(12) STANDARD PATENT (11) Application No. **AU 2014341927 B2**
(19) AUSTRALIAN PATENT OFFICE

(54) Title
Optimal maize loci

(51) International Patent Classification(s)
C07H 21/04 (2006.01) ***C12N 15/82*** (2006.01)
A01H 5/10 (2006.01) ***C12N 15/87*** (2006.01)

(21) Application No: **2014341927** (22) Date of Filing: **2014.11.03**

(87) WIPO No: **WO15/066636**

(30) Priority Data

(31) Number	(32) Date	(33) Country
61/899,598	**2013.11.04**	**US**

(43) Publication Date: **2015.05.07**
(44) Accepted Journal Date: **2017.12.14**

(71) Applicant(s)
Dow AgroSciences LLC

(72) Inventor(s)
Sastry-Dent, Lakshmi;Cao, Zehui;Sriram, Shreedharan;Webb, Steven R.;Camper, Debra L.

(74) Agent / Attorney
FPA Patent Attorneys Pty Ltd, Level 43 101 Collins Street, Mebourne, VIC, 3000, AU

(56) Related Art
GenBank Accession No. AC193791 24 September 2013.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 May 2015 (07.05.2015)

WIPO | PCT

(10) International Publication Number
WO 2015/066636 A3

(51) **International Patent Classification**:
C07H 21/04 (2006.01) *C12N 15/87* (2006.01)
C12N 15/82 (2006.01)

(21) **International Application Number**:
PCT/US2014/063731

(22) **International Filing Date**:
3 November 2014 (03.11.2014)

(25) **Filing Language**: English

(26) **Publication Language**: English

(30) **Priority Data**:
61/899,598 4 November 2013 (04.11.2013) US

(71) **Applicant**: **DOW AGROSCIENCES LLC** [US/US]; 9330 Zionsville Road, Indianapolis, Indiana 46268 (US).

(72) **Inventors**: **SASTRY-DENT, Lakshmi**; 2239 Stone Manor Court, Avon, Indiana 46123 (US). **CAO, Zehui**; 13719 Stanford Drive, Westfield, Indiana 46074 (US). **SRIRAM, Shreedharan**; 3619 Knickerbocker Place, Apt. 2A, Indianapolis, Indiana 46240 (US). **WEBB, Steven R.**; 15416 Bloomfield Court, Westfield, Indiana 46074 (US). **CAMPER, Debra L.**; 5340 North Delaware Street, Indianapolis, Indiana 46220 (US).

(74) **Agents**: **ADDISON, Bradford, G.** et al.; Barnes & Thornburg LLP, 11 South Meridian Street, Indianapolis, IN 46204 (US).

(81) **Designated States** *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) **Designated States** *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) **Title**: OPTIMAL MAIZE LOCI

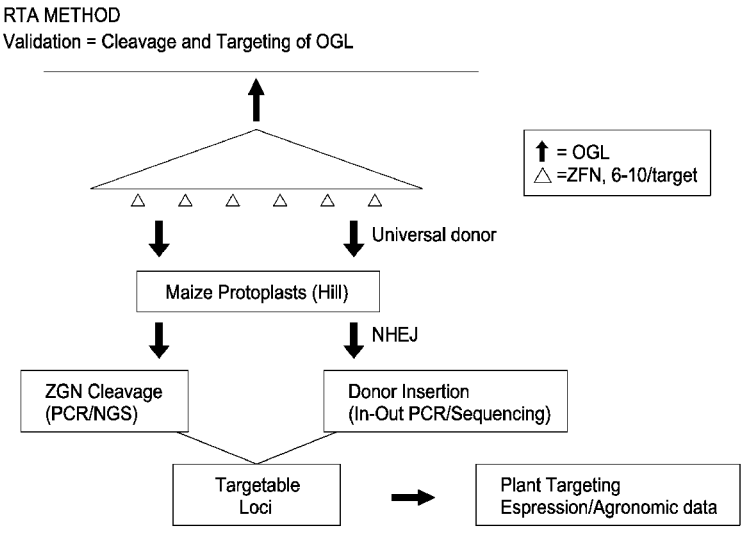


Fig. 13

(57) **Abstract**: As disclosed herein, optimal native genomic loci from maize plants have been identified that represent best sites for targeted insertion of exogenous sequences.

WO 2015/066636 A3

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

— *with sequence listing part of description (Rule 5.2(a))*

(88) Date of publication of the international search report:
25 June 2015

2014341927 29 May 2017

OPTIMAL MAIZE LOCI

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit, under 35 U.S.C. §119(e), to U.S. Provisional Patent Application No. 61/899,598, filed on November 4, 2013, the contents of which are incorporated by reference in their entirety into the present application.

REFERENCE TO SEQUENCE LISTING SUBMITTED ELECTRONICALLY

The official copy of the sequence listing is submitted electronically via EFS-Web as an ASCII formatted sequence listing with a file named "7560232316_SeqList_ST25.txt", created on October 31, 2014, and having a size of 13 megabytes and is filed concurrently with the specification. The sequence listing contained in this ASCII formatted document is part of the specification and is herein incorporated by reference in its entirety.

REFERENCE TO TABLE LISTING SUBMITTED ELECTRONICALLY

The official copy of the table listing is submitted electronically via EFS-Web as a .PDF formatted table listing with a file named "Table3", created on November 04, 2013, and having a size of 8 megabytes and is filed concurrently with the specification. The table listing contained in this .PDF formatted document is part of the specification and is herein incorporated by reference in its entirety.

BACKGROUND

Reference to any prior art in the specification is not an acknowledgment or suggestion that this prior art forms part of the common general knowledge in any jurisdiction or that this prior art could reasonably be expected to be understood, regarded as relevant, and/or combined with other pieces of prior art by a skilled person in the art.

The maize genome was successfully transformed with transgenes in the early 1990's. Over the last twenty years, numerous methodologies have been developed for transforming the maize genome, wherein a transgene is stably integrated into the maize genome. This evolution of maize transformation methodologies has resulted in the capability to successfully introduce a transgene comprising an agronomic trait within the maize genome. The introduction of insect resistance and herbicide tolerant traits within maize plants in the late -1990's provided producers with a new and convenient technological innovation for controlling insects and a

2014341927 29 May 2017

wide spectrum of weeds, which was unparalleled in cultivation farming methods. Currently, transgenic maize is commercially available throughout the world, and new transgenic maize products such as Enlist™ Corn offer improved solutions for ever-increasing weed challenges. The utilization of transgenic maize in modern agronomic practices would not be possible, but for the development and improvement of maize transformation methodologies.

However, current maize transformation methodologies rely upon the random insertion of transgenes within the maize genome. Reliance on random insertion of genes into a genome has several disadvantages. The transgenic events may randomly integrate within gene transcriptional sequences, thereby interrupting the expression of endogenous traits and altering the growth and development of the maize plant. In addition, the transgenic events may indiscriminately integrate into locations of the corn genome that are susceptible to gene silencing, culminating in the reduced or complete inhibition of transgene expression either in the first or subsequent generations of transgenic maize plants. Finally, the random integration of transgenes within the maize genome requires considerable effort and cost in identifying the location of the transgenic event and selecting transgenic events that perform as designed without agronomic impact to the plant. Novel assays must be continually developed to determine the precise location of the integrated transgene for each transgenic event, such as a maize event. The random nature of maize transformation methodologies results in a "position-effect" of the integrated transgene, which hinders the effectiveness and efficiency of maize transformation methodologies.

Targeted genome modification of plants has been a long-standing and elusive goal of both applied and basic research. Targeting genes and gene stacks to specific locations in the *Zea mays* genome will improve the quality of transgenic events, reduce costs associated with production of transgenic events and provide new methods for making transgenic plant products such as sequential gene stacking. Overall, targeting trangenes to specific genomic sites is likely to be commercially beneficial. Significant advances have been made in the last few years towards development of methods and compositions to target and cleave genomic DNA by site specific nucleases (*e.g.*, Zinc Finger Nucleases (ZFNs), Meganucleases, Transcription Activator-Like Effector Nucelases (TALENS) and Clustered Regularly Interspaced Short Palindromic Repeats/CRISPR-associated nuclease (CRISPR/Cas) with an engineered crRNA/tracr RNA), to induce targeted mutagenesis, induce targeted deletions of cellular DNA sequences, and facilitate targeted recombination of an exogenous donor DNA polynucleotide within a predetermined genomic locus. See, for example, U.S. Patent Publication No. 20030232410; 20050208489; 20050026157; 20050064474; and 20060188987, and International Patent Publication No. WO 2007/014275, the disclosures of which are incorporated by reference in their entireties for all purposes. U.S. Patent Publication No. 20080182332 describes use of non- canonical zinc finger nucleases (ZFNs) for targeted modification of plant genomes and U.S. Patent Publication No. 20090205083 describes ZFN-

2014341927 29 May 2017

mediated targeted modification of a plant EPSPs genomic locus. Current methods for targeted insertion of exogenous DNA typically involve co-transformation of plant tissue with a donor DNA polynucleotide containing at least one transgene and a site specific nuclease (e.g., ZFN) which is designed to bind and cleave a specific genomic locus of an actively transcribed coding sequence. This causes the donor DNA polynucleotide to stably insert within the cleaved genomic locus resulting in targeted gene addition at a specified genomic locus comprising an actively transcribed coding sequence.

An alternative approach is to target the transgene to preselected target nongenic loci within the corn genome. In recent years, several technologies have been developed and applied to plant cells for the targeted delivery of a transgene within the corn genome. However, much less is known about the attributes of genomic sites that are suitable for targeting. Historically, non-essential genes and pathogen (viral) integration sites in genomes have been used as loci for targeting. The number of such sites in genomes is rather limiting and there is therefore a need for identification and characterization of targetable optimal genomic loci that can be used for targeting of donor polynucleotide sequences. In addition to being amenable to targeting, optimal genomic loci are expected to be neutral sites that can support transgene expression and breeding applications. A need exists for compositions and methods that define criteria to identify optimal nongenic loci within the corn genome for targeted transgene integration.

SUMMARY

In accordance with one embodiment a recombinant sequence is provided comprising an optimal nongenic maize genomic sequence and an exogenous sequence, wherein the exogenous sequence is inserted into the optimal nongenic maize genomic sequence. In an embodiment, the subject disclosure relates to a recombinant sequence, comprising: a nucleic acid sequence of at least 1 Kb and having at least 90%, 95%, or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424),loci_232228_G1 (SEQ ID NO: 4529) with a DNA of interest inserted into the nongenic sequence. In one embodiment, the insertion of the DNA of interest into the optimal nongenic maize genomic sequence modifies the original sequence of the nongenic loci by alterations of the nongenic loci sequence proximal to the

2014341927 29 May 2017

insertion site. Such modifications include, for example, deletions, inversions, insertions, and duplications of the nongenic loci sequence. In a further aspect, an embodiment relates to a DNA of interest, wherein the DNA of interest is inserted into said nongenic sequence. In another aspect, an embodiment comprises the recombinant sequence, wherein a DNA of interest is inserted proximal to a zinc finger target site of Table 8. In another aspect, an embodiment comprises the recombinant sequence, wherein a DNA of interest is inserted at a zinc finger target site of Table 8. In another embodiment, the recombinant sequence comprises an inserted DNA of interest that further comprises an analytical domain. In another embodiment, the recombinant sequence comprises an inserted DNA of interest that does not encode a peptide. In a further embodiment, the recombinant sequence comprises a DNA of interest that encodes a peptide. In yet another embodiment, the recombinant sequence comprises an inserted DNA of interest that further comprises a gene expression cassette. In an embodiment, the gene expressions cassette contains a gene comprising an insecticidal resistance gene, herbicide tolerance gene, nitrogen use efficiency gene, water use efficiency gene, nutritional quality gene, DNA binding gene, and selectable marker gene. In a further embodiment, the recombinant sequence comprises two or more gene expression cassettes. In another embodiment, the recombinant sequence comprises two or more of said nongenic sequences each comprise an inserted DNA of interest to produce two or more recombinant sequences wherein the two or more recombinant sequences that are located on a same chromosome. In an additional embodiment, the recombinant sequence comprises the DNA of interest and/or the nongenic sequence are modified during insertion of said DNA of interest into the nongenic sequence. In another embodiment, the subject disclosure relates to a maize plant, maize plant part, or maize plant cell comprising a recombinant sequence comprising a nucleic acid sequence of at least 1 Kb and having at least 90%, 95%, or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424),loci_232228_G1 (SEQ ID NO: 4529) with a DNA of interest inserted into the nongenic sequence.

In a further embodiment, the disclosure relates to a method of making a transgenic plant cell comprising a DNA of interest. In another aspect of the disclosure, the method comprises selecting a target nongenic maize genomic locus having at least 90%, 95%, or 99% sequence

2014341927 29 May 2017

identity with a target nongenic maize genomic locus selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), and loci_232228_G1 (SEQ ID NO: 4529); selecting a site specific nuclease that specifically binds and cleaves said target nongenic maize genomic locus; introducing said site specific nuclease into a maize plant cell; introducing the DNA of interest into the plant cell; inserting the DNA of interest into said target nongenic maize genomic loci; and, selecting transgenic plant cells comprising the DNA of interest targeted to said nongenic locus. In a further aspect, an embodiment relates to a method of making a transgenic plant cell. In another embodiment, the DNA of interest comprises an analytical domain. In an embodiment, the DNA of interest does not encode a peptide. In yet another embodiment, the DNA of interest encodes a peptide. In a further embodiment, the DNA of interest comprises a gene expression cassette comprising a transgene. In another embodiment, the DNA of interest comprises two or more gene expression cassettes. In a subsequent embodiment, the site specific nuclease is selected from the group consisting of a zinc finger nuclease, a CRISPR nuclease, a TALEN, a homing endonuclease or a meganuclease. In an embodiment, the DNA of interest is integrated within said nongenic locus via a homology directed repair integration method. In another embodiment, the DNA of interest is integrated within said nongenic locus via a non-homologous end joining integration method. In a further embodiment, the method of making a transgenic plant cell provides for two or more of said DNA of interest that are inserted into two or more of said target nongenic maize genomic loci. In another embodiment, the method of making a transgenic plant cell comprises two or more of said target nongenic maize genomic loci that are located on a same chromosome. In an additional embodiment, the method of making a transgenic plant cell comprises the DNA of interest and/or the nongenic sequence that are modified during insertion of said DNA of interest into the nongenic sequence.

In accordance with one embodiment, a purified maize polynucleotide loci is disclosed herein, wherein the purified sequence comprises a nongenic sequence of at least 1 Kb. In one embodiment the nongenic sequence is hypomethylated, exemplifies evidence of recombination and is located in proximal location to an expressing genic region in the maize genome. In one embodiment, the nongenic sequence has a length ranging from about 1 Kb to about 8.4 Kb. In one embodiment, the DNA of interest comprises exogenous DNA sequences, including for

2014341927 29 May 2017

example regulatory sequences, restriction cleavage sites, RNA encoding regions or protein encoding regions. In one embodiment, the DNA of interest comprises a gene expression cassette comprising one or more transgenes. In another embodiment, the purified sequence comprises a nongenic sequence having at least 90%, 95%, or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), and loci_232228_G1 (SEQ ID NO: 4529). In a further embodiment, the purified nongenic maize genomic loci comprise a DNA of interest, wherein said DNA of interest is inserted into said nongenic sequence. In another aspect, an embodiment comprises the purified nongenic maize genomic loci, wherein said DNA of interest is inserted proximal to a zinc finger target site of Table 8. In a different aspect, an embodiment comprises the purified nongenic maize genomic loci, wherein said DNA of interest is inserted between a pair of zinc finger target sites selected from Table 8. In yet another aspect, an embodiment comprises the purified nongenic maize genomic loci and a DNA of interest inserted into the nogenic maize genomic loci, wherein said DNA of interest comprises an analytical domain. In another aspect, an embodiment comprises the purified recombinant nongenic maize genomic loci, wherein said DNA of interest does not encode a peptide. In a subsequent aspect, an embodiment comprises the purified recombinant nongenic maize genomic loci, wherein said DNA of interest encodes a peptide. In an embodiment, the purified recombinant nongenic maize genomic loci comprises a gene expression cassette, wherein the gene cassette comprises a gene including, for example, an insecticidal resistance gene, herbicide tolerance gene, nitrogen use efficiency gene, water use efficiency gene, nutritional quality gene, DNA binding gene, and selectable marker gene. In one embodiment a DNA of interest is inserted into the nogenic maize genomic loci using a site specific nuclease wherein the site specific nuclease is selected from the group consisting of a zinc finger nuclease, a CRISPR nuclease, a TALEN, a homing endonuclease or a meganuclease. In an embodiment, the said DNA of interest is integrated within said nongenic sequence via a homology directed repair integration method. In another embodiment, the said DNA of interest is integrated within said nongenic sequence via a non-homologous end joining integration method. In a further embodiment, the DNA of interest comprises two or more gene expression cassettes. In a further embodiment, two or more of DNA of interest are inserted into two or

2014341927 29 May 2017

more of said target nongenic maize genomic loci. In one embodiment, two or more of said target nongenic maize genomic loci are provided wherein each comprise an inserted DNA of interest to produce two or more recombinant sequences wherein the said target nongenic maize genomic lociare located on a same chromosome. In an additional embodiment, the purified nongenic maize genomic comprises the DNA of interest and/or the nongenic sequence that are modified during insertion of said DNA of interest into the nongenic sequence. In another embodiment, the DNA of interest is inserted via a homology directed repair or a non-homologous end joining repair mechanism.

In another embodiment, the subject disclosure provides for a plant comprising a recombinant sequence, said recombinant sequence comprising: a DNA of interest and a nucleic acid sequence having at least 90%, 95%, or 99% sequence identity with a nongenic sequence, wherein the DNA of interest is inserted into said nongenic sequence. In another embodiment, the nongenic sequence is selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), and loci_232228_G1 (SEQ ID NO: 4529). In an additional embodiment, the plant comprises two or more of said recombinant sequences. In a further embodiment the plant comprises two recombinant sequences that are located on the same chromosome. In another embodiment the plant comprises a DNA of interest inserted proximal to a zinc finger target site of Table 8. In one embodiment the plant comprises a DNA of interest inserted between a pair of zinc finger target sites selected from Table 8. In an embodiment, said DNA of interest comprises an analytical domain. In a further embodiment, said DNA of interest does not encode a peptide. In yet another embodiment, said DNA of interest encodes a peptide. In a subsequent embodiment, said DNA of interest comprises a gene expression cassette encoding a gene product, including for example, an insecticidal resistance gene, herbicide tolerance gene, nitrogen use efficiency gene, water use efficiency gene, nutritional quality gene, DNA binding gene, and selectable marker gene. In another embodimentthe plant comprises a DNA of interest and/or a nongenic sequence that are modified during insertion of said DNA of interest into said nongenic sequence.

In an embodiment, the subject disclosure relates to a recombinant sequence, comprising: a nucleic acid sequence of at least 1 Kb and having at least 90%, 95%, or 99% sequence

2014341927 29 May 2017

identity with a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_203075_G1 (SEQ ID NO:2030), and loci_204637_G1 (SEQ ID NO:2731), with a DNA of interest inserted into the nongenic sequence.

In an embodiment, the subject disclosure relates to a recombinant sequence, comprising: a nucleic acid sequence of at least 1 Kb and having at least 90%, 95%, or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), and loci_232484_G1 (SEQ ID NO:2053), with a DNA of interest inserted into the nongenic sequence.

In an embodiment, the subject disclosure relates to a recombinant sequence, comprising: a nucleic acid sequence of at least 1 Kb and having at least 90%, 95%, or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_127268_G1 (SEQ ID NO:2709), loci_232222_G1 (SEQ ID NO:3357), and loci_204726_G1 (SEQ ID NO:424), with a DNA of interest inserted into the nongenic sequence.

In an embodiment, the subject disclosure relates to a recombinant sequence, comprising: a nucleic acid sequence of at least 1 Kb and having at least 90%, 95%, or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_291068_G1 (SEQ ID NO:3230), loci_43577_G1 (SEQ ID NO:3428), and loci_232228_G1 (SEQ ID NO: 4529) with a DNA of interest inserted into the nongenic sequence.

In an embodiment, the subject disclosure relates to a recombinant sequence, comprising: a nucleic acid sequence of at least 1 Kb and having at least 90%, 95%, or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), and loci_204637_G1 (SEQ ID NO:2731), with a DNA of interest inserted into the nongenic sequence.

In an embodiment, the subject disclosure relates to a recombinant sequence, comprising: a nucleic acid sequence of at least 1 Kb and having at least 90%, 95%, or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_232222_G1 (SEQ ID NO:3357), and

2014341927 29 May 2017

loci_204726_G1 (SEQ ID NO:424), with a DNA of interest inserted into the nongenic sequence.

In an embodiment, the subject disclosure relates to a recombinant sequence, comprising: a nucleic acid sequence of at least 1 Kb and having at least 90%, 95%, or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), and loci_232228_G1 (SEQ ID NO: 4529) with a DNA of interest inserted into the nongenic sequence.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1. Illustrates a screen-shot sample of a wiggle plot for the DNA methylation profile of root and shoot tissues obtained from *Zea mays* c.v. B73 chromosome number 1.

Fig. 2. Illustrates a distribution of the polynucleotide sequence lengths of the resulting hypomethylated genomic locations of the *Zea mays* c.v. B73 genome.

Fig. 3. Represents a three dimensional graph of the 5,286 optimal maize loci. The Principal Component Analysis (PCA) statistical approach was used to cluster the set of 5,286 identified optimal genomic loci into 32 distinct clusters based on their feature values (see Example 1). During the PCA process, five principal components (PC) were generated, with the

top three PCs containing about 90% of the total variation in the dataset. These top three PCAs were used to graphically represent the 32 clusters in a three dimensional plot as shown in Fig. 3.

Fig. 4. Provides a schematic drawing indicating the chromosomal distribution of the 81 optimal genomic loci, and their relative positions on the maize chromosomes.

Fig. 5. Provides a graph showing the coverage of the 72 optimal genomic loci within *Zea mays* c.v. B104 and c.v.Hi-II genomic databases that were selected for targeting validation.

Fig. 6. Provides a schematic drawing indicating the *Zea mays* chromosomal location of 72 optimal genomic loci selected for targeting validation.

Fig. 7. Provides a plasmid map of pDAB111845 (SEQ ID NO:5418). The numbered elements (i.e., 5, 7, 8, 9, 10, 11, 12, 15, 16, 25, and 26) correspond with zinc finger nuclease binding sequences of about 20 to 35 base pairs in length that are recognized and cleaved by corresponding zinc finger nuclease proteins. These zinc finger binding sequences and the annotated "UZI Sequence" (which is a 100-150 bp template region containing restriction sites and DNA sequences for primer design or coding sequences) comprise the universal donor cassette.

Fig. 8. Representation of the universal donor polynucleotide sequence for integration via non-homologous end joining (NHEJ). Two proposed vectors are provide wherein a DNA of interest (DNA X) comprises one or more (i.e., "1-N") zinc finger binding sites (ZFN BS) at either end of the DNA of interest. Vertical arrows show unique restriction sites and horizontal arrows represent potential PCR primer sites.

Fig. 9. Representation of the universal donor polynucleotide sequence for integration via homologous-directed repair (HDR). A DNA of interest (DNA X) comprising two regions of homologous sequences (HA) flanking the DNA of interest with zinc finger nuclease binding sites (ZFN) bracketing the DNAX and HA sequences. Vertical arrows show unique restriction sites and horizontal arrows represent potential PCR primer sites.

Fig. 10A-10C. Illustrates the constructs used for targeting and validation of the universal donor polynucleotide system integration within the *Zea mays* optimal genomic loci targeting and validation. Fig. 10A) ZFN design space with location of the ZFN pairs as previously shown in pDAB111845 of Figure 5. The ZFN pairs are labedled numerically and correspond with specific ZFN binding sequences that are specifically recognized by ZFN proteins for binding and cleavage. Fig. 10B) Configuration of the ZFN expression construct. The ZFN expression construct contains a constitutive plant promoter (Zm Ubi1) which is used to drive expression of the ZFN protein. The ZFN protein contains the nuclear localization

sequence (NLS), the zinc finger proteins (ZFP-L and ZFP-R, where L indicates left hand binding ZFN protein and R indicates right hand binding protein), Fok-1 endonuclease (Fok1) and the self-hydrolyzing 2A (2A). Fig. 10C) universal donor polynucleotide for NHEJ mediated targeting of *Zea mays* optimal genomic loci. Z1-Z6 represent ZFN binding sites specific for a *Zea mays* optimal genomic loci target. The number of ZFN sites can vary from 3-6. Vertical arrows show unique restriction sites and horizontal arrows represent potential PCR primer sites. The universal donor polynucleotide system is a short (110 bp) sequence that is common to donors used for integration within *Zea mays* optimal genomic loci.

Fig. 11. Plasmid map of pDAB8393.

Fig. 12. ZFN cleavage activity at *Zea mays* selected genomic loci targets. Cleavage activity is represented as number of sequences with indels (insertions and deletions) at the ZFN cleavage site per 1 million high quality reads.

Fig. 13. Validation of *Zea mays* selected genomic loci targets using NHEJ based Rapid Targeting Analysis (RTA) method.

Fig. 14 & 14B. Plasmid constructs transformed into Zea mays via random integration that comprise the events used for flanking sequence analysis and transgene expression studies. Fig. 14 represents the insertion of pDAB105817, a 1871 bp fragment; Fig. 14B represents the insertion of a 6128 pb fragement of pEPS105817.

Fig. 15. Plasmid map of pDAB111846 (SEQ ID NO:5419). The numbered elements (i.e., 1, 2, 5, 6, 11, 12, 15, 16, 21, 22, 29 and 30) correspond with zinc finger nuclease binding sequences of about 20 to 35 base pairs in length that are recognized and cleaved by corresponding zinc finger nuclease proteins. These zinc finger binding sequences and the annotated "UZI Sequence" (which is a 100-150 bp template region containing restriction sites and DNA sequences for primer design or coding sequences) comprise the universal donor cassette.

Fig. 16. Plasmid map of pDAB117415 (SEQ ID NO:5420). The numbered elements (i.e., ZFN51 and ZFN52) correspond with zinc finger nuclease binding sequences of about 20 to 35 base pairs in length that are recognized and cleaved by corresponding zinc finger nuclease proteins. These zinc finger binding sequences and the annotated "UZI Sequence" (which is a 100-150 bp template region containing restriction sites and DNA sequences for primer design or coding sequences) comprise the universal donor cassette. Further included in this plasmid design is the "104113 Overlap" which are sequences that share homology to the plasmid vector

for high throughput assembly of the universal donor cassettes within a plasmid vector (i.e., via Gibson assembly).

Fig. 17. Plasmid map of pDAB117416 (SEQ ID NO:5421). The numbered elements (i.e., ZFN54 and ZFN53) correspond with zinc finger nuclease binding sequences of about 20 to 35 base pairs in length that are recognized and cleaved by corresponding zinc finger nuclease proteins. These zinc finger binding sequences and the annotated "UZI Sequence" (which is a 100-150 bp template region containing restriction sites and DNA sequences for primer design or coding sequences) comprise the universal donor cassette. Further included in this plasmid design is the "104113 Overlap" which are sequences that share homology to the plasmid vector for high throughput assembly of the universal donor cassettes within a plasmid vector (i.e., via Gibson assembly).

Fig. 18. Plasmid map of pDAB117417 (SEQ ID NO:5422). The numbered element (i.e., ZFN55) correspond with zinc finger nuclease binding sequences of about 20 to 35 base pairs in length that are recognized and cleaved by corresponding zinc finger nuclease proteins. These zinc finger binding sequences and the annotated "UZI Sequence" (which is a 100-150 bp template region containing restriction sites and DNA sequences for primer design or coding sequences) comprise the universal donor cassette. Further included in this plasmid design is the "104113 Overlap" which are sequences that share homology to the plasmid vector for high throughput assembly of the universal donor cassettes within a plasmid vector (i.e., via Gibson assembly).

Fig. 19. Plasmid map of pDAB117419 (SEQ ID NO:5423). The numbered elements (i.e., ZFN59 and ZFN60) correspond with zinc finger nuclease binding sequences of about 20 to 35 base pairs in length that are recognized and cleaved by corresponding zinc finger nuclease proteins. These zinc finger binding sequences and the annotated "UZI Sequence" (which is a 100-150 bp template region containing restriction sites and DNA sequences for primer design or coding sequences) comprise the universal donor cassette. Further included in this plasmid design is the "104113 Overlap" which are sequences that share homology to the plasmid vector for high throughput assembly of the universal donor cassettes within a plasmid vector (i.e., via Gibson assembly).

Fig. 20. Plasmid map of pDAB117434 (SEQ ID NO:5424). The numbered elements (i.e., ZFN66, ZFN67, ZFN68 and ZFN69) correspond with zinc finger nuclease binding sequences of about 20 to 35 base pairs in length that are recognized and cleaved by corresponding zinc finger nuclease proteins. These zinc finger binding sequences and the

annotated "UZI Sequence" (which is a 100-150 bp template region containing restriction sites and DNA sequences for primer design or coding sequences) comprise the universal donor cassette. Further included in this plasmid design is the "104113 Overlap" which are sequences that share homology to the plasmid vector for high throughput assembly of the universal donor cassettes within a plasmid vector (i.e., via Gibson assembly).

Fig. 21. Plasmid map of pDAB117418 (SEQ ID NO:5425). The numbered elements (i.e., ZFN56, ZFN57, and ZFN58) correspond with zinc finger nuclease binding sequences of about 20 to 35 base pairs in length that are recognized and cleaved by corresponding zinc finger nuclease proteins. These zinc finger binding sequences and the annotated "UZI Sequence" (which is a 100-150 bp template region containing restriction sites and DNA sequences for primer design or coding sequences) comprise the universal donor cassette. Further included in this plasmid design is the "104113 Overlap" which are sequences that share homology to the plasmid vector for high throughput assembly of the universal donor cassettes within a plasmid vector (i.e., via Gibson assembly).

Fig. 22. Plasmid map of pDAB117420 (SEQ ID NO:5426). The numbered elements (i.e., ZFN61 and ZFN62) correspond with zinc finger nuclease binding sequences of about 20 to 35 base pairs in length that are recognized and cleaved by corresponding zinc finger nuclease proteins. These zinc finger binding sequences and the annotated "UZI Sequence" (which is a 100-150 bp template region containing restriction sites and DNA sequences for primer design or coding sequences) comprise the universal donor cassette. Further included in this plasmid design is the "104113 Overlap" which are sequences that share homology to the plasmid vector for high throughput assembly of the universal donor cassettes within a plasmid vector (i.e., via Gibson assembly).

Fig. 23. Plasmid map of pDAB117421 (SEQ ID NO:5427). The numbered elements (i.e., PPL17 Pair 3, PPL17 Pair 1, and PPL17 Pair2) correspond with zinc finger nuclease binding sequences of about 20 to 35 base pairs in length that are recognized and cleaved by corresponding zinc finger nuclease proteins. These zinc finger binding sequences and the annotated "UZI Sequence" (which is a 100-150 bp template region containing restriction sites and DNA sequences for primer design or coding sequences) comprise the universal donor cassette. Further included in this plasmid design is the "104113 Overlap" which are sequences that share homology to the plasmid vector for high throughput assembly of the universal donor cassettes within a plasmid vector (i.e., via Gibson assembly).

2014341927 29 May 2017

Figs. 24A-24C. Histrogram of characteristics (length, expression of coding region within 40 Kb of loci, and recombination frequency) for the identified optimal nongenic maize loci. Fig. 24A illustrates a distribution of the polynucleotide sequence lengths of the optimal genomic loci (OGL). Fig. 24B illustrates the distribution of expressed nucleic acid sequences relative to their proximity (log scale) to the optimal genomic loci (OGL). Fig. 24C illustrates the distribution of the optimal nongenic maize loci relative to their recombination frequency.

Fig. 25A & 25B. Histrogram of characteristics (distance to actively transcribed endogenous gene and distance from centromere) for the identified optimal nongenic maize loci. Fig. 25A illustrates the distribution of the optimal genomic loci sequences relative to their distance to actively transcribed endogenous genes. Fig. 25B illustrates the distribution of the optimal genomic loci sequences relative to their distance to the chromosomal centromere.

DETAILED DESCRIPTION

DEFINITIONS

As used herein, except where the context requires otherwise, the term "comprise" and variations of the term, such as "comprising", "comprises" and "comprised", are not intended to exclude other additives, components, integers or steps.

In describing and claiming the invention, the following terminology will be used in accordance with the definitions set forth below.

The term "about" as used herein means greater or lesser than the value or range of values stated by 10 percent, but is not intended to designate any value or range of values to only this broader definition. Each value or range of values preceded by the term "about" is also intended to encompass the embodiment of the stated absolute value or range of values.

As used herein, the term “plant” includes a whole plant and any descendant, cell, tissue, or part of a plant. The term “plant parts” include any part(s) of a plant, including, for example and without limitation: seed (including mature seed and immature seed); a plant cutting; a plant cell; a plant cell culture; a plant organ (*e.g.*, pollen, embryos, flowers, fruits, shoots, leaves, roots, stems, and explants). A plant tissue or plant organ may be a seed, callus, or any other group of plant cells that is organized into a structural or functional unit. A plant cell or tissue culture may be capable of regenerating a plant having the physiological and morphological characteristics of the plant from which the cell or tissue was obtained, and of regenerating a plant having substantially the same genotype as the plant. In contrast, some plant cells are not capable of being regenerated to produce plants. Regenerable cells in a plant cell or tissue culture may be embryos, protoplasts, meristematic cells, callus, pollen, leaves, anthers, roots, root tips, silk, flowers, kernels, ears, cobs, husks, or stalks.

Plant parts include harvestable parts and parts useful for propagation of progeny plants. Plant parts useful for propagation include, for example and without limitation: seed; fruit; a cutting; a seedling; a tuber; and a rootstock. A harvestable part of a plant may be any useful part of a plant, including, for example and without limitation: flower; pollen; seedling; tuber; leaf; stem; fruit; seed; and root.

A plant cell is the structural and physiological unit of the plant. Plant cells, as used herein, includes protoplasts and protoplasts with a cell wall. A plant cell may be in the form of an isolated single cell, or an aggregate of cells (*e.g.*, a friable callus and a cultured cell), and may be part of a higher organized unit (*e.g.*, a plant tissue, plant organ, and plant). Thus, a plant cell may be a protoplast, a gamete producing cell, or a cell or collection of cells that can regenerate into a whole plant. As such, a seed, which comprises multiple plant cells and is capable of regenerating into a whole plant, is considered a "plant part" in embodiments herein.

The term "protoplast", as used herein, refers to a plant cell that had its cell wall completely or partially removed, with the lipid bilayer membrane thereof naked. Typically, a protoplast is an isolated plant cell without cell walls which has the potency for regeneration into cell culture or a whole plant.

As used herein the terms "native" or "natural" define a condition found in nature. A "native DNA sequence" is a DNA sequence present in nature that was produced by natural means or traditional breeding techniques but not generated by genetic engineering (e.g., using molecular biology/transformation techniques).

As used herein, "endogenous sequence" defines the native form of a polynucleotide, gene or polypeptide in its natural location in the organism or in the genome of an organism.

The term "isolated" as used herein means having been removed from its natural environment.

The term "purified", as used herein relates to the isolation of a molecule or compound in a form that is substantially free of contaminants normally associated with the molecule or compound in a native or natural environment and means having been increased in purity as a result of being separated from other components of the original composition. The term "purified nucleic acid" is used herein to describe a nucleic acid sequence which has been separated from other compounds including, but not limited to polypeptides, lipids and carbohydrates.

The terms "polypeptide", "peptide" and "protein" are used interchangeably to refer to a polymer of amino acid residues. The term also applies to amino acid polymers in which one or

more amino acids are chemical analogues or modified derivatives of a corresponding naturally-occurring amino acids.

As used herein the terms "optimal maize genomic loci", “optimal nongenic maize loci”, “optimal nongenic loci”, or “optimal genomic loci (OGL)” are used interchangably to designate a native DNA sequence found in the nuclear genome of a maize plant that has the following properties: nongenic, hypomethylated, targetable, and in proximal location to a genic region, wherein the genomic region around the optimal maize genomic loci exemplifies evidence of recombination.

As used herein, the terms "nongenic maize sequence" or “nongenic maize genomic sequence” are used interchangably to designate a native DNA sequence found in the nuclear genome of a maize plant, having a length of at least 1 Kb, and devoid of any open reading frames, gene sequences, or gene regulatory sequences. Furthermore, the nongenic maize sequence does not comprise any intron sequence (i.e., introns are excluded from the definition of nongenic). The nongenic sequence cannot be transcribed or translated into protein. Many plant genomes contain nongenic regions. As much as 95% of the genome can be nongenic, and these regions may be comprised of mainly repetitive DNA.

As used herein, a "genic region" is defined as a polynucleotide sequence that comprises an open reading frame encoding an RNA and/or polypeptide. The genic region may also encompass any identifiable adjacent 5′ and 3′ non-coding nucleotide sequences involved in the regulation of expression of the open reading frame up to about 2 Kb upstream of the coding region and 1 Kb downstream of the coding region, but possibly further upstream or downstream. A genic region further includes any introns that may be present in the genic region. Further, the genic region may comprise a single gene sequence, or multiple gene sequences interspersed with short spans (less than 1 Kb) of nongenic sequences.

As used herein a "nucleic acid of interest", "DNA of interest", or “donor” is defined as a nucleic acid/DNA sequence that has been selected for site directed, targeted insertion into the maize genome. A nucleic acid of interest can be of any length, for example between 2 and 50,000 nucleotides in length (or any integer value therebetween or thereabove), preferably between about 1,000 and 5,000 nucleotides in length (or any integer value therebetween). A nucleic acid of interest may comprise one or more gene expression cassettes that further comprise actively transcribed and/or translated gene sequences. Conversely, the nucleic acid of interest may comprise a polynucleotide sequence which does not comprise a functional gene expression cassette or an entire gene (e.g., may simply comprise regulatory sequences such as a

promoter), or may not contain any identifiable gene expression elements or any actively transcribed gene sequence. The nucleic acid of interest may optionally contain an analytical domain. Upon insertion of the nucleic acid of interest into the maize genome, the inserted sequences are referred to as the "inserted DNA of interest". Further, the nucleic acid of interest can be DNA or RNA, can be linear or circular, and can be single-stranded or double-stranded. It can be delivered to the cell as naked nucleic acid, as a complex with one or more delivery agents (e.g., liposomes, poloxamers, T-strand encapsulated with proteins, etc.,) or contained in a bacterial or viral delivery vehicle, such as, for example, *Agrobacterium tumefaciens* or an adenovirus or an adeno-associated Virus (AAV), respectively.

As used herein the term "analytical domain" defines a nucleic acid sequence that contains functional elements that assist in the targeted insertion of nucleic acid sequences. For example, an analytical domain may contain specifically designed restriction enzyme sites, zinc finger binding sites, engineered landing pads or engineered transgene integration platforms and may or may not comprise gene regulatory elements or an open reading frame. See, for example, U.S. Patent Publication No 20110191899, incorporated herein by reference in its entirety.

As used herein the term "selected maize sequence" defines a native genomic DNA sequence of maize that has been chosen for analysis to determine if the sequence qualifies as an optimal nongenic maize genomic loci.

As used herein, the term "hypomethylation" or "hypomethylated", in reference to a DNA sequence, defines a reduced state of methylated DNA nucleotide residues in a given sequence of DNA. Typically, the decreased methylation relates to the number of methylated adenine or cytosine residues, relative to the average level of methylation found in nongenic sequences present in the maize genome.

As used herein a "targetable sequence" is a polynucleotide sequence that is sufficiently unique in a nuclear genome to allow site specific, targeted insertion of a nucleic acid of interest into one specific sequence.

As used herein the term "non-repeating" sequence is defined as a sequence of at least 1Kb in length that shares less than 40% identity to any other sequence within the *Zea mays* genome. Calculations of sequence identity can be determined using any standard technique known to those skilled in the art including, for example, scanning a selected maize sequence against the *Zea mays* c.v. B73 genome using a BLAST™ based homology search using the NCBI BLAST™ software (version 2.2.23) run using the default parameter settings (Stephen F.

Altschul et al (1997), "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", Nucleic Acids Res. 25:3389-3402). For example, as the selected maize sequences (from the *Zea mays* c.v. B73 genome) were analyzed, the first BLAST™ hit identified from such a search represents the *Zea mays* c.v. B73 sequence itself. The second BLAST™ hit for each selected maize sequence was identified and the alignment coverage (represented as the percent of the selected maize sequence covered by the BLAST™ hit) of the hit was used as a measure of uniqueness of the selected maize sequence within the *Zea mays* genome. These alignment coverage values for the second BLAST™ hit ranged from a minimum of 0% to a maximum of 39.98% sequence identity. Any sequences that aligned at higher levels of sequence identity were not considered.

The term "in proximal location to a genic region" when used in reference to a nongenic sequence defines the relative location of the nongenic sequence to a genic region. Specifically, the number of genic regions within a 40 Kb neighborhood (i.e., within 40 Kb on either end of the selected optimal maize genomic loci sequence) is analyzed. This analysis was completed by assaying gene annotation information and the locations of known genes in the *Zea mays* genome were extracted from Maize Genome Database. For each of the 5,286 optimal nongenic maize genomic loci, a 40 Kb window around the optimal genomic loci sequence was defined and the number of annotated genes with locations overlapping this window was counted. The number of genic regions ranged from a minimum of 1 gene to a maximum of 9 genes within the 40 Kb neighborhood.

The term "known maize coding sequence" as used herein relates to any polynucleotide sequence identified from the Maize Genomic Database (available at www.maizegdb.org and Monaco, M., et al., Maize Metabolic Network Construction and Transcriptome Analysis. doi:10.3835/plantgenome2012.09.0025; Posted online 23 Jan. 2013) that comprise an open reading frame, either before or after processing of intron sequences, and are transcribed into mRNA and optionally translated into a protein sequence when placed under the control of the appropriate genetic regulatory elements. The known maize coding sequence can be a cDNA sequence or a genomic sequence. In some instances, the known maize coding sequence can be annotated as a functional protein. In other instances, the known maize coding sequence may not be annotated.

The term "predicted maize coding sequence" as used herein relates to any Expressed Sequence Tag (EST) polynucleotide sequences described in the Maize Genomic Database. ESTs are identified from cDNA libraries constructed using oligo(dT) primers to direct first-

strand synthesis by reverse transcriptase. The resulting ESTs are single-pass sequencing reads of less than 500 bp obtained from either the 5′ or 3′ end of the cDNA insert. Multiple ESTs may be aligned into a single contig. The identified EST sequences are uploaded into the Maize Genomic Database, and can be searched via bioinformatics methods to predict corresponding genomic polynucleotide sequences that comprise a coding sequence that is transcribed into mRNA and optionally translated into a protein sequence when placed under the control of the appropriate genetic regulatory elements.

The term "evidence of recombination" as used herein relates to the meiotic recombination frequencies between any pair of *Zea mays* genomic markers across a chromosome region comprising the selected maize sequence. The recombination frequencies were calculated based on the ratio of the genetic distance between markers (in centimorgan (cM)) to the physical distance between the markers (in megabases (Mb)). For a selected maize sequence to have evidence of recombination, the selected maize sequence must contain at least one recombination event between two markers flanking the selected maize sequence as detected using a high resolution marker dataset generated from multiple mapping populations. (See for example, Jafar Mammadov, Wei Chen, Anastasia Chueva, Karthik Muthuraman, Ruihua Ren, David Meyer, and Siva Kumpatla. 2011. Distribution of Recombinant Frequencies across the Maize Genome. 52nd Annual Maize Genetics Conference).

As used herein the term "relative location value" is a calculated value defining the distance of a genomic locus from its corresponding chromosomal centromere. For each selected maize sequence, the genomic distance from the native location of the selected maize sequence to the centromere of the chromosome that it is located on, is measured (in Bp). The relative location of selected maize sequence within the chromosome is represented as the ratio of its genomic distance to the centromere relative to the length of the specific chromosomal arm (measured in Bp) that it lies on. These relative location values for the optimal nongenic maize genomic loci dataset ranged from a minimum of 0.00373 to a maximum of 0.99908 ratio of genomic distance.

The term "exogenous DNA sequence" as used herein is any nucleic acid sequence that has been removed from its native location and inserted into a new location altering the sequences that flank the nucleic acid sequence that has been moved. For example, an exogenous DNA sequence may comprise a sequence from another species.

"Binding" refers to a sequence-specific, interaction between macromolecules (e.g., between a protein and a nucleic acid). Not all components of a binding interaction need be

sequence-specific (e.g., contacts with phosphate residues in a DNA backbone), as long as the interaction as a whole is sequence-specific. Such interactions are generally characterized by a dissociation constant (Kd). "Affinity" refers to the strength of binding: increased binding affinity being correlated with a lower binding constant (Kd).

A "binding protein" is a protein that is able to bind to another molecule. A binding protein can bind to, for example, a DNA molecule (a DNA-binding protein), an RNA molecule (an RNA-binding protein) and/or a protein molecule (a protein-binding protein). In the case of a protein-binding protein, it can bind to itself (to form homodimers, homotrimers, etc.) and/or it can bind to one or more molecules of a different protein or proteins. A binding protein can have more than one type of binding activity. For example, zinc finger proteins have DNA-binding, RNA-binding and protein-binding activity.

As used herein the term “zinc fingers,” defines regions of amino acid sequence within a DNA binding protein binding domain whose structure is stabilized through coordination of a zinc ion.

A "zinc finger DNA binding protein" (or binding domain) is a protein, or a domain within a larger protein, that binds DNA in a sequence-specific manner through one or more zinc fingers, which are regions of amino acid sequence within the binding domain whose structure is stabilized through coordination of a zinc ion. The term zinc finger DNA binding protein is often abbreviated as zinc finger protein or ZFP. Zinc finger binding domains can be "engineered" to bind to a predetermined nucleotide sequence. Non-limiting examples of methods for engineering zinc finger proteins are design and selection. A designed zinc finger protein is a protein not occurring in nature whose design/composition results principally from rational criteria. Rational criteria for design include application of substitution rules and computerized algorithms for processing information in a database storing information of existing ZFP designs and binding data. See, for example, U.S. Pat. Nos. 6,140,081; 6,453,242; 6,534,261 and 6,794,136; see also WO 98/53058; WO 98/53059; WO 98/53060; WO 02/016536 and WO 03/016496.

A “TALE DNA binding domain” or “TALE” is a polypeptide comprising one or more TALE repeat domains/units. The repeat domains are involved in binding of the TALE to its cognate target DNA sequence. A single “repeat unit” (also referred to as a “repeat”) is typically 33-35 amino acids in length and exhibits at least some sequence homology with other TALE repeat sequences within a naturally occurring TALE protein. *See, e.g.,* U.S. Patent Publication No. 20110301073, incorporated by reference herein in its entirety.

The CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)/Cas (CRISPR Associated) nuclease system. Briefly, a "CRISPR DNA binding domain" is a short stranded RNA molecule that acting in concer with the CAS enzyme can selectively recognize, bind, and cleave genomic DNA. The CRISPR/Cas system can be engineered to create a double-stranded break (DSB) at a desired target in a genome, and repair of the DSB can be influenced by the use of repair inhibitors to cause an increase in error prone repair. *See, e.g.,* Jinek et al (2012) Science 337, p. 816-821, Jinek et al, (2013), eLife 2:e00471, and David Segal, (2013) eLife 2:e00563).

Zinc finger, CRISPR and TALE binding domains can be "engineered" to bind to a predetermined nucleotide sequence, for example via engineering (altering one or more amino acids) of the recognition helix region of a naturally occurring zinc finger. Similarly, TALEs can be "engineered" to bind to a predetermined nucleotide sequence, for example by engineering of the amino acids involved in DNA binding (the repeat variable diresidue or RVD region). Therefore, engineered DNA binding proteins (zinc fingers or TALEs) are proteins that are non-naturally occurring. Non-limiting examples of methods for engineering DNA-binding proteins are design and selection. A designed DNA binding protein is a protein not occurring in nature whose design/composition results principally from rational criteria. Rational criteria for design include application of substitution rules and computerized algorithms for processing information in a database storing information of existing ZFP and/or TALE designs and binding data. See, for example, U.S. Patents 6,140,081; 6,453,242; and 6,534,261; see also WO 98/53058; WO 98/53059; WO 98/53060; WO 02/016536 and WO 03/016496 and U.S. Publication Nos. 20110301073, 20110239315 and 20119145940.

A "selected" zinc finger protein, CRISPR or TALE is a protein not found in nature whose production results primarily from an empirical process such as phage display, interaction trap or hybrid selection. See *e.g.*, U.S. Patent Nos. 5,789,538; US 5,925,523; US 6,007,988; US 6,013,453; US 6,200,759; WO 95/19431; WO 96/06166; WO 98/53057; WO 98/54311; WO 00/27878; WO 01/60970 WO 01/88197 and WO 02/099084 and U.S. Publication Nos. 20110301073, 20110239315 and 20119145940.

"Recombination" refers to a process of exchange of genetic information between two polynucleotides, including but not limited to, donor capture by non-homologous end joining (NHEJ) and homologous recombination. For the purposes of this disclosure, "homologous recombination (HR)" refers to the specialized form of such exchange that takes place, for example, during repair of double-strand breaks in cells via homology-directed repair

mechanisms. This process requires nucleotide sequence homology, uses a "donor" molecule to template repair of a "target" molecule (*i.e.*, the nucleotide sequence that experienced the double-strand break), and is variously known as "non-crossover gene conversion" or "short tract gene conversion," because it leads to the transfer of genetic information from the donor to the target. Without wishing to be bound by any particular theory, such transfer can involve mismatch correction of heteroduplex DNA that forms between the broken target and the donor, and/or "synthesis-dependent strand annealing," in which the donor is used to resynthesize genetic information that will become part of the target, and/or related processes. Such specialized HR often results in an alteration of the sequence of the target molecule such that part or all of the sequence of the donor polynucleotide is incorporated into the target polynucleotide. For HR-directed integration, the donor molecule contains at least 2 regions of homology to the genome ("homology arms") of least 50-100 base pairs in length. *See, e.g.,* U.S. Patent Publication No. 20110281361.

In the methods of the disclosure, one or more targeted nucleases as described herein create a double-stranded break in the target sequence (*e.g.,* cellular chromatin) at a predetermined site, and a "donor" polynucleotide, having homology to the nucleotide sequence in the region of the break for HR mediated integration or having no homology to the nucleotide sequence in the region of the break for NHEJ mediated integration, can be introduced into the cell. The presence of the double-stranded break has been shown to facilitate integration of the donor sequence. The donor sequence may be physically integrated or, alternatively, the donor polynucleotide is used as a template for repair of the break via homologous recombination, resulting in the introduction of all or part of the nucleotide sequence as in the donor into the cellular chromatin. Thus, a first sequence in cellular chromatin can be altered and, in certain embodiments, can be converted into a sequence present in a donor polynucleotide. Thus, the use of the terms "replace" or "replacement" can be understood to represent replacement of one nucleotide sequence by another, (*i.e.*, replacement of a sequence in the informational sense), and does not necessarily require physical or chemical replacement of one polynucleotide by another. In any of the methods described herein, additional pairs of zinc-finger proteins, CRISPRS or TALEN can be used for additional double-stranded cleavage of additional target sites within the cell.

Any of the methods described herein can be used for insertion of a donor of any size and/or partial or complete inactivation of one or more target sequences in a cell by targeted

integration of donor sequence that disrupts expression of the gene(s) of interest. Cell lines with partially or completely inactivated genes are also provided.

Furthermore, the methods of targeted integration as described herein can also be used to integrate one or more exogenous sequences. The exogenous nucleic acid sequence can comprise, for example, one or more genes or cDNA molecules, or any type of coding or noncoding sequence, as well as one or more control elements (*e.g.,* promoters). In addition, the exogenous nucleic acid sequence (transgene) may produce one or more RNA molecules (*e.g.*, small hairpin RNAs (shRNAs), inhibitory RNAs (RNAis), microRNAs (miRNAs), *etc.*), or protein.

"Cleavage" as used herein defines the breakage of the phosphate-sugar backbone of a DNA molecule. Cleavage can be initiated by a variety of methods including, but not limited to, enzymatic or chemical hydrolysis of a phosphodiester bond. Both single-stranded cleavage and double-stranded cleavage are possible, and double-stranded cleavage can occur as a result of two distinct single-stranded cleavage events. DNA cleavage can result in the production of either blunt ends or staggered ends. In certain embodiments, fusion polypeptides are used for targeted double-stranded DNA cleavage. A "cleavage domain" comprises one or more polypeptide sequences which possesses catalytic activity for DNA cleavage. A cleavage domain can be contained in a single polypeptide chain or cleavage activity can result from the association of two (or more) polypeptides.

A "cleavage half-domain" is a polypeptide sequence which, in conjunction with a second polypeptide (either identical or different) forms a complex having cleavage activity (preferably double-strand cleavage activity). The terms "first and second cleavage half-domains;" "+ and – cleavage half-domains" and "right and left cleavage half-domains" are used interchangeably to refer to pairs of cleavage half-domains that dimerize.

An "engineered cleavage half-domain" is a cleavage half-domain that has been modified so as to form obligate heterodimers with another cleavage half-domain (e.g., another engineered cleavage half-domain). See, also, U.S. Patent Publication Nos. 2005/0064474, 20070218528, 2008/0131962 and 2011/0201055, incorporated herein by reference in their entireties.

A "target site" or "target sequence" refers to a portion of a nucleic acid to which a binding molecule will bind, provided sufficient conditions for binding exist.

Nucleic acids include DNA and RNA, can be single- or double-stranded; can be linear, branched or circular; and can be of any length. Nucleic acids include those capable of forming duplexes, as well as triplex-forming nucleic acids. See, for example, U.S. Pat. Nos. 5,176,996

and 5,422,251. Proteins include, but are not limited to, DNA-binding proteins, transcription factors, chromatin remodeling factors, methylated DNA binding proteins, polymerases, methylases, demethylases, acetylases, deacetylases, kinases, phosphatases, integrases, recombinases, ligases, topoisomerases, gyrases and helicases.

A "product of an exogenous nucleic acid" includes both polynucleotide and polypeptide products, for example, transcription products (polynucleotides such as RNA) and translation products (polypeptides).

A "fusion" molecule is a molecule in which two or more subunit molecules are linked, for example, covalently. The subunit molecules can be the same chemical type of molecule, or can be different chemical types of molecules. Examples of the first type of fusion molecule include, but are not limited to, fusion proteins (for example, a fusion between a ZFP DNA-binding domain and a cleavage domain) and fusion nucleic acids (for example, a nucleic acid encoding the fusion protein described supra). Examples of the second type of fusion molecule include, but are not limited to, a fusion between a triplex-forming nucleic acid and a polypeptide, and a fusion between a minor groove binder and a nucleic acid. Expression of a fusion protein in a cell can result from delivery of the fusion protein to the cell or by delivery of a polynucleotide encoding the fusion protein to a cell, wherein the polynucleotide is transcribed, and the transcript is translated, to generate the fusion protein. Trans-splicing, polypeptide cleavage and polypeptide ligation can also be involved in expression of a protein in a cell. Methods for polynucleotide and polypeptide delivery to cells are presented elsewhere in this disclosure.

For the purposes of the present disclosure, a "gene", includes a DNA region encoding a gene product (*see infra*), as well as all DNA regions which regulate the production of the gene product, whether or not such regulatory sequences are adjacent or operably linked to coding and/or transcribed sequences. Accordingly, a gene includes, but is not necessarily limited to, promoter sequences, terminators, translational regulatory sequences such as ribosome binding sites and internal ribosome entry sites, enhancers, silencers, insulators, boundary elements, replication origins, matrix attachment sites and locus control regions.

"Gene expression" refers to the conversion of the information, contained in a gene, into a gene product. A gene product can be the direct transcriptional product of a gene (e.g., mRNA, tRNA, rRNA, antisense RNA, interfering RNA, ribozyme, structural RNA or any other type of RNA) or a protein produced by translation of a mRNA. Gene products also include RNAs which are modified, by processes such as capping, polyadenylation, methylation, and editing,

and proteins modified by, for example, methylation, acetylation, phosphorylation, ubiquitination, ADP-ribosylation, myristilation, and glycosylation.

Sequence identity: The term "sequence identity" or "identity," as used herein in the context of two nucleic acid or polypeptide sequences, refers to the residues in the two sequences that are the same when aligned for maximum correspondence over a specified comparison window.

As used herein, the term "percentage of sequence identity" refers to the value determined by comparing two optimally aligned sequences (e.g., nucleic acid sequences, and amino acid sequences) over a comparison window, wherein the portion of the sequence in the comparison window may comprise additions or deletions (i.e., gaps) as compared to the reference sequence (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleotide or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the comparison window, and multiplying the result by 100 to yield the percentage of sequence identity.

Methods for aligning sequences for comparison are well-known in the art. Various programs and alignment algorithms are described in, for example: Smith and Waterman (1981) Adv. Appl. Math. 2:482; Needleman and Wunsch (1970) J. Mol. Biol. 48:443; Pearson and Lipman (1988) Proc. Natl. Acad. Sci. U.S.A. 85:2444; Higgins and Sharp (1988) Gene 73:237-44; Higgins and Sharp (1989) CABIOS 5:151-3; Corpet et al. (1988) Nucleic Acids Res. 16:10881-90; Huang et al. (1992) Comp. Appl. Biosci. 8:155-65; Pearson et al. (1994) Methods Mol. Biol. 24:307-31; Tatiana et al. (1999) FEMS Microbiol. Lett. 174:247-50. A detailed consideration of sequence alignment methods and homology calculations can be found in, e.g., Altschul et al. (1990) J. Mol. Biol. 215:403-10. The National Center for Biotechnology Information (NCBI) Basic Local Alignment Search Tool (BLAST™; Altschul et al. (1990)) is available from several sources, including the National Center for Biotechnology Information (Bethesda, MD), and on the internet, for use in connection with several sequence analysis programs. A description of how to determine sequence identity using this program is available on the internet under the "help" section for BLAST™. For comparisons of nucleic acid sequences, the "Blast 2 sequences" function of the BLAST™ (Blastn) program may be employed using the default parameters. Nucleic acid sequences with even greater similarity to the reference sequences will show increasing percentage identity when assessed by this method.

Specifically hybridizable/Specifically complementary: As used herein, the terms "specifically hybridizable" and "specifically complementary" are terms that indicate a sufficient degree of complementarity, such that stable and specific binding occurs between the nucleic acid molecule and a target nucleic acid molecule. Hybridization between two nucleic acid molecules involves the formation of an anti-parallel alignment between the nucleic acid sequences of the two nucleic acid molecules. The two molecules are then able to form hydrogen bonds with corresponding bases on the opposite strand to form a duplex molecule that, if it is sufficiently stable, is detectable using methods well known in the art. A nucleic acid molecule need not be 100% complementary to its target sequence to be specifically hybridizable. However, the amount of sequence complementarity that must exist for hybridization to be specific is a function of the hybridization conditions used.

Hybridization conditions resulting in particular degrees of stringency will vary depending upon the nature of the hybridization method of choice and the composition and length of the hybridizing nucleic acid sequences. Generally, the temperature of hybridization and the ionic strength (especially the Na+ and/or Mg++ concentration) of the hybridization buffer will determine the stringency of hybridization, though wash times also influence stringency. Calculations regarding hybridization conditions required for attaining particular degrees of stringency are known to those of ordinary skill in the art, and are discussed, for example, in Sambrook et al. (ed.) Molecular Cloning: A Laboratory Manual, 2nd ed., vol. 1-3, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, 1989, chapters 9 and 11; and Hames and Higgins (eds.) Nucleic Acid Hybridization, IRL Press, Oxford, 1985. Further detailed instruction and guidance with regard to the hybridization of nucleic acids may be found, for example, in Tijssen, "Overview of principles of hybridization and the strategy of nucleic acid probe assays," in Laboratory Techniques in Biochemistry and Molecular Biology-Hybridization with Nucleic Acid Probes, Part I, Chapter 2, Elsevier, NY, 1993; and Ausubel et al., Eds., Current Protocols in Molecular Biology, Chapter 2, Greene Publishing and Wiley-Interscience, NY, 1995.

As used herein, "stringent conditions" encompass conditions under which hybridization will only occur if there is less than 20% mismatch between the hybridization molecule and a sequence within the target nucleic acid molecule. "Stringent conditions" include further particular levels of stringency. Thus, as used herein, "moderate stringency" conditions are those under which molecules with more than 20% sequence mismatch will not hybridize; conditions of "high stringency" are those under which sequences with more than 10% mismatch

will not hybridize; and conditions of "very high stringency" are those under which sequences with more than 5% mismatch will not hybridize. The following are representative, non-limiting hybridization conditions.

High Stringency condition (detects sequences that share at least 90% sequence identity): Hybridization in 5x SSC buffer (wherein the SSC buffer contains a detergent such as SDS, and additional reagents like salmon sperm DNA, EDTA, etc.) at 65 °C for 16 hours; wash twice in 2x SSC buffer (wherein the SSC buffer contains a detergent such as SDS, and additional reagents like salmon sperm DNA, EDTA, etc.) at room temperature for 15 minutes each; and wash twice in 0.5x SSC buffer (wherein the SSC buffer contains a detergent such as SDS, and additional reagents like salmon sperm DNA, EDTA, etc.) at 65 °C for 20 minutes each.

Moderate Stringency condition (detects sequences that share at least 80% sequence identity): Hybridization in 5x-6x SSC buffer (wherein the SSC buffer contains a detergent such as SDS, and additional reagents like salmon sperm DNA, EDTA, etc.) at 65-70 °C for 16-20 hours; wash twice in 2x SSC buffer (wherein the SSC buffer contains a detergent such as SDS, and additional reagents like salmon sperm DNA, EDTA, etc.) at room temperature for 5-20 minutes each; and wash twice in 1x SSC buffer (wherein the SSC buffer contains a detergent such as SDS, and additional reagents like salmon sperm DNA, EDTA, etc.) at 55-70 °C for 30 minutes each.

Non-stringent control condition (sequences that share at least 50% sequence identity will hybridize): Hybridization in 6x SSC buffer (wherein the SSC buffer contains a detergent such as SDS, and additional reagents like salmon sperm DNA, EDTA, etc.) at room temperature to 55 °C for 16-20 hours; wash at least twice in 2x-3x SSC buffer (wherein the SSC buffer contains a detergent such as SDS, and additional reagents like salmon sperm DNA, EDTA, etc.) at room temperature to 55 °C for 20-30 minutes each.

As used herein, the term "substantially homologous" or "substantial homology," with regard to a contiguous nucleic acid sequence, refers to contiguous nucleotide sequences that hybridize under stringent conditions to the reference nucleic acid sequence. For example, nucleic acid sequences that are substantially homologous to a reference nucleic acid sequence are those nucleic acid sequences that hybridize under stringent conditions (e.g., the Moderate Stringency conditions set forth, supra) to the reference nucleic acid sequence. Substantially homologous sequences may have at least 80% sequence identity. For example, substantially homologous sequences may have from about 80% to 100% sequence identity, such as about 81%; about 82%; about 83%; about 84%; about 85%; about 86%; about 87%; about 88%; about

89%; about 90%; about 91%; about 92%; about 93%; about 94% about 95%; about 96%; about 97%; about 98%; about 98.5%; about 99%; about 99.5%; and about 100%. The property of substantial homology is closely related to specific hybridization. For example, a nucleic acid molecule is specifically hybridizable when there is a sufficient degree of complementarity to avoid non-specific binding of the nucleic acid to non-target sequences under conditions where specific binding is desired, for example, under stringent hybridization conditions.

In some instances "homologous" may be used to refer to the relationship of a first gene to a second gene by descent from a common ancestral DNA sequence. In such instances, the term, homolog, indicates a relationship between genes separated by the event of speciation (see ortholog) or to the relationship between genes separated by the event of genetic duplication (see paralog). In other instances "homologous" may be used to refer to the level of sequence identity between one or more polynucleotide sequences, in such instances the one or more polynucelotide sequences do not necessarily descend from a common ancestral DNA sequence. Those with skill in the art are aware of the interchangeably of the term "homologous" and appreciate the proper application of the term.

As used herein, the term "ortholog" (or "orthologous") refers to a gene in two or more species that has evolved from a common ancestral nucleotide sequence, and may retain the same function in the two or more species.

As used herein, the term "paralogous" refers to genes related by duplication within a genome. Orthologs retain the same function in the course of evolution, whereas paralogs evolve new functions, even if these new functions are unrelated to the original gene function.

As used herein, two nucleic acid sequence molecules are said to exhibit "complete complementarity" when every nucleotide of a sequence read in the 5' to 3' direction is complementary to every nucleotide of the other sequence when read in the 3' to 5' direction. A nucleotide sequence that is complementary to a reference nucleotide sequence will exhibit a sequence identical to the reverse complement sequence of the reference nucleotide sequence. These terms and descriptions are well defined in the art and are easily understood by those of ordinary skill in the art.

When determining the percentage of sequence identity between amino acid sequences, it is well-known by those of skill in the art that the identity of the amino acid in a given position provided by an alignment may differ without affecting desired properties of the polypeptides comprising the aligned sequences. In these instances, the percent sequence identity may be adjusted to account for similarity between conservatively substituted amino acids. These

adjustments are well-known and commonly used by those of skill in the art. See, e.g., Myers and Miller (1988) Computer Applications in Biosciences 4:11-7. Statistical methods are known in the art and can be used in analysis of the identified 5,286 optimal genomic loci.

As an embodiment, the identified optimal genomic loci comprising 5,286 individual optimal genomic loci sequences can be analyzed via an F-distribution test. In probability theory and statistics, the F-distribution is a continuous probability distribution. The F-distribution test is a statistical significance test that has an F-distribution, and is used when comparing statistical models that have been fit to a data set, to identify the best-fitting model. An F-distribution is a continuous probability distribution, and is also known as Snedecor's F-distribution or the Fisher-Snedecor distribution. The F-distribution arises frequently as the null distribution of a test statistic, most notably in the analysis of variance. The F-distribution is a right-skewed distribution. The F-distribution is an asymmetric distribution that has a minimum value of 0, but no maximum value. The curve reaches a peak not far to the right of 0, and then gradually approaches the horizontal axis the larger the F value is. The F-distribution approaches, but never quite touches the horizontal axis.It will be appreciated that in other embodiments, variations on this equation, or indeed different equations, may be derived and used by the skilled person and are applicable to the analysis of 5,286 individual optimal genomic loci sequences.

Operably linked: A first nucleotide sequence is "operably linked" with a second nucleotide sequence when the first nucleotide sequence is in a functional relationship with the second nucleotide sequence. For instance, a promoter is operably linked to a coding sequence if the promoter affects the transcription or expression of the coding sequence. When recombinantly produced, operably linked nucleotide sequences are generally contiguous and, where necessary to join two protein-coding regions, in the same reading frame. However, nucleotide sequences need not be contiguous to be operably linked.

The term, "operably linked," when used in reference to a regulatory sequence and a coding sequence, means that the regulatory sequence affects the expression of the linked coding sequence. "Regulatory sequences," "regulatory elements", or "control elements," refer to nucleotide sequences that influence the timing and level/amount of transcription, RNA processing or stability, or translation of the associated coding sequence. Regulatory sequences may include promoters; translation leader sequences; introns; enhancers; stem-loop structures; repressor binding sequences; termination sequences; polyadenylation recognition sequences; etc. Particular regulatory sequences may be located upstream and/or downstream of a coding

sequence operably linked thereto. Also, particular regulatory sequences operably linked to a coding sequence may be located on the associated complementary strand of a double-stranded nucleic acid molecule.

When used in reference to two or more amino acid sequences, the term "operably linked" means that the first amino acid sequence is in a functional relationship with at least one of the additional amino acid sequences.

The disclosed methods and compositions include fusion proteins comprising a cleavage domain operably linked to a DNA-binding domain (e.g., a ZFP) in which the DNA-binding domain by binding to a sequence in the *Zea mays* optimal genomic locus directs the activity of the cleavage domain to the vicinity of the sequence and, hence, induces a double stranded break in the optimal genomic locus. As set forth elsewhere in this disclosure, a zinc finger domain can be engineered to bind to virtually any desired sequence. Accordingly, one or more DNA-binding domains can be engineered to bind to one or more sequences in the optimal genomic locus. Expression of a fusion protein comprising a DNA-binding domain and a cleavage domain in a cell, effects cleavage at or near the target site.

EMBODIMENTS

Targeting transgenes and transgene stacks to specific locations in the *Zea mays* genome will improve the quality of transgenic events, reduce costs associated with production of transgenic events and provide new methods for making transgenic plant products such as sequential gene stacking. Overall, targeting trangenes to specific genomic sites is likely to be commercially beneficial. Significant advances have been made in the last few years towards development of site-specific nucleases such as ZFNs, CRISPRs, and TALENs that can facilitate addition of donor polynucleotides to pre-selected sites in plant and other genomes. However, much less is known about the attributes of genomic sites that are suitable for targeting. Historically, non-essential genes and pathogen (viral) integration sites in genomes have been used as loci for targeting. The number of such sites in genomes is rather limiting and there is therefore a need for identification and characterization of optimal genomic loci that can be used for targeting of donor polynucleotide sequences. In addition to being amenable to targeting, optimal genomic loci are expected to be neutral sites that can support transgene expression and breeding applications.

Applicants have recognized that additional criteria are desirable for insertion sites and have combined these criteria to identify and select optimal sites in the maize genome for the

insertion of exogenous sequences. For targeting purposes, the site of selected insertion needs to be unique and in a non-repetitive region of the *Zea mays* genome. Likewise, the optimal genomic site for insertion should possess minimal undesirable phenotypic effects and be susceptible to recombination events to facilitate introgression into agronomically elite lines using traditional breeding techniques. In order to identify the genomic loci that meet the listed criteria, the *Zea mays* genome was scanned using a customized bioinformatics approach and genome scale datasets to identify novel genomic loci possessing characteristics that are beneficial for the integration of polynucleotide donor sequence and the subsequent expression of a inserted coding sequence.

I. Identification of Nongenic Maize Genomic Loci

In accordance with one embodiment a method is provided for identifying optimal nongenic maize genomic sequence for insertion of exogenous sequences. The method comprises the steps of first identifying maize genomic sequences of at least 1 Kb in length that are hypomethylated. In one embodiment the hypomethylated genomic sequence is 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 10, 11, 12, 13, 14, 15, 16 or 17 Kb in length. In one embodiment the hypomethylated genomic sequence is about 1 to about 4Kb in length and in a further embodiment is about 2 Kb in length. A sequence is considered hypomethylated if it has less than 1% DNA methylation within the sequence. In one embodiment the methylation status is measured based on the presence of 5-methylcytosine at one or more CpG dinucleotides, CHG or CHH trinucleotides within a selected maize sequence, relative to the amount of total cytosines found at corresponding CpG dinucleotides, CHG or CHH trinucleotides within a normal control DNA sample. CHH methylation indicates a 5-methylcytosine followed by two nucleotides that many not be guanine and CHG methylation refers to a 5-methylcytosine preceding an adenine, thymine or cytocine based followed by guanine. More particularly, in one embodiment the selected maize sequence has less than 1, 2 or 3 methylated nucleotides per 500 nucleotides of the selected maize sequence. In one embodiment the selected maize sequence has less than one, two, or three 5-methylcytosines at CpG dinucleotides per 500 nucleotides of the selected maize sequence. In one embodiment the selected maize sequence is 1 to 4Kb in length and comprises a 1Kb sequence devoid of 5-methylcytosines. In one embodiment the selected maize sequence is 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, or 8.5 Kb in length and contains 1 or 0 methylated nucleotides in its entire length. In one embodiment the selected maize sequence is 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5,

5.5, 6, 6.5, 7, 7.5, 8, or 8.5 Kb in length and contains no 5-methylcytosines at CpG dinucleotides within in its entire length. In accordance with one embodiment the methylation of a selected maize sequence may vary based on source tissue. In such embodiments the methylation levels used to determine if a sequence is hypomethylated represents the average amount of methylation in the sequences isolated from two or more tissues (e.g., from root and shoot).

In addition to the requirement that an optimal genomic site be hypomethylated, the selected maize sequence must also be nongenic. Accordingly, all hypomethylated genomic sequences are further screened to eliminate hypomethylated sequences that contain a genic region. This includes any open reading frames regardless of whether the transcript encodes a protein. Hypomethylated genomic sequences that include genic regions, including any identifiable adjacent 5′ and 3′ non-coding nucleotide sequences involved in the regulation of expression of an open reading frame and any introns that may be present in the genic region, are excluded from the optimal nongenic maize genomic locus of the present disclosure.

Optimal nongenic maize genomic loci must also be sequences that have demonstrated evidence of recombination. In one embodiment the selected maize sequence must be one where at least one recombination event has been detected between two markers flanking the selected maize sequence as detected using a high resolution marker dataset generated from multiple mapping populations. In one embodiment the pair of markers flanking a 0.5, 1, 1.5 Mb maize genomic sequence comprising the selected maize sequence are used to calculate the recombinant frequency for the selected maize sequence. Recombination frequencies between each pairs of markers (measured in centimorgan (cM)) to the genomic physical distance between the markers (in Mb)) must be greater than 0 cM/Mb. In one embodiment the recombination frequency for a 1 Mb maize genomic sequence comprising the selected maize sequence ranges from about 0.00041 to about 4.0. In one embodiment the recombination frequency for a 1 Mb maize genomic sequence comprising the selected maize sequence ranges from about 0.5 to about 5.0. In one embodiment an optimal genomic loci is one where recombination events have been detected within the selected maize sequence.

An optimal nongenic maize genomic loci will also be a targetable sequence, i.e., a sequence that is relatively unique in the maize genome such that a gene targeted to the selected maize sequence will only insert in one location of the maize genome. In one embodiment the entire length of the optimal genomic sequence shares less than 30%, 35%, or 40%, sequence identity with another sequence of similar length contained in the maize genome. Accordingly

in one embodiment the selected maize sequence cannot comprise a 1 Kb sequence that shares more than 25%, 30%, 35%, or 40% sequence identity with another 1 Kb sequence contained in the maize genome. In a further embodiment the selected maize sequence cannot comprise a 500bp sequence that shares more than 30%, 35%, or 40% sequence identity with another 500bp sequence contained in the maize genome. In one embodiment the selected maize sequence cannot comprise a 1KB sequence that shares more than 40% sequence identity with another 1Kb sequence contained in the maize genome.

An optimal nongenic maize genomic loci will also be proximal to a genic region. More particularly, a selected maize sequence must be located in the vicinity of a genic region (e.g., a genic region must be located within 40Kb of genomic sequence flanking and contiguous with either end of the selected maize as found in the native genome). In one embodiment a genic region is located within 10, 20, 30 or 40 Kb of contiguous genomic sequence located at either end of the selected maize sequence as found in the native maize genome. In one embodiment two or more genic regions are located within 10, 20, 30 or 40 Kb of contiguous genomic sequence flanking the two ends of the selected maize sequence. In one embodiment 1-9 genic regions are located within 10, 20, 30 or 40 Kb of contiguous genomic sequence flanking the two ends of the selected maize sequence. In one embodiment two or more genic regions are located within a 20, 30 or 40 Kb genomic sequence comprising the selected maize sequence. In one embodiment 1-9 genic regions are located within a 40Kb genomic sequence comprising the selected maize sequence. In one embodiment the genic region located within a 10, 20, 30 or 40 Kb of contiguous genomic sequence flanking the selected maize sequence comprises a known gene in the *Zea mays* genome.

In accordance with one embodiment a modified nongenic maize genomic loci is provided wherein the loci is at least 1KB in length, is nongenic, comprises no methylated cytosine residues, has a recombination frequency of greater than 0.00041 cM/Mb over a 1Mb genomic region encompassing the maize genomic loci and a 1Kb sequence of the maize genomic loci shares less than 40% sequence identity with any other 1Kb sequence contained in the maize genome, wherein the nongenic maize genomic loci is modified by the insertion of a DNA of interest into the nongenic maize genomic loci.

In accordance with one embodiment a method for identifying optimal nongenic maize genomic loci is provided. In some embodiments, the method first comprises screening the maize genome to create a first pool of selected maize sequences that have a minimal length of 1Kb and are hypomethylated, optionally wherein the genomic sequence has less than 1%

methylation or wherein the genomic sequence is devoid of any methylated cytosine residues. This first pool of selected maize sequences can be further screened to eliminate loci that do not meet the requirements for optimal nongenic maize genomic loci. Maize genomic sequences that encode maize transcripts, share greater than 40% or higher sequence identity with another sequence of similar length, do not exhibit evidence of recombination, and do not have a known open reading frame within 40Kb of the selected maize sequence, are eliminated from the first pool of sequences, leaving a second pool of sequences that qualify as optimal nongenic maize loci. In one embodiment any selected maize sequences that do not have a known maize gene, or a sequence comprising a 2Kb upstream and/or 1Kb downstream region of a known maize gene, within 40Kb of one end of said nongenic sequence are eliminated from the first pool of sequences. In one embodiment any selected maize sequences that do not contain a known gene that expresses a protein within 40Kb of the selected maize sequence are eliminated. In one embodiment any selected maize sequences that do not have a recombination frequency of greater than 0.00041 cM/Mb are eliminated.

Using these selection criteria applicants have identified select optimal genomic loci of *Zea mays* that serve as optimal nongenic maize genomic loci, the sequences of which are disclosed as SEQ ID NO: 1-SEQ ID NO: 5,286. The present disclosure also encompasses natural variants or modified derivatives of the identified optimal nongenic maize genomic loci wherein the variant or derivative loci comprise a sequence that differs from any sequence of SEQ ID NO: 1-SEQ ID NO: 5,286 by 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10 nucleotides. In one embodiment optimal nongenic maize genomic loci for use in accordance with the present disclosure comprise sequences selected from SEQ ID NO: 1-SEQ ID NO: 5,286 or sequences that share 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98% or 99% sequence identity with a sequence selected from SEQ ID NO: 1-SEQ ID NO: 5,286.

In another embodiment, optimal nongenic maize genomic loci for use in accordance with the present disclosure comprise sequences selected from any variety of maize or corn plants. In a further embodiment optimal nongenic maize genomic loci for use in accordance with the present disclosure comprise sequences selected from yellow corn inbreds. Accordingly, a yellow corn inbred includes dent or flint yellow corn inbred plants, including agronomically elite varieties thereof. In a subsequent embodiment, optimal nongenic maize genomic loci for use in accordance with the present disclosure comprise sequences selected from transformable corn lines. In an embodiment, representative transformable corn lines include; Hi-II, B73, B104, Mo 17, W22, A188, H99, and derivatives thereof. One of skill in the

art will appreciate that as a result of phylogenetic divergence, various types of corn lines do not contain identical genomic DNA sequences, and that polymorphisms or allelic variation may be present within genomic sequences. In an embodiment, the present disclosure encompasses such polymorphism or allelic variations of the identified optimal nongenic maize genomic loci wherein the polymorphisms or allelic variation comprise a sequence that differs from any sequence of SEQ ID NO: 1-SEQ ID NO: 5,286 by 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10 nucleotides. In a further embodiment, the present disclosure encompasses such polymorphisms or allelic varations of the identified optimal nongenic maize genomic loci wherein the polymorphisms or allelic varations comprise a sequence that shares 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98% or 99% sequence identity with any sequence of SEQ ID NO: 1-SEQ ID NO: 5,286.

The identified optimal genomic loci comprising 5,286 individual sequences can be categorized into various subgroupings by further analysis using a multivariate analysis method. Application of any multivariate analysis statistical programs is used to uncover the latent structure (dimensions) of a set of variables. A number of different types of multivariate algorithms can be used, for example the data set can be analyzed using multiple regression analysis, logistic regression analysis, discriminate analysis, multivariate analysis of variance (MANOVA), factor analysis (including both common factor analysis, and principal component analysis), cluster analysis, multidimensional scaling, correspondence analysis, conjoint analysis, canonical analysis, canonical correlation, and structural equation modeling.

In accordance with one embodiment the optimal nongenic maize genomic loci are further analyzed using multivariate data analysis such as Principal Component Analysis (PCA). Only a brief description will be given here, more information can be found in H. Martens, T. Naes, Multivariate Calibration, Wiley, N.Y., 1989. PCA evaluates the underlying dimensionality (latent variables) of the data, and gives an overview of the dominant patterns and major trends in the data. In one embodiment, the optimal nongenic maize genomic loci can be sorted into clusters via a principal component analysis (PCA) statistical method. The PCA is a mathematical procedure that uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components. The number of principal components is less than or equal to the number of original variables. This transformation is defined in such a way that the first principal component has the largest possible variance (that is, accounts for as much of the variability in the data as possible), and each succeeding component in turn has the highest variance possible under the constraint that it be orthogonal to (i.e., uncorrelated with) the

preceding components. Principal components are guaranteed to be independent if the data set is jointly normally distributed. PCA is sensitive to the relative scaling of the original variables. Examples of the use of PCA to cluster a set of entities based on features of the entities include; Ciampitti, I. et al., (2012) Crop Science, 52(6); 2728-2742, Chemometrics: A Practical Guide, Kenneth R. Beebe, Randy J. Pell, and Mary Beth Seasholtz, Wiley-Interscience, 1 edition, 1998, U.S. Patent No. 8,385,662, and European Patent No. 2,340,975.

In accordance with one embodiment a principal component analysis (PCA) was conducted on the 5,286 optimal maize genomic loci using the following 10 features for each identified optimal maize genomic loci:

1. Length of the hypo-methylated region around the optimal genomic loci (OGL)
    a. Genome wide methylation profiles for root and shoot tissues were established using Illumina/Solexa 1G parallel sequencing data after digesting genomic DNA with a methylation-sensitive restriction enzyme (Wang *et al.*, (2009) Genome-Wide and Organ-Specific Landscapes of Epigenetic Modifications and Their Relationships to mRNA and Small RNA Transcriptomes in Maize. *Plant Cell* 21(4): 1053–1069). Sequences mapping to the genome indicated the presence of DNA methylation at the mapped locations and chromosomal stretches without mapped sequences indicated an absence of methylation (hypo-methylation). The length of the hypo-methylated region around each of the OGLs was calculated using the described methylation profiles.
2. Rate of Recombination in a 1MB region around the OGL
    a. For each OGL, a pair of markers on either side of the OGL, within a 1Mb window, was identified. Recombination frequencies between each pairs of markers across the chromosome were calculated based on the ratio of the genetic distance between markers (in centimorgan (cM)) to the genomic physical distance between the markers (in Mb).
3. Level of OGL sequence uniqueness
    a. For each OGL, the nucleotide sequence of the OGL was scanned against the *Zea mays* c.v. B73 genome using a BLAST based homology search. As these OGL sequences are identified from the *Zea mays* c.v. B73 genome, the first BLAST hit identified through this search represents the OGL sequence itself. The second BLAST hit for each OGL was identified and the alignment coverage of the hit was used as a measure of uniqueness of the OGL sequence within the *Zea mays* genome.
4. Distance from the OGL to the closest gene in its neighborhood
    a. Gene annotation information and the location of known genes in the *Zea mays* c.v. B73 genome were extracted from Maize Genome DB (www.maizegdb.org). For each OGL, the closest annotated gene in its upstream or downstream neighborhood was identified and the distance between the OGL sequence and the gene was measured (in bp).

5. GC % in the OGLneighborhood
    a. For each OGL, the nucleotide sequence was analyzed to estimate the number of Guanine and Cytosine bases present. This count was represented as a percentage of the sequence length of each OGLand provides a measure for GC %.
6. Number of genes in a 40 Kb neighborhood around the OGL
    a. Gene annotation information and the location of known genes in the *Zea mays* c.v. B73 genome were extracted from Maize Genome DB (www.maizegdb.org). For each OGL, a 40 Kb window around the OGL was defined and the number of annotated genes with locations overlapping this window was counted.
7. Average gene expression in a 40 Kb neighborhood around the OGL.
    a. Transcript level expression of Maize genes was measured by analyzing transcriptome profiling data generated from *Zea mays* c.v. B73 root and shoot tissues using RNAseq technology. For each OGL, annotated genes within the *Zea mays* c.v. B73 genome that were present in a 40 Kb neighborhood around the OGL were identified. Expression levels for each of the genes in the window were extracted from the transcriptome profiles and an average gene expression level was calculated.
8. Level of Nucleosome occupancy around the OGL
    a. Discerning the level of nucleosome occupancy for a particular nucleotide sequence provides information about chromosomal functions and the genomic context of the sequence. The NuPoP™ statistical package provides a user-friendly software tool for predicting the nucleosome occupancy and the most probable nucleosome positioning map for genomic sequences of any size (Xi, L., Fondufe-Mittendor, Y., Xia, L., Flatow, J., Widom, J. and Wang, J.-P., Predicting nucleosome positioning using a duration Hidden Markov Model, BMC Bioinformatics, 2010, doi:10.1186/1471-2105-11-346). For each OGL, the nucleotide sequence was submitted to the NuPoP™ software and a nucleosome occupancy score was calculated.
9. Relative location within the chromosome (proximity to centromere)
    a. Information on position of the centromere in each of the Maize chromosomes and the lengths of the chromosome arms was extracted from Maize genome DB (www.maizegdb.org). For each OGL, the genomic distance from the OGLsequence to the centromere of the chromosome that it is located on, is measured (in bp). The relative location of a OGL within the chromosome is represented as the ratio of its genomic distance to the centromere relative to the length of the specific chromosomal arm that it lies on.
10. Number of OGLs in a 1Mb region around the OGL
    a. For each OGL, a 1Mb genomic window around the OGL location is defined and the number of OGLs, in the Maize 1Kb OGL dataset, whose genomic locations overlap with this window is tallied.

The results or values for the score of the features and attributes of each optimal nongenicmaize genomic loci are further described in Table 3 of Example 2. The resulting

2014341927 29 May 2017

dataset was used in the PCA statistical method to cluster the 5,286 identified optimal nongenic maize genomic loci into clusters. During the clustering process, after estimating the "p" principle components of the optimal genomic loci, the assignment of the optimal genomic loci to one of the 32 clusters proceeded in the "p" dimensional Euclidean space. Each of the "p" axes was divided into "k" intervals. Optimal genomic loci assigned to the same interval were grouped together to form clusters. Using this analysis, each PCA axis was divided into two intervals, which was chosen based on *a priori* information regarding the number of clusters required for experimental validation. All analysis and the visualization of the resulting clusters were carried out with the Molecular Operating Environment™ (MOE) software from Chemical Computing Group Inc. (Montreal, Quebec, Canada). The PCA approach was used to cluster the set of 5,286 optimal maize genomic loci into 32 distinct clusters based on their feature values, described above.

During the PCA process, five principal components (PC) were generated, with the top three PCs containing about 90% of the total variation in the dataset (Table 4). These three PCs were used to graphically represent the 32 clusters in a three dimensional plot (see Fig. 3). After the clustering process, was completed, one representative optimal genomic loci was chosen from each cluster. This was performed by choosing a select optimal genomic locus, within each cluster, that was closest to the centroid of that cluster by computational methods (Table 4). The chromosomal locations of the 32 representative optimal genomic loci are uniformly distributed among the maize chromosomes as shown in Fig. 4.

In accordance with one embodiment a purified optimal nongenic sequence is provided wherein the purified sequence is at least 1Kb in length and has at least 90, 95%, or 99% sequence identity with a nongenic sequence selected from any sequence described in Table 15 of Example 8. In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), and loci_232228_G1 (SEQ ID NO: 4529). In one embodiment the purified sequence is at least 1Kb in length and has at least 90%, 95%, or 99% sequence identity with a sequence present in a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID

2014341927 29 May 2017

NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), and loci_232228_G1 (SEQ ID NO: 4529). In one embodiment a purified sequence is provided that is at least 1Kb in length and has at least 90%, 95%, or 99% sequence identity with a sequence present in a nongenic sequence selected from the group consisting of optimal loci_ 204637 (SEQ ID NO:2731), optimal_loci_136086 (SEQ ID NO:4425), optimal_loci_232484 (SEQ ID NO:2053), optimal_loci_203075 (SEQ ID NO:2030), optimal_loci_3733 (SEQ ID NO:1923), optimal_loci_168286 (SEQ ID NO:573), optimal_loci_128078 (SEQ ID NO:560), optimal_loci_265551 (SEQ ID NO:463), optimal_loci_127268 (SEQ ID NO:2709), optimal_loci_204726 (SEQ ID NO:424), and optimal_loci_232222 (SEQ ID NO:3357). In one embodiment a purified sequence is provided that is at least 1Kb in length and has at least 90%, 95%, or 99% sequence identity with a sequence present in a nongenic sequence selected from the group consisting of optimal loci_ 204637 (SEQ ID NO:2731), optimal_loci_136086 (SEQ ID NO:4425), optimal_loci_232484 (SEQ ID NO:2053), optimal_loci_203075 (SEQ ID NO:2030), optimal_loci_3733 (SEQ ID NO:1923), optimal_loci_168286 (SEQ ID NO:573), optimal_loci_128078 (SEQ ID NO:560) and optimal_loci_265551 (SEQ ID NO:463). In one embodiment a purified sequence is provided that is at least 1Kb in length and has at least 90%, 95%, or 99% sequence identity with a sequence present in a nongenic sequence selected from the group consisting of optimal loci_ 204637 (SEQ ID NO:2731), optimal_loci_203075 (SEQ ID NO:2030) and optimal_loci_128078 (SEQ ID NO:560).

In one embodiment a purified sequence is provided comprising a 1Kb sequence identical to a sequence present in a nongenic sequence selected from the group consisting of optimal loci_ 204637 (SEQ ID NO:2731), optimal_loci_136086 (SEQ ID NO:4425), optimal_loci_232484 (SEQ ID NO:2053), optimal_loci_203075 (SEQ ID NO:2030), optimal_loci_3733 (SEQ ID NO:1923), optimal_loci_168286 (SEQ ID NO:573), optimal_loci_128078 (SEQ ID NO:560) and optimal_loci_265551 (SEQ ID NO:463). In one embodiment a purified sequence is provided comprising a 1Kb sequence identical to a sequence present in a nongenic sequence selected from the group consisting of optimal loci_ 204637 (SEQ ID NO:2731), optimal_loci_203075 (SEQ ID NO:2030) and optimal_loci_128078 (SEQ ID NO:560).

2014341927 29 May 2017

In an embodiment, the subject disclosure relates to a recombinant sequence, comprising: a nucleic acid sequence of at least 1 Kb and having at least 90%, 95%, or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), and loci_204637_G1 (SEQ ID NO:2731), with a DNA of interest inserted into the nongenic sequence.

In accordance with one embodiment a modified optimal nongenic maize genomic loci is provided wherein the optimal nongenic maize genomic loci has been modified to comprise one or more nucleotide substitutions, deletions or insertions. In one embodiment the optimal nongenic maize genomic loci is modified by the insertion of a DNA of interest optionally accompanied with further nucleotide duplications, deletions or inversions of genomic loci sequence.

In an embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from any sequence described in Table 15 of Example 8. In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), andloci_232228_G1 (SEQ ID NO: 4529). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_137693_G1 (SEQ ID NO:387). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequenc from loci_265551_G1 (SEQ ID NO:463). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_128078_G1 (SEQ ID NO:560). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_168286_G1 (SEQ ID NO:573). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_3733_G1 (SEQ ID NO:1923). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_203075_G1 (SEQ ID NO:2030). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_232484_G1 (SEQ ID NO:2053). In one embodiment the optimal nongenic

maize genomic loci to be modified is a genomic sequence from loci_136086_G1 (SEQ ID NO:4425). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_203704_G1 (SEQ ID NO:2033). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_127268_G1 (SEQ ID NO:2709). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence s from loci_204637_G1 (SEQ ID NO:2731). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_291068_G1 (SEQ ID NO:3230). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_232222_G1 (SEQ ID NO:3357). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_43577_G1 (SEQ ID NO:3428). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_204726_G1 (SEQ ID NO:424). In one embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence from loci_232228_G1 (SEQ ID NO: 4529).

In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), and loci_203704_G1 (SEQ ID NO:2033). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), and loci_136086_G1 (SEQ ID NO:4425). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), and loci_232484_G1 (SEQ ID NO:2053). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), and loci_203075_G1 (SEQ ID NO:2030). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1

2014341927 29 May 2017

(SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), and loci_3733_G1 (SEQ ID NO:1923). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), and loci_168286_G1 (SEQ ID NO:573). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), and loci_128078_G1 (SEQ ID NO:560). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_137693_G1 (SEQ ID NO:387), and loci_265551_G1 (SEQ ID NO:463).

In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), and loci_232228_G1 (SEQ ID NO: 4529). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), and loci_204726_G1 (SEQ ID NO:424). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), and loci_43577_G1 (SEQ ID NO:3428). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), and loci_232222_G1 (SEQ ID NO:3357). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), and loci_291068_G1 (SEQ ID NO:3230). In a further embodiment the optimal nongenic maize genomic loci to be modified is a genomic sequence selected from loci_127268_G1 (SEQ ID NO:2709), and loci_204637_G1 (SEQ ID NO:2731).

In one embodiment the optimal nongenic maize genomic loci is selected from the genomic sequences of loci_59517_G1 (SEQ ID NO: 1), loci_159525_G1 (SEQ ID NO: 199), loci_9811_G1 (SEQ ID NO: 365), loci_7507_G1 (SEQ ID NO: 543), loci_178978_G1 (SEQ ID NO: 687), loci_285621_G1 (SEQ ID NO: 875), loci_221721_G1 (SEQ ID NO: 1089), loci_83937_G1 (SEQ ID NO: 1233), loci_37146_G1 (SEQ ID NO: 1369), loci_156393_G1 (SEQ ID NO: 1571), loci_343678_G1 (SEQ ID NO: 1795), loci_60209_G1 (SEQ ID NO: 1980), loci_282323_G1 (SEQ ID NO: 2171), loci_64542_G1 (SEQ ID NO: 2349), loci_162531_G1 (SEQ ID NO: 2557), loci_337001_G1 (SEQ ID NO: 2693), loci_66202_G1 (SEQ ID NO: 2855), loci_185454_G1 (SEQ ID NO: 3004), loci_239863_G1 (SEQ ID NO: 3151), loci_257541_G1 (SEQ ID NO: 3289), loci_217939_G1 (SEQ ID NO: 3455), loci_326869_G1 (SEQ ID NO: 3586), loci_31710_G1 (SEQ ID NO: 3731), loci_81941_G1 (SEQ ID NO: 3849),

loci_198387_G1 (SEQ ID NO: 3981), loci_197372_G1 (SEQ ID NO: 4192),

loci_106202_G1 (SEQ ID NO: 4401), loci_232228_G1 (SEQ ID NO: 4529),

loci_244324_G1 (SEQ ID NO: 4646), loci_157315_G1 (SEQ ID NO: 4836), loci_137489_G1 (SEQ ID NO: 5046), and loci_31764_G1 (SEQ ID NO: 5162).

In one embodiment the optimal nongenic maize genomic loci is selected from the genomic sequences of loci_59517_G1 (SEQ ID NO: 1), loci_25001_G1 (SEQ ID NO: 100), loci_112632_G1 (SEQ ID NO: 203), loci_28905_G1 (SEQ ID NO: 295), loci_129164_G1 (SEQ ID NO: 384), loci_204726_G1 (SEQ ID NO: 424), loci_2425_G1 (SEQ ID NO: 451), loci_122036_G1 (SEQ ID NO: 547), loci_5735_G1 (SEQ ID NO: 671), loci_178978_G1 (SEQ ID NO: 687), loci_288388_G1 (SEQ ID NO: 781), loci_60310_G1 (SEQ ID NO: 843), loci_285621_G1 (SEQ ID NO: 875), loci_243330_G1 (SEQ ID NO: 967), loci_127038_G1 (SEQ ID NO: 1107), loci_262784_G1 (SEQ ID NO: 1147), loci_344662_G1 (SEQ ID NO: 1190), loci_153894_G1 (SEQ ID NO: 1252), loci_28771_G1 (SEQ ID NO: 1300), loci_1098_G1 (SEQ ID NO: 1371), loci_97772_G1 (SEQ ID NO: 1569), loci_156393_G1 (SEQ ID NO: 1571), loci_236662_G1 (SEQ ID NO: 1663), loci_139485_G1 (SEQ ID NO: 1822), loci_301175_G1 (SEQ ID NO: 1906), loci_152337_G1 (SEQ ID NO: 2003), loci_202616_G1 (SEQ ID NO: 2027), loci_203704_G1 (SEQ ID NO: 2033), loci_282323_G1 (SEQ ID NO: 2171), loci_262782_G1 (SEQ ID NO: 2256), loci_64542_G1 (SEQ ID NO: 2349), loci_236455_G1 (SEQ ID NO: 2428), loci_162531_G1 (SEQ ID NO: 2557), loci_301774_G1 (SEQ ID NO: 2632), loci_344663_G1 (SEQ ID NO: 2649), loci_337001_G1

(SEQ ID NO: 2693), loci_204637_G1 (SEQ ID NO: 2731), loci_238100_G1 (SEQ ID NO: 2753), loci_66202_G1 (SEQ ID NO: 2855), loci_264359_G1 (SEQ ID NO: 2934), loci_282653_G1 (SEQ ID NO: 3086), loci_80282_G1 (SEQ ID NO: 3139), loci_291068_G1 (SEQ ID NO: 3230), loci_56395_G1 (SEQ ID NO: 3270), loci_200497_G1 (SEQ ID NO: 3334), loci_232222_G1 (SEQ ID NO: 3357), loci_43577_G1 (SEQ ID NO: 3428), loci_5607_G1 (SEQ ID NO: 3435), loci_114664_G1 (SEQ ID NO: 3457), loci_228254_G1 (SEQ ID NO: 3497), loci_120993_G1 (SEQ ID NO: 3593), loci_53137_G1 (SEQ ID NO: 3702), loci_31710_G1 (SEQ ID NO: 3731), loci_344664_G1 (SEQ ID NO: 3815), loci_81941_G1 (SEQ ID NO: 3849), loci_321514_G1 (SEQ ID NO: 3939), loci_198387_G1 (SEQ ID NO: 3981), loci_301180_G1 (SEQ ID NO: 4113), loci_197372_G1 (SEQ ID NO: 4192), loci_348776_G1 (SEQ ID NO: 4350), loci_244439_G1 (SEQ ID NO: 4458), loci_348258_G1 (SEQ ID NO: 4487), loci_232228_G1 (SEQ ID NO: 4529), loci_322501_G1 (SEQ ID NO: 4610), loci_244324_G1 (SEQ ID NO: 4646), loci_97232_G1 (SEQ ID NO: 4832), loci_157315_G1 (SEQ ID NO: 4836), loci_282499_G1 (SEQ ID NO: 4953), loci_155031_G1 (SEQ ID NO: 5060), loci_301773_G1 (SEQ ID NO: 5110), loci_283161_G1 (SEQ ID NO:5213), loci_55524_G1 (SEQ ID NO: 5264), loci_127268_G1 (SEQ ID NO:21492709), loci_136086_G1 (SEQ ID NO: 34844425), loci_232484_G1 (SEQ ID NO: 34172053), loci_3733_G1 (SEQ ID NO:1923), loci_168286_G1 (SEQ ID NO:3473571), loci_128078_G1 (SEQ ID NO:3047560), loci_265551_G1 (SEQ ID NO:3547463), and loci_137693_G1 (SEQ ID NO:387).

In one embodiment the optimal nongenic maize genomic loci is targeted with a DNA of interest, wherein the DNA of interest integrates within or proximal to the zinc finger nuclease target sites. In accordance with an embodiment, exemplary zinc finger target sites of optimal maize select genomic loci are provided in Table 8. In accordance with an embodiment, integration of a DNA of interest occurs within or proximal to the exemplary target sites of: 111879ZFN5 and 111879ZFN7; 111885ZFN1 and 111885ZFN2; SIG115737_31v1 and SIG115737_32v1; SIG120523_11v1 and SIG120523_12v1; SIG115246_5 and SIG115246_6; SIG115636_1v1 and SIG115636_2v1; SIG120417_11v1 and SIG120417_12v1; SIG120621_15v1 and SIG120621_16v1; SIG12078_11v1 and SIG12078_12v1; and, SIG157315_1v1 and SIG157315_2v1, ZFN_binding_1 and ZFN_binding_2, ZFN_binding_3 and ZFN_binding_4, ZFN_binding_5 and ZFN_binding_6, ZFN_binding_7 and ZFN_binding_8, ZFN_binding_9 and ZFN_binding_10, ZFN_binding_11 and

ZFN_binding_12, ZFN_binding_13 and ZFN_binding_14, ZFN_binding_15 and ZFN_binding_16, ZFN_binding_17 and ZFN_binding_18, ZFN_binding_19 and ZFN_binding_20, ZFN_binding_21 and ZFN_binding_22, ZFN_binding_23 and ZFN_binding_24, ZFN_binding_25 and ZFN_binding_26, ZFN_binding_27 and ZFN_binding_28, ZFN_binding_29 and ZFN_binding_30, ZFN_binding_31 and ZFN_binding_32, ZFN_binding_33 and ZFN_binding_34, ZFN_binding_35 and ZFN_binding_36, ZFN_binding_37 and ZFN_binding_38, ZFN_binding_39 and ZFN_binding_40, ZFN_binding_41 and ZFN_binding_42, ZFN_binding_43 and ZFN_binding_44, ZFN_binding_45 and ZFN_binding_46, ZFN_binding_47 and ZFN_binding_48, ZFN_binding_49 and ZFN_binding_50, ZFN_binding_51 and ZFN_binding_52, ZFN_binding_53 and ZFN_binding_54, ZFN_binding_55 and ZFN_binding_56, ZFN_binding_57 and ZFN_binding_58, ZFN_binding_59 and ZFN_binding_60, ZFN_binding_61 and ZFN_binding_62, ZFN_binding_63 and ZFN_binding_64, ZFN_binding_65 and ZFN_binding_66, ZFN_binding_67 and ZFN_binding_68, ZFN_binding_69 and ZFN_binding_70, ZFN_binding_71 and ZFN_binding_72, ZFN_binding_73 and ZFN_binding_74, ZFN_binding_75 and ZFN_binding_76, ZFN_binding_77 and ZFN_binding_78, ZFN_binding_79 and ZFN_binding_80, ZFN_binding_81 and ZFN_binding_82, ZFN_binding_83 and ZFN_binding_84, ZFN_binding_85 and ZFN_binding_86, ZFN_binding_87 and ZFN_binding_88, ZFN_binding_89 and ZFN_binding_90, ZFN_binding_91 and ZFN_binding_92, ZFN_binding_93 and ZFN_binding_94, ZFN_binding_95 and ZFN_binding_96, ZFN_binding_97 and ZFN_binding_98, ZFN_binding_99 and ZFN_binding_100, ZFN_binding_101 and ZFN_binding_102, ZFN_binding_103 and ZFN_binding_104, ZFN_binding_105 and ZFN_binding_106, ZFN_binding_107 and ZFN_binding_108, ZFN_binding_109 and ZFN_binding_110, ZFN_binding_111 and ZFN_binding_112, ZFN_binding_113 and ZFN_binding_114, ZFN_binding_115 and ZFN_binding_116, ZFN_binding_117 and ZFN_binding_118, ZFN_binding_119 and ZFN_binding_120, ZFN_binding_121 and ZFN_binding_122, ZFN_binding_123 and ZFN_binding_124, ZFN_binding_125 and ZFN_binding_126, ZFN_binding_127 and ZFN_binding_128, ZFN_binding_129 and ZFN_binding_130, ZFN_binding_131 and ZFN_binding_132.

In accordance with an embodiment, the zinc finger nuclease binds to the zinc finger target site and cleaves the unique maize genomic polynucleotide target sites, whereupon the

DNA of interest integrates within or proximal to the maize genomic polynucleotide target sites. In an embodiment, integration of the DNA of interest occurs within the zinc finger target site may result with rearrangements. In accordance with one embodiment, the rearrangements may comprise deletions, insertions, inversions, and repeats. In an embodiment, integration of the DNA of interest occurs proximal to the zinc finger target site. According to an aspect of the embodiment, the integration of the DNA is proximal to the zinc finger target site, and may integrate within 1.5 Kb, 1.25 Kb, 1.0 Kb, 0.75 Kb, 0.5 Kb, or 0.25 Kb to the zinc finger target site. Insertion within a genomic region proximal to the zinc finger target site is known in the art, see US Patent Pub No. 2010/0257638 A1 (herein incorporated by reference in its entirety).

In accordance with one embodiment the selected nongenic sequence comprises the following characteristics:

a) the nongenic sequence does not contain greater than 1% DNA methylation within the sequence;

b) the nongenic sequence has a relative location value from 0.0984 to 0.973 ratio of genomic distance from a maize chromosomal centromere;

c) the nongenic sequence has a guanine/cytosine percent content range of 34.38 to 61.2%; and,

d) the nongenic sequence is from about 1Kb to about 4.9Kb in length.

II. Recombinant Derivatives of Identified Optimal Nongenic Maize Genomic Loci

In accordance with one embodiment, after having identified a genomic loci of *Zea mays* as a highly desirable location for inserting polynucleotide donor sequences, one or more nucleic acids of interest can be inserted into the identified genomic locus. In one embodiment the nucleic acid of interest comprises exogenous gene sequences or other desirable polynucleotide donor sequences. In another embodiment, after having identified a genomic loci of *Zea mays* as a highly desirable location for inserting polynucleotide donor sequences, one or more nucleic acids of interest of the optimal nongenic maize genomic loci can optionally be deleted, excised or removed with the subsequent integration of the DNA of interest into the identified genomic locus. In one embodiment the insertion of a nucleic acid of interest into the optimal nongenic maize genomic loci comprises removal, deletion, or excision of the exogenous gene sequences or other desirable polynucleotide donor sequences.

The present disclosure further relates to methods and compositions for targeted integration into the select *Zea mays* genomic locus using ZFNs and a polynucleotide donor

construct. The methods for inserting a nucleic acid sequence of interest into the optimal nongenic maize genomic loci, unless otherwise indicated, use conventional techniques in molecular biology, biochemistry, chromatin structure and analysis, cell culture, recombinant DNA and related fields as are within the skill of the art. These techniques are fully explained in the literature. See, for example, Sambrook et al. MOLECULAR CLONING: A LABORATORY MANUAL, Second edition, Cold Spring Harbor Laboratory Press, 1989 and Third edition, 2001; Ausubel et al., CURRENT PROTOCOLS IN MOLECULAR BIOLOGY, John Wiley & Sons, New York, 1987 and periodic updates; the series METHODS IN ENZYMOLOGY, Academic Press, San Diego; Wolfe, CHROMATIN STRUCTURE AND FUNCTION, Third edition, Academic Press, San Diego, 1998; METHODS IN ENZYMOLOGY, Vol. 304, "Chromatin" (P. M. Wassarman and A. P. Wolffe, eds.), Academic Press, San Diego, 1999; and METHODS IN MOLECULAR BIOLOGY, Vol. 119, "Chromatin Protocols" (P. B. Becker, ed.) Humana Press, Totowa, 1999.

Methods for Nucleic Acid Insertion into the Maize Genome

Any of the well known procedures for introducing polynucleotide donor sequences and nuclease sequences as a DNA construct into host cells may be used in accordance with the present disclosure. These include the use of calcium phosphate transfection, polybrene, protoplast fusion, PEG, electroporation, ultrasonic methods (e.g., sonoporation), liposomes, microinjection, naked DNA, plasmid vectors, viral vectors, both episomal and integrative, and any of the other well known methods for introducing cloned genomic DNA, cDNA, synthetic DNA or other foreign genetic material into a host cell (see, e.g., Sambrook et al., supra). It is only necessary that the particular nucleic acid insertion procedure used be capable, of successfully introducing at least one gene into the host cell capable of expressing the protein of choice.

As noted above, DNA constructs may be introduced into the genome of a desired plant species by a variety of conventional techniques. For reviews of such techniques see, for example, Weissbach & Weissbach Methods for Plant Molecular Biology (1988, Academic Press, N.Y.) Section VIII, pp. 421-463; and Grierson & Corey, Plant Molecular Biology (1988, 2d Ed.), Blackie, London, Ch. 7-9. A DNA construct may be introduced directly into the genomic DNA of the plant cell using techniques such as electroporation and microinjection of plant cell protoplasts, by agitation with silicon carbide fibers (See, e.g., U.S. Patents 5,302,523 and 5,464,765), or the DNA constructs can be introduced directly to plant tissue using biolistic

methods, such as DNA particle bombardment (see, e.g., Klein et al. (1987) Nature 327:70-73). Alternatively, the DNA construct can be introduced into the plant cell via nanoparticle transformation (see, e.g., US Patent Publication No. 20090104700, which is incorporated herein by reference in its entirety). Alternatively, the DNA constructs may be combined with suitable T-DNA border/flanking regions and introduced into a conventional *Agrobacterium tumefaciens* host vector. *Agrobacterium tumefaciens*-mediated transformation techniques, including disarming and use of binary vectors, are well described in the scientific literature. See, for example Horsch et al. (1984) Science 233:496-498, and Fraley et al. (1983) Proc. Nat'l. Acad. Sci. USA 80:4803.

In addition, gene transfer may be achieved using non-*Agrobacterium* bacteria or viruses such as *Rhizobium* sp. NGR234, *Sinorhizoboium meliloti*, *Mesorhizobium loti*, potato virus X, cauliflower mosaic virus and cassava vein mosaic virus and/or tobacco mosaic virus, See, e.g., Chung et al. (2006) Trends Plant Sci. 11(1):1-4. The virulence functions of the *Agrobacterium tumefaciens* host will direct the insertion of a T-strand containing the construct and adjacent marker into the plant cell DNA when the cell is infected by the bacteria using binary T DNA vector (Bevan (1984) Nuc. Acid Res. 12:8711-8721) or the co-cultivation procedure (Horsch et al. (1985) Science 227:1229-1231). Generally, the *Agrobacterium* transformation system is used to engineer dicotyledonous plants (Bevan et al. (1982) Ann. Rev. Genet. 16:357-384; Rogers et al. (1986) Methods Enzymol. 118:627-641). The *Agrobacterium* transformation system may also be used to transform, as well as transfer, DNA to monocotyledonous plants and plant cells. See U.S. Pat. No. 5,591,616; Hernalsteen et al. (1984) EMBO J. 3:3039-3041; Hooykass-Van Slogteren et al. (1984) Nature 311:763-764; Grimsley et al. (1987) Nature 325:1677-179; Boulton et al. (1989) Plant Mol. Biol. 12:31-40; and Gould et al. (1991) Plant Physiol. 95:426-434.

Alternative gene transfer and transformation methods include, but are not limited to, protoplast transformation through calcium-, polyethylene glycol (PEG)- or electroporation-mediated uptake of naked DNA (see Paszkowski et al. (1984) EMBO J. 3:2717-2722, Potrykus et al. (1985) Molec. Gen. Genet. 199:169-177; Fromm et al. (1985) Proc. Nat. Acad. Sci. USA 82:5824-5828; and Shimamoto (1989) Nature 338:274-276) and electroporation of plant tissues (D'Halluin et al. (1992) Plant Cell 4:1495-1505). Additional methods for plant cell transformation include microinjection, silicon carbide mediated DNA uptake (Kaeppler et al. (1990) Plant Cell Reporter 9:415-418), and microprojectile bombardment (see Klein et al.

(1988) Proc. Nat. Acad. Sci. USA 85:4305-4309; and Gordon-Kamm et al. (1990) Plant Cell 2:603-618).

In one embodiment a nucleic acid of interest introduced into a host cell for targeted insertion into the genome comprises homologous flanking sequences on one or both ends of the targeted nucleic acid of interest. In such an embodiment, the homologous flanking sequences contain sufficient levels of sequence identity to a maize genomic sequence to support homologous recombination between it and the genomic sequence to which it bears homology. Approximately 25, 50, 100, 200, 500, 750, 1000, 1500, or 2000 nucleotides, or more of sequence identity, ranging from 70% to 100%, between a donor and a genomic sequence (or any integral value between 10 and 200 nucleotides, or more) will support homologous recombination therebetween.

In another embodiment the targeted nucleic acid of interest lacks homologous flanking sequences, and the targeted nucleic acid of interest shares low to very low levels of sequence identity with a genomic sequence.

In other embodiments of targeted recombination and/or replacement and/or alteration of a sequence in a region of interest in cellular chromatin, a chromosomal sequence is altered by homologous recombination with an exogenous "donor" nucleotide sequence. Such homologous recombination is stimulated by the presence of a double-stranded break in cellular chromatin, if sequences homologous to the region of the break are present. Double-strand breaks in cellular chromatin can also stimulate cellular mechanisms of non-homologous end joining. In any of the methods described herein, the first nucleotide sequence (the "donor sequence") can contain sequences that are homologous, but not identical, to genomic sequences in the region of interest, thereby stimulating homologous recombination to insert a non-identical sequence in the region of interest. Thus, in certain embodiments, portions of the donor sequence that are homologous to sequences in the region of interest exhibit between about 80, 85, 90, 95, 97.5, to 99% (or any integer therebetween) sequence identity to the genomic sequence that is replaced. In other embodiments, the homology between the donor and genomic sequence is higher than 99%, for example if only 1 nucleotide differs as between donor and genomic sequences of over 100 contiguous base pairs.

In certain cases, a non-homologous portion of the donor sequence can contain sequences not present in the region of interest, such that new sequences are introduced into the region of interest. In these instances, the non-homologous sequence is generally flanked by sequences of 50 to 2,000 base pairs (or any integral value therebetween) or any number of base pairs greater

than 2,000, that are homologous or identical to sequences in the region of interest. In other embodiments, the donor sequence is non-homologous to the region of interest, and is inserted into the genome by non-homologous recombination mechanisms.

In accordance with one embodiment a zinc finger nuclease (ZFN) is used to introduce a double strand break in a targeted genomic locus to facilitate the insertion of a nucleic acid of interest. Selection of a target site within the selected genomic locus for binding by a zinc finger domain can be accomplished, for example, according to the methods disclosed in U.S. Patent 6,453,242, the disclosure of which is incorporated herein, that also discloses methods for designing zinc finger proteins (ZFPs) to bind to a selected sequence. It will be clear to those skilled in the art that simple visual inspection of a nucleotide sequence can also be used for selection of a target site. Accordingly, any means for target site selection can be used in the methods described herein.

For ZFP DNA-binding domains, target sites are generally composed of a plurality of adjacent target subsites. A target subsite refers to the sequence, usually either a nucleotide triplet or a nucleotide quadruplet which may overlap by one nucleotide with an adjacent quadruplet that is bound by an individual zinc finger. See, for example, WO 02/077227, the disclosure of which is incorporated herein. A target site generally has a length of at least 9 nucleotides and, accordingly, is bound by a zinc finger binding domain comprising at least three zinc fingers. However binding of, for example, a 4-finger binding domain to a 12-nucleotide target site, a 5-finger binding domain to a 15-nucleotide target site or a 6-finger binding domain to an 18-nucleotide target site, is also possible. As will be apparent, binding of larger binding domains (e.g., 7-, 8-, 9-finger and more) to longer target sites is also consistent with the subject disclosure.

In accordance with one embodiment, it is not necessary for a target site to be a multiple of three nucleotides. In cases in which cross-strand interactions occur (see, e.g., U.S. Patent 6,453,242 and WO 02/077227), one or more of the individual zinc fingers of a multi-finger binding domain can bind to overlapping quadruplet subsites. As a result, a three-finger protein can bind a 10-nucleotide sequence, wherein the tenth nucleotide is part of a quadruplet bound by a terminal finger, a four-finger protein can bind a 13-nucleotide sequence, wherein the thirteenth nucleotide is part of a quadruplet bound by a terminal finger, etc.

The length and nature of amino acid linker sequences between individual zinc fingers in a multi-finger binding domain also affects binding to a target sequence. For example, the presence of a so-called "non-canonical linker," "long linker" or "structured linker" between

adjacent zinc fingers in a multi-finger binding domain can allow those fingers to bind subsites which are not immediately adjacent. Non-limiting examples of such linkers are described, for example, in U.S. Pat. No. 6,479,626 and WO 01/53480. Accordingly, one or more subsites, in a target site for a zinc finger binding domain, can be separated from each other by 1, 2, 3, 4, 5 or more nucleotides. One nonlimiting example would be a four-finger binding domain that binds to a 13-nucleotide target site comprising, in sequence, two contiguous 3-nucleotide subsites, an intervening nucleotide, and two contiguous triplet subsites.

While DNA-binding polypeptides identified from proteins that exist in nature typically bind to a discrete nucleotide sequence or motif (*e.g.*, a consensus recognition sequence), methods exist and are known in the art for modifying many such DNA-binding polypeptides to recognize a different nucleotide sequence or motif. DNA-binding polypeptides include, for example and without limitation: zinc finger DNA-binding domains; leucine zippers; UPA DNA-binding domains; GAL4; TAL; LexA; a Tet repressor; LacR; and a steroid hormone receptor.

In some examples, a DNA-binding polypeptide is a zinc finger. Individual zinc finger motifs can be designed to target and bind specifically to any of a large range of DNA sites. Canonical Cys_2His_2 (as well as non-canonical Cys_3His) zinc finger polypeptides bind DNA by inserting an α-helix into the major groove of the target DNA double helix. Recognition of DNA by a zinc finger is modular; each finger contacts primarily three consecutive base pairs in the target, and a few key residues in the polypeptide mediate recognition. By including multiple zinc finger DNA-binding domains in a targeting endonuclease, the DNA-binding specificity of the targeting endonuclease may be further increased (and hence the specificity of any gene regulatory effects conferred thereby may also be increased). *See, e.g.*, Urnov *et al.* (2005) Nature 435:646-51. Thus, one or more zinc finger DNA-binding polypeptides may be engineered and utilized such that a targeting endonuclease introduced into a host cell interacts with a DNA sequence that is unique within the genome of the host cell.Preferably, the zinc finger protein is non-naturally occurring in that it is engineered to bind to a target site of choice. See, for example, Beerli et al. (2002) Nature Biotechnol. 20:135-141; Pabo et al. (2001) Ann. Rev. Biochem. 70:313-340; Isalan et al. (2001) Nature Biotechnol. 19:656-660; Segal et al. (2001) Curr. Opin. Biotechnol. 12:632-637; Choo et al. (2000) Curr. Opin. Struct. Biol. 10:411-416; U.S. Patent Nos. 6,453,242; 6,534,261; 6,599,692; 6,503,717; 6,689,558; 7,030,215; 6,794,136; 7,067,317; 7,262,054; 7,070,934; 7,361,635; 7,253,273; and U.S. Patent Publication Nos. 2005/0064474; 2007/0218528; 2005/0267061, all incorporated herein by reference in their entireties.

An engineered zinc finger binding domain can have a novel binding specificity, compared to a naturally-occurring zinc finger protein. Engineering methods include, but are not limited to, rational design and various types of selection. Rational design includes, for example, using databases comprising triplet (or quadruplet) nucleotide sequences and individual zinc finger amino acid sequences, in which each triplet or quadruplet nucleotide sequence is associated with one or more amino acid sequences of zinc fingers which bind the particular triplet or quadruplet sequence. See, for example, co-owned U.S. Patents 6,453,242 and 6,534,261, incorporated by reference herein in their entireties.

Alternatively, the DNA-binding domain may be derived from a nuclease. For example, the recognition sequences of homing endonucleases and meganucleases such as I-SceI, I-CeuI, PI-PspI, PI-Sce, I-SceIV, I-CsmI, I-PanI, I-SceII, I-PpoI, I-SceIII, I-CreI, I-TevI, I-TevII and I-TevIII are known. See also U.S. Patent No. 5,420,032; U.S. Patent No. 6,833,252; Belfort et al. (1997) Nucleic Acids Res. 25:3379–3388; Dujon et al. (1989) Gene 82:115–118; Perler et al. (1994) Nucleic Acids Res. 22, 1125–1127; Jasin (1996) Trends Genet. 12:224–228; Gimble et al. (1996) J. Mol. Biol. 263:163–180; Argast et al. (1998) J. Mol. Biol. 280:345–353 and the New England Biolabs catalogue. In addition, the DNA-binding specificity of homing endonucleases and meganucleases can be engineered to bind non-natural target sites. See, for example, Chevalier et al. (2002) Molec. Cell 10:895-905; Epinat et al. (2003) Nucleic Acids Res. 31:2952-2962; Ashworth et al. (2006) Nature 441:656-659; Paques et al. (2007) Current Gene Therapy 7:49-66; U.S. Patent Publication No. 20070117128.

As another alternative, the DNA-binding domain may be derived from a leucine zipper protein. Leucine zippers are a class of proteins that are involved in protein-protein interactions in many eukaryotic regulatory proteins that are important transcription factors associated with gene expression. The leucine zipper refers to a common structural motif shared in these transcriptional factors across several kingdoms including animals, plants, yeasts, etc. The leucine zipper is formed by two polypeptides (homodimer or heterodimer) that bind to specific DNA sequences in a manner where the leucine residues are evenly spaced through an α-helix, such that the leucine residues of the two polypeptides end up on the same face of the helix. The DNA binding specificity of leucine zippers can be utilized in the DNA-binding domains disclosed herein.

In some embodiments, the DNA-binding domain is an engineered domain from a TAL effector derived from the plant pathogen Xanthomonas (see, Miller et al. (2011) Nature Biotechnology 29(2):143-8; Boch et al, (2009) Science 29 Oct 2009 (10.1126/science.117881)

and Moscou and Bogdanove, (2009) Science 29 Oct 2009 (10.1126/science.1178817; and U.S. Patent Publication Nos. 20110239315, 20110145940 and 20110301073).

The CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)/Cas (CRISPR Associated) nuclease system is a recently engineered nuclease system based on a bacterial system that can be used for genome engineering. It is based on part of the adaptive immune response of many bacteria and Archea. When a virus or plasmid invades a bacterium, segments of the invader's DNA are converted into CRISPR RNAs (crRNA) by the 'immune' response. This crRNA then associates, through a region of partial complementarity, with another type of RNA called tracrRNA to guide the Cas9 nuclease to a region homologous to the crRNA in the target DNA called a "protospacer". Cas9 cleaves the DNA to generate blunt ends at the DSB at sites specified by a 20-nucleotide guide sequence contained within the crRNA transcript. Cas9 requires both the crRNA and the tracrRNA for site specific DNA recognition and cleavage. This system has now been engineered such that the crRNA and tracrRNA can be combined into one molecule (the "single guide RNA"), and the crRNA equivalent portion of the single guide RNA can be engineered to guide the Cas9 nuclease to target any desired sequence (see Jinek et al (2012) Science 337, p. 816-821, Jinek et al, (2013), eLife 2:e00471, and David Segal, (2013) eLife 2:e00563). Thus, the CRISPR/Cas system can be engineered to create a double-stranded break (DSB) at a desired target in a genome, and repair of the DSB can be influenced by the use of repair inhibitors to cause an increase in error prone repair.

In certain embodiments, Cas protein may be a "functional derivative" of a naturally occurring Cas protein. A "functional derivative" of a native sequence polypeptide is a compound having a qualitative biological property in common with a native sequence polypeptide. "Functional derivatives" include, but are not limited to, fragments of a native sequence and derivatives of a native sequence polypeptide and its fragments, provided that they have a biological activity in common with a corresponding native sequence polypeptide. A biological activity contemplated herein is the ability of the functional derivative to hydrolyze a DNA substrate into fragments. The term "derivative" encompasses both amino acid sequence variants of polypeptide, covalent modifications, and fusions thereof. Suitable derivatives of a Cas polypeptide or a fragment thereof include but are not limited to mutants, fusions, covalent modifications of Cas protein or a fragment thereof. Cas protein, which includes Cas protein or a fragment thereof, as well as derivatives of Cas protein or a fragment thereof, may be obtainable from a cell or synthesized chemically or by a combination of these two procedures. The cell may be a cell that naturally produces Cas protein, or a cell that naturally produces Cas protein

and is genetically engineered to produce the endogenous Cas protein at a higher expression level or to produce a Cas protein from an exogenously introduced nucleic acid, which nucleic acid encodes a Cas that is same or different from the endogenous Cas. In some case, the cell does not naturally produce Cas protein and is genetically engineered to produce a Cas protein. The Cas protein is deployed in mammalian cells (and putatively within plant cells) by co-expressing the Cas nuclease with guide RNA. Two forms of guide RNAs can be ued to facilitate Cas-mediated genome cleavage as disclosed in Le Cong, F., *et al.*, (2013) *Science* 339(6121):819-823.

In other embodiments, the DNA-binding domain may be associated with a cleavage (nuclease) domain. For example, homing endonucleases may be modified in their DNA-binding specificity while retaining nuclease function. In addition, zinc finger proteins may also be fused to a cleavage domain to form a zinc finger nuclease (ZFN). The cleavage domain portion of the fusion proteins disclosed herein can be obtained from any endonuclease or exonuclease. Exemplary endonucleases from which a cleavage domain can be derived include, but are not limited to, restriction endonucleases and homing endonucleases. See, for example, 2002-2003 Catalogue, New England Biolabs, Beverly, MA; and Belfort et al. (1997) Nucleic Acids Res. 25:3379-3388. Additional enzymes which cleave DNA are known (e.g., S1 Nuclease; mung bean nuclease; pancreatic DNase I; micrococcal nuclease; yeast HO endonuclease; see also Linn et al. (eds.) Nucleases, Cold Spring Harbor Laboratory Press,1993). Non limiting examples of homing endonucleases and meganucleases include I-SceI, I-CeuI, PI-PspI, PI-Sce, I-SceIV, I-CsmI, I-PanI, I-SceII, I-PpoI, I-SceIII, I-CreI, I-TevI, I-TevII and I-TevIII are known. See also U.S. Patent No. 5,420,032; U.S. Patent No. 6,833,252; Belfort et al. (1997) Nucleic Acids Res. 25:3379–3388; Dujon et al. (1989) Gene 82:115–118; Perler et al. (1994) Nucleic Acids Res. 22, 1125–1127; Jasin (1996) Trends Genet. 12:224–228; Gimble et al. (1996) J. Mol. Biol. 263:163–180; Argast et al. (1998) J. Mol. Biol. 280:345–353 and the New England Biolabs catalogue. One or more of these enzymes (or functional fragments thereof) can be used as a source of cleavage domains and cleavage half-domains.

Restriction endonucleases (restriction enzymes) are present in many species and are capable of sequence-specific binding to DNA (at a recognition site), and cleaving DNA at or near the site of binding. Certain restriction enzymes (e.g., Type IIS) cleave DNA at sites removed from the recognition site and have separable binding and cleavage domains. For example, the Type IIS enzyme FokI catalyzes double-stranded cleavage of DNA, at 9

nucleotides from its recognition site on one strand and 13 nucleotides from its recognition site on the other. See, for example, US Patents 5,356,802; 5,436,150 and 5,487,994; as well as Li et al. (1992) Proc. Natl. Acad. Sci. USA 89:4275-4279; Li et al. (1993) Proc. Natl. Acad. Sci. USA 90:2764-2768; Kim et al. (1994a) Proc. Natl. Acad. Sci. USA 91:883-887; Kim et al. (1994b) J. Biol. Chem. 269:31,978-31,982. Thus, in one embodiment, fusion proteins comprise the cleavage domain (or cleavage half-domain) from at least one Type IIS restriction enzyme and one or more zinc finger binding domains, which may or may not be engineered.

An exemplary Type IIS restriction enzyme, whose cleavage domain is separable from the binding domain, is FokI. This particular enzyme is active as a dimer. Bitinaite et al. (1998) Proc. Natl. Acad. Sci. USA 95: 10,570-10,575. Accordingly, for the purposes of the present disclosure, the portion of the FokI enzyme used in the disclosed fusion proteins is considered a cleavage half-domain. Thus, for targeted double-stranded cleavage and/or targeted replacement of cellular sequences using zinc finger-FokI fusions, two fusion proteins, each comprising a FokI cleavage half-domain, can be used to reconstitute a catalytically active cleavage domain. Alternatively, a single polypeptide molecule containing a zinc finger binding domain and two FokI cleavage half-domains can also be used. Parameters for targeted cleavage and targeted sequence alteration using zinc finger-FokI fusions are provided elsewhere in this disclosure.

A cleavage domain or cleavage half-domain can be any portion of a protein that retains cleavage activity, or that retains the ability to multimerize (e.g., dimerize) to form a functional cleavage domain. Exemplary Type IIS restriction enzymes are described in International Publication WO 2007/014275, incorporated by reference herein in its entirety.

To enhance cleavage specificity, cleavage domains may also be modified. In certain embodiments, variants of the cleavage half-domain are employed these variants minimize or prevent homodimerization of the cleavage half-domains. Non-limiting examples of such modified cleavage half-domains are described in detail in WO 2007/014275, incorporated by reference in its entirety herein. In certain embodiments, the cleavage domain comprises an engineered cleavage half-domain (also referred to as dimerization domain mutants) that minimize or prevent homodimerization. Such embodiments are known to those of skill the art and described for example in U.S. Patent Publication Nos. 20050064474; 20060188987; 20070305346 and 20080131962, the disclosures of all of which are incorporated by reference in their entireties herein. Amino acid residues at positions 446, 447, 479, 483, 484, 486, 487, 490, 491, 496, 498, 499, 500, 531, 534, 537, and 538 of FokI are all targets for influencing dimerization of the FokI cleavage half-domains.

Additional engineered cleavage half-domains of FokI that form obligate heterodimers can also be used in the ZFNs described herein. Exemplary engineered cleavage half-domains of Fok I that form obligate heterodimers include a pair in which a first cleavage half-domain includes mutations at amino acid residues at positions 490 and 538 of Fok I and a second cleavage half-domain includes mutations at amino acid residues 486 and 499. In one embodiment, a mutation at 490 replaces Glu (E) with Lys (K); the mutation at 538 replaces Iso (I) with Lys (K); the mutation at 486 replaced Gln (Q) with Glu (E); and the mutation at position 499 replaces Iso (I) with Lys (K). Specifically, the engineered cleavage half-domains described herein were prepared by mutating positions 490 (E→K) and 538 (I→K) in one cleavage half-domain to produce an engineered cleavage half-domain designated "E490K:I538K" and by mutating positions 486 (Q→E) and 499 (I→L) in another cleavage half-domain to produce an engineered cleavage half-domain designated "Q486E:I499L". The engineered cleavage half-domains described herein are obligate heterodimer mutants in which aberrant cleavage is minimized or abolished. See, e.g., U.S. Patent Publication No. 2008/0131962, the disclosure of which is incorporated by reference in its entirety for all purposes. In certain embodiments, the engineered cleavage half-domain comprises mutations at positions 486, 499 and 496 (numbered relative to wild-type FokI), for instance mutations that replace the wild type Gln (Q) residue at position 486 with a Glu (E) residue, the wild type Iso (I) residue at position 499 with a Leu (L) residue and the wild-type Asn (N) residue at position 496 with an Asp (D) or Glu (E) residue (also referred to as a "ELD" and "ELE" domains, respectively). In other embodiments, the engineered cleavage half-domain comprises mutations at positions 490, 538 and 537 (numbered relative to wild-type FokI), for instance mutations that replace the wild type Glu (E) residue at position 490 with a Lys (K) residue, the wild type Iso (I) residue at position 538 with a Lys (K) residue, and the wild-type His (H) residue at position 537 with a Lys (K) residue or a Arg (R) residue (also referred to as "KKK" and "KKR" domains, respectively). In other embodiments, the engineered cleavage half-domain comprises mutations at positions 490 and 537 (numbered relative to wild-type FokI), for instance mutations that replace the wild type Glu (E) residue at position 490 with a Lys (K) residue and the wild-type His (H) residue at position 537 with a Lys (K) residue or a Arg (R) residue (also referred to as "KIK" and "KIR" domains, respectively). (See US Patent Publication No. 20110201055). In other embodiments, the engineered cleavage half domain comprises the "Sharkey" and/or "Sharkey' " mutations (see Guo et al, (2010) J. Mol. Biol. 400(1):96-107).

Engineered cleavage half-domains described herein can be prepared using any suitable method, for example, by site-directed mutagenesis of wild-type cleavage half-domains (Fok I) as described in U.S. Patent Publication Nos. 20050064474; 20080131962; and 20110201055. Alternatively, nucleases may be assembled *in vivo* at the nucleic acid target site using so-called "split-enzyme" technology (see e.g. U.S. Patent Publication No. 20090068164). Components of such split enzymes may be expressed either on separate expression constructs, or can be linked in one open reading frame where the individual components are separated, for example, by a self-cleaving 2A peptide or IRES sequence. Components may be individual zinc finger binding domains or domains of a meganuclease nucleic acid binding domain.

Nucleases can be screened for activity prior to use, for example in a yeast-based chromosomal system as described in WO 2009/042163 and 20090068164. Nuclease expression constructs can be readily designed using methods known in the art. See, e.g., United States Patent Publications 20030232410; 20050208489; 20050026157; 20050064474; 20060188987; 20060063231; and International Publication WO 07/014275. Expression of the nuclease may be under the control of a constitutive promoter or an inducible promoter, for example the galactokinase promoter which is activated (de-repressed) in the presence of raffinose and/or galactose and repressed in presence of glucose.

Distance between target sites refers to the number of nucleotides or nucleotide pairs intervening between two target sites as measured from the edges of the sequences nearest each other. In certain embodiments in which cleavage depends on the binding of two zinc finger domain/cleavage half-domain fusion molecules to separate target sites, the two target sites can be on opposite DNA strands. In other embodiments, both target sites are on the same DNA strand. For targeted integration into the optimal genomic locus, one or more ZFPs are engineered to bind a target site at or near the predetermined cleavage site, and a fusion protein comprising the engineered DNA-binding domain and a cleavage domain is expressed in the cell. Upon binding of the zinc finger portion of the fusion protein to the target site, the DNA is cleaved, preferably via a double-stranded break, near the target site by the cleavage domain.

The presence of a double-stranded break in the optimal genomic locus facilitates integration of exogenous sequences via homologous recombination. Thus, in one embodiment the polynucleotide comprising the nucleic acid sequence of interest to be inserted into the targeted genomic locus will include one or more regions of homology with the targeted genomic locus to facilitate homologous recombination.

In addition to the fusion molecules described herein, targeted replacement of a selected genomic sequence also involves the introduction of a donor sequence. The polynucleotide donor sequence can be introduced into the cell prior to, concurrently with, or subsequent to, expression of the fusion protein(s). In one embodiment the donor polynucleotide contains sufficient homology to the optimal genomic locus to support homologous recombination between it and the optimal genomic locus genomic sequence to which it bears homology. Approximately 25, 50, 100, 200, 500, 750, 1,000, 1,500, 2,000 nucleotides or more of sequence homology between a donor and a genomic sequence, or any integral value between 10 and 2,000 nucleotides or more, will support homologous recombination. In certain embodiments, the homology arms are less than 1,000 basepairs in length. In other embodiments, the homology arms are less than 750 base pairs in length. In one embodiment , donor polynucleotide sequences can comprise a vector molecule containing sequences that are not homologous to the region of interest in cellular chromatin. A donor polynucleotide molecule can contain several, discontinuous regions of homology to cellular chromatin. For example, for targeted insertion of sequences not normally present in a region of interest, said sequences can be present in a donor nucleic acid molecule and flanked by regions of homology to sequence in the region of interest. The donor polynucleotide can be DNA or RNA, single-stranded or double-stranded and can be introduced into a cell in linear or circular form. *See, e.g.,* U.S. Patent Publication Nos. 20100047805, 20110281361, 20110207221 and U.S. Application No. 13/889,162. If introduced in linear form, the ends of the donor sequence can be protected (*e.g.*, from exonucleolytic degradation) by methods known to those of skill in the art. For example, one or more dideoxynucleotide residues are added to the 3' terminus of a linear molecule and/or self-complementary oligonucleotides are ligated to one or both ends. *See*, for example, Chang *et al.* (1987) *Proc. Natl. Acad. Sci. USA* 84:4959-4963; Nehls *et al.* (1996) *Science* 272:886-889. Additional methods for protecting exogenous polynucleotides from degradation include, but are not limited to, addition of terminal amino group(s) and the use of modified internucleotide linkages such as, for example, phosphorothioates, phosphoramidates, and O-methyl ribose or deoxyribose residues.

In accordance with one embodiment a method of preparing a transgenic maize plant is provided wherein a DNA of interest has been inserted into an optimal nongenic maize genomic locus. The method comprises the steps of:

a. selecting an optimal nongenic maize locus as a target for insertion of the nucleic acid of interest;

b. introducing a site specific nuclease into a maize plant cell, wherein the site specific nuclease cleaves the nongenic sequence;

c. introducing the DNA of interest into the plant cell; and

d. selecting transgenic plant cells comprising the DNA of interest targeted to said nongenic sequence.

In accordance with one embodiment a method of preparing a transgenic maize protoplast cell is provided wherein a DNA of interest has been inserted into an optimal nongenic maize genomic locus. The method comprises the steps of:

a. selecting an optimal nongenic maize locus as a target for insertion of the nucleic acid of interest;

b. introducing a site specific nuclease into a maize protoplast cell, wherein the site specific nuclease cleaves the nongenic sequence;

c. introducing the DNA of interest into the maize protoplast cell; and

d. selecting the transgenic maize protoplast cell comprising the DNA of interest targeted to said nongenic sequence.

In one embodiment the site specific nuclease is selected from the group consisting of a Zinc Finger nuclease, a CRISPR nuclease, a TALEN nuclease, or a meganuclease, and more particularly in one embodiment the site specific nuclease is a Zinc Finger nuclease. In accordance with one embodiment the DNA of interest is integrated within said nongenic sequence via a homology directed repair integration method. Alternatively, in some embodiments the DNA of interest is integrated within said nongenic sequence via a non-homologous end joining integration method. In additional embodiments, the DNA of interest is integrated within said nongenic sequence via a previously undescribed integration method. In one embodiment the method comprises selecting a optimal nongenic maize genomic locus for targeted insertion of a DNA of interest that has 2, 3, 4, 5, 6, 7, or 8 of the following characteristics:

a. the nongenic sequence is at least 1 Kb in length and does not contain greater than 1% DNA methylation within the sequence;

b. the nongenic sequence exhibits a 0.00041 to 62.42 cM/Mb rate of recombination within the maize genome;

c. the nongenic sequence exhibits a 0 to 0.962 level of nucleosome occupancy of the maize genome;

d. the nongenic sequence shares less than 40% sequence identity with any other sequence contained in the maize genome;

e. the nongenic sequence has a relative location value from 0.00373 to 0.99908 ratio of genomic distance from a maize chromosomal centromere;

f. the nongenic sequence has a guanine/cytosine percent content range of 25.17 to 68.3%;

g. the nongenic sequence is located proximally to a genic sequence; and,

h. a 1 Mb region of maize genomic sequence comprising said nongenic sequence comprises one or more additional nongenic sequences. In one embodiment the optimal nongenic maize locus is selected from a loci of cluster 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 2, 3, 4, 5, 6, 7, 8, 9, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 or 32.

Delivery

The donor molecules disclosed herein are integrated into a genome of a cell via targeted, homology-independent and/or homology-dependent methods. For such targeted integration, the genome is cleaved at a desired location (or locations) using a nuclease, for example, a fusion between a DNA-binding domain (*e.g.,* zinc finger binding domain, CRISPR or TAL effector domain is engineered to bind a target site at or near the predetermined cleavage site) and nuclease domain (*e.g.,* cleavage domain or cleavage half-domain). In certain embodiments, two fusion proteins, each comprising a DNA-binding domain and a cleavage half-domain, are expressed in a cell, and bind to target sites which are juxtaposed in such a way that a functional cleavage domain is reconstituted and DNA is cleaved in the vicinity of the target sites. In one embodiment, cleavage occurs between the target sites of the two DNA-binding domains. One or both of the DNA-binding domains can be engineered. *See, also,* U.S. Patent No. 7,888,121; U.S. Patent Publication 20050064474 and International Patent Publications WO05/084190, WO05/014791 and WO 03/080809.

The nucleases as described herein can be introduced as polypeptides and/or polynucleotides. For example, two polynucleotides, each comprising sequences encoding one of the aforementioned polypeptides, can be introduced into a cell, and when the polypeptides are expressed and each binds to its target sequence, cleavage occurs at or near the target sequence. Alternatively, a single polynucleotide comprising sequences encoding both fusion polypeptides is introduced into a cell. Polynucleotides can be DNA, RNA or any modified forms or analogues or DNA and/or RNA.

Following the introduction of a double-stranded break in the region of interest, the transgene is integrated into the region of interest in a targeted manner via non-homology dependent methods (*e.g.,* non-homologous end joining (NHEJ)) following linearization of a double-stranded donor molecule as described herein. The double-stranded donor is preferably linearized *in vivo* with a nuclease, for example one or more of the same or different nucleases that are used to introduce the double-stranded break in the genome. Synchronized cleavage of the chromosome and the donor in the cell may limit donor DNA degradation (as compared to linearization of the donor molecule prior to introduction into the cell). The nuclease target sites used for linearization of the donor preferably do not disrupt the transgene(s) sequence(s).

The transgene may be integrated into the genome in the direction expected by simple ligation of the nuclease overhangs (designated "forward" or "AB" orientation) or in the alternate direction (designated "reverse" or "BA" orientation). In certain embodiments, the transgene is integrated following accurate ligation of the donor and chromosome overhangs. In other embodiments, integration of the transgene in either the BA or AB orientation results in deletion of several nucleotides.

Through the application of techniques such as these, the cells of virtually any species may be stably transformed. In some embodiments, transforming DNA is integrated into the genome of the host cell. In the case of multicellular species, transgenic cells may be regenerated into a transgenic organism. Any of these techniques may be used to produce a transgenic plant, for example, comprising one or more donor polynucleotide acid sequences in the genome of the transgenic plant.

The delivery of nucleic acids may be introduced into a plant cell in embodiments of the invention by any method known to those of skill in the art, including, for example and without limitation: by transformation of protoplasts (*See, e.g.*, U.S. Patent 5,508,184); by desiccation/inhibition-mediated DNA uptake (*See, e.g.*, Potrykus *et al.* (1985) Mol. Gen. Genet. 199:183-8); by electroporation (*See, e.g.*, U.S. Patent 5,384,253); by agitation with silicon carbide fibers (*See, e.g.*, U.S. Patents 5,302,523 and 5,464,765); by *Agrobacterium*-mediated transformation (*See, e.g.*, U.S. Patents 5,563,055, 5,591,616, 5,693,512, 5,824,877, 5,981,840, and 6,384,301);, by acceleration of DNA-coated particles (*See, e.g.*, U.S. Patents 5,015,580, 5,550,318, 5,538,880, 6,160,208, 6,399,861, and 6,403,865) and by Nanoparticles, nanocarriers and cell penetrating peptides (WO201126644A2; WO2009046384A1; WO2008148223A1) in the methods to deliver DNA, RNA, Peptides and/or proteins or combinations of nucleic acids and peptides into plant cells.

The most widely-utilized method for introducing an expression vector into plants is based on the natural transformation system of *Agrobacterium*. *A. tumefaciens* and *A. rhizogenes* are plant pathogenic soil bacteria that genetically transform plant cells. The T_i and R_i plasmids of *A. tumefaciens* and *A. rhizogenes*, respectively, carry genes responsible for genetic transformation of the plant. The T_i (tumor-inducing)-plasmids contain a large segment, known as T-DNA, which is transferred to transformed plants. Another segment of the T_i plasmid, the vir region, is responsible for T-DNA transfer. The T-DNA region is bordered by left-hand and right-hand borders that are each composed of terminal repeated nucleotide sequences. In some modified binary vectors, the tumor-inducing genes have been deleted, and the functions of the vir region are utilized to transfer foreign DNA bordered by the T-DNA border sequences. The T-region may also contain, for example, a selectable marker for efficient recovery of transgenic plants and cells, and a multiple cloning site for inserting sequences for transfer such as a nucleic acid encoding a fusion protein of the invention.

Thus, in some embodiments, a plant transformation vector is derived from a T_i plasmid of *A. tumefaciens* (*See, e.g.*, U.S. Patent Nos. 4,536,475, 4,693,977, 4,886,937, and 5,501,967; and European Patent EP 0 122 791) or a R_i plasmid of *A. rhizogenes*. Additional plant transformation vectors include, for example and without limitation, those described by Herrera-Estrella *et al.* (1983) Nature 303:209-13; Bevan *et al.* (1983), *supra*; Klee *et al.* (1985) Bio/Technol. 3:637-42; and in European Patent EP 0 120 516, and those derived from any of the foregoing. Other bacteria, such as *Sinorhizobium*, *Rhizobium*, and *Mesorhizobium*, that naturally interact with plants can be modified to mediate gene transfer to a number of diverse plants. These plant-associated symbiotic bacteria can be made competent for gene transfer by acquisition of both a disarmed T_i plasmid and a suitable binary vector.

The Nucleic Acid of Interest

The polynucleotide donor sequences for targeted insertion into a maize genomic locus typically range in length from about 10 to about 5,000 nucleotides. However, nucleotides substantially longer, up to 20,000 nucleotides can be used, including sequences of about 5, 6, 7, 8, 9, 10, 11 and 12 Kb in length. Additionally, donor sequences can comprise a vector molecule containing sequences that are not homologous to the replaced region. In one embodiment the nucleic acid of interest will include one or more regions that share homology with the targeted genomic loci. Generally, the homologous region(s) of the nucleic acid sequence of interest will have at least 50% sequence identity to a genomic sequence with which

recombination is desired. In certain embodiments, the homologous region(s) of the nucleic acid of interest shares 60%, 70%, 80%, 90%, 95%, 98%, 99%, or 99.9% sequence identity with sequences located in the targeted genomic locus. However, any value between 1% and 100% sequence identity can be present, depending upon the length of the nucleic acid of interest.

A nucleic acid of interest can contain several, discontinuous regions of sequence sharing relatively high sequence identity to cellular chromatin. For example, for targeted insertion of sequences not normally present in a targeted genomic locus, the unique sequences can be present in a donor nucleic acid molecule and flanked by regions of sequences that share a relatively high sequence identity to a sequence present in the targeted genomic locus.

A nucleic acid of interest can also be inserted into a targeted genomic locus to serve as a reservoir for later use. For example, a first nucleic acid sequence comprising sequences homologous to a nongenic region of the maize genome, but containing a nucleic acid of interest (optionally encoding a ZFN under the control of an inducible promoter), may be inserted in a targeted genomic locus. Next, a second nucleic acid sequence is introduced into the cell to induce the insertion of a DNA of interest into an optimal nongenic maize genomic locus. Either the first nucleic acid sequence comprises a ZFNs specific to the optimal nongenic maize genomic locus and the second nucleic acid sequence comprises the DNA sequence of interest, or vice versa. In one embodiment the ZFN will cleave both the optimal nongenic maize genomic locus and the nucleic acid of interest. The resulting double stranded break in the genome can then become the integration site for the nucleic acid of interest released from the optimal genomic locus. Alternatively, expression of a ZFN already located in the genome can be induced after introduction of the DNA of interest to induce a double stranded break in the genome that can then become the integration site for the introduced nucleic acid of interest. In this way, the efficiency of targeted integration of a DNA of interest at any region of interest may be improved since the method does not rely on simultaneous uptake of both the nucleic acids encoding the ZFNs and the DNA of interest.

A nucleic acid of interest can also be inserted into an optimal nongenic maize genomic locus to serve as a target site for subsequent insertions. For example, a nucleic acid of interest comprised of DNA sequences that contain recognition sites for additional ZFN designs may be inserted into the locus. Subsequently, additional ZFN designs may be generated and expressed in cells such that the original nucleic acid of interest is cleaved and modified by repair or homologous recombination. In this way, reiterative integrations of nucleic acid of interests may occur at the optimal nongenic maize genomic locus.

Exemplary exogenous sequences that can be inserted into an optimal nongenic maize genomic locus include, but are not limited to, any polypeptide coding sequence (e.g., cDNAs), promoter, enhancer and other regulatory sequences (e.g., interfering RNA sequences, shRNA expression cassettes, epitope tags, marker genes, cleavage enzyme recognition sites and various types of expression constructs. Such sequences can be readily obtained using standard molecular biological techniques (cloning, synthesis, etc.) and/or are commercially available.

To express ZFNs, sequences encoding the fusion proteins are typically subcloned into an expression vector that contains a promoter to direct transcription. Suitable prokaryotic and eukaryotic promoters are well known in the art and described, e.g., in Sambrook et al., Molecular Cloning, A Laboratory Manual (2nd ed. 1989; 3.sup.rd ed., 2001); Kriegler, Gene Transfer and Expression: A Laboratory Manual (1990); and Current Protocols in Molecular Biology (Ausubel et al., supra. Bacterial expression systems for expressing the ZFNs are available in, e.g., E. coli, Bacillus sp., and Salmonella (Palva et al., Gene 22:229-235 (1983)). Kits for such expression systems are commercially available. Eukaryotic expression systems for mammalian cells, yeast, and insect cells are well known by those of skill in the art and are also commercially available.

The particular expression vector used to transport the genetic material into the cell is selected with regard to the intended use of the fusion proteins, e.g., expression in plants, animals, bacteria, fungus, protozoa, etc. (see expression vectors described below). Standard bacterial and animal expression vectors are known in the art and are described in detail, for example, U.S. Patent Publication 20050064474A1 and International Patent Publications WO05/084190, WO05/014791 and WO03/080809.

Standard transfection methods can be used to produce bacterial, mammalian, yeast or insect cell lines that express large quantities of protein, which can then be purified using standard techniques (see, e.g., Colley et al., J. Biol. Chem. 264:17619-17622 (1989); Guide to Protein Purification, in Methods in Enzymology, vol. 182 (Deutscher, ed., 1990)). Transformation of eukaryotic and prokaryotic cells are performed according to standard techniques (see, e.g., Morrison, J. Bact. 132:349-351 (1977); Clark-Curtiss & Curtiss, Methods in Enzymology 101:347-362 (Wu et al., eds., 1983).

The disclosed methods and compositions can be used to insert polynucleotide donor sequences into a predetermined location such as one of the optimal nongenic maize genomic loci. This is useful inasmuch as expression of an introduced transgene into the maize genome depends critically on its integration site. Accordingly, genes encoding herbicide tolerance,

insect resistance, nutrients, antibiotics or therapeutic molecules can be inserted, by targeted recombination.

In one embodiment the nucleic acid of interest is combined or "stacked" with gene encoding sequences that provide additional resistance or tolerance to glyphosate or another herbicide, and/or provides resistance to select insects or diseases and/or nutritional enhancements, and/or improved agronomic characteristics, and/or proteins or other products useful in feed, food, industrial, pharmaceutical or other uses. The "stacking" of two or more nucleic acid sequences of interest within a plant genome can be accomplished, for example, via conventional plant breeding using two or more events, transformation of a plant with a construct which contains the sequences of interest, re-transformation of a transgenic plant, or addition of new traits through targeted integration via homologous recombination.

Such polynucleotide donor nucleotide sequences of interest include, but are not limited to, those examples provided below:

1. Genes or Coding Sequence (e.g. iRNA) That Confer Resistance to Pests or Disease

(A) Plant Disease Resistance Genes. Plant defenses are often activated by specific interaction between the product of a disease resistance gene (R) in the plant and the product of a corresponding avirulence (Avr) gene in the pathogen. A plant variety can be transformed with cloned resistance gene to engineer plants that are resistant to specific pathogen strains. Examples of such genes include, the tomato Cf-9 gene for resistance to Cladosporium fulvum (Jones et al., 1994 Science 266:789), tomato Pto gene, which encodes a protein kinase, for resistance to Pseudomonas syringae pv. tomato (Martin et al., 1993 Science 262:1432), and Arabidopsis RSSP2 gene for resistance to Pseudomonas syringae (Mindrinos et al., 1994 Cell 78:1089).

(B) A Bacillus thuringiensis protein, a derivative thereof or a synthetic polypeptide modeled thereon, such as, a nucleotide sequence of a Bt δ-endotoxin gene (Geiser et al., 1986 Gene 48:109), and a vegetative insecticidal (VIP) gene (see, e.g., Estruch et al. (1996) Proc. Natl. Acad. Sci. 93:5389-94). Moreover, DNA molecules encoding δ-endotoxin genes can be purchased from American Type Culture Collection (Rockville, Md.), under ATCC accession numbers 40098, 67136, 31995 and 31998.

(C) A lectin, such as, nucleotide sequences of several Clivia miniata mannose-binding lectin genes (Van Damme et al., 1994 Plant Molec. Biol. 24:825).

(D) A vitamin binding protein, such as avidin and avidin homologs which are useful as larvicides against insect pests. See U.S. Pat. No. 5,659,026.

(E) An enzyme inhibitor, e.g., a protease inhibitor or an amylase inhibitor. Examples of such genes include a rice cysteine proteinase inhibitor (Abe et al., 1987 J. Biol. Chem. 262:16793), a tobacco proteinase inhibitor I (Huub et al., 1993 Plant Molec. Biol. 21:985), and an α-amylase inhibitor (Sumitani et al., 1993 Biosci. Biotech. Biochem. 57:1243).

(F) An insect-specific hormone or pheromone such as an ecdysteroid and juvenile hormone a variant thereof, a mimetic based thereon, or an antagonist or agonist thereof, such as baculovirus expression of cloned juvenile hormone esterase, an inactivator of juvenile hormone (Hammock et al., 1990 Nature 344:458).

(G) An insect-specific peptide or neuropeptide which, upon expression, disrupts the physiology of the affected pest (J. Biol. Chem. 269:9). Examples of such genes include an insect diuretic hormone receptor (Regan, 1994), an allostatin identified in Diploptera punctata (Pratt, 1989), and insect-specific, paralytic neurotoxins (U.S. Pat. No. 5,266,361).

(H) An insect-specific venom produced in nature by a snake, a wasp, etc., such as a scorpion insectotoxic peptide (Pang, 1992 Gene 116:165).

(I) An enzyme responsible for a hyperaccumulation of monoterpene, a sesquiterpene, a steroid, hydroxamic acid, a phenylpropanoid derivative or another non-protein molecule with insecticidal activity.

(J) An enzyme involved in the modification, including the post-translational modification, of a biologically active molecule; for example, glycolytic enzyme, a proteolytic enzyme, a lipolytic enzyme, a nuclease, a cyclase, a transaminase, an esterase, a hydrolase, a phosphatase, a kinase, a phosphorylase, a polymerase, an elastase, a chitinase and a glucanase, whether natural or synthetic. Examples of such genes include, a callas gene (PCT published application WO93/02197), chitinase-encoding sequences (which can be obtained, for example, from the ATCC under accession numbers 3999637 and 67152), tobacco hookworm chitinase (Kramer et al., 1993 Insect Molec. Biol. 23:691), and parsley ubi4-2 polyubiquitin gene (Kawalleck et al., 1993 Plant Molec. Biol. 21:673).

(K) A molecule that stimulates signal transduction. Examples of such molecules include nucleotide sequences for mung bean calmodulin cDNA clones (Botella et al., 1994 Plant Molec. Biol. 24:757) and a nucleotide sequence of a maize calmodulin cDNA clone (Griess et al., 1994 Plant Physiol. 104:1467).

(L) A hydrophobic moment peptide. See U.S. Pat. Nos. 5,659,026 and 5,607,914; the latter teaches synthetic antimicrobial peptides that confer disease resistance.

(M) A membrane permease, a channel former or a channel blocker, such as a cecropin-β lytic peptide analog (Jaynes et al., 1993 Plant Sci. 89:43) which renders transgenic tobacco plants resistant to Pseudomonas solanacearum.

(N) A viral-invasive protein or a complex toxin derived therefrom. For example, the accumulation of viral coat proteins in transformed plant cells imparts resistance to viral infection and/or disease development effected by the virus from which the coat protein gene is derived, as well as by related viruses. Coat protein-mediated resistance has been conferred upon transformed plants against alfalfa mosaic virus, cucumber mosaic virus, tobacco streak virus, potato virus X, potato virus Y, tobacco etch virus, tobacco rattle virus and tobacco mosaic virus. See, for example, Beachy et al. (1990) Ann. Rev. Phytopathol. 28:451.

(O) An insect-specific antibody or an immunotoxin derived therefrom. Thus, an antibody targeted to a critical metabolic function in the insect gut would inactivate an affected enzyme, killing the insect. For example, Taylor et al. (1994) Abstract #497, Seventh Int'l. Symposium on Molecular Plant-Microbe Interactions shows enzymatic inactivation in transgenic tobacco via production of single-chain antibody fragments.

(P) A virus-specific antibody. See, for example, Tavladoraki et al. (1993) Nature 266:469, which shows that transgenic plants expressing recombinant antibody genes are protected from virus attack.

(Q) A developmental-arrestive protein produced in nature by a pathogen or a parasite. Thus, fungal endo α-1,4-D polygalacturonases facilitate fungal colonization and plant nutrient release by solubilizing plant cell wall homo-α-1,4-D-galacturonase (Lamb et al., 1992) Bio/Technology 10:1436. The cloning and characterization of a gene which encodes a bean endopolygalacturonase-inhibiting protein is described by Toubart et al. (1992 Plant J. 2:367).

(R) A developmental-arrestive protein produced in nature by a plant, such as the barley ribosome-inactivating gene that provides an increased resistance to fungal disease (Longemann et al., 1992). Bio/Technology 10:3305.

(S) RNA interference, in which an RNA molecule is used to inhibit expression of a target gene. An RNA molecule in one example is partially or fully double stranded, which triggers a silencing response, resulting in cleavage of dsRNA into small interfering RNAs, which are then incorporated into a targeting complex that destroys homologous mRNAs. See, e.g., Fire et al., US Patent 6,506,559; Graham et al.6,573,099.

2. Genes That Confer Resistance to a Herbicide

(A) Genes encoding resistance or tolerance to a herbicide that inhibits the growing point or meristem, such as an imidazalinone, sulfonanilide or sulfonylurea herbicide. Exemplary genes in this category code for mutant acetolactate synthase (ALS) (Lee et al., 1988 EMBOJ. 7:1241) also known as acetohydroxyacid synthase (AHAS) enzyme (Miki et al., 1990 Theor. Appl. Genet. 80:449).

(B) One or more additional genes encoding resistance or tolerance to glyphosate imparted by mutant EPSP synthase and aroA genes, or through metabolic inactivation by genes such as DGT-28, 2mEPSPS, GAT (glyphosate acetyltransferase) or GOX (glyphosate oxidase) and other phosphono compounds such as glufosinate (pat,bar, and dsm-2 genes), and aryloxyphenoxypropionic acids and cyclohexanediones (ACCase inhibitor encoding genes). See, for example, U.S. Pat. No. 4,940,835, which discloses the nucleotide sequence of a form of EPSP which can confer glyphosate resistance. A DNA molecule encoding a mutant aroA gene can be obtained under ATCC Accession Number 39256, and the nucleotide sequence of the mutant gene is disclosed in U.S. Pat. No. 4,769,061. European patent application No. 0 333 033 and U.S. Pat. No. 4,975,374 disclose nucleotide sequences of glutamine synthetase genes which confer resistance to herbicides such as L-phosphinothricin. The nucleotide sequence of a phosphinothricinacetyl-transferase gene is provided in European application No. 0 242 246. De Greef et al. (1989) Bio/Technology 7:61 describes the production of transgenic plants that express chimeric bar genes coding for phosphinothricin acetyl transferase activity. Exemplary of genes conferring resistance to aryloxyphenoxypropionic acids and cyclohexanediones, such as sethoxydim and haloxyfop, are the Accl-S1, Accl-S2 and Accl-S3 genes described by Marshall et al. (1992) Theor. Appl. Genet. 83:435.

(C) Genes encoding resistance or tolerance to a herbicide that inhibits photosynthesis, such as a triazine (psbA and gs+ genes) and a benzonitrile (nitrilase gene). Przibilla et al. (1991) Plant Cell 3:169 describe the use of plasmids encoding mutant psbA genes to transform Chlamydomonas. Nucleotide sequences for nitrilase genes are disclosed in U.S. Pat. No. 4,810,648, and DNA molecules containing these genes are available under ATCC accession numbers 53435, 67441 and 67442. Cloning and expression of DNA coding for a glutathione S-transferase is described by Hayes et al. (1992) Biochem. J. 285:173.

(D) Genes encoding resistance or tolerance to a herbicide that bind to hydroxyphenylpyruvate dioxygenases (HPPD), enzymes which catalyze the reaction in which

para-hydroxyphenylpyruvate (HPP) is transformed into homogentisate. This includes herbicides such as isoxazoles (EP418175, EP470856, EP487352, EP527036, EP560482, EP682659, U.S. Pat. No. 5,424,276), in particular isoxaflutole, which is a selective herbicide for maize, diketonitriles (EP496630, EP496631), in particular 2-cyano-3-cyclopropyl-1-(2-SO2CH3-4-CF3 phenyl)propane-1,3-dione and 2-cyano-3-cyclopropyl-1-(2-SO2CH3-4-2,3Cl2phenyl)propane-1,3-dione, triketones (EP625505, EP625508, U.S. Pat. No. 5,506,195), in particular sulcotrione, and pyrazolinates. A gene that produces an overabundance of HPPD in plants can provide tolerance or resistance to such herbicides, including, for example, genes described in U.S. Patent Nos. 6,268,549 and 6,245,968 and U.S. Patent Application, Publication No. 20030066102.

(E) Genes encoding resistance or tolerance to phenoxy auxin herbicides, such as 2,4-dichlorophenoxyacetic acid (2,4-D) and which may also confer resistance or tolerance to aryloxyphenoxypropionate (AOPP) herbicides. Examples of such genes include the α-ketoglutarate-dependent dioxygenase enzyme (aad-1) gene, described in U.S. Patent No. 7,838,733.

(F) Genes encoding resistance or tolerance to phenoxy auxin herbicides, such as 2,4-dichlorophenoxyacetic acid (2,4-D) and which may also confer resistance or tolerance to pyridyloxy auxin herbicides, such as fluroxypyr or triclopyr. Examples of such genes include the α-ketoglutarate-dependent dioxygenase enzyme gene (aad-12), described in WO 2007/053482 A2.

(G) Genes encoding resistance or tolerance to dicamba (see, e.g., U.S. Patent Publication No. 20030135879).

(H) Genes providing resistance or tolerance to herbicides that inhibit protoporphyrinogen oxidase (PPO) (see U.S. Pat. No. 5,767,373).

(I) Genes providing resistance or tolerance to triazine herbicides (such as atrazine) and urea derivatives (such as diuron) herbicides which bind to core proteins of photosystem II reaction centers (PS II) (See Brussian et al., (1989) EMBO J. 1989, 8(4): 1237-1245.

3. Genes That Confer or Contribute to a Value-Added Trait

(A) Modified fatty acid metabolism, for example, by transforming maize or Brassica with an antisense gene or stearoyl-ACP desaturase to increase stearic acid content of the plant (Knultzon et al., 1992) Proc. Nat. Acad. Sci. USA 89:2624.

(B) Decreased phytate content

(1) Introduction of a phytase-encoding gene, such as the Aspergillus niger phytase gene (Van Hartingsveldt et al., 1993 Gene 127:87), enhances breakdown of phytate, adding more free phosphate to the transformed plant.

(2) A gene could be introduced that reduces phytate content. In maize, this, for example, could be accomplished by cloning and then reintroducing DNA associated with the single allele which is responsible for maize mutants characterized by low levels of phytic acid (Raboy et al., 1990 Maydica 35:383).

(C) Modified carbohydrate composition effected, for example, by transforming plants with a gene coding for an enzyme that alters the branching pattern of starch. Examples of such enzymes include, Streptococcus mucus fructosyltransferase gene (Shiroza et al., 1988) J. Bacteriol. 170:810, Bacillus subtilis levansucrase gene (Steinmetz et al., 1985 Mol. Gen. Genel. 200:220), Bacillus licheniformis α-amylase (Pen et al., 1992 Bio/Technology 10:292), tomato invertase genes (Elliot et al., 1993), barley amylase gene (Sogaard et al., 1993 J. Biol. Chem. 268:22480), and maize endosperm starch branching enzyme II (Fisher et al., 1993 Plant Physiol. 102:10450).

III. Recombinant Constructs

As disclosed herein the present disclosure provides recombinant genomic sequences comprising an optimal nongenic maize genomic sequence of at least 1 Kb and a DNA of interest, wherein the inserted DNA of interest is inserted into said nongenic sequence. In one embodiment the DNA of interest is an analytical domain, a gene or coding sequence (e.g. iRNA) that confers resistance to pests or disease, genes that confer resistance to a herbicide or genes that confer or contribute to a value-added trait, and the optimal nongenic maize genomic sequence comprises 1, 2, 3, 4, 5, 6, 7, or 8 of the following characteristics:

a. the nongenic sequence is about 1 Kb to about 8.3 Kb in length and does not contain a methylated polynucleotide;

b. the nongenic sequence exhibits a 0.00041 to 62.42 cM/Mb rate of recombination within the maize genome;

c. the nongenic sequence exhibits a 0 to 0.962 level of nucleosome occupancy of the maize genome;

d. the nongenic sequence shares less than 40% sequence identity with any other sequence contained in the maize genome;

e. the nongenic sequence has a relative location value from 0.00373 to 0.99908 ratio of genomic distance from a maize chromosomal centromere;

f. the nongenic sequence has a guanine/cytosine percent content range of 25.17 to 68.3%;

g. the nongenic sequence is located proximally to an genic sequence, comprising a known or predicted maize coding sequence within 40 Kb of contiguous genomic DNA comprising the native nongenic sequence; and,

h. the nongenic sequence is located in a 1 Mb region of maize genomic sequence that comprises at least a second nongenic sequence. In one embodiment the optimal nongenic maize genomic sequence is further characterized as having a

genic region comprisings 1 to 9 known or predicted maize coding sequence within 40 Kb of contiguous genomic DNA comprising the native nongenic sequence. In one embodiment the optimal nongenic maize locus is selected from a loci of cluster 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 2, 3, 4, 5, 6, 7, 8, 9, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 or 32.

IV. Transgenic Plants

Transgenic plants comprising the recombinant optimal nongenic maize loci are also provided in accordance with one embodiment of the present disclosure. Such transgenic plants can be prepared using techniques known to those skilled in the art.

A transformed maize cell, callus, tissue or plant may be identified and isolated by selecting or screening the engineered plant material for traits encoded by the marker genes present on the transforming DNA. For instance, selection can be performed by growing the engineered plant material on media containing an inhibitory amount of the antibiotic or herbicide to which the transforming gene construct confers resistance. Further, transformed cells can also be identified by screening for the activities of any visible marker genes (e.g., the yellow fluorescence protein, green fluorescence protein, red fluorescence protein, beta-glucuronidase, luciferase, B or C1 genes) that may be present on the recombinant nucleic acid constructs. Such selection and screening methodologies are well known to those skilled in the art.

Physical and biochemical methods also may be used to identify plant or plant cell transformants containing inserted gene constructs. These methods include but are not limited to: 1) Southern analysis or PCR amplification for detecting and determining the structure of the recombinant DNA insert; 2) Northern blot, S1 RNase protection, primer-extension or reverse

transcriptase-PCR amplification for detecting and examining RNA transcripts of the gene constructs; 3) enzymatic assays for detecting enzyme or ribozyme activity, where such gene products are encoded by the gene construct; 4) protein gel electrophoresis, Western blot techniques, immunoprecipitation, or enzyme-linked immunoassays (ELISA), where the gene construct products are proteins. Additional techniques, such as *in situ* hybridization, enzyme staining, and immunostaining, also may be used to detect the presence or expression of the recombinant construct in specific plant organs and tissues. The methods for doing all these assays are well known to those skilled in the art.

Effects of gene manipulation using the methods disclosed herein can be observed by, for example, Northern blots of the RNA (e.g., mRNA) isolated from the tissues of interest. Typically, if the mRNA is present or the amount of mRNA has increased, it can be assumed that the corresponding transgene is being expressed. Other methods of measuring gene and/or encoded polypeptide activity can be used. Different types of enzymatic assays can be used, depending on the substrate used and the method of detecting the increase or decrease of a reaction product or by-product. In addition, the levels of polypeptide expressed can be measured immunochemically, i.e., ELISA, RIA, EIA and other antibody based assays well known to those of skill in the art, such as by electrophoretic detection assays (either with staining or western blotting). As one non-limiting example, the detection of the AAD-1 (aryloxyalkanoate dioxygenase; see WO 2005/107437) and PAT (phosphinothricin-N-acetyl-transferase (PAT)) proteins using an ELISA assay is described in U.S. Patent Publication No. 20090093366 which is herein incorporated by reference in its entirety. The transgene may be selectively expressed in some tissues of the plant or at some developmental stages, or the transgene may be expressed in substantially all plant tissues, substantially along its entire life cycle. However, any combinatorial expression mode is also applicable.

One of skill in the art will recognize that after the exogenous polynucleotide donor sequence is stably incorporated in transgenic plants and confirmed to be operable, it can be introduced into other plants by sexual crossing. Any of a number of standard breeding techniques can be used, depending upon the species to be crossed.

The present disclosure also encompasses seeds of the transgenic plants described above wherein the seed has the transgene or gene construct. The present disclosure further encompasses the progeny, clones, cell lines or cells of the transgenic plants described above wherein the progeny, clone, cell line or cell has the transgene or gene construct inserted into an optimal genomic loci.

Transformed plant cells which are produced by any of the above transformation techniques can be cultured to regenerate a whole plant which possesses the transformed genotype and thus the desired phenotype. Such regeneration techniques rely on manipulation of certain phytohormones in a tissue culture growth medium, typically relying on a biocide and/or herbicide marker which has been introduced together with the desired nucleotide sequences. Plant regeneration from cultured protoplasts is described in Evans, et al., "Protoplasts Isolation and Culture" in Handbook of Plant Cell Culture, pp. 124-176, Macmillian Publishing Company, New York, 1983; and Binding, Regeneration of Plants, Plant Protoplasts, pp. 21-73, CRC Press, Boca Raton, 1985. Regeneration can also be obtained from plant callus, explants, organs, pollens, embryos or parts thereof. Such regeneration techniques are described generally in Klee et al. (1987) Ann. Rev. of Plant Phys. 38:467-486.

A transgenic plant or plant material comprising a nucleotide sequence encoding a polypeptide may in some embodiments exhibit one or more of the following characteristics: expression of the polypeptide in a cell of the plant; expression of a portion of the polypeptide in a plastid of a cell of the plant; import of the polypeptide from the cytosol of a cell of the plant into a plastid of the cell; plastid-specific expression of the polypeptide in a cell of the plant; and/or localization of the polypeptide in a cell of the plant. Such a plant may additionally have one or more desirable traits other than expression of the encoded polypeptide. Such traits may include, for example: resistance to insects, other pests, and disease-causing agents; tolerances to herbicides; enhanced stability, yield, or shelf-life; environmental tolerances; pharmaceutical production; industrial product production; and nutritional enhancements.

In accordance with one embodiment a transgenic maize protoplast cell is provided comprising a recombinant optimal nongenic maize locus. More particularly, a maize protoplast plant cell is provided comprising a DNA of interest inserted into an optimal nongenic maize genomic loci of the maize protoplast cell, wherein said nongenic maize genomic loci is about 1 Kb to about 8.3 Kb in length and lacks any methylated nucleotides. In one embodiment the transgenic maize protoplast cell comprises a DNA of interest inserted into the optimal nongenic maize genomic locus wherein the DNA of interest comprises an analytical domain, and/or an open reading frame. In one embodiment the inserted DNA of interest encodes a peptide and in a further embodiment the DNA of interest comprises at least one gene expression cassette comprising a transgene.

In accordance with one embodiment a transgenic maize plant, maize plant part, or maize plant cell is provided comprising a recombinant optimal nongenic maize locus. More

2014341927 29 May 2017

particularly, a maize plant, maize plant part, or maize plant cell is provided comprising a DNA of interest inserted into an optimal nongenic maize genomic loci of the maize plant, maize plant part, or maize plant cell, wherein said nongenic maize genomic loci is about 1 Kb to about 8.5 Kb in length and lacks any methylated nucleotides. In one embodiment the transgenic maize plant, maize plant part, or maize plant cell comprises a DNA of interest inserted into the optimal nongenic maize genomic locus wherein the DNA of interest comprises an analytical domain, and/or an open reading frame. In one embodiment the inserted DNA of interest encodes a peptide and in a further embodiment the DNA of interest comprises at least one gene expression cassette comprising a transgene.

In accordance with embodiment 1 a recombinant sequence is provided wherein, said recombinant sequence comprises a nucleic acid sequence of at least 1 Kb and having at least 90%, 95% or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), loci_232228_G1 (SEQ ID NO: 4529) and a DNA of interest, wherein the DNA of interest is inserted into said nongenic sequence to produce said recombinant sequence. In accordance with embodiment 2 a recombinant sequence of embodiment 1 is provided wherein said DNA of interest is inserted proximal to a zinc finger target site specific to the nongenic sequence, and more particularly a zinc finger target site of Table 8. In accordance with embodiment 3 a recombinant sequence of embodiment 1 is provided, wherein said DNA of interest is inserted between a pair of zinc finger target sites specific to the nongenic sequence, and more particularly a pair of zinc finger target sites selected from Table 8. In accordance with one embodiment a recombinant sequence is provided wherein, said recombinant sequence consists of a nucleic acid sequence of at least 1 Kb and having 100% sequence identity with a sequence present in a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID

NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), loci_232228_G1 (SEQ ID NO: 4529) and a DNA of interest, wherein the DNA of interest is inserted into said nongenic sequence to produce said recombinant sequence.

In accordance with embodiment 4 a recombinant sequence of any one of embodiments 1, 2 or 3 is provided wherein said DNA of interest comprises an analytical domain. In accordance with embodiment 5 a recombinant sequence of any one of embodiments 1, 2 or 3 is provided wherein said DNA of interest does not encode a peptide. In accordance with embodiment 6 a recombinant sequence of any one of embodiments 1, 2 or 3 is provided wherein said DNA of interest encodes a peptide. In accordance with embodiment 7 a recombinant sequence of aembodiment 6 is provided wherein said DNA of interest comprises a gene expression cassette comprising an insecticidal resistance gene, herbicide tolerance gene, nitrogen use efficiency gene, water use efficiency gene, nutritional quality gene, DNA binding gene, and selectable marker gene. In accordance with embodiment 8 a recombinant sequence of any one of embodiments 1-7 is provided wherein said DNA of interest comprises two or more gene expression cassettes. In accordance with embodiment 9 a recombinant sequence of embodiment 8 is provided wherein two or more of said nongenic sequences each comprise an inserted DNA of interest to produce two or more recombinant sequences wherein the two or more recombinant sequences are located on a same chromosome. In accordance with embodiment 10 a recombinant sequence of any one of embodiments 1-9 is provided wherein said DNA of interest and/or said nongenic sequence are modified during insertion of said DNA of interest into said nongenic sequence. In accordance with embodiment 11 a maize plant, maize plant part, or maize plant cell is provided comprising a recombinant sequence of any one of embodiments 1-10. In accordance with embodiment 12 a method of making a transgenic plant cell comprising a DNA of interest is provided wherein the method comprises selecting a target nongenic maize genomic locus having at least 90%, 95% or 99% sequence identity from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), loci_232228_G1 (SEQ ID NO: 4529),

2014341927 29 May 2017

selecting a site specific nuclease that specifically binds and cleaves said target nongenic maize genomic locus, optionslly one selected from Table 8, introducing said site specific nuclease into a maize plant cell, introducing the DNA of interest into the plant cell, inserting the DNA of interest into said target nongenic maize genomic loci, and selecting transgenic plant cells comprising the DNA of interest targeted to said nongenic locus. In accordance with embodiment 18 a method of making a transgenic plant cell of embodiment 12 wherein said site specific nuclease is selected from the group consisting of a zinc finger nuclease, a CRISPR nuclease, a TALEN, a homing endonuclease or a meganuclease. In accordance with embodiment 19 a method of making a transgenic plant cell of embodiment 12 or 18 wherein said DNA of interest is integrated within said nongenic locus via a homology directed repair integration method. In accordance with embodiment 20 a method of making a transgenic plant cell of embodiment 12 or 18 wherein said DNA of interest is integrated within said nongenic locus via a non-homologous end joining integration method. In accordance with embodiment 21 a method of making a transgenic plant cell of embodiment 12, 18, 19 or 20 wherein two or more of said DNA of interest are inserted into two or more of said target nongenic maize genomic loci, optionally wherein the two or more of said target nongenic maize genomic loci are located on a same chromosome.

In accordance with embodiment 1 a purified nongenic maize sequence of at least 1 Kb and having at least 90%, 95% or 99% sequence identity with a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053), loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), loci_232228_G1 (SEQ ID NO: 4529) is provided. In accordance with one embodiment a purified nongenic maize sequence is provided wherein, said sequence consists of a nucleic acid sequence of at least 1 Kb and having 100% sequence identity with a sequence present in a nongenic sequence selected from the group consisting of loci_137693_G1 (SEQ ID NO:387), loci_265551_G1 (SEQ ID NO:463), loci_128078_G1 (SEQ ID NO:560), loci_168286_G1 (SEQ ID NO:573), loci_3733_G1 (SEQ ID NO:1923), loci_203075_G1 (SEQ ID NO:2030), loci_232484_G1 (SEQ ID NO:2053),

loci_136086_G1 (SEQ ID NO:4425), loci_203704_G1 (SEQ ID NO:2033), loci_127268_G1 (SEQ ID NO:2709), loci_204637_G1 (SEQ ID NO:2731), loci_291068_G1 (SEQ ID NO:3230), loci_232222_G1 (SEQ ID NO:3357), loci_43577_G1 (SEQ ID NO:3428), loci_204726_G1 (SEQ ID NO:424), loci_232228_G1 (SEQ ID NO: 4529)

EXAMPLES

Example 1: Identification of Targetable Genomic Loci in *Zea mays*

The *Zea mays* genome was screened with a bioinformatics approach using specific criteria to select optimal genomic loci for targeting of a polynucleotide donor. The specific criteria used for selecting the genomic loci were developed using considerations for optimal expression of a transgene within the plant genome, considerations for optimal binding of genomic DNA by a site specific DNA-binding protein, and transgenic plant product development requirements. In order to identify and select the genomic loci, genomic and epigenomic datasets of the *Zea mays* genome were scanned using a bioinformatics approach. Screening genomic and epigenomic datasets resulted in select loci which met the following criteria: 1) hypomethylated and greater than 1 Kb in length; 2) targetable *via* site specific nuclease-mediated integration of a polynucleotide donor; 3) agronomically neutral or non-genic; 4) regions from which an integrated transgene can be expressed; and 5) regions with recombination within/around the locus. Accordingly, a total of 5,286 genomic loci (SEQ ID NO:1 – SEQ ID NO:5286) were identified using these specific criteria. The specific criteria are further described in detail below.

Hypomethylation

The *Zea mays* genome was scanned to select optimal genomic loci larger than 1 Kb that were DNA hypomethylated. Genome-wide DNA methylation levels of shoot and root tissue isolated from *Zea mays* c.v. B73 were surveyed via a bioinformatics method using Illumina™/Solexa™ 1G parallel sequencing data. The data were generated from genomic DNA isolated from the above described *Zea mays* plant tissues according to the protocol specified in Wang *et al.*, (2009) Genome-Wide and Organ-Specific Landscapes of Epigenetic Modifications and Their Relationships to mRNA and Small RNA Transcriptomes in Maize. *Plant Cell* 21(4): 1053–1069). These data are available at the NCBI Genbank, Accession No; GEO:GSE15286. The raw sequencing reads were collected and mapped to the *Zea mays* c.v.

B73 reference genome using the Bismark™ mapping software as described in Krueger F, Andrews SR (2011) Bismark: a flexible aligner and methylation caller for Bisulfite-Seq applications. *Bioinformatics* 27: 1571–1572).

The methylation level for each cytosine base in the genome was calculated as a percentage of the number of methylated reads mapping a particular cytosine base location to the total number of reads mapping to that location. The following hypothetical explains how methylation levels were calculated for each base within the *Zea mays* genome. For example, consider that there is a cytosine base at position 100 in chromosome 1 of the *Zea mays* c.v. B73 reference sequence. If there are a total of 20 reads mapped to cytosine base at position 100, and 10 of these reads are methylated, then the methylation level for the cytosine base at position 100 in chromosome 1 is estimated to be 50%. Accordingly, a profile of the methylation level for all of the genomic DNA base pairs obtained from the root and shoot tissue of *Zea mays* was calculated. The reads that could not be correctly mapped to unique locations in the *Zea mays* genome matched repetitive sequences that are widespread in the *Zea mays* genome, and are known in the art to be predominantly methylated.

Using the above described protocol, the methylation levels for the *Zea mays* c.v. B73 genome were measured. As such, regions of the *Zea mays* genome containing methylated reads indicated that these regions of the *Zea mays* genome were methylated. Conversely, the regions of the *Zea mays* genome that were absent of methylated reads indicated these regions of the *Zea mays* genome were non-methylated. The regions of the *Zea mays* genome from the shoot and root tissues that were non-methylated and did not contain any methylated reads are considered as "hypomethylated" regions. To make the root and shoot methylation profiles available for visualization, wiggle plots (http://useast.ensembl.org/info/website/upload/wig.html) were generated for each of the *Zea mays* c.v. B73 chromosomes. A screen-shot sample of a wiggle plot for the DNA methylation profile of root and shoot tissues obtained from *Zea mays* c.v. B73 chromosome number 1 is shown in Figure 1.

The methylation profiles established for the *Zea mays* c.v. B73 root and shoot tissues, as described above, were combined into a consensus methylation profile and used to identify hypomethylated regions in the *Zea mays* c.v. B73 genome. The resulting *Zea mays* genomic consensus methylation profile was scanned to identify genomic locations without evidence of methylation, i.e. does not contain mapped methylated reads. Stretches of genomic DNA longer than 100 bp that were hypomethylated were identified. The specific length of each of these hypomethylated regions was calculated by determining the total number of base pairs between

two genomic regions that showed evidence of methylation. Table 1 summarizes the identified hypomethylated regions. In addition, a distribution of the lengths of the hypomethylated regions of the *Zea mays* c.v. B73 genome is shown in Figure 2.

Table 1. Hypomethylation profile of *Zea mays* c.v. B73 genome.

Total *Zea mays* c.v. B73 genome size	~2.1 Gb
Total combined length of hypomethylated region	~663 Mb (31.5% of the *Zea mays* c.v. B73 genome)
Number of hypomethylated regions above 100 Bp	1,564,310
Number of hypomethylated regions above 1 Kb	130,917
Number of hypomethylated regions above 2 Kb	47,045
Number of hypomethylated regions above 10 Kb	206
Minimum length of hypomethylated region	100 Bp
Maximum length of hypomethylated region	90,202 Bp

These hypomethylated regions of the *Zea mays* c.v. B73 genome were further characterized to identify and select specific genomic loci as the methylation free context of these regions indicated the presence of open chromatin. As such, all subsequent analyses were conducted on the identified hypomethylated regions.

Targetability

The hypomethylated sites identified in the *Zea mays* c.v. B73 were further analyzed to determine which sites were targetable *via* site specific nuclease-mediated integration of a polynucleotide donor. The *Zea mays* genome is known in the art to contain long stretches of highly repetitive DNA that are methylated and have high levels of sequence duplication. Annotation information of known repetitive regions in the *Zea mays* genome was collected from the Maize Genome Database (available at http://www.maizegdb.org/, and Lawrence, CJ et al (2008) MaizeGDB: The Maize Model Organism Database for Basic, Translational, and Applied Research. Int J Plant Genomics. 2008:496957).

Accordingly, the hypomethylated sites identified above were screened to remove any sites that aligned with known repetitive regions annotated on the maize genome. The remaining hypomethylated sites that passed this first screen were subsequently scanned using a BLAST™ based homology search of a maize genomic database *via* the NCBI BLAST™ software (version

2.2.23) run using default parameter settings (Stephen F. Altschul *et al* (1997) Gapped BLAST and PSI-BLAST: a new generation of protein database search programs. *Nucleic Acids Res.* 25:3389-3402). As a result of the BLAST™ screen, any hypomethylated sites that had significant matches elsewhere in the genome, with sequence alignment coverage of over 40%, were removed from further analyses.

Agronomically Neutral or Nongenic

The hypomethylated sites identified in the *Zea mays* c.v. B73 were further analyzed to determine which sites were agronomically neutral or nongenic. As such, the hypomethylated sites described above were screened to remove any sites that overlapped or contained any known or predicted endogenous *Zea mays* c.v. B73 coding sequences. For this purpose, annotation data of known genes and mapping information of expressed sequence tag (EST) data were collected from Maize Genomic Database (available at www.maizegdb.org and Monaco, M., et al., Maize Metabolic Network Construction and Transcriptome Analysis. doi:10.3835/plantgenome2012.09.0025; Posted online 23 Jan. 2013). Any genomic region immediately 2 Kb upstream and 1 Kb downstream to an open reading frame were also considered. These upstream and downstream regions may contain known or unknown conserved regulatory elements that are essential for gene function. The hypomethylated sites previously described above were analyzed for the presence of the known genes (including the 2 Kb upstream and 1 Kb downstream regions) and ESTs. Any hypomethylated sites that aligned with or overlapped with known genes (including the 2 Kb upstream and 1 Kb downstream regions) or ESTs were removed from downstream analysis.

Expression

The hypomethylated sites identified in the *Zea mays* c.v. B73 were further analyzed to determine which sites were within proximity to an expressed maize gene. The transcript level expression of *Zea mays* genes was measured by analyzing transcriptome profiling data generated from *Zea mays* c.v. B73 root and shoot tissues using RNAseq™ technology as described in Wang *et al.*, (2009) Genome-Wide and Organ-Specific Landscapes of Epigenetic Modifications and Their Relationships to mRNA and Small RNA Transcriptomes in Maize. *Plant Cell.* 21(4): 1053–1069. For each hypomethylated site, an analysis was completed to identify any annotated genes present within a 40 Kb region in proximity of the hypomethylated site, and an average expression level of the annotated gene(s) located in proximity to the

hypomethylated site. Hypomethylated sites located greater than 40 Kb from an annotated gene with a non-zero average expression level were determined to not be proximal to an expressed *Zea mays* gene and were removed from further analyses.

Recombination

The hypomethylated sites identified in the *Zea mays* c.v. B73 were further analyzed to determine which sites had evidence of recombination and could facilitate introgression of the optimal genomic loci into other lines of *Zea mays* via conventional breeding. Diverse *Zea mays* genotypes are routinely crossed during conventional breeding to develop new and improved *Zea mays* lines containing traits of agronomic interest. As such, agronomic traits that are introgressed into optimal genomic loci within a *Zea mays* line via plant-mediated transformation of a transgene should be capable of further being introgressed into other *Zea mays* lines, especially elite lines, *via* meiotic recombination during conventional plant breeding. The hypomethylated sites described above were screened to identify and select sites that possessed some level of meiotic recombination. Any hypomethylated sites that were present within chromosomal regions characterized as recombination "cold-spots" were identified and removed. In *Zea mays*, these cold spots were defined using a high resolution marker dataset generated from multiple mapping populations. (Jafar Mammadov, Wei Chen, Anastasia Chueva, Karthik Muthuraman, Ruihua Ren, David Meyer, and Siva Kumpatla. 2011. Distribution of Recombinant Frequencies across the Maize Genome. 52nd Annual Maize Genetics Conference).

The meiotic recombination frequencies between any pair of *Zea mays* genomic markers across a chromosome were calculated based on the ratio of the genetic distance between markers (in centimorgan (cM)) to the physical distance between the markers (in megabases (Mb)). For example, if the genetic distance between a pair of markers was 1 cM, and the physical distance between the same pair of markers was 2 Mb, then the calculated recombination frequency was determined to be 0.5 cM/Mb. For each hypomethylated site identified above, a pair of markers at least 1 Mb apart was chosen and the recombination frequency was calculated. Deployment of this method was used to calculate the recombination frequency of the hypomethylated sites. Any hypomethylated sites with a recombination frequency of 0.00041 cM/Mb were identified and removed from further analysis. The remaining hypomethylated regions comprising a recombination frequency greater than 0.00041 cM/Mb were selected for further analysis.

Identification of Optimal Genomic Loci

Application of the selection criteria described above resulted in the identification of a total of 52,885 optimal genomic loci from the *Zea mays* genome. Table 2 summarizes the lengths of the identified optimal genomic loci. These optimal genomic loci possess the following characteristics: 1) hypomethylated genomic loci greater than 1Kb in length; 2) genomic loci that are targetable *via* site specific nuclease-mediated integration of a polynucleotide donor; 3) genomic loci that are agronomically neutral or nongenic; 4) genomic loci from which a transgene can be expressed; and 5) evidence of recombination within the genomic loci. Of all of the optimal genomic loci described in Table 2, only the optimal genomic loci that were greater than 1 Kb were further analyzed and utilized for targeting of a donor polynucleotide sequence. The sequences of these optiml genomic loci are disclosed as SEQ ID NO:1 – SEQ ID NO:5,286. Collectively, these optimal genomic loci are locations within the *Zea mays* genome that can be targeted with a donor polynucleotide sequence, as further demonstrated herein below.

Table 2. Lists the size range of optimal genomic loci identified in the *Zea mays* genome that are hypomethylated, show evidence of recombination, targetable, agronomically neutral or nongenic, and are in proximity to an expressed endogenous gene.

Number of optimal genomic loci larger than 100 Bp	52,885
Number of optimal genomic loci larger than 1 Kb	5,286
Number of optimal genomic loci larger than 2 Kb	770
Number of optimal genomic loci larger than 4 Kb	16

Example 2: F-Distribution and Principal Component Analysis to Cluster Optimal Genomic Loci From *Zea mays*

The 5,286 identified optimal genomic loci (SEQ ID NO: 1-SEQ ID NO: 5,286) were further analyzed using the F-distribution and Principal Component Analysis statistical methods to define a representative population and clusters for grouping of the optimal genomic loci.

F-Distribution Analysis

The identified 5,286 optimal genomic loci were statistically analyzed using a continuous probability distribution statistical analysis. As an embodiment of the continuous probability

distribution statistical analysis, an F-distribution test was completed to determine a representative number of optimal genomic loci. The F-distribution test analysis was completed using equations and methods known by those with skill in the art. For more guidance, the F-distribution test analysis as described in K.M Remund, D. Dixon, DL. Wright and LR. Holden. Statistical considerations in seed purity testing for transgenic traits. Seed Science Research (2001) 11, 101–119, herein incorporated by reference, is a non-limiting example of an F-distribution test. The F-distribution test assumes random sampling of the optimal genomic loci, so that any non-valid loci are evenly distributed across the 5,286 optimal genomic loci, and that the number of optimal genomic loci sampled is 10% or less of the total population of 5,286 optimal genomic loci.

The F-distribution analysis indicated that 72 of the 5,286 optimal genomic loci provided a representative number of the 5,286 optimal genomic loci, at a 95% confidence level. Accordingly, the F-distribution analysis showed that if 72 optimal genomic loci were tested and all were targetable with a donor polynucleotide sequence, then these results would indicate that 96% or more of the 5,286 optimal genomic loci are positive at the 95% confidence level. The best estimate of validating the total percentage of the 5,286 optimal genomic loci would be if 100% of the 72 tested optimal genomic loci were targetable. Accordingly, 96% is actually the lower bound of the true percent validated at the 95% confidence level. This lower bound is based on the 0.95 quantile of the F-distribution, for the 95% confidence level. (Remund K, Dixon D, Wright D, and Holden L. Statistical considerations in seed purity testing for transgenic traits. *Seed Science Research* (2001) 11, 101–119).

Principal Component Analysis

Next, a Principal Component Analysis (PCA) statistical method was completed to further assess and visualize similarities and differences of the data set comprising the 5,286 identified optimal genomic loci to enable sampling of diverse loci for targeting validation. The PCA involves a mathematical algorithm that transforms a larger number of correlated variables into a smaller number of uncorrelated variables called principal components.

The PCA was completed on the 5,286 identified optimal genomic loci by generating a set of calculable features or attributes that could be used to describe the 5,286 identified optimal genomic loci. Each feature is numerically calculable and is defined specifically to capture the genomic and epigenomic context of the 5,286 identified optimal genomic loci. A set of 10

features for each *Zea mays* optimal genomic loci was identified and are described in greater detail below.

1. Length of the optimal genomic loci
    a. The length of the optimal genomic loci in this data set ranged from a minimum of 1,000 Bp to a maximum of 8,267 Bp.
2. Recombination frequency in a 1 MB region around the optimal genomic loci
    a. In maize, recombination frequency for a chromosomal location was defined using an internal high resolution marker dataset generated from multiple mapping populations (Jafar Mammadov, Wei Chen, Anastasia Chueva, Karthik Muthuraman, Ruihua Ren, David Meyer, and Siva Kumpatla. 2011. Distribution of Recombinant Frequencies across the Maize Genome. 52nd Annual Maize Genetics Conference).
    b. Recombination frequencies between any pairs of markers across the chromosome were calculated based on the ratio of the genetic distance between markers (in centimorgan (cM)) to the physical distance between the markers (in Mb). For example, if the genetic distance between a pair of markers is 1 cM and the physical distance between the same pairs of markers is 2 Mb, the calculated recombination frequency is 0.5 cM/Mb. For each optimal genomic loci, a pair of markers at least 1 Mb apart was chosen and the recombination frequency was calculated in this manner. These recombination values ranged from a minimum of 0.00041 cM/Mb to a maximum of 62.42 cM/Mb.
3. Level of optimal genomic loci sequence uniqueness
    a. For each optimal genomic loci, the nucleotide sequence of the optimal genomic loci was scanned against the *Zea mays* c.v. B73 genome using a BLAST™ based homology search using the NCBI BLAST™ software (version 2.2.23) run using the default parameter settings (Stephen F. Altschul et al (1997), "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", Nucleic Acids Res. 25:3389-3402). As these optimal genomic loci sequences are identified from the *Zea mays* c.v. B73 genome, the first BLAST™ hit identified through this search represents the *Zea mays* c.v. B73 sequence itself. The second BLAST™ hit for each optimal genomic loci sequence was identified and the alignment coverage (represented as the percent of the optimal genomic loci covered by the BLAST™ hit) of the hit was used as a measure of

uniqueness of the optimal genomic loci sequence within the *Zea mays* genome. These alignment coverage values for the second BLAST™ hit ranged from a minimum of 0% to a maximum of 39.98% sequence identity. Any sequences that aligned at higher levels of sequence identity were not considered.

4. Distance from the optimal genomic loci to the closest gene in its neighborhood
    a. Gene annotation information and the location of known genes in the *Zea mays* genome were extracted from Maize Genome Database (available at, www.maizegdb.org and Monaco, M., et al., Maize Metabolic Network Construction and Transcriptome Analysis. doi:10.3835/plantgenome2012.09.0025; Posted online 23 Jan. 2013). For each optimal genomic loci, the closest annotated gene, considering both upstream and downstream locations, was identified and the distance between the optimal genomic loci sequence and the gene was measured (in Bp). For example, if a optimal genomic locus is located in chromosome 1 from position 500 to position 1500, and the closest gene to this optimal genomic locus is located in chromosome 1 from position 2000 to position 3000, the distance from the optimal genomic loci to this closest gene is calculated to be 500 Bp. These values for all 5,286 of the optimal genomic loci dataset ranged from a minimum of 1001 Bp to a maximum of 34,809 Bp.
5. GC % in the optimal genomic loci sequence
    a. For each optimal genomic locus, the nucleotide sequence was analyzed to estimate the number of Guanine and Cytosine bases present. This count was represented as a percentage of the sequence length of each optimal genomic locus and provides a measure for GC%. These GC% values for the maize optimal genomic loci dataset range from 25.17% to 68.3%.
6. Number of genes in a 40 Kb neighborhood around the optimal genomic loci sequence
    a. Gene annotation information and the location of known genes in the *Zea mays* c.v. B73 genome were extracted from Maize Genome Database. For each of the 5,286 optimal genomic loci sequence, a 40 Kb window around the optimal genomic loci sequence was defined and the number of annotated genes with locations overlapping this window was counted. These values ranged from a minimum of 1 gene to a maximum of 9 genes within the 40 Kb neighborhood.
7. Average gene expression in a 40 Kb neighborhood around the optimal genomic loci

a. Transcript level expression of maize genes was measured by analyzing available transcriptome profiling data generated from *Zea mays* c.v. B73 root and shoot tissues using RNAseq™ technology (Mortazavi, A. *et al.*, Mapping and quantifying mammalian transcriptomes by RNA-Seq. *Nat. Methods*. 5, 621–628 (2008); Wang *et al.*, Genome-Wide and Organ-Specific Landscapes of Epigenetic Modifications and Their Relationships to mRNA and Small RNA Transcriptomes in Maize. *Plant Cell*. 2009 April; 21(4): 1053–1069). Gene annotation information and the location of known genes in the *Zea mays* c.v. B73 genome were extracted from Maize Genome Database For each optimal genomic locus, annotated genes within the *Zea mays* c.v. B73 genome that were present in a 40 Kb neighborhood around the optimal genomic loci were identified. Expression levels for each of the genes were extracted from the transcriptome profiles described in the above referenced citations and an average gene expression level was calculated. Expression values of all genes within the genome of *Zea mays* vary greatly. The minimum expression value is 0 and the maximum expression value is 2511.397, with a mean expression value of 18.489 and a median expression value of 3.604. The average expression values for all of the 5,286 optimal genomic loci dataset ranged from a minimum of 0.00369 to a maximum of 2233.06.

8. Level of nucleosome occupancy around the optimal genomic loci
   a. Understanding the level of nucleosome occupancy for a particular nucleotide sequence provides information about chromosomal functions and the genomic context of the sequence. The NuPoP™ statistical package was used to predict the nucleosome occupancy and the most probable nucleosome positioning map for any size of genomic sequences (Xi, L., Fondufe-Mittendor, Y., Xia, L., Flatow, J., Widom, J. and Wang, J.-P., Predicting nucleosome positioning using a duration Hidden Markov Model, *BMC Bioinformatics*, 2010, doi:10.1186/1471-2105-11-346.). For each of the 5,286 optimal genomic loci, the nucleotide sequence was submitted for analysis with the NuPoP™ software and a nucleosome occupancy score was calculated. These nucleosome occupancy scores for the maize optimal genomic loci dataset ranged from a minimum of 0 to a maximum of 0.962.
9. Relative location within the chromosome (proximity to centromere)

a. A centromere is a region on a chromosome that joins two sister chromatids. The portions of a chromosome on either side of the centromere are known as chromosomal arms. Genomic locations of centromeres on all 10 Maize chromosomes were identified in the published *Zea mays* c.v. B73 reference sequence (Schnable, P., *et al.*, (2009) The B73 maize genome: complexity, diversity and dynamics. *Science*, 326(5956): 1112-1115). Information on the position of the centromere in each of the *Zea mays* chromosomes and the lengths of the chromosome arms was extracted from Maize Genome Database. For each optimal genomic locus, the genomic distance from the optimal genomic locus sequence to the centromere of the chromosome that it is located on, is measured (in Bp). The relative location of optimal genomic loci within the chromosome is represented as the ratio of its genomic distance to the centromere relative to the length of the specific chromosomal arm that it lies on. These relative location values for the maize optimal genomic loci dataset ranged from a minimum of 0.00373 to a maximum of 0.99908 ratio of genomic distance.

10. Number of optimal genomic loci in a 1 Mb region

a. For each optimal genomic loci, a 1 Mb genomic window around the optimal genomic loci location was defined and the number of other, additional optimal genomic loci present within or overlapping this region were calculated, including the optimal genomic loci under consideration. The number of optimal genomic loci in a 1 Mb ranged from a minimum of 1 to a maximum of 22.

All of the 5,286 optimal genomic loci were analyzed using the features and attributes described above. The results or values for the score of the features and attributes of each optimal genomic locus are further described in Table 3 (herein incorporated by reference as a separate electronic filing). The resulting dataset was used in the PCA statistical method to cluster the 5,286 identified optimal genomic loci into clusters. During the clustering process, after estimating the "p" principle components of the optimal genomic loci, the assignment of the optimal genomic loci to one of the 32 clusters proceeded in the "p" dimensional Euclidean space. Each of the "p" axes was divided into "k" intervals. Optimal genomic loci assigned to the same interval were grouped together to form clusters. Using this analysis, each PCA axis was divided into two intervals, which was chosen based on *a priori* information regarding the number of clusters required for experimental validation. All analysis and the visualization of the

resulting clusters were carried out with the Molecular Operating Environment™ (MOE) software from Chemical Computing Group Inc. (Montreal, Quebec, Canada).

The PCA approach was used to cluster the set of 5,286 identified optimal genomic loci into 32 distinct clusters based on their feature values, described above. During the PCA process, five principal components (PC) were generated, with the top three PCs containing about 90% of the total variation in the dataset (Table 4). These three PCAs were used to graphically represent the 32 clusters in a three dimensional plot (Figure 3). After the clustering process, was completed, one representative optimal genomic locus was chosen from each cluster. This was performed by choosing a select optimal genomic locus, within each cluster, that was closest to the centroid of that cluster (Table 4). The chromosomal locations of the 32 representative optimal genomic loci are uniformly distributed among the 10 maize chromosomes and are not biased toward any particular genomic location, as shown in Figure 4.

Table 4. Description of the 32 maize representative optimal genomic loci identified from the PCA

Optimal Genomic Loci Name	Genomic Location	Length (Bp)	Cluster Number	SEQ ID NO:
optimal_loci_59517_G1	chr2:43352132..43353146	1015	1	1
optimal_loci_159525_G1	chr4:172518643..172519712	1070	2	199
optimal_loci_9811_G1	chr1:52159463..52161841	2379	3	365
optimal_loci_7507_G1	chr1:39334848..39337271	2424	4	543
optimal_loci_178978_G1	chr5:35776311..35777560	1250	5	687
optimal_loci_285621_G1	chr8:118321357..118322528	1172	6	875
optimal_loci_221721_G1	chr6:91309097..91311722	2626	7	1089
optimal_loci_83937_G1	chr2:192746622..192748862	2241	8	1233
optimal_loci_37146_G1	chr1:223833176..223834563	1388	9	1369
optimal_loci_156393_G1	chr4:154313884..154315253	1370	10	1571
optimal_loci_343678_G1	chr10:113837795..113839503	1709	11	1795
optimal_loci_60209_G1	chr2:47513705..47515145	1441	12	1980
optimal_loci_282323_G1	chr8:100763204..100764398	1195	13	2171
optimal_loci_64542_G1	chr2:72203716..72205045	1330	14	2349
optimal_loci_162531_G1	chr4:189896984..189899332	2349	15	2557
optimal_loci_337001_G1	chr10:77188319..77190007	1689	16	2693
optimal_loci_66202_G1	chr2:83483805..83484909	1105	17	2855
optimal_loci_185454_G1	chr5:80270170..80271254	1085	18	3004
optimal_loci_239863_G1	chr7:14997553..14999296	1744	19	3151
optimal_loci_257541_G1	chr7:125978470..125980969	2500	20	3289
optimal_loci_217939_G1	chr6:67227678..67228708	1031	21	3455
optimal_loci_326869_G1	chr10:12348441..12349499	1059	22	3586
optimal_loci_31710_G1	chr1:194939396..194943360	3965	23	3731
optimal_loci_81941_G1	chr2:181418576..181421181	2606	24	3849
optimal_loci_198387_G1	chr5:164712378..164713567	1190	25	3981
optimal_loci_197372_G1	chr5:158680601..158681681	1081	26	4192

optimal_loci_106202_G1	chr3:85647138..85648635	1498	27	4401
optimal_loci_232228_G1	chr6:144719567..144723469	3903	28	4529
optimal_loci_244324_G1	chr7:40299412..40300584	1173	29	4646
optimal_loci_157315_G1	chr4:158710709..158711983	1275	30	4836
optimal_loci_137489_G1	chr4:29898267..29899725	1459	31	5046
optimal_loci_31764_G1	chr1:195178584..195182163	3580	32	5162

Final Selection of 72 Genomic Loci for Targeting of a Polynucleotide Donor Polynucleotide Sequence

A total of 72 genomic loci were identified and selected for targeting with a donor polynucleotide sequence from the 5,286 genomic loci that were clustered within 32 distinct clusters. For each of the 32 clusters, a representative genomic locus (32 representative genomic loci that were closest to the centroid of that cluster as described above in Table 4) and an additional genomic locus within each cluster were chosen. The additional optimal genomic loci were selected by first screening all of the 5,286 selected optimal genomic sequences against a whole genome database consisting of genomic DNA sequence data for both *Zea mays* c.v. Hi-II (targeting screening line) and *Zea mays* c.v. B104 (transformation line) to determine the coverage (how many optimal genomic loci were present in both genomes) and percentage of sequence identity in the genome from both lines. The additional optimal genomic loci with 100% coverage (the entire sequence length of the optimal loci aligned between both genomes) and 100% identity in both the Hi-II and B104 genomic databases were selected for targeting validation (Figure 5). Comparatively, a small number of the representative genomic loci had sequence identity that was less than 100% coverage and identity in both the Hi-II and B104 genomic database (Figure 5). Other criteria such as genomic loci size, extent of uniqueness, GC% content and chromosomal distribution of the optimal genomic loci were also taken into consideration in selecting the additional optimal genomic loci. The chromosomal location of the 72 selected optimal genomic loci and the specific genomic configuration of each *Zea mays* optimal genomic loci are shown in Figure 6 and Table 5, respectively.

Table 5. Description of the maize selected optimal genomic loci chosen for targeting validation. From these optimal genomic loci listed in this table, 72 maize optimal genomic loci are representative of the identified total of 5,286 maize selected optimal genomic loci.

Optimal Genomic Loci Name	Genomic Location	Length (bp)	Cluster Number	SEQ ID NO:
optimal_loci_59517_G1	chr2:43352132..43353146	1015	1	1
optimal_loci_25001_G1	chr1:151371224..151372260	1037	1	100

optimal_loci_112632_G1	chr3:128098856..128100257	1402	2	203
optimal_loci_28905_G1	chr1:177037718..177038919	1202	2	295
optimal_loci_129164_G1	chr3:221246027..221247542	1516	3	384
optimal_loci_204726_G1	chr5:200665730..200670667	4938	3	424
optimal_loci_2425_G1	chr1:12810845..12814490	3646	3	451
optimal_loci_122036_G1	chr3:184608166..184609697	1532	4	547
optimal_loci_5735_G1	chr1:29190279..29192844	2566	4	671
optimal_loci_178978_G1	chr5:35776311..35777560	1250	5	687
optimal_loci_288388_G1	chr8:133290442..133291481	1040	5	781
optimal_loci_60310_G1	chr2:47967092..47968271	1180	5	843
optimal_loci_285621_G1	chr8:118321357..118322528	1172	6	875
optimal_loci_243330_G1	chr7:34630402..34631577	1176	6	967
optimal_loci_127038_G1	chr3:210603611..210605198	1588	7	1107
optimal_loci_262784_G1	chr7:155767046..155769049	2004	7	1147
optimal_loci_344662_G1	chr10:119131667..119133955	2289	7	1190
optimal_loci_153894_G1	chr4:139979597..139981225	1629	8	1252
optimal_loci_28771_G1	chr1:176062139..176063611	1473	8	1300
optimal_loci_1098_G1	chr1:5582601..5583834	1234	9	1371
optimal_loci_97772_G1	chr3:30209253..30210607	1355	9	1569
optimal_loci_156393_G1	chr4:154313884..154315253	1370	10	1571
optimal_loci_236662_G1	chr6:165975716..165977010	1295	10	1663
optimal_loci_139485_G1	chr4:42804231..42805751	1521	11	1822
optimal_loci_301175_G1	chr9:20325171..20326621	1451	11	1906
optimal_loci_152337_G1	chr4:130033092..130035481	2390	12	2003
optimal_loci_202616_G1	chr5:188822901..188824814	1914	12	2027
optimal_loci_203704_G1	chr5:194836270..194840217	3948	12	2033
optimal_loci_282323_G1	chr8:100763204..100764398	1195	13	2171
optimal_loci_262782_G1	chr7:155759080..155760097	1018	13	2256
optimal_loci_64542_G1	chr2:72203716..72205045	1330	14	2349
optimal_loci_236455_G1	chr6:164795991..164797027	1037	14	2428
optimal_loci_162531_G1	chr4:189896984..189899332	2349	15	2557
optimal_loci_301774_G1	chr9:23468085..23470278	2194	15	2632
optimal_loci_344663_G1	chr10:119143167..119144795	1629	15	2649
optimal_loci_337001_G1	chr10:77188319..77190007	1689	16	2693
optimal_loci_204637_G1	chr5:200298202..200301414	3213	16	2731
optimal_loci_238100_G1	chr7:4899227..4900708	1482	16	2753
optimal_loci_66202_G1	chr2:83483805..83484909	1105	17	2855
optimal_loci_264359_G1	chr7:163504241..163505487	1247	17	2934
optimal_loci_282653_G1	chr8:102704765..102705924	1160	18	3086
optimal_loci_80282_G1	chr2:173420834..173421870	1037	18	3139
optimal_loci_291068_G1	chr8:148277606..148279985	2380	19	3230
optimal_loci_56395_G1	chr2:24801482..24803132	1651	19	3270
optimal_loci_200497_G1	chr5:176879526..176881345	1820	20	3334
optimal_loci_232222_G1	chr6:144700575..144702126	1552	20	3357

optimal_loci_43577_G1	chr1:256469704..256472666	2963	20	3428
optimal_loci_5607_G1	chr1:28613065..28615113	2049	20	3435
optimal_loci_114664_G1	chr3:140106950..140108061	1112	21	3457
optimal_loci_228254_G1	chr6:126085629..126086823	1195	21	3497
optimal_loci_120993_G1	chr3:179419306..179420357	1052	22	3593
optimal_loci_53137_G1	chr2:7304197..7305496	1300	22	3702
optimal_loci_31710_G1	chr1:194939396..194943360	3965	23	3731
optimal_loci_344664_G1	chr10:119144946..119146850	1905	23	3815
optimal_loci_81941_G1	chr2:181418576..181421181	2606	24	3849
optimal_loci_321514_G1	chr9:140776147..140777584	1438	24	3939
optimal_loci_198387_G1	chr5:164712378..164713567	1190	25	3981
optimal_loci_301180_G1	chr9:20328932..20330129	1198	25	4113
optimal_loci_197372_G1	chr5:158680601..158681681	1081	26	4192
optimal_loci_348776_G1	chr10:142097590..142098803	1214	26	4350
optimal_loci_244439_G1	chr7:41068791..41070248	1458	27	4458
optimal_loci_348258_G1	chr10:139297032..139298517	1486	27	4487
optimal_loci_232228_G1	chr6:144719567..144723469	3903	28	4529
optimal_loci_322501_G1	chr9:146078534..146080201	1668	28	4610
optimal_loci_244324_G1	chr7:40299412..40300584	1173	29	4646
optimal_loci_97232_G1	chr3:27463016..27464143	1128	29	4832
optimal_loci_157315_G1	chr4:158710709..158711983	1275	30	4836
optimal_loci_282499_G1	chr8:101771408..101772767	1360	30	4953
optimal_loci_155031_G1	chr4:146991391..146993137	1747	31	5060
optimal_loci_301773_G1	chr9:23465509..23467762	2254	31	5110
optimal_loci_283161_G1	chr8:105321958..105323571	1614	32	5213
optimal_loci_55524_G1	chr2:20099003..20100485	1483	32	5264
optimal_loci_127268_G1	chr3:211767898..211770046	2149	16	2709
optimal_loci_136086_G1	chr4:22531506..22534989	3484	27	4425
optimal_loci_232484_G1	chr6:146122164..146125580	3417	12	2053
optimal_loci_203075_G1	chr5:191370802..191374627	3826	12	2030
optimal_loci_3733_G1	chr1:19232372..19235997	3626	11	1923
optimal_loci_168286_G1	chr4:219987223..219990695	3473	4	573
optimal_loci_128078_G1	chr3:215482594..215485640	3047	4	560
optimal_loci_265551_G1	chr7:170127188..170130734	3547	3	463
optimal_loci_137693_G1	chr4:31118968..31122359	3392	3	387

A large suite of 5,286 genomic locations have been identified in the *Zea mays* genome as optimal genomic loci for targeting with a donor polynucleotide sequence using precision genome engineering technologies. A statistical analysis approach was deployed to group the 5,286 selected genomic loci into 32 clusters with similar genomic contexts, and to identify a subset of 72 selected genomic loci representative of the set of 5,286 selected genomic loci. The 72 representative loci were validated as optimal genomic loci via targeting with a donor

polynucleotide sequence. By performing the PCA statistical analysis for the numerical values generated for the ten sets of features or attributes that are described above, the ten features or attributes were computed into PCA components of fewer dimensions. As such, PCA components were reduced into five dimensions that are representative of the ten features or attributes described above (Table 6). Each PCA component is equivalent to a combination of the ten features or attributes described above. From these PCA components comprising five dimensions, as computed using the PCA statistical analysis, the 32 clusters were determined.

14764-231316

Table 6. The five PCA components (PCA1, PCA2, PCA3, PCA4, and PCA5) that define each of the 32 clusters and the sequences (SEQ ID NO:1 –SEQ ID NO:5286) which make up each cluster. These five dimensions are representative of the ten features or attributes described above that were used to identify the optimal genomic loci. The minimum (Min), mean, median and maximum (Max) values for each PCA component are provided.

		Cluster1 (SEQ ID NO:1 -- SEQ ID NO:198)	Cluster2 (SEQ ID NO:199 -- SEQ ID NO:364)	Cluster3 (SEQ ID NO:365 -- SEQ ID NO:542)	Cluster4 (SEQ ID NO: 543-- SEQ ID NO:686)	Cluster5 (SEQ ID NO:687- - SEQ ID NO:874)	Cluster6 (SEQ ID NO:875 - - SEQ ID NO:1088)	Cluster7 (SEQ ID NO:1089 -- SEQ ID NO:1232)	Cluster8 (SEQ ID NO:1233 -- SEQ ID NO:1368)	Cluster9 (SEQ ID NO:1369 -- SEQ ID NO:1570)	Cluster10 (SEQ ID NO:1571 -- SEQ ID NO:1794)	Cluster11 (SEQ ID NO: 1795 -- SEQ ID NO:1979)	Cluster12 (SEQ ID NO: 1980 -- SEQ ID NO:2170)	Cluster13 (SEQ ID NO: 2171-- SEQ ID NO:2348)
PCA 1	Min	-0.38899	-0.93177	-0.39537	-0.93241	-0.39582	-0.93174	-0.38719	-0.93217	-0.38101	-0.93175	-0.39194	-0.93253	-0.38415
	Mean	0.73994	0.70291	0.79790	0.72366	0.69609	-0.70419	0.75999	-0.69832	0.79994	-0.71434	0.77029	-0.73093	0.65514
	Median	0.44473	-0.72051	0.58197	0.72065	0.41229	-0.72032	0.46869	-0.71729	0.54692	-0.72051	0.34742	-0.72075	0.31035
	Max	3.01665	0.40085	3.06313	0.40153	3.82376	-0.40276	3.00728	-0.40162	4.26043	-0.41456	3.07238	-0.402	3.05451
PCA 2	Min	0.20045	0.21100	-9.82023	5.15632	0.20059	0.23336	-4.04364	-4.90205	0.20494	0.20506	-5.36888	-6.75555	0.20683
	Mean	0.60795	0.65168	0.77754	0.94886	0.62733	0.64049	-0.7257	-0.69802	0.61334	0.63953	-1.0031	-1.01406	0.61808
	Median	0.61604	0.69582	-0.4007	0.60703	0.65472	0.66268	-0.5115	-0.48357	0.64270	0.67324	-0.52447	-0.66079	0.63948
	Max	0.94121	0.95060	0.18831	0.19363	0.93384	0.95102	0.19471	0.19361	0.95002	0.95666	0.19786	0.19368	0.95017
PCA 3	Min	-0.19912	-0.19998	-0.19915	-0.19817	-0.3145	-0.32531	-0.30392	-0.31372	-0.19958	-0.19843	-0.19868	-0.19755	-0.31583
	Mean	0.25154	0.34875	0.15307	0.23056	-0.26578	-0.28236	-0.25128	-0.26153	0.24465	0.25742	0.12111	0.22983	-0.2653
	Median	-0.02809	-0.04129	-0.02763	-0.01853	-0.26978	-0.28873	-0.2537	-0.26577	-0.02402	-0.02638	-0.05745	-0.02841	-0.26895
	Max	6.48111	34.9050	11.2455	10.6752	-0.20057	-0.20094	-0.20105	-0.20248	5.73918	11.2077	3.38454	16.9224	-0.20086

14764-232316

PCA 4	Min	-0.39542	-0.39731	-0.39369	-0.39886	-0.37619	-0.37126	-0.39716	-0.39684	-1.25027	-1.22084	-1.21449	-1.13853	-1.24332
	Mean	-1.03065	-0.94334	-0.83983	-0.72857	-1.08865	-1.12548	-0.83798	-0.86737	-0.881	-0.83045	-0.8525	-0.80304	-0.87789
	Median	-0.95657	-0.84329	-0.66454	-0.33413	-1.02571	-1.06296	-0.49167	-0.59831	-0.87578	-0.82491	-0.84403	-0.81514	-0.89279
	Max	-2.82969	-2.82634	-2.89030	-2.84848	-2.87596	-2.89113	-2.86978	-2.79200	-0.41074	-0.40079	-0.43247	-0.41111	-0.4172
PCA 5	Min	-0.19722	-0.19899	-0.18939	-0.1958	-0.1959	-0.1976	-0.19078	-0.19095	-0.19058	-0.18616	-0.19615	-0.18815	-0.196
	Mean	-0.69288	-0.75726	-0.64203	-0.69849	-0.68265	-0.69397	-0.66165	-0.61872	-0.84803	-0.77689	-0.82206	-0.79153	-0.82428
	Median	-0.53791	-0.60913	-0.43872	-0.58786	-0.50032	-0.51461	-0.45756	-0.43232	-0.77586	-0.59967	-0.80215	-0.73028	-0.79593
	Max	-2.93832	-4.20543	-2.76582	-2.80897	-4.14041	-2.99552	-3.44651	-2.71729	-2.76030	-2.59351	-2.35178	-2.94705	-2.67123

14764-232316

		Cluster14 (SEQ ID NO: 2349 -- SEQ ID NO:2556)	Cluster15 (SEQ ID NO: 2557 -- SEQ ID NO:2692)	Cluster16 (SEQ ID NO: 2693 -- SEQ ID NO:2854)	Cluster17 (SEQ ID NO: 2854-- SEQ ID NO:3003)	Cluster18 (SEQ ID NO: 3004-- SEQ ID NO:3150)	Cluster19 (SEQ ID NO: 3151-- SEQ ID NO:3288)	Cluster20 (SEQ ID NO: 3289-- SEQ ID NO:3455)	Cluster21 (SEQ ID NO: 3456-- SEQ ID NO:3585)	Cluster22 (SEQ ID NO: 3586-- SEQ ID NO:3730)
PCA1	Min	-1.03449	-0.3984	-0.93226	-0.4	-0.93176	-0.3845	-0.93215	-0.39456	-0.93174
	Mean	-0.70636	0.519692	-0.72131	0.788093	-0.72141	0.822434	-0.7062	0.648476	-0.71986
	Median	-0.72054	0.149839	-0.72068	0.474147	-0.72052	0.469551	-0.72007	0.373243	-0.72054
	Max	-0.40125	2.973061	-0.4106	3.076914	-0.4042	3.022389	-0.40471	2.902287	-0.41693
PCA2	Min	0.206354	-4.6237	-4.17636	0.201471	0.200304	-12.4583	-5.15079	0.202767	0.202637
	Mean	0.613673	-0.71726	-0.89472	0.585603	0.656596	-0.99953	-0.84736	0.618663	0.60694
	Median	0.642803	-0.38947	-0.58265	0.600619	0.671923	-0.69949	-0.41126	0.650056	0.588239
	Max	0.955582	0.178297	0.199158	0.947875	0.957912	0.189554	0.199151	0.949085	0.95292
PCA3	Min	-0.3256	-0.30535	-0.31509	-0.19941	-0.19977	-0.19819	-0.19983	-0.31601	-0.32437
	Mean	-0.27114	-0.2528	-0.26165	0.635893	0.335092	0.188191	0.219518	-0.27138	-0.27931
	Median	-0.27173	-0.25626	-0.26456	-0.04339	0.008014	-0.04381	-0.04394	-0.27672	-0.29129
	Max	-0.20023	-0.20007	-0.20018	34.91703	8.740083	7.182482	13.78985	-0.20023	-0.20086
PCA4	Min	-1.17361	-1.13483	-1.21844	-0.39205	-0.38758	-0.39849	-0.39561	-0.36964	-0.38206
	Mean	-0.85262	-0.83671	-0.8048	0.614565	0.833197	0.600433	0.604744	0.646062	0.758589
	Median	-0.87973	-0.86109	-0.8269	0.451215	0.567642	0.449885	0.359338	0.523269	0.57825
	Max	-0.4226	-0.43388	-0.41083	2.809658	3.04613	2.884778	2.972785	2.6186	2.974322
PCA5	Min	-0.19829	-0.19924	-0.19297	-1.79801	-2.53365	-2.6192	-2.44086	-2.6779	-2.62344
	Mean	0.810572	0.736591	0.728155	-0.72144	-0.84754	-0.80889	-0.82297	-0.72856	-0.70873
	Median	0.764994	0.693731	0.657955	-0.72833	-0.77132	-0.70957	-0.77948	-0.59442	-0.57736
	Max	2.416623	2.278981	2.616655	-0.20335	-0.20762	-0.20218	-0.20251	-0.20116	-0.20382

14764-232316

		Cluster23 (SEQ ID NO: 3731 -- SEQ ID NO:3848)	Cluster24 (SEQ ID NO: 3849-- SEQ ID NO:3980)	Cluster25 (SEQ ID NO: 3981-- SEQ ID NO:4191)	Cluster26 (SEQ ID NO: 4192-- SEQ ID NO:4400)	Cluster27 (SEQ ID NO: 4401-- SEQ ID NO:4528)	Cluster28 (SEQ ID NO: 4529-- SEQ ID NO:4645)	Cluster29 (SEQ ID NO: 4646-- SEQ ID NO:4835)	Cluster30 (SEQ ID NO: 4836-- SEQ ID NO:5045)	Cluster31 (SEQ ID NO: 5046-- SEQ ID NO:5161)	Cluster32 (SEQ ID NO:5162 – SEQ ID NO:5286)
PCA1	Min	-0.39968	-0.93205	-0.38484	-0.93175	-0.36299	-0.93202	-0.39541	-0.93174	-0.38676	-0.93219
	Mean	0.569528	-0.7112	0.89369	-0.71148	0.847871	-0.6997	0.733638	-0.71468	0.713562	-0.72235
	Median	0.307897	-0.71444	0.656779	-0.7205	0.473467	-0.71199	0.522102	-0.72051	0.378272	-0.72062
	Max	2.76172	-0.40915	3.044789	-0.40213	6.206739	-0.40329	2.997077	-0.40188	2.942702	-0.40344
PCA2	Min	-4.50821	-4.32937	0.205796	0.217611	-3.95614	-4.39001	0.203336	0.213622	-3.27891	-4.31097
	Mean	-0.777	-0.77438	0.615151	0.627195	-0.58233	-0.66813	0.642413	0.668567	-0.54379	-0.6389
	Median	-0.41811	-0.59493	0.63135	0.641379	-0.23895	-0.27959	0.691753	0.727605	-0.27039	-0.39873
	Max	0.196954	0.180603	0.941307	0.956251	0.199442	0.199682	0.947101	0.955864	0.197573	0.197193
PCA3	Min	-0.30606	-0.31336	-0.19852	-0.19834	-0.19909	-0.19493	-0.31606	-0.32335	-0.30162	-0.31598
	Mean	-0.25642	-0.26736	0.171006	0.21757	0.20907	0.183239	-0.26663	-0.28001	-0.25672	-0.27043
	Median	-0.26139	-0.27169	-0.03015	-0.02662	-0.03223	-0.06903	-0.27011	-0.28811	-0.25858	-0.27998
	Max	-0.20052	-0.20409	4.462448	7.171082	7.193004	6.524651	-0.20077	-0.20004	-0.20218	-0.20128
PCA4	Min	-0.39748	-0.39925	-0.7756	-0.74818	-0.78247	-0.75487	-0.79614	-0.74639	-0.78065	-0.74365
	Mean	0.668717	0.649507	-0.63225	-0.6052	-0.61175	-0.59977	-0.62563	-0.61235	-0.62339	-0.59687
	Median	0.41274	0.413211	-0.63785	-0.61495	-0.61728	-0.60438	-0.63223	-0.61292	-0.63546	-0.6038
	Max	2.854384	2.911189	-0.40047	-0.40417	-0.40476	-0.41372	-0.41488	-0.40099	-0.40756	-0.40546
PCA5	Min	-2.18571	-2.49096	-2.21238	-2.21096	-2.21537	-2.20254	-2.39722	-2.17311	-2.11438	-2.35552
	Mean	-0.85226	-0.79404	-0.8952	-0.956	-0.91416	-0.91719	-0.96664	-0.96062	-0.95439	-0.98418
	Median	-0.79315	-0.76484	-0.83735	-0.91891	-0.92024	-0.83148	-0.90166	-0.94788	-0.90938	-0.885
	Max	-0.20566	-0.20015	-0.20978	-0.20039	-0.22084	-0.20408	-0.2077	-0.21493	-0.20199	-0.22725

Example 3: Design of Zinc Fingers to Bind Genomic Loci in *Zea mays*

Zinc finger proteins directed against the identified DNA sequences of the representative genomic loci were designed as previously described. *See, e.g.,* Urnov *et al.,* (2005) Nature 435:646-551. Exemplary target sequence and recognition helices are shown in Table 7 (recognition helix regions designs) and Table 8 (target sites). In Table 8, nucleotides in the target site that are contacted by the ZFP recognition helices are indicated in uppercase letters andnon-contacted nucleotides are indicated in lowercase. Zinc Finger Nuclease (ZFN) target sites were designed for all of the previously described 72 selected genomic loci. Numerous ZFP designs were developed and tested to identify the fingers which bound with the highest level of efficiency with 72 different representative genomic loci target sites which were identified and selected in *Zea mays* as described above. The specific ZFP recognition helices (Table 7) which bound with the highest level of efficiency to the zinc finger recognition sequences were used for targeting and integration of a donor sequence within the *Zea mays* genome.

Table 7. zinc finger designs for the *Zea mays* selected genomic loci (N/A indicates "not applicable"). It should be noted that the ZFP recognition helices that are identified with an asterisk (*) were designed for targeting and integration of a donor sequence, but the completion of donor integration within these genomic loci has not been completed.

pDAB Number	ZFP Number	F1	F2	F3	F4	F5	F6
111879	111879 ZFN5	SEQ ID NO:5287 QSGDL TR	SEQ ID NO:5288 RKDQL VA	SEQ ID NO:5289 RSDDLT R	SEQ ID NO:5290 TSSNRK T	SEQ ID NO:5291 RSDTLS E	SEQ ID NO:5292 ARSTRT N
	111879 ZFN7	SEQ ID NO:5293 RSDSLS V	SEQ ID NO:5294 DRSNR KT	SEQ ID NO:5295 QSSHLT R	SEQ ID NO:5296 RSDAL AR	SEQ ID NO:5297 RSDDLT R	SEQ ID NO:5298 DPSALR K
111885	111885 ZFN1	SEQ ID NO:5299 RSDNLS Q	SEQ ID NO:5300 ASNDR KK	SEQ ID NO:5301 ERGTL AR	SEQ ID NO:5302 RSDHLS R	SEQ ID NO:5303 ERGTL AR	SEQ ID NO:5304 QSGHLS R
	111885 ZFN2	SEQ ID NO:5305 RSANL AR	SEQ ID NO:5306 DRSDLS R	SEQ ID NO:5307 RSDTLS Q	SEQ ID NO:5308 RSADLS R	SEQ ID NO:5309 DRSNLS R	SEQ ID NO:5310 NSRNLR N

117404	SIG115737_31v1	SEQ ID NO:5311 RSDSLSV	SEQ ID NO:5312 DRSHLAR	SEQ ID NO:5313 DRSNLSR	SEQ ID NO:5314 RRSDLKR	SEQ ID NO:5315 RSDTLSE	SEQ ID NO:5316 QNATRIN
	SIG115737_32v1	SEQ ID NO:5317 QSGSLTR	SEQ ID NO:5318 QSGDLTR	SEQ ID NO:5319 RSDVLSE	SEQ ID NO:5320 TRNGLKY	N/A	N/A
117408	SIG120523_11v1	SEQ ID NO:5321 RSDNLSR	SEQ ID NO:5322 DNSNRKT	SEQ ID NO:5323 QNAHRKT	SEQ ID NO:5324 QKATRIT	SEQ ID NO:5325 DRSHLTR	SEQ ID NO:5326 RSDDRKK
	SIG120523_12v1	SEQ ID NO:5327 ASKTRTN	SEQ ID NO:5328 QSGSLTR	SEQ ID NO:5329 LRHHLTR	SEQ ID NO:5330 QSAHLKA	N/A	N/A
117400	SIG115246_5	SEQ ID NO:5331 QSGDLTR	SEQ ID NO:5332 ASHNLRT	SEQ ID NO:5333 DRSNLTR	SEQ ID NO:5334 QSSDLSR	SEQ ID NO:5335 DAGNRNK	N/A
	SIG115246_6	SEQ ID NO:5336 DRSDLSR	SEQ ID NO:5337 RSDNLTR	SEQ ID NO:5338 DRSHLSR	SEQ ID NO:5339 TSGNLTR	SEQ ID NO:5340 QSSDLSR	N/A
117402	SIG115636_1v1	SEQ ID NO:5341 QSSDLSR	SEQ ID NO:5342 HRSTRNR	SEQ ID NO:5343 RSDDLTR	SEQ ID NO:5344 DRSNLKA	SEQ ID NO:5345 DRSHLTR	SEQ ID NO:5346 QRSTLKS
	SIG115636_2v1	SEQ ID NO:5347 RSDALSR	SEQ ID NO:5348 RSDDLTR	SEQ ID NO:5349 DRSHLTR	SEQ ID NO:5350 TSSNRKT	SEQ ID NO:5351 RSDTLSE	SEQ ID NO:5352 DRSHLAR
117406	SIG120417_11v1	SEQ ID NO:5353 DRSARTR	SEQ ID NO:5354 QSGHLSR	SEQ ID NO:5355 QSGNLAR	SEQ ID NO:5356 RSDVLST	SEQ ID NO:5357 RYAYLTS	SEQ ID NO:5358 RRWTLVG
	SIG120417_12v1	SEQ ID NO:5359 RSDNLSQ	SEQ ID NO:5360 ASNDRKK	SEQ ID NO:5361 QSGDLTR	SEQ ID NO:5362 LKDTLRR	SEQ ID NO:5363 QSGNLAR	N/A
117411	SIG120621_15v1	SEQ ID NO:5364 QSGDLTR	SEQ ID NO:5365 MQNYLSR	SEQ ID NO:5366 RSDHLSE	SEQ ID NO:5367 QNANRKT	SEQ ID NO:5368 RSADLTR	N/A
	SIG120621_16v1	SEQ ID NO:5369 RSDNLSE	SEQ ID NO:5370 QSANRTK	SEQ ID NO:5371 RSDALSR	SEQ ID NO:5372 DRSALAR	SEQ ID NO:5373 RSDHLSE	SEQ ID NO:5374 DSQNRIK

117413	SIG12078_11v1	SEQ ID NO:5375 QSGDLTR	SEQ ID NO:5376 DKGNLTK	SEQ ID NO:5377 RSADLTR	SEQ ID NO:5378 DRSHLAR	SEQ ID NO:5379 RSDTLSE	SEQ ID NO:5380 DRSNRKT
	SIG12078_12v1	SEQ ID NO:5381 DRSNLSR	SEQ ID NO:5382 LRQDLKR	SEQ ID NO:5383 RSDHLSE	SEQ ID NO:5384 DRSALAR	SEQ ID NO:5385 DRSALSR	SEQ ID NO:5386 NRRGRWS
117429	SIG157315_1v1	SEQ ID NO:5387 RPYTLRL	SEQ ID NO:5388 HRSSLRR	SEQ ID NO:5389 RSDSLLR	SEQ ID NO:5390 WLSSLSA	SEQ ID NO:5391 QSGDLTR	SEQ ID NO:5392 DRSHLAR
	SIG157315_2v1	SEQ ID NO:5393 DRSNLSR	SEQ ID NO:5394 LKQHLNE	SEQ ID NO:5395 LRHHLTR	SEQ ID NO:5396 QSGNLHV	SEQ ID NO:5397 TSGHLSR	N/A
124802		SEQ ID NO:5495 QSSDLSR	SEQ ID NO:5496 QSGNLAR	SEQ ID NO:5497 DRSNRTT	SEQ ID NO:5498 DNSNRIK	N/A	N/A
		SEQ ID NO:5499 QSSDLSR	SEQ ID NO:5500 RTDALRG	SEQ ID NO:5501 RSDHLSE	SEQ ID NO:5502 SYRSRWG	SEQ ID NO:5503 DRSALAR	N/A
121900	SIGPPL05_1	SEQ ID NO:5504 RSDTLSE	SEQ ID NO:5505 QSGDLTR	SEQ ID NO:5506 TSGNLTR	SEQ ID NO:5507 DRSALAR	N/A	N/A
	SIGPPL05_2	SEQ ID NO:5508 RSDSLSV	SEQ ID NO:5509 QSGDLTR	SEQ ID NO:5510 DRSNLSR	SEQ ID NO:5511 RQDSRSQ	SEQ ID NO:5512 RSDHLSA	SEQ ID NO:5513 QHGSLAS
124810	SIGPPL06_9	SEQ ID NO:5514 RSANLAR	SEQ ID NO:5515 RSDHLTT	SEQ ID NO:5516 RSANLAR	SEQ ID NO:5517 TNQNRIT	N/A	N/A
	SIGPPL06_10	SEQ ID NO:5518 QSGNLAR	SEQ ID NO:5519 QSNQLAV	SEQ ID NO:5520 QNAHRKT	SEQ ID NO:5521 RSDDLSK	SEQ ID NO:5522 RSDTRKT	N/A
121902	SIGPPL07_1	SEQ ID NO:5523 QSSHLTR	SEQ ID NO:5524 QSSDLTR	SEQ ID NO:5525 RSDDLTR	SEQ ID NO:5526 QSSDLRR	SEQ ID NO:5527 TSGSLSR	SEQ ID NO:5528 TSSNRAV
	SIGPPL07_2	SEQ ID NO:5529 RSDHLSR	SEQ ID NO:5530 DRSARNS	SEQ ID NO:5531 RSDTLSE	SEQ ID NO:5532 SRCWRRK	N/A	N/A

	ZmPPL18SIG_5	SEQ ID NO:5533 TSGNLTR	SEQ ID NO:5534 LKQMLAV	SEQ ID NO:5535 QSSNLAR	SEQ ID NO:5536 RSDNLTR	SEQ ID NO:5537 RSDNLST	SEQ ID NO:5538 QSGHLSR
123802	ZmPPL18SIG_6	SEQ ID NO:5539 RSDNLAR	SEQ ID NO:5540 QKKDRSY	SEQ ID NO:5541 RSDVLSR	SEQ ID NO:5542 DSRDRKN	N/A	N/A
	ZmSIGPPL19_1	SEQ ID NO:5543 RSAHLSR	SEQ ID NO:5544 QSANRTK	SEQ ID NO:5545 QSSDLSR	SEQ ID NO:5546 QSSDLSR	SEQ ID NO:5547 QWSTRKR	N/A
123805	ZmSIGPPL19_2	SEQ ID NO:5548 QSSDLSR	SEQ ID NO:5549 QSAHRKN	SEQ ID NO:5550 RSDNLST	SEQ ID NO:5551 DSSTRKT	SEQ ID NO:5552 RSDHLSR	SEQ ID NO:5553 DRSNRKT
	ZmPPL20v2_1	SEQ ID NO:5554 QSSDLSR	SEQ ID NO:5555 QAGNLSK	SEQ ID NO:5556 DRSNLSR	SEQ ID NO:5557 LKQHLTR	N/A	N/A
121992	ZmPPL20v2_2	SEQ ID NO:5558 DRSNLSR	SEQ ID NO:5559 QSGDLTR	SEQ ID NO:5560 QSSDLSR	SEQ ID NO:5561 QAGNLSK	SEQ ID NO:5562 QNAHRKT	N/A
	SIGPPL09_1	SEQ ID NO:5563 RSDHLSQ	SEQ ID NO:5564 QNAHRIT	SEQ ID NO:5565 RSDDLTR	SEQ ID NO:5566 QRSTLSS	SEQ ID NO:5567 TSGNLTR	SEQ ID NO:5568 DRSNLTR
118643	SIGPPL09_2	SEQ ID NO:5569 TSGNLTR	SEQ ID NO:5570 RSDDLTR	SEQ ID NO:5571 QSGDLTR	SEQ ID NO:5572 MQNYLSR	SEQ ID NO:5573 QSGNLAR	SEQ ID NO:5574 DQSGLAH
	SIGPPL10_5	SEQ ID NO:5575 rsdnlst	SEQ ID NO:5576 drsalar	SEQ ID NO:5577 lkqhltr	SEQ ID NO:5578 rrddlrn	SEQ ID NO:5579 rsddltr	SEQ ID NO:5580 drsnlka
118648	SIGPPL10_6	SEQ ID NO:5581 rsdtlse	SEQ ID NO:5582 qsgdltr	SEQ ID NO:5583 qsgdltr	SEQ ID NO:5584 drsvlrr	SEQ ID NO:5585 rsdnlar	SEQ ID NO:5586 drsnltr
	SIGPPL21_1	SEQ ID NO:5587 DRSHLTR	SEQ ID NO:5588 QSGDLTR	SEQ ID NO:5589 QSGDLTR	SEQ ID NO:5590 RSDNLSE	SEQ ID NO:5591 KRGNRAK	N/A
118650	SIGPPL21_2	SEQ ID NO:5592 ERGTLAR	SEQ ID NO:5593 RSDALAR	SEQ ID NO:5594 RSDALSR	SEQ ID NO:5595 DRSALAR	SEQ ID NO:5596 ERGTLAR	SEQ ID NO:5597 DRSALAR
	SIGPPL22_3	SEQ ID NO:5598 QSSDLSR	SEQ ID NO:5599 RSDHLSR	SEQ ID NO:5600 RSDTLSQ	SEQ ID NO:5601 QKATRIT	SEQ ID NO:5602 RSDALAR	N/A
118654	SIGPPL22_4	SEQ ID NO:5603 RSDNLSV	SEQ ID NO:5604 DRSHLAR	SEQ ID NO:5605 RSDTLSR	SEQ ID NO:5606 QSADRTK	SEQ ID NO:5607 TSGHLSR	N/A
118656	SIGPPL23_1	SEQ ID NO:5608	SEQ ID NO:5609	SEQ ID NO:5610	SEQ ID NO:5611	SEQ ID NO:5612	SEQ ID NO:5613

		QRSNLVR	DRSHLAR	RSDTLSE	RMYTLSK	DRSALSR	RSDDLTR
	SIGPPL23_2	SEQ ID NO:5614 RSDALTQ	SEQ ID NO:5615 DRSDLSR	SEQ ID NO:5616 RRTDLRR	SEQ ID NO:5617 RSDNLAR	SEQ ID NO:5618 QRSPLPA	N/A
118659	SIGPPL24_4	SEQ ID NO:5619 RSDSLSA	SEQ ID NO:5620 QNAHRKT	SEQ ID NO:5621 ERGTLAR	SEQ ID NO:5622 RSDNLTR	SEQ ID NO:5623 TSGNLTR	SEQ ID NO:5624 QRSHLSD
	SIGPPL24_3	SEQ ID NO:5625 QSGDLTR	SEQ ID NO:5626 QRSNLNI	SEQ ID NO:5627 RSDNLAR	SEQ ID NO:5628 DRSVLHR	SEQ ID NO:5629 DRSDLSR	SEQ ID NO:5630 RQDTLRS
118660	SIGPPL25_2	SEQ ID NO:5631 RSDALSR	SEQ ID NO:5632 QSGSLTR	SEQ ID NO:5633 RSDALSV	SEQ ID NO:5634 DSSHRTR	SEQ ID NO:5635 QSGDLTR	SEQ ID NO:5636 QSGHLSR
	SIGPPL25_1	SEQ ID NO:5637 RSDNLAR	SEQ ID NO:5638 HRNTLLG	SEQ ID NO:5639 TSGSLSR	SEQ ID NO:5640 RSDHLTT	SEQ ID NO:5641 QSGDLTR	SEQ ID NO:5642 RPYTLRL
118767	SIGPPL26_1	SEQ ID NO : 5643 RSADLTR	SEQ ID NO : 5644 RSDALAR	SEQ ID NO : 5645 RSDTLSQ	SEQ ID NO : 5646 RSDDRKK	SEQ ID NO : 5647 TSGSLSR	N/A
	SIGPPL26_2	SEQ ID NO : 5648 RSDTLSA	SEQ ID NO : 5649 RSADRKK	SEQ ID NO : 5650 QRSNLVR	SEQ ID NO : 5651 DRSHLAR	SEQ ID NO : 5652 RSDALSV	N/A
118769	SIGPPL27_1	SEQ ID NO : 5653 DRSNLSR	SEQ ID NO : 5654 QSGNLAR	SEQ ID NO : 5655 RSDHLTQ	SEQ ID NO : 5656 QSGDLTR	SEQ ID NO : 5657 LRHQLKS	N/A
	SIGPPL27_2	SEQ ID NO : 5658 RSADLTR	SEQ ID NO : 5659 QSGDLTR	SEQ ID NO : 5660 DRSHLSR	SEQ ID NO : 5661 TSGNLTR	SEQ ID NO : 5662 RSDHLSA	SEQ ID NO : 5663 TTRYRNR
118663	SIGPPL28_1	SEQ ID NO : 5664 QSSDLSR	SEQ ID NO : 5665 QSGSLTR	SEQ ID NO : 5666 QSGHLSR	SEQ ID NO : 5667 TSGNLTR	SEQ ID NO : 5668 QSGHLSR	N/A
	SIGPPL28_2	SEQ ID NO : 5669 QSGNLAR	SEQ ID NO : 5670 DISNRSK	SEQ ID NO : 5671 DRSDLSR	SEQ ID NO : 5672 RRTDLRR	SEQ ID NO : 5673 TSGSLTR	N/A
118668	SIGPPL29_5	SEQ ID NO : 5674 DRSHLS	SEQ ID NO : 5675 TSGNLT	SEQ ID NO : 5676 DRSNLS	SEQ ID NO : 5677 FPGSRT	SEQ ID NO : 5678 RNDDR	N/A

		R	R	R	R	KK	
	SIGPPL29_6	SEQ ID NO : 5679 TSGSLSR	SEQ ID NO : 5680 QLNNLKT	SEQ ID NO : 5681 RSDVLST	SEQ ID NO : 5682 ASGNLLN	SEQ ID NO : 5683 RSDNLSR	SEQ ID NO : 5684 DNSNRKT
	SIGPPL30_1	SEQ ID NO : 5685 RSDTLSQ	SEQ ID NO : 5686 ASANRTK	SEQ ID NO : 5687 QSSNLAR	SEQ ID NO : 5688 DSSDRKK	SEQ ID NO : 5689 RSDHLST	SEQ ID NO : 5690 QSGHLSR
118669	SIGPPL30_2	SEQ ID NO : 5691 RSDHLSA	SEQ ID NO : 5692 SYWSRTV	SEQ ID NO : 5693 DRSALSR	SEQ ID NO : 5694 DRSHLAR	SEQ ID NO : 5695 RSDNLTR	N/A
	SIGPPL31_1	SEQ ID NO : 5696 DRSDLSR	SEQ ID NO : 5697 DRSNRNK	SEQ ID NO : 5698 RSDVLSE	SEQ ID NO : 5699 RNFSLTM	SEQ ID NO : 5700 RSDALAR	N/A
118670	SIGPPL31_2	SEQ ID NO : 5701 QSGALAR	SEQ ID NO : 5702 QSSDLSR	SEQ ID NO : 5703 RRDILHQ	SEQ ID NO : 5704 RSADLTR	SEQ ID NO : 5705 QSGDLTR	N/A
	SIGPPL32_5	SEQ ID NO : 5706 QSGALAR	SEQ ID NO : 5707 DRSNLSR	SEQ ID NO : 5708 LKQHLTR	SEQ ID NO : 5709 RSDNLST	SEQ ID NO : 5710 RSDHLSR	N/A
118673	SIGPPL32_6	SEQ ID NO : 5711 QSSDLSR	SEQ ID NO : 5712 HRSNLNK	SEQ ID NO : 5713 DRSNLSR	SEQ ID NO : 5714 DASNLRQ	SEQ ID NO : 5715 TSSNLSR	N/A
	SIGPPL33_1	SEQ ID NO : 5716 RSDSLLR	SEQ ID NO : 5717 CREYRGK	SEQ ID NO : 5718 TSGHLSR	SEQ ID NO : 5719 RSDVLSA	SEQ ID NO : 5720 RNDHRIN	NA
118674	SIGPPL33_2	SEQ ID NO : 5721 QSGSLTR	SEQ ID NO : 5722 RSDNLRE	SEQ ID NO : 5723 QSGSLTR	SEQ ID NO : 5724 RLDNRTA	SEQ ID NO : 5725 RSDVLSN	SEQ ID NO : 5726 DRSTRIT

	SIGPPL34_1	SEQ ID NO : 5727 RSDSLLR	SEQ ID NO : 5728 WLSSLSA	SEQ ID NO : 5729 ERGTLAR	SEQ ID NO : 5730 TSGSLTR	SEQ ID NO : 5731 RSDTLSE	SEQ ID NO : 5732 QSGHLSR
118676	SIGPPL34_2	SEQ ID NO : 5733 QSGNLAR	SEQ ID NO : 5734 DISNRSK	SEQ ID NO : 5735 RSDHLSR	SEQ ID NO : 5736 HRYHRLS	N/A	N/A
	SIGPPL35_1	SEQ ID NO : 5737 QSGSLTR	SEQ ID NO : 5738 DRSHLAR	SEQ ID NO : 5739 DRSALSR	SEQ ID NO : 5740 RSDALAR	SEQ ID NO : 5741 QSSDLSR	SEQ ID NO : 5742 HKYHLRS
118677	SIGPPL35_2	SEQ ID NO : 5743 RSDHLSE	SEQ ID NO : 5744 RKDARIT	SEQ ID NO : 5745 ERGTLAR	SEQ ID NO : 5746 RSDALTQ	SEQ ID NO : 5747 DRSHLTR	SEQ ID NO : 5748 RSDHLTT
	SIGPPL36_1	SEQ ID NO : 5749 TSGSLSR	SEQ ID NO : 5750 QMHHLKT	SEQ ID NO : 5751 TSSNLSR	SEQ ID NO : 5752 QSGALAR	SEQ ID NO : 5753 RSDDLTR	N/A
118680	SIGPPL36_2	SEQ ID NO : 5754 DRSALSR	SEQ ID NO : 5755 RSDHLSR	SEQ ID NO : 5756 DRSARTR	SEQ ID NO : 5757 QSGHLSR	SEQ ID NO : 5758 RSDHLSE	SEQ ID NO : 5759 ARSTRTN
	SIGPPL37_1	SEQ ID NO : 5760 RSANLAR	SEQ ID NO : 5761 RNDDRKK	SEQ ID NO : 5762 DRSHLTR	SEQ ID NO : 5763 DRSNLTR	N/A	N/A
118683	SIGPPL37_2	SEQ ID NO : 5764 TSGSLSR	SEQ ID NO : 5765 DSSDRKK	SEQ ID NO : 5766 QSGDLTR	SEQ ID NO : 5767 DRSHLTR	SEQ ID NO : 5768 DRSHLAR	N/A
	SIGPPL38_1	SEQ ID NO : 5769 RSDHLSA	SEQ ID NO : 5770 TKSNRTK	SEQ ID NO : 5771 DRSNLTR	SEQ ID NO : 5772 RSDDLTR	SEQ ID NO : 5773 QKSSLRT	N/A
118685	SIGPPL38_2	SEQ ID NO : 5774 RREDLIT	SEQ ID NO : 5775 TSSNLSR	SEQ ID NO : 5776 DRSALSR	SEQ ID NO : 5777 RSDDRKT	SEQ ID NO : 5778 RSDTLSE	SEQ ID NO : 5779 HRRSRWG

	ZmSIGPPL39_1	SEQ ID NO: 5780 RSDNLSA	SEQ ID NO: 5781 RNNDRKT	SEQ ID NO: 5782 QSGDLTR	SEQ ID NO: 5783 RSDDLTR	SEQ ID NO: 5784 QSSDLSR	SEQ ID NO: 5785 HKYHLRS
123833	ZmSIGPPL39_2	SEQ ID NO: 5786 TNQNRIT	SEQ ID NO: 5787 HRSSLRR	SEQ ID NO: 5788 DSSTRKT	SEQ ID NO: 5789 QSATRTK	SEQ ID NO: 5790 QSSDLSR	SEQ ID NO: 5791 HRKSLSR
	SIGPPL40_1	SEQ ID NO : 5792 QSSDLSR	SEQ ID NO : 5793 QSTHRNA	SEQ ID NO : 5794 RSDHLTQ	SEQ ID NO : 5795 DRSDLSR	SEQ ID NO : 5796 RSDNLTR	N/A
118771	SIGPPL40_2	SEQ ID NO : 5797 QSGDLTR	SEQ ID NO : 5798 DRSHLTR	SEQ ID NO : 5799 QSGSLTR	SEQ ID NO : 5800 DRSNLSR	SEQ ID NO : 5801 QSGNLAR	N/A
	ZmSIGPPL41_7	SEQ ID NO: 5802 DRSALSR	SEQ ID NO: 5803 RSDALTQ	SEQ ID NO: 5804 RSDSLLR	SEQ ID NO: 5805 RSDALTQ	SEQ ID NO: 5806 RSDNLST	SEQ ID NO: 5807 DNSNRIN
121943	ZmSIGPPL41_8	SEQ ID NO: 5808 RSDNLST	SEQ ID NO: 5809 RSDNRTK	SEQ ID NO: 5810 RSDVLST	SEQ ID NO: 5811 WSSSRAA	SEQ ID NO: 5812 QSGSLTR	SEQ ID NO: 5813 TSSNRKT
	ZmSIGPPL42_7	SEQ ID NO: 5814 QSSHLTR	SEQ ID NO: 5815 RSDALTQ	SEQ ID NO: 5816 ERGTLAR	SEQ ID NO: 5817 RNDDRKK	N/A	N/A
121946	ZmSIGPPL42_8	SEQ ID NO: 5818 QSGSLTR	SEQ ID NO: 5819 TSSNRKT	SEQ ID NO: 5820 RSDNLSV	SEQ ID NO: 5821 QNANRIT	SEQ ID NO: 5822 ERGTLAR	SEQ ID NO: 5823 RSDDLTR
	ZmSIGPPL43_3	SEQ ID NO: 5824 RSDNLSE	SEQ ID NO: 5825 RHSALSA	SEQ ID NO: 5826 QSSDLSR	SEQ ID NO: 5827 QSYNRFV	SEQ ID NO: 5828 ERGTLAR	SEQ ID NO: 5829 TSGSLTR
121949	ZmSIGPPL43_4	SEQ ID NO: 5830 ERGTLAR	SEQ ID NO: 5831 RSDDLTR	SEQ ID NO: 5832 RSDHLSE	SEQ ID NO: 5833 RNQHRKN	SEQ ID NO: 5834 DRSHLAR	N/A

	ZmSIGPPL44_1	SEQ ID NO: 5835 QSGNLAR	SEQ ID NO: 5836 QGANLIK	SEQ ID NO: 5837 RSDSLSV	SEQ ID NO: 5838 DRSDLSR	SEQ ID NO: 5839 QSGHLSR	N/A
121952	ZmSIGPPL44_2	SEQ ID NO: 5840 TSGSLSR	SEQ ID NO: 5841 QSGSLTR	SEQ ID NO: 5842 RSAHLSR	SEQ ID NO: 5843 RSDALST	SEQ ID NO: 5844 DRSTRTK	N/A
	ZmSIGPPL45_7	SEQ ID NO: 5845 RSDDLSK	SEQ ID NO: 5846 QSATRTK	SEQ ID NO: 5847 RSDALTQ	SEQ ID NO: 5848 DRSHLTR	SEQ ID NO: 5849 TSSNRKT	N/A
121959	ZmSIGPPL45_8	SEQ ID NO: 5850 DRSALSR	SEQ ID NO: 5851 TSSNRKT	SEQ ID NO: 5852 RSADLTR	SEQ ID NO: 5853 RSDDLTR	SEQ ID NO: 5854 RSDVLST	SEQ ID NO: 5855 DCRNRWR
	ZmSIGPPL46_7	SEQ ID NO: 5856 QSSDLSR	SEQ ID NO: 5857 QSGSLTR	SEQ ID NO: 5858 QSSDLSR	SEQ ID NO: 5859 RSDNLST	SEQ ID NO: 5860 RSDNRTK	N/A
121963	ZmSIGPPL46_8	SEQ ID NO: 5861 QSSDLSR	SEQ ID NO: 5862 AASNRSK	SEQ ID NO: 5863 DRSHLSR	SEQ ID NO: 5864 DRSHLAR	SEQ ID NO: 5865 RSDTLSA	SEQ ID NO: 5866 RSADRKK
	ZmSIGPPL48_7	SEQ ID NO: 5867 RSDNLST	SEQ ID NO: 5868 DRSNRKT	SEQ ID NO: 5869 RSDALAR	SEQ ID NO: 5870 RSDNLST	SEQ ID NO: 5871 DRSALAR	N/A
121971	ZmSIGPPL48_8	SEQ ID NO: 5872 DRSDLSR	SEQ ID NO: 5873 DRSNRNK	SEQ ID NO: 5874 QSSDLSR	SEQ ID NO: 5875 WRSSLRQ	SEQ ID NO: 5876 RSDHLSQ	SEQ ID NO: 5877 TRSPLTT
	ZmSIGPPL49_1	SEQ ID NO: 5878 TRDHLST	SEQ ID NO: 5879 RSDARTN	SEQ ID NO: 5880 RSDHLSE	SEQ ID NO: 5881 QSNHRKT	SEQ ID NO: 5882 RSDALAR	N/A
121972	ZmSIGPPL49_2	SEQ ID NO: 5883 ERGTLAR	SEQ ID NO: 5884 RSDALTQ	SEQ ID NO: 5885 RSDSLSV	SEQ ID NO: 5886 DRSALAR	SEQ ID NO: 5887 QSSNLAR	SEQ ID NO: 5888 QSADRTK

	ZmSIGPPL50_5	SEQ ID NO: 5889 RSDHLSA	SEQ ID NO: 5890 QSGDLTR	SEQ ID NO: 5891 QSSDLSR	SEQ ID NO: 5892 RSDNLAR	SEQ ID NO: 5893 FREGLYK	N/A
124097	ZmSIGPPL50_6	SEQ ID NO: 5894 TSGNLTR	SEQ ID NO: 5895 LKQMLAV	SEQ ID NO: 5896 ERGTLAR	SEQ ID NO: 5897 RSDHLSR	SEQ ID NO: 5898 QSSHLTR	SEQ ID NO: 5899 QSSDLTR
	ZmPPL51_7	SEQ ID NO: 5900 RSDTLSE	SEQ ID NO: 5901 HRRSRWG	SEQ ID NO: 5902 RSDDLSV	SEQ ID NO: 5903 TSSNRTK	N/A	N/A
123818	ZmPPL51_8	SEQ ID NO: 5904 RSDTLSQ	SEQ ID NO: 5905 QRDHRIK	SEQ ID NO: 5906 DRSNLSR	SEQ ID NO: 5907 TSGNLTR	SEQ ID NO: 5908 RSDSLLR	SEQ ID NO: 5909 WLSSLSA
	SIGPPL52_5	SEQ ID NO : 5910 DRSNLSR	SEQ ID NO : 5911 LRQNLIM	SEQ ID NO : 5912 QNAHRKT	SEQ ID NO : 5913 QSGALAR	SEQ ID NO : 5914 QSGHLSR	N/A
118705	SIGPPL52_6	SEQ ID NO : 5915 QSGNLAR	SEQ ID NO : 5916 LAYDRRK	SEQ ID NO : 5917 RSDVLSE	SEQ ID NO : 5918 RNFSLTM	SEQ ID NO : 5919 RSADLTR	SEQ ID NO : 5920 DSSDRKK
	SIGPPL54_5	SEQ ID NO : 5921 RSDNLAR	SEQ ID NO : 5922 DQSYRRT	SEQ ID NO : 5923 RSDNLSE	SEQ ID NO : 5924 TSSNRKT	N/A	N/A
118711	SIGPPL54_6	SEQ ID NO : 5925 TSGSLSR	SEQ ID NO : 5926 RKELLRS	SEQ ID NO : 5927 RPYTLRL	SEQ ID NO : 5928 HRSSLRR	SEQ ID NO : 5929 DRSTRTK	SEQ ID NO : 5930 RSDYLAK
	ZmSIGPPL57_1	SEQ ID NO : 5931 QSSDLSR	SEQ ID NO : 5932 QSTHRNA	SEQ ID NO : 5933 RSADLTR	SEQ ID NO : 5934 RSDDLTR	SEQ ID NO : 5935 DRSNLSR	SEQ ID NO : 5936 QSGNLAR
118718	ZmSIGPPL57_2	SEQ ID NO : 5937 QSGHLAR	SEQ ID NO : 5938 DRSHLAR	SEQ ID NO : 5939 RSANLAR	SEQ ID NO : 5940 QSANRTK	SEQ ID NO : 5941 RSDHLTQ	N/A

	ZmSIGPPL58_3	SEQ ID NO: 5942 QSSDLSR	SEQ ID NO: 5943 RSDHLTQ	SEQ ID NO: 5944 DRSALAR	SEQ ID NO: 5945 RSDYLAK	SEQ ID NO: 5946 QSGDLTR	N/A
118722	ZmSIGPPL58_4	SEQ ID NO: 5947 RSDNLSQ	SEQ ID NO: 5948 QRQHRKT	SEQ ID NO: 5949 DQSNLRA	SEQ ID NO: 5950 RPYTLRL	SEQ ID NO: 5951 QSSNLAR	SEQ ID NO: 5952 RSDNLTT
	SIGPPL59_5	SEQ ID NO : 5953 QSGHLAR	SEQ ID NO : 5954 QRVALQA	SEQ ID NO : 5955 ERGTLAR	SEQ ID NO : 5956 QSGDLTR	SEQ ID NO : 5957 RSDDLTR	N/A
118726	SIGPPL59_6	SEQ ID NO : 5958 QSSDLSR	SEQ ID NO : 5959 HRSNLNK	SEQ ID NO : 5960 RSADLTR	SEQ ID NO : 5961 TNQNRIT	SEQ ID NO : 5962 RSDALAR	N/A
	ZmSIGPPL60_3	SEQ ID NO : 5963 DSSALIN	SEQ ID NO : 5964 TSSNLSR	SEQ ID NO : 5965 RSDHLSR	SEQ ID NO : 5966 YGWYRHK	SEQ ID NO : 5967 TSGHLSR	SEQ ID NO : 5968 RSDNLTR
118728	ZmSIGPPL60_4	SEQ ID NO : 5969 QSGHLAR	SEQ ID NO : 5970 QRTNLVE	SEQ ID NO : 5971 DRSTRTK	SEQ ID NO : 5972 QSGNLHV	SEQ ID NO : 5973 RSDHLTQ	N/A
	SIGPPL61_5	SEQ ID NO : 5974 RSDNLST	SEQ ID NO : 5975 RSDNRTK	SEQ ID NO : 5976 RSDNLAR	SEQ ID NO : 5977 QKVNLMS	SEQ ID NO : 5978 QSGALAR	N/A
118732	SIGPPL61_6	SEQ ID NO : 5979 QSGDLTR	SEQ ID NO : 5980 TQGYLRK	SEQ ID NO : 5981 RSDNLAR	SEQ ID NO : 5982 DSSGLTH	SEQ ID NO : 5983 RNDDRKK	N/A
	ZmSIGPPL62_1	SEQ ID NO : 5984 DRSDLSR	SEQ ID NO : 5985 RRDYLRT	SEQ ID NO : 5986 RSDTLSE	SEQ ID NO : 5987 NNRDRTK	SEQ ID NO : 5988 RSDTLSE	SEQ ID NO : 5989 QSGDLTR
118733	ZmSIGPPL62_2	SEQ ID NO : 5990 QSSDLSR	SEQ ID NO : 5991 QSTHRNA	SEQ ID NO : 5992 RSDDLSK	SEQ ID NO : 5993 RSDALAR	N/A	N/A

	SIGPPL62_5	SEQ ID NO : 5994 RSANLAR	SEQ ID NO : 5995 RSDDLTR	SEQ ID NO : 5996 RSDALST	SEQ ID NO : 5997 DRSTRTK	SEQ ID NO : 5998 QSGNLAR	SEQ ID NO : 5999 QSTPLFA
118735	SIGPPL62_6	SEQ ID NO : 6000 QSGHLAR	SEQ ID NO : 6001 ERIALVR	SEQ ID NO : 6002 RSDHLSE	SEQ ID NO : 6003 RSAHLSR	SEQ ID NO : 6004 RSDNLSV	N/A
	ZmSIGPPL64_1	SEQ ID NO : 6005 RSDTLSE	SEQ ID NO : 6006 QSHNRTK	SEQ ID NO : 6007 DRSHLTR	SEQ ID NO : 6008 DRSALAR	SEQ ID NO : 6009 TSGSLTR	N/A
118739	ZmSIGPPL64_2	SEQ ID NO : 6010 LRHHLTR	SEQ ID NO : 6011 QSYARTL	SEQ ID NO : 6012 RSDNLST	SEQ ID NO : 6013 RSDDLTR	SEQ ID NO : 6014 RSAHLSR	SEQ ID NO : 6015 RSDNLTR
	SIGPPL65_1	SEQ ID NO : 6016 RSDDLSK	SEQ ID NO : 6017 DRSNRKT	SEQ ID NO : 6018 DRSNLSR	SEQ ID NO : 6019 QRTHLRD	SEQ ID NO : 6020 QSGHLSR	N/A
118742	SIGPPL65_2	SEQ ID NO : 6021 QSSDLSR	SEQ ID NO : 6022 QSGNRTT	SEQ ID NO : 6023 DRSNLTR	SEQ ID NO : 6024 QSGHLAR	SEQ ID NO : 6025 QRTNLVE	N/A
	ZmSIGPPL66_1	SEQ ID NO : 6026 QSGDLTR	SEQ ID NO : 6027 RRDPLIN	SEQ ID NO : 6028 QSGDLTR	SEQ ID NO : 6029 RSDSLSR	SEQ ID NO : 6030 DKSNRIK	N/A
118745	ZmSIGPPL66_2	SEQ ID NO : 6031 QSSDLSR	SEQ ID NO : 6032 QSGDLTR	SEQ ID NO : 6033 QSSDLSR	SEQ ID NO : 6034 TSGNLTR	SEQ ID NO : 6035 QTSDRNK	N/A
	ZmSIGPPL67_3	SEQ ID NO: 6036 QSGSLTR	SEQ ID NO: 6037 RNDDRKK	SEQ ID NO: 6038 RSDSLSA	SEQ ID NO: 6039 QNAHRKT	SEQ ID NO: 6040 QNAHRKT	N/A
124081	ZmSIGPPL67_4	SEQ ID NO: 6041 QSGDLTR	SEQ ID NO: 6042 DKGNLTK	SEQ ID NO: 6043 QSSDLSR	SEQ ID NO: 6044 QSAHRKN	SEQ ID NO: 6045 QSSDLSR	N/A

		SEQ ID NO: 6046 RSDALSR	SEQ ID NO: 6047 QSGSLTR	SEQ ID NO: 6048 QSGSLTR	SEQ ID NO: 6049 QSGSLTR	SEQ ID NO: 6050 TSGHLSR	SEQ ID NO: 6051 DRSHLAR
125361		SEQ ID NO: 6052 QSGDLTR	SEQ ID NO: 6053 RSDHLSR	SEQ ID NO: 6054 RSDHLST	SEQ ID NO: 6055 RSDHLSR	N/A	N/A
	SIGPPL69_5	SEQ ID NO : 6056 QSSDLSR	SEQ ID NO : 6057 RSDYLRK	SEQ ID NO : 6058 QSGDLTR	SEQ ID NO : 6059 LRQTLNS	SEQ ID NO : 6060 QSGHLSR	N/A
118753	SIGPPL69_6	SEQ ID NO : 6061 RSDTLSV	SEQ ID NO : 6062 DNSTRIK	SEQ ID NO : 6063 RSDNLST	SEQ ID NO : 6064 DNSNRIN	SEQ ID NO : 6065 TSSNLSR	N/A
		SEQ ID NO: 6066 RSDVLSA	SEQ ID NO: 6067 QNATRIN	SEQ ID NO: 6068 RSDVLSE	SEQ ID NO: 6069 QSGNLAR	SEQ ID NO: 6070 RSDNLSV	N/A
124878		SEQ ID NO: 6071 QSADRTK	SEQ ID NO: 6072 DRSNLTR	SEQ ID NO: 6073 RSDNLSE	SEQ ID NO: 6074 KRCNLRC	N/A	N/A
	ZmSIGPPL71_5	SEQ ID NO: 6075 DRSNLSR	SEQ ID NO: 6076 DSSARNT	SEQ ID NO: 6077 TSGNLTR	SEQ ID NO: 6078 DRSNLTR	SEQ ID NO: 6079 DRSNLSR	SEQ ID NO: 6080 QRSNLDS
123829	ZmSIGPPL71_6	SEQ ID NO: 6081 QSGNLAR	SEQ ID NO: 6082 QKVNRAG	SEQ ID NO: 6083 RSDNLSV	SEQ ID NO: 6084 QRNHRTT	SEQ ID NO: 6085 QKATRIT	N/A
	ZmSIGPPL72_3	SEQ ID NO : 6086 QSGALAR	SEQ ID NO : 6087 LRHNLRA	SEQ ID NO : 6088 DRSTRTK	SEQ ID NO : 6089 HRSARKR	SEQ ID NO : 6090 RSDHLSE	SEQ ID NO : 6091 TSSDRTK
118761	ZmSIGPPL72_4	SEQ ID NO : 6092 RSDSLSR	SEQ ID NO : 6093 DKSNRIK	SEQ ID NO : 6094 RSDDLTR	SEQ ID NO : 6095 DRSHLTR	SEQ ID NO : 6096 DRSNLTR	N/A

	SIGPPL74_1	SEQ ID NO: 6097 RSDNLST	SEQ ID NO: 6098 RQWSLRI	SEQ ID NO: 6099 TSGHLSR	SEQ ID NO: 6100 QSSDLSR	SEQ ID NO: 6101 RSDDLTR	N/A
121904	SIGPPL74_2	SEQ ID NO: 6102 RSANLAR	SEQ ID NO: 6103 RLDNRTA	SEQ ID NO: 6104 QSGHLAR	SEQ ID NO: 6105 DSSNREA	N/A	N/A
	ZmSIGPPL75_1	SEQ ID NO: 6106 RSDALSR	SEQ ID NO: 6107 RSDNLTR	SEQ ID NO: 6108 RSADLTR	SEQ ID NO: 6109 RSDNLTR	N/A	N/A
121905	ZmSIGPPL75_2	SEQ ID NO: 6110 RSDNLSV	SEQ ID NO: 6111 RSDTRTE	SEQ ID NO: 6112 TSGSLSR	SEQ ID NO: 6113 QSGNLAR	SEQ ID NO: 6114 RSADLTR	N/A
	SIGPPL76_2	SEQ ID NO: 6115 TSGSLSR	SEQ ID NO: 6116 RSDHLTT	SEQ ID NO: 6117 RSDDLTR	SEQ ID NO: 6118 QRSTLSS	SEQ ID NO: 6119 ERGTLAR	SEQ ID NO: 6120 QSGHLSR
121917	SIGPPL76_1	SEQ ID NO: 6121 RSDHLSQ	SEQ ID NO: 6122 DNASRIR	SEQ ID NO: 6123 RSDNLST	SEQ ID NO: 6124 AQWTRAC	SEQ ID NO: 6125 RSDHLSE	SEQ ID NO: 6126 DKANRTR
	ZmSIGPPL77_2	SEQ ID NO: 6127 QSSDLSR	SEQ ID NO: 6128 LRHNLRA	SEQ ID NO: 6129 RSDTLST	SEQ ID NO: 6130 DRSSRIK	N/A	N/A
121918	ZmSIGPPL77_1	SEQ ID NO: 6131 QSGALAR	SEQ ID NO: 6132 RSDNLTR	SEQ ID NO: 6133 RSDNLST	SEQ ID NO: 6134 DRSNLTR	SEQ ID NO: 6135 DRSDLSR	SEQ ID NO: 6136 DSSTRRR
	SIGPPL78_1	SEQ ID NO: 6137 DRSALAR	SEQ ID NO: 6138 DRSALSR	SEQ ID NO: 6139 DRSHLAR	SEQ ID NO: 6140 RSDNLST	SEQ ID NO: 6141 RSDARAN	N/A
121909	SIGPPL78_2	SEQ ID NO: 6142 RSDHLST	SEQ ID NO: 6143 DSSNRIK	SEQ ID NO: 6144 QSGALAR	SEQ ID NO: 6145 RSDDLTR	SEQ ID NO: 6146 QSGSLTR	N/A

	SIGPPL79_1	SEQ ID NO: 6147 DRSHLSR	SEQ ID NO: 6148 DRSHLAR	SEQ ID NO: 6149 QSSDLSR	SEQ ID NO: 6150 QSGDLTR	SEQ ID NO: 6151 RSDNLSE	SEQ ID NO: 6152 HSNARKT
121912	SIGPPL79_2	SEQ ID NO: 6153 RSDALSV	SEQ ID NO: 6154 DSSHRTR	SEQ ID NO: 6155 QSGDLTR	SEQ ID NO: 6156 ASHNLRT	SEQ ID NO: 6157 RSDHLST	SEQ ID NO: 6158 TSANLSR
	ZmSIGPPL80_3	SEQ ID NO: 6159 DRSDLSR	SEQ ID NO: 6160 DRSNLTR	SEQ ID NO: 6161 RSDSLLR	SEQ ID NO: 6162 RLDWLPM	SEQ ID NO: 6163 RSADLTR	SEQ ID NO: 6164 TSGNLTR
121981	ZmSIGPPL80_4	SEQ ID NO: 6165 RSDNLSQ	SEQ ID NO: 6166 DRSNRTK	SEQ ID NO: 6167 DSSDRKK	SEQ ID NO: 6168 RSDHLSE	SEQ ID NO: 6169 QSASRKN	N/A
	ZmSIGPPL81_3	SEQ ID NO: 6170 RSDVLST	SEQ ID NO: 6171 STAALSY	SEQ ID NO: 6172 QSANRTT	SEQ ID NO: 6173 QNAHRKT	SEQ ID NO: 6174 QSSDLSR	N/A
124091	ZmSIGPPL81_4	SEQ ID NO: 6175 QRNHRTT	SEQ ID NO: 6176 DRSNLTR	SEQ ID NO: 6177 TSGNLTR	SEQ ID NO: 6178 QSNQLRQ	SEQ ID NO: 6179 RSDALTQ	N/A
127268*		SEQ ID NO: 6620 DRSALAR	SEQ ID NO: 6621 DYYGRHG	SEQ ID NO: 6622 DRSHLAR	SEQ ID NO: 6623 YRSSLKE	SEQ ID NO: 6624 TSGNLTR	N/A
		SEQ ID NO: 6625 HHHVLVQ	SEQ ID NO: 6626 QNATRTK	SEQ ID NO: 6627 DRSTRTK	SEQ ID NO: 6628 RRDNLHS	SEQ ID NO: 6629 QKATRTT	SEQ ID NO:6630 HRSSLRR
120993*		SEQ ID NO: 6631 QSSDLSR	SEQ ID NO: 6632 QWSTRKR	SEQ ID NO: 6633 RSDVLSE	SEQ ID NO: 6634 QTVHRNS	SEQ ID NO: 6635 RSDTLSE	SEQ ID NO: 6636 FRGSLTW
		SEQ ID NO: 6637 RSDNLST	SEQ ID NO: 6638 RSTHRTQ	SEQ ID NO: 6639 RSDNLSV	SEQ ID NO: 6640 QKATRIN	SEQ ID NO: 6641 DRSNLTR	N/A

228254*		SEQ ID NO: 6642 QSGNLAR	SEQ ID NO: 6643 CRQNLAN	SEQ ID NO: 6644 DRSNLSR	SEQ ID NO: 6645 DGRNLRH	SEQ ID NO: 6646 RSDHLST	SEQ ID NO: 6647 RSDNLTR
		SEQ ID NO: 6648 DRSNRTT	SEQ ID NO: 6649 QNATRIN	SEQ ID NO: 6650 QSGNLAR	SEQ ID NO: 6651 HKLSLSI	SEQ ID NO: 6652 DRSDLSR	SEQ ID NO: 6653 YRSNLVR
200497*		SEQ ID NO: 6654 DRSALSR	SEQ ID NO: 6655 QSGSLTR	SEQ ID NO: 6656 RSDNLTR	SEQ ID NO: 6657 RQDCLSL	SEQ ID NO: 6658 RNDNRKT	N/A
		SEQ ID NO: 6659 QSGNLAR	SEQ ID NO: 6660 DQSGLAH	SEQ ID NO: 6661 QSANRTK	SEQ ID NO: 6662 DRSDLSR	SEQ ID NO: 6663 RSHHLKA	N/A
66202*		SEQ ID NO: 6664 QSGNLAR	SEQ ID NO: 6665 QSGSLTR	SEQ ID NO: 6666 DRSALSR	SEQ ID NO: 6667 QSGSLTR	SEQ ID NO: 6668 QSGNLAR	N/A
		SEQ ID NO: 6669 QSGNLAR	SEQ ID NO: 6670 WRISLAA	SEQ ID NO: 6671 RSDNLSE	SEQ ID NO: 6672 RSQHRKT	SEQ ID NO: 6673 QSSDLSR	N/A
5607*		SEQ ID NO: 6674 RSANLAR	SEQ ID NO: 6675 RSDHLTT	SEQ ID NO: 6676 RSDNLSE	SEQ ID NO: 6677 DRSHLAR	SEQ ID NO: 6678 QSAHRKN	SEQ ID NO: 6679 LKHHLTD
		SEQ ID NO: 6680 TSGNLTR	SEQ ID NO: 6681 DRSNLTR	SEQ ID NO: 6682 RSDNLSQ	SEQ ID NO: 6683 RKADRTK	SEQ ID NO: 6684 TSGNLTR	SEQ ID NO: 6685 DSSNLAT

Table 8. Zinc finger target site of *Zea mays* selected genomic loci

Locus ID	Name	pDAB Number	ZFP Number and Binding Site (5'→3')	SEQ ID NO:
optimal loci_ 204637	OGL1	111879	111879ZFN5:ctACTCCGTATGCGAAGGCAcg	5398
			111879ZFN7: taTTCGCGGTGGGACACTTGat	5399
optimal_loci_204726	OGL2	111885	111885ZFN1: ccGGAGCCGGGGCCTCCCAGgc	5400
			111885ZFN2: atCGCGACGCGACGcGACGAGac	5401

optimal_loci_156393	OGL 12	117404	SIG115737_31v1: TGCATGCGCAGTA	5402
			SIG115737_32v1: ACACCGGCGCACGGCACG	5403
optimal_loci_198387	OGL 15	117408	SIG120523_11v1: AGAGGTGTAACC	5404
			SIG120523_12v1: TCGGGCACAAGAAACGAG	5405
optimal_loci_31710	OGL 08	117400	SIG115246_5: TACGCTGACAATGCA	5406
			SIG115246_6: CCAGCTGATGGAGAGGAC	5407
optimal_loci_64542	OGL 11	117402	SIG115636_1v1: AGAGCAGGCGAG	5408
			SIG115636_2v1: AGCAAAGTGAGTAGTT	5409
optimal_loci_197372	OGL14	117406	SIG120417_11v1: TGGATGGAAGGAATC	5410
			SIG120417_12v1: GAAGCTACATCCCAG	5411
optimal_loci_232228	OGL 16	117411	SIG120621_15v1: TACGCGCAACGGAACGCA	5412
			SIG120621_16v1: CACCGGTGTCGTGTAACAG	5413
optimal_loci_285621	OGL17	117413	SIG12078_11v1: CCCGGACGACGCCGAG	5414
			SIG12078_12v1: GACATGGCACGCGCATCGAG	5415
optimal_loci_157315	OGL 13	117429	SIG157315_1v1: GCATGTGTGGTTTTG	5416
			SIG157315_2v1: GGTCAAGGTAGTGAC	5417
optimal_loci_43577	OGL04	124802	ZFN_binding_1: AGCTTCAATAGTA	6180
			ZFN_binding_2: GTCTTCCGGTTGGCT	6181
optimal_loci_301774	OGL05	121900	ZFN_binding_3: GTCGATGCACCG	6182
			ZFN_binding_4: CTAAGGATGGACGCAGTG	6183
optimal_loci_232222	OGL06	124810	ZFN_binding_5: CATGAGAGGGAT	6184
			ZFN_binding_6: ATGTCGTAGAAAAGAA	6185
optimal_loci_203704	OGL07	121902	ZFN_binding_7: CATGTTCGCTGCGGCTGGA	6186
			ZFN_binding_8: AGTCCGCTCGGG	6187
optimal_loci_59517	OGL09	118643	ZFN_binding_9: GACGATCTAGCGAGAAGG	6188
			ZFN_binding_10: ATCGAAGAACGCAGCGGAT	6189
optimal_loci_25001	OGL10	118648	ZFN_binding_12: CACGCGCCGGGTGTCTAG	6190
			ZFN_binding_13: GACGAGCACCGCCCCACCG	6191

optimal_loci_112632	OGL18	123802	ZFN_binding_14: CGGGTACTGGGAAAGGAG	6192
			ZFN_binding_15: GAGCGTCCTGATTGACATG	6193
optimal_loci_28905	OGL19	123805	ZFN_binding_16: ACGGTGCATCAAGCTTAAG	6194
			ZFN_binding_17: CAAGGGACCTAGTGAGCT	6195
optimal_loci_129164	OGL20	121992	ZFN_binding_18: GGTGACTAAGCT	6196
			ZFN_binding_19: AGATAAGCTGCAGAC	6197
optimal_loci_2425	OGL21	118650	ZFN_binding_20: GAGCAGGCAGGCAGGC	6198
			ZFN_binding_21: GTCGTCGTCGTGCGTGGCC	6199
optimal_loci_122036	OGL22	118654	ZFN_binding_22: GTGGCAACGGGGGCT	6200
			ZFN_binding_23: GGTTCAGCGGGCTAG	6201
optimal_loci_5735	OGL23	118656	ZFN_binding_24: GCGGTCTTGCCGGGCGAA	6202
			ZFN_binding_25: CTAGAGGCGCCCATG	6203
optimal_loci_178978	OGL24	118659	ZFN_binding_26: ACGGACAGCCGAGAAAGCA	6204
			ZFN_binding_27: CGAGATCGAGGCCAGATCG	6205
optimal_loci_288388	OGL25	118660	ZFN_binding_28: TTGCCATGGGTTATTGAG	6206
			ZFN_binding_29: GGAGCATGGCCAGGTAGTG	6207
optimal_loci_60310	OGL26	118767	ZFN_binding_30: CCAGTTCCGACGAGTGGCG	6208
			ZFN_binding_31: GGCCTGGGCGAACGCCGCCG	6209
optimal_loci_243330	OGL27	118769	ZFN_binding_32: AGTGCAAGGGAAGAC	6210
			ZFN_binding_33: AGGAGGGATGGAGCAGCG	6211
optimal_loci_127038	OGL28	118663	ZFN_binding_34: GGAGATAGGAGTAGCT	6212
			ZFN_binding_35: GTTGCGCCCTACGAA	6213
optimal_loci_262784	OGL29	118668	ZFN_binding_36: TCGGTTGACCGATGGC	6214
			ZFN_binding_37: AACGAGCCATATGCAAGTT	6215
optimal_loci_344662	OGL30	118669	ZFN_binding_38: GGATGGCTCCGAATGATATG	6216
			ZFN_binding_39: GAGGGCGTCTTGAGG	6217

optimal_loci_153894	OGL31	118670	ZFN_binding_40: GTGTTGCTGTACGAC	6218
			ZFN_binding_41: GCAGCGAACGGCTGTA	6219
optimal_loci_28771	OGL32	118673	ZFN_binding_42: GGGTAGGGGTGACGTA	6220
			ZFN_binding_43: GATCACGACATATCCA	6221
optimal_loci_1098	OGL33	118674	ZFN_binding_44: TGGGTGGGTTTGCGTG	6222
			ZFN_binding_45: CCCATGCAGGTAAAGGTA	6223
optimal_loci_97772	OGL34	118676	ZFN_binding_46: GGACTGGGTGCCTGTGTG	6224
			ZFN_binding_47: CGTGGGTACGAA	6225
optimal_loci_236662	OGL35	118677	ZFN_binding_48: CGTGCTGTGGTCTGGCGTA	6226
			ZFN_binding_49: TGGGGCTATGGCCATGGGG	6227
optimal_loci_139485	OGL36	118680	ZFN_binding_50: GCGGTACGATAGTGTT	6228
			ZFN_binding_51: ACTCGGGGAGTCGGGGTC	6229
optimal_loci_301175	OGL37	118683	ZFN_binding_52: GACGGATCGGAG	6230
			ZFN_binding_53: GGCGGATGCATCCGTT	6231
optimal_loci_152337	OGL38	118685	ZFN_binding_54: ATAGCGGACCGATCGG	6232
			ZFN_binding_55: ATCCCGGCCGGTCGATTCG	6233
optimal_loci_202616	OGL39	123833	ZFN_binding_56: cgtgcttgcggcaccgcag	6234
			ZFN_binding_57: gccgctgcacccgttcat	6235
optimal_loci_282323	OGL40	118771	ZFN_binding_58: GAGGACAGGCGAGCT	6236
			ZFN_binding_59: GAAGACGTAGGCGCA	6237
optimal_loci_262782	OGL41	121943	ZFN_binding_60: CACAAGATGGTGATGGTC	6238
			ZFN_binding_61: CATGTATGTATGTAGTAG	6239
optimal_loci_236455	OGL42	121946	ZFN_binding_62: TCGGCCATGGGA	6240
			ZFN_binding_63: GCGGCCAAAAAGCATGTA	6241
optimal_loci_162531	OGL43	121949	ZFN_binding_64: GGTGCCAAAGCCATGCAG	6242
			ZFN_binding_65: GGCTGGCGGGCGGCC	6243

optimal_loci_34 4663	OGL44	121952	ZFN_binding_66: GGAGACTCGATAAGAA	6244
			ZFN_binding_67: GCCATGTGGGGTAGTT	6245
optimal_loci_33 7001	OGL45	121959	ZFN_binding_68: CATGGCATGGCATCG	6246
			ZFN_binding_69: CACATGCGCGGCGCATGTC	6247
optimal_loci_23 8100	OGL46	121963	ZFN_binding_70: TAGTAGGCTAGTAGCT	6248
			ZFN_binding_71: ACGCCGCGGCGGCTTGCGCT	6249
optimal_loci_26 4359	OGL48	121971	ZFN_binding_72: ATCTAGGTGCAACTAG	6250
optimal_loci_28 2653	OGL49	121972	ZFN_binding_73: GTGAAACGGATGTGT	6251
			ZFN_binding_74: TCAGAATATCATGATGGCC	6252
optimal_loci_80 282	OGL50	124097	ZFN_binding_75: TGCGAGCGCTGCATGG	6253
			ZFN_binding_76: GCTGGAGGGGCCAATGAT	6254
optimal_loci_29 1068	OGL51	123818	ZFN_binding_77: TATCCGATCCCG	6255
			ZFN_binding_78: TGTGTGGATGACGAAACG	6256
optimal_loci_56 395	OGL52	118705	ZFN_binding_79: GGAGTAAGAAATGAC	6257
			ZFN_binding_80: TCCGCGTTGCTGTCTGAA	6258
optimal_loci_11 4664	OGL54	118711	ZFN_binding_81: TATCAGCTCGAG	6259
			ZFN_binding_82: TAGACCTGTTTTGATGGTT	6260
optimal_loci_53 137	OGL57	118718	ZFN_binding_83: GAAGACGGCGGCGAGAGCT	6261
			ZFN_binding_84: AGGGAAGAGAGGAGGA	6262
optimal_loci_34 4664	OGL58	118722	ZFN_binding_85: GCACAGATCAGGGCT	6263
			ZFN_binding_86: AAGGATTTGCACAGACAG	6264
optimal_loci_81 941	OGL59	118726	ZFN_binding_87: GCGGCAGCCATAGGA	6265
			ZFN_binding_88: GTGCATGCGTATCCA	6266
optimal_loci_32 1514	OGL60	118728	ZFN_binding_89: GAGGGTCTTGGGGTGATATC	6267
			ZFN_binding_90: AGGAAAGCCCAAGGA	6268
optimal_loci_30 1180	OGL61	118732	ZFN_binding_91: GTACAAGAGTAGTAG	6269
			ZFN_binding_92: TCGATCGAGGGCGCA	6270
optimal_loci_34	OGL62	118733	ZFN_binding_93:	6271

8776			CCACCGTCTCCGTAGGCC	
			ZFN_binding_94: GTGTCGAGAGCT	6272
optimal_loci_244439	OGL63	118735	ZFN_binding_95: ATAGAAAACCATGGCGGAG	6273
			ZFN_binding_96: AAGGGGCGGCAACGGA	6274
optimal_loci_348258	OGL64	118739	ZFN_binding_97: GTTGTCGGATAACCG	6275
			ZFN_binding_98: GAGGGGGAGTAGCTAGGT	6276
optimal_loci_322501	OGL65	118742	ZFN_binding_99: GGACGAGACCAAATCG	6277
			ZFN_binding_100: CAAGGAGACAAAGCT	6278
optimal_loci_244324	OGL66	118745	ZFN_binding_101: TACGTGGCAATTGGCA	6279
			ZFN_binding_102: TCAGATGCTGCAGCT	6280
optimal_loci_97232	OGL67	124081	ZFN_binding_103: AGAAGATCGATCGGTA	6281
			ZFN_binding_104: GCTTGAGCTCACGCA	6282
optimal_loci_282499	OGL68	125361	ZFN_binding_105: CACTACTACTACTACCGCC	6283
			ZFN_binding_106: GGGTGGGGGGCA	6284
optimal_loci_155031	OGL69	118753	ZFN_binding_107: GGACCTACAATAGGCA	6285
			ZFN_binding_108: GATCACAAGACCAAG	6286
optimal_loci_301773	OGL70	124878	ZFN_binding_109: CATTGTCAGTTCCTT	6287
			ZFN_binding_110: CAGCAGGACTCT	6288
optimal_loci_283161	OGL71	123829	ZFN_binding_111: AAGACAGACGATGTC	6289
			ZFN_binding_112: ACAAAAAAGCAAGAA	6290
optimal_loci_55524	OGL72	118761	ZFN_binding_113: TCACGGTGTTACCCATGTA	6291
			ZFN_binding_114: GACGGATGCGTACGTG	6292
optimal_loci_127268	OGL73	124086	ZFN_binding_131: GTTGTTATTCAAACA	6293
			ZFN_binding_132: CACAAGTAATGTGGA	6294
optimal_loci_137693	OGL74	121904	ZFN_binding_115: GCGGCTGGTTTGCAG	6295
			ZFN_binding_116: CACGGACAGGAG	6296

optimal_loci_265551	OGL75	121905	ZFN_binding_117: GAGGCGGAGGTG	6297
			ZFN_binding_118: AGGGCGGAAGTTACGGAG	6298
optimal_loci_128078	OGL76	121917	ZFN_binding_119: GGAGCCCCCAGCGTGGGTT	6299
			ZFN_binding_120: GACCGGTCAGTAGGTCAAG	6300
optimal_loci_168286	OGL77	121918	ZFN_binding_121: TTCACGTCATGCT	6301
			ZFN_binding_122: GCCGACGACTAGGAGGTA	6302
optimal_loci_3733	OGL78	121909	ZFN_binding_123: CTGTAGGGCGTCGTC	6303
			ZFN_binding_124: GTAGCGGTACTACTGG	6304
optimal_loci_203075	OGL79	121912	ZFN_binding_125: ATCCAGGCAGCTGGCGGC	6305
			ZFN_binding_126: GATTGGAATGCAGGCCCG	6306
optimal_loci_232484	OGL80	121981	ZFN_binding_127: GATGCGTCTGGTGTGACGAC	6307
			ZFN_binding_128: ACACAGTCCTACTAG	6308
optimal_loci_136086	OGL81	124091	ZFN_binding_129: GCTCGAAAACTTATG	6309
			ZFN_binding_130: ATGAAAGATGACCGA	6310
optimal_loci_228254	OGL55	n/a	TTCATGGTTGTTACCACTCatnnnatG ATCCCTTTGAAGTAAAC	6686
optimal_loci_66202	OGL47	n/a	TTCTACGATTACTTCtannctGCTAGT CAGATTGAA	6687
optimal_loci_120993	OGL56	n/a	TGATGCAAGGTGGCGTAAAggnngg GACATAAAGAGGCAG	6688
optimal_loci_200497	OGL53	n/a	GATTACCTCCACCTTttnnctAGGCCC TAATATCGAA	6689
optimal_loci_5607	OGL03	n/a	ATCCCTCTATCCTTCACGaanngaAA CGATCTCGAAGGACGAT	6690

The *Zea mays* representative genomic loci zinc finger designs were incorporated into zinc finger expression vectors encoding a protein having at least one finger with a CCHC structure. *See*, U.S. Patent Publication No. 2008/0182332. In particular, the last finger in each protein had a CCHC backbone for the recognition helix. The non-canonical zinc finger-encoding sequences were fused to the nuclease domain of the type IIS restriction enzyme *Fok*I (amino acids 384-579 of the sequence of Wah *et al.*, (1998) Proc. Natl. Acad. Sci. USA 95:10564-10569) via a four amino acid ZC linker and an *opaque*-2 nuclear localization signal derived from *Zea mays* to form zinc-finger nucleases (ZFNs). *See,* U.S. Patent No. 7,888,121. Zinc fingers for the various functional domains were selected for *in vivo* use. Of the numerous ZFNs that were designed, produced and tested to bind to the putative genomic target site, the

ZFNs described in Table 8 above were identified as having *in vivo* activity and were characterized as being capable of efficiently binding and cleaving the unique *Zea mays* genomic polynucleotide target sites *in planta*.

ZFN Construct Assembly

Plasmid vectors containing ZFN gene expression constructs, which were identified as previously described, were designed and completed using skills and techniques commonly known in the art (*see*, for example, Ausubel or Maniatis). Each ZFN-encoding sequence was fused to a sequence encoding an *opaque*-2 nuclear localization signal (Maddaloni *et al.*, (1989) Nuc. Acids Res. 17:7532), that was positioned upstream of the zinc finger nuclease. The non-canonical zinc finger-encoding sequences were fused to the nuclease domain of the type IIS restriction enzyme FokI (amino acids 384-579 of the sequence of Wah *et al.* (1998) Proc. Natl. Acad. Sci. USA 95:10564-10569). Expression of the fusion proteins was driven by the strong constitutive promoter from the *Zea mays* Ubiquitin gene, (which includes the 5' untranslated region (UTR) (Toki *et al.*, (1992) Plant Physiology 100;1503-07). The expression cassette also included the 3' UTR (comprising the transcriptional terminator and polyadenylation site) from the *Zea mays* peroxidase 5 gene (Per5) gene (US Patent Publication No. 2004/0158887). The self-hydrolyzing 2A encoding the nucleotide sequence from *Thosea asigna* virus (Szymczak *et al.*, (2004) Nat Biotechnol. 22:760-760) was added between the two Zinc Finger Nuclease fusion proteins that were cloned into the construct.

The plasmid vectors were assembled using the IN-FUSION™ Advantage Technology (Clontech, Mountain View, CA). Restriction endonucleases were obtained from New England BioLabs (Ipswich, MA) and T4 DNA Ligase (Invitrogen, Carlsbad, CA) was used for DNA ligation. Plasmid preparations were performed using NUCLEOSPIN® Plasmid Kit (Macherey-Nagel Inc., Bethlehem, PA) or the Plasmid Midi Kit (Qiagen) following the instructions of the suppliers. DNA fragments were isolated using QIAQUICK GEL EXTRACTION KIT™ (Qiagen) after agarose tris-acetate gel electrophoresis. Colonies of all ligation reactions were initially screened by restriction digestion of miniprep DNA. Plasmid DNA of selected clones was sequenced by a commercial sequencing vendor (Eurofins MWG Operon, Huntsville, AL). Sequence data were assembled and analyzed using the SEQUENCHER™ software (Gene Codes Corp., Ann Arbor, MI).

Plasmids were constructed and confirmed via restriction enzyme digestion and via DNA sequencing.

Zinc Finger Cloning Via Automated Workflow

A subset of Zinc Finger Nuclease vectors were cloned via an automated DNA construction pipeline. Overall, the automted pipeline resulted in vector constructions with identical ZFN architecture as described previously. Each Zinc Finger monomer, which confers the DNA binding specificity of the ZFN, were divided into 2-3 unique sequences at a KPF amino acid motif. Both the 5' and 3' ends of the ZFN fragments were modified with inclusion of a BsaI recognition site (GGTCTCN) and derived overhangs. Overhangs were distributed such that a 6-8 part assembly would only result in the desired full length expression clone. Modified DNA fragments were synthesized *de novo* (Synthetic Genomics Incorporated, La Jolla, CA). A single maize backbone, pDAB118791 was used in all of the maize ZFN builds. It contained the ZmUbi1 promoter and the Opaque2 NLS as well as the FokI domain and the ZmPer5 3'UTR. Cloned in between the Opaque 2 NLS and the FokI domain was a BsaI flanked SacB gene from *Bacillus subtilis*. When putative ligation events were plated on Sucrose containing media, the SacB cassette acts as a negative selection agent reducing or eliminating vector backbone contamination. A second part repeatedly utilized in all builds was pDAB117462. This vector contains the first monomer Fok1 domain, the t2A stutter sequence, and the 2nd monomer Opaque2 NLS all flanked by BsaI sites.

Using these materials as as the ZFN DNA parts library, a Freedom Evo 150 (TECAN, Mannedorf, Switzerland) manipulated the addition of 75-100ng of each DNA plasmid or synthesized fragment from 2D bar coded tubes into a PCR plate (ThermoFisher, Waltham, MA). BsaI (NEB, Ipswich, MA) and T4 DNA ligase (NEB, Ipswich, MA) supplemented with Bovine Serum Albumin protein (NEB, Ipswich, MA) and T4 DNA Ligase Buffer(NEB, Ipswich, MA) were added to the reaction. Reactions were cylcled (25X) with incubations for 3 minutes at 37°C and 4 minutes at 16°C C1000 Touch Thermo Cycler(BioRad, Hercules CA). Ligated material was transformed and screened in Top10 cells (Life Technologies Carlsbad, CA) by hand or using a Qpix460 colony picker and LabChip GX (Perkin Elmer, Waltham, MA). Correctly digesting colonies were sequence confirmed provided to plant transformation.

Universal Donor Construct Assembly

To support rapid testing of a large number of target loci, a novel, flexible universal donor system sequence was designed and constructed. The universal donor polynucleotide sequence was compatible with high throughput vector construction methodologies and analysis. The universal donor system was composed of at least three modular domains: a variable ZFN binding domain, a non-variable analytical and user defined features domain, and a simple plasmid backbone for vector scale up. The non-variable universal donor polynucleotide sequence was common to all donors and permits design of a finite set of assays that can be used

across all of the *Zea mays* target sites thus providing uniformity in targeting assessment and reducing analytical cycle times. The modular nature of these domains allowed for high throughput donor assembly. Additionally, the universal donor polynucleotide sequence has other unique features aimed at simplifying downstream analysis and enhancing the interpretation of results. It contains asymmetric restriction site sequence that allows the digestion of PCR products into diagnostically predicted sizes. Sequences comprising secondary structures that were expected to be problematic in PCR amplification were removed. The universal donor polynucleotide sequence is small in size (less than 3.0 Kb). Finally, the universal donor polynucleotide sequence was built upon the high copy pUC19 backbone that allows a large amount of test DNA to be bulked in a timely fashion.

As an embodiment, an example plasmid comprising a universal donor polynucleotide sequence is provided as SEQ ID NO:5418 and Figure 7. In an additional embodiment, a universal donor polynucleotide sequence is provided as: pDAB11846, SEQ ID NO:5419, Figure 15; pDAB117415, SEQ ID NO:5420, Figure 16; pDAB117416, SEQ ID NO:5421, Figure 17; pDAB117417, SEQ ID NO:5422, Figure 18; pDAB117419, SEQ ID NO:5423, Figure 19; pDAB117434 SEQ ID NO:5424, Figure 20; pDAB117418, SEQ ID NO:5425, Figure 21; pDAB117420, SEQ ID NO:5426, Figure 22; and, pDAB117421, SEQ ID NO:5427, Figure 23. In another embodiment, additional sequences comprising the universal donor polynucleotide sequence with functionally expressing coding sequence or nonfunctional (promoterless) expressing coding sequences can be constructed.

In another embodiment, the universal donor polynucleotide sequence is a small 2-3 Kb modular donor system delivered as a plasmid. This is a minimal donor, comprising any number of ZFN binding sites, a short 100-150 bp template region referred to as "DNA X" or "UZI Sequence" (SEQ ID NO:5428) that carries restriction sites and DNA sequences for primer design or coding sequences, and a simple plasmid backbone (Figure 8). The entire plasmid was inserted through NHEJ following DNA double strand breaks at the appropriate ZFN binding site; the ZFN binding sites can be incorporated tandemly. This embodiment of a universal donor polynucleotide sequence was most suitable for rapid screening of target sites and ZFNs, and sequences that were difficult to amplify are minimized in the donor.

In a further embodiment the universal donor polynucleotide sequence was made up of at least 4 modules and carries ZFN binding sites, homology arms, DNA X with either just the approximately 100 bp analytical piece or coding sequences. This embodiment of the universal donor polynucleotide sequence was suitable for interrogating HDR mediated gene insertion at a variety of target sites, with several ZFNs (Figure 9).

The universal donor polynucleotide sequence can be used with all targeting molecules with defined DNA binding domains, with two modes of targeted donor insertion (NHEJ/HDR). As such, when the universal donor polynucleotide sequence was co-delivered with the appropriate ZFN expression construct, the donor vector and the maize genome was cut in one specific location dictated by the binding of the particular ZFN. Once linearized, the donor can be incorporated into the genome by NHEJ or HDR. The different analytical considerations in the vector design can then be exploited to determine the Zinc Finger which maximizes the efficient delivery of targeted integration. (Figure 10).

Example 4: *Zea mays* Transformation Procedures

Before delivery to *Zea mays* c.v. Hi-II protoplasts, plasmid DNA for each ZFN construct was prepared from cultures of *E. coli* using the PURE YIELD PLASMID MAXIPREP SYSTEM® (Promega Corporation, Madison, WI) or PLASMID MAXI KIT® (Qiagen, Valencia, CA) following the instructions of the suppliers.

Protoplast Isolation

Zea mays c.v. Hi-II suspension cells were maintained at a 3.5 day maintenance schedule, 4 mL packed cell volume (PCV) of cells were collected and transferred to 50 mL sterile conical tubes (Fisher Scientific) containing 20 mL of enzyme solution (0.6% PECTOLYASE™, 6% CELLULASE™ ("Onozuka" R10; Yakult Pharmaceuticals, Japan), 4 mM MES (pH 5.7), 0.6 M mannitol, 15 mM $MgCl_2$). The cultures were capped and wrapped in PARAFILM™ and placed on a platform rocker (Thermo Scientific, Vari Mix platform Rocker) at speed setting 10 for incubation for 16-18 hours at room temperature until protoplasts were released. Following incubation, a drop of cells was checked under microscope to check the quality of digestion and digested cells were filtered through 100 μm cell strainer, rinsed with 10 mL W5 media [2mM MES (pH5.7), 205 mM NaCl, 167 mM $CaCl_2$, 6.7mM KCl], followed by filtering through 70 μm and 40 μm cell strainers. The 100 μm and 40 μm strainer was rinsed with 10 mL W5 media. The filtered protoplasts along with rinsed media were collected in 50 mL centrifuge tube and final volume was approximately 40 mL. 8 mL of "Heavy Gradient solution" [500 mM sucrose, 1 mM $CaCl_2$, 5 mM MES (pH6.0)] was then slowly added to the bottom of the protoplast/enzyme solution, centrifuged in a centrifuge with a swing arm bucket rotor for 15 minutes at 300-350 x g. Following centrifugation, about 7-8 mL of protoplast band was removed, washed with 25 mL of W5, and centrifuged for 15 minutes at 180-200 x g. The protoplasts were then resuspended in 10 mLs of MMG solution [4 mM MES (pH 5.7), 0.6 M

mannitol, 15 mM $MgCl_2$]. Protoplasts were counted using a haemocytometer or flow cytometer and diluted to 1.67 million per mL using MMG.

Transformation of *Zea mays* c.v. HI-II Suspension Culture Derived Protoplasts Using PEG

Approximately 0.5 million protoplasts (300 µl in MMG solution) were transferred to 2 mL tubes, and mixed with 40 µl of DNA and incubated at room temperature for 5-10 minutes. Next, 300 µl of freshly prepared PEG solution [36% PEG 4000, 0.3 M mannitol, 0.4M $CaCl_2$] was added, and the mixture was incubate at room temperature 15-20 minutes with periodic mixing by inversion. After incubation, 1 ml of W5 wash was added slowly and mixed gently and protoplasts were pelleted by centrifugation at 180-200 x g for 15 minutes. The pellet was resuspended in 1 mL of WI media [4 mM MES (pH 5.7), 0.6 M mannitol, 20 mM KCl] and protoplast containing tube wrapped with aluminum foil and incubated in room temperature overnight for about 16 hours.

Transformation of ZFN and Donor

For each of the selected genomic loci of Table 5, the *Zea mays* protoplasts were transfected with a *yfp* gene expressing control, ZFN alone, donor alone and a mixture of ZFN and donor at 1:10 ratio (by weight). The total amount of DNA for transfection of 0.5 million protoplasts was 80 µg. All treatments were conducted in replicates of either 3 or 6. The *yfp* gene expressing control used was pDAB8393 (Figure 11) containing the *Zea mays* Ubiquitin 1 promoter – yellow fluorescent protein coding sequence – *Zea mays* Per5 3'UTR and the Rice Actin1 promoter – *pat* coding sequence – *Zea mays* lipase 3'UTR gene expression cassettes. To provide a consistent amount of total DNA per transfection, either salmon sperm or a plasmid containing the *yfp* gene was used as filler where necessary. In a typical targeting experiment, 4 µg of ZFN alone or with 36 µg of donor were transfected and appropriate amount of salmon sperm or pUC19 plasmid DNA was added to bring the overall amount of DNA to 80 µg. Inclusion of *yfp* gene expressing plasmid as filler allows assessment of transfection quality across multiple loci and replicate treatments.

Example 5: Cleavage of Genomic Loci in *Zea mays* via Zinc Finger Nuclease

ZFN transfected *Zea mays* c.v. Hi-II protoplasts were harvested 24 hours post-transfection, by centrifugation at 1600 rpm in 2 ml EPPENDORF™ tubes and the supernatant was completely removed. Genomic DNA was extracted from protoplast pellets using the QIAGEN PLANT DNA EXTRACTION KIT™ (Qiagen, Valencia, CA). The isolated DNA was resuspended in 50 µL of water and concentration was determined by NANODROP®

(Invitrogen, Grand Island, NY). The integrity of the DNA was estimated by running samples on 0.8% agarose gel electrophoresis. All samples were normalized (20-25 ng/μL) for PCR amplification to generate amplicons for sequencing (Illumina, Inc., SanDiego, CA). Bar-coded PCR primers for amplifying regions encompassing each test ZFN recognition sequence from treated and control samples were designed and purchased from IDT (Coralville, IA, HPLC purified). Optimum amplification conditions were identified by gradient PCR using 0.2 μM appropriate bar-coded primers, ACCUPRIME PFX SUPERMIX™ (Invitrogen, Carlsbad, CA) and 100 ng of template genomic DNA in a 23.5 μL reaction. Cycling parameters were initial denaturation at 95°C (5 min) followed by 35 cycles of denaturation (95°C, 15 sec), annealing (55-72°C, 30 sec), extension (68°C, 1 min) and a final extension (68°C, 7 min). Amplification products were analyzed on 3.5% TAE agarose gels and and approapriate annealing temperature for each primer combination was determined and used to amplify amplicons from control and ZFN treated samples as described above. All amplicons were purified on 3.5% agarose gels, eluted in water and concentrations were determined by NANODROP™. For Next Generation Sequencing, approximately 100 ng of PCR amplicon from the ZFN treated and corresponding maize protoplast controls were pooled together and sequenced using llumina Next Generation Sequencing (NGS).

The cleavage activity of appropriate ZFNs at each *Zea mays* selected genomic loci were assayed. Short amplicons encompassing the ZFN cleavage sites were amplified from the genomic DNA and subjected to Illumina NGS from ZFN treated and control protoplasts. The ZFN induced cleavage or DNA double strand break was resolved by the cellular NHEJ repair pathway by insertion or deletion of nucleotides (indels) at the cleavage site and presence of indels at the cleavage site is thus a measure of ZFN activity and is determined by NGS. Cleavage activity of the target specific ZFNs was estimated as the number of sequences with indels per 1 million high quality sequences using NGS analysis software (Patent publication 2012-0173,153, data Analysis of DNA sequences) (Figure 12). Activities in the range of 5-100 fold over controls were observed for *Zea mays* selected genomic loci targets and were further confirmed by sequence alignments that showed a diverse footprint of indels at each ZFN cleavage site. This data suggests that the *Zea mays* selected genomic loci were amenable to cleavage by ZFNs. Differential activity at each target was reflective of its chromatin state and amenability to cleavage as well as the efficiency of expression of each ZFN.

Example 6: Rapid Targeting Analysis of the Integration of a Polynucleotide Donor

Validation of the targeting of the universal donor polynucleotide sequence within the *Zea mays* selected genomic loci targets via non-homologous end joining (NHEJ) meditated

donor insertion, was performed using a semi-throughput protoplast based Rapid Testing Analysis method. For each *Zea mays* selected genomic loci target, 3-6 ZFN designs were tested and targeting was assessed by measuring ZFN mediated cleavage by Next Generation Sequencing methods (Figure 12) and donor insertion by junctional in-out PCR (Figure 13). *Zea mays* selected genomic loci that were positive in both assays were identified as a targetable locus.

ZFN Donor Insertion Rapid Testing Analysis

To determine if a *Zea mays* selected genomic loci target can be targeted for donor insertion, a ZFN construct and universal donor polynucleotide construct were co-delivered to maize protoplasts which were incubated for 24 hours before the genomic DNA was extracted for analysis. If the expressed ZFN was able to cut the target binding site both at the *Zea mays* selected genomic loci target and in the donor, the linearized donor would then be inserted into the cleaved target site in the maize genome via the non-homologous end joining (NHEJ) pathway. Confirmation of targeted integration at the *Zea mays* selected genomic loci target was completed based on an "In-Out" PCR strategy, where an "In" primer recognizes sequence at the native optimal genomic loci and an "Out" primer binds to sequence within the donor DNA. The primers were designed in a way that only when the donor DNA was inserted at the *Zea mays* selected genomic loci target, would the PCR assay produce an amplification product with the expected size. The In-Out PCR assay was performed at both the 5'- and 3'-ends of the insertion junction. The primers used for the analysis of integrated polynucleotide donor sequences are provided in Table 9.

ZFN Donor insertion at Target Loci using nested "In-Out" PCR

All PCR amplifications were conducted using a TAKARA EX TAQ HS™ kit (Clonetech, Mountain View, CA). The first In-Out PCR was carried out in 20 μL final reaction volume that contains 1X TAKARA EX TAQ HS™ buffer, 0.2 mM dNTPs, 0.2 μM "Out" primer (Table 9), 0.05 μM "In" primer (designed from the universal donor cassette described above), 0.75 unit of TAKARA EX TAQ HS™ polymerase, and 10 ng extracted maize protoplast DNA. The reaction was then carried out using a PCR program that consisted of 94 °C for 2 min, 20 cycles of 98 °C for 12 sec and 68 °C for 2 min, followed by 72 °C for 10 min and held at 4 °C. Final PCR products were run on an agarose gel along with 1KB PLUS DNA LADDER™ (Life Technologies , Grand Island, NY) for visualization.

The nested In-Out PCR was conducted in 20 μL final reaction volume that contained 1X TAKARA EX TAQ HS™ buffer, 0.2 mM dNTPs, 0.2 μM "Out" primer (Table 9), 0.1 μM

"In" primer (designed from the universal donor cassette described above, Table 10), 0.75 unit of TAKARA EX TAQ HS™ polymerase, and 1 μL of the first PCR product. The reaction was then carried out using a PCR program that consisted of 94 °C for 2 min, 31 cycles of 98 °C for 12 sec, 66 °C for 30 sec and 68 °C for 45 sec, followed by 72 °C for 10 min and held at 4 °C. Final PCR products were run on an agarose gel along with 1KB PLUS DNA LADDER™ (Life Technologies, Grand Island, NY) for visualization.

Table 9. List of all "Out" primers for nested In-Out PCR analysis of optimal genomic loci.

OGL1	First PCR	5'-end	APL02-5PriF1	SEQ ID NO:5430 CGCCACAAATCTGAACCAGCA
			Spec-PriR1	SEQ ID NO:5431 CCACGATCGACATTGATCTGGCTA
		3'-end	APL02-3PriR1	SEQ ID NO:5432 GCGACATATCAGGCCAACAGG
			Uzi-PriF1	SEQ ID NO:5433 GGGATATGTGTCCTACCGTATCAGG
	Nest PCR	5'-end	APL02-5nstPriF1	SEQ ID NO:5434 CCAGCATACAGTTAGGGCCCA
			Spec-nstPriR1	SEQ ID NO:5435 GTTGCCTTGGTAGGTCCAGC
		3'-end	APL02-3nstPriR1	SEQ ID NO:5436 CGAAAACTCAGCATGCGGGAA
			Uzi-nstPriF1	SEQ ID NO:5437 GAGCCATCAGTCCAACACTGC
OGL2	First PCR	5'-end	APL01-5PriF1	SEQ ID NO:5438 ACAGGCGTACAGCAACACCA
		3'-end	APL01-3PriR1	SEQ ID NO:5439 GACCCTATGGTGTTGGATCCCA
	Nest PCR	5'-end	APL01-5nstPriF1	SEQ ID NO:5440 CGGGAGCTAGGCAACAAATCG
		3'-end	APL01-3nstPriR1	SEQ ID NO:5441 TCTGACTAAACGGGTGGATGCTG
OGL8	First PCR	5'-end	OGL08-5nstPriF2	SEQ ID NO:5442 CGGATCAGTTGATTCGCTCACTTTCA
		3'-end	OGL08-3PriR	SEQ ID NO:5443 GCCGAAAAGCAGCAACTGGAA
	Nest PCR	5'-end	OGL08-5nstPriF	SEQ ID NO:6619 GATTGCTACGCAGACCGCCTA
		3'-end	OGL08-3nstPriR	SEQ ID NO:5444 CACTATTCCTCCGGCATGCAG

OGL11	First PCR	5'-end	OGL11-5PriF	SEQ ID NO:5445 TGACCTATTGATCGGTCGGCTC
		3'-end	OGL11-3PriR2	SEQ ID NO:5446 TGCCTTGAATCTCAGGGATGCA
	Nest PCR	5'-end	OGL11-5nstPriF	SEQ ID NO:5447 GCCGAAGCTAACTAGCGGACA
		3'-end	OGL11-3nstPriR2	SEQ ID NO:5448 CATGGAGTAGCAGCTGTGCTG
OGL12	First PCR	5'-end	OGL12-5PriF	SEQ ID NO:5449 GAAAAGCAGTCACCGGCTCTG
		3'-end	OGL12-3PriR	SEQ ID NO:5450 CCATGGACATGAATTCGGCACG
	Nest PCR	5'-end	OGL12-5nstPriF	SEQ ID NO:5451 CTTTTGCACCACGGAGCAGAC
		3'-end	OGL12-3nstPriR	SEQ ID NO:5452 GCTAGCAAAACTTTGAAGCTCGCTC
OGL13	First PCR	5'-end	OGL13-5PriF	SEQ ID NO:5453 GAGGTCCCTTACGGGTCATCG
		3'-end	OGL13-3PriR	SEQ ID NO:5454 ACCAGGTCTATCTTGCGCAGAC
	Nest PCR	5'-end	OGL13-5nstPriF	SEQ ID NO:5455 AATAGCGTGGTCGGGTCCTAG
		3'-end	OGL13-3nstPriR	SEQ ID NO:5456 ACGAACGATCCAAGGTGCAGT
OGL14	First PCR	5'-end	OGL14-5PriF	SEQ ID NO:5457 TAGAGACGAGGACTCTGGGCT
		3'-end	OGL14-3PriR	SEQ ID NO:5458 AAGTCCAACATGGGCACAACC
	Nest PCR	5'-end	OGL14-5nstPriF	SEQ ID NO:5459 CCTCGTTAAGGGTGCAGGTTG
		3'-end	OGL14-3nstPriR	SEQ ID NO:5460 CCAAGTCAGCTTCTAAGCCATCAAAC
OGL15	First PCR	5'-end	OGL15-5PriF	SEQ ID NO:5461 AACCCTAGACTTCTGCCTGGTG
		3'-end	OGL15-3PriR	SEQ ID NO:5462 GCTCACTTACGAGCAGATCCCA
	Nest PCR	5'-end	OGL15-5nstPriF	SEQ ID NO:5463 GGTGCACGCATGTTCTCATGT
		3'-end	OGL15-3nstPriR	SEQ ID NO:5464 TGTTTACCGCAGCCATGCTTG
OGL16	First PCR	5'-end	OGL16-5PriF	SEQ ID NO:5465 GTTGTATACGGCATCCATCCGCT
		3'-end	OGL16-3PriR	SEQ ID NO:5466 GAATGAAACTGGTGGTCTGCTCC
	Nest PCR	5'-end	OGL16-5nstPriF	SEQ ID NO:5467 CCGACGAGGTACAAGTAGCAGG
		3'-end	OGL16-3nstPriR	SEQ ID NO:5468 CCCGTAGTCCAGATTCTTGTGGT

OGL17	First PCR	5'-end	OGL17-5PriF	SEQ ID NO:5469 GTCGTTTGTTCGGAAGGGGAG
		3'-end	OGL17-3PriR	SEQ ID NO:5470 CGTAGTTGTCCGGCATGTCCT
	Nest PCR	5'-end	OGL17-5nstPriF	SEQ ID NO:5471 TGTATCCCTTCGGTGAGCACG
		3'-end	OGL17-3nstPriR	SEQ ID NO:5472 TGAATCGACTCGCTGACAGGTG
OGL04	First PCR	5'-end	OGL04-5PriF	SEQ ID NO: 6311 CAACCAGAAACGTCCTGCACTG
			Spec-PriR1	SEQ ID NO: 6312 CCACGATCGACATTGATCTGGCTA
		3'-end	OGL04-3PriR	SEQ ID NO: 6313 AAATCCAAGCCACGTACGCAC
			UnivDonor-3PriF1	SEQ ID NO: 6314 GTTTCATCAAGCCTTACGGTCACC
	Nest PCR	5'-end	OGL04-5nstPriF	SEQ ID NO: 6315 ACACCAATTGCCCATTTGGCA
			Spec-nstPriR2	SEQ ID NO: 6316 GCTGGCGATGAGCGAAATGTAG
		3'-end	OGL04-3nstPriR	SEQ ID NO: 6317 TTGGTTAGCAGCACGGATGGA
			UnivDonor-3PriF2	SEQ ID NO: 6318 CAGCAACGTCGGTTCGAGATG
OGL05	First PCR	5'-end	OGL05-1-5PriF	SEQ ID NO: 6319 ATGCCACTTTCGAAGAGAGGACG
		3'-end	OGL05-1-3PriR2	SEQ ID NO: 6320 CATCTCCAACGTCATCGGCAC
	Nest PCR	5'-end	OGL05-1-5nstPriF	SEQ ID NO: 6321 GGGAAACAGATTCGTCAGCTTGC
		3'-end	OGL05-1-3nstPriR	SEQ ID NO: 6322 GCCTATCCAGTGGCGGATACA
OGL06	First PCR	5'-end	OGL06-5PriF	SEQ ID NO: 6323 CTTGCTCTACAACTCTGCCCCA
			Spec-PriR1	SEQ ID NO: 6324 CCACGATCGACATTGATCTGGCTA
		3'-end	OGL06-3PriR	SEQ ID NO: 6325 AGTCGGTACCTGCAAGCTACG
			UnivDonor-3PriF1	SEQ ID NO: 6326 GTTTCATCAAGCCTTACGGTCACC
	Nest PCR	5'-end	OGL06-5nstPriF	SEQ ID NO: 6327 TGGATTTGAGGCCAACTGCAC
			Spec-nstPriR2	SEQ ID NO: 6328 GCTGGCGATGAGCGAAATGTAG
		3'-end	OGL06-3nstPriR	SEQ ID NO: 6329 TCTGCATTGTTGGGATCGACCA
			UnivDonor-3PriF2	SEQ ID NO: 6330 CAGCAACGTCGGTTCGAGATG

OGL07	First PCR	5'-end	OGL07-1-5nstPriF	SEQ ID NO: 6331 ACGATCGCAGGTTATCCTCGC
		3'-end	OGL07-1-3PriR	SEQ ID NO: 6332 CTTGTCGGTTGCTGTGTGGAC
	Nest PCR	5'-end	OGL07-1-5nstPriF	SEQ ID NO: 6333 AACACGGATGGCCTGCAATG
		3'-end	OGL07-1-3nstPriR	SEQ ID NO: 6334 GCATGGGCGTACGTCACTTG
OGL09	First PCR	5'-end	OGL09-5PriF	SEQ ID NO: 6335 ACCCAGAATCTCTGGTTCCGT
		3'-end	OGL09-3PriR	SEQ ID NO: 6336 CAGGAAGCTCTGCATCTGCG
	Nest PCR	5'-end	OGL09-5nstPriF	SEQ ID NO: 6337 AGTCTTTGATGTAAACGTCTTGCCT
		3'-end	OGL09-3nstPriR	SEQ ID NO: 6338 GCATGGAAACACCAGGTCGA
OGL10	First PCR	5'-end	OGL10-5PriF	SEQ ID NO: 6339 GCAGCGAATAGGAATGCGAGAC
		3'-end	OGL10-3PriR	SEQ ID NO: 6340 TAACCTTGTTTCGCTGACTCCC
	Nest PCR	5'-end	OGL10-5nstPriF	SEQ ID NO: 6341 CTTCTTCTACCTACACGCACCAG
		3'-end	OGL10-3nstPriR	SEQ ID NO: 6342 GATCCGTTTCCTCACTCTCGC
OGL18	First PCR	5'-end	OGL18-5PriF	SEQ ID NO: 6343 AGGTGAATCTTCCGTGGCTGT
		3'-end	OGL18-3PriR	SEQ ID NO: 6344 CCATAATCAGTGTGACTGGTGGCT
	Nest PCR	5'-end	OGL18-5nstPriF	SEQ ID NO: 6345 CGGATCTAAGGTGCCCTGTCT
		3'-end	OGL18-3nstPriR	SEQ ID NO: 6346 GTCTAGCTCATGGAAGTGGGAGG
OGL19	First PCR	5'-end	OGL19-5PriF	SEQ ID NO: 6347 GACTTCTAAGCCCCAAGGCCTA
		3'-end	OGL19-3PriR2	SEQ ID NO: 6348 AGATCTTTTGGCTCCCTCTCACC
	Nest PCR	5'-end	OGL19-5nstPriF	SEQ ID NO: 6349 GTGCTTCGAGGGCTCAAGGTA
		3'-end	OGL19-3nstPriR2	SEQ ID NO: 6350 ATTGCTCACCCCATCCCCTT
OGL20	First PCR	5'-end	OGL20-5PriF	SEQ ID NO: 6351 GGCTATGACCCGGACACTACC
		3'-end	OGL20-3PriR	SEQ ID NO: 6352 CAGTTGGGCGTCAAGTTAGTTCAG
	Nest PCR	5'-end	OGL20-5nstPriF	SEQ ID NO: 6353 AAGTCCACAAGGATCTGACCACG
		3'-end	OGL20-3nstPriR	SEQ ID NO: 6354 TGAAACTTTGGTTCAGTCTGCTCG

OGL21	First PCR	5'-end	OGL21-5PriF	SEQ ID NO: 6355 TATGTCCAAGCCACGAGAAGC
		3'-end	OGL21-3PriR	SEQ ID NO: 6356 ACTGCAGGTACTACTGGTACGC
	Nest PCR	5'-end	OGL21-5nstPriF	SEQ ID NO: 6357 GCTACAGTATAGCAGGAGCAGC
		3'-end	OGL21-3nstPriR	SEQ ID NO: 6358 GTCCTACTATACGCTGCCGC
OGL22	First PCR	5'-end	OGL22-5PriF	SEQ ID NO: 6359 CAATCCTTCTGAGCTGCACCG
		3'-end	OGL22-3PriR	SEQ ID NO: 6360 GGTGTCAATGACCTCACGAGC
	Nest PCR	5'-end	OGL22-5nstPriF	SEQ ID NO: 6361 CCGTACCAAACAGGCAAGCAG
		3'-end	OGL22-3nstPriR	SEQ ID NO: 6362 GATCGCCCATATGCTTGGATTCAC
OGL23	First PCR	5'-end	OGL23-5PriF	SEQ ID NO: 6363 GGATTAGGACGGCTGACTGGT
		3'-end	OGL23-3PriR	SEQ ID NO: 6364 GTTGCTTTGTTTGCGTGCTCC
	Nest PCR	5'-end	OGL23-5nstPriF	SEQ ID NO: 6365 TTAAAGTGCTAGCTGACTGACCGA
		3'-end	OGL23-3nstPriR	SEQ ID NO: 6366 GGCCCATGCCTTAGGTTGAC
OGL24	First PCR	5'-end	OGL24-5PriF	SEQ ID NO: 6367 ACTGAGACTGGGAGTCTGGGA
		3'-end	OGL24-3PriR	SEQ ID NO: 6368 CGCCGTCCGACTGTTATTACC
	Nest PCR	5'-end	OGL24-5nstPriF	SEQ ID NO: 6369 CTTCGGCCTTGGATTGGATCAC
		3'-end	OGL24-3nstPriR	SEQ ID NO: 6370 ACAACGCAGATCCCTAGAATCCA
OGL25	First PCR	5'-end	OGL25-5PriF	SEQ ID NO: 6371 GGGATCTCTTGTCACCAAATCAGC
		3'-end	OGL25-3PriR	SEQ ID NO: 6372 TTGACAGTGAGACATGGGAGTACC
	Nest PCR	5'-end	OGL25-5nstPriF	SEQ ID NO: 6373 TGCCTGCATTGCATCGATCTG
		3'-end	OGL25-3nstPriR	SEQ ID NO: 6374 AGTACCCACTGTCACTGCACG
OGL26	First PCR	5'-end	OGL26-5PriF	SEQ ID NO: 6375 ATCTTCACCAAGTATCCCACACCT
		3'-end	OGL26-3PriR2	SEQ ID NO: 6376 GCTGTGTTAGTATCGTCGAAGGCT
	Nest PCR	5'-end	OGL26-5nstPriF	SEQ ID NO: 6377 TCAAACCTCACCTGATGTATCGCT
		3'-end	OGL26-3nstPriR2	SEQ ID NO: 6378 CGAACCTCCAATTTATCGGCAATCG

OGL27	First PCR	5'-end	OGL27-5PriF	SEQ ID NO: 6379 AAGTCCCTAGAGCCCTCATGC
		3'-end	OGL27-3PriR	SEQ ID NO: 6380 GAGAGTTAGGAGGGAGCATGGC
	Nest PCR	5'-end	OGL27-5nstPriF	SEQ ID NO: 6381 GTGTCCGAGATAGGTCGTGTCC
		3'-end	OGL27-3nstPriR	SEQ ID NO: 6382 TTGAACTTGGGCATGAGTGGGA
OGL28	First PCR	5'-end	OGL28-5PriF	SEQ ID NO: 6383 GTCGGCTGTGCGTTATGAGAC
		3'-end	OGL28-3PriR	SEQ ID NO: 6384 GATTAATCGGTTATCGGTGGACGC
	Nest PCR	5'-end	OGL28-5nstPriF	SEQ ID NO: 6385 ACGGACAGATCACAGATCGGG
		3'-end	OGL28-3nstPriR	SEQ ID NO: 6386 CCTTAATCCGGTTTGGTGAACCC
OGL29	First PCR	5'-end	OGL29-5PriF	SEQ ID NO: 6387 GCTTACACCGATGCAGGGGTA
		3'-end	OGL29-3PriR	SEQ ID NO: 6388 GGTTGACATCGGAATTCGTGCC
	Nest PCR	5'-end	OGL29-5nstPriF	SEQ ID NO: 6389 TGAAAGAGAGCGGCCCAACTAC
		3'-end	OGL29-3nstPriR	SEQ ID NO: 6390 TTAATGCTGGCCTCTCCTGCA
OGL30	First PCR	5'-end	OGL30-5PriF	SEQ ID NO: 6391 ATGAAGAGCACCAGCTACCCC
		3'-end	OGL30-3PriR	SEQ ID NO: 6392 GGAAGATGGAACCACATGCCC
	Nest PCR	5'-end	OGL30-5nstPriF	SEQ ID NO: 6393 GGCTACAAAACCCAAGAGGGG
		3'-end	OGL30-3nstPriR	SEQ ID NO: 6394 CCCTTTCATGCAACGATCAGGC
OGL31	First PCR	5'-end	OGL31-5PriF	SEQ ID NO: 6395 TGTTCAGTTGGTAAGTCGTCGCT
		3'-end	OGL31-3PriR	SEQ ID NO: 6396 GTTCTTGGAGAGTGATTGTCGGC
	Nest PCR	5'-end	OGL31-5nstPriF	SEQ ID NO: 6397 CTTCACCTCAAGGGAAGCAAGC
		3'-end	OGL31-3nstPriR	SEQ ID NO: 6398 GGTGAAACTGAGCTGGGAATTGG
OGL32	First PCR	5'-end	OGL32-5PriF	SEQ ID NO: 6399 GATCCACAACCACATTCAACAAGGT
		3'-end	OGL32-3PriR	SEQ ID NO: 6400 TGATCAAACTAGAGGCCTGATGACG
	Nest PCR	5'-end	OGL32-5nstPriF	SEQ ID NO: 6401 GGACAAATGACATGTAACCCACTCC
		3'-end	OGL32-3nstPriR	SEQ ID NO: 6402 ATGACGACAGCGTGTTTGTGG

OGL33	First PCR	5'-end	OGL33-5PriF	SEQ ID NO: 6403 AGCTCCACTTCCAGTAGTCCTG
		3'-end	OGL33-3PriR	SEQ ID NO: 6404 CGGATAGCGTCCACAAACGAG
	Nest PCR	5'-end	OGL33-5nstPriF	SEQ ID NO: 6405 AATCATGCGGCTGTCGAAAGG
		3'-end	OGL33-3nstPriR	SEQ ID NO: 6406 GCGATAAGAAAGCATCCTGCGG
OGL34	First PCR	5'-end	OGL34-5PriF	SEQ ID NO: 6407 ACTGTACCACCGAAAGACGACC
		3'-end	OGL34-3PriR	SEQ ID NO: 6408 CCCGTCTCACTGTGGATCTATGTC
	Nest PCR	5'-end	OGL34-5nstPriF	SEQ ID NO: 6409 AAAGACGACCAAACAGTCCTGC
		3'-end	OGL34-3nstPriR	SEQ ID NO: 6410 GAGTCAACGTGTCAGTGTCACC
OGL35	First PCR	5'-end	OGL35-5PriF	SEQ ID NO: 6411 AGGTGTAGTCCTGCTCTGTCTG
		3'-end	OGL35-3PriR	SEQ ID NO: 6412 AACTGAAGACACTGACGACATCCA
	Nest PCR	5'-end	OGL35-5nstPriF	SEQ ID NO: 6413 TAGGGCGCTAGGCATGTACTC
		3'-end	OGL35-3nstPriR	SEQ ID NO: 6414 GTGGCCTTCTAGGTACACTAGGG
OGL36	First PCR	5'-end	OGL36-5PriF	SEQ ID NO: 6415 GCAACCAACTTTGTCGGATGCT
		3'-end	OGL36-3PriR	SEQ ID NO: 6416 AAAGCTCACCTCACAGCACGA
	Nest PCR	5'-end	OGL36-5nstPriF	SEQ ID NO: 6417 TCATAGATTTCGCGTGGTTGAACTG
		3'-end	OGL36-3nstPriR	SEQ ID NO: 6418 ACTCTGCAGCCATGAATTCCAC
OGL37	First PCR	5'-end	OGL37-5PriF	SEQ ID NO: 6419 GAGAAACCGAGGGATCGGAACA
		3'-end	OGL37-3PriR	SEQ ID NO: 6420 ACATGTACGTGTGCGAGAGTCG
	Nest PCR	5'-end	OGL37-5nstPriF	SEQ ID NO: 6421 AGTACGACTGGAATCCAACGCG
		3'-end	OGL37-3nstPriR	SEQ ID NO: 6422 CTCTCCCTAGCTCGACGCTTG
OGL38	First PCR	5'-end	OGL38-5PriF	SEQ ID NO: 6423 GTAGCACTGCACCGTTCATGC
		3'-end	OGL38-3PriR	SEQ ID NO: 6424 ACTCTCCTTCCCTCGACGGTA
	Nest PCR	5'-end	OGL38-5nstPriF	SEQ ID NO: 6425 AGGAGATGAAGGCTTTGTCCCC
		3'-end	OGL38-3nstPriR	SEQ ID NO: 6426 GCAAACCTGCATGGTTGATGC

OGL39	First PCR	5'-end	OGL39-5PriF	SEQ ID NO: 6427 TTGGGTTTGTGCACCACACTC
		3'-end	OGL39-3PriR	SEQ ID NO: 6428 GCTTCTGGAAAAACGCCAGCA
	Nest PCR	5'-end	OGL39-5nstPriF	SEQ ID NO: 6429 ATTCCTTGCGCTCCGTACGAA
		3'-end	OGL39-3nstPriR	SEQ ID NO: 6430 CTTTGCATTGCAGGCACGGTTA
OGL40	First PCR	5'-end	OGL40-5PriF	SEQ ID NO: 6431 CCGAGGTTAAATCCACAGGCG
		3'-end	OGL40-3PriR	SEQ ID NO: 6432 GCGCATTTCCTTGCCCTCAAA
	Nest PCR	5'-end	OGL40-5nstPriF	SEQ ID NO: 6433 GTTCACAGGTACGACAGCAGC
		3'-end	OGL40-3nstPriR	SEQ ID NO: 6434 TACGTTGCCACCAAAAGAGCC
OGL41	First PCR	5'-end	OGL41-5PriF	SEQ ID NO: 6435 AGCAGGCTACTGTGGTCAGG
		3'-end	OGL41-3PriR	SEQ ID NO: 6436 CGATTGCATACAGCAGGTGCC
	Nest PCR	5'-end	OGL41-5nstPriF	SEQ ID NO: 6437 GGCAGGTTTTGAAGGACCCC
		3'-end	OGL41-3nstPriR	SEQ ID NO: 6438 ACGAGCAATGCAGTGAAGGGT
OGL42	First PCR	5'-end	OGL42-5PriF	SEQ ID NO: 6439 TGAGAACGAAACCCGTCAAGCA
		3'-end	OGL42-3PriR	SEQ ID NO: 6440 CACGTCGATCAAACGGCGAG
	Nest PCR	5'-end	OGL42-5nstPriF	SEQ ID NO: 6441 CGTCAAGCATGCAGAAAGGCT
		3'-end	OGL42-3nstPriR	SEQ ID NO: 6442 CCCCTAATCCGCACCGTGTA
OGL43	First PCR	5'-end	OGL43-5PriF	SEQ ID NO: 6443 CCTGTTCCTTCTCCCGAATGC
		3'-end	OGL43-3PriR	SEQ ID NO: 6444 GGTACAAAGTGAAAAGGGCCGG
	Nest PCR	5'-end	OGL43-5nstPriF	SEQ ID NO: 6445 GTGCAATCAAGCCTTGCCCAT
		3'-end	OGL43-3nstPriR	SEQ ID NO: 6446 GAAGTGATGGTCCCTGCCAC
OGL44	First PCR	5'-end	OGL44-5PriF	SEQ ID NO: 6447 GGCTCTAACACATGGTGAGGC
		3'-end	OGL44-3PriR	SEQ ID NO: 6448 AATCATGGTCCTAGTTGTAGCCCC
	Nest PCR	5'-end	OGL44-5nstPriF	SEQ ID NO: 6449 ACTAGGATGAGGGAGCCAATGG
		3'-end	OGL44-3nstPriR	SEQ ID NO: 6450 CTATGGAGATGCCTCCCACCAT

OGL45	First PCR	5'-end	OGL45-5PriF	SEQ ID NO: 6451 GAAGAGCTCGGCATCGGAGAT
		3'-end	OGL45-3PriR	SEQ ID NO: 6452 TCCCAAAACGAACTGTGTGCG
	Nest PCR	5'-end	OGL45-5nstPriF	SEQ ID NO: 6453 TGGCTAGAGCGACCTTGTTCG
		3'-end	OGL45-3nstPriR	SEQ ID NO: 6454 TCGAGATCAGGCATCCACACC
OGL46	First PCR	5'-end	OGL46-5PriF	SEQ ID NO: 6455 CCAAAGTATTTGGTGGGATTCTCGC
		3'-end	OGL46-3PriR	SEQ ID NO: 6456 CTGCAACAAGTGAAAAGCGCC
	Nest PCR	5'-end	OGL46-5nstPriF	SEQ ID NO: 6457 GGATTCTCGCTTTTTCCCACCAAG
		3'-end	OGL46-3nstPriR	SEQ ID NO: 6458 TACATCGATCCAGCTCGTGCTG
OGL47	First PCR	5'-end	OGL47-5PriF	SEQ ID NO: 6459 CGGAACACTAAAACGGGGACATG
			Spec-PriR1	SEQ ID NO: 6460 CCACGATCGACATTGATCTGGCTA
		3'-end	OGL47-3PriR	SEQ ID NO: 6461 TCTTCCTGGCAAGCACTAGGAAC
			UnivDonor-3PriF1	SEQ ID NO: 6462 GTTTCATCAAGCCTTACGGTCACC
	Nest PCR	5'-end	OGL47-5nstPriF	SEQ ID NO: 6463 ACCGAGTAAGGGCTTGTTCGG
			Spec-nstPriR2	SEQ ID NO: 6464 GCTGGCGATGAGCGAAATGTAG
		3'-end	OGL47-3nstPriR	SEQ ID NO: 6465 TCTCCAGCAACCCCTAGATGC
			UnivDonor-3PriF2	SEQ ID NO: 6466 CAGCAACGTCGGTTCGAGATG
OGL48	First PCR	5'-end	OGL48-5PriF	SEQ ID NO: 6467 GCAGTGACACTATAGCCACGTGT
		3'-end	OGL48-3PriR	SEQ ID NO: 6468 GCCCAATCAATTGTCCCTGGAC
	Nest PCR	5'-end	OGL48-5nstPriF	SEQ ID NO: 6469 TGCTACCCAATGGTGTGGACTT
		3'-end	OGL48-3nstPriR	SEQ ID NO: 6470 AATGCCCATTCGGTTGAACCC
OGL49	First PCR	5'-end	OGL49-5PriF	SEQ ID NO: 6471 TCTGATGATCGGGTTGAGGCC
		3'-end	OGL49-3PriR	SEQ ID NO: 6472 CCTCCGGAATCATTTCCCGTTG
	Nest PCR	5'-end	OGL49-5nstPriF	SEQ ID NO: 6473 GTGCTGATCTGGTTGTGGGTC
		3'-end	OGL49-3nstPriR	SEQ ID NO: 6474 CGGAACAATTCCTGGGCACAA

OGL50	First PCR	5'-end	OGL50-5PriF	SEQ ID NO: 6475 AGCTATGGTTAACGGGAATGCCA
			Spec-PriR1	SEQ ID NO: 6476 CCACGATCGACATTGATCTGGCTA
		3'-end	OGL50-3PriR	SEQ ID NO: 6477 TCTAGCGAGAGGTGGTCAGGT
			UnivDonor-3PriF1	SEQ ID NO: 6478 GTTTCATCAAGCCTTACGGTCACC
	Nest PCR	5'-end	OGL50-5nstPriF	SEQ ID NO: 6479 GCTGAAATTGCTGCATCATGGC
			Spec-nstPriR1	SEQ ID NO: 6480 GTTGCCTTGGTAGGTCCAGC
		3'-end	OGL50-3nstPriR	SEQ ID NO: 6481 AGCTGCTACATCTGTGGTCGG
			UnivDonor-3PriF2	SEQ ID NO: 6482 CAGCAACGTCGGTTCGAGATG
OGL51	First PCR	5'-end	OGL51-5PriF	SEQ ID NO: 6483 CCTTCACAGTACTTGAACTGCTGCA
		3'-end	OGL51-3PriR	SEQ ID NO: 6484 CACTCACATGGTGCGTTCCG
	Nest PCR	5'-end	OGL51-5nstPriF	SEQ ID NO: 6485 TGTATGCCTCGTCATCGAGGG
		3'-end	OGL51-3nstPriR	SEQ ID NO: 6486 AGGGGAATGACCAGGAGCAG
OGL52	First PCR	5'-end	OGL52-5PriF	SEQ ID NO: 6487 TCACGTACTGACCACAGAACACC
		3'-end	OGL52-3PriR	SEQ ID NO: 6488 GAATATGCTCCACGCGCATCTC
	Nest PCR	5'-end	OGL52-5nstPriF	SEQ ID NO: 6489 GCTGACTCTAAAACCGCCTTGTG
		3'-end	OGL52-3nstPriR	SEQ ID NO: 6490 GATCCGGCTTGTTCGCTTGAC
OGL53	First PCR	5'-end	OGL53-5PriF	SEQ ID NO: 6491 AACCATAGTGGCTCGCCAGT
		3'-end	OGL53-3PriR	SEQ ID NO: 6492 AATCGCACTAGGTCAGCATGGT
	Nest PCR	5'-end	OGL53-5nstPriF	SEQ ID NO: 6493 GATCATGTCGTTAGCCTCCAACCA
		3'-end	OGL53-3nstPriR	SEQ ID NO: 6494 GTGAAGACTCGAGCTTGGCCT
OGL54	First PCR	5'-end	OGL54-5PriF2	SEQ ID NO: 6495 CAACAAGCTGGTTTGCAGGGT
		3'-end	OGL54-3PriR	SEQ ID NO: 6496 TAACCCCCTTAGAGATGCACATGC
	Nest PCR	5'-end	OGL54-5nstPriF2	SEQ ID NO: 6497 ACCCCAGCAAATTGGACGATCT
		3'-end	OGL54-3nstPriR	SEQ ID NO: 6498 TAGATCGATGAAACCGGTCGATGTG

OGL55	First PCR	5'-end	OGL55-5PriF	SEQ ID NO: 6499 GACCAACCATTTGTTGCCCCT
		3'-end	OGL55-3PriR	SEQ ID NO: 6500 CACGTCTTTGTAGCGACTGTCCA
	Nest PCR	5'-end	OGL55-5nstPriF	SEQ ID NO: 6501 TCCGAAAACTCAAGCATGCCC
		3'-end	OGL55-3nstPriR	SEQ ID NO: 6502 GTGGTGAACTTCCCTCTAGACCC
OGL56	First PCR	5'-end	OGL56-5PriF2	SEQ ID NO: 6503 TGGAAAAACGTAGATGTGCTTGCC
		3'-end	OGL56-3PriR2	SEQ ID NO: 6504 CAAGCTCTTTGATCGTGGTTGACG
	Nest PCR	5'-end	OGL56-5nstPriF2	SEQ ID NO: 6505 GCAGTAAACCTAGTGATGCTGCCT
		3'-end	OGL56-3nstPriR2	SEQ ID NO: 6506 ATGCTTGGTCAACGTGCCAC
OGL57	First PCR	5'-end	OGL57-5PriF2	SEQ ID NO: 6507 CGGTGAATGCAAGCTGGATCAC
		3'-end	OGL57-3PriR2	SEQ ID NO: 6508 GCACTTGTGCTATCCGCCAG
	Nest PCR	5'-end	OGL57-5nstPriF2	SEQ ID NO: 6509 CTTTTGGTGGCGGAGATCAGG
		3'-end	OGL57-3nstPriR2	SEQ ID NO: 6510 TGGAGGAGGAAATCTCTGCTATTCGT
OGL58	First PCR	5'-end	OGL58-5PriF	SEQ ID NO: 6511 ACAGTGGACTCCCTCGCAAG
		3'-end	OGL58-3PriR2	SEQ ID NO: 6512 GTAAGCTTCCTCGACACCTCCA
	Nest PCR	5'-end	OGL58-5nstPriF	SEQ ID NO: 6513 TCTGAAGCACAGTTTAGCCGCA
		3'-end	OGL58-3nstPriR2	SEQ ID NO: 6514 GTGGTTATCTGTAGCTTGAGCACTGA
OGL59	First PCR	5'-end	OGL59-5PriF2	SEQ ID NO: 6515 TGTGTTCCTTCTCCATGCACCT
		3'-end	OGL59-3PriR2	SEQ ID NO: 6516 CCTTGTCACGGAGACTCTCGG
	Nest PCR	5'-end	OGL59-5nstPriF2	SEQ ID NO: 6517 TCACATGCCTCAACTGGAGCA
		3'-end	OGL59-3nstPriR2	SEQ ID NO: 6518 TGGAAGGGCAAAACTGAGCC
OGL60	First PCR	5'-end	OGL60-5PriF	SEQ ID NO: 6519 GCGACCTTTTCATTGTTGGAGTAGG
		3'-end	OGL60-3PriR	SEQ ID NO: 6520 TACCACACCATCGAGCCGTC
	Nest PCR	5'-end	OGL60-5nstPriF	SEQ ID NO: 6521 ACGATTCAGTAGGTAGGGTGCCT
		3'-end	OGL60-3nstPriR	SEQ ID NO: 6522 ACCCATTTCGAGCTGCCTGT

OGL61	First PCR	5'-end	OGL61-5PriF	SEQ ID NO: 6523 CCATGCAGATGTCGAGGCAAC
		3'-end	OGL61-3PriR	SEQ ID NO: 6524 TACTGCCTTCTGAACCGTCGG
	Nest PCR	5'-end	OGL61-5nstPriF	SEQ ID NO: 6525 TGTTTAGCTACATCCACGGGCAT
		3'-end	OGL61-3nstPriR	SEQ ID NO: 6526 ACTGCAATGACAAGGCACATCC
OGL62	First PCR	5'-end	OGL62-5PriF	SEQ ID NO: 6527 GCACGTCGTTAGTGATCGAGCT
		3'-end	OGL62-3PriR	SEQ ID NO: 6528 GTTGTCAACGAAGCCCGTCTAATTG
	Nest PCR	5'-end	OGL62-5nstPriF	SEQ ID NO: 6529 CCTGCAGTTAACGCAGACGTG
		3'-end	OGL62-3nstPriR	SEQ ID NO: 6530 CTAGACCGTACTATTGTGCTGTGAAG
OGL63	First PCR	5'-end	OGL63-5PriF	SEQ ID NO: 6531 TCCTTACTGGCCCCTAGTCCA
		3'-end	OGL63-3PriR	SEQ ID NO: 6532 CTCCCACGAGCGACTAGCTAC
	Nest PCR	5'-end	OGL63-5nstPriF	SEQ ID NO: 6533 TGCAACTATGGACTTGGCCACA
		3'-end	OGL63-3nstPriR	SEQ ID NO: 6534 CCTCACGAATAAAAGCACCCCC
OGL64	First PCR	5'-end	OGL64-5PriF	SEQ ID NO: 6535 AGTCTACGTGGCATACAACCCC
		3'-end	OGL64-3PriR	SEQ ID NO: 6536 GAAACTTGGACCTTGCTGTCGG
	Nest PCR	5'-end	OGL64-5nstPriF	SEQ ID NO: 6537 AGGTCTCGAACAAACTCCCTATGC
		3'-end	OGL64-3nstPriR	SEQ ID NO: 6538 CCATTCCATGAAGACCGACTCCA
OGL65	First PCR	5'-end	OGL65-5PriF	SEQ ID NO: 6539 ACCAAATCCGTTTGCTTTCACCG
		3'-end	OGL65-3PriR	SEQ ID NO: 6540 CTCTGACAGATACCACGTTCGCT
	Nest PCR	5'-end	OGL65-5nstPriF	SEQ ID NO: 6541 CACCGTTTCACGAAGCTGCA
		3'-end	OGL65-3nstPriR	SEQ ID NO: 6542 ACCGAAATCTGCGCGCTAGTT
OGL66	First PCR	5'-end	OGL66-5PriF	SEQ ID NO: 6543 ACAGAAGAGGTTGCGGAGTAACG
		3'-end	OGL66-3PriR	SEQ ID NO: 6544 AAACAAAATCGTATCGCCGAGCAG
	Nest PCR	5'-end	OGL66-5nstPriF	SEQ ID NO: 6545 TACTTGGACCGGCCTCTACCT
		3'-end	OGL66-3nstPriR	SEQ ID NO: 6546 AACCTTGCAACAGCCCCAAAT

OGL67	First PCR	5'-end	OGL67-5PriF	SEQ ID NO: 6547 AGGTAATACCAGTGAGCCGAC
			Spec-PriR1	SEQ ID NO: 6548 CCACGATCGACATTGATCTGGCTA
		3'-end	OGL67-3PriR	SEQ ID NO: 6549 CACTCTGTACTGGGAGAGGG
			UnivDonor-3PriF1	SEQ ID NO: 6550 GTTTCATCAAGCCTTACGGTCACC
	Nest PCR	5'-end	OGL67-5nstPriF	SEQ ID NO: 6551 ATAATGCAGCGCTTGCAGAT
			Spec-nstPriR2	SEQ ID NO: 6552 GCTGGCGATGAGCGAAATGTAG
		3'-end	OGL67-3nstPriR	SEQ ID NO: 6553 CTCAATTCCATGTGCAACCAAAC
			UnivDonor-3PriF2	SEQ ID NO: 6554 CAGCAACGTCGGTTCGAGATG
OGL68	First PCR	5'-end	OGL68-5PriF	SEQ ID NO: 6555 GTGGTGATACCGTCGTCTCTCC
		3'-end	OGL68-3PriR	SEQ ID NO: 6556 CACTTTGTCCCTGCTCGGTTC
	Nest PCR	5'-end	OGL68-5nstPriF	SEQ ID NO: 6557 GAAACAAGCCATTGATTGTGCCCA
		3'-end	OGL68-3nstPriR	SEQ ID NO: 6558 GTCGACTCACAACGCTTCCC
OGL69	First PCR	5'-end	OGL69-5PriF	SEQ ID NO: 6559 AGTACAACACTGAGACGTGGGC
		3'-end	OGL69-3PriR	SEQ ID NO: 6560 ACTAGGATTGCTAGGGAGCACGAA
	Nest PCR	5'-end	OGL69-5nstPriF	SEQ ID NO: 6561 AGATTGCAGGGCACTTGAGGT
		3'-end	OGL69-3nstPriR	SEQ ID NO: 6562 ACAGGATTACAAGCCCAAACCCA
OGL70	First PCR	5'-end	OGL70-5PriF	SEQ ID NO: 6563 TTCTTCAGGCGGCATCGCATA
			Spec-PriR1	SEQ ID NO: 6564 CCACGATCGACATTGATCTGGCTA
		3'-end	OGL70-3PriR	SEQ ID NO: 6565 TAGTAGCCGACAATGTGGCCC
			UnivDonor-3PriF1	SEQ ID NO: 6566 GTTTCATCAAGCCTTACGGTCACC
	Nest PCR	5'-end	OGL70-5nstPriF	SEQ ID NO: 6567 CGCTCAGGAAATCCTTGATGCC
			Spec-nstPriR2	SEQ ID NO: 6568 GCTGGCGATGAGCGAAATGTAG
		3'-end	OGL70-3nstPriR	SEQ ID NO: 6569 GTGAACGACGGCAACAAGCT
			UnivDonor-3PriF2	SEQ ID NO: 6570 CAGCAACGTCGGTTCGAGATG

OGL71	First PCR	5'-end	OGL71-5PriF	SEQ ID NO: 6571 GAGGTCCCTTACGGGTCATCG
		3'-end	OGL71-3PriR	SEQ ID NO: 6572 ACCAGGTCTATCTTGCGCAGAC
	Nest PCR	5'-end	OGL71-5nstPriF	SEQ ID NO: 6573 AATAGCGTGGTCGGGTCCTAG
		3'-end	OGL71-3nstPriR	SEQ ID NO: 6574 ACGAACGATCCAAGGTGCAGT
OGL72	First PCR	5'-end	OGL72-5PriF	SEQ ID NO: 6575 CCAATGGACGACAGCGGTTAG
		3'-end	OGL72-3PriR	SEQ ID NO: 6576 ACGAGAACAAGCCACTCTTGCT
	Nest PCR	5'-end	OGL72-5nstPriF	SEQ ID NO: 6577 CAACCGGAGAACGGATAGCCT
		3'-end	OGL72-3nstPriR	SEQ ID NO: 6578 TGAAGATTTCCCTACCGTCGCC
OGL73	First PCR	5'-end	OGL73-5PriF1	SEQ ID NO: 6579 AGTACTGGGGACGTTCACCG
		3'-end	OGL73-3PriR1	SEQ ID NO: 6580 CGACAAGAACCCGGTACATGC
	Nest PCR	5'-end	OGL73-5PriF2	SEQ ID NO: 6581 AGAGCTGAAACTGATCGCGGT
		3'-end	OGL73-3PriR2	SEQ ID NO: 6582 GACAGAGTCCGATCCCTGCT
OGL74	First PCR	5'-end	OGL74-5PriF	SEQ ID NO: 6583 GCCACACGGATTTTGCGTATCA
		3'-end	OGL74-3PriR	SEQ ID NO: 6584 CTTTTGTCGGTCCTGCCACTG
	Nest PCR	5'-end	OGL74-5nstPriF	SEQ ID NO: 6585 AGCAACGTAGGGTCACGGAC
		3'-end	OGL74-3nstPriR	SEQ ID NO: 6586 GAGGAGTCTTCGATGCCACGA
OGL75	First PCR	5'-end	OGL75-5PriF	SEQ ID NO: 6587 GAAAGCACCAGGTCGTATCTTGC
		3'-end	OGL75-3PriR	SEQ ID NO: 6588 CGCACAATCTTCGCTTCAAACCA
	Nest PCR	5'-end	OGL75-5nstPriF	SEQ ID NO: 6589 GCATTGCTCTTCAGGAGGTACGT
		3'-end	OGL75-3nstPriR	SEQ ID NO: 6590 CAGCTGTGCAAGTCCGACTG
OGL76	First PCR	5'-end	OGL76-5PriF	SEQ ID NO: 6591 TCTCCATACCTGCACTGGGTG
		3'-end	OGL76-3PriR	SEQ ID NO: 6592 ACGTGCTCTCAGCAACATCCA
	Nest PCR	5'-end	OGL76-5nstPriF	SEQ ID NO: 6593 CGTCCAAACAGGCTAGACAGC
		3'-end	OGL76-3nstPriR	SEQ ID NO: 6594 TGCCTTTTGCGTCAACGGTG

OGL77	First PCR	5'-end	OGL77-5PriF	SEQ ID NO: 6595 CCATCCAGATCGCGGTTGTC
		3'-end	OGL77-3PriR	SEQ ID NO: 6596 TACGAGTTCACGCCATTGCGT
	Nest PCR	5'-end	OGL77-5nstPriF	SEQ ID NO: 6597 GTCTCCTCTTTGACGGTTGCG
		3'-end	OGL77-3nstPriR	SEQ ID NO: 6598 TCGATCCACACTCGCATGCA
OGL78	First PCR	5'-end	OGL78-5PriF	SEQ ID NO: 6599 GTGGACCAGTGTAAAGCCCG
		3'-end	OGL78-3PriR	SEQ ID NO: 6600 TCCCTAGTGCCAGGACCTGA
	Nest PCR	5'-end	OGL78-5nstPriF	SEQ ID NO: 6601 ACACCAAATGTCCGGTAGCGA
		3'-end	OGL78-3nstPriR	SEQ ID NO: 6602 CGACGATTCTCCATTGGCCG
OGL79	First PCR	5'-end	OGL79-5PriF	SEQ ID NO: 6603 GCTAGAAACGCTGAACAGCAGC
		3'-end	OGL79-3PriR	SEQ ID NO: 6604 CGGGTTTAGAATCCACAAGCCG
	Nest PCR	5'-end	OGL79-5nstPriF	SEQ ID NO: 6605 GACAAAAGCTGCCATCAACGCT
		3'-end	OGL79-3nstPriR	SEQ ID NO: 6606 CCCGATATGGACAGGTCAGCT
OGL80	First PCR	5'-end	OGL80-5PriF	SEQ ID NO: 6607 AAAGGCGACACACACCTTTGC
		3'-end	OGL80-3PriR	SEQ ID NO: 6608 AGACAGCCATCCTCACTCGC
	Nest PCR	5'-end	OGL80-5nstPriF	SEQ ID NO: 6609 TTTGGTGCAGAGGCCGAGAA
		3'-end	OGL80-3nstPriR	SEQ ID NO: 6610 AAGTAGCCAGGCAGACAACCA
OGL81	First PCR	5'-end	OGL81-5PriF	SEQ ID NO: 6611 CTAGGCAGGGTGGCATGAAAG
			Spec-PriR1	SEQ ID NO: 6612 CCACGATCGACATTGATCTGGCTA
		3'-end	OGL81-3PriR	SEQ ID NO: 6613 ACCATCAGAGGTTGTGAAGGCA
			UnivDonor-3PriF	SEQ ID NO: 6614 CAAATTCCCACTAAGCGCTCGG
	Nest PCR	5'-end	OGL81-5nstPriF	SEQ ID NO: 6615 AAGGGCAACTTCATGGTTCAACC
			Spec-nstPriR1	SEQ ID NO: 6616 GTTGCCTTGGTAGGTCCAGC
		3'-end	OGL81-3nstPriR	SEQ ID NO: 6617 ACCAGTAAATCCACAACCCATGGT
			UnivDonor-3nstPriF	SEQ ID NO: 6618 GTAAAGGTGAGCAGAGGCACG

OGL03	First PCR	5'-end	OGL03-5PriF	SEQ ID NO: 6691 TATATGGTGGCCAATGGACGATGG
		3'-end	OGL03-3PriR	SEQ ID NO: 6692 CCACAGGAGCAAGCAGTGAC
	Nest PCR	5'-end	OGL03-5nstPriF	SEQ ID NO: 6693 CGCATCTTTGGGGGTAGTGG
		3'-end	OGL03-3nstPriR	SEQ ID NO: 6694 AGTACCCAGTTGGTCTCGCC

Table 10. List of all "In" primers for nested In-Out PCR analysis of optimal genomic loci.

All Reactions		5'-end	Spec-PriR1	SEQ ID NO:5473 CCACGATCGACATTGATCTGGCTA
	First PCR	3'-end	Uzi-PriF1	SEQ ID NO:5474 GGGATATGTGTCCTACCGTATCAGG
	Nest PCR	5'-end	Spec-nstPriR1	SEQ ID NO:5475 GTTGCCTTGGTAGGTCCAGC
		3'-end	Uzi-nstPriF1	SEQ ID NO:5476 GAGCCATCAGTCCAACACTGC

Table 11. Primers for ZFN cleavage activity.

OGL 1	Control/ZFN 111879	SEQ ID NO:5477 TGGCACTAATCTCACCGGCT
		SEQ ID NO:5478 AGTCTTAGAAGTACGCTACCGT
OGL 2	Control/ZFN 111885	SEQ ID NO:5479 TACTTGGCTTCGGCGGCGA
		SEQ ID NO:5480 GGGTGACTTTTACGCGTCTCG
OGL 11	Control/ZFN 117402	SEQ ID NO:5481 GGTCACGACGCATGGCCTAA
		SEQ ID NO:5482 AGGATGCATGGATCACCGTC
OGL 12	Control/ZFN 117404	SEQ ID NO:5483 GCTCTGTTGTGCAGCCGTAC
		SEQ ID NO:5484 CGTTGCAGATACCACAGTGTAC
OGL 13	Control/ZFN 117429	SEQ ID NO:5485 GCTAGTAGCTGTTTACACGGCGTCT
		SEQ ID NO:5486 AGGTCGAGACAACCAAGTAGAG
OGL 14	Control/ZFN 117406	SEQ ID NO:5487 ACAGGACATCGAGCTTGCAT
		SEQ ID NO:5488 CAGAAGAAAGGCATCAACTCATG

5

OGL 15	Control/ZFN 117408	SEQ ID NO:5489 CTCTTTCACCTCTACTTTTACTTCAG
		SEQ ID NO:5490 ATTGAACCGTTGTCAAAGCCA
OGL 16	Control/ZFN 117411	SEQ ID NO:5491 CACAGCGTCAGGGCGGTAAC
		SEQ ID NO:5492 GGCACGCACCTGTCACTGAC
OGL 17	Control/ZFN 117413	SEQ ID NO:5493 GTACGCGCCCGGGAACTCCT
		SEQ ID NO:5494 CCTGCGGCCCACGTGCATCT

Deployment of the In-Out PCR assay in a protoplast targeting system was particularly challenging as large amounts of the plasmid DNA was used for transfection, and the large amount of DNA remains in the protoplast targeting system and was subsequently extracted along with cellular genomic DNA. The residual plasmid DNA may dilute the relative concentration of the genomic DNA and reduce the overall sensitivity of detection and can also be a significant cause of non-specific, aberrant PCR reactions. ZFN induced NHEJ-based donor insertion typically occurs in either a forward or a reverse orientation. In-Out PCR analysis of DNA for the forward orientation insertion often exhibited false positive bands, possibly due to shared regions of homology around the ZFN binding site in the target and donor that could result in priming and extension of unintegrated donor DNA during the amplification process. False positives were not seen in analyses that probed for reverse orientation insertion products and therefore all targeted donor integration analysis was carried out to interrogate reverse donor insertion in the RTA. In order to further increase specificity and reduce background, a nested PCR strategy was also employed. The nested PCR strategy used a second PCR amplification reaction that amplified a shorter region within the first amplification product of the first PCR reaction. Use of asymmetric amounts of "in" and "out" primers optimized the junctional PCR further for rapid targeting analysis at selected genomic loci.

The In-Out PCR analysis results were visualized on an agarose gel. For all *Zea mays* selected genomic loci of Table 12, "ZFN + donor treatments" produced a near expected sized band at the 5' and 3' ends. Control ZFN or donor alone treatments were negative in the PCR suggesting that the method was specifically scoring for donor integration at the target site of at least 72 of the optimal nongenic maize genomic loci. All treatments were conducted in replicates of 3-6 and presence of the anticipated PCR product in multiple replicates ($\geq$ 2 at both ends) was used to confirm targeting. Donor insertion through NHEJ often produces lower intensity side products that were generated due to processing of linearized ends at the target

and/or donor ZFN sites. In addition, it was observed that different ZFNs resulted in different levels of efficiency for targeted integration, with some of the ZFNs producing consistently high levels of donor integration, some ZFNs producing less consistent levels of donor integration, and other ZFNs resulting in no integration. Overall, for each of the *Zea mays* selected genomic loci targets that were tested, targeted integration was demonstrated within the *Zea mays* representative genomic loci targets by one or more ZFNs, which confirms that each of these loci were targetable. Furthermore, each of the *Zea mays* selected genomic loci targets was suitable for precision gene transformation. The validation of these *Zea mays* selected genomic loci targets was repeated multiple times with similar results every time, thus confirming the reproducibility of the validation process which includes plasmid design and construct, protoplast transformation, sample processing, and sample analysis.

Conclusion

The donor plasmid and one ZFN designed to specifically cleave a *Zea mays* selected genomic loci targets were transfected into *Zea mays* c.v. Hi-II protoplasts and cells were harvested 24 hours later. Analysis of the genomic DNA isolated from control, ZFN treated and ZFN with donor treated protoplasts by in-out junctional PCR showed targeted insertion of the universal donor polynucleotide as a result of genomic DNA cleavage by the ZFNs (Table 12). These studies show that the universal donor polynucleotide system can be used to assess targeting at endogenous sites and for screening candidate ZFNs. Finally, the protoplast based Rapid Targeting Analysis and the novel universal donor polynucleotide sequence systems provide a rapid avenue for screening genomic targets and ZFNs for precision genome engineering efforts in plants. The methods can be extended to assess site specific cleavage and donor insertion at genomic targets in any system of interest using any nuclease that introduces DNA double or single strand breaks.

Table 12. Illustrates the results of the integration of a universal donor polynucleotide sequence within the *Zea mays* selected genomic loci targets. As indicated by the * below, donor insertion within OGL73 was only confirmed by a PCR reaction of the 5' junction sequence.

Name	ID	Location	Cluster Assignment	ZFN (pDAB#)	Donor (pDAB#)	Targetable Locus (Y/N)
OGL01	optimal_loci_204637_G1	chr5:200298202..200301414	16	111879	111845	Y
OGL02	optimal_loci_204726_G1	chr5:200665730..200670667	03	111885	111846	Y
OGL0	optimal_loci_	chr1:19493939	23	117400	117415	Y

8	31710	6..194943360				
OGL11	optimal_loci_64542	chr2:72203716..72205045	14	117402	117416	Y
OGL12	optimal_loci_156393	chr4:154313884..154315253	10	117404	117417	Y
OGL15	preffered_loci_198387	chr5:164712378..164713567	25	117408	117419	Y
OGL13	optimal_loci_157315	chr4:158710709..158711983	30	117429	117434	Y
OGL14	optimal_loci_197372	chr5:158680601..158681681	26	117406	117418	Y
OGL16	optimal_loci_232228	chr6:144719567..144723469	28	117411	117420	Y
OGL17	optimal_loci_285621	chr8:118321357..118322528	06	117413	117421	Y
OGL04	optimal_loci_43577	chr1:256469704..256472666	20	124802	124812	Y
OGL05	optimal_loci_301774	chr9:23468085..23470278	15	121900	121926	Y
OGL06	optimal_loci_232222	chr6:144700575..144702126	20	124810	124813	Y
OGL07	optimal_loci_203704	chr5:194836270..194840217	12	121902	121930	Y
OGL09	optimal_loci_59517	chr2:43352132..43353146	1	118643	118697	Y
OGL10	optimal_loci_25001	chr1:151371224..151372260	1	118648	118686	Y
OGL18	optimal_loci_112632	chr3:128098856..128100257	2	123802	123810	Y
OGL19	optimal_loci_28905	chr1:177037718..177038919	2	123805	123809	Y
OGL20	optimal_loci_129164	chr3:221246027..221247542	3	121992	123808	Y
OGL21	optimal_loci_2425	chr1:12810845..12814490	3	118650	118697	Y
OGL22	optimal_loci_122036	chr3:184608166..184609697	4	118654	118688	Y
OGL23	optimal_loci_5735	chr1:29190279..29192844	4	118656	118689	Y
OGL24	optimal_loci_178978	chr5:35776311..35777560	5	118659	118690	Y
OGL25	optimal_loci_288388	chr8:133290442..133291481	5	118660	118697	Y
OGL26	optimal_loci_60310	chr2:47967092..47968271	5	118767	118787	Y
OGL27	optimal_loci_243330	chr7:34630402..34631577	6	118769	118787	Y

OGL28	optimal_loci_127038	chr3:210603611..210605198	7	118663	118697	Y
OGL29	optimal_loci_262784	chr7:155767046..155769049	7	118668	118691	Y
OGL30	optimal_loci_344662	chr10:119131667..119133955	7	118669	118692	Y
OGL31	optimal_loci_153894	chr4:139979597..139981225	8	118670	118693	Y
OGL32	optimal_loci_28771	chr1:176062139..176063611	8	118673	118694	Y
OGL33	optimal_loci_1098	chr1:5582601..5583834	9	118674	118695	Y
OGL34	optimal_loci_97772	chr3:30209253..30210607	9	118676	118696	Y
OGL35	optimal_loci_236662	chr6:165975716..165977010	10	118677	118697	Y
OGL36	optimal_loci_139485	chr4:42804231..42805751	11	118680	118697	Y
OGL37	optimal_loci_301175	chr9:20325171..20326621	11	118683	118764	Y
OGL38	optimal_loci_152337	chr4:130033092..130035481	12	118685	118765	Y
OGL39	optimal_loci_202616	chr5:188822901..188824814	12	123833	123809	Y
OGL40	optimal_loci_282323	chr8:100763204..100764398	13	118771	118787	Y
OGL41	optimal_loci_262782	chr7:155759080..155760097	13	121943	121983	Y
OGL42	optimal_loci_236455	chr6:164795991..164797027	14	121946	121984	Y
OGL43	optimal_loci_162531	chr4:189896984..189899332	15	121949	121985	Y
OGL44	optimal_loci_344663	chr10:119143167..119144795	15	121952	121986	Y
OGL45	optimal_loci_337001	chr10:77188319..77190007	16	121959	121987	Y
OGL46	optimal_loci_238100	chr7:4899227..4900708	16	121963	121988	Y
OGL48	optimal_loci_264359	chr7:163504241..163505487	17	121971	121990	Y
OGL49	optimal_loci_282653	chr8:102704765..102705924	18	121972	121991	Y
OGL50	optimal_loci_80282	chr2:173420834..173421870	18	124097	124295	Y
OGL51	optimal_loci_291068	chr8:148277606..148279985	19	123818	123831	Y
OGL52	optimal_loci_56395	chr2:24801482..24803132	19	118705	121201	Y
OGL54	optimal_loci_114664	chr3:140106950..140108061	21	118711	118792	Y
OGL5	optimal_loci_	chr2:7304197..	22	118718	118794	Y

7	53137	7305496				
OGL58	optimal_loci_344664	chr10:119144946..119146850	23	118722	121208	Y
OGL59	optimal_loci_81941	chr2:181418576..181421181	24	118726	121209	Y
OGL60	optimal_loci_321514	chr9:140776147..140777584	24	118728	121210	Y
OGL61	optimal_loci_301180	chr9:20328932..20330129	25	118732	121211	Y
OGL62	optimal_loci_348776	chr10:142097590..142098803	26	118733	121212	Y
OGL63	optimal_loci_244439	chr7:41068791..41070248	27	118735	118795	Y
OGL64	optimal_loci_348258	chr10:139297032..139298517	27	118739	121214	Y
OGL65	optimal_loci_322501	chr9:146078534..146080201	28	118742	121215	Y
OGL66	optimal_loci_244324	chr7:40299412..40300584	29	118745	121216	Y
OGL67	optimal_loci_97232	chr3:27463016..27464143	29	124081	124866	Y
OGL68	optimal_loci_282499	chr8:101771408..101772767	30	125361	125366	Y
OGL69	optimal_loci_155031	chr4:146991391..146993137	31	118753	121218	Y
OGL70	optimal_loci_301773	chr9:23465509..23467762	31	124878	123880	Y
OGL71	optimal_loci_283161	chr8:105321958..105323571	32	123829	123832	Y
OGL72	optimal_loci_55524	chr2:20099003..20100485	32	118761	121221	Y
OGL73	optimal_loci_127268	chr3:211767898..211770046	16	124086	124298	Y*
OGL74	optimal_loci_137693	chr4:31118968..31122359	3	121904	121927	Y
OGL75	optimal_loci_265551	chr7:170127188..170130734	3	121905	121927	Y
OGL76	optimal_loci_128078	chr3:215482594..215485640	4	121917	121927	Y
OGL77	optimal_loci_168286	chr4:219987223..219990695	4	121918	121928	Y
OGL78	optimal_loci_3733	chr1:19232372..19235997	11	121909	121930	Y
OGL79	optimal_loci_203075	chr5:191370802..191374627	12	121912	121929	Y
OGL80	optimal_loci_232484	chr6:146122164..146125580	12	121981	121936	Y
OGL81	optimal_loci_136086	chr4:22531506..22534989	27	124091	124298	Y

Example 7: Expression of Polynucleotide Donor Sequence within the Genomic Loci of *Zea mays*

Randomly integrated maize transformation events were generated by transformation with the pDAB105817 and pEPS1027 plasmids containing the *aad*-1 transgene, described in U.S. Patent No. 7,838,733. (Figure 14). Large numbers of events were produced and 1,027 stable events were analyzed to determine if any of the events contained a randomly integrated transgene within the *Zea mays* selected genomic loci targets via a genome flanking analysis method as desribed in U.S. Patent Application No. 2012/0258867. As such, the chromosomal location of the integrated transgene in 223 events was mapped within the *Zea mays* genome. The data, Table 13, indicated that the chromosomal location of the integrated transgenes demonstrated integration within hypomethylated regions (45-73%) and in transcriptional units (promoter/gene/3'UTR) downstream of at least 1 Kb areas (60%).

Table 13. Genomic and epigenomic context of the 1027 mapped events.

	No. events mapped with high confidence	No. events mapped with low confidence	No. of total number of events
Count	107	116	223
100 bp hypomethylated regions	102	61	163
2kb hypomethylated regions	68	27	95
Gene body	45	26	71
Upstream 2kb	32	11	43
Downstream 1kb	16	3	19
Repeat	9	62	71
Total genic/repeat	88	98	186

The mapped events were further analyzed using the optimal locus predictive criteria described in Examples 1 and 2 (hypomethylated regions, unique regions, nongenic, non-repeat, proximal to genes in a 40 Kb neighborhood, evidence of active expression in roots/shoots, evidence of recombination) and several randomly integrated events were identified within the *Zea mays* selected genomic loci targets (Table 14). For example, targeting within the *Zea mays* selected genomic loci targets optimal_loci_232222 and optimal_loci_127268 have been demonstrated using Rapid Testing Analysis and by *in planta* targeting, respectively.

The average length of the experimental *Zea mays* selected genomic loci targets were approximately 1 Kb and varying degrees of *aad-1* expression was observed at each of the *Zea mays* selected genomic loci targets (Table 14). The average *aad-1* expression analysis was

conducted at the T_1 plant transformation stage via a real-time PCR analysis of isolated transgenic leaf material. As such, random integration events within the *Zea mays* genome were capable of expressing a transgene within the experimental *Zea mays* selected genomic loci targets.

Table 14. Expression of the *aad-1* transgene in randomly integrated within the optimal genomic loci. The Location, Length and RNA expression for the *aad-1* marker gene at the locus are shown.

Event ID	Optimal Genomic Loci Name	SEQ ID NO:	Location	Length	AAD1 RNA Expression Avg T/R
G3_PL2863_1027-nstPri3	optimal_loci_43565	655	chr1:256293759..256295777	2018	22.687
H4_PL2783_1027-nstPri3	optimal_loci_164397	4552	chr4:199185401..199186813	1413	32.825
B6_PL2955_1027-nstPri3	optimal_loci_232222	3357	chr6:144700575..144702126	1553	3.1805
E7_PL3018_1027-nstPri3	optimal_loci_125749	19	chr3:204456962..204458140	1179	0.5185
E4_PL2955_1027-nstPri3	optimal_loci_7953	1777	chr1:412798234128090	1087	4.0805
A7_PL2746_1027-nstPri3	optimal_loci_205643	2037	chr5:205773760..205775465	1705	1.3761
F4_PL2978_1027-nstPri3	optimal_loci_201819	2726	chr5:184470152..184471958	1807	0.56075
B8_PL2955_1027-nstPri3	optimal_loci_42519	1929	chr1:250905847..250908881	3035	0.4591
B104/pDAB105817{1}015.001-1	optimal_loci_127268	2709	chr3:211,767,898..211,770,046	2149	1.54

Example 8: Optimal Nongenic Maize Genomic Loci for Transgene Integration

A suite of optimal nongenic maize genomic loci were identified from the 5,286 optimal nongenic maize genomic loci to select multiple loci for site specific targeting of gene expression cassettes and to generate stacks of gene expression cassettes. The following criteria were used to filter the pool of optimal nongenic maize genomic loci and select a suite of optimal nongenic maize genomic loci:

1) Greater than 3 Kb in length. The optimal nongenic maize genomic loci can be targeted with the integration of at least two sets of gene expression cassettes.
2) Recombination frequency of 0.5 to 1.0, which is less than the average recombination frequency of the identified 5,286 optimal nongenic maize genomic loci (average recombination frequency is about 2.0).
3) Greater than average expression of endogenous genes within 40 Kb of the identified 5,286 optimal nongenic maize genomic loci. Average expression of genes within a 40 Kb region in root and shoot tissues is greater than 6.30, which is the 48th percentile of all optimal nongenic maize genomic loci.
4) Sequence coverage and sequence identity of greater than 90% between *Zea mays* c.v. B104 and *Zea mays* c.v. Hi-II.

Each of the above described criteria were applied to select a suite of optimal nongenic maize genomic loci. Fig. 24 provides three illustrative diagrams of the criteria, and how the selected optimal nongenic maize genomic loci compared in relation to other loci. Nine optimal nongenic maize genomic loci (optimal_loci_137693_G1, optimal_loci_265551_G1, optimal_loci_128078_G1, optimal_loci_168286_G1, optimal_loci_3733_G1, optimal_loci_203075_G1, optimal_loci_232484_G1, optimal_loci_136086_G1, and optimal_loci_203704_G1) that were at least 3 Kb in length were identified using this criteria. See Table 15. Additional optimal nongenic maize genomic loci were identified by reducing the size limitiation to ≥ 2 Kb (optimal_loci_291068_G1, and optimal_loci_43577_G1), these loci were added to the suite of optimal nongenic maize genomic loci. Another set of optimal nongenic maize genomic loci were added to the suite of optimal nongenic maize genomic loci as there was evidence of expression of a randomly integrated transgene via *Agrobacterium* transformation at these sites (optimal_loci_232222_G1 and optimal_loci_127268_G1). The optimal_loci_204637_G1 and optimal_loci_204726_G1 genomic loci were added to the suite for their meiotic recombination unit features. In addition, optimal_loci_204637_G1 and optimal_loci_204726_G1 have been successfully targeted for integration of a donor polynucleotide. Likewise, optimal_loci_232228 was included in the suite as this optimal nongenic maize genomic loci has been successfully targeted for integration of a donor polynucleotide, and the length of the sequence is 3.9 Kb.

Next, all of the optimal nongenic maize genomic loci were characterized for distance to proximal genes and distance from centromere (Fig 25). The suite of select optimal nongenic loci are about 1-15 Kb away from proximal genes and are located towards the end of chromosomes (distance >0.70 from centromeres) (Table 16, Fig 25). Finally, interference by

2014341927 29 May 2017

quantitative trait loci was probed to fully characterize the suite of optimal nongenic maize genomic loci.

Table 15. Suite of optimal nongenic maize genomic loci.

OGL_ID	Location	Length	SEQ ID NO:
optimal_loci_203704_G1	chr5:194836270..194840217	3948	2033
optimal_loci_291068_G1	chr8:148277606..148279985	2380	3230
optimal_loci_43577_G1	chr1:256469704..256472666	2963	3428
optimal_loci_232222_G1	chr6:144700575..144702126	1552	3357
optimal_loci_204637_G1	chr5:200298202..200301414	3213	2731
optimal_loci_204726_G1	chr5:200665730..200670667	4938	424
optimal_loci_232228_G1	chr6:144719567..144723469	3903	4529
optimal_loci_127268_G1	chr3:211767898..211770046	2149	2709
optimal_loci_136086_G1	chr4:22531506..22534989	3570	4425
optimal_loci_232484_G1	chr6:146122164..146125580	3417	2053
optimal_loci_203075_G1	chr5:191370802..191374627	3826	2030
optimal_loci_3733_G1	chr1:19232372..19235997	3626	1923
optimal_loci_168286_G1	chr4:219987223..219990695	3473	573
optimal_loci_128078_G1	chr3:215482594..215485640	3047	560
optimal_loci_265551_G1	chr7:170127188..170130734	3547	463
optimal_ loci_137693_G1	chr4:31118968..31122359	3392	387

Table 16: Optimal nongenic maize genomic loci characteristics.

OGL ID	Distance to closest gene	Distance to centromere
optimal_loci_137693_G1	4070	.70444101
optimal_loci_265551_G1	9252	.94191056
optimal_loci_128078_G1	2491	.87326872
optimal_loci_168286_G1	1710	.84128147
optimal_loci_3733_G1	14910	.856875
optimal_loci_203075_G1	1001	.75612998
optimal_loci_232484_G1	1001	.80656755

optimal_loci_203704_G1	2001	.788019
optimal_loci_127268_G1	2758	.84500724
optimal_loci_204637_G1	2874	.83827931
optimal_loci_291068_G1	4243	.77879798
optimal_loci_232222_G1	2832	.79463887
optimal_loci_43577_G1	2001	.73018748
optimal_loci_204726_G1	11370	.84166127

The optimal nongenic maize genomic loci that are selected using the above described criteria are validated by integrating a gene expression construct that contains selectable/reportable markers. This gene expression cassette is stably integrated into maize plants via genomic targeting using a site specific nuclease. The targeted optimal nongenic maize genomic loci that are produced and contain an expressable transgene are analyzed to identify single copy events that contain a full length integrated gene expression cassette. The expression profiles of the optimal nongenic maize genomic loci are analyzed via qRT-PCR, Western blot, ELISA, LC-MS MS, and other known RNA or protein detection methods over multiple plant generations (e.g., T_1 and T_2 generations). In addition, the effect of the transgene expression cassette integration within the optimal nongenic maize genomic loci on neighboring gene expression is assayed. Finally, the effect of the transgene expression cassette integration within the optimal nongenic maize genomic loci on agronomic properties of maize plants is assayed.

TABLE 3

OGL ID	Length of the OGL	Recombination frequency in a 1MB region around the OGL	Level of OGL sequence uniqueness	Distance from the OGL to the closest gene in its neighborhood	GC% in the OGL sequence	Number of genes in a 40kb neighborhood around the OGL	Average gene expression in a 40kb neighborhood around the OGL	Level of Nucleosome occupancy around the OGL	Relative location within the chromosome (proximity to centromere)	Number of OGLs in a 1Mb region around the OGL
optimal_loci_141_G1	1151	1.762917	19.72	10615	39.53	3	0.994628114	0.247	0.995110469	4
optimal_loci_144_G1	1629	1.762917	0	12985	50.58	3	0.994628114	0.5	0.995059769	4
optimal_loci_168_G1	1078	1.61634	0	3093	47.3	4	20.09560715	0.514	0.992690193	4
optimal_loci_195_G1	1028	0.982617	22.37	1001	38.61	1	11.29280113	0.215	0.99229317	4
optimal_loci_444_G1	2593	0.544453	35.75	3651	35.48	1	1.556021429	0.134	0.982865573	2
optimal_loci_445_G1	1330	0.544453	10.6	1249	36.39	1	1.556021429	0.3	0.982847701	2
optimal_loci_535_G1	3121	1.93197	5.31	1001	49.05	3	11.12779061	0.481	0.978366615	5
optimal_loci_557_G1	1067	2.481339	0	15992	42.36	1	5.776709427	0.248	0.977298936	6
optimal_loci_625_G1	1014	3.355066	0	1001	38.46	3	5.876923554	0.293	0.975005915	6
optimal_loci_628_G1	1222	3.373899	0	3314	50.4	3	5.876923554	0.354	0.974898973	6
optimal_loci_638_G1	2038	3.27174	2.36	4972	49.31	2	1.383591852	0.41	0.974701719	6
optimal_loci_650_G1	2412	3.2379	0	7154	55.3	1	10.90270876	0.731	0.974398058	5
optimal_loci_827_G1	2368	2.89912	0	4237	50.8	2	0.077566736	0.607	0.966860052	11
optimal_loci_856_G1	1067	2.704681	0	2086	48.92	1	3.231810412	0.412	0.966178497	13
optimal_loci_857_G1	2350	3.352892	0	1001	37.7	1	3.231810412	0.062	0.966125952	13
optimal_loci_858_G1	1387	3.368528	0	3960	37.05	1	3.231810412	0.05	0.966111101	14
optimal_loci_861_G1	1387	3.33734	0	7121	43.47	1	3.231810412	0.469	0.966087582	14
optimal_loci_877_G1	3205	3.441965	3.65	1001	52.38	2	33.88506673	0.579	0.965772954	15
optimal_loci_897_G1	1158	4.28108	5.79	2359	39.03	3	1.600327134	0.213	0.964815848	16
optimal_loci_899_G1	1474	4.28108	34.26	4878	38.67	3	1.600327134	0.31	0.964794754	16
optimal_loci_908_G1	1103	4.28108	0	8527	44.42	5	3.743287562	0.278	0.96473151	16
optimal_loci_913_G1	1224	4.28108	2.37	4275	61.27	4	4.232624355	0.712	0.964699874	16
optimal_loci_919_G1	1318	4.108832	18.59	1001	49.92	5	21.47846729	0.363	0.964606317	16
optimal_loci_978_G1	1448	3.157154	0	2001	45.64	4	20.05751478	0.212	0.962951637	16
optimal_loci_984_G1	1106	3.157154	0	2403	63.65	7	8.932988157	0.709	0.962745454	16
optimal_loci_989_G1	3508	3.300461	0	6547	51.65	1	19.79392737	0.407	0.962365774	17
optimal_loci_994_G1	1212	3.565712	0	13086	34.24	1	19.79392737	0.222	0.962334204	15

optimal_loci_1024_G1	1050	3.347472	9.81	19468	41.71	1	2.961478685	0.505	0.96112401	17
optimal_loci_1044_G1	1107	3.158041	0	2007	53.38	4	17.64968313	0.419	0.96024474	12
optimal_loci_1075_G1	3104	2.67965	0	3955	40.14	3	26.94552083	0.344	0.958885841	10
optimal_loci_1077_G1	1705	2.67965	5.92	2001	37.3	3	26.94552083	0.108	0.958863557	10
optimal_loci_1079_G1	2033	2.67965	5.41	1489	50.46	3	26.94552083	0.459	0.95881003	10
optimal_loci_1098_G1	1234	2.780217	0	5231	55.42	1	182.626325	0.598	0.958453616	9
optimal_loci_1122_G1	2962	2.696832	0	3710	55.7	4	4.474779038	0.653	0.957965521	9
optimal_loci_1125_G1	1704	2.680075	0	1200	49.06	3	3.864097548	0.412	0.957927961	9
optimal_loci_1197_G1	2597	2.298471	1.27	4150	37.54	1	3.679516793	0.225	0.954839903	7
optimal_loci_1209_G1	1017	2.881375	0	2525	50.83	4	18.96083651	0.3	0.954027946	4
optimal_loci_1214_G1	1249	2.881375	23.22	6647	44.91	3	25.28111535	0.293	0.953965506	4
optimal_loci_1217_G1	2597	2.881375	37.66	1065	36.23	5	22.98794007	0.161	0.953747619	4
optimal_loci_1314_G1	1046	2.343475	11.09	2022	35.94	1	3.060076745	0.251	0.949548118	5
optimal_loci_1317_G1	1241	2.343475	2.74	11102	48.83	2	16.41305621	0.359	0.949420074	5
optimal_loci_1354_G1	1009	2.643982	36.27	1001	40.93	2	4.348145791	0.141	0.947555476	8
optimal_loci_1362_G1	1062	2.596837	23.54	2359	47.92	4	5.518672085	0.322	0.947371443	9
optimal_loci_1379_G1	1060	3.237749	30.09	4561	36.88	1	2.90843939	0.21	0.94591093	10
optimal_loci_1382_G1	1442	3.237749	4.3	1273	38.97	3	14.10824565	0.219	0.945642693	8
optimal_loci_1416_G1	1141	3.092295	0	19833	36.8	1	31.58293622	0.001	0.944723534	8
optimal_loci_1438_G1	1216	2.654868	4.28	2650	38.81	1	1.139784848	0.136	0.944236436	9
optimal_loci_1450_G1	1069	3.283236	0	2151	38.54	4	7.840503628	0.2	0.943760751	11
optimal_loci_1479_G1	2891	3.220867	7.96	4010	38.11	2	22.53145908	0.187	0.942632403	10
optimal_loci_1531_G1	1251	4.483067	0	1023	38.68	2	2.555363414	0.142	0.940787976	8
optimal_loci_1553_G1	1011	4.516747	0	10028	43.71	3	8.666855182	0.347	0.940327597	7
optimal_loci_1554_G1	1584	4.516747	0	8405	38.25	3	8.666855182	0.202	0.940315521	7
optimal_loci_1564_G1	1139	4.516747	0	1631	52.58	4	6.506181351	0.451	0.940210491	7
optimal_loci_1651_G1	1381	4.848085	7.17	2001	40.91	3	6.720707876	0.225	0.937086049	5
optimal_loci_1760_G1	1045	1.456051	0	1001	42.67	2	18.94302616	0.19	0.933249204	5
optimal_loci_1771_G1	1041	1.529016	0	1001	48.89	5	13.52108314	0.512	0.93262619	5
optimal_loci_1811_G1	1288	1.72731	2.72	3252	47.67	1	1.982319031	0.429	0.931385938	5
optimal_loci_1812_G1	1845	1.72731	6.18	4573	41.08	1	1.982319031	0.352	0.931371964	5
optimal_loci_1814_G1	1140	1.72731	0	10063	41.84	1	1.982319031	0.062	0.931336362	5
optimal_loci_1901_G1	1128	2.994309	30.94	2001	37.94	1	9.687699471	0.271	0.926265179	2

optimal_loci_1912_G1	1013	5.111349	0	10771	43.92	1	24.69651467	0.164	0.925429144	2
optimal_loci_1993_G1	1676	5.237859	8.65	7115	51.96	1	72.13759189	0.686	0.921616629	14
optimal_loci_2003_G1	1110	3.665929	0	1731	39.81	3	18.46241818	0.161	0.921264405	14
optimal_loci_2014_G1	1425	4.072832	0	6394	50.38	1	11.26133949	0.419	0.92062846	16
optimal_loci_2058_G1	1631	3.532103	36.73	2001	34.7	2	4.363429422	0.208	0.919506719	17
optimal_loci_2059_G1	1881	3.532103	6.17	1062	34.76	2	4.363429422	0.103	0.919461049	17
optimal_loci_2065_G1	1345	3.532103	8.03	6083	36.57	3	2.908952948	0.241	0.919356853	17
optimal_loci_2067_G1	2179	3.532103	39.7	1681	49.74	3	2.908952948	0.477	0.9193241	17
optimal_loci_2085_G1	1018	3.921883	0	2487	33.59	1	6.403415156	0	0.918921376	17
optimal_loci_2089_G1	1189	3.922634	0	2742	47.35	1	6.403415156	0.41	0.918855818	17
optimal_loci_2099_G1	1054	3.922634	16.22	2193	53.32	3	3.212324232	0.59	0.918392969	17
optimal_loci_2103_G1	1148	3.920215	0	2001	61.06	5	23.56310006	0.486	0.918337932	18
optimal_loci_2104_G1	1364	3.920588	0	1001	57.25	5	23.56310006	0.581	0.918327537	18
optimal_loci_2107_G1	1114	3.920043	0	3221	61.93	5	23.56310006	0.565	0.918279754	18
optimal_loci_2109_G1	1662	3.920043	8.97	2931	32	4	28.24187981	0.062	0.918254464	18
optimal_loci_2144_G1	1166	4.359676	0	1001	38.76	2	3.0407807	0.11	0.917151987	16
optimal_loci_2145_G1	1023	4.359676	18.38	2313	40.76	2	3.0407807	0.189	0.917143289	16
optimal_loci_2164_G1	1162	4.510942	0	6712	44.06	2	27.68671345	0.227	0.916511161	15
optimal_loci_2183_G1	1851	1.500135	0	1001	51.53	2	29.38735736	0.632	0.914627857	9
optimal_loci_2230_G1	1422	2.146715	5.66	2001	42.96	3	8.093391992	0.381	0.911043661	4
optimal_loci_2288_G1	1005	4.889778	0	2305	44.67	5	6.736261772	0.289	0.908244241	10
optimal_loci_2304_G1	1742	5.102126	15.44	5795	37.19	3	1.244801123	0.147	0.907607173	14
optimal_loci_2338_G1	1338	5.187835	0	6396	54.26	4	290.4975527	0.522	0.906932031	13
optimal_loci_2339_G1	1123	5.187835	0	4704	61.53	3	383.5718436	0.585	0.906919442	13
optimal_loci_2344_G1	1012	5.187835	18.97	1390	34.68	2	574.6776887	0.153	0.906810751	13
optimal_loci_2376_G1	1204	4.530283	11.46	2440	38.78	1	0.021097089	0.175	0.905817068	13
optimal_loci_2424_G1	1295	5.197383	11.89	11671	40.69	1	34.12760531	0.233	0.904683333	13
optimal_loci_2425_G1	3646	5.197383	7.3	7741	46.9	2	17.06380265	0.506	0.904654092	13
optimal_loci_2428_G1	1318	5.197383	22.15	5162	42.86	2	17.06380265	0.326	0.904634903	13
optimal_loci_2451_G1	1307	4.936769	3.52	5965	49.8	2	3.299835243	0.42	0.904289338	12
optimal_loci_2453_G1	1043	4.936769	0	7705	47.36	2	3.299835243	0.315	0.904278356	12
optimal_loci_2457_G1	2590	4.936769	1.39	14471	51.85	2	3.299835243	0.673	0.904216503	12
optimal_loci_2459_G1	1551	4.936769	0	17976	57.18	2	3.299835243	0.575	0.904198155	12

optimal_loci_2648_G1	1714	2.299355	1.63	8459	49.53	2	3.697785991	0.358	0.899100037	3
optimal_loci_2664_G1	1652	3.322662	0	3268	47.39	1	20.72616287	0.48	0.898213304	4
optimal_loci_2697_G1	1109	2.493383	0	2813	54.46	1	0.920413948	0.624	0.89555285	6
optimal_loci_2719_G1	1346	1.867214	0	2001	38.93	1	13.50480412	0.293	0.894613557	7
optimal_loci_2781_G1	2115	1.82215	38.49	2300	35.36	3	3.378126793	0.221	0.892923914	8
optimal_loci_2792_G1	1491	1.44159	0	3816	38.9	3	3.378126793	0.218	0.892839777	8
optimal_loci_2847_G1	1462	1.016508	15.18	5160	40.76	1	31.43259932	0.254	0.8917925	7
optimal_loci_2855_G1	2667	1.016508	23.55	5664	35.62	1	31.43259932	0.079	0.891671436	7
optimal_loci_2877_G1	1392	3.288193	0	1918	42.09	2	2.450275248	0.166	0.889786265	13
optimal_loci_2883_G1	1776	3.288193	0	7070	38.17	2	2.450275248	0.111	0.889745074	13
optimal_loci_2922_G1	3619	4.283331	1.08	2393	48.3	2	38.04877138	0.337	0.887788668	11
optimal_loci_2929_G1	1521	4.283331	0	12020	52.26	4	19.25151997	0.586	0.887720811	11
optimal_loci_2949_G1	1028	4.283331	2.72	2434	37.93	1	11.30966101	0	0.887354591	11
optimal_loci_2952_G1	1031	4.283331	0	4475	44.51	1	11.30966101	0.264	0.887339382	11
optimal_loci_2959_G1	2997	4.283331	2.54	10039	56.62	2	8.778257016	0.713	0.887211682	11
optimal_loci_2976_G1	1491	4.283331	20.19	4727	46.27	3	2.082284339	0.277	0.887070112	11
optimal_loci_2993_G1	2059	2.026961	0	4625	54.2	1	3.309036076	0.65	0.886335007	11
optimal_loci_3016_G1	1257	2.026961	5.09	6113	43.43	1	167.9691338	0.229	0.885810022	9
optimal_loci_3051_G1	1631	1.869173	0	2001	61.61	3	4.685791449	0.658	0.884523132	10
optimal_loci_3142_G1	2867	2.689704	0	1001	55.42	1	6.048693577	0.562	0.880941771	6
optimal_loci_3147_G1	1716	2.624457	0	2447	42.65	2	3.091999065	0.397	0.880622329	5
optimal_loci_3155_G1	1834	2.624457	0	1001	54.74	2	3.091999065	0.495	0.880482359	5
optimal_loci_3160_G1	1755	2.368372	12.99	6639	49.8	1	0.332283554	0.32	0.879972753	5
optimal_loci_3203_G1	1758	1.960224	0	12483	52.5	2	3.749654734	0.362	0.877596533	5
optimal_loci_3278_G1	1496	0.551557	0	13026	51	1	0.0978642	0.412	0.873491875	4
optimal_loci_3279_G1	1574	0.551557	32.47	11282	40.4	1	0.0978642	0.216	0.873478899	4
optimal_loci_3280_G1	1143	0.551557	10.5	9745	36.22	1	0.0978642	0.165	0.873467463	4
optimal_loci_3282_G1	2910	0.551557	0	6173	42.95	1	0.0978642	0.181	0.873440885	4
optimal_loci_3423_G1	1053	3.41382	13.01	4016	46.05	4	27.35019546	0.291	0.868773743	7
optimal_loci_3430_G1	2846	3.388195	0	2563	41.98	6	9.413705275	0.268	0.868409107	8
optimal_loci_3433_G1	1323	3.267962	26.46	4243	42.4	5	8.692940648	0.25	0.868375372	8
optimal_loci_3451_G1	2909	3.197778	0	2857	38.53	3	4.474422446	0.082	0.867166607	8
optimal_loci_3455_G1	2127	3.480523	0	1001	48.14	2	1.640208201	0.596	0.866900975	8

optimal_loci_3460_G1	1267	3.480523	0	4820	55.95	2	1.640208201	0.503	0.866878958	8
optimal_loci_3466_G1	1024	3.480523	29.79	10996	40.82	2	1.640208201	0.273	0.866834814	8
optimal_loci_3498_G1	1236	1.526293	0	12011	50.4	2	48.02506617	0.444	0.864756659	10
optimal_loci_3595_G1	1044	1.114121	2.68	5669	45.97	1	4.299051222	0.345	0.861429293	8
optimal_loci_3605_G1	2781	1.113712	1.26	7112	46.27	1	4.299051222	0.351	0.861291972	8
optimal_loci_3606_G1	1599	1.113712	0	9940	50.03	1	4.299051222	0.408	0.861279725	8
optimal_loci_3640_G1	1273	1.912519	0	8690	34.09	2	0.102629761	0.165	0.85994381	10
optimal_loci_3649_G1	1560	1.853888	0	2088	40.64	1	0.05280726	0.058	0.859407909	10
optimal_loci_3673_G1	1978	1.623379	14.56	15794	36.65	1	26.19342066	0.167	0.858940283	10
optimal_loci_3705_G1	1599	1.389297	7.44	2106	36.83	4	54.69216478	0.204	0.85791942	10
optimal_loci_3733_G1	3626	0.775751	3.17	14910	58.08	1	36.8970222	0.671	0.856875022	9
optimal_loci_3741_G1	2009	0.775751	10.65	2374	42.11	2	44.69442336	0.467	0.856714368	9
optimal_loci_3742_G1	1072	0.775751	4.2	2025	34.98	2	44.69442336	0.248	0.856702165	9
optimal_loci_3877_G1	1140	0.138883	4.47	18568	46.84	1	1.477141613	0.31	0.853698616	5
optimal_loci_3885_G1	4424	0.138883	0.63	11768	48.12	2	11.06380836	0.402	0.853562329	5
optimal_loci_3976_G1	1786	0.164675	0	1001	39.86	1	433.0851054	0.133	0.848080885	1
optimal_loci_4065_G1	1463	0.519426	0	12853	33.42	2	4.726553134	0.042	0.843643876	1
optimal_loci_4160_G1	3368	1.103192	25.24	3181	45.13	4	6.609911267	0.365	0.838576607	7
optimal_loci_4161_G1	1404	1.103192	0	5463	55.27	4	6.609911267	0.566	0.838564516	7
optimal_loci_4162_G1	3429	1.103192	0	2001	43.59	4	6.609911267	0.249	0.838538757	7
optimal_loci_4166_G1	1624	0.452612	0	2648	54.31	2	11.06033262	0.516	0.83843128	7
optimal_loci_4168_G1	2269	0.452612	15.91	2881	58.74	2	11.06033262	0.563	0.838407924	7
optimal_loci_4177_G1	1069	0.452612	0	13330	50.51	1	4.144796403	0.535	0.838268698	7
optimal_loci_4265_G1	1163	0.882696	0	17617	40.58	1	5.933948611	0.216	0.836213237	8
optimal_loci_4358_G1	1096	1.44233	0	1012	48.26	2	10.54192483	0.577	0.832606905	4
optimal_loci_4384_G1	2843	1.295085	14.03	1001	53.85	5	8.080097473	0.562	0.831568073	8
optimal_loci_4385_G1	1305	1.295085	22.38	1169	45.36	5	8.080097473	0.348	0.831445558	8
optimal_loci_4420_G1	1054	1.506298	30.08	2730	39.08	1	0.118320026	0.106	0.828481466	11
optimal_loci_4427_G1	1354	1.506298	0	7204	43.2	1	0.118320026	0.097	0.828445945	11
optimal_loci_4431_G1	1277	1.456949	36.18	17014	40.32	1	0.118320026	0.268	0.828373527	12
optimal_loci_4441_G1	1266	1.508054	14.53	7357	43.75	1	1.668752012	0.198	0.828102135	14
optimal_loci_4447_G1	3421	1.465072	0	2473	59.31	1	1.668752012	0.6	0.82799125	14
optimal_loci_4465_G1	1695	1.552655	12.33	6839	43.59	2	2.427661501	0.29	0.827363519	12

optimal_loci_4470_G1	2202	1.616642	0	3329	52.86	3	7.487953654	0.533	0.827154568	12
optimal_loci_4471_G1	2446	1.616642	0	5689	54.74	4	5.61596524	0.47	0.827135193	12
optimal_loci_4472_G1	1762	1.616642	0	5288	51.87	4	5.61596524	0.501	0.827114561	12
optimal_loci_4544_G1	1173	1.904105	0	1001	46.2	2	11.08252821	0.253	0.824683661	11
optimal_loci_4546_G1	1284	1.904105	8.41	3413	38.7	2	1.923620392	0.301	0.824559293	10
optimal_loci_4549_G1	1354	1.904105	2.22	1880	59.37	2	19.76041069	0.468	0.824483921	10
optimal_loci_4674_G1	1938	0.696321	32.04	5446	33.95	1	12.77974205	0.181	0.821090945	10
optimal_loci_4704_G1	1291	0.923729	15.03	15938	53.83	1	2.71856824	0.593	0.820004442	9
optimal_loci_4717_G1	1395	0.923729	4.01	3425	40.86	1	2.71856824	0.294	0.819911339	9
optimal_loci_4721_G1	1044	0.903937	0	3941	55.74	2	15.89171465	0.513	0.819841161	9
optimal_loci_4723_G1	1470	0.903937	29.46	5953	49.86	2	15.89171465	0.448	0.819823021	9
optimal_loci_4741_G1	1026	1.601481	0	7247	58.57	1	5.3050065	0.589	0.819187924	10
optimal_loci_4745_G1	1241	1.601481	2.5	2001	47.21	1	5.3050065	0.127	0.819148891	10
optimal_loci_4819_G1	2018	0.79928	0	2354	51.53	1	58.92282379	0.424	0.816424978	9
optimal_loci_4825_G1	1544	0.79928	2.53	3351	44.49	1	58.92282379	0.375	0.816351369	9
optimal_loci_4851_G1	1077	0.560723	0	1549	37.04	2	8.93256229	0.151	0.815923966	6
optimal_loci_4924_G1	1309	1.442388	29.03	6513	48.58	2	8.100071493	0.497	0.812589315	2
optimal_loci_5007_G1	1746	2.1117	3.38	3964	44.84	1	8.42162261	0.553	0.808649539	2
optimal_loci_5038_G1	1020	2.019556	37.84	2788	37.74	2	37.38301299	0.214	0.807980685	2
optimal_loci_5152_G1	1775	1.174499	14.65	5103	47.66	2	16.60562234	0.388	0.803231235	5
optimal_loci_5177_G1	2188	1.178051	6.63	3592	49.54	1	2.395997004	0.512	0.802288795	5
optimal_loci_5179_G1	1298	1.178051	4.01	2001	54.69	1	2.395997004	0.736	0.802276957	6
optimal_loci_5240_G1	1091	3.352873	17.42	1001	40.51	1	0.597701311	0.2	0.799770982	11
optimal_loci_5241_G1	1493	3.352873	0	2001	47.01	1	0.597701311	0.55	0.799724874	11
optimal_loci_5267_G1	1386	3.80779	32.18	1280	37.73	3	5.077399855	0.164	0.798548869	9
optimal_loci_5278_G1	1195	4.302836	0	3289	37.48	4	5.712146575	0.067	0.798448467	8
optimal_loci_5284_G1	2217	4.302836	3.43	2952	43.7	4	4.597249728	0.203	0.79830314	8
optimal_loci_5288_G1	1042	4.302836	33.3	4396	43.57	4	4.597249728	0.497	0.798275372	8
optimal_loci_5301_G1	1295	4.302836	0	10103	54.59	2	0.152942505	0.705	0.798072939	9
optimal_loci_5303_G1	1675	2.789403	0	12238	54.86	2	0.152942505	0.523	0.798054226	9
optimal_loci_5385_G1	1138	1.460982	0	1676	40.94	3	7.667374239	0.144	0.794390655	4
optimal_loci_5417_G1	1865	1.086419	23.65	13865	38.82	1	14.06932808	0.333	0.793004747	2
optimal_loci_5545_G1	2238	2.003561	30.12	13513	36.32	2	4.331342949	0.017	0.788677098	5

optimal_loci_5551_G1	1259	1.927181	0	8087	57.34	2	14.79025054	0.719	0.788244115	5
optimal_loci_5552_G1	1373	1.923923	0	9453	52.51	2	14.79025054	0.603	0.788233103	5
optimal_loci_5553_G1	1028	1.923185	0	11072	39.88	2	14.79025054	0.193	0.788223624	5
optimal_loci_5607_G1	2049	2.134787	7.13	2239	41.97	3	10.64286957	0.327	0.787089933	5
optimal_loci_5728_G1	1079	1.263874	21.96	17103	41.89	1	13.27024894	0.346	0.782920432	9
optimal_loci_5735_G1	2566	1.505242	10.48	3304	59.54	1	8.328344883	0.539	0.782791339	12
optimal_loci_5757_G1	1160	1.852207	0	6997	52.84	1	23.18619617	0.382	0.781304405	14
optimal_loci_5773_G1	1601	1.853432	5.5	3965	47.72	1	10.03717269	0.438	0.78034814	14
optimal_loci_5791_G1	1105	1.853432	0	5967	43.52	1	9.10231746	0.369	0.780128631	14
optimal_loci_5792_G1	1527	1.853432	1.83	7679	42.56	1	9.10231746	0.341	0.780112753	14
optimal_loci_5793_G1	1776	1.853432	0	9530	42.73	1	9.10231746	0.339	0.780097128	14
optimal_loci_5823_G1	1201	2.031953	15.99	10846	38.3	1	4.860147555	0.299	0.779225067	14
optimal_loci_5825_G1	2101	2.031953	0	8028	40.4	1	4.860147555	0.154	0.7792041	14
optimal_loci_5828_G1	1081	2.031953	0	3023	47.17	2	2.430073778	0.351	0.77916686	13
optimal_loci_5829_G1	1769	2.031953	0	1001	52.96	2	2.430073778	0.502	0.779151815	13
optimal_loci_5836_G1	1333	2.031953	0	4021	40.88	2	2.430073778	0.203	0.779066369	13
optimal_loci_5863_G1	1835	1.879968	2.89	1001	45.17	1	1.121452974	0.26	0.778332054	15
optimal_loci_5872_G1	1140	1.735365	26.23	10676	42.71	1	1.121452974	0.486	0.778265238	16
optimal_loci_5976_G1	1404	0.881883	0	5057	43.73	1	9.494875344	0.303	0.774918438	7
optimal_loci_5982_G1	2277	0.787433	11.73	2099	49.18	2	4.747437672	0.389	0.774818847	7
optimal_loci_5983_G1	3278	0.787433	6.71	2001	44.81	4	0.203608686	0.396	0.774668125	7
optimal_loci_5985_G1	1218	0.772606	14.04	1001	47.12	4	0.203608686	0.41	0.774587835	6
optimal_loci_6095_G1	2157	0.585779	0	2620	58.59	1	12.62016873	0.56	0.771691979	5
optimal_loci_6209_G1	2735	1.183263	0	2001	47.09	1	1.164561217	0.336	0.763595231	7
optimal_loci_6211_G1	1454	1.183263	0	5617	47.04	1	1.164561217	0.509	0.763577857	7
optimal_loci_6213_G1	1088	1.183263	38.24	8028	52.94	1	1.164561217	0.455	0.763562641	7
optimal_loci_6242_G1	1912	0.833339	13.55	5364	41.78	2	24.65985781	0.226	0.763006853	7
optimal_loci_6262_G1	1074	0.981536	17.69	7948	46.74	3	3.883493015	0.412	0.761816719	7
optimal_loci_6270_G1	1548	0.981536	21.19	2784	47.09	2	26.31429733	0.263	0.76131744	7
optimal_loci_6276_G1	1042	0.722503	0	2907	44.33	2	26.31429733	0.273	0.761175655	7
optimal_loci_6366_G1	3067	0.405366	10.53	11153	42.22	2	0.014956037	0.303	0.757040677	4
optimal_loci_6381_G1	1663	0.641973	1.92	1138	46.9	1	4.699691557	0.341	0.756287507	4
optimal_loci_6388_G1	1589	0.641973	0	6403	52.04	1	4.699691557	0.49	0.75620744	5

optimal_loci_6422_G1	1012	1.630877	0	10308	42.09	2	6.757920618	0.368	0.75438378	9
optimal_loci_6456_G1	1403	2.19278	4.35	5882	38.63	1	25.13022052	0.31	0.752519144	7
optimal_loci_6470_G1	1153	2.19278	0	7451	53.77	1	25.13022052	0.443	0.752386771	6
optimal_loci_6475_G1	1593	2.19278	0	17468	52.85	1	25.13022052	0.471	0.752308966	6
optimal_loci_6510_G1	1363	2.858521	0	2163	50.84	3	40.33504934	0.563	0.751276942	8
optimal_loci_6518_G1	1006	2.858521	0	3668	32.1	3	5.256160573	0.09	0.751092753	8
optimal_loci_6602_G1	2225	0.795966	1.26	5798	44.67	3	8.348114403	0.372	0.748197455	7
optimal_loci_6603_G1	2842	0.795966	0	8056	53.06	3	8.348114403	0.413	0.748176064	7
optimal_loci_6638_G1	1278	0.020253	28.95	3637	39.67	1	0.539972941	0.251	0.745829122	6
optimal_loci_6665_G1	1430	0.039099	0	17932	43	1	19.33029757	0.428	0.744835618	6
optimal_loci_6666_G1	1662	0.039099	8.06	16237	43.5	1	19.33029757	0.205	0.744823006	6
optimal_loci_6733_G1	1909	0.037927	31.48	1001	45.2	3	13.40717925	0.18	0.742432247	11
optimal_loci_6775_G1	1497	0.035611	1.73	10124	46.49	1	3.664276091	0.332	0.740986451	10
optimal_loci_6793_G1	1449	0.027553	4	10655	38.37	1	11.2783208	0.12	0.740137909	10
optimal_loci_6803_G1	1758	0.027553	0	1001	48	1	11.2783208	0.332	0.740066079	10
optimal_loci_6804_G1	1056	0.027553	2.65	2001	60.98	3	5.87411037	0.634	0.739962262	10
optimal_loci_6805_G1	2123	0.027553	13.19	3090	44.41	4	15.39489093	0.491	0.73994622	10
optimal_loci_6806_G1	1860	0.027553	0	2588	46.12	4	15.39489093	0.391	0.739930067	10
optimal_loci_6808_G1	2047	0.027553	0	1529	56.03	4	15.39489093	0.599	0.739869598	10
optimal_loci_6841_G1	1634	0.147935	0	2001	50.73	1	3.893134174	0.45	0.738003393	10
optimal_loci_6855_G1	2940	0.164609	4.69	1591	43.8	2	10.04898499	0.43	0.737809978	10
optimal_loci_6908_G1	1551	0.305043	2.06	11561	41.39	2	10.0811258	0.141	0.735138832	7
optimal_loci_6925_G1	3060	0.361468	12.09	1564	48.23	4	81.86403318	0.389	0.733919464	5
optimal_loci_6932_G1	1269	0.338669	2.6	1001	33.72	2	1.667651035	0.189	0.733508936	5
optimal_loci_6935_G1	1049	0.321296	0	4872	38.41	1	12.7941427	0.211	0.73301439	6
optimal_loci_6937_G1	1228	0.321296	0	2933	40.96	1	12.7941427	0.266	0.732999963	6
optimal_loci_7054_G1	1154	0.158738	0	6727	45.66	1	0.426403384	0.461	0.729496823	3
optimal_loci_7187_G1	1224	0.167022	12.99	1001	52.61	1	13.50603816	0.347	0.723205766	1
optimal_loci_7267_G1	2239	0.080736	0	3470	50.15	2	0.298799073	0.508	0.7194041	3
optimal_loci_7355_G1	1394	0.250544	29.41	2413	37.01	2	77.70132465	0.07	0.716261086	6
optimal_loci_7374_G1	1035	0.254727	19.81	6582	49.46	1	3.202976028	0.574	0.715678065	6
optimal_loci_7375_G1	1052	0.254727	4.18	8023	38.87	1	3.202976028	0.385	0.715667217	5
optimal_loci_7377_G1	1071	0.261707	0	10287	32.39	1	3.202976028	0.074	0.715650231	5

optimal_loci_7392_G1	1225	0.22112	17.96	4088	47.42	2	6.865646723	0.44	0.714816689	5
optimal_loci_7456_G1	3017	0.370803	1.56	2360	48.06	5	22.30375504	0.429	0.71081006	5
optimal_loci_7478_G1	3146	0.35259	6.33	19653	51.39	1	4.048418853	0.429	0.709699323	5
optimal_loci_7483_G1	1282	0.304701	0	2182	41.1	1	74.44689501	0.38	0.708948229	5
optimal_loci_7497_G1	3090	0.310757	2.04	4537	48.83	1	6.750339546	0.394	0.707913638	6
optimal_loci_7507_G1	2424	0.314481	8.25	1001	52.22	1	46.36409035	0.455	0.707311972	9
optimal_loci_7567_G1	1129	0.808359	35.96	3061	42.24	5	3.102203808	0.399	0.704217202	15
optimal_loci_7575_G1	1040	0.947362	0	7538	30.86	3	0.067674625	0.054	0.704113824	14
optimal_loci_7578_G1	1572	0.947362	4.9	10215	40.13	3	0.067674625	0.127	0.704089948	14
optimal_loci_7580_G1	1449	0.918583	0	2793	37.47	3	3.054008388	0.213	0.703998199	14
optimal_loci_7602_G1	1287	0.800491	2.25	3973	37.99	2	26.65034815	0.164	0.703123571	15
optimal_loci_7606_G1	2098	1.002903	1.53	1200	53.81	2	26.65034815	0.566	0.703102939	15
optimal_loci_7610_G1	1513	0.972441	2.41	3483	49.1	2	28.05284615	0.314	0.702940067	15
optimal_loci_7677_G1	1252	0.99883	0	8994	34.42	1	0.211480263	0.175	0.701049747	18
optimal_loci_7686_G1	1247	0.99883	0	8326	36.08	2	59.37279745	0.182	0.700864531	18
optimal_loci_7692_G1	1353	0.952613	4.58	1018	54.1	1	118.5341146	0.513	0.70067657	18
optimal_loci_7697_G1	2816	0.952613	4.19	4664	51.63	1	118.5341146	0.574	0.700638557	18
optimal_loci_7699_G1	1149	0.963644	0	15554	56.48	1	118.5341146	0.599	0.700569933	18
optimal_loci_7700_G1	1386	0.964257	36	16736	54.47	1	118.5341146	0.293	0.700559375	18
optimal_loci_7723_G1	1110	0.895844	0	16500	55.49	1	61.7595277	0.563	0.699414509	15
optimal_loci_7724_G1	1200	0.895844	0	15242	46.25	1	61.7595277	0.293	0.699405149	15
optimal_loci_7748_G1	2022	0.433691	0	10649	53.21	2	51.75286618	0.533	0.699125856	12
optimal_loci_7782_G1	2090	0.433691	1.96	7101	38.56	1	2.018493798	0.363	0.698208735	12
optimal_loci_7783_G1	1587	0.433691	0	5431	49.84	1	2.018493798	0.432	0.69819631	12
optimal_loci_7857_G1	1006	0.541515	21.37	14925	43.33	1	10.03648326	0.134	0.695698862	11
optimal_loci_7937_G1	1138	0.451276	26.1	5405	38.92	4	4.807646079	0.09	0.693245915	6
optimal_loci_7943_G1	1327	0.442126	37.91	3883	46.11	2	9.605093478	0.386	0.693110551	6
optimal_loci_7946_G1	1382	0.442126	13.89	6290	47.53	2	9.605093478	0.532	0.693092232	6
optimal_loci_7953_G1	1087	0.43103	0	1001	52.16	2	14.9380337	0.647	0.692850379	6
optimal_loci_7969_G1	1374	0.274538	2.24	1027	39.88	1	0.024135834	0.261	0.692143571	7
optimal_loci_8053_G1	3731	0.086922	12.38	8538	34.95	2	11.78786692	0.121	0.688422083	4
optimal_loci_8076_G1	1768	0.149979	9.9	7124	34.1	2	9.527129738	0.079	0.687275603	5
optimal_loci_8113_G1	1301	0.225157	2.15	3242	45.11	2	23.15317428	0.342	0.686299933	5

optimal_loci_8127_G1	1216	0.229819	33.06	3906	44.98	2	4.024261264	0.351	0.683981347	6
optimal_loci_8131_G1	1220	0.229819	4.51	1001	48.03	2	4.024261264	0.333	0.683927225	6
optimal_loci_8190_G1	1533	0.974755	9.2	2346	36.13	4	14.11393795	0.159	0.681128006	4
optimal_loci_8193_G1	1294	0.974755	5.33	5701	41.19	4	14.11393795	0.311	0.681051912	4
optimal_loci_8310_G1	1013	2.89445	32.58	2001	30.2	3	57.20028428	0.394	0.674914338	6
optimal_loci_8324_G1	1037	3.380917	0	2001	58.53	3	6.181965628	0.566	0.674326034	6
optimal_loci_8326_G1	1378	3.380917	2.76	3309	47.67	3	6.181965628	0.445	0.674313765	6
optimal_loci_8339_G1	1177	3.241783	13.25	1001	38.06	2	12.23483761	0.243	0.672789315	6
optimal_loci_8390_G1	1363	3.194924	21.32	4240	44.75	3	61.81035401	0.187	0.671368051	6
optimal_loci_8391_G1	1100	3.197226	0	5374	42.81	3	61.81035401	0.252	0.671346317	6
optimal_loci_8554_G1	1059	0.165947	0	9657	41.64	2	2.832105954	0.1	0.665644695	3
optimal_loci_8561_G1	1385	0.165947	0	1001	38.33	2	2.832105954	0.173	0.665520818	3
optimal_loci_8601_G1	1111	0.165947	27.9	6255	41.58	2	1.801908047	0.127	0.664243631	3
optimal_loci_8699_G1	1044	1.311307	0	1566	33.71	3	0.25473009	0.13	0.659628824	3
optimal_loci_8701_G1	1861	1.311307	14.4	1537	42.07	4	0.425871889	0.284	0.659611503	3
optimal_loci_8776_G1	1086	2.147955	20.99	4686	36.18	2	16.54547941	0.125	0.655957693	4
optimal_loci_8870_G1	3271	1.258413	3.12	1358	52.43	2	78.74086903	0.453	0.652632708	5
optimal_loci_8885_G1	1762	2.534411	0	3979	48.35	4	10.12537104	0.384	0.651423519	4
optimal_loci_8897_G1	2099	2.440985	8.81	1299	39.25	1	2.279378386	0.35	0.650859524	4
optimal_loci_8914_G1	1621	2.45419	5.74	2182	34.91	2	8.65879336	0.077	0.649259382	5
optimal_loci_8952_G1	1033	2.434861	7.84	4823	41.91	2	5.022829212	0.24	0.64680192	3
optimal_loci_9017_G1	1083	0.849213	0	2001	32.31	2	3.660893972	0.082	0.644152984	3
optimal_loci_9082_G1	1176	0.995597	0	2001	51.7	3	0.005946027	0.784	0.642027917	4
optimal_loci_9208_G1	1008	0.609865	0	1732	48.41	3	3.8697641	0.302	0.638858876	7
optimal_loci_9222_G1	4319	0.609865	4.49	2159	49.36	3	3.8697641	0.524	0.638758504	7
optimal_loci_9234_G1	1759	0.609865	1.78	14927	52.87	1	23.98721535	0.474	0.638076027	6
optimal_loci_9235_G1	2366	0.609865	0	7043	54.9	1	23.98721535	0.565	0.638017366	6
optimal_loci_9236_G1	1132	0.609865	0	5878	64.13	1	23.98721535	0.781	0.638008698	6
optimal_loci_9250_G1	1140	0.609865	8.51	2398	43.24	1	19.21761933	0.214	0.637696585	6
optimal_loci_9383_G1	2665	0.049255	33.21	14211	36.99	1	1.68076566	0	0.632602969	1
optimal_loci_9573_G1	2038	0.678551	36.41	2389	38.66	3	3.542859748	0.208	0.622865618	3
optimal_loci_9629_G1	1133	0.975742	25.51	3254	38.48	3	101.6829737	0.12	0.620483132	10
optimal_loci_9633_G1	1351	1.115086	24.35	1458	41.82	2	0.183978988	0.374	0.620227098	10

optimal_loci_9657_G1	1907	1.179086	34.77	3267	42.42	5	11.48966433	0.243	0.618302701	9
optimal_loci_9679_G1	1465	1.113368	12.15	4836	37.54	1	22.47996169	0.177	0.617610729	9
optimal_loci_9680_G1	1431	1.113368	0	3255	42.27	1	22.47996169	0.165	0.617598966	9
optimal_loci_9685_G1	1147	1.093941	5.84	2638	45.42	1	22.47996169	0.22	0.617529695	9
optimal_loci_9687_G1	2267	1.093941	1.81	4687	44.59	1	22.47996169	0.204	0.617506116	9
optimal_loci_9690_G1	1546	1.093941	0	9535	43.53	1	22.47996169	0.268	0.617475409	9
optimal_loci_9693_G1	1331	1.093941	0	12418	45.3	1	22.47996169	0.322	0.617455558	9
optimal_loci_9811_G1	2379	0.282427	24	3618	56.95	1	166.3398338	0.657	0.611891064	4
optimal_loci_9832_G1	1234	0.216784	24.47	2109	40.76	1	8.911102067	0.173	0.611181451	4
optimal_loci_9843_G1	1295	0.177754	0	7024	34.13	1	1.405568871	0.056	0.610570484	4
optimal_loci_9852_G1	1046	0.177754	0	1790	55.35	1	1.405568871	0.555	0.610471674	4
optimal_loci_9940_G1	2168	1.51479	2.68	2001	47.27	1	13.49658105	0.275	0.606208884	3
optimal_loci_10030_G1	2501	1.547849	0	6610	53.93	1	14.35755727	0.68	0.602566801	5
optimal_loci_10033_G1	2220	1.547849	2.34	2618	51.26	1	14.35755727	0.397	0.602537098	5
optimal_loci_10082_G1	1523	1.688913	2.69	2153	45.17	2	96.22956343	0.608	0.600955097	5
optimal_loci_10086_G1	1346	1.681541	14.26	13833	39.74	1	7.579623569	0.138	0.600809449	5
optimal_loci_10181_G1	1106	0.245467	0	1903	60.12	1	1.263847783	0.611	0.597229978	3
optimal_loci_10382_G1	1314	0.288465	24.96	2001	34.39	2	11.77748289	0.161	0.586984449	3
optimal_loci_10387_G1	1087	0.288465	2.76	5395	43.14	2	11.77748289	0.237	0.586960885	3
optimal_loci_10419_G1	1423	0.427579	0	3405	36.54	2	10.28984048	0.062	0.585220432	5
optimal_loci_10467_G1	1170	0.686121	7.01	4622	39.82	1	13.93766814	0.158	0.582823504	4
optimal_loci_10471_G1	1031	0.778282	29	1279	50.14	1	13.93766814	0.279	0.582742158	5
optimal_loci_10513_G1	1203	1.47036	0	3956	54.28	3	0.752553337	0.406	0.58093715	6
optimal_loci_10537_G1	1425	1.526092	3.09	2014	50.59	4	39.75724094	0.521	0.579014338	7
optimal_loci_10538_G1	1012	1.526092	0	4410	39.32	4	39.75724094	0.162	0.578999583	6
optimal_loci_10540_G1	1286	1.526092	0	5833	41.75	3	25.83468107	0.212	0.578986957	6
optimal_loci_10631_G1	1267	1.166018	0	1001	37.17	2	20.96832526	0.072	0.576656451	6
optimal_loci_10633_G1	1050	1.166018	0	3320	35.14	2	20.96832526	0.094	0.576640811	6
optimal_loci_10697_G1	2114	0.170467	31.6	5072	44.46	1	10.67453458	0.389	0.57398215	3
optimal_loci_10878_G1	3135	0.396549	0	19405	47.94	1	42.97263234	0.366	0.565080223	4
optimal_loci_10883_G1	1281	0.128737	31.46	14704	42.38	1	42.97263234	0.027	0.565045246	4
optimal_loci_10884_G1	1191	0.128737	3.53	12988	54.99	1	42.97263234	0.373	0.565032478	4
optimal_loci_10919_G1	1114	0.160994	0	1158	33.75	2	2.970274442	0.109	0.563071525	4

optimal_loci_11051_G1	1862	0.211163	7.95	2001	38.93	1	42.11417497	0.133	0.555336034	3
optimal_loci_11169_G1	1161	0.087237	9.47	2191	49.61	2	59.51880917	0.563	0.552508118	3
optimal_loci_11170_G1	1041	0.087237	0	1001	52.64	3	102.8048951	0.4	0.552449903	3
optimal_loci_11268_G1	1296	0.693545	14.04	16780	35.26	1	8.59812967	0.088	0.547812507	3
optimal_loci_11269_G1	1333	0.693545	18.6	18164	46.21	1	8.59812967	0.475	0.547801935	3
optimal_loci_11276_G1	1325	0.693545	0	3015	40.37	2	7.077168932	0.15	0.547063996	3
optimal_loci_11368_G1	1507	0.829076	5.57	1552	45.58	3	2.692167469	0.223	0.54140997	1
optimal_loci_11463_G1	1079	0.863703	19.83	13386	33.08	1	28.82793269	0.024	0.536018281	2
optimal_loci_11532_G1	1740	0.449025	9.37	3209	33.44	5	1.23357691	0.112	0.533509211	3
optimal_loci_11552_G1	1244	0.086722	0	8363	34.56	2	3.84932272	0.069	0.531993891	3
optimal_loci_11590_G1	1009	0.013247	30.13	3571	42.81	1	48.5510861	0.351	0.529728333	4
optimal_loci_11664_G1	1151	0.251496	5.08	5620	43.78	1	66.83366388	0.354	0.526490402	4
optimal_loci_11671_G1	1642	0.308453	7.31	12621	29.23	3	22.79587405	0.163	0.526311577	4
optimal_loci_11765_G1	2495	0.576848	5.49	2516	47.21	1	0.6208928	0.267	0.523158423	4
optimal_loci_11875_G1	1318	0.150668	33.84	5301	36.26	2	0.133971089	0.093	0.519706235	2
optimal_loci_12197_G1	1588	0.459055	6.93	9252	51.57	1	85.10926704	0.343	0.506563862	2
optimal_loci_12248_G1	1087	0.454063	8.65	1810	50.32	1	9.567827412	0.392	0.504583415	2
optimal_loci_12600_G1	1998	1.475944	0	3644	48.74	1	6.277971263	0.436	0.485893616	1
optimal_loci_12753_G1	1285	1.366417	23.35	15089	37.35	1	20.20422279	0.221	0.480166667	4
optimal_loci_12754_G1	1150	0.426581	0	13906	61.13	1	20.20422279	0.511	0.480157865	4
optimal_loci_12762_G1	1104	0.426581	6.25	1001	31.06	2	125.3939211	0.048	0.480016071	4
optimal_loci_12793_G1	2168	0.239027	20.2	14542	34.68	1	7.347597431	0.066	0.478118378	4
optimal_loci_12883_G1	1272	1.626637	0	4357	38.28	1	0.623568323	0.186	0.473829568	2
optimal_loci_12969_G1	1621	1.626637	0	3347	41.14	1	11.838924	0.164	0.471265625	3
optimal_loci_12998_G1	1599	2.292658	0	2490	34.02	1	38.34413298	0.068	0.470094509	3
optimal_loci_13066_G1	1112	1.636187	0	8206	37.67	2	6.087227098	0.047	0.467466652	2
optimal_loci_13288_G1	1294	0.503234	0	1001	44.97	1	5.360286943	0.363	0.458341131	1
optimal_loci_13456_G1	1335	0.127873	21.42	2001	45.24	1	85.6582528	0.573	0.449616369	1
optimal_loci_13557_G1	1862	0.268679	20.77	1880	39.09	2	5.842853262	0.243	0.444856109	3
optimal_loci_13558_G1	1073	0.268679	34.78	4846	38.02	2	5.842853262	0.168	0.444839911	3
optimal_loci_13570_G1	1543	0.262066	0	1023	44.58	1	8.974322515	0.288	0.444684881	3
optimal_loci_13679_G1	1142	0.236161	0	3361	36.51	1	21.24201486	0.093	0.439042783	2
optimal_loci_13754_G1	1290	0.389212	8.91	3477	37.9	1	15.33230619	0.243	0.436276868	4

optimal_loci_13800_G1	1267	0.613452	0	2001	53.43	1	4.831481253	0.584	0.434847545	3
optimal_loci_13860_G1	1005	0.84795	0	3348	47.76	1	0.290502133	0.458	0.432737121	4
optimal_loci_13931_G1	1005	0.977745	0	7644	44.77	1	26.31136074	0.263	0.430044635	3
optimal_loci_14015_G1	1276	0.985339	0	2001	53.6	2	0.417581768	0.579	0.426912783	4
optimal_loci_14034_G1	1973	1.055384	9.22	1806	66.34	1	14.32697457	0.718	0.426019918	3
optimal_loci_14037_G1	1246	1.055384	0	3013	55.21	1	14.32697457	0.618	0.42596407	3
optimal_loci_14380_G1	1540	0.013771	7.08	19750	46.81	1	12.40313901	0.199	0.410248862	1
optimal_loci_14600_G1	1212	0.742189	0	4476	53.21	2	20.38515676	0.416	0.401135335	4
optimal_loci_14629_G1	1052	0.681853	0	2001	53.61	3	1.722608898	0.528	0.399701503	4
optimal_loci_14644_G1	1118	0.839564	0	1001	38.81	1	0.43089278	0.123	0.399030149	4
optimal_loci_14679_G1	1251	0.960286	7.75	2325	37.41	1	0.039588839	0.216	0.398336228	4
optimal_loci_14823_G1	1590	0.697809	0	1001	28.8	2	3.898908238	0	0.393031704	2
optimal_loci_14838_G1	2168	0.656697	10.61	2361	36.76	2	6.494991498	0.276	0.39285378	2
optimal_loci_14898_G1	1211	0.048627	0	2001	39.3	1	29.29655873	0.153	0.388703683	4
optimal_loci_14904_G1	1881	0.048627	35.14	8297	41.67	1	29.29655873	0.193	0.388651853	4
optimal_loci_14955_G1	1577	0.223812	0	4607	40.13	2	16.89962509	0.158	0.385499926	5
optimal_loci_14956_G1	1175	0.223812	12.43	6261	39.48	2	16.89962509	0.213	0.38549061	5
optimal_loci_14988_G1	2958	0.311782	4.56	1407	36.78	2	5.676741968	0.032	0.384674769	3
optimal_loci_15098_G1	1743	0.205753	0	12748	39.75	1	44.91609922	0.234	0.379557173	2
optimal_loci_15153_G1	1254	0.331649	0	1232	36.04	1	0.141733571	0	0.37765971	3
optimal_loci_15227_G1	3089	0.205304	7.96	2292	39.43	2	0.907429188	0.142	0.374562574	2
optimal_loci_15388_G1	1425	0.197088	12.84	3497	36	1	15.19364142	0.176	0.368898869	2
optimal_loci_15412_G1	1231	0.231211	0	3609	59.22	2	14.57761848	0.933	0.367375298	2
optimal_loci_15538_G1	1353	0.126236	12.66	1147	39.61	1	20.94837083	0.153	0.36090096	2
optimal_loci_15558_G1	1313	0.136592	0	4246	35.49	2	9.926160535	0.168	0.360114018	2
optimal_loci_15623_G1	1589	0.211199	0	12631	38.82	2	16.23809566	0.172	0.355447865	1
optimal_loci_15703_G1	1196	0.53291	0	2585	37.54	2	1.826061235	0.092	0.351484993	1
optimal_loci_15794_G1	1188	0.431496	0	3209	42.5	2	1.436859446	0.206	0.346938088	2
optimal_loci_15828_G1	1431	0.681062	31.31	8865	31.23	1	2.869193659	0	0.345947418	3
optimal_loci_15895_G1	1965	0.992948	11.15	1015	50.43	2	121.9794617	0.569	0.342814576	4
optimal_loci_15961_G1	2313	0.708119	14.31	16781	42.84	1	34.86229561	0.296	0.341416882	4
optimal_loci_15964_G1	1218	0.710031	2.3	14701	36.94	1	34.86229561	0.278	0.341401406	4
optimal_loci_16030_G1	1224	0.012886	2.86	4903	37.82	1	222.1464292	0.112	0.338869985	3

optimal_loci_16396_G1	1193	1.449954	10.31	16231	39.06	1	5.198069065	0.287	0.323384516	3
optimal_loci_16432_G1	1092	1.813261	0	9410	44.87	1	36.75397262	0.254	0.321148006	4
optimal_loci_16436_G1	2481	1.9038	11.81	15462	55.5	1	36.75397262	0.552	0.320922805	4
optimal_loci_16479_G1	1376	0.421655	13.3	18684	51.3	1	15.30422394	0.453	0.319313415	7
optimal_loci_16534_G1	1407	0.391508	0	5755	35.6	2	7.947263678	0.4	0.317111868	5
optimal_loci_16535_G1	1966	0.391508	18.31	7343	35.7	2	7.947263678	0.035	0.317095893	5
optimal_loci_16548_G1	1163	0.391508	21.84	3472	61.65	1	20.17586161	0.682	0.316425967	5
optimal_loci_16549_G1	1486	0.391508	0	1867	53.23	1	20.17586161	0.515	0.316414025	5
optimal_loci_16717_G1	1455	0.271729	13.4	14900	33.05	2	17.11118907	0.067	0.309467813	6
optimal_loci_16718_G1	1556	0.271729	0	17533	41.96	2	17.11118907	0.29	0.30944747	6
optimal_loci_16730_G1	1231	0.263044	2.27	13281	35.98	1	0.041101011	0.169	0.309106473	6
optimal_loci_16738_G1	1273	0.263044	5.5	2001	33.22	1	0.041101011	0.119	0.308963475	6
optimal_loci_16769_G1	1789	0.268036	19.01	2546	37.84	1	2.249835338	0.219	0.307511362	6
optimal_loci_16772_G1	1503	0.268036	4.92	1953	46.37	1	2.249835338	0.315	0.307454576	6
optimal_loci_16922_G1	1405	0.260618	0	9579	39.78	2	1.211905099	0.086	0.301172054	1
optimal_loci_17413_G1	2121	0.445976	9.9	10418	49.59	1	1.142048288	0.345	0.28116125	1
optimal_loci_17536_G1	2176	0.136731	11.86	2333	40.21	1	4.081236377	0.186	0.274482768	1
optimal_loci_17645_G1	1133	0.143408	0	2001	38.57	2	4.145164277	0.194	0.268478199	2
optimal_loci_17718_G1	1048	0.136822	19.66	5471	40.17	1	24.64682834	0.329	0.265209673	2
optimal_loci_17930_G1	1451	0.135701	0	12579	57.2	2	5.861051041	0.677	0.256129174	1
optimal_loci_18343_G1	1181	0.288672	0	6351	42.25	2	9.952352183	0.239	0.239315744	1
optimal_loci_18450_G1	1422	0.305057	0	1540	48.52	1	9.206449522	0.385	0.234023415	1
optimal_loci_18698_G1	1018	0.179202	34.53	15902	37.03	1	1.330007457	0.199	0.221503698	1
optimal_loci_19015_G1	1207	0.177841	0	1001	38.77	2	20.86042949	0.287	0.204605089	3
optimal_loci_19073_G1	1507	0.175506	0	2001	48.1	2	17.32070507	0.499	0.202502195	3
optimal_loci_19093_G1	1168	0.014192	0	1001	40.06	2	6.09958815	0.154	0.201706853	3
optimal_loci_19848_G1	1141	0.087337	0	4304	33.3	1	0.058332362	0.177	0.16207122	1
optimal_loci_20568_G1	2974	0.02816	20.44	2057	39.81	2	0.365307593	0.207	0.12416814	2
optimal_loci_20623_G1	1030	0.049876	39.61	4179	65.63	1	1.471580223	0.528	0.121610275	2
optimal_loci_20899_G1	1110	0.022727	0	4149	44.23	1	8.028679239	0.49	0.109657478	2
optimal_loci_20910_G1	1580	0.020914	5.13	11397	47.4	1	8.028679239	0.425	0.109600052	2
optimal_loci_24242_G1	1166	0.214805	0	19512	37.65	1	7.713961533	0.114	0.070597055	1
optimal_loci_24777_G1	1106	0.042095	0	5252	54.52	2	3.639627836	0.881	0.091295098	2

optimal_loci_24784_G1	1008	0.040266	21.83	1620	37.5	1	13.86676006	0.107	0.091500695	2
optimal_loci_25001_G1	1037	0.042739	17.94	12602	58.72	1	93.27353588	0.738	0.098411885	1
optimal_loci_25099_G1	1541	0.046799	0	7039	42.95	1	5.509738271	0.222	0.102912813	2
optimal_loci_25102_G1	1717	0.037586	22.95	3593	38.78	1	9.295802385	0.093	0.103207383	2
optimal_loci_25470_G1	2068	0.031907	0	9843	50.43	1	5.339401699	0.566	0.116174846	1
optimal_loci_25586_G1	1404	0.081797	0	2228	58.61	2	27.87444258	0.582	0.121350768	2
optimal_loci_25653_G1	1707	0.151596	7.91	1001	41.41	2	2.144517122	0.222	0.12406936	2
optimal_loci_25737_G1	1153	0.149674	22.2	9400	40.32	2	1.605517346	0.426	0.127477865	3
optimal_loci_25738_G1	1555	0.149674	0	5028	42.57	2	1.605517346	0.366	0.12750173	3
optimal_loci_25741_G1	1057	0.149674	0	2624	37.74	2	1.605517346	0.034	0.127519175	3
optimal_loci_26001_G1	1481	0.157634	0	17075	43.14	1	14.03167646	0.172	0.138132707	3
optimal_loci_26033_G1	1013	0.157634	19.84	6218	45.8	1	2.600571215	0.486	0.13941615	3
optimal_loci_26052_G1	1017	0.157634	38.94	13422	41.88	1	79.94940496	0.194	0.140059031	3
optimal_loci_26311_G1	1027	0.091166	0	3318	56.76	2	0.018299609	0.538	0.151018687	2
optimal_loci_26347_G1	2243	0.079907	19.57	1903	40.57	1	0.078952173	0.222	0.153407861	5
optimal_loci_26389_G1	1373	0.093649	35.18	18640	51.05	1	1.071189135	0.534	0.154329774	5
optimal_loci_26395_G1	1566	0.093649	23.88	14750	45.91	1	1.071189135	0.378	0.154544719	5
optimal_loci_26433_G1	1642	0.089924	5.54	2701	50.66	1	3.802624659	0.544	0.15541021	5
optimal_loci_26476_G1	1339	0.092099	0	1636	57.28	2	6.164501178	0.558	0.156505355	4
optimal_loci_27175_G1	1132	0.056153	0	2682	38.07	2	132.8751096	0.052	0.178146951	4
optimal_loci_27178_G1	1174	0.056153	0	2398	46.33	2	132.8751096	0.26	0.178201371	4
optimal_loci_27184_G1	1077	0.056153	16.43	6506	47.35	2	132.8751096	0.462	0.178226066	4
optimal_loci_27185_G1	1362	0.056153	9.1	8297	33.7	1	265.4488881	0.081	0.178236832	4
optimal_loci_27258_G1	1409	0.119309	11.43	3290	32.71	2	64.22537745	0.177	0.182830472	1
optimal_loci_27955_G1	1180	0.586681	0	2597	41.61	1	25.45456244	0.24	0.213588637	1
optimal_loci_28113_G1	1494	0.305679	0	11530	44.04	1	34.98726783	0.341	0.219717941	1
optimal_loci_28294_G1	1216	0.549195	0	14238	30.09	2	0.016467518	0	0.227585789	1
optimal_loci_28517_G1	1347	0.949343	0	1313	49.51	3	8.510783271	0.335	0.236160177	3
optimal_loci_28538_G1	1921	0.817545	19.26	1673	36.23	2	2.683111723	0.07	0.236671634	3
optimal_loci_28560_G1	1705	0.695191	2.87	10160	45.63	1	0.02866405	0.327	0.23752354	4
optimal_loci_28627_G1	1345	0.309986	38.66	13192	37.32	1	0.609944317	0.108	0.24051556	2
optimal_loci_28700_G1	2659	0.674724	31.59	2791	34.37	1	10.97385632	0.12	0.244253009	3
optimal_loci_28732_G1	1030	0.868756	39.42	1001	33.39	1	3.777040016	0.122	0.245805949	3

optimal_loci_28771_G1	1473	1.001132	12.22	2869	44.39	3	4.514351346	0.332	0.246835698	3
optimal_loci_28905_G1	1202	0.310837	6.74	3085	43.67	4	132.9767715	0.228	0.252700169	1
optimal_loci_28998_G1	1859	0.675156	0	14439	45.88	1	0.971050988	0.444	0.256054777	1
optimal_loci_29158_G1	2344	0.590675	0	7037	41.63	1	1.206277533	0.204	0.260837899	3
optimal_loci_29179_G1	2139	0.590675	34.13	7485	40.62	3	1.833020781	0.319	0.261004441	3
optimal_loci_29180_G1	1970	0.590675	34.62	4810	40.25	3	1.833020781	0.122	0.261021537	3
optimal_loci_29352_G1	1434	0.85151	0	1765	46.37	2	8.704487768	0.334	0.267923253	4
optimal_loci_29395_G1	1449	1.153892	0	3180	48.3	1	0.349529177	0.369	0.269478628	4
optimal_loci_29396_G1	1031	1.153892	27.26	2091	39.57	1	0.349529177	0.161	0.269487687	4
optimal_loci_29415_G1	1161	0.940082	0	1785	53.05	1	0.17391138	0.661	0.270057736	4
optimal_loci_29513_G1	1119	1.621101	13.23	2472	46.38	2	3.602733112	0.127	0.273651274	1
optimal_loci_29843_G1	2204	1.141486	7.94	2764	36.11	2	1.179432428	0.04	0.286318942	4
optimal_loci_29860_G1	1222	1.295009	0	2075	42.55	1	102.5274595	0.249	0.287296033	4
optimal_loci_29871_G1	1347	1.353481	0	2560	54.86	3	4.939906671	0.586	0.287748441	4
optimal_loci_29890_G1	1008	0.857665	0	1118	42.65	2	2.992143939	0.214	0.289052298	4
optimal_loci_29982_G1	1025	1.228404	28.49	2950	42.43	2	13.06454895	0.101	0.293439595	3
optimal_loci_29984_G1	1301	1.228404	0	4507	44.04	2	13.06454895	0.327	0.293448955	3
optimal_loci_29988_G1	1223	1.228404	0	1001	36.71	2	17.96773761	0.213	0.293671672	3
optimal_loci_30074_G1	1030	0.093084	7.09	1854	59.02	3	0.013958382	0.551	0.298318752	2
optimal_loci_30076_G1	1033	0.094071	0	3093	47.14	3	0.013958382	0.486	0.298331081	2
optimal_loci_30421_G1	1153	0.277871	0	8259	58.45	1	0.416174054	0.504	0.3141474	3
optimal_loci_30422_G1	2412	0.277871	0	2001	36.15	1	0.416174054	0.157	0.31417745	3
optimal_loci_30432_G1	1444	0.277871	0	6728	57.89	3	4.805464672	0.613	0.314571357	3
optimal_loci_30584_G1	1359	2.837071	0	5107	44	2	16.851732	0.31	0.319249113	1
optimal_loci_30711_G1	2466	0.475893	5.03	1011	51.7	2	0.007854302	0.637	0.324023385	3
optimal_loci_30714_G1	2395	0.475801	1.29	1298	35.69	2	1.922277199	0.103	0.324190865	3
optimal_loci_30715_G1	2722	0.475801	1.43	3806	56.79	2	1.922277199	0.499	0.324205942	3
optimal_loci_30777_G1	1101	0.542932	0	2934	43.68	1	0.10264377	0.296	0.327522198	2
optimal_loci_30845_G1	2462	0.632445	0	2108	35.74	4	5.090210943	0.06	0.32936796	2
optimal_loci_31008_G1	1403	0.727193	16.46	5941	34.85	1	48.41586095	0.074	0.333512455	2
optimal_loci_31025_G1	1331	0.874186	0	11116	46.43	1	42.93358149	0.488	0.33383071	2
optimal_loci_31101_G1	1671	3.829776	37.94	14720	35.24	1	11.15668503	0.222	0.338310947	2
optimal_loci_31147_G1	1071	2.417029	31	9079	47.24	1	0.031099928	0.522	0.340414358	3

optimal_loci_31177_G1	2402	2.681721	0	2001	46	4	6.875760686	0.415	0.341824428	2
optimal_loci_31474_G1	1399	0.017106	0	2114	45.31	1	0.027202357	0.375	0.351369937	2
optimal_loci_31481_G1	1083	0.017106	0	1930	37.76	1	0.532444614	0.197	0.351606072	2
optimal_loci_31567_G1	1037	1.6267	0	1096	39.44	1	207.3989086	0.095	0.355992636	4
optimal_loci_31611_G1	1263	1.116997	0	3431	40.77	1	3.405537984	0.242	0.35742621	6
optimal_loci_31621_G1	1630	1.116997	33.93	1220	38.46	1	69.73762547	0.206	0.357600741	6
optimal_loci_31669_G1	2884	0.92146	1.11	7263	55.72	1	3.201549358	0.408	0.358782786	8
optimal_loci_31710_G1	3965	1.089961	4.19	4043	45.29	1	1.771070208	0.361	0.36031203	7
optimal_loci_31712_G1	1470	1.089961	0	8650	57.27	1	1.771070208	0.826	0.360339723	7
optimal_loci_31763_G1	1015	1.272812	0	7054	39.01	1	0.640332023	0.096	0.361740681	5
optimal_loci_31764_G1	3580	1.281486	1.45	2963	43.85	1	0.640332023	0.345	0.361749854	5
optimal_loci_31876_G1	1442	0.723993	39.67	16431	37.51	1	7.544476076	0.332	0.365464327	1
optimal_loci_31980_G1	1003	1.712125	0	2781	49.95	2	37.9822666	0.524	0.369303901	1
optimal_loci_32088_G1	1372	1.428143	2.84	4917	57.28	2	10.74347696	0.733	0.373086759	4
optimal_loci_32090_G1	1211	1.428143	0	3211	49.54	2	10.74347696	0.335	0.373098402	4
optimal_loci_32133_G1	2162	1.302793	0	1061	57.12	1	8.65402018	0.545	0.375038829	5
optimal_loci_32137_G1	1469	1.302793	0	4930	33.83	1	8.65402018	0.163	0.375062087	5
optimal_loci_32236_G1	1833	1.67013	11.35	1171	51.28	1	1.805231204	0.461	0.377479947	5
optimal_loci_32267_G1	1004	2.333205	0	18757	44.12	1	18.65471202	0.36	0.378630288	4
optimal_loci_32299_G1	1410	2.458319	0	3351	65.17	1	0.530054277	0.772	0.379900572	6
optimal_loci_32346_G1	1059	2.735521	0	3350	47.87	1	0.399254003	0.609	0.381587689	6
optimal_loci_32355_G1	1293	2.735521	5.03	6018	38.28	1	1.459995485	0.138	0.381919884	5
optimal_loci_32356_G1	1733	2.735521	9.23	4155	32.83	1	1.459995485	0.15	0.381928438	5
optimal_loci_32383_G1	1931	2.344027	0	2001	40.96	3	1.280595607	0.044	0.38318988	5
optimal_loci_32446_G1	3313	1.53928	2.69	2363	56.53	1	0.147158364	0.68	0.385163639	3
optimal_loci_32522_G1	1455	2.675096	0	1142	52.57	3	4.220543906	0.4	0.387720606	7
optimal_loci_32559_G1	1269	3.504185	33.88	2081	34.75	3	1.246949896	0.15	0.389280435	6
optimal_loci_32585_G1	1660	3.6962	21.02	6841	34.09	2	9.879981618	0.214	0.39009403	6
optimal_loci_32588_G1	2764	3.6962	7.27	2589	28.14	1	19.7153205	0.208	0.390112954	6
optimal_loci_32612_G1	2321	3.302941	11.16	3923	35.76	3	8.537009607	0.252	0.390700658	7
optimal_loci_32613_G1	1040	3.302941	0	2776	33.26	3	8.537009607	0.055	0.390715253	7
optimal_loci_32689_G1	1142	1.753269	3.42	1370	45.44	5	167.6740698	0.325	0.393672451	6
optimal_loci_32717_G1	2032	1.194649	1.48	1258	47.88	3	123.2244064	0.46	0.394526743	4

optimal_loci_32718_G1	1210	1.194649	3.64	2001	45.12	3	123.2244064	0.28	0.394574604	4
optimal_loci_32753_G1	1394	0.757841	0	1135	60.68	1	0.261670469	0.675	0.395897661	4
optimal_loci_32914_G1	1084	1.143933	0	2884	35.14	2	0.029804097	0.199	0.402473446	2
optimal_loci_32979_G1	1718	1.285847	0	2075	40.8	2	0.42220368	0.297	0.403683016	2
optimal_loci_33122_G1	1219	1.279387	9.27	2007	33.63	2	70.75309731	0.119	0.407376619	2
optimal_loci_33200_G1	1057	1.278198	37.84	1814	29.61	1	373.3248184	0.137	0.409771582	2
optimal_loci_33362_G1	1545	0.643607	0	1010	43.17	2	3.401348378	0.265	0.415148244	5
optimal_loci_33369_G1	1164	0.643607	0	8720	40.97	2	3.401348378	0.187	0.415289905	5
optimal_loci_33376_G1	1033	0.591395	0	8043	36.49	1	0.055590605	0.067	0.415373763	5
optimal_loci_33378_G1	1275	0.591395	0	5845	39.52	1	0.055590605	0.166	0.415385521	5
optimal_loci_33407_G1	1314	0.514096	20.09	1198	52.28	3	0.736769432	0.523	0.416311419	5
optimal_loci_33474_G1	1356	0.751941	0	5430	37.61	1	88.40504608	0.191	0.419644645	4
optimal_loci_33535_G1	1025	2.159286	0	2001	27.31	3	18.83449092	0.102	0.422138945	9
optimal_loci_33537_G1	1952	2.159286	0	4722	29.04	3	18.83449092	0.147	0.422199701	9
optimal_loci_33540_G1	2134	2.159286	6.14	1605	35.98	3	18.83449092	0.114	0.422217344	9
optimal_loci_33549_G1	1552	2.592519	4.7	1870	53.6	1	24.63228637	0.649	0.423018761	8
optimal_loci_33562_G1	1308	2.316275	0	2741	35.77	4	26.68843988	0.083	0.423232221	8
optimal_loci_33615_G1	1029	2.496314	9.62	1302	34.2	1	14.15407025	0.268	0.424967026	8
optimal_loci_33618_G1	1444	2.496314	0	18074	32.4	1	14.15407025	0.286	0.425067847	8
optimal_loci_33619_G1	1120	2.496314	6.25	19679	34.46	1	14.15407025	0.139	0.425077495	8
optimal_loci_33738_G1	1101	0.955856	21.07	6771	31.24	2	14.59843425	0.177	0.428313159	3
optimal_loci_33862_G1	1381	1.180457	0	1570	35.77	1	145.3979355	0.036	0.431277305	6
optimal_loci_33863_G1	1709	1.180457	5.68	3237	37.56	1	145.3979355	0.222	0.431287326	6
optimal_loci_33889_G1	1637	1.425026	0	14909	43.18	2	3.359795267	0.461	0.432057881	6
optimal_loci_33891_G1	1637	1.425026	8.31	13891	42.02	2	3.359795267	0.244	0.432081138	6
optimal_loci_33933_G1	2202	1.59982	21.66	11070	34.28	1	14.01488626	0.103	0.432945667	7
optimal_loci_34010_G1	1320	1.568224	5	17639	59.46	1	0.383289558	0.681	0.435040037	8
optimal_loci_34027_G1	1336	1.524119	0	1001	40.11	2	0.779873421	0.025	0.435896066	6
optimal_loci_34049_G1	2743	1.405693	10.28	11426	37.07	1	4.525121391	0.18	0.43656565	5
optimal_loci_34077_G1	1513	1.326727	4.56	8526	45.07	1	7.982081326	0.292	0.437151755	6
optimal_loci_34083_G1	2101	1.274837	11.14	13222	41.31	1	7.982081326	0.278	0.437179984	6
optimal_loci_34158_G1	1015	1.719899	13.3	1767	41.47	1	0.034681132	0.159	0.440037851	4
optimal_loci_34244_G1	1011	2.739201	0	1001	39.46	1	1.756839825	0.331	0.442387789	6

optimal_loci_34266_G1	1531	2.70804	0	2916	41.34	1	0.193086668	0.181	0.443202172	6
optimal_loci_34275_G1	1033	2.624463	22.65	8604	39.3	1	0.132240029	0.072	0.443459743	7
optimal_loci_34281_G1	1341	2.486544	11.56	15990	35.42	2	4.716430692	0.086	0.443505255	7
optimal_loci_34329_G1	1289	0.951483	0	3330	59.27	1	16.52860807	0.692	0.444653822	8
optimal_loci_34365_G1	1280	0.943908	0	1235	44.92	2	92.85965284	0.435	0.445568353	7
optimal_loci_34407_G1	1628	0.489412	15.79	2389	37.46	2	1.351940908	0.363	0.446259012	6
optimal_loci_34424_G1	1896	0.413033	3.27	2509	42.14	1	15.86641964	0.293	0.44664582	4
optimal_loci_34501_G1	1601	1.620245	0	7147	39.35	1	35.36206905	0.257	0.450823636	2
optimal_loci_34516_G1	1680	1.643348	18.57	15746	42.5	2	1.736695402	0.23	0.451316903	2
optimal_loci_34613_G1	1204	2.052535	39.78	1001	36.04	2	0.157130886	0.116	0.454733271	2
optimal_loci_34621_G1	2082	2.052535	0	2001	33.23	1	0.142059088	0.06	0.454869901	2
optimal_loci_34728_G1	1576	3.040325	6.85	2379	52.15	2	1.549711101	0.526	0.458392122	6
optimal_loci_34733_G1	1554	3.178244	5.98	5058	49.16	2	1.549711101	0.334	0.458519663	6
optimal_loci_34742_G1	1099	3.178244	17.83	2001	39.76	2	0.159684648	0.295	0.458871239	6
optimal_loci_34764_G1	1574	3.290561	0	13723	35.51	3	3.270681241	0.23	0.459396642	6
optimal_loci_34793_G1	1410	4.316681	16.17	1265	35.1	3	40.98119334	0.104	0.460028655	6
optimal_loci_34809_G1	1114	2.108106	18.04	1001	37.61	2	11.66453271	0.099	0.460919099	6
optimal_loci_34911_G1	1248	0.244455	9.94	10498	46.87	3	1.388755868	0.334	0.463949345	3
optimal_loci_34963_G1	1209	0.248974	20.51	4550	36.22	1	3.691022687	0.014	0.46602401	3
optimal_loci_34971_G1	1121	0.248974	0	3152	48.52	1	3.691022687	0.47	0.466089058	3
optimal_loci_35100_G1	1281	0.251682	10.69	12554	36.37	1	9.37104086	0.262	0.470182319	2
optimal_loci_35102_G1	1017	0.251682	0	9728	35.29	1	9.37104086	0.126	0.470200894	2
optimal_loci_35280_G1	1422	0.23893	0	1001	36	2	4.420620893	0.021	0.474380604	4
optimal_loci_35342_G1	1173	0.31547	10.49	1780	39.47	2	1.850515803	0	0.476714041	4
optimal_loci_35343_G1	1879	0.31547	0	1001	40.39	2	1.850515803	0.289	0.476721976	4
optimal_loci_35347_G1	1392	0.31547	0	15561	49.85	1	0.121348878	0.421	0.476838739	4
optimal_loci_35492_G1	1041	1.505486	8.36	7733	60.23	2	0.802353233	0.782	0.48077804	6
optimal_loci_35503_G1	1095	1.505486	3.01	1001	46.11	2	0.802353233	0.402	0.480844429	6
optimal_loci_35552_G1	1284	1.639781	2.49	7564	44	1	9.922660564	0.42	0.482072429	6
optimal_loci_35554_G1	1909	1.639781	0	4902	34.67	1	9.922660564	0.103	0.482084674	6
optimal_loci_35560_G1	1078	1.639781	0	1525	33.48	1	9.922660564	0.109	0.482165628	6
optimal_loci_35573_G1	1162	1.58813	0	8844	50.77	2	29.9606265	0.44	0.483004357	7
optimal_loci_35669_G1	1255	1.041556	0	3509	38.08	1	7.719766086	0.378	0.485522533	3

optimal_loci_35693_G1	1461	1.041484	0	8523	44.28	2	0.507412117	0.4	0.486295727	3
optimal_loci_35744_G1	1161	1.643741	0	11691	40.82	1	2.359631812	0.189	0.488638789	3
optimal_loci_35783_G1	1301	1.712803	15.91	6400	41.04	2	15.40632939	0.146	0.490358698	2
optimal_loci_36002_G1	1247	1.070158	15.96	10224	31.03	1	30.825439	0.116	0.49637835	1
optimal_loci_36257_G1	2470	0.338532	13.81	13177	41.25	1	11.16852243	0.197	0.503350013	2
optimal_loci_36329_G1	1495	0.081095	12.11	2001	33.97	1	25.81479381	0	0.50631651	2
optimal_loci_36469_G1	1378	0.135623	21.63	2308	37.3	3	0.051728594	0.109	0.511334125	1
optimal_loci_36579_G1	2720	0.020755	13.68	15196	40.58	2	18.86304296	0.253	0.515788375	1
optimal_loci_36750_G1	1450	0.046306	0	7165	27.24	2	8.48636671	0.071	0.52395853	1
optimal_loci_36922_G1	2678	0.047948	9.3	4557	39.24	4	5.234346336	0.218	0.528759078	5
optimal_loci_36925_G1	1512	0.047948	24.54	2638	47.08	2	9.102067797	0.351	0.528847167	5
optimal_loci_36927_G1	1911	0.047948	9.94	1004	56.77	1	3.041934378	0.788	0.528888663	5
optimal_loci_36962_G1	1571	0.043117	10.95	5093	42.01	1	13.50782875	0.311	0.530016426	5
optimal_loci_37020_G1	1933	0.041431	7.35	3086	49.81	3	12.75754871	0.403	0.530868415	7
optimal_loci_37120_G1	1399	0.042007	2.29	2023	45.53	3	26.77632139	0.48	0.533605305	9
optimal_loci_37130_G1	1095	0.042007	0	6685	44.1	4	20.08224104	0.14	0.533658084	9
optimal_loci_37143_G1	1039	0.041471	0	3035	52.06	2	11.86842862	0.255	0.533982825	8
optimal_loci_37146_G1	1388	0.041471	0	5960	55.11	2	11.86842862	0.459	0.534000408	8
optimal_loci_37213_G1	1476	0.047565	33.6	8092	37.33	2	5.45867098	0.143	0.535604053	12
optimal_loci_37214_G1	1784	0.047565	0	10508	58.01	2	5.45867098	0.738	0.535618577	12
optimal_loci_37226_G1	1017	0.042435	7.18	2001	58.6	2	13.20729905	0.605	0.536485685	12
optimal_loci_37229_G1	1796	0.042435	0	2264	49.44	2	13.20729905	0.354	0.536500394	12
optimal_loci_37244_G1	1453	0.022769	0	7555	36.95	2	118.5197406	0.107	0.537188216	9
optimal_loci_37254_G1	1071	0.031582	0	1801	34.64	2	26.6591814	0.081	0.537655665	12
optimal_loci_37265_G1	1408	0.031582	0	19964	46.73	1	43.78929631	0.346	0.537812607	12
optimal_loci_37282_G1	1375	0.032814	0	3287	38.03	2	40.94387679	0.307	0.538035324	12
optimal_loci_37332_G1	1662	0.022753	21.78	7980	35.07	4	5.991041923	0.153	0.539518961	8
optimal_loci_37353_G1	1635	0.011131	0	2440	41.52	1	21.06248367	0.272	0.540542644	7
optimal_loci_37354_G1	1023	0.011131	11.53	4256	48.97	1	21.06248367	0.359	0.540553561	7
optimal_loci_37357_G1	1604	0.011131	17.46	6410	54.86	1	21.06248367	0.505	0.540566509	7
optimal_loci_37448_G1	1310	0.011755	32.6	1471	36.48	3	20.22803232	0.135	0.543953368	2
optimal_loci_37539_G1	1791	0.012138	36.29	4399	45.72	3	6.003119083	0.358	0.546321767	3
optimal_loci_37653_G1	1232	0.01105	0	5754	40.42	1	17.12564684	0.308	0.548730676	2

optimal_loci_37808_G1	2218	0.021931	1.85	3921	52.34	2	42.04979789	0.463	0.552620252	5
optimal_loci_37810_G1	1076	0.021931	0	7053	50.55	2	42.04979789	0.515	0.552639079	5
optimal_loci_37811_G1	1451	0.021931	31.36	8325	51.06	2	42.04979789	0.545	0.552646726	5
optimal_loci_37835_G1	1184	0.011016	18.5	6793	35.81	1	43.40441757	0	0.553134612	5
optimal_loci_37883_G1	1411	0.010133	0	1743	37.63	2	56.28981278	0.137	0.55452178	5
optimal_loci_38115_G1	1536	0.020538	0	7827	36.71	1	38.46925513	0.179	0.562859571	4
optimal_loci_38138_G1	1001	0.010263	2.8	5457	40.95	1	3.962197901	0.153	0.563412079	5
optimal_loci_38141_G1	1271	0.010263	0	3440	34.61	2	0.097195089	0.095	0.563514174	5
optimal_loci_38204_G1	1495	0.011144	19.33	14188	50.63	2	8.10058198	0.393	0.565617464	6
optimal_loci_38227_G1	1735	0.011185	5.94	5528	44.72	2	12.28356625	0.328	0.566140721	5
optimal_loci_38311_G1	2299	0.010551	28.93	2001	35.01	4	11.86236245	0.128	0.568443435	6
optimal_loci_38329_G1	2077	0.01038	0	13286	33.79	2	0.831093938	0.067	0.569219707	6
optimal_loci_38330_G1	1234	0.01038	0	10176	34.11	2	0.831093938	0.127	0.56924347	6
optimal_loci_38368_G1	1030	0.010871	12.33	4256	38.64	3	9.416628683	0.246	0.570496784	7
optimal_loci_38417_G1	1497	0.010915	13.83	1823	39.27	2	2.785489321	0.086	0.571824067	6
optimal_loci_38428_G1	1060	0.010915	0	5372	40.84	2	22.83153479	0.243	0.572111243	6
optimal_loci_38439_G1	1042	0.020421	0	2514	51.72	4	3.615578467	0.524	0.572414764	4
optimal_loci_38533_G1	2350	0.010637	4.98	5922	56.89	1	30.39933602	0.686	0.575826378	6
optimal_loci_38544_G1	1207	0.010516	0	15402	47.63	1	30.39933602	0.567	0.57604523	6
optimal_loci_38577_G1	2205	0.010739	18.19	11982	62.99	2	1.254710599	0.875	0.576698806	7
optimal_loci_38651_G1	1550	0.010804	0	2655	43.8	2	5.512293019	0.301	0.578221419	7
optimal_loci_38684_G1	1055	0.011007	38.96	1081	35.92	1	9.352040883	0.176	0.578770735	8
optimal_loci_38685_G1	1390	0.011007	8.71	2751	42.87	1	9.352040883	0.195	0.578780774	8
optimal_loci_38698_G1	1165	0.012718	0	2354	54.5	1	6.780366814	0.684	0.5793964	6
optimal_loci_38740_G1	1293	0.011218	0	1001	35.88	3	12.42923541	0.123	0.581429184	5
optimal_loci_38789_G1	1539	0.010461	0	2082	41.19	1	59.63375711	0.224	0.584194303	5
optimal_loci_38817_G1	1147	0.017311	15.17	3206	38.18	1	4.345671959	0.152	0.585129771	4
optimal_loci_38820_G1	1701	0.014741	0	6624	42.68	1	4.345671959	0.245	0.585150318	4
optimal_loci_38826_G1	1115	0.014728	0	5759	37.93	1	23.99582757	0.243	0.585459051	4
optimal_loci_39389_G1	2164	0.011215	0	4208	38.26	2	0.903331332	0.133	0.602261242	1
optimal_loci_39461_G1	1469	0.073066	19.33	9723	33.62	3	7.991863142	0.166	0.605288351	5
optimal_loci_39472_G1	1336	0.091352	0	3003	37.64	1	102.6979625	0.126	0.605705112	5
optimal_loci_39485_G1	1237	0.096669	10.11	18265	48.9	1	13.4144878	0.277	0.606021612	5

optimal_loci_39518_G1	1125	0.106745	38.22	1808	40.26	1	196.3550199	0.171	0.6066124	5
optimal_loci_39573_G1	1067	0.126416	31.21	2914	39.83	1	0.021563411	0.296	0.608276897	5
optimal_loci_39923_G1	1619	0.125685	0	1568	39.9	2	1.479774423	0.225	0.61819784	2
optimal_loci_39955_G1	1185	0.124238	16.79	2157	41.26	3	3.153743501	0.221	0.618925974	3
optimal_loci_40008_G1	1115	0.127756	16.14	2550	38.02	1	7.091183638	0.092	0.621247461	5
optimal_loci_40026_G1	1460	0.123737	0	17284	40.47	1	0.257897062	0.115	0.622284868	4
optimal_loci_40071_G1	1498	0.12672	1.94	16678	40.58	1	4.328615527	0.224	0.623564037	4
optimal_loci_40073_G1	1455	0.12672	0	3163	39.65	1	4.328615527	0.223	0.623645538	4
optimal_loci_40335_G1	1353	0.123959	6.95	13944	49.22	1	1.539871268	0.378	0.633575072	3
optimal_loci_40348_G1	1078	0.134478	0	1384	56.58	2	0.300141223	0.639	0.6339793	3
optimal_loci_40351_G1	2305	0.132312	13.36	2655	42.6	3	8.609533192	0.375	0.634075125	3
optimal_loci_40494_G1	1287	0.121562	11.81	2464	43.12	2	25.33516297	0.07	0.637158487	3
optimal_loci_40563_G1	2303	0.129085	34.3	13426	37.6	2	0.923387716	0.217	0.63863925	3
optimal_loci_40607_G1	2003	0.124026	0	2296	44.13	3	2.97025499	0.328	0.639404876	3
optimal_loci_40822_G1	1113	0.120201	26.24	5361	41.5	1	43.09493659	0.127	0.645767266	2
optimal_loci_40853_G1	1190	0.127634	16.39	7181	32.18	1	2.830939913	0.104	0.646613395	2
optimal_loci_40999_G1	1788	0.120181	26.51	19445	47.42	1	0.092012036	0.366	0.650389183	4
optimal_loci_41007_G1	1272	0.121568	22.01	1466	37.02	1	0.092012036	0.178	0.650500362	4
optimal_loci_41055_G1	1224	0.129981	0	13049	41.42	1	12.74694918	0.287	0.651983307	4
optimal_loci_41089_G1	1428	0.132868	2.17	1818	50.63	1	0.878592446	0.453	0.653144282	5
optimal_loci_41153_G1	1090	0.128244	17.71	3182	37.52	1	27.4205524	0.125	0.655634133	3
optimal_loci_41211_G1	1481	0.125354	18.03	16864	34.77	1	0.255224823	0.16	0.657047094	4
optimal_loci_41303_G1	1103	0.133704	26.65	2751	41.7	3	0.151527994	0.339	0.659811588	4
optimal_loci_41309_G1	2713	0.133704	0	2556	33.39	4	0.327095065	0.148	0.659829886	4
optimal_loci_41373_G1	1163	0.105546	0	3366	40.92	1	12.80366957	0.334	0.662252808	3
optimal_loci_41528_G1	1606	0.194042	8.16	1248	35.92	2	0.953358362	0.166	0.66654815	1
optimal_loci_41602_G1	1310	0.322306	34.12	2510	55.72	3	17.80938012	0.78	0.669732586	3
optimal_loci_41603_G1	1533	0.322306	0	4082	50.88	3	17.80938012	0.49	0.669742036	3
optimal_loci_41706_G1	3381	0.277069	5.44	2026	39.39	3	12.26782701	0.243	0.671330268	3
optimal_loci_41929_G1	1575	0.23197	35.81	1001	31.93	3	0.107351875	0.071	0.677839754	1
optimal_loci_42030_G1	1048	0.227921	4.39	1614	39.02	1	6.148692767	0.367	0.68117473	3
optimal_loci_42043_G1	1686	0.252662	4.69	4954	48.81	2	12.63470185	0.6	0.681775034	4
optimal_loci_42117_G1	1488	0.325201	13.84	16672	40.32	1	0.304045758	0.34	0.683439291	4

optimal_loci_42156_G1	1392	0.388006	19.47	3586	37.78	4	133.9429103	0.172	0.684492544	5
optimal_loci_42257_G1	2190	0.478012	1.37	2209	50.95	2	7.335890378	0.551	0.687129046	8
optimal_loci_42258_G1	2725	0.478012	10.06	1182	34.31	2	7.335890378	0.109	0.687244246	8
optimal_loci_42318_G1	1027	0.459481	0	16422	40.79	1	6.880570796	0.403	0.688013688	7
optimal_loci_42322_G1	1047	0.459481	7.55	19026	29.03	1	6.880570796	0.139	0.688029342	7
optimal_loci_42331_G1	1659	0.459481	0	5941	44.48	1	22.04663632	0.232	0.688458877	7
optimal_loci_42334_G1	1187	0.459481	0	3972	47	1	22.04663632	0.396	0.688473551	7
optimal_loci_42348_G1	2322	0.459481	24.16	7389	40.26	1	22.04663632	0.216	0.688566731	7
optimal_loci_42422_G1	1427	0.469494	22.49	1001	40.92	3	10.83981009	0.384	0.693082784	2
optimal_loci_42424_G1	1231	0.469494	7.8	6130	37.12	4	8.129857567	0.052	0.693158328	2
optimal_loci_42511_G1	1238	0.284795	0	10392	45.63	2	6.49517639	0.495	0.696567326	8
optimal_loci_42513_G1	2433	0.255022	24.37	2114	46.69	1	6.549363762	0.403	0.696634448	8
optimal_loci_42519_G1	3035	0.255022	2.57	10605	57	1	6.549363762	0.611	0.696741605	8
optimal_loci_42525_G1	3338	0.216044	4.43	16345	53.59	1	6.549363762	0.518	0.69677611	8
optimal_loci_42549_G1	1100	0.051707	0	3449	40.54	3	0.122983933	0.37	0.697956339	8
optimal_loci_42557_G1	1740	0.052122	0	2001	33.39	5	3.408329025	0.145	0.698222199	8
optimal_loci_42565_G1	1144	0.052122	0	5744	46.76	2	4.110483641	0.324	0.698326795	8
optimal_loci_42568_G1	1184	0.052122	6	8678	46.11	2	4.110483641	0.176	0.698344432	8
optimal_loci_42715_G1	2019	0.067087	2.82	1001	51.16	2	32.48269997	0.418	0.701715987	2
optimal_loci_42746_G1	2071	0.080751	0	1327	45	2	4.410838745	0.455	0.703261779	2
optimal_loci_42894_G1	1105	0.072917	0	2001	41.17	3	2.523936412	0.222	0.70807248	11
optimal_loci_42908_G1	1915	0.068263	0	2179	44.12	2	21.75325267	0.322	0.709386527	13
optimal_loci_42916_G1	1096	0.068263	23.27	12290	40.6	1	43.50650535	0.196	0.709521684	13
optimal_loci_42928_G1	1650	0.071258	12.91	2500	37.27	2	10.7869635	0.137	0.710004533	14
optimal_loci_42935_G1	1244	0.070595	0	10115	41.31	1	12.73828673	0.25	0.71020531	14
optimal_loci_42936_G1	1390	0.070595	0	11514	43.52	1	12.73828673	0.27	0.71021372	14
optimal_loci_42938_G1	1246	0.070595	0	13465	54.57	1	12.73828673	0.461	0.710225448	14
optimal_loci_42939_G1	1935	0.254944	1.55	15148	54.62	1	12.73828673	0.656	0.710235565	14
optimal_loci_42942_G1	1933	0.254944	0	18120	59.07	1	12.73828673	0.603	0.71025343	14
optimal_loci_42957_G1	1269	0.322781	0	5597	31.12	1	0.717340143	0.294	0.71053394	14
optimal_loci_42970_G1	2379	1.148495	1.18	6606	43.88	3	90.82787333	0.349	0.710910985	15
optimal_loci_42985_G1	1794	1.722318	7.8	3333	41.8	3	5.749727976	0.192	0.711174856	14
optimal_loci_42991_G1	1093	1.722318	35.04	1001	41.17	3	5.749727976	0.138	0.711203109	14

optimal_loci_43048_G1	1151	2.142868	0	1442	54.56	1	4.717441761	0.372	0.712979704	13
optimal_loci_43062_G1	1248	2.384845	13.14	1826	37.66	2	11.42099488	0.135	0.713926372	7
optimal_loci_43087_G1	1358	2.799876	0	1001	50.66	3	10.85324449	0.48	0.714787985	4
optimal_loci_43176_G1	1068	1.375542	0	10017	41.47	1	0.344752083	0.164	0.716924361	5
optimal_loci_43222_G1	1457	1.157691	0	4210	38.5	1	6.173596937	0.447	0.718496784	3
optimal_loci_43223_G1	1528	1.157691	0	2574	36.78	1	6.173596937	0.087	0.718506192	3
optimal_loci_43377_G1	1433	0.656363	2.02	4657	47.8	2	4.60541645	0.378	0.723338545	1
optimal_loci_43565_G1	2019	0.65504	12.18	1001	42.59	2	64.40155138	0.305	0.729129811	5
optimal_loci_43577_G1	2963	0.668	4.22	2001	41.3	2	23.65164825	0.275	0.730187464	5
optimal_loci_43588_G1	1957	0.668	9.61	1184	43.84	1	47.3032965	0.412	0.730313497	5
optimal_loci_43596_G1	1046	0.666618	28.78	1001	34.99	4	23.57172831	0.28	0.730759268	5
optimal_loci_43621_G1	1558	0.652872	0	1831	34.85	2	17.28827784	0.105	0.731312726	5
optimal_loci_43690_G1	2211	0.593102	1.27	4284	46.26	1	2.935578121	0.31	0.734455281	6
optimal_loci_43693_G1	1528	0.593102	13.42	1001	43.32	1	2.935578121	0.372	0.734479122	6
optimal_loci_43694_G1	1210	0.593102	0	2209	56.36	2	5.005302861	0.565	0.73452393	6
optimal_loci_43736_G1	1346	0.560757	19.61	2001	41.3	2	2.30376179	0.214	0.7353506	7
optimal_loci_43764_G1	1534	0.447093	16.23	3158	40.35	1	2.044480917	0.09	0.736153021	8
optimal_loci_43836_G1	1084	0.488914	0	18956	37.45	1	0.27844958	0.133	0.737405511	8
optimal_loci_43854_G1	1249	0.457521	10.97	5616	34.82	1	0.104886873	0.18	0.738052835	5
optimal_loci_43872_G1	1023	0.942828	16.72	18415	45.35	1	0.291919797	0.369	0.738522935	4
optimal_loci_44019_G1	2989	1.64676	1.07	8986	52.22	2	8.587489467	0.451	0.741766816	5
optimal_loci_44030_G1	1524	1.58402	34.51	3458	42.19	2	10.48811348	0.295	0.741998123	6
optimal_loci_44031_G1	1311	1.58402	0	2001	56.29	2	10.48811348	0.77	0.742008162	6
optimal_loci_44062_G1	1872	1.345734	0	2354	40.49	2	0.898694411	0.086	0.743253295	6
optimal_loci_44065_G1	1251	1.345734	0	2659	49.24	3	0.630076634	0.353	0.743301758	6
optimal_loci_44095_G1	1790	0.877385	15.92	11261	42.4	1	0.022806614	0.284	0.74484086	6
optimal_loci_44137_G1	2078	0.278092	1.64	2099	42.2	2	892.966274	0.221	0.747201433	2
optimal_loci_44307_G1	1508	0.275763	0	2182	50	3	8.614326952	0.456	0.752205162	4
optimal_loci_44345_G1	2080	0.282619	36.63	15520	43.26	1	0.28080591	0.264	0.753710565	4
optimal_loci_44363_G1	1406	0.281802	19.06	8741	42.53	2	0.007413835	0.343	0.754098412	5
optimal_loci_44370_G1	2255	0.27909	1.6	4536	37.87	1	46.16596044	0.253	0.754475319	5
optimal_loci_44445_G1	2017	0.280231	0	2946	53.79	2	23.88632052	0.615	0.757007609	3
optimal_loci_44515_G1	1104	0.273735	0	19740	53.44	1	1.008662484	0.615	0.761003109	2

optimal_loci_44531_G1	1802	0.273735	17.87	2107	42.28	1	1.008662484	0.343	0.76110491	2
optimal_loci_44624_G1	1088	0.507726	0	6972	35.11	3	4.044317824	0	0.764219765	6
optimal_loci_44633_G1	1351	0.507726	10.51	11800	39.82	4	5.918184654	0.134	0.764265445	6
optimal_loci_44635_G1	2227	0.507726	0	6761	38.48	4	5.918184654	0.252	0.76429047	6
optimal_loci_44637_G1	1283	0.507726	0	5057	37.1	3	7.608088452	0.132	0.764306388	6
optimal_loci_44649_G1	1199	0.604552	0	7911	61.05	2	10.05905981	0.743	0.764540202	6
optimal_loci_44702_G1	3478	1.693723	17.45	7107	32.43	3	1.567805588	0.038	0.766110046	7
optimal_loci_44776_G1	1093	2.486037	0	1001	38.51	1	3.794632305	0.091	0.769067844	3
optimal_loci_44900_G1	1196	1.060922	0	9846	43.56	1	8.624085709	0.152	0.772024224	6
optimal_loci_44930_G1	1082	0.278591	32.35	9382	37.33	1	4.998505875	0.081	0.773005805	5
optimal_loci_44932_G1	1291	0.278591	0	1330	31.13	1	4.998505875	0.091	0.773090005	5
optimal_loci_44933_G1	1539	0.278591	0	2666	58.67	1	4.998505875	0.638	0.773098036	5
optimal_loci_44937_G1	1022	0.210404	18.2	2809	36.88	2	16.14733189	0.25	0.773288942	5
optimal_loci_45046_G1	1017	0.804728	18.68	10268	38.15	4	35.59822147	0.095	0.776552792	2
optimal_loci_45047_G1	1196	0.804728	10.2	2001	39.04	2	67.08642708	0.245	0.776642871	2
optimal_loci_45163_G1	1175	0.819282	0	3045	38.89	2	0.590674639	0.11	0.781526404	3
optimal_loci_45176_G1	1106	0.816562	0	1079	48.64	1	5.907907829	0.51	0.783380251	7
optimal_loci_45202_G1	1758	0.822949	8.76	1631	55.46	3	2.620522113	0.539	0.784088872	8
optimal_loci_45222_G1	1095	0.827202	14.52	2457	49.31	1	0.164963239	0.312	0.784626279	7
optimal_loci_45300_G1	1058	0.827294	0	2521	39.13	1	0.077087726	0.137	0.785975251	10
optimal_loci_45301_G1	1194	0.827294	0	3791	36.59	1	0.077087726	0.143	0.785982885	10
optimal_loci_45306_G1	1313	0.827294	0	8383	45.62	1	0.077087726	0.189	0.786010489	10
optimal_loci_45338_G1	1990	0.651623	0	14278	41.95	1	8.21583554	0.152	0.786815056	9
optimal_loci_45355_G1	1281	0.604385	15.14	12990	31.77	1	8.801554564	0.067	0.787654836	7
optimal_loci_45356_G1	1164	0.604385	0	11743	37.02	1	8.801554564	0.223	0.787663036	7
optimal_loci_45372_G1	1414	0.604385	0	8899	43.7	1	16.77890815	0.212	0.787984362	7
optimal_loci_45565_G1	1043	0.315045	0	7915	40.26	3	17.99667492	0.182	0.79451487	2
optimal_loci_45568_G1	1091	0.315045	11.82	10658	42.8	3	17.99667492	0.141	0.794531359	2
optimal_loci_45689_G1	2257	2.007482	39.12	7376	34.82	2	4.966529074	0.02	0.798137299	3
optimal_loci_45708_G1	1697	1.998097	22.63	7382	53.74	5	22.04271925	0.6	0.798767779	3
optimal_loci_45724_G1	1958	2.365526	0	5724	42.49	3	6.419902163	0.347	0.798992691	3
optimal_loci_45895_G1	1378	1.683864	0	1001	51.52	5	1.801530429	0.459	0.805173818	5
optimal_loci_45908_G1	1083	1.53458	0	3157	51.43	3	72.09334655	0.317	0.805756491	5

optimal_loci_45914_G1	1077	1.582736	30.83	3796	29.34	1	0.17023875	0.171	0.805971255	5
optimal_loci_45923_G1	1208	1.754879	0	4284	38.65	3	13.47292565	0.164	0.806294584	5
optimal_loci_45926_G1	1036	1.754879	0	14979	39.18	1	6.068047254	0.235	0.806358874	6
optimal_loci_46021_G1	1109	0.78199	3.52	2026	44	1	3.796839463	0.203	0.809350474	4
optimal_loci_46065_G1	1272	0.780569	0	7615	52.2	2	4.767975353	0.408	0.81101669	3
optimal_loci_46100_G1	1591	0.777876	0	12030	33.75	1	6.807609606	0.091	0.812188834	4
optimal_loci_46166_G1	1353	3.423297	26.53	6152	38.95	1	3.32836282	0.129	0.81484001	12
optimal_loci_46181_G1	1165	4.161348	0	2195	47.98	2	7.765993228	0.339	0.815559355	11
optimal_loci_46189_G1	1125	4.161348	2.67	2535	57.06	1	12.52145275	0.538	0.815742446	11
optimal_loci_46194_G1	1297	4.161348	0	9979	39.7	3	7.804848121	0.373	0.815865545	11
optimal_loci_46197_G1	1418	4.161348	0	2955	41.81	2	5.446545805	0.248	0.815907041	11
optimal_loci_46198_G1	1921	4.161348	9.32	1001	35.5	2	5.446545805	0.119	0.815915763	11
optimal_loci_46248_G1	1193	3.933443	8.05	2375	39.89	2	32.49870162	0.164	0.817443618	11
optimal_loci_46249_G1	1052	3.933443	0	3849	36.02	1	18.14576221	0.174	0.817452479	11
optimal_loci_46253_G1	1407	3.933443	0	6257	55.01	1	18.14576221	0.523	0.817466954	11
optimal_loci_46254_G1	1145	3.933443	0	18686	46.81	1	18.14576221	0.234	0.817541668	11
optimal_loci_46255_G1	1016	3.933443	7.78	19985	33.07	1	18.14576221	0	0.817549477	11
optimal_loci_46388_G1	1682	0.881023	0	16795	62.24	1	15.31350877	0.79	0.822039422	8
optimal_loci_46391_G1	1636	0.90238	2.02	7355	46.21	1	15.31350877	0.335	0.822096445	8
optimal_loci_46393_G1	1011	0.90238	2.97	5775	54.3	1	15.31350877	0.385	0.8221097	8
optimal_loci_46397_G1	2739	0.90238	2.01	1880	45.05	1	15.31350877	0.367	0.822122726	8
optimal_loci_46400_G1	1102	0.90238	0	2109	34.57	1	15.31350877	0.117	0.822178132	8
optimal_loci_46407_G1	1041	0.924691	0	7920	51.2	1	15.31350877	0.241	0.822213064	8
optimal_loci_46437_G1	1201	0.087004	0	8483	63.11	1	1.579757796	0.707	0.822959291	11
optimal_loci_46475_G1	1754	1.511535	0	7096	39.9	3	2.663786472	0.155	0.823869578	12
optimal_loci_46525_G1	1369	1.511535	0	11190	53.54	1	16.99527685	0.438	0.825566278	7
optimal_loci_46528_G1	1947	1.511535	0	6107	57.98	1	16.99527685	0.703	0.825593358	7
optimal_loci_46530_G1	1506	1.511535	5.58	4192	55.51	1	16.99527685	0.549	0.825607521	7
optimal_loci_46549_G1	2043	0.529461	0	2126	41.01	2	0.297289372	0.178	0.826307203	7
optimal_loci_46575_G1	1397	0.328506	7.95	6034	36.36	1	4.558764601	0.068	0.82757162	6
optimal_loci_46626_G1	1171	0.073157	9.82	4438	35.09	1	86.1003095	0.061	0.829142167	11
optimal_loci_46676_G1	4012	2.877314	0	18501	48.37	1	0.123542338	0.346	0.830930641	10
optimal_loci_46677_G1	2428	2.877314	0	16040	52.67	1	0.123542338	0.589	0.830954956	10

optimal_loci_46695_G1	1731	2.614927	2.31	4019	46.79	3	3.493460345	0.313	0.83131416	10
optimal_loci_46699_G1	1213	2.614927	28.85	4356	41.22	4	7.332569366	0.099	0.831407491	10
optimal_loci_46709_G1	1367	2.614927	0	5435	58.52	2	9.424948215	0.647	0.831573204	10
optimal_loci_46714_G1	1691	2.614927	0	9426	37.61	2	9.424948215	0.372	0.831597195	10
optimal_loci_46718_G1	2208	2.444315	12.91	18749	44.42	1	8.202970758	0.371	0.831668062	10
optimal_loci_46721_G1	1355	2.396866	0	1617	49.96	2	4.101485379	0.348	0.831776174	10
optimal_loci_46788_G1	1655	2.338528	23.02	2764	42.83	2	41.83063057	0.304	0.833769368	10
optimal_loci_46848_G1	1376	0.436067	13.44	1001	32.84	1	414.1568129	0.102	0.835451887	2
optimal_loci_46940_G1	1031	1.87891	0	4330	35.59	3	46.7197077	0.14	0.839950399	4
optimal_loci_46941_G1	1365	1.87891	0	2723	37.8	3	46.7197077	0.205	0.839958051	4
optimal_loci_46998_G1	1078	2.168782	10.48	6739	37.01	2	12.60303637	0.047	0.841177828	4
optimal_loci_47037_G1	2241	2.620605	1.34	3428	54.97	4	17.04746781	0.558	0.841803566	4
optimal_loci_47108_G1	1896	1.114186	0	2947	41.82	1	0.690279491	0.186	0.845109573	3
optimal_loci_47122_G1	2643	1.060531	1.4	1486	48.05	4	10.55970398	0.608	0.845809874	3
optimal_loci_47175_G1	1278	1.116064	2.82	2001	43.42	1	13.09481191	0.355	0.848002287	3
optimal_loci_47311_G1	1311	1.303325	21.89	7270	35.85	2	0.014358178	0.179	0.854398431	2
optimal_loci_47351_G1	1793	0.893084	37.59	1001	37.08	1	19.13540217	0.042	0.856620462	2
optimal_loci_47449_G1	1015	1.791493	0	1001	60.39	1	10.31155776	0.526	0.860574677	6
optimal_loci_47452_G1	1128	1.783119	0	5385	40.42	3	9.145221663	0.129	0.860662333	6
optimal_loci_47492_G1	2626	2.06218	7.69	4540	43.86	2	0.028151276	0.359	0.862300976	9
optimal_loci_47494_G1	1030	2.06218	0	8422	47.96	2	0.028151276	0.465	0.862324312	9
optimal_loci_47509_G1	2454	2.06218	0	2887	46.98	3	3.836679401	0.447	0.862639002	9
optimal_loci_47530_G1	1065	1.918804	0	2258	39.62	5	0.623073558	0.227	0.863339904	9
optimal_loci_47553_G1	1103	1.856746	39.98	10401	41.25	2	1.353663953	0.356	0.863703929	9
optimal_loci_47608_G1	1674	1.661352	22.82	18493	36.37	1	0.286934489	0.064	0.864902949	9
optimal_loci_47612_G1	1037	1.661352	0	8908	49.75	2	0.778324442	0.775	0.864964397	9
optimal_loci_47676_G1	2617	1.620313	11.39	11905	42.83	2	32.94726837	0.402	0.866432818	6
optimal_loci_47683_G1	1021	1.637792	0	2483	31.53	2	6.360135489	0.233	0.866714645	6
optimal_loci_47727_G1	1270	1.705225	0	2001	36.85	2	12.74979429	0.132	0.868085377	7
optimal_loci_47808_G1	1222	1.671717	0	12465	56.46	1	0.04490182	0.596	0.870216848	9
optimal_loci_47812_G1	3787	1.664712	2.24	2001	49.3	1	0.04490182	0.439	0.870264331	9
optimal_loci_47844_G1	1184	1.597727	21.37	17296	45.86	2	0.942086964	0.372	0.870896681	9
optimal_loci_47856_G1	1251	1.59933	35.41	3143	39.56	4	29.50537105	0.214	0.871053178	9

optimal_loci_47886_G1	1565	1.510755	0	1766	42.55	1	12.01282596	0.337	0.87214221	8
optimal_loci_47941_G1	1177	1.52276	2.72	1001	47.15	3	3.267300779	0.438	0.872899005	8
optimal_loci_47943_G1	2129	1.52276	6.48	3343	44.66	3	3.267300779	0.464	0.872913475	8
optimal_loci_47945_G1	1146	1.52276	3.75	1509	49.82	3	3.267300779	0.253	0.872967702	9
optimal_loci_48009_G1	1586	2.25613	0	2538	54.85	2	91.28237473	0.632	0.875933189	4
optimal_loci_48075_G1	2018	3.373715	26.56	2001	38.94	2	10.56759909	0.248	0.878600998	6
optimal_loci_48077_G1	1019	3.407607	0	3303	34.05	2	10.56759909	0.119	0.878682505	6
optimal_loci_48100_G1	1324	3.77184	2.79	19805	37.38	1	28.24227248	0.211	0.879444379	8
optimal_loci_48108_G1	1843	4.11421	18.5	4066	49.7	2	14.45287721	0.393	0.879605548	8
optimal_loci_48110_G1	1169	4.13692	12.06	3025	39.52	2	14.45287721	0.153	0.879626683	8
optimal_loci_48236_G1	1280	3.797536	0	4686	47.26	1	3.448287524	0.368	0.881905683	7
optimal_loci_48242_G1	1544	3.797536	0	1297	31.21	1	3.448287524	0.08	0.881924468	7
optimal_loci_48250_G1	1067	3.797536	0	3654	43.2	2	0.35214668	0.291	0.882294997	7
optimal_loci_48267_G1	1787	3.797536	13.82	6968	43.25	1	1.639176957	0.186	0.882659827	4
optimal_loci_48569_G1	1146	1.342848	0	4737	39.87	2	2.371366536	0.133	0.888084441	4
optimal_loci_48648_G1	1109	1.588509	11.27	18385	48.51	1	0.51329719	0.441	0.890676087	5
optimal_loci_48666_G1	1760	1.593464	0	7942	37.72	3	0.171099063	0.033	0.890734949	5
optimal_loci_48702_G1	1248	1.690209	0	4735	45.11	3	2.484167723	0.342	0.891096197	5
optimal_loci_48707_G1	1043	1.580679	23.87	2622	34.99	2	12.89199134	0.094	0.89155529	4
optimal_loci_49154_G1	1527	1.50384	0	5363	41.06	3	19.20127254	0.234	0.902010629	4
optimal_loci_49165_G1	1846	1.50384	13.43	2001	38.35	2	4.880883076	0.255	0.902277037	4
optimal_loci_49167_G1	1276	1.50384	2.19	1001	45.29	3	21.83535609	0.457	0.90233204	4
optimal_loci_49242_G1	1150	1.419112	0	1793	52.26	3	31.12027534	0.433	0.904843123	4
optimal_loci_49365_G1	1891	2.497009	3.7	2383	37.96	1	1.159439349	0.343	0.909917833	6
optimal_loci_49369_G1	1967	2.497009	0	2001	51.7	1	3.609778819	0.54	0.910127885	6
optimal_loci_49374_G1	1477	2.610361	0	13763	36.83	1	38.72848162	0.243	0.910307051	6
optimal_loci_49377_G1	1467	1.234433	7.36	7930	45.39	1	38.72848162	0.381	0.910342175	6
optimal_loci_49382_G1	1346	1.254157	16.94	2368	46.58	1	72.77100016	0.344	0.910722207	7
optimal_loci_49383_G1	1043	1.254157	0	1001	38.25	1	72.77100016	0.131	0.910732246	7
optimal_loci_49478_G1	1582	3.023787	0	1480	56.38	3	0.696356737	0.549	0.913671434	5
optimal_loci_49498_G1	1609	3.023787	31.7	3521	36.17	1	0.0178318	0.166	0.914060898	3
optimal_loci_49508_G1	1021	2.669324	0	10019	34.28	1	92.57645231	0.09	0.91444622	4
optimal_loci_49562_G1	1063	2.377502	7.62	2001	47.22	2	18.70422843	0.765	0.917239454	5

optimal_loci_49574_G1	1369	1.682401	16.44	1001	42.51	4	25.7080339	0.203	0.918062169	4
optimal_loci_49589_G1	3521	1.682401	23.6	11020	41.09	4	25.6944679	0.301	0.918122396	4
optimal_loci_49631_G1	1379	1.978996	0	3158	45.97	1	10.18935518	0.301	0.919645598	4
optimal_loci_49835_G1	1020	4.145865	0	1259	38.52	2	23.93501364	0.047	0.92861714	3
optimal_loci_49842_G1	1001	4.145865	0	3911	46.95	2	0.823644744	0.508	0.928742685	3
optimal_loci_49881_G1	1458	3.872632	38.75	2001	50.68	3	6.238575429	0.6	0.930807088	5
optimal_loci_49914_G1	1099	3.476978	0	1083	44.22	2	29.83281941	0.243	0.9329745	3
optimal_loci_49945_G1	1301	3.514708	15.07	3841	39.73	3	25.77707063	0.214	0.933548902	3
optimal_loci_50154_G1	2164	0.924366	10.17	2703	37.84	2	1.440033809	0.251	0.941142912	2
optimal_loci_50185_G1	1621	1.867435	39.79	1844	42.68	1	37.91716483	0.228	0.942100513	2
optimal_loci_50284_G1	1202	2.639845	0	2138	58.65	2	86.05865655	0.504	0.94514348	2
optimal_loci_50325_G1	2498	2.647378	0	2224	43.75	2	58.99737208	0.262	0.946921975	3
optimal_loci_50411_G1	1443	3.466717	0	3349	30	3	14.36784538	0.084	0.949787067	6
optimal_loci_50422_G1	1241	3.694299	0	1001	35.93	4	13.13388217	0.051	0.950015075	5
optimal_loci_50469_G1	1322	3.787899	22.92	17631	59.53	1	2.90972745	0.725	0.951640823	10
optimal_loci_50479_G1	1338	3.787899	0	1664	48.43	1	2.90972745	0.243	0.951736709	10
optimal_loci_50493_G1	1364	3.824662	14.59	1001	50.21	2	0.208006933	0.504	0.95213091	10
optimal_loci_50519_G1	1368	1.564904	35.82	5416	31.65	2	8.417245698	0.019	0.953200436	10
optimal_loci_50537_G1	1164	1.53108	16.32	8961	34.27	1	16.8344914	0.201	0.953310412	11
optimal_loci_50542_G1	1780	1.514776	0	12197	34.77	2	6.785107205	0.135	0.953442408	11
optimal_loci_50545_G1	1545	1.514776	11.52	9869	35.79	2	6.785107205	0.136	0.953457815	11
optimal_loci_50552_G1	1378	1.493484	0	2001	61.82	5	47.51709342	0.615	0.953591247	11
optimal_loci_50587_G1	1372	1.627616	8.09	2033	36.88	2	1.088516103	0.242	0.955417598	8
optimal_loci_50590_G1	1872	1.627616	0	2001	43.21	2	1.088516103	0.258	0.95547539	8
optimal_loci_50607_G1	2418	0.813456	16	11473	46.98	1	30.18102701	0.391	0.956294161	7
optimal_loci_50700_G1	2670	3.455192	0	5857	52.92	2	24.75850342	0.496	0.959552103	3
optimal_loci_50719_G1	2353	5.036694	39.91	17471	34.84	1	2.279955811	0.104	0.959861028	3
optimal_loci_50734_G1	1056	5.656081	4.64	4175	38.44	2	260.2044072	0.138	0.960732332	4
optimal_loci_50820_G1	1421	5.966694	8.66	2121	43.84	3	15.86696549	0.33	0.963388599	3
optimal_loci_50830_G1	1152	6.326304	23	14946	35.5	1	1.294816529	0.086	0.964003756	3
optimal_loci_50926_G1	1338	3.689608	0	18878	37.96	1	10.24822372	0.102	0.966547715	3
optimal_loci_50941_G1	1460	3.787461	1.92	1288	57.05	3	2.036550004	0.839	0.967115028	2
optimal_loci_51075_G1	1262	1.398277	8.72	3607	41.12	5	16.50316479	0.21	0.973112667	3

optimal_loci_51101_G1	1587	1.203214	0	1521	51.29	2	124.7017819	0.413	0.973903847	3
optimal_loci_51120_G1	1275	1.17643	8.71	1291	32.62	3	1.551129348	0.143	0.974815949	4
optimal_loci_51178_G1	1551	0.024541	14.44	16615	35.65	1	24.71785478	0.055	0.977256622	2
optimal_loci_51281_G1	2038	3.011175	0	1555	46.61	2	3.984222476	0.344	0.981491804	1
optimal_loci_51361_G1	1227	3.943736	7.42	2001	35.69	1	19.1352505	0.092	0.984587939	3
optimal_loci_51379_G1	2820	5.521172	4.43	2001	52.55	5	7.515979922	0.481	0.985679514	6
optimal_loci_51380_G1	1141	5.521172	14.81	4836	36.1	5	7.515979922	0.183	0.985700542	6
optimal_loci_51472_G1	1168	4.334889	19.78	9696	38.44	2	28.66139134	0.07	0.988557417	5
optimal_loci_51473_G1	3705	4.334889	4.94	5706	34.3	2	28.66139134	0	0.988566151	5
optimal_loci_51482_G1	1459	4.373623	0	1001	48.32	2	28.66139134	0.462	0.988688697	5
optimal_loci_51589_G1	1535	2.087855	1.89	1343	42.08	2	0.102296968	0.224	0.992083233	4
optimal_loci_51591_G1	1328	2.087855	8.28	2153	35.09	2	0.102296968	0.235	0.992120581	4
optimal_loci_51640_G1	3185	1.584899	30.24	5346	34.5	1	0.043276121	0.148	0.993181161	4
optimal_loci_51655_G1	2123	1.373386	9.94	8302	39.04	1	15.54882446	0.317	0.993431837	4
optimal_loci_51796_G1	1030	0.861109	0	13338	40	1	1.805609138	0.195	0.998758486	2
optimal_loci_51803_G1	2073	0.821922	35.31	2001	37.53	1	1.805609138	0.173	0.998820366	2
optimal_loci_51949_G1	1469	1.03722	9.19	1074	48.33	1	6.169026665	0.445	0.991900183	1
optimal_loci_52050_G1	1339	5.086547	38.46	1897	43.46	6	6.84979128	0.353	0.982233036	8
optimal_loci_52052_G1	1960	5.086547	9.44	2087	48.16	6	7.382237087	0.315	0.981740527	8
optimal_loci_52090_G1	1258	4.505889	0	1001	40.06	6	13.78892165	0.3	0.977863832	12
optimal_loci_52101_G1	1224	4.804254	35.95	2104	37.99	6	16.19567036	0.283	0.977744489	12
optimal_loci_52103_G1	1522	4.804254	0	4201	54.46	3	8.264605947	0.524	0.977520431	12
optimal_loci_52106_G1	1353	4.804254	0	7441	41.98	4	7.714029043	0.412	0.977487374	12
optimal_loci_52113_G1	1469	4.804254	0	5873	45.94	5	7.370813452	0.328	0.977424607	12
optimal_loci_52122_G1	1150	5.108975	9.3	2976	48.52	4	12.29195057	0.551	0.977126986	12
optimal_loci_52177_G1	1665	5.69598	0	5368	56.63	2	7.082802302	0.595	0.975658267	10
optimal_loci_52178_G1	3135	5.69598	5.58	2200	53.07	3	4.856352542	0.518	0.975624166	10
optimal_loci_52226_G1	3116	5.101162	0	1689	47.65	4	17.43323222	0.423	0.973252788	10
optimal_loci_52227_G1	1213	5.101162	8.33	1080	52.51	4	17.43323222	0.524	0.973238224	10
optimal_loci_52292_G1	1297	4.258825	31.23	1542	37.77	3	3.720674455	0.134	0.967656534	2
optimal_loci_52299_G1	1300	4.258825	14.31	4177	43.61	3	3.720674455	0.432	0.967598837	2
optimal_loci_52420_G1	1118	4.033901	17.62	2822	40.6	4	60.28504566	0.341	0.961744198	9
optimal_loci_52424_G1	1725	4.026847	0	2001	59.88	4	60.28504566	0.717	0.961649699	9

optimal_loci_52428_G1	1511	4.170072	0	3159	43.01	6	16.18247655	0.162	0.961323832	9
optimal_loci_52429_G1	2598	4.170072	0	2001	52.5	6	16.18247655	0.514	0.96129395	9
optimal_loci_52477_G1	1177	3.697188	13.51	4604	36.78	3	2.030991102	0.086	0.95833986	19
optimal_loci_52480_G1	1671	3.697188	12.27	2001	47.63	3	2.030991102	0.349	0.958311841	19
optimal_loci_52483_G1	1363	3.697188	0	1647	34.48	3	2.030991102	0.159	0.958237481	19
optimal_loci_52490_G1	1228	3.697188	26.3	18900	37.37	1	22.67616371	0.102	0.957971981	19
optimal_loci_52503_G1	1207	3.59195	7.79	14076	46.14	2	88.93890884	0.301	0.957045716	19
optimal_loci_52560_G1	1083	3.911517	0	2625	34.53	1	0.352758048	0.223	0.954177621	15
optimal_loci_52564_G1	2031	3.911517	0	2489	57.8	1	0.352758048	0.516	0.954061141	15
optimal_loci_52566_G1	1757	3.911517	0	4949	41.26	1	0.352758048	0.23	0.95403761	15
optimal_loci_52571_G1	1129	3.911517	15.77	9384	37.11	2	58.28568418	0.109	0.953817718	15
optimal_loci_52572_G1	1131	3.911517	0	7877	46.68	2	58.28568418	0.445	0.953801496	15
optimal_loci_52573_G1	1535	3.911517	2.02	6247	54.65	2	58.28568418	0.668	0.95378395	15
optimal_loci_52574_G1	2346	3.911517	0	3790	51.61	2	58.28568418	0.529	0.953757503	15
optimal_loci_52583_G1	1701	3.82478	0	6628	50.61	3	38.85712279	0.365	0.95358747	15
optimal_loci_52584_G1	1055	3.82478	0	7556	41.99	3	38.85712279	0.319	0.95357409	15
optimal_loci_52598_G1	1704	3.82478	0	2001	53.11	4	3.771012079	0.384	0.953226738	15
optimal_loci_52706_G1	1136	5.979401	0	2919	44.71	4	44.39863695	0.375	0.945364855	11
optimal_loci_52707_G1	1219	5.974435	3.53	4491	38.63	4	44.39863695	0.194	0.94534704	12
optimal_loci_52709_G1	1975	5.974435	0	2952	47.44	6	29.94110848	0.415	0.945320764	12
optimal_loci_52751_G1	2197	6.28964	0	3485	49.84	2	20.26268253	0.501	0.943794316	13
optimal_loci_52758_G1	1176	6.28964	0	9604	47.44	3	41.40017581	0.382	0.943043186	13
optimal_loci_52791_G1	1056	6.162786	0	6351	64.01	2	2.824823706	0.962	0.940794316	13
optimal_loci_52798_G1	1217	6.335294	0	2893	54.23	2	2.824823706	0.649	0.940674822	15
optimal_loci_52810_G1	1119	6.235049	0	7917	47.54	2	2.249470894	0.643	0.940377503	15
optimal_loci_52815_G1	2415	6.202157	1.2	1851	48.19	2	21.11283371	0.416	0.940312207	15
optimal_loci_52817_G1	2133	6.175366	0	2001	61.65	3	27.10879548	0.724	0.940199903	15
optimal_loci_52821_G1	1092	6.175366	3.3	4089	60.16	3	27.10879548	0.67	0.94016268	15
optimal_loci_52826_G1	1334	6.21184	0	3099	41.67	2	40.66319322	0.487	0.939962422	14
optimal_loci_52843_G1	3646	6.160549	3.57	1001	55.89	1	2.553826385	0.649	0.938807417	14
optimal_loci_52875_G1	2458	5.959415	0	1920	50.85	4	2.295083449	0.515	0.935375178	14
optimal_loci_52877_G1	2479	5.955449	15.61	2680	56.75	5	1.844157538	0.448	0.935286243	14
optimal_loci_52953_G1	1113	3.285277	0	1181	61.18	4	10.62413854	0.715	0.933472745	9

optimal_loci_52956_G1	1255	3.285277	3.11	3325	54.26	5	8.499310829	0.664	0.933448138	9
optimal_loci_52962_G1	1219	3.286553	13.95	2001	52.83	5	8.499310829	0.488	0.933385113	8
optimal_loci_52963_G1	1757	3.278565	0	1001	47.75	4	10.62413854	0.339	0.933322013	8
optimal_loci_52977_G1	2306	2.964391	24.11	2727	34.99	2	2.536108118	0.04	0.931950872	8
optimal_loci_53026_G1	1302	4.301557	0	2834	59.83	3	0.022010351	0.808	0.929304015	6
optimal_loci_53126_G1	1965	3.922653	34.66	2907	43.05	5	4.095434433	0.333	0.922530818	2
optimal_loci_53137_G1	1300	3.87381	5.38	1001	42.53	4	4.476943704	0.265	0.921361722	2
optimal_loci_53270_G1	2226	0.497425	0	4777	43.26	1	0.878088261	0.126	0.914569795	2
optimal_loci_53276_G1	3200	0.497425	0	4849	57.21	2	3.758390701	0.688	0.91438592	2
optimal_loci_53423_G1	1168	4.824315	19.78	1490	48.45	6	28.49149737	0.454	0.904159451	13
optimal_loci_53430_G1	1576	4.49616	12.56	2182	55.32	1	0.98792547	0.61	0.903559429	17
optimal_loci_53432_G1	1273	4.49616	27.49	4463	34.72	1	0.98792547	0.129	0.903538138	17
optimal_loci_53446_G1	1824	6.056942	19.74	1024	43.42	1	4.884892144	0.289	0.902216932	18
optimal_loci_53447_G1	1201	6.170885	0	9956	52.95	2	50.85177139	0.46	0.902044844	19
optimal_loci_53448_G1	1030	6.170885	14.95	11796	40.58	2	50.85177139	0.4	0.902026878	20
optimal_loci_53452_G1	1148	6.170885	3.14	9771	39.8	2	50.85177139	0.178	0.901991927	20
optimal_loci_53478_G1	1162	6.586746	14.97	3325	49.05	2	59.1581833	0.432	0.900289171	20
optimal_loci_53483_G1	1641	6.586746	0	2001	42.35	2	59.1581833	0.25	0.900194672	20
optimal_loci_53484_G1	1627	6.586746	0	1001	49.53	2	59.1581833	0.343	0.900124435	20
optimal_loci_53517_G1	1147	5.478453	0	2001	55.79	2	57.10966723	0.323	0.899313563	20
optimal_loci_53522_G1	1214	5.464954	0	4677	56.42	2	57.10966723	0.655	0.899135264	20
optimal_loci_53524_G1	1989	5.464954	11.61	6926	53.69	2	57.10966723	0.616	0.899102713	20
optimal_loci_53532_G1	1133	4.904385	7.77	7903	45.27	3	2.885428278	0.467	0.898542325	19
optimal_loci_53537_G1	1278	4.904385	0	4914	42.87	4	2.84711135	0.389	0.898490549	19
optimal_loci_53539_G1	1112	4.904385	17.18	1135	50.44	4	2.84711135	0.354	0.898449871	19
optimal_loci_53540_G1	1098	4.904385	0	2001	39.98	3	2.917320105	0.248	0.898392659	19
optimal_loci_53548_G1	1452	4.734425	37.47	1001	47.1	5	6.448684145	0.365	0.897794155	17
optimal_loci_53574_G1	1443	4.107517	0	2748	46.7	2	2.907779761	0.359	0.896738837	17
optimal_loci_53577_G1	1560	4.107517	0	3841	59.16	5	1.868379855	0.685	0.896634403	16
optimal_loci_53666_G1	1101	1.510483	16.49	13165	42.77	1	9.86548846	0.341	0.892031055	6
optimal_loci_53693_G1	1272	2.987244	21.38	2001	38.36	5	6.946744596	0.152	0.888304618	6
optimal_loci_53706_G1	2077	4.773684	25.9	1001	40.1	4	49.37321906	0.162	0.887338934	6
optimal_loci_53712_G1	1095	4.773684	0	2001	52.87	5	11.64362889	0.277	0.886964263	6

optimal_loci_53765_G1	1716	4.029627	0	2414	43.47	4	6.579121202	0.455	0.885233638	5
optimal_loci_53783_G1	1551	3.864732	0	2163	49.51	2	12.5907944	0.425	0.883846857	5
optimal_loci_53949_G1	1486	2.700815	0	3340	56.19	2	8.693360798	0.705	0.875697976	9
optimal_loci_53950_G1	1635	2.700815	1.77	5327	43.36	2	8.693360798	0.454	0.875674984	9
optimal_loci_53955_G1	1284	2.813794	0	3168	51.47	2	5.345516719	0.483	0.87551282	9
optimal_loci_53958_G1	1192	2.818734	10.49	1715	47.65	2	4.753667676	0.4	0.875314887	9
optimal_loci_53964_G1	1310	2.818734	0	2001	52.74	2	4.753667676	0.364	0.875202121	9
optimal_loci_53972_G1	1387	2.893695	0	2001	44.7	1	6.848655211	0.26	0.874852691	9
optimal_loci_53976_G1	1792	3.082349	0	4426	57.81	2	3.444019853	0.568	0.874563509	11
optimal_loci_54002_G1	1214	4.588314	2.31	2445	44.97	3	3.268877018	0.463	0.873418493	13
optimal_loci_54009_G1	1042	4.588314	0	3669	39.73	3	3.268877018	0.265	0.873321819	13
optimal_loci_54062_G1	1454	4.249769	22.28	5478	51.03	2	21.53672793	0.492	0.869351141	9
optimal_loci_54064_G1	1037	4.249769	0	7525	57.66	1	43.07345586	0.567	0.869333595	9
optimal_loci_54073_G1	1633	4.538432	7.96	8044	48.86	3	7.348671915	0.406	0.868225038	9
optimal_loci_54083_G1	2104	4.538432	0	3035	32.36	4	8.778208177	0.225	0.868157104	9
optimal_loci_54088_G1	1648	5.105257	0	12046	38.95	3	4.355605654	0.141	0.867786276	7
optimal_loci_54128_G1	2594	3.18945	25.4	2806	37.74	2	1.694387174	0.104	0.863959064	11
optimal_loci_54138_G1	1938	3.18945	0	2719	45.04	2	157.3582378	0.404	0.863387169	9
optimal_loci_54146_G1	1669	1.37934	17.91	1001	58.29	1	2.091011194	0.398	0.862235296	9
optimal_loci_54149_G1	1670	1.37934	16.29	4049	35.98	1	2.091011194	0.171	0.862116233	9
optimal_loci_54151_G1	1316	1.522022	2.43	7006	44.6	1	2.091011194	0.388	0.862088213	9
optimal_loci_54212_G1	1158	1.877403	19.69	1909	44.55	2	0.234247621	0.239	0.858994112	13
optimal_loci_54245_G1	1592	1.491934	0	4753	53.64	5	8.074340409	0.424	0.856929279	14
optimal_loci_54249_G1	1036	1.491934	0	3860	35.13	6	7.352165517	0.15	0.856890312	14
optimal_loci_54250_G1	1367	1.491934	2.93	2074	45.13	6	7.352165517	0.353	0.856871087	14
optimal_loci_54304_G1	1233	1.968056	26.03	2047	36.57	3	5.077060852	0.213	0.855152777	11
optimal_loci_54314_G1	1628	1.743049	16.28	2001	58.66	1	42.94204063	0.635	0.854212723	11
optimal_loci_54319_G1	1152	1.743049	0	7159	59.37	1	42.94204063	0.558	0.854078105	11
optimal_loci_54320_G1	1359	1.743049	0	2809	41.28	1	100.8474336	0.432	0.853699763	11
optimal_loci_54326_G1	1082	1.997936	0	1532	50.64	2	3.394080109	0.591	0.853388127	12
optimal_loci_54332_G1	1734	1.997936	9.57	5266	36.1	3	2.262720073	0.122	0.853230721	12
optimal_loci_54353_G1	1696	1.86666	7.9	2317	37.85	2	21.48559525	0.301	0.852467944	13
optimal_loci_54404_G1	1107	0.90197	0	1001	45.52	1	2233.060052	0.283	0.848163079	12

optimal_loci_54407_G1	1279	0.90197	0	3657	35.18	1	2233.060052	0.11	0.848053746	12
optimal_loci_54422_G1	1081	0.596548	9.25	1001	41.99	2	39.35057751	0.227	0.847097481	11
optimal_loci_54427_G1	1619	0.810291	0	1001	56.7	3	88.81804522	0.64	0.846871604	10
optimal_loci_54429_G1	1106	0.810291	0	2114	54.97	3	88.81804522	0.507	0.846851399	10
optimal_loci_54437_G1	1794	0.895346	1.56	9496	46.98	1	56.04020913	0.326	0.8465331	10
optimal_loci_54439_G1	1129	0.895346	3.54	2001	48.89	1	56.04020913	0.253	0.846452422	10
optimal_loci_54453_G1	1757	0.974483	2.96	2963	58.45	3	1.42520307	0.65	0.84576718	10
optimal_loci_54463_G1	1056	0.928638	0	1001	44.6	3	24.65807769	0.339	0.844288364	11
optimal_loci_54490_G1	1620	0.90135	1.85	3604	43.76	2	1.582124616	0.28	0.842025694	13
optimal_loci_54534_G1	1004	0.948911	0	1240	35.55	5	0.373449385	0.082	0.839811163	9
optimal_loci_54574_G1	2392	0.894463	0	2392	47.24	2	0.828723327	0.538	0.838467589	14
optimal_loci_54581_G1	1515	0.894463	0	8204	35.57	2	0.828723327	0.078	0.838414467	14
optimal_loci_54590_G1	1335	0.894463	10.19	2111	45.84	2	0.828723327	0.247	0.83831606	14
optimal_loci_54602_G1	1352	1.001145	0	2946	47.55	4	19.26113011	0.506	0.837252002	15
optimal_loci_54628_G1	1813	0.733752	12.91	5493	42.8	1	2.8111154	0.225	0.835513821	14
optimal_loci_54629_G1	1466	0.733752	3.07	7414	52.11	1	2.8111154	0.334	0.835496878	14
optimal_loci_54662_G1	1704	2.10634	0	5794	46.83	2	4.705640944	0.399	0.833450215	15
optimal_loci_54663_G1	2038	2.10634	0	3723	55.05	2	4.705640944	0.568	0.833427922	15
optimal_loci_54664_G1	1098	2.10634	0	2514	53.64	2	4.705640944	0.507	0.833414909	15
optimal_loci_54665_G1	1412	2.10634	2.41	1001	44.47	2	4.705640944	0.287	0.833398622	15
optimal_loci_54666_G1	2402	2.10634	0	1001	50.74	2	4.705640944	0.404	0.833300721	16
optimal_loci_54669_G1	1537	2.10634	0	10631	39.55	2	4.705640944	0.133	0.833206372	16
optimal_loci_54700_G1	1020	2.033852	0	12708	31.66	2	9.498957249	0.121	0.832569397	13
optimal_loci_54741_G1	1184	3.10672	14.02	9885	47.38	2	11.12465416	0.38	0.829321281	11
optimal_loci_54742_G1	1201	3.095487	0	2001	29.3	5	14.50445146	0.191	0.829105188	11
optimal_loci_54763_G1	1038	2.825139	29.96	1966	45.56	5	18.65473284	0.315	0.827957212	8
optimal_loci_54788_G1	1232	2.416864	14.85	1336	41.88	2	3.510193903	0.34	0.825362067	14
optimal_loci_54829_G1	1747	2.996545	32.86	2368	33.37	1	0.537773747	0.121	0.823504607	16
optimal_loci_54847_G1	1893	2.725532	12.41	1259	48.38	3	27.02597468	0.403	0.82189887	17
optimal_loci_54857_G1	1319	2.597436	0	4386	64.82	1	27.34759026	0.651	0.820948418	18
optimal_loci_54858_G1	1609	2.597436	12.18	2744	38.59	2	15.2765972	0.092	0.820930743	18
optimal_loci_54859_G1	1097	2.597436	0	1001	45.48	2	15.2765972	0.235	0.820911981	18
optimal_loci_54861_G1	2768	2.597436	3.58	2882	48.8	3	12.70324067	0.524	0.820817051	18

optimal_loci_54863_G1	1721	2.597436	9.59	5731	36.25	3	12.70324067	0.06	0.820790904	18
optimal_loci_54865_G1	3154	2.597436	12.46	1400	54.66	3	12.70324067	0.528	0.820744284	18
optimal_loci_54867_G1	1043	2.534195	12.94	1001	47.07	2	8.169368741	0.543	0.820430635	18
optimal_loci_54868_G1	2807	2.534195	6.06	2077	34.16	1	8.782209866	0.117	0.820400065	18
optimal_loci_54878_G1	1527	2.509605	18.07	9504	48.59	1	3.62849279	0.313	0.81899958	18
optimal_loci_54899_G1	1000	2.500876	0	3279	37.7	1	0.984972012	0.136	0.818438568	19
optimal_loci_54900_G1	1798	2.500876	14.68	1397	45.38	1	0.984972012	0.446	0.81841831	19
optimal_loci_54903_G1	1004	2.500876	0	3940	50.59	1	0.984972012	0.714	0.818309699	19
optimal_loci_54920_G1	2119	2.633172	1.84	9493	50.49	1	22.06176365	0.565	0.81776662	18
optimal_loci_54924_G1	2441	2.633172	4.01	3897	52.47	1	22.06176365	0.457	0.817706383	18
optimal_loci_54949_G1	2345	2.623336	3.16	2190	53.9	1	24.25194469	0.489	0.816014833	19
optimal_loci_55003_G1	1627	2.28514	0	16758	51.87	1	6.428749981	0.759	0.814496168	12
optimal_loci_55026_G1	1011	1.685981	5.44	2225	37.09	2	94.0070788	0.075	0.81343296	11
optimal_loci_55050_G1	1147	1.744099	0	2298	39.66	3	6.142266627	0.294	0.811062433	6
optimal_loci_55062_G1	1130	1.744099	0	1112	46.1	2	11.91305991	0.353	0.810687147	7
optimal_loci_55098_G1	2098	1.814236	0	2001	48.23	2	1.138218329	0.477	0.809611733	7
optimal_loci_55154_G1	1113	0.505251	0	1434	36.11	1	8.284041069	0.108	0.805401981	7
optimal_loci_55164_G1	1445	0.495105	14.33	7566	37.71	2	362.8853448	0.155	0.80468916	6
optimal_loci_55197_G1	1193	0.642185	8.47	2001	38.64	2	18.48626573	0.156	0.803516695	7
optimal_loci_55225_G1	1416	1.356189	8.83	4569	39.83	1	5.081544148	0.246	0.802396362	7
optimal_loci_55227_G1	1744	1.356189	0	7116	40.53	1	5.081544148	0.366	0.802365414	7
optimal_loci_55290_G1	1191	0.918414	0	2316	48.11	1	9.91014601	0.452	0.798678493	6
optimal_loci_55312_G1	1148	0.97049	0	13245	46.86	2	9.396252486	0.379	0.798181087	6
optimal_loci_55390_G1	1637	1.424313	19.55	1001	48.8	2	60.35787855	0.508	0.793341292	5
optimal_loci_55413_G1	1545	1.64217	0	2001	47.18	2	2.87487977	0.385	0.791941184	3
optimal_loci_55415_G1	1469	1.369326	0	1460	43.36	2	0.671973682	0.17	0.791628525	3
optimal_loci_55485_G1	1067	2.658796	19.31	2096	42.83	1	1.300190612	0.458	0.784849569	16
optimal_loci_55492_G1	1247	3.687435	9.38	5358	38.97	2	0.967253093	0.263	0.784681141	16
optimal_loci_55493_G1	1179	3.687435	0	4146	48.85	2	0.967253093	0.393	0.784668095	16
optimal_loci_55494_G1	1804	3.687435	0	2126	52.66	2	0.967253093	0.491	0.784646351	16
optimal_loci_55495_G1	1024	3.687435	0	1001	55.76	2	0.967253093	0.634	0.784634241	16
optimal_loci_55499_G1	1139	3.687435	0	5992	39.33	1	0.634315574	0.152	0.784537492	16
optimal_loci_55502_G1	2219	3.687435	5.14	8044	48.35	1	0.634315574	0.472	0.784503778	16

optimal_loci_55524_G1	1483	2.961612	1.89	1753	42.68	3	0.994446883	0.254	0.7836331	18
optimal_loci_55527_G1	1067	2.961612	0	2628	39.45	4	0.745835162	0.196	0.783562304	18
optimal_loci_55528_G1	1027	2.796359	0	4115	51.7	4	0.745835162	0.659	0.783546728	18
optimal_loci_55529_G1	1895	2.796359	0	5175	51.55	4	0.745835162	0.618	0.783525974	18
optimal_loci_55530_G1	1271	2.796359	10.31	7103	44.92	4	0.745835162	0.192	0.783511938	18
optimal_loci_55531_G1	2569	2.796359	16.58	5493	36.78	4	0.745835162	0.203	0.783482842	18
optimal_loci_55532_G1	1266	2.796359	0	3953	29.3	4	0.745835162	0.081	0.783466265	18
optimal_loci_55541_G1	1147	2.796359	35.57	1001	29.29	2	6.012279303	0.17	0.782657029	18
optimal_loci_55574_G1	1029	3.043686	0	3168	43.34	4	1.420567367	0.254	0.78025056	19
optimal_loci_55594_G1	1105	1.471139	0	2001	57.37	3	66.73039796	0.622	0.778881529	12
optimal_loci_55608_G1	1306	1.471139	0	3109	30.93	1	0.2447366	0.111	0.778588428	12
optimal_loci_55650_G1	1751	1.342996	0	5130	45.17	1	49.06470612	0.407	0.77698253	4
optimal_loci_55765_G1	1674	0.942	9.74	2001	37.27	2	10.95097147	0.144	0.769580065	7
optimal_loci_55788_G1	1117	0.940438	0	1205	60.42	3	5.552634446	0.785	0.768427815	7
optimal_loci_55802_G1	3244	1.072904	8.05	1001	49.72	1	1.367976704	0.43	0.76746662	11
optimal_loci_55852_G1	1157	1.193791	0	2789	54.27	1	23.8972847	0.605	0.765352078	11
optimal_loci_55854_G1	1127	1.193791	0	4268	37.88	1	23.8972847	0.366	0.76533648	11
optimal_loci_55855_G1	1137	1.193791	2.81	6367	47.31	2	15.46044253	0.33	0.765313778	11
optimal_loci_55860_G1	1797	1.193791	4.84	3405	41.4	1	7.023600359	0.139	0.765151507	11
optimal_loci_55912_G1	1372	1.384393	0	1676	44.09	1	23.09232088	0.392	0.76276239	9
optimal_loci_55913_G1	1159	1.384393	3.19	3081	54.01	1	23.09232088	0.511	0.762749559	9
optimal_loci_55916_G1	1650	1.384393	0	5396	38.36	1	23.09232088	0.164	0.762719354	9
optimal_loci_55920_G1	1629	1.41291	0	2649	45.54	1	16.9039453	0.413	0.762374241	9
optimal_loci_56005_G1	1726	2.428938	0	2828	51.73	1	8.007073391	0.611	0.755532637	10
optimal_loci_56043_G1	1104	2.682819	0	2167	45.83	2	5.8733667	0.42	0.753580614	11
optimal_loci_56055_G1	1538	2.682819	19.77	3010	43.43	3	5.526773013	0.315	0.753025565	11
optimal_loci_56061_G1	1067	2.682819	19.21	2397	32.52	5	8.310968529	0.131	0.752826437	11
optimal_loci_56068_G1	1741	2.682819	1.61	1415	47.21	5	130.3320266	0.37	0.752560958	11
optimal_loci_56084_G1	1396	1.709796	0	16846	41.11	2	0.368844939	0.2	0.751160893	11
optimal_loci_56086_G1	1097	1.709796	0	15180	51.95	2	0.368844939	0.566	0.75114296	11
optimal_loci_56088_G1	1444	1.709796	0	7363	38.01	2	0.368844939	0.24	0.751058816	11
optimal_loci_56089_G1	1961	1.709796	5.05	5143	37.42	2	0.368844939	0.137	0.751034919	11
optimal_loci_56093_G1	1250	1.709796	5.04	2001	37.76	2	0.368844939	0.239	0.751001098	11

optimal_loci_56114_G1	1112	2.937578	0	2001	38.03	2	16.99878001	0.168	0.749048041	13
optimal_loci_56176_G1	5187	3.638735	0.66	2569	53.05	2	2.674091323	0.496	0.744665791	5
optimal_loci_56193_G1	2763	3.638735	4.6	2103	49.54	2	2.674091323	0.355	0.744513046	5
optimal_loci_56197_G1	1030	3.638735	4.76	2001	45.72	1	4.520803575	0.258	0.744178805	5
optimal_loci_56241_G1	2499	2.050618	1.6	19188	42.69	1	11.87751763	0.311	0.741533638	5
optimal_loci_56298_G1	1355	0.263265	17.49	2001	37.26	3	3.249289947	0.114	0.737504553	4
optimal_loci_56391_G1	1309	0.234681	19.79	7043	43.92	1	1.772800061	0.538	0.733818536	3
optimal_loci_56395_G1	1651	0.234681	12.3	4303	38.34	3	26.60327168	0.192	0.733012573	3
optimal_loci_56489_G1	1499	0.163024	36.02	12062	39.49	1	21.02998823	0.108	0.726558762	1
optimal_loci_56610_G1	1062	0.235226	25.8	17836	38.98	1	15.26176319	0.275	0.718888461	1
optimal_loci_56725_G1	1083	0.281964	0	1800	33.88	4	3.374048766	0.118	0.710666911	4
optimal_loci_56729_G1	1131	0.288013	21.22	8282	40.31	2	4.982776634	0.109	0.71016409	4
optimal_loci_56735_G1	1697	0.288013	7.84	2605	46.67	2	4.982776634	0.388	0.710102982	4
optimal_loci_56745_G1	1299	0.304902	0	1267	55.81	2	7.350275354	0.466	0.709546233	4
optimal_loci_56839_G1	2081	0.939652	0	5123	46.22	3	0.269991887	0.382	0.703345274	6
optimal_loci_56841_G1	1372	0.939652	0	2820	55.46	3	0.269991887	0.423	0.703320484	6
optimal_loci_56846_G1	1270	0.939652	0	5503	57.4	5	6.081095883	0.636	0.703181722	6
optimal_loci_56847_G1	1706	0.939652	0	2001	53.63	5	6.081095883	0.475	0.703095673	6
optimal_loci_56925_G1	1111	2.597109	0	4300	52.29	2	5.867393949	0.414	0.699020969	9
optimal_loci_56939_G1	1150	2.769703	4.43	2001	55.21	2	14.19833689	0.722	0.698095188	9
optimal_loci_56952_G1	1730	3.041037	0	2408	41.21	5	10.18071093	0.248	0.697242056	6
optimal_loci_56985_G1	1317	3.492072	13.82	2988	40.16	2	2.455427111	0.335	0.695353143	7
optimal_loci_56988_G1	3497	3.575022	4.46	1001	50.32	2	2.455427111	0.369	0.695193929	7
optimal_loci_57037_G1	1108	4.672555	0	14714	33.03	2	16.40735581	0.224	0.691872917	7
optimal_loci_57049_G1	1047	1.967577	16.81	1277	38.87	3	4.378017782	0.248	0.690989731	6
optimal_loci_57107_G1	2692	2.000562	10.74	10345	46.06	1	1.417662146	0.333	0.687231991	7
optimal_loci_57123_G1	1024	2.437887	5.37	2816	41.11	2	2.12969919	0.341	0.686559978	7
optimal_loci_57176_G1	1127	2.628609	4.17	14047	45.69	2	3.34074734	0.272	0.684768321	6
optimal_loci_57183_G1	1363	2.530673	0	18463	46.07	1	0.586132966	0.331	0.684237094	6
optimal_loci_57231_G1	1252	2.173337	6.55	1336	35.86	2	36.8609996	0.138	0.682009193	6
optimal_loci_57248_G1	1425	2.173337	21.33	8478	41.75	3	5.026625186	0.283	0.680818708	5
optimal_loci_57316_G1	1098	1.610734	0	1001	40.52	1	56.85964659	0.268	0.675686685	6
optimal_loci_57327_G1	1167	1.53558	0	1823	43.44	4	8.800565954	0.26	0.674040194	5

optimal_loci_57332_G1	1328	1.374017	9.79	1840	39.15	4	4.66997373	0.199	0.673389645	5
optimal_loci_57380_G1	1829	2.103329	1.59	7438	42.91	1	6.08017405	0.209	0.671024144	6
optimal_loci_57382_G1	1240	2.103329	2.74	9716	58.79	1	6.08017405	0.684	0.671005963	6
optimal_loci_57436_G1	1898	0.490461	17.23	4348	41.35	2	40.41129425	0.27	0.667368837	3
optimal_loci_57771_G1	1863	0.385137	7.25	2654	40.25	7	101.8653252	0.198	0.650111313	2
optimal_loci_57827_G1	1603	1.181745	5.12	7709	37.05	1	36.37570626	0.226	0.645407492	3
optimal_loci_57856_G1	1963	2.184472	28.32	11288	36.06	1	17.94911424	0	0.642684327	2
optimal_loci_57940_G1	1396	1.054216	0	3218	39.68	1	28.90643928	0.167	0.635681862	1
optimal_loci_58039_G1	1182	0.771803	0	15474	44.16	2	6.098778972	0.369	0.626788837	2
optimal_loci_58041_G1	1420	0.771803	9.08	13545	54.01	2	6.098778972	0.425	0.626768073	2
optimal_loci_58137_G1	1111	0.025789	0	1421	50.49	1	27.78390007	0.471	0.619769053	1
optimal_loci_58251_G1	1366	0.102661	15.89	5233	38.28	4	0.425239433	0.233	0.613867653	2
optimal_loci_58275_G1	1709	0.738232	0	2001	36.8	1	49.17211443	0.213	0.611562304	2
optimal_loci_58368_G1	1553	3.644468	15.07	4370	35.6	3	21.82553725	0.202	0.603662605	4
optimal_loci_58378_G1	1114	3.29739	0	2871	46.31	3	21.82553725	0.475	0.603548568	4
optimal_loci_58379_G1	1265	3.284549	8.54	2001	45.84	3	21.82553725	0.297	0.60338211	4
optimal_loci_58453_G1	2953	2.407803	4.98	5906	37.58	2	0.732042746	0.171	0.600186523	5
optimal_loci_58498_G1	1099	1.392645	0	2375	38.39	1	4.619369991	0.189	0.59717267	4
optimal_loci_58581_G1	1269	0.681481	26.16	5581	35.53	2	0.404540391	0	0.592344403	6
optimal_loci_58586_G1	1184	0.681481	33.36	8758	42.9	2	0.404540391	0.228	0.592311119	6
optimal_loci_58630_G1	1324	1.935422	2.11	3086	48.48	1	6.324686736	0.3	0.589804144	5
optimal_loci_58634_G1	1044	1.935422	0	6295	40.51	1	6.324686736	0.086	0.589772616	5
optimal_loci_58638_G1	1114	2.086339	0	4340	47.48	2	34.78546018	0.314	0.589581927	5
optimal_loci_58888_G1	1307	0.049323	4.74	17698	55.24	1	15.12521289	0.692	0.573768751	2
optimal_loci_58912_G1	1590	0.049323	0	1001	40.18	1	0.077017774	0.21	0.572029612	3
optimal_loci_58992_G1	2564	1.276401	11.04	5595	55.85	2	6.636684062	0.61	0.567908751	3
optimal_loci_59034_G1	2310	1.150359	0	2001	37.61	3	2.880764805	0.209	0.564135361	2
optimal_loci_59167_G1	1570	0.939513	0	4839	52.54	2	1.55573036	0.509	0.556159795	3
optimal_loci_59200_G1	1490	1.292876	6.38	3355	46.44	4	3.197208574	0.332	0.553386222	9
optimal_loci_59233_G1	1297	1.482214	8.87	4976	39.16	1	3.105819884	0.019	0.550832217	9
optimal_loci_59237_G1	1019	1.525996	0	2001	40.13	2	2.715143835	0.269	0.550703229	8
optimal_loci_59242_G1	1657	1.525996	0	4718	37.41	2	2.715143835	0.214	0.550667115	8
optimal_loci_59249_G1	1795	1.525996	0	1001	38.05	4	1.441216053	0.205	0.550521507	8

optimal_loci_59251_G1	1482	1.348277	0	2700	36.57	3	0.886348109	0	0.550438633	8
optimal_loci_59255_G1	1348	1.348277	2.74	2001	58.6	3	0.886348109	0.638	0.550303638	8
optimal_loci_59288_G1	1402	1.32119	0	1001	43.5	2	15.89512146	0.336	0.549005727	8
optimal_loci_59396_G1	1051	0.384822	3.62	3221	29.01	2	13.61818928	0.094	0.541119203	4
optimal_loci_59397_G1	1833	0.384822	0	1268	57.82	2	13.61818928	0.465	0.541098181	4
optimal_loci_59463_G1	1310	0.406852	31.53	11684	33.58	2	0.239431984	0.144	0.537732734	6
optimal_loci_59466_G1	1534	0.406852	23.53	2216	38.26	1	0.478863967	0.252	0.537530323	6
optimal_loci_59517_G1	1015	0.409826	8.97	6092	54.87	2	10.52646427	0.631	0.53333535	6
optimal_loci_59518_G1	1748	0.409826	0	7140	55.66	2	10.52646427	0.726	0.533316179	6
optimal_loci_59569_G1	1354	0.350012	0	9856	29.61	1	3.917660879	0.279	0.529621496	4
optimal_loci_59586_G1	1135	0.347562	25.37	9457	36.65	2	1.95883044	0.306	0.529308525	4
optimal_loci_59704_G1	3070	0.491023	0	2052	51.1	2	28.94230906	0.445	0.522318396	1
optimal_loci_59828_G1	1202	0.29601	0	2155	53.49	2	21.94582793	0.601	0.513457309	4
optimal_loci_59830_G1	1166	0.302693	0	4467	55.4	2	21.94582793	0.625	0.513432809	4
optimal_loci_59831_G1	2656	0.302693	0	5666	56.92	3	14.63055195	0.556	0.513403864	4
optimal_loci_59835_G1	1075	0.302693	2.6	1001	46.79	3	0.477526211	0.428	0.513253994	4
optimal_loci_59894_G1	1112	0.572388	14.3	2001	44.06	5	3.366464288	0.111	0.507375135	3
optimal_loci_59922_G1	1052	0.753055	6.75	1001	30.51	4	1.388102367	0.119	0.505227729	5
optimal_loci_59928_G1	1219	0.753055	0	3544	40.77	5	4.57970571	0.19	0.505138568	5
optimal_loci_59985_G1	1249	0.985788	0	11406	35.22	3	11.3140273	0.169	0.500987298	5
optimal_loci_59989_G1	1050	0.985788	0	17082	38.09	2	16.97104095	0.1	0.500928342	5
optimal_loci_60041_G1	1594	0.997115	8.09	17929	49.56	1	0.149828964	0.486	0.496956954	3
optimal_loci_60209_G1	1441	0.562762	2.43	2244	58.22	1	63.45891958	0.566	0.488534499	5
optimal_loci_60213_G1	1496	0.562762	0	6414	49.46	1	63.45891958	0.41	0.48848902	5
optimal_loci_60216_G1	2329	0.533052	4.42	2001	36.49	1	40.62384658	0.162	0.48814606	5
optimal_loci_60228_G1	2394	0.502394	0	6616	46.19	1	9.695191693	0.492	0.487645673	6
optimal_loci_60310_G1	1180	0.076994	22.37	6357	46.94	1	3.162919411	0.35	0.483656932	9
optimal_loci_60339_G1	2711	0.63086	26.67	3901	34.15	2	33.70008166	0.076	0.482270097	7
optimal_loci_60380_G1	1408	0.829609	26.21	3545	37.42	3	10.80570301	0.22	0.478918654	7
optimal_loci_60386_G1	1064	0.829609	0	4128	60.99	3	10.80570301	0.601	0.478823961	7
optimal_loci_60387_G1	1325	0.735036	3.7	2770	54.49	3	10.80570301	0.489	0.478809343	7
optimal_loci_60395_G1	1254	0.624604	6.14	1356	39.31	3	5.510365247	0.139	0.476989817	6
optimal_loci_60452_G1	1041	0.66594	0	8552	43.32	1	2.389457168	0.303	0.474341572	5

optimal_loci_60846_G1	1070	0.243855	0	1001	40.84	3	8.114803582	0.095	0.448465296	1
optimal_loci_61010_G1	1068	0.150746	0	5282	48.22	1	20.14093739	0.507	0.436758009	2
optimal_loci_61011_G1	1579	0.150746	7.09	6383	50.79	1	20.14093739	0.585	0.436740657	2
optimal_loci_61414_G1	1640	0.165968	23.48	4348	32.86	1	1.472908897	0.112	0.415993337	2
optimal_loci_61423_G1	1766	0.174537	22.34	3512	41.16	3	1.310246639	0.231	0.415715145	5
optimal_loci_61498_G1	1282	0.1718	8.03	7131	42.35	1	181.2765866	0.477	0.410592906	6
optimal_loci_61500_G1	1179	0.1718	0	5528	55.64	1	181.2765866	0.616	0.410575651	6
optimal_loci_61504_G1	1539	0.1718	0	1001	43.07	1	181.2765866	0.472	0.410526921	6
optimal_loci_61579_G1	2254	0.225947	0	5555	47.33	1	7.763170904	0.291	0.407631163	6
optimal_loci_61582_G1	1049	0.225947	19.54	2001	38.51	1	7.763170904	0.108	0.407520205	6
optimal_loci_61639_G1	1208	0.089137	21.85	2578	42.46	2	9.549194798	0.346	0.40319324	4
optimal_loci_61743_G1	2058	0.020553	0	6434	50.38	2	0.408172136	0.489	0.399331453	2
optimal_loci_61934_G1	1329	0.29354	2.11	15574	43.49	1	0.042964074	0.315	0.388682433	1
optimal_loci_62343_G1	1171	0.060213	15.03	16533	36.72	1	37.01180236	0	0.367727008	4
optimal_loci_62346_G1	1743	0.060213	0	2085	48.02	2	19.44962092	0.567	0.367483423	4
optimal_loci_62347_G1	1032	0.060213	0	1001	45.83	2	19.44962092	0.212	0.367456814	4
optimal_loci_62420_G1	1000	0.060213	25.7	10812	32.2	1	24.92560473	0.112	0.364359645	4
optimal_loci_62519_G1	1765	0.062732	6.12	1001	55.18	3	4.351212408	0.422	0.357206136	2
optimal_loci_62533_G1	1002	0.062732	0	2149	40.11	4	3.26780254	0.092	0.357061087	2
optimal_loci_62665_G1	1114	0.908022	34.65	2766	41.65	2	31.20642875	0.054	0.34692803	4
optimal_loci_62668_G1	1295	0.908022	0	10540	41.54	2	31.20642875	0.412	0.3468424	4
optimal_loci_62707_G1	1144	0.91196	0	3201	64.16	2	8.60997208	0.586	0.34467225	4
optimal_loci_62708_G1	1675	0.91196	0	4378	60	2	8.60997208	0.48	0.344653864	4
optimal_loci_62911_G1	1561	1.446414	0	16387	37.15	1	36.99848904	0.195	0.334381302	4
optimal_loci_62916_G1	1803	1.446414	1.61	3730	37.27	2	18.49924452	0.174	0.334245059	4
optimal_loci_62920_G1	1058	1.446414	38.19	2207	32.51	3	12.37256848	0.089	0.334105479	4
optimal_loci_62922_G1	1217	1.446414	0	17069	48.8	1	0.11921639	0.439	0.33375817	4
optimal_loci_63010_G1	1578	0.355447	5.7	16937	43.53	1	0.212678551	0.368	0.327311141	2
optimal_loci_63068_G1	2511	0.230249	18.76	3733	42.29	1	3.934653932	0.211	0.32486901	2
optimal_loci_63195_G1	1098	0.633987	18.12	17737	37.34	1	2.299679245	0.232	0.316762347	1
optimal_loci_63393_G1	1324	0.379011	22.73	1001	42.82	1	15.16130782	0.206	0.303606577	3
optimal_loci_63429_G1	1294	0.341812	0	3964	37.17	1	11.67543858	0.1	0.301012239	3
optimal_loci_63432_G1	2150	0.341812	0	7276	44.04	1	11.67543858	0.288	0.300967374	3

optimal_loci_64279_G1	1151	0.043322	0	2785	41	2	0.138593898	0.169	0.238686792	1
optimal_loci_64364_G1	1987	0.113114	0	1001	46.35	2	1.663704877	0.406	0.232390764	1
optimal_loci_64459_G1	1214	0.262699	35.09	2154	41.1	1	0.524037974	0.238	0.226087772	4
optimal_loci_64542_G1	1330	0.3038	0	1006	61.2	1	0.715489091	0.623	0.222765931	6
optimal_loci_64548_G1	2584	0.301896	0	5119	40.82	1	0.715489091	0.297	0.222657169	6
optimal_loci_64549_G1	1534	0.301896	0	7770	39.11	1	0.715489091	0.198	0.222639935	6
optimal_loci_64601_G1	1155	0.307976	19.65	3356	43.72	2	1.994071778	0.292	0.219961658	5
optimal_loci_64643_G1	1009	0.298863	2.97	2261	38.55	1	3.428961566	0.118	0.217672939	5
optimal_loci_64718_G1	1001	0.29993	12.99	5147	38.86	1	57.30804893	0.01	0.211157578	2
optimal_loci_64722_G1	1195	0.29993	0	1340	37.07	1	57.30804893	0.156	0.211047234	2
optimal_loci_65456_G1	2080	0.212068	32.74	6538	35.76	1	0.36554036	0.156	0.157810883	1
optimal_loci_66070_G1	1261	0.08838	0	3471	38.38	1	2.331633188	0.209	0.110458116	1
optimal_loci_66202_G1	1105	0.001621	21.18	7199	34.38	1	570.0691809	0.217	0.101346512	1
optimal_loci_72631_G1	1154	0.095364	23.22	1001	37.78	1	0.620692925	0.156	0.229969623	1
optimal_loci_72780_G1	1101	0.211837	14.99	2149	37.05	2	21.05567121	0.329	0.235203358	3
optimal_loci_72781_G1	1084	0.211837	0	3369	36.16	2	21.05567121	0	0.235211927	3
optimal_loci_72848_G1	1615	0.216185	7.37	2208	35.78	1	2.955888264	0.121	0.238005621	3
optimal_loci_73221_G1	1417	0.136835	2.54	6827	44.88	2	2.314418708	0.329	0.257333006	1
optimal_loci_74607_G1	1003	0.527827	0	2624	46.95	3	5.324750317	0.351	0.315660566	1
optimal_loci_75292_G1	1087	0.273015	14.08	3341	41.58	2	3.411811943	0.257	0.33953596	5
optimal_loci_75335_G1	1914	0.370377	4.75	5148	33.17	2	4.021732259	0.119	0.341028506	5
optimal_loci_75336_G1	1585	0.370377	0	3493	37.79	2	4.021732259	0.225	0.341042441	5
optimal_loci_75365_G1	1609	0.43707	12	7988	46.36	2	1.392626699	0.477	0.342012997	5
optimal_loci_75406_G1	1033	0.441903	0	2332	39.49	1	9.042942286	0.251	0.342940778	5
optimal_loci_75644_G1	1477	0.323534	0	1672	51.65	1	9.780469832	0.527	0.351884102	1
optimal_loci_76564_G1	2912	0.220784	0	5326	33.03	1	0.771893338	0.153	0.394009658	1
optimal_loci_76728_G1	1437	0.354409	0	3503	41.19	1	0.067250271	0.094	0.400231025	4
optimal_loci_76729_G1	1039	0.354409	0	1315	38.11	1	0.067250271	0.126	0.400283502	4
optimal_loci_76733_G1	1345	0.354409	15.39	5410	40.29	1	0.067250271	0.169	0.400312265	4
optimal_loci_76739_G1	1174	0.335078	30.83	19784	46.67	1	2.546029973	0.386	0.400462522	4
optimal_loci_77426_G1	1018	0.053786	17.98	13675	41.94	1	2.419882565	0.137	0.429997469	2
optimal_loci_77444_G1	1046	0.046849	21.7	8628	36.23	2	8.36328374	0	0.430375929	2
optimal_loci_77581_G1	1960	0.107655	6.63	10853	38.06	1	18.39136289	0.052	0.437082107	3

optimal_loci_77595_G1	2466	0.147621	18.9	8002	40.59	1	18.39136289	0.136	0.437374664	3
optimal_loci_77617_G1	1120	0.270816	0	1001	39.01	3	14.89693922	0.201	0.439621187	3
optimal_loci_77899_G1	1374	0.174429	37.26	14398	38.35	2	15.27714915	0.199	0.45136341	1
optimal_loci_78701_G1	1094	1.158249	39.12	6418	37.93	2	2.105190329	0.003	0.483630562	3
optimal_loci_78754_G1	1006	1.022099	15.11	2001	43.33	2	3.064378014	0.298	0.485518502	3
optimal_loci_78771_G1	1005	1.000883	0	4682	42.58	2	12.38342965	0.219	0.486292794	3
optimal_loci_79826_G1	1524	0.531361	0	10778	42.78	2	42.67109101	0.328	0.530368446	3
optimal_loci_79832_G1	1040	0.531361	0	1001	33.07	2	42.67109101	0.217	0.530510521	3
optimal_loci_79861_G1	2898	0.867296	25.81	1001	33.98	1	15.08917488	0.087	0.532378549	3
optimal_loci_80142_G1	3506	0.444441	21.02	2519	50.28	1	0.034628146	0.444	0.546395096	1
optimal_loci_80265_G1	2563	0.280857	23.14	6374	35.31	3	0.55274231	0.156	0.552279114	6
optimal_loci_80271_G1	1425	0.282972	32.63	9700	35.71	1	12.95031067	0.184	0.552574017	6
optimal_loci_80282_G1	1037	0.282972	6.75	2307	40.79	2	7.749850619	0.185	0.552935711	6
optimal_loci_80300_G1	1200	0.280402	16.5	1663	35.75	3	0.292572339	0.057	0.553188898	6
optimal_loci_80375_G1	1086	0.27258	0	8214	39.59	1	4.347792074	0.255	0.555365589	6
optimal_loci_80379_G1	1772	0.27258	16.82	5333	56.43	1	4.347792074	0.611	0.555381007	6
optimal_loci_80524_G1	1101	0.229017	38.51	9069	37.96	2	25.19927316	0.199	0.560230086	4
optimal_loci_80564_G1	1465	0.306843	39.18	2004	39.18	3	6.450586453	0.26	0.560911408	4
optimal_loci_80591_G1	1964	0.324387	0	5833	47.14	1	0.084283601	0.273	0.56123001	4
optimal_loci_80592_G1	1196	0.322676	0	3919	40.63	1	0.084283601	0.194	0.561248848	4
optimal_loci_80792_G1	1074	1.358911	3.54	13605	42.08	1	0.46401909	0.353	0.568808359	2
optimal_loci_80795_G1	1341	1.358911	0	6447	44.81	1	0.46401909	0.19	0.56899807	2
optimal_loci_80882_G1	1603	0.762472	0	5895	34.12	3	2.307557167	0.201	0.573541325	1
optimal_loci_81004_G1	1046	3.277338	6.41	6719	53.34	1	12.11621969	0.722	0.578886847	3
optimal_loci_81035_G1	1105	2.13142	0	1848	40.45	1	21.33850973	0.104	0.579971333	3
optimal_loci_81064_G1	1641	2.073291	23.77	1542	33.94	1	1.505375619	0.235	0.581187125	3
optimal_loci_81339_G1	1086	0.81191	0	8853	38.85	1	0.693298688	0.099	0.590732589	1
optimal_loci_81521_G1	2012	0.465219	4.62	3462	33.79	2	6.166519574	0.043	0.595244095	4
optimal_loci_81527_G1	1046	0.465219	0	1990	49.71	1	12.33303915	0.535	0.595359127	4
optimal_loci_81594_G1	1625	0.759473	31.32	5005	35.38	3	7.589845294	0	0.597899662	8
optimal_loci_81602_G1	1336	0.759473	0	15830	48.8	2	5.932192909	0.588	0.597975697	8
optimal_loci_81625_G1	1370	0.863975	2.63	3545	33.57	1	0.043143423	0.163	0.598976695	6
optimal_loci_81629_G1	1424	0.863975	0	1705	44.38	1	0.043143423	0.385	0.599033428	6

optimal_loci_81630_G1	2059	0.863975	3.59	3415	51.18	1	0.043143423	0.476	0.599045439	6
optimal_loci_81673_G1	1203	0.521485	12.55	11171	37.24	2	0.069341888	0.19	0.600417593	10
optimal_loci_81773_G1	1645	0.245818	28.94	1490	46.2	1	2.815875433	0.312	0.602865761	6
optimal_loci_81774_G1	1249	0.245818	0	3282	34.82	1	2.815875433	0.081	0.602878348	6
optimal_loci_81775_G1	1833	0.245818	33.01	4564	38.02	1	2.815875433	0.271	0.602887353	6
optimal_loci_81803_G1	1075	0.180336	0	1985	31.72	1	2.004374813	0.171	0.603827088	7
optimal_loci_81833_G1	1174	0.184792	6.56	13362	42.75	1	60.64609925	0.208	0.605105858	8
optimal_loci_81871_G1	1713	0.295723	11.85	5888	56.21	1	8.306698442	0.595	0.60705693	6
optimal_loci_81882_G1	1395	0.39234	2.87	1101	43.65	1	1.505133326	0.198	0.607409156	5
optimal_loci_81887_G1	1280	0.389163	0	14788	42.26	1	1.505133326	0.184	0.607505294	5
optimal_loci_81941_G1	2606	0.421443	6.22	2430	43.93	2	0.353018069	0.472	0.609111909	5
optimal_loci_81992_G1	1321	1.465365	0	3782	38.45	1	61.58131348	0.124	0.6120573	2
optimal_loci_82147_G1	1466	0.913901	19.3	1687	61.32	2	0.593551887	0.828	0.617787302	3
optimal_loci_82184_G1	1611	0.114827	0	1147	43.51	1	2.374861876	0.23	0.619344834	4
optimal_loci_82185_G1	1802	0.114827	0	3002	33.9	1	2.374861876	0.222	0.619357863	4
optimal_loci_82253_G1	1861	0.367807	14.78	4231	42.34	3	24.71939846	0.504	0.621551939	8
optimal_loci_82315_G1	1317	0.591994	18.45	4406	59.68	2	12.05657654	0.616	0.624115877	7
optimal_loci_82317_G1	1362	0.591994	0	2595	47.94	2	12.05657654	0.439	0.624128281	7
optimal_loci_82331_G1	1070	0.6583	0	4950	31.02	1	5.137654584	0.119	0.624522117	7
optimal_loci_82335_G1	1548	0.6583	0	2001	38.5	1	5.137654584	0.092	0.624539474	7
optimal_loci_82339_G1	1259	0.664743	24.38	8423	36.06	1	5.137654584	0.034	0.624630575	8
optimal_loci_82404_G1	1517	0.958667	9.1	17906	41.92	1	68.21290415	0.286	0.627105091	9
optimal_loci_82425_G1	1318	0.904861	27.16	9448	34.67	2	33.25438587	0	0.628063432	5
optimal_loci_82430_G1	1171	0.821632	0	2001	54.31	1	62.27839978	0.807	0.62823224	4
optimal_loci_82477_G1	1479	1.149908	0	4291	51.52	1	2.321872031	0.489	0.630056607	4
optimal_loci_82562_G1	1365	0.964232	0	19263	46.44	1	0.115192164	0.42	0.633642819	10
optimal_loci_82576_G1	1276	0.926744	2.59	2529	46.39	2	2.203966447	0.349	0.634008264	11
optimal_loci_82579_G1	1029	0.926744	0	4864	32.94	1	4.392706201	0.136	0.634078736	11
optimal_loci_82590_G1	1249	1.211737	18.73	6821	40.11	2	0.452598027	0.191	0.634330322	11
optimal_loci_82591_G1	1530	1.211737	3.59	5109	45.09	2	0.452598027	0.548	0.634340373	11
optimal_loci_82593_G1	1951	1.211737	0	2048	49.82	2	0.452598027	0.314	0.634358916	11
optimal_loci_82596_G1	1007	1.211737	0	1689	54.51	2	0.452598027	0.528	0.634413402	11
optimal_loci_82622_G1	1677	1.372215	7.81	2870	54.8	3	8.798611899	0.586	0.635829526	12

optimal_loci_82628_G1	1010	1.372215	5.74	5555	53.06	2	4.539368733	0.639	0.635986765	12
optimal_loci_82662_G1	2132	1.395429	3.56	2235	39.11	2	19.56689799	0.154	0.637090665	19
optimal_loci_82665_G1	1757	1.395429	0	2001	47.41	2	0.501135211	0.552	0.637291362	18
optimal_loci_82708_G1	1461	2.45223	3.15	3898	47.02	1	0.082048066	0.231	0.63917695	14
optimal_loci_82738_G1	1036	2.682853	26.25	3336	44.01	2	0.129946436	0.184	0.639647678	14
optimal_loci_82739_G1	2486	2.682853	1.77	1016	39.5	2	0.129946436	0.142	0.639703624	14
optimal_loci_82742_G1	1307	2.65809	2.91	4070	50.42	2	0.129946436	0.601	0.639772459	14
optimal_loci_82750_G1	3165	2.657429	14.28	2021	47.45	2	0.396643696	0.405	0.640134463	14
optimal_loci_82751_G1	1124	2.657429	0	7805	35.14	2	0.396643696	0.107	0.640175089	14
optimal_loci_82773_G1	1477	2.657429	0	12318	46.58	1	0.229040038	0.326	0.640373497	14
optimal_loci_82774_G1	1035	2.657429	7.15	13857	46.18	1	0.229040038	0.429	0.640384306	14
optimal_loci_82804_G1	1614	2.569516	0	1675	58.05	3	16.50467876	0.601	0.642443205	13
optimal_loci_82808_G1	1683	2.51687	6.36	2001	54.07	4	12.46982241	0.408	0.642545594	13
optimal_loci_82810_G1	2798	2.488398	11.97	2001	59.04	2	16.30058404	0.543	0.642706865	12
optimal_loci_82821_G1	1109	2.397035	0	3594	49.77	2	0.456900746	0.456	0.643123887	12
optimal_loci_82871_G1	1596	1.801366	10.9	2001	50.43	1	1.059336159	0.472	0.645059893	6
optimal_loci_82929_G1	1085	1.056971	26.91	4343	47.28	1	1.322952263	0.455	0.646873506	2
optimal_loci_83027_G1	1188	1.547525	23.74	5629	52.69	2	4.149400251	0.541	0.650802089	3
optimal_loci_83029_G1	1316	1.547525	0	3038	42.09	2	4.149400251	0.46	0.650819389	3
optimal_loci_83082_G1	1303	1.048143	0	2001	48.34	2	2.885339313	0.525	0.653858755	3
optimal_loci_83168_G1	1122	1.337105	27.54	8916	56.14	2	4.508065677	0.417	0.657978258	6
optimal_loci_83171_G1	1154	1.61711	27.56	9547	38.21	2	2.765199131	0.126	0.658100784	6
optimal_loci_83175_G1	2475	1.61711	18.83	4318	50.14	3	16.2057168	0.343	0.658128234	6
optimal_loci_83182_G1	1007	1.600375	25.22	4028	46.97	3	16.2057168	0.478	0.658299964	6
optimal_loci_83243_G1	1166	1.813988	0	2001	37.9	3	0.287424547	0.152	0.661056585	9
optimal_loci_83244_G1	1140	1.813988	31.49	2001	52.01	2	0.431136821	0.425	0.661136771	9
optimal_loci_83327_G1	1318	1.557795	35.96	1343	43.85	4	2.541765292	0.292	0.663782925	8
optimal_loci_83338_G1	1083	1.557795	16.34	3715	47.55	3	69.2761174	0.506	0.663869545	8
optimal_loci_83342_G1	1189	1.322586	17.41	1288	38.18	3	69.2761174	0.13	0.663961412	8
optimal_loci_83359_G1	1408	1.27797	0	1748	46.8	2	16.80514131	0.399	0.664693855	7
optimal_loci_83392_G1	2237	1.53744	13.95	2624	36.65	3	70.21294953	0.13	0.66583914	8
optimal_loci_83402_G1	1469	1.369757	0	1001	43.09	5	0.317954935	0.265	0.666393391	8
optimal_loci_83471_G1	1288	1.504483	0	15347	44.56	2	0.341393827	0.433	0.667548278	5

optimal_loci_83489_G1	1435	1.021454	13.87	3687	52.61	2	0.638262375	0.52	0.668309736	4
optimal_loci_83584_G1	1150	0.654857	15.3	15134	34.86	2	4.14295712	0.178	0.672186939	3
optimal_loci_83639_G1	1305	1.024099	4.44	7542	50.49	4	9.012114771	0.321	0.675452267	9
optimal_loci_83642_G1	1190	1.029107	0	10428	39.91	4	9.012114771	0.298	0.675472538	9
optimal_loci_83650_G1	1401	1.001315	0	9056	29.47	1	3.932177444	0.132	0.675880275	9
optimal_loci_83671_G1	2032	1.097556	0	7537	39.76	2	5.285228115	0.281	0.676494861	11
optimal_loci_83691_G1	1452	1.097556	0	18291	51.72	1	16.28147624	0.527	0.677185778	11
optimal_loci_83701_G1	1951	1.097556	8.97	5954	51.2	1	16.28147624	0.337	0.677268928	11
optimal_loci_83705_G1	1349	1.097556	0	2038	39.28	2	9.564685099	0.256	0.677346705	11
optimal_loci_83708_G1	2713	1.097556	0	1001	49.24	3	8.110177109	0.466	0.677465073	11
optimal_loci_83735_G1	1381	1.080667	0	1001	40.47	1	15.1238849	0.19	0.679051993	9
optimal_loci_83739_G1	1266	1.076307	28.12	12693	33.49	1	1.486389794	0.127	0.679416518	8
optimal_loci_83748_G1	1549	1.082664	6.46	4132	36.79	1	1.486389794	0.187	0.679474663	8
optimal_loci_83838_G1	3351	2.221731	2.54	1001	43.39	2	1.344032019	0.292	0.684344484	3
optimal_loci_83889_G1	3245	3.049467	1.45	3322	50.5	4	10.25521947	0.524	0.686510829	5
optimal_loci_83890_G1	1464	3.049467	9.08	6676	38.72	3	13.42341371	0.181	0.686534387	5
optimal_loci_83937_G1	2241	1.934145	13.92	2974	53.36	1	0.024284288	0.512	0.688680186	4
optimal_loci_83950_G1	1164	1.798398	2.75	16319	48.28	1	9.904671615	0.484	0.689069843	4
optimal_loci_84193_G1	1645	0.671661	0	3870	45.41	3	12.71895587	0.544	0.700926564	6
optimal_loci_84195_G1	1213	0.671661	0	6941	52.18	3	12.71895587	0.62	0.700948135	6
optimal_loci_84200_G1	1309	0.671661	13.9	4055	50.87	3	12.71895587	0.489	0.700974082	6
optimal_loci_84201_G1	1653	0.671661	0	2369	60.37	3	12.71895587	0.41	0.700983508	6
optimal_loci_84227_G1	1343	0.522907	2.08	3496	47.43	2	0.117912108	0.272	0.701830877	6
optimal_loci_84300_G1	1005	0.135331	0	2570	42.38	1	8.897749882	0.225	0.703815173	6
optimal_loci_84411_G1	1097	1.550632	21.57	3179	41.84	4	11.35247296	0.294	0.708274153	2
optimal_loci_84433_G1	3251	1.249915	36.08	4777	36.11	2	0.350700835	0.029	0.709016324	3
optimal_loci_84502_G1	1365	0.659103	0	1327	41.53	4	0.991178407	0.285	0.712550594	5
optimal_loci_84519_G1	1015	0.185577	13.99	1115	42.26	1	28.57665239	0.11	0.713101086	4
optimal_loci_84521_G1	2299	0.052863	0	15717	46.45	1	28.57665239	0.425	0.713203651	4
optimal_loci_84562_G1	1074	0.048891	23.84	1619	39.75	2	8.684408378	0.223	0.714371238	5
optimal_loci_84630_G1	1561	0.342027	6.09	2645	45.8	3	0.028469586	0.307	0.716749208	4
optimal_loci_84708_G1	1407	0.686497	0	2001	54.72	1	6.18230174	0.581	0.719552419	3
optimal_loci_84721_G1	1601	0.76537	11.12	7407	54.65	2	124.4424985	0.476	0.720051644	3

optimal_loci_84852_G1	1249	0.774525	0	2001	34.5	1	0.08957153	0	0.725275819	2
optimal_loci_84860_G1	1287	0.802195	4.04	1442	35.43	2	81.52330742	0.103	0.725731136	2
optimal_loci_84952_G1	2376	0.759116	26.77	7898	44.14	2	16.92609664	0.298	0.730546115	7
optimal_loci_84976_G1	2355	0.721081	4.63	3189	39.74	2	6.108550255	0.225	0.73133805	7
optimal_loci_84980_G1	1437	1.900563	9.81	2005	39.87	1	0.751166042	0.199	0.731634562	8
optimal_loci_84983_G1	1859	1.900563	0	5011	38.35	1	0.751166042	0.163	0.731655676	9
optimal_loci_84984_G1	3137	1.900563	0	7480	40.99	1	0.751166042	0.067	0.731673018	9
optimal_loci_85008_G1	1014	1.873361	0	2001	40.72	5	7.546109899	0.28	0.733787855	9
optimal_loci_85014_G1	1029	1.873361	0	1001	40.71	6	6.288424916	0.287	0.733854155	9
optimal_loci_85047_G1	1098	2.117557	8.47	2977	43.8	1	8.657201424	0.36	0.735048264	7
optimal_loci_85048_G1	1884	2.193398	25.21	18191	43.52	1	3.198457741	0.291	0.735179241	6
optimal_loci_85384_G1	1402	0.256766	3.42	2980	44.07	2	4.020391698	0.379	0.754724166	2
optimal_loci_85388_G1	1038	0.285582	35.07	3480	33.42	2	15.56875499	0.134	0.755017271	2
optimal_loci_85488_G1	1149	0.524632	0	2502	39.86	1	2.214837968	0.178	0.760090501	2
optimal_loci_85558_G1	1082	0.44152	0	2001	38.81	4	8.197937511	0.287	0.762446458	5
optimal_loci_85595_G1	1162	0.540193	26.25	2001	34.59	3	3.887895567	0.101	0.764806265	5
optimal_loci_85599_G1	1030	0.538448	7.18	3140	33.98	5	10.0081613	0.082	0.764975045	5
optimal_loci_85600_G1	1565	0.538448	0	5510	47.15	4	11.43836096	0.39	0.764991692	5
optimal_loci_85651_G1	1878	0.530569	9.42	2159	36.36	1	2.991803332	0.254	0.767054046	6
optimal_loci_85720_G1	1726	0.215523	7.65	6388	31.17	1	1.602431615	0.132	0.76860914	3
optimal_loci_85742_G1	2230	0.17068	0	12630	46.77	3	53.57748885	0.353	0.769536688	3
optimal_loci_85833_G1	1227	0.105989	0	2117	52.64	4	4.630873727	0.547	0.773161216	1
optimal_loci_85950_G1	1017	2.26771	2.95	2603	45.91	2	26.01360757	0.561	0.780205144	3
optimal_loci_85971_G1	1561	2.26771	0	2768	42.79	5	18.45458198	0.345	0.781305138	4
optimal_loci_85987_G1	1107	0.654578	6.78	1001	62.87	2	25.72255991	0.608	0.782081551	4
optimal_loci_86058_G1	1080	0.336656	22.41	16742	48.24	1	24.68027051	0.205	0.784572798	4
optimal_loci_86108_G1	1508	0.204868	8.75	1447	58.88	2	69.60766525	0.578	0.786158945	2
optimal_loci_86203_G1	1112	1.841541	0	2001	49.64	4	0.248704055	0.306	0.790409593	4
optimal_loci_86235_G1	1290	1.902968	10.08	6327	50.46	3	15.56845767	0.571	0.791400632	4
optimal_loci_86326_G1	1931	2.102728	2.02	2919	42.51	1	30.81380457	0.199	0.793666021	6
optimal_loci_86328_G1	1014	2.102728	8.58	1540	41.71	1	30.81380457	0.093	0.793682148	6
optimal_loci_86389_G1	1204	1.474655	2.82	2728	53.32	2	6.890812982	0.602	0.795614095	6
optimal_loci_86403_G1	1197	1.304148	0	8185	47.2	2	9.999407553	0.651	0.796280989	7

optimal_loci_86453_G1	1476	1.860015	2.03	2652	39.76	4	10.20509395	0.143	0.797358387	5
optimal_loci_86465_G1	1062	1.835867	17.61	3590	38.32	3	0.840604054	0.221	0.798211875	5
optimal_loci_86505_G1	1903	1.962831	1.47	1412	50.39	2	40.98072025	0.521	0.799624199	5
optimal_loci_86657_G1	1648	4.302462	2.37	1001	52.06	1	0.102628809	0.671	0.802424635	7
optimal_loci_86688_G1	1277	2.833247	6.19	1001	51.68	3	1.850414474	0.458	0.80360391	6
optimal_loci_86692_G1	1400	2.891595	28.21	1001	34.85	4	3.87894362	0.156	0.803693585	6
optimal_loci_86702_G1	1367	2.68791	14.19	4230	47.69	2	2.03580737	0.402	0.804446074	8
optimal_loci_86705_G1	1127	2.68791	0	7737	33.89	2	2.03580737	0.116	0.804470708	8
optimal_loci_86713_G1	1202	2.68791	27.12	1212	50.66	3	270.1361783	0.524	0.804782243	8
optimal_loci_86764_G1	1012	1.192267	5.24	6254	52.47	2	3.736518746	0.496	0.807251372	5
optimal_loci_86770_G1	1781	1.192267	9.83	1221	56.31	1	7.473037491	0.586	0.807391789	5
optimal_loci_86959_G1	1125	1.347902	0	3413	36.88	1	47.49057092	0.111	0.813622266	6
optimal_loci_86985_G1	1667	1.50466	9.84	6940	46.19	2	5.173485636	0.364	0.814318352	6
optimal_loci_86996_G1	1464	1.369816	0	13057	56.14	1	7.303676816	0.643	0.814512776	6
optimal_loci_86998_G1	1817	1.363365	0	15069	49.31	1	7.303676816	0.428	0.814526909	6
optimal_loci_87009_G1	1013	1.290087	0	19745	37.7	1	20.4725122	0.159	0.814950864	7
optimal_loci_87027_G1	1035	1.121851	36.91	9973	36.52	3	8.913720419	0.243	0.815865867	8
optimal_loci_87098_G1	2371	0.90211	17.55	2001	45.84	2	1.344209394	0.499	0.818201406	7
optimal_loci_87130_G1	1181	0.893715	0	8413	42.67	1	9.539303345	0.204	0.818613448	7
optimal_loci_87177_G1	1091	1.012629	28.14	5361	35.1	1	41.59911262	0.098	0.82021325	6
optimal_loci_87183_G1	1586	1.012629	7.31	1010	48.61	4	35.93989433	0.321	0.820305791	6
optimal_loci_87190_G1	2852	1.012629	9.26	1001	51.26	6	27.8916882	0.449	0.820453696	6
optimal_loci_87230_G1	1094	1.08565	0	2001	56.58	4	7.470672994	0.711	0.82209817	5
optimal_loci_87332_G1	1222	1.18849	0	3155	32.56	2	15.66537482	0.115	0.826566127	5
optimal_loci_87345_G1	2437	1.266821	1.4	4006	47.02	2	0.024511781	0.414	0.826812522	5
optimal_loci_87353_G1	1425	1.388246	0	15631	39.36	1	1.094216667	0.099	0.827153362	5
optimal_loci_87354_G1	1006	1.388246	0	14562	43.63	1	1.094216667	0.205	0.827163814	5
optimal_loci_87395_G1	1672	1.759951	0	1001	44.25	4	16.43946296	0.361	0.829502956	7
optimal_loci_87433_G1	1203	0.725128	0	1449	47.54	7	3.626615983	0.412	0.832144854	3
optimal_loci_87446_G1	1693	0.725128	9.16	2310	39.16	3	9.204188115	0.155	0.832434018	3
optimal_loci_87547_G1	2166	1.563942	35.04	2427	39.75	4	21.34866467	0.214	0.836616274	3
optimal_loci_87548_G1	1244	1.563942	0	2920	53.53	4	21.34866467	0.386	0.836637577	3
optimal_loci_87554_G1	1436	1.563942	5.57	2840	31.12	5	17.07893173	0.016	0.836696326	3

optimal_loci_87703_G1	1809	1.961675	7.85	1234	50.08	1	18.4295397	0.346	0.843960414	1
optimal_loci_87837_G1	1344	1.197831	0	5421	38.02	2	1.551540488	0.27	0.851966019	3
optimal_loci_87838_G1	1016	1.197831	27.17	4226	38.28	2	1.551540488	0.069	0.851976717	3
optimal_loci_87839_G1	1701	1.197831	0	2492	44.26	2	1.551540488	0.207	0.851984085	3
optimal_loci_87921_G1	1118	3.25338	29.79	2520	36.04	4	8.571376858	0	0.855955726	1
optimal_loci_88032_G1	1143	2.884469	32.11	3959	38.05	3	2.498140545	0.102	0.859916444	2
optimal_loci_88072_G1	1235	2.095163	3.48	3248	38.62	1	1.612436606	0.096	0.862289062	2
optimal_loci_88369_G1	1128	2.611449	36.26	4641	33.95	2	3.458568121	0	0.872733213	1
optimal_loci_88529_G1	1442	2.348597	0	2067	41.19	1	11.45554116	0.28	0.878707869	3
optimal_loci_88592_G1	1083	2.481125	13.3	13318	36.65	1	0.84705245	0.024	0.880533746	3
optimal_loci_88611_G1	1022	2.482981	25.24	2008	39.62	1	2.643203904	0.364	0.881139334	3
optimal_loci_88802_G1	1263	1.077159	0	1559	44.97	1	60.41854779	0.413	0.885935594	1
optimal_loci_89030_G1	1132	2.617259	20.14	4749	40.37	2	26.40137481	0.238	0.895940491	6
optimal_loci_89040_G1	1573	2.603599	7.5	2017	42.65	3	17.60091654	0.141	0.896031038	6
optimal_loci_89054_G1	2721	2.984412	0	13438	30.72	2	7.159012921	0.149	0.89638195	6
optimal_loci_89114_G1	1007	3.693577	0	2846	43.99	3	2.485318477	0.18	0.898678913	9
optimal_loci_89116_G1	1671	3.693577	15.02	1040	43.38	3	2.485318477	0.152	0.898727884	9
optimal_loci_89120_G1	1001	3.161579	0	2001	30.36	3	0.138323	0	0.898875704	9
optimal_loci_89225_G1	1026	3.791541	28.17	3720	43.17	1	11.7832491	0.257	0.90096319	8
optimal_loci_89229_G1	2716	3.791541	15.1	7053	41.56	1	11.7832491	0.251	0.900986601	8
optimal_loci_89230_G1	1339	3.791541	0	10077	48.24	1	11.7832491	0.46	0.901007842	8
optimal_loci_89294_G1	1003	2.767074	9.57	12875	47.35	2	0.333939177	0.363	0.903043083	7
optimal_loci_89320_G1	1493	2.591261	0	1001	49.63	4	0.042548743	0.37	0.903957658	7
optimal_loci_89367_G1	1912	1.81778	0	3801	40.89	1	0.517046598	0.14	0.905691366	5
optimal_loci_89386_G1	1175	1.509206	0	4450	38.8	1	3.482425682	0.315	0.9062052	6
optimal_loci_89505_G1	1016	0.161936	0	1001	37.5	3	1.809201126	0	0.909073123	6
optimal_loci_89515_G1	1263	0.142407	18.45	10558	40.61	3	0.474215007	0.33	0.909315578	5
optimal_loci_89535_G1	1452	0.14545	23.69	2313	40.28	1	0.312954528	0.177	0.90984103	4
optimal_loci_89606_G1	1150	0.370485	4.43	12168	40.17	2	1.283570485	0.28	0.911588287	5
optimal_loci_89659_G1	1893	0.33763	15.76	1001	30.53	3	18.87122558	0.095	0.914201533	2
optimal_loci_89795_G1	1323	1.274968	25.17	1001	34.16	2	0.060986176	0.2	0.918973967	2
optimal_loci_89825_G1	1319	1.894018	10.99	6994	43.21	3	3.108866102	0.433	0.920042234	3
optimal_loci_89916_G1	1377	2.698104	5.81	2611	44.51	2	20.13790954	0.384	0.92353037	9

optimal_loci_89921_G1	1058	2.716525	0	6605	42.72	2	20.13790954	0.056	0.923615248	8
optimal_loci_89923_G1	1065	2.729486	12.02	3176	56.43	2	20.13790954	0.463	0.923639285	8
optimal_loci_89937_G1	1070	2.884781	14.67	3410	53.08	1	34.91664371	0.729	0.924550685	8
optimal_loci_89953_G1	1915	3.548448	0	2915	40.83	2	5.049996849	0.342	0.925187137	8
optimal_loci_89995_G1	1018	3.548448	7.66	4840	35.85	1	5.157505072	0.093	0.926403857	8
optimal_loci_90016_G1	1581	3.548448	31.69	2753	36.11	1	6.061646288	0.135	0.926724018	8
optimal_loci_90017_G1	1430	3.548448	35.87	4968	41.6	1	6.061646288	0.346	0.926739576	8
optimal_loci_90267_G1	1232	1.349498	17.05	1001	38.23	4	6.086645335	0.156	0.936846554	1
optimal_loci_90457_G1	1441	1.952695	33.66	2721	49.34	1	0.035363994	0.485	0.940850786	2
optimal_loci_90575_G1	1244	2.441362	0	2001	53.77	2	0.244660782	0.662	0.943404764	2
optimal_loci_90733_G1	1116	1.870238	0	14293	32.88	1	42.40723381	0	0.947906429	2
optimal_loci_90804_G1	2221	3.018455	14.99	3731	37.37	2	0.377507679	0.261	0.949730135	2
optimal_loci_90930_G1	1132	6.280686	20.05	12230	48.49	2	0.053849283	0.358	0.954306248	4
optimal_loci_90949_G1	1006	5.587964	4.57	1309	38.36	3	0.669726461	0.009	0.954766643	4
optimal_loci_91003_G1	1185	5.313728	8.86	3280	38.56	4	5.816485694	0.097	0.956517426	5
optimal_loci_91018_G1	1080	6.041724	12.41	2868	48.7	2	0.08082029	0.313	0.956986195	5
optimal_loci_91074_G1	1006	3.872765	0	1964	48.4	1	18.54919225	0.611	0.958820697	3
optimal_loci_91337_G1	1025	5.880001	5.85	1001	41.07	4	10.26254782	0.118	0.967763403	2
optimal_loci_91374_G1	1014	6.506823	13.71	10010	42.8	1	0.177041819	0.429	0.969538728	4
optimal_loci_91432_G1	1349	4.081849	0	2376	52.18	3	5.924057577	0.548	0.971387629	4
optimal_loci_91447_G1	1082	3.815219	19.96	6758	39.92	1	6.631383893	0.356	0.972097363	5
optimal_loci_91493_G1	1831	3.886717	10.16	2184	38.39	1	1.942544638	0.195	0.974200695	4
optimal_loci_91512_G1	1077	4.238125	0	3200	59.14	3	7.178659308	0.726	0.975532847	3
optimal_loci_92289_G1	1793	3.996078	29.5	8560	33.24	1	3.13304653	0.221	0.989022528	4
optimal_loci_92364_G1	1017	4.101608	9.73	10471	45.52	3	2.593329365	0.153	0.986571815	4
optimal_loci_92390_G1	2735	4.882398	14.55	3470	38.68	4	13.57047167	0.236	0.984320181	4
optimal_loci_92391_G1	2056	4.908309	0	1381	44.06	4	13.57047167	0.283	0.984299228	4
optimal_loci_92455_G1	1647	7.100221	1.82	2548	52.45	4	5.663576615	0.582	0.978418716	5
optimal_loci_92543_G1	1027	7.964583	0	7079	30.96	2	0.297320817	0.071	0.974078124	8
optimal_loci_92568_G1	3365	7.289776	0	12872	48.35	2	1.508985501	0.431	0.973808124	8
optimal_loci_92573_G1	2002	7.128469	0	1001	60.93	1	2.423329369	0.709	0.973638044	8
optimal_loci_92579_G1	1131	7.232928	0	11631	39.16	1	2.423329369	0	0.973484774	8
optimal_loci_92607_G1	2094	5.415292	0	4118	34.57	5	1.300125005	0.126	0.972370401	8

optimal_loci_92613_G1	1626	5.415292	0	3137	48.21	5	1.300125005	0.253	0.972315426	8
optimal_loci_92643_G1	1583	6.507184	0	12883	37.52	1	30.42260173	0.143	0.970954473	8
optimal_loci_92714_G1	1509	5.44412	15.24	2812	47.24	3	5.091620723	0.414	0.967751565	8
optimal_loci_92768_G1	1398	7.533335	0	4166	55.36	4	18.45278064	0.544	0.965178044	5
optimal_loci_92769_G1	2097	7.533335	5.01	2001	58.22	4	18.45278064	0.581	0.965156329	5
optimal_loci_92773_G1	2043	7.533335	0	3001	61.23	3	14.98255843	0.707	0.964879298	6
optimal_loci_92791_G1	1753	8.043398	0	2001	55.16	3	2.057370917	0.522	0.964332086	6
optimal_loci_92850_G1	1631	3.440993	0	5757	55.79	1	0.406583997	0.616	0.959996279	3
optimal_loci_92958_G1	2248	10.539975	4	2001	52.13	3	2.95083908	0.635	0.953133601	7
optimal_loci_92959_G1	1203	10.539975	3.16	2001	48.79	3	4.503898924	0.456	0.95281008	7
optimal_loci_92962_G1	1816	10.539975	7.54	2230	46.14	3	4.503898924	0.48	0.952657954	7
optimal_loci_92963_G1	1114	10.539975	25.4	1001	43.08	3	4.503898924	0.343	0.952645627	7
optimal_loci_92974_G1	1460	10.539975	0	1001	36.23	3	0.041836287	0.308	0.95234016	7
optimal_loci_93007_G1	1521	7.480889	23.14	2501	42.93	3	5.976980771	0.247	0.951153701	8
optimal_loci_93017_G1	1377	7.480889	0	1504	51.56	4	4.482735578	0.49	0.95105013	8
optimal_loci_93120_G1	1709	6.39582	0	11936	33.87	2	4.520340744	0.213	0.946338004	6
optimal_loci_93187_G1	2574	8.192837	6.1	2001	43.82	4	21.17224075	0.357	0.943919488	9
optimal_loci_93189_G1	1126	8.192837	2.49	2420	38.45	4	21.17224075	0.062	0.943905266	9
optimal_loci_93248_G1	1719	8.121026	2.79	1699	38.91	4	2.36836902	0.131	0.942081444	9
optimal_loci_93279_G1	1553	7.482869	2.38	3723	49.25	1	2.895684693	0.347	0.941017783	8
optimal_loci_93280_G1	1002	7.482869	10.68	2558	54.69	1	2.895684693	0.515	0.941006098	8
optimal_loci_93296_G1	1670	6.765297	0	6154	50.77	1	16.75781258	0.562	0.940332487	10
optimal_loci_93308_G1	1320	6.765297	0	2001	41.59	3	4.161743516	0.242	0.940018556	10
optimal_loci_93314_G1	2475	6.765297	0	3160	52.52	3	4.161743516	0.422	0.939792558	10
optimal_loci_93409_G1	2228	5.743544	0	4363	47.08	1	14.34804309	0.442	0.935525356	9
optimal_loci_93413_G1	1369	5.748781	19.28	2046	46.67	1	14.34804309	0.623	0.93542663	9
optimal_loci_93433_G1	1630	4.964327	10.37	2001	39.5	2	3.759998601	0.198	0.934627081	7
optimal_loci_93463_G1	1635	5.27922	2.81	1001	38.59	1	0.596945696	0.166	0.933287141	7
optimal_loci_93469_G1	1134	5.27922	0	13866	51.85	2	0.298472848	0.287	0.933163129	7
optimal_loci_93486_G1	1164	5.25572	24.48	1001	46.13	2	2.100276392	0.386	0.932372628	11
optimal_loci_93549_G1	1866	5.21642	0	2001	59.75	3	0.10385989	0.713	0.930010632	9
optimal_loci_93575_G1	1159	5.129063	18.21	2169	36.92	1	5.813227482	0.219	0.927698546	6
optimal_loci_93576_G1	1149	5.129063	0	3444	52.74	1	5.813227482	0.716	0.927685858	6

optimal_loci_93581_G1	1240	5.129063	33.63	8768	41.04	1	5.813227482	0.123	0.927631545	6
optimal_loci_93582_G1	1238	5.129063	10.9	10455	39.09	1	5.813227482	0.2	0.927614644	6
optimal_loci_93690_G1	2365	5.789913	3	2796	54.33	3	0.479558801	0.591	0.920311695	5
optimal_loci_93741_G1	1247	5.886068	0	1087	49.87	3	5.471303881	0.336	0.917583751	6
optimal_loci_93761_G1	1354	5.886068	0	11012	36.63	6	0.349433712	0.096	0.916487864	6
optimal_loci_93764_G1	1306	5.886068	27.03	8673	34.53	5	0.419320454	0.048	0.916464403	6
optimal_loci_93765_G1	1506	5.886068	0	4716	34.66	5	0.419320454	0.138	0.916424714	6
optimal_loci_93801_G1	1592	4.919716	18.72	17301	35.42	1	64.17713743	0.117	0.914123852	5
optimal_loci_93934_G1	1324	6.630209	0	2344	43.65	2	0.35503881	0.398	0.908627834	7
optimal_loci_93980_G1	1044	6.99864	18.01	1033	41.85	4	1.204642407	0.239	0.90650656	8
optimal_loci_93986_G1	1002	6.99864	0	2427	42.31	4	1.204642407	0.126	0.906381936	8
optimal_loci_93987_G1	1201	6.99864	14.57	3506	40.63	4	1.204642407	0.26	0.906369117	8
optimal_loci_93998_G1	1385	6.81365	17.55	1840	49.24	2	1.468351871	0.262	0.905351926	8
optimal_loci_94020_G1	1356	6.81365	22.79	3152	42.62	2	8.256710826	0.329	0.90514317	8
optimal_loci_94042_G1	1169	7.066986	0	14995	50.21	2	11.35040419	0.562	0.904073109	9
optimal_loci_94067_G1	1072	3.806593	10.35	4143	41.04	3	24.6794355	0.105	0.901506038	12
optimal_loci_94089_G1	1953	1.721165	0	2238	41.16	1	1.656069974	0.351	0.899618766	11
optimal_loci_94098_G1	1302	1.784235	26.88	5128	39.7	2	45.60650498	0.212	0.899015025	11
optimal_loci_94104_G1	2096	1.784235	0	1110	31.63	2	48.9176243	0.127	0.898897803	11
optimal_loci_94134_G1	1508	3.03801	3.12	2001	48.47	1	21.90083607	0.447	0.89697995	12
optimal_loci_94135_G1	1198	3.105639	0	1001	52.42	1	21.90083607	0.425	0.896836249	12
optimal_loci_94161_G1	1113	4.897769	10.42	18176	32.34	1	1.57270471	0.075	0.895348004	11
optimal_loci_94184_G1	1759	5.094538	0	7994	58.1	1	1.57270471	0.617	0.895045005	13
optimal_loci_94189_G1	2024	5.094538	0	11059	49.65	1	1.57270471	0.575	0.895011605	13
optimal_loci_94193_G1	1450	5.094538	14.48	14642	62.62	1	1.57270471	0.726	0.894981424	13
optimal_loci_94205_G1	1560	4.800464	31.67	4948	50.51	3	0.919781937	0.315	0.894383561	12
optimal_loci_94227_G1	1202	5.417254	9.9	2236	50.83	3	4.435023881	0.456	0.893443541	10
optimal_loci_94271_G1	1882	5.126693	11.26	4697	47.55	2	2.330441357	0.212	0.890171765	13
optimal_loci_94273_G1	1291	5.126693	5.5	8408	40.89	2	2.330441357	0.3	0.890140471	13
optimal_loci_94313_G1	1342	2.949452	0	2001	53.05	1	1.837424622	0.573	0.887562698	9
optimal_loci_94314_G1	2006	2.949452	14.31	1155	45.06	1	1.837424622	0.132	0.887474112	9
optimal_loci_94317_G1	1711	2.949452	6.31	4805	41.61	1	1.837424622	0.27	0.887440461	9
optimal_loci_94324_G1	1074	2.949452	0	12416	37.24	1	1.837424622	0.168	0.887370512	9

optimal_loci_94326_G1	2729	2.949452	10.59	14356	46.86	1	1.837424622	0.279	0.887334453	9
optimal_loci_94358_G1	1196	0.395627	0	1971	43.31	2	1.063206442	0.39	0.885145697	9
optimal_loci_94402_G1	2260	0.076665	0	2823	35	2	13.68002819	0.188	0.883366861	7
optimal_loci_94557_G1	1548	3.346806	0	2001	54.32	5	5.45308408	0.741	0.874353581	10
optimal_loci_94570_G1	1362	3.306759	0	2236	37.88	1	474.455905	0.197	0.873523882	11
optimal_loci_94571_G1	1687	3.306759	17.55	3841	35.56	1	474.455905	0.099	0.873504524	11
optimal_loci_94574_G1	1731	3.306759	0	6607	39.34	1	474.455905	0.202	0.873476339	11
optimal_loci_94602_G1	1034	3.381197	26.89	5064	41.48	1	0.321127918	0.128	0.873240983	11
optimal_loci_94618_G1	1205	3.763484	0	6145	40.58	2	2.795134847	0.182	0.871776489	11
optimal_loci_94627_G1	1077	4.250963	0	13145	46.98	1	5.590269693	0.391	0.8713501	11
optimal_loci_94635_G1	1841	4.250963	3.69	2822	38.07	1	1.31734256	0.237	0.870815757	11
optimal_loci_94640_G1	1963	4.250963	9.42	2139	38.81	1	1.31734256	0.136	0.870738445	11
optimal_loci_94662_G1	1044	3.193717	15.52	4213	43.86	1	5.32091876	0.364	0.869660572	11
optimal_loci_94688_G1	2178	2.970021	0	12666	37.09	2	5.689191879	0.234	0.868717503	11
optimal_loci_94752_G1	1065	1.06929	0	5950	38.4	6	0.818748272	0.227	0.864360491	4
optimal_loci_94779_G1	1363	0.431884	0	3922	57.22	3	9.620412902	0.686	0.862392738	3
optimal_loci_94784_G1	1035	0.366221	0	1068	52.94	3	9.632769842	0.405	0.862319519	3
optimal_loci_94946_G1	1106	0.827231	4.25	2667	38.96	2	2.12019871	0.331	0.850153109	1
optimal_loci_95111_G1	1659	0.375226	11.33	14557	38.33	2	3.329760586	0.091	0.840700752	1
optimal_loci_95244_G1	1025	1.238781	0	2001	44.58	4	32.23821141	0.437	0.833712197	5
optimal_loci_95264_G1	1609	1.609796	26.6	5054	46.86	2	12.38934556	0.418	0.832934473	5
optimal_loci_95297_G1	1674	1.892877	14.34	8710	35.96	1	7.089186664	0.111	0.830809328	8
optimal_loci_95324_G1	1206	2.150173	12.02	16139	39.46	1	33.53686511	0.185	0.829634012	9
optimal_loci_95334_G1	1028	2.150173	23.54	1001	43.77	3	1.950014597	0.341	0.829124313	9
optimal_loci_95359_G1	1096	1.624693	0	11151	32.84	4	9.53021744	0.079	0.827848947	7
optimal_loci_95360_G1	1119	1.624693	30.56	9155	30.65	4	9.53021744	0.075	0.827828927	7
optimal_loci_95371_G1	1065	1.624693	0	3639	40	4	9.53021744	0.063	0.827571184	7
optimal_loci_95425_G1	1002	2.119723	0	5514	50.09	2	91.61850376	0.32	0.825054303	6
optimal_loci_95526_G1	1200	1.894349	0	12710	46	2	5.664797499	0.333	0.819021424	1
optimal_loci_95651_G1	2457	0.500424	2.16	4796	40.98	1	8.793879726	0.244	0.813041515	3
optimal_loci_95734_G1	1385	0.999496	11.12	2195	39.92	2	12.24664446	0.183	0.809482999	5
optimal_loci_95748_G1	1653	1.169318	36.6	1001	36.29	3	0.03642109	0.119	0.808473862	5
optimal_loci_95783_G1	1421	1.750163	0	1001	50.52	2	22.35103934	0.494	0.804768004	7

optimal_loci_95784_G1	1336	1.750163	5.01	7019	42.44	2	22.35103934	0.257	0.804708495	7
optimal_loci_95846_G1	1750	0.882787	1.89	1425	54.74	2	22.37561353	0.564	0.801808415	5
optimal_loci_95864_G1	1776	0.447218	0	13383	39.92	1	302.8164291	0.251	0.800969368	5
optimal_loci_95872_G1	1833	0.740351	0	2301	51.77	3	15.20134326	0.495	0.80008343	5
optimal_loci_96164_G1	1295	1.333484	0	1451	51.42	2	4.518550494	0.589	0.783770171	4
optimal_loci_96166_G1	1317	1.333484	15.64	2917	42.59	2	4.518550494	0.341	0.783750321	4
optimal_loci_96196_G1	1271	1.333484	0	1161	40.83	1	0.541361095	0.285	0.78255989	4
optimal_loci_96212_G1	1120	1.620923	14.37	1235	37.76	3	5.13751094	0.035	0.780797934	4
optimal_loci_96348_G1	2060	3.952223	0	1893	49.56	2	12.96901622	0.38	0.77367678	7
optimal_loci_96380_G1	2780	3.003905	1.65	9000	58.74	1	67.04883832	0.672	0.772029228	10
optimal_loci_96381_G1	1042	3.003905	0	2861	49.52	1	67.04883832	0.399	0.771967653	10
optimal_loci_96419_G1	1158	1.879857	0	1001	57.08	1	28.93141046	0.603	0.769713671	10
optimal_loci_96444_G1	1516	1.763894	0	2001	40.89	1	0.480275002	0.098	0.769234604	10
optimal_loci_96445_G1	2111	1.763894	0	1001	54.57	1	0.480275002	0.606	0.769148736	10
optimal_loci_96446_G1	2442	1.763894	0	6030	52.17	1	0.480275002	0.708	0.769094975	10
optimal_loci_96490_G1	1031	1.130493	29.97	1765	36.17	1	0.98496388	0.205	0.767493992	9
optimal_loci_96491_G1	1696	1.130493	36.26	3050	46.63	1	0.98496388	0.354	0.767474433	9
optimal_loci_96494_G1	1374	0.54087	6.04	6530	41.7	1	0.98496388	0.223	0.767442758	9
optimal_loci_96614_G1	1180	0.362862	0	1332	35	1	0.661749592	0.082	0.762411284	2
optimal_loci_96647_G1	1077	0.562961	0	3760	45.86	1	3.803388273	0.522	0.761355577	2
optimal_loci_96777_G1	1510	0.019763	20.66	3428	38.14	2	13.40216323	0.126	0.750735296	4
optimal_loci_96778_G1	1623	0.019763	8.69	1001	42.94	2	13.40216323	0.196	0.750710953	4
optimal_loci_96782_G1	1701	2.355961	4.23	1001	56.55	2	0.410686774	0.679	0.75018332	6
optimal_loci_96849_G1	1451	1.327294	27.43	5245	35.21	1	3.064081603	0.282	0.746070181	6
optimal_loci_96876_G1	1017	1.327294	24.98	2143	42.57	1	1.827255687	0.173	0.745675878	4
optimal_loci_96877_G1	2222	1.329844	24.08	3228	40.09	1	1.827255687	0.254	0.745652909	4
optimal_loci_96967_G1	1163	0.980747	31.3	1001	45.57	2	12.00896394	0.094	0.739959478	2
optimal_loci_96999_G1	2092	1.619304	0	1649	38.04	4	3.296160303	0.146	0.738292828	2
optimal_loci_97232_G1	1128	0.584351	0	7510	43.43	3	3.016489057	0.464	0.724532166	2
optimal_loci_97235_G1	1345	0.584351	0	10328	38.21	3	3.016489057	0.269	0.724501725	2
optimal_loci_97394_G1	1813	0.915759	0	5730	41.69	2	0.652683983	0.316	0.716995416	3
optimal_loci_97398_G1	1481	0.915759	17.22	2439	50.03	2	0.652683983	0.345	0.716962407	3
optimal_loci_97417_G1	1134	1.506023	0	3025	46.47	4	9.02533564	0.46	0.715668847	4

optimal_loci_97503_G1	1082	1.814439	0	1553	29.39	2	23.33396509	0.1	0.710754654	2
optimal_loci_97629_G1	1966	0.182846	17.29	10868	32.96	2	10.43551162	0.051	0.704531986	3
optimal_loci_97648_G1	1681	0.165505	0	1001	39.91	2	23.02037987	0.187	0.702989037	6
optimal_loci_97656_G1	1434	0.473277	0	9018	37.16	2	5.9604257	0.24	0.702676018	6
optimal_loci_97741_G1	1253	0.771775	0	1001	36.95	2	20.16275075	0.17	0.699335537	7
optimal_loci_97752_G1	2790	0.79018	16.7	3645	48.67	2	4.540887177	0.419	0.698617492	8
optimal_loci_97755_G1	2376	0.79018	14.81	2606	38.17	2	4.540887177	0.146	0.698579759	8
optimal_loci_97772_G1	1355	0.971452	0	16197	43.76	1	98.84169754	0.343	0.696984885	7
optimal_loci_97776_G1	1227	0.971452	0	13547	51.42	1	98.84169754	0.606	0.696958305	7
optimal_loci_97851_G1	2140	0.73704	8.97	4747	36.3	5	0.183769808	0.182	0.693817944	6
optimal_loci_97861_G1	2031	0.744302	0	6987	34.36	4	0.019948038	0.096	0.693542197	4
optimal_loci_97998_G1	1208	0.045538	36.75	6787	38.65	3	10.47373593	0.09	0.684389488	4
optimal_loci_98002_G1	1318	0.045538	0	5246	36.87	3	10.47373593	0.147	0.684346078	4
optimal_loci_98015_G1	1335	0.045538	27.64	11281	37.3	1	0.022642537	0.167	0.684151946	4
optimal_loci_98088_G1	1151	0.01486	0	13106	36.14	1	161.2649901	0.123	0.679880822	5
optimal_loci_98130_G1	1096	0.01486	18.52	1001	40.87	3	44.94372997	0.208	0.676588425	3
optimal_loci_98167_G1	1626	0.01486	23.25	2487	41.02	3	20.81323665	0.365	0.674384664	2
optimal_loci_98324_G1	1189	0.193778	7.4	5617	41.46	4	16.65345629	0.116	0.661406199	3
optimal_loci_98329_G1	1476	0.193778	17.28	2756	34.55	3	43.61228861	0.242	0.661173942	3
optimal_loci_98336_G1	1493	0.193778	0	7633	30.94	2	56.26362648	0.163	0.661107202	3
optimal_loci_98623_G1	1055	0.265685	0	5449	37.44	2	1.771233691	0.105	0.644668656	1
optimal_loci_98842_G1	2284	0.211144	2.06	2715	44.13	1	0.123542338	0.144	0.63196318	2
optimal_loci_98857_G1	1261	0.166764	0	11726	30.68	1	21.20492645	0.058	0.630677623	3
optimal_loci_98900_G1	1435	0.035619	3.62	3683	41.39	1	12.80667229	0.335	0.626426449	2
optimal_loci_99247_G1	1399	0.312157	0	16086	36.81	1	5.554745907	0.176	0.606465637	1
optimal_loci_99490_G1	2029	0.037212	24.79	3759	35.58	1	0.034043404	0.209	0.587408606	2
optimal_loci_99566_G1	1048	0.071635	0	11319	36.64	1	27.33974387	0.027	0.582604082	4
optimal_loci_99591_G1	1032	0.080129	0	1001	39.43	2	19.96148101	0.169	0.58133671	3
optimal_loci_99593_G1	1024	0.111	0	3097	54.49	2	19.96148101	0.504	0.58126329	3
optimal_loci_99886_G1	1323	0.125709	11.56	1260	41.26	2	0.707506865	0.302	0.56512325	3
optimal_loci_99888_G1	1087	0.125709	0	2001	41.85	2	0.707506865	0.265	0.565056038	3
optimal_loci_99889_G1	1377	0.125709	8.42	3121	47.78	2	0.707506865	0.463	0.565041896	3
optimal_loci_100036_G	1203	0.010913	19.78	1001	37.57	2	0.899231745	0.172	0.55774654	1

optimal_loci_100127_G	1170	0.732804	24.7	1453	40.85	1	4.94259971	0.195	0.552625145	1
optimal_loci_100850_G	1532	0.042448	11.29	2385	35.83	1	16.43238712	0.113	0.513636961	2
optimal_loci_100860_G	1571	0.042448	2.16	9711	56.52	1	16.43238712	0.405	0.513475928	2
optimal_loci_100985_G	1164	0.19792	22.08	3490	40.03	1	7.08339202	0.249	0.506983922	7
optimal_loci_101003_G	1231	0.220347	0	2001	43.21	2	0.589384396	0.43	0.506172076	7
optimal_loci_101090_G	1291	0.22203	0	16795	38.1	1	2.995538678	0.141	0.503049408	7
optimal_loci_101091_G	1387	0.22203	25.67	15375	40.08	1	2.995538678	0.14	0.503035165	7
optimal_loci_101092_G	1416	0.22203	12.08	12766	33.96	1	2.995538678	0.132	0.503008997	7
optimal_loci_101094_G	1099	0.21634	0	1523	32.66	1	2.995538678	0	0.502817322	7
optimal_loci_101100_G	1606	0.227319	6.41	2194	38.97	1	41.00466169	0.192	0.502220873	9
optimal_loci_101170_G	1128	0.213115	20.83	2001	46.89	2	34.80368924	0.289	0.497464935	3
optimal_loci_101177_G	2052	0.212037	1.8	14961	49.85	1	69.60737847	0.616	0.497325677	3
optimal_loci_102395_G	1108	0.178336	18.86	18229	35.1	1	8.818024758	0.247	0.42948333	2
optimal_loci_102398_G	1371	0.178336	6.71	9242	34.64	1	8.818024758	0.1	0.42939319	2
optimal_loci_102571_G	1534	0.590242	6.52	16935	37.94	2	3.259670745	0.205	0.41763652	1
optimal_loci_102780_G	1440	0.021241	0	2001	36.45	1	18.00860226	0.116	0.40498339	1
optimal_loci_106202_G	1498	0.014448	0	10926	37.11	1	11.63450677	0.181	0.140936459	3
optimal_loci_106240_G	1801	0.011793	19.16	17321	47.41	1	0.317910372	0.407	0.139892257	3
optimal_loci_106255_G	1582	0.011793	13.53	11702	37.48	1	0.317910372	0.256	0.13958332	3
optimal_loci_106433_G	1202	0.012254	17.72	9150	50.99	2	2.218181655	0.625	0.129082106	1
optimal_loci_106888_G	1052	0.00041	36.88	8205	41.15	1	7.04433304	0.305	0.103122528	1
optimal_loci_107176_G	1402	0.00041	0	17506	41.79	1	0.050969819	0.238	0.082724453	1
optimal_loci_107462_G	1181	0.00041	5.42	2917	40.98	1	1.787186992	0.152	0.066342377	2
optimal_loci_107480_G	1149	0.00041	21.15	1001	35.07	4	8.915392752	0.079	0.065367482	2
optimal_loci_107909_G	1526	0.00041	4	14283	38.99	1	0.634618813	0.251	0.03683337	1
optimal_loci_108229_G	1030	0.00041	0	3332	49.51	4	0.02441353	0.6	0.012642628	2
optimal_loci_108231_G	1047	0.00041	0	2675	37.15	5	0.019530824	0.123	0.012396499	2
optimal_loci_108411_G	1268	0.00041	20.98	7175	50.86	1	3.55594749	0.468	0.004282457	1
optimal_loci_109456_G	6844	0.00041	35.13	9236	59.32	1	1.446754759	0.623	0.051411329	1
optimal_loci_109578_G	1089	0.00041	19.93	19776	37.74	1	6.023590263	0.205	0.056806392	1
optimal_loci_109890_G	1125	0.00041	28.8	11727	38.13	1	11.7378535	0.101	0.07596841	1
optimal_loci_110490_G	1472	0.345352	20.24	11981	41.84	2	2.119402476	0.327	0.107732268	2
optimal_loci_110554_G	1248	0.031071	7.21	15157	39.66	1	0.172345895	0.044	0.111134226	2

optimal_loci_110785_G	1159	0.373729	0	2877	36.75	1	107.3769514	0.068	0.12600417	1
optimal_loci_110941_G	1724	0.287245	18.62	1001	34.39	2	11.71167563	0.242	0.132980058	1
optimal_loci_111607_G	1346	0.122762	0	1001	56.09	4	5.071803034	0.383	0.162568957	3
optimal_loci_111669_G	1532	0.070136	0	16440	52.08	1	5.57909494	0.481	0.165815004	3
optimal_loci_111678_G	1033	0.070136	0	1049	41.81	1	5.57909494	0.264	0.165935896	3
optimal_loci_111796_G	2028	0.135747	14.89	5830	46.84	1	5.250484844	0.381	0.172732334	1
optimal_loci_111975_G	1206	0.142186	2.4	18429	42.7	1	34.23265137	0.429	0.182332108	1
optimal_loci_112169_G	1682	0.24827	17.42	2388	39.83	2	2.852559127	0.286	0.190272823	1
optimal_loci_112289_G	1079	0.390346	0	1001	40.4	1	0.100859877	0.158	0.196341584	1
optimal_loci_112423_G	1269	0.242172	0	17575	32.78	1	5.094646605	0.061	0.200998091	3
optimal_loci_112438_G	1518	0.199743	15.02	8776	36.62	1	0.997195423	0.23	0.201834228	4
optimal_loci_112470_G	1063	0.194449	0	1001	34.61	2	4.805464976	0.243	0.202368258	4
optimal_loci_112558_G	1672	0.034003	2.27	3391	38.27	2	0.155232006	0.071	0.205365127	4
optimal_loci_112632_G	1402	0.097822	25.68	1056	46.07	1	13.39153571	0.244	0.208451154	2
optimal_loci_112689_G	1011	0.549276	21.76	4569	34.42	1	24.70841842	0.218	0.212803994	2
optimal_loci_112750_G	2272	1.216792	28.3	8210	38.55	2	13.49388864	0.18	0.215572295	4
optimal_loci_112780_G	1199	1.141597	12.84	7878	39.86	3	9.227681327	0.233	0.216871457	3
optimal_loci_112804_G	1051	1.141597	0	2177	37.39	4	0.931192423	0.313	0.217525092	3
optimal_loci_112882_G	1966	0.055938	15.51	5301	38.4	1	21.24317763	0.176	0.222784717	1
optimal_loci_113176_G	2376	0.050046	0	1001	35.52	1	2.488572814	0.082	0.233057718	2
optimal_loci_113238_G	1300	0.051581	30.92	1811	34.84	2	2.993222397	0.138	0.23524981	3
optimal_loci_113314_G	1477	0.056977	22.88	4052	35.61	1	1.56834174	0.268	0.238315114	3
optimal_loci_113401_G	1478	0.043871	30.04	1799	35.72	2	11.96121663	0.13	0.241120405	3
optimal_loci_113475_G	1500	0.042875	0	6403	42.4	1	15.82305722	0.553	0.243378299	2
optimal_loci_113659_G	1022	0.394851	27.3	16417	36.39	1	50.7569753	0.103	0.252662896	1
optimal_loci_113785_G	1046	0.601292	0	1221	37.47	3	14.29754402	0.188	0.259224041	2
optimal_loci_113813_G	1595	0.72677	35.92	4177	34.35	1	3.218359211	0.186	0.26026386	2
optimal_loci_114018_G	1082	0.03152	39.74	2969	29.02	1	30.76055926	0.123	0.270545397	2
optimal_loci_114050_G	1510	0.043365	0	1079	34.83	1	71.26925227	0.088	0.271778026	2
optimal_loci_114184_G	1278	0.497788	8.45	5165	49.6	2	0.013555916	0.358	0.277990426	3
optimal_loci_114185_G	1269	0.497788	11.51	4817	44.2	2	0.013555916	0.32	0.278001055	3
optimal_loci_114188_G	1060	0.497788	16.32	2150	45.84	2	0.013555916	0.365	0.278022935	3
optimal_loci_114499_G	1260	0.168963	0	16113	40	1	0.104345728	0.096	0.292574248	3

optimal_loci_114514_G	1045	0.165803	0	18649	46.88	1	2.108894506	0.691	0.293248235	3
optimal_loci_114546_G	1672	0.157898	36.24	17749	56.04	1	0.835108697	0.768	0.295393446	4
optimal_loci_114606_G	1061	0.148252	4.24	10643	39.3	1	9.186593584	0.141	0.297910013	4
optimal_loci_114664_G	1112	0.182127	6.56	16234	36.06	1	3.552323115	0.117	0.299809022	3
optimal_loci_114666_G	1034	0.181217	0	17917	31.72	1	3.552323115	0.005	0.300086388	3
optimal_loci_114793_G	1304	0.142266	26.69	10888	41.33	2	1.453796334	0.306	0.306203551	2
optimal_loci_114856_G	1357	0.034144	0	1547	38.24	1	0.154236269	0.178	0.309999521	2
optimal_loci_115045_G	1506	0.026228	20.19	1188	41.69	2	8.724651537	0.199	0.31974629	1
optimal_loci_115279_G	1411	0.064159	0	2001	37.84	5	14.94592871	0.084	0.33008825	2
optimal_loci_115303_G	1064	0.079136	28.1	11610	29.88	1	5.277330433	0.076	0.332139525	3
optimal_loci_115348_G	1693	0.096384	25.58	11585	38.33	1	4.624021369	0.131	0.334106846	2
optimal_loci_115496_G	1605	0.087519	4.67	2001	32.21	2	8.629852916	0.238	0.34306919	1
optimal_loci_115620_G	1078	0.571523	0	2048	46.01	3	19.19266424	0.279	0.349648365	1
optimal_loci_115698_G	1534	0.507342	6	9550	45.5	1	1.096707961	0.378	0.353662222	3
optimal_loci_115703_G	3148	0.423253	25.64	1001	39.89	2	202.4731514	0.233	0.354374295	3
optimal_loci_115740_G	1139	0.351334	20.02	1969	53.46	1	10.02509308	0.431	0.356724543	4
optimal_loci_115806_G	1158	0.197921	9.59	14903	40.06	1	10.52368719	0.211	0.359977027	3
optimal_loci_115875_G	2396	0.121669	11.14	8503	44.32	2	0.675884777	0.322	0.362127123	2
optimal_loci_116108_G	2450	0.53275	7.88	1532	44.32	2	16.92292422	0.286	0.371693117	2
optimal_loci_116203_G	1135	0.611213	30.84	1069	43.08	1	3.156525497	0.406	0.375481236	2
optimal_loci_116472_G	1236	0.081218	15.53	2001	36.24	3	7.146987696	0.216	0.387365137	2
optimal_loci_116502_G	1410	0.096584	12.7	2856	40.85	1	7.213491589	0.356	0.389802664	5
optimal_loci_116543_G	1163	0.137791	13.84	4787	33.87	1	18.92745917	0.206	0.391580188	4
optimal_loci_116545_G	1069	0.137791	0	3011	43.4	1	18.92745917	0.376	0.391594415	4
optimal_loci_116547_G	1181	0.137791	11.52	1001	40.47	2	9.463729583	0.178	0.391682401	4
optimal_loci_116807_G	1465	0.209709	30.17	4229	43.82	4	16.92833486	0.311	0.403809363	1
optimal_loci_116936_G	1020	0.220951	0	6199	39.5	2	0.039034682	0.191	0.409731875	3
optimal_loci_116937_G	1127	0.220951	0	4664	46.31	2	0.039034682	0.245	0.40974274	3
optimal_loci_116939_G	1233	0.220951	4.14	1001	43.3	2	0.039034682	0.263	0.409769801	3
optimal_loci_117229_G	1018	0.475788	20.83	3736	46.26	2	96.73892877	0.27	0.420471895	1
optimal_loci_117303_G	1163	0.395027	32.42	10664	35.51	1	31.07617667	0.24	0.424513437	1
optimal_loci_117457_G	1302	0.192487	0	1001	46	2	13.10311082	0.386	0.434118978	2
optimal_loci_117502_G	1344	0.212829	17.71	7019	31.25	1	0.910890761	0.216	0.435378403	2

optimal_loci_117595_G	1426	0.399315	1.96	1001	38.35	2	10.57726032	0.096	0.439257506	3
optimal_loci_117597_G	1014	0.399315	0	1001	46.15	2	10.57726032	0.434	0.439351975	3
optimal_loci_117607_G	1414	0.398113	9.05	2263	44.83	3	53.11964645	0.266	0.439786842	3
optimal_loci_117803_G	1344	0.865648	11.38	1280	38.61	2	0.099217312	0.283	0.447553052	10
optimal_loci_117811_G	1761	0.845866	27.37	9629	48.04	1	0.198434624	0.389	0.447773395	10
optimal_loci_117865_G	1902	1.0448	0	15020	48.47	2	0.401056927	0.525	0.449634934	10
optimal_loci_117866_G	2863	0.787718	13.06	12059	48.89	2	0.401056927	0.413	0.44965015	10
optimal_loci_117872_G	1085	0.787718	0	8163	45.34	2	0.401056927	0.462	0.449693318	10
optimal_loci_117875_G	1073	0.787718	0	6079	58.43	2	0.401056927	0.469	0.449709265	10
optimal_loci_117876_G	1080	0.787718	0	4966	62.4	2	0.401056927	0.688	0.449717679	10
optimal_loci_117888_G	1724	0.766953	5.92	11724	43.56	1	42.04874619	0.247	0.450092466	10
optimal_loci_117891_G	1494	0.766953	9.71	6270	45.58	1	42.04874619	0.163	0.45013571	10
optimal_loci_117894_G	2722	0.766953	0	2244	55.03	1	42.04874619	0.552	0.450156997	10
optimal_loci_117967_G	1667	0.476252	1.68	2993	38.15	2	27.43362495	0.203	0.455124451	4
optimal_loci_117981_G	1885	0.500261	8.01	4488	45.14	1	11.7140411	0.32	0.455488479	4
optimal_loci_118016_G	1807	0.452463	12.17	9520	42.28	3	8.771993168	0.313	0.456988652	4
optimal_loci_118038_G	1003	0.504162	16.55	1881	44.06	1	17.54648729	0.399	0.45823191	4
optimal_loci_118122_G	1611	0.593353	2.23	3345	55.99	2	14.76138819	0.573	0.463618285	8
optimal_loci_118123_G	1151	0.593353	0	2001	47.08	2	14.76138819	0.324	0.463632009	8
optimal_loci_118157_G	3181	0.914192	3.3	1389	55.39	1	169.8951554	0.577	0.466046172	8
optimal_loci_118161_G	1255	0.914192	0	6181	51.63	1	169.8951554	0.448	0.46608263	8
optimal_loci_118162_G	1202	0.914192	0	12858	51.83	1	169.8951554	0.355	0.466133429	8
optimal_loci_118163_G	2807	0.914192	0	14093	48.59	1	169.8951554	0.396	0.466142825	8
optimal_loci_118183_G	1036	0.915466	0	11626	61	2	8.020616816	0.769	0.466965389	8
optimal_loci_118184_G	1159	0.915466	0	12771	47.1	2	8.020616816	0.276	0.4669741	8
optimal_loci_118265_G	1247	0.340257	0	10683	44.5	3	0.436406453	0.193	0.470838665	1
optimal_loci_118636_G	1033	0.667661	0	2001	44.33	2	6.138514142	0.338	0.488922489	2
optimal_loci_118682_G	2178	0.893231	0	4685	48.85	1	0.035491946	0.355	0.490468645	2
optimal_loci_118758_G	1356	1.771824	20.8	17839	53.31	1	427.833818	0.353	0.494550289	7
optimal_loci_118761_G	1403	1.771824	0	2677	55.31	3	193.7742902	0.76	0.494786312	7
optimal_loci_118782_G	1461	1.771824	0	3028	50.3	3	4.272245543	0.356	0.495762118	7
optimal_loci_118788_G	1524	1.771824	0	3527	46.85	3	4.272245543	0.375	0.495815663	7
optimal_loci_118791_G	1883	1.771824	2.18	2023	60.75	3	11.94895211	0.618	0.495876877	7

optimal_loci_118813_G	2480	1.90189	3.43	2001	42.58	2	6.510274005	0.32	0.496860511	10
optimal_loci_118819_G	1035	1.90189	0	2635	43.28	1	4.793192902	0.2	0.497538972	10
optimal_loci_118862_G	1791	1.12585	7.59	3664	34.72	3	5.835603566	0.154	0.499807897	7
optimal_loci_118872_G	1969	0.987701	0	5736	45.86	1	6.747282326	0.328	0.500030721	7
optimal_loci_118877_G	1003	0.987701	0	2001	43.46	3	37.37659111	0.205	0.500066487	7
optimal_loci_118979_G	1162	2.490342	0	12122	41.48	2	12.1012004	0.086	0.502737588	6
optimal_loci_118981_G	1027	2.490342	0	10163	37.87	2	12.1012004	0.072	0.502753519	6
optimal_loci_119006_G	1068	2.490342	0	2643	57.2	2	19.19520665	0.46	0.504939395	4
optimal_loci_119035_G	1612	0.198807	1.8	3406	55.76	2	19.20558999	0.808	0.507270152	2
optimal_loci_119177_G	1108	1.13953	0	1001	40.25	2	0.983526318	0.085	0.515375984	1
optimal_loci_119289_G	3103	1.496568	2.58	8180	39.54	1	54.60949822	0.346	0.520303191	2
optimal_loci_119309_G	3455	2.254597	5.93	1001	56.81	1	0.07282161	0.559	0.521249926	2
optimal_loci_119456_G	1772	2.377729	38.54	4222	48.53	2	0.248809979	0.381	0.52767386	2
optimal_loci_119517_G	1103	2.097235	3.41	3627	42.88	4	6.123606603	0.31	0.530675865	4
optimal_loci_119569_G	1111	2.981068	21.06	2553	41.4	1	10.89792037	0.482	0.533155274	6
optimal_loci_119570_G	1642	2.981068	0	3860	42.08	1	10.89792037	0.221	0.533165218	6
optimal_loci_119626_G	1688	1.732973	0	9453	49.76	2	2.610195145	0.585	0.535002533	5
optimal_loci_119631_G	1527	1.732973	30.91	3458	36.21	2	2.610195145	0.09	0.535049368	5
optimal_loci_119632_G	1926	1.732973	2.28	1001	45.58	2	2.610195145	0.465	0.535065025	5
optimal_loci_119728_G	1284	0.406428	0	5205	45.87	2	4.105316792	0.463	0.540191167	2
optimal_loci_119742_G	1635	0.406428	0	2001	48.56	1	126.1205552	0.547	0.540584099	2
optimal_loci_119833_G	1659	1.336395	27.73	2803	32.85	2	53.85132024	0.125	0.545032548	3
optimal_loci_119847_G	2480	2.69177	1.29	2001	50.12	2	2.80818371	0.456	0.545346577	3
optimal_loci_119875_G	1262	3.48216	0	4206	60.3	1	2.562121581	0.599	0.547548765	4
optimal_loci_119929_G	1016	2.674687	6.45	1001	43.3	3	14.33268782	0.189	0.550160159	5
optimal_loci_119963_G	1638	1.546549	5.92	14442	37.42	2	13.16845477	0.185	0.552767436	7
optimal_loci_119971_G	1164	1.546549	0	1001	52.49	3	8.778969847	0.476	0.552909501	7
optimal_loci_119988_G	1653	1.546549	1.69	5116	57.65	1	9.374383759	0.636	0.553966879	7
optimal_loci_119989_G	1731	1.546549	3.99	3250	55.97	1	9.374383759	0.342	0.553980482	6
optimal_loci_119993_G	1282	1.546549	0	2037	61.46	1	9.374383759	0.668	0.554044124	6
optimal_loci_120002_G	2074	1.546549	7.57	17272	47.97	1	0.324309051	0.532	0.554248239	6
optimal_loci_120112_G	1167	0.083044	12.08	1749	33.59	1	54.01599179	0.145	0.561706446	4
optimal_loci_120131_G	1478	0.169587	0	7207	35.99	1	1.862177086	0.087	0.563005752	5

optimal_loci_120143_G	1270	0.191055	0	8136	57.32	2	37.68721961	0.746	0.563631337	5
optimal_loci_120151_G	1397	0.191055	0	6421	40.65	3	301.9148538	0.1	0.563868509	5
optimal_loci_120230_G	1525	0.609116	21.64	4423	37.18	1	0.524260256	0.018	0.566430344	7
optimal_loci_120279_G	1562	1.50222	0	2994	42.63	4	5.492528377	0.251	0.569328317	9
optimal_loci_120290_G	2445	1.50222	0	6845	54.35	4	5.224567913	0.537	0.569382942	9
optimal_loci_120292_G	1251	1.50222	0	4777	33.49	4	5.224567913	0.257	0.56940776	9
optimal_loci_120314_G	1237	1.83009	5.25	7970	35.65	2	4.636256852	0.128	0.570427722	8
optimal_loci_120316_G	1179	1.83009	26.63	2001	51.06	5	1.854502741	0.535	0.570579593	8
optimal_loci_120345_G	1108	2.430701	38.36	5661	34.38	1	8.273033949	0.089	0.572051046	13
optimal_loci_120376_G	2052	2.864346	12.91	2403	47.22	2	0.104410067	0.471	0.572587221	13
optimal_loci_120380_G	1243	2.864346	0	2815	37.24	3	0.239788598	0.179	0.572653404	13
optimal_loci_120436_G	1077	3.395007	0	1001	47.35	1	65.20676087	0.365	0.574878241	9
optimal_loci_120459_G	1571	3.429523	0	3439	50.92	2	0.717740042	0.571	0.575364797	9
optimal_loci_120460_G	1511	3.429523	13.37	2790	56.51	3	1.245118537	0.6	0.575549367	9
optimal_loci_120463_G	2865	3.429523	0	2001	49.66	2	1.177512028	0.493	0.575610019	9
optimal_loci_120464_G	1700	3.429523	0	2728	53.23	2	1.177512028	0.515	0.575632394	9
optimal_loci_120513_G	1013	4.510093	4.34	1093	56.86	4	17.90017579	0.592	0.577150461	6
optimal_loci_120569_G	1129	1.274088	28.34	7888	35.25	1	6.207861066	0.043	0.58136523	3
optimal_loci_120570_G	1083	1.274088	39.89	6711	40.9	1	6.207861066	0.171	0.581374535	3
optimal_loci_120574_G	1129	1.274088	0	2691	53.76	1	6.207861066	0.484	0.581404769	3
optimal_loci_120710_G	2903	1.405194	0	6811	52.7	2	1.347005744	0.539	0.588401039	8
optimal_loci_120714_G	2609	1.405194	4.18	1824	49.06	2	1.347005744	0.407	0.588441217	8
optimal_loci_120724_G	1857	1.51106	0	1001	45.66	1	7.897281976	0.358	0.589105162	10
optimal_loci_120729_G	2151	1.51106	1.44	13845	51.97	1	7.897281976	0.425	0.589251076	10
optimal_loci_120772_G	1240	1.47241	0	2347	37.25	3	0.024486732	0.111	0.590110304	10
optimal_loci_120777_G	2469	1.616359	1.4	6963	50.14	3	0.019536392	0.581	0.590324584	10
optimal_loci_120787_G	1043	1.616359	0	6899	40.84	4	0.08767579	0.115	0.590398838	10
optimal_loci_120789_G	1757	1.80373	2.11	2001	45.58	6	0.158971102	0.313	0.590514898	10
optimal_loci_120843_G	1011	1.566836	0	1918	36.99	4	2.14951692	0.031	0.592356504	8
optimal_loci_120847_G	1007	1.612141	0	2322	41.7	4	2.14951692	0.083	0.592420845	8
optimal_loci_120961_G	1651	1.455547	0	1001	46.94	1	19.90216431	0.444	0.597699726	6
optimal_loci_120993_G	1052	1.27343	5.04	2905	40.58	2	4.212882754	0.374	0.59889837	6
optimal_loci_120997_G	1973	1.27343	0	16950	32.18	2	4.212882754	0.107	0.599005225	6

optimal_loci_120998_G	3003	1.27343	4	19367	57.74	1	6.835740357	0.638	0.599023614	6
optimal_loci_121020_G	1024	1.261677	0	8288	49.7	1	13.38190785	0.461	0.599532849	7
optimal_loci_121023_G	1115	1.261677	0	5429	34.26	1	13.38190785	0.198	0.599681479	8
optimal_loci_121116_G	1020	0.930525	11.96	3281	37.74	2	39.60728573	0.055	0.603344325	5
optimal_loci_121117_G	1084	0.930525	0	4334	39.29	2	39.60728573	0.049	0.603352336	4
optimal_loci_121153_G	1108	0.983086	0	1001	46.38	3	20.16618967	0.316	0.604846993	5
optimal_loci_121239_G	1639	1.106871	3.84	12691	50.09	2	4.784908042	0.529	0.607756202	7
optimal_loci_121240_G	1854	1.106871	8.41	11150	33.33	2	4.784908042	0.087	0.607769311	7
optimal_loci_121279_G	1700	1.114771	0	7542	42.64	3	87.75710412	0.27	0.609103135	6
optimal_loci_121292_G	2273	1.14436	31.59	2910	35.45	1	0.509325275	0.162	0.610423484	7
optimal_loci_121304_G	1542	1.150198	10.83	2675	55.44	2	0.054381028	0.631	0.61146815	7
optimal_loci_121306_G	1239	1.150198	0	4919	40.27	2	0.054381028	0.055	0.611485222	7
optimal_loci_121339_G	1034	1.170287	19.54	1001	37.42	1	1.897677167	0.172	0.613044502	4
optimal_loci_121468_G	2736	2.685469	35.45	2906	41.92	1	1.534396657	0.267	0.617845462	1
optimal_loci_121718_G	1092	1.983024	0	11687	50.36	1	22.14690716	0.699	0.627155895	7
optimal_loci_121719_G	1323	1.904672	0	19930	54.42	1	22.14690716	0.815	0.627218608	7
optimal_loci_121745_G	1151	1.674269	27.98	2001	38.05	3	12.60817674	0.222	0.628057728	7
optimal_loci_121786_G	2243	1.413096	23.72	3922	36.2	1	9.124720469	0.08	0.629007361	8
optimal_loci_121792_G	1109	1.402641	0	2202	41.92	1	9.124720469	0.319	0.629114718	8
optimal_loci_121802_G	1712	1.403564	36.62	1271	47.13	1	2.826165485	0.304	0.629518004	9
optimal_loci_121804_G	2005	1.403564	7.63	5146	39.25	1	6.029548641	0.212	0.629776122	9
optimal_loci_121863_G	1227	0.971668	26.57	3659	38.87	4	20.48470312	0.332	0.632806763	13
optimal_loci_121875_G	2112	0.983523	0	4327	43.98	2	20.90984025	0.319	0.632954655	11
optimal_loci_121889_G	1287	1.179131	31.31	1319	54.54	1	2.085529633	0.508	0.633770798	11
optimal_loci_121905_G	1550	1.184294	0	3847	61.41	2	18.68311821	0.56	0.634314293	11
optimal_loci_121919_G	1170	1.277527	30	1001	52.99	1	0.779753562	0.625	0.634642351	12
optimal_loci_121921_G	1132	1.274532	0	13547	42.75	3	3.138624579	0.251	0.634803428	13
optimal_loci_121949_G	2013	1.319041	0	1001	40.23	4	61.98942337	0.343	0.635841375	14
optimal_loci_121962_G	2941	1.50039	23.22	4143	51.47	1	27.91651112	0.521	0.636458021	15
optimal_loci_121967_G	1976	1.497532	0	2093	55.66	2	13.95825556	0.576	0.636545764	15
optimal_loci_121999_G	2449	1.927578	24.17	5658	43.56	3	133.5716673	0.365	0.637193641	14
optimal_loci_122000_G	1821	1.927578	14.55	3747	38.82	2	4.139253575	0.183	0.637212957	14
optimal_loci_122036_G	1532	1.927578	9.4	1431	56.98	2	15.17385712	0.573	0.638375342	12

optimal_loci_122041_G	1465	1.927578	0	2001	39.11	2	4.365339516	0.24	0.638574063	11
optimal_loci_122051_G	1226	1.927578	0	1001	56.93	1	8.899921747	0.657	0.638894818	10
optimal_loci_122079_G	3459	0.982763	12.63	3956	41.71	1	33.87327695	0.213	0.640156015	9
optimal_loci_122090_G	1093	0.78971	21.5	3755	52.79	1	0.599409629	0.482	0.640802591	7
optimal_loci_122254_G	1035	0.398021	16.91	2001	53.42	3	11.34215609	0.644	0.647162047	6
optimal_loci_122285_G	1019	0.200816	29.44	3343	36.5	1	18.61911978	0.31	0.648480334	6
optimal_loci_122291_G	1595	0.200816	0	6905	46.33	1	18.61911978	0.492	0.648507434	6
optimal_loci_122317_G	1261	0.200816	0	11794	55.03	2	1.595629333	0.665	0.649928179	6
optimal_loci_122327_G	1364	0.126026	0	4743	44.28	5	18.50808255	0.275	0.650649268	6
optimal_loci_122329_G	1017	0.126026	9.14	2835	37.36	5	18.50808255	0.409	0.650677334	6
optimal_loci_122515_G	2043	0.890327	1.52	4482	56.82	3	3.827267163	0.497	0.656654228	5
optimal_loci_122516_G	1871	0.890327	23.3	5282	46.87	3	3.827267163	0.388	0.656678034	5
optimal_loci_122567_G	1155	0.890327	30.04	1001	38.61	2	7.750494028	0.137	0.658241764	7
optimal_loci_122582_G	1284	0.890327	23.05	7403	36.83	2	0.032033787	0.166	0.658634642	7
optimal_loci_122603_G	1607	0.711742	35.72	2001	57.24	3	62.81464372	0.582	0.659834884	7
optimal_loci_122629_G	1123	0.586331	0	5699	50.13	2	117.892046	0.228	0.661271469	5
optimal_loci_122664_G	1267	0.605907	10.5	3926	36.22	3	27.59563669	0.165	0.661939271	5
optimal_loci_122800_G	1500	0.217765	9.33	4713	53.66	2	37.53375558	0.545	0.669227347	4
optimal_loci_122801_G	1627	0.217765	35.96	2497	51.01	2	37.53375558	0.479	0.669243241	4
optimal_loci_122804_G	1499	0.217765	19.55	2001	49.36	1	75.06751116	0.279	0.669297798	4
optimal_loci_122842_G	1218	0.556262	0	2001	60.59	1	1.399096294	0.632	0.670296716	4
optimal_loci_122927_G	1045	0.942278	0	2538	39.23	2	69.37589178	0.279	0.674525043	1
optimal_loci_123075_G	2055	1.203249	20.34	1363	45.59	2	0.720300064	0.459	0.680020083	4
optimal_loci_123080_G	1544	1.203249	0	3741	55.44	1	0.551029504	0.343	0.68009312	4
optimal_loci_123095_G	1121	1.209568	0	11591	46.38	1	0.03090145	0.185	0.680546041	4
optimal_loci_123098_G	1506	1.257051	7.37	7282	55.64	1	0.03090145	0.473	0.680575895	4
optimal_loci_123251_G	1687	0.626688	6.4	1373	44.16	2	24.16054688	0.343	0.686482095	5
optimal_loci_123264_G	1325	0.578523	0	12952	58.64	1	2.95215727	0.632	0.686702408	5
optimal_loci_123265_G	1377	0.578523	0	14355	52.65	1	2.95215727	0.487	0.686713082	5
optimal_loci_123298_G	1327	0.709301	0	2950	31.8	1	13.64743462	0.182	0.687919471	5
optimal_loci_123299_G	1135	0.709301	0	1762	41.05	1	13.64743462	0.333	0.68792997	5
optimal_loci_123383_G	1170	1.267998	0	16388	55.29	1	10.1242837	0.54	0.692670736	7
optimal_loci_123391_G	1270	1.282656	4.33	3394	55.98	2	7.368163888	0.632	0.692916338	7

optimal_loci_123393_G	1182	1.211721	0	5413	48.22	2	7.368163888	0.296	0.692931698	7
optimal_loci_123394_G	1784	1.211721	0	6673	46.52	2	7.368163888	0.42	0.692941284	7
optimal_loci_123419_G	1224	0.915756	6.94	6033	45.58	3	1.262336802	0.354	0.69469132	8
optimal_loci_123429_G	1581	0.915756	15.12	3030	36.3	2	0.332598363	0.191	0.69496037	8
optimal_loci_123450_G	1570	0.894396	32.23	2675	39.23	1	4.851726451	0.16	0.695450959	8
optimal_loci_123505_G	1341	0.472787	27.37	1086	46.6	3	3.68454408	0.413	0.697694116	4
optimal_loci_123810_G	1259	0.863292	0	5288	36.06	1	44.77702782	0.165	0.709828184	4
optimal_loci_123860_G	1284	0.787444	10.2	2065	53.81	1	0.125011157	0.43	0.711746851	7
optimal_loci_123868_G	1329	0.817326	0	1241	40.4	2	7.566769946	0.254	0.712543335	7
optimal_loci_123895_G	3426	1.009745	0	3054	54.58	3	1.180327503	0.565	0.713388686	9
optimal_loci_123955_G	1225	1.221988	31.18	17888	33.87	2	4.363049483	0.062	0.71530695	8
optimal_loci_123956_G	1122	1.221988	34.4	14369	33.33	1	8.726098966	0.023	0.715334506	8
optimal_loci_123958_G	1050	1.221988	0	12774	57.23	1	8.726098966	0.586	0.715347189	8
optimal_loci_123992_G	2284	1.241493	0	9039	52.62	1	5.116274663	0.447	0.716471374	6
optimal_loci_123995_G	2348	1.183065	1.19	2794	51.19	1	5.116274663	0.445	0.716598709	6
optimal_loci_124131_G	2171	2.781551	4.51	16135	53.38	1	4.622748638	0.621	0.723006986	12
optimal_loci_124148_G	1153	2.832272	0	3738	51.17	1	4.622748638	0.608	0.723109047	12
optimal_loci_124151_G	1280	2.832272	2.34	1001	46.71	2	2.311374319	0.214	0.723162098	12
optimal_loci_124182_G	1426	3.055165	0	6071	51.96	3	1.444868996	0.439	0.72442611	13
optimal_loci_124185_G	1945	3.055165	3.86	2001	38.92	4	3.050252616	0.124	0.724453126	13
optimal_loci_124188_G	1271	3.055165	28.17	1001	48.7	5	4.705438701	0.389	0.72462309	14
optimal_loci_124189_G	1076	3.055165	4.93	2305	41.54	5	4.705438701	0.413	0.724633011	14
optimal_loci_124192_G	1935	3.055165	0	2385	57.51	1	11.32618304	0.545	0.724800798	14
optimal_loci_124208_G	1116	3.402982	13.53	3674	41.57	3	15.76403463	0.184	0.725469802	14
optimal_loci_124212_G	1214	3.402982	0	1975	45.88	3	15.76403463	0.365	0.725496118	14
optimal_loci_124234_G	1237	4.189987	0	2001	42.19	2	10.71779386	0.205	0.726530855	14
optimal_loci_124235_G	1126	4.189987	17.41	1173	52.75	2	10.71779386	0.51	0.726589695	14
optimal_loci_124257_G	1349	2.829145	0	1893	45.81	1	11.85600426	0.412	0.72773395	11
optimal_loci_124293_G	1995	1.212419	36.74	3741	48.42	2	0.181424856	0.401	0.72843029	11
optimal_loci_124354_G	1277	0.045162	29.29	3386	37.27	2	3.05893284	0.219	0.731557819	3
optimal_loci_124363_G	1205	0.061264	9.46	7361	37.75	1	5.108757822	0.245	0.73210581	3
optimal_loci_124513_G	2086	0.253998	14.33	2001	48.94	1	9.259337464	0.273	0.739916298	3
optimal_loci_124525_G	2017	0.285718	16.91	3086	51.46	2	0.552782824	0.438	0.74052618	3

optimal_loci_124583_G	1163	0.34939	30.61	2001	42.99	4	26.19732374	0.301	0.743138639	3
optimal_loci_124694_G	1596	0.314181	33.02	5872	40.72	2	10.50866178	0.17	0.748131039	5
optimal_loci_124720_G	1840	0.561059	19.35	2265	42.01	1	29.17529525	0.22	0.748694307	6
optimal_loci_124736_G	1776	1.050425	0	2509	36.99	5	4.382086912	0.193	0.749822417	8
optimal_loci_124740_G	1652	1.050425	7.51	4811	44.55	5	4.382086912	0.257	0.749860495	8
optimal_loci_124781_G	1027	1.16114	30.77	3917	33.1	2	48.57456276	0.277	0.751637821	8
optimal_loci_124791_G	1923	1.32175	0	3558	49.03	3	21.42699045	0.375	0.752501218	7
optimal_loci_124792_G	1524	1.32175	0	2001	53.28	3	21.42699045	0.507	0.752516099	6
optimal_loci_124795_G	2671	1.221744	34.71	2918	55.78	5	52.89677981	0.514	0.752768975	7
optimal_loci_124875_G	1791	0.534359	34.67	4361	46.67	3	7.185935828	0.443	0.756419829	3
optimal_loci_124897_G	1039	0.616001	13.86	6572	43.98	1	41.02160289	0.385	0.757641397	4
optimal_loci_124985_G	1464	0.952591	14.75	2246	40.98	2	15.36161189	0.179	0.760764498	4
optimal_loci_124986_G	1191	0.952591	0	1001	59.36	2	15.36161189	0.477	0.760776047	4
optimal_loci_125047_G	1052	0.75794	0	4470	48.09	1	16.92482008	0.472	0.763234481	6
optimal_loci_125071_G	1087	0.579466	15.82	2181	50.13	4	4.286517962	0.494	0.764793228	8
optimal_loci_125085_G	1010	0.515327	0	2001	55.04	2	3.211625724	0.616	0.765337849	8
optimal_loci_125104_G	1363	0.520405	9.68	9776	43.43	1	19.31673218	0.318	0.765882553	8
optimal_loci_125141_G	1377	0.969821	0	11953	42.84	2	2.068657529	0.296	0.767342662	13
optimal_loci_125160_G	1529	0.993207	6.47	17794	36.1	1	13.90923326	0.129	0.767674326	13
optimal_loci_125179_G	1588	1.308572	0	9565	39.67	1	13.90923326	0.259	0.767943338	14
optimal_loci_125184_G	1075	1.308572	7.81	8680	54.32	2	87.97966062	0.534	0.768182748	14
optimal_loci_125225_G	1235	1.164363	0	1779	39.27	2	49.70160091	0.117	0.769978066	11
optimal_loci_125230_G	2345	1.164363	8.66	4474	45.75	4	1.917911838	0.356	0.770215109	11
optimal_loci_125235_G	1301	1.173374	0	2207	52.57	1	56.2780183	0.424	0.770655728	13
optimal_loci_125236_G	1112	1.173374	10.97	3936	47.12	1	56.2780183	0.533	0.770668882	13
optimal_loci_125238_G	2075	1.173374	1.88	6740	47.66	1	56.2780183	0.392	0.770690215	13
optimal_loci_125246_G	1737	1.20312	2.94	2001	38.91	3	12.56425016	0.126	0.771085407	13
optimal_loci_125267_G	1259	1.390089	2.22	6727	50.91	4	27.48896004	0.707	0.771668706	13
optimal_loci_125311_G	1032	0.916339	0	12933	38.08	1	21.78193314	0	0.774107922	12
optimal_loci_125314_G	1300	0.908111	14.62	17385	52.69	1	0.048223629	0.46	0.774423769	12
optimal_loci_125374_G	1006	0.701684	0	1001	55.16	1	0.023734225	0.604	0.774938133	8
optimal_loci_125375_G	1858	0.701684	2.96	2413	46.87	1	0.023734225	0.443	0.774948875	8
optimal_loci_125429_G	1959	0.328045	1.43	5242	38.48	2	6.003371758	0.183	0.776469742	7

optimal_loci_125431_G	1900	0.330291	11.26	2732	36.68	2	6.003371758	0.26	0.776489287	7
optimal_loci_125456_G	1238	0.200055	14.05	10546	39.66	2	0.215097449	0.123	0.777682484	8
optimal_loci_125535_G	1076	0.12462	21.93	1001	42.93	1	4.214565228	0.2	0.780511786	5
optimal_loci_125555_G	1339	0.099255	0	4591	38.61	3	3.426650536	0.166	0.782017528	7
optimal_loci_125567_G	1041	0.099255	14.7	12420	37.94	1	10.27995161	0.125	0.782259022	7
optimal_loci_125571_G	1800	0.099255	26.06	17078	34	1	10.27995161	0.135	0.78229446	7
optimal_loci_125623_G	1247	0.149563	29.59	17908	37.28	1	0.028898055	0.039	0.784735495	6
optimal_loci_125625_G	1267	0.149563	0	13877	36.62	2	12.63932979	0.171	0.784766011	6
optimal_loci_125639_G	1038	0.140294	25.82	2486	39.88	2	12.84356224	0.167	0.78507126	6
optimal_loci_125746_G	1276	2.299265	0	7583	38.63	2	97.00878502	0.154	0.789356571	8
optimal_loci_125749_G	1179	2.299265	9.25	3883	43.93	2	97.00878502	0.211	0.789385458	8
optimal_loci_125753_G	1380	2.299265	2.46	1001	57.02	2	97.00878502	0.492	0.789451024	8
optimal_loci_125797_G	1026	3.125287	0	3733	32.06	2	10.64292978	0.115	0.790730276	8
optimal_loci_125805_G	1642	3.125287	0	2674	47.5	3	10.01591641	0.394	0.790774927	8
optimal_loci_125809_G	1311	3.193339	0	2441	40.35	4	7.84234752	0.274	0.790841999	8
optimal_loci_125811_G	1505	3.646885	0	2001	44.25	3	8.622149186	0.245	0.790912084	8
optimal_loci_125813_G	1947	3.646885	9.5	2716	40.67	2	5.041765257	0.158	0.790980032	8
optimal_loci_126156_G	1463	0.503484	28.5	1863	37.25	3	8.595827315	0.157	0.80268379	9
optimal_loci_126157_G	1199	0.503484	21.18	3416	37.61	3	8.595827315	0.333	0.802695605	9
optimal_loci_126203_G	1699	2.242129	0	4296	49.44	1	0.224603298	0.422	0.805366683	10
optimal_loci_126206_G	1032	2.242129	0	12970	51.55	1	13.12477661	0.29	0.805587103	10
optimal_loci_126208_G	1788	2.242129	19.46	10400	43.56	1	13.12477661	0.298	0.805600904	10
optimal_loci_126215_G	1090	2.242129	14.68	3429	32.38	1	13.12477661	0.238	0.80565925	10
optimal_loci_126218_G	4830	2.242129	3.23	1001	54.45	1	13.12477661	0.63	0.805714827	10
optimal_loci_126220_G	1255	2.242129	0	6634	37.52	1	13.12477661	0.151	0.805757683	10
optimal_loci_126239_G	2489	1.975652	0	5436	46.44	4	1.87207005	0.324	0.806318531	10
optimal_loci_126290_G	1010	2.433767	9.01	2001	48.91	5	36.59305702	0.592	0.807524753	9
optimal_loci_126368_G	2212	1.859813	0	2800	48.96	2	1.193987169	0.329	0.810600791	5
optimal_loci_126431_G	1079	1.226676	8.71	4734	36.05	2	9.95558252	0.1	0.812856791	5
optimal_loci_126434_G	3034	1.214984	11.31	1001	38.1	2	9.95558252	0.229	0.812870318	5
optimal_loci_126470_G	1719	0.651101	8.09	14047	37.63	1	7.409532728	0.058	0.81435707	5
optimal_loci_126484_G	3024	0.651101	5.22	4794	53.76	2	3.704766364	0.592	0.814540043	4
optimal_loci_126599_G	1064	2.767694	0	10091	37.96	1	16.8511709	0.251	0.819808828	9

optimal_loci_126605_G	1519	3.131968	22.58	4015	33.17	4	12.83142476	0.075	0.820341747	11
optimal_loci_126640_G	1494	5.044848	8.3	12469	41.36	2	1.76353648	0.148	0.821668891	16
optimal_loci_126657_G	1019	5.044848	0	17098	37.97	1	7.860521121	0.049	0.822161899	16
optimal_loci_126660_G	1506	5.044848	3.45	14229	52.52	1	7.860521121	0.455	0.822180021	16
optimal_loci_126671_G	1019	5.044848	4.51	4995	40.03	1	7.860521121	0.164	0.822377487	16
optimal_loci_126676_G	1027	5.044848	0	1001	44.69	1	31.21916018	0.229	0.822622587	16
optimal_loci_126685_G	3043	5.044848	0	12471	46.89	1	10.20607328	0.357	0.822989302	16
optimal_loci_126699_G	2382	5.044848	30.65	1219	31.02	3	7.657872333	0.06	0.823152707	16
optimal_loci_126711_G	1191	4.077711	27.2	2525	37.11	3	0.07113113	0.178	0.824058069	15
optimal_loci_126715_G	1137	4.077711	34.48	1050	35.53	3	0.07113113	0.078	0.82410024	15
optimal_loci_126731_G	1342	3.592384	0	2817	51.34	4	13.65268256	0.417	0.824511538	15
optimal_loci_126742_G	2691	3.592384	0	1490	35.63	3	12.68854499	0.073	0.824637983	15
optimal_loci_126747_G	1331	3.506942	4.51	5386	36.88	2	12.21957331	0.101	0.82473634	15
optimal_loci_126748_G	1023	3.506942	20.72	13588	54.64	2	18.06034173	0.641	0.824801837	15
optimal_loci_126749_G	1275	3.506942	0	11902	44.39	2	18.06034173	0.227	0.824812747	15
optimal_loci_126831_G	1044	1.343029	0	6283	36.68	1	4.097741754	0.121	0.82802894	11
optimal_loci_126854_G	1393	1.6791	38.19	2005	36.75	2	10.36388213	0.184	0.828705202	6
optimal_loci_126864_G	4213	2.366671	8.05	2759	49.91	3	17.39530034	0.457	0.828965481	6
optimal_loci_126877_G	1426	2.366671	0	2909	37.23	2	8.468543611	0.16	0.829571969	7
optimal_loci_126886_G	1127	2.366671	0	1013	35.66	1	3.075210519	0.157	0.830062101	7
optimal_loci_126893_G	1308	2.366671	17.74	6550	34.86	2	4.397544243	0.167	0.830267472	7
optimal_loci_126954_G	1113	1.758263	5.39	2800	34.14	2	7.971939438	0.088	0.83325493	9
optimal_loci_127005_G	1187	1.11869	3.29	1767	42.88	4	85.27050481	0.318	0.835505148	8
optimal_loci_127008_G	1421	1.116533	11.26	2858	49.26	4	85.27050481	0.422	0.835561188	8
optimal_loci_127020_G	1677	1.116533	24.75	6058	52.23	1	69.6756097	0.495	0.835694192	8
optimal_loci_127038_G	1588	0.970938	35.64	16290	49.74	1	0.015030147	0.385	0.836149312	8
optimal_loci_127044_G	1386	0.88854	13.85	1113	39.68	1	2.329149325	0.399	0.836640965	9
optimal_loci_127097_G	1126	0.838173	2.58	2001	43.25	1	3.808692665	0.346	0.838973349	8
optimal_loci_127103_G	1031	0.838173	16.49	4723	54.41	1	3.808692665	0.833	0.83905703	8
optimal_loci_127133_G	2612	0.935983	0	3646	47.47	3	23.57138316	0.406	0.840230187	6
optimal_loci_127197_G	1215	1.839918	0	1001	55.3	1	10.27406219	0.563	0.843203038	12
optimal_loci_127221_G	1154	1.839918	9.1	1001	30.76	1	10.38832075	0.158	0.843832191	12
optimal_loci_127236_G	1347	2.030549	6.68	3190	38.53	1	0.75864597	0.158	0.844316016	11

optimal_loci_127240_G	1304	2.030549	0	2002	46.93	1	0.75864597	0.352	0.844373251	11
optimal_loci_127248_G	1711	2.172199	39.86	2935	32.96	4	22.10193686	0.038	0.844758278	11
optimal_loci_127250_G	1910	2.172199	19.11	5231	43.29	5	17.95287966	0.306	0.844775746	11
optimal_loci_127252_G	1367	2.172199	0	8093	45.35	5	17.95287966	0.365	0.84479752	11
optimal_loci_127259_G	1801	2.205567	5.5	2001	52.13	2	0.95879553	0.47	0.844895633	12
optimal_loci_127268_G	2149	2.212146	2.19	2758	47.97	2	0.95879553	0.344	0.845007235	12
optimal_loci_127306_G	1515	2.560096	0	6825	33.79	1	13.47122548	0.142	0.846313548	12
optimal_loci_127340_G	1137	2.554222	22.16	2001	58.48	3	37.03752722	0.601	0.846995227	12
optimal_loci_127359_G	1095	2.973201	0	4375	53.05	2	7.078007944	0.618	0.848704697	6
optimal_loci_127455_G	1391	2.780624	0	1001	44.21	1	0.254642274	0.427	0.852420608	2
optimal_loci_127574_G	1908	2.979594	5.66	2488	47.06	1	31.01107108	0.438	0.857383132	6
optimal_loci_127581_G	1207	2.979594	2.82	17104	56.33	1	31.01107108	0.582	0.85749433	6
optimal_loci_127583_G	1827	2.979594	0	19164	56.43	1	31.01107108	0.514	0.857510003	6
optimal_loci_127626_G	1432	2.979594	39.87	1001	48.67	3	14.03301076	0.435	0.858912778	6
optimal_loci_127627_G	1006	2.979594	0	1191	47.01	5	49.27924357	0.516	0.859018058	6
optimal_loci_127644_G	1991	1.113133	0	1399	54.79	5	7.658875309	0.554	0.860421518	9
optimal_loci_127732_G	1362	0.011428	0	8425	40.08	3	2.058117192	0.184	0.863443181	7
optimal_loci_127733_G	1553	0.011428	0	6839	42.49	3	2.058117192	0.268	0.863453795	7
optimal_loci_127734_G	2532	0.011428	0	4274	33.68	3	2.058117192	0.078	0.863465861	7
optimal_loci_127788_G	1685	0.011525	6.17	8259	50.86	1	13.55318398	0.607	0.864411112	6
optimal_loci_127828_G	1038	0.011525	33.04	5520	44.02	2	9.134301835	0.384	0.865685076	10
optimal_loci_127873_G	2276	2.510335	0	1001	37.12	2	0.047166509	0.172	0.866916891	12
optimal_loci_127930_G	3282	1.991287	1.07	2954	55.81	4	3.764156101	0.616	0.868329267	8
optimal_loci_127935_G	2095	1.991287	7.35	2212	49.88	1	0.274622514	0.577	0.868478925	8
optimal_loci_127937_G	1996	1.991287	8.02	3319	49.39	1	0.274622514	0.557	0.86857035	8
optimal_loci_127954_G	1240	1.698374	0	3589	37.17	1	2.456349409	0.219	0.868795852	8
optimal_loci_127989_G	1452	1.471422	0	6831	36.98	1	2.115040627	0.095	0.869936569	10
optimal_loci_127990_G	1492	1.471422	0	8452	47.92	1	2.115040627	0.458	0.869948902	10
optimal_loci_128058_G	1157	0.984794	0	16550	30.85	1	82.26376666	0	0.872693846	7
optimal_loci_128077_G	1206	0.99956	0	1001	53.89	2	190.6464465	0.536	0.873219477	7
optimal_loci_128078_G	3047	0.99956	8.6	2491	46.4	2	190.6464465	0.439	0.873268731	7
optimal_loci_128128_G	1308	1.081884	0	7682	41.81	3	1.02978178	0.112	0.875508222	8
optimal_loci_128140_G	1281	0.998191	0	1209	47.07	1	0.135143806	0.327	0.876042723	8

optimal_loci_128196_G	1305	1.060897	21.15	10742	33.71	1	7.503547688	0.108	0.878306514	6
optimal_loci_128207_G	1320	1.058573	0	1906	36.06	4	7.944110451	0	0.879050442	6
optimal_loci_128209_G	1284	1.064397	0	2001	46.33	4	7.290190058	0.376	0.879186899	6
optimal_loci_128232_G	1137	1.164767	2.99	2001	60.07	5	40.93059429	0.363	0.880768204	6
optimal_loci_128314_G	1522	1.510218	0	1623	36.07	2	12.26290847	0.095	0.883843946	5
optimal_loci_128355_G	1288	1.909735	3.57	18938	39.36	1	56.25114998	0.18	0.884552953	5
optimal_loci_128380_G	1727	2.888969	0	2876	42.79	2	56.7248922	0.286	0.885925691	8
optimal_loci_128404_G	3429	3.627362	0.85	4217	48.46	2	2.083654179	0.317	0.886515792	10
optimal_loci_128484_G	1821	3.894286	12.9	2001	41.79	4	17.98153763	0.358	0.889051973	9
optimal_loci_128488_G	1155	3.894286	0	3244	50.47	4	17.80222952	0.376	0.88919864	9
optimal_loci_128505_G	1122	3.408946	14.44	3707	39.12	1	69.60586615	0.377	0.88966238	9
optimal_loci_128508_G	1377	3.408946	2.83	6465	34.64	1	69.60586615	0.192	0.889683363	9
optimal_loci_128517_G	1592	3.408946	13.51	8228	51.38	2	1.570919287	0.503	0.889791663	8
optimal_loci_128519_G	2104	3.408946	18.87	4765	42.91	2	1.570919287	0.406	0.889814114	8
optimal_loci_128579_G	1500	3.208603	14.8	1815	44.26	1	2.351402635	0.196	0.891977524	7
optimal_loci_128678_G	1330	4.448565	0	2054	36.84	3	2.962521286	0.239	0.89613127	1
optimal_loci_128771_G	1276	3.625382	5.8	4987	37.61	3	2.759717332	0.118	0.901366244	5
optimal_loci_128772_G	1046	3.625382	0	3194	30.78	3	2.759717332	0.083	0.901381635	5
optimal_loci_128775_G	1162	3.625382	21.34	2001	40.7	2	4.139575998	0.236	0.901446585	5
optimal_loci_128776_G	1142	3.71562	23.03	1001	45.7	2	4.139575998	0.313	0.90146966	5
optimal_loci_128823_G	1854	1.870192	0	1001	45.09	2	1.800589461	0.272	0.903729555	5
optimal_loci_128957_G	1124	0.530133	13.97	2820	38.87	1	0.718400452	0.191	0.907881878	2
optimal_loci_129054_G	1001	2.596095	0	1001	38.16	3	86.31756703	0	0.911583661	5
optimal_loci_129063_G	1059	5.228885	27.57	2178	53.63	3	23.40429408	0.667	0.912569189	4
optimal_loci_129067_G	1102	5.228885	0	2269	36.75	3	17.33205238	0	0.912672209	4
optimal_loci_129084_G	1261	5.228885	18.32	2792	34.81	3	23.98652266	0.09	0.913429139	5
optimal_loci_129164_G	1516	5.377074	13.39	4485	50.59	2	19.03122322	0.505	0.917117068	8
optimal_loci_129240_G	1336	14.329869	0	6152	54.11	5	43.52710853	0.609	0.91949208	8
optimal_loci_129241_G	1837	14.329869	2.07	4282	54.43	5	43.52710853	0.454	0.919502495	8
optimal_loci_129243_G	1335	14.329869	12.13	2370	48.61	5	43.52710853	0.572	0.919520861	8
optimal_loci_129255_G	1132	14.329869	0	1631	33.48	6	11.25024042	0.116	0.919995762	8
optimal_loci_129269_G	1394	14.329869	18.72	1001	37.8	3	31.85056347	0.17	0.920511943	8
optimal_loci_129270_G	1517	2.794552	0	2557	45.81	3	31.85056347	0.328	0.920523781	8

optimal_loci_129317_G	1089	2.794552	35.9	1993	37.09	5	0.842434685	0.092	0.922171603	7
optimal_loci_129396_G	1009	1.348583	29.73	3490	39.74	3	12.48289127	0.275	0.927253467	4
optimal_loci_129413_G	1066	1.079304	15.1	8415	36.02	2	17.15889008	0.125	0.927509804	4
optimal_loci_129463_G	1362	1.207893	31.79	10005	34.58	1	0.078486601	0.042	0.929009863	6
optimal_loci_129496_G	1461	1.207893	0	18782	34.22	1	53.26413211	0.175	0.930232328	8
optimal_loci_129571_G	1244	1.485285	0	11996	43.32	3	15.19887314	0.272	0.932684903	10
optimal_loci_129573_G	1417	1.485285	0	8591	39.44	3	15.19887314	0.267	0.932709493	10
optimal_loci_129585_G	1101	2.241472	0	6236	40.96	1	84.76962961	0.172	0.933098445	9
optimal_loci_129586_G	1211	2.241472	0	2685	38.64	2	42.3848148	0.115	0.933124624	9
optimal_loci_129622_G	1341	3.940308	4.62	6560	54.88	3	6.35298416	0.509	0.934555176	8
optimal_loci_129653_G	1116	4.296468	0	6521	37	1	0.088239714	0.12	0.935474112	8
optimal_loci_129662_G	1232	4.32355	7.71	6598	36.6	4	8.497624401	0.109	0.935578517	8
optimal_loci_129663_G	1069	4.32355	0	5320	39.85	4	8.497624401	0.211	0.93558948	8
optimal_loci_129793_G	1465	3.983841	34.06	11781	40.34	2	12.41773026	0.325	0.941449804	7
optimal_loci_129807_G	1314	3.796356	2.13	6122	39.42	3	12.46467482	0.038	0.941675039	7
optimal_loci_129812_G	2360	3.796356	0	3704	42.24	2	35.28247761	0.365	0.941818093	7
optimal_loci_129846_G	1304	2.747528	9.82	9363	57.82	1	15.29094785	0.525	0.943112857	7
optimal_loci_129849_G	1860	2.742141	0	4396	53.92	1	15.29094785	0.684	0.943146416	7
optimal_loci_129866_G	1014	2.218016	0	9063	54.53	1	15.29094785	0.78	0.94329599	7
optimal_loci_129894_G	1010	0.80332	0	4699	44.45	3	6.17892546	0.34	0.945161355	11
optimal_loci_129949_G	1127	0.237623	0	2677	32.56	3	10.32657005	0	0.947337935	7
optimal_loci_129983_G	1015	0.320021	0	1334	39.01	3	12.10420311	0.197	0.948193008	9
optimal_loci_129984_G	1901	0.320021	21.25	2001	39.76	4	9.73159355	0.149	0.948232304	9
optimal_loci_129998_G	1064	0.320021	6.48	13084	49.62	1	2.613764871	0.352	0.948475897	9
optimal_loci_130011_G	1452	2.074055	17.29	1537	48.48	1	40.25478744	0.275	0.949146796	8
optimal_loci_130014_G	1109	2.074055	12.8	5120	59.33	1	40.25478744	0.392	0.949174055	8
optimal_loci_130118_G	1150	0.292894	0	1001	31.56	5	44.23087748	0.147	0.951482026	7
optimal_loci_130128_G	1098	4.39774	0	1122	48.45	2	78.71941345	0.381	0.951997142	7
optimal_loci_130272_G	1000	3.190607	0	2294	53.7	2	114.9074331	0.553	0.959173905	7
optimal_loci_130317_G	2115	3.363991	0	1619	45.91	3	24.92407881	0.42	0.960601726	7
optimal_loci_130348_G	1459	3.50156	0	2711	43.45	1	25.43299669	0.27	0.961324458	10
optimal_loci_130353_G	1182	3.616659	0	5284	41.37	1	1.264912316	0.207	0.961491073	10
optimal_loci_130391_G	1202	3.61333	9.07	4067	44.75	1	6.832817341	0.288	0.962660625	10

optimal_loci_130404_G	1009	3.678618	20.12	5612	41.52	1	14.03136204	0.422	0.962968118	10
optimal_loci_130405_G	1554	3.678618	0	3767	36.16	1	14.03136204	0.044	0.962978009	10
optimal_loci_130447_G	1529	3.082673	0	1001	39.24	2	8.483973245	0.021	0.964512387	9
optimal_loci_130452_G	1061	3.30523	6.13	4117	34.3	2	8.483973245	0.121	0.96457488	9
optimal_loci_130457_G	1017	3.30523	0	3407	43.55	2	8.483973245	0.299	0.964621425	9
optimal_loci_130540_G	1896	2.88584	6.28	8216	35.39	2	4.729089955	0.189	0.967960602	4
optimal_loci_130666_G	1039	0.954189	0	6839	37.43	1	1.42162878	0	0.971852198	3
optimal_loci_130675_G	1091	0.980203	0	15109	37.85	1	7.121792745	0.09	0.97251682	3
optimal_loci_130688_G	1548	0.689511	0	14142	36.75	2	5.391416695	0.12	0.97338084	4
optimal_loci_130752_G	1589	3.337613	19.45	2001	40.02	2	2.749075785	0.18	0.97672074	4
optimal_loci_130777_G	1419	4.221166	19.45	2197	40.87	4	4.109283093	0.273	0.977918768	5
optimal_loci_130785_G	1565	4.216929	0	3870	38.53	1	49.05459414	0.022	0.978418372	5
optimal_loci_130824_G	1768	3.621243	0	2002	35.63	3	0.013032351	0	0.980649805	6
optimal_loci_130840_G	1289	4.252115	32.2	3870	34.98	1	0.109826069	0.032	0.981699058	6
optimal_loci_130888_G	1668	4.245	0	11512	37.47	3	46.95041566	0.064	0.983582432	5
optimal_loci_130897_G	1039	4.245	0	2286	37.92	4	40.29911578	0.074	0.983657409	5
optimal_loci_130943_G	1216	1.97504	23.93	16097	34.53	1	12.19515724	0.136	0.986838035	4
optimal_loci_130967_G	1168	2.688817	0	2122	41.6	5	10.20076422	0.188	0.987676097	3
optimal_loci_131035_G	1716	0.581406	0	1001	37.93	3	2.595131653	0.201	0.991102903	2
optimal_loci_131332_G	1052	0.681654	30.51	5120	39.73	1	2.346964998	0.133	0.995176258	2
optimal_loci_131346_G	1366	1.164085	3.51	11860	41.72	2	1.91475527	0.247	0.994325204	2
optimal_loci_131459_G	2036	1.762211	0	1001	41.4	4	3.346704666	0.132	0.987952469	1
optimal_loci_131605_G	1796	2.300563	22.61	2001	45.71	2	6.41424284	0.391	0.981183333	5
optimal_loci_131609_G	1058	2.667337	0	3377	26.55	2	6.41424284	0.116	0.981009972	5
optimal_loci_131623_G	1507	3.520287	6.5	3547	42.4	5	1.834819545	0.264	0.980642232	5
optimal_loci_131632_G	1544	4.683605	0	3617	40.34	6	1.640764931	0.234	0.980366401	5
optimal_loci_131696_G	1035	6.503542	0	5276	42.41	2	3.320696549	0.175	0.97648641	7
optimal_loci_131802_G	1543	9.046044	12.77	1609	37.58	2	2.431915449	0.156	0.972239867	10
optimal_loci_131819_G	1104	8.844509	4.98	6426	38.4	2	2.431915449	0.159	0.972050389	10
optimal_loci_131858_G	1291	8.614337	0	15970	37.95	1	53.29644046	0.141	0.971218262	12
optimal_loci_131859_G	2442	8.614337	0	13184	34.43	1	53.29644046	0.1	0.971191804	12
optimal_loci_131861_G	1775	8.614337	6.76	9270	37.74	1	53.29644046	0.223	0.971154634	12
optimal_loci_131865_G	1339	8.614337	0	5261	39.43	1	53.29644046	0.159	0.971116562	12

optimal_loci_131868_G	1154	8.614337	12.48	2242	38.38	1	53.29644046	0.375	0.971087892	12
optimal_loci_131891_G	1978	7.689007	0	2686	41.75	1	179.8552479	0.259	0.970411814	13
optimal_loci_131984_G	1266	9.537879	27.01	2001	36.25	4	16.30825007	0.194	0.968851244	14
optimal_loci_132051_G	1133	5.396735	0	2001	41.21	7	7.100519233	0.335	0.967042308	12
optimal_loci_132052_G	1654	5.396735	21.4	1641	44.61	7	7.100519233	0.298	0.967024824	12
optimal_loci_132055_G	2593	5.670676	0	2716	35.55	1	3.172548861	0.151	0.966648585	12
optimal_loci_132069_G	1130	4.384593	21.59	6596	41.32	4	3.894387945	0.147	0.965982232	7
optimal_loci_132101_G	1314	4.213742	5.02	3027	47.71	3	8.628767514	0.36	0.964476021	9
optimal_loci_132203_G	1261	4.058497	0	5952	41.47	4	6.776792005	0.236	0.960151339	5
optimal_loci_132208_G	1782	4.058497	0	1001	35.4	3	0.232544505	0.152	0.960080237	5
optimal_loci_132212_G	1290	4.058497	14.65	2001	38.52	2	0.348816757	0.298	0.960017531	5
optimal_loci_132256_G	1027	4.894376	0	1749	38.26	3	17.09145572	0.105	0.957424245	11
optimal_loci_132358_G	1241	5.449586	16.6	2661	41.01	3	0.034827694	0.199	0.955049791	11
optimal_loci_132378_G	1082	5.204372	0	4181	41.49	3	11.61513894	0.184	0.954483533	11
optimal_loci_132401_G	1167	5.204372	0	9908	38.56	6	0.012608178	0.148	0.954207113	11
optimal_loci_132417_G	1141	5.204372	23.58	1956	46.71	6	2.982767441	0.506	0.954043476	11
optimal_loci_132435_G	1377	5.178467	0	2423	40.95	4	33.42151784	0.196	0.953683333	11
optimal_loci_132449_G	1093	4.822236	0	4066	36.32	2	6.690642573	0.273	0.953430009	11
optimal_loci_132451_G	1787	4.822236	19.36	1254	39.95	2	6.690642573	0.327	0.953403305	11
optimal_loci_132475_G	1076	5.600031	0	2960	41.91	4	11.97902888	0.296	0.952545214	12
optimal_loci_132477_G	1016	5.600031	0	2593	40.05	4	11.97902888	0.309	0.95252528	12
optimal_loci_132478_G	1430	5.600031	18.46	1001	41.11	4	11.97902888	0.316	0.952510161	12
optimal_loci_132563_G	1254	3.796758	21.61	2206	51.59	3	3.357133457	0.549	0.948571083	7
optimal_loci_132570_G	1097	3.796758	8.57	5545	39.38	4	1.690185295	0.124	0.948479734	7
optimal_loci_132647_G	1791	2.647782	0	17368	55.94	1	0.113760312	0.709	0.944504103	8
optimal_loci_132651_G	1022	2.568351	0	2919	40.7	2	1.474454921	0.209	0.944167369	8
optimal_loci_132677_G	1174	4.875804	16.61	3637	39.94	2	9.458449701	0.342	0.943476942	8
optimal_loci_132684_G	1133	4.875804	0	3694	35.3	5	4.007371632	0.198	0.943248623	8
optimal_loci_132688_G	1357	4.875804	0	2071	37.73	4	0.741245399	0.195	0.943076011	8
optimal_loci_132738_G	1143	5.824278	2.45	6541	32.63	1	0.908315347	0.089	0.941370703	14
optimal_loci_132781_G	1042	4.966134	0	5054	38.57	4	7.068621726	0.226	0.938943495	13
optimal_loci_132782_G	1409	4.966134	0	6208	37.82	3	6.65251045	0.366	0.93892905	13
optimal_loci_132816_G	1279	4.649727	0	6655	37.13	1	11.46963483	0.198	0.938035888	12

optimal_loci_132819_G	2579	4.649727	0	2001	36.87	1	11.46963483	0.156	0.93799169	13
optimal_loci_132822_G	1185	4.649727	0	4836	45.99	3	7.495686068	0.288	0.937838984	13
optimal_loci_132840_G	3019	5.051751	12.39	1665	34.84	2	48.34091575	0.083	0.93702359	13
optimal_loci_132843_G	2140	4.40511	0	12864	39.62	1	40.13881237	0.163	0.936925584	13
optimal_loci_132845_G	1916	4.40511	0	15959	33.55	1	40.13881237	0.134	0.936898319	13
optimal_loci_132901_G	1297	2.597625	33.77	2577	36.08	4	2.209162043	0.148	0.935086258	13
optimal_loci_132947_G	2043	2.703185	4.36	1793	40.23	3	6.83394289	0.15	0.933404292	12
optimal_loci_132948_G	1066	2.703185	8.35	2001	39.3	3	6.83394289	0.073	0.933393466	12
optimal_loci_132949_G	1076	2.703185	15.43	5107	39.4	2	4.674219817	0.188	0.933237654	11
optimal_loci_133080_G	1730	2.384243	0	5846	33	1	11.43464048	0.158	0.930616904	6
optimal_loci_133102_G	1045	1.932006	8.8	10970	33.77	1	0.060692001	0.246	0.929247075	5
optimal_loci_133408_G	2331	3.94605	0	11438	42.81	1	20.61300748	0.348	0.908394055	6
optimal_loci_133439_G	1066	4.660472	34.9	2001	32.73	4	10.51363413	0.099	0.907407445	6
optimal_loci_133450_G	1095	4.863953	7.49	1203	40	1	6.669761224	0.386	0.906363362	7
optimal_loci_133462_G	1034	4.863953	0	16724	33.26	1	35.28135119	0	0.905856192	7
optimal_loci_133490_G	1484	4.989573	0	12973	45.82	2	1.070836912	0.382	0.904971852	7
optimal_loci_133502_G	1169	4.989573	19.85	6717	34.3	2	2.702637536	0.226	0.904578044	7
optimal_loci_133576_G	1206	5.905701	23.55	1401	34.41	2	0.058410659	0.174	0.901737635	8
optimal_loci_133658_G	1505	6.123902	0	7523	43.78	3	2.634035529	0.417	0.898925366	4
optimal_loci_133662_G	1433	6.123902	0	3678	45.35	3	2.634035529	0.287	0.898888851	4
optimal_loci_133665_G	1040	6.123902	0	1146	38.55	3	2.634035529	0.012	0.898809449	4
optimal_loci_133801_G	1296	3.446106	30.48	2726	39.89	1	1.158079822	0.163	0.893054435	3
optimal_loci_133810_G	1386	3.39408	0	6713	34.92	1	1.158079822	0.117	0.892924777	3
optimal_loci_133813_G	1370	3.325638	0	8742	53.21	1	1.158079822	0.63	0.89290566	3
optimal_loci_133945_G	1173	2.064251	27.37	3519	36.31	1	10.55535901	0.235	0.887623542	4
optimal_loci_133947_G	1042	2.064251	0	6916	42.51	1	10.55535901	0.203	0.887592526	4
optimal_loci_134004_G	1475	1.373921	29.36	10211	45.69	1	11.38830358	0.278	0.88535151	4
optimal_loci_134039_G	2042	0.919536	1.37	3661	33.93	2	5.150542023	0.111	0.884016059	4
optimal_loci_134273_G	1707	1.07218	4.63	18546	52.78	1	230.8263123	0.462	0.872563827	1
optimal_loci_134374_G	2160	3.510306	0	7204	36.52	1	0.716779285	0.169	0.866766059	3
optimal_loci_134377_G	1100	3.510306	0	3513	49.27	1	0.716779285	0.512	0.866731007	3
optimal_loci_134378_G	1211	3.510306	8.18	2152	31.46	1	0.716779285	0.223	0.866718082	3
optimal_loci_134539_G	1316	2.546136	0	9499	47.26	1	14.54958954	0.508	0.860429801	2

optimal_loci_134544_G	1144	2.546136	0	13453	39.68	2	9.699946831	0.149	0.860312545	2
optimal_loci_134810_G	2012	1.172884	17.15	4755	37.72	1	10.93901172	0.178	0.8496785	5
optimal_loci_134830_G	1165	1.514368	32.27	13719	40.08	1	9.085555896	0.163	0.848414217	6
optimal_loci_134853_G	1065	1.506985	0	2001	40.09	1	23.69184809	0.199	0.846835337	6
optimal_loci_134861_G	1662	1.506985	0	2033	46.38	2	9.842418425	0.587	0.846459117	6
optimal_loci_134885_G	1769	0.984704	0	7775	41.66	2	0.037166867	0.318	0.845093808	7
optimal_loci_134904_G	1052	0.701252	13.21	1352	43.15	1	2.128590795	0.258	0.844455518	6
optimal_loci_134993_G	2852	1.274329	0	5088	39.97	1	13.23284359	0.136	0.840449791	3
optimal_loci_135093_G	1328	1.841197	19.05	5894	41.26	1	1.142547466	0.309	0.835049962	1
optimal_loci_135280_G	1224	1.959903	9.64	15471	46.48	1	33.76928983	0.36	0.828997987	1
optimal_loci_135413_G	1507	1.634493	17.52	1783	34.7	4	45.19078194	0	0.823630674	2
optimal_loci_135476_G	1049	1.351397	8.67	23522	42.99	1	2.10902829	0.349	0.82015585	3
optimal_loci_135533_G	1267	1.008605	0	3204	38.75	1	14.56143021	0.181	0.818444986	2
optimal_loci_135655_G	2802	0.035436	23.95	2714	38.57	1	0.433546484	0.271	0.811396201	2
optimal_loci_135697_G	1249	0.617158	0	3152	56.84	1	10.04144049	0.44	0.808382764	2
optimal_loci_135845_G	1426	2.605959	0	3886	36.46	2	1.456574293	0.206	0.797465024	1
optimal_loci_136086_G	3484	0.658666	0	4381	34.98	2	25.70024146	0.057	0.785992507	4
optimal_loci_136109_G	1509	0.234225	0	1306	32.8	1	3.385430756	0.117	0.785116657	4
optimal_loci_136110_G	1009	0.234225	27.25	3701	35.18	1	3.385430756	0.099	0.785098661	4
optimal_loci_136152_G	1281	0.011706	0	19586	26.85	1	3.75573775	0.121	0.782877388	8
optimal_loci_136219_G	1932	0.012393	0	7544	36.95	1	0.777821556	0.167	0.780065774	8
optimal_loci_136225_G	1026	0.012393	30.02	3661	58.67	1	0.777821556	0.542	0.780028898	8
optimal_loci_136231_G	2154	0.012393	25.95	2015	42.47	3	1.337413504	0.181	0.779700532	8
optimal_loci_136247_G	1721	0.012393	8.37	10520	33.52	2	0.183149399	0.327	0.778116562	8
optimal_loci_136275_G	1313	1.767127	0	14020	41.58	1	3.873442664	0.172	0.777686638	7
optimal_loci_136311_G	1169	1.767127	18.48	2002	34.64	1	22.92700678	0.242	0.775656211	7
optimal_loci_136318_G	1173	1.767127	38.7	16857	47.39	1	22.92700678	0.384	0.775322678	7
optimal_loci_136716_G	1296	0.348347	22.38	5770	32.56	3	26.21881803	0.079	0.756407028	2
optimal_loci_136760_G	1816	0.510529	28.19	10024	35.57	3	1.197206617	0.084	0.75304095	3
optimal_loci_136789_G	1232	0.470878	24.51	9811	36.28	2	17.74234503	0.046	0.751466078	3
optimal_loci_136871_G	1219	0.446287	36.83	8972	46.51	2	10.74722105	0.258	0.748208234	4
optimal_loci_136884_G	1508	0.509857	19.89	1693	32.75	3	4.658827832	0.125	0.746608215	3
optimal_loci_136909_G	1437	0.457924	0	10914	37.23	2	4.327523678	0.199	0.745392963	3

optimal_loci_137076_G	1284	0.134784	0	1001	58.33	3	1.0382422	0.679	0.734263875	1
optimal_loci_137250_G	1195	0.195893	33.72	16621	45.85	1	6.761215945	0.347	0.72637246	2
optimal_loci_137288_G	2578	0.405494	39.64	18645	33.51	1	6.37894121	0.148	0.724527047	2
optimal_loci_137489_G	1459	0.343124	2.26	6423	43.66	1	0.426015487	0.382	0.716051994	1
optimal_loci_137604_G	1145	1.266448	0	2595	44.89	1	2.464144614	0.113	0.711031567	3
optimal_loci_137606_G	1261	1.266448	27.68	6844	37.82	1	2.464144614	0.125	0.710922251	3
optimal_loci_137664_G	1051	1.041735	0	6312	45	2	31.88357623	0.246	0.706373599	8
optimal_loci_137693_G	3392	0.94655	20.99	4070	45.04	5	8.629299032	0.362	0.704441035	7
optimal_loci_137708_G	1334	0.940201	0	1001	41.97	1	76.63367966	0.428	0.703219193	7
optimal_loci_137709_G	1151	0.940201	0	2409	41.7	1	76.63367966	0.282	0.703207559	7
optimal_loci_137713_G	1555	0.940201	14.86	7082	44.95	2	38.31683983	0.335	0.703159345	7
optimal_loci_137731_G	1102	0.729266	3.45	2322	46.73	1	0.030060293	0.303	0.702280513	8
optimal_loci_137801_G	1297	0.54044	12.49	2738	43.4	1	11.01857171	0.357	0.700168746	7
optimal_loci_137845_G	2934	0.011394	14.96	10520	41.17	1	0.143540892	0.367	0.697700912	3
optimal_loci_138642_G	1122	1.235952	0	2835	44.38	6	5.135781045	0.475	0.649427645	4
optimal_loci_138653_G	1038	1.164067	0	1960	43.25	2	19.45447632	0.24	0.648525973	4
optimal_loci_138689_G	1889	0.842614	5.77	11726	35.83	1	3.614165813	0.276	0.645912754	5
optimal_loci_138700_G	1054	0.842614	0	2150	43.45	2	14.17743424	0.496	0.645508405	5
optimal_loci_138738_G	1329	0.626999	35.13	1476	40.63	1	0.05550816	0.296	0.641698841	3
optimal_loci_138952_G	1460	0.905718	13.56	2732	37.26	2	5.767806748	0.241	0.630057702	3
optimal_loci_138985_G	2505	0.713022	13.41	7963	40.39	2	7.686015538	0.303	0.627165802	3
optimal_loci_138993_G	2682	0.243185	5.22	2030	42.35	2	48.53604192	0.227	0.62642528	3
optimal_loci_139322_G	1005	0.064994	0	8529	53.03	1	4.620770115	0.721	0.602548025	2
optimal_loci_139359_G	1307	0.182869	13.01	2192	36.34	2	9.918529513	0.058	0.599784406	2
optimal_loci_139485_G	1521	0.274608	0	5644	46.81	2	12.28282104	0.337	0.593487645	2
optimal_loci_139557_G	1348	0.336592	35.16	3450	40.43	3	0.7140649	0.262	0.590069877	4
optimal_loci_139634_G	1015	0.377667	6.4	10006	32.41	1	1.002314112	0.06	0.585901785	3
optimal_loci_139637_G	1109	0.377667	12.44	7666	46.25	2	3.725723076	0.482	0.585528414	3
optimal_loci_139762_G	1437	0.257628	14.2	3935	45.85	1	0.257102836	0.33	0.577357075	2
optimal_loci_139764_G	1022	0.257628	0	2001	56.65	1	0.257102836	0.753	0.577338708	2
optimal_loci_140389_G	1622	0.152955	26.14	3904	39.51	1	18.35359027	0.329	0.542590085	1
optimal_loci_141963_G	1372	0.146021	0	18255	54.44	1	2.742190676	0.415	0.453259639	2
optimal_loci_142025_G	1162	0.143765	0	15941	44.06	1	0.661259257	0.424	0.449860313	2

optimal_loci_142143_G	1122	0.137832	0	17269	33.68	2	1.308659786	0.052	0.444301643	1
optimal_loci_142744_G	1049	0.015546	36.03	9241	38.13	2	1.661991749	0.08	0.408116543	2
optimal_loci_142752_G	1298	0.015546	3.78	12044	45.91	2	1.661991749	0.268	0.407840579	2
optimal_loci_143055_G	2161	0.041782	38.87	11005	43.91	1	0.505949159	0.371	0.391110361	1
optimal_loci_143731_G	1584	0.087083	0	7762	41.72	1	176.4965014	0.27	0.350286372	4
optimal_loci_143777_G	1157	0.093783	0	13627	36.47	1	16.19311723	0.17	0.347074805	4
optimal_loci_143779_G	1602	0.093783	1.81	4441	38.51	2	8.6936098	0.134	0.346812688	4
optimal_loci_143784_G	1393	0.07254	0	2179	41.34	2	8.6936098	0.164	0.346682564	4
optimal_loci_143849_G	1081	0.034114	0	4371	39.68	1	0.176391887	0.157	0.340923932	1
optimal_loci_144083_G	1070	0.021655	32.9	2375	42.8	1	16.36436873	0.288	0.327185793	3
optimal_loci_144125_G	1439	0.02137	12.02	14642	35.02	2	2.190054031	0.236	0.325350997	3
optimal_loci_144167_G	1317	0.011559	0	2575	45.02	2	0.541360199	0.262	0.323751709	3
optimal_loci_145661_G	1467	0.210258	0	2818	40.35	2	5.844657868	0.141	0.225068794	2
optimal_loci_145696_G	1440	0.297337	37.64	10744	38.81	2	51.55152018	0.23	0.223418205	2
optimal_loci_145798_G	2392	0.404242	0	1721	32.94	2	0.03520484	0.105	0.217816686	4
optimal_loci_145828_G	1203	0.396736	20.95	6534	34.58	1	73.39037653	0	0.215933789	4
optimal_loci_145842_G	2094	0.396736	0	18895	48.18	1	5.106747491	0.383	0.214957892	4
optimal_loci_145861_G	1937	0.412409	9.71	1290	30.4	2	12.66657073	0.113	0.213916515	6
optimal_loci_145950_G	1192	0.068969	0	7607	50.75	2	177.6722775	0.51	0.209981282	3
optimal_loci_145958_G	1437	0.068969	35.21	16292	36.04	1	16.2263167	0.16	0.209719582	3
optimal_loci_151664_G	1035	0.21345	34.2	3421	32.94	2	1.005029473	0.051	0.143217494	1
optimal_loci_151807_G	2281	0.063399	0	3976	34.23	2	5.735885921	0.066	0.147018932	1
optimal_loci_152337_G	2390	0.055303	0	2945	51.79	1	19.87891117	0.398	0.17679303	1
optimal_loci_152901_G	2942	0.065307	11.32	1001	34.39	1	15.59616825	0.049	0.202099969	1
optimal_loci_153296_G	2531	0.053223	29.79	10845	35.32	1	9.111673717	0.115	0.220098063	1
optimal_loci_153894_G	1629	0.151554	4.54	2001	45.11	2	3.746844386	0.406	0.250267563	1
optimal_loci_154285_G	1532	1.59459	0	19929	45.62	1	8.060565028	0.258	0.270047837	3
optimal_loci_154390_G	2236	2.789566	31.17	2109	33	2	99.52481283	0.059	0.273125035	3
optimal_loci_154391_G	1241	2.789566	6.29	1001	52.37	2	99.52481283	0.433	0.273175	3
optimal_loci_154770_G	2124	0.357022	5.08	6560	45.15	2	4.740515565	0.465	0.29014841	3
optimal_loci_154805_G	1740	0.418893	5.06	2069	47.7	2	9.293132204	0.305	0.291914339	3
optimal_loci_154824_G	1209	0.637938	4.3	2038	29.36	1	6.318888299	0.067	0.292734212	3
optimal_loci_155031_G	1747	0.538084	0	11918	43.44	2	1.630830534	0.264	0.302063475	1

optimal_loci_155124_G	1454	0.451306	21.25	2001	35.69	2	0.219516141	0.089	0.306422193	5
optimal_loci_155133_G	2340	0.424573	9.7	7265	39.35	2	0.235678272	0.166	0.307007965	5
optimal_loci_155162_G	1647	0.317313	0	14921	36.18	1	0.071659859	0.162	0.307620559	5
optimal_loci_155217_G	1863	0.156958	1.61	1071	45.3	3	0.049135409	0.231	0.308849382	5
optimal_loci_155222_G	2404	0.156958	9.03	2793	36.27	3	0.049135409	0.323	0.308930786	5
optimal_loci_155801_G	1349	0.739224	0	2001	45.14	1	41.54082346	0.359	0.334686217	4
optimal_loci_155807_G	1125	0.739224	20.09	5680	34.84	1	41.54082346	0.213	0.334713394	4
optimal_loci_155814_G	1227	1.038125	0	8556	32.68	2	15.51638267	0.177	0.335498511	4
optimal_loci_155853_G	1887	1.552126	8.27	7313	51.93	5	6.127509621	0.481	0.337080261	7
optimal_loci_155922_G	1155	2.297014	0	2595	41.64	1	0.282451138	0.264	0.339599225	5
optimal_loci_155924_G	1890	2.281794	6.46	1177	39.94	1	0.282451138	0.315	0.33964348	5
optimal_loci_155931_G	1217	2.273589	3.37	9350	48.23	1	0.282451138	0.38	0.339703854	5
optimal_loci_156007_G	1096	1.513409	0	11635	40.05	1	159.2008283	0.255	0.342343218	6
optimal_loci_156064_G	1328	1.381597	2.26	19141	49.92	1	0.067346206	0.275	0.344193913	4
optimal_loci_156071_G	1361	1.721654	0	1164	49.52	1	0.067346206	0.331	0.344364057	4
optimal_loci_156124_G	1267	1.847856	0	3849	48.53	1	0.032990699	0.47	0.346800287	7
optimal_loci_156176_G	1035	2.620604	2.71	12254	55.07	1	1.007896296	0.443	0.348335846	6
optimal_loci_156179_G	1139	2.620604	0	9910	59.43	1	1.007896296	0.683	0.348352393	6
optimal_loci_156188_G	1507	2.620604	0	2393	45.25	1	1.007896296	0.181	0.348405202	6
optimal_loci_156199_G	1408	1.239478	0	5485	39.41	1	5.26386293	0.168	0.348860439	6
optimal_loci_156281_G	1527	0.614596	22.53	4915	32.54	2	175.8580793	0.27	0.351221189	5
optimal_loci_156385_G	1179	3.194469	3.65	6984	43	2	6.143935836	0.126	0.355844316	3
optimal_loci_156388_G	1635	2.840069	4.77	12541	45.5	1	730.3712301	0.315	0.356022306	3
optimal_loci_156393_G	1370	2.83222	2.55	2001	53.94	1	730.3712301	0.687	0.35615451	4
optimal_loci_156503_G	1398	2.987021	13.95	2397	34.33	1	43.43608945	0.13	0.359759248	3
optimal_loci_156548_G	1697	2.337073	21.51	5315	52.2	2	22.87870804	0.401	0.361343051	3
optimal_loci_156598_G	1244	1.510861	0	17311	46.86	1	5.935958859	0.446	0.363549709	2
optimal_loci_156848_G	1478	1.679143	22.12	2001	38.97	3	0.203290027	0.308	0.371470196	3
optimal_loci_156884_G	1156	2.15672	14.45	1380	44.29	1	75.23696147	0.418	0.372141191	4
optimal_loci_156894_G	1642	2.306981	1.83	4382	50.97	3	0.63962081	0.36	0.372379679	4
optimal_loci_156994_G	1295	2.415503	0	1001	45.71	5	17.02422336	0.371	0.375788729	4
optimal_loci_157006_G	1583	2.634004	5.24	5836	43.01	2	12.30748277	0.356	0.376652273	3
optimal_loci_157055_G	1234	1.975672	0	5413	48.94	1	0.362676786	0.505	0.379500083	2

optimal_loci_157215_G	1227	2.043836	0	3223	54.36	3	15.98062835	0.596	0.384345544	3
optimal_loci_157280_G	1075	1.295428	0	11459	35.9	2	12.81653573	0.238	0.386873306	5
optimal_loci_157315_G	1275	0.83237	0	3507	43.76	1	0.340361374	0.434	0.388633724	3
optimal_loci_157316_G	1284	0.83237	0	15938	41.82	1	0.340361374	0.233	0.388725551	3
optimal_loci_157478_G	1213	0.990581	0	6384	62.07	1	5.992951922	0.714	0.395630293	3
optimal_loci_157544_G	1320	1.336437	18.11	2001	41.96	1	25.9526279	0.194	0.397513113	6
optimal_loci_157567_G	1640	1.651075	21.71	2692	49.93	3	0.965091509	0.514	0.398937934	6
optimal_loci_157594_G	1323	1.89211	0	12476	55.63	2	0.081871459	0.505	0.400003482	5
optimal_loci_157615_G	1420	1.919021	20.35	2001	48.59	3	0.054580972	0.315	0.40024104	5
optimal_loci_157634_G	1013	1.931987	9.67	9448	50.54	2	3.225659721	0.678	0.40074444	5
optimal_loci_157701_G	1055	1.0272	25.5	2191	30.42	5	68.59525017	0.233	0.405718382	2
optimal_loci_157716_G	1057	1.109799	0	5453	41.72	1	7.164009145	0.254	0.406738293	2
optimal_loci_157857_G	2626	1.689406	9.86	2001	45.43	1	16.01739839	0.198	0.412292564	2
optimal_loci_157922_G	1063	1.86511	11.76	1068	37.44	2	0.144637597	0.211	0.415492584	2
optimal_loci_157993_G	1138	2.199724	12.21	1811	48.76	2	0.109739655	0.413	0.419317129	1
optimal_loci_158063_G	1594	0.918346	5.21	2001	51.06	2	8.980367734	0.49	0.423267747	2
optimal_loci_158084_G	1597	0.45362	5.64	1368	40.95	6	4.428149977	0.16	0.42509809	3
optimal_loci_158148_G	1093	2.177851	17.2	1081	48.12	4	1.171394018	0.536	0.428407541	3
optimal_loci_158162_G	1574	2.177851	20.08	14311	50.38	2	0.271226807	0.617	0.429114836	2
optimal_loci_158474_G	1513	1.021396	0	4691	54.32	3	14.90921109	0.488	0.439738629	4
optimal_loci_158487_G	1401	1.021396	0	1296	37.4	2	48.96717145	0.087	0.440221618	4
optimal_loci_158515_G	1196	1.548322	32.02	7337	49.33	2	10.6659207	0.41	0.44130833	4
optimal_loci_158526_G	1177	1.424397	0	2001	41.71	3	4.910850869	0.2	0.442317353	4
optimal_loci_158719_G	1047	0.671147	0	2618	52.62	3	16.9413519	0.64	0.448839509	6
optimal_loci_158723_G	1945	0.662613	1.54	2617	58.92	4	7.026340292	0.558	0.449171028	7
optimal_loci_158724_G	1085	0.662613	0	1499	48.01	4	7.026340292	0.223	0.44918564	7
optimal_loci_158740_G	1134	0.876159	17.9	10651	46.29	4	9.86603085	0.347	0.450026055	7
optimal_loci_158784_G	1052	0.876159	11.69	1001	36.59	2	9.982021438	0.137	0.451438355	7
optimal_loci_158803_G	1348	0.792225	31.9	6054	43.99	2	0.073816706	0.227	0.452063655	7
optimal_loci_158825_G	1193	0.807754	0	2936	46.26	2	1.243561829	0.159	0.452811349	6
optimal_loci_159036_G	1036	0.569473	38.8	2544	44.3	2	1.996722854	0.158	0.467695451	1
optimal_loci_159103_G	1069	0.841423	15.34	1001	38.63	4	87.1609349	0.263	0.471826363	2
optimal_loci_159105_G	1711	0.86576	26.01	1001	34.07	3	0.77323855	0.11	0.472188361	2

optimal_loci_159200_G	1122	2.333163	0	1001	44.29	5	2.987708248	0.272	0.478017692	4
optimal_loci_159206_G	1042	1.927979	0	2001	41.93	2	42.12625663	0.269	0.478842994	4
optimal_loci_159220_G	1467	1.823043	39.47	8347	45.67	1	3.223119473	0.413	0.479786414	4
optimal_loci_159235_G	1325	1.827713	0	1001	38.64	1	4.321815338	0.185	0.480362095	4
optimal_loci_159308_G	1157	3.302544	0	1001	45.28	4	3.076852788	0.408	0.484554592	3
optimal_loci_159350_G	1157	3.639672	0	2001	50.38	3	4.309154299	0.436	0.486153775	3
optimal_loci_159391_G	1460	2.312772	4.32	11415	55.41	1	0.029593301	0.68	0.487701515	8
optimal_loci_159501_G	1259	2.064171	0	3064	38.84	2	0.243662702	0.102	0.490120829	8
optimal_loci_159519_G	1457	2.294056	16.82	6820	32.6	1	10.14659406	0.158	0.490597946	8
optimal_loci_159522_G	1258	2.294056	0	4543	47.37	1	10.14659406	0.301	0.490616236	8
optimal_loci_159525_G	1070	2.294056	15.61	2527	56.16	1	10.14659406	0.554	0.490632517	8
optimal_loci_159527_G	1186	2.294056	19.06	1001	39.46	1	10.14659406	0.181	0.490642933	8
optimal_loci_159603_G	1741	3.307841	4.94	6281	56.97	2	94.16707403	0.64	0.492501103	7
optimal_loci_159605_G	2972	3.307841	3.47	8789	53.29	3	62.77804936	0.478	0.492519629	7
optimal_loci_159726_G	3112	2.233782	4.37	1001	38.07	4	46.03036734	0.216	0.49659703	2
optimal_loci_159795_G	2853	2.296878	3.54	2053	45.84	4	3.464231912	0.453	0.500061696	5
optimal_loci_159805_G	1019	2.022229	31.6	10844	39.35	1	11.44202609	0.064	0.500381677	4
optimal_loci_159834_G	1671	1.906596	0	1235	43.62	5	30.38708549	0.246	0.501636199	4
optimal_loci_159841_G	1180	1.906596	22.88	1992	36.27	5	3.26761272	0.183	0.501921521	4
optimal_loci_159954_G	1359	2.534425	0	1001	55.7	2	3.517643661	0.628	0.507800079	9
optimal_loci_159965_G	1900	2.820214	0	1919	45.63	2	29.21915684	0.336	0.508652454	11
optimal_loci_159987_G	1577	3.426591	18.45	4514	39.69	2	27.06442492	0.174	0.509881431	11
optimal_loci_159988_G	1574	3.426591	11.25	2654	58.57	2	27.06442492	0.462	0.509895193	11
optimal_loci_159993_G	1501	3.426591	39.84	1520	32.11	2	27.06442492	0	0.509997496	11
optimal_loci_160000_G	1317	3.517411	24.68	1001	55.73	2	1.220388089	0.361	0.510603294	11
optimal_loci_160006_G	1702	3.517411	0	10495	54.34	1	0.042519257	0.566	0.510917195	11
optimal_loci_160010_G	1030	3.650194	19.22	3350	60.19	1	0.042519257	0.594	0.510974939	11
optimal_loci_160011_G	1436	3.650194	0	1001	55.29	1	0.042519257	0.601	0.510989292	11
optimal_loci_160026_G	1384	1.150371	0	2585	50.86	1	2.820544473	0.567	0.511709935	10
optimal_loci_160028_G	1072	1.150371	18	1060	44.4	1	2.820544473	0.29	0.511723505	10
optimal_loci_160138_G	1880	0.027159	0	2737	39.94	1	1.778263358	0.205	0.516244176	1
optimal_loci_160231_G	1111	0.190415	0	7181	49.14	3	45.2119066	0.44	0.520112111	3
optimal_loci_160235_G	1418	0.186539	3.53	1527	37.16	1	8.46682769	0.169	0.520270857	3

optimal_loci_160237_G	2393	0.186539	3.34	3899	36.1	1	8.46682769	0.178	0.520288379	3
optimal_loci_160307_G	2995	2.964264	6.58	1087	56.62	1	28.69608577	0.668	0.524157504	4
optimal_loci_160318_G	1334	3.353737	0	1001	57.42	1	1.514985022	0.734	0.5246636	5
optimal_loci_160368_G	1098	4.177704	26.78	3498	43.16	2	5.950851156	0.324	0.52600811	6
optimal_loci_160371_G	2881	4.42764	0.97	2148	53.31	4	2.975425578	0.486	0.526121109	6
optimal_loci_160411_G	1238	3.00826	4.04	7804	57.51	2	1.068586984	0.642	0.528145788	6
optimal_loci_160436_G	1783	2.752382	0	4308	53.28	5	4.881364991	0.463	0.528439842	5
optimal_loci_160492_G	2160	1.450894	4.58	18815	35.74	1	13.67604459	0.078	0.531731268	6
optimal_loci_160559_G	1233	2.345865	0	5329	44.84	1	6.457370756	0.464	0.533928146	11
optimal_loci_160563_G	1510	2.813928	0	2001	56.42	1	6.457370756	0.597	0.533950684	11
optimal_loci_160576_G	1337	3.027291	19.82	2501	33.8	3	1.990332386	0.154	0.534880629	11
optimal_loci_160592_G	1239	2.68722	0	1001	35.83	5	16.02394923	0.171	0.535496658	12
optimal_loci_160593_G	1293	2.68722	15.31	1654	42.53	4	17.35064969	0.178	0.535506837	12
optimal_loci_160604_G	2509	2.929963	0	1001	48.82	4	9.767080195	0.43	0.535965797	12
optimal_loci_160614_G	1944	2.991906	0	1001	50.72	4	6.817258411	0.409	0.536576463	12
optimal_loci_160623_G	1434	3.540848	3.7	4886	58.15	4	6.817258411	0.595	0.536669148	12
optimal_loci_160625_G	1069	3.540848	30.22	3664	40.78	4	6.817258411	0.018	0.536682023	12
optimal_loci_160644_G	1381	3.540848	25.34	1001	38.08	2	0.033915007	0.154	0.537200825	12
optimal_loci_160669_G	1210	3.754164	27.69	5654	40.99	1	3.182940752	0.182	0.539075039	9
optimal_loci_160672_G	1753	3.754164	10.55	1466	43.98	1	3.182940752	0.272	0.539101965	9
optimal_loci_160710_G	1692	2.183845	0	2273	62.47	4	34.27561849	0.618	0.543041916	6
optimal_loci_160711_G	1516	2.183845	0	3998	55.67	4	34.27561849	0.582	0.543054659	6
optimal_loci_160712_G	1594	2.183845	0	5527	51.5	4	34.27561849	0.341	0.543066825	6
optimal_loci_160713_G	1183	2.183845	16.4	4223	45.9	4	34.27561849	0.428	0.543079494	6
optimal_loci_160718_G	1972	2.183845	12.47	1488	54.76	4	59.63397575	0.65	0.543156422	6
optimal_loci_160772_G	1391	1.650504	0	1174	50.68	4	4.904679439	0.49	0.544410012	7
optimal_loci_160808_G	2128	0.91147	23.12	3542	51.87	4	7.352758847	0.649	0.547416036	4
optimal_loci_160840_G	1593	0.811049	0	3231	38.79	1	14.99049574	0.287	0.548672442	3
optimal_loci_160842_G	1033	0.811049	0	5552	47.04	1	14.99049574	0.524	0.548689587	3
optimal_loci_160936_G	1024	0.823861	0	2001	43.75	2	0.97932431	0.141	0.552482464	2
optimal_loci_160953_G	1528	0.963097	9.1	2130	54.31	1	43.40187262	0.677	0.553739778	2
optimal_loci_161049_G	1243	3.207586	0	1350	38.05	3	3.64846942	0.101	0.559042795	8
optimal_loci_161065_G	1471	3.207763	1.9	2866	54.04	2	40.19820982	0.618	0.559754839	9

optimal_loci_161067_G	3499	3.207763	1.4	2459	49.58	3	27.633754	0.412	0.559776151	9
optimal_loci_161072_G	1145	3.207763	0	3077	47.16	2	31.4350188	0.365	0.559883594	9
optimal_loci_161085_G	2418	3.525489	3.39	8080	41.77	1	5.344784515	0.208	0.560648426	9
optimal_loci_161093_G	1050	3.631991	0	6787	44.47	1	23.06979845	0.289	0.561028907	9
optimal_loci_161094_G	1938	3.631991	4.18	1001	43.8	1	23.06979845	0.312	0.561065088	9
optimal_loci_161102_G	2235	2.847941	24.38	1426	37.8	2	7.019224312	0.177	0.562048058	9
optimal_loci_161119_G	1935	2.74326	8.89	2219	53.95	2	2.89304656	0.47	0.56281874	9
optimal_loci_161183_G	1235	0.310824	6.4	1130	48.5	2	33.49926354	0.542	0.566151623	3
optimal_loci_161223_G	1112	0.43137	0	3219	40.1	1	16.74368512	0.09	0.56896139	2
optimal_loci_161340_G	1056	0.037195	17.14	9311	35.98	3	10.19776346	0.129	0.574936909	2
optimal_loci_161342_G	1621	0.037195	0	6563	42.81	2	15.29664518	0.309	0.574954409	2
optimal_loci_161510_G	1046	1.90431	7.84	6339	45.79	2	2.619220665	0.233	0.584289618	5
optimal_loci_161527_G	1010	2.224456	8.22	2749	44.85	2	1.264396105	0.364	0.585153059	5
optimal_loci_161541_G	1131	2.224456	19.1	2429	37.93	1	0.104734184	0.324	0.585280654	5
optimal_loci_161570_G	1177	2.792477	20.05	8194	49.87	1	40.27829374	0.434	0.586021257	5
optimal_loci_161613_G	1330	2.566963	9.47	3539	49.32	2	1.649782421	0.467	0.587620979	6
optimal_loci_161722_G	1035	2.047858	0	1484	45.02	3	12.51537145	0.258	0.590602804	2
optimal_loci_161875_G	1019	0.01286	10.6	2001	48.18	4	4.399801337	0.338	0.597968913	1
optimal_loci_161989_G	1034	0.997205	33.27	1762	44.39	1	18.80170859	0.255	0.601976868	2
optimal_loci_162024_G	1608	0.818656	0	2633	40.42	2	54.82025997	0.287	0.604106443	2
optimal_loci_162129_G	1078	0.457003	0	2001	41.92	3	0.262012516	0.121	0.607861055	3
optimal_loci_162150_G	1136	0.451688	27.73	1516	39.7	1	0.046150691	0.173	0.608810045	3
optimal_loci_162197_G	1191	0.866178	38.71	2001	33.5	2	1.926875242	0.089	0.609998372	6
optimal_loci_162305_G	1756	1.29254	0	2012	43.9	1	1.102782913	0.271	0.613189129	6
optimal_loci_162326_G	2248	0.530107	0	18709	49.11	1	45.50407826	0.426	0.613341544	6
optimal_loci_162350_G	1139	0.530107	18.53	14471	41.43	2	22.77836057	0.398	0.613662183	6
optimal_loci_162354_G	2053	0.525217	16.03	5364	40.18	1	0.05264289	0.199	0.613722705	5
optimal_loci_162355_G	1392	0.525217	0	3867	33.54	1	0.05264289	0.095	0.613738646	5
optimal_loci_162512_G	1590	1.084973	0	1001	40.94	1	3.602782711	0.107	0.618374509	5
optimal_loci_162531_G	2349	0.448169	1.66	4371	49.72	1	0.032388318	0.568	0.619005799	7
optimal_loci_162532_G	1849	0.448169	0	2057	57.49	1	0.032388318	0.688	0.619026586	7
optimal_loci_162534_G	1087	0.549911	0	2001	38.82	1	0.032388318	0.04	0.619087329	7
optimal_loci_162551_G	1257	0.661831	2.31	1001	40.33	1	362.2877937	0.205	0.620129239	7

optimal_loci_162628_G	1313	1.133579	18.66	1488	49.96	2	0.291461491	0.386	0.622517675	7
optimal_loci_162630_G	1047	1.133579	0	2155	41.92	2	0.291461491	0.182	0.622592594	7
optimal_loci_162689_G	1228	2.48251	35.59	3252	34.28	1	0.301715917	0.107	0.624333828	6
optimal_loci_162728_G	1247	0.376962	23.82	10295	36.32	1	15.15218947	0.263	0.626800921	4
optimal_loci_162732_G	1820	0.376962	5.44	4067	34.28	2	7.883141785	0.05	0.626842694	4
optimal_loci_162738_G	1019	0.376962	16.68	2089	40.13	2	7.883141785	0.238	0.62699197	4
optimal_loci_162852_G	1026	0.204277	15.01	19158	38.59	1	0.249383602	0	0.631011324	2
optimal_loci_162954_G	1089	0.829554	3.95	2544	49.49	2	9.781407343	0.31	0.634230543	2
optimal_loci_163451_G	1164	0.015973	33.08	2054	35.91	2	1.988662431	0.005	0.650932098	1
optimal_loci_163651_G	2250	0.599673	24.18	9012	38.13	3	1.843289657	0.158	0.658054895	3
optimal_loci_163696_G	1165	0.386578	0	2001	51.07	2	4.210173808	0.424	0.660710858	3
optimal_loci_163706_G	1334	0.386578	19.94	4098	35.15	2	4.210173808	0.02	0.660786848	3
optimal_loci_163976_G	1206	0.335795	11.86	3614	36.65	2	19.8464633	0.161	0.671000169	2
optimal_loci_163992_G	1426	0.330819	4.77	3220	56.8	4	13.29300851	0.52	0.6717933	2
optimal_loci_164095_G	1542	0.378785	27.17	3970	58.88	4	27.73507414	0.542	0.67690249	3
optimal_loci_164114_G	1309	0.333556	0	13872	43.77	2	0.976795369	0.314	0.677396878	3
optimal_loci_164120_G	2062	0.333556	0	2001	42.24	1	1.953590737	0.171	0.677479007	3
optimal_loci_164326_G	1164	0.17222	3.44	2695	49.74	3	3.835306388	0.505	0.68464286	6
optimal_loci_164332_G	1186	0.217975	16.44	2001	36.76	3	2.474502374	0.043	0.685142907	7
optimal_loci_164340_G	1029	0.422263	0	7342	40.91	2	0.054798356	0.167	0.685728051	7
optimal_loci_164350_G	1437	0.453152	0	8907	50.59	1	0.527503277	0.455	0.686147054	7
optimal_loci_164362_G	1216	0.453152	6.99	8354	52.79	1	0.527503277	0.572	0.686308726	7
optimal_loci_164397_G	1413	0.690691	0	2022	35.52	1	9.59346209	0.18	0.687619056	7
optimal_loci_164416_G	1046	0.964242	4.49	2113	38.71	2	0.787101057	0.263	0.68835649	7
optimal_loci_164520_G	1296	1.029211	12.73	14469	46.21	2	1.495529476	0.43	0.691634325	2
optimal_loci_164764_G	1058	0.712241	0	1001	38.56	2	0.198094272	0.052	0.699113011	3
optimal_loci_164808_G	1096	0.473764	0	1420	52.28	4	2.526621845	0.682	0.701953537	4
optimal_loci_164809_G	1482	0.473764	0	2549	50.74	4	2.526621845	0.42	0.701961877	4
optimal_loci_164837_G	1000	0.108697	0	2001	38.7	3	4.066967065	0	0.704594741	4
optimal_loci_164911_G	1298	0.124915	0	7535	50.3	1	4.005041913	0.464	0.707506219	5
optimal_loci_164987_G	1043	0.267355	0	3830	49.56	1	5.127011227	0.494	0.710027067	4
optimal_loci_164988_G	1194	0.267355	3.27	2454	48.49	1	5.127011227	0.555	0.710036116	4
optimal_loci_165002_G	1201	0.287991	0	3370	57.28	1	0.028122461	0.569	0.710439622	4

optimal_loci_165139_G	1122	0.410016	21.84	1254	46.7	1	0.572139301	0.434	0.715928584	3
optimal_loci_165190_G	1286	0.411852	3.97	5703	43.85	2	15.37339161	0.278	0.71744357	4
optimal_loci_165218_G	1725	0.406267	8.75	12381	42.14	1	9.583350479	0.288	0.719355178	4
optimal_loci_165234_G	1513	0.406267	2.18	2248	36.81	2	1.647941891	0.169	0.719884631	3
optimal_loci_165424_G	1175	0.056108	0	10535	39.57	1	8.710616417	0.242	0.728201562	2
optimal_loci_165433_G	1543	0.056108	12.57	11733	40.44	1	1.87260785	0.226	0.728350719	2
optimal_loci_166843_G	1658	0.141179	1.75	2676	39.92	1	0.360840151	0.216	0.778473408	1
optimal_loci_166977_G	2323	0.136665	5.77	3620	45.75	2	34.72362747	0.386	0.783942602	3
optimal_loci_166984_G	1493	0.146228	0	1137	32.21	3	9.369055455	0.075	0.784562945	3
optimal_loci_166986_G	1124	0.146228	0	2496	39.94	3	9.369055455	0.082	0.784580179	3
optimal_loci_167152_G	3110	0.135131	0.9	2154	40.25	2	0.844806515	0.188	0.792385222	1
optimal_loci_167587_G	1037	0.150391	0	4246	52.84	1	0.315433617	0.683	0.811799457	2
optimal_loci_167588_G	2080	0.150391	7.55	2068	39.08	1	0.315433617	0.12	0.811807841	2
optimal_loci_167667_G	1907	0.145303	5.14	8756	43.47	1	66.60938009	0.456	0.81623384	2
optimal_loci_167691_G	1090	0.145303	12.84	15880	52.29	1	78.78707302	0.441	0.816676246	2
optimal_loci_167826_G	1619	0.060404	25.2	6872	37.12	2	5.713214945	0.051	0.82352164	2
optimal_loci_167845_G	2163	0.025018	6.52	1001	33.88	2	2.056008849	0.153	0.824195331	2
optimal_loci_168190_G	1429	0.135928	15.75	12671	33.17	1	6.515082485	0.083	0.837436593	2
optimal_loci_168236_G	1375	0.469301	0	10464	43.49	1	2.870748422	0.368	0.840111038	3
optimal_loci_168286_G	3473	0.509046	15.2	1710	44.22	2	9.240645857	0.262	0.841281489	2
optimal_loci_168380_G	1021	0.773638	9.11	1594	39.66	1	41.18401497	0.21	0.845170522	2
optimal_loci_168431_G	1639	0.777011	13.97	2862	37.58	1	0.038119272	0.222	0.848347355	2
optimal_loci_168586_G	1071	0.768576	0	2099	37.72	1	0.882320723	0.121	0.854348418	1
optimal_loci_168819_G	1282	0.096599	17.32	18487	36.19	1	5.483459851	0.249	0.864056714	2
optimal_loci_168857_G	1131	0.041765	12.29	3362	40.14	2	0.311260143	0.285	0.865097368	2
optimal_loci_169233_G	1436	0.691439	3.41	8324	39.2	1	14.94355901	0.15	0.87789875	2
optimal_loci_169239_G	1665	0.690182	0	2042	36.63	1	14.94355901	0.204	0.877943464	2
optimal_loci_169812_G	1082	0.21463	0	7628	46.76	1	0.072716696	0.57	0.897174036	2
optimal_loci_169839_G	1026	0.24238	0	2001	32.45	1	5.757380565	0.121	0.89793895	2
optimal_loci_170176_G	1364	0.742024	0	4065	37.6	1	3.469902773	0.103	0.906726016	2
optimal_loci_170193_G	1112	0.772878	8.27	1718	50.44	3	6.174509951	0.426	0.907372007	3
optimal_loci_170300_G	2806	1.099277	2.39	2354	41.41	1	25.14178974	0.265	0.910834908	3
optimal_loci_170338_G	1528	1.291649	5.82	4136	42.53	1	47.46623562	0.306	0.913278465	3

optimal_loci_170410_G	1245	0.60126	10.2	15605	42.81	2	9.753958205	0.238	0.914847827	3
optimal_loci_170476_G	1688	0.372666	0	13084	40.52	1	4.269720418	0.223	0.917940427	3
optimal_loci_170547_G	1242	0.794721	0	1458	40.74	1	51.35023773	0.286	0.92112034	3
optimal_loci_170572_G	1120	1.10307	34.29	5851	36.25	2	0.015367738	0.1	0.922188858	2
optimal_loci_170646_G	1221	2.669682	0	12392	48.15	2	14.68999676	0.342	0.926281268	4
optimal_loci_170655_G	1309	2.675913	9.32	6899	52.55	2	14.68999676	0.412	0.926321195	4
optimal_loci_170668_G	2144	2.679722	7.93	5619	50.32	1	1.957520789	0.389	0.926441211	4
optimal_loci_170759_G	1501	2.408529	7.53	3822	41.63	2	51.84654518	0.133	0.929970366	4
optimal_loci_170952_G	1009	2.161414	3.77	1001	45.19	5	11.17513711	0.557	0.939009165	2
optimal_loci_171036_G	1360	0.808171	15.22	5007	43.01	2	198.0757641	0.217	0.942093181	2
optimal_loci_171119_G	1143	3.387746	21.87	2001	39.02	2	1.761221722	0.111	0.946285693	4
optimal_loci_171120_G	1890	3.387746	0	3327	39.62	2	1.761221722	0.124	0.94631106	4
optimal_loci_171141_G	1380	3.614118	0	3285	41.44	2	10.17076553	0.291	0.947370661	5
optimal_loci_171183_G	1062	4.810016	2.92	12249	46.04	3	70.31953957	0.406	0.948593013	5
optimal_loci_171244_G	2573	5.766052	12.09	1001	39.21	3	48.28404688	0.144	0.950080896	5
optimal_loci_171326_G	1937	4.456232	11.98	6542	38.61	1	30.23497514	0.187	0.952804996	4
optimal_loci_171355_G	1136	4.222203	9.51	1232	52.2	1	71.55095467	0.434	0.953418928	4
optimal_loci_171379_G	1801	2.762931	10.88	1001	52.91	2	7.886630372	0.477	0.954601338	3
optimal_loci_171577_G	1945	3.880572	1.69	1250	43.03	2	1.03906273	0.487	0.961106946	4
optimal_loci_171599_G	1468	4.512519	9.81	2493	34.4	2	12.00679257	0.062	0.962213913	4
optimal_loci_171615_G	1596	5.331916	0	3510	54.26	4	18.18279084	0.386	0.962537063	4
optimal_loci_171635_G	1271	5.544922	0	2704	32.65	1	13.03118814	0.124	0.963119777	4
optimal_loci_171803_G	1118	8.447715	8.68	7558	34.43	3	11.95295441	0.207	0.970393896	3
optimal_loci_171814_G	1081	9.801385	29.32	7823	40.14	1	7.946838901	0.166	0.971305426	3
optimal_loci_171855_G	1080	9.138135	13.24	6099	41.2	3	9.537407006	0.238	0.973858902	6
optimal_loci_171923_G	1349	4.945275	0	5089	59.82	1	132.686346	0.628	0.975191475	4
optimal_loci_171964_G	1527	3.321432	39.88	2001	33.52	3	8.958205043	0.089	0.977176457	6
optimal_loci_171965_G	1329	3.321432	0	3862	51.69	3	3.613063865	0.392	0.977190204	6
optimal_loci_171996_G	1013	3.700822	27.84	1001	37.8	1	0.155921951	0.227	0.980199419	6
optimal_loci_171997_G	1422	3.624098	11.46	4861	39.87	2	0.094544326	0.33	0.980256003	6
optimal_loci_172015_G	1182	11.223488	31.73	1862	35.44	3	10.94684869	0.035	0.981877702	5
optimal_loci_172034_G	1189	10.168608	0	8651	34.06	3	2.036237267	0	0.98345892	5
optimal_loci_172074_G	1170	9.773439	19.91	2064	35.29	3	7.898757532	0.213	0.985003927	4

optimal_loci_172112_G	1386	9.32077	28.64	15084	39.75	2	8.802834527	0.131	0.987261089	2
optimal_loci_172219_G	1000	3.067724	0	4936	47.1	1	24.08918624	0.516	0.99166625	1
optimal_loci_172493_G	1381	0.936547	0	12465	38.66	1	6.771211744	0.077	0.992873998	2
optimal_loci_172513_G	1224	0.843439	0	1001	38.88	9	14.0691662	0.037	0.990852903	4
optimal_loci_172554_G	1433	4.613844	26.52	3461	36.35	2	0.798344746	0.053	0.987955425	3
optimal_loci_172571_G	1165	5.09895	27.64	3157	33.9	3	26.98090145	0.071	0.987030371	4
optimal_loci_172640_G	1186	7.302241	36.76	3756	34.73	5	15.18607302	0.018	0.983019189	3
optimal_loci_172656_G	1065	9.779606	4.98	4629	35.68	4	3.322894587	0.09	0.981743021	5
optimal_loci_172761_G	1012	8.009054	0	2158	52.96	7	10.1759304	0.544	0.977934252	4
optimal_loci_172777_G	1983	6.635119	10.74	3643	58.44	4	3.211410773	0.526	0.977278495	5
optimal_loci_172794_G	1121	6.711555	0	1664	43.62	4	3.723336365	0.28	0.977105601	5
optimal_loci_172865_G	1867	4.240066	39.53	2256	51.68	3	5.618866336	0.682	0.972977322	5
optimal_loci_172937_G	1204	4.180058	0	15773	28.57	2	16.39890078	0.211	0.969066295	5
optimal_loci_172938_G	1938	4.347428	35.86	1001	43.08	1	11.47441612	0.393	0.968620098	5
optimal_loci_172953_G	1631	3.68488	25.87	2558	39.23	4	0.991771548	0.299	0.967527322	4
optimal_loci_172954_G	1452	3.68488	0	1001	36.22	4	0.991771548	0.085	0.967512102	4
optimal_loci_173048_G	1595	5.026511	0	5166	54.54	2	0.025738296	0.613	0.961069863	4
optimal_loci_173102_G	1115	6.99211	0	9440	41.25	2	0.219278982	0.427	0.95950132	5
optimal_loci_173125_G	1283	8.0016	20.97	4379	38.81	4	6.232105487	0.217	0.957975982	6
optimal_loci_173131_G	1053	8.0016	0	1227	41.88	4	8.201090107	0.395	0.957900587	6
optimal_loci_173187_G	1025	9.288736	4.59	11451	44.48	4	2.009885071	0.362	0.954714008	8
optimal_loci_173208_G	1195	8.702383	8.54	2001	40.66	4	3.481360161	0.33	0.953494829	7
optimal_loci_173220_G	1705	7.78034	0	6845	57	1	30.06807843	0.565	0.951994624	5
optimal_loci_173223_G	1403	7.78034	10.55	3353	63.15	3	10.36760993	0.702	0.951865044	5
optimal_loci_173224_G	1659	7.642499	3.19	5004	44.9	4	8.0924746	0.245	0.951846403	5
optimal_loci_173336_G	1001	4.716414	35.06	2001	28.47	3	10.86697229	0.123	0.946836628	6
optimal_loci_173344_G	2561	4.555051	0	1001	35.92	1	8.633121241	0.113	0.946296334	6
optimal_loci_173358_G	1169	4.26967	8.98	3317	48.75	3	1.266826834	0.407	0.945525611	6
optimal_loci_173359_G	1153	4.26967	10.58	2001	45.44	3	1.266826834	0.237	0.945512747	6
optimal_loci_173389_G	1631	4.169173	0	2001	48.31	5	16.05679597	0.448	0.94233566	8
optimal_loci_173396_G	1078	4.169173	0	4978	42.94	5	22.81032319	0.486	0.942154223	8
optimal_loci_173455_G	1500	9.542767	0	1194	56.33	2	38.30289916	0.433	0.938356491	6
optimal_loci_173460_G	1096	9.281892	0	3911	38.95	5	5.187400961	0.256	0.93803738	6

optimal_loci_173533_G	2227	8.328142	0	3485	51.81	1	20.63512061	0.49	0.935393187	5
optimal_loci_173534_G	1354	8.328142	0	2001	56.79	1	20.63512061	0.691	0.93537868	5
optimal_loci_173599_G	1330	8.902126	0	17267	42.25	1	0.098716948	0.3	0.932130332	4
optimal_loci_173630_G	1838	4.365135	0	2862	33.13	5	7.093432544	0.216	0.929130371	4
optimal_loci_173679_G	1007	5.643601	35.35	18538	48.36	2	29.04903289	0.504	0.925474457	3
optimal_loci_173693_G	1544	4.394413	31.67	8938	52.91	3	15.35790833	0.598	0.924837752	4
optimal_loci_173764_G	1239	1.667895	11.95	15249	34.38	1	9.762941606	0.068	0.920240811	3
optimal_loci_173819_G	1269	0.785834	27.58	6160	39.95	3	0.01231343	0.204	0.916790743	2
optimal_loci_173990_G	1026	2.205733	11.79	1010	42.98	6	4.231808535	0.468	0.905952366	4
optimal_loci_174019_G	1526	2.543313	0	3679	57.86	3	8.249718743	0.54	0.903966276	7
optimal_loci_174020_G	2444	2.543313	9.29	5239	47.62	3	8.249718743	0.481	0.903942053	7
optimal_loci_174030_G	1127	2.85226	0	12742	34.25	1	6.858289605	0.125	0.903343773	7
optimal_loci_174085_G	1398	3.180409	9.16	3891	39.41	2	15.76079263	0.217	0.900205924	6
optimal_loci_174086_G	2325	3.100295	23.05	1459	52.98	3	21.18592479	0.521	0.900182151	6
optimal_loci_174088_G	1610	3.100295	4.72	1991	47.14	3	21.18592479	0.278	0.9000813	6
optimal_loci_174335_G	1802	3.249346	14.1	2507	58.37	1	12.32519884	0.563	0.884762893	10
optimal_loci_174338_G	2896	3.249346	0	12730	54.86	2	9.021054725	0.613	0.884652268	10
optimal_loci_174363_G	1579	3.354855	0	2665	44.83	1	4.337847196	0.369	0.883881046	10
optimal_loci_174367_G	1537	3.354855	0	2930	44.37	2	7.460225928	0.253	0.883793255	10
optimal_loci_174368_G	1008	3.354855	10.52	4571	52.97	2	7.460225928	0.363	0.883782385	10
optimal_loci_174369_G	1230	3.354855	26.5	5641	43.9	2	7.460225928	0.257	0.883769756	10
optimal_loci_174374_G	1667	3.530538	0	8187	51.22	2	7.460225928	0.585	0.8837135	10
optimal_loci_174389_G	2947	3.530538	0	1614	57.38	3	4.719294392	0.601	0.883446061	10
optimal_loci_174393_G	1784	3.530538	38.51	1122	29.65	4	1.165581067	0.043	0.883112825	10
optimal_loci_174450_G	1374	2.154936	11.57	2666	35.44	3	28.07562488	0.079	0.879877185	12
optimal_loci_174499_G	1230	1.257761	32.76	2544	49.34	2	7.500636276	0.36	0.877595249	3
optimal_loci_174513_G	1090	1.046931	0	12556	45.59	2	31.39283305	0.481	0.876225836	3
optimal_loci_174619_G	1086	1.59009	0	2417	44.38	3	24.82963616	0.328	0.869982864	6
optimal_loci_174632_G	1528	1.564432	10.8	2001	42.6	4	2.550924287	0.218	0.868982502	12
optimal_loci_174637_G	1794	1.564432	27.48	1384	39.85	4	2.550924287	0.161	0.868950714	12
optimal_loci_174676_G	1026	1.505423	0	2001	33.23	2	19.136425	0.033	0.866620274	17
optimal_loci_174680_G	1262	1.529207	0	3096	54.35	3	12.75761667	0.564	0.866528504	17
optimal_loci_174689_G	1726	1.587219	2.14	3236	52.08	5	13.90560453	0.578	0.865695347	17

optimal_loci_174696_G	1128	1.583348	6.29	1001	55.85	2	3.435104614	0.539	0.865082111	16
optimal_loci_174697_G	1185	1.583348	0	2528	52.15	2	3.435104614	0.494	0.865066628	16
optimal_loci_174698_G	1540	1.579285	16.43	1001	42.14	2	3.435104614	0.146	0.8650461	16
optimal_loci_174706_G	1191	1.570061	0	6063	56.08	2	3.435104614	0.549	0.864937849	16
optimal_loci_174709_G	1608	1.570061	18.84	8617	57.15	2	3.435104614	0.552	0.864908807	16
optimal_loci_174710_G	1348	1.570061	0	10360	41.02	2	3.435104614	0.209	0.864894311	16
optimal_loci_174735_G	3035	1.896131	22.08	1303	34	2	1.567391595	0.257	0.86288608	15
optimal_loci_174736_G	2105	1.896131	29.93	3454	37.9	2	695.3427454	0.329	0.862612522	15
optimal_loci_174747_G	1234	1.900519	0	8111	47.32	4	349.1356463	0.453	0.862235689	15
optimal_loci_174758_G	1000	1.902684	0	1586	54.5	2	8.425775413	0.611	0.862074624	15
optimal_loci_174762_G	1215	1.963324	5.93	2448	45.02	1	1.83839782	0.372	0.8618265	15
optimal_loci_174826_G	1725	1.074627	0	4693	47.65	2	2.436101851	0.439	0.858112903	8
optimal_loci_174916_G	1583	0.725959	4.86	1001	50.91	3	13.55872976	0.471	0.854932776	5
optimal_loci_174917_G	2538	0.595785	0	1001	48.34	3	13.55872976	0.334	0.85481957	5
optimal_loci_174953_G	1039	0.095117	9.82	2849	43.4	1	63.21839708	0.267	0.852549971	7
optimal_loci_174960_G	1157	0.095117	0	18922	41.05	1	63.21839708	0.293	0.852391701	7
optimal_loci_175022_G	1213	1.347953	0	5150	53.42	4	4.303597179	0.387	0.84891783	5
optimal_loci_175039_G	1157	1.336406	14.52	2001	38.37	5	32.1127383	0.279	0.84793738	5
optimal_loci_175041_G	1412	1.336406	15.65	5849	38.59	5	32.1127383	0.394	0.847897273	5
optimal_loci_175177_G	1425	0.680801	6.46	2001	46.59	2	142.5083478	0.331	0.840383744	1
optimal_loci_175265_G	1179	0.76231	36.13	2001	41.05	2	0.006219986	0.24	0.835353861	3
optimal_loci_175269_G	1092	0.76231	0	3166	37.45	2	0.006219986	0.111	0.835317634	3
optimal_loci_175271_G	1165	0.76231	0	1001	63.94	2	0.006219986	0.759	0.835296471	3
optimal_loci_175491_G	1053	1.13738	0	10137	42.26	1	0.353034289	0.147	0.822013881	5
optimal_loci_175514_G	1145	1.1237	0	1001	38.07	3	0.045623407	0.195	0.820393675	6
optimal_loci_175543_G	1518	1.011455	2.96	8573	43.93	2	13.60633797	0.253	0.818606109	6
optimal_loci_175546_G	1586	1.005172	1.89	6497	48.29	2	2.457125117	0.329	0.818446725	6
optimal_loci_175582_G	1256	1.183873	19.19	1001	46.33	2	7.571264774	0.526	0.817166989	7
optimal_loci_175599_G	1086	1.244657	0	11784	39.5	1	176.1773509	0	0.816389765	6
optimal_loci_175636_G	1298	0.956283	13.64	1131	43.52	4	24.89053453	0.294	0.813007918	3
optimal_loci_175817_G	1205	0.551024	0	2001	33.77	3	30.38418682	0.178	0.80537741	3
optimal_loci_175820_G	1277	0.555395	11.75	5138	36.57	3	30.38418682	0.303	0.80534219	3
optimal_loci_175846_G	1723	0.795453	29.77	4787	38.07	1	28.46033469	0.244	0.803469589	3

optimal_loci_175995_G	1129	0.612412	0	1423	35.34	3	3.707452088	0.235	0.796574829	3
optimal_loci_176011_G	2269	0.388766	0	1224	44.2	3	5.015633461	0.392	0.795525455	3
optimal_loci_176023_G	1272	0.389206	0	2482	30.18	4	20.52662264	0	0.794919629	3
optimal_loci_176218_G	1860	0.27253	35.22	18233	40.32	1	1.139169813	0.124	0.784762033	2
optimal_loci_176247_G	2467	0.225186	0	2001	31.25	1	17.38817192	0.166	0.783988192	2
optimal_loci_176374_G	1465	0.421733	0	5147	42.45	2	17.33234536	0.438	0.778728778	3
optimal_loci_176403_G	1302	0.638094	2.46	11980	59.83	1	6.663940964	0.66	0.777358152	3
optimal_loci_176454_G	1473	0.663957	0	3225	41.81	4	7.511682107	0.336	0.775136207	4
optimal_loci_176562_G	1109	1.058175	0	6107	36.51	3	1.238357651	0.156	0.770517586	4
optimal_loci_176592_G	1218	0.729989	0	2049	40.31	1	0.156849718	0.175	0.769590782	3
optimal_loci_176656_G	1167	0.690767	29.99	3987	44.47	4	21.86422654	0.212	0.766521339	3
optimal_loci_176815_G	1130	0.012134	0	18449	42.83	1	17.31552686	0.178	0.758630518	2
optimal_loci_176826_G	1361	0.012631	31.52	1512	33.65	3	10.75716443	0.099	0.758258631	2
optimal_loci_177360_G	1258	0.107686	4.05	1756	42.84	1	22.11659613	0.204	0.728525797	6
optimal_loci_177364_G	2471	0.107686	18.7	6248	48.88	1	22.11659613	0.389	0.728470029	6
optimal_loci_177462_G	1171	0.111411	2.48	6732	38.85	1	7.098794566	0.119	0.725121251	6
optimal_loci_177464_G	1276	0.111411	0	11115	41.14	1	7.098794566	0.255	0.72507738	6
optimal_loci_177465_G	2482	0.111411	6.73	12424	60.95	1	7.098794566	0.715	0.725052796	6
optimal_loci_177471_G	1035	0.115991	0	3780	30.91	3	15.88263972	0.053	0.724427038	7
optimal_loci_177554_G	1125	0.115496	6.13	11543	41.51	1	13.35447792	0.045	0.720153304	7
optimal_loci_177564_G	1477	0.107595	20.92	14624	36.15	1	22.63768656	0.202	0.719479365	6
optimal_loci_177641_G	1345	0.072773	11.6	1871	39.62	1	7.379036728	0.275	0.716006305	6
optimal_loci_177647_G	1013	0.072773	0	8251	42.94	1	7.379036728	0.223	0.715882297	6
optimal_loci_177648_G	1145	0.072773	14.41	9307	40.34	1	7.379036728	0.325	0.715870684	6
optimal_loci_177649_G	1283	0.072773	0	10485	40.29	1	7.379036728	0.143	0.71585782	6
optimal_loci_178120_G	1112	0.29798	32.1	13207	31.29	1	0.733778415	0.126	0.691499492	6
optimal_loci_178129_G	1208	0.280192	5.71	12859	46.27	2	42.18723981	0.239	0.690809521	6
optimal_loci_178170_G	1882	0.226911	15.3	4710	44.42	1	24.83013804	0.411	0.688810147	7
optimal_loci_178172_G	1005	0.217121	18.21	6924	38.9	1	24.83013804	0.085	0.688797077	7
optimal_loci_178199_G	1486	0.215407	0	3026	44.07	2	16.19483704	0.392	0.688387654	7
optimal_loci_178230_G	1131	0.209494	35.63	2993	34.74	1	1.141237502	0.235	0.687644858	7
optimal_loci_178298_G	1053	0.175451	0	1362	41.88	2	2.082857241	0.257	0.684745396	6
optimal_loci_178311_G	1036	0.195858	0	25590	50.28	1	4.858256996	0.575	0.682647654	3

optimal_loci_178388_G	1373	0.250388	23.16	2655	40.71	2	5.124616433	0.106	0.678675934	2
optimal_loci_178513_G	1121	0.326429	18.02	12880	43.8	1	0.380599041	0.593	0.671931896	1
optimal_loci_178978_G	1250	1.327903	9.92	4654	53.36	1	0.531750712	0.761	0.650268231	1
optimal_loci_179377_G	1056	0.012112	0	1001	40.24	2	32.7910287	0.17	0.629290841	2
optimal_loci_179383_G	1248	0.012112	0	11977	37.17	2	32.7910287	0.052	0.629030567	2
optimal_loci_179499_G	1591	0.020752	7.17	1810	38.96	1	26.48594165	0.261	0.623821153	1
optimal_loci_179635_G	1415	0.021961	0	1001	42.61	1	47.02240083	0.064	0.614327067	2
optimal_loci_179731_G	1228	0.022316	31.51	2625	29.8	2	0.947874871	0.166	0.609543822	3
optimal_loci_179775_G	1020	0.023427	0	3443	36.27	1	28.00873719	0	0.60669173	2
optimal_loci_179884_G	2028	0.022752	4.24	8015	34.02	3	0.013307576	0.209	0.599767889	1
optimal_loci_179978_G	1309	0.013432	0	2001	40.18	1	18.44632713	0.279	0.593821359	3
optimal_loci_179997_G	1021	0.023001	3.13	2749	38.58	1	2.718160805	0.142	0.591467107	5
optimal_loci_179998_G	1260	0.021238	10.16	13897	46.9	1	27.30605067	0.404	0.591277058	6
optimal_loci_180080_G	1192	0.010634	0	1755	44.29	1	0.040195564	0.33	0.587182141	5
optimal_loci_180081_G	1230	0.010634	0	3076	59.02	1	0.040195564	0.666	0.587168856	5
optimal_loci_180086_G	2780	0.012352	8.13	2081	56.33	2	26.12993987	0.627	0.586531769	4
optimal_loci_180179_G	3100	0.485886	0	18345	58.45	1	19.45980698	0.615	0.581158739	2
optimal_loci_180190_G	1639	0.485886	2.99	2001	38.49	1	19.45980698	0.141	0.580998974	2
optimal_loci_180774_G	1544	0.139227	8.55	2679	38.4	2	2.463830844	0.092	0.542831808	1
optimal_loci_180888_G	1091	0.121812	0	3249	42.89	1	214.418926	0.15	0.534940616	1
optimal_loci_181036_G	1870	0.156667	38.29	4395	35.77	1	29.66248883	0.118	0.527326696	2
optimal_loci_181114_G	1726	0.121119	0	2382	45.3	1	0.79586752	0.366	0.522642659	3
optimal_loci_181147_G	2292	0.115107	0	2001	52.83	1	0.326483438	0.486	0.519466598	2
optimal_loci_181259_G	1451	0.032512	0	3961	56.71	2	1.082034062	0.58	0.512834653	1
optimal_loci_181590_G	1189	0.163615	13.54	6926	43.98	1	195.7226469	0.22	0.493042962	2
optimal_loci_181591_G	1178	0.176009	0	5640	41.08	1	195.7226469	0.178	0.493030391	2
optimal_loci_181751_G	1006	0.234684	0	2689	45.82	2	8.262507091	0.52	0.48182696	2
optimal_loci_181810_G	2534	0.178362	7.42	2122	49.92	1	34.17474517	0.446	0.477969384	4
optimal_loci_181825_G	1752	0.121903	0	1449	34.18	2	0.176909489	0.09	0.47681913	3
optimal_loci_181873_G	1118	0.040227	0	2001	49.1	1	20.11741708	0.518	0.47307522	4
optimal_loci_181916_G	1521	0.028369	5.52	6459	60.02	2	66.30038607	0.723	0.470308074	3
optimal_loci_181950_G	1473	0.027454	30.55	3476	35.91	2	0.457529484	0.153	0.467414457	2
optimal_loci_182110_G	2762	0.025639	0	15773	35.11	1	6.110706755	0.078	0.46041697	1

optimal_loci_182673_G	1011	0.163782	10.88	19813	48.66	1	4.313974662	0.491	0.425933421	2
optimal_loci_182684_G	2022	0.163782	2.82	2189	44.75	1	40.55541666	0.255	0.425625973	2
optimal_loci_182869_G	1579	0.339379	1.96	1001	36.73	1	1.332147884	0.132	0.41213868	4
optimal_loci_182884_G	2591	0.33961	0	3900	46.46	1	5.867454045	0.32	0.411082414	4
optimal_loci_182885_G	1270	0.33961	0	2532	42.99	1	5.867454045	0.08	0.411069042	4
optimal_loci_182924_G	1457	0.184202	36.86	2760	38.84	1	21.52004084	0.184	0.408427879	6
optimal_loci_182953_G	1436	0.158024	2.09	1001	42.89	1	29.1648112	0.391	0.405562424	3
optimal_loci_182959_G	1015	0.15405	0	9218	38.02	1	3.610682471	0.268	0.40431477	3
optimal_loci_183137_G	1813	0.167639	39.82	3829	36.56	2	13.78164832	0.046	0.391397273	2
optimal_loci_183198_G	1144	0.193846	37.41	2188	34.7	3	0.612665122	0	0.387135445	2
optimal_loci_183636_G	1687	0.910168	23.18	15262	39.83	1	10.16141817	0.162	0.354773812	1
optimal_loci_184065_G	2590	0.45162	22.05	1001	36.91	2	19.74693642	0.182	0.316029511	2
optimal_loci_184092_G	1472	0.532986	14.06	12588	35.66	1	0.377215939	0.205	0.313923969	2
optimal_loci_184485_G	1619	0.067131	14.89	10643	52.31	2	60.06002071	0.547	0.28957218	5
optimal_loci_184486_G	3398	0.067131	7.92	7212	40.96	3	50.26225106	0.277	0.289538641	5
optimal_loci_184489_G	1253	0.067131	0	2970	35.43	3	50.26225106	0	0.289497175	5
optimal_loci_184523_G	1713	0.062831	3.91	2001	34.73	4	28.90161842	0.104	0.286084272	5
optimal_loci_184530_G	2003	0.062831	9.49	12485	43.13	1	2.596425841	0.326	0.285323558	5
optimal_loci_184746_G	2593	2.312398	1.81	1141	46.23	4	8.226437838	0.392	0.267700332	1
optimal_loci_184929_G	1192	0.216022	0	6395	54.53	3	2.807590431	0.539	0.253233607	3
optimal_loci_184936_G	1263	0.190403	6.02	2429	46.87	3	7.938515853	0.433	0.252830098	3
optimal_loci_184969_G	1191	0.252401	12.26	1245	37.53	1	1.059832639	0.092	0.249933245	3
optimal_loci_185181_G	1466	0.088905	0	2207	58.66	2	22.63873569	0.66	0.23368958	3
optimal_loci_185183_G	1999	0.088905	0	5573	36.16	2	22.63873569	0.136	0.233651466	3
optimal_loci_185230_G	1689	0.128571	0	2001	34.51	2	8.262524263	0.03	0.230009218	3
optimal_loci_185386_G	1277	0.127124	0	6369	51.05	2	33.98612781	0.535	0.219438025	2
optimal_loci_185454_G	1085	0.140354	5.25	2245	38.15	1	13.12114406	0.207	0.215334761	3
optimal_loci_185506_G	1488	0.158068	6.59	9501	47.78	1	11.09802151	0.398	0.213510821	4
optimal_loci_185582_G	1347	0.550341	0	3369	47.29	2	17.65426497	0.295	0.209920938	3
optimal_loci_185589_G	1230	0.550341	0	4888	33.49	1	22.51014442	0.22	0.209757077	3
optimal_loci_186110_G	2323	0.137029	8.27	2001	41.15	3	3.894832413	0.185	0.180278807	1
optimal_loci_186270_G	1137	0.013666	0	2131	54	1	0.048871315	0.527	0.168377292	2
optimal_loci_186304_G	1695	0.01084	11.09	2204	43.3	2	13.53415751	0.242	0.166767947	2

optimal_loci_186646_G	1739	0.628406	0	1001	55.72	3	8.57254153	0.53	0.148492229	1
optimal_loci_186743_G	1228	0.217116	6.03	8237	32.24	2	0.291898589	0.276	0.140624223	1
optimal_loci_186956_G	1069	0.094783	10.85	1869	38.82	1	0.290291838	0.095	0.130004242	1
optimal_loci_187078_G	2361	0.012266	0	3870	57.72	3	4.056981883	0.631	0.123064154	1
optimal_loci_187450_G	1666	0.361464	1.74	2411	34.75	2	20.38733942	0.119	0.097157263	4
optimal_loci_187451_G	1093	0.361464	0	5161	34.94	2	20.38733942	0.161	0.097135982	4
optimal_loci_187455_G	1139	0.361464	0	2792	32.39	2	20.38733942	0.09	0.097104262	4
optimal_loci_187512_G	1351	0.316739	23.09	12541	44.18	2	180.2383542	0.244	0.092940489	4
optimal_loci_187687_G	1521	0.132719	25.64	2905	34.31	3	1.805149137	0.081	0.082750342	1
optimal_loci_191534_G	1629	0.05168	0	13009	38.18	3	0.209746659	0.246	0.13825083	1
optimal_loci_192637_G	2054	0.043001	2.09	7257	57.83	1	2.23689201	0.635	0.205763975	2
optimal_loci_192638_G	1092	0.043001	18.13	6053	36.81	1	2.23689201	0.209	0.205783906	2
optimal_loci_194905_G	1074	0.283729	0	3356	35.1	1	1.049104226	0.216	0.331454088	1
optimal_loci_195101_G	1153	0.41929	0	8409	41.8	2	0.204460297	0.231	0.342195427	6
optimal_loci_195112_G	3326	0.419187	8.45	14061	36.83	1	0.085293027	0.172	0.342435524	7
optimal_loci_195115_G	1300	0.415341	0	7967	36.61	1	0.085293027	0	0.342510243	7
optimal_loci_195117_G	1555	0.415341	0	5412	34.14	1	0.085293027	0.068	0.342531408	7
optimal_loci_195118_G	1121	0.415341	0	3834	33.89	1	0.085293027	0.131	0.342549922	7
optimal_loci_195119_G	1212	0.415341	15.35	2490	46.03	1	0.085293027	0.543	0.342561452	7
optimal_loci_195211_G	2197	0.193354	16.02	5405	48.74	5	20.62068273	0.475	0.34685707	6
optimal_loci_195885_G	1162	0.678756	0	15359	38.55	1	1.951820052	0.104	0.381040621	1
optimal_loci_196090_G	1451	0.912543	10.13	1040	42.1	2	1.111344212	0.286	0.38851556	3
optimal_loci_196093_G	1508	0.925224	29.31	9958	34.35	2	47.22927012	0	0.388635728	3
optimal_loci_196158_G	1000	1.163345	0	2125	52	3	3.241055057	0.442	0.391167345	4
optimal_loci_196240_G	2281	0.865371	6.18	8724	34.5	1	2.600510719	0.083	0.395686606	2
optimal_loci_196357_G	1192	0.141548	0	8830	49.91	1	0.808433092	0.345	0.401517032	2
optimal_loci_196360_G	1459	0.141548	5.35	2643	41.19	1	0.808433092	0.271	0.401571507	2
optimal_loci_196784_G	2011	0.773668	0	3760	34.51	2	0.024684805	0.099	0.42167305	6
optimal_loci_196799_G	1151	0.846075	0	4421	32.66	4	0.003821069	0.041	0.422390488	6
optimal_loci_196800_G	1627	0.846075	7.44	5140	34.72	4	0.003821069	0.073	0.422401383	6
optimal_loci_196803_G	1564	0.846075	8.44	2351	45.33	4	0.003821069	0.303	0.422427627	6
optimal_loci_196864_G	1412	0.910911	0	2212	41.71	1	40.429997	0.26	0.423739473	6
optimal_loci_196884_G	1054	0.960007	0	5505	38.33	1	5.262836943	0	0.425236185	6

optimal_loci_197223_G	1277	0.105199	32.26	2276	45.96	2	0.013284428	0.47	0.447183884	1
optimal_loci_197372_G	1081	0.165991	0	3057	43.2	1	97.18032461	0.428	0.455317037	3
optimal_loci_197377_G	1060	0.165991	7.26	2569	55.09	1	97.18032461	0.679	0.455422132	3
optimal_loci_197410_G	1356	0.15413	25.52	7267	33.7	2	239.3939186	0.098	0.457121757	3
optimal_loci_197574_G	1576	0.117958	0	2526	46.38	2	4.66170485	0.349	0.468154135	2
optimal_loci_197620_G	1453	0.114295	0	11525	42.67	1	20.7257088	0.327	0.471790176	3
optimal_loci_197700_G	1188	0.121064	0	2455	39.05	1	6.777956424	0.249	0.475065907	2
optimal_loci_198016_G	1076	0.112729	0	12749	35.87	2	19.43142885	0.164	0.492757161	2
optimal_loci_198027_G	1045	0.112729	0	3439	49.09	2	19.43142885	0.348	0.492843116	2
optimal_loci_198224_G	1210	0.411467	0	12013	41.65	1	27.77410267	0.195	0.501751523	3
optimal_loci_198225_G	1280	0.427413	7.34	2757	41.71	1	27.77410267	0.445	0.501836052	3
optimal_loci_198287_G	1039	0.23925	0	18284	44.46	1	31.29691316	0.361	0.505580087	3
optimal_loci_198387_G	1190	0.278298	0	6502	44.2	2	96.9243239	0.428	0.510821028	3
optimal_loci_198422_G	4126	0.271655	13.09	2315	50.77	2	10.38257277	0.431	0.512183337	4
optimal_loci_198424_G	1368	0.271818	7.09	7681	38.23	2	10.38257277	0.217	0.512232715	4
optimal_loci_198523_G	1043	0.298684	23.97	9645	42.28	1	1.876257861	0.164	0.516514851	5
optimal_loci_198567_G	1198	0.287714	0	9763	39.48	1	1.043855559	0.169	0.519399684	5
optimal_loci_198569_G	1507	0.287714	0	2180	51.16	1	1.043855559	0.325	0.519466619	5
optimal_loci_198591_G	1201	0.25106	0	4381	47.37	2	4.558938751	0.307	0.521377759	4
optimal_loci_198620_G	1058	0.424518	0	6536	47.25	2	0.168402765	0.431	0.523084459	6
optimal_loci_198700_G	1015	0.397251	0	11745	46.3	2	37.70460123	0.337	0.526434394	3
optimal_loci_198727_G	2061	0.379954	4.22	1621	34.54	4	3.105411679	0.104	0.527237447	3
optimal_loci_199079_G	1197	0.160896	0	1109	41.01	2	0.023434942	0.337	0.545949664	5
optimal_loci_199109_G	1154	0.874876	0	11539	46.53	2	2.352594614	0.285	0.548850195	5
optimal_loci_199110_G	1145	0.874876	3.23	10247	41.65	2	2.352594614	0.271	0.548862167	5
optimal_loci_199111_G	1950	0.874876	0	3659	52.46	3	2.845185658	0.404	0.548915381	5
optimal_loci_199118_G	1279	0.748865	0	2001	44.01	4	22.55093329	0.409	0.549292854	5
optimal_loci_199355_G	1216	1.585813	0	2472	43.17	1	10.80624466	0.479	0.560952123	4
optimal_loci_199360_G	1140	1.789354	0	4829	40.61	1	10.80624466	0.469	0.561043489	4
optimal_loci_199394_G	1361	1.744959	32.77	2698	50.99	1	16.5446122	0.478	0.561765693	4
optimal_loci_199396_G	2004	1.744959	0	2281	35.72	1	16.5446122	0	0.561827051	4
optimal_loci_199571_G	1172	0.150114	0	3062	45.05	2	7.973077424	0.164	0.570239226	2
optimal_loci_199583_G	3559	0.150114	0	6368	57.12	3	8.275172285	0.571	0.570371918	2

optimal_loci_199812_G	1400	0.426897	0	2439	40.64	2	5.08642522	0.24	0.583255329	2
optimal_loci_199880_G	1794	0.468627	0	1001	39.4	5	0.861589625	0.16	0.58632282	3
optimal_loci_199951_G	2460	0.532196	13.33	1657	40.08	1	8.132114844	0.211	0.588564198	2
optimal_loci_200139_G	1064	0.32318	20.49	1001	44.07	2	11.52571955	0.268	0.599533221	1
optimal_loci_200220_G	1460	0.343178	26.64	3580	45.27	1	2.989926986	0.415	0.605335066	2
optimal_loci_200253_G	3103	1.328926	22.66	2001	45.85	4	1.257887191	0.407	0.607476889	3
optimal_loci_200324_G	1386	1.126214	20.71	1001	46.82	4	7.510233022	0.401	0.612013725	3
optimal_loci_200335_G	1658	0.992052	27.93	4345	34.68	1	8.404693585	0.212	0.613362526	3
optimal_loci_200379_G	1653	0.147097	7.86	4233	47	1	21.34578674	0.505	0.616763256	2
optimal_loci_200497_G	1820	0.212214	9.12	2337	40.43	4	73.83760965	0.216	0.622782275	6
optimal_loci_200519_G	1283	0.236935	2.18	9952	48.4	1	88.18239482	0.372	0.623051984	6
optimal_loci_200531_G	1245	0.236935	0	6527	51.64	1	1.411477062	0.443	0.623744144	6
optimal_loci_200536_G	2072	0.238238	0	2001	55.83	1	1.411477062	0.608	0.623778182	6
optimal_loci_200537_G	1034	0.255878	37.81	1001	44.29	1	1.411477062	0.211	0.62384358	6
optimal_loci_200594_G	1031	0.407304	0	3737	35.79	3	0.079008988	0.219	0.62615297	7
optimal_loci_200728_G	1333	1.384854	13.5	1203	50.78	3	1.114789105	0.465	0.629964446	5
optimal_loci_200751_G	1257	1.507592	0	14006	35.24	2	0.015673868	0.049	0.630912502	4
optimal_loci_200759_G	2254	2.2351	0	9437	50.04	2	9.816223777	0.404	0.631742701	4
optimal_loci_200789_G	2931	1.177049	7.2	8825	41.89	2	3.599991705	0.378	0.633664505	5
optimal_loci_200835_G	1156	0.782404	0	5423	34.86	1	0.675021889	0.451	0.636390669	6
optimal_loci_200876_G	1161	1.404143	14.73	3682	42.46	3	3.481118403	0.307	0.638619947	5
optimal_loci_200929_G	1159	1.399572	12.68	2369	34.42	1	194.5931614	0.163	0.639911328	5
optimal_loci_200931_G	1907	1.399572	7.34	3854	35.86	1	194.5931614	0.273	0.639924992	5
optimal_loci_200944_G	1265	1.399572	0	6831	31.62	4	18.29918728	0.032	0.640601491	6
optimal_loci_201017_G	1917	0.58821	0	1982	36.98	2	1.370424275	0.054	0.644787495	4
optimal_loci_201044_G	1109	0.408574	36.25	2050	45.98	1	5.881357467	0.405	0.647335169	3
optimal_loci_201054_G	3004	0.345651	0	2181	32.62	1	9.360415398	0	0.648371242	4
optimal_loci_201123_G	1637	1.345463	29.75	17796	38.91	1	0.52531928	0.072	0.652691796	5
optimal_loci_201152_G	2106	1.293048	12.63	1955	59.35	1	9.376919617	0.584	0.654866516	4
optimal_loci_201194_G	1234	1.722705	0	10300	39.7	2	5.403762572	0.172	0.656745201	4
optimal_loci_201200_G	1478	1.722705	19.22	5107	35.92	1	8.718667709	0.143	0.656906271	4
optimal_loci_201386_G	1333	0.793124	7.43	6746	38.03	3	11.59078826	0.077	0.668791245	1
optimal_loci_201486_G	1495	1.137193	5.89	2291	45.55	4	1.421744451	0.245	0.675342477	1

optimal_loci_201553_G	1238	2.26057	0	2001	42.56	4	33.66411624	0.266	0.680404983	2
optimal_loci_201597_G	1213	1.369462	8.66	10276	55.39	3	15.7313361	0.523	0.683667141	4
optimal_loci_201690_G	1024	1.575339	13.87	3498	45.5	2	1.056963397	0.266	0.687097768	8
optimal_loci_201693_G	1294	1.456188	14.76	1334	52.24	2	1.056963397	0.291	0.687115196	8
optimal_loci_201729_G	1042	1.90295	0	2173	42.41	4	6.058433688	0.347	0.688793048	9
optimal_loci_201747_G	1315	2.242058	12.02	9077	47.98	1	6.271919391	0.581	0.689762886	9
optimal_loci_201748_G	1004	2.242058	0	8040	58.36	1	6.271919391	0.547	0.68977529	9
optimal_loci_201750_G	1196	2.242058	0	5754	50.16	1	6.271919391	0.389	0.689794559	9
optimal_loci_201784_G	2216	2.030037	0	3288	51.44	1	4.269727315	0.31	0.690898496	11
optimal_loci_201813_G	1006	2.272942	0	2001	45.32	2	4.482019124	0.379	0.692432062	9
optimal_loci_201819_G	1807	2.272942	0	1211	56.28	2	0.331176867	0.655	0.692630686	9
optimal_loci_201858_G	1646	2.739638	22.36	8389	34.69	2	4.64728989	0.147	0.694649276	5
optimal_loci_201863_G	1559	2.739638	25.66	5213	43.81	2	4.64728989	0.182	0.694679302	5
optimal_loci_201983_G	1361	1.149965	0	2001	57.75	1	3.686430848	0.552	0.702117646	6
optimal_loci_201994_G	1031	1.149965	25.22	2668	51.89	1	0.198013616	0.622	0.702432103	6
optimal_loci_201995_G	1118	1.149965	12.25	3839	42.75	1	0.198013616	0.233	0.702442879	6
optimal_loci_202012_G	1083	1.107999	36.2	6043	38.59	2	0.513261649	0.179	0.703278359	6
optimal_loci_202017_G	1879	1.107999	1.54	1801	54.76	4	2.172817992	0.567	0.703474544	6
optimal_loci_202022_G	1052	1.107999	0	1001	41.25	3	2.897090656	0.324	0.703567769	6
optimal_loci_202126_G	1154	0.939762	2.6	4416	31.62	1	4.041338556	0.17	0.708842748	11
optimal_loci_202127_G	1059	0.939762	0	3149	31.06	1	4.041338556	0.039	0.708855281	11
optimal_loci_202131_G	1362	0.985131	0	5764	37.15	1	4.041338556	0.173	0.708962483	11
optimal_loci_202140_G	3448	0.985131	6.93	14127	47.38	1	4.041338556	0.395	0.709039439	11
optimal_loci_202145_G	1577	0.985131	1.78	19350	31.95	1	0.146004044	0.112	0.709107055	11
optimal_loci_202158_G	1483	1.645007	23.2	12623	43.49	1	7.050557084	0.255	0.710386417	14
optimal_loci_202159_G	1420	1.645007	16.48	10838	39.22	1	7.050557084	0.326	0.710403423	14
optimal_loci_202164_G	2522	1.645007	6.19	3441	45.2	1	7.050557084	0.275	0.710559414	14
optimal_loci_202179_G	1523	2.334804	0	11818	39.13	1	10.29492625	0.249	0.711240016	16
optimal_loci_202180_G	2229	2.334804	13.01	9215	45.04	1	10.29492625	0.286	0.711257472	16
optimal_loci_202223_G	1591	2.503775	15.15	1608	37.52	2	37.20611384	0.261	0.713361254	17
optimal_loci_202236_G	1194	2.748502	31.57	1001	40.11	1	13.27927324	0.199	0.714061751	12
optimal_loci_202240_G	1152	2.748502	0	2001	46.26	3	10.58048318	0.406	0.714384776	12
optimal_loci_202250_G	1413	2.748502	0	1061	41.61	1	0.013158696	0.396	0.714775361	12

optimal_loci_202266_G	1636	3.144546	1.83	2001	55.07	5	16.2415291	0.56	0.715542351	9
optimal_loci_202267_G	1426	2.265017	11.08	3893	39.13	3	26.21447674	0.043	0.715687014	9
optimal_loci_202272_G	1235	2.38015	25.67	2940	39.51	3	5.704571352	0.114	0.716161963	7
optimal_loci_202457_G	1618	1.230933	17.37	6465	41.53	1	43.4842053	0.327	0.725965506	5
optimal_loci_202513_G	1425	3.91051	0	2564	49.54	4	25.16663021	0.392	0.729498366	10
optimal_loci_202514_G	1436	3.91051	3.13	4098	55.71	4	25.16663021	0.643	0.729512482	10
optimal_loci_202526_G	1222	3.91051	0	1001	48.85	3	17.32364188	0.468	0.729600508	10
optimal_loci_202528_G	1170	4.282038	32.65	3515	42.73	1	11.89297008	0.382	0.72966056	10
optimal_loci_202558_G	1917	4.314463	14.76	4484	52.58	4	11.11200819	0.487	0.73130431	10
optimal_loci_202593_G	1033	4.803676	6.78	3284	41.91	1	6.576916432	0.458	0.731638901	10
optimal_loci_202600_G	2093	4.798447	35.4	3187	44.67	2	3.676402883	0.343	0.73197882	10
optimal_loci_202616_G	1914	4.229378	1.62	2036	47.49	4	22.38224408	0.38	0.732684378	13
optimal_loci_202629_G	1345	4.256245	0	2001	42.52	2	3.66137274	0.157	0.733390332	13
optimal_loci_202653_G	2442	4.302276	17.53	3603	37.26	4	6.898027199	0.048	0.734782998	9
optimal_loci_202715_G	2455	2.010984	0	9609	47.16	2	8.874777299	0.416	0.737047372	6
optimal_loci_202718_G	1030	2.010984	27.67	13696	40.38	2	8.874777299	0.193	0.737107985	6
optimal_loci_202720_G	1177	1.95719	5.86	11635	46.81	2	8.874777299	0.45	0.737125598	6
optimal_loci_202819_G	1049	0.339244	3.62	2001	37.36	2	6.472732413	0.103	0.742472628	5
optimal_loci_202830_G	1321	0.338254	0	2145	47.53	2	0.161892458	0.252	0.742702483	5
optimal_loci_202854_G	1027	0.224173	0	18017	44.49	1	4.417031987	0.288	0.743820287	5
optimal_loci_202859_G	1087	0.224173	18.86	9279	48.94	1	4.417031987	0.349	0.743900142	5
optimal_loci_202888_G	1055	0.974037	31.85	2001	26.72	3	24.67443468	0.121	0.745784798	7
optimal_loci_202979_G	1313	1.130566	0	15468	50.03	1	46.17921307	0.502	0.750115843	5
optimal_loci_202987_G	1714	1.118046	0	1712	56.53	3	102.2507939	0.472	0.750343646	5
optimal_loci_203009_G	2084	1.350932	1.39	17100	51.58	2	0.153828795	0.528	0.752101666	6
optimal_loci_203012_G	1902	1.350932	0	1001	50.26	2	23.32836401	0.349	0.752305985	6
optimal_loci_203075_G	3826	0.763609	4.08	1001	52.87	4	6.314651272	0.382	0.756129985	6
optimal_loci_203081_G	2702	0.845474	4.89	4663	50.25	3	0.637291665	0.401	0.756261113	7
optimal_loci_203147_G	1900	0.966271	2.16	3655	44.84	1	0.51136178	0.224	0.760602952	12
optimal_loci_203149_G	1354	0.966271	0	6262	44.16	1	0.51136178	0.329	0.760626941	12
optimal_loci_203160_G	3490	0.987765	35.04	3012	47.24	2	5.142421817	0.326	0.760859152	11
optimal_loci_203172_G	1064	0.987765	11.28	3028	54.32	3	16.80217533	0.419	0.760979163	10
optimal_loci_203173_G	1879	0.987765	0	1001	54.12	3	16.80217533	0.507	0.760990316	10

optimal_loci_203174_G	1149	0.987765	17.75	1604	47.6	2	25.203263	0.42	0.761067842	11
optimal_loci_203182_G	1045	0.886879	0	1673	36.26	3	0.485867958	0.226	0.761801282	11
optimal_loci_203198_G	1060	0.724375	9.06	2516	45.84	4	8.882766102	0.389	0.763349709	11
optimal_loci_203199_G	1415	0.724375	12.23	2138	39.92	3	11.84368814	0.205	0.763369319	11
optimal_loci_203200_G	1990	0.724375	0	1001	57.13	3	11.84368814	0.489	0.763430098	11
optimal_loci_203239_G	1925	0.123734	15.84	2001	47.74	2	0.962696125	0.34	0.765669498	14
optimal_loci_203328_G	1417	0.142642	0	1467	54.19	2	0.141233349	0.628	0.769846281	9
optimal_loci_203330_G	1069	0.142642	16.65	7523	39	1	0.282466697	0.2	0.769980068	9
optimal_loci_203331_G	2760	0.142642	12.32	8625	37.17	1	0.282466697	0.239	0.769990209	9
optimal_loci_203332_G	1418	0.142642	0	11456	41.81	1	0.282466697	0.42	0.770016259	9
optimal_loci_203333_G	1023	0.142642	11.34	12962	37.82	1	0.282466697	0.244	0.770030118	9
optimal_loci_203335_G	1315	0.142642	0	15030	36.12	1	0.282466697	0	0.770049147	9
optimal_loci_203337_G	1512	0.142642	9.19	17065	36.11	1	0.282466697	0.037	0.770067873	9
optimal_loci_203339_G	1549	0.142642	3.1	18952	40.6	1	0.282466697	0.11	0.770085237	9
optimal_loci_203476_G	1471	1.775677	0	3594	39.42	2	4.623712889	0.182	0.777072787	8
optimal_loci_203488_G	1505	1.791077	10.63	2001	43.58	3	4.874015548	0.428	0.777872177	8
optimal_loci_203517_G	1211	1.90707	11.73	8193	57.88	1	2.166501508	0.631	0.779636831	8
optimal_loci_203521_G	2561	1.90707	0	12377	47.63	1	2.166501508	0.384	0.779675332	8
optimal_loci_203542_G	1293	1.957392	5.18	1226	36.96	3	27.71720621	0.09	0.781236302	10
optimal_loci_203545_G	3043	1.957392	0	2001	45.87	2	6.443581111	0.33	0.781372104	10
optimal_loci_203547_G	1230	1.957392	7.4	6201	53.49	1	3.969136079	0.413	0.781410752	10
optimal_loci_203550_G	1935	1.957392	0	9570	46.09	1	3.969136079	0.51	0.781441753	10
optimal_loci_203661_G	1929	1.698317	37.79	2665	45.72	1	3.251593275	0.401	0.785508464	11
optimal_loci_203668_G	1156	1.698317	6.83	8770	41.17	1	3.251593275	0.226	0.785564641	11
optimal_loci_203676_G	1833	1.698317	39.77	14593	47.19	1	0.526063791	0.304	0.786257372	8
optimal_loci_203686_G	3968	1.246423	7.43	11635	51.48	1	10.0579225	0.521	0.786669066	8
optimal_loci_203702_G	1792	0.704049	13.84	6308	38.5	2	17.25868013	0.182	0.787884209	8
optimal_loci_203704_G	3948	0.704049	1.7	2001	54.88	1	13.96843145	0.622	0.78801898	8
optimal_loci_203706_G	1189	0.706073	0	8565	37.17	2	6.984215723	0.241	0.788079382	8
optimal_loci_203772_G	1483	0.41744	8.83	3103	48.81	1	1.185166525	0.53	0.790740755	10
optimal_loci_203803_G	1770	0.47785	4.01	2368	40.28	2	22.11803098	0.444	0.793566032	9
optimal_loci_203810_G	2790	0.47785	0	7541	45.19	2	21.6906323	0.405	0.793861921	9
optimal_loci_203813_G	1172	0.47785	15.44	3382	40.1	1	1.414699578	0.094	0.794016347	9

optimal_loci_203827_G	2695	0.47785	20.37	4365	33.46	2	0.085751625	0.041	0.794601774	9
optimal_loci_203850_G	1949	0.47785	38.38	15089	46.63	1	37.57153767	0.336	0.795603966	8
optimal_loci_203853_G	1494	0.47785	0	11916	40.69	1	37.57153767	0.063	0.79563735	8
optimal_loci_203859_G	1343	0.47785	11.17	2561	33.87	1	37.57153767	0.037	0.795724824	8
optimal_loci_203867_G	1612	0.298052	0	7420	55.52	1	37.57153767	0.595	0.795838357	9
optimal_loci_203938_G	1165	0.451625	0	1001	53.56	1	9.157393558	0.386	0.800377108	5
optimal_loci_203953_G	1018	0.489219	7.47	2909	42.23	2	0.327162262	0.348	0.801074062	6
optimal_loci_204027_G	1517	0.924317	13.45	3691	34.8	1	0.87011381	0.092	0.804911644	8
optimal_loci_204028_G	2332	0.924317	20.63	1001	37.34	1	0.87011381	0.116	0.804928898	8
optimal_loci_204029_G	1575	0.972153	6.1	2001	38.98	1	0.87011381	0.038	0.804996587	7
optimal_loci_204053_G	1398	0.972153	0	8680	54.22	1	3.782119797	0.53	0.805641983	7
optimal_loci_204061_G	2621	0.972153	0	2259	47.53	1	3.782119797	0.416	0.805689815	6
optimal_loci_204093_G	1162	0.823062	0	11476	36.83	1	0.038517625	0.229	0.807207277	6
optimal_loci_204231_G	2163	1.329988	18.77	1358	40.96	5	8.009643437	0.264	0.814458803	7
optimal_loci_204244_G	1563	1.810688	5.82	2001	39.47	2	7.9592497	0.329	0.81511733	7
optimal_loci_204246_G	1906	1.810688	1.47	2202	52.57	2	7.9592497	0.488	0.815188066	7
optimal_loci_204260_G	3164	1.810688	0	6886	39.22	1	4.509288676	0.189	0.81600608	9
optimal_loci_204267_G	1160	1.810688	2.41	2031	53.96	4	1.594730189	0.422	0.816769758	9
optimal_loci_204292_G	1137	2.008872	13.9	3420	50.48	4	1.690378979	0.395	0.818987984	9
optimal_loci_204293_G	2119	2.008872	0	1688	49.36	4	1.690378979	0.424	0.819000315	9
optimal_loci_204304_G	2057	1.698251	5.79	3158	42.1	4	0.786788352	0.17	0.819906153	7
optimal_loci_204305_G	1385	1.698251	0	2925	39.63	4	0.786788352	0.325	0.819928486	7
optimal_loci_204363_G	1119	0.770134	0	1513	37.8	2	4.46019173	0.184	0.824365123	11
optimal_loci_204380_G	1110	0.848398	12.7	3271	52.34	1	11.15737429	0.358	0.824629126	9
optimal_loci_204400_G	1623	0.930211	1.91	2864	40.11	3	9.137081974	0.34	0.825181491	10
optimal_loci_204431_G	1560	0.948966	32.63	18669	35.76	1	1.306222297	0.198	0.82661597	11
optimal_loci_204442_G	1462	0.881452	2.94	2872	40.15	3	0.602020334	0.187	0.827457763	11
optimal_loci_204448_G	1079	0.858476	32.9	2001	40.12	4	2.779952182	0.31	0.827809166	11
optimal_loci_204453_G	1297	0.858476	2.54	4170	43.09	1	47.81292201	0.272	0.82817624	11
optimal_loci_204455_G	1031	0.858476	0	2001	58.97	2	31.14351895	0.607	0.828198647	11
optimal_loci_204461_G	1335	1.05233	3.45	1948	51.53	1	14.4741159	0.452	0.828465503	13
optimal_loci_204480_G	1864	1.090718	23.93	4114	57.99	2	6.129614113	0.62	0.829690427	11
optimal_loci_204491_G	1839	1.126698	25.12	2613	38.66	3	4.875293924	0.307	0.829956759	11

optimal_loci_204550_G	1143	1.200724	34.27	16398	36.92	1	3.835220607	0.09	0.832815568	7
optimal_loci_204555_G	1845	1.20243	0	11558	44.39	1	3.835220607	0.37	0.832853646	7
optimal_loci_204578_G	1948	0.924314	25.82	3303	35.42	2	6.727541419	0.208	0.834454211	6
optimal_loci_204612_G	4044	1.425558	1.93	2112	56.2	2	5.554639585	0.553	0.836613435	5
optimal_loci_204637_G	3213	1.323857	0	2874	52.38	1	0.598434408	0.515	0.838279297	6
optimal_loci_204726_G	4938	1.459479	31.75	11370	49.89	4	31.36805452	0.473	0.841661264	6
optimal_loci_204727_G	1220	1.459479	0	10093	42.04	4	31.36805452	0.252	0.841707228	6
optimal_loci_204729_G	1374	1.459479	0	7643	48.1	3	2.660155201	0.272	0.841728355	6
optimal_loci_204767_G	1363	1.277011	2.2	8197	42.62	3	5.960639714	0.152	0.843790315	6
optimal_loci_204800_G	1388	1.188513	0	8416	50.93	1	122.4374275	0.438	0.845757191	8
optimal_loci_204854_G	2373	2.472563	1.47	6179	51.62	2	5.03695566	0.645	0.84834228	6
optimal_loci_204855_G	1122	2.472563	0	1515	36.27	1	7.658571816	0.181	0.848472929	5
optimal_loci_204904_G	1295	2.090612	3.17	1035	40.54	2	1.876760159	0.293	0.850345245	7
optimal_loci_204917_G	1466	2.078275	26.81	2001	39.69	1	0.056133324	0.226	0.851118134	7
optimal_loci_204969_G	1205	2.463743	0	4458	38.25	1	10.80876262	0.085	0.853746656	10
optimal_loci_204991_G	1806	1.107412	6.64	14876	33.88	1	26.07699669	0.215	0.855717921	9
optimal_loci_205028_G	1116	1.107412	32.89	2001	35.66	4	11.91484622	0.194	0.856618348	8
optimal_loci_205043_G	1050	1.257825	5.9	2352	33.8	1	4.665454171	0.118	0.857538219	8
optimal_loci_205044_G	1039	1.257825	0	1193	45.9	1	4.665454171	0.256	0.857548986	8
optimal_loci_205047_G	1883	1.257825	15.14	4120	42.85	2	2.482012998	0.282	0.857624487	8
optimal_loci_205050_G	1825	1.257825	14.19	1759	54.3	2	2.482012998	0.382	0.857735674	8
optimal_loci_205132_G	1126	0.901441	0	4648	37.03	1	223.7403057	0.054	0.863420213	5
optimal_loci_205133_G	1323	0.901441	7.94	2391	39.98	1	223.7403057	0.123	0.863439169	5
optimal_loci_205136_G	1292	0.901441	0	2116	48.29	1	223.7403057	0.363	0.863537887	5
optimal_loci_205142_G	1827	0.901441	0	1393	44.71	2	0.046265242	0.33	0.864117057	5
optimal_loci_205145_G	1631	0.887633	0	3731	38.74	1	0.092530484	0.205	0.864193249	5
optimal_loci_205239_G	1565	2.736545	17.64	12512	42.74	1	5.36045474	0.308	0.870342512	4
optimal_loci_205268_G	1081	4.007577	0	3066	42.92	2	7.397621315	0.308	0.871827888	4
optimal_loci_205276_G	1254	4.007577	37.64	9786	35.24	1	52.94366576	0.04	0.872297204	4
optimal_loci_205293_G	1037	4.365962	7.23	2001	55.15	4	33.83836196	0.754	0.873086399	5
optimal_loci_205343_G	1212	6.171158	0	7281	45.29	5	0.864069217	0.287	0.877302447	4
optimal_loci_205423_G	1326	6.703742	11.39	3268	40.19	2	17.35396886	0.25	0.879980733	5
optimal_loci_205453_G	2246	5.927539	3.25	2001	53.02	2	12.95569707	0.493	0.88187946	8

optimal_loci_205474_G	1895	6.400222	16.09	2503	50.39	3	35.14553124	0.408	0.882859861	9
optimal_loci_205496_G	1571	6.655608	0	7589	57.54	3	5.48386164	0.73	0.884225087	13
optimal_loci_205563_G	1282	7.049948	15.68	2534	36.42	2	0.116424673	0.064	0.886232414	14
optimal_loci_205574_G	1247	6.762664	28.47	2193	33.68	2	7.407838359	0.086	0.886431829	14
optimal_loci_205576_G	1110	6.736451	15.05	2001	51.26	2	7.407838359	0.488	0.886500034	14
optimal_loci_205578_G	1437	6.736451	0	2345	40.77	2	7.407838359	0.333	0.886517499	13
optimal_loci_205579_G	2511	6.763297	0	1001	43.92	4	10.35620596	0.295	0.88665113	15
optimal_loci_205629_G	1166	5.449158	3	2132	40.65	4	60.22253411	0.15	0.888280976	16
optimal_loci_205637_G	1080	5.695731	4.35	1001	52.68	2	120.4450682	0.397	0.888396175	16
optimal_loci_205642_G	1170	5.445189	2.48	3348	40.51	3	18.37968788	0.124	0.888653543	17
optimal_loci_205643_G	1706	5.445189	1.88	1567	58.32	3	18.37968788	0.465	0.888665	17
optimal_loci_205657_G	1016	5.493787	0	6374	56.39	2	0.898820066	0.509	0.889129651	16
optimal_loci_205661_G	2362	5.493787	19.05	1598	47.03	2	0.898820066	0.432	0.889161214	16
optimal_loci_205683_G	1170	4.739728	0	1001	50.08	5	1.67187047	0.377	0.891178507	14
optimal_loci_205684_G	1515	4.739728	7.72	2223	41.12	4	2.089838088	0.24	0.891189752	14
optimal_loci_205692_G	1618	3.861749	0	6068	45.85	1	7.462795998	0.305	0.892211608	16
optimal_loci_205693_G	1975	3.861749	17.11	7719	43.44	1	7.462795998	0.407	0.8922268	16
optimal_loci_205706_G	1948	3.604223	2.93	3806	39.16	1	2.645777844	0.207	0.893191521	15
optimal_loci_205744_G	1907	3.558513	0	1001	61.24	2	1.249140088	0.7	0.895173267	14
optimal_loci_205745_G	1360	3.558513	0	2001	44.55	2	1.249140088	0.344	0.895225985	14
optimal_loci_205761_G	1007	3.462435	4.97	2001	43.89	4	14.03620547	0.344	0.895944601	12
optimal_loci_205766_G	1006	3.525275	6.46	1576	38.56	4	14.03620547	0	0.895995469	12
optimal_loci_205775_G	3729	3.525275	9.81	8997	58.86	4	13.66318173	0.584	0.896280683	12
optimal_loci_205795_G	1874	3.462648	0	3207	52.13	3	231.1515294	0.447	0.897391273	13
optimal_loci_205826_G	1330	4.054678	27.74	1001	30.67	4	64.52104508	0.159	0.899107212	12
optimal_loci_205827_G	1939	4.054678	16.04	2001	45.84	2	42.6972966	0.416	0.899186956	12
optimal_loci_205831_G	1537	4.054678	0	1394	53.8	2	42.6972966	0.465	0.899284745	12
optimal_loci_205867_G	2237	4.285543	10.68	9773	41.17	2	7.824223977	0.254	0.901082977	8
optimal_loci_205869_G	1731	4.285543	0	7263	60.25	2	7.824223977	0.614	0.90111073	8
optimal_loci_205873_G	1744	4.293883	0	2734	37.09	2	7.824223977	0.123	0.901152286	8
optimal_loci_205987_G	2932	3.411791	0	1847	57.7	3	9.664670144	0.53	0.904551626	6
optimal_loci_205998_G	1653	6.134124	0	6011	43.19	2	4.917973405	0.261	0.906126951	6
optimal_loci_206017_G	1221	6.287112	31.12	1013	36.11	4	2.690070125	0.096	0.908121681	10

optimal_loci_206062_G	2087	5.513891	1.72	2529	48.49	3	5.364206168	0.349	0.910045041	12
optimal_loci_206072_G	1128	5.184591	0	2164	51.5	3	30.7568263	0.399	0.910618192	12
optimal_loci_206075_G	2036	4.620298	0	2001	46.95	4	23.07092851	0.247	0.910699841	12
optimal_loci_206111_G	2233	6.94875	0	1001	36.67	3	10.76691185	0.139	0.912335705	11
optimal_loci_206112_G	1081	6.94875	0	2099	46.8	3	10.76691185	0.261	0.912399676	11
optimal_loci_206113_G	1788	6.94875	10.07	4743	37.13	3	10.76691185	0.098	0.912424006	11
optimal_loci_206117_G	1113	6.94875	11.68	3611	42.58	4	13.75201614	0.284	0.912490527	11
optimal_loci_206130_G	1761	7.537268	0	1782	49.68	1	3.884076875	0.598	0.913121614	11
optimal_loci_206146_G	1161	6.78703	4.31	4018	45.04	2	8.383856579	0.425	0.91422556	14
optimal_loci_206150_G	1192	6.342049	3.02	2562	53.43	2	8.383856579	0.61	0.914379527	14
optimal_loci_206222_G	1830	4.103012	24.04	3114	47.15	3	2.314429755	0.457	0.917617898	8
optimal_loci_206231_G	1904	4.014605	0	1531	46.95	1	6.085419372	0.286	0.918259493	8
optimal_loci_206243_G	1480	4.014605	25.41	10486	50.33	1	6.085419372	0.487	0.918341896	8
optimal_loci_206245_G	1915	4.014605	35.3	12629	38.17	1	6.085419372	0.126	0.918361616	8
optimal_loci_206277_G	1112	3.952644	20.32	8195	38.84	2	20.52669003	0.365	0.919815089	6
optimal_loci_206337_G	1337	2.625117	5.68	1001	58.71	1	5.194680637	0.767	0.922653893	9
optimal_loci_206366_G	1667	3.453412	5.22	2871	43.79	5	22.2235948	0.287	0.92495249	5
optimal_loci_206371_G	1122	3.453412	5.07	2063	55.25	5	14.60265071	0.475	0.92502928	5
optimal_loci_206376_G	1290	3.453412	0	3260	47.51	3	21.28393624	0.325	0.925131209	5
optimal_loci_206383_G	1444	3.474885	11.29	2278	36.63	1	0.64912643	0.277	0.925317917	5
optimal_loci_206477_G	1779	4.468436	0	3605	47.55	6	8.70728771	0.489	0.930192197	9
optimal_loci_206488_G	1541	5.265215	0	4671	52.17	2	23.8962544	0.49	0.931388273	9
optimal_loci_206511_G	1531	5.265215	19.79	5684	41.34	2	11.83338132	0.356	0.932108858	9
optimal_loci_206512_G	1337	5.265215	0	4203	38.51	1	5.921318351	0.222	0.932124271	9
optimal_loci_206522_G	1447	5.166015	0	2412	41.18	3	31.61388228	0.302	0.933084622	12
optimal_loci_206564_G	1062	4.816518	25.99	1457	44.35	5	9.296374676	0.38	0.934346151	17
optimal_loci_206567_G	1133	4.816518	6	2680	52.16	5	17.85295235	0.466	0.934530604	17
optimal_loci_206570_G	2134	4.816518	0	3314	48.59	5	17.85295235	0.367	0.934630914	17
optimal_loci_206572_G	1297	4.816518	0	3416	51.34	4	21.27488003	0.336	0.934656606	17
optimal_loci_206608_G	1712	5.452764	2.16	6194	43.04	1	14.62278127	0.254	0.93717718	17
optimal_loci_206616_G	1862	5.624144	5.75	2001	46.24	1	1.147670134	0.274	0.937400971	19
optimal_loci_206621_G	2930	5.624144	11.98	5688	43.34	1	1.147670134	0.288	0.937524351	19
optimal_loci_206636_G	2033	6.995374	18.1	14141	45.49	4	0.019756421	0.324	0.938227341	18

optimal_loci_206640_G	1297	7.132876	7.09	7439	46.26	3	0.026341895	0.264	0.938295785	18
optimal_loci_206641_G	2530	7.132876	37.35	4797	38.77	3	0.026341895	0.082	0.938308751	18
optimal_loci_206653_G	1167	7.368363	0	2134	45.67	4	13.64476912	0.25	0.938606829	18
optimal_loci_206654_G	2374	7.323095	21.27	2001	34.83	3	18.1666836	0.06	0.938702308	18
optimal_loci_206673_G	2091	6.510909	5.83	2148	33.33	4	0.158454659	0.128	0.939478049	16
optimal_loci_206682_G	1055	6.510909	0	1001	32.98	1	6.529605762	0.083	0.940007979	16
optimal_loci_206705_G	1413	8.713109	0	16692	36.58	2	14.60505443	0.188	0.941076627	16
optimal_loci_206713_G	1072	8.586637	0	2232	56.43	3	12.20210996	0.353	0.941667234	17
optimal_loci_206718_G	1837	8.349983	4.08	2001	54.76	2	3.929952964	0.518	0.941843507	16
optimal_loci_206719_G	1747	8.349983	0	3871	54.49	2	3.929952964	0.525	0.941860714	16
optimal_loci_206771_G	1602	8.088671	0	4990	57.17	4	1.177050277	0.735	0.943481745	13
optimal_loci_206774_G	1410	8.016082	3.55	3949	36.87	2	2.354100555	0.387	0.943629141	13
optimal_loci_206852_G	1436	6.950288	0	4253	36.83	2	12.36513864	0.239	0.946274052	13
optimal_loci_206867_G	1236	5.064047	14.64	17847	44.41	1	5.106629622	0.22	0.947297205	10
optimal_loci_206875_G	1595	5.372976	13.29	5455	45.14	2	28.11815731	0.359	0.947407932	10
optimal_loci_206876_G	1256	5.372976	10.59	3701	50	3	19.27733664	0.425	0.947427192	10
optimal_loci_206891_G	1193	5.523011	4.95	8878	61.44	5	7.658588491	0.524	0.947982988	10
optimal_loci_206931_G	1130	5.47426	18.14	2034	37.87	4	14.75137598	0.115	0.949223372	10
optimal_loci_206934_G	1571	5.538371	8.85	4263	40.29	4	14.75137598	0.235	0.949316495	12
optimal_loci_206994_G	1130	3.5065	0	1001	57.61	1	5.252675917	0.531	0.950766029	13
optimal_loci_207048_G	1010	5.92464	0	2014	50.39	2	7.500590404	0.679	0.95321147	13
optimal_loci_207049_G	1127	5.982208	0	3057	47.29	1	15.00118081	0.395	0.953221068	13
optimal_loci_207052_G	1310	7.420276	0	2532	53.2	2	17.52092248	0.702	0.953906639	12
optimal_loci_207053_G	1438	7.420276	1.95	1001	49.09	2	17.52092248	0.287	0.953919549	12
optimal_loci_207074_G	1316	7.659254	25.68	6110	46.35	3	9.351224941	0.445	0.955354756	11
optimal_loci_207078_G	3935	7.332317	3.51	2001	53.11	3	60.0210457	0.412	0.955612355	10
optimal_loci_207084_G	1160	7.296204	9.83	3527	39.65	2	84.20122369	0.221	0.955735697	11
optimal_loci_207085_G	2020	7.296204	0	4720	48.36	2	84.20122369	0.361	0.955746675	11
optimal_loci_207123_G	1153	5.899516	0	1001	43.45	6	45.19522634	0.252	0.957639126	16
optimal_loci_207127_G	1115	5.899516	3.23	4428	58.47	7	44.12583174	0.573	0.957679375	16
optimal_loci_207201_G	4298	5.318964	30.57	1001	44.27	4	43.60356957	0.355	0.960277844	10
optimal_loci_207208_G	1218	4.665826	0	7698	35.38	3	1.79996244	0.073	0.960512217	9
optimal_loci_207234_G	1933	5.28357	38.59	2359	39.83	2	18.64613657	0.187	0.961798923	12

optimal_loci_207244_G	1016	5.28357	0	4291	45.66	4	12.20192703	0.363	0.961987894	12
optimal_loci_207249_G	1219	5.28357	22.31	1001	43.72	4	12.20192703	0.311	0.9620163	12
optimal_loci_207251_G	1350	5.28357	20.81	1001	49.33	3	7.911238049	0.542	0.962104767	12
optimal_loci_207280_G	1421	3.923801	14.14	2001	33.99	6	3.387717199	0.107	0.964955967	15
optimal_loci_207281_G	1668	3.923801	3.78	2001	43.4	7	2.188285493	0.271	0.965133684	14
optimal_loci_207289_G	1777	3.959995	10.75	3335	35	6	9.441252323	0.138	0.965334314	14
optimal_loci_207293_G	1692	4.418718	0	1001	52.36	7	8.89220457	0.517	0.965446163	14
optimal_loci_207324_G	1397	4.045853	0	4250	52.18	2	15.1841454	0.429	0.966884186	10
optimal_loci_207333_G	2066	3.894344	5.32	2001	43.07	2	35.1955547	0.305	0.967489571	10
optimal_loci_207335_G	1765	3.894344	2.78	4788	45.66	2	35.1955547	0.464	0.967515217	10
optimal_loci_207338_G	1611	3.546894	1.74	12652	42.08	2	35.1955547	0.175	0.967587581	11
optimal_loci_207364_G	1642	4.585713	25.03	3369	46.77	7	6.03702924	0.293	0.969132686	13
optimal_loci_207365_G	2368	5.918711	2.87	3183	56.75	6	7.04320078	0.693	0.969153253	13
optimal_loci_207414_G	1311	4.773658	12.74	2360	50.87	1	38.19217464	0.279	0.972170363	9
optimal_loci_207448_G	1587	5.236097	0	2512	34.71	2	0.619326454	0.117	0.972724522	8
optimal_loci_207455_G	1268	5.236097	21.21	12398	52.91	2	0.619326454	0.443	0.972859164	8
optimal_loci_207499_G	1238	4.557163	3.8	4462	49.83	5	10.88352323	0.288	0.974222384	7
optimal_loci_207501_G	1093	4.557163	12.63	2910	47.48	5	10.88352323	0.505	0.974238	7
optimal_loci_207532_G	1628	4.874136	20.76	5249	41.76	1	6.630113628	0.248	0.975643365	9
optimal_loci_207595_G	2167	2.485756	0	3384	50.39	4	4.229528534	0.345	0.978333954	6
optimal_loci_207613_G	1602	2.520048	0	1001	62.92	2	5.678992584	0.618	0.979341133	4
optimal_loci_207615_G	1049	4.633571	0	2012	41.65	3	72.76778525	0.277	0.979672798	4
optimal_loci_207772_G	1414	14.808028	0	1772	43.21	5	20.37849283	0.271	0.988382085	2
optimal_loci_207807_G	2374	62.423938	22.37	5993	35.97	1	18.46352135	0.142	0.990539321	2
optimal_loci_208014_G	2421	1.246241	21.93	16310	33.66	2	2.725665049	0.189	0.993128488	4
optimal_loci_208070_G	1222	1.246241	2.62	16298	38.95	1	14.14031958	0.157	0.986285464	4
optimal_loci_208071_G	1921	1.246241	10.15	17614	41.48	1	14.14031958	0.217	0.986244839	4
optimal_loci_208074_G	1107	1.246241	0	18069	43.08	1	0.077914133	0.246	0.986203528	4
optimal_loci_208210_G	1421	0.504941	0	1552	47.85	4	6.249223552	0.657	0.969082379	1
optimal_loci_208312_G	1100	3.725884	0	6757	42.54	3	2.825117102	0.348	0.958351472	2
optimal_loci_208314_G	1013	3.725884	0	19049	38.3	1	0.011877076	0.351	0.958105403	2
optimal_loci_208398_G	1037	2.129966	0	5054	42.91	1	16.5882398	0.131	0.945235766	1
optimal_loci_208514_G	2104	2.343371	9.41	15029	34.88	1	1.484414573	0.121	0.922287661	5

optimal_loci_208518_G	1786	2.343371	22.68	1283	40.2	1	1.484414573	0.252	0.921856573	5
optimal_loci_208578_G	1683	3.040093	29.28	10651	34.46	1	0.874183818	0.089	0.913403609	5
optimal_loci_208582_G	1623	3.044395	0	1855	47.87	1	0.874183818	0.203	0.913066331	5
optimal_loci_208583_G	1082	3.044395	0	3511	50.73	1	0.874183818	0.626	0.913043851	5
optimal_loci_208855_G	2878	3.393745	5.39	16017	48.78	1	0.374992495	0.426	0.867993448	2
optimal_loci_208867_G	2042	3.393745	0	3659	34.32	1	3.068347935	0.183	0.866644194	2
optimal_loci_208978_G	1497	3.13603	2.34	12549	36.47	3	27.72616774	0.156	0.855356794	1
optimal_loci_209238_G	1038	0.040301	20.71	3590	39.59	1	0.339869373	0.39	0.815636613	3
optimal_loci_209241_G	1279	0.279427	0	2001	37.13	1	0.339869373	0	0.815406875	3
optimal_loci_209266_G	1478	0.396573	35.05	2001	42.21	2	13.94913604	0.146	0.808353206	3
optimal_loci_209699_G	1108	0.396698	31.86	2001	40.43	2	3.777450835	0.112	0.735856835	3
optimal_loci_209704_G	1599	0.396698	13.57	17754	43.9	2	3.777450835	0.23	0.735529335	3
optimal_loci_209732_G	1175	0.396698	0	17201	48.08	2	0.999594445	0.323	0.734046976	3
optimal_loci_209926_G	1017	0.40779	0	14767	38.24	1	3.029378108	0.227	0.721462218	4
optimal_loci_209963_G	1489	0.404914	24.18	5345	37.27	6	0.481164768	0.027	0.717987923	5
optimal_loci_209973_G	1103	0.404914	0	2555	38.25	3	0.151233854	0.112	0.717193407	5
optimal_loci_209993_G	1848	0.407242	5.9	11336	35.49	1	0.287539009	0.273	0.715674093	5
optimal_loci_210085_G	1840	0.398554	0	15873	36.41	1	0.753066471	0.105	0.71099125	6
optimal_loci_210189_G	1077	0.410267	0	8929	35.74	1	2.021437371	0.245	0.703826673	3
optimal_loci_210220_G	1250	0.397906	34.72	2763	37.68	4	3.954756317	0.329	0.702342702	3
optimal_loci_210421_G	1139	0.412384	19.4	1164	37.48	3	0.019226093	0.182	0.687698609	1
optimal_loci_210577_G	1274	0.392655	19.86	11050	31.55	1	0.083644958	0.134	0.671771935	1
optimal_loci_210852_G	1108	0.408346	0	18012	37.81	1	21.87342803	0.268	0.637542097	1
optimal_loci_211377_G	1680	0.189008	22.2	13233	35.47	1	14.28249772	0.254	0.553805645	1
optimal_loci_211704_G	1620	1.161246	25.31	2001	35.55	3	8.721140317	0.1	0.509782903	1
optimal_loci_211853_G	1108	0.339481	3.7	6363	37.18	1	0.677061103	0.197	0.490269315	1
optimal_loci_212402_G	1158	0.033994	5.87	2122	37.56	1	52.81214516	0	0.41499621	1
optimal_loci_212590_G	1719	0.337883	19.02	13790	34.32	1	0.104340552	0.152	0.393286935	2
optimal_loci_212593_G	1137	0.337883	12.05	9668	37.29	1	0.104340552	0.073	0.393203831	2
optimal_loci_212844_G	1138	0.091092	0	7059	43.58	3	48.05068035	0.237	0.366308488	2
optimal_loci_212845_G	1145	0.091092	0	8281	52.31	3	48.05068035	0.73	0.36628371	2
optimal_loci_213435_G	1181	0.896227	31.24	2001	40.89	1	2.359933929	0.199	0.302259778	1
optimal_loci_213788_G	1202	0.010948	8.4	17969	46.83	1	2.940756569	0.435	0.262009758	2

optimal_loci_213849_G	1370	0.023637	0	1001	47.88	1	3.922831122	0.354	0.255020867	2
optimal_loci_214039_G	1044	0.464584	23.56	1001	42.24	2	18.67324611	0.228	0.22847252	2
optimal_loci_214065_G	1945	0.342918	37.79	15291	38.97	1	47.14990045	0.124	0.225985827	2
optimal_loci_214256_G	1005	0.582877	6.57	12701	42.98	2	6.691961392	0.136	0.200640282	1
optimal_loci_217402_G	1240	0.165641	24.03	1001	41.53	1	6.534667875	0.196	0.115480812	2
optimal_loci_217438_G	1001	0.230197	0	11240	35.46	1	23.31437264	0.21	0.117156122	2
optimal_loci_217622_G	1421	0.243024	8.8	1516	46.16	1	4.613967965	0.363	0.128117289	2
optimal_loci_217658_G	2037	0.245255	23.66	5043	38.14	2	19.49993507	0.05	0.130040203	4
optimal_loci_217718_G	1077	0.499971	0	4432	52.64	1	10.46210256	0.581	0.133640021	4
optimal_loci_217719_G	1349	0.499971	0	5542	54.18	1	10.46210256	0.41	0.133649335	4
optimal_loci_217732_G	1638	0.57077	30.46	3771	34.18	1	1.194959827	0.134	0.134534626	4
optimal_loci_217787_G	1798	0.563638	22.58	15629	35.76	1	19.04097008	0.052	0.138076974	2
optimal_loci_217939_G	1031	0.341231	7.57	7564	40.05	1	0.035114173	0.112	0.144558603	1
optimal_loci_219497_G	2380	0.06231	14.33	2007	36.47	1	11.26349084	0.206	0.222203698	1
optimal_loci_219916_G	1090	0.163653	0	3922	38.07	2	0.111810599	0.115	0.245166483	1
optimal_loci_220195_G	1212	0.247533	0	2582	47.52	3	9.315895334	0.262	0.260031435	1
optimal_loci_220274_G	1641	0.025395	10.12	1172	38.39	3	38.09412791	0.143	0.265953044	1
optimal_loci_220411_G	1303	0.585211	21.26	3982	44.51	2	1.142359979	0.405	0.27488328	2
optimal_loci_220414_G	2008	0.585211	3.78	1349	46.86	3	0.852538802	0.517	0.274951147	2
optimal_loci_220737_G	1193	1.039195	0	1269	41.24	1	8.919995903	0.216	0.288438411	2
optimal_loci_220783_G	1083	0.612956	5.63	5757	42.47	2	2.62129855	0.263	0.290869404	2
optimal_loci_220850_G	1117	0.060649	0	10713	51.02	1	0.732662645	0.262	0.295309638	3
optimal_loci_220931_G	1120	0.564696	22.77	2379	38.48	3	3.483902892	0.348	0.298761379	3
optimal_loci_220933_G	1080	0.564696	25.93	1855	38.42	2	5.225854339	0.133	0.298808377	3
optimal_loci_221034_G	1743	1.863065	1.66	5876	43.02	2	1.00222894	0.22	0.306831479	2
optimal_loci_221040_G	1135	1.266289	8.11	9398	41.93	3	12.6863103	0.228	0.307237817	2
optimal_loci_221139_G	1014	0.17171	32.25	1001	32.44	2	16.3959169	0.126	0.316175318	2
optimal_loci_221239_G	1226	0.55195	0	2001	32.78	2	1.53724278	0.221	0.319551045	2
optimal_loci_221602_G	1623	0.189132	37.89	2461	42.02	3	7.268081753	0.533	0.340129843	1
optimal_loci_221720_G	1398	0.623812	0	3300	49.07	3	3.362565074	0.481	0.3466154	4
optimal_loci_221721_G	2626	0.623812	7.39	4731	54.11	3	3.362565074	0.579	0.346627407	4
optimal_loci_221773_G	1167	0.40367	31.45	13073	58.86	2	3.788454293	0.556	0.349207551	4
optimal_loci_221776_G	1146	0.40367	37.96	9183	40.4	3	3.291305855	0.105	0.349240369	4

optimal_loci_222089_G	1326	1.559128	0	1001	48.03	1	38.1923557	0.4	0.365717328	1
optimal_loci_222396_G	2317	0.793049	7.68	2204	52.09	4	1.708898911	0.533	0.380232843	5
optimal_loci_222397_G	1018	0.793049	3.05	1001	59.03	4	1.708898911	0.411	0.380253837	5
optimal_loci_222415_G	1230	0.199064	0	3860	44.06	1	4.142484042	0.215	0.380736172	5
optimal_loci_222471_G	1217	0.199069	0	9875	44.53	1	0.170784409	0.566	0.38348235	6
optimal_loci_222483_G	1009	0.199069	0	18028	38.85	1	0.170784409	0	0.383741206	6
optimal_loci_222501_G	1060	2.22655	0	1001	38.86	2	3.213980605	0.332	0.3854722	4
optimal_loci_222591_G	1170	2.437794	3.59	2015	40	1	0.052121769	0.132	0.38925037	3
optimal_loci_222629_G	2413	3.015037	0	2041	48.52	2	24.8860771	0.295	0.390725872	2
optimal_loci_222830_G	1560	2.447469	2.88	3852	44.1	1	0.478935295	0.284	0.401760755	4
optimal_loci_222843_G	1107	2.539517	32.79	5933	38.39	2	8.977031659	0.326	0.402112391	4
optimal_loci_222870_G	1062	2.331461	0	7076	30.13	3	1.793372641	0.068	0.403624965	4
optimal_loci_222883_G	1297	2.241648	0	11208	35.85	1	0.042099993	0.192	0.403892321	4
optimal_loci_223677_G	1011	1.026516	0	10047	36.39	2	7.992431294	0.064	0.438366424	6
optimal_loci_223692_G	1237	0.998958	0	2001	50.92	5	31.82278556	0.363	0.438902546	6
optimal_loci_223707_G	1971	0.932079	14.16	15802	34.44	1	0.278095495	0.055	0.439470647	6
optimal_loci_223716_G	2041	0.932079	4.95	1001	40.96	3	15.13791224	0.206	0.439834853	6
optimal_loci_223728_G	1040	1.144191	0	1864	48.26	1	1.530100277	0.244	0.440222864	6
optimal_loci_223784_G	1103	1.626206	24.2	5403	38.89	2	0.042870839	0.07	0.442099006	6
optimal_loci_223945_G	1270	1.394901	19.06	2001	36.37	2	15.5846507	0.142	0.447682598	2
optimal_loci_223994_G	1731	0.871632	25.36	9152	38.82	1	0.065226309	0.271	0.45015902	3
optimal_loci_224042_G	1023	1.320048	0	1311	42.03	2	21.38644426	0.096	0.4519764	2
optimal_loci_224166_G	1031	0.927513	13.77	5485	36.17	2	1.677001344	0.106	0.456878746	5
optimal_loci_224169_G	1350	0.932465	2.59	3457	45.55	2	1.677001344	0.38	0.456893087	5
optimal_loci_224176_G	1021	1.15421	31.54	9269	38.88	1	3.354002688	0.168	0.457027763	5
optimal_loci_224181_G	1560	1.168496	33.01	14904	34.48	1	3.354002688	0.139	0.457075047	6
optimal_loci_224216_G	1173	4.473598	5.37	17515	34.27	1	60.73644691	0.15	0.459647069	11
optimal_loci_224238_G	1238	4.732286	0	3344	44.91	4	9.377925119	0.278	0.461264019	10
optimal_loci_224253_G	1211	4.21703	3.14	3741	39.8	3	13.01876193	0.087	0.4621369	10
optimal_loci_224259_G	1309	4.21703	29.72	2869	37.05	2	19.5281429	0.3	0.46226201	10
optimal_loci_224263_G	1191	3.965408	34.68	2640	34.84	2	19.5281429	0.124	0.462360211	10
optimal_loci_224264_G	1331	3.965408	0	4209	36.58	2	19.5281429	0.14	0.462373377	10
optimal_loci_224270_G	1193	3.847372	0	3081	38.8	3	0.400305143	0.145	0.462595723	10

optimal_loci_224334_G	1974	3.637827	5.83	2983	40.47	1	1.114692374	0.221	0.464331424	9
optimal_loci_224336_G	1358	3.637827	24.96	1519	56.03	2	1.089249405	0.62	0.464397965	9
optimal_loci_224379_G	1274	3.272518	29.83	4231	40.18	2	0.81635061	0.189	0.465568225	8
optimal_loci_224473_G	1115	0.72318	14.44	2001	49.41	3	13.68049469	0.585	0.470407706	1
optimal_loci_224611_G	1630	0.777106	19.57	1015	47.36	2	1.184706545	0.342	0.47610154	2
optimal_loci_224681_G	1419	1.31141	35.73	2645	40.87	2	2.960152555	0.19	0.479196401	4
optimal_loci_224717_G	1045	1.318395	6.03	3015	37.79	1	6.926553831	0.135	0.480837349	3
optimal_loci_224749_G	1154	1.308149	0	2001	36.65	3	26.80211644	0.21	0.481545815	4
optimal_loci_224816_G	2238	2.379335	15.91	14801	44.81	1	38.75062279	0.529	0.485548791	9
optimal_loci_224846_G	1539	3.039266	0	1001	47.3	3	25.95383146	0.369	0.487205271	8
optimal_loci_224850_G	1237	3.039266	4.37	1132	34.03	3	25.95383146	0.182	0.487280086	8
optimal_loci_224853_G	1022	3.039266	0	4354	41.58	3	25.95383146	0.1	0.487360422	8
optimal_loci_224876_G	1426	2.223714	0	2001	36.53	1	0.408994506	0.159	0.487668022	8
optimal_loci_224881_G	1304	2.381483	29.75	19213	46.7	1	0.408994506	0.245	0.487889462	8
optimal_loci_224895_G	1214	2.54482	6.59	1828	37.8	2	0.549581439	0.389	0.489276153	8
optimal_loci_224918_G	1495	3.091131	0	6439	38.92	2	1.281886243	0.053	0.489490696	8
optimal_loci_225058_G	1511	2.102993	0	2382	55.32	1	0.313186665	0.559	0.4947938	5
optimal_loci_225066_G	1127	2.102993	0	3254	57.94	2	0.156593333	0.869	0.494950906	5
optimal_loci_225100_G	1849	2.758545	0	3078	38.34	4	0.84799914	0.149	0.495628921	6
optimal_loci_225104_G	3860	2.758545	0	2113	32.22	5	0.678399312	0.128	0.495721265	6
optimal_loci_225125_G	1518	2.631829	2.9	19014	54.01	1	0.86977578	0.491	0.497163362	6
optimal_loci_225224_G	1499	2.77795	3.87	2001	42.09	1	16.78556829	0.255	0.499542683	6
optimal_loci_225290_G	1149	0.463586	0	4431	48.38	2	43.10249518	0.556	0.502508161	5
optimal_loci_225308_G	1685	0.418	3.56	7183	41.06	1	21.66047869	0.243	0.503449555	6
optimal_loci_225345_G	1276	0.065843	0	12319	30.32	2	9.341599656	0.117	0.505734669	5
optimal_loci_225348_G	1465	0.065843	36.18	9059	35.35	2	9.341599656	0.099	0.505760438	5
optimal_loci_225369_G	2319	0.065843	0	1419	42.6	2	55.80844435	0.329	0.506742932	6
optimal_loci_225454_G	1232	0.065843	0	5716	50.32	4	5.02915573	0.426	0.510180064	5
optimal_loci_225457_G	1050	0.065843	0	1048	41.04	2	9.961242481	0.234	0.510319775	5
optimal_loci_225516_G	1208	0.065843	25.66	3870	36.83	1	33.20247008	0.074	0.513341801	4
optimal_loci_225529_G	2022	0.065843	12.56	15612	43.71	1	33.20247008	0.351	0.513525859	4
optimal_loci_225804_G	2290	2.884721	9	9128	56.06	1	2.10365983	0.655	0.525286712	5
optimal_loci_225889_G	1088	1.643552	3.12	11368	51.28	1	40.86840993	0.408	0.528162515	5

optimal_loci_225892_G	1725	1.643552	20.81	1001	48.17	2	20.43420496	0.514	0.52824416	5
optimal_loci_225895_G	1001	1.643552	0	1684	54.54	2	20.43420496	0.738	0.52833334	5
optimal_loci_225909_G	1591	1.469469	3.02	2837	40.85	2	10.87661727	0.223	0.52900382	5
optimal_loci_226024_G	1427	0.481531	9.53	1001	37.28	2	48.07012207	0.08	0.535170608	2
optimal_loci_226052_G	1191	0.487305	35.18	1001	31.65	2	1.135094886	0.203	0.537731621	2
optimal_loci_226144_G	1062	1.629687	0	3288	55.27	4	5.381872599	0.736	0.544886868	2
optimal_loci_226145_G	1207	1.625596	0	2001	43.91	4	5.381872599	0.24	0.544896451	2
optimal_loci_226257_G	1237	1.509473	21.42	2001	27.32	3	5.459149182	0	0.550115594	2
optimal_loci_226319_G	1033	0.892405	24.2	16742	44.53	1	15.96118505	0.319	0.553147362	2
optimal_loci_226475_G	1071	1.836965	0	17786	58.54	1	0.597565137	0.714	0.560291777	3
optimal_loci_226509_G	1005	1.733428	0	2901	41.29	3	67.36271486	0.123	0.562903857	8
optimal_loci_226520_G	1304	1.806919	11.04	3909	42.02	1	199.9246891	0.383	0.563119189	11
optimal_loci_226563_G	2238	2.719079	13.76	1924	38.78	1	1.792421626	0.172	0.565343778	10
optimal_loci_226569_G	1487	3.101578	1.88	18923	37.72	1	15.70056926	0.063	0.565826038	10
optimal_loci_226575_G	1155	3.101578	12.81	11081	37.57	1	15.70056926	0.269	0.565894627	10
optimal_loci_226579_G	1271	3.101578	0	3167	40.83	1	15.70056926	0.102	0.56596006	10
optimal_loci_226602_G	2620	3.529489	7.67	17665	41.94	1	4.269577181	0.097	0.567028705	11
optimal_loci_226609_G	1041	3.651855	0	8622	56.19	1	4.269577181	0.731	0.567117834	10
optimal_loci_226613_G	1948	2.572234	19.1	3156	36.24	1	4.269577181	0.075	0.567258569	11
optimal_loci_226614_G	1883	4.490662	29.26	5736	37.01	1	4.269577181	0.155	0.567280218	11
optimal_loci_226704_G	1062	3.392396	0	2634	51.31	1	5.95051182	0.349	0.570550184	6
optimal_loci_226716_G	1158	3.048752	0	4279	35.23	3	1.858679538	0.192	0.571435651	5
optimal_loci_226783_G	2643	1.765624	13.55	1001	37.3	1	19.78335344	0.168	0.57481001	3
optimal_loci_226813_G	2208	0.694809	10.6	9171	35.41	2	1.050887824	0.035	0.576319965	3
optimal_loci_226942_G	1163	0.822236	0	3119	40.24	1	8.044248866	0.232	0.58031116	2
optimal_loci_227153_G	1012	2.226716	27.47	6339	37.15	2	12.24805498	0.018	0.593030742	2
optimal_loci_227223_G	1496	2.740766	29.55	1337	33.02	2	77.11792106	0	0.596334523	3
optimal_loci_227301_G	1111	2.158002	18.9	4028	38.34	4	0.011280381	0.136	0.598498328	3
optimal_loci_227419_G	1054	0.398056	4.36	19973	36.05	1	9.514291578	0.115	0.60245741	3
optimal_loci_227473_G	1053	0.181115	8.64	6357	39.6	2	1.074489447	0.321	0.604824077	2
optimal_loci_227576_G	1043	0.602245	0	12351	36.33	2	4.699313171	0.131	0.609169256	4
optimal_loci_227588_G	1290	0.712866	33.41	15762	35.96	1	8.752694782	0.155	0.609586276	4
optimal_loci_227594_G	1051	0.712866	0	7580	45.09	1	8.752694782	0.146	0.609804662	4

optimal_loci_227627_G	1134	0.882624	0	5799	48.67	3	6.994373578	0.571	0.612316905	6
optimal_loci_227691_G	1137	0.776751	28.76	1001	34.3	2	0.05494062	0.179	0.616161717	4
optimal_loci_227700_G	1996	0.779498	2	18483	37.47	1	0.109881241	0.079	0.616360384	4
optimal_loci_227752_G	1010	0.593751	0	15726	31.68	1	432.8125754	0.225	0.619211107	3
optimal_loci_227900_G	1080	0.527461	8.15	15819	33.79	1	0.404449755	0.133	0.624903732	2
optimal_loci_227958_G	1025	0.554315	0	14939	49.26	1	12.61842458	0.511	0.626726474	3
optimal_loci_228034_G	1138	0.760966	20.04	5461	40.15	1	52.43145173	0.221	0.629484265	3
optimal_loci_228076_G	1065	0.728978	31.83	2001	33.8	2	34.28643058	0.127	0.631378355	2
optimal_loci_228254_G	1195	0.039055	4.6	3600	42.59	1	2.650962291	0.227	0.638439623	2
optimal_loci_228255_G	1070	0.039055	0	2486	41.21	1	2.650962291	0.302	0.63845002	2
optimal_loci_228499_G	1513	2.950468	9.25	1158	38.99	3	1.423393575	0	0.652523291	3
optimal_loci_228586_G	1080	2.582728	0	2568	47.96	2	45.65914798	0.342	0.654988385	4
optimal_loci_228587_G	1547	2.582728	12.73	1001	40.33	2	45.65914798	0.092	0.655002264	4
optimal_loci_228690_G	1186	1.24223	10.54	7738	38.95	1	75.33181312	0.085	0.65913254	6
optimal_loci_228716_G	1299	0.84199	37.88	4409	31.48	1	9.854864108	0.078	0.659811612	5
optimal_loci_228729_G	1167	1.07079	28.36	1108	35.64	2	1.278854241	0.06	0.66065019	5
optimal_loci_228739_G	1378	1.07079	0	1001	37.73	3	3.749661167	0.045	0.66115034	5
optimal_loci_228793_G	1082	1.645138	6.38	13827	37.98	1	16.74057427	0.197	0.663742206	9
optimal_loci_228883_G	1367	2.027838	3.73	2551	42.86	2	4.217154942	0.366	0.666799525	16
optimal_loci_228889_G	1000	2.020849	0	2568	45.4	3	2.914541775	0.337	0.666901057	16
optimal_loci_228893_G	1952	2.023413	0	6644	46.46	3	2.914541775	0.233	0.666935259	17
optimal_loci_228897_G	1137	2.023413	0	7306	36.49	2	3.345449079	0.087	0.666969847	17
optimal_loci_228913_G	2437	2.023413	2.5	7470	38.28	2	1.790991969	0.158	0.66736687	17
optimal_loci_228961_G	1121	2.425929	0	19475	33.8	1	39.40919279	0	0.669332344	20
optimal_loci_228962_G	1062	2.425929	16.85	18268	43.69	1	39.40919279	0.104	0.669342967	20
optimal_loci_228981_G	1505	2.425929	26.38	18161	33.08	1	2.702967553	0.178	0.669788314	20
optimal_loci_228992_G	2761	2.185987	0	8704	45.63	1	155.1021409	0.048	0.670180295	22
optimal_loci_228993_G	1031	2.185987	0	3719	37.92	1	155.1021409	0.122	0.670236641	22
optimal_loci_229002_G	1409	2.160047	0	5086	40.95	2	81.01536318	0.244	0.670327969	22
optimal_loci_229012_G	1068	2.160047	15.26	2552	35.11	1	6.928585514	0.113	0.670488977	22
optimal_loci_229013_G	2205	2.160047	20	4479	48.16	1	6.928585514	0.489	0.670505146	22
optimal_loci_229019_G	1381	2.10108	25.49	14388	33.59	1	6.928585514	0.088	0.670588293	22
optimal_loci_229023_G	3047	2.150331	2.26	4170	43.09	3	58.35385212	0.364	0.670916745	22

optimal_loci_229038_G	1358	1.762754	27.76	1246	30.26	3	58.35385212	0.184	0.671144948	20
optimal_loci_229111_G	1375	1.273318	0	7884	45.96	2	1.545623946	0.573	0.672540039	18
optimal_loci_229113_G	1406	1.273318	36.13	5798	46.15	2	1.545623946	0.352	0.672557283	18
optimal_loci_229145_G	1039	1.051195	17.23	11420	39.17	1	9.691507796	0.363	0.673448775	18
optimal_loci_229150_G	1224	1.051195	0	14311	40.44	1	9.691507796	0.117	0.673473033	18
optimal_loci_229168_G	1359	0.994723	21.19	13296	41.35	1	115.6975645	0.265	0.674048686	15
optimal_loci_229179_G	1234	0.905689	24.96	2766	35.08	3	38.73036295	0	0.67424789	15
optimal_loci_229242_G	1059	0.652724	10.95	2308	46.74	2	10.49882704	0.202	0.676221737	9
optimal_loci_229285_G	1523	1.245046	9	8189	39.92	2	1.145179604	0.301	0.678713213	4
optimal_loci_229296_G	1727	1.218557	16.85	1524	34.45	2	67.72734738	0.143	0.679065537	5
optimal_loci_229339_G	1121	1.259452	26.85	2759	37.46	1	17.860981	0.157	0.681418635	7
optimal_loci_229363_G	1258	1.047668	0	7715	38.71	2	10.78928119	0.161	0.683117357	8
optimal_loci_229369_G	1906	0.943044	0	2021	40.13	4	11.50941021	0.15	0.683602385	7
optimal_loci_229373_G	1363	0.929689	0	6311	35.95	4	11.50941021	0.077	0.683638383	7
optimal_loci_229391_G	1916	0.710116	7.15	3624	42.17	1	2.081962305	0.246	0.68380357	9
optimal_loci_229440_G	1047	1.095806	26.74	1845	41.16	2	1.442502956	0.264	0.686026456	13
optimal_loci_229450_G	1096	1.023215	0	2154	55.56	1	0.373698774	0.585	0.686681941	14
optimal_loci_229482_G	1331	1.370142	2.1	8970	45.37	1	3.008291468	0.195	0.687902077	11
optimal_loci_229483_G	1172	1.370142	34.39	7687	39.41	1	3.008291468	0	0.687914177	11
optimal_loci_229491_G	1013	1.370142	21.72	8237	44.42	1	3.008291468	0.542	0.688068774	10
optimal_loci_229512_G	1200	1.734029	8	7779	39.41	2	11.85831026	0.285	0.688676716	10
optimal_loci_229515_G	1017	1.734029	0	7631	63.02	2	11.85831026	0.62	0.688695679	10
optimal_loci_229553_G	1094	1.559027	24.5	1487	40.67	1	0.508118326	0.342	0.689620711	10
optimal_loci_229557_G	2505	1.559027	0	4266	40.43	1	0.508118326	0.133	0.68969785	10
optimal_loci_229575_G	1503	1.674622	0	2363	49.5	2	58.58343226	0.459	0.69029917	9
optimal_loci_229771_G	1099	0.812511	5.28	6402	38.85	1	2.859923358	0.27	0.695972916	3
optimal_loci_229777_G	1062	0.860129	10.36	1001	50	1	2.859923358	0.474	0.69629468	3
optimal_loci_229827_G	1194	0.681072	0	1377	56.44	2	125.6788602	0.555	0.698153276	3
optimal_loci_230092_G	1162	0.421472	21.51	1751	40.96	3	0.513350889	0.266	0.709563903	1
optimal_loci_230330_G	1039	0.68653	18.38	1123	34.45	1	18.29491493	0.017	0.717171387	3
optimal_loci_230335_G	1107	0.68653	0	19766	38.75	1	18.29491493	0.138	0.717327821	3
optimal_loci_230344_G	1070	0.720396	36.26	6342	36.44	3	12.03301577	0.12	0.717672308	4
optimal_loci_230421_G	3109	1.023387	13.28	2928	33.19	2	3.140970811	0.146	0.721565503	3

optimal_loci_230461_G	1407	0.113708	0	5489	38.09	1	15.97610304	0.261	0.725261231	2
optimal_loci_230703_G	1991	0.246444	0	6518	39.52	3	7.777846902	0.125	0.735616857	4
optimal_loci_230743_G	1988	0.418145	30.68	2841	35.81	1	13.21566398	0.231	0.737432885	5
optimal_loci_230771_G	1028	0.907603	0	2171	38.22	3	48.3803729	0.053	0.738963131	8
optimal_loci_230776_G	1208	0.907603	4.06	9120	50.49	3	48.3803729	0.649	0.73902144	8
optimal_loci_230824_G	1082	0.91202	0	19879	47.5	1	2.605877465	0.376	0.740984992	9
optimal_loci_230850_G	1501	0.918692	15.79	8828	40.9	1	12.93132919	0.249	0.741970548	9
optimal_loci_230857_G	1250	0.89118	0	13337	40.16	2	6.511591859	0.316	0.742209509	9
optimal_loci_230858_G	1533	0.874726	0	2001	35.81	2	0.124279328	0.097	0.742302255	9
optimal_loci_230874_G	1220	0.860197	0	6757	52.21	2	3.275931427	0.496	0.743255011	7
optimal_loci_230893_G	3074	0.860197	4.42	13040	30.25	1	0.281511493	0.079	0.743778966	7
optimal_loci_230971_G	1158	0.692081	11.31	17053	33.93	1	36.16922851	0	0.745566011	6
optimal_loci_231101_G	1033	1.012658	0	1197	41.14	3	11.55387866	0.167	0.751697943	1
optimal_loci_231274_G	1467	0.677667	26.58	5013	34.83	1	140.8965533	0.056	0.757577698	3
optimal_loci_231344_G	1327	0.35688	9.04	4951	41.59	1	0.167258405	0.277	0.759732482	3
optimal_loci_231404_G	1016	0.617115	19.09	2886	41.92	2	31.32155154	0.317	0.761103205	10
optimal_loci_231458_G	1685	0.988191	0	2001	34.59	1	0.416289397	0.216	0.763955924	9
optimal_loci_231460_G	1315	0.988191	0	4772	39.31	1	0.416289397	0	0.763979176	9
optimal_loci_231461_G	1605	1.234587	11.96	6205	34.14	1	0.416289397	0.208	0.7639912	9
optimal_loci_231467_G	1130	1.234587	4.6	15421	40.88	2	0.208144699	0.328	0.764068532	9
optimal_loci_231468_G	1074	1.234587	0	16584	37.43	3	0.138763132	0.299	0.764078291	9
optimal_loci_231479_G	3673	1.11069	20.56	3250	42.25	1	1.616759449	0.279	0.764741664	9
optimal_loci_231493_G	1106	1.086453	0	19607	41.41	1	1.616759449	0.062	0.764974944	9
optimal_loci_231516_G	1052	1.110087	18.63	6305	29.56	1	1.602142575	0.123	0.765481009	8
optimal_loci_231810_G	2544	0.488714	0	2001	47.2	1	14.74467041	0.268	0.774640874	8
optimal_loci_231814_G	2241	0.486225	0	6134	48.81	1	14.74467041	0.439	0.774675555	8
optimal_loci_231838_G	1145	0.429327	0	14971	44.89	1	9.111969425	0.164	0.775505582	8
optimal_loci_231867_G	3470	0.41475	0.92	3153	51.52	2	9.445461191	0.502	0.7766334	10
optimal_loci_231899_G	1170	0.325857	0	2001	44.27	2	6.37510008	0.538	0.778318226	10
optimal_loci_231904_G	1016	0.311866	27.46	4294	43.3	2	6.37510008	0.144	0.778405317	10
optimal_loci_231905_G	1327	0.311866	9.57	5343	37.75	3	14.96918666	0.17	0.778414119	10
optimal_loci_231906_G	1410	0.311866	0	6857	37.73	3	14.96918666	0.173	0.778426823	10
optimal_loci_231928_G	1018	0.243574	0	15847	34.18	2	0.47555532	0.231	0.779756556	7

optimal_loci_231942_G	1365	0.228922	28.57	6483	33.77	2	0.47555532	0.104	0.780011434	7
optimal_loci_232108_G	2124	0.896254	0	4086	56.21	2	3.21734985	0.653	0.788560195	3
optimal_loci_232110_G	1118	0.896254	6.53	2492	45.61	2	3.21734985	0.149	0.788582011	3
optimal_loci_232111_G	1338	0.896254	2.69	1009	46.93	2	3.21734985	0.404	0.788592609	3
optimal_loci_232205_G	1064	0.945317	21.33	5155	32.51	2	8.287255535	0.075	0.794315284	5
optimal_loci_232213_G	1156	1.001518	0	3333	47.66	2	8.287255535	0.37	0.794397004	5
optimal_loci_232219_G	1273	1.038575	30.01	5317	55.69	2	18.63705674	0.528	0.794620374	5
optimal_loci_232222_G	1552	1.038575	6.19	2832	42.07	2	18.63705674	0.191	0.794638885	5
optimal_loci_232228_G	3903	1.038575	0	2038	47.19	2	10.3498012	0.428	0.794798248	5
optimal_loci_232295_G	1269	1.64904	4.26	15992	41.6	1	24.30086711	0.411	0.79927057	6
optimal_loci_232305_G	1104	1.673739	0	5383	49.81	1	24.30086711	0.457	0.79952278	6
optimal_loci_232309_G	1533	1.689151	13.18	16993	60.66	1	24.30086711	0.634	0.7996202	6
optimal_loci_232310_G	1940	1.686067	0	3881	53.04	3	24.51393127	0.44	0.799757201	6
optimal_loci_232311_G	1194	1.687071	2.93	2544	45.05	3	24.51393127	0.342	0.79977468	6
optimal_loci_232349_G	1294	1.697732	21.1	3983	48.68	1	7.65210147	0.364	0.801631757	6
optimal_loci_232479_G	1313	0.653235	19.57	4155	41.05	1	103.771479	0.195	0.806491737	9
optimal_loci_232484_G	3417	0.712642	0	1001	57.71	1	103.771479	0.601	0.806567534	9
optimal_loci_232487_G	1653	0.712642	4.96	5993	30.67	1	103.771479	0.056	0.806609422	9
optimal_loci_232496_G	2020	0.033676	2.52	5654	43.51	3	43.40600436	0.253	0.807331918	9
optimal_loci_232497_G	2215	0.033676	0	3055	57.38	3	43.40600436	0.562	0.80735209	9
optimal_loci_232501_G	2618	1.798423	7.14	2947	45.53	3	43.40600436	0.432	0.807527539	9
optimal_loci_232524_G	1089	1.849275	9.83	2262	60.23	1	9.782199535	0.737	0.808986024	10
optimal_loci_232533_G	1307	1.849275	36.34	11888	40.78	1	38.86005017	0.262	0.809312319	10
optimal_loci_232553_G	1254	1.679326	0	1960	32.45	2	0.644938728	0.162	0.810330995	16
optimal_loci_232648_G	1652	1.886485	0	5009	38.19	1	13.28750756	0.043	0.812643548	13
optimal_loci_232692_G	1356	1.460138	16.22	5173	59.29	1	7.828503886	0.687	0.814081575	11
optimal_loci_232698_G	1266	1.460138	0	1001	53.94	2	3.914251943	0.484	0.814117338	11
optimal_loci_232704_G	1574	1.460138	39.58	5469	46.63	2	3.914251943	0.264	0.814199352	12
optimal_loci_232705_G	1210	1.460138	20.66	7113	46.94	2	3.914251943	0.375	0.814213147	12
optimal_loci_232707_G	1083	1.460138	0	6531	51.33	2	3.914251943	0.45	0.814226766	12
optimal_loci_232717_G	1000	1.460138	0	6779	56.5	2	5.103640951	0.561	0.814366376	12
optimal_loci_232729_G	1183	1.196185	4.48	2080	37.27	5	22.1823947	0.184	0.815734003	13
optimal_loci_232742_G	1044	1.448353	4.6	16143	40.42	1	0.112829814	0.062	0.816068353	13

optimal_loci_232755_G	2316	1.310768	34.24	1001	46.67	1	6.512280237	0.36	0.816513491	13
optimal_loci_232797_G	1129	2.07316	0	10022	41.89	1	0.602826613	0.326	0.81833958	14
optimal_loci_232831_G	1003	1.988382	0	8851	58.22	3	12.63394502	0.65	0.8196178	11
optimal_loci_232833_G	1671	1.988382	0	5508	37.34	3	12.63394502	0.224	0.819640246	11
optimal_loci_232874_G	1260	2.247733	8.25	2711	49.68	3	6.717555758	0.557	0.821258807	10
optimal_loci_232881_G	1205	2.247733	25.06	3918	46.55	4	24.92175329	0.362	0.821415225	10
optimal_loci_232885_G	1423	2.247733	0	4089	50.8	5	21.56526941	0.483	0.821447338	10
optimal_loci_232894_G	1050	2.247733	12.95	2431	47.8	1	35.29572647	0.294	0.822051948	10
optimal_loci_232941_G	1452	2.787325	7.99	2815	48.2	2	1.547534017	0.577	0.823151026	9
optimal_loci_233008_G	1007	1.717089	0	3171	42.2	2	29.8939863	0.276	0.824344949	8
optimal_loci_233009_G	1504	1.717089	17.82	1500	33.51	2	29.8939863	0.187	0.824354801	8
optimal_loci_233102_G	1937	0.864426	35.93	15901	40.68	1	101.7037193	0.31	0.827439961	12
optimal_loci_233119_G	1320	1.055431	4.92	1001	42.34	1	1.287526593	0.418	0.82882348	14
optimal_loci_233121_G	3784	1.008978	0	3016	53.46	1	1.287526593	0.534	0.828889132	14
optimal_loci_233124_G	1210	1.005312	9.5	8590	40.16	1	1.287526593	0.164	0.828935904	14
optimal_loci_233131_G	1345	1.005312	10.26	14809	36.8	1	11.68945318	0.162	0.829130694	14
optimal_loci_233136_G	1180	1.005312	14.41	11411	41.27	2	6.222539747	0.228	0.829160591	14
optimal_loci_233177_G	1406	0.981014	36.27	5883	36.41	3	7.529719901	0.135	0.830296171	21
optimal_loci_233178_G	1930	0.981014	17.62	4523	43.41	3	7.529719901	0.228	0.830324088	21
optimal_loci_233180_G	1240	0.981014	4.44	2592	35.88	3	7.529719901	0.115	0.830346081	21
optimal_loci_233209_G	1392	0.897982	0	7363	38.36	2	9.5145538	0.01	0.83137001	21
optimal_loci_233217_G	1600	0.831696	0	2719	49.18	1	0.262948665	0.471	0.831722879	22
optimal_loci_233219_G	1305	0.831696	0	1001	47.73	1	0.262948665	0.357	0.831779544	22
optimal_loci_233220_G	2035	0.831696	0	2391	47.22	1	0.262948665	0.439	0.831791208	22
optimal_loci_233222_G	1077	0.831696	5.48	5793	39.27	1	0.262948665	0.231	0.831819754	22
optimal_loci_233278_G	1311	0.471979	10.22	7659	36.23	1	11.65064391	0.148	0.833398449	20
optimal_loci_233283_G	1398	0.471979	36.98	3013	32.18	1	11.65064391	0.154	0.833436704	20
optimal_loci_233284_G	1423	0.486864	9.77	1001	48.98	1	11.65064391	0.516	0.833492614	20
optimal_loci_233286_G	1734	0.483016	10.84	3174	36.96	2	19.92061403	0.115	0.833510848	20
optimal_loci_233287_G	1245	0.483016	0	4941	40.48	2	19.92061403	0.209	0.833525675	20
optimal_loci_233300_G	1061	0.478229	13.38	14394	38.92	1	28.19058416	0.138	0.833810879	20
optimal_loci_233306_G	2339	0.478229	16.59	19485	37.58	1	28.19058416	0.119	0.833853598	20
optimal_loci_233355_G	2687	0.411751	7.44	4009	40.04	2	2.607652332	0.145	0.835614245	17

optimal_loci_233357_G	1247	0.396617	0	3411	52.68	1	0.212135613	0.411	0.835732542	17
optimal_loci_233379_G	2391	0.36625	10.08	3280	53.24	2	6.431751019	0.505	0.836403307	13
optimal_loci_233381_G	1626	0.36625	0	2721	39.6	2	6.431751019	0.214	0.836444549	13
optimal_loci_233395_G	1312	0.36625	14.41	12715	37.57	2	1.798330521	0.086	0.836593617	13
optimal_loci_233460_G	1341	0.37417	39.15	1001	41.01	2	4.001725411	0.288	0.838600408	8
optimal_loci_233530_G	1704	1.344638	1.7	2001	55.63	2	6.911478239	0.498	0.841599333	5
optimal_loci_233536_G	1076	1.344638	0	1001	51.3	2	6.911478239	0.436	0.841642127	5
optimal_loci_233584_G	1343	2.227047	26.21	4916	50.7	3	11.8787113	0.386	0.844954501	8
optimal_loci_233593_G	2198	2.214344	19.15	1386	43.08	5	5.575389923	0.191	0.84537966	8
optimal_loci_233629_G	1526	2.358001	0	4365	53.73	1	9.209169364	0.533	0.846121682	6
optimal_loci_233633_G	1430	2.358001	0	1001	56.08	1	9.209169364	0.556	0.846150715	6
optimal_loci_233639_G	1328	2.525553	0	2001	36.67	3	17.03228385	0.195	0.846523731	6
optimal_loci_233659_G	1671	2.078198	9.16	1001	48.83	1	5.367075729	0.516	0.847824389	6
optimal_loci_233740_G	1081	1.802393	0	2001	37.28	4	4.298133362	0.165	0.852171499	4
optimal_loci_233741_G	1607	1.802393	20.6	1001	51.58	4	2.172738473	0.472	0.852250224	4
optimal_loci_233766_G	1281	3.174946	10.93	1218	39.42	6	1.379977511	0.199	0.854040693	4
optimal_loci_233813_G	2306	3.145526	11.06	12792	45.7	1	0.161054632	0.311	0.856368333	7
optimal_loci_233864_G	1085	2.742415	0	2134	40.36	3	1.684737873	0	0.858338723	4
optimal_loci_233867_G	1860	2.759589	4.09	2001	48.7	5	1.010842724	0.391	0.858463196	4
optimal_loci_233896_G	1919	2.793442	1.56	4272	41.47	4	1.606439695	0.11	0.86009223	5
optimal_loci_233982_G	1145	1.236147	0	7214	40.52	3	0.241477259	0.018	0.863626212	9
optimal_loci_234041_G	1805	2.521089	6.98	4019	36.45	3	0.543590947	0.12	0.865886429	12
optimal_loci_234042_G	1091	2.521089	0	3406	50.87	3	0.543590947	0.636	0.865904873	12
optimal_loci_234047_G	1095	2.521089	0	3108	51.14	4	0.40769321	0.637	0.86597759	12
optimal_loci_234050_G	1168	2.521089	0	4447	53.85	5	0.326154568	0.434	0.866011809	12
optimal_loci_234051_G	1290	2.521089	15.5	3099	40.93	4	0.40769321	0.085	0.866022096	12
optimal_loci_234055_G	1126	2.521089	15.54	1422	41.91	6	0.271795473	0.192	0.866095073	12
optimal_loci_234070_G	1955	2.618862	0	4718	48.84	4	4.077873869	0.418	0.866565611	13
optimal_loci_234175_G	1750	2.915371	36	5676	37.14	1	1.143284298	0.082	0.869448412	20
optimal_loci_234187_G	1952	2.809952	6.97	9238	50.71	1	0.156630814	0.422	0.869773969	21
optimal_loci_234188_G	1918	2.809952	2.87	7243	48.33	1	0.156630814	0.577	0.869790994	21
optimal_loci_234196_G	1385	2.809952	7.8	1254	34.44	1	0.156630814	0.164	0.869845721	22
optimal_loci_234240_G	1242	2.315237	0	10488	48.95	2	16.45440651	0.485	0.870761128	16

optimal_loci_234254_G	2197	2.315237	10.15	1586	42.83	2	16.02072062	0.174	0.870950883	15
optimal_loci_234257_G	1903	2.315237	0	2001	36.88	2	16.02072062	0.335	0.871035281	15
optimal_loci_234265_G	1215	2.315237	0	5893	44.27	1	0.698189479	0.3	0.871297183	17
optimal_loci_234266_G	3404	2.315237	20.18	2276	34.45	1	0.698189479	0.087	0.871309165	17
optimal_loci_234269_G	1067	2.315237	34.49	1319	43.95	1	0.698189479	0.347	0.871381597	17
optimal_loci_234322_G	1538	2.315237	0	2177	34	2	0.190380394	0.093	0.873361041	17
optimal_loci_234323_G	2499	2.315237	0	3789	39.89	2	0.190380394	0.108	0.873374567	17
optimal_loci_234327_G	1026	2.315237	0	8214	35.28	2	0.190380394	0.074	0.873411698	17
optimal_loci_234340_G	1122	1.152369	6.95	2422	52.04	2	8.95580787	0.443	0.873805491	16
optimal_loci_234358_G	2230	1.15166	10.45	2464	45.2	3	2.018706625	0.327	0.874010812	14
optimal_loci_234379_G	1147	0.86336	6.89	2680	50.91	5	15.73350992	0.482	0.87540033	11
optimal_loci_234382_G	1039	0.86336	33.01	2691	47.64	5	15.73350992	0.514	0.875416064	11
optimal_loci_234483_G	2057	6.017833	0	2498	48.27	3	0.258847374	0.451	0.879107496	8
optimal_loci_234495_G	2537	6.017833	15.06	2001	42.84	1	0.460081012	0.165	0.87968486	6
optimal_loci_234535_G	1339	3.141935	0	2149	36.22	3	0.036674632	0.071	0.880962995	9
optimal_loci_234536_G	1080	3.315269	0	1196	54.81	2	3.146257007	0.473	0.881588298	9
optimal_loci_234555_G	1444	3.874232	7.27	3620	43.28	2	9.9227671	0.261	0.882251687	9
optimal_loci_234568_G	1522	3.892196	5.52	8689	45.46	3	18.49741958	0.229	0.882735122	9
optimal_loci_234611_G	1110	3.575748	0	15273	32.34	2	7.009157887	0	0.884708558	7
optimal_loci_234615_G	3144	3.575748	10.11	9542	41.44	3	6.807010869	0.3	0.88473958	7
optimal_loci_234616_G	1297	1.829649	0	2280	44.94	4	8.848617147	0.198	0.884816014	7
optimal_loci_234749_G	1021	1.425687	29.58	9910	38	1	3.071564224	0.083	0.889894565	6
optimal_loci_234817_G	1194	3.324183	4.02	3681	55.19	4	6.092819488	0.603	0.892747595	10
optimal_loci_234819_G	2006	3.324183	1.94	1296	42.27	5	4.874255591	0.305	0.892760794	10
optimal_loci_234828_G	1076	3.324183	15.15	3983	43.68	3	6.023422377	0.29	0.892895731	10
optimal_loci_234857_G	1541	2.893711	10.19	2001	49.31	4	35.50989733	0.3	0.893875656	10
optimal_loci_234858_G	1419	2.893711	5.99	2624	36.78	4	35.50989733	0.01	0.893891482	10
optimal_loci_234881_G	1532	3.689452	12.14	4414	42.42	2	2.304003097	0.18	0.895216893	10
optimal_loci_234892_G	1156	4.466723	0	2298	39.1	8	6.11217481	0.167	0.89580686	10
optimal_loci_234906_G	2395	4.466723	9.14	6913	53.06	2	35.82548005	0.544	0.896490732	10
optimal_loci_234908_G	1120	4.466723	17.68	10005	53.66	2	35.82548005	0.577	0.896516678	10
optimal_loci_234981_G	1031	2.622481	2.91	5610	42.87	3	0.087587551	0.184	0.899110205	5
optimal_loci_235141_G	1206	2.756633	16.92	14229	30.51	2	49.19475712	0.185	0.904550268	4

optimal_loci_235172_G	1069	4.137844	0	1001	38.16	1	5.89244858	0.09	0.906078215	6
optimal_loci_235216_G	3596	5.621854	2.31	6791	48.05	2	29.60531011	0.497	0.908673051	9
optimal_loci_235220_G	1565	5.621854	0	12215	61.27	2	29.60531011	0.781	0.908718565	9
optimal_loci_235232_G	1494	5.835868	17.6	7157	50.06	2	43.98984169	0.315	0.909544439	8
optimal_loci_235233_G	1313	5.835868	10.89	5811	42.19	2	43.98984169	0.165	0.909557252	8
optimal_loci_235251_G	1150	3.083865	12.7	7879	54.6	4	10.12834419	0.464	0.910338787	7
optimal_loci_235293_G	1343	3.428667	0	3717	52.79	3	24.7504777	0.422	0.911626002	7
optimal_loci_235294_G	1174	3.428667	0	2150	37.22	2	37.12571655	0.122	0.911640569	7
optimal_loci_235393_G	1466	3.230614	6.62	7445	58.59	3	3.839368533	0.651	0.916463159	8
optimal_loci_235394_G	1572	3.230614	0	9055	37.34	3	3.839368533	0.192	0.916476668	8
optimal_loci_235397_G	1344	3.230614	0	12114	46.94	2	0.11815611	0.353	0.916502337	8
optimal_loci_235409_G	1273	3.227189	0	13728	56.24	2	3.693697385	0.659	0.916573745	8
optimal_loci_235416_G	2339	3.227189	0	3583	40.53	4	2.766565678	0.505	0.916649927	8
optimal_loci_235467_G	1434	3.475659	18.9	1344	30.54	2	18.58522069	0.154	0.918219225	10
optimal_loci_235522_G	1030	3.451978	5.24	5037	47.28	2	21.98076889	0.319	0.920431773	11
optimal_loci_235525_G	1044	3.451978	0	7528	44.82	3	14.65384593	0.296	0.920452675	11
optimal_loci_235544_G	1018	4.712294	32.61	1292	38.7	2	39.02081559	0.127	0.92156387	6
optimal_loci_235546_G	1685	4.718129	1.72	2875	56.26	2	39.02081559	0.495	0.921577153	6
optimal_loci_235589_G	1302	5.175714	2.76	6533	46.08	2	2.667798716	0.179	0.924500433	5
optimal_loci_235792_G	1645	4.244915	14.35	1001	43.16	1	14.37370625	0.445	0.934377508	5
optimal_loci_235800_G	1556	4.835822	15.23	15532	39.65	1	14.37370625	0.37	0.934499439	5
optimal_loci_235815_G	1273	4.337274	0	1001	45.95	6	8.338401395	0.183	0.935326303	5
optimal_loci_235821_G	1205	4.337274	0	4529	57.26	5	10.00608167	0.614	0.935366924	5
optimal_loci_235855_G	1106	4.629696	0	8683	37.07	2	14.54115726	0	0.935881582	5
optimal_loci_235932_G	3137	8.032571	0	4432	50.33	3	33.30088751	0.517	0.940652138	11
optimal_loci_235933_G	2251	8.03694	2	2001	52.15	4	25.66610937	0.413	0.940679972	11
optimal_loci_235934_G	1367	8.127006	0	1001	54.57	5	19.56698701	0.609	0.940968775	12
optimal_loci_235935_G	1756	8.208402	32.46	3260	33.37	4	5.106768777	0.174	0.941028562	12
optimal_loci_235941_G	1198	8.208402	2.42	1730	55.75	3	5.88843338	0.731	0.941080251	12
optimal_loci_235948_G	3027	9.377189	0	4460	57.28	2	7.50084563	0.541	0.941155888	12
optimal_loci_235977_G	1895	9.534027	9.76	2777	40.89	2	43.25789239	0.287	0.942332164	14
optimal_loci_236016_G	1055	11.269247	27.2	1835	42.36	3	9.012274496	0.211	0.943793897	14
optimal_loci_236036_G	1098	9.793157	0	3450	44.89	5	32.72634858	0.26	0.94455458	16

optimal_loci_236038_G	1154	9.793157	0	2001	61.09	5	32.72634858	0.59	0.944566269	16
optimal_loci_236039_G	1307	9.793157	0	1001	44.37	3	50.70468857	0.483	0.944615088	16
optimal_loci_236049_G	1691	6.825543	12.66	6993	40.56	3	49.1918572	0.211	0.945127011	15
optimal_loci_236051_G	1731	6.775047	0	1308	42.05	6	9.816936084	0.407	0.945491678	11
optimal_loci_236070_G	1086	6.234291	38.4	2237	51.47	3	0.370955017	0.386	0.946005899	11
optimal_loci_236098_G	1894	6.838091	18.8	5866	47.72	4	41.78507046	0.502	0.948174562	9
optimal_loci_236100_G	1751	6.838091	0	2478	52.02	5	35.14605379	0.488	0.948204191	9
optimal_loci_236118_G	2082	5.779896	2.98	1001	54.13	2	4.273612617	0.575	0.949034487	6
optimal_loci_236220_G	1096	5.154946	0	2001	58.02	2	0.027827405	0.695	0.953784444	3
optimal_loci_236255_G	1167	6.483136	0	3332	38.38	2	1.758656551	0.082	0.955877268	5
optimal_loci_236258_G	1472	6.516435	0	4047	60.59	2	1.758656551	0.597	0.95596514	5
optimal_loci_236349_G	1459	8.504187	0	19669	46.26	1	51.24283922	0.287	0.958957277	9
optimal_loci_236364_G	1129	8.328181	0	4723	52.87	2	2.236316736	0.652	0.959231161	12
optimal_loci_236378_G	2372	8.9058	1.64	2001	36.38	3	10.0368677	0.205	0.960718117	11
optimal_loci_236380_G	1562	8.9058	3.27	2465	53.58	3	11.48054888	0.58	0.960851946	12
optimal_loci_236381_G	1298	8.9058	0	4060	55.39	3	11.48054888	0.45	0.96086533	12
optimal_loci_236382_G	1626	8.9058	0	4614	56.39	4	9.997335015	0.498	0.960890713	12
optimal_loci_236404_G	1295	7.627151	0	1475	47.1	6	23.60960396	0.355	0.961228529	12
optimal_loci_236448_G	2732	6.824329	1.13	8667	53.66	3	1.946068277	0.487	0.963197761	15
optimal_loci_236451_G	1505	6.824329	0	6161	52.89	3	1.946068277	0.43	0.963229085	15
optimal_loci_236455_G	1037	6.824329	0	2841	52.36	4	1.459551208	0.418	0.96326087	15
optimal_loci_236472_G	3474	6.374364	2.62	12938	56.73	3	3.876670344	0.501	0.963857039	14
optimal_loci_236486_G	1091	6.197435	17.23	1001	32.53	3	23.2954489	0.056	0.964935492	13
optimal_loci_236506_G	1228	5.832465	0	1001	35.34	3	9.923443437	0.286	0.966134568	11
optimal_loci_236509_G	1131	5.832465	27.59	6642	41.37	4	11.34235243	0.304	0.966181902	11
optimal_loci_236517_G	1100	5.794235	0	1001	39.72	2	14.54559463	0.378	0.966315781	11
optimal_loci_236523_G	1441	6.216131	5.9	2001	56.69	2	0.474660884	0.271	0.966673467	11
optimal_loci_236586_G	1084	6.114044	0	1598	51.01	4	0.129348208	0.466	0.969385082	7
optimal_loci_236597_G	1061	6.043179	0	3935	60.6	6	0.007265265	0.733	0.969627207	7
optimal_loci_236662_G	1295	6.280983	0	1001	49.57	3	33.14505773	0.51	0.973160022	8
optimal_loci_236675_G	1868	5.501157	9.85	3402	55.08	3	9.005356596	0.618	0.973923903	6
optimal_loci_236680_G	1041	5.160877	0	1001	39.86	3	9.005356596	0.355	0.973993238	6
optimal_loci_236682_G	1048	5.160877	16.22	2308	42.55	2	0.366060029	0.268	0.974041042	6

optimal_loci_236698_G	1526	4.983118	10.29	2354	36.1	6	29.93221135	0.055	0.974913428	8
optimal_loci_236715_G	1295	4.983118	5.95	3120	38.45	3	14.07626181	0.071	0.975417521	8
optimal_loci_236774_G	1364	2.756259	8.65	1822	46.26	2	1.968824735	0.391	0.978639456	7
optimal_loci_236777_G	2203	2.756259	2.02	2766	52.7	2	1.968824735	0.307	0.978658185	7
optimal_loci_236817_G	1811	11.690497	6.24	1766	43.4	5	28.96934848	0.271	0.980826353	5
optimal_loci_236820_G	1684	11.690497	0	2028	37.41	5	28.96934848	0.198	0.980859632	5
optimal_loci_236832_G	3692	11.690497	0	1355	43.82	3	1.848282677	0.302	0.981455616	7
optimal_loci_236900_G	2222	0.712458	34.02	2567	47.56	2	20.90668025	0.407	0.985196127	5
optimal_loci_236917_G	1079	0.684125	10.29	2089	35.68	2	20.90668025	0.195	0.985333195	5
optimal_loci_236953_G	1840	0.388682	10.49	4167	46.57	2	0.945815294	0.391	0.98710903	6
optimal_loci_236965_G	1714	0.349876	28.76	1629	38.09	4	11.01467271	0.222	0.987619207	6
optimal_loci_237011_G	1286	0.286774	39.04	8774	34.75	3	13.03805185	0	0.989719147	4
optimal_loci_237012_G	1884	0.286774	34.55	6745	32.59	3	13.03805185	0.121	0.989731155	4
optimal_loci_237323_G	1091	1.867798	0	5864	48.76	1	0.265629199	0.481	0.986821392	3
optimal_loci_237329_G	1252	1.76457	4.71	1001	27.47	1	0.265629199	0.213	0.986732326	3
optimal_loci_237332_G	2332	1.753805	0	5484	38.89	1	0.265629199	0.208	0.986550714	3
optimal_loci_237414_G	1271	1.56487	0	1510	37.68	2	0.676662174	0.179	0.971200824	2
optimal_loci_237488_G	1432	0.86848	28.7	2044	41.96	2	7.602518905	0.133	0.963541337	2
optimal_loci_237627_G	1633	1.447731	11.08	4151	38.33	3	6.309054669	0.219	0.951704359	3
optimal_loci_237682_G	1056	2.272642	0	2001	39.96	2	0.307841229	0.13	0.946657839	9
optimal_loci_237697_G	1480	2.503832	0	2001	42.43	3	6.20772626	0.189	0.945589963	9
optimal_loci_237727_G	1226	2.58698	0	1001	42.25	2	18.42423693	0.299	0.941947784	11
optimal_loci_237728_G	1987	2.581097	7.25	2477	44.18	3	16.14521133	0.419	0.941906813	11
optimal_loci_237729_G	1439	2.581097	7.86	4646	51.42	3	16.14521133	0.616	0.941877125	12
optimal_loci_237734_G	1393	2.581097	36.83	5991	45.51	3	16.14521133	0.368	0.941802308	12
optimal_loci_237735_G	1361	2.581097	0	4546	46.21	3	16.14521133	0.244	0.941775842	12
optimal_loci_237768_G	1330	2.720456	0	11057	33.53	1	1.185631488	0	0.938133388	13
optimal_loci_237793_G	1368	2.653943	0	6562	41.95	1	22.29840546	0.258	0.936315568	11
optimal_loci_237799_G	1582	2.653943	10.56	1001	36.59	1	22.29840546	0.071	0.936128645	11
optimal_loci_237867_G	1154	3.921311	0	3891	37.17	1	38.37641797	0.115	0.932952253	13
optimal_loci_237871_G	1593	3.069063	9.92	1001	48.02	1	38.37641797	0.429	0.932720073	11
optimal_loci_237912_G	1148	4.99331	37.89	2017	47.64	3	1.029288094	0.446	0.929095586	9
optimal_loci_237950_G	2468	1.995311	1.18	2530	44.08	1	10.78613988	0.309	0.926086245	6

optimal_loci_237959_G	1017	1.995311	4.03	9780	51.03	2	5.338302969	0.619	0.925505238	6
optimal_loci_237975_G	1564	2.029543	13.62	2621	33.63	2	20.20641309	0.126	0.922022289	6
optimal_loci_238023_G	1055	0.182944	0	10018	40.66	1	0.29222959	0.204	0.916246337	5
optimal_loci_238024_G	1477	0.182944	0	1192	48.88	1	0.29222959	0.656	0.915992601	5
optimal_loci_238071_G	1836	7.151505	12.25	2484	40.68	2	15.19423851	0.231	0.9114787	8
optimal_loci_238100_G	1482	8.198409	0	1001	52.76	2	3.90964965	0.468	0.910243443	8
optimal_loci_238128_G	1055	7.352549	10.52	3499	39.33	3	38.0251897	0.329	0.90559641	8
optimal_loci_238164_G	1042	7.352549	12.28	10828	38.86	1	50.96586211	0.117	0.903633187	8
optimal_loci_238171_G	2169	7.352549	14.52	1487	40.94	1	50.96586211	0.295	0.903462106	8
optimal_loci_238186_G	1061	6.872562	0	3015	52.4	3	3.555449872	0.562	0.90246511	8
optimal_loci_238232_G	8267	7.796719	15.19	18180	31.3	1	56.96225817	0.162	0.899308223	8
optimal_loci_238241_G	1356	7.796719	0	4826	38.42	4	30.0717534	0.038	0.898654267	8
optimal_loci_238349_G	1111	5.363033	0	6428	45	1	7.540472236	0.357	0.890663571	5
optimal_loci_238350_G	1163	5.363033	0	5181	52.79	1	7.540472236	0.598	0.890640733	5
optimal_loci_238375_G	1107	4.161429	0	1001	57.54	2	15.5194822	0.801	0.884510476	3
optimal_loci_238472_G	1299	1.032715	3.16	1001	42.18	2	3.461394478	0.361	0.873234505	2
optimal_loci_238496_G	1246	1.808467	14.77	2887	38.2	1	2.342062349	0.107	0.871564542	2
optimal_loci_238665_G	1307	1.56546	0	1158	37.41	2	3.664403858	0.305	0.84684467	1
optimal_loci_238754_G	1195	4.737437	12.38	2748	37.65	1	12.03486097	0.02	0.836530073	5
optimal_loci_238755_G	1099	4.953374	0	1437	40.12	1	12.03486097	0.373	0.836506062	5
optimal_loci_238758_G	1904	4.953374	17.96	2490	38.39	1	12.03486097	0.3	0.836356062	5
optimal_loci_238819_G	1056	4.586489	32.01	1714	49.9	1	8.347436938	0.321	0.830521245	6
optimal_loci_238821_G	1674	4.586489	26.7	8230	46.77	1	8.347436938	0.434	0.830205092	6
optimal_loci_238863_G	1584	5.015371	33.96	3101	38.44	1	8.622610041	0.164	0.82418315	3
optimal_loci_238948_G	3408	1.723582	28.29	2375	32.86	1	13.16741202	0.131	0.813862234	4
optimal_loci_238965_G	1317	1.723582	0	13823	40.24	1	13.16741202	0.134	0.813519744	4
optimal_loci_239023_G	1354	0.830904	18.83	5715	39.51	2	1.182472579	0.14	0.80689989	6
optimal_loci_239030_G	1474	0.851701	0	2181	40.29	3	2.279848906	0.129	0.806687253	6
optimal_loci_239044_G	1039	1.064792	5.2	2608	44.56	1	18.68971353	0.319	0.804184963	4
optimal_loci_239096_G	1479	1.452708	0	16142	58.14	1	210.3457443	0.606	0.798729799	4
optimal_loci_239188_G	1027	0.214013	0	2137	40.89	1	22.10912462	0.258	0.786183242	2
optimal_loci_239193_G	1335	0.214013	0	5089	36.25	1	22.10912462	0.287	0.786123535	2
optimal_loci_239347_G	1341	0.966047	36.99	15862	34.37	1	1.192940787	0.186	0.771854762	1

optimal_loci_239613_G	2785	1.311004	21.9	2495	35.47	2	16.21180011	0.153	0.744217363	3
optimal_loci_239618_G	1074	1.311004	0	1168	35.75	1	27.32460569	0.216	0.743899377	3
optimal_loci_239625_G	1265	1.311004	0	7449	40.79	2	13.66230285	0.111	0.743780842	3
optimal_loci_239863_G	1744	0.696661	3.61	5139	42.94	1	27.76303224	0.365	0.725287619	3
optimal_loci_239881_G	1350	0.642382	0	19248	39.48	1	4.819363941	0.18	0.724265147	3
optimal_loci_239968_G	2125	0.951654	24.52	1001	44.42	3	10.66907216	0.28	0.716686264	5
optimal_loci_240012_G	1247	0.865346	19.41	15739	34.48	1	0.028576965	0.145	0.712851667	3
optimal_loci_240014_G	1704	0.865346	37.32	17583	35.03	1	0.028576965	0.252	0.712809524	3
optimal_loci_240136_G	1072	0.333696	0	2183	43.09	2	0.213663782	0.091	0.703487271	1
optimal_loci_240290_G	1571	0.581251	8.34	12073	36.09	1	22.62691296	0.073	0.684206319	9
optimal_loci_240293_G	1095	0.581251	0	8189	36.71	1	22.62691296	0.297	0.684135183	9
optimal_loci_240298_G	1070	0.544182	12.9	1001	38.41	1	22.62691296	0.246	0.683926777	9
optimal_loci_240299_G	1114	0.544182	0	16408	40.12	2	37.42998125	0	0.683643791	9
optimal_loci_240342_G	1051	0.425238	12.56	10922	48.62	2	40.72428502	0.448	0.679612454	9
optimal_loci_240394_G	1023	0.275766	9.48	4512	40.17	1	17.32849652	0.21	0.675959835	9
optimal_loci_240396_G	1940	0.275766	7.99	1810	41.23	2	8.664248258	0.326	0.675910348	9
optimal_loci_240399_G	1478	0.275766	28.69	1001	35.31	2	8.664248258	0.192	0.67552663	9
optimal_loci_240402_G	1245	0.275766	30.12	3131	36.94	2	8.664248258	0.028	0.675491886	9
optimal_loci_240602_G	1335	0.269813	12.96	5607	45.61	2	1.811099366	0.277	0.662339231	2
optimal_loci_240632_G	1707	0.631504	3.57	2439	46.92	2	10.90183562	0.373	0.658911136	2
optimal_loci_240729_G	1497	0.465549	12.36	1417	35.87	2	0.273189636	0.257	0.645458553	2
optimal_loci_240735_G	1182	0.465549	12.77	6942	36.71	2	0.273189636	0.144	0.645363132	2
optimal_loci_240876_G	1288	0.271511	26.55	1791	31.36	1	12.63473843	0.263	0.629126941	3
optimal_loci_241003_G	1512	0.240366	8.07	9440	34.19	1	1.349989385	0.102	0.620447326	4
optimal_loci_241008_G	1057	0.240366	27.44	13417	37.93	1	1.349989385	0.246	0.620382821	4
optimal_loci_241104_G	1671	0.570313	0	3136	36.5	4	5.084757628	0.158	0.612975311	4
optimal_loci_241171_G	1001	0.482155	0	2001	45.35	2	1.195896152	0.449	0.605913535	4
optimal_loci_241230_G	1214	0.366645	15.57	1001	37.97	1	9.259766043	0.189	0.600769945	3
optimal_loci_241284_G	1970	0.013371	5.18	2001	36.59	1	4.265386025	0.18	0.597026172	3
optimal_loci_242236_G	1067	0.633814	23.9	16083	37.58	1	18.37321293	0.074	0.492696355	1
optimal_loci_242556_G	2612	0.042361	0	2628	39.2	4	0.035363185	0.122	0.458798626	1
optimal_loci_242675_G	1105	0.254837	9.5	1215	51.13	2	0.406100779	0.438	0.447445165	2
optimal_loci_242736_G	1085	0.471442	0	2564	36.31	1	1.466478705	0.176	0.441348187	2

optimal_loci_243300_G	1658	0.259696	12.73	16089	43.96	1	0.119669684	0.284	0.368976245	4
optimal_loci_243301_G	1700	0.259696	18.53	11133	30.7	1	0.119669684	0.073	0.368885476	4
optimal_loci_243311_G	1419	0.259696	15.08	11646	37.27	1	0.119669684	0.247	0.368427875	4
optimal_loci_243330_G	1176	0.262935	12.41	2993	43.28	1	0.433766583	0.36	0.365722033	5
optimal_loci_243398_G	2619	0.393519	30.58	1001	32.98	2	2.956948361	0.14	0.357150623	2
optimal_loci_244009_G	1981	0.307829	14.54	4785	38.06	3	0.815890807	0.197	0.292860769	1
optimal_loci_244110_G	1945	0.195305	27.4	14442	37.99	1	7.201711661	0.147	0.282684267	2
optimal_loci_244203_G	1262	0.293409	13.15	2001	41.91	1	0.032357511	0.403	0.273903223	2
optimal_loci_244324_G	1173	0.181465	0	13488	39.3	1	0.261277516	0.137	0.261894066	1
optimal_loci_244428_G	1555	0.071478	0	5392	40.19	1	36.5873831	0.196	0.248207033	4
optimal_loci_244439_G	1458	0.071604	0	13880	42.24	1	36.5873831	0.196	0.247797656	4
optimal_loci_244502_G	2505	0.276457	0	2001	62.07	1	1090.895878	0.775	0.241236484	4
optimal_loci_244521_G	2889	0.350988	7.44	6236	41.12	1	94.60190765	0.295	0.239015586	4
optimal_loci_248922_G	1073	0.176505	0	2001	38.95	1	12.31339092	0.126	0.117301614	1
optimal_loci_249178_G	1248	0.104462	17.07	2266	38.22	1	0.094938333	0.209	0.135284358	1
optimal_loci_250162_G	1594	0.056531	0	3492	42.91	1	0.843850412	0.254	0.194250429	2
optimal_loci_250167_G	1656	0.056531	1.75	8155	51.69	1	0.843850412	0.619	0.19437843	2
optimal_loci_250331_G	1399	0.332307	0	1001	46.03	1	9.248119705	0.345	0.203075328	1
optimal_loci_251259_G	1390	0.291191	0	14625	46.97	2	2.826669347	0.461	0.255582644	2
optimal_loci_251281_G	1401	0.211503	20.06	9326	38.54	1	0.090746257	0.117	0.257012936	2
optimal_loci_251383_G	1008	0.414332	0	1780	37.79	1	13.73609138	0.048	0.26163451	1
optimal_loci_251605_G	1321	0.011814	4.84	8987	32.7	1	0.071918559	0.069	0.273369422	3
optimal_loci_251640_G	1513	0.102824	3.44	2001	51.09	2	46.03009779	0.362	0.275842748	3
optimal_loci_251643_G	1385	0.102824	39.78	1855	39.56	2	46.03009779	0.314	0.27592798	3
optimal_loci_251856_G	1020	0.01893	0	15309	41.66	2	12.14830752	0.302	0.288956704	1
optimal_loci_252525_G	1329	0.053973	0	1481	41.3	1	3.258974981	0.159	0.322079951	2
optimal_loci_252544_G	1459	0.167915	15.35	7073	44.48	1	25.68150488	0.416	0.322874265	3
optimal_loci_252609_G	1715	0.44717	0	13904	38.07	1	33.70648043	0.175	0.326724148	4
optimal_loci_252636_G	1290	0.499771	0	2327	34.18	1	0.987923138	0.194	0.32776712	3
optimal_loci_252700_G	1121	0.649517	0	3727	46.65	2	21.48091522	0.435	0.330334482	4
optimal_loci_252745_G	1017	0.510956	10.42	1623	52.5	1	4.997590966	0.645	0.332793981	2
optimal_loci_253330_G	1185	0.263832	39.41	6607	33.83	1	3.559629209	0.03	0.362041151	4
optimal_loci_253362_G	1834	0.223269	0	10103	47.05	1	5.748642192	0.408	0.36282021	4

optimal_loci_253408_G	1852	0.228629	0	14805	34.5	1	9.167418616	0.152	0.365621389	4
optimal_loci_253410_G	1633	0.228629	10.78	18856	45.62	1	9.167418616	0.413	0.365656842	4
optimal_loci_253521_G	1109	0.061873	0	13598	40.93	1	35.36578175	0.12	0.370798646	6
optimal_loci_253522_G	1366	0.061873	0	2863	40.19	1	35.36578175	0.184	0.370890345	6
optimal_loci_253556_G	1308	0.135543	0	2631	46.86	2	4.712705811	0.339	0.372451325	6
optimal_loci_253600_G	2069	0.194147	3.82	13048	36.92	1	2.183733993	0.068	0.373996386	7
optimal_loci_253626_G	1377	0.260906	19.39	10287	44.8	1	7.485189881	0.325	0.375032444	8
optimal_loci_253634_G	2373	0.260906	8.85	1001	51.41	2	21.16734203	0.422	0.375104995	8
optimal_loci_253669_G	1111	0.422093	7.92	3014	55.26	2	1.109797779	0.651	0.377608996	7
optimal_loci_253701_G	1570	0.428551	22.04	18737	34.77	1	7.464667464	0.008	0.378456571	6
optimal_loci_253717_G	1400	0.431506	0	1922	38.92	1	7.423529894	0.207	0.379941368	4
optimal_loci_253720_G	1471	0.431506	9.99	16717	33.58	1	7.423529894	0.103	0.380070848	4
optimal_loci_253932_G	1203	0.41254	34.16	1001	45.71	1	2.273566413	0.219	0.391467109	3
optimal_loci_253933_G	1594	0.41254	0	2001	30.74	1	2.273566413	0.093	0.391561897	3
optimal_loci_253939_G	1751	0.416753	0	18344	37.63	1	2.273566413	0.003	0.391704925	3
optimal_loci_254110_G	1738	1.664432	25.49	17383	37.74	1	12.12222427	0.113	0.396769312	1
optimal_loci_254232_G	1153	1.221316	0	13032	38.07	1	2.312574739	0.326	0.402534309	4
optimal_loci_254305_G	1185	1.268555	0	16869	51.98	1	185.5291197	0.429	0.405419739	4
optimal_loci_254308_G	1037	1.252857	0	2890	33.75	1	185.5291197	0.118	0.40562934	6
optimal_loci_254318_G	1344	1.252857	24.48	12847	38.09	1	185.5291197	0.257	0.40571648	6
optimal_loci_254375_G	1390	0.786588	24.03	12656	44.74	2	2.487167865	0.318	0.409943268	8
optimal_loci_254377_G	1142	0.775669	0	14801	42.99	2	2.487167865	0.335	0.409962041	8
optimal_loci_254413_G	1032	0.45098	19.09	5857	38.85	1	0.218237523	0.112	0.411563217	6
optimal_loci_254416_G	1217	0.45098	26.05	2651	41.74	1	0.218237523	0.201	0.411589655	6
optimal_loci_254418_G	1316	0.45098	2.2	2001	44.75	1	0.218237523	0.267	0.411663431	6
optimal_loci_254422_G	1358	0.45098	0	6663	53.09	1	0.218237523	0.525	0.411704231	6
optimal_loci_254673_G	1013	0.592459	19.25	1592	41.95	1	15.14804298	0.098	0.427345256	4
optimal_loci_254676_G	1779	0.592459	30.69	5658	34.23	1	15.14804298	0.233	0.427460165	4
optimal_loci_254692_G	1092	0.534116	0	3247	43.22	2	26.29676889	0.261	0.428067876	4
optimal_loci_254694_G	1064	0.534116	0	4992	39.47	2	26.29676889	0.101	0.428087104	4
optimal_loci_254925_G	1145	1.945442	0	2394	37.72	1	2.02168132	0.03	0.438691554	1
optimal_loci_255412_G	1322	1.210496	0	9306	53.63	1	21.43449471	0.602	0.460703913	2
optimal_loci_255452_G	1445	1.269899	2.28	7779	40.69	2	1.050345179	0.284	0.461955384	4

optimal_loci_255556_G	1254	0.874345	0	6233	38.99	1	21.1750647	0.263	0.465586232	3
optimal_loci_255563_G	1763	0.874345	22.75	9365	48.38	2	16.22487922	0.414	0.465613642	3
optimal_loci_255654_G	1067	0.030672	38.99	2558	66.35	2	15.9209879	0.635	0.470676288	3
optimal_loci_255675_G	1630	0.030672	3.25	8408	59.63	3	14.96959866	0.634	0.471667862	3
optimal_loci_255679_G	1138	0.030672	0	19419	34.97	1	21.9745335	0.224	0.471764226	3
optimal_loci_255770_G	1280	1.374214	31.95	1359	41.32	3	0.451301915	0.251	0.479213522	5
optimal_loci_255775_G	1083	1.374214	23.82	3711	33.33	2	0.258278883	0.233	0.479284357	5
optimal_loci_255779_G	1430	1.147514	10.84	9625	41.74	1	2.111712888	0.355	0.479612901	6
optimal_loci_255824_G	1016	0.856567	0	3173	61.71	3	5.126806066	0.471	0.481583622	7
optimal_loci_255827_G	1139	0.856567	0	4990	50.04	3	5.126806066	0.354	0.481599524	7
optimal_loci_255888_G	1027	0.772546	2.73	2579	35.05	1	5.432103828	0	0.483808954	5
optimal_loci_255924_G	1095	0.820266	13.87	9310	53.51	1	10.32213959	0.635	0.485409343	4
optimal_loci_256135_G	1030	0.294235	6.7	16790	32.71	1	2.992741361	0.068	0.493836499	1
optimal_loci_256401_G	1087	0.723175	0	1923	38.08	2	0.02196994	0.202	0.504079272	2
optimal_loci_256427_G	1042	1.291442	7.2	4715	39.92	1	54.24198674	0.033	0.506244384	2
optimal_loci_256564_G	2090	2.166557	14.4	13923	40.57	1	4.463879735	0.284	0.511923308	10
optimal_loci_256591_G	1321	3.464695	0	2090	41.86	3	3.003830273	0.279	0.51354155	11
optimal_loci_256599_G	1201	3.003233	0	1001	57.03	2	149.5423779	0.753	0.513910334	11
optimal_loci_256611_G	1195	3.003233	38.83	2001	42.84	2	21.74874489	0.423	0.514148526	11
optimal_loci_256616_G	1219	3.546912	8.12	9338	43.06	2	1.240698793	0.396	0.51440571	11
optimal_loci_256631_G	1070	3.546912	10.09	2001	57.66	1	9.385623896	0.476	0.515079478	11
optimal_loci_256641_G	1101	3.546912	0	2702	53.58	2	4.692811948	0.698	0.515235511	11
optimal_loci_256643_G	1026	3.839311	12.77	1393	50.38	3	15.85998052	0.511	0.515456112	11
optimal_loci_256644_G	1921	3.839311	0	2507	33.68	3	15.85998052	0.049	0.515467236	11
optimal_loci_256646_G	1250	3.839311	12.72	1001	29.04	3	15.85998052	0.147	0.515571642	11
optimal_loci_256671_G	1174	1.524971	0	2074	42.33	2	8.231807791	0.166	0.517042332	10
optimal_loci_257043_G	3297	1.954656	0	4444	46.83	3	1.185633609	0.357	0.533708117	5
optimal_loci_257063_G	1762	4.164617	22.02	10420	46.19	1	0.943299162	0.279	0.534620498	5
optimal_loci_257067_G	3259	4.164617	11.78	4201	55.78	1	0.943299162	0.535	0.534661823	5
optimal_loci_257069_G	1186	4.164617	0	2356	41.73	1	0.943299162	0.267	0.534696112	5
optimal_loci_257098_G	1919	2.707125	0	13078	51.38	1	0.776100801	0.447	0.535568288	5
optimal_loci_257181_G	1162	0.51691	18.59	2001	52.06	2	2.177765896	0.699	0.540163318	2
optimal_loci_257190_G	1568	0.532815	0	11340	51.02	1	15.63992217	0.617	0.540549597	3

optimal_loci_257263_G	1139	0.848381	17.91	1001	42.4	2	47.34418506	0.264	0.544804032	3
optimal_loci_257267_G	1557	0.867852	6.49	1001	53.24	1	176.4343507	0.634	0.545835259	2
optimal_loci_257371_G	1488	21.212109	0	2213	43.68	3	25.94823509	0.401	0.550479403	3
optimal_loci_257500_G	1285	0.513894	8.33	4100	48.94	2	8.39126897	0.392	0.554466345	4
optimal_loci_257502_G	1248	0.513894	0	2297	45.75	2	8.39126897	0.345	0.554482448	4
optimal_loci_257541_G	2500	0.513894	4.08	2001	43.2	1	14.1375841	0.263	0.555538461	3
optimal_loci_259947_G	1631	0.459307	21.03	2001	34.88	1	21.27594365	0.064	0.674723796	1
optimal_loci_260062_G	1160	0.438312	12.07	9156	44.05	3	0.616455974	0.414	0.680422736	3
optimal_loci_260134_G	1111	0.938652	39.69	1001	42.3	1	61.18717599	0.299	0.68330302	3
optimal_loci_260141_G	1080	0.774389	0	2507	35	5	8.305668568	0.082	0.684227295	4
optimal_loci_260207_G	1858	0.9862	6.94	1273	44.99	5	24.93180294	0.306	0.688143647	12
optimal_loci_260238_G	1331	1.119254	15.7	7021	36.06	1	1.710791349	0.18	0.690934717	13
optimal_loci_260241_G	1116	1.119254	2.6	4774	59.85	1	1.710791349	0.603	0.690956263	13
optimal_loci_260260_G	2318	1.283521	1.21	5429	48.27	2	0.833453712	0.414	0.69154831	13
optimal_loci_260261_G	3203	1.283521	2.15	2001	52.66	3	1.386190364	0.515	0.691574914	13
optimal_loci_260269_G	1224	1.283521	0	1001	39.86	3	1.302246127	0.108	0.691756606	13
optimal_loci_260274_G	1415	1.283521	0	1001	45.08	4	23.79072504	0.521	0.692023198	13
optimal_loci_260276_G	1648	1.283521	1.88	4698	47.08	4	23.79072504	0.395	0.692108403	13
optimal_loci_260278_G	1124	1.283521	0	6759	45.9	4	23.79072504	0.387	0.692126441	13
optimal_loci_260288_G	1044	1.283521	0	7704	34.38	2	16.68429527	0.221	0.692297062	13
optimal_loci_260289_G	1674	1.176545	0	8813	47.78	2	16.68429527	0.377	0.692306767	13
optimal_loci_260319_G	1793	1.956403	0	12018	51.47	1	13.73393641	0.548	0.693076646	12
optimal_loci_260336_G	1263	1.956403	9.9	1766	39.27	2	5.633547591	0.191	0.693911917	12
optimal_loci_260418_G	1304	1.317766	26.3	5079	43.4	4	10.79162991	0.258	0.699327672	7
optimal_loci_260477_G	1318	1.968136	26.56	5011	37.63	2	21.09425035	0.426	0.702787636	9
optimal_loci_260479_G	1160	1.968136	3.02	1468	48.18	2	21.09425035	0.525	0.702888665	9
optimal_loci_260484_G	2705	2.065234	1.52	19495	44.21	1	1.218343917	0.379	0.703455174	9
optimal_loci_260489_G	1250	2.065234	13.2	15143	49.6	1	1.218343917	0.442	0.703505994	9
optimal_loci_260495_G	1082	2.069264	9.89	2526	51.2	1	1.218343917	0.558	0.703617884	9
optimal_loci_260499_G	2675	2.341785	6.8	2001	57.45	1	1.218343917	0.503	0.703683372	10
optimal_loci_260564_G	2429	2.766827	0	1402	41.21	4	12.66464838	0.384	0.706223096	9
optimal_loci_260570_G	1847	2.922754	3.57	13874	37.79	3	8.394445862	0.135	0.706552428	9
optimal_loci_260602_G	1398	1.389535	7.94	1001	47.35	5	32.84207413	0.463	0.70806495	4

optimal_loci_260765_G	1221	1.42487	10.97	2001	31.85	3	6.156118367	0.084	0.715094002	4
optimal_loci_260782_G	1145	1.405874	19.21	3750	43.14	2	5.928576719	0.248	0.715927864	4
optimal_loci_260799_G	2732	0.470454	6.77	1530	41.87	2	6.40730521	0.238	0.717955865	5
optimal_loci_260802_G	1255	0.470454	10.36	7375	47.01	2	6.40730521	0.353	0.718007018	5
optimal_loci_260880_G	1238	0.589502	0	1001	39.57	1	48.83970593	0.188	0.720804774	6
optimal_loci_260963_G	2144	0.514488	33.3	8894	38.05	1	4.963980972	0.194	0.724144947	8
optimal_loci_260978_G	1242	0.7122	0	10317	35.1	2	9.384461973	0.081	0.724526666	9
optimal_loci_260985_G	1426	0.7122	0	14403	47.26	1	5.500718281	0.491	0.724834459	9
optimal_loci_260988_G	1228	0.733963	0	2104	38.84	1	5.896354053	0.143	0.725323814	8
optimal_loci_261014_G	1104	0.474898	9.87	2001	33.87	2	12.82032801	0.069	0.727509239	8
optimal_loci_261023_G	1153	0.455439	8.15	4995	53.42	3	9.815964812	0.421	0.728232769	8
optimal_loci_261029_G	1007	0.449549	0	2034	49.75	4	18.07092446	0.389	0.728313529	8
optimal_loci_261037_G	1502	0.349736	1.93	2598	53.12	4	23.13951047	0.649	0.728663619	7
optimal_loci_261272_G	2183	1.4394	0	5139	48.28	1	5.946381381	0.429	0.741218811	1
optimal_loci_261498_G	2562	0.012998	0	2001	59.99	2	15.79648235	0.642	0.752272035	1
optimal_loci_261708_G	1046	1.940837	3.25	5118	38.62	1	17.08608298	0.168	0.762499168	9
optimal_loci_261732_G	1008	1.940837	15.38	3912	50.89	2	37.27638099	0.479	0.763607962	9
optimal_loci_261781_G	2164	1.661377	2.82	2809	49.35	3	3.008722972	0.427	0.765894765	9
optimal_loci_261784_G	1909	1.661377	0	2001	55	5	9.459740153	0.475	0.766014417	9
optimal_loci_261785_G	2029	1.661377	0	3996	46.77	5	9.459740153	0.402	0.766031876	9
optimal_loci_261786_G	1441	1.661377	0	4855	60.86	4	11.00552326	0.829	0.766050648	9
optimal_loci_261787_G	1343	1.661377	0	3203	39.31	4	11.00552326	0.233	0.766065964	9
optimal_loci_261793_G	1983	1.277627	9.93	5473	37.51	2	19.13626592	0.128	0.76623157	9
optimal_loci_261799_G	1166	1.33692	7.2	7801	42.36	1	3.019754098	0.399	0.766448339	9
optimal_loci_261928_G	1268	1.087301	12.62	5300	38.64	3	15.52355135	0.143	0.773429599	2
optimal_loci_261982_G	2124	0.84203	0	1001	52.77	3	25.34599191	0.551	0.776599263	2
optimal_loci_262113_G	2139	0.608678	13.09	1001	54.88	1	10.01601331	0.464	0.784790791	2
optimal_loci_262148_G	1973	0.577243	2.33	17207	47.84	2	9.703880981	0.335	0.786525543	3
optimal_loci_262218_G	2074	0.318453	6.12	2291	40.59	4	0.016978501	0.297	0.790355158	4
optimal_loci_262250_G	1199	0.12187	12.43	2441	36.53	3	22.50317014	0.2	0.79153518	3
optimal_loci_262299_G	1140	0.188103	0	4181	47.45	2	19.84677049	0.33	0.793660122	4
optimal_loci_262354_G	1153	2.058939	7.63	4067	37.81	3	12.38163997	0.285	0.797126755	9
optimal_loci_262370_G	1753	1.593231	16.03	2312	39.3	2	3.615953405	0.218	0.798114348	8

optimal_loci_262375_G	1366	1.593231	0	1342	34.26	2	7.012867173	0.214	0.798332096	8
optimal_loci_262398_G	1235	2.31158	0	2001	47.28	3	75.17734328	0.326	0.799247313	8
optimal_loci_262401_G	1130	2.31158	0	5338	59.82	3	75.17734328	0.783	0.799276517	8
optimal_loci_262405_G	1381	2.31158	15.93	4182	38.45	4	57.42214069	0.09	0.799338697	8
optimal_loci_262406_G	1026	2.31158	0	2607	41.81	4	57.42214069	0.231	0.799355588	8
optimal_loci_262409_G	2640	2.31158	0	2617	43.37	2	20.80192154	0.273	0.799453781	8
optimal_loci_262547_G	1515	1.630735	0	2984	44.68	2	18.67842085	0.289	0.804568315	3
optimal_loci_262575_G	1688	1.568143	17.54	2282	37.38	2	2.176419134	0.194	0.806053812	4
optimal_loci_262627_G	1094	1.225179	5.03	1164	38.11	1	9.767994694	0.223	0.808668126	5
optimal_loci_262649_G	1809	0.689645	0	5275	43.78	3	1.822804351	0.413	0.809993854	4
optimal_loci_262690_G	1205	0.763447	0	1001	31.28	1	1.444760995	0.168	0.811460606	6
optimal_loci_262733_G	1627	0.567219	39.7	1023	44.92	2	255.330569	0.329	0.814458827	8
optimal_loci_262734_G	1319	0.567219	10.16	8961	41.62	4	147.8145977	0.093	0.814528297	8
optimal_loci_262740_G	1131	0.506258	3.36	3447	31.38	5	35.36261336	0	0.814758849	9
optimal_loci_262771_G	1256	0.51299	0	2001	58.12	1	1.51964352	0.657	0.815981457	10
optimal_loci_262781_G	1507	0.738321	0	11111	41.6	1	1.51964352	0.327	0.816144605	10
optimal_loci_262782_G	1018	0.738321	0	13622	49.31	2	1.818350263	0.554	0.81616658	10
optimal_loci_262784_G	2004	0.738321	16.07	10123	45.85	1	2.117057006	0.333	0.816236295	10
optimal_loci_262866_G	1104	2.238463	0	3082	35.86	1	0.067075558	0.022	0.818980046	10
optimal_loci_262896_G	1008	2.466471	12.6	3042	43.94	3	10.68388336	0.248	0.820025005	13
optimal_loci_262900_G	2209	2.490084	0	1001	48.43	3	10.91276996	0.402	0.820192379	14
optimal_loci_262911_G	1084	2.243606	0	2001	37.73	3	7.06899142	0	0.820745979	12
optimal_loci_262950_G	1308	2.581895	0	7775	41.36	3	26.24655052	0.324	0.822520577	14
optimal_loci_262979_G	1777	2.539151	0	7711	55.48	2	4.538937262	0.632	0.824030168	14
optimal_loci_262980_G	1005	2.50632	15.12	6458	36.91	2	4.538937262	0.123	0.82404789	14
optimal_loci_262987_G	2232	2.485342	0	2343	55.73	1	3.452236418	0.831	0.824155132	15
optimal_loci_262990_G	2262	2.485342	35.23	7337	50.39	1	3.452236418	0.379	0.824198837	15
optimal_loci_262994_G	1643	2.50299	2.07	2429	49.66	1	1.463914811	0.534	0.824504015	17
optimal_loci_262997_G	1001	2.497022	9.99	8401	41.85	3	8.203615912	0.357	0.824627447	16
optimal_loci_263003_G	2293	2.321769	8.33	3072	43.43	3	8.203615912	0.256	0.824690354	16
optimal_loci_263018_G	1030	2.101367	0	1001	38.83	2	53.4440575	0.064	0.825335977	15
optimal_loci_263024_G	1015	2.101367	0	6105	37.24	1	91.85519633	0.162	0.825380645	15
optimal_loci_263130_G	1786	2.363758	25.03	6093	53.41	1	0.895922464	0.466	0.828420506	16

optimal_loci_263135_G	1657	2.363758	7.6	2447	48.82	1	0.895922464	0.429	0.828524335	14
optimal_loci_263137_G	1353	2.238603	24.69	8425	38.28	1	10.73075602	0.08	0.828712416	12
optimal_loci_263138_G	1363	2.238603	10.34	6942	44.38	1	10.73075602	0.231	0.828725307	12
optimal_loci_263139_G	1153	2.238603	0	5114	43.88	1	10.73075602	0.253	0.828743143	12
optimal_loci_263206_G	1449	3.158777	20.63	1882	32.09	1	12.1836852	0.089	0.831465295	7
optimal_loci_263252_G	1013	3.305048	0	4724	51.03	1	0.038874073	0.532	0.832559438	8
optimal_loci_263359_G	1101	1.538044	0	6343	50.86	1	1.83716604	0.584	0.836681391	4
optimal_loci_263398_G	1346	0.470182	4.23	6585	38.78	1	12.98071052	0.172	0.839735246	4
optimal_loci_263401_G	1369	0.470182	0	3212	55.51	1	12.98071052	0.558	0.839764564	4
optimal_loci_263438_G	2048	0.914274	0	3806	54.15	2	36.84985619	0.544	0.842375972	7
optimal_loci_263486_G	1296	0.026111	12.96	1001	41.74	3	1.739733131	0.264	0.844345232	7
optimal_loci_263489_G	1081	0.026111	0	2690	41.16	3	15.71784109	0.241	0.844463606	7
optimal_loci_263490_G	1594	0.026111	0	1063	36.88	3	15.71784109	0.125	0.844473356	7
optimal_loci_263516_G	1030	1.82438	0	10976	35.43	2	44.08593165	0.274	0.845859172	7
optimal_loci_263579_G	2200	3.514043	0	1001	35.9	3	6.844627732	0.147	0.84813725	9
optimal_loci_263584_G	1778	3.514043	15.75	2369	39.93	3	6.844627732	0.202	0.848182933	9
optimal_loci_263619_G	2041	3.100373	9.31	3860	48.6	4	4.88493513	0.318	0.851056453	6
optimal_loci_263621_G	1532	3.100373	0	2001	53.32	4	4.88493513	0.436	0.851077176	6
optimal_loci_263644_G	1047	3.369276	0	1001	52.05	2	15.58318426	0.398	0.852059544	6
optimal_loci_263669_G	1074	3.077861	18.25	3947	39.19	3	0.176114253	0.069	0.854084867	4
optimal_loci_263795_G	1578	3.123691	4.12	1001	56.78	2	3.961501092	0.535	0.858476107	8
optimal_loci_263796_G	1043	3.123691	0	2001	44.39	2	3.961501092	0.528	0.858490555	8
optimal_loci_263801_G	2058	2.994572	15.84	11155	42.22	1	7.923002184	0.391	0.858646842	8
optimal_loci_263804_G	1091	2.994572	0	14891	50.22	1	7.923002184	0.588	0.858679538	8
optimal_loci_263827_G	1737	3.463803	0	14236	61.48	1	4.610980475	0.744	0.859732452	8
optimal_loci_263831_G	4158	3.463803	2.72	3850	51.44	1	4.610980475	0.348	0.859802158	8
optimal_loci_263832_G	1246	3.463803	0	2503	44.38	1	4.610980475	0.518	0.859839432	8
optimal_loci_263846_G	1440	2.903163	0	18956	46.59	1	4.610980475	0.526	0.860049181	9
optimal_loci_263955_G	1198	2.57635	17.86	12161	33.97	4	16.54294354	0.055	0.864419724	2
optimal_loci_264061_G	1293	6.371429	0	2546	40.68	4	5.746734164	0.24	0.8691057	8
optimal_loci_264075_G	1809	7.245828	1.71	1711	52.73	2	6.236610899	0.371	0.869964513	10
optimal_loci_264079_G	1926	7.245828	0	5699	52.64	2	6.236610899	0.443	0.869999414	10
optimal_loci_264087_G	1144	7.94452	0	1443	39.59	3	10.24997567	0.298	0.870396763	10

optimal_loci_264096_G	2901	7.94452	0	8670	58.18	3	6.56367335	0.608	0.87099904	10
optimal_loci_264103_G	1614	7.94452	0	3394	57.24	2	5.687151283	0.539	0.871056477	10
optimal_loci_264147_G	1359	5.849795	24.36	9509	47.53	2	0.74573517	0.277	0.872508709	12
optimal_loci_264164_G	1125	6.151357	10.31	2001	60.71	2	60.3311558	0.543	0.873075769	12
optimal_loci_264190_G	1449	5.830491	0	3714	47.06	3	2.792067067	0.49	0.873732481	11
optimal_loci_264208_G	1226	5.819307	21.13	1001	41.02	3	0.89074764	0.312	0.874289241	11
optimal_loci_264245_G	2112	2.981373	14.54	1001	54.21	1	1.906623409	0.554	0.876618069	11
optimal_loci_264246_G	1595	2.981373	0	2001	42.82	1	1.906623409	0.182	0.876684555	11
optimal_loci_264298_G	2072	2.266942	0	2001	48.4	4	5.586342105	0.426	0.87919981	7
optimal_loci_264299_G	1157	2.266942	2.42	2330	56.69	4	7.503797887	0.524	0.879352096	7
optimal_loci_264301_G	1162	2.266942	2.75	1001	48.88	4	166.0459588	0.359	0.879376452	7
optimal_loci_264302_G	2122	2.266942	0	5324	51.36	3	221.3946118	0.468	0.879490757	7
optimal_loci_264305_G	1168	2.266942	0	2106	53.33	2	328.6700537	0.516	0.879527268	7
optimal_loci_264359_G	1247	1.179196	15.8	6855	39.05	1	21.6760173	0.093	0.883949165	5
optimal_loci_264423_G	1634	2.158553	0	2001	51.95	4	0.801956317	0.502	0.88648174	6
optimal_loci_264447_G	1647	2.654628	10.99	3507	48.14	2	13.44540222	0.408	0.887699875	6
optimal_loci_264449_G	1066	2.654628	13.7	6285	53.93	2	13.44540222	0.599	0.887724187	6
optimal_loci_264454_G	1686	2.327533	0	2946	50.47	1	2.626717171	0.558	0.887933972	6
optimal_loci_264497_G	1851	2.2635	4.81	6256	43.38	2	16.40960843	0.272	0.890467903	6
optimal_loci_264575_G	1423	1.052086	4.36	2001	37.59	1	2.635697938	0.26	0.894391737	6
optimal_loci_264584_G	1075	0.835847	3.81	6805	51.44	3	0.113572803	0.559	0.894871238	6
optimal_loci_264594_G	1791	0.841196	8.38	2001	51.31	4	29.98241156	0.557	0.895195546	7
optimal_loci_264597_G	1140	0.841196	16.67	6268	34.47	3	39.86297595	0.098	0.895232889	7
optimal_loci_264619_G	1144	3.078728	23.69	13922	32.43	1	17.96697781	0.055	0.897472853	11
optimal_loci_264641_G	1560	3.163901	25.58	1929	35.12	2	118.1692065	0.072	0.899140393	12
optimal_loci_264643_G	1932	3.650724	3.05	1120	40.57	2	118.1692065	0.202	0.899266512	11
optimal_loci_264654_G	1084	3.953259	0	1001	42.25	3	2.28781883	0.212	0.899811422	13
optimal_loci_264693_G	1523	4.001453	0	1001	39.65	3	159.0485327	0.307	0.901076843	13
optimal_loci_264694_G	1035	4.001453	2.8	1001	58.45	3	159.0485327	0.542	0.901169129	13
optimal_loci_264700_G	1097	4.001453	0	11456	41.84	3	2.313359257	0.393	0.901260627	13
optimal_loci_264737_G	1067	4.305873	35.61	4642	40.39	2	9.46289201	0.497	0.903111153	12
optimal_loci_264752_G	1675	4.522855	14.27	8550	50.8	3	26.58315531	0.56	0.903467816	12
optimal_loci_264766_G	1475	4.662529	1.9	4216	53.22	4	3.969860104	0.378	0.904025626	10

optimal_loci_264767_G	1741	4.669733	2.13	5724	51.92	4	3.969860104	0.388	0.904038823	10
optimal_loci_264770_G	1038	4.677509	16.96	6136	41.23	4	3.969860104	0.039	0.904063844	10
optimal_loci_264775_G	1920	4.666921	3.28	1036	47.23	4	3.969860104	0.324	0.904100759	10
optimal_loci_264842_G	1349	3.637391	0	2071	42.55	2	111.0105346	0.198	0.909007381	8
optimal_loci_264909_G	2466	3.835009	7.79	8564	37.18	1	0.648009224	0.119	0.912219368	10
optimal_loci_264911_G	1068	3.835009	3.18	6779	54.96	1	0.648009224	0.566	0.912247225	10
optimal_loci_264921_G	1189	3.835009	9.34	4953	41.37	1	0.648009224	0.193	0.912365599	10
optimal_loci_264922_G	2096	3.835009	2.81	6175	44.22	1	0.648009224	0.514	0.912376293	10
optimal_loci_264925_G	2534	3.835009	0	9914	44.83	1	0.648009224	0.212	0.912409015	10
optimal_loci_264943_G	1152	3.835009	20.92	3060	50.86	2	0.205345835	0.539	0.913243087	10
optimal_loci_264944_G	2446	3.835009	1.19	1146	49.3	2	0.205345835	0.36	0.913254718	10
optimal_loci_264962_G	1596	3.468197	29.14	6351	37.59	1	1.986233282	0.245	0.914112016	9
optimal_loci_264994_G	1152	2.700604	0	1186	51.99	2	3.030385497	0.431	0.915785437	15
optimal_loci_265072_G	1465	3.251914	5.26	17377	58.02	1	2.888951314	0.526	0.919698559	13
optimal_loci_265074_G	2343	3.251377	6.15	4371	46.64	1	2.888951314	0.405	0.919804699	13
optimal_loci_265081_G	1243	5.647435	0	9936	46.17	3	13.54661381	0.389	0.919967811	13
optimal_loci_265082_G	1547	5.647435	17	11578	43.89	3	13.54661381	0.304	0.919982181	13
optimal_loci_265088_G	3896	5.647435	2.72	4515	52.82	3	13.54661381	0.528	0.920025449	13
optimal_loci_265089_G	1761	5.647435	8.92	2640	44.86	2	18.87544505	0.359	0.920060543	13
optimal_loci_265104_G	1592	4.751124	3.52	2743	37.75	2	16.74602623	0.12	0.920726112	12
optimal_loci_265119_G	1174	4.054249	0	2001	59.28	5	54.48324687	0.498	0.921670086	17
optimal_loci_265120_G	1137	4.054249	24.8	1001	30.95	6	53.81427361	0.093	0.921771184	17
optimal_loci_265141_G	1040	3.514376	0	2001	50.57	2	11.1792192	0.473	0.922827354	17
optimal_loci_265142_G	1205	3.514376	0	3174	44.48	2	11.1792192	0.1	0.92283762	17
optimal_loci_265149_G	1655	3.27518	0	3306	49.66	2	5.619619577	0.334	0.923080372	17
optimal_loci_265207_G	1238	2.590308	9.13	2965	41.92	1	66.64812137	0.154	0.925555772	12
optimal_loci_265208_G	1058	2.590308	0	4345	40.26	1	66.64812137	0.132	0.925567849	12
optimal_loci_265209_G	1652	2.590308	33.78	14925	38.19	2	40.42752748	0.307	0.925660441	12
optimal_loci_265213_G	2056	2.590308	1.36	13449	51.75	2	40.42752748	0.558	0.925691133	12
optimal_loci_265222_G	2277	2.45454	7.6	3305	47.73	2	9.865621571	0.268	0.925874085	12
optimal_loci_265262_G	2265	0.967631	15.94	1001	41.1	3	18.88980502	0.323	0.928446821	9
optimal_loci_265274_G	1327	1.151059	0	2274	39.03	1	50.74281391	0.071	0.929014336	9
optimal_loci_265321_G	1137	2.689425	38.96	2880	31.66	3	13.31798612	0.164	0.931171537	6

optimal_loci_265326_G	1483	2.714183	0	2646	37.69	3	13.31798612	0.184	0.931241943	6
optimal_loci_265384_G	1973	2.294104	1.88	2509	42.16	4	0.989240097	0.244	0.933478862	5
optimal_loci_265388_G	3366	2.294104	1.31	2001	47.89	4	0.989240097	0.454	0.933518726	5
optimal_loci_265429_G	1256	2.372136	29.62	2011	37.89	1	4.122679499	0.279	0.935633183	4
optimal_loci_265520_G	1108	0.416778	23.83	12825	32.03	1	5.034416614	0.13	0.940009799	8
optimal_loci_265541_G	1076	0.820905	0	2001	40.33	3	21.38089218	0.126	0.94181473	7
optimal_loci_265542_G	2235	0.820905	0	3354	40.22	3	21.38089218	0.16	0.941826571	7
optimal_loci_265547_G	2381	0.922292	0	8306	40.1	4	16.03566913	0.193	0.941869909	7
optimal_loci_265549_G	1270	0.922292	0	11367	36.77	3	21.38089218	0.115	0.941896698	7
optimal_loci_265551_G	3547	0.922292	30.79	9252	43.67	3	21.38089218	0.328	0.941910578	7
optimal_loci_265589_G	1243	1.249147	24.22	1001	34.91	2	0.344541071	0.026	0.94347764	9
optimal_loci_265628_G	1790	6.434471	0	4879	46.08	5	14.07635451	0.397	0.946603792	8
optimal_loci_265630_G	1375	6.434471	15.2	2925	50.9	4	13.05511082	0.5	0.946626362	8
optimal_loci_265643_G	1234	6.627606	3.4	1746	49.35	3	8.266798619	0.4	0.947981951	7
optimal_loci_265658_G	1263	6.627606	0	2281	36.57	3	8.266798619	0.117	0.948062019	7
optimal_loci_265679_G	2484	6.523378	16.18	3717	38.44	2	57.81222199	0.21	0.949041866	7
optimal_loci_265698_G	2454	5.890966	8.27	11498	47.14	2	7.830246015	0.39	0.949654225	9
optimal_loci_265700_G	1589	5.890966	16.61	11500	51.29	3	23.48310845	0.408	0.949683333	9
optimal_loci_265765_G	1121	5.367164	0	3934	41.57	2	2.019315249	0.411	0.953726285	6
optimal_loci_265771_G	1007	3.97901	32.77	6558	38.23	2	2.019315249	0.172	0.953940096	6
optimal_loci_265834_G	1300	3.236379	2.15	9560	41.61	4	48.30727254	0.265	0.955811285	5
optimal_loci_265861_G	2192	3.629085	11.5	19921	44.34	1	6.326089554	0.324	0.957443319	7
optimal_loci_265902_G	1055	3.760717	25.02	4010	42.74	2	12.52405007	0.311	0.959771981	6
optimal_loci_265963_G	1226	4.352868	0	4400	46	3	1.914628548	0.341	0.961554963	11
optimal_loci_265967_G	1062	4.352868	9.13	18342	38.88	2	0.234740896	0.349	0.961676978	11
optimal_loci_265989_G	1494	4.911706	4.95	6333	43.9	1	4.693740998	0.304	0.962161327	12
optimal_loci_266046_G	1215	5.326514	12.1	1989	34.56	5	74.2002709	0.075	0.964596688	17
optimal_loci_266047_G	1800	5.326514	0	3695	38.66	6	61.84795667	0.116	0.964612389	17
optimal_loci_266057_G	1170	5.326514	0	2729	41.7	5	18.40182427	0.302	0.964834688	17
optimal_loci_266066_G	1349	4.796694	2.15	14924	45.21	2	28.98807271	0.319	0.965265101	17
optimal_loci_266070_G	1193	4.796694	0	7957	37.88	2	20.20635757	0.185	0.965370304	17
optimal_loci_266088_G	1679	4.95969	7.27	13229	47.88	1	86.06076932	0.297	0.965867141	17
optimal_loci_266104_G	1006	5.247984	21.47	7765	44.53	1	86.06076932	0.287	0.966086745	15

optimal_loci_266113_G	1487	5.247984	13.18	7332	37.05	2	71.5752131	0.234	0.966322251	15
optimal_loci_266128_G	1185	5.51557	30.04	1326	43.79	3	47.71680873	0.338	0.966573019	14
optimal_loci_266130_G	1400	5.51557	0	7704	57.85	3	9.257498067	0.716	0.966751123	14
optimal_loci_266135_G	2443	5.131372	5.94	3072	34.83	1	0.136418184	0.071	0.967351614	18
optimal_loci_266136_G	1106	5.131372	0	1717	31.64	1	0.136418184	0.079	0.967375174	18
optimal_loci_266142_G	1791	5.131372	0	11070	33.94	2	0.068209092	0.042	0.967554827	18
optimal_loci_266169_G	1287	5.011301	0	1784	39.93	3	5.26633022	0.277	0.968966461	18
optimal_loci_266215_G	1419	3.376544	10.29	14097	44.32	1	11.17313565	0.314	0.971173449	10
optimal_loci_266226_G	1071	3.376544	2.8	3030	46.49	1	11.17313565	0.266	0.971273348	10
optimal_loci_266233_G	1398	3.376544	0	6203	51.64	1	20.55354298	0.66	0.971633766	10
optimal_loci_266241_G	1278	3.62747	0	11978	40.53	1	20.55354298	0.251	0.971684306	10
optimal_loci_266330_G	1650	4.625347	0	1001	54.78	2	26.84529503	0.561	0.973543278	6
optimal_loci_266332_G	2105	4.625347	0	1785	54.63	2	26.84529503	0.652	0.97360755	7
optimal_loci_266442_G	1950	4.626778	1.88	17431	49.28	1	37.3776486	0.419	0.977970155	7
optimal_loci_266454_G	1242	4.712182	0	1381	27.45	3	17.98974153	0	0.978215226	6
optimal_loci_266456_G	1234	4.827894	0	2449	50	3	20.21043614	0.691	0.978703452	6
optimal_loci_266475_G	1091	4.7418	17.14	10867	41.7	1	32.53922849	0.08	0.979442262	7
optimal_loci_266481_G	1875	4.7418	18.61	1672	39.68	1	40.94407602	0.155	0.979646306	7
optimal_loci_266506_G	1218	3.406342	24.63	10215	48.35	4	56.40949982	0.561	0.980610698	7
optimal_loci_266553_G	1958	3.610737	14.2	11421	41.98	1	17.79476093	0.281	0.983513736	5
optimal_loci_266608_G	1442	2.759269	0	5027	39.66	2	4.615603076	0.316	0.98602416	3
optimal_loci_266674_G	1065	4.681642	0	1001	34.64	2	14.62954822	0.131	0.98924819	2
optimal_loci_266867_G	1853	0.362238	0	6643	32.54	2	0.008166354	0.131	0.998372347	2
optimal_loci_266908_G	1072	0.88141	0	2617	44.12	2	23.01877478	0.341	0.991880531	5
optimal_loci_266996_G	1857	1.662198	10.99	17075	42	1	7.21081894	0.282	0.985957408	5
optimal_loci_267002_G	1184	1.662198	0	8285	37.5	1	7.21081894	0.195	0.98577802	5
optimal_loci_267028_G	1050	1.919515	21.71	1001	32.28	3	101.2828489	0.19	0.982789776	6
optimal_loci_267081_G	1500	3.974415	9.87	16870	48	1	38.8062349	0.512	0.977322408	5
optimal_loci_267113_G	1954	3.622448	2	11530	42.42	1	17.98687008	0.263	0.972831429	3
optimal_loci_267153_G	1338	2.385767	29.37	1433	34.6	3	40.86000265	0.141	0.962546796	1
optimal_loci_267263_G	2950	1.543136	20.78	6478	41.62	1	20.23797573	0.26	0.950683306	1
optimal_loci_267433_G	1094	3.604062	0	8907	39.12	2	8.159173327	0.475	0.932986898	2
optimal_loci_267464_G	1198	3.457393	0	2156	38.23	2	0.212118514	0.318	0.928738102	4

optimal_loci_267530_G	1010	4.84612	15.45	7907	28.81	1	2.439006962	0.086	0.920900816	6
optimal_loci_267534_G	1163	4.84612	12.9	4797	38	1	2.439006962	0.094	0.920837347	6
optimal_loci_267571_G	1190	5.03074	0	15042	41	1	11.76088677	0.263	0.915765694	9
optimal_loci_267584_G	1236	5.156983	2.59	2001	51.77	2	35.21073747	0.581	0.913142531	9
optimal_loci_267599_G	2098	5.408323	0	2300	40.46	3	16.45848332	0.113	0.911120551	10
optimal_loci_267618_G	2478	5.525243	3.75	18204	37.89	1	32.63216243	0.186	0.909920408	8
optimal_loci_267634_G	1210	5.912941	29.75	3122	40.74	2	1.944132251	0.223	0.908621061	8
optimal_loci_267652_G	1281	6.539787	0	2208	36.22	2	5.379617523	0.188	0.90613202	8
optimal_loci_267661_G	1301	6.184767	39.44	3656	49.19	2	5.379617523	0.424	0.905620122	8
optimal_loci_267690_G	1801	5.414962	11.44	2455	50.63	3	6.299829196	0.397	0.902192163	6
optimal_loci_268075_G	1623	4.293766	8.87	7617	50.46	1	0.683590267	0.292	0.856563918	5
optimal_loci_268082_G	1156	4.293766	36.42	2665	38.14	1	0.683590267	0.213	0.856462857	5
optimal_loci_268143_G	1662	4.645985	11.01	4159	37.54	1	0.186657782	0.075	0.851110612	7
optimal_loci_268153_G	1050	4.55827	2.67	7304	38.47	1	0.186657782	0.05	0.850814449	7
optimal_loci_268200_G	1098	2.928632	12.84	2097	34.15	1	15.14485043	0.054	0.846654898	8
optimal_loci_268260_G	1294	1.897084	0	1838	43.19	4	3.454476312	0.14	0.841936673	6
optimal_loci_268269_G	1447	1.816463	8.29	4237	37.04	3	2.498539321	0.148	0.841347286	6
optimal_loci_268316_G	1013	4.502034	29.42	1771	37.61	1	19.67124	0.269	0.837042408	6
optimal_loci_268403_G	1465	5.722672	0	15389	35.76	1	1.702619888	0.274	0.828557327	3
optimal_loci_268404_G	1213	5.722672	0	13205	37.34	1	1.702619888	0.088	0.828512755	3
optimal_loci_268578_G	1429	0.58899	36.74	1001	28.97	4	1.262781928	0.081	0.811002653	1
optimal_loci_268682_G	1528	1.417943	0	6393	34.94	3	8.351383263	0.141	0.797694857	4
optimal_loci_268745_G	1386	1.364657	25.11	5842	37.95	2	27.77809233	0.146	0.790239612	4
optimal_loci_268748_G	1374	1.364657	0	2159	42.13	2	27.77809233	0.408	0.789894796	4
optimal_loci_268771_G	1188	1.525119	2.36	6754	34.17	1	14.97747539	0.167	0.788050327	7
optimal_loci_268875_G	1050	2.077889	0	6800	38.95	1	6.13861359	0.188	0.779537959	5
optimal_loci_268882_G	1617	3.117191	2.64	1001	47.68	3	15.66847865	0.328	0.778210592	5
optimal_loci_268883_G	1068	3.117191	0	2001	46.34	3	15.66847865	0.469	0.778185592	5
optimal_loci_268912_G	1168	4.113992	0	13484	46.31	1	46.94435784	0.45	0.775402653	4
optimal_loci_269090_G	1179	2.075402	3.56	1455	49.61	1	19.88319445	0.493	0.759114837	3
optimal_loci_269092_G	2081	1.408087	1.73	3675	54.15	1	19.88319445	0.655	0.759051122	3
optimal_loci_269118_G	1466	2.040464	1.91	1003	56.68	3	7.493550616	0.495	0.756651163	3
optimal_loci_269226_G	1696	3.855414	37.21	5100	42.09	1	2.358096668	0.268	0.742761714	3

optimal_loci_269307_G	2321	7.088075	2.41	7840	47.13	2	32.7709333	0.385	0.736448857	7
optimal_loci_269335_G	1318	8.487712	32.09	9287	44.91	1	60.25245486	0.417	0.734658061	9
optimal_loci_269371_G	2160	8.871985	0	3353	58.05	1	1.194316046	0.588	0.730285653	10
optimal_loci_269387_G	1471	6.85243	9.11	1001	50.64	2	0.695240429	0.541	0.72870849	10
optimal_loci_269389_G	1322	6.85243	0	2962	49.77	2	0.695240429	0.401	0.72867151	10
optimal_loci_269395_G	1701	6.785015	0	17126	45.79	1	1.373872349	0.293	0.728374714	10
optimal_loci_269424_G	1532	6.03504	0	3262	51.63	3	0.948099943	0.473	0.725844429	9
optimal_loci_269428_G	1028	5.449533	27.63	2377	44.16	3	0.948099943	0.152	0.725602755	9
optimal_loci_269452_G	1040	5.299934	0	1118	40.86	2	27.70044183	0.244	0.722146449	8
optimal_loci_269454_G	1012	5.299934	0	11527	38.04	1	3.052783993	0	0.721769592	8
optimal_loci_269644_G	1158	0.990087	0	14968	34.28	2	8.356432235	0.064	0.694845735	1
optimal_loci_269821_G	1371	3.344237	16.92	6994	47.26	2	0.45345545	0.384	0.666419122	6
optimal_loci_269931_G	1195	3.604313	39.83	2523	39.33	3	8.189210842	0.269	0.658385122	6
optimal_loci_269942_G	1113	3.540368	0	1638	40.43	3	3.657898351	0.314	0.657630449	6
optimal_loci_269959_G	1243	3.476328	11.42	15390	37.48	1	4.92527703	0.216	0.656418959	6
optimal_loci_269960_G	1025	3.476328	0	12524	25.17	1	4.92527703	0.119	0.656360469	6
optimal_loci_269962_G	1209	3.476328	13.07	10067	37.63	1	4.92527703	0.287	0.656310327	6
optimal_loci_270093_G	1918	2.638491	30.76	1393	35.71	2	6.421003684	0.123	0.639411429	2
optimal_loci_270127_G	1231	1.701088	0	10450	60.68	1	21.23779007	0.708	0.633002429	6
optimal_loci_270161_G	1235	1.697198	0	4296	40.08	2	12.0156428	0.097	0.628422837	5
optimal_loci_270183_G	1187	1.697198	0	2748	37.32	3	8.939836293	0.228	0.625398898	5
optimal_loci_270191_G	1327	1.702848	0	2001	45.29	4	48.01830865	0.541	0.623830388	5
optimal_loci_270193_G	1472	1.702848	12.3	3696	47.07	4	48.01830865	0.217	0.62377451	5
optimal_loci_270318_G	1277	0.0978	2.43	2562	34.84	2	1.903183613	0.131	0.609825306	2
optimal_loci_270319_G	1528	0.0978	5.24	1001	39.79	2	1.903183613	0.117	0.609793449	2
optimal_loci_270453_G	2605	1.326868	2	3239	56.77	2	1.01938037	0.553	0.595284857	2
optimal_loci_270455_G	1047	1.326868	0	2001	53.77	1	51.09027802	0.409	0.594767061	2
optimal_loci_270540_G	2552	1.775215	1.21	6652	58.5	3	9.785157012	0.797	0.581045102	6
optimal_loci_270586_G	1232	1.620883	0	2630	42.77	3	6.154228265	0.282	0.578049102	6
optimal_loci_270588_G	1816	1.620883	38.6	2357	34.03	4	11.78365912	0.219	0.577903653	6
optimal_loci_270614_G	1036	1.00276	0	14037	43.43	1	8.533128255	0.188	0.575231918	6
optimal_loci_270617_G	1951	1.00276	35.11	8599	51.2	1	8.533128255	0.489	0.575120939	6
optimal_loci_270648_G	1143	0.861921	0	4280	54.76	2	19.58274306	0.489	0.572324082	6

optimal_loci_270806_G	1357	1.566932	39.94	5768	39.42	3	35.3917928	0.191	0.554286122	2
optimal_loci_270813_G	1185	1.566932	7.43	1999	52.99	5	8.260391208	0.565	0.553793245	2
optimal_loci_270964_G	1694	1.228814	0	17023	48.22	1	12.2216317	0.29	0.534730714	2
optimal_loci_270967_G	1765	1.287103	0	2676	39.26	3	5.334833815	0.233	0.534066551	2
optimal_loci_271142_G	1338	0.256029	0	2933	55.15	1	1.441806411	0.588	0.510322714	2
optimal_loci_271143_G	1007	0.256029	0	4341	36.64	1	1.441806411	0.112	0.510300735	2
optimal_loci_271427_G	1337	0.190844	2.09	2527	47.79	1	6.228121554	0.566	0.467302327	3
optimal_loci_271429_G	1515	0.190844	0	4329	49.5	1	6.228121554	0.387	0.467261918	3
optimal_loci_271470_G	1413	0.190054	0	1341	46.14	1	2.62846104	0.36	0.462183694	5
optimal_loci_271544_G	1047	0.194034	28.65	8169	35.33	2	12.89989852	0.079	0.45439251	3
optimal_loci_271566_G	2730	0.194034	15.24	9722	36.92	2	12.89989852	0.239	0.45373251	3
optimal_loci_271925_G	1172	0.274684	0	2594	38.48	3	175.5295341	0.223	0.393387286	4
optimal_loci_271933_G	1697	0.274684	7.84	1001	35.88	3	175.5295341	0.1	0.393139592	4
optimal_loci_271941_G	1521	0.246256	6.51	5222	39.05	2	0.122464927	0.127	0.391393633	4
optimal_loci_271952_G	1063	0.185326	0	4572	52.21	5	3.161612512	0.455	0.389508796	4
optimal_loci_272676_G	1453	0.044049	14.04	2383	37.5	1	4.338804611	0.205	0.302145673	2
optimal_loci_272772_G	1237	0.027479	16.09	11338	42.19	2	1.28621299	0.294	0.292089959	2
optimal_loci_274354_G	1065	0.843707	27.79	3171	37.65	1	49.51442783	0	0.076372	1
optimal_loci_277835_G	1112	0.012239	3.78	1001	48.38	2	9.987865596	0.502	0.168025857	4
optimal_loci_277848_G	1002	0.054227	5.49	3548	34.33	1	0.192675565	0.125	0.168971218	4
optimal_loci_277850_G	1068	0.054227	4.4	1001	56.92	1	0.192675565	0.534	0.168991163	4
optimal_loci_277874_G	1680	0.177696	8.21	7886	46.6	2	8.242179455	0.454	0.171704016	4
optimal_loci_278057_G	1955	0.394799	13.76	5337	43.73	3	12.01587433	0.469	0.17964927	2
optimal_loci_278096_G	2749	0.084588	4.07	1001	42.08	4	1.784685364	0.258	0.182800361	2
optimal_loci_278641_G	1323	0.068743	13.23	1813	39.75	1	4.20098825	0.119	0.216692302	1
optimal_loci_278767_G	1024	0.034465	4.59	15296	41.4	2	106.6647028	0.355	0.22231555	2
optimal_loci_278782_G	1298	0.034465	12.25	2973	40.67	3	0.704362835	0.098	0.222930509	2
optimal_loci_280543_G	1000	0.213371	22.2	1001	37.2	1	20.57704449	0.162	0.313708954	3
optimal_loci_280584_G	1182	0.366369	0	2501	36.97	1	10.56120766	0.17	0.314917222	4
optimal_loci_280614_G	1273	0.422272	4.32	15026	41.94	1	141.9498356	0.335	0.316098021	4
optimal_loci_280655_G	1751	0.435001	0	4301	41.46	1	45.63221637	0.128	0.318568828	3
optimal_loci_280754_G	1208	0.443978	3.39	8493	42.3	1	58.04663111	0.28	0.323220894	1
optimal_loci_281185_G	1964	0.210124	18.79	1001	37.52	4	2.024380477	0.187	0.34489953	2

optimal_loci_281269_G	1493	0.300364	2.55	7575	42.73	1	60.2177995	0.299	0.348133904	2
optimal_loci_281441_G	1774	0.962341	0	3313	45.09	1	9.285652493	0.409	0.356790697	3
optimal_loci_281471_G	1125	0.922737	33.78	5797	43.55	1	67.75519299	0.354	0.358903359	3
optimal_loci_281475_G	1011	0.922737	0	2999	41.04	1	67.75519299	0.211	0.358926769	3
optimal_loci_282320_G	1065	1.304454	15.21	2539	36.33	1	3.08188714	0.111	0.396808259	6
optimal_loci_282323_G	1195	1.304454	0	5272	56.06	1	3.08188714	0.667	0.39683023	6
optimal_loci_282339_G	1268	1.381369	10.8	6188	41	2	13.7694667	0.367	0.398335892	6
optimal_loci_282341_G	1306	1.381369	0	1001	39.12	2	13.7694667	0.135	0.398377285	6
optimal_loci_282386_G	1636	1.893277	11.86	13168	52.26	2	7.374282878	0.678	0.399992792	6
optimal_loci_282388_G	1144	1.769503	0	1080	36.97	1	14.74856576	0.057	0.40018699	6
optimal_loci_282498_G	1446	1.213477	2.01	3256	52.97	2	6.667225053	0.582	0.404922742	3
optimal_loci_282499_G	1360	1.213477	0	1796	42.94	2	6.667225053	0.423	0.40493517	3
optimal_loci_282509_G	1101	1.215015	0	15543	43.96	1	12.15460606	0.173	0.405616981	3
optimal_loci_282619_G	1098	0.759206	21.68	1001	38.52	1	2.155247639	0.133	0.410039904	5
optimal_loci_282620_G	1133	0.664858	0	1001	38.21	1	5.190053046	0.212	0.410408178	5
optimal_loci_282653_G	1160	0.43392	8.97	1373	39.65	2	11.6857759	0.224	0.412438417	5
optimal_loci_282656_G	1285	0.43392	0	1001	55.48	2	11.6857759	0.515	0.412457284	5
optimal_loci_282661_G	1310	0.43392	0	19722	36.1	1	12.44017959	0.192	0.412659392	5
optimal_loci_282821_G	1352	0.09638	2.66	5151	54.58	1	73.11300839	0.434	0.419897778	2
optimal_loci_282853_G	1273	0.06929	24.51	1001	30.08	1	32.8057845	0.165	0.42048255	2
optimal_loci_282945_G	1159	0.227602	0	1001	30.37	2	1.292563237	0.114	0.425015519	4
optimal_loci_282950_G	1283	0.239708	8.26	3860	42.08	2	1.292563237	0.252	0.425053672	4
optimal_loci_282994_G	2919	0.320222	39.05	3306	39.7	2	20.52271421	0.231	0.427753679	5
optimal_loci_282995_G	1734	0.378191	10.21	1001	45.21	2	20.52271421	0.403	0.427842815	5
optimal_loci_283035_G	1527	0.397016	3.27	6445	55.73	1	0.686391753	0.574	0.429373953	3
optimal_loci_283161_G	1614	0.316771	0	2146	42.37	1	4.070216057	0.319	0.433478001	1
optimal_loci_283454_G	1230	0.751069	0	16323	42.68	1	11.97488986	0.328	0.445110417	2
optimal_loci_283492_G	2139	0.157776	33.38	13295	32.91	1	28.37262396	0	0.447839839	2
optimal_loci_283613_G	1124	0.004514	25.18	5043	43.95	2	12.26532046	0.308	0.456444804	1
optimal_loci_283802_G	1281	0.004514	0	3807	42.62	1	0.411582228	0.2	0.461585295	3
optimal_loci_283897_G	1205	0.390912	7.8	7728	42.82	2	0.059701066	0.237	0.465147886	3
optimal_loci_283898_G	1084	0.390912	0	6379	50.27	2	0.059701066	0.365	0.465159703	3
optimal_loci_284058_G	1185	0.170168	0	2068	35.69	4	12.60574952	0	0.470715577	1

optimal_loci_284165_G	1001	0.031215	5.29	2545	40.05	2	0.0189369	0.183	0.475768491	2
optimal_loci_284217_G	1195	0.031618	0	10514	47.36	1	98.45957653	0.289	0.477520942	5
optimal_loci_284284_G	1219	0.042462	18.7	17038	34.12	1	15.8654464	0.193	0.480524139	4
optimal_loci_284287_G	1060	0.042462	0	14628	54.71	1	15.8654464	0.541	0.480544792	4
optimal_loci_284292_G	1302	0.043549	0	1001	38.86	1	15.8654464	0.099	0.480735951	4
optimal_loci_284403_G	1006	0.049064	0	2001	38.66	2	46.9359797	0.084	0.485631486	1
optimal_loci_284615_G	1087	0.034447	0	5295	43.14	1	5.682016343	0.333	0.492655576	6
optimal_loci_284623_G	1576	0.034276	0	2718	33.69	2	18.23962495	0.031	0.492810319	6
optimal_loci_284638_G	1066	0.032596	0	6875	44.27	1	0.358756146	0.359	0.493268059	6
optimal_loci_284639_G	1291	0.032596	0	5501	40.66	1	0.358756146	0.169	0.493277295	6
optimal_loci_284667_G	1792	0.020566	0	8352	34.26	1	110.3450396	0.219	0.495356138	6
optimal_loci_284668_G	1831	0.020566	0	10516	43.03	1	110.3450396	0.21	0.495373534	6
optimal_loci_284976_G	2201	0.407066	0	2001	44.84	1	1.344258109	0.229	0.509847636	1
optimal_loci_285246_G	1669	0.068223	15.28	1656	37.02	1	12.20886168	0.104	0.519548621	1
optimal_loci_285395_G	1059	0.896434	12.09	3681	33.23	1	0.102252241	0	0.528973114	4
optimal_loci_285452_G	1116	0.755051	38.17	2949	35.93	3	0.33728496	0.11	0.530979187	4
optimal_loci_285467_G	1001	0.579108	0	17623	49.35	4	20.15685173	0.217	0.532116262	5
optimal_loci_285474_G	1136	0.564695	33.36	10738	39.7	1	10.8099515	0.149	0.532535029	5
optimal_loci_285555_G	1669	1.118899	0	2001	45.65	1	7.90917327	0.412	0.535996376	6
optimal_loci_285621_G	1172	1.367322	13.65	2028	53.92	1	4.803638731	0.67	0.53798002	5
optimal_loci_285630_G	1253	1.317271	3.51	7615	36.31	2	3.563789243	0	0.538495175	6
optimal_loci_285639_G	3271	1.394503	2.26	18791	46.77	1	7.127578486	0.416	0.538783646	6
optimal_loci_285689_G	1106	0.991013	6.69	18624	54.33	1	31.55014255	0.522	0.541880152	6
optimal_loci_285693_G	1545	0.862974	37.28	2192	35.72	2	4.448647906	0.119	0.542120349	5
optimal_loci_285772_G	1666	0.041794	14.17	9602	44.17	4	3.021940318	0.269	0.545485927	7
optimal_loci_285800_G	1019	0.063301	0	3030	57.99	2	174.4947999	0.52	0.546483236	5
optimal_loci_285825_G	1799	0.522924	35.77	2001	38.63	2	1.379668468	0.117	0.548148722	6
optimal_loci_285863_G	1218	0.55711	15.19	2582	41.54	2	19.90196699	0.292	0.549451753	8
optimal_loci_285865_G	2136	0.55711	0	4811	37.59	2	19.90196699	0.147	0.549469672	8
optimal_loci_285907_G	1152	0.773467	0	3074	47.13	2	151.3101745	0.466	0.550657779	6
optimal_loci_285965_G	1241	0.396476	19.82	2990	40.69	2	0.525620286	0.291	0.552641857	5
optimal_loci_285972_G	1320	0.396476	0	5520	47.12	3	0.354326552	0.291	0.552728791	5
optimal_loci_286229_G	1046	0.124091	0	5692	54.3	1	1.040834222	0.687	0.565866644	1

optimal_loci_286381_G	1006	0.142666	0	2349	48.21	2	4.489570617	0.353	0.574857087	3
optimal_loci_286489_G	1752	0.023571	0	13746	31.33	2	0.238244552	0.188	0.578060938	5
optimal_loci_286490_G	2850	0.023571	0	10699	32.14	2	0.238244552	0.091	0.578076606	5
optimal_loci_286525_G	1535	0.023571	30.23	2690	36.35	1	32.14433632	0.287	0.579397452	6
optimal_loci_286536_G	1229	0.023571	0	17844	45.48	1	1.76234819	0.304	0.579861173	6
optimal_loci_286582_G	1087	0.567314	13.25	2027	45.81	1	5.942335878	0.154	0.582131239	5
optimal_loci_286631_G	1136	0.577352	0	1001	57.74	3	3.319121686	0.552	0.582936609	6
optimal_loci_286771_G	1961	0.566926	16.93	2593	39.52	1	4.483924173	0.187	0.585960177	6
optimal_loci_286781_G	1111	0.559487	0	3642	55.98	1	2.472357099	0.654	0.586548044	5
optimal_loci_286790_G	1049	0.55713	33.46	6673	35.17	2	6.422887686	0.12	0.587470252	4
optimal_loci_286794_G	1383	0.55713	11.93	2225	32.97	1	12.84577537	0.14	0.5875889	4
optimal_loci_286886_G	1366	0.007045	2.12	1001	47.51	2	0.020236907	0.255	0.593230397	3
optimal_loci_286900_G	1178	0.007045	33.36	6301	29.71	1	7.187695509	0.041	0.594761599	3
optimal_loci_286901_G	3222	0.007045	37.12	3046	29.01	1	7.187695509	0.131	0.594771334	3
optimal_loci_287165_G	1302	0.106063	0	1773	37.94	1	14.84998821	0.191	0.60863088	1
optimal_loci_287666_G	1195	0.074725	5.19	15569	33.72	1	9.070756663	0.143	0.630029558	3
optimal_loci_287671_G	1175	0.074725	32.09	12215	44.42	1	9.070756663	0.111	0.630056682	3
optimal_loci_287717_G	1463	0.075836	31.1	2300	44.97	2	12.38904672	0.53	0.631496464	3
optimal_loci_287841_G	1101	0.197687	0	2488	41.32	2	4.408607828	0.327	0.635928439	3
optimal_loci_287878_G	1383	0.25768	0	5033	39.84	1	30.18087186	0.137	0.637782166	7
optimal_loci_287880_G	1305	0.25768	2.91	7916	42.98	1	30.18087186	0.303	0.637805342	7
optimal_loci_287953_G	1123	0.388035	28.14	3017	29.38	2	8.677094776	0.166	0.64084252	6
optimal_loci_287965_G	1007	0.388035	16.39	2139	47.56	2	2.918438086	0.371	0.641283185	6
optimal_loci_287972_G	1020	0.391697	32.45	3222	41.47	3	0.047995127	0.259	0.641604713	6
optimal_loci_287987_G	1069	0.378397	29.47	4816	36.38	4	0.035996346	0.096	0.64176509	6
optimal_loci_288074_G	1619	0.334234	3.83	2608	45.21	4	5.893194419	0.259	0.646161187	2
optimal_loci_288077_G	1061	0.311806	27.8	2279	36.56	3	7.857592558	0.217	0.64638369	2
optimal_loci_288388_G	1040	0.659341	36.25	12598	46.34	1	1.014473783	0.354	0.658316323	3
optimal_loci_288391_G	1247	0.659341	22.21	14283	40.89	1	1.014473783	0.275	0.658329868	3
optimal_loci_288425_G	1113	0.865829	3.41	9159	39.17	3	49.21351536	0.302	0.659644195	3
optimal_loci_288522_G	1212	1.383259	6.19	5826	39.43	3	0.855749646	0.066	0.664008385	1
optimal_loci_289201_G	1443	0.356801	0	1437	44	4	9.920112359	0.31	0.70141494	3
optimal_loci_289203_G	1242	0.356801	0	2812	39.77	4	9.920112359	0.258	0.701430278	3

optimal_loci_289301_G	1952	0.725929	21.93	2001	44.05	1	5.499233704	0.288	0.705025692	3
optimal_loci_289802_G	1317	0.608453	33.26	5498	39.25	2	16.35108464	0.231	0.727684353	5
optimal_loci_289879_G	1322	0.967038	0	3591	35.4	1	22.20324097	0.133	0.730757779	6
optimal_loci_289908_G	1309	1.112916	0	8613	47.13	2	0.235153526	0.396	0.731181023	6
optimal_loci_289913_G	2046	1.112916	1.86	3107	43.64	1	0.470307052	0.272	0.731219361	6
optimal_loci_289919_G	1805	0.484372	22.22	5405	39.55	1	0.470307052	0.148	0.731361386	6
optimal_loci_289955_G	1204	0.52756	33.64	5065	32.55	1	0.017815614	0.219	0.732112292	5
optimal_loci_290360_G	1355	0.195889	0	10995	43.02	2	5.768065735	0.42	0.750176325	3
optimal_loci_290371_G	1514	0.343589	0	1001	43.85	1	0.308259294	0.316	0.750255389	3
optimal_loci_290466_G	1482	0.778839	0	1001	54.72	4	9.024824696	0.649	0.754003824	6
optimal_loci_290491_G	1351	0.806529	24.2	11044	39.08	2	18.21142326	0.044	0.754401232	4
optimal_loci_290498_G	1041	0.820782	0	9453	49.66	1	6.653205347	0.437	0.754800343	4
optimal_loci_290508_G	1225	0.932607	11.92	14724	33.95	1	0.047888079	0.165	0.755415648	5
optimal_loci_290611_G	2232	1.252005	6.41	3250	50.44	2	15.84337594	0.525	0.759292643	8
optimal_loci_290640_G	1109	1.110292	19.12	10168	55.81	1	2.386058817	0.573	0.760083414	7
optimal_loci_290654_G	1830	1.124898	0	1261	43.82	2	3.898681594	0.434	0.760293746	7
optimal_loci_290661_G	2116	1.171806	5.91	12066	34.12	1	22.04087152	0.009	0.760612227	8
optimal_loci_290662_G	1705	1.186038	3.64	10233	52.9	2	31.05019761	0.645	0.760630266	8
optimal_loci_290664_G	1456	1.186038	32.83	8164	40.38	2	31.05019761	0.245	0.7606489	8
optimal_loci_290689_G	1182	1.836717	6.01	4810	46.1	2	0.075034726	0.312	0.761767767	9
optimal_loci_290732_G	1151	1.606537	0	2001	45.35	4	9.892609434	0.303	0.764330548	6
optimal_loci_290742_G	2124	1.619961	6.21	3866	42.65	2	5.499619784	0.292	0.764864031	3
optimal_loci_290841_G	1328	0.06116	5.87	2001	53.61	1	2.039268407	0.627	0.76925225	1
optimal_loci_290967_G	1004	0.444539	0	1001	47.41	4	23.47764534	0.54	0.774246946	1
optimal_loci_291057_G	1197	0.842287	0	8187	35	2	36.7182114	0.177	0.778580009	2
optimal_loci_291068_G	2380	0.842287	18.91	4243	39.15	2	36.7182114	0.145	0.778797962	2
optimal_loci_291264_G	1029	0.775121	20.99	18944	49.95	1	8.239997994	0.241	0.785634511	7
optimal_loci_291274_G	1299	0.767337	39.49	3109	36.25	2	5.741206236	0.106	0.785759638	7
optimal_loci_291315_G	1060	0.735601	0	18491	31.5	2	7.461859755	0.105	0.788182589	7
optimal_loci_291317_G	2499	0.735601	0	34809	38.09	1	14.92371951	0.115	0.788313769	7
optimal_loci_291359_G	1409	0.780001	0	6765	42.86	1	28.01250383	0.148	0.789446221	7
optimal_loci_291360_G	1399	0.780001	14.72	4720	52.25	1	28.01250383	0.46	0.789462741	7
optimal_loci_291367_G	1052	0.780001	26.05	3237	36.12	1	28.01250383	0.088	0.789549482	7

optimal_loci_291571_G	1986	1.431105	37.11	17396	30.56	1	11.98324892	0.053	0.796991616	2
optimal_loci_291669_G	1822	2.033721	1.65	4056	30.24	1	4.318034301	0.192	0.800768252	9
optimal_loci_291724_G	1938	2.696913	18.68	3640	41.58	1	3.906570893	0.276	0.802446303	9
optimal_loci_291727_G	1369	2.696913	4.31	8236	42.8	1	3.906570893	0.179	0.80248325	9
optimal_loci_291731_G	1514	2.974586	0	13529	47.22	1	3.906570893	0.274	0.8025258	10
optimal_loci_291733_G	1243	2.974586	0	15567	53.09	1	3.906570893	0.445	0.802542184	10
optimal_loci_291738_G	1027	3.111136	0	1812	48.78	2	5.10821811	0.501	0.802814802	10
optimal_loci_291758_G	1033	3.542679	0	2204	50.33	1	4.043800199	0.453	0.803431481	10
optimal_loci_291764_G	1802	3.542679	6.6	6086	58.49	1	4.043800199	0.611	0.803462688	10
optimal_loci_291818_G	2560	3.521852	1.48	2700	52.57	1	0.028900943	0.431	0.80542273	9
optimal_loci_291853_G	1567	3.521852	24.12	1419	40.01	1	7.763933339	0.233	0.806516571	7
optimal_loci_291970_G	1073	0.2801	0	11094	38.39	2	0.603514087	0.111	0.814272829	8
optimal_loci_291989_G	1068	0.2801	20.88	1659	38.01	3	48.7848361	0.194	0.814573125	8
optimal_loci_292046_G	1006	0.234705	0	1001	34.99	2	6.866701362	0	0.815905965	9
optimal_loci_292060_G	1960	0.236671	0	4732	48.46	2	3.470798133	0.448	0.816378055	9
optimal_loci_292062_G	1173	0.230649	13.98	3481	48.33	2	3.470798133	0.371	0.816498889	9
optimal_loci_292063_G	1213	0.232358	2.8	2152	41.38	2	3.470798133	0.339	0.816509251	9
optimal_loci_292069_G	1018	1.181734	8.84	2407	49.9	2	15.89586569	0.43	0.816854606	9
optimal_loci_292070_G	1360	1.181734	34.63	1001	41.98	2	15.89586569	0.165	0.81686316	9
optimal_loci_292158_G	1290	1.858621	27.83	1002	40.38	2	0.009583778	0.091	0.819804891	9
optimal_loci_292222_G	1004	1.025133	0	4257	45.51	1	1.851795395	0.342	0.822409579	3
optimal_loci_292223_G	1996	1.025133	11.22	2228	41.38	1	1.851795395	0.255	0.822417916	3
optimal_loci_292356_G	1231	0.780392	4.22	2001	46.06	3	8.943541479	0.304	0.83009773	2
optimal_loci_292438_G	1105	1.34785	0	14242	57.91	1	8.931481352	0.793	0.833203714	3
optimal_loci_292506_G	1026	0.35259	0	2519	36.25	2	0.054629179	0.225	0.837146388	3
optimal_loci_292585_G	1980	0.630302	0	4594	36.31	5	9.23245275	0.23	0.840778113	6
optimal_loci_292650_G	1066	0.760218	38.37	19002	38.08	1	0.823793759	0.337	0.84275765	6
optimal_loci_292665_G	1154	0.760218	17.5	3015	55.63	1	3.574698403	0.654	0.842982983	6
optimal_loci_292667_G	1578	0.762258	8.56	7015	58.49	1	3.574698403	0.648	0.843015139	6
optimal_loci_292684_G	1028	0.788346	0	1152	49.51	2	128.7617555	0.52	0.843854554	6
optimal_loci_292717_G	1377	0.791472	0	3541	43.13	1	0.774277851	0.266	0.846251748	6
optimal_loci_292759_G	1417	1.439505	0	2001	33.73	2	1.486953662	0.106	0.848231944	2
optimal_loci_292873_G	2890	2.939861	21.94	1320	35.46	1	10.23319704	0.211	0.854236674	8

optimal_loci_292888_G	1626	3.099502	5.47	4965	45.14	2	5.525162686	0.461	0.85477978	8
optimal_loci_292896_G	1194	3.246784	0	3390	43.71	3	4.940283259	0.509	0.854882318	8
optimal_loci_292933_G	1303	2.249947	39.22	6487	34.68	1	6.716400311	0	0.855946712	8
optimal_loci_292938_G	1610	2.256804	0	1529	39.19	1	6.716400311	0.268	0.856034634	8
optimal_loci_292951_G	1075	2.17716	24.64	2747	33.3	1	20.59103545	0.135	0.856365712	8
optimal_loci_292956_G	1076	1.677454	7.81	2001	41.63	4	35.84786485	0.129	0.85675385	8
optimal_loci_292957_G	1181	1.677454	12.79	2967	38.18	4	35.84786485	0.155	0.856764888	8
optimal_loci_293205_G	1899	3.570491	0	15970	54.81	2	14.99376424	0.761	0.865914262	3
optimal_loci_293228_G	1375	3.325221	0	8524	42.03	1	60.28918545	0.188	0.866963591	3
optimal_loci_293246_G	2239	3.18144	0	2111	40.28	2	0.033029928	0.142	0.867424096	3
optimal_loci_293392_G	1409	1.511465	22.36	2029	37.4	5	1.499082618	0.126	0.87261467	7
optimal_loci_293436_G	1734	1.266051	26.18	9104	41.52	1	41.42102399	0.198	0.873740016	7
optimal_loci_293444_G	1560	1.225719	0	1001	60.76	1	41.42102399	0.661	0.873806555	7
optimal_loci_293477_G	1233	1.194188	6	2001	44.12	3	4.311060452	0.304	0.874906666	7
optimal_loci_293480_G	2764	1.160733	12.41	3230	34.94	1	67.49439944	0.072	0.875379118	7
optimal_loci_293496_G	1220	1.230542	0	1365	39.67	5	57.50537364	0.308	0.876275288	7
optimal_loci_293498_G	1557	1.230542	0	2148	36.54	6	49.34538723	0.068	0.876308087	7
optimal_loci_293611_G	2586	0.581931	32.68	2001	35.42	2	1.118677443	0.187	0.882190046	7
optimal_loci_293613_G	1075	0.581931	0	14812	39.06	3	1.106707451	0.112	0.882293034	7
optimal_loci_293619_G	1617	0.581931	0	1136	43.22	4	10.63590035	0.291	0.882418016	7
optimal_loci_293663_G	2004	0.445122	12.08	3659	48.8	1	17.61558533	0.417	0.884167613	9
optimal_loci_293703_G	1138	0.421908	0	3215	43.32	2	1.019665829	0.308	0.885326184	11
optimal_loci_293709_G	1034	0.421908	0	6891	51.06	2	1.019665829	0.237	0.885355736	11
optimal_loci_293717_G	1964	0.421908	0	2001	53.71	3	22.04649826	0.526	0.885402161	11
optimal_loci_293827_G	1508	0.37465	0	15873	39.52	1	2.262439347	0.308	0.88801394	8
optimal_loci_293828_G	1122	0.37465	0	14529	35.02	1	2.262439347	0.114	0.888027847	8
optimal_loci_293837_G	1322	0.367499	0	3275	43.49	3	0.803565129	0.374	0.8882879	7
optimal_loci_293843_G	1130	0.367499	31.77	2805	39.73	3	0.060258218	0.22	0.888370839	7
optimal_loci_293940_G	1016	1.039875	3.25	1428	50.59	3	29.63421377	0.571	0.893456359	7
optimal_loci_293943_G	1381	1.039875	2.39	4491	56.91	3	29.63421377	0.707	0.893480982	7
optimal_loci_293947_G	1422	1.039875	0	7059	47.74	4	22.22566033	0.392	0.893525052	7
optimal_loci_293950_G	1086	1.039875	0	4828	54.41	4	22.22566033	0.475	0.893545688	7
optimal_loci_293951_G	1249	1.039875	0	3293	37.22	4	22.22566033	0.157	0.893556718	7

optimal_loci_293955_G	2194	1.039875	3.65	1001	54.46	3	5.284577029	0.548	0.893633868	7
optimal_loci_293957_G	1778	1.039875	10.35	2001	36.83	3	0.702463935	0.081	0.893791657	7
optimal_loci_294090_G	2579	1.770642	0	1001	33.96	3	60.52538931	0.081	0.899518922	5
optimal_loci_294091_G	1044	1.791261	27.01	2001	63.21	2	77.38052296	0.61	0.899659042	5
optimal_loci_294101_G	2121	1.882722	12.92	2001	45.78	5	0.492542587	0.331	0.900189116	5
optimal_loci_294122_G	1209	2.123974	0	3055	53.43	2	2.947714525	0.456	0.901357157	10
optimal_loci_294149_G	1330	3.039612	31.05	1473	41.05	3	0.773728794	0.1	0.902587926	10
optimal_loci_294168_G	1306	3.467687	0	2080	36.06	3	0.422355545	0.214	0.90436566	7
optimal_loci_294172_G	1415	3.467687	6.78	1001	49.46	3	0.422355545	0.318	0.904458028	7
optimal_loci_294176_G	1014	3.467687	0	2611	31.75	2	0.024948144	0.081	0.904514534	7
optimal_loci_294226_G	1987	3.865686	0	6357	45.09	3	0.068891888	0.351	0.905340476	7
optimal_loci_294227_G	4180	3.871392	8.23	2998	49.06	3	0.068891888	0.431	0.905357165	7
optimal_loci_294297_G	1045	4.1893	30.72	1001	64.3	2	11.80999285	0.715	0.910194739	7
optimal_loci_294298_G	1334	4.1893	0	2894	60.34	3	7.873328565	0.631	0.910259782	7
optimal_loci_294304_G	1021	4.1893	0	7881	57.1	3	7.873328565	0.722	0.910299873	7
optimal_loci_294377_G	1069	5.771985	0	2001	27.4	3	48.68006806	0.115	0.912768148	8
optimal_loci_294384_G	1776	6.242806	14.64	7556	40.42	4	36.51005105	0.268	0.912812804	8
optimal_loci_294389_G	2199	6.242806	6.41	8347	39.24	4	36.51005105	0.129	0.912874978	8
optimal_loci_294390_G	2436	6.242806	5.17	5725	44.37	3	0.055425512	0.379	0.912894151	8
optimal_loci_294447_G	1036	5.289242	28.19	6067	37.83	2	37.29427462	0.191	0.915583	9
optimal_loci_294489_G	3010	6.112561	4.98	2001	54.95	3	13.5564375	0.519	0.917652846	7
optimal_loci_294497_G	1357	5.488267	0	5696	53.86	1	7.14355909	0.463	0.918268239	8
optimal_loci_294519_G	1164	5.488267	25.26	2847	56.61	5	1.924515025	0.456	0.919006789	10
optimal_loci_294521_G	1332	5.488267	29.43	2712	59.53	5	1.924515025	0.576	0.919018236	10
optimal_loci_294554_G	3415	2.59415	2.02	1001	54.52	3	14.42653471	0.647	0.92023267	9
optimal_loci_294580_G	1200	2.392434	24.33	2385	37.41	3	1.200171734	0.097	0.921254546	9
optimal_loci_294598_G	1007	3.165397	39.72	2674	30.48	3	4.923799946	0.124	0.921947234	9
optimal_loci_294605_G	1578	3.565981	0	12537	44.55	1	6.914488156	0.3	0.922585819	11
optimal_loci_294620_G	1235	3.489276	0	2001	50.6	1	6.914488156	0.307	0.922779365	11
optimal_loci_294684_G	1227	4.556196	0	2182	40.5	4	0.31793415	0.17	0.925803754	9
optimal_loci_294697_G	1364	4.408619	36.44	2001	46.7	2	3.320108682	0.314	0.926258857	8
optimal_loci_294706_G	1127	4.343861	24.31	5915	60.15	4	9.278650197	0.705	0.926347889	8
optimal_loci_294707_G	1043	4.343861	11.31	7427	56.47	4	9.278650197	0.454	0.926360044	8

optimal_loci_294750_G	1017	5.226071	0	2726	57.22	4	6.035895463	0.783	0.928479314	9
optimal_loci_294799_G	1091	5.476795	11.09	5719	38.4	1	8.267024677	0.104	0.929357654	10
optimal_loci_294861_G	1583	4.449325	0	1001	50.09	2	2.499680946	0.459	0.930826907	6
optimal_loci_294872_G	3153	4.44163	1.46	1841	50.39	2	0.384531635	0.433	0.931084967	6
optimal_loci_294905_G	1736	3.89775	1.79	1630	37.44	4	0.382070083	0.153	0.931716896	6
optimal_loci_294928_G	1153	3.895356	3.12	13078	55.59	1	1.829251261	0.609	0.932703392	5
optimal_loci_295103_G	1015	1.597301	21.58	2001	57.43	5	2.662998723	0.713	0.937445969	3
optimal_loci_295106_G	1113	1.597301	0	4074	42.4	5	2.662998723	0.148	0.937462634	3
optimal_loci_295163_G	1199	1.117321	8.67	2153	39.19	4	13.80460322	0.198	0.939698044	3
optimal_loci_295303_G	1684	4.954896	7.84	1001	42.39	4	2.610055095	0.318	0.944736134	5
optimal_loci_295307_G	1284	4.954896	0	3398	48.13	5	2.088044076	0.433	0.944819024	5
optimal_loci_295308_G	1292	4.954896	7.59	2001	33.04	6	1.862779733	0.045	0.94483019	5
optimal_loci_295327_G	1673	5.491067	0	1001	44.88	6	36.94047036	0.275	0.945927577	6
optimal_loci_295369_G	1040	7.074688	0	1754	48.46	3	39.37108398	0.51	0.94739626	6
optimal_loci_295426_G	1228	4.61963	0	2676	44.29	3	11.83441078	0.179	0.949703272	3
optimal_loci_295514_G	1581	8.439349	22.58	1001	40.86	3	5.43326026	0.392	0.953886931	11
optimal_loci_295531_G	1536	6.169669	13.74	1891	51.95	3	4.36037612	0.609	0.954537976	11
optimal_loci_295553_G	1096	5.641429	0	15285	54.83	1	2.495669796	0.495	0.954853394	11
optimal_loci_295565_G	2145	5.785598	28.53	2985	39.95	2	5.173842788	0.077	0.955068614	11
optimal_loci_295573_G	2791	5.785598	8.31	3719	47.43	3	3.449228525	0.486	0.9551605	11
optimal_loci_295581_G	2065	5.785598	10.12	1116	48.71	2	4.114889806	0.412	0.955323337	11
optimal_loci_295586_G	1050	5.785598	34.1	7657	43.52	2	4.114889806	0.337	0.95537592	11
optimal_loci_295587_G	1624	5.785598	13.85	8811	42.73	2	4.114889806	0.265	0.955385197	11
optimal_loci_295605_G	1103	5.785598	0	9806	38.89	3	0.731242432	0.15	0.955497309	11
optimal_loci_295651_G	2662	6.900009	6.5	11687	39.4	1	3.764142907	0.282	0.95689217	14
optimal_loci_295655_G	1435	6.635994	0	11188	38.04	1	3.764142907	0.258	0.957116675	14
optimal_loci_295702_G	1168	5.179007	11.73	1103	39.81	5	0.307488911	0.376	0.959539176	6
optimal_loci_295705_G	1632	5.027718	0	1001	40.01	4	0.384361138	0.267	0.959676819	8
optimal_loci_295706_G	1887	4.798528	25.81	2704	37.83	5	1.574808586	0.264	0.959743358	8
optimal_loci_295746_G	1982	4.841382	23.61	10269	38.54	2	4.007854195	0.124	0.961421987	7
optimal_loci_295802_G	1541	7.097126	11.94	3549	32.83	1	0.083402662	0.144	0.963634815	9
optimal_loci_295803_G	1434	7.097126	23.29	2082	36.68	1	0.083402662	0.241	0.963647469	9
optimal_loci_295839_G	1055	9.053264	10.62	1167	39.62	3	19.72127118	0.167	0.964759092	7

optimal_loci_295852_G	1559	10.280511	15.52	2047	36.36	8	9.657668062	0.158	0.966186937	8
optimal_loci_295856_G	2764	10.280511	0	2001	53.47	7	11.68378243	0.607	0.966387743	8
optimal_loci_295866_G	1566	10.280511	0	2076	36.9	4	9.121556802	0.207	0.966559978	8
optimal_loci_295919_G	1177	9.681066	7.48	1424	42.31	5	0.950473418	0.3	0.969463508	11
optimal_loci_295930_G	1092	9.459949	9.16	4786	58.79	5	0.443736148	0.649	0.969678857	11
optimal_loci_295976_G	1366	7.171294	2.93	2001	44.58	6	52.16671728	0.29	0.971349576	8
optimal_loci_295977_G	1061	7.171294	9.14	4281	43.16	6	52.24372949	0.24	0.971367904	8
optimal_loci_295994_G	1219	6.906294	5	1952	54.38	2	5.13340149	0.681	0.972345574	8
optimal_loci_295997_G	1136	6.230438	7.57	5461	50.79	2	5.13340149	0.689	0.972379925	8
optimal_loci_295998_G	1300	6.230438	0	4128	50.38	2	5.13340149	0.241	0.972389322	8
optimal_loci_296004_G	1071	6.230438	37.35	2759	42.11	2	5.13340149	0.237	0.972487711	8
optimal_loci_296074_G	1014	3.821779	6.61	1001	34.12	5	8.959838196	0.102	0.977475695	3
optimal_loci_296080_G	1513	6.430839	13.09	3486	37.73	2	9.741649793	0.229	0.977630397	3
optimal_loci_296141_G	2113	4.5384	18.5	1195	34.97	4	3.001843464	0.161	0.980135675	8
optimal_loci_296201_G	1377	5.866411	8.28	3563	45.38	3	0.128591159	0.223	0.982118468	8
optimal_loci_296212_G	2318	7.070056	24.72	3056	40.37	3	4.358285351	0.255	0.982474008	8
optimal_loci_296214_G	1267	7.070056	21.78	6362	43.48	3	4.358285351	0.222	0.982500585	8
optimal_loci_296234_G	1839	7.070056	3.05	2001	35.34	2	6.072147921	0.16	0.983157547	9
optimal_loci_296257_G	1373	8.37364	5.9	10185	31.31	4	13.26235774	0.056	0.984166794	10
optimal_loci_296259_G	1045	8.37364	0	8519	53.77	4	13.26235774	0.629	0.984182824	9
optimal_loci_296288_G	2124	8.721914	9.18	1094	52.77	3	5.843749771	0.393	0.985027094	10
optimal_loci_296360_G	1243	7.333232	19.87	1001	33.22	3	22.35441365	0.206	0.986976364	8
optimal_loci_296401_G	1337	6.461192	7.33	6057	42.18	5	6.458609445	0.342	0.988112651	7
optimal_loci_296432_G	1856	3.86221	4.36	2201	40.78	3	37.11491159	0.154	0.989040592	5
optimal_loci_296433_G	1597	4.124494	30.62	2034	33.62	3	37.11491159	0.13	0.989066678	4
optimal_loci_296573_G	1056	3.135289	14.2	1467	43.08	1	103.2735874	0.339	0.995333946	2
optimal_loci_296657_G	1036	5.081912	35.33	9084	58.3	2	1.78055276	0.745	0.999084777	2
optimal_loci_296698_G	1263	1.248527	0	17237	31.43	1	3.780127648	0.044	0.995330222	1
optimal_loci_296850_G	2240	2.294539	28.17	1751	37.72	1	0.553373189	0.193	0.98665536	2
optimal_loci_297010_G	1135	3.814919	2.56	1279	56.21	1	1.701140576	0.558	0.979909834	4
optimal_loci_297045_G	1604	5.350414	10.41	3458	42.01	2	16.13531952	0.194	0.978058684	3
optimal_loci_297046_G	1310	5.350414	0	2001	30.91	2	16.13531952	0.072	0.978038504	3
optimal_loci_297221_G	1012	2.899245	0	5138	35.07	2	5.275177508	0.072	0.96861356	2

optimal_loci_297224_G	1032	2.899245	12.5	3715	41.76	2	5.275177508	0.235	0.968543947	2
optimal_loci_297529_G	1371	3.502249	21.37	1001	51.71	1	4.951604973	0.494	0.954082978	3
optimal_loci_297578_G	2276	4.029707	0	1349	43.4	1	6.700193481	0.197	0.951786427	3
optimal_loci_297653_G	3077	3.033472	0.91	1690	53.85	1	31.13736694	0.519	0.949322161	3
optimal_loci_297768_G	2308	2.754498	0	2001	38.69	3	7.920523329	0.096	0.940402825	3
optimal_loci_297811_G	1177	2.388084	0	19983	47.4	1	9.980498693	0.334	0.937274224	3
optimal_loci_297874_G	1514	2.84742	35.87	2163	39.56	1	0.343576271	0.155	0.933865776	3
optimal_loci_298133_G	1745	1.264766	0	4328	38.62	1	0.724675639	0.113	0.921559709	1
optimal_loci_298665_G	1656	4.254791	0	3504	35.99	1	316.4915148	0.178	0.892282064	4
optimal_loci_298702_G	1180	3.362305	18.05	6070	35.33	3	0.010310607	0.153	0.888880859	7
optimal_loci_298732_G	1162	3.611802	12.31	4045	43.8	3	2.472965959	0.391	0.886641219	8
optimal_loci_298733_G	1022	3.611802	0	2375	36.59	3	2.472965959	0.132	0.886618089	8
optimal_loci_298791_G	1415	3.427498	0	2899	54.91	3	7.001509253	0.408	0.883243518	7
optimal_loci_298800_G	1120	3.427498	0	11150	41.33	2	7.412435501	0.412	0.883003947	7
optimal_loci_298809_G	2197	3.427498	2.05	1243	48.97	2	2.153059929	0.461	0.882848199	7
optimal_loci_298834_G	2103	4.086664	14.55	5012	40.32	1	9.147143003	0.282	0.880654765	9
optimal_loci_298913_G	1089	3.322718	19.74	2001	34.8	3	18.55909886	0.219	0.875886801	4
optimal_loci_298920_G	4316	3.308378	3.54	2191	34.36	3	18.55909886	0.267	0.875769792	4
optimal_loci_298931_G	1271	2.628248	17.62	2933	50.82	1	2.215729991	0.271	0.875309363	4
optimal_loci_299140_G	1827	2.037028	11.33	1001	40.28	2	1.077952064	0.274	0.865281247	1
optimal_loci_299564_G	1543	6.065648	16.2	1452	34.34	5	16.30054185	0.014	0.844320042	7
optimal_loci_299596_G	1257	7.422203	29.04	16936	46.14	1	0.04486811	0.365	0.842914307	7
optimal_loci_299630_G	1110	8.213799	0	2075	42.97	3	3.12206818	0.138	0.841279972	7
optimal_loci_299655_G	1075	9.016994	0	4469	49.95	2	19.19551296	0.321	0.839948089	7
optimal_loci_299681_G	1259	9.147114	31.93	13928	41.69	1	38.39102592	0.296	0.839606939	7
optimal_loci_299695_G	1556	9.246771	23.33	19842	43.31	1	5.357514118	0.277	0.839227244	7
optimal_loci_299710_G	1215	9.515288	0	3016	33.66	2	13.67828828	0	0.837949238	7
optimal_loci_299825_G	1501	2.435346	0	10169	34.84	1	2.305088402	0.185	0.828541233	5
optimal_loci_299840_G	1203	2.435346	15.88	18236	43.72	1	4.8919305	0.285	0.827586247	5
optimal_loci_299895_G	1532	1.933594	0	2229	40.01	2	1.425716602	0.138	0.822711981	6
optimal_loci_299898_G	2289	1.933594	0	5329	52.38	2	1.425716602	0.434	0.82265856	6
optimal_loci_299907_G	3702	1.933594	15.37	13907	44.78	2	1.425716602	0.371	0.82252018	6
optimal_loci_299952_G	3112	2.386754	1	1001	51.06	2	81.12879049	0.383	0.817694266	8

optimal_loci_299986_G	2460	2.701299	9.15	3092	36.3	2	23.45904926	0.151	0.813959723	10
optimal_loci_299991_G	1353	1.473518	14.12	10764	46.04	3	8.132973163	0.328	0.813296842	11
optimal_loci_299992_G	2984	1.466996	1.04	7548	47.78	3	8.132973163	0.341	0.813252299	11
optimal_loci_299997_G	1192	1.437492	0	3221	59.22	2	8.509757475	0.582	0.813192368	12
optimal_loci_300036_G	1121	1.567047	28.01	2617	48.17	4	0.012198886	0.342	0.809414945	11
optimal_loci_300038_G	1810	1.567047	0	3319	35.91	4	0.012198886	0.211	0.809381634	11
optimal_loci_300039_G	1009	1.567047	3.17	2001	42.22	4	0.012198886	0.216	0.80936338	11
optimal_loci_300068_G	1271	2.197697	19.91	4549	35.01	1	0.744422485	0	0.807375873	11
optimal_loci_300077_G	1126	2.15789	0	4653	57.1	2	0.372211243	0.706	0.807034266	11
optimal_loci_300082_G	2242	2.15789	26.36	4551	45.45	2	0.031021048	0.324	0.80686151	10
optimal_loci_300092_G	1143	3.907731	0	4036	52.84	1	4.860200121	0.58	0.80625482	8
optimal_loci_300258_G	1341	2.132783	0	3010	44.74	4	11.59814366	0.292	0.794572839	4
optimal_loci_300312_G	1059	3.908817	33.71	3385	34.65	1	0.852808878	0.268	0.789875028	9
optimal_loci_300325_G	1024	3.908817	35.16	1987	29.98	1	0.3935799	0.107	0.788046994	9
optimal_loci_300327_G	1036	3.866042	0	16762	50.57	1	0.3935799	0.3	0.787645803	9
optimal_loci_300332_G	1637	3.601117	28.65	5970	57.17	3	10.84953682	0.714	0.78726849	8
optimal_loci_300333_G	1103	3.601117	0	4526	38.62	3	10.84953682	0.229	0.78724849	8
optimal_loci_300335_G	1134	3.601117	0	2523	59.7	3	10.84953682	0.487	0.787220748	8
optimal_loci_300336_G	1489	3.601117	0	1001	54.93	3	10.84953682	0.477	0.787199668	8
optimal_loci_300342_G	1019	3.601117	0	6671	53.97	1	1.96461718	0.474	0.786674294	8
optimal_loci_300405_G	1285	3.467444	0	1573	38.36	2	14.21188615	0.15	0.779606994	1
optimal_loci_300478_G	1541	2.452276	0	1001	43.21	3	3.395550644	0.249	0.771720152	3
optimal_loci_300497_G	1008	2.518131	0	2190	47.91	1	10.72413877	0.255	0.769363657	4
optimal_loci_300544_G	1005	1.129265	10.65	2001	33.53	2	2.313854252	0	0.764802784	4
optimal_loci_300564_G	1269	1.129265	33.02	7934	27.81	2	2.313854252	0	0.764326053	3
optimal_loci_300708_G	2163	1.326242	8	2001	46.92	2	28.78650743	0.376	0.755794349	2
optimal_loci_300741_G	1058	1.054092	9.74	4137	43.19	2	17.7091547	0.228	0.754426163	2
optimal_loci_300888_G	1521	3.234353	0	2001	49.17	3	30.04627457	0.498	0.742086745	1
optimal_loci_301076_G	1605	1.510241	0	17019	42.42	1	0.391906751	0.208	0.723656247	9
optimal_loci_301132_G	1302	2.280779	29.19	2651	38.86	1	2.516137819	0.164	0.719693172	9
optimal_loci_301172_G	1292	2.835187	0	1960	42.1	2	11.10367777	0.258	0.71862705	9
optimal_loci_301175_G	1451	2.835187	0	7198	52.3	2	11.10367777	0.627	0.718467853	10
optimal_loci_301176_G	1056	2.835187	0	6058	51.89	2	11.10367777	0.508	0.718452064	10

optimal_loci_301180_G	1198	2.835187	0	3690	43.73	2	11.10367777	0.26	0.718419266	10
optimal_loci_301186_G	1121	2.835187	0	2619	36.3	1	10.34039409	0.148	0.718246607	10
optimal_loci_301187_G	1055	2.835187	0	4032	34.4	1	10.34039409	0.111	0.71822795	10
optimal_loci_301189_G	1313	2.835187	0	1001	38.53	1	12.03613415	0.178	0.717545873	12
optimal_loci_301264_G	1328	3.033768	0	2227	34.78	2	8.033189196	0.089	0.71160018	10
optimal_loci_301273_G	1749	3.286309	0	1001	46.14	3	1.368374122	0.468	0.711001579	5
optimal_loci_301275_G	1458	3.286309	0	1422	54.52	3	1.368374122	0.504	0.710973546	5
optimal_loci_301283_G	1623	3.358807	10.91	5134	44.79	1	0.131299031	0.324	0.710486288	4
optimal_loci_301417_G	2001	5.793916	0	1184	46.47	2	17.44441319	0.339	0.699111801	7
optimal_loci_301438_G	1638	5.793916	0	3584	51.46	2	2.074196295	0.615	0.697823421	7
optimal_loci_301440_G	1286	5.793916	0	5747	49.45	2	2.074196295	0.282	0.697798338	7
optimal_loci_301442_G	1035	5.793916	0	8099	52.27	2	2.074196295	0.407	0.697769238	7
optimal_loci_301465_G	1233	0.993297	3.65	1894	36.09	2	0.79082646	0.123	0.695703296	7
optimal_loci_301466_G	1804	0.993297	0	3185	55.82	2	0.79082646	0.53	0.695677507	7
optimal_loci_301467_G	1422	0.993297	0	5100	55.2	2	0.79082646	0.423	0.695656274	7
optimal_loci_301696_G	2016	1.355245	18.7	2548	34.77	2	3.013567254	0.227	0.679582465	13
optimal_loci_301715_G	1071	0.929136	6.44	2001	48.73	2	2.335091639	0.367	0.677793532	13
optimal_loci_301721_G	1608	0.929136	2.11	2404	41.23	3	1.564302377	0.269	0.677614681	13
optimal_loci_301732_G	1431	0.854002	11.67	14321	61.56	1	14.09338886	0.654	0.676926787	13
optimal_loci_301733_G	1499	0.854002	0	12446	52.83	1	14.09338886	0.392	0.676900817	13
optimal_loci_301766_G	1022	0.854002	35.13	5132	42.85	1	3.067375447	0.182	0.675211233	13
optimal_loci_301769_G	1116	0.854002	35.22	2855	45.51	1	3.067375447	0.21	0.675179695	13
optimal_loci_301770_G	1246	0.854002	11.32	1553	43.49	1	3.067375447	0.24	0.675161662	13
optimal_loci_301773_G	2254	0.729029	0	7186	42.67	1	3.067375447	0.335	0.674961745	14
optimal_loci_301774_G	2194	0.729029	0	9762	45.03	1	3.067375447	0.402	0.674926898	14
optimal_loci_301784_G	1384	0.721942	0	7689	37.71	2	24.72493049	0.237	0.674256994	14
optimal_loci_301789_G	1917	0.721942	0	2942	59.72	2	24.72493049	0.56	0.674191247	14
optimal_loci_301793_G	1002	0.721942	0	1929	51.89	2	24.72493049	0.522	0.674063269	14
optimal_loci_301834_G	1126	0.576579	2.66	3621	59.5	1	24.8823702	0.61	0.668139501	10
optimal_loci_301840_G	2022	0.293834	22.21	2378	42.08	2	5.915466388	0.243	0.666951191	5
optimal_loci_301849_G	1631	0.406899	26.43	6774	42.3	2	23.17255207	0.243	0.665686994	5
optimal_loci_301852_G	1372	0.406899	10.2	2603	54.44	2	23.17255207	0.688	0.665629224	5
optimal_loci_301874_G	1138	0.543845	0	4647	54.83	1	5.867904192	0.362	0.662495249	5

optimal_loci_302109_G	1293	1.007802	10.83	1001	42.07	5	22.26795037	0.359	0.63143867	5
optimal_loci_302113_G	3090	1.007802	2.07	1203	41.81	4	28.48683914	0.315	0.631218837	5
optimal_loci_302132_G	1096	0.91504	21.35	3156	46.16	1	3.405570733	0.442	0.630063823	5
optimal_loci_302142_G	1038	1.06339	0	15337	47.49	2	11.42144829	0.304	0.628776551	5
optimal_loci_302154_G	1019	0.829055	0	2440	41.8	4	0.549014408	0.239	0.626608186	6
optimal_loci_302185_G	1801	0.348393	30.93	4585	37.36	1	1.261025933	0.19	0.621492853	2
optimal_loci_302339_G	1040	0.513328	0	2001	36.63	3	2.462141555	0	0.60659964	1
optimal_loci_302770_G	2919	0.306174	8.29	2318	48.13	1	100.3878471	0.292	0.567701302	1
optimal_loci_303042_G	1228	0.324949	0	18802	40.3	1	24.3577628	0.074	0.552408421	1
optimal_loci_303342_G	1619	0.175959	0	2462	40.45	1	0.839052661	0.157	0.533096039	2
optimal_loci_303348_G	1390	0.200079	0	2888	44.24	2	0.41952633	0.389	0.532814695	2
optimal_loci_303519_G	1572	0.039369	0	4686	41.98	1	7.627878268	0.141	0.520230983	3
optimal_loci_303562_G	2559	0.097458	4.69	12639	45.68	1	9.198432988	0.251	0.516485817	3
optimal_loci_303563_G	2354	0.097458	2.93	10228	35.51	1	9.198432988	0.234	0.516452424	3
optimal_loci_306860_G	1192	0.010729	20.47	2001	31.87	2	3.687360285	0.177	0.201935194	1
optimal_loci_307149_G	1144	0.011275	3.58	2211	46.24	1	21.04638119	0.347	0.17720856	2
optimal_loci_307208_G	1008	0.012079	0	1233	38.59	3	1.71895366	0.018	0.171122964	2
optimal_loci_307528_G	1511	0.010354	2.18	17662	41.82	1	0.125552643	0.227	0.143835789	2
optimal_loci_307610_G	1045	0.010682	26.6	1506	33.68	3	0.612227236	0.04	0.137802687	3
optimal_loci_307617_G	1138	0.011279	12.92	13963	40.68	1	13.16414637	0.138	0.136569155	2
optimal_loci_307893_G	1371	0.011408	14.51	19700	45	1	46.01070873	0.367	0.112016704	3
optimal_loci_307907_G	1456	0.011405	6.59	18802	33.99	1	4.431326596	0.104	0.109746288	3
optimal_loci_307919_G	1351	0.011405	14.51	6390	41.96	1	4.431326596	0.194	0.109574377	3
optimal_loci_308690_G	1339	0.104158	36.3	2051	38.76	1	6.292958617	0.188	0.038620693	1
optimal_loci_309257_G	1025	0.107333	0	2456	46.63	3	0.073732594	0.508	0.003736149	4
optimal_loci_309261_G	1068	0.098812	0	8955	40.44	3	0.073732594	0.352	0.003813472	4
optimal_loci_309307_G	1825	0.098812	2.47	13125	42.02	1	0.267430176	0.238	0.006303029	4
optimal_loci_309318_G	1131	0.098812	0	8376	43.58	1	0.267430176	0.233	0.006603466	4
optimal_loci_309558_G	2067	0.108949	21.09	2001	58.82	1	35.66343016	0.646	0.022503	1
optimal_loci_309774_G	1236	0.117134	0	15314	42.23	1	265.6740502	0.193	0.0364413	1
optimal_loci_309862_G	1709	0.146942	0	3690	52.01	2	1.398407625	0.587	0.044853175	1
optimal_loci_311097_G	1317	0.118511	22.32	2001	48.51	1	26.6767565	0.621	0.134056042	1
optimal_loci_311466_G	1448	0.083526	20.3	9486	37.91	2	0.106839862	0.069	0.162821202	2

optimal_loci_311494_G	1356	0.095641	0	3214	41.51	1	4.590601551	0.237	0.164602258	2
optimal_loci_311588_G	1955	0.159756	19.64	19760	48.23	1	35.95623478	0.292	0.175363774	2
optimal_loci_311592_G	1327	0.135634	0	12581	40.54	1	35.95623478	0.174	0.175456658	2
optimal_loci_311776_G	1073	0.281064	0	3909	43.33	1	15.6809296	0.21	0.189110595	4
optimal_loci_311834_G	1124	1.037133	0	13715	32.11	1	58.02112333	0.207	0.193231583	4
optimal_loci_311848_G	1075	1.133452	9.77	4838	39.72	1	0.476865557	0	0.194062344	4
optimal_loci_311858_G	1293	1.230924	29.39	15793	44.85	1	0.476865557	0.294	0.194329932	4
optimal_loci_313001_G	1266	0.935704	16.03	19342	31.91	1	24.08542724	0.339	0.277459716	3
optimal_loci_313012_G	1196	0.916873	0	9711	55.93	1	32.96221716	0.719	0.278257092	3
optimal_loci_313089_G	1636	1.074633	8.92	1627	36.06	1	7.804341639	0.057	0.282516984	6
optimal_loci_313135_G	1183	0.35532	0	9172	48.77	2	4.222384557	0.235	0.285466311	4
optimal_loci_313141_G	1328	0.242094	0	2727	49.77	3	3.38069006	0.419	0.285633234	4
optimal_loci_313155_G	1620	0.259872	12.65	2652	36.6	1	2.950784079	0.072	0.28637468	4
optimal_loci_313339_G	2384	0.447483	10.11	8891	34.94	1	1.823138441	0.201	0.298634303	1
optimal_loci_313453_G	2861	0.758351	38.55	2797	40.19	1	4.489935294	0.181	0.305165182	4
optimal_loci_313485_G	1038	0.652791	19.46	2578	50.38	2	4.973999062	0.278	0.306966666	5
optimal_loci_313519_G	1119	0.586322	4.11	2712	52.45	3	9.226473325	0.473	0.309001854	9
optimal_loci_313526_G	1285	0.49731	0	18525	50.5	1	74.84877919	0.433	0.310026176	9
optimal_loci_313549_G	1335	0.478572	0	3443	40.59	2	4.868496395	0.193	0.311706091	12
optimal_loci_313588_G	2985	0.456806	7.67	12018	47.93	1	2.641031546	0.307	0.313156953	12
optimal_loci_313593_G	1551	0.467523	0	1287	56.15	1	2.641031546	0.554	0.313301687	12
optimal_loci_313600_G	1728	0.467523	7.29	9571	47.85	2	0.793929829	0.516	0.31380806	12
optimal_loci_313602_G	1008	0.463976	9.62	5650	43.45	2	0.793929829	0.286	0.313863277	12
optimal_loci_313639_G	1137	0.507019	20.05	4197	54.52	2	0.588159881	0.414	0.316295904	13
optimal_loci_313660_G	1944	0.466246	0	1001	47.99	1	1.210970298	0.419	0.317208852	13
optimal_loci_313661_G	1748	0.45738	0	2001	34.09	1	1.210970298	0.017	0.317282701	13
optimal_loci_313664_G	1386	0.460026	0	19604	53.39	1	27.3816787	0.527	0.31753368	13
optimal_loci_313675_G	1509	0.454932	0	10492	46.45	2	8.334571903	0.627	0.318286036	12
optimal_loci_313735_G	1486	0.284711	15.41	1341	36	3	1.165283222	0.126	0.321060516	9
optimal_loci_313743_G	1132	0.278775	8.3	17518	31	2	0.271030307	0.16	0.321252983	9
optimal_loci_313744_G	1208	0.278775	0	18709	36.92	2	0.271030307	0.094	0.321267153	9
optimal_loci_313790_G	2532	0.158284	33.49	8026	40.91	1	0.29257768	0.211	0.325898988	4
optimal_loci_313902_G	1397	0.196334	0	1619	39.58	1	65.58173399	0.227	0.332114402	3

optimal_loci_313911_G	1164	0.197564	0	13268	36.68	2	13.08867147	0.303	0.332695528	3
optimal_loci_313985_G	1779	0.334771	11.64	7856	37.38	3	3.20851047	0.144	0.335907303	3
optimal_loci_314268_G	1033	1.539808	0	1001	42.01	1	0.330286015	0.323	0.352694706	6
optimal_loci_314275_G	1221	1.539808	0	14399	40.37	1	0.330286015	0.043	0.352998237	6
optimal_loci_314277_G	2141	1.539808	0	16421	35.91	1	0.330286015	0.101	0.353022293	6
optimal_loci_314278_G	1724	1.539808	9.57	19656	43.73	1	0.330286015	0.274	0.353060782	6
optimal_loci_314282_G	1265	1.539808	3	17710	37.86	1	0.152012393	0.124	0.353149895	6
optimal_loci_314296_G	1267	1.325461	11.52	4682	38.98	1	1000.629864	0.311	0.353908568	6
optimal_loci_314815_G	1335	1.147842	0	1104	54.38	3	0.399739849	0.596	0.385245818	3
optimal_loci_314844_G	1030	2.006968	0	3056	35.24	1	4.96829224	0.082	0.38651222	3
optimal_loci_314893_G	1131	0.389888	0	3648	54.46	1	11.53412892	0.645	0.388375322	3
optimal_loci_315232_G	1801	0.218022	0	2139	53.58	2	3.180223053	0.653	0.412099584	4
optimal_loci_315238_G	1094	0.165724	16.64	3487	54.47	2	2.831568458	0.637	0.412906633	6
optimal_loci_315280_G	1012	0.113712	0	1001	42.78	1	1.191938996	0.281	0.415543565	6
optimal_loci_315281_G	2713	0.113712	23.15	2143	36.08	1	1.191938996	0.112	0.415557152	6
optimal_loci_315318_G	1379	0.063375	0	11580	43.94	1	16.60213248	0.368	0.418239842	5
optimal_loci_315319_G	1970	0.063375	24.37	13352	44.61	1	16.60213248	0.352	0.418260925	5
optimal_loci_315523_G	1131	0.57418	28.29	2998	34.48	2	27.1679872	0.243	0.433638749	4
optimal_loci_315535_G	1041	0.585806	0	2001	58.98	5	24.25241075	0.66	0.435561802	4
optimal_loci_315575_G	1322	0.805867	15.43	4285	42.36	2	2.061064597	0.164	0.439014242	4
optimal_loci_315578_G	1016	0.805867	26.57	2001	40.94	2	2.061064597	0.274	0.439045057	4
optimal_loci_315713_G	1799	0.288484	4.89	1001	52.25	1	126.1826236	0.496	0.446690894	2
optimal_loci_315720_G	1232	0.288484	0	4224	45.94	2	12.79728343	0.35	0.447498299	2
optimal_loci_315868_G	1120	0.367956	0	6279	55.89	2	0.156249566	0.503	0.456672975	6
optimal_loci_315871_G	1058	0.367956	0	3655	51.51	2	0.156249566	0.4	0.456704932	6
optimal_loci_315880_G	1324	0.367956	0	5239	61.63	2	1.626842358	0.783	0.45684317	6
optimal_loci_315881_G	2169	0.367956	0	6596	50.89	2	1.626842358	0.546	0.456859315	6
optimal_loci_315885_G	2148	2.611025	0	1174	55.95	1	3.253684716	0.524	0.457086	6
optimal_loci_315952_G	1406	8.502763	0	2001	48.43	3	2.487738197	0.557	0.461200647	6
optimal_loci_316080_G	1054	0.322567	0	2001	58.63	1	0.226766099	0.629	0.470630205	3
optimal_loci_316091_G	1511	0.309772	8.01	2627	39.24	1	15.37181035	0.31	0.471474029	3
optimal_loci_316095_G	1175	0.309188	0	2952	49.7	1	15.37181035	0.419	0.471585926	3
optimal_loci_319409_G	1273	0.062171	15.79	1726	33.54	4	30.23738463	0.089	0.687578531	4

optimal_loci_319475_G	1105	0.301355	7.51	4484	36.56	1	0.19305246	0.002	0.691335704	4
optimal_loci_319479_G	1002	0.301355	0	2502	36.62	1	0.19305246	0	0.6915281	4
optimal_loci_319482_G	1198	0.301355	0	5430	36.39	1	0.19305246	0.111	0.691562936	4
optimal_loci_319724_G	1681	0.640679	0	1001	53.77	1	8.061666666	0.451	0.705587149	1
optimal_loci_319854_G	1097	2.507533	0	2582	47.94	1	28.64285549	0.358	0.715254385	7
optimal_loci_319855_G	1105	2.507533	0	3712	54.66	1	28.64285549	0.605	0.715267829	7
optimal_loci_319856_G	1420	2.507533	0	4850	55.63	1	28.64285549	0.457	0.715281368	7
optimal_loci_319886_G	1234	2.440566	0	10258	57.77	1	14.52145358	0.655	0.718178155	9
optimal_loci_319894_G	1083	2.440566	16.62	5964	56.32	1	0.217517623	0.742	0.718545255	9
optimal_loci_319895_G	1315	2.440566	20.08	4616	44.1	1	0.217517623	0.229	0.718558533	9
optimal_loci_319912_G	1206	2.440566	31.84	3041	39.63	1	8.937809562	0.253	0.719189997	9
optimal_loci_319986_G	1058	2.973522	0	16962	40.07	1	1.119427218	0.165	0.723379611	9
optimal_loci_319990_G	1062	2.973522	0	19105	41.14	1	1.119427218	0.385	0.723405107	9
optimal_loci_320035_G	1204	2.528445	0	1001	52.65	2	6.2750917	0.382	0.725756795	7
optimal_loci_320058_G	1478	2.009509	0	7630	36.19	1	8.607570388	0.054	0.726961984	8
optimal_loci_320090_G	1249	2.009509	0	1960	44.35	4	1.031870132	0.333	0.728167078	8
optimal_loci_320130_G	1054	1.57159	0	6119	43.35	1	7.629229229	0.268	0.73029082	7
optimal_loci_320153_G	1851	1.586047	15.72	18622	33.76	1	9.806341926	0.083	0.73119901	7
optimal_loci_320180_G	1345	1.594624	10.63	1001	43.42	4	6.399937621	0.315	0.732738354	6
optimal_loci_320242_G	2604	0.646803	21.01	7693	52.53	3	9.654484515	0.407	0.735971736	5
optimal_loci_320295_G	2123	0.72059	0	10485	42.91	2	0.040248273	0.257	0.739389221	2
optimal_loci_320417_G	1186	0.141879	0	7654	45.27	2	1.002328878	0.52	0.74573583	8
optimal_loci_320522_G	1667	0.220066	11.94	6626	44.75	2	8.958299025	0.283	0.750877429	15
optimal_loci_320524_G	2395	0.220066	0	8820	38.37	2	8.958299025	0.239	0.750903532	15
optimal_loci_320525_G	1092	0.220066	2.56	12260	52.83	2	8.958299025	0.457	0.75094446	15
optimal_loci_320529_G	2337	0.220066	7.02	16968	54.77	1	1.289057535	0.632	0.7511498	15
optimal_loci_320538_G	1292	0.219967	0	3863	55.57	2	0.644528768	0.386	0.751456377	15
optimal_loci_320539_G	2434	0.219967	0	5856	46.5	2	0.644528768	0.349	0.751480089	15
optimal_loci_320540_G	1300	0.219967	0	9042	60.23	2	0.644528768	0.691	0.751517994	15
optimal_loci_320545_G	1200	0.202832	31.58	4922	42.16	3	1.305417311	0.24	0.751751484	14
optimal_loci_320548_G	1057	0.202832	16.27	2766	45.03	3	1.305417311	0.365	0.751778837	14
optimal_loci_320572_G	1007	0.166624	0	2001	32.37	2	43.76548883	0.105	0.753450994	16
optimal_loci_320575_G	1184	0.166624	20.95	13552	41.55	2	43.76548883	0.389	0.753588423	16

optimal_loci_320608_G	1146	0.137519	0	17455	41.53	2	0.034738551	0.365	0.75481103	16
optimal_loci_320616_G	1326	0.137519	5.51	12370	40.42	2	0.034738551	0.199	0.754869388	16
optimal_loci_320619_G	1108	0.137519	6.59	5275	39.8	3	0.228788069	0.39	0.754956395	16
optimal_loci_320642_G	1763	1.273368	18.77	1442	43.5	2	24.81686989	0.341	0.757750803	8
optimal_loci_320664_G	2079	1.609704	7.26	7235	45.59	3	2.720328493	0.423	0.758976861	8
optimal_loci_320730_G	1432	2.692154	2.58	1029	50.76	5	4.857973972	0.311	0.762565944	5
optimal_loci_320772_G	1784	2.479264	13.17	8131	44.84	1	11.09869624	0.305	0.765437199	5
optimal_loci_320809_G	1214	2.445219	34.93	3063	39.45	3	0.130331272	0.177	0.768131513	5
optimal_loci_320824_G	1053	1.97222	10.73	1001	40.17	4	0.087134745	0.1	0.769084736	5
optimal_loci_320866_G	2864	1.908329	5.34	2210	53.03	2	20.98694264	0.499	0.770918771	6
optimal_loci_320947_G	1345	1.484373	9.96	2420	46.84	2	2.086409499	0.338	0.774456065	7
optimal_loci_320988_G	1702	1.73554	0	6567	38.66	1	2.663769899	0.197	0.776838151	7
optimal_loci_321023_G	1969	1.522931	16.1	1001	53.83	2	7.226076205	0.537	0.779751927	8
optimal_loci_321024_G	1278	1.516636	10.56	2003	45.38	3	4.817384137	0.361	0.779858946	9
optimal_loci_321028_G	1131	1.516636	0	5688	43.58	3	4.817384137	0.223	0.779902789	9
optimal_loci_321058_G	1282	1.584927	15.83	2001	45.7	4	51.73064941	0.481	0.781920511	9
optimal_loci_321088_G	1540	1.434257	0	19597	44.48	1	99.99747594	0.385	0.783895295	8
optimal_loci_321094_G	2103	1.902186	31.91	2089	45.55	2	12.14780072	0.348	0.785099342	9
optimal_loci_321106_G	1430	1.911302	0	3426	37.9	4	37.82179591	0.217	0.785804833	8
optimal_loci_321139_G	1286	1.31177	0	7067	34.91	2	6.289900184	0.251	0.78771468	6
optimal_loci_321200_G	1050	1.338515	0	1001	35.52	4	138.3306384	0.137	0.791068406	5
optimal_loci_321267_G	2440	2.929591	14.14	7033	41.59	4	8.566889422	0.323	0.795079199	7
optimal_loci_321299_G	1219	3.42483	13.37	2940	50.12	2	41.16390648	0.489	0.797619094	6
optimal_loci_321300_G	1309	3.42483	0	1598	52.02	2	41.16390648	0.563	0.79763399	6
optimal_loci_321304_G	1111	3.42483	23.58	3992	55.53	2	41.16390648	0.479	0.79780478	6
optimal_loci_321306_G	1627	3.42483	2.52	1001	48	2	41.16390648	0.436	0.797834226	6
optimal_loci_321348_G	1347	3.586915	0	3326	44.54	3	2.491488828	0.229	0.799813591	6
optimal_loci_321482_G	1284	0.849869	0	2001	41.58	1	14.60249388	0.292	0.807781436	4
optimal_loci_321514_G	1438	0.567202	2.5	1001	36.57	3	6.99164687	0.11	0.809941406	4
optimal_loci_321516_G	1048	0.567202	17.56	1001	50.28	3	6.99164687	0.465	0.809964844	4
optimal_loci_321523_G	1408	0.567202	38.28	10122	37.85	2	10.48747031	0.104	0.810147436	4
optimal_loci_321607_G	1173	2.831885	0	1121	54.47	2	2.552893825	0.685	0.816353714	8
optimal_loci_321631_G	2241	3.121521	12.21	4490	47.92	2	0.906814929	0.492	0.817698652	8

optimal_loci_321636_G	1438	2.852818	0	3986	44.5	3	0.406034343	0.234	0.817866586	8
optimal_loci_321638_G	1088	2.749797	0	1725	49.44	5	5.050184236	0.401	0.818007144	8
optimal_loci_321645_G	1955	3.025227	0	2049	48.74	2	14.43811635	0.279	0.818966149	8
optimal_loci_321646_G	1004	3.025227	0	1001	54.08	2	14.43811635	0.494	0.818989932	8
optimal_loci_321647_G	1070	3.025227	0	2001	54.67	2	14.43811635	0.351	0.819056535	8
optimal_loci_321649_G	2210	3.025227	3.08	2001	48.23	2	14.43811635	0.415	0.819074548	8
optimal_loci_321726_G	1070	1.083824	24.77	1001	45.14	2	9.346091276	0.209	0.825141897	4
optimal_loci_321754_G	1070	1.475012	0	4939	34.48	2	2.580020417	0.184	0.826660171	6
optimal_loci_321766_G	2557	1.682756	8.45	2367	31.91	2	3.883005586	0.086	0.827886883	7
optimal_loci_321807_G	2590	3.070717	8.42	3371	44.78	3	4.037645195	0.267	0.829818265	11
optimal_loci_321826_G	1108	7.34823	20.85	2906	42.14	3	5.095230949	0.37	0.832099031	11
optimal_loci_321831_G	2485	7.34823	0	2072	50.9	2	7.261745756	0.337	0.832209571	11
optimal_loci_321841_G	1603	6.193817	13.6	2421	33.43	2	24.29617511	0.242	0.833414094	10
optimal_loci_321861_G	1191	6.193817	4.95	4385	49.7	1	17.89794293	0.538	0.83420545	9
optimal_loci_321862_G	2482	6.193817	8.82	5885	34.48	1	17.89794293	0.206	0.834223296	9
optimal_loci_321863_G	2546	6.193817	0	8452	52.31	1	17.89794293	0.491	0.834253837	9
optimal_loci_321905_G	1546	5.34609	0	9373	41.84	2	23.32972862	0.254	0.835399443	9
optimal_loci_321933_G	1188	5.879969	25.84	1001	43.51	1	3.448471169	0.143	0.836389298	8
optimal_loci_322046_G	1130	1.567718	15.66	11016	34.42	3	10.73111039	0.182	0.845724782	5
optimal_loci_322066_G	2230	1.727719	1.39	2001	43.09	3	7.168736067	0.246	0.846930031	5
optimal_loci_322067_G	1947	1.727719	0	1001	41.96	2	3.524415204	0.329	0.847084592	5
optimal_loci_322069_G	1352	1.727719	13.98	3425	47.04	2	3.524415204	0.394	0.847113432	5
optimal_loci_322081_G	1194	1.717031	0	1001	51.75	3	0.503189522	0.63	0.847879612	5
optimal_loci_322172_G	1429	2.234243	0	2650	46.11	5	3.714299688	0.487	0.8545293	5
optimal_loci_322188_G	1279	1.961015	0	2364	35.41	2	27.3945687	0.165	0.85547743	8
optimal_loci_322190_G	1194	1.961015	0	4483	41.62	2	27.3945687	0.219	0.855502641	8
optimal_loci_322198_G	1388	1.961015	0	2066	37.75	3	27.79211675	0.3	0.85564245	8
optimal_loci_322257_G	2140	2.357228	0	17666	58.59	1	0.02651485	0.696	0.858393634	9
optimal_loci_322305_G	1571	2.495264	5.73	1001	58.62	2	12.58755967	0.627	0.860909509	10
optimal_loci_322306_G	1696	2.495264	19.46	2001	61.49	1	14.2787937	0.607	0.860994005	10
optimal_loci_322310_G	1002	2.495264	12.18	5117	30.53	1	14.2787937	0.136	0.861031078	10
optimal_loci_322317_G	2961	2.695062	9.93	3073	47.78	4	0.715582632	0.402	0.862116221	7
optimal_loci_322347_G	1260	1.302025	32.06	3026	37.38	3	63.59260208	0.112	0.864564255	6

optimal_loci_322364_G	1247	1.551303	23.42	2882	33.92	3	3.150299044	0.117	0.866130904	7
optimal_loci_322449_G	1942	3.195923	17.71	2001	39.13	1	4.268938792	0.242	0.870762739	4
optimal_loci_322501_G	1668	5.608092	0	3412	44.84	3	9.406524089	0.371	0.87302698	5
optimal_loci_322558_G	1169	5.034735	33.79	3098	54.31	1	4.751361258	0.549	0.87615032	8
optimal_loci_322567_G	2288	5.264277	30.38	16605	33.91	1	0.745005332	0.049	0.876932241	7
optimal_loci_322570_G	1152	5.186803	0	12615	36.37	1	0.745005332	0.09	0.876993228	7
optimal_loci_322622_G	2504	5.462885	1.4	1001	38.21	3	5.243981308	0.148	0.880299994	6
optimal_loci_322626_G	1596	5.532646	9.09	10167	55.45	1	1.189930107	0.583	0.880525596	6
optimal_loci_322654_G	1024	5.532646	18.95	13111	39.94	2	1.815319814	0.21	0.881196263	6
optimal_loci_322780_G	2327	4.909868	28.79	5512	39.23	3	7.324260609	0.22	0.888970201	6
optimal_loci_322790_G	1733	5.917721	5.65	2155	40.04	5	10.45814825	0.346	0.889981757	7
optimal_loci_322798_G	1234	5.917721	0	6214	43.03	3	15.18855804	0.348	0.890177627	7
optimal_loci_322827_G	1700	5.183753	0	9711	55.7	2	40.47950642	0.637	0.891735365	7
optimal_loci_322830_G	3145	6.546809	6.61	7351	37.48	2	40.47950642	0.115	0.891772664	7
optimal_loci_322861_G	1321	5.632629	0	2001	58.97	1	4.330945131	0.691	0.893469306	9
optimal_loci_322891_G	1280	4.640352	22.81	2001	37.34	4	1.686908609	0.173	0.895709371	8
optimal_loci_322921_G	2235	3.022196	34	1001	35.7	3	26.29022594	0.066	0.898221033	7
optimal_loci_322928_G	1397	3.022196	19.83	5846	38.51	5	104.7795617	0.158	0.898481888	7
optimal_loci_323030_G	1040	1.485536	10.1	2001	57.4	1	3.137299771	0.694	0.903280991	8
optimal_loci_323038_G	1390	1.476855	0	18349	47.69	1	8.847768067	0.267	0.903552648	8
optimal_loci_323051_G	1030	1.639956	24.95	2504	40.29	2	7.136373091	0.304	0.903922449	8
optimal_loci_323064_G	1471	1.805398	13.19	16956	51.66	1	0.328975394	0.443	0.905103248	7
optimal_loci_323067_G	1528	1.805398	4.91	14582	60.47	1	0.328975394	0.729	0.905130815	7
optimal_loci_323087_G	1228	1.794324	12.21	6306	52.68	2	0.363494635	0.602	0.906636323	8
optimal_loci_323135_G	1259	4.169964	16.84	2934	53.05	4	55.93261272	0.46	0.911002508	10
optimal_loci_323153_G	1587	4.990437	11.97	1083	48.01	3	6.396464691	0.374	0.912355787	9
optimal_loci_323167_G	3016	4.621436	14.03	2609	48.6	3	9.671247734	0.357	0.913159135	8
optimal_loci_323175_G	1231	4.372109	16.73	1382	32.9	3	4.559189803	0.108	0.913435932	8
optimal_loci_323186_G	1843	4.321078	15.74	1443	35.1	4	1.645505895	0.255	0.913984661	8
optimal_loci_323226_G	2150	4.956931	4.33	6625	53.25	3	1.715760371	0.388	0.916398822	9
optimal_loci_323236_G	2234	5.756358	35.68	4386	41.98	3	0.645713928	0.286	0.916782377	9
optimal_loci_323245_G	1125	6.23771	0	1236	38.84	4	10.82339644	0.247	0.91735628	8
optimal_loci_323309_G	1114	3.326698	11.67	7739	40.39	2	1.814048648	0.261	0.922004926	5

optimal_loci_323382_G	2195	3.885517	0	1702	41.54	3	0.351784324	0.197	0.925502851	4
optimal_loci_323504_G	1351	2.844968	12.07	4768	50.77	3	10.00230082	0.306	0.929604089	6
optimal_loci_323506_G	1383	2.844968	23.5	2288	53.21	3	10.00230082	0.519	0.929633215	6
optimal_loci_323572_G	1464	4.20097	5.33	3734	31.96	3	0.56223439	0.096	0.932442733	6
optimal_loci_323576_G	1252	4.233004	9.11	2001	50	3	1.800225381	0.366	0.933055565	6
optimal_loci_323580_G	2576	4.840521	8.04	6877	53.68	4	1.350169035	0.529	0.933207914	6
optimal_loci_323651_G	1322	6.954356	2.34	1001	51.05	3	1.800137555	0.723	0.938340078	11
optimal_loci_323675_G	1090	5.853752	0	2598	47.52	5	23.92852256	0.368	0.939410539	8
optimal_loci_323680_G	1045	5.853752	0	3062	36.65	6	19.65496044	0.096	0.939634404	8
optimal_loci_323682_G	1378	5.853752	0	2574	43.68	6	19.65496044	0.382	0.939658936	8
optimal_loci_323705_G	1125	5.704466	0	1001	47.28	2	11.25071512	0.356	0.9405864	8
optimal_loci_323714_G	1438	5.54673	0	18099	40.95	1	22.50143024	0.356	0.940980793	9
optimal_loci_323732_G	1069	5.044735	2.81	1001	48.26	4	7.418832457	0.357	0.943227651	9
optimal_loci_323751_G	1264	5.735922	5.62	2001	58.06	4	47.850949	0.599	0.944173223	10
optimal_loci_323848_G	1592	4.451572	17.84	2001	40.38	3	0.485544801	0.544	0.946598688	5
optimal_loci_323894_G	1538	4.520713	24.97	13555	37.06	2	3.557473942	0.322	0.949543946	4
optimal_loci_323982_G	1670	5.334292	2.34	19673	35.86	1	5.390425249	0.076	0.95523808	6
optimal_loci_324071_G	1604	7.853501	11.6	2449	47.81	6	7.223509378	0.373	0.960532955	10
optimal_loci_324072_G	1415	7.853501	25.23	1001	46.99	5	8.668211254	0.455	0.960552431	10
optimal_loci_324073_G	1142	7.720317	19.09	2010	47.72	4	11.22037178	0.398	0.960681758	10
optimal_loci_324074_G	1087	7.720317	11.41	1066	36.52	3	14.58505718	0	0.960780068	10
optimal_loci_324094_G	1181	7.562208	0	2001	52.83	5	1.704952667	0.539	0.961588818	9
optimal_loci_324096_G	1122	7.562208	0	2774	55.52	6	1.510310167	0.59	0.961611066	9
optimal_loci_324117_G	1496	8.684325	19.52	6213	39.63	3	9.424860473	0.255	0.962787796	9
optimal_loci_324149_G	1088	6.671873	16.18	8896	51.47	2	37.29099505	0.408	0.964306153	9
optimal_loci_324152_G	1126	6.671873	21.31	13352	47.86	3	29.16261812	0.483	0.964359169	9
optimal_loci_324308_G	1731	2.524393	17.1	2710	45.69	2	39.91583147	0.324	0.976273215	3
optimal_loci_324320_G	1007	2.524393	17.48	1702	35.15	3	36.33755924	0.157	0.976658162	3
optimal_loci_324328_G	1433	2.524393	6.14	16898	29.86	1	37.44619099	0.062	0.976838957	3
optimal_loci_324478_G	3528	2.395895	22	1073	38.8	1	0.350441907	0.224	0.985628723	1
optimal_loci_324826_G	1204	2.114245	0	1001	43.1	2	12.40422428	0.202	0.974311637	1
optimal_loci_324981_G	1534	7.041194	16.88	6702	41	1	23.17788869	0.194	0.951583234	2
optimal_loci_324982_G	1399	7.041194	16.08	5143	33.95	2	27.84361489	0.103	0.951552116	2

optimal_loci_325185_G	1005	0.37251	17.11	15224	32.63	1	1.786227229	0.253	0.920847924	5
optimal_loci_325196_G	1462	3.909597	7.73	5819	42.81	4	6.132933618	0.25	0.920127106	5
optimal_loci_325207_G	2046	3.55228	27.17	3316	34.94	4	5.626063972	0.109	0.919373194	5
optimal_loci_325234_G	1375	9.034325	0	9119	35.27	3	19.10214247	0.096	0.915651038	6
optimal_loci_325313_G	1515	6.95703	29.37	9552	41.71	1	0.21212819	0.15	0.91143519	9
optimal_loci_325362_G	1184	7.529571	7.94	2414	37.58	5	17.5721243	0.232	0.906132056	6
optimal_loci_325381_G	2464	7.496812	8.64	1508	52.15	3	20.14243514	0.456	0.905230818	5
optimal_loci_325392_G	1002	7.418927	2.89	1908	49.4	1	1.549840123	0.556	0.904700579	5
optimal_loci_325401_G	1689	8.280732	10.07	2527	37	1	6.733640138	0.054	0.902808583	5
optimal_loci_325492_G	1614	5.292306	35.01	1001	48.38	5	0.817020615	0.493	0.892378922	3
optimal_loci_325501_G	1160	5.826109	32.33	2453	39.74	4	1.041885882	0.177	0.891318743	4
optimal_loci_325528_G	1024	11.747748	0	18784	40.82	2	1.904401991	0.117	0.887768862	4
optimal_loci_325589_G	1901	8.381072	7.15	1001	43.45	4	4.246644935	0.263	0.882077226	5
optimal_loci_325682_G	2166	7.645182	2.45	1285	50.5	2	2.158471696	0.411	0.872708802	4
optimal_loci_325689_G	1107	7.690927	29	4314	41.82	3	1.937884524	0.417	0.872397725	4
optimal_loci_325727_G	1890	8.142094	27.04	2981	53.75	3	4.380905888	0.447	0.869396806	3
optimal_loci_325839_G	1583	2.935623	0	4925	53.5	3	2.451477642	0.495	0.858019701	2
optimal_loci_325954_G	1387	2.759307	26.89	1377	44.77	3	0.14356208	0.297	0.851546946	3
optimal_loci_326029_G	1086	0.774363	0	2648	45.58	1	16.98290342	0.284	0.841819102	2
optimal_loci_326190_G	1708	1.427801	8.2	2866	36.41	2	282.2351491	0.132	0.823447505	3
optimal_loci_326246_G	1135	1.734735	5.64	1001	33.74	1	39.46332413	0.213	0.817455868	3
optimal_loci_326265_G	1140	1.848281	0	11938	35.96	1	60.52407382	0	0.815599681	3
optimal_loci_326362_G	1206	2.71434	0	9619	51.16	1	0.705894377	0.661	0.802516447	6
optimal_loci_326363_G	1143	2.71434	20.3	8402	35.17	1	0.705894377	0.169	0.802492156	6
optimal_loci_326427_G	1132	2.645696	17.84	8079	61.48	1	10.19447102	0.616	0.79732982	8
optimal_loci_326455_G	1390	3.917178	0	2292	34.31	2	14.4470283	0.031	0.794518882	8
optimal_loci_326460_G	1325	3.787906	4.75	11052	48.07	1	6.096653269	0.346	0.792756347	8
optimal_loci_326465_G	1170	3.785858	31.28	2001	51.53	1	6.096653269	0.668	0.792575689	8
optimal_loci_326491_G	1966	4.024057	24.26	15674	35.3	1	3.967175996	0.042	0.789915609	6
optimal_loci_326516_G	1476	4.024057	7.18	4548	31.09	4	16.99631698	0.037	0.788970699	6
optimal_loci_326617_G	1887	1.626896	12.82	4536	50.55	1	26.27353823	0.482	0.776634691	3
optimal_loci_326665_G	3319	1.323592	5.27	5400	37.45	1	8.211872554	0.235	0.774275808	4
optimal_loci_326723_G	2042	1.298254	17.78	5869	32.81	1	0.380852956	0.102	0.76818495	5

optimal_loci_326752_G	1111	0.843925	12.33	1056	33.39	1	7.148990178	0.156	0.764377086	4
optimal_loci_326763_G	1145	0.880587	10.57	8270	34.58	1	7.148990178	0.111	0.7640601	3
optimal_loci_326869_G	1059	0.578983	9.73	1935	41.17	1	5.988098412	0.369	0.753503014	2
optimal_loci_326876_G	1097	0.578983	21.97	10230	47.94	1	5.988098412	0.317	0.753207385	2
optimal_loci_326971_G	1245	0.856389	12.77	2130	34.85	1	90.17822865	0.091	0.742113593	2
optimal_loci_326987_G	1764	0.887487	38.49	2344	35.65	2	14.91483207	0.173	0.73994495	2
optimal_loci_327208_G	1989	1.768669	28.36	15818	42.43	2	32.67606686	0.204	0.711294371	4
optimal_loci_327214_G	1189	1.649494	0	1001	59.96	2	1.757881426	0.616	0.710638583	4
optimal_loci_327218_G	1043	1.299766	28.38	2001	32.79	4	0.878940713	0.122	0.71010982	4
optimal_loci_327263_G	1149	0.566012	21.93	3596	34.02	1	85.48960449	0.137	0.705412236	4
optimal_loci_327541_G	1606	0.378526	0	7882	42.4	3	2.925653435	0.169	0.670483114	1
optimal_loci_328032_G	1745	1.004216	0	4368	39.02	1	3.330359098	0.155	0.615886946	1
optimal_loci_329014_G	1036	0.247981	0	17284	48.06	1	7.992144397	0.595	0.512441956	2
optimal_loci_329058_G	1620	0.419932	2.28	2085	39.81	1	22.46586144	0.359	0.507843752	3
optimal_loci_329124_G	2602	0.806474	17.45	9662	33.32	2	1.846803169	0.271	0.500604591	2
optimal_loci_329817_G	1179	0.280411	13.57	16303	35.79	1	25.20864427	0.119	0.410787784	1
optimal_loci_336212_G	1048	0.050939	2.77	2001	38.26	1	0.383884526	0.214	0.212900647	3
optimal_loci_336221_G	1376	0.074066	0	1001	34.15	1	45.45797767	0.076	0.213522545	3
optimal_loci_336223_G	2637	0.074066	0	2866	35.3	1	45.45797767	0.197	0.213582081	3
optimal_loci_336589_G	1329	0.15402	3.91	10371	48.3	1	3.709976638	0.343	0.231737386	2
optimal_loci_336618_G	1249	0.107319	16.41	2046	42.43	2	9.854942238	0.216	0.232698696	2
optimal_loci_336861_G	1068	0.819946	0	7748	37.17	3	1.203727542	0	0.246633023	1
optimal_loci_337001_G	1689	3.400151	1.72	1300	56.83	1	2.889518976	0.469	0.253486678	6
optimal_loci_337002_G	1777	3.400151	31.06	3022	48.39	1	2.889518976	0.412	0.253504287	6
optimal_loci_337006_G	1218	3.93113	12.64	10637	43.43	1	63.86359005	0.242	0.254192971	6
optimal_loci_337008_G	1152	3.93113	2.78	8821	55.9	1	63.86359005	0.704	0.254212216	6
optimal_loci_337020_G	2065	3.93113	11.19	17914	49.34	1	63.86359005	0.441	0.254567428	6
optimal_loci_337041_G	1012	4.896046	6.62	11495	32.6	2	10.155477	0.134	0.256278881	6
optimal_loci_337132_G	1098	0.680183	0	1001	36.33	3	18.11862111	0.013	0.263157252	3
optimal_loci_337177_G	1397	0.732142	0	1001	34.57	1	67.47596006	0.068	0.26503633	3
optimal_loci_337179_G	1052	0.732142	0	3791	36.69	2	33.73798003	0.225	0.265244543	3
optimal_loci_337386_G	1067	1.282786	16.4	11023	34.67	2	5.056631506	0.093	0.273274991	3
optimal_loci_337389_G	1004	1.282786	18.43	3365	54.78	2	5.056631506	0.508	0.273353947	3

optimal_loci_337393_G	1161	1.282786	0	3807	34.53	2	5.056631506	0.099	0.273516858	3
optimal_loci_337519_G	1497	1.495248	0	1001	37.4	1	0.065569014	0.271	0.278957047	2
optimal_loci_337594_G	1539	1.797424	4.29	2001	46.13	2	48.04458536	0.273	0.28263681	2
optimal_loci_337903_G	1248	0.376152	0	2081	43.1	1	4.122363313	0.341	0.300888077	3
optimal_loci_337961_G	1766	0.611276	25.54	8176	48.47	1	29.32659711	0.364	0.304478996	3
optimal_loci_337968_G	1199	0.628709	36.95	13479	37.61	1	7.471679274	0.214	0.304637142	3
optimal_loci_338132_G	1053	1.14166	29.82	4999	46.53	2	0.484123419	0.313	0.311442867	2
optimal_loci_338241_G	1097	1.318878	0	1001	52.32	1	8.608126529	0.538	0.316082356	3
optimal_loci_338277_G	1416	1.343304	21.44	1113	34.88	1	32.06987753	0.228	0.319022847	3
optimal_loci_338340_G	1981	2.07936	27.31	2424	40.28	2	0.162797934	0.103	0.323406307	5
optimal_loci_338361_G	3364	1.73802	39.39	2995	32.75	2	7.578490427	0.138	0.324168782	4
optimal_loci_338365_G	1026	1.73802	0	17938	32.94	1	15.08480172	0.091	0.32432159	4
optimal_loci_338377_G	1041	1.706954	0	10045	36.4	2	10.84745231	0.289	0.324940521	4
optimal_loci_338568_G	1689	2.091005	2.96	2179	39.66	2	0.683784676	0.145	0.336596515	7
optimal_loci_338573_G	1032	2.091005	6.69	11728	47.77	2	0.683784676	0.535	0.336772076	7
optimal_loci_338612_G	1835	2.091005	1.53	4772	42.39	2	56.0607852	0.286	0.338532184	8
optimal_loci_338613_G	1157	2.091005	0	6743	41.65	2	56.0607852	0.179	0.33855234	8
optimal_loci_338621_G	1593	1.211457	0	2304	43.81	2	9.29867661	0.212	0.339416431	8
optimal_loci_338629_G	1666	1.209202	39.44	2136	36.73	1	45.01835664	0.126	0.339882483	8
optimal_loci_338640_G	1103	1.173564	9.7	7924	41.61	3	0.042870576	0.523	0.340613186	8
optimal_loci_338701_G	1532	1.088373	21.28	1304	39.55	1	8.557735053	0.209	0.342588512	6
optimal_loci_338876_G	1443	1.909161	0	10786	36.72	1	70.38630753	0.083	0.353537343	5
optimal_loci_338902_G	1841	2.202231	5.7	4035	36.06	1	5.216958681	0.201	0.355124273	5
optimal_loci_338912_G	1266	2.202231	14.3	2001	38.38	3	6.31679992	0.15	0.355489599	5
optimal_loci_338914_G	1326	2.202231	17.72	3439	39.81	3	6.31679992	0.28	0.355514581	5
optimal_loci_338978_G	2153	0.237887	24.34	17422	47.37	1	0.574048026	0.318	0.357911333	5
optimal_loci_340077_G	1471	0.128573	2.31	2501	48.94	1	5.296000175	0.62	0.423558465	2
optimal_loci_340122_G	1214	0.154417	21.83	2081	36.9	2	0.241421113	0.273	0.425736226	2
optimal_loci_340243_G	1285	0.309199	0	16628	41.4	1	5.527961991	0.271	0.432382588	2
optimal_loci_340323_G	1053	0.174844	12.54	18487	38.08	1	18.19269526	0.091	0.436609896	4
optimal_loci_340357_G	1192	0.144962	17.2	1001	39.26	1	1.414277276	0.163	0.43775594	3
optimal_loci_340413_G	1419	0.041357	12.4	6037	34.31	3	5.654404822	0.136	0.441149997	3
optimal_loci_341136_G	1084	0.215859	27.95	5883	38.28	1	35.96070353	0.192	0.48219798	2

optimal_loci_341139_G	1267	0.236897	0	12674	39.62	3	0.644112947	0.387	0.482524804	2
optimal_loci_342099_G	1241	0.157219	27.16	12156	39.8	1	0.792461874	0.332	0.540775412	2
optimal_loci_342106_G	1138	0.167367	22.23	3268	37.87	1	0.792461874	0.231	0.540994505	2
optimal_loci_342209_G	3650	0.160803	0	18044	37.26	3	1.516835931	0.162	0.547051519	3
optimal_loci_342211_G	1425	0.160803	0	14259	56.84	1	4.550507792	0.419	0.547129626	3
optimal_loci_342226_G	1006	0.141847	0	2588	37.87	3	2.133627369	0	0.548944638	3
optimal_loci_342369_G	1036	0.095183	0	4498	41.79	2	4.218925869	0.07	0.557715412	1
optimal_loci_342566_G	1118	0.473228	4.92	11431	33.27	2	33.10073908	0.121	0.569646128	3
optimal_loci_342573_G	1200	0.473228	11.17	3350	41.08	2	33.10073908	0.328	0.569727926	3
optimal_loci_342630_G	1607	0.375029	13.19	2384	46.42	1	7.162532949	0.417	0.573287656	3
optimal_loci_343273_G	2407	0.076746	0	14662	38.55	1	0.657092098	0.235	0.610813274	6
optimal_loci_343298_G	1678	0.106631	0	2176	33.79	1	0.061112868	0.045	0.612554148	6
optimal_loci_343300_G	1112	0.106631	0	2001	32.01	1	0.061112868	0.118	0.612624534	6
optimal_loci_343303_G	1207	0.106631	0	5521	35.04	1	0.061112868	0	0.612660529	6
optimal_loci_343315_G	1372	0.106631	5.61	11649	55.83	1	0.061112868	0.549	0.612723194	6
optimal_loci_343321_G	1693	0.106631	3.84	15889	36.73	1	0.061112868	0.083	0.612766553	6
optimal_loci_343542_G	1775	0.156242	0	2995	39.94	1	7.568580943	0.207	0.621458371	1
optimal_loci_343678_G	1709	0.207311	0	6332	57.98	1	8.346616583	0.685	0.628266182	2
optimal_loci_343764_G	1119	0.131672	0	4673	33.78	2	9.950613683	0.167	0.631995051	2
optimal_loci_344235_G	1868	1.672953	37.9	1001	38.43	1	6.177172177	0.273	0.65663531	2
optimal_loci_344271_G	1641	1.634375	0	15489	36.86	2	4.059852194	0.171	0.658326383	2
optimal_loci_344386_G	1136	0.424254	0	7579	58.53	1	1.594891297	0.655	0.66537018	6
optimal_loci_344413_G	1029	0.256141	31.1	6131	41.1	1	0.098233318	0.232	0.667932625	7
optimal_loci_344414_G	1532	0.256141	0	12907	39.36	1	0.098233318	0.242	0.668001917	7
optimal_loci_344416_G	1305	0.256141	20.46	15425	40.99	1	0.098233318	0.324	0.668027666	7
optimal_loci_344419_G	1415	0.256141	28.83	17616	37.17	1	0.098233318	0.256	0.668050071	7
optimal_loci_344431_G	1089	0.256141	0	9300	32.87	5	5.757567224	0	0.668507268	7
optimal_loci_344494_G	1510	0.03608	34.64	1102	33.7	2	17.08190378	0.182	0.672298362	6
optimal_loci_344662_G	2289	0.068676	9.44	3682	45.47	1	0.116423696	0.275	0.682401601	4
optimal_loci_344663_G	1629	0.068676	0	15182	46.71	1	0.116423696	0.579	0.682519201	4
optimal_loci_344664_G	1905	0.068676	16.33	16961	38.16	1	0.116423696	0.204	0.682537393	4
optimal_loci_344722_G	1027	0.089344	0	3221	40.4	2	10.88466882	0.136	0.685327449	7
optimal_loci_344806_G	1008	0.087016	15.58	1347	39.48	1	2.111736446	0.326	0.688841407	4

optimal_loci_344833_G	1874	0.092015	37.99	6794	35.64	2	13.68300478	0.113	0.690085754	4
optimal_loci_344835_G	2272	0.092015	15.62	2558	36.35	2	13.68300478	0.15	0.690125002	4
optimal_loci_345075_G	1050	0.941624	4.29	4087	48.19	2	10.38812578	0.425	0.705662232	2
optimal_loci_345130_G	1900	0.24741	0	1001	51.89	3	0.410768222	0.565	0.709167304	2
optimal_loci_345196_G	1104	14.806378	19.38	6684	38.94	1	14.28864324	0.17	0.714446402	4
optimal_loci_345197_G	1396	14.806378	18.7	8064	50.57	1	14.28864324	0.339	0.714460514	4
optimal_loci_345198_G	1676	14.806378	0	9756	56.44	1	14.28864324	0.631	0.714477817	4
optimal_loci_345199_G	1862	14.806378	1.5	11736	53.92	1	14.28864324	0.46	0.714498064	4
optimal_loci_345383_G	1122	1.235223	0	1363	56.5	2	23.52732126	0.535	0.727801526	3
optimal_loci_345436_G	2173	1.098005	11.04	7163	47.99	1	0.116197645	0.424	0.730613476	4
optimal_loci_345445_G	1099	1.042066	2.55	3672	48.04	2	0.058098823	0.441	0.730902873	4
optimal_loci_345504_G	1155	1.204393	14.37	2106	45.02	2	1.0430207	0.562	0.734025777	4
optimal_loci_345609_G	1251	1.076506	14.15	9092	29.73	1	0.936554406	0.107	0.739072559	4
optimal_loci_345673_G	1013	0.646583	39.98	3678	38.49	5	2.441620813	0.114	0.74335658	3
optimal_loci_345674_G	1631	0.646583	2.02	4862	34.7	5	2.441620813	0.123	0.743368688	3
optimal_loci_345796_G	1690	1.42621	0	1598	62.84	3	2.616585699	0.84	0.75210274	1
optimal_loci_345891_G	1983	1.686875	20.68	2001	37.31	4	4.504764772	0.169	0.758411428	2
optimal_loci_345972_G	1241	1.833879	8.62	2651	45.93	1	13.10490254	0.294	0.762626699	4
optimal_loci_346030_G	1300	2.17728	34.69	1111	34.53	5	20.83172464	0.125	0.765615764	4
optimal_loci_346043_G	1159	2.17728	0	1001	48.57	4	11.64341783	0.34	0.766627601	4
optimal_loci_346091_G	1290	3.195069	2.64	3689	51.7	5	6.222244486	0.473	0.768947668	3
optimal_loci_346310_G	1275	1.725889	33.65	2433	43.29	3	0.003698196	0.341	0.783249837	1
optimal_loci_346552_G	1165	1.17696	16.48	5821	34.42	3	2.822765442	0.289	0.797273744	2
optimal_loci_346615_G	1008	1.717574	0	1001	34.72	2	9.751905875	0.17	0.80090022	3
optimal_loci_346640_G	1159	1.62171	37.19	2001	43.39	2	21.33437173	0.334	0.80419216	2
optimal_loci_346775_G	1172	2.787966	0	2101	34.47	4	0.005941032	0.059	0.812911988	6
optimal_loci_346796_G	1004	2.831904	0	6698	43.02	2	32.32774238	0.178	0.81377703	6
optimal_loci_346825_G	1083	2.985857	0	5724	48.29	3	5.555527825	0.283	0.815711114	6
optimal_loci_346833_G	1027	2.985857	0	8254	34.85	3	5.555527825	0.214	0.815986359	6
optimal_loci_346851_G	3006	2.432021	2.5	18964	47.03	1	2.899378136	0.398	0.817534133	6
optimal_loci_346854_G	1384	2.432021	0	15933	46.53	1	2.899378136	0.435	0.817581715	6
optimal_loci_347091_G	1541	1.80067	0	4366	39.58	1	0.241309511	0.329	0.828366449	6
optimal_loci_347093_G	1392	1.80067	6.97	2303	48.2	1	0.241309511	0.561	0.828389069	6

optimal_loci_347106_G	1570	1.887376	17.26	8488	39.74	1	2.94065212	0.3	0.829250777	6
optimal_loci_347126_G	1699	1.400582	3.94	1001	42.67	2	1.098249362	0.283	0.830190623	9
optimal_loci_347203_G	1977	1.391817	39.25	5759	35.4	3	8.394905657	0.153	0.831897219	9
optimal_loci_347237_G	1372	1.412704	30.1	2477	45.69	3	2.956389188	0.394	0.83253378	9
optimal_loci_347272_G	1825	1.414807	0	2018	42.41	5	13.8434027	0.134	0.834939572	8
optimal_loci_347273_G	1207	1.41619	7.62	2001	41.83	5	13.8434027	0.208	0.834959676	8
optimal_loci_347279_G	1907	1.507004	2.73	14568	35.86	3	21.81147934	0.099	0.835240361	8
optimal_loci_347340_G	1332	2.644378	0	2765	44.81	3	11.65346402	0.393	0.838574055	12
optimal_loci_347343_G	1322	2.644378	14.22	2001	36.68	3	11.65346402	0.089	0.838608475	12
optimal_loci_347361_G	1358	2.952167	28.13	1968	32.98	4	0.244773727	0.18	0.840458369	11
optimal_loci_347362_G	1084	2.952167	0	3510	36.99	4	0.244773727	0	0.840474137	11
optimal_loci_347363_G	1170	2.952167	0	4682	44.52	4	0.244773727	0.34	0.840486122	11
optimal_loci_347364_G	1314	2.952167	18.65	6025	35.54	4	0.244773727	0	0.840499856	11
optimal_loci_347368_G	1032	3.831114	2.71	2513	40.79	2	0.278539843	0.222	0.840730382	11
optimal_loci_347380_G	1599	3.77019	2.56	1001	37.27	2	15.82739769	0.162	0.841199328	11
optimal_loci_347406_G	1861	3.73933	15.26	11254	48.03	1	2.978987118	0.246	0.84240679	11
optimal_loci_347453_G	1218	3.479554	31.61	7612	38.17	2	17.93918215	0.211	0.845346637	12
optimal_loci_347454_G	1005	3.479554	8.96	9044	50.14	2	17.93918215	0.28	0.845361281	12
optimal_loci_347483_G	1182	4.066077	18.44	1001	40.01	3	0.571701642	0.314	0.848075899	13
optimal_loci_347484_G	1193	4.066077	13.75	2269	40.31	3	0.571701642	0.127	0.848088866	13
optimal_loci_347485_G	1669	4.066077	0	3625	43.73	3	0.571701642	0.148	0.848102732	13
optimal_loci_347516_G	1364	3.168465	16.72	12976	32.4	2	3.967507493	0.152	0.850754869	14
optimal_loci_347526_G	1623	3.462814	0	10517	39.92	2	2.64174173	0.284	0.851032374	14
optimal_loci_347529_G	1621	3.462814	33.81	7650	44.29	2	2.64174173	0.364	0.851061712	14
optimal_loci_347531_G	1848	3.462814	19.91	5221	39.33	2	2.64174173	0.239	0.85108423	14
optimal_loci_347544_G	1312	3.483227	0	3175	60.51	2	13.88470493	0.68	0.851552921	15
optimal_loci_347547_G	1139	3.541865	0	1001	47.14	2	13.88470493	0.659	0.851657871	15
optimal_loci_347549_G	1519	3.541865	2.57	3632	57.01	2	13.88470493	0.532	0.851744271	15
optimal_loci_347553_G	1033	3.541865	0	7678	49.17	2	13.88470493	0.353	0.851785645	15
optimal_loci_347607_G	1140	2.7789	0	3943	51.49	2	9.449458974	0.799	0.854916147	14
optimal_loci_347614_G	1663	2.7789	2.1	1305	49.84	2	9.449458974	0.52	0.854991912	14
optimal_loci_347616_G	1737	2.7789	7.83	3370	41.96	2	9.449458974	0.465	0.855016536	14
optimal_loci_347658_G	1665	2.796677	0	13195	51.11	1	1.041656361	0.512	0.856247324	11

optimal_loci_347678_G	1340	2.156062	3.21	4022	41.94	2	4.682364815	0.178	0.857736186	8
optimal_loci_347715_G	1444	2.583486	7.41	3442	37.04	1	0.899716531	0.166	0.859737527	8
optimal_loci_347747_G	1207	2.106643	13.67	3401	35.87	1	3.676816505	0.199	0.861244949	5
optimal_loci_347758_G	1158	1.943157	5.18	2498	58.63	3	7.67055426	0.534	0.861997331	5
optimal_loci_347876_G	2456	3.666985	8.14	13811	45.23	2	15.34132498	0.321	0.867005919	2
optimal_loci_348005_G	1062	2.693711	8.38	1950	50.09	2	19.17872766	0.353	0.872777678	6
optimal_loci_348016_G	2139	2.788758	11.59	19728	37.02	1	32.03601785	0.188	0.873040232	6
optimal_loci_348032_G	1226	3.005753	2.77	6254	37.11	1	4.412847994	0.28	0.87370919	6
optimal_loci_348043_G	1097	3.069975	0	8474	36.82	1	0.049762134	0.213	0.874597343	6
optimal_loci_348058_G	1290	1.337936	0	2001	45.42	4	1.65432059	0.197	0.875655514	6
optimal_loci_348059_G	1334	1.337936	3.07	2662	47.15	4	1.65432059	0.311	0.875767101	6
optimal_loci_348161_G	1144	3.040134	2.45	1417	44.58	1	0.361281125	0.363	0.8828381	5
optimal_loci_348184_G	1066	2.863646	23.26	2001	45.77	2	56.2044163	0.389	0.883627848	9
optimal_loci_348197_G	1217	2.845614	10.93	6298	56.94	5	41.31908622	0.483	0.884279605	11
optimal_loci_348220_G	1850	2.845614	6.65	1001	35.94	3	0.13339265	0.366	0.885521161	11
optimal_loci_348227_G	1832	2.667096	12.61	8139	40.44	2	0.1780472	0.16	0.886027719	11
optimal_loci_348258_G	1486	2.596544	4.24	17508	41.58	1	5.082916781	0.268	0.888613704	12
optimal_loci_348259_G	1427	2.599896	0	15784	58.93	1	5.082916781	0.68	0.888631937	12
optimal_loci_348260_G	1283	2.599896	2.57	13792	50.11	1	5.082916781	0.231	0.888653779	12
optimal_loci_348267_G	2868	2.596465	0	3611	46.79	2	2.54145839	0.351	0.888741683	12
optimal_loci_348273_G	1231	2.615721	0	1800	57.59	2	2.54145839	0.578	0.888861706	11
optimal_loci_348274_G	1580	2.615721	0	2721	54.68	2	2.54145839	0.657	0.888877505	11
optimal_loci_348345_G	1220	3.3713	16.39	3000	62.7	2	5.07488221	0.695	0.893053222	11
optimal_loci_348351_G	2074	3.3713	0	1001	54.05	2	5.07488221	0.66	0.893161465	11
optimal_loci_348380_G	1540	3.565892	0	4470	49.41	1	36.07055948	0.244	0.894599043	5
optimal_loci_348407_G	1589	3.230191	7.55	2001	42.85	4	17.43376553	0.6	0.895695747	5
optimal_loci_348413_G	1671	3.44357	2.27	2055	47.99	1	2.161154705	0.282	0.896261841	5
optimal_loci_348595_G	1011	2.539148	0	7328	46.88	3	0.028788209	0.375	0.904423929	4
optimal_loci_348625_G	1075	3.582338	0	3076	46.6	2	20.09546476	0.385	0.906875564	9
optimal_loci_348638_G	1152	3.920426	0	2488	51.56	2	3.616144401	0.635	0.908384295	11
optimal_loci_348650_G	1119	4.096453	2.5	1001	51.83	2	5.365697512	0.744	0.90882286	11
optimal_loci_348656_G	2157	4.461142	0	2001	39.08	3	20.25791153	0.167	0.909573033	11
optimal_loci_348673_G	2970	5.024853	6.84	6116	39.42	1	13.86061	0.184	0.910822647	11

optimal_loci_348674_G	2293	5.057041	16.69	3513	44.43	1	13.86061	0.235	0.910856188	11
optimal_loci_348681_G	1417	4.497635	0	18662	51.58	1	2.079394239	0.626	0.911440515	11
optimal_loci_348686_G	1424	4.497635	2.81	16355	39.81	2	0.8895862	0.199	0.911494693	11
optimal_loci_348706_G	1141	5.43254	0	8742	47.15	4	21.3686937	0.433	0.91218445	11
optimal_loci_348718_G	1357	5.43254	0	7397	37.65	2	17.10132252	0.26	0.912589443	11
optimal_loci_348745_G	1164	5.745961	0	3447	47.76	3	5.059831491	0.281	0.914409476	11
optimal_loci_348776_G	1214	5.746945	0	2105	42.91	1	18.37228919	0.266	0.91725236	6
optimal_loci_348782_G	1856	5.867621	15.73	2951	39.33	3	15.14856851	0.205	0.917991028	4
optimal_loci_348789_G	1148	5.916206	0	10662	35.62	2	20.4015402	0.125	0.918359862	4
optimal_loci_348891_G	1099	4.25654	0	4189	44.94	3	7.39008604	0.301	0.924188109	3
optimal_loci_348915_G	1370	4.455138	0	1001	54.74	3	16.52912743	0.585	0.924626878	3
optimal_loci_348938_G	1377	4.043273	37.11	6377	38.27	2	9.716383878	0.219	0.924971803	3
optimal_loci_349019_G	1035	3.725938	0	1001	36.71	2	3.407436887	0.095	0.930388533	2
optimal_loci_349021_G	1126	3.725938	0	1077	39.34	2	3.407436887	0.308	0.93040465	2
optimal_loci_349151_G	1746	1.373769	3.44	2313	38.25	2	7.831958663	0.116	0.937850311	3
optimal_loci_349158_G	1378	1.366749	39.4	13258	38.53	2	4.073104678	0.276	0.938346315	4
optimal_loci_349253_G	1486	2.258055	0	6240	47.57	1	20.06237141	0.495	0.941973139	8
optimal_loci_349271_G	1018	2.000822	38.51	5239	39.29	3	61.14234665	0.214	0.943145627	8
optimal_loci_349305_G	2010	2.33217	33.58	2266	35.77	3	13.76919714	0.122	0.944319159	7
optimal_loci_349349_G	2262	3.346904	0	2001	52.07	2	9.889886846	0.558	0.946231625	11
optimal_loci_349362_G	1459	3.58563	0	6662	37.62	2	0.498581974	0.196	0.947045302	12
optimal_loci_349363_G	4006	3.58563	9.66	2001	52.09	2	0.498581974	0.53	0.94706692	12
optimal_loci_349390_G	1993	4.318857	9.98	8517	47.81	2	0.802530329	0.413	0.948007615	12
optimal_loci_349407_G	2870	4.200413	0	1559	52.22	3	11.56226082	0.572	0.949603912	11
optimal_loci_349408_G	2531	4.200413	0	2001	59.77	2	17.26865884	0.668	0.949829355	11
optimal_loci_349412_G	1052	4.200413	8.27	9222	43.15	2	17.26865884	0.22	0.949903198	11
optimal_loci_349425_G	2394	4.200413	8.69	1001	32.83	4	1.920441865	0.249	0.950550834	12
optimal_loci_349453_G	1831	3.431716	6.01	2239	47.18	3	42.19195226	0.394	0.951795345	12
optimal_loci_349462_G	1679	3.542513	3.77	17267	47.64	1	0.035765603	0.352	0.952257368	10
optimal_loci_349477_G	1348	3.617395	0	2294	46.95	1	10.01923708	0.344	0.953174727	9
optimal_loci_349522_G	1208	3.713899	28.06	5699	36.25	1	7.704761407	0.228	0.955157927	8
optimal_loci_349552_G	1258	3.508849	0	1095	43.16	4	106.4541469	0.328	0.956661341	7
optimal_loci_349573_G	1492	3.276621	0	2001	50.13	3	56.55013716	0.507	0.958958092	5

optimal_loci_349575_G	1668	3.219831	19.78	1394	39.86	2	84.06388097	0.263	0.959080856	5
optimal_loci_349654_G	3871	4.404321	16.84	1184	38.23	3	2.50295472	0.112	0.962606574	4
optimal_loci_349709_G	1770	4.581153	1.92	1487	52.82	3	10.93455437	0.555	0.967424303	3
optimal_loci_349752_G	1307	5.253267	13.39	2025	42.46	5	7.349571716	0.213	0.968726305	2
optimal_loci_349833_G	1486	5.070585	11.71	4425	68.3	2	5.397766908	0.752	0.975672096	3
optimal_loci_349870_G	1043	4.807157	39.41	2209	31.73	2	116.3099406	0.075	0.976961438	3
optimal_loci_349892_G	1322	4.261222	33.21	2119	33.2	5	4.920594328	0.204	0.978862717	4
optimal_loci_349951_G	1866	4.353167	0	2208	38.58	4	8.453758358	0.143	0.983696214	6
optimal_loci_349983_G	1294	3.856244	10.43	15034	49.22	1	0.676290675	0.301	0.984917573	5
optimal_loci_350036_G	1230	3.612129	0	1001	39.75	6	29.17479431	0.186	0.986105861	5
optimal_loci_350037_G	1007	3.612129	0	2068	46.97	6	38.23342096	0.414	0.986160376	5
optimal_loci_350039_G	1366	3.612129	8.2	4032	35.94	5	20.5134294	0.351	0.98618046	5

2014341927 17 Jul 2017

WHAT IS CLAIMED IS:

1. A recombinant sequence, said recombinant sequence comprising:

a nucleic acid sequence of at least 1 Kb and having at least 90% sequence identity with nongenic sequence loci_265551_G1 (SEQ ID NO:463),
wherein said nongenic sequence comprises the following characteristics:

a. the level of methylation of said nongenic sequence is 1% or less;

b. said nongenic sequence shares less than 40% sequence identity with any other sequence contained in the *Zea mays* genome;

c. said nongenic sequence is located within a 40 Kb region of a known or predicted expressive *Zea mays* coding sequence; and

d. said nongenic sequence exhibits a recombination frequency within the *Zea mays* genome of greater than 0.00041 cM/Mb; and,

a DNA of interest, wherein the DNA of interest is inserted into said nongenic sequence to produce said recombinant sequence.

2. The recombinant sequence of claim 1, wherein said DNA of interest is inserted proximal to a zinc finger target site specific for said nongenic sequence.

3. The recombinant sequence of claim 1, wherein said DNA of interest is inserted between a pair of zinc finger target sites specific for said nongenic sequence.

4. The recombinant sequence of any one of claims 1 to 3, wherein said DNA of interest comprises an analytical domain.

5. The recombinant sequence of any one of claims 1 to 4, wherein said DNA of interest does not encode a peptide.

6. The recombinant sequence of any one of claims 1 to 4, wherein said DNA of interest encodes a peptide.

7. The recombinant sequence of any one of claims 1 to 6, wherein said DNA of interest comprises a gene expression cassette comprising an insecticidal resistance gene, herbicide

17 Jul 2017
2014341927

tolerance gene, nitrogen use efficiency gene, water use efficiency gene, nutritional quality gene, DNA binding gene, and selectable marker gene.

8. The recombinant sequence of any one of claims 1 to 7, wherein said DNA of interest comprises two or more gene expression cassettes.

9. The recombinant sequence of any one of claims 1 to 8, wherein said DNA of interest and/or said nongenic sequence are modified during insertion of said DNA of interest into said nongenic sequence.

10. A maize plant, maize plant part, or maize plant cell comprising a recombinant sequence of any one of claims 1 to 9.

11. A method of making a transgenic plant cell comprising a DNA of interest, the method comprising:

a. selecting a target nongenic maize genomic locus having at least 90% sequence identity with nongenic sequence loci_265551_G1 (SEQ ID NO:463);

b. selecting a site specific nuclease that specifically binds and cleaves said target nongenic maize genomic locus

c. introducing said site specific nuclease into a maize plant cell;

d. introducing the DNA of interest into the plant cell;

e. inserting the DNA of interest into said target nongenic maize genomic loci; and,

f. selecting transgenic plant cells comprising the DNA of interest targeted to said nongenic locus.

12. The method of making a transgenic plant cell of claim 11, wherein said DNA of interest comprises an analytical domain.

13. The method of making a transgenic plant cell of claim 11 or 12, wherein said DNA of interest does not encode a peptide.

14. The method of making a transgenic plant cell of claim 11 or 12, wherein said DNA of interest encodes a peptide.

17 Jul 2017
2014341927

15. The method of making a transgenic plant cell of any one of claims 11 to 14, wherein said DNA of interest comprises a gene expression cassette comprising a transgene.

16. The method of making a transgenic plant cell of any one of claims 11 to 15, wherein said DNA of interest comprises two or more gene expression cassettes.

17. The method of making a transgenic plant cell of any one of claims 11 to 16, wherein said site specific nuclease is selected from the group consisting of a zinc finger nuclease, a CRISPR nuclease, a TALEN, a homing endonuclease or a meganuclease.

18. The method of making a transgenic plant cell of any one of claims 11 to 17, wherein said DNA of interest is integrated within said nongenic locus via a homology directed repair integration method.

19. The method of making a transgenic plant cell of any one of claims 11 to 17, wherein said DNA of interest is integrated within said nongenic locus via a non-homologous end joining integration method.

20. The method of making a transgenic plant cell of any one of claims 11 to 19, wherein said DNA of interest and/or said target nongenic maize genomic loci are modified during insertion of said DNA of interest into said target nongenic maize genomic loci.

21. A plant comprising a recombinant sequence, said recombinant sequence comprising:

a nucleic acid sequence having at least 90% sequence identity with nongenic sequence loci_265551_G1 (SEQ ID NO:463),

wherein said nongenic sequence comprises the following characterstics:

a. the level of methylation of said nongenic sequence is 1% or less

b. said nongenic sequence shares less than 40% sequence identity with any other sequence contained in the *Zea mays* genome;

c. said nongenic sequence is located within a 40 Kb region of a known or predicted expressive *Zea mays* coding sequence; and

d. said nongenic sequence exhibits a recombination frequency within the *Zea mays* genome of greater than 0.00041 cM/Mb; and

a DNA of interest, wherein the DNA of interest is inserted into said nongenic sequence.

2014341927 17 Jul 2017

22. The plant of claim 21, wherein said DNA of interest is inserted proximal to a zinc finger target site specific for said nongenic sequence.

23. The plant of claim 21, wherein said DNA of interest is inserted between a pair of zinc finger target sites specific for said nongenic sequence.

24. The plant of any one of claims 21 to 23, wherein said DNA of interest comprises an analytical domain.

25. The plant of any one of claims 21 to 24, wherein said DNA of interest does not encode a peptide.

26. The plant of any one of claims 21 to 24, wherein said DNA of interest encodes a peptide.

27. The plant of any one of claims 21 to 26, wherein said DNA of interest comprises a gene expression cassette comprising an insecticidal resistance gene, herbicide tolerance gene, nitrogen use efficiency gene, water use efficiency gene, nutritional quality gene, DNA binding gene, and selectable marker gene.

28. The plant of any one of claims 21 to 27, wherein said DNA of interest and/or said nongenic sequence are modified during insertion of said DNA of interest into said nongenic sequence.

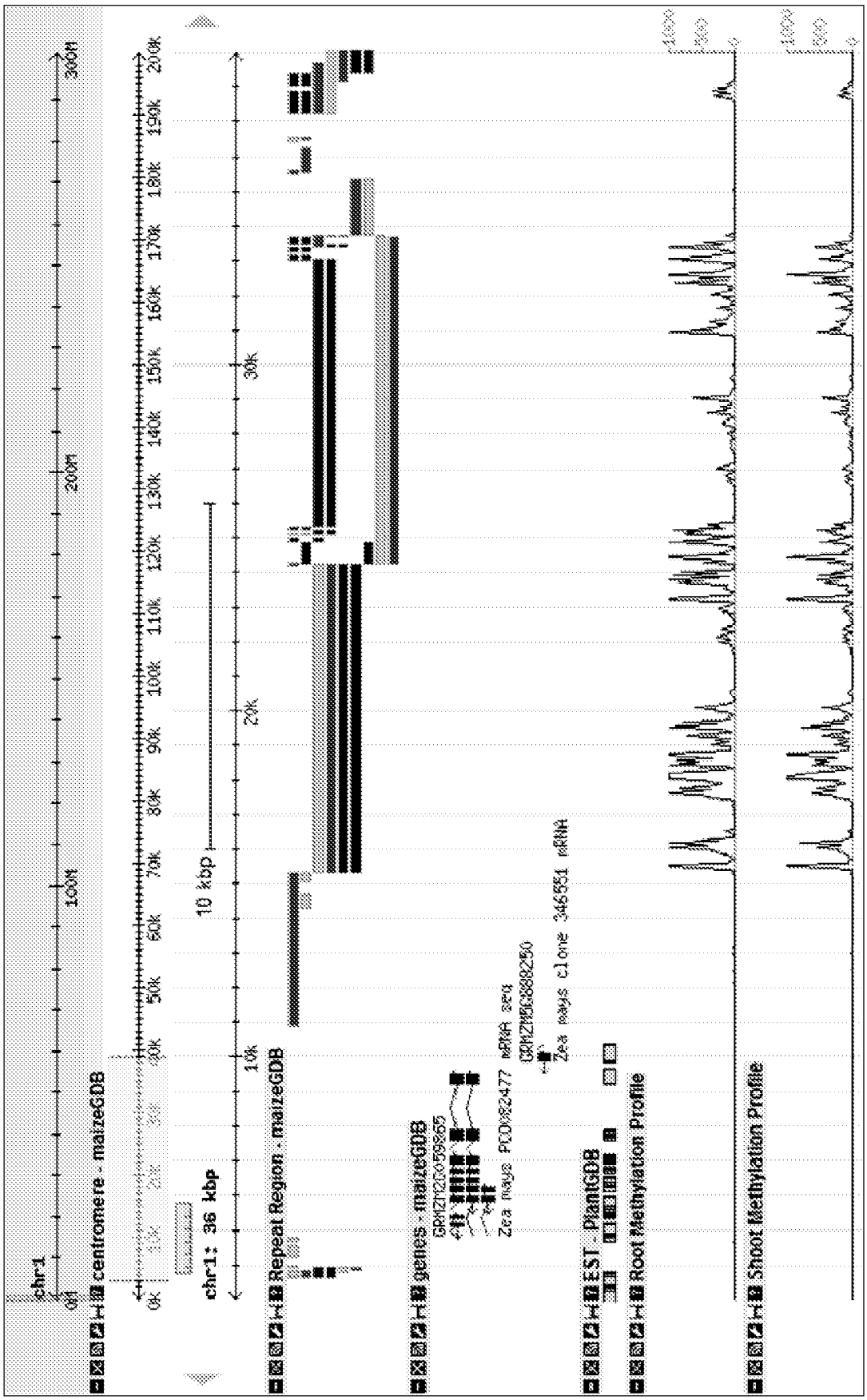

chr1
centromere - maizeGDB
chr1: 36 kbp
10 kbp
Repeat Region - maizeGDB
genes - maizeGDB
GRMZM2G059865
Zea mays PCO082477 mRNA seq
GRMZM5G888250
Zea mays clone 346551 mRNA
EST - PlantGDB
Root Methylation Profile
Shoot Methylation Profile

Fig. 1

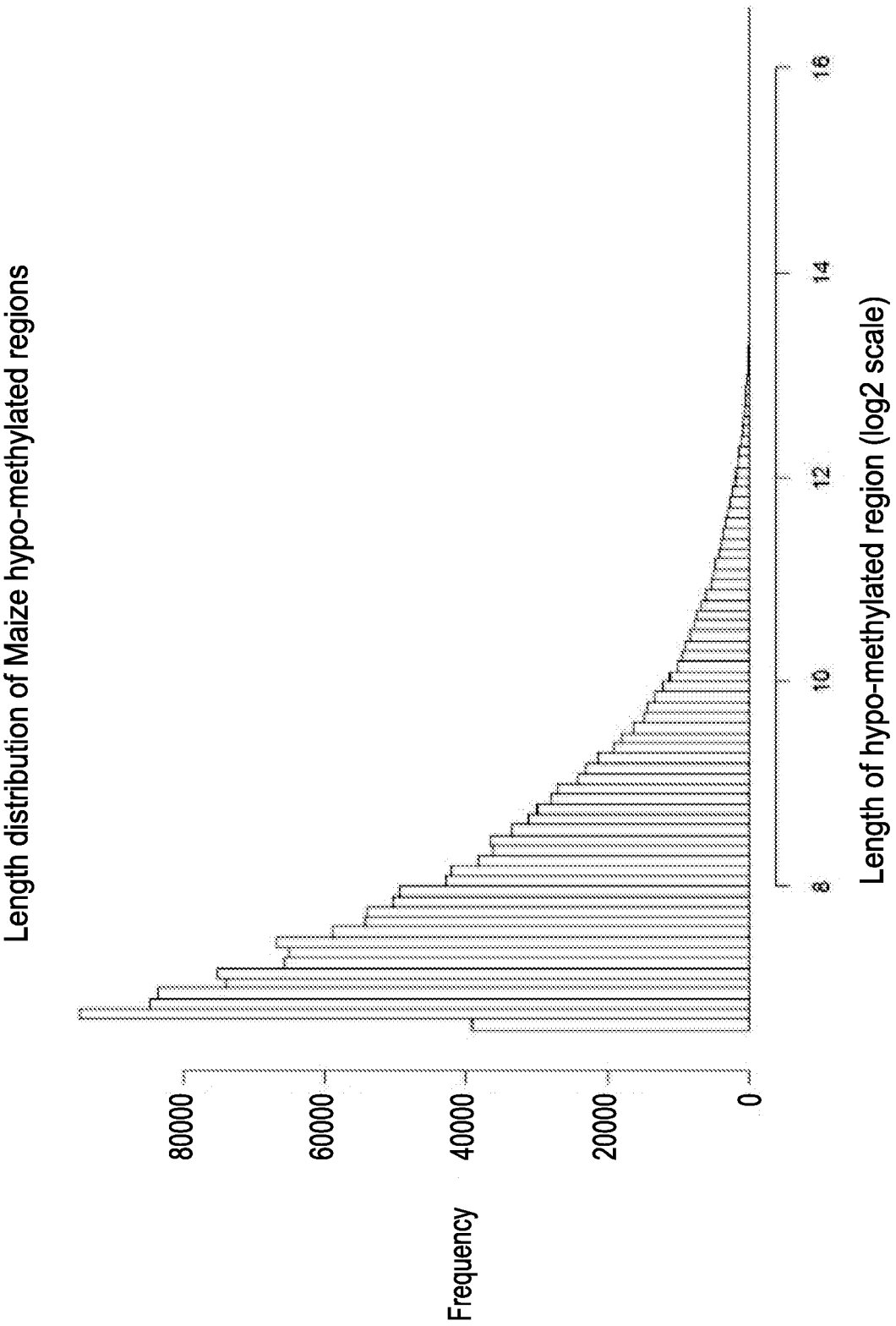

Length distribution of Maize hypo-methylated regions
Frequency
0
20000
40000
60000
80000
Length of hypo-methylated region (log2 scale)
8
10
12
14
16

Fig. 2

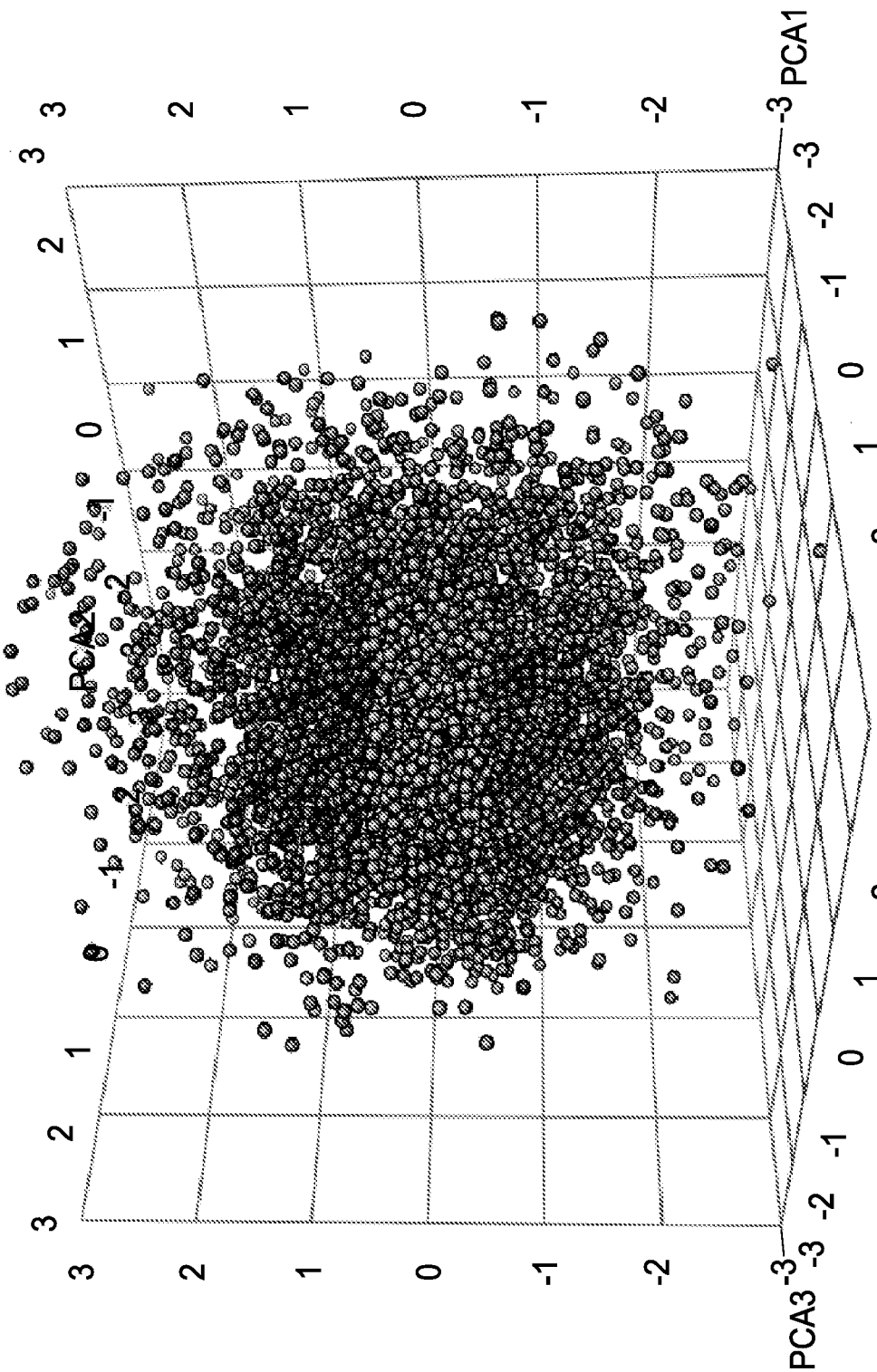


Fig. 3

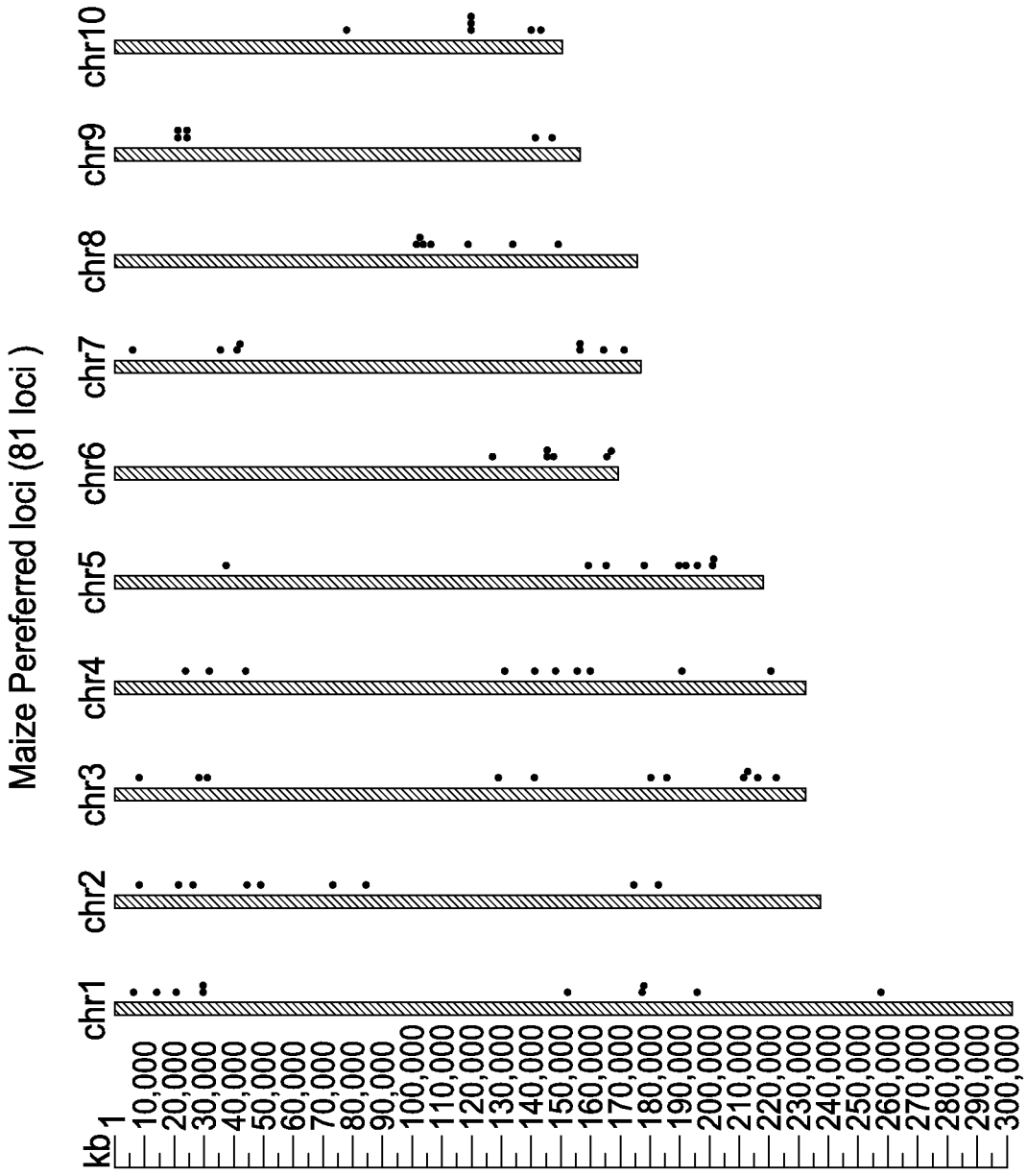

Maize Pereferred loci (81 loci)
chr10
chr9
chr8
chr7
chr6
chr5
chr4
chr3
chr2
chr1
kb
1
10,000
20,000
30,000
40,000
50,000
60,000
70,000
80,000
90,000
100,000
110,000
120,000
130,000
140,000
150,000
160,000
170,000
180,000
190,000
200,000
210,000
220,000
230,000
240,000
250,000
260,000
270,000
280,000
290,000
300,000

Fig. 4

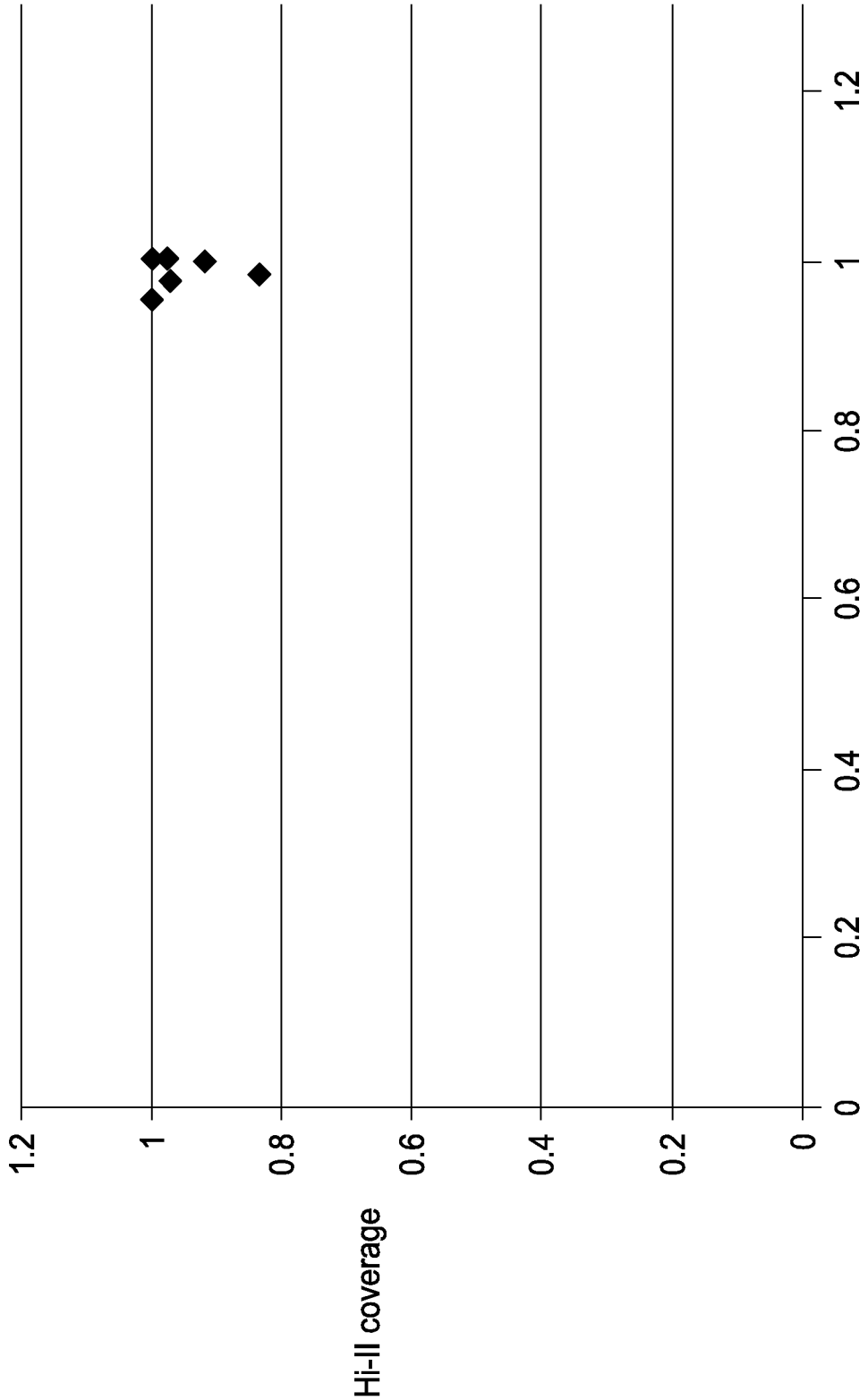


Fig. 5

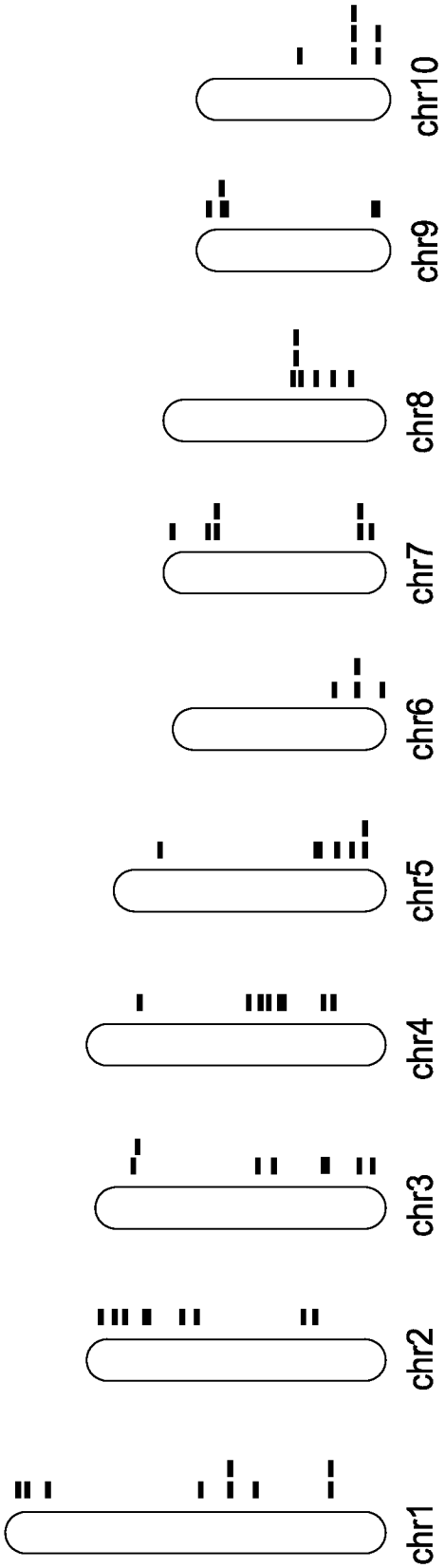


Fig. 6

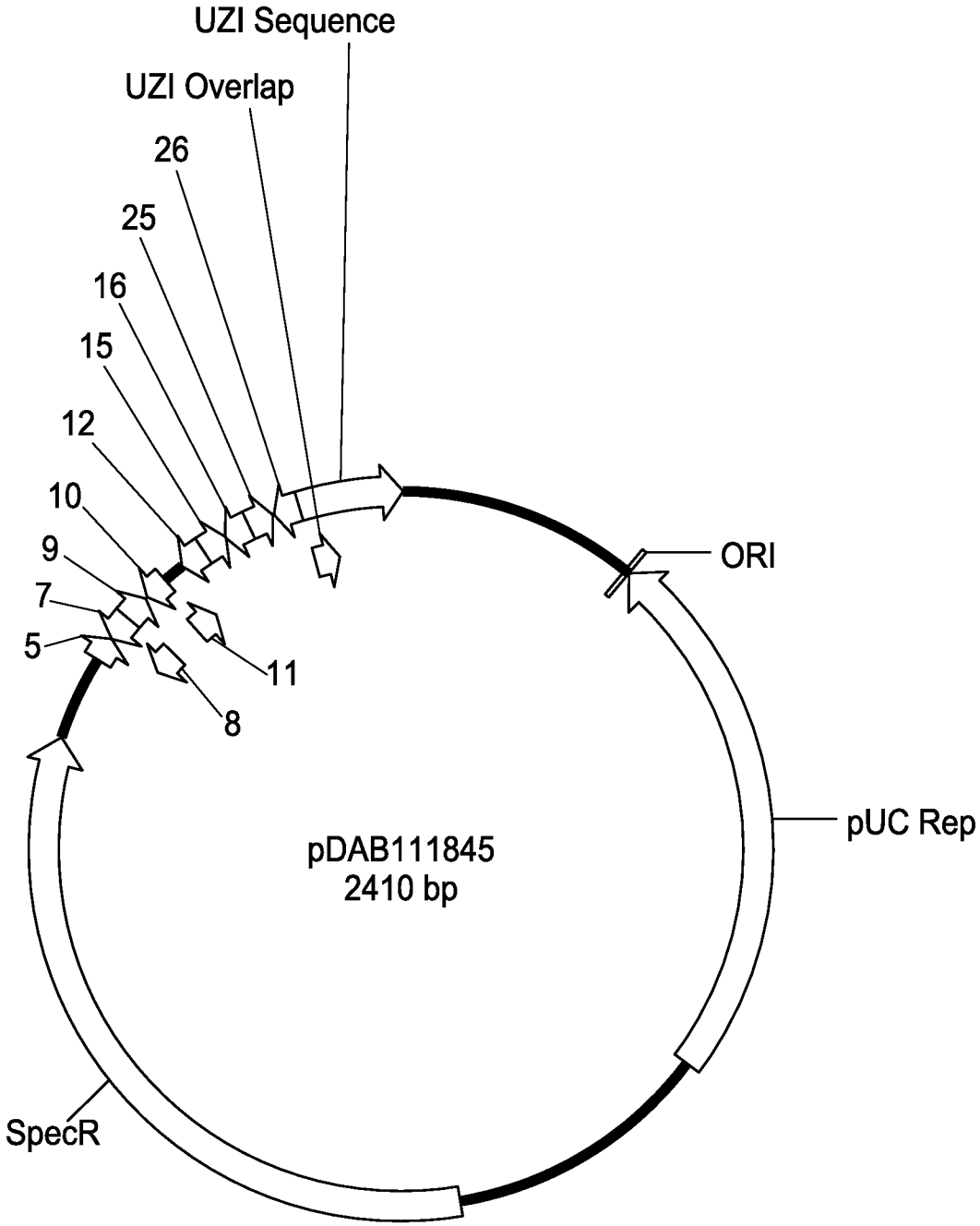

UZI Sequence
UZI Overlap
26
25
16
15
12
10
9
7
5
11
8
ORI
pUC Rep
pDAB111845
2410 bp
SpecR

Fig. 7

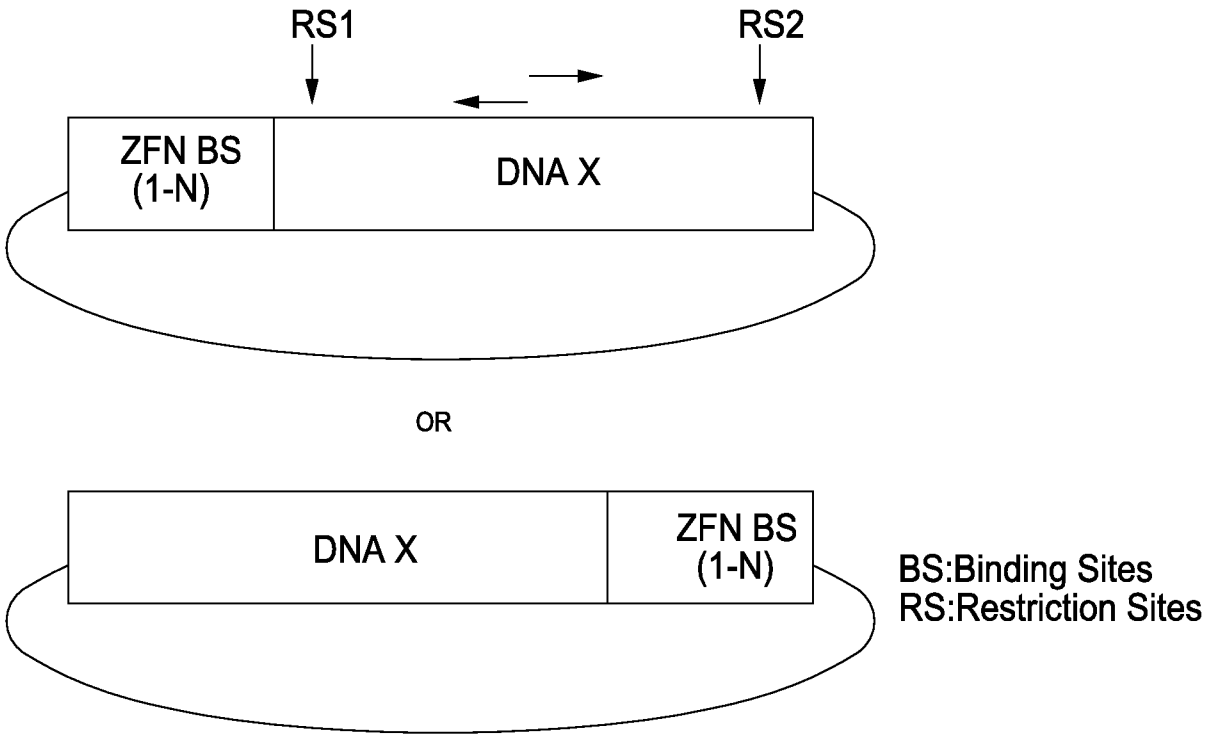

RS1
RS2
ZFN BS
(1-N)
DNA X
OR
DNA X
ZFN BS
(1-N)
BS:Binding Sites
RS:Restriction Sites

Fig. 8

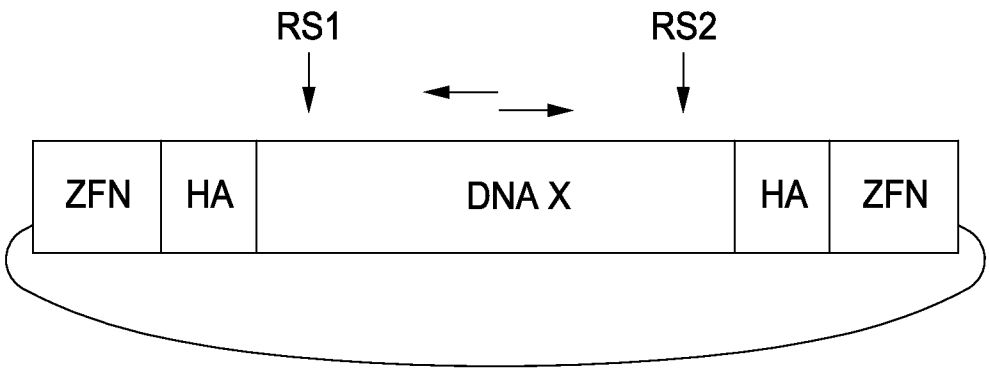

RS1
RS2
ZFN
HA
DNA X
HA
ZFN

Fig. 9

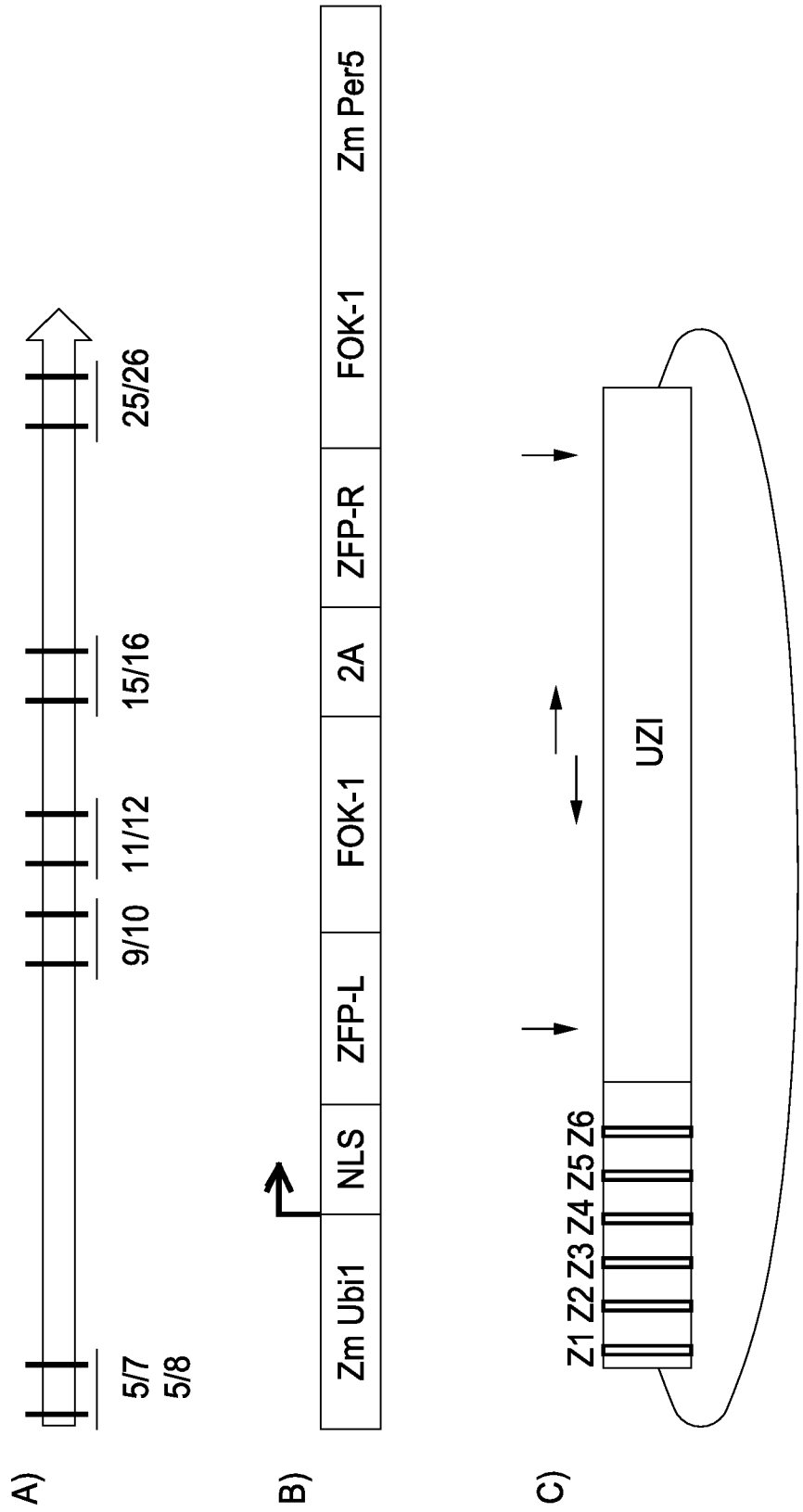

A)
5/7
5/8
9/10
11/12
15/16
25/26
B)
Zm Ubi1
NLS
ZFP-L
FOK-1
2A
ZFP-R
FOK-1
Zm Per5
C)
Z1 Z2 Z3 Z4 Z5 Z6
UZI

Fig. 10

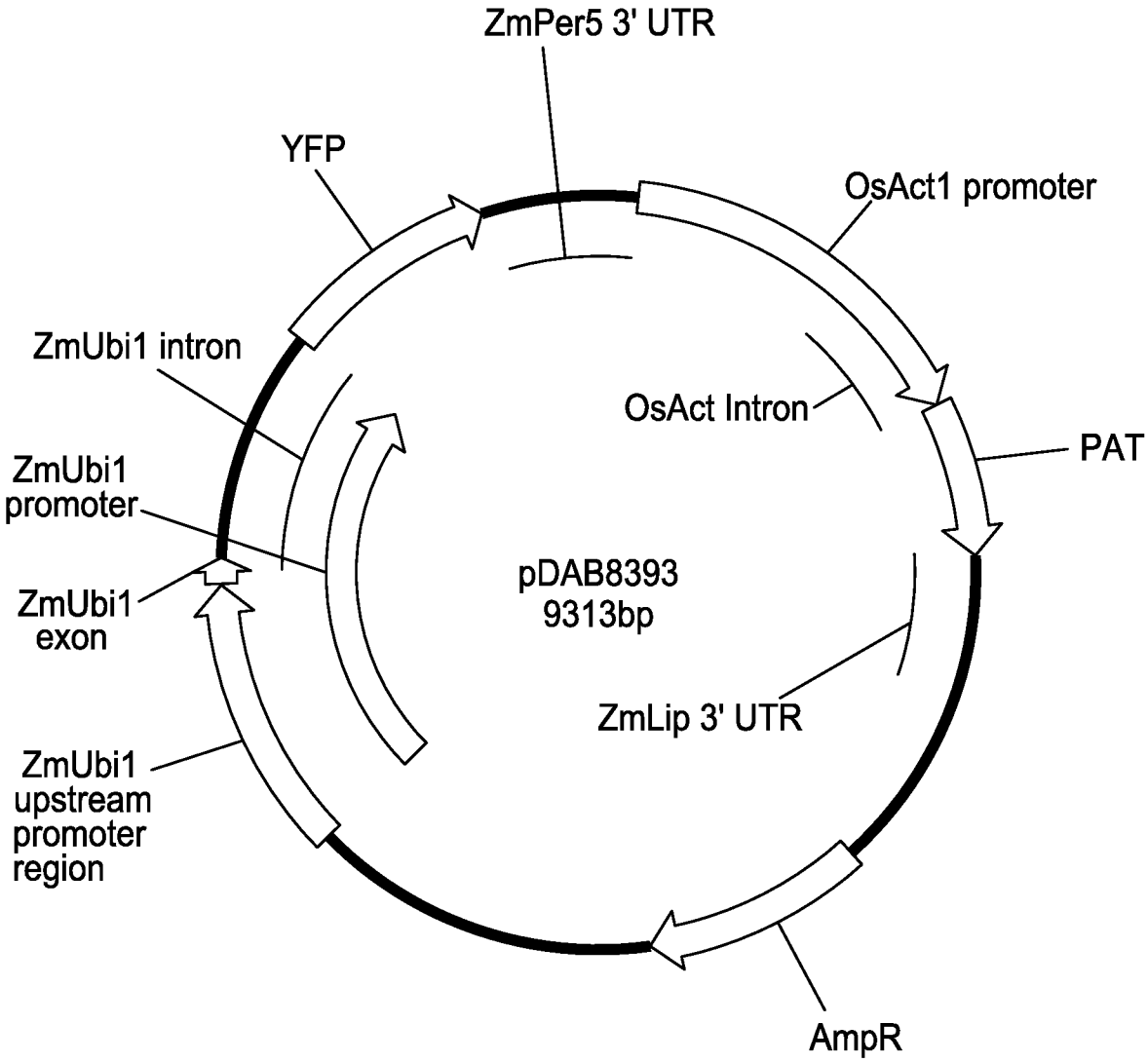
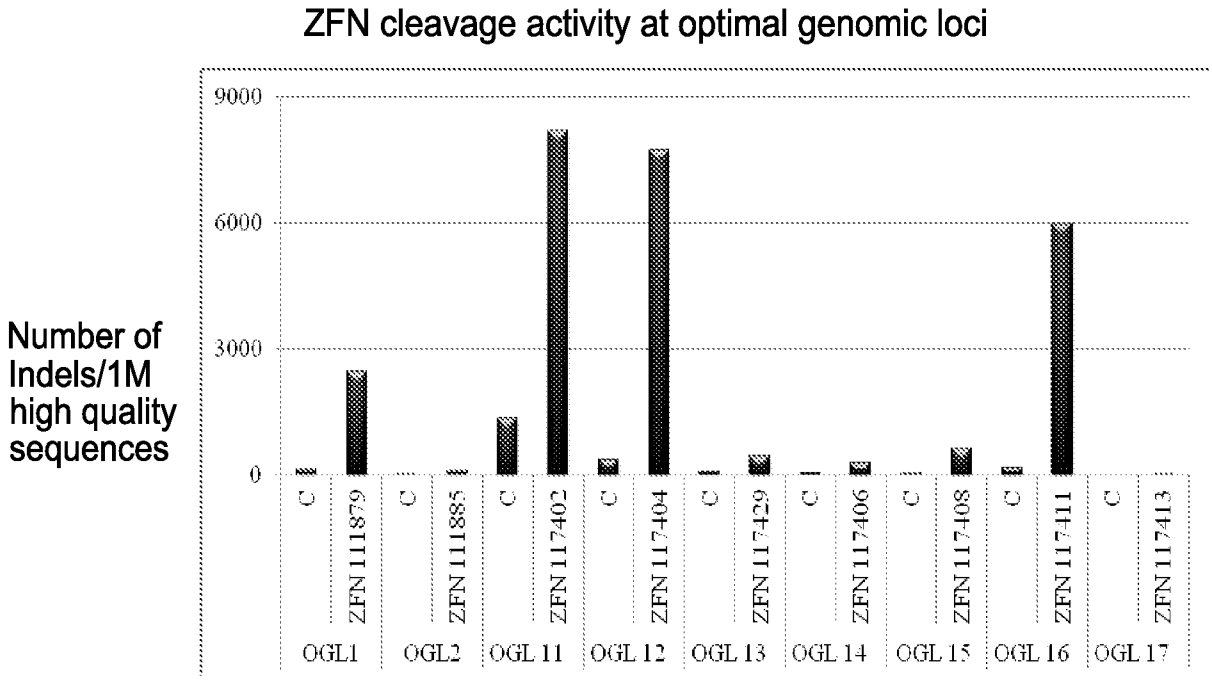

ZmPer5 3' UTR
YFP
OsAct1 promoter
ZmUbi1 intron
OsAct Intron
PAT
ZmUbi1
promoter
pDAB8393
9313bp
ZmUbi1
exon
ZmLip 3' UTR
ZmUbi1
upstream
promoter
region
AmpR

Fig. 11



ID	Name	Treatment	# Indels/1M HQ reads¤
optimal loci_204637	OGL1	C	115.1827783
		ZFN 111879	2458.971273
optimal_loci_204726	OGL2	C	10.86457474
		ZFN 111885	102.9851891
optimal_loci_31710	OGL 11	C	1359.364352
		ZFN 117402	8209.320688
optimal_loci_156393	OGL 12	C	368.6331485
		ZFN 117404	7748.53473
optimal_loci_157315	OGL 13	C	79.11178495
		ZFN 117429	453.3253803
optimal_loci_197372	OGL 14	C	48.99318995
		ZFN 117406	277.1403482
optimal _loci_198387	OGL 15	C	45.49262935
		ZFN 117408	622.2166624
optimal_loci_232228	OGL 16	C	163.1649867
		ZFN 117411	5980.912998
optimal_loci_285621	OGL 17	C	0¤
		ZFN 117413	4.815941547

Fig. 12

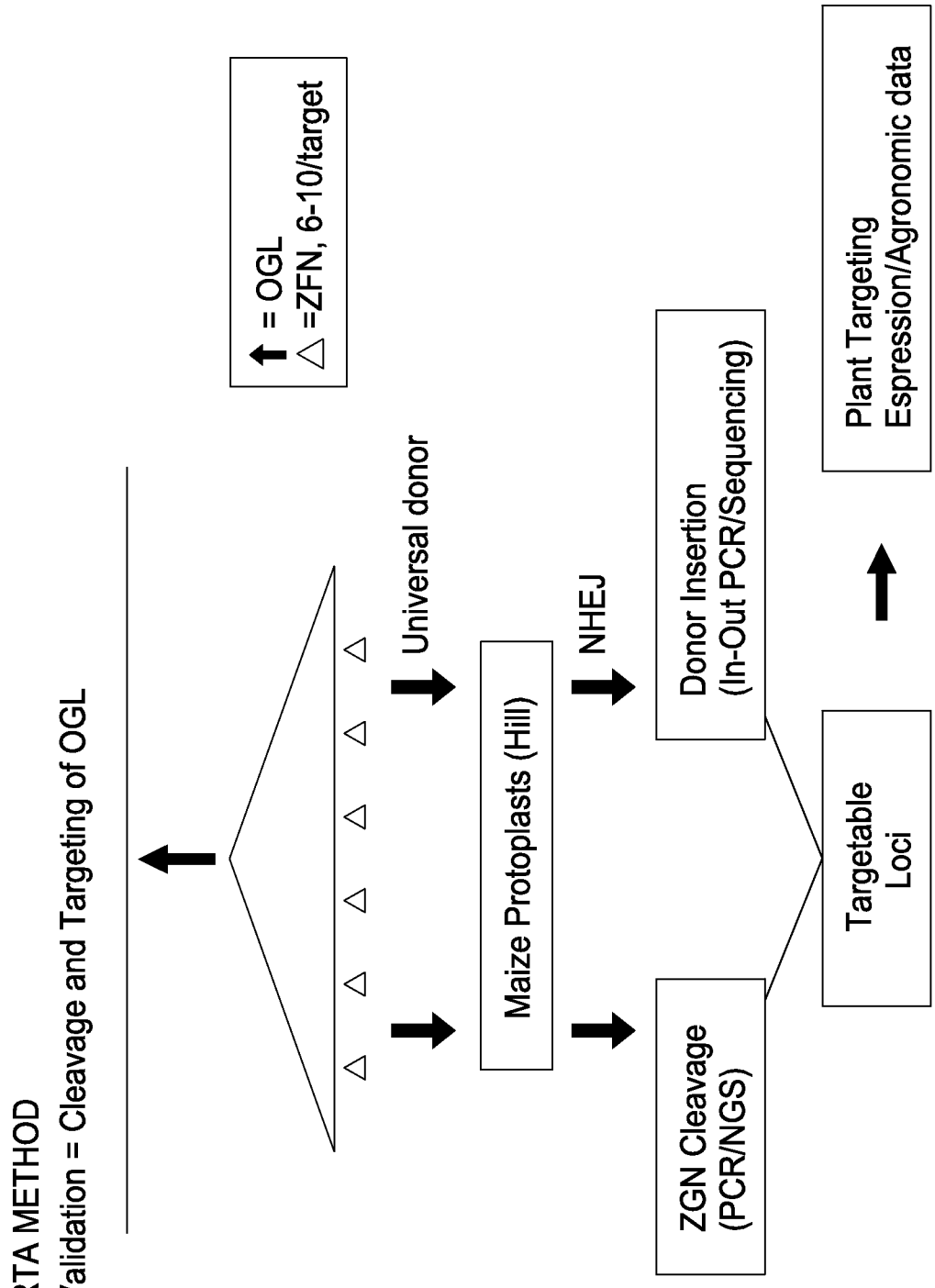

RTA METHOD
Validation = Cleavage and Targeting of OGL
= OGL
△ =ZFN, 6-10/target
Universal donor
Maize Protoplasts (Hill)
NHEJ
Donor Insertion
(In-Out PCR/Sequencing)
ZGN Cleavage
(PCR/NGS)
Targetable
Loci
Plant Targeting
Espression/Agronomic data

Fig. 13

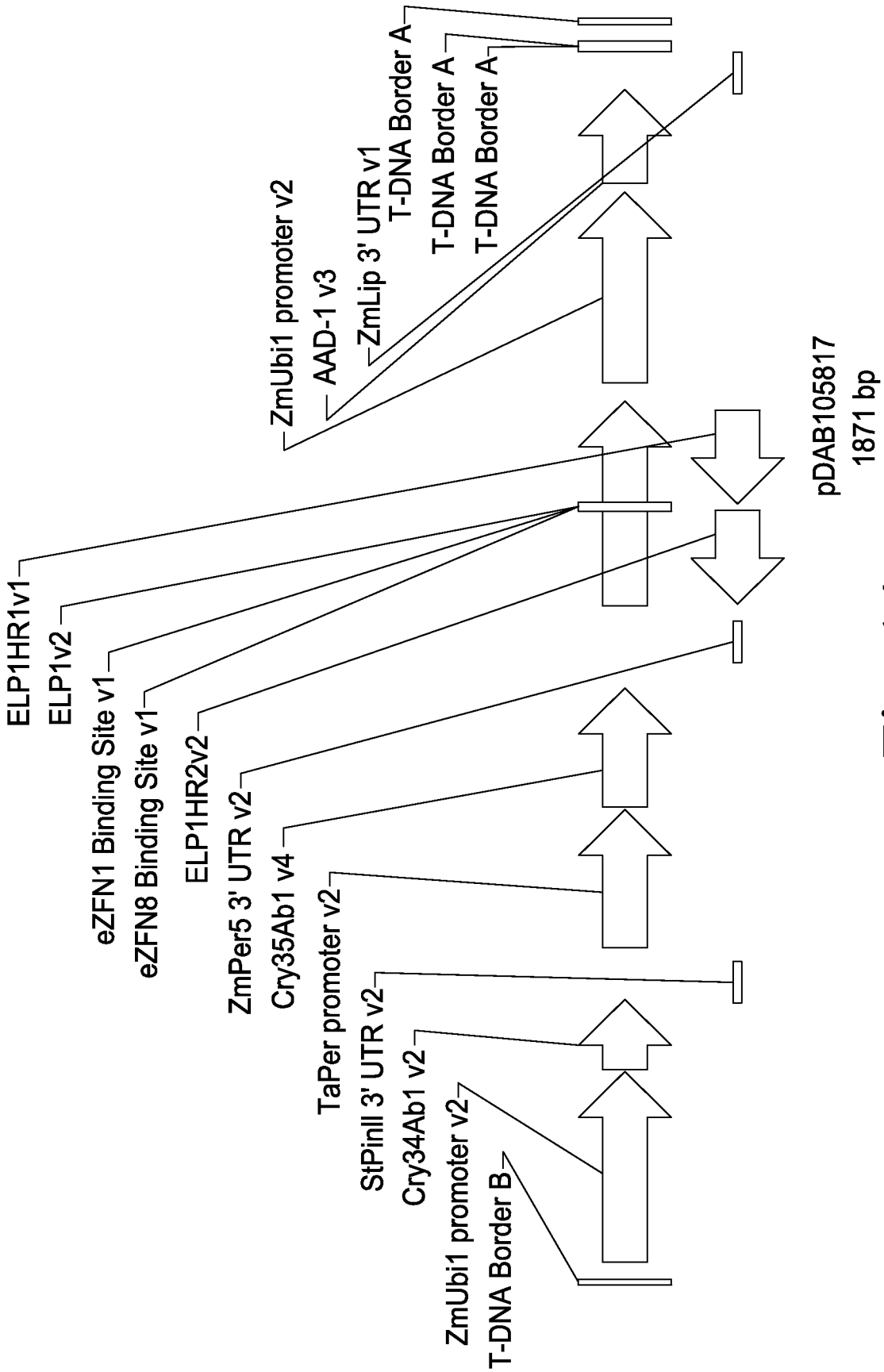

ELP1HR1v1
ELP1v2
eZFN1 Binding Site v1
eZFN8 Binding Site v1
ELP1HR2v2
ZmPer5 3' UTR v2
Cry35Ab1 v4
TaPer promoter v2
StPinII 3' UTR v2
Cry34Ab1 v2
ZmUbi1 promoter v2
T-DNA Border B
ZmUbi1 promoter v2
AAD-1 v3
ZmLip 3' UTR v1
T-DNA Border A
T-DNA Border A
T-DNA Border A
pDAB105817
1871 bp

Fig. 14

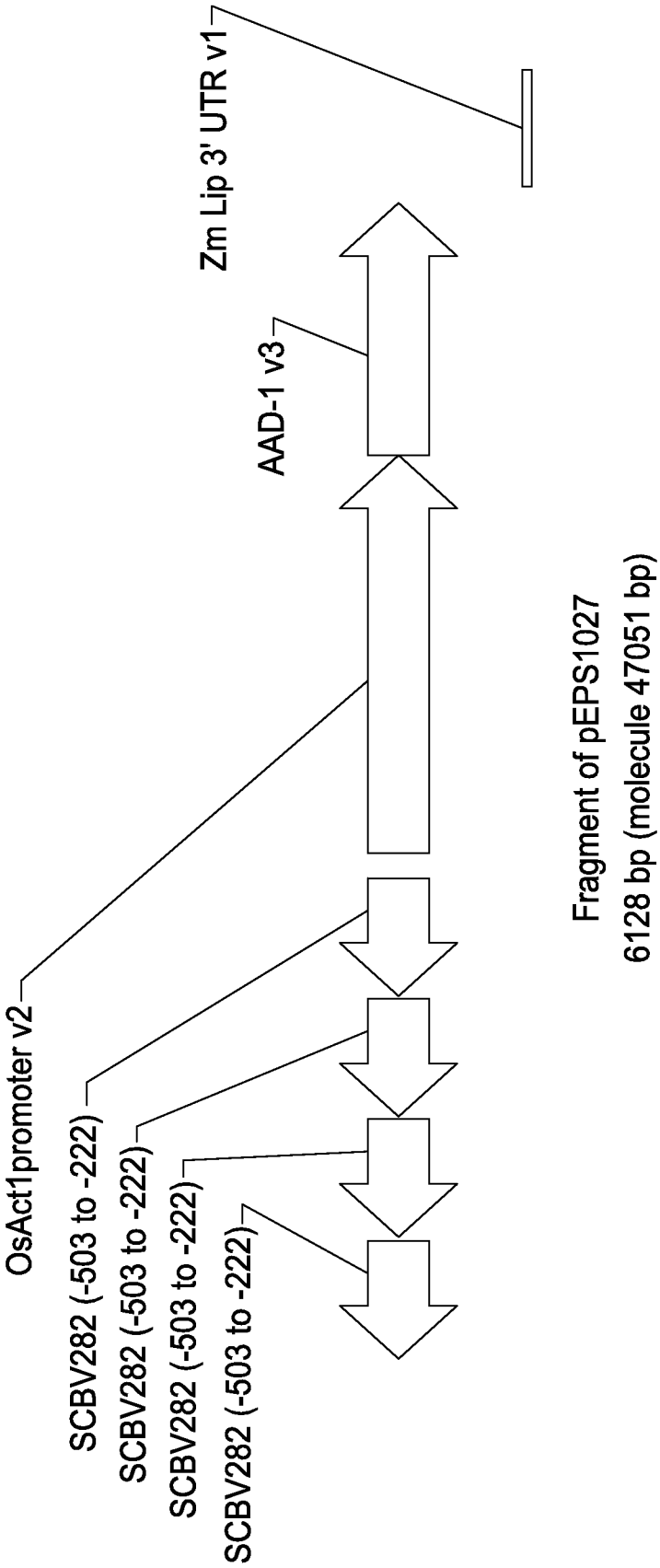

Zm Lip 3' UTR v1
AAD-1 v3
OsAct1promoter v2
SCBV282 (-503 to -222)
SCBV282 (-503 to -222)
SCBV282 (-503 to -222)
SCBV282 (-503 to -222)
Fragment of pEPS1027
6128 bp (molecule 47051 bp)

Fig. 14B

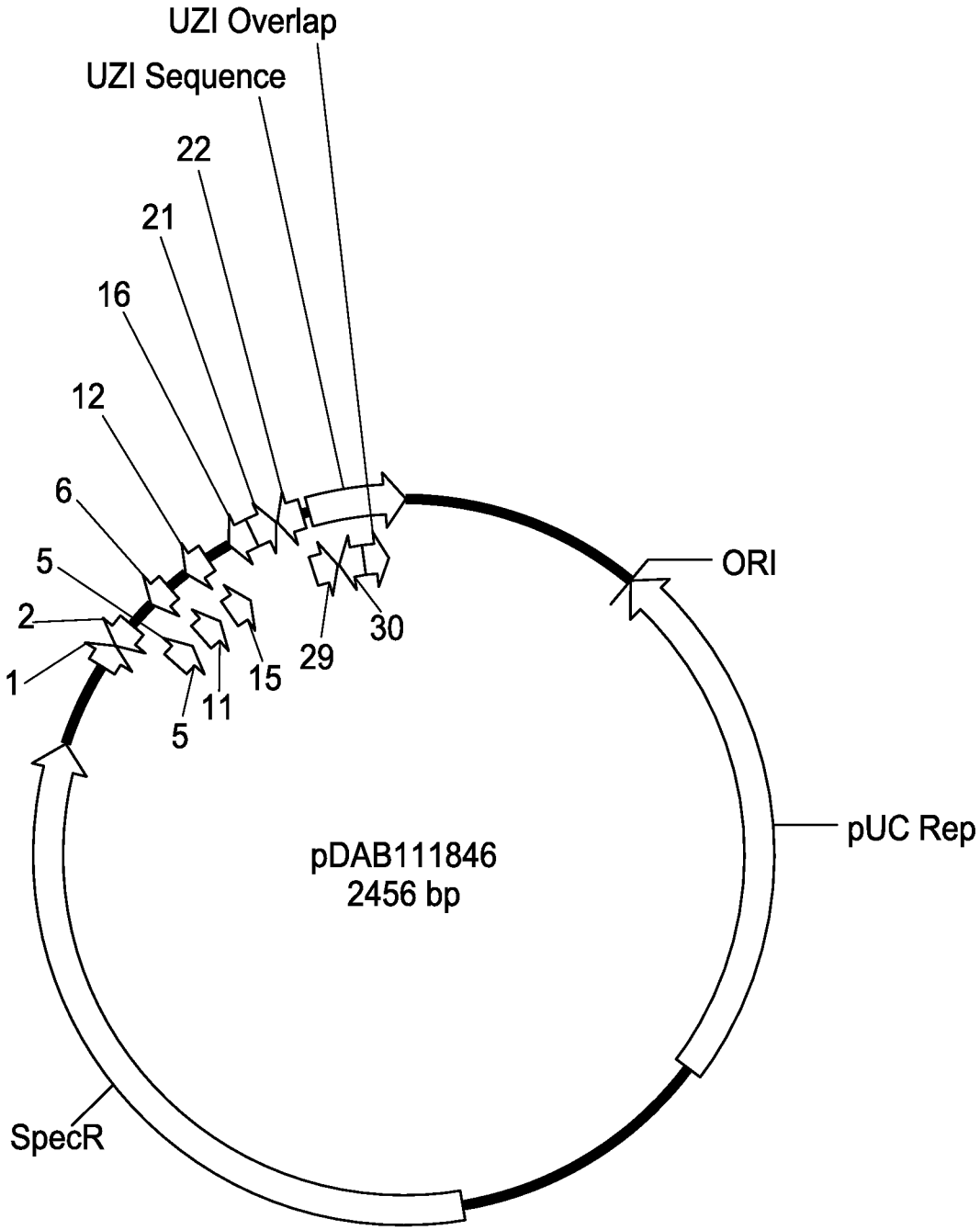

UZI Overlap
UZI Sequence
22
21
16
12
6
5
2
1
5
11
15
29
30
ORI
pUC Rep
pDAB111846
2456 bp
SpecR

Fig. 15

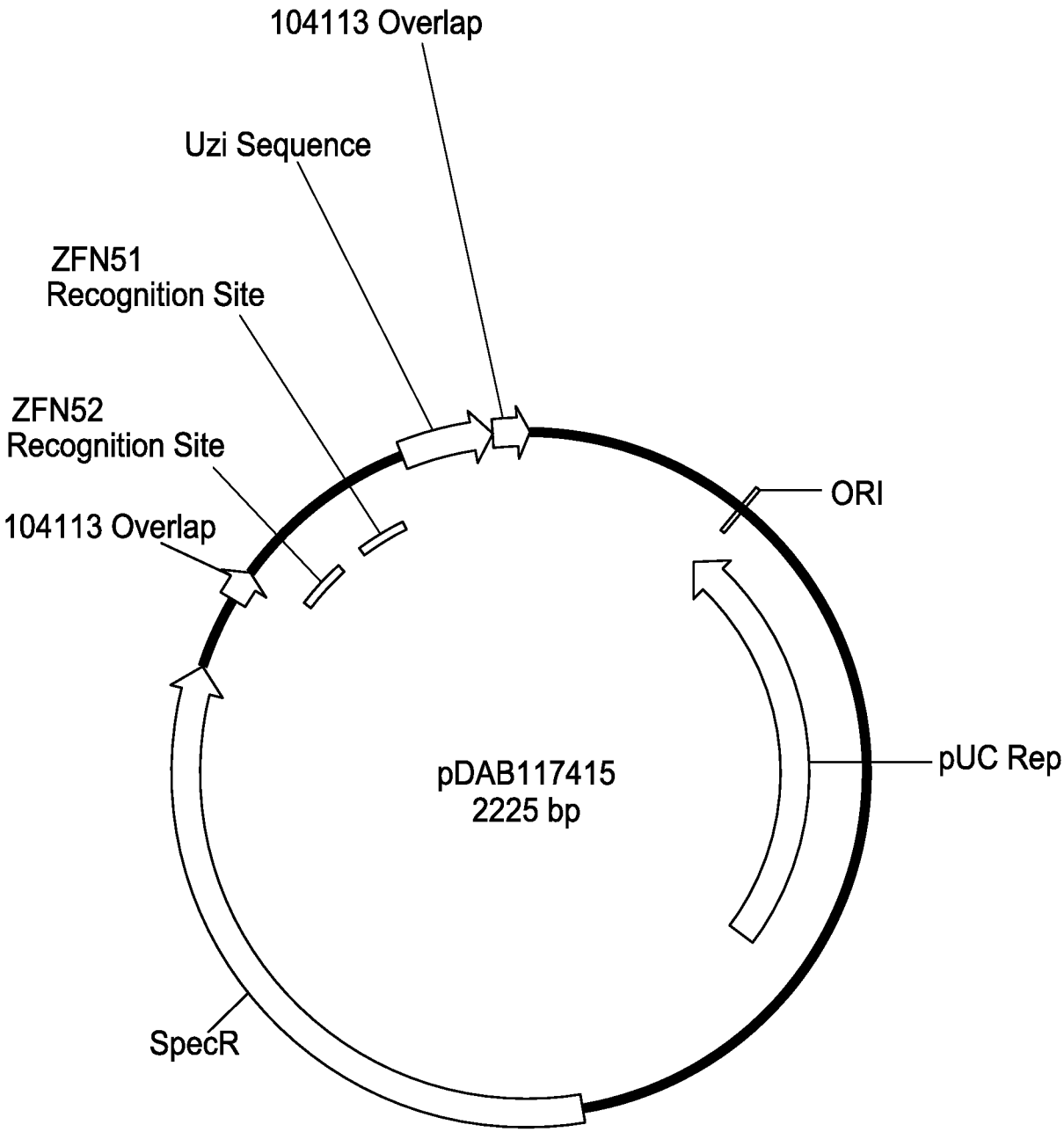

104113 Overlap
Uzi Sequence
ZFN51
Recognition Site
ZFN52
Recognition Site
104113 Overlap
ORI
pUC Rep
pDAB117415
2225 bp
SpecR

Fig. 16

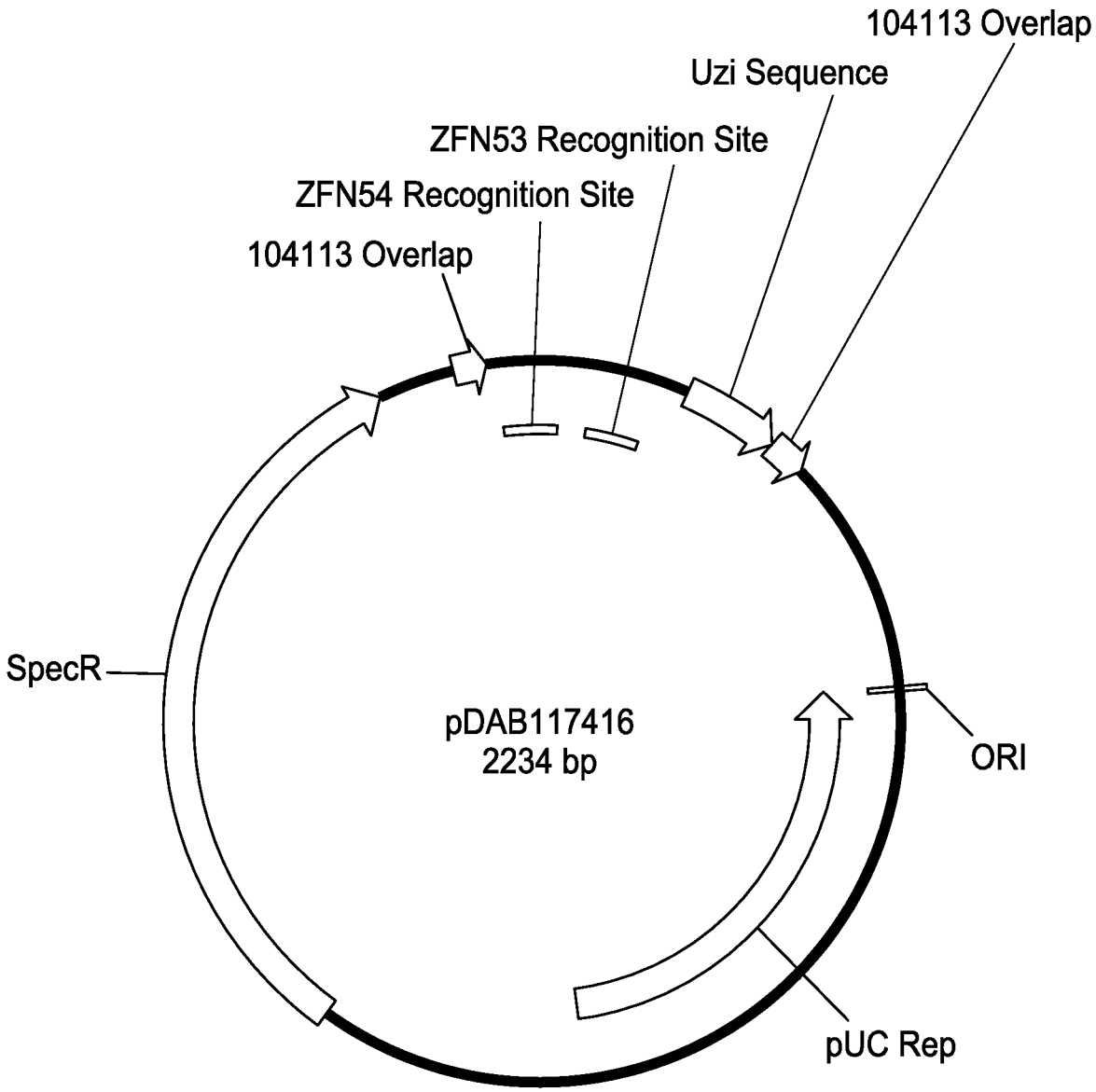

104113 Overlap
Uzi Sequence
ZFN53 Recognition Site
ZFN54 Recognition Site
104113 Overlap
SpecR
pDAB117416
2234 bp
ORI
pUC Rep

Fig. 17

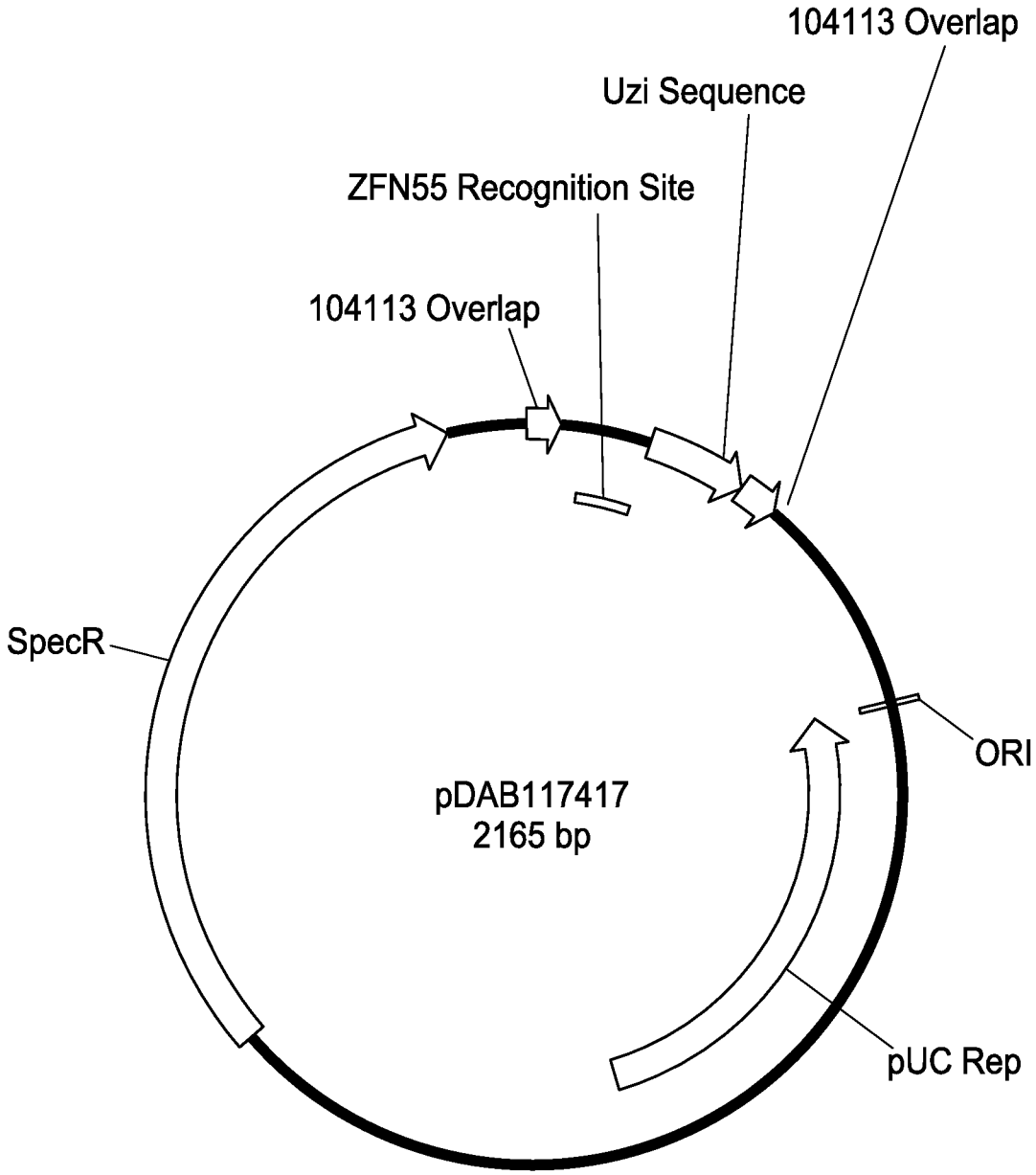

104113 Overlap
Uzi Sequence
ZFN55 Recognition Site
104113 Overlap
SpecR
ORI
pDAB117417
2165 bp
pUC Rep

Fig. 18

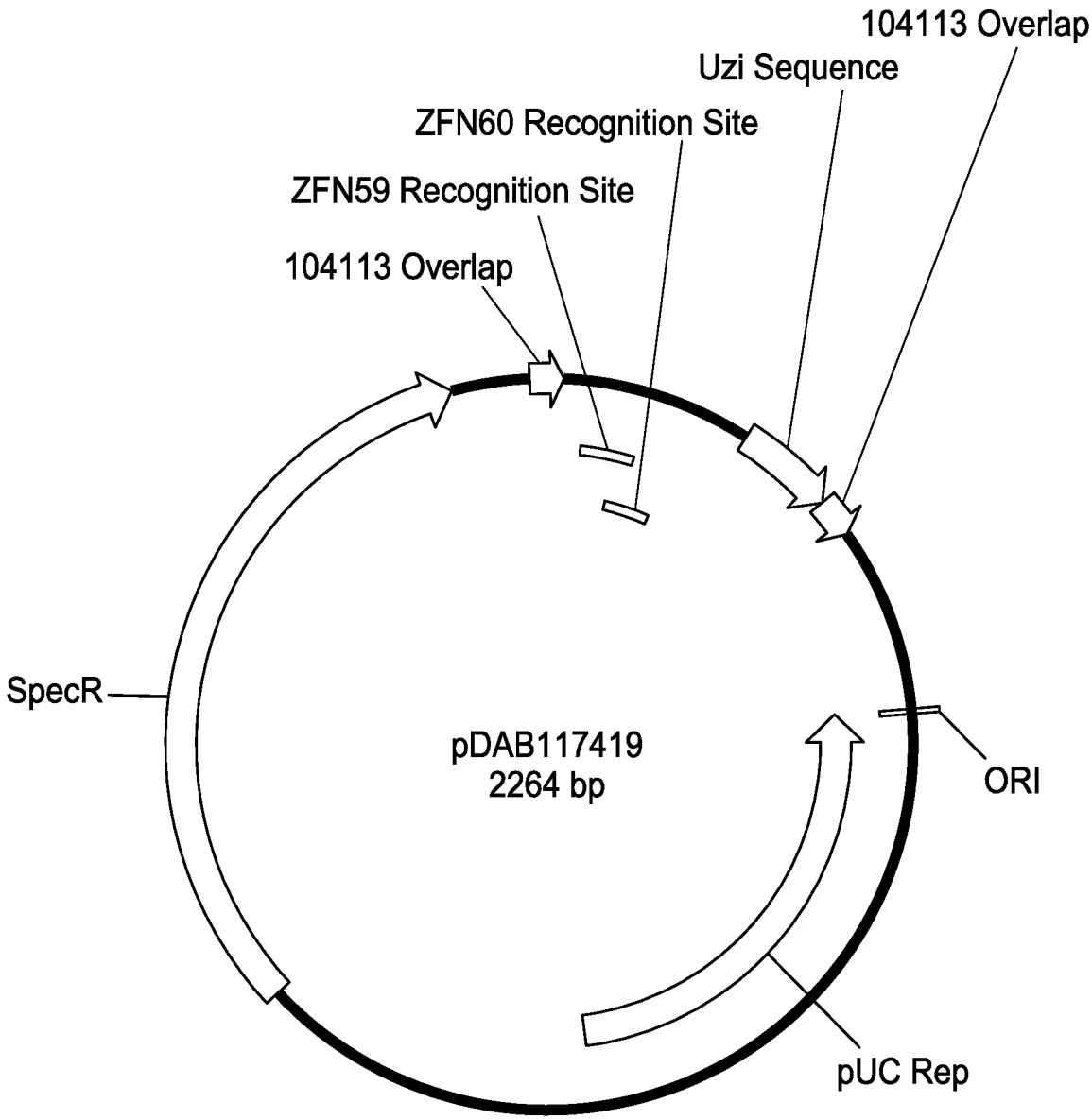

104113 Overlap
Uzi Sequence
ZFN60 Recognition Site
ZFN59 Recognition Site
104113 Overlap
SpecR
pDAB117419
2264 bp
ORI
pUC Rep

Fig. 19

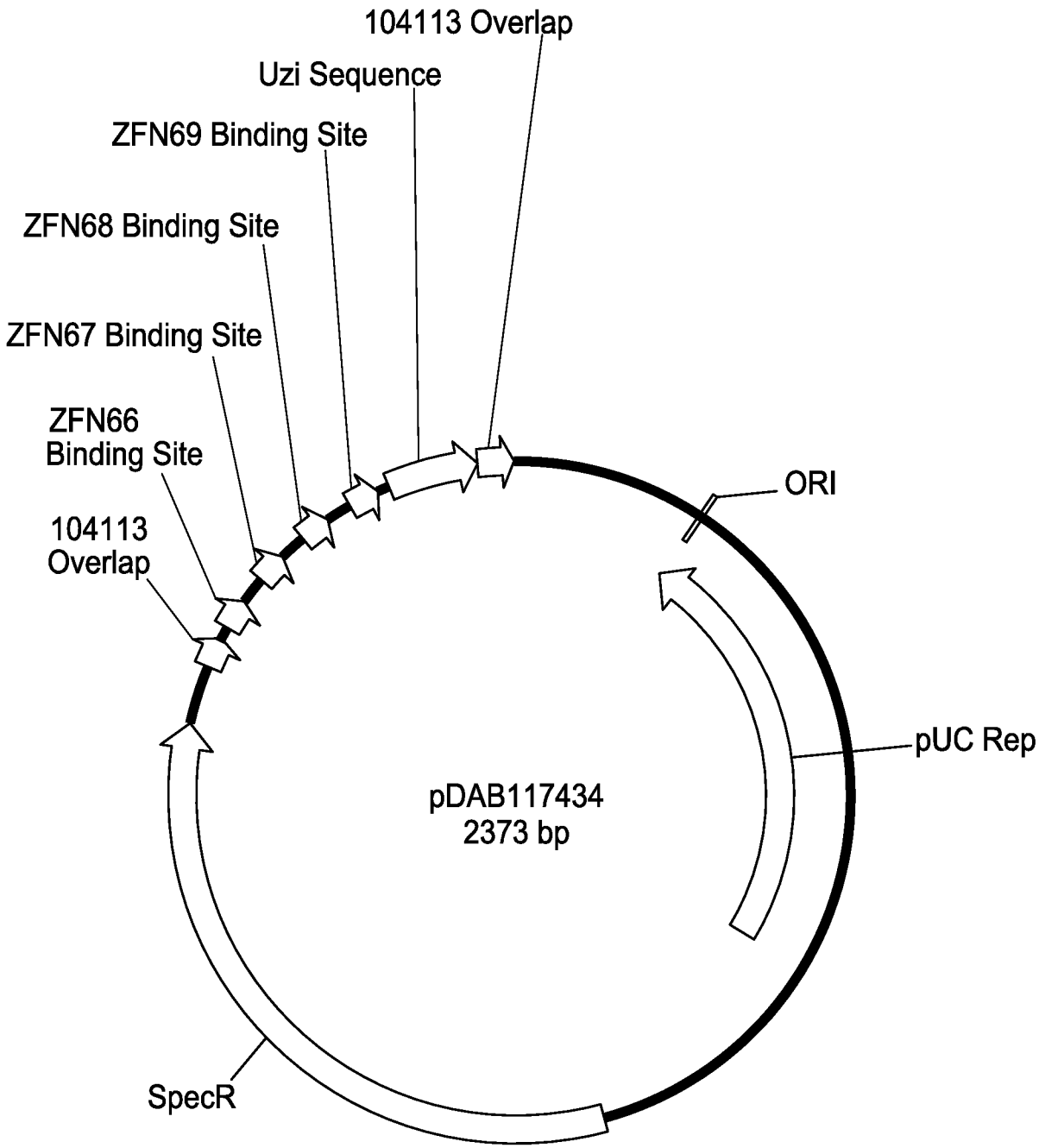

104113 Overlap
Uzi Sequence
ZFN69 Binding Site
ZFN68 Binding Site
ZFN67 Binding Site
ZFN66
Binding Site
104113
Overlap
ORI
pUC Rep
pDAB117434
2373 bp
SpecR

Fig. 20

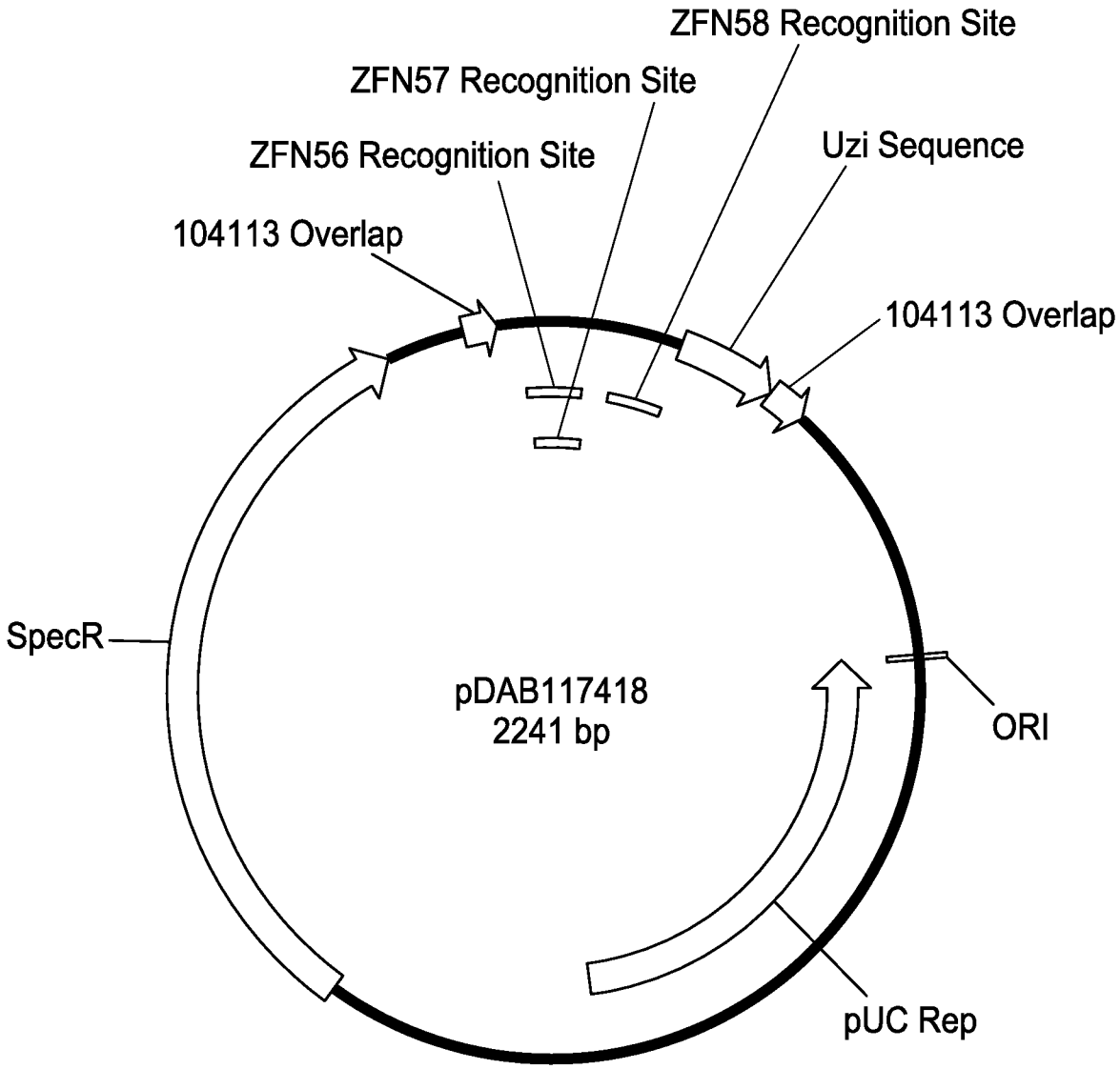

ZFN58 Recognition Site
ZFN57 Recognition Site
ZFN56 Recognition Site
Uzi Sequence
104113 Overlap
104113 Overlap
SpecR
pDAB117418
2241 bp
ORI
pUC Rep

Fig. 21

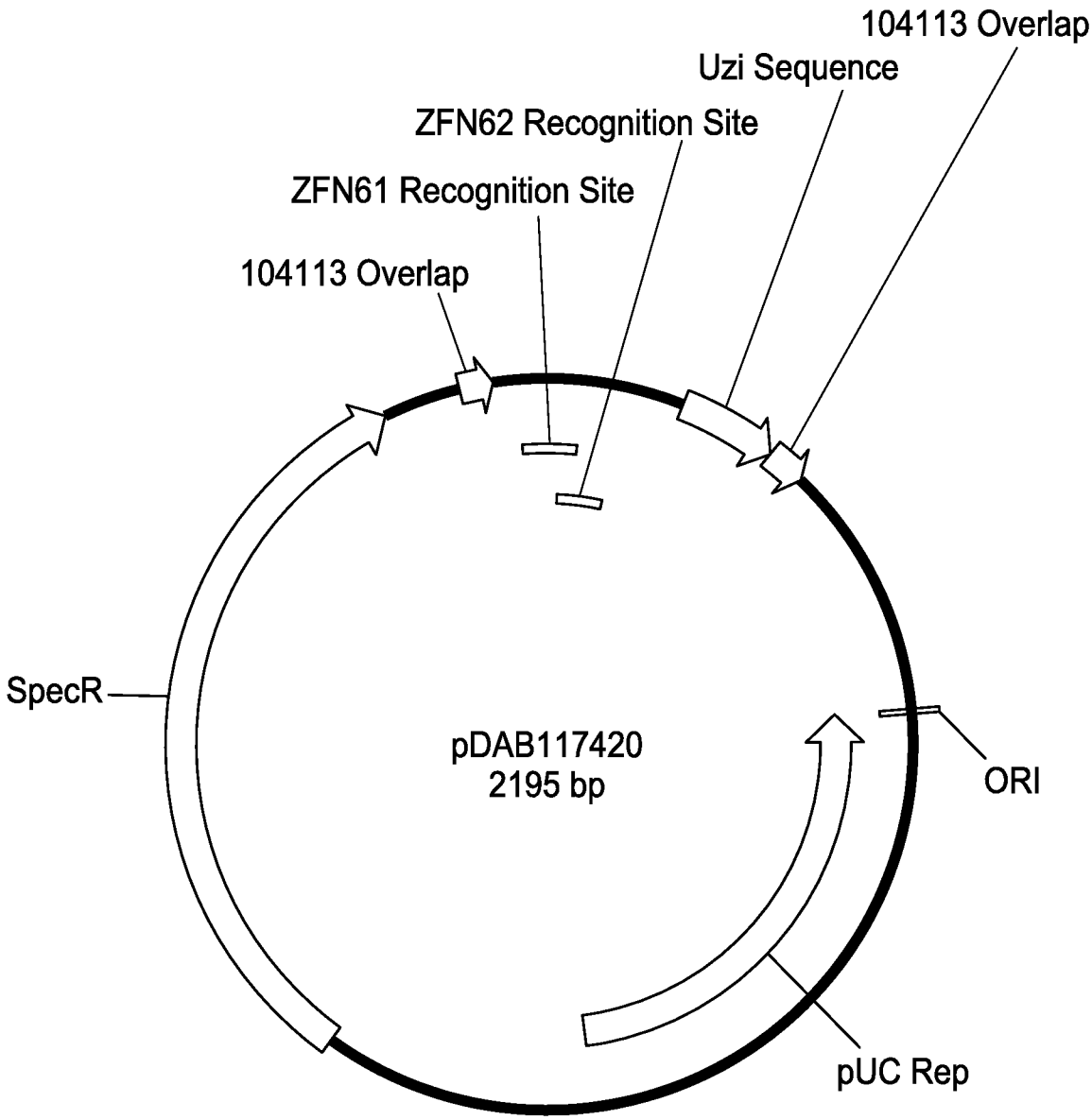

104113 Overlap
Uzi Sequence
ZFN62 Recognition Site
ZFN61 Recognition Site
104113 Overlap
SpecR
pDAB117420
2195 bp
ORI
pUC Rep

Fig. 22

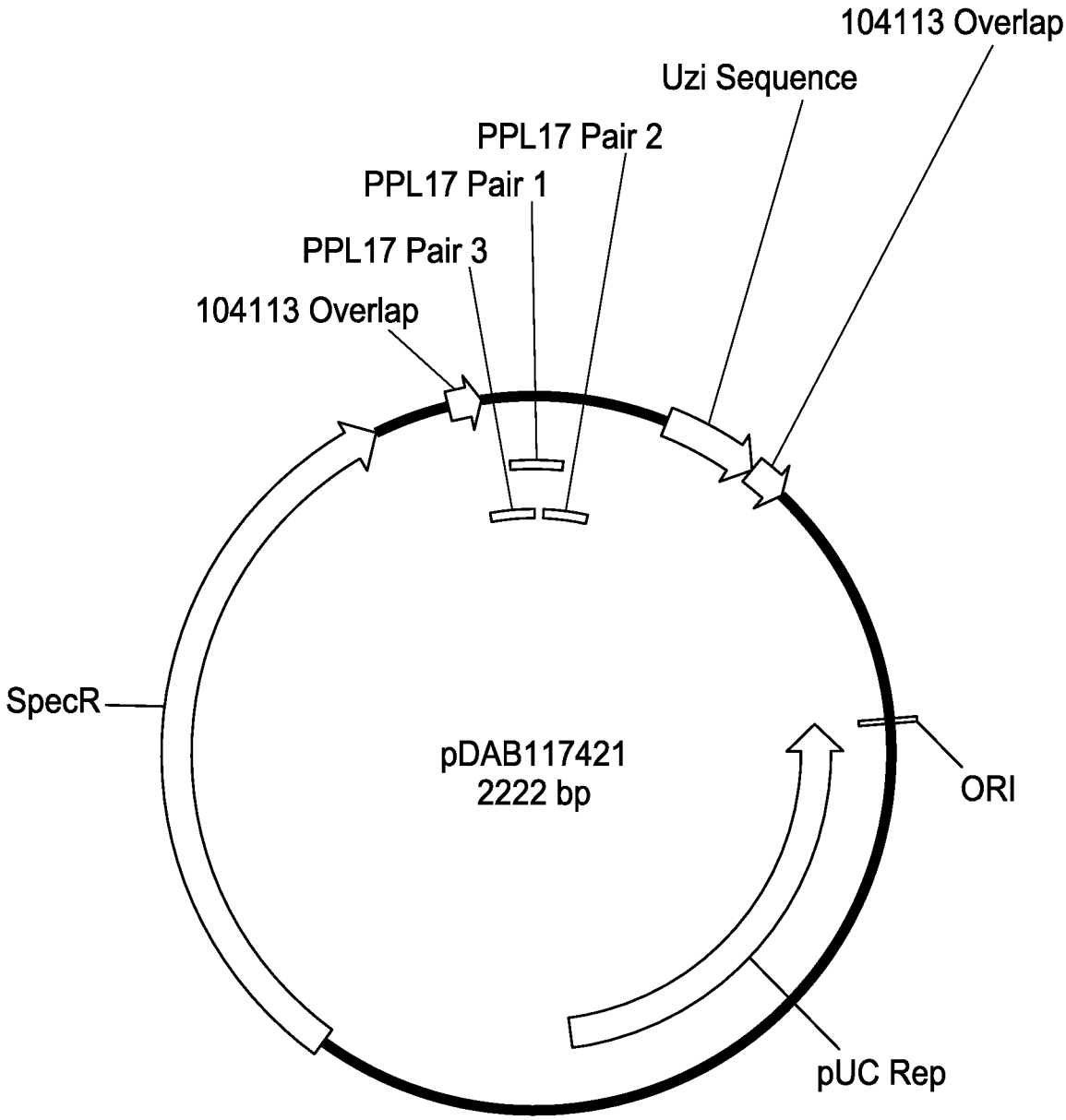

104113 Overlap
Uzi Sequence
PPL17 Pair 2
PPL17 Pair 1
PPL17 Pair 3
104113 Overlap
SpecR
pDAB117421
2222 bp
ORI
pUC Rep

Fig. 23

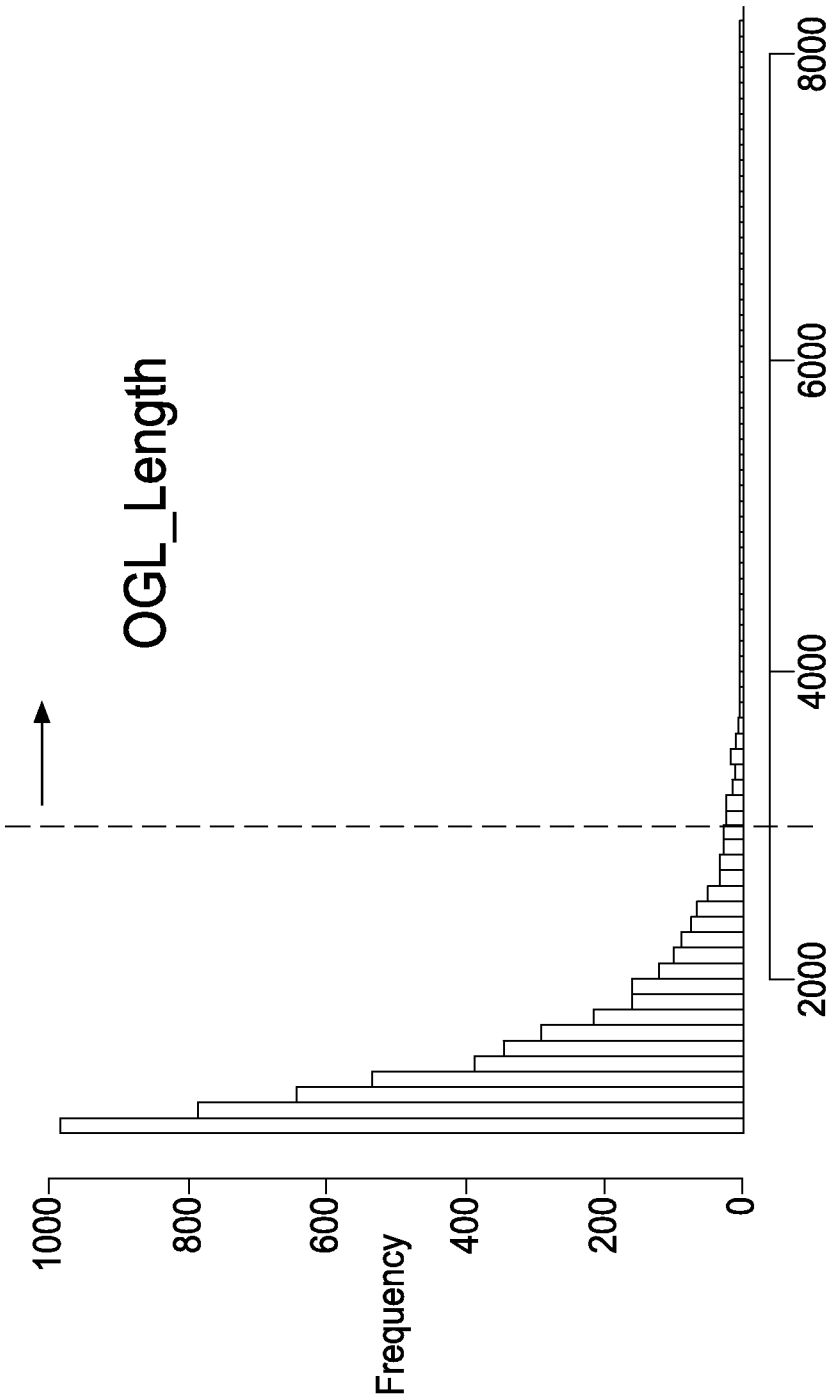

OGL_Length
Frequency
1000
800
600
400
200
0
2000
4000
6000
8000
OGL Length

Fig. 24A

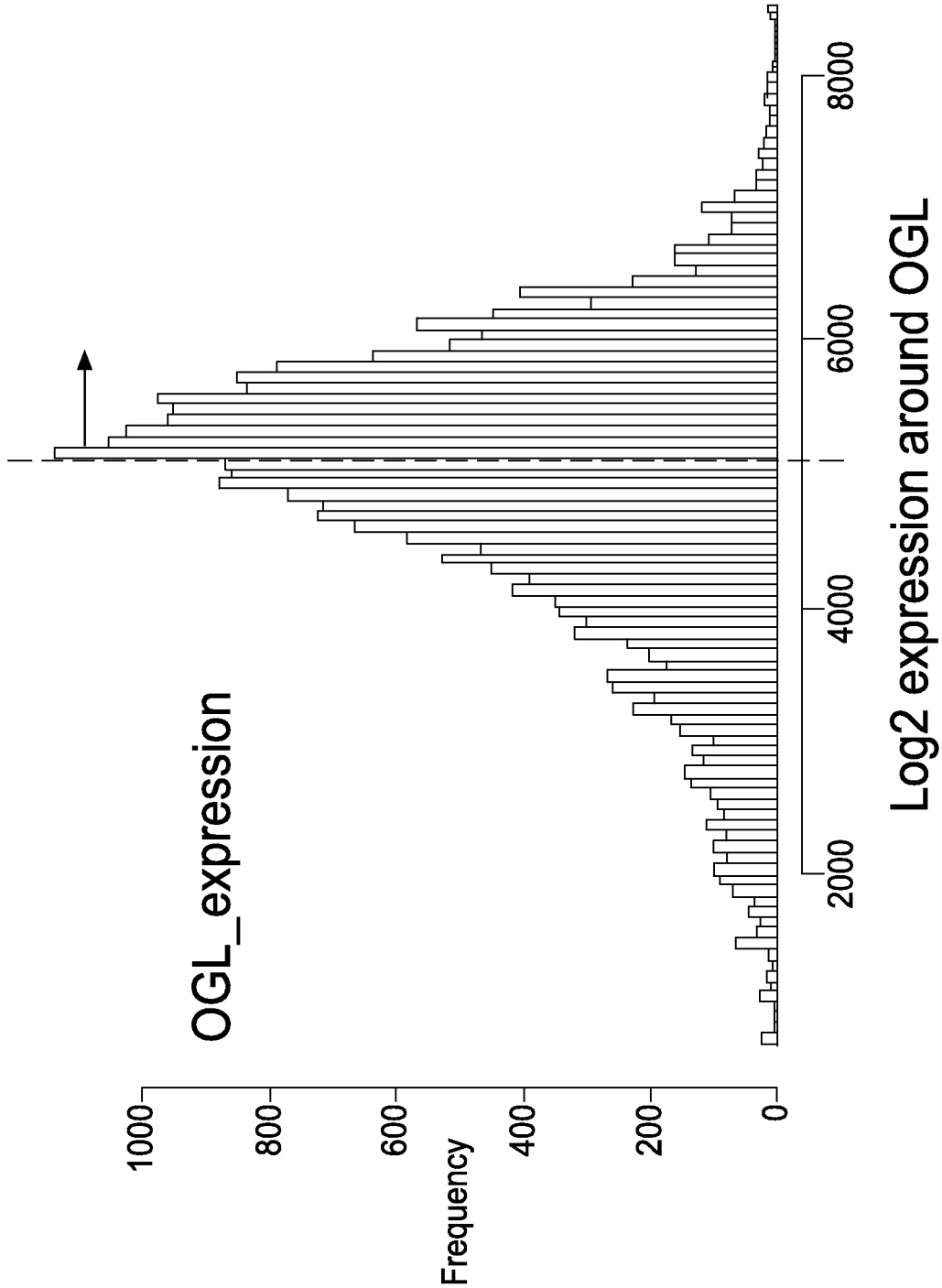

OGL_expression
Frequency
1000
800
600
400
200
0
2000
4000
6000
8000
Log2 expression around OGL

Fig. 24B

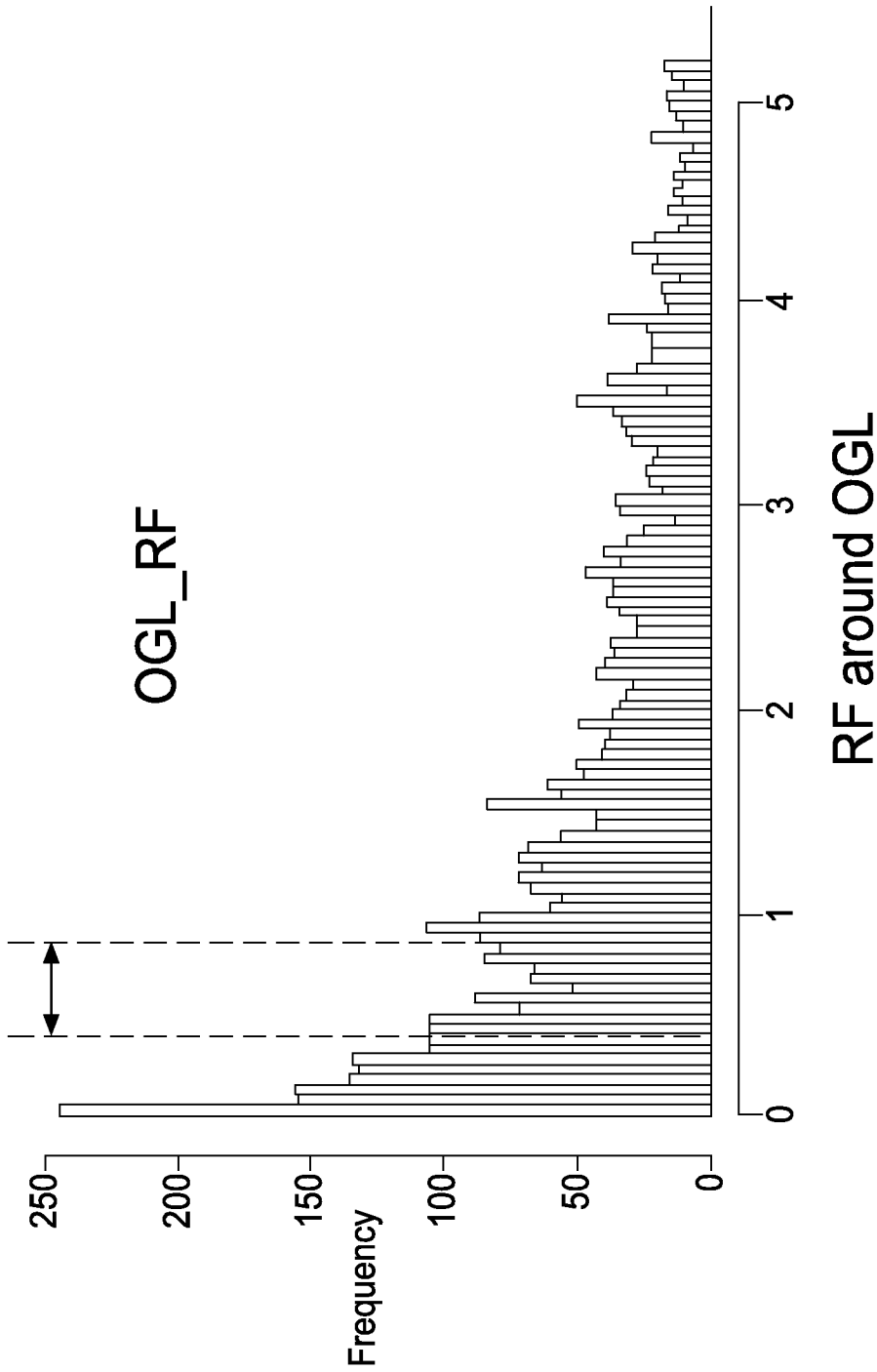


Fig. 24C

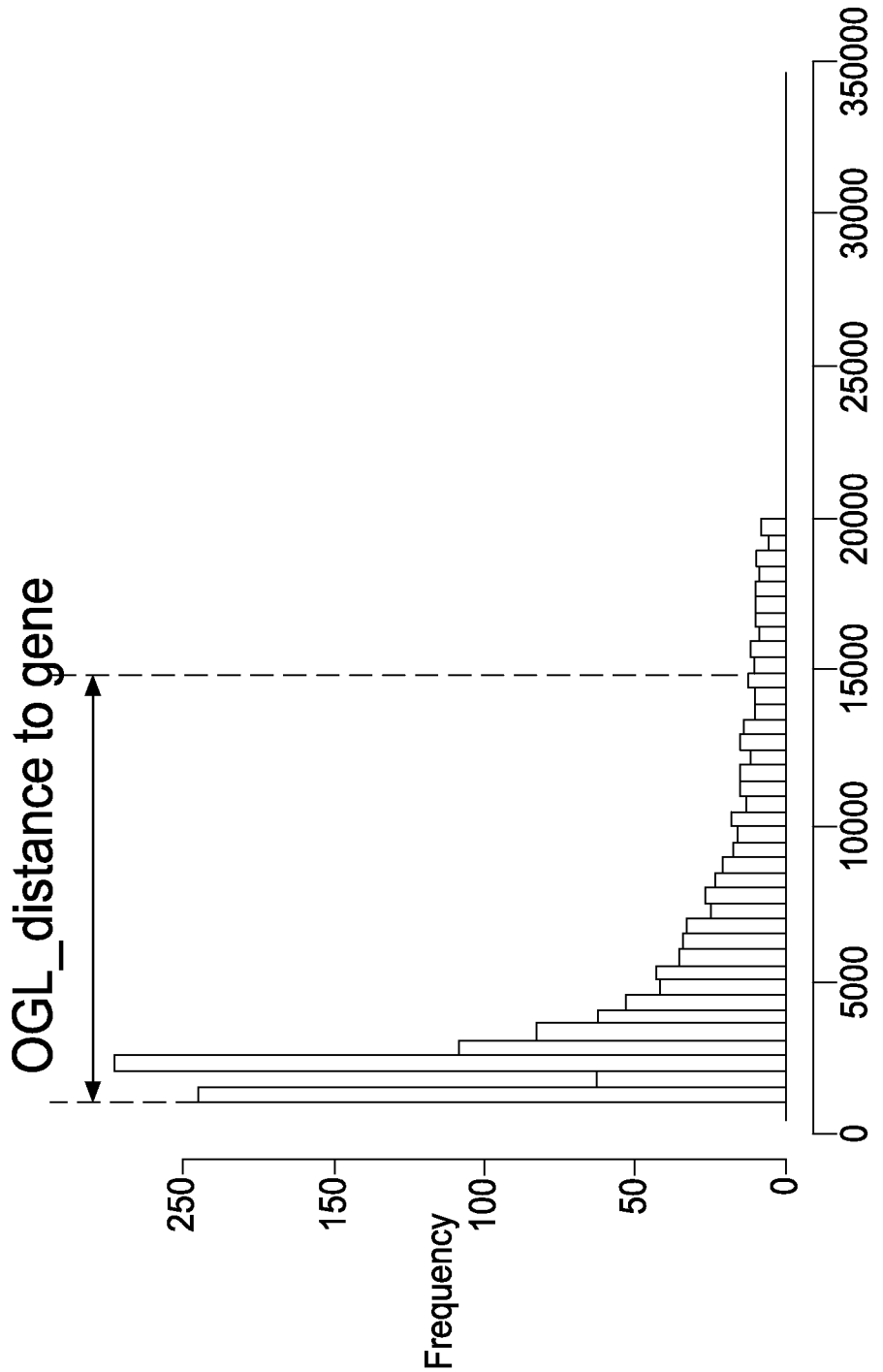

OGL_distance to gene
Frequency
250
150
100
50
0
0
5000
10000
15000
20000
25000
30000
350000
Distance to Gene

Fig. 25A

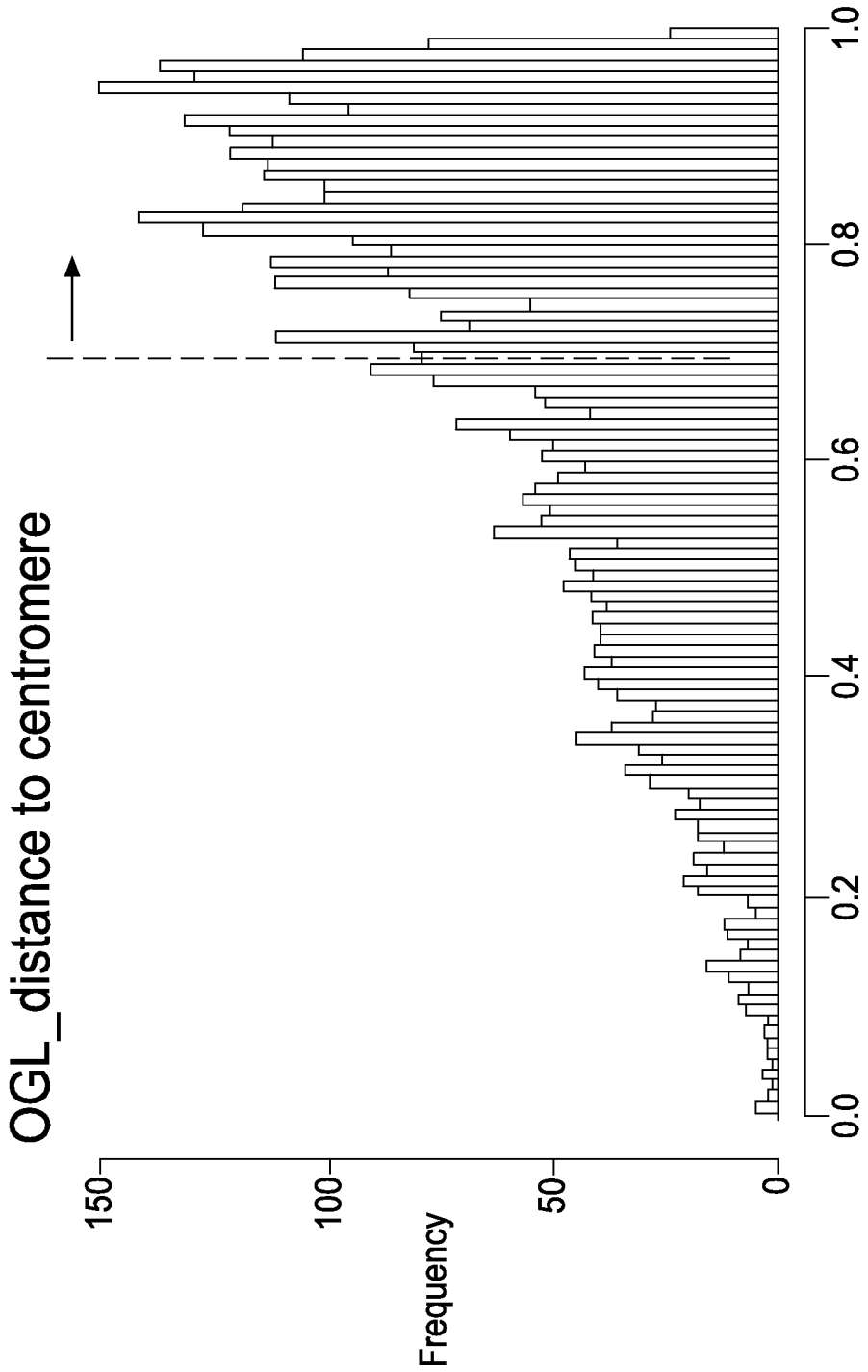

OGL_distance to centromere
150
100
50
0
Frequency
0.0
0.2
0.4
0.6
0.8
1.0
Distance to Centromere

Fig. 25B

SEQUENCE LISTING

<110> DOW AGROSCIENCES LLC

<120> OPTIMAL MAIZE LOCI

<130> 14764-232316

<150> 61/899,598
<151> 2013-10-04

<160> 6694

<170> PatentIn version 3.5

<210> 1
<211> 1015
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1015)
<223> optimal_loci_59517_G1, chr2:43352132..43353146, Cluster 1

<400> 1
actaagggtt caaacaggaa attaataaaa aaatacgact ctgctgggga tcgaacccag 60

aatctctggt tccgtagacc agcgccttat ccattgggcc acagagtctt tgatgtaaac 120

gtcttgccta aaaacatact aaggcttaat aaaaatgtta ctgtaagaac tgagccctct 180

taggcacgtg ttggtcatca gggtcctcgc cggcccgtca acggtagtat tggccgtcgg 240

ctgcacgaac cgtctccata gtaccagtgg cctcgagcgg catccccaga tagttggtct 300

ccggtagtaa cgccaccacg aaggcggtct cgcgctcagt cgatctcatc agccttcctt 360

ctcgctagat cgtcgttcgg atcgaagaac gcagcggata accaagacct tttgcatcct 420

tcaccgcggt gactcgatcg tcagctacgc aatcgtctct agctatttgt atactagtat 480

gcatgtcttg tctttttgtt tgttggttca gttattcgtc gagtcgctac aaataaaacg 540

acttagctat gcaaatggta gacaacgggt tgaggaacca ggatgcatga gcagatagta 600

gctaggaggg agaccctgtt gccagacaat ggggtgtcga gaaagaagat tgccctgggc 660

tagctggccg ggccacggct tccgatcctg ccatcatata tattcatatc ggtgattcga 720

ttcgatggcc gatcttcgca gctccgatcc gttgcctttg aggacccagg ttacagtggg 780

cagcacatac tgcaagagtg ttggcatgtt cacgtcgacc tggtgtttcc atgcgctggc 840

gtgcgccgtg tcgggcgggt tcagctgggc gtggcgtggg gggcgcgcgc gcgctgttct 900

gggcggtgcg gtgccgggcg agagggcatc cggtccgtgg ggcgcggcgc tcggctttgc 960

gcagatgcag agcttcctgc tgacgctgcg ctgcgccagc tcaagcaccc catgc 1015

<210> 2
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1052)
<223> optimal_loci_106888_G1, chr3:89417633..89418684, Cluster 1

<400> 2
caaaagtccg atttagctca aaattcgtgg agatcttaga aacatatttg gctaggtgtg 60

tgtaaaattt tatttaaatc agagttcttt tggttcaatt tcgcatccga gaatagaatt 120

tagtgttgct gaaatcagta cttgttcgct acacggtttt agactgattt agatttttt 180

ttttgtgttc gatttgtgat ccgttcattt tgctagtttc gtgtgagtat tatgaacttt 240

ttgaaatcat gagatcgcta atttgatgat atgattttag tttgaacgct tttttgatct 300

caattaaagt gaagtgctca atttcagttt ttagcagcaa aatttgatta gctctcattt 360

aaccctctct gatcgcctca ccggttaggc tctacttcac atttatatct aatattctaa 420

ctaactagca aagaacagac gcatggtaac acgcaagtgc acatgacaaa catgttacaa 480

caaaaaggtt accatctcac gcaattgtcg gtatagtcgg atagctactc cacggtgaat 540

atagatgccg tcctagagca gaacagatgc atgtgaaatg aatacaccag cacatcgtcc 600

acaagtacat gatgggcaca tgattgtaga agaaaatgtc atgaagaatg gcagctgtag 660

gatccggata ggccagctag gaatctatcg taatgccgtt tcgtcaaatc caagagctgg 720

actggactgg actggacaag atcaggccgt ggtccatcgg tcgcacatga caagaggatc 780

gagctagcta gatagggttg ttgcacgata gtcttgtgaa gatcagttgc cgtatgcggg 840

gacgggacgc gtcaaagtct gccatgggtg ttccttcccg ccaacaacct ttccaattcc 900

ggctccaagc taggacaaga agtcaattct atgaacgtgt tacattgcat ctgttgtaac 960

tctcaaagga gatttgatca gcattgtcat ccaccacatc gtgattaaac cgcaaccaca 1020

caagactcat cttgacagga acaatacata ct 1052

<210> 3
<211> 1281
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1281)
<223> optimal_loci_10883_G1, chr1:58456639..58457919, Cluster 1

<400> 3
tagtctatat actcaaccaa aaccgaccat ctccttaata accgctgatc atttttaac 60

accatagacg tatatcaacc atgcatgtac ttgcattcag aaataccacc agtacgtgtc 120

ggtgtctcca atttccaagt gtttctacag gaataggcga atagccacat gtttaggcat 180

gagtaaaagc tagccgtgaa aaaaaaatgt ggaatcctaa acaccagaga agcgacgcag 240

tatataccca cgcaataaca atatcatcag tcagcatcgc tttaaattct ctggaactcg 300

tacacagagc gaggcgtaag cagcactctt ctttttttt tgttggtagt gtccaacctg 360

ctttaaatcg actgggaaat tcagccaaac cattcaccaa aaggctccaa aaaaatcttg 420

tcttaaaccg caggggtccc caaaaatgac gcaaaaattc acagtcaccc attgtgaacg 480

cctcatcggc ctgacaacta cgttcatatc atggactgta ctgcgctctc agcatctcac 540

atgtagctcc gaaagcaagg aaacaatgga gcacactatg cgcggatcac gcaattattt 600

gccgaacagt aaagggcacg aacaagtcca gagtttgcga ggcggccgtg gctcgcgact 660

ggactccacg agcttatttg aggcgacggt gggcgactgt gatgtttttt ttttagcctg 720

gagaaatttg aaaccacttg atttagttcg tacagaaaag ggatttttc tgatgggtac 780

atgcatgtct gtatagctga tactttggta ggggccaaat gggttgagta ttttacaaat 840

aatcattgtg gccattatat tatgtcgtcc ttgcgcttgc gcactaatct ttcttcctct 900

tgttgttgtc gtttttgatt gatggagtgg agattatcag tttggtcagc tgtatattga 960

ggccagcttt gagtgctctg tggatgtgcc agggggggagg agataaccct agctctttat 1020

gaaaagaaga agaagaagaa aaatcatgaa aggtgaacgt ggttcgaggt gtctctagag 1080

taagattttg ctttatagtg ggaaatcacg gattaaatgg agtagtttcg tctggcttga 1140

aatttactac aaaaatggag cattctggga tttatttttt gataaaaaca aagacacgat 1200

gcaaagtgtt tgcgcgtaat agaacgtgtg gttttaagag ccatggtgct gctaaaactg 1260

ttggtttttt tgtttcgaga t 1281

<210> 4
<211> 1125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1125)
<223> optimal_loci_109890_G1, chr3:110685301..110686425, Cluster 1

<400> 4
aacatgtatt gtaagcttgt tctcttttgt ttttaaaaaa tattatcatc ttgttcttaa 60

gagcacataa agagtgttat tgcatccttt aaactatggt atattgaaca tggtgttgta 120

cttgtgatcc gaagatccga cgagtataac ttattttatc catattatat tcaaagtctc 180

tctgaacaac ccattgctaa aacagattta catcctactg gagacaatgc tggctgagaa 240

attgaggctg gcacaggaaa actcaacaaa tgtttgtgaa taaagcattg gttgagaacg 300

acacggaaga tagtgaacta gaagacgaca acaacctcat ctaagctaaa aatgtgttgc 360

ccgtggttga agaaaatcta gaaggtgaac aacacactac cctctgtgtc ctctctagac 420

atgaaactct aatggtgagc ctaggcattg cacaaatcca acaattttca tagtgcctca 480

aagatagatg catcatcatc tgacttgatg tgtgtgactt taccacctgt gtgtttcgtt 540

gtcagcaaac atttttcaaa gaaccttcta aagaggtgta tcctatttat gtggtgaaat 600

aaatccacac accttacctg ccatatgtca ttgttgagct gatcagcaat tggagtcatg 660

tgataagctt aattgacctt ctatttgtca tgatcttcac aatgaacaag gtaatcagct 720

cggctacatt atatttgcag catggtctag ccaaaggctt gattaccata tgccatcatt 780

ctgaaacaaa agaaaatgtt gcattaaacc atgtttattc ctttcagtga gaagcctttg 840

catgttgcat gagatcaagc aaaccattca gtttgttggt gaggtgtgaa tcactagcca 900

tgttggccac catgcagatg gagcaaaaca tgcaggtgga gcggatggat acatgatcga 960

tcatgagttg gtgcagacaa caggccagag gacatactac acttaatcca ctccatggtt 1020

ccatgatagg caacagaata ttcaagacaa tagaaatata ttatatacaa gcaacaaaca 1080

acttttgggt tttattattc tatgcctcct attttcagtc caaaa 1125

<210> 5
<211> 1333
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1333)
<223> optimal_loci_11269_G1, chr1:60774088..60775420, Cluster 1

<400> 5
acaaatttgg tgggatgatc tcattcctcg tattagtatt aactaactaa ctatgatgaa 60

tgatgtggtg atgaatcaac tcattctatt ccacgaacca aataaaaaag caagagtcaa 120

ttctctatcg gccactgaca aaaattgaaa ttccatatat accattaaaa aacttgtgac 180

gcctaacata ccactaacaa aattttccca tgcccтttat gccattaccg ttagattttg 240

ggttgacggc aactcaccaa agcttgaaaa gaccatattg cccttggttc atgtggcgtt 300

agaatttttg atttccttct ataccattcc aagcgtttat ttagcattgt acatagagtt 360

attaaacgag acgatctagc agcagttggg tgctcacgta cggaggcgta aaccagcatg 420

cacgctatca tgacaaatca ccaacgtgac gtgcgtgcgt tctatcatgc acgacagcta 480

gatttttcta aataaccgag gaaagattat aaaataatac gtacaaaata cggagcgaga 540

aatgttaatt cattcatgga ccaatggaat attgcatgca gtgtagccta caggcaccga 600

ccgacgagag gagctcggct cgaagcggga cggcgacggc tcggcgacgt gcggcagtag 660

ctcggcgaac ggccaccaca cctcgaccat agatgcgtct tgctagctgc cgagacgaga 720

tggacgactc gattggtggt gggccgacca cgtgcatgcg tgcgctgctg ccgtcgtcgc 780

acctcgcatg cacgtcacct ttgccctaca tgcacctcgc gtacccgata gccgcagctg 840

gctgtgtgcg cggccgctgt gcgcccacgc cggcgcccca ctgctggtac ccgccaagca 900

cacacatgac acgacactgt cgtctccaag ctcgccgtac gtgccattgc cacgcccaag 960

cacacacgtg aaattccata acacgaatat gaatatccat gtttgttcac ctttcttctt 1020

gagaacacgt gttatcaaac catcaaaatt tagagcattt ttgggtttat tatatatatt 1080

atataaactc gcgcatagca gtgatcggat gccgtcaacc atacggggag atcaagtcca 1140

aaagaacttt ttaaaaagat ttaatactta gccaatacga ctgagtggca tggaaggaac 1200

ttacgcaaat tttcaatgtg aactaagcaa agggcgatgt ggtctttttc atccttcagt 1260

cagaaactgt caccttcaaa tttgactgca gtggcacaaa agtccccgaa aattttcacc 1320

gatgccatgt tag 1333

<210> 6
<211> 1022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1022)
<223> optimal_loci_113659_G1, chr3:133910055..133911076, Cluster 1

<400> 6
taaaaaaatc caagataaag acatgcattt tcagtagata gaagatatag ttgattagtg 60

cattgaatac tttgactaaa gacgcatatt gtagatatat ccactatatc acaatgtgtc 120

ctagtggtgt cttgtgttta gagtaccgtg agttcaggat tgtacaggcc ctataaacat 180

cttatatggg tgcttctacc ccatgctctt acagtcatag aatcagcttt gtcacattgt 240

gcacctgaat ctataaagaa catgttcctt tggacaaaaa ccagctccca acaaaaagga 300

aaaacccttc tctcatctca aactcctgga tagaagagac gacaacacat cccaacgatc 360

ggttgggatt aggcctaggc atctggttct tcagttcagt ttggtttctt agttttatag 420

aaaattcgat tactaggaga ggcagaatcg aggatttcag tttcggttct atcttaacca 480

actaaggttt agcaaaaata ggaaagcaac acaattttag atttagcaga agtgcataga 540

tgactagatg gaggattggg aatggggatg gattgttttt taggagttgt gtgcttatat 600

acttagggtt tgggaaggct atattgagct aagcctaaag ttttattggt ctattgggct 660

tctattatat tttggttttc tcgatcaatt caattttctc aagtctagaa ccgaaattac 720

tttggttatt tcggttttct aaaacatgga accgaattta ctagcgatta attcagtttc 780

ggttaattcg gttttggttt tggttgattc agttcggttc ttcatttttg gtttattttg 840

cctaggccta gttaagatga ggaagatatt agataacttt ttctttatgg accctattta 900

tggatccatc gttagttcta tttataataa cagttttaac gaataacatc gactcattgt 960

atagaacccc agttgaaccc ataagttgtg gattatccaa cagttgcaat accaaccatc 1020

ac 1022

<210> 7
<211> 1009
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1009)
<223> optimal_loci_11590_G1, chr1:63203504..63204512, Cluster 1

<400> 7

tttattttcc tgtctaccaa atcagcccta agagattaac gacgatctca tatcatcaga 60

gatataaagg tatgttttta tttagtccag caacccccga ccaacatgct aattgtagct 120

cctgtggcag ctagctagcc acaacagatt ttaggcttaa cgtaaagatg catctccccc 180

tctgatgagt cgacgtcgaa tctcggaaca aaaagggaga tgggagagca agctagccat 240

gcatgcaacg ccctcgccat catttgctgc tgcagtgcag tagtgctgcg atcattattt 300

acccagcaca ctccggcctg cagtgtgatg ttctttgttt tctgattaat taaacagcag 360

tcttgtcgtg cggccggcag ctgtcgtcgg ccagcaacgc tatatatgct gctattgcta 420

tgatatacta tattgcttgc gatggaagac acgggcggcg cggcggatga catgcatgat 480

gcgtgccctg actaatgaac tacctccaat ggacgatcca tgttaagcag cggccggcaa 540

ctaatcaatc aatcaatcga ccactggagg agctagcgca ccggccgacc ggttaacgta 600

gggttccccc ggccgccgtg tggtggtcgt ctcttgttta gagtggagcg tctatcatgc 660

agctctgagg atatgtttgg tgggatgtac aaggagggat agaagcatga atgagtcggt 720

aaatttagag gtccttatta aacttcaaaa aagatcctat tttatagaaa aatataatcg 780

aaattacatt ttaatagaat tcatgtattc tgaatttcaa aaggtttact agataacact 840

ttatattaaa tctatctgtt tttacgaaat tatattgtaa cagaatacat aaataacaaa 900

cgtattaata gatgtgtttg aagagcagca atctagctgc taactgagtt cagcttatat 960

ggtgtaatgt tagtttactc actgatgcat attgtttagg cttactatt 1009

<210> 8
<211> 1151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1151)
<223> optimal_loci_11664_G1, chr1:63638540..63639690, Cluster 1

<400> 8
tataaaaaaa atatgacgcg gcacgtccgt tgaaactgat gatttaatat agtagagata 60

gagatagaga ctattattat cacatatatt atattatccg aggcgcatcc cccttgcatt 120

ctcttgtgca agatatagga ggtaataagc agaggatgta agccttcgaa ctgccacagt 180

gccactcata tatacacgtc atggtaactt tggcacgcag ccaccagccc accaggcagg 240

cacttccccg gccaagtcac acacatccca atcggttttg gtcaaagact acacgccgga 300

gtggagcgtg gccattggcc agctcatgca cctccatccg atccctgacg ttttccatgc 360

taaaattacg tttcaccggc cacagacaca cacagacaca gagcaggcca ttggctcgat 420

cgctcgctag ctgtttatta gtagattatt tattgcgtcg ttgcgtatag aacgcaccct 480

gctagctgca ccttgattaa ttaattaatt agtgtatata taagtatggt tgttgtggaa 540

ctacctttc gttaatccta gaataagata ctgtctacgg caagcttagc tcctgcaacg 600

atccttctcg gtagtagtcg agagacctcc caactaacgg cctgctagag ctagctgcat 660

ccccatcgtc gtcgctggca actggcctca gctggtgact tgttaatgta tagttgaatc 720

aggaaatgcg cgcgtaagag aaaaccaaac caaacacgga tatggggcag agacatcact 780

agccacgcat gcactatagc tgatataagt aaaaaaaata tatctaataa tgtaaatgac 840

cacacacaga tcagatgatc atgcatatgc gctgaaccgt ccaagtcagc gacgacggct 900

caagcgtaca agccaaaggt agtaggtagt tgctgcaggc cggcttatag ggccttgagc 960

cagaagatta tactactgca agtgccatca tattttaggg caatatatat aggaggggga 1020

tgctaattaa ctggcattat atattggtat tcttcttctt ttttgtatag attgcttgag 1080

aataatataa cgtttttggt ttgaaacttt ccaaaccata cgataaataa ttacatttta 1140

agggcgaatt c 1151

<210> 9
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1018)
<223> optimal_loci_117229_G1, chr3:155966899..155967916, Cluster 1

<400> 9
aagcaagatt tggcctgctg ttgggctgaa aatcgactgt gggccggatc aaatgaagta 60

ctgggccgaa cacgaactgc tacggcatga aactctttaa tgttctctct ctctctctct 120

catttttct ccctatgact atgatggtcc aaacgcgaat gttgcggtac aaatacttcc 180

aagagaaaaa caaaacggaa tgtatatact caattgccac ggcaggattg ctttggccgg 240

ccgactgcca gtgcgccaga tgcttggtta gatgtggtcg agccgctcta ctcaaatgac 300

tgcaacaaga cactccggtg cgttactctt acattccatc atatagccat gcgtttagca 360

actgtctcag catggatgcc aacatctaac cagctggtgc atctttgatg cagccgtaca 420

ccaaatgcct taagttgggc tcctataact tgcattgggt tcccataagg acatggagac 480

attggtgaat taaggaaact aacctttttgg ttttggcagt aacttgtact ggacgtctgg 540

accttgagcc cttgactgaa taagccggta tacatgtcaa gagaggatag agtggaccag 600

accagccact gaaatgttac tatactatat catcaggagg catgatagag aagttgcact 660

gacattgtgc taggagtgca caagcatgat attcaattca actgtttgtc ttgttatgcc 720

ttggttggta gtattatgat cagaaagaga gagagagaga gagagagaga tgtggtgtgt 780

tgtgaatgtg aagctggggg catgaccaga ccagaggctc gagcatgaga ggagaggcag 840

cagctgtggt catgcatgtt atgatgccaa atgcctgatg cagtgtactg ctctctgctc 900

cctgctttgc atggcctcgt tatttctctg tctagtcaaa caggagcctg tgccagtaca 960

aaaagaaaac ttagtcctgg tattatatat gcaggtggat ggattcaggc attcagca 1018

<210> 10

<211> 1356
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1356)
<223> optimal_loci_118758_G1, chr3:165703776..165705131, Cluster 1

<400> 10
cagacgtcgc tgccgaatta ggttcattca tattaaattt tgtggtgtcc aactggcgcc 60

acttcaaagg gtttgcacct catagctctt gtatgtaaca ctataggtat gtaatgtaac 120

gacctggctg aagaagtgaa atgttccata tttgctgaga cggcctcttt tgttcgtgtg 180

ctggttcatc tcatcgactt ggttccttgt tctgccttat tattgagcaa tagaatacaa 240

taccattgca tcatgacatt tcttttgcaa gaggtcaaac gcgtgaagcc tgacatcgcc 300

ctacaatcat tatttattct tcaatactcg gtttctttat gacgttgaga gtaaacttca 360

aacttctctt gcaatacagc acatttaatt cgattcctct ctgggaaagc ctgggagtat 420

ttaatctgat aatatatact agccattgaa caaatgtctg aaagttgaca tgtactcact 480

attgcatcat agagttccat gccctcgacc tcgatgcagc aagattctac ttttgctgtt 540

tgtattaaga atggcgactt ggcgagcatc atgctgcttt ccagtttcca ggtcgctcct 600

cattagaaac aaccgctgcc ccgtcaccca tgtccgaagg catttctcaa ctcgaaagtc 660

cctgtcgaac tgacctgtca aacccgtcct atggtgagag cgagaccacc aggccagttg 720

ccggcatccg tttttccaag gctgcgtgtg ttagtgctcg ccgatgtgac ccatggaaga 780

cctaaaaagt atattccaca cggtcggggc cagtcaccta cggcggctgg cacctaaaat 840

accgcctttc cggcgcacgc atcgcacact tggatttta aacagagcta cagctctgga 900

agcggaagct gccatggcta gcttccgtct ccgttcaaaa gggaaagccg cgacggcgac 960

cggcgaaccg catccccggt atgtgtcgcg ccacgtgaag ccgtggcccg ggcaccggat 1020

gccgtgtcgc acttgcgggt caaggtccgg cggtccggtc tcgtccggcc gcacaggcac 1080

agcgatgccg ccagagaccg tgacccgcgc cgctgaaccg tgtacgtacg tgggtggacg 1140

ggaggaaggc gctgccgccc gcgcagccgt cgccccccga caaggacgac aacgagccgg 1200

gctcgcgagg gaatgagcac gtgggcgcgg tggaacggga gctggaaagc tcgaggctat 1260

gactctttga gaacgggacg gcaaagggtt tgggtggtgc agcagaggga tcagatcacg 1320

ggagacgaaa ccggggcgca gccgcagccg cagccg 1356

<210> 11
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1108)
<223> optimal_loci_120345_G1, chr3:175890489..175891596, Cluster 1

<400> 11
atggtagacc aatagcgctc attacttgtt tctttcttag ataattctta tgaacattgg 60

attatctcaa ctagcttctg tgcactattt gtcccgcatt ttccccttgt cttgcttttc 120

tgaacttacg tgtctgctct gtctttttat tatcacaaaa ccgaaagagc ttgaaaacta 180

tatattgtat attgtaagag agaataaata ttgggacaat ttttttgatg ttctaacttt 240

taataacatt gcatatggga aaacaaattt tctactgcaa cagcatataa agcgtgcaat 300

actgtactgg gtctaggcaa gatatggcgg ggatgttcag ttgtccacag atgccatact 360

tgttaccgta gcattacctt tttatagttt cagtttcagg ttgctcatat agtttgctta 420

tgcttgagtt attcacattg ttccttactt ggattcattc gctggattca tcatttctac 480

atatgtttat ttaagttttc tttgttacac tcaacatgaa caatgcctca tgttcttgta 540

gccattgtga ttcatgttat cctcacactg cactgctaac catttaagta ttttttgtgc 600

atcgatagtt ttacctttat accagcatag aagagagata atttgggcag tgtaacacca 660

ccgaatgttt gttttgtatt aagattaaca cctcaggcat gccatcatcc tactttgacc 720

tcataccaaa cacatccata atcttttagt attgacaaca taataaggcc acatgactga 780

gaaagattga agttaagctc tgcaaccatt gtttatccat ttactgcatc aaaataatgg 840

aaatatttat taaaagggaa gtatgtccaa acaatttcac aagagactaa attatgggca 900

tatttgggat ttaggaggtg ttatgctgac cttgggtaag aatcattagt ggttcacttg 960

ttcttgagct ttatcatttg tactccgttc tgtttataat atatgggacc cacatgaaaa 1020

attcagatta tcgatcaaac actacttatc tcaattgtga aatttattag gagatctata 1080

ataacggtgg gagatctata atattata 1108

<210> 12
<211> 1249
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1249)
<223> optimal_loci_1214_G1, chr1:6185788..6187036, Cluster 1

<400> 12
gtgagctcaa agaccccgcc agaaatatcc atccattctg tacgcgtgat ttccggttcg 60

gtcgctggct tgttgctgac tcggtggcgt ggcgacaggg aaggaagcct gtgtgggctg 120

tggcaagtcg aacaaggcta caagccgcca gcctgcactg caccgtgcgg ttcgaatggg 180

ttttttatc ggtttaatta catagaaagt cgtctaataa gtaaatcaca tcggtttaag 240

atctggtcta gttctaatag taagctacgc catgacgtgc cgtgcggaga gctcccgatt 300

ccgtcttttt tagagagata aacacgatat tctttttttt tatatatata gattcggtgg 360

acggtgggta acttctttct tcggataagt aatcgtgcgc ccgaatttaa ggcaggcaat 420

gcctagtggg agtggagcac tgaccacgag catctgctac tactacaacg tccgttcctt 480

caccgttgat atccagataa gcgtatcgtt atcataagaa caaaaatata tgctactcca 540

tatacatata tataaaaaag aaaagggcaa taagcgtatc gtttatgcac atactgacgt 600

gcagtcagtt gctcaaaaaa aaaatcgtgc ggagccgcac gtgtacatcg tgtacagaga 660

ctgagagaca tgtacacgtg gaggccagaa agcgattcga gacgtacgcg tacggtgctc 720

cgtgctccca ttctcgatag gcgatagccg atacaccttc cttttccttt cgggacgtcg 780

ttggctccgc aaagcaacgc cgcagctgct ggtccgatcg accgcgccgt gaaggcgacg 840

cggcccgggc cctgtatagc gcactatgct acgactcacg cgacatgact cgtactgcgt 900

gcttgtctac ttcacacttc acgtgtgcca tcgacgtacg gggctgtaag ggtgaaaacg 960

gaatcgtacg ctagtgtatt taaaacgtat tcgatatcgg atatgaatag ttataaacgg 1020

gacggttaca gatacagaga tcgaatatgt attcgggcag ataagtgaca gatacattta 1080

tgatttggtc ggatctcgaa tacttgatgg ataatacatt aattgtttat cataaaatat 1140

ccttgttcga ccctaaaatt gcaaataaat tatcttgaat aataaacatt ttataagaag 1200

ataatctcaa attcctccat aaaaatggta aagtaaaata ttaattatg 1249

<210> 13
<211> 1227
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1227)
<223> optimal_loci_121863_G1, chr3:183876231..183877457, Cluster 1

<400> 13
catctatata gataatccgc tgtagtaaat gccgttgaaa gaacaaaaca ctcttataag 60

atgtttgaaa taaccaaatt tgattacctt ttatagcgta gtttttataa tatgctcacg 120

caatttattt tgtcaggttg actagattta agcttgaatt tgtacttatt ttgttcaatt 180

tatttttatc gctaagatat attgaaaagg aaataaaatt gacagacatc cctatggtaa 240

aaattaaaaa aaacagcaca ttcttccata tcaaacgtaa tctagtattt ccaagtactt 300

tctagagaaa tctccctctt taatgcggac tctttctgat ctgataggct gatagctctt 360

tgtgaaattt gttatttaaa caaaatttga tagctctttg tgaaatgcgg actctttcta 420

gcgaagggtg caagtttttt tttattagat cttagagata aaaataaaaa agatatcttc 480

ataaagataa taccaagata aacttaaatt tagttaatcc ggcaaaataa actgtctaaa 540

cgcactatca aattcaggct ataaagagtg atttaattta atcgtcaacg gtgctcacga 600

agttaaccct gtataacgaa aactttataa tgatgtttgt tttgttctct caatggtatt 660

taagagaata aattatgtat aaatatagat agcaacagag ggaataagat ttgtctatac 720

accggcaatg acgataagaa tataaaaatc taaatgaata atggtgatat aattataaat 780

ttagacgaca ttgaatggat caatgccaac gaggggaatt ctctctattt tgatagcgta 840

agcggaaatg atggatggat ttgatttgta tactgtacta ctactcctgt ctactcctat 900

atatcctgac gcagatgacg aggcggtcgg tggccgtacg gtggcagttg gatgcacccc 960

caaggctcca actccatgcc cgagcccgca cgaagcttcg ttgcggttgc ggcttccagt 1020

tggctcaccg gcagggtgta tggcagggca gcaatctccg gcacgcttcg agctatttgg 1080

agctgccgcg tgcacgtgga gacggcgcac tgctcgcgat gggtccatct gccagtgttc 1140

ctcacaggct tcgcctggcc tgacagggta gcatgtactt acgtgtacgg tcgcagagtc 1200

ctagcctcgc cggtttgcac gcggtga 1227

<210> 14
<211> 1116
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1116)
<223> optimal_loci_124208_G1, chr3:196055877..196056992, Cluster 1

<400> 14
agtgacacta gttagggttt gcagtgcgtc gtcttttac tcttcttgta agtcgtcgtc 60

tacggatgac gttctataaa cacgccatat atagtgaatg tttcgaatgg ctgttgttcg 120

tggtttttct cttcgtattg aaaaggtttt ccatgtaaat ttgtgtgtcg tgctcatcta 180

caacatcatg gcgtggctat ctataatata taatgaagat ttcgtctagt tccgtggctc 240

ggaggcggaa gctagtctcg atggagatgg agattatgca tggcgcgatg ggcgatgcga 300

gagaaaatga tacattgatt atccatatcg tttcttagat cggcagacta tcaacaaaca 360

gtatagtaaa tagtgcagaa acttgagcag tgcagtatgt tgtgtactct tcgtcgatca 420

caaaaaggca taaacaatac ggtaatcacc tttttattaa tatagatcag aataatgttg 480

tcttcagtag aatgtatata gacacatggt cgagactata ttgttcacgg tgtgagttta 540

taatctctaa tcaataagta ttgtcattgt atactctcgg ttgggccacc atcggcaggg 600

ctcgggagat gcagagctcg cttcgcgaag gcccgcaggc gcctgctgac gcaggagacg 660

atgcacaacg ccttgagtcg aagttgatcc atcgtaacac cagcgtcagc ccgttctgct 720

cgaggatgta aaaaatgaat attttgttaa ttgcataaaa gtgaaggggt gtcaacacat 780

tcaaataaca ttttttcgaa gaagaggttt gaaggagcta aaattctttt aatccccttc 840

tactaaacaa acatagaaaa tatatatttc ttcaccgtta gataattgtt tttttttctc 900

tgaactagca tatagctcgt gcaaacacta caatctcaaa gatgagagag atcgacggca 960

gcggcgtgag tgaggggatg ggcagcatgg tcgtgtggga ggctggcgac agagtcacga 1020

ggaagggaga gagatgaaga atgatccaaa taattttgtc cattagattt gtataaggaa 1080

tgagctattt agcaatctga actgtcggtt tttacg 1116

<210> 15
<211> 1039

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1039)
<223> optimal_loci_124897_G1, chr3:200284517..200285555, Cluster 1

<400> 15
tcccacacac atgaagttgt ggtaccggat gacctttcga gtaaaggaag ggattttgca 60

agctagaata caaacattct ttctttggta ccttgtttct actaaaagta gctagtgcag 120

cacgtaaggg cttgtttggg aggaagagta atggagagga ttgaaggggc tagaataccc 180

cactattcaa ttttaaatag tgagggattc tagcaccctc aatccccttc attccacttg 240

ctcccaaaca aaccctaagt gttcaaacat tatgtatata actttgtaga gctcaatttt 300

ccttttaatg tattaaagaa caaaagttca tacaagaaaa tcaagcttct gcccacatgt 360

cacctgcgcc ccgtggacca cccacatcgc ccgcatgttg ctcgtatgtc gcccacgctc 420

gtggagtcag gtggatatgt gcttttatga actttcctaa ccctagaccc tattctttcc 480

tacatgtgtc atggcctagg ccatggtcca gtggcttgcg gcccaaatcc ctccctgagt 540

aggatcaaac gaataagttg ttgttgtgct acaacaaaat aatggcattc taacattagg 600

accttgacta gcatctgcct gtttgttctc cattgtgtcc aagagcgccc ccaccttcac 660

cagcaaaggg ctatcctggt ggtaggtcca tgcctatttt tctaatgggg acgatcacat 720

cccaacttct ccaccattgg ccttggcttc gatagcttca ttagtgcttt gagatgggca 780

accgcctagg ttcttagtgc ttcacaaatg cctaggattg agctatctga caacgctcta 840

cctaatttgg atataacagt gtggcctatg ttaatggcct agaaaccaaa accagaaaag 900

acaaagcctt ctagagtctt taattaatac ctagttgaaa gatagagaca tcctcaacaa 960

taatgttgtg atagagataa tgtacccatg aagccaacga caagaactta tatcgccaat 1020

gcatgagcta tgcctcgat 1039

<210> 16
<211> 1363
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1363)
<223> optimal_loci_125104_G1, chr3:201367736..201369098, Cluster 1

<400> 16
gatatacatt cacaaaatct aaatttatca aattgataaa tctatagacc acattcattg 60

ttttggtaaa acttctcaag gagtgctcca ccaattaaat tggtggggtc tgagaaaatt 120

actcaccact aatactagtt acacatgtag gtaccaattc gtttttgcgg cctatttgga 180

tccatggtgc taaagtttag ctctatactt ttagttaaac tttagcactt gaagatccaa 240

acaggagtgc taaatgtact aaaagtgaag tgttaaactt tagcactaat tagcaattta 300

gacctttcaa gtgctgctac atgagttaag agtggttcgg aataaggaaa atacatcatc 360

taccctcctc acctctctct ctctcacccc acatttatta gtggtatgga tgtctttcta 420

tatccatatt ctaaaactta gtacttgcat ctaaacacta ctcatgtgca aaacttatgc 480

tctatatttg agaggtctaa actttagcat cctactaaaa tttagtacat aggatccaag 540

aaaggaggcc cacgatttct atatccacct ttattcttct tacgccatat ttgcttcctc 600

tcgtgtgaac actgcccccc ttagcctttg cccacgctga tcggctaggg gcggatctag 660

gaccgctata ggcccggtcg agtagctcaa tatcacttag taccctacat gaattttagc 720

acgatcacag aaaggaggcc cacgattata agatgcatgt atattacaat aggctgcaga 780

ccaatcaggt catcacctat acatatgata tgtagcaact tacacacatt tgtaaatcat 840

acatcctctc tatggcaact tcgttcattc gcaatattgc gaccatcttc aacattttca 900

atccataatt caaccctatt tgatatgttt ttggatccgc cactatgatt gatcatgctc 960

cagccacgcc aaccgcgacg atctctcccg cccaccctgt gcctacaact atcgatcgct 1020

ccatgactgg ctgtcgaccg cgcctggccg agctatgacc aacccactag ccttgaccag 1080

acatacctgg cgtgccgccg cctgtgccgc cgcctcccct gactacgcac gagcacccac 1140

atctaccccg ttggcgtctc ccaccctatc catgcatgca cactactctg atcatgcatg 1200

gccttgcacg cctagctatg aacctcggtc gcgtcatggc cacacctgct ctagggctaa 1260

gaaagtaaat tgtacaaata ttatccatct gtatttgaat ttgatccatc taagaggcta 1320

aggtctgatc tgtatccaag tccgggtatc gagtatatga tca 1363

<210> 17
<211> 1075
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1075)
<223> optimal_loci_125184_G1, chr3:201670074..201671148, Cluster 1

<400> 17
atccccacga ttcaccattt ggagtgagtt cacgctagca ttcttgtcga atacaaattc 60

tattgtcctc ctgttcccga aaccacgtca ctacctatct ctatgttcat acgaggtcac 120

gagcctcgcc gaagtcgcaa actcgcaacc tcacctactc cgttccatgg gccatagcgg 180

ccatccccgc ctgagcccgc ggccatccct tctatggtca tatgcgtcct acgtacctca 240

agtgaccgtg gctatagatc gccagcgttt gccctacctc actccacatg ccgcgtcgag 300

gatcactgcc cctctcatgt cgtcgtggcc tgattggcgc ctaggatagg atcggtgccc 360

accgtacctc tcttcaagcc acacctatgg gatttggaag ggagcaacgg gaggggagat 420

ggaacggtgc agacagagag cgacgccacg tgtgcctcgt gagattattc agcgagcagt 480

gaaccgtttc tccaacagta tctggactcc aaattctgtt tgagagtgga gcacacgacg 540

caattttggt caagtttctg tacgctgctt gcctgcctgc ctgcctatac cggactataa 600

aaattattgc tcatagagaa ttcgatagaa tagtaaaaag taccccgtta gcttcccgga 660

agcgaggttc acctgcggct gcctcacggc gttcgaattg ggttggtaga gacgaagata 720

gccaagcggg caaggactgg ctacactgac gagtctacgt cgtgctccag ttcttctctc 780

gtgctgactg agagtctgag actgaccgcg gaggttccac gtgccggcca gtacctatcg 840

gcatttttt tcacgcgaag attatgcaca gcacagcgac agtacaaaag aagttgtacg 900

attcgccacg gcccacgaaa ccagcagcag aaaaacgagg caaaccacat cgacgatcta 960

gctacttgcg ccggaattgt ccgtcctctt ggattgcacg tcagctgcta cgtccaggag 1020

ctcgaagacg cagtagtccc cttcctcgag gcagttgccg cgcgcgaagg cgcac 1075

<210> 18
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1112)
<223> optimal_loci_125236_G1, chr3:201996852..201997963, Cluster 1

<400> 18
tgaaaaggga ttgcaccgca agatcgagct tgagcctgtc ttttcttgcc agagccagac 60

tactagtagt gaataccacc aatctgcgta aagttgctct gctttttttt tcttcctagt 120

acacagtagg aggagaataa acagccgttg gacagtttcc tttctgcctg ctgcgtgccc 180

ttttgacggc atgcatggcc ttctgctttg ctgatacgac tatcagccag ccagtcaagc 240

ctctaaaggc aaccaaccac tatagtacca ttttttcaac attgcatggg aaattaagcg 300

ttcaggttag tcacaggtta ggtgcgacaa tacactaact aacagcggac tctagaaatt 360

ccgacatgta ggcatattca tcagtgacta attaagcacc ggggtaaaca aaatggactt 420

ctagaaactc gccgacgaac cagcaccgac aactcagtat gtatcgccca ctgtgacggg 480

gagggtcgtc cgtaagggtc tgttcgtttg gcatgtaatg aagggataaa ataaatatgg 540

tttagatttc ttcaataatt aatataaatt ttggagattt ggaattaatc ctactctgtt 600

ccagcagaaa cgaaccgaca ctaaaccagc atccggtccg ggctctacga tccccagtgg 660

cgttcagaat tttaacaccg tgtattctct actacacggt tcggatgcga gatagagggc 720

agcgaatcat ggattccggc atgtgattag attacccaga aggtggcgga ttccacttgc 780

tcttctctcc cgcatcaagt actccatacc tttactagct gagactccca cccaagcttc 840

gcttcacccg acccgaggga ggcatcattc ggccgccggg ggtggcgaat aatgagccgc 900

actccactat gtacgcaaat ggatgatgga tgcagatgcc ggattttcaa ctctctttat 960

gcgatggttt aatttgggag agcgatgatg agtcaggcct gaggaaagtg ctgcggctgt 1020

tactagtagt tgaaaatggc ctgttcttcg ttgaacaaca agggcaacca tggatcgatc 1080

gatgcccatg catgttttca gatccccaat ta 1112

<210> 19
<211> 1179
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1179)
<223> optimal_loci_125749_G1, chr3:204456962..204458140, Cluster 1

<400> 19
cttaagtata tagttaagtg tagtacttag ttatttaatt tgtctaaaca gtgtttgttt 60

ggttgatcca attgtccaat gctagcggac agttcagcct ataatatctt acttacgtaa 120

cataagccaa aagcagctgt tggtctgctc acgtaaacca gtttcaagtc aatactcgga 180

acagaaaaca taattctcct caaggtgctc tgctaccatg ttgccaaagg actagagagg 240

gtttttttt ctagcggaag cagatgatga cgattgagga gagggccttc attcagctcg 300

atctggttcc ggccttccgt cgtcccagcc tcaaccccaa gacgcgagag ccgtggtaga 360

gtatgcaatg acgcaggccc tccctcctcg acgctgacgg aggcgccggc cacttgcaga 420

aactaaacga gaaaaaatgg cgcagccggt cgatgccgag agagagcacg ggtggttgga 480

cctacatctc tgttagttac tacaaatgcg atttgctcac gtcgacttta ttcagggaga 540

ggatatttat taaccaactc tcactgaatt tcttttcttt cccttctgct tacacctctt 600

ttttttata catatatcaa agaaaactac agcacgtctg caggtataga cacgacgaca 660

gtgccgcgcg catttgctcg ctcgtcagac ttgtcgttag agctgctggc gtgctcagag 720

cttcgagcag tccatgcatg tgaggaggcc gggcactgct cacagctggc tggtgtgttc 780

tattatatat ttaatcataa ggacctgatt gcacgttatt gatgattaaa tgtatggcaa 840

agtgttttgc agcaaatgca tggatctatc tacctacgga aatgaaaaca agataagcac 900

cacgggatac gatgaaaggt ctaatcacgg aattgaaata ctggtgtatg cgtatcatta 960

atttgatggt ttcaagcaca tactattatt attgtattct ttcttttgca tacgatcgag 1020

tgtggcgaca taattaaagt ggttctacct gcagaacact ttgtctctct tcaacgacga 1080

cgtccaatca gaactataca agttcccaca aaaaagaaca ggtatttgat atatccaaat 1140

ccctgcagaa cagataaaag cgtatgacga gatgcatgg 1179

<210> 20
<211> 1023
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1023)
<223> optimal_loci_126748_G1, chr3:209112097..209113119, Cluster 1

<400> 20
aaacttgcag ctctaaattt ggataaacca ttacagagat ccatgcattt cacggactat 60

tctcctgtct accacactaa aacctgacta aatgaccatg atgtgaccaa aaacaagaac 120

cttgaataac taaataacaa aaaaaaatcc tatctacttt tcacttcagt tacccaaatt 180

gacaactcta gcggcaggta agccaatcac ttcaattgtg cttcctaaaa ccctatagaa 240

actggaagtc caatagtcca aatcctcaag ggaaaccggc tcattatgca aatatgtcga 300

accggtttta taataataaa gattgggcag gagcagcgag cacagccggc cataatgagc 360

cggtttcccc ttgtcccttg tccagcgccc gcgcgtgtcc cctgtctcct ctcgggcctc 420

ggccgcctgc ctctgcccag tgcccagtgc gcactggctc caccagtccg tccaggtcca 480

gcaccactgg cccaagcgca ccaaacaaac acacgaaaag ggcggtaaag cccagaagac 540

ctgaagccat tgcttgtctg ttcctcgtcg tgggggcagc tgctgccgcc tgcgactgca 600

aagccgtgaa ctggctcagg cgcccagcct cgcccgtacg tgcgtgctgc gtgcgtgcgt 660

gcgagcgagt acgacgaaaa ggcgccccca caccccatgc atgcactgat gccttctggt 720

cgctgcatga gcagtgacca gtgagcactg gcgctgtagc tcttgttcga tgcacgcaca 780

tcctgcgcca cgccgtgcaa gcgtgctacg gggtcggtgt gctcaactgc aactgcaagc 840

gcgactgcgc gagccactca actgcaagtc aactcgtcgt gtccatctgc tgccacgggc 900

caagtggttt gtttggtcac aagtagtagc agtatagcgg cagccggcag ggcagcagcg 960

ctggtctggt ctccaaactg cgtttgcctg ctcctctgct ttcagcatgt ccctctctgc 1020

ctt 1023

<210> 21
<211> 1038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1038)
<223> optimal_loci_127828_G1, chr3:214485797..214486834, Cluster 1

<400> 21
gtcttgctct gaatccgatt tgtcaggacc gccactggtt ataaatctca gagtgcgggc 60

agcgaaatgg tttccgttgc cgaaagagca cagaacgaaa gcgatagact gcaatggact 120

cgacaaagtg gtttcatccc ccctcccccc cttttcccgt ccaatcgttg tgtattattc 180

tgaattatga acatagtgac aggaatgcat cattacagaa cattatctta acagagcagc 240

gtagagaata aactccgatg acagaagcca gcatgcgcgg cgatggaaac tgattcgcgg 300

ctcgattaat caatgggggt aatgaagctg cgttgttttg tgttgtggtg aaagacagaa 360

agaggcccaa tcagatttgg aacgtgcatg atgatgtcag aaaaaggccc accgcgccaa 420

attgattgga ggggcgagct ctcgcaaaag gttgcgttgt aattttcagg tccagttcag 480

ttcagtccac gcatgttgct ccgagcactg tgcactaata ttcacaaaag cggtttgccg 540

gtggccgaac ttgcacagcc ggcctagtaa tatattacag tacttacaga ttagtggatt 600

agggtgtgga catgcatcag atccatcgct gaagtgtaat gcaaagcgtt cagctcaaag 660

cgcatgtggg atcttgctgc acgattggcc gctttaggtc ttgtctcagc gtgaaaaatc 720

agaagctaaa ataaacagct acctttttt tggtttagct cttagaaagc gaggagctca 780

gcaaagttta gcttatgtga aaaaccggaa acactgattt tatgagctct ctataatttt 840

tcgagtttag taaactaata acatcattgg cttctcagaa gaagaaaaaa aaacctacaa 900

taccttttcg aaaaagctcc aaaagctacg actcaaacaa acactgacct tagttttgtt 960

taagcctagc ccggatggac cattatattt atttagcctt ttttttaaa tgctgtcaag 1020

gtgcgttgtg ccaagagg 1038

<210> 22
<211> 1304
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1304)
<223> optimal_loci_129846_G1, chr3:224662918..224664221, Cluster 1

<400> 22
taggggtcgt tcggttactg gggaatggag tcctggaaca attcatatcc aaattgtttc 60

tctaattaat gtaagttttg attatctgaa ataatttctg gtgtatttct gtgcaaacga 120

acatggcctt aaagttaagc gaaaaattac ttttgtaata gttaaagaag acaaaataaa 180

cctttgtttt ttttttttt ttgttttcac gacgacagat ggcatcagtt tgaagcggac 240

taggcccgga tcgcagatcg ccttctgtcc gaactccaga cagcccagcc catgggtgct 300

ctcgggctcc tttcccgctt ggactccgga ccggtggtca gcattttaca ctccaccacc 360

atgactacct gagccatggc cgatggaact atgggagatg gaccttcttc tgttcttctt 420

ccttcggctg ttcccgggcc cggcttcccg ctacggtccc ggccagatac cctgtgtttt 480

tattcgctca tcaagctagt gtacagtgtg gtgtacatgg ccttggcaat ttggcattcg 540

accacggttt gcgcggtcca tgcggggcgg agagggtgac aggggaaagg ggtccctgca 600

ggacgaagcg acagcactcg tacacaaaac tataggtacg cgcatccgtc cgcacacaac 660

agctggaaga acatcatgag tgatggtcac tctcgacgcg cacggaccac agtagcctcg 720

gcgcggatac cacggcaact cgcgctctgg tggccgggcg tgaccgcaga cgacgccggt 780

gcggctccta tcctctcccg tcggcgcact cgctccgatc atatctccag gccatccgga 840

aacgtgtccg tcgatagaag aagtcgacca cggcaggctg gcagatggct gggcccccgc 900

gggttcatgc acatgcatat ggcgggcgga agagctcgcg gctgcgccac gacggcgacg 960

gcgacggcac agatcgatcg atgccgtgtc gtgtcgcggc gcgcgcgctc gtgtcggtcg 1020

ctgcgcgtcg ccctcaccgc tagcgcaagc gcgggcaggg gctcacatgg ccgtgtcgct 1080

cccgggcccg ggcccgatcg gccccgtctg ccagcggaac cgacgtctgc aatgagagga 1140

ggccagcagc ccagcaccgg gacagctgca tgctccatct ccatcctcgc ggggcccgga 1200

accgccggag tgctgcccca caactgcagg cacagagaga cagagagttg atggattggc 1260

catcgtatca ctcatccgtc ttcatcgtga aatgctcgta cgtc 1304

<210> 23
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1109)
<223> optimal_loci_130014_G1, chr3:225459603..225460711, Cluster 1

<400> 23
cattctctaa ttaaccctcg tcatatgtag atatgatcac tgcatgattt acgtgtatgt 60

gtgtgtcgcg atcgatcata tagcgcggaa gcatatcgta gcacggcgta cgtatacaga 120

agaggcttta tcgccatcac agcggtgctt agcgcaagat cgacgggcac gcacgaggcc 180

ggccggcaag tgcgcgcgca cgcgtcgacg tccccgatga cccgtcaggt cctcggatcc 240

gaccagtcgg ccggtcactt ctcggtggcc ggagattggt ctactcgtcc tgcccggccg 300

agagacgagc gcggcaatta aaggcgagta cacgttatca tcggagcact cgatggatcc 360

gatccggccg ccccgccagc atgtcgatcg tgcgtgcaac gtgcatgcgc gtgcggcggc 420

gtgccgctag cacctagcgc tggccgtcgt ccgcggtccg cgctgctcgt tcggcgagcg 480

gcgacaaggc accttcggcg ccacgtacgg cacaccgcac accggacgcc gcgcgcggaa 540

acagcagcca ctgatcgatc gacgccccac gcggggcgta cgcccgtacg tacgtacgtg 600

tgtgcgcgtc actcgcgcac gcctcggtcg tatgtctaga gcacgcacgg cacacggccg 660

ggccgggggc aatgatgcgc gcgcggcgtg ctcactcgct gacgacgccc agcgtgggcc 720

gccgcgcgcg cggcttgttg acgggggacg gacgagacga tgcacatgcg tgtgtacgcg 780

cacgtaccca cgcccgaccg cctgtgccag cgccaaactg ccagtgcatc gagatcgttc 840

acgcaggcac ggtctcgcct tcctttgcgc ctcttcattt gttgttcaca tcgtaacaaa 900

aatccaaata attagtgtat gttactgttt accgtacctc tcagtttgca ttattatttt 960

tctacgtagt catgccatgt cctagaccac acacggcata tataccaaaa ggttcggcca 1020

agttaaaacc cattgatcaa ttttgcaagc tctctcggtg ttatatccag tgcattgcca 1080

ggacacagta aaaatgttgg tgctatgtt 1109

<210> 24
<211> 1009
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1009)
<223> optimal_loci_130404_G1, chr3:227272697..227273705, Cluster 1

<400> 24
aatgtcatgt atagttttga ttctagattg atttattgtc ttcaactgtt accgttgaat 60

tgatttattt agatcattgt tagaacatct atttagtggt atgcagagtt tggaatacta 120

atcttttatg gttcttgatt gatcgatctt gaagctatat cttaattaat tttcaaagtt 180

ggcaaagttt gtaatactaa tatttagtgg attgcaaagg catactttct taagaaagtc 240

ttggccatta ttcaccagca tcggaatgga ccaaacgtta tatgagacag ggctgtattc 300

gaatcgaaac aagtagttcg agctagtggc taagtagcag atgatcaggc tggtaagcta 360

aggtcctcgt ccactgaggt tattggaaaa aaaaatccca tgattgctga agaaatcttc 420

accattatag attcatactg agaaaagaaa caagttatga gcttatatat ggctcaagag 480

gctgaaccat ttggtctata ttctgtacaa ctgatgaaat gatgacgatg aggttttcga 540

gaagcgccat gggaaagaag caggcagttt tgatcctttt gtattcgggt gattctgatt 600

ggaacaaaag gattcacatt acatggtaaa gttaatgacg ccggtctgaa gacctggagg 660

atgacagaca atggctcatg acgtggaagc tgatgatctg tgaaactgca tcctagcctc 720

tccccattcg ttcccgttcc agattcagac actgctagca gcactttccc tccctcgcaa 780

tctcaaatcc tgctggtgca ggctagcgca gggcggtggt gccgcactac ggcagcgcag 840

cgctataggc ggtgcaggtc tacagcgcat atgaccagga cattaggtgg ttgcgtggtg 900

ctactgctgc agtatctaca tcactaaaag gacagacacc acaaatttta gttgatggct 960

caatattgac tgctctcatg ttatagtgac ttcaaccaat gcttagttt 1009

<210> 25
<211> 1174
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1174)
<223> optimal_loci_132677_G1, chr4:5950705..5951878, Cluster 1

<400> 25
taatctcttt tagtcccctc ttatcgttgt gcaactcttt ctattcaatt ttaactggta 60

ggtcgtgttt ggttgtggtg gattgaaggg gttgagggaa ttaaatcctt cctattaaaa 120

attgagattt aatctcctct aatctatctc aatttacccc ctgacccaac aagctctaaa 180

agatttaata ctctctctct ctggcctctt caacattctg ctaatcgaac aagcagccta 240

ataagcccat aatgggttct cgatggatga agcaaaatat atcaaagaaa aaggcgttac 300

ggaataatat aggaggagcg atggaaaagc acacttaacg tgatgaatgg ttcacaaaat 360

ataatgtaaa tagcagtgtt aatgattcac actcaatacg ggtggtaata agtttgaata 420

ggtcgatatc aatttctagt gtgatgcctg attatggttg gactaacaca aaaatgattt 480

aacgttatca gttatccttc acattacaaa tatatgaaac aacatcttta gtgttgtttc 540

gttcacaaat tgtaacgtag atagcaacga taacgattca cactcgagtg acagcggtaa 600

taagtttgaa taggccgtat tcattttcag tgtggtatct gactacggtt taatttaaac 660

aaacatgatt taacgttatt tattatccat cacgttacaa ttatatgaac caaacaccac 720

cttaatggct tctagatgca tgtgatgtgg catgcaagtg gtgggatcaa atggaatcta 780

tctatagctg gattgaacta gtttttataa attggttggg cgtactttgg tagccaccgg 840

ccgggctagc gttcatctat tagttcatct attaatacga tggatacaag gatggcgtga 900

gcagttgagc acacagactt tgaggatcga ggaacaggaa cagccacgat gagtagtact 960

tggcagtgca tgtcgtcgac tgcttcactc catcaggtaa cagaagcaaa ttttctccgg 1020

ctggtgacag aggcaaggcg tctacgaccc ttcatcaggt tcaggtgtcc aggtgcgtga 1080

cgtacgatcc tctagtgttg tatgtatgtt tcttcgtcta cgcaatagtt ttcgccggtc 1140

acaataggaa tacagagcac ttccaacagc caga 1174

<210> 26
<211> 1165
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1165)
<223> optimal_loci_134830_G1, chr4:15960819..15961983, Cluster 1

<400> 26
ccagaccacg acgtcatcta cgccccctc tgcatcacgc cacgccgtca tttcgatccc 60

ccgccagggc agcaggcaag caggtgccct tttcttccat tgcccatgca aagtcacttg 120

cagttttacc ttttctcatt caagttccga tcttgcgatc ttcatttgct taatgacttt 180

actgccacct gttgatgaca tcaagcgtag tgttggttaa ccattgaatg cttctgtttt 240

ctacagaaaa attcctggcc tagaatttca tttcgtataa acaaaataac tgaaacgaaa 300

agaagtggtt gacttaggtt ccgtttttt tatatatttc tatgcttaat aaatcggctc 360

caatttacct ccccagctca aggcctcaag tgtcaggtat gaatgtatga tacattgagg 420

tgctgattgg tttgacaatt tagggaagta atcagtttac attgatatct gttaccataa 480

ctttaagttt ggttgtaata ggctgcaatc gatcacggcg gtatcatgct tgttaaaatt 540

cattaacgct cccttagctt ccggtcgtga tccaatgccc cgctatttca gtgctcacgt 600

gggcattgta acagatacca ggagcatata ttcccattaa tgttgcctct tttatggctg 660

aaacaaacag cacctgagat tcacgttttc atcacattat ttggtactat tggatcgttt 720

gttagactgc atgatgttgt tggttatcag tatgatacta tgattgttcc catacctgtg 780

tccatgatat atcaaagggt gaccatggct tgccttttc tgtacgcagg gccgggccag 840

cataaatcag ggccctgtac cgatttttt tctttgttaa gaatcgatga tataggttaa 900

tctcctctat taacatacat taacatgtga aggagtgtaa gtttttccaa atagactcaa 960

acatgttttc cttcctttgc gtcattactt taaactatgt gtgttagtac ttgatttcaa 1020

ttctcctaaa agtatcgaag atcaaggcaa gacaagttag atataaagac cttcgtcctc 1080

tcatataaca cttctttgga gtcctctcat ataacacttc tttggagtgt tagaataaag 1140

gatgaagttt tttagagaga aacac 1165

<210> 27
<211> 1224
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1224)
<223> optimal_loci_135280_G1, chr4:18005289..18006512, Cluster 1

<400> 27
tacatatcaa cgatgattaa ttagttcggt ggccgcttta taatgattaa tgaacgagtg 60

aatgaatgag gagtccgtgg gtacgagcag cgtgtcaaca gcaacctctc tgtccgcggt 120

cacttcactt tcagatcagc aagcaggtgt gtggaaccag tactcccccc acctttctgc 180

atgctttcgt cggattcgtc atttattatt aacagaaata ataaagctat tggttactag 240

tagctacgga gtaccgtacg tgcttgcaga ttcaatttga ttcagccgta cagaaaaaaa 300

aaacctttat gcagcatgaa caacaactgc atcaagcaag gatggtaccg gtcgatcgat 360

cgatcagcca tccaatccaa taaaaaggaa catgtcgcta acttgacgga tctgtgcgta 420

tggccagata tgtcgcaaca aaaaaactag caggagaatt gccgctcagc gatttctgca 480

gcaaccagga aggctggctt acagcttgtt ccgccctgca gccgctgtag gtgttcaaat 540

tgttgcagct gcgatccata aagataaaat attttagaag ttttactgtc ttagccatat 600

tcagattaaa accgcagcaa atcacagcga acaaagcctc caagatccgg cagcgaatgg 660

tgtcaaaagt tcgtgcgatc acttccaaag ccctttaaag ctactttgag aacctcagat 720

cctcttcgag attgaaggag attaaaatgt aaatgaacta attttctctt taattctctt 780

taattccgaa gaggatttga gttttaaaac tagcctatta cgcaaccact tccttgtcct 840

tgctcgcatt cgaacgcacc aggaccagaa gcgatcttgt tgctgcgcaa gcactagcag 900

cgccccaagg ccaatggaac gcgagctagc tagaagtgct tcgctttgtt tggcgcatat 960

gcatgcatgc cttcgaaatc ccagcggcct ggactggagg caccaacaaa caaacagtgc 1020

acgatacgct aagcttgagc agacgacgta cgtcggaggt atccaagagg gcaaagaata 1080

tccttcaccc aagtccaaga agcggatata tgtatgaccc acgcattgcc gtcgaacctc 1140

cgactccgag gccaaagacg aatgatgcaa tgctctgcat acagccacca tgagtccagt 1200

gttcaaccag aacagggcgg gcct 1224

<210> 28
<211> 1173
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(1173)
<223> optimal_loci_136318_G1, chr4:23657350..23658522, Cluster 1

<400> 28
tatacttgtt aaaactgatc gatctaatgg tgcatcattg tcaaactacc acctaccgtc 60

cttgtggacg ttcgtgctgc ctcctcgtgg tcgtccacac ggcatccgct tcgcgctcgg 120

cgttctttgt ctacgtcgtg ttcctctctg cctgggcaag cctgtgcctg ccgctacggt 180

acctggactg tggtgactac cgccaccaac ggcattggct acgccgttgc cttttgcctc 240

gccgcgtcca ggctcgggtt tgtcctcgtc aactgcaacc aggagaagct ggccatcatc 300

accactgacg cggtcgaagc tagccgtcgt cgtagccatc agagtagggc acgtactaca 360

ccctcacggt gtcatggtgg ccctctgtgt ctgcctcagc gcccgggaac ttgcggagca 420

cgaacacggc catggagaag gtggccaacg ccctccccgc cataagtcaa catactggtg 480

tgagtgtcag gacacccatc cacacttgta gtagcgcatt gccatatacc agcagtgcta 540

gcaattgtat aaagagaaaa atacaaagta gctggttttt gatttttcta aatatatagc 600

tacacagaaa cttttgcaac attaagctgt catatttact ggcgtgagtg tcagcacacc 660

acccatccac acatgcagta gcacattgcc atataccagt cgtgctagca atcatataaa 720

gagaacaaac gaagtagagg gtttaatttt tctaaatata tagctacata gaaacatcaa 780

acttgcaaca ttagatcgtc atatttcatg attgtagatc ctattcgata aacacttgag 840

cagatttgca agatctaaag agacaaatgg catggctagc taatcatatg ttttgtgcac 900

caacttttt tagaagaacg aagctccata ttgaagggca cagatccttt cagtgtaacc 960

taatcatcct cagatacaac ctttgtatga tctttttaca ttactctttg ctttacacat 1020

caacctattt aactccctgg cacttaatca actagagcga aaattataat gtttgggatc 1080

aatggccctt cgccttgcat ttgtcctccg ccactccacc gtggctgcta gagaattgga 1140

gcagctagag gcgctccttg ctggtgtatc ctt 1173

<210> 29
<211> 1219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1219)
<223> optimal_loci_136871_G1, chr4:26512455..26513673, Cluster 1

<400> 29
taacgaaaag tttttgtggc gtgtcggaca cacctacacg gccgtagatg gtagaaacaa 60

gcagtaaaac agcagcattg tccaaaagaa agccgctgag gtcaatgctg atgagaacga 120

gaacccaatc cgagcacaca aggagggtca ccgattaggt tagcacccca aaagcgagcg 180

gaaggcaagt gaggcaatca atctatcggc cacaataaga actgattggg gggatctcgt 240

ccgaggaagg gcgacttttt tgggtgggtg ggtgtggggg gtttgattca atttctcaac 300

cccaatcgag gatgagggag gggagagttg aaaatcgggc cggagcttac cggatttcct 360

ccgcgcgaca ttaattccgc ggcccgacca ggtagcaatg aggcgggcag gaatcgaaag 420

ctgcggcacg ggtgggagga ggaagggcag gcggcgggcg tgctcagcag cggtgatggt 480

ccccccctcgg gagtttggag atgatgccgt attgccgtgg cccgtggtgg tgcgctatgc 540

ttttgagaca cgaggggagg ggggcgtggg agtctggttc tggtagagga gagctgcggt 600

agcagagtca gaccgggagg aagcgtggac caaagatggt ggaggcccac agtcactaaa 660

aaaatgtggc ccaggctaca cagcgggtga gaataactcc gaggatcgag cgtataacgg 720

tactacgtcg agccacatgt cagctcaggg attctttccc gttttctgcg cttctctatt 780

ttttttctc tctaactagg acatcatgcg tccttacgac tatcaggaca acacatttca 840

gttaataaaa gtactatgtt cacgcgtttc aaacgaagag taggaaacat agtttacctg 900

ataagatgtt tcagtttaag atcatttagt gtagttagtg tagtgaaaag aatataaata 960

tggtatacat ctatttatat atgagaaaat ataacatagt ttaagaagtc agggagaaga 1020

caccgtattt ttgtaaaagt tgagtggtat atatacaatt aatctatatc tttactaaat 1080

cataagttta aattaaccac tcaacaaata atctatactg ttctttgtgc accccattta 1140

tatacataaa aaaaattccc tctatcacat tgaacagtcc agatattttt cccatttttt 1200

ctctcattca ctcacatct 1219

<210> 30
<211> 1195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1195)
<223> optimal_loci_137250_G1, chr4:28811786..28812980, Cluster 1

<400> 30
gtttctagtg ttttatagta gtagagagat agaaatagta gagatataga ttgtacatta 60

gtcatcgtcg ttagaaaaag aatttcttag gccatatcaa gcagatctct tatcacatct 120

cttatttcaa actttactct gcaaataacg ttaaacagtg tcacgtctct tattttacac 180

gatctaccga agacggcatt aaccatgtaa attggggcca gcaggcctaa ctcaatattg 240

aaaccctgtt tatcttccac ctctcagctc gtccaaccca tccaaaatgt gacggccaat 300

gtggccgttt tcacttttat tcaccaacgt tgcactcttt cacatatggg accgagaccc 360

gcacttgcct taacgccgct cgtaatctgc tggacgagag ctagagttcc ttatttgccc 420

ctctggcttg agctttctgt ctttgccggc gatcgctcct cctgctcctc ttctctgcca 480

tgtcgtggtc gccgacagcc acccagcgcc acggatctgc tgggctagat caaggaacgc 540

tcctcgccga ggggcgacgc aaatgcagag gctagcgcac tgcttcgcca gggggctgga 600

ggcgcggctc gcgggcacgg gcacggggcc cagctcatgg cgcgctctgc cgtggagcgc 660

ctcagattct ccaacctggg catctgcaag gccatcgccg gcgggaggaa gaaggactac 720

ggcgaccatt accatagagg aaatgactga aacggctggg attgacacga gggaagagtc 780

acttgagtac aaaattgcat tgtttttggc attagaaaat actatgatgg atcaacatgg 840

gcatttggga ttgttgattc caggctacgt caattaaatc tttgtgaagt attgctggca 900

gaatatctct gtgtgcatgg ctatctttct tgctaatctg aatcctaaaa tctcgtttta 960

tattcctact acatattctg tcttattgtt taatgctttg cagtttgaaa cacaagaata 1020

aatgagtaaa ggacttaatg aaacactcat ttttggaagt tagacgcaga aggtcatctt 1080

ccgtttggat tatgcaaaac aaatgccaat caattccatt aacaggtaat gttagaacag 1140

tttgtgcaat aatttaagca acatttgtat agggtcctac acttcttggt agaca 1195

<210> 31
<211> 1196
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1196)
<223> optimal_loci_158515_G1, chr4:165841455..165842650, Cluster 1

<400> 31
aggaggtcgg tagaaaacga agcagccatg accagcaagc agttggtgtc tttgggtaac 60

agaccgaatt aagtatggaa gaaagcttag aacgtgttaa ccacttgtgc aatatatata 120

cacgaacacg agacagagag aggcagctct ctttcccttt cgtcttttca gacacgcacg 180

cacgcacacg aaaactgaac aagagtagtg gcagctttgc acattggtta atgtttacaa 240

ggttgttgat gcatccccca tccctctcaa gtctcacact ctcccatccc atcaggccgg 300

cttgccctgg aacggacggc cgctgcctga tgacgaggat gagaattttt agaccgggga 360

cctcgctcgc cgtccggccg tccgggcatc tatcggggcg gctgcgatca accctgtcac 420

gcaccgagag cagacaagtt gtcatttctg aagaaggcaa aggcatgcat tgcgttcaag 480

tttaacaggt gaggctgagc gcgagcacct gccctcggca gatcagatca gaacaggtcg 540

ctcgtcgtct cggtcctccc ggtgtgcctg ccaggggcag gccggtaaat ttagaggccc 600

ttactaaact ttaaaagagg ccctacttta cagaaaacat ataatcgaaa ttatattgta 660

aaagaattca tgtattctga attacaaaag gtttattaga taataactat ttatattaaa 720

tctatccgtt tttacgaaat tatattgtaa tagagcatat aaataaacat acatattaat 780

agatgtgttt gaagagcaac cgtctagctg ctaactgagt tcaacttaca tgatataatg 840

ttagtctgtt tattgataca taatattgag ataagaagtt ttttagaccc tcagaatttt 900

aggtcctgta cggtcgcact tgtcgcacgt gcatgggccc cggccctggt gcctgcctgc 960

catcgtgttg gctgcttcgg caccaaccgc tccgagggcc ttcgcttttc gcggtcgtcg 1020

ggcaaccacc gtcttggcgt cttgccagcc gcgcgcgctc gaaaatagct gtcgtgccgt 1080

tcgatagctc gctcctccga aattttgggt ggtggtggag gcagggacac actgccacac 1140

tgcctggtgc ctgccagtct gctacgttgt ccagcaggag cagagcagac acggtg 1196

<210> 32
<211> 1134
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1134)
<223> optimal_loci_158740_G1, chr4:167021604..167022737, Cluster 1

<400> 32
ttcgagaaac acaaggataa tgaagttgtt caagtaaaat ttatgtaacc aagagtttaa 60

taggtatact ttttataaaa tccatttcta tgttgtatta taatatttat gttattatac 120

tgttagtttt tagtgatttt gtaaaaaatg gcctctattc gataattttg tacagggcct 180

cgctttttcc cggcacggtc ctgtatcgtc gtaagagaga gagagagggc gtgcgtgcag 240

taactacgac accgtaccca caacagacca cgagggccag tgtcgccgtc catggatcga 300

tccgatcctt gtcgagcttg ctggttttac agccacgtac ggcttcctgc attgctctgt 360

tctgccatca gggacggagc cgtgtcgctc tggtttacag ccacatgtgt ggctgcgggg 420

gctccgatcc gccgcttatc ggcgaccata tatatctaca gcctcgatgg ttgttatcta 480

cagctacagc tgggattttc cacgcagcta cgtagtacag ctgtgtttgt gtttatgttg 540

gcaaatgagg tagcggcgat tgtgtcaaaa cagtctcgcc gaaggccatg catgcgccga 600

tcgatccata gcagggccaa cccagcctca tacataaaat ctgagattcg tcagtgcacg 660

aggctcacca gttaggctct ggaacacacc tgctactact ccctgctgca cgccagtgaa 720

tatcagtgat gagacattca gagatgcaca cctagaaatg cgtctctctc tctctctctc 780

tctctgtttc cagattggtg tgaaacagaa cggtcaagat ctgcacagtt tgcgtctcaa 840

tatactcaac cactccatca gctaggcgca tatgttatgc atgacgttgg tgccgtatgt 900

acaaatacaa tatatacagc cgcagctcaa tgtgcttact ataagctaag gaatatatac 960

acatacaatc aggccgtcgt caccttccaa gtaactcaca tgggggtcgc taaactgcta 1020

attaattatt ggatccgaga cgactgtgtg atatctgatt atcagggact cctagacgat 1080

cggctgcagc tcatgcatgg tactcgacta ctactcgcaa agacatacaa tatg 1134

<210> 33
<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1019)
<223> optimal_loci_159805_G1, chr4:173838421..173839439, Cluster 1

<400> 33
gtatgggcat gattacttta cctaacaata catgataaaa aacaattcag ctgatttatg 60

gtcggaaaaa aaccaaggat tacagagttc acgcacctta agtggggaaa tcaaccagaa 120

ctgtgtgctc caatatgtta tctgtaacat agacattatc accacttttt gagaccgaca 180

gaacacccga acatgcatga aaatatgaac aagaatgaca gaacaagaaa cttacaactt 240

catcactgaa caagaaactg gggattattt tcatggcaac ttcagtttct tgttcatata 300

ttttcatggc aatatgtata tttaaaaaag acgtggttga ttgtgtgttg tttataagtt 360

tattatatgt ttactacata ccatttatat gtttaattgt gaatctgtag aagcagaagc 420

tagtgtgaga acagccacac taccagcacc accagtctta caaactcaga attaaacaag 480

tccgatctgc agtagatcat tgacctttgt ttcccacaga aaccacacag aggaaccatg 540

atcctagaca gtattagaga aattccactc gttgttcagt gctagtacca aatccacctt 600

ctggtacccc gttcagcagc tcgatccagt ggatttcgta ccaacatatg taccccattc 660

agcagcttga tctatctaat cctagaagac gagtcaaaac ttgcagcaaa cataaataga 720

cgagtcactg gctgatattg cttggtgaga ggcttggagt actcttaggg gagataggcg 780

ttcgcttcat actgctacag ggtgtgctga actttgattc tatccatctt aatcaaaaag 840

gggaaaaagg tgatgtctac tctttctcta cagatacaat aaggggcaga aaagcatggc 900

agctgaataa atattcagac ttgcattagc aaccatcaat agcttttctc tagaggaagc 960

agtgctgaac gtattatact gcagctaagt acatcgacgc ctacgtgtga aaataaggg 1019

<210> 34
<211> 1183
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1183)
<223> optimal_loci_160713_G1, chr4:179618574..179619756, Cluster 1

<400> 34
atctttaact ctgatttttg cactagatgt tgtatgatct aaagtcatag aggatccgtt 60

gctttctggt gtacgtgatc atgtagattt gcaacaggca tggtgacaca gaagatccta 120

cccttgtcat acgcacagat aatgaaggtg ggctgcgttc tgtgcacgtg agagggtgag 180

agtagagaac tcccttatta gtcccggcaa ggcaaatggc cttggctctc ttgcccagca 240

ctgtatagct tcgcttggca agaccagcta tttggtggca aaagaaaagc ttgctttgcc 300

tggcaaactt gcttggctcg gcaaggattt tttttgcctg gtgaggcgag ccagattggc 360

tctccagtac agtcaagctt gctggctgca tccatctcac catctgccag gctgaacccc 420

tctggtgatg ctgctgcagg agcaagcaaa tcgaacaccg gggaaaaaac atcgctcttc 480

ctttgctaag ctagttttat cctatctgtg ccagctaggt aaaccagtaa aaagagccct 540

ctgaaatccc ccggctaatc aaatgactgg agtgatccgg gctgtgctca ccgtttgact 600

ggagaaggta ctcaccgttt gactgccgct aggcagcgtg aggagagacg cgtgacggcg 660

tcaaccctgt tcggcacttc ggctgcggct gcagcctgca gccgcctttc tccatttaca 720

gactgcagcc ggccgtgctt gctgcggctc tgcagcagag ccgcaggctc agccagaacc 780

gtttgtactc cgtttgcggc gccgttaagc gttaatacta tttgcttttg cgggaccgcg 840

ctgccggttg gacgaatgag gacctttcgt acgtgtactg gttatgccga ttttccaaca 900

gggaggggg ggtgtttgct ttcgcgacta aaatttaatt cgtatcacaa caattgttta 960

aatatcaatt ataaatattt aatgtagatt taattaggtt tattaaattt gtattgtctt 1020

ctagtcttta tctatataat tagttttata attaaactat atttatatac ccataattat 1080

catgtaaata tttgatgtga tagatactaa acctcttaat gtaggctaac catgtcgtgt 1140

tatatgatgc tgcaaaatac tattttacac atcagattat att 1183

<210> 35
<211> 1177
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1177)
<223> optimal_loci_161570_G1, chr4:185431751..185432927, Cluster 1

<400> 35
gttggagata gtctcacgcg aaacataatg atagcattat tcagttttct ttttctctgc 60

gctggcaata gctcaaagga cagtcgtgca atttgtttgt tttttaaact taaagaaaaa 120

aagaaaagaa aaggacaatc gtgcgtgcgt gcgtgcgtgc agggtcctgc ggtgatgatg 180

gatggcatgg cccatcggcc atgcatgggt ctgagtctga ctctgctgtg ctgctgcgcg 240

tggggacccg agtacgtacg tacctacgtg gcacgtcagt ccgctgcact cgtcacatgc 300

acacaccaca gaccacgcgc ctcgcctccg ggtccctgcc cccgcttgtg catagtcact 360

gacaggccgg cctcgctgcc actgctctgc taccgtcgaa agtaaggccc acagacagaa 420

agaggtactc cctgttacct ttgacaagtg ggcccacggt cacggtccga cctgtcgatt 480

gccgacgtcc actatcccat gccagaccgg atgggtccta ccgggcagtg tctgcggtgg 540

gcagggacga caggagatgc tgcttcctcc tgtgggggag cagagcagag tagaggttga 600

caccaagaag caggcctcat cattttgggc ttggtccagg ccggcggccc gtattgcaag 660

acacagacct atagttttcg ctggagccca tcttacttca atctaccggc cggcctgctc 720

agatcaggtt ttcagcctag acagaaaata aggcatttca ggtgtccgag catttctttg 780

ttgattcacg gatcttgaga tgatcctacg taataagtaa ccaccgaaaa atatatatag 840

atcgctagtg catttacata gatcgcgtct ttataagaac atatatatgt catgtcacaa 900

ggtgatcaca tgttccacgt ataaagtcag attattcccg agatgccaat actggtgatt 960

gcacgagtag tctgtttcac ttgtcatttc agaggtgggc tagaccgcta gagtgtctca 1020

catatgtata ttgttcattg actgatttga ttgagacaac tagagaagat cagacattat 1080

attatcatgc atggtgacac acctctatct atttatcatc agacattgtc gccttcatga 1140

attgagtgct actaaccgag cggtggaggc catgcgt 1177

<210> 36
<211> 1139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1139)
<223> optimal_loci_162350_G1, chr4:189173600..189174738, Cluster 1

<400> 36
agcgaaagga tggagacggt ggtcgagtcc catcttggta gtggatgggc aaagttgtat 60

cgttgtagct ctaggtgtta ggagtatgtc ctaactcagg tatgaccagg ccttgagtca 120

acttgtactt atcccggatc gaccattgag tcacattggt gcacgcgcac accatagcat 180

atgacatcat tatctagatc ttctttaatc tttcgagggc atgtgggttg cctttgcggt 240

aggagtggag taatcccatc taacaagagt ttggtcatca tgatgttttg tgtcagagtg 300

gtatagattg attgtcgttg gaactcgacc atatagatct agcagtggac ctctcgacca 360

ctccagtgta ggtcttcttg tgtccaccaa gtcttatttg tccaccaatg ataggtgctc 420

ttcttgctcg atgtccacca tgaacatgaa ccgagaccct gaaaatttgg agtatgaatc 480

tgagtcatca tagttttcca agacggtgtg atgcctgaga ctttgtaatt gatacctttt 540

tcatttaaag acattttggt gctaaaatat ttgattcaca agattatata gggtgtgttt 600

gggtgcaggg ccaaaggtgc catgccaaat attggccttg ccaagttatt ttggctagta 660

tttggttgta ggctaaattt tggccatgcc cataaaaatt tggcaatgcc aatacaaatc 720

tatgacaatt tttggccaaa accaaggcca acaaatcagc tgccaaaatt tggcttggcc 780

ccaacgtatt ttagccacaa accaaacacc aaaacttgag ccaaaatttg gcttagccca 840

gctttggtaa gttgccaaat tttggtcggg cttctttgat ccacaaccaa acagacccgt 900

agagctaata cacggatttc atgttctata tagccacaca taagtgtgta gtggtaggaa 960

aggatctcag atagagaaag aacttgaata gttatgcaac tttattgttt acgacctttt 1020

ttttggcgtc atcttaattc taaaatatct gatcacaaga ttttataaag tttataccaa 1080

aagattccat atgctctacg gtcactattg actatacaag tggatgcgta gtgatagag 1139

<210> 37
<211> 1376
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1376)
<223> optimal_loci_16479_G1, chr1:91482902..91484277, Cluster 1

<400> 37
ataagactat tgctgacata tccaaggaaa taactagctg attcagcatt gttggtcacg 60

ccccgaacat cctgtggatc accaccaccg atgatgccag aatcttgccg ttaaacgccg 120

taccagtcat cgccgcagat ttggcagccg gtcctgaaaa ccgaagagga acagtcataa 180

ttccagcaac agtgtaaaac ctgtcttgcg acgagtgcgt tacggaatca tccatggctt 240

tgactgccgt cggaaccagc aacctgaacg gaactcacgc cgtgaatgct ggagtcaaac 300

catgcatcgc ccctctccac tctccagtca cttccaatga ccgcagcagt caagatgcga 360

atgctgaagg cgttttacag ggttcaaatg aagtcgtcac caagttcaag ttgatccatg 420

atgctaaatg catcttcctc cctaacccgc acgatgcgtc catccgccgc gcatgtgccg 480

gcgaggggcg tcggatgacg acgcctgcgc ggggctggcg tgctgcgctg catatccgca 540

tgtgaggtgc cgggtcaggt cacgtacccc gaaggcaacg gcgcagacgg gtccaggatg 600

tctaacgaac tagtggctcg taatctggca cgcagaggat gccagtgagc tcaatcaaca 660

tcagccgagc gtgcttggtc gccctcgcac cagatttcca gggccagggc gtcgtggcac 720

tcgcacaccc accatcttgc ggcaacggga tgccggccgg gcgacctgtg gagccatggc 780

attgtatggg agatgtttcc ggttgcgccc gcacggcggc atgggctgct ctgcttgcaa 840

cgtcagggtt gtgggctact gggttgcgtt gtgccatgcg cgtacgctca catccctcgt 900

ccagctagca gagcagctct tcatgccgtg tcctacgtgt actgtttgat gattagcgat 960

aattgattga ttccttataa cacttgatct gacgctactt ctgctaaaaa aaaggatgca 1020

atttcatgtg catctgcagc aagttttaca aaccaccggg cgacgagatt gacgtggttg 1080

gacggctggc gtgcgctcga agttaaactc cattctttag aagaaaaaaa agggaaaaac 1140

acaacgttga actcgttctc cgtccggtaa aatttcaaat atcgttcgaa aagttgttgg 1200

aacagtgaat aatattctaa gcccagattt taaatcgagg caaatttcat agatattcaa 1260

aacatatatg cgcactacgc atagcaatat atagatcaac acagtaaaca accgaattaa 1320

catatttact cacgtcgggt cgggttttgt cagtgcttag tttgatcaag cataaa 1376

<210> 38
<211> 1286
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1286)
<223> optimal_loci_165190_G1, chr4:203222850..203224135, Cluster 1

<400> 38
tctagttaaa gagagctcag ggcttctaat atatatatat atatatataa gggaaatttg 60

gaaattcagt tcttagatta aggagccctg tcataaagac actaaattaa gcagcagaag 120

ggagccagaa agtaggtgat ggaaatctga aagagattat acacaagata taagtttgaa 180

catcaataca tacacacaaa aataactcca ctacctcaga aatacaaaag gaatgaacag 240

ataagaacaa gcacttgatt tttaatacta ataatcaaat caccagagcg catcctaatc 300

agggttgttc ctgaaagcaa ccgttggtag gaatggtagg acccggttcc acccacaagg 360

catcgaatat cattggccgc cccctgcaaa tgcacagaaa aatgtgccga tgtcgactgc 420

gcgtctgcgc cagcaccggt tggtctggtc cgcagacttt gcgaggtctc cctaaacaat 480

tcatgatttt tttttgagct tacgaaatgg gagttgggtg cagaagactt ggcccagaaa 540

taaaaaaaaa gaagctgtgt gttggtgctg tcctatatgc atgtcccaat cccatctcca 600

tgtaatggtc ttcttccctt cccatccatc gtccgtgagc tccgagcgtg agggcgagag 660

gcgtcgctag ctggctctca cggccggcaa atctgcgatc aactgcaggt gtgtacttgc 720

ctgcaactca tggagattca gcatgcatcg cacagtttgc ttgtttattc ttctctaaaa 780

attggtcgtc atgggcctgg tcaactcgtc ctgcagactc tgctctagca ctctgcaggc 840

tctgaaactc tgcgtctcat ggccaagatt agttcaccgt atcgatcact gctgaccttt 900

cgaccttgaa tgcagacgct agctgtcgtg caagtaagta ggttgacttg ccagaggttc 960

aggttctggc tctccagtcg agcctaacct ttctgtttac ttgattctgt agtgtgtgcg 1020

tgtatctcca ataaatccta aacttcgcgt gaacttcgac tccgccctga tggaatatta 1080

ggtactcagc agctatcgcg ttctctatct cattttatt tgaaacttta taaatctact 1140

actttatata tgacctgcta cgaacagttt tacaatcatc ggcggaccaa attcaaccga 1200

ggtagtcaca tctctcatga gtcatcctcc aaccattcct ccaactcctt atgtatattt 1260

tctaatctat tttactatat ctaata 1286

<210> 39
<211> 1090
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1090)
<223> optimal_loci_167691_G1, chr4:216656325..216657414, Cluster 1

<400> 39
aggcaatcaa cataccattg ctaaattcgt acgtccgaat ttgtcgtttc tttttcgtac 60

tgtacacaat atatttcatg atgtacttat gtatatatgc ctgataaagc gcccgatagg 120

gcgctgtctt tttctagtta caatgcattt gtccacgcgt tccaagccat ccccgatttt 180

acacacctaa accgcccccc ccccccccccc ccccaaccca aaaaaaacag gttaggtatt 240

cgtacgtccc atggacgaga agtgcatgtg ttagcaaaag gaaaaaaaag ttggtgcgcg 300

cggtgaactg gcgtccgtgt gtcgatcaca gtgtcagatc ctcctcttgc acggactaaa 360

cgtgtgcctt ggttcgcttg ccgtccttga cctgccttct actagcttcc taatgcaaga 420

gactacctac atgcctgtag gtggtttaat taaaaactag agccgatatg gagagtcaac 480

gcacaaacgt gacgtacggg atattaatta ctccatcgaa gcagaagcag ctgctgttgt 540

ctgccagcta gcatatctcg ccggcgccgc cagttttcag gtttgtccac gcaggcacgg 600

gcgggtgttt ggagtggtcg gactcggaca ctcgccgggt cggtgaactc cagcgtcgtc 660

atctcgcagg ggggacgttg ctgccttcgt cgcacgtgtt cgggggtgtc gttggtgcac 720

ccaccccggc ccggaccaac tcccgcatgc gcgatccagt tagtttacgg tggacggaac 780

aataatccgt cgatcggatc tcacgcgcac ggcactggtt tgtattatta ttggccgcgt 840

taactccctt ttcggtggtt tttggtggca tcatgtgtta gccacaagaa cacaacggca 900

acgagcagac gacggcatcg gtggttgaga tggagcagca gcagagtgac aacagcgacc 960

aaaggcgggg tcgtggttcg aagcgtccaa aggtgtgttt ctcaggtcaa gaatgggtct 1020

tgtaaatgtc ttgggctgaa ataggagaac gtgtgggctg agcccgtcag agaggataac 1080

aggagaaatc 1090

<210> 40
<211> 1245
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1245)
<223> optimal_loci_170410_G1, chr4:229946156..229947400, Cluster 1

<400> 40
tgtctgttag ttggtgtgtc agttctcaat tgatgtttag tgtccatgat cgagctcaat 60

ccgggttgat gcccagactg tatctcaacg cttagccata gattagccaa atcttgagtc 120

tatctatgga ctcctacgca tactccacag ttcatttcag gatctagttg tacggtaagg 180

atgttaggtc caagacattg agaagatgga aaccattgta caatgacgag atggaaggga 240

agatggaggc atggagctac tcatccatct ggtgtagttg gaagtgaact cgaccgcttg 300

gaatcagctg aattcaatga agatcacaaa tatcgatgtc tcagctctcg acttggtctg 360

ctagcgcagt gattcggtag attcttcatc tagtttgtct tctgtcatta ctaggcatat 420

tggtccttgt tttgtgagtt gtgacaggcg cacctttacg cttggaagtt ggaacttaat 480

attgtaaaca ctttatgata aataaaacat gagaaacctt aacgttgtaa acacttcata 540

tgatcgataa aacaagagaa acttgttttc taaaaatatg actcagcatc gtagatctgc 600

aagatgaatt gaatggatca cgagataggt tcctttgtct cgccggtgtg agcaacgaga 660

tgtttgtggg atagctaagt tggctctctc gaaatagcga gaaagaaaaa gtttactgat 720

gcaggaaccg atatagttag ctaaacattt aagggcccgt tcgtttcatc tgaaaccagt 780

ggccggaata attctcgagt ggaatgattc actaatttgt gtaactttaa taggccagaa 840

cggttcttac ctttaatcct gactaaccga acacagacta aacatgttgc tagttttgaa 900

ttatagctca gtgagtgaga tgatatgtta ctcatcaaga gattcaaaca tgtccaaacc 960

ttttcgagcc aaatagagtt ggggtatcta aaaattgaat tcccacgctt catttgaaac 1020

taccgggcat gatcatttac caacctaagg ctagtggcac cagcggtcag tatcgaccgc 1080

taggatgaca cttctggtgg tcgttagtac tgactagaca gctgcaacag cggacgattg 1140

acccgatcag tcggctttgg ttgtcgttta gttgggacgg gtggtgtcgt gggctttaga 1200

gtgagagtcg ttaccaatcg ggcgtggtca gtaacgacag atggt 1245

<210> 41
<211> 1309
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1309)
<223> optimal_loci_170655_G1, chr4:231499346..231500654, Cluster 1

<400> 41
ttcagtatct tggaatacgt aaaatctcct atctatttgc tcgttgctaa ttattcttgt 60

tttctccata ttttctattc acgtaggaaa gagagtgaat ctagctggtg aaatagctcg 120

ccacatagta gacgccgtaa ctgcatactt ggatggaaac gagataatcc tgaaatgctt 180

ctgcaccttt tccgtatata gttaggggcg gccctgttga agtcatccat catgtggatg 240

agagtgagac tccgaaattg gccggactac tgctgacgac gggacgcgct agccaccctg 300

ggcggcagcg gcaccaccag aaagcccaga acacaacgga cacggccggg cgccatcgtg 360

gctactgtta cccccacgca cctttcacgc acagttccat tggtggagac gacggaggag 420

cgagcacgag cagtgtgcat ggcattggca tggcaccacg gcggccacga ggaagccacg 480

tgcgggagtg ggacgcggga tcgttggccg cgcgggcggg cgcaggggcg agcagtggag 540

cacatggccg gatagatgct gccaccactg gctagtggct gctgagcagt gggctggacg 600

gacgctgctc gactcgatcg gcccctgctt gccccgctgc tgccggctgc ggcccgacga 660

cggatccata gcggtggggt ggggagctgt cgatcgacga cggcgcggcg gaaagcaagc 720

ggtcgagccg ccgtgctacg cgccagtcta atatggggag ggacaaggcc aacagcgcct 780

ttggcccgtt gcctgtccct gtccgggctc taggggtggg gtttagtgta cgagagacac 840

aacgaaagcc ggttcctggt ggctacgctt tttttttct tttctttatt agccgccgcg 900

gaacctagtg aaggcatgca tttggacttt gttagcacat actttgctaa tcctttggaa 960

ccatatacta ccctacttct tattattaac taagaagaaa acaccatttg gtacataggt 1020

ttgagcttcc tcctaatcat cattcaaaga taatatatat actcctggaa cgcatgttgc 1080

attgtatgca gtacgaaata aacaataagt aatatatccg ctcagagcta agcgcctgat 1140

aataagagca tggttgttct tttgtcatcg ccacgttttt tttttgtttt ttgtttttgc 1200

ctcaccccca agtacaaacc gtacgtagta cctcaactca cacaccacca cacgcacacc 1260

taccttcatc tacaaccagc tacacacaca cgtagctaag ggatactga 1309

<210> 42
<211> 1360
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(1360)
<223> optimal_loci_171036_G1, chr4:233634455..233635814, Cluster 1

<400> 42
tccagacatg tcactggtac gcactggtat ggtgggggtt taaatgctaa aattagcaac 60

tacgattgga tcacaatcta aaagccattg tctcaaggta acgacggtta cacaagcaaa 120

tcttaggtgc aagtatgtga gcctcctgga ttttaaatca tgatccaatc atccaaccaa 180

agtcgtacgt acttaaacct cccatcatac cagggcatac cagtgtcatg tctggactaa 240

tagcgagcta gtgaagggtt taagtgttaa atgtgtaact aaggttggtg agggtttaag 300

tgctatatgt ataactatgg ttggaatacg tgaagggcca tgagacacgc acctaataag 360

gcttgcttgc tgcgtatatg aacaaaccag aaaagagcat ccaaaatatc atccccacgc 420

gagctcaggt tactcttgtc ccaaatagac gggcaaagaa ctcccgtaag tagtagtaac 480

tgtacgggta accgctaacc aagattgaac cagtttctcc aggacaggat ggcggggttt 540

gttctagtcc tttctccgtt gataacaatg gcggtgtcta cctgtattcc agtcgtccat 600

ggtagtcaga gcgttgcatc acagcagctt tgaccatcac caattggcat gataagaaat 660

gcagaaagag gtgcgacgac ggttgagaac tcgagatact tggagtgcca tcgactatat 720

aaggcagcat aagacccaga agaatagagg aagaacgggc attcatcacc gtgagatgca 780

gctctcagtt ccaccctgac tgactgatga aaataatcaa gctgagactt tgataactgt 840

aataacaaga gcttaagaag aaataagaat caccatccag tgacgtacca gtagaggacg 900

gctcaaaata aggtcgagtt gttatgaaag agggatcctg agcatcaatc tccaagtggc 960

gtgttgtgct aatcttttga agacctgttg attcgacaag ctttactaat ttgtccgtta 1020

tgattgtcat gggcgggcgg agatctggtg attgctgcat tgtggaagaa atatcataag 1080

taattgtaac ttctgttaat gttttagttg gtgaacattt acatcattag aattgctgca 1140

agaatatatt ttttgttaaa ggatagagat ttcctccttg attacagggc tacgtccttg 1200

attcttccct tgattttgat aacagggctg cgcccctgcc ttattcttct ccttgactat 1260

agggttgtgc ccctgattct tctctgtaac catctgtgat gtacaccatt gatctatata 1320

ttcacacgac agccactcct ataggtgtgg attatttcat 1360

<210> 43
<211> 1081
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1081)
<223> optimal_loci_171814_G1, chr4:237589019..237590099, Cluster 1

<400> 43
acaatatctt gccattttgg cactaccgag atctctcaaa agcttaacaa atttgatcaa 60

tttgctcatg accatggcat agatcaatta cattttctg tatatgtttt tgcttctatt 120

tttgtctcct aaaaatggtt gtggctggtc attcactcat tctacttgta gaattcaagt 180

ttctatcttc aaatctaaat tgaatttaaa tgaaagtgac acgagaacca tggttcatgc 240

tttcttttat cttatttgtg atgtttctca cctaaagata tatgctcatt cctaaaacta 300

attgtgttgt tgtgttcatg acaattaata tttttaaatt ttaatatatc ttattataat 360

gtgttcactc cgtagcaacg cacgaatatt tatgtagtat agtatataat gcatgaatac 420

atgtcggatt cccactcccc ccgtcccctc ctcgtggcac gagactaccc tccactcctc 480

tcccttcccg cccgcggttg gaggtggtcg cagcgaccgg aggctacata tgggttgagg 540

ttaattgcat gcttgggatt aagaccactc acaccctctc ttttctctgt acgtgtttgc 600

ttgtcgaaac aatgttgttg ttcagcaagc gcgctgttta ttttcacttg gtactttctg 660

ctacgcctgg cttgtgcgtc cttccaaggt tggaattcca tcggtcttcc gtacgtgctc 720

ctttttctga actgaatcga tgcgcaacga cattttcacg agtaatgtta aacatgcgca 780

gttggttccg tttaatcaga catgtgctgc gttacttcat taattggcag taccaactgc 840

aggatctgat tatgatgtta tgggcatcat atatagctgt atggtacaca ttgcggtttt 900

ggcttagttc ctaaatattc tcacaagact agagtttgat cttaatgttc atttggaata 960

aaaaaaacga ggatatatta tttgccgtgc ccttgaggtg gatgccctct gtgctctcaa 1020

ttgagaagtt tcggtttaga gcatgttgtg gacactctag ataactgtga gactgcactg 1080

g 1081

<210> 44
<211> 1080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1080)
<223> optimal_loci_171855_G1, chr4:237934692..237935771, Cluster 1

<400> 44
gctttttca acgaatcgat actagttatg gacgaacctt ttaagtgcaa gcaagcctaa 60

aaaagtccac atgcaaatgg atagcaaagt tgaatttggt accttgaaat atgaatacca 120

tacccactaa cccaccaatt tcacaccttt ttcatggtat acatggttgt aatggtgcta 180

tcatttgttg attggtctag actatggttc ctcaagaatc aaacctataa tgaagacaag 240

ttagaggacg caacacgaga tgtggttgac catgtcgata aggtgagaga agtcacacat 300

gaaagtaccc aaagggatca tgatggttcc acagatgaaa cacacacttc ctttgttggt 360

gttttggtcc tacacagagt ccaatccaaa aaagagaaac acaagctttc accacaacgg 420

gaagatttca cccccatgcg acactactat agtggtgaga atagtctatc aataacatca 480

gtcgatccta ccttgttcga ttgtcatgtg ggttctagtg ccactggtaa tcgtgccttt 540

tggctatatg agacaaggca accctcccct tcgaagtatc taagagacat ctcccaccct 600

tagacacttc ttcaatgtcg ggatttatag tttctcccac gctcattatt gtaacctcga 660

ctacatactt tggtcccttt gtgcttagga acatgtttga aacccctcta gacatacaat 720

gggttgtttg aatgaattta aacctcacgc ttttgagaga taagtaatct aaacacatgt 780

gtgacattaa gttcactagt tggtgatatg aaacaccaat atggggcatt ggcgactctc 840

gtgcatgttg gtggtatccc tcttcctcta gatgagggtc atcttcttca tgtcattctc 900

atactaagga tctcttgctc ccatggtgaa gaattgcttt tactgctttg ggaattggag 960

tgataaacac acaacaaact tggctagcat aaacatctgg tacactgaaa ccacaaattt 1020

atcctagcaa aaacctcatg agagtgtgaa catggggtgt catatttatg ccacataggg 1080

<210> 45
<211> 1386
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1386)
<223> optimal_loci_172112_G1, chr4:239748993..239750378, Cluster 1

<400> 45
gaagtgttgc aattatgcat ttttttttctt cgagagactg ccgggtgtca cgggcaatct 60

ggtatatagt ctaaatagct ataaatattt atcctctctc taggatcgcg aatatgttta 120

gatcatagct agaggggatt attaaagatt taaaattgtt agcgctatca gcggcagcag 180

cagtttgttc ggccatttat ttggtgacat agaaatgaca ttgtgtgtaa atgtaaacat 240

gtgacaaatt ctttgcaggt tcttcatctg gctatttact ggcttcattc ctaggctgtg 300

ctatagaagc ctatattctt tcaggagttg gttttaacta cctattaacg tttggatcaa 360

gttgtcagag agttttttttt tacctagact cataggtggc gatctagttt agaattgacc 420

actactagcg aaggtgtccg tggttgacat tagcctcata ggttctgaaa acactccata 480

ttatagtgaa gatgttcatg gtttttctct tcgtattaaa gagttttcta tgtaaatctg 540

tgtgtcatgc tctgtgattt attgattgat ttacttcgtt ttgcctgttg tttctgctaa 600

tagttagtag aagttgaatg tgtgcaaaga caaagcgtaa gcagccaagc aatcacaagc 660

agcgtgatgc aagcaagcga gcatcgcttt atctgctgcc tgagaactgc actgcacccc 720

acttgtacct acccagccgc tgggaacaag aacaacagtg gtagctagct ccatcacttg 780

caacccagtg gttgacattc tgtcttggca tcacactaca caccgatcat ttcatacatg 840

tgtatatata gcaaaaggac aaacctaaaa gcctagcata tttagtgctt cttatactga 900

tccatatatg atcggtagga gagccagacg agatcatgta tgtttatata aatgggtagc 960

tgtgactgcc taacagcacg tagttgaagc ctgcatgcag aaaccgcatg ctagctaacg 1020

atttgacttg gcgcaaacag gtcagacgag gagatgtgaa gatatctata tataatttgg 1080

gctgattaaa ctccactagc agaaagcgtt tttgcatatc ttatctcctg atgttgatgc 1140

tttacattac ccattggaaa tgataacttt tccctttttt gttttctctt ttgctctttt 1200

cgaacacaag ttgccctctt gcggtttagg ttttgtttgg atactttagg tgtatactat 1260

attatctgaa caaaacctta gggatctcag aatcattaat atactcgcgt atatatatca 1320

aacctaaagg ttatatcagc atggtgcttg gtatactgat ccatggtcag cggggttcta 1380

aggcac 1386

<210> 46
<211> 1186
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1186)
<223> optimal_loci_172640_G1, chr5:1735952..1737137, Cluster 1

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (891)..(891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (892)..(892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (893)..(893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (894)..(894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (911)..(911)
<223> a, c, g, or t

<400> 46
tgcagaaaac tgagaagaag aaattggatg cagttggaaa cacagaataa tatgatatgt 60

acctcatgcc tatgtctagc tgcttattat agctgctctg gtttctgttg gtaaaaaagg 120

cccactttaa ccaactaatt tcatttcaac agctataaat atgagaaaac taaaagcttt 180

aattattaca taatcctcat gggaaccagt gaacacaaaa acttactatg tctggcttga 240

ttacgtcatt ccactccttt gtcttcctct tcatctcctt ggaatttgaa tcggcaagct 300

gcagaaacaa atggagtagt ttatatgcat ctgatatata gaacaggtaa tgcacgtcta 360

ttgtatacac atgtttgagc gcataacaca aataggcttt tgttttcagt caaagcaatg 420

acgaataccg taggtacaaa tggtaccatt ctttttatag tacattacta catatatctg 480

ctgtctgacg atttttatag tacattacta catatatctg ctgtcacatg tgttcataat 540

cttctctata aactgggtga aaccttaaaa gcttcgactt agaacaaagc taacatggca 600

ttatttttgg ggtcagaggt agtatatcat tactgttctt tctttaatgc cagtaatctg 660

tagcgattga tgtattcatg aactgctaca ggctctgtca aagaccttaa cccgtagacg 720

agcttttcta cctgaaatca cagttttctc tattgcaacc agacaggaat ggatgcatca 780

ctcttgacat atcagaatgg tttagcttca tnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 900

nnnnnnnnnn ntcatcagct tgaagcatga tagatggagc acatgcgaga tctgctatga 960

catttgagaa gagcactgag ctattgtata gatgattagc tcttacgtga tcttcctccc 1020

tgtctctttc tagcatacca gtttggtgga cctccaatat tcctggcaca ttcgttatta 1080

catggtatgg aatatttcat tgtcaataaa atttacttgt tctctcagga attgggcctc 1140

agcccttcag tgccactgca tgtcgttctt tgccaagttc ggacac 1186

<210> 47
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1007)
<223> optimal_loci_173679_G1, chr5:7622957..7623963, Cluster 1

<400> 47
ctctcttact ttggtgcagt ggaggccctg agggtggggc agagggaccg ccgccccgag 60

cccccaatta tatagggccc cgaactagtt atacattcag taattagact atcagacaca 120

ataacttaat agtgaaatgt taaataatta gtagccacag agtgttcaca acccggtcgt 180

atttaaaaat gttaaaagaa cttttaagat aatactataa tatgtatctt tttatttatt 240

tattgcttgg tatgaatatt tttagatatg tcttgagttt atatattggt actattttta 300

tatagcaata gtttaatgga cctctatttt aaatttgctc tgaacccta aaacctcggg 360

tccgccgctg ctttggtgat cccttcctct gtccatggtc gccaagggga ttccactttg 420

gtgatttctg cctctatggc tgtctgagcc ttgcgaaaag aacggcgtcg aaatctgcaa 480

cccccacccc ccggcccgga gaaagccacg ccgactgcta gtttaaagtg gtcttgtccg 540

ctttgagctg ctggcctggc agcgctttct gtttgctgtt gttttctccg cattggcttc 600

tcgctgaagg cgaaagggag gccagcgcgc gtgctgggct tgtttcactg acggtgtcgt 660

cgaaggccac acacacacag agtcagaaac agcagctggt tttacaaaag gagaggcccg 720

cccggccgct gtccagtcac tgcactgttg cagcatgtgc aggctgcaag ccgtcatgct 780

ggccatcact gggtctgagg aatcagagaa cgcgcctgtt ttcagaggga aacggtcttg 840

aaacgcaagt caggagggca ggaacatgca ggtcaggtat ccctcccttt cacccaccct 900

ctgtgcaacg tcaatggaga agaagaacaa gtaaaggcgc acacctggat tgccctctga 960

aatcctgcag aagacaaagg aaaaaaaacc ttctgatcta aggctca 1007

<210> 48
<211> 1008
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1008)
<223> optimal_loci_174368_G1, chr5:11888055..11889062, Cluster 1

<400> 48
cagttaaaat tagccataga gattctaaat aatttagcta aagtcctagc ttatttttag 60

ctagaccgtc aattagtagg ttggggcagc taaaactttg aaattttctg cgaggcaaaa 120

tgctaccgac ccagttgaag cgaaggaaat caaagactat ttctataaca aaattagacc 180

tcctatatgt taaccgctcg tacgtctacc ctttagacta taaatataaa actttagact 240

atatgaagag agacaagata ctacccttac aacgaacaca attgaacgta tcataaccag 300

caatccaaca tgtctaactg gacttagggt attaccctac taagttgcgc cagtgagaaa 360

attagaaagg cgcggcgtgg gccccggccg accgcacgca gccttttttt tttccatagc 420

aggtgaggcc tacctagtac gcgtcaccgg ccaccggcgt gtgtcaggaa cgcgatctcc 480

agcccgatct cgtcgcatgc aggccgggct cgcgagcgcc cccggccccg cggcaaggca 540

acggaagcaa agctactgac gcgacgcctg gaggctggag gagcggccgg ctggccggcc 600

attctcatct cgtcgcgagg ctagcctctg gccagttggc taaccggcgc ggcgcggcgg 660

ggcgctctgt taggagcgca ccggcctgac ggccggccgg cgcacgcggg taagatattc 720

cccgagcgaa taattggcaa tgcatcccgt catggtcgtg ctacgcgatc tgtctctttt 780

gcggctttcc ccatggctgt actcgctcct tgctttgggg caggatgaca cacaactgtg 840

gctggagacg tgttgtacgg agctctggtt gtgcggcgga tcggatggct ccctatgcac 900

agtccgtctg attggattgc tgctccattg gtacagttgc acccgcggag atttaaagca 960

acgtttgttt ggttgttcgg tacataaatg cagactcgtc tcgtgcaa 1008

<210> 49
<211> 1230
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1230)
<223> optimal_loci_174369_G1, chr5:11889125..11890354, Cluster 1

<400> 49
aaaggaggag agttgtagct tgtttatttt ttgctatatc tcttaattag aatatttaat 60

cacagtactg attttatatt tgtgtttctg ttatttttta aacaaaacta gaccacatat 120

attgtataat atttaaagat tttttgtaca atcttatcta atacacgttc tgatacagac 180

aaccaaacac gagctatatt tgatctgaat gtactaatac aaacaatcaa acgcaaacat 240

gtgcatggat ctaggctgta tacaaagaac atggctcctc acatacggac caggatatca 300

ccgtgcagca accaaacaga ccgagtatgc aggcagccag agacagccat cgcgattgca 360

aaagcttctc gcgaaagcgt gcggtggctt tgccaaccct gcagtgtcca ttggacgcga 420

tttggcccta tggggtgcgt gggcgtgggc gtgccgtggc ccagcgtggg acgtaatcaa 480

atccaccgtg atctattcta aagctggtgt ggtccgcgcg cgcggtcccg tttgcaagtt 540

tcaaggaaaa ggtccctggg ccccccggga cccaaggtag ataaagccct aacgtcttaa 600

acgattgtat ctactactat ctagtattag tatgcttagt attgtacacc ttgccgttgt 660

cagtgttggt ggtcataaga gttgttgagc ttccagacca gagttccatg ttaacctgtt 720

ctctttacac cggatacgtt gttcaaccgt ggaaagatca gaaggatgat gccctacagg 780

cggagtcaca ctccagccca tactcggtag tcggtaccat gcgcatacgt gcctagggtg 840

ccccatctct acctaccttc atgccttcag tggggtttcc cggaagaaaa aaaaacattc 900

ctgttcattt gtctccaaga ggtagccgat aatatgcatt attggatacg ccgaatatat 960

ccgccaattt tatgttcact gaaaaaaaaa ggatatatcc agttttatgg acgctactgt 1020

atatgtatga acacttgcaa gaactagccg acgaactgta tcctactcca agtgtatgat 1080

ctatctattg cgggtccgct tcggcgttgt cagtattttg ttcctgtgcg cgccatacga 1140

gaccttattc gcctcttccc atcaaatatg gattagatga ctttagaaag gattttgact 1200

tgcttatagt ttaatgtcag ttaggtttca 1230

<210> 50
<211> 1167
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1167)
<223> optimal_loci_176656_G1, chr5:23883701..23884867, Cluster 1

<400> 50
aacagtgact taacatcaaa agaatacgac ttttttgggg cgcacgtgac tcgtaatttt 60

ttccacgcgg aacaaaagaa aggcgtggaa agaagtaaaa gtcaaagcgg taggcgtgga 120

tttcttttga acctttcatc gtcgcggctg cagtcataca gaggcagtag ttgctgccag 180

cccaacggtc acttttccaa ccgtcacctg gcgggtccca cccacttttt cttcttcttc 240

taccgcctgc tgagcggggt actctctgcc ccccccccccc ccccccccccc cacctcgatc 300

ttgacgtctt atgatttttc tgcatctcat attatcgtga gtgttagtat ttggaaaacg 360

acgggtcacc gacagtacag taacccccctc gcccccacct ctttgacaaa ttctgacgat 420

ctgctgttgg cggggtggtt gccgagtatg gattcgcaaa cgttcttgta gaacagcacg 480

aggagaagac agaaggggggg agggggtgtc agggttttgt ttgcaaacgc aagatgtctt 540

tatattctta ggattgttat tttgacaccg cgagaagcaa ggtgtttttc gttctttctt 600

ttttttcctt tccggaagca gcagtggtcg tcagtactac atatccgcct tcagaactga 660

tgcaaactca atgtctgacc aaaaccgaac taaattaaat taactttggc cgagtccata 720

aaagcaaaaa aaaaggtttt gccatactag cgtcgtcggc gggcaaggca ttgaagcggt 780

cggtaagctg gcacctagta gtagtaataa taataatact agaaaaaaag cgccctgtcg 840

ggtgctctac catctgaatc acgccgtcat ctgaatcacc ccaggtaagg ccaaaaaacc 900

aaccttagag tattcaaata cacttgaatg catgagaaat tatttagtgt cccaaacaat 960

ccagctaaag taaaataacc acttttagat ataatacctt ctattgcctg ctaatcactt 1020

tcctcaagtt cattcatgtt gtgatcatat atctccagaa cattacacaa agaggactca 1080

aatcctaagt aacaaacaac aacatgccac caattgtgga ttaacttgtg agacaaaaga 1140

aatatctaaa aagctaagct catagat 1167

<210> 51
<211> 1048
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<223> optimal_loci_17718_G1, chr1:98754773..98755820, Cluster 1

<400> 51
tgatggtgca ggtgcgcaac cggaaccgac gaaccgtctg tatactagtg attgacagca 60

gcagcaacaa caaacaaaca aacaaagacg aatactagga ggtaataaca gttggagtag 120

ggcactagag tagctacaaa tcaagtgatt cgaggcatga cgtcaagatt aattgcctag 180

tttaaaacaa ctgtggaggc atcaggatta aatgattgat tgtgttaata ataactatct 240

aggtcgtgtt taggaacaaa gttttttttt gaaaaaacat agtttttaaa atactacagt 300

acagtacact ttagttatga caatattata gtttaaaata ctacggtttc ttcgaaacaa 360

ttatagtatt tacttatgtt ttgaaaacag agattttagg tagcttacca aacactattt 420

tacaatactt caatacttca gttaaacacc attttataat acttcagttt tgaaaacaaa 480

gattttgcaa tgcttcagtt ttcaaaacaa ctagtatttt gtatataccg ttcagtttcg 540

tggaacttag cttacgctat tctagcttgc ttggctcgcg cgtcctactc taaattcaat 600

tgtttcacta gcgttaattc gctgtcaccg gaaatacaat catcccgcca taagagatcg 660

tgctggatgt agatggagga gtctgattct cgccctgcca gtgacgaagc tagcgggtat 720

gcagatccct cttatttaca ggagaatcag gctccccata tgcattaact ataattcggc 780

tcatgtttgg tacgttgtat cctgaaaact gagcaaacat acactggtgc aacctagtgt 840

tatttatctg cacatataga tacccaaaaa acttacgtat ctaggcaaca aagctcacac 900

aagcctagct gcgtgcatgc agggatccaa ccacacggta tatgctctgg caaactctac 960

cagtggtggt tcccttcggc ccctccaacg tggctacgtg ctcagccttt gccattcctc 1020

cttcccagcc tgcatatgtc ggtgggtt 1048

<210> 52
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1145)
<223> optimal_loci_177648_G1, chr5:29065285..29066429, Cluster 1

<400> 52
attcttgagc acgtctttac gccaactggg gatatggtct ttctctagac attgacatac 60

ataaaattta taaaaataat ttatttttat aaaaaacaca ggaaacaaaa aacactctat 120

tccaaagaga catgcgactt tttaacataa aatcttttca aattggctat acgagatatc 180

ccataagcaa aactagatcc gaaggctagg tcaacctaat aacatctaat atataagtat 240

tatatatata tatacatact cattattcat caccggaact agaccacccc accgatcaaa 300

tttgtgaact acccctgtgc gctagctagc ccactgaacc gattctccac gagcctcgct 360

cgccattgat tactccaatg ttggagccac cgctacatgt ctacaattag tcaactatgg 420

tccgatctag tcctacccac caccaagccg atccgcacca cttaacatcc actttacaat 480

tagccattga atatttcttt cttctaaaat ttaaaaacgg cgaatgaatg aaataaacct 540

tgaaatagtt gaatatctgt tcgtggtgta tgttaagtaa aacttaaatg gctgaagtaa 600

accttgaatg acagaatata cgttgttgtg cgctacaagc ggcaagcgtc tgaacaccgt 660

taagcatgcc atgcacgccc gttataactc cttatcggcc ggtgcggttg gttctctggt 720

gggctagtcc attggacctt ttaatctggg tgatggatta tatatatgga ctctatcacc 780

ctagtttgtg aatagttctt aggtgtgtgt atatatataa ttacgtagaa atgggtagcc 840

aaagttttgg acactgacta ctcttcgatc agctgatgct aatcacacac tgaccggatt 900

ccgaaacaac gtcatgcttt gtgacagatc tagcggagta ttatactccc gtacgtacca 960

acagaggaca atgacaactt tgctacagac cttcctaggc gaagataaaa taaaatggtg 1020

atgaattatt atttttttgt ttaccacaag tcacgagtcc actgcacccc ccagtaccaa 1080

tgcacaacta gcattcagcg agatgttctg ttctccaaga gtgttctgtt cgaggcccgc 1140

tccag 1145

<210> 53
<211> 1208
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1208)
<223> optimal_loci_178129_G1, chr5:31628979..31630186, Cluster 1

<400> 53
acccactttg gtaagcccct aggaaaaaca taaggggaat tttcttccca ttcagtcgat 60

tccaaaaatc tatctagctt aaccaagata ggatgttctt gtttttcgt ccaagtctat 120

tggaggccac ccatgggaac ctctctcaaa ttaagcatca ctataaagca atttaaaatg 180

tccatcaacc tccgatcgta gtgggaagaa ttattctcac tcacatccct tatgagattg 240

aaatcccctc caaggattac aagaagtttc tcattcctac caatttatga gagttcttcc 300

atgaatcaac ctccgatcat gtttctttca tcatccttct acaaatcgat cttatgcctt 360

ttatatatta tgcatgtgat tctgatcagt gacctgtgct tgctgcttat atcaattaaa 420

actttcatat acaacagtga cacagggata tgggtggtaa tgggctctaa aatttacaca 480

gtaaaatttt aggatctaga tctatttata ttcatcttta aactaaaatt aggtaaaaac 540

tcaaacgagt cgtgaaaaaa catttaaatg gtgatccatt gccatcgtac acggggaggg 600

tccaactaca atagctattg gtttcgttcg cgttcgtgtg ccagtaaaat aaaaggatag 660

agcagcgatg tgttggtagg gtttgtcgtc gagtccaacc agaaggccat gccatgccat 720

gtcaggccta agtcgaggtc gcaaattgcg ctggctaccc caagcaaaac gtgacattcc 780

cctttctctc tcatgggcga aaggcgcctt tacgggctag tttgagagtc caaatgctga 840

aggggattga aggagctaaa atctcattct tatttaaaat tgtgactcta agtagttcat 900

ttccagctca atttctctgg ttttgtgctc caaactaccc cgtagggtcc gggtgtatgc 960

tcgcccgtcc gcctgtgcgg gccgcgcgcg gggtaacagg gcgtcgccgt cgtcgtgtac 1020

gggacgccgg acacggacac gacgggggac gctccaccgg cgtctcgtcc ggagacgggc 1080

gcggagaact ccaatctgct gacacgcgcg ggctgtgtca tcaaatgctg ggatggcgag 1140

ctgtcctgcg cctgcctcgc tcttccgagg aaattgatag cacgaccgcc aaaaagtact 1200

cctccctt 1208

<210> 54
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1005)
<223> optimal_loci_178172_G1, chr5:31835055..31836059, Cluster 1

<400> 54
ctttagcgag caatacaata atgagccact cgatctgtta ctgtagtcct caagaggaca 60

gacgaataga ccgttcacga ttctgcaccc gcattttcca atattcgcca gagaaaaaaa 120

agtactacct tattagctac ctaggcgcaa taggtagtgt agcactctac gtgaggacat 180

cggaaggtcg ctcttgccaa gaataacatc acagtcacag cggggctgct tgttcttctt 240

ctcgaagttc caccaccttt tagcgtaaag cgcttttctg gctgctcatg aataaagtgt 300

ttttctggct gctcatggga cgtcaattgt ttaaacacac agaggaagtc ttcttcagat 360

aaagaacatg gatttgccaa caaatatata ttatttatat cccttgcggt caacaagtaa 420

gcagtgttaa gcctctgata tgatgaacat atttctatac gttgcacgtt tgccacagct 480

tgttgggcag gcttcagttg atacatggtg ggtcctgctt tagataatta acctttgcac 540

attcattcag acatgcagct aatcgaaatg gaacagtact cgtattcgat tttaatctaa 600

atactaaaaa gtggatgtat ccgtaccgta tacgatttct acaacatttc tctatcttaa 660

tttcgtattt gaaaaataat gttaaatact cgctgttatc cacatccgta aataacgaag 720

tactaagtat agaatcatct agaacgactt atatatctac gactaattgg tattataaat 780

aatgccacca ttaatataaa aaccggcaca atgttcgtac gttgccacga cacataaata 840

ttcaataaaa ttttagagca caacagttac aattaaaacg aacaatatat attatcatcg 900

accaaaatac ctcacaaatt ctttgctaac agggaatata aaactaaact cgagatcccg 960

agcacctcct cctctccggc tgttcggcca tgcatcgtcg tcgaa 1005

<210> 55
<211> 1260
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1260)
<223> optimal_loci_179998_G1, chr5:41811098..41812357, Cluster 1

<400> 55
ttaaatgagt agattgccat aatagcgaga ggaaatggtt acagttaatt tatcggaagg 60

tactttagat tttgtatagc agataacgaa cgtgaggaaa cgtctctaac acgcgaccaa 120

cacattaagg ggttgttcgg ttccttagga acgatggtct ggaactattc ctgtctggat 180

tgtttaacta ttttatataa gatttcatga ggtgaaataa atctaggtcc aatcctgaac 240

aatcgaacag gccgtaaaga taaagtttta tttcatcatt ttgatactgg cgtgaattct 300

tcctcctcca acttatgcac cgtaccaaat atttttaca cggagtgaat agcgttgttt 360

tacagcgact ggcagggatg aattatgcct gcagcgagcc agcgagtgtg tgtggctgag 420

accagcttca ttcactcgtg ctgttgctgc tgacgccagc cgcacttgtc ccgcttgttt 480

ctgtcaatgg gaaaaaacct gtcgccccaa taatcacaat cacattcaca gcaccccacc 540

tacctctacc catttgaaga actccggccc tgtcggtgaa ggatgccgct ccattgtgtt 600

tttttttgt cggtgcaaac atgccgcgcc gatcggtcgc tcactcgctg ccgcttccag 660

aagaagcagg cgaagccaaa gaaaaacgtc cccgacgccc ggcgggaaag cgcgactgtt 720

gtctgttgat tttccccttt cccggcggat tgtgcagtgc agtgcatcct cgcgagttgt 780

tcgagcgaac aagcagcgtc aggacagggc tggttgatcc tatggtaacc ttttgctttc 840

gccggcggct tttctgctcg agtactgttc atggcgaccg gaagaacgag ggaccgggcg 900

gggatggctg cgtggggaac tggcgatgag atcctggcgg cgtgcccgcc cacatggggc 960

tcacgccgtt cctgctaccc tgatctgtac gcgtgcgtac gcatggttct cgttgggttg 1020

cggttttggt agccacgggc ttgcttgctc tccacccaag catctgaatt gcaatgccag 1080

atgcagattg gtaaagttta tattactaat attagtgtaa taagaaactc taatagcaac 1140

tactatatat atatatatat atatatataa tctaatttac tgtaaacacc tacacaatta 1200

tagtaaacaa acttctacta agactaataa aagcaaatag ctagttacta cttactaggc 1260

<210> 56
<211> 1189
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1189)
<223> optimal_loci_181590_G1, chr5:51860517..51861705, Cluster 1

<400> 56
attaacacta cgatacatgc atacactacg tcacatatgt tctgatctgt attacataaa 60

ataaacttta tttatcatac aaaacaattt aactaataaa taactgatac aatattttga 120

actaaaaaca ttatttcgag taacaaatag gtttaataat taaactcaga aactttaaat 180

tatcaaagga ccattccgcg aactaaacca acctaattaa aatctataat attgttctat 240

ccgacagaag taactaacac taaataattt ataatatata attcaatgat atctacacaa 300

attaactata aacaaacaaa acatataaaa tttataagca aaatggactt acataaatgg 360

gcgagacggc agtggtggac tcaggcgcaa ggaggttgac ggaggcgtgg gcgtcggccg 420

tccctattgc gggcgtgggt cgagcacggg cgtcggaggc gcgatgtgag cgcagatgtc 480

gttggaggca cgaccagggg cagacctaca ttgagctgag cgggggcaga tcactcaaat 540

ttctggtttt atagatactt tatcttattt actgtattta cgaaggctaa ttagttagta 600

aacctctatt taggccccca ctcatatatc aggcttccac tcagatattg gtctgagtcc 660

gtccctgggc acgaccatgg gcgttggtgg ctaaaggaga cggtggcggc gacgcgagga 720

ggccagaggc agcgcgcgtg caggtgcttt ggacggtgga ggggtggagc gcaacgcggc 780

ggtggggtcg tgactcggtg gcgacggttt tgggtgcacg gacgtcgtgc gaatatggtg 840

gccgaaacga catctacgag gataatccgt cttattttcg atatcttatc tgataatcgt 900

aaaacgttat tgttatgtat gacggtattg acggtcaata cgcgtcgtcg aaagtaatct 960

taaacttcta cggttgctct ctggaaacca tcgaaaatta gacggtcgcc gaatttgttg 1020

tggcttcctg ttgtgagtat tggttttgac gaattcagcg ccaccatcac agctcttgtt 1080

ctattgcatt cgtcgcatcc tgtaaggctg tcatttcgaa gttttcgata gccattcgta 1140

tccgactccg agaggcaggg caggtgcagg gaccatgtga aaacacaaa 1189

<210> 57
<211> 1351
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1351)
<223> optimal_loci_187512_G1, chr5:92790838..92792188, Cluster 1

<400> 57
cgacatagtc atgactaaaa cgatgaccgc ttagctatca agtgttcgtc tcggtccata 60

cttttttcaag gatcttccgc aagtgggcgc taggtaccga tgtagatata tacggcaacg 120

accagggagg agtactgcag cttggaacac tagctaccag tcactgttgc cgcctccggt 180

ttccagccac accttgaccg tgtctagcag catgaaagct gggacgccac tcaaagacag 240

aatggtcctg aaaagaaaga tggaaacagc acggtgcatg catcgacccc catgaattat 300

gatttttttt ctcaatgttt tacacaacgc aggtggtatt gtattcggtg gcacacgact 360

gctatcacaa aagatttata tacgccatgc ttatatctgt tttaaatttg acccctttt 420

acagtcttat aagatactag tgctgttgac catcaaatca agtataatag cactgactag 480

gagggctcca aacagcttca tatcgaaatc ctagatgaaa ggatgataat gcgtgagaga 540

gaagaaagtg gatgcttcat gagagagctc ggctctaacg tattctacga ggaacaagac 600

tatgctttta gcttgatgta ggagttaagg ttggctctct ttttttcagc caatctaaat 660

gatttctctc tccaacttag atttacctaa gaataaggtt actatatgta ttagttttaa 720

tattgactct ttgatgatgt tggcaaaaac atagagcatt cgatcagctg gttcttctgt 780

tagcctttgc tttcatctat gcatatgtgt actccagtca tatatacagt taagctatag 840

tagtaatggc taaaacgagg accgtagcca agagtgtcca tctcagtcgt ccatactttt 900

ttttcaagag tcttgtgcaa gtgggcgcta ggtgtaccga tgtagatgta taactacgac 960

cagtagtact gaagcttgga acgctatata ccacactagt accggtcact gttgctgagg 1020

cctctggttt ccagccacac cttgactacc gactgtggcc ctgcgcccag ctagctagct 1080

agcagcttga aagctgggcc ggcctgggag tttcttacgc tacccagacg actcgtcgac 1140

tcgaatggtc ctaggaaaaa aaagatgcat ggaaacagct actagcacgg tgcacagaca 1200

gccgacgaca tggatcgatt taatgttaca cagcgcatgc aggcaggtag gcaggtgtta 1260

cggtgttact gcgttgtatt cgatacacta catcagctac aatcattcta caatcatttt 1320

tagaggccaa aaagcaccga aaattaagtc t 1351

<210> 58
<211> 1213
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1213)
<223> optimal_loci_201597_G1, chr5:183496058..183497270, Cluster 1

<400> 58
tgcctgctac gacctctgtg catgcatgtg tatgtgaatg tgtgtgactg atctcgagag 60

agggacgacg aaaacacaga gggaggcctg gggttgttcg agcgggcaat ggcgcgccgg 120

ccctacgcat gagagaggag gatcagtcat cagcgggtgc gtaaatgcaa ggcagaagca 180

tgccatgcag aagagagaag gcagagagag agagggtgct agcttgcagt tgcatacaga 240

gaggagggca ggaggccgcg cggagggaga gtagcactag cacgcattga aggaggggct 300

cagtgctctc tgctctcatc atagctaccc aatggcgccc ccctgccctg ccctatcgaa 360

cgatatcgca tttactttgc acgcaggcat gcagctcgct agctgcgtgt ctttgcagct 420

gcagcacagc gcgcgcggca gcatggtagt gcttgttgca tgcgtaaact tttgcaaacc 480

ctagctatag ctatgctgcc atccagaaag gtgcaagtca aaccgcaggc gatccaccac 540

gctcacactt cgtgtatctg ccccccctgtc cctgtcccca aacttggggc ctctcttcaa 600

tacgagttgc atgtccgtgc atgcgttcga tcctcatctc tcgctcggtc tctcccatcc 660

atctacatac actgcagtca ctggcatgca tgcatgcacg agacgacgat cacagagtag 720

cggcccgctc ctcctgcctg cctgcctgct gctgctctgg ttgctgtagt tgcgtgagtt 780

tgtagcaaat agatgtgatg tgatgcacca gctagcatgt actgctactg cctagccagt 840

gtagctacat gagaggggct gacgagaggc cggcaggccg cagcatcccc ctccgactcc 900

gatcctggtg gcctgatgtg tgaccatgca ggtagtaccg gccggccggc ctttacacgg 960

ggccctgcaa cgcctgttcc aaccctgaag agtcacgagt cacagcagct tgcagctagc 1020

agcaaaaacg cttctttgct tcccgaccat ccatcgcttt gcagaattgc aggtcgtccg 1080

tttttctttc gcacaagaac acattaccat ctcagctcac acctctgacc tctcgttaca 1140

gtagaccgat caggcccgga acacaccttt gaataaaatc ctttttttatt caattctaaa 1200

taccaaatga ttg 1213

<210> 59
<211> 1315
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1315)
<223> optimal_loci_201747_G1, chr5:184158500..184159814, Cluster 1

<400> 59
gtacagacta ttcaaagttg accataacca gcacatgctg gttgaagaac aagtgcagct 60

caggtggtaa tgacagacaa gaaatttttt ttactactaa tctgccatag aaatttgtat 120

gttcgcagtg ttgtaagcag caaggtccat agagttttgc gcagcattca atcagatcag 180

tttaaaataa ggcaggactc gtttccaaaa aaactaggca tactatttgg actactacct 240

atccaaaaat caatatgcaa aacacaggca acggaaaatt atatggcgcc ctctttagct 300

agaatatcat gttgctatat tcaaaaaatc aacttaaaaa tcatttatgt agcacactta 360

tagttaaacg tagccacgac aattcagttt ggaattcatc tttcatgttg atattaaaaa 420

acagaagtat taaagttgtg tgtactaatc atttcaactt aaaattttaa gctggtataa 480

agacgtggac gattcattta tattatattc aaataataag tagcattgtg gtattgtagt 540

accccgctat cttcgccgcc agttcctacg gcgaggaacg gaggcaatgt cgccttgcaa 600

caaggagtac ttactgtacc aattccagca tccagtacaa caattagtgc acggcagata 660

aaatctgttc cgattaaagg ttcatttagt tccttgcgca gcttttgcga tctgtgcgcc 720

gacgcgcgca catgtgccta ctgctagttg taattgccgt cagttagtac gtagtactgc 780

aaagatgcgt ggagcccggc tgggatgtga gctgctgcgg tgctgcaaca agtgcagcag 840

cgactgatgg aggaactgct ctgctctccc aagtcccaag cccccgcgac cgcgatcgtg 900

cgccccgagc cctatcagcc gtcgacaggt gcgccgtgcg gcagtagcag taatgcgctt 960

gccgccgctc tgtcctgctg tgaatccgca aggcagctcg gctagtagct tagcaaatcg 1020

gcaccggatc cggggcaaga tttcgctggg atttgagggc tgggcggcaa cacatcgtgt 1080

tcgcaggcac atcagggtcc agccacagcc aggcagccag ccactcggcg gcggggtaac 1140

tggctagctg cacgatcagt cagtcagtca ctcactcgcc atcattcctg tacccccga 1200

taccgaagaa caacctagga gcagagagca gccgaaaagc acagggcctg gggccgctca 1260

tctcatcagt ggcagtgatg accagtgggt ggcctctgcc ttttgggata tgcta 1315

<210> 60
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1030)
<223> optimal_loci_202718_G1, chr5:189303627..189304656, Cluster 1

<400> 60
cgtgggggaa cactaaagat agctacagca agttagtgtc accggccagc tgttacgttt 60

ccatccaatt agcatgacaa aaaatctggt aatgggagca tctcgatcag ttatatgtgc 120

aataatgaaa tatgattcag cacgtctata tgcgcacaca gattagagca tgtataattt 180

agatactata tttcggttgt ccaaacacta gatacatata gttaactcgt tcatacaatc 240

caatgtatct aagtattgta tcttattcag tagaacccct tacaaatcat ttatatgagt 300

tgtataagtt taactatatt taaacttaga gaaccgtgct agagacgtta cttcgtcaaa 360

atacgtcttt tgtgttttta cacttacccc tttagatact ccttaagata cgagagtcat 420

ttatgtgtgt tgtacatgca tgcccttagg acatgttcgt tttaatctca attcatatga 480

attagaaggg attaagtgag tttaaatctc taatagttaa aatctttctt aatttcttct 540

atctagtctc ctctaataca catggaataa taataatcca acaaagcctt agtctgttct 600

ccaacccatc ctgtttcttt tttgttttga aaaaggcagg agagacagtt tttgcgccta 660

gtacttctcg tgcaactaac cctaacgcaa gcgagacctc tttaatgatc tttgatgatg 720

aattgatgat gagttcgttg ggagatggct atctagttcc tcccgcgcgc tgggatttgc 780

agaacgtggc agaaggaagc cagcactcta ggcgcgcggc atgcacctcc ctgcaaaatt 840

gcagatttgt ttttgacgca ataggttttc tctgttgcat tggggcatgc agcttgcaga 900

aatgcagaac agatttgcag accggctgca aattaataca gaatggctag agagtaatcg 960

cttcgcttct ctctctctct ctctgtctgc agccggccgg gcgcatgcat gcatgtatgc 1020

tcgcctctcc 1030

<210> 61
<211> 1177
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1177)
<223> optimal_loci_202720_G1, chr5:189305541..189306717, Cluster 1

<400> 61
ggattgagtg aaattgagtg ggtttaaata ccaaagaaga caaacttctt ttttttttca 60

atcaataacg gaacaaggct ttaatacacg tgaaggcatg catgattcga gaaatctacc 120

ggcacacacc gtatgtgcaa atctcgaaac aatctactac agctatatat ctagctagtt 180

gcgcttgcag gaatcagctg gaaggcatgc aagctgcttt ggctccgtgc tgaccgcctg 240

accggaacgg cggccggcgt aagcaggcta gcagctgcaa cacaagctgc tacttgagct 300

gtgccgctag ctcagaacgc agaagcaagc aggccacagg gctattcgag taaacaaacg 360

aaagattgca gtagtagtag tataggatct aggggatgca gaaaagcaaa gatggccgtc 420

gccccatgca tgcaaatata tgcagtagat agccgtacaa tacaaggtac tagctctcgc 480

gcgcaaggtc aacttagctg cagcctgcgc atgcagcagg agctattctt agcttgggct 540

caatacttct ataggagtat gtatatatag tctgtcaggt gtgccagacc gtagaagcca 600

caaataattt ttataataag gagcttctat tcgttatgat cagatcggac aggtccagag 660

cctgatcgga attcagaatg gattgacggt ggtggttcag tggtgttggt gcagaatctg 720

gtcggccggg ttggccgttg gcgattcaaa tccgggtcga ctccgcaacc tagtcttcct 780

aagcggaaga caattagata gcaataacct accactagct tacaacctca cgtacataga 840

ttatgcatac agcacgagca tgcatcaatg catgctttgt tggccatttt tttcatggat 900

atagtacctt cgttacccct gcaggctgca gctacaacac gacatgtgtg aaaggcagaa 960

agaacaggta ccaatcccag aggcagaagt ggcgctagct agcgctccag ctccgatcca 1020

gcggtccagc caagcatgca tgtggactcg caagtggcat aactggtaca aacctttgt 1080

tcgcgcacac aaacacatcc actagaacag atgataggga caaaatttgt gttctttcta 1140

ttattctata ttacttttc ttgcttacat tatgcga 1177

<210> 62
<211> 1254
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1254)
<223> optimal_loci_205276_G1, chr5:203995025..203996278, Cluster 1

<400> 62

atgcctacta acctggtgtc ctttactgga tccgcccata actgcatctc gattcataat 60

ttcgttcatt agttcattga aagattagct taagaaaatg ttcctgatac aaatctaaat 120

atgaaattct gaatccttta tagcactgaa gcaaataact gaatctgaat ccgccatgat 180

ataaataact gatgtatgtc tactaagtat aattttgcca tggtagtgtt tcgttgagga 240

aagaatgata tacattgcca gatgactcct agctaatttt gccatggtag tatttcctcg 300

aggaaagaat ggtatgcatt ggtagatgac tcttacctta cttgaagtta gatctttatg 360

atgcatgata gagtttctgt ctgtacaact tctaacatgg ccaatcagca actaagaagt 420

gaatacccaa gttcgaaatg agaccatttc ccacttacta agcactacct tttccttctc 480

tattttcagt tttttaattc agaccacaat aataagtaaa cacttgaagt tgacaatcct 540

agtatatatc ttggttattt ccttccaaaa tattttgtta gcacgatatg attaccctcc 600

catctgactc tcccctggta gcatccacct gctctgagtg tttgagtagt atcactagca 660

gtaaaaatcc attgattaca aacaacgagc agtgatcagg acacatctgg tcgataatgc 720

tattttgatg aatgcactta gtttgtaata tgtaacagaa tcacagaaca atgtcgatga 780

aagagcgaca actgagcatt tgccatgcac tttaattact tttatgatca ataatttaat 840

acaaacatat gtctctacca atgttaaagg atttttcacg tacatttttt gttctacaaa 900

agaaaccgag gaaacaactc agttcaattg tgtaggcaca atttttttc tcgaaaacgc 960

agcagaatgt aggcacaatt ttgaagccaa gttaaggatt ttttaaattt cacttgtatg 1020

tttggttgat aggacctgaa caatcagatt gtattgtttc agggagttca gtaaagcgat 1080

gattagtttt atatgatgac agtaggcatc atgtgtaaaa gatgtcttgt tttccatgaa 1140

tccatagtgc atggttctca tttatttttt ggataagggt tctcaaagtt tgtgtttggg 1200

tttgccaatt ctgtgtttac agccataaaa tctcatcctt cctgtttcag atta 1254

<210> 63
<211> 1113
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1113)
<223> optimal_loci_206117_G1, chr5:208362948..208364060, Cluster 1

<400> 63
ctgctcgtct aagtccaact gaaagatgtt tccttgcgga catgggtttc taactgtgcc 60

atatgatatt atttcggtaa accatctgcc ctggccacgg tcgatctgtt gatgcaatca 120

gcaggttgat caagtgcagg aacagatcaa ctgttgttta attctgcccg ctcatggtat 180

cgaactcttt tatttacagc atgagcttaa tttggacctc gtttaattag gcatttacgg 240

tttcaaagat acgctgtggc gttaattaac ctaaggatca ttattaggtt gcaaatggtc 300

ataagattaa ggccctgctc ataaaaatac ttcaggttat gatgctgctc tttgttagta 360

aagtctaaat tgcaaaagaa agtaaggcca aatcgcactc atccatcagg gatcaacaac 420

gatcccacta attaaactac tgtatgtcca acaactgtct aatgctataa tatgcgccat 480

ggcttttatg gccacgcaaa tccaatgcta atttcatccg atctgcactg cttcaacgtc 540

gacaataata ggccaagtta ggactgattt ggtgattggg gattccgagg ggatccatgg 600

gggagggatc cccttgcaat tcaattttga atagcaagag gatttcttcc cctggggatc 660

cccgagcacc aaattagctc ttaaggggga gctttcctgc atgattagtt caactccagc 720

ttccttagtg gttgtgactt gagccttcac tgtcgaaatc actggttgag tcgtgagcac 780

gagtccatcg cattactgac gacgagatct ttttataagt gcttccgtaa cctacgtgta 840

ctaaagggtc cgtactagag acaactggaa aaggacgtag ctccgtgtaa aaagaagtga 900

aaaagacaca tctcccgtct gcggcgagca aggcatgcgt atttgttttt ttgaaactac 960

tctgtatata tatatttttt tgggagagac ttgtggtcga taaattgcag gatgactgaa 1020

tgtctcctat gcagttagca aaagctgaaa ggactttata gccatttcag ttaggcttgt 1080

taatgggttg ggacgttggg ttaaaataga ttt 1113

<210> 64
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1112)
<223> optimal_loci_206277_G1, chr5:209158929..209160040, Cluster 1

<400> 64
tgaacatgta tacggtacat caatgacgcg cccccacaaa catacaacag cgtgatgaag 60

acgatgatcg tgcaaatggg actaccagat gtcaacgtga tagaagtgat cgttaggttc 120

gatgaggaaa ggagcaccgt catagatacc aatcgtggcg ttgtcgcctt tcacgtctgc 180

aatgcatgga gtcacgaggc gagcaagacc ctacagccac catcgtcacc ctctaatgca 240

ttaaccgttt ggtcgatccc actatccaat attgtctgtt cgatgtgtgt tcgtttcaga 300

ccctttgcca attaaccctc aaacctcttt catcgacaaa ccatctcgaa ctcggaccaa 360

gtttctcatc ccatccacct tactacctgt cactgtgcca tgaatgtacc agttaggggc 420

gtagcacccg gtatggtgag gtacatccta agtatctacc taacattatt tattttcagt 480

tgtcagttgt cttagctttt tagtgagacc acgaggaagg gaacaaatag ttttggctat 540

tatttgggtc taaatgggtt tctcttgagg ccaggccact cgaaatacaa cgagtgacca 600

tggcactatc acgttaggtg gtactcccta agtttcaatt tataatttgt atggcttttt 660

aacctaattg atcgactcgt tttattcaaa taaattataa taatcattaa tttttactgt 720

aatactgttt agcatataat atactttaag tatggctttg aaatttttat tttttgaaaa 780

aataagacaa gtcagtcaaa cttaacaaaa aaagtgaaat aaattactat ttgagatgga 840

gggagtataa aatagctcgt gtccattggc catcgcctag gctagcacta ttacaggagt 900

agttagtcat gtagctaatt agcatatggt gcacaacttt tgcctgttta atattttcat 960

tgttttttat tcattagtgt taagtaaatg gttcattaat ttttaacact ttgttgaaga 1020

gaggccggat aaaaaataat acactcgtgt gattaactca tcgcatcttg catgtacatg 1080

cgtattgaaa ctatagtttt gaatcgtact ct 1112

<210> 65
<211> 1236
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1236)
<223> optimal_loci_206867_G1, chr5:212145489..212146724, Cluster 1

<400> 65
tcgtggcttc aacgaaaaga gaagagaagg gtgctactac ttctacacta gctctgctta 60

cttaaaagaa aaataaatgc gcggggaatt cttgagagct gcagcttgct cgatcgtggt 120

gtagtggcgg tttgtttcgc tgtcgagtac tgcacttggc tcgcccgatc ggcttcctca 180

ccgtcagtcc gtcctggacg ggttcacaac tttcttcaga tgctttcaaa gccacgcagt 240

tggctgtctg cctccttctg gctagcttcc agcaggtacg gttatgccaa acacagcaca 300

aaggacacat gcgtgcatgc atgcactttc ccgtcactga attattagtt tagatcagcg 360

atatgacgcg cgacttctta gtcaaagtgt caaacaaaag aagcgctagc tgattttgct 420

agggcaatcc atgcaatgca acgaggtctc ccccacaaga agggagaagg ggtgtgtgtg 480

tgcgcgcgcg cgcgtggtga aacatgcatg cacacggcct tcttgttgac tacctgtacg 540

tacggtacgt gtttctgttc ataagccatt ccagatgagc agcacaatca cattgtgagc 600

aagtaacaca ggcgtcatat tgcccaatct gtgcctgtgc acagaagttc gtctgagacc 660

ggactctgat ttgcttgtct aataactgga ccaccctcac gcggagacat tcatatgcgt 720

atccttgcat gatgcgtatg cgtcacacat accgtcacca ccgctaaaaa agccttttat 780

cggatttaac tgctaaaatt ctttagttgt tccatttgca tggtccagtg ctaaagattt 840

ttttcatat tggttggtaa cttcgttgag gtgttgtttg gttcacggat ggtaatgtaa 900

atggcaacgt taattattca cagcggtaat aagtttgaat aagtcgatat tcattttcat 960

tgtgttatct gattatggtt gaacttaaac aaacataatt taacgttatg tattactcat 1020

cacgttacaa ttatgttaac caaacaacat ctaatagaga atccgaaagc atcaaaaaaa 1080

atcatggtct cacacacacg cacatcatgt cgtagatcac gagtcacacg agtgtgatgc 1140

taggattcaa actcaaggtc tatggcttca ccgtgttccc tacttactac tattctacaa 1200

gcccattgct actatgctat aaatcatgta aatatc 1236

<210> 66
<211> 1256
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1256)
<223> optimal_loci_206876_G1, chr5:212159615..212160870, Cluster 1

<400> 66
tgtccaaaac aacaatatgt gattatattt gaggtagtat taccctcaca tcttccttgt 60

cagtttgctt ttgttaccat cacactcgag atgtctttgt tgcaaaaaat tgaatgctga 120

aacacacgca caccttacaa atctagatga agtatgtaca tacatacata ctcagtaaga 180

agaagaattt tttttacatg tataaaatct ataattcata taacgagtgg ttaaagaaaa 240

ttcaaacaac ggaccacttt agcaacagat cctagcgaca ccactggcat gggatgggag 300

catattcata tgccccctat gagcaaattt aatatactct tactttaata gctacttgta 360

taatgagatt gttctcccaa aactatcgat aaaaagatag aaactcctaa ataaatcgag 420

tagatatcta aacgtgaatt cgaatatgat ctgtccgttt catatttgta tttgagaaca 480

ttcaaatcct tatcgcaaca aaaactcaat actctactaa tagatatttg aattatatcg 540

gtatctattc ccattttgac ccatggagag gatggtatgt atgtgtcgtt ctgtggcgag 600

gatgctctgg gcggccggag cgatgaggca gcgctggtgc cgcctggaga gagcacaggg 660

gaaggccgaa ggcaggatgg gagggagggt agcggcgccg gcgcggtcag agtattcagc 720

gctgcgtccg tcggcgtcgc gggtgaccgg gaaagcagcc cgcaggagaa aagcacggca 780

ggtcggagga gccgctgttg cttgcacttt cccacgctgc gctgcagcgg cgattcgcca 840

ttgggcgcat cagaatcggc gacgtcaact caaggcagtg agagatctgc tgctgctgct 900

gtgagtcaga tgatcagatc agtatcagta gccgggtcaa gacttttccc tgtcgtggca 960

ctgtggattg tgggagcagg tcggtatgga ctggccagag cgaggctggt cgagtggagt 1020

gaacggctgg aggagtcgag gagaggtgag gcgacgggat gcgacagtca agggcggtcg 1080

aagggcggct tgaacgctgt ggattgtgac acggaacgct cgggcccagt ggtggccggc 1140

tgcgtcgcgt gtgcgtgtgc gtggcggcgc caggagaagc ctgtgttgcc tgcctacgca 1200

gctggaggct ttgacacgtc ttatccggtt gggccggccg cggctgtaga ccgtag 1256

<210> 67
<211> 1316
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1316)
<223> optimal_loci_207074_G1, chr5:213021126..213022441, Cluster 1

<400> 67
agctagttcg ttcgtgcatc atgccatttg ttcggttggc tgcggaaggc gtcgaagccg 60

agttgctaac tcaagatggg ccatgcgctt ttcagtttat ctgtcctgtc tcttataagt 120

atatatatac tgtcaaagca ggttgaggat tcttgttgtc tcactttact cccatgtgtg 180

tggctgtctg tctggccata gatatatacc atagcgctag ctgtacgttg catgctaatt 240

cgcacgatac agtaggggct gtaggcacat gccattccat atatccgtct ccccaatacg 300

ccgcgcgtac ttgtcacgta gccgaaaagg tgccctgtcc gtccccgtcc gttctatcgt 360

cctgcatggc attgcatgca tcgaccgcgc gccttcgttc tccccccat ccactgatgc 420

accctgtccc tcgacggctg gacgtacgtc gtcgtccact cacaatacta tcatgtgcat 480

cagtgcatgt gatgtgccca cgctaaagtt gagagataca caactgttta ttgcaagcaa 540

gcaagcaagc acatccggcc atcatgtttt ccatatagaa ataactgtac gtacgtacgt 600

ggagacatcc ggtacggtcg tcactcgtca gctaagatac atacgtacgt agctgatgct 660

gatcaatgat gagacgacgg acataggagt tccatcgatc cgtccggcac tccagtacag 720

tactgcactg tatacacatc tgcatgtacg ttctcctcgt ccacagtcat ccagctgcag 780

gcgcatgcac gtacgttctc ctctgctggt tgctttgttt tggtcgtgag cacccatcac 840

ctgctactac tcctcccgat cgatccagca gtgcactgtg cacaggggtc tcgttgatcc 900

tacctgctac tactcctccc gatcgatgct caccgatcca tagggttgaa aacggacgga 960

ccattttcta catttgatcc gtatttacgg aaaaatatga aaaagggatg gaaatgggag 1020

atggcttatt ccgtccgttt ttgcgggatc acatttttcc ggattgaacc cgtatttatt 1080

ctatatttga taaatatgcg acgagcctaa tattcattat tatataaact aaagcctcgt 1140

gtatttaggt gacaaattat agcataattg gccattgtaa tcaccgactc ttttcaatga 1200

caagtgatat aaagtcttaa ataacatcgg atgtagctaa atgtacacat ttagcaacca 1260

aacaacaata aaatgttacc tctctatata tatttgtttt atgttattgt tctgcc 1316

<210> 68
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1005)
<223> optimal_loci_214256_G1, chr6:39647238..39648242, Cluster 1

<400> 68
gccagcaaga acttagcggt atgtttgtct attctgttca tatatatagt tttcttcttc 60

aaacttgtat cgtgttactc gtgtattgat acgaaacttg aattctatgt aacactgatt 120

ttgtacgtta ttgcttgatt gtgtccgtct tctttcttgg cctcccatga attttaatcc 180

tacgctcgcc actgtatgca tgtgcgcatg tcattgttga catagatatt gcatatatag 240

cattgcaatg tagctagggc agcatatgca gtaagaacta agaaatactg ctatagtttc 300

ttttgtttaa tttgaatgtc tagtcaaact agtatagtac cctaagagaa gcatttgtaa 360

gaggataaga ggacaaggtc atccatccat ccatttgatt cgattttgct gattttatta 420

tcgacccagc cagagaaagc tgtgcaacaa ccgggttcag gttggcggtg tgtgcatgca 480

catggccaaa cggtagcaag ggacgacccc tgtccgctga tcccgggcac ataccattac 540

catgcaatat gtaagcatgg agcataaact aaacaagaca gctagctctc ttcacgcatt 600

tccatgctag ctaaaaagcc agtactattt tatgcatctt gcttgcagga acccggccgt 660

atactgtttt aaatttcatt tttgcgtcgt ttccgcccat gcatgcatgc atgcagccgc 720

tgtgcatttt cgctcaaatt tgaataaaaa agacgcggcc atgattggcg cccggctacc 780

agcaaacaga tgcaggcaaa tacagcagaa cagaaaaaga gaggaaaatg cgtcatttgg 840

gcccgatctc tcaaaactcc gcatttcatc caaaaccgtc ggtgccaacg tggcatgtca 900

cctatgagta acttgagtcc cctaactttt tatgcgttat atgacatcgg tatctggatt 960

gagcaaattc ggttttggat gatcggttct gcacacttcc accca 1005

<210> 69
<211> 1107
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1107)
<223> optimal_loci_222843_G1, chr6:97921484..97922590, Cluster 1

<400> 69
gatttaggta atttgtgaat ccagtagatc ttgtttttga atgagattca tggtttgtga 60

acctgttttg aatgagattc aactatatac atatgtgtat gaactctcaa atacttatta 120

taggctaaca atgtgtctaa caatttccct ttgttatggt attttgttga tattcacacc 180

tgtccatatg ctgatatacc agctctaaaa tccattgttg aatgagattc atgggtctgc 240

ttgttcccta tggtttacct ttagtatccc tttgtcattc atgttcaaat tgttgctgga 300

tttctgaagt tctgcatctt catcatgagt tacactgttt tctgtaattc aacaatggat 360

tttagagcta aataacttaa taatgtagtt agaagtacta accatagaaa aatgtgaagt 420

tattgcaaag taagattatt attgccaatg ttatgttgct tcattaaggt ccatatgaac 480

cagaatacag caggagaata ttaatgataa ttctaccacc accaccaagt gaaattggta 540

gctaataaag tttatgagtg aaaaatgttc tacaaaaaat gtatagtcgt agtcaagtat 600

aacctggtca gaaatgcttg ctgctagaaa acaagttaaa agaacctgtc cttatgattt 660

tttagtgaac tcacaaatta atactatgct tctctcaata cttgttagct ctgaatatta 720

tgcttctctg tattactatg cttctctgaa taatattttc tgttgtgcag gatggatggc 780

acaaacaaca gtaggggtga cagcacacac ccacaaggtc agcctggtgg ctggtatcca 840

ccagcgaacc catcttcata ccagcccctc cctccccctg gctggaaccc atacatgttt 900

ccaatgcaag gtcagcctgg tggctggtat ccacaagcaa tccagcttcc ccaacataat 960

gttagcaact ttcatcctcc ttgtggacct gatattgtat cagttgaccc cgctcaatgg 1020

aatgtgggac tgggggctga ggtagaggta cttcctccag aggattcaac acattcaatc 1080

ctgaaacggg gaaggactaa gttaggg 1107

<210> 70
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1033)
<223> optimal_loci_226319_G1, chr6:115920979..115922011, Cluster 1

<400> 70
atatttatcg attcctttat aaaactatat aaattttgaa tattataaga tgataaaacc 60

gaaaaagata aaactggtgc cacttaaatc aatgttacgt tatcaaaatc gacaacttaa 120

ctgttaagga ggttatctat ctagttttat aaagatgaga gagttaaaca acaagttttg 180

aaggtgaggg ggtgaagtag accacctgtc tctaaagatg agaggttatg tagatttatt 240

tctaatatta ggatcgatct atggacttaa cctattaggc ttgatcctgc cacgataaaa 300

agccattttt tttgtaatag tcattgcagc tgtcccttga gctacttgta caaactattt 360

gacataggtg gtggattttg tgttttcaaa tgattattat ttgactacaa atgtggaacg 420

cgatatgaat tgacgctaat aaaattcaat ccctctactc cactgcggca ctgcctctgc 480

ttgcctcttc tcggtccaaa tcaaagcgtc atcgcattga atctgtctcg gccgccactg 540

aattggcttt ctccttggat cggatatata gagtggggtt ttattcaaag aattatataa 600

acaatgaact agagaatgaa tttattgaat actactgtag acgcagcgtc tgcccgttct 660

gccgcatcgc aatcgcaagc tacaaaaggc gaccgtcctc cagcatttgc cgtagggatt 720

ttacacggcc cggaccatgc catatcagac agacagtcgt cagaatccag gccgtccgag 780

ctcgtgctgt cttgctctat ccttcctaga tcctactcaa cgctgcagct ctggactggg 840

accatcgtag ccacagccct gccgccgccg tcgtcttgca gcagcgaaca ccagcccggg 900

gaggacaaac cggaccacca ccacacggcc aggacaggcg tcgacaagtc ccaatcatac 960

acgctgccag tccttcattc tgggctgccc cctgcacagt gcgtgcacac acaccaacgt 1020

tcagcagtag atc 1033

<210> 71
<211> 1304
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1304)
<223> optimal_loci_226520_G1, chr6:117109365..117110668, Cluster 1

<400> 71
ttgttggtta tcgttattcc atgagtttgg ccatcaacta tccattagac gagagaaatt 60

tcaagaacaa agtaactaac cttgcaacta attgatttac ataagttttg caatatttga 120

gtgtattata tgaaaacatc taaaaaggga gtaaaatggc caattcttgg aagcggaatg 180

ttggccaacc aacatctatg gtcgactgac caccccttag cccatttgat catccccta 240

gttgtttaga cacctgatcg atccaaatac attccacttt agtcttgcat gcatgccatg 300

atgaactcaa cacaacttca aggtttagcc acatggacga cacatcaagg acctaaagac 360

caccacgtca tcgatctggc taaggattgg tgaagttagg gatccaaggg acatctatcc 420

aatggccaag gtataaaagc aaatccaatt caatggttgc agaagaaaca taccaaataa 480

ttatcaaacc aacttcaaga aggcttctaa accgttggat gagcaatgga ggggagggaa 540

tgttcgaacg gccaagtggc ttggccgccc ggccaagtta tggccactcg gccacctagg 600

aggtttccta gcctgccact tattcttcat tgaattactt accttcctta atcaaccaag 660

ggtgttatat ataccctgca tgattagtga gtgtatagat agccccttgg agctcacttg 720

agaagaggat aataaagttg agagtagata caccatagag agcttactct cttcatcgtc 780

tccatgtagc tatggttggt agctccaatt gttgacaatg agagtgtgtc atcatgggaa 840

accttcgatc ggtcgtccga gcatccgaca cacaagaagt tgggcaataa gttatggttg 900

tgatcatctc tcctgaagca gctctaacta cctttgagtg ctagaggcag tcgggggttc 960

taggagtgtc acctagcttg acctatcaac catgtagtgt gtgttgtggt tggtgaatca 1020

ctccacaaat gtaaacaaca aattaaacat caattctggc tagttgtgtg gatcgaccta 1080

tgtcgactgc accgaatggc tctcattagc catttatcat cttttctgag tcggtaacaa 1140

gtaaaaaatg aaagaaattg tgcattgaaa tcgatcgaga ggataaacaa accttcataa 1200

agcatgattt ataggattat tagtcctaga ggaacacatg tcacatgcac aaccaaaagc 1260

acagaaacgt cccaaaacct atcaatatta cccacaccat taaa 1304

<210> 72
<211> 1012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1012)
<223> optimal_loci_227153_G1, chr6:120674055..120675066, Cluster 1

<400> 72
tagttaacta cgatgtcatt gtgtataggt ggagtagggg ttcatgagtt ttctcaacat 60

gcatgagaag gccttctgtt gtcttaccct tgacaagtcg agttctttaa gcattttaca 120

aaccatgatt gtttaagtaa caaattatag tgttgatatc aggtgaaaaa tgtagatggg 180

cattgcggtt atctttagtt ctctcacaca aatgctttat tctatagtgg tccactacat 240

gaaccagtag catcactaca ccataaacat tccacattct tatttaacca tttgctgcat 300

gttttctagg caatagttct taggtatgca ccgagccacc gaaaaattca acctaaaaga 360

ttaatctgat ggagaaagat gggcaattca cttgtattct aacactcccc ctcacgtcga 420

ggatctctca ggcctcagac atggaatagg aacgagcaaa atttatttta ttttattgcg 480

ctagccaaga ttcgaacttg agacctctag ctctggtatc atactaagtt gcatgcatca 540

actagttcga cccaaatact taagcagatg gagagaggtg gacagttcac ttgtattcta 600

accgtcctaa catatcctta acaacatata ccatttttaa atcctctgaa gacttctttg 660

aaacaaattc caaaaatgca gtatagcaaa aacacatatt ttggctggaa tcaaatgcta 720

agcacatgga attacaattt tgatacacaa aacaattgtt ccgtgagatt gacttcatga 780

taaaaggcct ccaaaattca tatgaaacta tccactcgtt tctaggggat ataatcttaa 840

tttcaaaatc atgattgata ttaacatgca ctagttaagt tgtctatgca ttgcttcggt 900

ttctatatat cacatatggt ttctttgtat aacataaact aacatgagct gcaatggtta 960

gagacgagtg ctttttttcta aggaccacgg tttgaatcct agtgggggcg cc 1012

<210> 73
<211> 1290
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1290)
<223> optimal_loci_227588_G1, chr6:122647050..122648339, Cluster 1

<400> 73
ttgcttgagg gattctatgg caccttgcag acaagtgatt acccccttcag aaggtattgt 60

cttcaattca cttggctctg gttgtaggaa agaacccaga gagagataag tcggttagaa 120

aagaaaatgc tagattcatc tgttagaaga acgttggaag gaagaggcaa tactaaacaa 180

aaaagcctac aacataatac atattgtttt tcattagtgt acacaccttc tcttcttggc 240

tctctagcca tggcatagtc tttaccaaat catccatgtc acattgcttt atttatgagg 300

gtgaaacatt ttttgcagat tctaaattgc atgtctgtac agaaaaggga aaatattgtg 360

gagggtttgg ggggcaaaca aaacatgcaa cagaatcatc aaagctcatg tgttccacgc 420

actcatgatg ccttcatttt gttccatcta gaaatatctc taatttaagt catttctact 480

tagaaagtca gaaacagata gaactgaaca aaaccaataa attttgtaaa aagaaaagga 540

tcgagctaga tgccctatcc taccactacc agactctact acttattaac tcagaaaaaa 600

tactcctctc taacattaga tggatgaatt taatgcttaa caaaaaacat aaattaatgg 660

aaagggtcat aagttgtaga atatcctaac taagcttaaa aatttgatgc atagttggtt 720

ccaacctgaa tatacacaca tctaaacatg cctcgttctt acaacataga tactgatgtc 780

tgttagaaaa acatgatact ttacatatac attaaatagc tagaatgata aagccgtcaa 840

ataattgaag tattcaggtt taccgggaag tatgttacca atatactcat aatatcatat 900

tcaaatggcc agctcccata cttagaagat gcatcatctt gtcattaaac catatcatca 960

aatgtgtggt ttttggttgt ttcataagtt aactttgaac gaaacatacc tccatggcat 1020

cagaggtgga tggcttgaca tgagtttgtt gaacttgatt ttgatgctct ttgcatgttt 1080

ccttctcatc tacaccaaca tagccaaatg aataaattat attttgttaa gtgattgata 1140

cgtgaataca ctgaatttat acaatgaaaa tgataagcac tcaacgattg tgccttcctc 1200

cgctgttgtt gctcatgcgc ctgcatcgct agctccttgg cttttgccac tctacctacc 1260

tgactggttg attaggtacc taaattcata 1290

<210> 74
<211> 1138
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1138)
<223> optimal_loci_228034_G1, chr6:125018380..125019517, Cluster 1

<400> 74
gcctaacaga caaattgacg cgtctacatt gacaatctac ttcgtcttct tttatgcttg 60

atcaacctaa gcaccgacaa accaacatga gtcaatatgt ctattcagtt gtttactgtg 120

ttgatctatt tgtagctatg tgtagttcac atatcagttt tgaataccta tgaaatttgc 180

ctcaaattat aatctgaatt tagaatatta cgcaattttc caacacataa agttgagggt 240

atgaatgcca aagcctctca aacctaatca tagtgagatc ataaaatgaa tttaacagat 300

ttaacacatg cagctaatgc catttaccga agagcccaaa gaaacaacat tactagtgtt 360

tttaatcata gtgagatcat caaattaata taacgaccca tctaaacaaa gtaactggta 420

caagcttctg gcgaggaaca atccacgttc aggtgtttgg agtttttatt cttgatttca 480

accgtctcaa acaacaaagg gaacgacaat tgtcattttc ctgtgactaa aattgtcgag 540

atggccaaca aaccaactga cccatcagag tgtagttgct gcttgtagtt gtacacatgt 600

cttcgcttgt cccttgtagt gctgagttgc aggagtgatc tccacgtaat taaactatat 660

ggctactgca gtaccctggg catttttgg agatgatatt ttagagctca aattaccacc 720

aatagcagct ggttgtcccc tatatttttc tcagctatac ttagattact acccgatgcc 780

ttgctctctc taatcccttt atttatattt tcttcctttt ctttctcagt agttggctct 840

tcatctaata acacaggata gatccacatc tccatatcaa tgggtgagtc agtgtacttg 900

gctggctctt catcatttct tccttttcag acaaaccact atggtttggg caagtgtcaa 960

gtgtggtatc cagtcctagc gtggtccagg aactgaggca acttggcact gatggagcaa 1020

ttactggaca gacaggcact gggttactgt caggctactg taagtggaga catatcacca 1080

gaagcaagca gatgcaactc cggatccgga atcagtcaat ggggcacatg catgcatg 1138

<210> 75
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1062)

<223> optimal_loci_228962_G1, chr6:129768515..129769576, Cluster 1

<400> 75
caaagactct aaagccgatt tatcttgttc ttcgtctctg tctcttctat ttctatgctc 60

tgagattgag tacaacaatc tcctctaaaa tttttcccta tatcgtccca atcaatgggc 120

gcctcaacat tcaacattta ggtccagctt agtatgtgcc attgcttgta gagaagttgg 180

ggcagtatcc cttttggtcc atagcatctt atatagagat gcattacaat gggggctacc 240

aattttgaaa tttcaaatga aaacacatgg aagggagttg catcttactc tggggccaag 300

acgaaatttc atgccacgga gaaatatcca tgcagtgatt aggcggcaag aaatatccac 360

cgcgggaatg aaaattgcca gccatttttt atgccaaacg cttttatttt cagcggaaac 420

gaagagtcca gaccagaaat aagggcgtgt acaaccctga gacatcagtt cggtttttca 480

agtataagag acgactaaga aattgcatgg tacaaatctg agaccttaga tcatcaatgc 540

agctaagaga caacgtgtat agaaagtcgt gaagagacgg gctcgggctc ttgaagagct 600

cgtctcttgt atatttttt tcacttaggt ccttaaagac ccctcaagaa actccatatt 660

aaatggagtt gtacatgtcc taaggattgc tcagttaagt tttgatacgc acattacttt 720

tccctggtca ttgtgtcatc agcgaatata tcaaacaaaa ctgaatggag ggagtatcaa 780

ttaaaactga atggagggag taataaataa tggggcacgt aaaaatgcaa gagagccggc 840

acaatgcacg gtcgatttgg cgtgcgctcg ggctcagcag ctatgccatt gcatcgtgcg 900

cgtgccccta aacatgtagg cggatgtggt cgacattgtg tggacgtctg tggatctgtc 960

ctgtagtccc cttccgccgc ccgccacgtt ctttttgatt gtacccccctg ttgttatcga 1020

ttaatttgcc agcaacaaca gtgatgatgt tgattggagg gc 1062

<210> 76
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1039)
<223> optimal_loci_229145_G1, chr6:130257822..130258860, Cluster 1

<400> 76
tgcagtgagg ttccaaactt tgagaaaatc agacagaaca cttagggtga tagcacctcg 60

aatgtcatgc acccagttcc ttgttgtgag agcatcgtgg acactcctct ttttagccct 120

agaagagaac gacttgacca gatgaggggc cagctgactt agactctggc catgaatccc 180

ataacaataa atttgtctta atgaaatctt taaagcttac aagaatagaa aaaacaaaca 240

cattaacaaa gaaatcagtg gaaatgttac agtgcattgc tgtaaaagtt ggatcatgca 300

tactttgata caaatatatg aagtattatc caaataacca atattccatt cagtaaactg 360

aaagcaatac aagcaaaaac aaaacacagt ttcgtgcagc cttattctta gatattttat 420

tggtctaaag tttaaaaagc cagccaatgt agttattcaa agtgcctaat ataattagat 480

atagtataac aaacttcgaa gagaatagac atgcatcctc caattcaagg cacgtaaaaa 540

atgatgatac ctaatcctgt tgcacttatg gtcccagatg tctgaacagt gacacttctt 600

gctctgttaa aattaactac agttccttga acaaggccag aaacatcaat atcttcaaca 660

cggcatatct gcattacaag agcgaccagg tgttacaagt agaataaaaa aatacgcgag 720

gaaataatat aaagagaaat ccttaaactt atcgctgtca tccaagtccc taaaccacct 780

gtttggcaga gcttcagctc caacaattat tgaagctgga ctagctccaa gatccatgga 840

gctttagccc gcgaacatcg agggtgtttg ggcaaaccat gtttgttttc atttagatgt 900

gtcatcgtgg atagacaccg aggtacatag agtaccgaaa agaaaagact agcagtttgt 960

tggacctaga cacgaccggg aactagcacg cggccagtgt agtgaggttc atgccacaat 1020

gtaataccct acgattact 1039

<210> 77
<211> 1359
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1359)
<223> optimal_loci_229168_G1, chr6:130329316..130330674, Cluster 1

<400> 77
cttcttttcc tcataaagac aactacgcta ccaaaacaat cacctttcac aacctactac 60

ttgttttggt tagatttctg caaatcatta aacatttacc attttctttt tgaataagtt 120

aaatcagaac atacttcttg tcttgtatat tctaactgca ctactagaat caaagattct 180

atgtcctcac aaaagaatta taattggtgt attactttta aaatccacat attgtatatc 240

aacatttgag tgggcttagg gttgggtggg aaaaggctct tcactattta atagaacatt 300

tttcaggtgg cactaaaatt ggaaagcaag caacccaacc agttattttg ctgaccgatg 360

aaatcgattt tcttttgaca agaaaccagt aggtaataag gcttataggt tttataccaa 420

ggatatatgt ttgatattgt aatttgtttt cctatcattt gacactggta tttttatcag 480

gtgttgtata acattcttga ttagcctacg atttggattt tgccctacct ctgcatgctc 540

gacctctcta gcaattgcct ccaggatccc tcgcggtagg gctagaccac accctgctaa 600

gggttccttt agaacgcatg aatttcacat gaatgatata gaaattccac aggaattagt 660

tcaaaaacac agaaaaacac atgattcggg aatttattct ttgatccaaa ggagacctaa 720

atatttttgt tctgtcctta ctcaatcaaa cactgatcac tcaatcaaat ccgtgcgcag 780

cgcgccgtca ggggcaaccg gtggtgggta gtcgtgctgg tgtagacgag cgggtagtgg 840

gccaacatgg tccgcacgtg gggctaggtg tggacgagta gcgtcagtcg tagcgtcggc 900

cagtgcctgt cgttttgtgt catcactggc gacagccgcg tccttgtgct cgatgacacc 960

atgcacgcga gtttgggtgg gcctttggcc agagcttaga gggcaagggc catttctgat 1020

tcgtgataac agagttagag aatacgtccc tcctagaata tggatatcac actccgctac 1080

aactattggc tactgcccat gatattgctg ttcatagttc gaacatgaca ttgttgtttc 1140

ggttcggagt ctagacttca gaaacacaaa atgatttatc tggttttgat gattgagcgg 1200

cgtaattggt gggcgatttt attggctgat tgaatctgat tctatatgtt gaaaccgaca 1260

agattcggta aatacatatg caaccgcgtg acatgacgat gagctgacca tcaaatcagt 1320

tgattaatta gtaatgcaca tctcctacat ccacgtatt 1359

<210> 78
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1070)
<223> optimal_loci_230344_G1, chr6:135528133..135529202, Cluster 1

<400> 78
tagatgttga tatagaaaaa ctaaaatctt cgagtttaac aagaatcaaa ctcttcaggt 60

gctggtatct gtgtaggtta agtatggtaa ctctaaggtt cttgtgccac cgatccttgt 120

gtgaaatgaa caaatggggc caactgagca aacttggttt aaattggtaa agtttagatg 180

caatgtatta tattttgcta gtttgagtaa gttttgctag aatgcatcaa gtaggacaaa 240

tgttaaaact tagttataat tggctaaatt caaaaataat gccctatttt cactagttta 300

agtaggtttt gctagaattt atcaagcaag agaacaattg agcaaacata gtttctcaaa 360

ccatgtttag actttatcaa gcaagaatat tatgtttgac tagtttgagt aggatttgca 420

agaatcaatg tatttagaat gcattactta ctcaaaattc ataaggttcc cgcaaatagt 480

tgcctcattg cagtaatggt gaaaggtcgc acttgcagaa acttaacgtg catctcctat 540

tgttgtaaat gttgcctgca agtgtaatgt gccatcgtgt tgagcattct taaatactta 600

gaatgaaaaa gttggaaact tggtcttacc taaattgtgg tatattgata tagtatgaat 660

gaagcatagt attgttgttg ttgttgttgt tgttcccttt agaattcatc ttgttgcctt 720

agctccacac acagccttgt aaactccaac ttatgctcta actggcgatg attgctagcc 780

ctagattgtc gggaggaaga caagcctgac ctccaacata taacctccct agagtcaatc 840

acttcattga atattaacta ccttcagaat gaataaacgg aacgatctct tgctgagctt 900

tggtgtgatg cactaagccc catgtagctc cctgtattgt ttcactgtat tttctgtttt 960

ccctattcca tgtaactctc tattttgttt tttgatatgt atcaccctcc aatgtaacat 1020

gtcatccatc aactaattgc agcggaattc aggtggggat atcctcccct 1070

<210> 79
<211> 1273
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(1273)
<223> optimal_loci_232219_G1, chr6:144698369..144699641, Cluster 1

<400> 79
ttttaaatcg ttttgtaatt taaaggatgc tggcgatcca gtccggaaac ccacatttct 60

gccgtccatt gcccgcaaat ccgccgccgg atacggggtc ggaggaccgg cggtgaccag 120

ggaggcgggg aacgacggag tcggtttccg ctgtggcatc cggcatcccg catcccttgc 180

acagctctgc tgctatctgc cgcggcggac gcagaggatc ctatgcgatg gcgatcacgt 240

ggcggggccc tagcacggcc gtcctttcga ggcggtgctg ggcctggggc gctgtccctg 300

tctgtctggc tggctggctc gcctgctctc tctcctctga ctcatcgcaa aatttctttt 360

cctttccctg ggtgtgcgtc gccgtcgcgc ctcacccact gacccaccct gacctcttgg 420

caccgtctcc gcgcggcggc ctccgtcatg gtgcatcaac ggagatcggt gcgccgtgct 480

tggcaggtgg cgccgcgtcg tgctgcttga gctgccacta cccagaacaa gcgcggctcg 540

gaagggaagt ggggttggag taggtaggtg ttttggttgg ccgctgtgga tgttcccggt 600

cgattcgttt ctttgcaagc tgtactagtt agtaccaatt ctttgcggcc ccgaatggtt 660

ctcgcattca tgaggggtga atgaaaatga acgtggtagg tttgggcttg attggctagg 720

agggcccgtg gcgggtcagg tggttgttgc attgcattgc atgcagacgg aagagttcag 780

cagatcacgg ttggtgatcc gccggcccag gcgcccacgc ggccacgccc agacagtagt 840

atataaagtg tctgaacggt tggcaagcaa gagcaagagc actggttggt ttcgcctctt 900

tcgtttttct ttaatataaa gtactgtagt aactgcccac actccgtacg agtgtgtgta 960

attgcacggg taaaccagct ttctttgcaa gtgcgccaca ctttgtgcct ggatttctcg 1020

cgtcctcaaa cgaaaaaaaa atggcatctc agaaagaaaa aaagaaggga gcgccaccac 1080

ggagtgccca cgcaccacgc tcattgtcaa ccgatgcgta attcgcatgg tcatgccatt 1140

tacgtgagcg gagggaaagg tggtttcatg aaagtatcga ataatggaaa acaaaaagaa 1200

ggatgccacc gaggaccgac agtcgagaga actggtactg ttgctctttt atagatcttt 1260

tattagtagc tcc 1273

<210> 80
<211> 1294
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1294)
<223> optimal_loci_232349_G1, chr6:145533946..145535239, Cluster 1

<400> 80
ggtcatggga cagagtacga ggagaaccga ggcccgtacg ccgggcggcg cctcccgatt 60

cgcggttcgc tgacgtgcag gccgcacaat cgcgcaaccg gaaacgaaac gaaggatcct 120

gcgggatcgg cgcgcgccaa ggccgtgtag cgccgcacag tcgctcgtac ccagtggcca 180

gtgctctcag gctaccagca acttaacgcc atcccaggag gaggagatca ttagatcata 240

tcacgacggt accgtggcat ggtcccgcat gacacggacg cggcacactg aattgccaaa 300

aaaatgcgtg ctcgcctgct gggtttgatc cggcagaacg gcatcggcaa gcaggcacct 360

gccgcctgct gggctggatg tggagttgtg gactggccgc cgcatcaaag cagactgact 420

ttcggaaggt cgctttgcca tgtgttgggt tcttccggtt cgtcggagag cctgacgccg 480

actggtcttc cccgttgccg gctcttttga ctgccccgcg cgcgcgacgg cgtggccctt 540

ttggcgttca tccatcctca ctcacggaca gagttttcca aggatgcaca gtgccctcca 600

ttgaatatat atatgcccga gcagtaatca tggtccacga aaatgttaat gaacatttag 660

tgtaaaaact cattaacata tatacacgaa aaggaaagag ttgatgtttt agagaggatt 720

gagacgccgc agcctctttt ctagggttgt aggtactcaa ttcgtgcgtg tttcatcctc 780

acacgtatga ataacgtaga gacaatgttg atgttatggt attgattaac aacgaactta 840

acgagcatat gtgaacatgt tgttgctgct agtatgcagg atgtacaact actttcactg 900

tatcgatata ctcttcttcc accgcgtctg ccggtaacga tctatgatcc tctacttcta 960

tgttacattg gttgaacgtg gtagatatgc tagcgtatag cgtatatatt tttctacaat 1020

ggtagatatg atcactcgca caacttgtcc ctacggactc gtatcaccat cgaggctaat 1080

agtgtgtgta tgtatcttcc aggtcagaaa attgtagcac atttgagtta gtacattgtt 1140

attgttctac ctcaagcaat tgtcaatatg atcgacgatg aaaatagaaa catttgaaat 1200

gtctcgaaaa ttgtcttgat ttgatcaatc caatacgatt tttatagcga ttttattaac 1260

atgaccgatg aattccttgg aggtcttaga gaat 1294

<210> 81
<211> 1313
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1313)
<223> optimal_loci_232479_G1, chr6:146113131..146114443, Cluster 1

<400> 81
tgagcatctt cgaggacgtt ttggctgttt tgctccgcgg catgcaagtg gaataaaatg 60

tgttaaagac gacatcgata tatgcaattc gctgcgactt ccattctaca aacttgtata 120

tgtccttaaa atgacttcta aatcttatat ggaggagtac ttgtcccctc caacaatgca 180

ttttgtgggg gcacttaata aaaggcactg gtatggaact gtcgggagtt acgttagaac 240

tgatcccaga ttggagggaa aaaaaccctt tcattaggta aagctcagca ttatgctgct 300

taacagagcc ttaagttata acgccgttta aaaattagaa gctgccggcc gcccggcggc 360

atctaccagg aagaatacta gatgtggcgg gtcggcgggg cgcgcagcca cgtgaaaccg 420

agtacgcgac ggctttggtt ggacgttata tattagagcg caagttctgc ggcccgtgct 480

ggagctagtg tgatgatgtg ctggcctcgg gagatgcttt cagatgaaaa aatcacgtag 540

gggtccctcc catcccccaa tcattttggt tattatccaa ataatattat cagacgagcg 600

tcttcaggcg gcacaaatga tagtgaccag tacttttgta ctttatgaaa gtgtcagctg 660

cgtgcttttg cgccactgag caaatgcgat ttgtgagtgt acctttgcag cgtagataac 720

acgagggaat aaaggacatc gaattatctg tagatggtcg aaattgtgaa attttgatca 780

atgtagtcat catttgtaat ttttttcctt gaagaaatac tctctctatt ccaaactagt 840

taacgcttta gctatgaatt tagataaatg caaatagtta acgctttagc tataaattta 900

gataaatgct tgctcaggtc aactattcct gggatggagt gagtctatgt gagattcgag 960

cacttcaaat agcttcacaa aaacaacaac aaaagaagca acaatcagct tctcgaagac 1020

tggtgtagtt agggcctttt tggaaccgct ttgttatacg ttcttttcaa cttcgcttca 1080

tagtttttag ccacacaagt ctagatccac aaactcgctt cagaaaaaaa acaactggaa 1140

ttataagacc gtgtaaagaa atgctcaaaa aaatttagtt tcagtaaaat ttgtaacagt 1200

cctaaacatg cccataaata aaggtcagtt agcaagaccg aagctatatg ctagtatagt 1260

tttcccttta ttttcttttg gggttgatct aatactatgg ttcagataga tgt 1313

<210> 82
<211> 1307
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1307)
<223> optimal_loci_232533_G1, chr6:146449272..146450578, Cluster 1

<400> 82
gatcctttga ggcctggatg gggtcactaa aaaacctgag atttttgagt gaattgatga 60

tgaatttgag agtgtcgagg acaacttcct ctccttgtgt gaaatccatg gttgccatca 120

gatctcaaat gatcagcacg actcccccta catggtgcac caactgtcat gcattgttcg 180

aaagtgaatt tatgggatag atcccgagat agagaactaa aggtacatgc ataggagact 240

caagggttta aacatgtttg gtctcttagt gtgagataac atcctacatc ctttttggta 300

gcggtgtcta ttgtttatgc aatgtgatca gatgacctac cgtatcgagg catccttgcc 360

ctacttttta tagtctaaag agggatgata gttacaggac atgtatctag gacgattaaa 420

ggatatggat agtaaccaag tctagccgag tctatcccat cttatcaggt agcttatctc 480

tatgtgtaca tgtgtttcac tcttactagt tgggtcttac catatctata tggatatcga 540

tcttatatta taatttgcta ggatctttac catgtttatt tcctaaagct ttcttgcgga 600

tgagtatttc tctgatatgg actgtcccta tgcactcgac cgagcccatg accccacctg 660

ccatggtctt ttttcgcgga gtcgtacatg gataatctta gtatatatat ctttaacatc 720

tagggtagga ggagattttg gattaaaggc ccatttggtt cagcttccca agccaaaaat 780

attattaaaa aactacattc ccaattaaag cgatgcaaat aggtttataa aaatccacaa 840

atttctctag tccaatccag aatctcctcc caccttagtt ttttagattc ctaccattca 900

aaatttccaa atcactaaca atttagcatt atttataaga ttaaatcatt ttcttttcta 960

tccaaaggtt ccatctgact catcgctcgg ctcccacccg acgacacttc ccaatgatgg 1020

ctagtgttgc accaactctc tacacccgac tttggtggtc aatgatgcga ctcaaccata 1080

tctaaaccgt cacacctcct ccctagcaat ctttaagtga tggcacaaca tccatgttac 1140

atatacccat atgatgttgc catgttgcct catttagcac ctaccagact ccactttgat 1200

gttcggtgat ggcgaggctc tatccctatt aaaacgatga tgtagcacat atcactttag 1260

ctattgatgt agtcgtgtgt gctgctcatg taggatgcta tgcacgc 1307

<210> 83
<211> 1356
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1356)
<223> optimal_loci_232692_G1, chr6:147017645..147019000, Cluster 1

<400> 83
gactcagcgt gtgcgctctt tatgtatgcc gcgcgctcaa gttatctcct gttggtgagc 60

aggcggcacg atgccgaccg gtccagacac gaagattggc gcagcaagaa gcatttgtgt 120

gaatgtgatc cgggccgccg gttccgaccg tatgggggcc cagcagaggc gagccgtggt 180

gggcacgcgc atgcgcggag gcggcggcca acatggcgag agttgttagg tcgatctcgc 240

tgcgccagct gtcccggcca gtagtagcgt agcgccagcc aggattgcat gattattgat 300

ccctcctccg tcccaactcc catgttttgc acgaactgga tacgcatgga cctggaccag 360

gaccaggcca gtcgatcgtc cgtcccatcg ccgaccggac ggacggacgt aaaagaaagt 420

taccagagga agttcacctc ctccgggtcg ggtcctgctt gctgggcaca acgcacacgc 480

tacgcagcgt ccggcgtccg gcaagggcat ctccccttga cagctaaacg cctccccgcg 540

ccgcgccaag cggagcagat cagatacgcg cggcgggagt ggacgtggac ccccacccca 600

cccggcccgg acgagagaaa aggacaagct cagattctga tctcatccac cggcatccgc 660

ctcatcggcc acggccacca ctcgcccccg gcccaatctg tgtgcgcagt ggccatggac 720

cccatggtcc tagtgctact gcatgcaaca gtggcgcgtc ctcctgtcct gaccgcagtc 780

cagttcgaca cgggcgccgt ctgccatggg tgtctatctg ccggcagcct tgtgtgctcg 840

atcgactcgc atcctgtatc aggcagggag gcagaggcag gcagcccggc acaggagtgt 900

acctttgcct cttctgggat tcggggtatc agagaatggg agggtacatt ggtcgggaga 960

gtcacgagct gcctagccta ctgtactctt tattttattt actcgccaga attaccgcaa 1020

ggcattattg tgtttccggt gatggtttgt gatagttttt tttttcgcaa cagtggcggc 1080

gctcccactc gcagcggtgg cggcgaccgc aggcaaggag ggctcaagct gcggcagtgc 1140

cctacggcaa aggcgaggga gagcacgtgc tgcatttccc actgctcttc actctcctct 1200

ccagctctcc cgcaacacca agaagcaaca gccagcgaca atcagcaatg gccatgtctc 1260

agcaagagaa ccgaatatgc atgctctctt atcttcttac tactgttagc taaggtcccg 1320

tcgttctatt cctgtgttga taatatatgt ttgtaa 1356

<210> 84
<211> 1205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1205)
<223> optimal_loci_232881_G1, chr6:147891628..147892832, Cluster 1

<400> 84
gatggggaga gagcaacaaa gatattcatg tgcacgatct gctaggctgc tagcctaagg 60

ctgatatggc ttgtcagcaa tttagtagcc ggcagaatac tattgttata attctttgaa 120

atgcgattga tagttattcg ttaaaaatat ttaacgaata tttttttat ttgtatggct 180

gtgggacact ggggcggggc cgcggagggg gagggacggt gctcgcttga cggatgcggc 240

accggcagca gcagcagatg gccgctttca tctgacggga aggcactgaa ttgtatggcg 300

atgcggcagg agcaggatgc cttttatagc actgcgcgca gaggctctag ccagtcaggg 360

ccagccgggc cgggccggac aggcgcccgg ccgtccgaac tccggcggta tgggcgcccg 420

cggcagctct gtccgctact ccgctgtgga cagtggacgc gacgccacgg tgcggctgta 480

cagtcccatc ggggacggca gtgcccagca gttgcacacc agcagtccgt gactccgcca 540

gcgccagtgc caagagtggc gatgggaaca ccaacggcgg cccggtgtcg tgaccatggt 600

tagtagcagt agcacagcac ggcacctgaa ataaagaatg catttttaa gagtggtgct 660

agactagctg ctctgtcagt ttgataatat ttgaacacat caaacagtcg aatccgtgac 720

ctgggcttgt cgtatccaat aagaatttta caagattgat ttcagcagat aaaagaaaaa 780

aactcttgaa gttgaagtgt attgatatcc tcaaacagtc gaattcgcga cctacgcttg 840

ccgtatctaa taagaattta caagaaaatc tcataattct ataatatcat gtttggatgt 900

agatattcaa gacccaaatt attgggaatt ggaataagga tttctgaatt ccgatgtttg 960

gttgtctaat gaatccagag ctaaaattaa agctcaattt catggatttg gactttaact 1020

aaaaagcgtc ccttccaatt cagatccaag actctatgtt tttggtggaa ttaaaacatc 1080

caaacaatat atttgtattg aaactcattt ccaatactag aaagatttgg tattagatct 1140

aattcgatcc taacatctcc aatatctaca tcaaacagac cctaatcgct ttcaagcatc 1200

gtaga 1205

<210> 85
<211> 1180
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1180)
<223> optimal_loci_233136_G1, chr6:148814677..148815856, Cluster 1

<400> 85
agtctcacat ccaatgaaaa gcttggtgca aggaaagata aatgtatcga gagaacactt 60

caaagagtaa cgtctgagcc gacgatgtat ttacatcgat aaattggtta cacttatccc 120

gaatccaaac atttgtctca gattcacggt aactactgta gtagatgagc aaatatgagc 180

atcaaaggaa acacatgaga gtgtgctggc aacaaagata atacttttgt acgacaatca 240

ttgtaactgc gatagtagat gaataaagcc aatgaggcaa agacagcctg cagatatgat 300

ccatggaaca caggtattga taatactgcc aagatagcag agatagtatg cccgaggtaa 360

ctgtaatccc atattttcat gtaccatttt acctagaccg cattgttcca ttcagatgct 420

gtccactgtt aggtatggga catgccagca tatcagctga gatttgtgat acttgcaaag 480

ttgcagtctt cacaatgtgg cagtacaata agaggctcga tgttaaaata tatttccaga 540

aagtaggcag cacgaaccaa gtaaccaaca actagaagat gaccatgcaa tgaaaagtag 600

tagatcattg ttgagtttta tgtctcgaag ccttctgagc taactgtgtt gcaggagtcc 660

acttagcaac gctcggatct tttacaccat gaggtggctg tatggaacga gcctagttac 720

aacatagtta ataaaacgtc gcctaaatag taaggcgccc caatgacgta aggcgctgtt 780

tgccttactc ccacactaaa gcgagtggaa gagagagcct aggactagca tcgtggcggc 840

tccggcaaag ccgacacaag agagagggag aagtgggaga gggagacgca ggagaggcga 900

ttgggaggag ggaggcggct caagatagag gggaaaagag aaagtaaggt taactcaatt 960

ttaataggct agttggactg atttgtaaat tgattggact gactaggcta gtctttttc 1020

tttatctttt tttatcaatg tttttatctt aaatactttc tcaaatatca acatttttc 1080

tgttttaaaa tatatttaag gcatcacctc gccttatgct ctatcactta aaaagtaaaa 1140

agagggtatg ttgccttacc tcgcctcgct gtcttaacaa 1180

<210> 86
<211> 1406
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1406)
<223> optimal_loci_233177_G1, chr6:148950009..148951414, Cluster 1

<400> 86
attattagta gcgagaaatg gtctgtcctt ctgccgagca gaagtcctat tagctttgct 60

tcaaactgga agaaacaaag aaaaagaaaa cgacatctca atattgtatt accgaatcta 120

gcaacttgtg tccgtcctgc ctgccacctg attgctcagt agcgtacacc aatgatgagt 180

tgaattaagc gctgggaggc agcgttaggg ccaggggcgt cccgtcaagt tgaaaggtca 240

tgcacaaaag gtaacaaaaa aaataaagga acatttaaaa taatattatt gttcctatca 300

tttttctcat ttttaccttt tgtcatgatt tttacctatt tttacccttc agctttacaa 360

aattagaacg ttacaaggca acttttttgt agaataaaat tttaaaggaa actcaactca 420

tgtcacttgc attaaattct attgtccgtc tcttttagtt gtatcttaag atagtggcaa 480

caagatttca agcatttttt atctagtgac tgcattgcac tggagataaa taagaaacta 540

tatttttttt ttgataactt tgatactatt aaaatcttct tataagtgaa gaaatagttt 600

gatcaacaat aagaacgttt ttgcgattct aaggtacatt ttagtaaata tttttacaca 660

gaataatatt tttatctata atctctatgt ggattattct agattttagg cccctgtaat 720

tttggagaaa ccctataatt ttaggggccc tatgcggatg cacaactcgc acgcccacag 780

ggacgaccct ggttaaggca cgtacaaact tgacacacta gttcgttttt ctaagtataa 840

gagacgacta agagattgca tgttacaaca ctgagatcct agatcatcaa tgcagccaag 900

agacaacgtg tatgaaaagt cgtgaaggtc tctattgcat atttttttact tagcccctta 960

gagacctctc aagcgacctc atattaaatg cggttgtaca tgccctacaa catagatatt 1020

acgttgtggt tttccaagca ctagatacac ctaagaaacc cttcatacaa cctaatgtat 1080

ctaagtctta tagcttattc actagaatgt ctcaagatac gactcattta tgtaggttgt 1140

atgagtagaa tcttatctag acttagagaa ccgtgttaga gacgttactt tatcaagata 1200

tcgtctttta tgtttttgca cttaccccct taataccccct taaagatacg ggcatttatg 1260

taagttgtac atgcccttac atctcaataa ctctactttt ttgtggtaat ctatttgtac 1320

cggtaaccta cgggtgcagt tgctcaaaaa atgtttttt ttctagctac catgccgtga 1380

ggcgtccgtg aaagtctgca gatcac 1406

<210> 87
<211> 1061
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1061)
<223> optimal_loci_233300_G1, chr6:149368872..149369932, Cluster 1

<400> 87
gacccgccac atcggatccc agtcggcggc cttgggccta gcgggcaaag gcactgtacg 60

tctgtacctc ctggataagt cctggcccat tattatatta ttattattat tattggagca 120

catatctact ccgttttctc ttttcacaag tgtgtgcaat ccatgtcacg tcacgctcgc 180

cagccatcag cagccacaaa gaatcagaat ctcggaagac tgtcatcagc cggattagca 240

aaggcggtcg cttttgttat tattatctac acggttcctt catctcatgc gcaatttcgc 300

ttaagaccaa ccacccgatt cgttcgtcca ggacgattca cggcgtgggc acgtcggcac 360

gttcacgagc tcacgcttct taagaaccaa acacctttc aattctgtat tgaaaattat 420

gctagtatct tagaatctct ctataacctg ataatgaaat ttgcactaga ttgtgtggac 480

tatccagatt ctcaaaatct gctatgaacc aactgccatc agagttagaa gctatatcag 540

atcaatagct ccttagaata aactaaaaga aagcaataag taagttgttt ttcactagct 600

tcttagataa gttgtctttt ttttcaacaa aaaaaacagc tatgctaaat aggtccatat 660

atatctcaac ttgggattca agttttctta aaagaaatga tcaatgtaaa caccatattt 720

agaggtgttt gggtcttctc tagaccacca tttttagctt tgctgcaaca tctccggcgt 780

gagtaacttc accatagagt ttacgtagtt tttaaattaa actgtttggt ttatatggta 840

actctaactt tataaataaa gcttgagatg gccttgagtg gggaaacgag caaagaaaac 900

aaaacaaaac gaaccggtta attatttgtt cgttcttttg ttttccatca cttctttttc 960

caatcttgaa gtgaatccca atttgacaat ctgatagaaa ctgcaaaaca tccttattaa 1020

ttgaagcata ctttgagatc taaaaatcta actaaggtga a 1061

<210> 88
<211> 1343
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1343)
<223> optimal_loci_233584_G1, chr6:150696906..150698248, Cluster 1

<400> 88
cgcatgcttt cggtagaaat ttgtctttgc gggcggacca catcactaca gtctacagtc 60

tacagctccg tccgctgagg gcgtatgctc gggaactggg agtagctggt gctggctggg 120

ctaatctgaa tctcgtcgcc ggcccacgat agctaaattt gcccgcaccc actcgtctgg 180

gccaacgcat cgcatcgacc aaacggccgg tgagagggaa aacgcttcct cggcgagaaa 240

ccaacagccc atagaggccc aactaaggtt cctggtgctg tcggcccgcg ctgaaagcgg 300

tgccgtcggc gggcggcact gcaactccca cggcccgcaa caactgcccc tcgggcctcg 360

gtttcgtcgt cgcaacaggg agaacaaaaa aatgagccgc acgaccgcca ccaagcagcg 420

cagagcaacc gtcgcgcggc tcggcctccg ctgccgctgc cgcccttcgc cacttccctt 480

ccgattctgc cttcctcgcg ggtggctgtc gcgcgcggct gtttccaata gcacatccct 540

acacgcggct ctccggttct gggcgtttgg aatccgtctc ctgtcgagga cggcgtccgg 600

caaagcccct gatccgatct ctgacgcctg cacaaaggaa gctgatgctg ccaattgccg 660

ctactccgct ccgcgggacg gacgcagcgg cctgagacag cgagcctgtc ggacgaagac 720

ggcaagcaag aggagaggac gagttgaaca ctcacttggc agttcgcgcg aagcaataga 780

aggcatcaaa catgccaaaa cagacagccc cacctaccaa ttctctttgt tctccctcga 840

gttgcttcca cgcgaaggca aaaactctcc agctgtacca acacggaacc acgaaatgta 900

tatgttacac ggtcttgtcg tcttgtcacc atgtcgtagt gaaaacgcga cggaagacga 960

taaaggacct tcttccttta catcaatcca atccagctct atattagtat aaattagaat 1020

taaatctata tcataattca tactctaaaa taatctaagc caacttattt ttttgtttag 1080

ttaaatccat cgtgaattat aactcaaaag tttaagaatt ttttaaacta tagaagacat 1140

ggattctatc tatagctcac taggtatgta acaaatccat taagaaattg caccaattta 1200

tagtggaatc catatatcaa aagaatacta gctttgaaag atacatagat taaatgatgg 1260

atttaatctt accataagat tgagtgtgag atatggattc actcaatcta tacccggatt 1320

taaatgtatg gtgtgattta gcg 1343

<210> 89
<211> 1120
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1120)
<223> optimal_loci_234908_G1, chr6:156841795..156842914, Cluster 1

<400> 89
gcgtagctcc acatgtcagt agcagggccg cagctagtag tggtcctccg tcctctcctg 60

cagggcccag ccccgggggg actggggaga tcacaaagcc tgcgccctgc agatcggagc 120

aggcagggag gccggccggc tgccgaaatc ggtctgtgtg gcagtggagg cctcgcgcga 180

gcagtgccag tgccagttat cggcagtgct ttaaccatct tggcagggca gggcggaggg 240

atctcttttt gggacggcca ccgtttgctt ttgccgagcc gagcctggac aagcgcaggg 300

agtctagggg aggaaagcga ggcgagctgt acaaaggccc ccctttgga tctgatactc 360

ttttgctttg ctttgctacc tagggtttgc atcctgccgt tgatgctgtt gagacgctac 420

gcctacgcgt cgtgtagcaa gcaaatctat ggcggttggc acggccacag ctcttcaagg 480

atggagatcc actggaggca tcagttgtac gctttagccc tctctcgtcc tcgtctcgcg 540

ccgctcccac caaaaaaaaa caagatgctg ggtgagggtg cacggcgccg ccgcatggca 600

ttggcatctt cgtactgagg acggccgaag gctgacgtgc cgtgcctctg tttgattctt 660

tgcagcaaca aataccaaaa aaaaaggctt catgtagtag gactggtaga cgcaagacgc 720

cgtaccacca tgcaagtatg cggaggtagg atccaaacgg gcagacgatc aggtacagat 780

tgtgcgtggc cggatatagg agagcaaaag aagcatcaac aagctagcag tcattgatga 840

aacggatcct ctctctctat cctgtctctg tcttaaatga actgctggtg gtctgcatgc 900

actgaaccag agcccggagc cccaggggcg ggcctagaat ttggacaata ggtattcaaa 960

attttactag agcaaaaaaa atgttttgat agcctaaatc tatgttagta gccttagtca 1020

tatataattg atggcctaaa gcctattaga gtagccttta gatatatata attgattagc 1080

atgcacagac gagtagctct ttcccttgaa cctcggcgag 1120

<210> 90
<211> 1313
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1313)
<223> optimal_loci_235233_G1, chr6:158395897..158397209, Cluster 1

<400> 90
gcgcgtggag atgtggggag agagcatcgc tagccggcca ggacaccacg agcccggtgc 60

ccgtgaacgt gccaaccaaa catgccgtat atgcatggtg gcccgggcat ggcatgggca 120

tcgccgcctg cacatgcaca gcactgtagc tgctgctact atagccacta gctagggttt 180

acatcatgta gtcctcctat actgttcagc aatcagcagc gcggggcagg tgcaggagcg 240

cagtgccgtg ctggcgctgt gccggccgta cgtgtcgttg gtcgactcac gcacagtcac 300

atgattacgc acatgctggt cctccctgcg cgcacctgac tgactgtgac tgcgatcact 360

gctacccaac aaaggacgac gacggtacaa acgtcagtat cgagtttaac cgctcacgtt 420

cttatagaga gtatatcaat atcggatggt gttttataac tgggattaat gtgtacctcg 480

agttaacaat aaaaacagat aactctttat taccggttcg acccaagaaa taataaggtg 540

ccgtttggtt cataaaatat tacgtaaatg ataatgataa tgattcacac tcgaatactg 600

gcggtaacaa gtttgaataa tacgctatct atttgtagtg tggtaccgat tacggttgga 660

attaaataaa cattattaga tgccttttc ttagtttctg tccatttagt actagttttt 720

ttgtaagaat tacatgtaat aacaaaggac actttgtggt ttccacccat aggtatatgt 780

agtatttggt tctttataag aacaagtaca aagatgtccc tcctataact ttggacatag 840

gtatatgtag tatttggttt ccacccatag gtatatgtag tatttggttt ccacccatag 900

gtatatgtag tattcatctt aaagtagttg ggtctagtgt tattttaaca agtacatcca 960

ttctttacct taaccttaaa ctctattttt ttagttttat atattttcat agaaatcctt 1020

ccaagatgga tccttgtgaa atgtaagagt atttgattca tggactagcc cttattcagt 1080

agcgtactca ccaccatctc ctatttcaaa ttccactcta taaaaagtgt gatttgcgac 1140

gcaaaatagt gttttacacg gctatatgca tgatctgctt gccatagcct taggaaggaa 1200

acgagaagat acacccaact aggcattagg gctctgagtg atgttccagt aaactagccc 1260

ttttagggct ataagtgatg tccaagttat atcaatttta acctttagct cta 1313

<210> 91
<211> 1150
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1150)
<223> optimal_loci_235251_G1, chr6:158489036..158490185, Cluster 1

<400> 91
ctatttctgg tgtcaacagg ttgcctctca cgttctaaaa aaaagaaaaa aaaaatgcag 60

aaacgacgtg ccgggtggaa tagtcggagt gagagcaccc ggcaggaaag tactctccta 120

ccgacttgga gcctgtccct tcccttcttc acaataccct gcatatataa aaacaatccc 180

ggccgggagg gcaggcaagc aaggcaaggc aaggggcaag ggcatcgatc ctctgctgtt 240

caggaacccc ttttgctcac agtcccgata ccgtttgtgc aactgatccc gcggccacgt 300

cgccagtcgg tcggtcggtc gcacagtagc tggcttgcta gctaccgaga tagatcccgt 360

cgcgtgacag cggcggccga ttccggatgc ccgatagatg cctcctcctc ctccggccgc 420

ccccacacga aaggaaagca gccgctgacg ctgatccaat ccatcgagct gccgctgccg 480

accaccggca ccggggctgc ctgcctagtc ggcaaggcaa ggacggcggg agagcgcgcg 540

cgcgcgctgt gaagtcgcga cctcgggcct agccgggatg gacctggtcc tggaccaccg 600

cgcaacgcgc ggtgcagcgc acacgcacgc aggcacaccc ctgtgcaggc aggcccccag 660

ctcggatgaa agccacgcat cgcctcctat aggcgacgag gacgtggctc cagcctctac 720

tagctaggct cgcgcggcat ggccatgagt caatgacgcg ggtctcgtga tcgtgagcta 780

gcgccgccaa caacgcagtg catcacgtac cggccggatt cccagatggg gggttgccgg 840

gcacatcaag tatacgtgca gaacacctat aaaacaagag ttataggtgt tgtataatgt 900

aagtgaatta cccgattcct tacttaagtt tttggattga attggttggt gtatacaact 960

taatataata taaaagccag atgttacaag ttcgaatcct ggctagaaca attaaataaa 1020

ataattgttg atcactcata ttccacgtct aagacccaag agaggctata catctaattt 1080

ggttcaaagg taaccggtct tactcgattg gtcgtgtagt tgtttggtaa aaaaaataac 1140

gtcgtcttag 1150

<210> 92
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1030)
<223> optimal_loci_235522_G1, chr6:159691861..159692890, Cluster 1

<400> 92
cgtcagaaag aatggggccg gatagatcat agatgcgagg tttttaccaa gaaggataac 60

agtcaggagg actagctaga ctgatccggc gacgagatct acaatgaaat tgttttagtc 120

cactcgaaac tttaaaaatt ttctatactt aacattagat ataactaaga ggttatagaa 180

aattgagggg gggggggtct acaatgaaat tgttactttg ccctcctttg gatgcgccca 240

tgactcaaag catcatgcat gtgcagaatc aggtacatat gcaaactaac aaatgcaaaa 300

cacacgagat ctcatgggca cccaagactg cattgctggg caaatctcct ttggcagtgt 360

ctctgcacgc aacgctagct aggtcatcga cgaccaggca agttactgcc agaggagacc 420

caacccggta atgcatgggc cccgcggccg catccgcagc ttgccctatc taatagtact 480

tgcctgctcg atcgatcgat ctactctgct gagatttttc gtgtccgagg ttccacgtat 540

atttatagcc agaggcggcg gcgtcacgcg gtcgcgtcca gctagcgccg cccggccccc 600

aatgggtgga tcgaatcggc attgttctgg cacaaaatta ttttactgta ttatttacaa 660

ggtatatttt atctccaaat atgcatcagg tccgattttt ttttttgcac ttgctctcgt 720

ccaatgattt cggtgccgtt cacgttatat tttatgattt gttggtcgac tctggggttt 780

gggcttgatg gatctgctag ctgcttctgg aatctggaca tgcctgtccg gggcggcata 840

tgctgcctgc atgcagaata acaggaagga agcgtggaga aacttgtgcc tgtagcttcg 900

tctcgcagtg gtacggtacg gtcgtcaggc cataaatata agctagcttt ttatgtttgt 960

aattcattca cgcatgcatg gatgcatgca agatctctgt ccgactgacg ggatgtgtac 1020

tatttgtttg 1030

<210> 93
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1131)
<223> optimal_loci_236509_G1, chr6:165144103..165145233, Cluster 1

<400> 93
aaattagaat attggagctc gaacgattta gattttgaaa atgagaaatt acatgatatg 60

tcaagtccag atttaaaagc taactgcagt gcagaacatt tatatgcttc gctgttgtct 120

cccataccta cccacacaca caaagttaga gcaacatgtg ttttggcaca atatacatga 180

agtagaattc aaaagcatga tgatcacgta acgagttgga tgtcgtgttg taacatgtgg 240

gcagtggaag taaagtttta aactaggcgc catatgctgt tctgacaccc ggccgcatcg 300

gcctctcgga tcactcctcg cagtggcagg cagccccacc catgacccac cgccgatcac 360

ccacgcagcg ggaacagcag acaaaacaaa ccggagatcg agctgccagg ttatactgat 420

atgcatgatc gcgctcgtgg tactggcgct atccgccatg gctagcagcc gcagtggggc 480

ggcaacggcc ggcggcggcg atcgaccaat taatatatat atacattaca gaaaaaattg 540

tttcgatcac ttgaaaatgt tagaccagct aatcttgtaa tgaaaggttg agccgccaat 600

atattttaag aacatggact caacaccaaa tataaaacgc gaggtcatca ttagctaatt 660

aatgtgagaa taacaagcaa gaaaggtata tcactagtag ccgatggaaa gaccatattt 720

tgaaggcctc cggcggctta ggccgacaag atccaatcct ctaaatataa gcaatggaga 780

cttccttcct ctatagcctg caccagcaca tatcgatatt aaaaggcatg gaattgaatt 840

gagttcaatt ataaatcaac catagtattg aaatgagatg taattctaat tttattgtat 900

agacgtcatg aattatagtt tagaattgtg aggtccaatt ccacttaata tgtaggagtg 960

atgctttgta ccgggagagt gagtttctag ttatagtcca attctaggga attgtgtctt 1020

tgattccaaa tctcaattcc atgtgcaact aaacaataga attctaaaaa gttgtttcca 1080

attcataatt ccgtgctcca atatctataa ccaaacgggt ataaagtgtc a 1131

<210> 94
<211> 1286
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1286)
<223> optimal_loci_237011_G1, chr6:167949139..167950424, Cluster 1

<400> 94
acctaaaata attcagatgc acacacacta acccatcaat ttcaaagaaa gaggcatttc 60

agccttaatc aactttgtag catagaccag gatatctttc ttggagttga tgtagttccg 120

tgtagttact acccttgtcc gaatctgatt aagatcattt atcaatctag taatccatga 180

aacaaaaacc atctctaatg gttctcttta cagagaatca atcaacaact attagaatgg 240

gagaaccaaa cctcaaactc tacagtcttc agtttgagtg ttagtgtctt tcccttcaaa 300

ccctcctttt gcaaatcatc aaataaattt tctacaatgg tagctgatag aagaaattgc 360

taatagagca agtagccttc tgcagtgaaa ctaagttgcg taagcatggg agatctgaaa 420

ttctaaattg atggcaagat ggcaacaatt gagatgtgtg gtcatcatgc ctttttttga 480

cagaaagtat aatcatcagg cctcagttac acaaataagt taattaacaa attccatttt 540

tctctttggt ggacacattg tcttttgtta ggaagcgaag agtgaattca tatgtttttg 600

tggtagctca gaagagtatt caagttctgg gatctggaga catttgagtt gattggatct 660

ataggacccg agatacatta gtattttgag ctgatgaatc ataaattttt attttatttg 720

tatttgttat gctaagaatt ttagcattat tttctaaata agtagcttgg gtgggtatct 780

catctctatg ttccatcgaa agaaaatgga aaatgaaaat aaacttggat ctccctattt 840

gatgctactt gataccagta ccacaaacag gcatatgcta atgttttgca gcataattcg 900

gttcatttgg cacatttttt aacttattta tattacttgt gtttccatca atatttaatt 960

cctctagatt aattctcgtg cataacatgt caacaaccaa catagctcgc aacaatagga 1020

tgtgatgtag catgtaatgc ataaaaataa tcaaagtagt aagctaatga ccaaacctta 1080

caacactctt aggcactatg ttaaaggtat ctttcatctc cttattctta tagtacaaag 1140

cagtattgac tcctcgcatc ttgaattgtg taacaatctg ttgggcaacg catgcacatg 1200

atttaatcat agcaacgcgt aatagttttt cctgttaaaa aggaagggaa acgaagaatg 1260

tgatgttcac tcacatttgt gagtct 1286

<210> 95
<211> 1393
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1393)

<223> optimal_loci_237734_G1, chr7:3176202..3177594, Cluster 1

<400> 95
ctgcatgcga tgcgagtggc gagtggagga aaagcgcatg catgggctgt agctgctggc 60

catttgccat cattacctta atcaaagttg agccacacgg tatgggcgcg aggtgcatgc 120

atgcagtgtg tggatcccta gctagtctcc ccttttctc tcattatata tagcaccagt 180

cttggatcgt ttgtgacact gcatatgccg ctgcatgctt ggaggccttg gtcttggatc 240

cctaaataca cctgattgat acacatgcat gccgacatgg tttaggccgg gttcttatct 300

gttatctctg aactgaaccc tcgtgcgttc aataaattaa tggtccatat atatttcatc 360

ctagataatg ctgttactgt caatgccaaa ttaagcatac tatactgtag catgcatgca 420

tactggggga caggccggat tccacaaaca atgggacaag caagagagat tctttctcaa 480

tggtggatct tattaggacc gggtttagcc tgacacagct cctactaagt cctaacactc 540

tgtccgaagc actaattatt ctacctacct agctagctaa tagagacctc cttacgtaat 600

taatcatgtg aagaagatag aatatctgtc ttaggatgtt cccccagcat atgcaactgt 660

acatgccgcc attgctagtt cagctcaagt ttttttttaa aaaaaagaag tgaaggtagg 720

aacaaatgtt aggccatccg caatcctccc ttttgacaaa ccgcaagaaa caaaagcaga 780

aaaataggcg tttaattaat ctccacagca acacatccac accatgcata tgcatcccaa 840

gagctagtag catcatgcca tatgtgcagc caatgtttga tcgaaaaaag attgcagcca 900

tatatataaa tacattgttc cttttggttt ggggccggag ctagctgccc tctcagccat 960

ggcaaaagtc caagggagct ggctggctgg ctggctgcat aggggtggcc cagctgagcc 1020

tgtccgcctg ccaggaagta gccaagcatg cttaaagggg atggtgaaat ggtactggta 1080

cctcccaatt agaaacagcc tttcatctct ctctctctct gctggccccc ccttcttccc 1140

tgcatcattc atgagaacat gctattgacc gacatctctc ttttttgtct gcagctagct 1200

gttgactagc gccaacattc aaaaggaaga gcgcaaatct atatatcagg gtatagaatc 1260

tatcagcatg catctccaag ctaataagag ctagggtaga tgatcgcttc attgtgtggt 1320

ttgcaagata tatatacaca ccgctgctag ctctccactc tctgatctgt ttttgagcca 1380

cgcgtataat ata 1393

<210> 96
<211> 1051
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1051)
<223> optimal_loci_240342_G1, chr7:17492110..17493160, Cluster 1

<400> 96
cgcgtacaat ctcgcacgag tctagccagt cgcgcgttag atgcaaccaa cataacttat 60

tttacgtctg tctatgtagc ccgcatttca tacgtgtaga caaccataca caaactcaga 120

gaaagccaag tcatatggtg accctggatg aggcggtgca tgtaaccatg attctgactc 180

tatggtccca aagtggcaga acacacgcca ctaccatccc aaatagcctc agcgtggcag 240

taataaatag cgggtgggcc gtgggcgtgg gctgcacagt tcctgcattt gaccgcgtgc 300

ctgttttggt tggcgtacgt atgaccgatc ggaggacact agtcactaga tagcttggac 360

agaatgggac gccaggattt actactactg ttgcgcgcaa ggtttcgccg tctcatcttt 420

aataacataa acttcattta tttatgtcag tcagtcaatg tatcaagagc acagtcatca 480

cctcatcagc tgtctataaa aaaaacggct aaaatctgta gccaaaagag gagatcctca 540

agcgctcacg ttgtactgag tcgatgcatg gttcatcttt ttcatggtcc attagtgtgt 600

gtttttctct attaatctgt ttgaactgtg aagacagcta gattctttag atccctgaag 660

atactactgg ttatcagtta ataattgttt ttatatctaa acagatacta caggtaatac 720

attagtacag ttgtcggaag aacagactaa tctacctcga cgacgggggc tataggcaac 780

gacacccgct ccgcctgtgc gtgcccgtgc gcgcttcacc agcaggtcgt ctcctctcac 840

tcctgcgtga gagagagaga gcccggtcag gtcaaacctg gcgccccaca tgtcatcctt 900

tgggtagggg tacgagcaag aggcgaaccg gcgagaatgc gaatccaatg cgctatctct 960

ctcacacaca cacatgggcc cggcgccgct gacagtaaca gcagcagagc agtacgactc 1020

ctcgagaaga tgaggagtgg gacaaaagta a 1051

<210> 97
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1067)
<223> optimal_loci_242236_G1, chr7:27697713..27698779, Cluster 1

<400> 97
tatatatgac atgtatggtg ttctcatttt atctttctga ttttcaaccg tcacggcact 60

aaaattcttt gcaagtgcct tcaccagata ttcttgatag atgttcctgt aaaagataag 120

ttaacacact taataaaaaa acataaacaa taatctgagt tccaaataaa ggtaaagaaa 180

atacatgttt aacacatgca tatacctgtt gggccagata gcaacactcg ttgacaaagt 240

gaagatatag cttttgtaaa cctcaagtag ttattgcaat gtaaatgtac atatgccgat 300

gacaggttta acacatgctt taacaagtga tgtagaaatg tgtacctctt gttttcgttt 360

tatgaaattt actttactgg agggacgaac cctgcattgc aaacaggcgc agctgcgacg 420

cctgagtcct gactcctgag accatttgca ctgccatgca ggaagcctct cacggtaaaa 480

gcagatagag agtaacgtaa aacatgtata taagaaaatt cttacggcat cagtgtcgtc 540

tacaacaaaa tcatgtgtta tatatagaga aaaaactaga tagatgttcg tgcattacga 600

cagttctata tatcaatgta aaccttattt aaatgaaata gttgtttaac tacgttccaa 660

acctttgtaa tgagcatttg aaagtcccga gtggtttgca aggattgtaa gattataaag 720

atcaagtaca tgtgttgtcc tcatggtcct ttgatgaatc ttcttcagct gatcgttgcc 780

tatgttctga tgccagtatg tgttggatca ataggtctgg aaagtcaaag tgccagagct 840

tgcctcttct cttgtgaggt ctcaactgga gctgccaaat atcaaacaaa aatggatgat 900

gctgaactag aaagacaaaa tcgtgaagaa agtagtggtg tacaaatgtc tccaccaggc 960

caataaatat agcatcctaa ccaacatatt tctgttgttt ctccactatg tggagagtat 1020

agattggccg aaagtagaga tgacaagggg tcagtgaaag gaacaca 1067

<210> 98
<211> 1295
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1295)
<223> optimal_loci_2424_G1, chr1:12809266..12810560, Cluster 1

<400> 98
cgtagagagc acactttagt ttggtgacaa taggagtttc cattaacata ctagtggcgt 60

cgataaagca tgccatggat gcaccatgag ggcccagatt acaatatcta gtctataccc 120

ttgagcaccc aatagtgtca ttccctagtg tttttgcaaa gcatcaacta gcatctatat 180

tgaacaactc atgctacacc tagatgccag tggaggcaaa tcttgaaggc cttcagccag 240

cgccatagtt tctaccagaa gcactagagg aggatatgtt atggagtcaa tgatgaagtt 300

atttaggttt tatagcccaa ccatgaagca taaagagaaa aataatagtc aagattcatg 360

acctacatga gttacgagca taacagtttg gtggatgaga caaggcactt tggattccca 420

aactcaaata tctttatcta taataggact taatagcaca cagtaactaa aagcctgaag 480

tatctactca tgtgtagata cctaggggtt tgagccctag ggaacacaac ttgacaaacc 540

tttagcttga aggcacccaa aggattgagc attggactgg cttgccattg aagtctttta 600

ggggttgttg ttgtataaac tcagtatacc acgccactcg aacatcatcc cattaccaca 660

agggtgggcc aaagttgttc aagatgaggc ctagtcaaac taagatacat cattagacat 720

gcagaacaag tgacctaatg tatagagttt agtcgtcgac ttctatggga tatggtagtt 780

attgttctta gattttcttg tggttaaata gaaaacatat ctacaaatca atcgagatgt 840

tgtaacccta ccctatggac tatatacgac gaggtagaga gcctccgatc gacattgtga 900

catactcagt gctatgctgc atagacaact agtcttagac aacaccttat aaactcgagc 960

atataagata agagatttat ttgcaattgg acgtatgata tcctataact aaaccagtat 1020

aagtttactt cacgtttgtt gtccttctaa ttccttgtat ctgataaagt gatctttgtt 1080

atcagagcaa atagtttcct cagaccgttt ggtcaaaata ctaagacaac caattaagca 1140

gaggcggatt tgggccccgg gccacctggg ttgtggcccg gggcgcagcc caaaagccct 1200

cttgtatata ggtttttta gctaaaaaat cttggttaaa atatatttca gcctaaaaat 1260

gtggtccaaa agacctcctg cttgcagcga ttgag 1295

<210> 99
<211> 1318
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1318)
<223> optimal_loci_2428_G1, chr1:12815752..12817069, Cluster 1

<400> 99
acataactaa aggaacaaag aaagttagct gaataccgaa gttgaccgtc tgaaggtctc 60

tccttcccac taattccatc cagcgagatt gtgcatcgtt ggaatggttt catgtgtaaa 120

acaggttatt tgtacactcg agatcaaagg cttgatgggg gtgcaggatt tgctgcgagc 180

tgaaatgagt gaaacttttg ccgccaagga ggcgctttct gaagatgaac tgaggaatga 240

gaagctggcc aggctgcttg gagttgagga agttaagaac aaacggcttc aaaactccct 300

caaaaggtag ctatccggag gtcaaaatca gatagcactt gccattcctc tttgcagcaa 360

tgcacgcttc gagtgagttc atgatggaag ttctagtgct ttcaatgcaa tggtgttttt 420

tcttcatagg atggagaaga cttctaatct ggatgaggaa aacagaatga ttcgacaggc 480

tatggcgtta aaccctgcta ttgtcaggtc gtcatcaagc gaaaaccatg aaggcacctg 540

gtattcaggt atgcccaatc attgtatcat aaactgactt gtgatgccat gaccagtact 600

aagaaatcat actttttag ttaatagttg atcatagttg tgtacattca tgtactacca 660

tgaaagaaag gattcgttgt atcgtccagt tttatttgtt gagaaagaaa atcggacatt 720

tttatctgaa actaaaggaa caaagaatta tatttcggtc tagcttaatt ctgtttttac 780

attctagcag atttgatata aggtttgatg aactgatgga gagtgctagg aaactgatca 840

aagcgacatc aaaggagatc aacaagtgaa aataaatatc catgcagtgt tttcccaatc 900

tccataatca accaacgggg agaccaagaa ggttgtaaaa cctggccatc tcggtcagta 960

agctaaaggc acttatattt tttgcttact atctacattc tacgaactgc ccttaatggg 1020

ggaaacaaca cagttgctgc agattaataa aaaaattgag ttgatggctt tctgagtatg 1080

agagttcttg aatccaaaaa cattcagaaa catttggcag ccttcagaaa ggaaatcaca 1140

tatccttgca atggcaaact ttcgatggcc agctctgtgc tgccggcgga ggacaagaag 1200

cccaagtaca tgaagtcccg ctcccggacc caccgctcca gcgactacca catttccaac 1260

tcgtcgaacg atgccatggg cccatggcgt ggttcagcag cgatgcggcc atgccgcc 1318

<210> 100
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(1036)
<223> optimal_loci_25001_G1, chr1:151371224..151372260, Cluster 1

<400> 100
aggttgtaag atcaatggct gaaattccct gcagcgaata ggaatgcgag acttgatctt 60

atccgccgat taggcatcgg acggctattc gatcttcttc tacctacacg caccagtgca 120

cgacggcgct gagtacatca acagcgcgtc ccaccgaagt gatatcaagg tgccgaggtt 180

aatacctacc ctaagcaagc actaccgcca ggaagataag ggtgagggag ctcatgggca 240

catgacttac cgtggcactg cgcaggaacg agtagtcacg ctccacggcc gcctagttcg 300

tcttctacac gcgacgagga agcctagtcc ttccgttgac ggacgtgcga gggaaactat 360

tcctagacac ccggcgcgtg accccggacg agcaccgccc caccggtcaa caccgagacc 420

aacgccactt cagagcgccc gttgacaggg tccaagctcc cgtcggcgag caccgccaat 480

tgacggcgtt gagtctccac tctaggcaat tttgtggtgc cctaggtatg cccaacagag 540

gacgagaggg tcgcgacact tgattttatt cccgcggtca ggttgcgccc gccaatccgc 600

ggattcagtt ggagagcccg gactgcggag atgctgttgc gcctgcccgg gagatgcggt 660

ggccaccatg gtttcggctg gagagagacg tcacgcttcg ggtcccacat ggcagagaga 720

tagacaggcg ggtccgcaag tcaacgccaa gagctgtgcg tgtattccgg gtgggagaaa 780

cggtggtcag ttggagaacc gcgacgcgat ttccggctga cggacattgg cttgaagaca 840

actctgttag ggtggcccca agcgtaagcg gcttagggaa cggtgtgttg tgtggtgagt 900

ccgtgagtgg ttcggacacg agggaatgtg ggctgatgac gcgtgggccc agggcatcgg 960

cgagagtgag gaaacggatc cgggtgcgtg aatagtcact ggccagctgg gtcagggagt 1020

cagcgaaaca aggttaa 1037

<210> 101
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1377)

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253626_G1, chr7:105352993..105354369, Cluster 1

<400> 101
aaaatcaaac tagctcataa acctactaag acactacaaa ccatttctta acttgctaag 60

aaacaccaga gagttaatca tttttgaact tcttttaaaa ccccacaaac ccaatgagta 120

acctcatcac ttctttaaga tacttaatgc cctaaacttg attaaggtgg aactcttttc 180

tctattttga gaagcaatta gtttgctagg caaacaaaac caaaaagctt caaacttgac 240

ctaaaggtta acatggccaa aacaaactta ctgaaaaatt cttacaattt ttagtgctct 300

attttcattg ttaagattca caaaattcta attaaaccaa gttttaatta ttccgaatta 360

ggggtttgtc tgaaaacccc aaaatcatta ctaacccaga gaccatattc ttttaaccta 420

acaaatcttg cttcatgaat tttacatctt acacaagctc tagacaaaat acacaaaaac 480

tgttttacag aataaaagaa taaagggcta tcccattgga tctgggcttg tcaccggccc 540

aactggacaa cacacgctgc gcctaaaatc gatgcccagc tcccgcgccc cggccgcgcg 600

tttccaagat cgacggcggc gacccgatac cccagcctcg acaacgatga gctagacgac 660

ggggagaaaa ctgtcacccc gcacttcggg accgcgcgca actactagaa gagctaagct 720

gcaggtttcg ggctctgcgg atgtctaacg gcagccatgg cggcacgatg gtccaacgag 780

tagtacggcg agcaccgcga attactagga acagagacag ggaccgggga agcttcacag 840

gttgagaaca aactgaaggt ggacggttgg cgacgctaac cgcggtgaca gtggtgttca 900

tagacggcga acccaccatt ccagacgaaa aaggcagtag aattgaaagg acaactccgc 960

gagcatcatt gataccagac agttatggaa cataaaccaa gtgtacgaga aggcggactt 1020

tgatagtggc gtggtcacta ggttaggaga gaacggcgtg cagcgagctc cgaccagtta 1080

aacgacgacg agacacaaga taatttggtc acgagggcgt gaactagtga aacgtacgac 1140

gaactttact aagggtcgag aaacggcaag gaaatgcact aagtcgaagt gcacgacgac 1200

tgaaagaaga gaggaaaaaa ggactctgca attatcagcc accaaaagtt caagaactaa 1260

gatttagaag ggtccaaagt tgagaggaat tcagcaaaac tgaactctgc accaaactca 1320

ccccccatcg ttgaccccat taatccacac gattcaaaac aataaggcca accttga 1377

<210> 102
<211> 1344
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1344)
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254318_G1, chr7:108859097..108860440, Cluster 1

<400> 102
gacgagtcca aagtgccaat atgaaaggtg aagttgtaat agcaccagac gtctacatta 60

gatttttaat agagtataga gtagcgtaga taagtcaccg ctgtcccggg aagcaggagg 120

gccatctcac cgccgctggt ccggtgggca tatgtgcatc agtgcatgtt gatgcatggc 180

tgattggctg aagccttttt aggctgtggc tgtgatcttc gctttaaatt gaaaccacag 240

tccacagccg ttgtgacttt tatacctgga gtgcttctgt gcttggtcgt agaaagaaaa 300

ttgcagccaa tatggctaca ggttaaatct acaacacacc ctatatctat tgcaactgtt 360

agaggaagta cagtacagta caataccaat aattagaacc attagtgtta aaaactagga 420

gcaaaaaatg atgttatata cactgtttgg atgtagatat tagaacatgg aattaggaat 480

tggaattagc tttcttggat tctgttgttt tgtttcacat ggaattagaa tttggaatca 540

gagattcagt tccctgaaat tagactataa ctagaaattt cctctgtcaa tacagagtgt 600

caccctctg aattgagtga aattagaccg cataattcta aactacaatt ctgtgacatt 660

aaaataataa aattgaaatt acatctcatt tcaatactat gctgatttga tattgaactc 720

aatttaattc tataccctcc aacatcgaca tcaaataaag cactagagga tctagacaaa 780

caattccttt tgttgtttta ccttaaacgg tgtatgtgta gaagtcgaag gatcgccaaa 840

ggtaagattc ttttgctagg acacaacatc tcggcgttct gtgcaactcc caagaactac 900

tttagatcgg gggctaatca gaggcgaagc caactttagg gtggtactgc tataaaaaat 960

aaataattta ataaaaaaat atggtaaaaa attttaatca gtaggatttt tttcattacc 1020

ctggtgcatt ggcactaggg aagcttaacg tagcttcgcc tatggtgcta atagcctcat 1080

tgcttccacc ttccagcttc tagcgctgat atctagagag ctaatctaac atagaagaca 1140

agacaatatt tttttctgat tcttcggatc agtgagatca tcgctcttct tgtcgttttt 1200

attagacatc atgattttag attggatcac tattgacctc aaccgagtca ctgacaaacg 1260

ggttatttca cctacaccag ttagagctat aatgttcaag actacatatg gcctagataa 1320

acaacgtgaa aggtgaaaat tagt 1344

<210> 103
<211> 1095
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1095)

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255924_G1, chr7:117965183..117966277, Cluster 1

<220>
<221> modified_base
<222> (185)..(185)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (185)..(284)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (186)..(186)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (187)..(187)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (188)..(188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (189)..(189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (190)..(190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (191)..(191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (192)..(192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (193)..(193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (194)..(194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (195)..(195)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (196)..(196)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (197)..(197)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (198)..(198)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (199)..(199)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (200)..(200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (201)..(201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (202)..(202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (203)..(203)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (204)..(204)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (205)..(205)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (206)..(206)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (207)..(207)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (208)..(208)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (209)..(209)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (210)..(210)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (211)..(211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (212)..(212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (213)..(213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (214)..(214)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (215)..(215)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (216)..(216)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (217)..(217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (218)..(218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (219)..(219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (220)..(220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (221)..(221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (222)..(222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (223)..(223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (224)..(224)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (225)..(225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (226)..(226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (227)..(227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (228)..(228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (229)..(229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (230)..(230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (231)..(231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (232)..(232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (233)..(233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (234)..(234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (235)..(235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (236)..(236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (237)..(237)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (238)..(238)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (239)..(239)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (240)..(240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (241)..(241)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (242)..(242)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (243)..(243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (244)..(244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (245)..(245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (246)..(246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (247)..(247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (248)..(248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (249)..(249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (250)..(250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (251)..(251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (252)..(252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (253)..(253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (254)..(254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (255)..(255)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (256)..(256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (257)..(257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (258)..(258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (267)..(267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (273)..(273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (274)..(274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (275)..(275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (276)..(276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (277)..(277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (278)..(278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (279)..(279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (280)..(280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (281)..(281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (282)..(282)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (283)..(283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<400> 103
gctaaaactg ttctgttatg ggtctcctcg ttgaattagt ctagttctat cgactcttgt 60

ccttttactt ggtttttcct cacatctatt catccagtct cattcttggg aggccatcca 120

tagaaggacc ccctcaatat tttataacct cttatacctg acgatctgta gagcgtctgg 180

ttgcnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 240

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnagactg gggggagggg 300

ggccctcttt ggcccgggta tacggggcat gtcaaaattg accgaactca tttggggaaa 360

agggcttggg ggtagtccgt gcattgggaa gggcgtgcac gcaggtgcgc gtgaacatgt 420

gcttgaaaag gccagtagcg cagccgagaa ggatcgccat tcacacgggc gcactggtgc 480

ggcttctccc ccgagtggga tgaacatgtg cttgggtgta gtttttcctt gagctgaaac 540

gtcttgcaac agtggccgca cacataggca agtggctcgg cacctggagt gcgagcagtg 600

gtgcctgagg gggccgtggt gggagcagca gagggagccg gggcctccca cggctgagtg 660

ccgggggctg cctcgggctg gagtgtgggg tagaaggcgg gtgggggcgc aggggctggc 720

ccggatggtg ctggaggggg tggtgcgggt ggttcgggag cactcaagtg aaaggggaag 780

agtgcgacag gcggccctgg ggtcttcacg ccaggcgggc ggggtccggc cagtatgcag 840

tcgggctgga caggggtctc ggtgggacag ccttcgggga cagcgccatc cttgtcgtgc 900

caagcggtta catagctgtc tggaaatacg tcctcagctg cccctgatcc cagaagaaaa 960

tttttcccac atcaccgttg tcagagaggc cagtgggtgc atggaactcc tcgcacgcgc 1020

tgctgcttct cttcttctct gggccacaca cccacgagca tatgcccact tctacaacta 1080

aggcaaccag gctac 1095

<210> 104
<211> 1285
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1285)

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257500_G1, chr7:125855965..125857249, Cluster 1

<400> 104
gtaaccgaaa gggcctctag cgtaatggtt aaggtttctc taaattatag gttcaatccc 60

ctcggggacg agttttaaag aaatagtagt atcgaaccac gttggagagc tttgaactca 120

gaggagtttg tgtctttgat cgaacttaat tctgcaaaac aggccatcat caaaattctt 180

tccctggagg aggaaaaaaa aacattagtg attgagtttc tttggatatg gtgggatgca 240

cgtaaaaagg cgaacgctgg ggggataaga ttatatctat tgaggagata gtctataaag 300

cacattctat gaaatatgtt gatactcttc gttcacagag agaagccaaa taagagacaa 360

cgtggatttt ctttctggtt gatggagcct ttataaaaag gagggaaaaa aggtgcgtgt 420

ggttttatta cgaaggatga gaaaagggct atggtgttgg ctggtggtgc agggagaatc 480

agtgggtgca tgacgcgtta agcgcagtgt cacaacacaa gcatgccttg caaagctctg 540

taagtatgca acattggacg gagcgtagag ttgttgttgt tgttgttgtc caatgctcag 600

gccatgcgcc acgctcttgt aattagtgcg cacgcggagt tcctcgagtt ggtttgaatt 660

gggacctgga agatcggctg gtcgcatgtt tgggtttcag actctaaaaa aaaatgtgga 720

ctctgatgat gtaaacgatg atcccaagaa ataataaagt gcaactctgc ttaaaaaaca 780

gcgacaatac agagagaaaa cccgcagtgc ctcgagacag tgaccacctc ttcggcacaa 840

gggaaaactg caggctcgct cggcactctg gcaagtggtg gtgcaaccgc gagcgtgctg 900

attgatgtcc gcaccgcact cgcaacggga gattcctgca actggcagat gatccacaca 960

ccgaacgctt gctttgctgg tacgtgcggt aagaagagca ggtggagtcg tagagagagg 1020

agactagggt ttgggatcct cctcgcagac gcagagtcgc gctcgcatgt gcggcgagac 1080

gactggctcc tggttcgtgc ggttgggttt gtcaacccga gcaggtgggc cgtgcacgtg 1140

cgaccatgtg catcagggga ggggagggga ggacagtgtt tcgccgtcct cgtacacgtg 1200

ccaagggtaa taactcggag tccgtctcca cacgggcgtg actaaattgc aagaatatgc 1260

aaactcatag ctacgtgctg ctgta 1285

<210> 105
<211> 1304
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1304)

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260418_G1, chr7:142408510..142409813, Cluster 1

<400> 105
tcaatagttc tgctgatcaa ggacatgact tctattacag ctttatatgt aaaaaaaatg 60

gaacctgaca agttcaatgg tcctaagctt actgggattc atggcatcac ccaatagaca 120

cttcaagcca agttctgtca ctcctctgca gtcattaatt accaaatgcc ttagcaatcg 180

aaagtgaatt ctagcaaggt taagcattgc ccaggtccca taaacctgag catttcacca 240

ggatgagagt agagagctgg cgaaataagc ataaatgatg gaggactgat gattgtcttg 300

caacattcat atgtgattct ccagccatca tgcccttgag ctcaagttta tccagataag 360

gttggttcat cagtaaggac aagatggcat cttgcccaat ttgagggcag cttcccagag 420

taagggactc gagtctcttg gcatactgca taagggctct tagagacgcc tcagtgatgg 480

acaagcaccc ttcgatatgg aggaacttca ggtttctgca ttgcttagca acctgaggaa 540

gaccatcgtc gctgattgaa gactgtaaca taacgaaatt ttctagtgca gggcagtttg 600

aagcaatgat cctggcagct ttatccgtga gagagaggca gtcaacgaga caaactgact 660

tcagattgcc gcatgcactg cttacaaaat ggatagcact atcagtgagc cgtggaacac 720

cagcaacaac agtcccacat ggtgcacaac aaagaccaag atcagttatc acacccttg 780

cacatatgtt gacaacagcg gctgcaagct tgacatcatc aacatcagac atatgcaggc 840

aagggtgaac accttgatga acactgaagg ggccccaaaa atctggccgc tgagggacca 900

atatgttggc ccgtctccaa cagacacagg cacatgactg gcgatcttct gggtttccca 960

catgcctgaa tatttcagct atgcaagctt ctggcagctc atttatcaag tcctgtggaa 1020

gagttcttga ttgatacatg gaagaacctg cgcttacctt cttacaagct tcataagaag 1080

ttctaaggca gcttgattgc ctcatgtttc ctgtcataca aacaatttcg atcagatttg 1140

gtggtatgaa gaaataatgg actcatatga agtgaactgg gaaaatttta ataaactatt 1200

ggcatgcaaa caactcttcc aaaatccaaa caaagaaata taaacatatt gtactgcaat 1260

atataccttt actactgata tgaatgcttc acaaaagata ccca 1304

<210> 106
<211> 1318
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1318)

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260477_G1, chr7:142803862..142805179, Cluster 1

<400> 106
tgtagccatg ttgttcgcac atgataagat accggcactc tacctcattg tatttccatg 60

tacaacaagc acatattagt atattactag ggatacagta ccgttgcatg ctctgcctag 120

agcccttaag tgttctacgg gctatatggt gcccttgcat gtctcatcag ctctgtaatg 180

tcccatcatg tgtttattgt gttgtacctc aaacttagct attaacccaa cgatctctct 240

agcatggggc cataccttgg tgtcatacgg tccctagtgg gtttttgaca tctttcaacc 300

ttgctaagtc cttatttatc aaggaagggt cctttagtcc ccaagtgcct atacgagggg 360

cccaaggctt atttctttag gtgtcccacg tcatgagggc cccaaaggct tatactgtta 420

ggtgtcctat ggtgtgagtg gcccaaggga tagtcctatc aggtgcttca gggcatgtgg 480

ggctatgagg gcttatccag ttagatgctc tggaggcttg tatcgttagg tgccctaaac 540

gcgagggact tgggggttta tccactaggt gtcatgagat gcgagaagcc ctagggcttg 600

tactaccaaa aacatattat ataagcgaat acctttttagg tctatttgtt tgcttgcctt 660

gccctgacct gactagattt ctatatgtgg tcatgctggt gtatgtttgg ttataatggt 720

caggtcatcg atgtggggtt agagtctatt tgattgccta gttttggtct agtctatttt 780

gtatttcaaa atttatatgg caagattagt ctagtttgat tcgtgaagtc gtcaagtaca 840

taagcatgaa attggcttaa ggatcaaata ttttagttaa gagaagagtt agttgaaaag 900

gtattacaaa attctagcct ggctacctgg aaacgcttaa atcttatgta ctaatctagc 960

taggctagtt gtatcaccca aaatcctatt ttggtaaatt cattttatga ttcgaataaa 1020

tatcctttca aataagaagt taaataaaat atctctatat gaattaaatt aacttatgta 1080

aaagttttcg tttaggaata ttcaccacat gagaataaaa gtgtctattc ataaaggaaa 1140

taatttctgt tataaaatat gtatttagaa acactcctaa aggtatataa aaataactaa 1200

taaatcatct agtaacatat gctacacctt agaagatatt ttcttcaaaa agttattagt 1260

tatgtgtatg aaacttgcat ctaaaagtat ttacataaat gaataggata ataaagaa 1318

<210> 107
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1017)

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_26052_G1, chr1:158299399..158300415, Cluster 1

<400> 107
ctggacaata caccatacta ggtgtacgct tacacaagtt ggagggcgga gttcatgacg 60

aaagatgaga ctacactaca aaaaccatac catgagacaa ccccgtggga cccaccaagc 120

gccactaaga ggacatcagc attagactca ctatagggac ctatattgcg gacagataga 180

gcggtacata cgaccacaca tgaccctacg gacgacatta gaggcactac atcaatcggg 240

gcaacagatc acgctcttac aaataggaaa ccaatccccc tataaggtcc tacccttgag 300

ctataaaagg acaggtcacc ttccttcttc ccacacacga caccagatgt aacacgtctc 360

tcaagtaata ctatgatcaa cactacacag gactagggca aaagcttgaa ccaatataac 420

tctctgtctc catcctctac ttgaatccta ggtggttcac cattcggagt gagtccgtgc 480

tagcatcccc tgtcgaacac aattctattg tcctctggtt tccaaaacca tgacaggtta 540

ataattacac atgaaactaa attaatgcta tacatgtaca aggacgatgt ttttgccatg 600

tttcaataat taaacctggg aacattaaca acaatactga ataagagtaa tgtgcaaata 660

atgtaaagca ttatccacct agctgaatgc tactgttaga ttagactatg ggaacatggc 720

atgcatctga agtggagaca tctctaacat aattaagtca ccaacaacta aatagacctg 780

caaactatgt caatctagat gaatgctcag tttaagaacg tttgaccttg ttaggttggt 840

tagtgaaagt cacaactgaa ctcacatagt tactcaaagc acttgacttt tgaagcatga 900

ttattcttaa cctgcgacaa aatgaaatag gatttgctcc catcactcac atattctcca 960

ctaccgacaa caaagtcccg aagatgtcaa aaatctacgt cctcacctcc atagatg 1017

<210> 108
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1153)

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261023_G1, chr7:145711344..145712496, Cluster 1

<400> 108
cgctgcggcc atagggtgcc cctacgcacc gcatgtaagg ggagtgggat cgctagggtg 60

taccgctgcg cacagcctga tgcatgcatg cggccggcca gaaagaatcg ctcgcgacgc 120

gacgcgagtg tggatggaat ggacaggcag gcaagcagag caggatctgc aggggcaagc 180

aaggccctct gtctggtgct cgctattggc tccatctcca tccactgatc actgctcctg 240

tgcggagatg cgtggcgtgg cgtggcgtgt gtgacgaact gacgggacca gctgctgagc 300

tatgcacaag gccaaaggct gctgctctgg ctctgctagc acgagtgtcc gagtggagtg 360

gaggaccaga gtccgggcac ccggcttcgt ttctttctgc tcgcgcgcga gggtctttct 420

cggcttggga gaggcacagg tgaccccacg cctgtagctg agctgagccg acagccgaga 480

gagatgatcc agacggctct cgtgtctcgt ctcgacacag cagcatccac gttgtattca 540

cgcacatgcg catgttcacc actccctctt ccctgccgat ctgtacgcgc cccccgacga 600

cttgactgcg tgcgtggtgg ccatcggtcc tcgtcgtctt cttctccact ccgcgcactg 660

cagcgcatca gtggagtgct gttgcttcca tatggatgga atgcgcttca gcttcagcag 720

gtgtgtcagt gtcagtgtgt gcggtgcatc tacgtatgca tggaagagga cagcgcgtgt 780

acggaccagc acgagtgtac ttatgtcttc aacccactat atatgcaatt tcatcaaaga 840

cgtctgtagc gttatcttaa tatttaacca acaacaaaag aagattaata tggaaaaaaa 900

agcatacaca tatcgagaaa tgcagcattt ttctaacttg tatcaacata gatgatgtcg 960

agtcatggac aggatactat ttttttatat taaaacgaga cataacactt atggtctatc 1020

tgacttcttc ctcctccctt ctcatctacc tcaacctcct cttcttcttc cacctctctt 1080

ctcctctacg ctccacattt ttatttaata gagtttcatg gatatagggg gttgagtcct 1140

ccaaatctgt ccc 1153

<210> 109

<211> 1008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1008)

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261732_G1, chr7:149753482..149754489, Cluster 1

<400> 109
gcctattcag taatggtgca tactccaatg ccaaagtagg taacgaccaa tccgtcccac 60

catggtcggt accgaccatg tcaaccagtc gatggtcctg ctgactgacc agccaagact 120

accgtcatta aagacataat ggtcagcggc cgataacggc tagagttgga tccgcgcata 180

cggtagatca cctatggaca gtcaccaagc taaaatctat atgatggggt tgtatttgat 240

ttgtgggtgg ataaaaaaat attctagaga tagatatttg ataaactttt aagattttga 300

aaaaaaaata tgtacatttg cagcctccga aaataatcta gtgcaacgac gacatccgtc 360

gccctcgccc aacccaaccg acaggctggt gacgcagctc cccgtacgtg cagacaacga 420

ccacatggcc gccgcatcca cgctgatcgg tgactggtga gatggcagac gtgagcccgt 480

cactgtcctt cgtcggaaat aaaatgagtg ggtggatggg tcgggccctt tgttctccga 540

taaacttgat taaccagccc taggaaaaat gactagtgaa cctaaattaa tctcacacca 600

gtgattagtg ctgattagaa catcgctgtt cttttatgaa cctagaattc ctttttttca 660

cagttatggt taatctatgc tgctactaca tggaaatctc cgcaaacgca acgcgcttct 720

ctgctcgcag ttccgcttct tccccaacca agccaattgc cacgccccca cgagccacga 780

cgcgacgcga ccaccccacg ccacgcaccg cacccaccca gaataaacca gcacgcgccg 840

caccaactgc cacctctccc tgccgctggg cccagagtat gccgtacctg tagggcccat 900

acgtcggtga caaagtacaa cgttcgcctt tgcctttcgc ccccaacggc tgctgccgct 960

ttgtaaaagc gacgtggtac ctctcactct ctctcctctc agtcgtct 1008

<210> 110
<211> 1319
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(1319)

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262734_G1, chr7:155571882..155573200, Cluster 1

<400> 110
tgtccactgt cggaatgatc aatcgtgtga tgaacttggt acgccttctt ggcttctgtg 60

ctgaaaagac cagcaggctc cttgactacg aaagtgatac tggttccttg tttccatgtt 120

gggcagcaat ccaagtgatc gatggcaacg aaaggagcat tttagatcag agactagagg 180

gagttgctga catggatgaa cttgtgaggg cttcacggct agcatgctgg tgcatttagt 240

ttcagtatga ggcgcactgg ccatccatgg cgcttgtggt gaagatgatg gaagggccca 300

tagatgttga tgtaccaccg tttccagaac ctcttcgttg tctactggac agtcaggctt 360

cctctctacc tgatgttagc cattcatacc acgaccctag ttaaaaaata aagtgcacac 420

tggcccagaa acctttttcat tggcgcctct tgggaccatg aacatgttgc gcatttcagt 480

cacaaaattc agtaagccga ctaatgtaga aactattgat aagatgacgt gttgatcttt 540

cttctgctaa agtttgagca catgcttatt attttgtatt ccagtaaagc tattgtaaat 600

gcatatggtg tacagtattg ctgagtttgt caacagtacg ttgttggctt atgctaaatg 660

aaaccatgca taggtccatt tttgccccct tgactagaca caccaaaaca gtgacaggaa 720

ttatgaaagt ccggagttac attcagctac ctggttggga gttcagtata ctaataccaa 780

ctataacaga attagtgggt ccgtgaaata gcgaacaaaa atcttgtcag cctcaagttt 840

ttagcctcaa accagtgtta tagcagtgct tataagctgc catgtgcaaa ccagcaaaaa 900

tggacacaag tcaagtgcta aaagaatgca ttaccatact aatctcctac tcagccagga 960

aaaaaaagtc aaagcactca acagtttagt actactataa ttttttttact tagcctttta 1020

aattcaattt tttagtaaca acacaaaact gaaattttga aggagcccct ttggccaccc 1080

taatgagctt tgggtgaatc cttgacttgg tcatgccaaa ttttattctg acccaccgtc 1140

cccccgggaa aaataagttg aagtagccta tctcagcgct tctagtatga ttgcaaagag 1200

agtactacct ccattccaaa ttataagatt ttttttattt tctagattca taacctttac 1260

tacgcacctg gatacaagca gcagcggagt gcgtgcaaaa attaaagtat tgttaatgc 1319

<210> 111
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262997_G1, chr7:156725859..156726859, Cluster 1

<400> 111
gacacaatgg tttatacctg aagtttggtt gcttgatgta acatacattc ttgttgtgac 60

aagtccaagc taggtggttc acatgctaat tagaatcaca tgctccctaa attccctacc 120

ctatgggacg tctagtacca gtatcagaca catctgatga gctcctgtga tatcaaaact 180

cctaccttgt tagtggtacc tgatgcacat aagatcactt ggtgctcgac tgaaaaattg 240

tatagtgtgt gagaacatgc cacatgtcta gtgcatgcaa aattgttgca ccaagagcac 300

ttcctcgtgt attcacaagt gtacgaactc tcgaaaattt ttccataaat atttttgctt 360

gctcttcgag cgtgtttgag gactatatgc acatgcacat aattcgaaca cctagtaatg 420

cttgatgaat gaattatcca attaaaacca ccttttaata atacaaccat atatcctaaa 480

tttgatcatg cactcttttg tgtcttgacc agtgaaacaa aatgccctag atattagttt 540

gcattgagcc cttgcatttt gtttttcctt ttgttctttt tatattgagc acttgattat 600

tgtaagtgtc aagggaagga catacccttg gatactagca atacatatct tgaagatccc 660

actagcagaa ggaaactcaa agaggcctaa ctaattctag ccacatgtcc ttggtcccca 720

caccacgagg ggcatgccca gctctagcta agtgtagggt catccatgcc ttgggactag 780

atactaaggc cctccttgac aggggactag atcatagggt cattaggacc tctagggctc 840

tcttgacctc ctagtgccat cctagccttg tggctctcct agcctattat agcattctaa 900

atctttatgg ctctaccagt ctcctaggcc ctctaggcta ggaaccaagc tcatcgctta 960

gccaagtcta gaggtcccta taaactaaga tctataacta c 1001

<210> 112
<211> 1353
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263137_G1, chr7:157192627..157193979, Cluster 1

<400> 112
gaatagagcc tcaatatgac agaatgcgca cgcatgatgt agaggtccag atcacttgaa 60

cacaatattc tatgtactct atacggcgag tggttagatg taagtatagg tagtgcttaa 120

actctcacat ggtgactgag ctagtgagtg agaacaactc tagttgttcc ttgtgacgtc 180

taccaagaga gagcattcga tcatggagaa gcgaacccct ttttatgttg ttcaacatct 240

ccctttttaca ccacaaagga gagagagaga gagttatatc cctatatgga taacgggccc 300

tgcccaacat aagtctaact actcttatca tatggtagtt ctttaaccat acatgaagca 360

tacctttggt gtgccatagc gaaccataca tgatgcatac cttcagtgtg ccatagcgat 420

gagtgtgaca tgtcacaatg gcatatatga gtgcccatac tatcaggtac gacatagttg 480

gtaggtgcga ggtttggccc tctgggcaca gtgctcgagt gtgaagctgg cactgagcta 540

ggtcattagt gggttcatct tctgatgatg gagttgtaaa gtgtgttttg tcagcatatg 600

acgatatgcc ttttatggat gttgtgagcc ggtattattt aaaaactcta gtaaaatttt 660

gatattcatt gacattttta agcaaagcgg caacctaaat acatgatttt tatcgacagt 720

ttccttaaaa attgttatgc tctatttgga tgtcgatatt ggagtgcatg aaattgattt 780

gagttcaatt acaaatcagc catggtattg aaatgagata taatttcaat tctattgttt 840

ggattgtcac cgaattggag tttagaattc tgtggtccaa ttcctcccaa tacaaaggag 900

tgatgctcta taatgggaga gtgagttttt agttatagtc caaatttagg gaattgggtc 960

tctaatttga atctcaattc catatgtaac caaacaatag aattgtagaa agctgatacc 1020

aatttctaat tatgtgctcc aatatctacg tccaaacgag gtactaggta gtaaagatgt 1080

atttatattg acagttcgta actactatga cccacagttc tatttataat tttatactga 1140

cgcctaaaca ttataaaccg ctatatttat aaaaatggat tccgcactaa tgtttaagta 1200

gtaaatttag aaaatccttt gaaaattttc aaatggaaaa aacacgtgtc atgcatctcg 1260

gtcagatcct aaaacgtcta cgtcagatat gtccccactc cccacgcaac ttttttttg 1320

cgtgtggtgg tgtgcgtgtg tatgatctta gtt 1353

<210> 113
<211> 1363
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263138_G1, chr7:157194100..157195462, Cluster 1

<400> 113
attaaaagaa aaagaaaaaa aagaaatgaa agtgagccct agcatctatt agtagatgta 60

cgtaccctag ttcgtggtca gtattcctga aacaaacgaa taatcaaagc gaaaatgctg 120

caaagagtgt agcttaagaa acgcgatgat gtatcgaggc gagaaggtct catccactcc 180

atcaaacgtg tgtgcgactg agttcctagg cttttccatc ggttttcagg agcagtttgc 240

tgtcaatcaa ataaagtgaa ataaataaat agattcacaa gaagtgaagc ttgctcttta 300

ttcagagcct tatcgctcac cgagttaaaa aaaaatagtt ttacaagtga agggaagccc 360

taccatgcaa atgggatcta atctacaaat gacgtcgtcg aatgctgctt gtaatggcaa 420

ttttgggttg attattgact cggtcgtcaa ccagacacct gaacgccatt ccctaatcaa 480

gctagcaact aactaagcac cggtcattag tttaagcaag tggttgctaa gtccaaacca 540

actaactggg caaccacaaa gttgctgcac taacggtacg gattcagact caatatttcc 600

cgtaacgaag ttcatttacc aaacatatat ttctgatgca aatattactt catgcatgaa 660

attaattaaa cacccttgt caaattcagg ccggcgtgtc tcgatctctg gctcgatcga 720

atcaaattca ggcggccgca cggaaactta cctttgaatt tgacaaaaaa aaacacgttt 780

tgtcatcatg tgcacgtaac ataacttgat cgtgcaaact tgagtgacga cgatacgagt 840

gttgcatata agtgcaacca tgcatgcata tgtatgcatc gctctcgcgc gcggccggcc 900

ggccggcaaa caaacgtacc tgagctgctt attaatttcc acaaggctga agaaccgtac 960

ccttaattgc cgcatatgcg gtcaatcgta cgtgacgaac ccggaggaaa atcaggggac 1020

ggggttcgag ttcgattggc cgacgcaaag atgacagtgc ctcgtgccgc cctgcgcaca 1080

cgggccgggc gaatcgccag cgcacacacc gagtgcgtgt gcgtgcggac gcatccaacc 1140

cgcatgcagc catccgctgg cgcatgctat tcgactgccg ttaataattc agtccgtaca 1200

cgggacgcag ttcgctaagc ttaggctact cacaatgagg atttcatatc tctgttttca 1260

aaaatgtcac atcagattta tggataaatg gaataccctc tctcaataga gagtttcatc 1320

tcactatttc atatatcaac atacttctta aatgctgcat ata 1363

<210> 114
<211> 1066
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264449_G1, chr7:163935593..163936658, Cluster 1

<400> 114
tgacgatact aacaatggca acgacggtgg gggcagacgg ggtttcagcc tttcgtatcg 60

ctcctgaatc catagtctta ttagagttcc tctaaaattt aaaatataca ctttataata 120

atacgatgac ggtttagttt agttcttatg taattttatc ttggctccgt tgacggcatg 180

catgcaggtg gcaagtctgc gagcggtagt gcctgcatgg ggttgtggat aaggatgatc 240

gcatgcagtc gcaggtgaca gcaggcagca cgatcacaca agggaccgga gcaggcatcg 300

tcccacgtgc gcggggcggg agccgggaga ggccggcgtg tccgcaacca tgtcccgcac 360

cggcacctag tacgtagtac gcctccctct ctctatctct gtctgtctcc tccgctggcc 420

atcatctcga caggtgccac caatcggtct gcgatccggc gagcaacgcc gccaacacaa 480

ggcaacgtcg gcacgtcgct gtgtgctgcg cggactgctg tgtctaggta gagcctaggc 540

ctgaggcatg aggccaggcc aggccagctg cccacttgcc caggcaggca gctgtgcgtg 600

tgcctgtgcg gtgcgctggg ctgatgtgcg gctgcagtag actgacggat gtttgcatag 660

caagcgaata gctagccgaa ggcgaaacat acacgccacg cacacaccac agcgcatgca 720

tgtcaccagc atgtgcgtgg tcgtcggtag cagttcatgg taccggccgg cacctgttaa 780

tataatcgtt gtcacttcac tgctggccat gcatgcaggt acaccgcctg ttctgaaata 840

ctggaaccgg ttcttattac tgtgttaaca tgaatggaac agccatcgcg tcaagataag 900

ctacggtggt gggtgggaac tagtgatgaa aactgacgga tacagataga aagactcatc 960

tctcgtttcc gtatctgcat tttatcatcg gaaataggat tgagtccgga atagtcggga 1020

acgaaaacgg gagcaggata aacggaattg caaaaacgaa cggaaa 1066

<210> 115
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264737_G1, chr7:165693781..165694847, Cluster 1

<400> 115
accgggcggt gcacttaatt tctcacttgg tctaatgtat gtgtatctgt ttattcgagc 60

aatatattgt gcttcagtat cttcgtctaa tgagcttcct accacaaaat gttcatcatc 120

ttcgccagta aataggtaca tggttggctg ttcttcgctt tcttctagga caatgcactc 180

atcaatcata tggtgcacat catcattgga ggtgacagag atgagcacat tcagttgctc 240

tcctggcaaa tggtacttga ctacgtgagc ttgcctgttg agcttggttg tcttgctaat 300

cagtccttgc catgacaatc cttgactgat ctaaatcaga tgcttttcac caccgacata 360

ccggagctta caataggaat ctgcctccaa agttgcaaag gaacttcatt ctagttggtc 420

cagaggtata tatctcttct gggtacgtct tatttgttcc ttgattactt gtttcactga 480

ttgaaggaca tttcatcagc ttctttgatg gtttatctcc agaaaaatta gcttcttctc 540

cccaaggagt gtgggtggtt ttgatgttcc tgttataaga ggtgattgaa accaaaggct 600

tccttgtgtt tgccctgtct tgcacgaatt caagagcaaa ctcttctcca gttcggaagg 660

agtaattcaa caacctcgtc tccctagttg taacaaaaaa cactggccta gggctggcat 720

tgaggacact tggtgccaaa gcttctatgg agctcatatg tccagcttca ggacctccag 780

ttccaattat ttgtaaattg catggagaat acacagtgtt ctttgacatt acctctcggg 840

tcaagtttgg tctaagctgt atttcttatt ccattttcag tatccaagcg aactatgata 900

ttagttaaca tgaacattat cacatagcat cacttatgca tccttatatt cagatagttg 960

tagtttggtt cccccatgga ctgagagcta tgaactgcag atatacaggt taaaataata 1020

atatatagct aagaacttgt tatatcataa gttatttttc ttctgaa 1067

<210> 116
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265902_G1, chr7:172168117..172169171, Cluster 1

<400> 116
gagggaagat gaggctacga cgtacgagac ctcatccgtc tttcccgatt tcgtagggcg 60

ggccgtttag aacagggatg gaaataattt ttttttcctc acagcgttaa agggtaggac 120

acgaaaatta agaaaacaga gatggagaaa aaaaattaga gacccgataa aaaaactcta 180

atgtgtattt gtgtattata cttatgattt gcaagagcgt aagactatta ctaagttgaa 240

ataattgttg cttatgagtt ataatttgta ttataaggtt gttagttgtt taagattttt 300

tttgtcttgt tgtgttttga taattgatat atttgcattt gatatcatac agtgaatttt 360

ttttgttgca ttattccccg cggagcctca gatgaagaac ggggatccac gaggacaaag 420

atggggatga ctatccctgt taaactaaac gagacgggat ggagaatggt ttcgggaaat 480

aggacagaga cgagttagtc cccagcatcc cgttgacatc cctgatcatc atcaagagct 540

tctaaagtat ttaatattga aaaagtatat caccaacgac tctcgatcct acctctcaat 600

cttttctcac ttcaaaaact tccaccccac atgtgaaaaa attcatggac tcccctatcg 660

catgtataat cagacatgca catgaagggg cttccatgtt cccgcgcgag gtctccttct 720

ccatcgatgt cctagaaacc ttgtcgtctc tggcctagga aagagataat cgatcgttgg 780

acaagcttga tttcattcta gacttgttat gactatcctt gatactctaa ttatccgcaa 840

ctaacacctg gaggaccatg gccatcacta gccatatcag gccaaacata gtcgactatg 900

ggcgcccctg gcctatccct ggtcatttgt ggcctagccc tgcttggttg ctggtggtca 960

aggcaagatt cccctagttc ccttgccacg actacctagt gtctacgtat ggcatgtcca 1020

tgcccagctg catttgtggt ctcctatggc ctagc 1055

<210> 117
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266104_G1, chr7:172889672..172890677, Cluster 1

<400> 117
ttaaactgtg aatcctcttg gacgggcaat gtgaacctga agccatggac gagcaacaag 60

aaccggacgt ctgtccatat atatatgcat cagaatcaga tccttaaaaa aaagtgatcc 120

accagaaacc acctagccag tgtcccagtc atcaaccaca cacacacaca cacgtgtaca 180

ccacctaaaa ttcaggtgaa ctgaacacat gaatgaacac gacggagaga gtgacaccgg 240

cagtcactag aattggacac gaagcaatgg gctgctggtt ggccggcagg gcagcagtat 300

actactgaac actgctttat tagatgcatg gtgcacactg caacgacctt cacgggaggc 360

gggagcagct gcatctgcat gcattattgt ggcgtcgtat agccattagt ccttatcgca 420

atctgccacc tcacctctca ccagggtgga ccatggccag ctgaagatgc cggccggtca 480

tgttcgtgtt ccttgttcaa ttattagttg tctgatacgt atatatctat gcacagaata 540

agctagatgg tgtcacaagg cagggtggcc aggtatcttt tggtggtcac atcacatgaa 600

cagctagctg atggatgatg ctgctgctgc tggcgcagta gggattcctt tttatctgtt 660

tttctctttc tattggtctg ttttcttttt ctattggtct gttttccttt ttaggatgga 720

tgcggccagc ctcataaacg aagcaaaaaa aaacataaaa aataaactaa tgatgatcaa 780

agaattagga tggaggcaac tctttggatc caatttaaat gcatggaata atgatttgtt 840

ggcacgtacg tatggagggg attgtgcgag gtcatgatcc agatgctttt tactggaact 900

taactccaaa tggaaagtcc tcggtaaaat cacgttatgc tgccttgatg cttagaaata 960

cctctaacac atgaataaag acttatgtaa tctaaaggta ccctaa 1006

<210> 118
<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266475_G1, chr7:174415737..174416827, Cluster 1

<400> 118
ggttccctgc ttcgacgcta gctattgcga gtgccagatg ccttctttgg ttccttgttt 60

tactattcag ttcattaatt ccattattag ggagttcatt atattgcttc ttcttatttt 120

ttccctcccc tctcatcttt aggtcatgtt gcaaacctta aggccttgtt tgaaagcaaa 180

agtaatacaa cagattgaag tggctacatt atcttactat tcaaaattga ataacaatgg 240

attctaaccc cctcaatccc cttcattatc tttgctctca aataaggcct tagagctaat 300

tgttagccag ctaataagtt gtcaactggt tttagctagg ttgaggcagc taaccaatta 360

atagttgttt gagaggtata gctaccaatt agctggttca ttaatcaatc cgttctaaac 420

ctttcaatta gttttaacgg cttcctatta gttttagagg tttaaaacat atggccttag 480

ctgtttggtt ttgtttcata ctgcaactgg ccatctcatc gaaatgaaaa aaagacatac 540

actgttgagc tttattttta ggggtgttct ctgggatttg agggggggag ggggagggga 600

atctctgtgg tcggcggtta agttgtagcc ttgtacataa cctctctatt ctgctacaaa 660

gcttctgcca ttttgtttat gaataaatgg aagtaaagtg atggaggtct ttgttaaagt 720

caccatggac atattcctga ggaagcgagg gagctctcaa aggcgcggct gtcgacaaga 780

aggttaatta gcatctcttg atgtcggtgt gtcatccggc cagcaaattg tgattgttgc 840

attcatgtga tctataggta cctagatgct aacagctagt agcttagtac gtacgcatgc 900

agctgcatcg tttatgctag tgacgacagc gagatcgatc ttgctttggt ttgttcgata 960

tatatttatg atacgattcc gagcgctgac tagctaagct agctaggttt gtgcgtgctc 1020

atccacgcca caccgcacct gtatagttgc tagcgctcta cagtgtatat gtagcttgct 1080

accctaaccc g 1091

<210> 119
<211> 1218
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266506_G1, chr7:174549248..174550465, Cluster 1

<400> 119
ccgggccgcg gcggccgatg atgacgttgc agcacgcggt tcatcaggta gctgctgcta 60

tgctaggagg cgtcgctatt gcaacagcac ggcacagccg gccccgtcgt aaaagcatga 120

tgatgtgcat cggcaaggga ggaagcttcg cggcagcttc attcgttcga tcgccgatcg 180

ggatggctga ttgcatgcat ggccctctcg ccggcggcgt agctccccgg acgacgacgg 240

aggaggacgg gacgggacgg gacccccgac cccgatccag cagcagcaga tggatgatgg 300

tgatgatgag acgggacccc ccacccccac ccccacacgg atgacactcc cccgggtgtg 360

tcatgtgtgt gcatgtgttg gtttctggtg gcggtggccg ccggaccacc agctcgcgtc 420

atgtcacatc cacctctttg cttcttgcga tcgcatcacg tattccacgc acctgacctg 480

accttggaca tcggctacag tagtctctgg gaacgtccga caacaagggc ccctctgctt 540

cgttccacca cgtggcgcat gcgtgtcagg accactgcat acttaaaaga tccgattgta 600

tcatgagagt tagtcatatc taccaattat atatcaaaat atatgatcaa gtaacttctc 660

gtagtatttc gtagatgtat tttgataaat tttgtagcta aaatgttctc tccagttgag 720

tctacaaagg tggccattaa tcttaatgat tcgtaaacca tttcatatat acttctacac 780

aattcgaaaa ggtttttttt tatcaaatca gcaagcgatc gtaatgtatt taactcgaga 840

tgattgtata cttgaggtga agtatcaaat tcgtccacac acaataactg tccggtgact 900

actttggact aaaatttatt ttttttgaa tcgagatttt actctacttt tagaaagcat 960

ataacatttg ttcaaacaca cactgaggat gccagtttac agtcattaga cagccaaacc 1020

accagacctt ctaaaataaa caaacagact agcaaagcaa gaacatattc agtgaaccga 1080

tctgctagca gaaacacggt cttcacacaa gagccatgaa cttctccaaa aagaacaaaa 1140

cctccagagc atttcctcca gcaaagttgt accaccagct tgaggagaac actctgaatc 1200

actccagaaa gcgctgag 1218

<210> 120
<211> 1386
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268745_G1, chr8:10276874..10278259, Cluster 1

<400> 120
atgttagtca attgacttca cttgtatctt tctatttatc ataatatttg taaacatgat 60

atgttatatg cttataagct aatttggtaa aaaaaacctt cactagattt ggccatactt 120

aaatcttttt cgtcctccgt ccatggtatg tatcgctatg gtttctatat atcatatgat 180

atatccggtt tctatatatc atataatata catcacatag ttataggtgt ctatatgtca 240

ctacgcccgt tcgtcgctac gtttttaga aaaaaaaaac cacttacctt caattttgat 300

aacaccgaca agaagggctg cattgatatg gcaatttcag cttaaaggaa agcttgttat 360

tgaaacagtt ctaaaacaaa gttaactgaa cgtagcaaca aggcagacaa aaccaggaaa 420

ccaatacaaa aacgatttta catgttttga agtctgaaac aacaaagtta gaaggcaccg 480

gttggcactt tattcaggat ggtgtcattg ttttacatct gtgagaggaa cacgaatcct 540

tttgctgttg acgtgctctt cacaaatcta gaattatctc actgattagg ttaccttgac 600

gcgctgtagg caccaaaaga gactgatcca aacattatga gtagaaacgg ggctttaacc 660

aacgttctat ttgatcttcg gtggccagtc gatcggaaca ccagaacgca taacatgaac 720

tgcgtgaatg atgatacatc taattagcca cacacaaaga cttgtgtggc tagcagatta 780

gtgagttaat acagtctcaa caaatgattt gaacagccta gtaccacatt ttgtttggtt 840

tctgaagctg ctgttttgtg tctttgcagt taccttagtc cagtcctagg cctatcagac 900

attagtccta tacaacatct gatttttttt atgcacccac tataaaccca ttcagtccag 960

gtgactacac aaaaacagga tgtatcttac ttatgtttta tttcctgaac tggaacataa 1020

ctttgattct gaaaggtttg ataactaata aagggatgcc actctattat caaatccatg 1080

tgtaagtaca cgatactctt ctaagagcag atgagctcca agagttatcc ccctcccacc 1140

acaaccccac cccccacaca cagaataaaa gcagactgcg ctttgctgct tgcttgaaca 1200

ataatcttag ccttgttact tgctttgccg tggctagcat tggcatgctc tagaccattt 1260

gatcatatct ggaaagtttg gttacttttt tgggtagatt tattccttcg acaaacgttt 1320

aggacaactt ctgacctagt gaactcacat tacaccgaac actcataaat acccaaaggt 1380

aaacaa 1386

<210> 121
<211> 1318
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269335_G1, chr8:13000438..13001755, Cluster 1

<400> 121
acaacaaaaa taaaaacttg atattgtctt gtttattgca ggccttgaaa gttcgtaagc 60

ttgaccctac attgtttcca aacggccaaa ctggtgcctt aactggcttc acctaggtga 120

tggaaagaag gctttgcttg ttatagaatg tatctgcacc tgaattcggg taaggcctgc 180

taccggcaag gagctgccat gatgtttttg gagatgtaat gacaaaagat tacatacagt 240

ttaacattga gaatcctata tatgtaattg ttctttctca gatctgtgtt gtacatttca 300

aagtagagct atgatgagtt gttaaatatt gtaagtttat catgtaaaca gttgtaaatt 360

ctttgctata tgatttatag aaaccgtagc aacgcacggg cacataccta gtgtatacct 420

atactccgat accactgcac cctctcaggt acggcctggt cctagcctta actgacggac 480

aaggacgccg ttgcgagcac ttgctagagt atccggcgtg ccacggtacg gctacgggga 540

cacaccagta caccaccaag gcacccgccc gcgcaggacc actcgaagcg ttcgattttc 600

tttttgcatt ttaaactttt tttaaaaaaa tatatatatt tagaactttg gacgacgtaa 660

tatcaacttg acactggcag gcagtagtac tgggtgctgc ttcagggagg caggtggcct 720

atgccctgcc ctgtctggct gtctccatcc gtctgttgct aggcatggtc cgcgtgatgt 780

acggcgccag attttgtttt tgtttttttg acaaaactaa gggccaggtc cctgctaagt 840

taatctctat atgggtttga gatagttcat cattcaaaaa aagtaaattt agatacggca 900

gctctgtcag tggcagctct gttagtggat ccgaggtgta ctaatagaga ggttttgagg 960

atggttagcg tataaaaata ggaacaaggc gatctcgtgg ttttctggaa aggtagtaca 1020

taataaggtc ctttatttac ctttttttgta tatatatata gtctttaaca caaataggca 1080

tggagattac agataactca accaaagccc aaaggaaata ctcctactac gtagcaggca 1140

gtagtcgcac gaaacagtct gccacatctt catcacatcc agcgcccgcc catgtggtcg 1200

cgcgctggct taaccagaga tctcgacgct cttcacctcg gcctcgggtt tcttgacctc 1260

ggccctaggc acggtgaccg tgagcacgcc gttctccagc ccggcttaca actgttcc 1318

<210> 122
<211> 1357
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270806_G1, chr8:21838624..21839980, Cluster 1

<400> 122
gggttccagc ttggacttct tgcctccaat agtgaataca atgtcagact ggcagagtcg 60

acgactgatt ctcccatggg actcggacaa cgctcacaaa actgtcatag tgaaacaatt 120

aagcaaagta gagtgctaaa tggcacagaa aagctctgtg ccctttgtca gtcaagctca 180

cctgattgat gtagtttagg atgagtttct atgtcttgtt ctgggaaagt tggttttgca 240

tccaaaccac agccatctca caggtattgc acattgggtc actcttcaga ccaccatttg 300

atgtcctagc ttcatcacgc accatgcttt gaactgcatg gctgtgtttg catagcatat 360

atataacaaa ggaacaaaga aaggtttgcc caaatgatca tcattatcat gagttcatga 420

gaggctacgt cacactatag tcattattta cagtcctcac gtaacaccat gagtgccatc 480

aaaagtgcat gtttctgcaa aataacccca acaaggcaac aacataagat gaatgtgcac 540

agaggaagat gaggtttaaa tctaaacttc aaacaaaggc ctagctttat ctgcaaaaga 600

gcaacatctg gactttaatt tgctatgtag tgtctattgt gctgacctta agacgtatgt 660

tatatgtaat gagaagcaat agagtggcca tgtataatca cacctaactg caggcaacct 720

acttttaggt caaatgtgat ataaaatagc acattagcga ccaacactac acactatata 780

actacttaaa tttaaataaa atagcaacga aactacacca tgcgaagata atccaaataa 840

aaaaatagta ggaatgatca tcgcacaaaa taaaatccca ttgatgatgc ttccctccac 900

agtcatgagt catcaagtgc ttttattgtc attatcgacc aaaactacac actatataac 960

tacttaaatt caaacaaaat agcaatgaaa ctacaccatg cgaagataat ccaaataaaa 1020

aaatagtagg aatgatcatc acacaaaata aaatcccatt gatgatgctt ccctccacgg 1080

tcatcaagtg cttttattgt cattattgtg tttggttgcc atttgccaac agagtcaact 1140

gttcagccac taaataaacc aattgattga aggcatgttc cagctactgc agcatgacat 1200

ggcacaaaag tatgtgagca taactaagtg tattatgcca cctaactaca aaccggaaaa 1260

atacagatca tgtgaagggc agagcagacc tagtgccaga ggctcccaca tgagtaaggt 1320

ctgaggaagg gataaactga ggcaagcttt ttccctg 1357

<210> 123
<211> 1077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_27184_G1, chr1:164648643..164649719, Cluster 1

<400> 123
aatagcctca gaaagaaatt agtaatgcat aaatagcctc agaaattcat gaaattttac 60

agagacacaa catatgtcca tgtataatcc tcaaaaatgt ttataccata aaatccatat 120

gatatcaacg tttctttcat ttcactctca cttattatgt gagttacatg taaaaatcac 180

tttatatata aatgtttgtg ccataaaatc cacaatatgt cattatttct tctatttcac 240

attcacttgc tgcataagtt acacttaaaa tcactctaag tttcaaaata atcaatactt 300

tactttatcg ttttcacatc tgcttgctag cttgcgataa tccataaatg cacctcggaa 360

ccccatccga tcccatcacg catgcaccct tcgtttccag gcgcggatcc ccgcgctcgt 420

cctgttgccc ggctgagccg atcgccaaac gcggcgtgtg gacggtggtc catggcagcc 480

atgcgcggct cccggcctga cccccggcga gcggcccaga tcttggcgcc ctccggtccc 540

ccggttcccc actgttctag ctagtccaaa acgccggccc ttgaatcgtg cgttttgctc 600

tcactgctca ctgcccgcac tatgtcatga tagcttgtag acgtagcaga cagcgacttc 660

gtctgcagac agctccttct tcttcagaca gctttgcgta tgcccgccct agctagctca 720

cgagctgatg gatggacatc tcggacacat cgtcacaatc acaagctcta gtttttctca 780

ccatgtgtcc ggtcaaaatg cttcggtcag cccgttttca caaggtctgc actttcaaaa 840

aactagactg catatgtaaa agtgctgttg agatagatag ataaagcctc cgttttttta 900

tgattgggcg tggcaagatg ctacggatca gcctcacgat tcctgagcag ataccacgcc 960

gtgtcggtat tatgtctccg ctcggtgctc gctttcagag gagcctttgc ttttctggat 1020

ccaagccggg ggcggtttgt ctcactaccc gttcgtttct gcagaggagc gttgcga 1077

<210> 124
<211> 1125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_281471_G1, chr8:96045338..96046462, Cluster 1

<400> 124
ggccgctcta aacaagacct tggtgtggtt aattggaagg ttctctcatt gatgatatta 60

ttctttttat atgggtcaat gcatttagat aatttgcaaa aataagtcaa accggaatct 120

aattattttg cagcttgtga tatgcgttct ccatcgaggt gattctagat gacaaggaat 180

ataatgtgca tcttgtgctg atgtgctggt ggcaaatagc atgtgtgcgg cgatgctcct 240

tggatcgagc acttcctttt ggatacgttc agaaggatgt gaaaagatat gtatagttgg 300

aagatatgct actcacgaac atgttcagtc aacacgtatg gcgactcgtc agtgcatttt 360

ttgatacgta aaaaggatgt gaaaagatct gtagagttcg aaggtacggt gctagctagt 420

gttgtgtttc actcaacacg tgcattggca agtttgcaaa cgttggtgtt cgcggtgaag 480

ccgtggaagg gattcgagta atctacagca atgcatgcaa gtaaatgtga atgctttctc 540

tttatcttga aaacaaacct tttacattaa ttaataatgt ataaaattta tacagaccac 600

ctgtatatat ataaagttta aaatactctc tcataatata taattcttta ttttggataa 660

tacatctcta gaaatgcttg acgtctacta gattttgtgg ccattgctga aacgccacca 720

tggccacagg tggggcgagc ttgattcaga gttcactgtc cacggctagc atgcgcatca 780

cttccacgag accatggcga tgctctcacc cccgtcgcaa ctttggtgag gttagaagcc 840

acagggttgt ctccctcaat agcgagttcg gctatggcct ccaccgctca cccatgtgac 900

caccaccatc gcactacgaa gtccaacaag aagcatcaca gtcgacatgg aaggtcaagg 960

caaagctact ggtgtggtcc ttgttgtcgg tgaccctact atcaacgaga ttcaccattg 1020

aacctgtcag cagctttgtt tgttcccgca actggctcat gtatgccagg ggcatatggt 1080

tttaggctca cgatcacgaa gggtgatgga tggagatatg gtagg 1125

<210> 125
<211> 1124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_283613_G1, chr8:108178885..108180008, Cluster 1

<400> 125
atgctagcta gctagctaga tgctggtcag tctaaatctg aacaaaacct agagccgcta 60

gaaaatttcg gtcccgccca gtacgtgcgt gctctctcaa gtcgtctcaa cctagctagc 120

acggaccacg cgtgcacagt aagccgctcg tgtcgtgtgc atggcttaat cacgtacgta 180

acgtgtgcgt gtggtcaata tgtatatgat gccttgcctg tactatatac atcaacatca 240

tccaggcagg cacagacatg tgtacaatgc tgtccgtcaa tgtcgctcgc tcgatcggca 300

gagtctatta tattaacgcg tcgttttttt tggttttgtt tttgcgagga attaatgcat 360

cgtatgaaag caagtgcgca aattgtttat atgacatagc atatatatat agcaggggcg 420

tgtcgtttct gcatatttgg cctatcgacg agatgtcgag atagatatcg ctatccatat 480

atgcatgcat ggaagtaacc ctaccaggtc aatattgttt ggtaaacata gtgttttacg 540

gtttattttg attcacaatg tacaggagtg gagaaccaca caggtccagg aaaaaaacgc 600

gccatgtatg tggaaaaaga aatgcgccat gcatggccat gcaccgtcca gggagaaaga 660

aacgcgcagc aaaataaaaa aaaaaacgcg ccctacatcg ctcaactaat ttctgtcatg 720

tctattacat tatcatttat agaaatagat agatagatga ttatagacac acacacgcac 780

gtgctgaacc ccccagtcaa cgcatgacca aagacgtgag gtcgccgccg caatatatat 840

acaacaatgc aagaatgtga cgcgtagtcg tcgtcgcttg acctcagatg agtacctggt 900

ctcgtctctt tttgaacagt accgtcgttg cgcccattaa tgcgggagaa tttcgctggc 960

aaaggttcct ccgctccctt ggcagccaag accgatcgtg atcgtctagg taacaagagc 1020

atctcaaaat aaagcataat ttatgagcca tttaaataaa tattgttttt tctaatccat 1080

cactatagag attttcacac cacagaccat tggtataact ctat 1124

<210> 126
<211> 1136
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285474_G1, chr8:117644034..117645169, Cluster 1

<220>
<221> modified_base
<222> (1006)..(1006)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1006)..(1105)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1007)..(1007)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1008)..(1008)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1009)..(1009)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1010)..(1010)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1011)..(1011)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1012)..(1012)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1013)..(1013)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1014)..(1014)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1015)..(1015)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1016)..(1016)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1017)..(1017)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1018)..(1018)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1019)..(1019)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1020)..(1020)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1021)..(1021)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1022)..(1022)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1023)..(1023)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1024)..(1024)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1025)..(1025)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1026)..(1026)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1027)..(1027)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1028)..(1028)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1029)..(1029)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1031)..(1031)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1032)..(1032)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1033)..(1033)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1074)..(1074)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1076)..(1076)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1077)..(1077)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1078)..(1078)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1079)..(1079)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1080)..(1080)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1081)..(1081)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1082)..(1082)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1083)..(1083)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1084)..(1084)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1085)..(1085)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1086)..(1086)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1087)..(1087)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1088)..(1088)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1089)..(1089)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1090)..(1090)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1091)..(1091)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1092)..(1092)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1093)..(1093)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1094)..(1094)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1095)..(1095)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1102)..(1102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1103)..(1103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1104)..(1104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1105)..(1105)
<223> a, c, g, or t

<400> 126
atttcttagt tgtcttggcc catacggccg atcagtattt atagcgatta catgccaatc 60

actggcccac acgtcataac agctcagtaa atccactact accacttagg ctattctcaa 120

tgggaatttc ataacactct ttccaacact gtcacatcat caaaagtgcc atgaaactaa 180

gaataaaaca atatctctca atacaaaatt ccacttcact atttcataaa ctaacatacc 240

aattaaatgc tacaactaaa tgaccaataa aagttagtaa aatatgtgaa gatgaaacaa 300

ttcattctca atggagattt cacacggttt ccaagacctt agaaatgggt tgacatggaa 360

actcattcat cttcaatgtt atgtcatgtc atctaaaatg ctgatgtggc acactattaa 420

atatgcatga aaccactatg aaactatcat tgagaatagc cttaggctaa tctatgcccg 480

taccctcaat acaaggtaat gatcagatta ctactaaaac cacctcacct ttagagctga 540

ccacagacgg tgctctaaca aaatccctcc tcgcttcacc agtacacatt acccgcaaca 600

aataccaccg tccatataag aaccaaaatg atgaaatctc aactatttct cgagtaccca 660

gcacagaatg ccaccactaa ccacacatga aacagaagat aaaggcgcta acctaaaact 720

aaactaaaca ggagatggga gccgcgcgta cttacccgtg agcgaaggac ttccgccatc 780

tcgggcgtgg agaagaaatc agccagggcg gtggtgaggc ggaccttctg gtcggattct 840

gacagcccga cctcggcctc ctcgggaaag tatgtcggcc agacatccgc gagccttctg 900

aattgaaggt gtagtcgtcc ctattgccct tgtccccttt gggttggtga cccttcattg 960

tgtcgccgta catttcgtcg ccttaccgga tttctcggag gccatnnnnn nnnnnnnnnn 1020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1080

nnnnnnnnnn nnnnnnnnnn nnnnngcttt gcgttgaaag aatcagcttg tattcg 1136

<210> 127
<211> 1175
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_287671_G1, chr8:129775119..129776293, Cluster 1

<400> 127
tgaagacata aacctttctc ctgctgaatc tcaagcccga gggctatgaa gatcatggtt 60

gtcgtagtct ccttgagcga gctaccaact ggaaacaaaa gaagcaagca gaaagccatc 120

agagaagcag atgaaaatat tgctttgcac catgctcacg catgtgctcg aaagaagaag 180

tgcttcatca cccgagtata ggttggccaa gtcgtctact caggcgggga agaaaaaaac 240

ccaaaactat caccgagtac tatgcctcat ctatgggggg tgctcccgta cctatcccta 300

ccttcgactt ccagaatcta tatccccact accctcctag ccagctttga cgctcccttc 360

agagtaaaag aaaccctaga tgccatcctc gccatgcctt cccaaagcgc cccggccctg 420

aaggcttcgg ccccagtttc tacaaagcta ggatttggag aatttatcaa ggatcttaag 480

atacttggta caatcttctt aaagccaaat atatgccaga aaacaatttc ttcctctcaa 540

aaaacaaaaa aagcaaaagg aggtttacag aaagtaaaac atttatttca gtgggggggct 600

atgaataaag ttgataatgg ggagggtact cttttctggc agcacatttg attgggtgat 660

gtgccaatta gtgtgaggta tcccagagtc tttgacatct gttcgaaaaa ggaggttcgt 720

gtctctgagt gcatggagga tgggagctag gatttagatt ttgcaagacc ctcacagttt 780

caaaaaatga tgagtggaag gaccactatt ctaagcttca atgttacacc tttttctcaa 840

gggggagact tggtgttcta ggcactagat aaatcacacc aattctctac taaatcccta 900

ttcaagttta ggaccgatgg ggatgcatgg gggtattacg aaaaacatcc gtctaataat 960

ctagaagtgt gtagggtgcc tttgaaaatc aagattttcc ttcgacaact ttataatagg 1020

aaaatccaag ctgggatggt gataaagaaa agaggttgga aaggatttgg cgcaagggag 1080

aggcgggaga aatgcgtgcc ataggcacgt ggtgtacgaa gcgcgcacgc cactgagaaa 1140

ttggatatcg gatatgtatt catttcatat ccgga 1175

<210> 128
<211> 1317
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_289802_G1, chr8:141919392..141920708, Cluster 1

<400> 128
tccaaaagcc aatcttaggc aaaaacacaa tgaggtatct gcataaaagc ctgaaatacg 60

tcttgatgaa cataacaatt tctgttgtat tgcattgttg tgaaaaatct agaacgagtg 120

ctatttcaag aagcataatt cttatttaag tggttgtaaa agtatgagtg ttcctccact 180

cttaatatta ccaaaaatag tctaaaatat gtttcaataa taacatattt aaattcaata 240

ataacatatt taaattcaat aataatgtat ttgaagagat ataaaccgtt taaaacatgt 300

tttaaattaa taacgtattt aaagagacat aaaccgcacg gacactctag ttccatactg 360

atgcagtagt tctttagggt cggaattgaa gagcacgcga cagggaccgc gacaacgccg 420

tgcttatccc agttgctatc ggctcctcgt cgcagaaaat gattttgctg caaaagcaca 480

accgagctag gtgtagtcaa gtagtattgc agggatatgt cctcttcgcc attcctgaaa 540

ataggtatat actggcttta gaaacacata gacagttgat atatgagcat gcaagcaaaa 600

gatagggcgg gtttggctct cgccaagtgt tcaggtgatg cgctgtctgt ctcatgattt 660

cagtgtggca acgacttcca cttggtggcc gtgagtatgg agaagataaa gatgggtaca 720

gggcaaccac ttccacttgg tggcaaagag gggcgtatca gcgtatgtgc tttagcaaaa 780

gccgcatcgt gcttgctacc tccattggat aaccaacatt ccatccaata aaagccacgg 840

gataacggag ctgggaaaag gcacttgagt ctatctagtt ctaggactag aggcgtcaat 900

gaggacccga tatcggttaa cctatgagaa atcatctatt agagttagag tatgagaaga 960

tttcaatcct catacatggg tacaaatttg gggaaattct tcccccatta gatatgtggg 1020

tatgggtata gaaaagcaga atttgaaccc aattatctac aagtaatata ttcaaccatt 1080

aaaattagct atgtgtccca ataggcaata agtccaacaa ctaaccctac ctcttcaaac 1140

cttttagcca cccatacatc taacccaggc agctagccac cagccgcctc atctaccagt 1200

ccacgtttca ctttgttttt gttattttac atggtcaaac aatgttttct tgttacatgt 1260

caaatttttt tgtgatgtat tattgttggg tgtcatgtgg cttttaaatg tcacaaa 1317

<210> 129
<211> 1351
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290491_G1, chr8:145242805..145244155, Cluster 1

<400> 129
actatcatag aaagaagtga gaaacacatg tcatagagta tcatacacat gtaggcacaa 60

catatcatat aatgcataaa gtaaacacac atgcgaagta tgggagaaac acatatgccc 120

tgtttggatg tagatattgg agcacagaat taggaattgg aatcagtttt ctagaattat 180

attgtttggt tggtgcatgg aattgagatt tggaatcaga gactcaattc cctagaattg 240

gactataact agagaccccc tctcccaata cagagcatta ctcctctata ttgagtggaa 300

ttggaccaca caattccaaa ctccaattca gtaacatgca aacaatagaa ctggaattac 360

aattcatttc aataccatgc tgatttgtaa ttgaacccaa ttaaattcca tatccgccaa 420

catcgacatc aaaacggaga aatagagata tcaaatactg atcttgctca tagctctccc 480

ctatctcaca tactatccct ctctcccgtc gacatcaagc accaaacatt aaggaccttg 540

tgtaggggta tacatagtca tgtaaaatgt tgaggtacgt ggtgagacct caaactaaat 600

gagaagagtg tccttgtcta tatctgatga ctcttctagc tgtccaacaa gctctaaagc 660

taaaactatt atctcaccct ctagctggcc aagtgaagtc gttgtggcaa actattactc 720

agggtctaat ggcataacta aggatgatat ggtgtcgtca gtacccatca ggggtgccta 780

aaacatgaag agtatgagct ttcagaagtg aagtttattg agatagatct cttgtgagct 840

aactgtgagt agtagattct atctgagtag gcggtgcaac cgatgtctct attgtcactg 900

atattttcaa atgtgttgta gaagtgatag cccatgacac gctagtagga cccaaagtga 960

caccctatca tagtgaagat aagtcaagaa tcatagagtg aattagagac acataatagt 1020

agagaacctg gccttaaagt catctgaact atatcgctag ggccataaga ggtctatagt 1080

atggtaggag ataccatttg tactggaaga ggtggtgctg actcttttgt ctcctacaaa 1140

atgtgttgga agtatgtgaa gttgcttgtc ctatctacta gcaacaattg ttgaaaaata 1200

atcttgtcta gcctaaataa tctcaaatag ggtgatcatc ctactaatct cacactattg 1260

aacctcgata tgacatctct actcctccat gttccatgca tctctacata gctaccaact 1320

atgatcctct actattcaag tggtagttta t 1351

<210> 130
<211> 1029
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291264_G1, chr8:149128030..149129058, Cluster 1

<400> 130
tccctctctc agcccgtcct tgcccgccga tgtggtacaa aactacacaa accatcagtc 60

atagaccacc gaaccatcta tttgggtcgt gtggaagccc agtcagcact aggtggatca 120

cacatccggc ccactagagg cagaatgctc ggtggccact ggccaggtcg tcttccgttc 180

ccgctcctct tccgtgcgct tgagcgcttc agccttcagc cgttgtccgc gtctcttctc 240

tctcatgatc tcatcttcgc tgccgccctc cacattcgcc gggctccaaa cgtcgcgtaa 300

agccccaacc gtcacgcgga taggagaagg ggtttgcctt gccggatgaa ggcgaggtcg 360

cagattgcgc cgaagcctct caaggcggtg gcgatggccc ccagaccgag cggccctaag 420

cggaagccga ggccgaagcc ggcggggaag ggcgaccccc gcgcacccaa gaagccaccc 480

accaccttct tctacttcat gtatcatgta tgttctgtgc tggctgctcc cctgttaatt 540

tgccgcctac ggatttaatg cctgttctgg ccgcgactaa gcaattttga ttagttgggg 600

gttctagcgt gcatctctta catatcaaaa aattctaatg tatgctagtg ttagtgcaag 660

gtactgctaa atgggctcac cattgtagct cagcagcttg tgcaatcagg cttttgccta 720

gtcttttcgt ttcttttctt ttaacaaatt gccatttatt gcttttgatt tgggaattgg 780

gatgctggga ggtaaggtta catttttgt gcactgtggt tttgtctttc agtttcatct 840

cgggatgctg tgattttgcc atttcttgct tttgatttgg gaaattagga tgctcaccat 900

tataggttta catttttgt gtactgtgat tttgtctttc agtttcatct aggattgaga 960

ttattggtta atgtcattgc tgaacttaac atatggcact ggtgtgaaga acatttggaa 1020

agtaatcat 1029

<210> 131
<211> 1399
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291360_G1, chr8:149604238..149605636, Cluster 1

<400> 131
gtactaagct tttgtgttaa gttagaacaa gaggggcttt taataaataa atatatacaa 60

gccgctgagc tgtccgcagt ccgctggtgt gcccatgtcg gcatgattga tctgtcaatg 120

tgtcatgtgt gtacggcaca gctagcccta caggagttct atgcatgggt aatccagtga 180

acgaacgtct gtcctgtggc tgctgccagc gtcccttcag acgcaggacg ggcagggaag 240

agaaggagac aggccaatcg ggagccacct cagaagaaga tgcgcggatc cacgggattg 300

caagtttgca acgcataaac aaagcgcgcg cgcacacgcc gcgcgagccg agccgatcga 360

gaacggagag ggagtaaaca aaaaacgacc ccggcctgtc cgttctcgtg ttcattgtcg 420

ctgctggcac cgcgcgtgtg gtatatactg ctagacggac gatctcctct cggtgttgtt 480

ggggctgacg ggggaggggc gcgcggcggc agtagccgca gtgtgtccgc ctgctcgccg 540

acagcgcctt gtcagccgcg cgtgcgccca tgcatgtgct cttcctgctc tctgcccatg 600

catgcatgtc gtcgatcccg gccgtcagca acgtgcggtc gaccatgatt gggtggcttt 660

gacttgcacg ttacccgagg cacgcatcat ctcctaatcc tcctcctctc tgccatatgc 720

ccatacggag tatgagacag catgaagttt caaaagaata gcggcatgat atatacttaa 780

ctcagctccc attgccatgc aagggctcgc tagcctagct gataaataat gcctctagtg 840

tagactgtag agacatgata attaaggaga ggttactccg ggtcggagct tagcctagcg 900

agctgataaa gcccctgtac tcgggaaaat gcaagttatg accactacta ccggccggcc 960

gtaacgacag ttcatgtgat ccatcgccat cagtgtcccg aagggccggg gtcaatgtaa 1020

tcatgaaaag ggagattgtc gttcatgcat gattacagaa accaaaagat catgatggat 1080

ttgttgtaat ggcggttttg ccttgaaaag acattatata tcttcttgcg atgcaggttt 1140

catcgaggcc caccacaatc acgtacgtac gtgtggagat aactcggata actagtgcgc 1200

gtacgtgtgg ttggtctcac tagcctgtca ccagtggtgg cctgccagat catacagacc 1260

aaatgaccat gcgtgcaagt acaagtagcc agtgtagcct ctcctctatt actcgaaaaa 1320

ggagtttatg ttggaagacc ggttctaact gccataacct aataaagggt acagtaccac 1380

ttgatcacta ccgaaattc 1399

<210> 132
<211> 1303
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292933_G1, chr8:157874429..157875731, Cluster 1

<400> 132
atgtatgaga aacacaatcg tctagatagt gctgaagata tctttgaacg ggatactcaa 60

ctgaattata aggcagttga caatttttac aaggctattg aactgatgag gcaagtaaca 120

ctagagccct ctcttgagtt taagaggcgg ggtataatat aatctgttag atccatgtta 180

tttttaaatt ttcctgtgta ttttatagaa cattcatact aacaatatga ttgatgcaac 240

tgctgccgag agaaatgagc ctgttcaaat gaaagtgtat aaatatttaa aactatggag 300

cttttatttt gatatggagg agagcctcag aaccttagac tctacctatg aggtttatga 360

gagaatatta gttttacaaa ttgtcattcc acaaatagtt ctcaattatg cctatcttct 420

agaggtaaga tctttctcaa aaaatcatgg ttttaagtgt atttcctata cgctaaaaca 480

tatgatttaa tttgttttct gtctcaaaag tcatggtttt aagtgtatta tttcctatac 540

gctaaaacat atgatttaat ttgtttgttg agtgcacgaa cggtttagca cccaataggg 600

cgctttctca ttctagttat aataatagga tctttagccc ttttagtaat acctatattg 660

tcatcccttt aacctccaga gctgaagaga gcccattccc ccaaaatatc ttgtttattc 720

catttcattt gctaggaatg cagcaacttc cagttcgtgt atcgctcgtt atgcttgtta 780

acatctattc taaattttaa tgcaatatag tttttgtgta ttagtattta tatgcaatat 840

aatttcattc caatgtcctg gcgatgaagc tattgtgcca ttcgaatgct gatcagtatc 900

agttttctgc taacattgcg cccaaaaatt tagccggtcc caatcgtttg gtctctactc 960

tttgacccgc catatataaa ctgcatttgt aatgaaacta tcggttccta ctgtttgcat 1020

tccatttact cacttgtgaa cctgctgtgt cactgaatac atcttgtatc atgcagttag 1080

tgatagatct agatatcact tgacttcgga ggtgtttggt tcttaccttc taaactttag 1140

ttagtcactt ttaatctcta aaatagcaaa cgagatgact gaaataggtc ttgcaaataa 1200

gatttggaga gactaaaatt tagttcctaa agtttagata tgatagaggg tgcgtagcct 1260

gcgtttataa tcactatttt tgtgtccttt acatggtttg tgt 1303

<210> 133
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294447_G1, chr8:165292811..165293846, Cluster 1

<400> 133
aattgaacac tcttgtataa ccaattatta taagtaattt gttgccttta tgatttgtgg 60

tttgtctttg tatgatgcca atgatctttt cgtctttatc tgactataga agcaattgtt 120

aattgttttt tgccaacaca tatcagattt agttggattt atgattttat ctaattctcg 180

acacaaaaaa ttatacaacg tttaccgacc ctgaaccata caactgtgtt tggatgtaga 240

cattcggcct cacaattcag aatcggcatt caatggctta aataccactg tttggaagca 300

caagaattta gaactggaaa tcgagtccaa taccagctcg gaattcgcta cacttgtgcc 360

cccttgccac tgattcatag cctcacccct ccgttttgct gggaatttta aaagccaatt 420

ttatggccat ccaaacaaca gattttaatt gtggaccatt tcaatatcaa agctgatttg 480

gtattctctc caatttaatt cctttccttc caatatcgac atccaaacgt agccatagat 540

tattcctaca tgccttacaa tgagtcgaat atgtaatttt agtataaaac ataaacaata 600

gccgttatca tgaaaaaaaa ttcagatacc tgaacaaaat accaaattcc tatttttat 660

ttttggttgg accttcataa atgacaatta gacttgatca tgggtcaccc gatccggcca 720

aaccaattcg acccgcccga aaaaccccaa tccgatctga tctgattaat gcgatgaaca 780

tatacatgta gtagttttta acccacaaca agtcacgggc catgattttt ggctcaaaac 840

atgactcaac ctgaaaaaac taatctgacg tgtccaatcg gaacgcacgg accaacccaa 900

cctgatcaga cactatataa gggtcggata taggccatgc taaatgacct ataacctgat 960

cttaactcga ccgaataggt ctaatggcaa tgtcttccgt ggatcttaaa ttcaccatct 1020

gctggcccgt aaacta 1036

<210> 134
<211> 1127
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294706_G1, chr8:166631896..166633022, Cluster 1

<400> 134
gacggcggtt gttagcggcg gcgggatgct ggcgtgcgcg atgtgcgcga cgtgcgcgtg 60

actcgcgcgc gtagggcggg cgggcgggtg acgggaaact cggcggcggt tgtttgcggc 120

ggcgggatgc tggcgtgtgc gcgcgagagg aattgagagc gggggcagtc tacagacggg 180

tcttaatagt tgtagagact agtataatga atccaagcca aatccgccgg gacgaaacga 240

aaccaaggcc gagaattcct ccagcaccgc gcgcgtctcc tcgttctgga cttgggacgg 300

gaccgaggga gcaagggcag cagagcaggc cgcggcagcg tcgtgcgcct cccgtcccct 360

gtggatttcc ggtcggcccg atggacacgg taataaaacg agggtggtag tacgaacgta 420

tagtgaaaaa aaactgggga ccggcgtccg ttttgccaaa agctcctgct actccttccc 480

tagagacgag caggcggcgc cggcgggcag cggtttacaa ccagcggggc tgggcctggg 540

cgcgcgcggc ccgtatcctg tgcgggctgc cgcgaatgaa tgccaacttg tccgcactag 600

cgcagctaag cgcgtccagc ttttgccttt gtgcagtgca ggtggtggct cgctcttgtg 660

gagttcgtga ccctgacacg gtcagtgact cagcgtgttt ccggcgctaa tagctagtac 720

tactagctgc gaaacctcgc tactagtatg tgttcggccg gcggccactg caccgcccgc 780

aggccgcggc agggctgctg gctgcatatg cgcccgtagc ccgagtccgg tggcatggca 840

cgcagcgcat ggatgaagga tgatgagggc gtgtacaacg ccatttactc aggcgtctcc 900

acatcgtctc caggggttt tttgaaaaaa atctctgcag ccgttgcttg gtggggagac 960

gtctctggct cccgtcccta gcaagaaccg acgaggttac gagttctggc cgtctcttgc 1020

tgatctcgtg tggtggcaag gagattaggt ggcagactat tgcagttcca gtagtagctg 1080

atacaaaatg tgtgtgtaca tttgattaag agtgttttta agtctac 1127

<210> 135
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_294707_G1, chr8:166633408..166634450, Cluster 1

<400> 135
gcattgtact tgtacatgcc ctgactgatg agccgtgagc gactccgaga gcccgcgcgg 60

cgaggcaagc cgaggcgaga ggccgcgcgt ccattaatgc tgacacggtc tcggcagggc 120

tcacgggacg gcgccgcctc tagcctttgg ccttcggcta cagatcgcgt gcgccaactc 180

cacgccaacc tccaaaaggg ggccaatgcg agctcgagcg gcgggcggcg ccgccgtcgc 240

gccgctctgc ccacgcgtgc atgccgggtc attatggggt tgccggtggc ggctacccgt 300

agcgacggaa gcgcccaagc gggtgctttg gatccactta catttattac gtattggctc 360

tcactaatcc cgatccgcgc tatcatgtat catgtgaccc gcgagccgtt gaagctgcgc 420

gtgacgccga gctcgccacg ccacacgcgt ccggccggaa tgcctccgct gccgtgtcct 480

gttcgtcgcc tctctattcg tttcccagga ggtagtactg gactgggccg tgccattcct 540

gcgtactaga gcggcctatt ttatccctga caaagtcaat gcacagttac aacgagtagt 600

acactccaca ttggttctgc tatttatgac agcagccctg aaacttttct ttttactgtt 660

ccctcgatcg gtactgctac gcacgatact cccagactac cagcggctat aagattcagt 720

gaaaagtatc tttaccgata ttgatttccc taagcaagtt ctgtattcca tatgcaagac 780

cccatgtctc atatatataa ccaacccaaa tatacttgct ttcatttcac acctaccaat 840

atataagaca tttcatcggt ctcctttggg gtcggggcca ccaacgaggg ctcctagtgc 900

tccatcatgg gtctcctttt ggatccagac cgccaacgag ggctcctagt gctccagggc 960

ataacatgcc cctaagccct actctggagt ctggacccag acaggggtcc gatgacgaca 1020

catggctgct ggacgcatag tgc 1043

<210> 136
<211> 1061
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295977_G1, chr8:172232105..172233165, Cluster 1

<400> 136
ggttcacatt ttgtggttga ttaattcgtg tggaaaccta aacacactcc aaactgatcg 60

tgctaaccga cactcgaaaa ggagatggtt aatggtacga ggactataag cgaaaacaaa 120

cggagcctat atctgtttac aagaacatgg ccaaagccag ttgatactag tttaatcagc 180

tggagttgat attgtaccaa acaaaagcat ccagtcgtta ctaccgtgat cgaggagact 240

aatcgtaatc ggtgagaact gaagaaagtc aactcgggat taggaaggca aatcattgct 300

caagaatcgt tacatcatct agtcaaagga aggccagctg tggtggcact ttcgccgtat 360

tagcatcaac tgccgttctt atccacccgg atcgaccaag cttcttccac gtcgtactaa 420

aacatttttt ttcccttgta tgattaagtt ttcgcctttc ggtttctcct tcgcctttat 480

ttcgtctccg ttttcctgtg ctaagaagtg gtctactgag ctgtattgca cacaagggca 540

tgcatagtgt tttccatctt ttggcagctt aatggtactt ttttttttat tatttggtct 600

ctgtctttaa cgggtattta tcagtagcat gtaattgaac atctcatgaa gcaacaggaa 660

tgaaattaat aaagtaggaa gaacaagtaa gaaatattta ctaataagct aataattgaa 720

gtgctgcact gactaaacag caaatctgct gaagtgctaa caatgcaagc tgcttgttcg 780

ctcaaaaaag gctaaataaa ctgtgtatca taaaagatgc aacccggccc ttcctcctcg 840

ttgttacgct aactgcttct agttaggctg aaactaaaca attagctttg gcgctaagca 900

acctcgctcg ggtcgggggg gacacaggtt ttcgaaaggg aaagatcccg gaaaaggaga 960

agcagaaaat aagacctggc cggggatgga tgtggacatg tcaccactgg ccggctttac 1020

cgcggcggcc accataccat taccagcaca gcccaatcca c 1061

<210> 137
<211> 1259
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299681_G1, chr9:11579121..11580379, Cluster 1

<400> 137
ctacaagtat gaaacacagg cacgtcagta cccgatgccc catttagcat acataggaaa 60

ttgaatctca ctgtgctcaa tcgattctga attacagaaa agatataaag cgacaaaagg 120

tgaaattcag tatcagcaac cgtatgatat atgtgcttgc tattaactct ctattactta 180

aagattgttt ggtagcgaat tgtaaacatg atacaaggtg aatgagactg attaagcatg 240

aacaagaggc aaacggtgta attactaatg tgcatttgca aaacaaaaaa tagcattcaa 300

agctgaaatc agtgctctat atcagtgtct gccggcgaag gcaaatcatt agactagatt 360

actagacaaa agtagttttt ggctacacca attcacaaat cattaagtga taacactatg 420

aatgtttcaa aatgacatgc atactgaaaa ccttttggct gcaccgattc accaataaaa 480

tcaaatctac aataagaaaa tttatatatt agataacaac aatataagaa aagtgtattg 540

ataaaagtag catagtgaat atacagctaa gttgtaatat gtgggaacaa atttttcccc 600

taaacaataa agtactttac acatcatata tgtgatcgaa agataaaatg atttttttgta 660

agcttttca caagtggcta gatgtaacga attgattgct gatctaaaaa atgagaggca 720

tcctgttagc ttgtgcctta tccatccaat tccaatctcg agtttctggt ggttggtagg 780

ttaacgaaca atgtgcgggt gcggccatga cccatggcca gattcgaagg accgcgacag 840

ccacgctata ccccttctct ccccgtccct caccactgtc gtattccctt ggttcttgtg 900

tcgatgaact gagtttgaga agagaaggtc gaggcaggga gcttaccagt gaccggcggg 960

gcagcagcag cacgaacgca agatcaatct ctgggtgacc gtccgcattc tgcaggtccg 1020

attcactcag atatttttgt cccgactttt gagcgccttc tttcctgact ccctctctga 1080

tcctgtgtag atcgtaaaat ttgagatggg gcaatggcct agcttgccca tccgtgaacc 1140

agccgttgcc ctggacagcg tgaacccaag cggccgcaca ttattttgca gcctcaacac 1200

atgttggtta agaatcagca cagcacgaac ttgcacaaca gggtttgcct acgcagaag 1259

<210> 138
<211> 1203
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299840_G1, chr9:12447071..12448273, Cluster 1

<400> 138
gtaacactag gtgaactcag tttgtacact tgtcacacaa gcttgtgagc caagtgtcct 60

actttataac actcaaggca ataacaaata cttcagcacc atactggaca tatgagttat 120

ctctaaatcg gtctaaactc tctctttccc attctcgtta aagcaaagcc attggaatgg 180

caaaccacaa accctcacct catatacaaa ttatttattt tagtaacaaa accatgacag 240

ttgacacgct agatagggta ctcacatatt gagtttattt acgatggatc ctgtcatttt 300

tgtgatgcct tcctccatag atcgagggcc accttcggga ctatggactt catcaccgtg 360

gaggatgata gcctatgttt catcatcccc cccttaggat aaggcaaggc caagcccctc 420

gatgggcgtc tctcggccaa tcgatcaagg atcatgcggt atagcaaccc atgcaaggat 480

cattagggga ataggggagg tgaagataac ccaattataa gtgtctgaat aagcccgagt 540

ttaggtaggt caactagtgg gtagcagaca aagcccaact cctcattcaa ccaccccaac 600

ctagcatggg gagtggtctt cgacattgtt ccacctaggg catgtcaagc atgtaggtca 660

gagcttgtta ttgtgaagag tcatgaccct tgtcactcta caacctcctc gacatgtctt 720

ctagcgatgg ctcctcaata aatccatagg acactgccaa cgggtcaccc ctccatgatt 780

gcttcatgac cgagaggaag aacacatcaa cgctaatagg agtactccca attgaggatc 840

agcactatcc cgaacaagaa gttgagtact tttagtgcta ggccaaacaa cacctaagat 900

gacagaaggc atcataggag aagccgacac tgtcgatgca gcaagtctcg actacccgca 960

acaagatgta gaacagtacc cctatcacac ctagattcaa ggacaattct agatgcatct 1020

tatatgtgtg ccatgatcag attttacatt taagatgatt cggtgtatat aaactagtgt 1080

cataaacttt attatataag tataatgtct tacaaaacta actaaataaa agaaactaaa 1140

cgactatgac gaagatggcg acaatcctgc taacgagaca caggtaggtt gaccggagcg 1200

ata 1203

<210> 139
<211> 1353
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299991_G1, chr9:13478616..13479968, Cluster 1

<400> 139
agctttaaaa actgctagtg aaattagata gctagctact agctaagttt agctgggtcg 60

aaccagctaa ttaggtaaca gatagttgag ggtatagcta atagttagct ggactattag 120

ataaggtgtt taaatgtctc caactaaaag catataatac ctaactatta gttaggttat 180

ttagatgtct ataactaatt ttgtcagata actatggctc tctgatgcat tatttaaaca 240

tgactttagt cgcccgtggt actcgatctc tgagaaatat cctgcactgc atttgcattt 300

ttcaccataa agaagacgaa taaatggtgc tgaaaacaag cagcaacaag aaagagagag 360

aaaaaaaaac ttgaattttg aactccgata cagtacgagc tagcgagagg aggaaacggc 420

agtgtgtagc ggctgacgat ctgtcggccc cctgctatca tgggtcaata ataactaccg 480

ccatccccga aagcaaaagg ctgatgatat gggcgagatc agataaaggt ggacacgtta 540

attggcgcgc gtaattacga ccggccggca ttacttaccc caatagtgac ggcgccagtt 600

gagccatata ctgtagtacg atgaatgttg cgttgcgttt tgttggttgg gcagctagct 660

agctagggcg ggaaagacgc gcgcggggca cgtacggtga tcatgcacgc gtccatatct 720

tggcacagcc ttacggcgat atggaaaatt aatattacgc ccgcgatcta cctagcccat 780

gcatgcatgc atattgttgt gtgtgctttt ttgtgcagct gcaggatcca aggacacgtg 840

tgtacccaaa gctagctagc tctctcgact ctggaaggtg gaaataaacg ggagctgacg 900

cgtgtcatga tcgtcgagca aagagccctg cgcgtacgta cgtacgtaca ccgctcgctc 960

tcgtccaaga gacgtccatg catgcgatag aatgtagtat agtacgtgtg ctacgtacga 1020

gctaggtact ccaatttgaa tcgatcctca gtgcatgtgc gtatacatga acgtatgtaa 1080

tggtgcacgt agtatatata tgtcctgctg agatctcgat cgataccaaa aacgcgtgac 1140

gcgcgcgaat gatccgctgc gcgtatatgg tgcacgttta tacgttctta gtactactgc 1200

ctactgctgc atgcacaccc tagctagctt cctcctgtac gtaaagtctt caagacaaag 1260

ttcggaccag agaaagcgtg cgtgcaatgc atgcacgcgg ttgcaaatcg tgatcccagc 1320

cacaactcct tacatgcttt gaaaaaaaaa aca 1353

<210> 140
<211> 1058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300741_G1, chr9:17729374..17730431, Cluster 1

<400> 140
ccaatgatac tcttcgtgca aaagctagca gcaagtgctc ggaggtgaga gaaaggtacg 60

cataggtggg cgggggacag ataaattagg ttggaggcca cttttagcat aatttagtat 120

ctttggtgga actaaaatgc taaaaggtgc taaactttat cacaataatt ttagccacac 180

tacttatttc tttagtagct aaactgtagc aaaaaataat atagtgctag attttagcag 240

aggaaaacaa acaaacaaac gggaccttag aatgcttggc aagccggcag tgggtcggct 300

caaggcaaag atatgattgt agcctacatt acattaggta gtcttagggt gcatccggta 360

acgtttctat ccaaaatgtg gatgtggggg gcgaagccac tttgactttc ttggtgcacc 420

gatattagcc gtaaaacaaa attttattaa tacctatctt aaatttacca gatatttctt 480

ttaaaatcgt atactttgct ttatgtttga taaagtgtgt atcatgatta tatttgagct 540

ggcttcgccc ccatgtgagt cagtaagcag ggtataatat aatatcatgg tgggatatag 600

aatcagcaac tttatggggg gattttgact acctatatat atacatatgg tctcagcatg 660

aaatgtacca ccacgcggaa taagggtggt ggaataaaaa aaaagatggt cgacatttta 720

aagttggaat agataggtgg gtgatactcg cacaaagttc gtccaaaaga aagcagacac 780

gtgccctctc gttaaggttt tttcttctcc ttttgtcgga cctggtgaga tgacacctga 840

ccaataaatg caagccgtga ccatgaataa ttgttctgga cttgtgagta attgttttgt 900

acgtatggta tcgctgtttt tcttcggcaa ggccaaggac tcgatcgccc gtcccttgct 960

cttgtcgggc ctcgtagtac gtcggcgacg gcgacggcga cagtggtcca tcgcggcagc 1020

acggggcggc atattctggg gggcaggtcg ggcctcct 1058

<210> 141
<211> 1257
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3016_G1, chr1:15345877..15347133, Cluster 1

<400> 141
gagcgctttc caccgtgcaa tgcgatcttg cggctaggaa gaggtagaac catggtgcac 60

ggatggtcta cgcgtactct tatagagtag gagagatgta ttcatttata tcatatgatt 120

aaattgttta ttcaataaga cttgtaatat atgtttttgg tgatttatga aatcttttat 180

tgagatgtaa tcttgatttg ttgagggtta ctgtggtctg tggttatggt acacaaccag 240

aatccttaat cttgatacag gggagacgtg gatgacatct cctagggatc tttgagattg 300

atttgctagg gatcaaggga atgacactca atttagataa attgacgagg ttggtcccta 360

catcctcctc catttgctca tgtaaagctt ttcccaactc aggcaatgca gtttatgctt 420

attgtcgctc cactgcaaat catggcactc atcctatcac atagttgttt tggtcaaacc 480

aaagcacccc atgtggcgaa ggttggatgg cctgtgccat cgctttgatc aacatttctt 540

tgccggcttt cgataacatc ttttttcttc caccctagaa tccgctccca aattcgcttc 600

gtttataaaa ttacaggttc ccacccttga gttcccaaca tgtacaggca agccaagata 660

gcgatcgttc atcgtttctg tagctatctg caggattgcc ttgacttcga cacgattagc 720

tgcccttagc ttgtattgga actgaacaag acgttcgatt tgcctttatt gatcgtccgt 780

ccagaaatac attcatgcag ctcaaggatt ccatgaactt cttctgcatc ctgtctacct 840

gtccgaacaa gcaaaaggga gtcagtcata tgcaaagagg aggtgcttgg agcttgatgg 900

catattctca ctcctctaat caactcatcc ctttccgttt gattcatcag agcactaaat 960

ccttccgtgc acaaaagaaa ctctttgata ggttgccatt caccttcact ttataagata 1020

caagatcagt caccttctcc ggagatggca cctttcaccc ttgggatcag cgcaatcgtt 1080

gtttcactcc aaagaagatc aggcatcggc ccaaccttca gtaccgccta cagctatctt 1140

cgatcccatc aatcacatgg cagttttctt tttcttaaaa ggttgttggc atataatccg 1200

gtcctgacgc ctaaatccac gatcacgtcc aaagctgcct gttcgaacca aaattga 1257

<210> 142
<211> 1138
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_307617_G1, chr9:62338570..62339707, Cluster 1

<400> 142
cctagtttca gaacggcact tggcaagttt gtctcttcag gttttctaat tgatggcagt 60

ttttaatttc tggtggcgca ggcgctatgt gatttctttg gctccatctg cattgttcgg 120

gaaaactgtt atcctcccgt gaattctgga taagctgcat attgctggac tgtccatgcg 180

aagttgcaga gagcactgca aacactgatt gcattgcttt atcaaagagc ctctagaacc 240

agcaggataa gctgtcgctt ggttatctgt atttttgtgg cttttgtcag ccattatatt 300

ttgtagcaga cgtagggcta tggggcagta agaacataaa ccaccaactt cgccgaaaag 360

aaagagtgaa cagcggagct tcggcatctt gccgtggatg cagacttcag tgttaggcaa 420

aattgcaatt taatctggag attaaacctt cgatcggttt gggaggctag caggtagaat 480

cacaaatttt tggtaggggt cacttgagtt gctgtataag aacatcaggc taatgggatt 540

gagaagcatg gagttttgcc ctcgaagaac tgctttgctt cggcttagat catctgacaa 600

ctaacgtcat agtcatgcag ctgttggttt gtttgggaaa gtgaatcgga ggagattgaa 660

gggaataaga tactcttact attcaaatgc taagagaatt ttagcctatt tacagttggt 720

ttgaaaactc aaatcttccg cccttgttta gatattttca tattcaactc aatccacatg 780

tattgaggtg gatttgagag tatctaagca aggactcccc gagataagag ggagagatct 840

gagtaccaaa ctagcgctta ggtcttattc gattgcatga ggatcgaagt gaattgacaa 900

agattaaatt actttctatt aaattttggc tagtaaattc cttttcgatc catcctaacc 960

gaattagctc tcagaacatg tttgggagaa gggaatcgaa agggttaaaa tctcttactt 1020

ttcaacttgc tatttaaaat tgaatagtaa aaaaaattta tcaccttcta ttccctttgc 1080

tctcaaacac gtcctcaatc ttctcaaatt tccttactgc taaaccagcc ctaaatcg 1138

<210> 143
<211> 1371
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_307893_G1, chr9:64111024..64112394, Cluster 1

<400> 143
ctcccaagcc caccactgta gcaataggga caagacatga tggaggccta tgagaaacat 60

aagtatcaat aatgcaacaa caaaagtgaa taccaaagta gctcctatat catttcctac 120

gtgatagcca gcggcgggta taggggtaag tgatatgcta tttgatgcct atggtgatga 180

caaaaaaccg tgagaagagg tttcctccaa aaaaactatt attaaagctt agatttaatt 240

aataaatttg ataagaacaa aattgcatct tcatatagtt cctaattaga tttaaacaca 300

gcttgtccat aagtgctcaa tctcactggc ctagtaaaga aaacatgtat tgttatttgt 360

atatgttttc ccatggcata tacacaacag ttcaattgag tcatgaggaa tctgaaccaa 420

tatactacac atacaaaagg ataaccttga ccagtgcaga atcccaaaat aagcagagtg 480

ccacccccttc caaagattgc acataataat gtttgtgcgc atacaatctt caattggtag 540

ctagcagcct gcactttata gacagataga tcacttaacc aagctcttgg aaggagagga 600

accaagaact gctcgagtgc ttacattaat gagttggaca ccacaatacc ttctgacata 660

gataccctct gcatcctagc atagaaatat tgtagcttca ggtcggagtc ggtgaggctc 720

tcgtagacaa ccctgagctt cttgtcctcc acgtccttga aatggccctc caaaatccaa 780

aagaaaggaa accaagacaa atatgtcctg ctgtgcacac acagaaacat cccaaatcta 840

aggatcagta gatggtaaca catttgcgca gggaggagca aagtgtgttg gaggcgctcg 900

acagcctctt catgatggtg cagcttcccc acgacgttgc cacttgtggt ccgagagaag 960

ccaccatgac tgtgtgccag gtcctagggt cgagcgccac ctgcagggtg cgactcgggt 1020

cagagggcgt cctgccactg ctcgtcaagc tggcggagta ctttagcatc gcagggtgca 1080

agaaggccga gaggggggagg aggtatgaga gaggtatgag ggggatcttg acggcgtgca 1140

gctcgacggg aggttacttt cgtcgtcctt cccgtatttt ctggaagtgt catgtagtat 1200

ggaggaggcc ggttgcctag ttcaatcggc tgcacagagg aatcatgaag tgtttcatca 1260

ccgttgaaat atgatccgaa ggccataaaa aagaggatga cgtggagctt cgaggagcga 1320

gctttgctcc cacgaataat atagagaaaa aataatataa tacctttat c 1371

<210> 144
<211> 1184
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320575_G1, chr9:136039639..136040822, Cluster 1

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(179)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (150)..(150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (151)..(151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (152)..(152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (153)..(153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (154)..(154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (155)..(155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (156)..(156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (157)..(157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (158)..(158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (159)..(159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (160)..(160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (161)..(161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (162)..(162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (163)..(163)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (164)..(164)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (165)..(165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (166)..(166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (167)..(167)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (168)..(168)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (169)..(169)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (170)..(170)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (171)..(171)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (172)..(172)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (173)..(173)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (174)..(174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (175)..(175)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (176)..(176)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (177)..(177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (178)..(178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (179)..(179)
<223> a, c, g, or t

<400> 144
gttgagaaag tgccaaagag agagagagag agaaaaacat gagagataat agaggattgc 60

atcgctaagg tctatagtgn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnna 180

tatttctcct acgatacagt ttgggttgtc agagtcgtcg ttgcaggaga tgcccggcat 240

ggatgattta cctgcagcta gctgcagcga ggctgcgcga agcatcgctg agagggttag 300

ttcagttccc ttctcatttg ctgaaactcc agtatgatgt tgatagtctt gggcggtgcg 360

ccatcttgat gttggatatt gattcataag cagaacagtt tccttgttga tgtttacgaa 420

agaagggcaa ggatcagcaa gaggctgaag aagctgcagg atcttgtgcc taacatggac 480

aaggtaaatt aagctgaact gcaaatgtcc gttttttttt ttgcttgtac ccattgatgt 540

tcgagaggaa ttactaaaaa tcaggattca tccttcacgt tcctcccaac aataaaatga 600

taatgaaact ggatttgcta atcaacagaa cctagcatct cctacttggt gtcagtccat 660

tccatcagta attcagtgtg cgttcttgtg attggttgct tgtaggagtg aatgcaacta 720

gctgagtcca gccctgtaca tgtggataca cgccgaacga ccgtggcacg gggctggctc 780

tggcttcttt tctgcacgaa cgtgatctgg cccaaccata aatacagcta accaaacagc 840

acataccaat gttttttgc atgccacggg ccatgtactt caaagttgct ggatgtggat 900

ctctcgcaga cgcatttttt tttatcaaaa acacatttgg cctgtttggg ttcccttctt 960

atatgagcca agttgtactt tggcagccaa gttccaagta gccaggttga gcgcatgcat 1020

acgagcgatg tttggttatc gtatacacga aacctggttg cttggagatt tcgtttggtt 1080

agcttcatgc aggtatcttc ttacactcac agagccactg acatatctga tccacacgct 1140

tgttgcgctc gcgcgagcct ggccacgtaa aaacgaaggt tttt 1184

<210> 145
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321304_G1, chr9:139756055..139757165, Cluster 1

<400> 145
tacgcgagtg tgcacgacgt gcatacatct ctatatgtca cactgaacaa gagaaaaaaa 60

aatcatttag aactttgtcc accaaatatg catgaatgat cgtatacgta aaatgatttt 120

gatagatttg ccatgaaagc agcttcgtat tattcattca tcttctcata actagccatt 180

tcgttttgcc tctgtgattt ggcacatgcg gtgtaggccg ggtttttctg gatttgtctg 240

ttgcgagttt cacggtccac aagaagaaga aaaaaaacgg cgtttctctt gcaagtcctc 300

ccatccaatc tgcatgcatg catggcaccc cgaccacgtc agaaaaaagc gccgacacgt 360

gtcggccggg cacgccgcca ttggttcctt tcttccctag gcttatccgc ctcctatccc 420

cttttggccg aaaattcgtt agatttccgt ggccctcgtt atctcccacg gagagaggga 480

gagaagaaga agagatatta gcaacacgag aaacatttct gtgactgctg ctagcttcta 540

aatcttcgct gctcctcgcc gtcgtcctcg gcatcgtcat ccgctcggag ggagaagcct 600

cccactacga tcgccacaga aaaccgctag acaaggatgt ggatcggtcc ttgtgttttg 660

tgtgcgttct tttcgggcga tgcgaaaatg acccgacgtc acgctcgctt cgttaattaa 720

ggatggcatg gcggggcggg tgggagggga ggtcaccgcc ggccacacga tcgggacggc 780

gccccccgac gggggctgac ggcgcggtgg ttcgggcgtc gcgactcgcg atagataagg 840

atggggttcc cgggtcgcca tttgtgacgg tggtggtggt gcttgcttcc cggcgggcgg 900

gcggcggggc cctcgacgga gggaaaaggg catctatcgg ctgcgtgagg gtcccgcact 960

tgaggatata ctgtgggcgc gtggagccgg agcgcgggac tgacggcgag gcgagacgaa 1020

caggcaagta ggcaactgcc ccgcatccgt gagtgtccgt gggcggtaca cggttgtacg 1080

cgctgaaagt ttttcgggac aggcggcgcg c 1111

<210> 146
<211> 1351
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323504_G1, chr9:150833880..150835230, Cluster 1

<400> 146
accttcaaat atctgaactc ggagacgtgt gtgttctcat tgatcgtttt gcattgtcat 60

tgggcttgaa gttttccggt ccaaatctag aggagggcct tcgttgttgg gccagtccgt 120

gagtttgtag gaccgactgg gggctggtac aggggaaagg agcccagaaa gctatgcgcg 180

aagctcttgg cctttggaaa gacgtcgccg ggaacatggg gaagcggggg gaacggcgag 240

gtggccgcgc cgcgccgccg cgggagcacg cgcgattgca aagggtaaaa gctgctgacg 300

aagccgactt gcaagtgaca gattcgaact ctgtacgtgg tgacaggatt cgaatttgtc 360

ttggtggtca tttttcaccc cgtctcgaaa agggggggct gtctgtgtct tgcgagttgc 420

gggtcgtacg aatttctcca catgatcgat ctgacgagat tttccttatt tgtccgtcca 480

tacgcgttat taccattttt ttagtagtgt acacatctgt attcacatta tcacatagcc 540

cctaccatct gccagtagat tagcattgcc gacacacgcg aatatatact agtacggtta 600

tgtcgtcggt cgagaacatg gataaggttc cccgttcgag attattagcg taaagcaggg 660

gactgtggac ggatcattac atttcgtcgt acccataaaa aaaacctaat cccatgcaac 720

atagcactag ctagctatgg tttatggtac aactataata gtggatatgg atcaagcaga 780

gggccacact gagctagcct tttgcaatta tatactacta ctagtgtgta tatatattat 840

atgccttcta gaacgttcta attggccaaa gcacaatagt aggctttgaa agttcaaaag 900

gcccgttgcc tccgtgtagc tagctggtgc cgtgccgtgg cgtcacgtgt acggagtagt 960

gcttggtttc cccggccagt cgtggttaaa cttgtggtaa tgcgtgatta cgacttaatc 1020

gtacaatgaa tgatgagctg agctgcatgg agcccagttg acttggtccc cggctacata 1080

ttgttttttc aagcgcggac ggcgacaacc agcagatggg aatgcaatgg gtcacgtcaa 1140

aagccctgtt gcgtggtgcg gtggcagagt aaaataggag atagctaccg tggcgggctg 1200

atcgaaattc ctggcggata cagactccgc acggtcagcg accgatagaa ggcggcggcg 1260

acaacgacca cgacaccggc gtgtcggagt cgacagacag gatgcacacc gcgtgacgat 1320

ctgattggaa cagcggcagc acagatcgat g 1351

<210> 147
<211> 1088
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324149_G1, chr9:153750613..153751700, Cluster 1

<400> 147
tggtggtttg cgcacgcgcg tgcgtcgttg ggtatgtgtg tatatggcga attggcgatg 60

ggtagcttat gaagcaactg gacacaacgg ggaggaagaa ggatctaatg gggagttagt 120

tagcaaggac acaaaggaga tggtgaggcg tcttttcgag ggttcttagc taagccgggg 180

ggacaacggc aaggggaaaa ggcggcctgc ctgccggccg gccttgagag ctagcagcta 240

gctagccgcg tgcagagagg aggcgaccca gacggcagca gctaactgta gctgatgacg 300

atgaggccgg cggggcggcc ggggatggac cgatggaggt gaaactaact aaagtgcggg 360

tgtgaattgc acagccgtgc gcgatcgagc cggccggccg gtaagaaagg aaggtaagat 420

gaagctttgg aatcatccaa agaggagaag aagaggaaca aaccaaagct agcaaattaa 480

aggtgccgcc tacagctagc taccaagagt tgcaccgatg gccagggtgc tctgctgcgt 540

tccctgcagg ctgctctcta ctctaccaac taggaagttg gggagggcat gcatgcaaag 600

tgcagtactc tcaactttag gaggatgagg atcggagggc tagctgcact gcacatgtgg 660

ctaatatgta gcttcgcgtg gatcatgtgt gttcgtgttc ccatctaaat tttctttcgc 720

tcaagaaaaa aaggtcgcat cttttggtgt agacggtatt aattaggaca caccttatta 780

acttgcattg tcgtactagc tatatactgc tgctactact actctggaag ctaattaaga 840

gcaagaagag aaaaacaggt aaggctgttg tcatgccttg tgcaactagc tagctagagg 900

ctacacttcc tgctgatctt gtatgtgtac gtgtagtgct gcgattattc ggctacacct 960

ctcctctgtc gagtgcggtt ccaatcacgc atagaatgca tcaatccatc aatccatcca 1020

ttgggattat taataccgac tgagggcccc gcccatccat ccatccgttt attcgggacg 1080

aactttgt 1088

<210> 148
<211> 1126
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324152_G1, chr9:153755069..153756194, Cluster 1

<400> 148
gagcgagcga atccgcaaag tacaaggcta tattccccag gctggggtgt ggacgaggcc 60

gcgtcaccgt caggcccagc tagccgccca ggcgggggaa cgcgcggtcg gcgggtccgg 120

tggtcgatcg gccatggccg gccccccgtc ggcgtcggct ggtccacgcg cgcatgtagt 180

cggcagccgg gggccgcgcg cgtcggggtt ggtcgttgga gagttccgag acagcgacgc 240

ggtgcgcgcc agccccggca ggccacagcc cacagctgtc gctaccgcgg cctgtctgtc 300

ggtgccgccg cacgttcgta cgttacctgt gtgcgagcga ggtagcttga ggcagcaagc 360

cagctgggac gagagcctcc tggactgact ggtacggcgg caaccaactg cttcatgcag 420

tacttggtct gttaggctag ctgttacact tgcatgcagg acctgaccct tcttcgttca 480

cgagatcgat cgcagagctg cgctgcgaac tagctagttc atccaacatg aaaagaaatt 540

aaagggcatg tcagtcttgg gtagctaggt aggtacttgg ctttggcttg ctttgacatt 600

gagccacttt gagcgccaac aaactcatgc cattgagccc ccaactcata catataaata 660

atattataaa taatattaat agtataatat taatgtattt atgtatataa tgaacgtata 720

gtgtatacgg ctagaagaat agtactatat tttctttttt acttattatt gtttcttgtt 780

tagttagttg aattgaatgg attggtcttc tattatacct cattccttac tagctagtaa 840

taaataatta ctagcataat aaatatagcc actctatcaa atttcatatg atgaacccat 900

gataaatcaa atcatctaga ataaagtgac ttcccaaact aaagacacca cgtcatccga 960

gacgacgata gaagacgcct cacaacaccc tcgcgagagc ataaacaacc tgtcattatt 1020

atgatttta atagatcata ttgagttttt attggtaaaa tttatacgta atattaacaa 1080

tgacctctat ttaaaatttt gttacaggcc cccgaaatct catgac 1126

<210> 149
<211> 1132
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326427_G1, chr10:10152645..10153776, Cluster 1

<220>
<221> modified_base
<222> (461)..(461)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (461)..(560)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (462)..(462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (463)..(463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (464)..(464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (465)..(465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (466)..(466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (467)..(467)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (468)..(468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (469)..(469)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (470)..(470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (471)..(471)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (472)..(472)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (473)..(473)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (474)..(474)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (475)..(475)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (476)..(476)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (477)..(477)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (478)..(478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (479)..(479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (480)..(480)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (481)..(481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (482)..(482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (490)..(490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (491)..(491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (492)..(492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (493)..(493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (494)..(494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (495)..(495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (503)..(503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (552)..(552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (553)..(553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (554)..(554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (555)..(555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (556)..(556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (557)..(557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (558)..(558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (559)..(559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<400> 149
gcgccatggc cgggctgcgc gcaccggggc gagctgacgc gcggggagcg gcggggctgg 60

gcgggccgca cagcgggcag gggcaatgct gggccgccac gccgagccgg gcaggggcca 120

cgctgggggc cgctccgaac gggcgcaccg ggggtcgcgc taggcgagca cgccggggcc 180

gtaccgggcg atcgcgccgg gggccgccgg gtcggggctg cgtaggggcc ggcccaaccg 240

cgccgaacgg gcgccgtgac gaggagaggg aagaagaggg gggcgaggga gaggaggaga 300

gggactcaca cgagggggcg agggtgcatc ggggtcggcg gttcgagcgc gtgcgcgtga 360

gaggagacga gctgccgagg tagagaagaa tgccggagta gagagagaga gaggagtagt 420

gggggctgac ggtggactca tcagggtggt ggcgcgacgc nnnnnnnnnn nnnnnnnnnn 480

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nnnnnnnnnn cgtgtccatt aacaaccctg taggtgctag gcatgttgca 600

gttctgtccc ctggtcggct aggaacgact ggggccaagc ctggcatctg gcgtatcgag 660

tcatgaccga tcgtcgggac gtagaatcag tttcccaggc ttccactgat cacttacgtg 720

attgcgatga ctagatgtag tctagcagaa aggttgtatg gagcataggt cattagctca 780

atcagtgccc agtcgtcgta ccctgatggg aagtgtcatg gcagggccgc acagtgggca 840

tgggccatct ctggcataca ctcagtgcct cgcatgtggt catgagtgtg tacgcgtgag 900

agggtagcac cgagggttgc ggtaggagcg cactacgggg ccgctcctgt cgaacgcccc 960

tggtatacgc cgcggcgttg ctgtgtcgtg tgcggccgcg tcgcgccgag tctggcgccc 1020

tggacgacga tgaagcgaag aagaggaggg cgaaggagag gagggagaag cgactcacca 1080

cgagggggcg agggtggcac cggggtcggc ggttccgagc ggcgtgcgcg gt 1132

<210> 150
<211> 1218
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337006_G1, chr10:77257387..77258604, Cluster 1

<400> 150
gctttaagta tatttgagaa atgtgacttt ttgtaaaaag atgacggctg cttggagcat 60

cagttgaaag cgattaaaga aacaaagtaa aaaaggcttg gacaccccat atatttttag 120

gtggtgtttg gttcttgtat tttgtttggt tcacgtcact aacaaagtca aatagctgaa 180

atcggattac agagccgaag gagcggaaac aaaagtgtat gtcctgtttc tgattacttt 240

gtatccgatt acacgggcgg cctacaccaa acaaaatcag atggaaacat accaaacaaa 300

atcagatgga aacacttaca gctgaaatgg gaacacgtac aattacactg accaaacagc 360

actagttctt tccaccaaaa gtaccatgca tacatagtag tgcctgccag ggatatatac 420

aaggttacag cctcacacgg cacaagttga gttgaaagcg cgtgccgtca gcatgatgta 480

aactgcatgc tgcaacctag ctagctagcg cttgtgtgtg ctgctttgcc cctgctgcat 540

tgtacgatta atcagcggga tttgttaccg agaacaagtt gggaacatat ataaatatag 600

gtgccaaaca aaattaaata aattagccag tttgttattt gtggggcaac actagcacca 660

ggtaggtagc tagctagcag ccatcgtcat ccatcaagat aatatatata ttgttttcat 720

tttgttttaa tcgtttctga tccccttctc gcatccaaat taagcacgtc gtccctgtgt 780

cagtgatagg ctgaaaaagc accgcataaa tataacacct cctcctcctc ctcacaaggc 840

acagtgcatg gcacacgacg caaactttgg tgtgtctgtc tgtatattat ttgtcattta 900

tttggcctcc atccaatgcg gtccacccaa gctgtcggtg tggtacgtgc ccccataact 960

gatcacgcat agctttttga gtccacgact aatctaatca tgtgtaccgg aacttgtctg 1020

gaaggcactt gctacggttt gtttttcgac atttcgtgac gagacaccat atatgcgctt 1080

gcttaatgta ctggtcaggt gtattaacgc atggacgagc tagctagctg gattaaatgc 1140

cctgctgcat gccttccgga gagcacgtaa tgagatgcgg ggggtacata cacaacctag 1200

ttaacagcgc tagctcat 1218

<210> 151
<211> 1199
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337968_G1, chr10:82190294..82191492, Cluster 1

<400> 151
ggcgcccccc gtagccgcca tgaggggggct agctcggggt gaccactgca gccagcctca 60

taggtgttgg gtttacaacg cacgacccaa gttgaatatg aattgttgta cgaattgaga 120

ggcatctgaa tggttacaag gcatcactgg attcagcaaa acaaactaca gaggtgcagg 180

aacgttaata caaggagttc aaatttaatt ttttgcattc catatgtaga atcgtaaacg 240

gaatctaaaa taaaatttag gactcggtct gatgcaaact gtgttaaaag gattccaaca 300

ccaaaccatt atgtatgata cacacacata cttgaacatt atgtagcatg cttcctgctt 360

catatttcta ttttgttttt gtgagacaag ctgtttggca gcgaagagat ttagaagatg 420

agcataagaa ctttgtggaa ttagagacat gaggaacaca aatacaacaa cactagatta 480

ggaacccaaa tagtgccaca tgctgggaat cgatttgaag ctctgagcgt accaagttgg 540

ggaagcacca caaatcaact aatttacatt attttatatt tgggtattct caacatcggt 600

acatgtggaa gtggcagcaa acatccaagt aacaactctg atcttccttc agactcagct 660

gagacatact attagcctgc atcaaatgta ctactagcct actagattat ttttttcgtt 720

aatgttatta aatatgttac ataatgtgag gaactgaaac atagcaatcc taacgatgta 780

agagatttta atctttttt gagaaaaaaa taatcggcaa aagattcata catagaacag 840

ggattaatat atgatgactg atgttgtctc ataaagagtt gtcttacaca aaccctattg 900

gaggaagtac tggtcaaaga aggattcaaa gttatgcctg tcacttttca ctaactccaa 960

ttgattgact tcatttttat cacgttatcg tcaatttgtc aaaacgattt tgttgtttct 1020

acctagtgga gtagcaaact tccaaacctc attgtagtcg acccaatatt cagaagccaa 1080

gagctattct tggacaagca atttgatcaa tcaatatgga accaaaggtg tgggtttaca 1140

agtagtttga tcaattaata tggacaagca gtttgatgga taaatatgga aattgttgc 1199

<210> 152
<211> 1084
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_341136_G1, chr10:99553868..99554951, Cluster 1

<400> 152
ctacacaaga ataaaagata tacaaaactt aaccagataa aaaaatcttt cttgtcttaa 60

ctgacgactc ctaaatagcc tttatggaaa gctaagaaat ttctatatca atccagaaag 120

aaaaaatcga atattatgta cgaataacac aaaacatcca tgtcttgtgt acaagaaaac 180

caacatctgt ccgtttgggt tattatacac ttatagcctg tttggttgct ggtatatacc 240

agaaccagac tctcaagatg caattccagc gcgttgggtt gcctacacag gagtctggac 300

ctggctccct aaatgcaaaa ggcagccatc agcctggctc accagatatg gatttcattt 360

gtttctggtg agccaggctc tcgtagtgca aagctgattt tcttagtggt gctattaaca 420

catgattaat gtatattaag caatattagt atattttaaa gtagattaag atattgagac 480

tattagagtg tagttacaca agttaaatat tataagatta cttgtttatc tattttcatt 540

ttatactatg tgactttatg caggcaacaa aacaccatct cttgttagcc atgctctata 600

tgtgcagcca accaaacaag gataacttga ccaccatatc atgtctagca tgagcctggt 660

tcccatatgc aatgtaggct ccctagagaa gacaacagcc tattatgtct tccctaatat 720

aatgatatgc aactctcttg tgcgttcgag aaataaaaag tgtgatcagt tggatcttga 780

atgtgaaatg aatataccta gggcttttca atcaagccat atgtgcagac tcttgttatg 840

tggggcaaga gattcacggc agagcaaaga aggcaagtac agcaagccag gaaaatggcc 900

acaatgacgt ttttttgggg ggggggcaat cctgagcgca ccattagttg gtgttaattt 960

agaaggttag caacagtgat tgagaaagaa ctaagggtga ttcggggtgc ctaatggcta 1020

tgtaaaccat tagataccct aggaataaaa aagcaatgag ttaatctcct ttctctatcg 1080

tttg 1084

<210> 153
<211> 1053
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3423_G1, chr1:17635757..17636809, Cluster 1

<400> 153
atccgtgtac agaacggtgt cgatggagga ggagggcacg tacgagatac agccttgtta 60

tgtctgtcgc tctgctcccc cggtaactcc caaaatatat gctgtcgagc gtttcaggca 120

gtcgcctgca tcctcctcac cccttgcagt ttgcacaaac tgaaatcaca gcagaaaacg 180

taccgtacgc cggcagttgc agagcagagt cgccgccagg gagcgcgcag cacgcatttt 240

aatgcacata attatttaca tatgaaatac taatctagtc tgctgcatat catataattt 300

tttatatagt ttaaagggcc taccatgatc agttcgactg gtggccttca aaatcatagg 360

accggggctg gcctccgggt ccgggtgtct gcctggttgg tcgccgcatg catgttgctg 420

tcctgtatcc agctccgcct cgcaagtcgc aatgcagtag cgtttgcaca gtggccagtg 480

ggtcaccgtt gctctcttct atatcttctt ctctgttgat atcccgtgta ctggtctggg 540

agcgagccta cagtggggtt acagttaaga gagcggtgcc gttggccgtc gggcgcgcac 600

gcggagctga aatcggctct gtttgacctt gtgcccgttt cattttttt ttgtcagaga 660

tacagctggc ttttagttag gtcaccgtgc tttccaagaa cagttccgcg aaatttatag 720

atacatctag tggagcatct caaaaagtgc tgaaatattc aagtcattat tccactacca 780

tcactcgtca atcaaatata ccgtcgctga ccagagttgc tcgtccgtgc cttaggatgt 840

atttggttca tctttttaaa tctacttctt ctttttaac aaaaaaaaac ataagctaaa 900

tcaaaggttc cttcggcatt ttgctactac tttaaaaaat catctttta aagtacaaat 960

ttgaaaaaaa aaacttgaat cgaactatcg aagggttcag ccatcgaata cgcatgcata 1020

cgaacatgca tacttatact actagcctgc taa 1053

<210> 154
<211> 1323
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3433_G1, chr1:17689028..17690350, Cluster 1

<400> 154
atttaatcca aatcatctga attgggtgaa tccatatgtc acacctaatc ctatggtgga 60

attaaatcca ccatgtaatc catgtatctc tcaaagctag ctatttttt gatcaatgga 120

ttctaatata aacttgtgca atattttcat ggatttgttc catacctaat gagctatgga 180

taaaatccat gcctttcata gtttaaaaaa ttaccaaata cttgattata atccatgatg 240

ggtttcaccg aataaaaata aataaataga cttggattat tttggagatg tattgtggca 300

tggatttaat tttaatacag ctaatttaga gctgaattgg tgtaaaacaa taaggctgca 360

gtgcaggtac gggggcgtcg ggaaaaagaa cggccaggat cgcaccgact ggagctcgga 420

agaggggcgc tgcaggtgtc ctttgctggc ccgcctgatc gagcccgggc aaccgaaccg 480

taccttgctg tgcaagctcc gatccaactg ggacagcacc cgcatcagcg atcatgtcgt 540

cgatcggaga ccgtacgtac ctgacgagtt gctgtccaca acagccgagc gaaattaaac 600

cctgaccaaa ttaatcacac actgaactaa taagcgtacg tcgtctattc cctcgtctat 660

atatatacaa aaaatcggcc aaatcgcaga atatatatat atatgtatac atggtgagtg 720

gcttctggag gatgcaccaa accctgctgg cagatgtatg tatgtatgca ccgggaagca 780

agcacaaacg cgcggatcgg atcggaggtt cagttgtccg ggaggggccg ggatcgcctc 840

tgtattttat ttttaatcca cacactgctt tatgcgtgaa gcctttcatt gcctacttcc 900

ataaggtagg aagggtgtgt cgcagctact gctacttgaa gtggagctac tagctaatta 960

agtttggact cataattcat tgaatatact tcagtcagtt gcctcaaggt aattaacgac 1020

gacgcagcat aagtaacgcg atcgagccgt tctaaagcac gcgcggccat gcagcatgca 1080

caaaccagtg ttttcagctt ttgatgcaaa actagctagg taaatattct tgtgtgttgc 1140

aaccaaaaaa agtataatat cacgttaatg tatgtaagag cgtgtattat acagttacaa 1200

aaaaaagtac tgcaatagta atgtttcgga aatcaatatt tggagatagg ctcggcgaga 1260

ccaaatctat atccttatct ggcagatggt cacataatct ttgtgtaact gtcccacctt 1320

ctt 1323

<210> 155
<211> 1104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345196_G1, chr10:122265310..122266413, Cluster 1

<400> 155
ctatcaaata ttttctctct cctagctaga aactctggta gaaagacaaa atcgtttagt 60

tggattgagg caaaactatt ttgttagctt ccttgctggg tgccaagctt tatggaccat 120

ttgttcatca cgcccgcacc accatgcata ttgaacatcc gtcgaagctc catgcactaa 180

aatccccttt tgtggacact caaccattga atagatcctc actttagaat ttttgtcccg 240

gaatacttga tccttcgagt tcgttgacct ttgatcttaa atcctggttg cttcacaatg 300

cttgactctt ctttattctc atgatcttga atcatggatt gtttttttct tgacttttga 360

aagaccttca acattcaata ttgagttatc gatcactttg ccatacactt tagggatgtc 420

acacacataa ggatgcaagt aactagggaa gctacttact tggtaagagg catgtaagct 480

cacagatggc cataggtaag gtgtgctaga attgtatagg ctaagtctga ctttgacaaa 540

tcggggcacc taaacctatt ataggtattt aaatggtatt atagcatctc cagcaggtta 600

catatacttg atacccgttt tagatgcgat atgggagagt acctatacat ggatgaccat 660

ttttctcaaa tatgtatttg ggtaccttgt tgggcacaat aacatttgga tcttgtcttt 720

tatatgattg tgtaactaaa cgtgtgtttg aattcatatt ttttgtatat tcttgttgga 780

gttagcctaa aaatatgctg tgagtcaaat ttatagagct tccattgaaa ccgcgcttgg 840

agccattcga actttacagg cttgggtgcc caagaatgaa cttcaaccag ttagattcgc 900

cctagcttaa ggacaggtgc acagcaaccg tagagttgat tgcgagcatg tatatgggcc 960

tggttaacga gactcaagaa atgatacaca gttttaaaaa aacctttgct gcttcgattc 1020

aaggttattt cagggaccaa tgggtaaacg acacgttcaa aataaaagga cataaattta 1080

tgcacatctc gtcttccttt gaat 1104

<210> 156
<211> 1396
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345197_G1, chr10:122266690..122268085, Cluster 1

<400> 156
aataaataag cacaagcctg atgcaaataa ttaaaaaaaa ctaagtcaac tagtagcacg 60

caccgctagc aattagcaaa gattggaggt tcagaggtgg atagaatacc caaggtaaaa 120

gaggcgcgtc ctgcacggca tgtgaggcag cagcttggag gagtgaaaaa aaaaaataaa 180

tcccaagtaa acgcgctaat tcaaaccgtc atcacgacgc ggtggctgtc agatctaatc 240

caaatcgcgc agctcaagcg tatttctgta gcgttgcgga acgcggagtg agctgcatgg 300

gtgggttcgt ttattttgtc gtccgcggtc aaagaatcct aggagcagtg gagcaacgaa 360

gcaagcggcg ccgctagctg gggctggggc ggcggagagg gaatagtcag ggagaaggct 420

gtggcgggcc agttgtcacg ggactcctcc gcggcgcggc ggtgggggcg ccgaccgggc 480

agttccatac gtaactcgga acacgccaaa ggctgtggac cggggctgga ttggcggtgc 540

agccgttagc atcggcgccg gctctttttc tcggatggac gccggggttc tcgctgctct 600

tgggcggcgg aacgcgtcca agaacagaac taaacgtgtg cttcggaacc ggcttggaca 660

ggaaccagtg ctcgatcttt aactgcctga ctctgagcta gccacacgcc cagacacaca 720

cacacactag agctggcggc agcgtgcaat ggcacgtcga cataaataag tggtgtatgt 780

atctccccgg tcgcatcgaa gagccagtgt gatgaattca attggcagcc gtggagcgcg 840

tgtgcacgcc gaagaacgca aggtcgccag tcttccggcc gtatctgtcg gatgaaagtc 900

ttgcgacgac cagattacta ttgggcttgg aattaaaacg cagcaggccc agaccacctc 960

gcccaggcag tgcttgtttt tatttagctg gtacggcttt cttaagttcc aaaatggttc 1020

caaaatgtat tctctccctc gttaaaaaag gtgatcttga tcaaaattgt ttttatttag 1080

ctggtacggc tttcttaagt tccaaaatgg ttacttctag gaagccaaat ggctaaaaaa 1140

tgtgttgctc cgtgatgaga gtgaagtgaa tctagtcttc attttgtact agagagtgga 1200

agccaaagaa agctgcttct ccctgttccc aacctgcttc ccacactcca atcccttaga 1260

aatcacttca cacacaattt accaaacgat tttcgtcaac tagattcact tccactcgag 1320

aattatttgg aatcgttata ttagagaatt agctctcgga gctagagaat cggctgttcc 1380

aaacaagctc atagta 1396

<210> 157
<211> 1218
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347453_G1, chr10:135065970..135067187, Cluster 1

<400> 157
gctcaacaag ccgggccttc ctcactgctt gtgcccagta tatggcgaca ccgcgacagt 60

gacccgtctg aggtttctgc agcctgcaac gggaattctg ttcacagcaa taatcatatg 120

catatatcaa tgtatgataa acaaaaggac gtatgctatt acacactacg gtacaaacct 180

caataaaaat atgtatgtgc tctagccttt gatgctatga cttggtatac atgctccatg 240

ctctactttg ctaactttac tttggtgctc tcggtgtctt tgatacgaca aattccctcc 300

ctggagcatc gtgatcgtga cgccatctag gaggtagctt ggagtgtgga attgaagggc 360

tagtgtaaac atgcaagata atcgaggaga tatataaata catatgtgat gtgtcccttt 420

gtgaaaaata tcacttttt tttaaaaaaa atagagttct tatacatcat acctacggta 480

tggccttgtc atttgtcaag gtcgctttct ttgacaccca aaatacattt ggatggaacc 540

tttcgtcatg attttttttt aaaaggaatc cttcgccatc aagcacttac taacaatatg 600

aactggtggc accatatctc tttaaaattc cttttgtttt ttttaaataa acgacagatc 660

aggctattga agtcatcaac caccttaggc tttgttcggt tacatgggat gaaatcccat 720

catagattta atccaggtat ggattgggtg aatccatatc ccacacctaa tcccatgatg 780

tgattaaatc catcaactaa tccatggttc ttttaaagtt agttattctt ttgatttatg 840

gattctaatg taaacttgtg caatatctca tggatttgtt ccatacctaa tgagctatgg 900

atagaatcca tgtcttccat agtttaaaaa attctcaaac atttaggtta tattccatga 960

tgggtttaac cgaataaaaa aatttaagta atcatggatt attttggggc atggattgtg 1020

gcatggattt aattccaata catgctaatc cagagcggga ttggtgtaaa cgaacaaacc 1080

ttaattaagt ggggggcagg tttcatgtta tgggcatcaa taattggcta ttcttttatc 1140

agatttggcc tggtcagtcc tttgtgatca tttcactgac ttcactcccc cataaactaa 1200

acggcaccac ttacttaa 1218

<210> 158
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347454_G1, chr10:135067402..135068406, Cluster 1

<400> 158
ctacccgtcc ggtggtttca tttcatcgaa gggggctctg atgggtgcct attttgttcc 60

ggcgggccca ggcgcgtcac cgtcagctgc aagtgaagcc ggtgggcggt ggcccgccgg 120

ccagcgcacg cagtatcgtg cgggcgtcgc cgtcgccgtc gccatcgcag ggggcgcact 180

ggcactctcc tattccgctg tttgctttgc gcaggatctc tcggcgccct ttgtttttcc 240

gacgtggcag gtgtcgcggg cctgcaaatc gctggatcca ccacaaggag ccacagggaa 300

aagtgcgccc tgccagatgc agcatgtcga taggcatgga gcagcgtgtg tgctgggccc 360

cggctgttct tggacggccg tcagtttttt tggcacggga accccgtgct ggtgctgcgc 420

ggataaaaaa aattgccccg gaccttgtaa tctcaggtta accaatcggc tggacgcgtg 480

gttatttgtg acaatattgt ttagcatgcg ttttactttg taagctgcca agtcagattg 540

aactgtccaa agtgtagaca ggaaaatgct gcggatttag tgctttatac aagagaatag 600

acgatacaga tctcctgaag aaaaaataat gggaataccc agagactgaa ctatcgagat 660

ttcctaacga ctaccagtca gcaaatgaaa ctctttatcg tcccagggtt tccttttgac 720

cggtgacaac aactgtcgaa atttaaaatc ccggtaccag aaaccatgga tccagcgcct 780

caactaccca acccaaccaa catggagatg cagagatgaa ctctctttta attatttgtc 840

gtcagagtga cccctaagca agctttgata gtactgcata gagaataatt catggcttcg 900

acgtactatt tccgtttcaa atatttcagc ttttttactc taaaaataga ataatttata 960

atataaacag agggggtgct attattgcag tattgcagct tcgtc 1005

<210> 159
<211> 1217
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348197_G1, chr10:138873203..138874419, Cluster 1

<400> 159
tgagcttcaa aggttttagt gaataagata ccaaacttag atatattgag ttgtatgaag 60

gggtttctta ggtgtattta ttgcttggag aaccataaca taatatctta ggttatacat 120

gtttgagatg aaaagaaata gacgaaccac gaagcgtatc aaaattcaaa ccaagcgcgc 180

gcacccgtgc cattaccccc aagcgcgcgc gcagcgaagc gtcacagctc gcaactcctc 240

gaaacctcac ccacccgcgc ggcgctgata taaagccacc atggcgttgt gatttcgctg 300

tccgctcctg cctcctggga cttgctcgaa accggaacat cgacaacgac aacgcggcca 360

caagccagcg agctgcgcca atggaaatgc cggcggcgac gcaggggcgg cggacgagca 420

ccgtggtgga ccggaagctc gacgagctct gcgcctgcct cgttgacgcg ctgtcgtccg 480

gacagcagac cccccacacc gacgagcagc tccgcgcgaa aatcaaatcg aagaccgagt 540

tcctccggtt gctcctgtac gccgaggcgg agtgccacgg cgggccgcgc ccggagcacc 600

tggccgaggc cgaggcgcgc ttcgctgtcc tcgcggccac gttcgatggg tgggcgcggc 660

gcgcagtcgt cgctgcacct gaaccagttg aggaggagga ggctgacagc ttggtgtcct 720

cgcggtccgc gtgcttctgc accgactcgt gccaggagga ggcgaccgag ggggacgcca 780

ttcgcgacgc catggaagca cgtaacgagg aggggacgtt ggatgccgtt gctaagaagg 840

gcgacatcga tcacgaggcc gcggtggaga cgggaagcag ggttgtacag cggcgctggt 900

ggaggcataa tgctgctgcc tgcaggtgca gtgcagccgg cttggtcgtg gtggttgcgg 960

tcgggttggc tttggaattg gctgctgtgg ctcaccacaa tgttaacatt tgcgttggtc 1020

cgaagtagaa aagccacata aaaagactag atcaggcaac ttttatctta gctctaactc 1080

ttgggccata gttgtttgtg atgaggtgct tttgttcttc tgattcctgc aaaacttgct 1140

tcgacgctgt agccgctggg tactcacatt tctgttcgaa attgatcacc atgtttggtt 1200

ttgatgttta ctttgag 1217

<210> 160
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348938_G1, chr10:142852470..142853846, Cluster 1

<220>
<221> modified_base
<222> (1242)..(1242)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1242)..(1341)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1243)..(1243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1244)..(1244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1245)..(1245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1246)..(1246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1247)..(1247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1248)..(1248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1249)..(1249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1250)..(1250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1251)..(1251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1252)..(1252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1253)..(1253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1254)..(1254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1255)..(1255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1256)..(1256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1257)..(1257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1258)..(1258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1259)..(1259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1260)..(1260)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1261)..(1261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1262)..(1262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1263)..(1263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1264)..(1264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1265)..(1265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1266)..(1266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1267)..(1267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1268)..(1268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1269)..(1269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1270)..(1270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1271)..(1271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1272)..(1272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1273)..(1273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1274)..(1274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1275)..(1275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1276)..(1276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1277)..(1277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1278)..(1278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1279)..(1279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1280)..(1280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1281)..(1281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1282)..(1282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1283)..(1283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1284)..(1284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1285)..(1285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1286)..(1286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1287)..(1287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1288)..(1288)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1289)..(1289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1290)..(1290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1291)..(1291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1292)..(1292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1293)..(1293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1294)..(1294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1295)..(1295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1296)..(1296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1297)..(1297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1298)..(1298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1299)..(1299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1300)..(1300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1301)..(1301)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1302)..(1302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1303)..(1303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1304)..(1304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1305)..(1305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1306)..(1306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1307)..(1307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1308)..(1308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1309)..(1309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1310)..(1310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1311)..(1311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1312)..(1312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1313)..(1313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1314)..(1314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1315)..(1315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1316)..(1316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1317)..(1317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1318)..(1318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1319)..(1319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1320)..(1320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1321)..(1321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1322)..(1322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1323)..(1323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1324)..(1324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1325)..(1325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1326)..(1326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1327)..(1327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1328)..(1328)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1329)..(1329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1330)..(1330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1331)..(1331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1332)..(1332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1333)..(1333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1334)..(1334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1335)..(1335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1336)..(1336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1337)..(1337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1338)..(1338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1339)..(1339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1340)..(1340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1341)..(1341)
<223> a, c, g, or t

<400> 160
tgcctcctta ttaatcaagg atgcaacggt atcctcctat agaacagatc ctgttcaagt 60

aagatcgtgc tgtagggttc cagagctgaa catttaagcc ggcttatact taatcgagca 120

atcgaggtgg agctaatcgg tcaggagtgt ccagcaaatc gtgtactggg tcggcccatt 180

ctggtattct atgcgtgggc ttcaggtcga gcccatcaag atggttgtag ttcacacttc 240

cttggcccat gtgcaatgct gaatgttgct atccacggcc cccgtccccg ttgatcctga 300

caggattgga aggttggcct gcactctgcg tctctgcgac tctgccgatc tgatgctatt 360

cgcctattcc tctggaaatc ttgatacgag ctcaaaaaaa aagggtaatg tagattacta 420

gcaagcacac acttgacact agactcacct cgtactcaca tgcggaaaat catgtttctc 480

cgcaactcag ttttactgta acgtttcgta ccttcgaaaa tgatccatct atggtcgttt 540

gacaacacac aagtcatccg tggtggttga atcggcgagt gaacttgtgc ttttgtgact 600

cgtattttca gtacgggtac catcattcat gacaatgcaa tgcaagcacg gtgtaaaata 660

tagggtctaa ctgatctgtg atcacggtgt aaagagaagt tttttgtcgt cgctgccttg 720

tttctttagc gtttttatgt ttggctttgt ttccaagaca aaacctgaat atagtgcaaa 780

gtatatacac catgtattct aaattacaaa aatattttag gttttccata tatattaatt 840

ttactataat ctatatatag tcgatatcta agtacacagt aaaaactacc gatctcatga 900

ttttaaatgt aggcaggaca ttgctccact caaaacaacc acaaaaaaaa gttcttaaca 960

catagcctaa ggtcaaatgg gcatttcata ttattgccag cttttgttag acgcacaaaa 1020

aaaaagtcat ttcacattgt tattaggtct ttcatgatat cgaggtgtaa ataaattcga 1080

cttctgtgct gagtaggagc tagtactacg tagtagatgt ttttctcgtg acatcataga 1140

taaaaagtgt atatggaatt aggaacattc gaattgttcc tctgagaaaa ggtgcggaga 1200

actaggaacg tacaaacggg tcgctggggc ctgaggaatt cnnnnnnnnn nnnnnnnnnn 1260

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1320

nnnnnnnnnn nnnnnnnnnn ntagacagta tatcttcgag aatcagcttg attcgtt 1377

<210> 161
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349271_G1, chr10:144629678..144630695, Cluster 1

<400> 161
tcatgtctga tagcggtgtg acccattgtg ccatgctcca tcttacttgg gctggactag 60

tgtcgtgtcg tgtcatgtgt ccatctatat ctactaggaa ggtgctcaaa ttacaaagcc 120

agtgtatatt cggtcctata gacaagttga gaaggggatt gagagggaaa cacatgtacc 180

attgtgttgt gatgaacctt agcctcacac gagtgttatg ttagtaggct acctttgga 240

gttagccata accctaattt tattggaaca tcgtgcataa ctctaagggc tactttacga 300

taacatcatt catagcccta agatgttgac gcacctattc attgccttcc taagtgctag 360

ttcatgagcc acctttacct tgatgttggc gatagtgacg ataatgacaa ggaggaaaat 420

tggtgtgggc ttcacctcgt caatatagct aatggcgagg gggcaagttg gtatggtgac 480

atcccttagc cgcaaactag cccttagtat aggaaataaa aagtattcaa gtggaacatc 540

actcataact ataagggcta gtttaatgga acatcgccca taatacatca gccctaaggg 600

ctagttggat gtatcatatt atttcctttc taagggccaa ttcatgattc aacttctcct 660

tcatttcaca gtgatccatc ttagcatgat ttctatgaaa aatatataaa accaaataat 720

agggatcgat gttaagctta aaaataatgg atgtccttgt taaaataaca ctaaacccaa 780

atactttgag ccgcgacctt aaatcctaaa ccatgtacgc gttgttgacc acaagaaaaa 840

ggaaaaaaca tgaacaaaca tcattttcta tatatcaagc ttgcaattgt gtgtagggaa 900

tgtaactcta tagcaaaggt atacaataat aatgtcacta gctgaataca caagaatatt 960

gtataacaaa gatttggttt ctaatgtgct caatagggga acgaggcatc actgttgt 1018

<210> 162
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349412_G1, chr10:145290497..145291548, Cluster 1

<400> 162
gtcggagtta tagaggaaaa aacatttttt ctgtattgtt taatataaaa acacatactg 60

tactagataa agaaaacaca tagtcttccg ttggtaattg attgagtgag tttatttta 120

gaacaaatgg tcggaaatta tatgcacgac ggtatgaagt ccgtgaccca aggggaatgg 180

atcaggcttc ccactttcct agtccacggc gcgtggtgca gtacagctac gggtgataga 240

caagtgacaa cgatagttat tactatatat atacacgata ctttagtatt cccggacgac 300

aaaccatgta gaatgaatga tattgaaccg atttgaatac atagcaaatt aaaaaatatt 360

ttaatttatt ctaatacaat ttaatttata tggaattgaa ataactgaac aagaccttaa 420

tacagagcaa gtaagtcgaa actagcatgg catgactatt tggatttgcc gtgggtggag 480

atggctcttt atttgtagcc acagctggcc actaggcaat gccgtcaagg ccggcgtcaa 540

caaaaataaa ggtgatgatg gacaatgttg ccttgtcttg gttgggtccc tactgactag 600

gacgtactga caatgcagat gcaggcttgc agcgcaactc gtaaactttg gataggaata 660

ggagagaata tatatccgta ccgagaagaa aagttgttag tacgtgatga acagcgtcaa 720

caggggcacg ccgagccgtc ctggtcctgg tccaggtcca gcccatgctt cgtcctcccg 780

tgttctgtgc atcagacact tgttgcagag tcagcatgtg catccatggc taccggtact 840

gaggtacacg ttgtaatagc catgtttaat atctattgca tgcgctcgcc cccacgtact 900

tctcgctcct gcaccaacac tcctgtttac cgccacattg actatatatc atgatagcgt 960

taaaaacctt atactcagac ttaggaggtg gaaaggagaa aatggggaag tgggccgcag 1020

gattaggagt tgggccagaa gggttctctc tt 1052

<210> 163
<211> 1301
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35783_G1, chr1:216573197..216574497, Cluster 1

<400> 163
agtaaatctg cattttcagt ttattgcgat aacggtctta tggttagatc cgttgtcgat 60

ttttctttta tgcgttaatc atgttgagtt agttcagatt ttctgttcta ttgtcatgga 120

taatatctgc tagtagatct gggtttttcg ttttatactg cattatcaaa ttaatcttag 180

gccatgtgaa ttttccaaca cttcgtccac cataacttgt caatattttc atgggttgtc 240

attctacctt aatttttggt tgcgctctgc cactgatcag cactcgtgta tatagatgaa 300

acaaacttac cgctgattga ttattggata atgaatctgt catctccatt tcgtgggctc 360

tatatataat agccaaatgt cacaacgaca ttggttatgt atctcgagag cgttgcatgg 420

gagccaaact cccaactgag acgtacgcgt tgttgcggtt tgctgtattt tattgttgtt 480

tactgtattt tattgttgtt tcgttaaaag tacgttatta cgttggcttt tggatcgaaa 540

tatatcggat gctattgttc gttcgttcgt tcgttattgt tgtttcgtcc gtacattctc 600

tccagaatct ttgacaaccg acacgtccgt accgtacgtg ctaacgacgc catttcgcat 660

gaatgcatgc atgcaacggt tgacttttga tttcgtctcc agccttatct tccagagcta 720

gttctcgagc agctgttgcc gagcttaaca ttttctaatt aaggatccat ttgtcaactg 780

agatcatcgg tagcagaagg acaaactgta ggccagattt aatcccatcc atagagaaat 840

aaacaacgtt tgattaattt agttaggtca aatcctgaaa gggtttacgc ctcctctgtt 900

acgaacagcg gcgttcaatt cacaggcaat tcgatagatt ggagtcacta attcgttttg 960

ttcttttctt ttcgtccatg taacggaatg cagaacatac tcgctaaaac gcttgggttt 1020

gtttgcttgt tataagtgga ttaaggggg ttgtggagga aatatcccct tcaatactct 1080

tctaaccaaa caagcacttc tctgtgtaga ggaaactcgg atacttcgag aaaattttgt 1140

cgtttacagt ttgaaccaaa ctaaatctgt agagttttgg agggatcaac tcgtctaagg 1200

ccaccttcaa ccacacccca aaccttccca ccccacccca cgtagagtgc catttgggga 1260

gagcaggccc tccaacagct ccaccaacca ccgcatatag c 1301

<210> 164
<211> 1023
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_37354_G1, chr1:224923320..224924342, Cluster 1

<400> 164
taagagaatt ctaggttgca ttaacgcatt aagaatgttc ttttttttg tctataactg 60

accaagctca tgatactgaa atatatgata ttgagttcga atatgtttaa gaggaaacta 120

aaggtgtcgt tgcaacttgc aagctaggac atttatcggc ctcaaaatca gaccaacaaa 180

ttgatctcat tctagggttc cgagttgcag aatatagttg tgagatggaa attgacgaac 240

acgtatgcat gcgccccatt tcagagtagc aacggcaaaa ctgtggcttt gttttcactc 300

tggcagaatt tcgaccagaa ttttgtgtgt gtggtgattt ccgagataag gttgggtata 360

tgcgagtgag tgcatgaatc gcaaggcgag aggagaagag agagataggg gatcagcaga 420

ggatagtaca ctacgacgta gcttagtgct actgcactag catggatcgg agaggggtgg 480

gcatctgcag agcagagaga aggtggtggt ggatctccgc cacacacaca cacccggccg 540

cccggccctg cggctgcatg ctgctgccct tctgttagta ctgactgcat ggtgaggtca 600

aatcaccaaa agtgaatgac gcctttgttt ttcatttctg catgcccttc tctcttctct 660

ctctccatac gatacgcctg tgcagtatta ttattaataa taatagcatt catgaatcat 720

gagggcccat ctatcacatt gtttttggac acatacactt catgaacaga gcacgcgccc 780

agctgctgct gcttgctggt actccctctc tcttgctctg cacgcctggc ctgtgacgac 840

tagctagtag tgctctcccg gggccgcgcc ggccgccggg agaccaagca agccggtgac 900

ggacggtgta tgaatagcta gtacgtagca tgccgcagta gcacctacgt acgtactcca 960

ggcctccagc ctccagaggc agcagtagct ctccctcgat ctctagctgc tggctaagcc 1020

cta 1023

<210> 165
<211> 1237
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_39485_G1, chr1:235814201..235815437, Cluster 1

<400> 165
tacaatttat attaattatt ataaacaatt gagtatgatg ttctactggt tgacaacttc 60

atctagtgtc tcgcaccctt cttccattaa ggtgtgggtt aaaaccctaa ctcctgcatc 120

gtctcttctt aacataattc acttcatgta ccacttttta acataataac ccacctccta 180

caccactttt taacatttta cgctgagttg atttggaaaa aatgtatgga ctttttttata 240

aaaagatgaa cgttgaaatt ggtgtttaag tatagacaaa gagaagggat atggatccgc 300

cacctatgaa agctcaggta taactaacct ccctgcagct ggcccggtct acgcacgcat 360

ttgcatggcg acgcgaagat aataacaaca gcgacatatt tccctttttgg gaacctagct 420

agctcttgga cgcacgtcgg agcatgcatg tatgtacacg tatgatgcgg tggtgatcac 480

gcaaggtgcg tgccagccag tgtggcgcta cgacgtcgac gagctctaca tcatcctaca 540

tgtctcgaaa ggcaacgcac tgcagactgc agtcggtgtg tggtgccgag gtgatctcga 600

tcggctaggg gccggggcag gcgtgattgc atggaggaac gacgcgcgtg gcgcgagtgc 660

gggtgttagg tcggcgggat gatcggtcgg agtggtggtg gcacgtcaag cagcagctgg 720

agatagctag ctagcaacca cggtgggtgt cgtcgtcgag ccgctgcatg tgtctggtaa 780

cgtccgcatg gcatagcgcg cggcacacgg cgttcttttt tgcgctgacg atatcgacgg 840

agttggtaga ggctttttt gacggtgccg accgtatccc tgtgtcctgc gatttccagc 900

ccggcccaag tgtggtctgt tcgtggtgag ttcgaggccc ataagggcag aaggctgtag 960

ctgcttctag tgaccaagcc tggccggtgt acacgtactg taggctgtag cttgtacgaa 1020

gatacgtgac acgagatatg gaaaacggaa aacatgccaa taggcaatag ggttcggtca 1080

aaccactttg gttccagtcg atttaaaact ggtattatta gtaatagata cagggccgat 1140

tgtaaatccg gagatccgtg caagctaagt ccctcaaccg gtactaatat tttatgtaat 1200

tcggtaccga ttcaatacaa gaaccggaac aaataca 1237

<210> 166
<211> 1113
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40822_G1, chr1:242426055..242427167, Cluster 1

<400> 166
caagatggtt atttaggtgc cactatgtga tagattgatc atgcaaaggt ataggggcgc 60

atggaagctt attttggtat gatacagatg ttgtcaaaga gatataaact catgcatata 120

caatagacct agtgaatttt caccttagac accactgaca aaggataact tataatctct 180

agtgtttggg acacattaga gttaagacat atgcaaaggt tggaagaaat gggactaaag 240

gatgcctaaa gcatgtgttg gaccctaatt gacatgggca ttggactaga acaatactag 300

tctgatggtt aaccctagta attgatcaga ttggtcattg aaccttatga tattgtctag 360

cggatggcat caaaccaatc caagaatcct agtttttctc tggtcaattt atgaagggtg 420

tcagaccatg tgacttggtc taatgacatg cattggacct gccttacaag cactaggcat 480

tctctagtta tttttggaaa aaacatcaga tccaagtgct ttagtccgat ggttgagaaa 540

aaggggtgt tggactatat gggtgtatta tttaccaagg cggtcccact gtcagacaac 600

ctgtgtgtct aggaataggg catcgaacta tgcgttttaa tccaacgaag ggcgtccaac 660

taatgtgatg ctagtggttg ctctcccatc agtttttgg aggcattggc ccctatggtt 720

tatgatccaa cagtcgtcga actaggagtg tcattttact ttacctctct tagctattgt 780

tgtggtagta taggaacact ttaactcaaa gtttatgatt gtgttacgtt gttgttaatc 840

agatctcgtt aggcttgcta gtggtaaaag ccacacctag ctctagttac taggctagct 900

agctataacc ctatgatcta ggaggcgctt caatgtttaa gctccacttg aacactatta 960

taatgtgcca ttagatccac acaactatgg ttggtagccc ctcttggtga caacaagagt 1020

ccgcctatgt atcctgaccc catcgtctag tactatcgta gggtgcatga tcttgaggcc 1080

tctctagatg agcatgcacc ataatatcgt agg 1113

<210> 167
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42916_G1, chr1:253031866..253032961, Cluster 1

<400> 167
ttaatgggtc gttgttgttg cacaacaaag gccaatgatc agagacagtt ctggtatagg 60

aaaatccttg atgcccttga tgtattgagt cgtatgcaga tagaatattt gggtacatat 120

gctagatgtc aaaggaaaaa agtgtacgta taaaatttta ataaatagaa attggttttc 180

acctcgaaat cctagatgat cccattggta atcatgtctc tagtcaccaa aggcctttgc 240

tctacagaaa gtcttcgaca ttcagagaaa gagttgcaac ataattgctt tcatcctatt 300

gaaactactt gctttttaac attagcttcc accatgctag gccacataca aatccataat 360

tccaccaaaa agaaaggccc cttaaaggga agacctcgac aagtcggcat aatgctcaca 420

acacatatgc caaccctctt gacccacatg aagaaactaa ggtcaaagag aaataagtac 480

ctctagcaaa ccaataacca ttctaataag ggcaaccaat tctggaccga acactagggt 540

aggtatttca gcaagtacaa gctagcctac aaaggcttag cgagaaaggg acaggttggt 600

cgcgaacttc gctgtcaatc aaagagcaac ccatgcctac caaccaacaa ccaaagtcag 660

gcaacaactt gcaatcctac aagtagaaat tttgagcata ctgtcaaact ctcctacatc 720

aaacaacaat ttcactaacc caccacaagc catgtgttgg caccaaattc tgactagatt 780

tgtacaacca tattggttga tgagctcaat aaaaaggaag ctactcgacc tatgcagagg 840

gataggcccc acagaccgtg tatcttagat atacattgga ttagattaaa gttagttagc 900

gagtgcttac cacttcaagt ccaaggacta taaaatgtgt agttcatgat aataagaatg 960

agaaggcatt cattcatcca agcagcgtgc gattcacatc ttctctgcac atcgccacac 1020

ctttcacaag ggttttccaa ggtaagcgcc atgcttccct ttagtcttta actttgtggg 1080

agcaagtaat tttaaa 1096

<210> 168
<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45568_G1, chr1:267173577..267174667, Cluster 1

<400> 168
atttttaaa ttttttatcg tcttgtccat tttaatctgg cccaactgtc cagcccactc 60

gccctcactc gctcgcgtcg cgtctggccc gcttgcccgc gtccagctct acccgtgtgg 120

ccgctgcgtc ggttccatga ttccatccta ggcagccgtc ccgctcccgc acgcagcgtg 180

cctgcgtggg cggaaagcat cgagccagca gcgtcggcgg gtggaccaac ggagtttgct 240

tctggcctta gagaaattcg ctacacgggc ctaggcccat taatgagctc tatattttac 300

gatataaaat ttaaaaatca aatcgaatac tttatttcta tttattttta aattaaaatt 360

aattaagtgt tctaacttat tgtgaaaaaa catttaggac agctgacttc ctccttaccc 420

gtatgccgta tcgcctgtac gcctcgttta gacatccagc acaagcttcg ttgatggaga 480

ttgcttggtc ttctagctga ttgagcggac aaaattcaat gcgagtgata cctgttttgc 540

atagcaagaa atgcgtctga ataagtagaa cttgcatggt gactgactgt cgaatggaac 600

tacaacagta actgaaattt ataggaacaa ataaaaaagt ctgacttgtt tcaagcttgg 660

ccttttcgga cgacgtaatt cacgtttgta caaaggtact ctaattgttt ccagctgatg 720

ctatataact atcatgttgt tccagtacta tctttcttaa ggaccaacca ggagaaacca 780

tgcattgtag tgctaaccaa gctttttttt ttgttggttg tgcaaatgat gctggtctgc 840

gtaattggag ctagttttta ttacgatctg tcttctaaac cgcaaacttt tgctctataa 900

ttctcaattc aaacatgtat attattgtgc atttctcttt aaaatggtat catattgaat 960

cttgtttctt gtttatatgc acgctgtcgt ttttagctac aattttggaa ggaaggaggt 1020

tcacagcccg ggtgaggaac gacatgcctc tccccaggca tattaatcga tcttggatgg 1080

aagtttccca c 1091

<210> 169
<211> 1213
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46699_G1, chr1:273308074..273309286, Cluster 1

<400> 169
ctgtcaattt gaattaataa gtaaatacga ttgagttagg tgcaattcag tcacatctca 60

cttgattgtt tcatgaaaaa gggactccaa acaaataaaa tctcgaattt ttcatgacaa 120

aatagacaaa cagcggatat ttaattccat tatcaacatg atctgattgt ttatagcaga 180

aatcccaagt aacaaatttt caggtcgaga ttcagagacc accaacattg tagacatttt 240

ccaaaagcta cacgaatatt atagttagat gacataatga tgacgtctcg attatgatgg 300

tatccaaaag aacaaaaatt ataaaacatg tatgaatata acatgagcaa gacaatagaa 360

gagtgaccaa tgtcaccatg ccaggcaaag cagtgctgaa tgcaagtagt taaacatgct 420

gaagacttga aacagaaaat aaatacaaag tccaagggca ggcccttcag cagaaccata 480

tggggctgca cataaatagc tacagaataa tgccactggt aacatagcct ttgtgcaaaa 540

aggcaaccat gctcatcgct tagttaactc atgttagaaa caagccatgg ttgctgcctt 600

gctggaactt cctatcgaaa gataattaaa gcatggaacc tagaagggct attggacttt 660

gtaatcatac ttaagtatga ctaccctagt ctatgtacga gattcacgac aatgtagcac 720

tatgcaatga atcatgtaag tttcaaatgc tcaggataaa atgtacaagt aattctctag 780

ctaacagact aatacccgaa cgggttactg tttcccaaag aacaaactca aactgattcc 840

tatgaactgt tcatcttccc tcccacaaac acgccagaat ttgctcgtac gagaatacgg 900

taaataggcc aactatataa cgcacgcaat ctacatcgcc aatagcgccc tcgcgccgac 960

cggaaaaggg aaataactac gaaaaaattc gcaccaaacc aaagcaacaa ttcccggcga 1020

agcgcttgct ccgctacaga tccgacgaac cgagcccact aacacggagc ccaaagcacc 1080

aactcgaacg gcaaaccaaa atctaaacaa cgaaacaatc caatctacga gcagcgcgga 1140

tttgtgggaa gacgggacac gcgggaggag tagaggaggc caggagaggg gtttggagag 1200

tttgggggct tac 1213

<210> 170
<211> 1309
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4924_G1, chr1:25186688..25187996, Cluster 1

<400> 170
caacaacaat tgcaacaaac acctcataaa accatctcat aatttttagg ttgaaattgg 60

taccaataaa agaatttatt ggatgttaaa caaccgcaac caagttggca gcataatgaa 120

ttactctgac taaaaaatgt gactcttaat tctttaggag tcaaataaat ttatatttat 180

ataacaacaa taacaacaaa ccactttatt cacgagcaaa ttaagacaga ctgaagttaa 240

aattcaacac aactcacaag ttaaggttta gacgcatgga taattggtaa tcacgcactc 300

ctgttcaaat aaagtattta aaatttacat aaacttacat aaaatatatt ttttgtcatg 360

acaaatagtt attgataaat aaattataaa acattttgta caacaaatta tttaaatata 420

ttactatcga ctataatttt aagaaagttt ctttcgttct atgagctgca ctttttggac 480

ggggagagcg tagaaaacac gaattggaac acaaccatta cgctgctgcg tacaatgaac 540

gaatcgtaat cagtggtatc attgtcgagc actcgggctg ttctagaatt tgcacccaag 600

gacaagagtc tttattacat gcaaggacaa gtcattacat gcaaggacaa aaaaaactcc 660

cgcgggaccc cagtgcctag gcaagccaca tggcaccctg ccgatcacaa gaagcccagc 720

caggctccca gcgcctcgag cgccggcgtg ccgtgcggcg tgcgcgcctg acaccgcacc 780

acatggccgc cgtgcgtggg cagcgcctac gcgcccaggc gactcgtggt gccaggctct 840

ctgcggcttc ggagtccgtg ccacgccgcg gggtccatgg accgttccta ggggccagga 900

cgaagctgca ccgcacaacc cgtgtgcgcc tgacggcgtg atgcgggcgt tccaggagct 960

tccgccacgc ccgagagcgc gcggggcccg cgccaccacg tgacggcgca gaagagctcc 1020

acgcaaccac caaaagcaaa aaggcgccac ttgctgggtg ggctcggcga gctagcgatt 1080

ctcagccacg cgcacgccgg cgctcttgcc ttctgccccc cgtactccct tgaaattctg 1140

aaccttcgtg gagaaattta cgtccgcctc accgatcgat gcagcataca gcctacagcc 1200

tacaggggag cgctagcacg tcggatgttt ccgcgttctt gcgttgcgca tgacatctcg 1260

tcgtcgtctt ttcctccctt ctccatccta ccacacactg acacaactt 1309

<210> 171
<211> 1228
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52490_G1, chr2:3903176..3904403, Cluster 1

<400> 171
accccaagcc actggagttt gttctatctt cggtgtcatc tacagttctg tctcctctat 60

tttccatgtt ctagtggaga cagttttata aggatccaag ttaaagtgtg cctgctgcct 120

agtacgtaac tgagaattca atttagtgtg tgaacacact cttaaattat acttaagatg 180

ttttggtatt tctagattca tagttcttgg cacgtattta gaagttgctt ggaactgctc 240

taagttttag tttcagcgtg cagctactat ttataataca aatgtaaata gtattaaaaa 300

cattttaat aaaaatgaat tatctaaatg tcttctaaag attaataact ctatctccac 360

gagttttgta gctcctaatg acttgttcct agggcggata caagcactgg accaccctgt 420

ctgtggccta gtgcatgatc cgcatgtctc tagttttatt tattagtttt agaccaaaat 480

atattataag aatactatat tcaatagact agcctagggt ttgatcgaat cttggatctg 540

cacctgcatg ctccaccaac tccactaaat tttttaaagc tagagctgtc ccaaagaagg 600

ccttagacat aacaataaaa tctaggtgca tagcaaaagc tatgaaacta aaaaaataaa 660

acacctactg gtttatagga gtagatatca tttatattaa atttatcctt gcattgccac 720

aagtattggg atattattat gcatagtata tacgacaata aaaggtacac catgaaggga 780

gaggtatgct ccatgattct ctagcttcaa gcgctgattt ttctagtaga atgatttcaa 840

gtgattctct agcaggagtg actctatctg atgaaaaacg ttttgcaaat agtatgtaaa 900

gtgattctcc gaggggttgg agagtgggta gtagactggg agcggtgagt agcaattttt 960

ttgctcccac tctctagtac aaaacagaga ctagattcac tctgttctta ccatggagca 1020

ggccagtttt tcaccatttg aatgcacatg agttattctc gttgtgagcg aagctgcgag 1080

acctctacca aatgccccta actcgattga gccataggtt acaagtaact tgtatatagg 1140

gtatgtttgg tatggttcca ctacacctta gaataatttt tctccaaaac tttataagga 1200

gcacctctac tccagagtgt ttgagatg 1228

<210> 172
<211> 1207
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52503_G1, chr2:3989247..3990453, Cluster 1

<400> 172
atcagcggaa ggcctgctaa atttctggct agccaggccg aggtcgaatg gcccggcgtt 60

tgggcccaat tccatcgggc tcaggtgggc gcttgaatgg catggccgcg tggggagaca 120

cggccggcca cacggccgcg tgggcaaaag ccaaaaggag gacggggtct ctgtctgcca 180

gtgctcagtg cgtgtctagt gtcttgtcta cctacatcca tgaacagtag tagttctggg 240

cttctggcaa cggtcttcgt gggggctcta ctgtatatgt atgcagtggt gcgcctgctc 300

atctgctcac ctcacccgtg gaactcttag attttatacg tactactaca actcctgtca 360

ccgtttttta agcaaattta ataatacaga cagctagttg caaggattct agcagcctac 420

tatttattgt aaccatatag tagtaattac ctcttcaata ttaatattaa tgcaggaccc 480

cttatatctc tcacaatttt tttaagttcc ggtctccaaa ccaacagtaa gtttatagtt 540

tatagttcgc ttcttctctc tcatccgtat agcatttagt gcatgtttgg attcatatgc 600

taaagtttag cactacatct ttagctaaaa atttagcact tgaagagcca aacaggtgaa 660

agtaaactag taaattttag catttataat agcagtttag ctcttcaagg ttcagcacat 720

gatatccaga catagccatc ttgcatcttg ctctgattcg cgcatccgag ccatttccct 780

gacctcgcga tcgcgctcca cagggacagc aagaagacaa gcgggtagaa gacaagcggg 840

cagattagct ccagatttac atattgattt cgctctctgc tagctgggca gcaggatcac 900

gtatcggaga tgtagatctt ctctgttccg ttggagttaa ggtttgaatg cccataataa 960

caatcatgac agctttaatc taaccaaaaa gatttgctag ctgcatgcta taggcccggg 1020

acctgacgaa aattaaagca accggaacga gtgtggcggc caccgtcatc gcctgcactg 1080

cattgctact agtccaatcc atatgtgtat ggaagattag ctgatgacac tgacacatac 1140

tacgtgcaga tcttaagact agctagtact gatagaggca tcataattga ggccaccggg 1200

ccttatc 1207

<210> 173
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53448_G1, chr2:9100674..9101703, Cluster 1

<400> 173
accgtccact atggtcttct agcccttgcc ccttggagat tccacctcgg cagcttgtcg 60

tgacatctgc gtgttcgtga atcgtgatga tacaaaaagt tttgacagga cactcatcct 120

cgtgacgctg caggttggtg gttctcggga gataataatc tgacagcacg gtaacagtaa 180

tccagcagcc aactctcggc attctccggt ctgtactcta tctgtctctt caaagggttg 240

ggccttcaaa gcccattgaa gctcagccca tggtaccgtt atctgcttag cccatttcaa 300

atgcccttgc aagtattgaa gtatcctagt atatcttttt catccccaaa tgtccacact 360

tgaatgtctt ttcttataca gaacaacaag tcctggagca tccgcttcca agttccaact 420

gcctagcact tgaagatgag gtattggttg ccaggacagt atggatggta atagatcacg 480

atctaaatgt ctcttcacaa tttatttaag tccataatca attatggttc aaaataaata 540

caaatagagt ctaattctaa tctgatcttt aaattttgtt gtgtaaaact tagagcccat 600

taccacccat agagcgagga ggattaacaa gtctgttaaa aagaacacat gagaaattct 660

gttagcaata ggtattgcac taccgcttag gtgtccgaca ttacggtgtc acggtgctgt 720

caagctcaga gcgacactgt cgtatataaa cggacttttt caagggtaaa ttaaaaatat 780

ttgtcaatga aaggtagatc gagtaaatta ctagctttct aggccatgat gatgagatat 840

tgtctatata tccgtacttg cttagggatt tgactatatc cttggtttag tcaattggaa 900

tactaatgat ttattatctg acatgcttag ggatttttt ttttgactga gcactccgtt 960

ttcgtatagg gatttgctta tcttcttcac tgttgagaga accgacaatt actttaaatg 1020

tgtgttccag 1030

<210> 174
<211> 1101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53666_G1, chr2:10029215..10030315, Cluster 1

<400> 174
ccggaacgat gtggatggag gcgcaccgtt tgccaacgac agtgtcggtg ccgaaggtgt 60

ggtttttca cgacgatcag taccaattag gacgagcgca acattgggac aagtctcgtc 120

gttaccgatt attgcttgag cgttttcagt aataacagtc agtagccaac atgtcacatt 180

ctgattgacc agcgttatta tatccgtttg aatttgaaaa aaaaactcta aaatatggaa 240

aaacttgatc caccttataa atagaggagg ctgattgcgc tcgtttacac agtttcatca 300

ccatatctca agaccacttt catgtacaca ctttcatctc tgatttgata taagctggag 360

tctcaattgt gaaacgttca cgcatttgct caataagcga tcttcacaat gctccgagaa 420

ccctgccaat gttgggcaag tctttttcga ttatctttct cctgtccacc atcaaggcaa 480

gagaaagttc gagctcgtcc ccgtggacta actcctcaaa ctctattttc ttattcgtat 540

gctcctcttc atattgataa cgaccaagtg tcgatactcc tccttatgcc aatgagcctc 600

caacaaatga cactccttct aacactaacg aaacaccctc caccgtccgt ccgcccgatg 660

ctcgttctct acaacctttc gcttataagt attctcctcc atatctacat taatatccac 720

acgttgtggg tttgtatggt gctcctcatt catatgcacc tctttatagt gctcctcctg 780

tgtttcctcc ccttatgatg ctcctcttat atatagtggt cttgctcctt cacagcctcc 840

tcatgcacga gcagtcacat cgatgtggtc tccaaccagt ccatgtactc cgatgcatcg 900

tagttctaac gacgatggga ctagactaag acagaagatg aaaggtttgt gagtacacat 960

atatctttac gaattacata ctttttttgta agtagagaac atttttgtga gtttgtacat 1020

ttataggtac acacgtggtt aatacactcc attgaacgaa aatgattggc atttagggtt 1080

atatagcagt cacgtacaac t 1101

<210> 175
<211> 1184
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54741_G1, chr2:15854870..15856053, Cluster 1

<400> 175
gcacgaccta gttgaaccac agcgagctgc gcgtgcatta gtatataagc tttgctccga 60

gccaggtgtc gccgcgtcgt cgagcgccgg ctgcgcatgc gctccatgct cgtcagttca 120

tgcaattgac gtaggcagtg gcgcacgctt gagccggaca gccagtcggt acagaatact 180

aatataatac taatatatgt agtataaaaa gtaaaatcaa gtgcgtaaaa tatggagagt 240

gttggtaggg tgagtagagt actagagtgt ttgatccttc cttcgtatat atctcccttg 300

tgtgtgtcga gtatgcgtgc ctcatgctga agttggatgc catttttta gaacataaat 360

gaattccatt actcagagga tgcacagaaa tcggaagcta caatgaatcg catttataat 420

caaggataga atccataagt ggatcgtcgt cttcggaaca ctcacaccct aacgccgcta 480

gaccatgatc tctgccccag ttacatgatc taggaacaga agtatgaaac agtgcagccg 540

ggcaaagctc ccgtatttct gtcatcagga tcctgctagc gtctggctca atggcagcct 600

gcacacaaac aatccacgat ttccgcatga aaagagtcca gtatgtggtc gtaatcgacc 660

ccggccgacc agcggtatct ccgtacgtct tcgtcgcaga tgatatggct gttggattga 720

ccttacctag tttggccaag gggttaaaca aataaacatg acgtaaccac tctgtcttca 780

tcggagacgc gacagcgcac cacgtacata aatagaaaga atgccgacgc atgaaccaac 840

cctcatcggt agtcttatct cccgtgtgcc tacactacac gaaacatatc tattttcgat 900

ggccaaatca acttttcaac tgctattaga ttgttaactc agacgacagc ggtgcagagc 960

acgcgagtag gcgagcgagc ggacgcaagg tgtcttctac acaatcttta ctgtacctag 1020

tagaccggtc gagagcgtga tcaaaaaatc ctagaccgta tgggatggta gtcttgccga 1080

tggtagtctt gccgtatgtc aaaatagccg ctcacctcac atgagaaaaa aaaaagtcaa 1140

atcaccgatt agttcgaccc tgtctcgatt cgactcgtaa taag 1184

<210> 176
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56610_G1, chr2:26114201..26115262, Cluster 1

<400> 176
gattgtttta aactgcttgc tgctggttat tgagccctga catgaagggc aggagaccaa 60

ccgataggtg gagccatgac tagtcaggtc agcagtctct gtctccgtgg ggtcccacca 120

ccacgtgcac ctgctaccca ccttctgttt gggtggtgtc tggtctatgc tgtgtgtatt 180

gtactggcgc tgtgcatgcg aaacaacttt gtttttctct ctcgtttttt aatatatatg 240

cgtgtaaaaa atgccaggag aaaagtctag cctgtatctg cagttgtgca ttgcatgatt 300

ggaatcagcc tccaagcaag gagaaggagg atgagatgga agcttcggaa tcattgcaga 360

tgcagcgaac aaatgaaagg aagtgcaagt gctagtacgt atataatagt gtggtccaaa 420

ctccaaatag cactggcagg ccaactattg gcccagccat accaaagcca ctgaaacgag 480

acgagagggg cccaccacca gcttaccgct gttcgttccg ctaaaccata ataaacatta 540

ttcatcccac ccgtttctgt ttggaagttg agtatttttt ctgttttcga ataatattgt 600

agtatttaag atactattat atttttttcaa tatagtgttt ggtacaatct ttaaaatttt 660

tgttttcaaa actgcagttt tagctatgct gtagtatttt cacattttgg aaacttatct 720

ctaaaccaaa gttttcaata ccgtggaaaa aaaatgtaag tatgtcttag catttcaaaa 780

ctatagtatt ctaaaattgt agttttcaaa tactttattt ccaaacagag cctttgctaa 840

ttggcggatc taggggggtat gccaggtatg ccctagcata ccccacgtac acagcgtata 900

cacaatatat gtacaaaaca ataaacaaaa ttaacataaa aagatgttgt gataatagtc 960

ttttaaatta tgtttccttt gtatttaggt tatggcctca tgatgtatct aataaattct 1020

tgaaatgatt tgttggacag acaatacaat cataaattga cg 1062

<210> 177
<211> 1079
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5728_G1, chr1:29174416..29175494, Cluster 1

<400> 177
tcctaaattt tttctggctc tatccctagc tatcgaatgg tataattaga gtacaagaat 60

ggaagcaaga tgcctccctg atgcatatag caatatggga ttacatattg cctaacttat 120

aagatacagt atatgcacgg tagacaacag tgcgtagttt gttgagccat aacttttgtg 180

cacatttttt aaatgggctg ctcaatcggt ttctttgggc taggccattg ttagagcaaa 240

tgggcttggg aagtttgctt gggacttgaa agatgaagac cgtcctggtc ctggaagacc 300

tggactggat gcaattgaaa gaaccctacc tgttattcaa actatatctt agcatgaaaa 360

acgatagcta gttttcccat gattgcactt cttctgtttc ctatagtctg ttggtaacaa 420

ggaaattatt tcatgttcct gcgtttttct gaaaaaaaaa ctaattcctg tggaactttg 480

cttcttaggg gccgtttgga acttatgttc ctgcgttttt ttttcctcag aaattgaact 540

ggttctgtaa aactgttgca tgattctggt gaagttccta cgttcgtttt aattttccgc 600

tgagggttgg ctggctcgta tctgcttccg cagccgagag gggttcacaa atcacaagac 660

agcgatgaca ttaggctatc ttgagcagct tacttatatt tatatttaaa ctttacttta 720

cgaatattaa aatttataat acaaaataat aattttagat aaactataaa tagactccta 780

catacggtct tactagatgc tagggcagtg gcagggcagc aaagcgacgc cgatgcgcca 840

tcattctctt tccgccggtc atcatgtggg ccattcgcat tggcatgttc cggccctatc 900

gtgctgtctc agtacacatt gaaagctgat ggcactacac taggccgtca agtccaaccg 960

atgagcgaca agatgggccc tgctacatgt gtggctccaa ccaactattt gggtttagtt 1020

tggctccacc tccacttgca gtcaatcgga tccctttctg tatttccctc ttattttct 1079

<210> 178
<211> 1282
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61498_G1, chr2:54754638..54755919, Cluster 1

<400> 178
aatctcatgt tagaggttaa tgtgctaaaa ttaactggta aactgtttgc cacgagaatc 60

tggcttggat tcggcgggga gtatcttggg cgatccgtaa gatttgacag gttctgcccc 120

ggaaccacgg atagcttaat gggctgaagc gacctgtcgt accacaccat cggtcttggt 180

tgtgcactgc tgctgcaggt gtgtttggat ttggaccaaa ctacaccgag tgggcttgga 240

atggaggcct tgcgatatct ctggacccaa gcaagaattt tgtggacgga ggagctagga 300

cggctgaatg gttgacagtt tccgtcgtcg gcagtccggc aggaatcgac ctttttgggg 360

tgcgttaaac tgacgaaatc gaccttatcg ttccacatcc gtactgtaca tttgacttgt 420

gcttctgtgc agtcatgtga gatgatttag catatggctc tactctatct atcttggggc 480

acctctgctg ctaaaactct ggagtgcact gtagagtttt agtggttttc tgataggaaa 540

aatagcttct aacttcagaa acaagggttt gtcagcgaaa gtacatcctt gctgcggttg 600

ttggcagagg gagggggggca ttgccggata aaccgagcgg acacagaccg agatggagaa 660

ttgatgttat ctttttttata gaatgtttat tagatttgat aacttattta taatttttctg 720

ttgatattag aatattttat ggatttaatt gcatacgtct atatagaggg gtgaggtatg 780

gggaagctca ctgcgcacga acgtggatcg atttttttatc gacaaacaaa acattctctt 840

acaacattca agatatacta atgtatttct tcaaacagaa tcttattatt ttgaagcagt 900

gaaagttggg aactcgaatg tccgaaattg aagtgggttc atttctcgtt aatatgtatg 960

tatatccttc cgatctctga gagaatttga gtttttagac tagctagttc taattacagg 1020

acattgtaaa tatatagttt gcagtggcgc taccgtggca agtgccttgt ttgaatttta 1080

gtttttttttt taaagtttct gttgttgaga tgtacccagc agctgtaccg cccgcggtga 1140

gccggtgagt accttccgta ccgttcgctt tggagccacg tgagcagcat gaatgtccga 1200

ttttttttttt tatttgaacc caatctatga aaaaattcaa gtttagatct ctgcaagaat 1260

tcatgtcagt tttagactct tt 1282

<210> 179
<211> 1386
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7700_G1, chr1:40243435..40244820, Cluster 1

<400> 179
ctaggatcac tgtagatttg caagtacgat catgtacata atcaccctga tcctgttcat 60

gcgaccttac ttggctgcga cgaacatccc atcagcaccg cacctttttt ctatttatcc 120

agaagatttc cctcgcgatc gcgatacggt tccaccagct acactggacc cgtacatcct 180

acctgtcctg gcagtggcac gtgccgtccg gccccacgtc ccagaggaat ctcacatcca 240

gggccccca cacgacgtga caccccttcc acccccctgt gcctgtgcgc gccgccctag 300

cccaaaaaac ttgcagcgcg taccggacac ggacgccggg cagttgcctg ttttgcctcg 360

ccccgccgtc actacactcc cgcaccgcac tccctcgctc cggctcaaca acgcgcccac 420

ccaccgtctc ctgacccgcg ggacccacgc gcaacagatt ccctttttccc tccatcgcga 480

cgcgggtccc gccgcctgcc cggaagcccg accgccacca catacgcgac ccggaaaccc 540

catcctcatc tatcgcgacg cccgcaacgt cgtcgcgccg tcagcccccg tccgggcgcc 600

gtcccgatcg tgtggccggc gcgcccgcca cgccgccgtc gcggctgacg ccggcgaccc 660

ccgccccgac ccacccaccc agccatccct aaacgaggcg tcacgtcggg gcatttttca 720

atcgcgcgaa ataaaaaaaa acgcacataa aaaaacaggg actgatccat cgctgtcttt 780

cggtttcgtg ctctctcttt ctctcacttt ttttttgccc ctgtgatgat cgtagttgga 840

ggctcggagc ggatgacgat accaaggacg gcgaggagca acgaaaattc ggaagcagca 900

acgaaaaatg tttctccttg tcattatctc ttcttcttct ccgtgggaga taacaagggc 960

cacgaaaaat taaattgaat ctccggccaa gagtgaccgg accgggcggc ggcgggaggg 1020

agggagggat aggcggataa gcgtagggaa gacaggaacc aatggcggcg tgctgggccg 1080

acacgcgtcg gagttctttt tttctgacgt ggccggagga gtggcagatg ggacttgcaa 1140

gaaaaaaaaa acgctggtct tttcctcttg tgaaccgtga tactaacgag aaacgaatcg 1200

agaaacaaag atactccatt tttatattta tataaaaatc taaaaatagt gtcactaggt 1260

acattataaa aatgtttacg tgtttaatat cataggtatc gctagtcttc tttacaaaaa 1320

taattcaatt taaaatagtt ttttttgaaa gagagatttt atttacctag acgatagata 1380

cgggga 1386

<210> 180
<211> 1374
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_77899_G1, chr2:158960100..158961473, Cluster 1

<400> 180
atctgcccta tgttttccca tgtatggtca aatgaggtgt ttattcatac aaatctaagg 60

caatttattg tattactctc atgagttgat caagtgattt taattgataa taatttctga 120

ggcaaactat agttcataca attctggtta tggtaagttg tttcttctct tttcttctca 180

agtgatttta ctctcatgat caagtgattt tactctcatg atttccttct cttttcttct 240

gtttaagttg ttaccatagt tcatacaaca ctgaggcagt tttctttctc ctatatcttc 300

tattttcttc tcttttcttc tagcagtttt actgtcatca ggaggtgttt aatgagaata 360

actactagca gtttctgatt gatcctgttt ataaacattt tctgtttata gttcatgact 420

accaaacaat gcatcatatg ggcttggttc attttgacta ggcaaccaaa cattttgggt 480

tggctctgta gatgcgggct cccttgagcc tggtcctctc attaagctag gctcaggctg 540

ggccaggaaa ccaaacacat cctatagagt tttttgaggg tctctaatga gttcagtgaa 600

aaaaatacga gaggtgagct attggctctt cgttaagagt ctgtcttttt acgactttc 660

atacactata tctcttagct gtatttatga tccaggattt taggattata ccatgcaatc 720

tcttaatcgt ttcttatact tagaaaattg aactagtgtc tcagggttgt acatacactt 780

agggcatata caaaagcaat taataacatg tgtgttgagt catgtttata ggcctaattt 840

caaaaaaatg aagagtcgat gcttggtgaa gccacgaccc taggtcgttc gaggctggag 900

aaacgttacg ttgtgtgcat gcctctgctt ggttttacac ctccgttgtc gccccctcc 960

ccatccgatg aacactgcta ctgctatgcc tcatacctca tacgatggac gctgctactg 1020

ttacaaagtg tgtggagcat taattaagat acaagagttt agatacactc ctctatatta 1080

aaccctgtct taggtgtgtt ttatacttag agaattgtga cgttgtatct gtattgtacg 1140

tgcccttagg acacacaaat attagcaaat atgcaaatac gcattcaaca tcacattcaa 1200

aactttacat aaaacatttg cgggtatgct agcatagaat gcaatgagtc ctatgtcttt 1260

ccctttgact tacaagatgt acctgatgcc atgatgcaaa cttggttgta cggctgtttg 1320

gttatggacc tgtgcgtctc catgagtgta agagctgatg ctgcttgatg taag 1374

<210> 181
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7857_G1, chr1:40897068..40898073, Cluster 1

<400> 181
ttaggtagtg tttggatgca gagccaagga aggatgaaga gagatgggat gaaattattt 60

taatttgacc cgcgtttggt ttagagttcc agagtcagga tcaaagaata ttattcaaaa 120

atggtggatg aggtcatccc tcaaaaaata agggacggat cagcccagag ttgatcccgt 180

cacatccctc gttgacaccg aaccaaacac taccttagtt ctaaggaaaa aaaaaatcct 240

agaagactcc tttggttgtt agaaaaaaaa ggaaaacttc cataggattt aaaagtaaaa 300

agagctcgga cctgatagaa aatttcctag tgtgaaaagg gaacgctccc acgtttcgcc 360

tagtttcgta gtcacaaaat cgaacgagat tggagtgact aaaattatct tattcaatat 420

gtctctctgg gtggcccgtg cttaggataa aaaaatatat ttcaaacttc ttagtttctt 480

tatttttat ggtgtagcta aacaagtctt ccactaaatt ccttttgttt ttaaatccgg 540

tatggtgttc taaaggagcc gttattgttt gtgctatctt gttctccctg ggatgtgcag 600

tttggtgcag aatatttgac cgcgcaagcc gcgacgatgg aataggttat agggtgcgaa 660

tctgaagggc ccaacgacgg gcgagcgtcc gcatcactga acggataggc tctcctccag 720

atcttcggaa agcaaaaacg gcgagatgtc accgccgttc cttccgcgtg atagtatggg 780

cgttgcacca cacacaccac tgtcctaacc gaaaccaccg cagaatcgaa gcgtgtgcgg 840

gacgcgtctt gatgatcaga tgatgtgaca acggcaatgt gctcgatctt acgaatatca 900

caaaggccat gtaaaatgcc gtaataactt gtgccaggta aaatgccgta ataacttgtg 960

atatatgatg aatacgcttt gatatactcc cactgcatgc gtgcca 1006

<210> 182
<211> 1327
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7943_G1, chr1:41244616..41245942, Cluster 1

<400> 182
cgcaaaacaa taaacaaagt gctaatctaa aacaataaat aacttttcac tagagaacta 60

aaatttctac ttccagtttg aatgtgagaa ctcaatagtg ctaatctaat gctagaaagc 120

gttagcatcg gtaataacca ctcattcaca ggctggctgc agcagatggt gattcaccaa 180

tacataactc ttttcccttg tcacgtacat tgcatcattc catcgtaatc aaaactgcaa 240

acaagacatt tccatcacaa ccaaaactca aacacctgca tatcaatggt gtaagtgtag 300

aagcacaggg tggtcctcct agagttgtac tcacatacca gtccaagcct ccaggtgagt 360

ggcggccgag caggtgagtg gcgagcgacg agcaggcgag cgcggccgag cagaggagcg 420

gcgagcaggc gagcgcggcc gagcagaggg cgcggagcgg cgagcagcag gcgagtggcg 480

agcagagcga gcggctgcgc gcggcgagag tgggattgga gggagagccg ccgccaaatg 540

cccaaatttt gggtgggatt ggagagactg agtcaggatt tagggttttg cggattcgtg 600

ggcagccagg caggctgggg cagcggcgtt tcctgctggc tagagaatat gtatatgaac 660

agaattttgc tgttgcggct gctgctttgt gtgtccttca aggtccaaat tccaaaccta 720

ctcgagagtt tcagatacag cagggagcaa ttagcaaggc gactgatctt ggtaattagc 780

agcggagagt aggaagttaa tctttctttt ctgaagaaat ctatgctaac ctggatggct 840

aagcacgcgt ccggcgtaca aaacagccaa gtctgatggc gaaagagtcg atgcacacgt 900

gtaatttctt gttggagcat acttttgcga tcaatgagaa caggtgtgta ctactggatc 960

tacatgtacg gtatacgtgg cactgtcact gtaccagcat tagctccagc aggaaggtgt 1020

tgagtccata gtccgatcat gttaggaaaa cgagactaat ctttctcaat tgggcctgga 1080

attcgtgata aaaagcggcg acctggctta tttattatct ttatacaagc actgaagcac 1140

gcgtttttca cctagtcaat tcacttattc agaagtagtt gaaacaatgt tatgtctacg 1200

agagagctga attaaacttc cctaaatttt cttatacaaa ttaaaacatg caattaagcc 1260

taaattcact ttatacgctt aaattgtttt tatgtatcga tcaaaagttt tacaccttaa 1320

gtttcag 1327

<210> 183
<211> 1382
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7946_G1, chr1:41247023..41248404, Cluster 1

<400> 183
taacacatcg gaaatataca gtgagtactt gacctctcaa acacagttta caaactatat 60

gagtactttg tctaaaacaa aaagtgcacg aataccacat aagagcactt ttttattatc 120

gcgatttaac tcattgtttt cagatgttcc agaagaaaag gagaaaaacc tgttcaaata 180

tgacattgtt tatacttctt tctttgcccc atataataga gttatttggt aattccaaca 240

agaaggttca gctggcatat ggcgtcacta ccagatgctg gaaggagatg agacaacgat 300

ttcgtccatg aatgtacatt caaatcctgt accggtgcta ccaagataaa ggtcattagg 360

cttctgaata gtttgagccc acacgccatt atttgagtag acttcacctg ctaataaaat 420

ttgttatctg atgaactgtc aactgtgcat gccattataa atcataatat attagcatat 480

cccgatggat ctccacggcc taccaacttt ccgatctagg acttgggaaa tctgctgcta 540

cgaattacgg aaagcgaaat gaggtagtag tcagagtatt tcctaaggtg aactgcgcac 600

tgcacgtaat tcgtatttta gacacaacta cacggcgcct ttggcgtggt ctcatggacg 660

ggagaaaagc ctacacggtg tgtctcgaga gaaagtttgt agggtgcctt tgacaggagg 720

atgagtggcc attatcccat cccacgacct tttcgcagta tatctgcgcg cctgtgtgcc 780

tactggtact ggtctctccc gatgatgatc cattagctta gcttgggtcc gcgatagaaa 840

tcgtattgga tagcgacgcc cacttcggaa aaagccagaa aaaatgacgc cggacgagca 900

tcattggtcg ccgcgcatat cgagctagcc caactcttcc agtggagact ggcgtggcac 960

acgacacgtc gccacaggtg agctttgatt gggctgatga tgatggcaga attcacgaac 1020

gcgtgagcca tttctgcaaa tcgcacgcgg tgctgccgtg gtggtcgtgg tggtaccaac 1080

caacacctgg caaactgcaa agctactcct acagccccgc cgcccgccta aacaggcgtg 1140

cttaaattgg tggcaagccc cggccgccgt ctcacatcac gcccgcccag cttagactct 1200

ctccagcaac ggacgctaaa gcgtccggta cgctaaattt agcgcttgtt aacatccgca 1260

aggcatccaa caacgctcgt tattgcgtcc gctaagatag cgttcgtccc tggctgccgc 1320

taaatgtagt ggttcactgt gcatcctcta tccacacagc ggcacactat tcctcttcga 1380

at 1382

<210> 184
<211> 1101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80524_G1, chr2:174459326..174460426, Cluster 1

<400> 184
tgctcataag aacccaaggg atatctatct cccatagttg tcatatctat gttttgggag 60

taggaccatt atgcccttgg ctaactagtt tagctctaga atatctagat atattgggaa 120

tgtgtaatag cctctataaa taaggggagg gatgccccca aatagccatt tttatattat 180

ctatctagtg gtttactttt catgcctttt gtcttgtagg tctctccttt tgactgttac 240

tgagattgat agaagtttta gcaaacaaat attcatctat gtttttgcca tggtggttca 300

tggtgaagtg aaatatattt ttatggtcct ttgagttctt gaagtttttg ctttggtttc 360

tctactccca atctcctctc tttggtcttt tgttggatct tttgaatatg agttctaggg 420

acttttgggt tgcataggaa tgtgcaaggg cctccatgga ttattctcac ctagtggttt 480

gggcagattc aacttaagca cgaaaatcta atcacttgat cattttgag aaatccacga 540

gctaagagca tatttttat ttgctattaa atctttaatc ttctagacct caaattttga 600

tgacgccttt gaaacttcaa tggcaatctg tgtgtaaaac atcaactcaa ttggagtttc 660

tttgaatcgt tttttaactt ttggagcttt ggttcacgct actaacacca agcaccacga 720

cactaacgtg aatgagcaac actgttgttg cctagcaatg gcagggaata acaatgttgg 780

ctgtgagcac agcactatct ctccctcatg gacaactcat cgtttcgagt gctttgagag 840

ttttaggtgt atgtttcgtg atccattttg ttttttgggt tcttatatac cctatgaact 900

ttcccaaagc atcaaactac tatttgactg tagtgttttc tatctaggct ctttcttcat 960

tcatgttgga atagagagct caatttttgg attttggaaa gtttcactca tgcatttggt 1020

tttagtgggt ttgagtgctc cactgtgtct gtcggtcctc actaagaaca tctaaccact 1080

tattggctcc attgtttatc c 1101

<210> 185
<211> 1174
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81833_G1, chr2:180848239..180849412, Cluster 1

<400> 185
ggtcctacac cactgctggc tcatgccatg aaccggtagt cacatatcaa tcctagccac 60

aatattattg ttaatttatg acttaaaccg gaagtggtat ctcattgtgg atttatgctt 120

tgattcggaa gtgatagaaa actttatttc ttgcttttaa gaacccttaa ttatttttga 180

attttaagtt aaaattagat gttgaagatt atctatgacg acggtttcca taccgataat 240

aaacccataa caggaatcca tactttcaac agtagcaaac aacttgatta cagacccaat 300

taatatccga tgcctacttc agctgtagtc aaaaggaaat caccccccga cggattcgac 360

tcggttactt cttcctacgc atgcgtcgtt actgcgggct gactagattt gctttcgctt 420

ggagctaggt aacccggcct agtgcatgcc caacaataat acaatagagc tagctagcta 480

gctagaggcc tagagctaac agattattat tgcttaatga tcaatcggct gtactagtgg 540

ctaactacgt tgacctccgt tgccatttct aaacaaaact aagcagatag caatacaaac 600

aaacaaaacc atgtaagcat gcaggccaaa gttgggcgca cgagatcacg atccaacgta 660

cgaaagcaac taacaagcaa agcaggccaa agttggacga cgcacaagag gacacaaccc 720

aagtcaagac tggatttgct tctacgctct ctctatatag tttaataatc gagccggtcg 780

gtcgatgatg cgtgatctta ggttgatcga tctctcattc atagatcaat caagtgagtg 840

cagacgtgta gtagaaaaat cagtgtgaaa ccactcgctt caccatcctc gctcgtctcg 900

tctcctgctg ggggtgcaat tccagcccat ggtgcaggtg ttggcactcc agcgccgcgg 960

cggatcccac gcgcgtgatg agaaattcgg cgagctaggg gtaagaaaag atctaacata 1020

acagtaaaac agtttttcta ccagccgtcc gatataagtt taaagttcga cgcctgtcag 1080

ataagcgatc agatattaag agtatattta aaaccactaa agataatagt tagccagcta 1140

ataaattatt agctagattg agtcagctaa cact 1174

<210> 186
<211> 1317
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82315_G1, chr2:183554674..183555990, Cluster 1

<400> 186
aatagattgc gtcgggttgg gggagctggg gaatgggaac tcgcccgctg ctcattggcg 60

tgccgctcca aacgaccaaa ccctactgac ctacctcagt ataggcgtac gcgtatggcg 120

gcggcggcgt agcagcgagc gggtgtagca gcgagctctg agcgagggtc accgagcgcg 180

ggcgtagcag tgagcgggac acggagcggc ggcggcggcg ccatcgagcg cgagcaggaa 240

caggcaaaca ggagctagcg cgagtgcgtg acctagggac ctagcgcgac ccagtgggca 300

gcagcgtctt gacgtattcg tattcgatat ccgaagcaag tatccgaatc catatccgat 360

atccagaaaa aacgttcgaa tatccgaaaa aaatatccaa atcattattt gctctctttg 420

gatacggata cggacgggtt tacatcccta gctggtgggc acgcggacgc ggtggggtgg 480

ggtggggtgg ggtggtgggg tgcgttgcgg tgcggctaga cgggacggag ccttgccgtt 540

aacttgagac ggcggtttga taggatccga gccgacatgg tgcgtcggat cgaaaccagg 600

accgaccttg gtgtctcgtt ttccaggtcg aaacggctag cggttccttt taaaccgccg 660

tcagcgtctc tcggcgtcgt ggcgaagaaa ccggacgact cgtcggtctc tgtgagctgt 720

gacgcaagct actgatcacc atcacctgct ggcgcgggga cggcggcgac ccggcctgcg 780

acgggcacac gcccacacgc ggacgcggag ctgtttgctg cgcctgcgcg gcaggacacc 840

ggcggtttgg atgctcctgc cacctgctcg ccggtaggcg ggcggcgcac cgcgcgcgtg 900

tcccaaagtc agccgcaaaa tgaagagaaa cacggaggac gcaacacgtc gtcgacgcga 960

aggctgatct cgctagcacg gagcacgccc atcatcatcc gcctcgatct gctaacccgc 1020

gccatggccc catttcgccc gtccgtccaa tgggatggat ctttttttt ttttgaacgg 1080

accccggacc cggagggagt cgatcggaac gaggtacagt aacaggacca catatgtgtg 1140

gtctcgcagt tccgataaga ccagacaccg gcccatctcg gaccggacgt gctcctctac 1200

gaactatggg cggattcccg ctttccggag gaagtaaatc cctccgttaa aaaaaaactg 1260

tgcttgtatt cctttgatca caggagtatg gacccgcttg tttcaacttt agctttt 1317

<210> 187
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83182_G1, chr2:188421424..188422430, Cluster 1

<400> 187
gcaggccttg ataatttcat gggccgagcg cagaaagaca ggcaaaacat atattctcgg 60

accaaaagaa aaataagtac tacggacggt gataattaac agacgagcca tcacgccgtc 120

tcgtttcgct ttgggatcgg aaggctctag aatccacgct acgacggtct ccacgtggcg 180

ccagtccacc ggacggtgat acaccgcgac ggggcccgcg tggcagcggc gcgtggaagg 240

cgtcagcgca gggtgcggtc cagtcaccgt tgctgacgcg cgatcgtcgg gcaggactgc 300

aggagggaag aaaacaacag atgacttgac tcgtccatgc gagaccatga cctaaaccct 360

atttgccctg aggcttttgg ctcttcatct gtgttcatga ctgaactttt ttaatatgaa 420

agaggagggg gtgtaagctt ctactgaaat taactgttca taactgaaat tgaccggcaa 480

gtctaagaaa cataaacatt tggctagcgt gaatccggtt caactgtttc gtggtttatg 540

catctacgac ctgattggcg atccttcgtc aacactcaga acacagtgaa ggataatgct 600

tgaccatgct gcatgattgc tctgctgtcg tcttgaacgg ctgttcgcgc tgtccatttc 660

tgctcgatgc atacgcatac gtacgaatat atagagtgga gagtgtagac cattagacca 720

agaccagggt actttcttca gactcgactc gagcgttgac accaggagcg ccggcggtgt 780

ggctcacacg actcaaagtc tgcaacactt cttcacagaa ctgaagttac aaaaaccatc 840

ttattttact attaattaat taattaattg gacgacgcat cgaaggcatt gaacaccgta 900

caaatacagt aaacaaagag aataatgtca agatctagcc atgtatccct ctatttcaaa 960

ttataaaacc cttttgtttt aaatatataa ctttttattc tgacccc 1007

<210> 188
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83338_G1, chr2:189214359..189215441, Cluster 1

<220>
<221> modified_base
<222> (199)..(199)
<223> a, c, g, or t

<220>
<221> misc_feature

<222> (199)..(298)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (200)..(200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (201)..(201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (202)..(202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (203)..(203)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (204)..(204)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (205)..(205)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (206)..(206)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (207)..(207)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (208)..(208)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (209)..(209)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (210)..(210)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (211)..(211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (212)..(212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (213)..(213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (214)..(214)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (215)..(215)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (216)..(216)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (217)..(217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (218)..(218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (219)..(219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (220)..(220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (221)..(221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (222)..(222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (223)..(223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (224)..(224)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (225)..(225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (226)..(226)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (227)..(227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (228)..(228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (229)..(229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (230)..(230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (231)..(231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (232)..(232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (233)..(233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (234)..(234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (235)..(235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (236)..(236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (237)..(237)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (238)..(238)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (239)..(239)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (240)..(240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (241)..(241)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (242)..(242)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (243)..(243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (244)..(244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (245)..(245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (246)..(246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (247)..(247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (248)..(248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (249)..(249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (250)..(250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (251)..(251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (252)..(252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (253)..(253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (254)..(254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (255)..(255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (256)..(256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (257)..(257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (258)..(258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (267)..(267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (273)..(273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (274)..(274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (275)..(275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (276)..(276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (277)..(277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (278)..(278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (279)..(279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (280)..(280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (281)..(281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (282)..(282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (283)..(283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (285)..(285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (286)..(286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (287)..(287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (288)..(288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<400> 188
acaagggatt tccttaataa aatcgatgag ggcaagatca ccttgtgtgc aaatatagtc 60

tagagcaaac aatcgtgaga taaaaataaa attagttatt acaataaaaa acaaattgat 120

ccatactgtt ttcttaaaat tataatacct ttcggaacta ttgcggtgcc gccgatgacg 180

aatctctaga ttccgcctnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 240

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnncc 300

tggcaggcgg gcctcaagcc ctgaacccaa attattacgt tatcgatcac gagacggccg 360

gcaaaaagcc gccacgagcc ggccagcccc tgcatgggca tgggcgccgc agcgagaagc 420

tcgctcgtgc agtcgtgcag tgcagtgaac ccgcgagccg ttggtcgtgc ctgcctgtcg 480

cgatcgcctg agcgcaggcc gttcgtacgt gtcgcgcgcg ctcatcagga ctagtgctgc 540

agcaatgcat ggcgctggcg cccctccatg cagcattcag ctcctctcgt cgggacgggc 600

cgggatgggt gggtatcata ttggcgcaaa gcggcaaggt tggcaatggc acaggcgcac 660

tggactaccg taccgtggcc agcaacgccg ccgcgacggg aggatcacgc gtgcgcacgt 720

gtacctaatt acctatacgg tgcatcgcga tcccgagcat cagtatcacg tccatgcatg 780

ctgcactatt cagatagtac gtaatgctgc agctgcaata ctgcagtacg gggtctcagg 840

tgtacaaaac agtagtacgt gtgagacggc tggccaattt aaagacgtac aggtacaggc 900

caggggggta gggcatcgtg tcgtaccgtc cagtgcgtac gacggtatta acaagccatt 960

agattgagaa aacagtacgt cagacagcgc tatcaagcac ttagattaac atgcatcacg 1020

tttattgtca tgtcactcta tcaaatacat cctactgatg gttgtagcta gactgatggt 1080

tgt 1083

<210> 189
<211> 1363
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8390_G1, chr1:44166772..44168134, Cluster 1

<400> 189
ttgtcgtgac tcaccaattt atagtgttgt cgcctttctt cctcgatatc tgcctgaccg 60

actgcgagtc cattactttg agcaacacaa tgatgttaac tagtagtgtg aataatggcc 120

actagtaatt ttgaacacac gggtcccttc gcaaggtgct atcttgtttc tgaatttgtt 180

aattcagtgg agttcttatt agaataagca tgtttttaat gtatgtatcc gttatgcctg 240

tgagcagtat tatttaaccc gccgtgcaca tatattgtcg caattctact atagtatttc 300

tgaattaaat caaacatgca tgaaaatacc taattaattt cctagcgata ggaaaaaaaa 360

gtatcaatca tctacggagg tctaatgtat gcatgcaaaa cacgagcatg tatatattcc 420

agccatctgt ggcgatatcg tccataaacg agactgatgg gtacgtacgt agtatgcaag 480

tcagacagag tggccatgga aatcaaaggg agcatgacct gcacggtagg caacactaat 540

ggaatacacc tcaaactcaa aggcgtgcta ggactgtgct ctctcttggt gtatccatac 600

cgtccttgcg tatatgcaac ttcaatgttg gaatacataa tctcaaaaag ctttcagccc 660

agtcacaagc ttgtacgacg actggtcgtc atcctggact atctattagc tcgatcagca 720

gcccaaattt atttaggcag aaggtaataa aggttgtgtt tagatgatgc atgatgatcg 780

atcaccacac atcgttcagt cagaaccgat cgagctcatc ctctgatcct ggcatgatct 840

tcttggcgat catatgcatg catgtgagcg gcctccagtt ttgctggaga gacgatgaat 900

gcgcgcgcat gtgcctgccg atgatgcatg ggtagtagta catggcatca tgcatagtcg 960

caagcgaatc cagaactctt atctgatgca tgtcaaaggt ctgcttcgag agcgtgactt 1020

ttcccactag cgtctggaga tgcagttgac cgacacggac ttggccgccc gctacattgc 1080

aaactacctg acgcgccggt cagagctagc gtaggcccgt tcggcacgag acagcgactg 1140

ttcgccatcc attttccggt ctcttccaaa aacatcatat cagatcgttt ttgaacaact 1200

aatttaagtt tggaaaaaaa aaaggataag cggagggaaa gaaccgctgg gttcaaagac 1260

agggcgcgcc atgctcgtag tcgtcgcgcg agcgagctgg gtgctgcaga cgttaggctc 1320

tccacaataa attccatttt tgagtgctaa aaattaaaat aaa 1363

<210> 190
<211> 1309
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84200_G1, chr2:194496890..194498198, Cluster 1

<400> 190
tttgcgtcac gctttgtata ttagtaatac agcatgtttg cttgctgacc tagctaggtg 60

ttgatatcca aaaattccat ttcaccgagt tgttaaagtg tgaaaaagat catataccat 120

tgtgttccga tcctctctag ctgagatggt taaaaaaaac atcagtctgc ataaaaaaac 180

acagagatct agagaaccaa aactattcga tcacaaagtt actcgatagg gatagtaggg 240

ataagattac gtgcttctcg atagctctgc gaaaatacca gagtcatcga cgtatttctt 300

ttttagcttc ttacgctgtg tacttgggct atgtgcttta cttttctagc ctatgtcata 360

ggtttagaac gtaggtcgaa tagatacaac aacacgtata gtcaaaatcg tacgtagttg 420

tacatgcatg tatatatata gacacacgcg acgggtgcct tgtttgcaaa tatagcacgg 480

ccccgtaata ttattattat tgttgcagcc ggccggccgg ggcggcagcc ggcaggtgac 540

acgcggctcc cggtcaaatc agccccctgc tccttagcgg catgacatgg ctagtgccta 600

gtagcttccc tttagtgaac agttcctatc gcacagaagc cgccattaac accaaaccgg 660

agcggtcctt agctttaaaa atcaaccacc gccattatat ggtccctgtg gcggaggagc 720

tagccccggc cgggagggag gtccatgacc atgaccactg atggacggag gcgagccaaa 780

gttaaggccg ctcgctagct agctgctgct ggttggtggt ggtggcggcg aggggcgcag 840

tagtagacca gtagtgcagt caacaatctg ccgacaccag agctcgcgcg acgaccgtgc 900

acatcgatct gtggcagact ggcagtgcat gcatgatgcg gcaccgtaca tttgattgga 960

gaagtggatg catggagcag agagagagag ttggattgcc tgtccagttg tgacagtctg 1020

cgtgccgggg cctaacgtac tcatgcatct aactaacgca gtacgtacgt acgtactata 1080

tattccaggg tgtcgaaaga cactgagact gtgttagtta gatgcatgtg ttagatgcca 1140

cgtcgctctc gcgttcccca gtagcaggct gggggagaag aagcccggcc ttctgcgtgc 1200

atgtgctgca gctagcgttc tctctcgaca aggctaggcc aggggaacgc ccccacttcc 1260

cttcgtttcc cgctcccgct cgcgcgcgcg tgcatctatc ggtcgcccc 1309

<210> 191
<211> 1080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86058_G1, chr2:206398745..206399824, Cluster 1

<400> 191
ggcaacacag atacagaatt taatctcact ccggatgttg accagagaaa tggtcgagac 60

agatctcatc aagcaggtta gtaatttctt agattaataa aatgtgtgct gagagaaaaa 120

aagaatatat cattcagagt ctgctggtcc tggttataat aaaaagaatt gatccataaa 180

ccacttgcct cataatagcc atgattactg caaggcgcac gaagtgcgcc tcctgatcta 240

gtgttttgaa aaacgcagaa gcatcttcga ctctttgttg ttgcacacaa gtacagaccg 300

tgcgcaccac gtcaaggcgc caataggctg tgaccggctg ggaacatgcg tcttgctgat 360

tagtgactct ttgatttgac cgggtttttt ttgacaacag acttgaccgg ttgaccctgc 420

tccgtgctaa taatggtcgc ctgcactgca gctcaggtca gccagagcca gaggtggtcg 480

aatctggcgc caagaaaaaa agatatatag tcagaactac gatggataaa gacaaaatgt 540

tgtaaaagcg gatagcctta tataaattac catcaacacg tctcactcgt acggatctat 600

aggctggtca actttgctgt tcttcaatga gcaaaaaaaa agagagagag agagttcagg 660

ttcttctcaa tactgacgta cggtacgtgc tgagaagatt agcccggaca gtggtgagat 720

tatgggaata tattagcttt ccattgctta tcaaattgga ccgctcattt gtcatgtttc 780

tttgtccaat gcatgtatgt aatctgctca tttgttcaaa ttaattacga gcacgcctgc 840

actggtgagt ggtgagtgac tggtcgtggg cggcccatcc cacgcgacgg gggtagcgtt 900

gcgggggcg cagagctgcc aaatcctccg tgacgagcgg gccccgcgac gacgcggtgg 960

cgcgggcgac acgtcgtccg cgatggggac cggacctctg cctgtctttt ttcttgtgca 1020

ggcccgggcc ctggagggtg aacggaggcc caattatttt atgcaagtgt cgtccgcgtg 1080

<210> 192
<211> 1290
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86235_G1, chr2:207370816..207372105, Cluster 1

<400> 192
ctcgtcggtt cttgctaggg accggagcca gagacgtctc cccatcaagc aacggctgca 60

gaaatttttt tcaaaaaacc ccctggagac ggtgtggaga cgcctgagta aatggcgttg 120

tacacgccct tacgtcgatg gcctgtttcc gcaacattta tcagcgcgga tttcatttca 180

tttctgtatt aattcagcag ttccatttgt gagacagaaa actgagtaga cgaaccgcgg 240

ggatcttgag ctgatttgga tgatgagtga aggacatggg ccagcacctg accggtagga 300

ccgtaggaga gcgcggttcc caagcgcagt gcatacgcgc gtgcaggaag gaagtactcc 360

gtgctctcat ctcatctgcg gttactgtgc gctgggcctg gtttccggtc aaatcggttg 420

cggccagact gactgacgtg gagagctcct cacagctgcg agattcctgc tcgcccgcct 480

gctattctgg aactgggacc ggaaagaata aagagaaaca atagcagcac aggaatccgg 540

gtgcagtttt gaatcagtga aatgattcgc ttaagcttcg cattcgctta taagtaaagt 600

acgtacgtac agtgttggct tagctcactg tgctggggcc aacacgtggc gtggcttaac 660

gaacgaacga acaatcatgg atggatggag tagtatctca caacatctct gcgtccacgg 720

gagcacggcg acggtcggat tcgtcgtcca cgggacggag tggccgcgcg tgtgctccac 780

ttgtctcgtc ctgcttggcc gtgacgtcca tttatccgct ctttttttc ttctttttt 840

ggtgctgcgg ggctagctgg aaacttcttc tcctgcgaat aggatcgata atatttgcac 900

ctgttactgt taaaatcatc tccatccagc tcttgtggcg acaatgcatg cattgccctt 960

ggcgtggtga ttggtacctc acttgtgggc tttaccggcc gttcaggtgg taacctttt 1020

cagtcagcca gcaaattccc cccacgaccg cgcactttgc gtcgtaagta aatagcaacg 1080

tcaaatgcag cacgcgacac agggaccgtc caaccacgca gatagaccgg atcgaggagt 1140

gggctttagt tgtttttttt ttacagctgg tctgttcgtt ttattaataa tttttattgg 1200

aagtaattcg cgatgtcggc actgcacatt ttcaacaaaa aaaaaagatt gttcgtttgt 1260

gatgagtgga ttgaaggata ttagagccag 1290

<210> 193
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87027_G1, chr2:210853904..210854938, Cluster 1

<400> 193
gataggtata tgctcgtgcg ttgttacaaa atcaatatga taaaatacat tgatatgaaa 60

aaacactaat tattattctc tatacttttg ttagcatcac taaaatggat atttacatac 120

cttaaaagat atagtaaggt gtccgtgcat ttctacgact atcctctgtt catatacaaa 180

catagttgtt tcttaaatta aattgttcaa gagtaatcaa agttatatga tatgcctatt 240

ttagaatttg catgatttac agagctagca taatgagata aggatatatg aacacataga 300

aagtttctcc agttatattt actcatcccc aggaatttaa aacgacaaag atgtcataca 360

taggaagcaa aaaaacaaga agctaccaac gtactcactg gcaggaaaga tcgtagaacc 420

aagtaggcat tgcttgtgtc aacatcacag agaaatataa atcctagcaa cgcacgagca 480

tgaacaaata aaaaacctga caatatagct cagttggtga tccctttaac atcaatcata 540

tcctaaatat agataggaac catgatattg aaagggtaaa gaaacatagg tattgtttta 600

catgatacag tagcaattag atcctcgtga ggatcttcca acggcttcaa catgatcctt 660

gaggtcatat tcctagcttg gtcaaagtaa tcctcaaaca tattatgcgg ggagagtttc 720

caaaacatta gctcatatgc tggcatcgcc atcttgcatg tccaaaaccg gcacaatgaa 780

gagccaaggc taacataaat gcaaccctaa gtgcaatgtc tcatccttcc ggtggactaa 840

aattaacttt ataaccttat taaaattatg catggaaagg catctgccag agatgtgcat 900

atatgttcca aggataagca agcaaccaga attgatggat cgggtgcctc accgtgtcac 960

tacaaatccg acgtcaatat atttgatcga tactgttggt gtagtgcgag ggaaggcatg 1020

tggaggcaag aagta 1035

<210> 194
<211> 1132
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89030_G1, chr2:222254038..222255169, Cluster 1

<400> 194
tccaaatgat tagaaatttt actaaggttt tgaaaattca caaattccat ccaagagaac 60

aaaaaatgaa ataattggtc tatattttac cagggtgacc ggccggctgt agacccacaa 120

aatgctagtt tttgagtgat tctatgttga cattctgaac cctagcccca ataagctagg 180

agctttagct gtctatttta ttacatcata tccactccat agcacccccct gtaaactcga 240

aaactccaaa gtaaaatgca cttggagaaa ggtcctgctg ctaataatca ataccttgta 300

ccaacagtac tgatggaaac agaacgggag tgtttatatc aaaacaccag acagattagt 360

agttccggca gttgcacatt gaagaaattg ggataaactt ggaccattgg acacgaggag 420

ctttggtata aggaataagg ggaccatgaa tcagaatgtt catcagtagc aagaggggag 480

gccggaacga attcaaagca gcaggttcag ggcagtgtca gcattgatct gcaaacgcca 540

gcgtccattt gtggcacgag agacctccct atgaattggc agttgggatg cccaggtact 600

tgcagttcaa cgctcaaaat cggtgcagct gatccaccca atttctgacc ataacatgcg 660

tgtgatgtgg tccttttttt tatcatctgc tttgacgaca gatcaactgt ttgatacata 720

caggtcgcag ccaaccaaga gaagcggtgt tttattttgc tcgtcgtcgt tgacagcatt 780

tcttcatgtg acaccacaga cgcatggttc ccacaaggaa catgaaacca agttgattgt 840

atgtttttag atatgatata ataaaaataa tcatcaaaac tacaagatca gacagtagtt 900

ttttttgtg cgaggaggca catatgtcaa acagataaat atgttactga cgtttttata 960

gaatgatgag gaaggtatca aattggatgg ctacaattat ttaactgttc aacctactcc 1020

cgtagcatca agtaaatatt agtaactgtt caacctactc ccgcagctcc ttaaatatta 1080

gtaacatatc tatctcacta ttactataac cggacgaatc tctagattcc gt 1132

<210> 195
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89225_G1, chr2:222969114..222970139, Cluster 1

<400> 195
ctcttggcct tttcgtcgtt cctctcaccc gtggcgtcct actagcatat cccccactcg 60

atgtacatgt acgtacgtat catgcatgta tgccatgtca ttgcccagta ggacgtccaa 120

gctaggacga gagacccaag ggcagctgca ataattcatc catccgagac gagaacgaca 180

cacgtctcac atgcatgcat gctccctttt ttcttgtctt gggattccaa gattccaaaa 240

tcccaggtgg aggttgcatt ggttgggtga ggcaccgagc gaccagtaca atgtgccgtg 300

gtggcatggc atgacagcgg cggctagcgg ccggcagtgc caaggtcgcg gcagggcatg 360

cattgtcagc agcagtccag aggccctcct ggtacgtgtc gtagtaccaa taaaaaaaga 420

ttccagccaa ttcctgcacg acggtttcat tcatgactat cgatgctatc tactatttca 480

aactctacta tataaataat ataaaaccat gcatatggcc atatacattg taaactatat 540

tactatatta gtataacata ggtacgttgt aacggtacac caatcatatt tgatgttata 600

atgcaacaat catttgatat ccgatggtct aatggtaagc cagtgcgata gaccctctta 660

aaaataaatt taaaactaaa gtagaacctc cctataaaaa taaatttaaa actaaagtag 720

aacctcccta taaaaataaa tttaaaatta aatttgacat atagcccaca taccagatat 780

taaactatgt atactgcaaa atgtatgagt tgaaaagaat acataccctt ttttatagct 840

cgctcggccg ctcgtcctac ttcagctagt gacgtggtac tatccaggag cgctgcatgt 900

gactttattt catattgggc ttgagagttt tctcatagcc catctaggag gtaacgacct 960

cattgttagt tgagacgtga gggacaagaa acatatctac gcgcttcgta tgtgacacat 1020

ggcgca 1026

<210> 196
<211> 1072
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94067_G1, chr3:9818777..9819848, Cluster 1

<400> 196
gtcaactcat tttttatagt tacttagtac taatataaag aataaggtta tcctactaaa 60

tttaaggaat agacctataa tataccacat tattttggat gaagtgattt ctcaaactaa 120

acacccttta gtctctcctt attagtctcc tatacctgaa ccttttcaga ttagctagca 180

actggaaacc aatccatcct cgccctaccg acaaaccaat acaaatgcaa gtagacacaa 240

gtcgaagata gacacacact caccccccac ccctaacgca acagcggcca aacgctgaaa 300

cttttgaccg cgtgcgcagt ttacttcctt tagctcattt agctgcatga cttgtttact 360

agcagcatca gtttgccgac agcattttgg ttgtgaaagc aggaggatgg aggccgcaca 420

gttctcactt ctcagttggg taggcagcat cccattccca tccaagtttt aggcgcttct 480

ttgacaggac ttgagttggc agaagcaatc tctcgtcaga gcagggctgt tacaaaaagc 540

tggtgtggct gttacaaaaa gctggtgcat gcattcttaa cgttatcacc tacacgtacg 600

agcagagcag atatgttata cgcacattat tcagagcatt gaaaacatgc ctgaatatga 660

ggtgcatgca ctaggagtaa atatatttgt tgtatagtaa cttttaaagc tttgcagcac 720

tgctagatat ttagatgagt cagaatcaga actctgatca tcgttgttgc tccactcggg 780

cagatatttg tcctaagtgc caactccatt gggatcgtca tcatccatag atgcatgcat 840

gagtttgagt ttaactaaag aaatgggatc gctcaggtag tggggtaagt aaggatgcaa 900

gagagacggg ctagcaaacc atttttcgc agcataatta tgaccgattg atctctttct 960

tggcaattac ttcactgcgc aacatataaa ctaaattatt tgttagattg catctctaaa 1020

tcccattttt ctcttcgagt ccatatcttg tctgaaactt actagttata ca 1072

<210> 197
<211> 1302
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94098_G1, chr3:10066901..10068202, Cluster 1

<400> 197
tcatattaat tctacatttt gcccctcatt tatttcagtt gcactaatgt cagagaaatg 60

gttaggggta tttgggtctt cttatgagtc atttaatgtg ttattgatat ttttagtcta 120

tgtagtgata gggtctaact ctagtccgtg agcaaatagg tgatccattt gctggactat 180

ttggatgtct accactaatt ttagatcatt taaacagggt ctaatgtact actggactag 240

ttgagttgaa tactaaagtt tagttctatc gtggtgataa taccatttta ctcagagtat 300

tagaataaat cagagtgata aagagaaact gttttataaa ccggagagaa agagaagtcg 360

gagtgagaga gagcaagtga atagtgaccc gcggggcccc tcttctgaaa gcgacaaaag 420

gagaagcgag tgcgggcatc ttttgtgatc atcattcaga acagcagtag cttgagcaag 480

aagcgccaaa taagaagctg cagtggtcag gcacaggcaa gcgtttcggc atttttatg 540

ttccgtagag ttccgagttc caaaaaacac agagtgggag aggagaggct cacgggcatg 600

tcgcatggta gcactgctgg tgctgcatcg gattcttgtg cagtgaccat cagcatcagg 660

ataaaaaaaa atagactcga gctgtggagc cggaagcgac aaaagagaag ctgcggcgcg 720

gtggtcactg ctggtcagcc tactttaccg tgcgatcggt tcgtactaca acacttgaca 780

agttctacgc tacaggtttt ctctgccgag atccctcccg ctttttggc atttgctcgt 840

ctcgtgactc acaaggccta cattggaccg cagccttctc ggaacaaata ccatgcactg 900

attggtggat gctacacaag aaacacaaac atcgtgtgta atatgataat atacagggcc 960

gggccaaaga aatttgaggc cctgtgctaa atctaaagca gtataatgta tgtttttatt 1020

aaaaatcagt aataacaatc tacaagttac attaatatat attgcaatag aatatctaaa 1080

taaacatttc tattttattt gaataacatc gttcttttgg tgggttttaa aaaaaatatt 1140

gtacaatatg cttatattcg atcttatcca aagcttcact ctgctattgt ggcaaaataa 1200

tacgtctttt ttttatcata gtagaacaca aatatgaatt tagtagcttt aatttagaga 1260

actttgttca cgcggacaga tatgttaaga tcctataaag at 1302

<210> 198
<211> 1208
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97998_G1, chr3:31465161..31466368, Cluster 1

<400> 198
ttaggcatgg catggctagc attttacttc ttgttgattc cttgattagc taggttatat 60

gtttcaaata aggtagttca atcgtcatgc aaccaactgg tcatgtgata aacataatta 120

gagcacaaaa caatatttaa acaaataata ccagaaatga aacactaaga atatgaataa 180

ataagatcca tgctccaaac agagtgctac catatataga gatatcattc ttataaatag 240

agggagtaaa tgcctatata aatttgtgga tctctatata aatagagtgc taccaaacat 300

aaatcattcc aaatctgtgg atgtttagtg gcagatccag gaatagacta aaggagcctg 360

attttctagt gacaaatgcc agagacaaca caagctggta gggggctcat ttttctctct 420

tcttctttct cctcccttct tctctaccct ccacctcttt ctctaatgtt tatgacaaac 480

ctaaaacatc cacctgtatt ttggaaatag agggagtaaa tgtctatata aattttgttt 540

atacccacaa tgaggtttgt tgatgtcggg tacatgtaca tccctacgta tacctattga 600

ccacattgat cgagtagcaa acattcttcc gtgcgatgcc tgctggtcca taaatcttaa 660

ttatttatta actgcaggtg ccaacaatct catgcgttaa agtatgcaca catccacccg 720

catgttcccc gggacatcag tccagctctc gatcgggtct tgtgcaaaca tcacatcaat 780

agaaaaagag gagagcacca cacttccctt taaaggagct gaaagccaac agaaagacat 840

ctcgggagaa aagaaaagag tgattggaaa ggttcaaatg tgactatgga ccttttaaag 900

ccttccctag ctttaagctt taagtacgtg tgcgcataca gattcttttc ggaagggcaa 960

ctcgaccgta cgtctgatta aaccggcctc tggcagttta acatgcatgg ttagatcaag 1020

atgactcaga acaacaaaca taacgtacca tttgatgcta tgattgcaac cttttgaagg 1080

agcttctaac catcatgacc taatcatatt atgctgtctt tcagagtagc acaaggtcaa 1140

agcgtaataa tttcgaactg taacattgtt tctcacaagg cacatggaga tataaatatt 1200

ttcagttg 1208

<210> 199
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159525_G1, chr4:172518643..172519712, Cluster 2

<400> 199
ggccaaacca tatgcaggca accaaacgca cctataatgg cacacaacta attaactcat 60

tattgttacc cccgagagta tattataaga aattttatat atgaaattgt ttgaaaaata 120

tccatgcatt tagcataaaa tgacctcgaa cagcctatga agatgttgga cacaaagccg 180

tgacaaacaa aacctagcta ctggatttgg ccaagctttg gcggtcgctt cgtgggacgc 240

attgtatgca tgcacccaca cccgcactac tgcacacgtt acagtcatcg cgacctaaca 300

tatcctagtg gaaagatgcg cgtagctagg ctcgtgcaca cgctacattg catgtacaga 360

gttggctacg accagctgct gtactacata tactgtgtgc acacagcacg tgaacaggga 420

tgtgcatcga tcgatcgacg gagcatgcat gcatcagccg ctcgatcgct agctctctcg 480

ctctcggaaa gctggacgag cgagcatgca tgcaacagtg tcatccgaat cagattctga 540

tccccatacg tgcatgcatg gtgttcgagc gacaatgacc cgcgcgtgca ggcagagcta 600

gctagcgagc tagccgctag ctgcggtaga aggagagtac gtaggagaca cagcatgcca 660

gcatgggttt gatgtgcgtg tgtgcactat cggatggaac caaatcaaat catgcccccc 720

gcgcgcgccc gagcccggca cacatgccgc gggggccggg cgcgcatctc ggccgcctgt 780

agccggcgct gtgcggcggc ggacggcagc gcgggcggga agccggctgg caccggtgcc 840

ccaccggcga gatagggcgc gcgggccaag ccggcagcgg ggatccggcc ggtgccacac 900

caacccacag ttggtcacat cggtcacatc acatgcgggt ggatcagcgc ggctggctgg 960

gcgcctattt tgtgcttcct ctgggtacag ttaccatgca tgcatttggg cgcggatgct 1020

gctctgctgg tactcgactt cgtagcgtgc atgagttagg ctgcaccatc 1070

<210> 200
<211> 1128
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_101170_G1, chr3:50101619..50102746, Cluster 2

<400> 200
ggcgaccatg cccaagctcc tggatgggtc gacgtctctt tcctttgaaa ctgagcaacg 60

ttcggaccaa accaaccacc gagacgagat ggtacctgcc atggcatgca tgtagtcgac 120

ggagcctttc gttccggcac ccgctcaacg ctggtctcat ctagtcatct gctctctagt 180

catcagtcat cactgtactc tcttcctaac tgtctggctc ttggcgtgac cgaccgtcct 240

cgatctcttc gacacgactt gcatgctatt gctcgtcccg ggaggcggag gtcaactaac 300

gaaaaaggta tactagtgaa caagaagcaa gtgcaaagac agagtattct ttctttttt 360

tccccttgta aaaggttgca taataacacg cttggaaacg acaatgtagc aagtctaaat 420

gtacgatggt catgctaatt gcatgttctt taagcttggt gggccgttca atccacgccg 480

cgcgcgccat gttgttttaa ttaatccgtt aagattatct attcacacac acaatatttt 540

actcgataaa ttattctgct gttgacggtg gtggtcagac gaaaaagtat catgtccaat 600

aataattgtg taatcgccgt gtggccagga tcgagaaatc aagcaactaa caactgctca 660

tgtatacgta ggtagtaagg gtttgttaga gcacctccat ctcgcaatta tttgcgacag 720

ctcgaatgtg tactccctcc cacttttttt tctttccttg ctctccccac tatcttgtct 780

ccggaccggc ctcctcctcc ccctcctcgg ccgttctttt ggtgcgacgg atcagctgaa 840

ccaaccaata atcccctgct gcatgcaaaa ttcgtcgttg cacgcctctg aaaagaacaa 900

gaatatcaac cttgctttga ctgcgctgac gcttgcctgc gaccttatcc gtcccgcgtc 960

cgtgttcaca gaacttggac cgggctagct agtctccaca caccaaataa tctatattta 1020

ttattatatt attactacta ggttcattat acatccaatt caggtttctc ccattctagc 1080

gtgaagtttg ggcagacttt gagtttcctt cctggattca cataggat 1128

<210> 201
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10471_G1, chr1:56078424..56079454, Cluster 2

<400> 201
aaacaaccga tacaacttaa agaaaacaac ttccaagcga tttttttaa aattgtgatt 60

gagtagtagg gatgtaccaa gagtagcaac cggctgcata atcatgacca ttgctattca 120

tccctacttg tgaacataat gggacgcaaa cggcacctga gtgtttcttt tctatttgtg 180

gagttttctc tctctctctc tcactattat actttctctt cttggaccac cgacgctcta 240

caagctaccg tgttattttc aagtggcatc taagcctacg cgtggtctga gggctgagga 300

gaccaccgtg tcgggcacgc ccttggatgt cagctggacc aaaaaccaaa cggcgtggta 360

gaagaatagc tgcagccttt tgtagggctc cagggagaac caaggaaagc atgaaaagaa 420

gaaagagagc aaagatttaa acttggttgg tcactgtccg caggcaggtg gatgaaacca 480

ccatggcagc gagaaacccc ccagggctgc catgccaagc caagccactg ccctcgtctc 540

caagcgcccg gttctgttcg tcggggaacg tgttagcgtc tcgtcagcgc agagaggaga 600

agagaagaat cgggatgcgt ggagaagaag aatagtgtag cgacgagggg aaatgtgcgt 660

aagtatctgt tcttttgatg ccttgcagcc tctcgttcat ctctcttata ctcccgtgac 720

aacggcccag tccaatcccc ttacacaacc actcgggcct attaactcta acgttagtgt 780

gctctgcctt ctcctattta tgcccctggt tctcttcttc gggtgccggc ctgcttggct 840

gcttcctgtg tagcatggct aactgaacgg aacagacaag gaagacgatc gatgggatat 900

gggcatgggc cagctactgt actaactgcg aagagccgaa gagcaaggga agggcccatc 960

agtccaacgc aaatagaggc ctcgtttgcg tctctaagaa gtaacctgcc aaactttggc 1020

taacctgacg c 1031

<210> 202
<211> 1161
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11169_G1, chr1:60141749..60142909, Cluster 2

<400> 202
tcctataatg accatattat gtaatgagca ctactatctt tctatgctga tcatattacg 60

taataatcac tactatcttt ctatgggacg ctataatttc catgcgcgct gtcgtgcgct 120

attgactagt gtgatgatga gtcgagtgtt gaaggacaac aattcaacaa gcgaatggcg 180

gaccactggg gcagagcagg caggcaggca gccaacgcgc gctgtcttgt ccggactgcg 240

attgcgggcg ccgccggtga ggaccatgcg caggcacagc cgcacaggca ggaccgcgac 300

cgtcccgttg aacaacccaa tcgctgccgc acgccaactc atgagcagga ggaggaggag 360

gacgacgaat catcatctgc cgcagcatca ctgcttgctg agtgctgctg agtgctgact 420

catactcact aaaacgcttc gacgcagtga tgaactgatg atccacggaa acgcttcgac 480

ttcgacgcag tgatgaactg atgatccacg ggctccctgg cagcgcacag tccgttatcg 540

atactcacta aaaaatgaag aaaaatggga tggttaaccc tgactcccag tcagtggtca 600

ggttatcgat ggcaggatcg atgcaacatg tgccagtcca tctaataata tttgaaccac 660

agactgcctt cagcgtccgc aagcgcttgc ttgtccgatc cgaaggctgg tggctggcgc 720

aagctatagc caagccaagt cgcgttggag tttggaggcc gtgttggccg accgcccttg 780

cagcacgtcg tttcagagac aacgcatcca cggcgtgata attcacgggc tccctggcgg 840

cacccgtgtt ccccgtccat aaaaagaaca cgctaaatgc tacctctacc agaaaaaagc 900

taaaatttag gatgtcgtac acacttcaca agcctagaat tctttattat tgatctcgac 960

gacgtctagc tttacaagta gtttacagaa acgatcacat gataatagcg gctttgttaa 1020

attatcaatt gtctcctcag tgcggacatg ctcgatatat atacatcttt tcatctctaa 1080

tgtactcccg aataatctga aatcatctcg atcgcatcta tatgtttgct ttgatcaaca 1140

atggagttgt gtgttgctcg c 1161

<210> 203
<211> 1402
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112632_G1, chr3:128098856..128100257, Cluster 2

<400> 203
ggcaatggac tccttgctcc tagcgactga cgcccccatg gctggggatg gtgaaccttc 60

tgcggccgtg gcagttgcgt tggcgactcc ggcagaggaa gggtctcccc ctgcttcgct 120

ggttggggaa ggtgaacctt cctcggccgt ggcagttgca ttggcgactc cggttgagga 180

agattctccc cctgcttcgc tggatgggga aggtgaatct tccgtggctg tggcagttgc 240

gttggcgact tcggttgagg aaggttctcc ccctgcttcg ccatagcccc ttgctgcggc 300

ggatctaagg tgccctgtct cggccgtggt cgcggcagct gcaatggcaa ctctagccag 360

ggctagaatc gagactttat taaatgctca ttgtctgtat ccgtcaactc ctctaaatat 420

catcactcaa ggtgcttagg aaaaaaatta tcgagctcat cctcctctgt cagatcattt 480

tcctcctttc ccagtacccg tgagagagcg tcctgattga catgcacttc cggtttcgaa 540

atttttgaat tagcccataa ctctaccaag ttatgaacaa cactatcatt tgaaggaaaa 600

gagaaaccta aaggttgcag cctattcaag ataaactcag cagagatacc acccgcttgc 660

ctgtaccatt cgctgcagac ccatgccaat ccccgccatt cttcttcttg ttgttacttt 720

gatcagattc attcgttggg tgatgaccag attttaaatc attttccttt gaattctgcc 780

cctcatcttc accaaaaccg atgtcatcta agtccatagg ttctggttct cttcatccat 840

attttcctct actctaaact gcaactcata caagtaatcc ccaatcacaa catccacaaa 900

ctgagggatc aaactagcat caaggaccat cacctataac ctgcatatgt caaaatctat 960

tggtgaactt catatccact gcttttgtta cccccaacat tgatccaact gtccagataa 1020

tttaaaactc ccttagctcc tttgggatac cagaaaattg aatccaaaac tttaggcaaa 1080

gcagatttaa cttccattgg cagtactgtt tcctctatta tcatgtaagc tttaaattta 1140

atcaaaacaa ctcctcactc tatcatgtga tctatttcta ccctagaagg aaattgaacc 1200

ttgaacatat ccttcttagt atgttccacc tcccacttcc atgagctaga cactaatctc 1260

tcaagctcag aaatcacttg aggcacagag agtgagccac cagtcacact gattatggcc 1320

aatttagaat cagatttttt ttcttctggg taggcccatg cgggatgtaa tagaatccta 1380

aaccatcaaa cgcataacca ca 1402

<210> 204
<211> 1139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115740_G1, chr3:147587936..147589074, Cluster 2

<400> 204
ttggatcaaa tgcggatgga tattacctgt ttcatatctt tttatatttt ttcttcggat 60

tcggatcaga taaatattat caaattatgt cggataaggt ttaaatgtat gtcgacatct 120

taaatatcta actttaagaa tacatatacg aataaatgtc gaatatatat tgaatattga 180

gtccccaaac tcgaatatgg atcggaactc agccctagta gatagatcga attggacaat 240

gccgctagag ccgttgcttg acttgtacaa ggtacagcgc gatgaggtca actgatcacc 300

agatacacgt tataaaagca aagaaggaaa ccgacgcata ggtgcaaaac tacagtccaa 360

acaaccaaat ttgcatggta tttgtactct ctattaactg tcgatcgttg catccaaaag 420

gcaaggcaag atgcatcttc tgggattcgc tttaggtccg cccttgcctt ggccgacagc 480

acacgcgcgc tggcagtatg tgccaggcaa tggcaagtag tacacgcgct ggagtaccag 540

cagctggtca agtggatgtg gcttattggc tgtcatgctc ataccggacc agattcactg 600

cacttgattt tgggatactg ctgtaccgga caccatgcta atgacaggtg aagccgatgg 660

ttttcgaggc tgtgatgtga gtacaaccac ctgacctgga ctagcagcag tacgtacgtg 720

gcgtgtgccc ctgcctgtaa aatccccggc caagaacaag tgccgcgaag ataattgctc 780

cggcggcgaa aaccctagcc gccgtctcat tctctccctc ccctctctgt ctcgccgtcg 840

ccagagctag ccgcagaaag gctcgcgtgg cccgcggtga tggtggaggt ggcctgtggc 900

gatggtgcac gcgcggctgg ctcgcggcgg caggggctcc cgctcttacc cccgctcctc 960

ccgcgcctgc gtgggggtgc tcgcgtggcc aacccacggc gacggcggcg acggcgaccg 1020

tgcctgttcg catggccggc ccgcagcagc gacaatgcgc gtggtggctg gggcaaggct 1080

ggctggaggc ggctctgctg ctgccttcgg tgggtttggg tggcggggct ggtattgga 1139

<210> 205
<211> 1003
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118038_G1, chr3:160930082..160931084, Cluster 2

<400> 205
ctgagaggga gacgacagta ccatcatgat gaaaacaaat taatatgggc ttaaggctca 60

tctgacctag tttaatatat tcgtacccat ctttagagga attattggag agaaggttaa 120

aatccactcc taataaatat tataggatac tgctaaaaac atatttttgg gagtcatttt 180

tgggagctct tccttggaga tgttctgtgt cggtctttat atgtgcatat tattgtacaa 240

tcgtatacat gtatatttgt taatattaat attagattat atcatcttaa tttattttcc 300

tggctctttg tccatatttt ttattctggt atttccgtct atccagactt cgctttccat 360

tccttttttt cgaatcctat tccgttttat taaaaaataa aaatgagaaa gggattttcc 420

cgcacgtctt cgtccctatg gaagaacaag tcccgtcatg ctagtttttt tgttgaagca 480

taaaacggtc ccgtcgtcct acatgcatcg ctaatcctgc aattaataac atagcgagga 540

cgtaatggtc gatgttcgtc agcgtaattt aggattcata tgaaaaaaaa cactaacacc 600

tttcgggggg aaaagtcgcc cctaactttt tgaatgcaaa agtagcatcc cgtttttttt 660

aaatcttaga gaaaatggcg cactcgttgc cattggcgcg ctacttgttt gatgcgcaag 720

gattggacag gtcttgcagt cttgcagatt ctgaaggaag ccaggcaggc gttacccggc 780

gctgacgcaa atgggcggag gagaaagaaa ggcgacggag acggatgggt gggttcgtgc 840

tcgctcggtg gccgcgtggg tggcgtcaac gtcggcatca tttgggccac cgcttccctt 900

atcccgccgc gagtgcccct ggctttgcgc tgagctgacg gctacccgcc gatgaagacg 960

tccccggcat tgtaccgctc ttggcctctt tgctcaagca cac 1003

<210> 206
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119569_G1, chr3:170778022..170779132, Cluster 2

<400> 206
tcttttgagt ctatgacgtg gaatatagaa acgagcaata attatttttt taattgtgct 60

aatcaggatt cgaactcgag acttctgcct ctggtataat attaagttgc atgtaccaat 120

caattcaact caaaagctta aaccgataga aatatagaaa tatagaaata tgggacaatt 180

cacttatatt atattctaac atatggaaat attatactct gcgcaaaaaa ctcaaaataa 240

attaccttat ttttcaactc aataatccgt ttgacacgtt tatcgacttg gcgtctctct 300

gcagcgacca tcttctctct ttgttctgcg tttgagtaaa aaaaatcctg cattgatttc 360

actgcaaagt ttacgtgtca gtaaaacgat tgccttcaac actacataaa aacagaacat 420

aattataatt gggagcataa ttataaaacg attgccttca acccaattta ttgattacat 480

tttttgctca caacaggaaa aaaatttggg agaagttgaa gacttgaagt aaaacaatag 540

aggtttacat aaccaatcat aaaagggagc atggacactt gagtttaaca gtccaatcga 600

acaaaaatat ggctggcagc gatcaacgat catgatactt aaggtaatgt ttgcacgctt 660

gcaaagtgac tgaaactgga ctgcagtcag cagagcacaa ctcaactcca acatgggcct 720

tggccaccag gcctgtcatc aactggtcca aatcaaatgt gtgcaaatgg cacgcactga 780

ccgcagcaag gatttgtaat taagatcgtc caccgcactt gttcgctaag gcttgcgcct 840

gcgcggtaac agcgtacagg tggaccgcag ctagctgaat gcatcgacgt cagccggccg 900

gccggccatg gatgatggat ccatcatcca acctgaaagg ctgaaaagca gcagacacgt 960

ggtcacagat ggagagcgcc gaaacctgtc tgcgtgctag gagtcacgct cctgccctgt 1020

cccatgcatg gtagctgcac actgattact agtactcgat cgctaatggg ccactagcta 1080

ataataagcc attcgcgtta ttagattaag g 1111

<210> 207
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119929_G1, chr3:173013147..173014162, Cluster 2

<400> 207
atcatgcatt tgttactata actcatcgga agaagagtgt gccaatatag taccattagc 60

taatgtatgt ccttgcatgc caggagcggt tacacatcta cccatgctcg ttatgttcgt 120

tgtcgatcaa tatcgcatca ataagaacaa tgtctctatg gtatccacgc gtgggatgaa 180

atatcgcgac gcagtgagag aattaaagaa cggtgtggca gtccaggtcc ccgcaaccct 240

aaagaaaaga aacaactagg ttacatactt ttttttagta tgtcgatcac ttcgtgtgtg 300

tgtgtataca ctattagcct tcacatagat catgattgcc tcctagatat atataattaa 360

cacttggatc ctactgccac tcttttaaaa aaaacgacct gtttgctatg ttggggtttg 420

gtattttatt tctctccact ccttcgcctt tcttcggttc caaattacgg tgtacctgct 480

cggttggtgt ccttgatctt ctccttttct tatcagacgg agctggacgc tacttagaaa 540

actgtcattt gacaatgata ttgcattttg ggagataaaa gagggtgcca ttattagatt 600

ccccggatac gtcatcgcca cacaaaatca taggatcagg acgctgtgat gaccgatgcc 660

agtttgtcac gcaccacgct agctgttgtc caaatcaaat cctcccgcat caggtccaag 720

gtaattatta ggtaaaccag cgcaatcatt tctttcaagt tctttgtttc gcttcccccc 780

tcttcatggt cactgtcgcg accagtgaaa cgacctgacg tagagcctca tcagtatacg 840

acatcgtggt cgtagtagta gcagagaatt ctatcacccg atcgagtgtc ggcagatccg 900

ccaatttatg cagacgctct actttttgaa gaaggggggaa aaacccttca gatgtgaact 960

tttctgatgt tggactgaat agagacagca acggttggtt gatgctaata acaatt 1016

<210> 208
<211> 1151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121745_G1, chr3:183252017..183253167, Cluster 2

<400> 208
gacgtgaaca tagccaaatg gtataaaact aaatgtaaaa taatagtatt tttttaaaca 60

tatgtaactc aatcgctcag ataatataaa cttgaaattc tacaactacg tatacgacag 120

tacctgacag cgatgagaaa gaaaatgcgt tcattgaaac aggattagcc ggttcgatgt 180

acagcccctc gctttcggca cgacaaatcc ccgactagtg caaatactga gatgctcgcc 240

gtctactcgc tccaaatctc caacaactac atacacaact gttatatata taaaaaaaga 300

tacacacaaa aatgtttttt tacagacaag cttgtttcct ggaggatgtt tcagacgctg 360

gaaccggttt ccttttttctt cttttgtttt gcaattgctt tcgattcgaa gcatggggat 420

ccgtcacgat cgcgaccggg tacgcgacta tgagaaaaat cgcttaccta accacgtaac 480

tcgttcggtt ataagagatg aaattccacc ataaatttaa tttgggtctg tattgggtga 540

attcatacca cacactcaat cccaatactt aatcccaata gtgagattaa atccatcatt 600

taatacatcc atttctcaaa gctagcattc ttttgatcca tggattataa tataaacatg 660

tgtaatattt ttatggattt attcaatgtc taatgagcta tagatagaat ccatgtcttc 720

tatagtttaa aaaagttcca aatctttaag ttatgatcta ggatgaattt aaccgaataa 780

aaaatttgag tagacttgca ttattttagg acattaattg tgacatgtat ttaattacaa 840

tccatactaa ttcagagcta gattggggtg taaacgaaca atacctaata aagtggctaa 900

ggacactcag aaacccgttt ccccctgtct tctttaggcg tcggtttaaa taataggcac 960

acgtggactg tcctctgtcc aacaataaca aagcactcgg catcactgaa catgatcctc 1020

acaacacaag gcactaagtt gacatgcccc ccgcacacac gtttccatat tctaagcatg 1080

gtggccacaa aaaggaaaca cgaaaggcga gcccccggtc tgtgattgga atttgggttg 1140

catgttcaga t 1151

<210> 209
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122254_G1, chr3:185763092..185764126, Cluster 2

<400> 209
cgacagacag aagccgggcc gaaaagcact cgagattttc ccccggagcc ggagatgggg 60

tgactcgtgg cactggccgg cgcggccaag gcaagcgtcc gcgtgcgtgc ggccaaggcg 120

tcgccgtcgc cgcacgcaag cgcccaggaa agcagcgagc gagtcacggc gtgcgcgtgc 180

ccggccggcc acctccgatt tggtgccgcg aatttccttt tgccggtgtc agcgtcagcg 240

ccgctcggtc acctgcatgc tgatggaagc aaggcaagca ccgcacagat tttactcgat 300

cactcccggt gcgcgtatag agagagtatc agcgggctcg tctgacgact tctgcagaga 360

gttaacgagg catgaaacat gcacgcggct ctgtttggga caagaaggaa gtggtgagta 420

atgcagccta ctactgactt caggaaggcg gacaggtacc cgtggggtgg gtgggtgggg 480

gacacagcat cagctttctc gttctaacta gaaaaaagaa aaggacgagt ttcatgtgat 540

atgatatgat atgatcacag gagctcgtca tcggcttcta ccaggttctt gacaggttcc 600

tcaggtttcc agctatttgg cttacgtgag gactggctac tgaggatgga ccgcacagtg 660

catttctgct tctgcatatc catgcgcacg gcccgtggct gcagtttacc acttgagggt 720

gtccaagggc cacttcattt gagccagcgg cctttcaacg aactagaacc agcagcgccc 780

tatcgggcgc catacagaag catcaggatt caggaatgtg cactgcccag aaacagaaac 840

attgtcttct tcttgcctga gctgtgctag atcgacattt ccatttcatg tgaatagaga 900

ttatgactga ttagaaacct aatgtgtacc aatcagaaaa caggaaggca ttgactggca 960

cttgtcaacc agaggtactc tataaaataa atatctagca caagaacaga aacactgcaa 1020

agaaaatata taagt 1035

<210> 210

<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122285_G1, chr3:185936368..185937386, Cluster 2

<400> 210
gcatttattc gatcttgctt gcttcagaaa ccaagcaata tatatgatac aagacagaga 60

agttgtataa agtggacaga tatatatcaa tatatgccat tatgctacct gatttcttgc 120

ataatctatt ctacctgatc catttgaatg tacaaattga gcctcctttt tcttcttttc 180

ttttttgttt tgaacaatca tgaattttac ttcatatata catctcaaca agggttgtgt 240

tttcgaagaa cgtatgtgtg tatatacatg catgacgtga gttcaaaata taagaggttt 300

tttctctgtt taattactat agcatgtgga gtattacact gtggttggat atagatattg 360

aagtctggaa ttaggaattg taaccaaaat tatgttgttt ggttgtttaa taaagtcaga 420

gttggaatta aaccttagtt cctcagtatt ggactataag tagaagttgc ttgccacaat 480

ttagagccta catcctctgt actggttgaa ttacaattcc agttacatcc aaagaataga 540

tttgtattgc aactcatttt caatactagt gagatttggt attacatctg atttaattct 600

aacatctcca atatctacat caaaacgaac ccttaatcat tttctactta aaagaaatgc 660

acaacctttt agatttattt catatcctaa tgccggcagc tgcgctaaca aagatcgtcc 720

tgcatgcttt gcaacaaatg tttgcttcaa cttaagcaga catatctata cccaccaatg 780

caagctttgg tttgtttaag cacaaagtga attagtcccc gtgctgccca ttatcgttac 840

atgtagaccc ctgcactcga gtatcagtag cgcacacacc agtgcaccct ttaaggcttt 900

ttaacgtctt cttagaaaga cgatgcctag ctagctagcg ccttttttta tgatcactct 960

cgtctcgtct gggtacgttc atcgcccgcc ccactaagct tttgcaagct caggagtca 1019

<210> 211
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_12248_G1, chr1:66582903..66583989, Cluster 2

<400> 211
attggagttg ctctcattaa gctgaccgag cacaacttgc tagtaattaa tagcgcaaaa 60

agcagaatat ataagatacc acgtgattat ttaggggact acaattgcac atatataaac 120

cagctatcac tacagaccat cagtaggccg tgtattgaga tgtccggttt cggctggcct 180

agtcgcattg acctgtactg tacttactat ctgaaagtat atcaattatc atacactatt 240

atgttggtgg cagtttcttg tttgtggaca gacgttgaca tgtcctttta atggaaggag 300

catgatgtct atagcgctac atcctgatcc gtggcgcaat ggtagccttt ctaactccag 360

atcataaggt tgacgatctg aaactttctt tatttcccct ggttttcaat caatgtgacg 420

acgtactttg gaattttgaa tctctctttt ccttcttttt aaccaatatc caatgtatat 480

ctcctgacgt tcgaactcgc catcggaaca ggtcagagat gcatgcaggc ggctctctcc 540

ctcctctagt cccgggcacc atcccatgtg gttttactct cgccctggtg cgcgtcaacc 600

accctcctct actctgtccg catgtactgg gcggcggcga agctgcaatt aacctgcggc 660

gcgaggccat gtgtgctcga tcgccgtcgg tctccctgcg ctgcgcggcc ccgccacgca 720

catgcgcatc cttgtcgccg ctagctgcaa gcgaagaagc caatgccctg tttgaagggc 780

cacagctccc gtcgccttca attcctctgg gctccattag ttggtgcaag gaatgcatat 840

gcctcacggg ggtcagggca gggcagctag cgcgtgcgga tcgtatcgta tcgtatcggg 900

ggcgccggcc cgtcacttgt tgtcaggtca gcccccggtg gcagactagc gaagccatca 960

ctgtctgacg tccgttccgt ccaaggtctt ctcttcagct attgtctctg actcccattc 1020

actgaaagtg cactcatctg tcttctcttt tcttttcttt tttcatcgtg caatcgcaag 1080

taccctt 1087

<210> 212
<211> 1126
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124235_G1, chr3:196203076..196204201, Cluster 2

<400> 212
gtactgctct tttttttcc gttcatggtg cttatttgat cctctgtcac tcttatgggc 60

acgcagtctc tcccaacctc tctatccaca tccaggttcc aggaagggtc atggtctcag 120

gaaaaaaaaa agagagagtt gtaatctaaa tacggataca tatatgcata cgtacagcca 180

ttgtgtcggc agatgctgcg agggttatcc gcacgaattt ccctagttca tgctacctcc 240

tgcaggcctt cagcctacag gctacagaaa agagctcgag aattggccta tccttcgcta 300

cacgattatc tgtactgtgc agagtgtgct ttgtcctgat tcgatgtcac tgtgcttaat 360

ttagcaatgc tggtgttagc ctaataaggt tagattacac gctagtggca gtattaatca 420

cgcgaagcat gaagctaagt gtgagccgta tcttgctttt atccctgaaa tcttcgatgg 480

ccgaatctat tcctgctaat ccagagcgct cagtgccgtc gactggtcca ggttgcagcg 540

ccggagcaca aacagctttc ttttacgttc ggcgaggttc catgcgagct cccccgattc 600

ccccccctaat aaaaacctgc ccactactga acaaaaagaa aacgctcgcc atgcttatct 660

tgctcgatca ggggtcacga acagatgcct cgtttctctg cagatcatgc atgcatcata 720

tggaactcga gctgaattgc tgctctactc acggtcacga acggatgctt gagcgttccg 780

gcggccggtc ccatccaact accctacccc ctcggcggca tgcagtcgca cggggctagt 840

agtccgccgg ccggccggaa tcccgttccc gtcgcttttt ctccggcgat ctaaccgaat 900

ttttctcggc ccggtacgga gacgtcaccg ccgactttcc aagtcaccgg ccgcaacttt 960

cgtgttggag gaggcagctt ttgcgtcgga cggccactcc cgcctgcctg cctgcttttc 1020

ctccgatcca gcagagatgc aaagactttg aagtaaagaa gtgcgcagag aaccgggcgg 1080

gtctggagtc ctttgggcga cggcgacgcg agcaggcgca acgctt 1126

<210> 213
<211> 1163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124583_G1, chr3:198378272..198379434, Cluster 2

<400> 213
caagaattga attagaatag tcacatttcg ttttttttt ggatgtagtg taggactgta 60

ggtggagcag ctgatgaatt gtacagaagg acccgtcgtc gatggagatt tctagggaaa 120

acacacgacg atcaatcaac agcagccgca aaccaccacg acgagcggaa cccaggggtg 180

gaggtggagc cgctagtgcc ggcgtgccgc caccgtctag cagctaacta gggttaggtt 240

gcagatgctt gggtcgtgga cggtagaaaa tttagaggta gagaatgaga atgactgccg 300

ttttgtttta ctgagtgagg aacaagacaa gttgggtata aataaattta gcgcgcgaaa 360

acacagcggc ggcatggctg gcgtgcgcaa gggaacacag tgaggggtgg cgaaacagag 420

gctggcgcac acaggacttg cggacacgaa ctatccgatt tcacatccgt attagaccaa 480

cgtaaattcg gatatcagaa tccacattcg ttttcgctaa acggattcgg atactttgac 540

tttgactttt atatgaaaaa tgaattcaga tacggatatt tttcatgtgc atcttttact 600

gggtacggat atcgtataat atgaataacc atttccattt ttcatccctg gttggtactg 660

tgtttttta tctctagatt tttactatat ggtacaacta ctattcagct tcagtagtcc 720

ttttgcccgt cacagcgtgg cgcccgcaag ccgcagggga attaatggat ggcaaagcag 780

aggctagcga gctactcaaa aagcatttga cggaaattgt tacaatggac cgatctcagc 840

ttcccagcga atctaaagta tgatggtcat ttacatacat ggtaggcaag gtgtaggctt 900

aggtagaatt gataaaccga gatgaaggat tttcgatagg ctagttgtct atttttggt 960

agaatatttg gaaaaaagaa atagaatttt ttttaaaaaa aatccatgaa agatcatctc 1020

gccgttgctt atctcatcag agagaatgtc atgcaatgca tggcggctca ctctaccttt 1080

atttagagga tctctttgtc gcaggatggt tcactctagc tttgtttaaa gagtctctta 1140

ttgttgtgtg tgtttttttt aaa 1163

<210> 214
<211> 1038
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125639_G1, chr3:203889903..203890940, Cluster 2

<400> 214
aggagagggg ttgacggcgg tgtggatatg aggacgaaag ggccgaagga tgatctaaat 60

aatattgtcc attaaatttg agtgtacaaa aagatgattt ttttcaatga tctgaaccgt 120

tgatttttat gttgtgttaa atatgaatgc aatttgtttg atagatttag taagattatg 180

agtacatgga ttatttggtt ggatgagttt tataaaatat aaactagtgt attatattgt 240

gatatatata ttaaatatta ggcccctatt acttttgtat cccgggcctc tgttgcatgg 300

ggtcagtgcc ggccttgcct ttcctgcacg cagcagtgct gcacgcgcca tatcgtcact 360

actcactact ctctcgagag gcaaagcaga gcccgtgcgg aaagcgagcg cctgaacctt 420

gagcgaatgt cgtcttttcc aaaagtaggt tcctttcgtc ggccattgat cgggataccc 480

atccttttct tttgtgtttt ctacttttat ctgattctaa acttgatgcg tggcatatgc 540

gagagatagg agaagctaac agttcttagg gcatgtttaa gatcaataag aatgaaggga 600

aatagagggg ctaaaatcat ctagccattc tattcttttt ctcccagaca aatcttgatt 660

gcataggtat tggaggggat taaggcagat aaaattcctc aagtttctct gatccttacg 720

gcgatgcggg actgacccgt gaagccagca gaactgtcac cgtccacaaa attgatttgg 780

tagtgtttgg ttgggataga gccgcttcgc tctaattttt tgttttaaat ggattttatg 840

taggatagag tgattttaaa aaaactaaat tatgcccaaa tgttaaacta tatgtctttc 900

taaaaatttt cggatagagc tgttctctaa aatggagttg ttctttccca acggactccg 960

aaactaaaca ctaccctagt ggacaactgc gaatctgcaa atatttgagt gtgacatgta 1020

gatcatgctc aacagatc 1038

<210> 215
<211> 1010
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126290_G1, chr3:206841194..206842203, Cluster 2

<400> 215
gcatcgatat caacatcgag aaacccatgc gctcaaggtt catgagtgtc tccttgttca 60

tgaatctccc aactgatgtg caacacaaac cagtgcaagt attccatgcc ctcaaggttc 120

atgagcatct cctagccacc aagaacaatc cattcagatg atacgactac tatgcagaag 180

tacctcacaa tggaagagat ttcatctctg atggtgaggt caatatccat ggcggtggcg 240

ccgttcgacc tgatgtagcg gctcaacagg ctgcatgtca tggtgaagct agtcactttc 300

tccccaaatt tcttagatgc catcttcacc gtaggcctcg aatctccact agaaatagaa 360

gcgaaagctt tcgaacaaaa acaaaacctg cttcattttt tggaggggcg gtgagcgcga 420

gaggaactct tcgatagggt gagggagcaa gggggaaaag attatataac cccctaaact 480

atatagtggt agatacatcg aacctcgacc tataaaacta tattgtacac cctaaacttt 540

gtgaaaacag ataaataagc ctctctagtg gttttggtgt cccgttttac atgtgtggtg 600

gtctaagctg gctctccttg acaccgtggc acttggtctt tgcatgttag cggcacaaca 660

ccgtgaagaa catcgagcgc agtcacaaga acccacacta ggtgtcctcg acatggcggc 720

gctcgtcgag gcacaggggt catcgagacg tggtggcctc gacgcggtag gaagaagaca 780

ccatggtagt attgtggctg tgtagcggtg gtagtggaag caaaaggata gcggcccttg 840

ctgatcgcgc atgatggagc agcggcaacg aggagctata tggggttgct ggcgatcgtt 900

gtgatgtcaa cgagcattat ccccatctcc tacccactcc aacgctgcta gaagtggacc 960

tcaaggtgaa aatcctctac aaagatgacg aagcagtaga caaagtagtt 1010

<210> 216
<211> 1393
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126854_G1, chr3:209625156..209626548, Cluster 2

<400> 216
accaaaacag ttgttgccac tccccggctg atctgatcct gaagaataat agccactaaa 60

aactagaagt tattctctaa gtctaaggtt acatgattct ctttagagtg atgtatgcta 120

ctcagaatca tgaactcatt tgtcttaagc cggcatttgc attagcttat tataattatg 180

acatcgaata attattatca gcagagcaga cataagtata cctacatagt aagcttggtc 240

caacccaact aacttgtaaa ttacaagtta caagttatct gtgaccaagc ttactatgta 300

atttacaagt tagttgggtt tgcaatgtaa tacatccaac catacggcca tacgggcaca 360

taagtagata acatattgct atatttaaca ccaaactgaa caacacttga gggatgccat 420

agggcttacc tcatattgac atctatccgt aaaaactccc catctgaact cctatcatcg 480

atcacagatg tggtagtatt gactgctaag tagctgctat actcctgcaa tatcaaatca 540

tcattgtgtt agttcaaaac tcaaagtcca ccattgaaaa agataaagct cgcagaactt 600

gaatgaaaaa tcaagtcaac ttcaaactgc tagcatgtaa agcacattgc aatatttaaa 660

aaatgtcaac ccacgatgta ttggattcag agcaacaaat atttaggata caaaatgtaa 720

ctgaaatgtt tagtgtgtct aggtggaata ttttggatac ataatgttag atgtaactaa 780

ggctacaaaa gtcaactatg ctacagaaaa ccaaatgata atgcacttat atctgcaatt 840

ctacataagc aaaaggagtc aatcatttcc caattcattt ccatacactt gtttaaaacc 900

accaattgga gcatgaaaga atacctatca tgctggcttt taatttttg gtgctatata 960

ttttgacag aaaaagaagt gccagcaaca actgcaactg attacagacg aaactgaggg 1020

gggggggaca aaaaacagaa tttatggcca cattgaagta ataaaaaatc actactgaat 1080

ttttaattac tgccatcaaa catctgatca tcaggcccat cacagcttgg agagtgatcg 1140

cctctaccat atgtgcatcc atctctctca gctttatcat gttctttgtt actgccacgg 1200

tcaaatttca gacgactgtc catgctaggt ctccgtcttc ctgttgaagc acctcctcca 1260

tataatgttt tttctcttgc agatgataaa attgtttctc atagctgttt gcttgcagtt 1320

gatgggtgca ctgattttgg cgtgtgatta ttaaccaaaa cagtgtcatt aggctgatta 1380

ttctgcattt gtt 1393

<210> 217
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127340_G1, chr3:212029200..212030336, Cluster 2

<400> 217
acgacgagac cggatgggac gtgtgagtgc tctgctgccc gaccccgtca aagcacaaag 60

atccccacgc cacaccacac cacagcacag caccacggtc ggctgaccca caccagagga 120

cggacgggca ggggggggcag caggacgcac acgcaacact ccactccgac gtcccgtcgc 180

caccctacta ccatcaccca ccgccagcac ccgtggtagt agacaagaca actcgtggct 240

gggcaggggc ccgcgccgcg cgcggtagcc ggcagccacg cggccatggc ccatgcggcc 300

gagcgcgggg attccctcgg cgccgggaaa gcggagccgc gcgccgtgcc gcagctgcag 360

ggatggggtc agccgatacg acttgcctct gcagtcacgc gatccgtgcc tgcagtccgt 420

ccatcacaga tcgaacagct actagcttct atgtgctttg tccttccaca gctagctccc 480

ggcctattaa ctcccggccc aatatgtcat tagccacggc tggcgctgaa gctaggtatt 540

tttggcgccg gttctgtttt tttatttttg gcgcgatggt gacttgtgcc acagctttgg 600

cgttctctta tttttcttcc catgagaaat cgaattaact tggaatcgat caaagggatc 660

atcaacttca gcttgttgca taaaaaagga aatccgcgca tctgaaatgg aaggaaatca 720

gcgcatctaa aactgcaaag cctagaagaa cttggttgga caaaaaaaaa catagaagtg 780

caaagaagga catccagctt acagagaaat agagagcctg acacttgtta acggttggat 840

ccacaacaaa cggctcggat gaagcgactg cagaggcaag tcgtattggc tgactgcaga 900

cgatcttgtt ccacgccggc tgggcagcgc agcgttgcct cccatcagca tcaggtcggg 960

gcgtcgggcc gcccgtaccc acgtacgcgg tgctccaggc tccagcggtg gcgcccggcc 1020

cacgcgtgcc atgtagacgt acgcgtctgc tccccgtccg agtccgacgt tgcagtacac 1080

tgtgcaccga ccaaacaggt gctactgaac tgtccttgta ggagtgggca tacagga 1137

<210> 218
<211> 1059
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129063_G1, chr3:220648253..220649311, Cluster 2

<400> 218
gtaatctaca acataactct gtaccataca aatgataata gtctttatat tcaacttaca 60

gttgtaaaaa aggaaaataa aaaatgctaa tcgcatacgt atacatgcat cctgtataga 120

aaaagagaag aatgccaata tggcctacac tctgcaggat ataaagttta gcgcacataa 180

tgactgagca atttctgtaa aattagttaa ccttattttt aattacatag atatgtagct 240

tgtagctaga aaaatgataa ctattaacta atactaaaac attaagaata tctaaatggg 300

tcctgcctga gctatcatga gctcatcatg atcggacggt agtagcggca ctgttgcggc 360

tggtcgtctt tcttgacgat gagtaaatgc aggagatagt cgccaaagat atccttgccg 420

aagagacgga agcggggctg aacgaacgcc cagacttgtc gttcgccttc aacccgcact 480

cacagatgaa atcgatgtac ccttgcccct ttacgattgt gccgttgctg ctctcccacc 540

cgcgacagta gcaggtcctt gttgccggcg tcgaggttca ccagcttcac acccagcccg 600

ctgtgcactt tcccccgggc cttggatttc ttgatcttct tgctcccggc ggcgctggag 660

gaggcgtcgt tttgcggttc caccgcctcg ggctgcggct gatcgcctga ccttcgtttc 720

ggtttcgtgg ctgggaggag gaacgggggg tttgcgcgag gagtggcggg cacggggctg 780

cggtacaggc atcgcatggc tgggcagggg cgggggctgc aggacgcggc gaggggggag 840

ggggggggtg ttacgtgagg aggagtgata gcgtcacgag gatgatgagg tggacacaag 900

gagagggagg tgtgggggcg gtggcggggg cgatgatatg ggcaggatct acgtcgtggc 960

ctcgcggggg cggggtgggg cgcgagatgg gagaggggca gggaccggga taggagaggg 1020

gcaatacgag gagacggagg acggggaaga gacagcgcc 1059

<210> 219
<211> 1335
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129243_G1, chr3:221561982..221563316, Cluster 2

<400> 219
agaggagaga gaccgagacg agacagccgt agaggactag aggtagcctg gctggactag 60

aggctaatga atgcttacta gattagagag gactagtact aataaaagtg taatgagtcg 120

atctgggtac tcactggcag ctgtgagtac gtgagacaaa tccagaggtt tttttttta 180

attttgaac gggagaaaat ctgctgcttc ttctgtacgg agtggcagct ggtacgggct 240

tcctcggcct cgcttagcag cttccgtact cgtgggtgga agccgaagcc gaggaggcca 300

caggaggcca gggcggtcga ccggtcactg gtgcacggtg atccgggcgg ccggcggcgt 360

agagccattg gctggctcct agccgtaacc tagctgcgcg cgcatgcagc gggtttaaat 420

gcgtgggatt tgaccgcacc gccatgattg atttttatcc ttgacttgac tgggctctca 480

gctgccagtg aagtgagagc aatgcacagc aggcgcagtg gcagggcagt ccactcactc 540

acgctcgcct tttcggtccc tgcagctcag cctgcttgct gtgctgtgct gcctttcagc 600

atgcatgggc cttctccctc ctgcaatggc aatgctcatc aaaggcagcc gccgggaatt 660

ccccgacgga ccggccccgg cctgattcat tagatcagga agaaagaaaa aaaaaccgaa 720

atccgacatg cttgacccca gcaatgttcc tgtcacgacc ttcaaaggtt gcgattttct 780

tcgagatttt ggcgaactat tcctatcaca acctgcagga tacgaagagc tagtacgagt 840

cttcaaacgc tgttcaggtg gccacagtgc aggacagcag gaggagcaaa tgcaccgcca 900

gggctgcgac tgcgactgcg accgcgacca gcgccagcag tgattcccgt ctccccctct 960

gctcgaggcc caggggcaac aagttccaac gcgcaagtaa acattcctgt ctctgatccc 1020

tccacacatg attcatcaaa ttacccgatt ctctagggct attcccatcg gatatttcat 1080

ttttaatttt atcataatta aatatcctgt catatataag cgggcaagat gacaattatt 1140

agtattaagt attatctaat tataaaacta attacaagga taaagactaa aagaggaaag 1200

aaattattaa acctattcga gcctatattt aatactcata attgatattc aaacatttta 1260

tacgacaaga gctaaacttt agccgggaaa acaaaaagct tcaaaattta aatataatat 1320

ttatcttaaa aagaa 1335

<210> 220
<211> 1009
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129396_G1, chr3:222578357..222579365, Cluster 2

<400> 220
cattggatgc atgtgccttg agttggatga atccatttag gtaatcagat atatagtggg 60

ttgttatctt gctgtataga gtttatgata tccttgtttg ttttggtttt gagatgatgc 120

cttttgaaat gtaatgagta gttaatcctt gatttgatcc catgatcata ttgaaagtgg 180

tttcaaggaa ttataccaat catgtgtgat gccttcgacg accgcgatga atgatttcat 240

caatgctatg gtatctccta ctaaaacaat cattgtttca tagctcgcta tgggagcatt 300

gaacataccc gtgtttggct aaaaatctct ttctattgaa tgctcccaaa caaaccatca 360

taggttttgg gcttgctggt gtcctggcat gattttcatc gggtgggatt tgggccatgg 420

aggttttggc tcgcggagct tgggccacga tggagtggag gtggctgcaa gtgctaatat 480

tgttctcgat cgcagagaag aacagaaaca cgggcacgca tggttttggt ttgttggagt 540

ggaggtggct ggaagtgcca atattgttct cgatcctaga gaagaacaga aacacgggca 600

cacatggttt ggtcgtacgc catggccacg gtgggaacat acatcgggcc ccactcacat 660

gcagcaggct aataatgata ttattattac tatgtatatg accttgccac agaagtaaaa 720

ataattagta taaaacgtaa ataaaatgta aaatccatgt aacataatat caccataaca 780

ctaatattat attaacgata taaatatata atcttattat aaatacacga taagacagga 840

aggagacgaa aaagcaggct gttttgaacc aactgtcaat tggagaataa aaaaatagat 900

gatgagtttg gtttgaaaaa taagcaacat atgtaggaag gcaaccttgg ttcaattaag 960

taacaatctc tgtgttggct ggcagcaagt acaagcatac gagccggtg 1009

<210> 221
<211> 1335
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13456_G1, chr1:73970226..73971560, Cluster 2

<400> 221
tggaaacaaa catctcgtgg agaaacagct gaaccactcg taacattcca cctgcaacga 60

gaccaggatt tgtagcatag aatggttata tggtgtgggg ttttgcagga acacttgtgg 120

ggctcctgtc agtcctcacc aggtaataat ttctcatgaa tgaacttctt gactgagttt 180

ttttagtttt cttccctttc ttgaccacac tgttgttcat cataacaaaa caaaccagtc 240

acggccagtt cctctgaatc atcatgatgt ggacatatgt cgacaacact gcttatgact 300

tgtagatttc atggtcttgg gcaggactaa ttggcttgga tcaggtaaca cgtccacaca 360

ggtctagatg cgatgcccaa ttgtgtctcc tacatgacaa tcgaatattc caaatccagt 420

ctggttaggt gctgcctcca ggttgtgttg tgtacatact acattctggg cgaattgggg 480

ctttgagcat ccataggtca ctatcaccag acatctcgaa aggaaaccaa atgtgaattt 540

caatccctag atttctgctg ttcaacgtgg tgggactgga aacgaagatg caaccgaatt 600

ccatcgaaag actcttgtgg gaaaacagaa aaaaccatgt acacgcgcac ccgcgtggat 660

tctgtatggg gcgagggagg atttctggga gcaagagagt agcaggcaga gcagaggctt 720

aggagagtta tggagataac cgtagtttgc tgctgcggac cttgaagcgc accgcagcag 780

caagccgtcg ttgctgctca ccgccgagcg ccgacaggcg cgctgcagct gctcctgtcc 840

caggccactc aagcgagtgc tcggttagtc ggttgtgagt tgtcgtccag acggcgacga 900

cgggccggac agcggcggct tcgtcgttcc tgttttgctc aaaagtgcat atggccgtac 960

gaggcccgcg acttcgctat ttaagcccta ttcgagtcct ttacgagcat aggccttgtc 1020

cagtaagggt gtcgtatcgg gctcgttctg agcttttggc ctttcagact agcacgagcg 1080

gatccatttc taaacgggtt aagactcgat ctatttaata agacaaatat tataaaaaat 1140

ctctattttt tatttaaaat ctatcattta tttgtgaaat gtgtattatt tgtaatatat 1200

gttattgaat ttagttatat ccttcaatta tgatttaaaa atatattcat ttttttatgg 1260

tggtctaatt ttaaacttga tttatacgtt ggcaggcttg ggcatacacg gtgaacattt 1320

ttaggccagt attaa 1335

<210> 222
<211> 1297
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137801_G1, chr4:31570935..31572231, Cluster 2

<400> 222
atccaaataa gctagaccgt tgaatttgag taagagaaat aagaggttta gactaatctc 60

gtctcttggt ttcaaagatg ggatggttct aggtgcattt gtttgggtgg ctattacaaa 120

gttcaaagtg atgctttata taggggtata gatatacatt atgtgacaaa ctcagttgct 180

aaacatcttt aacatgtgcc ttgcatcatt gacacgtaac atgagtatca ttacattgca 240

tttgaattgt tgaattatgt ttaaatggta ccttatgaag caactcaaac ttttataatg 300

aagttgtgct atgtttataa cattaaaata cgacatgaga aaacatggtt ttacagtatt 360

tttttacaat tttttgggaa ttattttgtc agcttacaat ttgtgggaag attcaaaatt 420

gggatgacca ttcttgatca aaatggaatc ttgttgattt tatcttccca acgattattt 480

taagaaagtt ttagagcaac atgtctcaac tttttggatt tttaaaagtt tgcctcttct 540

gatcgatgct atggacccgc ttgtccgcca cggggcactc ctccttgttc ctctcctcgg 600

ccattgtcac tatgggcctg cacgtcagcc tctgcaccat ttcttgttct cttcctcgcc 660

cactattact atagtcttgt tgcacttcaa tctcggtgct cctctttcat tcctctcctc 720

tctactttgc ttggatagta gtcttggcgg cgctcaccat cgatgtggac accgtggtgc 780

cagacatagt aaaatctgct tgtgcacctg cctcttctcc tctgtaaagc acatcgtcag 840

cctctcatcc cctaacccca actctatctg tcattctccc attacctttg tcgaagcttt 900

gagccactag ccacaattcc tcctccccat cggtcctttc tctagtctgc cactgcccga 960

gcttcccctc aacttcctta gtttttttcct cctcttttcc atccttccct tattggatcg 1020

agctattgtc gttcttcctt ctcgctgacg tatctctctc catcatctgc catctttcgg 1080

tccttctccg cccaattatt tgctttgatg aacttcccat ggcgccactc gtgtctcttc 1140

tctaccctct ttgtacctcc ctctcattag tcgtatctcc tcgccaccgc agacactgtc 1200

acacacatgt tggtgtgcgc tctcgtgtgc tcgcggatgc tttgatcggg tgggtcttta 1260

acctaggtcg actgacagca tggcctaaag cccacgt 1297

<210> 223
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_144083_G1, chr4:70846267..70847336, Cluster 2

<400> 223
taaccctaaa agggtttgtt tggtctatcc actctgatgt tgcggacatg ttatggaggt 60

ctctggtttc ctgctgtata tggttgtgtt gcgtttcgtc ctgaaatgct ggtaatcacc 120

agtgcacaat gtttccaccc atttcgtctg ccccgtatgg aatgacgtct tgttattttg 180

tcagtaaaat ctcgcgcata aatagggagt tgatgtcctt aatggtgcac ttcacatgtt 240

tcttgaagtg ctggcacatg atgatatgct gaacgcaaag gagctggtcc aatgggagag 300

tggcttgtca ttcaatgaca tagcggctag gcaggggatt cgcatccgca ggcattgcca 360

cccaccgcct ccttggagga gatagagaag gagccaggag cccccttaac attctagaga 420

tcatttggga taaggatatt gaagtagccg aggtatgcat ttgcaactcc gtgcacgtgt 480

tggactttcg tggttcagtt tggtagcaaa gttcaatggc caaaggtaga gagtgatgtt 540

gcgcaaatac agataataaa gcagtgtgag cattatgtct tatagacacc ggttgttcac 600

aaggctacaa gaactagatg gtgtgcatgt agagccttag cccttaggtt agtacagtag 660

tattggcata agtaatctgc aaattacagc ttacggtagt atttggcaca aattctcttg 720

cccatgtaga gaagttagat gatattttct ctataagaca gatacacaac tctcctgtgt 780

attcggtaaa aaaggtttaa aaactatgat tccattttgg gccagagtta caatgcaacg 840

aaaatctttt ttcagaaatg ataaaagcca atgttagatg ctaacaacga agaaaatcaa 900

ttattcaact ccaaatgtgt agacaaaaac gctaggtaag ctgtaagaag gcagggacat 960

atgccgatgc actccatata tccaggcggg agttgctcat tgtttacaat ggcggagaca 1020

aaggggatga atttgactag attttgaaaa aaaatcttta ctgctggccc 1070

<210> 224
<211> 1241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_154391_G1, chr4:143080657..143081897, Cluster 2

<400> 224
gggccggggc acgcaacgca agcggaaacg ggcagatgag atctgtcaaa gaaggagacg 60

tggcgcggct tggttccttg gacggcgccc tcgtccggca cgccgttcgc tttggcgcta 120

ttataagcag ttggcccgtc ctgataggcc actggcctta tttgtccagg ggcacgttct 180

gtgcacctgt gccatggcgt ccgcgatcgg cttcccctca cttccagagt ccagactcgc 240

tcaatggatc cgatggaaca aagtagttta ttgataagaa tttttcagag tgtccgatat 300

actaaaatca acgacgaaga gccagatttc ggtactaacc gcacgtcaag aagtgggaat 360

gataaatatt ttaaaaacaa aatttgaatg ttacgatatt aactatttta gaccgaagta 420

ctgctatata ggagtatatt tttttaatgt ctaggaatct ttgaatctca gatgcgcgcg 480

ctcgtcggat gatgattttg tttcggggaa aggggaaaaa aacttaatct tcgccatatt 540

atagaccgga cctgttgggc gggaatcacg caacaggctt cgatgatcga tcggtgcagt 600

cctggtgagt gctaccacgc ttcagctgaa cccacgtgat gagcagagac taccatgggt 660

ccggtccggc cagccaataa tttccgtaaa caaaaggtga gtttggttgc ccatcccttt 720

ctgccgcaaa acccaataat tcccacagat cggctgtcac gacgttcgct ggcggcacgc 780

actcgtcgtc gctagccagg gtgaggccgt cagggtgctg agagacgccg taccattatt 840

acccaaccgg gtgcagcggc atcgtatcta tcggttgtgt ttgtttgtgt gcgcgtgtca 900

agggtggtgg tggtggtgat caagacgatc caataattaa tagccccgtc ggagaggtag 960

tgcgtgatgt tgagtgagac ggagaccatt aatacccgcg tactcatcca ttgggtcgat 1020

tgggagtttc gttctcagct ggacgctatc gtggtgttga gtgagacgga gaccattaat 1080

aaagcaattg taaccgcccg ctgcgacgat agggaaggtt gtcgctctac gaacacgtag 1140

ttctccctgc gagctgcttc gggttacgtg cgcggacgac gggagggagg cccacgggac 1200

acgacacgtt gcgtgcgcat gagtcgcaac gtgcaggccc g 1241

<210> 225
<211> 1156
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156884_G1, chr4:156478057..156479212, Cluster 2

<400> 225
aagggatata gatatgaaga tgtcaaaatt aaattagatt taatatcaaa tctgcctagt 60

attagaaatg tgttgcaata caaatgtaac tggaattgca attccagcca atacagagag 120

tctaggctct gaattatgag aggcagttgg tagttatagt ccaatactaa agaatctcta 180

ctataaagca tgaacttcta ctatcgttgt gcttcaacac ttttaagaaa aacattatat 240

ttcattgtaa tcaacctgtg gtccaaacct ccccatccta gctctctcct ctctcccata 300

gcgacaacgc gaccgttatg gacatcactg ccaacctcgt ctgcctccgc gagcgctacc 360

ccttcctggc cgccaggccg cctgtctgcc ccgagaaatc cccgatctag tggcgcgccc 420

cgacgaccta gcgctcacca tgtttgtgct atcctggctc gatgggaacc cgcccttcct 480

acatgcttat ggccctactg tcagcgttgt tcccatccct ccacgtgcac gcacgccatg 540

tgcgagcact atggctcatc acctgagcgt tcatgaggcc acactggacg aagaggtagc 600

cgagtacaag tctacctacg ccatgaagct aatcaagata tggatgatga gatggagagg 660

attcgtggca tagggacaag gaagcgagag aacggaagga gaggaggata gacatcggct 720

cagagagaga agtggaacgg gagcggagga actagagttg ctcggaaaaa tgccgtatca 780

agaaagagga gatggtgagg aagctagaga acgagtgcag caagcggcac cactatcatg 840

accatgacat catgtacgaa ttcgtgaact attgtgtacg caagtaaaat tgagtaagta 900

cagagaaggt atgaagaata tagttgttcg tacaaataga ttgagtcact cataaaatga 960

ttatgtcatc tcacaacaca ttggcttgta ctagttaagc tttcatttta actctaaatt 1020

tattagacaa ccaaactaca gaattcagaa attctattta caatttccaa taccatactt 1080

taatatacac ctgcaaacga ggtgtaaagc tacaccaaag tccaaatttg gtctaagtta 1140

cttgtgatta tagctt 1156

<210> 226
<211> 1320
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157544_G1, chr4:159912743..159914062, Cluster 2

<400> 226
cgcaaaaaat atttgagcag tgccatccct tttgcaactg caacgttgct cggtcaaaaa 60

agggcaggaa gtaagaaaca acaaacaatg atatggttca accgtgcaga gcagatacaa 120

tggttaggat ttaataggcg tcccatgacg tgtaaaaccc aattaagaat atttgcagac 180

catgggtcgg accaccatcc tatgctaggt tccgccgaaa atggaccata aacctgcact 240

ccttttgaaa cactcgcgca ctgtcattcg cagctgtccg gctggtggtt ttacattgtt 300

ttagcaaaga cctagtacag gagatgcatg cctgcctgcc tgcctgaaca tgcggagtta 360

ttgagtggat cgatcgttat tgagatggtg gccacccacg acgccacaaa gcatacgaac 420

ggagcggcat ggaatggacc atggaatggg atggatatgc tctcgcgctc cgagtgtgcc 480

catgtcgatg ccaccaactg aacgcggaaa gagcaagcgc gcgacgatgc ccatgagcaa 540

cccaacaaga gctgtcaccc tcatctaagg gcgcaagcgc aaccagccct gcccatctgc 600

tatcatgtgc attagctaga ggctcggtgg tgtcgttgct ggtcgtttga ttcctgtctg 660

ttcttcttcc ctcttccttt taataatacc ccatcttcct aatttctaat tcgtttgatt 720

ttttttatgc taagtttacc cggctcatct tattcaaaaa ataagaaatt caaaactata 780

gttagagtat actatatagt agacgatatc atcgtaaaaa ctaacaatga ttatgaaaca 840

aattaataaa atgagtaggt caaattttgg ataaaaaatc aaacaaatta taaattgaaa 900

caaaatcaaa caaattataa attaaaacag agtgaatact tcatatatac cgtgtcgatt 960

gacttttttct tcgtagtgtc ctctccacga atctgagcga gtttggcgct ttgatcaggt 1020

gagtgcttaa cttgttagat ctatgacgtg atttttctga aaaagaaaaa aaacatgtga 1080

cgtgatggct ggtgctagat acttctacgt gtagagaaac gggtacagat gagcagtacg 1140

tacagtgtaa aatccactgg aagaacgtgt ggagagtttg tgattcgaca ggaaccttta 1200

tttgttatgt ataaaaaata atttatcatg tgtgtttatg gccggccact aactgatatt 1260

tttatcagga agtcaggata agtctactat cgtacctttt tcagggcaga gagagatatg 1320

<210> 227
<211> 1186
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159527_G1, chr4:172520053..172521238, Cluster 2

<400> 227
ggtcatagat atatgacgca tacacaccat cgatgtatgt agtggtggtg acctagctcg 60

ccgccggtcc gcgagtaaat aaagccagca ggtaacctcc ctgccccctg tccattgtac 120

acaacacaac aagacatgga tagccgttgt agttgtcatc ttacaagtag tcattagcta 180

ctattcctag gttgtataga tgtatgtagc attatagcta tatctatgtt catacctaca 240

tgctatattg ctattaaaag aagaaaaaag tgttcaataa agtaatttgc acatcttgcc 300

tcaataccca tcggacgtgt aaagtgcatt aggcatctga cacagttaac cactagttta 360

tagtcgttag agttatagcc attggaaagg catcgaatgt gtctcgtgca ggaaactacg 420

gtgcaacaga catatctagt gcctttgatt tctgtgtttc aagaggtaaa ggtcagatct 480

cttgatcggt cttggctggt aaatctcgac tctatatatt tatcaacacc tcttaagggt 540

acaaaaacat atccattcac gtgtagctca ttttttgtga gatattggaa cattcttggt 600

gcattgcttg tagtcattgt taattgaggg gtcaaaatga ctattacccc ctacttttc 660

gtctgtcggt ccatcccact gcacttcact ctccccactc catttctgat ccaaatcaac 720

cagtgggcca tattttcaac ctagttagca caattcaaat tcaacatgag accacatcaa 780

tctcgattca cagtatggag atcgattata atatggaata gatgacgcaa tcattacata 840

aatctttata ctgcatgttt gttagtataa gggtctgttt ggatcgcatg tgctagactt 900

taacaggggt gctaaagttt agctctctta aatagagagc taaagtttag cacatggata 960

ttgtatggat gaaagtgcta aagtttagca catgggtata gaaagatatt catacctcta 1020

attaatgtga ggtgggggag aaagagagtg gggtaagagg ggtaatagat gtcttttctc 1080

catcttagat cacttttagt tgactttagc atatctggac gagctaaact gttaatgggt 1140

attattaagg tttagcgctt cacttttagc acattttagt actcct 1186

<210> 228
<211> 1293
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160593_G1, chr4:178593437..178594729, Cluster 2

<400> 228
gagttgcaac gtctgcccac ggcctacttt tatacatctc tggggatagg cgctcgataa 60

caataggcga tgtggcacta aatggcaaac agacacacta ccgcttctat ccgcctggct 120

cgaccagcga ggctgcagcg ccaagtagag ctaccgaagt gccgatttgg gcttttcctc 180

ttttatttta cgcactgcta aactgggcct attagccgaa gccaagatta tttttttgc 240

atgggcttta atggtctgga taacaaggct gactcgaacc cgtgcttttg cctgtgattc 300

tttgcagtta ctccggcctc cgtgtatcag tgaccagcaa ccttccccta tggtttgaag 360

cagcgaaaga tatagagaat gctgatgaag agaagctgga agaaattcaa gaatggtaga 420

ttcctctcgg tacaatttgc gataaaaaca agcctacacc taggtttgtt aataacgtga 480

tttcttactg tcacagggag gtcggcaatg ctagttgagg atatgtttgg tttgagatca 540

aagtgtgata ataaagtggg tgcgacaccg ttccctcgat ttttaggttc ataccaccac 600

agagacatac tatggtgttt acctcgcttt tacgtgactt tcatccaaac gctatataaa 660

ttatagtcac cctcttctat ccatccatgt atatccaacc agacaccacg actaactatg 720

cttggcttca ttgtgcaaga atccgtaact cgtgccgggc ccccatcgac aatcttttga 780

cgcacctttc ggacccgttc gacaaaaatg ccattcacac actctcctcc tcctaagtaa 840

tcgtcccaaa acctttgttt gtataatgct acggcacata atggtgacaa taatgttttt 900

tctgacagta aatggaattt gttaggtctg ctcgttgcaa agttttctat catgaaaaat 960

gaataaacac cccgatagct ctgacgacgt gtactgatat atagatcatg gtagggggac 1020

ggaagataaa ggaaatacat tttatcattc tttgcgattg atcatgataa tcctcagtat 1080

atccgctcac ttttcatttt cttggtcgat tctttcctag ttcaatcatg ctataatcgc 1140

ataaatagac gctacaagag atacaattaa ttcgtatggt ggtattgtga ctccatcggt 1200

cttaaagtgc ctcaaacatt tgtgtagaga tgtcatttca tgttttgtca aagagtatat 1260

ttatcgtccg actattgatg atcttaaacg act 1293

<210> 229
<211> 1235
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161183_G1, chr4:182741929..182743163, Cluster 2

<400> 229
attcatagct atacatattc tagatcacta ttatatttga tcacgttttc ctcttccagc 60

agacgaaaaa tatatataaa aaaacaatac atattagctc tttcagaagg agaaaaaaat 120

acaaaaaaga cagtgcataa tgtctgagcc caggttcgaa ctggggacct ttagtgtgtg 180

agactaacgt gataaccaac tacaccaccc agacatgatg ttgaacaata tctccggcat 240

aatactgtaa cttacgttct aatctttagt tcttacataa ctctttaatg aaaggttaca 300

ttttgtattg acctagcatt ctggacgtcc gctccgcacg caactaacca cccagcgaat 360

ctgacacgta accaaagtca gatccatgca aatactttac ttggggtctt gggctgatca 420

gcagcagcag gaggcagata gatagagaga gagagaaaaa aaaggcgaaa caaaacaatt 480

cctttcctcc ctctccagcg agtacgcacg gcataatatt cctcatgatc tatctatcga 540

aacgaaaaca agatcgtgga cgcgccaacc gagcccacgc acgcacgcga cacatgttta 600

gaagcggtca atgggtgtca ctgccacgag accagcaccg tccggcgcga gcgcatcccc 660

aggccccagc acacccttgg tttcgttttc ctggtccaag caagcacagg aaggggcac 720

gcgacgggaa gaaacgaact agaacgttcc tgttccgggg cacgcggcaa cgttctactg 780

ttcccagaag gccagagaac cgtgccgttt cctgccgagc tagctgcttc gggaccggac 840

ggaagcggac ccactccacc ggtgtcaaag tcggtctcgc gcggcgcaag attctccggt 900

cggtcaagaa accccggttt cgtgtagcta gctactctcg actccgactc gatataatta 960

agtttgtggg gcaagattca ccgtgttctc tcgaggttaa catcaccatc ttgcggctgg 1020

tcaagaaaac cccagtttta tgtagctatt gttgaagata aaaaaggcga cagtgatctc 1080

atccggaagt aacaagaagg ctccagaaga ttaccggtta ttacatcttc ccctaatcct 1140

aattaagcat aatatctcta ctactctata agcaggtaag gagggcgtcc accacggctc 1200

cgcccggacg tcgcatgagc ccccgcttcc cctgg 1235

<210> 230
<211> 1034
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161989_G1, chr4:187591718..187592751, Cluster 2

<400> 230
tttttaatta aaattagtta aggctctaaa cgaaccgtga aaaacatttg aatcatgatt 60

tattatgact cctacttgaa ccatcaaata cacgattgca catgatatgt ccccttaaa 120

tactttcaga atctatacta taaaatattt agttttcttt tgtgcgtcat cacaactgtt 180

agattcagtt tttattgaaa tcttatgggc atcagcagtc ggcaggaact ctcctcacca 240

aaataattgc gaccgctccc tcccctccac tccgttgtag aattgtcaaa aatcaatggc 300

gacgcaaaag atgatccgtg ccaaggtgca agtgcatgtc caacacgggc ctgaggccat 360

tggcgaggag tgcatgctgc agctggtgga gggtgtcggc ggcgtcaagg tcctcgccgt 420

catcatcgta gatctagctc ggtgacgagg aagtaggctc gtagggcctg atatcggcta 480

cgtcacacca ggcaaagacc ttgtcatcga agtaggagac gaggaggtag ccatcgtggc 540

cagtgtggtt ccctccgacg gattagatga ggcccagcca agtgtcagcg tactcaacta 600

gaacggaaac ggaaggggag aaactgggaa ggggagcaga gggaagagac ggaggaagag 660

aaggggagca gagtattttt cttaggggtg ttttacagag cttccacagc tctgttcaca 720

tagagattca ctcctacata gttaaatagt aaaaatctga attgctcaac ggtgaaaatg 780

aagtgaatct aatctctatt ttgtactata aagtgaaagc aaaaaacatg tttctcaccg 840

ttcccaagct gctccccact ctctagatta acttcacagc ctatttgaca aacgattttt 900

ttcaaataaa ttcatttctg ctaaaaaatc actcgaaatc actatattag agaatcggct 960

ctcggagcta aagaatcacg aagcgaagct atgccaaacg agctccacac gaccacacct 1020

attccttcca gaat 1034

<210> 231
<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162738_G1, chr4:190978100..190979118, Cluster 2

<400> 231
tgtgttgtgt ttgttttctt tgttttcctc cttgcctgcg ttgtgcttgc agttgtttgt 60

aatatgttat gtgccacaac attatgtaaa ggttaccttg tttcctttaa aaacgaggtc 120

gttgaggtgt agcttagtca taccaataat caatgaaaat cagctaggga ttgtctatcc 180

ccgttgacga ttaaaaaaat taaaacgatg cacgtctgta gtacatctat agatagatgt 240

acacacgttg taaaaaacca agattcaagc ttattttcta ctgttcatgg ggctcgactc 300

gctgaaatta ataaaaatga gcaaagctac gtacttttaa agtataatat aaatgaattg 360

tccatctcgt atcagattaa gtttttgggt taaactgatt gatgcatgca accttaatat 420

ggtatcagag ccagagatct cgagttcaaa tcttagctag cacaatttaa taaaataatt 480

gttgctcacc catatattcc acttcagtag ggtaaggtaa gaatgaaaca ctcatgtgct 540

ctggtctgtg gacagtcaat aagagggctt ccgctttctg aagccaaaac acttgcgtgc 600

tcgcacgtct tgcctaatcc gccggctaat gaaatgtatc tcaggggtat taatcaaatt 660

agcagtgcaa cgacatcaat caaagaataa taagcaatac ttgcaggcgc aaaacctgcg 720

atacgtactt gtttatattt atggccaagt aaaagaagca tttcggactt cggagtcaag 780

ggggcaaagg ataataatta acctaacctg catgcaaatc tgcaacaaaa accgtgtatg 840

gtgcccagcg cccttgcgca tttcccgtgc accgacgccg acgtgtgcag gcaagacata 900

ggccatggcg ggcgtggatt ttcgagccgg ctagtgtgga ttactccctt ctgtctttga 960

gaaaaaaata cataaatata tatttttaaa gcttgcgtaa gagtactgct tggcttcaa 1019

<210> 232

<211> 1163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16548_G1, chr1:91871188..91872350, Cluster 2

<400> 232
agagtcgaca aaaggctact gttgtatggt acgtggtggt caacaaaggg cgcaacaagt 60

gatggaacct gcctaagcct aagtctgtgg cagctggagc ctggatggga atgggatgat 120

tattatgcat gatgggcatg caatggcatg tccatgccga gcgacgacgg ttgcgacaga 180

gcacgtaccg gtgcggtcac atggcgagac ataagccatc attaaaaagc gcgcacaacc 240

aacggaccga aagcaaaaac accggcaacg ccaatcaagg ctccccccga ccgttagccg 300

gtcgttatat tccggaccaa ccacgggggc cgcgccacca tgcaccagta acggccgcgc 360

ccgcgcgcca cggtggttag tggcatctat cgtccggtgc ggtccggtcc ggttcgccgt 420

gtggacaaaa cgggcgggcc gagcgcgacg ggtgggcgga ggagcgcggg ggcacatggg 480

cagccgctcc gtcgccgttt tcacccttga atgctggctg gctggctggc tggctggggg 540

agttcgccgc tacatacgta acgtacctag gccgtctggt cgatgctcgc gccatgtatc 600

gtcaggtgct agatgttgct gttgcaggta ctggactggt cccggcgccc gggccttctg 660

gcacgcacgc aacgcatcgt cagttagaga cgatccagtt tggccactcg ttgacacgta 720

cgtccgtccg gccggcaccg ggcaccctcg ctccgagtaa tacacgtttg ccttttagca 780

cgggaccatt attgccccgg cagctccgat ccgtagcaga tcgacttgac atacagtagg 840

tagagttgaa ccgaacgtac ggtcggcatg catgcatggt tctggagcga gcagcgaggc 900

aggtagcagc tagcagaccc atgcatgtga gccggtgaga aatttccaaa cctgacacga 960

tcagcgtgtg cgcaccacat cacatcacca ccggcccggc ccggcccccc aataataatc 1020

ggccgtcacg gggggtccgt gaccaacgag cacgccacgc acggcgttcc ccccctgccg 1080

cccgcggccc gcccacgcac ccgcgcgccg aagtccgcgc tcccccgctg gttgtggtgt 1140

gcgtgtgtgt tccttttctt cac 1163

<210> 233
<211> 1136
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171355_G1, chr4:235167661..235168796, Cluster 2

<400> 233
gtgcatgtgg tgaggcttgg gatgaaatat atgatgatga tgaaactttt tctgcttctc 60

tgggaagggg tgtaggtccc tcggtccttc tcagtctgaa ctctcttcat accttaacag 120

ctcttttact cctacaccct tgtgagcgcc acgccgccac acccaccggc ttcaattcgc 180

aggccggcca ctccaccctg cacagcacag ctcttttact cgtacagccg tactgtacat 240

acgtacacgt actacagcac cattcatcgc aacaatctca catgagtttt actggtagtt 300

tcactggaca gtgccgtaat tccacgtgta gcttgcagtg cagttttaca agttacaaca 360

atctcacatg agttttatat atatatatat aatcccaaca cttgcatagt acatactgtt 420

gtacacgacg tcagcatcac atcagtgtcc ccatgatgag tagtacgttc gtgactgcct 480

gcatgcaccg gaatttatgg cgccgtactt aaggatcgac acattcattg tctccagtga 540

ctgtctgtaa tttgcagcag tctctgaatg gggtcaagtg ttgagtgact gtacgtacgt 600

gcgctgctca attacaggat cttccatttt atggcgtcgc tggcctggcc tggccgtcga 660

aaagcaccgc ctgctcgttc cggcgcatgc atgcatgtcg ccggccatcg ccagaaccca 720

gaaggcggag gagcatatgc gcgccgcgcg cgagaaggcc gaagggtcca cgggctttct 780

attgttatat cacaaggtgg aaaaaaaaaa cgtctacagg ggtagtccgt cacgtacgtg 840

catccgtgcg ttggtcgacc ttggtcctta gcggtcagcc gtagcgcctc gctcggtcgc 900

gtattacctg tccctgcagg ctgcggctct gctccatgaa atttctccgc gccatacctg 960

cagcggtcag gcacggcgtc tggtacgcgg gtcggcgggt gaagatgggg ctttgcaagg 1020

tgaagtcggt tgtggctcgg caacgataac agctgacgaa ccccccttctt cgtggatggg 1080

attgtttcgt cgtacatcta ctaggagtag gatagaggtt caagctcatt ggtgaa 1136

<210> 234
<211> 1403
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173223_G1, chr5:4922804..4924206, Cluster 2

<400> 234
ttttgtgctc ccgactcacc cgataggaag taacgggacg gcgggagagg gtcgaactcg 60

aacagctgcc gggcagagcg tctcccgact tggatggtat ggcgtggggg cggcgggcgg 120

cttggcaggg cggtcgagcg tcgacggcat gcggcctttc tcgccgccgt tccaccacca 180

ttgcacggcc ggccagtgtg tcgctgccgc gacgcgcctg cgcatcaacc gcgatcaggt 240

gaggagggca agcacatctc cagctcctcc tagcgagcag gggccctgct agcgagtgac 300

ctactactcc tagtcctcgg cctgttcgtc cgtccgtccg tccgtacgcg cgcggatcaa 360

catcaacttg ctggacccaa gcatgtggat gcggcgtggc agtggctccc gaatcgatct 420

ccaccagtac atgccgatgc cgatccacac acgacgagca ccagaccgca ccgggcggcg 480

gtgggaaaga gggcagcaga tgctctcgcg ccgtggctgt gcacggtgat gggttgacgg 540

cgctgcgcac ccgcgcgccg atgccctgag ctgcgaccga cggacgggga cgtgccggcc 600

tggcattgac cttgagtccc agagcgaccc aacaggcgat ggcggatggt gtggtgcttc 660

tgctgtgggc tgtggctcgg ccaccgtact ccatccgagg ctcgccatcc gagttggcgt 720

ggtacgggcg gggacgggga caggtggccg ggggacgggg acagggaacg gacagacggc 780

catgtgaccg tggcgggctc gccgtcagcg agcgagggac agggagaggc cgcccgaccc 840

aggggccagg gccaccatcg gcagagctcg tgagttcgtg acgccgttgc cgctgccgct 900

gcccgagact cagactccga gagtggttgg cggacggatg ggccttgctt ggtcccggca 960

ctgcagcgtc cagcgcgccc ttgtacggtt gttcccatgc gcagccggca gctcagcact 1020

cgggcaggaa ggagagggca gtagcgcctt tctcgttctc gttgctcgcc gctcgtgcgt 1080

gattctttgt ggcaagtggc aacgcacacg cactcactca cactcggtgg ctcggtgccc 1140

cgcccgcgtg tgcttgtttt tctggctgtc gtgtagcgcg gctccaagac tgatgagtca 1200

gtgggatcga tcgatctcta cttttaggag acagttccct cttagccact gaatcttagg 1260

gcctgtttga gagagctttg cttcaaaaac ttcagctttg gttttctagt ttcactagtt 1320

tcactataaa acagcttcag caaatcgtta aggtgagttc caggagcgtt tggtttgtat 1380

atggactcca acttctatag tac 1403

<210> 235
<211> 1230
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174499_G1, chr5:12520777..12522006, Cluster 2

<400> 235
gcacctttcc gcatctcttc ctaaacaatc ttggattgcc tcgaacgcgg gctggaagga 60

ggtggcgggg gtgggttcgg tggcaactgc ggtgggagca tggatggagg tagaggcggc 120

tttgggcagg cgcaggctga ccgacgacgc ggcaggagtc tgtcttacat gccaccgagc 180

atcttgccca acctagggtt tggctgcttg agtgaggaga gatgcggttt ggggaagaag 240

accgaggccc gatttgattc aggcctctat cactccatgt gatttctcct ctattgtcgc 300

catactcgag tcgacgcgct agcaactgcg cctcgtcggg tcactatcca gtccattcca 360

ccacttcaca tgcgaacaag agcaaagccc gaaatccttc tccgtttctc cccctgcacg 420

catgcacctg ctctctcgcg tgtctcttgt gtccttactg tctaagtgtc tagtggcgac 480

gactgccact gccactgcca ctgccgccgc cgcccgcgag gggccatgcc cctcatctcc 540

acctttgagc gcttcgccca ggtatgtctg ccccgcagtt gtcgtgcttc acacagctca 600

gtccaccgtc ttgaaacctt gtaaaatctg cattgtggag aaattccatt ccctctggac 660

ttggattgga ttgcatgcat acaacggatc aattcaatag cgcgtctatt gtcctagcca 720

gcaaatcaac acttatttgt gtagtccagg gaattgcagt cgtgcctgcc atgactgcta 780

ctcatgaaaa cgtagcttta atctcttcat ttctttcttt cttcaaacga cataaagcgg 840

cttacttcca ttattcttct ggaaaacgca ttactgcaca cactataaat tagtatgcat 900

ttggtaagaa atgcaaatat ctgctttgac acaaaacaag gcatcaattg ctttaggttc 960

agttcttaaa accggagaag atgggtttcc tccggactgg tgcgttgttc acttgtcatc 1020

tgccattccc gttgaggcaa actgtcatac aaaaaaatcc aaaaaggcca ttgtttcttg 1080

tatttcttac aattacgaag acatcgatgc cttcctttgg gaattgtagt aataatctat 1140

ttgagcttca aaacaaaaat agtggcctag taactaaggc atgggcgcat ggcaatttaa 1200

gtcaaaggtg tgttggtcat atgcagacta 1230

<210> 236
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174953_G1, chr5:15083100..15084138, Cluster 2

<400> 236
tatttttta gctatgctcg tgctaccaaa aaaaacccga tccatattct cggcactact 60

cactcacgat gctagcctca gctgtgacca cgaacaaact tggctctaca gaccctgctc 120

tctctctcgt cacacacgca aactaatagg ttgtgtaggc aaacatgttt catatcagta 180

tctgatgctg ggcacgtgat cagaattttt cctgagacac tgttaatttg gtcagcggca 240

aagttgaatt tgagacacga tataataata aagccttgaa cgtatatcac gaataatcct 300

ggtagctagc agccagcgac taaggcggga actgtcgata tcaacaataa ttcaagcaaa 360

gaattggccg gatccagttg aaaaaaaatt tgaccagatc caattggcca gggtcctcat 420

ctgagtcgtt tcttagccgt tgatcgatat atacagggtc cacagttgat ggatttgttt 480

tgtttagtgc tttctgcaat tcatacagat agactgaagc cgctctgatg ggctagctag 540

ctcgcctcgt ctgtctctgt cagtctgtcg tccacgggcg ttgtttcttg tcctgctgct 600

gctgctgcca tggattcagc aactgggacg cgagccggaa gtgccaggca ccttccttcc 660

ttcctcttcc gcggcacaca catctttcag ccgccacgcc gctgcttctt tcatctcttc 720

cagagttcta cttccagtcc attgcacgcc acgcttgcct tggactcttg gtacatgaac 780

gcgaataagc acgcatttct tccgttggcc caaacaatct ctatttatct gatttttcta 840

gttggtgctt gtcgacgata aagatcagca atgttgtcaa atttttgaaa aatagggttt 900

gtagcatata cggtaatatt ttggtctatt tagttttatc gtaatgatgt tgtctttatt 960

tttatatcaa aaccatcaat tatataggtt atttttttata ggcacataat gttaattata 1020

agctctgtag cttgttcac 1039

<210> 237
<211> 1298
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175636_G1, chr5:19127993..19129290, Cluster 2

<400> 237
tgcccgggcc ctggccggcc cagccagaca catatagttg gacatgtata catgtatacg 60

tggcagggtc gcttgggagg caaggtgggg agggagaggg atgagagatg agtgatgagg 120

gatgattcaa ataatattgg ctattgaatt tgagtaagaa agagagtgtt attcaacaat 180

ctaaaccgtt ggttttgatg atgtattaag tctgggtgta atttgtttgg tggatttact 240

ggaggttatg aatgtaggag tgattagttg gagacgtctt acatataaat atgtcaaaat 300

ctaaactaca atgactaaat tgcagttaca tgtcacgatc aacaaccccg agaatgtaga 360

aagatttata gtcgcccctt ccactcaaaa atgtctacct gagcagctga gctggcttat 420

atctctgatt ttttatatga aatggataat gcatgttaat gcttatattt tgttgcacca 480

ccagccaata accctcgctt ttgtgatttg tatggaaata cccaatttca tctaatgaag 540

gcgtacgatt ctgctaaaat gttaacgtaa ccttgactaa ctcgaccaag gctggaaatg 600

ggcgaaggta aaattcacaa tttagtttct taaaactggc agatgttctt gcagtttcta 660

aggtcttgtt tgggataatt ttaggttcca gctctagtgt agagcggtag tttataatac 720

caatttaaat agttttaaaa atatatttaa tctaaataat aaacaaaata atttatttaa 780

atgtatttaa tgtagtacct aatgacctgc accaccaact ctattaaatt ttttggagct 840

gaagatatcc aaaccgccta aaactctgaa gctataaacg caacttgttt cctagacaac 900

gggcatgctt tgcacacagt ctcgagtaat tcctgaatga acaataacaa aagtagcagt 960

aggagccctg ccagcgaacc gcctacagca tccgttcctc aaaacatctc cctactcatg 1020

tcatccctaa accatccgta cctgaagcta gcagctgtcg gtaagcaaga aacgagcgcg 1080

cgtcaggttt actcaccgca gtcatcttcc tcggcggcgg ccgcagcctc aagcgcggag 1140

ccgcctccac tggcgagggg gaaggggcaa ccatggtggt ccgcgaccgc gaggccatga 1200

gccggaggag ctgcctcgag ccctcgacgg agatggatcc tttggattac tcgtgtggac 1260

ccgtccctct ctcgcactta tgtaaatctt cggagcta 1298

<210> 238
<211> 1263
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_184936_G1, chr5:76434219..76435481, Cluster 2

<400> 238
aggtgaggtg accgacgctg cacagggagg aagctacgag gccaaaagat acagcggaac 60

gaacgaacga acagacaaaa acaagcaacg caacgtgagc gtatcgaatt cgtatcgtac 120

catttatata gtgattgatt tacgacgaaa atgataccgt accaagcagc acgactggag 180

tgactggctg tggccgtcac aggcgaggcg agaatgacgg catgtgcgtg cctctccgtt 240

gatgtgtcta cggatgctga gttccctctc ctctcggcgc agggcgggag gaaaaggcgc 300

gcacatgcag ccattctcgc tcgtgattca ccctacatgg ctacatctca ctagagtgcc 360

gatgccgatg catcatgcat ggactgaatc actggacgac ggagagcctc tcacttctgc 420

tgctccggtc tcccaccgtg gcgccctgcc gccctgtgtc tcggtggccc gcggcggcca 480

tgtcggtggc ccggccgcct gggcttgggc ggcagcagca gcagaagcct gcactgcatg 540

tgcggtgctc ctggattagt gtgggcccaa ccgcccagat taaataaaac aacgaacccc 600

caaactggcc cacccgcggc gcacgccgca ccatcatcag cccatcaccg tcaaggcgtc 660

cactcggaga tcgctcgtgt ttgagctacc tacgtctaac gtgtgtggtt atttaggcct 720

ctggttcagc tatatattca tgaaaaaccc gagattatag acacgagccg tgagaaagct 780

gttgcggctg tagagaagct aaaatatgtt tagttacaac atcggtaggt tcggtaagcg 840

tgtgatgata gcttggtaaa cggacgacat ggatctgaaa aaaaaatccg ggatacaaag 900

gtggttctga attggactaa aaggaggatt atgtagattt ttagaaatct attctaatgt 960

tatacccgtt caattggaaa tcgagatttt ttttcaacat caaatctggt taagaaagcc 1020

caacgaaaca cgtcttagtt ctctgaccca ttctttcttc gtgtaggtat tcatcctctt 1080

gcaaaaaaag taatacccca tccagatcta gattataagt cgtttcgaca aggtttaagt 1140

caaactttat aatttttag ctataaataa ttgttttatt atttattttt gaaacttatt 1200

attattatta ttatcattat tattattatt attattatta ttatgcatcg ttttatctta 1260

aaa 1263

<210> 239
<211> 1128
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1901_G1, chr1:9908833..9909960, Cluster 2

<400> 239
aagtggtctc aacaaagtgt tcttctggat gactaaccct ttgttcacct cactgcaacc 60

aaaccaacat tgctataggt gaatggtaca gtttgaaaca aaaatagaaa tcctatctga 120

tggggagatt agattcagat tcaatgaaac aattgggatg ttggggatca atgagacgtg 180

ggagattggc tgtgggatcc ggtgcgcaac acatagcaac gacacaacac acaaaccaaa 240

ttattggtta aatgaaaagc ggaaagcaga aggtaatcaa caacatgcct tcttaaggcc 300

cgagagtgat cagcgacata cataccgatg atgaggagca ccttcgtgac cttgtagcga 360

ttgcggcagt aatagactcg gggaccctcc cacttgtcgt tgtccgcgta cctgcccatc 420

tcgcagtaag gcattacatc tccccatcga tcagggtcgg ctcatggttt tgaaaggaca 480

taggcccatc taaatatttg ggcccttaat atatattttc acttatgtat catttaaaat 540

gtactttaat agaaagctgt aaaacaatga tataatctgt gtgaacacct caaacttgta 600

aaattcgaca tctcatttaa cactatagaa tgtctctcaa aataagtaac gcgttgagca 660

tttcttgaag caaaatcatt aagaccaata tttagatcaa catttaccaa tatatccttc 720

tcgatcgaac atgtaaaata attaactcta aaggactcta tagatgacac tgattcttct 780

tcgttccatg tattcatgtt tctcatatgc tcaaaactat tttcacgcta tttgatcctc 840

ccactaagat gcttccagtc cctcaatcca tcatgtgcca gcaaactttt ggtctcattt 900

gatttaaaca atcaacaaca aaaataataa actttatcca catgcttaga ataaacgaat 960

cactttctat caacaatctc agaattactt aactttcttt ggtagaaggt acagaaaaaa 1020

tgcctaccaa gattgtcttt agggaactac atattcaatt ctctcatagg ccccttttca 1080

attaagatgt ctattctttt atggtctaga ttatcctatg ttttagga 1128

<210> 240
<211> 1028
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_195_G1, chr1:1034771..1035798, Cluster 2

<400> 240
ttacgagatt atcgaaagta ccatctgtat gtgcgtccca atgcatgttt gcgaaatcca 60

attcgtgcat atgtgatttg aatttctcat ggtttccata ctagctacct cttgtttttc 120

acagatttga tgatagtcaa agtagtaata ggcttccaaa aaatttcgga tacatgtcca 180

aagtaaatta aaacatgtat ttgtcagctg gggcctgggg tagaggacaa caagtgaagt 240

aaagcaagcc acacaaacaa aaagcaaagc gccaaagtgg cgacgacttt ggatttttct 300

ttgttataaa gcacaaggat acaaaggcag gatggatgta tagatggagt gccactacca 360

aagtgaagtc acaagtgaag tcacctctaa tatataatat cccaagtaca gaaaaaataa 420

caatgacaga cacaaattcc tgcattattt aaaaggattt tttctagatt tatctgtacc 480

ttttctcagc atacaagaag aggatttcca atcctatatg ggtgccatag cacaatcaca 540

catcacaaag ctaaagatca agtaaaaaga gaggatgaaa agctgtggcc accaattgga 600

caattgggta ttggcaccac tcctctccct ctcaatctaa aagacatgca gcaggacttt 660

gagctaccat ggtgcacagc agggaaggaa gggaccattc ttgtctctat tcctttaggc 720

acacacgtca cagacagaca gaagcaaagc aacaaacata aagcaaacca aattgatatg 780

agtgctcaaa gtagaaagta tcaaaaaggc aatccactta ttcctactta aaaaaaaaga 840

aaaagaaaag aaaactacca gtatgtttgt cgtgtttatt tattccccgc actgaccatg 900

ctatatgaaa caactacatt tggaactcag aatcatgtat gtaaaagatc aggtgtatcc 960

acctgcaagc tgaacgaatg ggaacacaac aaagaaaaac tttcaaactt tccgtgcaat 1020

tgccacac 1028

<210> 241
<211> 1060
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_197377_G1, chr5:158692022..158693081, Cluster 2

<400> 241
tgccctcccg ctgagccgct cacgcccccg gattccccac gacgaggccg ccctgcatgt 60

tcctatacca atatcaatga tcgtgaccgt gccttttgga cccctcctcc ccacgcctcg 120

tgtctagaat gttttgcaca tccttgacta gctagctcag tgcgtcggtg gggtggaggc 180

cagaccacat ctctgttgtc gtgctcgggc tgctagactg atgaggtgcc ttccactggc 240

tgcgtcgttg tgatgtgctg actaaattcg ggtctatgtc attaagacac atagctttag 300

cttacttttg gggtggcaag accgagcaaa cccgtatctc acgttgggtt ctgcgttcgt 360

ctagcgtgtt ggattctggg agtatcaggg aggaccgtcg tggccacaat gttctagctt 420

gccaggggaa gcactgtggt caactatcat cctccataat acgtcgtcta gcgtctcgtg 480

ccatggctcg cgcacgcatg ccacttcgtc gtggctgcac tgatcgttgc tgtgcatatc 540

ccatctgtcc cttggcaagc gctggtttcc tcgagcgtgg cttcgatgtt ggcagcattt 600

tatgtgtctg ggcaagatgc ggtggggcag atgctgccgt gaacatcgac acacttgttg 660

gggtcccttc aaggcttcct gcgctcagga tgcgaccttc atgagcgttg gtcatgaagc 720

tctcttgtga agggtcatgg ctgccctgcc gggtgggaca cgatgaggct atagccagaa 780

tccgatagga ggaggtcatg gaatgaatcc ctgatggggt tgtccattcc cacgaactca 840

acgtaattgg gtcttatcgg accttgttct aggttacgcc tttgagggag gtggagttag 900

agccccccaa aggttccacg atgacatcga catcttctga caaggggtg tgggcggtag 960

gagtcctgac cttctttccc tcgtcattga caatgaagac gaggatccca aagcaaatgt 1020

cgctccgagg accaaaacga catcgtgact ggccatctag 1060

<210> 242
<211> 1361
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199394_G1, chr5:170248680..170250040, Cluster 2

<400> 242
tccaccctga cagtacgccc tacgcgagca ggtcctcgaa gaagagctgg tggaccatct 60

cgctgcggtg gagctgacgc catcggtcgc aggctagggg ccgtcgggtc ctgcaacctc 120

tgcgccctgc tcatgctcca cgacgaggac gtcctcgcat cggccggtcg caaggctgcg 180

aacgcagagc agaacatagc ctcagcgagg gagagcggga ggcgatagta ccgcacgaca 240

agcaggccac aggcgagggc ggggaagaag gcgctgtcca gggtggcgag ctggtcgtcg 300

gtggtggact tggccatgag gagcacctcc tcggcgcggt ccaacgacag accaaggcgg 360

gtgacgatgg acgtgattcc cgcggaggcg atgacaagct tctagtcgcg gtaggcggaa 420

tcagagttat tgcagacgag ggaggaaacg cggagtcgca atatgacgct agcgccgcgg 480

tggccggtgg acgtcgggac gccgtcgcta caacctcctc aagaccgcaa ccttctcccc 540

aactgcgact aagcaatcga cctctcgtcg gttggatgtt gggccaacgt cacgctcgcc 600

tgggtgcgag aacttggttg ccatcatgct agcctggtgg ccgcgtggag ctccgtcagc 660

gagaactccg acgtggcctg gtcacggttt acaaaaccgt ttgacccgcg acaaaactag 720

ccggtttgac aaagcaaatt aatttgaatt caaacccggt ttgacaaagc aaattaattt 780

gaattcaaac cggtttaccg acgaaaaacc gctagaaacc gccggtgctt attatgtatt 840

tgatagtaag tgttcctacc atttgaaaac ctactttagg tgtttattat gtcttatgta 900

cgcatcctat tttgtgcttg tcatgtctct ggtgctctgt atttgatctc ttcgagtcct 960

tgcatacccc aagcaaattg attgttttta tgcttcctaa tctagagaca taaattgtac 1020

cttaggggag aaaaatatgt tatctacatt gcacagcttg aaacaggcaa tcctcacggc 1080

tcttgattga ttattccagt catcagagct actgttccaa agctggactt ggacgatgca 1140

tttcaggaga agaatgagat cgcaaaagca gtcgagagga gcttgaaaag gtttctgcca 1200

agcattcact ttttgtttaa ttgttgtttg aattcctgtt agagcatgag taatattttg 1260

attgatttag cttgtttgtg gaacaaagat acgatgattc ttgattactg aaattgccct 1320

tcatatactc ttgttgcatt ttacgccaat ttatgacatt t 1361

<210> 243
<211> 1064
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200139_G1, chr5:174352985..174354048, Cluster 2

<400> 243
ttaagatttt tgataagccc tccatggcca tgcttagaaa gggaagggtc aaacaacaat 60

gatcgacacg agggtggagc aggttgaagg gcgatgagca aggcgctggt gtcgctacag 120

agctggtgga ggaagataac cagatggatg gtgccactct tgggggcgac aaggttgcaa 180

tcttttattc atcgactaga tttaggggtg ggtagggata gagcagcgag ggttggcatc 240

caatgttgta tgagccaacg actggggaca acactagtgg ttggaggtgg ggtcagttgg 300

tacggttcgt cgaagaagaa tagtagacaa tggttagaga caaggaataa tgtgtgtgag 360

agagagagac tcatgcgtca gatgttgtag tagcacgtgc actaattaag acagatgctt 420

tgctgatgcc atgttgacta ggtgttggag aatagttgtt gtcgactatt ggggcatctt 480

ctccattaat cgctatagga ttcaagtggc cctatagaac cttctgagta gcacctccat 540

tctatattgt tcataaccac aacttttga tgcatgtgta aactttctat agagccactc 600

ctacctccaa ctatattgtt ctttaatcac tgtctggttg tgtggtctct ggtgaccatc 660

agaagataat gtgatcccct ctttctttgt gctttgttta attgtgcac taaactctgt 720

tctttccctc tcagtgcctc accgtaactt tctagggagt gcaatatggc tagaccaatc 780

catcttcttg aacggtgcct aagctccggt gcccttctta ggggcatcaa tagagaatcc 840

aatgtttaaa atagtgggat atagcaacgc tatagccccg ctatagcctt ttgaaggacc 900

taaagctacg atatttcact tttagacgct atttcaacta caaccgctat agcctgattt 960

agcttcgcta aatgtcacaa ctttagcgct aaatagccac actatttcta tttttcatgg 1020

tggaccaaaa aataatgaat gtaacgaaaa ggatgatgaa tccc 1064

<210> 244
<211> 1386
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200324_G1, chr5:175709277..175710662, Cluster 2

<400> 244
tgggcatcgc tgcaggcgtg ggacgccccc catacaggcg ccatgcaagg gcccgggagg 60

gccagcggtc accgctgcag ccagacttac tggtactaac gctgctatta ttttagtact 120

agtagagtac taatcatctc gctgctagag gtggagcaat tggcctgtct ctaatcatct 180

ctggcggcct ctgtttggag tgagtcagat gcgcctgaac catccgactg tggaaacgtt 240

ggttaagctg tctaatctgg atcgggctaa cctgaccggc tgatgaccca ccgacccacc 300

cgggcaccgc cagccgtcca aagagcaacg aagaaccctg ctgctgtttg caggccggtc 360

tacgggtcat gccccggggc ttgtacatgt ccgctccttt ttgtttgcac gctgctggag 420

ccattgctgc tgctgtttgc acactgcact ccccgtccca tagcaagtga ctacagttaa 480

gtaaggaaaa cataatcaag taaaatacaa atggttacag tttcaactat gattaataat 540

aggtctttca ccgacacatg tccgtgagta tcaggtactc taatctccat cttcttcttc 600

ttttgccagg gtaccgtatg atgcttcata ggcttcttcc tttgacctat atcccttgta 660

cgtagcatgc tcccttaagc cattcacctg cgcacacacg ctctgcccaa ggtggagaaa 720

attgatgaac cacgtatctg gtcatgacaa ctcaaggtaa acgcttggca acaatactaa 780

tatataagca ccggctattg taagtagtta cggtaagaat aatcatcatt agcataagag 840

cataagctca gtttgttctt aatacagaga tggcggcgtt gttgctggca accgctcaga 900

attaacagga acagagtata aatttattta ttttcataag agtaagaatt aaattaaata 960

aaaatcagtt gaagttcaca ccacaccact ggcataaggg caacgattca gaactaaatc 1020

aaatcaatag gttcacagtc agaaccatca agttaacacc acaacaacca tcaaggctga 1080

tccatgagtt tcatcacagg agccatatgc gttagtttct gatagttaca tagcacaaat 1140

gaaatcagtc caacaggata atacaagtag agcagagaga cggcaccaat gaagcatgtc 1200

accggataga ggaggcacca tatatatcag gagctgtgtg gccttatccc aaaagccagc 1260

aaaagatatg acactactag agcagagctt gccaactcgg ccgggatgcg tcacgatagc 1320

acaagcctct catcccacaa aagctagcaa atgatatgac actactagag cttgccagta 1380

gtagga 1386

<210> 245
<211> 1194
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202236_G1, chr5:186799127..186800320, Cluster 2

<400> 245
cgcagcacgc tccggcgctc cgcgctgcag gctgcagcag cagccagcag agcagctcgg 60

tcctcgctcg tcgctcctcg gtggctgggt actcgcctgg gggctggccg gcgctgctct 120

gcgcctctgc tgggcgctgc tctacctgct ctagcctctg gtcgcggtcc ctgcgtgctc 180

cactgaccac tgctcgttcc acagaatatg gcaaagaata tggcccaaaa aagtatgtct 240

ctaattctct atattatgtg aacattgaaa gagaaaattt taaagacggg accttcagaa 300

aaacaagaag gcatttcaaa ataagaaaac tagacaaatg caattgccta gatctcctag 360

aactagactc aactaatatt cttattttac ttgttcaaca atttttactt caatttgtca 420

ttcgtaactc atttttтcct tttttacaga atttattcgc tatatgacat ttggttgtaa 480

atggattgta atcaagatgg ctattaaata aggtattttc aacatctatt acttatttta 540

tagttacaaa ttattttaaa atgtcataaa tttttattct ttgttgcgtt agcaacacct 600

aaatttttcg gcgtcctccg ccactgcaat caagcgaata gtaattagct caaatagtca 660

aatgtaattc acttgtttct ctcgtaaagt tttaaaatgt ttatggttca gtctgctccg 720

ctgccctcta ttgatctcag catgcagttg ctacagtcat ttactttact tacgacacaa 780

gataaaatta aagctcgcat agcacgacgc tttaaacatt gaaggcaccc acacgtgtat 840

gtatctccaa aacaatctac tggtacacaa tggaatactg aatttttta ttgatgatga 900

aggaatttgc tcaaaatact cctgataata agaccagtgc tcggatagtc ggatctatgt 960

agatagcttc agggttcaca atttcgtttt aagtcaaccg aatttcgttt tgttgaccaa 1020

aacttgactt tagtattttt atattttgaa tcgaaatcca aaaccggacc agaattcact 1080

ttttcgccta gtagagaaaa cgaaaaaaaa catcgggttt tagtgatttc ggagcgtgaa 1140

gttccgtgga tagcttccgc cacaaacaac ccgacatggt aaacaccttg tatt 1194

<210> 246
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202528_G1, chr5:188494294..188495463, Cluster 2

<400> 246
gacaagatgg gatggacatg gactgcagct agctgtcgtg tgggtcacgt gggcgcagcg 60

tcattcggcc ggtacagaca gacagcgtgg ctggccgctg tggattggcg agaatttctt 120

gcgggattcc ccattcccat ctgcggcttg gattccgggg ccacagcgcc ccggtgcagt 180

ggacagtgga ctctcggcct cgtgcccctc gtcggcatac tcctggactg cttccacgga 240

aaagcggttt tacgagagac cgtatatttt aagcttgtat atatggatgg cgttagatca 300

aagttgagct atgagaggtg agtaggtgac catgaagacg gtgaccatct cgttattaac 360

cgcttacaag ccttaccttc gctttactgc gtagtaggtg taatttacat cttcgtgtat 420

atctgatgaa caacaggcta taacaagtgt cggtttatgt gctggcattt tcggtgtctt 480

tataagcctt tgttcggtta catgagatga aatgccatca taaatttaat ccgaatatgg 540

attgagtgaa tctatatctc acacccaatc tcatggtggg attaaatgcc accataaatt 600

taatccggat atggattgag tgaatccata tctcacaccc aatctcatag tgggattaaa 660

tgccaccata aatttaatcc ggatatggat tgagtgaatc catatctcac acccaatctc 720

atggtgagat taaatccatc aactaatcca tgtatcactc aaaggtagtt attattttga 780

tctataaatt ctaatgtaaa cttgtgcaat atctccataa atttgttcca tacctaataa 840

gctatggata gaatctatgt ctttcatagt taaaaaaatt cacactctta ggttatatat 900

tctatgatgg gtttaaccga ataaaaaaaa gttaagtagc cttagattat tttgaaacat 960

agattgtggc atagatttaa tttcaatcct tactaataca gagccgcatt gtgtaaacaa 1020

acaaagacta aattggcggt ggactggaga gtcctcggcg aacaccttag gccctgttcg 1080

gttgccttgg aaggcttcta gaccagaaac ggttccagat caggaaacag tggaccactc 1140

aatccagtcc agaatttgat ccagatggta 1170

<210> 247
<211> 1064
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203172_G1, chr5:191897776..191898839, Cluster 2

<400> 247
aagagtgcgt tcatttgttc tagaatcata atctagaatc aatctaacca ggaatgctta 60

cctaatttgt ataagcttta agtatcttga accattccta ggctcaatcc tgaacaaacg 120

aacgcattct aatgctagcc acagtccaca gatgttattg gcctcgtgtt tttgcaggac 180

gagcatggcg agtgaggcag tcaccaccac cgttgtgggc caacaccaaa aggccccgag 240

caaaacctgc ggcgccgtgg cgtgcactcc ggtggcaacc gcagctcctt cccgtctcgc 300

ggtagagggt aggtagtagt atagcgggga atcctacacg gtacgtgcgt cgcggtgagt 360

gggcagggga acaaaacagg aatccaattc cattcgcgct ctcgtggtga cgttcggttg 420

ttcagcagga aggcaggtca ggggcccggc tccggcaaag ccagccacga gtgtgcgcac 480

cagtgcagta cgtacagttt tgttccatgg ctttttttta acccgggagg aagaatagag 540

gaccccgggc cccctgtacg attgtgtagg gggggtcaac ttcagtacgg tgcaaaacag 600

tgggtgaatg ttattactcc taccgtccta cgcgtagcat agttgcttct gtactaggca 660

tccgggaaca attcacagtg tgctgcctgt ggcaaagcat ctggttgggg gtgggctgcg 720

ctctagacct ctggcccccc tgtactcatg gtcacagtca cagtgcacgg aaggaatgaa 780

catgtaggct tgcttgtaca ggtacaatac acacctattc atttggcgat gtaatgtaac 840

cctagcatcg gagaaaaatt ttggtcgcgc gcggaaggaa cttgacgcgt gcgtcgggag 900

aaggacacgg gcaacagtgc gagcacgaga tcggagtaga gatgtacatt tcgattggac 960

cggatccgtg ggagactggg cggctggtta gctgtcacgg tcacaaaccc ggagttcgtg 1020

caccccatt cgatcgctgt ggctctgctg gcccggcgcc ccgc 1064

<210> 248
<211> 1149
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203174_G1, chr5:191907413..191908561, Cluster 2

<400> 248
cacgggccgc acgggacaca cagcgaggga caagcgggca agacatcgca cgatgatcgg 60

atgacgcaac cgccaacgcc ggccggcgct agccgcctgc gccttcaccg tccacggccg 120

ctgctgcccg gcggtaccgc ttctcttctc gttgtgggcc ttgcggctca gccaggctga 180

cgcaagatct aaagatgcca aaattattac tgcttacctt gtttgcttct gcaaagtcaa 240

tactgagagc aacacctaca tgctcctaaa caacttgcgc tccccatctt tggctagccc 300

tcggtgatga aaagaaaaac ctcgtgaaat cagcttgcat ctgcctcgcc attgtatcta 360

cctcggcatc ggctccccat ccctagacat ctttggctag cccttaggac tcaccatctg 420

ctccctccta ctcctgccgg tgtagagatt gacatcggct caaccacttc gtagcagaaa 480

agtcaacaaa ggacacccga taatccatcg ataatccatt gcgaacacaa tgaaacgtca 540

caacatgctt cgagatggca ttcgtgtggc tacagtaccc taacgaaaat agtcatccat 600

gatgtccctc gtccagcagg aaccccaaag gacaaggagc tacacaaccg tatccgaccc 660

tttgacttat gtaacgggat ccttctctca tcttggtcta taaaagcaag ggaaggacca 720

tgattcaaga tgcaagcaac cacacgtact cattgccagc acaagtcaac atatagcact 780

tgtgtgttga tatgaagctt gaattctatg caacgttagt tttttgatgt cttgattgat 840

tttatcatgc agttttcttg gtcccatgaa ttcttgtctc caactgttcc ctaaaatttg 900

ccttttttaa tggatttacc tcgtggaact cgagtctttg ttttttttt ttgcatacaa 960

gtatttttgt tagagtgccc atgggcagct aaagaaacat ttatggtctt cccactactt 1020

gataaaagga tcttgtgact atcactaaaa atgatatttc cctcgcgttc ggctataaca 1080

aaaaccctct catgccccca acttaggggg tacgaatttg tcgagtttga ccagtactat 1140

aatcccaag 1149

<210> 249
<211> 1060
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203198_G1, chr5:192155390..192156449, Cluster 2

<400> 249
ttctatggta ttacacttta aattgaattt ggaacctttt tacacaccat ttgcattgtg 60

acatcattag ccaaaaaaat ctagatccgc ccctgcgttc aacgtggtta gcagcagctg 120

tgaacggagt gctacagtac gcggtttgta ggcaaattga aaatatgagc agtatgcctc 180

tctctccgtt gaattatata tgaaagtacc tgcatgtggc tagttgtcga gtacgaccgg 240

aggaaattcg ttggatataa attatgctta aatgaaacat gttttagaat ctaaatcaaa 300

taatgaccca gaacatcaac gtctttcaca cttcccatct gaacttcgaa tctctataat 360

ataagctcat caacgccaat gctgtgcagc agccagggat atatagggat tcggaaacat 420

atcgtttttt ttttgttttc tttttggttg atgaaatggg aacatgtcag caggcttgca 480

agttgcaacc cagtaatttg aggacagaac ttggacaaat aaaaccgtcg gcactcagac 540

tcagctcatc aaattgcagt tcgttttcat tattggcgga aggcagcaca gccacccacc 600

aacagccagt cagagggaca tgaggttttt tgtccacggc gaaggaggcc cagctcccgg 660

ggcaagcaga cgacggcgaa ggcgtggaac cgcagcaagg acgacgggaa ctttcacaac 720

ggacgaaggg gctgtaccat cgtgcttcgt gtcccggcgc cgagattgat atccgcttca 780

cacgtgtttg ttgaagtgat ctatgagaat cagataaccc atcctttgct tactgtgctg 840

aataactgtt taaagcttat ttactgtact agtataattg ttaaggcttg acaaagatcc 900

tgtttagtat aacatcacga gtagaggtgc tatctcccgt gtgagccgac tgagacgcaa 960

gtatagaccc ccctccagca gctccgttgc cgttgccgac gcccgcaggt cgcaggccgc 1020

agtccccagc cttgctttat ttttcttgct actctcgcca 1060

<210> 250
<211> 1110
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204380_G1, chr5:198814799..198815908, Cluster 2

<400> 250
caaaaacaaa ccctgtacag cttggaagaa tgcatggctt caccttctga agatttcatg 60

atttgtcgtc agtatcaccg ctctccccac gaggagcatt aagaaaaaaa atggaaaatt 120

tgaggtccta gtatggaagc attaagtaaa gatataatgt gttgaaaaat aaaaaaatgg 180

taatgacatc agctacgttc aatcggggga gtatatatat gtattggccg gctcatatta 240

tttatatcta tccacatgac gtagtatact gcagccctga tctcagcatg cagctcgaac 300

ccgtgttcac caattccatt ttccaaaaac tatgcatcat acgatataaa gtcagttgtt 360

tgaattattg cagctgtaat aacaaaacac taaatagaag tcagatgcta atcatgaacc 420

tctcttggcc tcctctgttg tctcgcaacg gggtgcgcaa gtacactgaa tcccggtcgc 480

attccttatc caaagtaaaa gcgggggcct gtccacgacg cgagcgattc aaatcaagca 540

tgggcagcag cgcggccggg gcagcgaaag gccgacgagt ccaatggtca cagcacactc 600

tcctctctcg ctctcgaaaa cgatggaacc tagctaacct ccaacaagca agcagtgtga 660

ttatgtgaaa cgagcaacac gtcacgtcgc gaccgactcc cgagtggtcc tggcccacga 720

ggtggaagtg gggcaacggc acacggcacg gcgaggtcgg tctacgtcac ggcggcgacc 780

gatcggccag agcttgcggg cgcggaatgg tggacggcag caagcataga gcatagcata 840

ggggagggcg ggcgggcgtt ggacactggg tggcaacgtc aaacatgtca tggcggtggc 900

gtactggtgg gcggtgatcg ctgattggtg ggaggtgcaa agttctgtga atgaggcggt 960

ggtggtggag acgcgccgga cgggacggac cggagcatct tccaagccgg ggcagaccgc 1020

tgtcgaagca gccagtgagc cagcagaagc tttcgctggg gccgctggtg gagagcagag 1080

acgtggtgct ccaataaatg cgcgatgttg 1110

<210> 251
<211> 1116
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205028_G1, chr5:202291159..202292274, Cluster 2

<400> 251

ccgtgacaag catgctgctt tgctcgtttc ggcttatatg agctgcatct atctatatgc 60

gatttatcca tatcatcctt cctagtggca agtatagttt cagtagctga tttgttcaaa 120

gtggagtggt aaacgtaaaa catgagtata tacgcttcaa gtattagctt aacgtgaact 180

ataaattaag aagcttaacg tgaacctata tataaactaa gctcccacct tttgttgtag 240

cttacctagc taagatgccc ggagaacgtt ctttatacgc tcaaactcct ctattttaat 300

aacaatcata cataaatgtt tttttggcgt atttttaaaa ataatatata caagtttaac 360

aaatattcag gcaaccctgt caagagccaa ctgaaccaag tctagcgcac atgaggtagg 420

cgctggttta ggcaggcatg gttgccatgc cagccgcaca ggcacaggtg ggtcacatgt 480

gtctttttg gttgctttca cgaagacacc gggtatcaat cgccctttg cacttaaagt 540

gaatctgttg ctaatccgat catttgcaca tggaaataaa caaaacatac aggaaagttg 600

aaatgtaaaa tgcttcaaaa ctcaaccgaa atgcgagaaa cagctagcaa aagtgaacta 660

ctttatcaag acagaagcaa gtggcattag ctataactaa gcctataaca caatcccgca 720

aagtagggtg ttttgaaaca aagcattttt agagttttaa ggtaaaatta ttgtattaga 780

gaataccata ttatcttgcc aagagatgtt tggctacaat gtaaaaaaat gttttgaata 840

ccatgttatt tttggagtat ttgaaacttc actccaacct aaagtttttg tctataacta 900

gccctgtaca tgtatactat atatcatggt ttgaaatata tacttagtct ccaaatatgt 960

agctaagagt ggtataaaaa atactacgat tatatatata tatgtcatga catcttaaac 1020

tgtagtattc caaaaccatg gttttgaaat actttgcttc taaacacgag caattctagg 1080

attgctcgtg tttagaagca aagtatttta aaacca 1116

<210> 252
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205293_G1, chr5:204080789..204081825, Cluster 2

<400> 252
cggtagtggg tgagggaaga ataggatcac gggaggtgac gggatggaga accagaacta 60

gataaaacgt actccgctct cgtttttca gggccaggtc catatgtggt ttcagcagcg 120

tgtgagccta tacaccgtgg gactatccct gaccaccgtc caggcaaaca aacatgcctt 180

aagtattcgt cgagctgaac atgccacaag tttaagcgga aggccaatgc aacgttgatt 240

ataaacattc agagctagtt tggaagtcca aaaaccaacc ccccccccc ccccccccc 300

ccaacccaat ttcattagct catcgtcatc acttcacagt tcgctcgcac ccggaaaacg 360

aagaaggttg gttacacaca gacagacagc agacacgcaa catatttgac cttgctgtct 420

ttgcacagca attttccctg gatcgcactc caccgatgtc atcacttcac cgccgcatca 480

gcgatctgcg caggcttctt gaaagaaaga aagaaaaaag gtggaacaaa ccgacagccg 540

cagtaggcat ggccagtaca ggtaggcaag tgacagctta cgtgggcgtg gggccccgat 600

gtctgaaacc ttagaataaa ataatagtac cagacagaat ttggaacgca ttggatccct 660

gcaacaaccg ccaaattgac agctacctga acgcgcttgc accaacaatg atgtccgccc 720

aaggaagaga gacgacggcc catggtttgg ttgccaggtg ggcaaataaa tcactctcac 780

tgccgttgcc atcacaagac cgtggatgaa tcctccctcc ctccgtctcc gtccctcccc 840

cgccccgctt ttctcgcggc gcaatcagca acacccggcg gccggcgcct ttcgcttttg 900

cctcgggggc cttccgcttt cgccgcgaca ggctggctga tcgggacgcg ccgctgggtc 960

accgccattc atgcaccccc gcccgcctgc ctctgtgtcc tctctgcctt gagacaacca 1020

acccgccggg gcctaat 1037

<210> 253
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205761_G1, chr5:206564855..206565861, Cluster 2

<400> 253
ggtcgccatg accaacgagg tcttctgaat cagctggccc aacggcgagg ccgagggccg 60

cggcctgctc aaggtgctcg tgtgcatcta tggctggagt gtcaagattt ttttcgacca 120

cgccgacgag gacagcacct tcgagtgcat gacacgccac aaccagggac cccgccgctt 180

cgcgaatgtc gatctcgaca gaagcaaact gaccgctgaa ctaaactgtc ctactgctca 240

tttcaacgaa tcatggagaa cgtcagctgg aggagctgcc tgtccccaac tccaacgttg 300

aacgtcagct ggaggagctc tccacaacac gtgggcaaat aatgggtaac cagaagcctg 360

tcgtttgtgt tgtgttgtat ctcgagttga caaatctaaa agaggcaagc gttcaaatac 420

tcttcagttt gtgagctgca ttaactgact ccattgttct gagttttag aatatgattg 480

gaggatcaag cgccctggca tggactaacc ccctaacctc ctcgagccaa caacagacaa 540

aatggccatg ataaaatcat tagtttgtgt catttgaggt gactgttcta taagtctaca 600

tggttgatga gagacgatgg ctgaacggtt gtagcctcaa gccatcagct aagatgaatg 660

caggcaggga gtgttagtac ttattttatt tattttattg cattgactaa tagtcctatt 720

atcttaaaag gattatgaga accttccctc aagatcttgg aagaacaatc cccagaccat 780

ctttgtttat tatgcaaata tccgggttca ccttttttcaa aagaaatatt tatgcttagt 840

taccaatgac attttaaatt aattatatac tctttgatcc aaatacatta tatttttttg 900

aatatcaata tattttatca tattgattcc ataccaactc acgggcaaat acttagatct 960

actatctatt aagacgatag tgtagaccac aaccatgccc ccgcctc 1007

<210> 254

<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206564_G1, chr5:210738061..210739122, Cluster 2

<400> 254
agctttgtgc aagtgattcc acttgaatcc cagaataagc caaagatcga tccccccatc 60

agatcgactt gcgagcgaac cagtgcatgg ttaataaaac aaacaaaacg ctgtgacgta 120

cgtacgtaca tgcagctgtg caagacggac gtatctatcg aaaccactgc cgcatccaac 180

cagagagacc ggttcgtcgc acaagaacag aaccagtgca cgccaacaat cgacggctca 240

ccttgttttt tctctcggag tacggcaaca gaaccctaga atattctcgc ttttcagcac 300

cccaaaagaa ccccctttt aaaataaaaa aaaaataaaa gacgacgaaa acgttcacgt 360

ccagacgaat cgagatggag ctgcactaca gcgaaagcgc cgtatcaacc tactgctgct 420

gctgctgctt ccggaatgaa acgccgtatc gaactcgctc gccctttgg aaccactaac 480

aggcgctctc tttctgtttg cgcccctgag actgagagaa gagaacataa aaaagtgata 540

taaagcagag gcggagctag aaaattttgc caatgggttc acttaggaat atatgtataa 600

ctataaatca taatgactat accacaccaa actaaatggt ggtggtctat cctttgcagc 660

cagccatgtt gcacgaacag gactgaccac aagtcagtta atgggttcgg gactaaattt 720

ttattgggtt caagcaataa actatataca ttaatccttg gtttgataaa aatcattggt 780

gtcaactgaa cccaatggtc cctatgtagc tccgccactg atataaagcg cacccattag 840

tgagtagtat tcatgttctt tttgggccta ctacgtactc ttgaggccag gaaagcatcc 900

cacaagcggc tggtttagat atttttcaa gcggaatctt cggtgttttg aatcattgat 960

acggcaatgc cagctttcgt ggagggagat ggaagaatac aaaactggct gcacaagatg 1020

tataagagaa gggtatgtct tctctaaaaa ttcttacgta ga 1062

<210> 255
<211> 1219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207249_G1, chr5:213745055..213746273, Cluster 2

<400> 255
atttggaaac tctcgctgat aggggattct ttcactctca tttattgact cgctcacaac 60

atctaaagac atgtataaag gtggattagg atcaatagga tagaactccc acctaaacaa 120

agtggaaagg ggaggtagga aatcatgacg cttagttgaa acttgagctt gtaatctttt 180

tcacctttat gttcatcagt caatgagtac aagaggacat agtggattac acacgttgcg 240

gcctagctaa gactctctaa tttgtttatg tgttggtttt ttgttgtacc catgttgaac 300

acatcgatac ttacgctctg actctctcca atctcttctt tttggtactt tacatatccg 360

atgtttgtcc actgtgacac ctatgaacct gagattatta taactttatc actttgtttt 420

taatggatat atggataatt atggatgcat tatgtatggg gtatagagtg tcgaccattg 480

atatatggcg taatagtaag gtgtattgtt atacttgtat atatgttatg atatattggt 540

ttacgtttga tttaaagcta tttaatgtgt tacttttgta tcattgctac tactactata 600

aatataacta atatatttta tatatttttt tatcttgact cacgagttta gtaaaccaac 660

ttgagttcgt aaataagctc aactacgcta acttttaac ttgtttcaga taacgagtta 720

aaaccaagct agcaagctag cttattctaa tgaacaaaag acgacaaaga tggcttgttt 780

atcccgtcat tttgcgggca gaggtcgcta gcgccagctg cgtgcagagc gccaagcctc 840

gcagcagcgt gcgtgcttgc acaggttgca catgctgtgc tatgtggcgg ctactggcta 900

gcagaagctg cagcctcgca gcagcgtgca tgcctgctgc ccccctgcaa ctgcaagcct 960

acgcacaacg gcacaaacat ggagatctgt gtcgtcgtcg tctgcatgcg gtgagaccta 1020

gagagggcga gcgagaagtc atgcctctcg caaggttccc cggcccagcg gctcgagtgc 1080

acgcccgacc aacagcccaa cgacgcttgt ctttcaatca cagcctacag gctactacgg 1140

gcatgtgtga gatgagatca ggacgcaact gggctggttg tctcggcccg ttaccgtcat 1200

tccacccaca aaacggccc 1219

<210> 256
<211> 1350
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207251_G1, chr5:213754669..213756018, Cluster 2

<400> 256
ggattttcaa agaacggatc ctaaaaccag atctagttaa aaattcattg tcatactaat 60

ggcatctgaa attagatcct gcaatacaaa tgtatgttta ccggacatta atacaaaact 120

caaacattga gtacgatgtc tgctctactt cggcgtgcgg ggaagtgcgg gtctgcttgg 180

cttcttggcg aagcagtacc gaggtgacta ttttttgcta ccgttgcgaa cgggcttcct 240

tccgatgcgc ttacgacgcc cacgacacga gaagcgccta agtgtgttat atgtgggacc 300

aagtactagt gagataaatt actattttta ttcttctatt atctgtacgt catgtagcta 360

tttgagaaaa ccatcgtgaa cgcccttaaa accgagagga gggtagctat ctgacttttt 420

cggttttctc tcataaagca gagcagagca gagaacagaa gcaacgaatt ggttggaggg 480

ggtggtcaag attcggtcaa aagtgaagcg aagcaaagca aaggcacgga ggacagtggc 540

gactgactgg ccatggccag tgaaatgatg agtgactgag agatggctgc tcatgcaggg 600

ctagggcgaa aacgaccggg tgagccactg tggcgtgggc ccgtcaggca tcaggacctg 660

gggttttgtt ctgatgatgt cctccatggt cctcttgttt cctgtaccac cgaccggcat 720

cccaaccatt gtaatgtaat tggcttgccg cctttctact agtgtttcac ttcagttact 780

tcgctgctgc acatattctt tctttggttg ctgcatcgaa gtgacccagg atgatgacac 840

tggcaaagaa aagagagctg gcacccgacc cgagtgacga aaattacagt gaccgtgagt 900

ttcccaaatc gacgagcgca gtgcttcgga ggcttgtaaa gtaggccagg ggcagtgggt 960

cacaagtaaa atcatttaaa ttcagtaaaa aaaaatagtc acatactcat tcgtatcaga 1020

gtactctccc ctcctctagt cctctgacgg tctgaccacc ccccacacac gcccaaaaga 1080

aagacgtcga gggtgtgcca acgtaagcat cggacgtagc atcactatgg agaaagatga 1140

cgccgtcgtg gcatcgcacg tctcgaatca tcagcttttg gtgtgggtgt gccaactgcc 1200

aacgtagaaa gacgtcgcaa ccatctgtgc gtacgcatcc actatacggc gcatgagcaa 1260

actataggag cagtgacaga accatgtgca ggcagtgcag ccaccccaac tccactcccc 1320

atccccacac ccacacccct gttgcacctc 1350

<210> 257
<211> 1311
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207414_G1, chr5:214848526..214849836, Cluster 2

<400> 257
ataacacttg agtactctac cattgtttta tgcatccagt ggtttaggtt aagaacaagc 60

ctaatttctt ctaacatgat catcattaga taccagtgcc atagcatcta tcgtcctcgc 120

ggctatcaaa ccagataaca cattttcaat atttgtatcc atattttaaa ctgaatatat 180

acaaatatag attcaatatc ctcgaatatg aatagttgga taattcggat cagacattat 240

tataccgttc aattagatca tattttattt gaataagtaa atattatttt tttatcttat 300

gacaaaaatg caattttctt atttgcactc cattagagat tgagatgtat cacatgtata 360

gttggtatgg cactccgcac tcctctatct atcatccatt ttttgcggtc atccttgcgc 420

tcggaacaga gccggtcttg acatgtactg caagtacgtg gtaactatgg agtagtgagt 480

agtgactact ggtacgacga cgacgacgaa aacggcgact atattggtgc tgtacaacgc 540

gagaagccgg ggaggctagc agccggcttt aatcgcaggc actgttggtc cggcgagtta 600

ggtcaccgtc aagattccgg tggcgccacc actacgtacg tcgatcgtgt gtatgcgtca 660

tatgtctacg accagtaccc catgcatcca tccagggata cgatcgcata tataataaac 720

gctacgacta caagcagcat ccgatccgcg cacaatgcat ggcaactgta cgcagaggaa 780

gcataaatag gcgcccggcc aggggcgcgc tgcaagctgg cgcgctgatc cacggccgcc 840

aggcgccgca tgtgaccgat gtgaccaact ggggctgctc tggcgccgag cgccggccgg 900

atccccgctg ccggcttggc ccgccgtatc gccggtgggg caccggtgcc ggccggccgc 960

gcgcgctccc gtccgccgcc gcacagcgcc ggctacaggg gggcgatgca cggtggtggt 1020

ggccactagc gccaccccgc agccggtcgg gcgcgggcca gccagccgat ccctgcctct 1080

gcacgcgact agacggaggg gcgcgcgagc ggcgtgattt gatttgattt ggttccattt 1140

ggcgcggcct agtatgtctg ctgacacaag tagagaatgt ttaggacaat cgagtgacag 1200

tggcggatcc agatatatag gctaaagggg ttaattttct agtgaccggt ggtagctaga 1260

tagatgcaac ataagctggt aggtaggcta attttacctc ttttttcttc c 1311

<210> 258
<211> 1093
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207501_G1, chr5:215073222..215074314, Cluster 2

<400> 258
aacagtttcg catcttcgtc tgaaacatca tgcatggata cacacaccaa tctttcctct 60

gccaggagat tggcgatcaa tcaacggtcc atgcatggcg atcctcatca gaaaccaaac 120

cgacttcaca acgctcctag ttctaacttc tcagactttg caaggggaaa aagaaaagat 180

cttgaagaaa tcaaatggtt gacaaggagg aggagaaggc tttcacggtg caagaaacct 240

gtctgtgtca gctccttttc tacatggttc ttcagctgtt actttcatgc tactactact 300

actataaaaa aaattctctc tttaattaat tggatctccc gtgtaccact cacccgcgcg 360

ccactgaaaa acagagtagg tgcatcctct ttttcgcgat aagttggacc aagagaagag 420

agataatgta tcgagccaaa gctttcagtg ggcaccagat caaaagatat ggacctgatt 480

tgatgataca atacaacaag gcgccgttct ccaccctact tagtcatgaa gtttcatggt 540

gaattaaaaa aaaaagaggg tgtcttctca gattctcaga aggtatcgct agctaccttg 600

taactgtagg cctggcaggc agatgatgta cactggatga gggaattgat tgcatgggcg 660

ggcggcctga cagatgattt tcaattttca atgaaagaga ggagatagta taaaaaggaa 720

aggaattgtt ggagcccggc tagaaaggaa ttgggctcgc ggccactttg tgcctggcac 780

tggcagccag acggtgttaa agcaggccgg gtctgccgca ataagaaggc ccaggatagt 840

gcgaatcgag cccaagtgat gttgtcggtt gggcggccta taaacagcgg gatcacgcag 900

ctggggctcg tcgaccccga cgcagcttgt tcatgtggcc atgtgggtat cctaaacatg 960

accctcttcc ttccatggca tgcttgttcg ttccctccac aataatcaag agagcatgcg 1020

gtgattgttt gttgggccat gcacgccgat cagctgccac gtatactgtg ctgctgcagg 1080

gttttaggta cta 1093

<210> 259
<211> 1044

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_214039_G1, chr6:38266720..38267763, Cluster 2

<400> 259
aaaaatataa aaagctcaag ataaacgata actaggatat ttttgtttaa tcgacccgaa 60

tacaatagag tttgtgatca aatttaggat cgatggtcat cctattaaaa ggagagtcta 120

gttatacaat ttggtcacct agtactacta gttgttgtta ctatatgtat tgcatatagg 180

tctaagtgac acacttgata gcaagaagaa aaggtttctt gacaaacatt ttaaaaatgg 240

taccttcgcc tctaatatgt ttgacaaaac atttagtagt tagaacactc gagaattaat 300

aatggaaatt acccttttgta cagatttaca taagataccg aataatccga tggtacagta 360

gacatgcatg gacaccggat aagaggggat ggatgatgga gtggagttga gggaaaatat 420

atatatagat ggagagagca tacatgcatg accagttgtc cactccaagt tccttgcatt 480

gcctctctac gtgcacctat ttgaagttcc ttgcctgtcg tgtctccaag agaaagaaga 540

cgaagaacaa agttccttgc ttttagggca gcaccaagaa agaaagaaga cgaaggagaa 600

agttgcttgc ttttacggca gcatcgatct atccgcactg gtagcttcac agagaactgt 660

gtatgtgtag tccaggtact caaaattgca tctccattcc gttcgtcgtc gccatagcta 720

ccttctcctt tgttggcatc gcgagagaaa gagaaaaaga aagagagaga gagatgagca 780

acgccaaaac cgccagattt gggcctgcgg ccaactggga aggataccgg cgccagccga 840

actacacgga ggcaatgaag gagggcatgg actgcaggcc cgtgtcggga cactacgctg 900

acggtgacgg cagatcttgg agctggcatc agacgtacgc gccgtggatc aatcgatatc 960

gaccgatcgt ggaatgcatt tcaataaata agatctaaat tattagacga atctttttaa 1020

gcgcttgaat tgttgtatta tatg 1044

<210> 260
<211> 1309
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224259_G1, chr6:105089776..105091084, Cluster 2

<400> 260
ctagctagaa attgtgttgt ccgatcacta cttgtagtag ctagctgtgc agtgatttga 60

tggtgctaga tgtgttgaat cggttggaca ggtataccgg agtttatggc accagagctg 120

tacgaggagt acaactagct ggtggacatc tacttctttg gaatgtgcgt gctcgagatg 180

gtgacgtttg agtacccgca caatgagtgt acacaccaga tacatatcta caagaaagtg 240

atctctgtaa gaagatcctt ggacccgatg agccatttca caacaattgt gattcaggtt 300

gaagtttgaa atgattttcc tgatttctga aaaatatagt acccatggat tacaccgttg 360

cagcgggcct gaaaattgat cttgcattta cagacgatca tacagccgac ttaatttaat 420

cgcatttgat taacaactta tacataacaa tgttttatta tatattacag gtttttagtg 480

cacccttctc ttccatagat gtactatttt ttacaaagtt ttgtagttga agcgtcaatt 540

caactcatct gtcactaagt gaaaaacaac cttgtcaggg tgccttcggt ttatagccga 600

actgatacag gctgttacaa cattttttgc actttcttga tggatatatg ctgcatcgat 660

tcttactaaa ttttgttagc tgcatttaag ttttaacatg tgaagtatcc tagctgtata 720

tatatgtatc tttgaataac actattgata tagggccatt tatgagtata tagttctttg 780

cttggcactt tcatgttcct tgtgttgttt actaaattta ggtggacaaa caaactgcaa 840

actagacttt ttgatgtttg tctcctccct gtttggcagc ttagatggta gtgctagctt 900

atattgttgg atatgccctg agagagcaaa gaacgaagtt tgtctttcat taatcttcag 960

tcaatgcact acaatctgca gcccttgaga tagtttgatt acagagtaat acgtgctatt 1020

ttagcaattc gcttggttta tcgaatgctc cttatctaaa gtcaattgat atcatgcatg 1080

tatttcattt atccaaccac tgataactga ttagtttatt tactttgtcc atgaataaca 1140

tagtattttt gtttgaactt actggtatca acatattgtt tttatcctgt gtaagcataa 1200

agagtagtct tgcagcttat gcatccattc ctctttgtag ggcgcaatgc ttttggccct 1260

tttgataggc taccaagcac tggtaatttt tactcctaaa ttttgtaat 1309

<210> 261
<211> 1191
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224263_G1, chr6:105101479..105102669, Cluster 2

<400> 261
taaattaaat gatgcatgac taggagtata tatatatata gagagagagt ctcaaaaaga 60

ttgagcatgc tatcacaatc agtctgtcgc tgctaggcct cacataagag cttattagcc 120

gagctctaga gaaaaggatg ataagtcgcg catgtgtggt atgataagct gatagctttg 180

tgaaaaggag ctacgcttaa acctgatcac ttatcgcccg atcccatttc tcctttccat 240

ttctaacgaa aaaccgtgtt tgtgagggcc tcactttaag aattacaact tcaatttttc 300

agcttgacca taaacaactt caacgaattg gtaaggcttg cacttagact ccagcttcta 360

taatcgaatt aatttgtgtg atttttctta attacccttg atgattagtt ggtagagaaa 420

gagatctaaa tcggtaggtc atgtaaccaa tgacatgata ggtaattttt acataacttc 480

atgaggacgt atgaaagcac catttgagga gctttaaaaa atttatgaaa ctggcctcta 540

gtttaaggtt tttttgaaac tagagctcgt ggagctagac atgtttagat agaagaagct 600

gaaatagact tgaaattatt gaagtaagga tctcccaaac agggtgggag ggcttcactt 660

caaaaattac aacttcggtt tccagcttca ccttgaaaca acttcaacag attggtaaga 720

cggagttcaa gattgtttgg cttgcacata gactctagct tctataatac aattaatctg 780

tgtgattttc cttaataacc cttgattatt agcgggtgga gaaagagaca tgaatcttta 840

ggtcatgtaa ccaatggcat ggtaggtaat ttttgtgcaa tttcatgatt aggtatgaaa 900

acaatttttg aaccagccta tgaggagctt caaaaatttc ataaaaatag cctttagttt 960

ctgttttttt taaactagag ctcgttgagc tggacttgtt tggatataag atgctgaaat 1020

agacttagaa ttcttgaagt gaaactctac caaacatagc ctaatagttg ctactccctc 1080

tatcctaaat tataattata atgttatctt gacttttata aaagtcaaaa catctcagat 1140

tccactaatt ttatataata aaataatact attatgatac tatataagta t 1191

<210> 262
<211> 1115
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224473_G1, chr6:106060534..106061648, Cluster 2

<400> 262
ctatgaagag gcccttagtt gccatcacag taactttgca ttacgctgat cgcatgaagg 60

agagcactgt gtgtggacca ataatacaag tccagtgggt aatgggttgt ggagtattgg 120

gccacgtcgg cttcatctag ggcctgaggc cattgtataa atacaactat gcttaaccag 180

ctgtcggtta cgaaatagat ctccatcttc tccactcagt ttgcattgag ttctgatccg 240

aaatctgata attgaccatt ggttatcaga tcaatgttga atttgtgtga atttttttc 300

tcacggattt gaagaactct atgctcaatg atcaccgaag cggagaccag cggagtcaca 360

gtatgacatg gcgacgtcgt ttgaagaact ctatgctcaa ttcgagaaca cgaccaagaa 420

gttcgttggg tttccatcca tgatgcgtgt tgcgtgagat tcttgacaag atgagcacta 480

ttgtccagtc atggaggacg gcctcggatg aggcgctcgg caggacagac ctaggataaa 540

atatgactga gtgcatactt gtaaggagag caggggcatc taaattgaac tgagcagagg 600

taaaaatcta gactttaata cttagaacaa agaaatgagc gggagttgtg ccctcactcg 660

gccctacttg ggagttgggt ccacccctgg cgctcggcac ttttgattca tcggacagag 720

gtggtgacca gtgatcacgt ggatggtgga ccgggcttca tcgtggctcg acagcgtggg 780

cgcgtggccg ccaccatcac cgccgccgct gccaccactg tcatctcccc agacgaagga 840

gctgcaccag gcgtacgaca ccacatccgc ccccactgaa cccgtgttgg atggatctca 900

acttgtgtga ttcggtgtct cattcggttt tgtgttcgca cccatttcca aagttggagt 960

tccctaagct tgatagctct aatcatcgtc ttcggcgtga tcaccgtgaa atgttctttg 1020

agttgtacgt ggttcatcct tcgttgcgac aagacaagac aagatcttcc acctggctcg 1080

tgacagtgga actgggtgct gttttctgat atggt 1115

<210> 263
<211> 1059
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229242_G1, chr6:130588288..130589346, Cluster 2

<400> 263
actagcccta aatatgttag gatacaacta ggaattcggc tcatgtagtg gttctgttaa 60

tctatttcat atattcctcg attgggtcaa taatacaata attcactgcg cgttagtttc 120

tggctcactc gtatcattca actgtgttcg atggaccggc agtggaaggg ccactacgat 180

agaaacccag caagaccaaa aagtggcccg tccattccgc gcgtgcgcgt cgtccacggt 240

cgtgcccaaa tgtgcaaaaa agaagcccca ggggaatatg tccacggcgc cggcctgccg 300

cccgtcgcct cgcctaggcc taccaccacc gcattccatt ccatctctgg tccccggccc 360

cctgctggtg cggtccagta ccagtaccag taccagcaac agcaagcaac tccccccctag 420

ccgcgtcgtc ggtggcgcac cgactggatc tgtcgccggg tttgctcccg gaactacggt 480

gtgtcggtgc caacgacact ccacgagtaa cggcgagtca gtcagcattg catgcgctgg 540

agtttcttcc acagttccac caaccgtgca tcaccgtgtg gcattggcag ccagttgttc 600

ctcatgagtg acacgtatct ccaatgccgt acgtggacgc gacacaggcc tgaggccagt 660

taaataaaat acaatgattc attaaaatat aataactaca tccgagtaca taattaaata 720

aataaaatta catatttcat aaagaacaac taaaaaatac atggcttgaa aaaaaaacta 780

tatgattcat aaaaaaatct aattgctatg gtgcggatcc aagatatgct ctattaaatc 840

atttttgta gctgatcata tactagacta gcaaagacta cgacctcaag gtaaaggatg 900

actgcaaaga tcgtgagtgc ctcacaagtg attgtttatg tggcaacaga ggactcaatt 960

atctcataat ggcccacatc gtatgctcct ccatgcttat cctcaacgat catatcatgt 1020

agaatgatac atacacacat gatcatacaa agtacttga 1059

<210> 264
<211> 1121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229339_G1, chr6:131207625..131208745, Cluster 2

<400> 264
ctcagtggac gatttaataa aatgccatgc atatcctcat gtgcatattt aaagaacaca 60

accttagtca tgataaaagc acacctacac aaagcctttt gatggtgtaa ttatattttc 120

ctgtgttgta gatttacatg caagcctgaa cacaacgcct aagaaaggag aaaattttag 180

aatctgctga aaggggaaac tgataagccg cttgtgtgtt atttttcagt ctccccctat 240

gtagaaaatt agcctaagaa acggaatcaa gtgtgtagtg tagttggtac aatcttctct 300

ctgttgttca ggacacatgg caccaattaa taatcttctc tctgctgccc atctcctgct 360

ttctctatca ttttggaatc atgccgctac aattgtacca tcttggtgta aaaggaatgc 420

caaagaaatt ttcattggac acataggctg ataggcatga gtttctagca atatcagtaa 480

ttcagaatgc atatatgttt gaatagtagg aatcaagtgt taataccgtg ggttttgaca 540

gtagctaagt taccctggta tatgttttct actcgtacgt actgtatgaa gtatactacc 600

cttgattggt agttcgaact gtgaacacat ctcccactct ttccctccgt ccctccctcc 660

ctctctctct ctcaaaaaaa aaagagttgt gatgataatc gatggtccat atgactatac 720

cgaaaaggtg aaaatgatcc agtaaccaag taaaaaacgt aaacaagccg aaacgaaatt 780

gtaagagaaa gctaggggaa gtgaactcac cgccaaaagt gtcagtgaat ttatcacatc 840

ggatgttaaa tcctgaaaat aggaaaggat gatcttagat cgcaagagaa gttgatatga 900

aacttgcaca ccctaaaaga aaatgaaaca gcaggaacta cacataataa tacagaagga 960

tgatcttaga tctcaagaga atctgatatg aaacattcac accctaaaag gatatgaaac 1020

agcaaaaact actcataata atacataatg tacccaacat tcaacattta cttaaattaa 1080

actctcaaca atgagaaagg aaatctctgt gtggtcgcat a 1121

<210> 265
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231404_G1, chr6:140703982..140704997, Cluster 2

<400> 265
tgactaagaa cccatgtctt tatattacca taattcacta ctcgacacga cttctttgtg 60

actcggcaaa ggttcaaaag cactcagcaa aaccttgttt gggagttgct tgtttagttg 120

cactcggaag gccacatttc cgatagtgat tctaggagat cgaacagtcg aagtaacgag 180

tgttgcttgt ttagttgcat gaagatcaga ggaaactgag ggatatataa tctcttgcta 240

gtcatttttg actagtagga cttatttggg agctagggaa acagagggga ttggagttga 300

ataccagctt ccgattctca tacaactaaa gactttgtta tgttcgtgcc atcgaacact 360

tgggtgctgt ttggttcacg aaatataata taaatggtaa ttgtttacac tcgagtaccg 420

acagtaacaa gtttcaatag gacgatatca atttttagtg tgctatctaa ttacggttag 480

actaaaataa acatggttta acgttatcag ttatccatta tattataaat acttaaacca 540

aacagcaact cagtgtagtc gcataaagaa aagcgagaca gagtatgacg atggcaagca 600

agcatggtcc tgacttcgct ccccgcaacc gtaccacgtg aaccagctgg ttgttggatg 660

actaccttag ctttatggga aattccaatt tggaccatca tatatataat ctattcaaag 720

cagaaagata ctctagcagc actgctgcag tgtgcaaact taagaaagtt gagaggcaca 780

tgccccccgc ttctgcttct cgcatcatca agacaagaaa ccgtacgtgc gtatagattt 840

ttaggatacg catgtacgga gtatcttgtt ggcgaattcc cagccagaaa tatcttgctg 900

ggaactggcc gacattgcgg agcacggcga ggcgaggcct gtgagcaggc gaaaggacaa 960

caaaaagaaa aaaaaattgc gccctattat gcagcattct ctcggaccta aaaaga 1016

<210> 266
<211> 1089
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232524_G1, chr6:146410386..146411474, Cluster 2

<400> 266
attacccgtt gcaacgcacg gtcatatacc tagttattat cataaaagta tatttatttg 60

atgagagtct aatgatttgt ttggcaccgt cacgccccac ccctataatt ttatcttgcg 120

tatcgcgata ctaccaaatg gtacgtgcca accgattcgt tcagaaccta gacccatacg 180

ttgatgcatt gcatttacgg ccgcccagac ctatctagcg gaagtccgtg cggtccaggg 240

gcaacgcccg gcgcggcccc ggccgctcat ccgcagttcc gcaccggccc ggcggacggc 300

aaccacgttc cccggccgcg tgcagtgggt gcgtgtcgcc gtcactagtc agtactcagt 360

agtcactggc cgtggaggcg cgcgcaggtg tcgcggcggg atcggccggt gccccccgcg 420

cacgtcgccg gacgggtggg tcttcgtccg tcgtgccgcg ccacttgggt caccgcgccg 480

gcccgcgcgc actgccgcgc gagtgcgacg ggacggcgcc tggccggccg agcgcgtggt 540

ggtagtgcgc gtcattcgcg cgctgcgcgg tggcgactgg tcgtgtggac cttggtcgtc 600

gcgactcgcg agcagtggtg cgtggtgcac tactagctag agcgcacagc tccgggccgg 660

cacttggaac gcagatcatt tttctgaggt tttgactctc acggtcacac gggcttagat 720

ttcactgtca gtggaggagc atctgtgccc ccaatcagca agcgtaccga gtaccagaat 780

cggtaggtta ggcgtacgtg cttgctttgt tcacgccacg ggcgcctcaa aaatgctcgt 840

agctcgaagc taggctttcg ccggaccgct gagcacacac ggccgtgcgt ccgtccactt 900

gtgaaaaaaa atggatcttt gaacgtacaa ccgttcgctc ggaaggtata tatccggctg 960

cgtcgtgtaa ctcgtgttct gaggaagaag aagaagaatg cgtacgcgat gaccttcctg 1020

tttgtgtcac tgccgatgcc agagaggccc agagcgcaga gcgcgcagct ccgctctttc 1080

accggctct 1089

<210> 267
<211> 1050

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232894_G1, chr6:147967509..147968558, Cluster 2

<400> 267
aatcgtcagg aacccacagg aggatgcaaa tatccttaga catgcgtcct tgtataatgt 60

cgtctctgca gagcagtttt gtaatgcata tttggtaaat atagtagcat gttttacctt 120

tcaatgatga cagaacttgt tgcagatgtg aaatacttgt gctggttatt tgttatatat 180

gaacgtcgta aactaaactt tgtgcaatgg atatccatcg atatattctg acattattat 240

cttggacgcg acaaagaagc ttgcgaggga tgccttctgt tcctgggggt tcgtgcctac 300

acttctcacc gaggcgaact gaagaaaatt ttcatggtga agaaagctcc acctgggcca 360

tgtagcgagg agcttcgggc taaaagagta gccatcgccc atcgctggtt ggattcgaag 420

ctcacatcag aagagcagaa gcgtgagcgg cctgccaaga ggagaaagaa agccgctacc 480

gctacactct acaaagtgag cttgcacaac cacaaccgaa atgctgcatc gtctgacttt 540

ggatcatgat gcgcgccccc ttgcaaacag tttgtttaga aataatcaga accatcaggc 600

cgattgtgtt cgcccatgga ttcggggcag ccaggagcca gctgtgcaca ttgctgtacc 660

atacctggtc aataggtaga tctggagtgt cactgtcaga gtaaacaatt agacctcgat 720

cacgggcaat ctttgacttt cattttcatt aactaccaat gcacgttatt gtatgccttt 780

catcactgtg tgtctgtccg taagtaaagg ggggaaagtt agctgcaatg ctatgatcag 840

gtagattcca gaagccaaca ggcaaattcc agaagccaac aggcccccgc tccaacgtgc 900

tccccacttg tcctccaaag acaacctgcc atgtgggccg ttacgacctt aaatcatcca 960

tcccacatgt cagtgacggc aacccctccg ccaaaagtga actgtgaacc ggacgatcca 1020

ggcatccagc taaccgcttc cccctcgtcg 1050

<210> 268
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234340_G1, chr6:154135204..154136325, Cluster 2

<400> 268
tgctcggctg ggcgcatgca gacgcaatca tgattcatgt gtaatacagt aacaaatata 60

gctactagtt cgttatacgg ttgtgagatc gatcgaacat tagcttagct ttccagggtc 120

gcgttcgtgc gtacgtggtt ccatgctgca tacctggcct ggtggtggtg gtggtgcatg 180

gtccatgatt gctgggaata tgctatgcta tgctatgcta tgctatgcta tgtttcgaca 240

cataagaaaa catcctgatc tatctatctg gaactcgaaa cgcccgacgt cgtcccaggc 300

tcccagcagc atttgaggtt ttgctacgaa tgtgcggtgt cgtagcattg gattcgtcca 360

gaaatcatcc gcggcggcta caatgatcat cagctcgccc gcggggagac tgagagcgtc 420

gtccgtcgtc tcgtctccgc gggccacggc aaagctgcca agctgtctgg caagtggcat 480

gtgcatggcg atgcataaag tagggggcag tgggctgacg gcggctccgc gcgatcggcc 540

gtgcaccgtt cgtcgctggc ccggcccgca tgaatttctg gcgtgcgacc gatggtgcag 600

gttggggctg gacggaggac agcgcgccgc gcgctggatg catggaatgg aacatcgctc 660

gcgcgctgga agctgaatcc agcgagaaca tgaacagctc gctcgcggcg gccgcagaat 720

aatcgcaggc ttccttttcg cgttatccac ctcggatctt ttccgcgtga tgatgatgaa 780

aggcacgttc gcgaggatcc tctagctcat ttcagcctgt gatacggggg ggctttttt 840

ccaggttgct atcttttgct ttcagcgtcg ctggaccacc gttgcatgtg gtaacatgca 900

tgcgggttcg ttcgttaaag tgacagccca actaagagct tgtttgggcg tgtgtgtgta 960

tatatatatc caaaagtatg ttttaaatgt cttgtgccat tttgatgtga tgctttgaga 1020

atttaatgat aacttactct atatactagt agggtgcccg tgcgttgcta caacaactta 1080

caatttggta caaaacagtg atgcaatatt attacaagct ga 1122

<210> 269
<211> 1147
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234379_G1, chr6:154325268..154326414, Cluster 2

<400> 269
gcaatgcaaa ctctctgtgc gactgcgttt taagagaaga caagtgtgtt cgtgccagtg 60

cgatgggctg cggtgcggtg gttctggacc tctggtcctt gtctggcaag tgacgggttt 120

gcccctgtgt gagtgtgagt gacagctgcg gaaattcgga atcgggattt ggccgattgg 180

gtaaaaagcg gagccgcgga gagtggtcac actcacggtg tagacgggcc cagcggcgca 240

gtggccgtga gggaacggag gctcactgtc ccggacgtgt gggccgacga aggcaatcgc 300

gctaagttac tgaaaagaaa tgtgtccgtt actgtgcagc tgtacctgta cttagtagtg 360

cactgccgtg ccgcgacaac tcgcaggctc ggtaatactg gctgtacgtc gagtaatcgg 420

gggtactgtt gtctgattgc ttcggattga aacaaacgga cagtagttga ttgttgttgt 480

aaaaaaaaaa caacggacag gtgtatgact gacgatcgtc gttcgcaacc tgctactgtt 540

gaacatgcat gtgttcagtg caaggcaagc ggagctagcc tcgcctctgc tttgtttatt 600

agtatcagtg tgtgtgtgtc cttctttggc agttatgcca gttcggcgct aatctgttcg 660

tccagaagaa tccttacggg cacgagttct gtcgctgccg tgcgtgcact ggcagatcat 720

tattatcgac gcaccaagca tcaatcaatt actatacacg atcggtgtat tagcggctac 780

cctgcatagt gtcctttggg ggggggattc ggattttcca atgaatggcg acgggaaaga 840

gaaacatgca tgattcaacc atgcgcgccg cactgtttgg gcatcacatg gactgacgat 900

cacatgcatg catgattcaa tcatgatagg agcacgtagc cttttatttg agcatagtat 960

ttccacaaat cggaatcctg cccggcccta tgcttttgct ttcgatcact cgcactctct 1020

tttgttttcg gctctcgcaa tgcgagtggg tgaaagtgaa acataacagg gttgcttgat 1080

tgcttctcgc tcgcactagt agaaaaagga aaattaaaag ggagagggga ttcagtgttc 1140

cacgtga 1147

<210> 270
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234382_G1, chr6:154327143..154328181, Cluster 2

<400> 270
ctgctctggc tcccgtcatc agtggactgg ttcttagcga cgacgtgcgc actgtgggcc 60

aagctcgcgg tcgcgccgct gtctccgtcg tcgtagcaga agcttccgtg tgcggcgttg 120

ttgccccatg ctgcggctgc gcctgcgcgg ccctccgccc ccttctcgag gtcgaggcac 180

tcgaggagca gcgccaccac gtcggccatg gtggggcgct gcgccgacgc ctgctcggtg 240

cactggagcg cgatctccgc ggctttccac acgccgttga cgtcgtggct gcctcccata 300

atggacgcgt ccaccacggc ctcgatgtcg tgtcgccgcg cgccaggtgc tgccgtgtcc 360

actggatcac gctggtgggc tgagggccgt gcaggatagg aggcctcccc gtgaccagtt 420

ccagcagcac cacgccgaag ctgtacacat cgctcgtggt gcttggctct ggctgcattg 480

ttgcctggtt cctacatgca cgtcgacgtc gtccacgtga tttttcgtgt gtcagtgtgt 540

gcataagtgc ggattaaaac tcacgcgatg tgaggtcctg tgtgttgctt cccttaccag 600

ttaccactgt accttaaaat tactacttgt gacttaaagg ttgatacatt tcttttgtat 660

ttcctctatt caatatatat taatgattct aaacaaattt aaataaaaag tttaaattta 720

atttttttag atctttttga acgctacaac tttcgtttag atcatctatc catataaaat 780

tatttgaaaa ataaaaaatc aatttcaaaa ccattaatct taacacaaaa ttttttagca 840

ctaaacaatt ataaataaaa aacattatca actacaaaat tgtatatctc tttaagtatt 900

ataagttttt aaatggtcag gcttttgaag gctaagacat tgtgccacaa tttatatggt 960

aggaatgaaa agatagatgt tacattacat ataaatccaa ggtattttaa tgaagtggtg 1020

gtggaagtag cgccgatag 1039

<210> 271
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235544_G1, chr6:159826778..159827795, Cluster 2

<400> 271
gtgatgaaca aaaatagagg gagagaaaaa aaaaatgcta gtagatatat tttaaatcga 60

ttattgcacg tgttattata ttccctgtct ctgagctgtt ggacaggcca tcgtctatct 120

aattgattgc atgttttgaa ggctttaggg agaatcgtct gtagaccaac gtttcgttgg 180

caagaggccg ggagtaaagt gaccactcat tttcaagcca tggaaaaagc acgtggtttt 240

gatactactc ctgaaaatcg tggcatgaaa atccagagaa tgtgggactt gcaggcaagt 300

cctgcaaaag gttacaagga agaaaccaaa tcactagtaa gacagaatgc gatgggaagg 360

aggatatgta cgtccctgca gcgactttga agcaaggact tgggcacttt ggtggctatg 420

catctttcac gaggattgga tatttggcca tgatatttat ttatttcaga aagctttaga 480

gtttgtttgg atccatataa caaacggttt gtcgactaat tttaggatat tggacttcaa 540

gtattgttga ctaataaatt gcctaattgt tagccgaaaa gattggcaaa ttatttgact 600

attagccatt tgaccatgtg ctaataggtg ctaatagatc ataaaaagag gaaaaaggac 660

atctattaaa ctgacttaaa ctaggtccta tcttcaaata taagacctaa gagagaaaaa 720

tggctttcaa aagaatagct attttataaa tttgtatcaa attaatatag gagtctagac 780

ttgaaatgtg ttgtccgtgg aaatggatcg acgggaatct tagccacatg gatgtccgat 840

gtgctgtgtt gtatattgat ttgcttcagt gatgtgcagt atagatacta ggccttgcag 900

ctcaattttg tctatgtaga atctgatgag tgcctgtaga agtgccctgc gtcacgctaa 960

actaatgtgc actgaatgtg tggacgttgt cctagcccac tttcgtgttt ttttctag 1018

<210> 272
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236016_G1, chr6:162476027..162477081, Cluster 2

<400> 272
atgtttttat gagattatga taggtatgtt cccagttccc atgtgaagaa aaaattaaat 60

tatatcatgc tatctatatt taaatatagt tttataacat gttgatttca tctttcaggt 120

tgcttttata tcctaatttt gatgtttgct tggaagccgg agcttttgag tcatggtaat 180

ttcatctttc aggtatgttt ccagttccca ttgctattaa tttgtcaaaa aagaattgca 240

attatagatg gtgacaccat tgtttaaaat cctagatccg cccctggatg aagtcaccag 300

catctaagtc cagtgctcat gttgcattgg actctgcact tcaacacttg aacctgaaat 360

aaattaaaat cagcgtgtag gtggacagac gctttttcca gtagaccagt acagagacca 420

acctagatta gtgcaaattg ggccggttcc agttccaaac cgctgttcct ttcacccagc 480

gccagcaaaa ccagcggttt agccgccatg ggcggagagc tcgcaattcg cgacagacag 540

tcgtatccta cagccacttg cgcatgcact tgcttcagaa accatgtcca agttcaggcc 600

attgtcgtaa acaagagttt gtagtttgta acagctcgtg tgcttactac tactagtagt 660

atttattctc cagtgaagct ctcaagtttt ggccgattct acctgcaaat cagatgccag 720

aattcagaaa gggagaaagc caatcagcac gcgtcagatt ctcccacggt tcgcttacct 780

ccaatctgaa tttacgtttt ccctatcttt tggtctgcac tgcatgtatg caaactagct 840

tagtgtgtgt ccgcgcgcgc gtgttagtct tcaaaccgta gtcattagca gaacacaaac 900

ctgatggttc attaatcgac gtgactcctt ttgagatacc gtgacgtggt gatggtgatc 960

ggaatcatca gaaagttgaa gcatcgatga tctgcgttgt tcacgtttcg gggcattcga 1020

ttttttgcc actttaatgt agcagccatt taact 1055

<210> 273
<211> 1056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238819_G1, chr7:9252485..9253540, Cluster 2

<400> 273
cgaggaggtg gccttggcct tgtctccagt gtctgtcgcg gcgcggctgc cgtgcacgtg 60

gacgtacgtg agcgcgtgcg gcgcgctggc aagcaactgc cacgtgcagt gggtgagtgg 120

cgcgctggca tgcacaggcg caggcgcagg cgcagcacat cggcgagcga gacggggact 180

gcgccgtaca tgcaatgatg caatgcaatt catgcatcgt accgtacgta cgtaactact 240

acaagtacaa gccgctagcg gtacgtaata agatggcaga ttggcagcat gcagcgcagc 300

acgaaagatg cacgcactga cgcacaccat caattctcta ctggagacga cgcgatgacc 360

tcgtacgtat atatgtcagt atgcgaagac catcgtttac gtgtacgtgt actgtacgtg 420

tgcgtgcgtg ctgcaggaga gtactacgtg atcgagtgta cagaaggaaa gaaagtacgt 480

acaactacta gtgccggcta gttgtatacg gtcggcgcgc ggcaatggcc gggacgtgcc 540

gattgaccga cgacacacgg cgtccgcgcc ccaaccccaa cacggcaagc acacagcaga 600

gacaggtacg cataccagta cgtgtggcgg aatgaatgca cagcactgca cacgcgcagg 660

aaagcagcct gccattacat acagtactaa gtacgtaaag gcggtttgga tgtagatatt 720

ggtacacata attgggaatc ggaatcagct ttttctgaat tatggttgtt ttggttatac 780

atagaattga gatttgaaat ccgaagagtc aattccgtgg tattggacta taactagaaa 840

ctcactctct ctcccaattt agagtgtcac ccctcaatat tgtgtggaac tagaccatct 900

aattcaatct ccaatacagt aacatccaaa caatatgatt agaatttcat cttatttgaa 960

tatcatgacc gatttgatat tgaaatcaat tcaattatat gccctccaac attgacatcc 1020

aaacgaatca ctcatagttg gttccatgca ctatat 1056

<210> 274
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239044_G1, chr7:10690463..10691501, Cluster 2

<400> 274
gtaattggat cggatgcctg gcacattgct tgtgtcttta ttagcagaca aagagcctta 60

cctgggaacg acgacgatta tgccgctcag acattcaatc aaacccttgc agtgttgcct 120

tgaaatacct ttctttacat atgctacaac acacaacttt tgtaccagca accattgaag 180

aattctttcg cttgctctat aggcaaccaa cccactgtcc gcagtccgcc tccgccatgc 240

atgccaagta tgcgcatgtt tgcggcaagt ttcagtacct taatgtgctt ctacacatgt 300

accttaagat aaggtttacg gaaaccgcgc gcgtagtgtg tcgtcgtcat cgatgcaccg 360

ttctgactga ataaactatc gagctcctaa tactataaga catggttttc caacatgctg 420

tcgttgtgga acaaccgtgt agaatggtag ttattggagc atctgtctaa caacaaggga 480

agtttgagcg gttgatcccc aggcagatgt ttctcttaga cagtgtttgg ctctggagcc 540

agatagatag aacggctccc gtccagaaaa ttttgatgag tcaaataatt caacatttaa 600

gcataatttt tttttctatt tttagattca ttccgtccta catgaaatca atccaacaaa 660

caacaacgat gacactctgg aaccaaaccc tatcttaaga gcttcacgcc actcgagtag 720

atgtgtttcg ttgcaccatt caacatttgt gtgagttcta agtctcttca acaaaaaaaa 780

agggcaagaa cagcccatcc actttcaaca agtctacact cggagtcgga cgtcgcctgt 840

gatggacacg aatccatggc gtgcttttgc gcggtgaact attatgggaa acgaactggg 900

tactgctgca aagccacctt tgtatcaaaa agcccgcagc aatctcagat cctgttggtg 960

cattgtattg tattgaggcg catgcagctc tgaatcatga atcgttatcg gtacccatac 1020

agaatcatcg tctcgctcc 1039

<210> 275
<211> 1245
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240402_G1, chr7:17716899..17718143, Cluster 2

<400> 275
tgggataaac ctgttttgaa ctcatgatct catgactcac tgagaaagtt ctcatcacta 60

caccgagcat gtccttctat aaatcttcat acaaaaataa actaattaaa aatataactt 120

atgttgatct gaagttgaaa caatgtacca agatgttttg tgattcacat tcagaaaaat 180

acaatgaaac aatcacatat acactaccat atctaggccc taactatgtc tcacacttat 240

gcacatacta taatgtttgt ctaatttgta taatatctga tgagctagaa tagttcctgg 300

atacattctt agctaataga acaagcatta cagttgcttt cactttccac atttgaaaga 360

aagatgttca aactctggtc ttgagcttgt gaccacctgt ctatggagga agaatagggc 420

ctctttacca cctgttttag aagctactcc ctttcttgcc atccactttt gtccaacccg 480

atgttagggt tcatcaatta ctagaattat ggccgcaaga agcactacaa accaccagat 540

aggcgccaaa ttggctcttg ctggtaatgc atgtctttcc gatacctcta aatcctggtg 600

cgtcaacatg aaacagaaca aaaagaaatt gatgattcac tgccatgatt tttgtttcac 660

tgtactgcct ctgtttccta tgaatgatac tcatggtcat atgggagaac ggtatctcag 720

gatccatcca aattatggca tggaaggatt ggatgattta tattgttttg agaggagcgt 780

actactgtag aggtcctctg tttgctccat tctagtatgt gcacaaacga ccaacctttt 840

tgaaccaatt ttaatttgaa aatttcaatt gctttgatgt ggaagcgata aacaaaaaaa 900

ctaggaaagt gctaatacaa tgttacggtt cctatttatg cttctgacct tctgtataga 960

gtataatgtg tgttatgttg actacgtgtg tgtgactgtg actctatgag tttagagcca 1020

acaaccatgg ttcaaatcct catttgtaca taattttagt ttctaccaat taaatgtgga 1080

ggaacacgat aactacggtg gaaactggac ccgactgagt tggagagaag gcaagttggt 1140

tacaaagaaa tataatagtt ttttttataa aagtaaccac aatggaacga tggaaactgg 1200

tgatttaata taataaagac ttaagtcccc aacccaagta catcg 1245

<210> 276
<211> 1385
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_251643_G1, chr7:94028845..94030229, Cluster 2

<400> 276
ccatcacata atgaacatga caatcagatg ggggctcgat ggtcgccgaa cttcgactac 60

tggataggga tggcaatgga tgggcacccg acggtggaac aaacacccac ccgtattgac 120

acttattaca ttaagacaca cccgcacatg tgatacctaa tgggtgtatt tgcacacccg 180

cattcgttgg gtgttgggca cccattgggt gaccaacatt tgtaagtatt gcaatcttag 240

aaagtagcac cacacattac actacaaata aaatataaaa catacataaa tatatagata 300

gtcaatctat caacacaaca tgtaatagga tgacaattca catgataaca ttgttttaaa 360

ctcaatttag tcacataata gtgttgtatg aggcttaatg ataggccaaa tcaaacttct 420

cgtatctcag attagcaatg gtgaaattac acttaataaa ataataatta ctatatatgt 480

tcaaatagtt ggtgatcatc ataataaaga taaacaatat tcaaacatag tatggttcta 540

aactctagtg agctaagaca aattcaattc cttaaaaatt aagacttagg ataaaaatta 600

agacttagga caatataata ttatttatgg ggctaattgg acactcgtgg gtgaaactct 660

agacccgcac ccgaaccatg ggtctaattt aacacttgta cttgcaccca taaatctaat 720

ttaacaccca tacccacgtc taatggatgt gactgtcatc gactcatcct actacgggac 780

atctttgact gattttgcgc tgaacatgac caaaaatcat attcttaatt aaaaaaccaa 840

aatacacatt aggcacgatg aaaaatatat atctcaaaat tctcagaatc gtatttttat 900

taactatagt tgactaaggc cactgtactg attggaaagc atgggggtga tcaatgtgtg 960

aaagagacac ttttcaacta cccaacactg acagtagcct aatctagcag aggtcgtctg 1020

tcgtctactc tacgtgattt tatataataa gggatagcct acatgtattt ttcaggaccg 1080

gaaagcttaa cctgtgccat gtgccagtac agtaccagtg caagtgatgt gcaggaccga 1140

aaatttcttc cagtcgcagc ccgtggagct ctgaagtatc tgacgtggtc gggtcggaaa 1200

ctcggaatcc atgcggattt tggcggcagc ggcaccgaag ctgccgatca attccagctt 1260

ggcaagacag cgatgcatcg tctatcgcag cattggagac ggtgtgtagt catcacaatt 1320

gcaaagacga gactataaac tttagattag tggcgtaaat acatgacgac gaagctagca 1380

acata 1385

<210> 277
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254673_G1, chr7:111330504..111331516, Cluster 2

<400> 277
atccaatcaa ttaactatca gaatgtaata taacatcgta ggaagtataa agtctgtaga 60

aaatgaaaca caaacctata gacgatgaaa tttttttgtg agggtcacta tgtaaaggga 120

agatgaaaat gtacggcaat actctgcaaa tgcctcagat ttaagttttt ttcacagcgg 180

aatcgctaca aagtatattt aacaccatca tcggcaattt gctcgagata atacaccagc 240

ctaaacttgt gttaaacagc ctaatggtac acttgacaac gatgataaaa tgacagaaaa 300

acgaattaat cacattggaa aaagaacaga ttcaagacca cagtctgcct cagtggtagt 360

gacaatttgt ggatcgtcat ggaacaattc cgataatacg tgcatttttt atgcatcatc 420

ggcagccaac gaacatgaca agaagcaaga ccccgaaaga aagatacaca gagaaaggag 480

atttagtttt ggaaaagcta aagcattaga gggacggcca ttgaaggcga gttttggatt 540

tggaaaagct aaagcatcag agagattccc attatagact tggtctatca tgcccggaaa 600

agggttctga tgtccctgtc ttgttctcat cacctgcttg catccaatct caatccaaat 660

cgacaagaag aaaaacgata aactcaagca accaaagatc tcagagcata aaagaaagaa 720

gagcaaagac cagcccgcag cacgaataga aggatgcaaa caacatagtg gagagtatcg 780

catggaaggc gcggctgccg tcggcgagga ctgtgagacg aggcgattgt tgggacatcg 840

ctccggcggc cttatatata gctgtcgtcg gacttcctag ggttttccgg taggatgttg 900

tagtttgtgg gctgggccta ttgtccacga gttcgaacgg gcctaagcgt tctattatct 960

tctctgttta gtgggaaatt ttttttattt cggcccatgc ataagttata cgc 1013

<210> 278
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255654_G1, chr7:116281714..116282780, Cluster 2

<400> 278
accggaaatg ccataaaacg catgatttgt tttgaccacc tacgtaccag tgttaggggt 60

aacccatggg cacttcaccg gcctcgccga cgtcgcgatg gattctccgt tccacatgcc 120

caccaccggc ggcaccacca ccacctgagc agtggctgca ccaccgcctg gcacgatgac 180

gctgccagca ggcttcctgg acgccgccgg ccgcgcggag ggaggaccgg cagaggcagc 240

cgccctccgc cgtggaggcc ccgcggggcg gcgaccgatc ctgcccgtgg acgcccggct 300

gcagaacgac tcggtggacg cctccgacgc gcacgagacg ctgagcgaag acgacactgc 360

tgctgcgcca tggcgcagca gcgtggacgc cgccgcggcg ccccttgtcg gggacggggc 420

caacgacaac gtcggtagca gcctcctcct ggccttgtcg gccgccgccg cgggggcgtt 480

gtcctcgcgc tggggtagga ggctccagct tgtccctgcc cagcctccgg gcggcgccgg 540

gcacgcgggg agccgccgcc gccggcatgg agcgagcgag gtagcctaca cctagccgcg 600

ctagcgaggc gaggcgtccg gcctaaagtg agcttgtgac gatgtcgtga gcgaaagcga 660

taggcgatcg gattcggatg ggcgggagca ggtgatgagc ctgccggtta agtagcgcgc 720

ggtagcggcc gcatgcagcg tgttgtacta ggaggctagc agctagctag caggtggcgc 780

ccgcggctgc ctgtcttttg tattggtata cgtgccgtgc gtacgcgcgc cgcggtgggc 840

gggaaaggag aggtgatgcg gacgcgcgcg gtaggtgcca cgtctatagt gctatacaaa 900

cctctggtgc agctaatcat gcggagcgcc ggaccgcgcg cgattagctc gtcaggtcat 960

cagcaaacgc tgcaagcatg gatccctgat cgatgagatg catggtgccc cgtgcatatg 1020

catatgttgt tgtttcctga cccggtcggc cggccggact atatata 1067

<210> 279
<211> 1195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256611_G1, chr7:121249059..121250253, Cluster 2

<400> 279
tgagtgagtg agaaaaaaag agggtaaaga gatctagatg gttcaatgtg atggaggagg 60

attcttgtgt gtacaaaacg gggtgtacga agaaaacata tctcaacagg agtcatttgc 120

tggatggatc tacattaatt tgaactggtg ctttatatag tgttatagat taagctagaa 180

aatatgatgg ttttatgtgt ttactattgt ttagagtgcc aagtaaacaa aatagtgatg 240

tgacattgga attaatggag agagagaaga gaatcacctt tttagattaa aaactatctc 300

tacatatgaa tcaagacata aaaagataca tagatagata ataaagaaaa aaatatatgc 360

atttggacaa agattatttt aaaaaattac ccagcgaaat tatatttttt aatgtgcagt 420

acctgtacaa tttaataaac atagaaactg cattagtttc tagtatcagg atattgctgt 480

ctagcattcg tactgcattt atcagtcaac cagaaacgga gaacatgacg agtaacaact 540

aatcaactat gcgcatttga tcggcccgcc tactcgggag gcacatatga ttattcaggt 600

tgaagcccat acgcagattg aggggttgag catgtaactg acagcccagt tcaagatccg 660

gcccagttaa ggggcacaac gtgcgtgtaa cggtgtaagc gacctttacg gttcgttttt 720

tatgggccta atcccgcgca tgtacgggta actctggact caggctgtgc tgcctcagtt 780

tttatttaca tttaccatcg cctttattac tactatccag cagccaccgc aacggtggag 840

agcgaggcat caataaaaac gtcggcggat tcaccacggc gggcgatctt cacatgggaa 900

cgccgcgccg gtgctggaga cgaggtagca ttgtgcagag agcctcctag ccatctcgca 960

ggtcaacaca gagagcggta cagtgtcccc gtggatttga gcgttggatc caatgtgtgt 1020

ttcccagttc catcagtctc agaactgata ttactctaca ccactactgc tccccccccc 1080

ccccccccg ctgttctccg ttttcaggac tcatgaaagc gtggattaca cgcgttacat 1140

atacattgtc ggcaatcaaa gagaatatta cactcaagag tcctaactgt aggag 1195

<210> 280
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256631_G1, chr7:121355434..121356503, Cluster 2

<400> 280
cacgaccgcg ccgcaacgga tcccatcgcg cctggtcggg ccccgacgcg tgtgtgtacc 60

aaaccacgtg tttattccct ttaaccccga aactaagcaa agggggaggg ccagcggcac 120

gagggcgctt acgccgatgc taatcgcgtc tcggccgccc gtcattattg gctgcaagct 180

ggaagacgat ggagcggccg tgaagccaga gcccacgata cgacgtatct ctctctcctc 240

ggtgcggcgg ccgtgaagct ttcaagttgc cctgaaggcg tcgtgtactt gcctataaat 300

tgaccacgat caaatcttct atttttccc ttttcacata cgattcggta agtttgtgat 360

tcaaattctg catacgggtg ttgtgtggtt gtaggggcaa aacgcagcgc tgccggtacc 420

ccgtccgcgg catctccagc cggcccactc acactcactc acccgtcgcg tccaggcggt 480

gtagtctctc gtcgtctctc cctaaccatc tcccctccga acagcgcggc cgccgggcgt 540

gcgtgcaggc aggcaggcag ggggcgccgc gcggcggcac tggccaggct cctcgccggg 600

cccctaccgg atgggccacg gccttcgtgg aaagcgtgtg cgtacggtgg acgcgtgcgc 660

gcgcctgcgc tccgcacgta cgtccaccac gacggcgatg gcagcgtgcg tcgcgatcga 720

cgatccggcc gtttgcgcat ggccttacgt gtgccgacta ccaccttggc cacgcgaatg 780

atcagataga gtagagagct gtcgggagaa atctcgtggg cgcgcgaagg gaaactagct 840

accgatccga aatgtcaccg ttgtttttta agccttccta aaataaatgc gaattacagt 900

tatatataat cagtatgtaa cacgaaaacc attttcagaa acatgacact ttacgactca 960

ttgcctgttt agcggagctc cggctcctct agacatagct ccggctctaa cttctccacc 1020

atagctgctc taccatgaga gtcgctgttt ttttttcaaa ccatttggta 1070

<210> 281
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256643_G1, chr7:121398470..121399495, Cluster 2

<400> 281
attatcgcac ggggcagatt gttttctccc acctgaggaa gcatggacaa caaaccaacc 60

ttctagttca acaagttccc atcaggagca agtacaagaa aacagacaat gggttcagtg 120

gaggcagcaa cagcaatcga agcgtccatc ttctccagca tacagttagt tattagacca 180

acagcgcaat ccagcttctt ttttttagc ctgacgtcca ttttggatcg gcaaaacacc 240

agcgtgtcgt gtgatctgaa tcaggtcatc agtatgtata tgcattgcgt gcgtgagcgg 300

ccggcgaggg aacagccgca accaccccta ctataaactc acgggcttca ccctgccttc 360

tcggtccgtc caccaacagc aaccccatgt cccatctgcc atgccatcca tggaccagac 420

cgtggaaaag ggcagtcata cgagacactg ctcggctcgt gaagggtttg gtgccgcttt 480

ccggtcaacc gcaggctttc tcgttctcgg cggccaaacg aggattcttc ttggacgctc 540

atatcatatc atatgatggc tgggctgggc gcaacagagc acgtgatccg tgctgcgtct 600

tcgctgtgcg ccggtacaaa aaaaagcgcg cgaggaagtg gccggttgga gttggatcgg 660

gaggtttcgt tctctgttga gggcttgagg ccctgtgagc tgtacagtgt agtactgtgt 720

agtagtacgc cgtacggccg taggctgtgc tgtgtccgga tgcaaaggga aaggatgaat 780

caacggagtt tggccgaaaa tttattgctc attgattcat tctatgtcat ttattcggta 840

ggtttgccta cggaatacta tatttatttg tatgttctat ctcacaaccc ccccccccc 900

cccacccacc ccaaaaaaaa gtccaatagc tgtggacaag ccaatagaga tgagaatcgc 960

agaaactcgt agcctcctag gtaacattct gatcaacggt ttgttttggt ttttttttcc 1020

tcaatt 1026

<210> 282
<211> 1139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257263_G1, chr7:124751903..124753041, Cluster 2

<400> 282
gtcaaatctg gaaacgttca actaactaag ctcatccacc aaatgcttgt ttggaagcac 60

ccagttttta agaatttggt tctaaacata ccagtttata tcctagttta tagaaactag 120

attctcagtc ccttaaaaat caagaaacta gacttctcta gctaaaacca gtttatgaaa 180

actgaggtgg tttcaaacat tttaaactat tttttcataa acagtttcta aaaactagag 240

ataaacatta ggttattaaa aactatgttg tttccaggcc taaataaaaa gctcgcgcac 300

actggcacgt gggcccagcc catcgacgtc cgcgcctgga cgtcaaccgc cagcaacgac 360

gattcgcttc tgcaaagatg tcaaacgcta agtaattgac tccatataaa aacccaagga 420

actcggtgat gatgtacgcg gtgtcgtaag cacttacgct ctgaggatgc ccaatcatgc 480

gcaacgacag agagagagag agagagagag acagggcagg aaggaagaaa gcaggaagcg 540

tcgcgagctg gtgacgaacg gaaacgtgct gcaatcgctg gactggactg ctgtctaagc 600

tacgggtgac agcgtgaagc aacctagtaa actaagggaa tgacgatcat gtttaggtgc 660

agtaagaatg gtgaccggac gaaattgtct agaactttac aagggacgaa ctgctagcgt 720

tcatgtgttc aaaagaagaa gtgaaatttc cagctgccat gttcgaccct aggagatctg 780

caggctgcag atgcgttcgg tccgtgtgac ctgattaatc cagggagaaa aagagaaggg 840

acctttttct tagtagctgt ctatttaggc cccactcaca tctagccgtc cactaatatt 900

ttacgttgcg atcatccctg gttccatata catctgctat acccttttt aaaaactagt 960

tattgctcta tctaaagtta aaacatctaa taattcaaaa cgagacagtt gtttacaaga 1020

aacatgagat atgcttgtgt ctaaaaatta ggcaatatat caggtgcaac aggacctatt 1080

ggtgcaacca cgcgaccaaa acacaagcat gaatatgtga ggacctttt aaaaatatc 1139

<210> 283
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_260134_G1, chr7:140577457..140578567, Cluster 2

<400> 283
tgctagctaa ttaaaaatta gctaaaatta gttattttgc atctaaacaa tagagctaac 60

atgtgagctg attatttaga caaagtgttc aacaagttgt tagccaactg tctaaccaat 120

tttacctatt tagtctaact tataactagt tctagcttat aaaaacacac gttaagcttg 180

aatacatatg catgtcatag tttattctag taatttaagt gatttataca tatgaaataa 240

attcaaacct cttggaacta catattatct tgcttgagaa aaaacatatt agcaaacaag 300

ctccgaagta ttcttagagc caaagatcga aattatttac acgcaaaagt aagatgaaac 360

cttttacaca aatgtcgagc gtgcagctca atatatgcag ttcttaccta gttttgattt 420

gaaaaaaaaa gaagtaaaac aaaagcggcc aagattgtga aacgaaaatc cctctctccc 480

catttcttca ttcttgtccc ccacccacct ccgtccatct cccacccctg tacacctgtt 540

cagccgatgt tgtcgctgac gttgcccggg atgtgatcaa tgtcgacgag gactccgcgc 600

cctaccctga ctcgcgacat tgtgtttcct catcgtgatg tgcttggact tgggatcctt 660

gggtttggag gtgtcattgg tctgacgggc cgcttgggtt ttggctgtgg gcgtagtttg 720

ggaatgcagt gagcgagctg agggcgcatg tggagatgat tgtgctgagt gcggacggag 780

tggatgggat gaggacgtgc gttctgcgcc cgagcaatct cttcggtccg cgcgattcca 840

gcttggtgag gtttgttgct ggatatgcaa ggtctccctt gggcaaggta ttccaatacg 900

aaatcgactt tgttactgtt caacttatct tcacgattca gatgtttagc agttgtcatc 960

aatggagtat ttctttagtg aaggacagat atatatatca aaccatgttt ccaacttgac 1020

atgcccacaa cattatatca aaaagaagaa cttctcacga aggttgagaa aacctccgaa 1080

ctcctgccca cccatacaca gcagcaccgt a 1111

<210> 284
<211> 1398
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260602_G1, chr7:143406873..143408270, Cluster 2

<400> 284
tttgctattc gtttatttca gttacactga tcgagacaga atgataagag gtattttggt 60

cttcttataa tttatttaat atgctctaaa tagttttagt ctttacaacc aactatgata 120

tagattaaac tttagttttt ttataatgta aacaagagtt ccggcttttc gcatcagata 180

cgtacaacca ttacatgtta aatattgatt taatgaatag ttttttttta aaaaataaaa 240

ctaactaaaa tgtagtcctt gaattaaagg aaccaaatat gcccttggtt gcgaatgaag 300

tttggaatcg gaaacatggt ggcgcacagg agtgcaggac gagacggatc aaggctgtgg 360

cgcgaccggg tgtgggggca tctacttgct ttgtggactc ggcatttagt ttctttgttg 420

ctatgcggac gcgtgcctgt tctgctcccc gccccccccc ccccccctcc cccccaaaaa 480

aaaaaccgtt tcaatgatca gcgctgcagc cacacggaca cggtgacctg gctccagcgc 540

tctacacttt ttttatacgc cgctcgccgt tgaagaagtc gttagcgtgc tgtgcatgtg 600

ccatgacgtc gccgtgagct cattatcgcg caacaatacg atcacgcgtt ccagaatttc 660

acactagagg tgatcacgta cgctggcgac tcgcgtcgcg tcgcgtcctt cctcggttcg 720

gtttggttcc ctctcgagcc gcgccggtct ggttcctgct gcagccgtgc cgtttgagga 780

gatactatgc cactctgctt gctacgtaca gtacgtgacg cggtgcagca cgtgcgggat 840

cctgtgggat tttcgaggtc tcggccagta cgaacacgat ctgatgaagg caccggctag 900

tatatatata tacgatctac agacaggtgg ctgcggcggc ggcgaagggc cgggcgttga 960

cttgctctac tcgttgcggg cagatatgat gatctacgta gaattcatat caatgggctc 1020

gtacgcgtgg ccctgtcaaa acggaggggt tggtgtactt tcttctcgct ctttattata 1080

aaagttgaga gacgtcagtc acgtcacact gcacacagac ttgaccggac ttattataat 1140

gtttttgtt tcttccttga gaacggagag tccattctac agtatatata cccattgaat 1200

cgacgacaca tgtcgatcgt tttcactgac tgggcgtgct atatatggtg gtttagctac 1260

gtatgtgtgt acacatacgt ggtggaatcg acgactgtag caatatctat aaactagtga 1320

aattatgtgg cagttcactg tggtgtccat tcagtttcat ggcactgtct gtcgttgacg 1380

gcggggttgg agacatcc 1398

<210> 285
<211> 1008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262896_G1, chr7:156199962..156200969, Cluster 2

<400> 285
gtagcttatc agttcagctg cttcttagaa tgaactaaaa gaagacaata agcagaagct 60

gctcttcact atctttttc agataagttg tgtcttcaac aagcagcagt cgtgccaaac 120

aggaccaatg gtaaatctga aaactatctc atagtttatg ggttagagta taactatccc 180

tatagagaat tatggccaaa gttgcactta ataaacaatc taaattaaac cgtgtcgaaa 240

atattttggc aggaattagt atttagtatc tttaatgcac gatgcctatg tatgatgtga 300

agccgaagat tgatcgtaga caatagcgcc tttaattctg atgacggtta ttggcgtaca 360

tatatacagt tgtggcgggt ctttcggcaa cgcccaaggg gttaacatct gaagtggttg 420

ccgagatata atgtgcaaga agttgcacac gtgaagccat cgagttctca taacgtgtat 480

ttcatggtgt ttagagaact cgctgtctca cacgtggaca ggagactcag gagacgtgtt 540

ttaagggccc ggccatgcat gcgcccatgc cgtacattac atacatgaac catgcatgac 600

gttaggtgtg gactcgatgg ccttctctct gctttgcctc gatgaagagt aaaacagaga 660

gtactgtcca cgagatgatc accgtgtgct ctgctgactt ggaaggttgg atggctccat 720

ggatggttgt cgacctgcga aagctacgcg tgaatcctcc tgtggtgctg cgctggatgt 780

gacattctgc tccacccccc actcgaacgc gagaaatgaa agaaatgcgc cccaacaaca 840

ggaacagcga aaaagggagc ctacattatt cctcgtcgct ccaacaactg aaaacgacaa 900

tgccgactct ctcttttctt tctaaggggt ttggtctaga gggagtcctt tttagtctct 960

ctattttatt ttattttaat ttctaaactg tcaaatgcag aaaagctc 1008

<210> 286
<211> 1125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264164_G1, chr7:162261795..162262919, Cluster 2

<400> 286
gtttatgccg cgttctgcac accgtaggtt tcggttgacg ccatgagaac cctggcctgg 60

ccatgagttg acgccagcgt gtttcgaact ttacccctgc gaaatccctc cctccctccc 120

cttttgcgac ctagctagtg ccactttgtc agccacccgc tttgctctct tttcccaggc 180

tcagtcactg gtagtcactt tctcaggctc agtcacgccc ccctggtagt gccctcggtt 240

gctctttgag taccacacac tactattacc ccttctgctg ttgtgcactc gtcgcaccag 300

atagataagg cgcggcacga ccaggcaggc cctttgctc gtctaaccga acgaggctgg 360

ctttattagg tgacggttag atgagctgtt ttatttaagt aaataaagaa atttgcatac 420

cgctgcgcgc ctccggtccg gcgatcgggg ctcacctacc cgaacctgcc ggcgcccagg 480

atttggcgat ccgtcgatgg atgggaatgg gatcgagcag cttgaagcgt agtagaccct 540

gagcgcgctg ggccgggcgc tcctaggtct ccggcctgac acgcgggcgc tatcagcgcc 600

agcgagctcc ggacgcgaca gaggagggag acggacagac gtcgccgtca ggcgtcgcgg 660

agggggaacg gattatgagg cctgcgccgg gccggccgcc gtcgcgatcg ccaattcacc 720

acagcgggca cgcgacgcga gttcagttca ggcaacggag atcacgccac gcgcccgcca 780

gtactactac tgctacgtag tacagtaact ggcaaccggc caaccacagc acagccacag 840

acgagacgac cctgtcgctg tcgcggtatc catcggagat agtacaaccg cgtcagcggc 900

agcgtccacg ccgaaccggc aggcggcagg ggctcctttc caggtatctc acggcgacga 960

ggacgcccgt aatacacgtg atacgacggc ggcgaggagg ttcaggcaac gccactagtg 1020

gcctggcgca tgctcacgcc tgccgcgttg gaaaggattc atcaaaggac tcgccaccag 1080

caccacacca agcttccccc aaactctgct gtgtcaggac aggag 1125

<210> 287
<211> 1238

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265207_G1, chr7:168258410..168259647, Cluster 2

<400> 287
aagcataagt ttaatttctg ttcgagttca tatgaaaagt tacaagttat gatttttcac 60

gatgcagtgc aaaagaacct atccttagag aaagaaacta atatagatct attattatgc 120

tattatagct tgcctaataa tgggagataa atatctaact atagattgct cactgaaagt 180

gacctaaagg tttcattaga gcaacttcaa cggttctact tgcaacctta gaacttattt 240

ggtagatcaa actaaagcag aatatggatc tatgattccc atggatcaac actagtgttt 300

ggtatagctc tacctccctc tatcttactc tcacttagaa cttctccaat agctcccaat 360

tgataatccc aaaacggtag tttaggggca aatgtgaaaa acctagtcca acaactcatg 420

atctatgttc ccaatttttt cgatgctcca aaaccagagc ccctcgcggt atagatttgg 480

ggccaagcca acgccgctct atttggcctt ttgtgtttcc tgcgttaggt ggggccacca 540

caaagggtac atccacgtcg gctatcaggg ttgcacttgg acctcccacc aatgatgctc 600

tttctcgtga gactgaggag gaagacaacc acttgatcga aaacaaacaa atcgataact 660

ttcatagcca ctagtaggcg gttgatttcg tggactcgga gagagattgg aagactttgg 720

gtcacatatt ggcttgtcaa taaaattcta agtcgatctt gtgggctgta ttggagtatt 780

ttaaggagtt attggagctg ggtatgtttt ttgggctttt agaattttag gtggagccca 840

atatagagat attgagagta aaaatattag gagttgttgg agatgctctt agaccacaca 900

tgttaagagg catattaaaa attcaaaaag gatgatattt tcttcctcct acaaccttgc 960

ttgtcctcat acatgagcgg agctcagcta ggcatagcca tgtccgagca tggggtggag 1020

gggcgagacc actgccgctg tcgctcgtga ctaggtgcat ccatgggcag gcacaaccaa 1080

ggctgatgat aaggtcacat cgcgatgtgg tggagtgata ggaagaagac gagaggaaca 1140

gaagatgaat cattttgtgg tgtaataaat aataatggca ggtaaatttt tagctccacc 1200

aaacttggat ttcgtggagc atcccttgag ctgctcta 1238

<210> 288
<211> 1375
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265630_G1, chr7:170666036..170667410, Cluster 2

<400> 288
tgtcatggca tccacgtcct cttgggaact ggaagagccc acgatagtag acagcagtca 60

gtcaccactc cagccaccac gctcggcccg ccgccgtcgg catcctcggg ttcaatcgtt 120

tggcccgccc gcccgcacgc ttgtcgccag cctagcctgc tggcagcagc tgtcctctcg 180

ttctggtcgg cgcgcggata aacaacaccc taccctgcg ggctgtagtg tgaagaacta 240

ccgcgtgccg tcgcgttcgc tggccggtcc cagatgtggt ggttgaggta gacgagtagc 300

gacgccgaga cgggcgccaa gatgctcatg gcagtttctg gcgcagctag ccaaacgcaa 360

ttatccgcac tcgctttctg tgcactagtg gtggtggcgg ccgtgtcctt gtcggctcgc 420

tcggcagtcc gtcgtccccg ctcaaattgg aagctttccg gtggttacgc ggtacgggcg 480

gggcggcggc gtcatatctc ttttcgaggc acgacgaggc ggttggaggc ttggagcgtg 540

tgatttgcaa gaggacagga caggacagga gaacgcccaa gttgaggttt gagcggcaca 600

cgtcgatgag attttctaga aattctgttg aggcagttag ctgctggtgt ccaatgcagg 660

taccttctca aacagtgccg tcccatctag ccactctatg tcttgaattt ttgtatgatt 720

agagtatcta gctgcagtat gataaactta gttacttaaa atctacatca ctaaacagta 780

agcggttttg attctagaaa ctaatttttg gtccctctat tttattctat caatggagga 840

tggctggcgg tcgagactga aaccacgacg gcggagtgaa ccagcgaggt atagtgtcac 900

cgcacctcgt cctcgtcttt ggtaccatac tgcagctgga gcttattttc gtttccttgc 960

aacttccgca agctctccgt ccggtgggtg ggtgccgatg cctgtactcc ccgggcttca 1020

tgtcgattca ggcgcttgag cttgctttcc cgaacacaaa tgttcagttt gctaattacc 1080

tggttcgttg tttctgtaca aatagagttt gggtgaagtc tgttcaccat gacactcagt 1140

tatggtattt gtgccttttg actattggtt tgtttggtgt gagagttgta ttatgatgaa 1200

tacacaatgt gaagttacat atttgattct gagaagcttt aatgttgtaa atagcaagta 1260

tgtccttttt accatttttg ccagtattca aggaaccatc agatcagtgt gaatgagttg 1320

tatacgtagg gagtaatctg tagattgtat ctgaataaca aggtatagat gagta 1375

<210> 289
<211> 1185
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266128_G1, chr7:172945236..172946420, Cluster 2

<400> 289
ataattcatg tacaaagact tattaaccgc ctccgatctg aattgtttgt ctactaaaga 60

ataatttggt cagtatccgt ctttactagc cactgagccg tcgttgatga tcaatctccg 120

cggtcatgtt catactcttc tagagccatg attctttggc atcagggacg gacgcggagt 180

gtggtgcgcg gtagctagct ctatccgtgt gtttgcgtgt ccatctaaca cacacagtca 240

caggctcaca gctgatctga gcactggtga tcccgtgact cgtatgactg gtcgttgacg 300

cttatcttgc catcatccgt caatagctag cacatgatgg tcacgtgccg gccgtaacaa 360

gaattgcatg cacgcgtcgc tttcgggtct tcggggcctt tcggcgctct agatgcatgc 420

atgcatgcat gcatttcata tgcatgttcc cttcgttaac cgttgcaaac caaaggccgg 480

ccgccgccgc cgccgccgac acacgatttc aggccgattg agggccgccg acccgaccga 540

cgatcgtgcg tgcataccta ctttgtccgg tccatgcttg ctgcctgctg catggacgga 600

cagggttacc catcctgttt tctacatgaa tttcgcccgg aaaacgggat tttgcctaat 660

ttcgtatttc ttcgactagt ttacgttttc aagtttgact actcgaattt ctctgctttc 720

tgaccgagtt tcagtgactt ttgaccggaa gacacagttt ggtagaaaaa aaaaccttag 780

aaattttggt aggatttatc tatattttat taaaagtcat gttgtacaat aaataacaat 840

atattcacaa gtaattttat tcacaaaaac acataatcca tacatataaa aaaaccacaa 900

ttttagtgca ccacacacat cagtagaaag ttacagttgt gtcgtacaag tgcacataaa 960

gttttccata acacatattg tccaataaca caaattacaa cgcaaagcaa tgctcgaacg 1020

ataatgcatc cacgtattca actggagtca taatattcag gcatgttcga agcatctgtg 1080

tataggctta ttccatatac atattctcct atatagttat aaaataacct tagtatctat 1140

gagagattag ctacttcttg cgcatttggt attgcctaag gcccc 1185

<210> 290
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268316_G1, chr8:7983910..7984922, Cluster 2

<400> 290
atggttctgt ttttgcaagc tatgtggcca tcttctcttc ccaaaaagac ccaaaattcg 60

tatagtatag atatagactc atattatata tcgttttgtt ccttgaacct agttccatta 120

tacacaacga aagtatagat gtttagcaga caagaatgct tttatcttga ttcaaagtca 180

aataaaaaaa ataatcgcat cgacttttct ttgatagaga agtttcaccc accacctttg 240

tgcgttaggg aggccgatgt tcttgtgcaa ggatcaatgg ctgctactta gtgcgttgcg 300

aaggtcgatg actggctaca aacaaaaatc acgcggatgc aaatattcta tagaggagtt 360

tgaacaaata gaccattcaa acactatcat atgaatctgt ttttacaagc tatgtggcca 420

tcttctcttc caaaaaatag acccaaaatt cgtatagtat agatatagac tcgtattata 480

tatcgttttg tttcttggac ctagttccat tatacacaac agaagtatag atgttctgca 540

ctcaagaata tttagaaagt agcatttcct attttttttg ttgttgcctc aaaatctgaa 600

acacccagag tgcgaggtgg atatcatgag tacgaaactt gtaaagttac aatatttttt 660

atagttttcc cttggttatg ttactttggt tgtctctcta attccgaggg gtattatgtt 720

gtcatttggt agttggtatc cattttctat ccaaacccat ctaaccatct cgtaccaaac 780

aaaggaatct atatcccaca ctcatctctt cctatactat ttaaatttcc atttcccaag 840

ccaagattac atctaagtgc cacccttgtg ttccctagtc ttccatccaa catcgccatt 900

gccaagaaac tatcatagca atccatgacc tcctagactt atcaacgata tgaggttgcc 960

agagtaggtg tcaaggtgcc catgcacgag cttgataagg tgggacgatg aac 1013

<210> 291
<211> 1195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269931_G1, chr8:16737935..16739129, Cluster 2

<400> 291
agggcatatt ctctctctcc cctatcggga gggggacatg aagggagaaa aatgagaaac 60

gttggaggct ttcagtgcac tcacacgaaa cttggtggcg cggggagggg ggtggaggga 120

gcctgaggaa ccttcagagc ctgtcttaac attgctcgga cacaatgtct ccttagttaa 180

tgatttttag cgacgagatt agcacgaatg aacatagagg aggtttaagg cccatttgta 240

agagtggttt atataaatga ggtacttcca aacataccaa tttatacttc agtttctaga 300

aactggattt tcagtttata agaaacctat aagttgacct ccggctttca taaaatcaat 360

ttatgtccga taaattacat aatgtcgtta gttggttggg tgaaaattat gatgattgtc 420

atcactctta ggtctatgta tgcaccccct cgatgcctgc tctatttgat ttgaatgttt 480

aattatcatt tcaaaatttt gaattaaaaa atatgagttc aatgtatatt caaaatttac 540

agcaaagaaa atagcaattg aatcaattgt ttttaaaata gagtaataga ctaaaaatct 600

aattttcaaa aaattaatgt gttggggaat aaacctcgct tatcgtgcgg cagctttggg 660

atactttctg gactcttccc ttactagtga attggtcgcg ccttgcgcga ctcattcacc 720

gatatgtttt tacattttaa aagtattgca acataatcat acataaatca atgattttgt 780

gaaactaaaa caaagaaaga tagatttata acttgtctgc cagttgatga gtttgctatg 840

gctctcctca ttcctcgggt tctaagtcaa tcactgattt tgatgctgct agacaatagt 900

tatttcttgt acccactaat tttccatgca cataccttat catcaattac tctcatatta 960

gatggtatgt gcacctgctc atgcactcac actcacacaa ataactcatt aagggcttac 1020

cctgtttggt gatataattg atcagtgtat tatctcccaa attagttcac acgggtcgtg 1080

actgtctgtg tctagacctc cacacgcatc aatacctcga acaccacatc ctcccccaga 1140

ttcggcaagc tgaccagctc gtaccctccg gcctcagaac ctggtggtgg ctgct 1195

<210> 292
<211> 1185
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270813_G1, chr8:21862947..21864131, Cluster 2

<400> 292
agactttagt ataccaaagt ggataagaac aagctatcgg tttcttcgcc aagctgaatg 60

aaaaaagtag aaaacgtccg cttttagccc ctgttgggcg ttgtagccgg cgacccggcg 120

ttgtttcgag gggcgcctcc tctgtcctct gtctgggtct ctgtattgca tttgcgaagc 180

acacagccac acacaacacc ataagcgcgg ctggacttgg cagagcagag ggctgaaagc 240

gacggagcga gccgcgcccg cgccaaaatg agttgcccgc ggcgggttct cactccactg 300

tacaagcgtc cagccacagc caggcagcga gccaagccac cacctgcgtc cagccacacg 360

gtctcacacc ccacggctct actgcctacg ggctacggcg gggggacggg tcgggggccg 420

cgacgtgcct gcgcgccccg tgccgtcgga tccgcgcgta cgcgacgtgg gatggggaac 480

ggacgctccc catcatgccc gtctcgtccg ctagctagcg ctttggcttt gggaacccgc 540

gccgcacctt tctctctttc tttctgcttc ttgttccttc ttcgggttca ggggcccgct 600

cgccagtgag agatagatac atacgagtag agcggacgga gccacggagg aactcgccgg 660

tgccatgcca gatgccacac ggcgcttctt ttcttctttg ttttttttgtc gtcgttcgct 720

ttgctttatt tacttcccgc ggccgaattc ttctcttctt tttccgcgct gtgcgaggac 780

actcgaactc gcttttacgc ttcacatcta ccgtctcgcg cacaagccga gagccgcgcg 840

ctgtgcttgg catggcaagc ccagcgccag cggatcgaaa cgaaataagt cttaaatcta 900

tctctagtca aaattgaata aaactagatt taattctcct caggacctgt ttgattgttc 960

tggattgggt ctaagattta ttccacctga tgagatctta tataaattta gataatcaat 1020

tcgaacgaac atgctctcga tcttcttgga tctagacaca actaaataag tcttagacct 1080

tgttcagttt cagccggatt aaagggtatc gagggacatt aaattccttt tattcaattc 1140

taattacaaa tagatttaat ctcctccaac ccacctctaa tcgaa 1185

<210> 293
<211> 1065
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_274354_G1, chr8:45256708..45257772, Cluster 2

<400> 293
agggagggga gggagcgggg ggtaatagga ccagtatgtc tccttcacat cgctacactc 60

aagattattt tctctggaag gaatggttct gtttcactct gcaagttgca actactgcat 120

caagattacg tattggcaac ttttgcaata caatagtgct tcagtacccc accacttttc 180

aagaatcgtg ctcctttgtt ttcctcgaag actatgctgc cacttcttgt gaagcagttt 240

ttaatggtac gtagagtttt caactgtttt tgtaagggct tttggaaaga cgtcctttgg 300

taggggagtg atgtgagcta tcatccactt cgagtaaagg ctaagcagaa gattctaaca 360

aatgtttccc ttgtcgtaaa gttaaatagg cattttaata acagaaattg ttgttgcatg 420

ttaatgtgac atgtaaatgc aatatttaca ggtcacattc acggaacaac atgtgtcatt 480

tttacacttt ttaactaatg tttgtgctat tgttggagat aatgtttctg tctatccatt 540

tttatttatg ctaattaatt tctctgtaat gcacttttt gttgaacatg cttgtaattc 600

aattgaacat ttgacctgtt caacatgggt gtttgccccc tttgccagct tgaccatgaa 660

catcgtaaaa gctatgtttc tatgtaaaat atagccaatg gtatatgtaa agctggtaga 720

ccatcattga gagctaaagt tatctataac tttggttgtt gattgttctt tctctagttg 780

ctgactgatt tagttatgtc ttcaagactc taaagtagga atttaaagca tcaaaccaag 840

tcttctacaa ccttggagca gttgcaccta ttacctagga catttttttg atgtgcaggt 900

gtgttcacca tttctggagt catagattcg tttgtatatc atagtcaaat tcgactgatg 960

ttgtcttact atttgctgca attaagtagc ttctgttgca gctccaagtt ccaaaaattc 1020

actgtggctt ttcctctcga actcaacttg attaaacatc agcct 1065

<210> 294
<211> 1218
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285863_G1, chr8:119748369..119749586, Cluster 2

<400> 294
caattatttt taaatatctc ttgcattcac atagcctcag cctcacatgt atgtggtctt 60

gaacagggtt gatgggtaat ctctatccaa gctctttgct ccacagtatc ttgtcttgtc 120

accttaacat ctgacgtctc taatgtgagt cacatgcttg ttcagaattt acaagcccat 180

agttctgcac aaatattcac tttcatttgg caaaatataa aagggtataa atgatgtact 240

gtcttttact ttcgttcagt tcatcgattt ggagtcttaa atataaatta atgatgtacc 300

ggcttggcgg tggagttttt tcaggagttt tggcacttga ttaagaacaa tatttttgat 360

atgtgcaaaa aaatttataa tgggtcatta gatatcaaga ggcttaacta tgatgtggtt 420

attttgccgc ctaaagttga aaatgctaat aaaatgaaga attttagatc aatcggttta 480

ctaaattttt gttacaaaat tatcacaaaa atgctcaata gtaggttggt tgcctacatt 540

atcaaagtca tcaatgaata ccaatatagt ttcattaaga tagatatatt ttggacggtg 600

tggtttccct tcatgaaatc attcatgaag gctagcaaat gtgctgcaaa tattgagttg 660

cacagagatg ctctcatcta taccattcag aggacatgga catggtagtg gaactcaaac 720

atggaactag ggaacatagc ccctccgtct ttgccgatgt cgtctcctac tctggccgtc 780

acggcccccg gtaccatccc cctcgcagca ggtggtccgc ggggcgccgc tcgggcacat 840

tttggttgtg tggccgcctg aactctagag aggcgtggac cctgtctggt aagagccttc 900

atggatctct cctttcgcta cgatgtcatc ttcattttcg tcggtgaggt tcggagttcc 960

ttcagcttgg cggcctgggt gattgtgatt tcgccctagg ttattgctac acatttggat 1020

catttttcc ttagttttgg tggcgttggt tgctacgttt cttcgctctt gagattcatg 1080

gagcggtgat ttaggcgttc tctcccaaat tatttttgag gttgattgct ttaatcctgg 1140

ttcctcacct tactatgatt tctggaaggc atgaccgagg acacaacaac tggtatgaat 1200

ctaaggaaca tggaggga 1218

<210> 295
<211> 1202
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_28905_G1, chr1:177037718..177038919, Cluster 2

<400> 295
cctcccctga ccacaactag aggaggggct tgatgacggg taacctaaca acgaggtaca 60

ttagagggat aactatatgc tgagacttct aagccccaag gcctattgga cactgaggtg 120

cttcgagggc tcaaggtaaa tagtacccca agacaacttg aagaagaata atctaagtcc 180

caaatcagcc ttatgccttg gaacattaat taacaattta aagcccccat ggcccgtcat 240

gcctcggggc gctataacat taatcccata gggcccctca ttctcaagac gctcatgaga 300

ataatcctaa gtctatgtgg ccacttgttc cccggggcac tatgtaatat aagtgttcgg 360

gtagttgagg tcctaaaaca cacaacgact cttagacgct agggaccttt agctagcccc 420

aaagccctta agcttgatgc accgtgagaa caagggacct agtgagctta agtataatca 480

tgtcacaata tagaaggatg tgtctgggcc cacctaggac aatacaacct tgagaaatgg 540

accccatatc taagatggtg ataataagtt tataaagtta acttagtgga taagacttag 600

gtacaacata ttaaatgtga tgtgtgacat tataggccta acaagaatgt tttgccacga 660

cttaggtagc aggacactca agatcacaac aatgtacgtg catcgatcat gtatccatgc 720

atgcacatgc gaagtgtacc ataaaacatt atgaagtaca aaaggctaca tcggctacca 780

actaaattat actgatagca cgggccccaa cactcgatga aagtgacata ttgtatttgc 840

ccctttagga ggtatggcaa ccgataggaa gagaaaatct ctgacactat gccacgacca 900

atggcatgga cttcgatacg actccatgaa tatgataaga acgggctagt tttgccttag 960

tgagtggact ttgatggtta tgtaacctct ctcctctctt gcactataaa ggggatgggg 1020

tgagcaatga tttgggattc gatttaggaa catcacacga gattcagacc aattctatca 1080

gattcggaca tccttgctca agaattcatc caggaggcaa gcataaaggt ggattaggac 1140

agttataact agaatcccca ccatagatat aaggtgagag ggagccaaaa gatcttgatg 1200

tt 1202

<210> 296
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292069_G1, chr8:153011615..153012632, Cluster 2

<220>
<221> modified_base
<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (310)..(409)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (315)..(315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (318)..(318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (319)..(319)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (321)..(321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (322)..(322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (342)..(342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (343)..(343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (344)..(344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (345)..(345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (349)..(349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (350)..(350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (351)..(351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (352)..(352)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<400> 296
ctttgggct cgattctggc aggaagtgat tcccctccca ctcatctcat ctcttacgtc 60

acctaaaatc catttactac ttttcctctc cacaccaaac tctttcttgg tgtccgcaca 120

ccatgtcatg taggagtatg ttttttttc tcacgagagg aagatggaag ccgcagtgaa 180

aattttactg cgcacctgag agtcatgaga aaccatggaa attgcgtgcg cggacctgcc 240

ggagggacaa agcagacctt gcgctagtgc tatttgccgt tcggtcgggt aggttagggg 300

gcgtgcgttn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnc gaaaaaagga 420

agtatctaga gattcgtcga atcatggaat gcgtgcgcgg actgcggagg gcacaaggca 480

ggaaaaagca ctagtgctat ttgcgttcgg tcgggtaggt taggtggcgt gcgtacgtcc 540

aatccaagtg gcaggtcaac atgtagtagt aaatttcagc tgctagacta attgctagtc 600

caggcgagcc acaccacacc acacggaagc accaagtgcc gaaagtggcg ggggcttcat 660

catttggatt cgtcgcgcaa ccgtggagca aggaggaggg ggcaggccgc cgaaccattg 720

gagcaaagca agggcgatcg acgacgcggg ctcaggattt tgcatcgcgc gcgtggcatt 780

ccggagcaag gaggaggggg cagctgaaaa ggccgaaccg ttggaggaac gggacgacgc 840

tgacgggtac cagccagcga gacgtgcctt tccggagcat ccgtgatgcc gccgccgcgc 900

cttcctctga ttgatcagat atacaaatac aacctgcacg gactctcctt ggaccttggc 960

cactcctcca ggtaacttca ctctgcagga gaggaggtgg gtgcgtgcgc gcgtgcag 1018

<210> 297
<211> 1360
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292070_G1, chr8:153012679..153014038, Cluster 2

<220>
<221> modified_base
<222> (773)..(773)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (773)..(872)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (774)..(774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (775)..(775)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (776)..(776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (777)..(777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (778)..(778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (779)..(779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (780)..(780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (781)..(781)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (782)..(782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (783)..(783)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (784)..(784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (785)..(785)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (786)..(786)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (787)..(787)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (788)..(788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (789)..(789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (862)..(862)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<400> 297
aaagtcagta gggcccccag tccggcacaa atagatatat actcttatat atatatgtat 60

ggtatatatt tattctattc ccaaaatccc tagccgttgc tcgctggtaa ccattgctaa 120

agatattgta aatgatattg gtgtaaatac atcatttcca gtaaagcgta aagcggcgag 180

aaagaaaaca atttgatgaa aagtagttgc cacgaagaaa ttcatgaaat tgagagagct 240

tttgaaagtc aactattttt tggtattagt tgatatggcg agcactttct ttgaggacca 300

gatttaaaaa aactctccat gtttaaaggt atattcgagt tttttattga gctcaagcaa 360

actaaggtca ctaaaatgat agagaactta aagagtgttg cactaaattt gcaaacactt 420

tctctcatga tggttcatgt gatgttgagt taaatgattt gatttctaaa tacaacctgc 480

acggactctc cttggacctt ggccactcct ccaggtaact tcactctgca ggagaggagg 540

tgggtgcgtg cgcgcgtcgg cgcgtgtcag catgtgcgtc cgggagaggg taaactactt 600

ttgcctactg gcactggcca ccaccgagag agcgtgaacg agtgaataga gtaataaaat 660

atttcggggc gccggacaca gacgccgacg tgtgcgggtg ggttctccaa aactgcccgc 720

ttcgttgtag acccgcgcgc accggacgaa tctcttgatc gccaaaggtc cannnnnnnn 780

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nngtaggtgg actgatgatt caagcttgat 900

tcgtcgggag atggggaaga aaaagaagca cgtgctgttt tctaagagta gatgtacgaa 960

gaaagagaaa ggtggtgatc tgatggacgt gtacatacat acatacatac atacagacgc 1020

agacacttcg ggctgcacca acctcagtta gttcttcagg tcaattcaac tctgaaacgc 1080

aggcagcggt cgtccccggc cgggactgga gcgagcaaaa tcgcagagcg gactcggttc 1140

attcagccac gagctcggcc gcgcttgcac gttttcaatt ggtaacgata acgcttgctt 1200

tttttgtttt tacttggtgg actactggac ttcagcaaca cgtgctcgct tgagagtgag 1260

agtttttttc tttccttccc agcccccttt gtttatatag ctgcgtacac tgtaggtaga 1320

gcgtacgaaa tgagtgcaca tgcccatttt ttttgccaga 1360

<210> 298
<211> 1044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294091_G1, chr8:163311970..163313013, Cluster 2

<400> 298
ttatacataa ttactagctt gtcattgctc tattttaagg agtgacaata gatatataaa 60

taaattgccg ggccgggttc gtttggccca tcgtgccacc aacccccggt tccccagtgg 120

tccgccggcg atcgagccgc cccacgcgtg acgcgccgtc gcaatccacc acggtccaat 180

gccgcccgct gcggtgcggt gcggtgcgga tccccccgcg cgtgcgtgcc acctgccgcg 240

ccgcagaccc cgcagcaggt ccacccatgt acagtactgt acggcggtaa cgcctcccga 300

gtcccgacgg gcccggtttt gtcgccggtg gcacgaaagg cgaggagggt ggcgcgcgtc 360

gtcgcggctt cgagagtccg cattgcggat ggagcgcgac gcgaggcgat acgggatagc 420

ggcgcaccaa aaccgtctgt cgcaagtggt ttccggaggc gtccgtcccc gtccacggtt 480

ccaccacacg tccacagacc taaacctggc gctggcgagc ccggctcgtt gccgggcgac 540

ggcacggctc cttcctcccg tcccgtgcag tgtgcacgta cgtacaggtt tagaggtgcg 600

gaccagggtc caaagcatga cgtcggctcg ctcaaaccag ggcaccagcc accaggcagt 660

gcaggtctct ggtcgcgtgg cggcatcgct gcgtctgtgc acgacggagc ccggaccgct 720

agctggacca tgaccgtctc tcgcaagtgc gacacggcat ctggtgctgg ggccgtggaa 780

ttcacgtggc cgtgacacat accggagtgc ggttcaccgg tcgccgtcgt ggttttcctt 840

tctgaacgga gacgaaagcc atgggcagct tccacttcca gagctgtgac tcgtactcaa 900

atccaagtgt gcgatgcgtg cgccggaaag gcgaggagca gcctttattt tacgtggcag 960

ccgccgtggg tgactactgc ctctgggctc tggctggcta ttgtggaata tacttttggt 1020

cttccacggc tcgcatcggt gcgc 1044

<210> 299
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294297_G1, chr8:164622545..164623589, Cluster 2

<400> 299
cggagttatc tctgcagcag gtacccatag taatttatag cgtcatcatt agtactcatc 60

actctcctca catctggtgc cttttaacta ccggccggcg accatcgatg gcgatagatc 120

cgtcgtcgct caagtcaagt cgtcacaccg aaatgtgaac agtggtcgcc agccgacgga 180

cgcaaggaat gaacaggcgg ggaagcgacg ggcgagcgtg cgtggcaagt ggcagcacgt 240

acgcagcagc ggccaagcca ttggccgagg acgaggcagg cgcaggaagc gagcgagaca 300

agactggagg agagtgacgg cggcggcggc gccggcagcc ggcgtggatg gtgggccgtc 360

gtaccgatca aacggcccag aaaccccgct gggtggacca ggggcggcaa aagggatgct 420

ggcgccgcgc ggtgggggggc gtgggtcagg tggtctgcct ggcctcagct agctgaaggc 480

agcctgacct gatcgagcag ctgggggggg cccggcccgt ggccggctgc gcgagcgagg 540

agacgtgtga gggcgccccg cgcgcaggca caaacaacag gcacaggcct cgtgggcgac 600

gccgcgcgcg gcaggaggcc cgcaggccgc ccaagcattt tcgcatttaa cgcggcgcga 660

ccaccaccgc cacaggatgg accgcagcgg cccgggcgga gccgatgatg cgatgcgata 720

tctcctcgac tccccctgac actcttctct ctctctctct tctctctctc tgtctctgcg 780

cctgcaccct gcccctgcgg cgtactacgg ccgcactgtg ctgcgccgct cggctgccac 840

cgtcggtcgt catcattgcc gccgggccct ccggccgatc gcctccctcc cctatcgcaa 900

caaacaatct gcttgttgtt ccgtccattc cgtctctgca tgcatccatc ccgattgcat 960

tgaattgaag tggatgaatg cgagtaggaa ggaggggggt gacgagagta cttgtaccac 1020

gaccccagtc cccagctagc caaca 1045

<210> 300
<211> 1056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_296573_G1, chr8:175213331..175214386, Cluster 2

<400> 300
agagagacga agacaagaga aaaaaaatgg gaggttagga gttaatatac gatgccaata 60

acgaggaggg ggaagtacct gtggtggttg catggttgat tgcataaggc ttatgttatc 120

atgttgttag acgagactta aagaagaaat cagatttacg cgctttgctt gtgacatcaa 180

tttaataaac ttatttagtc gtttagttct tatacatgta attattttta taaatagatt 240

atatttaata ttttttatta gtatctaaac attcggcgtg ataattagag gtagacccag 300

gacaaaatga gagtgggagc acacttaaaa tgatgagcat caaaacacca gaatgagagc 360

atgatcgagg gcttatggca tagtgccctc actcaggcaa cgtaagtcca cccctgacaa 420

tgtccaatgc ctaaagttta gtcggcgtat taggtaagcc aattatgttc ctaactgcac 480

taaattctgt ctcttcgtcg cgacggtctc cggagactgg tcagccccat aattgtgctc 540

cgtcaaacac gtaattagtc aagaactgtt tgccccatag cgattatact tggcatttaa 600

ggtttcctat aaatgaatga cagaaatcca agtttggcac cgtagatttt ctcagccatc 660

tgtcagatag aagcagaaag caaggaatac acaaataaac acaatttctt ttagtttggg 720

tgaataaatt cctgaaacaa gtgatgacat ctactcaaaa tcaaaatacc agaaacaaga 780

gaacatgtct caaacctgtt tactaaggat gtggatcctc ccaagcaaag ccaaatggaa 840

tggttggggg cagtagcgcg agcaaatccg tcgtgccagt gtgcgaaccc aaagctaaac 900

catcagctcc tgtcaccata gtggatgatg ctacaccggt ggaaagcata ggcatcgatg 960

atgcagctcc ggcgaccgcc ggtggagacc acaatgcgcc gacgacagag gtgtggggag 1020

agttggcagg tgggcagcag ggcacgccgg cagttt 1056

<210> 301
<211> 1025
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29982_G1, chr1:183814890..183815914, Cluster 2

<400> 301
tgtccttctt gtcctttgga tggttgagtg ccatggtctt ctttttgtc gttctccttg 60

ttttactcat ccatttatac actgtatgtg tcttctgtga tcacgtcacc caatacttag 120

gtaggatcta tacacctttt gatttgcctc tcataatgac aatggctgta gtattaaatc 180

ttggaaacaa acgtctaaaa aaccaacgag agaaatcctc gtcatccacc tcgtgaccca 240

aattactttg ttcaatcaca atgacatgaa gcctatgaaa catttctcta tgtagaagaa 300

atagacattt ctaaatagta tctagacatg catctaggac catggattag aaaacccgtg 360

aaaaccagtc cagtttccca ttactggatc agtaactgtt ttccaaccat ttttacatga 420

aacctgttaa aaaacagcag aaatcgacaa aaaaaaaaga gagagagtag tttctcgccg 480

agagatccga gcaaccgatt tatttgactt tgtaatgcaa actggtcaaa aaaattaaaa 540

aaatgaaaat aggtttctct gtcgggaaat agggattcag gccgagaaac acgcttctcg 600

ccgggactaa aataagtttt ttgtgcgtgc ccgtcatcgg tcagcctgca ccgctgcaaa 660

cgtgacggct gggcgtatgt cgcgagcttg actgagctcc agattttgga tacgccaacc 720

tatacgcgtg caacgagcca acgagggtcc aaacaaatgc agctttaagg atctaccggt 780

gcaaggaaat aggtaaccaa aacacaaggc atgagaacgt gaatgattct ttttttttaa 840

aaaaaaggtg tttggatttt ggtccactcc ctgccacgcg gccacgccac cgttacgccc 900

atcacggttt cccgtgacgc gaaagctttg gctaccagaa aaaaaaaagc aaaatttgta 960

tctgctgtat ctgcaagaag cgaaagaaaa actcagaccg gtctaagagc gacacggtcg 1020

tcgat 1025

<210> 302
<211> 1372
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301852_G1, chr9:24140199..24141570, Cluster 2

<400> 302
cagcctcagg ctttgcagca acagcctttc atcaccacgg ctatgggaag aagctctgca 60

ggccgtgcca tgcatgcatc gatcacaact cacaaggccg gcatgcacag gcacagccct 120

ctctctcagc tagaccctct gtctctcatc tcatctctgt gtgtgtgcgc gtgtatgtgt 180

gacaacacga gccagcaggc caagcagagt agcatgagcc atcaatataa atggagggaa 240

acaatgcaaa gaaaaaacaa agcagccagg cacaggaact gagtggcacg cacgacacac 300

ccatgccacg cacaccgcat gcgaacaaat atgaacattc caaccgtctc tctctctctc 360

tactctcgct ctgaatgaaa gcagaaagat gaaaggagaa aggagggcgc aatgcattta 420

tgcatccatc caagcttgca ttgcattggc ttcaatggat ctgacttctg agccagccag 480

ccaatggcct gtctctcttt cccttgcgac ctggcctggc cggccgaaag cctagccgcc 540

cgcaagccca cagcggacgg cgacggctgt gtgcctgtgt gtgtgtgtgg tgtgcagtgc 600

agtgcagcgc gcactgtgct gcacgcgcaa aggcgttgct gcatgccccc tttgtacctg 660

ccgagcaata agtggcagct tgagctgggc aaggccaagc agagcagccc acaacgcact 720

cgatgcgtgc ctgcctgcct gcttgctcgc aagccgcaac gcaccacgag gaaaggccat 780

gcccgttcac tcacgatcca gtcgctgctg gattgcatgt gtgcagcagc agctctttgt 840

cgatccgcaa ccacgcgtcg tcttcctgtt cttgctccgc ttggtgtgtg tttcggttct 900

gttccggtga tctcaaacaa ctgtacagag agtcagggta aatgcacaga tctagagaga 960

gtgtgagaca aagagttttt tttttgagtg gcaggggagg ggagtagggg accgacgaga 1020

cgacgcgcgg caagtcggca acagtgtaaa aacaaggagc aggagctgtt cccacctcac 1080

cttcctttct ccgggtctca tcacatgcca agtctctgga agttctcaag gtttcgttcg 1140

ttccgctgca acaacaggtt caggctcttg ttttgttgta agcagcgtgc agagactaga 1200

agcacagtgg actctagtaa gactttgcag aaaggggtta cattagaatg tctgaacaac 1260

gccggttaaa gagtagtgac ctgaaagccc aacaagccaa caacagcacc agcagcaaca 1320

agtacagtgc gcacaaccaa ggaaagaatg ctgccgtcct gcctgcggct gt 1372

<210> 303
<211> 1293
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_302109_G1, chr9:26608836..26610128, Cluster 2

<400> 303
caaagagcct acaatgacct attcgattga atgttagctt gttagcctgc tcggcttcct 60

aatgagtaga cctgttcaaa catcggtggt atcgtgggcc attggcacga ttcatgttta 120

acccatgcat tgtgttgggg tcgagttgtt gggatagttt ttttagcgtt aggtcgagtt 180

tttttaggtt ggatcaagtt tttagtcaaa aatcataggc cttagcagac ttgtggattg 240

ttacgggtca aaaactatga ttcatgctcg cccgttgtat tggtcgagtc ggaccaggtt 300

ttttttgcg ggttgaggtc gattcgagtg gtccatgatc aaacttactc atgagtgcta 360

attataattt ccaagatcct gacaactatc ggtgcattca gtgtgctaca acatcgtcct 420

tttagcctcg ccaccacaca aaagtcatgt ggcattattg gactatctcc agccactcac 480

atatttcatc catatcttat cttctattta aaactttatt atgatgcaaa acaatatttt 540

tacacaatcc ctcatggccc ttgcctttgt aacaactaag ttagaaaaca attttgtggg 600

tttatcctca acatcaacaa aacaagaaca acatttttt atcatccttt atttaccgca 660

aggagttccg tttagtcgcg acactttggg tcgtgcatcc acaaccacaa gacacagctc 720

attgagtcct tgccattgga gacaacaaca agaacattca aaaaaattcc ccgtcacccg 780

agtaaaagag ggcaatgtgt tggaaatata taggaaatga gagaacaacc gagaaatccc 840

tcatatcgaa atgtatataa ttcacatgtc tagactcaaa ttaatttatg aaagcctgtg 900

aatcaagtgt caaatgtaga gagggcgcgc gcatgaatta agggttaatt aaatatcgaa 960

atttgtgcgc tcattgcgtc tgtccgatca aattccaccg tgaatgagct agaatcggtc 1020

atcagctgcc cagcgcgtcg atcaccatca ttatccacgc ctcagcaggc gtactttcat 1080

catcaggtat atagttaatt gctgtaaatc caaccggagc cagatgaaaa actcctggca 1140

ggtagcgctg cactgtacag cacagcatat gtaacacgac tgccgtacgt gcatgagcat 1200

gagctggacg cctggatgag ctggcttgtg ccttctacgt acgtacctga tgtatctatc 1260

tatctactag tatatatgat tggagttgtg ctt 1293

<210> 304
<211> 1317
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_311097_G1, chr9:83967505..83968821, Cluster 2

<400> 304
ttcgaggtcc tcaagagtgg ggccctcgag gtagttgcaa cattatgaat ctactcgtgt 60

tcatataata aacatggtca caaaataaga aacaatatat caaacatgaa aacatggttc 120

agaatggtcc tataattatt ctatgtattt gtagaattta tttgagacca aaatcattta 180

atttagattt aaaatgaatt agatatgaat ttttaatcat tttacaacaa tcaaggcata 240

tattcattta tctataactt ccaaggtatc taaaagtata tttttggtcc ctagttataa 300

ctggtgtgta ctgcgagttt atttctgtaa aattgaggag ctcttaagca aaatggtcac 360

ggtcagctca tactgaccaa gtgctaacca atatccacga atatcagcca ttggatcaca 420

cgggtgcgac tcggaataaa tggatcacta tgtgggcggc gcacacggtg gtaggagacc 480

tccgcggggg taggtcactg gtgagagcca tgtcggccaa cagagagctc ggctagggct 540

acaacctgtt gccaagccac tagggctacg tcaagcatgc taggcaccac ctcgggggca 600

agggacagct ggaggggcat ggttggcggt gaaggggcgt tcacggcgaa agagcatgct 660

tcgattagca attcccgcat ggtccatgca ctatccagct agggaaggga cgttcgaggt 720

tgggtacctg ctggcgtagc tctaggtgct gagtggaagt cgagggagct cctgtgggct 780

caaatcaaca acagtgaggc gcgatggggt tggattgttg tggtctaggt cgtcagggtc 840

gatagagctc tagggaagtt gcattgtagt ttgttcgagc ttcgatggtc ctggtgacgc 900

cggtgggaag tcagggtgac tctggtgtgg ctcaacgagc accagggctt atgggctgcg 960

acgacactgg tggcatgaag aaggtgttcg ggaagctagg agtgtgagct gagagggtgt 1020

gaaggtctgc attttatatg tgtgcaccat tattagccag agacagctcc aacgtgagca 1080

gcgtggctgg cacatcggtt gaatatcggt gagttcgtgt ctttgaatgg catgatgtcg 1140

gggaagtaaa tgggggggacg actgccatga atgcttatcg cattcgctct caggtgatgg 1200

ggcctaggct gatgatcgag ctgcggatgg cgagattgat ggtgacatgc atgtcaagga 1260

gcagtgagag gggcaggaga ttagggatga aaggtggggt tcatctatta gcgactt 1317

<210> 305
<211> 1206
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319912_G1, chr9:133148427..133149632, Cluster 2

<400> 305
ccatagtttt ctgttactgc acctttcttc atatgaataa ctaattaaaa taaccacaac 60

cagtacgact ctttttccaa atactatttg gttataagca actatagagg agagggcaca 120

agaatcagat gctgcgaaca atgcttttgg ccatttgaca gaagcggtaa aaggatatgg 180

tgccaggcga gcagacgccc caaagataaa aaaaaggagc aaagaacaga aattttatta 240

tggttcaatt ttgtaaacaa aatttggaga ttaatatttt acaaaagtga tgaggtatat 300

atgtaatctc tttcgagtta aatttcagaa atgatcctgt gcattatata cgttctatcc 360

ttctcagtca tgccttcatc taaagttcaa gagttaaata caaattaagc atccagtcgg 420

aggatcaatt ctcatatact aaaacaagcc cccatcctac ctccatctta ttctattctc 480

taagagatca aatgaacaac tattcttcta aacaaattgg tactcggtag aggtaaaatc 540

tgctctcatc ctacctccat cttctattct ctaggggatc gaaaccaaac caagattaag 600

aagaagaaaa actgacctgg aaatcaggag gtccaagaac gaaaccatta ttataagaaa 660

aactgaaacc aaaatcaaga ggtccaaaaa acgaagcaca actgacctgg aaacttgagt 720

gttgaagaat gagaaaatta tatatttagg actttaaaca atgtgcttcg tatttttggc 780

atccgaaata ttgacttcgt aaaagtagga tttaaaacat attctaattt gtttgaatgt 840

cattttctgc cttttctatt tttttctcct atttggcgtc tatgccatgc atgttttctc 900

gtatgcagct tgcctttgtg aggtcgcccc cgcgctggcc tagtggcctt tcaagccctc 960

gccagggatc tccacgacat cgacggcgga gtagtcattc cttctgcgcg caatcctcat 1020

acgaacgctc tgcgacaggt tcctgattcc gctgcttcat tgcttgctga gcttcacatc 1080

aatcctgaca tcggtggtcc catagccctc tgcgcaaact tcttgatctc cttgacgaca 1140

ttggctcaaa cctaagaaaa tgttgacgac attaggcgca tggttatgcc cccctcaatt 1200

tcaaag 1206

<210> 306
<211> 1282
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321058_G1, chr9:138420971..138422252, Cluster 2

<400> 306
gaagttttaa tcttcaatat caatactcca aaaattactg caattttggc tataataaag 60

tattcgaagt agtgttttaa aaagttcaac cgaagaccta ctagtccaga atgctaccat 120

tttttaaata ccataatatt gtactttctt tgttccgtta tattagtcgt tctagcattc 180

aatcacctac ataaattatt ctctgaatta ggacacaagt gggcttcaaa ttcaaataga 240

taaacaattc tatgaattta gacaatccta aacacttcta agacgaccaa taaaataggg 300

cagatggagt attagaactt aatccgtctg cagaattttt tgcacagtag tcggcatgtc 360

gatgacctgt tctaccacgt aacgggggc gaacgggctt ggtgcgcggg agtcttgaca 420

ttgaaccgag gtgctgtctg gtttacaaaa tgtaacggaa agggtaatga taatggttta 480

cactcaatta ctgacggtaa caagtttaaa tagttcggta tcaattttta gtatgatatc 540

tgattacggt taaattaaaa caaacatgat ttaacgttat cacttaacca ttatgttaca 600

aatatatgaa ccaaacggca cccaagaccc tagcaattcc cggcgcgaat ccttgtgttc 660

gagcatctag ctcagctcgg tcgatcggct ccaactccaa gtagaagtac cgcagcagta 720

gaaagtagaa tattcgatca tgagcacgcg cgcactcctg gattgggcgt taaggtaatc 780

tgctggatac acacgcacac gcacgcttgc tcgttccggt tgcggacttt ggactgtcac 840

tcgttgtcct cgttgctctt gctcgtcagc catcaccgcc cttcgtcacc ggctcaccgc 900

attcgcatac gtgagatcgt ctggtactct ggttacgctt ggctgcctgc gtgttcagga 960

tgccttgggc ttggttctct cagagtagcc cgcaatacag gcccagatct gtttcggccg 1020

ctgtttggga gctctagctg ggcctccagc ggatgcattg tttcttacta ctgtagcctg 1080

taacgttcct tttaaaaggc cgacaatcag cgagcccagg tagcggatcg tggtgactgg 1140

tgaggtggaa ccggcaaaca gagagccgtc gtcgcgaatc ccgcaaagca gcccacgtaa 1200

aaacgcgcgc agtgggatgg atgggatcca catccacgac caagtggaat cgccggaaag 1260

gaaaagacaa cagtttccgc cg 1282

<210> 307
<211> 1219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321299_G1, chr9:139740448..139741666, Cluster 2

<400> 307
taaaactata atctagtcag gttctcttaa ttcttttctg gatggttctg gtgagggagc 60

gatggtttgt ggaatggagt gagttaatcc atcaccatct cattccttgt agttagttgt 120

ttagtaccaa tatgtggaat aaagtcatcc catcaaattt gaggaataaa ctcatgatgc 180

accactttat tttggataga gtgattcatc aaaccaaaca cttcaatagt ctatgtgaag 240

ttttgttgtt tggctgaaga agaattgtta tcatggagga tgctctaaag agtgctgcaa 300

acagcagtcg gcaacaggag cataaacata cagttctttt ttgctgggac aactaccttt 360

gcaaaaaaaa aaacgaaaag aataaaaaat aaatcgcaga cttatacgct catcccactt 420

gtgagctcgc catcacagcg gccttttttg gcaatccgcc cgtgcgtcgc tccggtccaa 480

cggaagccca aaagccgaaa cggacgttga aggccctagt attagattgt tattttgggc 540

caatgcttcc gacgggcttt ctcaattttc gagactctat tttccgtttc gtccaggaat 600

atgtatgggc caggaataca gtatggcgtg aaggagcagt gcacgacagc acgagtacga 660

agcgcggttg tttccgtagt cactcaaaac tggtttctca cagccacaca cacaccatcg 720

ccaagctaga cggcgcttgg acgatcacca acgactgtca ggactctgga gatgatggaa 780

gcataggcac cagcacgaag accacacggc cagaaggcag agcgtgtggc tgaacagagt 840

ctcgacgaca tggggccggg ccgccggggt tgtgacggcg aggttggatg ggcaatgtcg 900

acggctgctg atcctcgtcg attagtccca tagagatggg gacagtgatg ggtacggatg 960

cttgtgcctg ctaccatgcc gctccacagg atgaaggttg ggtgaacgga tgtcggatgc 1020

ggcggcgccg gtagcccagc agggtcgttc gttcttgtta aatccctctt ccctgctcgg 1080

gcctagtcgc tgtgtaggcc cattgcaagc aggcgtgtac tttttgagac ccccctcttc 1140

cctgcctcgg gtctgggcct gggcctgcga ggatttaagg gcggcacctt gttatgggcc 1200

aaagtcacca ttgttgggc 1219

<210> 308
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321726_G1, chr9:142053759..142054828, Cluster 2

<400> 308
ggagacacaa aggtgtttga cttcgcttgg gcatgaccat gaatccatga tattggccaa 60

gcttcttcgt tgactagatt tctctcgttc ctcgtgcgag tttgcaatgt tcgaacgaaa 120

aggtcagctg caaaaaaaaa aaaaaaactt ttcccctcct tcagaaatga gagtcgccca 180

gagcctcgaa tgacgaggta ctctgctgac gaggccggca gcaaactgga gcgggtcatc 240

gtcagagtcg ttgcgcaaat catcgagtgc acccgaagca agcttaggat agcacgcagc 300

agcatctcgt cgctttcaga acagtgtcaa gcgtgtagga cggctcatgt gtgctacatc 360

cttgtctgcc aacacagtcg ctcgctggat ctcatcagct agcggtagcg ccatgtgcat 420

ctaaagtgat gatgtgggtt tttagtgtaa ctcaaggcgc ctaatcctca ctgtccaagt 480

ggggaaaagc ttccatggtt ttgcatgtgt ccagtgggga ttttcggtga ttggttttaa 540

tcaccggaaa aaaagggctc cactgatggt ggtgtcgtac tggttgattt tggtgagtga 600

gatgtgatga caatctgatt gtatttcggt tgtgggtgca gtgtcctttc aatgaacttt 660

gatggtttat gagctagagc tctacgctat caagatctcg cggtgtactg gtgtgcgtgt 720

gggtgtacag tacagaaact taaatttgat tggataagat agggagtgtt tatttcaact 780

taaaatcaga ttctgacagt tattctcagg gcgaccttat tctggaggca catgtagttg 840

gcctcttggc acggtcgtgt ggtctgctgg tgtctgttgt tttgtttccc atctctatga 900

agttgttctc tctgtttttt tatttcctct agatagctga tggtctactt ttctaggttt 960

ttctttttcc tatcctgctt gctttctggt ccttgtcgga tcttgtacat attttaactc 1020

ttctaatata ttgtggtggc aaagcttttg ccacttaatt aaaaaaaaga 1070

<210> 309
<211> 1260
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322347_G1, chr9:145367236..145368495, Cluster 2

<400> 309
gataccaccc actatggtgg cagcgatagt cggcttacgc catcaaatcg atatagtgag 60

tgcccgccta ttttagttgg taccgactgt ctaattttaa gaaacttaaa actaaaagta 120

ataaaaatgc aagaatttta aaaaaaacat tataaattat ttaactttat ttgtatatat 180

cgtgtaactt ttattttgat aaaacgacat gttttatttt aaataaaagt tagtaagaaa 240

tgttgatgtg agactgcgat tggctatagg ataatgataa aagttgtaca ctaaagtatt 300

atggtagata caaactaata atgatagata catacgcgac gatagcaatg tggcgataga 360

tgtcgtttca agaaaaatat gtgtgctgtg ctttaaataa tcgagaatta tgattgagct 420

ttagtgtttt actgactcgg aaaatgacat tttatatcaa agctattcta acatgcttgc 480

ataattgctt tgtataccac tagtatcaat taatcgccca agctgtacct cgaaattaca 540

gcaccgaagt aaacattagc tacggataca tcagttcaga aaaagagtca ccacttcttc 600

aatatttctg taatcaattg agcccacatc ttgtagtcgg aaatttacat cacaacgttt 660

cgtgcatgaa acacctcaga tttccagtat agttcttatc tgctcaggag agtgcttaac 720

caacgacctt gggtcaggat aattgttata agattctgct agagctcttg ccaaaccata 780

gcaggcattt gaacgtaacc ttggaaccct gcagttgctc aaattcaggc aaaggaacct 840

tctgttccag tcacaatgcc aaagagtgac ttcaagcatt tataaaagca tttgtggcga 900

cgtttcgatt atatctgcca gagaccttgc atcaaccttg ctaccgtact cctttatgta 960

tggcatctta tttgacagtc cacatttcct aagaatgttg tcaacttctt tatcgacaag 1020

ggcacgaata tgtacttcga tcatagagcg caggttgttt acatagcttg tagcaacctc 1080

ctggcccatc aatggctcct gaatagctga caagcagttg atgaggtaga ctttggatga 1140

agattcagca caaccgattc ccgttttcta cagagctcaa ccactcaaca cctacgtcgt 1200

tcactaccgt cagaaactgt ctttattctt ttagatttaa gcccggtttt taatacacta 1260

<210> 310
<211> 1259
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323135_G1, chr9:149270404..149271662, Cluster 2

<400> 310
gtacaaggct gccatcaact tgacgggcgt gattaggctg gccggcgcta cggataacgc 60

ggtgcaggaa tggcggcgga tgatgagggg acactgtccc cgacctgttt ccgctgttca 120

cgacgttgcg acttggaaag agagagcgaa gtgggcgaga tggccagtag gggattgctt 180

gctcgtagca cctttgcagg aatttcctct gatagtctga tgggagatca gatcgagaga 240

tccccatgtg cgggtgcggg tgcggtggca tcgtcatcca gcgaggagtt cattgctcct 300

tgctctcgat cactcatcat tgactcggat ccggagcagt ggaggcgtct atctacgcgc 360

caccactgct ttctttttgt tctcttcttc tttctactac tacaagtggc cgagtgcctt 420

ctcctgcgga aattctcggc gcatgaacgt gcgtgcgcga caaccgccgc tgctttagct 480

ttatccttgg tcgcagctgc cgcctgccac gagcatcatc gtctcacaac gggggacgat 540

tattcctttt attttccccc ttatcatgtt tatctgataa taaagtatcc acacacggcc 600

tgttccgttt gataccaaga ctagacagtt tcgctaaaga gaggccaatc atgcatcatc 660

gcagactata gtatacttct tcaaccaccc aatttctagc catcgtgaga aagaaactga 720

tttttaaacg acagctaccg gaccggacga ttaactagtc ctgatccgtc gtccagtctc 780

tcggcttctt ctgctctgca gtgtgcagtc tgcagtctgc aatgcactgc acccccccg 840

actgaagtga catcgcaccc tcacaggatt gattgtctaa acatcgggac accgtcttgt 900

gttttatctt ttgtccgatc ctttactctt atgcttgctt gagtgtcagc tttgtcccct 960

ttttccagtt ctttttcttc taattattcc cctaaccacc gagctagcac agtcatcaaa 1020

ctcggaatgc ggtgcaaagt atctgcttta gaatgcagtg caggtatgca accgatggct 1080

cgcgcgccaa aagcaggggg cggggcagga caggggtgcc gcactgctgc tcgaagccct 1140

cgtgaggcca ggccatgcat gccgcgagat caggtcgtgc gtgggcgtgg cacatgctgt 1200

cggtgccact ctcggttcaa gatccgagct cctcgcgcag ggattataag aataatcgg 1259

<210> 311
<211> 1383
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323506_G1, chr9:150836328..150837710, Cluster 2

<400> 311
cccgatcacg actccccggc tacccaatca accagtgaga gccatcaaca agtgtgtgct 60

agctgggatg agcgaaggaa gccaggctac gcgcatccaa agcctgaccg tactctagag 120

gtgcagtgga ttcttttaca tatggtttcg gtgattggcg gaactcattt gatttgagtg 180

atggcagact gcatcaatca tccggtggca ggccggccac gcacagcgca ccggcaacgg 240

caacggcacg ccgcagtcca agcctcgcaa ggaggcccag cgccatccat ttcggtgggc 300

acggcggccg cccactggtt tcggtgtcgc tgtcggtctg cgccgtctcc cctccctgtc 360

gtcgacgtca gttcgctgcc tgtctcgaga acgcgggggg ggaaggggaa tggaatccac 420

cactccagca ggcattggaa gcttcctctc tcctccggcg acgcgtccgg actcttgagt 480

ctgaggggc ccaagcaacg gatatatctc aaatctgtgc cgatggatga agggaaaact 540

ccaaattatt gctcgggttt gggagatgtc ctgctatgct gtgctggcgc acctctggaa 600

ccacaggccg cctgcaatgc aaccgtgcct tgcaaggctt ctggccgggc tggctacaac 660

gagacatgct gtctctagag ctgcagggtt aaaggcgcac gataaatgga tcgtcgttta 720

ttatataata taatggtgtg atgtgtttgt aatggcataa catcttcatg ccccttcctc 780

cagtgatgtc cttgaataaa catggaaaca aaagagaaga aaataatgca tggttcaagg 840

ttatgtttgg tggcacgcgg atgcggtcga gccttcatct tcaaaaggta cacgtacacc 900

agaagtgcag ctagaagaaa gatccgatca gactacttac tggtagctaa ctagctacgt 960

ttgacttaag gcaacgacga cactagaaat tggtcagagt cgaaatccga tttgctcggt 1020

gcttcgactt cgagtctcta cacgaactgg ttttccatag ggttattatt caacgatgca 1080

tatgtactcc gttagctttg ctgatggtaa gtgagctgat gcatacgcaa ggagcagcgg 1140

cgaacgtctc ctgatgctgt gctgatgcta gcacaacaac tactatattt tccgctgtga 1200

agtgaactcc aatagtacac ctccgtgtaa agaagtcgtt gcaagtttgc agaggcttcc 1260

gctctccagt ctccccgggc tcgggctggc aggcagagca gagctaagca aaagaaagtt 1320

ccacgcggga ggtgggaaac cggctgatgc cgggggatcc gaacaacgtc agtcaaccag 1380

tat 1383

<210> 312
<211> 1142
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324073_G1, chr9:153445980..153447121, Cluster 2

<400> 312
gagcatattt cattctttat ttcatgttcc acttattgac gtggtaatat atattggaaa 60

tattgtgatg aaactaccac actcagaatg accttaatgc cttacctatt acacatctac 120

ctagaaggcc ggtgcatgct tcaaacgggc ctataataga aacctgaatg catgagagga 180

gtgaggagag aggtgcatgc ttcagcgtcc agtgtgtcca gtgcaggcag cccagtccgc 240

ccctgaaacc tgaatgcatg agaggagtga ggagagaggt ggaaggccgg caggcaccgg 300

caccaccggc gccggtacac acgcacacac agcatgcagg aacagcacgg ccggagtgtg 360

ccggactggg gagggagggc cgccagaggg gagcagcact gcactgcaca agaaggcatg 420

gcatgcatgc agctagctgc tagcagtagt agctcaagtg cccgggagac cggcagagac 480

atcatttgca tgcaaggcga aaacaagcgg atcatacggc tcatcatgcc ctccccagtc 540

tcccagccca gctacaggga gctcccctgc atggctgcat gatcctttac gcatgccttg 600

catctgcatg tccgtgcgtg catccacgtc ttgtcaacgc tttcggcgct gcaaattgat 660

agtacgtacg tgtctttttt tgagtaaatg gctcaaaaaa aaaacataga gatctaggtc 720

ttcatgattt taaacattac gaacatcacc cttaattttg tttgagtaaa tggctcttga 780

gcctgtcatg acggatcgta cttggcaaca cgtacttatt actgcaaatt aagtatagta 840

tccagagagc agatccgcag cacaagtaac gtttgtcacc tgacgacaat gatgacttgt 900

gcaaactcga tgaagaaaac agtactatgg acacaagatc gataatggca caacatgcgt 960

gtctatcata gctacgctag tgacatggac gattcctaat tccataaggt cgaatagaaa 1020

ccaggtgtgt gtggcttaga gtacaatgca aaccagtata gtttgactat acaaaaaccc 1080

ttaagaactg catgcctaac tttctggaaa atatcatagt caaagtcaat aggaaatcag 1140

ag 1142

<210> 313
<211> 1210
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32718_G1, chr1:200639117..200640326, Cluster 2

<400> 313
cggtggcatg tgcggtggca cgagaaatca cgagatcata aatatggaca ctttgctagt 60

atactttta tggtgctgag tactaattaa gcccgtggaa aggaggcgtt ccactcagct 120

gagatatgca tacagcaaat attccaagcc cgaaagttct gaagaaattt aaaaggtggt 180

ttgaagtggt ttaagccagg aaagtcacag gtgaccactc tgtagccgat ttgttgacgg 240

tttcagaaac gagataatat atgtacattt acctaacacg tggtaacaag tgacgtgaga 300

aggacgtgcg actcgcgagc aagacacatt caacagtggc tcgtcaagac gtgagtagag 360

cagccctggt tggctcggct ggttgctggc cgtgcagttc atctactgct tgttttctga 420

agagccgttt gcagcaaagt cagctcttga gctaatttat taactcctgc tccgttgaat 480

aactggaagt cagcttgggt gtcctgcgcg agcactacgg agtacggagg cgccatgccg 540

gcgcggcgag cgatttcttc gcttcgttcg ttgcactggc aatttggcaa ggcgcgcaag 600

gactagagag gtggctctaa cctgtccatg cgagcagtgc ggacctttcc cgatgtcccg 660

tactcccgtc gtaaagcaag cacggccaca gtactgtact ggatacgttt tccagtgaat 720

acgtacgcgt acttttaaaa atttagacaa tttcagtagt agtttaatct agaaattgtt 780

agtcaacaaa tatatgacgt cggatatatg tacatgtgct ctaaacgtga tgaacatata 840

tagaataata actaacataa tttttattat aaacagtgta gtagataggt agccatgtta 900

accattacca tgaaagagag gacgaagtga gcaatagtgt cacttacata tactctaaaa 960

aaaacatgat tgccagccct caccctaaac tctcggacga cactcatttt ggaggcttgc 1020

tattctaata cttgtgcgca taaaaattgg aatggagaga acttgaccaa caacaaaagc 1080

aatggaaaac caatgaaatg aataaaacga acatatgaca ggatggagct tttgtcttga 1140

agcgaggaga accgagcggg agcagaagat caagaccacg cgctatgccg caccatgacc 1200

gtaacggtgc 1210

<210> 314
<211> 1249
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_336618_G1, chr10:75155474..75156722, Cluster 2

<400> 314
aaggctatta tcaaatcaac aagtgatcgt aatgtatttg gctctagttg gttgtataat 60

aaaggtgaag caccaaattt gtcgtgcaca caacaactat ctggtgacaa ctttgagctg 120

aattcatcaa ttttattact tagcggcgaa tttgatgatt cagaaatacg acaaattttt 180

acttgataga gaaatttatc catgtttcat aaacaatatg ggatggttag gggggcaagg 240

cccctgcccc acccccttgg cttcgcccct gactgtatgg atgtacatgt acctgcagtg 300

tatgtattgt agcactacaa tcggattccc gacgcaggaa tttccgaaca agctcgtgct 360

tgagtaattg agtgtttcac aggcatgtgg gccctgtttc tctattatta cttttgttgt 420

tgttgttgtt actaccggta caattgctac cgctatcctt cacgagcacg atcggcgaac 480

tattcctatg atttgattct acatcatttt tatttctatg gcccgaacga ttgtgttcga 540

gatgacattt tagctatgaa cctgactcaa acacaatctt cttaggggga tactatatcc 600

tagtcctaga tgctacttat tttatagctc accttctaca acacacacaa acctgtctca 660

ggcatccgat tccgatgcaa tgatcagtga aaaatgttga aaactattca agttgacaca 720

tcgaacaaca atgttcgagc cctagcttct ttaggtattg aacatgatag ggcatcaata 780

gagctgctta agacaatgtg caatagttga tcttaaattt tgccccccac atcccaatat 840

cataccacac cagtattatc tctcctccta tatcacttcc atcttcaacg gtttcccctt 900

aatcacaacc cttcatccac tatgcataaa taaaataatt tacatttggt cgtcgtacac 960

catccacctc ctccttcccg gctttcccca tcatcttcta tgaacaaagc aagatagtgt 1020

gccctctgaa ataaggggag agagaacatc cctctagctt agggggacag gtatagaggc 1080

aagtgataca acatatagag gtgtcctatt caaggggaga gagtggtcac accggaagtg 1140

ttgtggatag cctaaagata agacgaactc tacaccacct aagcctagcc cactagctag 1200

cgcatgcaga gtccttggtc gagatgcctt tttcgaccga ggctcccaa 1249

<210> 315
<211> 1241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345972_G1, chr10:126976834..126978074, Cluster 2

<400> 315
cattcctacc tcagggcact cctccaccga tactgtgtac ggaccacgga agatggaaaa 60

tattcgctgc aaaccctctg cggtcatttc tcctccgcct tcgctgtgcg gatgagcgac 120

gggacccaac tcgaggcaat gcagaacagg ccgatattat tatttacgaa ttacgaggcc 180

aggtaaaaag aaggcgagct caactgaggc ggtgtatcac tcgcttccaa gtgggcctgc 240

tgtatctggg gccaaccgta agcggcactg tggactgaga tagacacact cgtcgacggc 300

ttccagaggc agcgcatcgt tttaccgccc tgaccgaggg tgcgtgcaag tgcgaggccc 360

gctgggtggc caacacgtgg accggcggat gacaggtgcg ggaagcggac tcgttcacct 420

tcctcggcgg cggcaagtcc tgccgttgtc ggacgccggg cagcgtgcgc cgacgtgggt 480

cgcaggctgc cgtggcgttc gactgttcga gtttgctgcc gcccgggccg gggtgggtaa 540

tccagtagcc acacaatgac aaaacatgct attgagtcca atgccttttc gaaccaacgt 600

caaaacacta atttcgttgg catttgtcat ttgcatatta taagacctct tcttcaagtg 660

ttatggaaga caaggaagag aaaagcccat tcttattcct gtacaagcaa acttggagta 720

agataaaaaa aaagagtgga caattttacc acaagtattg aagcttcatc gtctcctctt 780

atgaccaagc aagtttctac cattgcagag gccataagga tggtgaaaga atggagtgca 840

agaaaaaact acccttatgt acacaaccat attgctcatt atcaaaacaa aagttagaga 900

aatcctcagt ttgttagaga caaatgaagg agggcttatt gggtaaagag ggaacatgag 960

ataaagttgg catgaatctt tatttgtgtg ttggagcact ttttcttgtc tttagaacta 1020

ttatcttggt attttttgg aacaatattt tcttgttcgt gtgttatgga ttgtaatatg 1080

aatgttgacc gttatgtggg tgtgttataa acaaaataac gtaagtgaac ctttatgtat 1140

atgattggtc tcatttttgt cttgtctttt ataatattac atgttcatat gttgcaaaca 1200

atactttcgt attgatgtgg tatgaactgt aacatatata t 1241

<210> 316
<211> 1159
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346640_G1, chr10:131041497..131042655, Cluster 2

<400> 316
gggactctag ctgggttggt tagctggtct aagtagcact cttcaggtcc tctcttttgt 60

ctcacgccaa agcacaggtc taaggctcgg ccccggtcgg cgatcacggt cacatgggcc 120

acgatgtcgg tatgtatggg tgttgtaggg attcaggagt tttgtcgacc tatgtgagaa 180

ggtcttcttc taaatacaat attcgggggg ctgtcttagc tcccacgggt tgagttttaa 240

aagagaggta gtggtgcctg atgctggtga tggaggatga taagtgtaaa gtaaaaaatg 300

cttccacttc aaggctaacc tacccttctg gcatacaagg aagtactaaa tttatgatta 360

ggccttaaaa taattttatg ttcttcattt gtaacacaag tagataacta ctgctaatcg 420

atggtgtcac tcagcttgca gtttactttt ttcgcgcgag taataagaac ttagacactt 480

cctgttttct gtatcaacat gtgctctctc tgtaagaata ctcgtaggtg tcaaatgcct 540

tttgttcccc gtgccaatgg tacatgtgac tggttctaac cttgcctttt tattgactaa 600

cgtatcagct tgcagcgatg aggattgagg aggatcaccc aactgcccgc taagaagcgc 660

cttcacggag ccttagaatt cataagaaca ggataaccag ataatctgtg ggataatgaa 720

ttgcagtcaa atagttcaga tagtttcggt cagctttgtg catatggttt tctattaatc 780

ttcatgcggc ccattgatgt cgttgatgaa cggaaaaaga tccttaattt tttggaaatc 840

cgttgtgtag gcattttcgg gcgtgtattc agaataacct gtgtgattgc tgtttctcac 900

cgacacaaag gcgtttggtc caggtgatgc ttaaaccgta ctgtaaaccc taaactctaa 960

gcatgtaaca taatccaaat agagataata aattattgtg cttacagaga agtcttcggc 1020

gatcatagca aaacattggc ggcataaaaa gcacagcatg ggcatatgct ctggctaatg 1080

ttcgtggatt cgtgctgcca tcaacatttc tttgtccaaa atttccccat gcttgtgtgt 1140

cagcgaccta tcgatcgag 1159

<210> 317
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348005_G1, chr10:137748436..137749497, Cluster 2

<400> 317
aagcagatgc taacgtggtt aagattaata gttttattct taatataaac atatcggcag 60

gattagtgtg tacaccgcgg gccttccact gtggcgtccc cgccgacgcc gccctccttg 120

cctacgaccc cgtccacgtc cttgccgcgc caccaggtaa caacatctgt tacagcactg 180

agacagtgga ggaggatgca ggacagcagg agtaggaagg agaaacagga attgtattca 240

ttctgatgat gccccccccc ccccccccct ctggagcagg ttcccacata gttattttcc 300

gcacggcaca catagttatt tacagaccgg cgtgcacacg actacccagc actcacccac 360

atggcagttg gcacgaagaa cccttccact aggcacccgg cgctgtggtg cgagtggcaa 420

ctgaccacgg ggctgttggt catcttgtga agcacctgtc gaagctgatg aagtaacaca 480

acactgccgc cgcctcgctg ccttcccctt cggtgctcac tccccctttc tctgcgtcgc 540

tgatgtggat gcccaatgac tctccaggtg gccagccgca agaggatgac gacctgttgt 600

gtgtggaggt tggccacctg cttggtgacc tcggagaggg ccttcgtcat ggcgttgatg 660

acggatggtg gcactcccta tggcactggc agtgtccaat tgtccatggt gatgaagtct 720

tgccattaat tgcagcagta gcgtcacctg atactagatt tgtagggtcc ttgatcctat 780

cgcggttgcg aagtgcgtaa taatgtaaga ttagagatca aaatttatgg ttttggaaag 840

gtcatggtgg cgtgggtgca aagcgggagc ggcgacacag gggtggatct agaaagtgga 900

gaatgagtgt taaatttttt gaaagagtaa aaaactgaag gcctaaagtt tacccctctt 960

aacttgtgca ataccacata ggatcacata gaactaatta taaattaatt ataaatgaga 1020

tataaaacta gtcataactc aaaattattc aacatataaa aa 1062

<210> 318
<211> 1066
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348184_G1, chr10:138809468..138810533, Cluster 2

<400> 318
gcccaccggg ccctgggcga gctgtacggt accgttgctt gagctggcag tagtgtcgtg 60

ggaaggaaaa gctgagagga tggcttggaa gctagcccgc gccatggggt cgacgcgcca 120

ctgtctcgac gtcgacgtcg acgtcgaccc ccctctggca ggggcacaca tcagcgtcgc 180

ctcctagctg tgcctgtgcc gtcccgtcgc cagctgctcg ctacactaca ccacacagca 240

tgagaggtgc atggcgatgg ggtacgcgtg cgtgagagaa tcggccggcg aggtcacggg 300

ccgcacaggc acagcagtgc gagcgaacaa actggtgtgg tctcgatcgg gaagatccgg 360

ctggcttggc tcctgacctc ctgttgccgt ggggttcggc ctcgacggct ccaccgcaga 420

attctattca cgatttcttc tcatggggtc gagagtttct ttccctcatg atagaactca 480

ttatcaacta agatttgcga aaaccattat gaaaagtcgt tattgtatta aattcaaaga 540

cgagatattt tattatcgtg aacaatagat attattgacg tgcctcaata tctttcggca 600

ctagtttgtt accaataaag gtgtgaatat atttacaaaa catagtatcc acaaagttta 660

ttctcctgcc cctgtataaa acactaaaat ctaaaaagtt atggattatt attactggca 720

aataacttgc gagatgtgca aacttcgtac atacaagaaa gttgtcccta agcataataa 780

tttcctttag gctaggctgc tttttatgta accgtgtcca tgctcgacat aataaaaatt 840

gtcacttctt agtgcatgat tgaatcatat agaggtttag agagttaagt ttgaacggta 900

gaaaatactc gttaagaaga tccacaactt cttgtaacta tcttgttcca tcaatataat 960

cataagtatc cagtggaagt tgtagaaatg ttataaacat ggagatatta gactatgcat 1020

ttagttacga aaaggtgcga ggtacaagat agtggacact aactta 1066

<210> 319
<211> 1310

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37448_G1, chr1:225488892..225490201, Cluster 2

<400> 319
agaagaccga gcctaagtag tggagacctg gtgggccttc caccaagcat gcaatgtcta 60

tttgttgacc tagactacac tgtcatccta ctcgtgggta tattttgagt gtaattagga 120

tctagacaac aatgtcctat aattacccta ttatacagta tattccgagg atgtagcagg 180

taaccacggg cacacatgac aagatattga gagcctttgt tcctttctat cacactacta 240

aacacttcta agtggttggt tccacctgtc aaaacccaac aacgaagacc acacaaagat 300

caaagttatc ctatcgcctt tcattctatg cttgaaggtt tcaatgatga agacaagata 360

caaagcccca acatatgtga aagctcaaaa gtcaaaacat gtgaagcatc gtctacgaag 420

acttcacaca aagccacaag accaaccaag gttctaaaaa ctagaattaa tcgatgatta 480

atggctattg ataggcatcc aatatgatta ataggtaatt aggtaagtaa tcggtatacc 540

agattaatcg gtcgttgacc tgattaatta gccattgact agcctaatca aacaaatccc 600

actatctaat gttgcttcta atgctcaaga ctggctggtt gaaggatgtg atgatattga 660

cgaagaaaat gaagttatgc aacttcataa aagttcaaga gttaaaagaa cttcatgaag 720

ataatttcaa gtttgatagc gaatgtggag acatcgaaat tgaggatgag gatgttgtgt 780

ttgagtcaga ctatgatgaa gtgctcccaa caaaatatta tgagcaaggc agtgaacatt 840

gataatgact agatgtctct attttatatt ttaatttctt acattgcaca tttggactac 900

tatttagccg aatagtgtct atcaattatt tttcgattaa tcctcgataa ccgattaata 960

gctcatgtct agcctatcga ttaaactatg ctattcaata tcttgaacct tgggaccaac 1020

gaagcttcaa agaaaagaga tgtctttgaa caatcaagca aagatgacaa agaatcttcg 1080

atggaattaa agatgtgcct atgaagattg tttatcaaca aggacttgac aactaataaa 1140

gatagatatt gaccaattta cccttgagta gacaagtggt tgtaatttta tagtccgagg 1200

gtagttagga atttgaacat gtattacaaa gatagggacc tctccaaata ccctctgaca 1260

ttgactattc atagacagga aattgttatc caatttagtt tgctttttt 1310

<210> 320
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38684_G1, chr1:231280905..231281959, Cluster 2

<400> 320
caaatgtcaa ttgcaataca tccactgatt aacggactag accgggttct tgtttgaccg 60

tgtcagtaac aagatgacta gctagccgaa gattgcaacg ccgagggttc acacagtaag 120

ttgaaaaatg cgctaaagtt taacgtacgt gtaaactgct ttctggcgct gcaaattaaa 180

ggtggtggag aattgagtct tgggctctta cactttctaa attaggtgcc tacttaggca 240

ttgttcggtt agaagagata aaatttcatt atggatttaa tctggatcta gattggatga 300

attcataact cacacctaat cctattgtag gattaaaccc atcatttaat tcatgtattt 360

cttaaagcta gttattcttt tgatccatgg attataatat aaaacttgta caatattttc 420

atggatttgt tccataccta atgagctata atgagctatg gataatccat gtctttcata 480

gtttaaaaaa ttcccaaacc cttgaattat aatctatgat ggctttaacc gaataaaaaa 540

atatgagtag acttagatta ttttaagaca gattgtaaca tggatttaat tccaatccat 600

actaatctag aactggactg atgtaaacga acaaggcctt atcatagcct cttgctttgg 660

atggagacat gtttggtgta gtgacaacta atcgttatct gctagctagc tggggaaata 720

cagctaataa ctcaaactag agaataactc agaaattcta cttaagaatc aactctcgga 780

gctagacaat catggagcga aactatgtca aacggactct aagtgcatgt acaaccatga 840

gacactagaa cgattttcta aatacaagag acaacaaaga aaatgtatgg tacaaactaa 900

gcccctaaat cataaatgaa gttgagagac aatacgcata gagaatcgtg tagaaacaga 960

aacttcgtga agagtacgtc tcttgtactt tttcagttaa cctcttatag agacccctta 1020

agagaccatc taataaatgg gatgtacacg tccta 1055

<210> 321
<211> 1390
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38685_G1, chr1:231282575..231283964, Cluster 2

<400> 321
aatagcactg aagtcctccc tccgtctaaa gaagacacaa gtcatcaatc tcgagtacga 60

ttgtattaat cacggaatat attttttct taatatattt ttgtagaata caaacgttga 120

tgctattatc tataaatcgt tagttagatt tgagattctt tttgtttgga tcgactgcgc 180

gtatgtaaac gttaggctca agctcaaaca gattccgtca aagggctcca atccatacat 240

gcatacggag tggtgccggc cggaaatgtc aaacgcgcgc aataaatcca ctgattagcg 300

gacgcggact ggaccaggtt cttggttgac cgtgtcagta gtaggatgac ggcgctgaag 360

attgcaacgt cgggggttca catagtacgt gatcagttgg aaacgggctc aagtttttaa 420

cgtgtagtac taaacatctt ttctggcgct gcaaatttaa aggtggtgga ggagaattga 480

gtgttgggct ctcactttcc aaattaggcg actgcttatc tgctagctag ctggagatat 540

acagctaata atagcctttc cttagctgac tagcaattaa ttattgacta aacatttact 600

aatctacaag aacctgagca ggtcacctgg tggacgaagc cagcaatgtg aagccgtcat 660

accgtttatc accgtccaaa cggggctgac ccagctaata taaaccgcag tgacaaacag 720

catgacgtga acacgggcag actcggctag tgaagatcga gactacgacc atatccgtgc 780

acgtaaaaac ttgtgctggc tgcaccatga ctcggttgcg gtgcctacat acaggagtgc 840

tggtccggtc aaggatgcag atactgcgaa cttgtgcacg ccgctgtacg gttgatttga 900

cgacgtacga tgacacagac cacacgacga aagcgtacat acatacagga gtactccgta 960

tacatctacg tacgtacgta ggactaattt aagaggggtt gggttctacc caactaaatt 1020

tagtgtctgt catatcaaat atttagatga taattatgag tatataaaat ctagtctaat 1080

tataaaacta attatataga tgagaacgac attcttagac cggttaacca tgtatttaat 1140

acatatactt gatattcaaa tatttaatgt cacacaaact aaactttagt ccggggaaca 1200

aacatcccta gttgctagca ctggctagta gtaatcctgt ctgcccactc gctctcgaga 1260

taaataaggg cttgtttaga tgcatgggga ttgaggagaa ctgagggcat ataattcttt 1320

gctagtcaaa aatgactaac aagagattac atatccctca atccactccg gtctccatgc 1380

acaagccctg 1390

<210> 322
<211> 1125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_39518_G1, chr1:235912481..235913605, Cluster 2

<400> 322
gtcgacttgg cccggacgct cgagaaagca tagaattgga ttgggctgtc ccctccaaaa 60

catgagatga gattcgacat gggctttgat tcagcacctg ttcgattggt cgggtgttag 120

cctcattgta gaaaggtagc aacagcaaag gtgaaccttt tatcttcttc tcttacttcg 180

tttcaattcc aagttgtagc tgcgccgaaa ggaggacaaa aaaacagtag aatttagctt 240

atgttcatat cgttagaacc agagagagaa aagagtatgg ttcctgaact tgtcagttag 300

aactgcttcc atgtttcaga gagtcaccag accatcatcc agtgtgagat gttgttcaca 360

atgattcatt tgatgatgta gtgaaagtga ccaaatgatc tggagtggct catgatcaaa 420

actaggatcg ccagtctttt ttctctctct cccggtctcc cccttgcttc actgtgccta 480

tcacctcctt atgactcgtg ataagaaata aaaactcacc ggaaatacag aagctatgac 540

ttcctgcctg ctcagaaagt cttttgtgct tgatagttga tacctccttt ctatttacac 600

aaaaggcttt tgtttgtgct agagagtgat agacaaggtc gataattgta tggtttaatt 660

tccagaatta ctaaaccacg ttaaaatgaa ctttctggaa acatacgatt gtggtaactc 720

ccgcaacacg taatatagtg atgtttctgg atgtgcgcat cgatattctg gaattaacaa 780

ttggacatct caatatccta atgcttaatg aattactctt tctttctttt tgtgcaggct 840

cacttcataa aagatagacg atgtaatact gcacgggctg tttttgcatt ggagttagaa 900

tgcaagtggg ctctgagtgg aacacctttg cagaaccgtg ttggagaact ttactctctt 960

gtctgtaact gatacctaaa tgaacaaata taattccttc tagattatgg attcttactt 1020

acatgttgtt ttttcagatt cggtttttgc aaatcttccc ctactcatac tatttctgca 1080

aggactgtag ttgtgagata ctagatacca ggtaagatgt gcaat 1125

<210> 323
<211> 1287
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40494_G1, chr1:240993949..240995235, Cluster 2

<400> 323
ctaggcaaag cgaactttta gtagatctct ttgctgactg catgtttttc atctgtttgg 60

aacatggttc ctatcgaggt caagggattt cgcgctagtt ccaaggatag gctgcgattt 120

gacaatttac tcatgacaat ctttattatg ggtttttttct aggatatctg gtgtttttgc 180

catctcatcc tgccaccttc tgatgtaatt gcgcaggtac tctccttccc cttggtcaat 240

ttgttgcggc tgatgaccaa ttgtcctagg ccctgaagag atggataaag ttataaatga 300

actcatccca agaatctatt gagttggggg ctatcctagc aaccattctc tcggtacaag 360

catgagaaat tcgatgaaat aattttccac gacaggaggg cctcctttga ctgatgtgat 420

ggataggcga cagatctcta agcattcaac atcgttagta tttccgatat aagctctaat 480

tttactggat aaacttctca ggccaatgca ccgcctttag atgatccatg aaagctttga 540

ctagaatgat tggtggacct ctagtaagtt tcacattgta atttttttagt gggttgcctc 600

tatcttctac catcatagtg cttgtcctgc atatagggcc gagtaggtca tcatgttatc 660

tagacaggct atgtcttctc ttatttgagg tatattttga caaagtaagg gtgtgagttg 720

attggtcaca agtttggact cgataatgtt ctgagttggt gtcacgtgga tgattcttcc 780

ttgaaaattg atcgtcctcg tgagttagtg atatatggct catgggtccg agatgccccc 840

atatctaccc gctcagggac cccaggaccg ggtcatccat attttttttg attgcgcaac 900

accttcagtc tattctaaag ttggatggtt tcttgctttt gttgttgctt tgagtgggtc 960

tcggtttgac gcactaggat tccctatttc tcctagctgt gaagctgcca ctcgatgcag 1020

atagcttctc ggtagggcga gtttcctatg gctggctgct agcagcctgt tcagggttgt 1080

gatatccttc tagatgttaa tttgtcgtga tggctagaca ctcaccttct ttgaaccctt 1140

cacttgggtt tggtatcttc gttgtggtag tagaaggatc agaaaaagag tcgggatcta 1200

aacttatgtt aaagttgatg tcatattctt ggttcaactc attgacatta tcaagcacgg 1260

gttggtgtgt gggtggattt tcactct 1287

<210> 324
<211> 1310
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41602_G1, chr1:246412785..246414094, Cluster 2

<400> 324
tgtcgtacct ccaaccatta catagaggac agacttgata gtttggtcca atgtctcgtc 60

tcatagagag ggaacagcgc agcagcagcg gtccaagcaa ggcccagcag caaggcaacc 120

aaaagctagc gatagcggcc gcggctgctg gatcgccagc tcgatatatc agccagtggc 180

cggcgaattg actctccgtt taatgagccg agcaggagca gtcgagcaca gtgtagtggc 240

tgcatcgaga ggggagagag aagggaggaa tcgaggtggt tgaccccgag attataggcc 300

ttcaatttgc gtttgcgatc caatccaatc ctctccaact ccaccccacg acgaagatgc 360

atagtatgca gcctgcattc aactgatcgc tgagcgccac ctcattgacc cggacctccc 420

atccgcccag acggccagac cagcaccatt gctttcctag ctgcggcatt ccactctccg 480

tttgctttgc accgcttcca ttcgaactgc ggcgccgggg tgggggggacg tggggtgggt 540

ggcgcgtcat gggcagctgc gttcgtggca tgcgctgttc gtggacgtgg catgcgctgt 600

tcgtcatgcg ctgttcgtgg catgcgctgt tcgtggacgt ggcatgcgct gttcgtggca 660

tgcgctgttc gtcatgggca gctgcgttcg tggacgtggg gtgggtggcg cgtcatggac 720

gtggggtggg tggcgcgtca tgcgctggct atggagtgct tcatcttcct ctagagtcta 780

gaggtcgatc gtcagctagg atggatagct tctcagcagt cttatttcct ccactccatg 840

tcctgttccc gctcagtaac gtgttcgaca ttatctcgtg acacatccat caattcatca 900

tcgaccgatg acgctagcca ttgccgcatg cacctctaaa ctgttattgg tttccccgtt 960

cttctcggag gtccgactag aggagtacgg ccagtgcgtt cgtggcacgt tcgttgcgac 1020

ggccgttaac gcagtaataa cagtagtgaa gctagcgtcc agcccgggta ggtgcagggt 1080

aggtcgacgt tactgcacgg ctgggctggc tggtgcaaat tgcaatgcga cgtcggagta 1140

gatagatcta gggcagtctg ctgcgctgag tcgctgacaa cgggacgagt catgaatgac 1200

tacacaatac ggtctacaca ttcccattaa atgaggggtg gagggaggat tgcacgacat 1260

tgacgttgta tgtttcattt ttaaaagttc ctattctatg agaacagtaa 1310

<210> 325
<211> 1305
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4385_G1, chr1:22652413..22653717, Cluster 2

<400> 325
ctcagaactc gtgaccacag cacagacggc atcagagatc agactgcctg gtggcgtaaa 60

aggacaaaga atgtagcagt aacactgatg agcgcagaag aaatgagagg gtcctaccta 120

cttgatgtga ctatgtaata ctgtatctat atttttttta ttctagaaag agcaagaagc 180

tcagagctgg gcaggaagct cagagatgct gccaaaacta aatcatcctc aagtccaaaa 240

taagtataat ttccggttca tcataaaact gtatacaaga aatacgggtc caacccgctc 300

gcaaaaaaaa agtatacaag tacgcaacat aaacatggat gacctttat caaacgaata 360

tacagaggtg ataccgccta cctcaagtcc tcaagatgct cgtggatggc tcctggcaac 420

cccacctgac catacattca ttggttgaca gaattggaat actcacaagt cacaaaaatg 480

ttagtaaacc tagcccggaa ccggacagca accaacggca tgtgcagggg gtgtaggtag 540

gggacgacca ggagcttaca gcaggaacct tccccttgca gggcaaccgg cgccggcgcc 600

agcccagaga tggcagtgtc ctatccttgg tcccctgctc cacgacgaat gaaaatgtta 660

aacgcatctt tctaccaaac acactatcca tccttgttta ggcgtcaaca agacaggcta 720

caatgtgtgt cggtcatgtc cgcgaagcat gacaggttta gaatgtatgt tggttttgtt 780

cgatacctac tgtaccggta cttgcacagt tgagttggac cagatagcaa tttccagtcg 840

ttgttcttgc aggcaattct acttgtcatg ctgtagttac agtttctaca tgctgatacc 900

ccccccccc ccccccccag ttcgctgaag tgtgtcaggg aatagtttta tagcttagcg 960

taagtgccag gtaagtatct cacaagcagc agtaccatcc agttactgac caaactgtct 1020

atgccgaact aagcacaatg aaaccaaaga attaatgacc attagtcata ttgagtattc 1080

gcttcactat tatgtttttg atttagtaaa atgcctcatc accactaaac aaagttaaaa 1140

attcaactca ctccctaacc acaatgagtc agcaacttat gtgcacctaa agcagtatga 1200

cagcctgacg ggaagcaatg ttacatacag gaccaaatgg gaggtgaatg acacgctagt 1260

catgcacagt ttgcacacat cctgcaacat cagaagcagg gctaa 1305

<210> 326
<211> 1251
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47856_G1, chr1:279903298..279904548, Cluster 2

<400> 326
gcagttcctg ttggatccat cttgaagtcc tctgccttgt ctcatccaac atcccgagca 60

ttgttctcca tagctccaag gttctcctcc tgacctagct catcgtcgtc gatgccattg 120

ttcctgaatg ttcgggtctt aggtggactc ctcttcaaat ttcatgattt tatctctctt 180

gtttttttaa aaccttcatt gtaacagttc tgaccaatct tgaatggatg aatgattaag 240

ttttgagaat gcctcatagt aatgacagat acttataata ccgtatattt gtaatatgac 300

atttgggata atttgctcta gcagtaactc tacataaaaa ttgtaagttg aaaaacaaca 360

ccagcatatt ataaacaagc cgtcctggaa attatcaagt tcacattggc agctgatgtc 420

caatttacac attgtagggt gttgcagcgc tatttttttc ccttgtattt taggtgtgtt 480

agtgttaacg atttgtagcc aaacttgtgt ttctaaagac tgcagagtta aaacatctct 540

aagaagaatg atctaattgg agatgggtgt ggacatggtt tatacatgag atctccgtca 600

ttaaggagtg ttcttacaat ctggtttcaa caaattaatt gtaactgttg tgatacccgc 660

tcgacgtgct caaggtcaac ctgcagtgca ggtgagcgga tttttattgt ttggtgagtg 720

ctcaagttgc agtcttgcgg cgctatcgtg cgggtgcagc accttggcct cgggaggctg 780

atcgcctgat ccgagacagt tagctcatgg gattaaactg cggcgtattt ggggtttcct 840

agcatttttg ttttagcagt gagcgtaatg taaataatgc gctgaaactt ataccgctga 900

aatgcttccc tgtatcagaa aataattcaa aagaaagacg gctcaacaat ccatcagctt 960

ggtgctactt gtgtagttgg ttatatctct ggtgtcgttg gtactgttgt aagtcctgca 1020

aataatattg tctcatccat gtacaacaaa aatgctaaaa aatagcatac atgtaaatat 1080

aaatataatt ttccagcata aggtatcatt gttgtcaaaa tctactctac aatttttcta 1140

atgttctcat cttatgcttc taggctatca aaactgaaaa gtacttgtcc attccgatca 1200

cccttgttgc attggaccca tcataaccat gcagtggttc ttgtacgata g 1251

<210> 327
<211> 1346
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49382_G1, chr1:286502405..286503750, Cluster 2

<400> 327
ttggcggtcg tggctggctt gcgtccaact agatcgaact gtgcgtgagt aagctagggg 60

cagcatagtc atttcgtgca accagagacc ctataagtgt ttaggatggt tctaggttct 120

agctccggtg tggagatgta gtttagaata tcaatttaaa tagttttaaa aatatattta 180

atcttaataa taaacaaaaa tgacttatct aaatgtctta taaagactta caactctagc 240

tctatgattt tatggaacat ctaatgacgt gctctaccaa ctttaccaaa ttttagagct 300

ggaaatgtcc caaacatggc caaaatatca aaagtgtgat atattcttaa cggttctaaa 360

agagcagata cacggcaact ccattcctat tctagagatt gaaggcttcg aagttccatg 420

ttagcaaatg gtagtcttgg cagttccatt acggtaaaaa actcggcagg ccgcacgcgc 480

taatcgccgc gcgctgaggt cccggcgtcc cgcgccgcgt ccaccgtgct gggaacccgc 540

ttgcccctcc acgtgcggtc gtgccgatcg tctccatatt cgctgcttcc tcggcggcca 600

tgctccactc ctccaccccg tccccaagcc aaaggcaccg gcgtccctcg gctcctgcct 660

ccggcctgtc taccgctacc tgtcgcccgc ggagaacccc aggtccgcgt caccgccgcg 720

taagatgcac acgatgaaaa aaaggccagg gaggacacca gtgacacaca cgctgcatcc 780

tcgcgcgccc ctgtgcggct tcccgtgcca cagagcgtgc cggtaagcgc gcccttgcag 840

atggactgga cgacgcccaa cagcggctcg aggaaatgcc agcaaggtaa ggtgctctct 900

gaatagttat cgtctctact ttctaggagt tggagctgaa cagcacttac ggagctaata 960

attttgtgtg aaacacagaa tgttattttt gattcaaggg agcatgatgc aagcttgctg 1020

agggtcattg cttctgaata cgaagtttta cattcataat attgattgac tgttgctcaa 1080

gcaaatgatt gtgttcctgt tacctggatg tcctttcgtg gctatattct atacaattta 1140

ttaatcaact taactcattg aatgcatagt tgtatataca atacaaccaa ccgtactttt 1200

ctttgaaggt cgtaaactta ttttggtgtt gcagattatc tgaaacatat gggattgtcc 1260

atgtgaatta agtgttataa tgttttcaca aaggcattcc acgagttgca atattactgg 1320

ctccaaaatt cgacttcaga attctt 1346

<210> 328
<211> 1063
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49562_G1, chr1:287586576..287587638, Cluster 2

<400> 328
acctttttta gatgaataga caattagttg gtgtacttga aaccgagaaa cagtggacta 60

aaaatgacac gagaaacagg aggagctctg tagtcgtttt ccaacaggat aaaccgaacc 120

cgggcaggca gcttagcaat ttgccagtac atgtctcact ctgacgcctg accagaaatc 180

taaacagagt atattatatc ataatatgtg atgtctccaa gaaaagagaa tatgggcaga 240

gaaatacagt gagatataaa atactgtatg tcctgtctgc tggtgcagga gttaggagta 300

tactgatgat aggcctgcct gcaccttctg ctttccgtat ctctggaaat aatcgtattc 360

agatggtggt caattcgtct catcattatt gtgtacgggt ggtgggtcaa ccatcctcca 420

caccacaacc cctgccttaa tccgtatttt taatttctcg cttgaccaga tcagtcacca 480

agtaggattc ccttccttga tctcctccga tcaccatctg tgtcgtccat cgcaccgtga 540

tctgcagcag ctccagaaac cggtccgccg ggccatggac atcacatcac acctcggtct 600

gcgtcggatc ctgacgtgac ctgcgacttg ctgctgttca ttgcagcgcg gcagaatccg 660

gtggcacgtc gggttcgtgt cgcgtcgtct cgtcggtcgt cgcccattgg ccgttggtga 720

gatattgctc tcgttttcgc tcaccattca ttcatgcatg catgcatgca tgtgtgtgtg 780

acccgtcctc tcgtgtcgat cgctctgaac atgtaacttg cagttagttt atttatgaga 840

taataaaacg tggttctagc gcgtcgtctt tgccatgcca tgacacggca gggggtttga 900

gcatcatttt gttagaacat cggtttctct ggttgttcag gcactatttg gaaaagcagc 960

acaaatgccg ctgctagttt caacgagctg gtggtaccat gcccccaaca aaattcctcg 1020

aaaaaacctt cgttctctat ttgaactaaa aaaacgtgtt ttt 1063

<210> 329
<211> 1369
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49574_G1, chr1:287723438..287724806, Cluster 2

<400> 329
tatggttttg agaaacattg tttggatata acattgtaaa ccacgatatt agacaaaagc 60

taacaatgcc actttggatg ggaatttcta atactccaaa aacgccatgg tatctagaat 120

atcatggttt taaagacata gttttcaaga ttgcaatcaa acacctcgtg acattaaata 180

ctacggtatt gccccagacc atggcattgc atagaaactg caaacggtat tgcccaagac 240

catggcattg catagaaact gcaaacgtac tgcatttcca aacaggccat taggatatag 300

acgatagcca tatatttaag ctaagttcat tgcctctaga caattttcat acacattatt 360

tgttgttgtt gttgttgttg ttgttgttgt tgttgtgtct aataagattt attttgagac 420

ataagattta atttaaaaca agcctcgatc aatttcaatt agattcaatg agacatgtag 480

ctaactacta cgagtcttat gatcatacga cgatacaaca tgatgcacgt ctgttacaga 540

actcgtacta tatgttttgc tagaactacc agtaccacag aaagtcacga ggactacgca 600

tattcaagaa tctgatgcta taaggcaatc ttcatcactt tttatttctt ctttttattt 660

caaactctac tacgttaaac aggatacttt acaatataaa acaacactat atatataatc 720

tggtggtgtg tatgtgtatg tgtatgtgtg tggggacgcc ggtttaggca gatgccaagg 780

tgcaatatgc atttgcgacg tcaacagtac tcgtataaac aaagtgacaa gcgcaacact 840

acaagatagt acggcccctg aactacagtg tgtaaaaaat ctgaatggtc agatgcagag 900

gaagagcagc aggcacagcc agcgccagga ccagggctgc ggcggcctgc tgatccatgc 960

atcgctgaca cgccacaggc catggctagc gagatcgagg caggcgttaa tgcgggccgt 1020

agcatacagc tgtatgctta gtggtttacc tttaattctt gtcttgctcg cgacacctcc 1080

accgatccgt cgtacgcaac gctgacaccg catgccatgc atgcatcgcc agcgcgggcg 1140

cggccggccg gccggccgga gcgacccccc ctccggtccg gtcactcaca gcctgccaaa 1200

ctaagtacta gtactatctt gcttgggtct cttgacggca gacgaaagta gcattattgg 1260

tgtatctcgt ctcgatcatc acagtccaaa acaaaccctt tctctttgtc tggttataat 1320

atatagtttt taactaaagg tttgaaaaaa atacccgttt atgttttgt 1369

<210> 330
<211> 1020
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5038_G1, chr1:25806377..25807396, Cluster 2

<400> 330
aacaatattt tgttatcttt taacgtttga ttgtatatgt taacaaacat aattttcacc 60

ttgaatttgg ttgtggataa cactaacggt ttcatacatt atctcagaat tggtgaaaaa 120

tttgagcttg ttgaggaaga gatgaatatt aaattgtctt gaagattctg attcatcttg 180

ttgggctatt attcatcatg taagaaatgg aaaagaatga ccgatcggtt cgttgttcac 240

tatatttctc tatctagtgt ctttctttgc gttactagaa gtcttcagag cttacctatg 300

ctcttagaat atagtactgc ttgcacatac agatcaaagc cagtagaaaa catgttgttt 360

actcaacctt gggtcaccct acacgtgttc ttcaaatgtc attagatgag ttccaagtta 420

taaaaatcat tcgcctagct tcaaaatttg tgttgggctc tattgtagca ttgcagatgt 480

gcaatattta ctgcatttgc atgcgtagca gatctcagtg acatgctcgt ggaaaacaca 540

cttttggtgt tggtggtcat ctgatgattt atggatcgta aattttctgg ttattattat 600

tatgaactta gagaaagtaa tcagtgcatg tacgtatgtt gttgattaat cgatgcatgt 660

atgatgtttg ttgtccactt gggagttggg accggtagca tgtgtgggaa aggcgagcat 720

gttgtgtact gttttatctt ggctcgctat gccctgtgac ccaggctagg cctgtcagcc 780

catcaatgtc cctagacccc aagacttgta ctttattttg cttagatgaa aaaaactcat 840

tttttgctac cttcttggat ggcataacaa gggataatgc acaccgctga tctttacatg 900

caatatacac ttacttacac tacaacgtac aacatgctct atgtatctag agggggtaga 960

tcatgtcatt ttttcgtaag ccaactacca agtcttgggc ctaatatctg tgtggttttc 1020

<210> 331
<211> 1224
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52101_G1, chr2:2066314..2067537, Cluster 2

<400> 331
cgatgcgaac agacaatgtg tcgtgcagtt ttttgaaggt tactaagggt tactgttaat 60

ttcatcgagc acattggtag tggaaacttt atattaattt tttttatttg gtcacaaaga 120

aataaaatct cagcccaaat tcaagctatt tgctaagtgt tccatgcctt ctgaatctcc 180

ataactggaa ccaataggcc cccctctcct ccactctaaa agttagccta ttatttactg 240

gtgctgcgtt tacaactcct tttgtctttc tgggacttcc ttggaccata cttgatgctt 300

tgcagttagg aactttctgt cctgcagttg tgcgagctac gtttaattgg tccattttat 360

aactgattgt gtgtgaacaa ttcgctttta tatgaatcgc actgtgtttt gttgatctcc 420

atgtcctctt ctcgtttcag gagtatttgc acttcttttg taaccctcca ctttgccata 480

gggacatcaa atcgagcaac attcttttat atgagcattt cgttgcgaag gtatggtctt 540

gtgattgtac tgtttcaaca tttgcaagtc atggccagtg ctttgctaat ttttggtgta 600

acctgggaaa aacatctatg ctaatatgct aatatgatta ttttgaagac acctcttagc 660

atcaaccttg gttcttaata cagaaaatgc atcttatatt tttttcttgc tcccttccct 720

tgtcttcaga gtgcacatga taatttggtt agacagtgct acatgtctgt actccatgtt 780

gcctgctaat actccatata ctccatgtgc ttgtggtcga tctgtgtgat catgtgcttg 840

agctgtagag ggttaatcaa tttagtggaa gtggatattg aatatgttta agcaggcaac 900

atggagtaca gacatgtatt agcaggcaac atggagtaca aacgtaacag gccttcatcc 960

attttatata tactctttga tcttgtggtg tttgtgcagg tccagaacat ctgcactagg 1020

ctgcctaaaa agaagtctta caaagatttg gttagttgct tcatgctttc tctattcctc 1080

tcttaatact tagctctatt tgattgatct gtgctatact gtatgtgcta ttttttattt 1140

ttgtatctca acttaatctt tgagaactgc atgtaccact atttctgtat ttttattaat 1200

tttgttcata ctccgcgatg ccat 1224

<210> 332
<211> 1150
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52122_G1, chr2:2123754..2124903, Cluster 2

<400> 332
gaaattccgg gctcatcaca tggcggaact tgcgcgtcgg cgtcgaggcg ctgcacttgg 60

gagcaaacca cgccgcccat gcagatgcag cctgctggcc gctgcagagc cagaggaggc 120

caaaaatggc gccagcccgt gaccacactg cttgactgac aggtgacagc cgacaggtcc 180

gctccttcgc gtaacataac actttgattc gaactgggac acgaccattt ggatccaaac 240

cgtccatatt caagtaatgg caccagagcg acatggtatg gccacggagc ctttgcatac 300

ggttgacgat catgttccgg cagcggagcg cagacgccat tacgacacgt gcgtgcgttg 360

ggtgcagtga actggccggc agtcacggtc acgggccacg gtcacgggaa agcgttctaa 420

cctaagggcc gattacacca agaattattc ctgttaatca aaacttatac aaattaaaga 480

agcaattcgg atcggaacag ttccggtctt ctattcccta tcaaccgaac gggccctaaa 540

ccactcatca ctgtgcggcg gccggtgcac acgcacggac aaaagacatg tcaatgtgag 600

cctctcaacg aaaacatgaa cctgaacagc atgactgcag cgtcgtgctc cgtgatcctg 660

cctggactgc agttctttca tggcggccgg ccggaacaat gcgttcgtcg gcgaccaccg 720

ctgcgccctg ccaaagctcc tccttgctat aggctaggtg ttttttttgt gagtattgca 780

tgcacaccgc cgatcggcga gcttgacaca tagtattatt tacaacactc taaattatct 840

cgaatcctag tatttagcgt acatgtgtta aaaactagtc atagacagac aaaaatttta 900

ggttaaagta gtggagtttt caaatactcc aaaattacca taataaaatc atgtcaactc 960

gtttctaagg tcttggaaac cgcataaaac gtcaatttag agtgatttgt tttatcttca 1020

cataatttac taacttttg ctgatcattt agttacacca tttaattagt atgttctacg 1080

aataactgaa tgcttgtggt tttgttgtga catgattgtg acacctgttt ggttttctgc 1140

cttagccctt 1150

<210> 333
<211> 1213
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52227_G1, chr2:2484957..2486169, Cluster 2

<400> 333
gttatattta aagcaaatcc ctccaatgtc atcaaaatat ataccccaa aatctatact 60

gatctcttca atgtcactag aaattggttc gatctatttg agttttaaaa atttcagaat 120

aaaaattctt aaaaacatga atgtacatct cagcttaact catctatata caaaatttca 180

tagtcaaatt tatcttactc tagtagttaa aaaagacaaa aaaaatggtc aggcgtagat 240

tattgcgagt taaaaactat ggattgtaac tgtttgttgt attggtctgg tcgagttaga 300

tttttttgt gtggactaga ttgagtggca catgatcagg tctatgtaca agtgcaacgc 360

cttggtctct agtctgtact ctctacagct acacctccac tagccgtggt gtggtagtac 420

gggtactggt ggtgcttgag ctggagtgct ggtgggagca gcggctagcc ctgagcattg 480

gatgctagct ccactacgca cccactacca ctagtcaccg aggggcaggg gcagccaccg 540

gccagccggc cggccggctc tgtaaaaagc tagtactagg cgcggcatgc aagcagcgca 600

gcgcagcgca gtgcagatcc cgcccgcccc ggcccggcgc atgcatgcac gccaatacaa 660

tgcaagctgt aaaaaaggca cgatcctcca cgcacgcacg cgcgcacgcg gatggatcct 720

cgtcctcgtc gtccccatgc aatgcaacgc aagcatcccc gtcccgttcc cgtacttgtg 780

ttgtgttccg ttggacggcc cagagatgcg gccaaaaaac gcagcacttg gtgggtcgct 840

gtgctccgtg cacgagcccg gccaaaatgc ccaatactac tttgctggag gtagagagga 900

gagtgcgtgg tccagtgctt ccagtccagt ccagcccccc tacccctact agctaggctg 960

ctacagtgtc cactctccgc tgctatcgca gaagcagagg ttgcgtcgtc tcgtcgttgt 1020

gttacatgcg atgcagacgc aggagggcgc tcagcgtgca catgtggagt ggcactggag 1080

gatgccaata ataacctcag gctgcctgtc agagagttca gttcagagca cgatgggacg 1140

ccggcccacg tacggaggtg tgctgcgccg tggaacagtg ctcgtcggcc gctagctcca 1200

gctccggtgc cgg 1213

<210> 334
<211> 1118
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52420_G1, chr2:3552847..3553964, Cluster 2

<400> 334
tattattttt atagattaat tataaaaaaa agttggacta gtagcagcag ctcctctgca 60

gtccactacc gtctacggtc gtcacctgca tatggtcata gcaccccacc aggctcacgc 120

ggcagcggaa acagccgact gcagaggact gcagcggaaa cacccgtagc ggacacagtc 180

gtggccaatt atgctagggc tcgcgaccgg ctggtgggga tcaccacgtg acttggggct 240

gtgcctgttc ggtccggctg cccccgatca ccaccacacc aacccttcaa agcacgcgcg 300

ccgcacgaca gtaaccgccg gtcctcgagt tctacacggc agtcagactc atgtaggagg 360

agtactagtc cagtcaatga tttcatttct acgggttttt ttttttttt tttggtttgg 420

aatccaagcc tatcatgcgt catgcgtgag ggcacggttg tagattcggc ggtgactgat 480

ctatatccga gttcggatat ttagtgtttg atctatatcc gagtacttaa aatttaataa 540

ataagatgtc gataactatt taaatccttt ctgatacgtt tgaataatat ctatattcga 600

tccgaattta aataaaaata ataaaaataa atatggtatc aacgatatat atccatattc 660

gaccaattgc atcgtagttc gacgcagcag aaagatggca aatgaactag ctaggcgcct 720

ttcttttcaa atccatcgtt cacacagtcc aaacgtgaac agtcaattcc caatcatgtg 780

caaaaaaaaa aaaaaaacag taaccaggct tgacgggatg gagatgagaa aaaaaatgcc 840

acgggacttt ccaatcttcg attgactttt tacaccaaat ttgatcaact tgtcttagtc 900

aaaaaaaata taaaatttat taatttttgt tgtgatatcg tttggcatat aattaagtat 960

ggctttgaat ttttcgtttt tcgcaaaaaa aaaagaatag gatgagccaa tcaaagttgg 1020

taaaaagtca aatgaattat taatttaggt tgagagagta attcatagct ccaaattttg 1080

aggaaaaaaa caatcaggag agattgagga ctgagaag 1118

<210> 335
<211> 1219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52962_G1, chr2:6187305..6188523, Cluster 2

<400> 335
tcccatatgc atggcaagcc aaacatgcat ctttcactgc gaatctctga agagagcggg 60

cgcgcgcgcg tgcacgcaag catcatcagt cgtggaagca tgggccgagc agcagctacc 120

acactgctgc atgctgtagg ttcgtcgcac acatcgctct ctcttcccac tgacggcatc 180

ccaggctgtg atgatttccc tgcacagttc gttcacaccg gagcaaagct agctaggccg 240

cgcattgggt gaaaggagtg agacaaacaa ggcgaagccg accggatcga gcaccgcacc 300

ctttttctag cttttgcaca caccacctgc tggctgctgc cgcatcaccc cccgcgcgcg 360

gtctcagtcg ccactcgctc gccagcgtga tttgcgaccc ccgccgacca catcctggtg 420

agcttgtctc gtcgccgtcg tcgccgccgt ccctgtcgtc ggtagccgta tgcgtgcatg 480

catggtttca ggtcgccgtt ctgaaaagtt tctcgatcga ctccgccccc atactaaggc 540

gatgccgatg ctggctgctg ggtgcactgc acacgcactt atatagcatt attagcacgc 600

aataatcaga actagagcga gcgagctcga tttctcgccc gtccttggag accgcgaaga 660

attaaattaa cgagcatctt gttgaccctt caataatgtg gtttcgataa ttccattcca 720

cacatgcatg atcaggagcg aggaccatct cattctcatc tgctggtgtg gtatccagtc 780

tgccggtaga cggacggacg gacggacgta cgtacgtcag tacgtgtccc tcagatcgga 840

atcattatac ataatagagc tggtcaaaca tatacataat tggatatgtc atatgtgtat 900

gcatgcatgt atgtatatat atcatgatga tgcagggtag ttggtggatt tctattcgct 960

tgactgttgc ccggcactgt ttccggccgg ccgggacaag ctgatgagtg atccgacgtg 1020

tttatatata gcgagtagag atcgatcatg catgtgtgca tattgtgcta gctgagagag 1080

gtttgcattg gttgtgacga ctacctagct acatgtgtac gtggttcgac gcggttcatg 1140

tgccactata tatataggac catatattat gatccaccat cgatcatcgg tcgccccctg 1200

tgtggcttct gttcgtgac 1219

<210> 336
<211> 1168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53423_G1, chr2:8902420..8903587, Cluster 2

<400> 336
agggctaggg cgtgatggca agtacgtttt accacacata actgcatcgc attcaccgcg 60

gcctccccgg ccccagcata cagcagttag tgcttcctgc ggtgacgcgc tgccgcttat 120

tggaattctt cttgaatgct ctcgtccggt ccggcatatc catctctagc tctggcgctc 180

gaggcatctc gttgcgctcg agggagtgtg acctgtgacg agacgagact cgcccgcctc 240

cgagctccga tccggccccc cggccctccg gcctccgccc ccgcgcgcgc gccgtctgtt 300

caattcaatg tggcacttca attctccaac ctcctctttg ttgggttgtt gcagcattca 360

acactcgagc tcgctcgtcg cctcgcctcg ccgctaccac gcacacctag gtttaggcta 420

gctcaggcac tgtgggtgct tcaattcagc gttgctgtcc gtcccctgtc cttccatcca 480

tgcatatagt atcaaagcca gccacactac gtactaccgt gctttgcatg catgcatgca 540

tgccccccgg cctcgcacgc ttatgtttta ctaattgttt cagtcaaaac atgggacaag 600

gaggtatacg gtgagcttta cctagttcgt ataattatct aattgagttg gatgggaggt 660

gcatgtgatt tatgcattta accatctact agatcatatt gcatatatag atgaacgaat 720

actagtgtct aaatcatatg cggatttcaa tagactagag ggaggaaaaa tctagcaagg 780

atgaaaataa ataaagtgtt tgagagatat ggtcggtggg atcaatatcc ccttatttat 840

agagctatta tatattttca atttagttct agataattag agccgaacca cttaacctca 900

aggacgttat agtccaacac aagatctata tagatatgac agtcacgagt acttcacagc 960

tttgctttgt atcgccttaa gctttgagct gacaccgtct caagttccta ctagaaatcc 1020

acctagattt tgaggcccaa acctagaaat cgttcgctcc tctagcttct ccacttgact 1080

tagatcaatc gttgttgtct tgattcgatg aacacaatct actcatccat gtcctcttgt 1140

acttgtcaat gatctcagct gggctgcc 1168

<210> 337
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53478_G1, chr2:9261975..9263136, Cluster 2

<400> 337
gagatcgata tctgataagg tatgcacgac ttcgatttgg tgggtgatgt ttttattcca 60

tcgatagatt aagcatgagg tgattatttg gattagattg gaatattcac ttttgattgt 120

taattgggga ttaaataagt agttgattat tgtcactcct cttcgtttag aaaaatgagg 180

agatttttc aacactttca aatgggtttc acgactccat gaattattat gctgcaaaat 240

atatagtacg gtccacgtat tgttccgcga tcacaaaatg tatcctccgc gaacaaaact 300

tgctgacagg ctactactcc catcaaaatt actggactgg acacaacaca accatgtatt 360

ccaagaatgc aaccgcgcgt taatcccgag gaggtaggca tatactagac tcgattggat 420

tcgaggagta gcctgtcctg tcccgaacca attaattgtg ttcgtatgcc agggcccccg 480

gccgcaccac tcccaatata aacatgccgt gcaagaagca aggaacgacc gattcggagt 540

gagccgcacg cggccaggaa cgaccgtgac gccgcggtga cgaacggctt tctgcacggc 600

cgaaacggac cgatcgagaa acccggccga gtgctccgcc cgccggcgcc ggcgccggct 660

ccacactaac gacaggcaat gaggagggcg gcgggcagcg ccaggcacct gcacgcaacc 720

atcatcaagc acacggggca aaagctgcct ggcgcataaa tggcaggggg gcgggcagtc 780

catttccagg caagaatctc caaatgccgc gctcatcatg agcgagcggc tctccaaaca 840

ggcttcgttc gtgctaccag acgtcgctga cagcatcatt agctacatca gccagcccag 900

ctgggaaaga tagatatcga ttgtggctgc tagtatagct taactgacac tattacctcg 960

cggttgcaaa cgaaatcata aacgaaatca taagacgtgt cgatttttt atatttaaga 1020

atggaggtag tattatcgtc atgctcatat tgtatggagg catggagcgc acacacacga 1080

aagatgtact ataggaacag ccacagacgt acaaatggcg tccaaaacca aaaggtagtc 1140

caagcttgca ttatggcggg tc 1162

<210> 338
<211> 1107
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54404_G1, chr2:14104544..14105650, Cluster 2

<400> 338
catcactaac attttgctcc aaaagatcac cgccccttaa ggtgcagggc acaacaatgt 60

ctctatctac aagggtatca atgaggaccc gagcctaggg gatgttatcg gcaagccaag 120

cccgagggac acctatacta cccccacatg atagaagtga gccctctaag ggtcaccatt 180

gcctctaggt gtggccctca cctaagctca agaagccata gaggaggtca atgtcgttat 240

agtcacatag tggaagcgac tgaggcggga ctcttggact aaatgtggga ccatctagag 300

aggctgatgt tctagaggtc aacgcattcg tatctattga tacccgtcga aggagggaaa 360

tggaggaagc cctggcctct agtattgctg ccgctcaacc ccaagaggag gctaagggga 420

tctaggataa catgttttct tcttgattgt cacccttttct tatcccatat gcatgttttg 480

acttgtttgg gcttggattt tgatcaaact tggatcttgt atatctagga tcgagtataa 540

cgtgtgcaac acctcttaac acatatggta gtccttgtga ttgtgttttc atggtcatca 600

ccaaaacctt aaaatcatgg tcatgtgcac atgattctta gatagccata tgtagataaa 660

tatgcagctc aatcattagt cgagcctact tgaagccggc atgaatagca tacatatata 720

ccactttgca tcgtgttgat gattagggta aagactagtt tcgcaagccg tcctggtggc 780

actgtcaatc aattgagaaa gagggttttt gacaagctga tgaccaactc ctgccgcagc 840

tcttatcaca tactttgact atacacagag aatgagagat tctccagata tcattttcag 900

cctgaggaag cagtagtcaa tatgaaagga gcaagcttga caagtataaa tcctctgaaa 960

ttttgcatcc tctcacaggc acgtcgccgt ttgtagaatc caggcaagat ccaagagcaa 1020

gctgcgtcct tgcatgtcaa tgtcttcttc cccatacaga gcagtgtttg gctgtttgtt 1080

gaactggccc cgttgtacat cgcattg 1107

<210> 339
<211> 1081
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54422_G1, chr2:14203564..14204644, Cluster 2

<400> 339
ttcatcattg ttaggttttt ttccctcatc tagactaatg agtgagatcc acaaatccat 60

atctaaattt tgcaatcttg tcatttgtat acattctggc acagtagggc tatctactaa 120

ctcatttggt caaattcttc acggtaagat cccgattcaa tttggagcat tttagttcgt 180

tggagttttg tttggagttt agacttgatc ttctaggaga acattttaac tccattccta 240

acctttgtgc aaaatttcat ctcgattcga gtccatttga gctatttttt gcacttttgg 300

aagaaaaaac gagggttgaa caagccaaac tcgattggac tacccctcaa tctcgaccgg 360

gccaaaatct cgactaagac gaccctacac ctaactaggt cggcttttgg ttagtcatga 420

aaggacaaac ctgaccaggt cgacccttcg ctctggtcaa gccacttttt gctatgtgca 480

gtttgtgtat tgagtgcctt ttttagtttt cgtgtgtata atagtataag cctatctcca 540

tcagcttact catctttata cacatattca aactccactc taccaacagt gcaatctata 600

gtgcaaaata gtgttttgga tgactatggt tgaactgttg gacacggtct aagatctgat 660

ctattgttct agcgggtttc aaaatttgca tagaaacttt ttattcatca aacaagcaac 720

atgtagttgg tttaggttat ttgtgtgcac tctttcttcg cctttgctga gcttaggagc 780

gacgttttca ggcttcaaag tgttccgtgt gtgcattgag ttttccgttg attttagtgc 840

tctgctatgt tctcaggtca tatccgagga tattctatca ctagtttggc tcgagatcga 900

gctactcgtt tggagatttg gaggggggag gggggggcgg ggttgaagga ttgatttgaa 960

caacaaccac ttcaaaagcg cctttcattt atcttgtttg gtggactgaa ttggtccttt 1020

gtcggcacct tccagtgtgg agctcccgta cgggcgtacc acccgtaaca atgtcgcgtg 1080

g 1081

<210> 340
<211> 1038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54763_G1, chr2:15981738..15982775, Cluster 2

<400> 340
tgtatcgcct atcgtcgtcg gcgtgcctag ctagtcgatc gaggtttggc gtgccaatcg 60

cattctgtta tgctagctgt gccacccttg cccctaaaat acaccttctc tcttggtagt 120

tggtaatttg cgttgtttat tgttataagt agggctgctg ctccctcgcg ttttacttgg 180

gttttaagca tggcatgccg gccgatcgat gggtcgatcg atcgagttca aggattcgat 240

atgcttttcc gcgagccatc accttccccc ccacctgcac gtctgttagg gcatcacttt 300

tcggcaaagg agaggggac ggtctcgatg atactgcagg ctacgtctac gtgtgtgttt 360

tgccatgttc tgcgattcgc atcctcgctc gctcgctatc aggtattctc cttgtccaca 420

gtggtgcaat ggcagtagcg tgctcgagca gtatgcgaac tagcttggaa aatccgagag 480

ctgctgctct gctatcctgc tacggatata acagtgcgat acgtattgca aatttgcata 540

tacaggcgaa gagcaggtcg agatgattga accttgctgg agacgaaatg aactaggtca 600

aataatgcca tgcatgcaaa ctgacatgcg tggtgacgaa acgactcgag gtacctgctg 660

cgagtcgtat taccgtattc atgggccgta cgtgttgtcc ttagtatata tccagttggt 720

tacacttaca cccaggggcg gatccatagg gggggggggg caaagtgggc catggccccc 780

cctcaatttt atacaaacct attatacata atgacattta ttgttaagtg gagaaaaaaa 840

tcaaagtttt gataagatat agtcatattc taaacaaaaa aaaaaaaaca aatagctagc 900

gactaaaact agctgagaaa tttagaatga atcaactgat tgaccaactt atttttagct 960

atacccttta aataatcatt agttcttagc tacctcaacc tagctaaaac cagttaacaa 1020

ttagctgtct aaaacaat 1038

<210> 341
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54867_G1, chr2:16680952..16681994, Cluster 2

<400> 341
cctccgccca ttattttcag ccggcgaata aaggaggaag acaagccaag gaaaatgtca 60

caaaattctg actgtaccgt cggatatgct ggaaaaaaat gtcgaaacag tgcgatccac 120

tcgacttcca tcagcatcag aaagcgattt tgcggcaaat acagcacaaa atggtcactg 180

tcgcgcagtg catgttttgt ctactggcca atagcccaat agccatcacc aaacgataaa 240

tgttagtagc tggcatcatt tgccgattgc ctggaatcaa atactagtac tccagtaatt 300

gagtggggat gggggatagg acataggaca cgtactcttc ctacctttca acaatagcga 360

tgggctgtcg tcttctatcc gtccccgcat tccactggca tgcacacaag ggaagcagtg 420

caagctgccc aatagcggat tggtcccgac caggaggagc aaaaggacaa acactggcgg 480

tgcaatgggc tacgtaccga atctaaactg acagagacac gacaaggaag aacatgaaca 540

tggcatgaga ccccgctggt gtggtcttgt aaaagactgt tttcccccct cttggagtcc 600

tggactgcac tgaaaatgtg tcccgagctg tagctagctg aggtgctaag ttcacctaaa 660

atccgcatta gggtgtgttc gtttgtttcg gaatcgtgac ctagaaccaa ttcaaccagg 720

aatgtttatc taatttgtat aggctttgat cacctgtaac cattcctgcc ccaatcctga 780

acaaaccaac gcagcctcat gaagttttgg atcggaatga tgacctctct gaaatccgca 840

tgtagtagag ctgccggata gtggctgaag aatcgccaga atctagtacc ttgtagtagt 900

tagttgttga gactctcttc caaacagctg tccggaagga ccaggatgcc attagggatg 960

cacatgatag agaacgaagc aggactgcag gcgaaagttc aacttttctt ttttgacaat 1020

aaatgttcag ttgattgtcc tat 1043

<210> 342
<211> 1265
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58379_G1, chr2:36844538..36845802, Cluster 2

<400> 342
ggggccgggg agcgtgtgag caagccactg agcagcacca gccagcggca gcgtgggtgt 60

ggtcagtggc agaacggcac ggaaaagggc aggtttgggg gtgaacaagt gcagtggcca 120

tggcgacggg acgggtgtac ccccccccccc ccccccccccc cggtcctggg cggtggggcc 180

gcggcagcct cgtcgaccgt gcctgagcga tggcgtttct gtagttttgt cggaggctgg 240

agggtggtgg cgtggtgcgc agcgtagagg ttggggtgtt tgagtgagtg aaaggctgct 300

aggcttttct gttcgttgcg gtggctggct gctgggcaac aaagcagagc acgagagtgg 360

tcacgctctg tcgacgtgtt cttttctcgg actgaagagc aaaagcgttg ttttcacgtg 420

cacctccgtg ttgcttgaaa ttacacaagg gtccgttttg aaaatccatg gatgccatgc 480

ctcttggtcc ggtttttgtg aagcacacgc tataggacaa acgaactatt agtctacagt 540

accttcagac cggttttcat ggctaaacgt aggtgacctt gatcggagag gagcacttgc 600

tcccgatttt tctagacgtt taactaaaaa acaaaataga ggataatatt aaaatttatt 660

tatatatcca aaacaaattt attgcataca ttcaatgctc aaaataatga tatttattat 720

atattctaaa tatttgtatg cttttgtata tatgtttgtt aatttttta cgagcacctc 780

tttagatgct ctaacaaatc tatttttttc ttgaaccggg gtttacagag ctctaattat 840

ttgactaaaa cataaactaa agctaaaaac aaaccaacca ttatctctct ctctttgtat 900

atatagaagc ttcatcggac cagaaacatt ctatctttct tgtcgaacaa ggcttttggt 960

tctttctcgt ttctgcttcg taaatctgga cctttggcga caaagttgta ggcttctatt 1020

cacaccttcg caacatcaat gtgcatacga agcttggtag ctcctatttt tctaatttgt 1080

ggattgctat tggagaaggt ttgctttgct ttctccttgt gttgtacctg aaacacattc 1140

tctcaacccg aaggtaaagg ggtttgggga tcttcggcaa tataggcact caacacctcc 1200

aacggtgact tcttaatgcc ctcatgtttt agttctagtt tgacaacatg gatgtgatca 1260

tctca 1265

<210> 343
<211> 1208
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61639_G1, chr2:55442141..55443348, Cluster 2

<400> 343
cccttagaag ccgacgacca gatagtggtc cctttagtgg aggaggcgct aaccttagag 60

cagtaggggt gccatcccta gatgcggcga ggcactaacc ctaggagtga caaagatgat 120

gacacttaga gaacttagag atacgacatc ccttcaacca ctgctctgtt aacataactt 180

agacccaaca ggcccaatct gattatggtc atggagtagt atgtagtgcc atgccttcga 240

tcatgttata gtgtcgagga tgtcctgttg tagtggcaga cttacatgtc atagacatat 300

gtatgacatg ttgtggcgac gagtgctaaa gttcatgcca ttggtacgac atagttggta 360

actggtgtag tagtttgtac ttataatact ccctggcaca cttcgcatcc aagcgtggct 420

acatggatga tggcacttat tgaatagtgg ccttgagtat gtctgcctat ataattgcag 480

taatgcatcc attagattac aacatcactc atcacactta atgtgatgtg caagagcctt 540

atccactatg ctaccgtcgg gagtagactt tgaacatagt ctcatacctt taggggttgt 600

cttgccatta ggccacaagc tagttatatt ctttggtctt gcaagttcta ccatacttag 660

cattttatga gctcctttgt tctcttggaa gatcttaggg ccatgaggac cttggggact 720

ggccattagg attgattgag gatgaggacc tcaaaaatct aggatcccta ggagaccgag 780

agctttaatg ctctgtttgt ttgagtttag agctattcta aaaacatggt gatgtgcttt 840

tgatcctgag aagccagtga tagctttttg atgatgttat tagctttta aactcaagaa 900

gctacaagaa gcccatacaa ccagacttcc catatgaact cagtttttct gagcttccag 960

ctatccaaat gctaaaccaa aaggctagat gtttgtttca gcttctggct ttttcacgat 1020

ggaaaatgcc tagaagctta aacaaatagt tcctaaatct aggagtcctg aagtttggat 1080

cgtctcaagg tctggagctc catggaaccc tagagaatgg ggtataagtt tcacatagtt 1140

taaatgatca cttgagtatc catagattta agttttagat gactttaccg ggtattttgt 1200

tactcaag 1208

<210> 344
<211> 1114
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62665_G1, chr2:60669273..60670386, Cluster 2

<400> 344
cgcctccaac gttgcctctg ctccccaacc atgcgacgct cgagtataag aaggaagtag 60

tctctcgggt acaacaacgc tccccagaac tcagccatat ctgcgtcgaa gaggaggaag 120

aagaaaaata tctcgcaaca ctcgaagagg aggaagaaga aaaatttata aaggtgttcc 180

aatccccaag ccctatcctt ctacgcttcc attgattttt ttcctttgta tatggttcca 240

atcgatgagt gcatgtgtag taaagaaaag catcattttg cctagaacag gtaactgtac 300

ttgcacattc cacattgttc agcttagaca tgaataaaga acatcatcgc catgttgtct 360

tatgttggca aagccactac actgaggtat tgctgcaaag tcgttgtgca attatgtaga 420

gtgtcgaata atatcttggg agaaaaataa ccaccacaat catacaaaca aagatttaca 480

gtgcaactaa tttagcttaa ctttttgctc ccttcggatc acaaaacagt catgcagatt 540

agcaaaagtt tgtgcataat ggaaaaactt gacctcatga ctactaaaac ttgacctcat 600

ttatcaaaac agtgtgacac attagaacat atttcactgg tacatctgat ccttttgttg 660

aaattctact gtggtcaaac atattgcaca cacaatggca attccaaact ccagggaggc 720

ggatagacgt aggatccctt tttggtggtt cacgtttgag caagttttag tagtttgaac 780

aaaacctggc gttgtgcatg catactaccg tgcacaaaca tttctttgta gcatgtaaca 840

tgtgaaaata gcctcaaact ctttgacgct gcccaatttc agtccaaggt cctgatccga 900

tgaggcagcc ttcagcaaag gagatcctga gacaccctac ctttgagaag ctccataagt 960

ccccaacaac gaagtagaaa cacaccccca tttagatcag agcagccgac aagggaattg 1020

cacaattgct cccaattttt tacatgtatc tgtatgtgtg tgttgtgtgc cctgatatga 1080

tattgtacga gattatcaaa aatgaagctg ggat 1114

<210> 345
<211> 1324
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_63393_G1, chr2:64693626..64694949, Cluster 2

<400> 345
caacctcctc cccctacctt gcgtatcgaa tgtcattatc taacaacgcg aaggtacata 60

gactaccaga tagagagaga gagagagaga gaaagttagg aaggaacatg acacaagtca 120

gtagccatat tgaacctagg cacaattggg agccaacatg taagaagtta gagagatttg 180

ggcaccatat gtcctattgc tacatgttga ttaacataaa gaaaaggagg atacaatttc 240

aacctcaaaa gaccagtgag catcaagacc ttctagctca cccacaactc ttggttgtgg 300

taggagttct atcttaatgg tcataatcca ccttttatgc atgacatcta ggcgacctct 360

tatgcaagag tgtcttgatc ttaatcaagt atctggtcac ccttaaagtg tttactcgtc 420

tcttccattt atagtgcaag ggacaagata ggttacatca accttgaatt ccactagtta 480

agcccaacta ccttatcatt atcttgttct tgaagtcata tgggcccatg cccaccgatc 540

gtagaacagg gtctgagatg ccctttttata tgtggttgtg atacatgtca tagagttagg 600

tatgatatgt cacatccata gacatcaagg cctactctat ttagtacgat gtagttggta 660

gctagccttt tgtacttaat agtacttctc gtgtgctcac gtgtggctat aggatcaaaa 720

cacatgtacc gcatagtgaa cttgagtacc atgcaatcta tgtcatggca gcaataaact 780

tattaggcct ataatatcac atataatgta tctaatattt tgtacctaag acttatccat 840

taatataaca ctatggactt gtctttaaat ctttagatgt ggggtccaac tcctagggtt 900

gtattgtcct tgatgggccc aataacatcc ttctatattg tgatagggtt acacttagtc 960

gagttgagtc cattattcac atgtggcttg ggccataaga gtatgggtcc gaccattttc 1020

acgatacgag gcctaaggac attaaggacg atggggctag cagagtgccc ctagtgtcta 1080

agtgtcattg agtgctctag gtccgagcta ttcctagcac ttatactcca taatacatag 1140

ggacacgagg gtccctagag acttagacat gtgagtgccc catggcatga tagggatggg 1200

gactaactcc catgaatgtg atggggcatg agaagcctcg gggctctaga cttctgatca 1260

ttggcctagg gaacgagggt ccctagggac ttaaattatt ccaccttagg caattctggg 1320

gcac 1324

<210> 346
<211> 1224
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7187_G1, chr1:37199922..37201145, Cluster 2

<400> 346
gaaacattgt taaatatatt tttataataa ggttatttat aaagatataa atattagtaa 60

tatttttat aaatatagtg aaacctaatt aagttttact aggacgaagt gacggacgga 120

gggggtatat atataatata cgtataggtg catggttcat gcatgcaagt aataatgtat 180

atgactcgga atccaaagtg ggcagctact tttgttcggt caagatcaag agaatgaaag 240

catgtactaa aaataacaga gaaaaagaaa ggtagcgtaa cgagggactg agggagcgca 300

ggcgtacttg gagaatcgga tgtacgtgta cgtgtgcgct gtccatagac acgtacgcga 360

actaggcagc agtctagcag cggtacaaat aagcgcggca gtgtcactca cctcactgct 420

agtgtgctag ctagctgcta catacattgt caccttaatt tctatcaaga aaatagctcg 480

tccccgtcgt gctagctagg ttcgttccac gaccggacgt acccacaaag gcgcgcctgg 540

tgatcctagc taaaaaaaag aggcacgccg ccgtacgtgt gcactggcca ctgttcgggg 600

gtgcgacaag cagtccctgg tccaggcgcc gccgaatggt ctcggccagc cgccagccgg 660

ccaatgggac gagatcgaga gaaatgcacg cgcggagcca gcagacagca gctagctagc 720

tcggggccta gcgcgttttg ttcgtctacc gatccccaaa gctactagcg ggcggtgtag 780

gtagctaggc gtctttgccg gccggaggcg ggcgcacatg gccgcggccg gcgccgggcc 840

gggatgccaa aaatggcggt gccgtaggct ttttttaggg ggtagtgggc gggcaggggg 900

gctccgaggg cgcggatccg gccgagatcg tgccggcccg cgtcgtcctg ctgtccgcct 960

gtgcgtgtca gcgcggggtt ggccgcgcgc cgacgccgtc cgaccagggc caagattagt 1020

gccggttttc gccggtgcgt tgtttcttca ctgcctcacc ggcatatata catggaaaca 1080

aaagttgatt aaggaaagag agagagggaa caagagtaca agaccagtcg accaagctta 1140

aaatctacta ctactaggtt aaaaggcagg cgagcgagca ggcaggaaag gacccgatcc 1200

gatcctatga ttgatggtat tatc 1224

<210> 347
<211> 1394
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7355_G1, chr1:38133117..38134510, Cluster 2

<400> 347
ttcatatgaa cgacttatat aaggaattaa tgatcatgtc atccatttca acgtctccaa 60

gttgaacgtc gtgccatggc tatacgctca taccagcgta gagaagtagg gtttcgggac 120

atgtgcttaa attgggttca atcctaaatc agctaagata ttgaaatggt atgtaattcc 180

aattttatca ttttgatgtc cctatatttt agtttggaat tgagtggtcg aattccacac 240

aatatagagg ggtgatgctc tgtattagga gaggggtctt ccagttatag tctaatttca 300

gataaatggg tctctgattc caaatctcaa ttgcatgtgc aaccaaacaa caaaattaag 360

gaatattgat tccagttcct aactatgtgc gttggttcaa tactaaatcg gctaagatat 420

tgaaatggta tgtaattcca attttatcat ttggatgtca ttgtatttta gtttggaatt 480

gggtggtcga attccacgca atacatagaa gtgatgctct atattaggag aggggttttc 540

cgattatagt ccaatttcag agaattgtgt tccaaatccc aattgcatgt gcaaccaaac 600

aacaaaatta aggaatattg attccaattc ctaattatgt gcgtcgatat atacatccaa 660

atggggtgga gagctttacg aaagtaaatt atgatagttt aaataatatc tttttcactt 720

taatatcaaa tataaattag gcatactaac acagaaaatg gccgataagg cgataaccat 780

cagggttcaa caaattggtc acccctcaaa aaccggtggc caccaattac cgattaataa 840

cgatttatcg tagtaaaccg gtagaaatca caaaattcga atacaaacca aattattaat 900

tggctctatt tgaagtcgat taatcgactg atacaaccga ttaatctgtc cttaacacga 960

taaatcgaaa tcaagctcct tgtttttgtc aaataaagca cattaagatc acaaatgaac 1020

aaaaatggtc caaatgttat cacgagttca ataacaacat ttagcagttt caatacatta 1080

catgtcacag tttcatggtt cacaaataac atcaagatac aatacaccct ccggtgaaga 1140

tcattctcac gagtgtgcat tacactgatt gtgtggtgta ttatactcct ccgtataata 1200

cattgcccac gcatcaactg caccttgtac tccacccaag tctgtttgat ccattcagaa 1260

gtcgtactcc acgagtctac caacatttag tagtatttag gctcctcctg ttggtacacc 1320

aacctcattg gttgttgagt caccaccgac cggataattc acgtagggaa gaaggggtga 1380

agacgaacct tgtc 1394

<210> 348
<211> 1097
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84411_G1, chr2:195536193..195537289, Cluster 2

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (821)..(920)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (891)..(891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (892)..(892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (893)..(893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (894)..(894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (911)..(911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (912)..(912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<400> 348
tcgatctaga gattcgtcat caacagatct cggttttaag caatactgta gttttactgt 60

ggtaaagcaa taccgtagta tttatgtcgt atacaattgt aaattatggt atctcaaact 120

acattatttc aaaactacat tctcaaatag gccctaaagt attataaata ctgcagtttt 180

tttaaagtat tctaaactta ggtttatatc tcagttttct gtgtaaaacg cagcgcgcgc 240

atctctaacg cgtgcaaaaa aaatactttg cttccaaaca catttatata tccaatactg 300

tggtatttta aaactgtagt attttaaact gtggtattgt catgactaaa ttataccgta 360

gtatttcaaa aaccatggtt tccaaaaact ttgttgtgaa acagggtcta aactgtacag 420

attaaatcca agggaatggc acacaatgct gcgcacgtgt tgcggtgttg tcctagccca 480

gcaacagttc ctacgtacac cccagcactg tgtgccacta gctgcctagc agctggtgga 540

ggccgaaccc tgcaagacaa gtcctgcgtc aggtcgctgc cgcggcagca acgccatgcg 600

cacgcggcat ggtgcagtac tgcagtggga gctgtacacc agggtgcagt cgagtggttg 660

caggcatgca gtctgccatc cggcacagta acttgttgtc cactgggact gaccgaccgc 720

gggcatgctt acaggccata attggtggga cgtggctcgt aacaggtgga ggtcccactc 780

ccccttcaag ccgcaccttc aaacaaaaaa ctacttgctc nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 900

nnnnnnnnnn nnnnnnnnnn ggtggatgtg gtgcgagaac ctcctcctct ctcttttctc 960

ggccagctaa ataacggaat cgaaattcgc caaaaacaaa aaagctcact atcccatccc 1020

tagtgcttgt ttgcctgaga ctgtcttcaa cggtgaacgc ctccctcccc cctcccattc 1080

tgtagcggca acaggat 1097

<210> 349
<211> 1015
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84519_G1, chr2:196223398..196224412, Cluster 2

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (791)..(890)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<400> 349
ccattacgtt atgtcatact cctagtacta tagtatttct ttcttctcat gcgatcgaat 60

aggcggcaac cttttgtcag tataattaat gacccttcg ttcatgttga tccgccgtgc 120

cgattaatca ggaaaaaggg aggagctcaa tagctcatgc atggtctagg gataaggacg 180

atgatgggcg ttcgttgggt tcggcgagcg gcggcggggc atggccagcc agtgaccgcc 240

tcgcgctctc catgtcacgc ggggcccgcc gcgtcggcga acaggacagg gacagggaca 300

gaaagggaaa gtcgcgggcg gcgccaagta ccaacaacca ttcttaaaaa aatcatacac 360

tatttatttc attaatcttt aaagttttaa aaaaatcata cactatttat actaccataa 420

tacatattgt tttcatgtta ccatacttaa aaagtgttaa tatcacaaag aaattaagtg 480

attaaagcat aaggagatta gaactcatct catatgtggg tttcttctct ccccatatat 540

atttagaatg gacagtgggg gtgggatggg aggaggtttg ggggtgtgga tggaggtacg 600

gtggcctaat aataatctaa tctaaagggc tcctccaatg gcgcttcgct atcgcctacc 660

tggagacgac agcgacatgg tacgggagta tgggtggtca cacgcacggc actcgccagc 720

aagtccctca aaagggccgg accgtccaca cactcgaacc tgtagctctt ctgaccttga 780

gctacctaca nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ttgttttagc 900

gggcatctag gaagtgagaa ctccaataga ctttgaagaa ttggaaggat tggaaaagat 960

gggatgtatg gccacgccac ctcatatccc ttccatatca caactagatg cctaa 1015

<210> 350
<211> 1074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84562_G1, chr2:196404228..196405301, Cluster 2

<400> 350
tcgtcccttt acctttttctg attctctgtg ttgtgtccct ttaggattgg cgatgagcag 60

tcaggggaag acgcagacga cagcccacgg gagctgctgt tcattcatgg aagccacaca 120

gccaatatat cagaactgtc atggaatcct agcgagaaat gggtcattgc cggcgtggct 180

gaaaataata tcgacctggg agatggcaga aagcatctac tgtgataacc tctctatgca 240

ggttaactga cctgactctt cggaaggatt gacgagatca tcactggctt cctttaggtg 300

tcgtctttgc aacttgcaaa ttattgtctc gcaggcatgt gtccctgtcg caagactttt 360

cagccgttag gtcatgatgc tgctccattt gatcgttctc tctcttgctg attctaggtc 420

attaggtcat gatgttgctc tatttgatct ttccctatct ggttctctac ctccgttccg 480

taggattcac tttaagcatg acttatggtg gtctctaaga ccacttatgg tgtgtttggt 540

tgtggtacaa ccttgtcgtc cagcacacct ttcgtaatcc gattctatat acaataacac 600

tagaatggcc aatgttctaa ctcataactc tgaatcaaac aaccttatct aagtgatcgt 660

ttaatctcat cccatcattg ctatcacaac caaacacacc agaagaatgg atagcaatag 720

attttctacc tctcaatctc cttcaatccc tttatcatca aattagccct cctcagtccc 780

ttttatcact aaaccagccc taaggctctc ttcaaccatt cctctcccaa atctctccat 840

tcgtattttc tattatattt aaataccttc cccttcacta ttctttccac tatttcatca 900

tctctctaac tatttcccct atttagttct ctctttactc tttaattgaa ttgttttatt 960

ttttcatcca tttttgtagt tttaaaaact ggtacaatat ttgtaatact gtaatacaca 1020

ttgttattta tttattaaac tcagaaacgt tatttttat agtaaatata atta 1074

<210> 351
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85047_G1, chr2:199347993..199349090, Cluster 2

<400> 351
aacgcatctt aggcacggtc aaggaaaaga aaaaaacata ataataatac atcttgcccc 60

ttcttgctgg gccctccttg tcaagtgcgg cccctcccgg ttgacggtcc gagagtgcca 120

atcacgtatt cgtgcaggat gtggcccaaa gtatatatag agcattattc gctggtttgg 180

tcggcgcggc ggtccagcca aagttttcat cagtcactag tattttccca ctatcgttcg 240

tctatcacat ttacgagtct caaacacgcg tattctcgta cgtgttatca aacggtaaat 300

ttaagaattc tgtatgaaat aaaagtctaa ctaaactaaa ctaaacggac atagcgtatt 360

aatctctata gtgcatggat ggagtatatg gaagtggatg ctgtgtctct gctcatgacg 420

ttgaaccggc accagaatcc aagaacgcga tggatacggt acggtcgagt tgggcacaca 480

acattgatga ccagcaacgg ctgccattca agtgtctttt cttagtagta ctagtacaat 540

tgtacaaacc gtttgcattg ttgtagtatc gtactaaata tatcctattc acctactatg 600

ttaatggact aagcaggtag cagctgaaga gaggaggttc ccaagtgatg acaagagacc 660

aaactagacc agctgaagcc caaccacatc agcattaatt aaggccgatc tcccaattca 720

gttccagagg aacacgcatg caccatgcat cagttaatta ctcttagcta gacctagacg 780

gatgcgaaac gtgtaactgt ttatgacgac aaataaagtc tcatctatca gcgtgctcat 840

atatgtgcaa gttgagatac gtctgtctag ctatcggaca agtgccgctt gcttaaatgt 900

tccccaacgg accacgccac tcaatgagcg tcgaaacatg attgagatgg gtaaagtgtg 960

tccaaacacc aaaaggcctt cagtgggttt tcttacgtga aagtttagtg cttgtttagt 1020

taggtgcagc tctcatatct cattcatatt catacctctt atttcaaact aagaaatagt 1080

cgcacacaca cctccacc 1098

<210> 352
<211> 1202
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86713_G1, chr2:209275941..209277142, Cluster 2

<400> 352
ttagcacact ttgtaggagc taaacggtgc taaagtgtag catttacttt tagtatattt 60

ttaacactcc tgtttgggta cgtgccactc gttcgtccag ctgccgtacg atctgacggt 120

aaacgaagct gctcgtggtg ctctcagtcg tatcgtatga cctggcgtca aaggacgtca 180

agtcgtagag ttccgtcgga tcgtacctag attgatgctt acagttgtac ctataacacg 240

attcttagct aaaagtatat atagcgctaa attgtaacac tgtatatcca aacccgccta 300

aaggtccctt ggtgcacaat caaccgcgac aggggagtcc gagccccacg cacgtgcctt 360

ttttctcgag tgtcggagac agcgactgct gccgggctgg gctgggccgg acccacgtga 420

tagtcactaa ctccgccacg tacatgcatg gacaagacac actctttccc tgtgctgatt 480

aacatcatcc actaagactg tgtgcaatag accttgcaaa cggccaccca aatccaaaat 540

gggcatcgcc ctgcactgta gcacgaggca aacaccatcc aacagaatag ccaactacgc 600

cacgcaaaat gcatcggagt agagaggcta ccgatatttg agtactctct tttttcatat 660

catcttcctc gcttgagtaa ccatcagccg ccccatacat ggagagcttc atgtaccatc 720

cagccatagc tacaagcacg aggagaactg gagaagatcg tgtgttcgtt ggcctttgtt 780

tcccgcgcct aggcggcaaa gttcgtctat tcccgccttc tagttcccgc ccccggaaaa 840

ttactgaacc agtataaatg ggccgcacaa actactgtct gttggagaac aaaaagtata 900

catacggttt gtattttaat gtggccagac atctgattgt ttgcctacct aattatgcgt 960

ggcgttgttg cacacagcct aatcagctca attccgttcc cttgataggc atcatcatgg 1020

gaccggccag cagcagaact gggcagctgg cggccagtgc agaaaacaca cgtgagctga 1080

agcgaactgc agcgcgggag cggggcgcga ggcacatgcc agtgtcgccc acttttaga 1140

ctaaccgcaa cagagcccct acccagcttc cttcccttca taccggctgt agaaggcact 1200

ct 1202

<210> 353
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89916_G1, chr2:226181978..226183354, Cluster 2

<400> 353
tatataggcc atgataatta ttgcttggaa tggtggaaca ccaagtgata tctttgatgt 60

tggtgtattt aagaaggttt ttagtcgtgt gtctactccc tctccaccat gtaatggcct 120

aacataattg cccaaagcag tcgcgcagtc gtcgcccctc tcctctaacc acatgagtgg 180

aaacaacgct catctccctc catgttgtta agtagtttca ttaccttaac aaaaaaattg 240

tgtacattac tgctacaagt agcatgaaga gtctaacctg attgaaatta aatagtgaga 300

tgagtctgaa tagctgatga aaaattggtt agtaacatta tattggttgt tggcaaaaag 360

ttatgagata tcgagatcga tgataatata ggtgttgttc gtttttatat aatcggttgt 420

gtactaacat tttatccaat gttttgtgct tcgtcgtaac gcacgggcat taaactagta 480

atacaaaaat caacaaaagt atctcttgcc cccctaactc tgaggacact cgactctctc 540

ctccttcgac atcaagtacc aaaaggtacg ccttaaccta aggatactaa ggagtggggg 600

cgtatcagtg ggagcaatct agaacacaga gagatcaaca tctgagtcta tgttagggct 660

gctactgaag ttgtctctaa agcgaaagtt agagctaaga ctagcactga tggagctatc 720

ggctgagcca gtgtgactga taccgaggag gtactgatag cagagcatat gatcatcaca 780

tcagtcgacg tactcccaat tctgacagca tgtgtagaga agtccaaacc tgctggccag 840

agaggggaga tggagagtcc aaaagtctga ctaggtggag tgctagactg tgtatggttg 900

gcagttggca cgacgactga ctgtctgaag aggtggaggc ggtgtcgtct gaataagagc 960

tacagagaac ctggtgtgct caaagagatg ctagaaatac atctgattct ctatcatttg 1020

acggtggtgg aacagtgaaa tgtcattcat agaatcattt gagttgtctg cagctcgaaa 1080

acgaacgagc tcacgctctc ggatggcctc atcctcctct gtctctctct ctccagcaag 1140

tgcatcctct tggatctaat ggcctctgtg acccagaatt cgacctgctg gacgtgggtc 1200

gacctcctac tggggccgat aaactccaaa ggctaagcgt gaactcctca aagttgccac 1260

tatggtgatt ggatcagctg agcaaaaatc ctccggcata gctgagcaaa ggttttagct 1320

ccccttagt catccaccaa atactagttg gtattattct gcacttttcg tggggaa 1377

<210> 354
<211> 1065
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89923_G1, chr2:226197484..226198548, Cluster 2

<400> 354
catgtccata gaggccagcc gtttagaata ttgattctca ataattatga atgtcttcat 60

caaaatccgt ttgaaaagtg aagtgatgca gagcttcgct tgtggacgtc aatcattttt 120

caagctttta agtctgagaa ctagcggtgt agaattgtcc gacggatcga tactgtaata 180

tatcagtacc ataaataatg aagtatacat gtcatgtgga gaaccttact atactagcac 240

gtagaaggcc gtagcatgat caacagagag ggaaggacag gcttgcacga gcacgggggc 300

ggctggggcc ggggatcgga atctgatacc tccgcggcat cctccggctg atcgatcact 360

tcgaacaagc agccgcaacg caggctggct gcggctctgc ctggccggac ctccctccac 420

cggatctgga cacccgatcg attcatggcc atggctcgcc cgccgcgccg cgccgcgccg 480

ctgtggtgtg ccatcgccgg acgccagacc tccaacacgg caacagctac ccaatcatac 540

catacgcaca gtcgatcgat cggggggggc acggatccaa ccaaccggcg gcgagcgtcg 600

ggacaaaatg ccagccggtc gcaagcatga tcgagaatcg ctgcacgtcc agtccagtcc 660

agatccaacc caccattatc atctcgcacg cagacgcagc cgtcgaaccc ttgcaggtgg 720

gtgtgcccgt gtgggggttt gagagaaccg acgcgtaggt acgccctggc gactgggatg 780

ggacggggcg gcgaggacga ccggacgtcg gacgatactg cccctgcccc tgctatggcg 840

gctggccggg tcgccgtccg gcctcagggt atttatcgct ccgccaggac gtcgatgacc 900

agctggtgcg gatgaaaaaa aaaaaatggg ctgacctcgc ttcgtttcgg tcggccctat 960

cacctacctg tggctcaatt ctaggcgcta ccaatacctg gaacgtgtcg atcgagatag 1020

tttatcttag gctataaata caagttcgct gaacggacag tttcg 1065

<210> 355
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89937_G1, chr2:226327239..226328308, Cluster 2

<400> 355
tcgtccatgg ttcctgtcag ttcacggtaa gtaagaggaa ggaatgaatg ctggcttgcg 60

ctggaattca gttaacagtg agtcgatctg tctacacagc tactgctgtc tgctgctgct 120

gctccacagg atgggaatgg gatactggtt attattactg cgatacgtaa atatttattt 180

accttggttg gcctcacgcc ggtggggccc ggtgggtcgg aggcggcgga gtgcgccgac 240

gccctgcacg ccggggcggc cggccgtggg aggagatttg ggaggggcgc gcggggccgg 300

ggcgtcagat tggggacgcc acgagcagcg aggttggcgt tgggtagggc tcggtgaaga 360

tgaggacgaa gctggggaac ttggatttct acgcggatcg atccctatac atcggatggg 420

atttctacgc ggatcgaaga gggactggtt tgccgcacga tctagggtaa atcccttaca 480

gatgctcttt tcttttgttt ccccccttaca aatgggaagt aaatagctcg tctttttttc 540

cccactcttc ctactgagtg tccggctcca gcaccggctc ctacctcgca aaacagctcc 600

tgagcaggag ccataatacg gctaagagcg ggagcccaga tttttggctc tccacggctc 660

cacatatggg cgctgcgctg cgtctctccc cgagcagaca cctctctcca agccacctca 720

tgcctgatgc aagaagatgc agctagcagc gagaccgttt tactccaaat caaataatac 780

acgagaggag ccggacccat ttttacaggt gccgtagccc tccaaacggg ccctgaatct 840

agccataatc gatatggaac gttttggatg tgtcttgcta aacttaaatc acaaaacaag 900

tttaacagat attgacttgg aatgggttca tgtatacaca caggcatgag gcttcggaag 960

atgcatatct tgtgtacagc aaaattcgtc agttcaccca cacaacagga aaccgtccca 1020

cggtacactt gcatagcatc agcagcagca aacttcgctg tcccaatcat 1070

<210> 356
<211> 1318
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_919_G1, chr1:4755594..4756911, Cluster 2

<400> 356
tcagagctcc atcaccatca acaacagaac aaatggtccc catacgagat gaccgtaaca 60

tgggctaggc cagaaaccag tctctctctt ctccttcatg ggctgggcca gcgcgccgac 120

cccattgcgg aaccagccca atctagttgc acactgccgc tatgaattcg tttcatcgcg 180

gacgaccgga cgtgtccgtc aagtcttcct gcgccgtcct ccgcgccggt agtcacccat 240

acccgatcgt aaaccccgcg tggaggccgc cggggacggg aagcaggagc cgtcggcgtg 300

ccaggcgtcg acgtttcgct gagctggcgg aggcgtgcga cgccatcccc cacgtgctcc 360

aaggtactgc tatcccactc ggcatcgtcc ggtgcacgcg gctgcggact ctcaattcgg 420

cgccggcctt ggttttcgca gggaaggacc tgatcgcgct ggcgcagacg ggtccgggaa 480

cacgggcgcg ttcgtgctgc ccatcgtgca gaagctgcta agcaaccgtc aggctgatca 540

gcctttcttc gcttgcgtgc tcaggccaac cggtatttaa tttcgagtgt ccgtggttgc 600

tattgctact cagagatcta gcgattcaga ttgcgaggag cagtttcagg cgctcgggtc 660

agctactggt ctgccttgct cagtggtgag cgttatcaat gcaattatgc aagcgtctaa 720

atgtatacgc gaatgcattt tttggctgcc agcgtctgaa tgtggcaaat cgtgacgcat 780

cgatacagct gtcagcgtct gcatttgtgg atgccttggt tctagctgac atttaattct 840

ttcaccagct tgttggaaat ggatcgggtg caacaagtgc tacccattag caaacgtcca 900

catattgtgg ttagtatcat acatttcctg gttttctcta cttattccaa gctaaagttc 960

ctctccgcat ttatatagcg aaacatgttt ttgacgactc ttaagtacgt tcccaacctg 1020

ctgtgttact tcgaaatgta tacattaaaa taaattactt ctaaaaagct accacagttg 1080

gtcggcatcc ttatcaaatc aaatcctcct tctaattgac ctcttggaga gagccattgc 1140

aataagcctg agaactactt tataaaccag tagcgacaac tatagcagat gtgattctct 1200

ttggctcttt tatacttcca tgacactgaa atttgttgta tgttattatt tatataactg 1260

aaataccctg tttaatttga ttttatttca catattgttg tgttaacctt ctccgtaa 1318

<210> 357
<211> 1140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9250_G1, chr1:48692440..48693579, Cluster 2

<400> 357
gtcgggccct acgtccggcc tcggtccctt gcgccgcctg ctcgcggacc tcagcgaccc 60

caccatgggc cacccgcccg tcacctgcgt cgtctcccac cgaccaccgt cccacgtcgt 120

aatgggattc tccttcgccg ccgcgaagga gctcggcctc ctctggcgcc ggacgcccgc 180

gacctcccgc cgggtctcgc tctccaacaa aggaggaata tttagttaga tatactttga 240

tggttagggt caaccaaata ttgtgtatgt gttatctaac tgcattcatt ttcttggaca 300

tagtggtact ggatatattt gcagaaagta actaaccacg atatggtgaa gtttagtatg 360

tttacttgtt ctccaaaata gattattgat tctatgaccc atttttaatt ctggatgact 420

taaatttcag agtggtattg aggacaactt tgctactgta tttgctgctt tgggagtaag 480

catggaaata gcccaatttt tcgaacgtga ctttgaagaa aatggctcaa tgaaatgggt 540

caccctttt tctgaatctg gtaccaaatt tattgttata tggcgatcag ttattacact 600

ataacaaatg aaattttgat gagttgatgt gttatagact gatagtatta aaggcttaaa 660

gctgactctt gctgtctgtt ctctttattg attacaggcc aatgatccca ctattgtatg 720

gataaccact cctcgtattg ctctgacaac agaagagtac ttggcataaa atgtgggaaa 780

cacagtagct tttttgaatc ataatatgtc aagcaataat catatttagt tatctactta 840

ttacagtctc ctgtgtttga actctaattg catttgtccc attctttatg ccctaggggt 900

gcacactgtg cagttcaagc acaacggttg ctataatttt acaactgagg aattcaaata 960

tgtcaccaca aaatacaaag tttcgtggtt gactttaggt gattctgtga cttcaatcat 1020

aatctcaacc ctgtgttctg aattctgtga cttaaatcat aatctcaacc ccgccgcttg 1080

gaggtggtcg aggagatgag gagacgggcg gtggagaatg atgcaaagga agagaaagat 1140

<210> 358
<211> 1369
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93413_G1, chr3:6436597..6437965, Cluster 2

<400> 358
gaagccgcta aataaaacca actgatcatc atcgtaatac aaaaaacgct aacggcgcca 60

tatataggat ggggagtgcg atgaactagt caagtcaaca tatattagac cagaacaatg 120

aaccggtgca agcagcatct cccagaagga tctcttgact tctctacaag caaagcaggg 180

aatacaaaat gctccatttc ggcaacaagt gttttggtgt tagatgtggt taacatttgg 240

aacaccggcg ctggccgtct ttgtgcaagt caaccccggc ctccaagata aacattgcag 300

ctagggcgtc gagttggtta ctttcacctg tagcacgcat gcagaggtgc aactgtgtgt 360

gtctgttatc atcctctggc cgcagggtaa gggttgacat ttggagtagc tgactccaca 420

agcaaattta atgggagtaa tcgcaatgat ataaaaatcc cctttgtgag agagtttatg 480

tcatccaggt cacgttcatc gatctccgac gagagatacg aatgatgatg cattccgaga 540

gagagtccat gccagtagca gaagaaaaca gaaacctgct gcctccgctg atctcatctc 600

ctgtatttcg ggttcggcgc tgacattcca tccatctgtg gtttgtggct tgttttgttt 660

ccgccgacgc cgacgaaaga cggcggcggc ggcggtggct tctgaatact gaatacgctg 720

caggtcgtcg gacttttctg cggacaggag ggatggaaat gcgtggtgat tttagtactg 780

ctatttgcta ctagggtagt tgttgttcag acaagtcgcc atgggaatga gatgatgaga 840

gggcgtgcgc tttgcttgta gccttgtgca gtttttgcgc tctgcctttt ggcactttgc 900

attgcatgcc tactcctact agtactcggg gatggggaag ctaattgtgt gcatgactgc 960

acgggaggtt gaagatgggc atccaagatg agtgtgtggc cccatacgta cttcaatcac 1020

ttcatgatgg actgatgatg tgttgcaata aataattgtg taaaggtctc gggtcatgct 1080

atgggctatg gccatcgaga aaactaggag tatataattg accgcgctca ctatttccta 1140

tacttgtatg cctgtatgta tgtatgtata tcattgcacg cacttgcgca tagagatagg 1200

ataggatatt cacttcttgg cgctttcctc caaagacaag tgtttggggt tcgcaggtca 1260

gagataagag tatttctgta tttgaacccc aaatcttgga gcctgcttgg ctggctatct 1320

accaaacact gccatactaa agttttggta aaaaaaaatc ctgaatcta 1369

<210> 359
<211> 1356
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94020_G1, chr3:9455871..9457226, Cluster 2

<400> 359
gctgggcctc aatcttagtc acgatgggcg gcacgtcacg aaatgaagca cgaattaaaa 60

aacaagtgtt taaatggtta ttttatgctc caatattttt ttctcttcac caaagttata 120

gaaaacattg atttattttt ctcatatttt tttactctat agcaaagtta tgaatatttt 180

gaggatatat ttttagatat gtataagttt tttatacatg tcgtgcttgg actggctggc 240

acgacacgat catcgacccg ctgtgctttg ggccagacag agtctacttt tagtatctaa 300

acatgatacg gtctagccct aaattgtttc gtaccgaccc gaaaaaagtt agatcgaagt 360

accatgggcc cggaccgtgg gcatggtagc agacgccatg cgcgcctttt aggcctgagc 420

ataccaatct agacggaaga aacgggccaa gctgagaggc agctgcattg gtgaaatagg 480

cccgctctgc gctcactagt tgggcccgaa cagaatagca aaacaaagcg ggacccatcg 540

ttgcgtcatt ccactttaac aaatctcgca catatgtctc ccttactagg ttctatctaa 600

aaaacaaaaa caaaaacaaa acatgcttgt ggctcttctg cagcaagtat tgcagctgac 660

agccgagaag atgagttcgt aagagcagca gtcaggaggt gattgagatc cagaagatgc 720

tttcccttct ttctttcagc tggtaactga aacggcagct acgctacaat acgagtagtg 780

gagacccgaa agtgatcctt agacgccgcc tatagcctgt cggcatctct aggccgtcag 840

ttttcttttg cacgatatgc cattctttct tcagatttgg tattaaaaaa acaaaacaaa 900

acaaaacaaa aacgtgatgg cagtgtgaag aaagggatgc acaaacacat tatccaccac 960

ttctcctttc atttgtttga agcaggtttg gaaactgtct gcttttccac cagctatcac 1020

gatttgcatt tctgcaatcc tttcagctca tatcttgcag cgcttgtgta tccaatcctt 1080

tcagcaggtt tggaaatttt ctacggtaac aatcatccaa aaaaaaaaca acaaaaactt 1140

cagagcgtac agaaccttta aacccaatgg taccagagct ttagcatcgc tcagacagac 1200

agcatcactc ctaccttgat ctgatgtgta tatacatgat aacaaattaa tttaaggtta 1260

cgcgggatac ctggacgtga acccacagcc aagttgaatt ggtccacatc atctttgaca 1320

aggattgaaa tttggagggg ctggcggatt atgtgt 1356

<210> 360
<211> 1133
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9629_G1, chr1:51005935..51007067, Cluster 2

<400> 360
catgaaagca tgcatgaaat gtaacttttc atttttttag caggacggga tgtgcttttt 60

cattgagtag ggaggagttg gaaaacttaa aatcaatgaa agattaaaaa aatcagagta 120

gaaaggagaa ggtaaaaaag gcaagtaaaa gaaatacaag gacaatatca atgagctatc 180

caggaacacc taaagcaacg actaaatgta cctttcttta tggaagtgat catcctaatg 240

acagaagcat ctgaaaaagt agaaatagat ggatctttga aaacttggat ccaacagtac 300

aatactgtaa aaatgacttc agcaaaaaaa aaaaattggt tatccataga ggaagagaaa 360

aatatgacac tgcagtacca gaatggttgc aacatactca catttagtta ttggcttaga 420

ttcactcccc cacccttttgt ctataccttc ctatcaaggt gctttttggt tcgttgattt 480

agtgctgtaa taagttaaca gagtaatcta ttaccattgt tttatgtttg gttagactat 540

accgtaaagg attgcagtgg gatacaatac ccagccaatt caaaatcatt actgcttttt 600

gactgtcagc caactccgat ccttcttttt ggatcccacg ctgcaaccaa acatagaccg 660

ataaccattc acattaaaag atagcaggtg caataagttc cattcccatt actactaccg 720

ttgccgaacc aaacggcacg caagttgtaa cataattctc gatatatcta tatatccaaa 780

catcttagta taaaaaaaat cacagtaggg gccccttcta ttcaggaacc tctcttgcaa 840

ttaatcagca gctggagcga gactgcccgg atgtcatctt gattagagac ttagaggata 900

aaaatgtaac ttttcagcag gtgttcttaa attaacagaa aaaggcgtac taatattagc 960

gaggatatat attcttgttc gattagggcc aaaaattgat tgaaggctaa tgatggttag 1020

gcttaggccg gcctaatgct catctgtctc ctgtctctta aacaacgcag tgcggtgtgg 1080

tgctggagga caccatacgt gcgggccact caagagtcac ttcggcactt tgt 1133

<210> 361
<211> 1147
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9685_G1, chr1:51402863..51404009, Cluster 2

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(172)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (150)..(150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (151)..(151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (152)..(152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (153)..(153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (154)..(154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (155)..(155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (156)..(156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (157)..(157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (158)..(158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (159)..(159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (160)..(160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (161)..(161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (162)..(162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (163)..(163)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (164)..(164)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (165)..(165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (166)..(166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (167)..(167)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (168)..(168)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (169)..(169)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (170)..(170)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (171)..(171)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (172)..(172)
<223> a, c, g, or t

<400> 361
tgcgcgctgg agcatttttt tacgctaagt cgggtagcgc gggcatgcgg tccgcccgct 60

gtgggcagct tcnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nncccccccc 180

ccccccccca ccccccccatt aactgttact atcattgtta gatggaattt cgcacgagct 240

agtcaactcc caagaaacag cgctgcaaag tcctctgctt gtggtggcgc cgtgtgaaat 300

aatttaattt aaaaccgcca agttgacgtt tgtaaatcta ctgtactaca tattatgaaa 360

aaaaaaatgg ttgcatacaa cagccggggg cgcgacgggc ggtgtggtcg gattccacgc 420

tgggggttga aaatctcggc cacttcggct ggattcttgt gcgccggggt ttttttttata 480

gcaaatgacg agtagggcta tagggcatcc cggatataac atctctccga tttggtactg 540

gtctctttgg cggtttactc gatatgaata tactagctag tcctacataa gatgcatgct 600

tctatatcgt tgctctggat agatttggat tccgtgtcca ggctgtgctc atcaccaagt 660

ttttttggtc agcgcagcag ctttgtttcg ttgcgtcgtg ggtttggacc tgtccgtgct 720

ctgaactgga actggccggg gtttaaacaa aaccggatgc ggtcagaggg agtccattgg 780

ttcgtggcca gcttggccgg gttttgcatt gcggagctgt gcccgcttgt tggcttgtgc 840

cgtgcgcgca aacggaggtc aaagtgttaa gctacgttgg accattgtgc tcgttgaccc 900

cccagcggca gatgcgggag gcagggccct tgtatatgcg agcccaatgc cagatgcgta 960

caaccgctca ttttgctgtt ttaggtcttt aaaaataata cttcatgtag ctactctcac 1020

aaataagtga aagctgctaa tccagagatc gttctaagga aaatataggt atttctttgg 1080

agagagaggg ggattcaaac tacacaatat agctgttgag taccatttgt gacactagat 1140

actacca 1147

<210> 362
<211> 1163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96967_G1, chr3:25924878..25926040, Cluster 2

<400> 362
accaacaagc gacgaggatc tcgcgctcac acggcactgc gctgcacgta aactaaagaa 60

aaatccagga gagacgagag ggtccgtggt ttttttttac ttgatgacga ctgagctctc 120

atcagtttag tttagctcta aatgacatgg aagtatatat acatgctctc aagaagcact 180

ttttttgttt gacggcaccc gtaaaacagc acgttgcggg gcccgccaga ccaccaacaa 240

gcgacgagga tctcgcgctc acacggcact gcgctgcacg taaactaaag aaaaatccag 300

gagagacgag agggtccgtg gttttttttа cttgatgacg actgagctct catcagttta 360

gtttagctct aaatgacatg gaagtatata tacatgctct caagaagcac ttttttgtt 420

tgacggcacc cgtaaaacag cacgttgcgg cggagaaagt cggcattgac catcaccaat 480

acgacaccta gttgctaaat ttctgacgct gccgctactc atcatggatg tacacgtatt 540

ccggtggtgt acctacgacg tacgtaggag tacgatctag cctgctctag agcaagaatt 600

ggttggtgag gaataaacac tagtagtacc taccaaggca gcgagaggac caggaatgat 660

atgatatacg gaccgtgtgt gtgtgatctg tgatgtgatg tcatagggga tcagcattcg 720

catctctctc tctgtgcaaa tttccatccg caccgcctct tgcgtggacc attttcaatt 780

ctgcatgtgc atgcgtggtc aagttgcgat atgcacgcga ctcttgctgc tttgtttatt 840

attttgtttt atttttttg gttcaatcaa gcgacaacag tacctgcctc tgcctgcgtg 900

tttgaacaat aggggtaggg gcagctgggc gggggaatca aagcacacac acgcagagta 960

gtgagtgtaa tccacctagc agtttggcag ttagtatcac atagaaaact acataccaac 1020

gtagtaatta catattattg tggtgtactg aaaacgagat tcatagaagt gcaaaattat 1080

agcatccgtt catttttcta agggtgatta catacatata cagggctcgt ttaggagagc 1140

tctggtgtca tatgatgatt tgt 1163

<210> 363
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98130_G1, chr3:32243039..32244134, Cluster 2

<400> 363
tatagtatat cttggtgttg tctatgcact tgaaacatta aaaactacct tctagacaat 60

atacagtaat gctagccttt tctggtagct ccaagagtga cgttggatct ttctagctag 120

cagttaacta ggaccattaa tcacatcctt ataaacccaa caaaatactt ccattagtta 180

tttcgcattc tgttttgtcg gttaagacac aatgtagtgc acgatcagat ttaatataga 240

tagtcataca attaagatgt gagtttaatt gaacaacttg gtcatctagt gccactagat 300

gctaaattta tatgcatcac atataagcgg cacacgtgag agcaagtaaa aaaggtttat 360

tgagaacact ttgaaaacac taacttggct ctaacatgtt tggcaaaaaa aagagttaga 420

tgagaaagta ccatcgatgc aaattttcaa agtacaccag tgagacactg gatatgaaaa 480

tggcccaatt ttagttcaca tctttcggcc gagcaccatg gtgtctgttg tgcaccagat 540

aggatgtacc agaggtattc gatgaggcac tagatggcct atcggatagg gaactcagag 600

aacatgttga acacttaact ttagccttat aaggcgctag ccgtgtttag tgtggcacga 660

ggtatcacac tggatagggc acttcaagac catgttcttt tgtgcggatc agtccaacac 720

tcattagatg tgtccggtga agtatccgat gagtgcacca gatatctgac aagtttaata 780

ctagttcgat tgaaagggcg ccgacacatc tggtgtagag accaatgaag catcagacaa 840

atttgggtcc ctaatctcta ttttccaaat cataatgaca gattccttta tgaggttata 900

agtagatggc atggccaacc ttagctggca tccttcgacc actaacactt gcatatattt 960

cttgagcctt gagaaacacc ctccactcac ttgcaacaca tagttcatga cttgagtgag 1020

attgggacac tcctagtggg accaagtaac tcggtcctag tcggggaact cagactcgga 1080

ttggtcaact cagatt 1096

<210> 364
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9832_G1, chr1:52255980..52257213, Cluster 2

<400> 364
cgtccaaaca ggcccttatt ctaacctcac gccactgaaa cactccactg tacaacatgg 60

gactagctag cttggcgtgc agatatcgct gaaatcaaat gtgatagcgc cagaaatcac 120

aagaaacgaa aaagaatagc aaatggaact atggaagctc tgtgagcagg aggttttggt 180

tatttgcagt tcaacccaat cttgccatga tgagggcatg gtgatatcag gatgtggtaa 240

tcaaccactg ccacagcgtt cctgtttgct tagacttgcc ggcaacgtct aggcgccaca 300

ttagaatagt cctcgtgtga tactccccgc tttgactagc tgcgtctgcg tctccttcac 360

ttgatccttt ccgttgaatt aacgaccgcg ggggccttgg tggactctaa tctaacgccc 420

aatagccaca agttgatttt tttaataggt atataattta atgtgctaag gccaccaaac 480

atggtgatga caaggaaact agtatgattt aaaaaggcct ttttttgcga aatgatttaa 540

aagatccttg tatgaccata agtaaagggt aagtttctca ttttatcttt tgatatttat 600

ggctgcttta agagcatcat gccctcattc cctctaccta ggatctaggt caatggctga 660

tacaatacag tagtacctaa cttcaaggac aggaagctgt ttcattcttc ctgacgacag 720

caacaatcta ctaatcatgc acgactggtc atatatttca accatctaac cactggccat 780

gcttgctgct tcggttacat atatctatcc caaggtttac aaaaccagtc agaaccggcg 840

gtaaaaccgc ccggtttact gaaactgtcg gtgcgcggta ccggttaacc atcgtttttt 900

aattcattcc aaatttaaaa agttaggtct tttttataaa aaacgaaaac cacgggtaaa 960

ccttcctatt agctcggtaa accgccctat tggctcggta aaccgccact ttttaccggt 1020

aaaccggatt taatgtcaag attaagttcc aatttagaca tttagtggtc agtttagtta 1080

tattagtctt gtgtactatt gtatgccata tgtgaagatg ttatatgcta catgtgaata 1140

tgattaacgg tttgatacta tttttttgtc tagtttaagt gttaatttag tgccctgaca 1200

ttattagtgt ttaactgttt atacaggaca tgtt 1234

<210> 365
<211> 2379
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9811_G1, chr1:52159463..52161841, Cluster 3

<400> 365
aaaagctccg ccattttgtt gtccattagt tttgctctcc atcaggtggc cggcgggtct 60

cgctcgcctt ctcaatttta ccatgctcgc ggcaatgatg gccgtccccg tcgtcgtcga 120

agaagaagag gaaagattcg gcgggtttct ctgagaggcg ggcgaataca gtgagagcag 180

cgagacgtga tcaaagcaac cgcgtcctga tattttgtta ccgatggctg ctatcgctgt 240

cgtgtctgcc aggttctgga agtagtactg cacaagtgtc aagttttac tggcgctaca 300

aattgacgtc gtcgccacct gcaggaattg atgcatgatc ggaagagttc gtggagccat 360

aggattgtgc aggcgccggc cgagagccag cagacgacgt cagagagcgg aggcccgtcc 420

aagctctagg aagcttcctg gcaggtgcgc gcgagagcgg cggggagtga atgaattgcc 480

gaaagctcca cgccgccagc cagccagcca cctgcttctc tggatggcca cagagaggac 540

gcgagaattt gcttgaaaat gcctccggac gatcggattt ttgttctgtt ttgttttgct 600

gacgctacga acgtttcgat gattttggga acgaatggcc cgctagcgtg gcttccggtc 660

agagaggcat cactcgccgt cgccgcccag cgtcgctcgc tccacagaac gacagatcct 720

tgcgatcgca cccgatctgg atgtcctttt agaacgcagc cattcgttcg tgacgcccgg 780

tgcggtcagg tcggcatcgg gggcaaccca cccgccacgg cagtcggcgg ccccgacgaa 840

cgtcagtgcg tcatccgtgc cgtacccggc tccggcgcca cgtactagta ctggtagtac 900

ttggtaggca gcgcgcggag ggagctagag ccggtcgctt tccggccctg tccatttcgc 960

acgcagtaaa cttacgtggc caacaggcca agcacaacgg gccgctagct cagctgggcg 1020

tagcctgtac cagcaaccaa ccaacccaga cggccaaacc aaagacgccc acagcacaac 1080

gtcgcggggg ccgcggcaag cgcacgtcgt gctcgacggc cggatcgggc ggaaggaagc 1140

ttcgcggcag cttcgtcctg ggggcgcgga gtgggggcgg ttactacagc ctgcgggaca 1200

gcggcggagt caggtggatc tcagctcagc tcagggacgg gaaaacgacg cgcgggcggc 1260

ccgcgtggcc cacgacgcgc cggacggtcg cttggacctc tcgtcgccgt ccctatcaca 1320

tcggtcagtg tagcgtactg ggttgcctcg gcgcggcccg tgcgccgtgc ttatcttatc 1380

ttggctcgtc gtcggcctcc tccgcgccgc ggtgccgacc ggaccgacga ggtttccgtg 1440

cgacgcttct cttgcctggg actgggactg ggcaaacgga cgtgcatgcc caaccatgcg 1500

tggcgggact tgtgcggcca aatgtgggtg cgcgttttct gcggtcaaaa aggcgggcgg 1560

ggggtggcgg cgttcagtgc agtgcagccg ccggccggac tatacgtacg gcgctggatg 1620

atacgcgatg tgtgacctcc gttccgccca ccacgctgtg gactgtggtc gtcgacgtgc 1680

cggtgctatt ccgtgctggt tttcctgcgc tgttacgagc agcagagtac aatccacgtt 1740

tggttttttt tctctccctg cgcctcggtc gcgggcgcac cacggtcatg catgcacgag 1800

catgacggag agagacaaac gttttttat agatgctcga tcgaatttc ctctgttttg 1860

tatacatttc tgtttgtttg ctgctgtgtg tcgtctcgat atgttaattg agcttgtgca 1920

cgcgcgcgtt tcacgatttt tttgttacgt gcacgtggtc gagcaattag cagtatttga 1980

gttgagaaga atacagaata ctcgtgtcaa ctaaccacac tatttttgag ctgatggtat 2040

atttctcccg aacattttta gacccacaca caccgtttac atactctact cttgtctgtc 2100

cgtacctatt tgttctcgta aagattgaag caatcatgta gtttttttta tttgagatgg 2160

ctccgtgatt ccaaaactcc cctgtcgtac ctgttctcta agcatatttt tgtagattat 2220

ctgacgacga caatatcttg ccaacatcta ccacccgccg ccgccgttca tacgctagta 2280

gtattttatc tgttaccaca tcttctgacg acacaatggc aactccaacg agcagcgatt 2340

attagaagcg agcatctcgg gacatgattc agtaggaca 2379

<210> 366
<211> 2114
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10697_G1, chr1:57254686..57256799, Cluster 3

<400> 366
ttatattcta acaattttca tattctttca tccacgatgt tccgagagac gaccgtgatt 60

cctgccaagc acacgatgca tccagcaccg gtagagtgga gagctcaatc gctagccggt 120

gaatacaatg catagcgatg catggagctc cgcagtccac agttccacac cgacccatcc 180

acctgtgaaa cgatgcaagt tgccggatcc tggaggcctg ccctcgtctc gacccatcgc 240

tttctcgttc gtttttttct cgtccgaaac agccgcgcgc atgcatcggg aggcccagat 300

ggtccatgca tccacaatat cgtcacagtt cagaggcgaa agcgagcgcc ttgtctgtat 360

tttcatggca gtggcgcggc accccatcac aactcacaag ctgccgagat cggttagcta 420

tagctcgcat gcctgcgcgg ccggggagtg gaacgaacca ccagcccatc tcacccacgg 480

ccagtcgtcc atgtctgtgc atgcgtgcgc tgccgtgctt cgtgccactc gcgcatgtat 540

cacgggcgag cacaccagcg tcacgcatgg agggcgtctt tattaatttg tccccgcctg 600

cggcagtgca catgcatatt tgcaacagta tacaggctgc gggagtggtg ttcgtaccgg 660

ttggttcaag tcgcgccata tcagctatca acagtactac taccgatctt cttgctatcg 720

attttcgcca tcccttatct aaccagcgct ctaatacata atctttagct ttagtctata 780

cccatcttaa catcacatta gtttttttag acttttagtt gacaagaaac atgcgatttt 840

actaaaataa aaaagtatcc aattacataa ttaagcaaat aaaactatat aacttaaaca 900

tgaaaacaaa aagtacataa ttcataaata taactaataa actaccgctc ttactccatc 960

ttcctctacc acctctttga tcgtttctcc cttctctaat ttaagctgct ttgtcaactt 1020

tttcaaggct aatttgtagg ttctttttgt gtcttcgtcc atatcggcaa gtgaaacgat 1080

ccaacaattt attaaattac ttaaataatt tagtttgagc atttatctca ctagacttgt 1140

agtgcttctt ctctacattc cttctacgta gatgaagact cgttactact tgttgttggg 1200

ccattctctt tccattgagc tcttgtccta tcgtcatcaa taggatgtgg tgagtctaca 1260

cttttatgtg acactaggct atgatcaccg tccattttga gacaagatct tttccttaga 1320

ttacttgtca tcgctatcgt gcttcacaca tcacttaagc tgatagcgaa gagcgcgtca 1380

catgtgctcg agcttgaact cagattttta ggcttgttga agaaactata tttggccgct 1440

ttaagtagca tagcatcatc tgctccactc gaccaggtca tgtacaagtg gttgtagatg 1500

cagttaagga ggatgatctt tcggttgctc gtcgaccacc atttttttcaa ttgcttgggg 1560

tacgatggtg agaagcttct gtgaaggagt tgtatctatt gactatttgc ccctggaatg 1620

atgatccctc cttatcattg ccatcaatgg gatccaccaa ttatagtagc cacacatgca 1680

tctaaaaaat atgaacctaa aaactattat ggacctaaaa catatgtgga ctttcaaaaa 1740

tatgtgtact taccagcctt tcattcttca ctctttgtgc aatcccttca tagctaaaat 1800

tatggagtgc cagagtaagc atactagttc aaagcgacat cactgcatat gtttggtgac 1860

attgtcgtgg ctattggagg acgagcactg tacgaagtag gagcaccaaa cgagagaggg 1920

aattgcggat gagaaccata tggaataaca tatgtaggag gagccccata atccatatgg 1980

aggagcacaa tatggatatc catatggata tggaggatgg tatgggtaag gaaattgtgg 2040

tggctgctcc atatgttatc gattggtcag taccaatcca gatcgaccat gtgtaaccgg 2100

tcggtcagta ccaa 2114

<210> 367
<211> 6844
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_109456_G1, chr3:107457514..107464357, Cluster 3

<220>
<221> modified_base
<222> (663)..(663)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (663)..(663)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1975)..(1975)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1975)..(1975)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2194)..(2194)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2194)..(2293)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2195)..(2195)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2196)..(2196)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2197)..(2197)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2198)..(2198)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2199)..(2199)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2200)..(2200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2201)..(2201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2202)..(2202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2203)..(2203)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2204)..(2204)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2205)..(2205)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2206)..(2206)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2207)..(2207)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2208)..(2208)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2209)..(2209)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2210)..(2210)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (2211)..(2211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2212)..(2212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2213)..(2213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2214)..(2214)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2215)..(2215)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2216)..(2216)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2217)..(2217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2218)..(2218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2219)..(2219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2220)..(2220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2221)..(2221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2222)..(2222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2223)..(2223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2224)..(2224)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2225)..(2225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2226)..(2226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2227)..(2227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2228)..(2228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2229)..(2229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2230)..(2230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2231)..(2231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2232)..(2232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2233)..(2233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2234)..(2234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2235)..(2235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2236)..(2236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2237)..(2237)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2238)..(2238)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (2239)..(2239)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2240)..(2240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2241)..(2241)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2242)..(2242)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2243)..(2243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2244)..(2244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2245)..(2245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2246)..(2246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2247)..(2247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2248)..(2248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2249)..(2249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2250)..(2250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2251)..(2251)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (2252)..(2252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2253)..(2253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2254)..(2254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2255)..(2255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2256)..(2256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2257)..(2257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2258)..(2258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2259)..(2259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2260)..(2260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2261)..(2261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2262)..(2262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2263)..(2263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2264)..(2264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2265)..(2265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2266)..(2266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2267)..(2267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2268)..(2268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2269)..(2269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2270)..(2270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2271)..(2271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2272)..(2272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2273)..(2273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2274)..(2274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2275)..(2275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2276)..(2276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2277)..(2277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2278)..(2278)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (2279)..(2279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2280)..(2280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2281)..(2281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2282)..(2282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2283)..(2283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2284)..(2284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2285)..(2285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2286)..(2286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2287)..(2287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2288)..(2288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2289)..(2289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2290)..(2290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2291)..(2291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2292)..(2292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2293)..(2293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4555)..(4555)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (4555)..(4654)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (4556)..(4556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4557)..(4557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4558)..(4558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4559)..(4559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4560)..(4560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4561)..(4561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4562)..(4562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4563)..(4563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4564)..(4564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4565)..(4565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4566)..(4566)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (4567)..(4567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4568)..(4568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4569)..(4569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4570)..(4570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4571)..(4571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4572)..(4572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4573)..(4573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4574)..(4574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4575)..(4575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4576)..(4576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4577)..(4577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4578)..(4578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4579)..(4579)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (4580)..(4580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4581)..(4581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4582)..(4582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4583)..(4583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4584)..(4584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4585)..(4585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4586)..(4586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4587)..(4587)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4588)..(4588)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4589)..(4589)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4590)..(4590)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4591)..(4591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4592)..(4592)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4593)..(4593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4594)..(4594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4595)..(4595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4596)..(4596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4597)..(4597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4598)..(4598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4599)..(4599)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4600)..(4600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4601)..(4601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4602)..(4602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4603)..(4603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4604)..(4604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4605)..(4605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4606)..(4606)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (4607)..(4607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4608)..(4608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4609)..(4609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4610)..(4610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4611)..(4611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4612)..(4612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4613)..(4613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4614)..(4614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4615)..(4615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4616)..(4616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4617)..(4617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4618)..(4618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4619)..(4619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4620)..(4620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4621)..(4621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4622)..(4622)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4623)..(4623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4624)..(4624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4625)..(4625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4626)..(4626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4627)..(4627)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4628)..(4628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4629)..(4629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4630)..(4630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4631)..(4631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4632)..(4632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4633)..(4633)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4634)..(4634)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (4635)..(4635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4636)..(4636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4637)..(4637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4638)..(4638)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4639)..(4639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4640)..(4640)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4641)..(4641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4642)..(4642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4643)..(4643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4644)..(4644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4645)..(4645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4646)..(4646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4647)..(4647)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (4648)..(4648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4649)..(4649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4650)..(4650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4651)..(4651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4652)..(4652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4653)..(4653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (4654)..(4654)
<223> a, c, g, or t

<400> 367
gtgatgttgc gatctgtctg tctgacgatc gagcgtgaga gtgtcgcgat gtgtcgagag 60

tgcgagtcgc gtgagtcgtg tcgcgacgag acgtgtcgat gtgtgcgagc gatcgatatg 120

tgacgatgcg atgagagcga cgagtgactg agcgagcgag cgcgagcgat gtgcgatgtg 180

ttctcgcgag tcgagagtgt gtgcgcagag cgacgagcga cgatgtgtcg cagagatgcg 240

cgagatggcg agatgtgcgt gcgaggtgtg agatggtgat cgatggcgat cgatcgaggt 300

gtggcgagcg agtcgtgcga gcgcgcgagg aggacgtgga gacgagtgcg atcgatcgag 360

agagcgagtc gatcgagctc gatcgagcgc gacgcgatcg cagagcgaga gcgagagtgc 420

gacgagagcg agatgcgagc gatcgattgt gtcgacgcga gttcgagagt gagcgagtga 480

gacgatcgac gcgagagcga cgagcgatgc gtgcgcgacg cgatcgcgag tgtgtgatgt 540

gtcgacgtcg tcgacgagcg agagagagcg acgatgtcga gtgcgcgatc gagacgtcga 600

tcgacgacga tcgcgatccc gagcgacgtg cgagcgtggc gatgtgcgag tgtgatagcg 660

tgngtgcgat gcgatgcgcg agcgacgtgc gatgcgcgat gcgacgatgt gtgtgtgttg 720

aggtgtgtga tcgagcgagg cgtgcgacga cgcgattcgc cgacgacgag tcgatcgtgt 780

cgagtttctg tgcgatgtcg cgatcgtgag tgagcgagtc gatgagtgtc gatgtttgac 840

gaggtcgagg agagcgatag tgtgcgcgag ttgttgtgcg atgtcgcgat cgctgacgag 900

tcgagcgatc gacgagtgtg acgagatgtg cgagagtgac gactgatgcg tcgagacgat 960

gcgagtcgac gatgatgacg acgcgatatg cgatcgagtc gcgacgcgac gatgagcgat 1020

gcgagagtgt gagtcgatgt gctcgatgtc tcgagtgtcg atgtcgaggt gtcgacgagg 1080

tgcgtgtgcg acgctgagtc gatgtgtagc gagcgatcga gcgagcgatc gtgcgatcga 1140

cgatgtgtgt gcgagcgcag cgattgcgag cgatcgacga gagtgcgtgt gagtcgacga 1200

gatgatgcga gcgagtgatg tgtcgtgatg tgagagtgat gtcgatgagc gagtcgatgc 1260

gatgagcgag agcgagtgct cgttgttcgt cgagagtgtc gtgtgcgatg tgtcgagcga 1320

ctgtgtgtga gatgtgcgag agcgagcgag cgacgatgag tgtcgagtgt cgcgatcgcg 1380

acgatgtgag tgtgtgtcga tcgcgagcgc gatgatgtgt ttcgagtgcg agtgtgttgt 1440

cgtgagtggc gagcgtgcga tctgatgagc gaggacgaac gagtgcgagg acgcgaggtg 1500

tgtgtcgacg atcgacgtct cgatgacgcg acgaggtgtc gtgatcgccg agttgcgagc 1560

gcgatgcgcg tgcgatcgcg cgttgtgcga gtgcgacgcg atgtcgagtc gacgtgcgag 1620

cgacgagcgt gtgagagtcg agcgagtgcg cgatgcgagc tgtgagtgtg agccgacgcg 1680

atgctgagtc gatgtcgact gatgcgacga gtgcgagagt gtagatcgac gagagcgcga 1740

gcgcggatgt tgtcgctgag agcgagcgag tgtgcgatgc tgatcgagcg atggcgtcga 1800

gagcgactga tatggtcgag cgagtgcgcg actgagacgt cgcgcgagtg atcgagactg 1860

agtgtctgac tgacgagaga cgagatgacg actgagtgcg atcgagcgag tcgactgagt 1920

gatcgactcg agctctgact gtgacgcgag ctgatcgcag atcgcagaca gatcnatgac 1980

tctcgatgat gtgctgagga cgtgacgagt gctgacgatc gacgatgaga gtgatcgact 2040

cgatctgtct gacggaagac gcgtcgactg acgcagatgc tgcacctacg aacagtaatc 2100

tgtatatctc tacgatccat gtatgcaggc agtagctgca ctgcgagaat agatatgcgg 2160

cgagccacga gtcatgcgag gcgagtgcac acgnnnnnnn nnnnnnnnnn nnnnnnnnnn 2220

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2280

nnnnnnnnnn nnnatacgag agacgcagag cgacgacgac gcagacgagc gagagcgatg 2340

cagagcgcga ctgagcgagg cgacgtgtcg cgagtcgaga gtgacgaggt cgacgatgat 2400

gcgacgatgc gcgatcgagc gagtgtgcgc gagatcgacg tgacgatgtg tgttcgtgag 2460

tcgtgcgcga gcgatcgacg acgcgagacg cgacgatcga cgacgagtcg atcgtgacgc 2520

gagtgcgcga tcgcgacgat cgatgcgaga cgcgatgaga cgacgagtcc gatcgagtga 2580

gtgtgagcga gagcgatgag tgtcgatcgc tgcgatgcga tcgcgatcga tgtgtgacgc 2640

gtgtgcgacg tgagtgttgt gtcgagagag cgatgtcgcg agacgatgcg acgtgtgtgc 2700

gactaccgat tgtgtgtttg tcgatcgtga gcgatcgagt cgagatcgac gagtcgagtg 2760

tcgcgatcgc gatgcgcgat cgcgagagag tgcgtgtgtc gcgatcgcga cgatgagcgc 2820

gagtgcgacg atgtcgagtg tgtgcgtcga cgagttgcga tgatcgatga cgatgcgaga 2880

tgcgacgacg acgacgagtc gcgacgagac gacgagtgcg cgagcgacga tcgacgatgt 2940

gtgtgcgcga cgatgatgcg cgcgacgagc gaggagcgat gacgacgatc gcgacgagcg 3000

atcgcgattc gagcgacgac tgagtcgaga cgacgcgacg cgagagtgac gagtcgtcga 3060

cgacgtcgtg cgagcgagcg atcgcgcgag acgagtcgag agtgtgcgcg acgtgtgtgc 3120

tgcgagcgat gtgtgcgagc gtcgcgacga tcgcgactgt gtatgagtcg gagagatcgc 3180

gagcgaggcg tgatgcgacg agagtgtgtt gtgttgttgc gagcgagtgg cgacgagtgt 3240

gatgtgagtg tcgatgtgcg tggcgatcgt gcgtgacgag cgagtggtgc gatcgagcga 3300

tcgatgtcga gatcacgaga catgatgagt gtcgagtcgt cgagagtgtg tcgtgagatg 3360

gcgcgacgtg tgaggcgagt cgtcgagcga tgcagcgatg cgagttgcga gcgatcgacg 3420

atgcgaggcg acgtgcgcga gcgcgagaga gcgaggtgtg tcgtgacgac gacgcgcgag 3480

atgagcgagt gcgagagtgc gagtgtcgat tcgatgtggt gcgtgtgtgc gagtgtgcga 3540

gcgacgacga cgagcgtcgc gagtgtcgat tgcgcgacga tgtgtgtggc gcgcgagacg 3600

agcgagcgcg agagcgagtg tggcgtgtcg agcgtgcgtg ttccgagcga ggcggatgtg 3660

tggcgagcga gcgatgcgtg cgcgcgtgtc gcgatgcgcg acgcgtgcgt cgagacgatc 3720

gttcgagagc gtgacgacga gcgagtcgat gcgtgacgcg atgacgacga gcgatgcgag 3780

gtcgatcgtg cgtggcgcgt cgagtggtgc gacgagcgac gatgtgtgtc gtggcgatgt 3840

gcgagcgagc gagcgacgac gcgtgtgacg tcgacgtgcg atgtcgatgt tcgactgaga 3900

gtgtgagatg ttcgatgttg tgtgtggctg agatcgcgcg aggcgcgagc gcgacgagcg 3960

agacgatgtg tgtgtgtgcg atcgagttct atgatcgatg cgatcgatgt cgcgagaacg 4020

cgtgagcgag cgacgtcgag tcgatcgagc gcgcgagcga gattcgtgag tgagtcgaga 4080

tgtgagatga tgacgtgtga gatgtgcgat gaggtgtgat gacgatcgat cgaacgatcg 4140

atgcgacgcg atcgagcgac gagcgcagag ctgtcacagt cgatcgcgag cggacgatca 4200

cgagaccaga gcgacggagc gcgagagagg cgggtgtcgc gacgcgactg gtcgcagtgc 4260

gtgtcgcaga cgctgagtgc ttcgagtgtg atcgatgcgc tggactgtga gagcgcagac 4320

gcagcgcaga tgcgactgca tgagggtgtc tgagctgcag tactctgcag catgcagcgc 4380

cggctgctgc agagccgcgg agaggtctgc aggactgatc tgtctgcagt actgcagcag 4440

tagcagctgc gcagtatctc gtatacctgc gagcgcgata cacatctgct acgtgaaagc 4500

cacgcgacaa ggcacagcga gcagagcaac acgagaaata catgctcgat cgctnnnnnn 4560

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4620

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnncgagtc gacgactgac gcgatgtctg 4680

cgagtgtgcg cagagccgcg tcgacgagac gcgatcgtcg atgacgcggt gtgcgagtcg 4740

atgtcgaggc gcgatgctcg atcgcgagtc gcagacgaga cgacgagtcg atcggtgtga 4800

gacgatcgag acgtgacgcg acgcgaggcg agcgatgcga cgagtgcgcg agtcgatgtg 4860

cgacgtgagt gtgacgagtg tgcgagtgtc gcgagacgtg atggtcgcgg cgtgctgaga 4920

tgctgcagag cgagtgagcg ctgcgatgag gcgatgatgc gtggatggcg agtcgagggc 4980

gatgtgcgac gagtgtcgcg ctgagcgagt tcgacgagat gagcgagcga gcggcgatgt 5040

gtgcgcgtgc gtcgacgagg tgtgatcgag agcgagcgat tgagcgatcg cgatgtgtcg 5100

tgagcgtcga ttgtcgacga cgtgtcgaga tgacgtcgag tcgaagtgcg agtgatgttc 5160

gagtgatgtg tgacgatcga tgcgacgagt cgtgcgtgcg tgtctcgacg atgtgcgaga 5220

gcgatgatgt gagtttgtga tgagtgtgtg tgtcgagtga gtgtcgtcgc gtgacgatcg 5280

agagatcgag tgagtggcgt cgcgagtgag cgatctgtgt gatcgcgatg ttgatcgacg 5340

tcgacgagag ttgacgagtg agcgagtgcg acgtcgcgag acgtgcgaga cgacgtctga 5400

tgattgatga gcgacgagtg tcgtgcgatg tcgagtgtgt cgtcgtcgat gtgtgatgct 5460

gatgagcgat gtgcgacgat gcgcgatgat cgatcgcgat cgcgatgtgt gtgtgtgtgt 5520

cgacgcgaga tcgctatggc gatgttcgtg cgatcgatgc gcgcgatagc gcgcgatgat 5580

gcgcgagatg tgacgagatg agcgagtgcg cgagtgttcg agcgtgcgat agcgcgagag 5640

cgatgtcgat gtgcgagcgt ctgatgtgcg cgagcgacga gatgacgtgc gcgagcgaga 5700

tgtggtgtga gtgagtgtgc gacgacgatg cgtcgacgat tgtgtgcgtg tcgcgtcgat 5760

gcgtgtcgag tgtgtgggtg tcgtgagcga tgcgagtgcg agtgtgagtg cgagagcgat 5820

cgagtgtcgg cgagcgaggt cgagagtgcg agcgagtgtt ggtgtgtgtt cgacgacgtt 5880

ggttagtcga gagtgagcgt gcgagatcgc gagtgcgacg acgcgtgaga tcgcgagtgt 5940

gagtcgtgcg cgagcagacg attggtgtga cgatcgatcg agtgtgtcga gcgagccgag 6000

agcgatcgcg atgcgatcga gagatcgacg cgatcgagga gatcgagcga gcgagatgtg 6060

cgagttggcg atcgatgtcg atcgacgacg acggacgttc gacgtgagac gagcgcgtgc 6120

gagcgaggcg atgcgcgacg agcgagtgcg cgagagcgcg agacgtgtcg acgagtggcg 6180

acgcgagaag ctgatcgaga cgagagtcga tgagtcgaca acgcgatacg cgatgcgagc 6240

gcgtgtgtgt gcgtgatgcg tgagatcgcg agcgaagcgt gagtgctcga ttcgattgtg 6300

tgagcgatcg acgctgtgag tcgatgctga tcgagctgat ggtgtgatgt gtgtgcgatc 6360

gctgagtgcg cgtgtgagcg atgatgacga ttcgagtcga gtcgacgcga gcgcgcgaga 6420

ggcgcagttc tgtgacgatc gagagagtgc agagcgcgtc ggatgtgcga tgagcgcgat 6480

gcgatgtcgc agtcgcgacg tcgagtgcga tgtgcgatgc gacgcgagcg agatcgatcg 6540

tcgacgacga tcagacgacg atgatgacga gaggtgcgcg atctgatgcg atggcgatgt 6600

ggctgagagt gtgctgatgt gtgtgtgcga gacgtggttg tgacgcgcgt acgatggcgc 6660

agctgacgag ctgatgtgcg ctgagcgact gtcgcagagg agcgaccgat agcgggctgt 6720

ggctgctgtc tggacgctgt atggttcggt agcaggtgat gctgcagtgg cgcggcaagc 6780

tgcgagctgg cgagtcagcg gatcgtgctc gctgtgcatg gcagcagctg tagcatgtgt 6840

ctgt 6844

<210> 368
<211> 2272
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112750_G1, chr3:129034860..129037131, Cluster 3

<400> 368
gaatcgattc ttctttttt tggtaagcat ctgagacaaa ttagattatt gatcctaacc 60

atggttagtt tattgataat agtagtagag atttgtggag taaaaaaata gaaggcaagc 120

tacatgtttt gttttgtaaa atagaaggca aattatagtt ttaggaaaat ccttagaaac 180

tgatcccctg caatgaacac aggagcttgc aagagtgacc gtgtttttgt aacgcgacag 240

ctcatgtgtg agatagccaa caacaggtat gcgtcatcat tcatttcaaa aagggacgat 300

gcctcttttg agatatcagt gaagcaagca cacctgattt agctacaatg tgatgaacga 360

acaaatgttt cttgggagaa cactatttta gttgtagatc ttgccaacat ttaaattttg 420

agattattaa tatgagagcc atgaaagata tatttgttac atggagcaag caggcatttt 480

gcccacaatt ttaaaaataa aaagcataag attgtcaatt gttggcacat gattttctat 540

aataataaag tggagaacgg agttgtatca aacgtgttat tatgatacta caacttgtat 600

ttggagggtg aggcaataaa aaacgtgtta tcatgtgaaa tataaagact gatggttctc 660

attgtaatat gtgttcatgc aacataaaca acaacaaaaa gataagagaa cattgaggaa 720

aagtataaat aaagtgaatt catccctaaa gcatgagctc taatttactc aaaggaaccc 780

aaaagaggag cacagtaaac atgcccatat gcaaacaaat gcgaaattat tctataataa 840

atgtcacaca aatatgatat atgtgccctc catagtgcca gccaccttaa atcttggtgt 900

ttgcgtgtat ttagggatcg acatctcaag gttgaaagtc ctgccctgta atcgctacac 960

aactctaaat gctgctacaa tgctagacca ttttttgttg ccttatgaac taccaccacc 1020

tgtaatgaca aaatgtgtaa aattgtcatg aactacatac atcaagaaaa gaaaaggtca 1080

actcaatcca ccagatttca tacctgtcat atggaagatg aacaatctca gtacaaaagc 1140

aaggaaaatg gaggcttgtt tagtgcatat ttcatggttg tcatagtagg aaatgttgat 1200

tctttaggca tgatgaaagg gaagaagaaa gtctcctctt cgtaagccgc cctatctggg 1260

aaggtcaagt tcaaggtaaa aacaaatgaa tggcaacatt gacagaaaaa attatggtgc 1320

agatgagcat tatgcctcac accatagaat ttatctggat aattcatatc aaatagataa 1380

gagtgtgagg catgagaaaa aaagaccatc tcatcttggg agattgctaa caagtcagat 1440

gttggaaatg atggtgacgt caatatatct gccatgtttg atgagaaata agatgttttg 1500

ccatttgcat ctgcatccct tccttctcca gaacccattt taataaatga acagtgggtg 1560

tgctacgaca agtgtgagaa ttggcaactt ctactctatg ggatgaatcg agatatactt 1620

cccaaaaatg gcggtgtagt atgcagagtt ggttgtaagt tcatccactt cgttcaattt 1680

cttgcagtgg tggccttgct gctccaagat cccattgaat ttgattaagt gttgttaaat 1740

gctttatttg gtttttaagt gcccttattt tggtatttgc aaatcgttgt aggcctcgaa 1800

tgaatagttg caaaataact gaagatgaaa tcataggagc cctttgggca ctttatatgg 1860

ttcctacacc tggaaataac attaaggatg gtggccatga taatgctatg acaggcatag 1920

gcacaactat tgctccaacg tttcatggaa atataatgtc tatcatttca ctagtttcag 1980

agggttcatc tttagatgga ttgaatatta gcccattcat atgaagagat ggattacagg 2040

tggctggtga gggagaatcc acagtcagag tttggggatt atgaagggga tacgggtaca 2100

gtggctgcaa actgctgatc tacttactga aggtgatgga gcaggagctt cttcttgcaa 2160

gagtccagga cgtcccagag cttctttgcc ccatcactgc cgctacaact ggaggttgtc 2220

tgagcccgag aagacaagaa gggcgcagcg gggggatggc gtgggaggga gg 2272

<210> 369
<211> 1465
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116807_G1, chr3:153776773..153778237, Cluster 3

<400> 369
tgacaccctg tagtaatttt agcatagtga aggtccacgg ttacaaaatg catgcacata 60

atagcccatc actcatatgt acgacacaca acaacgcaca cacgtttgta attcacacat 120

cctctctgtg tcggctccat ccatttgtat tgcagccatc tccggtctct ccaatccaca 180

attcagcccc tcctttgatt ttattctgga tccgccactg gcactgacat attaagaggc 240

gcttgatttg ttaaactcaa tattaagggg gtgtttggga gtggagtatt tttctctgct 300

tttagagaat attgtggtat atgtgatatt ttttataata tggtgtcgtt tggtaacatc 360

ttcaaaaact atgtttgcaa aactgtggtt ttggctatgc tacagttttc tcacggtatt 420

ggaaacttag gtcactgtgg taaaaaataa tgtggatata tgttgacatt tcaaaatggt 480

agtattggtt ttaaaataat ttgtttataa acatgggcta agtatttctt taactatgcg 540

tatactctag ataagctttg tttgacatgg agtcacggag catccaagaa aaaaaaacca 600

cgtcacatcg agaatcccca acccgttggc atcagggctc gaccgttgtg tagcgggcag 660

gttcatttgt tctttttttct ttgtaatggc aggagattgc tttgctcaca aataatacat 720

gacgttgatt ctgttcatat ttttaatcgt atacatgcca tcagctatac tctatttgta 780

gaaagtatat gtatcaatcg agtgttttaa cacttggttg ttctctcttc ttctctaaac 840

atgtagcctt tggagaaaaa aaactcgatg gccatgacga cagccaggga ggaagaaaga 900

gatgacgcca gacacggtaa ggagctccac gaataccctt atttgaggcg aggcccgtta 960

ctggcgtttt tttccgtgag gtgcaggcct gcctgctgaa tctcgccgtc agatatctaa 1020

gggcccagga gagaccgata ggcccaactg cctaacgtgc acagcgggcc cagccagaga 1080

tcgcaagggt cctgatgccg tcgtgccgct gccgcccccc acagcctgag cccgtcatat 1140

cacggccaga aaaagcctcc cactacacta cccatccgat ctgatgataa aaagagagag 1200

aaagtaaaaa aaaaaagagg cggagcaaca aaacggacac ccttttttg ccctcctaga 1260

ccaaacaatg taagtacgta cactggacag gattggaagt tggaacaagg aacagcagtg 1320

attagacttg agcgaagcaa acaaaggtac tccactctcg gcgtcggttg gtttatattg 1380

gacgatgacg gtgaaagctc aactacaacc accgccaccg cacaagaaac atgagccgtc 1440

ttaacagcag cagtagtact atata 1465

<210> 370
<211> 1724
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117888_G1, chr3:159860232..159861955, Cluster 3

<400> 370
tatcacacta aaatttgata ccagcctaat caaatttgtt acggccagta atcgagcgta 60

aatcattatt attaccattt gcgttacatt tcttgaacca aacagtagca tgcatatgtt 120

ttttttataa tatagatttt ttttgaaaaa tatgtacgtt ctcgtagata ctactacttg 180

tgtcaaagcg tggtactggg gagagtctgt gtggttgtcc taaggacacc ccaataatgg 240

ttaatttttt tgtaataagg acagcaaata aataaaaatg ttgatgtgac attacaatta 300

atgagagata atgaaattga tttttttttat aagaaaagta tgtatgttta tagagaaacc 360

agcaaaaaaa gacagtgata ggttatgata tcagagataa ggtagttgac tgaataaaaa 420

aagcaagaaa attaagaaac catccattga gattaaataa aatatctata tatgtgtagc 480

atctataata actggggggt atatatagaa actatatcac gatctatatg cttttattta 540

aatcccaagt cccaatacct tgtaagcaat gtaaatgaga tcatgggcgg cgcgttattc 600

gtattcttcc cggttgccat caccccttg tcaatggttt tccgataccg gagccgcgcg 660

catccgtcat gtcatgtggc agcagatgca tgagagcaga gcagcaagca aaaactattg 720

ggaaaaaaca aacaaacaaa tggttctgcg caacacgctg agatatttga ccaagctagc 780

taggggcttc ccgtgtagct tcaggaggca aaatcaggcc cgcgctcagg ctcgaccagc 840

cgagaaagaa gatttgacca agctaacatc tgtactattt catccatctc tctcgaaacg 900

acgaattgct actgcaacgt ttctagaacg gctccgcggt tttatggctc gagccgaaag 960

cccagccgaa actatgctaa gaaactgcac atgggggaat tctgcagttg cggcccacca 1020

cgacacgaca cgacaggtca tcctagcttc agcagccgtt ggattggatg taatgtaacg 1080

cggcttagat ttcggaatgt cgacaaaagc tgggtgtgta ttgcaaatgc atgcacggaa 1140

tggaataaag ctgaaaagaa agaagctata tgcgtgctgc gcaaaaggaa atatggaaat 1200

gccgctggtg ctcatccggt ccggggcccc ttttcctccc ctccgatctc ctttttttt 1260

ttttttgcc cccgctgctt caagagactt tagatcagaa tgaatgcccg ctggatgctg 1320

ggggctttgg gaaagccgag tcgcatttgg tgccgccgtg gcggggctct gaggtcgggt 1380

cgggacgagc acgagccggc cgggggacga agaaggggcc atgcatgccg gcgtgtggcg 1440

tgggaggtgg ccaccggagc cagggaggtc gccggcgtag gagcctgagg cacacgacag 1500

aatagaaacg aaacggtact gagatctctc tgtgtgtgtg tgagtgtgac cagtgacgat 1560

ggctgccgtt aataatttct attcaactct acgacaagat acaaaaaaaa aattaatata 1620

cgattttcta aaggacttaa ccaaaacgac ggatcaagtc ttcatcgttt tggcaattaa 1680

atttcgtaaa gttggatcgt gtttttcgta tagaagtata tata 1724

<210> 371
<211> 1494
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117891_G1, chr3:159865916..159867409, Cluster 3

<400> 371
tccatggcat ttaacgccag cgccatcagt cggggtcacg ctactagact agcggtgctg 60

tgctgtgctg tgcatggatc ggcagaccct gcggagagtc cccgactgat ggatatgtat 120

ggacagacga gcaacgggcg tgcgtgtggt ctgggtggtg ctagtcttct ttctcccctc 180

tctttactcc cgacttcaaa gtccatggcg agcacgtgca cgagagcacg ccgcctgctt 240

ttcgctgtga aacccgtgac cttgctcttg gctttggctt tacctctttt ttttctgtct 300

agtatagtgc aacgcgatcg cctttgcgtc gcggttcagg gttcactaag ccgcttccct 360

tttgtgtctg tgtttttttc taaagtttta ctagcagctg ctctgctact cctctcccgt 420

cttccaccca ccacgggccg gtcaaaaaga gcacgggtag ggtagtaatt aatcatcact 480

catcagatct ggggtccgtc cccgcgtcct cagagctgtt ttttttgcct gaaaagggat 540

catgctagga attaatatgc cgtttggttt acagaatgag ccactgcatc atattctgct 600

cctaaaattt ttatatgatt tgtggaattg aatgatttga tctatcatta cctcattcga 660

ttatctcaca aattttgata aatggactcg tggtgcacta ttttatttta gataaagtga 720

ttactcaaat caaacgccct ttaagatcgc catctccttc cttggtatga tgaagagtaa 780

aagtggccct gtttcttatc atcatgtatc tgtttttcac tctctccact tcatcagatg 840

acacatgcaa ttcggtcctc ctgagctaaa ataccaaaaa gaagaagaat acgagaaaaa 900

gacgaggaga acaaagcggg ggtagtaagc tacggagtga ataaattgct ggagaggaga 960

gggacagatg gtagtgggag tgggagcagt acaagggatc caatacaaga ccggaagaaa 1020

aaaaaaaaga gacccgaaaa gtgtcgcatt gcacgctttg ccactaccgg atccgcgctc 1080

acaccttgtg tctttcccac tcccataacc catgattcta ccccctttat caacaaaggg 1140

gagaaaaaaa cgggtaaaaa ggagcaagcc cgtgaaagag gcaggcgatg tatgtttatt 1200

tcctcccctc ccctctctct atatatatcc tctccttcgt ttcctcgaac aaaagtgatt 1260

ttcagattcg atccctcccg cacgacacaa cgggcggaac caaaaggcca gaacagactg 1320

aacctttttt tctctccttt tatatatatg tgaataaggg cctgtttgag agagatttgc 1380

ttcaaaaact tcagctttgg ttttccagtt tcactataaa acaactccag caaattgtta 1440

aagtgagttc cagtagtgtt tggtttgtat atgagcttca acttttatag taca 1494

<210> 372
<211> 1885
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117981_G1, chr3:160569485..160571369, Cluster 3

<400> 372
acgccaaagc gacgttcgtg tgagccacaa cggagcaccc ctcctccttt ctctacgaag 60

gtggcgtgat tgtgtggcca cgacatcgct tcttcacacg gagttgccgt cgtcgtgccg 120

ggaaccccat cccatcaaac gcctcttctc gccgagctat acgacaccag gagccacatg 180

cccctcccca acattcgcgc tgcggcgcgg tcgtccagcc acgatgtcgc ttcttctcac 240

agagctgcac gccgcctgga tccgcacccc cttctcgccc tccggccttc tcacgcccag 300

cgaaactact aggccccgcc agcctgacga gcggcagcag gacgagtggg gtttcaaaac 360

ctccatggtt tgcatcaacg gcttgcccac caaccggtgt tgatgaaggt cctcctccat 420

ggtctgcatt caccattgtc ggttacagac gagtttcctc aagatgcact gccattcaca 480

tctacttcat agtgaaacct ccaaaatgat ttttttctc tacacgacct ccatacctaa 540

taaactatgg atagaatcct ttacataatt taaatttttt tcaaactatt ggattataat 600

ccatgattag tttaaccgaa taatttttt gagtatgctt agattatttg gagacatgaa 660

tttaatttca gtccatacta gtttaaagtt ggattggtat aaattaacaa ggccttagaa 720

agtgagctcg tggaggcaga gatgtggatg attgaggatt gtatttatag gcaccgattg 780

acgtacggag accaatgcgc ggccgcgggt gctgagtcct cctgaccaat tattggaggc 840

gcgcgatgag accagtgcag atgatccgat ggccgtaaac ttttttttcc actgggaaac 900

agttaataga gggcagagaa cacctatacg tacgtcagag ttgaagtagg cattcagatc 960

gatcatcagg tcggcgatga cgacgtgtag ggtaaacgta tcaatcagag attcagagag 1020

agatggcaat ggattggatg cctgcatatg ctgcggcatt ctgcgtgcgt cgtccacggc 1080

gaagaagcta gggtatgcca tcatataggt actatggcca caccgtatat gcctgccact 1140

tgcatggcct ggtttagtca cgatgatgcg acggggcaga tgaacgatgg aaaacgacct 1200

cttcttcgtt cgtccaatcg ttcatatctg gccgctgtac gtatattctg cgtcgttaga 1260

acgatggttt attatttatc tttgtatcat aacaatgtat attacagtac tgaattggat 1320

tggattggat ttgaagtcca atgttctgat cttttcgatc ccttcatctg taatgagtga 1380

tggtgaataa ataacaacat ccgcttcgtc agggaacgaa gatcaaccaa gaaagcacaa 1440

ggtacaagtt gcacctgagt ttaattagtg cctggaggag aggagagaac aaaaaagcaa 1500

tatgccaata agcggggacg cacatctata ttatataggc agcaagagct taaatctgta 1560

attaacaagc gctttgttat gttaaagaat aatacaacga agagtaccaa tatttatact 1620

tacacagtta taccatcaaa ttaatatcac caggtacacc ataatgtgtg tataatgtgt 1680

gtatacatat gcatacatac atacacacaa tgggagtagg gcgggtgggg cttgagcccc 1740

tctacggatc ctcaacccat agaaccccca gaattctctc ctaaaattta aaatctacat 1800

agtacgatgt catggtgtat ttttatggtt tttaaactat taaatatgtc tattgcgaat 1860

tatttagtga gattatattg ttata 1885

<210> 373
<211> 1807
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118016_G1, chr3:160766668..160768474, Cluster 3

<400> 373
acttatatct ttctcgacct tttagctgag ctaaaatgta atatttgttc ttgtcagatt 60

aatataactt tgatattaaa tttgttttta tggcattttt actaggaggg ttcaccactt 120

ggtttcacgt gttgcactaa ttgtttgccg ttgtaatgct cgtgtattgt tctagtatta 180

gtgtgttcct gagccgcgtg catcgactga tctccaattt ttcatgcctc tcgtctccag 240

cgagcgcgtg gtgtgcagca gtgcaagtta gctaacgacg cgtcattgac ggttgccatt 300

aaatgttaaa tcagtgttta cttccgtcgt ctgctgttgt ctcaccgacg cttttcttct 360

ccctgcaccc acacaacaca agcgtggtca actttagcgc caacagaaaa agaaaccggc 420

cacgataaaa cttggcgcaa acgtgaaaaa aaagaccgca cagtccatct gcacggcgcg 480

ctagcaagaa tagaaagtgg caatcataag tcatgctgcc ccatgctccg tggtattgta 540

caatgcaaaa taacagcaca aaaaaaaaaa gagatatcat gtgttcgtgg gtcacgagtg 600

gtaggcagac tagcgcttcc actgtgtctc gacgcttggt cggtcactta tgacggatcg 660

gtttcgagcc agtcatggat ccacttgagt ggtttttctt cggcacgctc ggccccctgt 720

tcggttccgt catgctgacc ccggctcagt gccgtgagcc ggatatgtcc gggggctagt 780

tgttcaaggg tagatgttat ctgtctactc cgactgacca tctagcccta cttgctagag 840

gccttttcc ccgatgtgct tactgaccga tgggccccaa agaccgagga ttgtatcccg 900

gtcacccttc ctctattcta aaaagcgatg gtaatagata taaatttcat gaaaccaata 960

agaacatgat gcaactaaac aaataaaagc tagttttaga taggggagag tagctttttt 1020

gttttgaaga aactgataat tcaatttcta taaaccagga cgtaaattga tatgtttaga 1080

attactctag tttctataaa ctagtttctt aaatactgga caccccaact tttcgctgaa 1140

taaggtgaat gtgtacccaa tgtgaatctt tgaacgggtg catcatacgg gagtaattgt 1200

ttcgaatcgt cttggcactc gtatatgaga atcttgtctg cgcaccaata acctgttatt 1260

gcggctatat tgtgcctcat ttttttagca ctacttaaat gtacgtaaag ctcataccat 1320

tctttttaaa ataaaacctt agaaagttac tgggaaatgt actagttgtc taaattttca 1380

tcggcacata ccctggtgtt gggttgaatt atgtattgta gttttcttta taaaatgcgt 1440

gctcacattg gcaaagataa ggaatgtgta gtcttctgta gcaagcttaa aaattattaa 1500

caagtcttac gaatatctga ctcttcaaac cttaagcatc aattcaggta gtgtcaatat 1560

tgctggaaaa gcgctctacg agtagcatct aacgcaggtg gccaaagcaa actcctgcta 1620

ccatattccg cctcacatag tcacacatat attcgcgcgt attggagcag agcgggcggc 1680

agagacgtat cgtggaggtt caactcatcg ataagcacat atatcggcgc aaggaattag 1740

tacggtatag tggttattgt actcataacc cttttgcatg ttgttcaaat tattgagttt 1800

atatact 1807

<210> 374
<211> 2941
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121962_G1, chr3:184356153..184359093, Cluster 3

<400> 374
acttgtaggc agcgagcgcc tgatgcaatg caacggagag cgcgcggttg ttcaagtcca 60

agccaccgac gtctggttgc agtaacgaac tgcgaggata tggatggagc cgtcgatctg 120

aactcagtag aaaaaatggt atgcattgca tgcatcgctg ctcccgacaa cttccgagag 180

gggtcctctc cgctcgtcga atacccgcca acagtgttca accaccgatc gtagtcggta 240

gtcatgtctg aaccacgcct gaacccacac gcaacgccta cggtacggcg tgcccagcct 300

gcatccatcc atgtctccgc ctccggtacg gtggtgctcg agagtcgaga taggatagga 360

gtagatgcgc gcggacgacg tcaggacagg ttggtgcatg ggaagaagct tcctgtgctg 420

tgccgatctc attctatctc tccactccag tgcggggacg acctgcatcc ccgtttacag 480

ctccagtgct caacagctcc agtgttggtt tctcgccgtg atcttgtgga tggttcttct 540

gagctcatgc ctcaatgcct ggcaagtgcc agtaactgcc gaaagtaaca acacctcacg 600

cttctcacat ctcgagagat tcagacatgc ccatattgca ttcacagagg caattcaagt 660

gcagtagtgg aagtccagcg agtgcccacc ggagcatgca tgcatggcgc tcttctctcg 720

ttctgcaaca gtccgaggct ccgagcagga gcactagcag catagagctc ggctcgcact 780

gcgtaccact ctgcgcgata ttgacagaga gacagcaggg ttttactcgg actgtggaag 840

agcttgtgct tgtctaccac aagcagccta ttcacgtgcg ctgacagatg ggacgctgtg 900

aaactggaca aaacatgggc gggccgccca gagcggcgat gcttttgctt cgacacggcg 960

taggaaaaca gtcaagggta acatggacat gacaaaaagc gagaaaaaaa agaagaagag 1020

aggaaagcaa tagtctgtga gcaggcaaaa gagaaacaaa agggtttgac gaagcagaga 1080

tggcgccaat gattgcaatg attagcagga cgcgatggcg ccaataaggg aggacgggtg 1140

ggggtggggg gggggggggg gggggggttg agatattggc atcagccaca gtcatcagga 1200

gaggctcctg cccgccggcg tggaaggttt cgcctagggc ccttgtgctt ggcccgggct 1260

gatcgcccgc attgatgatc gcgtggaagg tttcgcggac cgcaggggtt tcgtgtcgtc 1320

tcgctgcagc agtacgtgtt tcacacaggg gtcgccgcgg gctcggcgac ccggctgcag 1380

gatcgatcgg cgcttcaagt tccagcagca ggacctgccc tctgtggcgg tgcacggatg 1440

cgttcggcga gacaaggacc tgccgtgttt tgcattctcg tgtcgtggtc gtggtcgtgg 1500

ctggtggcag taccagtacg tgcgcctgtg cgagtgcgag agcctactgt ttgtctgcag 1560

ttgttggccg ttcaattcac ttggactgga cgtaccccgt tccgtcacgg ggccgccggc 1620

cgtgatcccg tcacagtaga caccacacca gtaagtacag tctttaccca agcaccgtag 1680

gagtagagat cagagcaacc agtccctccc taaaagaaac gatcttggga cggtcaacgc 1740

gactgctggc gtgccggcca acctcagaga tatgcaggtc gtctgggcac tgcagcatga 1800

gttcttagag gagccgaaga agggccctgc ttcatcggtc atctcaagca gtgcctctcc 1860

atcagaggtc ttcaactgcc cattggacct tccctgcagt tcagagcaaa cgctgccata 1920

tttttcagac tttgaacaga acatcccggg cacgcgcata cactgaccga actgagttgc 1980

agagaaaagc agtgaacgta tacatatttc gcagcaccgc aacagtaagc tatgctactt 2040

tgagatcttg gcacttctta atttaggcag taaggagtga tggatataga cattagacta 2100

gttcttagat atcttagact gttgaatttt gtgaccgcat cttataataa accggcagtg 2160

tctcactaaa ctatctatat ataccagggc atgttacctg aatcaatgtt ggaagtggtt 2220

ggataattat gatgcatatt tgaaaaccat tcatattgtg gtcgtctctg caatcttcta 2280

ggccatctgg aagtctagaa acaaagtgtg ctttgaaaag acattaataa aatctcctaa 2340

agatatcatc tgtcatatgc atgtgcattg atgaactttt gggcaggttt aaacaagaag 2400

gagctccagg acttaattca ggagggcgct aagctacttg ttacttgtta gggccgccag 2460

catcaagtta gctagtcctg aggataatca gaaagatgaa aactccgaag aaatcattga 2520

agattgatgc aaccgagcga agtcgttaaa ttctagaagc gaagttgttg aattctgaaa 2580

gtgtgcttgg ctggtgtctg ctgggattca tctttatttt catgtttggt ggatcgatgg 2640

cccctgtgtg ggtgtttttc tgttgtcttt agacctttg gttgcctccg tggctgaggt 2700

ggtttcaagt aaaattgggt gctggttggt tgaggatagt ctctgaatca gggaggtact 2760

ctcttttggt taaactttga atgttggtgg gtcatggacg aatagcctag gtagtagttt 2820

gttccttggg atttctgtta tgcatggtat gttcggatgt atttctgata tgaaaataat 2880

agaaatgagg tctcctcggt tcaaaaaaaa aaaggagcag cactgctgtc aaactcgttc 2940

c 2941

<210> 375
<211> 1588
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_12197_G1, chr1:66316230..66317817, Cluster 3

<400> 375
ctatcatgga tgtcacgtcc cattgtcgtc tttcggggac ggctggcgcc ccgtcgcgtt 60

cccattacag cgaacgtacg tgaccacgtt cctatttgaa tatgtacgta tcattatgta 120

cttgacgaga gggaagatgc atgcatacag ttaagcagac cgggtcagcg attctctcct 180

cgattatccc gcccacaaga caacagacta tttttcttgt gtacgtcaat ggtccagtcg 240

tggaagtatt aaaaaaatta caactagcga ttttttttg ttttttgtag acggtccaca 300

cgtacggtga acagttggcg agaaacagtg tacatgcatg tagaccgtgt ccgcggtacg 360

tacgtattac acaaattacg cattttgta ctttttaaa atataaaaca aatcacagta 420

tagtaggtgc cagtggcaca aacaagaata gtagtagcta gcaggctgac accaccaata 480

gacagttgac acaaacaaaa acacatatat acatgcagca tcacaccgtc tagttctcag 540

cttctgagtt ctgacacaat gagttggagt agatcataaa cgacagtagt gcggcatata 600

tatgacatca caattcagtt caaagggttc aaactttaaa cacaaataaa tacgtcaaca 660

aatagaaata cagcatcaaa gatcgatcac cattattcca tgtgccgttt tcttgcaaac 720

cgagggttcg ttggcaatgg cagcacggtg cattatattc ctgaagctgg tgacgacgtg 780

gtccagccgg ccagtggacg tacgaacgtc acatggaacg gtgtgtgtgt gtgtgtgtgt 840

gggggtgggg gggggggggg gggggttctg gcggccaggc agggagcggg gtccagatgt 900

agcgtagctt tcccaatatc aattttattt agggatacga ccaattaaga cacacaatcc 960

aattaattaa cgtatttatg tttatacatt aggtttagcg tagctttccc aatctcaatc 1020

ttcacctccc tacgtgcttt ggttgggtgg cctacggacc caaagcagcc caacatggta 1080

cagccagtgg acgtacgaac gccgcatgga acggtggggg tctggcggcc agggagcgga 1140

tctgcatgca tattattatt gtatgtacgg gcggtgccgt cggatcggga cgggaacggg 1200

agggggcggc gtctgcgaaa gggaggggga gttcgccatt ttcgaagctc ccaaaaacgg 1260

gccgcgcgtc gcgggagcgg gaggtccacg cgctgggaaa atcaacatgg cgggcgggcg 1320

ggcgcgcagg acaacgccac gagagaaacg ggcccgtgtg gttcgtccct gcgtgtggca 1380

ggcaatggca gtctggcacc cagcggtgtc tcgtaccgcg tgcgcgcgtg aacggcgtgg 1440

gcgcggcgtt gggttgggca ccgtgtgggg cgcacccgtc acgggatacg tgcggagtag 1500

gtgttccgac cagaaaaaag cgggatgttg tctcaactct tatctctact acaccttgag 1560

gctcgagcga gggcgtccac cgacctca 1588

<210> 376
<211> 2449
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121999_G1, chr3:184452843..184455291, Cluster 3

<400> 376
tgtgcatgga gggggcggag agctctcgcc gccgaagtac ttcgaatccg tgatatagaa 60

gggcatgtcg ttggaaggtg gatggaacca taattatgat atagaagggg acgaacaatt 120

cagcaaatac tatatagtga aaaatatcgt agattatata cacatgctta tactaatttg 180

cgtatagtat agataataaa ttaacaaaaa aacttgcacc atgcatataa ttgtatatat 240

taattaactc caacagagat caaaataatt tgtctctacg acaattgtgc aaattaaaag 300

cttcgattac atcatgaggg ctaatcatag ctgtcaattc tatatcaata gttgatcaag 360

taacttcgca taaaatcatc tcccgtttaa tttcgtagat gtgttttgat aagttttgta 420

gctaaaagga tctctaagtt gagaccggaa gggtgaccat taatcttaat atataatccg 480

tgaaccattt gatgatacat gaaactttta cataatttgg caagactttt ttatcaaatc 540

aacaagtgat cgtaacgtgt tttggcgcta aatggttgta tactgaaggt gaagcatcaa 600

attcatcgcg cgcagctact atccggtgac aattttggac tgaaattcat cgattttatc 660

attataggaa cgagattgat gcttaaaaat gcgacaaatt tctcctggat agagaaattt 720

attttgacca aataaaattc tgtatccctg tgtagataca attttagaaa gtacacatct 780

gtaaaaactc tccctttttat gactttggtt actttcagct tattatttat gttcaacagt 840

tttgagactt acagttgagc tatgcttatc ttgtgccatg tgcaccaata tatagccgtg 900

gtttaaatag tgtggttgct attgttgatg tctgctgaaa cttaacatgt gtatatcatc 960

cctgtctaga tccctgcagc ttgccgaaca tgttcgcagg agactggaac gttaaccccg 1020

caagctgcat atatacgcag tcgatcagtg gatgtcttct tccagtccgg ccgccgctga 1080

gggtgaggag tggccgacat ggaaggaagg aatgatcggg ggagagggcc gcctacgccc 1140

gacgctcttg gtttgaggag gaaattcctg acacggttgc tttacgccgg aaaagcagat 1200

caagttgtgc gacgtacgag agtcataaag ttgggagatc agcgtgaggt ctcttcggca 1260

cgaacgatca gctggaaatg agtgacagag agagccatcg ttccgcgcag ccacaagctg 1320

ccaccagcgt gctgcgccac aagttaaact gaactgacct ctgagattac ccgagttgga 1380

tccgctagct agcactgcga acctgaggcc atctcgattc tctggacaag ttaaaagagg 1440

ttgaggctgc ctctgtctcg ctcccatttg tggagagtag aatatagaat attccggaac 1500

acgacccact tgaagccagc gtgatcctta aaacacagaa gtggctgtac gtagacgacg 1560

acggaggcgc agctatcgca ttcccgaacg aatgcatttg ggtcatcggc ctctgttttt 1620

aactgcctca cgtagctcag gttcaaagca tccaagcaag caacagttct agccaccagt 1680

accaccagca cagtgacgcg gacgccatac gacgcggtct ccaatgacgc caactccccg 1740

tagccaggtg gccacccgcg tcactgctgt acgcggcaaa agttgacacg gcacgactcg 1800

gtactttctg cccactgcac tcgccgaggt gcgaggatga ttttttttt ctatcgcgtg 1860

gcagtttcac ggattcgtca cgtaagaaaa atcgcattct atactgtgcg tccaacgaaa 1920

cgtgcacaca tccgacgcgg agcacgtaat ccttgctggg ggttgggggc acccgctttg 1980

tcccattgtg cgccgcagag gatatttttt tcacttatat ctatgatata tgtgtcctat 2040

aaggaaacag cagaacgcca cgaccccgcc cgcgcagaaa tatctcgctg ctgaccggca 2100

caacaacagt gacacagcac ggtcatgcat gtactagcag tgcagagctt acacgcgaca 2160

aagtaaagaa aacaacgtga tactacgctg atctgtttgc agtggcggta ctgttttgcc 2220

tctgttttta tgatatatga ctagcttgct tgtactttgc tacggtttat atatatcata 2280

tataaataga tactaaaata tttatttaaa tataatcatt gtttatttt atacactatg 2340

agttatcttg tgccaaatat tagttctaaa cttctaactt gaggacaaca aagtagaaaa 2400

ccatatattt caggccctgc acaagagaaa aagttggtag gaagagttt 2449

<210> 377
<211> 1500
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122800_G1, chr3:188663359..188664858, Cluster 3

<400> 377
tggggccttt ttttatatag atgtttatat tgataagaca tgcgcgtgtt cataaaaatg 60

agaggatggt gcgtatatga aacgtcgata ttgtgatcga caaaataaaa gcatagttgc 120

ctcttttcca agtcgatatt tttgtaggta ctcttgttgt cataaaagtg tctctctaat 180

ttgaccctac gttaggccat ggtgagtctt agttggttta tatggtaata ccatttgttt 240

gcgatgtgga accaatcatg ttagatttat aatgaaatat ataaattttt ttataaaaaa 300

ttatctattt tatgttataa acatttgcag tcttaaacct aagttagttt atacaaaaga 360

gtatcatatc tttatattat gaagtatttt tattttactt tataggtatt ggcacacatc 420

tcgatacact ttgtggaatt tagaaaattc taagataaac ccgagtattt ttttacggaa 480

caaattgtta gaaagcgaca ccgtcggcag gcggcagccg aggacgtcct gaccacgatg 540

tatgggtgcg ggtgcagccg tgaagggcga gcaaccgagg acgtacgata ccatctggcc 600

agcgtccgca tgtgctcaat ttccggtgcc cgttaagcgt ccgtccgtgc agcggtcgtc 660

cgacaagacc aggcgccgct ggcacaggcg caccacgcac agccagacct gacccgtagg 720

ccgtagccgg tactagctcg ctgcgtcacg tgcctcacgg ttggcgccgt gatgtcatct 780

gaccagagag gcccaccgcc cgtggtagca cgctgcacgc atccacagcc ccgcaccgtt 840

tgaaaagccg gctccgccgt atttctgtgc cgagcggcgc ctgccacgca tcgtgcggcc 900

ttttgcctgc ttttggtcgc cgctcgccac agtactccgc tggacggaaa ggcgccgcgg 960

cacggagaac caaaattaaa ggagagcggc gtagcgtctg cagcgcggga gcgccgcaag 1020

ctgcagcggc gccgtgcggg agggaagtgg ggactgggga gtacgtacac gaatcgtcgt 1080

ctgtggagta gtgcggcgag cccatcctct gggcgctcgc tgtctgtgtc cgactccctt 1140

cccttccccc ccaaagcgta gatgggacgg gtcagtcaac gtccgccttg agagtcgtgg 1200

gaccctggcg gcggggcggg cgcagcgcag tgatgccgtg tcgcgctcat gggagcagct 1260

cggcccgtgc cgcacgtggt gggaaaatct gagggccagg ccaacgcgac gccgccgacg 1320

gtgtttgacc ggattcgtgg ccgaggcgtc gttgcgtcag gctcaggctt ctgtcgcctc 1380

gcctgtgcgg tactagtacg ctgcgtgctt gcgtgggacg ttgatctctc cgtctgcttt 1440

agccagccca atagacgttg ccgcaatgtt atactaccac ggtagactcc tcacagccgc 1500

<210> 378
<211> 1596
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124694_G1, chr3:199034474..199036069, Cluster 3

<400> 378
ataaaaatgg agagctatct ccgacgaaga attctctatt gacattccta ctctcgacat 60

cgcagttctt agaaaagaga tatgcaccct attgccaaga taagcatgcg aagctcaaat 120

aagcagcggt agaaccgaaa atttggtcca aaaataataa agcaggaaac gttgagaaat 180

tagtacctat ggtaaaactc tgctgtacac acagccgatt ccagcaaact tatcccttcc 240

catttcttct tctataccgg ctgtttcccc gagctaggtc tgctgtgacg caacgccggg 300

gaaccgcgcg gcgcaacgta tcgtttccag atttaaattt cctctgggca ctggaccctg 360

ctttcgcgcg gttcgccgcc ctgtcaccgc gacgatggcg cggacagatg ggaatgggct 420

cccgggcttc gcatttgggc gttgggcggg atgaaaagtg caggcggcct gcttctattc 480

tgccgatggt tggcaggctc ccgctcatgc ctacaataca cccaagcgga tgattcaata 540

ggcgcagccg ccctgttcca aaccgagagg cgttcgtgat ttgcctcaag cgcttggagc 600

attgtgtttg tgtgcaccaa agccaaacga ccccccctgca aaactatggg ttgctacagt 660

actttgtact tacccagaag ccacagttcc gaaggcagat caggtaccgt gagatcttat 720

gtgaattttc tgcggtcaaa agagggataa actataaccc atccgtccta taaaaagaat 780

gaaattctag cacaatttca tattctagta tcttaagtta actaattaca gattaaaata 840

ccaatattta tgatatcaaa taaacatcat cagattaatt acaatataca ttattgaata 900

ttttttgagt tatagatata aatactagta ttcgttagaa acttagttat acgtaaatga 960

cacgtaactg cgttctctct ttttggacta aaggagtacc aacgaaagaa aggtggtctt 1020

agagttataa ggtccaaaca tcatacgacc aatatatgat tcgtatttta ataaatattc 1080

attgaagcaa gtaacatgat tagaaacaga aaaacaaatg aggatgtttt gaatacctca 1140

actagctcaa gtcgatttac tgtcatctga agaaagaaca acatgtgtcg atatcaaaag 1200

gcagtaagta ttcctgtgag aattttcaga tcatgaacaa attgaatagt tacctcattt 1260

tcttcatttg tgccatttac taaggtctcg agtgctttaa tttttgaacg gtacttgtct 1320

tcccgggtct tgatgatgct attttgctgt gaaaacaaat gatgtgttac aggagttgct 1380

ttctatgaca ataaatagca aataccatac atttcttatg tgatccgctt ggatagcaat 1440

gcggtgctca atctcttgaa caacattcct tagcaagtaa acaacacgct gagacaagaa 1500

cgtgctgaca ttagtcatca agaacaaatg ataaataaac aatagttcca gacaatatat 1560

tcattgaaaa tcgttgaaaa tagacttaca tgtggt 1596

<210> 379
<211> 1791
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124875_G1, chr3:200123954..200125744, Cluster 3

<220>
<221> modified_base
<222> (751)..(751)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (751)..(850)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (752)..(752)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (753)..(753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (754)..(754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (755)..(755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (756)..(756)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (757)..(757)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (758)..(758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (759)..(759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (760)..(760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (761)..(761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (762)..(762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (763)..(763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (764)..(764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (765)..(765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (766)..(766)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (767)..(767)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (768)..(768)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (769)..(769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (770)..(770)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (771)..(771)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (772)..(772)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (773)..(773)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (774)..(774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (775)..(775)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (776)..(776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (777)..(777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (778)..(778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (779)..(779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (780)..(780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (781)..(781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (782)..(782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (783)..(783)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (784)..(784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (785)..(785)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (786)..(786)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (787)..(787)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (788)..(788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (789)..(789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1523)..(1523)
<223> a, c, g, or t

<220>
<221> misc_feature

<222> (1523)..(1622)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1524)..(1524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1525)..(1525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1526)..(1526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1527)..(1527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1528)..(1528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1529)..(1529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1530)..(1530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1531)..(1531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1532)..(1532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1533)..(1533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1534)..(1534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1535)..(1535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1536)..(1536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1537)..(1537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1538)..(1538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1539)..(1539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1540)..(1540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1541)..(1541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1542)..(1542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1543)..(1543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1544)..(1544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1545)..(1545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1546)..(1546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1547)..(1547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1548)..(1548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1549)..(1549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1550)..(1550)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1551)..(1551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1552)..(1552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1553)..(1553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1554)..(1554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1555)..(1555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1556)..(1556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1557)..(1557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1558)..(1558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1559)..(1559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1560)..(1560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1561)..(1561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1562)..(1562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1563)..(1563)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1564)..(1564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1565)..(1565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1566)..(1566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1567)..(1567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1568)..(1568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1569)..(1569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1570)..(1570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1571)..(1571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1572)..(1572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1573)..(1573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1574)..(1574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1575)..(1575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1576)..(1576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1577)..(1577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1578)..(1578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1579)..(1579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1580)..(1580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1581)..(1581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1582)..(1582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1583)..(1583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1584)..(1584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1585)..(1585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1586)..(1586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1587)..(1587)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1588)..(1588)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1589)..(1589)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1590)..(1590)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1591)..(1591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1592)..(1592)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1593)..(1593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1594)..(1594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1595)..(1595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1596)..(1596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1597)..(1597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1598)..(1598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1599)..(1599)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1600)..(1600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1601)..(1601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1602)..(1602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1603)..(1603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1604)..(1604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1605)..(1605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1606)..(1606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1607)..(1607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1608)..(1608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1609)..(1609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1610)..(1610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1611)..(1611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1612)..(1612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1613)..(1613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1614)..(1614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1615)..(1615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1616)..(1616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1617)..(1617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1618)..(1618)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1619)..(1619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1620)..(1620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1621)..(1621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1622)..(1622)
<223> a, c, g, or t

<400> 379
atgccgtgaa ccgtgctgcg cgctacaggc ggccacgccg gggccgagcc gcgtgcacgg 60

acgaacaggc tacacgagcg agcgaacgag gccgcggacc gctgctgtgt acgcgagcga 120

gttgctgctg cgaacatgtc ctaaacgggc tgccacgttt cgcgtgtgcc gcaggggca 180

aaacgatggg gctgccgctg gcatccttct acatgcaggg cgcgacactc cacggcgtcg 240

tgcttcatat tcgcgaattc ctttcgcaag gcgctgccgg tgcaagccaa taagaggaca 300

acggcctact gggcaaacag cccggccagc ctgacccctt tccccgattt atcttttgaa 360

ctttcggcca gccagaacac agggtgcaaa taataagacc gctgttaaat ttagaccaat 420

tgataataag aacctctgcc tctccaatct ttccccgaaa catccctcct tgctgtattt 480

ttaatatatt taactgcact gcgctcgctt agtgtcctac taggtgtcga ctcctaccat 540

tccctccctt tccgtctgct cctctatcct accctcccgg gtcctctcat cacaacagat 600

taactatatt aatcgttttt tgttgattga gaatcttgcg gtattgtata aagccataac 660

actatttatt atcgctgtgt gggagttgtt taggagaaat acctcataat tatcctggag 720

agcttttctc tccccctat ttctaagatt nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 780

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn aagtgcgtta aggcaaaaat tggcccgctg ggctgtattt tcattgagca 900

aaaatttttg gcttttaatt tcgatgatgg gcgcccccgc cctgtggcag aagttccacc 960

gcacaaactc agctgcggaa agtacttcct caatacgtct tcccttaagc cttcctcgct 1020

gaatcttctt gaccagctct ccgcctgtaa catgttcctg cacaaagtat attttggtgt 1080

tggtggccat gtcctcatag agctgtcgat gtgtggatgc ttaacaagct tcatcgcaga 1140

aagttctcgc tggatggatc aatgagacca accttcataa ccttctcctt atcaatcact 1200

ctgatcgcga cactttccga agtcgccgtg ttacgagcat ggtaaacctt ggcaaaggtg 1260

ccttggccaa gcaatttccc catctcatac ttgtgcaaga gaacgttccc tttatgctct 1320

gccatctgtg cctgtgtatg ctacgtatgg tggtggtggt atgcacacag aggtcacttg 1380

cttatccttg acagttaaaa aaaatgagac agcaaagagg tcgagagggt gtgaagactt 1440

caaccgtctg cgccgagatg gtgatctaag aagacggtga cccgccacgt cgagccacca 1500

gaatcgggaa gccaccgggt agnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1560

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1620

nncgagggag aaagaaagaa ccgcgagttc gtggggagaa aagaagatga caggggggcga 1680

cttgctgagc ttatagtggc cccaccggga ggcgcgcgat gggcaactgc ccagtgcgcg 1740

cgtagcgtcg gggcgggcga gccgttgggg ctgctaggcg cgcgccagcc g 1791

<210> 380
<211> 1788
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126208_G1, chr3:206588323..206590110, Cluster 3

<400> 380
taaagctaaa caagaagtca tgtcgggcca gattaaacgg gtggatggaa acccgcagcc 60

acgcatcgtc agtatactgc aagaatgata cgtggtttat gctgcgaccg aagacgaaca 120

gcacaagaaa acaccgacgt cccagcagtg cattcttccc gccgatctat ccgagatgct 180

tactactagt agtactccgt actaaacaag tggccgccgt gggacggacg gacgtgtata 240

atttgtcttc tcgtcccttg gacgaacctt atctgcagcc agccaaataa tcacagatag 300

aatatcgcat ctccgcatta tttagaggga agacaagaac aaatggttgg atatatagat 360

aggcacagct aagctagcac acagcaggta tatatataga aacagaaata aagagaggat 420

aggccagtac agtagtagta gcagcaaata ctggtggcaa cggcaatgtc agcggtcagc 480

acccgtcggt ccaacaggca ggcaacagct gcaaattttg tttctgaggg ggctgcacct 540

gggctgggcg tgcgtgggtc cacacttcat gtgaatgcca cgctcctcac tcatcccgtc 600

tgtaggtcca cccctgaacc tctcaagccc cataccgtgg ggcctgccgc cctggccccc 660

agcactctgc ggcgctgcca ttcatttgca tggatggacg atggaggcaa cattggtcca 720

tgcatggtgg agccaacatt ggtctatgtc agatgtacaa catggaccgg aagaagctac 780

cttccaaaca atgttttttt tcagttttaa aataatatta cggtatttaa tgatactata 840

gtattgtaac ttaaaggtcg tttggtttct acaggcaaaa catagtttta aatatcatgg 900

tttacctaaa cccgtggtat ttttggagtt tacgaaactc cactctcagt tctcttctct 960

ctacatatat tttatttttc caatgaaacc aaacagatat cggttttgag taatgctatg 1020

attttattgt gataaagtaa tatcgtagta tttgtgtcat gtgtaattgt aaactatagt 1080

atcttaaaac tgcaatattt caaaactgca ttcccaaaca ggccctaagg ggtattggga 1140

aacaaagtat tttttggagt tttgaagcaa aaccatggta ttgaaaatac catttttttt 1200

gccaagagac agggacggac ctagaacaaa aaaagagtgg gggcacactt ataaagatgg 1260

acactaaaat actagagcga ggacatctca attaggctca aggcacttaa tggtaaaaat 1320

ctagacacta gtacttgtaa caaagcaatg agtcgggcct aggccctcac tcccttgtat 1380

gtaggtccgt ccctgccaag agatgtttga ctgcattgta aaaaatgttt tgaatgccat 1440

ggttttatag atatcatgat atttttggac tacttcaact caaagttttt tttgtctatg 1500

actagtgttg cacatataca ctaaatacat agtttaagat attttgtctc caaacacata 1560

attctaacag cctgtttggt ttacaggaat tggtccgaat ttaatcagtt tccatttctc 1620

gacccgtttg gctgtccata gaattcaatt caccatttca gccccttccc tatccctgaa 1680

attttagcct gtgcacattt cagaccctca cccatcggaa aagggtcaga aaggtggcta 1740

gggttagccg cccgcatcgc tcgccgctca cgccgctcta ctccctgc 1788

<210> 381
<211> 1677
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127020_G1, chr3:210543790..210545466, Cluster 3

<400> 381
ctagggtttt aacccgtgcg cccatctacc tcatcaccat ccaccaccac agattcttcg 60

tcggtgtcgc tcgtccgcga ggtctggtcg ctagccgatc tactgctcgg gcgcgagcct 120

gcctagtctc cagccacggg cgtgggcctg cctggcctct agccgcgggt ctgtcatcct 180

ctaggcgcag gtgtgtctgc cttcgaccaa gggtgcgtag acctccacgc acgggcacat 240

cggcccccgg tcgtgccacc gtgagtctga ccaccagcca cgggcgtgag cccatccgcc 300

cgtcgtgttg ttgcaccagg cgcgagcaca ccagcttcgg gctcgagcac gagcccctgt 360

cctccccctc tttcttgcta atttaggaga tgtaatactc cttctcgtca gaggacaaca 420

gttcgtcgtc gccactgtcg ttgggtaatt cgacctcgtc cttgacggta cgcagtcctg 480

ggcgtcacgg gagtggcgat gtggtgggag cagtgcggga gacgacatcg ggagaaggcg 540

gcgggcaatt gaccacgtcg ttggataaga acggtgggca tcgcgtccga gccgccatgg 600

taggttgcct accaaaatcg ggcgctggtg tcggtggcct tcatcgaggc ctctcctctt 660

ttgtcggtgt tgtagttggt gggttggtgg aggtcgcagt gacggtgtga cgagcattga 720

tgattgtggt atcgaggact ccgacgtcgc acagcagaca gcacacaggg ctcgtaccca 780

tggaacgagc aaaatcctta tgggtacata ttggagatcg gtgtctcctc cactcgagcc 840

gaaaacgaag gaacgtcgcc actagtgacg cttgtgcgcg gtgtggcgtg ggtccacagt 900

ggggtggttc acggtgatca gttctgtgaa gcatggcaag ccacatgcag gtgaagccat 960

tgatgctcat ttgcatgatg gcgttgtgga tgatgaagcc gatgcagtcg tcgtcaagga 1020

ctccctcata tgcactgatg aactcgcgga tgacgacgta ccagtgtttc ttcacaaatc 1080

gatgaagagt aagcatcggc attgtcgtta ccttgttctc cttttcctcg ttggagttct 1140

tactatcttg tccttttcg gtgatcgtgg ttagcatcga gttcttcatt gcgtgccttc 1200

ggtgatggac ttcttcctca gcggttggag acgtgcttga taacgtgttt atatctcaga 1260

gagattgtgg gaatgaaata agagaatgaa tcacttatgt tctatttcaa taactgttaa 1320

tagatatata catagtgaac ggacgacttc acacccgtgc ggcatttgtt cagttggtgt 1380

ccgttcagct tgggcacgtt tatatggcta attatgatta ggggagatta gtaactacta 1440

atcttctggt gtcttcttgt tatctctgga tgagatcact gccatctttg ttcttcaaca 1500

ccatctacca aagttttgac gtgatggcaa attcctagca tcatcaactt tgttgtacta 1560

gtgtgtcaag ctcttcacgt gcttgggttg aaaggagaac gtgcacaact ttgagagatt 1620

atatatgttc tttttgattt gtagcaatat ggattttagt gaaaaaatat tcaataa 1677

<210> 382
<211> 1910
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127250_G1, chr3:211737471..211739380, Cluster 3

<400> 382
aacctgaacg catgaacgac ggttgcgggg gctgagcagg tcgcctgaac tgcttccaag 60

tttctggtga gtggtgaagc agcgcgactc gtcagagtcg cagtgagcgt gcgggctgaa 120

gaggcatttc atcagtgctg agactgcctc caacaagtag cagccatatt ggccagctat 180

ttggatgttt gcatgtccat gcagttttag ttggccagct aaaattatta actttgcaac 240

agaccatgca aaatagctgg acatcacaag taggaaagaa ggtaaaagtg agccgtacat 300

aacagatgca tatggggcca attagtcagg gacatagaca tcaaattagt tggcgtgtgt 360

cgcggcagcc attctacctt tcctctcttt tggctaccat ttttgctgcc gcatatggct 420

gcctcgttgg aaggctacag tgcggtatga acaggcaaat tgcttttgca tggcggaatg 480

cctggcccgt tggagtcagc ctgatcgctg aggaggtcca ttacacctta cacgggcctg 540

tggccgtggt cctctactaa gggcttcctc tgcggctcag attcggccca tccgctgcgg 600

cagcgctgag tgggagaaaa ccacgtcgta ctccgacgcg gatagcgacg gtttcttctg 660

cttcatcaca gatgtgaaga ttcagtttct tgtgcacaag cggtttctat atttcctcgt 720

taaatcgttt gccatattaa taaaaatata tgagtgatgg aacgagtaat acgcatataa 780

aagcaaaaaa actacagttt atattctgca tggtaaatac ccttaataat ctctccctag 840

tctcttcaca aacccaatat cttaataatc tcttacaaac ccggtagctg aatatacagc 900

cagattctga acgaccagat catcgttaag agagggattt ataagggtct attcagatcc 960

attagcacta aaaattagct agctagttat taattttgaa gacgttttta tcaacagttg 1020

gttgaatagg gaggtgaata tgatcatcca ttagtaactc taaacctgca aataaaacta 1080

atcgttagca ttttaactaa tgattaatat gcccgtttgg aatcgctagt attaatttca 1140

cctgctaatt ttgaatgcta ataggttcga acagatccta agcaaacaaa agaaaacaac 1200

tttccagtat attttttaa gactcaaatg gctttctcgc ctgggaacag gcagttcagt 1260

gtgttcatga cagcgacgtg ttcttgagag tgcatgatta gtttgctgcg atgtcgctct 1320

gattctcagg gcatgtacgt ttttagttct tgtttaaaag aacgcatccc ggcccttccg 1380

acgacccaaa ctgtacaggc aacagacaac acggtccaga tggagtcggt gcacacgtac 1440

atgttgtctc ctcctcagct cgtttagtta taacacacca ccaccataat aatcatcatt 1500

atctggatca ctttctgaat tattcagtgc ctacatatat gtttattcgg ttggttagtt 1560

tgctgcggtt gttgattaga gaaagatgga ggaactatgg gagagacgac actgacagca 1620

tttgattatc gagatactac tatagatgtt aacatttggt ctgcatgccc gtctgtgacc 1680

caatagcgct tcagattttc actgaagtaa ccacaagtac aaccaatatg atcgcagacc 1740

atattatatg ccttatttaa actgcactca tgcaagagga ctcaaacaaa gtacaagtgt 1800

cttcaaacag gctgacccac tgtctctata cttctcaacg ttataagttc ataacagacc 1860

gctaaccatt ttaatagata taaccagctt ggatggaaaa aagcttcggt 1910

<210> 383
<211> 1685
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127788_G1, chr3:214318347..214320031, Cluster 3

<400> 383
aatatctagt atgtgtgcca tatgtatttt ttttttgtag ggagatctat cacactggct 60

tgctactagg acctcgcatg ttgtatagcc gttgtaccac tctatacatc aaatatgatt 120

ggtgtggcat cgaaacatac agtattttta ctagtaccag tgttataaaa agatgcgagt 180

attattatag cgatatattc atgtcaacgt gattattttg gtaaagttga atggttcgat 240

gtgtattttc acgaagtcga atgttgtcaa atgcatcatt cattccagta gtactacttg 300

ggatcgacta gacggcgaaa cgaccaatcg gcttgtgcgt cagcgtggcc gaattgcggt 360

cggagcagaa cccaagtagg gtgcagcttt tcatgcgccg ctaggcagta ggcacagact 420

cccctctttt gtccgcttat tattattaca tgtgggtttc cttttgggcc cacacgtcag 480

tgtccaaaag agctgaaaac ccgtcgcgtg caccctgtag cccgtagggc cacgcagccg 540

aaagccctcc ctcctcgggt ctcgggactc gggaggcatc aagggtctaa tctaacggta 600

acggccgaaa gggaggtggc acgcagcgca ctgacttgtg ggtccatccg gccattaccc 660

ctccttgcag ccacaagttg cgtcgtgtca ccagcaacaa cagcaagcct ttctgcgcct 720

gcatgccgtt acacttgcac atggcacggg gaaaagtgac tcgactccag ccctttttac 780

tgccacaccg cccagcagcg tgaattgact tgtgtactga gcttctgact gctgggacca 840

tgggtcccgg tgcagtgcag cgcaccagcg caagactgca gggaaggtac ggtacgtgcg 900

cctcggtccc gggcgggcgc gtgagggaga aaagtaaaag ctgccgcgga agggctagat 960

gccctgacct gacctgacag tgcgatcggg gtgtgagttc tctgccgcgt cgggattctc 1020

accactgtaa aaaagaaaca acaaaggaat cagcgatgtt atggccgctg tcttgttgga 1080

atatacgtca acagagaagg gaaaaaacgt cacattttaa cagcaaatat aataagccca 1140

attaaaccag gtgacagcag tagtacacgc attacctgaa acagacgcgt cactgaaagc 1200

ccgaaaagtg cggtccggtg ccatgcatgt gcgacattca tgtgtgagca ccccacccgg 1260

cggcacgttc ccaagttttg gaatacccgc aacacagatt tgtggtaccg gtcctccgct 1320

cccggccggc agcatacata catacatgca aacgcagcgc catcagcgga caaagaacaa 1380

gcggaagcca ggaccgtttg atgcgcgcac atgcatgtgc gatctggcac gcgtgcgtac 1440

gtgctagcgt gcatgaccag tcaatgaaac accctgagat ctagattaga ttatacaccc 1500

ccaacacaac gaccaccacc accaccacac acacacaccc cacccccacg cccgggttcc 1560

agttcaaact tggaagactt aggcgctgtt tgattttctt agtcactaga ctaaatttta 1620

gtgactaaag tttagtcgtt aaagtatccc gtttatttcc attgactaaa ccggactaaa 1680

gaaca 1685

<210> 384
<211> 1516
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129164_G1, chr3:221246027..221247542, Cluster 3

<400> 384
gacacccccct ctagcttcaa acaatacgga acaggccaat gcactattcc tgagagtcgc 60

aagacatcgc aaaatccccc tcacctccgt tcaattcaca acttcacatc cccgagcctc 120

accggtcacc gcacgctccg acgagccaga gtccctggac acggcgggct atgacccgga 180

cactacccaa aacctcgtta caacgtgttc cccgcgacga cgaactctct ggaactagga 240

aacagacagc aaaaagtcca caaggatctg accacggacc cagcagggaa aggactcggt 300

gagtggtact ccggcgaggc cggcacagta gatctggggt ttagaactcg aagagctttg 360

cgggctcaca gcaaggatga tgctcgcgcc aaaaggacgg gagaaacacg aaggtaacca 420

gtcgacaggg aacagcagca cggcgacgat gtctggcgac gagcccaccg ttccagttca 480

ctacaagcag tagagctcaa aagggaaact ccgtgagcat cacatgcact aagtgatcct 540

ggaacacaaa catatcaacc gagaaacact ttgagaaggg ctgtccacga ggagatgaag 600

agccggccgg cgtgatcacc agaatggtgg acaacgaaga cgacgacgtg gggcgagttc 660

aggtaggatg agcggcacaa caaagttcac tacgagcacg gggacatgga tggataaatc 720

actctctggt taaggatacg agtcatgaga aggcggggag aacactacta caccggcggc 780

cacggtaacg gaaagggcac ggtgaacatg cagtgtttgc ccatctcact atgcacacac 840

agagaggcta aaggtttcat gaaactggac acgcgacctc ataaccgtag cacacgcagg 900

accaaaatca cagcagggca gtaactgatt gacagagaag caggcagaca gcttagtcac 960

cactaggaga taagctgcag acttctctag cctcagatat ttgagtgctc aaaacttatc 1020

cttacccaca aatgccaatg cctgtttcac ttacccaaac tgaccagaac agcaagggaa 1080

cacagtggtt gagatccttc catttctcca caacctgaac tctcattagt tacctacacc 1140

gagcctttca tttgcccaca ttggcttact gtcaaacacc acccaaccac agttacaaag 1200

tcccagctga atccagggag tgagaagctt taaaacaccc cgaactccag atctccaaac 1260

tgaattcgag cagactgaac caaagtttca gccacctgaa ctaacttgac gcccaactga 1320

acccccatct tttccccact tttatcacac gattccaaat ggtaacaggg aacctacctt 1380

aacataaatt gctctccaaa ctaccttcta tatcttttat acagagtcct tcgtccaaaa 1440

cctcatgaat tggtcacaaa agagctccaa accgagcacc cttcactaca attcagtttt 1500

cagtaactga acaaaa 1516

<210> 385
<211> 1465
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129793_G1, chr3:224444326..224445790, Cluster 3

<400> 385
caccaggcag cgctcatgtt cccccagccc aaacccgact cggtgcaacc aaccatgaat 60

caaacgtgct gataggtggg tcccacaaca cgattgcaag gaaataaatt gtgagcctat 120

aatcacggag ccacatgtct cataccattt ctagttccat taattacgcg cccctccgaa 180

ctctagttcg cacagcgccc ggagctccaa acccctcgcc atgtcgctca ctcctccatc 240

tcgcatcgcc acatcattgc caccaaatcg ggcggcgaca accaccatcg gcatctgaag 300

tctcccacac gagcgcatgt ggtggacgtc gttaagcatc ttacccccct tcgtcgtgct 360

tttctcaaca ttttgtgact attttcctca ccgttggctt ttatagtgta ctgtagtata 420

ttcagtaaga tttacgaagt ctttttcaca attagatgcc gatagtttta agtcatcgaa 480

tgtttgtgtt tcacaaaaca attgtgtgtt ctgtttcaca tggatatccc aatcaggtgc 540

ggggttggaa catgatgtca gcaccttaaa ccctagtttt tttacaatga aaccttaatt 600

tatctatgga gcagatactt ttatacaact ttttacttgg caagaaactg gttcaaaata 660

tagaaactgg atcaaaatat agaaaatggt tcaaaaagtt ttcgctgtgg agatccctcg 720

gtcagtcaat gatatcaaca acccgaatga cctctgcacg ccctggtgat gccatacgac 780

aaatgaaaca aacctatgtt cagagcaaca caaagcgagc tatagatcgg gtaaaaaaga 840

tgttgatctc gttggaaacc caaacgacga tgatgactac ccctaaaaag atctgtcaag 900

ttagatttgc caagactcga acgcctccac agccacacat gtcacacagg tctggaccct 960

cgtcttcacc aaaacaacca aagacaaata accccactga aaatcctctt accaagcaac 1020

cagcagtggt taagaataca tgccacaaaa aatccaaagg cagaagagct caggtgtgtg 1080

ttaatgctac taagttttta tttatctaat cagttatatg taacaaccta gcatcttata 1140

ctttttacaa taaaatttaa agttattgtg ttactactat agctagaagc catatatgcc 1200

actacaacca tctcacgcta gatcattcct tccacgtaat gacttttgtt ttatgcagtg 1260

catatgtagg ttttacgctt taaagcacac atgttgttac tatgtttttt acattaaaat 1320

gcatattttt ctagtgtata tacattttca aacagaaaca caacatcaaa ttaacattgt 1380

gtatatatgt tttcaaatag aaactcaaca tcaaattaac attgtgtata tacgttttct 1440

agtgttcatt tttacgcaat atttg 1465

<210> 386
<211> 1475
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134004_G1, chr4:12071012..12072486, Cluster 3

<400> 386
actgacttgc cttcagtgca ttgaaagatt aaattcgaac cgtcttgccc tcccctcttt 60

tatatggatg gtggtccgct cccatcgtcg tcgtagggag cacaccgtgg ccgccatgtt 120

cgaggagact gagggtgcgc tctccaccat gcttgagcaa tgtgctagac ctgatcatgt 180

tgggagcact gtgctagaca tttacaccat gaactccatc atcggggcgt atttaaacca 240

tggaagaaca gattagatgg agaagagtta aaatgagttt tagctgatgg gtgttgtggt 300

agataccaag acgttcaaca tcatgatcag gtcttcagta aggctggcat gtatggcaag 360

atgatgttga tatccagata catgaagaaa cggttcttca caccgaccac tgctaccttc 420

gacacaacaa tataacagag tgtttcggac atgctgctga catcgaaaat atggagtact 480

atttctgact tatgaagatt cagggtctca aacccaaccc catcatgcct actgctctct 540

atatgacaag tatggagata tcaaaatcat ggaggagatg ttatagctta tgaaggagaa 600

gagatgcaag ccttacagaa taacttatgc caccatgatt ccggcataca cttcacatgg 660

gatggatgaa gctgctaggt ttgctggaga tgaaagtaga aatgtttgat aaacaattgc 720

tagtaagtat ctttcagcct ttcatttgtt gcaagatctc atatttattg tcccatgtta 780

attcgatcac cgggctttgt ggtcttattc ttagagtagg gaccggtttc tgagattgat 840

ggcaaataat gcatgcaatt ataaattatt agtcccaatc taaggttgca gaaatgatgt 900

tgcggcgcat gcaagaggtc cttttggaaa agatagcatc gaatccatcc acaacaggat 960

ctaaacaaaa aggtcgtggc aattggatgc agagccatgc agatgtcgag gaaagtacaa 1020

gtctagaacc ctttataaat tcctggttca ataattagtg ccatggtcag ataatctatt 1080

tgtttgaggc tcatatttag gacaactgca caacatgaca tatggtcagt ttggtcattg 1140

tgttgtcacc aaaaggccac acatgtcatt gtgttgaccc cattgctagt tgtagcatct 1200

tctaagtaag actgagaggc tggggatcaa gagcatgaag tagcgtggat gacaacgtca 1260

gctcatgaac aaatcgctgg tggaggcact tgcaggtcac gtgagttctc ccagtggcgg 1320

cggtgggagc gagccaccgg ccatgcagtg ctccctgtga tggcggcaag ggcacactgc 1380

gatggtggcg ctcagcggta ggtggtgatg tctcgccttt gcagaaggag ctaggaccta 1440

tacatgttca atcgtatgtg tcgggccagc ccggc 1475

<210> 387
<211> 3392
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137693_G1, chr4:31118968..31122359, Cluster 3

<400> 387
atcaatattt ttgacttcct ttacaatatt cttcgaagcc gagataattc aattcatgtt 60

ggtgcaacat gaagtagccg tagcatgaag tagcaacaac atctgcttat atggcgtata 120

ctcccagtgg tgactgcata aagcatgaag tagtagcata tgggttctat gacttttct 180

ttatcacagc aggatgaagt gcacaatcat ccatttggaa atatggctga aacaactatt 240

gcttctatgg tgtatacttc ggtgactgca tcacaacctg taatgcatca aactatgggc 300

taggaaaaga ggacttcatt gtcatgtatt tggtataatt ttatctgcta attgttcagt 360

tttagtctag ttatacgacc atgaggccat cattttggtc taacaatatg cttattgtgc 420

caagccattc ggttacttgc agggctctgc tgttgtttac cctgggcatt aagatggtct 480

agatggccac tgtgacttgc cttaggggac aactcatgaa tattaattat gtcttgttgt 540

aatccaacaa gatctgattg ggatgtctga tggtttgttt catcttgtgg ttgtgagaca 600

ttttgtactt cctaaacaag gacagattaa ttccaaactt agaatgagca ctgcatatta 660

cagtggttgt gagacatgtt gcctgatact ggtttgctct gtgataatct ttggtctgat 720

ccttccaatg aagcaacggg ctggcccatc aatgatcgag gtgtttcact cacatttaga 780

ccttatctgc caagcacatc aggttcctat gttcttatag atgtgacata cttattcttt 840

tataaactac aaagtgtatt aatagtttac ttatgatttt gcattactga aattaaggtt 900

ggcaaagatg gatatgagtt tttttctagc tgtcaactcg taacaatatt ttagccccta 960

actactgttg aaaatttgac aaagcttcat gcatgctaag tcttggaatg ttaaccagtg 1020

ctctacctat gactgctctt ggggctgttt tgtgtagttt gcttctaaca caagttttaa 1080

acagagactt atcaatgtcg ctaatctatt ttgatttatt ttatatgtgc tgcttctaat 1140

tccaatctag tttggccttc cctacaagtg caacctaatg catcctttaa actatttatg 1200

tttggggctt tgtttcatga acttgccgaa gagtgaggcg cacgaggcct catgacatgg 1260

cgccaggtta ggtacatcct ccgttgtccc tccctagcac ctcattcatc aatggtattt 1320

tggttagcga tcaagatgtg agaatcaagc ataggagtgc cttcactata tcggtgcatt 1380

ggttaaaggt agtggtgtca gcctccctga tctgtcctga agcgagaaaa tgaagggcaa 1440

aagcaagaac aatttctaag tggggtttca aagctttatt tactgactat gcgttattgt 1500

ttctgatttc ttggggcgtc cttgaattgg tcctgtttct gcaggggaga gtttatcaga 1560

cgagcgagtg aggctacatc aagaaactca gggcgtgcat ctggtggtac atggagctgg 1620

atgatggata tgtggctgag taggagaagc taataggacc tggaggatgg gtctctgcgt 1680

tctttgctta ttggtatgat tgtttagata tccgcagatt acacacacta tttcttcagc 1740

gcgtctcctc ttcctactaa aaagtatcca tatctctgtt attgcaatca ccataaacct 1800

gattagtcca gttcaggtac tccgtactat atgaccagtt catccatgga gaacatagat 1860

cgctactcgc tagcaatata gggacaggca tcctggcgcg cggctcccaa atttcatcct 1920

gtcttttagc gaccagaaac tactcactac ataattgttt gatttttttc tatgttttaa 1980

atcattattt actgtttttt ggcaatatga aaagactaag agtacgtata attggtgcga 2040

tatcgataat gtttgccaca cggattttgc gtatcataat gatgtttgtc gttctttatc 2100

tatttttcat gcaattttgt ttttttactt ccgtagcaac gtagggtcac ggacctagtg 2160

tatatataaa aaagatatag ctcactaaag atatgtttgg tactagtgca tataacactt 2220

tgtaggattt tatttatttg ttttttttgaa aaaaaaagct ctagatagaa cactatgtcg 2280

tctatacgtg ggtgggtgtc atcatcgtca tcgaataaag aacaaagcaa cataggctac 2340

atactgacgt atgtatacat cattggcagc agcttttact tgcttagtca ttcgtacatg 2400

gatggagcgg catatatata acataaacgc cagttgcctt tctcttttgt ggataattga 2460

gcgcgcgcga gagcagcatt cgaggcacgt tgtagcagta gtagtagcta gcagtaaaaa 2520

ctaaatactg gacgctttga agaatctgag ttcccggacc gacacaggac aggacagggc 2580

agggcaggga tcctctctcg cttctgcttt tgctgctgtc accactgacc agtcaccacc 2640

acaccaccac tcagcaggac ggtcaacatc tatagcgccg gattgatgag gtgcatctgg 2700

cacaaacagc atgggggcta cgagactcgg gagcacgaag agcgggccaa tcatggagct 2760

ccagctgcaa accagccgca caacacacgg acaggaggat tttattttct tttcttttgt 2820

tttgcttcct gaggcagcta gcgggcgggt gcgcgagagt gagagcgaaa ggaatggaat 2880

catggagcta ccagacacgg tgcagagaga gagagagaga gggacggagg cccacaggca 2940

cccggcagtg gagggagatc gacgggatgc ttggggttcg ttcgatgcca tgttccgcac 3000

atgcgccaat gcatgtcgtg gcatcgaaga ctcctctctc tctctctctc tctgtctgtc 3060

cgtgtggcgg tggggtccgc cggcccgtga cggtggcgtg tagtagtgct tgctggcagt 3120

ggcaggaccg acaaaaggcg gcgaggcgag acgagacgag atgccatgct tggaagcttc 3180

cccatccatg catgtccatc ctggcggcac caacactaga cacgcaacaa ccagcccaat 3240

cccgccgtgc acgccaacgc ccatcttttc ctgcccgcgc cgcgcatcca tcccgccgtt 3300

tcgcatgggc accaccagca gcagcgggca gcggcagcgg aaaggcaggc ccgcgcgcca 3360

acgctcggcc gtcgcgccag ccagccaacc ca 3392

<210> 388
<211> 1555
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137713_G1, chr4:31255767..31257321, Cluster 3

<400> 388
attactctta atgtcctcac tttctcacta tgatcatcaa gggttttggc atatgttgtc 60

cgtgtgccca ttccaaatga ccccccttgaa cttatgataa acttgaaaaa acatggttaa 120

atctatgtag gcaatcaggt aaaattttgc caccacacag ctagtttttt ttttcttctc 180

tccctccata atgtgatgaa tctagagtgt cctcccggcc cattctctca ataatttgag 240

aatgattacc tcatgatgat acatatatta gtagcgctag tcctggcagc tatgaatgat 300

cagagtggct agggctgcca gtacgtcttc catgcagtac cagtactgta cgttgcatgg 360

ggaggccctc aatcctcatc cttgtataga agagaaggcg agcgaggagg gggaaagggt 420

gcagagagtg gtcagagcct gcactgtttt gtttacggcg ggccaacgct gaggtgaccc 480

atcgtcctcg cctcgctttc cctctcttga ttctctcacg tcgtcgtctc cggcctgttg 540

gtgctgtcta ctgcagtggt cgtctgcagt cagtaatctc tctgctcctt ccccatgcaa 600

tgcagagctt cttcatccgc atcccttgcc ctcgtctccg atggcccggc ctctttgatt 660

gctgtgaatt actatctctc tctctctctc tctctctggt cagcggtgga atgcatggtg 720

gcgcagtctt cctgaccgtc gcttgtcagg tgtacagcta caacatgtgg ttgagagtgc 780

acgccacgag ctctctgctg ctcctcctga catacgtata caatccggat gtttcctcgc 840

cagttacggc atgcggctga caatgtgggg ccaggcgaca gccggtcagc tggagctacc 900

ttcacagacg taagtgtaga tgatgatgat cccgtcggat actatccatc tcttgcacac 960

gccatttgat tactagcgta atctccaaga aaaaagaaga gatctcttca tcgtagactc 1020

acagaggact agcctccgta aagagaagta tactttagtt agatttatac cacatcaaga 1080

attttaaaaa ttaactaagt aataaaataa tattgcaact aacatcaaga attaacaaca 1140

ggtatcttag ttttgtttaa atgtgatcta ctttaactag cctgcaaaaa gatcaatttt 1200

aactaacatg ctatacttta actaaccaac aatgcatggc tcttatatat gtctaaatcc 1260

ggtgggtctt tgactaaacc cttacttatt atgttggctc tgttttattt agtttttacc 1320

atagaggatg caagttgaga cgtttggtga ttcagagctc atgttggtca tcaactagtt 1380

catacgattt cacaacaact ggaagaaccg tcgactggat ggaaaggagg gttacattaa 1440

ctgcagagaa tccaaccact tcatcgcaat cgagaccacc agcaacggtg aatctaaccc 1500

tgaggtacat ctctctaccc atgaaatggc aaccgagatt gatactttgc acaat 1555

<210> 389
<211> 1622
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_140389_G1, chr4:48163643..48165264, Cluster 3

<400> 389
tatatgctag accgatctat acctaccctc attagttttt atttaccgtg gcgcttcatt 60

gcatagtctt tatcactagt gtagggatac aaccacatca atatcaatgt tagtttttt 120

acctactcga atttaaaaca gagcatgact gatgattcaa agaaagtaca tcaaataaaa 180

aaacacatag ttcatagaaa acaaaattat ttaaattaaa caaagtacat aaaacacaac 240

aaattttaaa acataaaaaa ctactcatca tctctcaact gctttcatgt tttattggtc 300

atatatttaa attgtttaac caatttttaa ttggcaacat atgagccttc tcaagtcatc 360

attcatgtgg tcgatgttct gatccatcaa ctttgtgaac tacgcgtaca gtttttctta 420

atttaacata tcgttgacca tatagagtag cttctccatc atcttgttct ggccctgggt 480

ctcgctgctg cttgttgctg gtcttttacc cttatgttgt gatctggccc tattacgaac 540

aatagaggtg gttcaacact aacggatgat gtggagctat aatcgccttc catattgagg 600

caagattgct tgttcccatc attagagcta gagtcattgt accgcacaca tcactttggt 660

tgatgatgaa gtgcatgcca catatgctgc agcttgaatt caatttcgtt gggcccactg 720

cagaggctat ccttggagca gctagccatc attcgtccgt cttggacaag tcgcaaacaa 780

gcgatagata ccattgaaga gtgtgacctt ttggttgctc gtggaccacc aatccttgac 840

ctgcttggtg gtacaatggt gaggaggctt ggtggtagag ttgtatgtgg ttgctatttg 900

gcccgaaatg gaaaactctt tttgtcattg ccctcaacat ggtcaatgga gtgtattaac 960

cacacatgca actacaaatg tacaacctca ataattgttc tctagttaca aagagtgtgg 1020

aatccatata gtcatatata tacttagaag tctttcatcc tccatcttag tccagtctgt 1080

tgttgttgga ttgcgattca caagattaca cagactagtt ggaggcacat cattgtggct 1140

gtttggtggc actatcggac ctgagggagc acaagaaaga gaaggaggac tattgatgac 1200

cgttatttca tgatcttggc catcaactat ccataaggat gaggaaaact caatgacaaa 1260

gtgaataatt ttactactaa gtgagttcaa caagttgtgc tgaagtattt ggatttagtt 1320

gacaaaatat agtaaaaggg agtgaaaata gacaacaatt gaagacaagg gccataccat 1380

gtaagaatat ggttggtcga catgtgatgg gtacacaacc acctccatgc gcagccgact 1440

aagggtgagc cacccccact tggtcaatat cactccaaag ttgtcctgca catgtatcac 1500

gatgggaaca ttacaacttg gacatgttgg cacatgaata ccacatattt gagatggaag 1560

aacaacatct catcaatcca tgtgcacaaa tgtaagggcc aagaaagaaa cacatatttg 1620

at 1622

<210> 390
<211> 1540
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14380_G1, chr1:79261014..79262553, Cluster 3

<400> 390
taaattgctt ttatgaggat gtttggaact agtcagcttt gaaaaaatct acttagcttc 60

gaatacgtca agccaaacac catagcttcg tgatatttgc ttcaccaaga aaaggtgaag 120

ttggagttaa cttcaccttt cttaggtcct ttcttaggtc ctgtttggga cggttccagc 180

tctagaaaat tttatggagt taataaagta ggtcattata tgctctagaa aatcgtgtgg 240

agataaagtt ataagtcttt agaagacatt ttgaagctgt aacctaagtc attccaaata 300

cctccttata tgaattagta aaaagtgtgc ttctaaaaaa acctagtaaa gttagggagt 360

aattactcac cattactgcc actgattaaa aaaagtttcc ttttttaact cccgtatgga 420

gccgctaacc ctaggcgcag acgctgggga gaaatcgtcg ccgagctcgt gtgcagcgcc 480

ggctagcagc agcggggagg gaggggagag aaggtacgcc tcggcgccga gggcggcgcg 540

aagtccgcga ccagccgacc actgggagcg tgcgcgagga cagccgggac ctgggcttgg 600

ccggccgtgg tgcgaatgat cacacaactt atccattttt tctgaaaatg gtgaaaaagc 660

ttccacgata tgggtcagtt ccaaacacca tatactggat ggttcagatc ctgctgcaac 720

atgtgatgct ccccgatcca ctacaatgga gccaactgtg tctcttttat agttttattg 780

ttaccaacaa agaccatata ctactgttct atcaatgttt tgaccacaga catatactag 840

cgctaaccaa acaaataaag aatttgcact cagacggtgc ccatccttcc atgaaccaat 900

cggaaccagc atggtctaga tggtggcttt ccagtacggg gcgacatcca tgtcttcgtc 960

agcgtcgtcg tcagagctgt ccggggccta gtttccatct caatatactt gatctcggcg 1020

gagtgccctt ctagcagcgt tacgacagtg atatccctgt aaaaccgtgc gggcttcctc 1080

tccacaagga gcgcatgttg gctctcgacg gcttgggcag cggcaggtcg cggaacagca 1140

ggttgtcgtc gaacacgtca cacagcagga tgcctatcca gagatcgacc cagctgatgg 1200

tagccctcgg gcctccgagg atgatattgg tcactcgttc caattcctga aaggcatcaa 1260

aatgaggcag cacgtattaa gaatgatgac catttccctt tcaatttatc ttcagtttta 1320

gagataaatt gattgttggg acagaacaga aggctgagac ctcaaatgtc ctgataagca 1380

tgttccattc aactacagaa ccaatacacc catgtcctct agttacttgc tacatttccg 1440

aaatattcta tgcaacggga taattatagt acaactatgc ggacctaacc acaccaagca 1500

ttccaccctc ctgagaggct tacaagtggg ggccaccatt 1540

<210> 391
<211> 1440
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_145696_G1, chr4:81772624..81774063, Cluster 3

<400> 391
agaccctacc accactatga aggcgtgcaa ctaattgtta gaaaaatgta ttgattcaaa 60

gtatgtttag ctgtagttta tatctttcta cctcctcttg tagatagagt tagattgcat 120

cacatatctt ctcttgtatt cccaaatgca aagtaatatt ggttccatct ctgttggata 180

atggatagat gatcggtttg tgccatatct taagaaaaca aaatatatgt gagttgtggt 240

ggggcttgtg tttttggctg atcacatccc ctcttttctt tttctgatca tgtcaatgaa 300

tttatgtgtc aatctgaatt gtctttttt taaagatcca atatgttctg gtatctaaaa 360

aagatttgtt agattgcaag catatgttgc gaggtcattt aggcctcaaa cagatttttt 420

ttgagggaat aaggcacatc ttaagatctg attgtgttgt tgatttcggt ttcatgcgag 480

tagagatttt gtgccgtcgc aacgtacgga cacatcccta gtgatttatt atgatcctaa 540

acaaggaaat tgatggtaac cacctttttt gcacaaacaa aaaaatatca acaaaaaact 600

tggagtttcg gtcggttttt tgtggaactt gtagagcaga aaaaagaata tctgtttagg 660

gaaacttgtt agccaactca atgacctgat gagcgaaaca aaaatgcttg cagcccttgt 720

tttgaagctg aaatcgaatt ccccatttta tgctaaaaaa atccccttt accaaataca 780

gtacagtgac gtcttcaata tctaatagcg ttcaccttaa tcagatggac tatactcaca 840

tcctccatga tgcagaaact agggtttata atgactagct aggattcatt gttgatagct 900

acattgtggc atgctaggag aattcactca gcacataggc cttgccagcc agtgggcaac 960

ccagtcatgt gattccttca ctacagcagc tgaggtacca ggcttgcaca atgcaccagc 1020

ttgttggaca aggttgtgaa tgctttttat taaattagtt ttaaagaatg cattgcataa 1080

ggtgagagaa ctggctaagt ggcaaacgat gctgtgaacg agcgcatctc tatttgataa 1140

ctggctaagt ggccaaggtc actccggaca acatcctgca gtgcagagtt tgtgtaatgt 1200

caatccacga gtaggattgg tgtgcagcca agcaaaccct aaatgtcatg acaatacatc 1260

ttgtctgtga ctccgcaaac atatatttaa taaaaattgg agtttgagtc ttatgtgacg 1320

tgatttttc cctagctcca accaatcatt ttgaacactc tatcattagc cagaagatgc 1380

catgtacagt ttactgagta ccacaatcaa aatagcgttg gagcaactgc cctcccatat 1440

<210> 392
<211> 1437
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_145958_G1, chr4:83215092..83216528, Cluster 3

<400> 392
tccatccaaa aaaactaggt atggtggatt gacggagtct ccacccaaaa gagtcacaga 60

ctcagagaca cataatatga gaacatatct aataataaag caatctgtgt ttgatatgga 120

tccattatag aatcatgcat aaaaaggttc tagaaaatat atcgtatatg ataaggtatt 180

caagataata cctcaaaaag gcaacgatgt ttggtccatg taacaatatt aaatatgcaa 240

caaaatataa atgataaacc tgtcaagtag aaaaaagatt agttagtgag agtcaataaa 300

taaccataca tttagtttat aatgttgtgt gaagtcttac cactagatac tagcctacta 360

aatctctaaa gctttctcgc aggcttagaa aaattcatcc tacgttcttt catggcttga 420

aatgccttct taattttctc aaaatcaaga cttttaaaga tctccttctc aatatagcat 480

aacatacata gatcaattat agaggttgtg ttgagacgaa acaaatccgt agagggaatg 540

tggttgtcag atctatggtt ttgggagtag gaccattatg tcccggaata agttgtttag 600

ctctaaaata tttagggcta tgctaggaat gtgtaatagt ctctataaat aagaggaggg 660

ttgcctcaac cagctatctc tctagcatct acctagcggt ttagttttta cgatttctct 720

cttgtaggtc tctccctcta gactactatt aagatatgca gatgttttag aagataaata 780

tttacctatg tattgagatc tggtaagctt ggtccttacc aaggtggttc atggtgatgt 840

gaaatccatt ttcatgctct cttgagttct cgaagctttc atttttatt ttcccttctc 900

gatttcctct ctttgatcat ttgttggatc ttttcaacta agtttttgga gatttttggg 960

tttaatagaa aaaatgcaag gaccatcaag aatcattcac accaagtggt ttaggcagat 1020

tcaacttgag caccgaattc taatgtcttg attgattttg acaaaaaccc caagttgagc 1080

gcttattttt agatcttcat taaaggttta atcttttgga gttcaagttt tatggacgcc 1140

ttcaaaactt caacgtgaaa gtttgtgcaa aattatagct caatcaagtt tatttggaat 1200

gtttttttgt cttttggagc tttagtttgg actgctcgca gtagtcagca tggaattgcc 1260

gctcgtggag cagcaatacc aggaagcaac gatgctgcgt gtgagcatag tgttgtcgtg 1320

ctctcctaga tggctcattg ttttgagttc tttcggagta ctgggtcacc gggtgtaata 1380

cccaactttt ataaagagga gttaatactc ctatatgcat gattagactt gcatttg 1437

<210> 393
<211> 1881
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14904_G1, chr1:82163311..82165191, Cluster 3

<400> 393
ctagctagct agaagcttct tctgcttata cgctttatag aatctgatgt gatctggcca 60

catgttcacc tcagtgcttg gctagcgtta agctccagct agcgtcaggc tctacagttc 120

tactgatagg aatcggagac atgcatgcat atatgctctg tgtggcacta ggctaaattt 180

gggagagaat gacgtttgct atacgagaca aattttgccc aactttattt tctctctttt 240

ctagagctgt ctcgagcgag gttcgtggtt atcctgcgct agctaaatgt ttagctctac 300

gacatatata tagattagca tttttacaag tagggttcag agagcaggag ggacggcact 360

gtgtctctca ctttcacgtc tccatccctc tccccttttt cttcgcggcc ttcatcatcc 420

gatccctttt ttgcgaaata tgctccgcat cgtccctgct gaatctgatg caaaacgggc 480

aggaacgggg gcttcctccg gtttcatgtg tcgtgtacat atatatcctc cgcttgctat 540

tcaactcgaa atgatggaat ccacagaccg tttctgcata tctcttcaca cttctagcat 600

gtgaaagcag tgatggcaat gaggagttcg ggtcggacga agaaaaaaaa aaactgtctg 660

ggatcgcatt cgtcgaagta attcccaacc cacgatcaaa tctatcgggt ttcaagtcac 720

ctatgaattc tgtatcattc tacactttta aacaataatt cagctataaa caaaattaag 780

tatcaacaat atttgagttg tattttcgga ttttaaggct tctcacattg agaagcaaca 840

gaagtacaga acatttctta aatcattagt caagtactat tgcattttag acatttttgt 900

gtaaaataaa caatgagcca aatttcggat gattgcgtgc gagttagcat ccacgggttg 960

aaatagaaaa tcacacaccc atacccgtaa aacttcatat tgggtgcaga tgcatccacg 1020

agtcaaaatc gttacccata tacccgcaca tatcgggtcg agtacccatc aagttttagg 1080

tctacacgct aaattgcggt gaaagaaagg tgttccgttt ctggtgcaaa attggcaacg 1140

gaaatgaact agcttagtat gtgctaccac attgcactag aaacgatcta gacaactatg 1200

gcgtgtttgg tttcttgtct aagctaaggc ggccccacaa ctcgtctatg gttaaccgct 1260

cgaatgaaat taataactaa gcttagacag agaaattagg caagttgtgt ggcgcatttg 1320

tccattctac ttctaataga accttcaaga ggaatgaacg tacgtgctga gtccattatt 1380

taccagtaaa aaataattta gtttggcgca catgaaaagt aaccgaaaac atatatattg 1440

gccatctttg tcatccatct ctcattttct tgaacagctc cgcttgtata tctacttta 1500

cgagatgtgg tccgtcaaca gaaatttgtg atggttttaa tcatctcgat tctctgaatc 1560

tctcagttca gccttttaaa taaaaatgct ttgaattatg ggtgcttgtt tcgtaatgat 1620

aaggctaact gggtatagaa tttgagagta ttgtgattca agcaataaaa aacaactcga 1680

gttgttcgtt ttatgtggcc tagccaaggt agcagctagg catacatatt cagcatgatt 1740

agttaattag gtggccgagt gtggtctaag tcgtgtgagc atggctcgct agaaacggaa 1800

cgatcctagg tacctagggt acctacgcat gcagtctatg cagtctggag aggtgatttt 1860

ttggcaaacc ctgcatctgc a 1881

<210> 394
<211> 1887
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155853_G1, chr4:151731736..151733622, Cluster 3

<400> 394
gaaatgtttt caggtcgatc ggggagtgta aacggccgac gaccagtatc ccattcccat 60

aaacagtgcc cagccgacct agacccacta gtaaggttct gacttaaaac acctcttgcc 120

acgcgtggac gaagccgtgt cgtttgagtt gatggcagcg ttttgtccag ctgctgttca 180

tcacacacaa cttcacaccc atcaatttct ttgtatggta ttccatccat actctgtata 240

tgtagtatat ggcatattcc tatgtcttca atatataaca tgtatttagt taatatataa 300

catgtataat cagagtttgc taaatggtaa ctaggtctgt ctttttttt aagaactttc 360

aggatttatt ttcttttagc atatctcata aagatgaatg tggagctccg ttgggccatt 420

tagttatcag taatgtacgt attggtggaa ttgttatgat tatactttac atcaatttat 480

ttaccaaagc catagagtaa tactgtatta tggaccgtcg tgttgaaatt gtctaagagc 540

tttgttcgtt tgtgcatgat cggaactgtt ccagttgatc aaagctgttt atataaatca 600

gagaagtaat cctagctagg aattatttca gcccactaat ataatccgta attaagatca 660

aacgaacggg gcaagaagaa cgttgacgtc tgctttcaac cgtaatttga tcgcagcaaa 720

gtcagccgct tggaagcacc aaagtcttga gcaggtagaa tgaacagcga cggacaccca 780

gaagctcgta gtgtgatgcg gaacggagcc gcgcgcgcgc aggacatgga tctctgactc 840

tctctccccc aagccagcag caaacatcga tcacgatcag tcgttttccg tcgacgcgcg 900

cgggagcagt gtgcacagca ctgcagctag cgagcttgcg aggccattga tggcaatcac 960

gcacgcagat cctgcgccag gtcaacccgg cccgtacaca cgcgctggag cgcgctagct 1020

agctaggctg gttccgtccg cctcttgtga tcctcggcgg caacctggcc ggcggcgcgc 1080

cgacggtggc gatgattcac acacacggcg gtcggcggcc acgaccgcgc gacgacggtt 1140

ttgcccgtgc gagaccattt aacaaaggga ctaagcggat gagcccacaa tgccatctgt 1200

gcaccgaccc gagtcgctgt aggaaccggc gaacccgcct cgtgtgccgc cggcgggcgc 1260

cgcccacagc cagggagagc ggaaccaccg cgcaggtcag ctcagctgct gtcccccatc 1320

acatgccgtg ccgtgcgcca ggccgcgtcc ccccaagacg agtaataagt actacacgcg 1380

tcgctcggtc cccgcgcgta cggtgcacgg agagccggag agggtacgcc acaggtggcc 1440

agcggatagg cacgcacgtc gcagcagcaa ggtcggcgtc gcatgcatgg gcgggaaaac 1500

gatcgcatcg catggctggc tgtgcttccg tttccgttgg tgtcgctgtc gccgcgctga 1560

aatgctgagt gcagctatag cctataggat aggataggag aggacagtac gtgccggggg 1620

gaaatccaca tgtacataca cacacagtac ctgtttctag ctcgctgcta cagtgttagt 1680

acgtacgtgg accttcctgg caggtgcatg ccacattttt ccgaggcatg ccgtgccgtt 1740

caattactcg atgggacatg cacgtggtgc ttgtgacagt gacgacggca tcacgcaaaa 1800

taaagctgac aggaccgcgc cagaaaggtt tttgttaccg ttgacaaggt tacatgtgtt 1860

cgatttttg tgctttgtta aaaaaaa 1887

<210> 395
<211> 1635
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156388_G1, chr4:154295987..154297621, Cluster 3

<400> 395
atgatacata aaaacaataa actttggacg gttgagaaca agccgccaaa aacacgatac 60

aggcaaacaa taaactctgt actgtaagtg cattagctta cagtacagtc atcttttcct 120

tatgtacagt acagttggtc cgaggcactc gatctgggcg cgaacacgca ctacgagagc 180

acccagcaca cgttgtagct gtaatcattc cgatacaggt cgatcgatgg aggagattcc 240

attccatctc ggctcgacgg ctcgtctctc tctctcctgc tttctggcct tatggagttg 300

tgggtgtggc gagacactgg cgtgagcgtg tcactgtcag ccgcgtaaaa aaaatacgta 360

tagccaatga cccattgacc cccaccagct gaagactgat gagcatgtag caaaccgtgc 420

cgccgccact gcccgttgtt cagcgagtcg actcggatgt gagtttggcc gtgcaccgcc 480

gacggcgccg agctgtgggc atggcctagc tagggtccgt tttttgtttc ttgtttcttt 540

gcagtgcacg cgggagcgca tgcaaccaca atgtgcgacc actttcgtct cttgcgcgcc 600

cgaacccacg atcgttcagc gagaccacag tgcatcagac caaaattggt cctcgtgtgc 660

cgcctaatga actctagaac gctgcggcaa gaaactacgg agtatgtcag aaaaggagaa 720

ctcttccgtc ccatttatat gctttcctct ttttttttt gagtgcagtg ctaggtatca 780

cgtcgtgaac tcacgttgtg aacatataaa ttaagtgagt ctcgtttttt gatatcattt 840

tttgagtgca gtgctaggta tcacgtgaac caacgaggcc cagatgttat ctcagctcag 900

tttggcccga tatcgaactg ctcggtccaa ttaacagtaa gagaaaggat aagttcaaat 960

gacgagggtg agcccaccga gaatctgccg tctcagaata atagatacct gcacatattc 1020

ctctcgaaaa caaactgtag agatgtatgt aaaaaaaatt aagggcctca cgtgttctcg 1080

cgttgcatct atttttcaaa tctccaatgt gattttacct ttatttttc caatattaat 1140

attttgtgtt ttcttttctt ttttgtaact gaaggcaata atgtttgcct cttcctacaa 1200

gacgatttgt atgaactgag tttaaaaaaa aaaggctggt tgtttgtcag tgtccgagaa 1260

ggtcatacct agatgtccac aagacgcata tacgaccagt gtgtggaagc gaggagatat 1320

aaatccaggg agggaaaacc ttccctaaat aattcaatgt cttattcaaa tgacacccct 1380

aaggtttctt aacatgggaa aataaaggga tcccaaggaa atccgagttt ccaaactaga 1440

ccataggact tgtttcggtc aggagtggat tggggaggaa caaatcacat gctagtcaaa 1500

attgaataga aatggattgt aatcccatcc gattctcatg caaccgaacc agaccttaaa 1560

aactttgcta taggaaacta ctatgagacc tagttgtcgg gaccactgtt ctcaggatcg 1620

atgcccctgg accca 1635

<210> 396
<211> 1697
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156548_G1, chr4:155016275..155017971, Cluster 3

<400> 396
tggtttcata cacatctaat agtgtggcac atcactattt tagatcacat gacatattaa 60

taaagataaa tgaattttat gggatgacat ttgttcatgg ggatgaaatc atatcaacca 120

atttccaagg tcttggaaat cgtgtgaatc ctccattgag agtggtttgt ttcatttttc 180

acatatttta ctgatttcta ttggttgttt agttgcagca tttaattgtc atgttagtct 240

atgaaaatag taaagtaaaa ttttgaatcg agaggcaatg ttttattatt tagtttcatg 300

acacttttga tgatgtggca gtgttggaaa gagtgttatg aaatgactgt tgtgagtagc 360

ctaagctcca caaattaata tctagctaaa atgcgccctg ctgcttttgt cagaactcag 420

aagccacaag gcgcgcgagc agaaaccagc gcgtatttgg agaattaatt aacgacggca 480

ggtttatatc ctcccattga gatggattcg cctgcatgcg cccggtgcca cagccgcgcg 540

catagagtaa aagaggagta ataatctaag taatcactga tctgcggcag tcccggtccc 600

aaccccgaca aaaatttcga ataataataa taacttttgc ttggtttctg tagcgtttcg 660

cgtcgtctgc acggcaatga ttgaaagtct cactgatgca tgcgcttcgc ttggcatcac 720

ccatcagcca tcattgctct gttgcattgg attaagtgag tgggatggat tgagcagggc 780

ggtgaaagcg caccatgcac gctcgctcat gccgtacgta cacacctgac catgctatgc 840

taactctcca cctcgcgtgg acgctagctg tggaaagcaa aagggcatcg cagatcgagt 900

gctccgcccc gtcgcggcaa cgatcgagcc aacagcagcc ggcattcagg gccggcgaac 960

tttttatgac cgccacccgc cagatatgcc gctgcccccg gcaggccggc cggccggccg 1020

gcaccgcctg caataaggct gcaaccgcca ttgcggagga aaaatgcatg gcgccgcgca 1080

aagctccggg cggctccggc agggcatgca ctgaattcca ctatgccggg ggggcagagg 1140

gaggggggat cgagagccgc ccaagcgctg acatctttac gaattgaatg aagcctctgc 1200

tgccacgcga gcgaaaaagc ttgcggcggc tttctggtag tagcgtcgtc aggtgtagcc 1260

aaaaccctag ggcggcttaa tttctggtag cgtcggcatg cgcatgctat catcgcgcca 1320

cgaccgagcg cccagcttga gctagccgcc gatagtggcc tatacatact cgggctacgc 1380

gagtgcggag gcgcggacct gtcgcagtcg caggcagctc ctccggccgg tcgtcgatcc 1440

tcactcagct tgtccacgta cgcccagcgg cgtgcatgcg tggtggtact gtgctttggc 1500

cttttcaggg gttcacgtac ggcgcgtgca tgtgatgcgc cttcaacgat caggccggcc 1560

ggcatttgtc atggcgccga tcgaagcctg acgacgaccg tccgtccgta catgcagggc 1620

ctcctagctc ctagccttgg ccgcggtcac tactactagc tcgtcgatcg agggttttac 1680

ttttaccatc ttcattc 1697

<210> 397
<211> 2313
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15961_G1, chr1:88511259..88513571, Cluster 3

<400> 397
gtgcttccat ggtgtcaaga gggtttctgg caccatgaaa aacaaagtcg agacaccgat 60

gagctaattg agtttactaa tacgaggagg aactttcatg attggaggtc acctcatgtt 120

agtcatgatg caatgctagg ggagtggcac atggagattg gtcatgctcc cctagggccc 180

atgtggctag gccatgcaat gcccctatgg ccttgcacgc cctaggcgag gtgtggacag 240

aatactggcc cataaatacc atgatatgcg ggcccatgaa gccaaagcca ccagatggag 300

gtcacgacag tgaggattat gtgagattcc tatgcctcct gtggctcata atctgagttg 360

ttagaacagg tgtcaaagac agctccacaa accaatgaac atgttgatgt ttccatagtc 420

atgctacatg ataaaacata gctaacctaa aaaatgcact tggtcccaac atagtgtgcc 480

aaatgtcatt gcatcacatc atcatggtac acaaagttcc agaaagagag agagagagag 540

agagagtttg gagggagcac gacataggtc aatggtcata ttggatctgt gcacgactag 600

gagttagcat gtaggcatca agagaggttc aaaccataat gtgtgtaata ccctacgtta 660

tattgatact cattgattga tgaacacaaa ggagaaacaa accataagat caaagactag 720

tgagcatcaa gactttctag ttccccctca tcttatggtt tgtggtggga gttctaatgt 780

aatgttatta atccacccaa ccttctaggt gaagagtgtg gcatggtaag ctttgttgca 840

tctaactaaa ccacttgggc catattaaat tgaattccct aggctagagt caaatatcct 900

taaatgttgc tcacactctc cattttatag tccaaaggaa gagaaaggtt acacgaacct 960

cggatcccac cagctaagac acaattattt gtttttttata ttattcttgg agatgtacta 1020

aggtccatcc catggtcatg gtgttgtatc agagacatcc ttctcgaggt gattgccata 1080

cctaccatag aggtaggtat gatgagttgt gtctctcggt gtcacggcct gtgccgcttg 1140

ccacaagata gttggtagtc ggtgttgtgt tttatacttg attatatttc atggtacact 1200

ctaagtgctc gtgtctgtct atagggtgaa tgcacataca atataatgat cttgagtgcc 1260

ctgacgccta agccatgata acaacacgct tgttaggcat gtaatatctc ttatataaca 1320

cttaatgtgt tgtacctaag atttatctat gatgctattg atatgggcat atcattaggc 1380

cactagatgt ggggtccacc ctttagggcc atactatccc tagtggggcc cgacacatcc 1440

ttttatcttg tgataggatc acacttggat gcactgagtc cattgtcttt ttggtgcatt 1500

tggccctaaa aggtttgagg cctagcttct tccatgagga aagctagtgt tcttaaagat 1560

ttcagggtca atagagggtc cctagcatct gagtgttgtt gcataattta gggcccaaac 1620

tacatcaaac acatgtccca tcatgcccta gggcacgagg ggccctaagg gcctattctc 1680

atgagtgctc catggcatga ggcccttgca gttttattta catgagtgtc ttagggtacc 1740

aggagcacta ggggctttag actactaact attgtctaag ggcacaaggc tattcaagat 1800

ccctttagtc ctcctatgga ttttgactag acattatgtg ccttagtgct tacatcctta 1860

ggtcgcctcg gggccagatg ggctttgtat cgtaacttca taagttttgt atagttattt 1920

atttggggta ccctgatgtc aagcctcccg acataaagct cctcctctgg tcagggtcaa 1980

aggaaatatt cgatgcttgg agcctcagaa gtggtcaccc caacatagtg gacctcacaa 2040

cagctttcta tactagaatc tttgaaggtg ccttaacaac tacctaggat aatcttttt 2100

gggtactgat agttatagtc caagatatca tagccatatt caatgtctta atgtttagtt 2160

tcgtacacat acaaatcatg gccggtgaaa ttgtatttag ttgcttatat tgttgtgtaa 2220

tcacctttat gttttataga ggtctcatat atatgttcca attgtgatag ggtcatgata 2280

atatttgaat ttgtatgtcc cattcacttg tgc 2313

<210> 398
<211> 1577
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159987_G1, chr4:175124436..175126012, Cluster 3

<400> 398
acagctgtac tcttgatcca tattgttacc tgttgtaagg tgagagtgtg agatgtcctt 60

taggatgaca tgacaatgac gcacgcccgt ccgttggctg acagagtacc acgggaaatc 120

caatccttaa ccgccccggc gtccaactcc gtccaatcca tatcctttga tccggaccta 180

aagcacggca tggacctgca aaaggcaatc ctatgacaac cgggacaaca tttatcaaag 240

cgctgcaatt tgcatgcatg ggtcgatcaa ctttcgagga ttctataata atatactcct 300

atctcctaca cgctgctcct atggaaagtg ggagggagta gagtagctag gagtacgacc 360

tcttcgctga tgtggcctcg gtgatcgagt ttaggttgga cgagagaaaa atctttgttg 420

cacctagaca gcaatgtcag cgtgggttca gctcggattt gcgcgaaaaa aacgtgaagg 480

atgcaccatg tacgtgagca tcatcggtac tggcagctat tatatctcat ctcctatacg 540

atatctttta ttttaaattt tactatgtaa acaatgtaat ctacaaattt ataaagtttt 600

aagagctaaa gcataatttt tttaaagtat atccctttgc tcttctttag agttttagag 660

caaatctgct ttatgtcaac cacttcttat attcctctga tgcacgttaa atacttaatt 720

agatgtatat ttagtttcaa actttttatg tatgtatttg tcatatactt agatgtctta 780

tacatatact cagaaaaaaa aatctctgca tagctagagg atggatgagc gtgttctata 840

tttcaaagac actttagatg atacaattaa ggtcatggtt ggatcctcct aacttattat 900

ttgctaatga ctaataatta gtcgataaat acttagctag caaaaattag ttagtgtatg 960

tttggagact tggctaatag atgtcctttt tctctttata cgatctatta gcacctatta 1020

gtaaggttaa atggcaaatg ggtaaatagt ttgcatgcct tccggctaat aattagtcaa 1080

tttgttagcc aacatgtttg gaggttaaag tgttaaaatt agctggtaaa ttgttgccat 1140

aagaatccaa acaaggccta aaacatataa agaaagaaat tttctctaga cagggactag 1200

cagataagct tttacggact tccactggtt tctgtctaaa ccggtaaagc ttggctgtag 1260

ctagatctta gcatgatcat ctactccacg cagctaatta actactcctg ctaagcagac 1320

acgacgtacg gtcggtcggg ttattgccgg tgcaagtaat ctccggataa ggctactagt 1380

tagtagttgc tcgccactag ccatgtgagt gggcactatt atatactacc gctactacta 1440

gtttgcacgc atcattattc atttgccgtt tggaaacatg gactggaaca gtagagatct 1500

cactaaaagt tgtttaaatg ctcactatag agcttacgca cggtggagta cacgttaatg 1560

tggctcatcc agacaac 1577

<210> 399
<211> 2128
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160808_G1, chr4:180205627..180207754, Cluster 3

<400> 399
gacatagaag gctcctaaaa cacgctcttt gtgtcgattg ggctctcgtc gattttaatt 60

ttgctgatgt aagtgtcaga agacgttcta tggaggaaat cttgcattag gttgacagat 120

aaaacacaaa gaaatgattt gtttgaaagt aaagatactg gacgggatta gaggagataa 180

aatctccttg tttttcgaaa tccttttcgg cgaatgaaag caactactga tactgtaaca 240

aagcacctca gggtctggca actgtcacgg ttctttttta caaaccatta ttttttaccc 300

gtcattggct cactacacta ccaggagggt gatctcatta ccgacacatg aacaggagag 360

gcagagaagg caacagctag caacagtatc atcctgcttc agatggtacg tgattacagg 420

agcacctgga tgattacctg aaacggagaa gacagcaggt gcatcacccg gtactattcc 480

gccccgcact accactaatt gcccgcgcga tcgatctatt actgttttac tgcctcctcg 540

aacccgatcg gcctgcatgc agtcgaggat cgagctctgc ctctgcgtct gcctgcttgg 600

gagagcgaag aggagagatg cctgtggctc ctctcattta tggttgcgtc gccagggcac 660

tgtgggcgtc tcccgccgtt gctgcagcgt gcagcgcagt gcagccttct ctctccagcc 720

atcatccttg tcaatttctc atggtgcgca gcgctgcgtg ctcgtgcagt ggcgggggag 780

acttattaaa tgtgcattga accccagctc agaaaggcag cagcagggcc acaggcgagg 840

aatggatcac cagttcaccc acacgagttt tgacatggcg tgtgaattca gcgttccact 900

tcgctgcctg ccagcttcca gttccccgtt tccgcttttt ttccaaaatg cccatctgaa 960

gaaaaagagg gcacggaccg agctgcagtt cagccgcttc ctttgacatt gacaaacttg 1020

ggcacggcgc agagccgcag cctgctcgtg ctgctttctg aacctgtata gcctggaatt 1080

aaagtctaaa catttctgca cgtttttgga agccaaacaa acaacccagc gagtgagtgg 1140

ccggtgcccc cacagcaaac cgcgagagga acacaacaca aagcgcatac tacatgataa 1200

ctgccgcaac caccaaccga acctgctttt ctgccttgcg tttgcattgc ggccctgtgt 1260

gaaacgcgcc atttttaaca ggtttctcct cctgccagaa cggaggaacg ctgctaggtc 1320

tctggggaag aatggaggac gcgcactgcg cacaggaagg gttacaggaa ccaggttaat 1380

ttgtagcgca atgcaaagat ggagcgagga acagtagcag acactgtaaa acacgcgtac 1440

gtgctacggt gatcgaatcc ggtaagcggc agcgagatca gctcagctcg cctggctctg 1500

gctcacatgc gcgcggaagg gaatccggcc ggagcgcggc gcggcccccc cttgtctcgc 1560

agatgagaca agcggggaag cgatgcggct ttacactgtg cgatcacgcg gcaaagcatt 1620

ggatggacga gcgggcagat cgatcggcac gggcgagggc gagtaaaaaa tggttgcatg 1680

cagttgccga ccgcgcggag tgctcatcgt agcggtcgca agacttttcg agagacaaac 1740

ctctgtgggc cggccgttgc tggttgtgca aagtttatat acagtaaact attcaaaagc 1800

tgctgcaagt aggacatgca actatgaacg agggccgtag cttttgcccg gtgtggcgat 1860

aaggatatga gtggagaggt cagttagcat gggtgattgt tttcgccatg ccatctcgtg 1920

cccaccgcct tgcatattgt ttacagtttt gccacgagtt aacacttaga tgctgtttgg 1980

ttaatgaaat ctaatacagg tggcagcaac aatgatctat actcaagtac caaccgtaat 2040

aagttcacac cgtctaatgc aatggtcatg cgtcggtcga agtagcatgg acactgactt 2100

gcaatggagc acgcaacctg cgtaggca 2128

<210> 400
<211> 1542
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164095_G1, chr4:197734662..197736203, Cluster 3

<400> 400
taaaagataa gatcgaatag cgtaaaatta tatgggctac gtagacaggc aggctggcct 60

ggtacaagca tcattggttc atacgagtag agtagattat atttgaacca aatgaagtct 120

aaaaaaaagc ctgtacagac acgccgctat ttacagtaca tcgctaaaga caactgaaga 180

tccgtccgtc tatagaaccg atggagctcg gcgtcggatg gtggcaggag gcggtggcgg 240

cacagcgggc aggtggcgtg gtcgtagtcg atccaagtct cgaggtaggc gcggtggaag 300

aggtgaccgc aggggaggcg gtgcaccacc gacctcggct ccaaccgcgc caggcacacg 360

cggtagtccc ccgccgcccg accgacggaa cctgctccgg aaccggtccg ccagggtggg 420

ccccgtcacc gcctttctgc tgtcgccgcc gccgctcgtc ttcctcctcc tgcgcagccc 480

cccacgacgg taggcctagg atcagcagtg cggcgcgcag cagccccgcc aggatcgcgt 540

tgtacagcaa gaaccccagc aggctgtcgt tgggcgccga catgctcgag atgcccatcc 600

tcgctgtccg ccaccgatcc cgatctcggt tggggtggga ttgggaggag gatttggggg 660

gccagccccg ggagggacca atgttacaat ttgggcggag gaggtaggtc gggtgcgtga 720

gggaaggata gagatagtgg tgggattcgg gtggaaggag ctcggcagtg gtggggcggc 780

gcaaccgacg ccggtcccac ttatgccgtc gtaagcacgc cgccgggatt tgtgagttta 840

tgacattcat cacagcatcg gccttgccac agccgaacac tttgtggctg ggctccccac 900

tgcggcggcg ccgccgcgtg gcgtgctaca tgtgaggcga ccaggagccg ccgctcatgc 960

atgctgacat ggcgtccggt cccccgcact gcactgcacg gcggcacggg tgtcgccgct 1020

cgccacagtg cacatgcgca cacaggtgtg cagtgcaggt ctgattcgct cacgcactca 1080

aggtgatggg tggaatgatg tgtggatggg atgttgtgcg ccgtctctgc tgctgccgcc 1140

gccgtgccaa cactttgcag gtgcaccgac gtccctctct ccccgcggcc gcctcggcaa 1200

ctgaggctgt cggtccatgt aactgcgtgg ccccagcaaa agagcccacc ccagatgtcc 1260

ggagcgactt gttgtgccct gaaggacgag ctactctccc tgctacatcg tcaacctctg 1320

ctactccatc catagctctg ctcgcctaca cagatatatg ataatttatt ctgggagcaa 1380

aggctgtata tatgcagatg ctcacaactg cattgcatca ccgatgattt aaaacttcat 1440

tttaatttct acgtttctgc atcacatcat gtgcaaggtg aagtgttata ttgtctctgt 1500

acacaaatga gccgtcttgt cttacaattg cgtgtataac gt 1542

<210> 401
<211> 2481
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16436_G1, chr1:91265495..91267975, Cluster 3

<400> 401
attggggcgc atctagttcg ttccctaacg aaaccaaccc actcgtgttc acacagcaga 60

agcttcacag gtaccagcct cgctcgtcgg tgcccgccgc ctaaacgccc tttacacaac 120

gcgctgtgct gtgctgtgct gcgctgggct gggcttgcat tgcccatcaa aagttcatac 180

tatattctag cgcaataatt cgcagaccct cactaaaaat cccgcccaaa ttcgatgtga 240

cagacgggtc gattaagcga aaggccagag ccccgcgtcc gaaaggtcag tgccatgcca 300

tgcgcccgag agcagagcac atccccacgc cacctctttt tgactccatc tgtccgtcct 360

tgcgctctcc atgtcatccc acatgcccgt agcagaaggg agaagccatg ccttttgacc 420

gctggccgtc gccggaaact catttggctg gcaaacagtg tgtcaacagg acagttttat 480

ctgtcccgga cgacgaactc gctgagcatc gtgtgctcat gcgtgcgtgc atgatgccgt 540

gaagatgttg gaatctccga ctctgacgct gggccagaat ggaagtactg tcgccattaa 600

aaaaagaaat acgatcatct ctagactcac tggcttacaa ctattttagc attgctactg 660

ttttccactg tagaacggac ggagagagag tggtacgcta tacgttgttg cggcgcgacc 720

tgtggtggtc acggacacgg tcctagaggc gccgagccaa gcctctgaaa caggagaccg 780

gggtcgccat ctgcaggcac acgcatgggt agggtagacc ggtagagccg agacgagact 840

atgcttcgag gaaacgcgca cgcaggggg gtcgagatca gatcgaccac cagagacaac 900

agcggctgct ggtgctgact ttagcatttc accggctacc acactacaca gtgatcatca 960

aacaccaccg atcacggaat tgcctgcgac ccctgctcgt cgtgagcatg tgcgtccgtc 1020

catcggtcag gtcagtttcc ggtttctttt ccgcttcctt tttggggaac gatcgatatg 1080

gtcggagggg gtggggtggg taaccgtagt gcgtgcagtg caggtacggt gagcgcgcga 1140

tggtacggcc aaccgagcat tatgcaagct cacgcgatgc tgtaccgcgc gccactgggt 1200

agctacagac acacgccact cacctcgcca gctacctagc tggcgccacc ttgcattggt 1260

gcttgcttgg tttggaccca acgttcatca tcccgtcgcc ggcggttgaa gcgtacgtag 1320

atctacacgt gtacagggta tacgtcaccg acagtcctcc ctacttggtt tagatctgag 1380

agtataccaa cctctcacag atcgacgggg cagctagcta gtcgcaagga ataattgggg 1440

ccggattcgg tcgtcttccg tgtcgctcgc acgcatgcga ggacgacgac ccctgctggt 1500

cggcggcgac aatcatgcgg ttgcggtgcg atgcaacacg caaggcgccc gcggccgtgg 1560

ccgtgtcgcg cggaatcttg ccacggcggc ctcttgttgc tctctgcagc tacgtaccat 1620

gccatgcgtg tccaggacca gcatcgattc cgcccggtac ggtactaaaa tactcgcctc 1680

tccaccacgc cgcacgcaag ttctgcaccc cggcaatgac gcgcggtata cgccggtacg 1740

gccgggtaca tgtacatcac ttgtacacac cgctatagca gtccctcggg tggctctcag 1800

tagtcagtac ttgctgcgga actatgcagc tggtctccag cacccatgcc gccgtgcctc 1860

acctgcttta gcaacatgcc ctacgtacgc acgcaatgac tacagcagga tggcagctgt 1920

gtggttagga ctactaacag tatagagtgg cacatctggg cttcgattcc ggaacacgtt 1980

ctctctggca gcttgatggg ttctctagct gcgcggacac acatgatgat tgcgacggct 2040

gtgtagagag aagagaaagg agagagtgag aaaaggcgga agggcacatg ggcatggatg 2100

atatgggaga gatacgcacc ggggcaccgc cgggacgatg agtccagttc atccgcgaaa 2160

gcggtgtttt gacatggcag cggggcagat gatgatgatg atgatgcatg tgacggccaa 2220

gcgacccttc acatgctgtc gcgagacgcc gacggatcca tctcgtggcc gtgggccgat 2280

tcgtcaacca cacgtatagg cctgctgatc agccgggttt tctttagtca caaggttctt 2340

tagtccgagt taatatacta accataacta ataaacatca caatgtttga tccatagttt 2400

gtctcaactt tgtaatactt gaaccacagc tacctagtct agcaatatga aaagttagta 2460

ccactattta aattatactc c 2481

<210> 402
<211> 2323
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_166977_G1, chr4:212225057..212227379, Cluster 3

<400> 402
tttgaaggac cctccgggag ggggctcggt cgagacggtg cctctttggg gaagacccct 60

gatgaggacc ttaggcgagg cgcggatctg gttccttgct ctcgggggac atgtctgggc 120

agagagaact ttccgagcgt gttttgaggg tttaatctgg acacccctaa taatcacacc 180

cgacactatc aaaaaccttt aatggtcaaa ctgggacttt tctcttcata tatcttaggt 240

tgcccacgag tctaaataaa ccgactcttg aggcgtttc tccagcggat tgaacgacgt 300

ctgtcgtcaa cctcaatata ccgatcttca gctggcaggc tatagatggt caatgcaatt 360

ttctcatcac tacccacctt ttatatgtac accctcaagc tccccagctc ggtgttcaaa 420

taaattgaaa aatttagaaa atatttttta tggaggggag ctgatttgca tgtaaaggaa 480

accaccacaa gcaagcctgg cagattgctt gttgaccaaa aaaagcatga aggaatggga 540

gttctcaatc tcaccacgca gaatgaagca ttactactga aaaatcttga caagttctgt 600

agcttttca tcttcgcgtg gttgtttgcc aaaggcgacc cttgttcatt actactacaa 660

ataacaaccg gtaccactgt aaaggatgaa aacgatgcgt cgtgtttttt tttggtaaga 720

cttagtgcta ggtagagaga ggtgagcatt tgttgaataa aaaaagaaaa cggaaaggaa 780

agaaaagaag agaaatactg aggcgggccg gggcaggccc tggctgggtt tccaactttt 840

tgatgccaac gattgcatac tcgttcagac tgctgggcag cgttgggtgt tgatgtgtgt 900

actgtagctg cacctgcact atgaaatagt acatacgtac gtactccctc gatgatctga 960

aagtatcgtg tgtgtgtgtg tgtcgtattt tgtagagtta aatatttttt aaacttgact 1020

agatttttag aaggaaaaca aaacaatatt aatatctgca cacgtttaaa taggtttact 1080

ataaaagtta taaatatcct ctgagatgtg catttatgca cagcgatggc agttgccgtc 1140

ggtttgctgc cgcccacacg acacgacgcc ccatgtcact gtgtctgcac ggcatacata 1200

caccagagta cgtggcaggg gcatgccatg ccgcatgcat ggccggccct gcgccctcgc 1260

gtgcgcgtag ggcactgttg ctgctactac tacgacccct gcatcgcact gcattgtcct 1320

gtcccattcg actcgatcga gtgctgctgc gcaaatggtg atgctgccgt ttgttctagg 1380

ctctacctac tgatgaatgt ggtggaccgt gatgattggt gagccatgca tggcctcgag 1440

agaataatgg agcgatcgga atgtcccgtg tggctggccg tttggctcac tgggtacaat 1500

acaggtacag accatgcact gatggggctc agtgaatgca gtgggaacca aaccgatgag 1560

aagcgagccc taccctacac ttcctactgt gttaggcatg ggccttgtgt gctcccccgc 1620

cccgccccac ccctgtgggt atctcgttct ctcgtccaca gcctgtgggc ctttttttct 1680

ctcgtcacta gccaccgagc agcgagcact gccccatgcc aggggtgctg ccgtccctgt 1740

cccgtttgag tgagtactct agcatttaag tagtttaaaa ggattgaaga gtatataaat 1800

ccttaataga ttaaaaactc tcacaatgta gatttaaggt taaactagga cgaggtgggg 1860

taatatcatc cctcgatttt ttaggatcat gttgtcacaa aaaattactc tggtatttac 1920

ctcgtcacta tgtgactcta atctaaacat tatagaaatt atggccgcct tctttcattc 1980

cttcttatac attcaactaa acacatatta atccacttca atcactctca tttctagggt 2040

acttaaggtg ctggtgatac accgtggtcc aatttttagc aaaaaaaaag tgtagttatt 2100

cttcctactc tcttcgtttc acatcgcaag tatttcttac ctttttttct aaaagagata 2160

aacagcgaac cgacgaagta caaaaatcaa aacatgcccc agttgctcgc agtcattata 2220

cttgacatat tttgggccag ataagcatac aaacacgttt tagcaattag acgcacggcg 2280

ttgctgcacg taaaagctct cttcgtttcc agcttttcgt ttt 2323

<210> 403
<211> 1544
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173693_G1, chr5:7687555..7689098, Cluster 3

<400> 403
ttatttacat gaaacagtca ggagagaagg tatactttca caaattgcac gcaaatcttt 60

gcactagact aaaaagttca gttcagttca ggttgggggg caataaacat gtaagttctt 120

taaatgatgc tttcaggttg gtgatattgt tttgccacct ccaccttggg ctaaaggcag 180

ttgccagaga attcattagg aagcatcggc gggaagcact ggaatcggat tacgtatctg 240

agaatctgca ccattggact gatcttattt ttggatataa gcagagagga aaggtaataa 300

gcatctctac acttgcattt gatccccagc agtgctgttg tagtacaaat atgttttggt 360

ttgaaataag gatagtgtct tctttttact cttgaacata tatacaggat ctgtgaacac 420

aaactgagct gttatttttg ccttcttatt gaagtgtctt ctatctagcc accagttcat 480

tatttgactg ccgagcaatt tgacagctgg ttcttcgtct tgtgtgcgcg gtaatacagt 540

aacgtgtcgt gataacattg tcgctgttgg tctcgtggca tcttccgaag gtagatgcga 600

gctgggcctc cgctcgatct ccttctgatt cctgcatgga tctgaaaaga aacttggata 660

tgtttgacta tagtgcaatg caattcctga atggagcaga gcagagcaga gcagggcgag 720

aggcgaggcg accagtctcc acttctgctg cttggtccaa aaaccgttat aaaaagtcgc 780

ggggttctcg agacgggatt ttgtttgcgg gcgaggacag ggcgggggc gcgcaagggc 840

gaggccacgt tcgcctcctc cgcgggaagc gccgcgccgc cccgcgacac gacacgcatg 900

tgccgccccg cgtttgactc ggcgccgatt ggcaggcagc tcgccggcct cggaatcgga 960

tccccccttcg cgctcgccgg gtcagcgaca gcgcgaggat tgtttacgcc accttggccg 1020

gcagcgtcac ccgtccccat gtgaccccca accgggccgg cgacccggcc gtccgtccgt 1080

ccgtctctat atataaggaa gctagcagcg gcgtggtcga tcaccatgtg catggtgtgt 1140

tgagctagct gcctgtcgcg ccgtgggagc cgatcgagag cgtgtgagcc cggcctcttc 1200

tgcgcggcgg cggatggacc ggatcggagg aatggtgtgg tgtgagttga gtgaagtgcc 1260

caagataaag ggtgaagctg ccagcatgat ctaacgacgg cattgctctg ctgctgcagt 1320

gaggcttgcg agtgatggtt agatcatgct gtgacagttt cactctttcc ctttgggcac 1380

atcgatctct tcccctcctc tctctctttc aattctctcc ccttttgcaa tcagactcgt 1440

cactcgcgca caaattccac cactcgccac cctccgtatg ggaggcaatc gtcggggatt 1500

tccggcccaa ccacaggttg cacagcctcc gtgtcaggaa tgcc 1544

<210> 404
<211> 2444
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174020_G1, chr5:9824285..9826728, Cluster 3

<400> 404
agtcacgcga taaataacgt gaaacgcgag cgcgcgcatg acagcctcca taaccattta 60

tttatctcat gtgaagaata aggaacacaa ccacatataa gttggttctc ttttatatag 120

atgagcgaca taggattaaa gtctcatacc atatctacac atcatcttga ctttcttatt 180

gaattgggtc acacactagt gaccctaatt ctaacaaggt cgtcatacga gcaccaaacg 240

tcatgccaaa aggaggtgct cttcccgtcg tagacctcac aggtggtgat agcacggtaa 300

aaagagagat caaggattaa atttagttta ggttgctgtc aggaacggag gttttaacaa 360

cttttctctc gctaggcttg tggttttcat actactagtg atagcagtag tcagtagtgc 420

gtgttttccc tccggatttg gcaaagcacg aagaactatc tagcagcagt tcgtacagct 480

tttgtgagat taaaaggcgc ccaataaaaa agacaaaagt tgatcgaggg caaagtccca 540

aagacgaagg caaatccagc gaccgaaagc agccccctc ccccctcaga tgcagcgcgg 600

tcaagcggcg ccttcacacc aggggtccgc cagcgaggag tgccgactgg cggcgagtgc 660

ggacgtcgcc gtcgcatcgc gctcgccagg tcctggcgtc gccaccaacc cggccggctg 720

gcgcgacgtc gaccatccct gcgctgctcg cgcacaaaac tctcccgggc caggccacct 780

ctagttgact agcagcagca gcagcttgcg gactgtggac tacgggaagc gtagtcacgt 840

ctagttgcat cggttgccac caccagagcg aacacccaca caaatactcg tttgtttagc 900

tgttttccta gttttgacat gtgccattac ttgtcttgtt tgggcctcga ctgagacatc 960

gagatcgagt ccactacaga gtagcactcc agggctttgg atccatggct agtagtccgg 1020

ttttcagaaa cgtgcgtgct gcggtgctgg cctggcactt ggcaattgac aacttgacag 1080

tagtacatgg ggggtgtttc tcaagggcgc ctcaagcctc atcaagtcat cagatgtttg 1140

gcatgttgct tggtggtgca ctgcagcgct tgcttggtcg agagagatta acaagtacta 1200

tagccccgat ccagtgatgt atcatctgtc tcgatcagcc tactgcaacc gcgttgttcc 1260

ccgcgctcgc cagacgtctc cgccgtcgcc ggcagtgcac gcagcattat tatagtatag 1320

tcgatggatc tctctttcat gcatgcagct gttttggttg taggccatgc cttgccagcc 1380

actcgtgttt ggatgcttat ctgtcgtcgt cttctgtgct ccaaatctcg catataattt 1440

gatcgaataa tggtcactgc tcacgtggag tgtggcttcg cagtatgtat cgcagagtat 1500

atgctacaac gcaccacttc aggcccgtcc atcagcgacc atccagggcc tcccctgatc 1560

ccctcagaaa tacaagcaca gcgcacagca ggccgtaggc ccaatagacg gtccaggtct 1620

cggaagctga atcgatcgca tcggcatcca tggtccacca cagtgctcca gtacatcaca 1680

gactcgccgt tctgtccgtc tagtgtggca attgccatta catcagattt tttttctcaa 1740

atccattgta atagtaacaa tataggcacc aaaaaaagtt aatatggttg tatctgatat 1800

atactacagt tattcatact agggagatac ttacatgttg tactagtaca atgcctgtac 1860

acaatgatta cattgaaacg gaacaacaca tatattatta ttgacctatc tcacaaattc 1920

tttgccaaca actaatgtag tgtagctccc aaattttaaa tcggctatcc agactcaatc 1980

tcattatttt atttcagatg atttcaatta aagcattggt tacagaacat cctatacagt 2040

ccctagaaaa cagataataa actatggatt gaacgggctg actccgagca gacatactca 2100

aactctgaat cactaaggtc atttcccttc cttctctttt agctactgag tactaagaac 2160

gagcaaggca gggttggatt agatgtgacc aacaatacta agataatcat cacaaagaac 2220

tcattgtatc agcttcgaca agagactcaa gcaactcttg ttccgtactt gtatttacat 2280

gtcccattac tttccatcca tctgttagag agatggtcct gaaatctcca atgaccattc 2340

gggcatagac gagcaaggga cagggtgcgt cacacgttct atgttgttag aagcaagtaa 2400

attcctcgag ttgatcgata cagaccatct tcagagatgg cacc 2444

<210> 405
<211> 1723
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_175846_G1, chr5:20103339..20105061, Cluster 3

<400> 405
agaccaaagc cacaaatagt cattcgaagg atccaacttc tttgtaatag agacatcacc 60

ttcaacaacc atggtctctt gcaaaccaat gaacttaaat ttatgaagcc caataaggtt 120

cctgataaag ggggcaaccc ctttttttcct gatacctcta caattccaaa gaagacccat 180

catttggaaa acttttttatc agggatctgc tcagcagcac tatcagagga ttccccagtg 240

cttttgatct ttttttggcc aagattttct tgtgcctttt tatgatgaat tctcatgttt 300

tttagtaatc tctctctttt tctttcttga ttgaaccaaa acgaaggcat ctgtttcata 360

tccttcatgg ttttgagtct ctttttccat atcattaata gtagttctat cattttcacc 420

ctttttttgca acaccaattc ttttttccta cccaaacatt gtctagccaa ttccatttcc 480

tttatcaagt caatagactc catgtttgtg ttgtccatat taacccccat ctttttgctt 540

atataaatta tttcagtaga agataaacaa gaaatttcgg agttgggttt agacttgtta 600

cattccaagt ttcttttcat agtcatcctt ctgtttttttt tcttcaattc tgaggccctg 660

gtctttctta agtctctcac tgaccctcct ttcaggaatt ggggaaggaa ttttcttctg 720

ttggacatca ttttggccca tgtcatcagc cttgatccac tattctttgg aatagattca 780

tcctcttgag aagtattcag aatcacactt ccctgagtat tatcaaatat catctcatca 840

gaatttcctt ctttttttatc atttgggtct agttcttcaa taatgataga acattgcgcg 900

ttcttgctac gttgcccaac atttgtattc attgtgttca tacacttcag ttgggtattc 960

caagcagaat gactactaga gccaacacca gtcttcacag tcagaagatc atctccaaga 1020

agatcactga catcatcttc ttcactatca gtaatgtgaa ctttatcttt ttcatcatca 1080

gcgcaattga aataattttt gccagcttta agagtactcc cctcattctc ttttccttta 1140

cccttgcctt tatcaacttt catattccct tcatcgaaca aacccatatc ctgtctttta 1200

cccttcggca ttttaccttc atatttaaat ctcttagcat ctttctggta tgattcatcc 1260

actttaacct ctatttcagc atttccttct tcatcctccg taagaatttc tctttcaata 1320

aagaaatcat acaagaacat tccaagggca ctttccacaa cccctagaac tgcagtgaca 1380

tctctatagg ctattctagc tctgacatat tcatttctga gcctagtttt ctcatcaact 1440

tcgaccacct tgcccactag accaccaact ttcgcaatag taactagaga tctctgctcc 1500

ataggtatgc cactaatcct gaaccaccct ttttgtaagc tacctttagc attaaccgca 1560

tgggtccaag gatcaatagt gatttgggct tttgcggttc tcatccccaa aggtctgaag 1620

taccctaagt caccaatcat cttagggtct ggaaatctca tcacaaactt gttatcacca 1680

atggatctag cagatcatct ccacatattc ttgccaagca tat 1723

<210> 406
<211> 2471
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177364_G1, chr5:27775046..27777516, Cluster 3

<400> 406
ggtgggcgca cacttatgta tacgcgcctc gtcatctaca gagacgaaaa gcgaacgcta 60

gctacagctg tgtttcacag tcaatcatcc gtccttgaca cgtgcacagt acgtagggtt 120

gggcaaggga acggacggag cacgcgcaca gggcagcaca gcacagagtg accaccactg 180

accgatgcct ttccaccacc acaccttgtg atcgatcgtg tcgtgccgtt cccctcttgt 240

gttgttcagc agctatagag ctagctagca agcaagcaag ccgaaaaaaa tgccgcttct 300

cgccatttgc catgccaacc cacggcgcgg tggcgtatat ttggagatcg acgaggcatc 360

ggggagcgaa aaagaggcga ctgggtaggc caatggcgtc gggattcctt gggcccgagg 420

ggtgtgccgt gccgacatat ggcgtcggcg tgtgcgtgtg agcccgcgcc ccgcggcata 480

tcggtttcag gaccgaacca accgcacgca cgtaaacggc gaccggacgt cgcggcagac 540

acagctttta agaagatttt gagaatatgc cgctttttc ctttttttta atatatatgc 600

ccgtcaggaa tttcgtgttt cccttcgttg ccttgccata ttgctcttcc cctttattgc 660

cacactccgt tacttccact actgtgttac tgttagagcg ggtccttgga gacctggacc 720

ggcggacatg tggctggtcg gtcggtggcc agtggccaca ccacacggcg gaccatcgcc 780

ggtcagattc cagtgtggtg gacatgcgcg gcggcgcgtg gcctggaccg tggacagcta 840

gcatctgctg ggccacggtg gcagcctttt cagctactag tactatatcg taggactgga 900

ctgcgtcgtg ggtgatgacc atgcatgtgc acgctcgcga caaataggcc cacttccaac 960

agcaaagcga ttgctaggcc cttttccttg ttccttcagt acgcgccgac ttggcccatg 1020

cgacgacaaa ggaaatgggc tccgatggcc ttgcctgcat cactcgtccg cagggagacg 1080

aacgctgtgc gctcgcgtta ctgttcgccc tctgcgccgc cacgttgcga tgcttcggtt 1140

ccgtgggtgg gcccggagag atcgaccggc cgatcgcgac gcttcccgcc ggactatata 1200

ctaataataa taatcagctg ctgtggcctc tgggtgctca ggttaaccgg acggggttta 1260

tggccttctc atctgcactt tctgttagac tgcctttgac aggaggggag gggaggggag 1320

agagagatag tacctagacc atatagtatg tagagtagaa ttctgtatgt tttttcagta 1380

atatagttgc atttcacata tatatatgtc gacaacttgg aatctggatt ctacgttact 1440

taatttgttt gagtctggta tatgttgtgt gtgcaatctt gatcaatgct attgttttag 1500

tccaagaaaa agcgcaccgg gtcttgtttt cctgatgatg cagtgaacat tagggacggt 1560

ggtaatgtat cacagcccaa ataccccttc aaagtttgtt tgagctatta actaatttta 1620

actcaaaaat aaatagaaac agaggtcgat cataattcga tccgatcttt aaattttaat 1680

gtacaattta tagtctatta ccactctagt gaagggacat attcttcgct cacttgtagg 1740

acgccaaaaa aaaaacaaag tccgttggtg agatggccag tctaatctaa tatctacagg 1800

ttttaggacg atacagccaa aattgtgtac ctttttagct cgagacagac taattttagg 1860

acatacagcc aaatgtacag accgccgaat tccaagaaag aaaagtctcc agcaagcaca 1920

ttgtgcagtt aaccatcacg gcattgatat caggagcgaa catgatcaac taatatctca 1980

taaagtttgt catgtctgga caattcatcg tctgattcaa cactttcttg ttcaattaga 2040

atactacgaa gagatgtgtt gaatttaggc tacaagtccg aaacaatatt gagtaatgat 2100

caagcagcac aatgacattt gtgactattc acctccatgg gaaaggcata cagagaacat 2160

gggctaaaat acaggagaca aaaaaaaaaa aacaagcaca caacaaagaa atgtttctgc 2220

aggcctgaat ggtttcacaa gctttcggca aaggtagaac atgtaacatt gccacctaca 2280

aagtgcatac atggctgtgc aaaggtgcct accctgtcat acacagaaaa tgcagaaagt 2340

gacaaggcgg tatgaacaga gatgtggggc ttttagacca gggttgatca tcctgtggca 2400

catgcgggat tttgagtttt tcaggtgtgg tgtggcagtg attaaggccc gactaaggcc 2460

ccgtttgatt a 2471

<210> 407
<211> 1882
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_178170_G1, chr5:31832841..31834722, Cluster 3

<400> 407
taacgccgaa ggcaaacatt atacagatca acatcataag tgacataatg atatcttgtg 60

ttatgtaatt tacatattta aaactatgta gccagtgtaa gtagacaatt cactgtataa 120

ttcgtctatt tatgttgtct atatgtgttt tctaatatac aaatatacaa caactatcta 180

tgtctatgga tatggactgt acatgtcctt atatacactt gcatgtggta atatagccat 240

taaaactgac actaagggta tatacagcca tatacaacag ttgtctatat gtatattgaa 300

aaacacgtac aaataatata aataataagt catacaacga attgtctatt tatactgtct 360

ataatttttt aaatttatgt atggaacaag gaccaaagca atcagagtga ttgacgtacc 420

gtctcatgca ttggagcacg gggccaaaac cgtctcttca cgaaaggacg atatatgtct 480

ctctcctcct taattagcgt ctacgttgga ttttttgat ttaattgctg tttacgtggc 540

tgcttagaga tgacgtattt gataccgctg tacctgtacg tgccctaatt ctatcgccgc 600

ctgcggcccg acgcgaacga ctgctcggtc gtcgatggag aggcgcgggc ggcgggcgcc 660

tttccgcctc ctgcaagttt gggccaatac cgatggcgct gccggcgacc gtgtggagcc 720

tatcagtaat tccgcatgac tgtccgcatc catcgtgcga acacatactc cagttgagga 780

aaatcccatc cgttcgcatc gccattgtga tggcatggct acgtacctat gtactcactc 840

cttcaaatca aagagtacaa ttatggagta attctttagc ctaagtcaaa accactttcg 900

ttttgacttc cttgcaagca gtgtctggag ttggcttaag gcgacctaga gagttagaga 960

cgatgatgga ttggtgattg tgtttatttg caattagagt gagaattaca cacatcagta 1020

atgagaggaa ggtctagttt aggtactctt acgtacagat tacctccatt ggatttcaat 1080

catttagcta gcctccgtga gccaacctta ccagcttccg ttccatgata agatggaagt 1140

ctgacattgc cctgatacat gatagagagg cggaggcggg taccacaaaa gttacaccac 1200

gtacgtacca taccaacgac atgcgtgatt tggcatgtgt ggatcgattc aatctgaact 1260

caacaaagaa caaaagatcc ctgtacgaat gaaccggcag cccttggctg tctccagtag 1320

tccagctcca acgataccta cccgtgccac tgccatcaga agcagcggga agtcagtctg 1380

aactcagagc ctgcttggta actactgact tttggcagct ggacacctgt gtggtgactg 1440

gtgaggcctg caaattgcct gctttcattt ccatgcagcg ccacaagata tatagcacac 1500

aaccagagga ccagcaggag ccgtttgttt cagtttcaca tccgacagcg atctacgtac 1560

tggtgacgga ggaaaacttt cagcgaaaac cctttggtcg ctgtttgcct cgtccctgtt 1620

tgttctagtg gaatcagacg accacgcatg tgttgtggct ggacttccgc tgaatctatc 1680

ttcgtcatgg agcagcagcg tcatgtctca ccacggaaag ttcatcaacg tccagatcat 1740

gcctcaaccc actcaccacc gagaatccgg ttttttatgg agtactcgac gttttaccaa 1800

agggtttttt aaattggtgc cctcaatttc ggtagtgtgc tcacttatac ccttagtcgt 1860

gtttttatca gacatatcat ac 1882

<210> 408
<211> 1870
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181036_G1, chr5:48352610..48354479, Cluster 3

<400> 408
aaatggagcg taccttcatc gccattaggc ctgacggtgt tcaaagaggc ctggttagta 60

ttagcaactg tcacagcacc atagtttctt tcgatgcaat tctggatcct aataaccagt 120

tttagtttgc atgtactctg ttctttcatg tcatgttctt gaccatgtag caattattaa 180

tttgtaattt ctctggacat ggtgatatag gaattcaaca cttcttccat atagctaata 240

gatgaaattg ttgtggcttg cgacatagtt tcaaagcacc atagtttcgt ccatatgtct 300

atttggtata tcaaatagcc atctactgct tctatgcaat tgcatgttac aagtttctaa 360

tgcttctact gcttctattg ctgccttgtg aaaaaatcag atcatatacg atttttgct 420

cacactcaaa ttgattagac aaaattaaac tcatatagtt cgctggtttc agagttttta 480

tatctgtgat ttgtgctgaa aaaaggttct gccttttctg cggattttct agacgtaaat 540

tttagtatca tttgcagttg taactgaatt tgcaaactga gaatcgtttt gtttcatcag 600

gaaagccagc acgtggacaa catcacaaca ttgtttcatc aggtaagtta tccttatgtt 660

acttagatgg taatgaatca ttttacaaag acgatctgaa atcttctagg caacaacagc 720

catggctttg acatattgtc ttgtaccttt ttagattttc ttgtttttaa ttggtatggt 780

ggtgttgccg ccccatttgc actaagctga tcactgagtc aaaggagtaa aaagcctaat 840

aaaatgacaa gcatgtaaca ctgatggaat aatatatttt cattattttg tggtgtaaaa 900

tatgttcaat gcaaaaaata tgtagtgtta aatgagaaac tgtttataat acaagtaact 960

agctggataa tgcttagtgc aaatggggca agttccatgg gttagatttc tctccttttc 1020

ttgtttcaac tgaggctttg ttaacatatg tgtgtgtgcg taggggggaag taggtgggta 1080

ttttgtggtg taaaatatgt tcaatgatta acatatgtag tgtttgagaa actgtttata 1140

atacaatgaa cttgctggat attgcttata tgtaattttt agtatgggaa atgtttacag 1200

ttctctatcc ggatgactgc acgcacacaa tcatttttag tattcctagt tctctatccg 1260

gatgactgta aaatcatcgt tgtgaactaa ttatttgctt tccagtttag tttaccgcta 1320

ttatgaacat tgttgatatt tacctgaact tatcccaaag cactctatgt tttgaaaaag 1380

tctatgttta gaaaaaatct atgttcagaa aagtatctgt atatggtgtc acggatatgc 1440

tcttacttaa cttcagctgg ggctttgtta atactttcag tgtgtttgtg tgtgcgtgcg 1500

cgaggggaag taggtgtagg gtattttgtg gtgtaaaatc agaagagtag ctggctaatg 1560

cttagtgcaa atggggcaag ttccatgggt tagatttctc tcattttcat gtttcaactg 1620

tgtgccttga tttgcttaga tttacttttc caaattaaac aataaaaaaa tcatgtggat 1680

ggactttaaa gaagtataat agatctaaat atgtgatagt ataacagata tgattagcaa 1740

ttgttgaggt tctcacgagg gagttcaaca gcggggaaca ttgtctttta tttgttgggg 1800

ctgcagttgt cgatgccacg atcacactat tgagctctag cctgttgttg atgatgattg 1860

ttcgttgttt 1870

<210> 409
<211> 1813
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_183137_G1, chr5:62258247..62260059, Cluster 3

<400> 409
tgcactccac cacacgttat ttttttgagc gcccactttc taatgtagat tattggtgtc 60

ctatgatctc agaccaattt tcatgttttc accatttttc atgagctata gttcactgtt 120

tttttgtgtt ttaggagttc caaaactatg gagtcccaaa tagttttagg acactattaa 180

ggccactatg atatacctag actgagacaa catttcttta gcaagtttct acccacaaaa 240

acacgagttc ttggatttac tacacccctt aggagctcaa atacctagtt tcatgagttt 300

ttttgctatt ttaagtttgt gattcctagg ttttcgtttt ttcggcatgt caaacatgac 360

agtctaggcg ctcaattgca tgttgtttct taggcccact ttctagtgta gatttttat 420

gacatgtgat gtcagactaa ttttcatgtt ttcactattt ttcatgagat ataactcact 480

agttttcgga tgttttcagg atcctagaac tattgagtgc taaacattct taggccacaa 540

ttaagaccat taggatgtgt acccatgctg atacaacatt tttctagcta gtttctgctc 600

acaaacaatg tgttcttttg atttactaca tctaagacaa acccaaatac ctaggtcatg 660

agtttttct ctactttggg tctgtgattc ctatgtcttt ttgcttgttt tggcttatca 720

aacatgacaa tctagacacc caaccacctg tcatttttg gtcccacttt cttgtgtgta 780

ttttggcat gcggtgtttt tggaccaatt ttcacatttt caacatttgc atgagctata 840

gctcactagt tttgggtgtt ttcaaggtca caatactatt gagtctcgaa cattcttagg 900

ctagtattaa ggccactagg atgtacctat gttgagacaa cattttgat agtttctact 960

cacaaataac gagtttttct acacccttga ggagctcaaa tactcgaggt cacgagtttt 1020

ttttaatcta ttttgggttt gtgatttcta ggcttttgtt cgttccaaca tatctaacat 1080

ggtaatctag gcacttagac acatgtcatt ttttcttggt tcactttcta ttgtagattt 1140

ttacatcttg ctctcacaac gattttcaca tttcatcatt tttgtgagat atagcccact 1200

gattttagtt ttttgggggc cccgacacta ttttgtgcta cacattcata atccactatt 1260

aagaccaaca tgatgaacct agggtgagat aatagttttt atagattatt tctacttaaa 1320

aacaatgagc tctttagatg ttactacacc tatgaggagc ttaaatgcct cgggtcatag 1380

gttttttcgc tgttttgggt ttctgattcc taggattttt cccaatatgt caaacatgtc 1440

aatctatgca ctcaaccaca tgctattctt cttgagccca cattctagtg tagagtcttg 1500

atgttccatg ctctcggacc gaatttcatg ttttcaccat tttcattttc tatagctcac 1560

ggtttcatgt gtttcaaggg ccctagaact attaaatctt ggacattctt agtacactat 1620

tacgactatt aggatgtacc taggttagga ctacaatttt ctagctagtt ttttctcaca 1680

aataatgagt tctttagatt tactacactc gtaaggctat ctccggcaga ctacaaatca 1740

cactgcatat ttcaagcttc actctgtaaa cattgtcgtc tacagttcaa aacagtgttt 1800

tgcacacccg ttt 1813

<210> 410
<211> 1687
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_183636_G1, chr5:66004953..66006639, Cluster 3

<400> 410
agaccaatgt ggtatttgca atgtcagaca cctagggtat atcctgtatt tgggtttcgt 60

ctagtcgttt cctcagcgcg gcccaaacat accctaaacc aatgtaacta gaaaagccga 120

aacaaatcag taatttggga tggatggagt acatgtacaa gctcatatat atcataggct 180

aattaagtca tgcatatggc tctttatctt atatgcttca ttttgttggt taattaaata 240

tgtgattctt gcatcatgca gagatggcct ccgttggggc agacatctgc aactgcaggc 300

acctgagcag cacatataag gacgagtgcg acaccggcat cctctcctgc gacgagacat 360

gcagaaacga aagcggtggc aacactggcg gctcttgctt cgacgacccc cctagttgct 420

actgctttac caactgctag cttgacctag ctgagatcga caatcccatc atccctgcta 480

ggccacgcat ccgtgtaata gaaatataaa taatgtttaa ttatgcgatg gtaactggtt 540

aattaatact atgttgtgac aaataaaatt tgttggaacc tgtggatcca acaatttatt 600

aggggccggc atggtgcagc caccagctgt atatgtttat cctttaaggc aagatcatat 660

ataataataa aagcttggga gacattacaa tcgagtcatt tttttgcccc atgtttttcc 720

tagtagtgtc tttatcttgt aaaatatgat gcctacagtt ataactatac atggatatgg 780

tagtaagagt ttaatttata tggacttttg tgatactcag acatggagtt ctattaaaca 840

tggactattt taagatcagt gttagtaaga gtttcacgtg agttccattt atatcagata 900

gcaggttgca ttgctactta gtttgatatg gtagtatatt caagaaaaga gagaagaaaa 960

catcccattc tcatgtcatc ttccctgaga ggatgaagga cttcctcatg aatccaatca 1020

agtttcgctt tgggtccatg gatgctagac tccaactctg cgcacgacaa cttggtgact 1080

tctggaagct cggtgtccgc atcgacgtca tagagtcttc ccccgaggat cgtggcgctg 1140

ctcatccaca agattggcaa tccctccatc tcttagagaa ggtgctgcac aaccctaaga 1200

tcttgttcgg ttacatggga tgaaatcaca tcatgaattt aattcggcta tggattaggt 1260

gaatccatat ctcacaccta atccatggta ggattaaatc catcaactaa tgcatgtgtc 1320

tcttaaagtt agttattctt ttgatccatg aattctaata taaacttgtg caatatcttc 1380

atagatttgt tccatagcta atgagctatg aatagaatca tgtttttcat agtttataaa 1440

ataccaaaac ccttggatta tattctataa tgagtttaac cgaataaaaa aatttaagta 1500

gtcttggatt attttaggac atagattgtg acattgattt aattcctatc catgctaatc 1560

cagagctaga ttagtgtaaa cgaacaaagc ataaagtgaa ttgaactggt aaccatcaga 1620

tagggagaag gtgagggcat ttgcgcggga aaaaaattcg cgtctcgtgt cgctttgtac 1680

ccgatgc 1687

<210> 411
<211> 1619
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_184485_G1, chr5:72675148..72676766, Cluster 3

<400> 411
gcctcgagat tgacccaagg ggacccgcca ctcactacgg cgcaaggcat tagctgcaga 60

actctatctc tcatgtaaag atcgcccttg aagtataaaa gggagtctct cttgtccctc 120

tcctagatcg ggcaatggtc tgggagttag ggagaaagtg gcttgcaagt gctgcggtcg 180

gtgtagggtt taaacatgtc attaggcaaa ataaatagtc gacccactaa cgaagttttt 240

tttttcaatt ttctaaaact tctttgaatt ttagtttgaa ttcagacgtg tattttgaaa 300

tttggtttca atggtaattc ttagaataat ccatactatt tgcaagaaaa ttaccataaa 360

aaattgttaa aatttacaaa atctctcaaa ttcgaatttc aaaactggta caatatccga 420

gccgaccaat aagctggatt tatcgaacgg tttcacgacc cttgcctgta tgtattgcct 480

tgatttatgt cgtttcagag ttgggtttgc tcacaactca ggagtcgcgt tccacgttac 540

atttgtttgg ttatatttgt attcaaatta attacagtag aatgtgtcaa aaaatagtta 600

tttttgtact ctaactcatt ctaatactat atttgaatta agataaatat gagtatatga 660

ctgagttttc taatagtctc gttatttttt gcccatggcc gattttcttt cggtcaagct 720

tttgggtgcg tcgtcaacta gaagacccat ctggtcaacg tcaacgataa ggcccattgg 780

ggctatggac tcgaatgtat gggcctcgat ccagtttgta cccgccgtaa tcatcatcag 840

taaacgtaca ggcgcatcgc gaaaaagctc gcaaaatcgc agcacactag cacagaacct 900

tggacgcgaa ggcgtcatac cccgatgccg gcgtcgtcgt cgccggcgat ggcgtcgcag 960

catgcgccgc cgaggcggga gctcgacctc gacgctttcc tcccgtcctc tccgacatcc 1020

tccggggcct cggacgccga cccggccgac gatgaccacc gccgcgccgt cgacgacctg 1080

ctccgcctcc tctcctcctc agactcggac tccgattccg aggagtctag ccgcatccca 1140

agcaccagca tccagacgct atcccgagtc caagccccgg cgcctgtcgc tgagccctcg 1200

ccgtcgcctt ccccatccgc gtccccgtcc ccgaggagat ccgcatcggc cttgccgtcg 1260

gagaccctct cctccctcgt cgcgagaacc ttctcgagca acggcgcttc ctcgtcgtcg 1320

aagcccctcc cctcgctctt ccggggcgtc cgccccagcc ccaaacccgg cgccgcgctt 1380

gccgctgctg ccgcagcgtc ccgcgcggtc ctcaccccac acgccgctgc catcaagtcg 1440

cgccgatcag tatcggcgcc cgtggagaaa gttctggagg aagaggggag tggctccgaa 1500

ggctccaagg agttccttcc cactgggagc ttggaagcag aggtagaaga gaagggtgat 1560

tcggaagcgg ttgctgatgc gaccaagcaa actgcaggtg ggaatgtggg tgcggaact 1619

<210> 412
<211> 1488
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_185506_G1, chr5:80456356..80457843, Cluster 3

<220>
<221> modified_base
<222> (239)..(239)
<223> a, c, g, or t

<220>
<221> misc_feature

<222> (239)..(338)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (240)..(240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (241)..(241)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (242)..(242)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (243)..(243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (244)..(244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (245)..(245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (246)..(246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (247)..(247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (248)..(248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (249)..(249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (250)..(250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (251)..(251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (252)..(252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (253)..(253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (254)..(254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (255)..(255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (256)..(256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (257)..(257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (258)..(258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (267)..(267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (273)..(273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (274)..(274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (275)..(275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (276)..(276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (277)..(277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (278)..(278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (279)..(279)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (280)..(280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (281)..(281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (282)..(282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (283)..(283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (285)..(285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (286)..(286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (287)..(287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (288)..(288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (299)..(299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (300)..(300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (301)..(301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (302)..(302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (303)..(303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (304)..(304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (315)..(315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (318)..(318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (319)..(319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (321)..(321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (322)..(322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<400> 412
ggctgacgtg gcggacacat aagtcccgtc ggctacctac gcccgacggg aaataattgc 60

atggctcgtc tgccctggcg ccgagaagcg acaaactatc gtcgtgtact agggccgaca 120

gtagctacct tctcaccgct gagtcgactg aatgctcatg cattcttgtc cgaattcttc 180

ggcgtcctac attagagtgt catcaataga gtgttctcca caagagtgtc atactgaann 240

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnncg acgggaatat cctggattgc 360

tgttgtgcac tcaacctaat tcacagtcac gtaaaatcca tcatcaccca tctaaattaa 420

actcatatct aaaattcacc caaaataacc atttacatcc gctccattta caggcctacc 480

gatatgtata gaatttttc ataggaaact gacggcctcg cgtcctaccg ttctgtatcc 540

gtcgtccccc ctatgatctc catgcatcag ttacttggtc cgttgcctag cgcttgtccg 600

gttgcgatga actccggagg gtgagggtga cggtgacggg tcggtcagta cagtgtggcc 660

aagaggcaaa gcctggggga tactgtctcc aaagtactgc tgctgctact gcacatcata 720

ctgctgcgtg ctgtttgaga tatagatggc atgatgtatt atctatctgc ataggatcac 780

tagcccacac acgcttgaat cttttgatcg aacgcttccc cagcgtaccg tgccatcatg 840

gtcctctgtg cgaagtgcga accgagcact gttcatcagc atgccgagtg acgatgtgac 900

atgcacgcat cagggcagaa ttccaaggtg cagggcaggg ccaatgcgaa ccgcccagcc 960

ccatgttgat tgttgcctcg ctcatcagcg atctagtagt ttctttgaca ccgcagggca 1020

gggattacgc catgcctcca tcatggattc atggtcatat atggaccctg tctgtctcca 1080

ggcctccagt gtccggtagt ccatacagta cgctgcatgt atacatgtac tatgatacat 1140

gtactatggt acacagtgct agcagcatgc atcacacact tcgtcagcat gactgcacag 1200

tacccaccag gcgaaggagc acatcaggtc atcacgccat gccggtcctg ctggcgggcg 1260

gcaccagcgt gtctccgccg tagggtgttt gtttagactg ctttcaacgg ttcgcgctga 1320

cctcgacctc tcactgccct acccatgtag ccgtttagga ggttcaaatc cctataattg 1380

tgtccccttt gaactcctct acacactaca gtttaagtgg aggctacagg aaacacatta 1440

cacactacag tttaagtgga gactacagga aacacacaga tgtggggg 1488

<210> 413
<211> 2197
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_195211_G1, chr5:146893947..146896143, Cluster 3

<400> 413
ccccccccccc ctgcttcgct taacggcatt gcacaatctt acaaaatgga gagggatttc 60

atggccgcac accggagaag atccatgcga atgtccaacg gcagggcacg ctactgtccg 120

tctgtcacac acttgtagaa aggcacacca ctcaaccatg ttccttttt tttcctttga 180

cgatcgagat gcgattattc accgcgatgc atggtcccac atgattggat taaattccat 240

gtgcgtgcat agcctccatc cctgcaggta caacctgtac tgctctgctc gctgcgtccg 300

ccgctcatat ggtaatggta tcgcatcgaa tcccaagcct agctgggcga tcaaaccacc 360

attgtactac accttgttga actgcagtcg caaatgctat taattattta attatatctt 420

ctaatctgag cagacaaaga cctattaaac aaggaaatta ataacgagca agaagggtaa 480

gctgaaagag aagagagaag cttccctagt agaatataat ggttccgaat ttccgattct 540

gcagcacatg ccgagcatat ccagatctcg tcttcacgtc gtctttcctc tgctctttgc 600

agcgtgtata tatataggta gctggcgggc accagaggta aggcccgagg gcatggcggg 660

gagggagaag aagagaagca agcatagcaa agaacaatag caaacagagc ggaggatggt 720

gccatgagca tgagcatgtc catgagtgaa gagctagggt gagaatcaca gtgcagttct 780

cctctggcac gaaccaaggc tgagcagctt gccccatggc tagcccacga cggcccttcc 840

ttgccaaagg agaattgccc tgccattcac aaccctacag aaagagagag agagagagaa 900

cgcccaataa gcggatcgtg gacttcgctc gagttttgaa ctttttcaca taaaggttat 960

tagttttcca gcaattttca aaaaaaagaa tgctgtaatt tgcttcgatg atggccgaac 1020

ctgaatttca ttaccatgat tacaaaatca tgaaatctta atgtttcagc ctacctaatt 1080

gttagtaatt acctaggtgt caccatctat tataatcatg gaacacaagg gagtgtagtt 1140

gttcagaaag cccgaggcgc ataacactaa gccgctagca taacactaag ccgctatttt 1200

ggctagacac aaccgcaaca tgagtcaatg gcctggtgtt tcacaggttc gggctagtcc 1260

gacctgaggg acggagagag ggcaaggtag ggccgaagac cataccctgt ccgcacccaa 1320

ttccccgaaa gccttaacgg ggataactac atctccatcc ccatccccat ggatccatat 1380

tctccatttc ggaccacaga aaacactacg acacaaaaac tcctatcaaa tacaaggata 1440

ataagaaaat gttatattta gggtgatagt tgtgttgaac tttgatttca tgggctattt 1500

gggtccccaa tggagccccg tgggggatac ttaatcctta gacccagttc atttattttt 1560

gccccccctcc cctccagcac taaggggcgg gggagaaaat gtcatcgttc ctgccccaaa 1620

cagagctgat ccttgcaggg ccccgcctcc atgaggaatt tcgccctaga tccactgcac 1680

aaatccatac cgctctcgag acacgccagg cgacatggct cgacctacca tttaatggtc 1740

gagacggtgt cgacccattg actctcacac cctcctaaag ggatcacccc ctactcccta 1800

tttgctatgc taacactaac ttcctcttac ataggctcct ccttgtgcca gactctcaaa 1860

gtcgtagact tgctaacctc attccatccc tcccttctct tggctttgac tctcaatgtg 1920

gggtgtgctg ccgctgctgg gcgctcctca ctatccgtgc aatcatgccc tagatgtggt 1980

cacctgcctc agaatcctca acttcatgta gtctagaagc gatgcctcct cgaccatcat 2040

ggcttctttg agaggagcat gtcagcctta gggatgccaa cctcgagctc ccttgtttgc 2100

ttaccttgat gatccagcat caagcaccct aacagctcct cacctttgca acttgctgcc 2160

cccttccctc tttctttacc ttttcatggc attcatc 2197

<210> 414
<211> 1676
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1993_G1, chr1:10533050..10534725, Cluster 3

<400> 414
agaatactaa aaccggccgt atatactcac tcactcccga gtcccgattc ccgaacgaac 60

taattaagca cacgcagcta acggtcaaat tgatcgggca acatctatca ggagactttg 120

ggatgacgac catcgatgtg tgagagaata atactactaa tgttcgttcg tcaaggttca 180

agagagccgg aagtcccgaa tgatgcaact aactgtacta ccgccgtacc cactgcggaa 240

cgaacgaact aaacaccggc cgcgcgcacg tgtttgtcaa tgcgtgctgt tacatgttga 300

ctcgatcgat ccaccggcca gtgagcacac gcagcagcct actctatgcg agaacgctag 360

ctagtagtag tacggcgacg atcgaacgac aagtcgacaa ggccagtcaa catgcgaggc 420

cataggccca tatgcatcat tacctgcggc aaagtacact actgaacgcc atcattcgtc 480

gataccctgc gtacgtacgt acgtatacac gccagcgatc gaagacaagg atgtctgtac 540

tatacctata cctgtacgtg tgtctgcatc ctgaagacgt acgtacgcac gcgcatgatg 600

gccctgctgg tcccacctaa ttaatcaaag tcgatccaaa ccgcgcgcgt acgtcgcctt 660

cggacggagg aacttgcgag tgacgccaag agcattagag caagcagcag ccaccggtac 720

ggttcggtgg ccaccagtca ccacgcacgg cggcagcaca gcagagcatt gcatgcatgc 780

gttattaacg ctggtgtgaa atgtgaacga agggggggag actttgtgcc cggagaggag 840

ctgagagagc tagagctagc tgccagccgt ggagatcagc atcagctaga ggccgaccca 900

ttgcgcgcgt ttggatttga tcattcgatg cgtgtgaaca aacattaatt ttcctctata 960

tagcctccta gctagtagct tggtcgttca cttgtgaacg cattcaatgc gcgggcaacg 1020

tcggtctgct cccagtagct tagcgacctc tgtggctatg gttgtggtag tagtagtaga 1080

gtaggagtgt aggacgtcga tccgcagcag aaattgaaca cacagagtca cagagaggtc 1140

accgtaccga ccaggatagt acaggggga tgctgctgct agatcgagcg ctactacaag 1200

aacagtcaac gtactggaac agaaggaaac ggcgataaaa ctaccgtacg tacaacggcc 1260

accagagcac ctacctgttc accgccgccg cggagctcgt taagttctcg cggtgtttgg 1320

aagagctcgt ggggacggga aaagatgctt tgttgaaaac ctcaccaggc gcgtacgtga 1380

tgagtactac gttacagcaa agtcatcagt cgggaagtta actgatcatt gggttgtcta 1440

aaattaccgc cgagagcccc taaaccctaa acccctgatg tggcttcctt tttttcaatt 1500

caggtgtgta ctgtattatg tatatatcat caaaccgata tctgagcggc ggcggcgcta 1560

gtcttggaat gtttcggagt tgctgtgtac accaggctgg catgagcaga cgtacgggag 1620

agcagtacac gtgcgcttag ctgtccaatt cagaagtagc atacacgtac gtacgt 1676

<210> 415
<211> 1653
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200379_G1, chr5:176225422..176227074, Cluster 3

<400> 415
gtttgactgt tcggctgact ggatgttttg gcggtatatg tgaatgattg ctcgtgtcct 60

gaattgtggt ccttttcctt cctataatag gttaaggtga gagaaggggg tcgctacaag 120

agtctaaggg tcgggcgaag cggatgaagg tcggacattg tcatgtagtt ttttatcctc 180

tggagttctc accagtcgag ggacgtcata gatgaagcct cctccctctg tcaggatact 240

gtagtcacac ctaggccatc ccagagcatg tcgttgcact ttgtcatgtc cagtagcagt 300

ttattcggtg tccttgtttg acttcctatc tacggagtgg ttaagctagt gtccgcctcc 360

atgctgtgat ggatgacgta cgtgctctga catatctgct catgtgccat cattcaaagc 420

cttatgttgt atcataatct aacttgcatg cagtaagaac ccaagaatgt cacgcctgtg 480

tggtcgagcg aagtatccaa cccttcaggt caggggtcgg gcgaggcgaa acactaaggt 540

gggacacatc cgagcttcgc ccccctccat agctggggtt ggggggtcgg gtaacgcgga 600

acttcgaatc ggagacatct gagtttgggt ctctccatgg tctgataagg tggaactctg 660

caatggtgat atttgaggcc ctgacccatc gtggccagga tcagctgagt cgaaatctcc 720

ttgacaacgg taggtagaaa tggcagtggg tcaagtttag atcgagtgta gcaaaaccct 780

gcctaacccc gctaaagctt tgtttggata ctctaatatt aaccctagtc cgtgtgcgtt 840

aaagtggatc gggtgtaaat tagtttacgt tacactcaat ccacctaaaa catgtggatt 900

aagctcaata ctaaagtaac caaattagat ctaaatatgt gattgtctca tgtcaggcag 960

ggtccggctg cagccgtgag agagtttgcg agccattcgg tccaggcgaa gacgtttttt 1020

ttacgcgtaa gggacgggct ccgaggtcca tggatcgatt gttggggtta gttgggccta 1080

attgggccat tgtatcggtg tgttgggtgg tcggagacct agcgaccaga ttgtaggcca 1140

gaataatgga ggctgtatcg atcttgcagg ctgcaaccca tcgcccagtc tccattggct 1200

tgccatttga atcttgtgtg ccgttgctcc acctttttt tcttctagta caaggtagaa 1260

gcatcacaaa ggaccaattc agtacatgga ctgaaagtac gtaccgcgat accaacaaac 1320

taaacaagag cacaaatgac cacaaatgat ttgaggagca tcgtcactgt taaggataac 1380

tcttaattat tagtgaacaa aaagtgcacg ccagttcttg ctgtgctttc tgtggttggc 1440

tcctaaactg ctgcctttaa ttttaaaact ccttttttctc tcttaaccat caaaagatag 1500

aggatagagc tgccatttac ttaaaaaaaa ctgtggtcga tcgagtttgt ttaaccggct 1560

cacttgctcc ggtgtggcca tgtacctcca gttattcaga gaatgctaga gaaaaccaga 1620

tggtactgtt cttcatagaa gattcatctc taa 1653

<210> 416
<211> 3448
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202140_G1, chr5:186253338..186256785, Cluster 3

<400> 416
atggagacaa gacccacctc cacttctaca aggcggagga aacgacggcg gccagttctc 60

taaccctggc cttaatctag gccaagatag tatgcctaat ccctctgcat attcataggt 120

ttatggtgtg cacaagtcta gatcgattta ctgctgttaa attaaagcaa attagtatct 180

cgaattgact aagattgaac aatgaacacg gtaaagatcc tagaaaccta tcaacgcaat 240

gccatgtcta catgtgaggc ttaggatttg atggtttttt tgcgtgtaca aagaccgaga 300

caatcgctga taggaaacgt gtgaaagaat gtggatatta ttaagcatgt cagggccgat 360

atacttattt cgattgtgta tagtaccaag gctaaggtta ctagaccggc tatatagatg 420

gataaaatac tgactgtttt gtggtgtagt acattgttgg agtttgaaat ggtacgggga 480

gatagaaaga cctatgacgt tagtatatag gtgcttacca tctgtcggcg atcttgcttc 540

ttggaactga tattaaaaag cctgataata atatggtgat gcacggacat tgaccagtcc 600

tttatcgagg agtgcagcat acatgcaggc tgcatgcagc agatgatctt tgctcctcct 660

actgtggagt agctgtagct ctgagctgtg atccgacaat agtctcgagc tcccacgatt 720

tcaatcctga cgacctgaga ctacgaggcc gggtgaaaaa ggtcgaataa tgtcgtctgc 780

cactggtagt ctacttatca cgagactctc tgtgagtctg tgtgcacatg cacgaatggc 840

aggcactgct atctgctcgc cgtcttcatg gttgctccgt cttcatggct gctgctgctg 900

cacgcagctg ctgggacccg ggtgcctggg acgatgatgt atgcctagcc cacgcacaga 960

gattcgtaca gattttaaaa agatcgaagg tgtgtttgtt tattgtgctc gtttctggtc 1020

tcatgtgcgt ctagctccgt ggcaaatgct gtggagatga tgttgcagct tttgtagctg 1080

ttttttttta aaaaaatatt gatgcagctg tgagatttag ggtcatttta tatatggagc 1140

tatggcggag tatttcttag aaaccgcaga tattttgaga ggagcgagaa gtcctcacaa 1200

acgggtccaa attagtttgt gaggcttcac ctctgctagt tcgttctcga gtttgacgag 1260

agagagagag agaattccat gctacaccaa cagtacactg atcttacagg agaagctgaa 1320

gaaagttggg agtcacacga aacatgaccc ttgcatttca tgcgcagaaa tgttgtgtgc 1380

gccgagattg caacccaaac ccgtttattt aaccttgcaa taataatcat gtctcacagc 1440

tgcctgttat cttcagtcta aagaaaagcc tctcagttgt cttgtctact tatctgcata 1500

ctgctagtag caggacgcca ggacctgtgc tgtttccggc gcgcacctgc actgctggtg 1560

gacctcattc ggacgaacac ttcgtgtggg gttgcttttg tttgagctaa gtatgcctga 1620

atcaatcccg atgaagcgaa tggagatgcc tcaggagacc ggccggtagt agatcgatct 1680

gccaatcgag gcaggcaaag agatacgaaa gcgacagtag acagggggac gcctgaagaa 1740

tgtactccgt atgcattatt tggcatcgcg cgcgcgtatt ccgttcagga cgctgcagtg 1800

gacagtggtg ccataagtga taaaactttg cagataatta agtttgggcc aaacaaaaac 1860

aaaatttgct tgtagatatg tttatttcac ccttattgaa gaaaaaaaca tcacgccgaa 1920

aaccctactg ctactattca ttggtctagc ttgtgtattg gtttttattc agcctattct 1980

tcgcgagcgc gtgatctggg tcatcttaaa atatgttttg tttctaggac tttgctgatt 2040

tgcttcaaaa aaaacgagat ccatcatcat gccttctttt gtattgccat cttcatgtat 2100

tatatatata tattgcattg catcataggg acgacctact taacttaagc atattctttg 2160

caaacatgca tgcatgttat tagtcaccaa aatcgtagat tattgtggcc tacgaaagcc 2220

atatttgcca tactcttcag catcctaatt catgttttcc tctttgcatc acacctctac 2280

atttgttttc ccaattcatt attttataag catccaagct agggctagct tcattcgcaa 2340

ttttccccag atggtcccat ggagcgcgcg ctgcactgca cctggtggtc atgctacgtt 2400

tacagtctgg tggaatttga tccagaagat agcttcttgc tagtccacga actgttgtaa 2460

agaaaacgac actccgggca agcttgttat agtccaggca agcatatgga ccaccagcac 2520

caggtaaggt aacgatgctc cactcccctg aaattactca ctcgcggtca aatgaatcct 2580

tcaagagtca aatcagatga ctctaataat ttcctaacga caggacagga caggccaggc 2640

ttatccaaag taagacggga ccggacggag gcccacgcca cacattgcat taatccgtgg 2700

gccgtaactc tggctgctgc actgacttgg cggggctccg cgctaccacc agatgagatc 2760

cgcccacatc aacaagacgg gacggcgagc gagacgcagc ccccggccct ttgggatcgg 2820

gaccaggtgc gcttgccctt ctccccccggg ccccggccca tgcgctttca ggttcgctcg 2880

caggagcatg caggccccca gcctaactgt cgcgacggcg ccggtaccgt ctggggcctg 2940

gtcgcggtgc gggtactgtc ggcaacgcct gttgcggcct gattggacga cctgggcaca 3000

gacggcaacc gccagccatg cagatgcagt gcagctagct agcgacatgg aatgaaacta 3060

gacggtgctt cgcggtttgc ttcatccgct acgaattcaa gtccggaatc atcagatcgg 3120

cgaggggaga gcatttccaa tcgacatgtt cttgcttcaa tccaagcgcg agaaggagct 3180

gaccgggggg tgggatgttg atgcaaagct tcaaattgaa gttttcttgc tgtgagtacg 3240

gtgtatcgat cgccttggaa agctggaaaa cgagcatggc catttaagag gaagatagag 3300

atattattga tgagacatct gggagcgttg caatcaaggt gactgtatag cggattgcac 3360

cggattgacg tcgatgcagc ggattacaac agatagcggg cgatattacg gataagtttc 3420

aattagcggc acctcgtaat cttatact 3448

<210> 417
<211> 1483
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202158_G1, chr5:186399718..186401200, Cluster 3

<400> 417
gatattttga atgaaatagt actgctgcct atatggtata cataaaaagt agtctatagg 60

tacatgtagc atatataatg tttatagtga ttttttgtt attccataaa caattatatg 120

agatggcatt cagcctattt atcctagtgc ctaatcaact gcaaagatgg tataaggcac 180

cagcggatct atagggtgtc cagggtatgc aatggcatac cctatagtcc agtaccagca 240

caacatagta gctttgtcta tttcatgact tcaaacattt tgtaacctac aatatgcgtt 300

caatttatct ctatacaaga ggaagaataa tttctatata ttaaaccacg gcgcaaagac 360

gcaaaagcag ccagtccacg tagcctatat tattttacgc cgttcgatct gatatgtaga 420

gccaggttcg cttgagcaat acaccataca ggcggaggcc actgaaggct tcgagatggg 480

gcacgatttg aacgggcacc tagactaaaa aaggaaaaga tgaaagagat gagatggggc 540

gggattagcg tcttagcgag gggctacctc tccttcgacg gcggcgatgg cgatttact 600

ggtcgttcgc ctcccgttat ccttcctcaa aagccatggg aagcttctgt tacgttggtg 660

cgccgtcgtc aaggctaatc gcggtacatt gcgccatcct cgccagcgag ttcctcggca 720

agttatccgt ctactcttct catcggcttg cgccatcctc cgccgcgagt tccacggcaa 780

gttgtctgac tgctcatctt atcggcgtac ccaaccttca tcgtgtggca gattcgtcaa 840

ggtacgcaaa cccttctacc agtgtgtcgc tcagagttgt agtttcccgt ctaaactctt 900

gcttcacaca tcccgaatcc actcctgctt atcgataagc aaagttagcc ggatgattct 960

tcaaaattta tgtcctccgt attagagctt gcctctcaag cttcttggta ttgcactcct 1020

actcgatttg tgctaatcgt gggggggca agaatggcaa acaaaaatat tttctttcgt 1080

tatcccctcc ttcagacgca agtttacgat ggactaatga atctctacgt ccggcatggg 1140

atttaccttc agctacagac caaacttcgt atgtattcct ggaaatatta cttcctctca 1200

ttggttgctg caaatggtat tcttcatctg cattttgga aatattgctt cttctcattt 1260

gcttactgca gatgtccttc ttaatggata cccactatat tatctgccaa cgtaatacct 1320

gggtattgaa ctgtcaaact aattaacttc tagaacagca aatggttagt agaaatgtgc 1380

aaatgcataa atggccatat aattgtttca accaatgaat accagcctgt cttttaattg 1440

atcctgcaac tcgcgttagc agctaacttg gacaaactgt tac 1483

<210> 418
<211> 1420
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202159_G1, chr5:186401566..186402985, Cluster 3

<400> 418
acccatatct tttattaaaa tcatgtagat gtccacacat gtttgttaac tttactttat 60

ttacgtcact tcctcgccta gatgtgaaga tataatgtat tcattactgc ctttttgca 120

tgatcactcc tatttgctat cgtcgcacaa ccattgccaa aagctgcaaa ttctatcgaa 180

aataggtatg ttttcctcct attcatatta tgtactggct tacatatata ttaataccta 240

catattgctt acatagattt acaatatcac attgcttact gtctatatac atcgttgttt 300

taacgtattg ttaaaaggct cgctcttccg ctcgcgcaag cgcgagcaag ttactagttt 360

atacaagtgg caatcaaatt tgtaaatata agaattatta tgaataattt atacaagtga 420

caaatcaaat ttgtaaatat aagaattatt atgctggttt acatataata ccaaattata 480

acacatattt tatcattcct tattgaattt ctaaatgtat tttactaaat tatacatgat 540

tttttaaaat ttggtatact cagtaaaatt ccagatccgg ccagaacgag tcaccatccg 600

tctgattggt tactcgcacc atctcatctt ggatcacccc atgcgttgac tttatttaag 660

attatgtttg gttgcttgta tgtgtgaatc acagccgcat agatggatgt aaaataagtc 720

attttgatgc tattaaagtg catccactca tacgctcaaa attttcgtat gtgtctgatc 780

agagcggcgc cagccacagc gcatagacgc tcagccatcc aatcaggctg catgcaaaca 840

tgctttccca atcaggctgc atgcaaacat gctttcctgg ttgctgctat gacccattca 900

agttttcaat tagaaattca tcgagtcatg taaaaactag cagtgaattt gactgtaaaa 960

tacaggcgcc cgagaagttg tgcagcccgg agtcctacta gactactttt accggcatgt 1020

cagacctacc cgtgtcattg tcgccatatg gagccaaaca gaacagaaat tatcctcaca 1080

ctatggccat cataaactaa accaagtgaa gcctgtttta ccgtcgattg accatttgcc 1140

ttccgtgagc acaaaaaagg aacacaaaac caccgagttt gaaagcatca aaatgatagt 1200

ggatcggcga cggtttcttg aggcgtacgt gggcgctcgg cgctcaaacg ccgtcacgtc 1260

cacgccgtct gacgtgtttc tgtcttgagc tagctgctca gcaactttga catggaaacc 1320

aaacctccac gtccagttcg ctgtaaaaaa agaaggcaat tgttaagaaa ccgccaaagg 1380

ggtcacatat acccaggagg ctccatcttt ctatataata 1420

<210> 419
<211> 2229
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202180_G1, chr5:186494378..186496606, Cluster 3

<400> 419
gctatgtaac tagtgccaga gtccctttag taaattcgag tcatgaacca gaactaaata 60

tcactcttta ctatcggacc gtgcaactga gactaaaaat tgacatcttt aatcttgatt 120

gtccaatatt ggttaggaat ccggtagtca gattagtctt tctagagtag tggcatgtct 180

tgagagcttg gagaaaacat aatattaatt ggtagatgtg cggagactat ctccctttag 240

tgtctttttt ctagctctga ctccatcatg ttagacagat tttaggttta gatggtagct 300

agcgacttcg atagcatgcc gtctttttat tcagctaatg aaaaaaaatg atcgaatgga 360

cttaatgaga ctacaacgtt gctgaagaac ataaggtcgc cttcagatac agaaccagaa 420

ggagaagaag atccatcgac agggctgcct cttccaagta tcttcaagag ttccttttg 480

tcagaaacgg gtctttgatt tattgtttag tgtcgctttc tattgttttc catctttcaa 540

tagtcctttt ttattatttt tttagacagc gggaatttca aaggaaagaa tgattatatt 600

taaagatcta tttagagaac tgctgaaggg ttttctttac taaagtttat atttctatag 660

gttagagaaa aaaaagtata acaagatttt tggagccgct ctctccaaca ctcctgtctt 720

gtcggtttca cctggggtct cgttttctgc taaaaaaata gcgctggtat cgctctcgaa 780

gaaaactcaa catgctgtga ggtgatgacg ttgtggtgtt ctcggatcga gcgcagacac 840

tgcccacggc cacacatctg aaccgaacgc gatggttgag gccccgccgc ccgccggtgg 900

atagcgtggc tgtggttatg ctgccctgtg gcctatgggc tgtggccggc ggcggccggc 960

gcgcgggagt ttcctggaag ggcgcagcgc aggtcgcggg tgcggtcagc gtccgggccc 1020

ggtggcagca caagtgcaca acgacggagc ggcgtcaaca cgcgccgaaa atcctggccg 1080

gtcggggccc ctgctcgtgt aattttcatg cacttgcagc ggcccaagcg agatgccgca 1140

tccgggccgt caagatttgg ggcagtgcgt ggtctttgtg ctcgcttgat ggctgatgcc 1200

cgcgacgcga cgcgtgcggc tcaagcgtgg atcccaaaaa tgttgcttag cgacgccgcc 1260

aaggttgaca ttacaacaac aacaaaaaag gttacatgga ttaaagattc tctgaatcca 1320

tttttattta acaaaaatga agagtagacc aattcaaagt taaactaata ttaagacgaa 1380

gatctgctta tgtgatacga agacactcca gcaagcctga taaaaaggaa aatgggttta 1440

attatccagt tctgtggcca tcgcgttcca gacagcctcc tggactatgt acgccagatc 1500

ctcacggcta attgtttgtc ggtggctatc aattagctgg tagtacataa ttagctagca 1560

acaattagcc agagtatatt tggagttaat gggcaaatta gcaacaatct gtacacgatc 1620

tattagcacc atttagcaag attaaatagt taatgggcaa ataatttatc aaatatctga 1680

ttaataatta gtcaatttat tagccagttt gtttggagat caagatgcta aaattagcat 1740

gcaaactatt tgccaaatga atccaaacag ggcggccata gtacatagat tcaaccgaag 1800

aaaacccccc atcattttca tcacctaaat ttcaacggac tgaatttggc acaggttttc 1860

ttgcactccg tcagcctcat tgctggctcg acgtagagtc acgagacgcc atctcgcgac 1920

ctagctagca acttacttag gcatcttgca ttcttgctta tcagatgagt ctcccatgct 1980

actaatcagt aaccaatact ggaatgtggc cgtcaaagcc atacatacac acgaagatgc 2040

tttgatatac gaatgctgca gtcagccata ctgcccccgc caaagtctga aagcgtagga 2100

gccatgtgcg tgcgcgtgat tgaattcagg gatcagctgt ccctctcatc aaagaaaaag 2160

gaaagacatc gtatggcatg catcttggct gttcagctcc tagaaaccgg cccatatggt 2220

tccggactt 2229

<210> 420
<211> 1618
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202457_G1, chr5:188092742..188094359, Cluster 3

<400> 420
aatagaaaag ttgatgggag tgaaaatatg gagaaaaaat gtttctatgt agatccgtct 60

aagttcgccg cacggtgttc cagccgaatc agaaacctct tttgtatttg tatggacatg 120

cacaaagtgc gacgctttct gtgagtgcaa ggagctacca gcctaccagt gccatacgcc 180

gtgtgatcac tgttcagtct ctgtatggta aggaacttag ccagctgact ccccaacagg 240

gatcgacggc cgggacgtgt ccaactaagc cggggctact gttttgttcg gtgcggatga 300

gctcctcgtg gcgcaggagg ctgctatgtg gcactctacg gacggagaga agcggctgga 360

ggctggatgc gtgcaagaag ccgcttctga cttactttct gcgaccggtg cagttgccgc 420

gctgggccgc cggcgacggt agatgtcgca gtcctgctgg tggtggcggg tggcctggtg 480

tgatctttct ggcttcttgc cgttgccgat ggcattccta gctactgcaa tatcagctca 540

ccagtcgtca gatattttgc cgttgtccct ctcaggtcca gcagccacag ctacgcagta 600

gtgagatgtg ataaaattta tccggcatga gttgccgccg ccgctgttta cttctttatc 660

tagtcaaagc taacaaagac ccattcatta cggcagacat gcgttatatc tgaatatatt 720

ttgagatcaa agataacacc atcggagaac aggacttccg ttcgttaatt ttaatacctt 780

tttttaaaaa ccggcactga aattaaagaa ggaaccatgt taataattcc agtaccgatt 840

ttagctatcc agagctttag tattggtatc aatgtgaagc cttgggaggg gcggatccag 900

gatttttaat ttcggtcttc taaatctaag tagaatgaaa tttttttgg acggcctaaa 960

atctactatt ttgcatctat aataatatat cacaatgctg atcacataat atacaccaat 1020

agcaaatatt tcacataatt gaacatagtt catacaatta ttcataattt ataaaacgat 1080

caacatacag aagtacttaa tattcaaatg taatgtgcca acatataaaa tatatagagg 1140

cgaaagagga gataaacaaa attataagaa aaacttacaa gctatacgat aactttgtga 1200

tccttgatct gctgaaaata aattcatagc catttactca cataacaatt aacaaaacaa 1260

aacgaaattc atttactgtt tggatgtaga tatcggagca cagaataggg aattggaatc 1320

agttttccta aattctattg atgtagatat tggagcacaa aattggggat tgaaaccagc 1380

tttcctaaat tatgttgttt ggttgcacgt ggaattgaga ttttgaatta gaggtccaat 1440

tccttggaat tggactataa ctacccccca cccacccaat acaaagtctc actcctcggt 1500

attacgtgga attagactgg acaattccaa actccaattc agtgacatcc aaacaatata 1560

attggaatta catctcattt caataccatg tctggtttgg tattcaacac aattcaat 1618

<210> 421
<211> 1917
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202558_G1, chr5:188672925..188674841, Cluster 3

<400> 421
accgtttaaa catgtttccc gaagacgcga cacaaacagg aggccactgc tcggtcacgc 60

ctttttggc gcaataagcc aacaaatatg catgcgcgcg gcacggttgg tggtgacaaa 120

tatccggagc cctccctcgt ggctcgtccc gtggtccgtc tcggcgcgcc ctgcagcgcc 180

tcactttcgg cacgcatgat ccggaaacgg caccgcgcgc catgctgcat ttatttaaac 240

caaaggtcca cgccagcagg cccgccaccg ccgcccggcg accaccacat gacgatgggc 300

cggccgccca gccccaccca ccaccgcacc cgccaaactc cccccgatcg cgacgacgcg 360

gacggactgg tcgggtgatc cggatggctc tcccaccctc acagtcacag cccgcgggac 420

ggcgacggcg aggatcgaga gggtggggcc gtacttgggc tgccttccgc gcgcgcgtcg 480

gacgacggac ggacggacgt gatggcgcgg cgcggcggag agcggggact tttccttttc 540

tccgacgtca agctgcccac ggacgcgtgg acacgtgcac ccgcacctgt atgtacgcgc 600

taatcgtgtg ggtccaattc caattggcat catcaactgc tagaatagcg taggcgtagt 660

agcagtccgt caagtgtttg atggatcgtt agttcactac tactcacaag ctgaagctgc 720

tgctagctag tgtagtgcgc gaaccatccg gattccagaa agttccaatg catgccgatg 780

gccgaaagag gtccttaggt aatcatctca tcacagaaca catccatcca ttctatcggc 840

cccggctggc tatcgtggcc agaaggtaca gagttcaaat cgtggaacgt ccgggtgcgc 900

tgcaattaat actgcataaa gcaaacataa caacgaccct ctacaaagtc attatacaaa 960

atctattacc tttatatgta cgtaatcgga aacacaaccc tctagaaagt agtgtaataa 1020

taactatatt gtactcagac gatatagcta acatccctaa atgtaaaaat gtttcgaata 1080

tgtcgacgac ccagcagcta gcatgcatcc ctgaattata agaaacacgc aaagacgata 1140

gagactcgca cacgaacaaa acaacggcaa ctaacaagta atgatgcttc gcttgccgcc 1200

aaaacctaac tccggcagac ctattattac agcattccag agcaccagta aacacaccaa 1260

taatcatatc acagacgaca gggaagttgt tattactcta ctctctccat catagtctaa 1320

tctatcgtgt ggcgtcctga tccagcactc cggctgcgta atcaagtacg taccagccag 1380

tgctagctag ctagtcataa gccaggctcg caggccacaa ttcatatact atgggtgcaa 1440

aaccactaca agctagcacg caacgcaacg attgtacgta cgtgctaagc gtgccgcttt 1500

gcgttgttta ttagaaccta atagattata catgcatcac ggcaaaacat aacaacgagc 1560

ttatctgcat gcaagctagc aggcgcgcac agggcagcct cccctcctcc tgctcgttaa 1620

tttatctcgg ctgatgatct cactgacagg gagatgagcc cgaacgaaca ataggatatt 1680

tttggcatcc gatcgggtgg cgcgatccgg cgcggggccg aacggattag catgggcatg 1740

gaaatgaggc gtatcatttg tttattatga ttgtctggag gtgctctcat ctgatgggtt 1800

ttttttagtg cgcttcgatt attcaagtca accctagtgc ttggggtggc agagatggcg 1860

tcaccgaacg cttaattgca agcaaaacca acaaaaggtt tcgcaaagtc gccagac 1917

<210> 422
<211> 3968
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203686_G1, chr5:194689571..194693538, Cluster 3

<400> 422
gaaaatattt atggacaaaa tatataacca cggcccacgg cctcaagcgg tgctcgaatt 60

gacccaacca gacaatgctc gcgacatata cttatactta ttacttggcg aaattagagt 120

tggtgggggg gggggggggg atctcgagct ggttttagat tttttgaaaa aaaaatggtt 180

gctttgaaat atcctgattc tcctgtgaac tctttttttt agcacgttat atattccaag 240

tgcctaagaa aagaggtggg ctagcacttt tgaggcagaa gcagaaccgt ggcggtctgg 300

ttgaacaggt catgattcct tttcggccta gtgggcttct aggaatcttt ttagcctagt 360

gggcttctaa ggccgcgttt attttgtatc caatttaggc ctattgttga cgggcctcag 420

tatatttacc tttttttttgt ttttcgttcg agaaatacta acgtggggaa ctccagtgcg 480

cttgacattt gacgaaaaat tgaacaggcc tgcatttgtc aaattgggtt cacgagtgtt 540

cctgggcctc tagctagcag tggatcaggc tttattagga acaaagtggt atgtatgagc 600

accggggccg gagcgatctc gtctcgttcg tcgggcctgc cttcgaagat cgctgaatac 660
cacgatcttt tagatatcta aacgaaagcg acagagcatg ggcatgggcg tgcgtggctc 720
taaaacctaa accataccac cacattgata ttttggacat gcatgcatgt gttctcctaa 780
gctgtacctg gacgaccaca tgcagtgcat tacgcatcgt ttctcctttg gccatgttat 840
ggagctcgga aaagattggc cgaaacacag tccgtagaga cacccgtttc gtctgtaacg 900
ttgaacggag gagcacagag ccgccgatac cgacgtaacg gagcaaagcc gccgaaccac 960
gccggaacgg agctaccgag aaggcgtgga gagcgagcgc actgcaatga tggcagctcg 1020
ttcacgcacc agcgagcccg ccaaacgaac acgtacttgt actggaaaaa ggaaggaggc 1080
ggggacggag gggggagtgg acgagagtcg agggaagtga acagtcgccc ggcccagcgt 1140
gccggaacgc aacgcactac gcaccagcaa caaccggtaa aagacgcgag cgggccggca 1200
gtaggcgagc tccggccagc accgcacgcc gtgcacgcgg atcgtccgtg tctcgttctt 1260
cggctgcggc ggctgtagtg ttggggccgc ccgggctggg aaatgcggaa ggggtgattg 1320
ggcgcgggta cgtgttgggc ggccatgcat gccaccgcgc ggagtggggc cggggtgcgt 1380
cctgagtggg cggccggtgg ccgacaggag cccggcgcgg ggaacgaggc gaggcggggc 1440
agcggaggca aacaggtgcg gcgacgacgg acggccggat gatgggctgc cctgctagcc 1500
atgtgatagg gtggcgccgc aatcgagatg ccggtgggtc gcggatatat agggtgtgac 1560
gccgacgggc tgggggaagg acgaatgagg accgcgctac ccaggtcacg ctcaatggag 1620
cagagcagtg cgctctccgt ccgtcctcaa atagatcgga tcggatccaa aatcaagata 1680
gataaagact aaaatgacga tgttgctcct gtgatacgct tcgacccata cttccgagtt 1740
tcgactttcg acacacactg cggcagcaaa aacacaagac attgagctcg gatgaaaacg 1800
cttggaagcg ataacgatgc agcaacgcag tactaccaaa cattgccccg aggaatattc 1860
agggcaccca ttccatccat ccatccatcc tccgatcgat ttcggtgcgg atggtccagt 1920
aggtcagtgc cgcctgggca gccagcccgg ccaaaagaaa aaaaggcctc gccacgtccc 1980
tgttgcctgc tgccttttt tctctctctt ttggcgcagg cagcgttcgt tggtgtggtg 2040
accagtggtc cgtggaggcg tggagccact gttgtgagca ggtcgtcgca ctgcgctcga 2100
agaccgtgag gcgtgagcag tccagtgccc ccactgccca cggccaaaca aaactctgaa 2160
aattccctag tatgcccact tttacgtccg aggctgcccc gtgctgacag gtggtatctt 2220
cttgccgtgg catgtctctg ctatcgtatt cctatgcccc tgtatacctg gtggcagctg 2280
atctttatgg tacctatcat tatactatta tcttatatga ggtaatatga tattttatct 2340
acttatattc ttttattttt ttaaaaaaaa atataggaag aatgtcctcc agatcctaac 2400
aaagtaaaat cctagcgtcc gaagtcactg gtggcaggtg caaggagaca tggcctccac 2460
tggcagaacc attcagctgg gcactcttga cctcgaaagg ttcagctggg cccttcgtct 2520
tcttcgacgg tcgtggttac catagcatgg acaactccat gcccatcttc acttggaaca 2580
aagcttccac aattgatgtt ttcagctacg tcgttttcag cttccacaat tgatctcttt 2640

gtttaaaaaa aaaaacacca ctggcttctg gctacgtcgt tttcagctaa tctctactca 2700

tcgtttacca tgacgccgtg tatgaagcgg cagcccaatc ctaacgtcca cgacgagcga 2760

gagatgtgcc cgcccgagct gacttcgcca gccagaggtc cgcgtcgtgc actggaagta 2820

gccatcgatc gaacctccgc tctctctctc tcccggactc taggtctagg ctgtagacta 2880

gtgcaatcca tacgctatcg tccagcgcca gcggcggtcc gccgtccgga tcagcgagcg 2940

cggtcgtctc gtccgcccca tccttctcgc ggccgcagct ggtctcggat gcaatcgaca 3000

gccgacatgt ttgagcccag ccccaacttg gtgcactgca cgtatacacc ccctcccaac 3060

gctgattacc tcatctctag ggcgctgtca gtgtgactcc cgcacatgtc gctcaatttg 3120

ccgtgtgcgg tacggcgggt tgctcgtgat ggacggcgat gtgccggtta cggttggagg 3180

gaactgcggc gcgttacgtc agcttgcggt actgtgatta cgctattgct ctacaaactg 3240

actaaagtgt attcctcgct ataagctaaa agcgactaag agcctgttta gaagctaaaa 3300

taaaaatgac taaaatttag tcacttcaaa acgaaaaaat ctaaatagta agaactaaaa 3360

acgcttaaaa cgatataaaa aagtatcttt tagtcacttt taaccagctt ctaaggaaga 3420

tctaaaattt agttgacact tggatttaaa aataaggcct aaaattgtac cttttggctg 3480

ttttaattag tcgctttcag ctctttttgt tccgatctaa gctttgctcc ctttgattta 3540

gttattcttg agatgcaaac aggtccttta gccaatccga gccgtactgg atcgaagcgt 3600

taattaggtt aaaggagtac agcggtcaat gcttgctgga aaaagaagat ttgcatcgtc 3660

atgtactgta cccccgatcc tttccctctt tgcctttacc aaccaactag caggacgatg 3720

atggtactgg aatggttagg gtatgcggag gacaatcatg aagtggcagg acgtcaaaat 3780

taagatgcgc ggggagggaa gggaaaccta gaaatattct cttggtagcc tctgatagcc 3840

tcgtaggtgg ccaaacatat cattgtgtca ctcaggagca acagtacgtg gagtactgta 3900

aaactttggt ggtccacctc tctctcatat gtagacaagg gaacagagag acgatatatg 3960

atgatcat 3968

<210> 423
<211> 1949
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203850_G1, chr5:195660552..195662500, Cluster 3

<400> 423
tttgaaaaaa gtcgttcagt ctatcaagat gactatttaa cctcccgagc tgtgttttgc 60

gggctcaatt accgaagtac caaaatggtt tggatcataa aaactcgtgg acattactac 120

ttaaattgtt tacagagacg gtcataaaga atttatagcg tgtttagttg gagaaatagg 180

ttagtttatt atcttcttac tcatcatttt tttatttgat ttgtggaatt aaatgagtta 240

gtccatcaac accttatttc ttatagttag ttaatactaa catgaggaat aagtttatcc 300

taccaaaatt aagaaataac tcatgatgca ccatgtcatc ttggataaag tgatttctcg 360

aaccaaatat ccaattacat agccaaacga tgactcaacc tcaaccacca tgtagccgtt 420

aatccaaccc taggctaact ccaacaatac catccatttt tgaaggctca ttttatcttt 480

tgtctaccca ccaaaaaata tatcttctaa ttgtctatca ttatctccga caataatact 540

cattcggaca cccatatcaa aaaatatcat tcttttgttt atatcccata aatctaggtt 600

tgctttctct ctcttctctt actcacaaaa tactgttttt tatatgtatg tatttgctat 660

actcttaaat atttttacat atattttatt tttgattaac ctgttgttaa agtatcaaaa 720

tgatataaaa agagtaaaac agtggcagac ccatgatttg aatctagggt agtcgaagac 780

aaaaaaaaat tgacatataa taccctgtat aatttggtac cacacgtcta ttttccatct 840

tctcgataca tgattagaaa ttaacaaaaa agtgtcattt aattcaacaa attcggttgc 900

tagttacatc gatttatttc ttttagcctg taaatgctaa gaagtaattt gtttgtagac 960

caagttctag ggtagtcgga ggcctatcca aaacactgcc taggtccgct cgtggagtaa 1020

agagaacatc tatatttaga gaaccgagag acatcctata gtcctatata tccagagaac 1080

gttgtggaac agttatagaa aagaatcatg tctacatttt tagttccaca tcagacaagt 1140

taagaagtac ctatcgacca ccacagtccg aaactcggga ccaaacagag tgtaaagggc 1200

atacgtggtg gaactgaacg agtggaatcg tgccataggc ccaagtgcgt gtaacgatgc 1260

aactagcctg caactttatg gcaggcaatc ctgaccggaa tccgtccgtc ggccctcctg 1320

tgacgtagta ccagcggaca gtggttccgg tgggcgactg acgtgccaac ccgaacacgt 1380

cctgctcgcg caccaactgt tcaccgaaag aaggctcgcc gatggccgcc ccccgtacgt 1440

cctgaatcct ggtcgtccga ccgccgcgtt cgcgagcagc cggtgagccg tggaggcgac 1500

agggcacagc accgccgatc gcgacggggg ggatttcttt aattacgctg gcctattccg 1560

ggtccgggaa ggcgagttgg gcctgggcgc gtgtctagtg gtgggggagc agcgccaccg 1620

gtggggcggc gggggggttc aaaggcaggc aggctccacc tgcgctggcg ctgcggttgc 1680

gggccggtgg aatggaatgg atgcatgcgc gatgcgtcgc atcagcacgg ccggcgcacg 1740

cgcggacccg gccgtgcgcg gggacgtctc aggcacgccc gcgggggggcg caggttggtt 1800

tggcttggct gtcttgtgta ggggcggtgg aggtgggagg tgggcggtgg cggcatcgtg 1860

ctggcggtcg tcgatggggg cggccagccg tgacgggcgg ctcagtgcgg cgttcatgga 1920

ccacttggga cttgggaggt cgtcgcagc 1949

<210> 424
<211> 4938
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_204726_G1, chr5:200665730..200670667, Cluster 3

<400> 424
ctcaatcgcc aaagtagaga atgatgtttt tcagcctaca ggccccaggt agcagctgtg 60

tgttgcaaag caacttgtat aatacaattg gacaagttcg agcttcaaat aactcatata 120

ccatgcaaag caaattggat ggttttcagc ccacgtaatt aaatggaaat caagttttcc 180

aacctgtcaa gcactacatg attaattgaa accttcagtt ctgcatgggt gccaatctgg 240

ccaatagaag tgttattgct tatgcagttt gcacatgatt taaatagatg aaaacaaata 300

acaaagtaga gttagtgctt gcagtcagct tgtcccactc ccatacttcc tttgcacttt 360

tcctcccagc aaattagtac cagcttttac gtgtcctcat cataacaagt attgaccatg 420

aatcaaaata cagacatcac tcacagctca cagttccagg ccatggttac aacctagcac 480

taagttgacc aaggcttcta aatttagaac ttttaatagc agaagtgcct tgaagatgta 540

aagcctgcaa atatacagga gggacaatga tcagattctc caccaacata actcactagt 600

gctttgggtt aacaataatc atataaagga accaagttat gctgacagaa aattatttgg 660

aataatacca gcaatcaaat aaaagaacca agttgtgctg acaaaagcaa cataaagacc 720

aagaaactat atgacaaaaa ttttgtgaat acatcattct tttgtgggcg aagagtatac 780

gtagatatta gtttatttaa aaaattaaaa aattggttta aaatttagtt aaagctcatt 840

ttttgcctga gtcaaggtaa tacaacacat cagtatcata tatccaaatc tgtggattca 900

ccagctcaaa ggaagatagc aaagataaca acaggttagc gttgctgaat tgtaaagtac 960

agaactagct agtgttgctg aattgtaaag tccacaagca aattgttgca gctcgccttc 1020

atgctaagaa attgacatgc tgaattgttg agcatgcagc tgaaacacac ttagataaac 1080

taaggtatat atacatgcag cctaattaaa gtactagaac tactaattac ttggtaatgc 1140

actacatatg tgtagaatgt tcagaggaac agctagcgtt gttccaacat gtgcatgaac 1200

ttttaactga aagggcatgt tttatcaatc tctttagacc tcagtagagt ttaggcagtg 1260

gaaagctact aactaggaga gatgtcattt atttttaac tatcacttaa caggcagaat 1320

tagccaaaca aaaaaaggac catgctttta catagacaac ctgtaaagtc catgtgacag 1380

aaaatatatt ggatgcaaac tgacttagga actaaaaaag cttgaatctt tttgtattta 1440

gatccaaaga acccctgacc atttttcaaa atggctgtta agaaaacctt gaaaattctt 1500

gtccattata tcctattgtt acttgatttc tgaaaccgat gtataaataa tcagagcaaa 1560

ctttactgaa aagtggtggc acatcgagga ggagaggaag caaccaggga aggcacggca 1620

taggaacgtg cgctgtgcac atgcgggctt attgtcttag ctagaaaagt ggtgtgagtc 1680

aggtcaggtc aggtcagagg gggatcgatg gaccgatccg attcggcagg cggaacaagt 1740

gaaggttcag tgcacggcga ggcgagtcca ccggagcgac tgagggaaac aaagcaaagc 1800

aaaagggaca gagggatccc agaacggggc gggggtgcgg acgacggaaa gcgaaagcga 1860

cggcacggag gggtgggcac cattagatta ctggtatctg gacggccgac caggtacagg 1920

cgtacagcaa caccagccac acacaccgac ccagccagca aaaccgctcc tccgcctttc 1980

ggcttccagc caggttttcg tttcgcgtgg ttttcccctc cctccgcgcg gcctactaaa 2040

tcaatcactc acccgccgtc gtcggggtgg ctggcacgcg tgcgctccag gggtgggctg 2100

ggtgcatgca cccgcgcggt taagctagct ctggcgcata gccgtccgcg tcaccgggag 2160

ctaggcaaca aatcggaggc ctctcgggcg cgcgcgtcgc tgtctgccgc agccgcagcc 2220

tgctgtactg tacttggctt cggcggcgac ccccgcgtcc aagtggttgc ctgggaggcc 2280

ccggctccgg gcatcgcgac gcgacgcgac gagacgcgta aaagtcaccc gtcgcggtct 2340

cgcatgcgcg agggaggcag gcaggcagcg aacaaaatcg cacgcgcgtc gtcgactgcc 2400

tggcctggcc tggtccagct gaaaaccgcc ccggtttgcc tccgtttgcg ggatctggat 2460

gggctgtttt cgcgctggcg ggggtcaatg caaaacgggc gatgtgccgt gtggtgtgcg 2520

cggcgcggcg tcactttccc ttaacttctc gcgctggaag aggcagctgc ctgcttttgc 2580

cgcagctgaa aaggaggagg aagaaaatga tcggccggat tggatggcga cggcgggcgg 2640

aagcggaacc ttcttgcttg gccgctgacc atgacacctg gccccgcttt gcagcccgtg 2700

gaggactctt ggcagctttt acgcgtgccg ccggtgtgcg tgcgttgtct aggcaaggca 2760

cggcaagcag agcacgcgag ggcggatgag gaattttgac actgcaaaaa tcccaaatcc 2820

gcaagtatgc acactcaccc gcacgaccag tagcgtgact gcgtgagtac tgtttagttg 2880

gtcacccata ggagtagcgt tctatatatg aacaggagaa acaaaaatat atgcccttgt 2940

tagtcgttcc gaatttcaaa aaaattggaa atcagtcgca cggcctacta tgctatatgc 3000

ccttggtagt cggcacgacg ggtatatacg ggatggaacc gagccggtgc gtgatttccg 3060

tggacgtgac attgattgga gtggtcatac agactgctgg gactggagtc ttgcatacaa 3120

acatccaaga cagcatccac ccgtttagtc agagtcagac tcgagtacga cgaatatcga 3180

tcagacaaga gccaaatcca tttgggatcc aacaccatag ggtcattatt gttttgggac 3240

catgggaccg gatcatgcgt atatactatg tgtctattat tagcatgccg acgcgcgcat 3300

tcggccgcta gataggccct ctgacagtaa ttaatatatg aggaggagag gaaatacttt 3360

ccacctattt ttttctcgct atagaggatc gttgtcaaaa aaacaacctt tttggttagg 3420

gtttgacctc tgtttatcca attcaatttg agtgaattaa tttttagtga caaatgatac 3480

atcaataaga catttatgat aacttcaatt ttcaagattt atgaacctag ccagttggat 3540

acctagataa aggtagagtg tactttcatt aaggatggac atgtgttagg tgtggaccca 3600

cataataata tgtatttgaa aagtacttaa agtaggaact tgtatcctaa tatgtatttg 3660

acatgcacgc gtgacttggt ggcctcggcg accgagcgcg gaggcaaggc atgtggcacc 3720

gatcgaagca ggcacatata actgtcgccg cgccgtatag agtcggcact gacccaccca 3780

cccctgcgtc ctagctagct agttgctact agctccgatc gcgatcggta gggtagggac 3840

gacgatacga tgcatggatt gaccaccgtg caaggtctgc agatgatgcc atcggtctct 3900

gacgatcatc tcgacacgga catccggaat tgtattgggt ctggtagctt ctggctgccg 3960

gccggctgct acttgtacgg ccaataatgc gtggtgagtg gtctgctgca ctggatctgc 4020

aggcgaggcg tctgatcatg cagcatatgc gtggtgcccc ggccgccacc cgcgtacgtt 4080

gttgcgaagc cgggaggaca gcacattgta cgtgcaccgg ccccatacta cttatggacg 4140

acagaatatg cgtggcagca gaaccccatg acgcgggtgt ccgctggcga gcacggggcc 4200

ggagagacgg ccgcgacgtg acgagggaac aaccacccca acccaaccaa cgcgcgtagg 4260

ctcagcccgg cggcggcccc tgcccaggag ccgggcgggc tccacgtaca tcgatcagtt 4320

ggattcgatc actgtgcaga tccacgatcc atgccccatc tccatgcgtg tcttgtcctc 4380

ttgcttgcta tcaacctgac atccaagtgg tgcacagcgt gaggagatcg gagcggagat 4440

ccgggctgtg tctgtgcgcg gcatgtccgt acgcgcagtg tacgccgcag tcctgctcct 4500

gcacgcggtc acgggacggg actgagccaa ctcgatctga ggatgattgt ttttctgggc 4560

ccgcgctgcg cgccttgtgt ttgttcgacg tgtttttgtg catctacggc gccgatcgta 4620

tagtagcatg tctgaaatct gaatgcctgg tgatagctca gctgcctgcc tgcgccctgc 4680

ggcattgcag ttgcagccct gttgattctc gatttgggaa caccaagaca ggcgcagatg 4740

aattgcatgt gtccgtaata tgcctgcact gcaccctgca taggttgcag taacaaacta 4800

acaatccctg gacaacgtac gcgtgacaac gtcttgacca ggagaagagc aacgcgcgcc 4860

acaggcatcc ggccagagat gccgcaaggc ctgactagcc cagcggccag cgccactgca 4920

tgcattgcat ccaggacc 4938

<210> 425
<211> 1565
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205239_G1, chr5:203782603..203784167, Cluster 3

<400> 425
atttctttgt aagggtaccc tagacttcag aagagtcgta acctgctgag aagaacctag 60

tatagagtag aaactgtatt atgatgatca gtattcatta gaaagttgtg ttatcacact 120

gataagcctt ttctgatttt cgttgataat gtagtagtat cttgggaaag accgaagttt 180

ttctttatct atatccttat ttaatctatc agtttaaact ttacaaaatc cacccaacca 240

atcatccaca cataacctcc cctaattcca ccaaacaaat tgcactcaca cataacacac 300

cctcaaaacc aatgtttcag atcgctcgat aaccatcttc tctcttactc aaatctaatg 360

gtcaatgtta tttagattat cctttctccc ttatccctca cacttacagt aataccctac 420

ctccctctct ccttgtgacc ccgtcgcccc ctcccctcac tcgtgctgcc gccgccacta 480

gcctctcctc ttttcatcct ctttaggatc gtagtgttag cacgaccctg tagcctagta 540

tgtttaactt tatacataat gtttctaaca tgtacaaagg atcatgtttt tgttttccat 600

taacatcttg ctaaatactt tatctgattt ggtgctggag tgcgaaatat gctaacctaa 660

gctcctggaa gtttgtcatc ccacgtaaac actccatagt ttggacttcc aaaccaatat 720

gttatagcat gctttgccat tcctggggct gtagcgactg tgagtatgaa ttgttccctg 780

tggcaaagta catccacgca ccacaccaca aaaactcatc ccatttcaaa tgctagatgt 840

gggcaagggt gacactcggt gactggcctt ttataaccga tatcctccgg tcccatccaa 900

cagtaatggc cattaggatg actgctacct ttcaaatgaa atatgtggcc aagcaacaat 960

gtctacgcaa aacaggattt gacagcataa ttcatgacag aaggaaggga ccaattcaga 1020

acttggacac gagagctgag cagcggaaag aagacaaaca ggactcacat cgctggtcgt 1080

tgcacgttga agaatctaag cgccttgtgc agcgcctgct tgtattggtc gggcatcgac 1140

agccgcttgt gcgggacgag attgatgtgg taaggaactg gcaaagtacg caaggctgga 1200

atggggaata cccttgctcg tgcatatatg tgtggacaga cgattttcgg ttttctacct 1260

taaaaggcct tttcagaatt gttttagcgt tcttttggag atgctttaaa tctatatact 1320

acttttaag aatctaagga ggtgtccacc aggtgaagcc tgctcccgct cgctacgcag 1380

cagcgaagga taaggaagag ctttctatgc tagctgtccg agttggatgg agtgcatgta 1440

tgtacgtatc tcaactggag aaaaggcaca gtcacttggc tctgccgcac acgtacacgt 1500

atgcttttgt gacatggaaa ttaatttttt ttaaatttca atatatctta tcataacatg 1560

ttcac 1565

<210> 426
<211> 1975
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205693_G1, chr5:206160831..206162805, Cluster 3

<400> 426
gtcgtgtgga ataagtactt ggcggatcgg cggtgctgtg ctagcttggt gacaggtgcg 60

tccccccgaa acgacgccat gacccatgag taatcgatca ttattttctc atcgtgatgc 120

cagtactcaa tgtttctcat aatgactccg ctgccgatca ttccgttaga gctgagtata 180

gtaacggtct ctgcttacat gacatttttc ttcttacgtg agacattaaa aagtagtaag 240

agtgagctct catacaagaa cgagcaacta tacgggctcc aaaacaaaat aatgaaatag 300

aatagactag agaacaatat aagagccaac cttataccca actttattat atgaatattt 360

ttattattgt ctatagatga catcacagag atttagagcc cactgtggac actattatta 420

aacttgctct tatttgccaa cattcattgc acgcataatg cattatcgca acgtcacaag 480

cacagcaaga ttcaactatg aacaaggttg taagactgcc tccaacggag cagctaaaag 540

ggtatgcaaa gctattatag ctactcatat tcactgtagc ggcatgcatc ttccatccaa 600

cagagtagcc aaacagagga gccaaattcc atggcaggtg agagaaaagc tattatggct 660

gggcaggaac cgagtaggca tctctgatgt aaattggtgg gcaattcctg tcagtgagca 720

tgaggcaagc tatttttact atatcattgg aaagtgttgt attatagatg gacagctaat 780

gcatctacac aagccaacat actgaatgtc tgcttctttt agctgccgcc tgttggaggc 840

agcctaagga gctgtttgga tggagccctg ccaggaacct agctggccag gcaatacacc 900

tgagaatcgt ccctggccag ccagacagac ttgggtgggg tgacaaccaa ccaagcccta 960

agagcatgct gcgtatacat gtttgctttt acaaaggagc aatataatgc cttgcttgtt 1020

ggaaaataat agatgtcgct tctgggtgcc gaaagctgaa taatgcaaga tttgccgcac 1080

ttacgggcgg ctagtatccc agagtctttt agcgactagc atcattggaa cagctcatca 1140

cgcgtgtatg ataatcgctc ttcacaattt ggacccagca gtgggttgca tttgcatact 1200

actgtacagg tgccacagtg cagtcgtgag ctcacatctc agtgatcgag ttgggacgaa 1260

ggcttgcttt gcatttgcaa ggcaagcgta aaaagtcacg tgactagagt ccaagatcgc 1320

ctgcgtctcg ccagcttgcc cgtgtgcctg gcgcgtttga ggaattgctg cggccgccca 1380

cgcagcggag caggggcgcc atgcgttgcg tgccgaatta aacgagagta tccggcggag 1440

gagccgcgac gcgaaataca tgcctggtta ctttggactg tattaacgga ctcacgagag 1500

agccccgctc ccacgatctc tatgagcgac aaactgcaat taacagttcc taatcactaa 1560

ataattggta caggctagga cttcattata tcatctcaaa aaaatattaa tcgctcgata 1620

atattctcta tagaatattc ttaatacttt cttgatcaac tatcttccgc tgggatctac 1680

agttccccac tactattcat cataactatt attattatca gaatttctga tcagttacca 1740

tctacaaatc accaatgttc atcataatta tcgctattat aattcctccg aaaacaccgt 1800

ggagaaaact agagaacact tcaatatatc aggataaaac cttgattaaa aaaacccaat 1860

ggaaaaataa aggagaaaac gccatggtaa taacctgata tcgttttatt tagacccatg 1920

cataaaactt accatcttcg tttatatagt aacaataaaa taagatatta gacac 1975

<210> 427
<211> 3729
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205775_G1, chr5:206601378..206605106, Cluster 3

<400> 427
agctactgcg cctctctagc gttgcaataa caattccaat agattcatat gtcatgcctc 60

gtctcatctc ttgcagtaag gcatgacttg caaccccggc gagccaaatt ggattgtcca 120

aggtagcaat gaaaaaactt atcacactat tcccaaattg ccttgcatgg agttcttgct 180

tctaggtccc cttgtccctt aattgatgaa cagaacaaac caggcttggt accaaattgg 240

atccattagg ccttttcagt taatgagatt aaatctcacc atggatttaa tccggatctg 300

aattgattga atccatactt cacatctaat ctcaaggtgt aattaaatct atcatttaat 360

ccatgtatct atcaaaactt gttatttttt atttatggat tctaatataa acttgtacaa 420

tatttttata gatttgttcc atatctaatg agctatgaat ataattcaag ccttctatag 480

tttaaaattt ttctaaacta ttgggttata atctatgata ggtttaactg aataaaaaat 540

taagtagact tagattattt tgaagcatga ttgtgacatg gatttaaatc caatacatac 600

taatttagag ctggattagt gacctagcag acacgttcga tggggcgttc caaaggccaa 660

aggtactgga tccatttgga cgaacttttg ctttatagag acagtagagc agtcaacaac 720

aaggacgatc ccgctccaat cccagcgtcg tcgggtgcaa tgtgcatgta ctcctgcaag 780

catgtccttg caccaggacg ccagccagac gggtacgcca gcgattccgt tccggcgacg 840

agagtgagcg acgtgatcgg acaaaaggga acgcgacgga gattcggagt cggagcctcg 900

gaggggactt ttacagagag ggggaaccag cgaggaggag atgccgctgt cagaggctcg 960

tgatggtgtg cctggaagga ggaacaagag gagaccggga gatgggtagc ccgtgagagc 1020

actcatcatg gccggaacct cgacggcgaa aaagggagga aagcgacgca gcgagaaaga 1080

cgatcgacga tgcgtcggcc cgtgctagca agctctttct cttccctttc accgttcagt 1140

accgctagct gctgtaactc gcccgaaacg acgtacgacg cggcttttcg agcctgggtc 1200

tggggtgtag gttggcacga ggcttttgcc cgcccggcgc cgggcatggc tgtacctgca 1260

ctgcacatgc ccgccttcct ccggccggcg acccccggcc cgtttccctt cccgcaaaag 1320

gcatcggggc accaaaggct ccgtccggca ccaggggccg cgttccgcgc tggctcacgc 1380

tagtcctcct cgttagcgag ggccggccgg gggaccgagg tcgcgcgcca acctggccgg 1440

ccggtgccac gctatgtcac gcacagcagg cagcgcgcgg aggctgctcg gcgcggtccc 1500

tgacccatcc gatccatctg tgtctatcac aggacgcgga gggaggggct acccctgtct 1560

gtccggtacg gcatctgatc cgacgacggg atgtggtgtg cgctgaacga tggcggcccc 1620

ccccccccccc ccccccctga cacggacccg ggagcgcaca gtgacatgtc acggtcgtgc 1680

catgccgcgg tgcccgtttg ctcgtgtcag tttccacggg gccggcaggc gtaactgtgg 1740

gcgagcagtg ggtgaactgg cactccacgc atggcggctt ctgaaatgcc cgatcgctgg 1800

ggccggccgg ccggccggac gatcgtcgag gtacgtgagt gaacgagaga cgacgaaaaa 1860

gacgtgagcc ggcctgctgc ctccttatct tctctcattg aaacaaggca agagctagtg 1920

tccgcgaaaa cgtcgccccc taacctactg tgttcctgta gatgtcaagg aaaataagca 1980

ttgtgagatc gttcgtccgg acgtgcttga cgtctattcc aggcaattat gcgacgcgcg 2040

atcacacacc cggatccggt acgtgtttcc acggcacgat caccgtcgtc ctcccgctcc 2100

cgcccatggt ctcgcggccg cggcgggcag gcatcagtca gccagggccc gaccgtccca 2160

gaacgagaag gtacgctagg cgacagcggc cgctagcatc tgccgcggcc atggacgaga 2220

acgcgagcgc tcgtggatga ccgaggcccc catatgcctc cccctatcgg tggcgcccac 2280

cgtcactgca gcacagcgag agccgcacgg cgaggcgcca caggcttgca ggccttgcga 2340

acgccactgc tgctccgttt cggctttcag cagagagcgt gacggacggg agccggtcgg 2400

ggcgaggacg ccactgcact gctctgctac tcgtcctcgg gctcacacga cgcgacgcgg 2460

cgagagcaac ggtgaaagcg agcatgtgca gcaagcattg accacagaac gtacagctcc 2520

gcgccgtacg ccacagccac acgagtgtga atacctggag taaccccgcg tcagtttcac 2580

ctcccgtctc catccccagg tacaggaccc gtcgcatccc catgccagcc tttgtcgccg 2640

ctacttgcgc tgcgcccctg catcagcgcc cgccatggtc ctcggccagg cctccccggg 2700

gtcccgcgcg tgatggctca acgaacgacg acgcgagagc gctggctgct tccgcctggc 2760

ccatggccat ggcgttctaa cccgaccacc cgcccgcaat caataagcac tttgagctag 2820

ctagacgggg agaggtcctt gagcatgcaa accggctaac acacgtttcg ttccagcagc 2880

aggctaagcg aacgaatgcg aacccatgta cagtacagta ccatccagga gcgcccccga 2940

cagcgtattg tacgccgccg cacggagcgt gcgtgcagag gccggcgcct tgaaggcttt 3000

ccgccttccg gaagtgggcg cgcctgtccc gctgtacgtg tgcgccgcgt cgccgtcgtc 3060

gggcgccgca cgcgtccacg cagattttaa tgccccgaaa gcgagcggcg agccccttga 3120

cccttccccc cgtcccaggc gtaccgccac gcgaggtgct ccgtcgcgcg gtcagtgcca 3180

gccaccgcac cgcacggtcg acagcaacag cgagcgggcc gccccggcat gcacgagggg 3240

acccctgccg atgccgagtg aggtgaaccg agcatgcagt gtgcggccgt gctggggacc 3300

gcgagcacag cctgagcctg agccatgcac gtacggcgcc acggcggggg agtaatggct 3360

gggctctgcc tctcggatcg gatcactttt attactactg atgatcaggt gaaccgcggc 3420

cactgcctgc cgagaataac taggcaatca atcaagaatc aacgcgcgcg agcaccttcg 3480

ccctctgatc tgtgtccccc gtggtggccg tgcgtgcgcg tccttgggtg tgctacaaga 3540

caaaggcgat acaggcatac agcagcagca gctgggtggg tggagcctct ggcgagacag 3600

gatgagggca tggcgctgcg cgcggtgggc ttcggtgttc gccacgacgg aggcacgccc 3660

acgacgaaaa cccgtataat ataattcgtc tacggcacct gaataggacg ggtgtatgca 3720

ggtgacact 3729

<210> 428
<211> 1480
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206243_G1, chr5:208998833..209000312, Cluster 3

<400> 428
ttccggcgag tcgcctggtg ctggtgggga tccgatggat aggggaaatc gatgcggacg 60

acgagctagg gtttgattct aatgataggt ttttttacct atgtcattac tattttaaaa 120

ttttgttaca attcgcctat atgaaaaact gacatataat tgtatccact gtcacgcacg 180

ctgcagtccg cggcgcgccg cgcagcgacg cctgccgtga tggcgcagtc cggcgtcatg 240

accattcctt gcgcggcgtt gccgtccggg aataaatctc accatcgatt taatccggat 300

ctgaattagg tgaatccata tgtcacactc aatctcatga ttaaatccat catttaattc 360

atgtatctct caaaactagt tattcttttg atccatggat tctaatataa acttgtgcaa 420

catcttcata gatttgttcc atacataatg agctatggat agaatccatg ctttccatag 480

tttaaaaaat tctcaaaccc ttgggttata attcatgatg ggtttaaccg aatacaaaaa 540

tttgagtagg cttggattgt tttggggtat ggattgtgtc atggatttaa ttccaatcca 600

tgctaattca gaactagatt ggtgtaaacg aacaagatga ggtgttcctg ggacctcttc 660

ttcctgtcga ttcattcttt caatcccgcc ctccaaatga cactgtttac cacaagtaaa 720

cacgcggtga cacagaaagc aggagccgat ccgccgaaac ctgacaagat tccgaggcca 780

cgggcaggca cgccggcagc ggcgccgctt gtgacgcatg gcaaggtcca aacacaccat 840

tgaattccgc tggctccatg tgtaccgtac cgggccggag cctggacctg ccaatggtgt 900

gtgctgtggt gtggtcacca gcaggcagca gattcacttt agacaggacg tccgcgcgcg 960

gcgacccaca attcacgctg caggggacgg gggacagcag agacgccaca ccgcaatgtc 1020

tacactacac cgaactgaac tcattggctc atgtagtcat ctgatgattc ttgctgatca 1080

tgctcttgta tacagtaata gcccattttc cacggactgc attgccctga cttaattgct 1140

ctgaaggtgt tgttagcgag cagttgccaa ggccgagcgg tgccggttag cgagcactgg 1200

ccaggcgggg gcgaggcgat cgatcgagat ccggggcgac aagtcaatgt gcagcgctcg 1260

attggctttg gtagggtgcg acaagggaat gcatgcagat ggtactacga accaggcatg 1320

ggcgaggacg cgaggtgacc agaggtccag cccagccacg gaggcactgc cactactggc 1380

tgctcgcctt ccctgccggt gccggcaatg cgatgcgatg cgaggtccac gaactgaaac 1440

agtacactac atttggaaca aacaaacctt cggtaaaaca 1480

<210> 429
<211> 1915
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206245_G1, chr5:209000976..209002890, Cluster 3

<400> 429
atatctaaca ttttacactt tcaggggca taggctggaa tggttctgaa ttagagatca 60

aataagagta agcacttctt cttgcacctg ctcaagatgt tttccacttc atagtgccgt 120

tacgaaatgt gtcaaccgga gattagacaa aatattccgt cttgcatgca tgtctgcaac 180

caataaaaca aaggtgccct gttacatcta tgttgtttta tatcaggtca aaacagatga 240

ttatgcctat ttattctaat aggattgcat ctgtgtgtac cagatcgttt gttagagtac 300

ttcacttaac tgacactgaa atataaaaag tttcccaaat cagtactttg tttttattga 360

atgttcgctt ctattgattc tctttctttt agtcacttct tttactctaa attaaaattt 420

accaatagct agaacaaata ctattttagt acagagtacg attttttttt gttcttttgc 480

ttccctttt cttgttatgc tctattctta gctgtaggtc ctccctttc ctattgacga 540

atacaaaagg atgggttgca ttttatgctc gttgtcgtct cttcataatg tacctatgat 600

ttgcttagct ctgatgtgct ctttttggg ttttatattt tggtgcatgg tttatgccag 660

tggttattta ctgaacatat gttcatgcgg cgcttcataa aattccatat ttgcagagga 720

tgcagtgcat ttctgtctgg cctagtcagg tctggtgttc agcggttgcc acacctaggt 780

gatcagatgg attgcatatc caaaaaaaag cttcagaact caacttcgtt ggctgatcca 840

tatagaacaa tgctacctgg tgccacagcg ttacgatctt attaattatg ttatttggtt 900

aaggacttga ggtacaataa aaaaaaaggc cttattgttt gtcatgttaa tttgcttctt 960

tcattcagat atagaattgg ttgcctaatc tagatctaat attttagtct accactgctt 1020

gcttatggca tcctctattt cttttgtttc cttgcccatc catgtaaagt ctgatgaagc 1080

gtttcaatca atatggaatt tatttggcta tgtacgtgtc agtctacggt gaaacggaga 1140

caccaaatgt tgattcagct ctgccaacta ttcttgtatg agcttctata agttttttt 1200

ttgtttattt ccttgcctat ccatgtagag gtctaacgat ctatgcagct atccgattaa 1260

ctgcgggaat tgacaaccag ttggaccatg ggaatttgca aggatgtggt tgcatctatt 1320

ctgatcggtg tttgaatcca agatgttgta atcgctgcac tttttatgca atgtttccat 1380

gctgtgccat tgccaagtga agtgatttta tatcatttat agcaaacaca tacaagcctg 1440

gtgtagctaa gtagctaact atggagtcat tttattagct gccgttcagg ttttgcaaat 1500

gccttgcgtt tagtcgagag attgatgtaa caggatactt tattggccta tagaaagcgg 1560

gaacttaaca cgtgctaatc ctaattccaa accgttctct ggctgagacg ttgaaatgcc 1620

acattttatt acatgaaagt gatatatgat gtaaagaatg agtgagtggc tagatggttt 1680

gtacacagac cagaccaccc tgtcaacatc acaaaccgtt ctctggctga gacgttgaaa 1740

tgccacatct ttattccatg aaagtgatat atgatgttaa gaatgagtga gtggctagat 1800

ggtttgttat cccatgagag agagatcacg ccggtctgac gacccattgt ttttttagc 1860

ttattgcctt tgctgctgca acagagtgac aacatggaac aagatggctg tctgt 1915

<210> 430
<211> 1531
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206511_G1, chr5:210494928..210496458, Cluster 3

<400> 430
tcatcatcta gacgatccaa tccaacagca acagcggccg tgctggttgc tgttgcgcca 60

gcgcctagaa acaactgtgc gtggggtagg ggacgacgat aggtggaggt aggtccgggt 120

ccggggcgga cgaggcggcc acagaatctg cggagctgcc tgcctcgctt ttgcgctgag 180

ggcgacggag ccacacgcga cgacgacgac gacgacgacc cggtgggccc gatgctctgg 240

cccaagggcc aaggggggag ccaccgtcca catctgcggt gggagcaaag caattattat 300

tcccttcaaa tcaaaggcta catacatctc ctgctcctcg ctattgccca tcaggctctc 360

gaaagattgc ttgggatttg ggaatttcca agcatccatg gcttggctcc tccgcgcgtg 420

gacacgtgat cgcaaacatt ttacaaataa gtcctcagct gttttttttt gtaataaagt 480

cctagtccga cccaaccacg ttcaaaagtt tttcataaag attattacta ggattctcat 540

ttcaacgcga agaagagata tcctagattt ttttttgcgc aggaccattg ctgacaaatt 600

tatctacttt agaatttttc catccaccgt tgctgacaaa ataaatcaca cttttccctt 660

atcgcgggtg catgtgcatc cactgatcca cgagatcggg tacagcaatt actatattgc 720

acttgaatat ataaccatga ctggaatatt tctaagggta gtatatacgt acagtatagt 780

acatggcatg gtcccttaaa cgcgatctgt gaattgttca tatgtaatgt atcatgcgga 840

acacgagact atgagagaat aattaagctt tatgctgtta tagactagat gtgaacttgc 900

caattcaata tcaccatgtg aggtaatcgg tgaatttgtt ctttcgaaaa agacctagta 960

ttgatccatg cgccgccaca cttaattgcg aggctttgct aatttactgc caatatatat 1020

taccatatat cagctaattg gttttaattt gttctcgcga aaaaaaatga ttgtccatgt 1080

tagtttttac tttgattgtt ctctatctct actatattaa agcatcagtt aaaacggtcg 1140

tctcgcgtta atatttaaaa aaaaactata ttttttagaa tcgtcccacg cttctatact 1200

atcttctcta ctgctataac atgataattt atataaaaaa ataaggtgaa attatgtata 1260

agtgagtgtt tgaatattgg ttgttggttt cacattcaca cgcacataaa caataaaaaa 1320

catatatttt gtgcttcatt agaacaaaat ttatcatatg tcgtatatat aaaaatcgga 1380

acaaatacac ggacatatga caaatttatc tactttagaa ttttccatcc accgctgctg 1440

acaaaataaa tcacactgtt tccttttcgc gggtgcattg catccacgag agcggctaca 1500

gcaattacta tattgcactt gaatataaga t 1531

<210> 431
<211> 1595
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206875_G1, chr5:212157522..212159116, Cluster 3

<400> 431
tcccggcctc cgtctccggc cacgacgacg acgtcatgcc gccgagccgg acgctgctgc 60

ggcgcaatgg ccgaagcgag ccgaatagtt aagctgctgc ttagttctgc tgccgacgcc 120

tcctagtcgt cctacgtcga tcacggcggg catgatgaat ctcggtgggc tcggatactt 180

atacgccacg ccgagcgagg tcgagcgctg cgcgttgacc cgaggttcaa ctcgagaatg 240

gcgcgtcgga cggcgacgtg ctgttgatgc cagccacatg gcaggcggtc ctgcacacca 300

gggccaggcc gagttgggag cgcgtccgct agctgggcct gggcgagccc cggtggggcc 360

actcccgttg gtggtgttgg ggggatggat gacgacgatg ggtacggtac tacactacta 420

cggcggtctc ttctgctatc tgccaatttc cccaactttc tagtttgttt gttttatgct 480

cttaataact gcgcatgatt gatcgcgtcg atgtcctctc cttgtctggt tgctgatatt 540

tatttacacg catcaaatca ttaccacaca gcatatgtaa gtaatttttt tttctcattt 600

cttcttgaca agccttttt aataagaaaa aaaatgacca tcggcatcaa tacctagtga 660

ataaggttat atcgataaca tataaggtta gtgttagagc tcggtttctc acaaatgatt 720

tccaatgacc atctctaact aaggtcattt gggatagggc atcagttcta ttccacgaat 780

tctacctata ttcatttcat ttctacctga aattctatct gtatctattt tatttccgcc 840

tgaaattcta tgtatatcca tttcatttcc acccctaggg aggatgatag ttcaaacgtg 900

aaggaagtaa atcagagaaa caacattttc tttactgatc caacatcatg ttgtaaaaag 960

aaggtatgtt tctctggttt atgatttgaa taactaacca aacatccagt atcagttgga 1020

ggccgtgcaa cgctgggcta aatagtgggt aaacgcctgc ttggacttgc gatactctgt 1080

gataagcttt gagacatgta tggtatcttc gaataatttg cgaggatcta aaaatggcag 1140

tttcacccta ggataaattc aaggacgtaa aactttgaaa tacagagacg tgaacgacgc 1200

cccgggagac gtttaaagac ctcaggtata ttttaataga aagaccacct gctaggactt 1260

cttttgtttc tatgaaaaac aaaatctagt ctttgccaaa caggtgtact taataggtca 1320

ccgtggaaag caggtatgta atccttttt cattcaaata aatacaatgt ttcatactaa 1380

gagcccgatc ccgtttagca ttgtttcggc tctgactttt ctatgaatac aagttagagc 1440

cctaacaaac acctttttta aaacgtcttg aggcgaaaaa cacctaaaag ccagagctat 1500

ttctgtacca cggagaaaaa gccacaaatg gtagcttcat cagctatggc ttgaacactg 1560

gcattttaat aatgggaaac gactctgact cttgg 1595

<210> 432
<211> 1628
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207532_G1, chr5:215225947..215227574, Cluster 3

<400> 432
taagtctggt catgtgtctt gatatgttac ctcttatttc atttcgtgag aagggattgt 60

ttttcgttcc ttgaattgta ttgaattgta cttgacggta atcatgaata aatgttttga 120

catagttgtt caacttttta taatgtttgt tcaataccag ttcattctat gagtcagtat 180

atttataaca atattacata tttatattgt caatataata ttagtgttac agtgatattt 240

tatcacacag attttgtata acatagtgat gtttttttgt tctattatat atgtttata 300

gtatttttta acttccgtgg caacgcacgg gcacacactt ataataatat gattcgatga 360

agggacatat ctgtaactca acttcaaaca agcctcattt taaaaggacg ctgtaatcag 420

gagccgtcgc tagtcgctaa taatctttgc ttcgcatgca tcatcagctt caggccaggg 480

agcggctgtt aattaatcat tatttttact tcctctgtgt ctctgtcttc gatctgtaaa 540

agaaacatag agagagagag agagagaaaa aagttcgttc cgctgctgta tacaatacaa 600

tacaatacaa acagctcgct cgcagaagcg acggttgacg tggaacagtc aagtgcaccc 660

acctttctcg tcgtaagcag ctcagccgtg gccactcttc ttgagtggcc gcccgtgaca 720

cacagagacc agtgaccacg atgaatgcat ggatggacgc atgcacgtgc cggctcccgc 780

ggtttcaggc tccataatgg ccggtcgacg acggacgatg catgcctaca tgcatgcata 840

ctcaccgcca agtcaggtga gtgatctgat ctctcagtgt caaggtccgg gacgtggacg 900

tccgtccaca tcggctccag atccgcgtgg cccggagaat gagacggccc gtcggtttca 960

gctagccccg gtagagtaca tatgggtcgg cgactagccg agatttcggc ggggggaaaa 1020

tgaaacgtac tagaaagctg agatggcgcc gcaagaaaag tgtgcgtccc tctagttgcg 1080

tttcgcaagt ggcacacata tatatggcga ggtgcgtcgt caacgtcttc ctctagttgc 1140

ttcgcaagtg gcacacatat acatgtagtc acggtacatg tatgataaca atgtttctta 1200

aattcgtaag tcacggtact tatcctacaa ttgctacaac attgtagctt tggattagct 1260

aaaaatttgg aaaaattcgt aaaacacggt aatatacagt actatagttt tcgtcaactc 1320

taaaaatact agatattgtt agatacaaca ttgtaaacga cggtatttta acaaaggcta 1380

accataacat aaaaacttta gattaaacta gaattttcaa tactctaaaa atatcatggt 1440

atctagagac aataaaaata cttttacttc taaatatgcc catctgacct gagaacgaac 1500

aaaaagagga ttacgtctag agttggccag accgactccc taatacggca agattggata 1560

gttggccaaa ccgccttttt tgacatggtc agcatggctt tctctgtcag gctagctaca 1620

tgacagct 1628

<210> 433
<211> 1580
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_20910_G1, chr1:119668174..119669753, Cluster 3

<400> 433
tcactctaaa caatatttgt ttaaaaacaa aatatctcaa accataatat ttagtacaca 60

tgtgcaggac gctagtaata aacaaaaact ttagattaga gtgaaaattc aaatacttaa 120

aaccctaaaa aaatactttg ctaactccgc caaattcacc tggacctttt ttttttgcgg 180

atgacttcca actcatcagt ttcacggcgt gcagtctgga tgctaaccta gaggggacag 240

gtacccacac ctcctaataa taatgatggg aaggaagggc ggcagcagag ctaaagaatc 300

taggcccctc agctccacgt tatcgaatga aaaccctatt ccaggcatgc tcgctagcac 360

acatctatcg caagggaagt cggaacgtgc tcatgtcctc cactcgatcc tgttgttacg 420

caacgactag ctagagactg gccggctctg tttgattgag ctagcttctt tcaattcgta 480

cggttcgtac accaagtatg gttttgttca tgcatcataa cctcaggtca ttgcaaacct 540

gaagaattat aaacctgaag aatgaagatg gtagacgatg tagtatgtac gtactactag 600

tgagtgagag tgactatggg acaggctgct tggtcgttgg tcagtagtac tagtgaaggt 660

ggcattggaa tgctgcatca atgtggtacc tactctgagg gtgccagact atccaaacaa 720

gaagaaagag agggagcatt ggagcgaggg ccggaggtca cggagagcag agaaccgcat 780

cattgcgttc tgtggcgagc gtgttattat cagcttttga gaagcgcaat gccattttct 840

ttgttttttt taactttctt tcttgggctt gtatcgagcg cggcctgcct ccgcatccat 900

ccaatgaatg atccatggcc atttgccatc caaactccaa aggcactttt ggctgccacg 960

cacgcacgca cagctagctc gtcactggca ccgggcccgg aggcaagtct gcgtgggccc 1020

tcttgctgac cacagagggg atggggccca ggcgtcagcg ttggagggtc cacagtacgt 1080

agtccaaggg aacggcgaac gagcgacgac gaccccggcg cggcggcatc ctgcacagca 1140

ctagccagcc agccgcctag ggcgggggac attccttcgc tgcgctcgcc acagtgtctc 1200

cgctttcccc gctctctttt ggcccttttcg atgcaaatgc ttggagcaag tagaatttgt 1260

tgttcctcga gcctacacag cagaatattt agcggccgca accacagcac gctgcaactt 1320

gcccattttt ataggactgc cacgaacaga ttattactac cagttgcttc ttgcaaacga 1380

tttcagcttt tctatggcga agtgatttac cgttttgttg ttgttgttgc gatatactag 1440

ttactatgta attaacacta ctgcatgcac agacgatttt ttacgatcac atgccacctt 1500

tcagatcaat tgcacgctca catgccaatt aaacacatta tacaaataag gatactttaa 1560

aataggtatg tatatgagat 1580

<210> 434
<211> 1945
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_214065_G1, chr6:38389159..38391103, Cluster 3

<400> 434
tgcaaccaat cagtttacca actaaaacaa ttcaagggca ttgtcagcat gctgcacaag 60

ctcgtacata tcaaccatag agcaattgtc tagtcaagtc tcctccatga agaacatctc 120

taccttcatc tcatcaaaca ccctcatgtc tgtagtggac aagtgaatca catcataatc 180

ccaacaggcg aatctaggat ttaaagttag ggtggtccaa tcttataaaa atcaataaat 240

aaatgagttt gaatttaagt cctacaatat atgagaatca aaataagcac ataaatcaaa 300

ataatctata tacttttagc aggatcaaaa atcagagggt gggcccatcc tgtccaccct 360

ctagatctgc caatgcagcc aaagcattaa agataatgaa ttgatgtaag tttttgtttg 420

tgggttcatt tttctaaaca aaaacatgaa caaaaaagtg tgggaaataa gatcaagtaa 480

acaaagattg gagcagactg ttcttgcata taatgcatga agcaaataat cagttctgaa 540

gattgcacag cctgaaaggg aactgaatga aacaaaaact ggatcactga cccataacac 600

tttccatttc ggtgcctcca aaacctcttc caatataatg cacacatcag tattagccct 660

ctaagtgttg tcctgaccta tagtggagtc ttcattttct gcagaaaaag gtacttgtta 720

cactaaaatt cttcaaaaaa catataccgg caaatgaagg ggccaagagc cgctatcggt 780

ttttttcttt cttggtagca ttatgtgcca ctttcctctt ctttgtcagt gtgcccttat 840

tatccacctc aatcacacgg acaactatga taccaccaac ctctggcttg tatttgagaa 900

agggtcaaag agaacaaatt gtgggaagtt ttttgtttgt gagttcattt ttctaaacaa 960

aaacatgaaa aaataagtgt gggaaataag ataaagtaaa ccaatattgg agcagactat 1020

tcttgccaaa tagattggag catacatttc ttcaatataa tgcatgaagc aaataattag 1080

ttctgaagat tgcaaagcct gaaagggaac taaatgaaac aaaaacgaga acactgacac 1140

ataacacttt ccattttagt gcctccttca aaacctcttt taatataatg cccacatcag 1200

tattagcctt ccaagtgttg tctggaccta caatgaagtc ttcattttct gtaggaaaaa 1260

aaggtacctg ttacactaaa attctttcaa aaaacatata ccacctgcaa atgaaggggc 1320

caagagccac taccgatttc ttttcctttc ttcgtagcat tatgtgccac tttcctcttc 1380

tttgtcagtg tgcccttaat atttgtgtta acattaacac catttgttct cactgcctgg 1440

taaacacacc tctttgcaag ctcaaatatc tatggcttgg atcagcaagt atccaaattg 1500

atcagacacc ttctgatact ctcaatgtgt caaggtactt caagtatgta acaacgtcgt 1560

acctacaggc ctgtaaagaa acatataacc aaacctaagt tttgtaggcc gtaataccaa 1620

cctaccacta aattcagtat aacaatttct caacttaatt cactagattt gtccgattgg 1680

taaaaatcta gggaccgaaa tccatcacta ttttgagagg aatagataag caagtgggga 1740

ggaatacaac aactctgaag acgggtgggg cggttgcaga tccgaagata ggtgggggaa 1800

gaaggggcaa caccgtacta atctgagcca ccaccgccgc tgctagctag aatggagcac 1860

ttcttcccca agagctcgtc gaggttcatc tgctgctgcc tacactccaa gctacagaag 1920

gccatctcac ccatgtagat ggtgt 1945

<210> 435
<211> 2238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224816_G1, chr6:107864963..107867200, Cluster 3

<400> 435
tgtggaatta ttttgtaggg ggtacctatc ccgtcttata tagacaacga gattaggttt 60

tacaagctga gacttatcac tacatctaaa catacaaagt tttatgccaa tctaaggacg 120

tcgctacatg catggtgatt ctattctgac tcataggcga cataaatctc caagtcgact 180

tcatcgaaaa tggttgttac gatgtcttca cgcttcaaga aaactccctg ccatctttgg 240

gtatgagtta gccggctatc ctatggactt aatccttcgg cccactcaaa gcctctaatg 300

gcccatgaac tcaacccatg cagtgaggcc ctaggggata tctatctccc acaccacatg 360

gtgcttaggg catctagtat gggtggtgta ggcacctgca atgccactga aactcccaag 420

acattagttt gagcgtcaac agggcttcca taaatgtggg atggggtgcc cataaatgga 480

ggagaaggca ggcattcagt ctggccccac ctaccatatg gaaccctctc tccctcggtc 540

tataaaaggg agggggagga ctccctatag agacagataa cttgagttaa tcccactcat 600

acaaccccaa tcaatcttag gcaggcaacc tgagggacaa cagtcgccaa ctcaggcaac 660

tagacgcatt catactctta ggctctagat agccaactat aataggactt agccattctc 720

ttgaatccaa ttcacaaaag gagaatgtaa ggtgttatgt atgcaacagt ggcccaaacc 780

tttgagaaac ccctagttcc ctagcagtgt tgggagggtt gttgttgcca tcttccaaca 840

atcgggccat gcctttatcg tgaaaggtat tagagtactc caagaacccc ttgtcaatcc 900

tctatggagg tatcatcctt ttttcctcga ctatcaaaca ctgacatcgt cgatcgtggt 960

agatcttatg gcaactatgg gttatgcaca aggagaagag atcttttgg ggacctctat 1020

tgccgatgag gttgagagtc tcaagcttgc cttagaaacc ctagcaattt tggtgtcctt 1080

cacctaagat tctatagatt caatttgcac ttcggcttag actctgccta gacactgacc 1140

aagattcatg tgaagctcca acttgaatta caacacctag tcaggcctag actcccatta 1200

ctcgggagat cggttcgtgt tcatggtgta ctctgagtat taggatggtc aatcctctaa 1260

ccatgataat gacaacaatg accattcggt gagaagacga cgacaccaag aagagttgca 1320

ttgttgtggt caagatactc atgaccagat ctagatagtc gacttccaag gcgaacatgt 1380

ttacgccatg ccaatgcaaa acatcatgat gacgaagctc ctgatggata gaatcacacc 1440

accacccccg cagggcaaca catagggtca tgatgacctg ccaaagatac ataacatgat 1500

ggcatatgcg acagtgtgct catatatgct accaagttat tagatgatcc aacctaggat 1560

gaactggtgc acactcacaa aaactagagt catcgatagg acagatcatg ccctcatcga 1620

gaggggactc gaccaccatc ttagtacaat aggactcaaa ctcctcctcg tggaacagat 1680

catcatgctg agttagatcg atgccatcta ccccaagcta aagacatcag caaatgtaca 1740

attcatgaca atgatggata cgaggtgaag catgacgact cctactatga ggtccttgta 1800

tgaggccggc taggtcaggt tccaagttat ctctcagcct ctattatcaa atctttcata 1860

ggtccactaa gctaagtcag ctggcctaag aatttcaagc cttctttgat caagtaatac 1920

aatggtcgct ctaacccatt gaattgtatc gaggtttatc aaatctagag gagatatctt 1980

agccatggaa aattacttgc caatgtgtct tggtcccaac atcaggaagt ggctattggg 2040

cctcctagcc aactacattg attcatggga tgatctgaag catatgttca ttactaactt 2100

caacatgacc gttgagctag ggaatacata atcaatatga cctcgagcaa gtcatataga 2160

aggaagatga aatcttgtgc aactacatca agtgttggcg caaagtcaag gtcgatgctt 2220

agagcatgtc ggaggaaa 2238

<210> 436
<211> 1465
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225348_G1, chr6:110273673..110275137, Cluster 3

<400> 436
cagtaaaaac taaatataat tattttgtgg cagtggtata gaaaattctg gagtaggcct 60

cattcggttt gaaatgcttt agtgtagttc gcagatggaa gcatagcccc gaattccagt 120

tatattagaa catcactgat tgattattta gagtgtccaa attgataagc taagagaaac 180

acaaagaata ttaaaactag tgctgcatgg acatctaata tggcccaaag atgagctggc 240

tgataagttt ggcacacttg catgtatgac tgtcatctgt gtggtggact gagcttcaat 300

gtggacatgt acatggaatt agaattttat actaaatgat tgtgagttta tttcctttta 360

atgattatga cattttccat cctaaggcct aagggcatac tcgtgccttt gtctcttgta 420

tgctttattt tctttgtttg tggtttctcc taatatggct tctggtagga accaccgaac 480

tacatcgtgt tcttgagtat ttagcatgct tgtagccttg tacttgatgt ctctgtttag 540

ttatttattc acaaaacgtg gagaaatctt gcatgtatta gcaacagcaa agaagtggta 600

aagaaagtgt atatcaggtg gttgttgcaa cttctttaag tatgtaaccg gtaggtgtga 660

aaaatcgtat agatcctaca aaacttgcaa tatgcacttt attattgttt atttgtttat 720

gcatttgttt ttttactttc atgtttttaa cgaactagaa gggcattggt ttcttttcac 780

accatgcaat ttagtaaggg tcccctcacc tcatcatatc atttggaaac atagtttgtt 840

catcttttct gatttgtcat gcattcttat tacacagcag gatgtagata atgttaagtt 900

gtgaacctct tattttgaaa gtgtgcggtg atgctttttg ttgaatacga ctaagatttg 960

tgtcttttta gggctggttt ggctccttgg aattgaatca gtttctatga atcagattct 1020

aggaattgat tcgtctaaaa ttgtaccagc tggaaacgga ttcatttcat tattcttgtt 1080

tgggtgcaaa cataactgaa tttctggaat taaaatcaaa atcttgtctg gctaacttgg 1140

atcaagaatt gagcccagat tatctaacca gcacaatata tgagacacac gcagcacata 1200

cagacccata tagaacacaa agatcacaat atatgtatat aatcacttaa tcagcacaat 1260

atatgaggcc caatcaacac aatatatgtt tagacatcta ataatcaaat taaaacaagt 1320

acatcagtga gaggtaggca caagcacgaa cacgatatat gaaccaaaca acacgtgctg 1380

attacacatc aaaattaaaa ccattaacca tttggtaaga aacacatatt actctaatca 1440

cttcttaact gcttcagtag ccacc 1465

<210> 437
<211> 2022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225529_G1, chr6:111199112..111201133, Cluster 3

<400> 437
gtctgactag gtagtgtttg gttttagagt acgatgggat actgggattg agctattttg 60

ctcctaactt gttgtttgga ttggttctat gtatgataga gtgtgtttaa aaaaacaaaa 120

ttatgcttaa atgttaagcc atctagcttc taaaaaatct tccggatgaa acccctctat 180

tccaacttat ttcggaacca aacactacct aaagatatgt tcagttgtcc agaaatagac 240

ctggaattat ttcggcctaa cggatcacag tgttaacgga tatggcccgg tacaatgccc 300

ataccgttcg ccttccggcg ctatcagaag aaaaaatctc caccatagct gtccgaagac 360

gctcgccgtc gctgtcctag ttgcttcgcc gtccaccctg tcgcggggag tatttgttct 420

gcatgacgac gtcctcgtcg atccagattg caaaacgtgt gcgcaccgcc gttccctgac 480

ggctcgtcgt cacggtttca ttgagcctct ttctcatgct catcttctga gcgacctgac 540

tagtgactac ctgagttcat gagcgctagt ttatagccct ggaactagca cgatgtcttg 600

gtcattctgc tcaggatcgc agcatcggct tcgtgtttca ttactatgca ttgttcgttt 660

acattaattc agctcttatt aattcagatg gattaaatcc atgctcttaa atcctgcggc 720

tacagtacag taccacctcc atgccagcaa cgaagaggtt agaagttaag atcaaaaaaa 780

tatgcatgct ctaaatcaat ttaggcacca cagctaccat tttagacaat aacaattgac 840

aagataatat caatatacta ggaatcagat tttctttgat tattttagtt tctcactgtc 900

aggaatcgaa caggaagctg atttttctaa gttattttta aatagtgttt ggttcgtgag 960

tatggtggga cggagtagtt tccatatagg atagagtagt ttgatttggt tcattatgcc 1020

ctatgcctac acccgtgtag agctcaagaa caaaggcaca ttctaagttc ttgtttctgc 1080

ttctcacttc catgaatgac atacgaatct cgtagttttc tcatggtttg aggcacatgt 1140

ttagccgcac ttgcagttca tcaattgtcc agtttgtact taacgggcat ccagcaagtt 1200

cccgtaccaa ggcaggcatc atggatagga ttaaaaaaag gcatggtgga tatatttctt 1260

ccgattatat acttaagact tgtttgagaa gctcaatacc gggataaatc cagccttttc 1320

ccgtggagaa atcccatgtg gatgtcagct catgaaagtt tcttggccgg tttggaagac 1380

actcttccgg gctagctctc ccccaacccg accaataacc caagtaatct atgtctcgac 1440

accggagacc agacaacttt cccctcggac gagggagaga cgacgcgagc acaccgtgcc 1500

ctccacatcg tgtgcgcgtc accttctgtt gtgccgccat ctgctccgtc gtcgaccact 1560

ccacaattgt ccgctcggcc gtcactggct ttccccgacg tggcctcgag taggacgtga 1620

gtcggccacg ccctctattg tagtccatgt ccactggttt gccgtcctcc accgccatgt 1680

catcccctag ttcattgtcc tgcgtcgtcg ttcacgactt cacggcacga ggtaaggcct 1740

tcaccctgtc gttcattttt atattatatt gtatatctgt acgtgtgaat ggagatgatg 1800

atattatgtg atgtgatgat ggatggatta gcttcattgg atattagatg gtatttaaat 1860

tgaactttac gtgaatcata tgtgcttcat atttttcga tttttattga tgttttattg 1920

tttatgagtt ttgtaaagaa atatttttct ttgatttttt ctgaatttta atgtattttt 1980

gttcagaggg gcatttagcc cattgcttcc caaacaatgt ca 2022

<210> 438
<211> 2205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229013_G1, chr6:129907017..129909221, Cluster 3

<400> 438
agtgtgtcta cagcacaaaa aagtaattta cacgtccata tagcctcatt ggtaagaata 60

gccttagaac caagacacac gccctgtctt tctctcggag aaaaaatgca gacctgcacc 120

tggatgtgta aatctgaatc ctggagtgaa actgtgcagc cactgcgctg cacttcattg 180

tttgagtacc atgaaatttg attttgatgc agaagctagc taagccagca gggagcatgc 240

atcagactcg acaagggctg agcctatgca tggcagtgat ttccttgttg ggaactgcga 300

agggcgacga agagaactgg gcattcagat ttcagaggct gacgaacgtt tgcaggcccc 360

ccggaggcac actatttcgg ccaggatttc ctttttcacc aactggtctc gtcttggttg 420

ttgcaaagtc tatatactgt actgcttcgt actatgcctt ctgctgtgca taagcaggga 480

attctctttg ggttggggtc cctagctcgt ccgggacaat cggcagctgt gtatgcgcat 540

cagcagcaaa gctattcagc aggagatgct gtcgtggaag tggaactgtg tgtgaatgtt 600

ttcatccaag tttggatata tagtgattta acgtatttcg tagaggtata gtattttaat 660

gtcctggcag tggcactcct ggagcttcac tggttgggca tctcctacag ttgattctct 720

aatcagtgat ttaacactgt agtactgaat actgattaaa ccacctccgg cactcaagag 780

cgagcgagcc acactgtgag tgtgaggaca gcttcatttg tttcaaattt ccgaacgcag 840

acgtagagtg ttgctgcatt tgagcatttg ctgagcactc aattttcata gtactgtata 900

ccgtactgtg gcgatggcac agtgtgattc catctgagag actgtcggcc gggtgaatat 960

gaacgagtac cgtagtagct tgcacagtac gagagagttg tttgcgctgc gctgatcctt 1020

ttctctatgt tacacaagtg gtcctgactt cctgagctga ggcccttatt aactcttgtc 1080

tgatgagcaa ataaatgtct gtagagtaga gggcacagac agagaacatt ggcagccaga 1140

gcacacgtac agaagactag cagcgaatat acatgtatta tctatattct tgtttcaata 1200

attttgcgtt ttaattagga agctcacact tattacactc acagtggttg ttgctctatc 1260

tccatgtgat gaaaactggc cttgttgcct gcagctgtag atgatgatga atgcgcatgg 1320

ccgaataatg ggctcagtca gatgtctcta tagctcgtct tttgtttgga tgattcctct 1380

tggttcggat gcgattattt gcgattcgca cggctcattc gcgtcgtgct gcaagacata 1440

actagggcgg ttatgatgct gttgctgacg agcgaccatc cacggataga taatgcatgt 1500

gcggacgacg attccaccgc actgcactgc aactggatgc agcacaaccg gcaccagtac 1560

catagcatgt ggccgttaat ggggtgtcct gcgcttttgt tgctctactg ctctgagaaa 1620

caagagacag accgcacgtt ctaggactac gagtagtaca cacaagcaca acacacagga 1680

aaagtagggc agtggatcgg gttcattccg tagatctttg aaacctgtcc tgttcatttg 1740

ccgtacgtcc atgacactct acttttgatt caaatttgaa ctgagttaca tccgtaataa 1800

gattactaga acagctatag actctcttag ttttaagtgt tgggcggagg ccgaacgtga 1860

ccccaatcat ggagcgaaag ggcctttgat tcgtcgcgtt gcttcgacta aacagtatgc 1920

accacagtgg gtgaataggc cttcgactct tcaatcgaca gtaacgaaag acgaaatcaa 1980

gcagtaccgg ccaagggctt cgccaagacg cctacacagc aacctacgcc atacatccgc 2040

caagggagag caaagggcgc agagtcgcga aggcttcgaa ggtggcggtg aagggtacga 2100

ggcgaccagc cccttgtagg cccaccaaag gacgcttccg gaggcccacc tgttagtgta 2160

agtatgggtg tgttatttag tgtgccgcct gcagggagca cgacg 2205

<210> 439
<211> 1501
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230850_G1, chr6:138423860..138425360, Cluster 3

<400> 439
acaaattgcc atggatcctt gccgattcca gctggcggtg gtttgccata atcatcttca 60

gttaggaaga gggtcctggg aaccaaggct cgcctggcag caacaataga gaagcgcgcg 120

cgtggccagt tgggtgagcc tggcctctcg gccccatctc ttagcgctag tggtgcttcg 180

ttgcgctggc gcagctgttt agtttaatta ttcaaattcc aaattcaatt ctgagcttaa 240

ccatttaaat ataaatacaa caatcaaaga atatcaacat gaatgcacat ttgctttggt 300

tattttattt gttaattgct tttaaatcaa gccttatatt tgttgagatg ctaaagaaaa 360

taaacaaaat cacttaaaca ctttgtccca agggttattg tatttctcca aaaaattggg 420

tattacaatg acagtatcat attgcatatg aacctatcta tatagaacca cccctctcag 480

cttgctctat gatggctgca acaacgattg cctcttcata accgtaatcg agcctcttac 540

gcatcctgca ttgttgctca acggtaacta ccttgacttt atcatgccta ggagatcatg 600

atgactcatt ttcatcatcc ctaactcaag ggggcagact atgtctcttg gtcctaatca 660

cactgctcta gcacactaac aaaactactg gcaactacaa tcattgatca agaattacaa 720

cacaaacaca ctaagctaac cctttaagat gcccactaac tcactaaact cctcctaaca 780

tgtaaaacct ctcgaggctt ggcctcagtc catactcact agcttggccc caagtttaca 840

aaccttgaca tgctgcaaga tagaggcaaa agagtataca taggaaatat aatttagtga 900

taagaaattc ttattgatag caaagtagtt tgagataaga aaagagaaat gggcggcttg 960

gctaccttta aagcggttaa tgaacaacag aagcaacata tatgtgtcat gcaaattgaa 1020

tcaccaacta gatgaagtga taaacaagag ttatcattaa aatggaactt gagattaaat 1080

aataatgaaa agcagactat caccttggca agaggatatg acattcaaat attgagggat 1140

agtatcaaag gggctcacaa atgaagtgga ataacactaa aggctctaat ggattggaag 1200

ctcattttcg aaaccctaat aatgttagga gacatgattt agggttgggt gggtttggga 1260

tttggctaga gcagtgaaaa caaaatggga aaaaatagca ccagaatcac ctagggtatg 1320

caatggagga aatggcacta agacaacatg aagaagctag gatgtgtata tgcaatgtgg 1380

gtaggatatg gtggctaggc ataggagcat cgagcgtgga ggcgatgcag agatggtgtg 1440

tggtagtgca gtagaggaac aatgcaatgg catggcaaaa tgcggtggag tgggtgcaca 1500

a 1501

<210> 440
<211> 1533
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232309_G1, chr6:145294220..145295752, Cluster 3

<400> 440
tttgtaaccc ttgaaaccaa acgggcctaa tacagaccac actaaggtgc cgtttggttt 60

ccaaaatgta acgtaaatgg taacggtaat ggtttgcatt cgattaccag cggtaacaaa 120

tttaaataag ctgatatcag ttcctagtgt ggtatccgat tacgattgaa tttaaacaaa 180

catgatctaa cgttatttgt taatattaca ttacaaatat gtgaaccaag catcatctaa 240

cttcgattag acatgactac acgagcttgt gtcgccacat cccctcttgt cgatgcccaa 300

tcgtcaaaca gcccagccgt acggtacgga cctcgaaacc ccaaatgttg ccaagtttac 360

ttctacttgc ccctgaggac gcccgatcgt ggatgtcacc agacagccag ccactcgcgc 420

ggtagaaggg ccaccgggta gaatagggaa aatggtggag gtccttgtcg atctttgcgc 480

agagctgggc tttcggtctg ggtgcccggc ggccggcatc tgtaccagcg cgtgaacgcg 540

acccgagagg gatttccgca agtgcccgga cgagatgact gttgtactgg cgagggccgc 600

gagcaggccg gcaggggcat cttggggcat ccgtggcacc cgcgtggagg ttccgaagga 660

aggcggaccc ggggacggga agaggaggga gatgccgctg gggcgccgcg ttcacacgtg 720

gcgccgtgcg tgctcgctcg tcgttttgcc tgctgcggcc actgcgtgcg tccacgtgcg 780

cggcgtcctg cgtctcgctt cgcgcgctcg ccacaggtct gagtccgcag ccacctgaga 840

attgatcgac ccaccgaccg tacgcaccgg cccgcgccgt ggttgattgc gttgttttgt 900

ggacgggga acgcggcggg gtgatcgtga tccgggaccc ggacccggcc cagacgacgg 960

tgaccagggg agcaagggcg gccgctcgag tctccctcca cctgggggct ggggcccaaa 1020

cccagcgtcg cgtaactacg tggcgccggt gtcaaaatga ttgatggtga tgaaattaat 1080

gtgagcgcac ataaagtgaa gtttatatta acgtgaggag agctgctcaa gacagcggtt 1140

atggggcgcc gcgccatagg ccgaccgcgc cgcctgcctg gtgggcgcgg tgctcggacc 1200

gtttggcggg tcgaggaaaa gaatctcgcc gcttggtgcc gtcccggcgc gggaatatcc 1260

cattcccgct gccgccgccg cgcgggtgga ccagccaaag cagccagtcg cgatttgctt 1320

tgcctgggca aaacgcgatg cgtcaaactc acgagaccgc cgggggtgac ggtctggcgg 1380

ggcggcacgg tagccggcag gtactacccg gcccgcgagg acgtaggcag gggcaccgac 1440

cgactgaccg accctgtgga ggatcggcag gtcgcccctc ccgcgcaggc gtggccgtgc 1500

ggctgacgag tgcggcgtga ctgctgggga tcc 1533

<210> 441
<211> 1937
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233102_G1, chr6:148609622..148611558, Cluster 3

<400> 441
caccggaatt gcgatcgcaa gatcactaga cgcaagatga gaacgaacat gagatttttg 60

gttccgtcaa aacagcccgc ttttctagtc tcttctattg actgaaaaac aaacttgata 120

gttacagact tgttacaaca cgctataaaa acatcgtccg agtccgtcca caaccgcgcc 180

atcacgcagt tcaagctcgg ttctaagtcc actagtttgc gatctccctg aaaacgtgcc 240

tagctgctag gcctgctacg gtattgttcg gttacgtcta gatcgaagtg aattgagggg 300

gactacgcgg gctcaactaa ttcggctgca tgtccaagaa cacagcggca agagaaaaga 360

ctaaagcctg acgaaaataa gaaaacagac cgaccaaact gaaagaagca aagctctgaa 420

agtctgaatc gaagttgctg aactcctgaa tggtgacgga cacttgttga cactctcgca 480

tcggtgccgc tcctccctcc acgcgtcctg cttgtcgcgg caccaccaac aaatcctcgc 540

tgccccatgc ccagtgccgt cgtgtgcaca caggctccgc atgccatgga gcatggttct 600

agccaaggtt gtggcctaca agaacaaggc ttcgatgtcc ctgcttcccc cgatctacgg 660

tctcctgtcc tgcaacttga ttccccacat cttcgatcac catcagccct tcatgcagct 720

gcggtccttc agcggctagg cttcacacac tggtagtctg gttactaatc tactccctcc 780

cctctcctta ctccctagat tttgctagat atggctgaat ttgtgttgtg tgttcatgac 840

tggaattgtt tttccctatt ggacagatac tgctagggtg ctaccaatct tatttaggaa 900

ttaccaaatt aggatgtaat gcgcctggtc tatagaatac ctgtggattt tccaattttg 960

atgattgatt agttattaat taatctactg tgaatcctaa tatggccttt attctcttga 1020

aattggtatt tgacatgtac tagtacaaca taaattcgct aaatcctagg ctgaagttct 1080

tgcttatata acacagctaa ttttgagcca agtttcatct atgctagtgt gaaggcaaat 1140

gaacagttac cgggtaacag ggtactaact tggtaagcat ggggattctt ctgaaagagc 1200

ttacaattca acacatttcc tccatgcagg cgacttaatt ttgattagga gaaaacattc 1260

aggtatgtgc tttcttttcc atcactaata gtaataagta gacagtgaga gaaaccattc 1320

atgtttgtgc attgctcgaa agtctataga aatggtgcat ttcttttcac ttgatttctt 1380

tgctgaatag ttaaaagtat ttctttacaa tgaaatactt gctaaagatt atataatgta 1440

gaaaggcaat gtgctgaata ctccccctgt ttttatataa acgttttaac ttttgtatat 1500

tcatagcttt tgttgtgcac ttagatcata ccctaatcta gacatgtaat aaaaataata 1560

tatctagaaa agtcaaaacg tcttataatt tagaacaaaa gaattatgtt ttgtctaaag 1620

attaaacact acctaaaatg tatacttaca tggctcattt ataaatgaca tatctgtacg 1680

ttaattgcac ttaggttctg taaattaatt taacatgcgt aaacttcgga tctgaaagtt 1740

tcatatttgt atctgtagtt ttgtggatat gacaagtttg tatttggtac cttgaattta 1800

acacaactgc actgtattgc tgtggggaat tagaaacaac tgagtcttgc aatgaaatca 1860

taaggctttt agacctctag tgaagagcta atggagttga gctgcaggca accataattg 1920

ggttgttatc cttcaat 1937

<210> 442
<211> 1930
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233178_G1, chr6:148953336..148955265, Cluster 3

<220>
<221> modified_base
<222> (29)..(29)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (30)..(30)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (31)..(31)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (32)..(32)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (33)..(33)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (34)..(34)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (35)..(35)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (36)..(36)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (37)..(37)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (38)..(38)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (39)..(39)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (40)..(40)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (41)..(41)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (42)..(42)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (43)..(43)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (44)..(44)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (45)..(45)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (46)..(46)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (47)..(47)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(128)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<400> 442
aaagaataca tgttgattac cttacggcnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnntg ttttattgcc accatcttgt gagagcttgg atagtaatac atgtaccagc 180

tctaagaagt ggtcatatta tcttaatcca ataactaaaa gtctagccat atgttggagt 240

ctatgaacaa cccgctttga actggctact acagtaagca tagcattttt cttctccctc 300

tatttctctt aatttttcat gtcactggaa atctaacgtg acatgtcttg cgttgggctc 360

aaatcacgtt attatacttt gctctggcgc aatcctttcc gccaaacagc acgcgacgtc 420

agcgaacttc agcaatcgac ttcctccaaa attcctgcga aagccatcag gccgggctca 480

tccgaaaacc atcagcctgg attgcgtaaa cagaatcgag ggccttaaag ttcgccagct 540

acaggatttg tacgttaatc agtgttagcc cgtatcctgt acgtactagc tccgtctcct 600

acatgttaga tacacacatt gacgccagag atatacggcc ggccgaatat ctatctatct 660

atctatacgt atgaggtccg tagctagagt gctagaccac gcggcggcgg cgcaccgcac 720

acctgacacc tagcagccga ccgtttgttt catcacggaa gtcggaatcg atgcacgtag 780

caccgctgac caggagaacc gctcgatcga cgacggcagc cggcgggccg cgcgacagcg 840

agagcgaggg agaatcgccg ccgggccgga ccggacgtga cgtgacgtga gcagcacaag 900

aggatagcgg cgagatgtta cgggtatggt gactattagc ccgcgcaggc atgtgttccg 960

tgcgtgccaa aggataatgc tcgcagtgtg ggggttgggt tgcggcccgg ccaggcgaga 1020

cagcaacgac gatggatgag gggagtcaat gccgatcaca atgatcgaaa gggactgtag 1080

agggagaaaa tacttcgtcc gctcgaccgg cagcaccaga tagtcggccg cacgcagccc 1140

aaacctggtc ctgctccaaa agcctggcac gtcaatgtgg ctctagaccg gactcccttg 1200

gagaccagga ggctggtttt gttgatactg ctattaatat actatctctg ttctaaaata 1260

ttgaaaaaaa ttaaaaaaat gacacgattt atttgtgatt tgttcaaatc acgttgtaca 1320

ataaataata atagattcac atattatcca atacccaaaa tcacatttaa catacttgtg 1380

caaataaaaa tgcaatccaa gtgcaacacc aagtaataga acctcacaat agtgacatac 1440

gtacatgtac atataaagtt tttttctagc acaatttgtc atacaagtcg aatgataaag 1500

ctttcgtgta tggatcacat gtttagctcg agtcataata ttcagacatg ttggaagaat 1560

tcgagtatgc gctcattcca tatacatgac cctatacaaa gatacgagaa aacatgaata 1620

acaaataaat agttaacgac gaaacaaaaa aaagtaacac atctggttgc cggtagaatc 1680

atatggatct aacactataa caccaaaaat gaaacatgta tggggtcggg gtactcgtga 1740

atgcgaatat gcatacgggg gtggttgcac gtacccatat atgactgatg attatacttc 1800

acatgaagat ccttgccatg tgtaagggtt taggttttgg tctcgtcgag ccggatagtt 1860

gtaactgtag ctgtgcttcc atcatcaacg gaaagggaaa ctgatcgaca tcgaccactc 1920

cttgtttccc 1930

<210> 443
<211> 1444
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234555_G1, chr6:155141774..155143217, Cluster 3

<400> 443
ttacaactca attattacat catccctgca gcaatttgta gttcaaatgg acttcaacta 60

aatcatgata tggaggaaaa taaaacacgt gcactaagct gcttcttcat atcacgtgga 120

ctttcaatgg tatatgcaat tatgttactc tctactatat ttatagccag cgtggtaagt 180

tcgcacatgc ttcttcatat caccatgcac taacattaat tacctatcgg ttttggtttt 240

gtggattaaa atgcaaccga aaatgctgtc tgatcttcta tcaatgatat ggtaggttac 300

gcccattctt gaaagaaaaa aaaagaagtt tctcctcaaa agtcaaaagg tacgcttgta 360

ctttcaataa agtttttttt cctgagataa cggctttgaa agatttggat gctgtgtcga 420

ccgaccgata gactatgctg ctggtacgtt cgtcccctgg atctcctcaa aaggtacgac 480

gataatgcat gggacaacca gcgtggattc cgattcgtac gctgttccac gcagcatgca 540

catggcgtcg gcgggccgta tccggcgacg agccgacgac ccaaatccaa cgtgcgccaa 600

gcaggccaga cgacagggaa agcaacagca cagccctatc cagtaaccag tatccaccgc 660

cacctcacgc gtcctcgtcg gcggcggccg ggatctctct caccaccgta ccgccgcagt 720

ggctccacca gcagtagtag cacatgcatg ctgcgccggc gctgctgatt tggaaaagca 780

cggccaccac tcatgactca cccaccgccg ggccggatgc cgctgcacac ctgccgactt 840

gttgagaagc cacgtacgta gcagtagtac gagtggaaga tgacacgtac atgttcaagc 900

ttatcatgca aacgcatctt gtcatatgga tagacctacc tatcatcgta ggagtatatc 960

tttagcacca gttttatgtc aggtgcaaaa cgtgtaacta tattcttatt ccgcttcttg 1020

tttaataata agtttaatgg gctgttacac tatagacagg gcatgagaaa ctagctaagt 1080

ccaacgcaac agaaagtcac acgttctcgc atagtataac atcgctagct gaaggaggac 1140

gaatatccga gcaagatata aacaaaggag tttaaactca tttttaactt atatctttct 1200

tagctttta tgtaacaaaa agtgtaatat ttgttttgac tagtttaata tttggtacgt 1260

ggactataag tttactttga tattaatttt tttatatata ttagatacga tcgtgtgtcg 1320

gtgtaacata cgaggattaa ttatacaata tctatgtaag cggacggata tattagcatc 1380

tataagctag aagaccacca cttggcgttg gaacgatgca tgtaatctat gcctttattc 1440

tacg 1444

<210> 444
<211> 1522
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234568_G1, chr6:155199387..155200908, Cluster 3

<400> 444
acgatggaga ttgtttggat tttcatgccc ttgcttatta tggtttccat tttggtttca 60

aagaatggat gacaagttca aggctataaa tactccatct ctttcctaat ttaatagttc 120

aagcaactca tttaaagtac gagaaagaga gttcgggctg gggtgagagg ggtagtcaat 180

taatctagca ccggctatgt tagaggtgct tcttttgtta cgccttgcta ttagatgtgt 240

gcgtgtgtcc gttctaaaat gaaaacattt cctgttttaa tttaatcgga ttatccaggg 300

cgcacggcgt cgagagtgcc cgtcacggtc ggtggcagag cgcatctttg atcttttctc 360

gctttgacag gcagatgaag aaaagcccaa agctcgcgca cggggggggt cctgtaccgc 420

gtgcccattc gcggcgggca catcgcgctc cgttgattgg gcaaaagcac ccggcggaag 480

tcagccgcac ccggctcgtc cgcggcggcc gaatctcccg tccggccgtc ccgccgcagc 540

agccagcagc tcacgtgcaa agtgaagttt gccgaaagct gggcaagata gcgtaaccat 600

ttttttacgg tttgccttga atttggaacg gcaaatttaa atttctggct tggctgcttt 660

aaagggttgt tagtgcgttg ctgatactag tactagttat cggttttatc actttatatg 720

taggtcatcc tgtaccgtgc caaaaaggta gctgagtgaa atggatcctt gtttcgcaga 780

acatgaatgc agtaaatctc catctttatt tttatcttta ctatattaaa acaccagttt 840

ccaatggcta ccggtttgca atcatctgta taacagaacc aagaagctgc agcttacaat 900

cagaaaacaa aacgctacca aacaaaactc acccttatcc tattgtaccc gttttcgcca 960

taccgcgtcc tttcctatga ataaagtaag agagcttgca tatcaaatcg tcttaacaag 1020

aaaattcttc tttccttctt tttccttgga ttccgcaaca ggtcttggga ccctgataca 1080

gttgagaatc tgagatcggt tcaccggttt cagatatcgc gtgcatgcac agacacctcg 1140

tacattcctg acgaataata acaagatgag tgatgcaaag gttcaagcat agatcctatc 1200

ccacagccac taaacatact tttaatcaca tccacggatt gtccaaggcc ccttaatcag 1260

agaaaaagat tgctgcctcg tttttttttct tcttcttcaa aagtcaaaac gtgcccgtgt 1320

ggttgcattt agctttagcc tgggcactga accatttcct tcccggaaaa aaaggagagg 1380

ctagcaatca tctgaaggtc atggctacag gtgaggagac agatggaagt actcatggcc 1440

attcctcaag catactcaaa gctgcaccaa gagaagggca tgcgatgtac tacctcgggg 1500

tactcgaata tttgtaaaaa ac 1522

<210> 445
<211> 2395
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234906_G1, chr6:156838703..156841097, Cluster 3

<400> 445
attataatct gcaacgtgtc gagacgagta attattatac acaaaaatta cgaacaaaca 60

gacagacaat aatactgcaa ggtccagatc actggagcgg cgtccaaatt attaatttga 120

gaagagccgt gtagaatgtt tgcacagcga tgtcagtccg ggccggcatg attgattgtt 180

ccggagaagg gatattcgtg cccgcagaag gaatattcgc tcgctggata aatagggagg 240

gggacgcctc ggcctcgcgt agttgtcctg cgtgtacgtt tctgtaaaat aataatctga 300

tctgaatgca acggcggggg cagccgagca gcggcacact gcattgcgca gtgcagtgca 360

atgcgaaggc acacagagct agtgccgcag gaagctgggc ccggcggctg agcattcacg 420

tgccacctcc catcagtccc tctccgctca tcaattcatc gacgacccat ctcgtctcgt 480

ctcgtctgct cacccacgtt tattggatca atagatgata tggagcggag cgctgttctc 540

ggttagatgt ctcgcagggc cgtggcgagt tttttggcgt ggagctcgaa tttctgtctg 600

cgcccctgcc cctgcccttg gaggagcgag gagccgtata tttgggccac gactgactag 660

ctggccaatt attggtcggg agtgatgaac caacgtggac ccgcgaacaa ctgaaattgg 720

ttgctgttta ttattgcatc gttttatttt atttaaaaaa aacaagttcg gtcatactgt 780

atgccagtac catatcaaat cgaattactt gaccgaaccg ccgcgggaac aattgaacaa 840

aaagatcgct ctgatgattg cttgtatatg taaatgcata aatctcgtag gacaatgaca 900

tcaggggatt attgccgatt cgatcgacca ccagtagaaa aaaaaaatcg tccccggtgc 960

cagaaaaaga tcgcagagca atcggttgcc accagaaaat gaacattttt aaatcacaca 1020

gacgacacga gccagcgacc acagccacaa ccacgggaaa caggaccatc tagtgtttag 1080

atggagggac gaggaaggat gaagatggat gagatgagat cattctagct taactcgcgt 1140

ttggtttgaa ggtccagagt caggattaag aaatattctt taaaaagggt ggataaaaac 1200

atccctttaa aaaataagga acgaggttag ctcaaggtta atttcgtccc attcttgttg 1260

acaccgaacc aaacactacc taactgatca ggtgagggtg aggcgtgtcg tgttgcagct 1320

agcgtgccgg ccccggaaaa cgacgagccg ctgcacggcg cgcggtcgac gtgtgtcgcg 1380

gtcgcttgct gccttgctgt gatcctgatc tgctcccgct aggaaatgaa gatgggcact 1440

tggatttcac ttgtttgtgc catgagatga agcccaggac ggaccctcat ccgtcgccaa 1500

aaagagacaa gacgacgaga cgtacggcgt gcatgcacgt ttacctggac gaatgcatgc 1560

atgtggccgc gtacatatat acgatcgatc gatcgatcga tcgagaacca ttttctcagt 1620

cactgaaccg tcagccggga caagacaagc ttcgtggcag cttcgcgtgc ccgttactgt 1680

gtggattcga ccgcggagta acaagaatct gtcgcgcgcg tacgtgcgtc cacgtttgca 1740

tcattgcacg cgtacaaggc ctagagtaca tgctcccagc cgaaataggc gacgacgatg 1800

acaagcgccg gcaaactgaa agcccaacaa cgcagcggcc tgctgccggg cgtcgaggcg 1860

tcaagccaaa aagcccagta gcaatttcct ggttccggcg gcccggatac aaaacccgag 1920

cccgttaaga aaccagagac caaaaaggcc tttgccggtc cggcgtgctc aagcaaccca 1980

acccctaaca aaaaatccgg ctgccactgc cagggcgacg gctgccacct gccactgcta 2040

ggttttcgcg gggccgcggc acgtcatcgc gctgtcccct gccctagtgg cagccaccca 2100

cccacccact cccgcggatc cgcgcgcgag cccccaagaa tttaaccgcg ccgatgcggg 2160

cttccccctt ccggcaaaga tctcctgcgc gcggatcccc tgctgccgcc aaggttcgta 2220

actagtgtcg catccaaacc aaatggcagg caggcaggca ggccggccgg cgtgctcgta 2280

aaaccccagg ccaataaaaa acaactgttt ccaggttaac accactgctg cctgctagtg 2340

ctcgcgggtt aaaattacca tctctcccta ttcggtcggg acaagtgcag gcagc 2395

<210> 446
<211> 1494
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235232_G1, chr6:158394370..158395863, Cluster 3

<400> 446
taaaaaacga ctaatatttt gaaactgagg ggatattttt tttaataaga gatatacaat 60

tcagcctcta catccaccta acaaaaacca gcctctatat tctgttggga atgggataca 120

ttgcatgcag ccaaaaaaat gcataagctt ttgcagtcgc ccatatatat acacagtagc 180

atgcatacat catgcgcttt attacatgtt agccgctaaa aggatagacc acacagcatg 240

catgcatgtg agttaaaagc tcaatgacac agaaatctga attcgtaagc agcgcgatga 300

aaaagagctg ctttgcatgg actgtagata ccgtagctag gccggcccca acccggtccc 360

gggccccagc agaggtcgct ggcaaaagag aaataaaaaa gactgtactt acaactgcaa 420

agtgatgcta gtgagacgaa cgatgaccat gcacctcaaa gtgagccagc tctctctttc 480

gttcaccact atgctagcag taggctaaac taaactgata ataaaccgct tcattaccag 540

tggcagatcc agaggggct gggtagctca tgcgccagca gcttacaagt aggagggagt 600

aagagaaagg aagaaagaag aggagaaaga gagaggaagg gagaaagaag aagggagagg 660

aaggaagaag agggaagggg agatgaagga ataagaaggt gaaaagaaaa agaggaagaa 720

tacgagggaa aaaaaagata gttagcttct agctcctttg ccctggattc tggatccgtc 780

actcttcatt actaagcagt ttgtttatca tgtcacctcg tgcgcagtct tgttgctcgc 840

tctcgtatag taggcgtagc acgctcagac catcagcact gcgtgcggtt gccacagctt 900

tcttttaaga aaaggatttg tcgagttgag aagagagaga gagagcactc agagcagcac 960

ctgctaacgc tagccaggac aaaatagagt agccttccgg ccggccggtc gatcgaacgg 1020

ttgcttgtct agcacagtgg gagtactgta ctacgaggac agacaggcgt gtgtcgagtg 1080

gcgtgtcgcc ttcctgcgtt gcgggcctcg tcgtgcgtgc gcatgcaaat gcaggcgggg 1140

acggaaagac attgacattg cacgcgtcag tgtcaccacc ggtccacggc caccggtcga 1200

ttgatggatg gctggctgat gcatgacaag tgacaaagcc acacggcggc cggccggccg 1260

ggatgccctg ttgccagatg ctgatcggcg ggcttgctca ctcactcacg cactgacctc 1320

cagttactag cgacctacta ccttaccttc gtcgcccctt tggccccggc ctgagaattt 1380

atgggcgtgt ttggttgtcc tgaccgcccc acccaagctt atgccgtgcg ttgaccacat 1440

gcaaaccggt gattggttac ctgaacattt agatgctggc ctgcgcgtgt ggat 1494

<210> 447
<211> 1691
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236049_G1, chr6:162634900..162636590, Cluster 3

<400> 447
tgaacaccta tctgatggca tttaggatat gtttggaaac acctaatttt taataaaccg 60

gtttatagaa attgaggtgg ttcaaaacat aacagtttat ggctcggttt atagaaatta 120

gattcccagt ttcttaaaaa acaagaaact agtatctcgt agctaaaaga taaaaacatg 180

gtttttttcaa actgggttgc ttctaaacag ggccttagct caaagaaaat atgggggtgc 240

agttcttggc cctcgcatat ggttgtttcc tcaggtctgg tgcgaccaaa aaagtcagca 300

caaaaaaaca cacacaagta aatgacagcc agaacttatg tcaaaacaaa cggcataaac 360

aaccggtgag ttgaaacgca ctgcggctgt gcgacaagct gtggaactat tatatcatca 420

cgatcgctgc atgagcttta agactaacaa cgttcactct tgatagcact tttggcattt 480

gaattaacaa cacttcaaaa tttcagaaaa aaaagttaaa cttcttttgt tgggagctct 540

cttaaaataa gagagcaccc tcaaaaaaaa atagcgtata ctgctaattg tgacgagcac 600

acggtactct ttagtaaaag gcgaaagaat agctcgcttt gtgctcgcca cgcagcgcgt 660

gcttcgtata ggatgcattg gcctctcact aataacggag cacataaccc cacctctagc 720

agctgcaaga tatggcacta aatcatctgt tcaaccctgc tttcccttac ccgtccagcg 780

atccagcggt gggctgtggg ccttggtccg tccagcaagc cagccagcaa tgtatccggt 840

ggacgggagg agtccggccc accaacggtt ttacaagtga agaaaccttt tttgcatggc 900

tgggcactgc cgcattgggc tttgagcttg ctggccgcgc atccgacggg tttacaactt 960

ggtagcttta aaataaacat gttgttaaaa tataatagat ggaagccatc attagttttt 1020

tttctagttc aaattgttac atccgcgtca ttgagatgac taacacaatg ataaatcttt 1080

cagcagttat aaacagactt gttcgtattt ccagccatat aaaaacagta tgatgtagga 1140

agatggaaag tctacgagtg gatagtgatg ttgccaaccg ataactcaca gttactaggt 1200

ctttgtcgaa catgtacttc taggccttcc tgtactggtt aagggtttat gggctcttcg 1260

acgatgcttt gaaaatattt gaattcatgg tgtatgttca ccgaatatgc atgccgaggt 1320

ttaatttcat gttcacgttt acatgtatgt ttttggagaa gtgactgaac aaacggtccc 1380

tgccgtattc agcgtcagca aatcaatctg aataatacct gttatacgag ttttttaaa 1440

cttaaatgaa caatgtaaat gtgtgtgtgg tggggttggg ggggacacag tacaactaat 1500

gatgtgtttt tagcattcga attaataata atttaacgac caataaaaat ttgaatttat 1560

tttgttagga gccctcctta ataattagga aagcattctc caaaaattag cgtatactgc 1620

taattatggt gagcacacgg tattctttag taaaaggcaa aagaatagtt ggctttgtgc 1680

tcaccacgca g 1691

<210> 448
<211> 1894
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236098_G1, chr6:162998090..162999983, Cluster 3

<400> 448
ccatctaaac gaaattccaa tgctatatat acgtccctat gagactacta tggtcaccta 60

aaacactgtt taccactata tactacatta tttatagaat gtagtttgag tatgattata 120

aggatgggta agatgataga gatagcctaa tcgatctagt gaccatttac atttatgcag 180

cttacatagt acgtaacttc caaagttact tagagctagg ccattgcgcg gttgctccat 240

ctttaagcca tcgcggtttg tcactgtttt acaattcgag tttcaggagc gctgcctcgt 300

tgttctgtac cttttggctc tttatcagaa tttagaaggg gaaaaacatg attcaataca 360

gcttctaaag ttgtaaacta ctacgagtct ttttcacttt gtgaagctac agctctcgct 420

ctcgctccgt tgatagatag gctacgccca ctccaaattg catatttttt tttcgaaaaa 480

cagctctcgc tttaactttt tctaaaaaaa acagtcttct tagagctgaa actgttgcat 540

aaattgtttg gcagaaatgg cttatactag ttttgcaaaa caccttctat aatagaagtg 600

tttttactca ctgattttag tgatcgttgc aatgacaaaa tgggcgcata gtcctcacct 660

gaactgagaa tctactcgct actacttggc tgcactctta ccacagctgt gacggctaat 720

actgcttggt ttctacaggt ttactgcaaa acagcacttc cgatcacggc caaaaccgaa 780

ctgtaggcaa tgtcttcccg tggcattgta acgtgagggg ccccggtggg ggcagatatt 840

gccagagaca ttcttcagct ccttccattc cacagcgtgc caccgccttg caacttgcaa 900

gctacaagtt ctcctactct gcaccttagc cggttctgga gcttgctgac gacgctgttt 960

ttttttttt tgcccctgc tgtgacactc gttgacgttt tttatttta gaaggttcgc 1020

tgggctaagg acgtgatcga tggggtacgt agctactggt gcattaatca agtaacacac 1080

aaaagtatcc gcgcatttcg gcatcggaag gaagtagtag tagtagtagg tggtggcctc 1140

gcccactggc gcaacaagtc aagacaggta tgcatggatg ggatgttccg gccggccggg 1200

gagtggactt cccttcttct ttgaggctga ggggggggatc ggttctctct gtactgctgg 1260

caggacaaaa cgatgacagg aaacgacggc tgtgccagcc aaaggcgctg ctccccctttc 1320

tgctttggtt gctctaacga cctagctaac caccacgcac gtagtcgtac tcagcaaatg 1380

cgctggaccg cctggtgggt ttcatttgga tcaatcagtc gaaaattcga agcggactca 1440

cgcatgcagg ctgcacggaa cggccacaca ctgcgcatgc acagagagag atgcttgacg 1500

acgatcacat ggaatggaag caatcactgt ggtgtggaca gcgtcgaagt aaaaccgtgt 1560

gtcagtaaca ctcgtgcgga agagtggtca tccagaacta ccacgtacgt acgctgccgt 1620

acgtgcagtc cgccggacgc ctgcactgca ccgcagcttc cgcaacaccg atccatgcac 1680

gcatggacac ggagaagggt cagtggcttg caggtcccgc gaagcaaagc tggtggagag 1740

cgaccagcaa gctagaccgg ctttgctgct gtctctttct gtaggggtta ggagccgaat 1800

ggtacctcac taggtcacat gatgtacctg tccgtaaagg atgcgtcttt ttttttactt 1860

gagagctgat tcggtgatca agaatccaga acaa 1894

<210> 449
<211> 1439
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237729_G1, chr7:3172071..3173509, Cluster 3

<400> 449
gcatgcatgc tagtacgaca ccatgcacgg cggccggcct cctctgaatc tctggtgagg 60

ttgcatctga tgggtgcagt gcagatgatg cacacgcagt gatagccctg agagagccta 120

gttaacatac agggcagcag gcggctcgat ctgaggaggc gtgcacgcac ccatccacac 180

gacgttggac acaccagcag atcagagcga gacgacgacg acgacacacc ggcctcctcc 240

tagctcgacg acgccggaga ccgatcgatg acgacgatga tggcgaccac tcatcagctt 300

gcacaccacg tactgccctt gcttcttgcg cgcgagcagt tcatctgagc tcttctagct 360

agctggtctg atactctgat ctgatccatc ccatacgagt ggccggccgg ccggcctggc 420

ctggtaccgt acgagacgta cgtacgtcgt atacgcaaac gaatgaagac gacgacaacg 480

acggcagcag cagcagcagc tcatgcattt agtcttctgt tgccgtccag tctgttctct 540

tgattctctt tctctctggt gatccgcccc gatcacacac acattcagag gccagagagc 600

gacgacggac gacgacagcc gggcacagta ctgtctgtac acgtatggca cggctttgtt 660

attgtatatt ggtgacgaga tcgagctggt accttagctt catccatgag ctagccttca 720

gtacaataat acaccataga actactactg catggcttca gttgttctgt acgtgttggg 780

atcctgggca agttttcaat gtgtgtgtgt gtgtgtgtgt ggtcgcctga catgagacat 840

aaagagagat cgccaagaga gggacagacg agagagcgag ggggagcaac attttccaac 900

agctgttgtg cagtcacgta ttgtagctat cggagggcct ctttgggtac gtacactttc 960

tctttggtgg gtacgacccc acacacacac tgcagtgtgt gctagcttgt tggttgctgc 1020

cctgccctgc cctgccctac gtacgtacgc aaccctacgt agcagctagc gcatggccta 1080

caacacagtc gaaagagcag agagagatga atctatctta gattttgttt ggatcttgtg 1140

catccatccg tccactcgtg aagcgacaat gaaaggcaca gggtttctgc aggctgggtg 1200

ccacccatct ttaatgcggg cacagcatgc actgctactg cgattacaga accatgcatg 1260

cagctgtttg taacctattg ctaggagctc atcccaaaag ccgaccgccc atacatacta 1320

taaataaata aagtataccc tcctatcgta aggtatatat aatatataat atatattata 1380

tatataaata tacataaacc tatgctgcat gatcattctt caccactata aacacgcat 1439

<210> 450
<211> 1674
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238821_G1, chr7:9269129..9270802, Cluster 3

<400> 450
gacaaagcag tttgtagttg gtcgccacga gggcaattcc ggcacggaat aaaaagaaga 60

agaagaaagg aaaaaatgta gctggctgtt tagtaggttg ctatatttgt tagtgacggt 120

acatttcttt agcgggcgtg ttacctcctc tgttccgatt aatacatatt taaaaaaaac 180

tttagaaatt actcgataaa atcggtgagc caacgtgtgt agacagcatg ctaaatagat 240

gccagtaatt ttttgtagta gtgttcaaca agcctcctta agtggtagat gtataactga 300

tgtacacttg attcggtttt ttatttattt atttatttat aggtagccgt tggacgtgga 360

ccacaaaaag aagaaaaact cgtgtgcttg catgaacgca cgagagctgc aacgttgaga 420

gggacgagga gcaagggtgt ataggaagag ccaaacccat cgtctgacta ttagcactgg 480

cctacgtggc gtgtagaaca ccaaaaccag caaaaggagg catggcagcc tactacctct 540

acctagcacc gttagctgat cgcaaatcgc agcgaagaga aaatgatacg cgcacaccca 600

tgccatgccg tgcgtgagcg tgactgccct ggcccacact atctggcgcc ggtcagccgg 660

gcggtggtgt ctggtgtgtg ctgtgtacga ggtccggtca ctgacatatg gaggggaatt 720

tgggtggacc cacctgtcgg tttcagtgtg gttggggacc ttgggtcgga gaaacggggt 780

gcttgttggc tatgcagggc tgggctgccc ctgcttgcag tgcagggatc gcggtagtta 840

aagcgaattt aaagcgtgta aaggtcgtga tggagagacg agagaggggg agggagggag 900

tgtctgtgtg taagaaaaaa aaaagagagg agaaaacgaa agggaaatgt tgaatggatc 960

ttggtcgtga tcgatgacga gtccagcctt ttcgatgagc agagcacagc agtgggccca 1020

acgttttagt ccttgtgtag ttgtgtgtgt gtggggtata tacatctaca cacacgtttc 1080

gtttattgtt ttcagctctg cttgttttat agcgatatat gattgggact ccgactactt 1140

aataattcgc ccggctagtc ttaagtcaaa atatctcctg ttttttagat agtagtttcg 1200

agcgacgatc ttggattctt ggacaggcga tgaattagtg caactaagag aagagctcac 1260

gaaagatagc ttagacaaac aaacaaaaac aaaatctgta gctaaataac aaggacatta 1320

catttgtcgt ggttgcaacg agtcgggtcc aaatcgatgt gggccgtttg tgggtgggcc 1380

tgggccgtgg gtgggtgtgc tcgtaggtca aattctcagg agatcggaag aggcatgcct 1440

gcaataaaaa agagagagag agacccaaca aaccatatgg ttgtggtggc tggaaggttg 1500

aacagagcgg tctgtacgat acgttagaat cgtggctgga atccctgcat ctggccgtca 1560

atctcacttg gacttgttcg gttacatcaa tctaaatgga gtttccttca atcccctctg 1620

aattggtgta accgaacata ccagttagta gaggtttgcc aaaaagggat agta 1674

<210> 451
<211> 3646
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2425_G1, chr1:12810845..12814490, Cluster 3

<400> 451
ggcaccacgc caccacccat gcaaatccgc ccctaccatt acatcttctc ccaagctata 60

caacttcctc aatctgattc tctttttttct tattcatagg cgagggcgga gcgcttccct 120

ggccaatggg cagcgactgt ctgctgccat gtgcccgtga ttctccccta ttgtgagtaa 180

ttattcctga atgtctggtc ccctttccct acctgtcata gttccactga attgttttaa 240

atgttactac cccgttatta aatttgtaga gtgacccggt gcgttaattt tatggagctc 300

cgccactgca attaagtgcg tagattttaa accttgaacc tacctaacat aggttcccat 360

ctcacttatc aagaatcaaa ctttaaaatt ttgattggat atttttgtat tatcaacatt 420

tgtatctcta aatacatctg ttacaaaaaa aaaatataat aaatgtagtg ctagttatta 480

cacatcataa aatatcaaag aaattttata agtttagtta aattttaaaa aaaataaaaa 540

caaaatgtgc acttatttga gaactcagtt ggtttggacc tagggcagcg ttcgcagata 600

cgactgcacg aatcagtgta gcggccatgg ccatggcacc agagaggaat actagacctg 660

aagatactcc agatgttgag tcgttcacgt gaacggtagg agctagctgc agcgaatcgg 720

agggtgcagt gcaggtcgca ggcggcagat gggatcggag actgtgacgc gtgatgacct 780

caggacggaa tgtgagctga gcatgtgtct acatcgatct ttggactaca tgcatgaaca 840

atgccttttg cttgcatggc ccgttgaaag tgaaactgaa agttggagag cttacgatat 900

tattactccc cttatcctcg cataattgac gcaataatat ttatatcagt taatttttt 960

agttttattg aaaaaaaatt attaacaata tttacatcct aaaaagttta aaataaattt 1020

aaagatttac aacatgcatg tagtacacgt cgcgagcagt aatttccctc tttctctttc 1080

gatatgatac caccgttatt cgtggactgg ggaaaagata aatccagcag agctagcgag 1140

aagacgagtt gttgcgtctg cgtcatggat cgtctcggtc ctgctcctgc actaggcaac 1200

aggtgtcttt atttcgcggc cagtcgaaga aatggatatc cggccatgca tggattggac 1260

ttggaccacc actagaagct ttatgtgcat ggcgccaaag aagggcaccg atatacaagt 1320

gacggatcgt cggcgcgcgc tgcccggcca tttgcatgcc tgcgtcatgc gtcgtatgca 1380

tgcataggta gatcagatgg ccccagattt ggccaaactg tggatggcta catatgtcca 1440

agccacgaga agctgtcccg tcgtcgatgg cgtacgtagc tacagtatag caggagcagc 1500

caagccgatc gagcagacga ggcctctctg tctgtctctc tctctctctc tgcctcctcg 1560

caccgcacgc caccgtccct ccctcctccg ctccgtcgtc tcgctcccgc tctctctgcc 1620

gtcgtttgcc gtgccgtgcc gcgtgtgcgc gccaactgcc aagtatatgc atgcgcgcgc 1680

acgtaaccta acgctcgatc gaccggccgt gtccgcgcct gatgcctgcc tgcctgctct 1740

gcgtcgtcgt cgtcgtgcgt ggccatccat gtgcgcggcg gcaggcacgt acacggcacc 1800

ggcgcgcggt gcatgcacgc gtgctgcatc aaataaggcc ggccgcgacc ggggtacgtg 1860

tagatagtac gtgcgcttgt agaaagcttg ctggatgcat atgcatagga gataggaaaa 1920

gctagctaga taccagccag gcactcctat ctccaaagtc caaactcaat acttcctgaa 1980

aaattcttct taccacagag aaattaaagt aatcattttt acctccttgt tggaactaca 2040

aaattccatt cgaaaaactc gtagcctgcc tgatggactt gtaggacttc tggaggccgg 2100

aggcgaaaga gatatgcagg cagatagcat atactgggta cgcagcgctg gggattgcaa 2160

ggtgcagttg catcactcac accgtcacac gcacagtcac atgagcgggc cgcatcatga 2220

cctcgtcatc gtgtgctcac caccactgct gcctgcctac cagtaccagc aggctccaca 2280

gctcagctcg atcgtatcac tcacacgcac agtcacatgc atgcgtgcac tcacctgtca 2340

gtcacagctg ctgcggcctg cgtacggatc gatgcgcgcg ccggcccgtg tattgcaact 2400

gcagttgcag cttgcgcggc agcgtatagt aggactactc ggtgcgtacc agtagtacct 2460

gcagtgcagt gctggctttg gcctgtgtgt gcatgtgcat gtgcatgtgt ggtcgtgtaa 2520

taagcctggt actactacac gtacgttacg tacccactgt cagctgacat atatgcatgg 2580

cctacttatg gcgctactcc gatgatatat cgatacatga aacacgcgcg cagcctgcct 2640

gccatgcgca cacgcagtcg tcgcgacgca cggaacgaga cttcgcttag cacgctgcgt 2700

cacgtattag acgtgccgat cgatgtgtgc tagatcgtcg gacagacacg catgcatgca 2760

gggtggtgca gctagcaagg tgtagtagct agcactgcta gtagggcacc gtggtcgtgc 2820

cgggccgtct ggtcatgcac gtaggtttac acgccctgct ggcgctgctg cggcatcgca 2880

tgccttctct gattcctcct agtctccttg caatttgtac gtacggtgcc ttaattctgg 2940

tgcatatcgt cccattttgg atacatcatt agtaatcagt aacaagctat attactttcc 3000

cgttccaaaa taatcccaca tctcgcttag ctttttggca actcaacttt ttaaaagttg 3060

actgaattta ttcaaaaaca aaactaaggg cacatgtaca accctgatgc ggcggtggca 3120

gttaaaagac tgcgtgatat aaccctaaga cactagacca atatgtatgt acgaataatc 3180

atgtagagac acgctcttcg cgaatagact atctcttata tatttttcaa ttaacctcta 3240

gaaacacctc aagggacttc atgttaaatg gggttgtaca taccctaaca tgcacctatg 3300

atgatatgat gtataactat cactaaatcg atcagatagt ataatttcat ataaatgtat 3360

cagcatatat ggatgttgat actgtttttg atctctagtt aaactcaaat acgtttgact 3420

cgtacagaag cgagacagta tgtttgtctt tggatgggag gtaccgtgta aagctagcaa 3480

aagctacccc cttcatccca ataaatcaac atctatgata taaaatgagc atattgtgaa 3540

atatattcta tgatatgtct aaatctaatt atactaattt aatgttataa actttgatag 3600

atttttattt tgaaaaaaga gttaaagtta aaacagattg atttaa 3646

<210> 452
<211> 1945
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_244110_G1, chr7:39163495..39165439, Cluster 3

<400> 452
taagctgatt cattcacacg tgcacccagt gcacctagcc atggttcggc gagcatgtgc 60

cgttcgaatg caagtacaag gatgcacttg tccattgcat gcttattttt tcataaaaat 120

gaaataacat atcatgattt ggtacggtca caacgtaccg gtttactgca aagatataaa 180

atgcaccaca taactgctag ataagattca tatttatgga ccacctcgat ttccatgcat 240

tatattaggc aagttcagca ttgactttct acagcctcca gaatacatgg tatcttttg 300

gaagactgta ctgcaggatt aaaagtggaa tgaataagct ttttttacaa ttttttgtc 360

aagaaaaaaa aatactttcc tccgttctac gtatgattgg aattctgctg tcagaggcaa 420

ataactgatg tatgcaacat ttctaattaa tctacgaact tcctaataga tgtctggtag 480

ccagatcttg taggatcttc caagcagcaa agatgtgctg ctcctctgta agcggcgctc 540

ctactgcaaa tcgcaagaca aaattgccag aaagaacctg ttcagtgaag gagggagaaa 600

ccaaagcact atcagtggat aaaacatttg gcgagagcag ctagtacaga aggatttcct 660

aggcacccac cgtatgtgat atgaagatct tcccacttga gttagcggca tccattagat 720

catagttcaa cttgcgaccg ttatctggtc agacgacagg ggcacaaggc ggaaacaaac 780

aagtgaaaag gtccttgtag tcactaccca tgtgtttgat tgcagtagaa gtcgagccag 840

gccaggataa atctagccag tgttggttga atcaggctga gtttatacat atgtttctgt 900

ttggttattg tacatactcg tgcaggttat atacagactt tgtttggttg attgtattga 960

gacatgagtt atagaagact acataattaa atatcaaaat attacattgc atgaatggtc 1020

ttattttatt caaaaaatct gaggaacaca aatataaaat cagtttggcg atcaaatgtt 1080

tttaatagaa gatataatag aaaaaacaaa ttaaaagtca ttctggtttt acttgttgcg 1140

caatggccgg ctgcattcag cctggacgca cgcctacgcg agctgtgggc gtatggcgcg 1200

ggcctggccg agagctaata tttgtatcta atgagactgt atgtacagag aagtaaacca 1260

aacgaataat gttttatgga tctgcaggtg caactgcacg tgaaaagcag tcaaccaaac 1320

atacggtacc tgaattggtt tcttattcat tttacctcga atcttgaatc agagatcaca 1380

agttattcga aatgtttggc taactctata tgctttctaa tgtagctttg aaggttctcc 1440

acgccataaa gcctcaagac catccataac ttaagtgatc tgaaatggaa gctctaattg 1500

gtaagaggaa ttcatacatt ttaacacagt atatagtatc tgaaagaatt gcagggagtc 1560

agaaacactg cgttaaggat aggaaaatgt ttgatattta cacatgttgg gctaaataga 1620

ataaagaaca tatgagttgg ggcacatttt ggatgttgtg ggaggggaca agattatcaa 1680

gaaacaattt ataaactaaa taaaatctga agcaatctct ttttgattta ctaaaattag 1740

tggttgcgaa tgctccatga aggtgcaaat tgaatgttag ttcctgttta ttgtataatg 1800

tgcatggcta aatgactttt aagttctaac ttaaaaaaac tagacctatc agaggtatta 1860

ctctctcaaa ttataaagtg atgttttgag ggcgtcactt tgactacaac ttttattgca 1920

ctatgagtat aaactatagc aaatg 1945

<210> 453
<211> 1459
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_252544_G1, chr7:99393151..99394609, Cluster 3

<400> 453
aaaatgaaaa catccaaaca taaaacttca ttcgtaacta tagtgtaaac taaaatacac 60

tggtaatcac tctatttgct tatgacatga aatactattg attttacttt actattttcc 120

cagaaaagat taaatgacaa gttactttgg aaacgaacac tatataaatt catttaaaaa 180

gacatatgca taacattaaa ctaaacgcta tggctagatt atctaactaa ttatttattc 240

ctaccggaaa gcatgtgagt tacaccttct tctatctttt atttgcaaaa ccatattaag 300

atgttacaac tttatgtata aggcacataa ctcctagttc gttagcgaaa ctatattaaa 360

ctatcattta cttatatcat ctcaatatta gtaaaaactc tattatttct tagtgattaa 420

ccaatgtgca tatattgcgc ttatgaacat atgtgttgat tataaatcta aaccacctta 480

agagcaaagg taatcatgta ataattcatc taacattttt tatgaaaata tggtctaccc 540

tattctttta ttattcattc tagaaaacta tatctaaact aattttcgac gaacatagcc 600

aaattaagat acacaatgcg accgataaca aaaataataa tggaaatagc ttgtcacata 660

cacatgagat ttaatcgctc aatatataca cgattcatac attacacata tcaaaatatt 720

gttgcaggga ctagttcgaa attaaacgtg gtcactagag ggtagcaaga aagaattagg 780

aactagatta aataatcatc ttctttaacc tctgttatgt ttccttgcat agggaggtcg 840

gcaagcaggg gaggggctgg cgggtggtcg gccgagcaga ggaggtccgc agggtggcgt 900

tctaggccct ggtcatcagc ggacggcgct ccagcggcgg cggacgatgg ggacaacact 960

acggtcgacg ataatcttca cgacaagaag gaggcacggg gagaggtgtg aggtggctag 1020

gaaccagcta atggaggtcg aggctcgtgc tttatagcaa gaatatagcc gaggggagcc 1080

agggagaggg agaggcgcag cagcgacgcc attaacgacg ttgcctccga gtgggagaag 1140

taggggagag ggagagggaa ggtccggtga catctggtcc ctggaggtga gcagccgacc 1200

cgggaggcga cgggccgagc gcgggagacg agggggggaca ggccgcaaac gcccaaacac 1260

gggggccaag cggcatcggc gcaggacgca cgcacgtcac gcgcgtccga gcgggtggag 1320

agaggagggg ccgcggggtg ggccccacgt gccatagaga gaggaatgag gaaaagaagg 1380

ggggcaccgt ggctgggcct ggtgggcctc ggtcgggctt tagcctgacc gagcggtaga 1440

ttatgttttt ccttttcct 1459

<210> 454
<211> 1633
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253410_G1, chr7:104281692..104283324, Cluster 3

<400> 454
aaaacaatgt ttatgagttt ttttattaaa aaattagcta ctagagactt aattgtgaaa 60

actaagggct tctacataat tatgcatata aaccgaaggt cccaggtgta aaactactta 120

gcctagacta taggtttaaa atccaaagat ctcggggtct aaacaacaaa tttcaagatc 180

taactatatt caaacttgaa ctgcgtatga ctgcagagct aaacccgaaa acatcagggt 240

ctattttgaa aaccactcga ttgttataat atgggtacgc cctggaccga tcattcccca 300

atctacgacc aatatcgaat atcctgaacc agttgtccct attctaatct cggtcattcc 360

tactgagatc aatagttgag gcaccttcct ctatcagtgg caccttggtg atggtgcgcc 420

taccgcagcg gggtgcaagg tgtgctggca atacagtgtg caaactcagt catgggggag 480

cacaaaacga tatggagaag atgaaaaagc agtgggggat gctcaccagc gacgacgacg 540

aggacagagc cgaccatagc gcggggtggg gcggcacagt cgaagatctt gaactcctat 600

gagggaccac cggctatccg aacgatcttg cactcgataa acctcatgca catgctcctc 660

tcgctctggg gagcctccta gctacactcc gaggatcgct ttgttgacga cgaactcgat 720

aaacctcatg gacacacatt tgagttacga tagctttgtt gaaggcgaga actcatggcc 780

atggccgcac gtgaacttga tggcagatgc tacaatgata ggatgagtca agggagatgt 840

tttggctggg ttatatactc acgaggatcg aatccatggc aagcggagct cggccagggc 900

ttcacgactc gaatagagag atggatctga ccactaggtc ccacaacaca cagcagctgc 960

ggcgagcgct catgtgcggg gtgtgtcccc gagagggaaa cagattgacc aaaaatacgc 1020

ttttggcgtg gcgcatctgc gggcgagcga ctggcagcac gagtggggtt ctgggtatgg 1080

gcatttcgac ccatgcgacc gagaggaggt gcgagctagg tcggctgaga gagctggctc 1140

gcgagtagag gaaggaattt tcatttttac tgtatgtttt ccatgttcaa atttaatttc 1200

gaatccaaaa taaataattc aaattaaaat aaacaaaaca atgctcgagc atacaatgca 1260

taatatattt tttatccact catttatttg tttaagaaaa taatttaaat gaatagtcca 1320

cacaaaagca ctaattcaag taaatatttt tggagaactt tatttaattc tcaaaaaaac 1380

ttgggtgtta cacataaaca ctttacaatt tgtttcacaa aatgatttgg aaagccgaat 1440

gattatggga tcgatcgatg aaagccacgt ccatccagag gatcggcctg gcagcgccga 1500

ggcgtccgca agctctggtg agtagggatt gtccctcgcc gctcctcgat gggctaaact 1560

atgcccctgg aatagagttg caacatgttg tttggaatag atggaacctt cgcatccatg 1620

accaatcggg taa 1633

<210> 455
<211> 1738
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254110_G1, chr7:107836751..107838488, Cluster 3

<400> 455
ctctccagac cctatatccc ctgacctcag gaaatgaaga acttcaacat tgactatggt 60

tcatacaatg gcgctcctgg ctaagtctgg tagaccacat gacatgacat ataaaagtaa 120

gtcccatggc tccacacgcc ctaggtcgct tgccagtcta aaccctcaat gctccatgct 180

ccccaaaagc ctgatggatg aagcctcgcg ggccactcgc gtcccaggat acttatcagt 240

ataagctctc gaggtccatc atgctccaag acatctatta gtagaagaac ctaggacccc 300

tcatgtccaa ggacacctag cggtataagc ctttgaggcc cctcattcct tcacgcacct 360

aagggtacaa gcacctcggg atcctcatac actagggcat ctaatagttt aagctctcga 420

ggcccctcgt gcctcgaggc acctaattat gtatctgggg ataatggacc ctctaaaggg 480

gacaaggatt tagtaactta cttggattgt tctagggcta aagggtatga agggtcctat 540

ggtggcaaca tgtcaccaat acatgtagac atgtacccca catcaataag acttaaagat 600

tgttcgagtg cgataactta acaaataagt cttaggtaca acatattaaa tatgagatga 660

acaacattat tgatctaaca tggtgtgcaa tgcaggcaca taaaagtagc ctacatggca 720

cttgaggccc ctaagaagtg catgcaccaa ccctttaacc caaaaaatac acgcatgttg 780

tacctaaaag tatgataaga cctaaggatc aatattagta accaatcact tgtggtcaac 840

atgaatgcta tgtaaaggtc gatgtcatag acagtggcgg aggatgcgag aaaatcaagg 900

tgtggctcaa acagtgtcac aagaaaaaat tatatcgcaa ttgaaaacaa aagtatcata 960

ttaaaatgac ataacacagt tgaaaataga caacaaaagc aaagtaccct atataaagga 1020

agggatcagc gtacataatt ttgatcaatt ataatatagt actaaaaatc tacaaaaaaa 1080

taaaaaagag ttaataatta tataactttg ttttttacga ttaactttct cactattgtc 1140

ttcttaaaca tgtgtatttc tggaacatat acaatctctt cttccacctc tacttcatgt 1200

tcatgataag cttcaacttc actagcctga ttacttggtc cacttcccct acaaccttaa 1260

cgaaaatagc ttttcaaatc taacaattat caatcatcaa ccatgtatta gactctaaag 1320

taatcagttg tggaatcaga gttaataata taggaaggga tcgacgtgca taattttgat 1380

caaatataat atggtactaa taaaaatctg caaaaaaaga gttaattatg atacaccttc 1440

tatttttat attaactttc ttaccattat cgtcttaaac atgtgtattt tctagaacat 1500

atgcaatctc ttcttccacc tctactttga gttcatgata agcttcaact ccacttgttc 1560

gagtacttgt ccacttccac tacaacctta actaaaataa cttttcaaat ccaacaatta 1620

tcaaccatca accatataga atatagagta atcagttgtg gaatcagagt cttaacatta 1680

acaagtgcac actataaaaa gtaagaataa acatttttgg gcatttttt ctttgtct 1738

<210> 456
<211> 1763
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255563_G1, chr7:115703232..115704994, Cluster 3

<400> 456
ttgtagaccg acaacccttg tgggacggag gagtattata attagaaaac cgaatcatcg 60

tcttaggcta atcacgaaag gctatttcat aacacttttt tcaacactgc cacatcatca 120

agagtgtcat aaaactaaga atgaaacaat atctcttaat gcaaaaatct cacttcacta 180

tttcatatac caatacaccg attaaatact gcaactaaat agccaataaa aatcagtaaa 240

atatgtgaag ataaaacaaa tcacttttaa tggaggtttc acgtgatttc taagaccttg 300

gaaatgattt gacatggttt catctcatga aacccgttta tcttagataa tatgccatgt 360

tatctaaaat agtgatgtga tatactatta aatgcacatg aaatcatcat aaagtaaaac 420

taccattgtg agtagcctta gagacatcat tagcaagtta gaatttcgag acagccccaa 480

aaggacaaac ggttaggcgg ccccgaatgc gaaggcattt tgcctgcatc caacgcgtcg 540

cgtccggcgt ccccccccgta tgggcgtcac gttgtcgctc ttgcttcccc agccagtgaa 600

tgcagacagg cagcccatca cgaggcggca acaacaccag aggttccaag ggagcaaaac 660

ttcaaagaat gggcgcagga cgctctcatg ccgacacaaa taattgagcg aggacgctgt 720

acgaccgctc ctccgccagc tccacggcgc cgcgcgcccc ccggccccgg ttgtggcatc 780

gccgttagat tttttttttg gtgcaaaaga cgagcattat tggcttggcc cgaaggtgac 840

acgcacgcat tgttcttggt cccagtcacg ggacgcagat ttcgtcgaca gcgacggcgg 900

tggttgctaa cgccagcctt gccttgctgg gcggcttgga tgacatggct atggctccat 960

cacgcgtgcc cacagcacca catggcggcc ccacctgctc tcctgtcctg tcgatcggag 1020

acgtcgtctg atctctgatg gtcgttcatc aagatacttg attgattctc tggcccttg 1080

gatctgagtt ctgtggcccg gaggcggagg ctccgagctg tgtgtgtatg actgtatgta 1140

cgcgagagag aagagagtaa cagacgcttg aatcgtcgca attttctatg attgtcgccc 1200

tgccacgccc acagaatcta aattattagc tgtttcagta tccaggtcac tattagaatg 1260

tatatctcat agcaattctc tgtttttacg gtgtttttgt ttatatagat tacagctgca 1320

gcagtataga cggtaagcga accaccccga gatcaaaaga agagccttaa acggtggatg 1380

cttttcctca tgaactgtct gtcctagtgt cctgccatgg ttgccaaagt agttggcagg 1440

gcggcagcgc gcgtgtacac tgtatccaat gaaacgtgga caccaagcag caagggtcgc 1500

tggaagcaac caaagggaaa acaaacaagg gccactgctc aacaccttgc tggtaggtgt 1560

agtgtaggtt agcccggacg tctaccgtga ctgaatcaag caaaaggccg gtaaagaacg 1620

atgcaccact gccatgtggc tctaaaaccg tgtgagatcg acgtcgttgg cagagctgtt 1680

aaaacaactg ctgcagtgct gcgtcgtcgt cgcaggttta ccagtaccgt tgtctgaagc 1740

tgcctttacg cggacaaata ggc 1763

<210> 457
<211> 2090
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256564_G1, chr7:120994795..120996884, Cluster 3

<400> 457
caaatgcgtg tatcaccaac tagctatatg catgcgcatc ttttctgcag gcaaaagagc 60

tagccactag aacaaagcta gacttcgaca cttcaaggcg aaactggggg gataacataa 120

ccatacatac agctgcatgc tattgagcct tgcaagatac gacggttttg gcccactcat 180

catcatctgc ccgcctggtc tccaacgtac gtgctgctca cggtatttga ccttaaaaaa 240

acgtggtggt agcagcagca tcatcagtac gtgatctcta gaatcgctag cttcttcctc 300

ctactacgtt ctttttttct agactctagc agcatgcagt cttctagcca gtatatatat 360

atatatatat atactagatt tctctagcta gctagctagt gaccttaaac tgcatctact 420

ctataactaa gcatggctat catatatcca gcatgattat tagctcccaa aaaaagttgt 480

gcgatttgta tacactttct ttagaaacgg acagattctc cttgtatgag gctgagtaag 540

taaggatggg ccaggcgacg caccaaaaaa gaatggaaat ctgggtttta acttgcagat 600

gtgtggatga gctcggcgtg gaatggacag catccctctc ccatcagaac cttgtcgaag 660

gatctctaag atgatgagat gctttaacaa cccgtgaccc aactgctaac tgattgcatt 720

gctcacgatc acgaagcagg atcacaagcg ctaataagcg tgatttagtc aatctctgct 780

ccccacaaca catgtaggaa atggtcgctt tgccctctgt ttttttttt tcttcttcgt 840

cctctttgca tgatctttta taatggcgaa aaacgagagg cacgatagcc gtgttcaggt 900

gttctacaca gtgcgtttag tagtggcgga ccgatgaaca ggccggctcc aggagctttt 960

gcttcccttt attagagtca attcttattt cagaacgaag gcgggacgac acggtcttcc 1020

gtctccttcg ctttcgggta gtaaaaaatg aagcttttac ctactacctc cgtcgccatc 1080

gtcgaaacga acgagcgtct gcgccggtca cttgggcgtg gtataggttt ggttcacggc 1140

caaaagatga ttcgtcctcg agtcacggct gctcaccatt tctgttttgt ttatatataa 1200

taacaactta ctcaccatgt tttcgaagga cgaagtcact gccgaggttc ttactaacga 1260

caaattaacc aaatttttca agaaaatcaa gtatccaaac aagacctaag tgtgccaatt 1320

atatctcgct ggtccctaac accagtggcg gtcctaatat tttaggggcc caagacaaag 1380

tttcaaatag agactcttca aattattttt aatatataaa tgttactaat taaacactca 1440

aaatacatct aaaaatattt atatcaaata gtaaataaat aaaaggatat atattatagt 1500

attacattaa aattttcttc taacatgttt agatattcat tactttgttg atggatattg 1560

gattacatga ctaaaattgg accctataaa ttcgagggcc cggcgcgacc acccctctgc 1620

cccaccctca aggccaccac tgcctaacac aaactcattc tactctggag tccagtctct 1680

ggagtttgac ctgaacttta taccaacgct tcgttgcccc caatattcct gcatgtagct 1740

ttgacttatt gacgatacca cggttcaaaa ggactgcaac tttgagagga ggatgagttt 1800

ttgaattagt taagtcgttg tagaaaattt catgaaccaa atctttttt cttgaatatt 1860

tatgaaagtt tcgacatgat atatttgctt acatattcta gatattgata cttatgatat 1920

taaacaagta ccgttcgatt cgctatgaag tatattttcg tagtatacgc acttggtgtc 1980

atgaacgttg gtatatttct ctttatcaga tttaggatga tttaacttat gacaaaataa 2040

aatgccctca aggacatggc agtaataaat aaaatggcat tactagtgtt 2090

<210> 458
<211> 2144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260963_G1, chr7:145244250..145246393, Cluster 3

<400> 458
atgtcgcagc cagaaatcca ctttgatata acagaaatag ctttgacaca atggcaacat 60

agaagaaaca cacagacaat gtgatcccaa aagcaatgaa caccgaccgg atcagctaat 120

ctatagaaaa aaatccaagt taacaaatac catacttgta actgattgag tcagatccga 180

gccaaacaac ccagtggctc ctcctcgaaa caacctaggg cgagacatgg gataaattga 240

gaggtgtgtc cgctcaatgg ctccattagc atcatcctta ttcccaacaa aactacatcc 300

atttccctgt tcgttgcaac ctgaaaacca cactcctcca catagacttg aatagcaccc 360

tccaaatctc ccaacttcag tttgcatccg gttcaccata atgcctaatt ctgcttactc 420

gctctactga ttagagaagg tatggtttca tgaacaataa atatagaaca caagcaagta 480

gaataggaaa attcagaaag cgtagtgcag attgcaagat ttagagaatt cattttaggc 540

ttgtgctttc aagcgccatg gctcttagct tcaagcaaga aaattaaatt cttcatttgg 600

caagtttcca ataacaaatt tgaagtagca caaactctaa tcagtagtca ggtacagaag 660

aaagcttatt tttagttttc atatcaacta ttttattttt ctttttgtca agatcaccta 720

ggcgatgttg ctgaaatatt ttcaatgaca tcttaggtgt catatttaga caaatttctg 780

aatcttgata tttgtcatgc attaaaatcc ttatagttca ggcatagagc aggaaaaatg 840

aacaaatcaa gcatatcttt catctgtcat gctgtagaac atacaatatt gtgaaaacga 900

ctaactgaac tgaactctga aactactgaa agtattgtga aaatattgga tgagtgcatc 960

acctcaagcc aatgttatgt ttcaataact gagaaagctg gcgagaggca gtatgctccc 1020

atgagcgcaa taatttttag tgatagttac actattatca ctggaaatta ttgtgctcca 1080

aatctccctt gaaacgaact gattatgtct actacaccat gtatttaccg tagtagagat 1140

tggaaaataa aatggggtga ttgaaaagaa cattttgaat aatcatgatc gactatagca 1200

gcatctactg cagaaacaac aaatctgaag ctctgaaata agaggtggta acattaaaga 1260

aagatcctcc taggattcag tgaaatggaa gaactgattc ctcctgaagg tgatcttctt 1320

cttcaaaaaa acatggacag atggccactc catattcttc ttgacgcttc aaaatttact 1380

tgcagggcct agtgctagta ccagcatatc gtcttttcaa actggttcat gtgaggtcag 1440

tgttgtgccg aagaggaaaa atattccatc aacctctaca gcactactac ttggtggggt 1500

gcttgaccta cttgaaatcc tactgcttgt tctctctgca aaacctatct taggttacat 1560

gggtgtaaaa ccggtaataa tttatttatt cttgcttctc tattaatgct cttttgtctc 1620

tttcagctaa aaattaaatc agccttggta gctgattaat ggttttccct ataattctaa 1680

aattatagca acggatgaaa gtccataact ttatttttaa tcaacaaggc tgctatttta 1740

cttaactaaa taaacaagtg tacttgctaa aacaaccaat gccgaaaatt tagagagtat 1800

aattgttctt gcagttctgt ttagtagtaa gaaactgttg caatagagta ggttatctaa 1860

tgcaatagag taggttatct aattgttctt ggagagtata attgttcttg cagtcttgtt 1920

tagtactctg cctgatgaag cccgcattgc agtactgcaa ctttttttgg tttggtaggc 1980

ttgtctgtag ctggtccagg gagaaattca ctcgcacgag catcacaaaa aagtagacat 2040

acatcaggca cggaggcagc gattcctaaa taccagcaca ggaggagagg gagcgaggca 2100

cgagagatga catacctttg gtggagccga tgaatgctga attc 2144

<210> 459
<211> 2058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263801_G1, chr7:160613077..160615134, Cluster 3

<400> 459
tgcatgggca cagaatatga aacctttttt aaatcgtttt tcattatatt ttttaattaa 60

tagatttaat caacaaaccg gtttcatata cttgagattt tttgaacaaa atcatattac 120

ttgtgctata taaaatttag agatttattt attgtaccct tctttattac atatttcagc 180

acaagcaaca aaacactaag caacaaaaca ctagatgtat ctagtctgaa ttcactaatg 240

taaacaacca aacaaaaaga taatgcatga atctagcctg ggcatgagaa gcccggctcc 300

ttacatacgt gccatgctag taactaatca caggggaata atgtatgaaa atgccaagtt 360

ctccggaccg ccaccctgtg actgaaaccg gaagctgtta tgctgccaac tgctgtttct 420

ttttcgtttc catacccata tgtcaactca gcggcggcaa tgctactact actatgctag 480

ttggattggt gatttcccga aaaacggtta gccttttgct agctcactca cctcagccac 540

cacccatcac caaagacgca acaacaagct gggttgccat tttgaagcac aggtccgttc 600

gaaggaaaaa aaaaattgct ccgaagagcc tacacatgta cgtatgtgtg cgcgcagatc 660

gatcaatcca atccaggtac tacatcctac gtcttgctat cctggctgta ctttgcaccg 720

tgcatgtcgg atggttcgaa atggacgctt tccctctttc agcggcacac gctcgaaccg 780

cgaggcgctc aattgctcaa cctcaaccta tctaaagcga ccaacagatg cgccccccta 840

tacgctgctc ccgttacgtg cttgcaaagc gaggagtttt tccccctacg cttttgaact 900

cccgtcacgt gtgtgccccc cctccccata attgagcatt ttccaagtca tcatcgctgg 960

cgtaccctgg aatggataag catggccctt gaactagatg ccgagatgcg gcactactca 1020

ctcacctgat agttttgtct tgtcacttgt gtttagtact gccattacca ggtacaatat 1080

taaataaagt ggaagatgat ggttcgttag aagaaaaaaa ttcttacgtt taaaagtaaa 1140

agggtgtttg gttactaaag tttagaccgt gttagattga atgtttgaat gcctattacg 1200

agtattaaat aggttcgtac ttcgtattat catttagttc tcatctgtat aattagtgtt 1260

ttaatttaga ctttatttaa tatttctaac taacatccaa acattcgatg tttaggtccc 1320

ccccctaacc aaacatgggt tgtagaggaa agagaggatc atgaacgaat tatatgcgtc 1380

attgtacaag ctagatctag cttgtttgga gtgactgtaa cattagttgg ttcctcttcc 1440

tcctaaaaaa aatactgtgg caatagtgtt gggtaccata ccatttcggt tttcgagaga 1500

ggaaccgtgc atggttttta gttttaccgg ctctgtgcta tttttacata ttactcaaac 1560

tgaaagtatt tttttattcg aaaaaaacaa tatagctact tttacaggat ggagaaagta 1620

ttccctactt attattgatc ggaggcaacc acgtggtgcg tgtcagatac acgctttgct 1680

cgctcacgga cgagaagccc agctgccacg tggacaaaga atggctttgc cttgccagtt 1740

gccactccat ctaaagttcc aaaccaactg gattttgctg ggtattcatg ttgaacagtg 1800

aacgcagatc caaactcact gcatccagca ttccggcccg aatcaattac tgaaagtaga 1860

tatcatcctt ggaccatgga ccctttttt ttttggcaat tgtgtagtat gtgggacggg 1920

tgcagcgggg gtaaacttgt cgagttcatt catcagcgtc aagcggccta cactccacat 1980

ggcagcgtag cagggggggt agactcatct gaatctggaa ttcggtagct aaggatcatt 2040

attatgttat tgatgacg 2058

<210> 460
<211> 1675
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264752_G1, chr7:165734535..165736209, Cluster 3

<400> 460
gcccgaccgt gctttggact aatttttttt aggtcaatat gatacaaaat aattttggac 60

taggtcgtgt cgtgcttaaa tacttaaagg taagcctgtc atggcccgaa gcatagcgtg 120

ccgatgatca tgccttaggc ccaaacacgt cacgaacaaa aaaaacttac atatatatct 180

aaaaaataca tctttaaaat atttatagtt ttgctataga ctaaaaaatc atatgagaaa 240

gtgaaacgga tattttctat aacttttgtg aagagataaa acgtgtctca catctctcgt 300

gccgtgccag cctaattgtg ttccatctag tcatgtatac actgtcctgt cgtacattgt 360

gcctacattt aagacacggc aggtccgacc cattttcctt cgtggcgtga cgttgttttc 420

gccgtgccgt gtgggaccta aatggccagg gttctattcg cgagcttccg ctgggtgtta 480

ggtcgtcact gcatccacga caagctaggg cagcagcagg gggccggcag cattgctctc 540

gttccgtcgc cgccaccggc agcagcgacc cgtccactcc actatagcct gctggaaccc 600

cggccgaact cgcctcagtc gacgacgatg tggcgcggag ctttctcgtc tcgtacggcg 660

gtgctcgcct tgccggcgac aaagggtgcg gtgtgatgca cgcaagctag gcgtaggagc 720

taccaccaca cgctaaggtc cgtgcatgga gaaactgcta cgaaaggact aaagcgcttt 780

tctagccggc cggtgcttgt ggtgttctcg tagtacgtag acgcgccatg attatggttt 840

cttcgcacgt acgtagtaca tggtgacaaa actgcatgat tatagttagc gtaaatgaca 900

aaagtgtagg ctagctagct accggtctct aagtatgcag tggaaacccc ggccagtaac 960

tttatcaaag gcgctactag gtaggggtga ttagacgtac actggcaata gagagtgtgt 1020

gttcgtcagg ccggagatcg agcaaagttt gcacaggagc gtacataaaa aaagagaatg 1080

cgcgtgttta gggttataat tgcgctcact cggccggcct caaaggctta accatctcta 1140

ctcatgcatg tgtgcgcatg agcatgtctg catatgtcgc ctgcagatcg accgacctct 1200

agctagctcc cgtcccgtgt gcattgcatc cctggaggct gcagcggcgc ggtaatacca 1260

gcttccgtgc ttcacctctc aaaaggcgcg tgtgtttttg cgttgtcagt tgttcgtgtt 1320

agaggagctg ctggaggcct gttcctgaca gtgtgatgag tgagcccagg ctgcccagct 1380

ggggatgtat tgcattgcag tcgactcgac tcgaccagca ggtgttgata aggctgcgtc 1440

atcactctga actaatccgc tctttaccgg tatccaaggc aaacaaacta caagctcttg 1500

ttcagcgccg ccttgctttg tttggctttt gcgagtacct aggagaggag aaaccggatt 1560

ccgttcctgt ctcacgtgtg acgccagcta cgcatcgcgt gcgcccatct cggcacaaac 1620

atagatcaca ttttattagc acatgctatg cacctagcta cagcctatag ggccc 1675

<210> 461
<211> 1547
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265082_G1, chr7:167621545..167623091, Cluster 3

<400> 461
ttgtacttgc tcttagatgg agagaatacg tccacaaatt tcgctcagca ttcatatacg 60

ctctacacca gaccatacct gagtaactga tgatggtacg ccgcaccaga ccgtctgatc 120

aatgcgtgat ttaattaggt cagcaaatgg cgatccagct ccggcggtct gtagtaacga 180

tggataggaa gtgcggctgc atgtgcggtg cctgagagta tctccaagac tgttactgtc 240

tcatactaca aataaaggag tactctagag aagaactagt tttttctttt ctcccgatga 300

gactatgatc tcatgtgtgt ctatcgccga tcgggattag gataagcgca tcgatcgcac 360

cgtaccacga taacagcaca agagtggtct agcgcgagca gctgttactg gtgcctatag 420

cccggtagta ggactccaag tacaggcagg cagcatgcat gcatggatgg ctgtacctct 480

gtctgccctg ccctagctag cagcagtaga cgtagacgaa gaagaagacg acctggtcag 540

ccggccagag aatgaatgcg gtgcggtgta gtgtaagcca ccagtacgac catgcggcga 600

ttcatcagct gctggctgct gccatggatg ccactactgc tatgctaccg gcagagcacg 660

aggtgcctat ccaagtacgc ccgcccgccc ggcacattcc gcgaaactgc catcaaattt 720

aatggtatag tactcgtgct actagacatc actattattg ttttttagg ggggataccg 780

gtacgagtag gcagttcttt tttcaggcat gggcctttag atatgatata tttcgagctc 840

tgctcagcca gattattttc caggcatgaa aaagaccata gttgaagacc acgcttcaaa 900

actggcagtt tcgcggaatt tatgatagag gaagacactg ggctccgtcc ataatcatcc 960

atcggcgaca aagtttcttg tacattgtac acatgtaaaa caatcacacc accattttct 1020

gatttcttcg tttcagattt cgaagcattg taaaatcatt ttgtgttggc tttgctgact 1080

ttgtctacct tgttgctacg ttcagttgac tttgttttgt aactgcttca ggaagggagg 1140

gacaacgttt cccttcttta taagctgatt tgtgcagtac tccttatgtt ctagctttgt 1200

caaacattac tatctttttt aaaaaaaaat cacaacatat aaattatata ttattaaatt 1260

atttcttaca gtaaatctaa atatatataa atattataac attccgcgaa actgccatca 1320

aatttaatgg tatagtactc gtgctactag acatcactat tattgttttt ttaggggga 1380

taccggtacg agtaggcagt tctttttca ggcatgggcc tttagatatg ataatatttt 1440

cgagctctgc tcagccggtc tccatgaaaa aaagaccata gttgaagacc acgcctcaaa 1500

actgaaaata cagcataatt caggtttcct ccctactcgt tgtatat 1547

<210> 462
<211> 1652
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265209_G1, chr7:168270370..168272021, Cluster 3

<400> 462
aacctaagtc tcattgtgtc aagtccaagc tagatggttc atacgccaat tggcaccaca 60

taccaagcct acaattagga cactgcaaga accacactag agatgcattc taacaaatca 120

ctgtttcact aaagttgccc tttgtgaata ttccttaggg aattagcaca agagcccctc 180

acaaatgatg attggagccg acaacaatct ccaatagccg ctcaacaatc ccacaaactc 240

taggccatct agatgatgac atcaccaaaa gtaacatgag tataacaagc ccaagttgct 300

tgactagtgg cacaagatgc gaaaactatt tgtgatgcac taggagcttt ctaatctcat 360

ccaaatgatg atctacaaga acaattaagt gaagtgtatt tatatagtac caagaggtgt 420

tcacaagtgt ttggagtgca agcatactag ccaaggctaa ccaagtggtc tatttataca 480

cccacattca aatccaacca ttacctcttg gtgacccaaa ttgggggcac caaacatgtc 540

tagtgcacca ctagtgttag cagtagacac atccattgct cttctagtgt ttataaacta 600

gaagttatca tctatcaggt atacacatac actagacacg acatcaaaca tgactgatgc 660

atattagagt tgttgtgcac atccttattt ggtgtggtat ctagtgacct ttagagcaca 720

tgtatcaaat tacatgctct ctgagttgtt tttctagtgt accattcgat tctacacatg 780

atacatgtgt tgaggcacat taagtgtaca taaattccac tgtgctagga caaaactatg 840

caacatatgt gatcttgcct catgtctgtt gctcatatga taggacctag atgactaaag 900

aggggatgaa tagtgtataa aatcatcccg caaaactaca cttatcacta taacaaagtt 960

gaatataaaa atgttagggg cctagatggc tagagagagg gcaaatagtc tataaaaata 1020

gttttacaaa acttacaata atgaatagag ccaatatgtt tgaatatgtg gaagtatttg 1080

cttgctctag ttctaattta ctctaggata tctcttaatc aactattaac tcacaaaaga 1140

attgtatgaa gaagacatgg tactcacttt gcaagagaaa aagcttagtt gcaaactaca 1200

cgggaactag ataaacttgt atgatcaatg agtaagtgta attgcaagaa aagtttggag 1260

cacaaactac atggggcaat atatgacata agatttatcc tcgaggtttg gttgcttgca 1320

acaacctatg tccttgttat ggcgagtcta aactaggtgg ttcacatgat aattggtatc 1380

gcaggccaag cctccaatga gtcttccata agaatcacac tagagtggca ctacaacaag 1440

ccacgatttc acatcatgaa ctctaaacac taatttatat agcatgctag gtccaaatta 1500

ggtggtttac acgctaattt atataatata ccaagtccat aatgagggtg tcgtaggaat 1560

cacactaaat aagtactcca ataaaccatg atttcactat atttgctctt cacaaatctc 1620

ccacgaggaa tgagcaaaga tccctaacaa tc 1652

<210> 463
<211> 3547
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265551_G1, chr7:170127188..170130734, Cluster 3

<400> 463
tagagaagga aaagttcaga atcataaact gcaccaaaat gtaataatcc tactttcact 60

aataaaaaat ttcagaatat caaatatacc aggttcagca tcaagcgggc agatgttgta 120

tgaattataa gggtcaaaga agaatcatgc atattccgag agaacaaata gatgatccgt 180

gacaactgca ataagttgaa cttacattag ttcagcagca acatgatcaa caccaaggca 240

taaataatac tgataagtgg aactatgtaa gcctttaaag agagatttat ctactaagga 300

tcacagtatc attgaagtga ctaaatagtc gtgtaatacc acatgtattg aagtcatata 360

gtagctcata tcatatccat gaaagttata tagtagctca acaccaggca gagatctggc 420

aagccaccta gctttactaa taaatccaat gcctaatgca tgtctcatcc ataatactgt 480

ttggatatgg tctggtgtct gcaatgaaga aatcagataa cagcttcgct tgccaaggtc 540

cgttaagtga tgcatctatc ctaaaattcc caaaggatgt gtttgggtat aattatgggg 600

aggggaaggg ggcacaaaag tgacagctgt acatgcaatt ttaacaaata gaatgctaac 660

ccaaatctgt aagcaatata aatgatacaa gaggcgagtt caacctgtgg aagagaaata 720

tcttctcgaa cataatgcac caattcagca agaagggtgt aagcaagagg tcttaaagtt 780

tcgatgcaaa ctcgacctgt gccaatcaga accctgacac gccaaaagta aggtgtcaag 840

catgactaga aactctaaga gttaatacat gtagaacaat aaatgctaca agaatagtaa 900

agggaaacaa tacaaaactg tcataagaaa acgacaagac atcgtgaagg gatgaagtct 960

tttgctaatt acaattccat agtaagttcc tgaaaagtac aactaaaacc gattgatttc 1020

gaatagatac aaatcaggaa aggttgtgtt tttaaacaag ttcatttact ccccttgaat 1080

tgtcacatga gtggttttaa gtatgggcag ttatttgaag ctattttatt gttgatgcct 1140

tgatggtgaa aattagactc ctcatatttc aggcagaaaa gtagacctgg ttcattagca 1200

tgtgctgttc atctttgcaa tacccgttag gtcaatggag aaaatcttat taacttttac 1260

aggcattctt tatcgtagga ttattcagcc taccaaaagt aactaaaaat agcaaaacac 1320

caacgaaaag aaggggaaaa tagattaaat gagttgatca taggtcaaaa tgaagcactt 1380

tggaaagtta atcagtttac cagttacaca ttacaaagca agtacatagt atcaggaaat 1440

caagatgtgg ccatatcaaa cttaatctga atgagatccc agaaatagca catttgaaaa 1500

caaactagaa aagttggatc acggaattga tggaaaaaga aaattggttt acctttcatc 1560

aagaagtgtg tcaatcaagg ggaacagccc tcgcttgtac tcggtgttga gaacttgttt 1620

cagaccaacc aatagctcct gaaatccagt gtaagagata aggatattag cattttcaaa 1680

gtaatggtca tatagttaaa tgatttcaag aaagcaccag gtcgtatctt gcctttctga 1740

tggagacaga atcaggagga cacgtaacaa gcaagttcac aatgctcttg catatgcttt 1800

cctcatatga ctttatgtaa tctgcattgc tcttcaggag gtacgtcaga aatgacaagg 1860

tctgcaagaa aaatcatcaa tacatcatga actaaaagaa aagcaactaa aaacaaaatc 1920

tgaagaccga ccttgacctg tgcacccttt aaatcgttga agggtgtctt aaggtgtggc 1980

ggcaccttgt cgggaccctt gatagagatg gccgccacca tgagtggcaa caagtgcggg 2040

atatttgtct gcacaagctt tgcatacaac tggaagagaa acatcacaac aagagggctc 2100

tctgtgacta tcttgaagga acgtgcgctt gggttgagtt gaccaccacc aggcacttgc 2160

atcatgactg aggcatcggc agtggggtcc aaatgctgca tgggcatgga ggcagccata 2220

ctggcacttg tgttgggatt atcgaagaag tagctaacgg ttgtgggaaa tttatggtat 2280

atgttaacca caaagtcaag aaatggctgc acctccgcct cgacagtagg gcggaagtta 2340

cggaggaggt caaacacaat tcggatggca aggagagcat tgtcctcgtt gtcctgtgtc 2400

aacacacgga gagaaagctt gagcagatcc tgcacaaatg gtctgagcac ctcgctgtgt 2460

ggaaggcggt tgagtatctc gatcacaaca ttccgtagct tgtgctcagc attctctgtg 2520

gcctgtggct tggtgtaagc ggtgagaatt gctgagaagg ctctgaaata gcagcgaaga 2580

aagttgaggt agtctggagt gtgcgtcatc tccaggctgt cccgaacttc catggcaagc 2640

tgcagtcgga cttgcacagc tgcagagtat tagaggaaac gatcagatca ggccatttag 2700

atagataaag cattatggtt tgaagcgaag attgtgcgcg attgttttgc aagacaacat 2760

agacaagact tatgtttaag caaaattcac aaaacaaagt gccggagtga tagtgacaag 2820

aggaaacagc aagaggcatc taatgtcctt taaatcaaac gacagaaaat tctcaaaagc 2880

tcaccccccc ccccccccacc cacacacaca gcacccatgg gaaggaaatc agtagtcggg 2940

aatttacctg cgaagctaca ccgagaacaa aacaaacgca atgggaaagg aagtcgggac 3000

aggggacagg atcacaggac gtacggaggt cgggctcgag gagccgctgc gagtgctgct 3060

ccatgttgcc gctgttgatg ggcgccatgg cgggcgcccc gcccgtgcgc gtccggctcc 3120

aaccttaccg cgccagagct tagggttttg aagatcggcg ctgggaagac tccgcgagct 3180

gggcggagga gcggatggct ggaggtagga ccgtaagagt gcaggggcag gaggcgcggg 3240

ctcgtttccc ccgacgcgaa tggcaacccc gtgttatgga ctcggaggaa ggggtctccc 3300

tcgcgctcgc gagccgaggg tttggggtgg gggtagagac ggggacggac ttggaggaag 3360

acgagggcga tgggcctctg gttatacaag gaccggtctc gaaccattcc ctcttccaaa 3420

ttctctgatt ccaaattctt acttcctatt cttatttcaa tattttcatc ttataaatca 3480

ttatctttat ctttactact ctataagggt gtaacataga cgtccacatg cttcaccgtg 3540

gcttcgc 3547

<210> 464
<211> 2454
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265698_G1, chr7:171012014..171014467, Cluster 3

<400> 464
agcgcgacac atagcgcctt ttatgtaatg tacatggtag caatatcgtg atcgagacaa 60

tgttactcaa gaccaatcat cgacacgacg tatatctcca ctacaatgcc gaagctcggt 120

ctcgtatata ctgtgagctg tcgcgtgcct gtggcattta gaagctttgg tggtgtcact 180

tgagagggtc atgtcagttt ttttttttta gcatagatgg tgaagaaagc ttgggattag 240

cattgggaag gtagaatttg tagtgaaagg ttccacacgc caaccgagtt tgttgggaac 300

aggaatagga catcagtttt cgttttggcg tgtttcgatc tcccacgctt tgaataatgc 360

tgtgtgcatg caagatcaaa tcatctggtt caaagttttg ggagcagttt atacgagtgt 420

cgtgaaattt gcactcgttg gttttagaaa ttcatcgtaa ggtctcagat ttccagtttt 480

ttttatcgtg gtggtttaga agaatgctga catagctttt taaaaaaatg ttacaataga 540

gatctttatt tttttcccca gaaatgctta caacggccat catcatcacc cccaccaccc 600

ccgcttctca ttagccatga gacgacgatt tgggggttgg agcgtgagtg gttactgact 660

tgttcaccac ggtgggtttt caccagctgg tgttggcgcc tgtcatttca atgaatcgag 720

gcgtcaaaaa ggctagagag ttgggggcag taccggctac cgctgtccct acgcccaatt 780

agcagcccca gccaactagt taaccatttc tcggcttaat ttaagaggcc tgtctgtctg 840

gctgtccgcg aggtggcgga ctccgcctct tcctctcctc ggccggctag gagccccagc 900

ccccaggagg aggtgaggtc ctcaacagta accaagcaag ctgcaagggc aatcagctgc 960

atcctgcaga aaaaatggca aaagccctcc tctgtcctct ctctccctca ccgtcgcccg 1020

tcgacggtcg gcaccaccag taccagcagg cagcagcagc ctatccttcc tatcttacct 1080

ggccccaccg ccctacggca ctaccgcaca gtactactac taccttccaa ctgggtccgt 1140

ctggtccggt gtcttgtcac tgtacctcga cgcacctgcc agccagcctg cctgcggtcc 1200

agcatccttt gttgaggcga cgacctgcat gcattgcagc tgccagtggc gagaagctgc 1260

agcttgcatt gtcggatgct agcttcagcc tgctcctcct aatcttctgg acccctgtag 1320

gtataagcac ctactggtta gttaaaaaaa gtgttacgct aatgacaccg cccctgattg 1380

ttgctttata tagctaatct gatgacccta gcaaaagctc aatcaaagga ggagaacgga 1440

gggaaagttg atattctcct caagtataca atcctgctca gcttgcattg ttcttgcctt 1500

cttggctgct gttcctctgc catgcagtac tccctgtcct ccatctgcag cattaataag 1560

cggtactttt ccccactctg tcttgtctgg ccagggttga cgtttgaatt ttttttttaa 1620

aaaaaagatc tcaacgtacg ctcatctggt cggtgaaatg gaccggcaaa cgcaggaaaa 1680

agcgcgccgg aaatctaatg gcattgacga tttcgatcgc tttgtcaatg gcgttattcg 1740

gacacctagc agtacaacaa gaacaccctc tttttttcg ggtgggggtt gttcggaaca 1800

cgcatgggtc tctcacggtt aggtaacgta ctttctgtaa tgatgtgggc aatggaactt 1860

tataatctac agctcgcgca cgcatggttt gtttccgata aaatcaagat gtatttggtt 1920

cggtgtcaac gagtgatgag acaggataaa ctctgggttg acatcgtccc ttatttttg 1980

agggacgact catccactat ttttgaagaa tattccttta ccctgacttt agacctccaa 2040

accaaacgtg ggtcaactta aaatgatctc accttatccc tcttcatcat tcctcattca 2100

tccatccaaa cactacccaa gtagccgcca gcccgccaca cacaaaaaaa aattgatttg 2160

ttcatctaaa aagtgcaacc tttattgttt tgcttggttt atccttacac ctgtagctgt 2220

agcgttttcc ttggccggtg aaggatttga ctagttctcc attagctgat gctacaaaat 2280

aaatatatat aaatagatag gctaaatagc tagagaggtc aagaaaggaa gaaagaaatg 2340

agtaggacac gaggcgaggt caacagacca gttcttgtct ggctagcagt atacgcgact 2400

gtagtgtggt gcatccgctc tttttttca ttacaaaaag gaaacggttg tgtt 2454

<210> 465
<211> 1589
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265700_G1, chr7:171015340..171016928, Cluster 3

<400> 465
agagccacgc acagcacaga gaacgatggc accaccggtc acagcaagca cagagaactt 60

gcgcacaccc acggtcccag tcccggcgtt gcagtgcagg agcgacaaca gccgagcagc 120

catgccagcg cacgggcaat gacgggcgtg tggtgtggtg ggtggtcgcc cgtcggcgtc 180

acgagccctg gctacacaac actgcacggc agccccatgg atggcgagcc ccgcccgcgc 240

gcggtaggga cggccggaca ggtcctgccg ctgccgcgcc cgacacgctg cagtcccctg 300

tcgtccccat cctgccctcc tcctcgtccg cttctcccac ccccctcgct tcggctcggt 360

cgcatcgcat gtggcatcat cggcaagttg aggtgcccgc gggggcacac ttctgcaccg 420

caccgtagtg ttcatacaga aggcccccaa tcgcttcaac gggtgacgtg tagtaccagt 480

ctaccaccat ctcgtatgcc tgacagtttc ttcagaatgt cgaaaaccta cagcggcaca 540

gtgtgtacta aatatgctat gcatgtgtgg gcatagtacc taggctacta tattgtcctc 600

ggtgagcagt gcggatccta tgttctcagc caagccaaca gtgtggcaat caagaccgag 660

acaatcggaa cgattcgaac cacaaacaac tgaacaagcc accccgacat gaagattgct 720

ttccttttct tcttcttatt ttggcaaaat aaatgaaggc tttcttgtcc acccacctga 780

cctcgtcgct ctagttttta ccaaaaggtg ctacagccgc gcgctgtcac gtacggctac 840

ggcacgccgg ccgcggcgtg tcaacggcgc cacgtgacat gtcctgctgc ctcccctccc 900

gccatgcgta caggacaaca atgccgtcgc gtgagtgcct gccgaccata tccataatct 960

cgatcggggt atgcaggttg cagacacgcg tcgtcggaga tgcgacgcaa cgagaggtcc 1020

tcgtcgttgc atgcgttccg ccggacacgt cgtgcacaca gctagcaccg gcacaaacaa 1080

gcaggtttac taccgctata tttatatata aataaaacag atccaatata tattcctctg 1140

atcatactat taaaaactga agaacacaat actatcgcag atccagccag atgaaacgag 1200

cagggacgag cagcgacagg tttggccaca caaacaatta ctgtcacgtt aagcgcagca 1260

ctgatgcgga agtagccgca cccgcagaaa tgtcaatgca tagcaggtat acatgtccat 1320

actggcagtg gcggactcag gatttagagt gtgggtattc gaaaattttt ctaagatgat 1380

tatttttaaa aactgaagtt tttctactag tacacatagg taattatttg tatatataac 1440

atataattaa gtataaacaa tataggcata actgattcaa taactagtta tcataattta 1500

aaaattctag aacataccat aatacaaaga gtaaagacaa ataattgttt catatgataa 1560

aatgagaaga aagcttacaa atcacaatc 1589

<210> 466
<211> 2192
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265861_G1, chr7:171902033..171904224, Cluster 3

<400> 466
ctggacggaa ctaatcaacc tggtttagaa tctgatatag cttgttagag ctgttcgttt 60

atcttgaacc agaaacaaag tcgtctggtt ttaactcctc tgcctcaatt cttagcctaa 120

gatgaaccca agtgaccaac tatctgaatt aattcatatg ctgaaagtgg gctgccgatc 180

agaaatgagt gacaacccaa gattcactca atcctgggct ggtttggttc ccgcttggct 240

tcaaccctgg cctgagtagt agagtagcta cggtcaactt caatctgatg tactttcaag 300

ttcaacctat ccgatcacaa tcagaggtgg acctgaccac acacactaaa aaaaagttta 360

gtgcatctat caagcacggc aaataccaat aactaagtcc atgagagtct agtgcacctg 420

aatactagat gcttcagtct tggcagttgg agcactgcaa ccactccatg atgcagtcct 480

acaactaacc ttgcttggca tttgatcggt ttgtcttgct gtgctttgtc tgcgcgtgcg 540

tacgtgccga gaacagttag catgacaggt acaccccgtt cgttgcagta gttggcctga 600

aaggaagctc ggtaaacgag gaagtggaaa ttcctgacga aaatgacata aggatttgtt 660

cgttatttct atacatatag attggatgta attagaaaaa ttataaaaga atttgacttg 720

attaaaagtt aaactcactt aaccccatct aattcacatg gaattgagag caaaacaaac 780

aagccataac tagatcgagc cgcgtgaaat caaacccatc ggctagtgga ttctttccgt 840

gtttcaacca aacatttttt ttatcttaca gttttctgta ggagtatttt ggacccgtac 900

gattcaagat cacgaggcat tcattccttt ttttttatt cccatcttcc gcaatcagag 960

cccttcacct ggaaggggg aaaaaaccac aggccattcc ttggattcag gcacggtgca 1020

ccttcttgca gtgccagtgg ggagggtttc cagcagcagt agtgcggacg aatcggcgtt 1080

gtcccccgct gtggacggtg tctcgatccg tgctccaatg gccgatcgag cacccctggg 1140

ctgcctgtgt gcattgcatg cagtgctgca gacatgtccg tctcttccaa ggcatccttc 1200

ttcacccact ccctctcctc tcctcctcgg gattcacccc atgacaaagt ttttccagtc 1260

attgaaaaga aaaaaagaca gatggaatgg aagcatgact gcacatggtg ttgtgagttg 1320

gcgatcgacc ttctccgctg ttcgtcgttt tctcttggat ctttctgttt cctctttcgt 1380

cgtcgtcgtc gtcgtcaata aacactcgct gcagcttctt ctgcggctgc aagaaagcaa 1440

ctactgcata ctgttagctt ctactgtttc agactgatcg tctcagagag cgactgttgc 1500

gtgtcaaatt aaaggggagg ttagcattgc tttcaggctt tcagctctcc ctccatgacg 1560

cagcaaagaa atgatgacag cagagtacgt agcgcacaca caacacaaca ggaagaatga 1620

tcaactcttg tacgttcaaa aggggctttg atcccagttt tccgtcgaaa agggggggcat 1680

gtcatcgaca gcgcgtacat acataacata acacagacaa ccctgcttct gtttgttctt 1740

tttgcagttt tgataatcgt atacatgcaa tgatcgatcg gcagcccctg catgcatggg 1800

aatcgtatac attgcagtga tcggcaccct gtctgcctgt gtctccttcc ccatgagaca 1860

aaaaaccagg tgtgtgaagg gcccctcagc ttttattctt ttcatggctg atgtggtcac 1920

atccctaggg aaatatacat agaaaacacc tctcaagaac ccagcatgca tgtataaaaa 1980

gaaaaagaaa agaaagcgtg cacaaaagct acatgaacaa atcatcaccc cctctgataa 2040

gaaaaaaata tatatcatgg gaaaataacg ccttttccat ggatgtttgg ttcacgtatt 2100

tataatatga tgggtaactg ataacaattc atatatttat aatgtgatag gtaactgata 2160

acgataaatc atgattattt aaattcaatc gt 2192

<210> 467

<211> 1679
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266088_G1, chr7:172864579..172866257, Cluster 3

<400> 467
ttagaactgc tggagtcaac ttgcgctgcg aaaagaaaac tatcgtagtc taccttgcta 60

gttgttaata acttgaccct agttcatgtt catgtaattt tactagcata gcatgtgacg 120

tttatcaggt gcctagatca ttgattcttt catagcaggt tagtaactga tatttctgtt 180

tggtagtagt tatcaggtgc tgtgtgaact tgaaatgtac cacaagtatt cactaagttt 240

cagatgttct tctcttctat ctgatttcac aagtaaccac tggcgtctct ctggtttgtg 300

aactctgtct tttgccacca tatggtttcc tttgcttcta acctgtcttt tccaccatga 360

accacgtggg catggaatgg tccaatacaa tgaatagaca taacactatt tgttttatgg 420

tcccaggttg gacaatcagt ttggagctgt gccagctagg cgcttggagt tagaggggcg 480

caataaaaac gcaactgtga agaaggttcg tcatcagcaa gctgactagc tagtgcattt 540

tgcctacaaa atccctttgc gtatacacaa cggtggacgc ctgcggcctg ctgaaggctt 600

caggatagta cttccagagt tttgcctcga gtaatttcgg ctacgagcat ggctggctat 660

tagcatatgt aacaggatta gtgaccaatt ggtttctgtg ttggcttctg aaggagaagg 720

agtgaggtag ttttttttctt ttatctaaca accagcacga agatactctg ctatataata 780

ctaaaagttt tcctataaac atggcgtcga tatgtccgag tggttaagga gacagacttg 840

aaatctgttg ggctacgccc gcgcaggttc gaaccctgct gtcgacgaaa ttttttgctc 900

ttttcttatt tgtttgttga gcgttcggtt gagcttttt ttgtcttttt tgttcttttc 960

ttattaatta tttatttact ataataataa tatatactat tgttgagcgt tgggctgggc 1020

ctgatttgtc gaactattct tctgtactgc atgtctgcat agcccatgag acgaggttca 1080

ggatcgtctc aactcggctg tcgcgggagt attacgaggg cacagccgca caaccaagcg 1140

cataggctcg tgtcgtgcgg cggcggtggg cgaccggcaa caagtccgac tggcactggg 1200

gtctcgcccg ccgtcgccgt caggtcaggt gaggtcacca gcagcctgtg tcatcagtgg 1260

attctgatgc cgccatgagt tgaggttcca agtttggtcc aggccgccca tcagtttcca 1320

ctttccagtc tccatacatc acacagtgcc gagaaattcg gtggaaggtt cgcgcgtcgt 1380

cgtcgtcgcc ggccgcgctc cgctcaactc cgctgcgccc ctcaactcat tgatggtctg 1440

cggtacgacg tacgacgacg ctggagaaac ttccggggcg gcccgcggcc gcgacgcgga 1500

ctcccagagt gctggccgga tggagcaccg cttcgggctt ccctttccct actgatgtag 1560

tagacgcgtg gccccaccaa aatcatcgag atgactacat tcgcttgatt ccaatttgga 1620

tgaccatatt catatcaacc gaaatctcat tggcaaacaa atcaccgggt ttaccgggt 1679

<210> 468
<211> 1419
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266215_G1, chr7:173470903..173472321, Cluster 3

<400> 468
gaactaattt tttctagtaa agtatcatgt ttcatttcaa atatataaaa aaatcgatgt 60

ggtgtgacgt gtcgggggt cctcgaactt tttctctggc tatatttttc ctttggtact 120

cttggtagat tggtgtcttt gctataataa tgtggtacta tgttgacaaa gaaagttgat 180

aagttttatg gaacataaag agttttgcga ggatgaagct tttatgtaca gtttttaaga 240

tatgagtgtg tttaaaacta atgtacatgc atcctccacc aagactagcc ttataaaaag 300

gaaaacatag aaacaaatca tgaagcgggc cggggcaacg agacgtgggt gtgtccgagt 360

tgccgggggc agctcaacca tcgactcttg atcgtccaca aaatgactcg ctgatgaatt 420

atgagtggcg agcctggttg tgcacactcc cctctgcgtg cgtgctttaa ttataaaaat 480

caaaacgtta tataaaatgg aacagacaaa agaatataca gatgcagttg ttcttgtctc 540

cctccacaat taaacattga tgaccaattg acgtaatact attcatcatg aactcaaaag 600

attggttcat acaaaccatt tcggtacttg gagatactcc cggatttata aattaatact 660

aatatgtagt acgtacgtta ggtcagatcc gcagtctcga tcgacggctt attactagtt 720

cgttcctgcc tggtgtgttt atggtgagag ggagacgcat cgcatgtagt ccgctgtttt 780

ggccgcttgc cattggtcga cgacactcga cagcgacaac gtactctccc agcagctgcc 840

ctgcgaatta taatccttgt ccgctatcga agaatccgcc tcctaatcgg gctcgtttgg 900

tcgccatgca ttatatatgc agataagcaa gtgactcctg gatcgattaa gctatggccg 960

ggtgtatgtg gagcaacaga cagacagggg ggatcgatgt gcatggcatg gggcatgggc 1020

aggcaggctc acgcctacta gtcctcctca gtgtcgtcgc tttccgaaac ggatggcgac 1080

gtaccacgta ctcactgatg ctagctatac tagtagtata gggtacaata cactgtttca 1140

agtttaattt agtgacagga agaatccaat tcttagctac taataaatcg tactgctaag 1200

gatgccagat gggatggatc ccatcgatta tacaccaacg gatcagtgaa caatattatc 1260

tgacacagta tatgtcggtg tcctgaatac gggtatctac tcatgctatg ttaaggtgag 1320

tcctcaccct caggcaccgt taaggatttc acgggtagcc ggctcagcat ggggctaagg 1380

cccaccatat ggagtcatga ccaggtcagc ctcacctct 1419

<210> 469
<211> 1958
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266553_G1, chr7:174880963..174882920, Cluster 3

<400> 469
tagtcccctc caaagacaaa atctgttggc gatgccaaca atgtcctctt ttccctcggg 60

ggctatcccc tcttgctgaa taaggggaac cgaggatacc tcatctagtc cgccttagaa 120

atctcttgag tatttttcga tatccgaaga tgatggactt tggcaatcta atggtgttac 180

acaaaaaaac aacgttcgaa agctccacct ttatgccaaa atcataatta aaatcttcgc 240

tcggggcacg ccccataata ggaacatgcg caagcagtga gtttagttgt acataaaaaa 300

tatgtctacc cattaaaaac aatctaacat tacacaccat gttcagtgac ctcgctcggc 360

atcactataa acccctttgg ttggtgaagt acccaacgct gccacaatcg tcgttgacaa 420

ggctgactat gcagccggaa caacgacgcc accatgacga cgtcccctgg ctgcctcgcc 480

tgaaaacaaa cacaataaat gagcgcttga agggtaataa gcaaatgcaa atcaaataac 540

acacctgctc taacttcctt aagacttgtt cagttaactc tcgatccatg tagattgagt 600

gagattgaat aagtttaaat ctcaaacaag tcaaactttt tatttttttt ttaaatttca 660

tacaatccat gtataataaa aataactgag caagacgatc gatcgttccc acacgaagac 720

atccacacat cggatctagc atttcttcac tagctcgatg catggtgagg ctagcctcgc 780

tatacagact tcgatcgatc ttgtcggtca tgaggcgatc gatgtgactt cacgggctag 840

cacaccctca tatatagtta atcatgctta cgttggtaaa gaatgtttag ttttcggtgc 900

tctcacctag gagaaaccct gtcggtgcaa agacattgtt gagttgccct agctaggtca 960

gccaacatag agttgaaaga gagatagcac aagtcaaaac caacgaaatt aaaggccggc 1020

cgggtgtcgt catgaccttg tttgggtggg tcgcctaaga caaatgaaaa tgggatagaa 1080

aaatgaaaag agatttctga ataatgagag tctaaatcca actatctatt caaaccttct 1140

ggctttatgg ctagaaacga agttgcaaac ctaaagagcc aaccacagta gagatagata 1200

ttcggagtac cctaccatgc atgcgtgtat tcgatcggag ccagcacaac atgtctttct 1260

cttggatgca tcttccgtta aagctccaga caatagcacc acacaagtag tactagaaga 1320

gatcgtggtc agaatacaca agtgccaaat taagcttgtt cagacatcta tccagcgatg 1380

agctagcagc ttaattagct actacagtac atgctagcag ctaggaagta ggaaccactc 1440

ctcctgagtc ctgaaaacta actgttcaat ggcttggctt gtgtcatcag attctgaacg 1500

catcatctgc ttttttttct attatccttt gagtggtgtg gctgaagagc aatgcttttt 1560

gtgtgccttg ctttgcatct tctttggctt tcctcttgtg tggcttcagg tgaatgcttt 1620

tcccttctca tgctttatta tcttccttcc tcagtcgtag agctttggcc ttcagttgga 1680

cttggatatt ctccatcatc cttcaattca atgccttttt cccggcttgc attgctagac 1740

aaggctgtta tctcgttttt gttttagaaa gcttccacct tcttcccaat atttaaaaga 1800

agttccaatg caattaatct cgtttttatt gtttggaaga atctgcaagg atttggtgtg 1860

tttgatttaa ctgaaatgaa gggatgaaaa aagattaatt cttatatgtc atttccatga 1920

ctgcttactc aacgcgcttc tagaactctt acagaaag 1958

<210> 470
<211> 1857
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266996_G1, chr8:686231..688087, Cluster 3

<400> 470
tagtatttag tgggtgtcac acttgaaagt tgtaaatcta gataagatgt tcaaattttt 60

cattggaaat aatttatggt cttaagtatt taatatatgt agtatcattc aattgtcaat 120

aggagagtat gtgcttaagt ggtagtggag gctttgtgtt acctaaggta tgtaagtcca 180

tcgagggtat taagcactaa gtgtagcact agaaggatat tatggacagt attaacctta 240

atactgtttc gaaagatttt gcatcacaaa attcctaaat aatttttttt gtaaatcatt 300

ggagcattgt tgttttattt aagataatca taatagttat tttactcttt tttcaagttt 360

attgtttcag tatcattatc tttttatatg aactaaatat acactataaa ttatattact 420

atataatcta gttctcatat aaaagaacta gcttaaagcc tcttactgtc ttatttgctc 480

taagggtgtc cgcaatagat cgtataaaat attgaatttg cactgtaact ttgtggtagt 540

atctgactaa tgtttttaga aaacagaaca gatctgacag ctaaagattt ggaatctact 600

gaatgctttt tctgattttg gcgagagctt ttatgatatt taatcttcgt tttagagtgt 660

cttaaaggat taatatacat acgctttgtt ggagaagatc aattaataca agatagctgt 720

agtcaacaat agggcagcat gttatatagt tcgtcccgga attgggaatt gggagtttct 780

ccgttagttc gtccccagct ggccagccct agctagctag ctagcccaag ccaatagggc 840

acgtggttta ggtgctcgta ctgccgttgc gccttcgatc gattgttgcc atggctttag 900

gagaagctag cgacagtgtg caataaacga ttgagaacga gagctagaat ctacgatgtt 960

ctgtcgtcac tgcaggtgca gggacagaag aaaccacaca aagctgcaac tgcaatgcta 1020

ataaatcagc gtcgatctcg acgcatggca gcacatgcac ggatcttgcg ttgtccagaa 1080

gcgtttgaaa gtgttgcgac tggcgactcc aaagagtcca agctaattag gccaccacac 1140

cacatcgacg acgacgatga tcggtgggtc gtcagtatgg atcgtcgtcg ccgtccacac 1200

acgccgaatt gaaaccccgt ctccgtggtc ctgtcgtcac tcgccgtgac cggctatctt 1260

cttctcacgt cgatctggac ttgagccaaa agtttcctac gacgacgtct gtgtgtgtgg 1320

ttggatcgtt ttccaatggc gcgcgtctgt gtctgctcga gtaatcaacg acgaccttgg 1380

acctacccca tatatatgca tcgatatcta tacacggtca cgtcccctac gtaatacagc 1440

ggggcccgcg ccgcgactag ccggcagtgc agtgagaagc tgatggatcg cggtgcgcgt 1500

ggtccccgcg tcaatgtcga tacgtccacg tcgcccgcca agtgcctgtg acaaccggct 1560

tggatttaag gtgatcaccg gagaagaacc gagaggctga gagggaaaga ctatttttag 1620

accttctccg gcagattact tatatccata tctatttagg tcttgttcgg caatctggaa 1680

ttctttcccg gattgatttt ttcgccacat ggattgggtg aatccaaaac tttcacccaa 1740

tcccttgtga gattaaatcc caaaacccaa tcaaccaatg tttgctcgtt tatgccatat 1800

ggattatatc acaaaaccaa aataactatg tttgttcatt tattccatgt tgattaa 1857

<210> 471
<211> 1500
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267081_G1, chr8:1109703..1111202, Cluster 3

<400> 471
tagaagaatt atatagtaga aactcccact tatataatac ggatgggtat ttgctccacc 60

cgtgttacac cacccattgt catctctcta ttcccagatg agccggtggc cggcttgaaa 120

caagactatc cttggaatac gccaatcatc cgcaggccca atcgacggtg acggtgtcct 180

gttccagatg aggccacggg agtctggagt tcgtcgtaaa tcagctcggc ggtcgccgtc 240

agacacctga tgtggctgcc gcgacatacc tttttctgct gtgggtggtc ctgtggtata 300

tgcatttcat tttgtcacgg acgattgccg tcgcctcgtc cggcagtgcg gtcgcctgct 360

cacgcttgat ccgtgtcgcc tgcacctgcc gccctgttcg ccgcgagcgg gattacgcag 420

gaaaaattga tcgtatgacg tatgcgcatc tctcgtatac tactaatttt aggtttggtt 480

attaattgca aggcagagca gcagcgttgc ttcggcaccg tgacaaagca ccgagttagg 540

gaggaatggt taattaaggc tccaaggtca tatgtacacg taccagaaga atcgaaagtg 600

catgcccgtt ggcatttgcc aacattgaca tatataaatt tgaaactcag atggcacaag 660

atgttttcga taatttttt ttatagttga tggcaaaagc tatgacttgt aattaagaat 720

aaatagagtt ttgtgcgcaa aaggagttag ccaaatcagc acattcgaac agttgaccga 780

cccacacaac acggtagagc actaccgtaa gccattgttc cactagcata aacatcaggc 840

catgatgaag atcaccgcct atctacaacc attgtcgtcg ttgttgtcat gctacccaat 900

ggaagccctt tagaggggca tcgacacgcc acctgcacac gctagccgca ccttgtatcg 960

gcctccaacc cctcgaaccg agcattccac aaaattgaaa atcggacctg gctctgctgc 1020

aaatgaaata gtggcactgc attttcatag caccttggtt gcaagctcta aggtcactca 1080

ttgtcactgg tgccctcata gtagtttcat gctagcgcca agcattcttg tggtcgatac 1140

caccttttgtt gggtgcccca tggcctccac atgctgctat cgggcacaca agcgaggagg 1200

tgggcgggtg gctgcagaag ggaggtatag agatgactgc gtagcagcta gaaggtcgtt 1260

gatcatagtg aggagacaac tgccatcaca aagcctgttg agcaggagat agggtcaata 1320

tgactagcga cggtgaatag cctaaaaata ttctgcaaac tcacaaacca ctagagcaaa 1380

gattgattag tacaaaagat agcactaatg cgactatttg ctctagctct atttcaccat 1440

aagcaagccc cctaatcaat tctagtagct tgatgtctaa gtctatgaca tacaaacaaa 1500

<210> 472
<211> 2950
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267263_G1, chr8:2413569..2416518, Cluster 3

<400> 472
acgccgtcct ctccatatct attccaaaga ctcaatgagc gactgcatgg gctactagga 60

aggccatctc aaatgtaatg tctatcccaa agactgaatg agcggttgca tgggcatgtt 120

ggcatcctgt gcgacgtcct ccacatctat tctgaagact catcgagcaa ctgcatgggc 180

atagagaaaa ttggattgtt ggtactccat ctctattaag aagcttgctt gcaaaatttt 240

gagatcaatg aaggttgttt ggatcaaaac aatatttttg gggatttcgt gtgctgttgg 300

gaaggccaaa actaactgag ttagtttgcc ccttccctaa aatagcttag gcacttccag 360

ggttcttgta tcgaactaga atcagcctag ctggtttgta agctagctag ttttgctgga 420

tgaggtgttc gttgtagctc tgtttcacta gtatgagttt gtttttgttc tagtcttttt 480

tgcttggttg ctctgtctct cgtatatatt tgattgcatc tcaacaccta ttggtgtttg 540

cgtgttctga aggagctttt agtgctttgg ttccttttga gggctctagg ggtttctcga 600

gatcaacgtc aagatgggtt tgaggaaatc ttttactagc acctatttca cgctcccctc 660

tctagtcgcc ttgcttggtc catcatatag gatacaaccc acaactatgt ctcaatgcat 720

agggatgaag tttagttggc atatagcaga acacagtgaa caacctacaa aggaaaacaa 780

catccaggat agttatggtg ccaccagaaa actctagtgc acctcttagg tgctactcta 840

agtgtgtttc ttcgtgacca tttggttggg cttgagtact ttgatgtctt gaggttctta 900

cttgtcttct aagattttca atgttcctct tcaacgtttg tctaaatgca tctaaacaat 960

catctataca cgtttaaaca cgaaacacca tgtttgcata tagtttagac cttcaacgct 1020

gaattaaatg cgacaaacat caaaacaatc aaatagaaaa aaacatttta aatggtggca 1080

ttagttgatg gataaattac attgtctatc tctttccttc tggttttatg cacaccgcac 1140

atattttcac tctttaaatg tatcgtgcat gtgtccagac ctatataaac tcaattattt 1200

tgagacggag aaagcatttt tattcgagtt ggaagaaatt tctgttaaac aaaattggca 1260

gaattcaaat cctccacgtt gccccggagg cccgacctac tgtgtgacct ctcttatttc 1320

ttgaccggac aatctaaaat atttttgccc tgaagtggat ctgacaaatg tgtcaaaata 1380

caactcaacg atgtaaacaa agagtgtgtc ctcaaggtgt agacaactca acgatgcaag 1440

gccgagaaaa cctgccgagc caggttactc tgttgcattt tcccagtcgg gctttagccc 1500

atacacttgg gtctgggccc taaattccac aggagccgct acgcggcggg cggcgccctc 1560

tctgaaaccc tagaccttat cgctatatac atagccgccg cagctgcctc cgcctcagcg 1620

gctcttcccc actcgttccc tccttcagca tcacgtccga cggcggcggt ttcggcttgg 1680

acatatttgg tctcgcccat gcctccctcg tttcagcttt cctccttttt atatctcggt 1740

gttcgcttct attttccgac gctggtttga gtattatttg cggtggccgt cttgttgatg 1800

cagatgagga gacacaagtt ttaatgggta atttgcatct gaggcatctc tgtgatgtca 1860

caccctttc accttggaga tctgatgcta tgctccctac ggccacttga tctgtctgct 1920

tgtttttttt ttttttgct ttggctgacg cttctcgatt tgggttcgtg atcctgtttt 1980

tgcgtatgat gttccatagt ttgtttgttt tttgccgcgg ggagatgatg tgatgatcta 2040

attgtttccc tattggtttg attggccgcc atgatggctc aaactgtatt agctctatct 2100

gatcatctcc ttggcgatcc gactttccaa aaccacggtc ccatttattt aatcaatact 2160

atgacattgc aactgctaag tttctactgg tggtttcata atacttgtta tcatataatc 2220

atgtaacact tacgcagaca atttacgttc aaacgtgcta gcaagccgca tgggcataca 2280

aatcgaaaca aagctgatca ggaaacttat ctgcaaccgg ccgtttgaga tttttcccca 2340

atttgtcgac ttgctagtat aaagatatta aattaataga tgataagatt tactatacaa 2400

taactataat tttgtatgaa aagcaaataa tgatgtaaaa caaataaact ggaaattaaa 2460

agtctcatcg gcccgaagcc ctgaagcaca caacagccca gtgtggtcaa gctaattatt 2520

ttgtatttgc tagcatgttt tttaatgcat gtgctagtat tcatcgcaat gcgcagcgtg 2580

ttcttgctgg caattgacta atgttttcaa aattttggat gaaagaaatt ttaaaaaatc 2640

tggggtaaac gaggattcta gattaaatta gagaaattta tagattttta tgaatttatt 2700

tagctcttgt ccctttagat attgattcta atttttttaac aataaatctg gctcaaaaag 2760

ttgaacctaa ccggcattat ccttgacctc acagtatgag gctcatacaa tatgaaaggt 2820

ccagccctga gccccttagg gcctcctgtg tgatctaggg acaactataa ccgctaagta 2880

taaacttgta taagagtgaa aacaggatgg gtacggggta cctgggtcgg gtattcgata 2940

cgggcagcaa 2950

<210> 473
<211> 1472
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270193_G1, chr8:18433578..18435049, Cluster 3

<400> 473
gcttgacagg aaccacccca cctccatagc ctaggcagcc ctcaattcta aaaaaacaag 60

ctcatcggat cctgtatgtc tttctgcagt cgcagtgatt gttttctggc gtaggagctg 120

tcctgttatt ttaagtaatc tatctctgtc tagccatagt ggataactga atccaagttt 180

atcgattttt atgtctgcca tgccacacag cttggaattc ctgctcagat gccccaggcc 240

ccagtccagt agtagtatat agagtctagt ggattactac caagacaatg tgctgaaatt 300

tttttagtgt catgaatcta cagggtggtg gttgcggctg cggatgcggc taattggtgc 360

aacttgctgt tgttgtttgc atactacatg cattattggc ctggttcttg gaatcttgat 420

ccgtttcttg tggcggttca aacggctgcg cctgcgcagt ccccctgcgg gtagtcagca 480

ggagtgcagg acgaaccaac caaccacaag actggacgaa gaaagatagc ccgggagaaa 540

agagagaaac caaccactgg gctctctgcg cggtgtcagt gattatggga atcagtgaca 600

gtgagcggct agataaagat cgtttttgtt tagtactcct gcgctacatc tgtttaattc 660

ttaaggcgga tttctaattg cgccgcgtgg atgttttggt cgtagtttat atttggagag 720

agggggggg tgtgctattt gtatttgaat cctacggacg gagtagtaca gggctttgca 780

atctggttct acttgtttga tctctttcat tttcgggtgc aacgagaata atacgaacgg 840

gactgttgga ctccatgcag gacagcgaga cactgacatt gtattgatgg gtctgggtct 900

gggtgagcca agagttttga aagcgtggtc agcctacaac gcatggagat ctggtccatg 960

caacgagaac agtcttgatg gcagtgacag atgcgtcatg cgtgtgtata ctactagtct 1020

actactacta ttaagcacgg actcgtctag tcgtctgcta cggtgcggag tgggactgtg 1080

ggagaactgc aacatctcgt ctaccacaaa agaaaatggc atggcgcctg caatcagctt 1140

tgcatatatt ttacgcgtcc acttggtgaa agaataaaag gaggcaagca gtcagtgcga 1200

ccgctggcaa ttaagaccca tttggtaggg ctcctatggc tcctctgtct ttttggcttc 1260

tctataggag acagtggcag agactgtaat tttatgaaat attattgtat gccggataga 1320

aggagccaat agaagcttat tttctcgtgc ttcgattttc gatagtaaaa tggctctcac 1380

tctttgatga ctctcgatga tgagctgttt tttaagaccg tttagtacgc cttcggaacc 1440

ctgccaaagg gggcctaaca aggagcagat ag 1472

<210> 474
<211> 1951
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270617_G1, chr8:20817124..20819074, Cluster 3

<400> 474
taacacttcg ttatgatttg tatttgaaat atcgagtgtg tgagctcgag atagtcgaga 60

ctcgagagtc gagagggtgt gtgcgcacag cgagcgagag aggcgcgcat gtgtggccgc 120

ccccacacca ttctgggcct aacactgtgg cccagtttgg cccaaatcta ttagttatgt 180

tgggcctgcc ggccattaca ttcacgcgtc gtatcgtaaa ccgccgcgcc gggcacgctg 240

aaatgggggc gagacgatca ccggcgccgt ttgctggctc ctccgtcttc gcgcggtgcc 300

ggtggcgagg cgagggctca gtcactgcat gcgggaggac ggtcgcggtt gtcttggcgc 360

aggcgcgcag ccactgactc cgatcgctgc cggaagtaca gtgagatgca caatcgcccc 420

gcagccccgg ggcgccgagc aggtgagttg tttggtagat tgccgatcag tgattttgta 480

gccttgcttt tccgcatcca ctctcagcat agcgacttcc tggcagatca gaaagtttct 540

gcaacttgtt aagtatctcg ttaattttcg ctgcatttcc ttgcgtgttt ggctcgcgtg 600

ttctatcatc ggagtagact gctcccaatt ccatcacaga aaagcggggg aattcctccc 660

gcgggtttgc actcagcgag tgcgaaactg ccaataagtg atggcgggaa gtacgctagg 720

catgcgcata gcttcggtca cctgctcgat gaaatgccgg tgtcagttca taaatagcag 780

ttgttgcagc tggcctgccc cctccccctc ccctgaagat ttgctcgcac aaggctgtca 840

gatggtccat tgtgcctttg tcgggctgtt cctctatgcg ttgggcataa gcatggtggt 900

gtggccgtgt gggccaagct gccgtgggca aatcgggatt tgggggcaga gtttggtgca 960

tgagtagggt tggttggtac atgcaggtga tcggtcgctg tgagcgtagg tggtacaggt 1020

cgttggttgt ttggatcgta ctttgtgagc agttagtgct gttgatcgga tcacgacctc 1080

gtacctggta gaaggcacag atcaggcgtg caaactgtac gaggcctcgt gcgtggtagt 1140

cgtctgtagc tgaaggcagg tatgattttt ttttttactg aacttacaat tcagtgtttg 1200

tcattgcata agcggtagct ggtagcgaaa ggttgctagt tagctagtct cctggtgtta 1260

gtttcattag agaggcaacg caaatcacct ttgccaatgg tcgattggtt actccaaagt 1320

gcaaacacat cttatatcac ttgttagtta aggcgcatcg taaatctgac aaaatggcac 1380

ccagttctgc cacctgctga tgatgagcat gtgtggagcg cgaaacagat agtgctgttt 1440

gttccactct gagcttttat gaactgcttg ctcttttgct aacagcattg gaagccgatg 1500

agcagtagtg atgttcattt agctagctag ctgttagcta ttttagttcc ttcaacaaac 1560

ctttcctgcg cccctgtctg ttctgtcgac agcacattaa cataagaaac ccagctgagc 1620

acgcccaatg gcaggaaaca agaagaagct aatggctcga tcaggccttt ttcatacccc 1680

cacaatttta gaactcgggt tcacagtatt ctgaagtacg tagctgatac ataagcctgg 1740

aaaacagcac agccagtggg atgcaatcgt ttgtgacact gccaggcaga aatatatggg 1800

aggcatcagt aaagcgcgcc tctcaatgca ttcctctcat gcatgtatgt gatgtaatgt 1860

tgcttcttcc cataatgccg cagcttgttc cagtttgatg atctaatgat tgttgctacc 1920

ccctttagg tatacgtacg tacacttaaa a 1951

<210> 475
<211> 1680
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_277874_G1, chr8:72758908..72760587, Cluster 3

<400> 475
cttaatctct tcatgcatgc atgggcttat atttcaacca tgcaatagtc tagagttgtt 60

gaagaagcta gctagatggt catatggatg tccgctcttg acttttagga gcaaaacagc 120

aagtagtggt gtagccaaaa ttaacctcgc tcataaagcg aggggaatgg aagaagaaga 180

aaaacgctcg atccgatcaa acataacatt ccggtgtttt atttcacctt ttcccctcta 240

cgtaaaccag tggagggacg tcgatttctt ggaaggtgca ggccgggaag cgtcaacaaa 300

gctaaaacta cgtacgatac gacggccagt acgcgtttga aatctcaaca ggcacgcaag 360

agcatcgacc ggacgaggac gacgtctgct atgcatggac gacaaggcca ccggccggat 420

cgcctggtct tgcatggttg ttggaacaaa cccctccccc tctctctctc tctctctctc 480

tcacccgtct actacggggt gcatgccgtg tgccgacagg atcatcagca cagcagacga 540

cgacgattct ttcttccggt ctccgggaca aaaaggggat cgatcgtcgt tggagctttt 600

ctgggagatg gactggtgtg tggtcttgct tttgttttgc cgctgtgtgc cttctctctg 660

tctctctctt ttttctgctg tttcctccgc tacgtaccga cgtacgtacg tactgtagtg 720

ctacacgccg gccagtcgtc gtcgtttcgt ttcggtagtg gcgattgcga gcaaagaatc 780

acggaaaggg tgcgacttgc gaggtctccg ccgagttttc gcccggcggc cgggaggagt 840

cttctttcct gcttgccttg cattgttcac tcctccacgc gcgcgttgct cgctcccgcc 900

tggggctttg tcgctcacgc gggctgcgtg tgctagctag ctctctttaa tttggctctc 960

tgatgggaaa tctggctcat aggtcgagcg aagaggcacc gtacatacta ctactacgga 1020

atatattata tatacactga ctttaaaagt acacggatgc gatggccttg tttagataaa 1080

aaatatggtc ggcaggacta ctacgagggg ctccattttt ttgttgtata agagcatttt 1140

tttaacaaat acacgaatat attgcacaga tttatattag aaatccatac atgtatcaaa 1200

agattaacaa gcttcgagat atacacggat taaatgatgg atttaatccc accatgagat 1260

taggtgcgtg gtatggattt attcaaatta aatccatagt gcgatttcat cccttgtaac 1320

ggaacaacaa gaccttagca atgtttggac cttttacatg aaacccacct atcgaagtta 1380

atttcttcat ggtgtacgca attttctcta cagattttgt gaaattaagg tcagccgacc 1440

tgattaaaca tatagatatg ctctcttacg cacatcagaa aatgaagaaa aaaacattag 1500

attattatct acgcggcgac aaaaccctga atacaatcag tatctcgggg ctcccgtaga 1560

ccaacggtca agggcgtaat cagtggtaga tgccggtatt attgtgccgc atgtgattag 1620

tatcagctga tcacatgtgg tccctggtga agagagagag agagaaaagt agtatatata 1680

<210> 476
<211> 1955
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_278057_G1, chr8:73747248..73749202, Cluster 3

<400> 476
tcaacaagat cgcccacagg aacctatgcc gtacctctct tgacccttct ccgaccacgg 60

tgaccagcgc tctctctctc tctttggact ggacagcgag tggatgactg ggtccgccgt 120

ccctcctcgc ccgtgggttc gggtcgtcgg gtatctccgc ggggtcgtcg ccacgcgcaa 180

gtctcttggg tgtcccccgg ttgcgtttcc cttcccgttg gctgtcggtc ccgagttctt 240

ctcggttgcc ggccggcgcc ggcgcctccg cctgctggag tgctggtggc ctggtcgtca 300

tcatcctaca gcgacagatg cgcagggcgt ctggtcgcgt ccatttccca gcccgtctcc 360

gtccgcgcgg ctgtgcctgt gctgtgcgtg ccctgtttcc ctttctcctc tgcgctcgct 420

tttcttttct cttcaggctg ctggaccgcc gtatcactga cgaagatcgc ttctaccaga 480

ggcagagaac agatcgtttc tacttggctt tatttattta tgttgctacc gcctaaccta 540

aagcgtgggg ttggtgacac taacagccca gaatccactg gttccagccg ccggccactg 600

tcgtcagaga ggaatccgtt ttctcctagc aaatcccacg gcggcttctg gccagcgccc 660

gctgggttct gggttacaac atcgtaaaca agcgacgttg aagatagctc tgggcgaaag 720

attaaaaata agaacatgca gatgtgttcg gtttcgtaac cactcctctc gctctcgacc 780

ttttttttg ttttgctcga accgaaatat cgggacttag gataagccat tctctgtgga 840

agttttaagt gagatttcat aacattaatt tgtatgtcac atgagatttt taataacatg 900

gcactatatt tattacgaaa tagataaaag tagttttatt accataaaac tatatcaatc 960

cattaccgtg atattggaaa gcgcgtgaaa taacgttgag agtaattagt tttatctcca 1020

tctatttcat tcattcctat tggttgaccg tctctgagtt ttttaggccc cggtgcaaaa 1080

cataaaaata gctccagaga tttgtagtat atagagataa aaacaatata aaatatatcg 1140

tttcatattt gatctattct catacttgtc ctctcatatt atctatttta agtaatattt 1200

cataaataat aaacaatctt taccttttat accatttata ttcagaaatt tcaaaaattt 1260

ggggccctaa aaaattggag gccctgtgct agagctccaa ttgcgctggg cactcgatgg 1320

ccctgtttag acgtagtatt taagtcacat gttagcttat aaaatcgtgt cataaaactc 1380

tttattaaga gagagcatat tttattcttt attttatctt acgtgacaac attggaaata 1440

gtgggatgaa actaccacta agaatggcct aaaaatacct gtcgtttcct cttgcacaag 1500

agacggcgtt aggatctaga agactgagac ggagaacaat ggccgaggta ggccacggtg 1560

acacttgtgc ggctagttag gcatatgaca gtgggtttaa aatatggagt aagataagtg 1620

cgatatagaa agtgacaatc taaatattgt ctggtgaaat tattggtaat gatttttct 1680

gtaccgctta aatattacct tttcaccact ttctatgatg ttcaacccct ctagatctta 1740

gctcctacag tgattctcat tgaatccaat cctctatatg caacacacaa tattcccaat 1800

atattctgaa ttagatattt cacatgtgtt tttgttatat tcttaaatgg tatatacatt 1860

ttattcggcg attaattcgt agaattcgta gtctagagta ccaaattttt agagcggcat 1920

gagagaacac gctagattta ggtactggaa gatgt 1955

<210> 477
<211> 1636
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282386_G1, chr8:101156607..101158242, Cluster 3

<400> 477
gactatgcaa ctaccgtacc tgctataatt atcacctctg cacaatgtgc aactctttta 60

tacattgatc ctggtttcct ttgtctttac tcttatatcc taatttactc actgtcaatc 120

atataatcat cagacattat acaataacgc taaacggttt gccatgcgcg catgtgcgcg 180

cttcgtacac tagtttacta cagtgcatgt gcaacagagc tagtcaggtg gccgccgccg 240

ttcacccgtt ctgcatgcac tctctgcggc ctgcacacgc agcggacgga atgctggccc 300

caccgatgtc cggcgtggct gtcctcgatc gctcgttctt ggcgtgcatg gcgccatgtt 360

cttggctttg gcttcatcag cagtacctct gagagcgaga gactgtacgg ccggcactcc 420

ctctagctat cgcgccagct cgcgtttcta tttcgtcgtg gctgcttccg tccaaccgag 480

ccccatcccc atccgccgcg ctgaactgaa ggaatggaac ctacctagct agacgatgag 540

ttactgccta gtatcttcag tacactgtct gctgcttaga ttagatctag cattatacat 600

acttaccgtg gggatcgtgt ccatccgtga cgctggacga aaattgatgg taacacggct 660

ccgagagaga gacaccgtat ccggctgcgc acaggacaac ggaccgtaga cgggccgggg 720

ccacatgcat acccttcgcg gtcgagagga cgcggtaggt accgtacgtc ctcgctcgct 780

gataaaggca atgccctgcc tgcctgccgg ggctttcatt tccggattgg tggcgagagg 840

tcagttgtgt cgttccattc caacgtcgac tcagctcttg tgtttgggga gacatgcacg 900

ggtacctttg ctgctctgtg atcggatcgt ggagagcaga gcaagcgggg ctagctagct 960

gttgggagaa aactactact cgtgtagtaa tcaccccact tgttgctgct gccacaccac 1020

actcatttgc cagcgctgat aagcactgcg ctgcatcgtc ggaatcttgc caccgacgcg 1080

acctctacac atctccctgt cgcctcactc agctcggtcg tcgtccctcc cgagacgtgg 1140

aggagctcca tttcaccatt cgtagggctc tatctctctc tgcagtagca gcagacatgc 1200

atgatgcgcg ctagggatca gaggcatatg cagtagcagt agcactcgac atgcatgatg 1260

cccggaacag cgctactcat tcggcgtcat ttcacatcac agccctccac gaaattttgt 1320

cggcaaacta aactaggggg aaaggcgacg cgcgttccgt tcgccctttt ttttttaaaa 1380

tttttcttct cttcttcttc cttttctctt cctttattta ccgcaatagt atacgtgagg 1440

tatagtagta ggaccaaacc aaatatgccc gatgaattgg ccaccacttg ttcgtttcgt 1500

tattatcttg tccgtgggcc gtaccggtac gatacgcgta taaatatgcc aactaacata 1560

acgccatact cccggtgtca tcggtccaaa cgttcgctgc agctgctgtt tatgaattgt 1620

aattataacg gggtgt 1636

<210> 478
<211> 1462
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2847_G1, chr1:14541627..14543088, Cluster 3

<400> 478
cccaggagac caagccccat ggtgtctagc cttgagactt tatgagttgg ggggtcttac 60

acgagattcc atgacacttg ctatgacagt cccggtatgt atggccctaa caccatgtga 120

gcttcgacta ggtcaagtgt gtgacatagc agttaaaagg ttttgttata cccatgtctt 180

agacaacagg tgtactcgtt agcactatgc aagcacacgc cttcaatagc tatcaattat 240

gccatattcg acggtgtagg cacctataac taccattgtg gcatatcaca ctcattgttg 300

tggcacattg gatgtgtgct ccacatacaa tacatcaatt atgacaagat aggagtagtt 360

agatctttgt tgtgtagggc tcgctatcta tgtgtggatg tagctctttg catctttatg 420

ctataatcta taaaagggag gcatagagca gcgtagaatg acttttctat ctctcgactt 480

ttgagtcttt ggtctttggt tggagtccaa ttagcaatta gtaagggagc atgtagttag 540

agcttttggt tgagtttgag tctctcattc ggtttagcaa tagacatcgc aagggataac 600

tagggctctc ctcgctcttt agctcggaca tcatctaagc gtataaacta tgtccatact 660

tttagctaaa catcatccat atgaagaaca tgtccaaaac tctataaact ttgcgtgtgt 720

atacaaccat attggcacac tgattcaatg gtctcagaca taaactcctt tctctctctc 780

taattttctc taataatatt ggtaccgtgt tagcacaaca agacgacaac ttatatctcc 840

taaaattcta gtccagttac ttctatggac tagttaggct actcccaatg ggtagtatca 900

tgctcattaa ttagacacca catagtattc tttctaatat ggcaaggcat atttaatagg 960

agggagaaaa aatgtcgtat cttaaacaag atattgctcc ggcacgatat cttagattat 1020

gacataaaaa taatatttag gtccattctc atagacacaa catcatatta ataaccagtg 1080

tagatatata agtatgatat tatggggtgt ttgggactgc tccatgtttt gtaagccaaa 1140

cgggttaaac tcaagcaact ttgctcccaa aaacatggag tttgggagaa ctccaccatt 1200

ttggtggagc aataaaaagt tactccacaa tagttgtttt cataggtaaa catggggagt 1260

taattatcca ccaaaccact tgttatggac aaaataacgt ttcatttcct gttctattct 1320

ccttttcttc ctaacgctgt cgacctccga ccatgtcctc ttccacatgc acagcttgag 1380

cgctgcccat ctgcttcctc gtgtaggtcc taagtgcaat gtggccagta gcctagggag 1440

cgttgggatg cagaggtcta tt 1462

<210> 479
<211> 1456
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290664_G1, chr8:146019976..146021431, Cluster 3

<400> 479
tctgggggta agtgacacaa catgccaagt tcgtggaccg tgtgctttac tccttatttt 60

tgtatggaga gaatacgcgg tgagccaaaa ctaattcagc tccaaagtat tcgctattcg 120

gcaatagacc gtgtgcttta ctccttattt ttgtgtggtc ctctcatatt tctctctctc 180

tctctttata taatatatat atatatatga atatacaatt caagaaatta tcatttagtg 240

taaaaaagta acttatattg agtgcaatac tttttaatat ttataaaaca acaaatgtag 300

attgtagtca taaacactta cttgcacttg atatcaaact aaaatatttc ttatgacatt 360

ttacacttga tatcatttgg tttcgagtaa gataagagtt tgggacaaaa attcaaactt 420

caaaacctat attagaatag cggcttcaag ctccgcccct aagtttttc gagagaaatc 480

caattctcag gataatgcca cccaccctgc ataaagcctt cacgaagtgc tcgtgtgatg 540

ctaattgagt cagaaaccct atgttaagaa attgatgaac ctgaggtgac acgatgtatg 600

tcgtgcaatg caactagctt agatcacaag ccttgtgtca ggaaattgat gaattgattc 660

ggtctcttgg tgaatgcacc cacgatggtg aacatcgtag ccgcggcggc acaaaattgg 720

aacattgtcc agcaagagca cgagggcgtc agttcatttc ataggtttgt gttgatttgg 780

tgctcaatct cagatacata ttatacgata tacttggtgc atacataata ttaggggcca 840

aggcccccta cctttggggt ctagggcggc tgacccctg ccgaccctat tgggccgacc 900

ctgcatccaa ggttaacaaa atcgatcggg aaccatggtt atgggggcga ttttcagttc 960

cccgtccgga aaacgggttt cctgtgcagc tcgagaaacg agtttcccac tgttttctaa 1020

aatttatata aattcgacaa aaatactata tatatatata tatatatcag aaaaatatga 1080

taaaacaaca tgtttttcta tgtaatttgg tatagcccat aattaaattc aagcgcattc 1140

aatctattaa aaaagaaaat aactaaatcg ttaactggac ctattaatcc gtcggtccat 1200

ttttataaaa actccaaact ctactcgctc ctcctcagtc atctcctagc tcccctctat 1260

tagtcatctc cagagcttca tttcttggca gcgtcgcgcc gaaatccgcc attgcacaac 1320

atttcccagt cgagaaacaa cagggcctga tttcactcgt cgccttggct ccctcccgcg 1380

cttgcttggt cgagaaacca ccatttctca ccggttgttc atgtttcctg accgagaaat 1440

cgtgttaaga ggccag 1456

<210> 480
<211> 1734
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_293436_G1, chr8:160087805..160089538, Cluster 3

<400> 480
gcataaggtg cccatccgct agcaactctg ttcagttggc ggcgcgcata ttgttgctta 60

aaccctggct ttcgcttcgc tttgtcccca actccaactc ccgctcgctc ccccccccc 120

ccccccccacc gatcaatgga cccgccgccg attctccggg aggcgtggga gggctgcagc 180

gccctcgtcg acatcaacga cggcgatcgc ctagccttct tccgcctcac ccgcggagcc 240

tcagtactac actcccccgc acccccacct ccctgacttc gctactctct cccctctcaa 300

accaaccctt tgtgtgtaac cgtacaatag gtccctgatt gataacaaaa cagctcagaa 360

tttatctagc gatgatatag aggcaatgaa gcggtgatat tctgatcata tttgacttct 420

attgaatata ctgacagtgc tttattctct gctccctgtg atttacatct aatttgtatg 480

caatttgatt ttccaaaaca gggttggtgc gactggtgac gagattgtag aagctttaat 540

agcaaatagc tcaacatttg gaaagaaaat tgtcttctcg caggttagta caactagcta 600

gtattgtccg tgctaacgca cgggaggagg gggtggggcg gtggggtcat ggggagaggg 660

ggaggcaggg gtttagtgtg tgtgtaaggg atgagggacg aaggtcattg gaaattgaat 720

ttgagtgagt aagatagaga agggttatct aatgatctga actattggtt ttgaatatat 780

gttacgcgtg ggtgtgattt gtttggtgga tttagagaag atcatgggtg tggaggtgat 840

ttggttgagt ggattttgca agtttaaact ggtgggttat atagggtata gataatttct 900

tgactttatt tttctttggt cttccgaagt ttcaaatttg ttgacaattg atttgattaa 960

atcattttga ttgcagaagt acaagttaaa gaaacaaaag aaatatgcac ctaatgttct 1020

gataccacac ccatctgctc agaggtacct ttctattagt ctttgtacag tctgcaaaca 1080

tgttacatta ttttttgaga tgcttacatt ggtttacgtc gctgtactgt tgccatgtaa 1140

tcatttatgt gaccagatgt ttatctatat gctttctgtg tagttaagtt cccgatgttc 1200

tctacaagag ataaagggaa catggtaatt tctatattac tattgataca ttcgattata 1260

tttaaagcga tgccatgcaa caccttgaat gaagagggta gcgaccagac tgggagttga 1320

agaatgcaaa cgaaattatt ctatagcatt tgatatgtga agtcagcatg tccaatactg 1380

ttgtttcaat attttattgt gtctccagtt aactgaaatg aatgatattg tgctctttga 1440

gaaatggatg atatcttgtg ctttggagaa caatatattt tatggcaggt aatagttaca 1500

atggcaatta gcgtgttagc tagagtggag gatcaggaac atttctaata gaaatagttt 1560

ttttcccatt tttgtattta ttttttaata ttctactata actcatattg ggcatagccc 1620

aagcctcttg aaatttgatt gctggatctt tatcaactca ttttttaatc ttatggacag 1680

tagggttaat ttgtggtcct ttttatgtgc agcatttgtg agacatactt caag 1734

<210> 481
<211> 2004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293663_G1, chr8:161384933..161386936, Cluster 3

<400> 481
ccgtcgctcg gccccactgg ctcccagtcc caggtccggt ccgtcgaggc ccggccacac 60

gcccacacga cggggagcac agggccgcgg ggggcgcacc gggcggcgcg gtgccgccac 120

gcgtcgcgac gggactggtc ggcgcgcgtc cggtggagtc gctgtcccgg atcgtctgcg 180

gcggcctctc ctcggcggac cgaggcgtgg gtcgggttgg tgactgatga gatgagcagc 240

taatcatgga gcaggaccat cgggaaaagg agaggctttc cgcaaaggtg gcagtggcca 300

gagcagaatt atgcatgaca gggatcgtct catccatccg tccgtctccg tactggagga 360

ggaggaggag gaggagggga ggcttcgtcg ttccccgtgc aattaagaaa ccacgtgatc 420

gtttgtaaat taggcccgct agtactattc ctattccggc gactttggtt aaggttccgc 480

gtttgtatac agtctacagg aagcaacaag aggggaaaaa agagagcaca tggatctgga 540

tatggactgg gtgactgatg gaccgccgct caccttcca tctaagaaaa aggcataaaa 600

aacatgtcca tcttatcaga tgcttcaaaa cctggaatac tgttagttag accctatatt 660

ctgtctaaaa accccatttg gatccctcat gttataggac gaagaaaata acagttacta 720

gcaatcacta gcccctgtaa ttaataaaat ttgttaacca tggcacaagt tggtaggtgt 780

agttgagata gggactcaaa gctatcatct catcagggac ggatctagcg gcccaccgcg 840

tgaggctcca gtcaccccgt ttttctgacc agtggtctgg tgggtaattt tcaacaaatt 900

attaaggtgg ttttatgagt gcttggcttg catatgggct ccggcttcac taatacaact 960

tatttatgtg agtttccttg ataacccttg atgtttcgtg tgcgagagaa ccgaaacgat 1020

atattgtgta accagtggca tgacgagtaa ttttcgtgca acttcgtgac gatatatgaa 1080

aactggatta atttttgttg acttcaactc caaaaaaaca actttactga tagggccgaa 1140

tctattttat tttataaata tctggcagag cggctttagt agggaagata gcagagagaa 1200

atacgagaga aactagtgtt ttcaacttca tcttaattcc tatgtcgtgg gacggtggga 1260

gaagtaaata agcatcttgt agtaattttt tttttgaaaa tacctatttg aaagaaaagg 1320

cttaattaag acagcactgt aaagctggga tagaatcact aggcctttta tccgtgcatg 1380

gcactccgta ctcgcacaca ctgcgtacgt gtgcaaccga cgtagtagca tggagcatag 1440

tgatcgtgtc gcgcgggttt gctttgttct tcttctgctt tgcaccctcc aggtctactt 1500

cgtccccgca accttatcca ccaaaaaagc cggaatccag agctgcattg catctatcca 1560

cctcgtctac ccaccacctg tcgccggcgt aagtaagcat gcatgcacgt gacaaattga 1620

caagaccggc cggagagaga aaaaaacgcc cggccgagag ctttaattat actatataac 1680

agcatgccga aaaccaggct gcctgtaata ataataacag ctaagtacgc ttatttaaat 1740

gggcgcgcgc ggccggccgg cctcagctcg tgtgtgttcg tccataaatt acgcctcaca 1800

cagttggcac acggccgtct tttatgtttg gcttcttcaa tttgttccca ttgttaggtc 1860

gtttgctcct cccttgaatg ttagcatgtc gttccactac tgttcagtag taataaataa 1920

tgtactaaat actactgcca tgtgttggtg agtccatcca tccatccagg ctgcccgtta 1980

gtcacaacga ccgtgtaaaa gata 2004

<210> 482
<211> 1556
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299695_G1, chr9:11606238..11607793, Cluster 3

<400> 482
acaggtatca tagcaaggcc catttcacag gtaaattttt tttaaggaac catgtgtaaa 60

gagtttttcg gtgaagacag cagggcgtag tcataagtca ctctaatcaa ggatagatag 120

agtgagttaa taacataggg tcagccgttg cagttcgttg attataacct acaaaatcag 180

acacaaaaaa atagacacga tctgcaagcc tgacagcaac gagtgaaata caagcgagca 240

gtcatctcgt ctccgtttta atgctctcct tttctgtttc tttcatagat ttctcctttc 300

tgcgttgtct tgctcaccgt tcacgcaccg agccacccgt tggtgtcaaa gaaattctag 360

atcaaggcaa ctagcgtgac gcggccggct atgcaaagtt tttggtttgc tatgggttat 420

tcctggatgc cacacattcc aaagagttca taacttgtca tgttgatcac gcggaaggag 480

gccatggtgc tttattgctc tagctagaac gaggagggcg gatggggtgg aaccgtggaa 540

gatcgcggac aggacagtgg gaacatgcat gtcaatgggt atgctatcta catgcactgc 600

ccatgggttg gcacaaagaa ccaaagcttt tgcaatatat ctttgcaatt gctggaggca 660

aaggtgtata aatagaaaca tgcattgacc ataaacattt tgtttctacg ctacgggagc 720

catggcgcag cacatgtcaa caagctagtt catgagcaga ccgaccttaa tcgacgtaac 780

tcacagcagg cttgcttgct catagcgggc tgtaatcgta aactcatcgc attacagtca 840

cctgcagcct cactcgcaga acaagcttgc cgacacacga gtcgacacgt ggggccgtcg 900

ggccgatact ccctagcttc ttgatgactc catgttcgat gcagggaaga cgtacgattg 960

gtgaagggct cttcaattcg agttctgctg taagatttgc tgcggccggt gctctgccta 1020

tatattatat ggcctgcaat gaacacagta cccatctgat cgaattcctt cgtttcttgg 1080

tgaaactcag aaagtggaac acagcacagc gacggagtcg atatgtgtgg ccgtgcaatg 1140

ctgagctgaa cggaccttgt ggatgctaat aaaaatgttg cacaacctgt gttgggatca 1200

gtgactggag ctctataaaa ttaacgccgt gggccgcttt ataaaacttg aaggttactt 1260

taaacagtct ctaatatatt gtgcggctaa atataccgct aaaacaaaat ataccacaaa 1320

catagactaa gatagtattt acttcaattc agcatctaaa aatacaataa acttgattaa 1380

aaatataaaa agtacctata tagagacgat ttggtccttc cccgcctcta ataacttcat 1440

caacattagc acgtgaattt gaacctacac attgcaagtt caatatttgt ataaaatgag 1500

agatacaaca tgacaatata actaatgaat acaaaaatgt ataagtgagt acaaaa 1556

<210> 483
<211> 1637
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300332_G1, chr9:15357579..15359215, Cluster 3

<400> 483
cgtagcatgg tagcagtagt agcacctcgc tcgtcccctc ccctgccagc cgaggcacag 60

gcacgcgtgt tgctgtagct ttcaccctgg agggtcactc aatccgtcgt atcgtataca 120

agttttagta cctgatgata cgaacctttg catgctgtag gtcatgcaca ggagtaggct 180

gctccgtctc actctcggcg cgtgtgcgtg cgcaacgtgt acgtacgtac actggacgtg 240

taccatactg actcaggcca aagtacatac agtgcagtgc aagagaacac aaaaccctaa 300

aaccaaaaga ccggacggac gggacgacaa tgtccactat attccattcc aggccgtatt 360

tatatataga aacagaagct ctacctttta cctgtgcagc gctgcccaca gccccacacc 420

aacccggccc gaccagctag ctctagctct ctccttgcgc tcgtgcacgc tgcgctgcgc 480

tgtgcatgca tgcagccggc cacagccaca gtggggccac tgctcagggt gtgacaagat 540

gtaccaggcc acccgcgctg aaccagggtc cagggccggg gccatccatc gccatcagac 600

tgttcagggg taagcgaagg gctagctgct gtgcccggcg ccgcgccatg tcacactgct 660

gctgcactgg ctccacatcc accactgctt gctgatggcc tcctgcctga ttgatgcagc 720

agagctggtg cgcaaagacc acacacaaag ggcaaacaac caccacagca cgcatgccat 780

tgccatggac atggacatgg acatggacat ggactgactg actgactggt gagaagaaaa 840

gaacaatcac tgggaacggc atgcagtgca tgactattta aggaaacccg cttgaccctg 900

ccgccgaccg ccgtggccgt gcggtgcgac gggtcggggc gagcgtgcgc tccgctgctc 960

tgctctgctt ccattccatg ccatgccatg ccagcgcgag gtgaggtgtc agtggtggag 1020

tggagaggtg gagcagagca gacagagcgc tcgggaggtg tcggggtgct cgtcctttcc 1080

tcgcttcagg aatggaagtc ccgtcctcgc ctcgcctggc cttttgcttc ggccacccac 1140

cggccaccgc ccagcggaga gagtggtgga tcggagacga gacggccact ggcctgtgtg 1200

gcctgtgtgc taggctggct ggctgtcacg cagctgatga taggggggtgg ggcgggcgtg 1260

tagggcagtg ttacagcgaa gaaaaagggc gccacgccag tactggcagt acatactatg 1320

atttgaggtc tcatctcaga ggctcctttg ccagtgcctt ttcatttcgc caccaaaaga 1380

tctactcatt gcaacccaac ccccccccccc ccccccccccc cgccgccagg ctccccttca 1440

ccaacagctt tcaccaggcg agccttcgca tcaacatttc tttctttctt ttttctttct 1500

atttttcatc atgccatatt ggatttgttt tatggcatgt cgggagaggt agataaggtg 1560

tgagatgtga gaaagagcag ccgtacgttt ttttttgtt cccacggaac aataggactt 1620

tcgtaggagt ttcaaaa 1637

<210> 484
<211> 1431
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301732_G1, chr9:23324456..23325886, Cluster 3

<400> 484
ttgacaaggt gaaaattcca aactagttta agaagtggat tttaagttgc cgaattaact 60

ttcgctctta gacgccacgg tcccttcgat cgacttagga atggaggtag atggggattt 120

ttttttttt gagaatataa tgtgatcttt gcaacaacaa aaaaaggctt gaactttcac 180

actggttcat attaaaaaaa tttcctcctc gccatcatca taaacagaga cccggccaaa 240

ccggaactgt atctagttat tgttgccaac tccgaaactt cccttgtcga tcgatgccga 300

ggataccgac ctcgctcgac cgctgtagcc tgtagtagtg cgtcatcgtc agaccagtgc 360

ggcacacacg cacgcacacg gggggggcagg cgggcgggcg ggcgggcgcg cccatgcatg 420

catgatgcat gtacgcatgc gttgcggctc gcgcatcatc atcatctaca tggtgacaag 480

cgactggaac gaccggcgat ccggcgccgg ccgggcgggc gggctagcta gctgccggct 540

ggtaccaccc tcccgaccgc tcgggcccgg gcgtcagcgt ggcgcgcgtc gccgtcgccg 600

tcgccgcccc ctcccacccg gcgtccgtgc acacgctcgc ccctccgacg cgcgatgcgg 660

tcgaccccgg gcagccgtcg ctctcgcctt tgcgcggtaa tataatatcc cgcgaagcgc 720

agggccgtcg ccctcggccg ggatcgcgcg gatcaaacag ttgcccgcgc gcgctcgcaa 780

gtcgcccgtc gccgcaaccg gccagctgga caccaggccc ggacgatcga cgtgtgcggc 840

cctcccgccc gcgcgcgcgc gcgtcgtcgg caactcggca tggcggcact gcacgggcac 900

gccacggtgc gcgcgtgtgg atccgagaag gaatggacca accgggccgg ccgacgagga 960

ggttgttgct attgctacta gctagctcgg gctcggcgcg cgcggctggc ttgtgcgaga 1020

agccgccgtc ctaggtagct gtagctcaga cccgatcccc ggacgtgcag tgctgtgcag 1080

tgcggtgttt ggaggcacgt caattcgcgc gccgccgcgt atacgtgtcc gccgccgcta 1140

gctttcgctc gatcgcccgc ctgccggctg ggccggggcg cgcgacgacc ataccggggt 1200

tagctcgctc atcgccgcgc gccgcttgtc cgatctgatc ggtcgacgac acgcgccacc 1260

gccgacgatg acgaaacaaa ccgctgtact cgatcaccat catctcgaag cgatcatgca 1320

tatacagcga gcgagctcca ctgctagctg gtggattttc tatgtggttc tgcttccaaa 1380

agtgagagcg tgacaaattc gtttggagct aataatataa tctgcgtcgt c 1431

<210> 485

<211> 1631
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301849_G1, chr9:24135769..24137399, Cluster 3

<220>
<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (560)..(659)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (561)..(561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (562)..(562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (563)..(563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (564)..(564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (565)..(565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (566)..(566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (567)..(567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (568)..(568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (569)..(569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (570)..(570)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (571)..(571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (572)..(572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (573)..(573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (574)..(574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (577)..(577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (578)..(578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (579)..(579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (580)..(580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (581)..(581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (582)..(582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (583)..(583)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (584)..(584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (585)..(585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (586)..(586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (587)..(587)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (588)..(588)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (589)..(589)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (590)..(590)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (591)..(591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (592)..(592)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (593)..(593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (594)..(594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (595)..(595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (596)..(596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (597)..(597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (598)..(598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (599)..(599)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (600)..(600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (601)..(601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (602)..(602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (603)..(603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (604)..(604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (605)..(605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (606)..(606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (607)..(607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (608)..(608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (609)..(609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (610)..(610)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (611)..(611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (612)..(612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (613)..(613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (614)..(614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (615)..(615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (616)..(616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (617)..(617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (618)..(618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (619)..(619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (620)..(620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (621)..(621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (622)..(622)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (623)..(623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (624)..(624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (625)..(625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (626)..(626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (627)..(627)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (628)..(628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (629)..(629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (630)..(630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (631)..(631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (632)..(632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (633)..(633)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (634)..(634)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (635)..(635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (636)..(636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (637)..(637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (638)..(638)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (639)..(639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (640)..(640)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (641)..(641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (642)..(642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (643)..(643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (644)..(644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (646)..(646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (650)..(650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (653)..(653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<400> 485
cagggcaccg gtttttcaat ctaacggtct ggaccgtgga ccgccggtgc tcaatttcat 60

tgttcaacaa tatttttgat gattcaacta tcgtttgggt ttggtttagg ctataaaact 120

cagaaatatt tggctgccca actgtgaatt caagctgttt atgttttgcc atcgatcgag 180

atgtgttttg ctgagtggtt ttgccgacgt ggacgacgag tggaggtagt ccctcccaca 240

tgtcaatatg tcgttgctgt attattccct cctcctagtc catctcttct cctctcacgg 300

ccaaacccac tcgtccgctc cacagcagag agctcacccc gcacgggcct agctcaccac 360

gaggctgcct ggctgggctt ctcgttttcc ctccaaacca aaatccatgc aggccggccg 420

ccggcaagcg cagtggcgca gagcacacac aagcacagcc tcctccgcct gccggctccg 480

tgagcagctt ctacttcgcc atagtgcatg catgcaaata ttgcatttgc atccatccct 540

gcagcagcat cagacgtacn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 600

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnng 660

aaggaaatcc gattcatgat ggctgcttct cggcgtatgc attgcaatca atgcgcacgg 720

cgcacgcgta tcgggcatat gcactactgt ttctgcgcta cgcatgcaaa agagttaatt 780

aattcgtgct aagtacgctt tgccttgcct gcgtctagct ctgtagtaca atactgtatg 840

tatgtatgta tgttatggtt gctgctgcag gaatggaatg aatccatgca tcctttgatc 900

gattcaaagg catttcgcct gtgttgtagg atccaagatc ggtgacgtat atatatacct 960

acggttaatt aattaattaa tgccctgttt ggtagacctt cacttcaaga attccgactt 1020

cgttccaatt tcttccacct aaacaggttc ggctccacaa gctctagttt tttttaaaaa 1080

aaaatcaaaa ctaaaggtca gttttatgaa atttatgaaa cttcttagag agtgttttta 1140

aaaacaagct tcctcataaa gctgtatgaa aattacccac catgccactg gttacgtaac 1200

atacaacttc cgttctctcg cgacagtcca ctaatcatca aagataatca aggagactca 1260

cacaaaaata attgtactat agaagctgga gttcatatgt aagccaaaca ctactggaac 1320

tcacgttaac aatttgctgg ggttgtttta tgatgaagct gaaaacccaa aactgaagat 1380

tttgaagtaa agttattcca aacaaaccct aacttcgttc ctttaaactg tttaagatga 1440

agctgaaacc agttaataac cgttagacac ttgtcttcca cggagatgta ttggggatca 1500

aagtgtgcac tccctttcca cccgaagtac gccccccccc ccctcatttg cggtcccccc 1560

cccctccttt atcaatacaa caagacgttt tacattgttt tctagggaca attgcgttgt 1620

atccttattt t 1631

<210> 486
<211> 2559
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_303562_G1, chr9:34907166..34909724, Cluster 3

<400> 486
atctctatat tacacgaact atactgagtt cttacgaaac actgaaaacc aagggcgaag 60

attgctttgt tcgactttga tctcgctctc gctcgcaact cacctctccc tctccactcg 120

cacctcgccg ccgtctaccc gtctgctgtc ctagccccgc ttctgccgca gccatgaacc 180

cttccatgcc accgcctccg ccgcgtaacc ctaattcctt ttcgtcatcc gcctccatgc 240

caccttctcc gctcccaaac ccctcgccgc cgacggcacg gccggaggcg gcgtccgagc 300

ccgacttgtc ttcagcggag gtgaacggtc gcgctaaccc tagcacatcc tcctcgatgc 360

ctccgcctcc gcctcaaaaa cccgccccac cggcaccgca gatggaagcg aaggcggcag 420

aggctgaggg aggcgctgtc ccgagcccga gcgtgagcgg ttcgtcagcg aaggaggcgc 480

ccaacagcag cggggcctcc tccggcaaca acgtgatgga ggaagcggcc gcgtcgccgg 540

tggagcggca gagggctcgc gcgccgtacg ccattcccga gtggagcacc gcgccgagcc 600

aacccttctt ccttgaggtg ctcaaggacg ggacgatcgt tgatcagctt gacgtgtgag 660

tttgcaattc ccatcctttc atcagttctt tgttaattta atgatatttt tatttcgtga 720

ttaaggtgtt tggttcctta gtcaccctcc taaactttaa gtgcctgaac tttagtctct 780

agagtttcta tttgggccct gtttgggata gctacagtaa atttggtgga gttgttggag 840

cagagttgta agcctttaga agctggagtt gtaagccttt agaaaacatt taaataagtc 900

attttgttta ttatttaaat aaaaaatatt tttaaaacta gttaaattga tattataaac 960

tacagctcta cactggagct gtttggcagt tcagaaacta aaagtgacta aacttttagt 1020

cactaaagtt taggaggtgg gaaccaaata gcccctaagg gctggtttgt tgaccaggat 1080

cacgagggga tacataggag aggaatcccc ttactatttt gaaatgagtt aaccctcaat 1140

acccaaatga gcgttaagga tttctccctc atagatcccc tcgtgatccc tggtcaccaa 1200

atcagccata agttgttgtt tagttgtgtg aaatgagtta accctcagta cccaaatgag 1260

cgttaaggat ttctccctta tagttcccct cgtgatccct ggtcaccaaa tcagctctaa 1320

gttgtttagt tgtgtgaaat gagttaaccc tcagtatcca aatgagcgtt aaggtttctt 1380

acccttttt ttgttcactg ctttggctgt tgctgctgat atataagtca tgttgtttgt 1440

tggcattacc aagattagaa ttggtggaat gacctgtatt acacatatgt tgcaggtcca 1500

agaaaggagc ttacatgttt ggtcgaattg atctgtgcga ttttgtattg gagcatccaa 1560

ccatttctcg attccatgct ggtacgtttt agccattctc tttatcagcc tgacagtctt 1620

gacttcgcca tagtttgcaa aaggaaaatt tggttacagc acttataaaa tggtgttttt 1680

gaaatgaacc attacatgaa aacagcatcc tattgctagc agctaacatt gtgaaaccat 1740

ccatccaagc ctacaagcca gcagccattt tcttcctcct ccatcaatct gctacttgcc 1800

ctgattttct tctccttgac ctctctctct ccccctccct ctctctccag tggtggagcc 1860

agaacttttt aagttgggta ttccctatag atatcactgg tggtttggat aaataattgt 1920

ttaatcaatt tgttcttcat ttttcaaaac cccatctaca tgaaaatagc aattggttgt 1980

tgcatgtcta tttgtgtgtg catagccttt cagcatgttg gatgctagca ctactcgcct 2040

tgctcaagaa ttggtattct tatactctgt gccgacagca tgcctaacct aaggtttgga 2100

tcatttgagg agttgaggag atgagggcta aaagagatga tgagcgacaa gactcgagaa 2160

tcaaagagat atgagcgtgt ttggatgttg gcgctagctt gtccaaccta tttgcgtctg 2220

gtagcgtgtt cttttggatc aacactaaat aatagcatgc ccacgcaaga tgagaaaaac 2280

actggcacac agctacactt agccaaccaa atccttcacc aatgcttggc tagccagtac 2340

attggctggg taagtggatg atagcttcca aacacacata aagccatata tcatattgtg 2400

acaaggttat tgatatgggc tacctcataa gcaagaagac ggtgaacatg ctaatgcaaa 2460

gtgcagtact agaaaaaaga agtagctaga gtttaatggg ctgctcaaga actaaaaaat 2520

catttcgata aaaaaacata aaactatgtt tacatagta 2559

<210> 487
<211> 1671
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_31101_G1, chr1:191279425..191281095, Cluster 3

<400> 487
agcatcaagg atgaactggg ttgatgcaag gacttgagca ccaaggcaaa ggcaaggatg 60

atgagaacat gttagcattt ggaaactgaa tacacatctg tttgagaaac aaagatttct 120

taccgtcttt tgtgaacaga tttaaggtgc caaggtctta ttatcagggg aggtagccat 180

ttctagtgac cacgaccccg tccagttatg ccaaccccat ctttggttcc ctgaatctct 240

gaacctgagt aatttgtctg gtatgaaata cacccaccca cctttctcca gtgtactcct 300

atttgaatgc tcattttatt ttattagaac aattctttgg ccagcaacaa atctgatgtc 360

gttactttta aatttgtaat gttaaaattt gcttctgact gcactactaa aatattgcca 420

aatgtgatag caagatcaat ggacactaca ttgagcgagc cagctaagga ggtgggtttc 480

tgttttggtt tacttctatt attataccgt tatactttct atatttaaca aggcaaaggg 540

ggagaaaggc aaatacagta gaggaatctg ttcagaatct ttttttggtt gagtgttgct 600

acataagtag tgtattagtt tcctgaaaca tcccttgtca gtttttatta accaattgta 660

cctggcatct tttgtattac aggtgggtga caagctatct acttcattcc aagttataag 720

tcgttctgac tctgatgtgc atataggttt tgctacacac ctagatatac atcatgtcta 780

ggtacatata tagtaaaata tatatatcta gaatttcatc tatatacaag taggctaggc 840

tatatagtta ccttaataat ttatgaataa tgtaatgcag atagtgagag tgttgtaaat 900

ttttactatg gtcgtttctg tttaggtttt tatagtacta tcatattatg gtcccagatg 960

ggagcgtcta cagtgggagg gatatgtagg tttagtgtag cattagtaca atacttttt 1020

ttcttgtaca caccagaaac tcttttgttg tttgctcaca atttgcacta aggaagttca 1080

tgtgttgaat ctttataggc taatttagtc ttaatgatga ttctccggta aatttaaaat 1140

ttgtttcaag aatttgttag cattatctag cgagagttgt aaagtagctt aaaatagttg 1200

ttttgtggtt ttttctgcct attatctttc acgcaggggt aataaaatgt tggtccaatt 1260

cggtaaggat acaactggaa ttctgatttg aggcagcaga ccgacacgat gtctgatgtt 1320

taaaattcat gacatcaaga agaaaaatgc cgcttaaata tcttaatagc tatggtcaca 1380

aaatgttaac cgtaaggaaa acgatgaaca cattgctgca gtacacaaac aaacaatgag 1440

tgttcacaga atcaaagtgc tatttattct cttatattgt tgtatcatca aatgatttag 1500

tacaacattt ttttaagttg agcatgttcc tttgtatgtt cagtgctgct gagcatgtat 1560

tttggtgctt atccttttaa acacttttc aatatattag tgggttataa tgaaatcgtc 1620

agttcctgta tttgtaattt gtattgattt tctggagcta ggaatggatg t 1671

<210> 488
<211> 1955
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_311588_G1, chr9:87439449..87441403, Cluster 3

<400> 488
cactggcagg ccctgttcgg ctttcacgga ttgaagaccc ggaacgattc ctagagtatc 60

gcttctatag tttatataag tttggatgag ttggaacaaa tcttggtcca atcccgtaca 120

aatgaaatgg gccctcactt gataacaagg gcggatttgg gccccgggtc acctaggcca 180

tggcccggga cgcagcctag aaatcttctt atatctagga taattttagc ccaaataatc 240

tagtccacgg gcataatatc cccttccact cctgattcgt tctggcgcct cgtggtctcc 300

tggcttcccc attggcccaa tccctcacgc cctgcctagc tccagtccac gtcttcggcc 360

ttcttgtctc ctagaccgag gtaccggtgg cggcgccttc gcactacggc ctccagtcta 420

tgcctccacc tccatgctcc actccatgga tccgacaact gtgacctccc tgcggtcagc 480

ggtctacgcc ctccatggat tcacaccaca tcgttcgccc cttgacagct cgtgatcgtt 540

gatggctact gttctataag tgcaggtaca aggaaccgtt gtatgaatta tacaggagta 600

gcaaacgttg cataaaatat attgatgcta tcaaatgttc tataaatcat aatagttgaa 660

atcatgcaga ttgtcatact ataaaattag agttctaatt cctagattgt atagactgtt 720

caaatgtaat cttgttaatg aaatgctcaa aaggtatttt gcaactgaaa ttttgtcacg 780

gtagtgctca ctggaatttt gcccatatca tatatcagta taatcaaatg gatgtatatg 840

agtaagggac attccaagta gccaaatgat aaagggtgag catacaacgg ggcatcaatt 900

ttacgatgct ccgctactgc ttgataataa ataccggctg gacaaagccg tacaaaactt 960

acactctact gacaaagcag caacagttgc aaaagcaccg aaccctaaca tctctttctc 1020

taacctttga ttttgtgatt ttttatatat atataaagta tgccaaaatg atctcgtact 1080

tgcttgcctc attggtaggt cgcaggcgcg gtactactag cactgcagag ctggcgctcc 1140

ggttcaagca ccaagccaag cgcgtgtgca ttgaatttca attttgcata ctacgtttga 1200

aacggtataa ccgcgtgtgc accggctaga caatttgtca aaatgcacct gcgtggcagc 1260

gtgcgtgtgt gtttctggaa gcaaaagctg gagccaatca ccaacgcatc cgccatctga 1320

cttgcgcggc caattggttc ggagcgaata gtttctcccg gcgaagcagt ggagtgcacg 1380

ctgtggagcc cgtcaaaggc acgctcgacg ctctggacca gagctggacg gaggacggac 1440

ttcatcagac tagacgagag aggtcctcaa aagcttcgcg atttttgctc ccgtatcttc 1500

tctgttaagg gaacttataa aaaaaccgtt ttcgtctccc ctcttgtggc cgcgtggcct 1560

gaaggcgcaa ccattgcgtc agtggttagt tgcttggagg aaaatggccg agcaccacac 1620

ctcaccttcc cttcagggcc ggccttatca tccttttttt taagaagaag ccggcaggcg 1680

gcagggatcc ccgttcgctg gtataaaaag agtgaaattt gcaagtgatc cctaagcaac 1740

ccggtgaaac aaacaccacg taggtaatcg gggacgcagc ttttcttcag cagcaggttg 1800

tacgtgccgg taaacgcagg cgtggtaggt gaacttgagc agtttgccat tgtttgttta 1860

ttagcacatt gttctctcgt ggtggctaag attctagaac ctttctcctt tttcaggtca 1920

cagattggct cgggacgggc gagccaacta aaggc 1955

<210> 489
<211> 1970
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315319_G1, chr9:107855126..107857095, Cluster 3

<400> 489
ggaagtgaaa ttatataatc tcgcagatta taatctcaaa tgaagactct catagtgcag 60

tcgctgtagg gtatttaagc tcgactgggc attgccgcaa ccttgccgcc gcgcgctgcc 120

gtaaacacta ggccgagaag gtgtgtgtcc gtggctccgc cgcgcgtgca tgtgcatcga 180

ggtatattaa tcacggtcag cggttgagtt ggccggggca cgtcagcaga tggcaacgga 240

gaaaataagc gaacgatggc ttagttgtga ccatgattcc atgaaaggga taatacacat 300

acacatatgc cactctcgtc gactatgaaa gagcaaaaat gcacgataga gaaaaaaatg 360

agtgtactag tttagaagaa gaacagatct agcatgagag tttttatttg gtaatctaac 420

taatctatac cactatataa caatccaccg gtataaactt cgcaaaaccc aaccaaccaa 480

atcaccctcg catctatgac ctctaataaa cgtaccaaac aaattacact cagacttaac 540

acaccatcaa aactaacaat tcagattgtt ggataaccta ctctctttta ctcatccaac 600

ttcaatagat aatattattt ggatcatcct tcatctcccc ttccccacga cccctcatcc 660

tcccctaact cacgttgcca ccaccgttga cccctccctc ctcaaaatca taatgttagc 720

acatcatata tgctagtgtt agataaaaca tcatatcctt ctacttaact catcctcctc 780

ccaaatcaat ctcgcccccc ccctctgtcg ctgcaagtat caccgaaaca tggtacaata 840

ataccatgtt gcatatcctt ggaacatcgt tcccgttcta agaatgtggg aacaaaaatc 900

atgtcctcga ctcctcatag taggagaatg tccattaaaa agcgtactat gctccttgat 960

tgccgctctc catgacccaa tcatacctag acaatggcgg acctagcatt tttatatagg 1020

gtatgccgca acaaattttt cgtatgcagc agtcaaaacc tcaacttata ataaaaaggg 1080

attaatgtta tatgaagcat gagcatcaga agagaccctt gcatatttgc atccacatat 1140

gaacgtgaaa gaatgatttt gcagcactag ctctccaatt ctctcattaa attctaacca 1200

ccaactaagc aatgtgtgct acagacttgc acataaattt caactctatc aaatacattt 1260

tgattctcaa tttttagaat ctcaccacat tatccaatag taataaactt caccccactt 1320

ctgctacaat tgtagcactg gttggctcat catgtatcta accacataga gaccacaacg 1380

acgaagtagc ataggaggcg tgagttgaga aatgctcacc tggaaggccg gtgtcgtggg 1440

cgacagtagc gggccaccga ccgtcgtgta gacgaggcca tagggaggtg accataatga 1500

atgcagatgg ggagccgaga atagggagtg caacgagtca cagcgtcatg gcgcctgacg 1560

catggcacca accacgattt gatgcccggc gactgactgg ctgtgatgaa tgctaggacg 1620

acagcggcga cgcaagctct ggtcaagtgc ggggctgaaa taggggcaga tcttggtggg 1680

ctgggtggtt gccttagggt gtgccacggc ccacctaaaa ccccctgtga acagggtccg 1740

tccatgtcac cgtaaatttg aacttgaagc atgcacatta ttttagggat tagaaagaaa 1800

gatagactag tcgtaggacc ccatctagtt catttcaacg tgtcttagtt tatctactaa 1860

attgccccga aaagaacatt aactcctatc aagttcatgg cgggtcctat cagaatctta 1920

tcaagttcaa ctctcgtcta gtttcttcca ccatagacac actaatgtcc 1970

<210> 490
<211> 1442
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31876_G1, chr1:195796502..195797943, Cluster 3

<400> 490
gtcaaactac tcaagtacat gttaaatttg tcgtgtacac accaactatc aggtgacaac 60

attagttgaa atttgtagat tttattatcc acgatatcta atatagtatg tatataagtt 120

gttggcgctc attctgctaa ttcacatgat caccttcttt ggacattggt tgtggggcta 180

tggcagaggc gagtcaagtg gtcagctaaa atcggcaact gcctagccag acgataggat 240

gaatcataaa ggggtgaggt tcagatatca ccgtctgcaa acgaattagg attgatgttt 300

catgtatcga ttggtcattc aatgaatatt ttatcttata tgctttatct cttttagact 360

ttggttgaca tactataaca gagttatgga tcattcatta tcaaccacta tattaaacct 420

ttggttaatt gtaatgtaca aaatttagag tatatatatt tagacacaca aaatttagac 480

tatatatata tatttttttt ttcttgtacg tgtgtcaaag ccttgggagg ggtcatggcc 540

cctgccggcc cccctggctc cgcccctgac tgtaagtctc tagcgtgagc aacttgtctc 600

ttttcaacat cttttaagtt gaatttgctt caaacttctc ttagacttct ataagattat 660

ctagtactag atttcataaa tgtacatcac cacttaccac taaacttagc tagatgaagc 720

tacccatcca tatccccatt tatagtatgt tcaaataaaa aaaacaaaag gtcgtatcgt 780

taatctatgt atccatcaaa tctattaaca cttagaacta gtcgattgtt aaccttattg 840

atcgttcttt gaaaactgag aattaaatac catcaacaac ggcacgaaaa ccatgtaaac 900

ccaatcaatc atcgttgttg tgttccaact taaattgttc cggtaaaaca aaaacatata 960

tcaattataa taatcaagtg ttattattaa tcgttgaaac tcaactagtg acctactaga 1020

tgcttttatt accaaccagc actaaatgtc atctgatacc tataaaattt agacccggga 1080

ctactcacgt tactcatggt tttagctcta gtcaagactg aatcaaaatc tgttgtgtgc 1140

tggcgtcatc actcgtcttt accaacaaat attctcagtc gcctcatgca gttcagcaaa 1200

tggattgatt cgctttactc gtctgaccac ctgtctgtcc catccggaat cgttgctcct 1260

gatgagctct caactgctga cttacctaga gaggctctcg gatggcatca tctgcacaga 1320

ataaccacag atagatgcct atgcttctct gtagcttcac actctttgtt atgcatatct 1380

tgatcttgat aagggagttg tttggtcgtc tctagaagga gaatcaggtc ccagcaacta 1440

ct 1442

<210> 491
<211> 2604
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320242_G1, chr9:134558944..134561547, Cluster 3

<400> 491
cgtcaagcct accgcaatat tggactggac tatacgcact agtacaaaga tgatttattt 60

cccctggtgc tggcgatttt tctactgcat ggtgttcgat cgtttagaga aatcactagt 120

gtaaatgtga cattcacgtt ggaggttacg ttgacttaag ttccgtagaa aaattacaaa 180

tcctgctgct tcaattcacg attagaactg ttatccgagc tacttttttt attggtgacg 240

aacttgaagg tctaaaattt ataaaatact tcgaaggagg cccttccaga aggttaatta 300

acccccccccc ccccccccgcc tctatttttt acatgaattt ttttcaattt gagacaaatt 360

tagatctagg attttcatgg ctgagttttg agagggagaa agaatggtag gttttggtct 420

tcgttccttc aatataaatg aggttgctgt aaggggttta tttaattcct catatctctt 480

tttgcacgag cccttcttaa tttccgtgaa aactggatct atagtttcgt ggttttgttt 540

tttttatgag agagaaagaa ttgtagtaat tttagtatac ggtttcatga ttatccccaa 600

aattttagat tagtggggtt gtcatgtgta ttcccgccat atatacatgt acctcatcaa 660

ccattaactt tacaattgac gcatacgttc aaatacataa taaataatgg ggaaaagtgt 720

tatctagatt tcaaatatga attagtttct tagattaggc tacttatttt attcatacga 780

gtaattattg ctatatgagc agtggcgaag ctacccagta cgtacgtagg gattattctg 840

gtgagcgagt acgcgtgacc ctgacacaca gctagtttta tcttgtctct gacgccaaag 900

gcccacagaa cgcatcgata tcggcctgaa aatgacaagg aatgtagcga aacaaagtaa 960

cagtgtcctc ctctccgatg tcgacatgca tggtttcgct cgtttttcga tcgggaaacg 1020

ataaaataca cgtacgcgca cgctgttctt tgtttaattt aactcagaca ggagacagca 1080

gccgtcgtca agtgctcgtc ccgggcatcc gtcccagaaa cacgtggtgg atgtgcacgg 1140

ggggtggggg gactatacac gttgacagga tgcaggagca tgcatggctt ccaggttctc 1200

cagcctgcta ataatataat aacgtgcgtg tctcgatcca ccgttcaact caatggcagt 1260

tagtgcgggc gtacgtgacc gggccggccg ctattagttt tacctgctga gaggccggcg 1320

gccgagctat ctatctatct atcaatcgac gacaatcgcc agcggcaggc agccacactc 1380

acgcacacca ttgcaaagtg acagcgtcgc gtgcgcgcag tgcaatgcag gcaactttct 1440

catgtgtaaa gggaatctgc tcctcttggt gtgagtgtgt gtgtgtgtgt ggtgtctgtc 1500

tgtctgtctg tctccggcga gaacagagcg ggcgggactc tcatcgtcca ggcatgcaca 1560

tactcgcggt ggcgggcttc aacacatgtc gctcggagta aaaaaaaaat gcgtgagact 1620

gccggactgc gatctcacca gcgtgctagc gcgcagttct gatccgacga acaatgaatt 1680

cgtctcttag cttgcttcct cccagtccca gtccccgcat caaaatccat gccagcagag 1740

caggtacgac cacgacaagg agccgtactc tttcagcgcg acgctggccg ggccgggccc 1800

caacaaaagc gcgatcccaa taccggaccg cggagcgcaa cgtacacgca tgtgccgacg 1860

ccgtgcaaag tcgcgcagcc catggacaga gcacagcact gccactgcct ccgttcgtgt 1920

cgctccgatc cgtccattat tggtggtcca ggcagggggc tgcagcagag tcccgccccc 1980

ccccccccgc cccgcgcgca cacgagactc cactcccctc cacagcggaa ggaaccggtc 2040

gatccgtcca acgacgggct cacccgccta cccggcggtc gggtcgacag gccacatgca 2100

tgcgcaggct gctgctgctg caaccgtggg ctcaagcgct gctggcctat atggcctctg 2160

cggctctgcc tccctcgctc ggctggggcg cggcagcatg cgggcatgca cggccaccgc 2220

cgggcgggta cgccacatgc atgcgcgcgc caggggcagg cagggaaggg gccggtctgc 2280

cggagccgga gccggcgtgc gcgcgcgccc gcccgtacgc catgtgccag gggcggtgga 2340

tcgatgcgcc cggtccacca ccctatccca tcactcaatg atgcagatcg cgcgccctag 2400

caagcagtag ctcgcgtgca tgttgcaccc ccatgacaag tgtgtcgtgt gatgtaccaa 2460

gccaagacat gggaaggggg gctaataagc catgcatctt ggtcggttcc aagtaacagc 2520

tcgatcgcga ccaccattcg ctttgccatt ttggtatgca tgcatgggcg catcgctctc 2580

cggatcggat acatgaggca cggg 2604

<210> 492
<211> 1667
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320522_G1, chr9:135811778..135813444, Cluster 3

<400> 492
gactgtgagt ggcacagcca gcgacgagac cagggataaa ttgacagacg ctaatgataa 60

attgctacat ggcgtgtgca cgtggttctc tacgctatat gcatatatag catctgtaag 120

ttaaaaagaa gatgaggcca gggacaaaga gaacggacga actgcgctgt aatattacct 180

ggctgcaaag ccaagttgct cgtgaaataa tgtcatcctt gcacacggaa gcgacttttt 240

attggacgtg tggtcttttg ttggaatgtt ttttttctat tgctctccct tcagatgtgc 300

caccagaaat agtttatgat tccatcaaaa accttcttta gcggcttgtg atatagccat 360

ataggtagct ctgcatcttt tccaaacgtc agctatggaa aatatggcac cagctctgta 420

atgtaatatt gcccagatct ccttttttctg aagatagcct ttacataagt gttacggtgt 480

ttcgggctcc aatccacaag gctcacggat gagatcgttt agccatcccc ttaatcaagt 540

cgttagcagt caaaaatctt ttggtgcagc aatgtccaag ccaatggaaa acctgcattt 600

ttggtctgtc tgcgccctcc aaattaaggt tagccaatgt ttgctgaagg tacccgtact 660

gtaaatcgta ttttgtacgc gcatcacttg tcatatattc tccatgcgct gtcccagcgc 720

ccgtcgtatc gtattgtgtc cccgacctcg tcgtgttcaa ccgaacctgt tgtacggttt 780

ctctacgagt tcttcaccgt tcacgatttg ttagtggcaa tacatgacct atctatctaa 840

ttgtgttcca tctagggctt ttgtttaccc cctaactttc tttattttgc atatttttca 900

atagtttggt agctttgcgt tttattagta ggagaggagt catattgttg gagctattcg 960

ttcttttgca tctgcagcca acgtactgaa ggtcggtcca gaaggaagtg tcggagtcat 1020

atgctctttg tgatgagcga gacgatgcaa caagcatcgt tcagatcaga tgctgttcac 1080

atgagctccg tcatagcgtt ggtcgacacg gcgctccctt cacatgcatg atcggctcat 1140

caaaagcact tcacggctgc ccgtcccccc ggcctccaat ctttttttg tgcccatgct 1200

ttccatcagt gcacgcacgc tgtatagatt cgtcccaaat ttaatactgc tggttaaata 1260

ctactctctc ttttaaaaaa aaatacaact agcacaatgt ccgtgtcttg cgacgacata 1320

taatttaata aaatattatc tcacaacgat tgtatgaaaa cgagccacgt atatattata 1380

atcgacctta atatctcaca aattgtttcc caacattcaa tacaaattct ggtttgtctc 1440

cttctcaccc tcggttgttc agccacgtat caccaacggc ggcggctcct cctcctctca 1500

ctcagctatt cttgccccgt tgtttgcaga ggcgtatagc ggcggagagt cgcatcgcat 1560

ggtcgtggag agtcactaca tcggtttaag gcgcttgccg acggggtgcg gaagaatctg 1620

tacaagggag gtaaagacag agaaagagat gagaagttat taggggt 1667

<210> 493
<211> 1784
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320772_G1, chr9:137035537..137037320, Cluster 3

<400> 493
gtccgttggc aagtttttga tctagcaaaa tgcaccagca aaatatgtta tgcgtagcaa 60

tgtctggtgt gctgtgagcc ggtgagtaca caaaacgatg aagagccagc ttgtaacacg 120

cagcaagcta gtagggccgc ggtttaattg ctaaccggcc agtccgtcgt ctgtttatct 180

ctacatactc ttctatatat gttcatcagc aaccaatggg cgaacaaatt aaaagtgccg 240

cgcggttggt cgagtacgca aaatgcattt gctagagcag gcagccagcc gatcacgcgg 300

gagacggaga atgtgcttgg tttgaggaat gaagggattc acctttttat ttctcatttg 360

ttttatttgg tttgcaaaat aaaataagtt gatttatcat tatcttattt cttataagct 420

aataattatt atatacatga ggagtgggtt gattctatta aaattcataa aattaactta 480

tgatgtatca tctgatgaag catatagtga ctacagaaac aaacacacca gaaataaaag 540

ttttttgttt gcattgcata tatattgtga atgagatcga tcagcgccag gcgtatgtaa 600

cataacagtg gctagctaag taatagcaga gatcgaccaa cgaccattgt atagtcacat 660

cacaaggtgc gtagggtcgt catttctgtg ctcgtgggaa cgaagacggg cgtggaagga 720

agaagacgca ggagccctcg gttgagatga gaagcgaaac ccagggtgcg cggcgcgaaa 780

gtgcctcccc acttgcggcg cgtcgcgacg tctcgagctg taccgctacc gcccccagag 840

ccaaccaggc caacttgcgc tggcagagca gaggcccctg tcgttgcctc tgcatctgcc 900

tgccctgcct gccggttcca cccacctatc gcgtcgcgcc cgtcctctcc ctcttccagc 960

ttccaccgcc cgttttccaa gtcgctcctt gacctcgctt ttttaactat agcagtagta 1020

cacaatttaa ggagtaactt attattatta cttaccggta ccaatgtcat cttcgtcata 1080

attatactcc tttcgtttca atttataatt cgtttaactt atatatctta agtttgatcg 1140

gctcgtatta ttaaaaaata taattattat taattttgtt gtgaccatat aatatacttt 1200

aaacgtggct gctttgaaat tttcattttc cgccaaaaaa aggacgaact ggtaaaacgt 1260

actaaaaagt caaaagaatt ctaatttagc acggaagaat tctaattccg caattctaat 1320

aataataata atataattat tattaaagta gttttcgctg acactgcgac atatagacag 1380

ataataatta acaggtcgcg acatgcagct tgtgcgtacg ttgcggcgat ggagaccggc 1440

ggcaacttgc cgttggtaaa agacacaaga gggaggagct accacgggcc agttcagcac 1500

acgtacgtga cgtgagtaca aaatactgcg caagtggggt ggggcgatca acttgcagat 1560

cgcggtgatt agcagcagca atctggctta tggaccggtc gatctttctt tcctccttgc 1620

gccctgtcag tgcttccact ttcgtcgtaa ccggcggccc cggccccaaa accactttgc 1680

cttctcgtta gctagctaag ctacctatag gctgcacata cataccggat ccgacatgat 1740

gctgccgtgc caagttcggt ctctcactct ctctctagtc ttta 1784

<210> 494
<211> 1408
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321523_G1, chr9:140793464..140794871, Cluster 3

<400> 494
tagatgtttg ggttgccacg ctcccaactt agtgatgcct ttttatacac aggcacacat 60

ctcaatcaga atgtgtgatg ctctgttctg ttatgatact actatatcat gagtagtgga 120

tgtccaaaaa aaaattatga aaaccaaatt atgcttccta acaaactctg gccagaaagt 180

atccttgacg tgcctcttgc cccttgtatt tcaagcattc cgcttcctga aactcaggcc 240

taacataaga ttttcatcta tagggcatga tccattccat tcaaaatagt gtcaatgctg 300

aagttaaaca cagccaaatc ctaaactatt ggcctctcgt ctttaacatt tttctctgtg 360

agatggtaat ggatattatt cgtacgaaca ttcactttga cagaactgca agtagacata 420

acgtcaatag ccaaccaatg atcaggtggg ttctctgaaa ccttttttagt cattatgtgc 480

tgcttcacag ttcaccacaa ctaaagagga tattgtacag aaagcaaaag ggaaggaaag 540

taacagcagg acaaccaata aagcatttta ccaagacaag tgtctttatt tatgatagct 600

tctatgtatg tcctccagat tggttgatgc cagttttcaa ctatgtctcg ctcgccctct 660

cacatacaat ttgttaactg atacaaaagt agccatcaac taattcagaa gtaggacact 720

gctacaaact aaacctggta ttctcaaatt aaatgatata atagtgcttt agtaattttg 780

tgaggatcta aatttcaaaa atatgttgta accttgacga agcctcccga cttaaccagc 840

aacagctcga ccatgtgtgt gcaagtgcaa ttgctatgaa taaaaaaagc tttcgtagcc 900

gcttccggga caaagttgat caacgtctcg ccaaacatca ccatctggtg tgtgcaagtg 960

aaattgttaa gaataataaa aaagctttca cagtgcttgg ggaatgaaca tgccaaaagg 1020

ttgttcctga aattctgagt gcacggtaaa atctaattac acccaaaatt aaatctatgc 1080

aaactatttt caaagtgtaa cattattaag tgtatattcc atggtgcaag ctggaacacg 1140

atcactctaa gaatatgtca gttacataaa cgacaaacaa gtgtactttt agaccaatca 1200

gcacgtctat atgacaacac aataccttcg agcagtcagt gatggacttc ttgtactcac 1260

taacctcctt atgaggaagc acttgaaaac aacacttcga taatgacaac acctcgaaaa 1320

ttatttaata aagcaataat ctcgtctaga atagaaagca ctgaataaga agagaaccac 1380

tctgacataa tcaagccaca ttttcacg 1408

<210> 495
<211> 2327
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322780_G1, chr9:147418573..147420899, Cluster 3

<400> 495
gttgctaaac atttttgtga tgctgaagga caagatgtgc ttctgtttat tgacaacatt 60

tttcgtttga ctcaggtaat ttctgctagg cattactttt gcatgaaaat gatatgcatc 120

ttttggagcg ataatctttg ccggatgtga tgaaccctcc tatcgtgtag atttgtggct 180

tctttgttga tgcttgtcat ttagcttaca tttgctcttc ttttcacaat tcactgttcc 240

tctggcagcc aatctgtttg ttgtaactga cgtacttata ttgtcaaaag ggtatagttt 300

gattaactat agctcatgga agctggaggg gggactcatt taaatgatcc gaaatttact 360

gtagtttcta tattcatagc aagtaaccat gagatcattt gtatgtggtt taggtcaagt 420

ctgttatttt taaaactagg agctttaggt acaattgtga aacttagttg taagggagaa 480

cttctgttgc tgccagagtt tgatgttttt ggttttggga ttcagaaaat aggctgatct 540

atcagtgcag atcatgacta tgagacttcg tcattgctct ctttagatta tgtagctcca 600

aacctccaac aaacaactgt taccagatga tggcaacaaa agatgatgct cagaggatga 660

aacaagcagc aaagtagtag gaactttagt atgtatttgt gatttcgcaa aatggtcttt 720

atggagtagt tattggtggt actatgatta tttggtacat ttcttggttt gtagagggat 780

actgtaattt ctccttctcc ctgctgttat tgatagcaat caaaaaacat tagaaagaag 840

gtgcatatgg tactacttta gaaattacca ttgttttgtt ggtgtggttg tcgaccatca 900

atttatatca gttggtgctt gaaccagttt tagagtttag ttacctatac tgtactttgc 960

tttatccata acaagtacac accctattga agaaaaccgg acatctcaat caagtcgggt 1020

caccttaaag ctttactatt tccccttttc ttacatttcc taagcactaa ggtactctta 1080

gagttttact ttcatctcat acatacaagt cccaatgcac tcttaatgtt tcatgatcag 1140

ttttttttata tgtatagaac aacagacaag cacaaacaga ccaaaagttg catctatttt 1200

ttatatgtat agagatgcat ccggcttcca acaattgctg ccctgcaatt cctgacagat 1260

attcgaatct tttgctcatc gaattcattg actgtctggc cggttagtgg tagctaaata 1320

gatagatgac tactcatgta tatcattatt tccctgtcct tataattagc attgtttttt 1380

tcacagtccc ttgcacaact aaggtggagc ctgacaaagc aagagtggtt gcttgcaacc 1440

ggcctgacag gtattttgtt attttgctca tcgaattcat tgcctgtcta atttctgctt 1500

acctgattcc tacacagtcg aattcattag ctgtctaatt tttacacagt ccactttatg 1560

ttggtaattg agttgattat acaagctaaa cttatttaaa ggtgcataaa ctgggtgcat 1620

tttgagtttt tggccaccac agagccaacc tggccaaaat ggaacaggag ttgcaaaatg 1680

atcaccatag aacaattcag gaaacaagaa tgttgtgggt catcatacct tcttagtatc 1740

cgccacctcc tgcacaggct ggttcactcc acttttgtca tctttgtttc cttgaactac 1800

cacatgatta tccatcctat acatgtaaga tcttggctgc cctggtctgc tagccccatc 1860

agtttgtgaa tgcaaatgtg gtggcaaggg tggccgcaca ccaccagcag caccccaagt 1920

gctccagggc ctctttgtga taatcctact gacccaaaat aaattagctt gtgagcaaca 1980

gactgattct gttgccatga tggcccattg tatgctgttg aaggcaagcc tgtagctcgt 2040

aacagtgtct catcatgcct aagagagtcc ggaagtgctg ggggcagagt agttccagct 2100

tggtgcctct ccattaaata aagatcaaca caaaactctc tcaaagaaag catgccatca 2160

ttgtcttggt cagacaaatc ccatacctgc ttcaggacct ctaaaatggt taaaagagcg 2220

acacgtgcat taatggtatt tcatactatg agatatgttt agtgatcatc caaaacaaca 2280

ttatttattg tgtattttcc agcaggcaat ttgcatctcc caacaac 2327

<210> 496
<211> 1496
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324117_G1, chr9:153622994..153624489, Cluster 3

<400> 496
cccggaatca aatgaaacgg tcggatagcc acaggattta ctggttaaaa tttccatcgt 60

ccctaactgc tattgtcggt cactttcttc aggctaggcc aggaaattga cagtctcgac 120

ggccggcctt tatttttctc ctgcataaaa atatccacag tctaccgtat gcaaggacga 180

tatagtactt actagtacta cgggcttttg ttttcaaagc tctacatcat cactacttga 240

ccctcttgca agtctaggtg tatactgcac ctgtacaacc aatccaagtg acccggaatc 300

aagtcaaacg gtaatgtcca gaaaacttgc cgggaaagat tagaaatctt acaatgtccc 360

acgtgctacc tttcaaagat cgttgaactc tggctatatt gtagatcgct gtgggttttc 420

tttccataaa gtaattatat tcagacactc gctcccaccc cagtataata cagttcatta 480

tatagtttcc aaaaatatat tgaaatatga ggtattcatt ctacgtgatg gacatgctca 540

cacttgataa attttgtgaa agaacatgat ttgagcataa acttttaaa ttaggttcaa 600

tctacgggta tatatgtcat ttgaccatgc gttgagaata accttaggcc atcttcaaca 660

gatcccgtat tctatttcat atcacattct ttattttaaa ctttactatg taaacagtgt 720

catctactaa agacgacctt gtagcacaca acctcctaga gtcctagtaa ccgatgccta 780

tgaccatatt ttaatatatt ttaatctatt ggcatgtatg atggagtgat cagttgatcg 840

agtactatca gcagcactgt cctgactact ccctcggccc ataaaaaatg tacacctacc 900

atgtcagcat cgattaattt atcgcaaatt taattaaatt tataataaaa agaatcggta 960

tttatgcttt tgatataaat ttatttttaa aatatatttt atacagctat tccaataata 1020

ttcatgcatg ttatattacg attgctcata catatttata tatataaata gttaaagtgc 1080

tccttaaaaa gcaagaattg cgtttttttt atggatggag agtaataggg agccagcaca 1140

tactgcacag gtcactggtg ctagcaattt tttaaacacc gtgcgagtgg aggttactgg 1200

ttgtgatctc tcatctgatg gatggatgat tctctgataa tccctctcgg tgttggtggc 1260

gcttgccttt catttcaaaa tgggccgcga ggacgatgca accggtggcg gcatattctg 1320

ccggggcgcc gtcgatttgg gtgcggacca tatccggtgc gtggtcacat tgttgccgaa 1380

tggtgatgca cgagcacgac ggcgacgagc ttgtttggaa tatatggccg gtaggtgctg 1440

ccaaacctaa ggagaaattt tgtactcccc tccgtaccaa attagaattt gtttta 1496

<210> 497
<211> 1534
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_324981_G1, chr10:2424147..2425680, Cluster 3

<400> 497
cttactttcc ttcacctcac actatatatc ttaatgtgtt tgacctcgta aaatgacgtc 60

cgtatagcga aaacatcata ttgtgtattc gagcacatca cttatataga tcaacgaacg 120

gaacagtatg ctcatagaaa cgagtccagg tgcaggagga ggaagtaaga gaccctgcat 180

gtctgatcat gaacatacaa cttatactag ttagaaatct gttctatagc tatgcaacat 240

tctcccacaa gaccaatagg caacaattaa tttgattcaa tcctttggtg gttgcgagag 300

tgccgggggc gtcgtcgaca gtctgcttcg acttcggctc gcggttgtgt ggtgcgtgcg 360

gaaagttttt ctatccggtt ccatatgccc ggatggaggg ggtggcgacc gatgcagttt 420

tgcggttgct gcggtagccg gcgtgtcgat gccccactcg aagggtttgg gtcagggcag 480

cggcgacagc gaaggcaact tgatctgtat gttttcattt agatcgcctg gggttgccat 540

agtaagtcgg agctgctggt tgcattgcaa tcatgcttga caacgatgac tcatggcagt 600

ttgtgtgctc ttccacgtca cgttggtggg ttagctgtcc tttgtttgct ccattaaggg 660

ctaccagttt gtatttgtta ggttttggat ccggtttttt cttaaaacag gtcaattcct 720

tttttttttct taattgagag gcatagctta tctacatttt catcttaaaa tactgaaaat 780

tggccatagg caattaatgc gtgtgatagt atattgtaat agactagcga tttatttgtt 840

taacatcaca taaaaccatt gctaactata agaatattag aaaaagtaat ggagaataaa 900

ggttggatga ctcactgaaa aattacgaga gggcaaagac ttccacgttc atcattcttt 960

aatcctttta tttacaagcc cttttgatga ttaaaacgcc ttaccactca gaaacggaaa 1020

atgctattag tgattttaat cattcattta ccaaggtagt aagagccagc cacttttgtc 1080

ttccatgcca taccagacgc tcacacacct tagggatttg gacaaataac atataatatc 1140

aggtaatttc ggtactgata catattaccc gatttacaca atataatttt ggtttttaa 1200

acctaggatc cgaactattg tttgggtagg acatattacc cgatttatcc gatataattt 1260

tggtttttta gacctaggat tcgaactatt gttgggtaat tcaggttcag gtagatcaaa 1320

tacaagttca gatagttcgg attcaagtaa tgagtatcgg atttttttatc caccctagg 1380

cactattgta tcaacacaag aaggcaacat gcggagccgg agggtttgaa aggatgctcg 1440

ataaatagta caaaacattg ttttacagag tcttatacag agcagagctg atagctatgt 1500

agagatagtg aagtgaaact tcgaggccag agcc 1534

<210> 498
<211> 1887
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326617_G1, chr10:11188716..11190602, Cluster 3

<400> 498
atggggaatt ccttttttac gtagggtaca taaatggatg gtgatatgta cgagcgttga 60

gaattcgaag tatgttaatt agaaaagtgg tgcacatatg aaacaaacac ctccattaaa 120

ctggaaaatc taaaagatat attgatattt ggcctcaaat tgcatatata tacattcgaa 180

actcaagagt ttgactcagg caaagagaat cactaattat gtttaacata ttaatatatt 240

tcctgtgcgc ggttttgggt gatgaacatg atctacagta ttttttaacg gtgcgtgatc 300

aaaaatcgac atcaacaaga caccacgtca tcgctgacag ctgatcggcc gccgtcgcta 360

cagccgtgac acgcatgcac gcgcgcgtac ggcacgcgag gtttccagcc ccaccgccga 420

gcggacgagc cgttgacctc cgacgacgac ggacgacttg cattgcatgc attgcatgca 480

tgctgatatc aaagtggcgc ccgttgacga cgacgacgat aatggcggag aaagggagta 540

ctggagaggc agggggtcaa taagcagctg gccaccgttc atgcaggacc cttttcgcta 600

gcccagtgat cgatcagtca ctcgagcgat atgatccact aactagagtt ttggtgcggc 660

ggcacatgca tgcatgcaat gcaacaacag tcagctagct agctagctga ctactcgtag 720

acggcaacga tctatcgaga gggcgagccg cgagcgttaa cctagcaagc tagtatagct 780

aattaaccta cgggaaatta aagctagctg tcgtcgttgg agtgatggcc ggccgagttc 840

ttccgctctt ccgcactgtc aaagggactg actgatcact gtcaaccggt cggcatcatc 900

tctcagctcc tttcccctgc ttgtacctct tctcttccgt tcgtgttcca ctcgtgtcca 960

tttcgttaga cgatgatata gttttggtgc atgctgcacg cgccgtgggg tacatggatg 1020

ccgactaccc caatatcatg acactcgata gatcgcgcgc gtgtgcagca cggggatctc 1080

agtgtgggtt aactagctgg gttctcgggt gggtttggtt cagctaatgt tttctagctt 1140

tctaaattat attaagttta gctagtgttt tttagacttt gccgagtgtc aaagccgaag 1200

cagcacaggt acgtagtgaa gctagggtcc acgacaggga cagcacacat gcatggccgc 1260

tggaagatcg agacgcgcgg ccacgccggt catcgctaat aagtccgtcc gcggattcca 1320

gtgccctccc ggctcccgcg cgccgctcgt tcgcccattg aaaaattccg ctcccagcta 1380

gctagggcct tctttaattt agccggagac cgaatgaaga agaatactcc tattttcttt 1440

cttttataaa tttttttaa aaaaaggtgg tcgacgtacg tacgaaagca acacaactgg 1500

tccaggtcga tggaccggtc ctgccgataa tctcgcgcta cagccagtgg cagtgcgatg 1560

cgatgcgatg cgatgcgagt gagtgcctgc gcgtctccgt ctggccatcc gtttcctctt 1620

tcgagcttat catgatctat atccgtctgt ctacctaaga ttccttctcc actttccctc 1680

cctcatgcat gctccggttc tctctctctc tctccagacc tcctgctcct gcctgccttg 1740

ctagctacta gccacacttt cttcttgccg accgatcgat cgagttgacg tcagaggccg 1800

gcaacaaggg atccgttcca tgcatgtcca acaagcacca aggttctcat gggtgctagc 1860

taggagtcta ggactagagt gccgtgt 1887

<210> 499
<211> 1989

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_327208_G1, chr10:14462164..14464152, Cluster 3

<400> 499
caacgacata gtcattagcc acacaagttc attgcaagtt tgcaacacgg ttaagcggta 60

tattctcacg ttatcattgg catattcgcc gagtctttaa gccagtggtt cggactgcta 120

tagttaccac gtgctaccgt tatctcttgt tttattttca ctctgacgac tcacccacaa 180

cgaagcactc aaaataacca acaaaaaaaa caagttccca tgaaaaaact ctccgaaaat 240

gcaaagctag agttgttcgc ttcttcgaca aaaaaaaatg tgcaagatgt ccaaaccaaa 300

cacaccacag gttcgcatct agcgattgga tgcttttgga taagtttctt gctagagcgt 360

acgtacgaga gcccaataaa acacccatag accgcgagat ggacacacta gttaaaaaac 420

attttacacg tggaaactgt actagctggc cacgacgacg tgtgattaca tcagcctctt 480

attacacaca cgcttgcctt tttccagcgc cttgttttta catcgattct cgacggccgc 540

gccgtcccga tatatataca tagtttatgt atgtggagct ctgtgtttct aataactaga 600

taaagctctg gtctaataat atattcgaca caatcatttc tagccgaacc aaatttttat 660

ttggaggtcc attattttag cacaaaccac cagcgtgttt ctttacccta aacaccaccc 720

ccatttcttt gtctccaatt ttcctccacg gcaccgcgct gccgccattt ccctccattc 780

actgataggc accatgcctc cgcccatggc tagccgcgtc ttccgtcgcg tcgctacctt 840

cggtctcgtc gccgccagtg tgaggttcct gcatcggtgt ccaagttgat gtcgccgctc 900

tcggttgaag ttatcgtagg tggcttgcac cagctcgtcg taggagatga tggacctgcg 960

gacgtccatg tccagcgggt ccaggaggtc gttccacgag ttgttgccct gcagctcacg 1020

ccacctggtt gtcgttgccg acgacgacgg gggcccgccg ccgcactgct cagcgatgaa 1080

accaggaaat gcgtgaagta acaacatctt ggcatgtgat tgatgaggct tattgtatgg 1140

taatgctcct agattgtatg ctgtaaatta gatattacct tgtgtcctcc acatcttcac 1200

acatatatat ggtgtttatg gggggggatg actagggtgt caagtagaaa aacataatgg 1260

ttcaggttct actgcacctc tttcaggcta agcgtctaaa caacaatatg taaattatcc 1320

ttttccaata aaatacatgc ttaaaccgtg gctgctaggt gaatggttct actttagtca 1380

tcaaatgcag gttagcttat ctttttctaa tgcattatta tttgtggttt tccatcaaat 1440

gtacgttagc ttatctttta gcaaatttgt agatgatgtc aattaacttt ttagtggaat 1500

tttatctgct cattcttata ttcaggaatt ccactactat atgtgccact tgaagttgtt 1560

atgtcaaaat attatggtga aagcgagcgt ctattgggat ctgtttttta tcttgcaaat 1620

ggtcttcctg aaggaggtaa tatattctta gatgaggtat atatcgtaat ccttatagca 1680

tacacactca agccattgca aaatgtattg aaaataatta ttgtgtgtat gtgcgtgttg 1740

agacaccaaa attcatgaag ctacacgaac gatcttgtcc agttgagtac atactgtcaa 1800

aatccatcag aaatatctaa ctgatagttg ttatcggtag ctctcctact tgatttgtta 1860

aatatctaac taattgttga tatatgcagg gaggaaaagc agggtagaca gaatctctgt 1920

tggtgtctcc tgttttattg tgttcatgat gatcctttca gtaatatgcc tttttaggta 1980

gtaaaggaa 1989

<210> 500
<211> 2065
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337020_G1, chr10:77294005..77296069, Cluster 3

<400> 500
cactgatgat atatatcagc tggcatgcag cgtacacaca cataaagata ctaatcctaa 60

gatcaagtcc agagtgtttt ccagtacgac atgatatgat gcaatacata gatacggtac 120

aagaggttaa ctgatctgat cggatcggac atttatatcc cagctgtggc agcatgcaat 180

gggcattctt cagtttgttc tgaacggccg gcagtaatat aatggtgatc ttggagcctc 240

atgacaaaca agaggagaca gcagcggaaa gctagatgcg ttttgagaca gtgcatgatg 300

cttcgtcacg tacagtattt gtaaatgcca actgctcgtg tccatcaaat tgatgaatgg 360

gctacggcct acgagtacgt cgtgtcgtat acagggagcg ttgaatctgt gttgacccca 420

gcacggtcct cctccatcag tccatctcct tttgggtgcc ggcttcagct gtagccgtac 480

gtcgttgctg tctgtcatac tcaacaatac acagagcgag tgagagagag agacgaccgc 540

tgcatctgca tgagagagag agagagagag agagagagag taaatgatca cagcaatcaa 600

gaggcgctgc ctgccgcaga ccaagggaga gggaggaggg actgcacgta ctggagagat 660

gaagctgagc tctgcattgc atggggaagg agcagcgaga ttgctgctgc catggcactg 720

cagacgacca ctgcactcga cggcaccaag agggagacga cgacgagaga gaaaaacaag 780

ggaggaaagc gaggcgagga tgatgggtca cctcagcgga gagccgccgt gaacagtgca 840

gcctctgacc gtctttcccc cctcctcgcg cggccgctgc tcccagcaga gagtcccaac 900

tgccccccctg cacggctaca tgaatgaggc cctcccactc ccatgcaacg tacagtactg 960

gtactccatt ccatgggaaa gagccgcagc gctaagccac gctgtagccg tgtaggacac 1020

tgggagtagg acaaggggg gagcatgtac atagctagga ctaggcacta ctctgtacta 1080

ccatcatgag gtaatcattc tcaaattatt gacacaacgg ttcgacgact cacacattat 1140

gacattatat accaagctaa tgtgatggca aaaacttgga ttatatttga ttgcctacaa 1200

ttctactcga acttattttc aaggaatcgg ctcgttttca aggaaaaaaa gcatagtagg 1260

tagtaggaaa aatcaatgtg ttgttccaaa gggagcttgc taatttagtt ttttttttt 1320

gaactgaatc atactgctga taatacatca gagaggataa acctgatgga gactgccagt 1380

gtgtgccttc tagctagatc gaagaaaaat tagggttggc ttattgaact ttgataaact 1440

aaattatagg gccgaacaaa catctgaagt ggcatatata tatgttgcag cacaaatgta 1500

aaaaagagga aaggctgaac ggggaaggtg gcgcgatggg ccaataataa taataattga 1560

ttcaaaagca aaaggatcgg agcgccacca actacccgat cttgacaaaa tccagcacaa 1620

agaaacggcc caatagcagt gccgaagcgc ttcaacattg gagcacgaat taggaatgat 1680

tctattatct gtataaagat ctgaatgaaa acatgcacac acacagatgc atggaacgcc 1740

agctctctct tgcataaaaa gcagcacgaa ttaggaatgg ttggcacgtt ccgaagcaca 1800

actctcttgc tgggccggaa ttgcacaggc acacgcatgc aacggggaat ccgatccttc 1860

gggcctgctg cagccgagct cccgagtcac acaactccac gttggcaagg aaacggacat 1920

cgtggcccag ccttcacgtt aatgtttcct gttatggcct gctgcctcca gaaacataaa 1980

gcccgccagg ccgccatggt gcagccgttt gggcccaggc ccaggctcag gaagaggaag 2040

taggcacagc gacgggcctg cgccg 2065

<210> 501
<211> 1766
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337961_G1, chr10:82174829..82176594, Cluster 3

<400> 501
ggtgttcgtt taggtctgag aagaaatgga ctcattttga ataggcccgg tttggacttt 60

ttttattcca ccactgttcg acattaatct tggtctagtg ccctccatat ccaatctgta 120

atgctggcgg cggaggaggc gaagagacga cactgccagg tgacagcgtg gcggcgcgaa 180

gcagcgacga cggccaccct ctccgctgcc ttctcactag taagctctcg ttaatgcttt 240

caaacatcgc ggtggtccat ccggcggcgc gcacgtagct gctgctcgcg cgggtgcaga 300

agccggcgtt gaggcagctc tcgccgccga gcacgcgagc gcgtgttgac gacgtcgtcc 360

tcggagacga atcgctcgcg ggggatagca gggacgcgtc cgccagcgcg tccgtgaact 420

ggccgccata ctccaggagg agcacacgcg agtgctccga ttagataagg atgccatggc 480

tcgattagat aaggatgcac gcgcgagcgc tcgtcacagc ccatcatcta atctgtgttg 540

gttaatgcgt ttgtcctcta ggttggatcc aatctcaggc tgccgaacag agaaactggc 600

caggtttcag ctagaataat tctctgatag aaactgacat ggatcaagtg aaaagcccgg 660

atcaactgaa acctggcctg ttattgttcc tggcctgaaa ctgaaaccgg gctgccgaac 720

agggccgaat tttgggaatc tgctcttgag ggtttctgat ttaggtgttt tataatcgtt 780

tgataatttt ttttataaaa taaagtcact gctgaaagag tccaaattag ttttgtacat 840

ccttcggctg agcacgtgga gagtttttac aaaaatgcag ctgagcgcgt gaggagaaga 900

gtgtgggaag tgaaacatca gccggttttg tgcatatgtg cacaaagttg ggtacaataa 960

tggagcatga tgttcagtgt gtagcacata gagattgtac agcgttcatg agaaactcca 1020

acatagttgg tttgggaact cggctaacta tttcatgata tatacgtaca tggcaagaag 1080

ctctgcttca acagtttgct cccgatgcac ttcttttata ataatcagca tacattattt 1140

ggttcgttca ggtagatgag ttgtctctgc tagctgcgga cacgttacat gtagcattaa 1200

tatgcatggg ttgtctcctg acttcatgta ttgtcatata tatatatata tgtatactta 1260

gatgaatacg atgctctctc taaataaact ggcatgagca actggtggtg gtacacagca 1320

atatatatgt catccgtgaa ttgtattgtt ttctcctgca gcaaacagta gaccaaaccg 1380

tggatcagtg tagtagtagc agtagtagta tatcacaatg caagagtggt tgatgcacgc 1440

gtgtgcttgg agcgagaggc gtcgggaact ccaacttctc caaaactgtt ggcctatctg 1500

cgttgtggca tcaggacatg tcaagacgct ctcaagtacg cgcagcagtg aatccatagc 1560

caatggtgct tgcttgatta gtggagcgcg gcctggatgt agccgctcgg cctactcctc 1620

ctgcagaacc tctgatccag caacggcaaa gcttgtccta tggagcctcg atagagcatg 1680

ggtgtgtcat attcttttcc tcccctatgt caagtttatt ccatcaaaga gtatttgaaa 1740

cctggagctc agttcgactt tttgaa 1766

<210> 502
<211> 1513
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34077_G1, chr1:207722002..207723514, Cluster 3

<400> 502
ggaatttaga gctaaaattt atgctcaaaa tacggacgta tagcatgctg gaaatagtag 60

cacgatatgg atctgatgct cactctctcg gtccgacgct cgcataactg aaacctaaca 120

gggtcacaat atggtccgac acaaatggtc tacctcgagc gcgaaggaac catgtggcct 180

gatccgcgca caagtggagg cttagaactt cgagttctaa ctctgaaaat gcaagggttt 240

gcaaaagact cagtgccacg aaaagtcaga tcagtgccac gaaaagtcgg ataagaaaag 300

actaggctcc acctgtcctc acgcactcta acctaaaaac cgaagggtgc tatagggga 360

gacggcctgg gtcgagccga tgccacggga tcgccatgag gggacagagc gcgctccaga 420

ggtccagaat ggcagcgacc atggaggcca aggtcacgac gaggaggagg aggagaggga 480

agggacgtac atgttttttt ctcctcttgt gagccatctt ttcacagact actaagaatg 540

agatagtgat ggatcaactc attctatttc ataaatcaaa caaaaaatga agagtgtcaa 600

gcatgcatat ctgtggagta cttttctgtt gtaagcctgc tcgttaaatt tttatacata 660

ccttaattac atacgacgca caagtctttt gcgtattctg attaaaaaac gttcgacaac 720

ttgctggcca cgctgccaaa tctaggccaa ccatcaatac atttatttcc cagggtgacg 780

atgcccaact aactgcaaga tcagaaaggt gccggccggc gaccaggcat gccacccggc 840

cattgtccgg cgagtggagg cgattgatgt gagcgagcca agtggcagcg cagcactggt 900

gaaatcggga taatggcgca atgcaaaaat ctacatcgat catcggccta gttaatttgg 960

ttgagttgtt gccgctattc aatgcaacga tcgatccatt tggcagatgc ttgagctcac 1020

tactcactga tagaggagaa cttttcctgc cgtcttgttc ttccttccta tcgagttcgg 1080

tggatgtctc cgctctcaac aggttacatc ctttagacaa ccttcgaata tgatgactac 1140

ctcgacgagt caagtaaaga cgttgcttaa tcctaactat tctcgtttc tcaaggattt 1200

ctgaaagaag atgacgatgt gacttcaaag agatatataa taatctagat tagcatgaat 1260

atatatatgt tactattctc gttttctcaa gcatttctga attcttttc tttctttttg 1320

tttacagcaa caatattatt gttctttcta gcatgcatgc gaaccaattc aagtagtgcg 1380

aatatatagg accacaggac ccaaaaggcc acaggaacac tttcactact agcagttgga 1440

caacctcaca tcaatcagtt tgaacacttt cattcactac tatgctccct aaggcgaaat 1500

agtcacgtac gat 1513

<210> 503
<211> 1874
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344833_G1, chr10:119883096..119884969, Cluster 3

<400> 503
tcaaatgata tgtttatggt aatttgtgat gagtactttt attgaacttt acgtatgtta 60

ctcacattgt cagccacatc ttagacaaaa tcatacatca cgatgaaata atgcttgcca 120

acaacattgt gctcgactag tgatgatgag actcatcctc catggttcac attcacagtt 180

tatgacgatg ttcctctaga cttaccactc acatctcctt tgccatgaaa ctttcaaacc 240

atgtatccat ggacaaaacc ccactagatc aaatgagatt gcacatcact gccttctagc 300

atccaaacac gcttgttcct atagtgagaa cacgaacata tgattccctg ataattcaca 360

tctagagcat gcttttgagc agtgtaaaaa acttttatc gcttgttatg taaagggttg 420

tgataatctt gatatgtggt acatccattc taatatgtcc atgtcaatta gccttgtatg 480

tagcaaaata tatcaatatg acataacaaa atgagaggtg catcacttga atgcataact 540

tgttacaaat aatataaata tagacaatat ataattaaca taaacaaaaa acaccactag 600

atagcagtat gtagagcttt actatgtcat acataaacat aagtatagta gtattacaaa 660

aaaaccattc aaatgaagaa caagataagt tttctctctc ttctaccata gaactagttc 720

cacattaccg aaaacttgaa aaaagaaagc aaaataagga tgtgagagcg cataacaacc 780

tcctatgatg tcctccttca aggaatccaa gagagacatt ccacccctaa aacatggtga 840

ttttggagt tagcttcaac ctcgtcaaac tgaataggaa agctcatgga acaataagat 900

agggtgggtg aggggtctga ttttataacc atatattaga gtcgggcatc ctaaggctga 960

ccacctatgt taatgaagcc aataagggag gcgatctttg tagtagcacc atctctgtta 1020

atagttatta acaaagacaa tcaacgtaca tcgctatctt gattaactaa atgatggagg 1080

cgatagtcgt aaggcgtcca actctattaa tgtactatta aaggaggcga ttgtcttatg 1140

ttgatcgcct ctgttaacct ttaatcgatg tgaccactta gctatgaggt ctatcaatga 1200

ttaaatgggg ggtcaaataa taaaacaaat ttatagcatt aaatccacta tttgttaaaa 1260

agatcaaaga ataaaaggta ttcaacgaat gacaaaaaag atttgaatat aatgaaataa 1320

atattaaagt gcaaggcata ttggtagatc ctgtcgtgaa gcccaaaaag ttaatacaat 1380

tatgaacaat aattttctaa tgaggtactg aaggccgtta gggttacaca acaccgataa 1440

tataggctag ttttacctct cacaagacac ttatcttaat catagatgat gcaacgctag 1500

ttcgaccgat caaccatctg atagatctaa aatgacattt gatcatgaac gatatctttt 1560

aaagtagtaa ctcaaaatta tggtcaactt cagcaatgct ttctactttc taaccggtcg 1620

gttagttcct aatggccatc caaaatagtg cgtgcctatg tagtcgaagc gaaggtagtg 1680

caactgcaaa taggtatgaa gcgaaagtga atgtgaacgc gtatacattg aaggatgtgc 1740

agactaacat gctaaaaaat gtaaaaatat gagtttttc tctttcgttc ataaatccta 1800

tccccaaaac acacgtgtca agcatgatgg acactagtgt ttgtcttgac ttaacaaatg 1860

agacataagg ccat 1874

<210> 504
<211> 1977
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347203_G1, chr10:133750759..133752735, Cluster 3

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (888)..(987)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (891)..(891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (892)..(892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (893)..(893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (894)..(894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (911)..(911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (912)..(912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (921)..(921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (922)..(922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (923)..(923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (924)..(924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (925)..(925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (926)..(926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (928)..(928)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (929)..(929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (930)..(930)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (931)..(931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (932)..(932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (933)..(933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (934)..(934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (935)..(935)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (936)..(936)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (937)..(937)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (938)..(938)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (939)..(939)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (940)..(940)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (941)..(941)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (942)..(942)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (943)..(943)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (944)..(944)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (945)..(945)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (946)..(946)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (947)..(947)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (948)..(948)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (949)..(949)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (950)..(950)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (951)..(951)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (952)..(952)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (953)..(953)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (954)..(954)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (955)..(955)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (956)..(956)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (957)..(957)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (958)..(958)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (959)..(959)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (960)..(960)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (961)..(961)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (962)..(962)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (963)..(963)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (964)..(964)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (965)..(965)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (966)..(966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (967)..(967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (968)..(968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (969)..(969)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (970)..(970)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (971)..(971)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (972)..(972)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (973)..(973)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (974)..(974)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (975)..(975)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (976)..(976)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (977)..(977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (978)..(978)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (979)..(979)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (980)..(980)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (981)..(981)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (982)..(982)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (983)..(983)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (984)..(984)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (985)..(985)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (986)..(986)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (987)..(987)
<223> a, c, g, or t

<400> 504
taatgtaata gaaatattta tatgtcaaga gaaaagagct gattgaattt gtattttcct 60

tagtggagaa gggaacgtaa cagatgttaa ttaactacta taaatgaaac acataaaagg 120

ttggtcaaat acgtaccata taaatacaaa ggaatgaaat ggttgtaaat ttaaaaaaaa 180

ctactatata aaaaatataa atctagaagt aagattgtaa cacgtacctg tcttcgagca 240

gggttttctt ttttcagact aatcaggatg aacagtagat caataacatg ttaatgtggc 300

agagaggtaa gggtaaacat tagctttcaa tcggttgcag ttaaaaaaat gctaacttag 360

caaatctttt aaaaagaaat gtcatattaa gccatatgta cgaccatttc ttcaacatat 420

attcagtatt tgtgcaaact tttgtaccgg ttgaccatga tattctttta atctgaacgc 480

caaaggttgc gaagacacct gaatcgacga tttcatttta ttagccatat cataggaagg 540

aattgagggc aagcaaaaaa aaacaagcat gttgggatta tgtggttact ttctaacatg 600

cttgttttat atatcattgt atctctgttt gtttctatag aaaaaagaac catcaacatt 660

atagttccaa tagccttata tataatatct ctccttttat acacagattt ttggtagaat 720

cgtacaaact agcgcgcaag gcgcgcgtta ggcactagta cagaactatg tctgcattcc 780

tagctatttt ctcccttcgt cacaaacctg cttgcgtttc acctggtaca tcatcactta 840

ataagcttat ctggcaacca cttttgtgtg gaactatatt tttaaaannn nnnnnnnnnn 900

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 960

nnnnnnnnnn nnnnnnnnnn nnnnnnnttc cggatcttaa aaaatctgag gttaacgatt 1020

cgccctttag tgtatcacca gtaaaatttc tagccttcaa ttatcagccc cccttgcagc 1080

cttgcctcgt ttctgggtcc atcacttagg gagtatctgt tcatcaccta gatacacaac 1140

ttgtgtgtcg ggtgttctac tgtagcgtgc tgctaatccc ttggtatcca tcaggaagcc 1200

accataggct catagcataa gttctgtcag cgttcagcgc cccctcctgt ccttcccttg 1260

tggttctcta gcatttggtc cctgtccaac ctttgttaag atactgaaca tatgttgcca 1320

tgttaagtta gtcaacacaa gaattttgcg tagtgttgtc accatgcatg gtgctcttag 1380

gttggtggtt gttaaaattg ctttatttat ttacatctcc attgcacgcc gctggttgtt 1440

ggcgatttct tccttttatc tccaaccgac tgaactttag ttttcttata cagtttgagg 1500

ctttgtcatg cctttaaata gctgatagct gattattcca aggtaatatt tcttcctttt 1560

atctgttcaa gctggacatt gatgagctga tagttgatta ttccaaggta atatttcaaa 1620

ttgtctccat gcgtgcacat attaacttca gatgaatgat aacatctccg tgttcctgat 1680

tgataggaga actgtatgtc actctttgaa ttcaaacgag tgtggatggg caagaaattt 1740

tcttatatct gtgaaggcag acctaagaca aattcgggtt tattcatgca atccctcttt 1800

ctgcattgta tcggtagatg ctggcttcct ggaagagcat atttctgaac tgaacccact 1860

gcacacttac cgataatcct ttttgtggtc acagctgaac tattttccac ttaattttgc 1920

gctatactac atttactatc tgtatgagtg ccaaccatac aagccgcagt tcaatat 1977

<210> 505
<211> 2456
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347876_G1, chr10:137184019..137186474, Cluster 3

<400> 505
gctgttgcta tctgatgctt gtgttggatg ggattacaga ctttttatgc ttttaccagc 60

attattacaa gttaatagtt ttgggattcc taaaccacta aacatccgtt gaaggttctg 120

cgttgctgaa gataatttag acagaggttt gctcctctca ggcacaatta caagcaaata 180

atactagggt gctatatagc acggttgttg cggcatggca ggcagcattt cgcgtccagg 240

gtacggtggt cacccacacg cgcgcgcgac ccatcagatg cctagctagc tagcttcgga 300

accaagggat ggaaaggagt gccctgcacc cgcgggcgtg caggcagggt gcagtgcctc 360

gacgtctacc gccgtggtcc gtaacagtgg agctggtgcc gcgccgttgc ctgccggacg 420

tcagcgtaca ggaaccaccg gccaatgcaa ctatgcaagc caaccgtgcg cgctagaggc 480

agctgcaatg caatggtcaa ttagtacggt ggtgagtggt gaccttggct agtcgataga 540

tggccctata ggctatagct agctagtggg ttaagcgcat gtgtttgacc taatttccct 600

gtgtcttgca ttctactact ctcgagtccc acttccatgt agtacataca gtccatagct 660

aggtggactt agcgagcgac agagactgct gatctttcaa aattagaggg ttctgtataa 720

atagtatgca cgtacgtacg acgatgattg tgcatggtag cattacatgt acaagatacc 780

actgatcagg cacttacgta gccacgacca tcaaggtggt gtcgtttcag tttcaacaac 840

gcatggggtg gcattattgt accgccatac atcaaaccat aactccagct gtttagtttc 900

attaatatag tttagttgat acatcatcat cttactttac acagtgagag ctatctatat 960

cctgtcacga gggcgaggca ggcaaggaca gcatgcagac aataaataga taagaaaaaa 1020

aaggctgatt aatacttaca aatgatcaaa cgacttgacg aagagtcaag gagctagtgt 1080

ttaattaata gcctctagct aaggttagat cagcagaatg tacgtagttc gtctgagagt 1140

ctatatatat atagtcgtag tagtacacaa gctatatgtc tatatagaaa cacgagagaa 1200

cttacctaaa agttcgtgta ctatgttact ttatctatag taaccctaaa ccctaaaagt 1260

tcgtgtacta tgttacttta cctaaacgta gtagtctaat ctctttccta tggctcgcat 1320

cattgctttg gcctttaata acactctata tgttacttta tctatagtaa gcaatgatgc 1380

gagccatagg aaagagagca tgcatgcgtg aaccatgcat atccacacat tgttaggttg 1440

acactgccat caaactagga cctaacaccg atataacaca gtaattgttt ggcaattggt 1500

atatatactg cataccataa tactactccc cttcagcaca ttgaggcaga atacgtacgt 1560

gcgttggttg agtaattgcc cgatgcatca ataagtactt cttcaatata tagagtgatg 1620

aagcacatat tcctcctgcc ctcatcccta ggcggagaat gtttttgtt gtgccccccc 1680

ccccccccc cctattatat attactttta tctcaagtag caggagtacg tcagcttgtc 1740

gatcgtggac atggacggtg accaaaagag tctgctgtgt gccatactgc tgactgccat 1800

tgcagtggta gtacacattt tacaggccat ggacacgacg aaatgcatgg ttggtacaca 1860

ggcttgttgg aacgaagaag taccattggg tgacaacttt ttggtgtggg caggtgaaca 1920

agcgtgaatg ctagcttatt aacatcgaac aaaaaccaaa tgagtaaaaa gttgcatttc 1980

ttctctctct ctcacccact tggacatgga agcatgagga gaaaggtgca agaagcacta 2040

tgatgagcag ttagaggggg tgctagcgtt gtacctttg gcttacaaaa acgataaagg 2100

tggcacaaat ggcttgccca ggcacttgca gcagatggga tggccaaaca tatgatatga 2160

taatacctat atccatgtgg agagagatgg tagagtctct ctctctctct ctctcatagt 2220

gtgccaaaca tacgataaag gtgtttgtca tacgtacata ttctccatgc ggccatgcct 2280

cttctcttgc tcctccatcc tgacctcctc tctttctctc tctctctata gtgtctttca 2340

tggccgctgg aagattcttg gtttgggaag atggtgagac atgacatttc agagctaggc 2400

agctagccct gctacacgaa aaaggagcgc atgaagcggt gacagataga aagaca 2456

<210> 506
<211> 1571
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_36962_G1, chr1:223170424..223171994, Cluster 3

<400> 506
gtaatccata agctagatta tataatcctg aaaggaaaca aatatggccg aaatttacca 60

tgcacatttg taggggtttt aaaaaaaaag aaatttggat ttgtttgagt gaatgctgtc 120

gattataata attatacaaa aggtagtagc tctggatcat attgcttttg ccatgcatga 180

tcgagaagcc gagaaattta aagttccgga acaattctct gatgtggtta acgatccgaa 240

atggtcctcc atagaaacag tggttctgat gtagtgacct gacaatccta gaattggatt 300

tatgactagt gttgagagct gtatgttgct cccattaaat tcattccatg cttagtgttg 360

agggctgcga tgttccattt ctctgaacct tttgtgtgtg tgtgcgcgcg cgcgcttgat 420

gtggtgtcta ttagcactta gcagtgccat gtccttagtt agcaacacgc cctcaattcg 480

agtggcaatc gtttcttttg ggtaagccaa tagttcttgg gtaaaacagt tttatttccc 540

ccaacataat ggttacccat aatttaccaa atgtcaccca cttgcatggg tacatgctat 600

tgacaaaagt tctgttgatg gagtatatat actaggggaa aaggagcaga tgttacgtgt 660

tattgttgat ttctgtataa tggaagattg gaaggtagct ttgctttgat actctgattt 720

caatgcacgg ctgggtttgg tgcctggcaa ttttgtattt ttttctcaaa attagtgtaa 780

ccgaaacatg aacttggaga ctatcacccg tacaacagta gactactgtg ttcaatgtct 840

aatttcatga tttgtcaagc ggacataaca tcaaagaaaa agttacggat gattgatgat 900

agtgtacatt gtctaatttc atgatttttc gtgtagcagg aaaaaagcgt gaaggaagga 960

aggcccaacg ccagttacag tggcccagag tggattcgta acatggagat ggcccaaata 1020

ccaatcttgt ggtatgtcct ctcctctcct gcgtgcaggt tctttcaaat taaaggcgag 1080

ctcgccggcg ccgcgaagca gattgtgggg tggatgttat ttctactagt taacctattt 1140

tttggacggt gtgtagcgaa tggcttcatc atgaaatcta aaactatcgt cgttgaaaag 1200

agcaaacatg catgccacac gacaagataa gttggtgata aacaagggtg aactttggcc 1260

atctcatcta gctagctagg ttctttcgaa gcgcaatcac ctcacgtcgt ttgcctggct 1320

cacattattc agacagaaca gaacacaggt tcgtttgcct ggctcgtact aatggcaata 1380

gcatgcaacg ttgggcgacg atgcacagtc gtagctagta ggagaaaagg atttaaaaac 1440

tgcagtagca tgcaagtcat gcatagacgc gtagtagtag cagagtattc aattctcttt 1500

ctcacttgtc agcgctacag tatcagtaac acctccccgg agtggctccg gcaaggcatg 1560

gcagtaaata a 1571

<210> 507
<211> 1604
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37357_G1, chr1:224925474..224927077, Cluster 3

<400> 507
ttacataagg tgataggaag aaaaaaaaaa caccaaccat gcgtacgtgg tccggacgga 60

acaacaaccg aaaacacaat taatccacct ctgcttcgca aagaatctga gaggccggcg 120

gttgcatatg ccaaacggaa cccttgagca agatgcggtg gactggtggg catcacccaa 180

cacatctgct agctgctgct ggtgaccggc cggtggccgc tggcctcctg ttccgtgcgc 240

gcggggccgg cgggggggac gtacgaaaac gaccatgcat gccgtcagat agtcattatc 300

accatcattc cacaccgagc gatcgacccc ggcgtggtgt gggtcccgcc ggccgggcac 360

tcggtcaatg gagtggagag acaggccggc tcccatgcat ggcacccggc cggccggcct 420

tctctcacca gtcaccacca acctggtcga ccggttgccg gctcctttgg ccaacctcac 480

ctcgacgaca cagccctagc ggccggcaga gcactgcctg cctgctgcca gtgcttgttc 540

tcagactcag gtccatatgt acgtacgtac acacacaaac agtgagacgc acgcatatgg 600

ccatggtcat ggccatggaa aagtgcctcg cgctcgctcg cctctgcacc atgcatgcac 660

gtacgtgacg tagacgtcgc catggatccg gctgccgcgc cgtcgcagct cgcccgaggc 720

atcatgcatc tccttttttt tcagacgtac agcagcgcaa aataaagggg ccggccgggc 780

cggccggcga cgagcggcgc ctctcagttc cagacgacta cagtgacgcg cgcgcgcccg 840

cgggcggcag gtgacgacgg ccagagctat attagcctcc ctgatctgga tcgccgatcg 900

agctcgccgc gcgcggcgga ggagatgtac tagagatcga cgatcccacg caccgacgac 960

ggatgccgca gggccgtcgg ccgctagctc cggtcctttg ggtcctgcgt gaatggtcag 1020

gcatcaggga ggtactgcct gccatgcgta gggctacagt gcagctacgc cgtatagggg 1080

ggcatccagt gggcgggtgg agaagaatac tagcgcgatg gggtcctcgg gtgtgctacg 1140

cggtgtaaaa aggcgacagt aacgttcttg atgctgagat agatcgatcg accacggatc 1200

catctagatt ttgcggttgt tatctgctgg attgcaacgt gcaacttctt gggggtgatc 1260

tttttcaacc tagccggtta ccctcggaga ggtgctcacc ctatagctgg accctagaag 1320

agtttaatct atgtctaccc ctcttacttg ataagccatt aaatgttttt tagaccgttg 1380

aatcaatatg gatattcgtt gtgtagccgg gtgagtatcg caagatttag tgaatgtcaa 1440

gtaattcacg tccagacatg ctcttatagc ctgtacagtg tttgagtatt tatgtttata 1500

actttttttg tagttaaata ttttcataca atgaatattt atattttcta taaaaatagc 1560

taaattaagt aactttagct atagcttcta aataaggatg ttaa 1604

<210> 508
<211> 1451
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37811_G1, chr1:226935068..226936518, Cluster 3

<400> 508
tggtggtctc cctcccgggg gctcccgaaa cgttggcagc gccgcgcgcg ctggtgtgaa 60

gcggtgtggt gtcggtgagc gacagctcac ggctgctccc tgctgtgctg cgcacaggca 120

cagccacatg gagccgggcg ggagacaggc aagaagcgac ggcaggcacg cacagcacag 180

taactacgag acagacacga cgacacgaga gggaggtcgg tgctatagct atcacgcgct 240

gtacctgtac ctgtactgta cagtacgtgc agtacccctc tcctagtacc ttgtcacctg 300

cccgcgccga tcgatcttca ttgctcgtta ttagtacagt cgtaagccta gcacgctgga 360

agcatgatcg acagttcgac atcgattaga caaaatagag gacggtcaga acaatgatgt 420

atgtactcct acgttaccgg atctacaatc tgtgtcgcac accatgtttc gaaccctccc 480

tccaggtcca gcagtactgc tacataccgt ggcagccgcc cagcagtgca gtgaccacgc 540

ggtggcctgc gtactgcccg aaaaggacag agacagtaca atcagatgca cgggtcaatt 600

ggacaaggtc tctctgtctc tatctcgcct cccacgcacc tcgtggatct gtactagttt 660

ttaccttcac cagcgttacc gtctggatca tcccctctcc tgtcgcccga agaatcgacg 720

cgcgccagag cagacagcgc ccgccgtcgc gcccatgccc agcccatgca caagaagaga 780

cacaactgac gcgcggtggc gggctgcgac aacggcccca caccgccccg gacgcccaag 840

gccgattcca cgagtttggg cttcacgcgc aacaaggctt tagcggccgg atcggactgc 900

ccgaaggggt gcacgagcgc atggtcggcg acacgtattt ttttttctat ttttttttgtc 960

aaggcgcttc ttgttaaggc tattcgaaat tcgtcacaaa cttttcaacg ttaccacatc 1020

atcgaaacat caaaagtact acggtgctat ttggttcgtc aacggtaaca cggatggaaa 1080

caaattagag ccgtgcacgt acgataagta atgcgatttt gaactaatct cgtttctatt 1140

aacgacacca ttgaggcaac caaacatcac ctataaaact actaggaata aaacaatatc 1200

gcactatttt acatgctagc gtaccaacta aaatggccaa tataaattaa taaaatatat 1260

gaatacgaaa caaatcgttc tcaatggagg gtttacacgt ttttcgagac cttagacacg 1320

agttgacatg gtttcattct cgtaaaacaa aaccaatctc ccatgaaact cattcttctt 1380

aaatgctacg ttatgtcatc tacaaattat aatgtgccaa actattacat gtgcatgaag 1440

ctactaccat t 1451

<210> 509
<211> 1495
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38204_G1, chr1:229092804..229094298, Cluster 3

<400> 509
ccttattctt cagatggttc tgcagcttgt acttcctgag cacgagcatt tgtatgaatg 60

ttttcttcat cgtgattttc actagtggca ttcaactgtg tggattgttg tgccaggaac 120

aaaggcaaat aattcagtgc aattactgga actggagaac tggagaatta ctggatgcaa 180

ttacttttt tcttcttcct tgtcatggcc taggagaact ggagaagaac aggagatcaa 240

tcgctgcaat gggagtgtcg tcagccgtca ggaactcagg atggcagatt gagtgccacg 300

ccgccgcaaa tcgacgagag aagatcgtgt gatactgcac tgcgagtacg ctgggcaaca 360

gggcaaccga actgttcaga cctcactagc caataaggct tgtagcctac cgtaacttaa 420

aagcccatgg gcctcgtaca gaataaaggc catataggct gctaccaccg gcgctcggct 480

ccctggtaaa tttttcagtg gggtgggggt atcccaccat atgtcatgta tggcaagcgc 540

cagaccgggc cacagcttgc atctgccact gcccgcctcc taaccggggt taaacataaa 600

ggtaaggtca gaaagaaggg tcaaaccttt ggcccccgca aaacagcaca tattgaactc 660

atcaacgacc aaggcaagca atctagctat actagggtga gcaccattga aaacacaatc 720

atgtctggcg tagctactcc acctcactcc acctctagag tcctactgcc gaataccaac 780

aaaggtaatg catgatcctg ttataataac atctggactg acttatgaaa gagaatatat 840

atagtgagtg gtggttcaat gaaggacata atacttgtca taggacacag atgaagctat 900

agaacttcac catgaatcca aatacctgca tgagagatct cattttcgat tggtgcaaag 960

agcatggttt taccattttc ggttttattc ctccaactga aaatcatcac agttacttac 1020

tagagcaatt gtggcagcgg cggcacatgc tccaccacct gacgtgggtg catcactggt 1080

attgtgagca caaggatttg acgggtgaag ccctcacctt agattgtcaa agaggccgac 1140

gtcgttgccg tagagaggga caggctcgtg catcctatat cggtggtcgg agacgttggc 1200

tgccactctg ccagccacag cgagggcgag gaggataagg agtgctgctg ccgcggctgg 1260

cgaggccgcc atcgctgtca tcgcacgacg ttgatgagag agtgggacga gggtttgggg 1320

tgtgaggagg ggcacgagtg gagagatcta agcgaggcct gagggtggcg ttgtcggagc 1380

agacggtgtc gacaaaggcc cacgggggag gggaacacga cggctgccga gggagagggg 1440

gagatggcga ggcgacggaa cgcgtagaga gagatggatg ataagtttta cattt 1495

<210> 510
<211> 1735
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38227_G1, chr1:229179850..229181584, Cluster 3

<400> 510
aggaagctta tttatataga caaataagat aaagatagta aagcttttgt gcatctgctt 60

cccagtgcca caatagcata gcatatggtc cgctccttgg actctgaaca aactacaaga 120

ggaacacgtg attgctatca cacggttgga agcatctttc ttttttttt cttttctgt 180

ttacgccacc cttctgttcc attagtgcag caccaaacca aaccaaaatc gtcagacccg 240

tgactccaac atgcatgcac attttgtagg ccgatcgaca tgcattcctt gcaacgctcc 300

gcacaaaaca cgtggctcca tcatgcgtgc agtgcaaggg agagagagag agacacaaga 360

cgcatgcacc cgcttccatc ttgctttctt tccccgctct ccatatgagc ccgtttcctg 420

caacaggaaa actgaaagga ccacgcacgc aaagcctaca ctacaggaca ggatctaagc 480

acatgtcgtc gagagtttat atggtaataa gcaacagaaa gcgcgatggg aaagcaaagc 540

gtcgctctac gatcgacctc ctcattagca gctaggctga aaggtccaaa acaagtgtgt 600

tgtgcttgtg cggtcgtgcc caccattcct ttggtcaatc cggcctgatg aggcgatggt 660

gagtgtgcag cgcacacaag tgttgattcc gctccaccgc attgttcagg cgatacaatt 720

gatgtgaaac cagatgagaa gtacatcgat gtggttactg ttgacgggtt tgatttctgg 780

tttatggact tcgtgagctg tgacaaatcg ttcagatacc ttcagcgtgt aatttcaagg 840

ttcagatgat ataagcgtag ttctgtacgt agtaacatac tgcataccat gttgatgtgg 900

tatatgtatg agaacatgta catacattat atacggatac aattgatcac agtgttactg 960

ccacaaactg catactgcat actgaataca ttagaaaatg tttttctaag accctaaacg 1020

attctaaaac acaggctgtg gcccacaggt aaaaaaagtg aaaaaaggca cacatacaac 1080

gtggagccac aactgagaag aagccttaag ctgaaagcta ggttcagaac agtgttactc 1140

ttttgatcac tttaatcagc acagcagtgt ggtataacta aggtatgagg taaagtaaac 1200

aactgaaaga cctttctagg tgaagactta gccaaatatg cgaaagggtc ttagttagcc 1260

aacattcatc tacaatggtc aagacttatt agccgcagcc cacgtggcca catgtcacca 1320

cgtcagatca aaagtgacgt aggggcaggc agacacagcg tcttgttccc agtccataca 1380

cattttaatc accaacaacc accagtggct ttatcgagca atatcacctc gatcgctgac 1440

ggggttgtgt gtcaggtcag cacatcagac gcgtgtattt gcagacctgg aacgaagcat 1500

gattattata tattcttcag tccatgtatc tgcagaaatc gactagttga cacatcagac 1560

gcgtcccgtt acacatcatg cacaggtccg agcccattgc ctgggccacc atgttcctaa 1620

accatgaact ttacagggaa ataccttta catgtttgtt taagatccaa gatgttgtgt 1680

ctcacatgtg caagtgaaaa ctgaaaaggc atacgtaatg ttgcgtcaca gctaa 1735

<210> 511
<211> 2322
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42348_G1, chr1:249545923..249548244, Cluster 3

<400> 511
acaggaacaa actcatttct gttcctgtcc tggtagatcc ttattccccc atttaatttg 60

ggatcccgca gggaataatg taacacacac acgcacaaaa tattcacgac atgataacat 120

tacaaatata ccaattatta aaagacagca agacaaaaat aaatctgagg atgttcagga 180

gcgtcagagc cgtccaaggg tattagagtt atccgactgt gtcgaggcca tctgaggatg 240

tcgatgctat ttggaggtgt cgcgaccatc agaccaagaa gcgtgacgtg gcgtggttgt 300

gactatggtg tgactctaat ttctaggtga actttttttt gccgcttggg ttagagcaga 360

tcaccttctt cctattattc ctggtggaca tatgatcttc ttgttgggca tatgagatat 420

gacacacaaa catccgttta gattgattgt ggtccgctac tttgagcaac acatgatatc 480

gacttatgta gcatgccttg agtatgggtt gacccttgga ggatataaat ttatctctgg 540

atttattaaa tattcaattt aattcttagt atgatcagta tgtttacatg tagtatgtgt 600

ttgctaagtc tatggatatg aatttgttaa atttagtatg tttccttatg taatcagtat 660

gtttcacttg gatgtgccta gtaactttat gagtaataat atccgtgtac aggctaaata 720

aaatgcaagt gtttctcagg aaacacgaga tggaatctgt gccaaacttg ggtgtttgga 780

atggtggcta ggaaacaagt atgaactaat aatatataaa accgagtgac tagtgataga 840

agcgcagttt ctttcttttt ttaaatcaaa gttaagaacc atctctttgt aaagcaatgt 900

actactcgat tgatgatttg aaatagaaaa agaagggcgt gtaaggtaaa gggaggcaag 960

agaggagtag gacaggcgag gaagatgcaa agcaaaggaa aagggagata ctatgagagg 1020

gaattaatta aagggtagaa aatagagaaa gatggtcagg caggcaggca ggagtgtagt 1080

gtaggacaga taggaagaca gcgcgaataa aggcaacgcg gaaataaaaa gatgttgttg 1140

ctccttgctc ggcaccgaat cggtatgggc ccgtgagtta gaaaaataaa cggatacggc 1200

ctgggcttct cttttcctct tccagctggc tcgctggccc aatgccgaga catgcctttc 1260

tgcctttggt ttttactttg tgtatacacg aggaattatt tggatactct aatattcatg 1320

tcgatctata tatattaaag tagattaagt tataaattcg tttaagtttc actcgaactt 1380

tcctcgatgt atatagatta aggtaatatg aaagtatcca aacaatgcct aagtaagtgt 1440

gtgtccatat ctctctccat gtaatgcatg attccgtcct ccgtccattg aactaataag 1500

attttgtttg gatcccttcc caagtttagt tggttactaa acatttgaca gattagcatg 1560

tttatgtggt cttggtctaa cgagcctgcg aaattgtttg gtggagtaag gatccgtttg 1620

gtttctttag tctagactac catgtttgat tttaggtact aaaacttttc gaaacacatt 1680

aaataaatca taagaggaat aaaataccct ttagcattct tctgccatta gtgtaactga 1740

aataaaggag ggacaaaaaa tgaaatttat atgatttagt ctcttttaat cacccttga 1800

gtgactagag acaaacagtt tagttctagt tttagttcca ccgtttcggt catagctgtt 1860

aacctatcgc ttagattaat tgccgggggt ttacgggtag tagcggcctc cccaaaccgc 1920

tgactgactc cgctcggcga acaagcatcc gaggcccatt tgcattcagg cagagcgggc 1980

gtgctgaagg aaatccagaa accaacagct gtgagtaaag caacgttatt attgggggaa 2040

aagtcaagat cagcgaacat gtggcacggt tctcgtacag ccttaccttg ccttcctctc 2100

tgcaaattaa atctgcagca gctagtacta gtagtctgag gtagattcgg agaacatgta 2160

aggctaagca gcgacgacga aggtaaccag agacactggt ggcatccacc agaatcggct 2220

aaccaatgct gtctactgga cgacgaaggt aaatatgatt agcttttgtc taaataccat 2280

ggcttacaat gttgtatgca aataatattc cttaaactca tg 2322

<210> 512
<211> 1697
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45708_G1, chr1:267878323..267880019, Cluster 3

<400> 512
cactaccgag tatctttgga gcttgccggt tgaagaacag gccccactgc aaatcaacat 60

ctatgagctt agttttttag atatttcttt tgtctcatag gttaatccac aatcggtggc 120

atgttgttgt ttgttactta gaatttgagt cctctttgtg taatgttctg gagatatatg 180

atcacaacat gaatggagat atatgatcac aacatgaatg aacttgagga aagtgattag 240

gaggcaatag aaggtattat atctaacaat ggttatttta ctttagctgg attgtttagg 300

acactaaata atttcaagtg tatttgaaaa ggttggtttt ttgcctttac atggcgtgat 360

tcagatggta gagctcccga tagggcgctt tttttctagt ggagtatgaa aagctcgagc 420

gcctctggac acatttggat tccattccag tgaaaagtcg aaaaggtgaa caggccgtca 480

ctagcttttt ttctacgtga agtcaggaac ccacttcgct aaaaccatag taataaaaag 540

taaaatattc ttaagtggaa aagggataaa gcgaaagacg acgacaggag gcccagttcc 600

gggtcacgtt ctccgcaatg ggccggccat tacgagtcga gggacatgac ggcacgagcc 660

gaaaagcctt ggaaagtgca ctcccctgca gcgaatcgcg aggcgtacgt acggggtgta 720

ctagcacaca gctgcacagg cgcgccgcgc acggcgacgt cgacccgacg ccgtcgcgcc 780

gcgaggcccg acgacgacga gcgcctcgtt ccgcggcctc gcgccccctt cccgcgtggt 840

ggatcctcaa gcaggaacgg tgaccgaccg accggaacag gtgggccgtg ggcggcgtct 900

cggtgcacgg gcagcgaaaa acaatggcgg ctcgtcgcgg caaacgcgta acgcacggca 960

tgtcggtacg aggccttcgc gaaacagcgg ccgacccggt ccaaactggc cgaccggaac 1020

agccttctcg cggtcgccta cggcgtaccg gtaaataaat aacggaacat gtcacggatc 1080

aatgctgcct ccaagagctt ttcttgctgg tggttgcccg tctggattgt gcggctccac 1140

gtgctagcct ttcgacatat actccaacaa gctcgtcgca cacgtgcaca gcaaaccggc 1200

gttcgatcgt gcggcatctc gcagaccggc atgtacacac cacaccttcg agagttgctg 1260

gattcggcgg tgttcgtccg acactgcgag tctcagtctg cacacgggga cgaggtgttt 1320

tgcccacgcg atcatgccgg ttcgtgccag cgtggcatta ctgtccggtg ctgcgttgtt 1380

cggcctccga tgcgttcccc ggttgccaaa tacgacctat gtggcgccgt cacgtgctgg 1440

cttctttacg cagaagacag cgatgtatga ctgggcaagt cgtaccgtca gagcgtcctc 1500

ccttcctgca cgagtacggt gtaatagcag actgactccc tgtcccctcc aggatcgcta 1560

gtcgctgccc gtcttgggct atgttgtttc cgttccgccc tggcatgcgg cctgcatttg 1620

ggttgctggc ttcctgttac aggtcgcacg cagtacgtag tagaaccata agttagctag 1680

gggcacgcgt agatccg 1697

<210> 513
<211> 2208
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46718_G1, chr1:273351421..273353628, Cluster 3

<400> 513
attccggtat agtgaacact gtttgtagag aatttttttt gaaatagggg atggaatagc 60

gaatctgatt gagatagcct aaggcaatct aattttcttg gaaacttaga tttgaccaaa 120

cttatagaaa aaacacaaat atttagaaca tcaaataggt actactatta aaatataatt 180

aataaagagt ttaatgataa ttatttggta ccaaaatcag tggtggttgc aggaatggat 240

caaaggaggg gctagtaatt aagataggac tatttttag cttaaactaa aatatataat 300

taatgtttaa tatgacaaaa taacaagata taatccaaat cttcaaaaaa catttagact 360

aaataagtag gtatgaaatc tgtaaataca atactcaata tgtaccgttc atgagttacg 420

gttgtgagac aaatttatct tctgagttct tatgtctcga aaatacttca aaatcttttt 480

tgtcgtcaat gtctgcagac atatattcca ctcaatatag catagtgtgc tattattcat 540

tcacttgtcg tacatttttt tttctttcga tcttcataat ctttatagta gtgaaagcca 600

agaactgtgg gtagcgacag ctcgtagccg accaactgtg gcgctggtgg cctggcgaac 660

ccatcatcag cactaacccg aacgcgtacc catcatcagc actaacccga gcagtgcagc 720

actgaaaaat attggactta tttcctgtat gtcattaaac attattttca tccttgtata 780

tcatgaagtg gtatatagtg attttttttt tttatgtata tgacatttga gtccagtgac 840

acacaaggga tggaaataat tccccatgac acacaaggaa ttgcccatgt agtaatcagt 900

aggtcctggc acggaaaaca tttcgtgatt cttatcgatc tctacgtggc gtgcagattc 960

cccgaaaatc tgcatggagt ttgatgaaaa cctcgtcgaa gtcatcagga acttactctc 1020

actgctgaag cctcagaatc tacggcaatt ggtctggagc tcacgtcttc caccgttcca 1080

cgcgattaac gcggtccgta tacatgtata tgtgggcctt ctcgttttac tattttcccc 1140

cgtatttta ttgatttgtt aatatacacc tactaggcag ctaggcgcag caaaataacg 1200

ctactagtcg agttagcaac gcgcgcgccg agctcttgaa ctgatcgggc gccctgcctt 1260

gtccgaacgg cgtggtgtgt cgtcgcccgc gctaccgtgg caatttcccg ctcggttcag 1320

tgtggcgcac gcacagacca attcccagtt tgacaatttt cccgtaccgc gtggtacctg 1380

gtgctagttg actcttagca aaagtgcaaa actcgcgcga aacttcaccg cagtttagca 1440

tgaacaatct gccgcgcacg cgcagcattg catagcctac acgggacggc cgggctcgag 1500

agaacgtgtg taaagtgtat ttatactcac aatgcaaagc acactctcgc agctttactg 1560

cagatcgacc aacaggcaac agcctctatt gcagaagcag cagcagcagc catccacaat 1620

tagtttaatt gctcctttcc gattccccag cgtgtagcgc tgcaaagacg tcaagatgag 1680

catggcagtt ggtcagaagc tagggccgtg ctcgtgcgtg aagctgttgg tcgtcctggc 1740

cctcgtgatg tcggcgtcgg acggcgccgg tgcctcgagg cctctcacga cagcggcgcc 1800

ggcaggcgag cagcagcaga gcaccggcgg cggcggcggc ggcggcctgg cgtccgtgaa 1860

gttagccgtg gtcgttaggc agttgtgggc ggggccttct ggctgcacct tcgatcctaa 1920

caccactgga ccgcgctgcc cgtgataagc ccggccgatc cgtatcccat cgtaataccg 1980

gtttaattta agaccaaatt aaactaccat agaaatacaa acggtaataa ctgcgtacta 2040

gtagtgtgag tgtctgcagc gtctatatac acgacacatg attaaattca tatgttacgc 2100

tttcaaattc ttttgttctt taaatccagc aaattcatgt gtaaatatat agccactctc 2160

tctgtataaa taagtttcac aggtcggttt ggatgtctaa atcttcca 2208

<210> 514
<211> 1470
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4723_G1, chr1:24214317..24215786, Cluster 3

<400> 514
tcatgtctac gcgtgatgcc gtgtcatgtc tacgggtcat acgtattaag catccaagat 60

ttgttacact atactattgt tttggaagtg ccaacggccc aacgccgaat tacaccgttt 120

cacatttttt tttaagtttg tgaggaacgt tgtagccgta cgtaataaga gacggcaaca 180

ggcagataag ttgaagagag ttcacgagcg atctgcaatg ttgccagaag acacagaagc 240

agcacaggga tttgcaaaac gagctgagcc aggatcgagc ttgtacatcg cgtggaagga 300

agagtaatta aacagctggt cgaacggtca cctcgtataa acatactgta tactactgtc 360

agagtcagac gtacacgtac ggtagagtcc aagcaagagc acaggcattc tggagcgtgg 420

gaatcgagga atctatggct gcagcttctc cgtattcacc acgagacaga tcacctgtta 480

ctgttatcga cggaatcaga tcctctgcag gtagacttcc gttccctcgg tgcacggctg 540

gggtcacggg ctcacgcgtg ggaaggggcc gcgcgcaacc tcccaagccc atgtctgcat 600

cggcatcggc ccgtggatat gacaagctcc ccacgatccc atcccatccc atgccagggc 660

tacgcgacgg ccacgctgcc atgggcacac cgggcgggta gtactccccc gcggacaggc 720

aagcgttcgc cggctaaaaa ctggcgcatg caaatgcaat tggtaatgac tggactaccc 780

cagtgtacca cttggacgta gtattcggtt tcaacgccga gggcctgcct gactgcattg 840

catttaatat acaaccagaa catgacacta cacgcagagc agcatacatg catgtacaac 900

cagaacatct gtaacgccat tgttccgttt ggcattttgt cttgcatgac ctgtagtgta 960

ggctgtgtag ctttggatac cccctgtggg ccatgtaact ctctcttctc catgatcaca 1020

aagctaggga atttataaac gatgcatgca tgtatgcatg catatacgat atattcctga 1080

tggcctttta atccaatacc tctgatgctt gagacgcagg cttcgatctg caccagctaa 1140

cttgtcgttg ctcttgcttg acaaagaact cgacgccggc aagctagtgc tgacgatgta 1200

acagatgtgg agttggcatc ttagatcctc caacagggcc ggtgctggag cctggagggg 1260

ggcaagtgga gccgccgcac cgggcctccg attttggaag ggctccaagt aatatacatg 1320

tatatataat cttaggtgtt gtgtctaata cggctgctct acttgtccct cttcgcagga 1380

ctgttctgac gtttaggtaa atgatctact atccaagtta aaggttttga agttaagttt 1440

gtctgaaata ccaatgtctt ttatggagat 1470

<210> 515

<211> 2617
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47676_G1, chr1:279134682..279137298, Cluster 3

<400> 515
caatttggtc tactaaacat tgaatggtcg gaaataattt cctcctatat atactctgtt 60

gaacactgaa ttactaaatg tttgtcccat gtaaaattcg ttgaacgtca aattgttgaa 120

tgtttgcttg tgtgttgtac ttcgttacac agtgggtgac tgaagtgaac tttggattac 180

tgaatgtttc tttcttttaa aatttttaaa cgatgaatgg ttgaggggtg ctcaacatgc 240

cactcaaatc ctttttggag tgagatgtgc gatgaacctg ttgatatact ctatccttca 300

catgaatcct ctcatttcct ttcttttcat gtcaatgaga caaaactttg aggtagttca 360

agctgttgtt agggtctttg gcaaatgaaa tggaaatggg acccctcgac ttctaagtga 420

gtcaatccta atagagagag gaagtccttt caaaaggaaa gtaggaacga ttctgaagta 480

gtactcagga aagtagtagc cgtgtaagtc agtctgtcta agtaaacatt gtatacttga 540

atgtttataa ctgctatatt tcattaatta ttaaatgact gaagtaaacc tttgaattgt 600

tgaatatttt ttcatgttgc gacgggcaaa tcagcccggt taaacgcgcg cggacctgtt 660

tcaactccta gtcgactgat gtgttcatca ccataggtaa tgtatatcac ataggtatat 720

atatgtatta ttgcttaatt taaacatata taggtatcct tttgggaaag aaagatcata 780

aatgagttta gagaataata ggtgtgattt ctttggtatc ccatttaaaa acctatgtgg 840

gaaaaagaaa aatgaagata caaagtgcaa tatcaaaact tttttcaaaa catttcgttc 900

gaagaaagta caaaaaaaac aagaataata gtcaaagaaa gaatgcaaca agaggccagc 960

gggcagcagt tgatgtggac tgggtagaag agggatcggc gccactcctt gcgcctagcg 1020

cgcgaccggc gggcagcggt tgtcgtccag ctccctactg cgcggccagg gcggcagggc 1080

gcccttgcgc ctgcgcccag cgccctgcgc gcgtacgtgg ggagaagaag agtcgtcgtg 1140

catggggtat cgctcttggg gtagaggacg actgagtgga cgagtgacga aggcctgatg 1200

cgtgacacaa atgagtgttt ggttcgaata atcactccat ctaaaataag gtagtgtatc 1260

gtgagcctaa gcctattact taaatttggt agaataactc tatttatcat attagtacta 1320

actaactatt acgaataagg tggtgattga tcaactaatt caattaaata aacaaaaaaa 1380

aataaagagt aaaaagataa tgaactagat tatttctcaa acaaacaccc taaaagaacc 1440

tcgaccgatc tgagtttgga agaaagttga tgtcgtacgt ttatttttaa ccacttatta 1500

ttttcgtaat tttttacgaa gagacagctc gaggtaaaaa tttgcaccgg tgtttcatcg 1560

attaagaccg catagaggaa tccgggagcg gaatcaccac gttccataga gtttttatct 1620

gcatcgtgta gctattgcga catcgagcag cggagcagtc gatggaaaaa gtactacaag 1680

aactctcaag ccacctttt tttacattca ggatctctca agctggcaag gagattgttt 1740

cggggagaaa aagctgcgtc cagaacatga aaaggcatgg aaaaccacag gatataagta 1800

gctgaaagat cagttccgca acaacgacat gcaccgcaga gtctgcaccc catcgacgag 1860

acctaccgtt ccagctttga aggttagtta gtcagacacc cagatcaccc tccactgacc 1920

ccggcactca ggcagtaaga gtgaccagtg acagtcggca gtaggtgagt gggaagccta 1980

ttccgaacca cacggtccag tgttacgatg aaaaggactt gtcagggaac caagttttcc 2040

atgggaattc ttcttcatgg accacgaaat gcacgcatca ggaggagcac acaaaagcgc 2100

agactatcac atgcggaaag aaagttcagc tcctgaaagt gagacggtac caattgtagc 2160

acagcacgcc tgaacaaatg tagctcaaaa cacacaacaa actccagacg caagctacag 2220

acaccccatc actacttgat agaagatttc actccgattc tgattctgac tggcagctag 2280

gcagggaggt cgtaggtatc ctgttgccag tatttctcct tcacgccctt acaaacttct 2340

tccgccaggc aatgtttgac cgcccggcaa agggatgaac tgcgccgaat accccagatt 2400

cgtgagctct aaacgcgaca agctggcaac acacgacgtg gaagaacgca ttgtcgccgc 2460

agaggccatt gaagtatgag tagatggctc caggctccag tagtatgtat aagaaaacaa 2520

tggcattaga gaaggtttcc ctactctggt tttcatggct ggtacttgtg gaaaatcaag 2580

ttattttatg gtactatctg ttctaagagt gagttca 2617

<210> 516
<211> 1843
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48108_G1, chr1:281326020..281327862, Cluster 3

<400> 516
gttgtcgatg atggcatgat gtcgaatcgg ctcacccaag agactgtgac ggtgatcctc 60

ttgccacgtt gtcaaaacat cgttacaaaa tttatagtcg acatttgttt actagacact 120

acattcgtca actcacagct actttcacaa tgttcatagc tagaataaag ttatacaact 180

aaaccaaaca gactccttag tggtcaacga catctacttg ccgaagccac cggttggatt 240

tatttggaca tagattcttg aaaactaggg cctgtttgag aatgtagttt tgaaatagtg 300

taattttgag atattaaagt ttacaattgt atatgacaca aatactacgg tattacttta 360

cctcagtaaa atcacaatat tgctcaaact cgagatatat ttggttccat tggaaaaata 420

aagtatatgt agagagaaag aagaaaactt agttcctgag tggagttttg aaaactccaa 480

aaaataccac agttttggat aaaccatcat atttaaagtt gtattttgtc tataaaacca 540

aacacctttt aagttccaat actatagtat cattaaatat catagtgttg ttttaaacag 600

ggtcctaatg tctcctcttt ggacttggga agttttccct attcttataa aactagatta 660

gttcctgtaa aatctatatt atttgactct tgtgagattc ctgaacctaa atggatccta 720

agaatttgtg tgttcgattt tcattatcta ctctagatag tctaggatct gtcatgttcg 780

cgtgacatcc ttccttctgt ccatcagtac ggcagcgctc ttgtttgggc cacgcgtcgc 840

tcgctcctcc aatctcggtt cagctccagt agtggtggcg gcgccagtag gcagtgtagc 900

ctctgaggag cgaggacctg ggtttccgac gagtggccgg tccgacgaca cgggtgcagt 960

tgcagacaca cgtcgccacc agggtcccgc ccgatgacac cgcgagccgc gcgtcgccca 1020

ccctatctat cgtatccgcg ccgcgcagct tccgctgtca caccagcacc accagctggt 1080

ggtgcggtga cgccgcggga tcccatggtt atacctgccg tgatccgctt ggccgcggcc 1140

ttgcatttgc attgctgatc acctcagccc gcaacgagca gaggaaggaa gactccgcgg 1200

ccttgcattg ccaatttgcc atgcgcctcc gccatggcgc catgcgcatg ctcatccgcc 1260

actgccagcc tgcagctgca acctcgcgct cgcgatcgcg caccctcagg cttgcttcgc 1320

agtgcggcga tcgcggctgg ggggacggga aaaaggaggt ggcggcatag cgaaagcaaa 1380

caaccttaaa aacgagatcc gcgcgccgag ccgagccgag cggggcgcac gagatccgcg 1440

cagaaatctt cgcctccgcc gatggttcca atcaagcctt tggcccgcct atccagacgc 1500

tacatgtaaa agaacccaag gagaaaggga gagagagaga gagagagaga aaaaaaaagg 1560

cggccttttt ctgatcctgg tccaaaggcc aaagccagca tcgctgccgt gccgagggaa 1620

caggaacacc ccatgtgtga gccccaatcc actaacccgc tttaggtcgt ttgcttgctc 1680

caaagagcgc ttttgcatgc ggctgatgga attcgcctgc tggaaaacat cgcggaattg 1740

gcgcggccgg aatggatgca tggtcgtcgg atcggccttc tcgcctcgcc cccggccgtc 1800

ttggtttctt ctttttttta acgccggagt tgttatccgc tgg 1843

<210> 517
<211> 1467
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49377_G1, chr1:286439185..286440651, Cluster 3

<400> 517
tgatgccaat ctgttcgaca aactagatct cgctcgtcgc aacaatgtga ttcatttccg 60

atagttagcg agcttgacga acaacaaacc atgactttta tgtggtcttt ctagacccta 120

taaattcttg cgtctggttg aaaccgaacc caccggctca gccacatatt gcatcgtatc 180

gtcatgggtt gagccgttga ggtatgcact cacggatcat gttttgcaaa atttattcaa 240

aatcctaccg aagcacacga tttcatctgc aatccacaca tgcgtcgtcc aacgcatcag 300

cttcagacgt gttttagcaa tccacacata cggaccctta agaactcgta ccatgacagg 360

tcactaccgg gaggcgggag gcacgcaggt cgccctacag gcctacacat atcgttctcc 420

ctctctttca cccatgaccc atttataatc atttatactc ccagatttgc ttctcacctt 480

ttctgtatca gatccagcaa gtgcgttaga cataacctgg gggcagcaga ggactagccg 540

gtagcgtcaa caggctggat ggagcaaact tcctcttcta ctcctcatct gttgccgctc 600

caattcattc catggatgat gccctcattg tgctcgatga aatgggcaca tggtagagcg 660

gcggctggca gctcctactc attccatgga tgatgccctc aatgtgctcg ataacagccg 720

gctgccttgc tccactattt tatgctcatt agtatgacaa acactgaaac agagcctgag 780

gcacacaaca aaacaggagc tagcaggagt aatacttgtg caagggaaaa tgaggttagg 840

caacgcaatt gatggtatta agtcttttgg tttagtctaa tactttatat tttctctgcc 900

tattcaagta gccatttctt ttctgtgtac atgatttcta gtgccgccag gcctgcaagc 960

acaatgctgt tggtattttt ggcattaatg ggtttcttta gtttgagtga atggtgttgc 1020

acacatactt agatattggc ttcagacgtg tagtcatcag atgtcattat cctctcacaa 1080

ttgagttgat tcttctgtgt gcagttggat ctgaatgttc cttgctgccg gtgcaagtcc 1140

atcatggaag tcttcttaaa tctttccatt gacatgagtt gatcaatcat gaactgtcaa 1200

gcatctcgat tctgctgctc tcgtctgagc aactaatgga cacacgacat atttgttctc 1260

tgtacggtgg agtttgccag caagttcagg atcagcatgt gacctcagag gttgttgtat 1320

aaggggattt ggtcccatct tcgccggttt cttggactca ctgcttatct ttgttgatct 1380

ccttggagtc caggcttttc actgaaattt ccaattcttc tcgcttcttg gaggaaggaa 1440

acaagggaaa caagaatagg atacatg 1467

<210> 518
<211> 3521
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49589_G1, chr1:287733457..287736977, Cluster 3

<400> 518
tgtaaaagat tttttgagct cctttccttc agctttttct cggctattta ccttgggaaa 60

ctattttagc gaatatttat aaaaaatagc tttaaattta ctgttcaaac taagttgtac 120

caggtacgtc cagaatagag tgctatgata ccattattta ggtaacaaat aatggatgcc 180

ttaaaaaaaa tttttaagac cgaaagtgta gctggcaagt ggtcgcggat gccaggctgc 240

aaaataattc ccgtctgcaa gttgcaaatt gcaaactgca aaatagtcca ccatgcatgc 300

gaaagtgtac tgtactttca aacagttata tttttatcgt cctcctactg cgggctatgg 360

tggatgtgac catacttgcc cactagctac ctaacctatg tagtctacta cgtttctaac 420

agaaataaaa aatgttgcta tactactatg tgtagcttaa atttttttctt aagtgtaact 480

aaatttatga aacaatacta ttaatatttg taccttaaag tacatttatt ataaaaatga 540

ttcgataata tatatgatga tactaggtat attataaata tcaatatttt catatttgtt 600

aaattttcaa acgttaataa gaagggcact tttgagacgg aaaaagagag cattatagga 660

ggaggcgagc tagcctggta cgagtacgac ggccaccaga tcctcctaat aaaatcaaat 720

actgtcgacc acgccttctc catgggctgc agagctgctg cagggaacca gggaggaaaa 780

ggagcacggc ggctaggtcg ctactgcctt ttgcatgcat gcgtgtaggc ggggagggag 840

actactcaag cgggcccaag tccttgtaga ctgtacctcg gcttcgcaaa agagagcaag 900

gccaaataga aaagccacga cgatgtgcct tcactgacac tgtgcgctag cttatttatg 960

ccttccgatg tgggtgcttg ttggttcggt aatcgaacta ctaggccttt tctagatctt 1020

gtcttttcta aggcgtagag aagatgcacg cttgcatggg gaagcatgct aacctttgct 1080

ccgcgcagct ctttttatgt ttgtgcatgt gtttctccta tttgtacaaa tcacaaaata 1140

agtgattttt gcgagtacgc tatgggagct gatgactgtg tatagcatac ctttgctcgc 1200

gggctggtaa cagccacagc gcccagaaat atcagaattg aatcatccct cagatgatct 1260

gatctctact tctctagtac atctttgttt aacattagca ttgaatcatc cctcatcata 1320

gttggatata taggaaacca gctgccaaca gaaatatcag aatgtaagaa gcaatatcac 1380

gcagaagtaa taacaacttc aaaatgcagc agctgcatgc agtaataaac ttgaactgtc 1440

tttcgttcaa aaaaaaaact tgaactgtca tagcaaatct gcaaagacga attcagcaca 1500

aaaataagca tcgccctctt tcatgctatt gagagttcgc ctgactcaat gttttcatct 1560

ttttttcct gacgagtttg attcaataat gtgttcatca gactagagga gaaacggcaa 1620

gattttgaca gttagagaat gtagcaacag catgcatttt ttgctaagtg gccatatggg 1680

gcattgagcc tacataaaac cagcataatc gttgtccata tggatctttg caactagagc 1740

caaagctgag ccccatgcgc cgtgtcctgc atgcacgggg gaatcagagg cagcacgcat 1800

gcatgccttt catctatatc tatatactat atatacaaat gcagacaaat gtggatttct 1860

cggaaccgtt cccagcagca ttgataaagt gatgccctcc tcagttctaa agtatagcct 1920

acttttaagt ttttaacaac agcaaaatta aagtcatttt ttttctaact tcaacgaagt 1980

taatgaatca acatctacaa gataaggtta gcttcattga aatgtctata gaatttgttt 2040

aatggtgcat ttatttaaac ttgtatatat tggtgtattt ttctaaaaac ttgatataaa 2100

gatagaaaaa gttaacatag aataaatata aagtgactta tataatttag aacagctgag 2160

agtattatat atatggtggg ccactactgt aatggtagaa catatgtaag taaaaaattg 2220

caagtattca gatgcttagc actgaggtaa tgagtcatac acatatgaaa caaatgcaat 2280

tgcctgacca atggtttgag caaaagattc acagaggttg tggaagaggc agcacaaaag 2340

gtatcataaa agttttgtat atggatctct atttgatttt tgttcttttg agatcgtcat 2400

ctctatatgg ttattatatt gctaacacat acaacatgtc tacgacttca gactaacaat 2460

taaaggcaaa tagtagattt gtatgcagca agtttatggt aaacttttgt aactaaagta 2520

agtgggaaat ggaaacagaa taggcagctc ctgataccgc aacaaatgct cgcctcgcct 2580

tagctcagcg aggaactggt cggatcacaa ttttgctggt ggacgagttt ttgttaaatt 2640

ctatgctagt aagacgaggc ttgatgcctt gatccaatgg gatcgtcgtc cgtgtaaacc 2700

ttgctccgcg acctaacgcc cctcatcctg aaaatatcaa ataataatac gtctgtcgac 2760

tggcgtgctg cttgattagg cattacatat acccttttgaa tctactctac gtacactgca 2820

cgctccatga tctcaatttt aatacatgcc tacctgtggt ccacacacac cactgtccat 2880

ggtcagtagc aaattaatat ataaaaatcc ggttgaagca ccatacgaca gatgcagtac 2940

tgcactgatc tagatctctt agcaggtgca accctagaga tgcttagcag agcataggcg 3000

gggcatggta cgcatgagta cttgcgctcc tcacctcctc tcacatccaa aggcagtgta 3060

ctctccactc ccggctcacc cagatgagct ttggatgagg gcagagggct agctagctgg 3120

agcctggagg gctagtggtg gtgtagtcgt atgtgagagc agtgacagca gctcgagaaa 3180

agactgtcac tgttccctcc ctgtactttg acaggaccaa agaatgcaac gcaaagtctg 3240

gatcggcgcc aaaatggtgg tactgttcac gagagtgcat tgttttaacg aaaatgcaac 3300

gagctctacg tttctctact gtactttgaa gcttttgtac aggcccaggt gcgtgcgccg 3360

tgcggtgcga aggagtacac ccgaaggctt ttgcactgca cacatctggg aacagtgcta 3420

gatactttca ccgaccagtt accgccacag ctttgttctt gctcgatatc gcttctacat 3480

gcggctccaa caactccaat agtattttac cacgctggtg t 3521

<210> 519
<211> 2418
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50607_G1, chr1:294083488..294085905, Cluster 3

<400> 519
gtactatagt cctgttgcag gggcagaggt gtatctataa taggggtacg ttgtcatgtt 60

gtatcgttga acactagatt tcatgacgtt agtcacaacg tagtaatcga tttagtaaac 120

tatactttat aatacttcat cgtacactag tgtgtccatg tgtggctata ggagcgatga 180

cacagtatcg gatagtggtc tttagtgcgt ctgctgccta agtttacagt gtctcaggtc 240

tagaatttta ggtccttttc tcatagggtc tgttcggtta ggggtaaccg aataaagtct 300

tagagccggt tcgattattc aggaatctag tccaggaagc atttcagctg gaataattat 360

ataatttgta gtataacaag ttacttggaa tagttactag tcttattcca gtctaatcga 420

acggggcctt aaggtgcttg agatcgaggt cattaggatg gtggacctat aactttgcca 480

aagcaaatgc aatgcaaggt atatcaccag gagatgtgcc tcgtataatt tgaaggtaca 540

ttcggtgata cgccctttct cagacgtcga cagcatgcat atctaactct gtatgcaaaa 600

aaaaaagaca tatgaacgaa gaattcgatc agcacacgca tgtttaagcc tgcaccagcc 660

agccagccag tggctcagat cttgagacgt tgaatctatc cagtcaaagc tggatgatgc 720

atatggatgg gatttggtcg cagtacacct tgtcggccgg aaggaaagct agctctggga 780

cagtgaggag gggctagctg aggcctctat cgggcgaaaa ggagacgagc actgcccttc 840

gccgctgtca gcgcagcggt ggagcacgat cgctttcgag atgagaatga gatagacgac 900

gacaactgca tgcgttgatg tgccatccga ctgtcactcg cggctaataa ttacatccat 960

ctctgcaccg gccgggccgg gccggggtgg tttcagtttc atccacacaa acaaaccaca 1020

cactgcagat ccaccggcat gtgtagttgc atttcattgc atatcaaagc ttgctgaaga 1080

ttgattgatg ctggcgtggt gtagtccatg cgttgccgac agcgtgggtc gtcgacggat 1140

cggatgatct acactgcatc cactccacgc ctttaatttg cggctagctc cacttggcgg 1200

gtccttgatt tggctttaga agagtcagtg cctgtctgtg ctccaactag cttattcaag 1260

cacatgaaac aaatgcgcgc gcgcggcaga aatctgtaca gcgcggccag gctcgatcta 1320

tctgtgtgga tggatgatcg agctgattag tgcgcgacga tgcttaacga gcaatccaga 1380

tcgatctcca gactagtgtc gtcaattcgt catgctatat tattggcaat tggcattgtg 1440

cttttcagga ggagatcttg cattgtgaag ctactatcag gctttgacca aatgctgcaa 1500

attaagccag aggtcgttag tgatgaggcc tgaggggtg cagtggtgtc actgtggcct 1560

gtcggggtag tgcagtggtg ccggtccaca tgtcggccgc tgccgcagtc tgattactat 1620

ttgtcaatgg ccatgcatgc gcctttgtta aaaagagaga gagacatgcg caatctgatt 1680

actatttgtc aaagtttcct ccacactaat tttttttac ctccacacca tctctctagc 1740

tcaccatgat atatacaaga attcagtcag gctgtggtat gtggagcatg catggaaacc 1800

aaagtctcat gatgggagcg acatgattag ctccaagttt agtggacaat ctcccggtca 1860

acccctggcc tacactaaaa aaacagaacg ccctgcatct agtctactag agaggaattg 1920

gaataaatat ttagcggcag attgcattcc agccacacgt gagtcttttc tctctctata 1980

tatattaccc tggccacata gtgattttct agcatgatct agtagtctaa cctctgatgg 2040

ggacaagcat atatatgagt agtaaggtgg cgcctacgcc agcgctagtt attaatggga 2100

tgaattcaga gaatcagcta gcacgtagta gccatttgtt ttaattaaat gcgagaatca 2160

gctatccatg acaggagcat caggcaaagc acatttggga ccagggtgtg tggcagtgga 2220

agacagtaat taacgagagt taccttgttg ctcttgcatc caacacccac tggcttatcc 2280

tagctagtgc gcttcgtatc aatccatcat gaaaacctag ccttgacagc cagggccaag 2340

actgggctgc ctgccacgcc ataacccatt aatctcatag atgcttagtt aggtagtgtt 2400

tggttcggtg tcaacgag 2418

<210> 520
<211> 1775
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5152_G1, chr1:26443948..26445722, Cluster 3

<400> 520

ctgaaagcta taaaagctga cttcacagag tctcaggctc acgtggggct gttttcattg 60

ggttttggtc aatatttaaa actatcacat gcaaaactaa atggttttat taagagttaa 120

gtgtatctcc aataacttct taaaacccta gtctcatctt tattttagaa agagaaaaaa 180

cacgtccaac agtccctagc tccatctggc acggcacaag gacggcgatg gtatcggcct 240

tcctgcagtc ctgcgctgag ccgccgaccc cgtcacaatg ccaaactcaa gcgaacgttg 300

gccatgcatg gaggcgtatc gcgagctcgt cgacgccgat attgacgaag atgccataag 360

tgaagcggta gtccagctcc ttgaagctgg ctcgatgaag tgacggcgac aagaggccga 420

caagttcgcc catgagaccg gtgcgcgcag gaccacgcca gcacatggcg cgggaggtca 480

gcatcatctt ctacctggag aaaatctcga gcgagtccat cacattgtcg accgtcgcgg 540

agtctggcga ccacacgagc caggatgtgc cggcatgcgg caagaagctt atggcgtatg 600

acgcagggga cacgacaacg acggagggtg gtgggtcgcc acacctcaac acatcgcgga 660

ggcccaagca tgtggtgaag cattgatcca gatgcattgg ggaaaattat tgagggttgt 720

tggagtagta gtatttttta ggatttaaag ttttagatag atcctaattt tttttctgtt 780

ggaagaaata tttttaagag ttattaaaga tgccctgaga tagttaaaaa tgatattatg 840

gatcagaata aaaaaacatc ggacaatcgc gatagttgat tgaaggagat aaaccggact 900

tcttcctata aaagcagcct gtatacataa tgggccgaca attctctagc ttagtggcga 960

ggcctccggg ccaaattcct cgcggctgcc agacggctgg gccctgagcc cctgacgctt 1020

tggggaacgc aaggtggcgc gtgtcagccc tttgccgcgg cagaattctg acccggcgca 1080

atgcagagcc gccgtcgcgg ctcgcagtcg caggcgtccc gtgatttgac cggcgccgac 1140

gagcacaggt gcagactgaa gctgagcggt gcggcagctg cgtgcatgca ttgcaggctg 1200

agctgaggtt ggcaggtttg ccctagtctg ggcgtagtat gaaattgttg cgctgtgttt 1260

ctcggtctga atacgcaacg gttgcacgcg agacgatcga tccagttcat agagacatga 1320

atggacatct taaggctgct aggctgggtc aactcctcta aagatgtgcg cctgtacact 1380

caactcaaat gtgtctactc gctcgtgaac tgagatctgg cagtctactg ggtctcttga 1440

aaattggtat gcagcgttgg aacgtgcatt ggggtatcta agttcaccaa agtttcttaa 1500

tgcacttgac acggaggtaa agtctacttt cattgaagag tttagttata caatatcaag 1560

actgtcacgt tattattttt ctgtgacaat aaacttttc ctaataaaac tcttattacc 1620

ttttaatatt taatgtgtca aatcatcaaa tcctcttatc acacctaatt ttatttttct 1680

agaatccttt taaaaaaata gtttctatat ctttggatcc aatctcgctt aggaacatgt 1740

aatttccatt gctaatacag tcaggagttg tttgg 1775

<210> 521
<211> 1989
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53524_G1, chr2:9371370..9373358, Cluster 3

<400> 521
acgcccccac tgcacccgaa cgatcgatcg atcgattgcc gactcatccc atcccatcgc 60

ctcctttaat aatggcgcct tacaatacgt tatctaaaac gcaatctacg tgcagatgac 120

gctactttcc cacgcgacgc aacgacccaa gccgcgcgcg ctcatcaagg atcggccggc 180

caacgctttt gtgccgccat caacatcaac cagcagagcc tgtacgtact ttttattaat 240

tgacaactcg ctccgcttgc acaatgcatg cacgcacgcc acctttcttc cagatccgca 300

aagcggccac cgagaagacg tacggcgtag tagtattata ataattgatg ttggcactgt 360

ggacggtagg gatgcgacgg gtgaaggaag aaaaggatct caatcaaaac ccaccctctc 420

ctcctccaaa cctgatagat ctactgccct actactacta gctatctagc ggccggcaaa 480

gattcggccg gcgttgttgg atcgccgccc gcccggcgcc attaacccat cgtccaaaca 540

cagaaacact cacacagtgc ggccgtgttc ttgtgcggtg gggatgggcg catgttttca 600

tactacaaag cggagaggtc tactagctgc tctgttgcgc ctgcactgca cgtgaggtgg 660

tgagtggaga ccacggctgc tcctgccgct tgcattgctg gtagtgtgta gggaaaccag 720

gttaggtcgt cactccgatc cggctccctg gccagtggcc cctgcagatc taccaatcag 780

caccgtcaca agtactactt cccacgtgct tctactttaa cccttatgac ttgtttggaa 840

acactatttt atcaaggaat ttctattttt taaagaaaaa aatgaaaaaa agtgttaccg 900

tcgccagttc attccagcga gaaggaaacg atgtgtgccg cgacgacaac agataatagc 960

acatatatac ccatatcgcc tctctctggc tcagcatctg cagcgtctgc cagacgtgcc 1020

atgcagcgca cgcgcgcgcg cggaccggac cactggatcg actggccgtc ggacgcgcgc 1080

cagagagtgc tagcagagtc gtcagcctgg aataatcaat gcaaaatgca catgcttgca 1140

cagcaggggc ggtctttctt ctttccattg tgcacttcgg atcggttcgt cgtcgtgtgt 1200

gtggtggcgt cgttgccatc tggtaggtat acgtggcgct gttgtcgcag cttgctgcca 1260

cgaacgagaa cctgcactgg cactgcacac cgtgcgtccg tcggtccatg cctgcataga 1320

gctagtaaaa ggctactact agtctgccag tagcccagta ctaccactta tcgatcgcta 1380

ctcgcggtca gtcaataggg ggaggcaagg agaatgaaaa gcttccaagg cctggcgccc 1440

tggctcacgg cacttcgttt catgcccaca aagtgtgttg gacccgccaa agtgccaaag 1500

gatcagaact cccgatcgag tgtgggaatc gccccatcat gcacacagca cacccccagt 1560

ccccagataa tagcgaagaa tcagttgcag aatacgacag ggaatccaga gccttcttgt 1620

ccccaaagca tgggcgtcac acaggccggc tcccaggatg cgtgctttca gtcttcctgc 1680

acgtacggta gcaaagccgc cagccagcca gcctcgccct cgctctaata acaaagggaa 1740

accagagtcc gataaggact agggaagttt ccttgccgcg cagcttgtcg gattctgtgt 1800

ggagatttat agacaacgtg ttttcagaga cctgtgatgg cagagtatgg acatactata 1860

atcctgcaca gggtacggtg gcgtacgtca acatggctca gacttgggat caggtggaag 1920

aggctggttt ggtgctttgg attccagcgc caagtatcat aaactagctg ttagtgtact 1980

catgtcagg 1989

<210> 522
<211> 1454
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54062_G1, chr2:12135826..12137279, Cluster 3

<400> 522
ttatcatggt tcatctatac acgtaatgtc cccgttggta ggcaagaagt ggagaaaaac 60

tgacatacgt acttcacaca tgacgcacca cgtacaaaac tcgtacttta aagtagtaga 120

gattatatat gggtatatgt ctaatatata ttattgtata gcctcttatg gacacattta 180

tctttagttc atataaccta tcgaaaatat ttttttaca tctagaaccc tctttccttc 240

tactatgttt ttcttcctct tatagaatcc tattctttca ctgctatccc cctgattcct 300

attgctctct tggaaccagt tactaaaaca agataaattt gctgctctaa atttcagacg 360

tgatgcggac taacgtgagg ttgcatacag atacaacgca agggacttat gggcctgggc 420

cgagctggga cgggggcata tcccagagct acagaatgta gggcctctct ttttccaac 480

acaatgtttg gcccccatgg gccatgggac acgtcacacg tcagacctaa cgacctgttg 540

tactgtgctc tcaatctctg gacacgcatc atccaatgat gattcaagct cgtacagcca 600

catgctagcg ctccgaactc gtgatgagcg ctccactacc actagtgagg acactgtgca 660

caccgatcca ctcgcatgtg agcgtccgcc gtacggtcgc agctgcctgg ggctgggact 720

ggggtgcagg ctcgcttgga cgctacttta acacgtatcc acgctagaat cattggccat 780

gcaacatgcc agcgtctcat gtctcacgag aggtgcccag cttttactag ccgttgaccc 840

tgcaaaatta cgtcctaccc cattcctgtc gggtagcatg ccatccgccg cagtgcacgt 900

agcacggtcg cgccgtggct tgttaccaag tttgtttgtc cgtttgttgt ttgttgggat 960

ggggtctcac gtcttcagtg tttcaagtgg cagcggcacg tacgtgcaga cagagagaga 1020

gagagagaga ccgcccgggc gccttggaaa cattttgta tttttcaggt gcacgtcgcc 1080

cctcgtcagt tggtcctctg cgtcagcgcc tgtctggccg accggggcgg cgtgctcgca 1140

atcgcaaggc gcacgtccgc ccgtggccgt gggacgtcga cgcctgccgt ggcagctaat 1200

aacattaggg cctcctttag aacgcagcga aatcttacag aaattagtca aaaacatagg 1260

cgagcgggac gcggtgacga ttccctttc tatttttta ttaaggtgtg tggattagat 1320

agaattcttt atcagtcctt tatcatggaa cgaataggtt cgttgccctt gccccgccgg 1380

tacttggagc caaccggcct gtcggcgcgt gggcaacagc gacgtgcgcg ggccggccgg 1440

ggacacgcgc accg 1454

<210> 523
<211> 1633
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54073_G1, chr2:12240262..12241894, Cluster 3

<400> 523
ttactcaccg ccagagcgac catgagtcga gtggtgatgc tgtaatggga tttattgtaa 60

tgcagtccgc actacttttt gacaaggaca attgagggag cccatgttag ggattgatta 120

tgactttgta aaatagcttg aaaatagtgt cctagcacta ctgcactagc aaggtactac 180

ctccttcatt ttatattctg aaaggtagat ccgttattca tgtgactact gttcaggatg 240

acaactaaga gtaccctcta tattgattat gtttttttt tgctgaccta tcccgtgctt 300

acatggtcat gcttcaacat tgaaacagca cacagaaatc aacccccttt tttcactacg 360

aaatcctcgt gctgttgtgg aagtggttag cgtggtgttc gtgtcgttat tgatctctga 420

atgagaccgg cctgtttgta atgtagccgt tggttctgtt tgctggggaa gcttttgttt 480

ttcttttgca ttttttgta cgtttcgccc ccatgcttta atttggtcac cttttatgct 540

gaagtcgttt gcattcgttg gatgcatggt acagtgatgg atcggcaaac tgatcgagtt 600

cgtaccgata gcctgccggt ttctccattt ccccgcttgt ttgatcaatc attcaatcca 660

catgtgttgg gttgagtttg tttgaatacc atgaatccac gtgttgtgtt ggattacacc 720

aacatgtgaa aaaagataac acaaaggtgt ccaaataatg aagcccttgc attattgtgc 780

ttatacactg ggagttcgaa ccaaatgtct gaccaagcag ttgcatactt gtacaggcca 840

gcagcaggta catgccgaat taagcatcca tcgctgagca agaactgtcg gcaagagagt 900

acatggtccc agagcctttg ccggtcagtg gagagtggag accgccgtag catgcatggg 960

agagagctcg acactggcgc gcgccatgac accaagcaac gcgccaaacg ccactgcaca 1020

gtgcacacac tgcctgctgc cgccccccct cgctacgctc tgcctgtgcc gcgcaagtgc 1080

cgaccggtgt gtccagcttt gtcacatgag aaagaagctg cgagtggcgc gaaggcaggc 1140

ctctgctgcc actccctgga cgccatacgt acggcgccac tgatgcacgt ctcgatgaaa 1200

aagaaaagaa gctgcgcgtc gcttgcgtag tggtatagta ctatagtagg tcgaccgcga 1260

gtgcacatgc acacacgggc cggccagtcg gtcgcatcgc atcgcattcg aatgcatgta 1320

cgcacgcacg cacgctcgca tcgacggtcc cggtggtact aatgtttgca gcgtcagcga 1380

gacgaccggg ccggatcgga gctggcctct tttgaagcac gcgtgtacgt gggctgccgc 1440

ggtgcttctt ttggttggca tgccagaatg acaggggaaa gggaaagatg gaagcgtaat 1500

taagtaagcc tttgttcgtt tacaccaatc ccgctctgga ttagcatgga ttggaattaa 1560

atccatgcct caatccatgc cccaaaatat tccatgacta cttaattttt tttattcggt 1620

taaacccatt atg 1633

<210> 524
<211> 1865
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5417_G1, chr1:27818298..27820162, Cluster 3

<400> 524
gaacaatgaa gccaaaagat gacattcaag aaaaacaaga agggtcatat ctatgtgttg 60

aatgtgattc tgatgcgtca acaagtgaca gtgaagatga ttatagtgat aagaagaata 120

caaagaagaa aggttaaaag ttagagccat cagtcatctc aaacagctaa tcatcggatc 180

gcttggagcc gtagccactg acagctacta attgcatata gaaagaatag ctagatctcc 240

acgaatagtt agttgtatct aaagcgagtt gcagatacgc ttggagattt agaagcatgg 300

tttaaatgta taagtataaa attttacata gagtagctct tggaatattt aaatcagcaa 360

gtgtacaaga attttttgg acaatgtcgt tgaaatcagt catgtttgag agagtttcat 420

tttaagaatt ataacttcgg tttttcaact tcactataaa acaacttcaa cataatggta 480

aggcaaggtt caaaagtatt tgtattgcac atagactcca gcttctataa tacaattatt 540

ttatattagt ctttaattac ccttgataat tagcggtgaa gaaggagaca tgaatcggta 600

ggtcatataa ccaatgatat gatgggtatt ttttgtgcga cttcatggtg agatatgaaa 660

atagtgtttt taaagcaccc tttgaggagc tttgaaaatt tcataaaact ggactctact 720

tttagttttt taagctacaa gtcgtagagc tggatacgtt tgggtagaat aaactaaaat 780

agacctaaaa ttcttgaagt gaaggtttcc taaacatggc cttaaatact aaagaaattg 840

tggaaactca tgcacgaagg caaggctaaa tatttaaata ccaaactttg ctggagcatg 900

taggtgtgtc acatgcacat atagtctagc taggccagca gcttgcacgg tgcagctacc 960

ttttgattaa ttaaattatt tataatacct gtagctgtct agctgatttc atgagataga 1020

ttatagcgtg aacgacggca ttggaatatt caaaccatcc ttttttggaa tgattggatt 1080

atcttggata cacttgaatt gcaacatgcg gattaggtta aacgttagct gcgaagaaaa 1140

tcggaggtgc ggacgatgct cgcaaaagca gctactgatg ctggccactg attctgtaag 1200

agagagaggg ctgttttcca agagagagag agagagagag agagatgttg aagcaaccac 1260

atctacagct gcaaaaatca gcgggcgatt cggcccgtcc gtccccacaa cttgacagcg 1320

agggtttcat gttacttgca cggaatagcg acggcgtgcc cttttacatg atgcgatgca 1380

acattactct agtgagggcg tgttaatcaa gcttatccat ctaccaacct catctcctgg 1440

cctctacaaa tctacaatct ccaaggctat tctcaacagc aaagtaaccg gtcatatacg 1500

tgatcagttg gccatagcct aagtaacact actagaaatc aaggcttccg tctcagaaca 1560

tcagtaccgg ttccttttta atcggtttta actcccacgt catcatagaa aactttaata 1620

cggctagttt ttctaaccgg taataatgtt aagtgtttaa tgccgttgaa gacaaatgct 1680

taatattagt aacagttaga catcaataga tactaatgtt cttattttat agaccctcca 1740

cttctttcgt tcgtgaaatc ctaacggggg aattttgaac agacgtcgat aagttgcaat 1800

ttttgacaa cccccgtgct ttgcaccaca atccgctcat tcgtccctgc ccgccgccat 1860

ccatc 1865

<210> 525
<211> 1499
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56489_G1, chr2:25401193..25402691, Cluster 3

<400> 525
catgtctgtt gtaacactgg ataggcattc aaagagcatg tcaaacaagc agtcctgata 60

catagtgcat cgaatgtgcc ctatgtggca acggacacca caccgtacag ggcacccaga 120

gagcatgtaa attgcacagt tcgactgagt actcatcaga tgtgtctcag ggtgtgctcg 180

atgaatgcac caaataccta acacatttaa caactagtct atagccatca aaattatatc 240

tgttggaaag atcatacact agatgtgttt ggtgcagaaa actattggat tttgacttag 300

agttataaat agacctcttg gctaggattg gttgttattc cttcacttca tacacttgag 360

aacacttctt gtgtagttca tcatttgcat ttgagaacac ttcttgggtg ataacacttc 420

tacactagga aaacacactt cactcatttg catcttgtgt agttcatcat ttgggtgaga 480

ttagagagct cctagtgcat cacatatagt tgtagcatct tatggtacta gttgagcgaa 540

tttggttggt tttactcttg ttgtccttgg tgattgtcgt cacctagagt tcgtgagatc 600

gttgagcggc cattggagat tatcattggc tttaatcatc attatgaggg gatctcatgt 660

tcattcctcg taggagattc acaaagagca actatagtaa aatcatggat tgttgaggtg 720

tctctctaca atagttctta cgacaccatt attgtggact taacatgtga acctcctagt 780

tggactcgcc acaatgagaa tgttggttgt tagcaagcaa ccaaacttca aggatatttc 840

ttgtgtcatt tcttatccta tgtagttttg tgcttcttac ttaccttgca gttatctatc 900

tacttgttgt tcaatactag ttcatcaagt attatgtagt ttttttcata gttataattg 960

tcgtaagtag cttgttttgt tcaatttata gtagaaacca aaccactagt ccttttaggg 1020

ggtttgcata gcataaccta gatcaagagc aagtatagac ttttgagcca tcttttatgt 1080

cgatcatctt tgtttaatga taattgtgtt attgaggaat ttttagtcta ttcatcctct 1140

agccatctag ttctctagtg atgattgtgt tgttattgaa tatttttagt ctattcatct 1200

tcctctagcg atttaggtct taattggacc gtcatattag gaattacgca tggacatgga 1260

gggggagggg gagtgaatgg aaaacataag aatgatagag aggggttgat taggccgagg 1320

atccgcatga ccaattgata ttgcgtgggt gacttgtggg catataggcc cacatgtggg 1380

catatagccc cacatgtcaa ccaccctaag aaaacataca tagtgggaga gatacgtggg 1440

cacacgctca ggttaatcga gaacaagaac cgcaccacat gtcttattct taacataca 1499

<210> 526
<211> 1898
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57436_G1, chr2:30899538..30901435, Cluster 3

<400> 526
tccatgtaga aaatagagtg aatctagcta gtgaaataac tagctattgg agacgttcta 60

aggctattct taatagtgtg tcacattaga ttttttggt gacatagcat aacatttgag 120

aggattgggt ttcatgtgat gaaattagtt ttatggggat aaaaccatgt caactcgttt 180

tccaaggtct tggaaaccat gtaaaacctc tattgagagt gatttatttc atattcacat 240

aatttactaa cttctattag acattgagtt gcgacattta attggtatgt tagcgtataa 300

aatagtgaca taaaatattg tattgagaga cattgtttga ttcatagttt tatagcactt 360

aattatgatg tgacagcgtt gaaaagaatg ccgtcgtctt gagatcacgc taccacccta 420

tcatgccttg tcgtcgtgtt aaaggtgaag ccaaaaaaga atagctcggc caattttagt 480

tcacatacaa agttatcctc ctactattga ttagttgttt tctcaattca cagacacaca 540

acaacttata aatagagatt gactatatta gtcataaatt tccaaaacta tatctagaca 600

tgattaaaaa caatatagaa gccattttat caaatggttt tttatatttt tgtcttctct 660

ataaaacagt tttgacatag aagttagagt caaagttatt ttttaaaaga taaagtcgta 720

caaaaggagg tccaaaaaaa caggggatgt atatcgagag caagcagatg acatgttgga 780

agagtcccaa ccggtcgttg tagtgagtga aatggtggtg gatctcatag ggctctagat 840

tggtgtctat gatataccat caggtggctt agaaaatggg aagaatatgg gatatcgaga 900

gcaagtggag gacgaagttg acatgttgga agtagttggt tcaccattta caagtttgat 960

gttcataaat acacggcaac gacaacctct tttatccaca cgcaacgcag gcgacactcc 1020

cactatctac acaacgttaa tacattctgg gttgcagaat cttaatcttc ctaaacctta 1080

ggccaactac aatagctcct aaaaacactg atctcgataa atattttagg gataaagaaa 1140

aactacggtc cagcaattac cgaagtgttc tccctatctt ttcgcacgca aaaggagacc 1200

catccatggc gcaaacattc acaggcgcac gaggtccaaa actgcatgtt ttctttgttc 1260

ccgcgcctaa gatttccttc gtgcctccac cggtctctgt tcccgcgttt gagatttcct 1320

ttgcgcctcc atcgttccta tgtcctcccc acccctcgat ttcacgcgcg agggaacacg 1380

atgcacaatt gaacgcattg ttgaatctct ctgccaagct ttcagccccg ttgatgttgt 1440

ttggcgagta cctctagatt cttcttgggc aacgtcgacg caaaatccat ctgcaacggc 1500

tgcagttttg gaggtaagca atcgcaggtt accttggatt ggatcatagg tcaacataga 1560

ctgggatatc ctagcgtgcg caggacaccg gtcaggccac ttgcctcgca acaaccttgg 1620

gccactgcga acgcgcaagc tgatctaaat ctgagcggcg aggtcggagg gacttgcttg 1680

cagctacgac cctgccagct catgcacgtg gggtagatta aaggagggga atggaggaga 1740

tgggatggga cggaacctga agcatagtac gtaaatgatg gattattgga agggatgggg 1800

tacccagagc ttgcactaca aaccaacatt gtgtcgataa attttcatcc ataatttctt 1860

tcaaaagtac ctcataccat actatatcca tataggga 1898

<210> 527
<211> 1601
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5773_G1, chr1:29519610..29521210, Cluster 3

<400> 527
tttggcgcat tgctgcgctc tcctttgacg gcagggagct agctagctag cagtagcacg 60

actgtaaaaa gggggggtc gtcgtggaga catcagcagg gcaaagcgaa cgatgcgaaa 120

ccgtacactc caaatgatgt gtggttgcag tagcgcgcct tgaggcaggt gacgttgaga 180

cgcctgatcc agcacggttt ggattgacag acggatcacc cgaacgatgc aaagatcgat 240

catccgaaaa cttaaccgat tcggcttggc ttgcatcgtg gctttgcatg aatcggtcgg 300

tcgtcatcaa gccgtgcgga cttgtcgacc gcttaggtgt tctttataaa aaaaaacaaa 360

aacaaaaacc aaaagaactg cttgtgtttt tcctatgcga ggctctccgc agctacagga 420

ttctaatttc tagagatgta gtagatctca tgaaaggaag agcccgaaca aaagaggagt 480

tcgcattagg tgttttatcg tgggccggcg catttccagc tgcccatcat gttcatgccg 540

ttaggaaaag ctcggtcctt tatggtgcgt gcttgaggcc cactctcact accagcccgc 600

caccaccgcg cgtgatcacg cctagtaaat gtaaatcgag ggagcgaggc gccaacggta 660

aacgttacta ctacgtgtca cgggaaatcg ggacgtcagt acgtgcattt attatagtac 720

gtcgccgcaa gtattcacac gcctcacggg atcgtcgccg gcgacggagg agcgggactc 780

cccgtgtagc tgggccaaaa aaaaaaacgg attcggctcg gcggtctacc cgttcgaagc 840

tttcacggca cgcgcacgag catttaagcc cggcccatca agtatttaaa ccgttataca 900

attccgttcg tagcctagcc cgcaaacata tgccgtcact atacactgaa gatagcaggc 960

gcggaccatt tccactgtcg tattacaact cgtgtcggcc caaaccatac agacagcacc 1020

tgtgtctgcc tgtaacgaac ggtccaccat ataccgaact cttttgcgac gcagtttacg 1080

cagggaaaaa aaaaagaaat gctttttttt ttgcctccag gaagtatagt ccgagtccaa 1140

ttaagtttta ctttaaacgt tagatggatt gtctccttcc aaaccattta aattaaatca 1200

tcccatgatt ccacccccagc tctgaaagta ttctcttgct acactttagc tagcagtagg 1260

gtgtttggtt accgagataa tgggctagct aatacagata aaaagaacgt gtcaaccatc 1320

ctgtaccttt cagtagctga gaggttgagt aggtaataag ataacgtagt cgtctggcct 1380

ctacataaag tttatctcgt tcattagctg ttactatgtt ttggtttgaa agtagctaaa 1440

gtttaacgga tatatagtaa tggttatctg tttggagcta aacaagccct aagttcgttc 1500

atgtgatgat tgggtaattc ctttccctaa tctatgttct tcgtgagtgt tcgcgtgaag 1560

acatgcaggc cgtcacccgt cagcaaatta attgttacaa c 1601

<210> 528
<211> 1420
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58041_G1, chr2:34671827..34673246, Cluster 3

<400> 528
agctataaaa tagcttgttt tgcatccact catgtagcct gcaactttct tgtgcaggca 60

accaaacagg agctcagata aagtcaacgc atatggtggt ccaagatgag acgatacggg 120

taaccaaaca tacagacgga gacaaagatg gcaacaacgg aaaacgtaaa aggaaaacat 180

aaagagtaat acggagactg catgcgcagg cctctccggt ttatttgctg cttaataata 240

tttatcgccg gctacttcaa tatttttttt aaaaaaataa aacagaactg gttgctgcta 300

gctagcctac catctctctc gaccgaggcg acaaagagtg cgtgcgtgga cggggtgcgc 360

gcgtcgtcgt tgcccccgag aaaagctgcg gccggcgcgg gcgctggcgc tgctggaacg 420

gaagctctgc ggcgcgctgc cgcctgcgat ccatttgcgt tgtggttgta ggtaaataaa 480

gctgtcacag atgctcgctc ctgtccatcc agtttagttt ttttactgct cctaataagg 540

cttccttttt caccttaagg ccacattatt tcttgcttat ataaatatcg tcgatacatt 600

attatacaaa ggggggggag gaggaggagg accactgcag ccggccgagt cagcttatta 660

ttgccgagag tccgtatgga gcgtccgctt ctgcgctctg taccgcgccg gcaccaggga 720

tgggcgagtt atttcatccg gcggaacaag acacccaacc caagtttccg ttttggtggt 780

ccatgcatgc atggggctag agacagcgcg cgactagccg gccggccggg cagaacggga 840

gcgcgatccg cgcgacagaa gatgatgccg atcgatgcgc gcacagtacg tacgtacgtg 900

ccacgaacga cgagcacacc catcacaggc gctggttcat tccactacgt agtctgcgaa 960

tacaaccgca tgcagcgcgt actagctact ttgctgcgga cacacacgta cgttcaagta 1020

tatatgatat gtacaacaat acaagcaaac cgccacttgc tggtggtgct ggacctggaa 1080

tcaaccgtcg tgtgcgtccg cgcgattgcc gcccggccac ttggtgctac gatacctgct 1140

gccggccccg gccgtaccgt acgtgctagg cgacagacgc tggcgccgtg cccggctacc 1200

gcgctgcgca aagctcttgc agcgcagatg gctcgctttc agtgtccctc tcttttccgc 1260

gtcgtcggtc gtccgtcatc cgatcctctg cacgccagcc gtcagaggat tggaaagagg 1320

agaaaaagtt actcatgccg ctgcatgcat gcgttgcttc ggtttttctt tatcctgttt 1380

cgtgctttgt gtgtacgtga cgtgaggacg aagacggggg 1420

<210> 529
<211> 2564
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58992_G1, chr2:40138714..40141277, Cluster 3

<400> 529
atatggtaag cctaggacac cacaccatcg ctccaccctc ttgtatccag caacggcggc 60

ggtggcgtta gcggtgtgac agtgaggcag gtgacatgga ggaacatggc ggaagccctc 120

gagagaagct gcggggacgc gtgcgggagg ccgcatccgt ggggtggacc tggagatgag 180

cggcgtcacg agcgcgcgcc ctggagagac gccttcgagc tcgaccgcgc tgatgtacgc 240

tgcctcaaac tccgcgaccc cgccgagcgg ttcgccgccc tgcagctcgg cctcggtggc 300

tgccccttcc gatgggggac cctggcaagt ctgccttcgt tttcgcccca atctccttca 360

tgatgttcta gtaaccccac tagtatgtac aggaggattc tgatgaacat cttgcgatcg 420

ccagattaag ctgtctcaaa aagggcctca atttgcaacg aacccaggcc cagggtaagt 480

cgtgggccgg gccgtccgtc cggcgcgcac agagctgaga cggttcatgg cccagaaacg 540

gaagcagaaa gtagtgcgag cccccgcggg atccacgcgt agactgttcg tctgtaccgg 600

cacatttcgg tgcggccgcc ggccggtgta attaatggtc gcccatccta ctagtagtcc 660

gaacaaatac agtggtgaga agtactacat acacacacgg gtgcatgtgc atacagttgg 720

gggcgttggg caccgctcct gctttccaag acggccggcg cggcgcggcg ttccttttt 780

gttggacgga caccggctgc agcgatcctt ctcacacttg cagcaaaggt tggcgttccc 840

gcgccgcgcc caaaataatg ccatcgccgg gcggctttta cgtctgtcgg gcagcaaatc 900

gagcccgcgt cggcggatgc acgcgcgcgc gcgcgtggct ggcagcagta gcagcagctc 960

tagctatgcc gcggcccgcc ggccaccgcc cgcccgcccg atggcagatg gagccggaag 1020

aggcccgcgc agcgagcgcc gcttgcttcg cgcacgctac gtcgtcttga cccttgagca 1080

gcacctcctc atgtcattgt catgtgggct agcgaccgtt ccgtgctgtg cgtctgatct 1140

gctgagaacc aaatggcagc catccaaata aaaagaggag cacgggccgg gggcgggggc 1200

gcatcccgtc acgtcacgtg cccccattgc cctcgagggc aaagaaaacc taatcaaaca 1260

ggcgtggggg cacgggaaca tggaggcggg cgccggtggt gtcaccgaga tcctggaaaa 1320

ttctcgggcc ttggactttg ccaaacagtc gcggtcaaat gattgccctt ctgttctgtg 1380

cctcctctgc acgcacgcac gcaacgcagc tgccccccgc cggcttgcag acaatgaact 1440

attcgttggt tgtgaggtag ctaataatta gttgcggtga gtaattttgg aacgtacaat 1500

aacaactatt ttttaatagc taactgccga ctacgtacgt gtacctccag aaaattctgt 1560

ttactagcca gagtagtttg tgcgcgcgct atccttggcc atttctcaat gaaaggtttt 1620

gttttctatg tgccatatat aggtatgatg aaacaaatga gatcatggac gaaactttcc 1680

attgggagtg cagtagtgca cagtcttatt ttgttgtggt tttataggca acatgcatgc 1740

aatacatgga acttatttca tgtccctcat aataagtagg ctgtcatgtc acaatatttt 1800

ctgatttgtc acattattca atgagaatga tacttacact gaaaatgacc tcgtggcata 1860

tattggcatc cgatatctgg ccgtccggat tttagggttt gagtcagttt ttttttttt 1920

tgttcctgac agcgaatggt gcgcctacgc atgcatgcgc gcagcatacc acgcactcga 1980

tcgcgccctt gcatgcgtgt cctgccacgt atatactcgc aaataatagc gctgagataa 2040

aaaaacaccc gcccacgtcg tgaaatgtga atcgtgtgat cccgaagcgc gcgcagctag 2100

ctagcgttgt agtagtagca cagtggagta ctgctgtgca tgaccaccac tccctcctcc 2160

ttttcactga actggcctat agatagatgg gagcatgcat tgcatatttg cattgcgaat 2220

cgatcgccat catcagcgta ggtttcgctt ttgtctttgg aaaggtgcgc gcgcggctgc 2280

atatatgcaa acgcatggac cggcggcctc ctccctccgc tagtctagtc cgctccgcat 2340

gtcaacgttg gactacactc tacgccgcac tcgcaggcca gacatggccg catgggtagt 2400

ggaaactggc aaaaggctcc atccttttcc ccttctcatg tgacgttggg gcccggtccc 2460

gtgaactcat caaatcagaa gtcgcagcag gcactagtag tacgcgtcgt actgtacaga 2520

tgtgtgcatg acaggtggtg tggcgtggca cgggatgatc atcg 2564

<210> 530
<211> 1579
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61011_G1, chr2:52325215..52326793, Cluster 3

<400> 530
gaaagcgaat aaacgagacc acataacccc aaggagggcc ccaaatcctc aacaccgggg 60

actagccatt cgtcgtggcc caataggcca cgcctaacga gagtttggag gtgcccctag 120

tccaccaagg atcgacgcca ataggccata aggggagcta ggtgaaagct tgaaggcagg 180

aaggggcaa tgaggaaggc aagaggataa tagaaaaatt agaagggtag cctcaataaa 240

taaaggcccc ctttagctcc tcaacacaat agcccagaca tggtagcctg tcagacaaaa 300

gcacatgact ggcccaccat cgggtcataa tcagaccaac atgcaccaaa ccacccctag 360

aagcatacct aagggaaagc aagagcaacc ctccgtgtaa tggtaattcc tttcaaaagg 420

aaagacacaa aaggggcac attaattaaa agccctatgt tgtgaggacc tttacacatg 480

gggttcccgt gtaaccccat attacaagcc tggactaagg ggctcgaccc gacgtcatag 540

ggagaagaag ataaaaaaga gggttacaag cgcaatgggg gagcaggccc atacaagatt 600

tggtgacctt ttccttgatt accggtatac aaaatcgggg gaacaagagc tcgatcacag 660

aaggcagatg tctgttggag aatctctaag gagcccagcg tgcagcggat caggttctcc 720

aaggacacta aacccatgat tcctctagac gcctcatcat acccccttgat caagctctcc 780

aaggcccccg atgacgcgcc ttggggaaga tccatagggg tgcgaaggtc agccctagtg 840

atggcagagg caatggtagc gccacaatga acaccatgct ccacaacatt ccgaacgtgg 900

tccgggacgt cgagcaggtg ctgcacctga gtcaccctac gaacatggat gcttcaagtt 960

acttcattga cttgctgaca aatctccctc aactccgctt cctggcctga taggaaacca 1020

ggataaggcc ttggaaaccc atgtgacaaa agtgtgagat agcgagtgtc gcagcttact 1080

agaaacacgg gcctccgcgg cagaaagacg agcctacata cccacgaggt gaacatcggc 1140

aatcctcaaa gtcatctaag aggaggccag acacatctga agctctgcag ttgtcagaag 1200

cagaagggtc tgaggcctag gaccaccgat cggtgcagga ccggtagaac gggaagaggc 1260

aacgacccta ccacaaagaa cagtatagga aggaaaggcc ctgattcggt ctgaactgta 1320

gctagtgaag gtagcagctg cctaggattg aagtgtcatc aacactcctt tgaggtgcaa 1380

gcccaagggc accaactcag aggctagccc ttgacccctt ggctggagag accgcgaaag 1440

atagagacaa ggagataacc tctccttaaa cagtcgagac agccgaccta atgtaaaaca 1500

acaccgaaag gatgaagatg atgtagaaaa tcaaaagggt tcaaaagcca cttatctttc 1560

ttcaaaagaa cgccttttg 1579

<210> 531
<211> 1912
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6242_G1, chr1:31849968..31851879, Cluster 3

<400> 531
taattgctca cttgctccta tccacgaacg aatgatcgtc taatgattga ccgctgcaga 60

gaagaaatgt aaatacaaca tccaacgaat tgatcccaag ctctgaactg tctgaattat 120

gtactaatca ttgacaaacg gagcagatag atacatccgc agacattttt ttttgggtcc 180

agagctttct cgttgtgatg cggataattc catgaaccac caatagctgg caaaaagggt 240

ttatctgaag cagttgggca gtcacatttc tttccttttc tcctttaatc tatattttct 300

attttctctt ccccaactgt aaattgcatg cgtattagca tatacgtgtt gtgtatacgc 360

aacaaaccta gctaccagtg taacagtagc agcgtggcaa gtaactgagc tgacggtgac 420

cctaggtctg cttctgctag tgatgtacca gtaaccaaaa cgacagctac agtatgaaga 480

tactggattt gaacgctagc tgcaagaaag ttttgcccag tggagaggaa aaagcttttt 540

ttcttttctt tgagcgaaat aggtttggat taagggcgac actcagggcc cttgagaaaa 600

taataaaaag atcatttgtt aagcaaccaa atcaaatgat tggggctgcg attgtagcct 660

ctgaactgca gctgattggt tcggatcgga ggcatcccaa ttacaccaat aatgaaggct 720

ttccttgagc ttatcatgga tggaacaggg gggaaatttg ggcagaatgc agaggcgagt 780

tgttgagaac aaatttgtag ccagatcaac ctcccaatga tggggatttg gtgcaggatc 840

ctttcgaggt cgacgttgcc ttgccctaca cttcatctgc agcactgcat gcagccatac 900

ttcgatagga cataggagac atacacgcca tttgtttctt cttccttttg cagtaaccaa 960

ttttggtggt ggcaaaccct gccccagcat ggaagaaaag atacggaaag taagattgta 1020

tttatattta tatactgaca gtcatttttg ttagaaagga aagtaagagt gtatttatat 1080

actgatcaac gacaccccat attaatttat cattggagtg caattaatta gttctatatt 1140

ttgtcgatgt gctagtactg tccaggcaac caaagtatgg aagcgtgcat atcagcacat 1200

acgtttgtcc tttcattcct tgtccccagt gcaactacca tgaagattac acaaatcata 1260

acaaagcctc agtgcatgca gaacagatct tagtacgtca aaagaatggg gatttcgtgg 1320

actcattcgc cacaaatata attgaagtgc cgactttaaa tgtgtagtgg ttagttgcat 1380

gtaaagacaa caatattaaa aagaacactt ggctccaaaa gaaagaaagg aaatataaga 1440

atagcatgca tgaaataagc atgtgctcct gctcctgctt cagtgttcag tacttgcata 1500

ctcctgcatc gggtttctga atgtctctga cgatctagtt gcgtttgttt gaccaaacaa 1560

ggaggcaatg gcgtagcact gctccggaga tgtcactgcg atagaaatgg catggcacca 1620

actcatgaga tagtcctttg gggggttttg gcagagaccc cacctctccg ctgtagccac 1680

acatgacacg taccattcag tgcttgtttc gctgatgaag aaaaggggca tatagaaaaa 1740

gaagatgaga aatttgcaag agaaaacaaa aaagatctta agatgcttca acttattgta 1800

cgaatgttgg agagcaatgg atgattatgt gtgcagtgca gaaaaactgt gtatatattg 1860

ggaacattga aggcaagacc tagcagtagt agctctagtt gtctttagcc ca 1912

<210> 532
<211> 1662
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6666_G1, chr1:34294127..34295788, Cluster 3

<400> 532
cgtagccctg actaagtgag gggcacaaca ctaaatgaca ttataaagaa gtatccaaat 60

gggataactc ctcaactatt aaaaggcatg gtggccttcc gtgttgccta agcattatga 120

ggccagacac ctctagtgtc atggacctcc aagggtgaaa tattctgtca atgagacacc 180

ttgtgtcatg gggcactaat tagacaatat gtacttatgg cacgctatgc cctagggcac 240

ccacaagact aagtgtttgg ggtgtctcat gacccttgtc gcttgaaagc ataagtcctc 300

aagccactca catcctgagg aacttatgat cctaggtcct tgggggtccc tcgtatctct 360

atgcactcat aagtgtaagt ccttagtggg ctctagtttc ctatggcact tataagtata 420

ggtcccttgg acccatcata tgtcgaggca cttgtaaata taggctctca ggaccctcat 480

gcctcaagac aataagaagt ttgcaaacac gcatagcagt atgtccccca aacattacca 540

caattagcca ctcagggtac accattggcc ttaggttcct tagagaatcc tcgaccttat 600

attttgaggg tagctgagac tcagactctt tgaggcatag ggtcttcgag gagcttagaa 660

ttaggatagt taacctcatg atagaaggat gtgttgggcc cattgaggat agtacgattt 720

cgagagacgc ccccacatct aagctcccaa tgataagttc atagtgaaac cttaatggat 780

aagtctcaag gacaacacat taatgtgtga tcggtgacaa aacgggtctg tcagatgttt 840

tgttaccacg acttaggttg tagggcactc aagatcacta gattgtgcgt gcatcgatct 900

tatagacaca tgtgtgcaca caatatgtac tacaaagtac aaccaattgc aaaggctaca 960

ctagctacca acacatcgtg ccaagtgata taatccttag tgtttgtaga cacaacttat 1020

catactcgcc cctatcgcta gtatgatagt caccctgaga aggaacaact gcaaatgaag 1080

agaaaaaata aggctctaag gaccacatta aatgcgacaa atgaccttat agtcaagcct 1140

tcaccctaaa atgctcctaa ggggcaggtg tagtcactgt tactataaag atgttccatc 1200

gtgtttaaga ctatacttaa tctagcaatc atgctcgtta ctagggatga aaaatcacta 1260

taaccatgac taggtagtac gattgtactt tcatgtatta aaagcactag gaactgtaat 1320

aggctcctat caagacatac tgacaccata aaggcacatg tccttcactt tgagcataac 1380

atcaagaggt cacctccaca caaaggatta agactggcgc atgcactagc ataaactaga 1440

tgactacgag ctacaagatc tgaggtggta tagatacaag accatgatag gatggggcag 1500

taggcttgat gacaggtaga gcccacaagt agaacatgca tgtgagctct atccccttga 1560

tctataaaaa gggagggggt gagcaacatt taaggaggtc ggtctaggaa ccactctagg 1620

gcattcattc tatgtccaac atcccatttc caacataata ca 1662

<210> 533
<211> 3146
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7478_G1, chr1:39013266..39016411, Cluster 3

<400> 533
gtccaacagt gccgctgcat cagtttcaaa tgtagtaatg aaatgggcaa gaattactat 60

gttgcatgct ctaaatccac ttggggatat tattctggca ctcgcgcgca gtggcatgca 120

tgtggcacac cgtatcgtat atagtcatga cgtgggccgt tgagaaattt ttatggatca 180

aaactattga agttttagta tctttaattg tatatgcatg agcttcattt cagttgtagg 240

ttaataccag agacatgtga taattttgtc agggactact tccttaaaaa aaacaagttc 300

gcgggttgct actccatgtg actagtgaca agacactaaa aagaatatga caagtgacta 360

cacgtactaa tcgtgcttca cgcacaggca cagcacatag tagacaggaa caaaaaaaaa 420

tatgtggatt tagtatctat tctttgctcc gcttttggtc tttgatgagg tgattttgct 480

ttgccttttg tgcacgtact ttttacatgt cgatccgacg acgacggagc cgccgtataa 540

tcgcaacacc atttcgtttc tcttttcttt cgctcctgtg gtggagatct ttatttcgga 600

aacatccttt aatccgattt ttttatttaa tattagtttt attataatcc gaaacggagc 660

acgcacagcg gtggacgtcg taataaataa ataaataata aattaaataa ataaatacga 720

tgcttgcgcg agatattatc cagcaatcca aagctacatc cgtgcaggag cgctgcgcga 780

cacacctcgt tgccaaagct gcatccgtgc agtgcagtgc aggacaggac ctcctttgtt 840

taggacgcga tgctgctggt gcgagatcgg cacgacactt gcgtgcgcag agcgcctgct 900

cggctagctg ccgtgccgcg tcatccatgt gtgctctggc gtccagccag ccagccagct 960

ccccccgtaa tttcgccggc aggtttgact gcgtatctga gcagcatccg tccatctcca 1020

ttcactggtt ctgccaaatg cctgcagaag aggccgtggc cccatggacg aatttttctt 1080

ctcttctcga taggcagatt aaaaacgaac gaagctagcc tggttagcaa cgtgccggcc 1140

gctaagctac aaaagaacgc gtcacgggaa agagataagg gccgcgaaac acggccacga 1200

ggggtggcga agaaagggcg cgtcgaaatg attgggggag ggaatcttgt tccggctccg 1260

acgcgaattg gtgagaaggg cccagctttc cgtcctggcc tgtcgcggaa tctcatggag 1320

atcgatcgtc gtcggacggc cgccgccgag accaccctat gcctgctgga ctggacgctg 1380

tccacacggc tccgaagaac cggcgaaaaa aggaaaaagg agagcaacaa acgctagaaa 1440

ccattttatt agtacaagcg ctagtggtta gtgaagccgg cgcggcctgt gccgggtcgc 1500

tttgggcaaa gacgggtggt gggtgtgttc gccacgatcc catcagcggc tttggaagaa 1560

tccaaaggcg agcgagcggc cggccggggg ggcaagaaaa gaatcggcgc caaatgggta 1620

ccggccaggg gcaaggaaac gcgggggaag gcacttcact tcagcgcact tgggatgatt 1680

ttttttttt ttttgccgg ttctcacgac acctcgctcg tgcggcgcgg agggcatggc 1740

gccgtgtccg ctgtcgggca cgggcaagaa agtggccatt ggccagccgg ggggtcgttc 1800

ttaaaatctt gatgtgaatg cgatacgtac tgtgatcggt tgttgactct gccatctctt 1860

ggcgttgttt tttttttcta ctgctcgccc agtcttgccg atcctcatct ttggacagct 1920

atcaattgcc acaggctcta ctatagctcg tggtatcgta cgtacgtact gaaggccccg 1980

gcggggttca cggtttcaca ccgactcgct cgacccctct catcagcaaa gtcagcagcg 2040

gcgtgggtgc actgccggat tctgaccact cgtaggctcg tggcatagcg tcactgttca 2100

ggcacttgta cgtcgcaaca ggacagacag gctccgtccg ttttccgtga tcactcttgc 2160

attgcatcca caaatcagcc caggccttaa cctggcacca aaccaccagg ttgcttgggc 2220

cagaccagcc gtgcggatct cccagggtat cgtcggcccg actcggttgg ttgcggcccg 2280

ggccttcaac cagcccatga aaccgcacaa cgttgcggaa tatgaggcga gcgggtttgg 2340

cgtttggctc ccaagagtcc aagacccgat gggcgcggtg ccttccactt cgatgcgacc 2400

ttatttcaaa aatcaacatt gcactttaca catttgtttc ccaacgatta cactctttca 2460

ctgtttcaca taccacctga ctgattggct cccaaatacg gcgatctatg gcgtacaagc 2520

gaatgcaggc acataacctc aaaaaaatgg cactgagaca cacaatctag ttgatgtcgc 2580

tcgtaatctg gtcagtggag tcatatccaa gctggagtta cacatttgcc ccttcctcca 2640

ctcacgctcg agttctctct gtctttgccg acgaccgcca tctgtgctcc tcttctcctc 2700

cattctcggc gccactcatg ccctcgccgg cagtgcggtc ctcagccgcc ggagtgcgac 2760

gtcaaaggta ccgccgtcga ggtcgaagat gaggacatgc tgctcgattt cctgtcgagc 2820

ccgcaagtga tggcggcagt ggtgggctcg ttgacgatgc gcatgacggt gaggccatag 2880

atgacggcga cgtccttggt agttctcagt tacagatgtt tctaggtttg tcggtatgat 2940

acatgcagta gattgactct ggatgttcct atagatagtt tactatttat ctagccctaa 3000

atttggttaa caacgcgggt aataacaatg gtcctatggc ccgttgctct cttcttggcc 3060

atgcatgtag catgcatcac tatagagtaa acaatcatct caaacatgct ttatacgggt 3120

ttactttctg atttactccg acatga 3146

<210> 534
<211> 1425
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80271_G1, chr2:173369340..173370764, Cluster 3

<400> 534
ggcgtacctc aagacctcaa atagttagcg ttgcttgttt gatgagtatt tttcgtccta 60

gattgttaca ccttttctac attgaagaaa atgaaaaaac aacattgttg tggtactatg 120

tatttttaa agaagccgct tttactattt gttacatttc tattttctat tcttgaatgc 180

agatcaaggc cttatctacc ctctctatac tctttggaca aaagccttgt gaggaagttg 240

tgcatattgt tccataatgg atatattttt ttgattcttt atttttattg cattttcatc 300

ctgatcttat agtgttatgg tcattatcag agtacaacta gcaactttct tatatgttgt 360

actttgtact attttcatat cgtttcatct atctctttcg aatttgttgt cgacctgtgt 420

cttaggcaag caaggagttt tcgtctggtt ctgcccaagg aaggaagaaa gaaattgggg 480

actttatgtg cacacatctt aactactact tttctccttt atgcccaaga aggcttggag 540

caaatgcttg tgctttgact gtatatttga aatagttgat gcttctttta tgaaatgtga 600

acctttgcaa gaaggatagt ccatagagga ccttgtcact tccaaaaagc acacatcatc 660

tctgcttgac ctttctcttt cactaattaa ccgtgaattg gtacaggcgc gtgtgttgca 720

atttttgtg attgtcacta attaattttt agttgcagat gtagctatag cttccacctc 780

tcaattgcag gagttcctgc ctgctcctgg tgataatgga ggagggtatc gaccactagg 840

tggccttgca ggtaattaat gttgatgcca atggtcacca cattcaacag tattttgttt 900

gagtattgaa tttatctaac catggatgca caattgcaca cgttcaccgt accattgttt 960

tctgtcaatt cctaaatttt tatatgtacc atgaattcaa tccttctatc acacattcat 1020

gcaataaaag agagtagttg tgctgtcaag tatgaggttt catcattatc tttcagagga 1080

gatgctacag tttccaaata acttttgttt gtcctaccat tttcttccta gaatgttata 1140

ccttttctgc attgaagaaa atgaaaaaat atctataaca tcgttgtagt actatgtctt 1200

tttttaaaga agtcacttta ctatgtgtta cctttctctt tttttcattc ttgaatgcag 1260

atcaaggcct tatctactct ctgtatactc tttggacaat acccttgtga ggaagttgtg 1320

catattgttc caaaatgggt gtttttcttg attctcgatt tctctattgc attttcatcc 1380

taatcttata ttgtcttggt ccttatcaga gtacaattgg caact 1425

<210> 535
<211> 1713
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81871_G1, chr2:181126011..181127723, Cluster 3

<400> 535
gcagttgacg tgcggccgct gccttgtcaa tcggtaacaa aaacaaaaaa acagtaaaat 60

tcatttcctg cggacctctg caaacggatc tggcagcact ccaccatgcg tccaatcagc 120

ccccatgcct taacactcca ccacaggaca gggcacatta accccggtca cgttgcgctt 180

gcacacggga cagcgtggcg tggcgtgcgt gctgtcagcc gcgataacta gccccggtgc 240

tgtgatggca tggcagtcag gctaggccag ctcgaggcgc cggtgtcaac ctgacaaaaa 300

accgtggccc ggtcggcgcc ccgcgtctgg taccgcacac gtcctgattc ccctggcatt 360

tgcaaatcta aaccgcaaaa agggggcagg aacctcctgc atctttttta cactacatac 420

atgtactacg ctcgaataaa taaaatcgtg gagcattcga tcagatattc aaaattaaat 480

agcaaaatac tttgttcttc atgaatctcc tctggtcacc atttcttcac acggggtcgt 540

ggtttccttg ccacggccct accgccaacc cgacagatcg tcaccgctgc tgtccatgtc 600

atgcgcggcc ggtcccaacc acaataacca cacggcaaaa caaaccaccc ttccagttct 660

gaagtaacct ccccatccgc cgccagggag ccccccccatg ggtggcggct tgcagagcgc 720

agaagcagcc cgcagcaggc actcaggcag ccgggcgcta ggcctgctcc ccgcctcgcc 780

ggctcgtgcc cactgcccat ttccgactgc ggcgctgccc ccgcgcgcgc aacagcctcc 840

gctgtgcgcg tgttgggttg ttggcaactg gcaagcaacg tcagtccagg agaacggccg 900

tgatctgcac caccgactgc caccgtcccg gtggtgcctg tgcctccctc ctccggttgt 960

tgcatgcgta ctggaccaga acattctgag cccgtcctat cctgtcccac gcctcaaacg 1020

gacacggagg aggtctacta cttgctcctt gtattgtata ttcaagttcc tctacaaaag 1080

gatacactgt aaatagctcc tgagaaccgc cccgtgtacc gtaggtgcgc atggtgtgcc 1140

accggccgct agcttgtccg gccatcacgt catgcaaaaa caaagcgctc gtaactacag 1200

atcgttcgca ctgttctttc gatccccacc tgtgcgcacc acaaaggcag cacttgccaa 1260

acggtgctgc cctcctaata acatttgctc atttacttca cccagcgcca tcaggaaggg 1320

gccgcgtccg acggccgggg tatgttcatg gggatcagtg tcaccgcatg cacctaaacc 1380

gcttgtcctc tctgccatcc aacgaccgca ccatcaggga gtaagtggcc atcaccggcg 1440

gcggcggcgg cggctgacct ctttcgcgcg gagcggaggc cgggagctac cttctatgta 1500

tacccctatt atatataacc aatcagttaa aatatcacta agtatacaca acaaattacc 1560

actaactaaa tcccaccatt aaaaccaaca ctccagaccg cttcattcgc ttcatccctc 1620

ttaatacatc gtatccaacg tcactgtttt ttttgtcatc cctcacccgc ctctagcctc 1680

cctagcctca ccaacgttcc agcccccgcg att 1713

<210> 536
<211> 1861
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82253_G1, chr2:183189649..183191509, Cluster 3

<400> 536
gacctccgcc tccacgtatc aaccctcaat tcacaaccaa cgacgtcgat ttgccatgat 60

cttgttatgg caatatgatc taccctcttt ctcttggatt agtatcctgt ttcctatttg 120

gaagtgtctg tctatgcgtg gatgaagttt tatatttaaa ggtcccatga tttcattatg 180

gatagtttgt ttcagtttgt catattacca ccactttaga cagtcagaaa cgtacggatc 240

tagcactgag atagaataga atcaaaattc ctgcactaat gctactccaa agtatagagc 300

tcctctcccg acacctataa tatatgccct attttggaat cgctacggct ccacaaaatt 360

tggtgaaaaa ggttaataag tgctctacaa aatcgtggag ctagagttat aaactattaa 420

aaatatttag ataagtcgtt ttatttatca tttagattaa aaagtatttt taaaactatt 480

taaatttaca ttataaacta tagttctaca ctgtaagctg gaatctagaa agaatcgtgg 540

agttcgaaac aactacttat aaatttaaga gaggagcgac ctagaggtaa aaaaaaataa 600

tgaaaggagc tctcaagcta ctttgctgga ttcgccaccg tagtccatag acagtggtcc 660

taccggcgat ggtgacctgc gtccaagaag atgctctcga gtaactcatt ggtagtaact 720

ccatctggta acaagcggga taccagatag ggttaaagaa tggtaaagcc gctgcctgct 780

atgcattgtc gtcagtcgtc agatcttatc taaacgtcat ccttgacctt tgcaggctag 840

ctgctcttgc tcacacggat gtatgcatga ccaatattat taaattgaca cggcacatgg 900

ctagcggtgc gacgacgtag cgccagaata tagagtgttt aaattaaata ccttaaaaac 960

gagtttggat gtagatattc aatactggaa tagggaattg gaatcaagaa ttctgaattc 1020

cgctgtttgg ctagctaaaa aattcagagc tgaaattaaa actcaattct ttggaattgg 1080

actctctcac gattcagagc caagatcgat ctaggtatta gatggaattg caattctaga 1140

tacatccaaa caataaattt gttttgaaac ctatttccaa cactagatat atttaatatt 1200

ggatctaatt taattccaac agaagtgtaa tgcaacgagg aatcgaggat gcaaaatcag 1260

tcaaccagga ggagttcgag taccgcagca atcatggagc cttttgatcc atcgccacta 1320

ctgtactgtg catgctatat aagtaccgct catacgtcgc gtcgatcggc ttgtcagccg 1380

gacccatgca cgtttcgatt attgcatgtg tgtgtgtact gcaggagtgc aggtatgtgc 1440

tgccaacggt ttcggtcctc atcgtcaaac agtgtgctac tgttactaca tgtacacgca 1500

cacgctggag cgacagcgat gtgtgatacg tacgaaaccc cagatcgtgt ccaggtccgt 1560

ctgtctcgtg gtacgaccag atttgattga tgctagggag tggtacccac cagatttctg 1620

ggcagggcag gcgtaagcgt aacgtaacgt aacgtaacgt aacgtaacgt aacgtgtgta 1680

gattagattc gatgattttc gctccagcct tcgctagctc tggactgtca tcgttgggat 1740

gcttactggg cctggatgct actgggcctg ggggccctga ctgagcccgg tggatccagt 1800

ggtcgtcact cgtcataatc agaataaaca aattacagtg tagatctctc tcggtacacg 1860

t 1861

<210> 537
<211> 1517
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82404_G1, chr2:183980245..183981761, Cluster 3

<400> 537
cgcgtgtacg attcgtgtgg aagaaacgca ggcagaaccg acgacgtttc tagcaggata 60

acgagccatg tgtgggaatc cgcgtgtagg ttgcagaggc agcagaagga gccaggaatg 120

gaggacagga cgctggattc tctcgtataa tgatgaatat cataccatat tacgtcagtt 180

cgttcggttg gagctgaaac gatccatttc tttttcgaga aagagctagc tctcgcacaa 240

ataagtcatt tatagttagg cacccaaaat attccatcgc aggtcgtcgg ttgccgtgac 300

actgcacgcg gctgaaacat gcacaagcca acggctctag aagtctagca gagcgtgctg 360

ccttcgcgga ctgatgcacc tgcaatacat aaacataaaa tactgtaaaa gtcgcagccg 420

aattaaagcc atagcaaacc gcaacgaaca ataactctgt attttaaacc ataatttcac 480

caatatcaca ttatttctaa ggtctaaaaa aactttggtc taaatccaag tttttcttta 540

gcgcatggtt acagtctcgc tctttctcct aaggagaaaa aaacaatgtg actataaaca 600

tatgttgaat tagactgatg caaaatatat tatgattata tatcataata ttaggtaaac 660

tatggtttta gaaaacagtg ttttcaaaca gtctctggaa gggtggaacg tataccttgg 720

caacttttgc tgctcttttg tttgaccccc tacctcacgg ttaatttgtc tcatcggcgg 780

atcatcatgt atggatccct gctcagccat ttgggttgcc tgtgaaatgt gatgtttcca 840

atctcctcga atcaaaacac aaggagctta ttctctcgta taatgatgtt ttgtgtcgtt 900

gttttcgtct agacagcaca ccgagcgaag aaatctcgat cggtgtaggg ccgggtctcc 960

ctggcggcag ttttaaattc acgtcatttt ccgtgtgatt tccgtgtgat cggatgagat 1020

gactgctttc gtgcagctct ggcttcgcgc gcgcgagcct gtcccagtaa acacgtagcc 1080

ttccacgcat atccaccgac ctaagggctt gtttggaaga aagagtattg aaaaggatcc 1140

aaagggttat aatcccttgc tattcaaaat taaataacaa gggattatag tcccctcaat 1200

cccctccaat actcttgttt ccaaacatgc cctaaagccg ttagctgcac ctctgcatac 1260

acgcctgtcc acctacatct acatgtgggc aactgaacac aatggcggac gcattaccaa 1320

aatttatggg aaactaaaaa accatattat aaaatcaaac aaggtggtaa aaactattgt 1380

tgcataaaat tcaagttcca tatgtattat acaacataca agttcgaaga aaaaaattat 1440

atgaaaaaag aagtaaacat acaactaagt ttttcttgat cgaataaaag tcgtgtgtaa 1500

attgtcgaat gtcgatc 1517

<210> 538
<211> 2475
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83175_G1, chr2:188396975..188399449, Cluster 3

<400> 538
gctaaaagac gtcgtcgccc atctaagaac atgggccggt ttctagactc gtagaacaga 60

tgagtaggtt ttttttaac ttcatcgtaa tcctagcctt cacttttagg ggagtcgtac 120

atagatctga ttcagaaagt aattacagaa catattggtt gcttccgctg agagaattgc 180

tgaagtctag aacggtacgt acgcagggtg gtagattggt tggctgccac agaaaaaaga 240

cgagggacct ccggtgtcaa caaaaccttg acaccactaa gattaggcca aaacaacgga 300

tggattaaag ttgggtcacc tggctctgaa agaggtgatg caaacaaact tgggcacgca 360

cgcatccact ttgaattgat taattatcac tagggtgtgg acgcactagc agtaatgtgg 420

atgacgatgt caatggcaag gcaggccatt aataagcagg cggacagtgc cgaagtgtgg 480

aaccaaactc taacacttta tacaagactg ttatcgtgag ttgtctctac gagaatggca 540

tgctgcatgt atgcattgac agagattcat tgcagaactg gcctctaata ctcgatttcc 600

tggttgttgt ttttttgtt gttgttgttg tcacgctcgt cgctgtgtcc cagacgcgac 660

aggtaactaa aatcgactgg aggcagcgca gcactagcta gaatatacta gtaataataa 720

tatcaagaaa cagagggccc cgggaacaac gggataccaa cccaactact acgatgctct 780

ctgcctctct ctaatggtga ttagaaaaca accgccgcgt cgtcggcgtc ggcgtcgcca 840

tcccgtgtgg cgttcgctgt caagctgacg cggggctgtc agcgtcgcgg gggccggacg 900

gcgacgcagc ctttttgcag ttttgcactc cggcgcgtga cgccggcgcg cacggcacga 960

cgctttcagg tgtcgcgcaa cgaggcgagg cgactcttgt tccggccgcc tttttcgcgt 1020

gggcttggac tggttttctc cccaattctc gccgccgcga atgcgaggcc ttgcgtgcta 1080

cgcccactaa tttatgttta ttattattat gcgcgcgttg ccctgatttg cctgagtggc 1140

acggataatg tacggtgtca aacacaggtg cacgacgaga aataaagcag actagcggag 1200

catcgttcag aaggtacgct atgtttaaaa gagactgaaa tgaaaccgat acacccattg 1260

accatcatgc tactctattg agctgtttga gagttcttac atacagtgat tttaaagcca 1320

gaatctatcc tagataatat tttataatga aatggttctc tagaatacac aggtaagagt 1380

ttttaaaaaa cattgtttat cataaattta tttacttctc acgtgaaacc acctttatc 1440

tacagttgtt agagaaacac tcctccgagg aggagctacg ctacgcattt catctctcta 1500

tactactaga cgctcaggca agatttaggc ctcaagaaat tagcatgggc ctgaacggcc 1560

cgcccacttc cacctcatcc cgtgcgctac gtgggccacg tcgcggcggg gcacggcggc 1620

ctcctcgtcc cgtaccagcc gctctggact ctcttgccgg ctcggctcag accaatgccg 1680

cttgccgccc cctactgtcc ctttcttcct cacctccacc acgcttgcca ccctcgcgaa 1740

gaaactgcag ccgcaatcgc cgccacgcca cgcgcaagcc caggcctcga tggcgtctgc 1800

ttcgtacgcc gcaacgcatg cggctccacc cgcacctcgc tctccgcctg ttcgaccacc 1860

tgctccgctc gggcgcgccg acccggacct cccggcctac gagctcgctt tcgcgtcctg 1920

cgcgcgcgga aggggccttg gcacgggcgc tgcaggttcg tccacgtcta cgccgtatgc 1980

cgatgctccc cacgcgcgca gagtgttcga cggcgggacc cacaacgaca tggtcgcctg 2040

gcacgcctac tatggtagta aataacatcc ggatctgcgg acattgtcat aatgccatac 2100

agtaacttct aagcaagatt tctgggaggt gcataattgt tagggatgaa aatcggtttc 2160

gtcatttcag aaaagggtct tgttcttgcg gggattactg gtaatatttt tgatagcaac 2220

ggtttccttc gttttactta tttgcataca ctaaaatgtg tatattatat gagacaactg 2280

ttattattgt ccggagacat gaagctcctg actttattgc acgtctattg aatactatat 2340

ggcacccttg aaccaacaac atgattgaca tctcttgtgt ctcatcaact tgaaacctaa 2400

ttattgtcct tttcagtcaa catgattcaa aactgcacat gatcctgaga tgtatgtcct 2460

acgcaaaagt gtcat 2475

<210> 539
<211> 1951
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83701_G1, chr2:191122014..191123964, Cluster 3

<400> 539
taaataaata tcttaataaa tatttatatg atacatgaaa aacatagcaa aacgttgaaa 60

aacggtaatc cggtagccta gcccgttcct gacagagtga cagataatag gaccgacgac 120

gtgccctaca ctgcaaattt gcagggcatc tttctttccg ttcgctgttg ctgtcgatag 180

gagaaaccta aaaggggttt tcagtgtcct cctgtgcgtc tgcgtgatgc acacatgcat 240

gcatgacgac cacctcgcca tgcatgcata tgtacagtgg cctgcacaca cgctgctgct 300

ccggcagccc acatatcctc ggtcatcgca cggcgcataa ctctcgcaac acccttcagt 360

tcatccgacg tgccggcgta ccacggccgc acaattattg acgacgtacg cggccgcggc 420

cgcggggacc ggccgccgtc caccgatccc gccggaccac accggaaggg aagaagacaa 480

tcgatcgggt gcgtggcgtg gccccatgtc gtcagaggtg gtcgtcaggc gacaggcggt 540

gtgtgtgtct gtgggtgggc tctgccactg catgattcga gatccaaagt cgaaacgacg 600

tggacgtgcg atcggatgga tgaccggagt cggaggggag gtgcctctgc agagcgcaga 660

gcgcagaggc tgcgcgcgga gacaatcgac aggaacagga tcacctgggg gggaaaaggc 720

gagttttgca gctacctgtt tctccttttt ccccggcatg gctagcttgc actgtaggag 780

tactgtaact gtaactgtac tgcatgcatg cacgcacgca gaggcactgc atggacagca 840

tggttttggc gcagcggggg acgatcgaga tcggtcggcc gcgaccgcga ttgggatttg 900

cagcgcggga aagcgagggg tttgtcaggc cgctgcctgc catgttccgt tccgttccgc 960

tgcgagaaat ggagcagcta gacctagagc tgaggctgtg gatcctcgac cggccgatcc 1020

atctctagct cgatcaatgg cctccggtcc cgactccgat ctcgcgtgat cacgcgctgg 1080

tgcagtgtag gtgagacgcg gcaggtagct gcaaataatc tgcgggcaaa gcaagcctag 1140

ttacagagct agatgagctc ctttctctga tcaggattca gagctagaca gaaataacct 1200

gtcgattatt agagctgctt ggattattgc agttaaactt tcgtttggct ttgcgagtgg 1260

gagcttgagt tcggtttgtt tggtcttgag tacagtaagg ttgtactact tctacatgcg 1320

tgtatgtaag accaacccaa tttttttaa aaaaccactt tttatttttt tagctaggag 1380

aaaccagatc tatggttttt aaaaaactga gaatataatt tatataaact gagtcataaa 1440

ctggtatgtt tagaaccaac tcaatttcta taaaccagtt tattaaaaac tggatgcatt 1500

caaacatgac ctaaattcct ctcgaaagaa gtagagttcg gaagctttta tgagttggtg 1560

ttccacattc cgacggcgag acagagatgt tgcgggttcg ctttcgttcc ggtttcatgc 1620

tttccagcgg aaagcgagtg agcgagagaa caggattgga ctgctctggg cttttcgctc 1680

cccagccaga ccaggcccca atcactctaa agaaaggcca ccgagcctgt tacctggttg 1740

ggcccgatta catgactttt aactgcaaca ctagctagct agtagtactt gccagggagg 1800

cttgtcaagc ccggctcgaa ctcgaagcac caaacagtgc tcgtgagtgt ttagaaagta 1860

ttgcttgaga atgaatctct gatctctgta ttccattaac ataaataata tatacatagt 1920

gaacagacgg cttcacgccc gcacgtccgt t 1951

<210> 540
<211> 1601
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84721_G1, chr2:197212941..197214541, Cluster 3

<400> 540
cttcatataa ttgagcaaat tctattagtt atttatacgc agcatttaag aaatatgttg 60

acatatgaaa tagtgagatt gaactctatt gagagagggt gtttcgttca tccataaaat 120

tgaggtggta tttttgaaaa taggaacatg aaatcctcat tgtgattagc ctaaacggca 180

caaaaactat aacggcgatt attcttctag agtttgcttg gttaattaac aatgcatgtc 240

ctaaatgcat ccgcccagtc gcgtggtatg catgctgctg tgcgctgttg ctgtgcgggc 300

atcgtctcct cctgacctga gggccagttt gggatccgcg cggaatgcaa tgcatcgcat 360

gcatgccatc aggcagcggc agcagcaggt gcgatgaagt gtagtatccg tgccatgtgc 420

gcccgaccgc catcgtcgcg agactgtacg tacgtacgtg cgtgcgcaca gcagcgcgcg 480

gtcgatgcct tttcgtttca cgggctaaaa ctccactgtt ccgttccatc catctctgtc 540

tctgtctgtc tgcacgtacg ggcgtacgta cgtacgtact actccagtac gtacgcgagc 600

tactaggcta gccaagcttt ctagatgtgt gtagtgtagc tgcgccggtg caggcgtgca 660

gacagccgag taggtatggt atgggcatgg gccgcatatg gccgtctggc tagccagggg 720

ttcacgcgcg cgcgcattgc atgcatgcgc gcagatggat ggccagccca gccccggccg 780

tgtgcgcgcc tcgggaccaa gcatgcgtgc gcacacggca catcctgcca gtgccagtgg 840

agtcggcggc aagtccgccc ccatcctcgc cggccggaag ccgcgacaat gttgggcttg 900

ggcgcacaag aagaagacaa agcacacatc ctgtgcgcgt taggcattag gcattacctg 960

tacgtactgc agcagtgttt gtaaatctac gtacgtcccc cgccgccttg caggagctag 1020

ctagcaataa aagccggcct gtgaagccct ggacacagaa gcaacacggg cgacgagacg 1080

acgccaagct aggcacctag ctacccttat tagctccagg cgaagcaggg ggcacacgcg 1140

tacgtggcgt tctccagtac agtacagcac gggagggagg ggggcggcga gcgaagtggt 1200

gaccatttat ttgcatacga gtatctcata cccgatccct agccgtggaa aaaaaacgac 1260

ctttccagtt tccactccag gggaacagaa aaggccggca cggcggtgca ccgcttcagc 1320

ctacagcagc acgagcgtgg cagagtagca cacgtacacc ctgccttttt ttttttgca 1380

attattggtc cttcttctct gttcgtcaac caagttgcgt gaacgtgcca gcatagttgt 1440

catgtacttg ctgcgcatgg caaaaacggc caacaaaaac ggtcgacgac gtgcgtgcgc 1500

tgttatgttc atcggcacat gtacaggccc cgcggggaga ggaagcggcg gatgccgcag 1560

caacgagagc agagcaacca aaggaaggtt taccacacgt t 1601

<210> 541
<211> 2376
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84952_G1, chr2:198707027..198709402, Cluster 3

<400> 541
gaactaacat ttattctagt gttgtattta agataggtta attccacatc caattttgag 60

catgattgac acccataaca aaggatggtg ttaaccacaa agaatgatca ggtgctcgat 120

atagaaagag gaagaagaaa aacaaataca aagacttaaa gcaaagatat agctaggata 180

ttttattttg ccaatcaaaa caatagagtg ggtaatcgaa tttaggataa gtagtggcag 240

tataaagagt ggaactcaaa gtttaaaatt attacttaag tgccactagg tgaattaagt 300

ccatgcatga gcattaaacc tactgaagtc ttgaaactcc aacttagaca tatttgtgaa 360

aatgtaaact catatgcata agtttaaagg acatgttgga gttagaacat gggcgaaata 420

tagacaaaaa aggttaaagg gcgcctctaa taatcgtcaa ccttaacata ggtagacttg 480

gagtcagtct gatggttagc cttattctct tgtaaaacaa gacctctgaa tcataagcat 540

tgctctcatg atggagtagc ccccactgtt aggcgcatga gaaacttcaa acagtaccct 600

aatctatagt ccaacgagga tcgtcagtct agtatgcctc aatcactttc tataggcatc 660

gaatcctagc catcattggt tcgatggtta tcgaactgta gtcattagac tatacgatat 720

tatagttgtt agagcggcaa tgctaacttt caaatgtaaa caattcgggt gtatcatttg 780

gtctttactt attcttatcg tctatgttta cttttaggcc tcgttcggaa gctacgatgt 840

tgggcgcccg gtcaaggcct gaccggtggg acagtacttg cacgttcctg tcctatgtct 900

ttgctgcccg gtggggtgga tagacgcggt tgctatttgg gagcatctca gggcatactt 960

ctgggacaac tgacgttgtc ttcttcctta gaggcggtgg caagacaggt ggtgacgacg 1020

gcgaccccat gagtgagggg cggtggcagt tggatctaga ggaggaggcg aggcagagag 1080

tggaggctcg ggcgctcaac ggctagatcc aaaggagaag gcgatggtag cgacaagtga 1140

gagatgaggt ggcaactgcg gtgaccgtgt caggcggtgg aggcggaaga agcgtcgggt 1200

aggcggtggc gacatcgtgc tattgaggac gagagcgaga gaagcgagtg gagcagaatt 1260

ccgaccttca ggagttaggg tttccagacc cgtcgatacc tactgttaac tgggccacgc 1320

atacccaggt attgggtttc caaatgtctc tgaaaaaaca caagactgag gtaccgggct 1380

aaacacggga aaactgacgg ttttttgcgc ttccaaatga gcccttaggt gaatcgccct 1440

ggactacttg ttcttttgtt tttggttgcg ggtatagacg tatagtaagg aacgaaatca 1500

ttgcgtgcct attaaccttt ggtaccgagt agaatcggtt ccatagtgtt ttttgttcat 1560

ttaaaatttc atgctacctt gttgaaatat atgggcccga accagaaatt ttggtcccga 1620

cgtccgttgc aagtttttt cgaaacattt gttcgtttct gtctatacga catgtcgatt 1680

ctttcacaag atcaacatct agattgtatg gaccggtagc tgttcatggg gtgattggct 1740

acgagctggg ctggatgaac atgaagcaag gctatccgtt cacacaccgc ttgattggat 1800

ggttgtatgt tggcgcccac gctcgcacgg ccatggccgg cgagtactac ggatttgatc 1860

attcgggcag atgcagccaa accgtcttaa atggattgtt ttgcacgcgc tcatgcggca 1920

tgtatttacc atatatgcaa ctaaacacaa gttaagataa agttaacgca tatgtatatg 1980

gtggcgtaag acaagatagt gcgagcaacc aatcggacag acagtgaatc gatgagagac 2040

aaaaaagatg ggaccaatca agggccaagg taggtgccat ggtacaccac gacgacataa 2100

ctttttattt caaatacttc gattaaatac ataaaataaa aatgattctc aaacttggta 2160

cgctatgtta ttcgaatcct taaaacaaga tagacacgct ctcaaactta gttggccatc 2220

caaaacagga tgctgacgtg gcatcgccaa tttgaagcca cttgtgcctc taaacctaac 2280

atgttgtgtc atttgggtcc ccgaatttga tattatgtgt cacctgggtc tccaaacttt 2340

cattattgtg ctacaacatg gcattgtctc cgggct 2376

<210> 542
<211> 1609
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95264_G1, chr3:16654825..16656433, Cluster 3

<400> 542
tgaaatagac aaaattagga tggcaaacct taggtccagt ttttatttct gaagtacttt 60

gctgccatgt caacaacaaa aacaatctgt tgctgattga ttcacatcct gcaggaaagg 120

aattgtgagc cttgtgttgg agaagtcgga gactgagagt atatggcgac tccattggtg 180

tccatgtcaa cgtctggagt gttctagagc aactcggggt tgtcgcagag ctcagggaga 240

cttgccaacc ttgtcaccac gtaagtttct atctctgcaa atttttctct gcttgaaaat 300

caacatgttt tgatgcgata aacaaagcag actgatagtt tcaacatgtt ggtctgcttt 360

ggttattcaa aaaaaaacat gtctgctttg gttattcaaa aaaagagtgc aggtaagttt 420

gcttcagacc gaattagtgt tagctatcag tctactgttt gttaaggtta actgggtcac 480

catatatatc accacaatgg tgtcttcaca ttattagtgg gaactactac ctcacacact 540

acgacaatat tgtgtagttt cctgtcagtc taaatttgtt caataaccaa cttcaaaaca 600

aaagctgcta agaattctgc cagtagggta tgatgccttc attttggaaa tgggtaacaa 660

tcgagttgaa gataactttg catcacgttt ggttttgcaa ctaattttgt taaataggtt 720

aagctgcacc tttttctctg ttcagtgtac aacacatcgg gggaagatgt gattctgctt 780

tcatggcaat cagagtcaga tttgtattgt ggtgggtgca aaattaagga tatatgtaca 840

gcgccttccc tccgtactcc ctcccaaggc cgaaggcgca aaaaaaaaag tggcagcaga 900

gatccagatg ccacgaggag aggagatcga ccacatcgtc cataggatcc tgcgtgcatg 960

catcagcctt ttgtttttc caatccgcgt cgcgtcggtg ccgggggggg gggggggggg 1020

ggtctttatg gatggatcat gctcgtctag tagtacatgt ctgatcgagc gacacgacgc 1080

caaaagtgtg gtgtggcaga tctagaagca gccggatctc tacgacacca acaggccggg 1140

gtgggggacc cgcccccatg tgtgccacac tgccagcccc caggcccctt tccaatctgg 1200

caatcttcca tgcattgcct tattctcttt attaccatac aaaagacaca cacacacacc 1260

accggagccg gccgatccgc cgagcaacaa gcagctgggg catcatcagt gtggtagcct 1320

ggtaggtacg gtactctctc tctctctcct tgtccaagag acgaagaaga ctgacctgct 1380

gtactactgt gctgctgctt ctgcacgaca agatacgacg cggcgcctac tctttacccg 1440

agtttaatag ctcgtccagt tacagctcct cgtgctactg cttgcttcac aatgtgcgct 1500

atcatgggga aacaaaagag gggtaggtga cggtggtgtg tcctcaagcg tgtcatcgaa 1560

tgccttttt tttctgttgg tcctctcgtc ttgcaaccga agcaactct 1609

<210> 543
<211> 2424
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7507_G1, chr1:39334848..39337271, Cluster 4

<400> 543
aatctacctt ctcgccgatg atactctctc ctgtcattaa taatatacat gatgttacca 60

caagtaagta aactagtatc taatttagct gtgtgctaac gttgtatctg aatgattgga 120

tggagtgttt gctttgttgc gtctatggct ctatttcaca caccctggtg ttcctcgccg 180

ccatgcaccg tgagcataag tggtcgatat catttgacat gtgtgttaag ctacataagt 240

cataaatatc catatacgtg attggccaac aagtagcgga tagaaaaatc cataggacga 300

gtcggtcgag ttgcatggtg ttggatagat agatgcggcg aaggttaact agggcaggga 360

ttattcatca aaaaatgttg tgatagattt tatacatgag tagggagaga attgtgaggg 420

gttcgataaa aggagtgagc atactgaata cagacgaaaa aaaatgtcag aaacccatgt 480

attactccga tttgtttatg caagacatgc atggtcggtg acccaacccg tgttgtttct 540

gatttgaata tgggatgggg gtacgagaag aaaatctggg gggaacaaga acaagtactg 600

gcaggcaggc gcagtatgca aaagaattga cctagctagc gttaatttca aaaaaaagta 660

caacgaccaa cagtgctgta gtacaactga acttaacatt ttttttgtga tgctcccaac 720

cccggatcag gcaaagaaag aaagaaagaa agggaaaaaa aaggaggaga agccgagcag 780

gcaaattcgc gggccagcaa gattccagcc gctccgaatc aaacgttgcg ttcctgtctg 840

cctcaaggaa aaagccccgt cccgtcaaga gctttcttcg gcaccagacc actgctcgct 900

caattcgttc cctccccctt ttcccaaatc agctcactcg gagcggaccg gaccggacag 960

ggagaaatgc tcatcacgga gctgtagcag ctaggcagct agctagctgg attgcctgtc 1020

agcgcccccg gcgatggact tggtgtcttg gtagtaatta attaaagcta atgggtgggt 1080

catgggtggg ggcgcatgga ggcaggagag acgtcgacac ggcggcactg tgccctggcc 1140

cccaccggac actagccagg ccgggcgacg tgaaacgaaa tgaagtgatg ggtgtgggag 1200

tggggtgcgc gtgtccgtgc ctgtctacgt gttggaaacc cacacgggat cgttcctgtt 1260

cttcgcccat ctttggatgc ccggagaaca tgccatatat gtccatccac cgtctgctct 1320

gctctgctct cacggcatct ctcgcactag agtagactgg tgggttttcg tgaaggcaag 1380

gcatatcccg tttacccaac tctcagagct gtctggcgct ccaaaggggg gtggtggggt 1440

agggtgggtg cgactccggc atggtaggga cgggcgggcg gtgtgtctga tttgatttcc 1500

gaagtgtgat ccaagttggc gatgccctgt cccgtcttgt tgagaaggaa gcagctagct 1560

agaggtggtt gggcggccct tcgcagtgca gccattcacg tcggacctga ctgacgttgt 1620

tccgcacggg cacggcggcc cctccacgac tgtgcgcgcg cgtcccgctt tgcctatagc 1680

ccgtttgagg aattaaagta aacccccccc cacccccccc cccacccccc ccggctcgcc 1740

cccggattaa ctaccgattt gacttcacca ccttcacctc ggaccaccac gcgctccgcg 1800

acgcatgcgc gactgcagca cggcacgggc gtcagggacc ccaatcgcgg ggccgccgcc 1860

ttgggccatt ccgagccaac cgttgcctag cggggcgacg gcgccacgta cccggcaccg 1920

cgacctgccg actaccgtag agggcatgct ggcacgggga gggggagggg acgcgacgag 1980

gggccggggc cgggggccgg catagcccaa ccgcccccac gtgggagcag tcgcgctcgc 2040

accggacgca gatgaattcg tcagaagaga aaatgcgacc catgcgccac gcaggcagtt 2100

acctactgat cagactaccg agtcgcacgg ggcccaagcc agcttaaaaa ctactaatgc 2160

acactttatc aaacacaaag taaagcataa atttaaggtg atgtttgatt cacatatttg 2220

taacgtgaac ggtaaccgat aacattaaac catgtttgtt taagtccaat cctaatcaga 2280

taccacacta gaaactggta ccgccctatt caaacttgtt accactgata atcaaatgtg 2340

aatcattagc gttgctattt acgttatatt tcgtaaacca aacgacacct aaaagtaaat 2400

acataacaaa tttgatatag atat 2424

<210> 544
<211> 2033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1079_G1, chr1:5533900..5535932, Cluster 4

<400> 544
tactatatga gtaagctact aactcgtgga tcattactcc gccagcactt gatccaacaa 60

tccaactgca gttagctcaa ggatccacga gttgattaaa aatggctgcc agaaacccat 120

ggtggcttgt gtttcggtgc cgtatcggtt tccaaccctg atgacgtcag tccgcgcccg 180

ccgggcaggc cggcaggcac tttgggtttg gggcccctcg cttctcccgt ccagtgccat 240

gtgccaatgc cagcgccagc cattccccgt caaatttgtt tcggtgcggg tgactcggat 300

gaccccgacg tctccacgcc gggcgccgcc ccgtgacgac agccggtctc tcacggcggc 360

accggcagcc gcctgggtcg cttattgctt attgcttctc cgccggcaca agcactgggc 420

cataccagcc attaatgccg gtcatggatg gatggctgcg gtgcgtgagg cgacggacgg 480

accgggagct ctcggctctg gttccgtgac gcccttggtg ttctgttctc cttcctgcac 540

gatttcctga tcctgcataa gaaaaaggaa tccgtcttcc tcgcgtccgg tacgcttcca 600

gtccgggtgg tcagaaacag aacagtggag agcccggtga aactggcctg acctccgcgc 660

gcacgcgtgc ggtgcccccg gtggccggtg gcgacggcga cgggtaggat cgccgtcgcc 720

attcgccaat ggtggggtta aataaaaaca actccaccgc agctacctgc tgctgcggtc 780

tttatcatcc acgcgagagc ccactctcgc tgtcgcgccg atacgtgggg ggtgggatgc 840

acaccagcac acgcacttag ccgagcccga gcaggcgtac gcggtgaaac ttctctggtt 900

ggctctggct cgtccaaaat ccgcgtcgcc ggacaaacgc tggcgtccgg aactgaacgg 960

ccggcagcag acagacactg atgcgccccg ccaccttcga ggctaaaaga tgatggagtt 1020

ttcacggagg tttcttcgtc ggaaaacggt gcagtgcatg ggttccgatg actctctact 1080

tcgtactgac cagtgagcca gtgaccagtc accacgagtt acctacctac ggaagatgcc 1140

actgttcttg ctactactac ttttgtactg agaccacccg ctccacgcct ttcagatcgc 1200

tgtcattgca ctctacccat ctgcgacgcg aatgtcccca tccatgcagc gtcggattcg 1260

atgcgactcg cacatcattt tagagggcag ctacagctag cgtcgtcgta gcgagtgcaa 1320

gagcttcgca ggggaaaaca gtagtatata cagtaacaac agtatttcga ttacaatttt 1380

ttttacaaac ctgtgagctc tagctaataa gggtctgttt atatctatta gaactaatat 1440

aattgctagc gtctaaaatt agtagtgacg atctaacaaa ttaatagact gcctaactaa 1500

ctattataga aactagacat acaaaagtgg atatagatgc taatatgtgc tactgctact 1560

ataataatgt atcaaaccac cgcattagta ggtggatcta aacactccct agtgatagta 1620

agctagatat acagtagcta gcactcgtta ttagctaatg gccagctcta acttttggca 1680

tcagtagaac taaacataag tctacgcaaa ggtaaagatg taaatcataa atacatattc 1740

gaattaatta cctcacatag ttcgtctgga aaaaaatatt caaaagtgaa gagcaacgcg 1800

cctttcgaaa gccagagtcg caataccaat gtagcatggt caaaattaga aatggagatg 1860

atggagaccg atagctttgt tcagctattt cattataagg ttatctctag caacttaatc 1920

atctactagg tacatgccca tgcgtttcaa cggaatacac ttgtacatat ataggtcatt 1980

gtttagtaat gttatcaaga atcaactcaa taatcataac aaatgtcgaa gtc 2033

<210> 545

<211> 1506
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115045_G1, chr3:142727508..142729013, Cluster 4

<400> 545
acggtgaatg ttgtcgctaa tatgcacggt gattgttgta aaaagattgt gaaacaggaa 60

aaagatggaa gagatcgtga aactggaaaa agatatggga ggagagataa ggaaaaagat 120

acgggaggag agataaatag atgcgaaggg ttacaacgtg taaacagtgg aatggtgggt 180

aatttttcta taacttcacg aggaagtata aaaagttgtt tttgaagcac cattcgagga 240

gcttcgaaaa tttcatgaaa ttggcctcca gtttcaattt tttttaatct agagctcgtg 300

aagttggacc tgtttggata gaagaatcta ctataaacct gaaatttttg aaacgaagct 360

ctcccaaaca ggtcctaagt atagtagaga tttatctatc ggaaaaaaaa tcatatttac 420

atcttcatta acattaagaa aaaaactttt atatcctcgt cccaacagaa aattctccac 480

gggaatcgga gatcgggcga tatgatatat ccgacacaat actgaagtag gaggtggcgg 540

tacgctctct atcaaagaag tccggaaggc cagcatgcag tctgggctca aattacatct 600

gacgcaatgg aattgatgtg gccgggcttg gttggtttcc acacggaccg gaagatagtt 660

ttgctccgcg gagcactgct gctcatcagc ctgctgtttg ctagtataga tttgttgggg 720

aggaaggaac gttgttcgtt agaacaaacg atggagctgt ttcatttgca cttgcaccga 780

cgttcgcccc atttttttctc tctctcgatg tcgatgtata tgggatgctg catggcacca 840

ccaccacgac gcgcgggatc ggagaattgg tcagcatgca catcgatcga ttagccgggg 900

agaatggcag catgacacgt gggtgtctcg atcgaccagg aaaaagagac accgagataa 960

atcttattgc gtgctgctgt aaaactcgca tatggccgag ccggcccgca gctggtggtt 1020

agttacgttg atccagtcta taaggtgtcc ttttttttcc ccatatatat gcagaaaaga 1080

aactgacacc tgaagaaagt tacaacggat gcccagtcat gccggatagg gaaattcaac 1140

caaatttcac taccaagtac caaataggtt gaagtatttg gaaaccaacg tcattagaca 1200

aacaattaag ctgaagatgg aactgaatta aaagatgtac atatatagga cgaacaaagt 1260

acagcccaat aataaaaccc cacaaatcaa agagtcatac tagaactcat atcatatccc 1320

aatgtttggt tgtaccactt taatgataat gctttccatc ttccattttt cttcatttcc 1380

ctccctaagg ctatctctag ctagaagtgt ttcttgttct accttctatt ttaaactcca 1440

ccctgcaaac aaatactgtc tatagtgcaa aacagtacga aacattgtta tacacggata 1500

tatgca 1506

<210> 546
<211> 1414
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117607_G1, chr3:158505659..158507072, Cluster 4

<400> 546
tcttttgtgt catcacaacg cacgtgcaat acactattga gtctagatcc atgggttact 60

agacaatcat ctcataagat aaaaaaatat tatatattta ggtagaaggg gcatggtata 120

gtcaacaagt tcggtgccac ttgattggtc ttcgtaatgt attagaattg atgtaccaat 180

tttgtcaaat ggtggagcat agacaggaac aagaaagcca ataataaaga aatgttagat 240

atgttctcgg acccgatcaa gtgagtgact gagcctggaa tggcccacgg gctctaattg 300

gggtgcatac ctcttgtggt tatggccttc ggtcatagaa actatattaa cctaggcttg 360

gatcaacaca gaagtcaacg ctttcgtgct ttgctaaaac tagcctccac atgctagaaa 420

gggcctcatc tcctatgtag tgtctagtaa caaaaaatgg tccaatcgct ccataacacc 480

catagactat aatagtccat tggccactca tgctctactt aaaggtccaa acacgcaagg 540

ggaaggacga ggaggagaaa cgagtcaaca tagatgcgca caacttctag agttatctac 600

gatccagact gccaccacga ctctccacct cggtatggct ttgcatactc tctctggtgc 660

ataagtcatg agtctataat ctattcgtaa ttaagctagc tagcgacatt tgatgtcatc 720

tgattatgtt tttcttaagg gctgatttga tgatcatgga ctctcagaga atttatagag 780

agtaatctcc ttgttattca aatttgagta gcaagaggat ttatctctat agatcctatc 840

ggaatcactg atcactaaat cagccctaaa tttgttcaga ttttggttgc atggagatcg 900

tgggttacgt gccacaacat tcagcacgcg tgcattgatc gatgacctcg acgactagta 960

aacaattcca tcatccatcg ttatcatcct ttaattcata ggagaacgta tatacatcat 1020

ctactttgtt ctcactcagc tcagcctcag gcacgtactc atcctcatcc atatgctaca 1080

tgcacggcgt caaacactgc acgtccctgt cgagggtatc tgacgtgtgc ggatttagct 1140

cgggcaaaca acaacatgct acgtacttgc ttcacgtctt gttcggctgc ttgaaaagcc 1200

gctgcagctg cagatacagt agctgttcgg cttccatccg gccctgtagg ggctgcagat 1260

acagtagctg ttcggctttc atccgtggga aaacttagcg tgttgttgcc gtagcaggcc 1320

agccgaacgg ctgcagccca ccagccgaac ggctgggcct ttttgattcc agccgaagaa 1380

gccgaagtag accagccgaa cacgctgtca atta 1414

<210> 547
<211> 1532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122036_G1, chr3:184608166..184609697, Cluster 4

<400> 547
tcgcaccaaa actgttgaac ggtcgcctac tctatcatga aagaatttgc ttgagatgtg 60

ccgttattta ttattcatga gatttcatat ttttcatcgg tccacttgtc ggttctcctg 120

cgaagaaggg aagaccacat accattcttt cgtgttccct ccatccagag tctggaatca 180

attacatatg catgcatgca tgcatgtgtc tagacttgag gcttcaaatc tcaagagtga 240

ccaaacaatc cttctgagct gcaccgcgga tggtgcagaa acagaaacgc gatggcttcg 300

gccgccgtac caaacaggca agcagtgaag attaatccgg ggattggagc cgacttcgtc 360

gtttcaaact tggcatcgat cgggttattc cggccagtca gcagcaagtc gagcctgttg 420

accccaagcc ccccaacacg cccaaggact aggatttgga ccttggacca cggtttccca 480

ttcgtactta tcttcgcctt atcttatcag tcttcgcgga cactgaacgc cgtgaaagtg 540

agactcgccc acctgtcaga accggatgca aaatggatca ctgctactgc catcggtcta 600

ctactacagt gctacacgtc aaataaagaa cgccgccacg gccggagagg aaccagaggt 660

gcgtgacaca cataccactg cgtagaccga agaagccgcc atggacagtg accttgttct 720

aggaatagtg ctggactacc agcaggagga ggcagaggat gctgtcataa ctcatgcgtc 780

caggtccagc catcgttctc ttcgcgagca ttccggtccg aagccgagag cccccgttgc 840

cacaggaacg gttcagcggg ctagctagta gtagcgtctg cgtcactgtg aggctccagt 900

ggcctggcgc cgccgccgct gctagaaaag aacctcttcg ctccgagtgc gggcggctgc 960

cgatcgacct atgccacatg ccagcaccac cacatacgga cgtgagcaga gagcgacgac 1020

cgcacgagac ttggtggcca cacctccgaa accggctcct tgttcctgtc gcctgccatc 1080

ggcgacggat gcaaccagac gccagcggga tgctagctag agcgcgcgcc accactgttt 1140

ccgtcccgct cagggccgtg acttgactga gcctctgacg cacacgcacc cagtcgaacc 1200

gcgatgcctt cgcgcgcctg cgcctccagt accaggagcg caaagaaaaa ccacgtgcaa 1260

agatcggttt cctcggacgg cggcgagtgg cgccgagccg tggggttggg gaccggaggg 1320

agaggatcgg agtgaatcca agcatatggg cgatcgggcg ggccgggcgg gcgtgcgcca 1380

cggggacggt gagacggcga cgctcgtgag gtcattgaca ccacactgaa cggtccggcc 1440

ccggcggtgc caccaccgca cgaaccaact gcccctaaac gcggatggat aaatacacgt 1500

gttagttgag taagactttg accatcttaa ac 1532

<210> 548
<211> 1607
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122603_G1, chr3:187428812..187430418, Cluster 4

<400> 548
gaaggaagac acgagaaggc tcagatttgt gggactttgg aatccggtga gcgatcccta 60

cctaccggta tgggcacacg tagcgaaaca catcagcgcg tggggacgac gagatccaag 120

gcgagacacg gatgacgagg ggcactcacc gagacttacg acgacgtgta ggccgccacg 180

cgcgcgccgt ctctggtcgg agcgttttga cgaagatctg accgccacgc acgcgccgcc 240

gtccccaatc cgagacgtct aaacggcggc acgacggacg gaacagagtc ttagcgacga 300

cagccacgtc cgagtgtccc acgcagcgcg cagatgccaa tgtgtggata tcgggaggcg 360

tgtcgcgggc ggcaatttcc acgagagcat ggacagcagt acaggacggt gcgtgctgag 420

acggcccaca cacacacatt gagcagcatc catacgggcc cacacgtcag agcagaccac 480

acgcgtcggc ttgcaagagg ccgagcgcgc gtgaatcgct cagaagccac cgttaccgtg 540

tatgttttaa ctagaagtaa ttcatattaa caagtgaaga gctttttttt ctaatgcatt 600

tttgaattct caaaatgtct tggttgttcg tcgataaaaa aaagaaatca tatccatccc 660

aaaatgctat gtccataggg tgataatgaa tcacgagcca aatatttctt cacaattcgt 720

ttaaaactta agtaatttag tttaaaagtg aatggaaaca gagtcgggtt ctaatggtga 780

gtacaagctt gtttacttag gtctggcgat gagagctcca atcagagagc tagtagcgcc 840

ggttggataa tgcggagacg cgacgaggca gggcccatgg acaacgtcgc cgtatgggct 900

tggtcgagga atgacatcga taggggccag atggggcgcc cggggctgct cggatcgccg 960

gccgcacttg acgctgcggc ctgcggacag cggtacagta ccgctcgctc gcagtggggc 1020

ggcgacgaca cgcgtaggcg aaaaggacgg cgcctcccgg ctcaccgatg tgccgcccag 1080

cgccagcggt ggatcagtga agaaacgaac gtatcagcct ggaacgcgtg ttccttgcta 1140

ctactagcta tcaagtcgaa gagcggagca tgcgattccg tcatcggcaa tgggcaatca 1200

gtgtgcgtct gtgatgagca ggcaggcagg cacgtcaaaa tcaaagagta cagcgggcac 1260

gcagctaccc acggcctagc cccaaatgac acccagctgg ccgccttttt agcagcccag 1320

gtgcaatgca tattagaggg tatttactgg aggagaccag gagagtgagt gcccgatcca 1380

gttccaactt tccagcacca accgttgggt ctccccgtac gtccccggga ggcggtggcg 1440

gtggcacgac agcgagtagc cacagccgcg caccggcgac ctgggagacc gcaggtaggt 1500

ccgccgattg atttgacgtc gcgccttacc agagcactcg tgcgccgcac tgggctgtgg 1560

gctggggtag ggtccgctgg ggtcgatcga tggatcaaca cggcacg 1607

<210> 549
<211> 1627
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122801_G1, chr3:188665448..188667074, Cluster 4

<400> 549
cagagagagt gctgctacct atgtacatga aacgagcata tatgttgaaa ccaaggtggt 60

acaaagataa tatataatta ttaaaaacag ctatatatat atttatatag atgcatcgtt 120

ataaagattc actgattaga tgtggttata gaaaatgtgc tatatacatg attgtggctg 180

ctcttagagg acgttttaca gtcgcttgga ctgtgggcct acccgagtac cgtggcaaca 240

agcaaagcgt gtcggtagcg gctgtttgcc cgatcatgcg tgtgcgtacc cgccaccact 300

aaattctcac ccctacggct acggccccgc ccacctccct cgagcctggt cctccagcct 360

ccagccttga caaatccgcg ccgagatcgg cggttcaacg acctcgccac caatttacca 420

acccgtacgt ttccgcccca cgcgcagcag cggcatgcgc cctcggcggt cggcgcgggc 480

tgccccccca cacacacaca aaaaaaagga ggcgttatct acatctacat gcatgcatgg 540

ccattacttt atggcgccgc gcagcgccaa acgtggcgta gcggcgggag gacaggagac 600

ccagcgagga cgtccccggc tccggcagtg tccccacttg cgacgacgca cgcccacgcc 660

cacgcccccc accgcgaccg cctggcgtgg cccgggccgc ggtttctctg cgctcgcctt 720

tcccgtagct tccggtgcgg tttcctggcg ttgcttggat ccaaagctac gtactggggc 780

cacgcagggg gatgaaagcc gcacactgcg ccacagggag cggggcaggg cagagcagag 840

cgcgcgccct tttccgtgtc cgcgctgctc cgccacgcca tcggccgcta ctccgcccaa 900

ccagcagtcg tacgagctag cctattgcat gcgatgggca cgacctgcca tcaacgccga 960

tcggtgcccc ccctccgtgc acgcacgtct cagtcaatgc ccccacactc cccaccgcac 1020

cgcacctccc ctccccttcc tcacacgtcc acatcccgcc gcgccattgc tttcctccgc 1080

acgcccgccg cgctgctgat tgattccaat tttgccctct gctgtgggtt ccctccctgc 1140

cgtagtgccg tccagtaaag aaaatggcac attattggta cacagtgcac agcacaggca 1200

ccctcaaaag ataggtccaa gtagtacttg cgcggtacta gtgattttaa aatattttgc 1260

taatccgtta attctaaact gtactcgtcg acatatttga tattttattc tatttatttt 1320

ttttataaat aataaaataa atataatata actaaagtgt atataatacg taataaaata 1380

cataatactt attattattt tttaaatagt taaataagat atataaaaaa taaaacatcg 1440

catattttag aacaaaggga gcatcttctt atgcctgcag ctactattgt cattttaaaa 1500

gaaatcctta catcttgaaa ccccagctgc cgtttccaaa ataatcgtca taattgatgt 1560

aaaatgaaat tatagattca ccgtaagcta ccacacagct taaaacgttg agattgttat 1620

tggtgcc 1627

<210> 550
<211> 1499
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122804_G1, chr3:188672619..188674117, Cluster 4

<400> 550
taatccaaga caggtttcct tgtgtttatt tttgcgtgac aaagttaata gatctactct 60

atgcatggta caaagagcgg catgtatgat gaacagtttt ttttatataa taagtttatc 120

taataagtcg agttaaatat attgagtcga tagaagaaga accagccgat ccggcaatct 180

cctgtgaatg cgacggacga gcttccagtg ctagtacttt tcagcacagc tactgctcgt 240

acgtacatgc tccttcagcc tcgtgaggtg aggtcatcca atcctagatg gacgagacgc 300

gcgcgggaga ggtcaggtca tcggtcatcc aagggaaaac agccggacgg ccgccgagtc 360

gcgcgcgggc gcggcatatc aatcaagatc acatgagggg cgtggacgga cggacggacg 420

agcccggcga gcgcgaaaag gggccgcgcc gcgggtgggc acccaccacc aaaatgtcgg 480

catcagccgg cccgcggacg tgttgcttgg atcgcgacgc gggggggggg gggggggggg 540

ggcggggcac ccaccaccag ccacaggcgg ccgccggtcc tcttttctta tttttcgggc 600

cgctggccgt agaccgacag tcagtacagt acagacgcgc gcccaccacg gcaggcaccg 660

gcacgcgccg gttgcccgcg tatcgcgtga tgccgcgccg cttccaccac acgcttgccg 720

caggcagcgg cggcactgcc actttcctga tggcccggcg aattgctgga cgtacgaccg 780

acccgtgtac caggcgccgc tgccgtccat ttatgccttg ccttggagag gaccaaggag 840

cacggacggt tggctggcac ctccttgccg acgcggattt tcggaacggt gctaccttaa 900

cttcagggag ggagtataca atgttgcaca tatatagtca ttaacagcac tatagtaata 960

ctgaagtacg tacagtacag tatattagac cgaacataaa accattttga aacggaacta 1020

cgcttcctta gaccaaattt ttaatctatc taaacaaatt atttacatct atacgttgga 1080

catctcaggc ctcatttcaa tcaaaggata atttaccgaa tactgcgttt tctatgtgct 1140

tttgaattaa atcctatgaa atcactatat catttctata aaattcctgc gtttttaaag 1200

gacttctcaa tcttgttttc tatggggtgc cgtgactcga gcacttgaca catacgagag 1260

gagtcaatca aataatattc tttttctcta gtcgaggtct ttgtttttt ctagtgaaat 1320

gtcaaaacat ggccaaaatc taacaataaa taaaagcata tataaattag aattgtcgtt 1380

gtttctaacc tacactccga taagtaaatt tgtgtgtgcg cgttctgtgg tctagatcat 1440

atgttcggtg cgtgcaagat ttatattggt ttgggaagaa cgtccataca tttattctt 1499

<210> 551
<211> 1687
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123251_G1, chr3:190931326..190933012, Cluster 4

<400> 551
gtcaggagtg ccctaaggcc tcagggtcct caatttttag gtcgtccttg tggatgacag 60

tggccgaaag aactcttgct ttggaggggc tcaagatcag tgccctaggg atggcatgac 120

cctactttaa ccaaagctaa ggtaggtttc taaggcatag ggccctaaaa gcatgagttt 180

ggtagtagcc gagcatccga tagtttacta ggatccttga aggtgtcatg gcagcattca 240

aaggtatacc tttccctagg cactaacaaa ggcccctgag tccactgaac tgaggtctta 300

taggcaggcc catatttctc acaagatgcc taaacaaaat ggattcatcc tatgcctagc 360

acttactacg aatctcattg atggggccac cgataggtga catggaaact aggtccatag 420

ggtgagcgag agcgcaaggg gagcatgaat caggatagaa aaagcaacac atcatagtag 480

agtggattca taccatgatt tagctattac tagggttcca tctctaggcc ttgttgttgt 540

acctgcatag ggctagttgt tagccatcgt tagcttctca ttggaagccg aagcgactgt 600

aagagtcaca ttttgtgtat gctccccttc taatgagttg tgtagtgcct tgagcccgcg 660

actcaatcct taagtgagaa aaggtaatat aaccagtatt ttcgttagaa aattaaccat 720

aaatataatc ggattttaag tagggcatgt ttcccaagta agtatgatgc aaccatcttg 780

tcatgtacga tgagaatctt gcatgcatta aatacggtga ctagccatta ccctctatgt 840

aattgtcata ttgcatgaca tgtttgtcat gcgggttgtg tgatgcttca ggttcttcac 900

ccaagaatag ggagagaggg agaaaaggcc ttaagtatgg gtgtgcagtt ttacctttc 960

tgtttcctca taaagcctgc aaccattttt cctttacctt cttcctctag ccatcttctt 1020

tcgtggtggc aactttcctt gtccatccat ttgattgcca tgtacgcaac cttcaccatt 1080

gaccagttgt cttgtaggag tgttgaacaa ggagggccta gacaaggcac aaaaactctt 1140

agtataggct gtgccacctg ctttcaataa tgtttactcg ctttcaaaaa ctcttagtat 1200

aggttgtgtg gactcctagt gaggagacat gatattatat cacttttat tctagcatga 1260

tggtagggtt gagcttccca ctatcatgat ttcttcttcg aatccttgac accatggcct 1320

ctaggtttgg catctcatgc ccaatgctat tctctcgctt tcaacattcg catacctatg 1380

caaagtgttt gttgggggtg aggccatgtg tagagatttt tgacatttct ttgtcctccg 1440

agcgtcaagc gaccaaaatc cgttcaacaa attctacttc tatccactct agactttgat 1500

atgggactct atatgtggcc atcaacttca ccgagaagtg ggagtattgg tagacttcat 1560

atatctatgc cacagtccaa taaaatgtgt gccttgagat gctggtaggg gagcttgtgc 1620

tggaccgtgc ctggtgagaa gatcttatgt agttagacga ggcatgggag ctaaccatta 1680

ggagaat 1687

<210> 552
<211> 2086
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124513_G1, chr3:197954727..197956812, Cluster 4

<400> 552
actggttgga gggaaacgcg tcggacgggc tcgaccgcgt ggaggggctg gctcaaggtg 60

tggggctgtg ggctgttgtg tgcggtctgg ttcactgctg ctctgagcgc tctccgtgct 120

ccgttcacaa aaatgcttca ggatggagct ccattccctc ttttcctaat tttgatatga 180

tgtgttctat ttcagagaaa ggacacaagg tgacaagggt acaaggggag ggacgtgagg 240

tgcagaacta gaggcttcat tttgcatttg ttttgatctt gttcgaatgc atgtgaattg 300

agttctaatt tgcaactgta cttgtgtggt cgccatgttt gcaattttaa atgcaacttt 360

aaattcaaag ccatggatta accaaaacca tgcaatggaa atattttgtc tctaaagaga 420

tgttggatta aactaatgta aaatatatca tggttgtgtc atagcatttg gtaaactgta 480

gtattataaa ttgtttccaa acaggccctt tatctgttcc tgggagccaa tcgtcttccc 540

cgcggcaatg acatagtggt ggggtatgtg agttgggcgt ctggttgcaa gaaaaacgtg 600

tcacgtacaa taactgcaac gacgcgtggc tcgtgtgacg tcagctgtga cgagtaagga 660

gtgaccctcg gccacgtcct ctgctctatc catctccccc gtgtcgttac ctttgtcgcc 720

cgaattatca aatctatgtt cacacaagaa tacggaatta cggagtggtc gttttagtgt 780

ttgctttgct cttgttattt tcaccccaag aaaagctacg tatcgctgga ttttgtacat 840

agtgttttca gccagccaag caggtgcggc gagccaactt tgtgacgctg ctgaatagaa 900

caggaagacg tcgatgtaat ctggaggtaa tccaagtaat tgacctgtgc acaccgctta 960

acgaagaagt ccagaccaag cttgtttgtt tatttctccg aaccgatgct gccaaaagac 1020

ccctgcctcg cgaggcggag gcacgtcgtc cagcaaaaga gcacgagttg gcgcaggcga 1080

gggcgcggtc agctagctgg tcgttgccgg acgccaactc ggagctgact ggtccacgag 1140

acggcaactc gatccatcgc cgactcgccg tacgtgttga tcgggcgagg accggagccc 1200

ggaccacgac tggctggcca gcaacagttg attagttgaa cttgaatcac gtttcacgtg 1260

gtggtgggtg gaccaggtgg tggctgtgcc gtggcaggtg tcgggtcggc atttccctgc 1320

ggggcggggc ggagcgagcc ccgcccgacc cgcgcgcgtg aaggctgctg tgggagcggt 1380

cgcgctagct gcgtccgcgt agacgtcgag tcagccaccc ttcctccttg tgcattttta 1440

ggcgtacaag ttattacatg caaaaaaaaa ggcattgcac aactgtctta tcctattctc 1500

tgcgtggatt ccaggtcgga cccagccagc gcggcggcga cggccggtct ccgtgcgcaa 1560

agctgttctt tttaggccaa aaagaaacaa tagacgacag gcagtcaccg ctacttgcac 1620

ggacatgtac tgatatacag acgtcatttt agggtgccgt tgcagctgat ctgcatcttg 1680

ttccgtcaga tggcgatcag gagagtccat gcggctgcct gcctgcctgt ccacacaaaa 1740

gtaagttgca cgccaacttt tctaaaagga ggcaagtctc tctcttttt taccaaaaaa 1800

aacacacacg ttctagttct tattttaatc aattttaggt tctactccgt ttgatttgac 1860

ttttttaaga ccgtaaactt aaaaacaatt caatgagaca actgttgagc tcacctgcct 1920

ggaaggatac aatgtgtact acccaaatgt tctcaatttg actcccatca aattaatcga 1980

agaatatact acatgcgtgt atcccaatgt tcccatcact ttgactacaa tcaaattagt 2040

tatctcaaac tactttaaca gtacgaacaa caaagataaa atagat 2086

<210> 553

<211> 1840
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124720_G1, chr3:199108510..199110349, Cluster 4

<400> 553
gtgtaaaccg cccctccctc ccttagtttt taccttgccc tccatcaccg tacacacaaa 60

cttagtccat ctccacctct ccgatatctc atctcctatc tcaatctcca gtgtaatcta 120

taatgcaaat accgtatttt agataggtag ttctagactt ctagtgcatg tgtaagcatc 180

aaggcaaagc caggtttttt ttagcatttg caattttgaa gctcatcttt cctgttaaat 240

aattcacact acaatgtctg cctcccacat gaatagcagc ataggtcatc catgctctac 300

ggcttgcaca tgatcacgtt atcggcactc aggaatccat ttatagcatc agagactcac 360

tttccacaat ctaaaagtag catctgcata gcacaacacg aactgtatgt tcacagtacc 420

tccaaaagca tcctcatatg gatttctctt ccacacagtg ctccagaaag gaacctggat 480

gcttggtttg attagtacac tccattgctt ttttggcaca ttgtgttagt aggtttctgt 540

tctcaccaga ctcactcact cacctagaga gagcaccaac ttggccaatt gtttctccat 600

tcaaaattta cttacaaatc agaaatttcc ctctttcatt gaatcaggtg caccgagagt 660

taggttttgg atgaggagat acataacctg tggtcactaa aaacaccaac aaaacgttca 720

taaagccttt gagatgcact gcgcgtagtg agcaggcaca gcatgatctt ctgcagttca 780

gcaaccaact caatggaagt cacacttcca tattctgaag ctatatgcgc tagagatcag 840

atgcaagtga gtagccaatg ccgttttctg gtaataccat tttagcaagt taatccaaac 900

atgatacata gaaacgagca ctgaagctta accgccagga gcgacctttt tcgtcctagt 960

actagaaaat aaagatcgcg cggtgttagc cgtcatgctc cctgtagatt ggtttaattg 1020

gtgtccctct cgtaccaacc gattccatcc tagcgacatc atatcggtag ggagcggaag 1080

aggacggcgt gggtaccgac caatcaagag aggagagaac gacacgttga ttccccgata 1140

gcatcctccc tgtccggatg agcgcgccgg tgcgatctcc ccgcgcggcg cgacgtgaat 1200

cggagcccag ccgcaggttt cgcatcgggg gatgccgaac gggtaagggg cgaaaacgat 1260

ggcgaaaggc gcgcgggaaa aagggcggcg ggagctcaaa gcgacctagg atgtgctaac 1320

atacgtttgt ttagcctaat tctttttttt ttctactgta gatcgatttt tttacttaga 1380

ttgagtcata tatatatttt atcataatct atatcaactt agaaatttta tttatgtact 1440

cgatcatata ggattgaacc atgtatataa atatcagaaa tgctataggt ctgtttggtt 1500

gctgcacggt aatatcctgg tccgtacgtg aggagtcatg ttctttgtat acaggctaga 1560

tccatacaca tgtttgtgtt tggttgtttg tattagtgca tttagatcaa acatagctcg 1620

tgtttggttg tctgtatcag aacatgcatt agataagatt gtataaaaaa atctttaaat 1680

attatacaac atgtgtgatc tagttttgtt taaaaaatat agaaacacaa atataaaatc 1740

agtactgtga ttaaatattc taattaagag atatagcaaa aaaaaaaaag ctaaaactct 1800

tctcatttta cgtgctgttg catgagctcg gcctacacga 1840

<210> 554
<211> 2671
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124795_G1, chr3:199644085..199646755, Cluster 4

<400> 554
acggcggccc aactcttgcc tgcctgcctg ctaccagttc caatcccaac ctccgtctcc 60

cagctgccgc cggtcggccg cccgccacct gctgcatcca atccaatcca atccaaatcg 120

atccgctcca tctgcccaac tgaatcgata tctgccgccg actggcggat ggccgtgctc 180

attggctgcg gaacggccag tccgaccggt ccggtaaggt cacgctacag agagtacagt 240

tgcctgtcgg attgggcccg tcgtcggatg aagccgccgc cgccaccact tgcctgcgac 300

gctgaacgtt tccgcaggag agatcaggag ctagctagct agctagttgt acctttttagc 360

cgcgtggcgt ggactctgga ctcgagctgc gtcgcgatct gtccatacgt tgcttggatt 420

ggatgatccg ttcgctactg agcagcagag ggaggagaga ggtcgagtcc gcgacgtctc 480

ttcgtacgtg tcgcgtaggt tcggacatgc cgtgaaggca gggctcagga acagaagggg 540

gcggctctgg ctctgactgt gtcgtctgtc gtccgccgcc gccgggcgcg ggaagctact 600

ccgtatctaa ggacgactca cttggcatcc gaaaaccacc acagcgtgtc ggagtactta 660

ggagctccca cgacagtgac gctgaaaatg agagcccata tgctagagcc attgcacagg 720

tcatccgacg acatagggct atagctatgc cgaacgtttg gatgcagtct tgtcacccaa 780

atcccgatca gcgttgtcat aaaacgactt gttgtaaccc tggattttgc ttcgtcactg 840

cacgcgccac tccctcgtga gacggcaggt agcaggtgtc ccgactcccc ccccccccc 900

ccaggcccca ggcatgggtt cttcgaggcg catccatgat ctatcgtcta tcttttttt 960

cctggcagga tgcgcgcggt gaggcgccga aacactatcc ccaggacagc gacgcgcgcg 1020

acgcggtcgg cggcgatctg tgcgtggacg atcctggccg gggttcacat gactggctgg 1080

acgctggcgc ctggcgggca ggccccgcct ctccatggca tgctgcccgc gcctgggggg 1140

aacagctagt ccacgcgtgg tccacaggcg cgtcgcacat ggttttcccg gggcgccggt 1200

cgctgtcgtc gtatcgcccg cacgattcgg ccggaacatt cttatcctcg tccctcttat 1260

cggcgcatgc atggtttagg ttatacgagg accacgcgag cgcggcggtg ctgcgtgcct 1320

ccaactccaa gagtcgtttt ctgtgggtgg tggattaatt ggacgatagg tttggaaggg 1380

gcggtagtgt tccacgttcc acgcacgagc tagattggtc gtcgtcgacc tcggtatcca 1440

gacgtgtttg aatggttcgg gaaaggacca actggactat aggaaataaa gacctaacaa 1500

cctttattaa aacatggttt gctactgtta gagcaccgag atttgtttag ccgaaacgcg 1560

acgaagaacc aactggacta tataggacgc gtggttcgct gggacaggaa acgggaagac 1620

acattgaaca gacatggcca tatgggtttc tcatttctgc gtcggcgcgg ggcttgcaaa 1680

aaataaaaaa tgaaaatgaa accacgtcct gaaacaccgt tcgcacgcaa ccaagcgggc 1740

agcacgcatg ttgcgaacac gaggggggctg tcgccggttt tgttgttcag gcggttcaga 1800

ccacacaaaa aaaaatgtct cgatattcct cgcgcgcgcg ccattggtag tattcaatca 1860

atgcaacatt atctatagca tacattttca tgcatgtgcg ctttcatgga aaataatctg 1920

tagttgtagg tgaagctacg acttaaaatt tgagccagca ggcatatata tactcatgct 1980

gcttttcacc ccctttttt ttcttctctt ctctactctc tcttgcattc agtagaagcc 2040

aaggatcgaa ggaacgaatg aacaacaaca atgtatcgtg caaataaaaa cagagatgcg 2100

atcgatgcgc gcgcaaataa ccatacacgt gttcaatcac ctacttcggg tagggccgat 2160

gggtttccac ttctgctctt gtattgtatt gcccgagacg gcattgagag aaagggcaac 2220

caaaaacgtc caggaccagg accacggcac ttgcaagcca agtcgactgt gctgtggctt 2280

acggagcacg taaaaaaatt tgcatattgc agccagccag cctctcacag tctcactcac 2340

acctgctgtg ccgaaaccca gcaacagcac gccgcgtgtc ctttctcggc tccgtcccgc 2400

tcccgcataa acaagcaaca cgatgctggg gctggggcgc gtcgtctcca cgccaacact 2460

cacggcccgc atgtcagcca gcccagcccc acgtacgccc gacctgacag agacagaaga 2520

gagatcgaca tgcgaacaat cccgcccggt cacattcagc aacaagctag ctagtactgt 2580

acaagataag atcagaccag ctgcagaatc tgcgcaaagg catgtgcgag tggccaacag 2640

cctttcgcac tcgtccgtat atatctagtg c 2671

<210> 555
<211> 1463
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126156_G1, chr3:206204897..206206359, Cluster 4

<400> 555
aaagtctaat aaagcgaatt atattttggg acaaaaaaag tacattattc ctacatacta 60

aaaaattgaa atcgatcaac aggtgacgat agctcctaat aaaactaaag gctttaaata 120

taaagctgaa gattcatgga tatgcatgga actcatggta atccaagaga tcttgtctag 180

acttgaaccc cctccccccac cccaccacca ccacacacac acaacaaagt tttgattcac 240

actaaaaatt gatcatacta gaacatgggg ctcccacaga atgtgcccaa cttaaaaatg 300

ttacctaaaa tgcacagaag tggaatgcac caatatatat cagcaacacg agatgaagtt 360

cactggagtt tactatttga gtgttgtggc aactaaaaga gtcatcattc gaagcaagaa 420

atcagtgaac tcctaaattt aagttccaaa ccttgactat attttttttg taaaagtaaa 480

aaatgactat tgaattcaga acattcctgt aaaagtaaaa aaagatgatg tatcttgggc 540

ttggtcattt tgtttaattg aaatccacaa catacttcat ccatttaagc atatgtcatt 600

tttaggattt ttttgtgctc aaacctttgt ggctttgacc ataataaaca catatgtgtg 660

tgtaaattga gcacatctgt gccattgcaa ttgtagcgat gtctaaaaat gttaaacaac 720

aaacatgata ctcaacacaa aacccttaag agcatagtca gttaaacaat aaacgtataa 780

acattattaa gaacccttag agaatctagt tgtgtatttt tcagcttgca gtgggttgca 840

gcaagatttg caatcaccca tagcttagtt tgataaaaat aattgggtcc acaggattaa 900

ctttatatgg aacatgagtc gtgttagaag atcactcgtc gagcttacat ggatcttgga 960

agaagttttt gggtcaagga acccccttaac attgttctag atcagcttaa acccactgcc 1020

tgcattcacg acatacatca tatgtagcat ctgcaaattc aaattcaatt agaaaggttg 1080

ttcaaccaaa acaagatgtc acaacacatt cattcaaatg cacattgcac atgtacctca 1140

gtatagtagt cattgtctac tctatgcata cattggacaa tctcccttgc agtctttgag 1200

aaattctcga acccctgaaa caacagtgag aaactgagtc gacgacaatc tactagaatt 1260

ggcaacatag acatgaaaat tgaatgcttc agcccaatca ctgggccatt agcatactga 1320

tgtgcctctt agctgccatt gtgcaggtag ggaacctctc cctgaaggcc ctctcaaact 1380

cctgcacatg gtatttggta gtgatccagc acagtgatct gcatgagctt gttcagatta 1440

actttgcgag tctctcaatg tac 1463

<210> 556
<211> 4213
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126864_G1, chr3:209659367..209663579, Cluster 4

<400> 556
aaatatattg ttattttggt cgactttatt tctcgataat tatcagacat attaaattga 60

atatatatca atgtattttg tgtatgtttt ttgcaagtaa aattaacaca tattattttt 120

atataaaaaa tatacaatat aaaaggtcta tcataatgac cccaaaatca taggaccaag 180

gctcgttact atgttgtagt ttcagcatcc ttagtggtca ccaatttcta gatccgccac 240

aaattctata taggcccgtc gatgggcaag tgcgagctat atgcttctgc atagagctaa 300

ttgctaatag ttaaaaacag tgatagtcag accaaactcc ctagctaagt agctaataat 360

gtaactaatt gcttaggatt agctacctag cgaataaact attgttagct taggtgattt 420

cctctattag ggctagcagc taaggatcaa tactgatgga tggatctaga caaggtctaa 480

aaatgcaaga ggtgggtgct gctggcctcc atccagtacc gcaatacaga atcaccttta 540

cacgtacgtc aagcaagccc ttggtaggtt gagaagaaat tcattcgttt gtttatttaa 600

ggcggggacg gacgccacca gatggaaagc caaaggccgc caatgtggca atgtcccaac 660

tcgcaagccc gtacgctagc tcgagacata ttgggccgct ggccccagaa aagagagaga 720

gcccagggag acgatgtctc gcacatggct gcaactgcaa gagctagggg ggtgagccca 780

accgaagaac atgggggagt cccaaatcca atgtcacagc tgcaggccaa cggacccacg 840

ataccttcct tggcaggcag tcacgactca cgcatccttg ggcgttgaac ggaacgaacg 900

ccagcttcta aacacggtgt ctggctctgg ctcctcacga gcgtcacgag gaccagggaa 960

gccccgtcgg tgtgtgtgag gtacgctcaa gtactgcacg cactcgactc accgacgcat 1020

gcttcgtatc gttaagatca ggggaggtac gccacagttg gcagcaccgc caatggccga 1080

ttcgtccttt ttgtgatcgc aatctgcaat gagatatagt atatggttgg tgttgcgaat 1140

taaagctagg agacttggca acttgcaagc cggggttctt ctacggtggt cagtgggcag 1200

tggcagtggc agtggtggcc cggggttctt ctacaagcta gggagcatct agagccgcgg 1260

tggtcgtggt cctagcccga gaagctgaat tctttcggtt cttgaatatt tatagttggt 1320

tcgtttattt ttaaaaaaga acggatgggc tagttggtat cgtactcgat cggatcatgt 1380

gcaacatacc cggatcgcga gctagccccg cgagtccgcg acgcaccatc tgccgccacg 1440

tccaaaagga aagggcaccg taggggggcta ggggcggcga ccgcgcgcac gtgatctcga 1500

gtggcggccg gcgccccggg cacgcagcgc gtccaccctt tccacctcag cgcacaccga 1560

caggtgagtt tccatgatcc accccgcgcg cactccacct gcgcccttcc gcgtcagtcc 1620

gcacgtgaca agggtgagta agcagaacga aagcgaggga atccagcgat tggtcatcat 1680

gactcacagg ggagaaagga agaaaagctt gaggggggagg ggaggagaca ggtgagtgga 1740

taatatggat ggcgtatgcg tatgggtccg tcggatgcgg gatgcacccg tgtgctcgct 1800

cgctgctttg ctttctggcc catctcatcg tctactatac actaccacgt cgtcatcaca 1860

cgccgggggc aaagttggca gcaacaacgc cgcgcccgcc gcctcctgcc tcccgtcccg 1920

cgaggcgggc ttcgacgctc gacacgacgc catgcatgca tggccccggc tgaattgctt 1980

tggattctga cggtgtctgg actccgtggg caggcgaggg gcgagctcga tcgaatcgat 2040

cgtctccctc ccagcctccc tgtccgtccg gccgtgaatg atggctgcag gacgcatgtg 2100

aggcgcgcgc gacgcgtctg cagatcaagc taggctgtta cagataaaca catgtacgta 2160

gcataataca ctggacacgc agatgtacta tatatgctgc taccctgtta cagagaaaca 2220

tgtactatat atgctgctac cctgttacag taagtaatta tcacattcat tcaaccgata 2280

taatgcacga gcgactgtat aatacactgg acacgcagcg cacaacgaca gaaacatacg 2340

ttgatgtaga aagtggtcgt acgtccttac ttacgtaccg ccaacaacgg tagcatgttt 2400

tgcatcaaaa acaacaatag catgtttcgt tgctgataga tgaagagcat gttaatttta 2460

ctcatgctca ccaatttcgt tgttgatcaa taactcaaca acaacaacac gccgccgccc 2520

gttgtgctag caccacgtgt gtagcgagag aaacaacggc aatgtcttaa acacctgcaa 2580

ttgttggaag agagacgacg gtgagatggt tacgatgatt ctctccagca tactaattct 2640

tggaatcggg acttttacta attctctctt gtatatgcta gtctatgtgt acggtagagt 2700

tttactaatt tcaaaaggct actatagttt ttagattatt attatggtgg cttcttagac 2760

atatattctt ttatttgacc atatatttaa tatactagtt gggtagtaga ctagtaacag 2820

tgccatgcat ctttcttgtc aacaaagtgc tgcgtgtggg ggggcgatgc tgcgtcagta 2880

cttttaaccg tgaagaggag acggtaaagg agtgttgcgt ggtactgtgt ggatgctgac 2940

tatttgcatg ctttggtgga gtaggcacga ccactcccac atcgggccaa aagactcatg 3000

catctcgtgc atgaccccgc gcgcgcgcca aatgtttgtg tgtggatctg gcttaagccg 3060

agctagctag gcggagacca tcgccagtcg ccaccgacaa agaggaatcg tatataggat 3120

catgtaaact cgtgtggctg tgttggatcc ggcttagggc ttgtttgttc gtgccgaaat 3180

tcacttaaaa gttgttccaa ctgatcaaat taagcttata taaattaacc aagtaattca 3240

tctagaaatc gttccaagtg accattctct agaaaccaaa caagctatta aggattatgg 3300

gcttgttaat taaaggcaat tattcttttt ctaataacct tgtcacctac ggtgtggttg 3360

tcatcggtcc atcaacatgc atcgacttta tgctaaccat gccttttac cactagtagt 3420

ggaagtgtat gtgcgacaca cgcgtgacaa gaaaatatta catacaggat atttagtatc 3480

tagcactgca agtagcagag tctgttagtt gatcgatagt actaatgttc aatagtattc 3540

ggaaggtaac catcatggca gaagttgaat ggtagctgat gacagccaca acacgcacca 3600

gcaaggttag ggtctgcgtg cggaacaggg tgaattggct cacgcgggca tggagcatgg 3660

actcgacgac gtgcagggag tcgtgcttgt cgatctagtt gaactcgttc tctaggccat 3720

cgacgcgcgc ccgtggacgc cgctgtgcta gccaggatcg gaaagaagaa gaacgtattc 3780

tgtctcgtag agttcctgcg tttctgccgt acgattccaa taaaatactg aatctaatgg 3840

ttatgatgaa caaaagaaaa ttatatcttt tatataatct ctactactct ataagataca 3900

aaaggggcg ttcacacctt caccatgtcc cagccccgcg ccccctcatg ttgtcaggcc 3960

gcccccgccg cgcacgttcg agacaacacc gtgattccct cccccagccg ccactgtcac 4020

ctccccgtga tttgtgccct atcctctgat gcagagctcc gccaccaacc cgaccagcct 4080

cgcttcctcc ctctgcctct ccctcccaac tctcgccgct gaagcgcgca gctccgccgg 4140

ccccgacgcg gctctgccgg ccaccgcggc gtccctccgc aggctcccac gcgcacctcc 4200

tcgattgcgc gaa 4213

<210> 557
<211> 1421
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127008_G1, chr3:210526308..210527728, Cluster 4

<400> 557
agagttaaaa aaagaagcag ggagaagaaa cttggtatgc tgtctcgtat ggcagaggat 60

ttgcagagat gatacgtggc ccaagtaaac aagtcaaagg cacccaatca tatatggtcg 120

accgcacgtt gctgacggcc gggatcaacg acatgggggc agcgcagtag agcacacagg 180

agcgcgcgcg cacgcgccgc tgacgaggcg ctgtcggcga tgaagcggac acgctgcggc 240

agcggctact gccctaacaa caacgccgat gatcgacaag cagtatacca ccacgcggtg 300

tccgccgcga cgatggacac aagctcgccc gacagagtcg tttttattta gcttcacgcg 360

ccgcccagga ctcacaccat gacttaaaag ctttttccga aggagggtcg aatttttttt 420

tttcaaaggc gggcattaat catcattttt ttacagacgg tcgctgcgtt cgtttgcaga 480

aatagaaatg agaaacccaa gtgaggaacg ctcttgtgct gcctcaggct tatttagcga 540

gacggtcggt cttcaaaagt gaactccatt gtttttgttt tgaggtagag ctattatgag 600

gctcgtctct gtaattaaac tttttattaa gtaaacgtat ttttcgagac agaccatctc 660

tgtaaataaa taagatgtcc gtgttctgtt ttatttaaaa aatatatatt ttaggaggcg 720

gtcgaatttt ataaccgttt attaatgatt attatgattt gtctggcgaa atgatttgtg 780

tagtagtgtc ggccgccgat gcctcgtttc tgccacatca ttcgcggctc ccgctccgac 840

aagcagcgtg catcgtcgcc ctcgcgtcgc gtcgcgtgtg cggggtctgt ttatgcgttg 900

cggtccaatg gatctgcacg ctgatccgcg catcttctga ggcttctgat tggcctgtct 960

ccttccctgt ccctgtccgt cctgcgtccg aagggacgga cacggactag acgccatcca 1020

cacgcgacgt tcgttcactg aacccatgca tagaactcat gtagggcgga ctgtgctgcc 1080

ttgcacacat gacagatact agattactag tgcgcatgat gtccggtcga atgtgattcc 1140

cgttgtgcca cgtagcatga acgcccacat gggcagccgc agcccccagc agcggcttgt 1200

atattaagct cctcttcagc taacttagca tacaagctta ggtttccaac gacaacaacc 1260

cgtaaatggt cctgtacctt aaatatagcg tttctcttgc acctttttgc ttccagcaga 1320

gaacgctaaa tgattatcag ctagatgatt atcatgatgt gattcgtcac tggagacgtc 1380

atgataagct caggttaagt cattcaagcc atactaaaga g 1421

<210> 558
<211> 1908
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127574_G1, chr3:213394588..213396495, Cluster 4

<400> 558
ccgcagtata ataataataa taataatggt gctagaataa tacgtgcacc gaacaacgaa 60

caagggatgg attaatggat ataataattt ttgcgttttt ggttgccggg cagcaggtat 120

tggtcgaggc ccaggtgggg gtgtctggtt gcggttgcgg ttgcggtctg ctgcgcattg 180

ggaattctgt tacaagagac acaccagagc tagcctcgag gacgcgctgg gacagtgatg 240

gctcagactc ggagtggatc gtgcctgtgt actactaacc tggaaagaag gatcggagca 300

gagtagcctt caggctcatc agtggtagat ctacataagc cagttgctgt gaggcagtct 360

aataatgtga acatatgtgg ttagtctcgg tcttatgtga ctcatacctt tgttttgtta 420

aataatagtg ccatccatgt tatgcttctt tactcatagt tttatctgtg gttctcgtag 480

ctagggaatc gaatgcctac gatgcataca aatagttttc agtagcagta ttcaactcgt 540

acttccccaa gagaacatga ttctagcgag agagcgagag ggagagagag aaaactgaaa 600

aaggggatgc cattccaagc acatcagcga tcatcatcaa ccgttatttt cgtctcaccc 660

cccctgctgc tggtgctgct gccgcctaac ccgaaacatg ccgactaggg gtcgcggtcg 720

ccgttctcga tcgtcaaaga aacccaagct ctgggtcgta gtctgtgtgg tgggtttcac 780

ttgatgatgg cctagcttcc ggtttgcttt tcgcactccg atccggattt tgcttcagcg 840

ctagctactt tttttccagc tagctagcgc gcgcgcgctc ctttcttcag ccgatcctct 900

tcacactgtg atagtcagtc accggggaaa ggacgttaac gatgaaggca tgaacgaagc 960

cccgtcattc agaaacaagc aacgaatgag agcctaatct gcgggccggc ttttacgtgc 1020

gattagccga taggcctgcg aacggtgcgc gtacctgata ccctccctct ggcgtcgacg 1080

acgatgagcg ctggagcgag agcgacttct cttcaagggc tagctagcta gagcgctagc 1140

tccaccaatc accaatgtcc tcaatatgcc caaaataaat aacgatcatg agatcatcgg 1200

atatatactg acgtatccat catgcaataa tgcagcagct atagcgtagg atctaccaac 1260

aaaactcaag ggaaatccgt gaattctaat gtttttctcc ctccctttg cagatccgca 1320

tctcaactga tataattacc agcaggacag tgaataattc ttggattcta agtaaagctg 1380

gcgggacact acactactag tagtgcttgt ggtttaagtg aagggatcgt cggcaagtga 1440

ggttttcaaa aaatgggcgc caaaagccgc caagccagcc tgcaactgac agcattggct 1500

aacctaacta ccactggatt cttattggga gagtcttgct acctatacac agatccaagt 1560

ttctgcgcca tgtgtgcgcg cgcatgcatg aattaatgct atccattaac gaatgaatct 1620

gcgcgcgttc tttttctcgt aatctttttt ttgtgagttt gaaaagatag aaataaaatg 1680

ctgggtgcag ttatgcaacg gtttcggttt tcacatgttg gcagtgcacc ctatatataa 1740

tgcatgcaca ccccactatt gttgcctgcc aaattttggc tctaccttac acaagttaga 1800

acctttgcg agtagtaatt ttggctgctg agagtctaaa gatgtccgat atatagcgca 1860

tgtgtatcta gttgtccacg ctccctaaaa catctataca cgactata 1908

<210> 559
<211> 1432
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127626_G1, chr3:213595645..213597076, Cluster 4

<400> 559
ctgttccttc agcaggatta agtagtgtat ggttttatct gcactacatt gctatgtttt 60

tggtgtcaca tccttcggtt gtcattggtt tgaaccctct tccctctgcc tcccgttcct 120

tgtcaaaatc ctggtatttt cctgaagttt cttcactctt gtcttgtctt atgagaacca 180

gtccatgtgt gtgcgcaata aactcatggt ttcgctgggt tgtgtacata attttgccac 240

cttatggtcc ttaatacata tgtacgtgta ccttcattcc ttgttgattt tgtttgctgt 300

ttgaaaatgt ttttttgaag cggcaaagag tgtgtaccat ctgcactgtt tcgctccact 360

tatcgttgtg cttgacatgt tgcttatcct ttctttttct tttttcatta accgtacctg 420

tattaaattt ccaccacagg gatttttcgg tttgtcggac cataaggggc ttgaagggag 480

taaggtttgt gatcatttgc cctcaacccc caagacgaaa ggacgaacct aactagccct 540

gaggaatctt aacctttcga ttgaggatcg acttcagttc atcggccgta tacggtatag 600

ctacgtcaag ttagatgggc cgaatctcca caaagatttt gggggagggg taggggggct 660

gatttcctga agtaggctgc tgctgtggct gctacggccc actctcacag gctttatttt 720

tttagatata accgctaccc tgaatcaggg taccaatcag caatcaacac ttctctagcg 780

tacacactca ggagtccatt aacactgatg aaaaccaaga ttaactcgca tagttactgc 840

agttcaaaca tgacatgaca gctactctgc ccttcgctgt ttaaggacga cctcagcgct 900

tagcttcatg ggtcatgctt ctctcatagt gcagtgcagg cacgcctacg ctggcttcct 960

gacgcttgtc agctgcttcc ttcagctttc tcccaagtgc ataggcaaga ggcgggggggg 1020

ggggggggggg ggggggcac agcattgcca atctgccggt gcttgttctg gatgttgccc 1080

gcaaactcat agctgtctgg agaggccctg tgaggctgtg accgagcaca ttcccggacg 1140

gtgatgtcct gatcagggtg gaagcacatg ccattggctt gggggatcag tgagagatgt 1200

ggggaagttg ccttcccagt ccagcctccc gtactacagc cctttccact gagcctgtgt 1260

tgggcaggca ccaaggtatc aggtcagcca tctgcccatt tgacagctta acctcctcat 1320

ccggaagaag gtcacaacct gtacaaacag ctggtgctgc tgctgtaaaa ctgtgcagcc 1380

gagcactacc gaacattgca tgatctgaaa cacaaatgtc cttgcagtat ca 1432

<210> 560
<211> 3047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128078_G1, chr3:215482594..215485640, Cluster 4

<400> 560
acatattata gtctaaaatg caaaattata ttttgcgcaa ccatacaatt agtgtagatc 60

gatactagca gtttacatat ggtaacattc gttgtttatg taaactctaa tccaagagta 120

ttgagcgtga gcttatgccg tggcagagta agcaaggtaa cgccgcgcac acgacacatg 180

tacccaatgc aacacgtaga tccgacacca cataggcacg ttacttgatc acttggaccg 240

tgcgttcgta ggggaaactc ggccggtaat tgtcgaactt gatcttgtca tcaatcgacg 300

tgatcggcga ttgatgagaa ttgagatccg agtttattgt gacagagtag gaagcctgca 360

aggcgacgca gtccaaagag aaccactgca cgtagtcttg tctgctaatc aagacattgg 420

acgatcgctt gtgttgtgcc tgtccaaatc acatggacga ttgctctcta gaacggagtt 480

attttcctta tcacgtggac tctctgttcc ggattactcg caagtgagaa gtggtcgact 540

cgacggtgcc atctttttcc acagagtcgc tactcgtaac gatcgcgccg tcgtaaataa 600

tgaagaaaaa aaatactacg tacgtacatg gactacttcc agattgcctc catctccata 660

cctgcactgg gtggctatgg cctgtttggc actttttttt taaaaaaaaa cagcttatga 720

aatagcatcc tctacttatt atcgatttta gttaattctg acaagcatct aatgctgtaa 780

aagtatctta tttagtataa cttctactta aacccatgaa aaagatgtgg aatgagttgt 840

atctacctgt cgatccgtcc aaacaggcta gacagctaga caaactacaa tcttgtgggt 900

tgacctgcac tgcagcttga gaaggccgga ggaaggaaag cttcgatcgg tcagagatcc 960

tcatcaagcg ggtcaacgga gcggctaagc actagcaggc aggccttgac ctactgaccg 1020

gtcccacatg gagcccccag cgtgggttcc cctcgcctat tgttcctcga ctgattgttc 1080

tttgaccctc aagcactccc tactccaagc aacctattcc tcccttctag atgaagacgg 1140

acgggagaac agaccggctt ggaggccaag cagcacgaag cttctgacgt gggagggttg 1200

ccgtacgtcg ccggcctcga tcgagttcct tagctttgcg gcttctgttg acgggctcca 1260

gctaagcttc agcggtagcg caggtgcaaa tacaataata ttattcttat aaaaataaca 1320

tgtcatatga ttttgccaga ttgaaaagag ttcttcataa aatcggttga tgacaatcat 1380

actttgattc gttaataatt ttcgcagaaa atcagatttt ggacaaagac cgatcgtgac 1440

tttgctctgg aaaagttcca aagtccagtg ggcggtgtgc tgtgctagct gtgcagtccc 1500

cctatgtcct ggaccagtag accttccagc ttcggggatc ctatttctcc atggatcata 1560

catggttctc ggacgttgat ctgctactga tgagatgggg tcttagtgaa tttcctttta 1620

cttgtgttgt gacattttca cattagagac gcctatttct taacatgaaa aaaggaggta 1680

tcggatggca ttctagattg attagcaccg ttgacgcaaa aggcaaacca catggatgtt 1740

gctgagagca cgtgatgtag tatgcaggat ggtatttatc acaagcatcc cagatatgta 1800

acacccctaa atatcatttt ggataatata gggaaatttt atcccgagct tcgaataatt 1860

atgttttgaa acaggagatt aaacaaaaag atccgaatat gaataaaaaa ccccttagta 1920

aattatatag aattaattaa atgatctctt aatatagatt acacttggaa aatattttct 1980

atcaaaacaa aggaatatga acttttaaat ataccttaa tgtgactaca cacctaaaat 2040

aatatcatat tgaaataaat gacgtgtgtg tatttcatgt tgaaaacatt gcctaaataa 2100

aataataaca ataaataaag taactaaaaa taaatataac ttgtatctca tgctggaatt 2160

tatttttggg catttatgat tgagtttgaa attcaaaaca aatttgaatt agtaatttga 2220

aatgatttaa aagaaaaagg aaacacaaac ctgaactttg gcccgatcta aggaaactgg 2280

cccatctccg cgcggcccaa ccaagcgtgt atcatcactc gtgctcaccg ccaggcgggc 2340

ccacactgtc ggccattgtg ccgcgcacgc ctctacacga gcgccgatcg gtgggccaca 2400

tgcatcagcg acccccttcgc ccgacgcgcg ctctgtcgca ctcaccgagt tgtggggccc 2460

gctgctcagc ccccgtcgca cgcacacacg catgtgtcac ctacacgtgg gacctagcac 2520

tcaagactct tccctcccaa atcgagctca acagccaacg caatcccgag gaacctcctc 2580

cccaaccgaa cgcgacccaa ccgggctcca cgccgagcat aaaagcaagc cctacgtccg 2640

tcccctcctc ggccacccca aaaattgaga gcacgtgaac cgagggcgtc gatgagatca 2700

tggagcgtcg tgaagaaaac actgccgccg cggaggcaac tccgtttcgc cagcgcaagc 2760

acttcgggag gtggccagaa agctttacag ggcgactctg ttggtgatcg tggccccggc 2820

gcaatgagaa gaccaccaga agccctacaa tacctcgtcg gagttctgaa acagggccgc 2880

actgccttgt gtcgtggccg acccttgcac catcgccatt gtctggtgag acctgtctat 2940

tgttcgccat ggtctagtcc tctagtggcg catgacaggg tgagggttgg agaattgggg 3000

cgcagtattg tataacgtcg gcggtgcccc accgtggcct ctgtgca 3047

<210> 561
<211> 1821
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128484_G1, chr3:217557146..217558966, Cluster 4

<400> 561
gaaattctga atacattgga tatctaaatg tgtagcaaga gttatatata aaaacgctta 60

aatatcttgt aatctagaat atttgaagta ttagatggaa gagagtgctg aacgtgtaat 120

attagctagt atacttacga tatctatgag attgagcgtg taatgttatt ttatgataaa 180

tttaattata gatatcaacg gtaacattgt tttttgtata ataattaaat ctaaaattaa 240

ttgactgcat ccgcgttgtt ggatggcaat tggcacagca gtggaccgac aacctaaccg 300

actccctacg cgagagagga tcacacacat acgcgcgcgc cacacgaact agatgccgcg 360

tgtggaagtg attaatgatg acggtcacgg atggtggctg ctgtcgcgac ggtgccgatc 420

tgtttttcat gattggacgt tggcagctgc acgcatttga ttgatcttgg tgggcttcca 480

gtcttccact gcgtgtgctc cgctcattca tgcgtccggt gggggaatcg ttgaagacac 540

gtacggacgg gatgggagat gtcaccatgt gtgtgtgtgt gtgttgttat ccgacaaatt 600

cgtgcgagcg acgggctgtg tgcacgtcag atcagatgga tcacgctaat aacgcctgcg 660

tagcgtctac ggaggccaaa ggaagcgccg cgccggtaat gatgatgatg actgagatag 720

tcagtccaac gagccgtcca aatcaaatca gagcgctttg cagcacacgc cgctgaacac 780

cccaccccac tggaccttgt ccggacttgt aaccaagcaa acgccgtttc aggagaagca 840

tacacacaca cacacacccc attgtcagag cttgcattgc acgagtcatc acttacgcag 900

tatgattaat ttggcacaca gagtcgtggc cttcgacaag atccagatct attgtcaaaa 960

gccagcagac aggacgtgta gttggaggag cagatggtgc tgcatgcgag ttgggtgact 1020

gacaagggtg ttcgaaacgg gttgatgcga agttgcgaac acaactttta ggatctacta 1080

cttctttcat cctaaaataa aaccttcatc tcacatctta atgagccaaa caatctctat 1140

tttatataaa tacatactaa aaacactaat gttcatacta ttttttaaa aacttcttaa 1200

atgtaaatta aagactcgtt ttagaacgaa agtgcttcac tgagaaaaca tttcacgaag 1260

gcaaaaactt tcatactggc aggcaattcc gcaagcgtta gggctgaacc aaaactcgaa 1320

aattcataca acacgggacc catgagcagc aagagcggac ctgcaggttc tctacctccc 1380

ctaagggcat gtacaattta gagatcttgg aactattttt ataaatgtag ttaagagata 1440

ataagtatag aaagtcgtga agagataaac tattaacgaa taattcgcct cttcactttt 1500

ttcacttaga gcaagtataa taaggtgatt taggcgggct gtaaacacgc cacatcagat 1560

ttatgatgat gtggaagaga gagaaaaaac agagagaaga gaaaagttaa ttgctcacta 1620

ataaccagtc gaaagcaagt tactcacaat ccaacacaat ttgtaagaag aagagataag 1680

tcaaacatta aatatatagc ctgcattgtt atataactag acttttagtt ggctacaagg 1740

ttatacagcc cgttgtgggc tatattgtta aatttgctct taaccttcta aagatttttt 1800

aaaagacgcc tcaatcaatt a 1821

<210> 562
<211> 1901
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129984_G1, chr3:225335819..225337719, Cluster 4

<400> 562
ctttcaagaa ttttaagttt attttagctt cttttatccc aacaggtcta gctccacaag 60

ctctagcttt taaaaaaact aaaataaaga tcagtttatt gaaattttcg aagcttctca 120

gaggatgctt cacaaacact attttatacc ttctcatgaa gttgcactaa aattatccac 180

cataccattg gttacatgac ctaccgattc atgtcccttt ctccaccggc taatcatcaa 240

aggtaattaa taactcacac aaattaattg tattatagaa gttgtagtgt acgtgcaagc 300

caaacactct tgagtcactc cttaccaatc tgttgaagct gttttatggt gaagctggaa 360

aatcgaaact ataaattttg aagtgaagct ctcctaaaca gaaccatagc cttttaacta 420

taatttataa tttggaggct tagagttgta gtatcaatgc agtctcttgc atggttacct 480

cttataatta aaaaaccgat tcaagggttc agacttgtat gcgcttaatt agtttgccat 540

ttgtgtggtg tgtgcctttt ttttatcgct tgcattgcac aaatgaccta tcacctatga 600

tgcagacttc ttttcacacg agttaatttg tttgaccaaa caaatccccc ggccgtagca 660

acatgcacac gaagagatgg tgcgagttca attttgcatt gtgctctccc agtactgagt 720

aactggctag caatagtagc ttacgattta tgtagacgca caagacatgc agcaggtact 780

gcgactaatt tctctggtgc actttgtcta cccgaatttg tagaaaagtt caagaatcca 840

gtactatgtg ttgtcgtgca agcggaaaaa gtgcatgcca ggtactgctc tgccgatgtg 900

ccaagtcagc tacgacggcg acgacgttct atcgccagaa ggaaaacgtg gtcacacaac 960

gaatactacg acgcagcagc agcgcaacac catatgctaa taatggttgc acttttcag 1020

caacgagtcc tctctgtatg ttcatttttt tcccagttga aaagatggtc attaggccgc 1080

agaaggtact tggtggccat agacgcttgt aggttgttca tatgcttttg aagatgatgc 1140

atggtctgtt aagagtttat aacttttggt ggcacttatg ttgtcgttgt agatctattt 1200

ctcttacatg gcacagtaaa cactcatgct gaaatggaga aggcacacta gggtacctat 1260

ttcggccccc tcctgtctgc cctttgttct tccagttgtc ttcactaatt aaatctcatt 1320

tgtttttagt accactcacc tatgcatgtc gtaatatatt tactgtcaat tgtagcttca 1380

taattgaata atctcatggc ccacttcttt aaatgcgtta ttttaattga cctaatctga 1440

ttatgcagag aggcattgaa ctccttgaag ctatctcgtg ccacaacaaa ttaaagctct 1500

cagaattgtc ccttgcccag aagaatatta tgcaagacaa ggtctgcctg tcgtccagcc 1560

cagcatacaa taaaataacc acaaatttca ctgcatcatc agctgtgctc tgaacattat 1620

tactaccaag tttcttcttt gtatttttt ttttgataat ggattgattt cattaaggtt 1680

attatgaaat gacccggtct ctacaaagta tttgacccat aacagacaac cattcagata 1740

aacaccaaag ctagagaaca gaatagactc atagttctag cctattgcta aacttccagc 1800

catttttgg caaacacctc cattgcaata atctccggtc ttgagcatac agcctttagc 1860

cgcctttggt tctcctctgt ctgaagggca gcccagttcc t 1901

<210> 563
<211> 1452
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130011_G1, chr3:225456020..225457471, Cluster 4

<400> 563
tgcatttcca tgggccaccc ggtgggcttg tggctggtgc ctggtggccc atgcacggag 60

acggcgtggg gctcgctggg tttgggcttt gttcatcggc tgatagtgct acctcctttg 120

cattggtacc tcgcagccgc tttgtactat tggccactgc tcacaaacat cacatcacat 180

gagtagttag ttaggcatgt aaaagagaca cttgcttctc tgattgatat cacgaaagca 240

ggaaagagaa gaactggggg ctacgcaaag caagaagcaa gtgacgaacg aacgggatgt 300

tgtcaatgtg aagcaggcag gcactgctag ctctcgtgtc ttgtgatgtg aggtcgtcac 360

ctttcagata agatctacca gaaacacaca agccctgtca ggcagtcaca catgtgatgt 420

gaagcacaag acaccaaggc cggccgtagt tggcacgaga gctcgcaaaa gccttcagct 480

ttctttgcat tggttggttg gacttggagg cttagcttgg agagatgaga gatcatgcat 540

gtgcaagccc aaggccgaga gagatagaat ctgcccctgc gctgtgcaga cataaaggaa 600

agcttatgtt tccccatgat ggatgaggct gagatgctct gtctctctct ctctctctcg 660

tctctagcta gctgtgtgac gccatggccc ctacctgaaa agttgcaaca agggcgtctc 720

tctgtctacg gcctgtgtgc gcgcgcgccg ctcgaccctt tttataaaaa ggacgcagcc 780

ttttttttt tgttgcccac ccagatgaag tggagatgga ggagcgcgtc atggtacaga 840

actacagata cgtacagctg ctcagtcatt aacaacagat agttaggccg gggcagggaa 900

ttaatgtgca attgtcagtc tttgagatca gaggagcaaa ttgagagcgc cgcccggccg 960

gtagtacaag gaaaacccgg gcatgttttg cttgctctaa tccttttttg tccctatgac 1020

aaggttcttt tctggttatg agcctcaatg aggtttagct ccacccccac ccccacgctt 1080

tctgtctgac cagccgcccc tctttttggg tactgtcttt atttgaacct gtaaagttaa 1140

tagatcttat ttccgagaga ctcgatgaat tgaagttgca tcagtttgac ttagggtaga 1200

atcaaattga agcatatata atttggaacg gatagagtag ccagctctcc attccatgcc 1260

taacaaaacc atgtttcttc tgactgagca tagagatagg tctcccttca gcgtcacgca 1320

cacacaaaaa ataactgagc tgttgcttgc attcgactac aggccctgca catctcaagg 1380

caaattaaga cccagatcaa aacaaaagat aaacaaacta atgctacaac aacaacaaca 1440

aaataaagat gt 1452

<210> 564
<211> 1654
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132052_G1, chr4:3470633..3472286, Cluster 4

<400> 564
acctcttatc atattctcta ttaaggctga tttgataacc ataaaattag agagggagtc 60

cataaggaga gaaatctttt gctataatgt ttggagtcca acatcctagt agcacggcac 120

ggcacagcgc ctttggccca agatgggatg gcccacgtgg tggggaggcg acatggccca 180

tgagtgtaca agttttgtgt acttcctccc ctcccaactt ttcgttattt ctttttattt 240

ttgcaggacc tggtttattc ttttttgggt ccttatgatt actaatacac tgaatcatta 300

cataaataca acactttaaa attaatattc agaagaagaa aaaaagagtc caaattgctc 360

catccaagtt tcatactatc tgtccacaga taacctctta aactaatatt tggttcaact 420

tagtcctctc aactgaaagg ctggacaaaa agcttgcagc tcgatatgat gatacctgta 480

ttatgatgat tttcttgagt gttcgtaata acgtcttata tatactttaa acagtctggt 540

atatatatat atatatgata tgtgatctta catacatgta atcatcgttt tcagcgcagt 600

ctagctagtt cggactctga aacttaattt gaaggccggc gatgaataga tgctgaagcg 660

ccaggaaaaa gtgaagaccg ccgtggccga ctacaccggc ggcggccatg aaagtcgatg 720

aatatctgcg cactgtccag ctcatcgtgc tctcgatcgg tcgatcctta tcgtcggaac 780

ctgtcgattc aattccgtcg ctgagctgat tcagggatga gatgcgatgc cgcgcgcgcg 840

cgcggcctgc cggcgcagcc aaagatggat gtcgatccat ccatccgatc gtatcgctgt 900

gatcttcctc ccggctccga tgcgatgcca gccagctgct gctcttgagc atcgtatcgt 960

cgtcctcttt cgatctatct tcatcctgaa aacacatgca tgcatatatg ctggtggtgg 1020

cttccggcct gtagatgatt ctttgcatcg ttttcatctc ttcctctcct acgtgtttcc 1080

atctctctct ctcgagagag agagaaacaa aaagagaata atgctgggag ctttacctag 1140

ttcgcatctt ctgattcctg acttcttgct gcggattttt gggcgtgcat gcgtacaaac 1200

atgtctgttt cgtccacagt ttttcagctt tgactcctcg ccttctcata ggccgggcac 1260

cgtacccccc accccaccca ctgtttcttt caagaggcga ttcgttcatt gtacggcgat 1320

cgacagtgca cctgcagcag gcagctatgg taggtaactc aactggttac aaattctctt 1380

gtctccatgc acgatgcatg catgctgttc tccctctcga ttcggttcga tccatccgga 1440

gacaggaggt aatgcagcag gaaggtccaa gttccgaatc atcttgtatt gctagagtaa 1500

cgctggatct tatatgtcta ccttaagtta ttaagaaaat agtgaagatg ccacaataag 1560

ctatgatatc cactatcctc ggtaatcgat ggtattcaaa tatctcttca caatttgttt 1620

aagcccttaa ctaattttag ttagaaatga atag 1654

<210> 565
<211> 1430
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132478_G1, chr4:4999251..5000680, Cluster 4

<400> 565
gtatcggact aggtagagcc cacctaaata gttgtcgggc taaacagagc tcacctaaac 60

aactcttgtt ggcaagacca cacaaaccta cacaactagt aattaatcaa tcaaggagct 120

cctacacata ctactgagaa aaaacacaca aatcctaagc acactagcac tactcaacta 180

gcaaagctat acaaaataaa gtagagaggt aaataactta actacacaaa ttaagtaaat 240

atactaagat acacaagctt attagcacaa gagaaaaact aatttattgc acaagtaaag 300

tagttacaag aacaacatta agcactactg ccttgcaatt tgaccaccca gtgccactca 360

atgcaaccgc tcaatgcaac acactagaaa tcactctcat gtgctcgggt atgttctcag 420

tcaatcatac ataagtatag agccaaggct aagcacaaaa ctcgagaaac acatcactaa 480

ggtgctctca tacctcaaat ggttggccac ctctcaactt attggaatga gaccattatt 540

gttttagttt aagaggactt ctaaaataga cttaatatat ttgctgcaag aagttatttt 600

gaaaaaaaaa atgcaattac aaccgataaa cagcatcatg gaccatgtgg tatttcctta 660

gcagttaagc aacaaaggaa catgtttttt accatggtct agccatccac gtgggattat 720

tgcgggaaca ctcaaatctg gccagttcgg cagttcccag ctcgatcccc atcactatga 780

tccaaaacct gcagttctgc gtcactgctg gtgtagctca gctgtaggcc ctaccaagtg 840

cagtgtctga ctactgaata gtgaccatgt catttttttt cctgcgttca tatctatagc 900

tgtttcatgc agaaagaata ctatggagaa caaatagatc ctctcaagtt ctagagtaga 960

gagagagaga ctggggctct gggaggggat aagcatctgg attttggaga atgctgtcac 1020

cagatcacaa aggaaacagc ctctcctgct aggtgggcct acccccccagc ttgtcctgcc 1080

atctagggaa cactggtgag atggttctgg tgatattctc tggtgctttt gctggtacac 1140

atctttcctg ttacactatt ttttttattt tatttgagat gttcaggtac aattaatgga 1200

aacagtgagt gagtgtcagt acatgcaaaa gattaggatg aaggcaacat ttgaatggag 1260

ggatcaaagt agaaatttag ggatgaagaa cccacaattc aagccaagct gtgtctactg 1320

ccatgaactg tctgtcagtc actaacagag aatctgcccc tgaatgcctt gttgtgtttt 1380

gattttgatt tgttgaaaca gtatcgccac tgtagtcaga gcgcaaaggg 1430

<210> 566
<211> 1740
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_154805_G1, chr4:145617467..145619206, Cluster 4

<400> 566
attccattaa ccaaacagac tgttatgtta tgacacgatt attaataatg tcagcatcag 60

tttgcttata aacgtcgagc gcgcgtgact gagtagacga ggagaaaacc ctagagacgg 120

agagcacgat accaactacc aagtgtcaag tctcgtcagg ttcggggtgt tgcccggcat 180

gctcgatgcc gtctggccaa aagcgtggcg atcaatcgat tagcgcggtt agctggacga 240

gttgctcgtg cggttcatgt tttcctacgc gccatgcttt ctgcttatgc atctaattct 300

gtgattttct aaataaacat caagcgggga tagctcagtt gggagagcgt cagactgaag 360

atctgaaggt cgcgtgttcg atccacgctc accgcatttt tttaatatat tcgttctgtc 420

gttcttccta ctcggctact ccaccccaat tcgatcttac aatgcagaat gcctggcact 480

gtttctcatt tgattttgca agcgagggca aggtttttta atttagctgc tagctgtatc 540

aaacaccgtc tggtccgcag gaaccgatta ttttcctgct tatgaaccga atggaacctt 600

cgagtactga gttgaaccat acatatggca gggaacagtg attagcttaa ttatttaagt 660

accatttttt atgagtgcaa aaacccattt aggtctcgtt tgtatgatga cgttattatg 720

gtctcgatgc tttgtttttg atccacagct gcagttacgg agacaatagc tgctcgggtg 780

aggcagaaac tgcagcctgt gcctcgttgg agggcagcga gacgcactcc aacatcatgg 840

cttcacgcca tcttgtgaag agcgtcacag gatggcgtac gatcttctgg gggacgagct 900

cagctcaggt ctccacgccg ccgcgaagac cacgaaagag ctaggatctt gactgcccgc 960

ctgcgtataa taacgacgtc gaacaagcgc ttgtcccgtg cttcaaaata ggtctgccgg 1020

ccatagtagt atcgtggaac cgtgaactgg ttgccagaac aatggcattg gcgtgctgct 1080

cctttgatgg cctggtattc ggaatagact ggagtggata atttatcgca attatatcgt 1140

gtatgtcggg cttagagttt tttccttctt attctttgtg gttattaatg gaatccgttg 1200

tttctttgtt agccatgtga tcatctggaa agaattctgt gttgctggca gcatctgtcg 1260

acctggctga ataatccgtg ttcgcttcag attaaagact gaactgatgc agcggcaatc 1320

tatatagaca aaataatata gaagcggcaa tcctttaaag ttcagcactg cggaaacatg 1380

tgcgaataca atagtacgga tttctttctc gtggaatctc aatctcctaa tgctgacaac 1440

ggtgttgctg cgtcaccgat cctgtcgccg cgctcatgat tcccagacga ctgctgctac 1500

tgttgttcgg tccactgggc gccttttctc agcggcgggg ggaaatgcat ggcatgaacg 1560

caggtttttt ttttcacaag gctgcgaaac tgacggaaac agttgcttta cgatttgctg 1620

ttgtgctgct agaggagaaa gaaccatggg cacgagcagg gttgcagatt tgcggtatgg 1680

tggtgatgct gatcatgatg ccacagctgc cctgccccca tgccacagat ttgcagtatg 1740

<210> 567
<211> 2626
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157857_G1, chr4:161913489..161916114, Cluster 4

<400> 567
ctgcaaatca agcttaattt aagatactca tttgtttatg cgctgaaacc tctatgatta 60

tgttatccac gggagtttat atatgatttt attggtgctc tatcagctga gatagaggat 120

gcatgcatat gggtcaattc catcggctag ctacacccct tgatgtgatg tgacgcgcgc 180

gcctgcctct ggcgtgtggc gacaaattat acatgccttt aattccgtcc attccatgcc 240

atggcctaat aattctcctt gctgtacgta cagtacagtt ggtagtgctg ttggcattgt 300

atacgcgcgg ttcatgtttt tttgctttgg gtaagttctt tccctgctta ttcattaggt 360

caagtagaaa acaactcaac aacaacaaca acaacatgtg tgtacgtacg catgggctat 420

aggattatta caacagcaga tgccgtgtga acagttcaag ctggcatgca tgtgccaaag 480

gtgacaccgt acctttaatt ataagagctg ctgatgcagt agccgtgcag ctaattatta 540

actggtgacg tgcttaataa ttttggtcta cgcgggtgtc gacctcgcct gcagtttgtt 600

caaaacacag ggccacacca gtttctttct cctggcgaat gattgctttt gcgctgcttt 660

atcaaggtca caattaatct atctatctat gcatcatgcg tatggcatgg ccgaacagct 720

agctagctat ctccaaatct gcagtttgca ttgcacagtt cgttacacac atgtgtatat 780

aaaaacttcg ttgctggtgg atgaaataga tcgaataatc tgaagtgcgt atatattaat 840

aacgacacta gctatttctg gggatcgatc aggttctagc tagtttagac aataatccgc 900

attccaagtt cagatttggc atatactact atcttactac tacgtacgtg tgcgtacatg 960

cacagacgac ggttatagtt tagataacct ctgcattcca taactgggat gttgcccagt 1020

taggtcatgc cgatgtatat atatatatat gattacgacg acctcaatct cagggaaaaa 1080

gctcattctt tacagactgt ctgtgcctcg ccggcgtcgc taataataaa gcagcgctag 1140

ctactgatcg agtaatacta atctcgataa taatgcatgg agacatcaag aaagccagcc 1200

agcccagaaa gtgatcacta tagaagctag cagctttgtg atgcggaaca ataatcttcg 1260

gatcggaaag gcgaaactca tatctttctc ttctgtgtat aagttctgtc gtgtttttt 1320

tttttctccc ggccggcacc agattccgcc tcttgaatct gtgccagatg tgcaattgga 1380

aatgctttgg tttactatgg acactaacta aaataatgac aataatatga catcaccgac 1440

gacggataaa cattaattaa ttaattactc ctatatttcg caaacaaaaa aaaaagaacc 1500

gcaagctttg tttgatgcga cgacacgaga ggcgcattgt gtgtgtgcgt tcatatacta 1560

ctgtgcacat tggcctctcg ggtcgaagga acaggccagc aaagtgatta ttactattat 1620

catagtgcta gtttcagtac tactactact aataataatt aactacagct tggccgcgcg 1680

ctgattgatg agtacgtacg gtacagtgaa gcaaagcatc cgatggccgg ccggctaatt 1740

taaaaccggt ggcgggctaa taaagacgga ttaaagtagc cattgctcgc atcatgtgca 1800

ggttggcgca ggcgattact atattagatt agctggggat taagataacc cccgagcggc 1860

gcgctgtctc ttcgccgtgc atgtgctcgt cccccgcgct tgtcgcgttg catgcgatct 1920

cagctccatc gaccgacggc gacgggcgac gggcgacggg cgggctcatc gatcagctcc 1980

ggctctggcc gccggccgcc tccgcccggc aggcctcgct cgcgcgtcga tgtgatagcc 2040

agccaggata agcttttctt tctcgagggt acgtgtttga ctttgacgat tatgatagtg 2100

taattatttg attataaatg acccacagcc gtaattagct agctagcagg cggcgtccgt 2160

ccgttgcttt atcggatggg actccatcgc gaaaggagat gacatgacgc gctcgcctag 2220

ctactactag ttgtctgccg ccgggcatgc agctggtggt cttaatctgc ggcgacctaa 2280

tcggggctag ctagctagtt gcatgcacgc aataatcaga ggccgcatat catcgatctc 2340

gcaacttgct gcgattatta gtggtagtgc tttggcattt gtctagcagc ccatttgcag 2400

cctctttcag gggcgtacgt ttcataaagt atagtatgct gttaatttgt tataagagct 2460

ttctccgcct caactgtcaa tgttaatgta gcgtcacatt gtacaactgt atattgcttg 2520

ttgaagactt gggcttttat ttattgcaga ctatagtcca tatatgtata tatgcacgca 2580

taaactgtgt accgcctaaa ttaaatcgag ggtacctcgg gcaccc 2626

<210> 568
<211> 1965
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15895_G1, chr1:88323757..88325721, Cluster 4

<400> 568
gttatagata gaaccatgca tgagctgggc atgagatggt tttcatgttg gcaaaaaaaa 60

aacaaagttg agattcagat atttaatact catgactact gcacagctcc ggtcagcctc 120

tggttatcct agaacggaga tcaccgaagg aatttcagca aagggatcaa gaggagcgaa 180

aggaaaaaag aaaaaaacag aacaatcttt atttcttgac aggttgatta ttcaagtagc 240

aagtacaaag acacgttaag gcagacccat tcatcagcta ttgaagaggc taacccacag 300

cccaacttct gaaaccagtt tcgcatgaat actactccag atctgttgat tcttcgtcat 360

gactccaact gtctcatcat cgcatatcct aatcccacat gcactgccta tcgaaatgac 420

accaaggcga gaggatgaag ggcgagctgt atgtgcgagg cctcctccgc ctgctgcgct 480

gctagctctt gttgctgctg ctcgacggga ttttgaagcc agaaggaagg caaacatggc 540

gttttctttc agtaacaatc cactccacct ggtccatcgt ggtggctccg ttatcactaa 600

tgggccgact cgtgcttcgg cctgactttt tataataacc ttcggcctgt ttttgcatgt 660

gaaacaatcc tggaaatggg ccaatcgaaa caagggaagt gatggctcaa gactcacgag 720

gcccattaac cacaggatca gcgatgccgt ccgcgcgctt cggccccgct ctcccaactt 780

cattcgcctg ctgaaagcgg cgtccgaagg ttccggcggt ggcgtgacgc cattccgggc 840

atccatccgt ctcgccggcc gggtcggtca ccgtcgaatg aattgaatcc cagcccagtc 900

gacgacgggc aaaaaaccaa aacgcccagt ccaacacgcc accgatttca tcaacctcgc 960

cgtgcgcccg acggggaagg aaaggaaaca taaccgattt acccctggct tggccggccg 1020

cgggaacgcg tcgcgtcgca ttcgccagtt ccgcatgcgc aacagcgccg gggccccgcg 1080

ggggacagga taaggttttg ttccttgatt gctcacatgg accaatgggc ctggatagat 1140

aagctacttt atttttcact attatttgcc caggcagcgc tgcggcaggt ttagcgcaga 1200

agtttcacga tcgcgtgctc ttgcatgggc cactagatta attgtcctgc ttaatcaaat 1260

ccgtcggtca ccaccacttg cccataactt tagtctgtgt gtctggttgg acttttaagg 1320

ctgtttctac ttctcaagga tcgtggttgg ccctcgacgt cgatgatggc agctcatccg 1380

gccttgtcac gtcctagtca tcgttccgtc acgatacggc cattcggggg catgcgtgcg 1440

tgatactcgt ttttgtgtta tatggagttg tttacggact agctactcct gcgatgatcg 1500

ggcccgccta gacaaaaagg gcagccatcg tctcggcgct agcagtagca gcactcacgg 1560

tcacaggcga gcctctggtc tggtgtgatg tgacgcccgg gcgctcctgc gccgtcattt 1620

tggagcgggg gctgtggtgg ggcgcgcatg cctgtcaggg ccagggtggc ccgccggtac 1680

cacttgatga gatcggtcaa gcagcaatgc aatgcagcgg cagtttaaac tctctcgatt 1740

atagttattt aagttgattt tgtcttaata actggatttc taaaactgtg gtttgctgac 1800

ctagaatcca ctctagtttt gaacttcgaa catcgatata gatatacatc gtctatcttg 1860

tactaatatt cgtcatataa ttttctaaat tgacactgat ggcttttgtt atagttattt 1920

tttccctgat aactaacaag gacaaaaaag tatggatagt ggagg 1965

<210> 569
<211> 1574
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159988_G1, chr4:175126299..175127872, Cluster 4

<400> 569
ccacataacg ctggaccggt tttacacctt gacagtctcg tcccgctggt cgtctatata 60

aggttttgtt cggttacatg gaataaaatc ttatcacgga tttaatccgg atctaaattg 120

aatgaatcca tacctcacac tcaatcccat aatgagatta aatccatcat ttaatttatg 180

ttttgcatag tttaattttt tttccaaacc attgggttat aatccataat agatttaacc 240

gaataaaaaa gttagagtag ccttagttta ttttggaata tatattgtga cataaattta 300

gtttcaaacc gtgttaatcc agagttggat tgtgtgtgta aaagaacaag acctgcctgg 360

tgctcctgaa cgctagtgac ttttcagagc tagctagcgc gcgatctctt tcctccgcgc 420

aaccgcaacg cgtcaacggc gccggccacg tcaacaccgt gtcgtcgtca acaccgtgtc 480

gtgtccatcg cacgagaaaa tcaacctcgg ccggcgtttc aacagctcga ccgcgccgcg 540

cgcttgtcct ctcctcgtgg atgccctggg cctggggaaa ccgccgggcg ggacgccgcc 600

gtgtgcgcgt gcagtggccg cgcgcagcca tcgcgatgcc gtgggcgtgt cccgcccggc 660

caagccgaga agtcagcggc acgcacggga cgacgagaca cgggagtgcg ggttttccgt 720

ttgagaacgc gctcggacca cgaggaaact tggtgcgcgg gcggggcggc cttggacggg 780

tggccatggc catgccggtt gcccggcgcg cgcgcgcggc ctgtggttgg gactgatgga 840

tggattaaca ggataagggc ggctgttgga acggcgctca tgaccgatgc acgggcagcg 900

gcgaaccacg cacgtcagcg aatcggatgc agcgaacgag caagcgagcg agcgacacga 960

ggggccctcc ctccgccgga cacgttaatt agaaaatgga tggcacttcc atgtgtcgag 1020

accaaacaca ctttttttcc gccagcactc gaatgtgcag gactgtcaca aaggccaggt 1080

gtctcctctc tcgtggaacg gtgtcaacga acgaacgcgc atcagagcgt cgcacctcag 1140

tgtgctgtgc gccgaaaagc tcgaccgatc tgcactgcac tgcactcatc caccactgca 1200

tgtcctgcac accctcccgt ggttcctccc aggacaggag acacagcaac gactcgacgc 1260

ggccggcccg ccggtgcgtg cacgcgccgc cactgcgttc tccgagtccg agcaccagca 1320

ggcagcagcg cggcggcttg cagctaggcg ctagcccact ccgtcgatgc atgcatgcat 1380

gcatgattca ggccgggcaa ggtggcggca cgctcgtgct cggagttctg attctggacc 1440

cccggccgga cgcgcgcccc gggccgggca tgcatatgca tgcacgcgtg acgcgccggt 1500

ggcggtgctt tcccccgcgg cccgcccgcc gaaatgcttg acgcgctcgg cgtccaatgc 1560

atcgcctatg gccg 1574

<210> 570
<211> 2995
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160307_G1, chr4:177057038..177060032, Cluster 4

<400> 570
attcattcaa ccagtggtcg tcacactgcc cgtctgtctg tccctcaccc tgccctgcag 60

gctgcagtct ttctgaccgc cccttccggc tcagccgctg catgtgctgc tgggcagggt 120

cgccatgccg cagacagcgc tacaaagcga gaggcaggca ggcagggggc agtgcgatgg 180

ggaacgagaa cgactcgaga aagaccgccg acgccgtggc ccgtgaccgt gctaccccac 240

cttgtgtgag actcctgacg agcgcgagct gcgcctggaa aggcgctgcc ctgcctgcct 300

gcccgacacg actgcctcct gatgctactg ccgcagcgcg gctcgctccc atcccaccgg 360

ccagacgtcg ccctggcgag cccggcggaa ggcgacgaag accgcggatc ctctgcggta 420

gggggtgtca gctgtggcct gtggtgggca tacaccggca cgcacgtatg gccgcgcacg 480

gcgcattacg ccgcaccaac cagtgtcgcg gccggccgtt gcgaaccagc tgcttagatt 540

gcatgtagaa tctagatcac ggtctttctc tacgtgcgtc cagagacgat gggacaatgg 600

gtgcctcgtg gtcctcgggc ataggtcctg gacatcaaac ccgccggagc ggccaatggc 660

tgaatgccgc tgatacggcg agtcatcaga cgatgcatgc accctgctcc tggggtgccg 720

acaggccccc acactgacac tatcgtcgtc ccccctcgc tcgtgctcga gctgcgccgc 780

gccaactcat ccgccaccga tctctcggtt gcattgcatt gcattgcatg cgcgttccag 840

tgtttccaaa gacgcttgtg aacgcatgta ataaaagtgg tttgggtcgc tatacgctcc 900

ccactagccc aacaccagca ggcagcagcc aaccaaccaa ccaaccacgg catctccatt 960

tacaacaaac aggccacagg cacggcagca agcaaaagtg ggaggggta taatgggagc 1020

gtctgcgtct cctcctcctc cccgacgcgc tgtggcagcg tccgtgcatg acaacttgac 1080

aagcagcacg cttgcactgc atgcccactg gctgacggct gaccggacca gccggagccc 1140

ggaagcgtag cgtgcagact gcagtgaaag gcatgcatgc gcgctgcagg aggcagcggc 1200

agcaagtgac cggtcctgat gcctgatccg tgccagaggg gggggggag agggagaggt 1260

gactggcagt cacagcctga ccagccagcc agcgggcgcg gcaggtgcag gtgcaggtgc 1320

aggcgtcagc gtctcagcga ggcgaacgct ggctgggagc ctgctgctgc ctgggttagg 1380

ggaggacgtc cggaccgggc gacgacatgg ggcgcaggcg tgcagtcact gaacgtatgc 1440

catgcatcag ttctgcgaaa cagccaggtg ggtaggcctg cgcgccatcg catctgactg 1500

accgcttctt tgactcgtca tggaagggag agagagagag agaaagagga ctgctgctgc 1560

agaggagagt aggagacgcc gcgaggcaag gcaacagcca acagtgacag ccaacagtga 1620

cagtcatgtt tgcgttgccg ctccagctgg gagtgggacc tggggtgatg cggtttctct 1680

ctactcgctt cccggtccct tcccttgctc gtttccattc catttcatct ggcgtagcgt 1740

agcaagcaga gcccagacca gacagaggga agggaaaccg aggtcaaaat gaggtagctg 1800

cagggtttgg agccgcacgt actcacggtg gatgtggatc ctgttcgcgg ttggctagtt 1860

gctctctctc tctctctctg ggtgttttcg ttggccgtag caggaatggg taacgactag 1920

tagtggccct tttcgcctgc atgcatgatg catgccgggc atgcttgaat catgtgcttc 1980

caagtttcat ctgaagagag agagagagag agagagaaac gtgggcttct aagaacagtt 2040

ccaaagcctc atacctgtga ttacgcagtg gatcgctagc ggcgtgcatg cctttgcctg 2100

ccctcatctg tcacggccaa aagaacgccc tcctactctc ctagtggcct cccttccctg 2160

ttccctccag ctccacgctg cccgctgagg cgcatgtgtg cattggacaa cgcattattt 2220

tttacgtatt gtggatgcca gtcttatttc tattatgttc agccaaaaaa aatttctctc 2280

taaaaaacta acccgtcaaa acgtgagata taccactaac atgcatcatt tattatgttt 2340

actttaaatt ctctgtaaaa cgaccctacg atttatttat tttttggacg gaggggggca 2400

gcacagtaag tatatatctc tgttttccct tggctgacgg gtcaaggcac atcatcattg 2460

tattggcaga gtttcgctat gtggtgctgt ctatctgtct gtctgtctga gccaatgcat 2520

gatgatcgct cgcacggcct cgccgggaca gcggtcggat tatctcatct gagccctaaa 2580

agtggcccac ggttgcaggc ccgtcgttgg tgtcagtgag agcagacgag catcgcgttg 2640

cccttgccgc ccctggcccc cttttctgcc aactttgacc agtccccgta cgggttgtga 2700

tttgtgaagc ctccccctct atgcaaaaaa gagatagaga cgtatcgttg aagtttttta 2760

tgtttaatca gatttataaa aacattaatg gtgttacatt tgtaactaaa ttcaatacag 2820

tatatagtta gggatttaat gtctttcttc tcattacaaa aactgaggga gcattaaaac 2880

acccaaccat gccgtgcggg tgcgggaggg gaaaaaaaag gctcaatgat gatgctaaaa 2940

ccgctcgctg tcggtagaac gtgaaccttt tctcctgtaa taattaatgt cgtgc 2995

<210> 571
<211> 1972
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160718_G1, chr4:179628988..179630959, Cluster 4

<400> 571
tggatcgcag ttatatatgt atgcttcatt tgaaaagaaa agaaaagaaa aaaaaagaag 60

tgcgtggaag ttatgttccc gaatccactt taattaaaca tttttccttt attggttgat 120

tgacagtacg atcatttcat aattcttaat tcatacctga gagaactgtc tattgcagaa 180

tgtccgttcc aaatgtactg tttcctttta tatgcattag agagagaaaa aatataatca 240

tataaattgc taaaggcaag tagtatatat agcacatgct ttaatcatgt tctgcaacga 300

ggcaaaaata ccttctgtga acccagaccg agtctgtgcc tcccggggca ctggtcgagc 360

gagcctgcaa cttgcgagcc acatgatcat tgatcaatcg aaggagccag ccagaagaag 420

gcacgcacgg cgcattccca gcgatctgcg tctgctcagt ggctggagta gcctaccatg 480

attccgttat cggctcgatg gaagcgcatg atgatgagga tgagcccgtc gtcctcgtcc 540

tcgtcgtcct ccacagttcg tggacctcgc atcgcattgc cggcaccggc aggcaagggg 600

agtgcctccg tgggcgtggc tgggctgggc tggacctgga cctcctcatt cggcgctccc 660

atgcctgctt cctaccacct gcatgaattc gcttgtcgcc cctaccaaag ccaatcgagc 720

gctgcacatc tacttgtcgc cctggatctc gatcggtcgc ccccgcctgc ccagcagcag 780

ctcgatcatg ctgctcccac tcctcgttgg cacgcaccgc ttggccagca gttggccccc 840

ccccctactg cgctgctttg acagcacctt cagagatggg ttcggagact cagcgctgaa 900

accacccgcg tagtccgtac tccgtagtgt aacactaaca cctgacctgc tgctgcctct 960

gcctgcagtg cactgcactg cagtcagtcc atggaaaatg ggcatgatct gcatcatcag 1020

atgagaccaa ctaggtgagt ggtggtgact tcagttcggt gttgacacta cactgctgtg 1080

ccgtctctct ccccctgtag cggacggctt gtctaaacag tgaatttgtt gctgcctgct 1140

ggtgaccaca accacaccac gccattggca ggtccgccgg ccggcccggt acacatgaag 1200

ccaactgaat tcaatggtgt gttcggccgg cgtacgcacg ggccgtcggg ccccccggca 1260

tcctcctgcc ggtgcagtac aaacccctgc catgcgtcac aagcgctcgg cgtcgctgac 1320

ggcgtgccct cggaatcctg tcagttctcg tttcacggat tcatctcaga agagcgtgtt 1380

acttctggta acactttctc gcgactaaca cagggaagag cgcagcgcag gcgtgccaac 1440

gcatctatca attaggggaa aagacagatc tggagctgtt cggagcgagg aggcagggcg 1500

tccggcccgg tcggcgacaa cgccggcgca ggcaccacca ccgtaccgta cccacctcaa 1560

aatcccatgg aagagctcag ctcagttcgt tttcaactgc gcgccgtacg tgtctacgtg 1620

acgggataac gtgcacgcgg gcggatccgg agaggccgcc gcgatctgat ctgccgtgtg 1680

ctgcctcctt cgaaatctgg attccgcgcc gcggattcgc gggtttctgc gagcgaaacg 1740

gcagtgccac tgctctgtgc gcgggaaagc gggcacgcac gcacgaggga ctccagactc 1800

actccactca tctctaattc gcgcctcggt ggaccaggtt tcgcttctag cttcaccttc 1860

accccgctgc aatactatta tataccacct ctaattctct atgaatgcat ccaaaaggat 1920

aggccggtag atgttggaat taatgaagtt gacatagctg ttttgctaac ta 1972

<210> 572
<211> 1528
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160953_G1, chr4:181061694..181063221, Cluster 4

<400> 572
cggaagggaa ggggaggagg ggacgggaaa atcgtccgcg cggcgcacgc gtggttgcgg 60

ccgggaagcc acgccttggc gagagtgcgc cggcggggga cgctgcgttt ccggcaagcg 120

aaccgaaccg ctttcgtcgg ccacgccttt gatggataga tatagataga ataggcacca 180

cgcactagaa aactgcgtca tcgtctcatc agacccatac ccttgcgtgc tgcgacgccg 240

atatgcttgt taattctgga tgagctaatc gagctctgca atttattaga aacgggtggc 300

caccggagct cccaacaact gcagccgttg ttggcaaagc ttcagctagc tcttggcgca 360

tccaacttta ctgtgcgcta taacggtgac atcaatcgcc ttgtgacttg agaggccagc 420

gaaacaccgg cagcttgaat gcaatcaaac agttgggcgt cgcatcagtg atcaggcggt 480

ggtgatttgg ggcgaggtgt gcaagtgggt gggccggggc ggcaggtggg gagcggatga 540

gaccagaaat ggataggaat agatgatttg tactactcct ttcccatcca cgcaccgcaa 600

ccgcaactgg tggaggcatg gaccctggag tgtctggatg gaggagcgcc ggccctcgat 660

cgcatgaaga agcagaaggg acgtactcca gtatgctttt tggttgctcg tgcttcaagt 720

tcacggaagc caatacgtag tgatgtggct ttttggcatt gcaagtcaaa aaggcccatc 780

ccagtcgcgc actcgatcga tacgggtaaa gtggacgctg gctgtgcagt gctgcccgtg 840

atcgccgccg acgcaatcaa tataaagcgg cttcttctgt taaaaaaaaa aagacatttg 900

cattgtgttc tattaccatc tatctactcg agacgttcga atggctccgt ccgctgatgt 960

ggtctcgtca ctggattgtt tgccgtctcc agaatggagt ggttctcttc tcgtatagcg 1020

agtgagactc cgatcaggca tatctggcag gtgcctgtgt cgccgactcg ccgtccgagc 1080

gcagcgcacc cgtctcatct tttctgacgg ggtgcctgcc atcgccgtcc tggagtggat 1140

gcacaaagag cacgccacca acctcacccc cgtaggacac cacaccacga ccacagtttg 1200

tgtggaggta ggtggtggac atgcactcct gtctgcctct cgttcaaact tcgttccagg 1260

gaccacagtc tctccccggt gtcctttgtt caaacatccg cgcggcggga actcatgtgc 1320

caccctgctg cttcatgaga gggaccgaaa accgcagctg ctccctgctc gttacaggta 1380

gggataaaaa cggaaaacgg taattttcgg ataccggaat tcgttttcga agttttaccg 1440

aaatttagac ttaaacggaa acgaaaacgg ttaacgaaaa tacggaaaca gaatcgatag 1500

aaaaactcgg aatcgtaact ggagtaac 1528

<210> 573
<211> 3473
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_168286_G1, chr4:219987223..219990695, Cluster 4

<400> 573
gtgcgctagc tgtaacacct taggtgttta cctcaagcta agcagcaagt ttggacctat 60

gaaattatgt ccatacgaat cattatatcc atatcatatt tgtctccatc tattaagagt 120

attcaaaaga tttcacgaag tttgaaccaa ataatcgcat gaaatgacaa atcatatgct 180

tgtttaaaac ttctcgatta aataaatgtg aatttagaag ttcaaccaag ctttgacatg 240

ttacccaaac aactctatat gaactctaca ccaaaagtta ttaagggtcc atgttgagca 300

aatgccaaga aaataccact tttggcctaa aacatccata ttgaacttga taacaacact 360

actttgacca aactcgaatt ttagtttcta agcacaatat gaggtttgac ctttaatcca 420

atttgcagaa caagttataa acaacaaatg ttatatttaa accaagtcat gattcaatct 480

ctaaatgtct gaaacagtgc cctcaagttg gaccaaaaaa ctgattttag gattaaaaat 540

cttctaagtc tgaaaacaat gtcgatcgga tcaacttctg gcattctcta agttttgtta 600

agcaactcga gttggaccaa ctataaaatt tgttagtaac tattagaggc acaacatacc 660

aaaagttggt atcaatcgaa ccccacttga catattttga caaccagatt ccattgaatt 720

tttaaacatc cacaaaccta ttttcgtgag tcaataactc tctaaccaac actcaaatta 780

tcctaagacc tgtgtgagat ttgtagaata tagagcaagg aaaatatcgt ctatactaac 840

tgagatgcaa atccaaataa aaaatgccat ttttgctacc caaagtagca acttcaacgt 900

ccgccatgtg tttgcttgtt tgcctcaatg aggaacactt gggcaacgtg cccaactcag 960

tagccacttt aaatcttcta gtcgtactcc tttatccccc atgccatctc ctccactggt 1020

cgatggcctc agccccatgg tcgtagctag ctgttccccc atgagcctct gctcctcacc 1080

tcccaagcga ccatgtcggt gcctaggcgt ccctcctgcc acctcccagc gcccctacct 1140

aatgtgtggc catccagatc gcggttgtcg cgctcctggc ctctgatccc gaccaccgcc 1200

ctcatctagg gtttatgctg cagtgacgcc gtgtgccctc tccctccagt cgcgctcggc 1260

catcgtcctg gacgtgtgcc tcctcaccgt cgtcggccgt cgttcaccgc accatcgtct 1320

ggccatgtct cctctttgac ggttgcgcca ctcctcggtc ctgctggctg cacctccggg 1380

ccctagcacc agtgcacgcg ctccccccagg gcatattcct ggccgcaccc ttcttccatg 1440

gataccggtc tacagctccg agtcgcacct ccctcgccaa ccttgccctg ctcaacctca 1500

gcaaccatca ttctgttgcg ccctcgctct gtcatcaatg catgctaggc tgtgtgccat 1560

cgcctccaac ctagtcgtgt cggccgactt caccctctcc gtcgtcttct tgatttggat 1620

agcaagcact gtcatcgtcc agcctcttcc tcaaccctcc cttgatgatc cttcgcctct 1680

gcgtgccctc gacgctttgt cccaggtttt gtgcaaaccc aaccacgtcg ttgtattcgt 1740

gtttggacca ctccggtgcc aacgtcatat acctcctagt cgtcggcgtc gcgttcacgt 1800

catgcttctc ccatctatcg tcgatgactt cacccttgcg tgtgcgtgcc ttcgctctct 1860

atcctaatgc catgcgcgct agagctttcc cccatgtacc gtgactgctg ctgtgctgcc 1920

ccgtctcgtg ctcactattc cacgccttga cgctcgtgct caatgccact gcatgcactg 1980

ttctgccaag tgtcgtggac gcgcatcaag tgctcgatga aatacccatg ccaaaaataa 2040

tcatcgatct catgtcgcca tgctcccttt gagcctgtga attggtcgat gatgtgcatg 2100

cgagtgtgga tcgaagattt caatggagaa gaaagcaagt gaaaaagggt gagatgtttt 2160

ttgatgtttt ttcggctctt gttaggtgtt atattgtgat gtgtatgaag tgttgacgaa 2220

atttctcatt tgcacgcaat ggcgtgaact cgtatgtgat tcggagaaac gggcgcgttg 2280

tgtttgtttg atgtgatgag taggtttgaa aatgtcagtt atgtaaagga taaattgatg 2340

gatgtgtgtg cgccatagtg tattgtgtta gtgctgtgat agataagtgt agcatttcaa 2400

atgaagtagc cgataggttt tgtatgtgtc acttgcgatg aattgttact atggtgaagt 2460

tttatttgga ttgcgagtca tgtggggtgt ggcgaaatta gtggtgcaaa ggataagttt 2520

agtattttaa acggttagtg gacaggttcg gtcaatatgg ttaaaattga ttttgcttat 2580

gtggtgaagt gatgatatgt cgtagtagtc atctcgtcat ctgattattg acttggctga 2640

tggtcgtgag aaatgattat tgctactgtt ttcctttgga attttagaaa ttcataatga 2700

aagatgcgca taagtgctag tcttgggtgt acaagtttgt agtctcgtgg agctctagaa 2760

tatttggtta gaatctactc gttggtttga acgaaatgtg atgttttatt tagttggcgt 2820

gctacacaaa ttaacctaga aaagtggttt agaaaagcta aataacttac ttctatctat 2880

atttgaattc tagcgtccaa taatggtggg tttagtttgt ggtcttctag tgtcgtgctt 2940

tagctaccaa aatgtacgac cgcatattgt ttagtgtttt cttgcatatt aactaaatcg 3000

tgtaagtagg aaaaatgtaa ctattgtgct tgctttttgc tgccactctt tgctcatgtc 3060

cagagaacaa cctttctgcc ttggcctcct taattaggag gaggctgtag agtacatcat 3120

cctctaccct cacctcgtgg tcaaagttta atttgaactt tctcgttttc tctactgtat 3180

ttttaaaat tatagtgtct agcttgggca ccttacacct aatattctcc catccacatt 3240

cgtctatctc tgtgatgcct ttgttagggc aaggccatga atgaccccat tctaccattt 3300

ttggtgcgaa cgtcaagtga caacaacccc tttaggaagg tttatttcta gctccacact 3360

aggctctggt gctaatcctc atacatttcc acagatctat tagggatatg gaagccttga 3420

aggacatttt ggatgtacat ctcggtgtgc tagagcacat atctcattga aac 3473

<210> 574
<211> 1801
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171379_G1, chr4:235327728..235329528, Cluster 4

<400> 574
agtaaattat ttttctctct cttgtacttg taagcttgtt aatgtttgag atctagcatg 60

acacctttgt tgtttatgta agatatttat aagttgtatc aataaatatt gaggtacagt 120

attgatggga tatatataaa ccatggtaat acacggacat gactagccac tccaaaaaaa 180

tcttacattt tagtacgtgc tatttttttt ggagctactc gagaggctct tcctcacgca 240

tcggcgtcac gttactttgt tgccgaaaag accagaggtt cctgttggta cagagctgtg 300

gctcacatca aactttgtag tgaggtcagg gtccagtaat gaaaagaacg ctccgccatt 360

tgcacaccgc tgacaaacat gtcgccatgt ctgtccctcg cgaccagcca tcacatgcat 420

gaacaaggac agaaccacag aacgcaaagc aaaataaaca tggggaatta gagctgattt 480

ttttatgtgc gttttcttct ctctctctct ctctacaacg cgtagtagga gtaaaggtgc 540

accgtgcaca cacatgcata gcacacacac tgtcacacca gcaccatgca tttcctagcc 600

aaattaaact gacagtagta taagccccag aggcccacac agacactgcc tagtcatcat 660

catctaccgc gcggcgggcg tgggcgtggg cgtgggcgtg cggcgcgacg acccgaagtg 720

ccagaaggac ggcgtccagg tccagaacgg cggcgagcgg ttccggcgct ccggcgcgct 780

gggcggcccg gcgtccaggc ccagcatgcc ccacatcacc tcgacgtcgt ggtacccgca 840

ggtctgcacg tccctgtgga ggtccacgat ccctgctcgc tctgcatcgc agccgacgag 900

ccaagacgcg gcccgttgca acgggggaac agttagtgtt atactccgcg tagatagcaa 960

actggtggta caaacagtct gtcttcagac cacgtcacga tgcgcatcac tgttcatcat 1020

gtggatcgga gtcggagatg tggaggtgtg attattggaa cttttgttgc tacggacggc 1080

agtacaggag aatgccggcc atatgcctct tgtatgccag tgtaaaagga tgttgacaca 1140

attattaaaa aaaacagaga gattagagat aatttggcta ataagccagg tcaatctgta 1200

tccaaacagg ccgttgaaag caaagggtgt aggagcacaa ggcggcgtgg tagtgtccgc 1260

ccctgtgaat ttcctcccaa tcgtgaacct agctgtcgac acgatctgtg tgcctctggg 1320

gttcatcaga ttactgtaac tgagaagcta gctagatcat atacttggag tctatgcagc 1380

attggaaatc cctgtacaaa gtaaacggat gcttaccggt gcggcggcgc acgcgcgcgg 1440

cgacgacggc cgccgggcac ggctccctag ccgcgccgtg gctccggact agggctgagc 1500

ttgctagtag ggtgttgaac gaaccaccgt acgtgccctc tctcgcgctg ctctccccgc 1560

ttctcaccga ctgctaatgc caaagtagta atggggcatc ggatcctgac cctgtggtag 1620

tagtggtggt ggtggtgtgt gcgggtgtag cggccgggcg tttaaaactc gcacggctcc 1680

aatcaatgcc gctgtcgcct cttcgtttcg cgcaaaatac gcacgcacgc acgcgctacc 1740

agccggggct gcggttcgtt ggcgagcgat ttgatgcgat cccggccagg tcggcgtgca 1800

c 1801

<210> 575
<211> 1938
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172938_G1, chr5:3208227..3210164, Cluster 4

<400> 575
ggagctcacg ggttccgcga gggcggatgg tttgggaaga aaaaaaaaga tcgggcgatc 60

gtcacggcgg tcgctgtgct tgcgatggga cgggatttat ggaagaaaat gagaccgccg 120

cgtatttatt tcatgtatat caagtcatta gcaacgcaat tttgagacga tttaataaac 180

aaatatatat acagtttgtt gtctttttt ttgagtcgtc taaggtaact catatttttt 240

ttttcaaaaa gaaatacata taaaataaga agaatctatg ggttactatg taagataaca 300

tacttgctca aggtatagag tttgtttcaa ttgttcactt caattttgtc acaaggcttg 360

cttctttatt cttgacgaaa tctacagaaa agtccaccga tatctatagc atcattagat 420

cgttactagt ttcacctttt tctgtgacat atgctttgaa aagatttttt ttggggagag 480

ggagtaggtg acgatatatt ccattgtagc tagtttggaa accatgaaaa tgagatttta 540

gtctttttat tctgattttg tggatctcaa attagcccct caataatatg gtggttgcag 600

atcgtgagga aaaaaaaaag gggcggaggg gattattcat atcataaaca ttgcacgtac 660

ggtacgggaa ctcgggaaga ggtggttgtg ggcgtgaggc tcctcgatgg gccgatgatc 720

ccggcctggg cgcaaaatca aactgggaat caaactggga ggccagtttg caggacttag 780

gctcattagg atatctccat cagtctctat attatcattt ctattttact ctttatttta 840

aactatattc tataacagta tatctatagt acaaaacaag gtgtaaatgt agaatttccc 900

atagggtttc cacaacccat actcatcctc gtaaagcgat atccatactc atccacatac 960

ccatatccat catgagtata agatttatac catacacatc cctatttata tatcaggtct 1020

ccaatggatc ccatccccta caagaaaata ttattacatt atattttata tgacattaac 1080

agccacaaaa cacccaacaa aaatacatca ccaataaatt taacatgtaa caagaaaaac 1140

aatgtttaac catacaaaac aacaaaaaca aagtgacaca tggactggtg ggcgggacga 1200

ccgatggttg acctcctagg ttgggtggat gggtgtttaa aagggttggg agatgtagtg 1260

ttagttgttg cgcttattgt ctattaggct ttctcgttac atcttggcca gtaatcagcc 1320

ttgtagtttt tggccacgtt gttgcctgca gtctagcgaa gagtggacat atattgtcgg 1380

tgaaattgaa agccttaaag gtgtcgcttt gtggggtctg cctaacttcg tcaaaactgc 1440

tcattctcat atggccatgt gaagggtgtg ttgagtcttg ggcatgcagg tgttggattt 1500

cttgcttgag ggcttgaagg tgttctttct cttgcttaat aggcgacaca ccctggtttg 1560

agcctcgctg cgcggttgct tggccgcgag ggcatctctt ttcttctgaa gtttggagtt 1620

gcgcgtgcga aggcttttga gcagcatttg gtcctcagaa ttgatgccga ggtctgggtt 1680

ggcctgtaag tcttcctcgt cattttccga tggcatcccg aatgggtggc gagggcctcc 1740

catggcggcg aagcctggtg tcgggagcag gttccttgtc atgtctggct ttttgggttg 1800

ggcagagggt ctcttgagtc ctctgagcta gtggtatgga cttcgcttgc ttgctcgttg 1860

gagaatgttg tctgcttttg ttttgcgagg aggtcctcgc cctgtgggtc ggtagtggcc 1920

ttcgggctag gtggtggg 1938

<210> 576
<211> 2325
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174086_G1, chr5:10209042..10211366, Cluster 4

<400> 576
tcgaccaatt acctgcagtt tgatcgatgc gtattgtcaa ggtaagttgt tgatcaaatc 60

taaattgacc atgctacaca ccactaactt ttccaaacgg gtcgacgaaa agtgcgacct 120

agccaacctc agatccgcca actctacgtt aaaggttagt cgcaacaggc cctagccaaa 180

tatcagtctc tccacataag ctaaaacaat ttcaccatat atcttgcgct atcaagaatc 240

aacggtggat tagaagtggt gattgaagtg acatatgaga tttacactac cctatataat 300

taggcatgca cgacccactg aattcaaata ctaaggaggg tgtttgtttg ggattataat 360

ccgtctagat taggcggatt ataatcccaa acaaacactc cctaatcatg gaatccaata 420

tttgcgtgtg gttgaacata atcactattt ctagttatcc agtgcagata atgaagtgaa 480

gctataacag catctcatct cagcgccggc cctcgtcctt ccctactcac gtaaagataa 540

gtggcacctt atcctgcctg ggccgtgggc cctggcgcct agcggcttgc catgtgtttg 600

gttccctgta gctgctcaac acttgtagcc gcggagtctc aaagcatgcc gtgtttggtt 660

aggtgtctga aacaagcagg ttctacgcat gcaagcaatg cttgccagcc aggctggtct 720

gatacgcgct tgattagcgt atctagggat gcaggttgtg tgcatgcacc tgaagcttgg 780

gcacgcattt ctagatcatc ttttattttg ttttttatca tagatctcac ttgaaatatt 840

catcgctaag ccaatttcaa atctatgttc ttagcatttt tacgaacaaa actagattac 900

acctgctata taaattttag agatttattt atttattgta tcggattttt aatctgatgc 960

tgacaaccaa acaaaagttg tatttagcct gaatgcacta atacaaataa ccaaacaaaa 1020

gtctattgca tgatcttagc ctgaccaaat gagcctgaat cctcaagtgc tggctaagtt 1080

ggaccaggct gctactgcac ggcaaccaat cacgcggttg gtgaatcggc ctcagctttg 1140

ccgccgccgt ccagagtcaa gacattccct agaggatccc catccgttcc ctggccgcga 1200

aatccatggg ccgaaactct acagggcaaa aaaataaata aatcatgcga aacgcaaacg 1260

atggtcgtcg tcacaggacc tcccattccg aaatgttgtg gcggggatcg gcggtgttca 1320

ttccagctgc tccgacggcc agcagggcga ccgcgtcgga gcaggagcag gagggcatca 1380

gccggcaggc agtagtgggc aaacgggcca ggccagtgag aatcgaggat ggcacgcacg 1440

gcagcctgtg ttccacgcca cggccggccc acgcggaacc gaaagcacac ttgccgcggt 1500

agtacgcacc actgcacccg gttgcagcca cacccgatct ctctctctct ctttttatta 1560

ctctgtacta ttattatata ctccgtcccg ctcccgcggt acgcagcagg agcactgttc 1620

cggcgtgagc gcacgtcgcg ccaagcgcgg ggggagcgaa tccgccgtac cgatcgcact 1680

gcgcgtgtcc cggcatggga acatgacggg acgcgacgaa aatggaatca aaggggagcc 1740

gagacggacc gccgggacgc cacgccacag ccaaacacgc ccgccacgac cgcgaccgcg 1800

ctggacgagc ccggggatcg tgtaacggac ggaagcatga ggcgcgcggc acggcggcgc 1860

cgccggaggt accgtaccgt acgtgcttac tagtggcacc gcctcctgtg accctgtctc 1920

ggtgactcct gacaccatcg tgcatgctgg cgcggcgatg gcgcgtagca gccaggcggt 1980

agcgcggcgg tatcagtggc agcaggtccg tggccgtggc acgagccggc tttcgcagcg 2040

ctgcatcgct gctggctctg gctgctgctg ctgctacggc ctcgtgtcaa tatatgtgtc 2100

aagcacgcct gcagtttttt ttttctctcc ctgcggcgac gcagttatct ttagcctgga 2160

cgttgactct tggggtacgt gtgtgtacct gtcggctgtc gcgtggacgt ggagggtccc 2220

aaggatcgga gctgcaggga tccgcgtcca tttcgacccg gccggatcct gattcctgac 2280

tgcgaggtgg gctcgctcat ccgtgacttg cgagtatgtt gttga 2325

<210> 577
<211> 1610
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174088_G1, chr5:10220074..10221683, Cluster 4

<400> 577
caaagggtag ggagggcatc ggacgcgcgc gcgacatgga ggaggcagat cttcctcgcg 60

ccactcacat gcacgacgcc acgaccctgg tccctggcga ccccggcgcc gcgtgcacga 120

gcccctcacg agaccctctc gactcccctg cgcggcaccg gtggaaacga cccggaactc 180

ccgtgtgccg cgcgcccacg gcagacgcgg cgccacagag cccacaatct gtcgcgaggt 240

gcgctgcatt cggcggccgt gttttattat tagacgggta gcggcagaaa cggattattt 300

gagagctgga aaaaaagatg ctcaactgcc actgcgagtt gtcttcccct ccggatcgca 360

gacttttag cacaaatgtt gcggctgtta actcgaacgt gcacttacta cttctctttt 420

caaagaaata aaaaaaagga aattgtctcg gtaagctaca ttttttttat ataaaaaatt 480

tgactccagc gatcaccctc acacgcctct gccgggcacc gccgagtggt gttcacgacg 540

ccgcggacgg gaggcggcac acctacaaca accgcttcgg cgtgctcttg cggtagcgcg 600

acacgtattc ggtcccgtac gcaggttgct acaccgtagg acctattttt ggttgggtgt 660

gagtgtgacc acgtggacag tgacgaatct atgggctatt tgtttggggt cataatttta 720

tctagattat actatataac ttattttgaa aacaaggtta cgggggtgtt tgtttgaact 780

aagtattaat taaaaatttg ttggattatt taattttatc agattataat ctcaaacaaa 840

catcctctgt acaatctaaa cagattataa atccaaacaa acatgcctct aatcgagaac 900

atcatcagga ttgattgacc tcgacaaaac cctctaaatc cgcccgtgca tgtggaccat 960

gtgggagtgt tctgggatgc tgtgaacaag attttgcatg gctgctccat ccctgtgctg 1020

taaggatgga cggcggcgat tccatttctg cttctgctta agattgattc aactgtatgg 1080

aaaaaaaaaa gaacatacag ttgccgtcat ttacatgtac aggattggca aattatattc 1140

ttcgatgaat atgacagcaa taactgtagg cgatcctggg actactatcc aaatccgtaa 1200

ttttttaaa gggaaagaat tctacagtag tattaaatcc ttcgacctct tgttgaatat 1260

gggcttctaa tatgtgttca tcgagtgggc tcagcaccac atatcggccc ataacctcga 1320

gaggcccaag ggacctctga ttgttttccg tctgggctcc gcgtggtttg agtggagaat 1380

gggcctatgc acgaaacaga ctagagacgt ataaaagttg tagatgaaga tctcgttttc 1440

cttctcaata ctcaggagtc aagaacaaca tataaaaaca cacagcggaa gacaaatata 1500

tgaggagagc catctcttca tccgttgtta tagttgtgca tgtagtctct tgatattagc 1560

cttaaagaca tatatggaca tatgcatatg gtagcctccc tggcgaatat 1610

<210> 578
<211> 1802
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174335_G1, chr5:11786955..11788756, Cluster 4

<400> 578
ccattatttt gctgcgtaca gtggccggcg aggccccgcc ccacgcgctt tgcgagtggc 60

gcaccggatc cggtttcgcc tgccccaccc ccatccagcc atccatcctc gacgaggcac 120

agtttcatga ggcggccgga cggcaggccc caatcctcgt cacggcgcga gcgagcccgc 180

tcctgccacg tgccaggcac cgccatgtgc tgctccctgg gagatcacag tgaagcccga 240

gtctctgtgg accagagctg ctgccgcccg gcctccactg aggccggctg ggatcggtcc 300

accgtgcacc gagtggtacg actccaaaag gtcagagatg agaccgcctt gcgcccttgc 360

ggccttgcct agtgctgttg tgcatgactg tacgcgcaga gtcgctacgc ccacacgttc 420

tggtgcagag gacaggagca ccggatcgga gcacgctgtg aaatgtgcgt gcctcggttc 480

acgacgcctg cccttgagat gcaagcggcc accggatccg gatctgcctt ttggggacgt 540

atatgtatca ggccatactc agattaatga aatgtgaggt tcttgtgcgc caatagtata 600

gactttcgta tggttgttga ggtatttctt tcggaaaacg aatcgcagac atgatttggg 660

tagtcataac caccataaca atgatccctg gtgtgttcgg gaatctaaat gacctttct 720

caatcttatt tattcactat ataatacgac ctcgttaggc tatttattta aggtcagcaa 780

agttgctgag ttttttttt ttttgcctct ctctctaggc tagattattt gggaatgaat 840

cattagaaac cctgatcctg tatgtataat acagcaatga agccacacga gctgagtgac 900

gcgtccctct tttgcaaccg cgagcttgtc ccacgaagac gttgtttatg tttccccgac 960

acatccgtta gcatatcgcc ttacatatta aggcaagctg tttcttgtcg tacttcgtag 1020

ggtaccaaca cccgcaacac gcacccgaga gctctcatct gttaccttct caaacatcat 1080

ttagggttta ggacatcgat catcaacaac tcgtaatcat gtttagttgg aaataaaaac 1140

tcatcgtagt tcaacacaca ggtgtaagaa gcgcagtgca cgtcacgtag gactcaggtg 1200

tcccaactcc cgtgcacagg ataaaggacc cgacggcgac gggcgggacg tggccccgtc 1260

tttccccggc cggccgtacg gcacaccagg cacgcacggg ggcccttcgt gccatccggg 1320

ccccgcgcgc ccatacgccg ctgcagggag cccgtcgcgc tcgcaggtcg caccgcggcc 1380

agcgccgggc gtgtagcggt cacgggcgag gtgtgcgttc ccccgtgccg ttgcgctgtg 1440

ctgagcctaa actcgacgtg acgggacgct acgccgtttt ggtcccgagc cggctccgtg 1500

tccgccggtg tctcccatgc cgtccgtggc gggcgcggtc gtgagtggtg tgtgcccccg 1560

cgcttgcggt ccttcccgac cttccgtggc gatccaacgt gggtgccaca gcatgctgag 1620

aacgcgcgga agctacgcgt gataaggagg gaacgtggac tggggccgaa cgctgcaagg 1680

aaagaagatt cgcggccgtc gcaacagcct ggagcacctc cgtcgcaggc tggacggcga 1740

ggccgatgct gacgcggatg ccccacaccc ctccaccgcc catccgggcg tcacgtcaca 1800

tg 1802

<210> 579
<211> 2105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174736_G1, chr5:14052635..14054739, Cluster 4

<400> 579
agtatcacag taagagattt ttttaacaca tacattgtac aacattacac atttatcatt 60

ttgagagaga gattttggtt ttggatcctt tatactgatc ttttttttact ttgattttga 120

attttaattg gttttgtaaa tgaatgtcaa tgtttaatgt ctatgtggtg ttgctaatat 180

tttcgttaag gagaagattg taaaatctcg tgtgataatc cattgtttta tattagaatt 240

acctttgtaa agtggttaac atgatatgat gttgggcatg tgtgctaatg tgtggttttg 300

atattgattt aacacactca tgggcgtgga gttgcatgga ttgacttcga gggtgcattt 360

ggttcagctt tttgaaacta tttctgtttt aaaaagtaga agctaaacca aaaggatcaa 420

cttttctagt actactttaa aaaaacaacc ttttgtagta caaatttgaa aatgacttgg 480

acccgacttt tgttgcttat ctaagtttga tatattaata aaaagatacg acaatttaaa 540

acttaaattg gatttagaat aattaattgt tgtaataaat gaaattaaaa tatattttta 600

ataaattaat aaaaatgaaa ttgtaaaagt tatttattaa ttcaatatat gaatgacgac 660

agatataaaa taaaatggga ttaaaaataa ttaagtgtta gaataaataa aataaaaaat 720

atttataaat agcaaatata tagcaagtag agtctagttt tatttgtaaa gataccagga 780

atgcaaatat gaagtttgtt tttaattaga tatattgatt aagaaatata gttaaataaa 840

gttatataag caatatattg tttgttcaca acagacaact gtttgagctt aacaactttc 900

gtttttaca tcagataact cacgacatat tttcataaca gaaaactcac atcaactttt 960

tgacaactca aagctgaact aaatccatcc taagctaaat cgtgaacttg ttctcgtaca 1020

tggttgacgt ttggagtata gattggtaca tatgaaggtc atttgtgttg gagaattata 1080

tgaaatatat ataatgtttt aaaggatcgt tggatagaat tgcaacacac gctaaacagt 1140

gaaaagatag aaagaagtgg aggtgacctt ttgtaatttg gcatcctctt cgtccgggcg 1200

atcaaccatg ggctgatggg cgcagggctg ctgctccttt gcgtagccgc gtagggacgg 1260

gacgtggaga gggatctccg cggggagccg gggagcgtga ggcagctggc tgctccgctg 1320

ctggcccctg gccggactac cggtggcgct agacgaatag cagcagtagc tagtagccgt 1380

gcgcgcgggg tggaggcacg atgggggccg aggtgatgtc acgacgggtt agcgcggccc 1440

agcatggcac ggggcaggcc caggagggaa ctgttggcaa tgcaggcggc ctagacggga 1500

actgttggcc caagtgggga caatggcggc ccaactcggc gcagcttgca agcgggttgg 1560

tcaacccaag ttgctggccc aagagtgtcg aaggtcggct caagaggggc cgatgcgggc 1620

taaattgggt cttttattat aaatatcaga tttatgattt atattacctc aaaacattaa 1680

attaatctag agcttttgaa gattttgtaa agaaatattt ttttgtgttt tttgagagca 1740

ctttgtacac ataatactca tgattaaggc gttgtttata caagattagt gtggtaatct 1800

cattcctcct ttgcttaata atgtgcggcc tagttttgat cgtaaaaatg tcgggaatat 1860

agatatgaat ttggttcagt aagtaaatct ttaaattata agatataaaa aacaaaactc 1920

gtgtctcggt ttgtgtgcac gagtaaaaca acaggttggg acgcgcttcc tctatagtta 1980

cgtccaacga cagacgtgtg gggttacctg ctacagctac gtccgtggac gtaattgtag 2040

aggatcatac ttggctggct gagcagagcc tggccgcgtg tgcggccgcg tgaggcatta 2100

tcgct 2105

<210> 580
<211> 1425
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175177_G1, chr5:16327319..16328743, Cluster 4

<400> 580
aatctttaaa ttgccaaata cagaaactct atttgtgttg cttatttgtg ttttattggt 60

ccattcatat ccacccccctg ctaattttct agtttatcaa gcattttccc ttatcaaaca 120

ttcagactca aactgatgtg cttgacaaaa acgtatgctt ttacccaaga atttcttaaa 180

gctcttttaa gcattgcaaa tagaaatact gaaactggag acggatgctt attttctcac 240

ttgctatcgt ataaacatct cagtacacag tagctaagca actgtcctta cgtcgtcatg 300

caccaccaat tcaccgtcac catcactctc cgcaagtctg aatttttatt atgtatatgc 360

gcgaacagtt ggtagggaag agaccaaccc gcagggaatt aggtgtggtg tggcccaaaa 420

gcacagacag acgctcctag cctgataaca cattctaact gctgaaagat acatgtgccg 480

tgttgtgccc tgagtatatg ctggtctttc ccttgatcga cgacggctcg ctggtaacgt 540

atgtatcagc aggtgcacga gcacgtactt ttaaaaatta tatataaaag tggcaatgcg 600

tttccctatg tttttgaatt attagcacgc gggggaatta taggtggaca tggtttagtt 660

ttaagaagac gagcttcttt ctttctttct ttgtttcggt tcccgctttg catcgtggaa 720

aggaaaagca cacccgtatt attctctggt ttgatttgat gggggggcgt ccaaataaac 780

tagcggtagc ttagcttgaa cagaatgcgt ttgattgagc gggcatacct ttatggatcg 840

tctctctctg tctgtcagtc tgtgtgtgtg gaagtttctt gggaactttg atcctgcttt 900

tgcatctgca gagcaccacc atcctctgct ggtatacctt gctttgagta caatcaatca 960

ttcattcatt gaggtcaaag ttgcatgccc tgggcgggcc ccgcatcgga tctgtttatg 1020

cacgattggt cgcgaaggtg agggtcatgt gcggtgtgta aactcccctc tccctctctg 1080

ctgggatcat gtggtgtgcc ctgcctccag cttctattgt tgcagctagg ccggtcttcg 1140

taggcaagaa ttgcaagtaa agaaaggatc caatgcgttc catgcctgtg ctgttctgcc 1200

tgccggccaa tgaggtcgtt gaaatatggc gcgcgcgccc ctttgggtca gagggactgg 1260

cactgagtgt ccggatgaga tccaggagca acgccttttc tggttctgga gtaggcggag 1320

cagagtgtgc tgctactgct agctggacgg agtggacgct ctggcgcttt ttgaaacctt 1380

gctcgtcccc tagtcttcct tccagatgag atgctcatgc agcca 1425

<210> 581
<211> 2780
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_180086_G1, chr5:42295021..42297800, Cluster 4

<400> 581
ccacgtccaa gatccgtcgc cgtgccctcg ccggcacaaa agcttggtgt ttgtaatctg 60

ctcatatata tggtcgctgc ctccgatcgg cactgatgaa cgagagcgat cgagcgtcca 120

tccaacgtcc ctgaaagcac aacacccaaa cgccaatcta tctatctatc tatctatccc 180

aggtagacct cataaagacg gtcaaacaac gtccgaagca agctaggacc cccggcgcgg 240

cgccgacgga cgctagctag ctctcggtcg tcaccactca acgcgacccg cgacgtacga 300

cggatcatct ctgggcaacc ggctggtgcg gtgcagacgt gcagtggaca catgtccctt 360

ggacggacct gccagctgta cgtacgtgcc ggtctgccgg aacacggccg gggggggggg 420

gggggggggg cgctcggatc tctcgcagaa gggcggccga gcaggatcga gcagccggca 480

gtgcccccgt cggcgccagg actggacgga cgtacccgag gccgagcctg aagcaggccg 540

gccgacgccg acacgtacgg ggctgggacg tttctctcat gctccggcaa gagcaaaagg 600

aagcgagcga ggacgtatgc gcgcggttgc cgtcagcgcc cgccgcccgt gtgtgtcacc 660

gcgtgccgcg gcgcggaagg cgtgagccgt gagcgggcgg ggcatggacc aaggggtgg 720

cttgttgctt cctgcactgc ccgaaccgaa cccccgctgg aggccggggc tggactggag 780

catgcataca gtttggcatg gaatttatgt gtgttttcat ctatagtact ccttatacaa 840

tgagcatgca tgtgcacgaa tccacggtat agcacggccg gtgcctgaaa gaatacccta 900

ttcggaggtc catctcctgc tatttttaat tttttaagca ggccggacga gcgactgagc 960

ttgtcgtcgt cgtcgttcct cgagtctgtc tgtgctggcc gcccttgttt tatgaatgaa 1020

ttttggacat ctccgaacga gatatatata tttgctatac gaatctgtgt caaggtgtcc 1080

ccgccgtgca aaggggaaaa taataatact tatgactatg atgatatgta taaaataaaa 1140

tggaagggta ggctgggtca ggtcaacgat tcctgacatg ctagaaatag catggaccaa 1200

ggaagaagcc cgtatgtcgt tcacctgcac gacacgacca cggatatagg agtcacaatt 1260

gctgtactgt aatagccgcg tagtaatgga ctttatatta ttactttctt agaattagaa 1320

ggaaaaaaag tgagagaaaa gattccccag gtcgaggcgt agagccatcg cccatcggcc 1380

ggcatcacga ggacgacgac cgagcagctc cgagtcatca tcacagtgcc cagccagccc 1440

aaagcgtggt gttaattctc aggttccgga ttccctgtac gctcctcgta taggaggacg 1500

cgcgtataat acgccgcacg gtctcggtcg tggacgcctc tgtcttcagc tgttggtcga 1560

caggaacagt tccgctccgg tccactggaa cgagaagaaa gagaaggaaa ggaaccaacc 1620

aaaacgtgtg cggctcgcgg ccggcgccgc cgatcgccat cgactgatcc gtccgtctcg 1680

cctccgtcgg cgtcgccctg gtggttgcct ggatggatct tggacgtggc tcgtgagcca 1740

ggaagggagt actagggacc atatgggctg ccatttctgc gtcccagcag gttcgttccc 1800

gcggttattt tacttttggc ttctgccatt tctctgtttc ggctcaggca cttcattaac 1860

agctcacgtt cctttcactt tcaccgtttt ctatcggcga cggcgggcta ttggcgtgca 1920

ggtttcattg acgacggcgg gctatttact gcagtgctat agctgcagct actactctac 1980

cagctagcac tagcagcagg ttcgatgctg agctcaggct tcagacacgg gtggatggat 2040

ggatcgtcgt cgtcagtgag gttgctgtcg gcgaatttta ctgcgactat gcagccagtc 2100

accagtccaa tcaaaattta ccacaggcag acgtacacgt gcgtgcaggc atcgtactcg 2160

tacggtacta ctactaccac agccttgcaa gtcaaaaaga agaaagtgtt ggaggggaga 2220

gcgagtagta gtagagcagg acgattcctg cactcgccaa cagcatgcga ctacgagctg 2280

cttctcacgc tagcactctg ctaccggcac agcacagtaa gtacatggca acggcatgct 2340

aatcttgctt ccgtaccagt cagtcagtgc aggcataata ggagatcagt gagacttaag 2400

cacctgccag gcatcaatca gcacgccaca agatgaggac gtgacggggg gggtcgggag 2460

tgcggcacgc ggagcactgt acatgtgcga ctgcacgtcg cgcgcggcgc agcgcagcgc 2520

aggcacagag ccactgaacc agtagccgta ctctacagaa gcaaggacat agagaattga 2580

caagaaaaat cacgcaaggg aggagagaga gaaggggggа gcatagcata ggcatagcaa 2640

gagcaaagct gaaaaagagg agcaccactc gtggggggtt aaaaccccga gaacaaactt 2700

gggagtagca gcggccagcc ggaagcgagc ggagaccgag gggagagggg gtgaagaagc 2760

aacgagacgc agcgagcaag 2780

<210> 582
<211> 2534
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181810_G1, chr5:53401199..53403732, Cluster 4

<400> 582
gcctatgcca cccggcggcg agctcgagct tgagcagtgg tgcacgcaaa gattagccag 60

gccaggccag taaaagacaa ggcgtggcca gccggcgcag cactggcacg cacgccacgg 120

cccaaggttt cggctcccgc acgaggtatg ttaggttacg cgcgccgcgc cacgtcctga 180

ccgactgacg tatctgacct cggccggtcc acaacggcgc ccggatgcag aggaggagga 240

ggaaggcggc ggcgaacgat tcggctgatg cgcgggagcg gattccttcg cgccgcaggt 300

gccttctacc ttgccgatgg ccgtatctgt cacgctttgc tggattcgcg cgcgcccaca 360

ttcttatctt tgccgagatt tgcgcactcg atggtgtcgg gacaaggcag ctgttggctg 420

ttgcagcagc acgggcgcac tgcttggcct gctatgcgag cttcggtcgt cggcgttctt 480

ttagtttagt ttaggcccat gcatctgctg ctgtcatcgc ctctatcttc tgatgatgat 540

ttcgggtccg tgtacgccac tccttctcca gcaaatccag ctccttgctc cctgccgcgg 600

cggccaaacc cacaggaacg gccgtgtccg tccgtcgtcg cgctctggaa atcatctgcc 660

tgcccttccg tccatccaca gtcaggcggc gacctctctg aacgcagtga cggccggaac 720

tcaactcgtt gtctagtgcc tacaggaacg gggaatgtgc gtgccaggcg cccgtgacca 780

cgcgcagcca cacggcactc aaattggctt ctttggctcc atcggcggcg ttcagcggat 840

atgctgctgt cgatggcacg caacgcaacc tagcacagcg tgacgatgct ggccgtttaa 900

aacgaccgcc ggcccaccag ctgtccaaat agtagctcat cggtaacggg gcccagcata 960

cgatacgatt ccggaactaa cttggcagat agataggctt tccttgccgg gccgacgggg 1020

ctggacactc tctcacgcga cctgaacaga agtggtccgt cggccttctg tcgcagtcca 1080

cgggccgggg ctcgatacaa acgcatacat gtagttacgt acagtacagg acacaaagtg 1140

gttagctagc taaccatcat cagggcacag catatataca tgtagttgct tactagccag 1200

gtgtcctatc tgatgtatta cactgttgaa acgcgggatc agttgcttat tcctttgtgg 1260

tacacgtcca aacataacaa acaccctccc accccgcgcc cccgggtaat tctaggtttt 1320

ggatcaatca tttttttga gtttgactaa actcgtagga gattatgggg atgtttacga 1380

tggctctgta gtttataata tcaatttaat tagtttaaaa attaatctaa ataataaaca 1440

aaatgactta tctaaatgtc ctctaaaggc ttatagctcc aactctatga tttttctgga 1500

gcacctaatg atctgctcca ccaactctac aaaaatccct ggagctggag ctatcccaaa 1560

cagggcctat atgtaaacac tccttatgca tgtctatgac ttaatttatt aaaatgcatt 1620

ttatagctaa tgcaataaca tttaagacac gtttggatcg tctagtgttt gttgggttgg 1680

tctcatccga ctcgatgact acatccagtc ggacaacttg gttgtgttct gaccgggccc 1740

acaacaacct ttggttatgg ccctctttca catagctagg tacgcaatct aacaatcgtc 1800

gtaccccttt tgtcctacat tctcattaga tctgatctat ctctatggaa ttagtgaagg 1860

gtagatcatg gctatcatgc ccatagaacc tagctcacca aactctgaat ccatggcgtc 1920

atctttcaac cctaaaggtc ttttcccctg ttgctagggt cgtgagctaa ggtcatacaa 1980

atataacaac agtggtccta gtatactaga atgagatttt tgggggctca gaatctaacc 2040

ctaggtacta gattaccttt gattttggaa caaatttgag cgacccccct ctcaaacctc 2100

gtgtttctac tccattagaa caacaagcag aagaaggaga gatacaaacc ctaacttggg 2160

tttccctaaa ctcccaaagc ataaccctaa ctttgaccaa atcctgcaga tagaggaaag 2220

aggagtctta caacttatct ggccatcgga tatgttgata ggccaccgaa ggaggcagca 2280

cgagcaccag tctcggacac aaaggcatgt gcgaggcctt aggtcaccgc cgtgacgctg 2340

accaacgaca acacgctcac cctcaacttt ggatcaaaga acagtgaagt gcaatgcctt 2400

ttattttctt tattatttca atacgagtaa taatcatata aatgtttgta tacgaatctt 2460

gagcattgtt ttaagttaat gcttgctgga aattaagtta ctatgtttcg agccaagttt 2520

taagtttaag tttt 2534

<210> 583
<211> 1457
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_182924_G1, chr5:60516372..60517828, Cluster 4

<400> 583
tcatacctgt ttcacataat caacaattag actgagttca ttcagattcc tgacataaga 60

agcccttgaa cttaatactg actttagttc gctcctcatc ttatcaatat ctccacaaag 120

tttttcagtc tcccactgtc acaaagagaa atggttttcc tacacaaatc aaaggacccc 180

tttaagcgac taacccttgt aataatcatt acaaatacaa ataagaataa gtacatgaca 240

aggtagtcaa ggcaacagtg ttgaatattg aagatgtaaa gagaaaggca gcaagatgaa 300

gacatgtgaa ctgcaatcca tgcaaacaca gtgcacagaa gaagtaagaa ctatttttat 360

gttacctgtt ttagttacca aattgaaatc tgcaggtctg tagtattagg ttcagctaaa 420

acagtgcaga gcacacaaca acagtgatgc ctattagtcc caactcccaa actgggacca 480

cagtgacaac aatccaacat catgcataca aaccagagca ttagatatgt agctcctggc 540

tattacactg tagacaattt ctggagctcc actctctgta agagacttat gagtaggttc 600

tatcacataa tgcatcagaa tggtcctcca aactacataa tggatagttc ggtgcaaaca 660

agacaggtag atgaaacaat ggtgattagt agttccatta agttgcagat gagcagaaca 720

aaatgatcct cctatacatc tagccatcta ggagatcaag aaccccaaaa gaacaagcct 780

cagtctacct caacaataat ggatgatgag atgaacaaaa cattaaataa caagtccgcc 840

aatgagcaca atcagtaagg catcttgaag tttagagcgc gcaatagaat atcaatatat 900

taagaagaaa agaaacacag tataaaaacc aaagaacacc aggtctagga aacatgaaac 960

aaaccccaag aacacccact cccacgcacc tatgcaaaac aaaaatacaa gacctgaact 1020

agaccaacca gcccacaaat ctaacttgtg ggggtgacag gcagggggga ggagattcct 1080

ctagctccac ccaaacttca acattgtagt gtgcaactga cttttgccaa aaaaagacta 1140

gcattccaca tgaaaagtag atctcctcca acccaacatg taggtatttt taaaaaacaa 1200

tgacttaaaa atataattta tagagtgtat gcagtataaa gcaaacaact atatttcttt 1260

caaattaacg aagatgatac acccgaatat gataccga agtctataca gaacatagaa 1320

ggaagctaac aaaggagcaa ataaaattcg tttctcgctc acgtacaggc gtaagcatag 1380

acctcggcgt actcagacag tcgtacgcaa ataactatac tctttttcc tgcacccacg 1440

tcccattcat cccatac 1457

<210> 584
<211> 1695
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_186304_G1, chr5:85237945..85239639, Cluster 4

<400> 584
gtgtgcacgg gagggttaat gctatgtggg tccaagtgca taagtaacgg cgtcaattag 60

tgaatggaca gcgatggcat agaggaaaaa aagtctaaaa ctgatggcat agagggaatg 120

ctataatttc caatgacaca taaggaattg gtataatttc taatggcata gagggaattt 180

tctctagatt aaagccatac gacgtttcaa ggagacgatg gcgcaggcca acctgccctt 240

ccaaaacgtg tgcgccgcct cttgccctct tctgcagcta ctaccgaata agaaagaact 300

caaaattctc taccgaataa gaaaaagctc gttagtggaa gttgagcttc gtaatatgga 360

acaatgaaaa aaaaaagatg ctgcatagtc atcgatatta tttaaatata gaaatacagc 420

tgaaatatgg gacatttttt tgaaacccac gtttaaaccg gaccatgcag aggccggtgc 480

agagattttc cttcgtggcg gacggggtgc tgctgcgctt ttggaatggc acacatttcg 540

acgccagtgc agcccgtcgc agaatgcgcc ggagcccgga cggaggttcc taggcccctt 600

ttcggcccat tcccgaagcc gcacgcacgg ctctgattgg gctctctctc tttgctggcg 660

aaaattagct tgctgccatt gtcgatgaag acgatccagt cgatggttct atagtttcga 720

gagttgatta tctaatagag tgatttcgag taatttttt atcggaagtg aatttattta 780

gcgaaaatca tttggtaaat aggctgtgaa gtgatttttg acgggttgga tagtgggaag 840

caggttgtaa gtggtggaaa gcaggttttt ttctcacact ttctagtaca aaatagagat 900

tagattcact tcattcccac cattgagcag ttcagatttt tgggggcgtt tgatagagct 960

ctcgtatatc cgctcacatc gagaatcact ctcgcagagc caaaccgtaa aaaactgaac 1020

tgctttatta tgggagtgga gtgaatctag tatttatttt gtactataaa gtgggagcca 1080

aaaaacctgc ttcttacctc tcccaacctg ctccccactc tctaacctct caggaatcaa 1140

tttacaacct atttgccaaa cattttttgt caaataaatt cacttatgtt agaaaaacgt 1200

ttggtatcac tttattagag aattggcttt cgggactaga gaatggatcc aagctgtgac 1260

aaatgaaccc acagcagaat taattctagt tggaaccgaa gctatgagag gtctaccaaa 1320

tgtcccgata agctattggt tggtgctatg ctcctgaaga cagaacggct tgtcccgatc 1380

gaccgatcga gcggcatatg tgaagcactt ttctcgttgc caacgaagtg ggaatcgaat 1440

ctgtcttttt gtttttcctg tgctgattgt tgaagaacaa tggcgaccgg tcaggtggtg 1500

ctaatgcctt tgctaattct ttagtttgtt tatagatgtt ctggtttcta gcgtggattg 1560

aaaaggaaat gctatgcgtg ggcaatcatg cacgaatttg ttcttcgcta aagttgcgtg 1620

tgcctgcttt cgttgaaggt ggtctttgtt tttttcacat atcatgtgtt tggttgcctg 1680

tatttgatgg tgctt 1695

<210> 585
<211> 4126
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198422_G1, chr5:164860424..164864549, Cluster 4

<400> 585
caaccacagg aaactaactc agggccatgt gttcaaactc agagaacatg catgttgggt 60

tgcaagttgc aacaagggat taaaattccc ccaagtacta ctggaactaa tctagatcga 120

gagggatgga gtggatccct ccattattat attgtcactc aatccctttt ggggggaggg 180

gtgggggtta aattcgttta atccatgtct caaaaggtac attcgattca tccctagtac 240

ggacaactga gcttctatgc ttacctgaaa gtgagtaaaa agaaagaata tgcacacgca 300

tctcgtagat tacataaaag cagcaataaa ctccatacat atatgctgtc aattcttctg 360

taacaagagg gaaaagtctt acatatatat gaaacaagag tagagtgtgc tcatttattg 420

aattgaatat aggctactca aactgatgca tgttgcatca atttgtagtt acagtttaca 480

tatgcttgta tatgacctga aagggcgtaa acggacaagc tagctagcta ggcctcagag 540

ggccgggcgc gaaccatcca atggtacggt tacgaagttc tcacgtactc atgcatggtc 600

tctactaaag ctagcctggg tgacaactct ctctggatgg gcgaaaacat ccgcatatcc 660

caatcacgag tgtcagcgac gagctgagtg tgagtgaact agctagaggg ccgggccgcc 720

gggcaggggt cgtcacgagg gaggagaggg gcgcgtcgtg cagtgctgcc gtcgcgtagc 780

gcccgcccgc gtgctcgcta gctgcctagc ccctcccatg aacggtttct gcggttgccg 840

ttgcgaaagc tgacaggaga gagagcggtc ctaggcctgc agcgaccacg agcaagggcc 900

ctgaccccat gaccatgagc ggcgggctag ctctagctac gtgtacagcc gcagctccgt 960

ccgtctcccg tctctacgga gggaaacatg cagcctgtac acttggatat cctggtctga 1020

gttactgcag aagtgcgtgc ggcggcgtgc tgctcctgca aaagcgcaag agctggggga 1080

tggacgcatt cgtaacagta ccagcgcgcc catctatcta cgcacgtacg tacgtgcatg 1140

gcgcagatcc ctcgcacgat gtgaactttt tgtacgtacg tactgcacat tcaggccagg 1200

tggccttagc tatctatgca acgcagcgcg catgcaatgc agtcgtcccg tcccatctta 1260

attaacgaga tcgcccgacg atgactgcaa ttttttttctc cccttgcacc ggcggccaaa 1320

cagagcagag accaccacgc tctccactcc accaagacca aggagtagat gctgagggag 1380

cctttcaagt tcgtctagac catccggggc cgccgccggc gacacgatca tagaagcgcc 1440

tgacccgcgc gcgcggcgtc gatcggcggg ggggtccgat acgatcgatg gacgcgacga 1500

cgtccatctg aaatccgatc cgatcggatc gacgccgctg cccacaagca caacacagca 1560

cgtaggggtg cgtcacctgg ggacagcaac ggctgtggct tcacaacaca gcatgaagcg 1620

gtggctagct agctcgggga catgcacaca cgccgaccag cagcttggga gtcaagaaca 1680

cggcatgtga gaccacgtcc cggccccgac gtcgtggcgc atgtacactg aaagagctag 1740

ctctagctag atagataact gaacgtccca cctgcctgca ggggaagtct ggttaataag 1800

ctgcttgcac atccaaatga cacacatgca tatatcacgg agaaagggga aaaaggcatg 1860

cagtctgcgc atatgccatg cttgatgctt ctttcttgtt gagttgttgg ctagcttttg 1920

gggtcatgct ctggttccaa gatttcgtcc atgcatgtgc tcatgttgtg tgacgtgcag 1980

cttattatta attgtagaca ccgccagagg tggtcctggt ccacagtctg catatgtgtg 2040

tgctcgtccg tgaaattttc tagtattcca gaacatgcta gagcggcatg tactaacgac 2100

gtctctctct gactggtggt gattagcata acaaatacta catcagatta ttcgatctga 2160

taaccgtgta agtggggatg atatgattat tcgatcgatt ttctacacgc agtcgggggg 2220

caaaataaga ctttttctta tttaaaggca atacagtaaa tgataagata ctgaactgtc 2280

atctgacggt taattaactt tgtctggccg ctggaatctc gatcgtgcca cagtggcgac 2340

cagagcgtgg tggctataca gcgaccacgc caccaggtcg cgcgcgaggt gaaacgcgcg 2400

cggacgtgcg gcggaggatc gtcggagcta gcgaggcgct gtgtccgccc cgaccggggc 2460

ttgggttgca ggggcgagat cagggaggaa atcttgtgtt cctcttcgac atggcacggc 2520

ggccacgctc ttgcttagct tgtcccacga cggcccgagc gcggcgttga aaagcacgcg 2580

gccgggtaca cacggacaac taccgtcgct gctagcacat gaggctgtgg ggcttggccg 2640

ggttcgatcg tatatatgga tatgcatgca tcagatcagc gcgactgtgc cactgttaca 2700

tagatttgct cctcgatctc ttgacgtcga cgagatggtt ttccacagtg actgaactag 2760

ccgtgcctgt tcgggggcag tttcaatagt cagatgttgt catgcgtcac aagggagagg 2820

ttctagattt ttatagcatg catgcataga gaaggagcga gaggtgactc gatccatcca 2880

tccgatagct gcgtatatat cgtacgtagg ccaccaccgt cgttacatct aaatctagct 2940

ctcgtgcggc gattagatca gggtccggtg tctccctatc taccagtgaa aggtttcata 3000

cacgcgcgcg catgcacgac gacaaacgct gcagatgcgg cgccgctctg gagaggacga 3060

gagcagtcgc cgtcggcgtc gatcgatcgg cgcttctctc accgcgccac cgcgggccgg 3120

ccgggagagg gaggaagcca gcgtaataat ctgcccaatg caatgccacc cttcaatctt 3180

actcctagct agctagtcat tagggattag gtaccgtagc gtcgtcattc atcaacaaac 3240

gccaattaat cgaaggaacg acgatgacga tgacgaatca tcatcaggca ggcgtaccct 3300

tctcttatct tattacatgc atatggctcc atttattgat caacaaacgc tttccgtatc 3360

gatgctgcag ccaccgccaa cgtctcgtct cgtctcgcca cgcgcccctc tctgcttgaa 3420

ctgcagactg ttgccaccgt actgacaagc tagctatagc ctatagctag ctttgcgtgg 3480

tacggtacgc cacaccacca cagatatgtg tgacaggaac agctgatggc aaggttgttc 3540

acaggtctct acaagggcaa taataccgca ataggttgct gttcttggag agtgggcgag 3600

aataacctaa caggtttatc gacgtacgta cgtacgtgta aaccttgtca gatatccgcg 3660

gacgaatgtg gaaaaaagtt gccatatata ttgcatggtt cgctgcagaa gctgggtagt 3720

aatcataaat tcagggaaaa acaagagacg acgtaattaa aaagaaggaa ttttgaaggt 3780

gtttggtttg gggagtcaat ccattttaga cgagttggtg catcatgagt ctatttcata 3840

aattagaatt aactcattta ccatattatt actaattatt agactacaag gaataaaaca 3900

gtgatggatc aactcattac attttacaaa acaaacaaca aagtgatgga tcgactttca 3960

ttcaactcat attattatta aaataatgca ctaacttatt tctcaaacca agcacactat 4020

ttaggtttca ttggagccac atgctatcac tactcacaag acttgcaaaa gttaagcaca 4080

caaggttatc gatccgagtt ttaagctcta gagtagccat atatgc 4126

<210> 586
<211> 2106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201152_G1, chr5:180366212..180368317, Cluster 4

<400> 586
atgcctgttt agctagagtg catttaggtt ttacataaaa ttaaaatgag ctgggaactt 60

tactccatta ttgttccagt attcgagtat tccccaaagt ctaagaagtc tgctcctaca 120

acgaaaggga ggtgtactag acctggccca ctgggccgtg tagttttctg actttggacc 180

tgatccccaa ccaaggcctt gaatgcccac atcgtctgca gtgtcgtcca cgtgctgctt 240

gtgttgcgta ctccagtaga ctggactagc agtacaactt gcgtgcgaca ctgcaaccgc 300

atcggcgcca cggcgcggcg ccgggccggc ggccgtgacg gcacaccatt gcggtatgaa 360

gcccgtaggg ccattgtctg caggccgcag tctatctcct tcattgtcgt cgtcgtcgtc 420

gatcagggtc cactcctccc tgccgccggc catacagcta gcgtaagtgt ccgtatacga 480

ccatgcatgc atctccatac cagggccggt gtcagtgagc agtacgctca gacgactcag 540

tgctgctacg agccagtctg gacgcctagc cgcagccggt ggacgtacgg ccgggccatg 600

ccttggtggg gtgacagcgc aacggacgtc tcgtcggcgg gcaccgcacg gcacagcgtt 660

tcgcacggaa gctgcctcgt cgcttcgacc atcgcttcat acatcatcat ctgatcgtcg 720

tccagaacta cacacgtgtc ccatggattc accgtgcacg cacgaacgac gaatggcagg 780

cagcaggggc agggcggtgc aggtgtgcgt gcgcgtgatc cgcgtgcgcc atccagtcca 840

agatggtcga cgtcgccgcc cgtggttgat cactcttgat ccggccgctc atgtcccacg 900

tcccgcaagc ggcaagtcgg caagagcaga gcgcgtgcca aagtcttatt atctggtgcg 960

cgttcgccgc taactgaaac ggtgcgagac ggcggcggcg atggttagga tctcagtttt 1020

tgcgaggctc acccgtctcg cagcaagcca tgaatacggc agggtcgggc tcttggtttc 1080

acttggacga cattcctaca gcgggtgagt tcgtatcgta gggcaaaccc ggcgtaaaga 1140

caaaggagca acagggagtg gtagcggcct acaggagctc ccaatcgcag ggccggcccg 1200

tacatgtgag cagtttcggg tgcatggacg cagaatacag ctacagcgcg cgggcatgct 1260

gtccaggact cgcgccatgt ctctctgtcc ctgctagctc cctgagcagt cgccgtcgtg 1320

ccccggccga gcgctcatgc agtcatgcca cgcgcggttg cgttgcgttg cggcgacatg 1380

gatagatcta gccaccaagg caaggctgca ggggaaaacc cgaaggcgaa gacgaagcat 1440

tgccttgcct tgcccgcgcg tacgtcatgg atcacaggcg cgcgaaagat cgaccaagaa 1500

gccgggtagc tgtacgggcc cgaccgcgtg aacagcagaa gccacccggg ccaatgacaa 1560

gcgacgcaca cgcacgccgg cggcatgcac cgagcggcag cgcggtgcat ggaagctgcc 1620

tcgccagtac agtacacgtc cagtccagag acgcacaagc acggccgacc ggcttcgatg 1680

ggggtgtctc cgttgagcct cctcgctttc agttggcgcg cgcgtgtgac gaccgtcgtg 1740

cgcgattggc cggccggccc cggccgttac cgtggctgcc gtctctcgta ctgtcacaca 1800

caagaacagt agtagaacac gaaccaacta gtggttctcc ggcaccacca cgcatgacat 1860

tatcgtcaag atgaaacgag ccccccctcc caagtcccag cacattttat gggcactcct 1920

gcccggcgaa gtgaccgctc gatatccgcc tggcccacag ccacgaactt taattctagg 1980

aaaaggatgg agaacagaag caactatata ttggcaccgc aatttctgat tgtagattgt 2040

gaaagtctga aaggggtttt ccagccggcc gatcgaacgg gcaatagacc ttaagggctg 2100

atttgg 2106

<210> 587
<211> 2522
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202164_G1, chr5:186418518..186421039, Cluster 4

<400> 587
agctgaaacg ctagtatata tagtgccatt gcaccggtgg atcagtttct tactccgagt 60

tgagagttgc aaacatcgca ctgataattt tgtttgaagc tgcaagcttc agtttaaaaa 120

agttaaaagc ttgagtttcc caattgtacg aagtcttgaa ggtgctaagg aatcacttgg 180

ttattagtta atttctaagt taatccagta gtgaccatta gtaactagat atagatgctg 240

atggcaccac acaaatactt gggaaaaaaa aaggttggtt tccttttga ctgcaggggc 300

taaagaggct atgattatgc tcacaccgtc agatagcaag aactttagac ggtttcctcc 360

cgttgatatt tgtcccggag gactaataag gaaaggcaaa ttctatcggt gacagtaacc 420

atccagatta gtggagcagt tggaacgagc cgtagcgttt tacacagcct gctgctgtag 480

gttccgtagt gcttgctcca agcgtcctct ctttgggaaa accagttcac agagacacac 540

gagtagacga cgatgtcata tataagagcg cagctgaagt acgtaaagta acaccgtcgt 600

cgatcatgca acggcaacgg caacacggca tatgtatgtg aagaacaggc aggaacgaaa 660

atgcaagttg tattggtagc tgatgtcccg gcggtgaagt ggcgctcaag gcttgtcgta 720

cgtgtgacca gaccagctct tgtgagagtt ttgtctttga ctcgatgtgg cttacgtaca 780

gctagctgcg ccacaaatta aagagcccac cagttgctgc ccggtacaat tagttaattc 840

attaaccgaa ggtttgccca gttcagaggc gtataaaagc tgcacacttt cagctaggct 900

gggaatgaga cgaattctta ctgtgctaag tcgattttaa cacggacacg tacgtcgggc 960

gtcaatcagg atacggacct ttcggaaaac aaagcagcca gattgatccc gacaggaagc 1020

caccaaagtg tatggtcaga actggtttaa aataagaagg gggtttcggt cagatatata 1080

cagtactggc tacaacaagt tcagaagcta atgggggaag tccaagaaat aattaattac 1140

ctgacgaaac cccctgctag atgcgccacg agaacacatc agcgtatctc actgtccgag 1200

aaggagggca cacggcacag cacgagctct cgcgctctgc agtacgaccc cgatttgatg 1260

gggggagaag gagacgcccg cgacccgacc gcatccaacc agccaaaatg acaaagtgag 1320

aagtttcttg cagcgattgg tcgacgaaca cacacagtca gatacagtgg agcacgcagc 1380

ggcggcgttc atggtttctt ctgggtcaat gtttggttgg cccacggtga ggcggacgtc 1440

ggctgggatg cgcggctgcg acgacgacag gcggccctgg cggcatctgg aatcacttag 1500

tcaggtacgc tgtacaaagt gcgatggtaa ttggtatcca ttctttcgtt tgaacaaaac 1560

tatggaaatc ggcagaaaaa acagggccgg gttgggggggg ggaattcgaa ccgtcgtttt 1620

tcgtcgtggc agatctgaaa gtatggggct ttggcttgga ctcatggact gagctctgaa 1680

gaaccgacgg aggagaagtt tctttggatg gaagaggtga ggtgaggagc acatgctcgc 1740

ccagaccgag gaagctatac tggatgtact gtactgcatg cagctcaacg gtcaatgtgt 1800

cagcgtgccc tcgtgcgcgg gccaccgagt caaacctact actactagta ctatactagc 1860

gcgacgcgat gccttctgct ctggccttct attggctgac gcgacctcct acctcccggc 1920

tcccacttgc tattgctagg ccactgccac ttgtagtcca gacttcaaat tttgagatgg 1980

agcatgtgtg actgctgttt cgtgtatata tatgttctaa attataattc gtttcaactt 2040

tttaaagaat tcagacatac taagttaaac taaaatcata gaaagaaaat tataacatcc 2100

aatagatata ctataaaaaa tataactaat gaacaaactt atgttactca tttggtatga 2160

cgaacatatc accggccgga ccacatttga tgttggatga tgcattgatt tacataatta 2220

catcatactt cctaaatatt tatatttgta tggatgtttc atatttggta atttggataa 2280

tggattaatt atttgatcta caatacttat aactgctatg ttattagtta ttaatagatt 2340

aagggcctgt ctggttcctc tactctaggg actaaagttt agttcctacc gtgtttggtt 2400

ctagggacta aaagtattca gaacgcatta aatgaatcat aagaggacca aaataccact 2460

tagcattctc ccgccattag ttcaactaaa ataaaggagt ggcaaaagtg gaattaatat 2520

ga 2522

<210> 588
<211> 3490
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203160_G1, chr5:191884734..191888223, Cluster 4

<400> 588
tgtaaaccgt ggtttcacca tccccgggat acggccggga tccgtgttca gtgcatttcc 60

tgcgataatt cgggctctac tactagcagc tagctaggtc gtgcgtgtat tatacattat 120

tcgtcgtgca caagcgacag caacggaggc gtgagaccag ttcatcagtt cgcgctgtgt 180

ggatggacga tgtacacttg tccaggagcg gcatatatgc agcaatgctg tgtggtgcta 240

tttggttacg ctttaatttg tcttgccgaa caatgttatt taattggatg cagtaaaatc 300

tcagtaattg gtgcattact tttaactacc acgagtacca tttgcaagta caactgcatt 360

ggcgtcttct cgagtaccgt gtgataaatt ccaaaacata cttatgtgtc gcgcatgatg 420

atgcttcaaa tagtaccgcg cgcgctacta gtactatgat tagggcatat atatatatat 480

accgatcggt ggcgccggta cccgtatcat aatatttcga tacgaatcta agtacttgtt 540

acaaccactt ggcaagtctt ttaattcctt gtacgggcgg tattaagatt ttgcgattat 600

tagtaatcaa agcctcgagc ttgaggacaa cccaccactc accaggctgc atgcatgtac 660

gacaatattc cgtgcttatg cgatgccaat ttttttaat tttaattatg taatcaaagg 720

gaggcagcag cgccgattat tctattgatt tattgtcgat cgagaacaga tcttctttcg 780

tccgtatcat ggccgattct cgtctcatgc caaaagatct actactagta ctaagcttgc 840

tagctagtta gagtcgtaga caacgctagg agcaagcaac acactgggat ctgagatttc 900

gggatgcagt atatcctgcg cgtccaagaa acatgacgca cggtctacgt acatccttgc 960

acctaccgtc gtgcgggtgg gcctccctcc tactggcggc ccattgaggt agcgacctac 1020

gcgaagctta cgcccaccac acacacacac aagcgaagcc aaagcccgca cagtatccgt 1080

ttttagccct gctagtccag tagtcctctc ttcggccatg ggaccatgct gccgtgtgtc 1140

gtgtcgcttc gctgctggtc ggtcagtggt tagtggttct aatgccggac ggagggttct 1200

tgggggggtg gaaaaatgag gaatcatatc ctacacgcgc agatacaggt cgtttctatg 1260

ctttatcatt catgtggact aatgcgccag gacagaacaa taatacgagt agggtagtac 1320

cagcagcact ggcactagag gccaagggcg aggccggcct cgtgcaaagg cacacccgga 1380

aatggccaaa cgaatggccc caggctcacg tcgtacggcc agcgcccgta gcgtctgcca 1440

ttatgatgcg ctggagtagg tgggcatgct tcaacttcaa tagcggcgcc agcgttggcc 1500

ggctgtgcgt gctgcttcgc ctgcgcccac cgtacggccg ctggtggtgc gcgtttcgat 1560

ctgcgacctg ccgcgccacc gccacggtca aattggtcct gactcctcct cctgcctgcc 1620

tgcctgccgg tggctatgtg gaaaaggcag tcgatgccgc ggccactcga tcagcagacc 1680

aggtgtccag gcggccagca aggaccggca ggcgctgtgc agctgccgcg tgcatgtgcg 1740

gaaggctgca acgcggtacg cgcgcacggc ggagcgacga cggacggcca cgacaaaacg 1800

gcgggggaag ggacgctgtg gcctgtgaaa gggcaaacga aaatctcttg ccgccggtgc 1860

cacggtcgta tagagtcggg ggccgagata gagcggcccc ccggggagca ggcagtggtt 1920

ggttgctctt ggtttggatg tctcgcctgc ggccatgcga atctggaccg gacaggattc 1980

tcccatgcaa cacagtagcg ctcgtgccag cacgtcatgc ccacgtagaa tactactact 2040

cctgcattgt ctctattctt gctgtggcca agtatagcaa gcggaggcac gtacgtcgcc 2100

gaggagggta cggccggggc ggccggtaac ctacggtgcg tggtggtggc tggaacgtcc 2160

gcgtcgcgct cgctatcacc tgagtgacgc ctttgtctcc ccacgtagac cgccccgccc 2220

atcccagccc agtgctctcg cagtacgcca tgatgcccat cgccaaacca cccataaaaa 2280

cgactagtgt atgacgcgcg cccatgcgcg cgtgccgatc cgtggtgtaa actcttatta 2340

taagaatgta taactttata ctgtgtgatg aacatgtata catttagagt actcattatt 2400

aaggacataa gaatatcagt atcagatcaa atttaccaaa ctatgttttt tggcagcggt 2460

tgccaacaga attgtagcgt ttatgtcaac tagagattga actgagatca ttacaatgct 2520

tatggagctg cagcaatcaa aactccacat acatcaagac atgcattttg atacatatga 2580

ctgtccaaat aacagttgat acaattcaac aaccacaagc aacaaagaaa taacatactt 2640

ctttagtgga ttaacatgag actaacattt acactgtcat gcactcgaaa actcaatgtc 2700

taggaaaaga attaaaaaat atgtggtcgt aatttaggat ttcattaaaa gagaccgcaa 2760

tatcaaacta tatattctct tagcacctag tacataagat gtaaattagt acaaattttt 2820

ttgcacctct ataagatcat tttcatatga tgactccctc tgtagtctct gtctcattaa 2880

gtcatatatg tacagctgac agtgtacatc atgtctagca tacctgatgg caagtaagca 2940

ataaataaaa ggggcaaaca aaaagtaaaa cttatcaaat acaaaacaca atggaaaaaa 3000

attcaaaatt ggggtttata tacgcaatag ctaatcattt catcagtaag tggcctcgac 3060

ttccaatctg cacaataaag aaaaggagcg aaaaaaatca tatgtaaaaa caaacataac 3120

ataaaagaaa ttttgtaggg tttatgtgcg caatatttga tcatttcatc aggaagtagc 3180

atggacctcc agtctacatt ttgatatatt ctctccatct gtctaacctt gaagcctggt 3240

attattgacc ctaattaaaa aaacttgtcc tgtgtcaaaa aagataaagt gtgtagatgt 3300

gcaaacgaaa gataaaaaac aacatttcat ttaaaacatt ttctaagctt cgagaaagat 3360

gaaggaaagg cgcacagttt cagaaatatt acacaaaggg caagaatgtt attttaggac 3420

attgaaataa acatctactt tattgctaaa agtttttctc ctagagtgaa tatggtgcca 3480

aagcatcagg 3490

<210> 589
<211> 2163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204231_G1, chr5:197709561..197711723, Cluster 4

<400> 589
gtttcgacaa gagcaataac aaaagggtgg cgtccgaaat cgcaaggaca aggaccatgg 60

tgcaaatgac gatcacttca ggctcttgtt taagaaaaaa aaagatgaac gccccttgc 120

ccggaaccgt cagtatcgaa gactcgctct ttaagtcttt aaaataacaa aaggggctga 180

accatccaaa ggcgggtgtg ggagtgtgag acgcacaagc ggcgcaggcg cagccattcc 240

attaccttcg gaatccaatt cagacggtac ctccctacct ctcatgttaa caacgccttt 300

aatttgcttt ctccaattca gatggtacct catgttaaca acggcgcctt taattttgct 360

ttctcctggg cttggaccac gagcatcgac atcatcgtat atatccacaa agatctacgc 420

gatgggacgg agcagcctgc gtgcgcgcac gttaggctgc taggagtacg ctgatctcga 480

ccgcacggct ttcgttacca cgtagcaggc ttgcgtatta tcagaagaag aaaaacagct 540

ttggaatgga agtatggcac gagctcggaa cgggaacttc ggacgtggtt tcctacaggc 600

ctacaggcat caatcaatca gcacgctgat gggcttcacg ggctctacat gaagggtaat 660

attaaagaaa aaatggaaaa gaaatatcca gatctaaccg ggtgatagaa ttggcctgga 720

aggttatgtc atacgtatat aacatgtttg aactgggcta gctgctgcag gtgtttgaat 780

tttgaagtgt agctagaatt gctagcaagt agcatgtgtt ggtgtcggtg tcccagctgt 840

atatgatgga ttgaaaaatg ggaccaactt taaatccgag acgattcgga ctgccgactg 900

gcaaagcgtg aaagggcatc taggctaaag gcactggttt tacgataaga taaggttagc 960

ttaagtgggt ggcatgagcg gccgattttt atcatcgtcg tacccatctg aatagcaacg 1020

ctgccgcctg cagcgactgg tgtaacaaag gggcttaaat atctaggaga cgatctcacc 1080

tttgtttaag atcaacagaa aacacacgca gacccgagtc tgatttgtca atgactctta 1140

taagcctttg ttcctttaca ccaatccagc tctgaattag tatgaattgg aattaaacca 1200

atgtcacaaa ataattcatg actacttaaa ttttttattc ggttaaaccc atcgtgtaat 1260

ataatttaaa ggtttggaaa tttgtttaaa ctatggaaga catagattct atccatagct 1320

cattaggtat gaaacaaata cataaagata ttgcataagt ttatattaga atccattgat 1380

caaaagaata actagctttg agagatacat ggattagatg atgaatttaa tcatattata 1440

ggattggatg tgaggtatgg attcatcaaa ttcagatccg aattaaatcc atacacggtg 1500

ggatttcatc atatgtaacc gaacaaggca taagtgtttc tatatatact tttatatggt 1560

attaaagccc taccaagttt atcgtcatct gccttcacga atccgctttt ctgcagccta 1620

cccaacccca cgaagctgac gaaatttaac catgtactat gacatgtata agctagggct 1680

gctatccata gcataaaact actcaacaag acgccactgg caaaaatccc cctaaggact 1740

tgggatggat tgagagggat tccaattatc tcaatccact cctaatccaa caagctctaa 1800

aaaagtcgac gacggaaaac gaacgaggtg aacaattgga aagccagaga ctgctatctg 1860

ctcaaattgc tatcaaaaga catgctattt ttgctattct gatatgctct cgtttattta 1920

ttggtttatt tttttattac taatactaat gtctcactat atgtattata gttgttgcgc 1980

gtggaattat tgcatatttg agaacaaaca aaaaaaaaga tgatatttta tcactgagta 2040

agacatttct tctgctcaac atgacaaaga aaatagctaa aaacaatggt gtactgttta 2100

attcttagaa gaaagtgctc agatgacttt ccatgtggct atttttgcat tgctaatttg 2160

ttc 2163

<210> 590
<211> 1895
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205474_G1, chr5:205142899..205144793, Cluster 4

<400> 590

tggcttgtca aaatctccat ggccaccacc tcaaagaatt gacagacatt gatgacttct 60

tggtgtgatt cttccttcta cagcagtctc tgaaaccgaa gccaatgcgt ttctctgaaa 120

ataacctgca gaattaatcg atggtactgg tttgtgattt agaatgatgt cattgcggca 180

gagccaaatg aaccaaaaca ttggtgcaac tccaatcaaa aagtttcttt ttatgtgcag 240

ctcctttgtt ggattcccaa atccccgtaa tatgattaat actttatagg acatgtctat 300

atgaaaggca aagaaattgg ttctccatat atttctagca aggtaacaat catgttatgt 360

aatatatgga tattgttgtg ttcatatttt tttatatact caaatgaacc gacaaagaat 420

gcacaacact ggccgatgat gctcacaagt attcattaag cgtgtgcgtc tttgcttggg 480

tatggtcgag gcaagcaagt ggaatggttt caggattaaa aaagctctcg atatatcaag 540

gatagacaac gacgaccacg acgacgatac atcccaggaa cgatcgacat aacctgaaac 600

tgaaaggaaa caaagcggag aaatacacta caactgatcg aacagctgca cgcgcgccgg 660

tcggtggccc cagctttggg ttttagctta tctatcagta gcagctacca ccggccggcc 720

gctgacctat cctgccatca atctcgatcg cctccatcat tgcatgcccg cggtggcaga 780

gaccgtgcag gacaccaact ggcccagatc gacatgccag gccggcttgg ccggggtcaa 840

cgaccttgtg gcgcgcatgg cctgtctgtc gagagcgcaa gccccagccg cggcgacggc 900

ggtgtttaat tcggttccgg tgggtggagc tgcagggcgg gcagagccgg ccgcgcgccc 960

gtccgcgtcg gtcgcgccgc tgggtcgcag cgccgcgcgg cttgtcctca gtcgtcgctc 1020

tcgatcgatc acatgtgcct gctgtgtggc gcggttttgg tggctctgtt cttgcaactt 1080

ccgagccatt tacggccaga gagatcagtt ggaaccaaca ccaagtcacc aacccaagaa 1140

cgaaggcccg ccgactgcca ccaaccctag ctgttgggct ccaacgattg ctttgcgcgc 1200

gtttttttc atcccaggac ctggctgcaa catacgccac accagtttcc atatatgggc 1260

gtgtgtacac gaactacgac gcacgatttc acgtcagtga caacgccaaa aatgacggca 1320

tgcattaccc gcacgtgcat ctcgccgtcg gtacgtaacg gcctttcaca tgcatcgtcc 1380

tctggccggg agacgcgtgt aatactgtaa tgacggctag ggcgggggta tttagacagt 1440

acacacggtg gtacgtattt cctcacgtgg ccaaaagctc agctgaaggc caaccgcttg 1500

taggcagcta gcgtgtgttg cagtatgtaa ttgttgcaca caccattgct aaccaagttt 1560

gtattgtatg atgacccaat taataggcct tcaaattaag gggaggaacg gcagccagtg 1620

cgttttgaat tggtgtctca tgcatgtctc atcggccgcc tgcgcgactg ttccatgggg 1680

gcatgcatat atagcatata acccatgacg caacttgctt cgcgagcatg atcactgaag 1740

cacagcacag atggtttacg acttccgcca aaaataaatc aataataaac aaaaaaaatg 1800

ttagcatcac ctcaggcaac acgcgcagca gcgacgtcag tgacgacacg gatggatgtg 1860

aaaggtaaag ggatgaagcg ataatactcc tacgc 1895

<210> 591
<211> 1939
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205827_G1, chr5:206917211..206919149, Cluster 4

<400> 591
cgtacggcag actaaccgca gctcagagtg cccattcaca gattcactac aggatcaaat 60

caaataaacg ctcacagtga cgccattctt caacctgtcc gccgctcgca catccatcgg 120

tgacgccatt ccgtatgatc caagctcatc gagctgtccg ccgctaattg tttaccaagc 180

ttccgttaac caccctcgcg tctgttctcc tttcctaatc acgtgattgt gtcattctta 240

acccactgct gccgctgtac gtgcttaggc cacctccatc cacaccccca aacctcctcc 300

caacccacgt aaggcttgtt tgagatcaaa gaggcttgtt tgagatcaaa ggtaatgaag 360

tggattgagt gggctagaat cccctactac ttaattttga atagtaaggg attataggtc 420

cctcaatccc ctcaattacc ctttgtccca aacaagcccg tagagtgtca tttggagagc 480

aagccctcca atagcttctc ccaccgtcta gccccatatg gaggagagga aaaactactt 540

gggtgagttc taatttgcct ccatacttta atcattcaat ttctttgtaa tattaactct 600

tttaagtata gtaatctgaa aataatgtgt attatagtag tataaatagt gtatgatttt 660

tcaaacttta aaaaccgata aaaaatcaaa taactgaatt atagtatata gggagagcta 720

gataaggtga atggttggag acgttctaga tgtgaggtat cttttagggt gatgtactaa 780

aatataacag taaatataga taggggaaga aatatagggg gaatggttag agatggtctt 840

agaagaggaa tagagaaatg gcgatggacg gttgagtcca ggcgaccact tgatccactt 900

ggggggtgct ggcgctcgtc ctgacagagg taaaaacacc gctgtcgcca gattaattgc 960

ttgattccat ggccacaaac tgacgggatt ggtgacttgt gaaggtttcc ttgtcgttta 1020

agtgtcgatt ccttttggaa tggatgtcgt aggccagttt agtcaactga caggctcttt 1080

taagatggct tcctgtcatg ttcacgggcg acctagtttg gcctctggct cctcttgatt 1140

ggataatggc tacacgcaag cgtgatgcta cttcagataa taatactatg aaccagaatt 1200

gcagggaagc tcacagagga tagtcccatc tggtttttt cagcacgaaa aagagagaga 1260

atattcttca tgtaaataat gacccatttt gatggatctt cagaattcgg acactttgga 1320

gcttcagaat tcagatagac aatatctgta tgtatcacgc gaatggtttg gtttgtaact 1380

gaccacacgt gcttcaggaa gaagaactga tctgacatac ttgcagaata atgcaggcac 1440

aagagcaagc tgcagacaag gtgaaaagga ttcagaaatc aggcaagtct cctgtgcgct 1500

cctatcataa aaaaaaatac gcacatcttg acaacgtctg ctgcagtcac tagccactag 1560

gacggaagat agagagagca gccaacccaa gctagctcga gagaaatcat tggcgagaat 1620

gatgaagcga tcagtgcggg cagccgccag ccctccacgg gcgccagaac ggcgtcagga 1680

tcaggcaggc aggtcgcagg tgtcgacctc ttcagtccgg cagtaaaaag agagaaggct 1740

ctccctttgc acccgtaatt caacggacgc attattcacc gcctgacaga taggctagct 1800

tctaggtcaa aaaccagcaa ggttctcgca atcaagcatc cgctatcgca tgtcaacctc 1860

tctgtctcat gtcgacattg ctcacaccct ctcgtggctc tgagaatcat atacgcctac 1920

gcagctatgg cgacggctg 1939

<210> 592
<211> 1667
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206366_G1, chr5:209717225..209718891, Cluster 4

<400> 592
agcaatagca taggggattg gggatgacga tgacggacgg tgatgccaag tgccaaaaca 60

gaaggttctt gtgctgccag caacaaaggc gcgcacaggc tgaggccttc ttactgatgt 120

tttgctctgt aacatctctg cacaggcctg cctctggttg tgttgtgtgc ccccaatcca 180

tcgactgact gctgtgtttc tatgacacag gtgtaatttt gccggctata taatagaagc 240

tcaactcgca gttttttttt actattactt gctctacagc catggtttta tagcagcgag 300

cctctctgct gctgtgtccg ccgccgcgct gacaagtttg aagcggcaag cacacacaca 360

cacagtgccg cttctgagat tcctcgtttg caggggggggg caggatccgg tatatgcttt 420

gctttgcttt gcaggtccgg tatatttctc cttgggtgca gcgcgcttgt gtcatccgga 480

aatgtccccc gagactccga gagcgacctc atctctgctg cttactctgc actagtacgg 540

cttactattc tccctgtaat tgtaattggt tgcagcaggg caagtggagc agctccctca 600

tcgatcaatc atcggggtgg cgcggcgtta cttaagtgcc atttggatcg aacctttttt 660

tgtcgcaatt agtgaggcgc atgtgacacc agagaatcgc acaaaacttc cattggtcag 720

atcgaaggcg tgcatgtgac ttgatcgaag cccatgaaag ttgagatcca actttcaagc 780

gatgtataca gcacatggaa gtcgaggctc cacattgcac catcttctat attttaaagg 840

atcccatata acacaatttg tctgcggcgt ccgctattat tttatcccat gaaaacacga 900

atctccaggt gttctccaaa tactctttca ctatttagag aacgaggctt tagtccgata 960

aaatcggtat taattcttaa ccagtactaa cttaagcgtc ggtagcgata ttaactaccg 1020

tgttttcgta gaagccatta gtatcgatta gtgtctctaa ccggaactaa tattaagtaa 1080

tcaatactga ttgaaggttg aagacaccga tcaatattaa tgtttctgct ttataaacac 1140

ccttccttct caagttgccg ccaagaacaa cgagttcttt tcatggtgcc ataagcttta 1200

agcatgaggt gatgtccaat ttgtcctatc attggtttgt tttgtgtaga ctagacctaa 1260

actctaaaag gcaaaaacaa tccaaatgac ctccatatat acacaccttt atagggaaga 1320

tccaaattgt ccatagagtt tgaagtccaa aagcttaaaa ttttgaggtt agatcgaaaa 1380

aaacacaaac ccaaaatggg gttttcccaa aattggtcaa aaggttggaa ttttatgcac 1440

ctggtgaatc aacctatgtc ctttcacgtt tctaagtttc taactagctc aagcattcgt 1500

aaggactcaa attcaaaaga tcactaaaaa ttatatggag ctcgagaggg gaaatcacaa 1560

tcgagaattt taggtaataa aagatgaaca agagagtttt tcatattact cgtccttcac 1620

cattcctggt ctatcggcac aagtccgtat aaccttcacc ttcgttg 1667

<210> 593
<211> 4298
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207201_G1, chr5:213556132..213560429, Cluster 4

<400> 593
gatatcaatc tctggggtcc tgataaagat gtgcatggat tagtatatat ccccccccca 60

aaaaaaaaat caactagaaa gaattccata aaagaatgtt attataccta gatatttcat 120

cagacttctg tgtttcagcc cacaaacttc cctgtgttgc tcttgaaact ttcacccagt 180

gcaatggctt cagcggggtc cttttagatg cctggttggc acgtaaactt ctaggacttt 240

ttgagcgggc tgtgctacga tcctttgcac caaatgaaaa tgctggatgt gggggagggt 300

tagaattggc aacacttccc ttcgtaagct tatgaagggg gccgggtgga ggtggaggtg 360

gtcggattgt tggtgacttc tgtgaagtgt tattggccac ggctagctta ggaggaggta 420

atgggggtga aggtggtact gatggtgcag aagtaacacg ggatgacagt ggtgctggag 480

gcggaggtgg atgaggggct gccacacgat ttcttctact taaggatggg aaactttgtg 540

aagagggagg tggtggaggt ggagtaggtg gtgtttgaga agaatgtggt ggtggaggtg 600

gaacgtgtgg tgttccagga ggtggagatg gaacaggcgg tgttcgagat gaaggtggtg 660

gtggaggcgg aacaggtggt gttcgaggag gtggaggtgg aacaggcggt gttcgagatg 720

gaggaggtgg tggaggtgga acatgcagtg tttgcacccg tgtaacgctt tgtgaaaatg 780

taggtgtcaa agacggggtg tctggatatt ccattgttgc actgtccttg ttatctagaa 840

actgcggttg agacaatgag acttcaggtg atgatcgtga ccgtagagag gaaaatggtg 900

gttttgccaa ccctgggggt gggggcaggg gcgggggcgg tggagaccga gctctctttt 960

gtggagctag aattacagat acagcatctg gatttgagct tgaaaatgac gctgctgctg 1020

ctggtggatg cggaggctga tgtggtacga ctttttctat agtgattttt acctcttcac 1080

catgtgtcaa aggaaacagc gtcatgcctg attttgacgg aggcggtggt ggtggtggtg 1140

gcggcggcgg catagtttca gatcttgtcg cttgaattgc aaagggccta gtgtctggat 1200

tttgaggtac tgctggcaaa tctgtcggga gagatgctct tgcgttgctc aattcctcat 1260

ccagtgaaga tgaagcggct ggtgacagta tgaaatcatt ggaacctgta gtactatcag 1320

tttgtaattt cccacgagtt tcataggaag gttcttgtga tttacccagc tcttcggttc 1380

tcaaaagatc tttaggaggg actgatggtt ctgaaggtgg agaggaacgc acggttgctc 1440

taagggaaat gttgatggta cttgtgctag tatttatggg taacttagtg ggaacaggga 1500

gtaaagagac agtgggtgga gggggaggaa gaggaggagg tgtgcacaaa ggtaacagag 1560

atgctgttgg tgctggattg ttttccatca gagaggaagg ttcatgttca actggagttt 1620

gtgaacaaga catctcacct gatgctgatt ctgttatctc tgataaaaat tttactgcag 1680

agtcagacat cactcgccga ggctgaaccg gcgaagatga ttgttgtggc atgattgtac 1740

ttgaagacag ttccattggt gaagcactgg tctttgaaac cttaacctta gaaggtgata 1800

acaatgctgt gcgccgcatt cgcgaaggag actgcactgt agtttgtgat ttggattgaa 1860

cattagctga acttgaatct tggggaatat gtctcggttt agtgctgaca agcatatcca 1920

attcatttcc gaccttcaga acaacactag aagaataaat ttcaccagaa gaactttcag 1980

attcaagttc ttcacgagta tcaaagaaag tctcaggttc atcggtaatc gctgagatct 2040

ttagctgggt tgtgtgaggt acggtgtctt ttttcccatc caaccagtcc aaatggttaa 2100

agatatctag caccttagca aactcttcaa ccccaagtcc ttgtttctct tgatgaataa 2160

caggctctgt tgtgacatgt gaagtaacta tgtccatatc ggaaaagata acctaccatc 2220

aacaaaagtt gcatgtaaaa atccatgcac tacagtaata gtctagttcg ccacttggca 2280

taaacactta cctcaaaccg aaaatcttta gggaattggt cttttgcatt ccataacatg 2340

tctatgtgat cacggttaag catcaagatg tttgaccgga tgaatgctgt attgaacatg 2400

attcggaaaa ccatctcttc acgatccaga tcctcataca gatggataca ctctaggaca 2460

atatcacctt ggacatgaca ttgaaggtct attttcacca gttcatctgc ctaaggtcag 2520

aaatggtcaa ttcctttcta gtaaaggtta gcaaggaaga tttaaaaaaa aaatcaaatt 2580

ttatgtttcg agagatttat aacatggaaa attattatat aagacaacat tagctaacag 2640

cttaaaagca gaacaatgaa tgacccagca gaagacaatt acctgtgaat aaaaacggac 2700

aaggttgctt ttctttggag ttgaaaaaag aacttttgga gtctgatcag ggggcatgag 2760

atgatccggg ccgtatatcc tgaatattgg acggaaacca ccttggccat gaaaatttgg 2820

aaccatcctc aaaataacac aatctaatgt gagggctcta tcagctggag gccactcagg 2880

catgacattc ctcgtcgaga tatagcgcaa atatctcatt tgagaaggca tgggattcag 2940

aggtgaaatc atctccaaaa gctccaaaga cgattgcttg tagaccatat ccagcacttt 3000

ctcctcgtcg gaataatgcc ccaggtatat tagaagagca gctaacatga aagccagaat 3060

aggccagctc cctcgttgac agtgcattag cagtaagtta tgctgaccca aagaaagcca 3120

gctttcgctg gacttcaaga tgcagtggat catttccatg gtgaggagtg gacatccctc 3180

atagtggcca gggtagtcca atacagtcat accatactca gacaaaatat ggtatatagg 3240

gctttcttcc tctttagtcc cgaaattcga gatcatgaat gagtgatcgc gaaaattttc 3300

cagaagatct gctgcaatgc ctctaatgtg agcatcgaaa tggtcccctt ccacctcttt 3360

cagggagaag cagtgatcaa aaactgaaac aaaatacaat aatctatgag tcaaagatgc 3420

aaagcaagtg taactccatg tagctattta gtcatgtcta agtcagttgc tactgattgt 3480

acatgtacta ttgttatcat catatatgcc ttatgaagtg attaatgtat aatttgagtt 3540

tttaagcaat catccatctt tcaatcatta tgtagtcttt tggacaaatc ttaaagcatt 3600

ctagaatcta gagagccatg gtaattggta atacatgtag ctacaatgct acatatagta 3660

gtgcatttgt atttttttag atcaccggag gagatgaact atccccacct gaatttcatt 3720

accacagatt ccagcaaaag caggtaatgg taaatggtag ttacattgtt gggtcgtgag 3780

cccagagtta caaaacaata gagtcgagaa agcagataaa tatgaaagct aaaaggatca 3840

ctaaaacttc ctaactctct aattcatgtg cggtacaccc aaattgaagc tttgagagca 3900

attgcaggtg aatggtcgga ttattctgat tgcatctccc taagctcatc acagctcaag 3960

taaatcaagc ttagataatg caaataacgc catatcaatc aaactgaact gctccttgca 4020

ctaagctgct aggggcctag ggcacaacaa tgcaaataaa gaaaggcacg ggaaaatgca 4080

aaggaagaac tccgttaccg tagacgttat ctgtgatgag gagcagacca tcgggcggct 4140

tcttatagaa gaacttccgg aacagcgaca tgacgcggca ggaccagcag ctccaatctc 4200

cggatcactt ctgctcgcag gaagtccaag agctggctca actccagcaa ccgattcggc 4260

tcaatctttc gcgatacagc tgaaggatac tctctacg 4298

<210> 594
<211> 1933
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207234_G1, chr5:213721432..213723364, Cluster 4

<400> 594
tgcatcgtgc agcgacagct cgaatgctcg atgcctcgat gtaaggtcag ttccccaaac 60

tgcccctcat gctccactta taactataac cacttcatat tgcatgagaa aaaatagcaa 120

tcgaattact tcaaaaaaaa tagcaatcga ataaacaatc aattcttgtt cggaagaaca 180

caacactgcc gatcgatcca gctaatcttg ctctggctat tgttccgtgc agtcagctgt 240

tccccgggtt atgcctgacc gagatcaccg ccgacgccta caaggtcccg gtccccgatg 300

agtagcaaag ctcgccactt gctccgcccc ttattggaca gcctgaaaac acatctagca 360

ggtttgttcc ttatatagag catcatttgt ctcgcgtccc gttttgctgg cccaggcaag 420

caagtgtgtc atttatcttg cataataatc tctccgttct tttttatttg tctcaccaaa 480

tattcaagaa tagagttaag cacaagagaa agatgcacta taatttctac actgtggatg 540

gagcaatttg catgtattga tttgtggatg gagcataagt caacctactc agtcggccag 600

tctatagaac ctcactggtt gttggtcctc tatcaagtga gtggtgccac attttctatg 660

acgcccagtc tacatgagag tgttcacacc ttccaaccga agaagacatg ttgttttacc 720

tctacattta gatgcacaac aatgcagatc tagccttgag tttgtctctg tctaaaccac 780

aatggttcag tgcagggcag ctggacaaca tctgctaact agaacgggat agtcgatcac 840

ctgaatggtg acaaattcat cattgtcttt gtttaaacca cagtggttca gtgcagagca 900

gctggacatc atctgctaac tataactgga tagttgatcc cccgaacgat gacaaattca 960

tcaaacttgg tgagattcag ggaacaaaaa taaaggcatg tttcgggaaa attctcttat 1020

atttcccatt ttatgttctt gaaaaacttg gaaacatgat ctaactacat ttaatctttt 1080

caactttcct caacttgaac aaaaaaaaaa cagtggtaaa atttttatat gcaacttgat 1140

tttccacatg ttttttttatt ttggtaacag tatgcaactt catcatacca ctatgaaact 1200

gcttatagat agacaagtgt ccattgagga cttgtatcta aacttgtttg ctactttcat 1260

attgttattt tatgttagag atgttgtttg tcatgatctt gtgtcaagta tgttctcata 1320

caatatgtga taatttttc tctttttat gtatagccta gccatttgtg gagagtttgc 1380

ctagctaact gcccagagca tggacttcac aacccactta aatctccaga gaagagtgtt 1440

tggctatctt ttgtttgaac tgtatttcag ggctaactta ttttggttaa gaaaaatgag 1500

caatctaaca tgacagatta ttaagtctga accacttata tgccccctgt catctgaaac 1560

tctcattaat atcaacattt ttgaagttat ttgtttgttt tcctcgatcg tgagcagggg 1620

ttgcagtttt tagttattgt ccttcactca taaattaatg tatttttgg gagcactctg 1680

cttatgccat catctacatg tttgtaattg cagagtcatg gtggattttg tgtcgttaca 1740

tatttgagtg ttgctccaga aaggcccgaa atatgttctt ttgactggag ggctcccacc 1800

aataggaggg ccttgcactg cagatacaat gtatatatag agcctgcttt taaacaggct 1860

caacgatcaa aacgagaagt actataatag gtatccccaa ggtatacatg tcgtccatga 1920

ggttataaga tac 1933

<210> 595
<211> 1478
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_209266_G1, chr6:9504204..9505681, Cluster 4

<400> 595
cttcgacggt aatttactgt cttcagacac atggaccaat gtgcttcagt tctgcccgtt 60

tgcttgcttc tactaccctt cccttaccac ccatgcatgt gtacagagac ctttcatttt 120

tcagaaatat gttgacatat cttaatggta caccaatctc tagacatcag gaaatacttc 180

ccccaaaata agaatattaa agtgatattc ctaacactga tgaacaaaaa taatattaaa 240

gaaactagta caaccccgtg cgttgcgacg gcacaaaatt acggaaacag agctctcgaa 300

cgtaactgtc gctaccttct tcgttcgggc gtaaccgcca ttctcagatc atgaagccgt 360

ggcgaaaaca acgctcgtca ttttcgtgtg caagcataga cccacgagtg ggcaggccgc 420

gcctgtatcg cgccttggct gtcggcttct acaatggacg tgtggcccta tcactgccac 480

ggacgagcgt aggctagcaa gctccactaa cgcgagcgca ggactcgcct ccatggatac 540

gcgagacttg ccaacttcca tgtcgtcctc tgagcacacg cacatgggga actactagat 600

gggaggcttg gaccatagtt taattataaa gaaatgtaag aagaggttaa ttatacaaaa 660

gtgttgacgg tggaaacaat ggaaactgat gctatataga agtagagaat tactatttat 720

taatgaccag ttcaacttga tgatctggta gtattgttaa atgctttgtc aagcatggcc 780

ttctaaacat aacggttcaa gtgtgctatt ttattttaga aggtctagag cataagtgtt 840

ctggaactcg tgctaaaatt tgaacaagaa tgtaataagg aactagaatg agaacctacc 900

aataaaactc acgatgaaca ggaatggcca cacagtccta gctaaacctt ctaagcattt 960

ctcacaaaaa ggttggacat caagtttcag caagaatgtc caaactatct cttcgcgttc 1020

tatggctact tcccttacat cagacacttc agaagagtgg ggattatccc actcaatgtc 1080

cccgaccata gagatatgga ctccctcgtc atccaactaa acattattct ttgtaaccgg 1140

cattgaatct atatcactta cgcaagcgtt atcaacatta ttatcatctt ccatgtgctc 1200

cggagcaata gatcgaagca ccgagatatc ttcacaaatt tgtattgtgc tagtctcttg 1260

cctaaaaaca tataatcacc catcaagctg gcactacaag gatctagatt cgacaaactt 1320

ttgactggat tcgacaaact tttgactgga ttcaacaaac ttccatgtgc tctacaagga 1380

tctagatatc ttcaccttca cgtagaaatt gtaggttttg gaattcaatg ccaacaatta 1440

ttttggttgt tggaggctat aaaatacacc cctaacca 1478

<210> 596
<211> 1623
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_221602_G1, chr6:90534754..90536376, Cluster 4

<400> 596
caagatcatt tcgttcccga tgtttcttct tcctccaaca aacagttgtt catcttcttc 60

aagcctcctc tagcacttgg ttcgaaaccc tcagccaaat actattcctt tgggccaagt 120

ctggaagaga cgatgagtca tggcatgtgt aagggcagat gtagtactga ttgtagccat 180

cagttcacgt gctgattcgg ttgtatgtcc attcgttggc cacaaaacaa attaccactc 240

tgttggtact cgaagctagc tccaggcagc tgatggccag gcaactacta tctattccat 300

tgaaggcaga cgaccattgc tgagtttttt caattccaca gtgtaaataa atctacatgt 360

agagcatatg tgtagttata gcaaagactc atccatggac ctcgcaaatc agaagcagta 420

gtgcatacga tccatctgtc aggcatggcc ttgtagttgt agtaacagca atagcgtcag 480

tcctccctcg tccatcttgc gcttcatgtt cattatcaac gaccccacat gcctcacctt 540

caattcaatc tgcgttatct acacctctga aaatctctgc gctcattagt cttgttgtgt 600

cgttcctcca ttcagtgcag ccccgtcaat cttttaactg ctgggactca gttcgaagtt 660

tccgttgccc ctgccctccg atttccttgt agctgtagag ctcccaggag gaccgtggaa 720

tcagtgcaag ctggttgctt ctcatcctct tctgcttcca cccatcagca gcaccaagct 780

gtttgtagct gtagtttctg aacgcggtgt ttccatcgac cacataaacg tacgtacgta 840

gagaaagtcg tagtttaggc atggcaggta tcaggacatg caaacctgct acaaacatcg 900

aatcaaccat acttggtctt cccttcagta gctagttcat ctctgatgaa ggatggagtc 960

atccctgatg gaatctgcag ccagcagcga gattgcacca tggtagtgcc caggggcgga 1020

accaagatta cagtataaag ggggccgacc aattcatcaa taatatatgg tgaaaaaaca 1080

ttgtataatg ttattaaact taaacacttg catggaataa gaattctagt tctttataaa 1140

ttatcttagt acatgaatct attttctagc taattaatat attgaactaa agtagtgtta 1200

cagtaacaat aacaaaataa taaagttagt catatttgga tctaattttg tagtctatgc 1260

ggacgttgtg gctgtgacat gtgattctga taatcgatgt tgttgggctg ttgggactca 1320

ttctgttgct tcgcatgatc accttctctc gactttggtt gttgggctat ggcagagaca 1380

agtaaagtgg tcgatccgaa gctgtccagc cagatgataa gataaatcat aaaagggtga 1440

tgtttagata tcaacgtctg caagcgaatt aggtttgaca tctcatgtca ttgattgatc 1500

attcaacaaa tattttatct tataatcttt gtctctttta aactttggtt gtcatattac 1560

aataaagtta tgaatcatat atcgccaacc actatattaa acatgcgatt aattatgatg 1620

cac 1623

<210> 597
<211> 1725
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225892_G1, chr6:112953156..112954880, Cluster 4

<400> 597
cgatacaagc ttagtttcaa tcattaaggc aatgatcaaa ttcggttttt agataccatc 60

aagaaggcag gtatttggag ttgctggaag ctatggcgta cgtgcgtatt caattcctgt 120

gcggtgaaac agatagatat aaatatatat atatagccca actaggtttg gtcgcatgca 180

tgagcttggc cgatcttaat tctcaacaaa ccagattgta gggttgttag gataaataat 240

cagtgaccga cagaagcttg tgactcgtga gaaagctcca tgcatgcatg ggtagcacta 300

gcacataaat gtgctctgga tcttgtacga gctctcatgg acggacagtt taatttgatt 360

ccaagactga catgcaagtt gctcgattat ctgaatgccg ttgcctgtaa gcaacaagtt 420

gccacctaca aaaagtgcaa tagcctccat ttgttcccgg tctagccgta cgtctagggc 480

attcgtagat cacgtacgga actcgtaata taaaaagatt tctttggcaa cgtgcatgag 540

atcagcatcg taataaccgt aattcaccgt ggaataattc attggtcatg ctgtcgtttt 600

cgtgctgacg atgagctatc aagagtggaa gctgatggtt gtgaaacctt tcattttcgc 660

ataccctaat taagctatac cttttgcctt atgctttata tcttgtaaaa ttccttactt 720

ctattttact ggaattagct ctcggcacaa aactctcttg tcgacttcta aaaaaagatc 780

ttggtttctt caggcttcaa cgtatataag ataactcgtc aggtaaacgc acacgtggtt 840

ggtcgagaac gcattctttg cacacgcaac catgacaacg cacgactacg acgtacaagc 900

actacgagag gggggtcta tcaggatcgc aagcaccgct aagttaattc ttgcaaggta 960

gtatttgact agcattatat atggacacaa ttaagtacgt actaacaaga gagagagaga 1020

gaacaacaac cacaaaacgt ggacacagtg cattcgagga cacacgacga cctcgtcgtt 1080

atcacggcaa ctgttggcgt ttcatccgtt tgccattcga ggaccggccg gaggcccgaa 1140

cggtggcggt ggtggtggcg gcgccctagc tagctgctcc gatcctccct tgctgcaggc 1200

tgcaggctgc agcactgacc tgaaaatatg agggcgagcc gacgaaaatg cgcgcgaaca 1260

accttcgctc gatctccgtt tgtgtgttgt gtggtgcacg tccatcgtca atccgtcctt 1320

tcatttttt tttcttctcc tttttggaaa tgcatgtgtg gtcatgaggt ctcaatgtct 1380

cgtgtcgtat gcaccgtagt ccgtatgtat gtatagtcgc caggcttgac gatctgatcg 1440

aaagagccat atgcatagca cgaatctcgg gcgcgtgatg gacagataca ttcgtttcag 1500

tgtgctgctg cttctgcgat agttaactag gggtgacgta cgacgctgcc atgccaaccg 1560

cggccgtggc ggcgtcggcg tggggacgac gcgagagcga gggctcctga tgcggcacct 1620

tggcacgccg gccccccgtg tgacgtcgca ggcggcatca gtggagggag gatttcctgc 1680

cgactagctt cgttcagggt ggtcctgtcc gtcatgtgtg ttggt 1725

<210> 598
<211> 2618
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232501_G1, chr6:146236572..146239189, Cluster 4

<400> 598
ttttgggtt agaggcagta gtatatttaa tattataaac atttttgtt ttttatatat 60

ttaatcagac ttaagatacg ttaacacctt aaaataaaga cgagacgaga acctcatatg 120

accgagacgg agtaaatatc aggttttttt ttacagcctc tcactttcac tttatgagct 180

aggaggatat ggtgacctgg gcctaggaaa tccccacaga aggtgacgtc gcactgaacg 240

atagaaaagg ctccgccctc tggcattgtg caattcgccc gtcataagtt gcgttttaat 300

ataaagataa cgtacaacaa tgacccttt gatcgatttt taaatataag atatatttaa 360

aagactgcag gatgtaaatc taagcattca gatcataaac atagttaaga aataatatgt 420

acatgtatat aaattatgta atctaggtat ataaattatg taatccattt aaaaaatatg 480

tgtttttta tcttaactta tttgagctgg attatgcaat cttgaaggta aacaaaataa 540

gactttaggt accgtttggt tcacatattt gtaacatgaa tggtaaccga taacgttaaa 600

ctatgtttgg ttaaatctaa ccataattag ataacacggt ataaattgat attgtcctat 660

tgaaactggt tacaacttgt aatcaagtgt gaaccattac ggttactatt tacattacaa 720

cttataaacc aaacgacagc ttagttaaat atagacagct tgaactttac atatttttgg 780

acggggcacg ggaccaatat cttgtgctgc ctgatctgcc gacggccata cttccgcagc 840

agccaatggc acgtggaaag cgtgcgagtg cggcgcaaga atttcaagtc ttttttgttt 900

ttacctcgcg atccaggaac cacggttccg ggtagggtag gcggccttct gtcgtcattg 960

gccacgcacg cgcgcgctct tgttttgact tttgaccgac ggggtggatt cagggatcga 1020

ccatgagaga ggagagatct ctgactggcc ttcgctttgt gcgaacgaag tgcccggatt 1080

ttttgtgtta ttgtatttta gtagtttttt tccaataaat cccacgttta cgtctatgag 1140

gctaacaagt cgcaacaaac gccacctgca gtcctgcacg tactgataat ggatccggcg 1200

ggtcggtcgt ctaccactcg ggaaacaaaa tggtgttctc ccctcctttt attattacta 1260

ttaattaatc atcaatcaac acggcagcat tgttctcttg gacttgtcag tggctgatgt 1320

gcactctatt tcgtccttta tcgacgtctg tccctattcc tgcaaaaacg atgccaattg 1380

atcgacagtg caaaagcacg gggtgggggt cgctagccac ggttgacgtg ctccctctcc 1440

gagcgtccgc cagcaggttg tcgtggtgca tccagtgctt gcctgcctag gctaggagtg 1500

tcaacgtcgc ctcctctgcc ttgagttgag tgacaacaca acgacggacc ggtcttgttc 1560

ttgttacgcg tgggcgtggc gtgcccgacg ccgacggaga aacgttcgtc aatggactgc 1620

cggccggcac agttaatggg tagacccgta caccgtacta gaccacagca tctatcgtaa 1680

ccctttgtt ttaatctcag cgccgcccta tcaattggca gtgagtgcat cacgggccgg 1740

gacaacagat gagatgcaag ttcttatcgc acagccatca acagagatca tttctttcgt 1800

atggtggctt tggcatgggc ttgtccggaa gaggcagtgt tgttggtacg taaaatggat 1860

tatatttcgc gagttcggat tagagtaggc tgttcggact ggcagaatcc ttcgtcccaa 1920

cgtggaacgc ttgtaacctg ctgcttttca gcgtaccgga atatgaggga tgtgcgaggc 1980

tgggagcgag actgttaatt ttttttaga taatgggaaa gaaaatcccg gcatgttcat 2040

ccgacatgat aatctgatgg gagctcagaa tcccctgccc ggttgaataa tgatttcaaa 2100

tttgcccgta cgccaatgct gtcgaaatgg actagtatat gagtagcagg aggagcctag 2160

gaggaagagt ggtgagctac aagcagccgc tcaacctttc cttttcttgt aagtaacaac 2220

gatggggacg agaaaggtag caagcaactc tcctgccaaa caatatagag tccagattgt 2280

tgggtgcctg gccggcccca taccgtggtg cggttttctc gtcacagggt cggtctacgt 2340

caacaacttt attggtcctc ctgcctgcct gcgtgcacgt ttgatttctc gcgttgttgc 2400

ccgaaccctc cggaattgag tttttgtcgc caggtgtgtg gcgaggaact gggatagaag 2460

agctgactcc gcgagcagca gcctagtcgg gacaactcag ataagctagg actatttcta 2520

ttttcatgg acagtaagca taagctggtg cggtgcgagg agagtatgat tagtcaggtt 2580

tgcaaatact cagacgttgt gccgtgccgg tgccggtg 2618

<210> 599
<211> 2316
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232755_G1, chr6:147307467..147309782, Cluster 4

<400> 599
tgctgctagc tgcccttctc tcgatctgcc catgcatgct ttttcatgtg ttctcaactt 60

ctgacgagcc atgacgatgc aacttctctc gatcgatctc gtgcgcttgg gatcggagcc 120

aagccagaat gaatgccata ccgggacggg atgggggcgt cttgcattgg atgcaatatg 180

catggcagca tggtgctgtc ccatgcatca cacaaccttt tttcaatata cattggccgg 240

cctggccccc gtacttttgt tccttccttc tattgggact gccttggaca tgtacacttc 300

cagccacgga catatctgtc tctgactgat tatcgctcat cctgtccggg gacgattacc 360

agatgtgcac cttttgcttc tttcttgata tattgcacgc acatatatcg atcgatcaca 420

ctcgctagct agtatagtag tataaacgct gaaagcaaac agctcgatat aaatgaacat 480

ctttccatcg cctgcacgaa cacacgatca atcagacgcg ccatccaaca catacgtacg 540

tcgcaatgca aaagcaatga tagctagccc tagctccaga gaaagcatgc ggtcgggtgg 600

acgacgatag atggtgcgcg cgcactacct gtggacacga acaagaacaa gcgtacttcc 660

gtgccatcgc catcgcccat cgcgcacggc cgcaccgcac gtaccaggcg catgcatgca 720

tgctgctctg ccggcaagac acatgcacaa tcatcttaca ccaccgtacc acgggccgga 780

tgtgcatgcc tggcctagtg gccagctgat tcgttcatcg agcacaattc atcaatggtc 840

ggcggcggcc gccgggactg cctgcgccct gcgcccaccg tacgtgccac gagatgagcg 900

cggccgcgcg cgggactgct gcctctgcct gtgatgagcg gggtggcccg tggccgttcc 960

gcaaaccagg ggcgtcaaag ttgtggcgac ttgcctcgcg gtcccggccg gcctcccgat 1020

gaagaaacta aaaatcggga tgcaaatcag caaatgggcc acaagcagag cgaagttggg 1080

gggggggggg ggtggggggg ggcagcgtac gtgggcagcc cggcgtttgg atccatcttg 1140

tgaattggaa aacatcagcc cagcaaaatc cagacagggt gctctagtgg tactactact 1200

tctatactgc tcgtccacaa actcccagta gttactgaaa atttggtata atctgaattg 1260

ttgctatctc actgtatggt gtatgaacta aattcagttt agctccctgt tttgttaaac 1320

cttatggaag caaaagatct acgagaaagc aatctgcaaa aaaaaataaa caaacaatca 1380

taaacagact tttctagcga gagtttacta ctgcagttcc ccgggtattg aatctagggg 1440

agcatacctg tatgttctta ctgcaactat attattctat gattgttttg ttgtcacgag 1500

cgccaccaat aatgtaggtc tcgccacttt ctttttacaa tgtatggatc atcacgctgc 1560

ttgtctatat gtttaataag atatctatat cagtatccag ctttattttt taatactgat 1620

agacatctac tgaatgcacc aaaaatctgt tgttttgcgt gcttagtttg atttgccagg 1680

tctaagtttt taaagcaaac atgagttctt tattatctct ctttttttcaa ctgtctgatg 1740

cacattgtaa ttgatttgga taaaggcatt taaactataa ttcctgcagt accaaggttt 1800

tcacgttgtg tttaaattat taatcagtgg caggggccca atcccccatc ccccatgatg 1860

ccctccacta ctttaaccga catgatgtca aactcaagga tatccatgca atcattacag 1920

atatctttaa atttagtggt atgaatggtg tttctttctt tttgttgcat tacttgggtt 1980

cttattagag gatgttacag gcttattgat atccccatgc aatcggagtg taggttttta 2040

agggagaggt tcttttagac cttctaaggt aagatctttt tctttgtggt tatgcagttc 2100

ccctatgccc cctatagttt gtgttctaac tgtggcattc ttataggtga aggtaatgct 2160

gaactgcatg actttagttc tgaaattcta cccaaagcat tacattcctc tcttccaaag 2220

ccatctaagc aaatgaaaat aatcgtccat cataaaataa tcaaagggag gggctactgt 2280

gctcggaatc aaataagaac acaagtaaca tttacg 2316

<210> 600
<211> 1423
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233284_G1, chr6:149330943..149332365, Cluster 4

<400> 600
atctagtatg aacacacgta ctatgtatac ggatcggaag ggaagtgttc tgatgaattt 60

atataggtgc gtcgtcgaac ggctcgtcga aagtgaaaca ggcatttggt ttggtgtggg 120

tgcagccgtg catgtgacat gcaactgagc tactggtgtt tagggttgtt gctttgcaga 180

tcttttgccg cccgggcgac gacgagatgg gctagagagc acgcagcatg gagactggag 240

aggcgatctg gtgggtgatg aactgatgat gcataatgca tgcaatgcaa gcggacagca 300

aaccggctgc ggcggctgtt gctggtaggg aagatgcatc cagcagcagc aagcctggtc 360

atatcggtgg ttagctcatc agggttgagg ccggggagac tattgccgat taactcgcct 420

tgaaacccag aataaatgcc cgagtaattg gagacagcgg agggcatgca atgcaacggg 480

gcggccgggg gggattcctt tcttcatttc ctgcgtgtca gagcggccgg ccgggcgatc 540

agtgaaacca caccgcgcgc gcgcgcgcgc acagttcatg ccaaccctgt cgcttcaatg 600

cgttgttgca aaaggatcac ccgacccgat ccgaatcgaa ttgaagcaca ctgctccgat 660

cgaaccagcc agccagccac gtaaatgcgg cgaattgaag catacataga catggttgcg 720

tgccatgtgt tgctagtact gcgctatcgc taggaggcag gcattccact gtagtaacct 780

ccatcgtctc catggccatg ccggctgctc catacagtac cgatagatca gagctagcac 840

atactactgt tcgagtcaac aagcaacagt gtgacagtac agcacgctgc gcaaaataaa 900

ggacgcttta atttgttcat gtatatttag aattattgta tttatatata tggatcgaac 960

gtccaccgat attacttgtt tcgaataaag aaggaataca aaggagatgt actacataaa 1020

aacataggca attaattctt gccagcttaa ttaaaccaag cagcataatg atggattcat 1080

tagcgtaatc actcgaaggc atgggggctc tactccagct ctagtctggt ataaagacca 1140

gtccggcagc aggccagtcg tcgtccagac agtacactga tgctggactt gcaagctcaa 1200

gtgactttcc atgcagctgt acgagtatct gtcaagccat agcaaaccta cttttaggca 1260

gagagataat gtgtcctagc ctttgttgca ttcagcatca gtgccgaacg taggacgaaa 1320

attcacgagg ggtccaaaaa ccacgtgaca aaatcaagta ataccgtaaa aactagtgtt 1380

gcgtagaatt taagtttcat atcaatagat acaagtccaa aga 1423

<210> 601
<211> 2391
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233379_G1, chr6:149677823..149680213, Cluster 4

<400> 601
aaggatgggg tgagattatt ctaacttgac ccatgtttgg tttagaggtc cagagtcagg 60

atcaaggaat atttttcaaa aataatgaat ggaatcatcc ctcaaaaaat aagaaaaata 120

agggacgtga tcaactcagg gttaatcctg tcctatccct cgttgacacc gaaccaaaca 180

catccttaaa accccgccat ctccggacca accccactac accaggacct tggcagacca 240

tagtatagta gtagctccgt acggcgacac ccatccgctc ccggcagcag tcgctgttgg 300

catcgtacca cgtcctacgc gtgtgtttgt ttaacaccct gcctccgttt tgcctgcgca 360

gcaggtcacc tggatggatg ttttggttgc gaacctggac gtacgcatgc gtgctccagc 420

caacaacgcc aggcggccag gcccaggcaa gcagaaaaac gatcgcctgc ctggatgaaa 480

ctgaggttgc ctgagcatta atgatgaact gtgccgcttt tgttctatta attagcaact 540

gttctcatat taatgtttta caattgtact ttcggatcta cactatgggt tcttataccg 600

gctcattggt tatctggacg agcgcaccca cgctcgcccg attcaagctg atcggaaacg 660

ttttttttcc gtatgagtgg atgtagctaa acggtctcaa actgatttgt tttgcctaca 720

ctcgtgcaac tcatgcttca gatatacaga caaccaaaga aatgcttaga taaagtcaat 780

acaagtagtg acgcacgagg agaagatgca accaactaat gagaggtaat attgaattat 840

tattggaaat tcttcattta ttctcatgtt attcaatcaa aagtgtacac cacggtcgta 900

gtacgcagca accaaacgcg tctggatcct tgcaccggcc gtctggccac acatgaaaga 960

aaccatcagt ttccccccag acaaattctt gccagacaag atgacgaggc acccaaccca 1020

accaaaccaa acgcggggcc ctacgcccct acgtccggac gagggcgcgc gcatatggct 1080

ccaaccgggc ggggcgagcc cacctccact gttccgaggt caactgccgg agacgtcgcc 1140

gcccccagcg gacagcgtcc cctcaccgtt cacggctcac cagacggtgt cctggccgac 1200

gccgccggag agcggccagg cgaggcgtcg ctgtccttgg accccgtttg cattgccagc 1260

cccctgtccc ggtccctgtt cttggaacgg ctaggagctc gaaagcgacc ggcgcgggag 1320

gagtcgtgcg ccgcacgtac gtacgggtgc tgtcgtcgag tcgtcctggg atcatttcgc 1380

tctctgtgac tgtgagccgt gaggtgtgtg tgctgcccct atcagctagc tctgaattct 1440

atgtgcatct gcttcctctt gtcgagctgc tggctgctgc tgctgcatcg tcatcatgtt 1500

cccgtcgacg gggtcggccg cgcacgagac cggccgtcgc ttggctcccc tcccccgccg 1560

cgcgcgcgcg cttgccgtct gattcaggcg gcgcacagac tgtcctagga gacgggcaaa 1620

tggctgtgaa ggctgtacag ccaggtatct gaaaagtggt gacaacattt gctgcatgct 1680

tgctttcgga tgacagcgaa ttgcagctgt aaaaatacat cagctgcagc gtagtttgca 1740

gtgcacgata ccccaatcac catccacgta cacgaggtgt aggatagact gccggcgtca 1800

ctgtcccctg gagcagattt ttacccccct tctagctctc tatctgtccg agctgcaggg 1860

gctgtgattt cgtggacagg actggaacgc attcgctgca catggttact ggtggttgct 1920

gctgccgcac atcgtgtcgc tctgccgatg ctacctgacg aaagcttgat tgcgccggag 1980

aaacgagccg cagcgcgcgt gcaggacgga cggacagaga gtgacgacgg gcatgcctac 2040

gcaccgagta aaacgtccgg tgtcgctatt cctcatccat caccaattat ttcttcgctc 2100

ccgggacgag tgaatctgtg cctgcctcct cctatctgtc ctcctctcct ctgtcgtgag 2160

tacatgatat ttcttcgccc tccgatcccc gctgcttcgt tctgtcatgc tcactcggtg 2220

ctgaattcag atgacgcaca catagctaat acacgtctaa acaaaacaag atggaagcca 2280

tataccttca cttgtcgcgg gccattatat aagggtcgtc tcagctcaaa aattacacga 2340

tagtttctgt gtgcagttaa gcatatagat ttctcattta gagattgttg a 2391

<210> 602
<211> 2197
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234254_G1, chr6:153795008..153797204, Cluster 4

<400> 602
aatgacagaa atagcttgga acacgatgca caacgcaagg aagcaccaac gcggggataa 60

ataatgtgtg agcaacaacg agagagcaca aaggaaaaag aacgcacaaa tgtgtggaga 120

agggagagaa ggttggtgtg cagagaaatg agtgggataa ggttggtttg gtggaacata 180

gaattgaatg gagggtagta atttctttcc tatttaaatt tgaagagaga agattctttc 240

tacatagatc ctctctaatt ctatgtctac caaatcagtc ctaatagaga aagaaaggag 300

aggtgaaagg cttatttgtt aatgcacata agtagcgggg gagaggaata aaagagaaaa 360

aaaaacaata gtggaagggg aagggaaaga gtgccagcca ccaacgaact atgcatacga 420

aatgaatgca acagacaaga accatattat ttatataaaa ttgattttaa aattaaagtg 480

atacacaaat aaatcttaga atatattaga aaatagataa tgatatttat tttagtccca 540

acccaaaatg aagattttgg ggtgtgacag ttcccggcgg ccgggccgat gccatactat 600

cttgagagtc tacctcatca tgatattcag caattaaata ttctgtcctt tgtctaattt 660

agattttatg ttgatacgtg aaggtcttta ctcgaacaat ttgtccggtg gtgtggttgt 720

gcaatctgca acgttacatg actatgaatc tatgatgatg gaaatatgtt ttgcattttt 780

tttgcttcta cctgaaagtg gcaacagaaa ggtcgttagt tgctgctact tgcaagttgc 840

aacattatct tgattgaaat gatgtatccc tgtacttgga atgtcaccta tttcaaggcc 900

agggatgtca agctgataca tgtcctttta ggctacatgg aattttgcca tgagtttcta 960

cctgttgtgg ttcatcggct cagaggaagt tcatcatcat gttgccccct ttgtatttca 1020

agaagtatac cttcatggtc tctgtctcat ccgagctatt tcaataggta ttcagaaaag 1080

cagttgtgtt tattattgcc acaagtggac ggattcaaag aaggcctctt aagaatgcca 1140

agcatagttt ccgcttctgt ttcagagctt gtgcaagctc gccgcctccg agcctgtcca 1200

gggggcgttg tctagcgtcc agttcacgga tgaagacgat gtcgacgccc accacagcac 1260

gcttttcagg ggctaccctc acaaccttaa cagcagacac tctgccctgg ccccgacgag 1320

aattctgagc acattctctt ctagtacccg atgacggcgg cgttctgggc tcgggtgcgc 1380

gtctagattg accctgcgac aagcgcaaga aaaagaaaag aaaagctcta ggaaatcgag 1440

ggccggaccg cgtttcccac gcccattggc acgcgctcac tctcctttgc tgctggaaaa 1500

tttggaaaca tggctacgac gtcatcttcc ggcgcgatga cacgccgatg aaccgtctga 1560

cgcgctgctg catcgatcaa gagctaagaa acggcgatgt cggatacctg ctagggataa 1620

ttacgtagta acagaatggt gtaatatgtt cttagccata cgaaatgttc gaaactgaac 1680

cctccggcct gtcttgcaat cctatttggc ttcttgggct gcagacattt acaataacat 1740

aatcaggtgg ggacgctccc ctcttgaccg taaaataggg tatctaatta aactaagctg 1800

acatggtttt tttcttctct ggcatggaca ctctaatttt tctatgaatc cagtggttat 1860

gagtgaagcg atgaataatt attcgaatcg gtacgactga agatgcgatc gattatttta 1920

ttttcacac ttctacatga ccttttgcag ctctatttac caggtttttg aaggacatgc 1980

atggtgcaat ggtaaaagct caggttgtgg attcgaaaca acctcttcgt atttatggag 2040

aacggcttgt cttgggttat cgctttcgta aaccccactc actcatgtgt gagagctcgt 2100

gtcattgact ggtttaatgt taaagtagga taaagcgggt gagacaatat cttctcgata 2160

ttttaagatt acgccgtcac taaaaattac ttcgatg 2197

<210> 603
<211> 1541
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234857_G1, chr6:156527053..156528593, Cluster 4

<400> 603
tcattttgtc cttcgtattc gtataataat atatatatgc gggtgaatcg atctacttcc 60

agagaagcgt tggtactcgt cccgagggta tgagttggta ctttttttggt actaaaccaa 120

cggaacacgg caggtacata gtaatacgtt attacaagta ctctccgaat ttgaagagtt 180

ggcgaagcaa aaaaaagttt gaattttgaa cgtcgtctca gctgcattgc ataaatagga 240

gtaattaatt agcaagtact catacatata ctgccatgca ccttgctacc acaacagcct 300

tgctgcttcg gtgtgcgcgt gtttgccgaa acgtgagcga ggttcgtctg taagttttcc 360

cgcgttttat atatacaaag aaaaaagaaa ctttcgcgtg gttcgaaatg gagctccaaa 420

ccaaaccaca ccgcggcagc ggcactgcct ccatgccggg gcggggcggg gcggcgggac 480

cggaggacag ggtgcgagca cggcggggaa catccggacg tggtggcact ggcggcgcgc 540

cattgttcga ggccgccgct tggccgcttg tgcgtgcctt atcctcgtct ctgtacgtac 600

gcttctggtt ggatggctag atcgacacga gcaggcagtg acccacaacc acagggtcaa 660

gcagcagagc aacttctgtc cgtctgcagg tcgcagatag tagtagacta gtacagtaca 720

ctgtgatgcg gtggtggtgg cagcagttta acacttttgt ctacaaaaaa gggaggagta 780

tggttcgcgt ggatttcagg atatgcgcga tgcacagctg cacacacaga gagctcctcc 840

gcgttgtttc gcactggaac gcgagagtgc gcggcacgaa cgacagtaga aggcgccccc 900

aacttgtcat cagataaaag aagctactac gactacgagc agtggggact catcaagccc 960

tttgcccttt gccctttggg gcgcttcctt ttggagttga gccgcaaagg cggccgggag 1020

acgatatgga aagctgaaag ggcaaaccca tacaatcata ggtgtccgtg gcacgtacga 1080

tcaagcgtaa tagcagcgca tcgcggtgct ctgctgtctg ctcccaattt gcaccacgag 1140

ctagctctag cttgtggttc ggtcaagggg agcatcacgc ggccatgtgt catgtgcggc 1200

acagccagcc ccacccacgg gattatccac catcatcatt ctcaccacga gcagatctag 1260

acaaaacaac cattaatttt atctccatta aattataaaa tcatcaattt aatttattta 1320

agtgctaaca aacatacatt gtaacgaaga ttaataaaat ttattggtgt cacaggacac 1380

aaaaaaagac aggatccgcc cccgattctc cctcactaat aataaggtgg tccttgttgc 1440

tgttttgtcc ggtgagtttc cgcttggtta ggtttcgata tcatgcatgc acgcgtgttg 1500

ttttttttta atcttgattt gcatgagatg atggtactac t 1541

<210> 604
<211> 1645
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235792_G1, chr6:161353835..161355479, Cluster 4

<400> 604
cgctgtccgt ggggcgagaa cgacggctca actcgcagga gggaaaaggc attgtaccca 60

acaagccttt agtatcagaa attctcaatg gatggatggc atcacttcac tggacacacg 120

gttgttcaaa tgaagaaggt gttgcatgtt gattgattgg acattggata agtgagcctt 180

cttcatctcg ggaaacccta aaggcccaac cacttgagat ggagtcgaac aagcaatcat 240

gcaaccactc atttctttgt ggtttacctt tgaaaagccg aaagcgaggt cctaactcgt 300

gggttgttgt ggtgggacga tgcctggctt tgtgcggagg cggagagcca tgcctgctgg 360

tatatatgcg tgtaatagta aactatctcc attccataat aaatgtactt ctagaattca 420

aaatttattc taaaataaat tttagaataa attctataaa aaaaaactcc aaaggtcttt 480

aatatacacc taaatttaat taaattgcat atacaccatg cctatattga aattaaacgg 540

aacaaaaaga aataaaactg atgccactag ttttttttc taactggtct tcaacaaatc 600

aacgcatcgc tcacaaaaag actttcagct cactaataaa accagcaaac catggcagta 660

aacaggcact acactgcaca cgtacgtcag tctaggccac acaaactcac aacacaccga 720

tcttaataca aaggttgaat acctttaact tttaccagat atataagaag aaacggacca 780

ttaatgttta tgacaggtaa tgtctaaata tttttataat ataaggttat ctgaaggtat 840

aaatattgtt aatattttgt ataaatctag tcatatctaa tgaagtttag gccgtacaaa 900

actcttggct ggctttttta aagcataccc attagctagg aatggtaaaa aaaaatatgc 960

actacatcca ctaagcggat aattatcagt ttttttctag agttactaat atggatctat 1020

ccagacacgg aggaggaaag aaacacaccc ttgtagcctc tggcgtccgg ctttgctttc 1080

atgcttttgt cgctgacctt cttttgtaca gtatacgtga ttccacggcc ggctacagac 1140

atcgtggaca ccgacgagtg gtaagcgacc tcgtcgagcg agaaagctcc aggcgaccga 1200

acgcgatccg gcgcgttttg tctctccgat acccagccca gagcagtgag cacccccgcc 1260

cctgcgcgcc acgagaggga ctgggactga ccacccatgc ggacgaggac tgcgcatcgg 1320

ctcacgcttg ggcgcttggc ggcctgggca cgggcaggca tgtgccgcgc gctcgctctc 1380

cgtttcctac gtttccggcc cggccggata tggatatcag gttccgtcag cccaactgca 1440

tcacacgcgc gatcgccatc ccgcccaaaa tgctatcttc actcaccgtc gatcccgccc 1500

aaaatgatgt cgcctcggtc ggtacctaat aataaataaa cagtctatcc cataaaataa 1560

aataagacat atatattttt gaaaatgttt ttaatagtgg aactttgaca attaattatt 1620

atttttaaa tatgatatca acaaa 1645

<210> 605
<211> 1868
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236675_G1, chr6:166066751..166068618, Cluster 4

<400> 605
attcatcaca aaacttgtcc cgctaagttg accgtagttt gttcaagtgt gcagtcgtgt 60

gtattcagta ttcatacatg gaaagccctg aagcaacaga aaactgcagt ccagcgtctc 120

tctcgtatgc ctgcttggcc agaatccaag gcacatgctc tcctagttcg agcgtgtgag 180

tgaattgaac ccggtggcgg tggtgcaggc agggtgtgaa ccgaagtctc tcccgcacgt 240

gtgtaatgca tgcaccgagg aaaaagcaac gggggatgcc ctgcccagtg cgtgtcgtta 300

gcggcagagc gtacgtgcca atggcatgca ggcggcgtgc cggacggagg agcgagacct 360

agggagggtc tcagtagcta gctccggtcc ctgtcacctt tcctcgagtt tccaacgcca 420

accaaaccta ccttaatttc tttaatttcg tccagagtgg aattctcaag agttgcgttt 480

gactagcatc acgctggcgt caacacagag gactagcagg acaagtctct ctagaacctg 540

tacgcgacac gtcatgcaat ccattcttgg tgacggactg gactggagtg cggactgcgg 600

agcacggagc tgggagggga agaccgtcca gccgctggac cggcgccacg cacagcatag 660

tagcgcgtca aataacaaac aaaatggtag cctaacgtta ggcgcgtgca gtgtcaattg 720

ttaggctgac actgaatgct aatccgagcg acaacgcgtc cattgaatcg caacaagcta 780

taatgatgat gaccttgaat atacatacta ctactgtatt atctagctga cgcacatggc 840

cgacgctgat gtgagcaaga cctgtgtcgc cgccgccgct cgccggactg tgtgcgacgt 900

gcgccgcccg cttcttcatt cctgaaaaca acagcgcccg cccgcacgca gcatgttgca 960

gggacgagag gagagaacac gacgcgacgg cgacggcgac gcgaagctga gcggaaatgg 1020

cccaaggcct gagtcccgta cggccccggg acggtcgtcg acttggacac atgctccgcg 1080

ccgggccggc cagaagctaa gcaagtcaaa cgcatcgagc ttcgcttccc gctggcgtag 1140

tacgacgaac gtgtgtgttg ggcgcggtgg agacgacgac ctgaaagcaa cagttagcgc 1200

acgggttcac gggctcggcc ggccggtcag ggctagctgc atagcgcaat gcaatgcaat 1260

gcaatgcgtg tgctgtgcga actgcgacgc tagcttctgg ctgggtattc cggacactag 1320

caaaaaaaca gaggtgactg accatgagat gggttatggg tagagttaga acctaagtgg 1380

atcggagctg gccgtgtgtg tggtgtgggt gcgtgaatcg agcaccatga tcggagacag 1440

gattggcgcg aaagcaacac aacaagtacc cggcccggcc gagagctgca ggcttcagat 1500

cgatcggctc gcgatcggaa tgaagagcaa atcatgcatg catgccgccg cttcaattca 1560

tcatgctgct gtgcttgtgc ttccagctca ctcgtgttcc gtactagcgt cggtagaaac 1620

ggtgcccact ccaaccctcc ctccctcctc cattaggaac caaagacatc atgtcggcta 1680

cctgtggcgc gagatcatgg tcccaaactt acataacgga cgtctaaacc gtagattgtt 1740

aggctatggc catgagatcg tgcaatgttg actgcactgt tttgcaacat gggctgcaat 1800

gtttatatat gtacaagaga tgtagatgaa taagctgctg gagatattag agctgatctc 1860

agaatccg 1868

<210> 606
<211> 1811
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236817_G1, chr6:166889346..166891156, Cluster 4

<400> 606
ggtgtgcgtt gtcgtcctcc cgatacgacg ttatgtcatg tctgctctcc atacggggca 60

ctgtagcttg ctcggtgtca aactgtcaat gttgcggtac cgggtcctgc aaagtggact 120

cacggcgagg ttctgggttg tgtctaatat agcttcatct tccgtcatac cccttacatc 180

accttccagc atgtgtaggt atacatccac tatggggtat tgtgtctaat atagcttcat 240

ctgctcgttg cggtcccaca cgtcggtccc gcctccatcc tggcctccct cccattcgct 300

cctcgcgaca tcgcctcctc ctcgatgccc gcgcctctgc taaggatttc tcgggttgtg 360

ccagtttcag ggaacccact tcctccacga agaattccgt tgatagccat gagcatgtcg 420

atggccagaa gcccagaacg acgacttcgt tgttatatat gggccttata ccattgaaag 480

catgcttgca tttgccttca tagttctaat agggattatt tatgttatac catccaaagc 540

ctacttccct tcataattct aatgtggatt taagttatat atgggcctta taggacattt 600

aagacgaatc taatattgag ggtataacta atcaagatag aaggcgattg ataatgtatg 660

gaaaaggtac taaacgaaaa tgcacaaaat gatggctttt tcgcttttca aattcatcat 720

taaaggtact aaactaaaat gcacaaaatg atgacttttt cgcttctcaa attcatcatt 780

ttaccatttt ttttcttcga tcaaggctaa ccaagctgat cgagtgcttg gtaattggat 840

tcgtcaagtc caggaagatg aggaaagctc atgtgctctt tgtcatgact tcatcagagg 900

cactgtggat tgctcgacga ggtaccgact ggactttgac ccacggctga agcaggctct 960

gagcggacaa ttcactttgc atcaaagaat tagcacagta tggactatgg actcatcgct 1020

ttgtgggaat ctgcatccct tgtgatttta gatcgtcatt ttgaagtgca caacaatatg 1080

agatgcttct tgctgttcat ctgttcaagt atgtgatcgc cagttatttc tttgctcgaa 1140

ccttgagacg acgtccacac agattgtgag gccatccaac ctccggatgc tcctaagcaa 1200

gccgaccaag agggtgcgct actattgccg cgagttcgat gacacgctga tggtgcccgt 1260

gtttggcagc cactgagcca catgtatgcc atcctctttt ttctaggtac caatagttct 1320

tgtgttgtta ttgaacaaat cgactaatca tggtgaaact ccaaagtgta aaaattcggt 1380

cagctgattt tattctaggt aagatatgca gtatttttt ttctatttaa gctaaaaata 1440

gtatgcatca ttcgaagcag cgatggcggc agctgcgcgc gcaggcaggg tgcgcgacag 1500

ctactagttg ggaattggga tacatcgcat gttgttttct agtcgaatgg tttaagcaaa 1560

acggaaaatc ttaaaagtct aatagcatct ctaacaaggt gacttagaac aatgctctaa 1620

aaattaaaat actacatgat tcaaagtgtt cagggcactc aaatgaatta tgctccagca 1680

gttaagacct agatcatata tatatttttt aaagcgaaat atgttattag gaaagaaaat 1740

attgagagcg atgcacaaag caaagacatg acactagttt gagtgtagca aatttgggtc 1800

aattcatgga g 1811

<210> 607
<211> 2222
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236900_G1, chr6:167410111..167412332, Cluster 4

<400> 607
accgacgatc tagagtttgt agggatggtc gacggcagcg aggacctcat cttcgatgca 60

ctctgctcgg attcagactc ggactctacc tctccaatga gcggcgaggg aggtgccccc 120

aacgacgagg agaacaaaag acacacgacc atcgcaaccc ctgccctccc gaaaggacag 180

gtgccactgg cagcaccagt gaaatgggcc gccacacgcg gcaggagcca gaggggccat 240

caggcgtgat gcctccgatg agagcccatg gtagtttgcc gacaggagcg agtccacacc 300

ctgtttgtaa ttccttgatg gttattaata aaacatgttt cagaactatt cttggggtcg 360

gacacaggaa aaggggggcga acgccaacct aggctcggcc cagtgccaac caacacggat 420

gttcatagaa ttgaagaaat gtcaaaaaaa gttatatccc ttaaaccatt acaaagacac 480

aaattttcct taacccctcg tgggggagcg caatcaagca gggcgactcc cagtttccga 540

gcaaagggct ccgcagcttt caccatttcg gcaagctctg tatcactcca ggcatcgcag 600

taaccttcac ttagggcctc cagttcgatt ccgccttcga tatgggacgt aacaacgacg 660

aaggcctgac agatcccccg gcagaagtat tcaattttga gctcccagat ccgacctgcg 720

aggctctcga ggcaggagat caaggacatg tagtttctat gtgccgatat gtgccttttt 780

tccttctcca actcctccaa gcgatgctgc gtataatttt tatgtagttt tttatttcta 840

gtaaataatc tgttactact aaaaattcag ataaattaga gccaacataa tatctaatta 900

gcgtttttat gtaaaattat ataaattttg gatactataa gatgatagaa ctaaaaaaac 960

aaaatttatg ctacttaaat cagtaccaca ttattaaaac tgtcaacgaa aacagaccaa 1020

tggttatttg tctcgtttat aaagctgaag ggttgaacaa tcaattttaa aggcgaaata 1080

tcaatgttac gcagacttat tcctaaacct ataactcact ccagtattgg aacacactga 1140

attttccttt tcttcttctc ttctcctcca tctccggcag ttttagaaga aaattttggg 1200

aggcaactag gccaaggcgg tgaggtcgga agagacagta gcaaggtggt gacgccgctg 1260

aaacgggtgg cggagcagga gatggggcta gcttgagatc gggggcgatc atggctaaga 1320

cggcgtggag agggaaagat ggaggtcgcc atggacacgg tagcgtctca ccggcgtgca 1380

gttgcggcga cgcgtcggga aaaagaagat gcatagagcc caaaatagtc gggtgtagta 1440

tagacagttt tttgtacgga aaaactctga aattcaagtc ccaaatcacc caattcgaat 1500

tccaatttca attccatctc gtcgcatcag tgagttccaa cactccgcca cccccacctg 1560

tggctgagga ggacgaggat gcctcaatga ctgccgcagt agctgcgaag aagccagaag 1620

aagaaaagga agggtgcatt tatgatggat ggtgacaacg tcgaccagat ccttgcaggg 1680

atggagcatc cccaggcctg agccagagga gatgaaagcc caggattctg tgcctgcccc 1740

tgatgtggat gatggcatgg gaaagaaatc aaagaagaaa aagaagggag ggaatggatg 1800

tggatggtga ggacatcgac cagatccttg cggggataga ggactgctaa agagcctgag 1860

gccaaggaca tcagggtccc ctgtggatga tgctgaaggg aagaaatcca agaagaaaag 1920

cggaaggagg aagaggagtt gaacaaggtt cttgatggag tccctcttgt ggaggaggac 1980

aagtcagtgt acctggaagt caaggttgtt gaaggtcatg gtactacaat tgaattgatg 2040

ttgttttggt caatagtata ctgcatgaag gagatcagat agttgtttgt ggcatgcagg 2100

tagatgtcta aatcttcttg tatttctata tagggaccca ttgtgacaac tgtcagggct 2160

ttgttaacac cacacccatt gagagagctt cggtatctga ttatgttgca gctttgatta 2220

gt 2222

<210> 608
<211> 1714
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236965_G1, chr6:167698880..167700593, Cluster 4

<220>
<221> modified_base
<222> (1535)..(1535)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1535)..(1634)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1536)..(1536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1537)..(1537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1538)..(1538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1539)..(1539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1540)..(1540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1541)..(1541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1542)..(1542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1543)..(1543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1544)..(1544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1545)..(1545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1546)..(1546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1547)..(1547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1548)..(1548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1549)..(1549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1550)..(1550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1551)..(1551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1552)..(1552)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1553)..(1553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1554)..(1554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1555)..(1555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1556)..(1556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1557)..(1557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1558)..(1558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1559)..(1559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1560)..(1560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1561)..(1561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1562)..(1562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1563)..(1563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1564)..(1564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1565)..(1565)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1566)..(1566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1567)..(1567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1568)..(1568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1569)..(1569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1570)..(1570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1571)..(1571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1572)..(1572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1573)..(1573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1574)..(1574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1575)..(1575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1576)..(1576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1577)..(1577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1578)..(1578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1579)..(1579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1580)..(1580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1581)..(1581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1582)..(1582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1583)..(1583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1584)..(1584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1585)..(1585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1586)..(1586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1587)..(1587)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1588)..(1588)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1589)..(1589)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1590)..(1590)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1591)..(1591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1592)..(1592)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1593)..(1593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1594)..(1594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1595)..(1595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1596)..(1596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1597)..(1597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1598)..(1598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1599)..(1599)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1600)..(1600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1601)..(1601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1602)..(1602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1603)..(1603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1604)..(1604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1605)..(1605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1606)..(1606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1607)..(1607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1608)..(1608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1609)..(1609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1610)..(1610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1611)..(1611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1612)..(1612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1613)..(1613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1614)..(1614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1615)..(1615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1616)..(1616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1617)..(1617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1618)..(1618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1619)..(1619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1620)..(1620)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1621)..(1621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1622)..(1622)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1623)..(1623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1624)..(1624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1625)..(1625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1626)..(1626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1627)..(1627)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1628)..(1628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1629)..(1629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1630)..(1630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1631)..(1631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1632)..(1632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1633)..(1633)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1634)..(1634)
<223> a, c, g, or t

<400> 608
cctagggaga atccaggaaa catcacttgt ttaagatgac gttcacaaaa cagcatatgt 60

tttcgaacag ttcgtagaac aacacttatt tcaccaaatt aattcagaaa aacaacactc 120

catctatatt ttgcattctt ttattgctta cctcacatac aaatagacca aattacatcc 180

attcatcaca caaccttctt tttacctatt atgtccataa gaacaacata aataaataaa 240

atatgtgacc tctattttat agtgttaaac atacatatca gcacacatgt tttatgaacg 300

aataagtcta tatttaacca ttaaactcag aaccaggtac ctcggccatc gaaccattaa 360

aattagacat atttggtcca ccgaaagctt ttcgattgta cttcctatgt tttttatttg 420

atgtgttttt attttcaaaa acttcaatca cccatcctat tcaaaaaaaa tgtatgtttt 480

tagacttctt cctttataga acatccatgt ttttttatat atttaacatc atacttaaca 540

atataaaagg tagagctcat atatttgtat gtgttcatgt tgttcttatg gatagaagag 600

ataaaaacga gactatgaaa tgaacagtgt caatttggtc catttgtatg taaggtgaga 660

aatgaaagaa taaaaagtat agatgaagtg ttattttctg aattcatttg gtggaatcgg 720

tgctattttt gaattactta aaaaatctat gctattttct aaacactgtt ctaaactagt 780

ggtgtttatg gattctctcg acactccttg ccttctgggc cgacgtcgac tacctcactg 840

caaccaaagt cattccattt tgattgccat ggctctgaaa tgttgtaatt gtctatcata 900

ccagatcata gtaataggta cttgatgtgg ttggtagcct tttggggtga aaaaaacagg 960

gttaacacta ggtaattgtt catttagttc gttaaattga acggatcaat cgttgccttc 1020

tttaatggtg aagtaaacca atatgatgat tgagtagaat ttatctgcat tcaagtgttt 1080

aacgcaacgg gacgctgcgg gagcgggccg cgcccaccgt cagaccctgg tcagcccggg 1140

agcgagctag ccgttgggct tgcagccatt tttgacccag gaagcacgtg ggcccgcgcg 1200

tcgggccggg gttaaataaa aaaaaaaaca aggccgcact gaaatcgtag ctagatttgc 1260

gcttccttgt gctgtctcca tgcccccgct acccactctc cttgctgcac accgctaccc 1320

aacacgaggg gccgcgctgt ctccatgacc tgtggggcca ccggctgccg tgccgttgcc 1380

gtcccatgca acgcccacat ggaccatggc ttgtgttgga agatgtgtgc agtgcagtgt 1440

gcgcgtgagc tgtgcctgtg tgtgtgtgtg tgtcccaatt gttttactag tagtactcgg 1500

tagagaagat ttcacacgat tcaaggaaag ctaannnnnn nnnnnnnnnn nnnnnnnnnn 1560

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1620

nnnnnnnnnn nnnnattggg gggggcagaa gttctagaga ttcgtcgcat ccaaaaaggc 1680

gtcaacactt acattaacca taaagcaagt agga 1714

<210> 609
<211> 1432
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237488_G1, chr7:1989212..1990643, Cluster 4

<400> 609
ctccatagaa gacattattg gtctttcagt caaacttaac ttcaaaacct tcaactcaga 60

tagtagatca tttacctcaa cgtcagaacc gtcctgcgaa gagggacaaa tggagcaacc 120

acaccagacc taacacctaa gactatatat acatatacac tacttagaga cccttccaaa 180

atcggaggcc cggtccagcc accccacttg ccctcctaaa gatccggcct tgcatggatc 240

ccctctaatt ccctatcgac caaatcagat tttagctagc taccaagatc atcatcgcgt 300

ctacgccata tatgactaat tggacggtag tagaatacat tcgtgtactt tttgtctatt 360

atatattaag tcccacatag gatccagatc catggatgtg tggtcgcctg tggatctact 420

atatactacc gtaccgggct ctagcaacaa gcatgattcc gaaagctgtc acagtcatgc 480

catccggccg gccggagcat attggtggtc attgttgcac tcatacagaa cagctgctaa 540

ctgtacatcc tttaccaagc aggcatccag atgatgatag atagatagat atgctcttcc 600

ttctttattt cttccttgct tgttggtctt cactagctag ctacaaaagc tagctagtgc 660

aacagatata aaaaagaact aacataaagc acatgtatgt acatgtgagg aggggagatg 720

acaagtttac cctatatata tggagatgat aagcgtcagc tatccaactt gcacgacgta 780

cagtactgtc ctgttcggcg agctgggtgc aggtgcgcgc gggcgcggca gccaacgacc 840

ggcgttggca ggagcgagaa gccatgttag gctagctgtt ctctaaattt ctccttctgt 900

attatttttg tatttttcgt acggatcgaa aaattaccaa acacgcacta taaaaagaaa 960

catccttaga aaaaaacata taatcgtaat tagacgtcct cttatctagc atatggccac 1020

tatctctaaa gtttgacata tcccacaaaa atctcttgct ggacatcttc ctttgtgtaa 1080

caatttctag aatctgaact agaatgttcc tctaaaaaga acatgcaaga ttgatggagt 1140

tggtttaaaa gtaaaggcca tatcattgcg acaaagctaa atagaccgaa acattgccgt 1200

caccccacca attaggagtt ccccccccccc cctatatatc gtacccttgt tagcaaccca 1260

attcacattt atatgattaa cgctgtcggg tctctctatt tgaagagcaa agtaatataa 1320

ttctccaaat atttctagca atataacaat caaaaagtag acgttgaata gcctcatttt 1380

gattacagaa attgcatttc atactacctt tccaaccgcg tttagctaag tt 1432

<210> 610
<211> 1987
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237728_G1, chr7:3169902..3171888, Cluster 4

<400> 610

aaataaatat ctcaatattt attattatat atgatatgta aaaacagtgg ctttgcataa 60

cagtggtggt ggcctgctgc cacacttgct tatcaccatc catgagcacg ctgcacacag 120

tcggcagcgg cagcagcagc atcttttgag cagtatatat acacaggttt tgtcctgagc 180

agagctgagc tagaaactct ggcgccgcac agtctgctac cattaattga cgaatgtaca 240

aggcaaccta ctgttttcct ccttgcatgg ccgctgctag cttcaggcct catctctctc 300

tctttccttt aatttgcagc gttcattccc tgttggctgt tgctgttgga gagacgtggc 360

gtttcactcc agcatttctt gtatgagcga gcaacgacag cgctatcgac ttcgcgccct 420

tcctatacta tactatacta tatgttggcg cgaggatgtg tgttttgcgg ctcgatatat 480

cagagtgctt tcgatcgaga atcaacaagg tctagtggca tgggaactaa ctaactagct 540

agctagtagt catctcctag ctagctgctg actccttcct gcttgctttt tactactccc 600

ctagctagtg tagggcatgt tgtgtgtatg tctctgtgaa gactaaaaaa tgttggagag 660

atgttgatgc aagaaaggag aaaatagtaa agcaagggat ttaattaagg aaacaaagag 720

aaccattatt ttctcttcag ctactaataa gccttgccat tgcagggcgt gggggcccta 780

aagtagtccc ccccccctct ctctcttctc tctctagcat tgcactgctt tagcatatcc 840

tgacttcctg attgattcct gcattattca tctctccaac tggggtagct atagccaggg 900

tatccgctgc catcttttat cagagtgggg gagagagaga gagagagaga gaggggagaa 960

tgtggacgca tgcatcacac agtacactgc ctgcagcagc tgttggttag tatgtgtttg 1020

tgttgatgat cacggccagc cggctttgca acatgccgtt ttgctctcct ctcgtctcct 1080

gccgacggtc tgctgctacc taccggctaa acaaaacaaa acctctgatc tgatgagccc 1140

atccattgtt gcctagttgc atggcatttt tgccaccaac cggctactac caggaagccg 1200

gccactacct taggctgctg ctgctgctac tactcttcct gcccgctgca tcaatctcta 1260

ctctctctct agcttgtcat gccaccaatc aggactaaat atctaactat atatatatac 1320

atctttcatc gtttgccagt tcaggccatg cagacagaat atatatcctc aacaaggctg 1380

cacaacatct atttataagg tggcaagtct caactagacg ttagaaccaa catcgctatc 1440

aatatatata tatatatata tatactctgt ctgtatctca tataacctaa ttgatgaacc 1500

aatgcaagtt tgatggcgga gttaaatgga aaactgtatt gtttatccgt gataaaaaaa 1560

agctcaatat tcacattcat gtgatagaga gaaacctcag cgctcacatt aatatatgat 1620

aatgtaaact atttgtactt gtggatagat gcaacgatag tgagtgtgtc ggaggttgca 1680

caacactcta accaaattat taccaacaga tgatgatacg tttaccaaga aaaacttaga 1740

acttattaac ctagaggtgt atagtatccc tagctaacta ataacgaact aggttttaaa 1800

catagagagt acatccaaaa aaataaagct gccgctgccg ctgcagcagc agcagcacgc 1860

gcatacaaac ttttgcttct caatgtctgt ggtcctcatt ccctcaagcg tgcatgttgt 1920

tagcttgtta attaatgagt ggcgccacca gagagatcat cagctgctgc tttcccagga 1980

gaagatg 1987

<210> 611
<211> 1593
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237871_G1, chr7:3671892..3673484, Cluster 4

<400> 611
gaggacgggc gagctcgatc gaggcaggcg gccatgcata tatatccatc gagagccagg 60

caagctcgca cagaaatgga gagtaggtgt tagacggccc gtcgtgtcac agcaccacaa 120

atatatagct ctcgctcgct taactgattg accgcgctac tagctgtcaa gaactcaaga 180

tccatcagat cttacagaaa caacagccgt cggcttcctt gttggtgtta ctgttctttt 240

tccccccccct ttcttcttcc gtttgggcag agctgatctg cttgctgatg gcaactgttg 300

tcggcagtag gtagggtaga gctatatata gggtttttta tataatactt atgtgcttta 360

tatagtatat gcaggcacca ttatgcttgc tttttgctgc ctgattctat ctacctatct 420

ttggtgtcaa cgcaagttgg tgggggtgtg cgcgtggtgc gtaattggat ggactgtcga 480

ccactgctca tgaacagcta gcgtcgtcgt cagcaaaaca gcaacggcct ggcaacagtc 540

atcgccagag attgcaatct cgtctcgtca ggaggtttta tttaatcacc ggttcaagaa 600

acatacggaa cacatactgg ctgcgtctcc gatcgaaaca cacacaacac gcagcacagc 660

tggtggccac gccgaccgtc gtcagcactc actcagcact gctctgccga ccacggctgc 720

tcggtcgtcg tcgtcacggc gacctgtgca acaaggcgag ttggagtgga atttaccgtg 780

gttcctctgt gccgacgccg ccgggttacc gcggcggcgt tcacgtacgg ccagcagcgc 840

cgcgcgcccg cgcggtgcca ctccacgtga cgtgaccctt gacgggacgc gttgctttgt 900

tgcaaggccg agaagacgtg tagctgggct ggaatgtact acatgggttg gcccatactc 960

aataaaccag cccaggagcc ggttaccgga taatcatatc ggaatcggaa ctgtaccgtc 1020

gtctgctcct ctccttcagt ttcggtctgc tttaatgata cgactaaact tagatacgct 1080

atatatattt tttttcagtt gccaatatta tgttagcatt acaagaatca gtttctagag 1140

tcgggtcttc caacggcatc tctgttcaaa tttcccaaga tatcaacaaa ttttttttg 1200

acaaagaaag gctgcagcga aaaccccaca actatagatt ttattaagat taaaaacagg 1260

gactccggag aaagcgatag tgagcttaaa gagaagaaag gcacatagag acaagtattt 1320

taagttcagg gctaaatctg attatttgaa gtttcggcgt ggaattgaag catgtcctcc 1380

aggaattgaa ggacataaca gattctctaa agatagccga attttgttgt ttccaaatct 1440

cccagtgtat acccacgtaa ttccagcatt cggcactgaa agggcactca aatataggat 1500

gataagtggt ctcttcgcag ttcatctcgc ataaaataca acaatgatca ttatttggta 1560

aatcgtagca ctttcttctt agcaaattcc ttg 1593

<210> 612
<211> 1584
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238863_G1, chr7:9598017..9599600, Cluster 4

<400> 612
gatcataatc tgctctatca atgaggtaca aattacttga tgtgattccc tacggactac 60

gacaatacca tgttttacct acatgaagat tgtgaggtac taactgctct ttccatattt 120

ttttccggtg gtggtgatgt tggtgattca gatttttcat tggcttgtag gtatagtgat 180

gttgatagac atgtagccct tttttctcac tatagtgagg ctactcaaaa tagtacgata 240

cacaaacatc agtctagatt ttcaacacat cagatatttt atttgtcaga aagtttcaga 300

gggttagata tcaggtgctt gttatgattt ctgctgtgtt tcttttaggt attcactttt 360

ctatttgaaa aacatcacta atggagttta tgtttcttag tttgaagtgg tagatgatgc 420

aaggctttca gccaaaaccg tagctgttct ccaaaatctt tgccaaaagg ttagtatcat 480

tctgcctttc atgctacctg tttatagcat ggtctgttgt ctgtacatcc attatttttt 540

tgacactgtg ctatgcacat gtaaccgtgt aggggctctt ctattgaacc attagtttct 600

ctgttgctgc acctcactct cctcaaattt gagctgtgtg gaacactgaa attgacccct 660

ggaccctggt taattgactt atttgactat ttctgtgtta aatatacagg agaaatattc 720

agcaaaaatc acactattaa gtacaatgtg tttgtgtagt ctaagtttgg acaaagccat 780

ataggctgct gacggtgcta ctgttaagta cgaactgcta agaccatgcc aacattatgt 840

ataatgtgtc aatgtgtttc tgtagtctaa gtttggacaa ggccgcatag gctgatgaca 900

acggaactat tactgttgtg cctgttactg actcaatcct gtgtgccgtt cactcaatgc 960

atgccttagt cctctgccat tttgcgctat tgcaggatgc ctgaatcctc tatcgttttg 1020

cttcataaac attatttgac agcggatcgg atgccagatg catttcgagc ttggttaatg 1080

gataatgctt gttcattgag tttacgtttt cacatctgag attcgactat gcgtataaag 1140

ggctcatgtt ctgagtaaca cttgctactt tcttgctctt agttagtaaa atagtaagtg 1200

atgttcaagt atgtttctct gatgccctag gtgtgtggtg gtctggtgga ttaaatgtga 1260

atgttgagct gcaactttca ccaattggtt tggagaaagt caatagaggc ttgggttctt 1320

ttagttaaga aaaattgtgc tggtgttcag ttctaacatg aaattgttta ttgttctctg 1380

taatctcaca tttctttttt ttttatatct gaacagggat tatgtgccag tttcagtttt 1440

tggtaacagt ctacaggact tttagacatt caaaggtgag aatcactcag gttcagctcc 1500

ctttaaaaaa aagtaatgta aacaacacct ttctgtaaac agtgccctag aagaaccacg 1560

ctcctgccta cacaccagtt tgtt 1584

<210> 613
<211> 2125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239968_G1, chr7:15466806..15468930, Cluster 4

<400> 613
gggtatggtt catgggttgt ccactcccgt gttgagcacg tacttgcatg ccctcagcat 60

tctctgagat gaaaccaaaa ctacttactt tcaccttgag gaagaaatgt ccaattgtcc 120

atgccgcaat cctctctcct gagtcctact ttgccaccgg gtcctgcggg agcgaagcaa 180

gaaaacggaa aacacacaac tgccactctc tcagtcaata tgatggattt gtcacttctc 240

cgccattcct accaccacca gaatcctgag ctggtcccgg cctggtgcgg gcagtgagtg 300

agtggctgtg ccaggaagca tcagctgcct cctgcctgca gctgcaggct gcagccgtcc 360

gtacgtcgtc agcggaccat gaatggctgc cgatcgattc cctgcagcct ttagtaataa 420

aaactgccgc acagagggga catggtggag cggcggccag tggtccggcc actgacaccg 480

gccggccggc ctggatgcat gtctacgggt tgccggccgg ccggccgggg ggggaggtgc 540

cgccagacgc ccagacgggt tcagagcagt gcagctgctg aggtcggagc attgaccttg 600

caatagctct gcgctgtggg aatcagagaa attgaaatcg cctggagagg tttgcagcac 660

gcaggaccgc gggagacgtc atgatcaact ttggtcgaaa gagaaagaac agacaagaga 720

tagtgcgaaa ttgtgtgtga aaatattgtg ttagctgaca ttgaaacatt gtggttaatt 780

gtcagtgaca tagcaaagtg atttacatgc gtttaaaagt aatgcacgcg ttttgattaa 840

tgttgaattg tgcaggtctg ttaacatgca ttttaatatt gttgtaacgc atagcgtgga 900

tcggacttgt gctcgtatac ggttgcatgt gtcgttgatg cgtaggtgtt tatcaaggtg 960

aaacatggtc gacagcggcg acggaactag ttttcggtac aaacttcatg gaggaaccgg 1020

ggtatgaaat taggcttcgt gactaagttc agtgagaaac tgggggtcct tagtcaaggt 1080

tgctgcgcgg gatgtttcgg tcgaagtgtt gatgcatatc gcgatcgcgt gcgttggagt 1140

gggtttgacc cgtgcggtag ctagcctagt tggtgcagct atgctggagt tccaattaag 1200

atgggcgtag gcccaatggg tgcgacacga gtgtaccaag agggcatcag gctagatgaa 1260

tcccatgcga cgtttcaaga gtccaaccga gatagaatat gactctgatg tccttataaa 1320

taggtcagcg aaagatagta cagatcaaat aagagttgta gtagtccaag gagggtttgg 1380

cttcgaggca gattagtatt gttggtcctt ataattataa tatagatcaa atattgttct 1440

ttttaggacg aggattagag tagatagacc ataagagtag atctatttga gatattagtc 1500

taggtttttt gagagttcgt tagataactt tctagtgctt ttggagagca ctcattgtat 1560

acaaatcttg atgattaaag agttgattat gcaagattag tacgataaca ttattcctct 1620

ctctttgttg actaattgca ttcttagttt cgattctaga ttgaatcttg gttttcaatt 1680

gttactgatg ttttgattta tctagatcat tactaatgca tctatttact gacctacaaa 1740

gtctgagata ctaatctttt ctcattattg attaatttcg aaattagatc tcgattaatt 1800

ttcgttactc tttggaaact gtaagcttgt tccgttaata actttagagc tgaatatcca 1860

atcgacatga ttttagttgg atttgtttca tgatgttatc tagtttaatc tgttaaattt 1920

tcagattgat cggagttatt gatttcggtc agtaatgttt tcactaacgt aacaacaatg 1980

tgtccaaatt tatagaagtg taatattttg attttgcgat taggagaagg cgagataaat 2040

atttttttca aacttggtta gtttttcctt tttgacaccg tgaaatttga agacatcaag 2100

cggctgcatg agttcaagca gaatg 2125

<210> 614
<211> 2373
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253634_G1, chr7:105361283..105363655, Cluster 4

<400> 614
ttactttatg tcaagatatt cttaatgaat aataatttat ataaaagggg gggcaagaaa 60

agaagtggtg caaagtagta gtcgcgagca aaggctactt ctgctgctgc agcagcaccg 120

tgctgccgaa tgggggcagc tgcctccctc cctcctcccc acgccgccac aaaggaaacc 180

accgcccccg ctccaaatat tctcgcatat catgcaccct tttgaccatt ccatcggccg 240

gacccggcga ccacaccaca ctaccacgcc acgcatcgcc agccagccac cactcccctg 300

ccgcactgca ctgagcaaag catgcagctc gtgcgatcgc tgcgacggga cgagctcgtt 360

cgaccgacgc cacgccaatg ccatgccccg ctccgctcgt gagcaggcag agcagccgag 420

gccaaaaaaa aaaggcgact gcacgagcga gcgacgagtg tgagcgcaga gcgcacgtat 480

gtgcggggcc aaaaaggagg cagcacttct tttgatccgc ctttgccagc ccagcctctg 540

gattcccccg accccgattg gtttttatca tcgaatccga aagcaatcgt gctcgtgccg 600

tgcgtcttct gcagagctgg agatacgcta cgcgctgttc taccacgtac cgccgttgtt 660

cgagcactgg cagtggcagt ggcaggcggt ctctgattcc tcctcttctc ttctgcttct 720

ggccttctgc cctcgaagac gtcgcgcctg cagataccgt ttgcgtacaa cagcctgagc 780

agtgagcatt cgcaagcgtc ctgcgctctc agctgtcctc tgaaatacag tgcctggaaa 840

aacctgaaac agccctcgat cattctctcc gattgcagag atcagatcag atcagatcag 900

atgaggggg taggcaatac tcgtacacat gcttctgcga tccgagacag aggctttcgt 960

cggtccgtct tttgggctcg gacggacgct ccgctcatgg gattccaaag ctgcctgcct 1020

ggccatggcc cttttcctct cgtgtggtgt ggtgaccaaa gcgcagcgca gcaaagctgt 1080

gctctgaaag cccgaggctc cacccacccc gcatctcctc ggcgacgcca tccgcaccgt 1140

ccgatcggac ccggaggagt cccgcgtacc ttgaatcttg cttgaccggc taatctttta 1200

tttgacgacg aaatccattc cgagccctcg gctcaaagtc gctctccatc ttttttttcc 1260

tgagaaaaaa gaggggttt ttttcacccc cctcgtggaa agtgaaggga ctcctcaaga 1320

tctacccttc tgacaaaaag gcgcggctgc aaaaactgca gccagccatc gccggcgtct 1380

gtagtactgg tactagtacc gtgccgcaaa agctgttgtc tgataccgga attttctcca 1440

tccagccagc cattcagcta acgaaacaag acaaacaaat acgccgagtg agcgcatcac 1500

attcacagca cagcagcaga atgcaaaaaa aaaggattgg ttcgtacatt agagcaaagt 1560

atggcgtggc atggccggcc tgccacaggt catcagctat tggtggcgtg cagcgccccc 1620

tgtgtggtgt gtgcctgctc tgcactctgc tcctggagct gcaggtccat gtccaggaca 1680

tgttgccatt tcacctcaag tcagcttgcg caatggttgc tagctgtact gggtgggtaa 1740

ctcctcctcc tccccttcca gaaacactga aaagaaggac caaaggatat gacaaactgc 1800

ccctgttaat gggcactaca atgattatga ttcccattag ccactactag tgctgaccac 1860

tgttgcccct gcatatatta tcaggctgtg gatattgtat tctgtagatc agctcaaatc 1920

aaactgctag ttccctcgtc ttaaaggaaa gcataaagga catccttggc atgcgtctag 1980

ctagcagggg attcacaatg attcttttgt atatatatgt attgttctga tcaaacttgt 2040

ttctttaatg aacgaacaaa attctggtct ctaggactag gacaaagttc acaggtaata 2100

gggcttgcac acataggact aagagagaaa aacaacacac acagacacac aaaagcaaaa 2160

caaaaaacaa aggtgctgtt tggttcacat atttgtaatg taatcggtaa caataaacgt 2220

taaattatgt ttgtttaagt ccaatcgtaa tcggatacca cactataaat tgataccagc 2280

ttattcaaac ttattaccgc ttgtaatcga atacaaaccg ttaccgttac catttacgtt 2340

acattttggg aaccaaacgg caccaaagtt cag 2373

<210> 615
<211> 1557
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257267_G1, chr7:124869736..124871292, Cluster 4

<400> 615
ttgagctgcc tgagagtaag caacagggct gcttcatcag gtcgttggca tggcagctgt 60

gcatgtcaaa cggggcagaa tcgctggacg agtttcggct ccctccctgt cctcgacgac 120

ggtcgtcagg gattcagatt tgaaacctct ctccgctttt catcaactca aaagtcaaaa 180

cccagcaaaa gggacatatg gatgtgaagg atcgatgtgc ccgtgttacc aggctccatg 240

atccgccgcc gccgccccac cagcaccacc gtcgcccggc cagccagcgt ccacctaacc 300

cgattgcagc tgaccgtgag agtgaggtcc tcaaccgacg gccgaaacgg aaacgaaacc 360

gcaggtccaa gtccaacctg cggcgtcacc accttgacac gtacgggcca caaaaccaac 420

cccaacccaa ccgaccgacc ggatccacga tggtttccca cgcgaattcg acggaaatcg 480

tctgggtcgt caccagcaga aacaccctca ctcacaccta cttcatgaca gttttccttt 540

ctccctcacc actttcatgg tttctctctc tttcggcgcg cggtgtgcga aagtgactgt 600

gatgcacgag gggaaataaa aaaacaacaa caactccatg tcaaacaaaa aaaaaactcc 660

agtgtacgca tgctgtgttc tcttccttcc tgggaggaaa gccggcaaaa gcgctctggc 720

gctcgcgaca cgcgaaaact acaagccagc cgagggcgac gctttccatg gccgcctgca 780

tgcccttagc tagtcttctc tcgcgccctt gcttcttttt cttcttttta attttctccc 840

caccctagc tagtcgacga cggcgatatg aatatgatgg cgtatcgggg tgatgtgtat 900

cctactcgca cacctcgcgc atacaaaaat ggcgatcgct gccgtacctc acctcacctg 960

atgccgactg aaataagagg ggggcgttta tccgcggcgt cgccgtcgct gcgttttatt 1020

ggagccgtga ttgggggcgg cagcacagag atctccagag ccgccggcac aagacgaaag 1080

cgaggagagg gtggggccgt ctcacgtact gtgttcgaca tcgactgcgc cctcgcttct 1140

cacgcaagcg agcatcatga aacatgcatg ggtgctctat atatctcgtc tcgtttcttc 1200

cacgcatata aacgaaatga tataataatc caatcggata tgcccatctc tctcgtcgtc 1260

caatcaacat gccgtgacga ttgattgagg gaccggctga acctagaatt aatatgcggg 1320

ttatgatgat gcatccattg ttccgcccgt aaccgagctt agttttagtc tttgtgaagt 1380

gtgacgagag tgcgaccaaa ttattaatgt ttcttgagac tgtcgctccc gtagtcgaca 1440

gatcgaggaa gaaaaaggga agtagctagc ttggcaaaga gaagcacacg agttgttgta 1500

tgctgcttct tcccgtacgt tccaatcacg gtgatactac agcagccagc ataagct 1557

<210> 616
<211> 1858
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260207_G1, chr7:141130570..141132427, Cluster 4

<400> 616
tgaatgggaa gtgagtgatg gatgtctttt cttttctgcc tttctttctt tttccctgcg 60

agtgaggaga ctcactcaca catggaaaac atggaccttg ccatctcggt accgaaagaa 120

aaacataggc cccgtttgat tcattcatgc ctcgtttttt taaatttcat ttctacggtc 180

tcgttgttag ctaaacaact tctgatttgt ttattggaat ctcaacataa attggtaata 240

ataggatttg tattggattg tgcgcagtat ctagcttctt aaattctaag gataaccaaa 300

caccacctta aacatgcact agcatttatg aaccatctta taggttagac tgaaattcaa 360

gaaaaaaatt acaaattcaa atattcgaag acgacaagga agctaaaatt accaacacac 420

aaatatcact tgtgacaccg acacctcaac tgatttcaag atttgtcggc cttcgtattc 480

caaggcagat gtctacttca acttaaaatc gggttttggc cttcagaatc aggttgtcaa 540

ctgatttcca catccgttag ccttcttatt caaaggttta aatttaaaat cagattttag 600

ccgttcgaat ctagggatgt tcctaaaaca tccgacttat atgacaaatc taatatttta 660

acataaatag acatgaaatt taaagctaat ttttggtagt gttattaaga atattatgaa 720

gtatttaaaa ttttaaataa aattagtatt cacgatagaa ggaatcaatt tgctgtcgtt 780

tttttatatc ataaaccata caaatctctt tatcttatgt tccgtagtat tcagattctc 840

tccacgattc tgcagaaata tagattcccg aaaaaagctc gttggagaaa agaagctgaa 900

gataggtccc aactcccaag cctacactag atgaaccatc ggtacttccc tgtcatcgtg 960

acgtgaaaaa tcagcaaaga tttttgagcg aagtaatcga accagctcca aacaagctgg 1020

atccagtgag agccgctaac gcacatggcg aatctgtcca taccgggggc cgggggagct 1080

ctttctagtc cctggccccg ctcccgagta ctagaaaaca aaaacagtga cagccgtttc 1140

cttaaccgta tccagcccgc aggcgtttcc agtttccgca cgccttcctt cgtccccctc 1200

cccctgcctc cggtactccg ggtcggggga gtggggacca gctgctaagc acgacgggaa 1260

ttctcgatcg ggttgatgcg gatccatcgt agcgcccgct gaaggaaggg cccacaggcc 1320

acagcctgag gctgacggga cgggagggac tgcttgattt ttctgtccat cccgtgtact 1380

gctttccggc cgccgttttc gcgttgcctt tctcgttctt ctctgcctcc tggggcttcc 1440

ggaggccgac ccttttttt cgtgggcggg gggaggcgac gccgaggcag gcagcttccg 1500

tgcagtgggt ttttggctgc tggctgttgt tgtcgcgcgc ccgtagcgtg ttccagctaa 1560

ccgctgcttg atttgtcctg tctgtactaa ctaaaaggat agacatggat gacaacagtt 1620

gtctcgccgt cttgatgggg gggggggggg ggacagtttc ttttctaagg aaaaaaatac 1680

tcctatttcg gttccgtgct cgtaccgcta gattattagt ggctggtgat tcgtccttgc 1740

attttggaca accctgctca tcggaaaccc caacgtgcgg gctaaacgtc gcattgaaat 1800

ctgaatctgc tacttgtttc gaacgaagcg aaagtgaagg agttttggag attgaaaa 1858

<210> 617
<211> 2139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262113_G1, chr7:152173933..152176071, Cluster 4

<400> 617
cctacgagct cttggaccgt gttccactca tggcctatgg gttctaggcc tgagtcctct 60

gatgccctac gaacccacac aatggcaaga tgagaccagc agtcaggcta caaaggcaga 120

aggttagcat gggaagaagc agacaagaat gaataatgat gacacctgga cttctgtcat 180

gagcacggat cgcacgctct cccgacaata tccgaaacac gggaatcgac acaggggtga 240

accattgatt ttacactaat gttacactcc ctttagggag aagctatcta taactacctc 300

ccccttgatc tataaaaggg aggacggtct gcctcaagag gagaggcccc ccaagagaga 360

aaaacatgat agatatagaa tcgtgtcggt gtttcgaacc tcgctccggc aattaaattt 420

attgtgcgcg ttccgagctc tggaggggtg tgcgaggtgg ggcgcaagat ttatattggt 480

tcagtcataa catccataca tccagccatc ggtggctttc gctaccggca ctattgatga 540

tcaaaactcg tagtagaggt tacaactagg cgagagagcg aggagagact ccaagtctct 600

ttttcggggt ggaagtggag gatagaagct acaaggtgga gtccggacta agtattggct 660

cggcgcggtg gcgctcacta gcggtttgtt ggggaaatga tccctggtct agcggcggcc 720

ctatatgatt acttagccaa ggaatcagta tgcttgttaa tatcaccagc ggcgagccaa 780

tacttagacc agcgtatata tatgtgcgcg cgcgctatat gcatttctaa tcttttgtta 840

atatctcact gttaccagag ttactactgc ttgattatca ctaacacata ctgatagcac 900

catgaattaa ttaagggtgg ttgatgaaaa cagtgatttg tactagctaa agctaggcat 960

agtactatgt acgcacagat acaggaatag tgataagata cgaaaatgca gaggcacata 1020

aagcacgcgc tagctgcatg cgagttgcga cgcagggaaa gatacaaagg aggcagccgc 1080

agcgaaaaga ctgcggccgc gacgcgttgt aaaagatggc ttcgttttac tgcggcgcgc 1140

gacgggcgaa agcgtatggc gtataactat atggtgatcg ggtgtgcacg gcgtggtgca 1200

tgcaaaccct cgcgggggca cgtacggcgg aataattgga gctctgaatt tgatgtgtga 1260

ctagacgcat ggtaccagcc ctgatctggc cgtgtcagcc ctggccgggg ggtcgggtct 1320

cggtgcgcgg taccgccgga ccgcccagcc acaccgcggg acggcgggag caactagtgt 1380

tacaaatcca ccggccggcc ggggccgggg cttcgaattc atgtctctgt gcacgcacac 1440

cgcatgcata tactagtcct gctttaaaaa aatggattcc cccaccctag ctatctcctg 1500

cgcactgtgc aagcttccac tcattttgtt ctgggttacc gcgccgtccc tatgggctat 1560

gggtggtgtt gtgttggtgg gcagagcgag ccgcaccgca tgcatcacgt acagcggctg 1620

gtggcctggc tgcctagcca atcgagggcc gagaccacca tgtatgtgcc tctctggccg 1680

tctggcacat agctgccggc cggccggtgc agctaaccgc ggcacggcat cgatgctgcc 1740

aaaacccggc cggtaagatc cgtccccggg ggccacgttt tactgcgcac ccaccacgac 1800

tacacgtact acggtcgtgg gcctgccgcg gtttttcct gccgcgaatg atggatgggg 1860

gtgggagaca cggcccggcc ggtccccggc tcagaagatg gtcgcagcag cttccacctg 1920

ggcccccgc tgccccgtcc cggcatgcat gcgcaccgcc gacccctgct tgcctgcctg 1980

ctcggcctca ggcagccaca gcagcgcctg tctctctcgg cgctctactc ttcctttcct 2040

tcgttcatcg cgcgttggcg ccagcaggcg caaatcccca atccaaaaaa aacaaacacg 2100

gtgaaatttc aaccccacct atcgcaactc catgtgtgt 2139

<210> 618
<211> 1627
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262733_G1, chr7:155563944..155565570, Cluster 4

<400> 618
tcgcaactag acacatttcg cagctagaca catcatgagc gcaagagctg caaggtggca 60

taagctaatt tgtacaatga aacaaaagta tttatcttgg catgtgcttc tttgaacaac 120

ggacaccttt cgaacaaagt tggtgtatca gtttgtagga tggacatctc aaatcggact 180

ttgtgctact gctgcaggtg catgtagata tgcctctgtc agcacatgat gcatctgcac 240

tgcatgcctc ttacccgtac aaagtgtcct tgctatgttg tcactgtgct caaaatcctt 300

tgcactgcca ctgatgatgc ccttagtaga taaacattat ctaattatga gaatccctac 360

ctaaccaaac gctaccataa tcaggcgcgt ggtccatgtc tgacctggcc aattcccaag 420

tactacggac cagagagtaa ttctatgaca cccatggttt cccacggtgg caccagcaca 480

aggttaaatt tccaacagga ccagtcgagc aatcagtgac cttctcatgc tatatattac 540

aggtcccttc ctttttgggg agtcggctac cacaagaata tgaggttcaa accctacgag 600

atctggtcgt caggaacaac ttgtgtgtgt ttaccatgta ctagtatgta catgtgcagc 660

cggcgccccg cggacttttg atcgggaaga agagcatcta ctacagcaga tgggctcaaa 720

acaagtctcc tccagcagtc atgtagcgtc cccgccatcc tccgtcagtg aagccttagc 780

tgcctgacaa caggacccgt gcctgcttta ccttcttttg taccgaaaca ccacactata 840

taagctccta aaattatgca tgttttactg ctgatagaat aaacaacgga caacccattt 900

tgactgggtt taactcaaaa cctcttgcgg gtcttaaatt aaaactcatc aaagctgact 960

gtttcctaca aattatctgt actcaaagct gactgtttcc tacaagctgt ctgtactcta 1020

tggtgtcgat tctgttctca aaaaaatcaa gataaaatcg taccaatcca tgttggtttt 1080

agtactgatc aataagacat tgggaccgag atttggatac tctgctggag gccaggaacg 1140

agtgaaatgg aggagaaatc ttttagactg gagatcagga tttggagggt atgctccgaa 1200

gtttggaatg atagatcaat ccagagaaag agaatatgta catcaaggat ttgaaacaga 1260

tgtctatgac ttttggttag tgcagtttca cagtgtatac ttcagtttcg agaaagaatt 1320

cagatttttg agagcagtta attaaagcag ttcttatggc tcaatgagag acacaaatgg 1380

accctatact ggtcggagcc acatacacag tgtgaggtgc acaagctatg cggaccgtat 1440

ggtagctgca accctgacgc aaatgctacg agcgcaaatg ctgggagccc tgaggattgt 1500

caggtgactt gcttcaacag ttgcagctgc agtgcttaca catataacgg cactggctgt 1560

tttgtttggc atggagacct acctggtcaa cctccaagaa cagcacactg gcgatggatg 1620

aggaacc 1627

<210> 619
<211> 2293
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263003_G1, chr7:156733047..156735339, Cluster 4

<400> 619
tgcagaagaa ccacccaacc agagtcctca cgctggtata tcagcctttt gccctggggg 60

ttacagctct cctagcatac cacgaagcaa aaaatcaaca ccaggcttcg gaacctgaca 120

ggatacacaa tttacttctt aagttatttt tggaataata cttgtaagtg gatacctatc 180

tctgagataa atagagatgg ttcataaatt atattccgtt agcctgacta ttgcgccagt 240

actagtatat atatttaatt ttctctctct aaaagatagt attagctagt atgtttccga 300

tttgatatat tgcataagtg ttatataaat catggttatt gaacaagtga tatcaacctc 360

ataccatcat gttttggaaa ttagctggat gtggccacta aggggcaatg tgggtttgga 420

gcctttgttg gcatatgtgt aacaagtgca gcattcggga tagcagatgc ccatgctcaa 480

ggtggcatga ttggtgacct atccttgatg tgcccagagt tcgttcaggt ggcttgtttc 540

caacgatttt ttgatgtatt gcgcactgat agaaatatct cagtgcctat agttggctgc 600

tcttatgtac ccatctccat tttggtttgc agtcctactt ggcaggtttg gccgcatcgg 660

gccggagcaa tcatgttgcg ttgtcatgtt gagttgctcc atatgctact ttgtgcagcc 720

tatggaggat ccgaaacaac atgtgcgatt aagcaccaaa caactgcttc tgcagaacat 780

ggattacgtg ttcgatatct ttctgatatg tcttgactat ctattttccc cggattccca 840

tctgaagaca cacggcctgg ggacttggta aggtttcttt catgtttttt tttccttttt 900

tactgacaca cggtgactac tagctcctac atttcggcat aatctagcgt tccacatgaa 960

atttagtccc ctctgctgtg tgcttttcag gtatgttcaa tgcgtgggat ctcataggca 1020

gatatatgtg cccttcattg ccaagctgag atctcggaag tgtaccacag cagcagctct 1080

cgcacgcttt attctcgttc ctgcattcta ttttactgcg aagtacggcg aacaaggtta 1140

tatgatcttc ttgacatcct tgctggggtt gagcaacggg tatctgaccg tatgtgtcct 1200

cacagtcaca gtcacagagg cacccaaagg atacaaatac aacgtaactt ttactctgtt 1260

atatacttca cgccatcagt tgctcaaaga tagatttttt ttctcattgc aatcttttgc 1320

gcaggggcca gagcaaaacg cgctggggaa tgttcttgtt gttttcgtca tgacagggct 1380

gttttctggt gtcgtgctcg attggttatg gttgataggg aaaggttggt gatactgaag 1440

tcacctcata aatggtgtta ctagtctttt gctgaggcca catttggaag cacctagttt 1500

ttaagaaatt gatttataga aattgagatc gttccaaaca tactagttta tgactcagtt 1560

tatagaaatt agattcttaa tttcttaaaa tcaagaagct agtttctctt agctaataaa 1620

taaaaactgg tttattaaaa actaggttgc tttcaaacat agcctaaatg tatcaacatc 1680

gatggaaaaa taatgacagg tacaaaggat gatggggtag actggtagga tgctgaaact 1740

aacttgaagc gtcgtcaagt cttaagcgaa gtttttactg gtctcctttt taggagaatg 1800

gcaggtgctc tgacttttc attataggag gaaacaccaa atgatcacaa tgttgagggc 1860

tcgtcgaggc tgattaagaa gccagacctg aagagagaga gagagactaa tctgaggacc 1920

tgcccccggg ttattggcca gagtcaggaa ccaggaaaat acacagtcac agacacacta 1980

gcccacgccc gaccgccccc acgctcgcag tccactcgat gcttttgggc aacgtcaaaa 2040

tacctttgct tgctgctgag aataggcgca ctacgctgct tgaaatggtc acgccaaagc 2100

aactggtcct ccccttcaga cattaacgag aggaagacca gtatgtttgg caagggttct 2160

ccagtcatca cgcaggcctt gcatagatga tgttcaatga ttcggctcag ctcctgcctt 2220

attagcccgg gtcacagtgt tgtctgctcc tatctggata agtcatccac acacgcatca 2280

acttgctcgt aag 2293

<210> 620
<211> 1647
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264447_G1, chr7:163932815..163934461, Cluster 4

<400> 620
cctttcacat ggctaagcta attaatacta gtgtatagct acagctctac tgtatttctc 60

tctctctctc tctctcatat ggaactgctt tgttggtgtg atgtttcggg tgtatggacg 120

catgattcct cccaattatt ttgccttgaa gccgtgcatc cctttatgtc gtagaggcta 180

aacacataat actgccttcc ttcgcctcaa taaaaaaaaa gagcactagc tagggtgctt 240

agcctagcac tgatcattga tgttaggtag tacatattgt gttctttttg ttcacccctt 300

gtaggtgagc tactagctag aaaaaggaag aagaagaaag tgagaggtag ccaatgatta 360

aagtaaaagc gtgtgcgtgc ggccactcag gcgctgagta cgtgtaagga aagtggcgat 420

ggaacggatc gagcaacgaa caggactggc atacatcgga ccaagatact acgacgtaca 480

cgtacgtacg tacatgatgg tatggtatga ggcagctgca gtccacgtcg ctgtagtagt 540

caccatcagg tttgcacacg ccggtacgta cgccactggc tggccagcca tcagtttcct 600

ggcgcggcaa cgtgatccag cgtccagcga gaagcgtgat gcctttgtt ttcccttcgt 660

agtagtagtt gggaaggacc gtacacctcg taggtaggct cctaggctac cgtccgacca 720

gcttagccta cgctttatat gccaaccaat cgtacgacca tagacagcag tcacacacaa 780

gcaataacga tcgttcaaac tttttggcac gatattctcg ctgattctga cagcgtcatc 840

acgcatagat ttatagttta cagcggatac gcttatcttg accctggcag tagacagtag 900

taggtgtgcc gacacgagtg ctcgagtaag caccaccacc agcacctggc tctgcccgga 960

cttcctttgc aaacaactgc aacgaacaaa cctcggccac gccacagata tatataaatc 1020

tcgctgacgg ggtgaccaac atgctttatt ttatttttct tcagagaaaa taacaaatac 1080

taccatacag gtgagaagaa tcttgcagca ggtggcgaag gacgatagca gagaggagct 1140

actgagctag ctagccatag attgctcaac acctgggcga aaaaaacgca ctaggaaaaa 1200

aaaaggaaaa tagaatactt tatatatcct gtataccctt cgggcactat tgtagtattg 1260

ttgatcgtca cggaatattc ggctaataag caaaagtcaa ggtctgtgtc caccaccgcg 1320

tacacatgca tcgctgggcc gtgcgctctg gaccggcggt ccatccatga cgacgattcc 1380

ccatcttacc ctatccatat catgcacata cgcagatgcg gagcggcacg cacgttcagc 1440

ctgcgccctg cgtacgtacg tgagcatttc gtcaccgttc cagtgtagcg ataaatctga 1500

cacagcggct tagctttgtg gatgattagc gtgcgggttt gcgtctggat cacatgctag 1560

ctcatgtggt gctagctagc ttggtacagt catacgcgcc ttctgtttct gtttttccc 1620

tagcttgcgt caaaaacgat ctttctt 1647

<210> 621
<211> 1791
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264594_G1, chr7:164789306..164791096, Cluster 4

<400> 621
tccaatgcat cggatcggga gtacgcacgc aaccctctct ctgccgtctt cagtttacgt 60

gtactagtaa aataagatcg actctctggc gcactggatc aaaaacaact gctgagcttt 120

cacgtcagtg atcacccgat acgacgtacg cctcacagtt ctgttctatg ctaatagcgc 180

cagcaggcgt actcctcctt ctcgatcgat gattggctcc actactcttt agtggcatac 240

ctaacaatta aacaacgcgg atggttccga attcccgttg gttacaccca cctcaagtat 300

acgtctgccc ccacacccac agcagctcta atggaagggg gagcacgcat ggtcagggag 360

ctaagctgcg gaaagagagt gagtgagcag aagagcactg tgcgcctgtg aagagaaggg 420

acaaagctgg atgattaatg acgccagaag aaagggccgc gaaaagcgcc agggaaaggg 480

tatcggggaa ggcgggcgag acctcgcttt cagaggagca gagacgatca gacgagaggc 540

cattatggat ttatggtacg ggctactacg gcgtcacctg cagacatttt aacctgatcc 600

accacgcggc ggactgcagt ctacagaaca ggcagccgga ctggcggtga tgtgccggcg 660

cagagcgtgc ggactcctag agtaaaaagg cgccggtgcg ttgcgttggt tggttgatgt 720

ggatgcatgc accgcggccg tggccgtgag attcatcggc cgagagagaa ggcgggactg 780

ggaagtctgg gaaggaagca ggatcccgga atacggtgca cgatacaatt tttagcggcg 840

agcacgaagc cgaggcgagg cgaggctcgt tggataaact aatgagctag tagacgtcaa 900

gcaaacgctg aaacctatcg aactcgcact catccttacg ctagctactt cagtagcagt 960

actactacca cttacggagt agtagtacga gcactggtat tgatcttcca tagcctggat 1020

attcagtcag tgcgtggtcc acatccacac ccccataggg ccatatatag aagcagaaga 1080

tgagaagagt ctctcggact gcacatacag tacagcgtag tcctacgtac gcatcgttgc 1140

accgagacgg agcaggaccc catgggaaaa tagtaccgga agctttatac cctgtatgtt 1200

tgaaagcaaa ctagttttta agaaaccggt ctttatgttt tactagctag agagaccaac 1260

tttttgattt ttaagaaact gagaatctaa cttctacaga ctaagttcta aactaatatg 1320

tttggaacca cctcaattcc tataagtcag ttttttaat aaaaaaactg tagggtgctt 1380

agttgcacgg gacagcctac aaagccgagt tattttgttg aggtaaacaa ctggactgcc 1440

cacgggccta cggacgcttc gagaacgcac gcacacagag tccctcgatt tgattgattc 1500

catgctggcg agtggcggat gcaactagct accggtggac gacggcaatg gaattggagc 1560

tgtgtgggaa cggggagatg gacgaatgat cgagcggcat ggcccagtcg gggatttgcc 1620

gtcgtcccaa ctctcaactg gagtgggttt cgtaatggct caactcgtgc agcaaactgg 1680

agcggatgca acataagata agaggccctg tctggagggg tttcgacggc tctcactgta 1740

gcattggagc gccccaaatc tattatgcct catctgactt cttcactttg t 1791

<210> 622
<211> 1761
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265089_G1, chr7:167630499..167632259, Cluster 4

<400> 622
tttgagtgga tctttcaccc tcctctccgt cgaccaaaaa aactaggtaa tgccaaatca 60

agccttcttt cctgtttgta gacccagctt tggtcaggaa atgaacagag cgtataacag 120

tttttttgg agacaagaac aaaacatgta ctgcgatatg gaaggatact gctaacatgg 180

catagttgga ttggaacagc ctgagcctag aagcaggtta agcacagtag gaacccaagc 240

tgtagctgaa gaacttgtgg gagtgcccat aactagcaag gccaagacag gcccaatact 300

atcccataca ttgggacatt gggtacccca gcaaaggctg ctgatcagac aggcattgaa 360

atcctgttaa agattcctca gactctgaaa ctgaaaggag gcaaaggagc tggtggacct 420

tatgcgactg agagcagagt tggcacgagc gtctggtctg aaccaacgtt tgggctccgt 480

tatccatttt ttttaaaaaa aacttggttc atacacaaag atgtttaaga agacgaaaca 540

gtacagacga ctgacgtttc ttttctgtat gtgaaagaac agattctcct acactgtttg 600

gtatcgacag cttggccttt tggtcggtat gtattataca tactgtgcaa ttgtgcatct 660

gcttagaaac gatgggttgc agtgcttatt ggcgagtacc agtcaaccag tcatagtatt 720

acaagccagt catagtatta caagttctgt gggccagaag aagtgaaagt tgagcgctgc 780

tgcaatcatt ttcagtcaaa aaaacttact aactgtatct acccgacagg tctgaaactg 840

gtttgagaga tgcaggcgct ggtgacaatg gttttaaatt aattgggata gcagcaccag 900

cacacgtggt ggctctatga actgtcaaac aaatttagtg attggggaaa ctggtcctgt 960

ctcctgtacc agcataacag tagcagcgga gaaaacggtt gctgccaact gactgccatg 1020

atgagctcga caattagttc gatatcgatc aggaagacga tgcgggagat aatgaaaggc 1080

ctgctatttg ttgcttcatc gtcaacgtac cccatggccc gtgccagtat ttgggccgga 1140

tggttttcgt tgcggctcat gcaatgggct tccctgctta tacagaaagg caatgggcta 1200

gctaaccttg caactggcga ctggctggat cttgagttct tgacgaacct gcaaaagaaa 1260

tggaagggtg accacttctc tttctaccgt tttggatttc accctgtcaa taaaaaaaaa 1320

gagcacactg ctgcaaactt tctcggtgag catcaaagca agtattctca aggcaccttc 1380

agtgccatta ttcaagttta cacgcttggt agctagtggc gaatgaggag aaagatgcta 1440

attaagaggc tgcgaagctc taagctaaag ctgcgtgaag aacattgctg cagtgattca 1500

tggagatgga gctgtgtttt ggcaaactga agacgctgga gctagctgga agcatgctct 1560

agagtgaagc tactggagac tgtgctactc agccagatat gaagagaaaa taagtacgta 1620

gcagtcagta tgggtatttc atttttggat caggggtttg ccaatcagga aagtcgccta 1680

ttctgttgat aaaggagaaa aaaggttaca cccccaactt ctatggatcg atatttttc 1740

ttgaaaacag atgttgccat g 1761

<210> 623
<211> 2277
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265222_G1, chr7:168294782..168297058, Cluster 4

<400> 623
tgagacgatt tctactgcag tagtgttcca taacgaaatg acttcaactg cactgctcac 60

tgaataaaac tagctactag ttgtcgaaac caaacaactc gcagccctcc tgacttggac 120

agcataatac tggtctgcag ctcggaaatc aaactgcaca gatacagtgt tgcacaaact 180

gcacaaaaac cagaaatgtt aattacactt gttagaagca tctatatgtg taagagcagt 240

agtaggaaaa agaaaagaaa aacagaaagc cttgaactgc ataaactgaa ctggacagca 300

gttgaatctc ttggcctcct tgtgacctgt ctatgtcgca aattctattg tgaagttaca 360

gctattttgt ttcaccgttt cttccatggc atccttttgc gttcctagat gacagcaagg 420

ttttgaacc tatgaatccc ttcattgttt tactgaaatc acttccaatt ttcaggtatg 480

ttctcaaaag ttgctgagca gaggttccca gttgtcggca gcacatacaa caaagcactt 540

gggaagaagc gccgctcgaa gccgttcgtc ctgcgcgcgc cgccccgtct tctacagtct 600

acaggcgagg caacacgcca acacggctct ggctgtctcc tccgggcgcc tcctgtcccc 660

cacgtttcta gtcgccgagc cgagcaggag aaggcctcgc cgagggacct gcgccacgca 720

ggattgtggc cccgcagacg cgcaccaaat cggcaaatcg gcaattcaat caactttctc 780

tcttccgtgc acctgcagac gcgccaaatc ggcaaaaatc gcgcgggaac gcgccggcgg 840

aaggcgagcg tcttcttttc gcgtgcgagg cttttgggag aagatataag ggtctattgg 900

aggtatgatt ttgctatttg cctccaaaac aacctcacat aatgtgcttc cgcatgtttc 960

gccgcgtcgc acgttcgtca cgtttacggc ctcctcctgg agaggcgcac caaaaaatac 1020

aatcaaaatt tgtcaaaaaa gaaaagaata tactaaacat agcattgtat gcactgttct 1080

ttttatacga cccacgtatc aaaaatatat actcctaata aacaccaaaa ggcacccacc 1140

caccgcccag catcccctgt ctaggtacgc tacggccatt cttgttgttt aatttgcacg 1200

acaccaaccc ccactcgcta cacgcatcct aatcctgccc acgacttgtt gaacgcctct 1260

cacgatttta atacctgcac cggacacgtg aaaggtgatg agaatcactg aatcaggcac 1320

gcccggccgg gagataatct cgcacacttc ctggtgcatc catcgtttat tacattacat 1380

ttcgatgtga agtttagtct ctctgtcata ttaagtgcta ccttttttt tctttttac 1440

tgtcgaagac cacctatacc tagatacacg tagaccgatc actgtgcatc gcatgttcca 1500

ttgcgtccaa cgctcattac acgcatggcc tccttctgaa gccgtgccag aaagaatgga 1560

agcaagtgtt tcaaattttg tcaaaaaaga agaatgtaaa cgtagcagag tgtatgcact 1620

aggtcttttt ataggaccaa cctataagaa aaatacaaaa caccaaatgc acccaccgcg 1680

caacaaccct tttatacggt cattctctat ggtttgcctc cggttgacac aaaaaaaaaa 1740

atgttggacc gtgacgatcc gaggagacgg cagatcagct ggttgcaagc aattgaattg 1800

ttcaaaactt tttcgaacgg caaatactct gtcccatgcg gtgtcattgc gaaagaaatg 1860

gtttctctag tagggcgccg ccggacacgt catgatgacg aagacgacga ggagaatcaa 1920

gcagccgaca cggaagacgg aatgctaggc gcaaaaaaaa aggaaaacaa atacaaatac 1980

aaatactgaa ataccacggc gacgtggacg tcagggcccc agcggaggtc accgcgcacc 2040

ggccgttggg tgcgggctcc ggcattctac cgcgggcgct gggtgggtct tagtaaacag 2100

taaacaggtt tccggatcga tatgaacgga aacatggtac gcggaaccct acaaaaacta 2160

ggatttaaca ctattgaaac gagattgttc tcacgttccc ggaacggaac gaacgttccc 2220

ggaatgagaa acgtggtcag gttcccagtt cccgattact aagggtggat aatgttc 2277

<210> 624
<211> 2919
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282994_G1, chr8:104609888..104612806, Cluster 4

<400> 624
catccatcac ggtttgatgc atcataccga gtagtcttca gccatctcaa tattcgagct 60

tgataaatac atcatgacaa cggtctagtg gagtgaaaag agagtgagct aagtgaatca 120

tgaggtggta gagtaatttg aaaagagaga ggtgtcaatg aactcaacca cccctcctct 180

atttacaggt tggattctag gatttttta agagttttct ctaatttta aattcaaaat 240

gacacgaact aatcagaaaa tgtcacatgg caacaggcag tcagtactga ctagttaagg 300

tcgatatcaa tcgagtctcc aaaggcgggt tgataccgac caattggtat cgatgcggtt 360

ccaacacagt tggtaccgac tgtgttgctc aaacctatca cctgacctaa ccgattggcg 420

ttggtgtcgg accgatcgat accgaccacc cgagacgcta gatcttcggt cgatataggt 480

cagcgttgga tccagactaa tacacatgct aggccacaca attgtttctg ttttgcagta 540

cagttccctt ttcaggcgac cgctgaccaa acatgtagat gcaactgagg gcatgtttgg 600

agcctcttaa ttttctagtt tcaaaataat attgtagtat taagagaata ttatagtttt 660

ataggctaaa aggtgttcag tttaccattt tcaatgtttt gtttgcaata ctatggtggg 720

gtgttgccaa cgtcatagtt tgtgtttgtg atactggata cttcactctt gatcaaagtt 780

ttctctaccc aagagcagca cacacacatt tatttcccaa ctcatctaag gagaacatgg 840

aggaggaggt gacgacctag ctccactgca gatgcccccc ctgcacgcag ttgcaggagc 900

tacacggcaa tggccctccc ccggcgagca gtagaggcga tgtggcttgg gacaatggga 960

ggagcatgac ggtcggggtc ggtgccacgc cgctctgcca agatggctca tcttcgtgca 1020

ccgtgacgtc atggatctcg cacccgtgcc tccacagctc tcatgcccgt gcaccgcgcc 1080

gtcgtggatc tcgcgaccac gcctcctcag ctttttatta ggggattaaa tttttcggta 1140

tgtttttttt tcatcttgtg cagagtctca ctgatcttgc aatcccacac acttacatcc 1200

tgtgagaaca gaccccatgg taggccagtt gaaaactctt aaatacccat cctacaaagg 1260

aatataaaga aacaaacatg tcaataacca taagatttca gtgccataac agaagctcca 1320

agagaaagaa gaaaattgca tatgaaccat caaccatgaa aaacctcaaa gcatacatgc 1380

aagatcatac tgaaaagtta tttacttaca tggaggcaaa ccagatttgc cttgttataa 1440

cgtaaaagca agattaaata tcagtgctct aagactattc tgccagtacg aaatgactat 1500

taagaagtca atagataaaa cctattgaaa ccaataaatg tatctttgct ttcaacagta 1560

aattaatttc tatattacaa aacgatgaat aatccatgcc agtttggtat ttggaagagg 1620

atgaaacgcc tgtctgattg tagctattga tgttaagaca tactgatagc attagtttgt 1680

attgttctac ttcagctact gtcacacatg tactgtttaa tcgaaaatat atgtttttta 1740

ggaaggttaa ttttcgctgt tccgagttca gcacctactc taagtagcag aagtgatatt 1800

catttctaag ttttataata tctaaggaag gttcagatga agttgtgact tgagacaaaa 1860

aattgtgatt taataccact gaaacctaac tttattgcaa agaacactgg catgtgccat 1920

catactatat ataatcatat aaggagccaa ggaggggcta ccctagtgca atatgacgtt 1980

aatttataga tcaaatgccc atgtttcact atgatctgaa ttttgctgca agatgatcaa 2040

ctgagagtaa cttccaaaaa atgactcttg tgacatttgc aaattagtac atgtaaatca 2100

tgtggttaga gggcaatggc actgtggatt caacatgacc cttcagtatt tcactcaagt 2160

aaaatgtgga aactgtggat tactcaatca aaatagaagg ccaataattt ttttttgatg 2220

aaacaggagg ggtggatacc cctactggaa ccaattaaag gaaatatgta caaggagttt 2280

aaggagttac aattgaaaat tacatcttta ctaatctaaa tggtttcgcc aggagctaat 2340

ggcagagaaa ttttttttcc ttctgcattc tctgaagtca tatcaaaaag acctttgaac 2400

ttattgtagc agttcataac tgaaggctct atgccttgga agaaggccaa taaaattatt 2460

acgaaggttt atatctgttg tagccatgta aaatctggaa cttgaactta tgattcaagg 2520

atcagttaga aacaacttta ggagtttatt aagggagcaa aatttcagtg acttcacaca 2580

tcacaagttg ttaatgtctc ctcccaaaaa acacataatc tctgtttgag agaaattaaa 2640

tgaaaggaaa ggactgttag tggtttttca ggaaaataag acatgagaca gagcattcta 2700

aaaggattca gttattgcat tacacaataa aatgaactcc aaacaccaac gtaccaagaa 2760

gtgtacacac ttgcactttc cttgcctgca agtgagtaca agtcaaactt aaatctcaga 2820

tccaatacat atgattttac catatagtgg gaggtatcca aagaccaatg tcctccaata 2880

gcatttgcca gttaaactcc aaggctcgct ttaacatcc 2919

<210> 625
<211> 1734
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282995_G1, chr8:104620976..104622709, Cluster 4

<400> 625
tgtgcgcttt ctttggtcgg agtcggagcc cgccccttc tttgaccaat tccgttccgt 60

tccgttccaa agagaatcac agggacgacc aaaaagaaaa cccgtcacca aatactcctt 120

tcctacccac cttccaccac ccaccttcta cctcctcaga tttgcccaaa gatttgcttc 180

ctgtgaatta atgccctaat tgctacttgt ttttttact actagtagtg cttaattgtt 240

aaacactcca aagcggatgg tgcacgacca gtagaggatg caagatgaga attcatatcg 300

ggtcaagaaa accgcatgac aaaattaaac aaaactgtaa aaaactaatg ttgcgtagaa 360

tttaaatttt acaacaatat aaacaaaagg aacaaatata tcactaagtt cttgttgact 420

acatcaaagt cgtgcgtacc ttatcaaatg tcagcctcct cgaaggagga cgagggtaaa 480

tagaggtgac atcactggct gagagccaga actcgctggt ttataaactc gccagtcacc 540

ggagatggat cgtatcgtca caacgagtga gatcggacca agctcgctag tcgccgggat 600

gggttgtata gtcacgacga gcaagatcag aactaccgga cggatggacc ggtgtcatga 660

tgacaacggc gagcggcggg acgtggcact gggcagggag cggcttccag gatgggacac 720

attgacggtg gcagatgtga gtttcaaaat caacttgagt gttaataaca tacttactac 780

tgtagttccg ttccgtgtct catgagagca cgggaaatta tttgtacgtc tgaataggtg 840

acgctgagga agccagttaa ggaaccttac gcgccggttg cccttgcaat tgccccctc 900

cacatccggc cacctggcat gcatggagat gttagtatta tttgaggctg acgtcacgaa 960

acgccctggt ggccgtgttg gtgtagccga gcctgcctgt cgtacggtca ccggcacggc 1020

agtcggcaat ggcgacgcgc cgagagaaga tgcgggctac atttccttat cacctcggct 1080

ggtgcctttt tcatgtctag ccggccggta ggtggtcaac gtacgacgac tgaaatagac 1140

gatgcccata ggacgagaat aggaatcgat agaaaccttt ccgtttcaca aaatagcttt 1200

ggcttcttcc atctcaactg acctaaacat ccttccaaaa aaaaccccaa aagagacaac 1260

actcgtacta agagctttag taaatactat atcggctaac gatgcggacg atagctcaaa 1320

acacaacaag agaaggaaga agcataacgg aacaaatcac acagcagtgc tggcgcccct 1380

gcgtttttt ttggttgatt tgagccaaaa ttttgcatgc atcttataaa catgttgtac 1440

tcattcacgt ataggtgctg atttacgaaa tttaacgtaa atggtaatag taatgaatta 1500

catttaaata ccgacgataa taagtttgaa taagacatta tccatttata gtatgatatc 1560

gagtacggtt gaacttaagc aaacatgatt taacgttatc ggttatctat tacgttacca 1620

atatgtgaac caaacgacac ttcttgtggt agccacctta tcaacatgtg gtagtcacat 1680

ctactatgat ttaatgttcg tcccccacgc actagcaatt gacacgtttc gata 1734

<210> 626
<211> 1463
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_287717_G1, chr8:129954219..129955681, Cluster 4

<400> 626
ctcaacacac gaaacaaatt caggttataa tttggaaagc aatcgaaggt aaacaaacat 60

gaggcaacca agacggtaac ctaggattac cttcatatct tgcatgaaat gcgtttgggt 120

tgaatgagat ctatttgtcc aaaacaaaaa aggaacagaa aacttaatca taaatttgtt 180

ttgagaaatg ccaagtagaa atcaactata ataccctaaa gtcatatttt aggtaattta 240

ggatgtttac cacaagatta aaatacttat gttgtgaatc aagggattaa atgaaaagag 300

cctctaggga gttaaattat tcctttcatg gaaacctata cattgaaata ctttttgaag 360

aggtatacaa aagtgtggcc taatagggac ttcatggtca tttataaaaa ggtaatagac 420

atctaatttg caatgaagtt aatacttatt ttatttaata aaaggaaccc taattattaa 480

attgtgtgtt gcatttttat caagtttata cgatttgggg catttactta aaagagttga 540

ataatgatag taaaataaaa tatatatact ttgcatcatg ctatatcttt ggttgtgcat 600

tcaaatatgt gaatctcaaa actagatttg aacttaaaaa gaaattaaga caaaagaaaa 660

gaatttatgc ctgttctggg ccatctctcc accccacggc ccatctcacc cgtgcaaccg 720

gctacctcac cccatcccat cttgcgcagt ccagcttcac atccagacat ttgtcgggcc 780

acttctctgc cccgtttctt ttccccacaa gaatgatgtg tgggccccac cggtcagtct 840

gacctcacat agcgcataca tcggtactga gtgcctctcc caccgtcggg tgggccacgc 900

tcgccagaga ctcgcccgcg cgcatgctct gtctcgggca ctggctggtg ggacccctac 960

tcagatgtca cctacctagc gataaggcag aagtcgtaac caaacagaga gaccgtagcc 1020

gccgggattg gtcactcgct cgatccgatt ccacccgtat cagactctcc ccatacctta 1080

taaaacttac gatccgtgac cccatatcag gctgcgtcga caactcgaag ccaccatcat 1140

cacccgggcg tgaagtgcat gccaagggag atttttgtgc cgccgtcatg gtcccacaat 1200

tccatggctg tcctatgcac gtggcgtggt cggggatgaa cgctagttca tgtgcaaacc 1260

ttctgcggtg tcatcgggtg gatagggcta ccatcgccga ctcaattgct cgctggagac 1320

aaggctccgc cgcagatccg cccccaccgt gggcgggtat ttttcacagc ctaattcctc 1380

cgtatggcgc cactactagc ttcgatgttt tctactcctt gcagagcgct aaaccacgtg 1440

ggagattgca caggggtcg ccc 1463

<210> 627
<211> 2232
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290611_G1, chr8:145851266..145853497, Cluster 4

<400> 627
tttctattgc ggtgcgccgg ggtgagccgt gagccggcga ggagactttt gaacgcgagg 60

tcgcgctttt gcccgttgtg gttgctccgt cagacgcccg agcccgacac ccgccccacc 120

acccggcccc gttcattttc cacgccgagc ggtggcaggc aagaaacaaa aagggtagct 180

gcagacgtac tagcatagca tagcatccag tggagtgggg gcagcaggcg gctgcgggag 240

cgagctggtg tcgtacgtgt ccgcttctgc agttgcgttg cccagcatcc cttcccgggt 300

cggtcggatc tgacggccgc tttgcgtgac tgccaggctt cttcctcgcc gctgccgctg 360

ccgctcgcgc gctgttgctt tttgccgttg caaaatacaa attccagaga ccttatttcc 420

tggctgactt ttcctcctcc ttcttcgctc cgtccgtccg tccgactgac ctttattttt 480

atccttttc tcccttcttt ctacctcgtt tctgcgcgct tctggtttcg tgttccagct 540

ttttggaaaa ctatttgccg ccttttgtta gctcatccat cgtccacgat ttgcggtact 600

actaatatgg tagttgtttt ttaccattca aaaaactgat atatataaat ggcaaaagaa 660

taaaggagag ccgaatatag gaaatgggtg gagagaagta gaaatagaag aaataatagt 720

ggaagggaat gtatttaaat atgaatagaa agtaccaata gaggaatttg ggaggggat 780

ggttgaagat agcctacaag tgcgtctcta actgcgttag ctaggcagct tacgaatcag 840

cgtgcgttag ttttccagta ttacaggttt gggcgcactc tggctggact ttttttagt 900

gtgggtgggc aggcaactgg gcattattta ggtggttggt tggttagtta caccgtcagg 960

cgttcacgtt agctggtggt ggaattgcga ttccaactaa ctgccgtatg ccacttaagg 1020

tgcacgcgcc gttgctggta acttgtaggt aaaatgcatg tgcctgacac accgcactaa 1080

ggctgtcagc agtagatcat atacagcacg agatttgcgc tgtagaataa agtttggaat 1140

aagtgacacg ataagggata agtcctgatc attaacatct gcgtccgcag ggtaagaacg 1200

gatagtgcaa cagaactaat gtggccatag ctttttatta tttctatata tatgcgtcgc 1260

tttcgcactc caagtagcag tagtaggcgt acactgacag gactgctaaa ctgcagttct 1320

agaagcacta gctgatggat cttgttctct cctgccctac ggtccacctg tacaatactc 1380

acctactact acctatattt ttttttcct ttgacatcgt aggaaggcac tccctacggc 1440

ctgatcgctg cctgtgccga ccatgaagtc aggtcccggt cactttctat tcaacaaatt 1500

ctactgacga ccgttgagaa cacctggttc cggaggatcc tacggcgctc gtgcccttag 1560

ttcgcgggct tccactgcag ttccgttcgg aggtcgccgt ctcccgcgcc cctccctttt 1620

ctttttttct tttatatgcg gcgtccttcg cttttcctac gcgctagctg actgcgatgg 1680

tggtgtggtg gcgtggcgtc gttcggtaca cctgaccgcc cgcgcgcgag tgtcggtggc 1740

cggcatgccg atccgctggt ggtggtggct tcgggcagac ggcctccgga caccaccagc 1800

tgaccagcac caggcctagg cagccaggca acaaggcacc ccgcgcgcga gggcgaggtg 1860

actcaaaatc agaaaaattt ggttgtctag gaagtgacgt gaggagcaac ttcatgactt 1920

tttggatggg tatgcgggct caaaatcagt aagcccgagt acgggctaca ctaatcctag 1980

ctaggatcac gggttctcgt accgtttaca gtagttcact catcgtcgcc taaaatactg 2040

tcttacacta tagactataa tttttataga aagtggagtt tgaacatata gatgaagata 2100

taaatggata agtcgtcgaa gatagcctaa acatctatga gacaccctat ctagccagtg 2160

tgttgtagat caaatgaaca tggcttaggt ccactcagtc acatgtcagg atggcaaatg 2220

agaacatact tg 2232

<210> 628
<211> 1567
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291853_G1, chr8:151725628..151727194, Cluster 4

<400> 628
agtttgattg gacaattcag tcatttagtg ccactaggtg ttggaattat gtttgttgca 60

tttaggccta gtgacacact cagagagcaa gcaaaaaata cttatagaaa acactttgaa 120

aaaagttaac tctgctctaa catgcttggt aaaacatttg tgagttgtaa cacttgtaag 180

aacgttgaga gtgctctcga tgttgttgtt aagcacactg gacatgtcta gcctgcacta 240

tatatatgga gactatggtt ttcacgtgtt cagtttttcg ccaagaatca aggggtccat 300

tgtgaaccat ataccactca ctggaaagga gtttttaggt gaacatagtc tcaccgcaca 360

tgcctggtgc tgacacagga cgctgcacct aacagggaat tcagagagtg tgtaaatcag 420

gtccatcagc tctaacatgc accaaacatg ttatatgtca tgtttggtgg tgcactagac 480

acctaacaca cagtaatgcc tagtttagag tcgttggaaa tatagccttt gggacacgcc 540

aaatgtgtcc attgtaggca catgtggtgc attggacatg tctagtgccc ttgcaatagt 600

ccaccgacaa ggcactagtt ggatttgttt ggggtctaca aatagacctt atggaagtct 660

ttggctacat ttttggcacc tcatacactt atgtacacct cttgagggtt gagaaacaca 720

ctccactcac ttgcatccta tggaacatca tttttgtgaa attgaatagc ttctagtgca 780

ttgaatttgg ttcttgcatc ttgtggaaat agttggagtg gcttggaatt gttatgctct 840

tattagtctt gatgattgtc gtcacctagt cgatcaagag gtttgtggga tagttgagcg 900

gtttggtgat tgttgttggc ttcaaccatt gatagtaagc gtctcttgtg ctcattcccc 960

atgggagatt cacaaagagc aactttagtg ggatcatggc tggttggagt gtctctttag 1020

tatggtcatt acgacgctcg agtagtgggc ttggcatgtg atgctaatta gtgtgtgaag 1080

cacctagctt ggattttcca caacaagggc ttaggttggc agcaagaaac taaatctcag 1140

ggatgaatca ttttgcttat ttcacttgcc taaattggtt tgcttactat aaaacttgta 1200

tttttattct tagtttttc ttgataatgt tattagttgc ttgcgtagct ggcataatag 1260

cagtgtaatt gtaagtttag ttactcttgt tagtagcttt gctagttgta gttctctctt 1320

gctaagagta gattgtttgt ttgtatgaca tatacgtgga aaccgagcta ctagaattga 1380

ttagagggct tacctgtggt gaaatagagc tagagcaagt agtcgcatta gcaccatctt 1440

ttgtactaat caaacttttt tctaatggtt tatgagtttt tagtatgatt tttatagtat 1500

attcgccctc tctgaacatc taaatcttat tggccaccaa caatttaagg cttagcaact 1560

tttagtg 1567

<210> 629
<211> 2163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300708_G1, chr9:17629486..17631648, Cluster 4

<400> 629
aaccacaaca aagtgtttag gggatgaaca gtgacacgct atatctgggg ggagagagaa 60

gggggccgac gcgtaagggg cgccgtaggg ggcaccgctg cggctgtaaa atgcccctac 120

gcgccgcatg caaggggagg gggctgggat ggggacagcg ttgcgcatag cctcacctca 180

ctacgacgct acgcttgcct ggggccacac gtcagcaagc tcttctccat gtccggcctg 240

tgttgctgtc ccgtgggatc cgagcatcag tcgcgcgccc gctccctcgt ccctagtctc 300

gctgcagcgt tgggcccacc tgtcattact tcctccttcc ttcgtaacag ctcccgctca 360

gctcggagtg gacgcacccg aggcggcaac caccccaagt ctccatagag aatatttgtg 420

tttatgcaca ccccaacgac caacgttaat tttttttgc taaaatgcac atctgtgtct 480

atgactctct cgaactggca tgtcctagcg acgcactggg tccgtccatg atggaccagg 540

accgttagat cagatacttt ctggcgggta atgatgggaa acttcctcgg catgggggca 600

ttcaggttcc tcgggcggtc cgtgttcaac ttgacaaacc ggatggcgat caaagtggac 660

gagaaccatg tttggaatca cgttgtgcat gtacgccagc atctttggga ggctaatacc 720

cctctggtcg tcgacctgcc tcgcagccgc aagagccatt gaacatcatc gtcctccacg 780

ccagttcgct aggtaacact ctgtagttcc ctcagtggtc tgtatgtcaa acgtctgtac 840

atcaaattag catattgatg acgctagttc atatgcacat acattcacta ttcttcttgg 900

gaacttactt accatcttgt attcttgtgc ttgatgaaat gacagctttg ttcagttagg 960

gaaaaaaaac ctgaaacctg ttgtagataa gcacaatcag tttaaaatat ttagttattt 1020

tgagtagtca accaatagag ttggccttgc tacttattgc ctttttttgt catttaccaa 1080

actgttttag attattgaat tgctgcaata gttggatcaa ccattacatg cttcctagtt 1140

gacttgtcga ttgcaaattc agctagtata tatgaggttg cgacacccaa atgtggatgc 1200

acctcaacct ggacccgcat cggcatctga acggtcaccc cccaccaccc tcttccgctt 1260

ccgcacccta gaggcatgtg agagcaggac tgctgacagt aactttggga ttggtctccc 1320

gtatacaatt actccagaat agaccgtagt ttcttgcttc atatagtttt agagaaagta 1380

attcttttgg tttctggtag tttaattgga ggcacagtcc tctgggtctg ccctttcat 1440

tgtcctggca agaagcagtt tattttgacc ttttcagttt acagcacact cgcacatata 1500

ggaggccact ggggatatca gtttacaaaa gttacagaca caaaaagaac atcaacactg 1560

ccaccaagaa gggcaaggaa acactaaaca agacaagctt gaacgctcct agaacacttt 1620

ttaaattgct attatgtcac aaacctcttc atcactccgt cgaaagttat ggatccagcc 1680

cttcatctct tccaacgtct tctccatcgc aacttgatat ttagatgata agttcacacc 1740

ccagatatgt aaaaagagat agattcatgt agaacaacaa gtgtgttgtt ctgaactcct 1800

tatcaaacgc cattttattt ctgttacgca aaatcaccca catcaagcct gctaacagaa 1860

aaaggagaaa gaggttacag tgaatctacc caattaccaa aaaaaattct ccaccgaaca 1920

ggaaatattg ccccaaccaa gcatttgttt aaggcggcgc caaacaaaga gggacaggat 1980

acagtggaag aagatatgat ccaccgattc atgaccctga cacaaggagc agaggtcact 2040

ccctttccag ccccttttct taagcacaat atttgcctgg attttcatat tatacaattg 2100

ccacaaaaca ccttaatccg aagcggcacc ttgcacttcc atatggtttc ataaatgctt 2160

ttc 2163

<210> 630
<211> 2919
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_302770_G1, chr9:31209048..31211966, Cluster 4

<400> 630
ccctcctcct ccaagagctt ttgcttttca cgggaaaaaa aggtgaaggg acaaggaaca 60

gtgcaggtgc gcgcgcactg ctggtcgcaa ttcacaaact gcgcgcgtgg tgctcatcgt 120

gctgcggccc cagttgtccg tcgacccccc cgcgcgcctg ccgagagggc cggtgccgca 180

tttttcgcca tgtcggccgg gccggcgtcg ttgggtcttt gcattgggat tgggatcgat 240

cgggcggcgc tgacccagtg accctcccgc gagtcaccac cgacccgccg tgctgggcgg 300

gggagtgcac gccagcccgc ctgccacaca aattacgtgc gcgggggcgc gtttgggatt 360

tcttcgtcga ccgctcgtgt acgggtggat acaaataacc agtagaacaa gtcgtcgccc 420

tgacgtgcgt ggtgcactgc aggcggcatg ggatatgcat ggtggattgg atgggatgac 480

acggtcgccc atcgcccaaa ccaacggcgg cgccgaccac ggctttcgtc ttcgtgcctg 540

tgtatcccta gcttcctgtt cgtgcgtacc agggagggtc taggctttga gcctttgacg 600

gttgcacgat ctagatggaa attgatcggg agtacacccc acccccctgca gggggctaca 660

gctgctctgt acgaacccta ctaccactgt gttgtgctga tttactgctc tgaacttcct 720

ggaggtagtg gtggctgtgg aggttggtac aagatccatt gcatttttt acaaattgtt 780

tagcagaacg gctccggctg tatttttat ttgatgcata aggcaaatgc caacaatgcc 840

aatgcgtgac catttgcacg aacaacatgt acatataaac agtgcacaaa caattcatgg 900

ccatgataaa gttttaaaaa ctgatgatca aatagtttgg cttgaggcgc gggggcggct 960

gaggttagcg tgggtataga catgagttct cggtagtttt cttgcgaaaa ccggcgagaa 1020

aaagtaggtc tcgcggcgag aaacagcgaa aaccgtctct gttttaaaaa aacaattttg 1080

aaatcccaaa ccgttcggga acgtcggatt tcgacagttt tggtctggtt tctcgttttc 1140

cgcggtggcg gggcgaggaa tttgtttcga acgggattgg taaacctggg tcccatgcgt 1200

cctagatctg ggagaactgc tgggacatgc ttgtcgcgga gctgcaatgc agccgcagta 1260

ccgatcgtga tggcagtcga attattagct tccttactca ctcactcacg caccaaccaa 1320

acatatagca atggcacatg acatgatgag tcctagactc ctgctccgga caaagcatcc 1380

agctatggtg gcctgttaca gtacggcgcg cagcagttat tgcagttgca agcatgattg 1440

ctcagatatc tttgtctttg tttccttgtg ccctccacct acctacctat cgcaaccgta 1500

taggtagtgc ctctccatcg atctatgatt tgtctcaaca gctagctgtc ttgattagat 1560

tgtgtgcgcg acgccattat tactagtgta tgctgttgca ctcactccgt tgaggaattg 1620

agttcggcga acaaacgccg aaaagttcgg tacggtgcac atggctgtcg tatgggcaaa 1680

gctagtagct caatggttga ataatgtggt ttatttgtta agtatttgtt aagatttgtc 1740

ctttttttca tataagttat gttttggtta tccgactttg tctgaacccc ctggagaaag 1800

taatttgggg aaaaaaattc cccttcaaaa gttatagaac aactgccacg agattaaacc 1860

agttcaactg caaaaatcta ctcactcttt ttagaaacat acataaaaaa tccactcatt 1920

ttgagttaga tgctccacgg ctagctagct gatttttgag tcctggtttt ttttgccatg 1980

gcatccgaga acgggaatcc ttcgtccact gttagatgtt gactcgactg acaagaagga 2040

tctagagctt tcctctactc ttcgcaggca ggccgcggaa gctgctgact ttcaccaccg 2100

acccgccgcc aacgccggca cttgccagac cgccacgcga atgaaacgga gcgatgatgt 2160

cgtggtagta gtacaatttt ttttcccgca cgccgcatct ttttacgtgc gtttggttca 2220

catgattgaa gcagagaaac ggtcaaggta gacttgtcag agggctcaat ggcagtagcc 2280

gtcacccctg cgcagaggaa ggataggatt catggcaaaa gggagctcag cctcttcctc 2340

cttcaacatc ttagattagt atcaatgttc tagtttatta tttaagtttc tttttttctc 2400

tctcactata gacagagagc agttctgttt atgttagaga ggtattacca agttttttt 2460

aaaattttta ttgaagattt tacttatcta attataaaaa aagattagca agctgatcct 2520

cttatcttgc atggtgacaa aggtttactg tcttctttta ttttttagtt agttagttta 2580

tatttagttg taaatggata tatgtatgat ccaaattttt tctaaagata tgtttgaaga 2640

cttcaagtat atagttatat ataaaaacac tggtttaaaa tactggtttt acccttgcct 2700

tactgctcca tcccagagaa gccaccgttg gctgacccct ctcccagcct ataaaaggga 2760

gagacaggtc tcagagcaag gagatcaaaa ggagagagtt tttgaggaaa ccagacgcct 2820

tcagacggac acgaacccac aaggacgaat aggaggagga gcgtcgataa ggaccaggag 2880

gctagagcct tgccaatcca agacttagct aggactcaa 2919

<210> 631
<211> 2067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_309558_G1, chr9:74591393..74593459, Cluster 4

<400> 631
accctcaaaa atttgcaagg gaaacactat ggataatggg gggcaggaaa gacaggttca 60

tctgctcttg gagtgacccc tatcagtcaa ccgatcaaag tcatattcag aggcctgtat 120

tatgatgggg attcgaagca gggaaccgta ttctagctag ctagccaaca atcgacgcga 180

gctgagggaa aaacataaga aaagaaaaag gtagtttctt tctcaaaaca tggtcaaaag 240

tagtttgaaa aaaaaaacga aaattgtgtt catttcttgt atccgaaaat ttgtacatgt 300

tcctggtttt gtgcacgttt gcaaaggtgc tcgatatgac gatatgtcct acacttttgg 360

aagtactaga agctgaagtt tcgtctggaa tcaattgttt gggcacctcc tgaagctaag 420

ataaagcgat aacgcttgtg cttccggcca cagaaaccag catgcagatt catctctcac 480

cctgcctctt ttgtgtgtgt gtgtcggccg gagctagcac tgggcaaatt aaagaaaaca 540

aacagaagca ggcgcgcggc gagcgtgttt gttgcgcacc tgtcgatgcg gttgcggagc 600

ttctggagga accgctggtt gtcctcctcg gcgacgcgga agacgcgctc gatgaactcc 660

tggcgctcgc caacgccgag cttcctcacg tccacctcct tgaaccgctg ctgcttgccg 720

ccgtcgtcgt cgtcgttaac cccgcccacg gcggcggcct ccgacaggat ggcggtgcgc 780

acgcggctgt aggtggggag gcgctcgatg gcggcccatc gcagcgcctc ctcgtcgtcg 840

tcgacgcggc cgccgcggct gcttgtccgg gaccgggagc cgtgctgcgg catgaagacg 900

tcgtcgacgc cccacgcctc catgcccatg ccgcggccga tgctccggct catccgccgc 960

cccgactccc acaccttctc catcgcgctc tccatcgcgt gtgtgactgt gtgtgtgtct 1020

atatatgtgc gcgcctgtct cttgtctacc ggccggtgtc gcttgatcgg tccaggccgg 1080

gcaggcagca cccggctccc ggcaggtggt cgtcacgccg ctcttgcctt gctcagacgt 1140

actgcgtccg cgcgctagac gcctggtgtt gccgtgctag gacggagctc ctctcaggca 1200

aggccgcagg ccgggcgctg gctccttctg cgcatgcatg cacgtcagtg cggcagttgg 1260

tggtggtggc ggcgtgcgag ctgcatgagt agcctggatt ggaagggagg agagaggggg 1320

gtgagaggag tgagcccgga ggtggagttt atatatatgc gctgctgcgg gtggcgcgcg 1380

gggcggggaa atggccaact gaaatttcca attgttttta ccaggcctag gtcgcgtcta 1440

ggagctacgc tgtgctctgg ttgggttggt ggggactggg gggcggcggc gaagcccttt 1500

tggctttcgc aaggaagcag ggaccggagg acgactcgcg ggggcatttt agcggcgctg 1560

cacgcggttg acccgagtcg accgcggtgg gtggacacag ccccggccgg tgctgagtgc 1620

tgagtgctga gcgccccacg cggtaggtgg acacacacag ccgctgctga gcgtgagcgg 1680

tgagggcggc ggatgcgtcg tccgtggacg tggctgcatc atatcggcag atcagaacca 1740

gatggcagcg cattttgcg ctgtgttgtg ttcatgcgtt gactgttgag tgatgtgttg 1800

cgggagcgct ggtggccggc cagccgatct agccgctgct acacgtacgg taggaggagt 1860

gccgtaccgt tccacttcta gcggtctagc tagtcacttc gtctgcattc cgacttccca 1920

gcagttcagt ggttacgtgt caggttttgg cgcacatggc tgcctctcat ttcgttctgt 1980

gtggtgtggg caggccgtgt gtttcatgac gcatcggcct cgctactcga tggccggcca 2040

ttgcagtttt ggcgagttac ttatgat 2067

<210> 632
<211> 1630
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31621_G1, chr1:194488362..194489991, Cluster 4

<400> 632
aataacctgt ttggatgtcg atattggagc acggaattga gaattgaaat tagctttcct 60

aaattatgtc gtttggttgc acacagaatt aagatttgaa atcagagacc caattccctc 120

aaattggact ataactagaa actcactctg ccaatatcga acgtcacccc tctgtattgc 180

gtggaattag accgcacaat tccaaactct aattcaacga catccaaaca atagaattgt 240

aattacatct catttcaata tcatatctga tttggcattg aacccaattt aatttcatat 300

cctccaatat cgacatccaa acaaagcata aggctatctc tagcagagcc cttaaatgga 360

tttgcgcgct cgcaagctac tacagatcat tccagcagaa tgcggatgag tacgcggaaa 420

attagcctaa ccaacgggtt atctctcctt gtccctatac gcgtccataa cactcatgtg 480

aatgtatacg catctgttac actcatgtga atgaaagggt tgctagagat agtctaagta 540

acttaaatat agagtacaca caattacact ctaaacccta aaccataaat atagagtatg 600

tacgcttgca ttcatcctat acgcgtcggt tacactcttg ttcgttgcgg cttgttgcga 660

ctttaatatg gctaaggtta tggcttctac catattttgt ctttatggat tgcatctaca 720

tcagtttgaa tatttaagat ccctttctct accaaatatg ctttttaaaa cccctatcaa 780

ccaaagctaa gctctaaatt caccgtataa acacaaaata aggacattac gtcgccttta 840

gccagtcaat tttggggcaa ctacctactt gcttcggtgg acgatgtgcc tcaacaaggc 900

cggtggatct cgttgggacg atggaaagcg cctatcagag aaagaagaaa gagagggaga 960

gcgaggaagc cgcatgcgaa tcctccgtgt caactgtcac gtcgtcaatg gtgcgacaac 1020

acttgtaatc tcacaaataa acgttttgct gggaatgacg tgtcggcatc gtttgaccaa 1080

tactagccaa tagcgcgcgc cagcgcgcgc attgaaatta tagtgtgcca taagaagata 1140

atagtgatta ttatgtaata tggttattat aggaagataa tagtgatcat tacgtaatat 1200

ggtcatcata gaatgtatca acgtacgtac aaacaacatg tcttcaacaa cgttaagtct 1260

acgatgcata gacaaaatat atttggatac tgttttccaa ataaagcata aacatttgtg 1320

ttagacaaaa gtttgtgcgc ataatgacta agattaggaa caccagcctc atcattttct 1380

ttccttggac aatagatctt acaggaaaaa aaagcttggt caattcatgt aaaatgaatg 1440

ttttgtgtt ggagaaaaaa atgaaggtca cgaacaacag tcatatattt tttaaaaaaa 1500

tagcgaagat cagaatatat atataccatg tttttcctgt tagagattgc tgaaccggtg 1560

tatggtgaga tgactaatga agtaggtgct cttcgagttg ctagtataac tatttgcttg 1620

attcattagt 1630

<210> 633
<211> 1763
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320642_G1, chr9:136389490..136391252, Cluster 4

<400> 633
tcaaatttct ttgaccatga tttctattct atttccctaa ctttacagtt ttttttcca 60

acccacgtcc tggtggctag cacaggggag gaggtaccac tgtaccagga cgtgccctgc 120

ggtctcttca tttatttagg agtatagggc agcacagggt cactcgaaat cacacaaccc 180

agcacaggat tatgatcaat gtgaaccgcg tatgactgac ggtcaactca gcgtaatttc 240

cgcggcggag tacccacgag aacaccgtag caggaatata atatagggca gcacagggtc 300

actcgaaatc acacaacagc acagcagttc cacttgccgc tcccaaacat aatctacaca 360

catcgttgta catcacagta aaatttcaac attttatttt tactggtcat gtgtatgtcc 420

gaattccgat gggcaggttt tagggcggcg cacatgatca ctttggcacg gttcaaaaca 480

cggcattatt agcgtggcgc catactccaa aggcatcagt tttgggccat atgcgtagat 540

cactgatacg aatacgatgg ggatggatgg ggctgcctat acatggcaca acccgcgtca 600

caggctgtgc ttaggccagt ggcatgaaac acgtacgaaa tatgtccttg aatatgaaat 660

gggtagccat ttattagttt ttggaaagac atgctgcaga cattgtcatc tacaacgtac 720

atcgtctcga acacacgatc agatctcggt ggtgcaataa aaactgtgca aagctgatac 780

agtaagctac caaaaatatt gtgcaggatc gcagcgggct acggcacgaa tactgcagca 840

gcagttcggc caaggaaaaa gacttgttgt ctcttgtcgt tgccctgaaa cgatataaat 900

taaagcacga gaggagcagc aggtcggcca acgcaaactt agcggtaacg aatttgtaat 960

gtccctacga tgtctgggcc ggtgggccac acccccacat ggtatcccca ggctgacaac 1020

cagaaacagt agttgcacgc tggaatagag agagaaagag agtcgagtca aagagtgttg 1080

tcgtgcacat actacgaaac tgctcctcac aaacacacct tgatgtcacg ttcagaaaac 1140

ccaggttgct tttgtgctaa ggctcaacta atggacaggt aagctgaatt tggagctttg 1200

cataccctat agtactcaag gtcactgctg tcaaccatca tccggtgttc tgatttagat 1260

tcacatgact aaggctagtc gcaatggaga gtttcatagc cttgtttttt ctaagagtat 1320

cgtgtcatat ataatgaaat aaagcatagg tagaacaccc actactatag tttcataggc 1380

attcaatttc ataaatcata gatagttggt aatcgtacca agagagagag ctttgttctc 1440

tcttcttaaa aatgttggaa caccatcgaa agtgtttatt gtggcagctt attaaatgca 1500

aataaaactc ttatagaatt ccctttgaga ctgacctaat agtccaatat tagctagcta 1560

catattagtt ggatgttgtt tagatccact agctaaagat agatgcattg gtcgttttgt 1620

ctctaatgcc cttcttcttc tagttatatt tgctattgat acacatagat aaaagtggtg 1680

tgagggaaga agtgtttttt tttcacaaca tgtagatgct attagctggg ttaggataac 1740

tgatggttat tagctagaca tag 1763

<210> 634
<211> 1969
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_321023_G1, chr9:138238700..138240668, Cluster 4

<400> 634
tcgagagact gtccgtgttt tgactgtcgt cgaaaacccc ctgtgtggct ctagcagaga 60

tgggacggcg gcgcaaccgg acgaggacgc ttggaccggc tggcggagac cgaccggcga 120

ccgcccctgg cccatcaatc catcatcata ccacgcacgc tagcctccaa ccgccacgat 180

tcgccacctg cactgccaca aggccaccac gggtccacga cgcgcggcgg caaaacaaca 240

cgggccacag gcccacagcc cacagccgcc gccgagccga gccacgcgcg cgtaccggtt 300

acgcttcgag ccggtggagt gggcgcccac cgcaccgtag ggcggcagga tcgcgtgctc 360

cggttcgcgc agcgaccccg cgcgcggcgc gtcggcggga cgcgatctcg caggctgggt 420

ctcgggagtg gacggtggga tctgttcgta gctgatgcat gcggcaggct ccacttttc 480

tccgtctgga actggttatc caaacaaggc cggaatggat tgcagggtgt gtgcatccct 540

tagatcccta tattccagta acgccgacga gattatgttg caaagctggc ttcttaataa 600

caattgtcca tggcgctaaa agggacaaaa gaaaacaatg gaacgaaagg aggcaggtct 660

ttgcatatga tctttgcttc tagaaccaag aggtgagctg tccacgggac aggtggtgga 720

gggatggaga gaggataata ataggccccg cgggtaggct aggcctcatc ttggccgctg 780

atgagtcatc acacgatatt tcgttctctg gcgcctctga ttccacatga aaaggacgaa 840

tctgattcca cccagcgaga cgtaaccggc cggtcgagat aaggtgccat gcaaagacat 900

acaaccggcg agtgagcgag cggtgctgaa gcggaacgtg cctgtgcgtt gggtggttgg 960

ttgatgacaa gtggggcagc cgctacgaaa gcgggatcga tggcgtggtg ccgtgggccg 1020

gggaatatgg cggtttgatt tgatccttca gtgatcttct gaactggaat actcctatag 1080

tatagtagtt gaggtctggc gcgggtgtca cttgtcgcgc cggccgcatg gcaggcccga 1140

agggctcagg ctcaggctca ggctcaggct caggcggaaa gtccagtggc tgtgtcatcg 1200

ttgccgccgg atggatggtc ctctctcttg caagttgcaa cgacggctga gaaccacaca 1260

ttccacatgg agtaggagga gtacacgtac acctactagt cagtagtcta gtcactaggc 1320

agcgaagcga gtgtgccaga cgagacgtca agactgtcgg tcaacgacaa ccccggccag 1380

tgcacctttt ctttccttcc atgtttctta cttttgcttc tgctctatgg aaaaaaaaaa 1440

aggttgacgc agcactacag cccgccggaa agccttaacg aaccagccga tcgaccttga 1500

gtacttcctt cgtctcgttt tttcgacaag atgaagaagc tggatattca taacatgaag 1560

taaactttac tgtattagtt acagaataca tttctatata atttttaaat gtatatatat 1620

aaatatatat attagttata gacttgatta aatttgggtt taagtcccgt tctttttaca 1680

gacgaaggaa gtaaattcgc tgcggctgac cgggagggga tatacatacc cctctagcct 1740

ccaacgcggt gctatcattc gctgcggcta agctctatca gactttctat cttaattttt 1800

attttaactc tattttgtaa ataatgtgca cggcctggtg gaatggcctg accggaaggt 1860

aattcgctgc accatgtaga ctatagagag agcatcaact tctcgcggta ccatgctctg 1920

ctgcaccacc gccagggaga agatcccgtg aatgaacagc agcaggttt 1969

<210> 635
<211> 2103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321094_G1, chr9:138688154..138690256, Cluster 4

<400> 635
tcgtatctgt acaactaggt acggtgctag ataccgaaac actccgtatt gattggagtt 60

gattgattga gtttaaattc gtatcaaaat aaaatcattc ataaattttt ttcccaatct 120

cttcctattc ataaggtata taaataacct aatctgattt gcgcaactat gtggcctcac 180

tgatagatat ccatggctct taataaattc cgttgctccc gggttcacat gctctcgtcg 240

tcacagtctg cgcagacgtg gcaatacggt agtgtttcgg gtgggggcgg ctttgatgaa 300

tgagacgatg tgaagcatcc atccatccag ccttttacaa tcttgatgat gtgatgcgca 360

ggtggtccag ctcacaccgg agccttggag tataatcccc gcatctcttt aagcatagca 420

gcccagcatt cccgtctgaa cagatgtgtg gagaaaaaga aaagaaaaga aaagaaaaga 480

aaacgtagct ccaaaggtga aatatttatt tattatgatc taggatcaca aagtgtctac 540

agatttcaaa acagttggag ctacggcaca cacaaaacac acacagcaag acaggacagg 600

agaagctttt gtgtgtgagt cgcgtgaccc cccatgtcct tttccctttc ccttttggca 660

cgacctcggt tctgctggcg cggtatgttt tttttagggg aaacaaaatg gctgcctggc 720

tgggatcgaa gaagccgggc taaacatgtc caattgtccg ttcctgtgtc tggatccatg 780

catcaaggtg tttttgaaat ggatcggggg tggtgttctg cttctgcctg ctgacactca 840

tgacacccgg ccttgtgcat gtgacacgcc cgctcagggc gtggtagcgg gcgtggttgg 900

cgaggagggc ggcggtggcg tctgcgcatt gtgcttgccg gagaagcgtc gcggctatca 960

tcgttcgttc gttcgtcgtc gctcccggca caaaagcccc gctcccagat caggaatgat 1020

ggtcgctggg tgacgcgcgc agtgatcatg ctgaggagaa aaaaaggaag gcgtggaccc 1080

ccccaccccc cccagtagaa atagaaggat gcttttctgc gctacatcac ctagtacgta 1140

gaagttaccg ttggtctccg ttcccagtgg aggagcgaca agtagagtct ccatcttcgt 1200

cgcgtttgcc attctacttt gggccccttt acactttctt ctacctgttg cttttcaacg 1260

tacgccatag ttttttttt tttgactgcc cgtccggagc ttgttgagag tctatccatg 1320

catggtgacg tgacgtcaag accttccagc cctccctcca gctgtgtgga ccgtgtacgg 1380

ggcctggcat tattcttgtc tgtgtaagct cgtgtgtgga ggaattattc ttgtctgtta 1440

agctcgtggg cgaaggaatt attcgtacgg tacaagaaca cggcaggaga atctcgtgta 1500

gctctcgctt cacaggcttg ggcggtgcgg cagaatggcg aatgccaata gacacctctc 1560

tagccgattc atctctgcat ttctcatggc aggtctgtaa agaatagata tggattacac 1620

gctcagatga ttccgagtaa ataagtgagg agagagagtc agaggcgggc ctaggatttg 1680

gaaaacgggt atttgaaatt ttagtggcca cattttttta acaatataaa tttgttattc 1740

acggggaaca aataattatc catcaggtac atatatagta taatttgtta ttcacagata 1800

tgagtatgaa tataataata tatttattgg taatttttt atatgtatgg atataccgta 1860

tccagaactg ttacccgatg aatactgaca tgagtacaaa tctataccta cgaatatata 1920

tatatatatg ggtatgttta tggattgaat ttttgtctcg tagttatgga tttgtaaacc 1980

atatactcgt gtcccaaccg cgcgattgct atccttagtc gcactgtagg gaaataaaaa 2040

aaagccagca aaaggtgaag tttggactaa atagctgtaa aacggtgtta ttttatgttt 2100

tta 2103

<210> 636
<211> 1696
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322306_G1, chr9:145067154..145068849, Cluster 4

<400> 636
cgtgcagtcc tcccgacatg gggcgctcgc tcgctcgcgt gacggccgcc tgtcgccagc 60

tcgccgtgcc atggatgctg gacgctccca cgctcggcgt cgcgggcctc gcctctgtgc 120

cggctgcgcg cgctgtcatg ccatggcatg ggcgccaggc tcctgccggc cgatacacga 180

accgggggtc gggcgttcag cacggccggc agcaaaagcc cccgcgtcag ttcctgcttt 240

tgtggcgccg tcgtgggggc agccgagcat ggcagtgcag cactggcact gcagcccacc 300

caggacaggt gagagttggg atcggtttgt agtcacgttt caggtgaggc cgaacgcttg 360

ctggactgtg ttcgcctgcc tgtgcgccac ttgcctagtg cttactcctg cctgcggagg 420

catagtcgca caagccctaa acctaaccgt aacacgacgt tggacagacc gaccggtttt 480

gaaccgagga aagccgaaag ccgtcccgtc ccgacctgtt taaaaaacag caaagcctgc 540

gaccgcgctg ctaaacctgt cttctcccca gatgcagaag aaagcaagga gtagggttca 600

aatgacaggg gcagcaggca gagtaaacaa agcggcaata agttaagcgc acggcacgga 660

tgatcatcac gatgcccggg caggctccaa gagcccggct cgagacggcg ctttattgat 720

cagtcagcta gccctctaat taattattta ttaatcagtc agctgagcgc gattaaagaa 780

cgcggcctaa atcccggacc ggcggcgata ggagcggcgg tgggggctca cgagacccgg 840

accggactgc gggcagggcg ctgggagcgg gcgcggagag aagagggcgc cgcaccggcc 900

ccggaccgca tgcacggggg gggggggga ggcagcgtgc ttggccgcgc ggcctggggt 960

ctgaccggtc aatgtggtcc agaggggtgt cccagcgcca gcgcgatgcc aaatgtgcca 1020

gatgccaacg ccatccatcc gcatccacgg gctgaggcag acgcaggcag ggatcgaggc 1080

gaggagctgt cgagctgagg aaggggattt ctcgatgctg ccaaccacct ttgcagcctg 1140

ccaacgcccg gggcggctcg ctttgaccgt gacctcacgc accggccacg gccggcactc 1200

ggtcgcttcg ctttctggga cgggctgtcc ggttcacggt ctgcctctgg cgttgccgcc 1260

tgcatgcaaa ctgtatctat cccgtccgtc tcttcctccc ttttattact acttttctt 1320

cgatggctgg aggtgaatca tgggatgaga cgacgggatg agggagggac gtaggcgctc 1380

gggcttgggc gtctgggcaa gaaaatagtg acgccacgag atgtgggcca tgggatgaag 1440

gggcatcggc agcctgattg gttcctttgc cgtgcccgta ggacactcgt taggcagcaa 1500

gtgaagtctc gtggctacgc ttcacgaaat ccccggctag ggtgcggtgg tgtggagtgt 1560

ggaccacatg aaactgaaga aagactacag acacgtctat accgcacggt cgcgcgcatc 1620

accatcagac tacagacatg tgtagcgttc tgttatagaa accacaactt tattttggtg 1680

aaaactcctc catcta 1696

<210> 637
<211> 3016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323167_G1, chr9:149451670..149454685, Cluster 4

<400> 637
gggagcggga gtctaagctc caatgtccgc agatgggccc ttcatccgca ggcccttgtt 60

gttgggctaa cccaacttct ttcaagtgtg agttgggcta ggttgtagtc ttgtagagaa 120

acagagcgca ctgtccaatg ggacacatca gaagaaacgg ccttgttttg ctgggccacc 180

aaaccaaaat cctaagctcc ttacagttcg acgaggcagg agcttgcaca tgcaggttga 240

cagcgacaag tcggtaacat ctttataata acaattcacc taattcagta tccacacgtc 300

cgattcgaac tgaacgcgga ggaacgagga cttcaattgg cctgataaat accagatgcc 360

atgttaaccg aacgcagtgg tggtggtagt agaaggacca acggtcgagc aagccaacac 420

gcgcgcggct accacacgga cggtgacgca attcacttca cggcgcccag cagagaagca 480

ggccagcagc agcagcagca gagccgtgtc cgatccgtat gaacagcgcc ttcgcctgtg 540

cacgaactgg ctggcgcagg cggcatgcag agcagagcac tagagcaggt gtgtaaatga 600

ggatcgccgg ggttgagttg atcagaccgg ggcgtatact ccagtaaacg ccgccttaaa 660

ggccgcaccc aactcaggcg agcgcgagcc accgccggcc tgcctgcctg cccgctgtgc 720

accaatggcg actactaact ccccatatat attaattgcc ccatgtagag tagagtagga 780

gtacgtgcgt accggcgcag cagcagtcta cgtactcgtc atgtagtacg tattatatac 840

tcctcctcct gtatatccca ccggcccgcc gaaacgacga cgacgtcagt gtgagacgac 900

aagacaacac agcaattctg gtgacgtacg tacgtagcgc gtactcgatc tcgtctcgat 960

cgtgtcttcc gcgctacgct tgccttcgga ttccgatttt gattaaaatt tcacaccacc 1020

gtacatatac catatggtaa catctatgcg ttcagtttac tgcgctagct ctcaagtcgt 1080

ttcaggtcga cgggcagcag agatgctaga gataacagga tcatcattgc caacatttat 1140

gcttgtacag ctaacagctc tgctgccaac agttctatgg agatcgagaa gacaacaaac 1200

ctatatgcca tgtcgtcgcc ttgccacgtc tccggctcga tctccatggc aacagggcgc 1260

tcacctcatg atccatctca acagctgctc tctctgcgta ttgaaggacg acgtcatttt 1320

tgtggaccgt gtgcacatca cagcttacat tagattagct tgtaagttga aaccagcccc 1380

ccatgcatgt atgagtatga caggaatcca tgcacagctg ctgatcaatc atcgtgcgca 1440

cggcagccta atcggattag gagtgcgtac gtaccaacta cagtacttct actccaccgc 1500

aaggaaaagc cggcctgggt ggttgtgctt tcagtgaaac tagaaaacgc cagcgtgtgt 1560

tgcaatagaa cgtgctatca cgtatggcgt gtggtgtgta gtcatctgca taatttacga 1620

cttgaggttt tattcaacga ccgagacttc tggtctaata tgtcttaaaa tggaacttcg 1680

tgtcagtaaa atatggtcag aagaattcgc ttttgacttg ctaattgcta acagtatcca 1740

tcaagttcag agatctaaat accaaaattt ctagagctta taaaatccgg atgagataat 1800

tgtacaatat cgtgtcggtg cccgagacaa ttcgagtgac ctaaataaca gtatccatca 1860

agttcagata tctaaatacc agaatttcta gagcttataa aaacccgaat ggcataattg 1920

tacaatatgc ttaaccgctt gttaagctgt taactttacc cttccacttc tgtgcataaa 1980

agaaggctcg tccttttttt tttattttaa tacgaacagt gcacccttg ttcgcccccg 2040

ggttgacagg cgcgcagcaa aacagggaag agaccaggca gagcagcagc cagagccaag 2100

ccaagcacac gtgcatatcc ttcatattcg ccccccaatc cacatacgcc gcaacctcgc 2160

gaccggtcgt gttgcatcgg acggcgggga gcgtttctag tggccagcga cctcgccatt 2220

ctcagcaaaa attaaagcag ccacgttgcg taggggcggg cgcattgaag cagatattga 2280

agggcagtta atgggaaccg gtgcacttca ctcgggctgc acgacgttgc caagagtggt 2340

cgccgtccac atttccccgc tctcccaatt ctactaggat tcgacagttt tttttcttta 2400

ttccttctcg atcgcaagga ccgatggttg cgtatatatg tcctttcaat gtactagtac 2460

tggtttacag gagaaaatta ttctatgcta ataaatgtaa tttttccccc caattttcga 2520

aacgaaattc tagagagaaa tgtgagcgat agaatttgag tttcgaatga caggatgctt 2580

gaaaacgtcc actttgaatt tgcagaccta aggccgacta ctcagcctgt gaatttgcac 2640

gggcgagcat cgatggctct cggcgttttt gaatcctgat cttgaagaga agctctgagg 2700

tagatgccaa atcaccgagg aaaagccaaa agcctgccat tgcgtccttc ccaaatatac 2760

agtcgtttat acacgttctt tcaaaagata tagctacaga ttctgggtgg ccatggcagt 2820

atggcacctg tatttctcat ttcccattct gtatttttg tcccgtctga cactattaca 2880

catgggctgt acgtagagcg cccgtccagc tcttaaattt acgtcaatca ataataacta 2940

gagcagaagc agaagcagaa gcgggacttt gtacactcct ttggatcttc aaatgtgtgg 3000

aactaccgat ataatt 3016

<210> 638
<211> 1604
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324071_G1, chr9:153433473..153435076, Cluster 4

<400> 638
acaatgttga acagttcctg agcaggaacc gatcttggac tgccgaacgg ccgagctgtg 60

gattcgtgcg gcgtcttccc tcctcccgtc atctgcatgc accttggcag cgctgataaa 120

ctggctgccg tcagtactta gtgcagcgtt agctctgtgc cctgccgtgc cgatccgatc 180

aacggactgc acgcgaacat gcagcggaac cttgagagca acggtgtaaa ctaattaatc 240

atcaaggaag tatctgaatt ccatacatct cttctctgca tcgtcgattg tgttttgttg 300

gctgatgcct gacgtgggtg ctggtttttt tttggccctc atgttctgaa tttccggtat 360

cttcgtcagg accatatact agaataatat ataatagcac tcatctatcc ggatcataac 420

aacaggagca ctgtcgagct ataagaaggt cacgaccaca ttagctccac agggcacacg 480

gtcaaaaacc atactagttt gattttctga atctttcttt tatttcagaa ggtgacaagt 540

ctcttctata gtgtattgag aacctgcctg ccgtggtcgg aggggaggag aagaatgttt 600

ggacacgcat caagattcaa gagtaacggc tcttattcat cttcaaaagc tgacaagcaa 660

ctgagggggc agatagttga attgggctca tccggtcttc aaatggatac ggaagtcctc 720

ttgtcaacgt aagagcgtat agagttttca attcagtcgc tttgcacatg acagacagac 780

ttggcgcaag gaataccttg ggaagaagaa gaaacatgca gctccaataa tccgtcgcca 840

tggcataggc taagttcata catgcttctt tatattatcg ccgacatctg tatatcatta 900

tccataaacc atagtagttt aattttctaa ccccgttttt ttttatttca gaagggcaga 960

agtctcctgt atccagaacc tgccttggtc ggaggaggga gaagaatgtg tggacataca 1020

ccaagagtaa cggctcctct agtctccatc atcttcagaa gctcacaagc aactgactga 1080

gggggggggg gggggggggg ggctgtcttc aaatggatac acaagtcctg ttgacaacac 1140

ataagcataa taaagttgtc ttccggttgc ttgcgcagga cagactgggc gcaaggggaa 1200

aaacaaacag gcagctccaa aacgattgga catttgttct tgcactgaca gtttggccga 1260

tgttgctaga accttgtcct gcaaagtttg aagccccaac tcgaggttct cagttttttt 1320

ttcttctttt ggtgaagatt gtcatgctca tatgctgatg gcatttggac atgtcagcag 1380

aaactaggga gcagcctctg acctatttat ccagttttca tcgttgatct ctccgtcctc 1440

ctccaagctg acgtacgacg ggactgcaac tgcaaccgca ccagcatcca gcagaactag 1500

atattgacca tccgagccga gactgcctgc aaagctgacc tgaccacctg ctgctatcgc 1560

tgtaatgacg cgcaggagct ggcggagatc ccgctggaca tcac 1604

<210> 639
<211> 1415
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324072_G1, chr9:153435110..153436524, Cluster 4

<400> 639
tgtacaggtt gaaacccaag aacagctgga ctcgtaaaag atagaggtag acgaagcaac 60

ggtcactgtt aacacgaacg agaaacaata ataatactaa gtcgtaagac acgcggctgg 120

tcttaagcct aattataaat cgcacgtagc tttcggcatc tggagacgat acgaacgacg 180

acagctaggt tcctactcgc ctgggatttg ttgcgaccgg agattctgct ggcagccgaa 240

gggaatcatg gagggctgta actgccaaaa cgacagcgcg cgcgaggcag agctagacca 300

tcgttgtact catcgtcgtc ccgtgcacgg gcactggcag atgcctatcc atatccatca 360

tgcatgctgc caacacagaa gttagttact caacgtatac tatatgtgtt acttatgctt 420

gcagatttaa tgggtggaag tgcaactgat ttagatcata tgagctatca ttgtgttaaa 480

catcatcatt attatattat tattatgtag tacgtacgat tctattgtta acgaaagggt 540

ccagagtccg gatttttcag atcaaggacg tcgttttcca ataaccttgg tctcatctca 600

ttctcatgct taccagttgc caccgccatt ggtctgaatt attgggaggc catattaggc 660

tgtcggctaa gaaacggccc aacatgccgc cgccacttcg ccaaagccca aagggcctgc 720

cctgttcgct gggccgcagc cgacaccagc cgcccatccg tccgtccatc tcagcccttg 780

cgagctaggg ttttgcccgc gtgcacgcct gagccatata taaacgacgc cgcactgcgt 840

ctctccaaac ccgtccctca tacacatcgt caaagctgcg ggcgtggtac cggtagatct 900

aatctcctgt taataagtat cgatttcgtt ttatttcctt gtttttcgg atcccaagtt 960

gttttgaggt gatgatcctt tccccaaatt atcgactatg attatactgt gcgatttttc 1020

gagctcttct cttcggagaa ggcgctccta agccagatgt tctgatcgaa acaacaacgc 1080

ccgcctcctc ctgaaaacat ccttctttgt gcacccttct tattttgttc ttttttttg 1140

ttgttgttgt ggttttgacg atggagatga ggatcctttc cccagctgat cgactatgat 1200

tatactgtgc gcaactgcga cgcctcctct gcggaggagg gtcccaagcc agaaatctga 1260

tccatcatgt gtgctagttt ctgcatcgat tgttgtaaaa catttggaat ttgaaaggta 1320

ccctaaagca aaaaagcagg actttgtgct ctctctttaa acagtgtccc cgtaaacttt 1380

aggtacataa tatgtatgtc catcgttatt gggtg 1415

<210> 640
<211> 1731
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324308_G1, chr9:154756453..154758183, Cluster 4

<400> 640
tatggtcgat aagtgacgtg actgacacga ttggatgtag gcttaggcta gcatggtggg 60

atatggtgtc aaaacgtatg aacaaagttg ttttaaggtt atttgaatta gtacaatgtt 120

gcacgttgtg atggcacaca aattattcaa taaaatgtta gtgtgcaaca attacatgaa 180

agcgaacgac acatatatta tcatcgacct caatatctca taaattattt gtcaacagtc 240

aatctctact actataaaac attaatttac acgtgcttta gtagaacact aaagttggtt 300

tcacaatcag aatagcataa catgaagtcc aacttttatg gtggaggatg gtacaaatct 360

acaaaagaga attaaatgca ggtacaatct caagaaaaaa gtagttcgtg aagaagacat 420

atggtctatc tggtttatcg gtttggtgtt tagttgtttt ggttttaaca gttctctaaa 480

accattgcgt taagtacaat cttggtcaag gttagcgtgg tagtggcctg ctcaatcgga 540

gtagttaaaa cctgtggaat tttgttgctt ttgagtaatg aaatttggtt agtagctttg 600

ctagatgtac tgaagcatag aaatgagtct gatggacaat ctcagttgtc ttagggcttg 660

tttgaaaaca ctcagttttt ttaaaatagt ttataaaaac tgaggtagtt ccgagcatac 720

taatgtttgt cacagtttat agaaactaga ttattagttt cttaaaaacc aaaaaatagt 780

ctccattagc taaagatagt ttataaaaac tgagctggtt caaaatatta ttaaccaggt 840

ttttttttata aaccagcttc taaaaactgg agatataatc tggatttta aaaaactagg 900

taacaggcct tagttctgct tacttaactt tctgaactat gtacgcttgt tacgagctga 960

gcatttcggc tcagaacatc aattctgcat gcagacacct tgacatcaat tctccaagaa 1020

gtcggttatt ggaagcagac gagaggaggg cgagcggaac aatgccactg ctcttgccaa 1080

tcgaggagaa gtaccagaca agggcgacat cgacgacaac gacgacgacg acacgcgaga 1140

tcgcctcaga aatctcgcaa ccacaaggca gctggcctgc tgttctgacg acagccattg 1200

cacgcaccag ccagagaagt tgaggttgcg ccttctcctc tcgggctcgg gctcggtagg 1260

tatatgcctg cattcccatt cccaaccagg tctggtctgg tctgctccgg tccggtcttc 1320

tctcccgacc ccgacctggc ctcctccctc ccctctccag cagagctctc cctccccctc 1380

cccctgaggt gaggtggctg aagtcggggg acatggtttc tttctccgct tcctaagatt 1440

cctcttcttc cccccaaccc accacctaca ccttttgctg cgccgcacct gcacggccgc 1500

tccatgcgcc gccgtatctc agtctcaggt cagcatcacc aaccgcagtt ccacctcccg 1560

accccagccg caatctagga ggagggccgc cgctctcccc tcggccgcat cgcatggtaa 1620

ccaccaccag cagggcagga tgttcaagct tcaccgccac cgctcctccg accgcgtcgg 1680

cgagcgcttc gacttcagat tctccaactt ccgcgccgtc caggttggtt c 1731

<210> 641
<211> 2464
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325381_G1, chr10:4745473..4747936, Cluster 4

<400> 641
ggtttattct aagctatcaa ttttaactgg ttatatcgat ggtttcataa gattgacaat 60

acaaaaaaaa attagtagat tcatttatgg gatcctctgc agtaacatga ctagatatat 120

ctgtcggccg attactgacg tgcggagctg gccgggcgcc tgactcgcat gcggacgtta 180

ctgttgagaa attggttcca tcaaccaagc atggttcaat aatgtaacaa agatgaaaga 240

tgggaacgag aattatataa gaaataagaa gagaggtttg gttatacatg ttattattta 300

atttgtccac caccatgtgc atgcagcatg tatatattag ataagacttg gagacgtact 360

agtagacgga tgacaacgtc cgtccggatg ttaattaatt agccgcagca gcgttcatct 420

aggtagcatt ctagcaagtg attataaaat attccctcca caaaccaact ttttccgtag 480

gggggccgta gcactagcag agtcgaagtg ccgaaccgag acggtggcct gcagctgcaa 540

gctcctcgct ccactgcagc taattaatct tggtgtggtg gtggtggtgg tgcccgaggc 600

gctgcgctct actcctattt ataaacagga gacgcgcggc gggacgccgg gacgtgcgtt 660

gtctttcgac ccagaaaaaa aaaatactag taatagaacg ctgcgtaatc atgctctgtt 720

tgggatcctg ctgtgctgcc atcgtatctg atctgatacc gagtctcaat taaagcctga 780

actgactgta atctatatat atatatagac acaaaaaata atatcgaaac agtagaaatc 840

ggtaataatt aaagcctgtg aattagtttt cagaaatgac ggtacaagac taaagtcaag 900

cgaacagtaa tcgcgttgtc tacattgtcc aaagaatcca aggagtatag tacaaagctg 960

cctgcctgcc tgcgtctctc aaccagtgtc catcctgctg catgggcgcg gggcctgcct 1020

gacgcacgtt gaccaaggcg tcgtccatgc cggcccagca gcggccccac ggccactact 1080

tttctttgca caaaatatat aaaaaaaaat acataatccc acggccacat atattctttt 1140

tttttaagca gacggccaca tctattctat gcactactgc actggggcgt gaatcccacc 1200

catgaagctt gggaacgagc ggcaatggtg ctgtttctgt gtgcttttgg cattggggca 1260

agcatgcatg catttggaac aattcatccc atgcgtcatt ttagtccact ctctctacta 1320

tcgggtccga gtggcatcta gcaccatgag tccatgacca tgagccatgc tgtgtgctgc 1380

tgcttcttcc cctccgtccc cttcaccacc gtcgtctgcc atctgcgctt cctagctccc 1440

actactccca ctattttaac tttccgatgc accacttcct tcctgctgca tgggcgcagt 1500

gggcactggg cagcagtggc agtgtcagtg tggcactgag cttagcccac gtacggtcgg 1560

tcgggtgaga gggggagcta gctgccgggg cctcgctcgt gcatgcatcg ctcctcgctg 1620

cgcctgcgct cgccacatgc ttgttgccgt cgtcgtcgac gcggcccagc gatagagata 1680

gagagagaga tgacctgtgg tgcgtgcgtc gtcagcgctg gctagctgca aggaccagca 1740

ccgaaaccag cggcgctctg tcaatctgtg cctgtattct gatgagctag ccactcgtcc 1800

tctgctctgg tcgacttttc atccctgctc tgtcactgta cggtccggtc cacatcgacc 1860

cgcccaacgg ctccgccgtg catgccctcc ctccttcctc cgtacgttgt agcctcatgg 1920

cggcggcgga gaggacagag ggcgcgcatc gcatgcagat gcagcgccag caggcacgca 1980

cagagaggcc ggccctgcag cagcagcagc gggcacgcgc ggcgaggcag gcaacgcaca 2040

gccggcgcca acgcaagcta gctgcctgct gccgtgccag tacgacggaa gaaagctaag 2100

ctactacgac tgcatgatct gcaacagctg ccgacggagc tgtggcgctt ctgctcgctc 2160

gcgacgactt ccacgaccac tcgaccagag agagagagag agagagttgt gggcgcccac 2220

acacgtcatc ttaccatgca tgcggcgctg gacttgagcg gcggccggca actactacat 2280

cgtgcgacat cactagcagg taaaatatct acgggggggag catgcgatcg cgcaaaaagg 2340

agtttgttat atacaagact cctcccgcga ctaattaatc gtgtcgctaa ttaatagtgg 2400

aggaggagag tcctagtgca cgctaatgcc ggaggatatg ccggcaaacg gtttaccgta 2460

tgtg 2464

<210> 642
<211> 1764
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326987_G1, chr10:13026995..13028758, Cluster 4

<400> 642
aatgtaattt attgcaacct aaatttaaat tatgtgaatc cttgaatttg gagactacca 60

ctgcaagctg atccatttta gctgagaagt cattactcct aaatgaagtt aaaattgagt 120

tatatagttc aagggatgac aagttttgat attcttagat tgatcgcctt gggcgtggat 180

gtttatttgt tgttacaaca atatagacta ttgagtatgc tctcattttt tatagggtcc 240

ataagtttgc accacacaac catttggttt tatctgtcgt catttgacct tgatggaaag 300

gagtgagatg aactatggag gaattcttat gttatggatt tccatttaac ttcatcgtac 360

ttgcaagcca tgcaatatgc tattgttgtt attgcccttt ataatttgtg attggactat 420

actgtgtatt taaagcggta tgccacttct tctaaatact atccaaccac aggctgttat 480

tgccctttat atcaaacgat ttttatattg ataattagta cttcaatggt tattcattta 540

attggaattc aaacaaggat ttcggtaaat aatgagtgtc aacttttgct ttgcattctt 600

ctatatagta caacacacat tgtttcttgc atttgaaagt tgttggtctc atgtaggaca 660

cagtggcgcc aaggttccac catggaacaa atttactaga aattttcatt ttacaccata 720

tattattgta tatgtactag attcatagaa ttttgcacca ccagattttt aatcgtagct 780

ctgctcatga tcccactatt gcaaataatg tctgaatatt tggtcaactt gtaggctgta 840

aaggacttga accaaatatt tttctaacta aaattctttt gcttagatat gcgccaacaa 900

cacaactttg gagaggcata cttcatgtga tgggtggtag caaggaggat agccatggct 960

cactatcgcc atcacctctt catcatggtt gctgctggtc cagactatac tgtggttgga 1020

ttggatggac taccacagtt cagaattcaa atttactttg ttaaagcgaa gatgcatgcc 1080

acttcttcta gagcaagtga atggggtatg atttggatgt tttaagtctc tgtttgatgt 1140

gatgactcat gctcaatgta ttatgaatct tagtgtacac tatctaaact aaaacaattg 1200

aaattgctgc aacctgtaat atggtgataa cgatttttat attgataatt agtacttcat 1260

tggttcttca ttaattggaa ttcaaacaag gatttcggta aataatgagt gtcaactttt 1320

gctttgcatt cttctgtata gtacaacaca cattgtttct tgcatttgaa agttgttggt 1380

ctcatgtagg acacggtggc accaaggttc caccatggaa caaatttact agaaatttc 1440

attttacacc atatattatt gtatatgtac tagattcata gaattttgca ccaccagatt 1500

tttaatcgta gctctgctca tgatcccact attgcaaata atgtctgaat atttggtcaa 1560

cttgtaggat ttaaaggact tgaaccaaat atttttctaa ctaaaatctt ttgcttagat 1620

atgagccaac aacacaactt tggagaggca tacttcatgt gatgggtggc agcaaggagg 1680

atagccatgg ctcactattg ccatcacctc ttcctcatgg ttgctgctgc tccagactga 1740

ctctgcaagt tctatctctc tgct 1764

<210> 643
<211> 1539
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337594_G1, chr10:80038894..80040432, Cluster 4

<400> 643
tagtagcaag acgctgaaaa aaaaacccaa acgaacacgc aaagtgtcgc tgccgctagc 60

ttcaggatat tatgatccgg caataataca tacactcgat cgtacaccca gaagaaaaat 120

cataactttt tttttcatat gggacttgta tttcatgctt attacgtcgg ccctgtatag 180

gttgtgacgt agcgctgtat tattacgcta aaaagcgagc gatcgagtga gtgagtggca 240

gcagagaggt acgtacgcac gcacggtggc caggtagcta agctagtagc ttgtgggacg 300

cgcatgcatg catgccatct ccaatcccag atcgagaata tgtacgtgat ttgacctaca 360

ataataataa tcctctagct acacatcgtc atcgatcggc acgggaataa tcccccggca 420

cgtcacgttt ttttccccat catctccgat gttgtcgtag ctgtgtacgt tattagtacg 480

tacgtgctgt atgagagaga gagcgcgttg tatacgcatg caaaatgcat ctcgatcgca 540

cgcgctttgc ctttgctttg catgtcgccg gtagtagtag gtatagtagc caggcccggc 600

caagcgtagt cgtcgacgac gacagccgct agctactagc tgcttgtttc ttgtggctca 660

cgatcacgac cacacgtacg tctctcaatg atggatttgc gtacagtact ctggtatttc 720

ctcatcacgt agtatatatg cgtgtcagct gcttgtttcg tcttaatttc ttggccagcc 780

attggtggtt cgatcggtgt taattatctc gtcttcgtcg tccgcattat tatttgtgat 840

ggcccatcac atatgtcgac ttaattaatt atgtgctaaa gttcttgtgg ctaaagatca 900

cgtacgtacg cacgcacggc tcaattggca tatgcatact agcttgttgg cactagcttg 960

tctctcatac gacgtgccaa ccagggttat catgtcatgg ccagtgatcg atcgtagctc 1020

atgcgtgctc gggaactgga tcgattgttc agcatttgca tatggtacgt aaaggctcct 1080

tcgttctgaa gctgctcata gctagaggct cggatcgagc tggagtagag gcccggatcg 1140

agcgccgtga agagagatag agagaactag agtctagaga tgagctagca gggaatgaat 1200

tgaatcgatg tgctcgatcg gtttgcaacc acgcactgga tcgacctgca cattcgaaag 1260

agctagctac cagctttatt tgtccgatgc aagttgtttt tgtaaaggga tcacaaagag 1320

aaacaaacta ctagtttata aagtttctcc aaacttgttt ccttttttctt cgcctatcag 1380

atatcttcct ctttggatac gttcctgatc gaatagagag gaacgtacga acatgcatgt 1440

cttccgcctg ttcctcttgc ttgcttcctt ttttcttttg ataatggaaa aaaaacatgt 1500

tccagccatt tgcatcaagg atgtatatgg cttcatagc 1539

<210> 644
<211> 1666
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338629_G1, chr10:85636916..85638581, Cluster 4

<400> 644
tttgttggat tagttcacga ttgattggat cgtttgcctt ttttaatagt ttgttgattg 60

acatgtttaa gcttaacaat caccgtatag atgttagaga tcacagagga agatgagaaa 120

gatgagatca cgaaggctgc aattgagtta aaaattgcta ggatagaaaa tgggtacata 180

gctgaggtgt ccactttcaa ataggttcct gattgggttc tacagttgta tctatttatg 240

tactccatgt tttgttttgt gaggggatgc gataatcctg atattaatca tttgtgtgct 300

gcgagaggcg attgaagttt tgagctttgt gttctttata tgcagaacta tgacgagatt 360

caccattttg cgattcaagt acaccttctt agtctatgct ggccaaagtt aatgtacacc 420

atttccatag aagtaagatc acgttcacct ttttagaatt atctattgca agttatgttt 480

gtttcggtca tttggagttg tacttgtcat cacccattta aactaagttt gatattgtga 540

gatattgaga tcgatgataa tatatgttgt tcgttttcat ttaatcatta ttatgcacta 600

acattttatc gaataatttg cgtgccgtcg taacgcatag gtattagact agtattcttc 660

tatacgtaag aatataacag tacgggtgca tcgtcaaaca atgcggatat agttctagct 720

ttcctatagc tagttatgtt aaccaacacg ctactataga gagctggtca catgactgct 780

aattcgtcaa gaaccccaga ccccagtagt agcgattgta cgtcatcact gtcggctcga 840

tggctctatg ctgaagcgat caaaatcaac aaggcatgaa tgaagaaata aacaagctag 900

ttgcgtgcgg tgtgcacatg acctaccgta cattggaagt taaacggcca ataatatata 960

gggatatcgt ggtacatggc cctgacgcac gagtttgtta tcatctcccg tttcgttaat 1020

atatagtatg tcacaatgtg tctttttctt ctcaacctgc aagaattgac ggcctatctt 1080

tatatatata tatatatacg agtatgatat gaaggcactt tggatggatg ttattggtgc 1140

agaattgaac tttagtgtag ctgtatccaa ttttgtagta gggcctgact aatgccctgt 1200

ttgaaaccac taaaactaat agttggctac taaaaattag ttgttagatt ttaaacacca 1260

tcagctaata ccgtaactaa ttattatata cctcacagct aacaatcagt tcattagctg 1320

actaattatt agctctaggg gttccaaaga cagcctaaac ttttagtagt ctctaaagta 1380

atctgtttgg ttccagtaac taaactaaac ctgagtaaag agcattaatt agtgtgaata 1440

atgactatat tacccttatt aataatagtt gttgcatgtt gtacgaagaa agtgggggag 1500

gacaagtggg gtaaaaatat ttctttaatc ccttttagac accctcttag cgactaaaga 1560

actaaagttt agccacccta ctttagtaac cccgtttgct tctttagaaa ctaaaagtta 1620

ctaaaattta gtcagtcata ccccaaacca aatagggcct tagtcc 1666

<210> 645
<211> 1532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338701_G1, chr10:85901537..85903068, Cluster 4

<400> 645
tgattagccc gcctaaccac aacaaacatg aagaaatcga tgggaagaag aatacacaaa 60

tgctagggag cctttgactt gttctatgga tcgatcagga acagctggat cggatctata 120

ccttccacac tgcatctcct cagaaacaac agcgctgaga agaaagaatt caaggtcgac 180

ttcagacagt ttcagaacag tagacctgtc ccgataaacg taccatccgt tttttgtagc 240

gaaagtgatt acctctcatc ctaagtcaga tcagggaaag cactctggtg aatcttgggt 300

gaccaatttg caaaactttg gaatacatga caatataatg tttgaacctt ctggggttat 360

aaaaaatgat gaggaaaaga atagaaattt cattcttctg ttgtgtcgtt gacgcagtag 420

ttttatcttg acaaagttga tgtgttgacg cagtagtttt atatcttaga caaagttgac 480

gcggttcttc atgctgcatt gattagacat tgtagaaaaa aaaaggatta cgaagccaaa 540

ccaaacatgg acatgtctgc atccacaagt tctgtgcgac atgcccacac ttttataaca 600

taatttcaaa gaaaaataca cgccatgtat aaaatctaag gcatacttgt agtttttaat 660

tggttatgtc cttattaatt attcgtccta attaaaccca catactgcag gagtcttgaa 720

tccaatccca agctaaatat tgctgaattt ttgtttctgc catctgtaat aaaaatgccc 780

tcttggcggc gagcacgtgg atatcggcgg cggcggtgtg ggctgcggcc ggcgaggccc 840

gatcttggac ggccaccagt gagcggcgca atacttgcag cttgcttcag tgggttcaat 900

gaccattatc tgctcctcac atccgtcttc atattttgtt agcgttgatt atatctactc 960

tatgatatga gtcatcttag catcttgcag aggcttcact tcctccgacg gggcatctta 1020

tctttagagg aatgttacga acttgattag tgagcgtatt ttggttggtt cgcgcgcgaa 1080

tcattcatca tagaatgacc cttctatgta ttgtttgtca ttcatagagt ttgtgattgt 1140

tggtatgggc taagattaag tggtatgact gcattagcta gctcagtttg ttggtcgtgg 1200

cggcaatttt tttttctgat agggaggtta taaaggtcct tcaatttcgg ggagaaatct 1260

ctaggtttga cctttgctag ctgtaccttt tgttttctga gtattgttac attatttatt 1320

ttaggcttat gatcattttt tctgtaattt tcaagcaaca ctagtattaa caaaaaaaag 1380

ttgaatttct caataacatt tttttcttgt ttgtacaaaa ttagatcaaa attaaggcga 1440

aatcagatgc tagaagccgc taatactctt actgttgtac atacacacag ttgatggcgg 1500

gaaaaatagc tagtatattt tgtaagagga ta 1532

<210> 646
<211> 1607
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_342630_G1, chr10:108461476..108463082, Cluster 4

<400> 646
ttggctagtc aggataagtg taacaccata aaatcctaat tctgtgagtt tgcaagaatt 60

cacccaagtt ttagataaac atgttttcta acaataaatt ggaaacaagt ttctcatata 120

aaagttatcc ttggttgaat tttatattct ctaaagattt aaactaagta aagattatat 180

agttatgatt ttacataaaa ataaataata ataatcatta tatttttaaa tgcattgtct 240

caattaaatg atatgaagga gtccttaatt atttaattgt gtgattcatt ctttactaaa 300

tgtatgaatt ctagaacatt tacttgaaac gatagaataa taatagtaaa agatatactt 360

tgcatcatgc tgtgtttttg tttttgcatt caaatatgtg gatctcaact tcaaaactag 420

attcaaaata ggaatttgaa aatagaatag aaaaacaaaa acagaaaaga gaagaaatgg 480

aaaatgacat gctctcaagc taacttttt cagcccaact cgccttcccg ctggcccgag 540

cctgcccagg cgtgtggacc tgctcttcgc gcggcccagc ctcgtgctcg ctcgccgcac 600

catcctcgac aagtgggctc cactgcccta ggacaacacc gcacgcgagg ggaaatcaga 660

cgttggaagg tgggtccact gcatcagccg acctatgctt aaacatcgtg cgccattgac 720

cgatgtctgg gtccgccgtg gtagatccat ttcccagata ggatcataac aaattgagca 780

aatgacaaca aacttcatcc aactccgccg attgtgtatg gccagcgtcc gtggcttcgg 840

ccatataaag catgggcact gtgcgaaccc ctcccatcca tcgcaagcca ccgcccggga 900

ggaaggaaga ccaccatagt gtgtggagtg cgaaaagcgc atagagggga ggagaagcca 960

ccgacgccaa ctcgtgcagt tatcgttgtt gcgtcttcac agaggggttg aggtggaagg 1020

atgaggtaca ccgatcacgc gcgtagcacc cttacaccat ggggttgatt ggagtcacct 1080

ctattgctcg ctgggggtcg agaggagatc caccaccata gaatcgggtt cacatcgctg 1140

ttctgccctc gggtgtgaaa ccaagagctt cactcagccg cgcaaaaggt gtatgtaact 1200

tctcttgggc ggatttgcgg tcggggctac caggattgct tgtcagagtt caccccaccc 1260

gctgatccgt agagcactgt cgaccggctt gaccacgacg ccaacggcgg tgagatttct 1320

tccccagtgt ttgccattgt ctcttcctca cgtcaaccac gtcgggtcaa agcattgcaa 1380

gtcggggcga aggttcgcgc atgtcgacga tggcttccac cacgggagga cgggcgcgcc 1440

gttgtctggg aattgaataa ggaagcgtgt cctcgaccgt tgatctgtct agtgatggta 1500

gagattagat cttcaaaata acatttcgac cgatgtaaat cgaggtgtag gatcgagatc 1560

gggttgttca gtgcatgtgc actcgagtca gccgagtcaa tttgata 1607

<210> 647
<211> 2293
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348674_G1, chr10:141472112..141474404, Cluster 4

<400> 647
tctatgtcga ctttgtcaat ttaaactata tgttggctca tcatcctttc aaaagatcag 60

tccccccccg gtgggctagc tagctctatg tattatacgt atacagtaat gtatggcctc 120

ttccgacagg acgggcagag cgaagccaca ataataaaaa ttaaaaccaa tgttaacgca 180

tttcgaagag atcagttgac gaatgagctt atatattatt attacccatc actattcacc 240

ttaaaacgat tcgtatgcat gctaccagta cttgtgtttg tgggcggcag ttgcgcagag 300

gaatcacacg ttttccataa tccagcaata ttcaatcatg caccgacggt gagtatacca 360

taaactacaa tatctaccga tgctgatcat gcatcgatcg ccctacgacc aaaaagacca 420

tttaaaaata ttttaattac agctaggttt tcttccccag aagctaggga aaccaccaac 480

taatttatga cacatgggca gtacggcatg gctagacaat agtcttggtt tttataaaaa 540

aaaatcacca caccatatac aacggtcact gaccactaac cacctgtacg tacatttgta 600

catgtcgcaa gggtagtact gtatagtgta tacaacggtt gcgttgccag aaacacacgg 660

gcatgaaggt caaggacacg aggtaatgac accagaagga actgaagtgt actgtcacac 720

actctctttc tcacacacac acacacgcac acgcacacag gccggctcag aagccaagaa 780

gggacaaaga aaacacttgg gaaacccggc catctcgtcg ctgtaaaaag aaggctaaca 840

ttttacatgc atgcagatga gatgatggag gtcgttaacc ttttcactcg cggccgcgga 900

gctattctat tttatctcga ccgaggccag gagaggggcc acatgcggcg atgcccccct 960

acacaccgtc aaataatttg gtgggctagc tcaggaaaag gacagatgag atgagagtgc 1020

cggggcgcca accaatcatg gctgctgatg tgattattta tgcctgctca gatcaaacgc 1080

tctgaaagcc tgctgcatgc cttcaagcat acatttccag caacatactc agactaatgt 1140

ttttttttctt ttatacttgg gaaaaaagag aaaaaaaaag ggaaaggaaa aaggaaagaa 1200

aaagaaaagg gtgatgtaaa accatcgaaa ctgtcggaag gtaggtaggg agtgaggaga 1260

ggaaagctcc gcgggaacat agacagctac gcctacgcta tgccaggtgc aatatttgat 1320

gaattgattg gctgcctctg cctgccatcc tacaaaacga tagaacatgc agcgccgatg 1380

cgacccgtac gttgaaaaag atttgcagca gcagcaggga gggacggaga cacagtcgcc 1440

ggccgccgcg cctgcgctgc gtacacacat acattatttg tgcagatgca ggctatacca 1500

gctagctagg ctagtaggct actatgcacg cagcatatat cggaaaaggg tctgctcagt 1560

ttgatctcag caagcagccc ttcagcttca gcgcacatgt gtatccaaac cttgagattt 1620

tgtagctaga tagattgatt agttagccag ctagctagct accccaaccg gttgctcttg 1680

atatgttcat atgtatatgc tagtagtagt agctttgtag ctttatattt ggatgctact 1740

gggggctcaa agtagaaaac gtacccaagt gtcgtagctg tagacccgtg gcaaattaat 1800

gtaatgtaat ataaaccctg ttggtgttgg gggatgtgaa gctctctgaa cactgaagat 1860

acaacactga cagtgctata taaattacta ctgttaccaa ggacatgagc tgtggattat 1920

atatattctt gtgcatgcat gggcgatcag tcatcactca tcatcagtcc acactctctg 1980

tacaacgaca agcgagataa aaacaagcta gtagtagtaa actttctagt taatagctag 2040

agtgtgcgag tgattatatt acatgtatgt aatcatatat agtagcctag ctagctaggg 2100

cacacacagg gtgatgtgat gtctatagac cagtttttct tgacagcctt gagaataaaa 2160

cgtgatgaca acagaaacca aacattaatt ggaccagagg caccaaaaat gaccaccact 2220

gcacaatgag aggaaatgga gatcgagagg gctactgatg aattaatcac caaattccgt 2280

ccgttcatgg tcg 2293

<210> 648
<211> 1831
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349453_G1, chr10:145475529..145477359, Cluster 4

<400> 648
tcttgtgtgt cgtcgcaacg tacggacact acaggcatat aggtgttggt tcacaaaata 60

taacgtaaat gacaataata atcattcaca cttgagtact agtgataaaa aatttaaata 120

taatggtatt aatttatagt gtggtatctg attatagttg actcacactc cagcatcata 180

ataattgtgg cgtgcacgta tattatttgt tgtggtgtga agagccttgc gtataagcag 240

ataactaaag tcgtacgtat accaccaaca tataccaact gaaccgtgct gtgcgtttct 300

attaattaag aaaacgaagt gtgcagcaaa gtacgtacga cgacgaagag gaaaaaaaaa 360

aagaaaatat ggggattctt tcgttgccac ttggctgtac tagtacggtg gtgacggcgg 420

ggctgggcct ggggcttgtt gcctcctgcg atggcatgct gccacctgcg actgcgagcc 480

ggcaatcctc gctggcagtg ccccgttgtc aacgcgccat tggtggcgcc gtcgacttcg 540

gtgccgccgc cacggactcg aaatgcaaag gacggttgcg cgtgctggca acacagtact 600

actagtccgc aacgcgatcg agctcccacg gctcgttgag tgacccgtat atttaccaca 660

agggcctagc ggggcccgga cccagtgggc cagccagcct gtgggccctt gtaagttggg 720

ttagatcttt ccctcccccc tccgtcgcga gagatctaga aaaaagggcg tcacgtcatc 780

cgtggacccg gatgtggggc cagtgcctgc cactgcgtct ggtcacgtcc ctcgtcacct 840

cgtgtagtcg tgtaatatga ccgggccagt tgcgcctgca tgcccagcgg cctgaatcgt 900

acgtgcgtgc gtacgtatct tcgactttga gctggtaata tggaggtcaa tctaaaaaaa 960

aatgtttgtt cagttcgagc gcaactaaat aaagaatttc atcgtcattt tgaagtttcc 1020

aattgcatct ctgcaggaga agttttggga gggcccacca tgtgcgtcaa cctttcttcc 1080

ttaaatatgc tgagaaatcc cttcaagaca ttgaaggcac ctcttcaact tatctcttcg 1140

atccaccttt ttcatatata taagcaaggc attcaataaa gagaataaag atttcaatcg 1200

tcatttgtgt ctctcgcttt cactctatac tctaacacaa taaccagaca aaaagataga 1260

gaactacata cattacattt ctttgaacag tcagaccagg ctgtttacca cgcgttttta 1320

tgaaatagtc ttagtttcat caaaaaaatc ggttctacaa aaaatgttac ggctaaagct 1380

attttcgtca tcgctcaaac gcgcccgcct tctaatcgct ccacgcttcc actgccgctt 1440

cttttcaatt ctatgttcca aaatccaaag gcatgtgcct ttaaaaaaat taatctcgtt 1500

tatctgttat cggcatttat ttatgttctg atttctaagc aagccatcac ttctcgaacc 1560

tttactgtac cgagcaacag aaaatcacaa aacgcaggat taggaaaacc ttggtcatgg 1620

gcaggctcgc tgtcactgca gcggcttcac aaacggagct cgctgctacg ggctccagaa 1680

tccagatggg ccagtacaag aatgcgtgtg ggctcagctc ctaacctata ttcgtccttg 1740

atcggccgga caagtacagc ccaacggtcc aacatacttg gggtccaagg ccatcagcgg 1800

tccagagagc agaactggtg accggcatgt g 1831

<210> 649
<211> 1512
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_36925_G1, chr1:222975913..222977424, Cluster 4

<400> 649
ctgcctgcgg cctgcccatg gcgtcaacgt cgccgttttg ttcctagctg agaaggaaag 60

gctcctgcag ttttcgcgtc ctttgctttc gcgtgaggct gaagccgttc tcgaggggat 120

gtcttctttc gaatatacta gtactacact tgcagctagg tagctgccca gtggaatttg 180

tttgtagtct gtggcatctc actgctatca gacactgcta caagactctc tgatgacgac 240

tcaacattct gcgtattttt tatgcgtggt cacatttcct tcggtggccg atcacccgtt 300

ttgattcttc agtggaaaga tgacttctac tgatggcagc aaattcgccg gtttctgacc 360

cccttctaga gttcagaggt tcgctcctga agaaaaataa ccgcagagac actgcttaac 420

acggtttcgt cgctggacat ttgctgtgca agaattgacg ttttctggaa ctattggccc 480

taatgcgaat ttgttccctt ccgctacgtt cggctgctag gcactctacc aacgtgcgta 540

ggctttcata gcctgagatt tgctcgtaaa cagctgctgt caaatcccag gtgacaaaaa 600

gcacgggttt gctgcgtgtc caaatgcagc agttccagct gcaaagcttc ctctagctgt 660

ttcgctggag aaacctgcag aacagctagc gcggcgtcgt ggtagtcccg cacgcttgtt 720

aagtgctaac ggaatcgatg cttcgtagta ctactctatt agtcttccaa aaattcggtg 780

caggattaat tcacatgaac agaaacacac ggaattgctt tcagatcaaa atccgccgcg 840

gagtatatat aacaaaatac aacggcaaaa aaatatttct tcgttacgta cgtcgcgaaa 900

catttgttct ccttttcatc gccattattg gccagttgac aagtctagct ggtacgaaca 960

gaaaatggca tagtgtttgt tttgctgggt ggcaataagg ttgtgaaaga aatgcatggc 1020

acaaaacata cggaatatat tcgcccaaaa aacttaaact ttctgtgtgt aacaacgata 1080

tttgcttcgg attaaaattc ggccgtttag actgctgcaa cagctatatt atttctttcg 1140

tgcccacaat tgtttctgtc ggtttcttta tcaacgtcta gccttttaat ttcctgtgcg 1200

gccctaggta gctagcccag gaacaggtga ccgatcaaac cgccgaccaa agctatatat 1260

tcgctaggga aaatatatgt gctggtaaac gatcgccgcc gcttcgctag ctagtgcatc 1320

acagaatcaa aggcacggga gtattcttgt cctcctccac ggctcgataa gaactcgtat 1380

gccatcctgc ctaaattctg aaaccgatcg agatcttcgt actaaaacct gcgacgtcga 1440

cgccgcgggc ggatctttgg gcaaagcaga ttattccaca aggatacctg caggtctctt 1500

ccacgccttc aa 1512

<210> 650
<211> 1933
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37020_G1, chr1:223312156..223314088, Cluster 4

<400> 650
tgttactaac gaaaggattt acaattagac aagcggtgga cagcaaatgt ggagatatat 60

caggaggccg cggccggtgt gcaagcctag tattagtaag cccagccgca catgcatacc 120

atcctagttg gcctttcttc ccttgattca gatccgggct gcgcgtagat tgacaaacac 180

gttccgcatt tccagcaggg tacagctctt gaagcctctt tagtgcccgt tgttttcgca 240

tgaaatgaaa gggtggaata aatttggttt ggattccttc aataattact ataagttttg 300

gagatttaga attaatcctg atttgttcca gcagaaacga atggaccctc attcagttcg 360

tcgaaacacg cacggccact gcacccagct gcttaaagac cagaacgcaa gaagctccct 420

gttttcccgt tcgcagcaat gtgtgtgttc atgttgtagt agattctgtc atgcaataga 480

tagaactctg tgcgtcgcgt cctcgtgtag gatcagctga tgctgctgac taccagccag 540

tttgttgggc cgtgctcgcc aaccccgcag acaaaccgaa agccgtcgtc cacgacctca 600

cggaccgagc ggcccaagtg ggctactttc ggcccaaggg gttttgcggc cgacacgctg 660

gctttgccag cgatcggcgt agatgctctc gccgccaaat tattttgcgc acggtaattc 720

tttcatttgg gccgtatatt cttcaagtgg gctgaaatgg ttagatgctt acaagttcga 780

ccagtcaaga ccatgtagaa gcacatgcaa aatctaaagt ctgcatgcat ggaagacccc 840

cgaccgacga cgacaaggcg tcacactttt ctataaacta ggaaaacctt agctactaaa 900

ccgaacatct gattttgtat aaactaagaa agtcttagct actaaaccga acatctaaat 960

taaattgtaa ttgcaccgtt gtgtttctca ctacaaatct tttataacaa gacacaacaa 1020

ctttttttct tttgtcgagg agaggtgatg gtgttttagg tctgacaaac aatgtttcat 1080

ctatggaaaa aaaaaacatg ttctcaatct caagacattt ggctttgata tcatattaag 1140

ttgcatgcac caattaattc caaccaaaag attaagctga tagaaaaata tagacatttc 1200

acttatatta tattctaaca tatattatat tctaacagta tcgtccccgc tttatacggt 1260

tgcatatata tagtccagat ccgtagatgc ctccagcttc aatggtgtgg cgaagatacg 1320

gcctaaaccc cctaggcagc gcccggccgg ggctcaccgc tcacgggtcc ggccagccac 1380

tcgtcgccag ccatacacac ttgccggtcg agccgccctg cctcctctgc agcaaaagcc 1440

gagcgcggtc gatgatccct gtctccttcc cggccggccc ggcccctagc tagcccccc 1500

tagctaggct tagcaagagc tgagccagtc tctcgctcac acacgggcag cctcgcctgg 1560

cgtagccaat gagccccggc ggtcgtgcag cggcatggct cgcgccaagc tttcatctca 1620

tgtcccttcc ctgccggctt cccctggcct ggcccgccag ctagctgctg ctgctgctgc 1680

ttgcttatcc ttcctcgcaa aagaggggac tgacactgac gcgcgcgatc gaaaacgaga 1740

gccacttccg cgcgttatct gctcccctcg caatgcgccc gcctctttcc cgcgcggatc 1800

ggatagaacg attgctagcg tcgcacttgc ggattagaaa ataggcctcg ccacacccgt 1860

atccggttcc ctcaatatag aaaaacttac ttcacctgcg aggctaagat agcccactaa 1920

cattatgtta ata 1933

<210> 651
<211> 3368
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4160_G1, chr1:21691937..21695304, Cluster 4

<400> 651
ccttgtagaa tacgaattcc agtatccaaa aaggaaatgt actgcagctt tgaatcggac 60

gatatctgtg taaaccatat atatgtttaa caaactagca gtagaaatct ataaccaaca 120

tttcttcctt aacaacaaga agggcctgcc tagccatctt cttaaggctg cattattcca 180

ttccggagct ttcaaagaga aaaggtggat tcagctttga caaattccta agtttcagat 240

gagaatagat ttcagtgcaa gccaggcact acaaacaagg tctactttcc ttgggccata 300

tgtgaagcaa ctgcattttg gactctttga tgagtcgtcc gtctccagta taagcaaaga 360

ttgttttttt ttcaagacta tggaacgggt tgttccttgc aatcaagtat gggcttaacc 420

aaacaactaa atcgaacgat ctcaacagac tggagcattg aatcccaagc ttatggagct 480

ttactctgtg ctacctttt aaaatggtac taccatcctt tgttccctct tccctgtacg 540

catggggcat ggcaaaccca gtgcatcaag caatgatgaa gtcgttctcg tccccatgga 600

tacaaggggt gcacaacaca aagatgaact ccactactcc agaataatgc gatggacgac 660

gtaactgcaa gcaaggtgta ggtttcgcag aaggcggctt atgaactcgt ggataattaa 720

gggcagctac taggaactgc atgtctggct tcaagctgca tatggacata cagagaagag 780

tcaagttttg cgtgcgcaca cgcttagctg ttgccaattg agatagatat tggaaactct 840

tgtcctcgtc tggaagtttc tgcgcgtagc tagctgttgc cacagcaaaa atgctgatgc 900

tccttatctc aaagtcactc gcattcttcg tagtcacgcc gcgctgatgc aaaggcgcac 960

gcatcatagt gcgtaaacaa ctattccagc cgtgcacagc ttagcatatc ggctggagta 1020

tgagtgcaca tatatccatc ccacaagctc tctctctctc ttttttaatg tagtattcag 1080

tatgaagcca tgtaaaggta tgatggtact caagtcctct ttccttgcca cttctgcatg 1140

atagtacatg gtgattaaaa aaaggacttg tagtttgtta agagtgagag tctgttagac 1200

gattgagtac atcaaacttg aatgctcacg ttcagtgagt aaaggtgcca gactacggtt 1260

cagcgtacca tttgctgtag ttgtacagta cgtcaaaact gaacctccca gtttactgct 1320

tgctatgcta ccccagtaca tgagatgagt ggcgaactgg ctggcttatt caatgttctt 1380

gcgctggcat gggcatggca ctgatcaatc aaagtcggcg agccacatgc tgtaacacta 1440

ctctgactga ctgactccat actagcttta gtcatttatt aaactactgt gacactggat 1500

ggataaaaca ctgcagatct tcaggaacca tctccagtcc agtgtaatgg tccacacacc 1560

taagatgctg tcacttttac ggtctgcaac agcagcagca gcaacaacag ccagataccg 1620

gccggccttt gcgcacatgc accagcacat ggctgaatgc caataggtct ccgtatttgc 1680

aaactagaac agatgttttt aggggagtag atacggtttg taaattagct aagacactaa 1740

ttgattgaag gcataaaaag gaaggatagt agaacctcct tagaagcaaa ggggggagga 1800

caaaagaaaa aaggtacaca attgtgcaga gaggggaagg aagggaacag tgtgtgtggg 1860

gtgtggtgtg gggggggctt cacaaagctt aatctgcaaa taatggccgc ctttaagtgg 1920

cctaaagctg atgcttgctg ggttttggag cctcgcttgt gacgtccagg caggctgcac 1980

tgcaggccaa ggaggctgga gacggacggc tgcagctgcc gcagtcgagc tgctgctcct 2040

ggttccggtc gcaaactcat caggtactgc tgaaaccttt tgcaccctct gcaagttcag 2100

atttgctttg cattgcattg cggtggtggt ctggattgtg attccttttc ttcggggtct 2160

tgagatgctc ggccttgtga gctttcgaca ctgcctttgc ttctccttgc ttttttttc 2220

tctctctctc tcctttctat ttaaggagca tctctgaata tatcagcttg gcaactggat 2280

gcagtgcatt tgagttgtat ataagctgtc agcaagatgc agctctgctc ttgatcttct 2340

ttttctttct ggttgacgag caatggacgg cccttgcaaa gcaatcacag gcccaaagcc 2400

acttttgttt gaggagatct cctcctctct ttttttgttg tgtttctcag tatttagaac 2460

aaggagaatt tcgtgcatag ggattactct cttagtccta aaataaatgt cgctgctgca 2520

ttcgtgctgg ttaaactttt tttttaaaat ctaactatta cgttcattaa aaaaaattag 2580

tttgttataa aaaaaataga tccgatgatg tatctaacaa tattaagtat atactataaa 2640

tgatgataaa tttatatatg cgtgcacttc attacagttg aaagtgtctg cctgttgaaa 2700

agcgaaaacg acgcttattt ttttggtacg gaggaagtac aatctttgtg cgttatagac 2760

caacagatga atacccatcc acaaccaaga gttgttgttt ttttcttttc ttctttcttc 2820

cagcagagca gccggtagat ttacagagca aaacatgata cgtcggtggt gtggcagcag 2880

tttttgtgac gttttcatac gcgaattaca atactagaat agttccacga gagttcacga 2940

ttgttgccgc gtccttgtca ccgggatcgt cgctcgtgcc gtcatctttc ttgcgcgtgc 3000

ttggtggccc tgccccggta gaagatcgcc atcggagaat atctgcatag cttctcagtt 3060

actgatggcc tcctcttgca agaatttttc catgagacgc gggagttgcc gagcccgaga 3120

tgtatgctaa agccgacgat gcctgcggat catcagaggg ctctcctcgc ctctcctccg 3180

actgcaggcg gttggcagaa tttctccggg aatcttgctg ctctgctgct gcctgcagcc 3240

tgcgttagac gtgagtgaaa attggcacat gatggctaga accatatcct taactacagt 3300

acccgcatac acgcgttgga aaattaagca cacatgtgct gtcgggactc gggagtacta 3360

actgttag 3368

<210> 652
<211> 2269
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4168_G1, chr1:21715707..21717975, Cluster 4

<400> 652
tcatacgtgc atgcacttgc gctggagcca aacaagagta tagtaggctt ctaaaatgag 60

gcggcgcatg caggcgtcgt gtagccgtca ccgtgaagat gagcacacta cgggctggag 120

ctcgaccatc ttgcaacttg caaggcagtt tggggctgca cacggaggag aagcggaaac 180

gaaaccaggt gcgcaggtgg cggtgtgccc tgctgaatga gccgctcgta ctgcacgcca 240

cacactccat cagttcccgc ccgtcgaact gcccgcctta attaaactgc gctaggagac 300

gaccgacggc ccgtccgtgc gtgcgtgcgc ccaaccgtgg ggcgcgcggg ccacggctgg 360

cgtcgcgtcc tcatccacct gccgctatct ctatcctgca gccgtcacgc cgcccgctac 420

ctgaaacgac ggcggcgccg cccgccttcg ccgtttcagg ctttcaagcc tttatgccat 480

agtgccagcc agccggcgtc gccctggctt cttcagcctc aaacactcgc aacaagccac 540

cagaaacttg acacctgcga gtagaaacgt acggaaactt gacctttttt tcccgatggc 600

tggctcgacc gagagcactc atgattcata aacggagcta tatagtacta ggctatagcg 660

gtgcctgcca gcgacaacga aaacgtgagg ctcacattga aggcaatgtc agatctttta 720

atttggtggt agtggggagg gaaaaaaaaa acccagagcc caatcatcct cgtcgtcttg 780

gaacctccga tcgcgtccga tcatgtcaag cgaaaaagat ccgaaacagt gccgcctgtg 840

tacgccgcca gccgcaaaac tgaatccaac caaccacaca gaagaatgct ctcgctcgcc 900

gctacgctac gggacaccgc cccactttcc acttgtaaag ctgtccggcc gggccttgtt 960

ttctttactc cccacaggcc acaggccaca ggggggggca gacgagacga gacgagacga 1020

gaggacgcgg ccaccagcgc gttatccgaa actcgggggg tggggtacgg ccaccaatga 1080

ttggcttctt ggcgaagtgg aaaatcccgt cccggctgcg cacgacagga ccggggatga 1140

cgactagact agcgtgccgt gccatcacgg tccggtccca ggcgcgcggc gggccggcgg 1200

ccgttcagaa aaaacgagct ctggccccgg ccacgccgct gggctcgatc cgcgccgcgc 1260

cgcacgcacg cgaggcgacg acagccgagg acccccgcca cgtcccgtct gggcgggcgg 1320

ccggacacgc ggcggcggcg aaccaaccag ccaggagagg agctggaaag agacgagagg 1380

agagacccag gggcgcacga gcggcacgtc gttttccttc gccgcgaccg cgagggggat 1440

aagggatacc gcgctactac tccgacgccg catcggattc ggccgctagc tttctccccc 1500

ggcagggcag ccgccggctc gccgcacatg tcctttcgcc agcgtcgcag gcaccctggc 1560

gatagggatg cagtgaactc ttcagtttca cggccgcgat agcgtttgga gatgtataat 1620

ctccgtccat tttcaggaac ggcatgcagg tggtaatatc cccctgtcaa ggattggtca 1680

aagaccacag cgatgactat acttgttggt ccttccaata agcacatgca ccctgttgag 1740

tttcagcttc cacaagcacg agcgcgggtt ctttatttgg taataaaaaa cagcaatata 1800

tttcttttgc aacaaaaaaa aaaagaacag cttgtcagag ccggctgtcc tattgctctt 1860

gtctgactgg gcccgtgcac ggtcgcgttg ggggacaggc ccgaccgccc gagcataaac 1920

aatcaggggg ctaatcggtg tcagaaggcc taccagcggt accagttgcc gttggatgct 1980

caaaacacag ctagcttggc aaggccaaat aaaaggccgt ccaatcggaa aagggaaaaa 2040

aaaagaaaag agatcaattg taaaaccacg cctcgttaga taaggttaac aatcagacag 2100

ttgcgtcgcg cctcgtggag cgaccacggg acatgtccgg ttttgttttg ctctaccatg 2160

tgttgcctgg gggctggggc tccctctctg acgcggaaat ccactccgtg accgtgaccg 2220

tgaccatgac cacaggtagt aataccggcc gttgctgccg tcgtaacgc 2269

<210> 653
<211> 1427
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42422_G1, chr1:250297187..250298613, Cluster 4

<400> 653
gattctcggt cgacatctcg tagcattagc actaccacct tgcagatttt gttagattgc 60

ttgtaaaaat gtgaggaaac atgtggtgga tggattaaga gcagagggga ggaaggcggc 120

gtgtcaggaa cacaagatat ggttctggtt gctctttgtt tttttttaa aaaaaaaatc 180

tgatgattct gttccctcag aacggttgat gttaacatct agtctggtta acagtaattt 240

tctcattaaa taatcgaaaa ggtctataac agaacattcg ctgctgtcat tttattttta 300

tgccgcaatt atcagcaaga ataagatgcc tcgcagaacg tagatcaatc tttgccgaaa 360

gtttcagtct gatcagttga gcactgagat ccctaggcct tctctattgt actgtgcctt 420

atctgatcag ctacattctt cagcatttca acgttgccat ttcgtaattt tataattaag 480

agtggcacaa gaaggaaata tgtctatatc tacctcgtga agcacgaagt gcctgcatgg 540

tctgccaccg gtggttttcg tccaatgccg cttcgttagg ctatggccag agatcgtgta 600

catggtgtag atatagagcg aagtttgaaa tgtgaaatga actgttaccg tctgtttggt 660

tgggagtgcg caggcgtgca cccgcacggt ccgtatctgc gttatgcgga tcatcaaaac 720

aagtgttatt tgattggctt tccgtcacct aaaagctgca tggacggaaa acgagaggcg 780

cggccaggct ccacggggac gcagccaaaa ggcatctccg tgtgtgcagg cgctgccaca 840

aaacaagaat actttaaag ttgtttttct agataaaacc ttatgcacag atcttgtcta 900

tatataagga gcatgattta taatatacgg ttcaggctac caccgtgcag caaccaaaca 960

tatggttaga gatggtttag aagggactaa actaaaccgt tagagtaata taatcttact 1020

aaatcactga caaaagatat atatatatat atatataatt gtttaaagta gtattatatt 1080

aaaacaacaa taaacgataa aaacataaaa tacaaataca taatatgatt atactaggta 1140

cattttaaat tttaggtgtt ttggagtggg aggcttgagc cccacccatc tcaccaccag 1200

aaccgtcttt gtcctgtccc aataacatct gagagcatct ccaacaattt cttaaaatgt 1260

ggtcccaatt atttttttgg acaaaaagta aaatccaaca tccaacggac tctcatccgt 1320

tcttccaaaa gctttgactg ttaggctccc aatcactcgt cgttttcccg ttcccgcgtc 1380

ttttgccgat ttggcgcttc ttcccatctc ccccgctctt cttatcg 1427

<210> 654

<211> 2433
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42513_G1, chr1:250888021..250890453, Cluster 4

<400> 654
gactactgtt tgtggcccta gctcagtcag acgggagtag gaggctgcag ttggactaaa 60

caagcaattt tgccccgtat catcaggtgc acaaggtcat tatcttagaa gactgcaatg 120

agagggccag gcataattga gatgagatga gatgtgtgtg acatgccacc accagtaccg 180

acgtctcctc cacagaacag aaacaggcat ccggcggccg gtagcgagca tatctctgtc 240

gtcgtggact catcctggac ctgggactcc ggctagctac tcgcagttgt tttatgctgc 300

tctaacctcc tagtgtttgg tgccggggca ttttcctaag ctactcgcgg atcacgcagc 360

taccggactg gctactcttc ttggcattgg gcgtagacta tgggagaggg ggaggggggt 420

atatgtgagt gctgacagct cagctgcatg attcgtcagg tttcggggct tggaagtcat 480

gacttgctgc tgccacatga ctgaccggag gtctgcaggc cacaaagaaa tggaggaatc 540

ttgcgtagaa aggtcgattg agatcggagc tgacgagctc tagacttgta gcgcatgcac 600

gcagcattgg cccttgtgat ttccagcctt ccaggctcct atcaacgtcc tacattggca 660

cctcatggac atcaccagcc acgcatttaa aagtgcccgt taactaaaag attggttctg 720

attaggtgac tagtagcaat ttctggcagg tgacaggtgg cttatttttg tagtttcttt 780

actgtaggag attaagtttc tgtggatcaa agaatatctt tccaactaca ccaagctacg 840

ttgtttggca tggctgcaaa gatagctcct tgctatactc catggagaag aagctagagc 900

cactcgaact ttaccaaaat ggggccttaa tgagctacgt acatggatcg attgaggtat 960

ttctttttg tttatttctt gattcttgat aacacgcacg cagataaagt gttccaaact 1020

tttgtctgct ggctgaataa aaaatgaggt tggctgggct agcttgtgcc aatttttta 1080

caggatcgtg tattgctcga ggcagagtgg ggacggcaac cagctttgcg ggcataaaaa 1140

ttaaagaaat gctgtgggaa tcctgcgtcg gaaagcagga cctaagatcg tctcaaacct 1200

tccaaagatg acgcgccgtc tcgaattctc ttattcggct tccgcctaat ggcatcactg 1260

catacgtact caaacattca agcgacgtct gcttttgcta cgtgcgtggt cttttcttta 1320

aggtatgata cttaattgca atccatgctt atgatgatga tggtcgttcc tgctagttgt 1380

cgtcaccacg tattaatgat tttccagtgt ttggccatcg gctcctcgag ctaactggcc 1440

atttttagct tagtttattc gatggttatc tcgctttctt cccaaagtta cgcgtaggga 1500

aagcacagca cgtgtggaaa actcagcccg cgctatgtta atttggcaac ctaaacggag 1560

ttacagattg cggcgcaagt cgtttttta ggctacgtct aacagttatc ctatctcatt 1620

ccatattata catcttaatt ttaagctcca ttttacaaat agtactattt aacgtgtaaa 1680

tcagagtttt atgtgaccat atatacagtc actacatgaa gttacagatt gtgggtgtcg 1740

cccattctta tctatctact ctttcgctga cgtaaatttc tcccaacgcg tgctttgtta 1800

attagctggt tggttcgaca catcagcaac taatcaagca attggccaaa caccaacgcc 1860

tatttgaaaa ggcgctggga cctaacagca ggattatcct agtccacctc aacaccaccg 1920

ttgctagttc gttggcgctg gtacggtacg taaacaaagt cacgctcttt gcacactgct 1980

ggaggccgaa ttcaagtagc tttcttaccc atctaatcag tcctcttttt ttttaaaaaa 2040

aggaacgaaa atcgtgtggt tttggccttg ctttaagctg agcttggacc gtacggaaat 2100

ggcggtccgg ccagcagtga cgactgacga ccggtcgaag gaaggatgcc aagattcgga 2160

cgtttacgtc gctgtctgcc gatcgatcag gcctctttgc ctcttctttt ttttcccgtt 2220

ttcctttcga agggaaaggt tggtcggtaa cctatactac gatatctctg gattaaacaa 2280

tcaacaaagt ggggttggat aacccgtcac tgctccaaat ccttagacgt accagtgatc 2340

caacgggcat ctatactgtt atgcagagcg ataatgctag ctttttatcc gtttggtcac 2400

gggtggctag acctgttagt aacctcgtca cca 2433

<210> 655
<211> 2019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43565_G1, chr1:256293759..256295777, Cluster 4

<400> 655
ggaacaacgg gacgaagcac gaggagggtg gatgggaaac ggaagaggac gacggctcga 60

ttacgaggat gagagagcac gcgagaacat ggagcgaatg gagtccctct attttgcatg 120

tcgcgatgcg atggggagtg tgctgggaag atgaatagtt acagtgcacg tctgcacgag 180

cggacactca cgtgaaagct tttcagtcgg cggtgaaata tcatagtagt actcgttaga 240

catcatgctc acaacacaag catggcagtg tctccctgct taaaaaacac ggtggagccc 300

atgctctgat ctcgtttttc tacgaaacag tcgacgcgat tttatacttg gatgtgtgga 360

gcgtggacaa tgtgttatcg tcttaccttc ttatatacaa ggttgtggga aaaaaaaaag 420

atctcaagtc tactgtagag gtctccttga tgcaaatatg gtccctaaga aagaggtcac 480

caagatgcat cgaaaatcta ttcattcttt atcttcatcg agctcgagct agagtcaagt 540

cgtgatcgtg cagggcacga agggggaaag tgctagacca ataaggtgag gggggccgaa 600

gtgggggcga cgcatctaat cctatcgtcg accatggcaa ggtgagctct tcgctattgc 660

atggtctagg ttggcggtgt acagctgaat gcggacgtgg acaaaatgca aagggtaggg 720

tattttaatc tatgttcatt atctaaggca taccgcaact ataaaaaaaa tccatttctg 780

agacttcgtc tacaagattt ttcctaaaat ggatttttt atcgttgtgg tgtggtgtga 840

cgccgataat aaccaacgtt tttcaatgtg tttctgataa gtatagtacc atttctagtg 900

tccaagattt ttcctaaaat ggatttttt tttatcgttg tgttgatccg atggtttggg 960

tcgctctctg ttcactctct agaatgtgtc agactcatta tctttggtct cacagttgat 1020

aaaaaagcat cgtgtcgaac atgacacact attcatctag agggacccac tgtcaaataa 1080

cagtttatta taggaacaat ggcaacagac catggacttt ggtctgacga tgatcattgg 1140

acccgtccaa cgagagttgg ctgctcgtag gtgagttcta cgcatgccaa tagacctgga 1200

ggttttgatt cgatggtcgt tggactcaag gaagtcagac tatacgagca tatagtcgtt 1260

ggatgacaaa aaaatattta aacggatagt aacgagcata tagtcgttgg atgacaaaaa 1320

atatttaaac gggtagtaaa cgtggctgca tcggaggaat cagacccgtg ggttatggtt 1380

caacactagg gcgtgagacg gtccaacatc tcatagttga gtaggttggt ttcacaacta 1440

gttgagcttt gagatcttat aaatagatga tgtgcaatct tggggagata ttctggattt 1500

ccaactaggt atacatccta gtaatcccaa gaaaacatct ctcactcaca tctagtgata 1560

gtgatacatc cttagtgaga ttgtgagttt tcctattgat ttgtattgag accttgcatc 1620

tagtggcact agtgattata ttgtgttgta gattctagtt actcttagtg attatcgcca 1680

cctagacagc tttggcgcaa cggaggatca ttgcgcgaca tttggtggtt gttgtcagct 1740

tcaatcatca aattataagg gactcatgtg gtcatcctta ttagtctgtt tggatgtcga 1800

tattggagca cataattggg gatttgattt agctttccta aattctattg tttagttaca 1860

cacataatta aaaattggaa tcaaagacct aattctctaa aattggacta taactagaaa 1920

ctccttctcc taatctcgag cgtcacccct ctatattgtg tggaattaga ccgcacaatt 1980

ccaaactcca attcggtgac atccaaacaa tacaattgg 2019

<210> 656
<211> 1957
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43588_G1, chr1:256490670..256492626, Cluster 4

<400> 656
ataagtgtct gatactagta cgtaccatac agcagataga tagatattca ggttccttca 60

aatgagaagt gcgagagcga gtggcgtggt caaacgtggg ggctcaatca aaccgaaacc 120

gaatccagca gcagaatgca tgcagcgggt tggttcgtgg ctgtagagat ggatggatgg 180

aggatcactc atccatcacc tgatcgaagc agaaccgctc cccaaaaaca aacagcagca 240

gcgtcgctgc cttccccttc tgttaggaca tgtccaatcg gcatcagtcg cgcaatggca 300

cctcccaaaa ctgtagtatc caccttgact ggactggaac tcctttccac cactgttcag 360

ttgctctctc tgtccagatc ggtccacgtc gatgtgttca tgcatccacc catcacatcc 420

gtgtgtccac cgaccatcca ctgcgatacc gagcatctct cacgcgcgcg cgtgttggtg 480

agcagtccat cgtacatgac ccaatgcttc attcgaaatt tcgaatgaga tcgatttcac 540

ataaaaaaat acatgattct ctctctctct ctacttaatt ggcttgtttg tttgggacgt 600

aggaatacaa aacaaagggg gagaaaacag gaatagaaaa tatcggaaat tagaaaacta 660

caggattcga aaaggcttca acacttgaga aaaaagttat acgaatgaag ttcagtcaaa 720

cttcaaaaaa aaaaatcgat cagtgtatat aaaccctaaa gtaacctttt tttttacagc 780

gagagtgaag ctacgtactg atactgtaca gcagtgtgca gcaggtttgg gcagggtgta 840

attgaagccg ccgagccatg tgttattgtt tggatgggag tgcagcccca accaactcgc 900

gcagcaagag tagacagtag tagtagattg ccagaaaaag gctctgggct ttccgtgggt 960

caggataggc aacgagctag tacgcgcaac acggcgtgcg gcagccgctc tgaactgctg 1020

tgcctgtgct ggccctcccc tgagactgac agccctggcc gcctggcctt tcttgagatt 1080

ctacacaccg agctcaggct gaggcagcca gctacagcta gcgcctagcg gtactggtgc 1140

actagcatgc atgccttccc aggcgcgcca ggccgcagcc cgccggccgg ccggccggca 1200

cgcatacaca ttttgcatag agataggagc agtagtagaa agcagttaag accatctcca 1260

aaccattcac tcacattttt ctccctatct ttatttacta tattttacta catcatcata 1320

aaatatactt tctcacattt ttttgggata ttttcaacca atcatcctat ccagctccct 1380

ctatatacta taatgtagtt atttaacaat ttttcatcag tttttgaagt ttaaaaaaat 1440

tacatactat ttatactacc ataatataca ttggtatcaa gttaccgtac ttaaaaagaa 1500

ttaatataat aaaaatggag taattaatat gtgggagaag gttagaggtc tcccatatat 1560

gggggcaacc tccctcccca tgtaggcctt attcagttat aattggatcg agtaggattt 1620

aaaggaatta aattctcttc tagtcaaaat taaatagaat gagaacttca tttaactccc 1680

ttgtaaccga ataagcccat atagggcaca gtgggggaaa cccttggaga gtcctctccc 1740

ctatagtaca ccagaaccgg atatggggtg gggggaggta tggggagctc ttggaggtgg 1800

tctaacatcg aacatctatt gatccatgag tcatttttaa aaaaaatata cttaactaaa 1860

caaatggaaa atgatattaa tttttacaac ttcaaataaa tttattataa aaatatattt 1920

caaataagtt tgcattgctg atgaccgaga tgtttta 1957

<210> 657
<211> 2843
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4384_G1, chr1:22634409..22637251, Cluster 4

<400> 657
cacggctgac aacgagctgc ccgtgccaat ccggccgacc agcacgacac ctgatctcgg 60

ttctgaccga cagacatagc taggcaggca acggcgcatc ccattggaca gaaccgcatc 120

attttccacc gggcttaggc atgattaccc gaaaagcggc aggttgcatg tgctgctttg 180

ggttagatag atcggtccca ctggccagtg ggctccccac tcactctcgc tacggcgact 240

ggccgctgct tcccgccggc ttcgagtccg aggttagtca tggcgtacat acgctgcagc 300

tgaactgccg gccgccgggc tctggggttc tgaccacttt tctccagata gtatagggtc 360

taggttaggg caggattcac gtcgcagtct tttagtaagt ccgcgtgcag ccgatcgaag 420

ttacctaact atcgagcacc agcacgagga aacgatgacg gagcgagctg tcgtccgcgg 480

tccggccttc ttcctccggt cgagacggta gcgcgagggc cgatcgagca gcgtgtgcgt 540

gcgtgcatgt cagcaacatg taggcatgta gtagcgtact acgacgtagg cgacggtgcg 600

cgcgtccgtt atagtcgtct acggtctgcg gacggagtac cgagaaggaa ggggagaagt 660

tgcggcggta ggcaaacaat gcgggggaga gctcgcgcag gtcaactcgg ccgccggcga 720

cgaacgatcg aagctgtccg aggccggccg gccggcccgt cgatcgccgc ccgcctcacg 780

tacgttccgg tgcgaggcga ttctgaatcc ggtccaagtc gcagcaggac caaaaaaaaa 840

aagaacagaa cggacgagtt aaatgaatca aatcgattga cctaataagc cgaacccctt 900

tctgctctct atcttttgtc gctcgatccg cactaaccgg cgcttaaatc aaatgaggca 960

cgcgcccgag ctgaccacct cagaacaatc cggtcggtaa tcacgccaac tgttaggtgg 1020

acgccgctag ccggccggga tagtggaacg accgaactga gagcaagcag ctgatgtctg 1080

atgaacagca catggagaga gagagagaga gagagagaga gagagacgga taagaagtgg 1140

tactgctata tacggcatac ggtgtgatta tccggtggct aaccgtcctg ggcgtgtggt 1200

tcgcgtcaac agaaacgtgg cggttttatt tagccgagta ttgctatact atacggctat 1260

accggcacca cgcagtccca tatgattagc ctggacagtc actagctagt agtagtcatc 1320

gtgcttaacg ctattaaccg ccctgggcgt gtggttcgcg tcagcagata cgtgacgact 1380

tgagaaatct ggcccgatcg agcgggcggc gagcggagaa gtcaattcca agagatttgg 1440

cagggtgggt ttccggcctg cctgcctgac caatcgaacc catgtacgca cgctattgct 1500

cgggtcgggt ctggttcggc ttggacgacc tcgtcgtcac ttcgccggcc ggcgtactcc 1560

cgcaggcgac ccatgtccga tccgcctcgg tcggaaaagg cgtccgaggc cgggccgttt 1620

ccactacccg cgtccgcgtg cgcccccgtc cgctccgccg gttgcgttgg aagtcacggg 1680

ccggccgctc tcgttccggt ttccggacgc cgccgcccgc cgctgcccac ctgccgtgtg 1740

ctcgcacgct cgctcggcgc ccgcgcgcgt ccgtccaacg ccagcttacc gaacataacg 1800

gccacgggtg gatggatgga tgcgtccatc caaaatcaca ggccgcggcc gtgtcgtcac 1860

tggtcatgcg gcggtcacgt gcgtattgcg cggggtggtg gggaagtgga agtcagcggc 1920

gcgcggttgc gcaacggcac gggatgatgc cacccaacgg ggccggaatt cctcgcccgc 1980

acggatccgc ccgccagttt gcaggggaca ggtggatgag taggctgttc ttctggagaa 2040

gacacgcccc gcggcccgcg caacccagcc agtcacgcca cgcttctgcc aatcacgtcc 2100

taagcgaagc gacaccatgt ttatttagcc ttttcaggtt ccaaaccctt ttcgcctatt 2160

agtttgcctt atattacata actgattatt tgacttttct tttttcctat aaaattgtct 2220

gttttctttg catattacta gtagtttctt gataatatct ctccctttcc tttgcatgaa 2280

tggccgtaaa tcactctgat gattgattcg ttcttctcat tggttttctt acatggccgg 2340

tggactttat ccgtagctaa ccttagcttg caacaaatta gcacgcaata aagagtcgtt 2400

ccacccccct attatgcctg taaactgcca caacacttgc ttgtcaacca aaaaaaaaag 2460

gatatgacaa tactggccgt gtttattatt tagaggatat gtatgcaata ctgtactaaa 2520

caacgcaacg aactatacta cgtcgtacgt tacgacacgc gtcggtatct acctggtagg 2580

tttagcatat tcgagttatg aaatgaggta gcgatctact gtcccacatc acaaacaaca 2640

cattcgttta acataagatt tactgaaagc ttaaaaaata tactcactca gttcaagaat 2700

agatcatttt ttgaattatt catcgtcagg ttttttacg gtttactgaa tttataaaaa 2760

aaacaattaa ttgtgatacc atataaacat acaatgaaaa tatagtttat aaggtatata 2820

atgatattaa tttgctgcca tga 2843

<210> 658
<211> 1524
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44030_G1, chr1:258434456..258435979, Cluster 4

<400> 658
ttttagttac tgcaaccgtt gttgctcgta ttataccact gcatgtttaa atcgcccccct 60

tccaagttat aaacatatgc ccctattaat tatgtttcag gtcaaagggc catacttcat 120

agctatttgc cccacaatgt ttcaagtgaa agggcctaag agtattggag cactctatgt 180

tacctgcttg gcgtcaacta ttcaaatttt actctagggt agtagataat tttccttgtc 240

gagttttatt ttggtatatg taactttgta attggtccta agcgtattgg agcactctaa 300

attaacaggt gcttgaagct aatgatgaag ttatacaact tggatgaata aacctttgtt 360

gtagtgacat aaggagtttc gaaactgcaa ggaattttaa atttgaatat ttttcagtga 420

gatgttaagg ttgataatat atgcgttttc gtttttaatc tttatgcact aatattttgt 480

agaaagtagt ttgttcacca ttacaacgca cgagcacata cctagtctaa tgattaaaag 540

cggaacagcg gggggtcgga ctcggacctc cccggccgga tcctgtaaac cctagctgcc 600

cggcgatgag ttgcgtgctt tgctggcgtc ctggctcctg cccatgcatg catcgcactt 660

gatgcccttt ggagcaccgg tgggtgctac ccattggcga gaccagtccg gcaaagcgaa 720

gcattggtca gagaatgaat cgacgtggct tgcacactca ttattccgat cgatcgagcg 780

accgcagcag catacttatt acagcgcatg gtgcggagca gagcgaacac accgaattat 840

ctgattggat tattgggact ccataatgac ttggtttgca gaagaagtgc tcaacaagcc 900

gtaaagcagg catgatgtca ggggcgcgat agttgttttg tttccttaat tgcttgagtg 960

tacacggggt aaaggaagct gcttgtatcc tgtgcctgtg cgcggcatct tgaacgtacg 1020

tagctagtgc tgcaaccaca tgtgcatgtg tgtgtgagtg aatatatata aacgaaaaca 1080

aataaaagga tcgacgatgc ctgcttggtt tctcaaaagg agggaggagg aggaacatct 1140

gtattccgga gacgcgctgg cccaacttcc ggttcccaag gaacattttt atatcctgca 1200

gatgggaata aggtagcttg tacataaaaa aggaacaata tgaagtacta taaggtaaga 1260

gtaaaagaga aaaaaagaaa gaaacgatac agttattaga ttatacggtt tatagagtaa 1320

attagaaata gaagatgaaa caataggatg agtaagctgc tccagaaagc ctaaagtgat 1380

ctaatagaat catgtgcatt caatgtacag atatattatg tagaaaaaaa aaatcttggg 1440

ctccaaacgc aatggtaacc gctgacttac ttcgccggga cattattatg gacaaatagt 1500

gtatcccgtg taacttgggg tcta 1524

<210> 659
<211> 1655
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46788_G1, chr1:273700982..273702636, Cluster 4

<400> 659
tccttataaa tttacatata ttcaagtttt gaaggggata ccatatatgc tatataagac 60

attatgagat aaattcttgg tagtaactta ttttagtaga tccgtcgctg ttgcagtgtg 120

ccgcgggaat aaaaaaaccg agatctggga tagttgtcgg tggactgttg tcggtggcgg 180

attccccggc ggggcccgcc tgcatttgcc tgccgaggga ctcgtgtcgt cagacggtca 240

cgtggttcat tggctgcgca cggctggggt ctgtctgagg ccgttgctcg cgcactccga 300

gagtacgagt gcactgaacc ccatgcagat tcggaggtag agtgccgact gccgagagac 360

ctgctccacc gcgaccattt tcattttctc accaaaagcc tgccaagaat agaacggacg 420

gaccggatca ccaggggaaa aggccgagcg tgcttgtgct cagcgctcat cggacagcgc 480

tttgcggagc gcactgagcc tggatgcaag tggcatgagt gcccgacacg cacatgcttt 540

tggaatacca tccttttcct ctcaaaggtt gaaaaaaaat cgggtactga gatcgttttc 600

tagctaacga ggataagagt ttacaacgac taaggccctg tttagaaggg ttttatttta 660

aaaattgcag ctttagtttt tcagcttcac cttaaaacaa cttcaacaga ttggtaagac 720

tgtgttcaag agtgtttgac ttgcacacag actccagctt ttataatact attaatttgt 780

gtgagtttcc ttaattactc tgatgattag cgggtgaaga aagagacatg aatttgtgag 840

tcatgtaacc aatggtatga cgggtaattt ttattcaact tcacgagaat gtataaaaac 900

aatgtttttg aagcgccctt tgaggagcct caaaaatttc ataaaaccgg tctccagttt 960

catgagacag ggcctaaggc cttctttggg agagcttcat tttaagaatt tcaagtctat 1020

ttcagtttct atccaaatag gttcagctcc acgagctcta gcttaaaaaa actaaaacta 1080

gtggctagtt ttatgaaact tttgaagctc ctcaaagggt gcttcaaaaa tattgtttta 1140

tacctcctca tgaagttgaa caaaaattac ccaccatgtc attggtcaca tgacctactg 1200

gttcatgtct ctttctccac ccactaacca tcaagggtaa ttaaagaaaa tcacacaaat 1260

taattgtatc atagaagcta gacactattt gaagccaaac actcgtgaac cccaccttcc 1320

caatctattg aagttggttt atggagaagc tggaaattcg aagctgtatt ttttgaagtg 1380

aagcccttcc aaacggggcc taaagcaaaa caaaggctac aacaaaacct atctctcctt 1440

taggacaact ggagagccag gcgcggggtt gtcgcggcca aatgcacgca cactggccac 1500

agtggcggac ctagaattta aacctagggg tagtcgagaa taatttttg tataatttgg 1560

tactacatat atctaatttt catccatttg gtacataagt acattattag aaaaataatc 1620

aaaatttctt ataataaggt tgtaagttgc ataga 1655

<210> 660
<211> 1793
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47351_G1, chr1:277502356..277504148, Cluster 4

<400> 660
gcctgttctc cactccgcaa attctccact tcgtaatact tacggtccct ttttaaatcg 60

gtcatgtata tatagctcat gcactccgtt tctgcaattt ttgtaaactg catatacgtc 120

tgacagagta cctttcttca gtttcagtta ctatcctact ctttttgtcg tagaggttca 180

gatgtaattt taaaacaaat atcattgagc agcatatggg accaccattt ataatgatct 240

atatctcgtc aagtctgttt tataaacatc tatatatagc tcaatgcact ctgttttatt 300

ttttttaaca cagttgaaca ctggattctg cattttggt aaactgcata tacgtctgat 360

agaggagatt tcttcagttt cagttactgt actgtttttt ttgggtgtag agattcagat 420

gtaattttga ataaatttcg ttgagcagca ctctgtttta ttattttcta tactgtatgc 480

tctcctcact ttacaaccaa gtttgaacac acggttaaaa atacaagcaa tagtaacaat 540

tcacctgtcc tgaatatgga gattccaggg atatttttat ctgtgtatcg cccatacact 600

ttaaaaactt atgttcttgt ttgcaaacac acattatttt tcttttgtat tatatttact 660

gtgtgcatgt ggtctcaata agattttatt ttctatcttg tttcatgtta aaaggtagaa 720

aacgatacac ctcagttatc aaaataagta caaggggacg tactgcgttt acagataaaa 780

ccaaccaaaa tatcacaagt ttatatttgc attactctca tattacatgg tcctgccatt 840

taataaattt taactgattc atgatgagcc atgtccagag ccgtccgatg aggaggagcg 900

taagaggcag gaaaggaaca gaaaacagag agaataccgt gcaaggataa ggtctgaaga 960

aacaatagag gaaagggagg tgaaaaataa aagacagcgt gaatacagag caatgaagaa 1020

ggcagcgtca gataattgca acgaagatat attgggtata tttcaaataa gatatattgg 1080

gtatgggttt gccataatcc atcgattcaa tgtaggaata aaagactgcg atgaacaaga 1140

tcaatcacca aatgttaacg cgtgttcggt cctcatacaa tcgcctagag tcaaggagga 1200

ggtgtaccta gatgattcca tggactggct acatagaaat gacaactacg tccgaggaaa 1260

tgcacgtacc tataatgaat gcactgatga aatggggagt acactcatgt cgaccatagg 1320

tgccatgtca acttttctaa tatgaattcc ttcttatagg tggtaagcga ctcatataat 1380

attttcagga catttgtctt cgtccattgc tggttctacc atggacaagc tcactactat 1440

aattataatt ataattgaac tgtgttccat gttggctaat gcgtatctcc tctgttagcc 1500

tctccaaaat ctggtattga atcgcaaaat ctggtctatc aaacacctcc ccgtgagcta 1560

aacgtagacc ctagcttgac caactatgcc actgtcttat ttgagtccac ccaaactgag 1620

gctgatgttt ttggtaagct gattgactga cacttttcc caaagcacct gaattacatt 1680

ttagtaacat acatttcaat catataccat ttttatatta ctactgtaca accaatttta 1740

tacccaatat gtgcccacta ctagaacctt ccaacaagga cgagcgtagg agg 1793

<210> 661
<211> 2018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48075_G1, chr1:281158909..281160926, Cluster 4

<400> 661
gcgtgagaag tagcaatagt tggggatgaa gacatgcttc tatctcattc tatggaacaa 60

atcactgaat agcttttacg gttaaaatga agtttatatt ttatttaccg tctcatccca 120

cgaaaccaaa tgtccggtgt atgccacata atcgtaccct ttatttttt ttttgtcttc 180

atattccttc gaatagcttt atggttccaa taggttatag gcctaagata aaggcagaat 240

gcatcatcaa tcttccgcct ggcctgtata cccagacttc taattacctt ttctccttta 300

ccgaaagtaa aatatgattc cgcacctaac tgattgatct gatttctcga aagcgaaagc 360

gaaaaagtca aattagtatt agcgcccacc caaggcccgg tttcatcttt cgaagttcaa 420

atgcagcaaa gaacaatggc ggtcagcgtg ccccctgatt acgttctcac ggtcattggc 480

gacggtgaca acgatcaaag ttcaaaggca cgcgaaaaaa aggcttcagg ttcgtttcga 540

actactaaag gcatcaggcc aatttctgct tggctggaaa caaagggcaa ttggagggag 600

cgagtttaca aactctgggt gcgagaatca acggccacgt ctcacggccc cgtgtcccgt 660

gacatgaaag atcgtgtttg ttttgacctg cgacgccgcg aagcatgtct taagcataca 720

tacattttga aaggagacta gccgtgtttg attttgaaaa ggtgtttgtg ctaaattttg 780

ctcaagcata gatgataaaa tacatcagct ggatcatccc ggcacatcga acatgctgtt 840

ttttttttgt ccttcttgtt gattctagct accgcacgac gccagtgaca tggccgccaa 900

caaccacggt cttgttcaca actcaacagc tccactccct ccatcctata atatagtagt 960

cttatacccc atttagatat caatattgga gcatataatt ggaaattgga atcaactttc 1020

ataaattatg ttgtttggtt atacacaaaa ttgagatttg ggaacagaga cctaattccc 1080

taaaattgga ctataactag aaattctctc tctctctctc tcaatacaaa aactcactca 1140

tctgtattac atagaattag accgcacaat ttcaactcta atataacgac atccaaacaa 1200

tagaattgga atcacatctc atttcaatac catgcctgat ttggtattga acccaattca 1260

atcccatgcc ctccaatatc gacatccaaa acagagcgtt aggtgttcac gttgttcata 1320

tacaaaatgt catatttaga aattcatata tgttagaaac gttgcaaggt gacattctac 1380

tataagcaat taatgaaata tatatatatt tttttaaaaa aatattatta aagtgtttag 1440

caagaactcc caccattcct taatttcaaa caatgatcta tgcttaattg cttatataat 1500

tgttataaca atgaggatgc tggtaaaaga agaacacatg tgctttcacc cacttttcgt 1560

actcggagga cacttcttaa atttaatagc tatcatctgt atgcatctat gattatatat 1620

ttcattaatt agatagtgtt ttatttaata tacgacattg ttttttaaac aaaatttaaa 1680

cataagaaag ttatttcagt tatttctttg aaacgtccct cgaattcaat agtaattaca 1740

tggaaccgta gatgacaaaa ctgtttaacg tttgtagagt aaaatttaaa atagagaata 1800

aaattaagga ggacacatag gagttgccgg tgacggcacg aggatcccag attccaagat 1860

ctgggcactc tagtagccag ggtccaaatg ccagcgccta tacagataca catcgaaagt 1920

agccagaagc atgcatacgg aaacggacat tcgggccctt tctggcgcct ctggtctggg 1980

tctgtggact agagcactcg gccacactag tcgagcgc 2018

<210> 662
<211> 1621
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50185_G1, chr1:291722316..291723936, Cluster 4

<400> 662
ccttttcctc ggttttactt ttcaggtcta gagaccataa taactgtgaa tttaatggca 60

ttagaccaaa cactttgaac ctgttgccca ataagtagca caccctcatt tttctcctct 120

tcccttctta ctctaccctt cctactcttc ccttcttctc taccttccac ttctttctct 180

aataaaatgg gggctcatct ttctctcttc ctctcctttc ttctctgtac ttcaccttta 240

tattcaatcc cccctcccca tccccattag atccgccact gccacaaatg gtgaatcata 300

actcttacca taaagatcca tatgctaatg agtttggcat taagatcagt gaacgttttg 360

ggttcaattt aggcatggat tctacctgct ccttgggtag gctgaatggc ttcaatttag 420

gcatggattt tacccgctcc ttgggtagtc tgaaacccac tcatacgttt ttagcaaaaa 480

aaaaacagtg gggagaaatc atgcccaata tgtagataaa ctatagagaa aaaagaacaa 540

tataaagaac aagaggtcca atgtcgctcc gcttttattg caacagtggc ttttggagta 600

ttttaaattg tcatatcacc cttctttgcc atagttaata tactcatgtt ttgggacaaa 660

ctcctgtttt ataaattggg gaaactcttt gtgggtttga taactaacac cagtaatatc 720

ttcttgcaac atatttagcc ttttatattt tacttatgat gcagctcaag tataatgaaa 780

ctagtagaga gaacggctgc ttgcctacag ttgcacagtg gaatatgaat gactgatgag 840

tgatgtccgt tgaattgctt attttgttgc agattatgca tgctacaaga ttacttgtgt 900

tctgattggc accatatagc aacattgagg taatttttag gactaatata tactgtaatt 960

tttcaaattc tttgcactac tatttttgt cttgtgctgt ccagaggtgc tggatagggt 1020

gtcggaatag gcgccgcctg atctagtatt ttataaataa ccatttattt tgtgattcgg 1080

tgaaaatact ctcttcttac attatttgaa aacaccatag gataaacaat caaagctgga 1140

gattgcttga ttatatggtt gcatcaaaat ttgtatctgt atgtgatata tcatttctat 1200

gtagttgtaa gtgatgacca ctttcaacaa ccaaagacct tgtcaacaat accttcgtac 1260

gcctcttgag tgaagtcact atactcaaaa gagcaagcac gactgcacga gcaaggtgga 1320

ctacgagtac gagaggcaac agagagccga cgccggaggc gctagcgcga cgatcctctg 1380

ctccggcgcc cgcggcctgc cacgggcctg cacgaatcgg atctgacgga gccaatcttg 1440

ggccagatat ggggcacggg ccgtaagctg gaataactag ccccatcgcc cgacttccag 1500

gaccgatgca tacatatccg tgggcttcag atcgcgactc ctggcaggcg tgcagagcac 1560

gagcgacatg agttgggcta ggagcctagg actaggagtc gtacctccac ttgatcggtg 1620

g 1621

<210> 663
<211> 1421
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50820_G1, chr1:295263677..295265097, Cluster 4

<400> 663
tactcaaata taaaatggaa atcgtagcaa cgtctagtat ataaaaacaa tagtagtgtg 60

tttgggaaca aagtttttt tctgcgggat tgaagcaata ctgcagtatg agcaatattg 120

tggtattata tgctttaaaa tgtttagaaa atcatctgaa atctctgtat actaaattgc 180

acttgtttgt agctttataa aatttgatct caaccaaagt ttttctacca tccacgcttg 240

gtcccgctct tgcccattgg tgaaaaccgg agcttcctaa ccctttcttt ctctagacta 300

gaggacgcca cttgccatct tgttttaact ttgagaacga aaccaccgat gccgactgct 360

gcagtactgt ttgtgtttgc ttcatcgtaa atatgaagcc agtttcgaaa taaatgggta 420

gattaaggct atttttggga tggctttatt ttaataatta ttgtttcggt tttccacctt 480

catcattaaa cgactttaac agattggtga catagggttt aagagtgttt ggtttgcata 540

tagattacaa cttctgtaat acaattaatt tgcgtggatt tctttaatta tccttgatga 600

ttagcggatg attaatgact agaaaacagt cataaaacga ataaactctg aagtaaagct 660

ctctcaaaca gaccagtttt taaagtgttt ggatgagagt tgtgttaggg taagataaat 720

tacggagtaa cttttggtgg cgatatgatt caaaaaagtc gagaagacgg tgtcaccttc 780

gtctcatctc actttgacat caaacaaaca catcctaaac caacaatctt ccgcacggag 840

tcaagtcacg ccacaagtct aaagccggcg caaagctcat tacgaacggt ccagtccaga 900

tctcgttgct ttcggcctgc cgtgccgtcc cgtcctgcat gcgggatgtt tccctacgtt 960

tcttcctgcg cgcgcgccat ttgcgccaca gccgtcatcc gtgcgtggtg cttgccgtgt 1020

cgtcgtctgc cacggcgcgc gcggggccgg ccaggaacgg cttgcacttc cgtcgtttgc 1080

accgcacaca atgcaagttt ggcacacacg acacgacacg acacgtacgg ccgtgccgac 1140

tgccgccaca gacggcatcg ccagacccag acatttgtta ggcggccctg tgtctcactt 1200

aacacgtacg tgcaccaccc ccattgagag tttgagaccc gtctgtctcc gcttctctga 1260

ctcacagccc tttgctccgt ctttttcact agtatttttt ttctcactcg atgaaggatc 1320

gaggcatcga gcaggccacg taaatggtag ccaatatttt ttttgtttaa taattttagc 1380

ctactttcta actcagcatc taaccactca catcacatat a 1421

<210> 664
<211> 1960
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52052_G1, chr2:1694346..1696305, Cluster 4

<400> 664
ccgtaaaaaa aagaaaccct gatgaaccag tcttgttccg cgtctccgac ccgccggatc 60

aagctagctg atcgaatcgg atccctgcac tgcacgctgc acggcgatga cgattggcga 120

atcggatccc tgcacacgca ccagcggact gacctagcgc agttgcgctg tcggattcct 180

gtccgtcccc ggcccgcacg cacgcgcagt ggctgccggt caagtagtgg atgtggatgt 240

ggatcgatcc gacgccaaac aaagccacgg cgtgtccgct acccgctctg ctcaaagctc 300

aagtacctag tgtgtggatc ctatcgtggt ctgcaaaaca tatcgggtaa cgaacttcac 360

agatgacgtg atcgctacta atagcatgtg cccgctaact acccgcggta ataaaaagat 420

ttatatatat tcagatgccg cagcagcgcc agtagacagg gggggggggg gggggggaac 480

tgaaaaagaa cacgggtagt agcaacaacc aatcttggtc gatgcggacg cggcaggcgg 540

cagcgaatgg atgagatcga gatggagatg gacagggcag gcgacatcag tggcgtgtgc 600

cggacggacg gatggcgact agatcgacgc tgctattagt aggcttgcat ggggacatga 660

caagtgctca atgataaatt aaaatctatc agtatcaatc accaggggg tggccagtag 720

actgagcagt atctgtttat gtagtctgag cagcagcacc acctaaacat gacacttcac 780

caacccctgc gtaaaagagg ggtggtcggt cataaatgca tgtgaataat ataaaggttg 840

aagatgagca caatcgagaa ccagcataaa tataatgcag tttaaagaga ttcatgacat 900

ttttgtaaca ctctacgtcc tctactattc atctctacta ttcgtcgatt aataaaatat 960

aaaggtgaag ataattacaa actcattaac taactcaaca tcatgacctc ctagccacct 1020

taccacttga tttttggtac aagttctagc ttattggttt ctaatccacc tctgtaccgg 1080

ttcttgagtg tcgtgcatgt gaatcttgtc ccccccatct ttccaaaatg gcaccccttt 1140

acttttacta cactacttat tggagcgaag atggaaccag tccttgatca cccttcgtac 1200

tcatcaatca acaagatttc cgatgcatgc atggtgatcg gccaggggaa acgaagcgga 1260

tgtgggggcc ttgacctcac gagaggcgaa gtccccttgg caagttcgac gaagacaacg 1320

tcgcgaggta gcgaaggcct acaacgaaca cacccataga cgagtctacg tcagcaagcg 1380

aatgcctcac actaaacccc aacggggagt cggacgactt cactgctccg gtgacaagaa 1440

catgttcacg gaggcgatat ccacggccct gctgagaggt tgcacctcca accagctggc 1500

gagatgcccc cacctgtcaa cctctcttga gggtataaaa cctcgtacaa ttaggctaat 1560

aggtttacta tactccttta tagagcatgt gaggagagag tttacatgtt agctagtcca 1620

tgggtccggt cagttaagac tcaacaacca caatcttatt ttaaccatag atttgtacca 1680

tacctaccgg agggggtaga tatgttatgt cgcttctttg cacactaggg tatatgccat 1740

tggatacttc atagttgata aacggtgcaa caatctgcac atccagtgta agccatatag 1800

attacccatg ctaacatagc gaacatactt aagctaaaac agctacacac cttcttcaca 1860

agatctttta gttgttttct accttgtaat ttgcaagacc aggagtattt ggggaagaaa 1920

tatttatgac attcattaag agtacaaata tgcctcacag 1960

<210> 665
<211> 3121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_535_G1, chr1:2904407..2907527, Cluster 4

<220>
<221> modified_base
<222> (2836)..(2836)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2836)..(2935)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2837)..(2837)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (2838)..(2838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2839)..(2839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2840)..(2840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2841)..(2841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2842)..(2842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2843)..(2843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2844)..(2844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2845)..(2845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2846)..(2846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2847)..(2847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2848)..(2848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2849)..(2849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2850)..(2850)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (2851)..(2851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2852)..(2852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2853)..(2853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2854)..(2854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2855)..(2855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2856)..(2856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2857)..(2857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2858)..(2858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2859)..(2859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2860)..(2860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2861)..(2861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2862)..(2862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2863)..(2863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2864)..(2864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2865)..(2865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2866)..(2866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2867)..(2867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2868)..(2868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2869)..(2869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2870)..(2870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2871)..(2871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2872)..(2872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2873)..(2873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2874)..(2874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2875)..(2875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2876)..(2876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2877)..(2877)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (2878)..(2878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2879)..(2879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2880)..(2880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2881)..(2881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2882)..(2882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2883)..(2883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2884)..(2884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2885)..(2885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2886)..(2886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2887)..(2887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2888)..(2888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2889)..(2889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2890)..(2890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2891)..(2891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2892)..(2892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2893)..(2893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2894)..(2894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2895)..(2895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2896)..(2896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2897)..(2897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2898)..(2898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2899)..(2899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2900)..(2900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2901)..(2901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2902)..(2902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2903)..(2903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2904)..(2904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2905)..(2905)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (2906)..(2906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2907)..(2907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2908)..(2908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2909)..(2909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2910)..(2910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2911)..(2911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2912)..(2912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2913)..(2913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2914)..(2914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2915)..(2915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2916)..(2916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2917)..(2917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2918)..(2918)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (2919)..(2919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2920)..(2920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2921)..(2921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2922)..(2922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2923)..(2923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2924)..(2924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2925)..(2925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2926)..(2926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2927)..(2927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2928)..(2928)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2929)..(2929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2930)..(2930)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2931)..(2931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2932)..(2932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2933)..(2933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2934)..(2934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2935)..(2935)
<223> a, c, g, or t

<400> 665
gtctattctg agatcagctt gattcgtatc cagattacgc accagataag cagcgtgttg 60

cggcgcttgt ttgaagtcaa cgctcaggcc gatttcatga agctgacagg cgctgatgag 120

caaatcgcgg cttattgctt caagatgcca ttcgttttcc acctgatcga agaagttagc 180

cgcaactttg gctacgcgct gtgcctgatc aatatcgatc ataaagcggc gttgaatatt 240

acgcagcgta cggctgcgaa tatcctgctc gacggccaga tgcaacatgc cgtagaccag 300

gccttcacgc agcgcaccgc ccgccagggt catacactga atattcagtt cggtaaaaat 360

ggcgatcagg atcgccagac cactcgggaa cactaacgca cgttccagcg tcagcccgtc 420

aatctccagt tcctccagcc gaccgcaatg aatggctcgc tgtttcaatt gctgcaactt 480

ttccagggta atgcgttcat ccatcccctg tgccatcatg atttcctgta acgcctgcac 540

ggtgccggaa gcaccaacgc acactttcca gccgtgatac cgtaattcat cggcaaccgg 600

acgtaacact tcgcgtgccg ctttttctgc agcatcaaaa ttttcctgcc ccagattacg 660

atcggcaaaa tagcgttcca gccaggtgac gcagcccatc gacaggctga acaacgaggt 720

ggtttgtgca cccgtgccgg ttaccagttc agtactggct ccgcctatat ccaccaccag 780

gcgctgatcg gcaccaccag tggtgtgagc aacgccctga taaatcagac gtgcttcctc 840

ttcaccgctg atcacctgta ccggacaacc gagaatttcc tgcgctttgg caataaaatc 900

acccgcattg acggcaaggc gtaacgtcgc cgtagcgaca acgcgaattt gcgagggagg 960

aatatcttgc agacgttcag caaacaggcg caaacattgc caaccgcgct ccattgcttc 1020

attggagagg gcattttcgc tattcaggcc agcagccaga cgcactttgc gttttattcg 1080

cgtcagcgtc tggatgcttc cagccacctc gcgcacaacc agcatatgaa aactattcga 1140

accgagatca atggctgcat acagcgacga ggtggaaccc atactcttca tccttcaatc 1200

tgtctctgtg ttggctgcat tctttcacct gaatcactta ctacagtaag ctcatcggga 1260

ttcattctct tgccatcttg atacagtttg aatgattttg agtatgacat tttttattta 1320

acctgaacga cgacgattac gcggagcgcc agtacgacgc ggaccattgc ctgtgcgcgg 1380

gcgcgtgagg cgcagcggtt ttggcagatc ggtcatcaat gcgtccggat tgtatttgct 1440

taccggaatt gagtgaccaa tataggtctc aatagcaggc aaattcaatg catactcttc 1500

acacgccagg ctgatagagt gaccgcttgc gcctgcgcga cctgtacgac caatacggtg 1560

aacgtaatct tcacagtcat cgggtaaatc gtagttaaag acgtgcgtca ctgccggaat 1620

atgcaaacca cgcgcggcaa cgtcggtggc aaccagaata tccagatcgc cacgggtaaa 1680

ttcatcaaga atacgcagac gttttttctg cgcgacatcg cctgtcaata aaccgactcg 1740

atgaccatct gctgtcaggt ggccccagat ctcttcacaa cggtgtttgg tgttggcgaa 1800

aataatcgct ctgtctggcc actcttattc gatcagcgtt tgcagcaaac gcatttttc 1860

ttcgttagaa gggtagaaaa gctcttcttt aatacggtgg cccgttttat gttccggttc 1920

cacttcaata tattcggcat tgtcatctgc tcgaacgcca gttcacgtac ccggtacgaa 1980

agcgtggcgg agaacagcat gttgaggcgc tggtttgcag gcggcatacg gcggaacagc 2040

cagcggatat ctttaataaa gcccagatcg tacatgcgat cggcttcgtc cagtaccacc 2100

acctgaatgg caccgaggtt aatgtggttc tgcttggcgt agtcaattaa acgccccgtg 2160

gtgccaatca gaatgtcaac gccgctttcc agcactttca gctgtttgtc gtagccatca 2220

ccaccgtaag ccagacccag cttcaggcca gtagcttccg ccagcggttc tgcgtcggca 2280

tggatctgca cggcaagttc acgcgtcggt gccataatta aggcacgcgg ctgattcacc 2340

ttgcgatcgg caatcgcagg atgagagaga agataatgaa acgttgacgt aagaaacgcc 2400

atcgttttcc cggtaccggt ttgcgcctgc ccggctacgt cacgacccgc cagcgtcagc 2460

ggaagggcca gtgcctgaat gggcgtacag ttatgaaacc ctttttttc aagggcttct 2520

acaaccttcg gatgcagggc gaagtcggaa aacttctgtt ctgttaaatg tgttttgctc 2580

atagtgtggt agaatatcag cttactattg ctttacgaaa gcgtatccgg tgaaataaag 2640

tcaaccttta gttggttaat gttacaccaa caacgaaacc aacacgccag gcttattcct 2700

gtggagttat atatgagcga taaatttttt cacctgactg acgacagttt tgacacggat 2760

gtagacatcc aacggggcga tcctcgtcga tttactgggc agagtggtgc ggtccgtacg 2820

aatctctaga tccgtnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2880

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnncatct 2940

agagattcgt caagatcagc aatttagcta tatatgaaga actaacatgc tgcctgccac 3000

gcagagcaaa gtataggctt cgttcaactc accattcttt gaaggccacg gactggtatt 3060

gaatctgcaa atccatcaat cccaggaata gtctgttggt cataaaattt gtgtgaatga 3120

a 3121

<210> 666
<211> 2077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53706_G1, chr2:10464137..10466213, Cluster 4

<400> 666

ggtgaacttg ttctacgaag ttaggatgct ctttcttttt acagctggga tgctcagttc 60

taacatgagc gagaagaact attacgatta atagaggtgt gaaatagtta atctgttttt 120

tctcttaaac tatgccctct aatttcttgc ctagttgttg ggaggtgcat tggattccat 180

ggaaaccact caggtgcaga tcacaggtct tatctccgct tgtttgtggc ccttgaactt 240

ttttcagaa cagtagtcag agaaaggtcc acgcattcac ttgcgagact agggctcaaa 300

gcttgcttgt aatttttgat gcgctgcaat ttttcccatg ttttttcggt tctaatcttt 360

gggattggga gaaataatgc aggctgtctt ttggtgctgg gctttatcat cttttcactg 420

caaaaatctt gtggatactg caaagtgcaa ccaaagcaga ctgggcctcg aattggagta 480

tgcagataga aagctagtaa atgattggtt attacactga agctgcagat gccatagcaa 540

gctgaaggtt cgccctggtg atctgaatct gatcccatgc catctcatga tgagatgcaa 600

ctttttaaca taataatgtt tgcctaattc acatcattaa ggtagaatga tgtcctaagg 660

cttaacagca aaacaaaaaa aatctttgga tatggtgcaa tgtatccgcg tggtacgtgc 720

aaagccaaaa gacttttgct ggcaagcgta catgtcttgt tagttgctcc aggtcagccg 780

tcaaattttt accatacttc ttttatttta attttgtttt ctttgtcacg tatacaacgc 840

ttccccttttt gtttttctgg cacgccaaca attagcagga gatttttcaa gaacagatgc 900

ttttcagaaa cagttggcag gaaatttctt tttttcacga catgttaaac cgctgttgtg 960

cagtgcagaa ttggccttat tcttgcgttt aaaaaatgaa gaattgatct caatcagaac 1020

aaatagatca ggcaaagtac tgaaaactct ggccaccacc agtagtatag gtcagataaa 1080

aaggaaaaca aaaatgtcta ctttttaagt gattagctac agtttatatt gaacaggtca 1140

gtttagatga agaacggaac tctttcagaa gaatcggata aactttccat gactcgctgg 1200

cttcttctag acaaaaagtt agagcttcta gaaaatttca gactagagaa gaaaaggcca 1260

tcaaggatag atggaggtga ttcagacttg agagtgagac caagatcatg cctatctaca 1320

cacaggcatt cctttcagct tttttgctaa aagatgctaa ccgaattcta accaggacac 1380

accatcacgt caaatcaaac cagcggaagg tcctctagtt cagtgttcag aggtcaagtt 1440

tgttgcaacc acaggattag gacaggtcct tgctcgacag cgactccaga cctgacctac 1500

gaatgaatgg atgaacggca caatcagaca acagtgacga gttcactggt cagagtcagt 1560

ggtacagcgg caaccgctgt atccttcgcc ctaagcacaa tgcatgcggt cgccaaaagc 1620

agattaggag caccgtaaag cagacgcttt gcacctaaaa tcggcaatga ttaggccggc 1680

aaatctgtca ttttgtggcc gatgcatggt acgtgctccg aattttcttt gacatgcata 1740

tttcagggtc tatttgggag ggctacattt caaaattttt gaattcgttt cagcttcttt 1800

catctaaaca ggtctagctc tagctttgga aaaaaaattg aaactagaga ccgactttat 1860

ggaattaata aagctcctta aaggatgctt caaaaacagt gttttcattc ctcctcgtta 1920

acttgtatga aaattaccca gtatacaatt gattacacaa tatactattt cgattctctc 1980

gtcacatcca ctaatcatca aaaataatca aggaaattga tacaaaatca attgtattac 2040

agaagttgta gtctatatat aagccaaacc ttctcaa 2077

<210> 667
<211> 1628
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54314_G1, chr2:13542011..13543638, Cluster 4

<400> 667
ggtggggtgg ggtgggtaca tacacgcgca gccgcagttc gagacagaaa caaaggcact 60

gcccgacttg ttgctctgct ctgcgttgcg ccgtactagg ccgcagcgat cagcgccgtt 120

cggtagcgtg cacgcgcgct gccatacgtc agcagaatta tcgagccgga catatttgat 180

acctggcaca agtcgtctct tggaagtgaa gcagaagcac ccccccagcg agccccggcg 240

ccgacggcgt gtcagccact caggcagcca gcccggggag ttgccatgcc atgccatgcc 300

gtgccgagaa gagaaagaaa cgaccccgga aagtccccag gaatccaggc ggccgcggag 360

ccggaggaga cgcggacacg cacggttaac ttatccccgg gccacgcaag gcccgccacc 420

gcagcgcggg gcgccaggac agccattccc tggcaatggt ggagccatca tggcgtcaag 480

gcctcgctcg acagaacccc ttgtttttgt tttattaatt atctgtcgct tctgggtgca 540

gtcggtctca tctcagcgcg ccaccgcgga ggccgccgga gagcgagagc gaacctgcgg 600

tggcctcagg tgctccggtg gttgcttcac ttcacacgcg agtgctggaa gggaagctaa 660

ggaacgccag gcaggcaggc aggcaggcgg ccgctagaat aaaatttcga tgcagtgctg 720

gagcatttga ttatttgctt tcgccgtaga ctactactgg cgtcgtcgcc caactacccg 780

gcgcagccgc catgaaatga gcagcacggc atggtcgtct cgtcctctcc cccatcgcat 840

ttcgcaacaa aggtcttcca cggcaacagg agtcgtccca cccgtttttt ttttaactct 900

ggggcacagg tccaaagcga ccagatttta gccggctccg ctgcctttac aagcgtcccg 960

tccgtgccgt gtgcctgcgt gctttcaagt ttcaactaca catggcgttg ccacaaaaca 1020

tgcgtaaaac atgcgtccat ccatgcataa aacatgcgtc caagccggta gataccgctg 1080

ctagctctat gcctctccat ccatgcataa aacatgcgtc cgtttcttac tccatgctct 1140

atgcctccat caatggatgg atcgaccgac tgaccgaggt tgcatcgcat cgcattgcag 1200

ttattatgac gatgatgatc cgagccgggt gcaatgatag atatatagca tatgatcgga 1260

tgcatatgca tgcccccggc atgggtgcat gtttcattca cctccacaac tggagctccc 1320

ctcctttcct ggctggatct ctccgggagg ggtcccatac ggccataccc gtccgccgga 1380

acccacagca ggggaacagg cgtctttcca cgcgatcatg gaggccggag ccaaagcttc 1440

cacgaataat gcacggcagg catgatgatt ggccagacac gccgcgtagc ttttcaaata 1500

aacgcccccc ggcgggcata ggctcccgac gaggagccct ttcctcgcaa ccgcggtgct 1560

gtccagccag atcagtgcct gcccatgcat gcttccactc ctgtagcggc ccgagaaaga 1620

aggaagga 1628

<210> 668
<211> 1893
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54847_G1, chr2:16543703..16545595, Cluster 4

<400> 668
tctctcactc catcagtgct agcacaaatg cacaatggta acgtggtttc catcctcata 60

catgtggata ctgtagagat gttattgttg ttgttacgct gttgctacgg atacgagagg 120

acgttcgacg acttccttga ctataatcga tgtgttcatc tttcgttgcg ctgcttgtca 180

atgcaagtgg taacaatgca ggatcctctg ctcgatagat acgctagtgt gtacggtata 240

tgttctctga cacgtatata ccatacccac gccaatgcat gtatgagatg aaagaaacat 300

cgaacgtggc agacggaaaa cctaccattt atagtcaggc ttctttgttg gacctatgca 360

tgcgcgccgc ggatccacct gttgacttga aaaacgaatt aaaagaaagt gaactaatta 420

atgttctcgc taatacaatc gcattggcct gccggcattg catggcggag gagatcttga 480

cgtgcgatgc gatgcgacgg tggaagtgga actgtacttc tccccgatcc agtgcgtacg 540

cgtttgagcg aacggccgag acgacggcat tgaaaaatcg aacgatatgg gcacaacgac 600

aagcgtgcgt atagcggtat aggaataggt tgatggcccg tcgcagtatg tacggtacgg 660

ccggcctcct tatccagatg gagcctgcac cggatggccc cacaagagcc ttttgacctg 720

agcctcctcc tcctcctgtc tgtctgtcca aaccctaatc tcgtgggata agcagcattt 780

gggaaagctt ccggcaccca catgctccgg ccggggacca ggccgcactg gacggacgcg 840

agagcgagtt gagtacttcc ggtcgatctc acctgcgaat ctaccgtcgc cgtcgcggca 900

ccacgatgcc gatcggagct caggcataca cagacagctg cagagagcgc gttctgtggt 960

agtgtgagtg gcaaccggcc tggctaagct gtagcccatc tgcctaggcc atcagttcag 1020

gcatcgcact ttcctctgcc gccttttgtt ttgttcgctc gctgcgtcgc gctccggtct 1080

cgttctaaac atgtaccgta accgtatgat gtatccgctg ctgggtaact ggggcacgtt 1140

tccctcgaga tttttatggt cattaaacag atgacgattt gcagggccgg gtcatatgca 1200

tccatgaggc agcttattaa ccgtcaatga aactgactgc tagctccatg tggtcagacg 1260

tcgtcagagg atgaaagagt tggcgcgtgc atgcccatgc tagcaagcac ctgatcgcct 1320

ggatggctcg tagtttaatt tgtggaattg ttgagcggct attggagatt gttgttggtt 1380

tctgtcgtcg attgtgatgg gctcgtgtac tgattccacg tgggatattc atgaagagca 1440

actatagtgc aactgtggct atttggagtg cctcactagt gtggtttta ctatgtccta 1500

attgtgggtt tggtgattga tgtcaattag catgtgaacc acatagcttg gactcgccac 1560

aacgaggtcg tagattgtcg acaagcaact gaacctcggg gatgattctt tgtgttcgat 1620

ctcttgccca gttcggtttc atcgttatca cactcacatt aatatcattg tcttgtatga 1680

tagttaacta ggtcgtattc ttttctgcta taaagtgagt agttgctaaa ttgtgtgctt 1740

atgtaaagtc aaccaagaga tttagcaact agatttgtta aagaggcttg cttgttgtga 1800

aaatagaggt agagtaaata ttcacttatt atgtgtcatc tcttatacta attaactttg 1860

ctctagtgtt tttgtggcct tcaattcatc cat 1893

<210> 669
<211> 3154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54865_G1, chr2:16649703..16652856, Cluster 4

<400> 669
ttagctgcgg cggtgaaatg agaagcgtag taaaaaataa aaaaaagtgt tttttatctt 60

ttccgcctca ggtgtttcct cccctgctgt tgcgtttcag gggagcaggg ggtagtgtcc 120

tgcatgcgtg ggggcagtct gaggccagag ggaacaggcg agctgctgct ggcagttggg 180

cagcagctcc gtccctctct ctctcgcggt ccacttccct tcccatgcag cgatgcgcag 240

gcgcaggatt ctctgcagct agcagcgacc ctacgtgcct gctctgccct ctgctcccgg 300

gctgggggga ttgggaatca tatcatagcc catttgtctt ggtgcttatc catccggacg 360

gccgtcccac tgcggcgcgg cgcagcctgc tgctcttggt tagtgcctcc ggattagaga 420

ggcgcaagtt gttgcaaaaa acgacatgat ggccggtgca gtgtgatcga gtagcgtctc 480

gctgtcaccc tcttcccagc cgcgccaacc ctggggtccc cgtaacagtc ttcaccgctg 540

gtggatcccg gccccaaccc aacccatcgg gcatcggctt tacagctcct ccgatacaaa 600

ggaacagata attgtgcgtg cctgtggact ctgacctccc tgtactgtgc ccatgtcaat 660

gcctggcctg gcctactacc ctctcaacaa cgggcgcgcg gggtaataaa actgtaataa 720

agcctctcga gtcgcgaaca gatcgaatgg gtcttggtct tgcttgtttt ttccctgcgc 780

atgcaccgcc tgcaggacgt cgtgccgacg acatgggcgc ggtgctcggc atgtcggcac 840

cgcggtccgc ccgccccgag catgccacca attacggagt cgtcgtcgtc gtcgatgcgt 900

catcgccgga gtggtcttcg cgcgcgcgcg cccggtggaa ccggccggtg caactcttgc 960

tgcgcgaatc gagcgagcgt aaacgaaagc aactcccttt gacatggagg gcaagagggc 1020

cggtgccttt cttcgagtca gtcaatgaca atatatggcc atggagatcg actttcaaac 1080

cctgactgca ataacacgct gtccgccgcc gagcgatggg cattggacta ttgtgctggg 1140

tgaagatcat gctggcgctg aaggcaacag tgccccctgg ccacacactg gacctcaagg 1200

ctgcagctcc atgcaggcag tacgagtagt aagtagcacc acactcacta ccagtggcag 1260

tgagtgcgca ggctgtgctg cgatggattg gcgacgagat ggacgccagg ctgctccgca 1320

ttctcgagtc tcgaccggcc tctctagcct cacctttccc ctgcataccg ctgttcgcag 1380

agtgcaatcc cccattggct ggccacggct cgccagagta gagcaggccg gccgggcgcc 1440

tccgcggtcg acacgcgcgc ttgccgctgg cccagcgcgc agcaggatgg ccacgcacgg 1500

agcgagcaac ctgcactgca acaagccaac aacctgcaca aacccaccga tcggattgga 1560

ttggactgga ccaccaacag acgcagcacg gcagcagggc ctagcacgag cagccaccac 1620

ccgtttaagg ccagagaccc agagacgaca gtgcagggga ggcacatcgc atcggcgtcg 1680

gggcgtccgc aggcacccac tactactctc cctggctctc tgccctgtgg ctgtgactgt 1740

ggcaggacag ggcagtgctc atcatcagtc atcatggcat ggtgttcgga cgatctcagt 1800

aagaaagcaa tgcaatcatc gcgactctcg ccaccaaaaa tgcactcgcg gcgcatacca 1860

gtttcagtca aaacacaaac acggacgaga cctcagttcc gatccagtgg gtggtaacaa 1920

acaaccaagg gcgtggtcgt ttctagcggt ccagtctgtt cgggccctcg ttccagacgg 1980

aaacaatcag cttggtttgg acttcgaccg tttcattccg gactgttcgt ttctatctga 2040

attaaaaacg aatctggttt ggtttgaagt ttctccttcc tttataggct cggtaccaat 2100

cctggccgcg tgccctctgg atcgaacctt ggcgaggtga gacagcaaag catcacaaga 2160

taataccaat ttgttgtgaa acaagtgttt atattcctgc ttgaaacgaa caaccatcat 2220

ctgttctaca gtttttattc ctgtctgaat ttcactggag accaggtttc agtgaaccaa 2280

ctggattcac ttgatccttg ccctggaagg atttaggccg ggattgaaac cgttggaaac 2340

gaacgggccc caaaggcatg caaggcagcc ggaaaacaca ggcttggatg gaaatctcgg 2400

cgagttttcc cgcttccccc aaaggcacga cctggcttgc cggcggccac cacgtaaaac 2460

ccgtgcacag gctttaatac ggttggtcag ttataccacg tgaaagtgaa aaccctcatc 2520

accttgtgat gcacccgtgc ctatgcatca caatgtgtgt ttgtaggatg ccgacagtag 2580

ataaggccat agagatgaac cagtgtagct gcctctgcat gccagtgcta aatggctaat 2640

tttgacgagt atggtttgga ttgattgatt ggatgccttt attcgatcat agatagccct 2700

atctctatag gtggggtaaa cctatcctgt ggaagggaat gcagcggttt aatagctctt 2760

ccaaaatctg tgcgaaaaat acatacgatt caaatttggt tttggctgac aaaacagttt 2820

tggccagctt gaaccggcca aatcttgcgg aggttgtaat cttctttttg ttcatcttga 2880

cttcaaatta gattgaacag cacatcaagt aaacggacta atatctacat cacaaaaaaa 2940

gaggccagca gggcccttaa acggaaaacc tagaccatta tccgtacatg acaaagacga 3000

aaatgctgat gtaaataaat gtgtttttct tccttggtgt cagtttcccg ttggcccaaa 3060

aagaaaaaac cggcccacgt aaaaaaggtt ctcacttgca gcccgcatcg ctcatgccga 3120

gcagcggagg ccggaggggt tatcggcgcg ttat 3154

<210> 670
<211> 1637
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55390_G1, chr2:19196958..19198594, Cluster 4

<400> 670
taacataatg ggtcgttact tcttgacaaa acatttcaca aaatggtagt atcctgtttg 60

gatatagata ttggtgcaca gaattggaaa ctagaataaa ttttcctaaa ttctatcgtt 120

tggttgcaga actgagattt ggaattagag attcaattat gtgaaattgt aatataacta 180

gattctctct cccaattcag aggatcactc ctcggtatta cgtagaatta gaccatctaa 240

ttctaaactc caacatagtg acatccaaac aacggaatta aaattgcatc ttattttaat 300

actgtgaccg atttggaatt gaaaccaatt caataccatg tccttcaata ccgacatcca 360

aacggaacat aagggttcta gcttcttaca aatgatgtca gttagcagtt acatatcgat 420

tataaccatt ctcaactctc gctgctgtct cacatcgcca tcgatcggtc actccatagt 480

ctccttaacc cgatcgagcc gcgatctcag atggcccatg gcatgcatgc gccccgcgac 540

acgttggtcc agcagaaatt aatatggccg gtgtttgtag atatactggt cggcatcaca 600

agatcgaagt gagcaaggag gaagaatgca tcacatggca cagctgcagg ttgcttggca 660

tatgctggga tgtgtcgacg tacgtatacc tgggacttgg gaggagtaat gcattcagtt 720

ccacttccaa cgtcccctct gctgatccgc ccagcatgca tgcatgctcc tggagtcctc 780

ctactagatt tagtttggat ttggcatcat taagaagcaa gctagcggca acaacgatca 840

ccagattaat acttcgtttt tttttgttgc tggggacgtt tgtactaacc gttgacccga 900

caagagtaca gagataaacg ttggtttctg cgacttgtcg actctagttg caaacacgag 960

gcacgatcca tgtgcgaaaa ctatcgagga cacctgacag tcttctgaat cctcccgatg 1020

gtgtcccccc tctaccctaa tctcaccaac aatcaactcg cccatccctt gcagtgattt 1080

gacatggaat gcaaatgcag gatcactcca gaaactacgg acaccggtgc caaccagatg 1140

aggtcctgga aagcaatcgg cccgttgatt gtctgaagaa ttggcactca ggtcctgtgg 1200

tgacagagtc attcactgac ggctccacca agtctacagc accaaattct ggacagcaag 1260

tcggctgttt tagttgcgtc tccctttgg tgtgggaggg aatgaagacg tcgtacgtat 1320

ctgggcaacg tggggaggag tggagaacta ggggcgcgcg cgccgaagaa agccggggga 1380

cacggccggt cgatcggatc ggatctaccg tgcccggcgg cgtcgttgcc cactcacgct 1440

ctcgtgccgc ggccgccggc ttcgtttgag gatcctgctt gatctgctgc cgcaacgtgc 1500

gactgtgcga gtccgggttc aacgacaggt attaaccgcc tggacatggg cttctcgcga 1560

ccctaaaccc acgttctctg ctgggccaga atgctacgct tcgctgggcc aagataaaat 1620

caggaccggg cgagcct 1637

<210> 671
<211> 2566
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5735_G1, chr1:29190279..29192844, Cluster 4

<400> 671
tagtggtgat gctgatgcgc gcgaccgtgc cgaatacagt agacgtgtgt gtagtctttt 60

tctttttccg tggtccaccc acagcccagc ctgggatttc gtgtggcgta gccccaaaga 120

ccgtgggatc catcccagcc caacgagtct cctctcctac cggcacggca aaggaaccaa 180

tcaggctggc gatcccctcc tccgtccctt cacaccccac ctcccagcag cggcgcctgt 240

gtgtgtccgt ccctcctccc gtcgcatgcc atgattcacc tcacgccatt gaagaagaaa 300

aagggagaag agacggacag gatagataca gtcagtcgca ggcggaaacg cgaaagcgaa 360

gcgaccgagt gctgccggcc ctcccgcctc ccggtggtga gtgaggtcac ggtcaaagcg 420

agccgcgccc gggctgcagc tgcaaaggtg gttggcagca tcaagaaatg ccctcctcga 480

tccctactgc ctccggcttg gtcccgccgt ggatgtggat ggatggcgtt ggcatcgcat 540

cggggacatt ggcatggcgc tgggacaccc gccctctgga ccacattgac cggtcagaca 600

ccacgggcca cgcgggcgag cacgctgcct tcccccgtgc atgcgatgcg gacgcggatg 660

cggtccgggt ccggtgccgg tgcgcgccct cttctctccc agtacggtag tacccctctg 720

gctctggatc gcgacgtcgc gtgagccccc caccgccgtt cctgtcgccg atccggatta 780

ggacggctga ctggttaatc aattaaagtg ctagctgact gaccgataaa gcgccgtctc 840

gatcgagccg ggcttggagc tccggatcag catctgcccg gcccgggcat cgtgatgatc 900

gtccgtggcg cctaacttat tgcggctcgc ttgccaccgc ttttgtttat gcctgtttgc 960

cctgtcattt attaagccct agtattagtt tttttagggc cttgtggctt tctgcctctg 1020

ggggagcaga ccggtttagc agcgcggtcg caggctttgg tatttttta gtaaaaaaaa 1080

tatttcttaa ttgcggcagg gcctcaagga ccgtgtagta gctccagtcg tagcgtagac 1140

acatgcacgc acgcgcgttg tggatgccga aaacctgaaa agaatctcca aacaaaacaa 1200

atgcagattg gactgctgac cgcccaggtc ggcttccccc ggttcaaatt gggtgtccag 1260

ccagtaagca ctaggcaagt gctgcggacg aactgtccag ctggcgttcg gcctcacctg 1320

aatcgtgact aaactaatct caactctcac ctgtcccagg aacgctgggc tcgctgcacc 1380

gcccggcagc atttccatgc ctggctgcct gatcctggtt cgtgtttcgc ccggcaagac 1440

cgcaggaact agaggcgccc atgaccgcgc gcgcaggcgc cacagagcgc gaggccagcc 1500

gcgacatcgc atcgcactcg cacgttgttg agtcgtaaac tcgtagtaag gctgtcctca 1560

ccgttacaca taaatatgta cgggaaaaac cgtttcagca ctatacatac atagattgaa 1620

gttcggaata taaataaata atataatagg ctctctaaca atgtcaacct aaggcatggg 1680

ccagcccctc gcgcagtcac gccacgcacg cggtgtcccg cgccaccgct gtcgtgtgcg 1740

gtgtgccgcc ctgccctcct ccccgccagc agcggcagcg gtgcgcactg tgcccaccgg 1800

acgtgccggg ccagaacgtg tatccgcgcc tcggtgtcgg acgtcaacgg agcagctgag 1860

ccgagcggag cggagcacgc aaacaaagca acaacagcgg ccggccgccc ccgccggtac 1920

agcacactgc gtccctgcgc ggcaccagtg agatgggcgc gagcacgctg cacgcgttgc 1980

gctggatccg acggatttga ctagtgcggg aagccgacgc gacgcgtctc cgtcgtctgc 2040

gctcgtcgtg ggtggcgtcc cccactcgca atcgcacccg cccgcccgtc cgtccgatcg 2100

atcaaatcga tcgtctcgta ccggggcctt ttgacttgcg gcacccgcac gcacgcttgc 2160

gcgcgtacgt acgtatacgt cacgtaccct ctacggctgg gtggcgttga gatcagatca 2220

ccggccaggt tttaaattcc tgtgcgtatc ggcaaggggg gcctggagcc ctggccccgg 2280

gaaactactg cagagaggaa cgcatacgca tttgaatgct cggatggaac ggagctttag 2340

gcatgcacgt tcagcttggc tttcttgccc tgtagcgtcc ccttactttt gcctttatgt 2400

tttcgggcgc catttactgt ttaatttttt tcccgtctga tgagccatgc taaaatcttt 2460

gcaccggtca cagactcaga gtcacagtct cgtctcggtc tcggtctcgg tctggtaaaa 2520

aaaaagaggc ccctccaacc tggcgccact gcacgtgtgg tgtgtc 2566

<210> 672
<211> 1548
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6270_G1, chr1:32077389..32078936, Cluster 4

<400> 672
ctaagtcgcg gtatttgtct gagaaagatg gtttaagatc ctgtttggta gggctcttcc 60

tctaccagtt tcagccctgg ttctggctcc tcttagaaaa tagctccctc cttattttta 120

tgaagaactc tagaaagagc accctgtttg gttggaaata tagtttctct cgcagcttct 180

cctacgatgt agcgtcaatg aagagaaaag aaggaagaag agccgataaa ggctcctctt 240

tatggctcct ggctcgtacc gtttttttgg agtcctctct cttttctaga aagagtttat 300

gaaaaagtat tctctttggt agaatttttc aagaagccgt tgaaaaagct cttgaaggag 360

ccttactaaa ggggcctaac aataagaatc ctacgaaagg tcaaacgtac ctcttaggac 420

tctaactttt tatattaatg aatatataat cctttataaa taacaagaga aaacatcctc 480

cgccattatc ttctatctct ttctatttgc gccaccgaaa ggaaggaacc aaaaacattt 540

tcttatgtct caattactga cgagaagatc ttaggttcat acctaatatc tataacaatg 600

cttactcgac aggctggatc ttgtcaagag tcggagtgga agctgctggt agagtcctac 660

aactacaagc agacgaggag aaaagaaaag agcagagtaa caagggtcat tgttgggccc 720

ttccaggtgt ttgctgataa tgaagcccat ggaatataca tggaccgaag agcgtacaag 780

aaaagaacac atattggacc cgacccgact tctcaagaac tgggaaggcc cagacggttg 840

ccggcatgat cgggacaaag cacggcaaac cggacccccg caacgtacta ccgccgatcc 900

gccatccacc aggggcatcc acggactgcg tgagcgtgag tgtgtgccat tgcatatttg 960

catcctcgat aggccgcgac acagcttaac tctgcacagt cgtcgtcaca cggccatgat 1020

tcgtcattac tctatttcga caggtaacgc acgtcttgta cccattctca tttcgacacg 1080

taacgtcttc tacccggccc ccctttctta agcggttctc atgagtcaaa tttgaccagg 1140

gaacatcatt caatacttga gaccagccag tattgccgtg ttgctgcaga gaggttaatg 1200

gcacgcacgc atgtaccgag ctttcggtac tggtccacta tctcgtctag atcgtcgtcc 1260

tccctccctg tacacggcac tactaaaaac cagatgtgtc atgcttggaa cgcgacgtgt 1320

tctttccaaa ccccttcccc agaccccacg ctaactcctt tatttctatg tgccgtcggc 1380

ccgtcgcgaa caaaggagta aatcaatccg gtacggtgaa aagtttgcaa aaaaaaaaag 1440

cgaaacaaaa ccgtttcttg aatgtgtgaa tactccacga ccgacgcgtc gcgttccgcc 1500

gcgtgcgtgc ctcggcgttg gcggtcgttc cccgcggagg cgattttg 1548

<210> 673
<211> 1909
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6733_G1, chr1:34615198..34617106, Cluster 4

<400> 673
cagaagtgca agccatgaca tcaaaagttg tcttcttttc attaagcagt ctgcaccttc 60

gagaaatgtc ggccttcaga ggaacttggg aacgactaca tcaatccttc ggcgtgccgc 120

ttctaccatt tcctataata aagggagatg tccagccgac caaagcttaa cttggagagt 180

ttcagggagt tgaggcttga tctcatcaag aatgtacttt acttctttag aatcctaaac 240

taatgtgcca atgggggctg agagcaagtc catgatgcac tggagctgaa caaagatgtc 300

agtcagcccg gatgattgat tagtggtttc cacgatggtc gagcccgccg aggcagggtc 360

aaatgatagc aggtctaaaa aggttgtacc ccttataagg aagacattag ttaatgtcag 420

aaaaggggggg agacacatat gacttgagga acatgatgta ccttttttgg gattggatta 480

acggtcggct cggggacaac cgattcatgc aagtcctgaa ggacgattag ggtgtcgatg 540

atctcagcta agatatcaat agcttctagg ggagagtgcc attggaatgc atgttcctcc 600

ccactggatg cttcaaggat gatggtctgg gaagcatgtg aactgcagtt accaggaatg 660

tgcgagcatc gaatatggga tacagaaagg gtgcatactt gatgtgcatt cagggcttct 720

tggttagggg acgatgatcg tgcctctttg agaaccttct tggcaaccac tttcctcacc 780

ttggtttgga cccgaggggc aatagtttct aaagttcgtc ctctcttagg agccggtttt 840

ggagaatcag gttggtgttg tattatgagc ttcttcatgg gtggcacatt cttacgggaa 900

aataccatgg gagtggtctc agagagttga gagggaaatc cattatagtt tagaggctct 960

tctccttcct attgatttaa aaaggaacaa gcagaatcaa cagaaaatga agatggagga 1020

tcttatgaag gtcgtcaaga acaatgcctc cccatcaagg gcctcgccat aaacattgat 1080

ttactgcaac aacgacccta aagcccttcg aaaagcatgc gacttccaca tttcccacca 1140

tgaactgaat ctgtcagttg aaaaggtgaa tgataggtca gtaggaatgg gaatcttcag 1200

gtcgtcaaac aaggaatagt attggtgggc ggtaatggag tcagaaaagt cagctctaca 1260

ttctatcaat agatgacgat gaaaatgagg agggacctat ccaagactaa attgttgagc 1320

ccctacaatt ggttggtagg actcataact agacttaatg atcctattag acgtactcat 1380

gccaaccgag aggaagccag ggcggatcat gagagaatac aagtgtccag tatcactgtc 1440

atcagcaaag ttgtctaggc tgagggaagt tgaactctca aactctacag aatcaacaca 1500

agggaagaaa agagggcttt tcaggccctt aaaaagattt tgaaccaact agatgcatct 1560

ctagggttca acctgctgtc agggagactg tataaggctt gaccataacc ggtacatcgg 1620

atctgtctat cagactcata tggaatgact tgcagctagg actgggaatg tgggaatgca 1680

tcgttgacag tacagatgag cccactgttg gataaaccaa tatcctgagt ttcttaccac 1740

taagcaagtt ggaagttaac agatggagga atcgataaac ttctcccagg aagagctttc 1800

tagggccgat aggattgcct ccggctaagc gatgagccaa agagatataa ttcttggttg 1860

gagcaagaga agggccacaa aacatgaaat gctcaagaca gagattcaa 1909

<210> 674
<211> 2123
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6805_G1, chr1:34949106..34951228, Cluster 4

<400> 674
tggctctgtc cggcaggcgg gcgtgcatct acaggcgttt gaactcagca ctagaacaac 60

acgatttcgt gcagggatcg gagagatcga gagctgcgct gctaactcca gtgaccagtg 120

cccatcctcc tagctatagc tatagctgta ggtcttaaac ctttcttgct tcaccgacaa 180

gctaaaggct ccggcagtcc ggcgtgtccg cgtgtgtacg tgtacgtatc atctaccggt 240

tgtagcacac cagggtttac ccgtttcata ttcatttacc gcccacggcc gccccaagaa 300

tgggaaactc aaactctggc gagaaaccgc cgaatttcgt caaatctcga aataattgaa 360

aatttaaatt ttaaaccacc agtttctcgg tcgggaaact gctaattagc accgagaacc 420

agccttttgt caccgagaaa ctgccttatg tcatggagaa accatttttt cggtaaattt 480

cggtgtacat atttttcaaa tttgaaaaaa aaagaatttc ggtgagaagc cgccgtgaaa 540

ccagtttttc cgatgaaatt cgctgttttt accaaaaaaa tgattggttt ttaaaaaaaa 600

ccctaaatat aagatatata tatatattac tatattaagt actagtttta acggtcgtcc 660

cgtgttaata attttcaaaa aaaaactctt acatttcttt agaatcaacc cgcactacta 720

taatttcttt tctattacta taatagaata gttcatgtaa aaaaataagt tgaaattatg 780

tataagtgag tgtttaaaac ttggttgttg gtgccacttt cacactcacc taatcaatat 840

aaaacatata ttttgtgttt tattaaaata aaatttatca tattatatat atatatatat 900

aaactgtagc aatgcacaag tatatgacta gtatgtgtat atataagagt actcagaaaa 960

catttagtat tttataacga tttttctagt atttatattt tttcaaattt atcaaaatat 1020

gaaccaatct ttgggaaaat tggtcgaaaa atccgacctg gcccggccgg aaacgagaaa 1080

ccggcgataa accttcccga cggttttgta aaaccttgag ctatcttctt ctcaccatct 1140

atttgaaact ctattgtata aatagtgtca tttaacatta cgtgtctcct attttaccct 1200

atatctacta gagacggtct tgcacacgcg gtcagaactc agaaggcatc cctttacgtt 1260

taggagatgg gatcgaggag cagatcctgc ggcagctagc gacacgtact gctattacct 1320

taccgcaagc tggatggctg tgcttgtgct cggctgcgct gactcgctga cttgtgactt 1380

gtgcgtgtgg aagacggaac tcggaaggat gaagcagcca gcctgacgag ttccatctct 1440

gcacggattc gccttccccc aacatcctgc acgcgcggat gcgccgatcg acacaggcaa 1500

agtcatcctc acatgtgtgg gtgaccttgg gctttggaag cagcaacgac tacagacctg 1560

aatccgtgcg agccaccgcc atcgctcttg aattttgtgt ttaacctcag ctgctcttgc 1620

gtcacccacc caccacatgt acgtgtaccg gcatctttct ttctttcttt ctttcacaca 1680

gaattactgt acaacgctgc aggttcggtt ttaccggtac gcacgtacac gtgacgatta 1740

gactatactc cgggctgaaa tgatgctata cgcgcggctt ccaagcacat gttactgtac 1800

taaaatatta ctagacagca gggcgggcgg ttgacccccc caccctcacg cgggccagtt 1860

gttggtgtgc attggtaacc ccgcattatt aaggtgcagg cgtcgtggca cgctggtgtg 1920

tgtgtgggct tcggtagctg ttgcacgcac gcggcgtggc aagatcggag atcgcgctgc 1980

gggggggtaat tttggctgtg ataaacccgt ttggtcggtt gcgacttgca ggccggtact 2040

actgctagct actagtacta gcaggcccca gctaagatcc caactgtcat cgtcctggat 2100

catcctcaat tagaggatct gca 2123

<210> 675
<211> 3060
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6925_G1, chr1:35758165..35761224, Cluster 4

<400> 675
ctgtttttga gtaaattcgt ttggtcaatg ctctggtttc ttccctttca tttatgaatt 60

atcgttttca ttgatcaact gcacaactaa tggccgatag attctagttt attcacgatt 120

ctgagatgaa tgaacaagga tgctaccggg aaagcaaggg ttcggttatg gtgttcatgg 180

gagaaaggta aagatgttga ttggctcgaa gcctctagta atccaggtga atccggtaaa 240

tgataatgta ttcttgggtc tgatctttgt caatgtctct actgtaaatt tggataagta 300

agcgagatgg aagtatgcaa actattttga cttttcgaca agcagactct tctcaagtag 360

aatttttgtg gtatttttct gaacatttgg accgatcact ggcttttcgt atagcgtgaa 420

ggatcatttc tttgctactg gctccatttg tatagattgt aaggcattat aatttttaa 480

aagtcaaagc gtcggaagtg ttgagtttat gatccaaatt ctaaagaagg cagattatgt 540

tggcgcggta tacgcaggaa aaatggtgtc atcacggacg agtttcgcca cccgatccgg 600

cagcggatac gcgcatgctg cgttgcgtcg gcgcccgcag cggtgaggca ggtcgccggt 660

cgattttcgt ggccgcgaca gacgcgccgg cccccgcgag ccacggatgc ccttggagag 720

ccgtggaggg atcggatccg ttccgttccg gtgccggtgc tgatggccct gacgtacggc 780

ggatcatgca ctgtaggtag ctgccggccg gccccgtccg gcgattagag gccatgctat 840

cgcacaactt acggtgctcg agcagcagca ggatggcatg catgttatcg cacaacttgt 900

gtggtgtaac acacgagggc ccagggcagg cagcctttat agttatcaaa ataaagcata 960

ggtctacagg ctacacagta cccctaccac acgtactagg cgtggccggt gctcagctca 1020

gctcagcacc cggccgccag ccgccgcaca gctcagctca ctagttcagt caccgactca 1080

ccggtgcaaa aaaaaaaaaa aaaaaaacag aagatcgggc aaaaggctct gctaaaaaat 1140

ctcagaagtt tgtcttggtc tcttggatac gtcatgcgtt actggctacg tgcatggtgc 1200

atatccgggg ggttcttctt tttgcgctag ctgtgtcctc ctgtggactc ttgtgctagc 1260

actgctgcac taccagcagt ctacagcaaa agaccaaggc gctgctgtag gtgggtggag 1320

cgagcacggg cgccgtcagc ccggccggcg ccgcgccctt tttctgtttt ccagttccag 1380

gattgggttt tggcctctag gccgggaggc gacatccagg gccgggctct accaagtacc 1440

aaccaaccag tcgaaaagct ctgctgcgtc cgcagcgcat cttgcgccaa acgattcgac 1500

ggcaagagct atgctctatc gcctatcggt acgtgctgct gcctcagtac tctctctctc 1560

tttctctctc ttttcggcag tggaggtacg tgtcgcggga cacgagagag agagacacct 1620

gagtcgagtg cattctcgtg gacaagctag tttccgtgtc gctgaacggc tgaagggatg 1680

gatatatggg tgcttgcttt ttcacccgaa atcacaaggc gcgtaccgtc cggcgctgag 1740

aaatccttcc ctcgttcact cgtttcctgg aactcttggg atatgcatat gcatgcaagt 1800

agtatggaac tagtagtgcg gtggctttta aaaagaacag gagggggcg agctagcccc 1860

taccggaaaa tgaatgatac gagctgcagc agacagtaaa gaaaacaagg ccatgggttt 1920

ttttcgtggc tcccgcgcct ggcgcatcta gaccagcaga gagtgatccc tcgctcgccc 1980

acggtcacgg aactggcggg ctaacgcgcc ccagagtagt tcccaacaca aatagtgcta 2040

tgtaaagtag acgaacagag acgcgcactt gactggagat tttcaagggc tcgccatatt 2100

tctcccctgt gttaatgtga tggcgtggcg cgtcatgcat gaaataaact gcacgcggca 2160

ggggcctcgt cctctctctc ctcgagcagg ccagtctccg gccggtggcg gtctgtcgca 2220

gtggcgcctc cccccgggcg gggcctcgcg acctttttca gaccgaatcg attccttcac 2280

aagcatcgtg tcgaatccac ccaatttagg cctccttcgt ttacgtcaat ttaactctgg 2340

actaatatgg attgaaatta aattcatatc ataatccata tatccaaata atctaagtct 2400

acttaaattt tttttgttaa acccatcatg aattatagcc caaggtttag gatttttta 2460

aactatggaa aacatgaatt ctatccataa ctcattaggt atggaacaaa tctatgaaaa 2520

tattgcacag atttatatta gaatccatgg atcaaaagaa aaactaactt tgagagatac 2580

atgaattaaa ttaataaatt taatcctata ataggattgt gtgtgaggta tatggattca 2640

ctcaaatcca aatttggatt aaatccacgt ttcctatgtt tctatttttt tcaaataaat 2700

tgtgaaaaat gaaaataggt gagagtttat cctgtcaaat tccataactc cattcggact 2760

ttgtttacgt aatctaatat tcacctcctc aatctatatg tattgagatg gattaagatt 2820

gtaaattaat ataatttata gtctaatcca tttaatacac acggattgca gtgaatagcg 2880

cagtaccaaa caagacctca aggggcaccg gagtcaagtc actctgcccg cgagtcatcc 2940

cgtgcggtga aaggcagagc agcagagtgc gtaaccgcag cctgatgcga ggcttgcaga 3000

acaaacgaaa tcgacggcac acgatcaaaa aatcggcttg cagtgcagcg cccagtactt 3060

<210> 676
<211> 1677
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82622_G1, chr2:185222333..185224009, Cluster 4

<400> 676
acggatgatt ggatgtgtct agctaaaaga ggttaatggt tatagtgtta gctgagtcga 60

ctattagctc tattgcattt aaacaatatc taggcttgaa atcaaatctt gttgagggtg 120

gcatctcaga tctttcttgc aaattaacaa aaagtatggg taaatctgcc gcaactttat 180

acttgtgcct ctacgtactg cttttgcgtg agacaagacc gtggcttctg ttcgtcggtt 240

tgctactgcc tctgtgcctc acgacctgtt ttgcacgctc cccgttctcc tccggtaacg 300

gcgatctagg aagggtgctg ctgactgcct gctgagtgtc gatgccgatc agtttaggaa 360

gattagtact agtagtatgc cgcaaatggc gatggcacag gctctgcatc cattcagaaa 420

gagagatgca cgcacgggca cggtaatgtg ggtggctata ggaaggagta cgtggtctgt 480

cagagaagaa gaagaagggg ggcagaaagg ctatctgatc gctgatcccg cgcgaggacg 540

cgaaaaagaa tatctcctgc cggccgtcgc ctctttggct ctttgcttag tgggggttg 600

gagacatgga gtgtggtggt cagtggaggt ggagcactgg actctggagg ccttaaaaaa 660

acaaggactc agctatatga tgtggaccat cggtggtccg cgatgcccac ggtcgtcatt 720

cagtgaagtc catgggtttc tcccgtgccg tggtggcgtt tgcgtgcaag gagcattcct 780

tttccacggt gtcgaaagca cgcctaacat tcacctggag gagcaagcgt atacctactt 840

gctcaagatt tcggaatggg tttgccaagg agttgatccg tgcaagtgac tgggagctga 900

agtgcagttt ttcaccttgt accgatgtca ctgcatgcga gcggagagga tgggcccaga 960

ccgaaaaaaa aaaattggta ccgcgtgcgc atgccgccgc cgccgttcta gaacgagggg 1020

gaggaaggaa caaggctcga cgtgtcgtcg ttcgtccacg cctagagact cccccaaagt 1080

ccaaagccta ccgcgcgctg caagacactg ccgtgcccct acgggtctac acgccgccgg 1140

ccgccccgcc cggcgcccgc ccatggattc gcacgcccgc gccacaccaa aactgggcgc 1200

gccgtgcgct ccgcatccgg atccgcccca actcctcgag cgaaccagaa ggcacgccgg 1260

gcatgggaac ccgaacccta tagccgatcg agcgactgct ctcctgttcc cggaggtggc 1320

cacggattgg ccggtataat agggcagctg actcatgagt cctgacgaat cagacgacgt 1380

acgtgtgccc tgcctgaccg gtggcctggt cgttggccgt tcagcaccaa acttactcct 1440

ccgaatcaat gccctcgccc gagtgagctc aggcaacgtc gatgacaccg aggttgtgtc 1500

aaccattgat tcacgcttgc gcaggccggc gatgcaaaca attgaacaac gctccggtcg 1560

cagatttgac atatagacca agtcttgcct ctccaccgaa atagcgggag tcgatcacga 1620

ccgctgactc aatgtgtgaa gcctataagg catatgcaat ccattttaac ggtatta 1677

<210> 677
<211> 2798
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82810_G1, chr2:186201452..186204249, Cluster 4

<400> 677
ggtcccttgc ccccgttggc cgacccttgt cctcggcgcc aggacgggcg aggtcgcagc 60

cgggcatgca tgcgcgcgac ctcggcggcg gtgcccgcgg ggcgccagct ggggctgtcg 120

tgtggtctcc ggctccggct ctccaccagg cgcaggcggg ggccgccaat catgaggacg 180

agcaaaaaag ccccggaggc agggccatca ccggccctct cgtatctgcg cgagatcggg 240

tcggccaggt ggaggctccc gagagttcca gctgcggatg catggggcct cctccatgcg 300

cgacctggtg tggtggtgtg ggtcgacgtc gtcgtcgggg ccagccaggt cgggcgggct 360

agtttccaga gggttctcag gctctcaact gcactgcacg gttgcctccc cgcgcgtccg 420

ttgacacacc cggccccctg ttccaggacg tgaaccgctc gcgacgtgcg agaacctatt 480

ggcgcgcagc tccgtcgtcg gtggcgtgca cgcatgcatg cctcgcaaat tgactaggaa 540

caccgtacgt agtgtcgcga gcggcctgct agtagctggg gctgcagcca gtcgtcgtcg 600

gcgcctgcag tgacagctag caactggtag tacctacaag atatgcgaat gccattgttg 660

gatggtatgg tcgttttcac ggcggcgagc acacacacaa acaagatgtg tccctttgtt 720

caagaacaca ccagtggctt ccgctccact gttggcagag cagaccgact cgggtgagaa 780

gccatgcaca aactgcttcg agaaacacat ggatttgtaa cgttttgacg gctttcgttc 840

tctatatggg cgatcgcgaa attgtgacga gtgacgagaa cgatggcact agtacgtcct 900

accatctact ccttatctat ctgaaggtgc tcttcccttg cattgctttt gcatgaccgc 960

gcatactatg ttcaggccaa tgcgcgcgta tctgtttgtt gtccacacca cggacgtgta 1020

cgttctggaa ctcttacgca acttggagct gcagcatata atgctcacgc acgcatgcag 1080

acagtagtgt tgcgcgatca tacttactag cttggacttg gcgtggcgat atatgtttcg 1140

ttttccgcgg aattaattac aaggcgacag acatctgcag ctgtgccctg tggtgcatct 1200

tgaagcagat gtatcccagc gtggttcttc ggtttagcga gcgcgcgaac gtgtctcggc 1260

catcaccaca cacacgatag gatcaaggac agtttgcgca cacagttcgt gtcaaagata 1320

attttgtaac caggggaaac atgtggaaaa aaacacaatt ttcttccctt gcatgtatta 1380

actgtttcgt ccttttatgt atctatatac tcagaatcca ccctcttctt cttaagtcat 1440

tgttcgtgtg gaccaagttc tactgtctta aactacctat atacgtacct gagcttaaat 1500

ggtcaccttt gatagatgtg atgatcgtta gttctgctta tgatattatc tctcattgtc 1560

acgaacgtaa caagctgaat aagctctact ccgccccagc cccagcatcg atgaagagac 1620

agtagaatat agatggatca agatcactct cgatcggccc ccaatgcaac ttggcagcta 1680

atggtacagt aactactttc tccggaaagc tcagtgcaca gcacctgaga ttcgaccgcg 1740

gctcgcatgg acacggctgt gagatgagat gagaattgag atgacgtgtg ctgatcggcg 1800

tgcatggtcg acctcctcga cgtgactctt tcaggccagc cgttggcgct tagctggaag 1860

tgcctgccca tgcatgtcgc gtgcgcgtgc cggccactgc catcctgggc cagcgcacca 1920

gtgggtgttc caccaccagt cgctctcgct cccgatcaac gtcgccgtcg cgcggatccg 1980

ctcggtcgcg attgaggtcg ctccagaaca gcccgtcgtg ggtctcggtc tctcgggatt 2040

tattgcggcg taagtgcgcg tgctggtgga cgacgccgtg atcgccatgg caactgggtt 2100

tcccgcgcgc cgcggcgtca ggtcggacgg acagatagcc ccgccccgca cgcgggtgca 2160

tacatgaacg accgcgacaa caccagagac cagacagcgt cacatcggcc gaggcccgag 2220

gcacgccccc tcgtgtcatg ctgacggccg aggcccgagg cgccgtcgcc gagcggtcga 2280

tcgtccgcca tctggggccc cgatagcgca cacggcaggc acactatccg atccgcggtg 2340

caacttgccg cgcccggccg gaggggagtg gccacggcgc ggcgctacgg tccaccgacc 2400

caggcaccca gccgcggggg tcgcgtcaag ctgcgtgacg tacggcagcc ctgggccccg 2460

tgtcggcgca tggaggaccg ccggcgccgg atgggcctca ccgtcgccgt ccgcgtattc 2520

ccgctgccgc cggccggccg tccaggtcgc ggcgcgggcc atgtatgtat ggctccatcg 2580

ctccgaaata gccctttcg cgcttgcaat aggtgataga taacatgcac tgtaacgacc 2640

gtgcaagctg ccaatggcgt gaacgtgatg atggtgaccg aacagttcca tgatcggcga 2700

tcagcatccg gcgggcaccg acctctttgc aacttggtac ggatcaaact gtgcgtgatt 2760

gtccatgcag gcagagggac agggataggg atagggac 2798

<210> 678
<211> 1508
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86108_G1, chr2:206624563..206626070, Cluster 4

<400> 678
tctgcgactg cggttcgggc gatggacatg aggatatcga tcccggctgt ctcgcagctg 60

tgcgcgctgg cgaccgccta ccggccacca cgatacgatc gcgccgccga tctgtcaggc 120

tcgatggccg cggcgggtgg ccgctcgcga tctcgccacc cgcgggtccc ccgtgaagct 180

cttcccggcg ctacgagcct acgaccacca aaccggcaaa acctccctta ttaatatccg 240

cgcgcccggg cccagctccg atggcggcag ctctctcttc cacgccgcgc caagtggacc 300

agagggctaa ctaaaggcag cgagctcgcc cgtgacgtgc gccgttcgtc gagttccgtt 360

tcgagcaggg acacgacacg agacgccatg gtgaagctgc agccgcgcgg aggccggcga 420

tgcgtgcgct gcgtgcgtgc tccttttccc tcataaagag caaccgcccc ggtgcacggc 480

gggaaccaga agcggccaga acggcacggt cgcatcacgg gcactgcatt gcgcgtaccg 540

ccggaacgta acagcgccgc ccatcacgta ccatcacccc acccgtgcgc cgcatccccg 600

tctccggtcc ggcgagtcgc tggaaacgga cgggaagttc ggtaagcagc aggagtacgt 660

gacaggattt agcatgtggc gtatgccaac tgccaaaact cgcaccggac gtttgcaaaa 720

gtcaagtagc ttgacaaacg agctacggcc gctcgccacg gaagctgtgc gacgagactg 780

acgactgaca agatatacta gctagctagc tagctaggcc acgagtagct gcatttcaca 840

ttgatgccgg tttccgtagc gcatccggtt gagaaattga ttccgggaaa aaaatatgca 900

cagaacatca cctcttgttg atgaaccaca cactccatta attgtgattt ttttttaaaa 960

aaaacacctg gactccaaat attttgaatc cactcctggt gtccgtaacc aaacaacggc 1020

ccctagtggg cgagcgtctt cctactctca atctagcggc aaacactcct tcccctacaa 1080

tgttgtcccc tacccttccc tgcacgccac gggtgaccgt ctctctcccc tcatatttga 1140

gggaccgcta tattcagccg tcactgtgcg tcgtcctctc catcaccacg cctctgaggc 1200

cgagcactat gcgtcatctt ccccaccggt cggttccgac gcccggcact aggagtcttt 1260

ctcgtcgccg ctcgcctccg gtgcccagtg ctgcacgtcg acctatccac gactcgccac 1320

cgacgtcgaa catttggagt cgcccaccgt gtcggtctcc tccgacatcc agttatgcgc 1380

gtcgtactcc ccgtcgctcc cgtccgatgt cgacgagttc ttgttcttcc gactcgtgca 1440

ggaagctccc aaccaatctt tttaagcatg ttccttgttc catatatagt tttgattgta 1500

gcaataca 1508

<210> 679

<211> 1781
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86770_G1, chr2:209647459..209649239, Cluster 4

<400> 679
ttccagctaa tttatttaat ttagataaat tagacaagtg ttgtgtaatt tagatacatt 60

caccaagaca caattgaaaa attaaaaaaa atctattata cgctagaagg agggcttgaa 120

cctccgacct tgtggttaac agccacacgc tctaaccaac tgagctattc cagctaattt 180

atttaattta gatacattat acaagtgttg tgtaatttag atacattcac agattcacca 240

agacaaaatt gttttttta aaaaaaatca tacgctagaa ggagactaaa ttgtaattta 300

gatacatcag acgactgttc tgatcaagga tgcaaatgca cccaggtgac caggtataat 360

ggaagaggtc agataagctt tctatgacga ttcactccgt attattagag aaatggagtg 420

attttacagg aacttcacat agattagttc atttttacaa caaacaaaaa caaaataatg 480

ttacattcta gatgtccgag gccgcacagg agcttctaga gctcatatgc acggccaatt 540

gtccgtggag ctgcacccgt catttgtgct tcaagaccct cattcctagg ctggctgggg 600

taccattgta tttcgggaag ctccgtcgtc gtaaccatcg ttgccgcaat ctccaccacc 660

caaagatggc ttctcgttcg tagctaactg cgccgtcacc agcgacaaag aacacgcgac 720

ctaactccga acctgtacca gaactcgcac gtcgtcggat cttgggagca tcacggcaga 780

aagcgacgac gcggttccgt gccacggtcg aagaagggtt ccgcgcggaa ggatgaacca 840

gacagcctgt gttgccgcag gaagctagga tgagtcatga gtggctggtt ttcaacaacg 900

tcggcggagg aggacgctgg tatcgcgcgg cggatggaac ggaacgagcg cgcgcacaca 960

ccgacacacg cgacagcctg cctaacgcgc aaccgaagac aaaaaggtga cacgacggcg 1020

cctgagaaga agagcctgtg ccgggcgggg cgctgcgatg gcatggcagt ggcaccggcc 1080

ctcgcgcgcg cacgcacgca tacgtacgcc gccactggcc agaagaacca gtgactcacg 1140

cggccaaggc cggcccaacc cactagcgcg gcgggtggcg tggcgtcgcg cgtgcagcgg 1200

cacgccggca cgttgacggc tgcggggccc gtgccaaccg acggcaaacg ggggatccct 1260

ccccttttc ctccccgccg ccccggtggt ccccggcctc ggcgcgcggc acgggttgct 1320

ttcggaattc cgaacccccg ctgcggaaag caactcgcgt cccgccgagc gcggggagac 1380

cgcgggatcg ggcgcggacg gcagggatgc gcgggtgggg aggagcccgg gcggtttgcg 1440

ggcgggccgg cgggcgcggt gtggcctttt cgccttccac accgcctttt cgcgaaattg 1500

cacgcggccg cgccgcgccc ccgagcgttt ccagagcgac gttttgcgtc caaagcgtcc 1560

gccgagggac aggcccaggc tgagctcgat ctcgtcggac ttcccgccgg cccctgcggc 1620

ggcggcgcca tccgcagtcg gttgccctcc tccatcccgg caaaaccctc ccaggaagta 1680

cctcgaagcc atccatggct ttgcaccggg cacagcttga tcttcccacg aattcggtgt 1740

cctgtgctcc aaatctcacg tctgaaaacg agactagagg g 1781

<210> 680
<211> 1586
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87183_G1, chr2:211486011..211487596, Cluster 4

<400> 680
tccgcttcgc ttgccaacac ggtctcttat ccaaaatttg gatcaccagt tcaacaataa 60

ttacacacag tctggtcaga tgaaattgat ggttattcag ctaaatatga ctcggagcta 120

acagaactga gacaacctgc acataacaaa accatatcct tggagagtga tgttaccacc 180

atccaagcac ggtacctacc aaaaaaaaga tgagcaagca ggagagttat tatttcagtt 240

cactgttagg gaaaagggta aggagtggta gatggatcat tattgccaat tttgattcca 300

ggatcaggat gtggccagca ctgagtttcc gacatcacac ctgggactgg gaggcaggca 360

ctgacctctg aacctgctgc cttccacagc tcctccactc atctttctac cgtccttgat 420

tgcagtcctt ccttcttcaa ttcactcatg tagccatgta tgaggttttt tctcttgaat 480

tcagtgggac aaccgttatg tttaccttag cccttagttc tgctgctagc tgatttctga 540

agttttcgtt gtgtatctta ggtgtgcaag agaagagctg tttcagcaac attggtatgg 600

cgggttgagg ccatcttcag ctgatccttc gtcccatcca ctatctcatc ctctgtttta 660

aaatttcaat ctgtaaacaa tgttatctac aatttcatgt ttcctatttt actgtgtcca 720

ctgaagatag tatgagagtt tagggttcaa ttcagctgct ttgacagttg acaggcctgt 780

gcttggcagg cgcgaagctg atatcagaaa caagtacagt gcttgctatc tttgttgaaa 840

cctcctaaag ttcagtgaaa ttatgtcctt tacaaaacca cctgaaggtt aaatttttc 900

tgctactccg tccgttccaa aattttctaa gctacgtacc taggtataca ttttgtctag 960

atatacagta aaaacagtgt aggtataaaa gatgagtggt ccggcatcca cagtactgga 1020

ctgggcaaag catagaggga tgcatggacg catcaacatg gggctgtact gacactggat 1080

actgaaagcc tgtccgtatg acacatgttg gtatagggac cggtggtggc ctacgcactg 1140

gcaactttct catgtgaggc tgtgatcctt gaattgcatg cgtcgccgta cttggctact 1200

gtggctttgg atcactgtac ggtccagtcc accatgccgt gacgggccat cttgctgaca 1260

cttactagac ggctagcagt gtgcgttgat gctgtgttgt tttgctgaat ttgtgcgtgc 1320

aggacgtgga gtggctcaag ccggccatca cctgcctgcg cgcggatcct gctcaaaggg 1380

catcgtcacc gccgatgccg ataatgaact ctaatgaccg gcggccgcgg cggtgggcag 1440

cgcggaaggt cgtggaggcg ggggcgtccg gcgtgatcgt gttcaaccac ggcgtcctgc 1500

gcgcagtcag cggtggtggc caccgtacca gctcggccct cggcgaacaa gtaactggct 1560

gccgcccggc cgaccgcatt tatcct 1586

<210> 681
<211> 2852
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87190_G1, chr2:211507068..211509919, Cluster 4

<400> 681
tcgttttata cttattaacc atgtccattt atttatttat aaactaatta gagatatgcc 60

atctacccaa gtgcaatgtc atatgccaaa aatatcgttt tatacttatg tcttaaatgg 120

ccattttcct tgcaacataa tatttgaatt aggccattga ttaagcaggc tctgccttgg 180

ccaaattatc tgttcgaggc tcctcggtga agcaggactg caggagggcc agctcggcta 240

aacacccggc aggtagaaat tcacatgacc acgcgagcct ctctaggatg ctggcaaaag 300

caatgcaagc tgcaaaagaa gagctccgcg cgttatccat gcacatgaca catggagcat 360

ggtccagcat ccacgggaca gccgcagaca aggacaatct aatctgtgcg tgcaaggctg 420

accggaacag gcggccggcc tcggggaagg agaaaaaagc aaaagcgacg agttctgctc 480

ggccgtgtcc gtgtccttgt gtgtatcagc aaaagtcgcc ggccctgacg acaccgccgc 540

cgctcctcct cctcctcctc cttccgtcct ttttcacact cgcatctcaa gagagctttt 600

gtagctacta gcttccgcta ggtcgtcagt catggcgccc gtgcatacat cgtccacgac 660

aatggcggat gagcatcgct cgccgccgcc ggcagcagcg acccgtccac tccaccccgg 720

ctgtactccc ctcactcgac gatgtcgcgc ggaggagaga tagctttctt ttttttctcg 780

ccagggtctc tagctcgtat cgtacggcgc tgctcgcctt gccaatgtcg acaagggcgc 840

cgatacacgc aacgcaaaag ctagctagga gctacttact gcatgcacct gtggtaggcg 900

aggtctgtgg tgtggagaaa ctactaaagc gcttttaatt tctagctagc cggccggtgc 960

catgattgtg gcttctactc tgcacatgac agaaccgcat atataattac ggtagttagc 1020

gcaaatgaca aaagcgcagc cgcctatacg cactactcgc tcttaattat gcattggaaa 1080

cctctgcaac tttatcaaag gcactgcagc aggtagtcga aagtagaaac tacgtacaaa 1140

ctagagagcg tgttcgtcag gcgctggaga cgaaagtttg gacagcgtgg tcgttagggt 1200

tataattgcg ctcgctcggc tggcctcaaa aggcttaacc gtccacgtac gtgtgcgcag 1260

catgagcatg tcgcctgctg cgtcgtcccg ctggctcatg cgcgcaactg acacgtccct 1320

gcagcggtaa cacacctgca gcttcagcgc tccgccctct caaaaggcgc gtgtttttt 1380

gcgctgttat tgttcgtatt agaggagcag tgctgaagct gctgtggttc ctgagagtgt 1440

gttgtgtgat gagtgagccc agcacggggt aataaaggac ctcagcttgc tttggttttg 1500

gcttttgcat ctacactaca ctgcctagga gggagaggaa gaagaggccg gattccgtcc 1560

tttgtctcgc gtgtgacgcc agctatacgt cgcgtgcgcc catctcgttt tggttgatat 1620

catccgtttt ggttgaattt tttattttat atgtagaact atatttattt atttatttat 1680

ttatttctcg attggaaagt cagagttgtg gccgttgggt ttttttttt aaaaaaaaag 1740

gaggggcagg tgtttgtttg gtttcacctg ttttatcttg gctccgagct gaatatatat 1800

gtgtgtgttg tgcttgtgcc tactctctcc aacgtttgta tagtgaacgt cgtacgggca 1860

gcagcatctt tcttggttcc cggcaagttt tggaacgaca tcctgctggc ggttcgctgt 1920

tgcatttgca tgcacatgac gcctgcctga ttatcatttt gcacttcgcg cgggtttcca 1980

ggccaagctt gtcgttggag aacgggagta attctgcctt ggtgttactg ttttgtttgt 2040

cttttgcaac tggtttcagt gtgaagaaga agaagaaaaa aaaaattaaa aaaaaagaat 2100

cttggaagtc gttggtgtcg aagagaaaca agacaagacg actgctctgg actctggagg 2160

ccatttctgt ataatacaca aatatatact aaaaggaaga tgctttcaag tgctaacaga 2220

ttttatttat catcgaaagg aaggaagaaa gaaagaaaga aagatactcc agtccagtgg 2280

attacagtga cgaatggcag gcaccctgca gtgctggctg caaacagtag ttgttactgc 2340

tgcgccagcg gcctgtggca gactggcagt ggaggtccgt ccaagcgtgg catgattatg 2400

gcgttgaaaa ctttagccag ggggcccagg gcatcagaat ctgagacgtg ccgtcgtctg 2460

cgtgccctgc tagacagacg cgcggtgtgc gctactgcgc tccgactccg acgcacagtc 2520

aaagtggcag gagcccagga gagtggagcg atccacagtc cacacacgcg cagggcgcag 2580

gcgccgcagc ggcatggcat tgcattggca ggggcagcgg cgcagcgctc ttcgcctgcc 2640

gtcgccgcct ctgaatccga accatacgaa cgcatcggat gctgcgggtc caccactcca 2700

ccccagcccc cgcccgcaag ccgcagccta atcggagtgc cggtgcgagg gcaggcctga 2760

cctgagtgag cttcaccggc tcgcgtcgca ctcagatcat atccaaccat tcactccaca 2820

tatattttac tatgtcgctc taaaagatat tc 2852

<210> 682
<211> 2166
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87547_G1, chr2:213808116..213810281, Cluster 4

<400> 682
cgcaggacca aagcaagcta gtgtcctgat tacgtgattt tgtggatgct tttggtcaag 60

tgtttactgc gacaatattc taagagtcgt gacaaacaat cgacattttc gagaaaagtg 120

ccatcggagc ccccttccca tgttcatcag cgaaattcta aaattcgatg gaccaaattt 180

cgtaagaata gtacttagag tggttagttc aaaaagaaat gaaaaaaagc gaaattaaac 240

gtttgagcta ggaatgggcc ttactggcgg cggcgtgggc tatcgatcgg cctcagcagt 300

atactggacc ggcccgtgag agcagctcat tccgcccggc ccacatagag aacccgtccg 360

tccatccatt atctggccca tccggacatg ctgctataca cgcatgcgtg atccatgcca 420

tgacatccat ctccttccat cggcggcaca agttcgtttt cagcagctgt tactgttatg 480

ctccagtgac ggcgtgagct aactaatcta aactcgagct gagcaactaa cgagtggtcc 540

atcgcacatc gaccggttga gacgattagg ttaggcgggc cccgggcggt gagtgtcact 600

cgcagagtca catgccccgc gcatccggtc catccacatc aaataatgcc ggtggttggc 660

tggaatactt gcgagctcgg ctcatcattg cgttggacta ggtagaagaa gaaggcacga 720

ggagctcgcc ttcttacaag cacgacaaag caacctgcta gtcttagttc agtgttagtt 780

cagagctttt ctacaagtgt tactactcac tctttctatt tcaagaagat acaccagccg 840

ttcaattggc tttaattagt atcggcctcc tgaagtgtta tgtttcaatg aattacagct 900

gcagtttcaa atagctaatt ttaatcaaag cgagcatacg acgaccatac agctgataca 960

cactttaatt atttcatttt attttacttt ggacagagtt gatacacacc aaagcgactg 1020

gcaggccatg gcggtacaag acgagtcaag aggagctgtt gttgctgctt caatttatgc 1080

ttcggaggaa gctaaaaatg tcaggggccg ccccagcatt aggaggtggc aggcacacaa 1140

gaccagggat cgcggccgtt cggctaaccg ggctagctgg gcggacggct tcaccgtatc 1200

gacagttttg gattttgaat ttggtaaatt tgtaaatttt gaaaacgatt gatgtcagtt 1260

ttgtataaat actatgaatt atttgaagac tttctgctaa aaccaaattt caaaatacac 1320

aatgaatttt aaacataaaa gttttgaaaa aaaataaaaa aaactgatat atcggctagg 1380

attactgatt agccgctcct caaagcccat aaattgatgt gtatgcctga taaatataaa 1440

agtattaaat agtaatacta agatctaaca aaaaatattg gttcttaaag ccattgtcat 1500

caacctaact caaacaaatg ttaatagatt taacaaaaat tggtatgaaa gtttgctacg 1560

atgttaatag atttaacact aactcgaaca aatttacata tatagaggtc tatcaagtat 1620

caacaatgca tatgttaaag gtggaggatg tattgtatct tcagtgttat ttgtgaacta 1680

taaaagtgag acatgtatta tatttgaatc atgaaatcgt gtcgtgtgat gcatttgaac 1740

catcaattaa atgtgttatt gaacttgtta taactatttg aagacttttt gatgaaacca 1800

agtttcaaaa tacgtaatag atttcaaact aaaaatagtt gaagtgtatg actaataaat 1860

cgatgtatat aactgatctg tcggtggtcg aataggagct agggttaagg ggatttttt 1920

gtcttttact tgaaatcttt ttaagttacc acaactaaat gttgttattg aatgtgtgac 1980

aacatttggg acatttttg ttcaattgtt gagacctaaa catgttttta tttgccaaaa 2040

acacgagatt tgattttacc ttatgtgttg ttgatttatg agttctggaa tcgataaatc 2100

agtcatatcg ggcgataaat tgatgtcaaa ccgagtagat taaaaaatgg tttaaatttg 2160

gatttg 2166

<210> 683
<211> 1809
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87703_G1, chr2:214853693..214855501, Cluster 4

<400> 683
ctttgaggaa ctgctggttg acgtggcgtc agactgtcag cgagcgatcg atctttcctt 60

cttcctttca aggtaggacc tcgttggaat ccagagaaca caaccgtccg ccaccgggga 120

ggctgcctgc tgccgaccgg cttctatcca cggacgcacc agcaccacct agcaccgtcc 180

gccaccggcc accggggcag ggtgggcggc cggccggccg gcctagtcgt agttgatgcc 240

atgtcattct cgccaccagc cggtccatca cgacgacgac gacggcgact cgggcgtgtg 300

tcagtccagc tggtgccacg cacggcatgg tacagtgtca tgtcatgcat gaccaggttc 360

gttagttggt tgggttcatg attagttaat gaatttaatt aatccagcgt actgtagtgc 420

gtcctaacta ataaccgcgc gcgatcgttc cggattagat gatgcgtcgt gcgtggttgt 480

gtggaggcag agcagcttcg gattaggtgc tttaagacat ggatctggac ataaaactgc 540

cacggattat tcagtaacca agcatgactc acacaaacaa gcaactaaaa ctgtcaccta 600

cgaccgacta gtagtgaccc aacaaggaga ttacaccgct caagttcgta caacttggac 660

gaggtgcatg ccatgccagc ttattattgg cagcatatat atgacacgta tgtacgcgat 720

gagcggagag catacggcag cggtctgcgc acgcaacgca acggcgcggc agcagctagc 780

gacgcgccaa ctgacaccgc cgcgcgcggc ccgatcaagc tcgccgtggc cgtggtcgct 840

gcttccctcc tgcgccgagc tgagctcgca tggttgcctg ggctgggctg cgcccgtccg 900

tcacacgctt cgtctcgaag caagcttcgg tctctttcac cttcagaaaa aaaaaatgga 960

caaaagaata ggaaaagcaa taatgtttgt atgtgtgtat gtatataagc ctggtcgtct 1020

cgtctctatc accttcgtcg tcgtcagata taacaaaaaa taaaacccac aaagaaatga 1080

acaaaaaaga ggtgacaatg caggtgaata gcccagtcac tttcaccccc atcatgagaa 1140

aaaaaaagaa tccacacatg aaaagaaaat agaaaagtat tggcgcaggt aatacgcctc 1200

gtctctttca tgttaagaaa gaagagagag agagagagag agcttgctgg tcatcacttt 1260

ctgccctgct gccttagctt ggtggcctaa caaaggtact cctcctctga cctctcctac 1320

tacggccaga agcaataacc aaccgctctt aggttaggtg aactcctgcc tcgcatcaca 1380

ggccggttcg gttagttaaa aaaaccggtt catcacgtca cttttgctta actctttata 1440

tatcaccctt tcacaatcct atagactcca ctaactctca gttgaactct gcttgttttg 1500

gtgacatcat cgtttttgtt ttgcgcgcgt gtgtggaggt gcaacccgtg catgtagggg 1560

tgctcacgga tccaaatatt tattcgtaat aagttaggga ttttaattat tttatacaag 1620

aaacaacatc atgttttgta tatgtataac tcactagcag ttcatatact agtgctagcg 1680

acaaaataaa tatacacata aacatcctta cagtggggct gtcggcgcta gaacagagcg 1740

gtcgcgacga tatcggcgta gaggaagcag acgaacagag agcgcttata acgacacttc 1800

ccaaaaacc 1809

<210> 684
<211> 4319
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9222_G1, chr1:48546539..48550857, Cluster 4

<400> 684
atatatgcac gagtagctag aacaatgaac tcgccatgaa tatgatcgat agccttttc 60

tccccctttt tgttgtgctg cgagccaacg cgcggtccga tcgacggtgg ccttgccttg 120

ccgactccat ggctacgtag tacagtaaat cgtagcgatg ctccagagaa tgcatgtctc 180

ctgcccgtgc caccgaccgg cggcggtgcg caggtgcgag gtgcctgcac tgcctcgaag 240

gcagcgggaa taagtaaggg gatggtttgg aaagccacgc cgcggcgacg cgaagaccga 300

acgcgcgggg ggctccccgt gcgtgcatgt cgttgacatg catgcagcat gcgcgcgcgg 360

cctcacgacc tgcatgctcc attgctcctg ctgctgctcc tcattccccc aaagaaaacc 420

gcaccaaaac ccgacgcgga gtcgcgcgtg gcgagtcgta aactagtgct actagtacag 480

tagtacgtgt acgtcctgct gctcctcgcc agctccgctg tctgcactga gccttgttcg 540

ccggagagtg agggggggaaa ggcgtcgtag tactcgccta tacatatata gcttctagct 600

gcgtctgcat gcaactgtgc aaagtgccgc gggtagcaga gctatgcgcg agactgcgag 660

tacgtgcccg ttccgcttca tcacccgccg gatccggcaa ggccatgtga aaatcgtgag 720

ggagtggtgg cccgcccgtg atccggccgg cagcggatct gtcacggtgt gtcgtgcacg 780

gcaggggtac ctgccctgcc ctgcccccct ggcagcagct agcagcggcc agccagaaac 840

cccgacctct gccccctgga gccgcagctt ccttcctaac caaaacgttg tgatatcggt 900

gatcaagagc tagagctaaa ctagctgctt gcggccgcca tgcatgctgg accagtagat 960

tagacgtacg tacgaacttg ccgatcgata gccgtgtcgt ccgtccaatc cccgatgaga 1020

cgagacgaga cgagattact agaactaact ggttccacaa aaccgagacg cctagctaca 1080

gtagatgagc aagccgtcgc cagttgcagt tgggcgttgg atggagccca cccacggccg 1140

cagccgcacc atgcgcgcct gcctgctgat gccatgccat gtgccgatgg gcgcgcccaa 1200

ctggccggcc gggtatatat gccctcgaca tggcattttc gaaccaaaca aaaatcacat 1260

tccacaagaa acgttagcgc tgctgttttt cttgaccggt ccagacaata tggaggcgtt 1320

cccatcgggt caaccgatgg cgcgcgggca ggccgcctga cagtgacagc taatttcacc 1380

ccctgcttcc tgcttgttta tgtcattatc gcgcaatcat catcatccgt ccatgcatct 1440

tgacacggcc gaccagtagc agcacgtcgt gtcagactcg gaacgccctc cgcctagctg 1500

tagcctgcaa cgaccgcgcg cgcgcgtgct ggtacgtacg tacgtacgtg tatctactga 1560

actagtggta gtataaaaac cggcggagcg agatgatcca cgtacgccat gcatgtgatt 1620

tttttttctc tccttttgc cggtcattga agcaagttgc gatggcagca aaggaacatc 1680

tcacgtcgcg catgcatgca tatatgcagg aagcagaaac ggaatggatc gagcgccgag 1740

cgttccgtga tcgtgactca cgggcaaagt ggccgctgcg tgcgtgatcc gatccgatcc 1800

ggccggcgat ggcgtacccg tcccggaaag cggaagtaaa agctgagatt tcgtctgatc 1860

atcggccgcg ctttagttta accccgggcg gaggagcccg ggtgtgtggc cggtgcgtcc 1920

gacctgtact gtacgttacg tattccaccg cggaaccaca caaacgtacg gacccaaaca 1980

aaagcggcag atcaagcaca cacatgcgtc ccgtcccgtc caaaggacta gtatagtgcc 2040

gcgttttgtt tagttcattt tcacttctaa gacctccttt ggattaaaca gagaccacgc 2100

tccctcagtt ctaaaataac tatcgctatc actatgataa tcatcaaaca agattgaatt 2160

gcattatatt ttatataaaa cattggaaat gtttttgttc ctaaatataa atttgtaata 2220

aaagtagttt taaggatcat actaattata tactatagtt attcaagttt tattgcatat 2280

atttgatcaa attcaaaaga gctatttggc atctgatcga gaaggattcg tatgacaaaa 2340

ggagtactct tttgtgtaca cgtaaaagtt acgccggccg agctaatcat gtctctcctc 2400

ccaatccgct agcttgtggt gggttaacca cgcccctcct cctaaacaat gattcaaaaa 2460

cgctgctccc gaaggaaacc ggcgagcgag gtcacgatcg ccggctctcg ctcgtgggtc 2520

agctcacgtg gcccgcacat ggtaggtctg gtctgggttc gtcgcgctcg gaacgaaccg 2580

tcagtcttat cacctccgcc tccaatggcg atccgcagct cccaaatcgc cattaaaaaa 2640

aatggtgccc gcttcacgaa ccccgtgccg tgcgtcacca tgacctttac taccacggcg 2700

gcaagcgacc tgccggcctt tccgtaccgt ccaattcagc gagagccgtc ctgcgatgcg 2760

gccgacagcc aatcgcctag cgttatacgg cgcaggcgct accggccagc gcgtcgcgta 2820

aaacctgatg cagtcacagt cacaggttaa caactgctcc agtgcacgta cgcatcatat 2880

cacctcgtta ctttaaagtc agtctagtct agggtgcgct tggttccgcc tctcaaacct 2940

aagcagaagc aaaggggcg tatcaaaact ttttttttaa tgaaaaagca tctctctttt 3000

ttttcctact acaaacatgg aaacaggttt cttcttgctt ttctcctttt ccatcctctc 3060

aacaattacc cactgcctct ggttataaaa catatctctt cggtttttcc ttttctctct 3120

ctctttccta acgaactaaa aggtgacaat ggctaaatct ccaccgatta gatacccaca 3180

aatatagaac atttattaaa ataacacatt acataaatgt ggcccgaagt agtgttgatt 3240

gacaaagatc caaagtcaaa tctttacaaa ctattgcata aagctccaga gtcaaactaa 3300

aaatttcttg cactgaagag agagtggtcc ccatggatta taaataatgc caggcttcta 3360

caaaaatggt gtattaattt ttttgcatat aaaaagtcta tcagactctt taaaccaaac 3420

aactcttaac tatttttta acaatatata gtttacatta aattttgcag caaatttccc 3480

acggcacagg actcacaaca acttttccat agctcacacc aaaacaaagc acccttagta 3540

caggacctat gtcatgcact aaattttaat tacctataaa ctttagttct ataagtaata 3600

catgcacata ggtaaaataa aaattaaact gtttttaaa ttttagctaa agtagcagta 3660

gaaactaatc ctttagtttt ggcaaatata agctaatatg attattgtgc acatgagtct 3720

ttatttataa gaacaaactt ggttcatgta tcgaacaata ttggactaga cttcagtcac 3780

atctacttta gttaacaaac tttttatcct cataaacttt aattcgacct agaaacaaaa 3840

ccctaagagt atgtttagtt ttgagactcc tcacggatgg gttaacttca ttcctgtttt 3900

ttctctagat ggagtgaaca catttctgat atggatgtgt gggttaggtc cattcctact 3960

ttgtgtttag tttggaggtt tcgttgtagg gtaggaaaac tatagtcggt catccgagaa 4020

gtggacacac gaagagtcat gagatatgct attgatataa tcatctctcc aaacagtgcg 4080

ctcaagtctg acgaccatcg aggtgtgcct tgggacgacg atcgatggtt ggagcgggac 4140

tcgcagccga cacatgccaa gaggcgcacg atgaaagaga aacatcagtg gccgcagaac 4200

aggtacacaa agggggcgtt tggttacttg tatggtcaat cctggctcgt atctggtaag 4260

accgactctg gttggcctgg ctaagtgcat acaatgctct gtggttgtct gatcacgag 4319

<210> 685
<211> 1907
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9657_G1, chr1:51298211..51300117, Cluster 4

<400> 685
caatggagct caaaggctat acgggaatat cattgcctta ggcctcgctt tcctttgtgg 60

aaggcaccaa ccaccaagcg ctgtccagac gagaattcag gcaaaaatct ggtgaaaaga 120

atggagaggg gaacagaaag gaagggacta caaacgcgac aaagccaaaa agccggggct 180

ccgctccatt gaagcgtaac cagcggtgcc actgagtgta gacacacgtg ctagctatgg 240

tcaaaccgtc aaggtagcta gtgcaaaaga ggttttccat agtcaccatg tgaagaaact 300

aggatggaat gcatgctacc catgttcttc atcttcatca tcaaagtcgc taatgtttcg 360

ataaatggat cgcttcagga atgttaagat gtgaatataa atctcaagcg catacttcct 420

ctctggaaga gtacacgcat ggtgatttac attggttgat cgacagaaag agtgggtata 480

tcttaataga caatcagaat ggatctaata tgtgagtata tatgttgcag aactcgccca 540

aaagtacaga tatttcaaat aaaaggcatg tagagagcaa gaatatatat aaatgactaa 600

tcgatcttcc ttaaaaggca cacgcatggt tttaaatgat gacaggctag ctttatcatg 660

caagcatcat cagtttgtgc atctggttta ttatattgct aagatggatt gatggtgtac 720

tagcttctat atatcaatca ataagacgcc tccctaatta atatttgtat ttccccttgt 780

acaattccaa ctgttcacaa atgcctttga gatagacgtt tacttacgag gcgcccatca 840

cttccatctg tcccctccag tgcaaaagag agagacagaa aaaaaaacta tccattgtca 900

caattggaca actgcttcac agttcataca cgaggggtga tagttttgtt cttaaatgct 960

ttccctctgt atctctccag tctccacaga atgcagcatt tgtgctcaac gaccccgtct 1020

cacggcggtc atgcgtgcat gcatgcttgc aaagttaatt ttcagctcag aagttagtgg 1080

tgagtggaca aaatggattc aattccaaat agtgaagcga aacggccact gtgcacgcca 1140

gcaatagatg tgcaggaagg gaggaatcca tgccatgtcc aggaacagta gcagcaacac 1200

aagcaccgaa aaacaaaaca gcattaccat tgcccaacag gggtgcctaa gctcagaaca 1260

gcacagcgca ttgattgatg cagcatgcaa gactgtgctg cgtgttactg ctgcagcaac 1320

ccgactagtc gaaatctaat gcgcgcatgc atatggatgc aagcggttcc cgagttaatg 1380

gctgcatatc tctttgcatc ttccttgaaa aagggaactt tacttgccac agcagttttt 1440

tccccagagg atgggttgta gtagccttct cttggcagta gaaatcaata gggtaggtac 1500

acactacacg gcgtgcgttg cttagacagg aatggaatac aagttatcat ttttttttcaa 1560

ttacaggccg tgtatttaat taaggagaag atagcaccga aaaacaactt atataagttt 1620

atctccacca acttactcat accattccta gttctcaacc tttcatcaca catatttcaa 1680

acttcacact gcaaaatgat gttttgtacg gctatataca cggtccattg atcatagcct 1740

aacatctgaa aaatgtagtt atgagatatc ttatagccat ggaggaagtg gttagaaacc 1800

tgacaacaac gacgacataa cacaaaaaat gtattaaggg aggccctcca ccataaatct 1860

tgatggctag atttgcatgg aaataaaaat ccacacaaag gatgcta 1907

<210> 686
<211> 1626
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98167_G1, chr3:32462224..32463849, Cluster 4

<400> 686
acaaacttag ggtgagtgtg ttttagctgt gagctatgca aaaagttgct gcgaaaaaac 60

tagtgtgaaa taaattgaaa gttgtttggt tcaaactaat gcgagttgtc cactgtaaac 120

aaacttcata ttttattttt tatatgtact ttgtttaact atatctctta atcaatatat 180

atctaattta aaaaatgatt ttatatttgt gttcctaata tttattgata aataaataaa 240

tcaattttac aattccatgt taatattttt attaaaatat tttaatttca ttttttatag 300

cacttaatta ttttctaatc ctattacaat ttacatttgc cgtatttgtt tattaatata 360

acaaatttag ataagtagca aaagcagggt tcaagctact ttcaacttta tactatagaa 420

aaactgtatt tttaaaagag ctgcagtgaa ctcctttggc tcagcttctg atttttttaaa 480

gccaaaatag gtttgaaaag ctgaaccaaa tacataacaa acttgcgttg agcccaccga 540

agatgctgct gcaaaaaaac tatagtgttg ccgagataaa ggcagaaagc actgctgtgc 600

ccccacaaat tttgtagagg aaatctgcct ttccgacgca agtggaagaa gattttccct 660

aacacgtgca actgcattat ctcgtcactt tggagggtag cagatcgaga gaggtcgcgc 720

acactagatc ctagatccta ctaccatctt gctgtatgca ggtgtagaag aagtaatagt 780

ggatcgtcgc tgatgagagc aagaagagac ctgaggaggc cctgcggcga gcgagagcga 840

tcaacatcgg tcaggtcaaa tctgaattcc ttttaacttt tagatttgga cttgttggga 900

aacaatcaaa ccgtcccccc cgccgctcct tctctctttc ggctttgact tggacatctc 960

acttgcactg tccggacgaa catgcggtag ccggaagcct ttagctagtc atcatatcat 1020

atcatcgttg ggtctgaact ctgaagaacg catgaactct gaagaacgca tggaaaaagc 1080

ttcttctttt cggcgtgttc atttggatga agaaggagaa gaagaaaatt aattagaaag 1140

gacggaatca cagtcacgcc ggaaagtgca aataaagcgc gcggaggcgg catcatctcc 1200

gatcggttca tcaccaagat ggagatccaa tcataccggc cggtggtgca tgcatgtctc 1260

ttggtccaag agtagagaca gccttggcga ccaaagaggc tggggctggg gcttgcattg 1320

cggtggttag gaagcagcag taggtgaaac gaaaccatcc tgttagagag ctgccgtttt 1380

ggctttgtgc gagtggcttt gtggtagtgg cgcgtactgt tgaggtgtcc tgctccttcc 1440

tcctcttcct acgggctatc tcactcatcc tcatcttaca attcaaactc tactgtatat 1500

gtctacagta caaaacagtt tttatatggc tacggcatgc acaatctgct attcatagcc 1560

taattcatgt tccctcacta gtctcatgca cgccccagct atgtgtttgg tttgaggtca 1620

aaggag 1626

<210> 687
<211> 1250
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_178978_G1, chr5:35776311..35777560, Cluster 5

<400> 687
aaaaaaaaat actgatcggc ccctgagact gagactggga gtctgggagc aacggccgcc 60

ggcgatccaa cagcgagatt ggcgccgaca cggctggcag atgctcgttg gaaacatgcg 120

tgagacgaga cgcttcggcc ttggattgga tcacagtcag ggagagacgc gtgaactccg 180

agacaggaaa taggagtact actaccccct cgttattttt cgtgcttgtc cgccggcagt 240

aggcaggcag gcccatggct ggggatctgc gccgtcggca tcccgccgtg atctgatctc 300

ccgcccgatg ggtgactgat cggagggcag gcaggtcgag catcctcggt gcaagggaaa 360

gaaggaaacg tcaggccctt ctgaattctg atcgatcgat actcctcgat ccctttgct 420

ttctcggctg tccgtcttct cgagatcgag gccagatcgt actcctccgt cgacaaaaac 480

agaaccgggg tggcgtgtcc aattttctca cgggaaagag aaagctgcgt gcccagttca 540

gccccactgt tcacgtcgcc agttttgttt cttccattcc attcccgtag tccgagcctc 600

gcgtggcttc ttttggcgtc atttttatt ttcaagcgtt aaacgcgcca tgtccagtac 660

ggcagtaccc cgttgaacac tgatctagag tctgatgtca ctgagcgtgg gcggcaggca 720

cagcagagcg ccgcttttgc tctgctcgat cgatcaacaa acagctcaac tcactacttc 780

tctcctctcc tctcctcagc atgcctactc gtcgtcgtag gatcggagta gtgccaaaag 840

ggtccatgat gattggcatt gttggcctgg catcatttcc cttggatcgc aagtcgccgg 900

ctgtcacggc agagcatggc aagctccatg ctgatcccgg tcatgatgct gtttcgtgcc 960

aggagcagac agtacgtgct tagctttctt tgcttccctt ctccgctttg gcgatacggt 1020

gatgctctac ttgctactga gcttagcgcg gtgctcatgt agcgctgtat agcagcatgg 1080

ataatggaac tttgctcaca tttttaacct tctatccaga aaaaaatatt tacatttata 1140

cttattgatg tctcacactc atctttggat tctagggatc tgcgttgtaa cctatgacaa 1200

caaggtaata acagtcggac ggcgtggagc ctggtcaaaa ctcggcaccg 1250

<210> 688
<211> 1387
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_101091_G1, chr3:49546008..49547394, Cluster 5

<400> 688
atcggttgca tttggaccga tgaggacttg gagcagaagg tggaggtaga tcatcatatt 60

cttcatcatt atcatcaaaa tcattgaccc aaaccactct tctcttttta gtctccagag 120

gaggactcta cttggtggtg gttatcgaag gtatgagggc ttgtttagca tgctgcccaa 180

gatggctagg acccacttct tcatcatctt tcatcaccca agtaggactc cacaaaggta 240

aataatgttc caacatttgt tcaatatgaa taattctcta aacaagattg atgacttcga 300

gacaagtaaa agtgaaagag ttattgaaga tgcctcatga cgaggttcta gtaaagaaca 360

tgtctttatc aagcatcctt cagggcaatc ccaaaaagaa gagaagatct atcaaagcta 420

agccttggca tctagcttgt ttatgggctc ggccttggat ctagaagtat caacattctt 480

gacatattcc catgcataat ttgccttctc acatagaggg ggactcggtt ctgagtccaa 540

ttaccaacta catgaagaga catgaggcct agagctttta attcatggat actattcatt 600

attgagaata taacatcaat gtgctttagt agagggtctc tcatccattc atagagtggt 660

ttgagaagtt ggtggcagca taagagaact ctagggaaaa ggtctctaag ggaagttgaa 720

gagacaaatg tggagagctt ctagaaacaa agggtaaaag ttgatggctc atggaagcta 780

aagcaccata gggtattctc ttttataagc gattgaggaa gctgaagcaa catagaatta 840

tggaatttga agcatcacac taataaagtg gccgagtcct aagctctaaa ctgagcctct 900

agactcaagg gttgcagcaa tgatctaggg actcggtcaa ggacaaatta gcacaaatat 960

tataattcaa atattattct agaagattta taaaaagagt atcgtatgag tgaatcaatt 1020

actcgaccaa gggatactta ggggctacta tcaataatat gtaccatagg tacccaaatc 1080

aagctccacg aagaagagcc taaacaaaag ggcccatagg cttgacaaca aacccaggga 1140

ctctgcgatc aagaacgtag ggagcccaaa atcttagggg ttctagaaga gcaaatatgg 1200

caaagacctc atcagaataa gagatacgtc caagatctca acatataagg aagacacact 1260

tgtaaacaaa gaatctaact catatacaac tcattatcga ctcaattatg tcactaacat 1320

aataactgat ttggtgccta ccatgtaact gtcgtccctc cttgaggcat cacatcacaa 1380

cattcaa 1387

<210> 689
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1024_G1, chr1:5223884..5224933, Cluster 5

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (357)..(456)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<400> 689
ggcgtggcta gaccgccggc ggcgcagccg caacgccacc accatggtga ccgagtacag 60

cgacatcggg tgtcgctcgc gccgtgccgg tggcgcatcc cagaccccca acgtgctaag 120

atctcatgga gtactacatt gaaaagtata cattttacgg ggtaaagttt gaatatagtg 180

attgtaatga gtaagctgct acagatagcc agcaacgtgc tgccactgtt ctcacggagg 240

tgtcgatgta aactccattg aggcgtgtaa gatgaaacgg gagcgagtgc tttggtgagg 300

atgcacgaat ctgcaaactg tgcaatgata gattcaggca ctttgcaatt tccaagnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnctgt gtttatgatg aaaacggtag 480

cgagatgtct tgggtgagga tgcccagaac cctgccaact tgtgcaatga atgaattcag 540

gcactttgcc attcccaagt tgtcaaacat gaatcattga ttctgctgag atttctcagg 600

cttatcacga tgcaggattc caacaggccg gcacggattt atttagggcc caggtaggtt 660

ttgacctatg ctaagaagtg ggattggact gggcctacct cgaccgcaag ttacgtatgc 720

gctatgggac gtcgacggcc tgctaataag cgtgtgtgtt ttgatcagaa gaaaaaaaaa 780

taataataca aagtctattt ttacattaat tttctcttat aatatcatgt cattttaaa 840

gacgccagaa tcatcgatgg aactgctagc gcaggaggca tgctacttct ctatcttatc 900

cctattcttt ctccttccga tactttattc acatataaaa actgttccaa gtgccacgtc 960

atttttttca caaagaacct ctcacatcta tttaaaatta acctatctcc cctctgcgca 1020

acaacatcca cgtcccaaac cacacctcca 1050

<210> 690
<211> 1202
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_106433_G1, chr3:86829313..86830514, Cluster 5

<400> 690
ttgtcagcaa ccctaaccat atgcttctaa attaatttgg agtgtcgtgg agcgttcatt 60

cgaagatggc atatgcggca gcacgcgccg tgtctgctgg tgcagtgccg gcagtactac 120

atcagcctgg ggatgacatg aaaccctgca cagcaagcag ctcgccgtcc atgtccatct 180

atcaatcaat cacattgtac cagctgagct ggttgcgttg tgttgtatgt agatgaacgt 240

ggtgctgttg acatggacga aggtgtcggg ctgtcaatgc cgacggccaa gccatcgatg 300

cccatttggc aagcaacctg tcggccgccc ggggagtttt accaagaccg tgctatctgc 360

ctcagcatga atacttactt gcagttgcag ctggatgtgc gacatcggtg ttcgccagtg 420

aaaccatgca gcggtctcac agaacaaacc acctgcaaat agcggtaagg cagcccacgg 480

aaactggttt cagaccttca acacaagcag tagccgtctg gatcagagag atcgaatcat 540

ctaggaacgc ctctgagttt tctgacggtt caaattggct ttctcattca gagatccgtc 600

tgcaattgac tctattcttc taatgaaaga atagagaagt atctgaggat taggtaaagc 660

gatctgcaca cgacaagtac ccctcccgtg tccgggttac agccaagaaa catacatatg 720

cataccgaaa gcatgagcta ccaagcggca ctcgccacac aaacacgcag gagtcggttt 780

cagttacaac cactgctgaa aactaccgcc cgacgtcttc agcagcctgt ccgcacatct 840

tctccacgaa tccggatcgt ggaggtaggc ctgatctcag gtacagattt ccttgcgccc 900

atgtcaatgc aaccaccact ctctctgtac ttgagcagga cgaaccatgc agcaaggcct 960

tcctcacatt tttttctgct tctggatcta gacgttgttg ttgtgccccc tcctccctcc 1020

aagagtgata catcctctct ctctgtactt gagcaggacg aaccatgcag taaggccttt 1080

ctcacatttt ttttctgctt ctggatctag acgttgttgt tgtgcccccc tccccccaag 1140

agtgatacat cctctctctg tacatgagca ggacgaacca tgcagcaagg ccttcctcac 1200

at 1202

<210> 691
<211> 1268
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_108411_G1, chr3:99271772..99273039, Cluster 5

<400> 691
cttcgaaacc agagaaaaca atagaagact tgctacaaga ctatattcaa tatttaatga 60

tatattgtag atggagatgg atgaaaatat actaaacaag gtgtttttta gtgttccagc 120

atgtttttag tcttagcata tatagaaaga tataaaaata taatcaccga cctatgttcg 180

actagtcacg actagtctac tagtcagtag ccgcacgatt cgactcgact tctcgactac 240

tcgaaacatt ggtttgcaac tttgcatata tgtcatctat agctgtcact gaaaggaatt 300

tgagattttc tttgtgagca ataggcattc cgtcaggttt gtcatctata gctgaaattg 360

aagaaaaaaa tgtggttttc ttcctaagca ataggtattg tatgtttctt tctggtctca 420

cctgcattta tttgtttatt tgcctttaat tcttttccta caacaatatc tctgcagtaa 480

tcggtgacaa atataaaatc ctgcgagcat tataactaac ctcccctagc gtcttgcgat 540

gcttggcatc ctgcaccgcc acctccttct taagattctg gagccgctta tcaatctgct 600

aaacaaaaaa aacacacaac acattgcact gtcagtggtg cgcaacacta tcaccgacca 660

accaagctcc cactcaattg agtaaggcag gaaggcgtgg catgaagttc acagccaaca 720

ttcagtgccg caggcaggta ggctcgcgac gtgacggacc tgcctacgga ggtcgacgag 780

ctccttgcat gagtgcttga acagcccaag aagctcgtcg acagcgggga agacgggcgg 840

ggccgccccg agcacgggcg gcggaggagg tggcgcgggc gcggcgtcgt cctccccgcg 900

gtactccggg agcagctcgt ccaccagtcc cccaaacaga gcgtcgaatg agaagtctcc 960

ctgcgccgca gtaccgcaag cgacgatgag accgcatcgc ggaggagaca caagaatcgg 1020

aggaagggag gaagggatgg gagagaggat gaaacctacc ttgaagtcct cgaggtcgag 1080

ggtgaggggc agcgcggcgg cggggttggc ggcagtcggc atagcggctg gcggggcggc 1140

ggagatctgg ggttcccttc ccttgtcgga gaagtgtggg ggtgtggggg tgtggccgcc 1200

gtatcggggg cggactggac gaggaatgca gaacggaagg ggaaaaccct gcaagctgca 1260

accgcgtt 1268

<210> 692

<211> 1278
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114184_G1, chr3:137239110..137240387, Cluster 5

<400> 692
gaagagcagc ggctctcgat cgatcgtctt atgagttatg acgacgatga gctacaaaat 60

aaagcatggg gagtagtact gtgttcttct tgtgcaaatg tatagcagtc tcacatgcat 120

gcaaatcctc attgccactc attacactct ctcagatgaa gttctttcta ggtagcttct 180

tgtgattggt cacatgcata tatgctgctg cttgctgctc ttgtgctaat gcgtgctctg 240

acgatgggca agacgatgga gccatggaga acagttatac ccatgctcat tatgctccaa 300

gcatatccag atcgggcgtt gtggtggtta aaagctactc cctctatctc agttgggaat 360

tatttttcg ataattggag cttatattaa agaaccaagc acattacatc gagaggatac 420

aaagtcttat tagcacgaac tttcggtctc tatctaacgc acaaagccaa actacagata 480

gaaaaggcat cacaccgaca cagaactagc ggcaatcaat cctaagccta ggttgtcatt 540

catgaaccgc tcaaagcgac gcaacccagc tgcaagcctg caaccaaagt ccgagcctcc 600

tcccgtcgtc gaaagaataa cctgcaaagg acaacaagag actttttct tagacactat 660

atcgtttcta cataaccaaa gaggccagca taagtccgcc gctccgagta gaaacaccga 720

tttcaatgtt ttattaagac cctgaaaaca ccctgaacat atatggtcta gattaattat 780

gcgatggatg gaagcgggtg gtcatatata aaatgctcca aactgatcga actaaacgac 840

actcaaagaa aagacggttg ctagtctcct cttatggcag gaagcgcaag tcttggttta 900

ggattgattt gcattgggat aaccttcctt atggcaggaa gatggtcgtc gcgcggcatc 960

tgctgctgcg ggggtgcgct gcccctcggc accagcgtgg aggcccctcg tcgcgtcgtc 1020

tcccatcgtg ccacccgtcc accggacctg gctgcgggta gcgccatcct tcggcgcgtg 1080

ttgcccgccc gcctggctag ccggtcggcc cggacgcctc ttctgaccga cccttcgcgc 1140

cgctgctcct ctactgttgt acgaatgcct catgtcacga ggccacgggc cacccggatc 1200

cgatgcttgt ctccctctgt gtcgttttga ccgaggataa tagatgaggg gcaaagctat 1260

gaacatccag ttgtttac 1278

<210> 693
<211> 1269
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114185_G1, chr3:137240507..137241775, Cluster 5

<400> 693

tcttcttcga cagtgtaact ggcgtaaccg aaacgcgtat gcctctttgc ctgcacgtcc 60

atccatccgt tcgaaaatta tatacatcat aagtttgagc atgcagtttg ctcttctcta 120

caagtttggt caaacttcat aatcataact tgacctagct agaacaactc cagaaaatcg 180

atttattttg agacgaaagg gggtaaagaa aaaactaaaa ggtagctgtg ttaattaatt 240

tattgtctca aacatcatct ctcgatccat gatttatttt tgattggtta caaactcaaa 300

gtgatccatg atttgttttg gagaaactga taaggtaaag gtgggcagag agaggcaggg 360

ccagatggtg tggtacagta tgggccagcc agcaggcact gggccaatgg gcggtcgacg 420

tcgagttgcc gagtttggga gggcagcacc tgatcccgcg ccacaagcct tgcccgaacc 480

agaaccccac ttcggtgcta cgcatccgct cgcttttctt ctccgatgga tgtgcagcca 540

gctgcccagc tgcactgcaa tcaaccacca ctactactac tacgcaccta gctagctgca 600

tgtatgacat gcatggtgga ccgggtgcat gtgggggctc atcatcatca tcatccatat 660

ctcgtgcact gcagctccta gcagtagcag ctagctacta ctggccgccc gctgcaacat 720

atataagcac cagctagctc tagcatcgat cactcacgcc acgtgtagca gctaggccgc 780

acaatgatga ttgatatatg tatgtatgta ttataatgat gagccgctgc ttaattcccc 840

ttcttcattt ccatcagaga cgaccatgtg gaagcagctg ctgtagcttg ccgtgtgttt 900

gtgttagaac gcagagcaat acaaatacat atctatatct atatatcagt ttaaactttg 960

taaaaaccat cccaaccaaa taacccccac atcgtaacct acactaaatc aaccaaacaa 1020

aatgcatcgg ctatctctta ctcactcgag ttcaataact caagttcaat aggcaatacc 1080

accatagcct ccccctcccc gtaaaatctg tgacttgtga tgttgttgtg tgattgtgtc 1140

attgttcatc catcatttac caattaccat ctttatattg tcattgtata aaaatatata 1200

gtgcttttta tgtgatatgt atacaaatat attgtaattc tagcggacga acaaaattcg 1260

agaacgggg 1269

<210> 694
<211> 1304
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114793_G1, chr3:140947448..140948751, Cluster 5

<400> 694
ccgtagtggt cacgatccaa catgatccac gggtagatta gttcaaggcc ataagtgtca 60

aaccaaattt tggtcacgat ttgaccaaac ttgattttaa attaaaatca ctatacaata 120

aaattttcat cttcgtggtt tatttaggat ctgtttggaa gggtttcact tcaataaatt 180

taacttcggt tttccatctt taccataaaa caactccaat aaatttttga agtgagttcg 240

agtagtgttt ggcttgcaca tgaactctag cttctgtaat ataattgatt tgtgtgagtt 300

ttttgatta ccattgatga ttagtggtta tcatgagaga actgagcgct atgttgtgta 360

accagtgacg tggtgagtaa tttttatgta acttaacgag gaggtataaa atcaatgttt 420

gcgaaacttc ctttaagaag cttcgtaaat ttcataaagt tgacagctag ttttattttt 480

tggatgaaga agctgaaatg aaaccagaaa ttttgaagtt gaaccctcct aaacagttgc 540

ttaactatgg ctaagttata aaaataagta acttattatt tgcctaaatt ttagtttata 600

gtaaaacatg gtcaaatatt aaccaaattt tggtatagac acataaggcc ttaatccaaa 660

cagacaaata ttcagttttt tagtctggta ggatggtatt tcagtttggt accattagaa 720

aatgactatt tcattagcgt agagcgaact ccaaagttcc ggccggtgtg ttcctcttcc 780

acggcctttg ctccaggcct tcagccccaa tgtcggttgc tctataacta ggattcacct 840

ccccggtgcc gtcgctgctc agctcccagt cctcaccgct ccgccgagtt tccgctccct 900

ccctcctgcg ctagaaagga cattcgttcc tgtattctat atttctagcg catcgcggcg 960

gatgcgggcc gaggcagcct ctccacgccc gccgcctgca cagtgcaagt tgctgccccc 1020

tgccgggctg ctccccattt tgatctgtaa ttcgtcttcg agattgcgtc gttttcgtag 1080

gacgaataga gtatgtgttg gtttatcgtt caatttcaat ggtggcgaaa ttgcagatta 1140

actcttcata cggtcaccat cgtccacggg ttgcatctgc taatctgtat ggtgtgacgg 1200

ccttctcttt actgctgaga tataggtacg accctacctg actatttgcc tcaattaaga 1260

taataatgac gcgtggctac aaacgtgggt tacatatgtg catg 1304

<210> 695
<211> 1318
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11875_G1, chr1:64550165..64551482, Cluster 5

<400> 695
tatcatataa gtggatttct atatgatgac atattgattg ggagaggcca gtcaccacca 60

ccaccactgc acaactatca attgttgttg cttttctcta tttatatatt aatggcttgt 120

ttgggaggga ttcactttaa gaatttcagc tttgattttc tagcttctcc ataaaacaac 180

ttcaataaat tgttggagtg ggtttgggga gtgtttggct tacacatgga ctctagattc 240

tataaaacaa ttgatttgtg tgagttttct tgattatcct tgatgaatag tggttgtcat 300

gggagaatca aagcgttagg ttgtgtaact agtgatgtgg tgagtaattt tcatgtaagg 360

aggtatgaaa actgtgtttg tgaataatcc tttgaggagc ttcatgaatt tcataaagtt 420

ggcctctagt ttcattgttt tcaaagccag agctcgtgaa gctagatctg tttggatgga 480

aaagttgaaa caaacctaaa ttttttgaag tgaagccctc tcaaataggt cctaactctt 540

cgattgtttt tttcttcttg gacttgttag ttaaatgtct aaatgtgtat agagaaatac 600

taaaaccaaa atagcatcaa ggctacatta acatattatt gcattacggt attagcctct 660

tagggaaagc acctattcat atagagtgta tgccgaatga acatttatat agtattatgt 720

agtgtttgtt gaatgaacat ttgtaatggt atgatagtgc ttttcgatcg attaatggtt 780

tttgtgtaca ctgatatatt aaggattggt tttacgagct caatgccacg aattttggtc 840

ttcgtctagc acaaaagatt tatcttactc aattagaaag gtgagatatt agccattaca 900

aaagataaaa tagattatta ttttgttgat acttattgtt aagacctaaa acaaaataaa 960

atgacattaa actttaaatg gatattattg tatttttgcg agctcgacgc catgacatgt 1020

ggcatcgagc ttgacgccag cgcaacatag catctcatac ctcagcgcca taagttacga 1080

cgcctcatac ctcgacgcca taagtcatga catcaaacta tgttacctca gcgtcgtggc 1140

ttgtggtgcc gaacaaaggg ttcaaaatga gaataagaca tccagagggc aaaaagtatt 1200

ttttacgaga aaagggttaa attgaaaaaa attgggatct ctgccaagcc tatctctaat 1260

cgctccttgc attgtgcaga gcttttggtt aaattggcaa gggcctctca tctcgtgc 1318

<210> 696
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120570_G1, chr3:177115970..177117052, Cluster 5

<400> 696
gttgtaggca atcagatcgt gttttttcag tcattgcaca acaatgctgc ttgaatagag 60

cagacattaa atcaatatgt tgacttgccc ctctaatttt gatgttcagt agtcacctct 120

ttagtccatt agttcgggtt tttatgccat ccatagtcag tatatggatc acataaaaac 180

aaaggcatgt gaacaaatag aacccactcc cctcaggatc tcaccgcgcc cggaccccat 240

gttctcattg tgctgctgtc gctctagcaa acgacgcaac cagaccactg cacgctctag 300

atcccaccgc cgctacgtaa gcatttctcc tacaaactgt tattcgtcat gtgagttgtc 360

cctttgcatg tacctttgt taggataaca ttagatagaa tacaacaact atactttgtc 420

aatacatgtt gtgatctttc ttcaaaggct taagcacttc atttttcaca acaactggag 480

cactgtcaaa tatcatgagc gggaaagctg gactgtatat tcgagcgaga ttttaggtga 540

agattttgtt ctaatactct tttatttgtg ttggagaaga agctgctgat gaatatgcta 600

ggaaggtgcc taggttggat ctccatcgcc agagacatgc tgcgcttaat aagtttttgg 660

ggtgtttgct cggttggtgc tctagagagt tgtatagtgt ctatgctaat atggaatcaa 720

tggaaactta ctacggcttt tgcactcgtt tgaatgtaac attagcttgc attccatatt 780

ttctatcgtt tctttagtgc ctcacgcccc tcaccgcacc ttttacattc attattttat 840

tattcgaaaa agagaggtca acacaactta tataccaaat gatcttaaca ttactgtgtg 900

attatcgaac catgcctatt acaccattga tcaatttagc gttttagatt attgtaggga 960

gtccaaagga cgcctgatgt tctagtggca cttcataaga cccaggaaca aagtccaagt 1020

gataggttaa actggacatg agcgcactca acgtcccctt agaattaacg tttttaggta 1080

ctg 1083

<210> 697
<211> 1093
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122090_G1, chr3:184927204..184928296, Cluster 5

<400> 697
tagtcgtgtg aaattcaagt accaccattg tagtgaaatt tgagaggcgc taatattatt 60

gtaataggag aaaatgtttg caccagtctg ccagtgttac tgtaacagga gcaaggattt 120

gcaccaaagt ctgcaatcta atctacgcag ttgtcagata ccctgaagcc aggcatctca 180

aatgaagtgg ccaaaggccc cgagcgcgcg caggccacct cgcggatgtc tgcggcctcg 240

ctcgtctcgt ctcctaccaa gttcaccttg tgcgactacg agagccaaag gccccgagcg 300

cgtccgtcca gtccatccac cgcgcgtcac gcacttcgcg ccacatcaga cactcttctc 360

gtgagcgcgc accgatagac cgagggacgc gcggagggga gggatgatgt ggccgtcgac 420

ggcaccgtaa ctcccattcc tgtacccggc gccggcgtcg gcgtacgtgg cgacgatgtc 480

gccggtgtcg ctcatgtcca tggcaaacgc gggtacgacg agagatcttg gagctctacg 540

cctctacctc cccaacgacg gctacgacta tctggcccac ctccgagagt tccgcccctc 600

cctctcctca accggcggtg ggggtcctcg gccatattcc tccctagctg tcgccccgcg 660

gtgaaaatca cgcgctgttt catgtggccg aggtgcctat ctcgttcgcg cgtcctgcag 720

gcgtgggaga cgagagtttc tgcgttcctg ccgtcctccc aagaccggag gatccaagta 780

aaacatcgaa tctaacgact gtgatgtaaa gtttttgctt ttctccagtc ctcccaaaac 840

cgtaagattt aaataaaaca ttgaatctaa cggttgtgat gtaaaaagaa aactggtttt 900

ttatatagat ttattaatat aatcggcagc cgtttaaaaa aaagatataa gttcagttct 960

tctaggtgag actcaacagt gtgggctccc tcttttccac ccacgaatgg gctatttgag 1020

atttctaatt agcgccaacc gccaagccta catgtattcc aataagtgtc accattagtg 1080

acccatatag tgg 1093

<210> 698
<211> 1224
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123419_G1, chr3:192010348..192011571, Cluster 5

<400> 698
ttggtgcttt gaccaataca tcaaacacgt ttggtgcgtt atagcctttc ttgtgttgct 60

ctgcaacctc tctaagtact cttttcgatg gggtatctgg tggcacatca gacatatgtc 120

tggtaccata tggatgtccc taaacttgct tcaaatctct tgcagtacca tatccgacgc 180

acacatacgt gtctggtgta ctctgtttcg gtagttattc tttcgtacag tttcactaat 240

gtagtgttgt tttatcttgt gcactttcag acacgtccga gctgttgagt gatctatttt 300

ttttttcatt tattcacgtg tcgtgttaaa atggtgcgag acaatgtatc acatgccagg 360

taacaacact atatcaagat tagaggatgc agccccagta ggcaggcctt tacatattta 420

gtaacaacat taattactaa gattagacgc atgtcgaccc ttttctactt atatatagca 480

ttctatcttt aacatacata taaccttcta tacttgagta cttacacgtt gttatattaa 540

ttagctgaaa gtggtacata tatatactgg tggtagcgta cttgtttttt tttctggaac 600

gaggtcgtca ggactcacga gagatatgga cgggcgagtg gataaaacgg ctgggttgac 660

atgatcgaca cgtacgggtt gtccggtttg gcacaaggag ccgtaacacc gatctcgctt 720

gccggaacgc tccgccaacg acgtcatgcc gcatccgcat gaaggaagaa taaaatccct 780

tgggtgatga cacaaaatgc aagcgtgttt ggtcatcatt cgatcgtgct gccgtgcgtg 840

gattcgcacc cgccggcggg atccggacga atgtcatgtg acaaagctgc aagcggcggt 900

ttcgtcattt cttgcatgta gagctagctt gcgtgtgcat gcatgcgagc acgtcacgaa 960

atatatgtac tgtcagtata tgcccccata tcacgatggt attcgttaat tgctagagga 1020

agtgtgtaaa tcatttgatc ctctaaatct ggaccacacc ttgccaagag agcccaacaa 1080

gagcaacaag aggaacccta gctaataata catgcaaaaa tgcacagcgc tcgtacggta 1140

cagtccatga gacgtacgta cgtaccccta gttttggtgc acacacgttc ggcgggcggt 1200

gtgccggccg gaggaaggca aggc 1224

<210> 699
<211> 1300
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125314_G1, chr3:202490395..202491694, Cluster 5

<400> 699
gttgctattg cagtgcactt ccccaaaggt tgcatcttct ttaccttaag acctttactt 60

tcaccgtgat ttaggaactg tagaatgatt ttttttatga aaatcatccg ctatcatatg 120

gttttcgggg acaagttttc tagtgcaatt gcatattcaa atttctgttc gcccttaatt 180

tattttgacc ccttctcttc cgtaaaattt cgagagcagg atggggagaa acgctttgcg 240

cgtgcttgta ccacatgcag ggggtctatc ctacaaacac aacaccaggt ggtagtggtc 300

accgttcctt agcacggcaa cgccgtcgcc cgtcgacggt gagcacctgc ctcggcaact 360

ttcattagtt cttgcagcga atccggaagg aggacaagct tccccgctgc acggctctga 420

tgcttgtcag tgccatcgct gggaaccttc tatgttctcg tctctgaaac ctgcatgcat 480

cccgttgttt ctttgtttgg ggcagtgagt acacggccag tcgctcagaa gctagcacgg 540

tggtcattgg agctatcgac cgaatcgact gcgtgcgaat gttcatgtac cagctgcacg 600

acgaggtcgt tggagactcc ctgaaacagg tagcagcgtt ggacggttgg tgtccttgaa 660

caggtggtgc gcgacccagg acctgagcgc cgccgtggct gggcatgcag gtcgggcagc 720

agctgctgct ggatcaggat caccgcccgc gtgctgaacc tgagctgcgc gctcgccaac 780

aatcgagact cgcttcacca tgtccctctg ccgcaaaagg aaacatgcag caagagttca 840

ttggccgcct tttggtggcg tacgtggggg gcacatacca tcttgaaggt gttgttggcg 900

gcgtggacga tgccgatgat gtgcgtccga tgttggagag catgtagcat gtagcaacga 960

ccatctcgcc ggggttcacg acgtgctgca ggtgatggac cagtacaccg ggtaggtgta 1020

gctgacccag acgctgctgt cgtcgaagtc gcgcacctag ctagctgctg agccgtggtg 1080

gaaagcccca tgcattgcgg tcgcactgtg gtcttcgtac cccgacgatc atgatatatt 1140

ggcacacaag gttctgacct tcatcatggt ttaatagcga gcgtgctata atttcctaat 1200

agtctactaa ggagtataag caatgtgtac cgttcatgca tttgtgatgt aattccgaag 1260

cacgcaaaac acaaaatcat gcacccgatc ccgttgcaat 1300

<210> 700
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125623_G1, chr3:203845770..203847016, Cluster 5

<400> 700
agttctagac atttctacat gagccagttg cagtgctcgc ttttgtcata tgcacccacg 60

atctcccatg aacagtttgc cccaacatcc atctatgttt gcttctacta ggaagcacac 120

caccaccaaa caacatatat atcgtgagaa gttcgggatt tctatgttga tgatctctac 180

atcttccgga taatcctaca tcgcaaccgc aatacacaaa gttggtgaag ataaacgaaa 240

gagcagatct aacagcgaat gacgacatat cttgacattt tttcgtaggc cactaaaaac 300

ataaatagct tatatgacca ttatgaaagt gacaataatg aaagtcggca attgcaaaaa 360

ttctataata tcgtgcacga tactcacaca aaagagctct taaagcttct ctggtcaata 420

ctagaccaga tggactacca cggaacataa ttgttgcatt caactttgag accgctttta 480

taatataatg ttcctcaaga ggatcatatg ttcctcctaa caacatatag caatatcccg 540

aacgatgcaa aaagccaaaa accctcctca aggtccacat aattagtgga ctagaccttc 600

caaccatttt gcgttaaaaa aaccctccac ctaattatgc ataacaaaca tttcatacat 660

agagttccgt aacttcctga tctatatcat gtgaaaaagt ttaaattaga actaaaagta 720

tactaattat ctaaataaat ttattgagta ctcaaacaaa tgtaaaatat ctagacccaa 780

tagaatccaa aagacaaagg agttagcctg tctccgtcga gctcacccct aaattatttt 840

gaaacataca cgaggaagca atgtatctta aaaatgaaac cctagagata catattaggt 900

tggaatgcaa cctatacctc gctaccctgg tagtgggcct atcgcccctc tatcggatta 960

caaccccctt cggacggtag ggagtagaat gtaaaaaaca aaaaatgatt tagatcccta 1020

ccatcccatg atcagatggc aatcacctat aatagttttg tgaagttgag atataaaatt 1080

gaaatttcca ttatttttgc atataaaaat aaaaagatac tacgacacaa catatataat 1140

ttttgtgtg cttgtcccac aaccatattg gcccatgaaa agagttgtca catgcggaga 1200

gtcatttgat aaagcgagaa tctggcctta tcatgcttct tataggc 1247

<210> 701
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127103_G1, chr3:210985802..210986832, Cluster 5

<400> 701
acgggttaaa gttaagcgga cagaccgaac agtagtaatc atagtaataa cagcaacaac 60

agtaataaaa agaaggaaaa taaaatcaag tgtttgagcg ctctatcgta gtcttgacac 120

cgacggtggc gcgcggccgt cgcgtcgacc attaattagc aggcagctcc aacaaaacag 180

cagctcggcc catgactttg aacgcaagcc acggaggagc gaggtcgtca agcccaccgc 240

tataataata actcctggaa gggcaccagc aacccgctcg tggacgtctg cctggccatc 300

gtcggcggca catgccatgc atggaaactt gaccggcccg gccgccgggt ttggtggtca 360

gatagactac tactgtaggg cagcggactg ccagacagag gagagatcag aaggcctcag 420

gcccaggcgc gtgcgtacac ggcctgacct tagctgcgcc tacacgtatc cgtcgtgccc 480

acgggttcca taaatagata tcggtgtgac gtgacgtgac gtgacgtgac ccctgcaatt 540

aacaaatcaa tcaagccgat ggtgctcgga ggaagctgga ttgccaagcc acccacgaca 600

gcgacgtcgc cgatcgccct gctgccgccc ggtctcgtct cgtgggcgat cgatcgatcg 660

atcggtcggt cggcgggcag cggtacccgt ccggggttta attgcgcgtg gccgtgcgat 720

ggctccgtca caacagtccc ccgattgccg atttaaaccc acgcaatccg tgtatccgat 780

ttcccccgtc cgagatcaga ttctccgaca accgaatagg cagcaatcgc cgacgatcgg 840

acatcgcatg gatgaggatg agcacgccac cagcggagcg tcagatcaga tcctggcatt 900

ctagtgacgt catgcatagc gacgaaactt tgtcagacgt ataaacacac ctcctcacca 960

agtctctttg aatataaaca tttatccacg aataatctca tctaaaaaaa gagtagacat 1020

taacaattac a 1031

<210> 702
<211> 1064
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129998_G1, chr3:225367837..225368900, Cluster 5

<400> 702
attagcttta ccaaaaatat tttgttacta cgtagactgt gtcatggtca tgcatgcgag 60

ttgatatcga tcaaaaaaaa aagtagcttt tttccccttc tttacgagag tagggaccag 120

agcatgcagt ccctcagtcg agtggcttct ggcttaggcc acttcaccct gtaggtacag 180

cgtgatgata agatgaagac tgcacgatgg tccatgcatc agcaagacag caaccagcaa 240

gtgcacagca aacacaagct gctgctaaca actgccggcc agtctgaagc caactggctc 300

tcaagcgttt gccgcgcgag gaagatttag tttagtttag tttagtttct gagaagcgtg 360

aacgtttttg gggagcgtgt cgtgtgcaag accgatcgat cgagacgagg atggtgcagt 420

gcaagtgcag tagtgcacac ggcgagcaac tactgcgttc ttgttaaata aaacgcacgg 480

tggtttgccg acggtcccag ctctagctac ctacaagtag ctactgcgtg ctgtgctcct 540

cctcgacatt gatcacctgc acaactgcgt gctgctgcac ttgctcagac ttgcaggcaa 600

tctatcagct cgtgctcgtt ggcggcttgg ccgtccttct tcaaatgcat gcagatatgt 660

ataatgcgag caggtggctg gcaatcgtcg tgcaccgggc taccgccggc cgggtttcat 720

ttcttccaag caaagaaaac tctcggtttc ttgggcctct cgagcacaga tgaggtggcg 780

ttctaaatcg cctgcggttg cggttacagc tcatgggaga gcaagcgaag atcgatcgcg 840

cgcgccggcc acgcttatta aaacttggtt tgttttattt cgacgacatg cgcaacgata 900

tggcacatcc tccgtaaaaa caaacgacgt cgtgggcgat cggctgaaat atgaaaaagg 960

tggctcaaaa ggctgctggt ttaagtaatg gtgttaggcc cgtttaaatt ctcctggcta 1020

attgtttgtc agtggttaac aattactcgg caaataatta gcta 1064

<210> 703
<211> 1202
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130391_G1, chr3:227232280..227233481, Cluster 5

<400> 703
tcagtaggcc accggcaaca gtaagcaaga gctagttact agctttaata gtgctaattt 60

ttagctttaa aatatttgca agaatttagt tgttgataag atctaggttt tctttctctt 120

atattaaaat atatatataa aaaaagagat tgcttagagc taattcgaat gtcgattgta 180

agagcttgct aaaattttct cctttagtcc taatttggaa acttaggaga cgtttggttc 240

gaggaaacac accatccaaa ataagatgat gcatcacggg tccattcctc aaatttggtg 300

ggatgaccac atttcttata ttagtaatat ggagatgtga gtttaaggct ggaaaaaaaa 360

ttggtgggaa aaatggttgt tttgtgacca caataacatc ccaaggcctc taggattttt 420

aagtttttaa attagccctt agcttctttc ccctcccagg gcatttgtcc cttccttcac 480

gtccaagtta catccatgca tgctgctgta aagcggaagc atctaattca accattcttc 540

ccagccttaa actcacatct ccaggacctg gaccacctcg tcaccggccg gtccggtctg 600

cttcccttca ctgctactgc tagtagtctg ctagctcctc ctagagacta gagtctacta 660

cagccagcca cagcccacag gtgagaacga agaaggaaga tggccgccgg ccaccgaaag 720

cagatggcag ccacacgcaa cgcaccttga cagccgccaa gctagccaac ccaccaagag 780

aaagccactg tgtcttcctt ttccttggtc tcctcggctg cgtccgggcg cagcgcaggg 840

agcagcttca ggcctttcag aaaccggccg tttgtccctt catgctgggc gcggtactag 900

tagcagagca tgtggtcgag tgagagtgac actggatgcg atggacaagg cctgctgcaa 960

ttgctgcgtg cagttgcagc tgaactgttc agggcaataa gctcgtcccc gtcgacacaa 1020

aagtttaagc ataccattac agctctgcta gctttgatta gattacgtac aacattggca 1080

tgcatcaatt accgggtcaa taaattaaga gggaattaag gagacaacag gcttcacgac 1140

tatatataat atatgtgtct attacaaaaa gcctattaca ccctctaaaa ttagtttaaa 1200

at 1202

<210> 704
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131332_G1, chr4:506889..507940, Cluster 5

<400> 704
gagatgtcat ccctgagaac aatgatttgt tagaacaatt aaggagtcag tattattgcc 60

ataggaaaaa tatctgtaaa gatatcatcc tttctttcat ggacaacata aaagacatca 120

caaaaagatc atcaatgtcg tggataagac atcaaaaggg gaatttgtct tggataaaaa 180

aagataagca gacccatgct ctcaaaaacc taagcaccca tatcgtacaa gaggatacta 240

gagtttgtca tggaagttta tattttatta ggatattgac acctatagag gccaacaaag 300

aggcaaagct aaaaggaaag acaagatgtg aaatcttgag tacgaactag ttataaccaa 360

agcttctatc cctgaagagg ttcagtgcta agtggcaatc gcagttaggc agttaactca 420

gtaagtgtta atgcatcgtc ctaccgacat ggtcagcaca tgtcactaaa aaaagtagat 480

gtgcttccac aaaactccct caagacaaat aataccatgt ggatgatatt caatgtcaaa 540

tgccttatga gctacaaata gccttgagga acctggccgc taaggtggct tatgttatgg 600

cttcttcgcc tcacacaagg gcaacatagc atgatgttga aatcccagtc gattattcat 660

ttttagtgtt gatcatatat gtgatggata taaagagttg gagcaagaca tccaagacgg 720

tgataatgaa atggtacttg tacaggctct atatgggtat attttaaggc aaaagagata 780

ctcaatggtc aacaaccatc aactactgat ggggctccct catcgctaga atttccacat 840

aggaacccta cccctccgga ctctctatgc tagaggccca ctactataga ttcaccacct 900

aggagcccca cactcttaaa aggatccctt cacctgctcc acaacctatt aaaagtcaaa 960

tatgcacaaa gtgaagctga accacaagta agagcacaca caatgactcc ttagctatat 1020

atgcatgaaa gaagcaagcc tatgatatga ct 1052

<210> 705
<211> 1130
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132069_G1, chr4:3580942..3582071, Cluster 5

<400> 705
atgtttgatg ccgaaatata tggttcatag gattttatat agttaatacc aaaggaatcc 60

attggctcta cacttctaca atagcgagtg cgccgcgtgc tgcttgcaga gacgtgtact 120

gaactgaacc acacaaggca ctgttgcatg cataaagacg tcagggatgg ccgatcaacc 180

gcgacatatg gacggagcct ggccggcgcg agcgcgacgt ctctggtcgc cttagataca 240

cttattatct atagggacgt ttggcagagc ttccacatag ttgtgctcct aatgagaatt 300

gcttatagaa agccaaacaa ctaagggatc gtttggtata gctccgctct ataattctct 360

agctccaaga gttgattctc taaaagagtg attctgagtg attctctacc agaattgaat 420

ctattgggcg aaaactgttt gtcaaatagg ttgtaaagtg attcttgaag ggttaaagag 480

cggggagcag attgggagta gtgggaagta ggttgggagt gatggaagta ttttttttac 540

tagattcact atattcccac catgaagcag ttcagatttt tattgtttgg ctcggtagaa 600

gtgattctcg ctgggagtga agttatggga gctctgtcaa atgccccta aaaattgagt 660

tacttcatta tgggagtgaa gtgaatctag tctccatttt gtactaaaga gtgggagcca 720

aaaaacatga ctcttgctgc ttccaaccac tccccacact acaacccctc aggaatcact 780

tcacgcacaa tttgtcaaac ggatttcgtc aaatagattc acttctactt gagaatcatt 840

tggaatcact atattagaga attagctctc ggagctagag aatcatggag cagagctagt 900

tggattatga tagatggaca agagagtaaa ataccatttt aggatcataa ataagttgct 960

agcttatttc ggtttattta tggtttaaaa cgatatttta tcatcctacc atttcaccat 1020

aatcatccaa ctttatataa tctaggagag aaacatactc tgaggccgag tgacgtgtta 1080

gtttcctttc cttaccatag aagtatatcc caaaggtcaa atttgtgccg 1130

<210> 706
<211> 1328
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_135093_G1, chr4:17367912..17369239, Cluster 5

<400> 706
ttactagcaa atgtttgcaa aatggcagag ctagagctga ttttcatgct agagctagag 60

ctatttttgg acaatctaaa gcactgataa gctatttctg tcaaacagac cctacaaaaa 120

acaagagaat aaaccagagt ttaccggaag aagataggat aaataaaaag aaacgaaaac 180

gatccggctc agcctgtgga ttacaccatg atttggatcc actaatcaaa ttgagcagca 240

agacttggct ttaccatatg cgatagcaag agcatttctt tatgaaatag gtttctcgta 300

ttggtcatag tgggatgaat ctcttttact tttaggatta gttagaagtt taaatcccct 360

taagttctgg tttaagttct ggtgaggatt tgagcttcca aattagccca gaaggtgaag 420

gtcgtatctc atttctggtt gtccaaattt ccaacaaatg agcacaacag ttgtcatgaa 480

gaattgggac tgtgtaacct gacttctgga acatctattc ccaacattgt tgcgcaaatg 540

ggcattgaag aattgggact gcagcagcgc tgcatctgct tcttggttgt ctgcgtcctg 600

tatgcatcaa gcagatgatc tgtgagagca aaaaccggca catcaaattg agatttttt 660

ttttaaaaaa aaagggacca catccacatt gtacacgcat gttatggtcc gagatcggga 720

ggattatctg cactgattct gagtgttgaa ctgcaacacc tgtgctgtgc atccaactgc 780

tgccactcca tataacgctg ccctacttgt gcgcgtacga ataatggacg ctggcgttcg 840

ccgacgacga tcaatgctga cactgccctg aacctgctgc tttaaaaatt tttgctccct 900

cgcctcttgt tgtggatgaa cgtttgtgat gcatggtccc cggccggcct aacttattcc 960

ttgaaccaac ttttaaatgg attcgactat ttcacattgt gaaaaaaaaa tagtgtcaca 1020

gtgtcacgtc aaccagaact caaatttgtg ctctgcgaat cgaagcaagc agacgcagtt 1080

ccctaaacga tcattaaatt tgtgttccta actatatatg tacacaagtt gtctgtctgt 1140

ttggatgtat ttgtagcaaa aattagcaac tactgattat tttattagca gatttagagt 1200

tgctactaat taatgtttag ctacattttt tggtgtgtct gtagggtata ttcagtcaca 1260

ggtgggagta ccaatctatc acgtctgcac atgcagcccg gatcgagcat atagaatctt 1320

tcgatggg 1328

<210> 707
<211> 1049
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_135476_G1, chr4:18936541..18937589, Cluster 5

<400> 707
tgtcgagctc catgttgagt accataaaat ccacctacca gatagcagac taattggtct 60

gccagctgca aacatatgga ggctagtttt agataaccaa acttacaaaa gaaaaaaaaa 120

agagactgag gaaatgattt catcggttct ctttccgtga tggagtcaaa gcagcagtgt 180

gtccatgtac tgtggcattc acatgagcct gcgcaagcaa agaggggggac aaacattact 240

gcctgcggct acgacacgaa cacgacagta gtgttgctga ttactggctg gctgtctgcg 300

ctacataaac gagacaaaat aatggtctcg cgcatgcctg actgcctgct tgaggccaca 360

acaacttagc ggctgccggc tagctagcgc ggccataggc atagcaatgc tgatgcatgc 420

atcgatcgga accgattcct ctggccgttg cgtgcgcgta ggcgtccaat agccgcgcat 480

gcgtggtgaa actttggctt ggccgacatg agtgcccgcc cagactgcag gctgcagcac 540

tagcaaccga tccgtgctcg acgtacaagt acaacaggta catctggtcg tcagcaccaa 600

gcaggcacag tttgctcata atagtggtca tatatatata tatgataatg tgaccatctc 660

aaaaaggtac tccaatttta gaacattgat tagtcaaact actccaagtt ttgataagag 720

ttttttatt aaaaaaagct attgatgctt attattggtc acttgttttt ttattcctga 780

aagagataaa aaaacaagac aacacatatg aaaagattcc tccttcgtcc cttggttaat 840

cttcctggag gaggttaata aaagggagaa ggtttcaaaa gacaacatag acttgacaaa 900

atgattcatt tttattcatc ttatatatca ttctatcatt tcatatttag aaaaataatc 960

acatatgtac ctttggcttt acaaagaaag gtatagagat acgacaaaat agcttcgaag 1020

gctgaccgac cgacttagtt ttccctcga 1049

<210> 708
<211> 1073
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13558_G1, chr1:74612444..74613516, Cluster 5

<400> 708
atgggtagag catgcttagc ataggtttta tttatgcact ctaaggacat tgatctcatc 60

atgactttac taaggacatg gttagttcat taggccacaa gattcattag cctagatttt 120

agaagaactt aggagttaaa aacctttagg gaaggtttga tgatcagggg tcacgagggg 180

atccatggtc agcgaatcaa cccttagggt ttagattttg cataggttag tgtttgtact 240

ttatttttta gtctaaatct gccctttctt aggccatttg atctttatac ttgatatcca 300

agctttgttg cttgtctagc aatcattggc ttgagtaatg gctctacgag ggagtgctac 360

acttaggttc aaggggagga actttcatta ttgggaagcc tgcatgaaaa tgtaccttga 420

agcccctcttc cagatgtttg gtagatgtaa acattggtca tgacacaccc ttgacctcaa 480

atcatgttaa gtaaaattct tgtgataaga atgcactctt tgaggaaaca aatgatcaaa 540

ccttcaatag ggtatatagt taggtcatgg cctatgatat ttggcaagag ctcatcaacc 600

ttaacgaggg cgccgttgct attcataatg agtgatatga tatgctcaag accaagctcg 660

acacttttaa aatgctccca aaagaacttt gtaatgaaat ttatactcag ttgaatgttt 720

ttgtatgaat ataaaatatt tggtctcaca tagcttaatg ttagagaaat cactcacaag 780

atcctcatga ctctccacaa gcttaaacag gaccttgttt tgtccattct ccttgagggg 840

ggaccttaac aagaaggaag tttatgagct tctcaacaaa atctgggccc atgagacgcg 900

gttgtattct aaacctgcaa taggcatgta gataataagt aatattgtag acaatacaaa 960

ctttgtcgat tcatggattg gatgtgtaat aagtcacctc ctatgaaact tagttgtttt 1020

ggtaaagtga atggaatgtg tcttatttca taatgaatgt cagcctcaca cat 1073

<210> 709
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136225_G1, chr4:23161932..23162957, Cluster 5

<400> 709
agcacacagc tcctgtcgct ggctaccgga gcttgtccgt tggaccgcac ctcgccgcga 60

ccctcccctg gctgcccgag cacatccatg gaccgtggcc ggttggcgat tgcccgagct 120

cgactgtgcc tcgcaggtcg cagcctcggc gcctcccatc ctattgaagc agtgaggttg 180

tgtgcttgta tgtgcaccac atagcacaat gcacgatatt gagaaagtga gccaatgata 240

gtgaggaatt gaggattaga aattgagaag aagtgagtca gcaaggaaca aaggattata 300

gttcgagatt tttagaggaa gtcgtcattg tccactgcca tactttattt ttgggtcctg 360

ctcggccact ggctgcagct gcctgcggca gcacccttgt aatcagcaca cacgagaaag 420

gagaaaccac gcagaatctc acacaagtag gcctgcgccg cgcgcctgtg catctaggcc 480

gtgacgatca tggcggcggc ctcgctgaac atctccggcc tcgggctcac cagcacggtc 540

tccgcaaccg tcggcaacct cacgtacctc gagtccctca tcctcgagaa gaaccagctc 600

tcacggggcc aatccaatcc tccatcggtg acctcaccca actgctggag cttgatctga 660

gcagtaatgc gctgagtggg tccatctttg acactctagc caacctgacc cacctaacgt 720

cgctcaacct ctcgggcaat gccgtcaccg gccacgtccc cagggaaatt tcagcctgcc 780

atccttgtcg tccgccatgc aggcccctac cgccatggac ttgtctcaca accagctaga 840

cggcccgctt ccctctgacg tctctggcct caccaacctt ggtcaggtag cgctatccgg 900

gaacaaattg atagtgacga aaaaccaact gcctcgctcc ccgcccgctg cctcgctcgc 960

cggacgtttc gttcgtgaac ctacgcgcca ccttcgtaaa gccgccgcgc gcaggcgcgc 1020

ctcggt 1026

<210> 710
<211> 1261
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137606_G1, chr4:30438627..30439887, Cluster 5

<400> 710
gggatagaga gaggggcgta ggttgaaaac atgctgatct tagataccat tatggataca 60

agcatacaag atagaggttt ggtgtgttga atacggaacg tcctacattc tctttgtgtt 120

tgatgagaat tctaagaaat cggtcaggtt ggttctcatt atttctctgc aggttcatta 180

gtagaaccaa ctagagcaat ttttgaaacc acctaggctg gctcttcggg aagccccaaa 240

ttggtttaag ttttaatcca atgaatataa ggccaattta gaagattgga tcactcccat 300

tatggattat ttatgtaaca taagtgttaa tgaagttgat aaaagttctt tcgcaattag 360

catgcaagta tattctagtt aataattgtt tgtattacct tactgccgaa ggtttgccat 420

tgttatgctt gaattaagga tgattacgcc actttaatgc atatttacca agctttgatt 480

actgattgtt ttgtaagtaa cacttacaaa ttattgtgcc cactgataat ttctgaaatt 540

tggctatgaa tgaccgaaag ggcaaaacgt cagtctgaac atttcgtcag tcgttactga 600

atgttcgtta ataattatcg aacatttctt tactgcagaa atgataaatt actgaatgtt 660

ttgtcagtaa ttatttttt ggcactaaca attattgtgc ttgctgataa ttattgaaat 720

tgagcgatga atggctgaaa tagcacaaaa tactgaaaga tgacgtgtcg cgtgagtggg 780

catgtgggag tcgtgggtgg ccacgtgcgg ctcgcgatcc attagtggat tgcggaccca 840

aaacaatttg gtaggttggc tggttcgttt ggtggggcat atggctgttc ggttagattt 900

aggtgaaact ttaccctctg tgacatatag catatgtata tataccagag gatcactttt 960

aattgaggta ttccaactac cactctttta tccttccaat cttcatgctt ctaagttcta 1020

tgctttggtg atccaaggat gttattatag gcttgtcagc cgacctagag caactcgacg 1080

acgtgcttgc cacaacgggt ttctctcgaa caagaacttt gatggtttct ttactagatt 1140

gatcagaaac tagctagtca ttattcgtta tgtaagtatg attttctatc ctttaattgt 1200

ttggttgtaa acctcgacgg tcttcatggt gaaagcgtgt tggttactta attaattagt 1260

a 1261

<210> 711
<211> 1060
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_1379_G1, chr1:7268512..7269571, Cluster 5

<400> 711
ctggacatgg aactcaaaga gcttgtaaaa tatgcacatc tgctataaca cacatcagac 60

atgtttggtg ccatgttcga tgagtgcatc aaatacctag tttagagcca tcaaaattat 120

agcagttgta gatgcaccaa atgtgttcgc tgcggacacc tacggtgcac cagacatgtc 180

cagtgcccct aaaatctact taacaggtaa caattgtatt caattgtgag tctacaaata 240

aaccttgtgc ccgaccttag ctactacctc aacacccatt cacttgtata cacttctaaa 300

taggtaagaa acatactcca ctcacttgca ttctttggat catcatttgt gagattggag 360

agctcccaat gcattgtatt tagttcttac atcttgtgac actagttgag cgacttgggt 420

ggatcatttt cttgtttctc ttagtgattg ttgtcacata tatgacccaa agttcatagt 480

atcgtggagt gtctattaga agattgttgt cggcttcagt cattgatcat gagaagatct 540

tgtgctcatt ccctatagaa gattcaagaa aaacaactct acttgagttg tgattagtta 600

gagtgtatct ctaatgtggt tctaataacg tcttaattgg gcgcttgacg tgttattcta 660

tttagcacgt gaaccaccta gtttggatgc cacaatgagg acatagattg ccgataaaca 720

accgaacctc gatgataaat tggtttattc acttgtttga ttcagtttga tcactattgt 780

acttgcaatt acatttatat tattgactta tgtgtagata cttaagtaac tctagtgtag 840

cttattattg taactagttg tttttaggtc cctagtgatt ttgtgttgcc gctagttagg 900

gtgcttttta agtgaaatca atctagtgac atagcactag atttatttaa gaagtcatgc 960

ttcttttaga atgagagtta gagcaacaat tgcgtcacct tttattctaa ttaaactttg 1020

cactactgtt ttataagatc atagggaaat ttttatagac 1060

<210> 712
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_139637_G1, chr4:43642750..43643858, Cluster 5

<400> 712
gcaagtgtgt ctatggatgg actaagatgt agactataag cccaaacagt aggctttatt 60

acacactccg ttccaaagta tagtaattta ttttacacta atcatatatt tattaaatat 120

catatgattg tagtttacat gtatgtctat attcattatt gtttgaatgg atgtgaacag 180

aaaaacagtg gaatagaaag aacaatactt tagaacggac atgtggtcag cagaggatca 240

gaggtgacgc gctttattta gcaggcagaa aacgaagctg cacggggtgt ctgaccgccc 300

agcgatcgag accaacctag ctaggttagt aaactaataa ccccatagca tcactagtta 360

aactaactca tgcctaggta ttcgtaaaac atgggaacat gccgcgtaga tacgttcgtc 420

gtcgtccact acaccggaac cgggactttg gggctgcggt ttgactgcgt gtgccttggt 480

cggtgttggc cgagagctcc gcggtgagca ctactaggtc gtctcgccct cccatctcgt 540

gctctcccat ggctttacat gggatggaat gcaagcttca gcgtacagac tcaatgcatg 600

gatcggagaa gatgatgctg agcgacgaag agctagtgaa ctttccgcca cacatatccg 660

tcgctatcga tccatctccg gacaggtcca atcaaatcga atcgagttcc gtcgcagcat 720

caatacaccg acacacacac agcgtcctga gcttttctga gcgaagtcga catgcatgtt 780

gccatgttgg ccccttttgct gagggaaaga gctggaacta aaagaacatg catattttca 840

tgtgggcaat gggaacagag gaaagagaga gaaggaaaaa aaagaaaaga aagaaacgaa 900

aagagaaaga agggggcaaa ccttgagcta tttgctggga ttgacgtttg cccaattgcc 960

ctaagctggg taaaagagat ttgagacctg accacttcat tgcaatgggg gaagtaaaaa 1020

gggatttggg tacggtgggc aaagcaggga caaccagcag agcatgtgca tcattagggc 1080

tcagggtgtg tttggttgga ctgaaagtt 1109

<210> 713
<211> 1151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_141_G1, chr1:656003..657153, Cluster 5

<400> 713
ttttaacca agctaacaga aataatacaa gaaacttgca gctttcaatt atgcaaggct 60

ccccaaataa acagataaca gagtactgaa atgagattgg atgtcataat taatgtaaat 120

ttaagaaatc ataggactaa aatgtaacac agtcgtacca ggctcacctt tcgataatat 180

caagaaaaat gcatcggagg gttgaatcag aaaataaagg ttccaacctc ttcatttgag 240

attcattgtc actatagcag cttgaaatag atagaagaga atccatacaa agccactgaa 300

ataaaaatta agaattagga gccatccaaa ctgacttctt tgtgtactgc aaaaagaggc 360

aagatattat cctaaccttc caagtcatca aaacagctct tctgcttcgc gtcagagttc 420

cctctgtaag aagatggttg atgttgtcaa ggaaagtggt gaccaaaatg tccaatgaaa 480

acttgtgggc ttgatctgtc tgcttcgctt ccacaaaatc caaaaactga gtactggaag 540

cagtagatag aactgccaga acataggcaa gagcttcata agctgccagg tgaagttcag 600

ctccgatctt gtacagggga aaaaaagaga aagactgact ttagaattta tgtaaagaaa 660

gctaacagaa aggacaatga aaaagaataa ttaagtaaat cagtaaaaag ttgtttaaaa 720

tagcaacata cctcattggc aatagtggag tgatgggtaa cattcaaata gaagtcccat 780

agcacggaaa atgcagaaga aacagaatca tcggagttgt aaggattaca ccatgaggca 840

acagaactaa cacatcgcat tgaccaaatc tgtgaattat gaggtggaat ttgtcaaacc 900

aaagcaactg tgtgttgagg tgtacttcaa aataagtaag aacaggtgtg tttggaccag 960

cacagcggca tcctcatccg tccacagaca ccatgtaatc ctcacttctc catccagctt 1020

atggattgta ccttgctccc acctcagacc agatccaaac acaacagaga agcagatccc 1080

atcaatggcc acctctgcct gtgctgcttg caccggagag atccattgga caatgcagat 1140

actaattcat c 1151

<210> 714
<211> 1049
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_142744_G1, chr4:62324280..62325328, Cluster 5

<400> 714
tacaatccgc gggtagataa gcagatacat ggtcttgcgc ttcacgaaca tttgaagaac 60

tatcttattg cgccatcgac aaccttgatt ttagcttttt atgatttctc cacattcccc 120

taattccttt tctttaatac cgggcttaaa cccttatttc attccattgc atgaattctg 180

gaccctatat atggattttc tagcgttagg aatcgtattt cttttaatct tgggtattgg 240

ggtagcaaag caacaactaa gataaagtaa tgaaaaactt ttcactatag aagtaagaaa 300

tatatcttca aaaaggcaaa cgagatttat tccgtagcgt gcatccccat aagggttgat 360

tcgctttcca gactagagac catgtgccct ttcttcgagc tttcactcat aaattctgac 420

tacaacattg cttttgttga aaaaacggcc aaagcatagt gatccaccgc ttattcgagt 480

tagtactgaa aaaagagcca gataaaatta ctatttttc gtaaacatgg tttttctatt 540

tagtcgtttc gagcacgctc attaaactaa agagttcatt tccctatttc ctcattcaat 600

ctccaaaacg aaaatagtac ttttctttta gaacgttctt cccgaaccag tataaatctt 660

gtgcccaccg cacacatcct ccggagccca aaacgcgcac aataaattta cttatcggag 720

tgaggttcga aacatcgaca ttaaggaagg cttgggaatg tataatatct ctttaaataa 780

gaggatggcc accccaagac aacaatctct tctagtactt gcattttagt tgctagtcct 840

ttgtttgttc aacctaaata tagggaaggc ctaggaatgt ataatagcta tttaaataag 900

atgagggctg ccccaagcca acaaggcaac aatctcttct agtgcttgca tttgagttgc 960

taggcttttg tttttgcagt ttagttcatt gcaatacgaa gtctgtcttt agtggatatg 1020

gtaaaatagg ggacgtgaaa ctgtagatg 1049

<210> 715
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157634_G1, chr4:160350179..160351191, Cluster 5

<400> 715
atttaataga ccggtccgta gaaacacaag agtagtctcc acttcatcat caacgacgaa 60

ggggagatgg tcagggcctc agaaacctga ccccctccac ccgagagccc cgacgccatc 120

acggaggccc tcaacaatct ctgacttgac ccgcgggagc aagaggtgga gcaagactca 180

acctcgctct acgtgggcaa agagataagg cagtagatca cgatctttat ggagcccgac 240

ccatcttaca acgatatgtg gacattcttc tcttcctttg cgagcttgac atcatagtgc 300

atcgaggaag ggtcaacctc ccctgacgat tttgacgacg tcccagttgt gttctcgccc 360

cgccttcaca acactacgaa ggtgattgtc accctcatgg cctacagcca tgttcccatg 420

atcgacgacc tggagttcac ggggatggtt gatggtggcg aagatcttat ctttgacgcc 480

ctccgctagg actctggctc agatcctggc tccacaacga gtagcgagga tggaccctca 540

gttacagaga gaacaaaggt cgtctggccc tcgtggctct aactgccctt acgcgtgacc 600

ctgctcccag gaagaacatg tgacactaac gacactaggg aaatgaggcg ctacacacga 660

tgctcctatc aaagacccct catggttcta ggaaggagcg aattcttact ccggtgtaat 720

ccctaatgat cagcaataaa atgcgatttt gaaaccactg cctgagtcag gcgtgcgaaa 780

tgggtagcaa gcctcggtct ggggacaaac tgactcccct atctttttct ccaacagcca 840

acatggcgaa tgacaagatg aatgccagga atatgggtca gacaacaaaa ggatcagagc 900

aacatcgagc gaaagccttc ctcgataatc tagctatgtt attcttcctt tccaatactg 960

attgttttag gattacttat ttatgttaaa gggtcctcaa cgatatgtgt cac 1013

<210> 716
<211> 1348
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158803_G1, chr4:167297441..167298788, Cluster 5

<400> 716
tctaaaacta ggctcaattc tccatttgta atgatgatgc cgctcttttc gcctttcgat 60

cgggcctttt ggtgttagca ggctagctgt tggcatcttt gcatattgct gtgaagatga 120

acaatataat gtgtgtccgt ccgttcccgc aagtcacacg gtagggcact ggtagctgtg 180

tagggcagtt tccctgcacc ggccggccgg ccggcatgga agacggagta cgtgaaatta 240

gtgtcaggaa tactgccggc gttggttcgg ttccaagcgg agatcgagaa tgaacaacga 300

actcatcgat cgatcgagaa ttgaaactgg taacgatgac agtgattgtt tgtcatcttt 360

actaaatact aattgccttg tgatcacggt gtacgggatg ggtgatgttc ttctctcctg 420

ctcctcctgc gccgttcata aggaaaaaca gtttctcttt cgggaaaaaa ggagaaaatt 480

ttccaagcag cgcgcacgct cagtggcaaa gccaaacaca cacgcacaca cggtcagagc 540

tcatgtaaaa gttcgagaca aatacggctt tctctctctc tctctcactc tctctcgatt 600

caacagtttg atgagttata tttcaggaat gtggagtaat atttgatttg ctggtggcag 660

acagtttcat gcaaaaggaa tactatcttt caggtgtata tatacctttt ccttttttatg 720

agatcgatca gcgacctgat gaactaggtc agccacaagc caagtaaagt caaaatttcc 780

tttttctggt ccaagtctaa actgatggtc ggtcggtcgg tcttcctctt cccaagtcaa 840

caaggtttct gtagtcctgt ccatcactat ccactagtag tctcctgatc ctaacaccaa 900

aggccgttgg gttttcctca ggcggaatgc tcaagtttgg atggaatatt ccaattgcta 960

gcgagcaagt ttggcgcaga aaaccgagtg tcatgcatgc tacattgcta ctagctagac 1020

tcgaccaccg gactgccggt gaaaatgttc agacgtgcta gctcgtagat cacgcgccaa 1080

tcaaggtttc ttctctttct tctttttctc cagcgtcatc aaatcagaga ccgattaatg 1140

tggtcgttgt ggagcgcgtg caatggtgca aaagtcgtac ttccatctta aaataatatt 1200

tgttttagag tgttaatgga tcaatacaat atttgatgta tgtgaatcca tttgattatg 1260

catgggcaaa agaaaatttg tagttaatgg aaacctgtta ctttgtagtt actttttttt 1320

cattattgat attgtggatc aaaaatac 1348

<210> 717
<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160625_G1, chr4:178752526..178753594, Cluster 5

<400> 717
tgcattcaaa ttagggatga cacccgtaaa atctatcacg atcgcaccca tgggtacagt 60

accaaacccg cacccgaacc cattgggttt caggtgggtt ttaggtcact tgcgaggttt 120

tactaagtgt ccacttttac gcaataattt aggtataagc aattaaatac tagcaataat 180

tgagttttat ctacataagt caagccttcc cacgttgagc aacaataaaa catttcatga 240

aacatcagct aagttattta ttaaaaacaa ttgctattgt atcttaatta tatttgcaca 300

aaataaagaa cgaatcaatt tttaggatga gagtgggtca cccacggatt aaaatagacc 360

gcgaaatttc agaccggtgc gggaccactg ggtcaaattc ttcgttcgta ctcgcaccca 420

ttgaatcagg tcgggtgcct gtcaaatttt agatctacag attaaatggt cattcctaat 480

ttgaacagac cttgatatgc atgcatggat gccgagatga ctgcttagac cagtactcca 540

gtagctacag cttttatttg cgatgatgat gaggggagat gggtacgtaa aaaaggagta 600

aaaggtgccc atcagagaga gactttgatt agtcggggag agacgataga tcgcgcaaaa 660

gagccatagc acgatttcgc tcatgatagg ggtggatgag tagaaacgaa atattccctt 720

tgtttttccc ccggtgattg gataaagcta catgtgtcca aagtaatgag tgagctgata 780

aaaataacca gcttagctat ctgatttaga tcaatcaggt gcagtcactc aaaatgacac 840

agatcaggtt ggttgtgctg ttgcttgaat aacactagta ttaacttagt cctgtatgac 900

tggcctgtat ctgagattct gttaccctct gagcaaagtt aattgaagct tccaacatta 960

aacaagtcac taatttgtac cagagaacac agcccctcac taattaattg atcatgtgta 1020

cttgtaacgg ttgctaatga ttccagacca gaaactccca ccactgcgg 1069

<210> 718
<211> 1210
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160669_G1, chr4:179076477..179077686, Cluster 5

<400> 718
aagacccaac atgatgcaaa aataaattat tattttgtta atttaattat catcttattt 60

tgtccatcaa acaaatgctt cccaatacgc aattcgtata cgcaaaacat atgttttaag 120

gaaataactc ctattacata atttgtacta aaagatagtt taacttaacc tatttagaga 180

atatctctaa atatattatc caaaagaata atttaactta tataagattg ttcattttaa 240

tcttttacta tgagctatat ttattttagg agatgtgact tacaaggtga gaaaatttta 300

ttaaaagata ttttgtttca agatctcaag tatctaaaat aaaattttag ggtgttacaa 360

aacttgtgtt caattctaaa ctccaattca gcgacaccta aataatagaa ttgaaattac 420

atctcatttc aataccttaa cagatttggt atcgcaccca attcaatttc ataccctaac 480

gtccaaactt aagtattaga gtcccgtcac gcggcatggg cctgcccacg agtttgagcg 540

cacgcaagcg tccccgtcca cacgctatct gcacgacgga ctattttaca gctgctacag 600

tctcgccgca gcggtccggt ccagcactcc tgtgcttccc taccgcgatg cgatgcagcc 660

ttttttctca agtggattcg tactcgtacg gccgcatgtc ctcgagggcg tgctgaccat 720

tccgcttctc actcatcggg agcttagatt atctttttaa gggctgattt ggtgattaaa 780

gatccctagg gatctatggg gaggaatccc cttgtaattc aattttaaat agcaagagga 840

tttcttcctc ttgggatccc ggtcaccaaa tcagccctaa aaaaaagaaa aaaaaaagag 900

aagaaaaaga aacatcatac gagaaggatt gtgcacggta acaaagaatc ctgcctccgg 960

aagtgaacag cgtttataat cccctctcat cgtcgacccc ctgatcggga tccccactgt 1020

tcaccaagta cacccagcgt ggacataggc taccacaagt agaaacgcta ggcctcagca 1080

ctagcttccg gactacgagt atagtactcc ctccaaaaat acagacggga acaggcaccg 1140

acaacgacga cgcgagcata cccatcagtc attccatcac gtagaaggct gccgacccgt 1200

ccaatcttgg 1210

<210> 719
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161510_G1, chr4:185197333..185198378, Cluster 5

<400> 719
gttgtggcgg ccaaatcgag cgccgctgat taggcaggct gtggcagctt cggcgccaca 60

ccaaacaggc cctaaagctt atgacatcgg atactttctc ctgttcgtac ctaggctcat 120

ttccaaacat ggcggattgg aaatggaagc atgcgcggct gcctagccta gcgacgacgg 180

cgcacgacgg acaggggggag cgcgagggca accaggaaaa aggcgagatc cttttcgtcg 240

gccgggaaaa gcgctaaggg gaggaaacga ggcaagccaa gaacaagtgg aaagccggcc 300

ggccggggtc caggccacga tgcaatgcaa acagcctttt cacgaatccc gttgccacgc 360

tgatcggtcg atcggccggg tagggtattc tacactgctc ctccatagtt tttccacaga 420

gaacaacgac atacaatcct tcccatccga gaaaactaaa tacctttaaa tttaactaga 480

tttatctgaa acactacaac tatttatgcg acgacaaaaa atatcttatt tattcacttt 540

gaatttgtta aaacttagag tacgtacttt gataaaaata tgcatggaca ccatagttct 600

acacgtattc tttttcttaa ttagagcgta ctctagcaca aaatgattga agagaaactc 660

cctccctgcc ttttcgaaac ggctgacttt gctgaagcca aaaggaccag gacgtacaag 720

ctagatacgg tcgtcgctgg acaaaatata tatatggtgt ctagcttggt cgttgactgg 780

ttttacttca acgaacgtca acgtcatcac agattaatta tacaactcta ctagctgttt 840

tcttttgtgt gatgtcgtaa ggtgctaacc ccgcatgcac cgagtagtag tatttatttt 900

atcaatgtca caaaaccgcg aaggctaaac cacaaagaaa atcatccttg gctgtaaatc 960

ctcgagcaaa tttttatcaa ggatagagga taataagggg agttgctttt cttggcggtt 1020

ttggcgcacc caaagatgat tttttt 1046

<210> 720
<211> 1330
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161613_G1, chr4:185648311..185649640, Cluster 5

<400> 720
cgtgtgagtg agacatgtct ttgcacacga agatactcat gcagccaata gggtacaaaa 60

tactgtgctt gactgataaa acaagaaggc aaacaataga atctattctt ctttatatgg 120

tcgctaagct gaaatagttt atttttatt gcatggagct acttataact gactaaacga 180

gtatgcatga gcacaggcag ctagctagca ttgttgaggc cgtcgtcaga cctttcttct 240

ttctctcgtc acatcatccg ccgattaaat cgcaattaaa cagccgacga cgacactgtc 300

cttgcgcgcc tcagctcgga cgcgtcgctt tcggacgcat tgtattctca cacgagtact 360

ctctcctgat cgagggccgc gagggtagta gtagtagtat gactagtatc atctatttag 420

ggcaagctgc cgccggtgcc aataataaag gtttcagctt cgggccgggt ccatcgatcg 480

cgtcgccttt gcagaaataa aggagacggc aactggtgtc tgcactctgc agccaatgaa 540

ggttcgacta gacgacttgg tacggaatgt gtgcgtcgtc gtcgatctca ctcgctcgat 600

ctgcttgctt gcttgctgca catggcgaaa tgcgttcggt cttgagaaaa tcagagcgag 660

gaccaccccc tccccccgcc ggtctctgca gctgaagtaa gccaacaagt agctagctct 720

ctgcacagaa agactcgttt tcctgcttgt attgatgata tggtgagctg tgatgaagaa 780

cgacgaaggt actgatgagc ttcgatcgca caggagagag ttcagaagaa ctgtttagaa 840

aagaactgat agatagaacc ctagtccgat ccgatccatc agcgttcgga gtcactgaac 900

tgccttgtca ggatgtgtgc tgcaaattaa agtcggttgt tttcaggtcg acgctccagc 960

tagccagttc gataaccgaa ggctgatgat ctttgcctgg tgtcgatcga cgatcggaac 1020

agagatgtaa aacgccattg gatgggagta tgagacaacg aaactgatat atcgtcccca 1080

gcctgttgct atcgctatag agctatgctg cagggagttt gctgagaggc agtggagagc 1140

ttgttgtctc gatgatctgc cgtccactgg tccatgcatt gcttggtgcc ctgccattgc 1200

gattaattaa taagcatgag caacaagagc cataataata atgccgtatg ctggtccctg 1260

ctgcccctgc cgttggttgg tccctcacgt gaaactccag cagcaggcta ctacacacca 1320

aggactggac 1330

<210> 721
<211> 1216
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164362_G1, chr4:199008017..199009232, Cluster 5

<400> 721
ttactggcag agatcgattg gctactacac actcgatcat gtggattaat taatctccca 60

ccccctact tgcctgcgga gcgcgccaaa cctgtatgcc tgtctgtctg ctgcgggcac 120

gcgcgcgcgt aaactagcta gctagctaga catacaagag gcgacgacga cgacccttgg 180

gtagcacaag cacagccaag cagccagcat gatgcctcga agctgcgagc ttgcgacgac 240

gtgtacatac catagcacca tgctgctcgt aggagagacc accctaccaa cacacatccc 300

tttctttaaa ttctctcacc tgctgtgtag aatattgcac agcgacgcgc tttctctgtc 360

tggccctccc tcccacgccc cagccctact agcagcgcag gaaacggcga ccaccgagat 420

caggtcacga ggcacttcca agtttcgact ctccttcgat gaaccggtcc ttccttctcc 480

tagtacgtat caggtgtttc caagcaggca caaaccagtc aatcacgagg cggcctcgat 540

gcggcaccgg cggcggcggc tgggcatcga tcgtcgtggc gagaggaggg ccggccggtg 600

agcgagtcac cgatgtatga acgaaaagca ttagcaaaga agaggttaaa atgatgggtt 660

ttttaagctg gtgccctcag ttttggtggt gtgttcattt atatctttag ttgtgttttt 720

ttctcagttc tggcttttta aaatgtactg cctagtagta gcctagcata ggacactttg 780

ctgatggcaa aattaagggt atgaatttta aaaaagccat cgttataacc catgcatgat 840

ggcgacttta ctcgaagcag tcgagcaaaa aatgatgtgc gtgtgcgtgg cgttgtgggc 900

tgcaggggag gggagggaag cttggggcac tgcaaactgg ctgtttgaag ggtcacctcg 960

tatgagtatg accaatccat ccatccatct gtcaaactgg ctgtttgctg gctcaccaca 1020

acaggtggct ggagtgtgag tggatcagcc agacaggccc agctgcgtga cttcagactc 1080

cacgcttccc aatcctgcac tgtccttttt ctcccaagaa cggtgccttc cggcttctgt 1140

ccatgtctgc ctcctcattt caccttctga ctataagcta cctagcctct aggctttagc 1200

tacccaccgg cgtact 1216

<210> 722
<211> 1296
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164520_G1, chr4:199728962..199730257, Cluster 5

<400> 722
catccctaca cttaacgtcg ctgccccagc ctcccctccc caccctctct gttttcctcc 60

ccgccgccct ctccctccac actcctcact cgcgccatca ccgttcttgt caacctctct 120

tctcacatcg acctcttatc tgctcttcct aagatcatta cgttagtatg aactatatac 180

tagtataata tagatttaag taatgagatc gtgtgactta ttgtactgtc actatcgaaa 240

cacgataagc atattttacc atcgggaaaa gttcaaattt catacgtttt gaatatcaat 300

cggtcagaag tattggtgag ttcaatggat agaaccggca tcgacaagtt ctgctatgtt 360

gtgtctagtt tccattcgca tggcagcatg aataaaaccg tgctgcaacc gttagatgag 420

agagagaaaa atcagctttg cgaacaatta gatgttcagt agccaaaaac cggcaggagg 480

tccaaagaag agggcctaag atgcacgaaa tataacataa atggtaacga taatgattca 540

cacttgatta ccgacagtaa catgtttgaa taagacaata tcaattttta gtatgatatc 600

tagttacatt tgtacttaaa taaacatagt ttaacgttat catttaccgt tcacgttaca 660

aatatgtaaa ctaaacagca ccttaactaa tagtatgatc ccattgctct cagtcaagaa 720

cttgcccatg acatttgcaa gcgattttca agattatgga cattgcttag atcccaagcc 780

ctgacagaac tttgttagtc cggccgcaaa cgagggaggg atccacagcc agccagccag 840

ccagctccat ggcgctgaag tcaggtcagg accaatcaag gaaacagaga catcatgcac 900

ggatctgtgt gtgaagacgt agctggcatg catgttgcat ggaaagggaa ggcttgcaag 960

cctccatgtc ctcgtctcca tggagacgtc gccgtcatgg acagcgatga gcactgcctg 1020

ctgcgtccag gaaagaaggc atcgtcaggt ggccggttcg ccggctgcgt gcatggtcgg 1080

gtgtggccgc gtcactgctc attgatgctg caaacttgaa tggatccgga ctaagaccca 1140

agatcccttc ggttcagttg aggaattgag ccccgctgat gacatgtgct ggtgtgttca 1200

tccaaatatg tcagattgca caaacaccgg gtcacatgcc atcaacacca aaccatctga 1260

aatcaacgat gatggcccct tcagagcacg agcgca 1296

<210> 723
<211> 1120
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170572_G1, chr4:230939937..230941056, Cluster 5

<400> 723
atgatactcc gacaatataa cgtttagtgg tatttcgagc tacccctatc aatcattgac 60

ccgaaataat aaatcagcac aaaaatttgc aaaaaaaaag tttaaatacg agaagacccc 120

agtagcgcag gtagtcacat gtcacgcgag tttcatgcat gtgcaaacac acgcttcgat 180

cgcgcgcgtc cgctctgggc tcaaatcgtg acgtcaggcg gcctcgtgca tttttgaaag 240

taaagtattt ttatactatc gcacatgaat tatcgtgttg ccggccatcc ctaggaattg 300

aatttttata gacggcccag ccgtgcgcta tactacaaca ccttggttcg acatgtgcta 360

gctatcataa cttatatgag caatatcgtg aataataaac caagaactgt tatatctaat 420

tcatcaatta ctacttttaa taaaagcact cagtacgtac tctttataca gtcgtggggg 480

agtggaggga catatacgga ttgtgacaac cagaaactca tattgtggct atgatccatt 540

ttctcctcta ttgtatatag ccaatgtgct agtggatgct gaggataaca ttttatgcta 600

atcgtcttct tgaagatttg aatgatcttg attggccagc tcagagtgtt aaagaaatgc 660

aaagaaatta aactgggtag gtagatcgtc aaaagctttt gagcttgttt tttctgtagt 720

tgaccaggaa ggatatgacc taggtgccac tttgttggtt tacacaatat aatgaggcct 780

gacacaattt ttggtgtaac gtggttcctt tctttttttgt tcttttgtaa ttactacggt 840

ttatggacct acatggacaa tatatataga tatgactttt ttccgttgtt gtttataaat 900

aatttatgag atattaaggt caacaataat tcatatgatg tttgttttta tatagtcgtt 960

gtactctaat attgtattga ataatttgtg tatcatcata acgcacggtc attgtactat 1020

tatatattta tatatacatc tttacaaata taaatcatgt gtttcgtcgt gcgtcctagc 1080

aatttttttg caaaaaacat cattatgctt ctttgaaagt 1120

<210> 724
<211> 1283
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173125_G1, chr5:4297775..4299057, Cluster 5

<400> 724
gtatgccctc tgtcctagcg taaatgcatg ttattgctac attcaactgt caaaatcctg 60

ccgattctcc tccagtctga tgaacattat tattaaatca aactccagag agaaagaaaa 120

gatgaacacg cattgagtca gacaaactcc cgaatctcga taccatgtaa gcgatagatg 180

ttcatttttt agctgaattc gtctttgctg gtttgttatg atagtttcac tttactaatt 240

aactcggttc cgatttgttt attactgcat gcgtttagtt gctgcatttt caagttgtta 300

ttactactgt gtgatattgc ttcttacata tacggctatt taatttctag tggcagctgg 360

ttttgtatcc aaatttcaac tatgatgagg aaggaatgat tcagagcttt ggctagctgc 420

tacgatacga gcccgggagc aaagacatga acttccatag gtacttgcaa aatcacttat 480

tttatgatat ctgatataag aaacatatgc acaaacataa aaaaaaaggc tcagcaaaaa 540

tatttttttt tctagtgctg gtaaggctaa gattatcaca cgattatata aataaatgaa 600

atattatttt atatatagac tgtacggatt atagagtcga atatagaagt tgacataaac 660

cagggcacga tgaaggattg aaggcacatt gtcgtggctt ttctgtttgg ccttgctctc 720

ttttgctaag ccgaggtaca gtcaacaagg acttgggctt gaccgcttga ctaatgagca 780

atgagtagtc tccctcgctc tacacgcatg catgcaaaag gcagtagcga tcgtgctcct 840

tttcctccca ggctccctgc agcagctgca gctctgcagc ccatggagaa gaaaggtgtc 900

gtcggcagta tttgtgattt tactaggagg atctggtggt ggtcccgcca ggctagctcc 960

tgttatgcta gctagcgata caggttagct agctagtagg caaagtatcg tgacatctga 1020

catcctcagc cacagcccac acacaagggg gatgaacaca aatatatata taattgtttc 1080

aaattacagt aaacttttgg ttcaaagcgt aaaattgcaa gggtgcgcgt gcatgcatgc 1140

tcacctattt tgcagtttgc aacttgcagg tgggaattat ttacagtact aactttatta 1200

caaactataa aatattatat ttttctgaat atgtagctta tgttatataa ctagatattt 1260

taaaaaaatg agaatattta gta 1283

<210> 725
<211> 1269
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173819_G1, chr5:8511039..8512307, Cluster 5

<400> 725
gtaagccccc cagttccaac tccacacccc tcttctgtct cctggcctct tctactcgac 60

gacgactcct cccgcatgtt ccgtcgtctt ctaaatccga gctttagaag acgacggaac 120

atattgtttc tgggcaatat tgttttgtta tgaggcgatt tttttctagt ttctcttttc 180

cggtgggcgt cagagcgctg ttggcgcttt cctagattat gtgcgttata ttgttagcct 240

ctttagcgta ttctggtacg agcaaatatt ttctcgtggc ttgaattgtt gtgcagaggt 300

aggacttggt tatcgtctgt gaaggtgaag agtttatacg aaccagtttg actttgttct 360

ttgggaaaca ttaaaccatt agggtttcag tcttgttagc tagaggatta ctagtacaat 420

ttgaagctta aatgattcat cgcatagtgc tgcatctttg tgaatcttgt acctcgatca 480

gggtactcgt aaactcatac ttgagtatga tttcgaagtc cagtagtcct gctaggctcg 540

attcctgtaa ttatctcgtt aggaagttcc agcaaccatg acttgttttc tgtcaggagt 600

ttaagtaaac gatgagcatg attcagtttc tgcagaaagg ctatgttacc agtggcattt 660

tattatctag gtatttattt gcccggtttt gctggaggct atggttctgc agaaaggcta 720

tgggtttgct gaagggcctg ccttgaattt cgtatttatt ttctgcttca actcctcagc 780

acgtttaact acttgcattc agcattgcgt tgcatggctt ggtgacattg gtcacttttc 840

tattgtcttg ctcgtgctat atccatacac gtttaaaaac atagtctcat tccttacatc 900

tctctcatac atataatgtt ctttttttg tacttttgaa taccatcatg attgagacgt 960

catcattatg tcatctagct taacaaaata taatcctcac ttagcttttg gaatgtttct 1020

gcaatgttgg tggtggtctc tgaacctcaa cttgaaaata agttcctgtg gactgctgcc 1080

ataaacaatc agatcttgtt aataatggta gagcatctgc tgtccgtcta tttttgtcat 1140

gaaacttcga tggtgtgcct atgaaatttt atttcttttg agtcactttt tcatgaaaca 1200

gtcaagtgat atgatgtgac tgaattgcac ctaacaagat tgtatttact tattaattca 1260

aattgacag 1269

<210> 726
<211> 1121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_178513_G1, chr5:33560247..33561367, Cluster 5

<400> 726
agggtcaatc tctggctccg caacctttt aatggcacat tagaattgat tggcatcctc 60

acgatccctc tgcttgatca aaaattctct tggaccaatg ggagaaaaaa cccaattctg 120

gaactccccg atcatgtgtt cttcaacttg gccatgagta tgaccatcaa ctcccatctt 180

tctagttgtg ctcgccctac ctccgatcac atacccatca ttttatccct tacgactaga 240

gcaccaaagc caatgacctt ccgctttgtg aatgcttggc tcaaacacaa caacttcttg 300

cccacaatcc taccagccta gaacatatcg tcttgtggta cctagtacct acacggatgg 360

catgcttgct tcaaggaggg gcttagcacc caaggagagc ctgcattggc tctagatgtt 420

gatgacttat atagtgggtg cctaaatatc aacccgaaac ctttgctact cctgtttaca 480

ggtacatagg catggaacat gatcaaaggc atgggaaaaa atagtgcatc agggccagac 540

aggttcagag ctcacttcta cactgctatc tagcaacatg tggctagcac tgtgatgtct 600

gttgtcactg acttccaaaa tatagttgtc gaccttgaaa agatcaaatg ctcacacatc 660

atcctcctcc caaagaaaaa atgctactac accaatagac ccccatccca tctctttaca 720

aatctacagt gtcaaaatca tcggtaaaat gttgcaactc gcctatagaa gcatataagc 780

atcaacatca atccaaacct aactagtttt atccatggca gatcaatata tgaaaacttc 840

atcaatgctc tagatttggc gctaacttga cacaagtaaa gggtcacaac gctggtaatc 900

aaactggatt tggtcaaagc attgaacact gttaattgga aggtcatgtc cttaaccatg 960

gaaattagag gtttcccatg caatggagct catggattga tcatctgctc tccacattat 1020

gatcttccat cctcctccat ggttgccctt gcccatggtt ctcctagaag aaagggctac 1080

cacaggatga cccaatctca acatacctct tacttcttat c 1121

<210> 727
<211> 1011
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_182673_G1, chr5:58726001..58727011, Cluster 5

<400> 727
gaaactacta ctactggtgg tcggcttgat tgttgcaacc cgaagtttga ctagcgtaaa 60

gtattgtctc gccgtttaat tgacgagtgg tgcccacgac tctgcatttg cgtcgatcga 120

tgcagcgttc tgaccttctg caaagaatgc aaaggtgagg gggtcagggg aggagtgctg 180

gccatgtcct gcaagcagga ctgtcagtta tctgctctga cctgggcaca agtgttctct 240

tgtagccgca gcgatgaacg ggtggagact ggagacgatc atgtgttccg tgaacgcatg 300

tagctggtga acaaaactga atgcttgtaa gcaagcagaa caaaactgag ctcccgttgt 360

atcataacca ccaagtccaa gagtattgat gcgctttaga ggccggcggg gttgtacgct 420

gcgtgtttct acatgttctg tagcttagtt tagtagcccg caatgtgtcc aagacgttgc 480

agaatcgagg catttttacc gcgtgttcaa cggcggcgtg gctatgttca ttctctgaca 540

ctgtggtgga caacgtagca gccgtttctt tgagtattta tttatttact tatttctgtg 600

ggtgtcactg aaaaagttgg taataaattt acgaaagatg gcgccgttgg tgttggaatg 660

ggtttggttc ggcgctgggc tctttcctac tgtattattc atcgagccat agggcactct 720

tcggactggg ccgtgccgct cgctgtgttt ggggtggtgg cccaggcacc gcgcagccct 780

aggcccctcc ccggtccagg ctagcccgga tacgtgacga cccggccggg atcatgtttg 840

ggctagaaaa ggaaaaaatc ggattttgtg gagaggcttt tagccccctc caatatacac 900

tctggttctg gttttgtggc ttacaaacta gcattaagat aaaataaatt aatttatatt 960

cggaaaataa aaatttcttt agaaaaacag ggttccaaat taggctttgt t 1011

<210> 728
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_18698_G1, chr1:104628886..104629903, Cluster 5

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (387)..(486)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (459)..(459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (460)..(460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (461)..(461)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (462)..(462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (463)..(463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (464)..(464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (465)..(465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (466)..(466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (467)..(467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (468)..(468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (469)..(469)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (470)..(470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (471)..(471)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (472)..(472)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (473)..(473)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (474)..(474)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (475)..(475)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (476)..(476)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (477)..(477)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (478)..(478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (479)..(479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (480)..(480)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (481)..(481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (482)..(482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<400> 728
ataatactga ttgtttgggt gtatatggtt ttcatgccct actgatggtg tttatttttg 60

gtgttcaaat aataagtgtg aatattaagg atctacttgt tctaagtgtc aatgacgttg 120

aagattagtg acatgatctt tgtttttcct tttgccatac tataaagggt gacatgaacg 180

tgtagcatga cctaattgag tttagtgagt aggtatggtg cacgctggtg aaaactaaca 240

ctatgtagct gtacggaagc cccaagacaa ggttaagaat aaatccaact caaagatcac 300

atgaattaga tgagttggtg gtggtgcagg tgcactccga tgtgtttaat gtgcaccaaa 360

cttgttcatc gaatgtaaac aatgcannnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 480

nnnnnnccca agactggaag gcagtcgctt ggctgctgat tattaaccac ctttttctga 540

tcctcccctt tccagtttct tacgcctcgt atagtggcta tccttttctt tcccccttctc 600

tagaatacct tgaccagttt gaatccaccc tgctcctaat gaatccaagg ttgggccaca 660

taagctattt taggaacctg tgacgatcat agaaaagtac cctgctggac atgaacagat 720

ttgacaaaga aatatatggt gtgcatcact gccttttgtc agaggatcca ttatatgtag 780

aacctgagct tgggttgttt tcgtgcatgt tgtgttgctg tcacaccagc ttcaccactt 840

agaagggtcg tcttgaaaga ggttaggaga tcctattgtg ggatcggtgg tttgggatga 900

gtccatcatc attatttatt ttagcccgga gttgtgcgta gtttttttg gaatgttaat 960

tttggtatgg ctttttttta tttgttagtt ccctttccac agcgtccgac aaactccc 1018

<210> 729
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198523_G1, chr5:165331142..165332184, Cluster 5

<400> 729
gaggtgaata caactatata taattcaaat aagaccttag tagccagaga aatcataact 60

actcgaaaag cctaccgaat gaagtgtgta ttcttcttgg agggagcatg catgcatgat 120

tacgtgtagc tgtacgtgta tttgtattca aacggctaaa atccacgcat ggtttggaca 180

acacaataga aatccaaaac ctgcagatag attcacagat gcacgatctc ggtgacacag 240

gaatatatat gacctgaatg agagagcaaa taaagcggac aaatgggggc ggtagacgcc 300

gaggtgcagg aaagcttgtt tgtttgcatc tgcgtatgtc tctggcaagg gagaaaagtg 360

gtcacgacgc atgtccttgg agttggagag agagagagag ggagaggact ggccatggcc 420

tggtacgtgc taggagtagg agagatggcc aggccagcca ccaggccgag cagggacctt 480

tcctccctcc tcggttcggc agaaggggga atctgtgcag gatgggggcc aggccagacc 540

aggggcagcg cttgcatggt cagcaccaca gtctactacg ctgtcctgca gtccagcagg 600

agctttagca ggctagaagc tgcagtgcca gcggtgtcca ttgccaaggt ccccgtaagt 660

agaattaaaa ttactggcca gctaattttt aacattagac ctatgttttg gaacaaagtt 720

tttaaaaacc actgtttttt aacagtgcaa tatattttag ttatgataat accacaattt 780

aaaatagtac aattttaaaa actaaggttt agacctaagt ttagagtact ttaaaataac 840

tacaatattt acaatactcg agttttaaaa acataaattt taactagttt gctaaacacc 900

attcttctat atatataata ctgcagtatt tgaaaatact acaacatttt ttcactttac 960

gccgaaacac cccctatgtc tacatatcct atctaaacag aaggcttgta cctagaccaa 1020

caattagtct ttctctaact ata 1043

<210> 730
<211> 1161
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_200876_G1, chr5:178600651..178601811, Cluster 5

<400> 730
agaaaatcaa atagacccaa caaaaaaacg agaatagaga tttatttgta acgtatatat 60

atttgatata aattgaataa acggaggccc tgagcggtgg cataccctgc ataccctcac 120

ggccggtcct ggttccagga gctccaatgg cggcggtggc catggcctgg cctgccctac 180

cccacaccat cagtgagggt tggtctcccc gtgtcgtagg cagcttgcag cgccaaggga 240

gagagttcca ggtgtgtggt ggtagtgggc cacacatagg gccatgacac gatgggagga 300

agtttatggc tcttgtggcc atggtcggcc cggcccgtcc tccggtgcct ccctgccagc 360

gtagcgctac ttcgtcacct agagggcatg gatgaagacc aacagtgtct ggcggctata 420

tggcagtggt tccctcctat tagtaccgtc ctcccataat aatgccatcg ggtggatcta 480

cctcacacct tagtgcacta gctagggata tattctgtga taaattagca acaagagttt 540

ctctaggttg gaactagaat cttttattgt agcaatatat taagactaat atttatgtaa 600

tgactcttta atgtttaatg aacattggta tttgtatcga tgaattagta tactttatta 660

tttttatgta ctgtaaattt ggatattctt tgaaaattgc ctccaaaaat attgatgcaa 720

tgtcattcat tttgtaatag tatttgattg ataaaaaggg aagaaacgaa attgatgtgt 780

tgaatacttt gatcaagggc aaaaatgact tctccaacca aatcatcgaa ttcgtgaagc 840

taaaattagt ctgcaaacta aacacttaaa aaactcagta attttactgt aaaactaaat 900

tatggtgaag ttagtgaagc taagctacat cgttagtcac ctggtcctgg tcagctggtg 960

tgatagcgtc gagaacacgt gaaaggattg gtccgtgagg ccgtgcatac ttttccactg 1020

aacaattttt aaagtggaac agggagtcag ggagccagct tattgacttg tcaagtccat 1080

tgattgcaaa atgctgaaat gtacgtacct cattttggaa tgcgagtgat gtggattttt 1140

tttaaaaaaa ataaactggg c 1161

<210> 731
<211> 1118
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201995_G1, chr5:185536471..185537588, Cluster 5

<400> 731
atcccatgat gagtttaacc gaataaaaaa aattaagtag ccatggatta ttttggggca 60

tggattgagg catggattta attccaatcc atgctaatcc agagcgggat tggtgtaaac 120

gaacaaagcc taagctggat tctaattatc catgagaacc aaacgccctc aatcgaaaaa 180

aaaaatcagg ggcaggtgcg acgggatgtc tgaaaacact attgcatgcc cagccagatg 240

ccctgaacaa ttgcatggag cgggaacagt aaagttcttt cctagtagga ccttgggtgg 300

caaccgagat acggctattt tccgtcgcga gaacataatc ggcggacaat acgttttcaa 360

ggaatccgaa gagctccgag ggttgacatt aattgtggtt gctgaagaga cacaaaattc 420

ttgtcaacag agctcgtatc cgatttggag gggacaaaaa aaaactggtg tacatatcat 480

ctccgagagc cttctggatg aaggaatctt ggaacctaca ctaggcagcc taagacatat 540

aagcgacata tatttacaaa cagaagagat tctgatcaac tcacgctgta atgggaaaca 600

gcacaaacaa gggattgttg cagctaggag tgtcttaaag cataaagaaa aaataaatcg 660

tagccaagaa tccctagatg ttttttttt gcttaaaata aaaaatagaa gctagaatcc 720

ggaagcaggc acagatcgtg tgccccgtta tgggtacaga ggagattatg ttaacaaata 780

ataacaatga caagctctag cttaggggtg ccgactagcg acaacgactt aattagcacc 840

gtcgattaga tccatgaagc catgactttg tgagtggaat cgaaactttg ggcccacgaa 900

ccacacagat cttgttagcg ataacacaga ataacagaag tggcatgaag ccttaattgg 960

atgcccctta ggaaacataa ctttgggccc gccaaataca cagatctaat ttggatgaga 1020

aatatagcgc cttggccacc aagaacgata acaaattcta tcgagatagg tgctccacgg 1080

tagagggtgg gttacaagag ctaaaagtag gataaaca 1118

<210> 732
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202012_G1, chr5:185627265..185628347, Cluster 5

<400> 732
atcacggcat gtgtttactg ttcttttgtc tcattaacca actgtcttat tagcagcaat 60

agcagatgca aaaaaataaa cgcattgaat aatatcagat tgtgtattcg ctaaaaaatt 120

atattcgctg gaaccaattt ttttttgttt gcaaatggtt gtagcgatat ggtttgaagt 180

gcagtccgtg aggccgtgac aaagttgtag ttagtatttg aaattgaact tgtctctagc 240

caaaaattat gctaccaaac agcgctatgt atcaagaaat actttgattt tactctggtt 300

ttgctgaaac catagtatta tgtcgtaaca tactgtatac catggtatta aaatactacg 360

gtactagaaa actctactcc caaacacgcc cttacatttt ttttacaata gaaacgtctt 420

gtaaattata atgcagagag aatatatttt agagactcat ttgctcatag ggagccagtg 480

taggctgttc aagtccaagt caatacctgg gggtccaaaa ttaagggttc acgtattact 540

agtgcactat gatcggatga tgcaagtgtg tggctgtacg taatgcggct gtgtaatccg 600

tttttaaacc atgggggcat ggggcatccg acttaaaagc ccccccaact catacattag 660

acactagtac agtagtacta gtgcaccaac accaccaggg caaaaccaaa aggcgttcga 720

tttgtgctcc tctacaggat cgcaggaaag ctgccttggc tgtacgcctc aggcctccag 780

caaagcaaag ccgcgttagc ctttgttcgt gtacaccagc tctcgattaa catggattgg 840

aattaaatcc ataccctaat ccatacccca aaataatcca tgactactta atttttttta 900

ttcggttaaa cccatcatgg aatataaccc aggggtttgg gaatttttta aactataaaa 960

gacatggatt ctatccatag ctcattaggt atggaacaaa tccatgagat attgcacaag 1020

tttatattag aatccatgga tcaaaagaat aactagcttt aaaagacaca tggattagtt 1080

cat 1083

<210> 733
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202859_G1, chr5:190041750..190042836, Cluster 5

<400> 733
gcttaagcat aaatgaaaaa agtaacaaca tacttaaggc tatgatcagc agaccttacg 60

gttacatatg acggtgcaaa ctagtgtttt atattatttt gcactgtaaa atgcactatt 120

tacggagtga ggttttcaaa tagaaagtgg aatcgagctt aaaagacaat ggtagagtaa 180

tgtattaact cttgttctcc cgcggaatag aatctaggag acataaggat caactattat 240

tcaatatatc tgactaataa caagtaattg taatgaatta tacgcagttt tcttctcttt 300

tatcatttct ctaatacaac aagcataata gataatttgt agtctgtatc aagttttata 360

aacttaccag cttttgatct atatactttt tatttatatc cagtcttttt ttacatagca 420

ccaccatgta tcttaaattc tgcaaactag acgagcagat tgcttggacg tcggaacgca 480

gcggggtggt tgacctgctc aaacggccca atcaaaggtt cccgagtcgc tggctgcagg 540

cctgcgggcg aggaggcgat gaggggcagc ggcccgggga accgagctcg acgacgtcgc 600

gcatcccggg cgaggggcga cacgcgagcg cctagatgtg tgtttggttc ggtgtcaacg 660

agggatgaga caggatcacc ttgagctgat cttgtccctt atttttgag ggatagcctc 720

atccactatt tttgaaaaat atttcttgac cttgactcta aacctccaaa ccaaacacgg 780

gttaagttag aatgatctca tctcatctct ctttatcttt cctcgtccct ccatccaaac 840

aacctagagc gctccactgg gcttgtgcct ggtggtgcga tcgggacgag agacgtgccc 900

acgcgctgcc agtgcacgcc ccgtgtgcgc gtgcgtgcgc tggtttcgtt cccgcgtctg 960

gcgtccgcgg tccgcgtgcg tgccgatccg cagccccacg cggtgcttgc tgcccgcctg 1020

cccgtgcccg gacccggacc cggatcggac tgcgctgccc atgccgccag cggggccaaa 1080

gcggtgc 1087

<210> 734
<211> 1211
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203517_G1, chr5:193925358..193926568, Cluster 5

<220>
<221> modified_base
<222> (964)..(964)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (964)..(1063)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (965)..(965)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (966)..(966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (967)..(967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (968)..(968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (969)..(969)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (970)..(970)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (971)..(971)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (972)..(972)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (973)..(973)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (974)..(974)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (975)..(975)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (976)..(976)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (977)..(977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (978)..(978)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (979)..(979)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (980)..(980)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (981)..(981)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (982)..(982)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (983)..(983)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (984)..(984)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (985)..(985)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (986)..(986)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (987)..(987)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (988)..(988)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (989)..(989)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (990)..(990)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (991)..(991)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (992)..(992)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (993)..(993)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (994)..(994)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (995)..(995)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (996)..(996)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (997)..(997)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (998)..(998)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (999)..(999)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1000)..(1000)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1001)..(1001)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1002)..(1002)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1003)..(1003)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1004)..(1004)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1005)..(1005)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1006)..(1006)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1007)..(1007)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1008)..(1008)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1009)..(1009)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1010)..(1010)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1011)..(1011)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1012)..(1012)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1013)..(1013)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1014)..(1014)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1015)..(1015)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1016)..(1016)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1017)..(1017)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1018)..(1018)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1019)..(1019)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1020)..(1020)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1021)..(1021)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1022)..(1022)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1023)..(1023)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1024)..(1024)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1025)..(1025)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1026)..(1026)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1027)..(1027)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1028)..(1028)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1029)..(1029)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1031)..(1031)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1032)..(1032)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1033)..(1033)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<400> 734
cggtcgctac tcgccagtcg tcggctgcta ccgcacccgc acgatgtgga cttggggctg 60

cggctcgtgt gcgcaaaaga tgcgaccggc ctgggactgg gacccgcctc ccctccagaa 120

ttcaagaacc gatcaaaccg aggccccacg aggcagtcca cgtgacccca cagaattccc 180

tcctgcgtgg cccatcccgc tccgcacgtc acggagcacg aaaaagctca ttgcattgca 240

ccttgcacgg aacagaccaa cccccaccca cccctcctcc actggcagcc gggacccgca 300

cccaccccgc tagcacgcta tgctgcgtgt gtgcgtgcct acccccttccg cgacggtcgt 360

ggcggcgtcg aagaatttga acttgtcgcc tacagggctc cagaaaacca gacggcttga 420

ccgcttcacc tccatttcct tcgtcccccc cgagtcctac tatatacgcg cggccgtgcg 480

ctcgatccat acctccttcc accgctgacg ccttcctcga gcgttccatc ccatcccctc 540

acccgaatcc cactcggcta ctccccactt ccctttaaga acgcgcccct ccccaccgga 600

ggttaccgcc cacccatcaa tccatcatcc atcgctcggt aatcgatcga cccgaacaac 660

gccggggtgc tggtgtgagg gtcaggatgg tggtcggatt ccgccgcacg atctcgttcc 720

cggcgcccag gtccccggcg ccgccagcgg ggcccagcgc cgccaacaac aagtccgtcg 780

cctaccgcgc gcggtcggcg agcctaccgt gccggttcca cccgctggtg ctccagctcg 840

acgacgacgt cgccgacttg cgtgtactgc tgggccgcct ggcgttccga gacctccgcg 900

aaccccgtgg agcaagaacc ggcgggaagg gctccgtgtg ctgcttttct ctagggcagc 960

atgnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnttttttct acgcgtgtca 1080

gctccagaag aacatcgcat tcgacgttac cattagatta caataataac gggaccagcg 1140

aggattgccg tgatgcgagg ttgcaagcac tgcagattca tcttgctcca cagaagcaca 1200

gagagaggac c 1211

<210> 735
<211> 1230
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203547_G1, chr5:194118135..194119364, Cluster 5

<400> 735
ataatagaac ttccccctgc cgtccgtacg ttcctcagcc gcgccgcgcg gccccaccgc 60

cattcccctc ccgtgccgaa tacgtacgca gggcgcgcgg ccccgacgga ggcaagttct 120

atgcaaacgt acgtgatcga tgtacacact gtctgctgtg ctgtgcagct agcacggacc 180

ggattccgtt cacgtgcctt cgtacagcca ccatccgatt gtgcatgaag cggttccgcg 240

gaggcgtgtt cattcttttt tttttctttt acggagaaac ctttgtctag ctagatgggg 300

gcagacacgt ggctagcatc cgggccgtac gttctgcacg gcatatgcac tgtacatcac 360

gctagcataa aagcgccagg cgcccatgca tgggtcgctc gtaagactgt tcactctcaa 420

agaccaccgg gctctgggaa cagtggcggc ggaagcacca ccgccggcag cgcggcgaca 480

aggggctttg ttggtagcga cggcgcgcta gctctcgatc gggtccggcc ggcccgcgtc 540

acgcgtatgt gtgcccggcc gggctgcgcg ccaccctaaa ccctagctgc catgcgaatt 600

actaagtaat taacgatacg aaaagggaga gctatcgatc ggttggtggc tggcgcgttg 660

ccttcatcgc gtgaacgtac gcagccatct agtcggagta cgtagccgca tgtgcagcgg 720

cgacaagcaa gcagcaggta gctcctgtgc atatatgctg ggcacaaaat taaagatcgg 780

atggcggatc ggacacggca cacggggtcg ccttgcacga cagtacgacg tacgttacgt 840

acgcgcgcat gtgatttgat cacttcccag atatagtact acgactgcta atgcgtgcta 900

cagtacactt tagattcctc atcaacttga catcacctgt ttacgtacgt ccggcgggag 960

gaaccggacg actgtatgag cactgacttc tagctacttt cccgtttctc ctacaactcg 1020

agtcaataaa cacgcggaaa acatcaggca catatttagt acaagcctca taaattctga 1080

caatcatcag attgtcatga gcttagaagc attacggccc tatacttcat caggtgatgc 1140

attatgagtt tataccataa cttttggtag aatcaactca ttcctcatgt atttactaat 1200

tattagctta taaagagtgg tgtggtaatt 1230

<210> 736
<211> 1143
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204550_G1, chr5:199704443..199705585, Cluster 5

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>

<221> misc_feature
<222> (101)..(162)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (150)..(150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (151)..(151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (152)..(152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (153)..(153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (154)..(154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (155)..(155)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (156)..(156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (157)..(157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (158)..(158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (159)..(159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (160)..(160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (161)..(161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (162)..(162)
<223> a, c, g, or t

<400> 736
actacagaaa tttatacttg ctacaatcaa cacttgttct ttcgtgaggc ctgaagactt 60

cannnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nngttggtct tccaatacca 180

cgagaaaatt aatacttggc tccaataaac catttttttt ttgtggaggc cgtggaggac 240

ttcaaaagaa cccctccatt ttaatttcca tgtttggatg gccatgttag gaatttggtg 300

gtggcttatt tttagagtta tggcacatat ttcttagcac attgataaga ttttcctaat 360

agaacaatca tatatgatag aatagctttc tttggtttct tttctcgtct tcgcaaagaa 420

ccctcctcgc cgctaaatca attggttctt tctttggatg acttcttttc ctaaaatgat 480

ccttcacctg ggagaccaca acttgatctt catgatcagt taagtcataa gcttgtttct 540

atggtgtcta atttactgag gagttgcttg gtgtgttcta atcgactttt actttcaact 600

gacttgccat tagtttgtct tttaggagtt gctagatgtt tggtgttctt gcaaggaggt 660

gtggggctcg tgactcctat gaggaggggt gaggctacta catagaaggg tggggctctt 720

gcgagaaggg gtgaggctct tacaaggagg ggtggggttc ctacaaggag gaatggggcc 780

ccgccaacta ccagtgcatt gtgacatctg taatttatga tgtgtctctt ctttcatata 840

gtaaatctat gcaatcccta taaaagtact agatatgtct ccatcaccct ttatgatctt 900

gagctctttg tctccatatc cttcatagat ctaaccaatg atcgtctaga atctcctcaa 960

tatggcatgt cttgctttgc tgaggaggtg aaaccatatc caaagccacc ttaattgtca 1020

tgttcggcac tgatatgtgt gtagctaggt cacatgatga tctatactta atttcttttc 1080

catctgtatg atatcattga tatgcatgga gtttggtgaa gcatgacgaa ttctctagaa 1140

tcc 1143

<210> 737
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_20623_G1, chr1:118054550..118055579, Cluster 5

<400> 737
gtcgtgcagc tcatccctgc gcagctcctg atcggaattt ccccggtcga gcagctcctc 60

caccgcgtcc tcccggtttc ctgctcgccg agcttggctt cgagttcgtg tctcccatgc 120

cgcggcactt cactacgcgc cgtggtcttt ccccaagttc ctatggtgct cggcgccccт 180

gctcctagct ccctgctcgg cgctttcttc tcttcctccc ctgcacagag ccgctgactg 240

atcctctcac tggccgtgtc gagctccgtt cacgcgcgcc cagcttctct actccctgcg 300

cgctgctcca attcccagcc atggcgcatc tctgttcgtt ctccagctct ctgtgcgtca 360

cggagctccc ttgtcgcgcc ccctgctcgc tcgcgctctg tagagcttgc tcctgcgcgc 420

agcgcgccca gccagctccc tgccgagtcc cagccgaact cctccgtaca gcgccctgtc 480

gaggtttcct gttcctgcgc ttgccatggc cacgcagccc tctcgtggtt gctcctcccc 540

ctcgccgagt ccctctcatc cccatggccg agtctcttcc ccggcttctc ctgaaccgcg 600

cccctgctct gctcgccgtg gagctcctgc gcacgcgccg tcccgagctc gcccctgatc 660

cctgtttgcc gcgttcctgc gccgtcgcct tgctgcttgc tttgcgcgtg cggtcctctg 720

cccctgcgcg tagccggttt ctcggttcgc cgtggagcct gcgcgctcgg ttctgtccag 780

ttcgtgtact gctcgcccgt ccgcgcggca cgtcatccat ggccgctgtc cgtcgtcgag 840

tccctatgcg cgcaccagct ccctgtgtcg cgttccattc gcctaaaccg gagttcgcca 900

gccgtccctg cttgccggtg tgctgctgct ctagttcgga tctcgcccaa gtcgctgcca 960

tggttgtcca gtgtttgacc cgtgccgatt cgcgttcgct catatcgcca tcgtccatcg 1020

tcgtgttgtc 1030

<210> 738
<211> 1297
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_206640_G1, chr5:211167279..211168575, Cluster 5

<400> 738
tattggagtt ctgttggagt aataaaaact gagtttcacc tttaaacaaa agttttggga 60

gcttttgagt cgttacttgg aaatgctcta atagcattta gggataaaaa tttacaggaa 120

acgctgcgca cagtctcatt gcttattccc ccgccacccc cgcccaaaaa agaaaaagaa 180

aaaaaacacc ctcccttctc cttgcttgtc agctcgcacc catggaaccc tcgtcgccgg 240

ccaccacggc caccttccct gctgccgtag aagaacatga gacgtaccct cccatggtgt 300

catcctctct attcccactt ttccccttcg ccgcctccac ctcctctgct ccccccgccg 360

aatcccaatg gctttcaaac cctagcttct ccttcgatgc ctcctccctg aacatcccgg 420

ctaccacctc atcgtcgctc ccgtcgccgc agagccactc gtccgatgag gacacgccgc 480

tgcaggccgc tcctgcgaaa tacgagctgg tgccttcttc gccgtcctcc gacgaggaga 540

gggggtcgcg gaggaagaga agtgggagga ggaaacggaa gcgcgagaag gagcgctatg 600

atggggcagc gacatcgcgg aaggctggga ttcgtgcctg ggctggattg gagacgaagc 660

cagccaagga ttactatgtc gacgcgaagg gcgaccatga taacctggct tttggatccc 720

tctacaggtc tgatcatgaa gtatttgatg tagcatgcca atccaattgc tcgtagtaaa 780

tctatgttgc tgcattcatg tttaataatt ttgctgtgct attagtttgt tgaagttgtt 840

tattcgtagc gtgatgactt gtgcagaaat tttagtgtga atcaaaggtc tcagcatcag 900

tattatttca aaatgtcaca ctaagcagag acctgctcca ggctaaccaa gttgtctgaa 960

atcctaggcc tagttatttg tacacaagat tctaaaatat tctccactaa acccagaata 1020

tatgttgcta aatgcagggt tggattagca ttttgaatat atttatgtgt taaccatggt 1080

tcattctatg caacctttgc ccattctgta cttgtatttg atacatctag aatgttctaa 1140

tatcagacta ttccaaaggc tagtgaatca acataatagt atgatgcacc gtgtcttgat 1200

cgtcggtaac actacaacat gtttatatga agtaactgag cttcaaattg taccacagca 1260

caatattata cgaatactgt aaactatgtt taaatta 1297

<210> 739
<211> 1268
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207455_G1, chr5:214923380..214924647, Cluster 5

<400> 739
tccattcatc gaccaaagcc ggcagctgct cgagttgatg gaatcattga tccgtggggg 60

tgcgtgtgct tctggttcac tggtaggtgg accaggtttg ctagaacctt cgtcgtccca 120

acggcttcga gctgagatcg ctggtcgtaa caaacccggt ctggattctc ggggctggaa 180

gggctagata agctagccat cccgttaatt cgtggtggac cgtcgtagaa cccatgcttc 240

gacgtgggca gagcactccg ccgcatgatt gccggtaatt ctacccctag gatgttcatc 300

gttctctctg ctacgtcggt agcatcggtc gaggggtagg taacggaccg ccgaggcgcc 360

gcacgccggc gagtgcgcta ccgcgtttag cgcgcaacac caccctgttt agccggaagg 420

gaaggagatg agcaatggct gttggattca aaaccagtgc atctgattag aacatgtgta 480

acactagttc ggtttgagta gatctaaaga tgatcgtctg aggggcgttc acttaagtct 540

ataaagtggt ggtccatctc cgtcttttga aatcttgcag aggacctttc cagacagata 600

atggttattt tccttaacat tgaggaagaa cagagcggta tgtacgctgg atgagctgtc 660

agtcatccca tggtataaga acccacccaa atgggggcaa gaactcatca tgccatgggc 720

catgcatggg gcatgggggc ttggggcaca acaatacaaa gaataggcac gggtgccggc 780

aacgggagga gcacagagct ctctcagctg cttggtcccg tcgaaagaaa atcccatgcc 840

ataaagaggt tagacgaggt tatatattcc attaacagct tctgcacaat tgaagccaca 900

gaaaagatga cgtgtgtgag aattggacct ttttttaaca tcactcagca ccagatctgt 960

ttattattta tatagtggtg ttatataaat ggggtacgga gccacgccgc acgcgcccgg 1020

agcggcggcg cccgcctcga cggctccgcg acgcagcctc agccacgctg ctcgtggcca 1080

cgccatacgc cggaccgtcc tcctcggatg agggaaggct cggtgccccg gcatcgtttc 1140

cagtggacgg aggccattcg aagcacgcgt gtgaggcagt tcgcaatttg caaagaagaa 1200

aaattagcaa aggagcttct tttcgctaag aaaggtgagg aatttttctc aaagttccat 1260

agacggct 1268

<210> 740
<211> 1038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_209238_G1, chr6:9143387..9144424, Cluster 5

<400> 740
gttggccgca acaacgtcat gagggagggc ctgacggcgg cgacacaagt gaggggaggg 60

ggcggcggga tcatggagga gggggagagg gacgagggaa gcatgatata aataacatta 120

gctattgaat ttgagtgagt agtagagagg aaagttatct agcgacctga atcgttggtt 180

ttgagggtgt aatatgtgtg agtacaattc gtttggtagg tttagaggag attatgggtg 240

tggggtgatt tggttgggta gatattgcaa agtaaaaact ggtaggttat atatagggat 300

atagagatat aaatataaat attatatata ggcatagatc gaacaaataa ccatatagtt 360

tgatattagg tgtaaaatat atttagtcag ggtagagcta ggctcgtttt ttttttttt 420

tttgctgtta ctttatagca ttacatgcta caaaattcaa ggctacaaca tttgttgagc 480

taagagaaag caatgatgat aattatgctc atgaaatgag tgacatcaac aactatctac 540

tctagatctg acatgtacat agtgctccct ctctttaaaa ttattacata atttttgtta 600

tgcccttaga tatatgtaag agtacagcaa aaaagctaca tatacctaga aaattaagat 660

atcttataat tgtccactat cacgcattac gctactagaa atttttaga aaaaagcgat 720

gcaaaaaaag agctcgtttt ttttcagatc aaaggtacga cttccatatg ccgttgccat 780

atgacccatt taatccctac cagctggggt tcatgcatac tacgcatgtt gctttgtgca 840

gagctagctt ctagctagca caacagtggt tccccccggc ctccccttt ttaccaatgg 900

taaatactgt gcatttttt ttcccttcct gtataggtcg tatgaccgga atctcccgtc 960

ctacaacaca tcacacggcc attataaggg ccgggcaacc tctctactta cttccaccca 1020

tcatcgcatc tattcact 1038

<210> 741
<211> 1202
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_213788_G1, chr6:36603115..36604316, Cluster 5

<400> 741
gtccatgcgc atgccaatcc aaggacgaag agcaccaacg gcaagcgccc agatgacggc 60

cgaagcggcg gccgacggca tagccgccgc caccttccag gcgaaggcca cggtgagcag 120

ccacacagcg cctcgcccgc gctctggctg ggacccgggc gccgcgcgct cgtagtcacg 180

gaggcagcgg aaaaggagta gcagagcggc gtacgagcct gttaccagta ggatggagac 240

gaggtcgccc cacacgcggt agatggcgac cctggagttg agggtcaaga agccgaggcc 300

ggctgtggtg gcccaggtcg gagggaggtt ggcgttgtcg gccatggatg gtggaggtgc 360

gcgtgggggc agaggcagag ggcgctgacg tagtgacgcc gccgacacgc cttttctctc 420

gagtcttcaa gtctaggagc gacgggtcaa ggactcaagg ctcacaactt cacatgctct 480

atatgaaagg cgaacgtgtg ggcgccaatt ttctgggctt tgtttttcac gaagaacaca 540

cttgcgtttg tggacgggaa tttatcccgt gacaatcagg aaagcacaga aaatggtaac 600

ctccggttcg gtttttgacc cctaaaagat tgtatgatac aattctaaga ttctgatcat 660

aaatacaact aaaacataat atgtatgaag agtcatcaag agtctgcctc ctgtttttta 720

ttcacatagt ttattagaga cctttaaaag actatattaa ataaggttat gtatgcccta 780

agttcttaat taatagttct taattaatgc atgcatgtgg ttttatgtca ttgaaattta 840

actacagcgc tgagcgtagt ctattggctc atgtattata ctatggaaac aaaaaactac 900

acggttgttc aatttaaagg gtaaatgtaa gaaagggaca ccactataca tgttcaaaca 960

gtgcaggtca actgctaacg gtccatgcta tgtgttacaa ggaaattgga ggatttgacg 1020

gagaaaaaaa cacctagagc tggtttggtg acaagataat taaagagtat tgcatgagaa 1080

gaaatttctt gatattcatt gaatagcaag tgggcacctg tgctatcacg gttttacctt 1140

tgtttagaaa taaacaataa ttatattaaa aatagtgttt agaaataaac aataattata 1200

tt 1202

<210> 742
<211> 1303
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_220411_G1, chr6:82759037..82760339, Cluster 5

<400> 742
tagccaatgg tcctttcctg tagctcgtag atgactggtg tcatcaccca gcaagcactg 60

ctagtatggt tttctagata gataagagta atcagggatg gatggtgtgt gtatggacag 120

aggagagccg tgcatgacct gggttcacct gggtacatga ctaaatgtgc ccagtatgta 180

aaagagcaag ctcctgtcca gaataaaaaa attcgggttt cttgtacttt gtactgccta 240

ggcaagctgg tgaaatgttt catactagat gtcactgcac agaatataga agttggactg 300

ttagtctgaa gatgaagtta ggaagcttct tcattccttg ttccctgtcc agttcacatt 360

tgatttcttc atctgtccag caggtcaggg tcaggtcagg tcagctccac cgagtgtcag 420

gccggcgtca cgcaggcatc ttttcatgtg tcacagtact gtatttttga tctttcaaca 480

agaagatgga tcactagcga cctcttcttc caggtcttcc aactcaagaa gcgtcatgga 540

acccactggg agcagagcac tgaggcgact gacccaccaa catgggcttc ttttttctct 600

ctctctccag cacagaacaa gaagagtgac aggctacttt caagcctcat ctatctctcc 660

agagtaaaag acttggaccg cttcaaagaa gcttcagatc gatcagatgt tgtggccttc 720

gtcgtgtgtg gctgaatgtc actggaggac aggaatgcaa atgcaaccat atggacttga 780

ctctctccgg caagaggcaa catccatcga taccagcaac catggacttg cttgtgcatc 840

catggaagaa ccggtccaag cgacagggat ggatggatgg gatggatggg atggccccag 900

ctccgttcca tttccacgtc ttgattttta tatggtacac ctaagctcac cgtttgtctc 960

cagtctccta gcaccaagca agtccacgct tgtcacactc tctgtatagt acctagtact 1020

aaatgaaaat atgatatgat actctctgtt tagtaatctc tttttaagga tggatctagt 1080

gcagccgtct taccgagtcg ctatattgcg agtttaaaga agcctatttt aaaagaatca 1140

ggttttcact agttttagga atttatgatg acactaaatt attatgacta ccgtgtgtgt 1200

gttttacaga gtaaaattat gttaggtcat aataatggtg attgtttggg tattcatgcc 1260

tattatgttt ttaaagtatg gatgtgccaa atagagttgg gag 1303

<210> 743
<211> 1167
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_221773_G1, chr6:91616584..91617750, Cluster 5

<400> 743
aagcgcctta ttgtttctaa attatcatcc attgattaga ctgcgcttac tttcgtcatg 60

ctggcagagg agacaaccgc accgtgtgtg gccggtgtcc tgaaaacgac gaaacggtgt 120

tcatcagcac gtctgctaaa ttcacagtga acgaacatcc tgtgacacgc ggggcatgtt 180

tgattacgtg gcctgggcta gacaggttta gattttaatc taatagccag ggtagctgaa 240

atctagctgc aacaacgcaa tccaatcttg ttttatatat gtgacattta ctggattttg 300

atcgttacag tagtacatgc cgttttacgc gttgtgcagg cggccaccct gcgtgcttgt 360

gccttgtggt accgctgctg cctccgccgg ctcggaatac tctgaataaa agccaggtga 420

tgaatccacc cttatgcttc tggtccaggt cctgctgcgg tgctgccgac gacgacgaca 480

aagccggtgg ccgccggccg tcctgccgcg ggacttgcgc gatcagagac atcgtccagg 540

cctgtggatg ggagctgacg ccagagacga aactgccaaa cgcgcccgcg tttctcaagg 600

cagcagcgga agaaagagac accgtcatcg tcatcggcga tcgacagctc taacagtctc 660

gctctgcgct aggccacgcc aagcggtcta acggtctagc tctagcaccg ccacccatgg 720

cgcagctact ggcccattcg gacggccgcg accgcgagag gggcaaaaga cgcacccagc 780

catcccggac ggagtatata agttgccgcc tgaccgcgac cagtgcagca gtgcgtgctc 840

cggactccgg tggcaccgca cggtcacgcg atggagtcga cgacggcccg ggcgctgctc 900

tacttctgct gcctcgcgct gtacctctgc cgccgcgctc cgccctgcct gtgggcggag 960

gccgccgccg gcgggtacgc tgcccgcgcg gcggcggtgg acgaaggagg cgcgcggctc 1020

cgcgcccagc tcgcggccat cgccgccgcc ggcgacgacg acgtccggaa cctcgacgtg 1080

tatgctaggt gcgatatatt acaacgaagg aacatcgata gatgtgtata tggttgttag 1140

tatgttaccg ttaccaagaa gtagaca 1167

<210> 744
<211> 1146
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_221776_G1, chr6:91620495..91621640, Cluster 5

<400> 744
ctctcaaaat cccctcccac caaatcagcc tcaatcattt tccatactct tgctcccaaa 60

catgctttgc tcccaacaag ctcaggtgcc aagatgcgga cacatattga agtcctgaat 120

cggtaaatgt cgataaaaaa atgggaaacc cgttggaatg tgttggcagt aaaaaaaatg 180

gcaaaaaaaa aacacggcag gcagaggaat agcgttggaa taaacaaaaa aattaaggat 240

tcattgaagt cactgaaaca gtattaagac atcattaaaa atttggaact gaaacagtat 300

taaatgtcaa ttaaaaaatt agagtgtaaa catctgaaag gcttcgatga aagtcactac 360

tgtagacgcg ccaggtaggg gtcgaaccta cggccttctg cttaggaaac agacgctcta 420

tccactgagc tacaagcgcc ttaatgactc taaatgatca tcagattata agactgcgct 480

tatttttgtc atgctggcag aggagacagt gtggatgtcc tgaaaacgac gaaacggtgt 540

tcatcggcac gtctgctaga ttcaccggga acgagcatcc tgtgacactg acacgcgggg 600

catgtttgat tacgtggcct gggctagaca ggtttaggtt aatctgatag ccagggtagc 660

tgaaatctag ctgtaacaac gcaatccagt ctcgttttat atatgtgaca tttactggat 720

tttgttcgtt acagtagtac atgccgtttt acgcgttgtg caggcgggca ccatgcgtgc 780

ttgtaatcgc tttaatgatt tgtttctttt tgtttgttgc tattgaatag aaaaaatagc 840

tcgatggcct ttttctagta tatatacatt ttttgaggag ttgagaacag ctggtagtag 900

atggcttgat gattacgaca gcgtaccgaa taagttatgt atatattagt agttttcagt 960

atatgagcca aataggtagt agaattgacc agtttaatta aaggcatcac gtgtttcagc 1020

ttgcgtggta ctatataatt atatcttcta cctactacca tctccttttt tttatgatag 1080

aacatagaag agaccgctct attgcaacag taacaaggcg aaaacaaaac aaggaccaag 1140

ctctaa 1146

<210> 745
<211> 1103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_223784_G1, chr6:102686863..102687965, Cluster 5

<400> 745
atgtccatgc agtgcagcaa aaatggagag tgtttccact gttgaggtaa tttgtcctgt 60

taacatgtat gtcattttgc cacattagac caagatatcc aacaaacaat aagaaacgtt 120

gttgttgaac aaagaggaaa aaaactcaca tttgcattga agagtatcag tgtttgaaca 180

gcctcctagt gaccatattg gcatgcttgc atcaaagcat tctacataga attcgcaaag 240

cacactctga aaggaagatg cagcaacaat gtacacgctt ctgtttgaag atggatagat 300

catagatcac agaatgtttg ttgtaaaagt ttattcaagg aaacaacttt ggccatggtg 360

gcacagatct ttcaaacatt ggtcatgcaa gatggtcaca atagtctaat ggaagtcaat 420

aaaaaagttt aatacattct tggatttgtt cttaactaat tctgatagtt ttctaagaga 480

taaaaaatgt agcacacaca tatcaattga tgacatgata cgcacaaagg agtaaactta 540

ggtattttag aaccagctct ctactgtaaa cataggtatt ttagaaccag ttttcctctg 600

caaggaagat ggcattttta tttcccactg tggccaactt gtttgtagca taaccctcgt 660

gtgtgttcta gacacagtcc tactaagttt tgaacataga ttgacccctg catgatgtaa 720

tggtgttcct agtgccacag tgcattttcc tttcatatat tcccttgagc ctatggacaa 780

ttttgctagt gcgacgaata agaagcagca accccacacg aacggtaatc tgagtagata 840

cacatatgtg gcaaccaaaa ggaatgtaca gcagaccagc catgtacaag ttaccttgca 900

ttgcttatag tgattgttct cttcatgacc tcgaacagtc gccccttgtg catagtgatg 960

aaacatggga gatcacactg acaacaccaa gcacatctat catagagatg gcaagggtat 1020

taacattgta ttcatgattc tatatgacac gaaattggct atgcttagaa ggttaccagg 1080

aacgaatcaa gctgatcatc agc 1103

<210> 746
<211> 1021
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224176_G1, chr6:104465988..104467008, Cluster 5

<400> 746
tgtttgaagc tagtgccaat atcgaaggta gagggaaaga gatgaagtgt tgtcctccat 60

cttttgaggg ccagactcct cctcttatag ccacaaggag ggaatccaag agttgtcgta 120

gtgtttgaga tagtgtttga gaggggggtga acttgagccc cagtagcagt atggccacca 180

cccactcctt ggcatattgg cctttgataa tggactttta tcctaaaggc ccataaacat 240

tctcatgggt catggttgcc tcttatgcat atattcaaca ataagaaata gcaagatcta 300

ccaaaaatac agatctacaa gtgagagaag gaactacgaa aaagttttag tggaggttcg 360

ccttatttcc ttttgacgaa cagaaaagag agatgcaaag gagtaacgaa ggttgattgt 420

tcttaggttc aatgatgacg ttttggtatt atttatcaaa gaaagacaca tttaagtgag 480

tgtggcaagg gtctaagttt ttgttgttgc gggataataa aaaagcactg gcgggtcata 540

actaggtata tttattagtt tagtttgttt acaagtagga attcgaagat gacaacatta 600

gagagagaca agaataggca gtcacaaatg taagtacaag atttagaagt aggtaaggtt 660

tatgcatgac gagatatgat agctagagct acctgatatt agaagaagaa tagcttgtgc 720

gttttgcgag ataggttcca agtaaagaca ttaaggttgg caatattttc aacatatgcc 780

gtctcctaac ttagtttttt ttcggattag cggagtacaa aactagggta gtcccaacta 840

gaagctaggc agctagctcg gtttaaagaa agcatgcacc agagtggagt aaagaaaaac 900

gaattggatt taaggaaggg aacaaaaatt agtgaagtaa atcaagaaaa tagtaatgat 960

aagtgggaaa gttttgtata aaaaaaatgt ggcgccacca ccccaaatat tttgatgcga 1020

g 1021

<210> 747
<211> 1274
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224379_G1, chr6:105483792..105485065, Cluster 5

<400> 747
gcatgagcgc gcgcaataca ctagtggatg taggatggcg gcaagcagtt gaaccttgat 60

gataaatctt gagttcatgt cttgtcttcg atggtttgca tacttcacac ttgcccttta 120

cattcatatc gtgtgctttt tgggaaaatg tggaaatagg atgagaaacg agacgaggtt 180

gtaaatctgt gatatattga tatgttacgt tgtgatatgt gaaaacttat taatcattac 240

ttgttatttt tattgaaaat ttagaataga ttgttcaccg acgcgtggtc atggagtgac 300

aaaaggcaaa agaagagcac tagggaaggt gagcattgcg gcggctgaag ccgcgagcgc 360

gcagggacag cagggtgcct aggaagtagg aactattgga gcatccattt aagctatttc 420

tcttgcattg agtgtatcgg gtcccatagc aatgatatta ttagtgttat ttaatttatg 480

ttgcaacgca taggcatgat aataacttaa tatacaatta ctccacttat atattgttcg 540

gttacaagga atgaaatccc accatagatt taattcgggt ttggattggg tgaattcata 600

ccgcacaccc aatcacattg taggattaaa tccatcattt aatccattta tcttttaaag 660

ctagttattt ttttatccat ggattctaat ataaacttgt gcaatatctt aatggatttt 720

ctccatacct aataagctat ggatagaatc catgccttct atagtttaaa aaattcccaa 780

atccttgagt tataattcat gatgagttta gctgaataaa aaaatctaag tagatttgga 840

ttattttgag gcataagttg taacatgaat ttaattctaa tccatgctaa tctagagcta 900

gatttgtaca gaagctgact gttcttggcc gagcacgatg atgagtcccg gataggccgc 960

ccagctacag ttgtctgctc gtctacgcgc ctacgcttgc attgcatccg ctgcccgtca 1020

acgtcaacga agcgcaaaaa cagccatcct aactatgctg ctctctcgca tgctacactg 1080

cacaccacat gcatgatcta tcgccattgc catggccatg gccatcgttt tatactggct 1140

ccgaaactga aacttaatgc tagctggtat aagtgatgaa ctatataaac taatgtcata 1200

atgggatcgg atcgacagga acttgcttgg ccagattagt tgagacaccg gcagcaagct 1260

agcttgaacc acag 1274

<210> 748
<211> 1304
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224881_G1, chr6:108143911..108145214, Cluster 5

<400> 748
taatgataga aaaatatcat cagtttcgcc gttatccttc ttttagcctt ttcagccgtg 60

gttcaccgga ccgagagtgc tacggcgtca atcctttcta tcctcgtcgt gcccagcttc 120

tcttccctct tttcccctca ctgatgaacc ctagccgccg tctccatgcc ggatcccgca 180

cccgagcctg ccctcgccgg cgccggcgct gctggtgagc attggttttc agttttatgt 240

ccagttttag tctgactggg agcattgttt atggccagtt tcagttttaa aggacctttg 300

cattttcag tgtgcagccc ctcgcctcaa cattcagttc acagattttc agttcagtga 360

tattcaactg aaactggatg gtaagttttc agtgaccatg ttgaggcgaa caacagttca 420

tgtcactgaa aatagaatga ccatgcattt ttcatagaat ggccatattc agttcacaga 480

aataaatgga ccgcagttca cagattagaa ttcagttcac agattacaac cggaattcag 540

ttcacacaga ttaaatggac tgcagttcac acagcagttc atagattaga attcagcggc 600

tagggttgcc atgctgcctg tgccgtacac catcacacag ctagagctag ttcaattccc 660

tttcccttcc cgttgtcacc cctctgttca gtccacacca caccctcctc aaccgcaccg 720

tcgtcgtcta gccgactagc ggcgggagct atagcttcga cgagccgacg acaaacacca 780

acaggagggg aaaggaggga agagaagcta gggcctaggg agggaggaga gctgctggga 840

gacgacgacg agaagactgg cgccgtaacg ctagccgtcc gtgacctgcg cctgatagac 900

cttactgaaa gatcgcaagg ctaacaacga cgactgctga tggtattttt ctattatggc 960

aaagagaaga cttgtatcct ttctattttg ataaacatgt gtacaccgaa ttgaagctca 1020

gttctgtagg aggtgactca tttccgttga acatattcat cgacgccact cgtgttttgt 1080

tcatcgacat taattctata cacgatgctt gggtttagaa tacatgtgtt tggtaggcta 1140

agttgtacaa tactgattcc tccatttgtt taccaatctg aagttgacag taccaagtta 1200

aattcaccac gaaccgtcca gacaacaccc acacacaaca ttccaagtag caaaatatct 1260

attacaacca atatgatcaa gttcatggtt tctataaacc aaca 1304

<210> 749
<211> 1406
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229113_G1, chr6:130151579..130152984, Cluster 5

<400> 749
gcgtttgagc tactcccgag cgctaaatta actgactcag tgtctgacga aactaaagaa 60

aatacagcta acagtaattg atgaaactga agaaagaaaa ctacaacgag ctagctaact 120

caagataact catgggttat tatctccaac atatgctagc aacataaaac accacttatg 180

agcagggtca ggccccacta aattcaaagg tattcaagtg aatacccatt atttttaca 240

atttttaat atatacatgt atgtagtata tattaatata tacataggaa ataggaaata 300

agcaaaatag tgaaggaatt atgttacttt gggctaaaac tatgtccttc ctacctcctc 360

cagccggccc gttaccatgt cttggcctat tattctcacg catccatacc acacggtcac 420

tggggcctgt tggctgttgc cctgttcgac tggtcgccag gacaggagga cgccagccgc 480

ccagccgcca ccgctactcc gctagccgct agggcagggc aagtgagtgt tgtcctccgg 540

cctgaccgcc tcttcgcctc cggtgctcac ccagtcggcc agtcgcccgc ctcgtcggcc 600

gctgcctcgc cgcgcgcagc gcgttgccgc ctgccagaaa ataggccgcc aggcgcccgc 660

agtgtggata ctaaaaatca tgaagtattt tgttttatca tacgcaatcc attattttaa 720

ataaatagag ggacataatt tttcttataa aaaactttac cttgaaatgt gcccaaactt 780

tgctaacatg tttctctgat cgattattgt tttctaacaa atattcaaat aatttggaca 840

tcatttgctt tgaatttagg aattaaaatt aaaattctat ttttaaaaca attaaacaaa 900

actattgccc taagccggca taggaggctt ccatcctaga agcacagcgt gcacccacaa 960

cccactccct ctcgattgct gacaagtgag accgccttgt cagaccacgc gcacgtgccc 1020

tcgtctcccc tcctttgtaa tctctaatgg atgggccagc cctattaatg cctctctccc 1080

actctctctc taaccagtgg ggtcaacttg tcatccctaa ctccgtgttc gtctccctat 1140

tcatggcgta tattctgtca gcatccaagc ccccgtgagg ctcagcctga caccccacga 1200

ccattagctg acagagaagg tctcgcgtag cataaggccc tttgtcccta cctgacccct 1260

ttttaatgtc atccatcaac gcagagaaca tcttagtgtt catcatcgcc tccacgacta 1320

cacttccgtt gtcatcacca tttcctccca ataaatggca ctcaactata aaagctggca 1380

tcctatgagc ccctactcac caaaac 1406

<210> 750
<211> 1172
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229483_G1, chr6:131981727..131982898, Cluster 5

<400> 750
tacctgagcc acactagaga gagatagaga ggagagagat cgagagagca agtgatagta 60

gtgtcccatt attacctgag gattgccatc ttttgtgtgg cctggcctag cttcctgatt 120

acctttaaat atatccgtag ctttattttg caaaccccgg ctggctctca gataacatac 180

ttatgttttg ctagtggcaa caaacgacca aacccacccg ccgggactaa tttaatctca 240

aatacagaaa agcgggacag aaagcagggt gcaccagaat atacatactt gcataaagag 300

caaaaagatc gcctataggt tattttagtg tcgaattatt ggcaaagcaa gcgcagcata 360

tggataagct caatccaaca gctaaacagt gcgtgtgtca gtgctaatga gctatctcgc 420

tgcaattttt ttttgtaaag cttggagaga aagaataatg ttcaacttga tcactgagct 480

atcaagcgtg ttaaactatg caacgggaaa attttgctat taaaatcaat caattgatag 540

tgaagataac ttcccaccct gtcatagcac caaaatcagt ctaggtattt cacagaaact 600

gtagcccaaa atcgaagaaa aaaatcccca acaagtagct cccaatcaca gaaaagggaa 660

cattttata tttcgagagg ggaatgagtg aagcacaaat tttgtctttt aattcccaaa 720

ctatccatcc agatttatga gcatcaaacc agtaaaccat catacacgcc ttgtgattag 780

aggggtgaa tgagagccaa tcaaattata cttccaaaca ttgaaaataa acactgcatt 840

ttaattgaga taaaacaagc gctcaaacta agaacacatg aaccagtgat ctcatgattg 900

aaaaatgttc ttaatactca catgagatca gcaaaacaaa cagattgcaa atcggggacc 960

taaaactccg aatcgctcca aaaccgtgtc gcgaacatgt gttgatttta gcaccacgaa 1020

attctgttct tggatgtaaa acttaagcaa acgaactccg attgagatga atttttacgc 1080

acttcaggag caatatgttt ccaaggtctc cacaaatttt tagctcgatc ggacttgtga 1140

ctcaaccgca gatttaaaat acagccagaa at 1172

<210> 751
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229491_G1, chr6:132000151..132001163, Cluster 5

<400> 751
ggacacatat tggtcgagcc tccacggcac cccaaacatc gacacttagg gcacctcagg 60

cattggcctc cagtgcacct cttgcctcgg cccttatggc acctaacaca ttagcctaag 120

tgcacctcgg gcattgtcct atatggcact tcttgccctg accctcaggg cacctcgggc 180

acctactttt agggcacctc ttgccctagt ttgtgtggca ctttgtggat taggactgga 240

gcacccaaat attgctcaga attttcatca taatgcatgt gattgagcta tgaaatgaac 300

atgtttgatc tagaagaatg gaataagaaa gacattacta aaacttacca caaatgatag 360

aacatggtga gttggaaata agattttacg taacatgcat tttaaacacc tgcttttctt 420

tagaatatcg cattttgtgt tcctacacaa ccattttgct gatatgtatt ttggtgctta 480

acatattgtt aaacaaaagt agttcttttt gttgaaagag tcatcaagaa tgaatgattt 540

attttctatc acatacaaaa gatgaattgt ttgttttcta caaagcattg gaatctctat 600

gaaatttttt aggtagcgaa gggaagagaa tggtgggcat ggtgggcata cttattggtt 660

gcttgtcgtc aatgaagacc tcaacaattg gcgtacaatg atggcatctt ctatatatga 720

gatggaaacc gggagcagtg ttgctacttt ttaatgtgtg agggtagtgt agcttgtgca 780

cttgttcatg ggtctatggc atggtcaagg cgattgccat ctcaaatcat ggtcaaggtt 840

gttgcaatgg acgtggagta ggggagggtg gcttgagcgg tgggagagga tccatggtga 900

atgaatgtgc aagcgatgaa ggagaagtgt gaaacgagga ggaggcgagg cgaggctcga 960

tgcgccatgg tggcaggggt acgacttgat caaaggcgtg gtggtggagg tgc 1013

<210> 752
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231904_G1, chr6:142765950..142766965, Cluster 5

<400> 752
ctcaattggt atctgtttgg tttgattttg cattcaaaaa ctgaatttcg agctgctgaa 60

aacaacattt tgagcgatac ggttttgagt cgtttcagat ttttcggtgt ccctttgtg 120

agccgtttgt tcactggtct tgtgtgaatc ctaggaatat tttgaaaaca tgaaatcact 180

tgttctttgg tgcggttttt ggtttgagcg attctgtcat ttccattaaa atttagtgct 240

caggttccgg ttttgaatga cagaatttta ttggctctca ttcacccct ccggtcgctt 300

ttagaccttt tacaattccg acaaatagat aattattata ttttttacag ataatttgga 360

aaagtcagaa taagtaactt tttcagaacc gatcctcctc gctttgcatt ccgtttcgtg 420

agctttaatt taaatgatct gtgtaataag gactagtaat cctcgactct ttacttcact 480

agttcgtttg ccgctaatgt caaatttggc acaactcaaa ccagatcata tgattgagat 540

tggtgcacta acatttgtga tttggaaaag aaaggtaata aagcaaaccg cagaaccatt 600

tcttcttttt atttacgcca gttgtgtttc cagaggcatt gtccacgtgt ttttggacca 660

aaacgatggc gttttttaa taaccatgcg aaacaccgcc agaagcccag aacagaacaa 720

aacaaaaggt aaactagaaa aaaaaaactc agaagattcc ggtcattgga aatgaccaaa 780

ccagcaccca gattacgaat cgcggaacgg agcggtgcac gcccggcctc gacgacgttc 840

gttgggtttg cattggggcg gttccgtcgt cgcccgtcaa gcacgtccgc cgatgagacg 900

agcacgcgaa acatgtggcg gaatgggtgt gctgaccgta caggctgcaa aaacgcacgt 960

gctcaccaga agcaaggacc ggcctgcagg gcacggatca aaagcgcggc cggtct 1016

<210> 753
<211> 1210
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232705_G1, chr6:147033325..147034534, Cluster 5

<400> 753
aaaaaaggag ctaaaatcct gcgtgctcca tgctgtctgg tagaaccaac tgaacatgag 60

aactggtggt gggggcacag ggcatctgca gattcgtcta gagaacccaa ctcgcaaaag 120

gccctgcaaa aattcccccc cccccgggag ttaggcggcc caaagtgccg ctttcacgcg 180

cgacgcaatc gagcctagta agctgcgtgc agccaaagta aaccgcagct ttcacttgtg 240

tccttttgca gggaatagta ataataaaca agagcggcgg ggcatgcttg cttgcttgct 300

tgctttgggc gtgaaaaaag tgacattccc ttggtaatcc cttcttgcag caggtccatt 360

cacctctctc tagtccagtt gggagcaggg cagaaaagtt gactgcgagc taaaacgttg 420

cctagccgtc aggctaagcg aactgccagt tcggttggcg ttcatttgtt tatatcatca 480

ctgctggtca ccatcgtcgc gagcggctga cagcacagca cagcacaggt taatttgctt 540

ccgtaaatgt ccggggattc aggcagtttc tgcatagaga tggccatatc tgcgatgtag 600

tagggtagga cacaagaatt gggacccagg tgctcattag ccagaggact agccaactga 660

ctagtgacaa gattgggggc tgttttctga aagagagaaa aaaaaattgt cgtcttctag 720

aatagaagga aaacgggccg ggggagaaaa atcttcgtgc cagtcttatc tcgtgacagc 780

atcacacctt tgtacttttg ctgttttgtt aggcgagtca agccaatccc tccatctttt 840

tttgcctata tacatatata actaaacaaa aggagttccc tagaagccga cctctccatg 900

tccaatatat aacgggggta gtactattcg atagaattag acatttcatt cacagaagcc 960

caaatatata atggcaaaaa aattgttttg ccagttcaat agaagaaaca aatttttggt 1020

aaggctaata gagatcatgc atgtagaaca ggtagatgct agatgacatt gccgcacaaa 1080

gctgatactg caaagatacc agtgaatttc actggtccag tccagctgtg gcctgcaaca 1140

acagttcaga gatcagatga tggtctggtt ccggggtatg atctgaaccg tatttaacaa 1200

gtccgttcgg 1210

<210> 754
<211> 1021
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234749_G1, chr6:156052609..156053629, Cluster 5

<400> 754
cttagaaaaa tagatctctc ttgaaaaaat gtgaaggaga ttgtgcgact aagcaacctg 60

cagttccctc cacattttcg catccgggct tgggaccggc aaaggcagtg ttaaaccgca 120

aacaaacaaa caaacaaata atcagaacac atataatacc caacaaaaaa aatatcatgt 180

tctcagcatt ataaaaagaa acaaacaacg taaccggttt ttgtgccaaa cgaagtattc 240

tacaacaaag acgctacgta aaaaacagta aataacttcg ctgcaacaat caataagtaa 300

acctagtacg agcaggagca ggtatctaga gtattttatt tagtcacagg actgaacatt 360

caacgtgtgc caattgtaaa acatcacaag cttccagtta atttcgtcca acaaaactag 420

tgagtcttcc atctatttgg cagaagatgc tccaataaaa atcattgcat gatcggactc 480

aaaacatgcc acagttatgt ttgccaataa aactaggaat ccatccaatt tggcctaggc 540

agaagatgct caattgccac aagatcagct ctaataaaaa tcatggaatg gccggactca 600

aaccaaaaca tgccatagtt aatcttctat taggaaccat tgttttcaga atatccttaa 660

acccgaaatc aacaataata gtgaacctgc accatcatat gaggcatata ggttaaggac 720

agcttcaaat aaagttagcg caaagaatta tttatcactg gaaggaagac tccatagtgg 780

gaaatgtcta gaactcatgt ctaactagca acccgcacct tagctccaac tgcagaaatc 840

caaccaaaca tccatcaact taaatcagac aactggatcc aaaataaatg gctgatatga 900

gcaaaagttt taggtgaact ctggttagat tgaagaatat taagatgtct caaacaaaac 960

aagggaactg gaatagtcag agtagttagc gcaaactacc gcagagcatg aaaacaacat 1020

g 1021

<210> 755
<211> 1076
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234828_G1, chr6:156410271..156411346, Cluster 5

<400> 755
ggcgcatagg acatcgtaac ccgagagctg atggggcaca acgaggggat tcttttaac 60

caagcctgaa aaatcgcccc ccgggggggg gggggggggg gtcgagccca ggacttggag 120

gtcctactcg gaagccctta atcactagac tagaggccct ttcactaaaa acactcctag 180

gtttcccaag gtgtcaagaa atgttaagat acgatcctca tgatccaaag gtacgctcct 240

aggatcacga aggcctatct ctaggagacc atagaggacc gtaccttcgt gatcctcaag 300

gtgtgattcc ctcaaagtca agaaatgtta agatgacatg tcctcgtgat catggagtca 360

attcattgaa accctcctag gttttgcctt caaaatacga tagtacatcc aaatgttatg 420

tcatcatgag tccttgatcc tcaaggaaac caagcttgag tctacataga gaagcaagaa 480

ggcagaagaa ggaatgcaac catggaacca accaccttgt acgaagcatc tactaatgtg 540

gatggcacac caaagaccac atgttcttcc cccactaaaa aaggttgttc acatgtcatt 600

aacttttaca tgcatcgaga tcaagaaaag acttggatgg ctagcatgga taagtggaca 660

acctaagata ggcttcaatt ttcattggaa taccattgta ccctatagga gaaccaaaac 720

taatttattt ggtagtaggc agatgatggt ttagcaaaaa aaatcttata aaattaagag 780

ttgtttgatg ccaccaatca cacaacgatg aactagaagt aaagaaatct ccttggacaa 840

ttttattgct gaaagaagta tatcaagtgt gaccaatttg gaaaaacaaa gcgatgatca 900

catgtttgtg tcttgaacca atgcccactt tccgaacatg aagacatcca agacttgctt 960

gtaccatgtg tctttgcaag agagttttga cacaagctct tcacccatcg gccgcaagag 1020

ctaacagaag tttaagcgag ctagagggat atcgtcgaag ggtgcattgt gattag 1076

<210> 756
<211> 1354
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239023_G1, chr7:10541913..10543266, Cluster 5

<400> 756
ttaaactgac ttataacccg tgccaaatct ttgctgagaa gtgagaacag cagttcagca 60

ctgctcagcc tcgtctcctc cgatatggcc tagtgcgtat tgaatcttgg tagagaactg 120

tatttgcgtc gccccctcct ttattttcta tgtttactct cttgtctcct gctcttggct 180

cttttaggtt gatccgttta atgtgttcac tatagcacga catcaaagca agagttctcg 240

agttttctga accacggtcc atgaagtgat tgaacagttg tagctgatgt gagatttttc 300

aaggtgctcg ttgttttggt agctagggac tatactattg ctatagagct atactactat 360

gtatggttct tttgattgct aatgcacata gtagagagca tggcaaggtt ctgtctcgca 420

acgcaacatt atggtttggt tttcgatgtg cctctctact aggtcctata aggtcgctag 480

cagtgcttag aacacttgaa cagctgcgtc catggctcca tgcgtgtgat cgtgtaaagg 540

tgtagcgaca tctgtgttgg ttgccttcgt acgtatgctg gggcgacaaa tgatcagatt 600

ctactatttc catgttacag ttctgagagg ctaaatttta tagcccgttt ggatgtagat 660

actgatgcat ggaattgtga attggaatta gtttttctat attctgttgt tatgttggaa 720

ttgtgaattg tgaattgaga tttggaatta gagatctaat tacagggaat aattggttta 780

taactagaaa cccactcacc taataaaaac agcacccctt tgaattgcgt ggaattagac 840

cacacgattc taaatttcaa ttccgtgatt tccaaaaaaa aaagaagaat tggaattaca 900

tcatttcttg aaagttgttg caccgcgttg cagtgttcga ttaaatggtt tccatattaa 960

tcaatgtcct cattaacatc tagtgaaaat ttaaggtatc cagagcctac tattgtgttc 1020

tcccaaaaaa aaaggaggca catgcccccc tctggtcatt atacatataa gtagttttag 1080

atttactaga ccaactcgaa cattttaagt agcttttacc atcagttagc gaaaagatac 1140

caagctccgt gttctaactc ttattttcaa gctcaactgt ggtttacgct cattttccaa 1200

cgacgtgagt ttgcaccctt ttttttgtt tgaaccgaag gtagtgtttt cccttattct 1260

attaggctat ctcccctatt ccacctcgct tctttctcct tattttcaaa ctaaattgtg 1320

tagtctatag tgcaaacaat atttttacg gccg 1354

<210> 757
<211> 1341
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239347_G1, chr7:12455390..12456730, Cluster 5

<400> 757
cttgcaaacg tattaaccct gtatgtggga aaggattgcc ttcatctaca atccaaaagg 60

aaaacgaata tctataaaca cagtcagaaa aatgagaaaa ggatgattaa gtttgtttct 120

tgaacagcac aaactcacat gtaagcagca catgacagaa gaaatgctag aatcctagtt 180

ttttagccaa agtaaacacc aaaaaaagtc aatttagaag gaacatgttc caatcttatt 240

tcctatttgt gccaaatgct caatgtctaa tgcaccttgg tttcacactt cactactaaa 300

ctctttatat agactactgc ttcttaacat caagcagaca catgagcgct ttgctgggca 360

caccttttgt ttatcatcca caagttgcat attcatggac ataataacaa agtagcaata 420

agcaaccgaa ctgcaaattg cagcaggatg ttagtcctga aatgctaagc aaacataaat 480

atggtaatca agcaatacag ttttaaaaag ggagttgtgt ctaaattatt tggtccattt 540

aaatgctaag caaaacaaag aagataagta aatttccaat tatagagatt cctgaataaa 600

caaaagtcaa taagaaccgg taaacaaact gcataaagaa ccccctacaa caagcatgtt 660

tactaataca ggacaccaag actgaagaat atgtataaga attcatagaa tttctctgta 720

cattagcata gaagaaagtt tgattgtcct caataaatac aatcaggatg aaataataac 780

agaaggccat tgaataaaaa cagtgtcatg aaacatagat gaggtaacaa aaacatataa 840

atcatgaaat gttttcgttg aggtcaaagt gcaaggtggc aataaaacga gagaattccc 900

tatttaacgc tagtatatga gtgcttcctt ctatggccat gaaaagtaca tacccctttg 960

atgcaggatc taacctttat tcttaataac actaatgtta actattccat caagactcta 1020

atgaatgctt tgtgaaaaga tggggttgca cttatggttt gcaattctgc tagtaacagc 1080

tagagcagca gctggtggag catctatgtt tcaagcattt gcatttcaga attttagtaa 1140

tcggtattca agaaaggtag tttgatattg catgcaactt gtgttaaatg catggggtta 1200

cacttgtagg aacctaaaaa tctaaaaaat tttgaactat cacttaccat aggaactaca 1260

aaactgaaga acctgagcag taacattttt ctataagaat taagctcttt ttattgttgt 1320

aacaccaatc cttttgtgag g 1341

<210> 758
<211> 1335
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240602_G1, chr7:18434944..18436278, Cluster 5

<400> 758
tttgtgcgct attgcatttt aatttgcagc tcgatggcag ggtccaaaat tcgtggtctc 60

ttgaaacagg gaatctttgt cctcggaaga tcaggaacca gaaacattta ctatatagta 120

ctataataaa ttcacaaaaa aatggtacga actactgtgt gctcgtgtgc taacacttgg 180

ctagtaaaat aagcctgcct agaggatgaa acgggggtga attcttactt ctaaagtcct 240

gtttggaacc aagccaattt ttaagaaaca agtttttatt ttttagctag gggagatcaa 300

tttctttgtt tcaagaaact ggaaatccaa tttctataaa ctgaagtata aactggtata 360

tttataacca cttcaatttt tataaaccag tttcttaaaa accgagtgct tccaaacatg 420

ccttaagttc gtttcaaaac ttataaaaaa catgtccatg agttaggccg gatatccatc 480

aaacacaact acacaagcaa ccgattctgg tgggtgtata gattgattat tgaatggtac 540

gatgaaacaa tatataagct caaagtcacc tctctctctc tcttgccaaa gaggtggctt 600

cgacgaaaac aaaaaagaaa acggagagga cggaacagaa cacggattga ctaaagcttt 660

atttttagtt cagtctcatt tcttgcatta cgatcgatga tcccatgcat gcatgcacgg 720

ttagttgcgc attgccttcc atgaccagaa accttgccgc ggcacagcca ttcaggtagc 780

tttcgtcgtc aggtcgccgc cgcgactttt tctagcaggc aggcaggcag gcagcccaca 840

cctgacagtt cccgacgaca gcgaaagctt tgcataaaca gggcaattcg gttgcgagct 900

ttccttgggt ctctcttgta tcagtcgcat cactcacatg acacgaaaat agtggtgtga 960

tttggtctca tattgtggat ttggcaaaat ccagttcagc ctgcgttccc cgtcgttgcc 1020

ctgttaactc ctcctgggct cgactcactt ctggcccata acgcgtcctc taacgggtcc 1080

gctccctctg atttgttgct cggatgggta gagcgagcct ggtccagatc caaggtgcag 1140

ggttgagccc aacatgtata tctggttcct taaaacctga agccacttcg agctctcccc 1200

gcgtctcgtg cgctctcggt cgcgtgcgtg ccgacgcgtg cccagggatt cggacccgaa 1260

aatattactc attttagtta tgagtggtac cgtgcgtccg tgccttcaca agctgtctct 1320

gtcgccgcgc acatg 1335

<210> 759
<211> 1057
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_241008_G1, chr7:20726042..20727098, Cluster 5

<400> 759
attcattatt gtccacctga tgccaactgg ataaccattc tcaaactcat agcatgtcta 60

gctatcctca tgtaaggccg actatgattc ggagagacca gccagtggcc atggtgttgc 120

taaagacatg gcattataag taaaaatata atattgtgcc agatgtacat ggtgcgaagt 180

ggcagacgca gaatggatcg aggagtgtgc ctctttctcg atgtctcaaa ttcccatgat 240

tcatgtacct ctcatcatat tatttgttga tactaacaca ctaataatgt gttcactaaa 300

aggagtggtg ctatcatgtc atgtgtggag tggcaaatac aggtatagat cagcatgtgt 360

gtgctatcaa atttatattg acatccctat aggtttcatc gatgtgatgg taggtaacta 420

atttgtgcat aatatatgat aaacttttg tggtagttgg aacttggaaa agatatgggc 480

tgtccatcaa gagagattga atgatacata aaaatacagt gtacttattg aaagtacctt 540

aatcaaacat cctaggatac tacatgtaca acctagatac tatgtggtgg ttcatcatgc 600

actagataca catgagaaac tccttcatac aacccaatat acttaagcct tgtatcttat 660

tcattagaac ccctcaagat atagctcatt tatgtgagtt gtatggatga aattatatct 720

aaacttagaa aaccgtgcta gatatgttcc ttcactaaga tacgtctctt gtatcttttt 780

ttacttaccc tattgatact gcttaagata tacgaatcac ttatgtgggt tgtacaagcc 840

ctaaaaggta ggtgaaacca gcgtccatat attattgtag tatttattgg ttaaccaaag 900

gctaaacgag tttctttacg acgatgttga tctacaggcc agcatcctat ggctctggca 960

atcacctact aactactatg gctttcttgg agctatttga gctcgttatg ctcttaagga 1020

ttggggaaaa gttggattgg atcctctacc accattc 1057

<210> 760
<211> 1185
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253330_G1, chr7:103868546..103869730, Cluster 5

<400> 760
gctcgtcata gactagacaa gcctactagt catggctaat gttacatcgt tgaaatgcat 60

cttgatgttg ttgggatgtt catttaatta tgactgaatt gtacagtgag aactcatcac 120

taaaaaattt atgacttggt taataatggc tttaatttat gtatatcaaa tattaaaata 180

gtgtcggttt catttatttt gaatggtgtt atcttattga attgaagata tcattctaag 240

tatggtaata tatgaccaga aaggtgacca tattcagtcc atccctaatc acgaaacaaa 300

caagagatgg tgtagctcca acctacttta accctgtaat caaataagaa attatgttca 360

acttgtcact gaaatcaaac aaggaacaag tccgacccaa cccagaaaaa tgaatcggct 420

cctatccgac ccacgtcgtt ctgaaaccaa atacatgctt atagaagaga acatgccaaa 480

agatgtaaca taatgtgagc aatatatatg gagtgattcg ttgtttgttt gtgaagcccg 540

tgtcagctgc ctgcaagccg ctcgacggca gtggtctctc ttagtcccgt ccaatttata 600

tagattaaga tcaaaccgaa taaaccatat ataggtttat ttatttttgt gtggatgtgt 660

agaaaataaa cttacagaaa ttaagtctac tgaacgggtc atgaacaaac ccgttttcgt 720

tcatgtgaga cccgaatata aatcagttcg ttcttaagga ttcaggaata ttctagctat 780

ttttgtgaca cgcgaatttc acttcgacgg attgttatgc tttttataaa aaaaactatg 840

tttttctgca tagaaaatct ctatggtggt ataaggctga agaaagaaat gcctatgatt 900

agttgtctgt agagggctaa cgatcagaaa ttttcaagtt tatttcatta taaaaataca 960

catgaaacca cactattaat aatattaata ataatggaaa gtatatatcg ataagaaaaa 1020

gtttgtcctt taggactgaa aggtgcatgt tgcccaaaaa agagatgcct tcagcagcat 1080

aaaaaatctc tatggtggta taaggctgaa gaaagaaatg tatatgatta gttgtttgta 1140

gaaggctaac gatcagaaat tttaaagttt attttattta taaaa 1185

<210> 761
<211> 1390
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254375_G1, chr7:109342070..109343459, Cluster 5

<400> 761
ccaactgtac cgcgtggttt ttacaaccga tctatatacg tacatagaag catgaaagtg 60

tcaacggagt ggggtctggt catgatatat atagttgttt gcaacagact caaggtcggt 120

atatattcaa ttattcatat gtagtacgtt atatgtgcgg tagaattgac ggtcgatcag 180

gaggtacatg catgcacagt gttctgcgca tgattgcatg caaaagctct ctctctctcg 240

ctctctcttc aagcgtaagc aaagcaaaac agcatgccat gcacgtacta cggtcaactc 300

aactgaacgg acttttaata tacaaggaca tatgcagtat atattaattg ctgccttacg 360

acgagcacaa aaaaaagcag cttaatttgt gggaattcga tcagatcgtc tgcagctagc 420

tagcttgctt ctcaagtcga tctatgatct gagctggcgt tcagctaggc tctcgtatat 480

atatatatat atacctatag atgtatagtg gtaaacaatg tggttttatt ttatatatat 540

atatatatat aatgtaataa taataataat aataataaac cgtctccaaa ctgaagtcaa 600

ccagaaaaaa aaaccaccat gttttccgtt gtacttggca gcggctcaac tcagacgcac 660

gcacggcatg cacagcatgt attcatccca aaacatgctg cttcgttcaa tggttgttgg 720

tcttcactct tcagaagtgt gtgagaagaa gggaaaaaaa aacgacgtat atgctctcta 780

tccagaggca cgccgttgag gcaagcaact gttccaaggc catgctgacc gtgcggggcg 840

gcatctcggt gacgatcgac cagcctaaag aatctccacg ctaggaggag ttctaagcta 900

agctctagct agggggcagg tacgtggtgt agctagctag ggcagttgaa gctggcaatc 960

gcgatcactc gacccttttt ttttgggggg caggggcggg atttgtaaat gcgcggcttg 1020

acgacgaatg ggatcgccgc acaacctaac gagcgagaga gccggtacgc tttcatgact 1080

tcaacccaga tttcgcgtaa tcgctcgcgg taactagtca tcagtcctca catatgctaa 1140

taatagtcgc cgccgacagt gtcgcgtgtt ttctggagac ttggcaacca gcagtaagct 1200

agtactagtc tactaccctc ggcctaaccc tgaacaccac cccggccggt agttttggtc 1260

tcctctcaga catcctggtt tgctggagaa attaacaatt gctgctagct agctactata 1320

agagcaagtt taataacata gacatacgag ctataaggat ctttatagcc tgttatttag 1380

cacatccata 1390

<210> 762
<211> 1219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256616_G1, chr7:121278446..121279664, Cluster 5

<400> 762
ctcgccgacc ccaaccaccg caacatcttc tccgtacgtg ccccgccgct agccctttaa 60

gataatcgcc gtcttgcatt gcttgtttcg ttagccacca tttttgctcg gaaaacgttg 120

ggtttaattt ggttggtttc ttacacactg catgcaggcg ctcacgtccc actgatacga 180

tgttgcttcg gagctgactt caggcgttca cgtcccactg ataataagat tattacctgg 240

cctattcagt ttggtgtttg ctaacggtga agtgatcagg ctgctaacat catagggccg 300

cgtgctgctt cagcctgtca ctgtgcactg cagaggtaaa caaagggagt atagtgtgcg 360

atcaatgcaa ctgcttggta tagccagagt gatcgtgcta caacttgaca tgtccttgag 420

cagttgagct gctacgtctg tttgtcacaa acatcctatc gttcggttcc tgtcaatctg 480

acaaaatctc cgtggacagt ggacgccgaa acaatgatat caagatggtg ggaggagatt 540

attctggtcc agctccacat ttgagctgac attacctagt actagctagt aagtgtacgt 600

ttatcctgtt atccacctgt acgattcgta ggaaacgcag agccgacgac gcctagcagc 660

taaacgacga gccgtgaggt aatccgcgtg cagctggagg ctggagaagg gcagatcgtg 720

ccaagatgtg caggatgtca tacatcagcg gggtagctag gatttttttt ctccaaaaga 780

tttttttta ataaattata atccataata gtttggtata caattcagaa tataaagata 840

ataataacat atgaaactat agatctaata tttaagtcta taagcgcatc attagaatgc 900

aaaataatat gatcataact caattgatta tgaggtacga accattgctc gttgtgagat 960

aaactaatag acatactcca acagtccaac agtgaggtgt tttgatgcaa taaaagatac 1020

gacatccaca ctccatctta catgtgttgc ttgactcatt tgagaaatcg ttcttactga 1080

ttttgcaat taagcacaca atgttgttgt cctgtcgtcg gtttgagaaa tacaaaccaa 1140

atttggtgtg tatgtagcaa tagtaagaat agatctaacc cctcttaaac tagccttatt 1200

agtttcaggt gctgaagag 1219

<210> 763
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_25737_G1, chr1:156206470..156207622, Cluster 5

<400> 763
atccatcttc gagcactccg tagctcacta ttcaaagtga gtccgcgcta acacccctgc 60

cgaacataaa tattcttgtc ccccgttcca gaaaccacga cacccgtgtt cccaaaccag 120

atcagtctgt tccgacatct ctgaaaatag caataatatc aactattatt ataagtagca 180

gcaccaatac taaatagatt tgaagttaaa agagagaaaa ttcccaaaac ctagctacta 240

gagcccccgg tttaatctat ttgggaccca ttaatcggct agcgggggggc ggctaataac 300

caaaatcgtc gggtttatct ctttttttat tttatttttg aaacttgttt gatttttagt 360

ttgaaatccg ttgtgcgtta tcaaatttgg tttcagtgaa aaatccagtc cataatattt 420

atagaaaaat tggcattaga ttttttttcag atttacaaaa tatcctaaat tcaaatgggt 480

cttgtttatt gattattgat ttatcggcca gttagccgaa ttaatcgaac gatttcgcga 540

accttgggtg ggaaggacgg agatgtgcct tggccgtcct gtttgctatg gctgacagac 600

agtgtttgtg cttcatttgt agtgtgtcaa aatgttagct tagctttgat ttgattattt 660

gctgcctgat ctgagcgcag gtatgctgta aaacgtaatg gctgacacac acatcgttaa 720

ctactagcag ctcatcatga ttttgttcaa caacataacc acgagctgat gttgttatta 780

gtaaaaagga agaattccga tcctacgtat agctcaccag catctggtgg tgttgatgta 840

atctagcaat cagcatggga cagatttgca gggtagctag atggatagat agatttggta 900

taaccactgg gtatatactc agggagcatc gatccacgta ttattaacca aacggtgctt 960

tatattgtgc tgcacatggg atgatgccaa atacgtttgc aaatgcgtgg atcggacagg 1020

cagacagtcc actagaccac ggaagatctt caccgtatat tgttggtttg tggaatcggt 1080

aatataaaag tggtagtctg ctgccagttc taaaaccggc agtgatgagg tttttcaaaa 1140

caccaaaaat tga 1153

<210> 764
<211> 1160
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260062_G1, chr7:140248342..140249501, Cluster 5

<400> 764
taagtaaata tatattagag atatatttta ctttaaattt ttatactacg tatttgtcat 60

agtttcaaat gtattgtata aattttaatt ttgctaaagt tagtgtttaa aatattaata 120

tagatagatg agatgagaga gaaactatat acataataaa ggattcagca gcgtctgctg 180

gagacatgaa aaaatgtgaa tctttttcat aatttaaaat ataggaggct ttaaaccgga 240

gaggcttctt tgatcaacgt tcggcagcag gcctgcagtg cacagctact gcaccgtgtc 300

gtttcggtgg gctgtggtag ggggctaggg ccacagcttc tctgctgcgg gaggcgggag 360

ccaacggact ttggcccttt gtttttttg catgtttatt aatacaaatc cagcaggcat 420

caggctcggc tttaataagt gccgccagga aacacgggca tggcgtgcgt agacgctttg 480

actacacggg ccgttgtgtc ctggagacct gcagcctggt gcccatttca ggccttgaga 540

tctggaaaaa agtttgcatc tttgcgaggg agacgcaagt tttaccgcag ccgctcccct 600

cgcctgaaga cgttcaaagg gcctctcgaa aatggccaac aagatcgagc gaacggaaac 660

caacgattgg attggaattt ggatccgatc aaagagacaa tgtagaagcg gatcaagtgc 720

ggcacaaagc gggggcgatc tctacgccgg cgaagcacac ggtgctgaag cggcggtggc 780

gtacgacacg ggcaaggaca tgtagaagcg gcgacgagag gagagcgcga gatgaggata 840

gtggagtggg ttgctacgtt ttctttgcat gagtaatggg agaaaagaga cgacaacgaa 900

aaatggccat gggctaggga ccgacagagg gaatgcgtcg caacaggaga agaaagcgtg 960

acatggcgtc gggagaagcc cagaatgctc ttcggttaaa tatagaagat ttgcaattct 1020

tttgagttaa ggagtgacaa tctctaaata gagttcaact catttttat tacatacttt 1080

tattgtttga ttcaatagga acatgcatta tattttattt aattaaatca aactaatcat 1140

agatacatat taattgtgtt 1160

<210> 765
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_26033_G1, chr1:158192453..158193465, Cluster 5

<400> 765
tgtagcctga aaacggcatg ggcctaataa gtgccaccac ctaaaattat ctgtgttctt 60

ttccttctcc aaacgaaacg agagtagtga gattatctga acctgtgttg ctgccgttga 120

taggagcagc atcaagtact cccggctagc acagatgtta tgcctctcta gaaaaatgtt 180

gcgatggtga tggtctgacg gagggaacag agcaaaggag ctgagcccca caacacacac 240

atccctgctc catcgggatt cgggcggaag attcttgctc catttcttgg ccaaagttga 300

ccagtggaga atttaataaa tatatatata tatatatatt attactcata taaaaggggc 360

acctcatttt acagcacatc gaggtgtact tgctcatttt acagcaagca aagcaagcaa 420

gaggtgaggc ggctccagcg gtcacgtgac ggacgggcgt tttgtttatg gttgcatcgc 480

atccgcgtca gaaactcaga agaagatggg ggaagagcac gaaaaggaca gtctccgaga 540

tctgccaggg gcattttcgc catttcttta tgccgaccaa ggcggcccta agatcccccg 600

agatcttctg cgcccaacaa gcatgctagt gtctgcttgc tcgcgggtgc tgtggctgac 660

ggcgatggct gctgcgtctc tatttccggt gtgctgccat gaaaattcga aagtgtggac 720

ctggtgtgga ttattggagt ctaggccaat aaatcatgga acgcgaacac ttttccagct 780

ttaggttatt caggccattt ccagtgagcg agagtttcat ggtattttca ttctcattaa 840

atgagataac acatcaccat atttgatgac ataacgcggt atttataatg agagagattg 900

agaaagtttc ataggaggag agaggatctc atccagatga aactcatgat acacgatttt 960

atagacaaaa gctgatgtgt caattttgag gaaatcgtgc aataaaactt cca 1013

<210> 766
<211> 1250
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260489_G1, chr7:142885945..142887194, Cluster 5

<400> 766
tatctctaat agcttaccca tccttatacc atattcaaac ttcaccctgc gcccagtgca 60

aacaatattt tggttaacca tacgagtgac atgccggaca cggtttcata tttatatttt 120

ttttacatag cggaattgtg tatataaata tgagtgcttt aatatttata gagagaaaaa 180

catggttggt tcttgaactt ggcgtaaaat gtcattcagg tccatgtact gttgaaatga 240

tatgtttaga tcctacactt ggtctcatat gagtctaaac aggtcttaat atactctgca 300

tgccgatatt tctttgcctc atactctcat agagtccaaa cagatattaa accactattc 360

cactatagct acttgccgac gtgagacgtg acatggcgac tatgcatttg actgtccccc 420

cgggttaggt ccacggtcat ctctgtctgc gaatccacct gctcatcacc ggtcgtccct 480

ggaccctgtg tggtgcttct ccatggcgtc ctcgttcttg ccgacgagcc ccgtccacac 540

gccgcggagg cactgaggca gtactggttc tcgaagtaca tcctgtccat ccaccgttcc 600

gtctcggtga tgagcacgtg gacgagcgtg gactagtcat cggcctcgac cgccggccgc 660

cccgcaagcg tcgtcgccta ggcgccatga cggccaaggc gtcgagcaca tccagcgact 720

attggcagct gcggagcaag aagctggcgg cctccagcca ctccacctcc tggggtgcgc 780

aagcatgagg cgccgcaggc cgcagcagcg ggattttggc ccacccgcca cggttgtcgg 840

ttggacgtac gtagatgaga agtgtggctt ggggagccgt ggccgaggac ggcggctgtc 900

ggcctcgtgg tcccacccgg agccagtctt ccgcgacgaa gagagcgaaa cagagaggga 960

gaaggacgaa ggagaagaaa cagaagggag agaagcgcgc atatgacaaa tgggttccaa 1020

tttgtcgaat gcatagaata gtcaacgtgt atagtgggtt aacatctatc tggatacata 1080

atagatcgaa aacagtacat taaattcgag aatcagtcat gatttttttc tctattttat 1140

atatacttga ttaaatttaa acgatttgca catggactgg cagaggaagt aggtgtcgcc 1200

gcatcttcct aagagttcaa gcttttaagt gaattggtgc atccaactta 1250

<210> 767
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260782_G1, chr7:144305327..144306471, Cluster 5

<400> 767
ggccattttc ggtggaagtt tcattgcacg gttttcaaaa gtgacacatc atttttgtc 60

tatgaaagag tgtatcctga gctctctcct cccttgaaac tctctacatc tctctcatca 120

taaataccgc gtcatgtcac taaatatggt gatatgtcat cttattcaat gagaatgaaa 180

ctacgataaa actcccacca agaatggact taatacataa ttttatcttt gttgttttct 240

aggtcatgct taagacacaa acatcttgaa aacagtgaac atatggtttc attctcatgc 300

cgagtatttt atctctcttt catcattaat acattgatac atcatcaaaa acgctgacat 360

gacagcctat ttaacgccca taaagaataa tgaacaaagt agataaatgt gcatatatat 420

gcaggcaagc aagcagtgct gcatgcatcc agttgtgcat gacagcgata gaccaatggt 480

acaaactaca aacgtacctg ggcatatgga tagcaggaac ggctgttacg tacgtcggta 540

cgaaaggaat cctgggccgc tgatcgccgg catgcaggtt gggtccgcac ggacggcggc 600

cacagatgca cgcaagagaa gagaaatata tcatactcct tgattgcgtc gagatcagaa 660

gaatcctcac ttgcattgtg tcacacatta ttattagcct ggctgccagg caaatttaac 720

cagcttaatt acatgcacgt tcattggaga cgacagagaa ggcggtatac atgcatatct 780

ctgaaaacga ttcatgcatg cacgaaacca aggcattgca ttgcgccacg tggcctgctt 840

ctcactcaag cgttggatat ctcaaacgaa cgtcatgaaa cgattcaacg tggcttgtac 900

aaatgtctac cggttccaaa tcctccgtga agtctcccgg ctagaagagt gagcctttcg 960

tcgcttcgca gagatgaaag agtcacttca cgaaggctca cgccgtctca gatgagaggg 1020

aggagatgaa cgcgatgtcc acatctatct aattaaggca agatcgcgag catttctagt 1080

acatgcataa ggttagaaaa tgcatgtaaa ctgcatgcat aacacatacg acaaattaac 1140

taggt 1145

<210> 768
<211> 1255
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260802_G1, chr7:144542901..144544155, Cluster 5

<400> 768
gcgtctggcc cgtgccgaac gtcgtttgac catctatagg cgtgcaatga ttaatttgaa 60

atagctgtaa ggggttattt ataaaaagat gacgcatgac gaccgttgaa actggtgctt 120

taagtataaa aatatagaat ttgtgaaacc cctaacagct gggacgacat ccggaaaatt 180

ctgcatttgc acttgcacca cgcctagtac cgatgatcgg cgaggatgca tgcacacagt 240

tttttgtgtg ctgccaccaa taatgctagc tagctaggtc cagtgcagga caggactcca 300

gctgatgcat gagcatacat gtggtgttgt caaatttgtt cccttgcggt ggagtgcatc 360

agtacgtcgc catcggccac acgcgcgcgc gagcgccaaa gagcgaggac cacacagcca 420

cccacacacc catattgtca aaatcaccaa ccgcggcagc aacaacaaat cgcatatata 480

tggaatcctg tcacagtccc tcagagctca ctgttggcgt aacgcgtagc agcctgcaat 540

gagaggatct gctggtgcag ctcagctagg gtttaatttg ttggtttgcc agtgggatcc 600

gatccggcga gctgcaggcc ctgaccgatc gagcatgcca acactgctcg aatggatggg 660

tcacatcacc gacctagctt ataggatgga tggatgatcg tcacctatat atattgtgac 720

gaatagcgca tctcatgctg gacgtacgga tgagcgcgct atcgatctga agcaacctga 780

aatggggagt cgtcgtcact gcatgtaccg gcgggccgaa tgaattgtgt aaacaattgc 840

ttttcaaaaa gcctgctgat tcttaattaa aaactgaaga agatcgaaaa aaaactggag 900

gaatccaaac atatcattaa taccatgctg tgtcgccggt gctgctagtt gttaccttta 960

tttatttatt attagcgata gatcgtgtgt agaagaatta aacattcctt ccttttgcag 1020

caatcattaa taccgtacgt accccaagca agctagtaat tagttgttgg tacacacgca 1080

cgcacgctct tatccatccc ctattcccct ccctcctgca tacatccagc aataatatgc 1140

aagaagaatt aaacattcct tccttttgca ccaatcattg ggcaaagcga tcgtcgtcgt 1200

caacacgata tatgtgaata agaataatgt atgagcaaga gggctcccct cagct 1255

<210> 769
<211> 1166
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261799_G1, chr7:150078037..150079202, Cluster 5

<400> 769
cacatgacaa taatatgcat atcataacta ccagtatatt aatataattc atgcatgcgt 60

cataactacc ggctgtattt ctagtagttc atgagtgaca agaaaacgaa gaagattgtt 120

actcatactt atgatttgtt gagttgttcc atttaaccgt agtgtgtgat agctggtgtc 180

tcaattaaca aacagtgtat tatgtagcca tcaaagtata ccggtcctgc agcaggtcaa 240

tgtataagca ggcaacctga ctgagtcgat cggtcggtca ctctatagtc tatacgcggt 300

ggttcagaaa ttaaagagac gggggtacgt atcgagaaca gtttagaccg gcctccagac 360

gcttcatcag cccaagaaac ttctaccgtc gtcgttccct tttcgactca tcgatttgtt 420

cattttattg tatatatatg caggaatata atatagagga tctgtgcaag aatataatat 480

agagatgttg gagggttgag cagcaatgca atgcaaggac acctagacga cgtacggcac 540

cagcagcagc aacacaaagg acggacgagt tgcacgcatg catgcacacc gacagacagt 600

gagcttgcac ccgagcgcat atataccaat tccatgctct gcctgtgtgt gagtggtgtc 660

ttgtgcttca agagttgagg ccggccggca gcttccctgc gacgcatgca tgcatcctcc 720

caactggact tggactctca caagttttag caaatgatta gctaggcggc aattaacact 780

aatcgtttgg tactcaatct tatggctagc aagcaagcaa gctagggcaa aggtccaaga 840

attaatactt ggaagatccc cccagctggc cgctcttgat tgagtacaaa cgacgccact 900

cacgcatgca tttctagctg ctaattattc gagatcatcc gccattcact ccttcagttc 960

tcgaggcaaa acatgctctt tactaatttg ttggaatttc attatatagt aacgtaatta 1020

tacaattaaa gatggcatct tccacttacg agagaaatat ttcaaacaaa caataaataa 1080

ataaatggcg tttcatagag cagaacatct tccttctaca cacaaaataa tgtattcaag 1140

agtcaaaatg tacgtggact aattag 1166

<210> 770
<211> 1373
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_26389_G1, chr1:160673396..160674768, Cluster 5

<400> 770
ttcctctcaa gtgaacgatg caaggacgga ccctagagga aacgacgcct agaagaccga 60

cgaataggag gatgacctga aggccggatg taatacccaa aattagtgaa taaaggggg 120

aaaaggttat gaaagtatat gtaaatgtat tccttattta tttaccatat aaattcccat 180

gatttgtgat gaagtcaatt aactaatgat aagccaaaca agtctacgca tctcatgctg 240

gatttcttgt tgtgcattta actaaactat gcaaactcaa cttaaaattc aagataatta 300

gaaatcacat tttaaatttg aaaatggaaa gagaaggaaa gaaaataaat aaaaaaaaga 360

aaaggaaaga aaagagaaaa ccctcgtgct gggccaaaat cacgggacga cccaacactg 420

ttgacccgtg tgccaggcgg cagcgacacg tggggcccgc gtgccagccg caccaacaaa 480

ctcgcctctc agcctctctg tagccgacag gtgggccctg gtggccctta ctcatgagtc 540

cgcgcgagcc ctggttcctg ctgtcactgg tgtgtgggac ccccggtcgg agtcatcacg 600

tccttcacca tagccgtcgt tgctctgtac gagtccacca gtgcgggaac ctgagtatcc 660

caacaaactc ggcctctgcc gttacgtcct tggccgcctc atgccgctat atcgcttgcg 720

tcctccttca cacgaagcta gagccgccaa caccgagagt ctcacgtgta gggaaggcag 780

ccttcttcga tgatactcgc ttacatcgac gctctggtca tggtggaggt tcgagaaccg 840

tcgtcgagtt gcgtggtagg cgcctaggat tgtttgccgg agtcgcgggt ctttgcggaa 900

ccgcccagtg ccacgaacga gagcctcgac gccgtcctaa ctctggtaaa ccttacacat 960

gccttcacct tcgatttcat accatgtagc accgatctat gtaggttgaa atgctcatgt 1020

gagtcgtgaa ttgctcgtcg acgttgagct cagccatgta tccgcgcctc accgtgggta 1080

caacacggta ttgcattctt cccgactggg agactccgat ctggctcata gtgtaccagg 1140

gagtttgcag cgccctttga tattgtggtt gggcgtcggg ggaggcaggg cacggtggac 1200

cgataatggc gccgtcgttc ggctgaccag attggggaag atgatggcga ggcatcgatg 1260

catggataaa cagacatgag tagctcggtg aagcgtttta gcgagattta aggggccgtt 1320

ggatcttgag gtgatgaacg agattagatc catgtaccga tgcgaccgac atg 1373

<210> 771
<211> 1359
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264147_G1, chr7:162197000..162198358, Cluster 5

<400> 771
gctgggcagt acaataatcc cgtcttttta accactcacg catcgatcat cccatagtct 60

gactgataac actgttacct atctaataaa ttctgttgtc agaagaaaca atccggatct 120

tgcagcttgt tgttctatac agcatatact acaattgcta cgaatccaaa gaagttcgtt 180

cttgtgttac gaggaagctt tgtcagtcca aactagacgt aagctagtgt ctcatcacag 240

agaatataat ggactgtacg tagacgcaca atatttgtcg acacctaatt aagcaggcaa 300

actggcatta gctatatgca cttatgctag cccggccagc tctccgttac agtatttgtt 360

tagcacgcgt gtagatgccg ataaagctaa gctaacgatg catattagct tgtgatccca 420

atttgatggc gcttttaaaa aactacaact ggtctccaag gataagaaac aaaaagtacg 480

aacccggaat ctattctccc ccgcgcatac gcttgctgat gcacaaacca catggatttg 540

agtgacatct accctaccct aaacaatgat tggcagccag tagcagcact gacagtgctt 600

caaactatac catgtccacg ctgcatgcat agataactgg gcgagagtga gagccgcgca 660

tgcagcgatc gactggttta acatctaaag acttttggag agacaagata ttaaacgtga 720

gctagacgag cgagatcgat gcgcacgagt aaacaatggc catcctctcg cacatcagct 780

cagaatccca ggcgcttgtc gcgacgcctt tggactcctc atgtccgggg catatccatg 840

gacgacgggg ggaaagcgcc tctccaacgc ccgcaacccc cgagcacatg gcaacactcg 900

cctcgctttc atggcgcccg cacatcttgt tccctgcggc gtcggcttgg aacaatccac 960

gcgggttcgg tgtctaaaag ggaatttccc tcgaaaagtt caaatgcccc tgcctagctg 1020

cttggccgca cgcgctttta ggttttgcat cctctagtct agttgcgcta aaacaatacg 1080

gagtactctt ataataatgc actgctagtc ttctcgttgc tggctgcagc caaatataaa 1140

agaccacgat agccttcaac ccgcaagcaa ctaataacac tctgagggga gcggactgat 1200

gatctgacaa caaagagaat tgcccctcga gaaaaaagct gaaacggctt aatttagcct 1260

agctatagct tgctgctttg tcagcttgcc cttgtatctt cggcgcgatg gatccatttt 1320

agttagcgcc tgatcagcat gtggattact ataatgcgg 1359

<210> 772
<211> 1038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264770_G1, chr7:165802640..165803677, Cluster 5

<400> 772
ctgcagccaa agcaacagat tcaggcaccc gtgagcgtag cctccgttca aagttcaaca 60

gattcagggc ctaaaagtcc gcaggtagaa tctttagaat gtcagctata agttattaac 120

tgagggcaag acttaaacct gaggtccttg aatcttatta caacacatat atacatctgg 180

tatcgccttt tagtttaggt gctaagcaat tgttacggta tctcagattt tccaaaatta 240

gtatgcctac attaccttct ttcctagtag catacacatt cgaaacaatt atcgtcacta 300

aataagtcat agcgcataca ttattagcat tgatgtcatg catgctagtc tttacaccca 360

acccaaagaa gctgaagatg acttccaact caggctactc aaccggcaga tgtcagtcgt 420

attcaagcat ttttttttg ctttatggat gcaggagcta aacacattga gaatcatcgg 480

agtgcattat tgcacgtgtt cgactatgtt acgcctgaat atgtcagctt tcctactgag 540

cttttagatg atgagtctca gtctcaagag gagttatatt caacctaaac aagatggagt 600

ctcgtattgg agccattgag ccataatttt tacggtgcta gctcatttct ctctagttgc 660

tatatatata tatatataag tatactatgt gtggcatgaa gaaaaattga agtccttggc 720

ttgtggcctc tcgtcagtta atagcagcgc actggtagta aggactacta gtatgaacat 780

actacatgat atacatatat acggggccct gactgctagg ggggccaggg tggggccggg 840

cctggttatt actactgttg taagacacga cacccaatta cagagaacca tatttgtgca 900

tgctattaac atgagaaaca gcctataact gaccaaacta ttgaattgtg acagattcat 960

caaaggagtc tgaggttgac cagatcctgt tcttcagttt tccctagtca gcggaggatg 1020

acgaagaagg tttgttcc 1038

<210> 773
<211> 1189
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264921_G1, chr7:166751238..166752426, Cluster 5

<400> 773
gattcttgca gatgatgaga tgaaccacag caatttgagc ggggtagtgt gcgtgcttag 60

ataagaagca ctagagaaga agctgaattt aattagaaac taatacggac ttgtcgatca 120

ctccgaagag agcaatctat tttccgtgtt acttctactg ggaagatcct aatgagatct 180

cagagtgagt gatgaatcag cggaaattac gacagggagt gcatgtgtta gtgtgtacac 240

ctttcaatcc actgacaagt agcattagct gacaaatgga gctgaggtct cagcagcact 300

gacgttagtg atcgacttta cagtacagtt attatctatc gacccgcatc atatattgtt 360

tgtttttata tatatccagt gagatattct tctaaaccgc ccgtccggtt aatcgtccct 420

cttgatttct tgcacggaat ccattaataa atcctgtaca gattttaggc ctgcacgtac 480

aacgtaccat gcctggaagc gtttaaacta cgcagtacgc acgttcttga tcgagctctc 540

gaaacaaacc tatatatctg tttgaatatt tgttccagca ttctgggcgt tcagttttct 600

caggctgggg tggtacaaaa caaacacgta cgcgcgagcg agcacgagtc tgtagctctc 660

aagcatacat tcatatacat gcatgacatg tatgaatggt gaagattaaa gtattaaacc 720

ctagctagac caagaacagt atttttcgtt tatttatata tgaacgtaaa cttgacaaag 780

gtgatgttaa tgtgtgtcaa ttcattcgca tagttagttt gtcataacgc agcgataaac 840

gtatgttaag ctagctgtta ccgtcccatc atgatgagtg gaggaaaaga acaattttga 900

tttctgaatc atctccttgt gtgcataatt gccttcgtac aattagaata aaacttttga 960

ctggactaca tatgccgcgg gaataaaaaa acagaaacgt ttaacattcg catgcatgca 1020

caaacactac agtatgctcc actgtccagg ttagcgtttg cacaagctca tctacattcc 1080

atgtgattgt ttagctgcac cgtctcgtcc cgcgtcacca cgtgcgttga ctttagctaa 1140

gtatgtgttt tgttgtctgc acgtgtgaaa cgtagactgc atggataga 1189

<210> 774
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265771_G1, chr7:171501738..171502744, Cluster 5

<400> 774
tatggtcgac caataattga tcttttttta acttgaccgt gtttgtttta acaaaatcct 60

tctttagcct aaaaatattt tcttttgaaa tatgatcgcc aataattgac tgatagagta 120

catctttgcc tataaatatc tatctctatg ttatgaccaa cgactagaaa ttgcacaagc 180

tgtgtgcata tcatttctat tggcaagacg aagtttgaag tgtagatggt tcaacaacat 240

aacaatggat catgtttcta ggagtgagat gcagtaggaa ctcgtggatc cttcaacagc 300

gagatgcata aagtccaaga cggcacaaca gtgaagttgg gatagctgcc tccctcgtaa 360

ggaggcatgg tggtaggctt gacttagaag aagccaaagt tgagaaatct gtagggtaac 420

gaaaaaggtt gaccaaaatg ttgcttatca ctttgtcggc atggctagtt aagaagcatt 480

atattatata taaaactaag aggccaatag agtatatgaa cgcactatcc aaaagttatt 540

cgagaagaaa gggaagaaaa gtatattgtg tggttggtta tggacagttc agctcatgcc 600

aatacaacca agagttcaag tcaggatatt taaggtcgac gcactatcca aaagttattc 660

gagaagaaaa gtatattcga gaagtatttg ttcccgctcg tcgtgctttc aaaaacagtc 720

aacataatgt gtggatggtt atggacacgg gtctcactcc tactcaactc atgccaatac 780

aaccaggagt tcaagtcagg atatttaagg tcaacgagcc tcttgtcaca catgactttg 840

tcaagcagca gcaaacacaa atgtattgtt tgcacaaatg gtacatagaa gtgataaaag 900

aaggtcagag catgttcgtt gcaaaaatta gacacgagca ttaattttat ggtgaggatg 960

tgataaacat cgagttgaag aaatatgctg agtattccaa atgaaga 1007

<210> 775
<211> 1301
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267661_G1, chr8:4623314..4624614, Cluster 5

<400> 775
aaaaagatgc ctattaatgt gaaagtgaca ctaaatcaag caaacgactg gttaagggcc 60

cgttcgtttc taacggtttc aatcccaccc taaacccttc taggacaagg atcaagtgaa 120

tccagttggt tcactgaaac ctggtctccg gtaaaattca ggcaggaata aaaactgtag 180

aacatatgat ggttgttcgt ttcaaggagg aatagaaaca cttatttcac aacaaactgg 240

tattatctcg tgatgctttg ttgtctaacc tcgccaagat tcgaaccaga cggcacgcga 300

ccaggattgg taccgagcct gtgaaggaag gagaaactcc aaaccgaacc acattcattt 360

ttaattcaaa tataaacgaa cagtccagaa taaaatagtc aaatttcaaa ccagactaat 420

tgtttccatg tggaacgagg cccggaacag actaaaccgc tagaaacgaa catgccctaa 480

atggtttatt attagagacc gatgaaaatg gcgttaaaaa gttaaagaca gttggattgg 540

agattgaacg ttaaatagtt aaaaatcgct ctgacggatg cattaataac tattattatg 600

actgaaatga agcaattggg agaagaacta cagcagatgg gagtggtccc taccttctga 660

tgacctacag cacgggatca acaatcatgg cgtggagcca tggcaggaca ccgatcctgg 720

tgagaagaga gcccattcaa ttaagtccag ggcattacct ggtggtggag ttgaaggaag 780

caggggcagg gccgacgaag atctgggcac ctggcatagg gcgggagcga cggacgccca 840

gttatggcat gaggggtgaa caggagaaga gaagaaaagg agagcagagg taagggcggt 900

acggggtata gggacctttg gtgctcgtgc tccaacgagg gagggtggga gatggaagga 960

cgacggacac ctaggagctg gatctagcct ccgtcgtggc aagcaaaagt tgcgagcaaa 1020

gcaacatcag gtggagtgca aatcgccgaa tcctacacaa aatggacttt agactgtaca 1080

caacacatca ctttagactt caggtggagt gcaaaactaa caattgtgtg atcctttagg 1140

tgtcgcccag gaggtagaag agcaccacga gccacagcgc gagcgcggcg cacgcgggcg 1200

gcggtgcgcc ggcgaaggcg caggtagtcc acgtacccca ccggggagta gggcgagttt 1260

tgcgcgcgga ggtacgcgca tccgggctcc ccaccgctga t 1301

<210> 776
<211> 1371
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269821_G1, chr8:16344093..16345463, Cluster 5

<400> 776
gtgcatttgt gcctaagttc ttaaatgggt ttgattatag gaccgtgcta catgttcaca 60

atgcttcttt gcaattccat agtacagtaa cacaatggca atgccatcta cacatctcaa 120

cattatctgc aacgacacag cctcgtctct ttcattctgt atgcgtttcc tgatgctgca 180

tggtttcatt tcgttcttgg ttccaaagtg acttcgttcc attcatggtt caaaaaatga 240

tttcgtgtca tggctcctaa ttgggcgagg catggactgt catgccgatg cagacgagac 300

acacggccat ccaagcctcc ctctgaattc cggtcccctg agactgagac tcgagtgcag 360

tggcagtacg tgttgttttc aggcttctat tccggatcga gcaggcacgg ttttttcaaa 420

gcccgacagc agcggctcat catcggccgg cggcgcggcg gcgccatgac ccatgactcc 480

atgcggtcgt caccctgact cctccgaatc cagtcctcta gctatgtata gcaactctca 540

cgaaatctac ggtgatgttt cgagcaccat ctggtgaagg tgtggatatc gacgacaggc 600

gcccgtcgac gacgccggac cgcactgcat gcactgcgcc gccgaccgcg ttgctgttcc 660

cggttgacat ggggaaggac acacagcggc gcactgaaaa ggagccccgt tggtgttgca 720

gtgcatgccc gcccgcccgc ccgtctctga ttatgcgttc gcagaaaggt ggaggcttgc 780

ggaacaatcc catccctact gtacgtactc ccttatctcg cgtgcacgta cgtattgtcg 840

ttaaggttgt gataaaaatc ttttttcgtt taagattctg cgcagcatca gcaatcgccg 900

tgccggcctg cactgtatat gtctctagtc tgtctgtccg tcttcttctc aattctaaaa 960

aatcgtagac tgataactga aactgaagca tgcatttgtc attaacgtgt tggcaggagc 1020

agaacagaat tatagaagag caaagaaaat cagctgctga tgtgcaaaac tcaacgcaga 1080

gacgatgggg aggatgacaa gagcctactt tttataggtt ttttaagctg gtgtccgcag 1140

ttttgctagt gtcctcattt tttactctta gtcgtgtttt ttttttcagt tttgtcattc 1200

tagtgctata gagcaaaaag gcaaaactga aagaaaaaaa acacaactaa agttaaaaat 1260

gaggacacca tcttaaaaaa acctttttta acgggcagga gctatgtctc tccattcata 1320

agaaaataat tgatatagtt ttaaaagaaa ccgaacataa acctatacag g 1371

<210> 777
<211> 1237
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_272772_G1, chr8:34686356..34687592, Cluster 5

<400> 777
gtgctgagtg ttccctaatc gccccctatg atttttgttt ctattttggg acccagtcaa 60

cccacaatga caatggccct tgatgctcga ttgctttttc tcgtttaggc tgggctcaga 120

ggctgcataa ctgatttggt gacaagggat catggagtaa ttgaaagaga aattagttca 180

ttcccatctg attctcttgt catcaaatca accacatgta gatttttttt cgcgtggttt 240

tctctgtttc tgcatcgtgt ctgcatgtgc ggatgcgccc ccttgttttt tcccactgat 300

tttgtggtac cttctcgtaa tcaccaatct aaacttttgt ttccttggtt aggttattca 360

caatgggagt tttgtgagag aatccataac gttaattagt atgttatgta ggatttttga 420

tgacatgaca ctatatttat tatgaaatag atgaaactag tttcatcact ataaaatcaa 480

gatattggaa atcgcgtgaa accactatta agagtaattt gtttcatctc catctatttc 540

atctaattct attagctatt tagatgcatc atttaagtca tatgttagca tatgaaattg 600

tgttacaaaa ctcttcgtta agatagcata ttttatttt ttattttatc ttactcttgt 660

tgacgtgaca atattggaaa taatgtgacg aaactagcac taggatctgg gaatgacttt 720

atacattttt tgtttgattg ggatttggga gaggaaattt agggtactgt attgtctcaa 780

agcaggggcg gatcaagggg gataaagtgg gccatggccc ccctgaattt ttgatactac 840

taatatatgt aatatgtatt ttctagaaat aatagaaaaa tgttaaacat aatggaccaa 900

aataaatttc gtctgtgggc cactgcgcct cctcccagtc tggcgtcctc cactagctaa 960

cacagctaac aaacgggcca aggactgtac actctagccg acgcctgacg cctcttccca 1020

tcccagtcca gcctccttcg gtcctcccga atacacagtc gctggtggtt tcttcccgat 1080

ttccgttgcc gacgccaacg accacagcaa cacaacctgc ttcttctcct aagaccacaa 1140

cctacttctt ctccgactac cgcggccacc atcaccggcc agcaccccgt ccacttctgt 1200

cgcaggctcg tgcctcactc gtggcgcctg gccaagg 1237

<210> 778
<211> 1205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_283897_G1, chr8:109261494..109262698, Cluster 5

<400> 778
caatggtgca gtcggcctgt tatgggcatg gagtgtcgtc gtctaggtat gagtaggtag 60

aagcgccacg tatgaccgat ttcgtcctcg ctgcgaaccc tcaccatccc tctctcaacg 120

ccaacacagt tgccccaatt cttgttttag tggatgcaag gcaggcctcc cacatcacgt 180

tgatcttcat tagatctttc agggagcccc atgcagcacg atgtcgattc atgacctcaa 240

gtgttcacat catcgacaag cttcaaaaat attgattgga tggtgtctct tgagtacagg 300

ttgcaacaaa tgtgttgtcg agttaacaga gaacgtaact aaaggttgct cacacagtgc 360

aagattttcc cttaaaacgc acccttgca aatatctgga gagaacaagt aactgagcct 420

ttcagttcat tgttgctcaa atttaatgtt ttcagacttt gattctaggg atgtgcatac 480

aaatattcgc agataatgat tttagactgt gacgcagaga ctaatataag ccacaggctg 540

agaatgtgct tcgaaacagt gatcacattg atgaatgacc atttctgttc tgtgcacctt 600

cagtttggca cgccgtcctg ccatgtcagg ctgccgaagt tgtatctccc ttgcaccttc 660

agtttggcca tgcatgatca catttagagc cacaagtttg tgttcaaatc tggttaacac 720

aacttcagta gctggatcac taggttgcaa gggacatgca caatcactca acaaaaaaaa 780

tctactgtct gcaatgcagt gagtcgtgag ttcgtgacaa gatgagactg ttagtataca 840

tatagttctg cataatggtg aacatacagt tctgcataca gtttggcatt tcaggatctg 900

cataagtcat ttcagaatca caactttctg aacatcagat gagacttttt ttgaagaaca 960

ttctctgtct tatagactca gactcacaaa ctcatagact cagactccca gactcatagg 1020

ttcaagcaga caatctccca cattgtcaga taattcaggc agacaaacgc cagaacttat 1080

tataacataa aagtgtcaca aatcccaact atgtatagaa ggcagctaca aatccggtct 1140

ttgaagatga cagacggcta cctgaagagt catacatgca gaaacaaaaa tgaaggccat 1200

gaatt 1205

<210> 779
<211> 1345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_28627_G1, chr1:175010758..175012102, Cluster 5

<400> 779
tgtccagcga ctttgatgac cccagcgcat ggacgctcta gtctccaaac atcctcccca 60

cgacattgat attttcaagc tctggctcca ctgtgagatc caacacttcc ggataggtgt 120

catgttaaat ggttttcaac tgaagtagta aaataatttg taaaattgca ccctaaacac 180

aagcattcat attatctcct ctccatgtaa ggccatggca agcgcgatcc caaatgagga 240

gagcaatata ccaagcacag gagatcgtag catcatgaag caaagaagac ataccaagca 300

caggagatcg tagcatctag aagcaatata ccaagctcaa gaagtaaagc atgaataacc 360

aataggaaac gggatagtct catgacagag agaagcatta aaattggtac actgaggcta 420

gataatgtac atgaatgtgt atatcagtat tcttgtcttg gagtcgctgc aacttttctc 480

cacggcccaa aatctgtatg tatagaagag gcaaagatgc acaccgtaat tagcaaccag 540

gaagattcac aggtgcatat aggaataggt gcatacaaaa ttgcaatatg gtacttatag 600

gaacaggtgc atacaaattg cagtatggta cttataggaa caactgtata caaaattaca 660

gttgtggtac ttataggaac atctgcatga aaaagtgcag tatggtactt ataagaacag 720

atgcatacaa aattacagtt gtggtactta taggaatagt tacatacaaa attatagtat 780

ggtacttata ggaacatctg catgaaaaat tatagtatga tacttatagt tgctgcattg 840

aaaagctaaa atcacttata aaaatagcca tactttccta tttgccttag cacttagcta 900

atagactaag ggacacgtga tgtatttaaa aatgcaaatg cagttggagg agaaaaatat 960

tacaaagact taaaatgtta tggttatgcc ttgaaagctt caagttagct gtttccaatg 1020

aatgtgaaat atgactgtcc aaactgaaag atatataaaa tagttcaacc tgatagccgc 1080

actcgtgttt catagaacgc tctggtttga agaactaaaa aatccaggaa tatgttactc 1140

caccccccta atagcaagga tctctcaaaa atatttcttt cttatcaacc aagcaatgtt 1200

tcactaattc aatatgtagg cacattgaac agcaagcaca ctgaacacat tggcatcaag 1260

tatgccatct caatacattt tttgcagtac aattgatttt gtatttaggc tcaagcaagc 1320

actgaacaac aagcaaactg aatac 1345

<210> 780
<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_287987_G1, chr8:131231572..131232640, Cluster 5

<400> 780
ctcaaattaa cgtttagttg aaagtagcgg ttttgttgtt tggctgaaat gcaacagatt 60

catcatgccc atactctaat aatcgtacga tttgtcatga catcgcaaga gtgatctttc 120

tttctagata atctttcaag tgatgtatga cttatgtatt aattgtgaat tatgacttac 180

gaatgctttc ctaatattac tctataattt tttcaccata ataatctttt gttgtaattg 240

attctataaa ttatttttc accataacct tttgcctcat acacataacc ttttggcctc 300

atacacaaaa aaatgcagaa agagttattg tgcgttgagg gatgatccaa taaagaatga 360

ccgccggatg cgattaagta agagagtgta gacaaatgaa ataatctgga acattgtttt 420

tgatagtgga ttttgtgtgg agttaaattg atgggtggat ttagtagggg acatgagtgt 480

gtgggttggt ttatgaggtg tacttagcat tgtttcaact gatggtttat aaggggtcga 540

gaaaaagaaa attaattggt tctcctaatg atggcgacta gcgagtcctt ttgtattgct 600

ttttttgtg gggcgtgtgg ggtggagttc atgtgtgtaa ctggatctag gatcttttgc 660

gcaagaaact ctaaagcggc cccctgttat ccaatatgcg cgtgcctcat gcataaggag 720

gcgtaggaag gcaagcccaa acttgaaaca tggctgatgc ccacagtgat atcttgggcc 780

gagtgtagcc catgatgaaa gaatccctga cgcccccaaa agaagagtga atcgtttttt 840

tttctaaaaa tcgttgcgta ctagattaaa ttctcatagt aaatctaact gcacttaaat 900

gtctaatagt atgtgacaaa gagtttttc accccaatat ccaaccctac aataacatgg 960

ctaacaatgt aaatgcttga attgaattct aacaatgtta actataaatg tgttttttt 1020

tcatgagagg tgttgcatag tttaatgatg tataaaaaaa taaacttca 1069

<210> 781
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_288388_G1, chr8:133290442..133291481, Cluster 5

<400> 781
tctaagcaaa tatgacatta ttcaaaatta aattgcaaga gaatttctat tcatatattt 60

tgggatctct tgtcaccaaa tcagcgctaa tatagttggt aggggaaggc gcagggcgtc 120

tgtgtgctgt actggtgtgt gcctgcattg catcgatctg catgagagag ctaggactag 180

aactagaact agaactagag agagcagagt ggctttaatg tctttagcta gagagaagac 240

gacaatggcc gtggggcaca cagatctgga ggggtcacgt accttggatc tccccacccc 300

atccatccat ccatcgccgt cgctttcttt cagcaatgca ggcatgcagc agcacggtgt 360

ggcgcgcggc aaaggggacg agtgcctttc tttcaagttt caagcttgct gcatgcaccg 420

caaatgcacc agctcctttt ttctttttct tgcatgcatc tcattctcct gtctcctcta 480

gctctccatg agtgcagcat aagctagcta gggctcctgt attgggactt gtttgctgct 540

gggctgggac ctggggtctc aataacccat ggcaattatg gggagcatgg ccaggtagtg 600

gcctctaggc cctcagcagc agctcctagt acttcttgtc ttgctttttt tttcattagg 660

gcactgtgtg tgtgagtgtg catcaagcag ggagaaaagg caatgtcccc ctcacttaat 720

agtatacatg tttacttatg ggatctttgc tagttcccat cttgctcttg tcccatgtta 780

tcttccaatt ctttattttt cgtttcttgc attgtgtggt ctcgaggctc aaccacacta 840

cagtgcaaaa atagctaaac ctgcatgttg acagtagatg cagcactata tatgcgtcgt 900

cattattttc atgctgaagc aaacaaggct gataggccca acaaaaaggt gccgtgcagt 960

gacagtgggt actcccatgt ctcactgtca atctttataa attaacaaag ttgtaaacga 1020

attctactac atctacagtg 1040

<210> 782
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_288391_G1, chr8:133292127..133293373, Cluster 5

<400> 782
tgctcctgca gtcctgctcg cggctcgccc aggagcagag ccgccggccg ccgccccgcc 60

cgccgagcgg ctgagccgga ccgccggtcg cccgtcgccg gactgccgac tgccgactgt 120

cctagagcaa gcgccaggcg agcagcagag gcaagagcag tgccgcagcg agccagcgac 180

gaagaggcca gagcaggggt ttgtcgtttg tggtttaaag cttgatttga atttttatt 240

tgaatctgat tatttatttg atagtaatct catgtttaat tataggaata agatggacaa 300

atttctcatc aagaaagatg cttctatttc taaaacaatt agtacaaatg agagccgagt 360

agaacaaaag gggccacgta ttgagctagc ccccctctta gattaatcct ggatccgcca 420

ctgttacaaa atatgaacta aagaccactg cgaatactat aactgaagtt tatttatcgc 480

atactagatt ttatctagtt agaaatttaa aggccatagt tggttaacaa atagctttaa 540

gttttctaat tcatccgtct gttagacatc atactcgatt cattgcttag tgtcgaatgg 600

tagcttgtgg taaaatatcc ttcattgaat tgtaatattt ctttcttgta gcaaggtatg 660

tgcatttttt tttgtctatt aagaaattta accagttact tgcacatgcg cttagggcat 720

ccacaacggt tgtatcaaat agctagctaa tatgaagctg atacaagaat aaaaatagta 780

atttatctca tcactagtac ttggtctcat acgtaataca ctcaattttt taatacggaa 840

aatttcctat ctatttaatc gtcgctagct attcttgttt ttcctatatt ttctatccgc 900

atagataaga gagtgaatct agctagtgaa atagctagcc attagagacg accttaataa 960

tacatactta attaattaaa tcggcactga gccataaggt aaggccatta tattagactg 1020

taggcggaaa agtactcaga attatttatt tattgtcgcg gagaagtatt aagcgcggcg 1080

ctccccgcac atggcctcca tgtgtgaccg ccccgagcgg ccttgtgtcg gagaccgacc 1140

ggatggcctt ctttttttc ctccctttct ttttttatat aaaaatgatt ttgaatgaat 1200

caactaagac gccttttttg cttcattttt taacaaaaat gtatttt 1247

<210> 783
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290640_G1, chr8:145949633..145950741, Cluster 5

<400> 783
ttggcacgta agccaggcgc gcacgccacg tttttcgcca tctcggcggg ggccggggcc 60

tgcgcactgc aattgcgacg tgccacggtg gtggtcggcc gtgcgcctat cggcgtgccg 120

aatcaatgcg gcacaaagcc ttcaatgcac aaaccgcgga tcgctcccag gttttccggc 180

ccaaaaacca caggcggttc gccgatcgac cttcgtctcc ccccgccaat gccatgccgt 240

tgcgggcggg cggccgccgt tttgtcgttg gggccgcgcg ctcgacacca ccgcgcgccg 300

gcccggctgc ggcttccaat ggaggcgcgc gccgggctgg caggcgtacg tacttcgcgt 360

gatctggtga ccggcgacga ggcgtaccgc gtacgctcgc atgtgccacg ggccaggacg 420

gttaactgcc gacgtacgat cagttaattc gacccgtccg cgtcgcctcg gcactccaca 480

gtttgatcgg ggcatggcat gttcatgtca cagtgtcacc gtactgcgga tgttcattcc 540

ggctaggcct tcatacttcg tgtggaacgt cgtgtcgatc gatctgggtt ctggagtact 600

actgatcatc cgtagttagt gaccgagctg gcgtacgtga aaaacataat taatccgccc 660

gggtgattag ctgaccaaac gaacgtgagg ccgggcaggt agctacagtg ggagaaggga 720

ccagcagtag tagagtcgcc aagcaaaaaa acgaaacaaa aacacagcct aattaacgtg 780

cgcgggacgt gcccgaggct gtagaggagt acagtacccg catttgcgta tgaatttggt 840

gtggcttggt ctgttcggta tcctgctgtt gagtggtcaa ggagctgttc ggatccatgt 900

actaaatctt agcactatat atacttttaa cttaaattta gcacttgtag agtccaaaca 960

tgagcgctaa aagtggctac aagtgaagtc ataaactttg gcacccgtta gcagatgcgc 1020

taaagtgagc taaaagtcgt ctaaggtgga gaaaatactt ctactacctg attgtgtttc 1080

gaacctcgat ctgccaagta aattatatt 1109

<210> 784
<211> 1182
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290689_G1, chr8:146159156..146160337, Cluster 5

<400> 784
gccctgctgg cgggacgaaa catgactacc ggctactttg gagactcaaa ccccttcccg 60

aatcgcaggg ggtttaagtt ttcaaattaa ttctacatga gcaagttggc caggttaaaa 120

ttcctccatc catgcttgta ataccctatt tcacccccta tttcaaactc ctatatacaa 180

catttacacg ttctaccgga gatagtctca ccagtttaga gcatcatttg tacatgaagt 240

ctggactcga ctgctgatgg ctctagttgg tctgccggaa aaaaaaccca aaaagaattg 300

tttggcagcg ctagctagct gctgctagca tgaaaaataa tatctactat acacacggcg 360

tcgttacatg gaccgaattc attctggacc tgagaaacgc acattattgt cggtccgagc 420

agggcctcga tgtcctgcct cgtggcccat cttcggtggt gcacattatc ggttagagca 480

ctcatttctt taatctttta aatttttgaa tacacaatct caaatgtctg cgcccgcttc 540

tgcctggaga taacttggcg atcaatctac aactaggaca gggacattgt acagtaactt 600

tggtaaataa gatgcaaaat aaagttgaga tttgtatgcg tcacagcatt catttgacac 660

atgcatagat tatttgagga agcaatggat ggtaacgagg ctacttaaaa accaatacag 720

agcgtaggcc gtaggagtta tctacaaatt attaggtgtc ctcgagagtt aagagattac 780

gtggtaacga ctaaactttt accaaactat gcataaaaaa tcatcgattt tttttaccag 840

aaaatctacc tgaacggtcg cgtcgttcaa tggaatttag aattcatcaa aacggtgaat 900

ttatttagtc ctaaaaagga gggggaggat cgagttcacg agcgtccctc tctgccggcc 960

ggttcgtcac gagcgcgcgc aagcggacag cgctagctac ctagctggag gaggcttcag 1020

gctagacgta ctgaccacca cgcaatagcg ttttccctgt ggtggtgtgg caaagcacgg 1080

caccaaccgc agcagcccca cgggccacgg gtccaagttg cctggaacgc ctgagcaggc 1140

gcagtagtag catgtaccaa tagcaagagt aggtgtctgc ta 1182

<210> 785
<211> 1369
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291727_G1, chr8:151223908..151225276, Cluster 5

<400> 785
tagggttgaa cacaaaatag taatcgtcgt tgggtttttc ttgaacgaac cagattaatt 60

gattgcacga tttcatcaac atggtcgatt gtacatgtat acatgatatc gtatgtttcc 120

catatgtata ttggggtaga gatattcacg tcggatgttt ggttggataa agggggatat 180

ataggtcgtt agaattataa ccactaatta agcggtgaca ctcgacttgc ggggctacaa 240

ccccaggcat tatgttaaga agagaaaaat cttgctccca cccatacatc gaacccagaa 300

tctgaatagt gctacttaga ccacctaacc aactcagtta gaggcccggc cctaacagta 360

acacatatgc actaatacaa attaagcatt aatcactgat ttaaaatatg ttcattgcac 420

cattaatatt ctaactagcc cataaaagat tgactgatca acgaactagc acttgtcaaa 480

actaatttac attataattc ttgagtaata atataacata gtaataattc tgaatttatt 540

ttctaataac aaagataaaa gacacggaca aaattttcta ataaatcttt tattgacgag 600

cttattcagc atcttttta aacggtaggt atgatatcta tgttactcac gcacctaagc 660

aaacataaac aacccgtccg ttctttcgct acgccttgtc ctgtggtccg agtgtggcac 720

acgcctgcat gttcactctt tagatgaaaa gcagaagaga agaggtgcaa ttgtgcgtct 780

atactagtag ggctaaaaaa tgcctgaacg atctctagaa ttcagttggt acagtgtcag 840

cagtctgtca gcctacggac gatctgtaga ctgtagcagt atattaacgg agtggacaca 900

acccaacttt gaattctcag tcatcagtcg tgtgtcctgg ggaccaatca tttgcacctc 960

tgcacgctgg caatgaggag acctgaacga gaagggagaa gacaaaactt gcccctacgg 1020

atggaagacc gggactccgg gagaggctac ctgcttatat aagcaaccat ggttatcacg 1080

gaattctttc cgcggggaca gatacagatg gtggcatggt gcagcctgct cgttgcttgc 1140

cgatgccggg gcgggcgacg agattctctt tctctacctg tcacgtccca tgatctgcat 1200

gtgagatgcc catgagcctt ttgacgtcct cgcctttgct acgcggacga ataggattca 1260

gcgacacatg ttcagtggaa ctttttttctc tctctctcac cccattagcc tatgaaccaa 1320

cgtacccacg ctttattagg gtgtttggtt tgagaggcta gatgagaat 1369

<210> 786
<211> 1066
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292650_G1, chr8:156233792..156234857, Cluster 5

<400> 786
tgtaacactc caaaatcata cattggtgaa ttaaaaaaaa tcctaaagat ttaaaatttc 60

aagcatattg taacaaagtt atgaattgag actatcctct aaaaaaataa taaattgtaa 120

atataaaatg ttggctatat acttaaacta taataaatag gatagtgggt tattctatat 180

aaattacttc tattgggtta tataactatg tgaattccat gtttattaaa tttcatgcat 240

acaaatactt attttagcaa agtaaataag cagtaaataa atgtaaagta tttgcatcca 300

tgctgagttt tctctgattg tgcattttaa ataagttttg aacttcgaaa cctacatgaa 360

tttgaattta tattgaaact agaaatagaa aatataaaaa aactaaaaga aacaaaaaaa 420

aaagacgctc tcaatatcct tgtttgtcta gccccaccga cccacatatg tgcatttttt 480

tttcttttct atttatttat ttaatccctt gcggaggctt gcttcaccat gatgtcagcc 540

atgttaaatc gtaactcaat gatgtgtggg ccgcaggcat gggtaacaaa tatctccgtg 600

atctcagacc atcgtcaact gcatctacct cagtctctgt tgtgtggggc tttctcgtcc 660

tccaaacgtc ataacgaacg cgaataaagc aaacaatctc tccaatttag tcgggattcg 720

ctggccagta gttccttcat caacccggac ttgtctccat ggccctataa aacctggtcg 780

ccaatatccc tagatccatc aactcggtag atgccctgtt gcagtttggg ctgagagcac 840

ctcttcgcca ttgatgaggg agagagatcg cagggagtcg ccgtagaggg aggtcacggt 900

aaattggtgt cgaggctctg tgggacctga gggagttcgt cggggtgcgc ggacgtcgac 960

ttgcgtccat tgctcgctcg gccaacgaca agccatcgag gagatagaga agaaagaaga 1020

ggaggtagaa tacagtcata tttgtatctt atatattatc tttata 1066

<210> 787
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295586_G1, chr8:170242802..170243851, Cluster 5

<400> 787
ttacccataa ctatggcctt gtatggttac ctagagattc ttataatcag ataaaatcta 60

tccgttagag atccaaacat tttgctttcc atgtcttggt taatgtgttg tgtgaaagaa 120

tctcaattat tatccttacg ttgcattttc ttgggtattg tgcaatgtca tcttattata 180

catcatgcat cacgtctaag atgaataata ttcaatttat ttataaagga aaacaatcaa 240

tattatgtta catcaaatct tcatatatat cattcctttt ttatatgtac attctaataa 300

gaccgtaaaa aatcgcgcgc aagtcgcgcg ttatacacta gtataatagt aatgcctgga 360

cgcgcgggac gccggactct gcagcctgca gcagcatttt ttttcagttt aatggacagc 420

tatgcttgct aagctagttg ctgatgagag ggagtgtgat tcggcaggag tgtttcagat 480

tatatggtct ggtagttgat gaaggtgagc ggtcacttgg aaagcatttg ggtacgtagg 540

ccgcgccgac tgccgaggca acaagcatgc atgtgggtcg tgtggacctc aggtgccgca 600

atctccatga tggcatgcct cgtatcgtag caatgtcgca ttccccaatc aggtcgtagc 660

tagcatcaat gctggaacaa tcatggcgcc atgcatatga ggtcccggcc ggcgaacagt 720

tgccggtccc ttttctctcg tagtaccatc gtcgccgaca aacgtgggtc gacgttgtat 780

atttggacgc taaagcaggt aaacaaaaat acggcatgca tatttttata tgtgaattat 840

aatagcagca caggtgtagt agtagagcta gaggacgagg gtgaaggatc accgaggcag 900

aggagactgc agagcaatgg acactatggg cctttggaac acggttgtat gtacgtgtaa 960

tgttatacgt tgctttccgt acgtggactg aactgaaagc atccgtattc cgaatttccg 1020

atgtgtacgt atacgtatgt atctcaggag 1050

<210> 788
<211> 1092
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295930_G1, chr8:172021998..172023089, Cluster 5

<400> 788
tgggcagtga aaacgagagg ggtggagcgg cgtgggtggg tgggggagtg gagatgttgt 60

cgtctcctct ctctctctct ctctctctct cctacgcgtc gctccgcttt tgctcccgtc 120

ccttttgcat tgcttgtgta ccgagaagca ggggaggggg ccaaaagcaa aaggttccct 180

tcgcgttcct tgaatctgga aaagcgaggc tcacatgaat caggcgtacg aaatcaaccg 240

tgcacctttc gttcctgcca aaatatatcc aacggttgag agcaatcttt agtacagggg 300

ggaaatggag accactagta gtggcttact tacgaatggc ggtcaagatt ggcacgaggt 360

gagcgggcag ccattcggct ggttcatccc agcgcaccgc cacagcaatt cccttcaggt 420

tggccccact ggccaaaggc tacagtttta acgcaagcgc aagtgcgcaa gccctcctcg 480

ctttggtttc gtttggcagg caggtggtga acgtcgtgtg gtctggtggg acgtcgctcg 540

cgagtcgcac aattcacttt ccggtccagc ctcccctccc ggctcccgcg agcaagcaac 600

catgcccgca atggaagcaa gcgatcccgc gcccggccgc ggaaggtgaa aataagacgt 660

gagcgacgtg gcgagcaagg caacatgagc cgtggaccga cggcccgtgc ccggccggca 720

atggggacgg aggccgctgc actgcacacg ggcacggctg gtttcgtgcg cggggaagac 780

gggcgacgcg gggtcccccc cgcgcccagc ttggagtgga gagagagagg gacggcttcc 840

accgcggcat gtgccgccag gagccgacag ccgagcggtg acacgtggtc ggcacgaatg 900

acaatgattg tgctcggcgt ttgcttaatg atgggctgac gggtggctac gcgatgccca 960

tttcttaaat tctcggtatg acgcgactgt tgtttgtata taacgaaaag attctagact 1020

agttggttca cggggtcaat tttaaattat gccccccccc aggcccccac ccacccatca 1080

gcttttgcat tt 1092

<210> 789
<211> 1136
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295997_G1, chr8:172357994..172359129, Cluster 5

<400> 789
aataataata ataatgtgta ttattggtag tacaaatagt tcattatttt tttaaatttt 60

ttttaaaaaa actgataaaa atattaaata actagattat agtatataag gccacgacac 120

caacatcgga tttgtaggtc tcgcaggcac gcaggcgctg gccaaccaaa tcacgtttcc 180

gcatggcacg caggcagaat cgctccaaaa tctgcctgaa aaggacgcga gtacgtagtg 240

taccgccacg aataataata ataatgtact gtatcgagga cgatgttatt ggcatgcagt 300

cagacgatgc tgggttggtc ttgtcgtcga actgcgctgt cggtctgccg gttcctagct 360

agctagctcc ttttaagcaa tcggtcgatc acgtacagtg cgatcgagat gattaggtgt 420

gtgctgatat agatcaattt taagggactt tggtctaata taaataaaaa aaagttatgg 480

cgacatatat tgacaaattc gtgaggtgct ccatataacg aaaaaccagc acgcccccct 540

ccctctctca cgccaaacac atgctagctt gtgtgtgtca cttgaggatt ttattgttgg 600

ttcgttcgtt cgtttcatgc gcgcgtgact gacgtcgtta gcggcgggtt ccggcaagag 660

atgggtgttg cgcgcgcgaa accgggcaag ccgagtcgag tcggccatgt cacgcaactg 720

tttgtatcat gcgcgcgggc gacagagcgt acgggcgatc tatccctgtg gccccggatc 780

tcgatggcca gcaaattgat taaacgcttg cgtagccgga gcacgggaac acgtgcgaat 840

gctattggct gtgggggcag tgcatgcatt gtcagctggt acggtcagct gctcgatcga 900

ccgatagcga tcgcaaacgc ccgtggtgtg gtgctctgct ccccggccgg ccagttcgtg 960

gatcggtcgg tgcacgcacg cacgcacacg cacggtgttc ggtccgatgg ctccggccgg 1020

tccgtgtgtg ggtcggttta taatggtggc agcaggcagg caggagagca cggcgatctc 1080

atgcatgccg tgtagcctac taactagcta gggtttaggg ctagcggagc caagag 1136

<210> 790
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_296201_G1, chr8:173569408..173570784, Cluster 5

<400> 790
ggagcgaaca acgagataca cccaaaattg agaagttttg gagacaaaaa taagaacggt 60

gagaacaagc gtacaatgac acaaacacaa acgattagta aaagcatcct gacatgcctt 120

gtattttaaa atgtatcaag aggtaagttt aaaaacacat gagacgtatt ttgatgaaga 180

aacgtttgta gtacagttct ctaaatgtag atatagtatc acctatataa tccacataaa 240

atgagctgta tattaagatg ttctagtaag tcacatacaa gacgttgtta ggttgtatga 300

aggccagtgt ttggagaatt gcttgtacgt gccctaatca aacgagtgtt agacatttcg 360

aaatgcttaa tgactcatgc atctcgtgac atgatggtcc catgctgatt tggtcgcacg 420

tgtcatggat gccgcgccgg accatttttt atctgctcgc ttctctgcgc agccacagtg 480

gctgcaggct gcagctgcag ctgcagctgc aagatttgtg caggaagata actgcgccgg 540

aagcggctgc tcccacccac tgggactgcg ccactgcggg ctcacgtgcc gctgcccgca 600

accgccctgc cccgcgtgcg ccacccaccg taccctccca gcgtacgcaa gggccgcgac 660

acaaatagcg gttcctccat cccggacctt gtccatgcac catcactcag aatgtccaga 720

cctgcgcgct tccagcgtac cagcaccgcg cctacagaag atcgcgtgat ccgcgccagg 780

ggtccgcatg tcatgtcacc ggattgaccg tagcgtgtcg acgggtacat gacacttggc 840

ctcgagacaa cgccgctgag cgaccagcta gtacattgca gcagatcaaa cattgtttta 900

ggttatccac acttaggcaa tcctataaat ttttacttaa aaggaatatt atatcttgat 960

cagcaagatt ctctactcta tcccacaatc tttcacaatc atattcatct taaatctcta 1020

ctctatatca actactatat attatattat tttattttca caatcttgcg agcctcacat 1080

ggtgtccact tccggcctca cctcatgtct tatctctgga ctatccaata gcatggaatg 1140

gacggggtaa ataaggtttc caacctcact ctagactttg cagtaccaga tagggtgtgc 1200

ggttgcgaga ctttttact ggatgcgcaa ctacatgtgt gtattgttat ctttatagtt 1260

ctcgcagata gccttatgtc gtagacacaa tgtttatagg ttgaagttta aaataatagg 1320

tgaagataaa caaatggtta gagatagcct aaagacttgt ttcagaacaa gggtaat 1377

<210> 791
<211> 1267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296214_G1, chr8:173616941..173618207, Cluster 5

<400> 791
gactatggag tcaccacgac agtcccgcta attagcgtgc gtaatcctcg gccacgggcg 60

cgcgcgctct tgtgattttg tgaataacag ctgttcgtta gtgacgcgcc agcatttcca 120

gcgagcgcat agatcgttcc gaagcatttt tttaataaga gaaaaactgt caagtttgaa 180

atccaaggaa tgtggttgtt ttactgtact ccttccttgg cgtgttcttt tcagctagct 240

gtttaccgcg tggcactgtg ccctcgtcac tcactcggca gatcttcgtc gtgacctatg 300

cagacgaaca ccgcatgcta caacgaaaaa cattacataa gtgtttctca ctggcctaga 360

tatgccgtca gaaatcgatg aagacaaggg gagcgaacgc gacatgaaac aaaaagtgat 420

ataaatcggg aaaaaaaaac taaaaaaaat tgcaaattga gatgctattg tgatatgcca 480

acttccaacg tcttcttctt ccggcccaag catctgggcc gtgagccgat attggatcac 540

cggatgggca tacgaacgaa gccagtcaaa gcctaaacct tgatctacag ttagaaaaag 600

actcacgtat catactcgtg tctattgggt tgttatacac agaaaataac ccatgcgaaa 660

atcactttag gaacatatta acgctgacca tgtcaccttc acggcttcac cgagattgca 720

cttgcacatc ctcgattggg cgctttgaag aacctacctt agcttcagct tcaaatcaga 780

cacttatctt tcatgacata tagtgcattg tgttcctaca ataacaattc ttcccattat 840

atgttctatg tgtacttttt tgtttgttcg ttaagtaatc ataggatctt cgatggtata 900

atttaagaat tttgctattt ttctatcggc ttattttgtg tgtgtgtggg gtggggggag 960

gggaagggga ctgtaagatt ataggccact agtcagggcc ggccctgagg gtatgcaggg 1020

tatgcgaccg ctcagggccc caagattagt agggcccccg tttgttcaga ttatgtccaa 1080

atacatatat gttatagata aatctctatt ctcgtttctt tgttgtctct ctaattttct 1140

ggaatcatct ctttaaggtc gtgtaacatt ctgcttatga cgaatactaa atattgattg 1200

atgcgggaag gccgtaatgt gttgtacacc tgtgcctgta gcgttgtttt aattatagcc 1260

tactgga 1267

<210> 792
<211> 1337
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296401_G1, chr8:174315047..174316383, Cluster 5

<400> 792
cctagctcac tcccacctcc atcaccaaac tcaaggtgca aacatcatct ccagttccaa 60

ctactctaac tcttcctatt cggctcgtct aattggcaca tggatcggat caaaattgct 120

ttgatggtta tgtttgcacc actttctttg agttgaacgg gtcgattttg taaagaatct 180

gacaacaccg aggctttaga ttcaacttgg ccgatgctag gctattcaaa attgagcctg 240

aacgatgtga agctgttttt ttctcgggga catctattag acttagactt gctaatataa 300

catctaggct tgtctcgaag catattcgtt cactgcatcc tctccttcat tcacaaacgc 360

gcatcgttgc tctcagagat gaagctaggt tatttttaag ggtgcagatg tacctaaaaa 420

tagaaatttt gtagatttag ttaaaatttc atcatataca catctctgga aaaaaatata 480

atggactggt tactctgttt tgtacctcac gcctaacaac actgccatgc atgtgtggct 540

tttgttcacc cgtcacgtgg taggaagtgc aagttacaac gacgatctgg tagtgcaagc 600

aaggtacgtg aaaaactact acctcgccaa cttagtccta ggtcccatta tattagcagc 660

accccaactt gtttgtacaa tgtccactct tgctctgagt tcactcccgg actagaaaag 720

atgcctcgtg atttggttgc ctaagcccta gggaacgagt caacgggtca cacaaaatat 780

gtcatctgaa cctagaaccg ttatgcaaaa cacgcgactt gaaggtccac atggacggga 840

tggggtcgat taacagaaag ttcgatggtc ggtcaacgga atgtgtttca tcctcgacgt 900

cgcaggggtg cactgccggc agctggtttc gttcagtggt gtctccaatc gtgcgcgatc 960

gatgcatcca acttgccaag agcaaatgga tcgaagggac tcaaactcct cctaccggct 1020

accgctcttg tgtctataga gtctctcact aaaactcctc ttaaaactta aaatattcat 1080

actataatct tactatgtat tttatattca tggatgtctt aatataatgc tacttcaaac 1140

tattacatat gtctattgtg agtgatttag tgagattata ttgctctagc gatttaagta 1200

aagaacagac tgccactatc attttgctgg agatacaagt tgatgtatac ttgtgcaaca 1260

tgaagcctta acttctgctc ggtcaatgtt atgtaataaa gaagtgaaga aaagactcgt 1320

tcctattaaa acgcacg 1337

<210> 793
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296657_G1, chr8:175679911..175680946, Cluster 5

<400> 793
tctgttaggt gtgactgcga gggtttttaa aattgatgcc tttagttttg gtggtgtgtt 60

cagctatacc cttagtcgtg tttttgttct gcaaaccagc acaacaccga ggtccctccg 120

atctaaagct aacaccccgg atttcaattt ctcagatcga atctcacccg cacgtttcgt 180

atcggacgac tgagaaccaa atccgaaccg gcacccacgc ttctaatctc gttcgctcat 240

cggcagatca acggatggca tgccttcttc ttcctcccgc gcacaggcca ataggcgcag 300

gtacgacatc catggtggcg ccattactag cgcactaggt ccacgcaatt ccgcccagcc 360

ctcattacta ccgttcctac acgacgcaga ggcataatcg aactgctagg aagagttctc 420

aacagcggag gaggcaatgg agaaactgcc aaactggcca cgacgtgctc gccgaccacc 480

ataacgccag gcgcaccttg agcgatggac ccgcacccga gatgcccaga cggaacaaaa 540

acagaggggg agacactcac cgaaattagt ggtgcaaaga ccctgctcca cgacgagggg 600

tggcgcaaca gctccggttg catgatgtcg aggcggacgg cctgccggtg gagcttgagc 660

agcgaggacg aatcctagcg agcaaccgat tatctctgag tgcagttcac ccgcagcgtc 720

cccaatttcc ccctgctgtc agcgcgcggt gcctcccgcc gagcacggca taagcgctgg 780

gcaagccagc cgcatgtgca cgacgacagc cagggcccga gcggcggcgg ccatggttgg 840

aaacaacgcc ggtgaacttg atgaagagat cgaaacggca atcgaagaag gactccacaa 900

cgtcgtggag gcgctcgtgg acgggcacga acgggagcag gaggtggccg tagccggtgg 960

ccgctaggtg ccgcagagat gtcgatatca ccgaggggcg ttaccccgct gcgccacagc 1020

tctggtgcat gaacac 1036

<210> 794
<211> 1032
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_297224_G1, chr9:2270096..2271127, Cluster 5

<400> 794
attagtttgg ctaagataac aactttaaag gctttgtttg ggagaagggt attggagagg 60

attgatggag ctagaatctc ttactattca attttgaata gtaagagatt atagtccctg 120

caatcccctc catttccctt ggtcccaaac aaaccctaag gaaaactata gcaaatgatc 180

acttccatat atcaattata ttggctctag ttataattgc tagtagtgta agaaatttta 240

tgggctattc actccctcta gctatttagg ttctttcacc aagttgtaag gcaccacatt 300

ctacctctaa acctaacaaa aagtagggat ggacatcatg gactcaaacg acacagcaaa 360

aaaggaaata ggttcactct aacctaaaaa tctaggatgg acaccaaccc atctcttaac 420

gtctcaaaat caacttgatt gaaactacca tctttttgtt ggaatcttgc ttgaaactac 480

catcttgcac aattggaatt taagcaaagg ataaatataa ggctatattt ggaagagttt 540

cacttaaaga atttcagttc tatttcagct tcttccattc aaataggtta aactttacga 600

gctctatctt taaaaaaact gaaacgagag gttagtttca aatccctcaa agggtgctta 660

aaaacaatgt ttttatatct ctcatcaaat tgcaggaaaa ttaaccacca tattacggat 720

ggcggataca cacataacgc ttcacggtcc cttccccgct tctgatcttc ccagtacgaa 780

attggcagca acagctacgt atcgacaaag ctgttgagaa gaaatgccat tggaggaaga 840

tggcgaggac agcgaacagg agatcaccta tcagatggat ccagtgctgc tacagtgagg 900

cgtccccgtc gggcaggcct gcatgccata cctgtaggtc gtcgtggggg agaccatgcg 960

tctacacctg gtggcgcccg tgctgctgcc gcacaaggcc gtggaggatg gggtgaagat 1020

cggtggttac at 1032

<210> 795
<211> 1162
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298732_G1, chr9:8183343..8184504, Cluster 5

<400> 795
ctactggttt tgtaaaccct gcttcacgca tggttggttg atcaaatgtc gctgtggcca 60

tctcgtgtta tttattatta cgttcacact aattgcagct tcgccattac agggaagcgg 120

atcttgccga cattcagtag aggtcttttg agtggtctct aggatgctaa ctgaaaaata 180

gctcttcgtg aagagtttgt ctctacacga ttctccatac ttgttgtctt acaactgcat 240

ttatgattta gtggctcagt attataccat gcaacttttt gttatctttt atacttagaa 300

aaccgttcta tcgtcttagg ggtgtacatg tccttatgac atgtataact ctaagactcc 360

aactcggttt tcaaagtata agagagctta gagactggat gatacaattc taggtctata 420

aattataaat acagtcaaga cacaacatgt attgagagtc gtgtagagat atactcttcg 480

cgaagaatcc gtctctagat ttttttttc acttagcttg ctagagacac tttaataaac 540

ttttcgttta attaggtggt acacgccctt tccacgagtc atcggccgcc ggtagccagc 600

tgacggtacc cggctcccga tgtaacgaca gttttcgaat gcgcgggaca acaccgttcc 660

gacgtttgtg ccctcccagt acctactaga gaacgcatac tgaaaggcac gtttaaattg 720

gggcgagtca aaactagtta gtatagttct ttactacaaa ttaaactggg gggggggggg 780

gggggggca ggctcaggcc tttgactttg ttcctcgaaa tcctgtatac tcaggaattg 840

tttgatcatg tctgctacta ggaaggaatc cttcaagcca tcggactcgg actggatgta 900

ctggagatta aagtaaatgc atgcatggca catgcaaagc cccaagtagt agtaatacat 960

agatcaatgg gcaccaaacc cgtgctgcca tgcgtcgatc gatcgaatgg tccctcaacc 1020

tctagatcca ccgaccgacc ccgcgcacgc tagaagaatc tttaaagaaa ctagcaaaat 1080

gaatcgtcgg tggaaaaaat cttcgtgcta acaaaggaag aagcaaacgt agcagaggag 1140

gttagaaatt catcgattgc tt 1162

<210> 796
<211> 1257
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299596_G1, chr9:11340331..11341587, Cluster 5

<400> 796
ttatttatgt aagaaaattg cattatgaga tgcgttgcgg cgcgggctag acaggcgaca 60

gccatgcgct ttttggttcg tcagcgtttc ggccggcccc tgacacgagg gagtgcccgg 120

tgccacctcg ctttctctag aaccctcgtg ccgccgggcc gagtgcggtc cccggtcaat 180

ccactattcg aatctcaaca agtgaccaaa tgcggaggcc gccgagcgaa ctctccggag 240

gccgtggccg gtgggggtcc aacgaaaata tcatcgtcct tgtcggccga ttcgtgtcag 300

tcgcgtcaag cccggctgcc cgggaaagca cgtaaaccag gagattgttt tcttcacaac 360

gctgcctacc ggcgtcagag cagaggcccc ggcccggcga aaggtggttc gcgtaggcta 420

gtcgtggtct gcctgcaaaa ggccctttta tcgtttccgg cacagttgct ctcctctcct 480

ccctccatcg acttgccgcc ggctttgccc aaacgaggat cgttccagaa aaaggttcgc 540

atcatccaca ggacaactgt taatagtaga tcataccact ggtactctat gatttgattc 600

caatgatgtc gatgggcaat gtattctcgt gcatgcatga tgcgtgtcct actctacccc 660

ccctgtcccg ccgtctgccg acgcgcgcct gttcaatgta cctcgatcta catacacttc 720

tttcttgcaa cttaattaga ataataataa taataggaac cggatatgac cctgtagagt 780

attatcgatc taaacttaat aacgtacatt tgatcaaact attccaacca atccatttga 840

tggttcagct aatgggttta aattctgaat atttatttgg tatccataca ctagactaca 900

cacaaagaat tgtacttaaa gattaagtta aagcaataat aagtcttaaa ttttaaaaat 960

taagtttaaa aatgtccgca aactataata taaaatagaa atagatggaa agccatacgg 1020

taatttataa aaaatgtaga ttaggcatga aaggtaggtt taaccgtctc gtcattttta 1080

taagcctata tccagcaatc tagcatctag tatttaagtg tgagtttata ctatatttaa 1140

agtataagtt atgtcagaac taatctttac tatatttaag tgtgagtttc gtcgtgcgcc 1200

ctcgcactca ctgggggggc ctcgtaggtc atgagtgtta tgtgcctcga ggtcctc 1257

<210> 797
<211> 1022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301766_G1, chr9:23448728..23449749, Cluster 5

<400> 797
aagttcattt agaaagggat ggagggagta cacgtttctt ctgcaagtat tgtgttgata 60

ctggggcaca tctgagccat ccaacatgac attactcttt ttgttctgtc atatactttt 120

gtttacgagt ctatttcgtc tgtgtatcct accattttca gtgatttcaa cttgggatca 180

ggatcatgat actgatgggg cgaattgtca acattgattt gatgtcacaa tattcttgac 240

ttgggtaaat tcggtgcata gattcctcgt gtttttggtt tggatgctca aacttagttg 300

gatgaattgc tcattttgtt ctaaagaacg atttctttt ccacactcat ttaactagat 360

tcaatcgtcc actaatactt ataagtggtt cgctaatgtg tccttacttc tgtggcatga 420

ggcattagtg gtcctaatca cgtcccatgg ccttgatgaa tcttgattga tcagtcaaac 480

ggatacacat gctacatcat agccatgagc acgactgtac tttctggtca tgtgcgtgaa 540

agcttctcta tgcatgtgct attcacatat gagcagacta tttctttctg tgttgttcac 600

atgcatatca atcgattttg ccaagtgcgg aaacattggg agttgggatg acaagttgtt 660

ggagagggtt ttctttcaat cctgccaaaa aaaccaagat tgggagtggg ttctgggaaa 720

tattggagat gctttgattg ggattagtgg ttgttcacat atcttcgcta ctgatggctg 780

gaacatgaat acttctcctg attcgctgca ttggtgatct ccttcccctg cagttgcctc 840

tggaacattt aacttttttg ccatcttctc tccttcaccc ttgccttttc tccccttcct 900

cttctctccg cttgtgctct ctttcatgtt gatcactggg tggcagctgc cgctctatgc 960

aggtgccttg gtcttgttgg gccctttgcc aggtcttaat ccggcacttt gctggcgaca 1020

ga 1022

<210> 798
<211> 1351
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_307919_G1, chr9:64287380..64288730, Cluster 5

<400> 798
aatctcgact tagcgcgttt aatccaattt acataggact aaattatttt attgttgttg 60

ttctcgatat aagttgactc actaactacg acgggtacta tcgttttgga taacaacaac 120

aaaaccaaaa ttgactttgc acacaacccg aaaatgacta gagggaaaaa aagatataca 180

aatcaaaagt attcctagat ctggatcctc cgacaaaaaa agagaaatta gtactagtac 240

aatgcactta ttttgcaaag gcgaagctgg aataaagtgc ccattagacc ttgccatatg 300

aacgccactc ctttccacaa attttcctgt ggctgagtgg acaaaacctt ggccgactga 360

aaatttacgg ggtcattcag gaaaacggct gccgatgctg aaccaggggc tacaaactgt 420

aactaatgca gaggagcaag aaagtttcga aatcacctag aagataatca atcctgtctg 480

tctagatgca tataatagtc gtcttttgtg cctctatgcc gcctagtcaa attgcagcga 540

ggaaaaggtg cagaattaga cctttggtta gtatgtgctt cctgtcgtcc tacgagtcta 600

aaagcagcag ttatccaaag gtctaaaggc agcagctggc gtggcagcct ggtcaaagtt 660

ttcttgtgta gtcacatcct ggattggaat gctcctggta attagtagta acaagcagca 720

tataaaaaaa ataccgcaaa tcaaagtttt ctatcaccag accagaattc cagagctcga 780

cagtttggca acgcgatacc gcgcgaaaga cagtccctgc taaggacacg agatcttgct 840

tttctaatga atcccaactg atggccagtg agatcccttg caatatatgc acatgagacc 900

tttctttgcg aggtaccgtg actcacagac actcaactag tgtttgtcga tccaaactcc 960

aaagagcgct agagaaaggg aggtactagt acacgaacaa cgcgtggatc catttacttt 1020

tgccgcaatc agaaggtgtt atgaaatgaa gctggtgatg attctattta ctttacgaaa 1080

tcaaagtgtg agcgtgcatg tgtgtaggca ggtagggcaa aacagaggca ttattctgaa 1140

gaccactcga acggatggag aggaggctaa agagagcagt ggcaagcatc atggtctgta 1200

aaataataga tgcccttaga agaatcgccg gcagactatt acgcgtttat gtgttggatg 1260

agttggtgta catatataag agcgagagtc ctcgataaat ataacacgga tttaaactaa 1320

attctaatct atcttagaaa ccaaaatatt c 1351

<210> 799
<211> 1071
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31147_G1, chr1:191629336..191630406, Cluster 5

<400> 799
accgcagtta accattgaca ccaagcaaag aactaattga atagaagaaa accgatgtct 60

caccggcaac acacgaaatt gcgacagggt gttaggagag ggagcagatg tggtgtcgac 120

agtccacagg tttgggcatt tcatcgaata ggcggtatgc gaggcacgac ttcgatagct 180

agctgtgagc aacgacgata gttatcgact tggccatttc atcgaaccga gagggtgcag 240

gcaaacgaca cagcaagggg gctcaccggg ggatgacgtc gtggctgggg cctcggcgag 300

gtggccatgg ccggccgaac ggagggtgct ggcgagctgg aggcaagggt gtgaaggggg 360

tgctggaaga cgatcctagg gcacggcttg aggtggaggc cgagcacagc catggatgga 420

gaggagcagg ggcggtcgac actgggggct aggaggagcc aagacggtcg ccgcgagatc 480

agcagggaga gggagtagga aagcggcatg gagaaaagac tctgtggctt tgtcctttgg 540

agaaaatgac gtgaagggat ttggttcctg tgaccaatgc gataaggcta aggagataca 600

gacgcgtgga gagtaaaaga aaaacgggat tcttacacct ttttcttaat ccaaaagcat 660

aaacaaaaat acaattatca gccttgatta gagtacagag aggtgtggat aagactgatg 720

gagaaaaaaa tcaaagatag agagcggtgg agaagataag agaaaaattt agatttttcc 780

ttctccaatc tttaaccaat agaataccca aataagtgaa aaatctggga tttgaatccg 840

ggcgagatgc aaacagaccc atcaaaacaa tataaatttt aatatttttg gactacgcta 900

acactgttag gtatttttcg gatcagacaa attttcatag ttgtagacag tggaacagat 960

taattacgag tactcatttc ggttctagtt atctcggtcc gatttaattt tgcagcactt 1020

ctatcgtgga gttctagtaa tattcacttg ggcaaaaata caagagtgga t 1071

<210> 800
<211> 1293
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_311858_G1, chr9:89033568..89034860, Cluster 5

<220>
<221> modified_base
<222> (1033)..(1033)

<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1033)..(1132)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1074)..(1074)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1076)..(1076)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1077)..(1077)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1078)..(1078)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1079)..(1079)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1080)..(1080)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1081)..(1081)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1082)..(1082)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1083)..(1083)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1084)..(1084)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1085)..(1085)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1086)..(1086)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1087)..(1087)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1088)..(1088)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1089)..(1089)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1090)..(1090)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1091)..(1091)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1092)..(1092)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1093)..(1093)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1094)..(1094)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1095)..(1095)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1102)..(1102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1103)..(1103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1104)..(1104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1105)..(1105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1106)..(1106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1107)..(1107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1108)..(1108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1109)..(1109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1110)..(1110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1111)..(1111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1112)..(1112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1113)..(1113)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1114)..(1114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1115)..(1115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1116)..(1116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1117)..(1117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1118)..(1118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1119)..(1119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1120)..(1120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1121)..(1121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1122)..(1122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1123)..(1123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1124)..(1124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1125)..(1125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1126)..(1126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1127)..(1127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1128)..(1128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1129)..(1129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1130)..(1130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1131)..(1131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1132)..(1132)
<223> a, c, g, or t

<400> 800
taatttgaac ggaactcaag tatatatagt atagaataag aatgcaaatg gtcattatcc 60

cctcccttcc tgtcagcttc ggccgggagc cgggagggag gccgcccgcc acggattctt 120

ttagctccag gcctccagct cactccattg gccagagcgg ccacgaagtc agcgcccgcg 180

cgcgtagagg cccgtgtgtg cggcgccctg tgctgcgcgg gcgctcgtcg cattgctggc 240

ggcgagtttc aagtggcgtg agcgcgtggc ggctgcgggt ggttcctcgg tcgtacggtc 300

cgtatgcacg tacgtacggt acgcgtcatc tgttgctagg aggccggccg tcttggtctt 360

gagtcttgac cgagagagga gaggatcgat ccgggagaag cgagaccggc cggaccggac 420

gagttcgtcg cacgcgcgca tcgccgcgca caggccactg catgctggag tatctaccgc 480

ggtcagccgc ctcgcgcgta cgtacgtgct cctgccgtga cgacgatcga tgtatctaca 540

cggaacgtgg aagctttcac atgcatgcat ctacccttct gacagtaata cattaaaata 600

catacaacat gcatgttaat tactacacat aatcggtatg tttggttgct gcacggtgat 660

atcctggtcc gtacgtgagg aaccatattc tttgtataca ggctagattc atgtacatgt 720

ttgtgtttgg ttgtttgtat tagtgcattt agattaaaca tagctcgtgt ttggttgtct 780

gtatcagaac gtgtattaga taagattgta caaaaaaatc tttaaatatt atacaacatg 840

tgtggtctag ttttgtttaa aaaaataata gaaacacaaa tataaaatca gtcctgtgat 900

taaatattct aattaagaga tatagcaaaa aaaaaacaag ctaaaactct tctcgtttta 960

ccccccttg cacgagctcg gcctgcacgg cgagctacgc gctggcgaac gaatcaagct 1020

ggattcttcc gtnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1080

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnagatctag 1140

agattcgtca gcttgtaggg gttgtaatgt cgccacttac ttgatgctaa caagacattt 1200

ccttcaccaa agccatcttc aacacttcgc ccataaaaaa gatcaattct ctttttcaat 1260

tgcctgtctg caagacaagt gataattgca ata 1293

<210> 801
<211> 1008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313602_G1, chr9:99080430..99081437, Cluster 5

<400> 801
acggttccag gtgatcaaag cctatacaaa ttagataagt attcctggtt ggattgattc 60

taggtcacaa ttccggaaca aacgaacaca ccttaagcct tatatataaa ttaggcaggc 120

aatccttata tataaattag gcaggcaatc cgacttgaaa gttcggtatg gccaatccaa 180

tccccgtgaa cgcgaacagg cccttgaggc tcagataaaa ttagaggatt ctgtcacgtg 240

aaaatgaact aacgatcttc acacagtttc gattcagatc gagacgcgtt attgttaatg 300

acggtggggt ggatgtgatt gtccaacaac tgtcctggct tggtccatgc accaaatttt 360

agcgaaaaaa cccgtaatcg cccatcaccg gtcaccgcca cagctccatc catccaagta 420

tcaagtaccc gctgcttgca gttgccgggt ggaagggata agctaaggta ctgtagggaa 480

gcaacccagt ttttaataaa ccagttttta ttttttagt tagaagagac tagtttctta 540

tttttaaaaa actatgaatt caatttctat aaactgagac ataaataagt atgtttgaaa 600

ccaacttagt ttttataaac tagtttttt taaaactgag tggtttcaaa caggtcctaa 660

gcaacatcta tgcaatgaac ggcagcaact ccccttttcc aaaaagctag ttaatgaaaa 720

gctggtggct ttcgtttcat taacagcaac taacgaacat gatgacatgc ttcagcgagc 780

gtgctagaac gacggcgatc ggagcgagcg agctgtactt ccattgcgtt ctaagagttc 840

ggtaacatgt cacacgctgt gattaatcgc tgtgcagcag gcagagtacg gagaggctta 900

aattcggacc tgctcacttc aactgcacac gcctactcct ccactcccaa accagtggcc 960

gaggaaaaac agagagtgag cagctccctt cacctgctta cacgcagc 1008

<210> 802
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313639_G1, chr9:99284894..99286030, Cluster 5

<400> 802
gctctacgcc ctaaggtggc aaaatacgac aagaaacgat gacaagtgtt tcatctatgt 60

ttgacatgac ttgccaccaa atattccaca cctacacact acacatagga atagatcttt 120

ttttcttcca ctagcacact gtactggcat aggccaggaa tccctgctgg gatatcattt 180

atgttacgtt taagggctag tttgagaaac tagtttttcc aatatggttg ccaaactttt 240

taagacctgg gaaccgggac aaggggggcaa gttcaccgcg tggggctgtg gaaacatgtc 300

gcgggcggct gcgttgcgca ggtccggtgg tgccgcggcg gcagcacgca ccgacgcgat 360

ggcgagagct cgtgtttgcc ccacaacact cgcagacggt acacttgcat gtgtagtttt 420

caacagaatg gatgcactgt gcgcggcagg aggccgtggg cacctgcgca tgtcgtcgtc 480

gtcgtcgtct ctgtctctct tgccgggcag catccgttcc cgggaaaatt agccggatcg 540

gcgcgcgggg ggctctacta gatagctacc ggccgataga tgcagcgtcg ccgtcgcgcg 600

ggccgtgccc tactacctgt cgagctagct agctcgcgtc ctgtgcgacc gagcggtgcc 660

tgccttgtta accttgtcct cactcgcaca gctgggcgtg gacaaaccgt acgtacgtat 720

gctgttttcc ggggcctaaa tgtctatgct atatgctcgg tgcatactca cacatcccat 780

attcccatat gggctaaaat tcagcaagca gagtggcaac ttggcagctt ttgatgcatg 840

ggcgattcca ttcattttga tggttgttga cttgaaagtt tggatgctaa cttcgtagtg 900

tatcttcttg atcccactat ttgctgttga gcctgacata tcgcatccgt aaacacatgg 960

catcgatcga cgatccatat ctctactact aattaagcac ctaatgtaga cgttcacagc 1020

caaccgtggt gcacggttct gccgcatcca gagcgtccaa tccgcatcca acgcccctgc 1080

cgcgctcgtc ccagcgttcc cgcagccccg cgccccggca gcccctgcag ccccgcg 1137

<210> 803
<211> 1322
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315575_G1, chr9:109599457..109600778, Cluster 5

<400> 803
tttcaaaaat tttgaccact cgtcttattt aaaatattta tttaaaaatg taaaatttta 60

agtcgagcac aaactacctt caactacctt catggataaa acaaacaaaa aaatgacaaa 120

tcattatttt taaataagac aagtgattaa agtttttttt ttaaaaaaga tcaatgatgt 180

tatatattta tgaatgaagt gagtattaca ctccatgagt catctgaaat agcaggcgac 240

tgaaaggtgt tctaagaaac ctcggacgag gctgcatgtg cgggccgtgg cgcagctaat 300

tctaacacag caccagaaaa caatccctat cgagatcgag cgccgagagc gggtataggc 360

ctcagctcca ccacctgccg cgtgccaact gccaacctag cctcgcgatg tgggagctac 420

accccgaccg cgagacccca cgccgttgcg aaacattcca gccgtgagct gcacgccgcc 480

gtcgtccaaa aagcggcgac cgatccatcc catgcacgaa ttgacgccgt cggtgccgag 540

aactggaact cctccggaag cttggcttcc acgctgaaag cgcaccaccg gttgacgtgc 600

tccgaagaaa agagatcgag caagaggccg ccgtctcttg tctgacggcc agctttaggc 660

ttctatatcc atctcttccc tcacgtcgtc tcgggtgaaa aaggcagtac agaaccacac 720

gcgtatatgt tcaactttgc attggatcga ggatcgatcg cgcatatgag cgagctgcaa 780

cttcatctgc tgctttgctt attaattaat cataaataaa taaccgcagg ccaatgcaag 840

ctagctaggg gggccatatg aatatataga ctaataactt agcacagaag cagaaggtct 900

actatatatc actgatgagt tctttagtaa aggcagacga gattatattg acaaacaact 960

caagtgtgtt cacacaataa tagtaaatat ataacctggc catatcaaat atcctgaaag 1020

atttgcattg gctgcatcat cattacatgc tgcatcatca ttatatgtgt atgcgcattg 1080

ctatattatt ggatgatcca aatgggccaa ttaatggctg gacgacgcat atgatatgaa 1140

ctttgtggtc tgaatcattt cgtgtaaaag aggaagcctc gatctcatgt gcttgtttca 1200

agaagaaaaa taaaactaac tagggcctat ctagaacata tgtactccat ccgagtcaag 1260

aaataattga cgtttttttt gttttaattt tacgctcttt aatcatagtt tttctattaa 1320

aa 1322

<210> 804
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319894_G1, chr9:133094236..133095318, Cluster 5

<400> 804
cttcagggaa ggacatgatg aatgtgtata acaccggtaa tattttgtaa aacaaatcgg 60

catatatatc gtggacctct gggtgaccat gggggtgggt gtgggttctt tccagcttct 120

ctgcctactt gagctactca gactccgata tagagtagtc cgcaaagcgg cggcctgcta 180

ccccaggaaa ttagacgttc ggaaaaggct cgatcccaca acaacctgca cagtagcaaa 240

ctatagtgat gtttattgtt gttttatatt gttttttaa ctcttgtgac agtatattta 300

agaacaatcg tcgtaccgga agacgacagt gctagtctcc tggttctcgg aatgatttca 360

ggcaactcct accaaagcat gtacagaagc tagtacagtg ctgcagcctg tgtgccgtca 420

cgccaagcca agccaggaga cctcacatcg catcgcatcg catctaccag tactgtacag 480

tttagtggag taaaattcat cgagccggcg gagtacaatt ctgaaccaaa gtgcagtggc 540

ggacgcacgc atgcatgcat atgcatgagt gatgccagcg ggcatcggga tcagcggact 600

tgagagagta ctcgcgtagt agcaggacgg tggtagtacg ggtaggaaac aaacgccact 660

gaccgtagca gtgtaacttt ggatggatgg atgaatatga tcccacggat ccccatggcg 720

agaagagaga gaacgcatgg gcgcccgcac aaccgccagc gccggcgcgt cgacccaggt 780

cgaagcggac gcgagacggg acgggacggg acgggaggca ggtcggcgaa aagctacgtg 840

cggatcggac aaggtcggtt gagcagcgag cggaagcggc acggaaacgg caggtcccgg 900

gtggcgacag ccgtgacgcc gtgccctgcc accggcggac ccgtcccgcg cgcgcagtcc 960

ccgcgtcgtc gcctcccgat cccgggcaca gcatttctgg gccagcctgc ctgtcgctta 1020

gcgtggagcg agcatagcac ggcctggcgc gaccgaccca ggaggccaac ccgcatgaac 1080

acg 1083

<210> 805
<211> 1315
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319895_G1, chr9:133095352..133096666, Cluster 5

<400> 805
tcgcgctctc gcggctgtgg cctgtgggct ctgcgtccag cgacccttt tcccttcgg 60

ttttgtgtcc gctcgtcttt ctccttcact tttcgcggtg agacgtccgc gtggacggca 120

gtggcggaat gatgggtcgc gccgcgcgcc agccgagagg atctctttcg atcgatgcct 180

tcgccgcgtt acactgctgc tgcctgcctg caggaactga cacttccgcc tgctactgcc 240

actgccactg ccagggcggc aagggtatca cgtccactcc acaccacgtc agccctagtc 300

actctcaagg tggggactac gtagcttccg tttcctctgt gcttggaatc ggtttttgga 360

ttctctggat ttaatacgac tttactacaa ctatttatct cggttctaga agcaatacgc 420

ctctagatat actactacta ttattattat tttgacaaac tttataaaaa taatatcaaa 480

tatatatacc gagacagaag agactaaggt cctgtttcgg catggtaaag tgtgaaaagt 540

aaggtagaca tccaaacacg cctaaggttc acattctaag acctagatgt tgcaatgatt 600

ttttcttttg gatgggggaa cccaatatag gctacaagtt tttggactca attttccaca 660

atcttatggt ctataagccg cgctcaaatc catagttaaa agtttaagta acatgttggg 720

gaaacacaga agagatactg tttgcaggga cccatgaccc atcactatca ctaaataata 780

aggtcaaggc aaaaccaatc tgtgggaccc cacctgttcc ctcctgactc ctgtcttcta 840

acaccacatg tgatttggac tctctttagg gtggcagata ctgataggag catctagcca 900

tctaccctaa aagaatgtga gtgggggggtc ctcactttct ttaacatgca aggtgaaagc 960

agggccacat atcgctatat tttctttgtt ggattcatgt taaattatac agttaatttg 1020

agcattctta aactaaacca ctatatctat ataccgattt tcgtggacaa atacatgaaa 1080

gttggatact attttgaagt aaccatatat gcaacataat ttctgtcttc cggccggtga 1140

caaggacagt taattgctgg tctgtgtgtt gtggttgatc taaaataaat tgaatcatat 1200

atctgtcgtt gattgtcggc aaataaataa tggtcatgtt atctctattc gtggcctatt 1260

cttcatcggc tggagttccg gatatatata tggttgtgtg gcaaaatcgt aacca 1315

<210> 806
<211> 1200
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320545_G1, chr9:135885243..135886442, Cluster 5

<400> 806
ttgccacaaa gccttgtcaa ttatgaaagg aataagatgg aaaatgattg gttgcatcat 60

ataatggtat gttgtataga gcaatatata tttgcaagtt attcaaagtg atgatatttt 120

acaacatttt tcaagaattg aagagccgga ttggaaagga acctccaaaa agttcaactg 180

gcagattttg tgctcaacta ccatttttg cattcactgt ttatattgtc acattgtatc 240

tctcatttat tgcaaatgtt taactcgcaa tgtgtaggtt caaattcacg ttctaatgtt 300

gacgacacta ttagaggcga ggaagaaacc gatcaccttt acctaggtac ttttatcttt 360

ttatcaagta tattgtattt ttataggtgt tgaattcaga taaatatcat tttagtctat 420

atttatggta tattatggtt ttagtggtat atttagctgt ataatatgtt tgagatattt 480

ttaaagtgat ctttaaattt tatatagtga tatataggga caattttacg gaggtccgcc 540

actggctatg acacagctgg tcagctgcct aacagtgttg gcaggtggag tggagctcgt 600

cctcgtgttc ccacccgaga cccgacccca tgcgttggca tgcatgtttg cgcaagcagt 660

gtagctgtaa ggattttgga tggacgcacc tcagaaggcc acaagtctgg taagcaggct 720

cgcgcacgac gacgacgatc tccatctgtc tccacatgca gcaggacgct acagtgcgtg 780

caacagcagc agaggtttgt tcatgccaaa gccagcaaac tacaaaaagg ccgttgctag 840

cttggcttac attcacatgc tggttcttgg tagtagtttt aatttgctcg gagaaaatta 900

atcaaagagt ctgggtagca gaggttaaaa gtctgcagtc catcaacaag cacgcacagt 960

gactgatcga ctattcgacg ctagctctgc tagctggctt cctgtgatat atctcactgc 1020

acctatatag gctgcggcgt caatcagctc gcaacacgta gacgtgtgcc aacctgcctg 1080

atctcgacaa gttcgacgat gggtccatga tcttgtcccc ttccttttg ttgccaccac 1140

gtccctggat ccttaaacct cactttcaac tgtaaagctg gttccatgat actgctgggt 1200

<210> 807
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322654_G1, chr9:146765168..146766191, Cluster 5

<400> 807
ttgtgttttt gactgacctg acatgtgtgt tccacatgtc atatctatct cctctctata 60

tctactattg tcaagaacgg aaaaacataa tcacattttc tattcggcaa cctttgtttg 120

tcgcttcccc cacggcccac gtaaaaaaca tgtacataaa aaagcatcgc aatcccctct 180

ccaagtccgc agctccaaca aaaagaagaa aaagtcacac cttttcgcat ggcactctac 240

cccctctaag gctgaaaacc gtaaccaaac atctcgtaat cgaggtctcg taaatgtatc 300

atttctgtaa agacaatatc attccaaaaa ttactatatt taaaatttga attttaaata 360

tctattaaca atgtatcgat cgagtcccaa aaaagtagat taattatgaa accaggtaaa 420

tttccgacca accagcaatt gttttcgtat agacaatatc gtttttgatc atttttagcc 480

ctctccatcc actccactct atcacttggc ccccatccca cccaatgtcg atcggtatac 540

cacatcaacg gtgagttagg tctttgttca aatccaaatg agactaaaaa ccagttggag 600

ggacctatat attctatcta gtttgtggat tgaggtgaca ctggcggcta acgttaggga 660

ctgctaatga tcctcttgga agtttgtgga taggatgacc ctgctggcca agtctaagga 720

tctactttgg agttggtgga gtaggatggc atcatgggcc aacttttgag attgataata 780

aattttactc tctcccaaat gtatggatga aacacccaaa acccataggt ttttgttggt 840

cgaaccagga cctttgtgtg atctcctagc cactagatgc atagaataca actaattaca 900

actttaggat ttacagaaga cactattagg gtgatggacc tcaacacaga gacgatgaga 960

tagcagcgat ggccttttcc ttcactaact aagttatata gtagatcaaa tctctcgagt 1020

atgt 1024

<210> 808
<211> 1228
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323087_G1, chr9:148903423..148904650, Cluster 5

<400> 808
tgtacagatg gtatccgaac tcctgtacaa ttggagcgtg ggaatcgaag aatatatata 60

tggccgcctc gtaaacgaca tggagcctgc aagcttcttc gtgttcacga gacacggcac 120

gtagccgacg cggccttggt gtcggtacgg ctgctgcatg gcccgtcctg gatcggtcgg 180

tcaggactca ggacactgga cacgggctca cgtgtgggaa ggggccgcgc gcaacctcca 240

aagcaagccc atatgtctgc atcggcccgg ccgtggatat gacaagctcc catctcatgc 300

atgccacgtc gccaggggcg ggctacgcta cgcggaccag ccggatgctc gggcagggtc 360

gcagtgattc gtactccggc gggaaaggac aaattatatg cctctgcaac aatccccgag 420

ccgagtgctt aaccctgcca ttcaaaaagt atccaaaata aaaaaactct gatcgagctg 480

gcaagaagat ttccaaagcc aaggtcttgt ctgcgataca gactgtacgg cgttgccctc 540

gttacgggct ggctgacaaa ggtggtagcc ggccgtctgt cacggtcacg gtcacggtca 600

ttcatcgtca caagagcctc catcgacgcc tcttgcttgg ttcgagccat cgcaacaaga 660

acaagagagc tctacggaca atatcagctg acacacaaat cccccaacac catccgagaa 720

aggcccaact ctgtattgct gtgcatgtgg tctttaggcc catgttgtag ttgggccata 780

aaccggggag ccctagtccc caaagttgga aggcccatac catgttacta tcggatcgaa 840

aggctcaatc ccaatccata ctgaaaaggc cttgtgtgac tggcaattgt agttggcctg 900

aaagattgtc gtagacccgg agagtaattt ccctgcaggc ggcgccgata gtcctcgtcg 960

acacgtacat cgctttccca cacgttaata tattgccgca gtaaagtaca cgaacagtac 1020

cttttggatc acttcacatc atatacataa atgcaatcag tgtattgttg tgcatttgtt 1080

ctttaggccc atgttatagt tgggccagaa accggggagc cctagtccaa gtttggaagg 1140

cccataccgt ggtactatcg gatcgaaagg ctgaatccat actgaaaagg ccttgtgtga 1200

ctggcaattg tagttggcct gaaagatt 1228

<210> 809
<211> 1107
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325689_G1, chr10:6391768..6392874, Cluster 5

<400> 809
tggcaaagaa tctctaataa tgtttatgag gaacccacgg ttgaagagca acattagcaa 60

tggcatctga gagaatgatg aagtcagcaa tgacctccca cgtcaccact cctcttaaat 120

caccaagtca cgaagagcta caaagagcat cagccattgt ccttctcttg accagtcttt 180

tgggaaccaa actaaaaact tgaggagcca agtctgcaat cctctgaccc atgagccatc 240

tgtcatgcca aaaaagagtg gactgtccat cacccatcat aaaagccatt gccaaatagc 300

acaagctatc caaaaactga tttgtctaat gttgttaatg agtgcttgca ttgttatttc 360

cttctctaaa ttaatctcaa tgacaccaat atgttttagg attatctttc tttcatcgtc 420

ctcctctctt ttacgcatgg tattacaata actattttgc ctatgaatta gattagtggg 480

agaagatcgg ggacttagcg ctaaataatg ttttttctcc ttttatctat aatttttatt 540

cttattatta gacttctacc tttccattgt atcgctaaac aagtatagat tgtgttatta 600

actatactac tgccaacaca cacacacaca caatatgcgt gcacacgcgc gtgcatttcg 660

tacgtgatat atcattatcg tccgttttgt caaaacacta gaccctctcc agtctcccct 720

atccaaatcc tggctctgcc tctgaatctc tgaagaacaa gacttgcacc tgctagtctc 780

aactactctg cttcgtgata cgatgcacgc acgcgatcga agtggagtgc atgctcgcgt 840

tacgcaggca aggcgagcag cgatactgcg agggtttgcc atatgcaaca cacaaaatgt 900

cccagcaaaa tatttttttt gtaggtaatg gaaacaagag ttcccggctt gtcccagtaa 960

aatatttggt acaacataat tcaaaacgta aggcaaaatg ggggaagaag acggtcctgc 1020

ttagtccaaa actgcctaag cctaagttga gtgtcccaaa gctggccaga ccagcttgtc 1080

ctttatcagt gtgtagtgtg tttggat 1107

<210> 810
<211> 1097
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326876_G1, chr10:12363214..12364310, Cluster 5

<400> 810
cgaatcgggc ctcaaaccaa ccattgattg acattgtcta tggttaaatt aaccatatat 60

gtgaacgcat ggcccaaatg tgttcagtga tcctgaaccc cccactcgcc cggtgcgagt 120

cgcggcatcg gggagccttc ataccccccc tgcgctgcac cgacgaagtg aagattgtcc 180

gccgtggggg ctcacctcct catggacgaa ggccataaag ggtaaccata ccaacattgg 240

ggatgccgta ccccccctacg ctgcaccgac gaagcgaaga ctatccgtcg cgggggctca 300

ccggctcgtg gacgaaggcc atagagggta accatgccag cgtcagggac gcactaccca 360

ctcctccttc actcaaagtt atcccggtgg ggctatgcaa aggcccctga tctcaggacc 420

agtgatggcg aagttaaact gaagccgaag gcgccaagat ttcgacccac agatcgaagt 480

ccctagaacg atcacaacgt gggacaaagt ctgtgtgacg aagaggactc gctcatcggg 540

cccacatgct agggtctcat gcaggtaaga atcctagtgt agttaggcat aaacctatac 600

aatgtaatta ccgcgctgga cgacatattt caggaatgta gccgttaatt aggggcatga 660

tcatatttag atctccgtcc cctgttagcc atataaatac catcgtccta tagccagacg 720

agatacttgt tgtgtcacca acatcacctt ctttcaagtg tggtccacat gtcgggatct 780

agggacacat gaacaattta tattgatagc tctcggagtc tagaaatact tagagatatt 840

taggccctat ttgggatagc tacagctcta ggaaatttgg tggagttggt ggagcaggtc 900

attaggtgtt ttagaaaacc gtagagctgg agctgtaagt ctttagaaga catttagata 960

agtcattttg tttattattt agattaaaaa tattttcaca actaattaaa ttgatatgat 1020

aaactacagt tccacactgg agctggaacc tagagccatc tcaaacaccc ccttagtctc 1080

agttatctac actcaat 1097

<210> 811
<211> 1053
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338132_G1, chr10:82855822..82856874, Cluster 5

<400> 811
acctggatgt acggttctta aaaggtttta ttaagttgca ctgcacccca ccgtgcagtg 60

ggaaacacga tcatcacgtg cgtcacgacg tcgtgtgcag atgcttaatc agtttatttt 120

ccggcccccc accagatcga cagcagtgca gtttcttcat tctttaccct attgcttgtc 180

gacttggtgt ccttagaatg atccctcact ttctcatgga tttgtcgcat tttgtgtgcc 240

caaagaaatg tttggacgac aatcaccaca tgaaaataaa ccatgcgaat ctccagaata 300

attttaaggc gtcgccggcc ggattatttg aaaagggcgc gcagtccggc cgtcatcaca 360

tgcatgaaga acgcaattca cgaacaatgg catcttaatt aagtttgacg ggccaatgac 420

gatagttttc aaaaagaaag gcatggtgtt ctttaatttt tcataggatt tgcattgcat 480

tggcaagaga gtgtaaaccg taaatctggt gggtctagca tgcatgcacg cacatacgta 540

cgcatttgaa cgacgtatat atagcagtat acgtacgtat gtagaccacg tacgtgctgc 600

aacgtggttg gttgcccaag catgcatgca tgcaatgcgc ttgcatgcac agccgagcat 660

gcaacgtggt tgattgcgtg ccaaggcgac ctcgccaacg acgttggtga aacgactacg 720

ggagggacgg agtggttcac atgcgattct ccccgtcccg aaactgaaag cgatcgatct 780

acgtacgtgt gcgttgctat aataacttga gagcaaaaga gagatcgagt agttcagttc 840

gcacgggttt ttgttacgtc cacatgaatc aactggaaat catttgtagc tagttttgtt 900

agtagtacgt gtttgaattc gctagggcgg catccatcgt atcatcgaca cctccggttc 960

acgtacgtgc gcgtgtgctt cacaagtcct actttaattt gcttcgtgat gcagctagca 1020

gacgtacgtg ttcttacaac ctcttttatt tta 1053

<210> 812
<211> 1032
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338573_G1, chr10:85332751..85333782, Cluster 5

<400> 812
aaatacgtca tcggccagag cttgggtcga cggatttaat tttaagtatg tcggccatag 60

cctgtccgac gttcttattt gttttaatgc catgtgactc gcccacggag ctctggccaa 120

gcgccacgtt gcccggagtt aagaacgtcg ggttttccct aactgacgtt cttatattaa 180

gaacgtgggg taggatgaat tttgggctct ttcaacaaaa gaaactaacg atgtaattga 240

gacaaaacca ggtatacata tatagttcaa ttagctatat acagagaagc ttttttgag 300

acaaagatat acatgtagaa gtcgtaaatg ccctctctgt agctagtgga atatatacac 360

atataaattg catgccgtag atatatatta cactccgaac attcaacata tagaacgcgt 420

ttccgttagt gcaggcacac gactttcaat ttggctgagc tgcaagagga attgcaattg 480

cagatgcatc ccaaaaaggt gaagcgaagc ggcacgccgc ctgcagtggt gagtagtctc 540

cttcacaaat cacagcccac taccaacagt gcatgcagtg tgtgtgtacg tacacgtact 600

actactacta ctcgccacac atgttttaac aataccgtcg tcgccgtgaa tcgactagct 660

agctaggtac tgtacttgtg tcgtttgacg ttcgtctcgt tgatgagtaa cccatcgatg 720

tgtcagcagg atgatggtgc aatggagcta gctagcagat tggagccggc cgcggcgtga 780

tgacgtgccc atatgcatgc atgcttgacg acgagacgat agatctagag gacgacaaat 840

gtccatgctt tagggcgttg aaattcgttt ggagtgtgag agtttccaat ccagatgtca 900

ctcggagttt aattacaacg aggcgtccgc aacgccatcg cggccgccca cggcgccaat 960

cggcgaaggt gaggcacgaa ggctcagaat tttggaggcg acagcgagat gccgggagcc 1020

tacgggttac gg 1032

<210> 813
<211> 1103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338640_G1, chr10:85708371..85709473, Cluster 5

<400> 813
ggaggtcggg cgggcggggt tagggacggt ttacggcggc gatgaatacg gagatcgggc 60

tgtcggggtt ggcgggcggt ttgcggggtt ttcctggagc gggggcggtc tacataccgc 120

tcttaattgt tagtacagat ttgtagtcta ggtgtcgctc cacctgcttc cccaccttgt 180

ggcaacacac gggcatatac ctagtattgg ttgaacagct atcctggcct ggtttcaaaa 240

tgcattcact gccggtttct aaattgactt tcgtcgccga atttggaagc ggcaatgtgt 300

atttgattct gatagtgctg acgtttcatt accggctact cgactgaaag cgatactaca 360

cattcttatt ttttgaaaaa aaacaaaatc taaacctggg ccagccatcg ccacaccggg 420

ccgccagccc gccacccctc gcaccctcgg gagctctgtc gcacaaggcg taggcctttt 480

ctttcgggct ccgctcccgc acgtacgtgg gctggaccaa tccgtatagt ttcgctccag 540

ccgctcctgt gcaaaagaag tgaagagaaa tactagtatc acacaagcca gagagtcgtt 600

atccatcact atgccatata aaccttgttt aagtcatgca tgaaaattta tgttaataac 660

tcgtatcaga gaccattgaa atcaaagaaa aagatatccc actctaacaa gaataacatt 720

ccacaccaaa atataacatt agccatctca taaaatatag aaaaaagcca acacaataga 780

gaaaactaag taaaaacaaa acaaagaatg taataaaaac cagtaaccaa agtaaaataa 840

atataaaaaa caaatatacc atagaatacc tgaacacact aatatgcatc atagaacatc 900

acatacatac taattgacca tcgtacgtac gtatatatgg aatatacaaa ataaacaata 960

caaggtggaa aatacaaata actatttaca gtaaaataaa gaagtaggaa aaacataaat 1020

accaaatgct acataaacat cataaattat cacatgtatg ctacatgaac cttacaaaat 1080

catttgacct acacgacatt ata 1103

<210> 814
<211> 1241
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_342099_G1, chr10:105282122..105283362, Cluster 5

<400> 814
ttaagacaat cggcagttca tcttcataca ttagagcttg acatagtagc taataggtgt 60

ccagtactta cctaatattc tattcctagt gtatatatat taaggtagtt caatattttt 120

ttaaaaaaaa tatgggaaga gtacaacctt gctggagtat tttacacaat cagtgattta 180

ccaggaactc gtataagagc tagtcatagt tttttgtttt gtttgtatta gtgggtaaaa 240

tataaagttc attagtgttt ttatataaag tttgactgcg tgcgtattcg aaaacatgtg 300

cgccctttgt tctagaaagg tgtcattctc atctttcgta aggctgaata tttaaacttt 360

gatcaatcaa atatgttttg acgcataatt aatattatta gggaaaacac ttaatctatt 420

tttatagtaa atttccaaag atttaaataa taataatatt tttttgttta taaacatagt 480

taagtttgta aaagttcact caacatccgt cctacaacgt gttattggga acagagtcat 540

gaaatcaggc tcgctctatt actaataacg atgtaataaa aaaataaaat atatttttat 600

acggaatggc gtaccagtaa tgaaatcacg gccgctatat aattattact cctaccaata 660

acatactaaa aaataaaata aaataaaata aaataaaata aaataaaata gaggcaggaa 720

aggaggtttt gccagatgcg cgggcacggc gtggtctttt cctgcgcgca tgcggccaaa 780

gcggggaaga ggaaagccaa aaggaggccg tctcctccaa aagggccggc cggcgaccgg 840

cggagactga gaagaaggag ccgacccgag gacgtcctcc ggcaaaagga aaggctgctg 900

atggaaagcg aaagaaagcg agtgttcctt tgtccctctc gccgccgtcg cgtccgcttt 960

cctgcgcgca tcggaaccag cgatattctg ccctttccct cggttcccgt cgcgtcgcgt 1020

gcgtcgtgtc cgtgcgatgc gtgtcactca tcgtgtcctc tctctctcct ccctcgcgca 1080

gtaatgctag ggactagcca gcacatcatc tgcaggtaag cagtgcttca ttgtcttatg 1140

tggcagagct caaagtttcc caaacgcttg ttacgcctcc ctatcaacaa agcaaaaaca 1200

tttttaatta tatagaaaag ttttctatcc atctatttgc a 1241

<210> 815
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34275_G1, chr1:208771362..208772394, Cluster 5

<400> 815
tagattatat atatgaagta atgccacata tgcctaaaac acaagtggtt taggacatag 60

tatgcataat attctatgcc ctctttagct gatgattgat tggtgtatgc aaatcataag 120

agattacaaa ctcctaaacc agtgaggaca agcgcctcct ggatgagaag tgagttgcgg 180

caaactagac taccaacttt tggcttgtgt ggggtcataa aaggagtctg cattggcttc 240

gcttaaatgc ttctccaccc atccatttta tagtccaagg aagtggttaa gcttacatgt 300

atgctctact tgtgggcact atttgtcatt gaatcaactg cccctatctt gttacagcca 360

tatgtaatag cagctcgtct cccttgtaat catacaacat gtgttgttgt cgcaggtgca 420

atcatatcta ctaatctgac cttatgggga cttatctaga acgagaattg gtgccttaat 480

tgccctagta agctataatg agtgcttagc atggattctt gtacctttg ttacatgaat 540

gtaccactgt actacctatt catggctaat tggattttcc attgcctgga agccattgtg 600

attgcctgac tagatatttt tgtaaatgcg atagcatgct tacacaaagg cattaggtgc 660

acctgacctt gagtgtgtgt gagaataaag gcatgtccat aatgccatgt ctcatttta 720

atgtgataca tagtttcact tatagtcatc ctttcctaag atgactgcca tactggctac 780

aaatgaagat atgataactt gcatctatcg atgttttggc ctaggccatc tagcttaatg 840

taattggtag acaatgtatc cctaaaactt tattctattt tatggcacac tctatgtgtg 900

tacacatccc tacaggacta atacacatac tgcatggtga ttttgagtgt cctacagtct 960

aagtcgtgta cttggtgtta gcatacttgt ctaggcttgt aatgtcaccc atcatacatt 1020

taatgtgttg tac 1033

<210> 816
<211> 1029
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344413_G1, chr10:117716754..117717782, Cluster 5

<400> 816
ctgtgtctag cctacaagtt ttttcgcttt aaagttgtgt gagctgaaag aaagaggaaa 60

gagtacctaa gatcgatagg aataggaggc atcagggaaa cacaagcaaa tttctacctt 120

caatgctaga ggagaaaatg aacgtgccgc tttcctctac gttcctatat tcccactgtc 180

tttagtgaat ctcttcctct tgcattgcct cacgctcaat cctgaagctg aacaacttcc 240

acaatcacaa acactaagca tgtagcacta ctctgacgag cctagactgt gaagaaccat 300

atgaggacac ccaatgtagg atggtggtat ccaagtcttt gaccccatgc ccatataatt 360

cgcgaaaagg taaagaaaaa ggagtagtgt tgtttgttcg atctcttaat ctaaaaaata 420

aaatatatgt ttacgattgt aggaaagcaa tatctgagta attaaagcaa cgagaacatg 480

ccatgaagtg tcatttttct atagtgattc tttttctcga acacgcaagg tggcgtcatg 540

aatcaaggaa ataaaaaaat tgattacata aagcacttaa atgcgaaaac aaaaaattac 600

agattctgaa aacaatacaa cgtaccacag gatacatttt tctaggactt cagaagaagg 660

acaaatcctc gcaccactgc cctgcaccag agttcagcct cgtcgaacga accggataaa 720

gcttgccaat tatattaaga aagaagaaac ctaaactgga caacataata taggatgcat 780

aaataattga gacaacagca aaaaccacat acacaatacc tatcctaagt catcgttgtc 840

gagcctaaca caagtgacga gcagctttga cttttcaaga cggacaacac atgaccaaca 900

gaaaccacga cgatggctat aaacaccggc gcaggagaag gaagactatg gcacgccgtc 960

gttgccaagc cacaagacac cccactcgag gcagctctga ttcttcacca gcaagacttc 1020

caaaacatt 1029

<210> 817
<211> 1305
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344416_G1, chr10:117726048..117727352, Cluster 5

<400> 817
atccgattca actcccagcg tcatggcaag agtagaaggt tttgttgccc ttttgggaaa 60

tactgaactt acatcatatg actgtcccgt acaatggtaa gtgatcatta gaaactaagt 120

acataagttt ttttagaata aaaagagaat cagaaataat taaatccgga aaaccttgac 180

gaggtcttga ctcttgtccc ttcaatatgc tggtgcgtac tttacaagta cactggtaca 240

atgtccgcat actgcgacga cacacaaatt attcgataaa atgttactaa aacttcagag 300

tcaaatatat gtccattttc atcagagagc cattgttttg tgcgctagtt cattttctag 360

taatcaatac aatgattata tttcagatga tgatgtcaag gagaaacgaa gaaatattaa 420

gataaggcat atgtgtttaa acatgtcagt atacatacat tgatgttcta ctaaatgaaa 480

ttctcagata ttgaaaaata ttatttttaa tgtaactgtc ctatacatga ttcagattct 540

agggcgatgc gggtggtgat ctcgtcgacc aaccagcgga ggagtccatc gtcgaggagg 600

cggtctcgcg cctgctgcat ccgctagagc catcttctta cgcccaactt cagagattga 660

cgacatggct tggtcgtctt taaaacatcg taactctttc tcgtcgacct tacaacattg 720

ctcatcgccc aacacacaca ttacccatcc ataattgatg ttaccgcctt cagcacttct 780

ccaaccctcg ctttgatgtt cggtgactgc aaggctacga ccccatagga gataacaatg 840

taacatttat tgctttagct actgccaccg ctatgcatac tgctagtgta ggatgacata 900

catgtgctgg actagacgtg actacaacca tgacacttaa gcctagctct gtagatgtag 960

ggccctatgg tatggcgtat catccccttg ccgagataac atgttgttaa atcggtctga 1020

gtgaccaaga cggtgcctct cctaccatgt tgtcaattca tcatacttga caattgtttt 1080

aactaaactg ctttcatata aacatcagct tgcaggagct tcctcatatc tcatagctac 1140

atttagattt tgagaagcct atagctaaac caaatagacc cttagattac cacgtggtca 1200

atttcctcat caagtacctc ggcattttga tgtccatctt tgggttgcac agcgtaactc 1260

caagatcatc catacatctc gctgcagtca acgtttctct atgaa 1305

<210> 818
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345673_G1, chr10:125092420..125093432, Cluster 5

<400> 818
taaaaaggag ataaatcggg caattttgct cattagccgc ccttgctagc agattaatcg 60

gtactagata aagataaacc aggagcctct aggctctagt agctaggttt tgggaatttt 120

ctccttttta acttcaaata tttttaacat tggtgctgct aaaggtaata atagttaata 180

ttattgttat ttgcggggat tttagatcgg atcgatccgg tttgggaaca cggggacaat 240

atatatccca gattcaatgt gctttatttg cctaaaaaga tgttcagatg agatggacac 300

cgagagtgac accccattac catcaagcat cgtggctgga ggcacttcaa gggaaaattt 360

gtttgagtgg gctaagaaaa atgtgggaga cactcacgtt ggtaagcgaa atgtgcaatt 420

catgttacca aaaacgagaa agaaaggaaa gaaagcagtg gcaagcggtg acgagatcga 480

tagtggagat aaaagtccat ggtaccaaga gtcccaatac atttcacata tactaccaaa 540

tgttggtgga ctcgtggagt acgacttcta cgtggaccag acagacttgg tcggtacaat 600

acgaaattga tgcatgagaa atttattacg ttactctcaa cgaaggagta taatatggca 660

caagatcatt ggaatacaca cccgtgcgga tgatcttcac ccagggatgt attgtatctt 720

tgattttgtt tgtgaactat gaaacaatgg catgtaatgt atttaaactg ctaaatattg 780

ttattggact tgtgataata tttgggtcat cttttattca aattatagga tctcaatgtg 840

ctttatttgt caaaaaacaa gtggtttgat tgttgcacct ttgttgccgg tttatcaggt 900

aagcaactga ttaatcgatc ttatgaacca attaattggt ctcgagtcgt ttgaattcaa 960

aaatcgtgtt gatttggaat tcggtcgatt tctactagcc tctacggatt tat 1013

<210> 819
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3466_G1, chr1:17896378..17897401, Cluster 5

<400> 819
ttctttttgc tatccaaact tatctgtctc tcagatggct tgtaaaaatt tatggcaaat 60

ttttttctat gttttggttg tcaaatcttt ggcgtggtag ttttttttacc gcaaaccaaa 120

caggcccata tgcatgatcc agacaccttt agccaacgca gttcggtccc aggctcccag 180

ctcccaggca tccctagcaa gttgacgtga gagattaaca aaacagccga gacagttcta 240

aggattcttc ctttctccca accaataatg cccgacttgg gtgccttttt tttaataaag 300

tggaaccttt tcagttgaga ttattctaag acgaaattaa agcctagttc aaccaatacc 360

aatgtgttta ggaggccctg agaggaagca agctgacatt agtggcgggc acggtgcagg 420

ccaaccacga ccagcagttg tgccaatcgg ctcctaccga aaaaaggcgt tctggtccca 480

cgacggagaa atgggtgctt ggtgaaaaac aatttctata tatagacggc tttagggcat 540

atacaatgta gacactatga tacggttgtc caagtgtaaa acacgtctaa gacatagttt 600

agtacaaatg attgtgtcta aaattttata tcttaatagt ttagattctt accgtgtcct 660

tgcactagga gcagcacata tgagaagagc cgatggatac aatacaatgg agacatagct 720

ccgtgtcctg gtttcgagct gagtgcaaga aacatggctt ggtgaagaac tgtcttgaaa 780

ttttttgcgt ttatcccctt agacattgtg gaatacatgg agcattgaag ggcaggaaga 840

tacaacttca ttaaagaggt ctttaaaggg gtaagtcaaa agaattaaga gacaaaatcg 900

ccacgaaaaa cacatctttt catagctttc tatacatact atcgcattta tgatttagag 960

actaaaagtt gtatcttata cttaagaaaa tggatctgaa ggcacgagat tgtatatgtc 1020

tacg 1024

<210> 820
<211> 1248
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34911_G1, chr1:212179892..212181139, Cluster 5

<400> 820
tactatttta aattgaaggg actaaaatat tttaataata agtccttgtt tggatactct 60

cgtattcacc tcaatccaca tgtattgagg tgtattagag tgtaaattaa tttaagttct 120

actccaatat atcacaatac atgtggatta aggtaaatac aaaaatgtaa cgctctctcc 180

atctcattcc tcaaacaaac cataaaaaaa tcatggattg tttcggacaa taccgtacga 240

actccaaact ttgcggcctg tatgcgcgtg aggtggacag caggcgatct ttgaaatggt 300

gaccgaggac cggcatgtcc atgtcacgat cgagccatcg cggcacgggc acgattaaac 360

gacgacccgc ggtcaaagtt ggttggtgcc gagaccggga tcgaggttga tcgaccggcc 420

ggcgacgcga ccgtgcctcc gacccttttt gacagccttg acggccaaaa gtagaaaggg 480

acgggacccc acaaacacat tctattcgac ggagtcttcg attcacaagg atcctcgagc 540

cgagtagcgg cttgctgcaa aacgaggagc tggggcagca gccgagtggt gggggtggtg 600

cactggtgcc ccgctgccgg caggcgaccg gcacgggcat aaacgcgcgt acgccgtggg 660

gcgcagcgag gcaggtaaga tgcgatcgaa cacatcgggt tgcgcttgcg ccggtcgtac 720

gtgacgtgcc tggctgacgg acggcagatc caggcgtttc aatgcccgtg ggccaggccc 780

agcctagcca ggctgcctga cgagatggat tgacaggatg agtgctgctg gccattctgc 840

atcatctttg accagtggag gccactttgc cagaccccct actgattgcg ctcataaatt 900

tgaagtgagc cgcgtaccca gcacagaaaa tgccatgtga gaggacaatg tccgggtata 960

tttgatgagc tagtttagtc cctctgttaa aaaatatata gctatatgtt acgtgccaat 1020

taaaacagtt cacgattgat taaatttcta ccaaatagta tttacattta tactccgaat 1080

cagctttttt atgaaaatat attttgtaat taacttaata agatttattt tattatatct 1140

tatagttaaa gctactaaaa ctgcattttt ttccaggaac acagtagagg taaaaactag 1200

cttaaattgt gggttcacta actagttagc taatactacc ttcttctt 1248

<210> 821
<211> 1378
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349158_G1, chr10:144160356..144161733, Cluster 5

<220>
<221> modified_base
<222> (562)..(562)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (562)..(661)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (563)..(563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (564)..(564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (565)..(565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (566)..(566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (567)..(567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (568)..(568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (569)..(569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (570)..(570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (571)..(571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (572)..(572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (573)..(573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (574)..(574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (577)..(577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (578)..(578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (579)..(579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (580)..(580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (581)..(581)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (582)..(582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (583)..(583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (584)..(584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (585)..(585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (586)..(586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (587)..(587)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (588)..(588)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (589)..(589)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (590)..(590)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (591)..(591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (592)..(592)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (593)..(593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (594)..(594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (595)..(595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (596)..(596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (597)..(597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (598)..(598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (599)..(599)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (600)..(600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (601)..(601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (602)..(602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (603)..(603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (604)..(604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (605)..(605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (606)..(606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (607)..(607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (608)..(608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (609)..(609)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (610)..(610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (611)..(611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (612)..(612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (613)..(613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (614)..(614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (615)..(615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (616)..(616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (617)..(617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (618)..(618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (619)..(619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (620)..(620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (621)..(621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (622)..(622)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (623)..(623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (624)..(624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (625)..(625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (626)..(626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (627)..(627)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (628)..(628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (629)..(629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (630)..(630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (631)..(631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (632)..(632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (633)..(633)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (634)..(634)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (635)..(635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (636)..(636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (637)..(637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (638)..(638)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (639)..(639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (640)..(640)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (641)..(641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (642)..(642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (643)..(643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (644)..(644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (646)..(646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (650)..(650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (653)..(653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (660)..(660)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (661)..(661)
<223> a, c, g, or t

<400> 821
agaggcgatc gagacgtccg tcatgactca tgacgatacg tgcttgtgcg accttgcgtg 60

cacagttcgt ttgcctcttc gggtgccgtc ttgatgagca tgtcattgca cgaaactgca 120

aactgcctgt gcgtggggag accaggagac ggcggcgggc cgtttggttg gaggaagatg 180

aaaggatgtt ccaatgtccc atgctgttgg atcgtcacgc cgaggaagtt gtgcaagaag 240

acgtgttatg cgtgatgata caagtggacg tgttagctgt taatggattc gcttaagaaa 300

tattgtcaat ggattcgctt aagaatatac atgtaactat aaattataac gagactatag 360

cacaccaatg tatttttttc agacataagt attatattag ctacatatgg atattaaatt 420

aaatgaaaga gtggagacat ataccagctg aatagaatcc taaaaccatt tgtttgcatg 480

tttaaaaaat tttgctttat gctttgtaac atttcctaat tcctggtata tgaacaaaaa 540

acgaatctct agatcgttta tnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 600

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 660

nttctgatat ccggatgcag acgacgtaat agactatcta tgtcctgtca catatggaag 720

tcacctgtag caatgatcat gaagccagac gctagtaaca agtttgatgt cttctgcaag 780

aacttgacga gcatcaaagg aatgccgtac tatatatata ctactgactg tgtagatgag 840

tgcgtaaatc cataaagtga gtgaaattgg aagtagtggt cctagaacca gacagcgaga 900

tagtgattgt gtctgagtga ggggtgtgta gaacgtatgt gggatttata ttaatatatg 960

cactacgtaa aatagatgag ttcgacaaga atgtgaccct gaaggaagaa tgaaatcaac 1020

ggaaagcagg gtctcgcctt agattcgagt aggtgtcaag gtcacggacc gaagccaagg 1080

ttcaaagtac caatgaaatg gttcgcaaat tcaagtggaa agtgttattt gtactgttct 1140

ccgaggtcga tcctgatacc acaagatcct tttataattg gcataggcta acatttttac 1200

aaaacaccac gtttcagaga tatgtacaag acccccttcg tgcacatacg tagaaaatca 1260

atataaacca ttcaaccaca acgaacggat gacgtgtttt acgaaaaaac tcattccacg 1320

ctatcctccc ctgcacccag ctgcatattt gctgaaaaaa gaccctgcat gctcagca 1378

<210> 822
<211> 1294
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349983_G1, chr10:148714533..148715826, Cluster 5

<400> 822
ctaagagata tggatgtgtc gtacaatatc ggcacacaca tatgctccag ttagtccacc 60

caattcaacc ctaagtcgct actccgtaga ttgtcactca tcacaaaaat tgaaccacaa 120

gagcaaaaat atcaacattg tgttggcaat cttgtagtga taatcttatt catgaacaat 180

gattaccttc ttgccacgtt ggtatgcaag aagttgacat gtcggtacat agatcagtta 240

gtaaagaatt tgctatttgg ctaacatata tgcttctctc gaatacttga gttaattggt 300

aattgtttga caacttgaat ggtagtacaa gcaatgaaga acttggcatg ttggtccata 360

agagtcctca agatcgatgt aattggttgc catgttggtc tgcacagctc ctctcatgca 420

tcggaccaat gtaaaaaaac ccttaattat agcatacagt agaagccgat ggatcgaaag 480

gcgttgcaaa cagagtagat agaccggcgg cggcgaatca aataaataat aaaaaaaaaa 540

caaacgaact aatttaaacg aaggaaacat ggatggatcg aagcgaaacc tggaggcgct 600

aagtggagaa ttccaaaggg attgcactga ctgatctgct tgtcctcggg cacgtacgta 660

cgtcggcgtc gatcggcagg ttagatcaat gcgatccctt tggagtcctc cactagcttc 720

ctgctagtag gcggcatagg ggggacgacg gcaggagagc tagctatata gatgccatgc 780

cattgatggg acgacgggga gagcgaggag aggtccatgc caatgccagc tggttaattc 840

cggcgatggc tgttgcttgc tttgcgctct cgctttcgac gtacacgtgg gcccgcccgg 900

tcccggggtg gggtgtggga ggagagacac ggcggcccca ccacggagat gctgctcctc 960

cgatccgtct caccgggccg gccggtggtg gagacgacga gctagccaac gccaagcctc 1020

cgagtctccg gaccagacca tgcacgccgc acgcattatc ttctggcttg catttgcctc 1080

ctctgattcg ccgacgcacg ctgatctaga tgcgtcgtac gatgtgctcg ctaagccccg 1140

tgcaacgagt cttgccgcac agtgaaatgg atgtgcgtgt ctactttaca taagctagct 1200

gtggtgtgtg tggcccatca tgttgtcctc ctcttttacc tctccctctt tctttttacc 1260

actgctctat ctaagcatct acacactgtc actt 1294

<210> 823
<211> 1353
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40335_G1, chr1:240397833..240399185, Cluster 5

<400> 823
atacatttag gccaaccgtc taaaaacttg catgtagcga taactaactt taggccaacc 60

ggctggctga tcgttcacac cgacagttct gaaacccatc tgtgtaaatc gaagaaatga 120

cgccaggaga aactctttct ttacgagtgg tatatgcatg caactcaaaa ccatcaacaa 180

tgatctcagt ctctcgccgc ctgtttaatt cgattcacgt gacagcgcga gcaaaagcaa 240

tttgtttttg gcacacaaca acgggcacaa cggttaaagt tacaaaagcc tagtgacacg 300

catttcagtg aacacgccga gtatattctt cagaaaaaag gttgatgagg tcggtggcat 360

gcatgtacgt acgtcagcgc ccatgcatga ccgcaggtct gcgtgtgggc cggcggccaa 420

tgcatgcgag atcgaaatgg ccgatgatcc atgacagcgc gtcagcgtgc acccttaat 480

ttgggcatgg aggtgactga acaaaagcaa agcaaaggag agagagagga cgacatgaca 540

cttggtacgt actacgagct agctgcagag agaggagacg agctagagag atggatggat 600

ggatggatcg tcgtccatgc atggctgccg taaagcccga cctaggtagc tagctagatc 660

gatgccgcac tcttctccta gctgagctac taccctatag aagtctagaa ccccgaaagc 720

taggcatcca gcaagcagcc gaaagcacca ccactgcatg cattttgtt gcatggggcc 780

aaagcaagca aagctatgat atctcattcc ctcttgcatt gcatgcatcc atgggtttgc 840

ccagtggcat gcagcaacat gcaagcatat ctgagatcat gagatcagat cctgcttcca 900

gcatgcactc acctgcatca tcgttcgtgc tcatgcagta attgcattca ttcattgcgt 960

cttgcatgca gctggtggtc agttaatcaa atgcacgcat gcatgcatgg ttcgtcatgt 1020

tcatagggtc atatcgatca tctgcacggt gcgcgctagc tctctctctc tatatatata 1080

tatagctgct gctcgctcga tcttcttctc tttttccaca gtactgcgca tgcacgcttg 1140

cttggccgac cttggattac ctcacttgat tgcctccttc gccgtgacaa ggtagcagta 1200

tgtgccaaga cacaatcact ccctctcacga gcacgaggag agacagcaaa gcgtggttgc 1260

attccgcatg tttggttgtt gggatcaaca gatcctggtc caagcctaga tgcaggatgg 1320

gcttagcctg tatgtattga tgcaaaccaa aat 1353

<210> 824
<211> 1184
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42568_G1, chr1:251172484..251173667, Cluster 5

<400> 824
gaagaaaagg ctggcagctg aatgtaatca tgagcttatc atttactgac ccaagtcaac 60

gagttaaaat ctgaacgcgc aggaaatgag gtcgagatgc ccttggtttc catgctgcac 120

tgcagagccc tgcacctgat gcctggagcc gcatgcatga ctgtactgtc tgcccgtgat 180

cccgtctgcc ctccacgtct cctccgtttc caacaaattg ccggagtagc ctacagagcc 240

tgctgattcc gacaagcttc gctgacacaa ctcataaaga acaatcaggc acgcatcacg 300

cagtaacttg ggaatgctaa agatagatat agatatacct gatggagcta gcgtctacag 360

ttggatcaca tgcgatcttc gttcctagct aggcatgatg actcagtccc cagcgttaga 420

ttaactaagc gttagaccac gcattattaa ccgattaaac tagtccatga tcgacgcaaa 480

cggatttacg gaaacggagc ttctggcttc tctctccaaa gttagagagt gagagacagg 540

gccgccaata ttcgcgctac cctggtaggg agacagcccc tgcagggggt cagatgccct 600

gctagtatat catatgatgc acctacgagc cctacacgca tcgcttatat ctaagcggaa 660

tcctgtgaat ctcaggccca gattgtctcc gcccctgatt aattattagt agggtttttt 720

ctttctttct ttctcttcat cattagtact ccaggctact gagtttgttt attgaccatt 780

cgttggacgc acgttgagag atgggcggac accgtaccta taatgacacg agcacatgga 840

tggcacaaga cacatgtata tacgctggct gtacgtgtgt ttccgtctga cgattctgcg 900

ttaagcattc atacaggcag gcacatagtt ttccccccctc tgactatatg tttccctgaa 960

cgagtgttct tgtccataat atacttttttt ttttttttaca aaagacaaac cagggcgtcg 1020

catacttggt gtgtgaaaga aaacaccgtg tatggaacaa ggggaccgac ttacaattaa 1080

tgaatttgac aaagtctaga gcacggtatt taggtgccgt ttggttcaca tgagtttgta 1140

atgtaatggg tatctgataa cattaaatca tgtttgttta attc 1184

<210> 825
<211> 1023
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43872_G1, chr1:257856344..257857366, Cluster 5

<400> 825
tatttcgtct ggcgctatcc ctactcgcgc ttcatacgga aacttcacca actgcctttc 60

ttctccgtta tatacacgcc tatctagaac tatgctgccc ctccgtccat cccacgtcgc 120

ccccgtccgt ccatcccatc ccaggcaagc tccacatatc tccacctcgc atcctccttt 180

ctccatctct ccttcatcca ttgatcttcc tcgcagcctc cttcctcgac gatacaggaa 240

cttgttgcct gatcttcccc tcctcccctt tccatcatag gtgcttagtt ctggtctatc 300

cagtcgcccc tccccaccgt tcgcgatgga tggacgacaa gcacccaaat cccgtcgtga 360

ttcgttggat gctgccctag gtatgatttc tagatcccat cgaagttctg tgcaagacat 420

tcgagggaac tccatggccg ccagtggtat tgctcgacgc catgttcaga cagcaccagc 480

ctctaatcaa tctgcgtcca ttagtgtcga tccagcatgg atgatgcccg agtacaggtt 540

tgtaatcaat ttttagtacc tcagttaggt acttgcataa taacctactg ctatggtctg 600

ctagaatgtt gcttcgcaga atgtctttta gcagctgtat gagcatagtt gtgcatactg 660

actattgtga aaagaatata tggaaaactg gaatatagat gtgatgcttc aatggccaag 720

gctaacttga aatatatgct aaaaagaata caatgacacc tgtgaacaac aaaattaggg 780

gggagaatta ccctctgaaa tacatttttt ggttttctgt gcattatctg caaaactggt 840

aatgccatca gctgttgggt gcattatctg aaatatatag ttgatgcctt aaaggtgtgc 900

aatttagttt gagagaaagg cacgctattt cttcttgaca tagtggtaga agaggaagtc 960

tactcttcat tgctaacttc tggtcacagt ttcttcttga cattttcaga agcatttgtt 1020

ttt 1023

<210> 826
<211> 1277
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4431_G1, chr1:23065322..23066598, Cluster 5

<400> 826
ccacggtcgc gcgccgcgag tcgtcttctt gctcatgccg caggctgcgc acatcagcgt 60

gcatcactcg tacctaaata ccttcgtcag cttcgatgtc cttggtgaaa aacacaggtt 120

actcggcacc gccacacgta gggctgtttg atacagtttt tttccttttc cgaagagctt 180

tttttaaatt ccttgataat ttagttatcg tgagaatttg gatatctcga ggtttatatg 240

tagagaaaga cgaagagata cgtagcattt atatattcat gctaatttag acgattttca 300

caaaaccaga agcagattcc gacaaaaaaa atctggtcag aagctaatcc aaacaggccg 360

tagcgatgac actgcagttc ccgcagccgc gtaaacacac atgcacaact agatgtcgcc 420

acaattatag catgatctca tcggcgttgg ctgccggcac agctcatgct gcagctagac 480

atagtcatgt cagatatatc ctcggagtcc atcagtgatt gactcgagct gactaagcgc 540

tatgatggag atcacaaatc ctttccacga gtcttcacat gcattatata tgaaagccaa 600

cccttctacc aactctagct attcagatca acctccagtg cttagtaact acaaatgagc 660

ccgactttat cttatgatac tgataatcca taatgtatct acgttggtga gcacagacgt 720

cccaattcat ggcccaacga ccccgacacc tcaaggtcaa ggagtagggg aggcacaaca 780

agatgaacat acaaaggtcc cccacaggag cggaggacga aacaaattta aggtatggca 840

aagcgtaagc atatataaac gtaagattta aaaaaatatg attcgtacaa cacaacatat 900

aataatatat gacaaacaat tttgtatcta aattatcatg taaacaaatt gcaaattaaa 960

ataatcacct ctcatttgtt gattggcttt attctctccc attcaatacg gttttaatca 1020

attaatttac cgaatcagca tgttgtatag attaaccaat gatttactaa taatttaata 1080

atacaaataa atagttaagg aagttggaaa ataaaccatc aaataataaa caatatgtga 1140

ctctagtcct gtagtacaac cgcatggggg tatcgagcgc tagttactct tctggcaata 1200

gcccacctta aagcctatta ttaatagtgg cctaaataat ggttcgttgt gtagcttctc 1260

tctcatccgt tttctat 1277

<210> 827
<211> 1266
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4441_G1, chr1:23101808..23103073, Cluster 5

<400> 827
agctgactct tgtgctctgg ttagatttta tccttctcct aactagatat ttgctagctg 60

actcttagtt caaacgttca atgatatacg cttacctaat ttgcactttc agctcttggc 120

tgctagagca gaagcccttt tccgtctcaa tttacttgat gaggctgatg ttgcaatctc 180

tagtttatat agattttgat gagctgtaat gaatcctggc tcattccagt acaaccgaac 240

gggcccttac aaatgttctg gtccaggcat ccagctccag cggctcccgc tgggcggcag 300

gcagatgcta gctacagcca tgtaattaac ctgcaactct gcaagcatgt gcctggtttt 360

atactgcggg tggcctccag cgatgcaacg catgccgcgc acgtacacgc gcggcagcgc 420

tagctctgtc gcgacgtcct tcgtctaatc gcctgcctcg agctgcctgc agctagcttt 480

gatcgccgcg actgttctgc tcgaggccgg gccggcttgc attgcattgc atatgagccc 540

gatacgcggt tttgcagatc gagcattctc ttgcagtctt gctcgtgccc tattgagcat 600

tctgcattca ccgttacgct agcaatatag ttcgggccaa catcggggta gctagtttct 660

tttaccatgc atatatagca tctatattta ttatttattt tcatttcttt gtaagagtat 720

tggtttactt tcgatgcatg cacccgtgtt atatctgcta gcatggattt attgttggga 780

aagtacgtgc gcacttttaa gattagatta atttctagaa caattactac ttaactatat 840

atagcaaata ataatattaa atctgtttta gacgcatcta acagaaacag gaacacgggt 900

gcgaaactca ccattacttg gacgtttcag tctagtcgaa aatgagtttg cggtgttgtt 960

aaactttata gatgttgccg tgcaaatcaa ctgaggagtc aagtgatcgt tgttcaaaaa 1020

cctgattcgc ctcaatctat gcagtttctt taacggagcg aggtttcgag attactgctt 1080

atctatctac accgtcaagc caatgtcgtt aacagaagag cataagattg cctcttatct 1140

aaaatgataa cttatggagt tatggtagat tggttgtttc tcgtgccttt gagggagaat 1200

gacatctcta tatataaggt attaggctcc tgataaaaaa gaaactaact tggttgcgat 1260

ctccat 1266

<210> 828
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44930_G1, chr1:263592712..263593793, Cluster 5

<400> 828
ttgtatcaca gtctcttagc tatctcttgt atttaggccc tgtttggttt agagtgactg 60

aattttagtg actaaagtta agtcactttt agtcctaaag aagcaaacat ggtgactaaa 120

gtggggtaac taaattttag ttctttagtc accaagggat gactaaaatg gactaaaata 180

gtatttttac cttatttgcc ctctccagtt ccttcttata gcaaatatcc attaattaat 240

aggggtaaaa cagtcattat tcacagtaat taatactctt tagtccggtt tagtcactgg 300

aaccaaacgg aatattttag cgactaaact ttagtcacta aaatttagtc tagtgactaa 360

aggaaccaaa cagggcttta gaaaaccgtt ctaggagctc atgattgtac atgccctagc 420

ggacgcagtc gcttagcagc taggtctcgc aatgattaat ggaagcatca ccggcctatt 480

gtgcccacca tcattaatca atgccggggg cctcataaaa gcttttgtat agtagtaaag 540

tggtgccaat cctatcttta ggccctgttt ggtttagagt gactgaattt tagtgactaa 600

agttaagtca cttttagtcc taaagaagca aacatggtga ctaaagtggg gtaactaaat 660

tttagttctt tagtcaccaa gggatgacta aaatggacta aaatagtatt tttaccttat 720

ttgccctctc cagttccttc ttatagcaaa tatccattaa ttaatagggg taaaacagtc 780

attattcaca gtaattaata ctctttagtc cggtttagtc actggaacca aacggaatat 840

tttagcgact aaactttagt cactaaaatt tagtctagtg actaaaggaa ccaaacaggg 900

ctttagtatt ccaccttgtt gtcggaagtt attaaattag tagagccacc ctaacatata 960

tattagcagc cgcttcgagc atgggttctg tttcctgcta atttcatctt cgccccttga 1020

gcaaaagtgt gaggcggtcg ctctcatatc tatcttaaca tatcagatat catatctatc 1080

ca 1082

<210> 829
<211> 1353
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46166_G1, chr1:270552005..270553357, Cluster 5

<400> 829
cttgatctaa caaacttttc taaaatctct tctaaaaact ctccttatct tatttgctaa 60

caattatatc cttatctatt tgctaaaaac tctcaacgaa ctcgatttgg ccgattacat 120

cttgaccacg ccccctattt tggcgctggt ctggctggca tcgtgcaaac gtccggccca 180

catgacattt tgtgagccaa ctattagtgc tttcttgtgt gagcccttgg tcaccttgtc 240

tgctcattcg cctcttattc aattgcttat tctaaaaatg tgaggttggt taatcttttt 300

tattctcctt ttggagttcc ctatgtttct actaatagaa atagttcaga ccttgctcat 360

acaatcctcg ggactgctgt tgcttaatct ttgtccttcc tagagaaagt aaacaagacg 420

atacaactga ataaaatcgg gctgaatatt tttgctaggt tggccaaaca aactaaaaca 480

ctcagatttg ctttcagatt tgtctgcaag gctacatcac tgccaatctt taaaatgaaa 540

ctccaccact gtctttgtcg tcataaaacc taatcgttgc atgaaggccc caaacaaatt 600

atatccaacg acatgcttgc tttctaattt ttaagcaact tgatggtctt tcccaacaaa 660

atgttttccc ataattatgc actcttcaat tctacatcat atgtgccagt aaacgaaacg 720

ttatgtacct gcaggttata gtgtttagtt tgatgaagag gctactcata ggtttcttca 780

gaaaatgctc attatacgct ttgttaacat tgcagagttt gtaattggtt ttcaggaagg 840

cacataatct ttctttatga ataactaagg agtctctgat tactgttact agtactatat 900

gctaaaggtg acagttcaga ttgtcaaact gtatcttgat gtatttggca cttcgtgctc 960

cagtaagtag cctcctgcct gtggattgtt tatttgtttc ggtgaagcac aagtctttca 1020

attggctaca tgactacatc cctgtttctt gtgctattat catgcacatg cactgatgat 1080

catttgtttc cttcgctcgt tcatccactc tttatggttg tctctgtggg ccttttggtc 1140

ctggcgtaaa tgttggaatg cctctaaagc tgaagctctg atacgcttta tgtggtatat 1200

ataggtctca tggttcgctg aatctatact gtttatactt aatagaaaat tctctttcca 1260

gttctcgttc cgtctgtgca tctgcggttt atgtatctac cgatcggtgt ttcctttgag 1320

caatgcggca ggcttgtact ttggtatcat att 1353

<210> 830
<211> 1291
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4704_G1, chr1:24190113..24191403, Cluster 5

<400> 830
agatctaatt tttgtaggtg tttttagtgg acaggaatat atgccaactg gagagctgtt 60

agccgctgct ctacgcttgt cgtttcaaca taatccacta gctagctgaa tatatatatt 120

tgagacacag atcgtccgca cgcaacgggg cacgcgctga tcccggcgtg aaattgtgtt 180

gctgcatgcg gaccacacca tcagtttcag ttcacgcacg tcgagtagta tcaatcaatc 240

gacgtgctcc cgtcgtcgtc ttcgtccacc tctctgctgc cccgtcgacc gcaccgcact 300

catcacctgc gtgcgtgaaa gggttgctga ttggtcgtag agcatactca tggctacgtt 360

gcctgctcat tttcggcttg ggtccaccgt acgcgtagct ccacgttacc cgccctagct 420

agctcatgtt tccctttct ctttttgat cgatgcgacg ctgcctctct gaacgtatta 480

cgtatggagt ttttcatttt gtctgcttgc ttgcatgcac tagtattcgt cggcacatcc 540

gatcccactg atatcgagct tcttccgtag tgtgccggat cggacgcagt attggtccta 600

agcttgcaaa ctggagattt ataaattgcc gagatagttt tgcaaagagt tgtaaaccat 660

atatgcatgc aaagtgtact gcactagtcc actagcttcg ttccattgat cgagcgggcc 720

acactgatct gagacaaaga ggaaaatcct agcgcattga atggtgctag ctatagcgag 780

cgccttttc tttcttcttc ttcaaaagtc tgcaacaaga gagtgtgcac atgcagctgc 840

gtgctgcatt ggagtaccta ccgtcagtcg atcaaacagt cgctgctgta ggtcatcgtg 900

atccggacgg gcgggatcca agggacgttc ccgtactcct gccgcccgcc cgcgcgcgca 960

tgcatgcacg cacgcagatc gcagaagcat gtcatcgaac aggcgggccg tgccaagagc 1020

cttaaattag ggatgcaaga agcctacaac gatgatcaat gcgaggcggc cgtgtgcgct 1080

cggctagacg cggtcggtcc cccctccccc tggccatttc cccctgttgt gttcgcctcg 1140

tgacgaggaa gaaccgtgca attctctgct gtgtctgcgg cgtggtcgcc ctgaactgaa 1200

cctcagagct ctctgaccga ccggcgagga ggccaagcat gcatgcaggc aggcctgctg 1260

gcgagcgccg ctctcctctt gactccggcc g 1291

<210> 831
<211> 1103
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47553_G1, chr1:278680720..278681822, Cluster 5

<400> 831
agtagggaac actcccagat ataagttggt tctctgctat ctagatggac gatatgggac 60

taaagtcccg tgccatctct atacaccacc ttgactttct tattgaattg ggtcacatac 120

tagtcggcct aattccaaca gggtcttcta gaactgctct atagtttttt ccaacatgga 180

ttactgcagg ccatgagcca aagcacctta aaaacatact acatctcatg agaagcgaag 240

ccaggatatc tcattttgta gaagttggct taaaggacta aaagttcaga aagccaacag 300

atgatgcacg aaacgtggac actgtgtcaa gttgtataca aatcctaatt ttaagattaa 360

ctaatatata aattcaactg catgttctct agatccaaat ttcctaccag agacatcctc 420

atctccttct cggcgaaaag acatcctaat ttttgcatgg gtaattccat gtccaatttg 480

gtggcatcag agtagaaaaa ggtcaaatgc ttctggacca cttaggtgag gtatccattc 540

cctctaagaa ccgaacatgg cataaaggct gcatgcaaat tctcacatct catatatgac 600

aacacaatga gaggaaggct aaacctgacc cccacgttaa gtatagcttt ctgcctgacc 660

tgagctggac atcctaacaa tttccgtgag catcagaaca agtgaccctg cacgctctcc 720

actatgtgta ccaataacga ctgtcagctt catatcaatg ttcaaataca tcaatgcaaa 780

tccgtgctaa tcaccaccag atccggagga tgtcgcctgg gaagcaagaa atgtggaata 840

ctttgctcgc tctaccttgt aacgtttcag ctctttgatt gccgccagca gcacatcaca 900

tgcaaggaaa ctggtgcgaa aaaaaagctt cacaaagtat ggtattttca ataggaattc 960

cttttcaatg tagtactgat gcacatgggt tttgatgtat gctatacagt tgccatctcg 1020

ccactctata gtttgacaaa aaaatgtgtt gcagattggt aagctatatt ctgagatttt 1080

aaaatagata accgaagaat cga 1103

<210> 832
<211> 1184
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47844_G1, chr1:279877264..279878447, Cluster 5

<400> 832
aaataaaaca ctgtagtaaa ggacggtttt tactccggta tatagcatcg tcgtaatgat 60

acgaaattac aaattgaaaa ggaaataaag taagggcgcc atatcgttgg tatcgaaaga 120

acgtcaaggc cactttacag tgcaaaaaaa tcaggacggc tgagagaaag aagctgaaac 180

aggacttttt gatatatctc gctaccagtg acccctctct ctccctcctc aaaaaattgg 240

atccaaatcg aaaccggaag cgccctattt gagagatcac gagcgcttac gtgctggagt 300

gagcgacaga gattgcagcg atggccacgc accatcagcc tgtacgtacg cgcattattt 360

gacagggatg gcagcgttgg ggagtagcgg agtgtaccaa caagacacca tcgactgcgt 420

atctccggcg aaaggatgtc tagagacgaa attcgccatg ggttcaggat aacgtcgtcg 480

tataatcttc gagagggccg tttctacagc ggaggcggag acggcgacgc cgaagccgga 540

gcggagcggt tgttgctagt ccaaatgcga tgcgccccgt ataaataggg ctgtagcaat 600

ccgtggagcc acgaagcagt caggtcggtc tcatgcggag gctgcatcac gcgaatgccg 660

acggaagtcg aatttatgag ctatccagta cccgccgctc tcgtgtctcc atcaagaaag 720

gagcaggccg aaatcgactg ctgtgccttc gttcgatata ccaagtgcgt ctctgctcta 780

acagcacggg ctgcaggtaa tagctctaac ctaatagata acatagaaaa ggatccactt 840

aaccaactgc atgcgtagca accttgacgc aatgccaacg cttctgattg catcgcttct 900

ctgtagctgg acgctggcgc tgcgagaaac tttatgaggt cctgtttggg attaaagtat 960

tttttgtagt ttctagacaa tattatggtt tttattaata tcatagtatt ttatgctata 1020

agttgtttgg ttgcatttct ggaaactatg tttttaaaaa aaccatggta ttctagatac 1080

tatggtattt ttggagtatt gtaaactcca ctataaccca aagttttcat ggcatggcta 1140

gattttgtct aatatcatgg tttacaatgt gtatccaaac aatg 1184

<210> 833
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48648_G1, chr1:283167650..283168758, Cluster 5

<400> 833
tatagatata tagatttgaa agtggttata gggttttgcg aacagtccca tccgttctca 60

tcgctaaccc cacgtcccca cgtttcctcg gctcctcgcc cgcctctctc gtttattagc 120

gctcgtaaac cccactcact tcttccttct cttcggcccc ttcctcggcc gaaacctcag 180

ttgctcctcc gcccgctcga aaaccccaag tccccaatca cacatcgggc caccgccgcg 240

gcatccatgg ccgccgaaga caaagggacc ggagaccgcg agaatgcaga ccccaacctc 300

tgctccatcg ccgacgcgtc gctgtctcac gagaacaccg aaggtgattt cccgtcccca 360

gtcccatcca ttacttatcc caactttcgt gtcctgtcga tcaggtgctc gattcgaggc 420

cccgacgcta gcctaagcct agcttggtgg gttagcttga tttcccgttg gtgacttggt 480

tgatcgcgtg cttgtgtacg agccggtgcg tggttccgac ttattacgtg tgcggtgtgc 540

cgtatgcggg tttgcgcgcc gtttctgggg tttctggtgt ttgcgggctt tgggtgtgga 600

tctaaaccaa actggtgtgt tttatgaacg atcgttctca cactgacgtg cgtgttatgg 660

tttggtatgt ccaacatgtg ggctacagta tgaactttgg atcggttaga tttgattgca 720

gcactgctcg ttagtcgtta catgctgttt ttaagtattt tgcacatttt tttgccagta 780

atgtcacaaa gatgttagat ctcgttgatg atcgctctca ggtcgttctt tcgccggtta 840

ttttactatt aacaattctg cagtgatgct ggtttcaggg gtcttttgaa atccactcta 900

ctagtcacga tagcttacgt tctagtaact gatttacgtg catactttaa taaattaaat 960

tgttaccttt ttttgaaatg ctatgattgg taagtgcttg ttttacttgc tagcgtcgag 1020

cttcgttttt tctgtatgag caaactcgca cactaatcat gatagctctc gctgaagtaa 1080

cttattttaa tggcaagatc ttaccatac 1109

<210> 834
<211> 1322
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50469_G1, chr1:293309386..293310707, Cluster 5

<400> 834
tgagcttgca ttatatttca gtatagataa attttggaag ttcccatgac cgcatagctt 60

gcttcgtgag ctccgccact agtagtatgc atggggtttg attgaaactg cgcgcgagtg 120

ataatgtttt tggccgtaat gatttctgtc ggcgacgcca ccgttggccg acatgagcac 180

gaacgtcgct aagctttgtg ctcggctgtg ctggaggtgt cggagtcggg cggagaatga 240

aaaaggaaag atcgcatgaa acggcagcca tcgatctccg gtgccaacac ggcgcttgct 300

ttcaaatttc cccaatccct ccctccctcc ccgccctcgc gcctttggct ttaatcaatc 360

gatcagctcg cgatcgtcag cagggatgtt ggtacatcat ggtagtgcag ggcgaaagcg 420

gcgtcccgcc ggcccctccg actccgatcc tcccccactc cctacgcggc taagcaacta 480

aagcgccggg cagctagcca gggccaatga tcattatcgc ccagcgggac cggcaccgtg 540

gctttactca cctggccgtc ccgcgcgtcg gccgcacgta cgatggccgc ggcccgccca 600

ggtagcagag gtagtacgtc tccttgttgc cggccgggcc actgctgctg gccgcggcca 660

ggcacggccg gcgaaaggcc actagctagg ggaggcccag gagacgaggg ggaaaccaag 720

tggccagcac ggccaaaggc caggtaaagc aagcgagagg tgaggtgacg agccggcccg 780

gcgcttgcct gctgccaccc tgcgctggcg ctgggttgcg ctttccaccg gcacttgtcc 840

tgaccgggtg attgcgagcg atcgagcagc ggccggcggg ggagatggca gtgcatgcgg 900

cggcgttggc caggcgatcg tcgaggccgg cgcggcctta agccacgcgt accgtaacga 960

gcaagctact cgaccctagt cctagctgca ggttttcggt cagcttacat ggccgcgcgc 1020

gcgcgcgccg ccatagacaa gctagctttc attggaatgc cagaatgcct ttgttcgtta 1080

atcaaaaaaa tcaaaataga atatgtatcg ccgatctctt cgccccaaag gaaacgcatg 1140

gcagatgcta gcagggcggt ggagagagat gtgtgaggcc ggatttgagc tgctgcaact 1200

gcatgctgca ggtgcaggat gaaatggcca gagggcagtg ccagctagct agcttagtac 1260

tagcgctaag tgcgcacaca atcctcagtg agcaaaagcc gggcagaatc ttggactgct 1320

aa 1322

<210> 835
<211> 1300
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52299_G1, chr2:3008769..3010068, Cluster 5

<400> 835
ggataagaag aaaaaaacaa aataagagta cttacaaatg ccttttcaga taaaatatat 60

ttgttcttcc actctttatt ccacaataga gattgtaaga agaaaatgtt tgagtgcata 120

tatccgtcgg gcttgaagca ttctacaaaa tatttttcta ccactacatg gtccagtata 180

tctaatttta ctgtgtccct gattctatcc aaaacatgct cttggtagag ttgagctcaa 240

tccctggagg ttagatcagc aagcaagcga tcatgatggc agtctctcga atcctgatca 300

tcataccaat atagagtgaa tcacaacatt gcacaaaatc cccctggtct caaatagaaa 360

aagggcatgc caacttaccg tgggctatgt gtactcttct acacttcctc tgtttgcata 420

gcagatgtct tcccaactct taaactgaaa tgggacaagg atcaatctca atgcttaaat 480

tgaatcttca caaatttaca aagttcatat gtaataatgt cctagaagaa aatagattaa 540

ttaacacggc agtcagaact tttttgtcaa agaagttttg gtccctgtat tcaatgtaat 600

aatgactaac attattttag tcccacgatt ttctttaacg gtatagcttt gtaattgata 660

atataatttt ttggttgaac tgtcataaat ttatagacta ccgtcgtgtc gtctcggggt 720

gaaaagaaaa agggctattt tgtagtctac cgtggagcaa gccggtgagc cgcccctcct 780

gcctccattc atttcggcgg cagattcatg ccggcacctg tcccagacac ttgcctggat 840

attaatatag gaattacatt atctgagatg gaaacctgaa atgaaaggcc accaggattt 900

ctgtcgtcgt catgggctca tggtcatggc catccgtaca aacaatctgc agttgcccgt 960

gctctatttt actgaatgtt caggggtcag ttgtgcctat aaatactact tcggccggct 1020

cggcagggcg tactgcagcc attgctggct gctgcatctg caaagactgc aacagttcgc 1080

caaaggcaca gctctaccag gagggagcta ggaggggcga tcgaggtggg caagagaaga 1140

gctagctagc taggagatgc aggcgaagct aggtagctga cctttatttc ctggcatgca 1200

gtgccggtgc cggaggctgg tgctgcctgc gacatggcat gtgctcggac ttgctcttcc 1260

tcctgtacgt tacgggtacg gcgtcatcgt atggctgtta 1300

<210> 836
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_5288_G1, chr1:27110749..27111790, Cluster 5

<400> 836
aacagggcct tagtttttt acggtgttgg gatgttcaga gatggcgccg atttgccgaa 60

tgaaagcagg cacaaaggcc cgatcatgat ggtaaagggc ggcgctgcat atgagatgga 120

ggaaatcatg ctcttgcgct tgcgccccca atgatttcct cctgcgctac ctggacggaa 180

gctggtttga gctcgagcct tttgctttgg ggccattggg caacggagtt caccgcttcg 240

ttctactaca cgaaggtgcg ctgcgtaacg gcgaccagcg ttgacgtagg caacatgtgt 300

ttttccactt gctcatccga tcggcagcat gccctcctgt tcccaaaacg gcgaaacgga 360

gatgataatt acttgcagcc cacggccgta actggcgtag ggataatggg ccaacggccc 420

aaatggaact ggtcgacttg catcctacct agaacccctt tcgaatatta ttttttatta 480

gcaatttcca aatcgtactc ccgaataagg ctgcctgaaa caaggcacgc tttctgacga 540

ctgacggtac cacatacaat gcttacatag gcaattcatg ttccagattt gcactttggg 600

ttctgagttt ctgatgctag ttgtttgctt gctgctacat cagtgttagt ctaggcgttg 660

tgaaaaaaaa cacgctggtg gacacgctag ctacttgtac tatgtgattg gttgtggtat 720

ggtagcagac tggtccggct tggccagtat gtaaagagcc aagctcctta tgttctggct 780

agatacatac gtaaactttt gtttggttgt ttgccttagt atattcaggt tagatataac 840

tagtgtttgg ttgtttgcat cagatgcaag atcaaataaa ataaataaat aaatcttcaa 900

tatttatata acaaatatgg tctagttttg tatataaaaa tgttaagaac atatatctaa 960

aatcagttta gtgattggat atttgaacta agagatatgg taaaaaaaaa gttaaaagga 1020

atatttttgg aatccgtctc at 1042

<210> 837
<211> 1133
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53532_G1, chr2:9424286..9425418, Cluster 5

<400> 837
ggagagacgc gtctcttttc gacgactggc tgcgcacgac ggcgcgagac gattgattgc 60

tcaggggctc atggttcaag cgatgatcga tgctcatctc ttcctactct ccaagagcca 120

aggtcaagct gatgactcac tgacgagttc agttcacgat gacaagcatc tgccgtggca 180

aatctggctt taactgatca ttgtgtaagg catgcaaaaa aaaccctgat aaataaggta 240

gcgtttactt cctaagtgtg gtggaacaca atcgttcggt ttttaattta ttgttgtttg 300

aattgatttt atataggatg gagtggttct aaaaataaaa aaataatcaa atgttaaact 360

atttagctcc tcaaaaattc tcggatggag cttcttctag gtacagggcc gttctatcta 420

agtgatttca gaaccaaata ctacctaagt tagacatcga atgttgtatg atcggtttgg 480

cctatccact cttttctcgg gagggaagtc gatatgctag tttggaagcc acaaaatcgg 540

aggaatagat cgtcgacgga gctgtctcga tcgatcagaa taggagcttc ctcgtgcaaa 600

gaattgttcc aaatctgccc aactaacact gtcttctgac agcgccgaga tgccgtcgac 660

gacgtctaca catgcgcacc gcatgtttta gggcatcagc cgatgtcgat gtactagtac 720

tactcatcgc gtcggtccgg ccagagaaaa ctttcacggt ttactgttct ctgacctgtt 780

agaccatgcc aatcgctttt acatccagca acttccaact gcaggacgag ggagttcaac 840

tcgaagtggt ttctgtttat ggtccagagg gaggaaacgt tttaaaatgg gtgccattga 900

aaaggagagg atcaggctag cagctattca aatgatatcg atggcaatgg tgtgtgcaaa 960

tcgcagaatg ctgtcgagga gagaattcca aaacggatct acgcttggta tatttaatct 1020

gcttttggtt gattctgaag atttcaaatg ctacgtttcc ggaggtctgg aatccggagt 1080

agggcagctg acaaggccat ctaccttcta cttagcagac agttgaaact cgg 1133

<210> 838
<211> 1271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55530_G1, chr2:20110471..20111741, Cluster 5

<400> 838
agcacatacg attgttttcc agggatgcgt accatgagtc aggaatcatg tattggaaaa 60

ttgtcaataa cgttaaggca gtgaaagtaa cagttaacgg aacagaaagc cacggactag 120

tgcatcatta tcagtaccgg aacttcgacg tctcgtcttc atagttcaga aagaggggg 180

ggggggggg gggtgatcaa cagcagccag ctcgtttgtg gaattctgcg caaccttcac 240

caaggcttct cggctacgaa ccacagaatc agattactgc ataaaaagca tgctgctcat 300

caacttcgtt ggctgtttca ccgtagtttt acatatagtc cagtttcaga ttctcacatc 360

tatctcaaac gctggcatga cagttccaga ttcttacatc tcaaatgctg ccatgccaag 420

tcccagcacc atgccgccag cattttgttg aaacaaagat agcaccaatg ctaagttttc 480

acaaaccaga tttctcaagt cctaaccaaa cagccattat caccatatgc ttacacagga 540

actgcatatt ttgaccaggc tggcaactgc ttgtctaatg tctatcccta tatgactgac 600

aataagtgtc acatatacca tataagtttt tcatgcatac actccacaaa tcggtgtggg 660

ttattatggc ttacatgaaa gcatgcgtga aacacggtct cacttcttac tgctgtgctg 720

tgcacaccgt acccttggcc ttggaccagc atcctccttg actcctcgtc tttgtcatac 780

gcctcctgcc gcctttggtg cttcatgcgc ctcatctctc cgatgttcac atcatgcatg 840

acggtctcct cgcactgatc cacctcatgt ctgatacttg agtgccctgc attggtcagg 900

cgagatagcg ccagattctg ggaactcgat gtcgaattcc acaatagatg gcctttcatc 960

aaagcccgac catgcagggg cataccctca tcatttatgg ctgacctttt cttttgaaca 1020

aagtgtatga gttgaatcat ttccaaaagt caaagtcaat agaatttaca taccaaagca 1080

tacttatgtg tcaacccaaa acaataccat ctagaattct agattctaga agtgggcagc 1140

ggcggatcta gaaataaatg aaaagagagc ctgaattatg tattggagag actaaacatg 1200

gtcccacaat gtgaattaac gaaaccacta tggagaggat gcgcgaatta catggacatg 1260

tagcctgtta c 1271

<210> 839
<211> 1309
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56391_G1, chr2:24726950..24728258, Cluster 5

<400> 839
cttactctat tcatagatcg cacgtacctg cctaacttat cgcaagagca ccagaggaag 60

gattcacatt agcacccgat agttcctgcc caccgagcca atggtgaagg tgggaccctt 120

gcaatcatcg ttgaggtcat cctaaggaca tagacttcga caaccagatt tctaaaccta 180

agacaaacca atggggaact ccaggcttga ggacccacac tggttcgacc aggtggctca 240

actatagtag aggctcaatc agaggtacca gtggatccta gagtcatgat gtaagacttg 300

gacaactctg agtactagat attaagatat tcgatgggga agacaactcc ttaggaggga 360

caaacatgcc tgacaacgag atcctagagg actacatcag gaacctaatg aggttggagt 420

caaacccaac gaggaggagg accctaatga gctagtggac atcgatgagc cttggacatc 480

ggagccactt atacatggag ttcctgatcc ggagactcct atacatgagg ctcttgcact 540

agttgctcat gctctagagg cacctatcct agaggatccc tcgttggagg accctatgct 600

agagcacccc ttcacccatg acatatggag gagggtcatc cactacatca gtggcctgac 660

cttgcgattt acctgcatgt tctaacattt gctcacaaca ttgggaccaa ccgaagtcat 720

tgtcaactac atcagggtgc aacatcagcc catcctaagg cattatctaa aggagtggct 780

catcttagcc gagatcacta ggctgcatgg atttggaggt cggatggtgg tatgttgaca 840

ctacgccata tctatcttgg acaactacga agtagagatc aatgatgcgg ctaggtaggc 900

catgtcgtat ttctatgacc tcaactatgg caccatggac cattgtatct agtgatacta 960

ccctcagtac caattcggac ggagccttat accttcgact caacaaccaa aggctaatat 1020

acatgacata ttaatataac taaatctaag caattcatta aaggttcaat tatatttagc 1080

aagatcaata gtaaacataa catcctcttt ccaatttttg tggatcgact tcagagaagg 1140

acaagtaact aatttaactt gtgtttacta aacaaattca acaacattgc cctccttact 1200

ttcatcgttt gagatatcga aatagttttc tatgacatgc atatttggac aatgtgatct 1260

atgaacttta tgagattctt tcaaatagga ttcatccaca acgatattt 1309

<210> 840
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56729_G1, chr2:26924626..26925756, Cluster 5

<400> 840
atttaaagtt atgatggaat ctacaacttt gatgctccgt atagtagcaa gcttcatcat 60

gcataggatc catttggatg catcaaagta gacaattgaa cctagaaaga ccaaggaaca 120

atggccaaaa tagggaaggc ttaatccact ctcagggcga tcaacatcaa aataggggag 180

gcatatgcca tcctaagccc aatcaatatt agggcaacca acatgaatga ctccgcactc 240

atgacctcca tgaacaacta aaatttatac attaggatca tgatctcaca gagtcttcca 300

atgtgactgg gtacgacgat gacatgatac gagtggatat ctttccctac tttcaaaagg 360

ctaaactcca tcaagtacat gagaaagttc atgcctatca acattgacat gtattatgga 420

aaggaatatt caaatcagta gatccaatgt tacttgtcca ccatcaacct tgctagaggg 480

aatgattgta tctatgtaga ctgcttccaa tggtgcttga ggttactcta ctaacctagc 540

tcaaacaact cagaacaaag tttaacaata gctaacatgt gctctccaaa aaaattgtgg 600

agaaattcta gggtgcatgt gcatgggttc atccacccaa tcgccatgac ctctagagtt 660

ggaagcaaaa aagatagaga aagcacatcg actattacag gcgcttcact gatatccact 720

gcacattggt ggacatatct gatagagatg ccattgacta ctttcgacga tggagttaga 780

gacaaatatg aaatatctat tgttttctaa tatggtggtc gaaaccacta aaacttaggc 840

aagttttggg acatggtcga taggcggaca aacacataag acagaatatg cgacaaatat 900

ggtgatcaaa accactgaga caataaaggc aagaatctga agaacaacag cgaaactcga 960

tatgtaggaa gagggggtat agacaacact atcacgacca tgaagaagtc gaagaaaggc 1020

agcaagccta aatctttcga ggaagtgtag caaggtttca ctatataacc tttctctaga 1080

cgccctaact agttaatagt cactagcttt tagtggtaag tggcaggtaa c 1131

<210> 841
<211> 1184
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58586_G1, chr2:37873114..37874297, Cluster 5

<400> 841
aaaaagagag acaaaaaaga tacacaggct gacataggct gacatgtggg tccacatgtc 60

aatcacgacc gattaaggac tggactggca cactttaaaa gtttatagac cagtctgaca 120

tagggcgaca agtttaaggc cggaaatgta ttttactcaa acaaagtcag tattgtttaa 180

tatgtttcca ttagcggtca gttccattac catttgcgtt tacatttaca aatgatacaa 240

ccaaacgaca ccttaatgta catggaaacc tatcttcatc aacaatagca ccagggcaga 300

tatagtaatg ggcaacccaa tagtttttgt agtaagttag aagttagtag gcatcaatca 360

aatagcttga ggttagattt tgaaaagtcg gtttcgcaca gcagataggg aagaggggg 420

agtacctggt gggcgctctt cgccggagaa gacaacggcg gtagaccacc cagtcgtcgc 480

agacagagag agagaccccc ccccccccc cctatctgct gtggaggatc gatctgggct 540

ggggcacagt cagcggtgcg aggcagacgg cggcggcgaa cggacgagga acgcgacgcg 600

agggagacgg gatcgaggag gtggtagacg gttgggcttg ggcttgagat ggacttttt 660

tggaaaaaaa aatttgctac tggttaaagc ccaaccgatc tcaacgtgtt gtgggcttgt 720

ggcacaatgg ccagggtctt catttcaaga attacagttt cggttttcta attttatcat 780

aaaacaactt caacagatgg gtaaattagg gttcaagagt tttggctcca aatagactct 840

aatttttgta atacaattag tttgtgcgag tttctttaat tgtccttgat aattagtggg 900

tggagaaaga gacatgaatc agtagatcat gtaatcaagg tatggtggtt aatttttgtg 960

caattttatg tagaggtatg aaaacaatgt ttttcaagca ccttttaagg acattcaaaa 1020

attttatgaa actgacctct agtttttttg aagctagagc tcatgaaatt aacctattta 1080

gatagaataa gctagaatga acctaaaatt cttgaggtgg agacctcaca taaaggtaag 1140

gtactgtatg gtacgtaggg atggctcaca ctgtcacgca caag 1184

<210> 842
<211> 1140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5872_G1, chr1:29800013..29801152, Cluster 5

<400> 842
gccaatccta gcttgattac actaggagtt agacccacga gggaggctga agagtaggct 60

agcttgacta atggaggtag gcccaccttg ccttattgtc ttgtacttgg tcttctagtt 120

ccaaatcttg agaggccttc gttttggggc ccttgccttg gagccaccat cttgaagtct 180

tcatgctcga tgccacaagg cacctcctag gcacccaaca aagatgatgt ccttagtgta 240

gcccaagggc tccgctctgg ctcatgcgac ctccttcttg tgggacatta acgaaatcct 300

ttgggggggca ttcacctttg ggaaagttga gccctcgctt gtggcccacc tttagagact 360

tcttgacttc gctgacacct accagagttt gcgtcatctt attaggccac cacggagtct 420

ctaccttcaa aattggaatt cagctctgat atccatagat aagattagtg aagggttcac 480

tggtcactta attggatgat cgaggtctag ttcggacttt gtcccaagaa gtactattat 540

agcagtgatg ccccatcctc ccaatatctt ttacacatca tttgtatcaa aatctaattt 600

gttctatttt atatgttttt ataggaatca ttctcatatt gatcacggtg aaatgggaaa 660

taacttgaaa aataaactag acctcacgta agaaataaga aaaatatgtc tatcaactag 720

ctcttagttg tttatatttt tttatttcct gctctaaggg ctagttaggg gtaagagtgt 780

cttcttcccg cacatgaaac cccttggctt ggaaccccat gaccatagga agtaaggttg 840

aagtaggtca aggagtaagg aattgagatg aaaaaatagg gaagaagtaa ctcaaacgta 900

tttttgcact tttttatatt tgtaatgtgt gtgtgtgaga gagaggttct tcattcttca 960

ccttaaaccc ttttggtgtg taaacccttg acttgaaacc ttgaccagag gaagtaggct 1020

tcaagtaggt tagtgaagga ggaactagga tgaaaaattt ggatgtacat agatctgttg 1080

aaccggttga gtagttgaac ggatgataca ctttgagggt gttggtaatg tcggcgatgg 1140

<210> 843
<211> 1180
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60310_G1, chr2:47967092..47968271, Cluster 5

<400> 843
gtacaattta tattaaatat tataaacacc taagcattat gttttactgg ttagacatct 60

tcaccaagta tcccacacct ttcttccacc ggagtgtgtg ttcaaacctc acctgatgta 120

tcgcttttta atataattta tctcttgccc ctctttttaa catttttac actgagttga 180

tttaaaagaa atatagtgac ttttttgtaa aaagttaacg cacgccgaca gttgaaacta 240

gtgctttaag tacagtagag aaataaaaca tgtaccataa gttattgagt aaataattgt 300

tcgcggattt atgacaactt ggagtgcttc tattggttga gagtggttac gcctagcgct 360

atacaaaatc tggccacaaa agatccggcg tgggggtgtt tctctccctt ctcggctttt 420

ccacttccgt aatccacgca tggcagttct attctttctc tcctctgcct tcacgaatgc 480

agaaaaaaag aactgccatg gggaccatcg ggaggtggct agcccaggcc ctggccgacg 540

ctgctggctg ctgaccgctc ggccgcgtgg agggccgcct ggaccaggag ggcgccgccg 600

cggcgtgctg ttcgcgcgca ggggctacgc acaggggccg ccatggctgg ctacgccact 660

cgtcggaact ggccgtcggc ctgggcgaac gccgccggta ccggggcacg agcggggagt 720

cgggtggggc tcgcgaccgc gcctgaagca ggggcagggg gcaccgtgca gcacaacggt 780

aggagaagtc tgcggctaca cggcgaagag aatgaagaac gggaagaaaa aacaatgcag 840

atatcgttag agtggaggag aaaactaccg attgccgata aattggaggt tcgattgaca 900

aatttaaaat atcaagatgg agccttcgac gatactaaca cagcggtatt cttagatttt 960

gttaacatcg cataggttaa aagtaattac tcgtcggaat taaaactgtc ctgaacttcg 1020

acgatatact tacaacgtca tggatctcga cttgcgatac agaaataata tttgaactga 1080

cgtcatggat ctcgacttgc gatacagata taatatttga actggctcga cgagaagatt 1140

tcagcaatat atatatagca atatatatag ggtttaaaga 1180

<210> 844
<211> 1088
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6213_G1, chr1:31776094..31777181, Cluster 5

<400> 844
tagatcacaa actcaacagt aataatgaat tgctataaat aaataatatg agtgttccga 60

ccaaagttta gctactgtat tactgacgct atatagctgt actaatttgt ttgccacttt 120

aacttttcag ctcagcatta tattagtcgg ggaacaaaca actatagagt ggaatagcct 180

agagtagcta ataatgtaca tcatccagca cgaccctaag gtgtactacg aaacgatatg 240

atgatctcgg tacgttagtt cttgttctgt ttgtagtcgg caaggcaagc acctggatga 300

tccatgcaaa gtgcatgcat gcatgaacac agcctcgcgt acgttaccgt ttgtcattgc 360

accgattggc atttggcagc agcgcagggg ccttagggtg tcgatccgtc acttcatgca 420

cacacgacga ttgacgacga tccgatcgcg aaaaggctct gctataggcc catagagctt 480

agctatagct agctatatag atcggccgag acgcgcgaca ccattcatgc acctgtgcgt 540

tggtccgtgc atatgcatgt gtggttagca ccgtgcgtcc gcgcaagcat gcatgtggga 600

tgctgatcga tcgggctggg ccggggaata agagggtggc gggtggcgta caaacgcaac 660

ggaacgcgag cttgacccct ccgctgctcc ggccgtgtcc ggcgacaaga ggatgcgccc 720

agcgccagcg ccgcccgacg cgcgcccctg tccgccgcgc ctagctcccg gccccggcct 780

gtgcattgga aagcaaccaa gggttgttgt agtagctgtc gtcgtcgtcg tcccactgct 840

cctacatgat gcatgcccac tgccgggtcg atcgatcgct cgggccgcat gtaggggagt 900

gacggacaga gacagacaga cagatcgatc gcgacggtac gtacacgtac ttgcactgac 960

gtcgtactgt gcttttcgtg gataggaacg gccctcgagt cgacgcgcct tcatgcacct 1020

accgtacctt ctggttgttc cttcggtgtg acatctatcg gtgtgattca gtgatggtat 1080

aattgttt 1088

<210> 845
<211> 1074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6262_G1, chr1:32010760..32011833, Cluster 5

<400> 845
gatgcctgcc gtatctgttt cgatcctcct cccatagaga gaaacttaat tatcacagag 60

tttaagtgcc agcaacttct acttgtatgc atactaattc ccaagaaata ctgcgtatta 120

attaaccacc ttgtcccctc tgacatgtcc agttttaaga ccagagctat tgagctatat 180

cgcttacatt aatccgtaaa ccaattcttg gtggagctca aattgccacc ggccgggtca 240

aaatgtgctc acagaatcac agcacggtcg cccgttccaa gaaaacgaat tcgatcgcag 300

tcgctggtgc aacttgtcag tcgttaccac agcagggatt tgtaatcttg agaatattaa 360

ttggtcgcag tctagctggt atgacataat gttcaagtat atgccttggc taattagcta 420

gtttttgttg gcagtgtttc ggctttttca tatcttctct gaatcataag gccaaagcta 480

gcatcagatt gcccatagaa atctggagag cacaaagcca cgtaggctat ggcttagctc 540

acagttctta tggcctgtgt ttcttgaacc ttctagctgt tccatcacga ctttttatgt 600

atgttcatgc atgtgatgtg gccatcccaa cgtcccctac gctcgctgtg ggcttgagac 660

gaggcgttgc cgctcaagca gtcaacgtca ccagtcaagt tgcatcacta actagcttag 720

catcttgggc aatagttttg gacgacgacg gagccacttg gcacattatt gcagatacta 780

aatttttcgt ccatcctctt gcaactaacc ctaaatttat ccctgttagc tagccatcac 840

atgatctagc atcgtaagtg accaccggtg ccgccggtcg tcgctcatag ggcgagcgag 900

aggtggtcga gacaaaccag atcgaagata gtcaagaacc aggattatac atcgctagat 960

ggatggttgt ggttgtccac acacctaagg ttttgccatt aatggacgtg gcaattgccg 1020

accgtggcca ttgcatgcga caggaacagc gatgggggt ggggggttaa gaag 1074

<210> 846
<211> 1278
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6638_G1, chr1:34159289..34160566, Cluster 5

<400> 846
taatgttgag gcctgtaact aaacctatct gatcaagttt ctattaagta tgtcaacaaa 60

gatttgactg tgcatagaat gaggttcaag aatcgtgaat catctgcttc agaatctaca 120

aagggtgacg gtacagtaga tcaagaaaag actagctctg atggtatcga tgaaattgct 180

gaatatatga aatctagata actttcttgc tgtgaggcta catggaggct gttcgggttt 240

gagtttcatg gtaaattttc tctgcggagt gtcttttcgt gcatctacca ggattgaact 300

ttgttatagt gcaagaggaa actgatctgc agagtgttgt caatgatcag aggcaattgt 360

aagaatgcaa tgaatcttaa ggattttaag aatgtactgt gaaagacatt aatggtcaga 420

catgcagtta acacctgaaa tgtcaaatat gacagttatt tattaccaga ggatgtttaa 480

tcatttgagt gtgtgctttg acatttgtgc tgatttaata aaggggttaa agccaagcga 540

agaggtgtca gctctcatat tgttttccct gacaagatcg tacagatgat attcaagccc 600

cgactgtccg actacctact tgtatagtcg atgtcacagg aattccctgt ggacgtgcta 660

cggcatcaat tacatcaggt ccgttgtcct tggcttcctt gttggtgcaa atgtaccgtc 720

tgaaggtaga catttatcgt gtacaatgca ttcactgtca agagtataat ctatactatc 780

tggatactta tataatcggg attcaaacgg ggcctgatga gaactttgaa tcaccttatc 840

tgtgccttgt tcttgtgcaa ccacgtctag actctagagt gtcatgcaat aattgccaag 900

atatcaaatg tcgtgtagta caagtttcag aaaaataaag aacctttcaa gtcatacggt 960

gtcacagtac tagtagcagc cactggaatg tgacggcgat gaccgctggt tcataacttc 1020

actacggcca caggtacaga actcgcaaaa gtcttcaggt catgctggaa cagtggaaag 1080

cacgtaacgt catgggattt gcctccgtca tgtaatatta tgcattctag ttttttttaa 1140

acaaatactc aaatataagg gattccaaag gacaaaaaaa aaacggtttt gcatgaacta 1200

cttctcattt atcaaccaat ttctgttaat catgttgaca gtagcatcta aatactgcat 1260

ccgtctggcc gttctcac 1278

<210> 847
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7374_G1, chr1:38211834..38212868, Cluster 5

<400> 847
ataaacttat agcaaaacgt cgagaattat acctggggac ggtgatcgat gggtacccga 60

tacacagcct gtccaggtcc tactcccaga tcttcgtggc tgcttagggg ggatgaacct 120

gaggacttgt caagggataa agaaagcagc gtgtgaatca aatatattat cgtggaagga 180

aacgggtatg ttgacgacag gctcagtttt caaccagtac agattctcca gaagacattc 240

tgccgaagct gaattccctc cgtcgctgca ttctgcaccg tgtcacggaa gagtgggggg 300

aaatgctttc acgacaatcg acgcgactga gtacaatcct tgcatatctt gcacgtcatc 360

cctcaagaac ttggaccaaa agttaaagtt aattccacga ttcgttctga gaaaaaaaaa 420

agttcggggc ggggagaaag gcactcgttg gtgttgcttc cttcggaggt catcgattcc 480

cgccggctgc cggcggagcc gcggaggtgg gaattccaat tcccgaccga aagatccatg 540

ccgatgggcg gcgacggtga ctgatgcgtt cgcggcggcc cgagtggcat tatcgctcac 600

catcagctag acggtgaccg cgaccgcaac atcggctgct gctgcttctg tgtagttctg 660

ttcagtgttt caacacaagg atctcagtcc cgtcacattt tttccttttc atttggtgtg 720

tgaactgggc cgcatgaggg tcgctctcgg ctctcacatg ggggcacccc accccagcaa 780

tggttccatt ccacgtgcac tcgtgaatgg cttgcgacgg cttcgggcga gactagcagc 840

agggacggac ccgtaaattt agaggctatg tactaaaatt caaaagaggt catattttat 900

agaaaaaata taatcagaac tacattgtaa cagaattctt atattctgaa ttgcaaaagt 960

tgtgtttgaa gagcagcaag ctagctgcta attgagttca gcttagatgg tgtaatgtta 1020

gtttgctcat tgatg 1035

<210> 848
<211> 1225
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7392_G1, chr1:38327413..38328637, Cluster 5

<400> 848
cttatggaca aaagagataa aacaggttgt gaaatgaata gaggtaattt ggcctatcta 60

tatatatggt gtaagcaata aaagaatgca aaatatagat ggtctgttat tttctgaatt 120

aatttggtaa aaccggggct attctaagaa ttgattgaaa acggatgcta ttttctgaat 180

gtcttcgcaa accggtgtta ttttgtacat tcttccaagc tatcgcctat cggtagtctt 240

ggacaatccg gtgacacatt tattaccatc tagtgactga cggatgctac cggcaaacgc 300

aaggccccgt gccatctcca tcgtttgtgc tagttcaacg atgcgagcga aagcgaccgt 360

ccgcgatgat gcaatcctat attcctatcc tgtttggcct tcctccggaa ggcttccccg 420

tttcggttcg cggacgcgca gcctttccgg tgccgcgagt acgcggaggc gcccgcgccg 480

atgcccgccc tgcgccagtg catccagcca gccagccatg tgggcgtgcc gcccgtggtg 540

gcctgcctgg tggaaagtgc tcccgcgcgt agcctttcgg cgaaagccgt attaccccac 600

cccgtctgcc tctgtcgctt cggtccttcg gagcctggac gccgtcgccc gccggcacgc 660

caaccgcttg gaaagcgtac gagtcttcct cgcgcccacg gcggcacgca cgtctggcgg 720

ggccgtgcgg gttctgccaa actaccactt gtcctagatt gcttgctcgt ctcgtcggac 780

tcaactcgtc acctgggcga gcatgacata aactcctgtc agtcctgcat atttttcatc 840

ctatatattt tctagtatgt tttattgtat cccataaaag atacttcccc gcatcagggt 900

tcacaatttc gtttgtgatc atccgaattt ggttttgtcg acaaaaattt gacttctaca 960

ttttgaattc gaaatctatt tgaaaccggt gcgagatctg tttctcgtct actagcgaaa 1020

acgaaaaaat agtgaaattt ggtgagcacg agaaagtaaa ttgtgctctg acataccaga 1080

cgtctccaac catcccctac acagttccta ctgtaactca attatttaac attttattag 1140

ctttcaagat taatttttt tataaaatat ttgtatcacc gtaatacaca ttattattag 1200

gtaggaataa ttagtgcttc ccata 1225

<210> 849
<211> 1174
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_76739_G1, chr2:151713398..151714571, Cluster 5

<400> 849
accattatgt attcatcagt cattcgtcgt cgtcaatcca cagatgcaca tgctacacgg 60

aattgggaca cgacaggagt gctgacgatg tactacacta gcgcgtacgt acgtgtggaa 120

aacaggtgaa aaaggtgagc ggaaaatcta gcaggattcg atcgacgatg ctgcaggagc 180

tagctagcta gctagtcagt tgtgtggtgg tggtcgtcgt cgtcggcgtc gtcaatgctc 240

cgcccgccat tatcatatgg ctcatttttg tcttaatcta ttatctactt aattgtgagt 300

gttacgttgg cacctgacga gtgcatccgg ccttacgttt gcatcatcct ccaattaata 360

attcctccaa cacatatatg catcacagca cgtgacacaa ctttgtccat tgcagtacgt 420

agtctatact ccttccatat atacgtaatt aatgcagtta attatgagag agagaaaaca 480

agtcgccatc atcatcgctc gctcgctcgc tcgctgctgc ttctttacta caagtcgcca 540

tttcattaca tccccaacct ctggtcagag tcagacaaga tttgttaaac ctctgttacg 600

tgtaacacgt tttggtcagg ttgcaatctt acttgtgtgt gtcagataca ctaatattgt 660

attgctcata taattctagt acgtacatgg ttgatggttg ctgcgcgtct gtacatgtta 720

attgtactgt gtgtaacctg aatagtgaat aatacagtat attacagatc gatcgatgaa 780

ccctagctga tgctacacag ctgctgctga tgactgaaga gaaggagaga gctcgatcgt 840

tagaaaggtt tctttagcta gttcgatcgt cctgccttcc cggcatcttc taattagtgc 900

ctgcggctct gatgctgaat gtatgtgtac catagcttaa ccttagtggt gggctcacag 960

tacctgctac cagctcaacg accaacctat ctatccatgg agttgctgtc gaattccacg 1020

cgctatggta gtagtctggt ctcgtcttgt ccaccctcag tccatcacct acacccacac 1080

acggaggcta cactggacag actccgctgc atacataaac tccttgagag ccgccatgga 1140

cgatccagcc ccggcggcct actgatccgg attg 1174

<210> 850
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_77426_G1, chr2:155918255..155919272, Cluster 5

<400> 850
gggttgctct tattgaagta tcaggaaagg ctgaccctaa agtttagctt ttttgatagg 60

tctgaagttt agcttactgg ttgtgccttc aactcagcta atctcagagc ctccgttggg 120

aaccggggtg ccagacgcgg tggtggctgc gggggggagcg gtcgacgggg ccatcggcgc 180

cgacttcgcc gagccggcag cccggcacat catctccctc ggtgacctac ggtcttttgt 240

gttgctacta gatggccatt gatttctggc gatctagcag gggcgtgcgg ttcatggcgt 300

tttgtcctag gccatcttgt tttcacgaca atagaagtgg ttgtacctat acatcaaaga 360

atgcatcagg tttatgtacc atgctgttgc aaagcaaatc agcaagacct gagctaatga 420

actttaggtc atagctactt agcattagcc ataaatcatc aagacttgaa ctaatcacgt 480

actctcagaa attcttacag gttaaggttc ataaaatatg tgacaatgca gaaacttaac 540

taacattttt tttattaatg atagggtatc cctagacaat aacaaggtgg aaattaattt 600

acttcaacca gggaaggttt aatgttaaat cccatttta ttggtaggtg gaaattattt 660

caagcagcct tcctgtacat ttgacaacta catgacaagg tggaaattaa tttacttcaa 720

acatcacggg tcattttata ccagaaataa ctcattgttt gctctctgga aggactactt 780

ccaactgcac tctcaccagt ttctttcttc tacatttttc ttttcattca gaacagaatc 840

gattgtcttc aaactccgct ccaaactttc aactcctcct ttgatgctct ggtattcaaa 900

agagtaatca ctgattgtca acacatcatt gccactgaag gattcatttt caaatttctt 960

gtgtttcatc aaatcaaaca atttggtgca aagttggcta atctaagcct tgcatctg 1018

<210> 851
<211> 1094
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_78701_G1, chr2:163553938..163555031, Cluster 5

<400> 851
gtttatgctt attttgtccc ttgggcctta tgtacctaag ccctatgagt cgttgtatta 60

tggaaacatt tttctccaat aggaatgttg tcggctgtcg ccggtgttgt cagtcttttg 120

tactaagatt tctatatttg gttcatgagt tactcatgtg ctaatgatgt atcttgcaca 180

cagctagtta ttcttttgac cccacggatt ctaatataaa cttgtgcaat atcttcatgg 240

aattgttaca tacctaatga gctatggata gaatccatgt cttccatagt ttaaaatttt 300

tccaaaccat tgggttataa tccacgatga gtttaaccga ataaaaaaac tgagtaggct 360

tggattattt tgggatatga attgtgacat ggatttgatt ccaatccatg ctaatctaga 420

gctggattag tgtaaatgaa caagagtgca aaacaattga caacaagcac aaaccgttaa 480

tgctgaagaa actaaaaaaa aggtttcgaa tatggatgag ccaaatctcc catcggagca 540

gggagagttt tcaccttcga atacattacc ggtggatgat tcgccctaca aggctctgtg 600

caacccggta ttaaagttta ccttttttat atagtatgtc tgtgatttct gttaaatgca 660

tggtccattt ttgtaattca tgcactttgc ttctgttgtt ttttttatgc ggccaaacac 720

tgcaatcttc cccaaaccct acagttacct gatgattatt ccttgggtat gttttagcat 780

gtcacaacgc tgtttacaat ttgtagtatc atagtatatt ctaaatgttc agtatacact 840

aaacacgacc tggtgcagac attgttccaa attttgttcg ggattaaccc atctggccag 900

aagtcgatcg cagagagtga tcgaaactgg aaattctatg tgaaaacagt tgccaatcca 960

ttttatttgc tctaaacgcg ttggcctgtc tgcattgttc taaagcacat cttcattatt 1020

ggtgctgaat acagttctgc tcaagctgct agaagttggt ctgtgatgat gagagattta 1080

aaccaaacga aaca 1094

<210> 852
<211> 1138
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7937_G1, chr1:41226612..41227749, Cluster 5

<400> 852
caaaaaagaa gaaaaaaagg agggaggttt ccatctttgc catcagtggc ggcgcctcct 60

gcttcttcgt tagtgaccac ggtctccact gccattgcgc tccatgttct cgttgtcgca 120

cgcttctcat gtattttgcg tatttttaat gttacaatac acgcgcgcat gacgtgcaca 180

ctatactctg tagttaccat atcaatgctg gattatttaa aatcaaatca gccatatatg 240

atatatttga attctgaaca gtcaaccaac tatatcgata caacaatatt tctgaaatta 300

tcatttcttt ccaagggaca aaaactagca gtagtaaact accataggaa ggcttctact 360

atatattaaa gctcggagca aatctgctca aacacaatat ccatgtcacc tctttttcac 420

gaactgtaca atcctttatc aacgacgagc accagctgaa cctttccttt cgtgcgctcc 480

gcactaaacg catgtgtcct cctctaagca gagaaacaga cgaagaagag aaaaaaaatc 540

cgctatcctt accttcgcaa cacgttttgt cgagtcggtc agccgagcta ggatgaaaaa 600

aagaatgacc tcaatgctaa aaactggttt gtagtttcag atgaaatagg gtttgttcta 660

ttgttatttt ttattcatat agtactagaa cacaattagt tggtcataat ttctttcaat 720

cggccacccc catcaataag atatatctga gtttgtcagt tgatagcgtt gcaattttta 780

ttacaggtta tctatgacaa attgacagga agaaactgtg aattcgggtt gtgaccgtgt 840

cttcgatcga agaagttgag gcggttatct ttcaaaaaaa aagaagttga ggcggttgct 900

gagcaattta atggctatgt gagttcactt cagctcttct agagctatgc acattctttt 960

gctgtcatag tggaccattc tcctgtttac ttacaattgt aaacttagca atactctatg 1020

aattatgtga tgttcatcac tcatggcttc ctaccagatc acacattgca taaatgaagt 1080

tcaacgttaa cggttagtct tcagggattc aaatagaaca tttgtattct gtttccttt 1138

<210> 853
<211> 1216
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8127_G1, chr1:42471692..42472907, Cluster 5

<400> 853
gctagactac gggaatcacg tgcgccatca agatcaccgc cgtatccttt gcctccgtga 60

ggccaatatt gccgcagact ttttatgcaa gtgcaagtgt attcatgata atccccttt 120

gtaagtcaac tttgtttatt ttgggcaaat ggcattccaa ttacttcttt cgtgtatggc 180

acatgtacgt atgtgcttgt gttatgcaat ctttgtttta aagtgtcgtg cttactgtac 240

aagctattat atctggaaac agaattttca gcgtcaagct agtatacgtg gaaacggtta 300

cttcagcgtg caaaaaactt catgccggga caacaattac aaataaaaca cttctagtcg 360

gaatgcatat ttataactaa aaaatttcta aaattaatat tattttacac acgtttcact 420

tctgaaaata aaaattataa ataaatgaaa aagactatac cccgcatgat ttattttaat 480

tagcatgtaa tgaaaataaa acaaataaaa actaaagaaa tggagaaaat gaagtttgtt 540

aatactgtag ttttaaatgg ccgaatttag aggatattga tggagactga aaatatagat 600

gacataatct tttaaagtgt gtgaaaaata caaagaatat tttttatggg atggaatttg 660

gggatgttgc tgcaaataac ctgaaacgta tgaacattga acaatgcact tgggctactg 720

tgaatgcgcg gcgtgatccg cacagcctgg tggagagcag caggcctccg cgttttccag 780

agccgcgccg gcatgcggat gcgagtctct ctttgtcgga tgctcggagc cttcaacggt 840

cccacttggt gtaagcaagc gtgccattcg gtgcagagtg gcagagtgcg gtcgcaatgg 900

gcgcggacgc acgactcgac cgatcaggcg atcaccgacc gactgctgat tggaaacgac 960

ccatcacaca actccatacc atacgtagta gacaggtact ctgcgatagg cttttgtctg 1020

ctcggcgcgc ccacttgcga ggtcccgtgg tggcgcacag gaacctaagc agcatctggt 1080

tgcgcgtatg ccctgagccc tgttccgagt cagctcttgg ccagccgctc gggcttggta 1140

cttggtggtc gggtactttg gttgatggcg ctagtcttga ggctagctgc agcggcaccc 1200

gccacactcg ctctct 1216

<210> 854
<211> 1249
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82590_G1, chr2:185008893..185010141, Cluster 5

<400> 854
tggagctagc tcagggatgc gttgttgcat ttacagaatt catttggcaa tgtatactga 60

gaaaagtaac ttcaaaaagc agttgctgtt atccttggtt gcttctcagc tattatattg 120

ttggctgaag ctactttact tccaagtgtt gatctatctc tctttttat tcttatataa 180

gttgtaggaa aacaagatgt tttagtttag gtgcggaact gaacacttta tgtacttcca 240

actgattttc tgcctctcca gtttatggaa aaagctttat tgcttgtgag tttgactact 300

ctgcaatact atattgtctc agcaatactt acggtcttgt gttagtgata gcattagata 360

atttgtttgc ataggacaca acagttatgt tcatctatca cctactcatt aattaaattt 420

caaacaaaaa acatttagtt tttatatatg tgcctatagt tactaggcga cacttggatt 480

atgtaaaatg agtgacatcc ttgaactcct cactattgtc ataccaggaa aaaacagtct 540

tttgtttcat tctgttataa acttcataat tttagccaaa actattgtct tcaaattatt 600

attgggcgcc cgaagggcgt ctaatgttct agtacatata attatatata cgtacttctc 660

tagttctaca atggaacaga accgtcacct cctgcgattg ctgtgacagc agctaccgtc 720

aagcttctcg atcgctactg cgcatcaact gggaaaaagg agggaagttt ctgtatactt 780

gagggcctaa tctaatctaa cgcagcaaga tcatacatac atgtctgaag cgcctttgag 840

cgagagatac gtgttggtat ccttttccac tttcgccaag acccaagcaa taatgatacc 900

ccgcacggta gaaagccgcc gccgtcgtcg ccgctttttc catggacagc cagacaggag 960

gggcaagtca attctcctat cattttccac gctcgcttta atttttttc ttctttcctc 1020

aagaaaatta agaagcgcca aggacctggg gtccgggact ccttttttcat gtgcacgcaa 1080

catacgctac actaacacta ataacactag tgcactttct atatatcttg ctgatcgact 1140

acaacctgta attgaaccag atacaagaag tgaagccctg catgccccca ggctttttt 1200

ttttggcccc ctgctcatgc attccagcca ttcacccttg gcagtataa 1249

<210> 855
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82774_G1, chr2:185870792..185871826, Cluster 5

<400> 855
acgactggag ataggctcaa gattttcggc atgttgcaga actatctact ccttgtcgtc 60

tgatagtatt tcggtggcat atctgacgga ttcaaccctc actcgtcttc ggagcttgat 120

gattcccagt agcacccccc ttctcgtagg actagcaacg atttcgttgc ttggctggac 180

tagtcaggtg atccccacac cacacgcaca ccgacctgtc gtggagggaa aagtgtctcc 240

cgggattcct acttccacct aggaggattg acactttgac agctactgag acctgttctc 300

cttcgaggaa acagggcaag cagctctcgc ccggtcaact cgccctcgcg gcgagggctt 360

gactctcttg ccgcactcca gccgcccacg ctcccgtggc cctggttcgt tcgttcgttc 420

gttccatgcc gccctcgttt gttgacttgc cgccgctaat aatgatggga ttctggatgg 480

tctccaactg ccatatctga cggcgttttt tctttctttc tacatgcttg gatttttctg 540

tggaatttag atttatgtct acaatttcga atggagaggc ccaaactaac gagatggatt 600

aagaggcaga ggcctgccag aaatagaatg tctgcacgga agtcgggaga tccagactca 660

agaaaatgct gggccgtggc atgaacacga tctggctggc tactttatta tttgtttatg 720

atgggacgca ctgcagggag gggatagact cctatgtttt gggaccaacg agcacttgcg 780

ccgttaaaag gtctatgctt tctatgaact aatttatagt cacttcattc tactatattt 840

tagtctctaa attatcaaat actgatcaga tatattagcc aactccataa acaacagtca 900

ggtcctacaa acctattggg acacatgttt ataccatttt ctttaaactt aattagtcaa 960

attaaaaaaa aagaaaatga tttagctcca aattactaga agtgctttat tttttgaaaa 1020

ggagggagag tacac 1035

<210> 856
<211> 1085
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82929_G1, chr2:186794652..186795736, Cluster 5

<400> 856
ctagtagcta acgcgcgccc tgcgcgcgag aataatttat ttttttggaa gtgtttgaca 60

gcaagatagt tgggttttct agtttacaaa taattatcat gaacaattat agtgagttgt 120

gatttacaaa ataaaataac aatcttagaa cttgaggact tggattgtga acacggatag 180

gaacagatgt gattctaact cccaagttta tagatctgac aaagtcctaa gacaaagtcc 240

taagacaacc atatgcacat ttttacctgc atcatttta atatcatttt tagacatcag 300

tcgactacaa tgaacattat ttattttatg tctgcatgca gacaacattt aacagggaca 360

taccttttt attgtggcca ctgcttgtca acaacgattg catttctatt gccataaatt 420

ttgtcaaaat ctgtaaatgt tgcttctatt ccaccaagtt caggaatccc ctaaggccaa 480

aatgactcgg tccaatcatt aacaggacca acattaataa aatcgaggcc ctgcgggcgc 540

tgaattacct gaggctgcac cttagaggac tggccgagga aagcgtcggt gagggagttg 600

agggggttgc accacgaggc cctgactgag gcttagttgt tcaggcccat gacgaggtgc 660

tgcagcgcca tctccgccat cgaacggacg tgcgttctct gacgccggag gtgagacgct 720

atgtctgccg ctttggtcga cggcgatgtg ggagaggata gaagagggtg agctggagcc 780

gtgcgaacaa aaacacccaa gtagaggaag cgcgttggaa gacgatggcc ggcgcacaac 840

gaggaggcgc tcaagaggac tcaaagcgtc gccgacattg tggtctcctc tcctcctttt 900

tttccctttt cccaagggtc cttcacgtga agtctcgaaa gctcaagcgt ctgatagctg 960

aagcagccgg cggtcggatg catgagagat gcgcgtggct gctgagcagc gatcggacgg 1020

tgcagttttt tctgatgacg tggcacaacg tggcgagctc cttgctcccg cggttaatat 1080

ataga 1085

<210> 857

<211> 1188
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83027_G1, chr2:187353960..187355147, Cluster 5

<400> 857
cttgcgacat gtctagacct tttctccccc acgatctggc tagcatagca ccctaggtga 60

acaccatgga tatcgttgac gtccaattga atattagtaa gcacgctgca cgccctagat 120

gaaatattgt taacgtcaaa ctgaatcgca tattagtaag tgatagcatg gtcaatgttg 180

catatggcct atcacacgca acaagcaact agataaaata catatatgac tgagattgtt 240

gcatgactga gattgttgca tggttagcaa gccacctaga atacatatat gcatcttgca 300

gagagatgct acgacgaaca gtaagagata caaacaaaca aaaagagtta ggcaaaagga 360

gtagatgaaa gagtcaatta gatgttggac ctctcgatca ccatgatcct cttgtttatt 420

tatacataga gtgtgtggca ttgtccagga tgtactacta ctctcttagt tttccacgta 480

acaaacagag gcgtcagaga ctggttgttg gtaaaaccaa aagtcgctga tagcatgctt 540

cgagtgtcaa cagtacactc aacacaacag ctgcgctacc tcccccggca cggccttaga 600

caaggccaca acgaactcct gcagctgagg cctgaggctg agcactgccc ggccgtcgct 660

cgtcggtcga cctgcagtcg ttcactgccc caccgaccga caggtggagc cacgcatgca 720

catcttccgt gaagtgtcgg cccggccatg gtccaggtgt acgtattgaa gaaggtcacg 780

gcatctgcgg gaggcaatca gcgaccgacc ggagcccgta ccgacgttga cgtgtgtctc 840

gttggggtca gttctcgttg tctgggacgg tcaagggggc cggccgtttg ggtgtagtac 900

gtataggcca ggagtccagg acgcgactgg tccgtccgcc cgatgacgaa cacggagttg 960

ggtgaccacg ctagctggct actccagcgt ctcatgatgg ggttttctgc gagacgcgcg 1020

gctccgccag aatggtccat ggcgacgggc gacggcacgc ggtggtggag atccgagctc 1080

tcggaatggc cgctcttgtc ccttaaccat tcgaaggacg cttctgccct tttgtcgggg 1140

cgtctgttat cgatggacgg ggacgtcacg ggcagtgtta acggtcct 1188

<210> 858
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83168_G1, chr2:188375623..188376744, Cluster 5

<400> 858
tcaacctgta cgttgagaga agtaaaccaa acaatacgca ctttgagact ccgcgggtgc 60

agctgcagcc tcccgcatgt caaccaaaca ggtacacgga ttcttcctcg ggattcataa 120

tcaccaagtc aaccctgatg aggaggaaaa atgttggccg atcaaatcac actaagttgg 180

atttttcttg catagtaatc ttattgtgtg ttactgaaca aattccatat actcttcttg 240

tgttagttta atgctcccgc atttaaaacg agcagccact gccacacaaa gacagtcact 300

ggttctggca gtggggcaca ccgaagattc gaacaccaag aaataaacgg aaaaaagaaa 360

aggatcgtca aaatggcacg caggtccaat ccagcccgtc gcgtccgacc acggctgacc 420

gcgagtgcgg acggtgcgcc tggctgccgc ctgggacttg acgggcgcac gccccgctct 480

cgtactacgc agtctacgct acggcggtgc gaggccggat ttgccatcgc tggggtcgcc 540

gggcggcaaa tcgatgccgg ccacggagga gcaccggcca cctgcgcgcg cggcgcccgc 600

caaccgcggc gcgaaacgtc gcccccaccg gggccgatgg cgacgcgggc cgtcgcgtcc 660

tgcgtctcgc ccgcaccgca cgcctttcgt ttcgtttcgt ttcgtttcca cgaatcggcg 720

gcgacccgac cggagcggag ggcagcgggc cgtggcaacc ggcggtcgcc tcgctatcga 780

tagcgggcgc gcacggggct gggaggtcga cgtcgaccca ctgatcgatg catgtcgagt 840

ggaggctctc cgtctccgtg tcgcacggtc actccaccat gcacaaaaga taatttggcg 900

tacgggcacc caagtttggg ctctcggatt cgttgttttt actgcactcg gaatggacga 960

tggcggctgc agtgatgaga gcgctccgta gcttcgtcgt ctgtcagata actttcttcc 1020

gtacgaagta gatgaaaatt agtctatgtc aataaaaatc aactagtttt attgatcagt 1080

tagctaattt tcgtcagcta gctatagccg acaaaaaaaa gc 1122

<210> 859
<211> 1154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83171_G1, chr2:188393067..188394220, Cluster 5

<400> 859
gaagattagt caaacttata taaaacatgc ccgccaccgt gctatgtagt tgtagaaata 60

ctcttcacga tgtcaattat agtcctaccg ttatcaattg tactcttaac actgtctctt 120

ctgttcatca cgtaactcca ttgcttcttg aatctgaagc aactcgtctt atgtgttgct 180

tcatagacta ctagctccag aggtaataag gacactcctt tttaagctct gacttgccta 240

taccgaataa ctcttttaaa catagagtac ctataacaca aacaatttag aacatcaatt 300

ccgttgtact ttcaattttt tcacttccac aagtcatagc tactctatgt tagaaggatc 360

aattgcatgg tagaaggatc aattgcaatc ctctccaaat tgattaacaa ttttaccacc 420

atatagtgta tacagaataa ataactaaga taacaatgaa atttgatacg acaaatacaa 480

agtacaaaca actcacaaga tgatttgcac acgactgact acatagctac tctatgttta 540

aagagaatat ttgaagagtc tattctatga tgtctagtaa tataaacctc gatgtcgctc 600

gacactactc cgatagcaac tttatgatag acaagttata tgtgatagtt gttggaaata 660

tatgatataa tacaatttat gatatatttc gcattgcata ttggtcgtcg acaccataat 720

tgtgcttagg atcattgcca cagtttcttc tatgcttctt agacatatca tataacactt 780

ttgaaaccta aagtttgcaa ggagcatggt aagccacttc atggttcacc atccatagaa 840

ttgacatcta cacatataca ttctcaagtg cggagggcca aatattgctt aggcaatcct 900

tgatctagac caagaagata tcaatgataa aaaaactcat atccctaaca ctatttctag 960

atggttggac gcactcctcg atgctgactc ctccctcgct cgccacgcta cgctctacca 1020

ctgcctctct gcactccaca ttgccaccgc gaggtccctc ttcctctctt ctttgcttcg 1080

ctcctcatta accacctcgc tcacctatct cgatcttcct actggtgttg ttattgatct 1140

tggatcatgg ggtg 1154

<210> 860
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8601_G1, chr1:45124546..45125656, Cluster 5

<400> 860
gccgacggac ctcttcataa cagaggtgag ctagagacta atagtctaga actctcacta 60

gaaccaaaag ggaagagacg ggcaaaggtg gtcaaagtgc tcagtagata tgtgagctta 120

taatcttcat ctcagggtca atcaatccaa tgaatacaaa aagggcataa gatattgtat 180

atcttgtggc tcaaacctcg agaggcgtag ctaggatttt tcttggaggg aggaggatgg 240

gggcaaaccg atatataact atagttataa tatcactaaa taaaactagt cataacaaat 300

gatatatgta tacactaagg ccttgttcgt ttacgccatc tcaaaccaca tgggacatct 360

cggccggggt acaatctttg ttcatagaga aacacatgct cgtgatttta tcttgacatt 420

tccttaccac acggcccgag aaataaccca caagtctaac aacatggaag aaatccccgt 480

ctcacaaagc cagcagcaca cgagatgaca caaatatata atgatgttgt ggcagcgagt 540

taaacccaca aggggattga gtgataacga gtgtatggat atcccatgtg gtttgagatg 600

gagtaaacga acaaggcata cataataaat tttagcttat tataaactaa ccccttttat 660

tttcaccaca tatataaaaa aattctttgt agttaggggg cacgaccctc tagccccctt 720

gcctacatca ctgcaaactt ctataaatca ctcacgtgtt aggccccctt tggtagggct 780

ccttcaatag ctccttcaat ggcttcttga aaaaatctat caaaggagat gctctttgat 840

gggtttttc tagagaagag tgaggagctc cttaaacaaa cagcagcagt cgggagccag 900

aaaaaggagc ttctatcggc tctgttccta tatttttctc ttcgtcgatg ctgcatcgta 960

ggagaagcta caaaagaaat tatatttcta accaaactgg gtgctctttc tagagctctt 1020

cctaaaaata aagcggaagt tgttttctta gaggagccat agccggagat gaaactccct 1080

accaaatgga ccttagtaac taggctacac c 1111

<210> 861
<211> 1367
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86702_G1, chr2:209228081..209229447, Cluster 5

<400> 861
gatttacggg gggagttgca gtgcaggaag cgagcgggga gggagggact accggactag 60

ggagggaagg agaggggtgg tctggtttgg cgtggcccct gggccctggc tgtggctgct 120

tcgctctggc cttttgggtg ctcacgtgaa cctccgttgc cagagtccgg tctcctctgt 180

gatggctgat gactgtggca gtagcagcag catggatgcc tcgctgtcag tgtggggggc 240

cagtgacagc cccttgtcac ccatggtcct ggctgggata gacggacctc gagacaaggc 300

tgctcttttc cttttgtact gtgtgctctg gtcctctgga cttttcatga tagggacgag 360

agcacagtac ttttttccgt gcgttagttt tgacggtaat cccaaaacca gaactgaacc 420

gtgagattgt attttgtaca gtgtttccta ctgtgagcct gagccagcca gaaactgatg 480

tgccataaca accacttgca atactggtcc acaagcagag cagttacagt gagccatagc 540

tccaacaatt actgctatct atataggtgt ccagcaaatc ttccaatacg agtacaactg 600

cacaggtagc atcgaggctt cttttatgac tcaagcgagt actatacgat ctttttgta 660

acaaaagttg tactcgtgca gcctaccgtg ctcagtgaaa tatacttact tgattatggt 720

aacttgttgc tgatgacata ctcctataca ccgcataatg tcagtgagtc ctagcctctt 780

attcttcttc ttgtaaaaaa aatgacgtac gcaaagcgat gctcaagcaa aatgtcaaga 840

acccatgatt caaacggtaa taatgggcta aagtcatcat aagaaaccag ggcaataaaa 900

taagaataat acattcaact ttggggaaca aaaaaaaaca cacaaaaggc gcaatatatg 960

agcccgtgac catgcatatg gatcactcat tttgcttgcc agccctttg gacggtcatg 1020

atgccgtcgt caggaaagaa cagttgaccc caaacttaag caaggaatca cacaagcttg 1080

tcctgttgtt tccatgtaat ccgtccatag ctgcgtgctt ttctgggtcc tcgataacaa 1140

actattcttt attggcattc agtgccacac tgctatgtga ttcggatttc ggaccttggt 1200

ttagcgcgac gcatgagaca gcacagcgga gagtggcgtg gccttggaga cgcaggcctc 1260

gcctcaccta ctagtcagtg tttagtcgtg ttgtgcttag tggcggacct aggatttta 1320

tgtagggtgt gccgtaacaa aattttcatt taaaattgta tctaatg 1367

<210> 862
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87838_G1, chr2:215994965..215995980, Cluster 5

<400> 862
aaatcgcatt gatcgagatc gacgacgatg actcacataa aatataaact atccgcgtgc 60

aagcatgtgc gggtgttcaa acgcgcgcga acagatggaa ttatatatcg aaaggagtga 120

cggttaaacg agctaggagg ctagagagga gtatcccttt catgcatgtc tctctagagc 180

catctcttag agcctaaatc gctggctttt gtttgatttt ttgtggggtg tgaggaggtc 240

aaaaaagatg gatgcatgga gagggagcca acccggaaag gatccaaaaa tgtagcgtca 300

atcgacgacg acccaaccca atgttgagtg tgtggcatgt gaggtgattc atatatgcat 360

gcgaaaggac gctaagctag ctagctacac gtatggtaca cggattagct atagtgggat 420

atatgccacc tttttaccca cctagctaat acaataattt tgcctcgggc taggtaataa 480

ttaataaact tcattcatca attatgatat cttcgattct tgtatgtggc aatgcaaatg 540

aaggctaatt catcaatgca agtctctctt tggaacttgt ttcttcttct tcctgtttat 600

tacttctaca tgtatatgta tatatagggc ccctatttat atatgatgtt tttctttgaa 660

tataaattat tccatatgta ctaggttcct gttgcttatt accagatgga gatgacgaac 720

tattagctag ctagcgccat atatgtgttg gaatataata taagtaaatt atctacatct 780

tcctatcaat ttaaactgtt aggttaaacc agttggtgca tgtaacttac tatggtatca 840

aagccagagg tatcctgatt agcacaatta aaataaaata attgttgttc gctcatattt 900

tacgtctgag acgtacaaaa gaaaggctcg atcgacgtaa ggttgaaata taatataagt 960

aaactgtcca cctcttccta ttagattgag cttttatata ttgaactagt tgatgc 1016

<210> 863
<211> 1143
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_88032_G1, chr2:217125335..217126477, Cluster 5

<400> 863
aacgatgggg cacgaaatcg atgtgcggtg cgtgcgcggg catcgcgcac ggcgacggcg 60

ctggaatcat gtcgagcggg gcaggggca ccaggggtgt ggacgccttc ggtagagtct 120

taacatgagt agtatagata attaggaacc atccatccct gcatagcaaa taatatgcag 180

tagaagatta tgacttgaaa aggtgcaaca caggtaatgg gcagttagca ataagatgtg 240

ttgttagagt aaaatagagt gggtaatcaa tcctgcttca ttatatccaa actctataaa 300

atggttgcat aacttaatgc acataccatt acacaaaaag gccatgcttc atttctagtt 360

ttatacatgt cttgaattgt tagcctatca atatgaattt tgaaattcct ttattaggct 420

gcaggagtca actttttcc cttggtccta ttggatgatg caagcagttt aactaccatc 480

ttgctacatt ttagatgtgt tttgcttcct aacctttgt gagtatggat tactttctat 540

ttttgttttt caacatgctc tgtctgtagt ttgtctcctt ttcaaactat gatattcctt 600

ctattatcac tcatgcagtc atgctacagt taggcttgtt tttaaatagc aaagagacat 660

gcaacactca aactttatga gccaaagttt tttctgcaag aaaaaaactg caaacgttta 720

atcattaacc cagaatagct attgatgcag taatctagta gaaagaaagc acggagttcg 780

gtagaagtat aataggaagc agtgaaaaaa gaatgatatg caggtgtgtt tgagaaaaaa 840

ctaaacccat gttttcattt ggtaataggc cttgtagtgg aaaaggaagt aaacaacata 900

accatctttc atgtatggat cctcccttag acttgtccct agctaggaat atggctttgc 960

gtgatgtgta taaagaagag gattaagttc ggtgtctatt caatcagtga gggaactgaa 1020

ttttatggga tgtcaatgaa ggaaattata tcatataaaa tgtacgacaa tctgtctttg 1080

gttgttgtac attcatttat taattttatc gcttctacat tttaggagca gagaacatca 1140

agc 1143

<210> 864
<211> 1003
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89294_G1, chr2:223265226..223266228, Cluster 5

<400> 864
ctagatgtta caatgttatt tagaagccac ctaaccttag ttttaagaga actaaattaa 60

actactagat taagctatta tttcaattat ggtgaacatg gtcacaaacc atattatttc 120

aacattaata gaaactctat tatttcttag tgaataagca atatgaatat cacacatgaa 180

catatgtatc ttgactaaaa atctaaatct taattttgac taagaaatga cggtctactt 240

ttcctttcaa tttctcatat tagaaaaaaa tacgcttaag caatcacaac aaacataact 300

tacattgatt tgcggatata tgaacattgt cacaaaaagg tattttaaca tgctaacaca 360

tatatacaaa accggtatga caaatatcgt ttcatttgag ctcaaatacg tacgtaaaat 420

agagaagttg atgtaggaga cctaaacaaa attaaatgta gacaccaggg gtagcaagaa 480

agaacatcgt ggactagatt gaaaaatcat catcttcaac cttggtcctc tctgttttct 540

tgtgcagggg gacggtgggt ggtcggccgc gaggggtcg gggtcaggct ctggcgatgg 600

gggtcgatgg ggacggcgct ctagcggcgg ctgacgacga acagaaggcc gacgtcgagc 660

atcgcggagc aagggagtta ggggcgcggg acgagcatgg ggtggctgag aacagaatcc 720

atgggctcgg tgtcaggttt tatagagaag agaagaaggg aggggtgccg ggaggagaga 780

aatggccagt ggtgccatta atgccatcaa tggcatcggt ggttacttag agcagagtgg 840

ggggagagga gagggaaggg gcggccgttt ccgtgctcca ctcgcggaga aggcgagcag 900

gcggggagga aggcggccgg gtggtgcagt gcggacgcga ccagtcgggc ggcggcgcgg 960

cgcagcgccc atgcgtgagc gcgcgctcga ggcgatgcgg cgc 1003

<210> 865
<211> 1263
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89515_G1, chr2:224158234..224159496, Cluster 5

<400> 865
atgcctggtt acaattggtc gatcctcata atggtggcgt tgttcaccta tttatagggt 60

taggctagta tatattctgt tatgaaatta tagaaatgtc cttcctactc tacatcaatc 120

cttcctaact agagggatac aattatgtct ttctacaaaa gagatgtggc atacacatct 180

tttcttttcc ctaaccttgt tgttctactc tcttttctaa aggtagcttc gcatactctg 240

agacccatcc ttccttcagc tacacctctt agcttcatca tattcaaact gttctccacc 300

tactttggct ttttgatgac caacttcgtc tcgaactaaa gcttcttcct cgtacttgaa 360

tccttttttt ttgaacaatt gttttcttaa tatggacatt tggccagaga cctctccatc 420

acttgagaag acatgagaat atgctcttgg tgatattttt tagaaagcat cgaacaagta 480

tagtggtgca ccagacatgt acgccagaca cgagtaaagc tcattcgaac tacacaattt 540

tcagtgaagc actatgaagt ctagtgtgca ccaaatatgg tgcattaaat ttgtctagtg 600

aagtagatga cccattatac atgatcagag agtatgtcaa acacatactt aagctctata 660

gtacatcgga cgtgtctagt gtggcaccaa ataccatatc agataagaca cccagagagc 720

atgtcaaagg aagattttag ctcaacacac accataatat ctaatcccat gtcgaatgac 780

tgcactggat gcctaacaag tgcaatgaat agtttataaa tgttgggaag gcattaggta 840

tgtcgagtgt aggatgcaag gtgcaccaaa cgtgtttgtt gccccgattt cagcccttca 900

agaggtaacg attggaatat gatatgggat tacaaataga ttcattggtc ggccttagtt 960

ggcatccctt cactccttac atttgagaac acctcttagg gatagagaaa catacaaata 1020

tcacttgcat ctggcggcac cttgcgacac ttgcggaaca aattggattg gttctactct 1080

tgttaccctt ggtgattgtc attacctaga cagtctagaa ttcgtgggat catgggaggc 1140

cgttggagat tatagtcggt tatgatcatc attgtgtgtg gggggcttgt gttcatctcc 1200

catgagaggt tcccaaagag caattatagt gaaatcgtga cttgttggag tacatgttta 1260

gtg 1263

<210> 866
<211> 1319
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89825_G1, chr2:225685376..225686694, Cluster 5

<400> 866
gcgatgttcg ctttggattg aagttgttta gattgttggg gctttaatcc ataaagacaa 60

aaacaatata gaaatagtga aagccgatac aaattaaaat taagcaaaca agcaaattta 120

gtcagtgcca ctaaatagta catgagttca tgttttccta ctacttttac tatgcttcaa 180

gggcccgaat ttctaaaaaa aaatcagatt tttttcccgc acctattgta accaaagatc 240

ttaacctgag acgtaataat tcacgcattt cagacttttt gtaacacata agtattatta 300

acattatctt aaatcaaata aaaccagttc aagatttata ttgcgattgt aacccaaaat 360

gagttacaga actcaactag tagtagagtc tagttacaag aacaacaatc cattgtcgtc 420

tagtccggtt aggatatctg gctttcaccc agacgacccg ggttcaaatc ccggcaatgg 480

aatctttttt tttatcatcg gacaattttc tgccgcgccc caatttttcc ggtctccacc 540

tgtcttaatc ctgaccgtcc aagtccaatc acagatcgga cgggccatgc tgccccgctt 600

taagcaatgc tatagtactg tgcagtctgc agctgatcta ttctataagc cactgtacta 660

ttgacaaaat gacaatgagc tgtatggctc gatacaacga gctttgtatt ctagtgtctg 720

gaacttgaat gcgtgtattt tttgtttgtt tgtttgttaa tatttctcac aatatgatct 780

aatgaacatg tatatatgta tgctggttaa tataccacgt catccttatc tcgatttcac 840

attattaagt gctgatttgg tggtaaggga tcccaagggg attcatgggg gaggaatccc 900

cttgcaattc aattttgaat aacaagggga ttcctccccc catggatccc cttgggatcc 960

cttagcacca aatcaggcct aaaggttgtt gtgccactca ttattaaagc acaactctgc 1020

actcaacacg tatgtacgtt acatcccttc agcggaaaca tggtcgagtg agcaaagcaa 1080

caagttcccg gggccgtgct gctggatgta ggagacgagg acgatgtcct cctccggcgt 1140

ccacggccct ttcttgacgc cggcgccgcc gttatcgcag ctagcacgat ggcctcccca 1200

tgcctgctgc tgcgcacgtc tgctaccgcg gaagatgcac ctgacaacca gctagctacg 1260

cctatagcta gtcgatctag ctcggctagc tagataatag tagactaggt gcatgcccg 1319

<210> 867
<211> 1132
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_90930_G1, chr2:230563505..230564636, Cluster 5

<400> 867
ttttagtagt actgttagct agcgcgcggc aagagttgcc agcgttcctt gatatgcatc 60

aatctaagat tcctcaaata ttaaaataat gtcagtttta tttattttga atgttgtcat 120

gttattgaat tgaatatata tatcatcctt agtggtaata taaccagtaa gatgactata 180

tttagttcat ccctcgtcat gaaacaaaca agagatgatg tagctccaac ccactttaac 240

tcagtaatca aataagaaac tatgttcaac ctgtcaatga aactaaacaa aaaacaggtt 300

caacccaacc cagaaaaatg ggccggctcc ggccccgacc caggtcgttc cgaaaccaaa 360

tatatacttc cattgcccgc ttctgcatag catacttgct aataatacca ttaccatggc 420

tcctcgacga caagtgctca ctggatgagc agaaactaaa accctgactc gatcgatcaa 480

gacccgggag cggactggag tattgcagct ggaaaaacaa aaacgacaag agaacggatc 540

atacatgtcc tgatctatca tcaatcaatg agcatccagt gcgggctcgg gcaacccgtg 600

catgccggcg gctcgcccag atggatgtcg tccaggaaat ccaccgacca caggttgttg 660

ggaagcaggc gccccccgcc gacgagaacg tcgcccctcc agatctcgac gccctgtaaa 720

ttctgcctga tctcgcagcc gcggcgaacg aggaaccctg cagagatgag gttcatgcat 780

gcgttgtcga agcaccttat accagaaagg ttgactctgc ccacggcgcg tccgcacaag 840

gtggaccaca tggcctcgcc attggcgaca gtggcgatga ctgtgtcttc agagtgatgt 900

aatccctgga gcatgttggg gttgcccgtc acgcaatggc tggcgccaga gtccagcacc 960

cactcatcat cagtaatgct cgtctgacta gttgctgcaa cccacggact ggcagagaga 1020

gagaaagaga agttctgtca gatcatgcag gcacgcagct gattatatat aataaactaa 1080

cgatcgagtc gccggagcga gcacaaaaat gattcctccg taatgctctt tg 1132

<210> 868
<211> 1014
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_91374_G1, chr2:232732136..232733149, Cluster 5

<400> 868
aataaaccag tacaaattta aatttagttt ggattataca aacccatcga gttttactgg 60

ttttcaccga tttactggca ctaaaacatt gccggtgggt aacggatttt ttttttacct 120

aaaacggttt tgtaaacccc ggtgggaagc ggacgtccgg gttattctga aactcgtcga 180

atgtgtggcc agagcatgtc aatgacaatt gagtacacac taaaatatat gtcacctcct 240

gaaatatcat aaatactctg tactttatta ggctgcccta tgtctagata taaataaacg 300

gaagctttat aaaaaccttt ttttttccaa aggaacaaag tagattaaga gatttcgatt 360

aatcatttgg ttttggggct ttcccaaacg aacaaacaga cggccgagta gggctgggtg 420

gtacgtcggg gcccgtggtc cggcagtgcg attggcaaat ttgaccgtgc ctgtagtctt 480

caggcctact cggcttcatc ttcaataaca tagccccaaa gtgtatctgg ttatgtcagc 540

aacactagca gcggctagac ggaacctgca tggcgaaagg caccaaagca gatcactgca 600

cgtgacgtac gcgcctcaca acgtggacat ggcaatggca acggcgaagc aaccggacca 660

atacatggat atggtaaacg gcagggcgac agctccacgc cgtgctgagc gcaacacaca 720

gtgacagtga cacagcgcag tctgcacgca ggcagcaaag gaagcctaag gcacaggatt 780

gcggcagggc agaaataaaa ttacatacct cctaaaatat aatttgtttt aaattaaaca 840

tgtattcatt aattgaacta cgaatataca gtttatatgc agtctatctc atctgtttta 900

aattaaacat ctattttgac acagagggag tagcgaaaga tgaacctctt acataaagtt 960

gaaattgtat tgtaagactg tatccgatgg gtaacataaa ataaaggacg caga 1014

<210> 869
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_91447_G1, chr2:233096406..233097487, Cluster 5

<400> 869
aatatctagt aatggctaca tgttgcatgc tttacaaggt gaggacctac cgtcacatga 60

gagtggtgtc tttctttcta ctatgaacga cacagggtgg gtcaagatag ttcttaatga 120

tatgttggtt gttagttcga tgttggtagt ttgctactta ccatgatctg gagatggttc 180

aaaatgatag gataaagaca taaagtggat gttattcctt ttatgaggat ataacagcat 240

tacgatttgc tatcaaatct cttgtaagtt ttagctagtg atattgttcc gacgagtatc 300

tgcagagatg caacagtata gtttgaggaa atgcagtatg ttccaattgc tttttaccaa 360

aatcacgcca ttttttttaat tccttgagtc aactatttcc ttaagccaat tcaattgact 420

agcattactc tctttagagc tagtttggtg accaaagaat catggattat gagaggatcc 480

atggaaagaa atctccttgc tatgaaaaag aggattcctc ccccatagat cctctcgtga 540

tctttagtca ccaaatctac ccgtaagaag attattctta tccttttgta tttacggtgc 600

tgagttatat tagaggggtt ggagaatgta gcttggtatg ttaggctatg actgcagaaa 660

caaggattta agactgtttt ggtcattaga tggcaaagaa aggtgttgtg atgctcacct 720

ctcagtacag aagtggtggt tggatggatt agttttgcca tcttagcata gcggttctga 780

aggctgtaat gcaatatgaa tgattttgac atggcttcat tgccttttt ggcagtgtgt 840

ggtgattgcc gacttgccgt agtaatatac taggtaggtg tccgtgcgtt gcgatgtgag 900

taaaaaattt gtatgaaaca tagaaacaga atgacgatat ggaggagacg aatttgatga 960

tgacgatatg taggagacga atttgttgcg agcagcaaga agagtttact tgccaatctt 1020

gataatatca gcagggcaaa ggagcacgtc ggggcttcaa ccacggggtc gcgatgacaa 1080

gc 1082

<210> 870
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92364_G1, chr3:1337774..1338790, Cluster 5

<400> 870
ctagaacgac gaagaacgta ctagctagct agctagagct gctagtcatc aacctctagc 60

tagctatgct gttgcagtga cgatgaactg tcgtatgttt gattgtccgg cgcattttac 120

tcaagggtca acaaattagt gaggacgtcg ggagcatgca tgcatggcag tggcaggtga 180

atatttggaa gtgtgggaag gccggcgtgg cgtctgcttg cgagctgact ttagttgcga 240

tcagcagagc cctatctagc tagctgattc taatcactct ccattatcat acacgtacgg 300

tctcctagct tttgcctttt gagctcgcta atcccttgga ctctagtgta tgaactctag 360

caggccctag gatattctcc catccggcct cgatcgtgca tttccattgc cccccacaca 420

gcctttccaa agggacacga tcgagattcc tttccaaagt ccatagaaaa aaaatatata 480

tatatttcgc tttcttcact tctccctagt tagctgtgta tgtcctatat gtatatgtct 540

ggctctttta tatttttgg tccccttttgg cctttatttg cctttgtcca aagctgccct 600

ttgtgccttc ttgctatggt acccttctgc tgctagggaa gagggatgtg agagtagtag 660

tagtatgcta ctttggaaaa agaaaaccaa catggaggtc agatctggga aaaagagaag 720

ccttgtcaac atgggtatgt ttgcttttgc ttgaattgct tcgattgact ttggccactg 780

catgaaccat ggctgtttca ttcttctatg ccacctgcta gctaggcttc aatgcaacaa 840

ccatgcgcac atgcatacat agagtactaa gtttcatatt aaactccctc ctaatgttcc 900

gtaacgttat cgtgtctttg gttgcatgat tcctccaaag tcccctctcg tccgtccaat 960

tctgatggat agcgggcctt atctcagtat ttgaccctag accaaacaac gttatct 1017

<210> 871
<211> 1240
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93581_G1, chr3:7213896..7215135, Cluster 5

<400> 871
tattttacaa agagcacccc tttgctatat cttctatcac tttcactccg ttcggatgta 60

cgtatatgcg caccctgatc tatggtcatg cattgtgacg accaagaaat aatgagtacg 120

tgtgtgtgtt tgtctaaacc agaattgaat tgagccaaca ccagttagtc atttgtaaat 180

ggtgcaacgt atgttgtttg tttaaacgaa acagttagag gctcttgcgt cgctacggtt 240

tctacgtatc acataataga tcacatagtt aggtatctat atgtcgctgt ggcttctata 300

tacaggttta gctatagagg ctcttgcttc cataatctgt tggtttttga gaatcaacag 360

agaaactttt gcttggttct tatcccatct ttggatctgg ggtagtccta gggatatcgg 420

ctataaaagt gagcaaataa cccctacatt gttttgacta atacaagagg tgacaagctc 480

gtttattgcc gtagacaccc gtattgcaag acgaagtgac aaggtggtga cgtccggtta 540

cgtacagccc ctatgtcttt tggtagcaag agcctcacgt ttttctgaaa gagattatta 600

cagtatacaa tgccactggc cttgcactgc gcggcgaccc ctccaaaact cacatatggt 660

ttccaaagta taattgtttt actagttctt ttaccccttt ttccactcat caaatttgga 720

agtcacacaa ttaattacca tggttgccgc cagcaggtgc aatcttctgg atggagatgt 780

catggtgtgt cttattttct cgagagtaga cacttttgag ttttgtggtg gtgcattgta 840

ttgatggaga aagaattagt gtgaagcacc ggcgaggcgg ctagaggggt gaactggagt 900

caatcaaatt ttgccgccga acactgaaaa tgagtacttc atttcaaaag aagtaagcac 960

ttaaaccaaa attacatcag caaaccagtg atcttatgat tttaaaatgt tcctacaacc 1020

cacaggagac caacaaaaca aacggagcgc aaatcggaca ctgaaaagtc cgaatcggtc 1080

caaaaccatg tcgcgaacaa atgctgattt cagcagcatg aaattctgtt atcggatgtg 1140

aaactaaagc aaacaaacta agattgagat gacattttac acatacctaa aaaaatatgt 1200

ttccaaggtc tccgcagatt ttaagctcaa tcggacttgt 1240

<210> 872
<211> 1034
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94602_G1, chr3:12636841..12637874, Cluster 5

<220>
<221> modified_base
<222> (589)..(589)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (589)..(688)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (590)..(590)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (591)..(591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (592)..(592)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (593)..(593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (594)..(594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (595)..(595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (596)..(596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (597)..(597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (598)..(598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (599)..(599)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (600)..(600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (601)..(601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (602)..(602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (603)..(603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (604)..(604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (605)..(605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (606)..(606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (607)..(607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (608)..(608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (609)..(609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (610)..(610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (611)..(611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (612)..(612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (613)..(613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (614)..(614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (615)..(615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (616)..(616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (617)..(617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (618)..(618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (619)..(619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (620)..(620)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (621)..(621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (622)..(622)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (623)..(623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (624)..(624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (625)..(625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (626)..(626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (627)..(627)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (628)..(628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (629)..(629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (630)..(630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (631)..(631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (632)..(632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (633)..(633)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (634)..(634)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (635)..(635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (636)..(636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (637)..(637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (638)..(638)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (639)..(639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (640)..(640)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (641)..(641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (642)..(642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (643)..(643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (644)..(644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (646)..(646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (650)..(650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (653)..(653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (660)..(660)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (661)..(661)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (662)..(662)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (663)..(663)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (664)..(664)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (665)..(665)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (666)..(666)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (667)..(667)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (668)..(668)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (669)..(669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (670)..(670)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (675)..(675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (676)..(676)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (677)..(677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (678)..(678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (679)..(679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (680)..(680)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (681)..(681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (682)..(682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (683)..(683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (684)..(684)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (685)..(685)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (686)..(686)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)

<223> a, c, g, or t

<400> 872
ggcaaatatg tgtaaatgtt gcctgggtta ctttacaaat atgtacagaa aatgatccag 60

gtgatcctca aggcccattg agcagaatcg acatatgatc ttttctcgag accatgaggt 120

tgcatctggt gctaaaatat aaagctaaaa gtcaagcaca aattccctag gaatttcttt 180

acgccgtagc accccatgaa accttcaaat tattttgaaa agaatctacg gaaggggaaa 240

aacccgtcgt aggcccctgc tcgatcagca catgcaagcg tacaatccat cccttctgtc 300

tgcctatggt tgtctgtaac cgggggggcaa ctgttggtaa ggaaaatact agtaagggac 360

tttgttcgcc ctcaccaacg ggcccggcaa gacccatcct ttcctcctgc ggtatggcac 420

cttgaaagaa aaaaatacca agcgaaaaca atgaaaaaag ccttttgtat cgcgctcccc 480

ttacgccagg cgaaccgccg tttttggcac cagaagaccc tagcactatt gaaattatat 540

gttgactaac aacgcgaaaa cccactcctc ccacgccact ttatatcann nnnnnnnnnn 600

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 660

nnnnnnnnnn nnnnnnnnnn nnnnnnnntt agcaaaagag gaaagttcgc ctccccctta 720

cgaaattaaa ctgcctagat agaagcaccc gagaagagag aagacatgat ggatctgcgg 780

cgaattctgc ccatgttggt acgtagccag aatctaccaa gaacaacagt ttcctatgag 840

cttaacacat atgatgcaat gaagagacga cccaagaacc aaacagaaaa agaaaattag 900

catcagaaag aaaaggaacc ggaacgatga gaacgacgga gtcgaggaag agaaaaggcg 960

cttccgccgg gtaccaggcc gacggaaaag agaaatacac cagcgtaggg gctccatata 1020

tgtagcagaa aagc 1034

<210> 873
<211> 1044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94662_G1, chr3:12993798..12994841, Cluster 5

<400> 873
accctgagcc ccctagatca tcaatgtagt taatagacaa tatgtataga gagtcgtgta 60

gagacagttt cttcacaaag agcctgtctc ttgtaccttt tcaggtaact gcctaaagac 120

cctccaagag accccatatt aaatgaggtt gtacatgtta ataatctggt aaagcgcagc 180

ttacagtgac ctctctcaaa tgttgtcttg ggcatgctaa tagtcgtatg caaggcgggg 240

gtcaggtttt ggctggtcct cactgcaggt gggcataatt gacctcttgt aatatgtagt 300

tatggacttc acaccttcgc atgcacatct ctaattcaac tcgacaatgg aacaccacgt 360

tttccactgc caacatgtcg atgtcattga ggagtcgatc atggatgtag ctagtcctga 420

ggtatgcatc ggcatggtta ttgcttgtca tgggggtgtg cctcgtggta tactttccat 480

tggcaccatg atcacatcgg aaccatggaa gttcacttct catgtattga ccatgtatca 540

ctcctgaaga ggggtgagat cgtcttcaat atttccttct ctcaagacgt agatgaccat 600

gtagtctaca tactcatcta ggtcgatgga attagtcact ctctcattca gattgaatgt 660

tataggatct gtgttgtatg ctgtgagctc gacatttgtt ggtgtcttgt cacccgcgtc 720

tccattgtta aaactataga tgcttgccat taggacaatt taatatggat cattgttgca 780

tggtccctct aggaactcct tggctgtgag agagttgaga tctggggtgg tcatcataga 840

ttaaaggagc caattgaggt aagtggttgc agcatctttg actctgattg gaaaatcgac 900

gataatgcaa tagggtagtg gtgttggatc catatcttca atccaacatg gatccactat 960

tagtggtggc ggatccatat cttgaaccca tggatccact agaagcacga ggaacttgtt 1020

gagaatgaac acttggttaa actt 1044

<210> 874
<211> 1335
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98015_G1, chr3:31488717..31490051, Cluster 5

<400> 874
gttaaactat actattatat acattgacct tgcgtgaata taatgccagc gtcactgtgt 60

gacctgctaa cgacgacggc gaggctttga ccaccccagc cctctcgaag ggtttgcttg 120

tactgaaaag gggcggccgt gggccaaccc agttactaga ccggcccata catttgtaag 180

ataaatcaat aagtatccat ggggcttcat tcagaagaaa aagaaaaaaa agaagttgta 240

tgggctgcca aacgtcaatt ttagcccatc cgatccaagc cctacattgg ttatccaatg 300

caaggctgag attcaggggg ttataagacc cttctcagtg gtagtttcat cacatcattt 360

ttaatattgt catgtcaata aaagtaagat gaaatataga atgatcaata gtttcatgtc 420

acaacttcat agactagcat gtgccttcaa tgatgaatct aaataaccaa cagggatcaa 480

tgaaatagat ggagatgaaa caaattactc tcaatggtgg tttgacgcgg tttccaatat 540

cttggaaacg ggttggtata gtttcatagt gatgaaacta gtttcaccta ttttataata 600

aatatagtgc cataacatca aaaatcatat attgcatact atttaatgca atgaaatctc 660

tcacaaaact cccatcgaca atagcctaaa agtcgatgga tccaaacata ggcatgcatg 720

cacgtaactc ttaataccat tcagtttttg agatgtcctt tgcctaccca tccaaaaatg 780

tattttcaat ttgcctacca ttatctacaa caataaaacc catttgaaca cccatatcaa 840

taaaatatca tttttctttc catcccacaa aactaggccc cgcttttctc tcttctctca 900

ctcatatcat atagaatagg ttttggagag aaaaaaccca tatttaggtt tcctctctcc 960

ttctaaaatg agtatcatct aggtgctctc aactttcatg tttgcatact ttaataaagg 1020

agccaaaatg agaatccaag gaagactcat attatggttc attttagagt ttagaaaagt 1080

tcttggtgac cattggaaca ctttggaact cagagataag gcatcattgt ttttatgtga 1140

agtttgaggt tccaagtgaa aattggagca taaagttgaa gtagagaagg cagctgaagt 1200

tggagaattt ggtaaagaca atgggatgac ttagagtggt tggtacaact caaagaatat 1260

tcgtctaagt cataaaagtg cacaatagaa caactggatc aatctgcaaa agaaaagcca 1320

aaggtaattt aacat 1335

<210> 875
<211> 1172
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285621_G1, chr8:118321357..118322528, Cluster 6

<400> 875
tacaacaaac cgaattttaa tttacaagaa aataagaatt tttgaacaaa tatatttctg 60

aacttatgag aatctctagt tttttttata ttttttcatg ctttgttttt gaattcgaaa 120

ttccaaacga aaaaaaatca aaaaaaagac ggtagaattt gtttctgtcg tttgttcgga 180

aggggagaaa acggcgaaac ccggcgaatc ccgagcggga tttgtatccc ttcggtgagc 240

acgcggccca cgcacacggc agcgatcgtg tccacggtgt tatccggcag cacaaacctg 300

ctgcgcaaga acttgcccat ccgccgctcc atgcgcaggt attggcgtct cgcgctcctc 360

tggttgccgc tcgtcgctga tcaccagtat ctactcgtac agtactccat ggatgcgtac 420

gcgcccggga actcctcggc gtcgtccggg ctgaccgaca tggcacgcgc atcgaggatg 480

tagatgcacg tgggccgcag gccaggtctg gccgtctggg gccgtgacgc cgggagccgc 540

gccgctgtca aaccgcgtca gctcaatcct agggtccgtt ttctcaattc ccaacgctgt 600

agacgaaagg ggtggtgtgg gcctgagagg tagagggccc cggccggggc tactcgatcc 660

ggccatcatc ggctcgccgg agctcaccgt gtgcgtgtcc tacaccacgt gaccactcgc 720

ctccatgaat catcatcaat tccacccctt tgccaaggca caatggccaa ccatgtgcgt 780

gctgttaatt aatttaattt aacggaacct tgagggtttc ttttttgaaa aaaataattg 840

accagaataa tccgatcgca tcaccacttc accggcagtc ctgcagtcca acactggaag 900

cgaagcgacc tctctctgtc ttgcgtgcaa cccggccgag cgcgtcacgc gtccatctgc 960

cgcttcgttc tggcttggcg caaatgagca tcacatgatt ggccgacacc agcaggcatt 1020

gcagatcgca caagcggggg atgtgatgtg acgtgaggca tacacctgtc agcgagtcga 1080

ttcagggcga cacaacgaat ggagtcgagt agaacgagag gacatgccgg acaactacgc 1140

ctcgccgagc ctgcgagctg taccgaccgg at 1172

<210> 876
<211> 1170
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_100127_G1, chr3:44602104..44603273, Cluster 6

<400> 876
gtcataagct tatcatgata accacattta acataaaata tgttaatcag tactaaatgt 60

atatatattt ttactctact tggaggggtt tgtgtatgcg tgtagagact tgtacaatat 120

aatataatta ccactttgga gcaagcttat tatatatctt attatctatg ttgttgtgct 180

gtcgtcggtg agctcgtcgt cactgcgtgc gcgcttgccc ctcagtcgcg tctattctgc 240

ttctagtcgt ggccctacac ccgcttgctt cgcctccaat ccaaggtgtg acaccatgca 300

aacatggccc atgccatgca ctgctccctc gcgtctggtc gggtgggcta gatactgatg 360

atcttttcct taaaccctaa acatttagat ggagccccaa tgcacatcac agagtcatca 420

gccttattat aagtttataa cgactgatga aagagaacct aaatgcaaca gacatgaagc 480

atatatagca taagtgttta cagcagcaaa tcaccaggca gctaagggca ctatcgtcgc 540

cttcgaacta gtcttcatct ttgtctgcaa cgtagcccaa taatccggac aaaagcaaca 600

aatgtaagtc acctcagagg gatccagaaa caattttgtt atcaaaccaa gctctatttc 660

ttgatttcca ggtcacccat agaactgcac cacacccagc taatctcttt actaagagtg 720

gatacagacc tccaacaagt gggcaatgct actcggggtg ctcggcagat tgaaggcaat 780

ttgaacaatt ctccggatat acttagcaac cgagcactcc agaaaatatt ttttgtggaa 840

gctttattca ctttagaaaa attgatgttt ttttatggag gcacttctca attgcttata 900

cactgaatta acaaaaagcc ttttgcacca agagaccaac tgactcgatc tcttgaattt 960

gaaagattaa tggactcata ggaatacttc aaattttcaa acatattggc tgtgtcaccc 1020

ataattatcc ttctgaacct tagatttgta aggttagccc agatagcatt tgcgatcaaa 1080

atcattttat cgaaggttaa atcaaataac cttccgaatt tttcagcaaa gggagagcct 1140

ccacaccagg catcatcata ataggaactg 1170

<210> 877
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_100985_G1, chr3:49152540..49153703, Cluster 6

<400> 877
atccatgagc tcatcgagcc ccctctcaat atacttgtga tgccccatcc ccacgagtga 60

gcatattgga aaccaaagct ttgttgtacc attatttctt gagcaatgaa ctagtgacat 120

tattcttgta tatcttcgct atagggtttt cattttctac acacactggc aagcttgata 180

tatagaagat gatgtttgtc aatgtttttc ctttttcttg tggtgcataa tgcctacatc 240

gtttagatat tagggtcatg acccaagtat taggggttag ggttatttta acatggacat 300

ccactattct ttagctcatc attaaaccat atttttattt ttatatgctt ttcataggaa 360

tcatgctaag atggataatt gtgaaatgga gaagtcgaat cataaactag cccttaggct 420

agaaataaga agatagatcc aactagccct taaggcgatt ttccagtaaa ctagccctca 480

cagttatgag tgatgttttg gttgaatttt ttatttcatg tgctaatggc tagtttttt 540

gctaagggtt acttcactag caatagtgat gaggtgaagt cggtagcaat ttgcatcctt 600

gtcactttgc ctccttgcca tttttgtctt gtaaccaaca ccaagataat ggtaaatgat 660

gatctagtcc ttaggaaggc aatgaatagg tgcatctaac tagctcctag ggatatgagt 720

gatgttccaa taaactagcc tttatgacta ttagtgatgt ttcattaaac tagcccttag 780

ggatataaat gttgttccaa ttattgtttc agttagatgt aacatttatg ccaaccctgg 840

ccatcacaca tagaaaaaat ttgatcaaac tctagctccc gagtgactac aaacatgttc 900

gacataccat atggcgtcgt taaaccctag tggatctacg ctggtgaata ccaaatgcct 960

tgatttatgc gtcgactagc ttgatggcct gaggaggagg ggagaaagag ctcgatggag 1020

gcatgcatcg taaaggctac atacctatgg gtaccgaaca tgctgcaaca acaaagacaa 1080

tgacttgcgg gtctgactaa ctcggactca aactgagtaa cttggacttc gacgagggac 1140

tcagatcgac gctaggggac tcgg 1164

<210> 878
<211> 1060
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114188_G1, chr3:137243383..137244442, Cluster 6

<400> 878
tcgtctaaac tatccatacg ctggaggtta gagcccggag ctagtaagta ggaacagctc 60

cggccaataa tgcagtccgc ggccggcggc caatcatggc tgccgccgcg cgcgcgtgca 120

cacgcgtcgc cggagctggt gagagactgc gcggcgtgcc atgtgcagca ggtgcgccgc 180

gctctggacg gtggatttgg atcggcgcgc cggcggcgac cattattatt gtgacgacga 240

ccctcccaca ccttaacaat gaactcgtaa ataaaaggcc ttgctggtcg gttgcagtgg 300

aggtatgtgc tgtgcatgcg ttttatcatc gggaccggac cgaaatcgac agaaaaaaac 360

cctattccat tttcatatct gcattttatc atcggaaacg gaaacagaaa cggtagaaag 420

ataaacaaat ttacgaaaat gaatgaaaac gaaaatacta acagaaactc atcatttaat 480

ataaataaaa atggtattaa tgtttgacta ttgattgatt ggtaggataa taacataaaa 540

caaatagata tagagagaca acattttatt ccacttgtca tttatagtgt acttagtgac 600

actaatttgc tgtaaaaact tggtgccccc atctaccaat tcggccaaag ctacagtaat 660

ttaacttaag accgcaaaaa aaatatttta atatatatat atatatatat tcaaggctct 720

gcagtatata acagattgct atacgaacgc ttgcgttgcg cgtacatcac acacactacc 780

gcagtatata acatgagtat atattgcata tatatgggcc gtcgtcgacc gtggagaagc 840

gccacaaagc aagtgagcgc gcgtcggtgc atcgcgcgac ttgcatcttg catgcgtttt 900

gattcttgct tcttgatgtg tccatcggtc attggaacac agatcccgag ggaaaaatat 960

aaactggggg gggggggggg gggggggttt gatcggacag gaaccattta caggctcaca 1020

gctactagcg gcggggattt ttttttgtg ttgggtggtt 1060

<210> 879
<211> 1135
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116203_G1, chr3:150053319..150054453, Cluster 6

<400> 879
cagtagaaac cggtcgaaat aaaaaatcgt cttctttgtt atacggtgca tggaagaaac 60

tgaatgagcg agtgcatgtg agggagccga ctattcggct tgctttcttt ttaatgcgaa 120

tgaacatcat aaaaccacta ccacctcaac agtcaacaac cagctgctgc aatggtgtga 180

gtagctgttg gtgttgtatc tttattttgg gggtgcgtgg aagggaaaga aagaactgta 240

tgtcccctct cttgcgccat cgttccttga cgtacagtgc gtcactattg catgtagtct 300

tggttacgta cgagaggttg ccggccagtg atcgattact ctctctctct ctctctcaga 360

ccccagctgc atgcccagct gggttgtttc tctctctctc tctctcgtgt ggagctgcta 420

gcttttccat gagacatggc ctaatctatc tttatggccc aatagtgcct ctctgggctc 480

acacgcacac gctgccagga aactggtggg gttcgcacag ctgtggacaa acggatccct 540

tgtcttgcat gttgcatgag cgtgactgga cacgacgcat gcacgcgaac ctagagctgc 600

atccgtgtta catgtgcatg catgctgcgt tctacatgct ttgtacagac atcatgtaca 660

cctacccccc tctctctctc tctctccctc tctgcatatt cacacactgt caatatatag 720

cagctactac atgtgctttg tacacacatc atgtatatac ctctctctct ctctctctct 780

gtgtgcagtg gcggagctct ataaaattaa cgtcccgggc cactctataa aacttgaagg 840

ttaatttaga cattccctaa tatattatac ggctaaatat accgctaaaa aaaatatacc 900

acaaacatag actaaaatag tatttacttc aaatcatcat ctaaaaatac aataaacttg 960

ataaaaaaac ataaaggtac ctaattagag acgatttggt ccttccccgc atctaataac 1020

ttcatcaaca ttagcacgtg aatttaaacc tacacattac aagttaaata tttgtataaa 1080

atgagagata caacatgaca atatcaatct accatcacat aaacatttaa caatc 1135

<210> 880

<211> 1179
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120316_G1, chr3:175697081..175698259, Cluster 6

<400> 880
taactcttcc aatttctcag ggtgtattgg tatcgttacg caacaaacaa caatgtcgat 60

aatatgccgt ctatgtttga catccttgat gtcggttctc tgcgagtagg gattctcagg 120

gacttgcacg ttcgctcgca gcgtttggag gaccttgagg ttttgcttgc cgcgcgcccc 180

cactccatgc atggccgaca aaaggtccta tttgtcgatg gctgctctgt ctcaggtggc 240

gccggccatg cctatcactt ccagttccag cttggggtgt gggatcacgc ttgggtcggt 300

cacacaggga catctcttgc tcggtcttga ctggttcctc cctccccctc gcttgcttgt 360

tggcttctgc ctgcgtacgt agttgcagat ctcgtgtagt acgtagttag cctcgatgca 420

tgggcaggca tggcgctgag agttgtggcg tcgtatggtt ttcagcaccc gcacacgtcg 480

ggtgagatgt gccaccagct tccagacatg agttcgagtt gttcccaggc catcacacgt 540

cccatgcatc ctccgttgga ttactgggat cccatggcgt cagctggttg acatagcacc 600

catgcaaaag cttgtttctc cgtggcagac tttggtcccc gtacgtcata ggattgattc 660

ctctggagca cgagctgtgg tcgtcggtca gttccatgag acgttgtttg cccgtgacgc 720

gtcggctttg gcagtcgtag gtggcaggcc gggatcctcg tgtgcacgcc actgacgtcg 780

gtcgcacaat atgagagttg gattacacct cctaggtagt ttctgacctg ttgttctctt 840

tgatgccggg ggtgtcatcg tatcctttag gcctcgttcg gctttgacgg aacgacatgg 900

aacacgaccg attccatcag gaattatttg atctggactc aaattagaac caatctaaaa 960

tggttgttca gatagacctg ttctgtaatg aaaccaagct attccagaat gaaaccagac 1020

ctttttaccc actcaacgac ttggattaga gccacaccta taatcacttg gaatcaaacc 1080

aaaccaagcc tttataggtt ttagtgaaac atccagatcc actctatccg gctcagattg 1140

aaaaaaatat acctgtcttc aagttggaac aaacgaacg 1179

<210> 881
<211> 1287
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121889_G1, chr3:184002944..184004230, Cluster 6

<400> 881
tgaagtgcct gaccccatga accattgcaa agtgcatgtt gcatgcttta ttttgaacgg 60

tggcgaaaaa agaaagctcc aattgcttgc agaaaagagg aaggcacgga tgcagctata 120

taagctccag gatgtagaga ggcaggtgtc tttactcgaa ggctgtttga gtttggcaca 180

attcctctcc ggcttcactc cccaggaacc atggctgcga gttttttttt cctcatcggc 240

tactctgttc attacctgaa tcacatgcat ctagaagttt acctatcacg tttacagggg 300

taagactgaa agttcatatg gccacaggtg gtggagctga aggttggaat gcactgtgaa 360

aggtgcgtca aggccatcaa gaaggcgatc agaacgatcg acggtaacaa gccggccatc 420

aacccggttc tttcctacac cacaaaaaac cgctcgctct gagctcttgt gctgttgacc 480

atgcttgcgg tcgtgcgcat acagatatgg agagctatca cctcgagacg gagataaaca 540

aggccacggt gacagggaag gttaccccgg aggaagccgt cagcagggca ctccgcaaga 600

gctatcactc aatcactctg agcttttcta caccagcgca tgataaacac gcgcacgcag 660

ctgtttgaga acgtgtccac caggctgcct tgcctaacag cgtcctagta gccttccatc 720

cttgaccaat tctgctctgc aggcgttgat tcagccgtgt gaccgtgtct cggctgacct 780

gcctccattg gccccgacat ccgctgcagg cactggcctg caccgccgct tccccgaacg 840

gcacggccgt ccgtcccgtt cccgtcgcgc cggctcgttc gccagaacgc tggcttgcgg 900

cggtcgttcg tttgaacagt tgtgcatgca gctgcggcat gcatggggtg cctttgccat 960

gccgcactcg tcagatcaga tgccgcgtga acgaacgctg tccatgcaaa agcaagctcg 1020

gaagctccca gagtcttcgc ccgtacgtct cgcgtctttt ctcgtctact actagctagc 1080

aaccatttaa cgacgagagt gccgtatcgc ggcgttttgc cttgcttgcg cgaaaagaag 1140

cacggcgcgg tgcactgaca gagacagaga agaactgttg gagatacgga ctaggtgtcg 1200

gttcatcatg catgatggtg aaggactggt tctttgctcc agagtgcgcg cgagttgcgt 1260

acgaacgaat tgaccagacg ccgccgc 1287

<210> 882
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121919_G1, chr3:184117501..184118670, Cluster 6

<400> 882
aactactctt accttcttaa taagtagtat agattgtgtt gcagttcagc cattactggc 60

cattgcattt tagcaaggga ggctagcaca accacgctcc tcctatggaa acacacacag 120

tttccatatt cgaaagcagg gacatgcatg catgctagta actcgatcta ctacactaga 180

gacgcttaac acgtcggaat gctgttgagt tgcacaccgc accggagggc gacaggattg 240

catgccgagc ttcggtccca ggacgagctc gtggaaacgg agcacgcagc aatgcgtgga 300

cggcgacacg tgtacagtgt agtcagacgg atccaacatg tcaaacagtg tccggcaccg 360

aggtcgcgtg gagatggagc tgcggccctg ccaccgccat gtgcggcacc tcaaggctcg 420

tgaagtcaat gaaaccgcta gattatcttt cagcaaagac gatttttttt aactaaagcc 480

ggccagttca gatcgatcca cactgtactt gttcagtagt cctagctgcc gcgcgcgccg 540

agcagtcaaa gcgtgtggat ttggatggca gcaggaactc aacgtcgtgc caagccattg 600

cctgcagctg ctcgtcttta ctttggttgt ccatgccggc agcggcgagg caatcgagcg 660

agaatcgtat ccatggcgtt gctcgcgcgc tcgtacgtgt gtgtgtgcgc ctttaccgca 720

cgcatagtta tcagtgacac tgtactagcg tgcatttttc ttccgcgctt ggtttcgaga 780

gaggctaggg aagacttgga agcatcggca ttgtggttga gtgtagagcg atgcaatgca 840

aggcggtccg gggctgatcg atgaagcttt ctctcctgtc tcggagagag cgaagtctgt 900

cgggcacaca ggtctggtgc tgcatttttc aattcaaggc cgagtgtctg tacctgactt 960

taccaacttg gaactcaact agcacgagtc cgctcccggc aaccgaactc tgcacgcaaa 1020

ggaaaggctc ctcgatcgtc ctacacagcg cctttgggat tgcaattagc tagcaaatag 1080

ttgccatcat gccctactca ttgacagctg acgtccaatc catgcatgaa agaaccaccg 1140

gccggcctcc tcacacctca atatgtacat 1170

<210> 883
<211> 1155
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122567_G1, chr3:187219412..187220566, Cluster 6

<400> 883
gctgattagt gggtaaagag tctgatgatt agctcgtaat gataatctgt tgcggctata 60

gatattatat actttgtagc attacgaccc agcctgaaag tatggttttt tattccatcc 120

aaatacagca ttggcgtgtt ttcatctcat aacaagtaat tttatagatt tggatggagt 180

taggaccgtt gtctcgttgt tattgttttt ttttttttt gcttttgatg agtttgagaa 240

aataagttta gactcgttca aagagaactt ctaagtccag tatgatgttt aagtctttat 300

tgttggtttc acgtgttaca agacgaaatg ttggactccc atgcttgtgt gagcaatgtt 360

acaaattgag ttctcctacc tgtatagcaa ggccattgcc cctttatata gccaaaggat 420

cgagtgacca ttgttatatt atgtttttta tgaggtaaat catccctatc ttcagttgtc 480

tagttgcttc agtgtgtctg cttcgtcatc cttgagttga cctagcaata gaagtggttg 540

agtcctgaaa gtgtctaaaa gccatgctgc taggtatgct ttgtgagaag cgtgtgggtg 600

aggcatggtg atgtgcctcg gatgctttca tcacgtctag ctttggtgtc ttccatatcc 660

ttagagcatg atcgacatag tatgtggggc ctgttcatac cttttaacgt gaagcagttg 720

gctggaggag tcaagtatca tgtatcgtac atgtttctac cttttgtatg tctcagttag 780

agatggcagt cacacctacg agcgtgggtg cccacactca ttgggtgtga ttgtgggtgt 840

caaattgtac ccatagaact acgcccgaac tgactcgtaa aatgatgagt tggatctagg 900

tctgactttt cacctatgga tgcttaatag gcctcataat actaattttg agttcttgtt 960

cacacatgat tttggtccaa cccaataaaa ccctaggtta tgtacttatc ttcatccctt 1020

taaaatgtga attgatgttg cactatgtgt tgtgtgcttc taaataatta tatgtagtgt 1080

gcttttaaat aattatatgt gttttccttg ctatattgtg gtgtttttac ttaattgttt 1140

ccaattgtta atcac 1155

<210> 884
<211> 1341
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123505_G1, chr3:192405036..192406376, Cluster 6

<400> 884
tgagttgaaa aataacagag catctaagaa agggcaagat gcagaacagt ccaagatgaa 60

cggggcttca agcccccaaa tagtatcaga tgaaggtggt ggtaacctga aatcaatgaa 120

ggataaatcc aatcagcaag ataaggatac aagagaggga ccaaatttgc aggttgctgg 180

gcctggtggc gaaataactg caggttacct tttgaagaga agagcaaaaa ataatggatg 240

gagcaaaagg tggtttgttc taaatgagac gagtgggatg cttggataca ctaagaacca 300

agaggagaga catttccgag gcgtcattat cctggaggaa tgtaaccttg tagagataga 360

caaggaggag atctcaaaga gttctaagga ttcaaagaag gcgaatggac aagagaaagg 420

cccaagtctt gtttttaaga ttactaatag ggttgcctac aaaagtgtct taaaagctca 480

tagtgccgtt atattgaagg ctgagagtat ggctgccaaa atagaatgga tcaagaagat 540

aaaaggtgtt attcaaagca gaggggctc tgttaagggt ccaactgagg atagttctat 600

gagacaaagt cgttcagatg gatcccttga tacaatgacc cagaggcctg ctgatcctga 660

agaacttcga tgcatgtctc aagaagttcg tggttatgtt gaagctagtt tggccgcaaa 720

tgttacaaag tgcacaaagc aatgcaaaga tcgaagaact actccaagag gaccacaatg 780

ctaaacgtag gcggggaaaa tatgaaaaca atcatccctc tcgccaactc agcattcatg 840

acaatagaac agcttcatat gtgaacgata gttctggagc tgagagtagc ccacggtctc 900

ctggccactc tggtgaggac tggaagtcca ccttcgtctc agcagcaaat gactctgtta 960

acgggtcgag ttcacagcat gcgacaaggt caagagatgc tgacagaggc cagtgccatg 1020

aaaatggcga tgccaactct ggcagccgac gcacacctaa ctggttacca ccggcaccac 1080

caagtgggag gagatactaa gtatgttgat tgatcattac ctgtgaccaa tcaacatcgt 1140

atgctcttgc caggttctca tccgctacag atattggtgg aagcgcacat ctgggaccaa 1200

agaacagaga gcctactgga agatgtggat ggatggtgta tatcaacagg ctgattggtt 1260

gtcgtgcccc acgtgcccag actcgtgctg tgcattgacc gcgtgcaagc gcctgttcgg 1320

ttgcctgccc cttcgtccac c 1341

<210> 885
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123860_G1, chr3:194252130..194253413, Cluster 6

<400> 885
gaattataaa ttgtattcat ttttttcagt ttgaatttaa tatagtccca ggtaaaatag 60

cagacgagac aagcgcaaca aagcattttt tttctgtggc ccagtccaag aaatgttcta 120

ttcttttcaa ccacacatat gctgggttca aggcatttgg tggctcgtag gcacaacaac 180

tagtccatcc gatcaaaata caagtctacc agtcaagatt tgttcaaagt taagcaattt 240

aagtattgac tatgtactat gggaccgaac tgtagctcgg ttggttctaa gtgtctctta 300

atagcagaga ggccacgtta gaagggctaa aatagcaatt ttttccttct gctggggtta 360

attagcactt gtttttgcg tgttattacg acgataagtc gataaccacc ctgatcgcac 420

acctttgcaa tatcgcggag cctggtcatc tacggtgctt gaagcctgtt agggttgtcg 480

tcgtcaactc gtcagtgcca ccagaaccct gagcagcagc agcaaagcac gggagcacgc 540

gcaggggcgc agccctgctg atgctgaagc atcaaaatgg gcgccaagcc ccgcggcggc 600

acggcacggc acagcaaccc gcgccggaaa gagaggcagg cggcgggcgc gcgccgaaac 660

ttaccaaagc ccgcgcgccc cggcgcacga cgcctggctg gcgaagccaa ctggattatt 720

ccgtcatcga cgtcgtcgac caaccagcga ctcctcctcc gactcgccgt gcgcgcgcgc 780

gcgcgcagcc ttcgaacgaa agtcccagct ccaaagccac acgcacgcgc ggcgacctcg 840

cctctctaat aaattcccaa agcggaggcc gaaagcgcga cgacgctttt gcctcctgcg 900

gctgctgggt aaacctcacg ggaatccgcc ccccgccccg gcctttgatt tggtatccta 960

gctagacgac tagtagacgt gacgcgcttc tcttttgcag cgctgcggct ccagacttga 1020

cgccggccgt ttgctacctt cctctttcct gaaaaatgga ggctggcctc gatctgtttg 1080

cgttcacctg cctttgtcgt ccttggccag gaccgattta ttagctaata gctagtctgg 1140

agcatgagat tgggcagtca tccaactctc aagagtcggg accagtgaca gatcctgcgt 1200

gaaaatgctc atctgccagc ccgcaccgca ccgcgcgcac ccgctccacg aaagacaaag 1260

tagtaaaatt aaccgcgcag cgca 1284

<210> 886
<211> 1271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_124188_G1, chr3:195944585..195945855, Cluster 6

<400> 886
acagtggggt ggtagtgtgt gtggtacggc tcacgagagg cggagcagta aaattatcgg 60

cggaaagcgc tgtgctgggg cagcagggtg caggtgcagg tgctccgcgg caggcggcac 120

ggcaggacct ttttggaggc gcggcgtagc actggcgcgg ggggagcgcg tacactggta 180

gtgtactagt aaagtaacat gaacaaatct gcgacggcgc agtgctttgc aggagaagga 240

ttaacaacaa acgcgacctt gcagcaggac tgtttgctgt tgctggcact gctagtgcta 300

gctcgtgttc cgacttccga ggccaatcaa tcttactact atataccgta ctttaattcg 360

aaaagttcgc tgagctgcca cctcccacct ccggtgcgta ttctttaaat cattttggat 420

tgagattcat gtgcaaaagg ccctgtgatc tttacctcaa atcattaatg aatttctgta 480

tgtaggaggt actagtacta gtatcagtag catcggatta gcgagacgga gttagcccgg 540

attagcttgg tgtggccgtc cttggcagtt tgactcctgt ctgtcgtccg gcgaaagcga 600

aaccaaccgg gctaccatac gctgtgcgcc gaacggaaat gaccgtcctt gtcactggct 660

tttgcagtag cagttcaaat gataggaatc gtgatagtgc accaaccaca gcatctcagc 720

aagtgtttcc cggttttagc tttcctcggg acggggtaat aaggagagga aaatgaacca 780

gagcgaacag agcacagtga ccaagcacgt acgcatcctt tcatgggcct ctcgtgtttc 840

gcctcgcacc cgtgcttgcc gccctgtgtg cttggaccgt tggacgtgct gggtagacgg 900

gcattccgat tcccacgttt cggcaccttt aggctttgtt cgtttacacc aatcccgctc 960

tggattagca tggattggaa ttaaatccat gccccaaaat aatccatgac tacttaattt 1020

ttttattcg gttaaaccca tcatgtaata taacccaaag gtttgggaat tttttaaact 1080

atggaagaca tggattctat ccatagccca ttaggtatgg aacaaatcca tgagatattg 1140

cacaagttta cattagaatc catggatcaa aagaataact agctttgaaa gtcacatgga 1200

tttgttgatg gatttaatcc catcatggga ttgggtgtga gatatggatt cacccaatcc 1260

atatccggat t 1271

<210> 887
<211> 1277
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124354_G1, chr3:196856087..196857363, Cluster 6

<400> 887
gggggagaga gcatcagggg gtgagtgagg cgcgagtggt ggatgtgtgt gaggggtgga 60

atgattcgaa catccctggc cgttagatgt gagtgggtaa gagaaagaac gagggagaag 120

agatctaggg agttcaatgt gatggaggag aatttcttga gtgtataaaa cagggtgcac 180

aaagaaaact tatcttagcg gggtcatttg ttaagtggat ctagattaat ttgaactgat 240

gctttattta ggggtataga accatctccc acggagatag ctcacatggg tgttttaagt 300

gatctagcag atggttcaaa acaaaatcac actagatgtt tcatagggac gccaacatca 360

ctataatgaa gaatacttga gattgatttt gcttttcaaa ggatcatgtt gttggcgatt 420

tttcctataa gtttattaga gatttataaa ttaagaaaag gtgaagattg agggagatca 480

ttaaaaaata ttatacatga taaaaagtca taattagata gatgttctga tttcaagata 540

gaccaaaacc tagcccatat ttatttagat ttttagaaac gcctcgctgt tgagactcca 600

aagtgtagca tgccacacac tcaaacatga atttagccta tcgatgattc tgcactttta 660

cacttggatc tgctagttgc caccaaggct cgtggagact agcagtgtct ccgctactgg 720

cgatcatgga gtcggcgagt tgctcgagag gacaaggatg ttagttgttg tatttctttt 780

caggccttct tgtataagat aattttgcct gctatatcta gtataatata attgtaaaat 840

aagtgggcac aaatcaaaca caatgttctc aatgatagtt ttatcatgct atttccaatt 900

taccgcacca ataagataag atgaaatgag gaatgaaata tgctctcaat gaagagtttc 960

atgacacaat ttcataggct aacatgtgac ttaaatgttg tgtctaaata acaatagaaa 1020

tagatagaat agatggagat gaaatgaatt gctcccagcc tcaatgtcga tttcatgcgc 1080

tttccaatac cttgaaaacc gtttgacatg gtttcatagt gatgaaacta gtttcatcta 1140

tttcatagta aatgtagtgt catgtcataa aaaatcctat gtggtatact aattaatatc 1200

atgaaatctc tcttgaaact cctatttaga atgacataga aatctctagc catttaggtt 1260

ctgtttagat gcaggtg 1277

<210> 888
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125071_G1, chr3:201224555..201225641, Cluster 6

<400> 888
tgaccatagt tcgctttctt cgcttcaagt agcggggtgt gtcaaggaga gcctaacgct 60

tgcggatagt tttgtgagtt cgggataggg gttgtccccc cggacctggt tcatgtgtct 120

ttccacctcg ggagcttgta aatatcactt gtgttgtact ttacttttc cactcttaaa 180

ttggtaatga aagacaaagc ttctgccaga ctgccattgc gttgaaaaaa acacgataca 240

actactgatt gacgaggggt ccagacgcta gtgtcgcttt gcatctgtag gcatcttgtc 300

actggatatg aaagcaactc gctcgtaaaa tatgcagcta gctagagcac ccacgaagag 360

cgcacgggcc actcggtccc tccctcctcc ctcgtttgga tggtcaaaac cgtctcggag 420

tctctgtagt catcgagcgt gctcgacgca ggacaaaggg tgatggctac gcgcgcgtag 480

atgggaacgt tcagattaca cggcgtacgt gacaggcaac tcttgctaga agtcgaggat 540

ggatcggagg catccaagtt acctttcgaa cagggcattc ggttgtcagt gagccatgct 600

agtgcgtgcg tgggggagat ctgcctcaca accctacgct acgcctgcaa gagagccgag 660

ttctgaacgt ttacaagcta gctagtactg ttccgccagc ggatggtact aaaggttaac 720

agtatgtatg tttgttgtta tgtgcaagat tcccaagttc gccgcaactt gaggttgcaa 780

ccaaagattc tgcttatctc gaggacaaga ttcgcgtagt ttcaagtgca gagacaagag 840

ggagggcaaa aaaaatctgg cgaagtttgt atagtggatt aaaaaaagca gagatagaga 900

gagaggataa gctcattgcc agacattcag actgcgcctc tctgctctcc tcctatccat 960

ggccgcacct ctgattgtct gtatataaat agacaagctc ccgagccgcc gattcattac 1020

gcatcggcat gacgcggcgt attcagaggg agaagatgag agcaacgtgg gcttcgccga 1080

ttccatg 1087

<210> 889
<211> 1076
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125535_G1, chr3:203290605..203291680, Cluster 6

<400> 889
ggtgtagcaa gcacggcctg cagctgttga aacttgaaga cccgtgggat ggcaatcagt 60

cagccatgct gggctgggct gctgctgcag actggccgtt gcggcgacgc ctaacgactg 120

cctcacgtct tggaccaaga aacctgtggc aagggcgaat ttggcacagc acagcaccga 180

gctgctgtct gtcgtgatca ctgttccacc atccagcgaa atagacgtgt cgcgcctgag 240

ctggaaggac gaggatgcgg ccaatatttt catccgcacc gggctccatg acaggcgagt 300

actactagca cgcaatgcaa gctaggaaga agcaaaccgt cataatcatg ctttcccgtc 360

aaaacgcttg agatatctag aattcatcag gagtttgctt acgccgtttt cagtaatcag 420

cttaccccgt tgattaatta gttggattac gttttgttca tttttgtctt gagaatgttt 480

cagtagcaat caaattaatt ggtgcaaccg tgcaaccaag acacaaggat aataatagga 540

ggacatttta gaatatacca atttttaaa acaaccctcc tacctctcta tgtatatttt 600

taaaaagata ctctcacttc caatcttgtg tcttgattgc accaattcat ttggttgcat 660

tagatacgtt cccgtcgtgg cattggggaa tcgtggattc ataattgaga tacaatgtac 720

aattatgtat gagcaaggat atgaacacct tattcttaga ctatctccaa caggtcctct 780

aagagtgtgt ttggtttgag gaatgaagtg atccatcttc ttctcaatcc tcacttttt 840

atttggtttg tggaatagaa tgggttgatc catcaccaca tcattcctca taagctaata 900

attagtatat atatgaggag tgggttgatt ccaccaaaat tgatagaatg aacttatgat 960

gcatcacctc atgaagcata gattgactcc acaaatcaaa cacaccatag agaaccctat 1020

accttaaatt ttagaaaaga ttttcgtcct ctatgtgttc agcagcgtcc tataaa 1076

<210> 890
<211> 1191
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126711_G1, chr3:209014336..209015526, Cluster 6

<400> 890
agctatagca ttagcctttt tctttttata aacggttagc taaattaaaa tacggtgtta 60

aattaaaaat aaaaaattta tccgagtaca taattaagca aatgaaaatt atgtaaattc 120

acaaaaaaac aaataaaata tcaaaactgt aaaaaaataa aaataacata gtttataaaa 180

atatttgata cactttctct tctcgtcatc tttctcttcc acatctactt tcttatctaa 240

cttgatttgc tttaattaac attttcaagg ctaatttata agctcttttt ttgtgtcatc 300

gtctatgtcg gcagtggagc aatccaacaa cttattgaat tacttaaata atttcgattg 360

agtcattccc tagctagcct tgaagagtgt gttcaacatc ctcttctcca tgtctgaaaa 420

ctcattgcta ccctcccctt atgttgagct cttacaatat tgctatcaat agagcatact 480

gggcacataa tgtctggttg gagctatagt tatcgtctaa attgaggcat gatttttgc 540

tcctatcact ggaatcatag tcatcatgcc tcacgccaat tatggataag taaaaggttg 600

aggaggagga gtgtcgtttg taggatcttt ggtggtagga ggagcatcgg tggtaggatt 660

ttcattcgat ggtaggaggg tctttagtgc taggattttc attcggggga ggagcatcca 720

ctgatggtcg atagggatat agaggaggag gatttgggta tgaaaactaa ggttgtgaac 780

taaggaaact gggataggta ggaacatctt cctaatgatg atgtacgaaa gaaagaccat 840

cgaaaaagat ctgccccaca ccaagagtct agggacgttg tggggattgc tcattgagca 900

agtcagtgaa ggttttaaag ttgtaactcc acctagaatt cgtattgaat aaatagtagt 960

gggagtcttt aatgtgaagg aagataagtg aaatggagtg tgagaggtgt gaatggatcc 1020

aatcacccct ccatttacag ggtggatcta gggtttattt tttatttttt tgaacttcaa 1080

atagttaaaa tggcgcgaac caatcaggag atgacatgtg ccaataggct atcattaatg 1140

gtcggtttgg ttccaacgtg gtcagtataa tctggactga cctgtcagta g 1191

<210> 891
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126715_G1, chr3:209019879..209021015, Cluster 6

<400> 891
aaaaaatatg ttgcaaaaca ccgtattcgt gccacggtta gtgtccaaac tctatcaaag 60

ctgatcatct ttgacaattg ctcatcacac gttgaacatc atggccacat atcgatcaca 120

tgttcgcaac ctccaaagaa gaccccgtga agtcttcata aggcttaatg ggtgcataaa 180

tggctcgaca atgacccaat accggaggtg cttctaacgt aaagtcccaa gtgccattga 240

cattgatcga ctcttctggt actgtaaaaa ttgatatgta aaaaatatat cctagttggc 300

aacagttaaa agtgtatgag tgaaaatata taatcgtgcc ctataaaaga gggacattaa 360

cttcaataaa gacactttat tcagctcaaa actctagaat acctatctcg acaatgtggt 420

tgtataagag caagtataat aataggatag tgccgacctt gtacatgtgc gacaagcgtg 480

attgtacatg gcccaaaatt ctgaggagcc taaaaaactt cttagctcag taataagcct 540

aaacaatata catcagtgag cagactaaca ttacatcatc ttagctgaac tcagctagca 600

gctagattgc tgcttttcaa acacatctat taatacattt gtttatttat gtattctatt 660

acaatataat ttcgtaaaaa cggatagatt taatataaag agttataagt gttatctagc 720

aaaacttttg caattcagaa tacatgaatt ctattataac gtaattttac aattatattt 780

ttctataaaa taggacattt ttcaaagtta gtacatgcct ctaaatttat cggctcgccc 840

ctgataatag gctataaaca aagtaaatgc cagggtgaag gagagataag aagagaagcg 900

agctataaag ttagaccatt cttagtggta tttcattctc actaaatgag ataacacatc 960

actatatttg atgatatgac atggtattta tggtgagaga tggagagagt tccatgagag 1020

aagagagggt ttcatccaga taaaacttag aatacacggt ttcatagaca aaagctgatg 1080

tgtcactttt aaaaaccgtg caatgaaact tgcactcgaa atggtcttac agccaac 1137

<210> 892
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128775_G1, chr3:219186296..219187457, Cluster 6

<400> 892
caaatggtct cggatagaga aatattttaa taatggagtc cttgtaatta ggggaggaat 60

aaatcccccc gcacaatctc ggagtagatt tgagtccaaa ctaggcataa ttaaatcatt 120

gtcggttctc tcgtgtatac gctgcccggc cggaacacca ataaaaatta atacgtctgc 180

aaccgccaat aataatgttt tgtgtactag tgtgggtggc taatttgtta gccaaataca 240

tctagctagt tagccaataa tagttcattg ctagcagcta gctagggatg tacgtacgca 300

ccttaatttt agatcaatag gaaccaaata tgtatgggct aacagttttt tagcttgtta 360

atttttttag tctcttgact aatacagtag taatttgtag tctttatttg aagaataatc 420

ggttgaccga gtagattcag ttcatgtact atatatatac acgctagcta catacaggtt 480

gagtgattca ttgattgata ataaagaaag acttactact agtagtcaat cagatgacga 540

ttaaaaacaa aacgcgaggc agacacatgt ggttaactaa ttgaggaagc ggccaatgga 600

aattagacaa gaagggtagg acaatgttgc aatgtctgct agctagctct ccagccagag 660

ccaagccagg taattaacgt gatatatgac aagagagcga gaggaaaaca acaaggcaca 720

acaaagaggc tgccgaagaa acatgatcca aacagtgcat gggtcagtag acgtctaact 780

aactgcagcc tgcagacagc agtgcatatt atatgtacgt acacaccaac gagaaacacc 840

caagagtgag atttgcacat tattactctc tctctatata tatgtactac tacaaaatgc 900

acagtagtaa gtttggcgca tgttgttgcc atggacatgg agagtttgcg cggcgcaggc 960

tagcttggac cccagataat aataataatt gtctgtacag tgtgcgccgc aggcaaagag 1020

acaagaggtc gagctgggtc tgggtggagt gcaactgcag ttgtcgttga aaaggggct 1080

gtaaataaaa taaaaaaagc tttccccact attttacaaa ctgcgcgagt attttaaggc 1140

aacccttatc gcgatgttat tg 1162

<210> 893
<211> 1142
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128776_G1, chr3:219189329..219190470, Cluster 6

<400> 893
aatcagccac caaaaaacca aacctcacac aagtgatgcc atcgagctaa ctagtagtag 60

gatgttcttg gtgatgacta gagaacacaa cggaatactc accttagtgg aaaatcgagc 120

acaacaacaa agctctccaa aacgtgaaaa caagagtcat gcacttcaat cacaatgaag 180

taagagtcta actgaaaatc ctctaagcca acaggggcgg cttgaacacc gagaaaaagt 240

tcctaggcac tattggaacc cccaccgaaa caagcgaaag aaagagcaaa tcaagggcaa 300

gctttggaca ccctagaaaa caagcttcaa cccatagatc acgtaactac aacgttggag 360

tgcgaaactt cagtgttgtg cgaaagttat atttatcaat gtcctcaggt gtcagtcacc 420

acggtcagtc atccaacttc ttcagtctct caattcaaat cttagctttc gtctttcacc 480

actcttagtc catcggcatg ctggacatca caagccaaat agacatatta cataaaacca 540

tactcatgct aaggttacat taaactaaag catatcatct tcttgacaat tacttaccat 600

atttgaacac cgtggcatat atcaacctcg tcattcttcg tcgcataagc acgtacggtt 660

ggctatcatt tgttggtttg cttgtaaacc gcatcatttt tcaccatgga ggagttagtt 720

attcgatgtg ttctttgatt tatgacgaac cgaacgatct agtcgtccta actcgtgtat 780

cactgcttgc gtcaacaaaa aaatgtcact cacctcaatg atactgctac tggtgcatta 840

tggctgcaga gtgcagagta ccatctcgat caagtggact cctccgagta ctggatctgg 900

attgcattgg catcatttag tcagggcggt taattaatga ggcgtcaagc aagcctggag 960

aagcgacacg taacggctct gaaattggca agccatccct ttcctttcct gcccgatgga 1020

ggagcgtgca tcaaaaaaat ccgaggggggc gggcctccgc cgagcatttg gattcgtgga 1080

ccacccccgg acggccgtcg gcgtcggtcg gtccatccat ttgccgtgtg cgagttatgc 1140

gg 1142

<210> 894
<211> 1089
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129317_G1, chr3:221910396..221911484, Cluster 6

<400> 894
cacttgtcat attcaaagag ttggtgttat aaatgtgatc aatcagagct tgggagttgt 60

tttcaagtgt ttaaatcacc aacgattgta gcatgtcctt ctactctaag tggcaacgcg 120

acctggccat atacttgttt tttctggttg gccaatgtga cgaaagatga tatttgatgt 180

aggtgtgtag tctgcagagt tagtgggctt tgatgctttt atgtttctgg ttgctagcaa 240

taattcatag gccctgcctt acatatctga tatatttttt gctttccagc ctttacactg 300

taaatctttc tttcccgtgg attcgtggaa ttatcttatt tgatacagtg ttctcctgct 360

aaatatctta atgtcagttg ctaaacataa cagcatccat tgtgtactgg tgttgacttc 420

tgcgcatggt gcgaagattc acttttgtat attttgttcc tggaaacaca ggggagagct 480

gcttatcata ataagaagaa acagtgctgc ttggaaaata ctagaaaata ctagaaaata 540

gtgttgcttt ggtctataag tttgaaacta tattattgct atatggatgt gattcttaca 600

attggatgag tataggaagc atatagagaa agatcctgcc ttggaaagaa ggtttgaacc 660

agttaaagtt ccagagccta ctgttgatga aacagtacag atcttaagag gacttcgtga 720

gagatatgaa ctctatcaca aactgcgata cacagatgat gttggacgca tataccactt 780

agaaccaact actatttgtc catttctttg tcatttttga cgaacttagc aaaatttctt 840

tgtttgtatg caaaaaccct ttcgtgagaa ctaactaaga tgtcaaaata gtagttggtt 900

ctcatgatgt caaaaaaaac cctttcacga acttagcaaa atgtcacaca ttggttctca 960

ttttttacaa gcctagtgca tgcaaaaccc ttctcatcaa ttttctttgt ttgttttgca 1020

gattgatccc atgatgtcag acaaacaccc tgttaaagca atgtgtgaca tccgtgattt 1080

ggggttatt 1089

<210> 895
<211> 1241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132358_G1, chr4:4732017..4733257, Cluster 6

<400> 895
gtcagagggt ctatatagtg tggaacctct tagactagtg atccacgcaa cacaaccctt 60

ctagttcaac aatttctgtc tctcgttttg cctaatgggg cagtcaactc atgccagatg 120

atattttgtc gatctcacaa cagtctcaat caagagcatg tgatctctgt caatgcaaac 180

ccaggactct ctcacaatgt tgaacatagt gtgaaggaaa ttttgatacg aaattatgag 240

tatcgctact ggttcgagga tgagcaagtc aaccatgtca tccttaacat agttgggata 300

cggtatcata aatagtaaga tgttgtttgg ttcacatatt tgtaacgtac aatgtaaccg 360

ataacgttaa atcatgtttg tttaagtaca accgtaatca tataccacac tagaaactga 420

tatcgtccta ttcaaacttg ttaccacggg atattaattg tgaaccgtta ctattatcat 480

ttacgttaca ttttgtgaac caaacgacac ctaaggttta cttaattact attgatggtg 540

gtaaacttct gcaacgctgg tgactcatag tcttcactaa catttgaaca aaaaagtagg 600

gttctaaatc aacaatctag taagacagaa gctcagtaga aatctgctcc attctagaaa 660

aaaaaaggcc gctttcagcc ttgaagaaaa ccgatagatc ttagttttcc tgaataaagt 720

agtgatggat gagtcatatg gccatcgcaa tttattatgg ggacctgaca tataacagcc 780

cagtactacc acccaaccaa taatttcttc actaactttc tcattcgttg gtgaaggtac 840

taactgctac caatcaaagg actatcaagg ttaacgcctt aacggttaac ctacacattg 900

gactattgaa gcagaactga cagcacagta aacctcaatt cacgagcaca ccctcaaatg 960

aatcctgcat ggttttcatt cagtaaccag gctggagaat gctctgaaca tgctgtggtt 1020

tcgagatgaa cgtctactac agtgatcacg aaccgacgaa cagtttccag aaactgagac 1080

tgaacccgcg atgctgaact gaattcatgc tgttctcttc agccttgtag gacaccgaaa 1140

gcgatggaga cgactacgat gaggacgatt atgatacgac tactacccgg acagcgatca 1200

gcgacttgta tcacttcaaa ccccccttgct caccagcacc g 1241

<210> 896
<211> 1141
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132417_G1, chr4:4838082..4839222, Cluster 6

<400> 896
agtatatcat ggttcgttat cactagacat gtaacacctt aatccatctc ttgaagatag 60

tagagtaggg gtagtttttt caaacaaaag agttgaattc attatttgat gcattcattt 120

tgggagtgtg atttttgttt gataaatagt ttcaagaatt atcttgataa tactaatact 180

tgttttgtta aggatgtcct atttctaaat acctcaagaa cttcacgaag attttcagaa 240

cctatttttg gagtatttgg tcatgtgtag ataaaaagaa aaagaaaagg gattgtgctc 300

tcctgtgcct tatccacatc tcgatgtcgt cgtcatgcca tcgccgtcgt ggtcgtgcat 360

ctccggagct tccactctag tctcgaggcc gctgatgtga tccccgaagc tcgccgctgc 420

ttctccaacc ttctctgagc ttgctccgtc caccgatcga cctcaccgcg tcaccccgac 480

ttcaccggag ttccacagta gtccaccatt cgtcgttttc catcgttctt gccccttcta 540

ccccctcggt gaggactcta ccgtgctcac ttttctctta gctccatctc gagcccttcc 600

ctagtcgcgt tggccaccca gagtgtcgtt ccaaccaact ccagcgagga atccggccgc 660

gcgccgccgc cgtacactgc cttctccccg tcatcgcccc ctcggctcac ggagccatgt 720

gcatgaagcc gagctgaaac cccctagccg ttgatatccg atcgtgcggt cagttttgtt 780

aaagcccgag tcggctcgct cgatttaata tcggccctcg gatttgatcg tgcggtcacc 840

agtggccggt acccccttcat ccgagccgcg tagccgcttt tgcaaaaaaa aaaaaaaact 900

gcattagtaa ttaagtactc gcatgttttt ttgtagttta aagatcctta caaacaggtc 960

ctaaaattta tgctttagcc catgtgcttt tgtttatata accatcatcc gcgcccccaa 1020

atgtttttca cccgagcccc ttggttttca aaatagaacc cgcaagcccc taatctttc 1080

agaaaagccc ctagaactta attttctgtt gcatataggt ccatgtagca ttgtttttta 1140

t 1141

<210> 897
<211> 1254
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132563_G1, chr4:5414212..5415465, Cluster 6

<400> 897
ttttgatgtg gtaacacatg attttgcctg ctagctaggg atcagatgga cagacaggtc 60

atggagcact tgtgcatgca ctgggaatgg agacggtttg cttgcccgca ataatctgcg 120

aaaggcccaa agtcacatgc catccatcga gctccagctc cagctggatc agaaccagat 180

cctgctgtga cctcgaccga cctgaacagt gcagtatgct ggggcagggg ggcattagaa 240

acttgaaact gaaagacggg cccggccgtt ctctgaatct ccggcccaaa cgcacttgca 300

gggactttcc atagaatccc ccacccaccc acacacacac aaaaaaccca gagctagtga 360

taggagactg tttaatttgg gcattatata tattgatatg ttaaaacgtt tgaactttat 420

ttcagggcac tatgttcctc agctatccca gcttgtgtac aggaggaaca tcggtgtaga 480

gtgtagacaa gcctatcatt aacttcaaag gtttcatggt agagatagct agcatatgca 540

tgatcatcaa aaactgatga aattcacacg aacattagtt cccatttcat cattcagaac 600

ctgacgagtc aaatggtttg gaaatggaaa agaatccacc atgaacgtat atattggtat 660

actgatccat tattccaatc gttccaggtc ggcaacggcc tgaccgacga ccgcaccgac 720

atgacgggca tgttcgagta cttgtggcac cacggcctca cctccgacga gaccctggtg 780

agcgctggag gcgtgcccgg ggacctccct gatccacccc tcgccggcgt gcaaggaggt 840

gtgggacgtg gccaccaggg agcaaggcaa acatcgacgg ctacagcatc tacacgccgc 900

gcgccgtgcg agaagggaac cccgtacgcg tacgagcgca tcttcgaaaa aggagccgcc 960

gcgtaagccg ttcaaccgtt cttcttggtc tccggccatc atcagtcgtt ctgatagctc 1020

tactctctct ctctttctca ccatgattgg aacacacgta gcacgttctc tcgtacgttc 1080

agccactgac gaaggctgcc ccgtacgata catgcaccgc cttctactcc accagctaca 1140

tgaacctacc cgacgtgcag aaggccatgc atgccaacgc cagcggcttc aaagaatacc 1200

catggcacta tgcaggtatg gcttcattta atttcctttc gtccataaca tggc 1254

<210> 898
<211> 1297
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132901_G1, chr4:6834121..6835417, Cluster 6

<220>
<221> modified_base
<222> (733)..(733)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (733)..(832)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (734)..(734)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (735)..(735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (736)..(736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (737)..(737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (738)..(738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (739)..(739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (740)..(740)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (741)..(741)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (742)..(742)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (743)..(743)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (744)..(744)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (745)..(745)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (746)..(746)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (747)..(747)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (748)..(748)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (749)..(749)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (750)..(750)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (751)..(751)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (752)..(752)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (753)..(753)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (754)..(754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (755)..(755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (756)..(756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (757)..(757)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (758)..(758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (759)..(759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (760)..(760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (761)..(761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (762)..(762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (763)..(763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (764)..(764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (765)..(765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (766)..(766)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (767)..(767)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (768)..(768)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (769)..(769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (770)..(770)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (771)..(771)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (772)..(772)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (773)..(773)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (774)..(774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (775)..(775)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (776)..(776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (777)..(777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (778)..(778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (779)..(779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (780)..(780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (781)..(781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (782)..(782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (783)..(783)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (784)..(784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (785)..(785)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (786)..(786)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (787)..(787)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (788)..(788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (789)..(789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<400> 898
cgtctagcat cagttgagct gggatctcta gcccctgctt tgcacatggt tgtcgtagta 60

taccaataat taatgacata tataaatagt aaaataaatt aatcaactat gtgactaatt 120

aatcacattc atcacaataa ctagggtatg tacaacctca tttaagtata gagtctctta 180

ggaggtctat aaggggttaa ttcaaaagcc acaagagaca tgctctttgc cgaagagaga 240

gccgattctc catacatatt gtctggaaag tatttgtgat ctgaagtttc aaagtttatc 300

atgtagtctg ttagtgattt tcggggcttc gaatacagat tgaaggtctc tggattggac 360

aggtacatat tagtaaggag tacaccagtc attaagggcg acatagagct tcagattaaa 420

tttagaacca taactgcagg gatagtcagc ctattgcatg ttcgcaaatg agctagcgag 480

atcagacagg tggtaactaa gattctgcac atgttgacga ggtagcacac atttgtcaag 540

tatttcagct aatgtggggg tagagcgtaa ttccatgaga aaggagaaag tggatcctgg 600

aaaaaagccc atccgcaacc atgatacaag gggcttccac catttgtagt aacatggtat 660

atgcatccct gggcagtgaa tattccccac acacgccccg gccactcatg gcatggcttc 720

acttctgata ctnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 780

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nngatattca 840

tgcagagtgt taagtgattt tttatttcta agaaccagat caaaagtgct agagtggtac 900

atgtgtttat attatgagag ttccaccagt catctaatgg cggcatggtt atcagattaa 960

atgagaacaa taccgatgga ttcgttggaa taagttaatc ccatttctga agtagtgtca 1020

gcagaggatt tataaactag tatcatgtac atgttgggtt agtcagcacg cctttcgcaa 1080

ggctctcaac tagtcgatgt gtagcttgca gttccacgat aagttatact gttgatacat 1140

ctaaaaaaaa cagaagaaca accagcctac aaaggggact taggtcattt ttagtggaca 1200

ttttataaga atttcattct cattaaataa tataccacat acgcaagcag gatgccatga 1260

catgagattt aataaaaaaa agatatgaga tcatttt 1297

<210> 899
<211> 1296
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133801_G1, chr4:11260073..11261368, Cluster 6

<400> 899
tccagcgctc gtacatcgta gcttggtagg aatactttct attcttaata atgaaatata 60

tataataaaa aaaccatcag ctagcacaaa acagagattt gattctcagt ggaactcgct 120

tcacggatgg aaacacaaaa cgtgttgttg tgaaacgaaa cgaacctgcc tctgtctttg 180

caagtacacc ttttgtagcg acgcggcgtt gcagacgaag caaaaacaga agagacgtgg 240

gcgcgccgcg cgcacgtcgt gatcgtgaca cgacaccacc gtgggcgcgg cggacaaagg 300

atgcacgggc gtcccctctc ttcaaagtac acaacacaat cgcttgagca cgtagggctc 360

tgctctacag cctaccaggc cctctctttc ctataggccg tggttgccac ttgctttaac 420

acactcatgc aactcaaggt ttataaaacc gaccggtttt ggcagtaacc catcggttta 480

ccgaaaccga cgggacacgg tttcgggaca cggtttcagt taaccccggt ttttttaaa 540

attcaccaca atattcataa aaatgaaaac catcggtaaa ccatttttga ccggtaaacc 600

atcattttaa atcggtaaac cacatatttt gttgggaaac cagatttaat gccaagattg 660

agatccagtt tatgcattta gtggtcaatt taggtatatt agtcttgttt attgttatat 720

gctatatatg aagatgttat atgccatgtg taaagatgag ttagtattgt tatatatgcc 780

atggcttatg gtttatgtat tagttattga taaatgtgtt atggcttaag gtttagttag 840

tattggcccc aaatgagcta ttttttagtt attgttatat gactcgagat gaatatatga 900

gtattgtaaa acaagttgac ctatgtgtcg ttggagagct gtaaaagaac ttgtatctga 960

gtattgcgaa gtttgttggt tgtttgttgc atgagaactg gagtttgtgg ttacatatgt 1020

atgttgtatg ttattttggt gaacatatgt cgtgtggatc aattaatatt tactttgcaa 1080

tgtgaattga gcatattaca ataaaatctc tttcaaaatt ttccattttt tctgtaaaaa 1140

acagcaaaaa cgggtttgtt tcgtggaaaa acggcggttt agagcggttt accgctggtt 1200

tttcgtcggt aaaccggtac aaattcaaat tggtttggat tgtccaaacc aggtggtttt 1260

tatcggtttt caccggttta ccggcgataa acagtt 1296

<210> 900
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134904_G1, chr4:16377783..16378834, Cluster 6

<400> 900
gccaacttta atccgaagct aacagcctgc tttgaacgtt atgggacaaa atgtggcaat 60

ttatttaatt catagtcacg catattgagt ttctttttt tggttttatc atattacgta 120

tgaagatttt gactagaacc aaccttgcat cggatactag gtccggcact agtccattca 180

cgtcggccac ggcctgctag ctagctgtag catccacgaa aggagcacac actttaactt 240

tctttccaag ctatttgtgc aacaaaaaaa tgtttttcgt atactatgta tgtgttctcg 300

cgtgtatgtg tatatattac cagtatagca cagtagcact acatattttt ttgtcagcat 360

ttctctataa acatactcct ttagagctga tttggtgatt gggatccttt gagaaaaaat 420

cctcttgcta ttcaaaatta aattgaaagg agatttctcc ccatggatcc cctcgggatc 480

cctaataacc aaattagccc ttatagagct gaattgtttg tattggaggc aaaacttttg 540

ctcctctcgt accgtaacgc acggcgcaat cgctcggctt ttgtcagttg gatcggtaac 600

acacgaagaa agcgacgcag gcaagaaaga cggtgaaagg aaagggcagg caaaagacga 660

gagagaaggt aaagcgatca ccatcatagt gctgctgcta ctgctctctc tctctctctc 720

cctactctac tccctagctt aataaagccg ccgtccgata aattaaccgt tggttcagct 780

cgaaattatt gtgaacttct cgtgtgtcta tatatatgca tgatagtgaa agatctcgcg 840

taatcgtcgt cggtatcagg gcgtgattat tagggtcacc tgtgttgttg taataatggg 900

cgtacgctag ctagctcgta atgattctgt cagaattgtg agcgcgagtc tactaggatt 960

aagtggctcg gaataatccg tgtagttcat gttgccagcc ccccttgccg ggtccgataa 1020

gcattgcccc aactagagta aatgctgaca ga 1052

<210> 901
<211> 1009
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1354_G1, chr1:7047536..7048544, Cluster 6

<400> 901
aatttgttca tagggatagc cttgaggcgt atgaaactga cgagtgtaca tctatttata 60

cgctttgtgc ttagtatctc tttctctcca ccactagtta tgcaggtcaa taccagtacc 120

atgtcgagga ataccaggtt gttgtgactg tgacaagcta cttaaaaaag cctcactgct 180

ctacatgagc agaaggcaac ttaacgcata tgagatgtga gcacaatgcc gttaaattct 240

ggaatattcg cttccacatg ggtcaaaccc agtacccttt gctagtaaat aaaacagctc 300

tggcttggta gaccgtagac caaaagaaaa aaaatgggtg gattgaaaac aagatttcga 360

gcagaaccat gtaaagaaaa ctgagttttg agagaattct ggggagagcg tagattttgt 420

tacaaaactc tggccagact aaagttctat gcgtaaatga tcttgaaaaa acgcagcatg 480

ttttttaagt atcccaacca caggattcga tgctttaata gagattttta tgggtgctag 540

ttaaagaact actgtgcaag gaccacgaga aaaatcatcg aggttgattt ttttataata 600

aaaaacgaat aaaatacctg tttagaggac aacaagaaag tcattcagga tgcatttgcc 660

ttaaagtgag gttaacaata acctagaatc ttggttttag atggggagat cacgatgagt 720

gcagctatat gcaaacacaa ggcctaaaga aaaagggtta agataacata tgtgcaaggg 780

gaaacaagca ctccaggggg ctgcgccaca aaaaaaagag gggtcaaggg catatctgca 840

agaaaaaaaa tgcgacatgg gggtggtata tgaatgcgca agaagttttt taaagacagc 900

acaagccaga aggggcatac cgcatccacg taaggctaac gcggccaggg atcaatgcgt 960

aaaatctcaa acaaaatttg gacggccagg gatcagtgcg taaaaactc 1009

<210> 902
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1362_G1, chr1:7072217..7073278, Cluster 6

<400> 902
aggaggcgag cgccctaatc ctcctcgccg gtagtggtgc agcagcggaa gaagctggcg 60

gaggttgttg tgaaatggac gaggtttgtt gctacagcgt cagctgcgag aacgttgttg 120

ttcaaacaaa taggatatga tgagatatga actgagatca catgttgatt tttgaaaaaa 180

tacaaggttt atttttaaa aagacgatgt ggtagtacag ttaaaactgg tggtttaata 240

tagttgagac tactatgtga tcatcattat cgtttctgtt ccgtgtccat caaggggaaa 300

tagcagccga tgcatgcgtt ccagggagca ttcggcctga cgagggccag gccaggccag 360

cagctggaga ccacactccc cacagttacc cccaccacgt ccccaccgct gcggctactt 420

gagcacagta gccaaaaagc tgcctgccct ggaccgcagg aagaggatgg agtgggcatc 480

gatcggatcg gatgccaccg acacacacac tctctctctg tctcctacac cactccacac 540

tgtcattgtt taaccatgca cgcccgtttc ctgttttgct tcagcgggaa gcatccactt 600

ccacctccag gaacgaagaa gatgcgtttc cgtgactcac gatttccaag aaccctcttc 660

gttttggaag cgaacagaga gtgtggtgtc acgttaaaac catatgttcg gacttaacct 720

tcttcgtttt ggaagcgaac agagagtgta gtagtgtcac gttaaaacca tcgactgtgt 780

agaaacagta aaaattaatc aagcaaccaa acacgaaagt gatcagactg acagtcaccg 840

gccccaccag gaaattccac ccaaacgagg aaacaaaaga acatattcgg atattccatc 900

cctgactcaa ggtttccaag aatcttcttc ctcttttaga aaaagatttt ttttgttcgt 960

ttaggaaacg aacagactag aaagctgcac gcaggaattc cccaacaatt ttggccactg 1020

aaatgggacc acgactcccc gagactcact ccaccgtttt ca 1062

<210> 903
<211> 1329
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_138738_G1, chr4:37727784..37729112, Cluster 6

<400> 903
ctggagcgaa aatgtccgtc ctaagattgt taagaatttg cccgagcaaa ggttaatgtg 60

gcgagtttgg tctaatttgg tacttaatcg tctaacaagc aaatcttata gagattagca 120

ttatacattt cactggtagg tttgtgaggc aaaatgttct ccttaaataa gatgcacttg 180

gtgctagttg gcaaaaaaat atatctggcc gggcggtggt tttcttaatg aaataagggg 240

gttttttgg cgcgggaaaa gaccgaggag gatttttttt tcacccccct tttcaaaagg 300

taatgtgtca tgcaaattta attggtgttt tccaatgggg aatttttggg gggggggggg 360

gggggttca tgacgtaaaa aacatgatga cattgccaga aaagataaaa ggataagaaa 420

aattgatttg attatgtttt ggtatgagac aggaaaaaga aaacgattat atttttctat 480

attgaatcta tcttgcatat gggtatggtt tcacttttag gtgcctgacc gtagaggaga 540

atgtatgatt tcggagcacc cttttactaa tatgatttca aacatgccaa tgcaggacca 600

attgtatctt tactggattc aagcaatatt agcatattaa tacattgact cataacaaat 660

tttattgtga acatccattc aacaatattt tagaagtaat aatctcaacc atacattcag 720

gtcatccata catgatacat ccaactcagc catccatata cgaacagtgc caaaaaccgg 780

agcaaattac atttttatt gaatcaatat actaagtaat agtagcagca agctatatta 840

aataaaatgc aatgagctaa ggctaacacg gaggtacatt aatccagtat gactgtgtgt 900

gcatgatctc cagatcttcg tggtcgtgaa cctgaccaac ctccatagtc tgcttctgga 960

catcatagat gcatagatcc ctatgaccag ctactaagtg gaccagaaag tagagggtgc 1020

tccctcttgg gttattggtg catgcatagc accaagttgc catgttggtg cccgtcaaga 1080

ggaaaaccct gtccccaaca tcatccacca ggtgccaggc cacaagttcc tcgtcaccac 1140

aagttttctc catcttgaag atacgagctg agctaatgtt ggtaggatcg aaatccatgt 1200

ataagtagca gatagccaaa agctcgtcca tggactctac caagtggatg gaggcagcac 1260

aaatgccctc gggaatgagg tcgaactctg catgataccg tcgccacttt tggtgttcaa 1320

ttacgtgca 1329

<210> 904
<211> 1348
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_139557_G1, chr4:43164295..43165642, Cluster 6

<400> 904
taacgtacgg ggccattcag tcgagcttca ccaacctttt cgaccaaacg atcaaaactc 60

aagtagctat agctttatct gaggagctcg gctgcactcg agaggaggag ctggagaggg 120

aaaaatggat cggggctcct ttctttggtc ggacgactcg gacctaggag cagtgtgtgg 180

ctgttttcgc atcttgaatt gcctaggtga tgtgagaagg gcagctgcgt gtttatggtg 240

tcgggataac cggataaggt agagagacag agagggcaag ggcaaatttt gggaggctcc 300

atcctcatac acattttagt cctttggata tacgtaaagt agtagaagaa gagaagatag 360

gtggacgtgc tcctcctaca ctaatccatt catcatcaca ttactaaaaa gtcgctaatc 420

catccatcat cacatcacat aagtttatct ccattcacaa gtaatacaag tctcttcatt 480

aggaactttg gcattaaaat aaattatgag ttaactcgtt ttcataagct tcatgtggat 540

tgccatcgta tttccttctc catgttgatt tcttatgttc ctttcactta gcactatgca 600

agtaacatat ggttacataa agagcatggt tgcatacaca gccaaagcaa caactagcaa 660

tctgaataaa cagttcagag ctcagtgcac acattcaact caaaatagca attggacaca 720

tatatgatgt tatatgcccc aggtgaccga aacattggcc ataggaccgc aaacaacact 780

ttctaatgag gcacaacgaa gatagcaata tggccatcct ctttttaata ggacatgcat 840

ctctcttgta ttcttagaat ataatcaaca atgtcatcat tataaatgtt tggggtgtaa 900

ttaaggttta aggtggagca tatcgaagtg acgaagtgga ctgaaatggt atggaggtgg 960

agcgaagtgg actgaaatgg tatggaggtg gagcagatct gagtggcgtc ttcctattct 1020

cgatattgag ggcagaacac tttttatact ttcagcggca ttagtacaaa ttaagggcct 1080

atttagatag actaaaataa ttattgcatg gttaatggac acctgattct gctattccat 1140

aggagtatga aagcattggg ttctctctgt actagagttc cgttgtagag atacctagac 1200

tagataatat ataaatgttc atagtacaat ttccaactga tgaatatact gagaaacaat 1260

tcttgataat agaataattg tactattatg tgaaaataga cttggacata catctttgca 1320

acaaaaccac cgaggcgaca gaaacagg 1348

<210> 905
<211> 1138
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157993_G1, chr4:162864429..162865566, Cluster 6

<400> 905
ccgctggcag agcggcagtg gcaggtggtt tggttggtcc gctgcttcga cggcgacggc 60

ggtctggcgg cgccggcgac catgcaatga taggggttgg ggatctggat acgcgcacac 120

gcacaacgtg gagaaggaag aaccgacgtg tttttcttcc ccctttccca ccgggcaact 180

aattttggaa tgagaatatg ggtgaatatt gcagtgacat agacatactg gcatcgcatc 240

gcaagatgct gaaacggaga tgagaacact gcatatcatc ggttcagccg gcaccgtaga 300

agaatcttcc tatcctaaaa aaacgtgccg tggatagcgt gagactttcc aggtctcgcc 360

agcctcccca ctctagaatt tcgcttacga gtcggccccc gactgacctg actacctgag 420

acgaatccat atcatgtttt aatttaaagt ttgtttgatc tacagattat tgagatgatg 480

tattatttaa gttgtatggt tgtacgtatg aaaatacaaa aggccggaat gatatttcca 540

cctccaaaaa atatcaagga ggaatgtcgg tgtcatggcc agcgaccaac cagactggct 600

caatccgacg gcgcccagcc aaagtcaaga ctcaaagagc accgggctac cggcggcagc 660

aacgagaccg gcgtgggcgg tgggaccgac gacaagcatg agaaaacggc aaaacgccat 720

tcacaatgtg cgggtggtgg ttcgcatggc atgtgcctcg tgtggcgtcc gaacatgttt 780

gtcgacgcga cgaagatgag tgcgtgtgga gtgtggacag ccaccgaact ctgcgttttt 840

tctacgcccg cccgtgacta gcgctctgct cgtgttttcc gttaacacga aggcacagaa 900

agcacaacaa acgacgtgcc cgtggatgct catgagtcgt gactgaaaat aacgatagac 960

tagaatgaaa tggaaagaat agatgttcgt cataaagttg gggataaata ttggctgtta 1020

aatttagatt aaatatatgt tatttttct tcttctaaaa taacttatag cgacggtcag 1080

gacgacaatc tagttcatat aatgattcag cttaaatagc ttaagaggca aacaaact 1138

<210> 906
<211> 1093

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158148_G1, chr4:164095030..164096122, Cluster 6

<400> 906
aaggtggaat atatatatgg aagggatagg gactccgaga cttgacaatc aaacgtacga 60

gcgcacaacg ggagccatac tgcgtacgtg cgtatggtaa ctagtctagt aacaattggc 120

gtggcgtaag gggtcctgta ccgctgcatg catggctaca ggcatgtatt tcgtcacgac 180

gcagacgcag gctgtacgtg cagccgtgcc gaaacaaaaa tagacctgac ctcacgcggt 240

cgtgcgcaca gtagagagag agtgtgtgtg gcagcatagg gaaggagcta gggttgagag 300

agagagctca caaaacaagg cgagctgcgg tattcagttc tcgaaacagc agcgagcggg 360

ggcatgcact ggagcagggg aaacggaacc aagaaggccg gcctgccgat actgcgacgc 420

atgcatgcat ggcaggatgc acagcatgca ggtctcagca gcagccagaa tagattaagt 480

gggtggtgtt tgtttctact tctacccaac taaaatttag tttctgccct catcggaata 540

ttttataata attatagata ctaaatatat tctaattata gtaaaataat tacgcagaca 600

aagattagag aagacgcgac taaatttatt aaacttaact aaacatatat ttgatacgta 660

tacttgatat tcaaatattt aatataggac acgatctaaa taaacaaact ttagcaagag 720

tgaaactcca aataggaatc ggatccgaag acgaagacgg tgtatatatg gagagagaaa 780

aaaaactcta gttttggaaa tcctgcatgg atcggacatg gccgccgccg ccaccgccac 840

cgccgccgcc agaattagta gagcggaaaa gctgcgcgat cgccggcact tgatgacgcg 900

catgcatggg tgtcgcaatc catggcattt tcacgtaggt ccagagtctg aaacacatgc 960

gccgccgccg ccgaccgtcg ccgtcttccc tcccgtcgga agccacgcga acacctcacc 1020

tcacctacag gttattatag gctgtagtaa cagcgacaac gaaggcttta gaggtcgaca 1080

aataatagtg atg 1093

<210> 907
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159036_G1, chr4:169413572..169414607, Cluster 6

<400> 907
gcaggagtga gctcggcgtt tcccgctaaa actaagcgaa aatcgattgc gaagtggcca 60

aaacctcccg agaaaatcga atttcaagat ttcaaatttg aaaaatccaa attgtttggg 120

atttatgaaa ttcgacgaat ttcgagcagt ttttttgtc ttcgaggagt accaaaaaat 180

attttcctat atattaatgt ggggctcaaa cgtgcgattc cacacgtcaa catcagccaa 240

caaaacactg ttcattcgat attacatcca cagttgggaa tcaatgcacc aaagcgcaag 300

gctgctcgcc gtcgtagatg gacttggagt cttcccgatg gacagatggc ttccacttgc 360

ccgctatgaa acaaaaaata ctccagacaa ttttcccatt gctcgcgagg ggacgacacc 420

tccagcgcac gtttcacaat ctcgctcgat aaccgccggt tacctaggaa atttttgtt 480

ctcgatgttc actggattcg ggtcccgcct gcaaatttcg aatggtccgt tcaaaaaatc 540

ataagatcag aaaaaaaatc tataaaaact agagggtctg agagttccaa aagtatattt 600

gttgttgaaa aggtcatctt ttggtgcgaa aaaataaata tatttagacc tgttcacaac 660

ggcaggaaca acagcgcacc cgtcgtcgag actcgggcgt ttctcgacgg gaaccaccat 720

ttcccgctcc atatttatta ttgcagttgc agttccaatg tttgctgctg caggttacaa 780

ttgctgaatg tgcccacgcc acacacatct agatcggaca atccacattg cttagggtcc 840

accacgcttc gaagcgacga tgaagtagtg agctcagcgt ttcctggtaa aaactgagcg 900

aaaaccgatt gagaagtggt gaaaaccgct tgagaaaacc gaattacgag atttcaaatt 960

cgaaaaatcc aaaccgttca ggatttacga aattttatga atctcgagcg gttagaggag 1020

caccgggcga cctacc 1036

<210> 908
<211> 1317
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160000_G1, chr4:175222157..175223473, Cluster 6

<400> 908
cgacgtctgc gggccgatga tggcctgcac ctgctcgttc ttgatcaggt ccaccgctgc 60

aaacaaacca aaaaaaacga aacaaaagct ttctgttcag gagtcgctaa tggttatgga 120

gcagaagccc ataaacatct cggccgaaaa cataatctgg cccctagatc atcatcaagg 180

cgttgagggg aaaaaagaaa aagatttggt tcggcatctc tgcaattgca gaacgcaaac 240

ctaacccatc cagttggtcc ctgactccct tccctagaca acgacgacaa caacaaaaaa 300

taaaaaaatg cttatatatg ttgatgatca gattagtagt tcatcgaagt tttccgttgt 360

tatttggaat cactgtcgct atcagagtat aggcggatct ctggcacctc acctgctccc 420

gtacttggat tggactgaag tcgtctgtgc agtgcgtgaa tgtttgaagg tttggacagt 480

gactcactcg ctggagtcag tctggaccat gtcgctcgct tgcctcggtg acggactgac 540

ggcgacggaa cagcaggaca ggagctagct agacatgcgt ggaggtgcat gcactagcta 600

gtcctgccaa gtcggtctgt ctgactgtct ctaacagtat aatacaataa aacaaaagaa 660

aaacttatcg cgtcgacggc cggctgacac gtatggagta tcttgtgatc gaaatctact 720

tgcgtttatt tatttttttg tttgtttgtc ctaactgcta agggaagacg accatggcat 780

ggatcgagta gttgggccgg tcagctagac gaccctcgcg ctgtacgtac gtgtacgtac 840

gtacaagcac acacccatca aagctcgaaa gcaactggat agccgattac aacttccgag 900

acggcggcgc tcgctcgcac gcagcgccta tatatgtctt accggcggaa gcggcgccga 960

cgacgtcccc ggcggagtcc cggaagctga gcacgaccct ggtcctggac gcggcgggcc 1020

gcgcggcgta gtagtccccc acggccatct caatgcccac cttccgccgc tgcccgaccg 1080

ccgacgtcag gttgaggatg acgcccacgc gcaccggcgc cggctgcgcc tgcgcctgcg 1140

ccgcgcccac cggcaggctc gcctggcacc agcaccaggc cagcagcgcg gccgccagaa 1200

cgagcccccc gcggcggcgg agggaggagg aggaggatga gggcgagtgg tggcgcagca 1260

gcctccgtcc catttcaact tactacttac tgctcagcag ccgcggcggc tagcgag 1317

<210> 909
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160010_G1, chr4:175272468..175273497, Cluster 6

<400> 909
cgcatgggaa tcccgaggcg gcgtttatct atcgcggagg ccgagatcca cgtgccgcgt 60

gagaccgcag ttaatatgtt tctgtgaatc tcgatgctgc atggaggccg tggcgtaact 120

agtagccgga tttctaccgt gccgtgccgt gcgggtgaaa tcacgagcca gcgtccaaaa 180

tgccaaatca ctggctcggc taccgagccg ctgtacattc gctgaaacct catgctacta 240

ttttcttttg tctgccgtca cggactcact gcgacgtggg acccaaagac caggcggaga 300

tgacaaacgt gagcggcagc cggcaggcag atgttgcagc actacagcgg cgcgcgccgg 360

gtttttatta ttataatacc gtatctaaaa ttaccgcttt gtaatatact aatagatgaa 420

ttgaagttta aaacaaaagg tggaatatga gttgccaatg tgggataagg gagccgcttg 480

agatagcgtt actaacgcat agccggaatg tactgcatgt tcaccgtact tatggctcgc 540

atcgtcactg ttttgtgttt cttttcgctc tgatccagct catcgtctat aaaaaacact 600

cgtccctctc gttgccccga cccgacctcc gcctctgcct gctcctcccg ctttcctccc 660

agctcccatc cccgcaagcc caaacgcgac gcgacgcaac gccacgcgaa cgtgacggga 720

gcgagccacc cgaatccacc agaccacgcg cagccgtcac gcccgggcgc ttctcccccc 780

ccgaccccgt cctcccgttt ggcgtctctc tctctccgtc gcgcgcgcca cgcgaacggc 840

acctaggcaa gggggcgcga tgaggccggg cgggccgccg aactcgcggg cgctgcagca 900

gccgggcacg ccggggcggg tcgcgccggc gcccggatct cacgctgccg ctgccgcagc 960

gcgacctggt ctccctcgcc gtgcccctgc caactggggc ggcggcggct ggattcatct 1020

ctctcctcac 1030

<210> 910
<211> 1072
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160028_G1, chr4:175373804..175374875, Cluster 6

<400> 910
ggtctgcatg ttttgtgtgt tgacttgaac cacgagaaaa cagttattgt ggaaaaagca 60

ggagctagat ggaagacctt tgggtgctgt ttggttcacg aaatgtaacg caaatggtaa 120

tagtttacac ttgattactg gcagtaacaa gtttgaatag gcatacagga gttagatgca 180

agaactttga gtgctgtttg gttcacgaaa tgtaacacaa atggtaatag tttacacttg 240

attaacggcg gtaacaagtt taaataggcc ggtatcattt tttagtgtgc tatctgatta 300

cggttgaata aaaaaacatg atttaacgtt atcagttatt cattacgtta taaatatgtg 360

aaccaaacga cacatttctt taccgatttt ataagtaaat gtgactgaat gaaggggggg 420

gggggggggg gggggttcag ggtacaacat gagaacaggc ttatgagtag tctaggactg 480

gacactaatc tatgggggtg ctcagatcat tttgtcgtag cctgaaactc cacaaacgcg 540

cctcatcttt ggcttggcgt cggaggcgaa gaactgaagg cgtattgttg tggaagacga 600

cttcattcct gtgtttccat attgcccagc agcataagtg gatgaaactg tggtggtgat 660

caagggagat tgtaggggggg gagtgatctc ggaggggcaa gtggccgagt gagagtcttc 720

aatatgtacg ccaaggctgc tccagaatgc gttggctgtt gggcatctga acaaaatgtg 780

atctgagtct tcatcagctg agcgacatac atacctcgca ggttgcattg gttacaatct 840

ttttttttctt gagcaggttt tgcttgtggt gaatcctgtt ttggacgagg gtccagatga 900

agactttcac ctttgggagt gagaaggggc gctacatatc ttggcgagtt ggatgaggct 960

gaactttgga gaattctgta caggagcccc gttttcatat ttccatcagg ctcaaacagt 1020

ctgtcaggtt tactgaactg atgagatgtt gtagctccac aagctcgctg gt 1072

<210> 911
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160368_G1, chr4:177307561..177308658, Cluster 6

<400> 911
tagaggctca gaacaagcta gtcaaagccc gaaaggtacg tgttattatt aatctcttat 60

ttactttgac cttgctgcat cacctctcaa caggcaacgc ttatacctgg cctaatgctg 120

gatagaatct ccaaccatgg cagccttacc tccatgacct tgttgcatca tcacctctca 180

acggggttcc ggtggacggt tcctcaacac taagcagcaa cagcagtctc acactgctcc 240

cagcaggtcc accacaaatg acacaagctc ctcaggttca ttcaactcgt ctacggcttg 300

gtggtggcgc agctggagat cgatctattc tggcactgca cccaaaacaa tggcctcgcc 360

gcctcgcaag atagtagcaa gaaggctctt tcttcatcag ctcttgcctt cactgtgact 420

ccagtgtcgc gcagagatga cgccttcttg tatcacccag gccaatctca gtttctctgg 480

aaatttcggg cagacaagcg cgcaagctgg gatgcgtaat ggaagtcagc atagggttct 540

agttatgaga tgacggtctg tgggccatgc atagctggta atccaggctt ttaggatcct 600

agtgtccggt gaccggtgtg gtttgtcttt tatgttctgt ttggatttta atattggagg 660

acatgaaatt gaattagatt taatgctaaa ttaatcttaa aattgaaatg agttgtaatt 720

ccgattctat tgtttggatg ttactgaatt ggagtttaga attgtgagat ttaattccac 780

acaattcaaa agggtggtgc tcattattag gaggggaagt ttatagttat agtccaattt 840

tctggtaaat tgggtccccg attctcgatc ttaattccac aagcagctaa acaacataat 900

gtaggaaagt ttattccaat ttctaattcc gtgctctaat acttacatcc aaacggggta 960

ttacacaatt catccttggc ttagtttctg gcttgttacc aaatgtgtcg tccacagaag 1020

agtgcaacta tatattatcc gtgtcagtta ctaactcata tttgaccaaa tttacagtat 1080

attatgccct aaataata 1098

<210> 912
<211> 1381
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160644_G1, chr4:178822758..178824138, Cluster 6

<400> 912
tggttcgagc cggcgaatct tgcacgatgc aacgttgcgg gtcgtcacga ctcacactca 60

cgaggaagca cgtacgtatg catgttttgg acagcaaccc tacaaattcc acgccaccag 120

tatacaattt attcaggcgg cgtttggttt cacccaaatt ctaagaatta atccagatat 180

tctcgagagg ttcttgctaa ccatagtgtt tggatctatg gatttttgc atcggataat 240

gtgacaactc ttcaatatct cctattatca agcatgaaag agattgttgg attttgcttt 300

ggataaaagt gccacctcta gtctgcatta cctcacacag tacggaggcc gtgccagctg 360

tgcacaagca catggcccct aaattgacgg ggcctccact ttttttcctt tgaccattaa 420

caaacagtaa gtagatgtaa agatcacggc tgcttttgac ctgttcatcc gtctcatacc 480

atggtgatta gattagaata caattacaat gaaccgtcat cgtttgggat taacgtgttt 540

ctctagaaca tgaggtcaac actgtgtttg ctcttttagc attggtatat gatatgaaac 600

aatacatatc taagttattt gagtgagtga aaacatgtct tagctatact atacatatag 660

attttcatat atattttggg tctcttgtcg agttcgctcc gaggccccat atttctgaag 720

accgccctaa cctcacatgc ccaaaatatg ttggtactaa acaaggcctt aacctagtag 780

acaacttatt tatgtaaaat cgattgttct ggtatgaaga gcttgtttgg aagaaaaaca 840

tttctatatt ttctgggcaa ttccatgttt ttaataataa tagagtattt tatgccatga 900

gttctttggt tgcatttcta aaagctatgt tttaaaactt tgatattcta aataccatga 960

tatttttgga gtattttaaa ctccactcca accccaagtt ttcatggcat ggctatcttt 1020

tgcctaaata ccatggttta taatgtttta tccaaacatt aggtagtatt cttggaggtg 1080

accaaaacta tggtattaac atgacaattg caaagtatag tattgtaaaa ccatggtttt 1140

aagaaatatt gttgccaaac atgcccgaat tgttggacat tggtcacagt ttaccacgtt 1200

acagttatag ttgtagtgga aatatgtccc tactaatgtg gagaacgtaa taagtgtgaa 1260

acaacatcac acatgattcg aacatattct cattcacggg gttgatctgt tctctatcac 1320

attattgaaa ggagatgtac acgattcaac atagcgaagg gacaacaaac atacatggca 1380

a 1381

<210> 913
<211> 1010
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161527_G1, chr4:185314220..185315229, Cluster 6

<400> 913
gtacagacgg gaacatctgc atcattgaca tcggcaaaca ctagccagtc aactttaata 60

atatggagta tgtatactaa tctattaaaa acataatgta ggcatttggt gctactatgc 120

tgcatcctcc cccgtgacac tctggactca ccccacgcgt cccacctgat ccccgtccac 180

gcagctacca tgagatcaga cgtaccttag tacctataat tatatttaga taattaactt 240

agtacctata ataatattta aaactaaaca ataattatat ttagataaat atcttagtac 300

ctatttatac aatatataaa aaacgtagta aatcacagga aagtgttaaa actttaagga 360

cagattaaag tgtgccagga gccaggaggg tagctgtgag gactgaggag ccgtccccta 420

ctgagctttt tcaatttgtc ggaggacaag ctctcaggct tcttcatcca tgtccacaac 480

cgtctctacc tccaatcaag acgtcgtata tatatactca tatacttata aataaaagta 540

tcatttcgat aatacttttt atttttattc tttgtcgcta gaacaccctg gtccttaaca 600

tcctgcgagg gtaaaggcgc agcgatcccc acacctaatg aaaggcgagg ctgcattcaa 660

tcagctggga tcgagtgggt gagagccagt cccctccatt catgtcaacc tcatcatctt 720

tctcttgcgg caggcaacca gacacagcca cggcactggc cagcctctgg gcggcttcag 780

cactggcatg tttcttgtga gttctgacgg ccgcggcggg tgccggcggt cgggcgtggc 840

cggagccata aattgtggct tgtccaggtg actgatatac tatactgtag attacagcgg 900

ccggtagcta gctctagctg tatggggtgg ttgtggtttt aaaggcgttt tttgcttgct 960

tgtgatctaa acagccctag ctgcacttta gagtacgaga tccaacagtg 1010

<210> 914
<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161875_G1, chr4:187049147..187050165, Cluster 6

<400> 914
tcgagtccac cggcaacaac aaaacatttc acgagccatt ggccaagtta cttttccaaa 60

gcaactacta tttatatctt aaccatcgtt ttgttttctt cttctgcgca agtaaaagag 120

cgaagcgaat ttcgggtcgg gtgcgggcga ccctgttgga tgaaatagaa accccgcatc 180

cacgcccgtg aaacctcgga ttcagggcgc accccacggg tggaaaaaaa atcttcacct 240

acacccacac gtctatcgtg tcgtcggata accggtcagg ttttcggttt agggttaagt 300

acgtgaccat ccatttgttt tggaaagagg gggaggggag cccaccagcc ccccaccctc 360

aacgcaaggg tacgtaactg gtccatggtg aaacgtacgg tgaccttgcg aagtctgagt 420

gtggcccggc ccattgctat tccagtagtg gcagagtagg aaaagtctcg ccaaagctga 480

ggagctgaac tatactcttg gttttaaaat aaaattcgag aaatagatag gaaaaggaaa 540

agacctgtgg cctggcctgt ccagatgtga cacctcctcg cgtcctgccc tgccctggcc 600

tggccctctg catgatgcca gcaagcagca gcccggccag ggttgatgca tgcagccagc 660

ggcgggacgc ctgcctgcgc gatcgcatcg tcagctgcag cctctgctcc gaattattgg 720

ttcgttaatc ggccagacct gggacttgtt agcagcttta ctgcacgaac ggtttttagt 780

gctggtcaaa aacttttgta tctctaaatg actttatttc tgtaaaaata tatccagcgc 840

tactaattac taattcaacg tagtaaacaa aagcattgat atgtatattt ggtgaaagtt 900

tagggtcccg tttatttccc cttgcttaag tttagctcct agtaaaccaa acaatctgtt 960

atgctaaagt ttaacaccca ttaacactct agggagtgtt tagtttgaga tcaaagtag 1019

<210> 915
<211> 1136
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162150_G1, chr4:188516749..188517884, Cluster 6

<400> 915
atgacgttta ttgctcatgt atataaaaat acacctgcaa caaattatgt gctcaacaca 60

ttgatagccc tgctcgctac acctttttctt ttctctctca tgtagtcatg tttcatacga 120

ccagtggggg actcgcaact cgcaagtgca agagagtcct gctttcacca gaaccactcc 180

ctggtattct tctaggagat gagcatcgtc tatatgccag gtatctgatc aggaaagctt 240

gtctttgcag aaggtgatga tggtgaatcc tttcatggct cgatttatgg atcttagggt 300

taggtttgct taggatttag gagttttatt aaaaaatgaa taattgaagt tcaatttcct 360

cttcttcaac ttgttgtagg agatatcgat cagatttgag ctgatttgga gatttggcac 420

atgtatgtcc taaatctcga aggatttagg ttctaatgtt agagtatagg tgcaaaacct 480

cgactctgat atcaccatta ggccatctcc aacgtcgccc ctacccctcc cccaccccac 540

gtagagtgtg atttcggggt gaaaatcccc tccaaccgtc ccttccatag cccacctcat 600

gtgggggaga gagactgctc ccccacatat ggaggatttc taatctcctc tcactttagt 660

tacttcattc tttgtgatat taacctttt aagtaccata acttgataaa aatgtgtatt 720

atggtagtac gaatagtcta taatttttta acttgaaaaa ttgatgaaaa aatatcaaat 780

aattgaacta taatatatag ctaggggggag ttggataaga ttaatggttg gaaacgtcgt 840

ggatgtgagg gtatcttttg aggtgatata gtaaaatata atagaaaata tagatagtag 900

gaaaaatatg gagggaatgg ttggagatgg aaatgcgtat gatattccct tgcctaaaac 960

cttgaattta gagtagagag agaaattacc tttgggtttg taggaggcgg ctctaggtgg 1020

agaagaacta cttgtcactt gctacaatct agattagctt agatatatgt atttgttagg 1080

atgaagaggt atcacgaacg ttggttggtt cgtgtgagtc ttagtttatg ggggcg 1136

<210> 916
<211> 1313
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162628_G1, chr4:190372399..190373711, Cluster 6

<400> 916
atcgtcagac gatgattcgt ccaaaagatt ttggaagata gatggacgac gatgacccat 60

gatgacaatc ctatctagat taatcaaaca atatgcagaa aataaaagaa caatatttgt 120

taacaaaaaa ttgataaagt ttagcatcaa ttattttaat caaagcattg acaaaataaa 180

actagaataa tgagcaacta ggaaacaaac cgctaggccg gttttggttt tggccctagg 240

caaccgtacc cctccttcaa ttgcttccac tcgatgtcag ggatctgtgt ggcgtcaacg 300

agatggcaaa aggcagttgg cgacgcgcac atttgttagg gtttagggta ataaacaagt 360

agctgttgga gtattttaat tactgtacga gtaaataaaa aaaggtaaaa cgaattttat 420

tttggaagag tagtgattgg gaacctccag tgaatttccg cgtatgtgta cagcaatttc 480

catcctagga tcggatccgt ccacgtacgt acgtgaggca aatctctaca gctaactcgt 540

catatctact agactgacag gttttccttc catggaagcg atgtgatggt ggtaccagta 600

ggccgggcgc cgtcgcacgc gcggacgacg aggacgttgc ctttacattg cattgcattg 660

cctctagtac tagtgcatct gcatgcatgg cagttggcag gtcctgcgtc ggccgtgctc 720

gagctcgact gctcgtgagc ccggcgcgcg ccgggcaagc ggtcgagcca cgtccatctt 780

cgacgcatga acgggacccc ggccccctcc gatctgatct tgctcggccg ccataaatgg 840

cggcagcagc cgatccacca ctttttgttt cttgctgcag cacatgtcga cccagcacct 900

ttttgttttc ttgctgtgct catcatggac gagacgttgt atttgcgtgt gtgggtgtgg 960

cgctatacta gcgtccgccg gccagccggc cggccggccc cggcctcgag ccctcgaccg 1020

gcgccatggc cgttcatttg tgctgtactg taccaccgcg cccgccgcgt agtacgcgta 1080

cagttagata tacatcagct ctagctgcag acgccggccg tgctgttcct acttgctagt 1140

acggcaaagt accaccagcc catcatgatg cgtgtgccgg ccccttgatg aatcggtcct 1200

ccgaaacatt tctaatattt gaattatttt cgaagttaaa cagcagaatc cttgcattca 1260

tgtctgggcg gccgtgcatg catgcccagt gttgcgacaa cacttatgtt tta 1313

<210> 917
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_165139_G1, chr4:203017761..203018882, Cluster 6

<400> 917
atggattgtg ttgtgtgcca tcgatccatc cataccatcc atgatgtgga catggaacgg 60

cacgtgccag accgtgacgg tgaaagtctc catggcacga cgctgcagtg tgtgccgaga 120

tgcctggagt agtgtttgac tcgatagcca aaaggttcta ctttgaggcc caatgtatgc 180

tcaggattgc ttgcttgggc atgttgggat ggaatattaa tactataata atacttggtc 240

cgaagaaaga ttaccaaaaa gttcagtaca tttcttttcg ctggaaaccc ctcttccctt 300

gccgtataat catcaagtca gcagcaaacg aaacgaacat attgaaccag cagctagaca 360

aggcagcaag agccaacaca tgtcacgaat tataatgtat cagcagcagc cacagatctg 420

ataggagagg acaatcttct caggctacta ggttttgctc tctgaggtca agagccactg 480

atatgacagt gccgagccac cgaacaaggt cagtcgcagc cgagcattca ttgacagact 540

tgttgatgcg ggacaccacc gccggccgtc ggcgatggtg cccttgagtg atcagggtgt 600

ccagctccag gggctgatac gcctcacctt gaggttccca gccagctcaa ggacctctgc 660

tgtcaggtac tcgaggattc gaggatggct gccgcgtaca cggtcgccgt tgctcccagc 720

ggcctgtgct tgtgaccttc ctttcagctg gcgatgaatg cgtccggcgg ggagctggat 780

gtaatcgtct atcaatcctt attcaaactt cactctgcaa aaataaccat atacaacata 840

ctctcaggac tgtagctgag aattagcata taataatttg aaccaaaacg ctaaatataa 900

aataacgatc aaattgaaca ttgtggctga gaattatctc attatctgct tgccccaggg 960

ggcacaatca agcaaggtta gcaatgcagg acaacttgta acacccatgt aaactagagg 1020

tcaaaacaga cgtacaatag tttatttctt atcatatcct aatatatttt aatcagattc 1080

gaaattagac acgaatagtt agaaacgaga cggataacag at 1122

<210> 918
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170193_G1, chr4:228934128..228935239, Cluster 6

<400> 918
aagccagatg ccccgatact taccacaggt tgcgcaccgg tatcgcggta gcttgctgtt 60

gcccaggctc agcaccccgt ccgaggagga ctggatgctc tgcccgccgc gtcgtcatca 120

ggagcggcca gatgggaaga atcgaggact ggatgtgctc tgcccgctgc gtcggcatca 180

ggagcggcca catgggaaga atcgatcgcg acaccaacac gctgtgctgt gcatatatta 240

caaagaacac ttttcatttt tattcaactc gacaaaatgt atattcgccg atttgcgaaa 300

ctaaggcgac atccgtatac attaacagtc gttccctgtc ctcgacctct gaccacgcgc 360

caccgactct agtcttaaac agcctattgc ttgcaccaac ccaaagaact cggtgataaa 420

ttcaaggggc attcccttcg tctcggagaa cacaccaaaa aaaaaatcca gcgcaagtgt 480

acctttggca gcgctttaca acaccagctt ggcttcactt ttttttgtc ataagccgta 540

caaaacagca gcttaggaaa tatcttttac tatcccttgt actggaacgc tgaagccaaa 600

aaaaaaaaat ggctcgccct gcagccctga ttgctgcttt ggctcacgtt acttttgcaa 660

atatcccctc ccaccaaatc aatcaagatc tcaaacgtta ttctctttct tctttgtttc 720

tctcgcacgg ccgcaggatt gctccttcct gctcgattcg tggagattgc agagctgtga 780

ggctcttcgg cggccggcgg tcgggcggtg ccgttacgtg aagccacgtc ctccacgatc 840

tctaccatcc aaaacctcca tattccaccg gctccgatct cgtgacggcg acgcgcggcc 900

agaccgtgtc ccgcgggtct caccagcgcc gtccgtggaa tcctcacgac gcacactgct 960

gggcgtcaga catggacata gagagaagtg ctttttagtc ctctttagtc acctcctttt 1020

aactaaagaa cttaaattta gtcattccac tttagtcacc atatttgttt ttttagaact 1080

aaaagtgact aaagtttagc aaaaccaaac gg 1112

<210> 919
<211> 1143
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171119_G1, chr4:234202010..234203152, Cluster 6

<400> 919
tcttcacttg ggcaagtttt tttaaaaaaa aactgataag agatggttgt gtgcaagaaa 60

taaattataa ggacctgatt gaataacttg ggtgtatgga cacctttaga acaaaattat 120

gatgttagaa cacctggttg aacaatcatg tcacaatgac accacgttaa agttctctct 180

gtgcaagtgc aacagaacta agctgtcttt cactaaggac ccaaatgaga tgtaacaatt 240

tgatcaagaa ttttacacaa aaagcacatg tccaagggtt aacagcacta atgttgatgt 300

tgaaacaaga aacaacaata ctactgtctt agaaccacca agtgataaca aattaacaat 360

acatgactat gccattgttc taacctgtga atttgatcca atctccaaaa taacggatgg 420

tatcctttga tgttgataaa ttaaaataga aaaggaatag gaagaaggat ccatcactca 480

tgcaacatgc tattagaaaa agtgaaatgt gggacctatc tgtgtggcct aaattcaatg 540

gcgtgctggc ccatccattg gtaagcacat aggaggtact tgatcgcacc aaattccagc 600

tcataaaaag accatgagac aataactgca agggttggga ccttccaaaa ctagaatgca 660

gaacataaaa aaatcagaca tgaataggtt caaaaagttc aggatgcatt tgtgtttatg 720

gaaaaaagac aatcaagaaa atagaagttt tctgtaccac ctaactggca cagttaaaaa 780

taccaaaatt gtaaacagca agtgtttgta ccatattttg agcaactacc cacttgattt 840

tgattcagct ataatagtaa gtgtttgtac gtacatgtta gttccactct ccgaaagggc 900

atctagctga gttggttagg tggcctgaga agcactcctc agatcctcta gtcctgagtt 960

tgaatcccag tgggagcaaa tttcaggctg aggttaaaaa aaatcactca ctggttcccc 1020

tggttgtgtg cacatgatat agactgacct atgggggcg gatcctcgtg taggggttgt 1080

gagagctcaa aacacgagta aaggtctagc ctatagggag cagaccctca tgttgcacga 1140

gga 1143

<210> 920
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171996_G1, chr4:238793030..238794042, Cluster 6

<400> 920
atctactagt attttctaga tgacgtggaa gctataaaaa ctataattaa gtgtcttatg 60

ttgggactgc tctaacgagg gctagcatgg caaatcaggg agttgatatg ctcgcatggt 120

caatcggtag acgatcagtt aggttggatt attgatcggt tggtctaggt gatatcacct 180

gcttttggaa ccagcatggt ggtgaccaag ataccgacta ctggtagggt cgacgccacg 240

ttcacattac ctgttgcact ggcaccagag caaaataatc cttttcacta gcaaaatatt 300

tttaaccatt tatttataag atcatgtgta tatttttttt gaggtgtgca ctatggtaaa 360

aatgacgttg gattcgcccc ttattactag cggatgtgtt ggagctagcc gtttatacat 420

atgtcatctg attcttacat tcaatttcaa gcgtttaaat ttataaaata aaaaaatatg 480

aactcacact ctgtaattag agagagggtt cttcccttct ttcacccaca ttcagagacg 540

atatagggat atgccatacc tcgcgtaccc aacatatacg tagtatgtct agaaaaaaga 600

tttaatttta aaatgtttga cagatttgta aattgtactt ccattgtgta tacttttta 660

ttgactcagg acctatctaa taaagttttg aaatagtctg ttagacggac atatgataat 720

aaaattgata gtccaatgct cgatcgcttg gattcttcga tagacgtgac tcacgatatg 780

cgctagagcc taagctgtta agtgtaggct cacgaaaaca acaaaatgtc aaacaaaatt 840

atgataggtc ttgaactttc gagagtccag aggcatgaag ggaccctacg cacataaacg 900

gtgtcttgcg tgccaaacaa cgagactcaa agttgatcaa tctaaccacc acgacattca 960

atatctcgct atttcttctt tgtatattaa aaaatatatc tacttcaatc gcc 1013

<210> 921
<211> 1169
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173358_G1, chr5:5571562..5572730, Cluster 6

<400> 921
acacatctaa ttttagtgat gttaataaaa gtataaaata ataattaatg ttttttgcat 60

attaatatat tttatcatat taattccgta gcaacgcacg gttatatagc tagtcaccac 120

aataaattca ggaaaaaaat tcaacctgac cccagggggt gtcacgactc acgagctgag 180

cgttactggc gcgctgccgc ccaaccaatc cgaaacccgc taccagcttt gctggtcctc 240

ccctcctcga cacagaggac agcgtcgcca agcgcaagcg cccgaggccc ggcatggaaa 300

tggaagaggg gtcccctcct caagacactg gaccactgca tgtacattgc acggagcaga 360

agcagatgca tttccatcac acggatacgg caggtccggc atgaagagcc gccatccatg 420

gctggtcctg gccccgtccc cttccggcac ctctgatcaa tgctgccatg gacactgcac 480

ggccggtcga gctgcgcagc cggtgatccg gtgaacagtg ttaccggacc tcggattgat 540

tgcctgtaat aatcgtcgag ccctgggtgt cgcttggcgc atcgctcgct gctcagctca 600

tcggccgcaa cgccagagga caggagcacc tctcgtgccg tcgtgcgtgc gcgcgcggtg 660

actctgggcc gggctgtcct acacgcgtgg gtacgtatcg ccggcacgcc attactcggt 720

gtcgggctcc ctgatcgcga tcggtgatag ggtaagtgtt gtgagcgcag cagcagtgct 780

ataggtccat acagtactga ggtccgtttg atagtctaca agtgaatcaa tatttgttaa 840

aaaaaagtaa cttcatcggt ggagttgaaa tttttatata aacatttggt agggggtcga 900

tcgagaaaaa ctagcctttt cagcttcact cggttgcacc tggaaaattt tgacgagctg 960

aaaaaaataa gttttatgaa taagtatgtt tggtagaaga acctcaaaac agtttggtga 1020

agctagcaca aaagccatac taggctctaa tcctgtattt acgttaaaaa aactgattta 1080

cgttgtaaac tgcagttttg tatagagtgg agtttaaaat agtgattaag atagagattg 1140

agatagaaag actcatggag acagcataa 1169

<210> 922
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173359_G1, chr5:5572894..5574046, Cluster 6

<400> 922
actagttggg atagaaagta caatttagtc tacagttagt tcccttgctt gcatacctat 60

tgatttaaat cttgaagtac taaagtcgag tttggtagca cacctcttag cttgtagcct 120

ttacaaagat tttcatctgc ctcgtgtctt ttttttgttc ggtactattt gtcgctactt 180

ttttttcaa gtaaagaaag gatatgccat gacgcttagg ttcgcattcc ggatgccccc 240

aaaatgtaat atggcaaaac gctggatcgc attttggcag gacacttgtg tagccgtgtc 300

tcttcccgcg tgaacacctg cattcgcggc gggcggtgag ggcgtgggac gacgagagta 360

gctagactac gcgtcggcga gggtgtgctg gcagcggcga ggtcacggcc ggaactgggc 420

ccacgcagac aggctagaga cttatctgca cagtgccaca gtggaggtga cgacaaggcg 480

aggcggggcc tgctgttaat tgccgatttg gcatgtgttg tgttacgtga cattgcaagc 540

ggaaagaccc ctaggttcag gcacttttcc cctgccgcac cgcacggttc ctctgcctgc 600

ctccttgtcc tcgctccttc gccaagaata aatttaccat cagctaccgc gtattatgta 660

gaccaagaat agacttacat gtacgtggat tgttatacag atacatttcc tagtccatta 720

taggaaaacc ataacataat ctatattgta tcttgttaaa gtcaacgtaa attcgctcag 780

tccacactga gtttgcgtgg acttgcccta aatcaattat tattaacttt gaccgaatat 840

gctagacatt ttataagatt ttataacata aaagtaaact cactaaatcc atcatcagtc 900

ctactatgct ttactttaaa acagtatgat tttacatgta ttatccgtta aaatttaatt 960

agaatgactc agaacaagct ctagaacgac ggactcatgt gaccgaaggg ggtacaaagc 1020

tgacaataat gtcgctgtca gaacgggaaa cgaacaagta atgtaacgaa caagctagcg 1080

acagcgagca ccacacagca gatgtcgttg taggtggcct cgctctcaca gtcacactca 1140

cgtgcggcgt tcc 1153

<210> 923
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_173990_G1, chr5:9620048..9621073, Cluster 6

<400> 923
ttgactacct gcaaacagtc cccctcaaac cacatcactg attgcgatgt tgtcccctct 60

aggaactggc tgctcaacca atcgcaacta agtctctaat tatgtggccg gtggcagcat 120

atatagtttt gctctgcact gaatgtacaa cactatttaa tacatcgtct cttgagggtt 180

ttctagggga taaaatgtaa aaaatacaca cgactcttta tatataatgt cttttgatag 240

catttatgat gtaactgatt ttaaagaccc tgcagatgca gtttttttatg tatcttttgt 300

gtatagaaaa ccgaggctgt agattgtgag aagttgtgaa cgattccacc tgtgaaaact 360

ggaacggttc atacggtagt ctgctgtcaa aacccaaaaa gaaatagcgc aaccatgcta 420

gctctctctg gtcagagaac gattgcgtgg gaggagactg gatgggcgaa aagggtatag 480

tactgtaagg ccttgtttgg atgcacgagt atacacctta atccatgtga attagagctg 540

tttggtgtag aatttagttt ggaatctaca ccaaactgct tcaactcata cggattggag 600

tggacacatg cgcatctaag gtgattgcgc gtggcgtaac cgggcgttgg caacgtcgtt 660

cgttggggcg ctggcgaaag caattagaac gctccaagaa cggcgacagg ctgttttcag 720

actgcaggtt tagttttcag tacaagacat ggtcaaggtg acttcgttgt ataatatctt 780

ttgatctgcg gcagcaaagt atttggtgga gagtggtatt ggtatgttat aaaaaggtga 840

cctaacaggc ttacatgcat gatctgatca gtttgtacag gcatacgttt tataagttca 900

taatccacat gatttgtagc ctgcaccatc ttgtcttgtc ttgaaccacc acatgtgttt 960

ctttgcttaa acgcttggtt gcttgaatac aagaagcgtg gactgcatgg acaggtgcaa 1020

aacaac 1026

<210> 924
<211> 1215
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174762_G1, chr5:14133935..14135149, Cluster 6

<400> 924
ccccccctcga ggtcggaatt tgtcaagcag ctgtagggta ggaaagtttc aatgaaggta 60

ggacacacac acgcacagca cattctgccg gtaaaaacaa catggatgtg ggcccttcct 120

tagatttctg ctgctgactt tcgttgaact aggtgtgctc atctgtttcc agcttaggaa 180

ttttccgtga actggtgtgc tcatctgctt ccagcgtagg aaatttccgt actggaacat 240

cgtaggaatt ttccgtcttg tagtctgtag ggtcagcaat gggcgctgaa agtcaagggt 300

gctgagcttg tgccagatct aatattgccg ttgccgatgg ggaatggatg gactaccctc 360

tacccatgcc caccccactt gaacccagtg attaatcaga agacatctct caaactatcc 420

ccaaactcca ggaaaaagtt tatttttagc ccttaagttg tctgattaaa ggagaacata 480

tcagttacaa ccaggcacat tagtgtaacc gtgcaaccag acacattgag aacatttgta 540

aagttgtctg attttattat tgtaaggagc gtgaggccta aaagtccaga cttcgtcaaa 600

actttggtag ctaaaagtag acttcttcat atgcctaaat ggacatagat tatccaatgg 660

gcaattagaa aatgatgtaa agaagagtag cctttcgcgt tagtctccat ccccatgtca 720

tgcctccatg gtttcgttaa gtcgccgctt atcgaccagg ttgggatagt tgcctgctct 780

agtccgggat gtggtcgtct aggcggcgcg cggactcgga cgatgactcc caaacagaaa 840

tcactgcctc cgatccatca cttgttcctg tttcttccgc atgcttcttc tcgcgggtcg 900

tgctggtcca ggtccacacg cggcaggcag gccgtcgacg gaactcggaa ggatacggta 960

gcacgggaac aggaagcccc gtcttctctt ctcgatgctg ggcatgcatg ggtaaccata 1020

gtatttttta cataagtaaa atctaagacc tgtttggcaa caaagtattt tcgtatacac 1080

agttttaatc aattcataaa ttaaataaaa ggtcagacct gtttggcaac aaagtatttt 1140

cgtatacaca gttttaatca attcataaat taaataaaag gtctattcaa atgcatgtat 1200

acctggtatg attgt 1215

<210> 925
<211> 1179
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175265_G1, chr5:16842122..16843300, Cluster 6

<400> 925
cagcatcctt ccctaaaaca ccatgtgtac tgttgggcgc ttcttagtca gcttatctgt 60

acattctgct tatattgagt cactggattc aattagtaca attttgaacc tacatgccaa 120

acaaaattag cattccaaat gttctctccg tgttatcttt gaactatgaa gatttgattt 180

gtaaagttct gatatgcaca tactattctg tttctgcagt cgcttgtgtt gtgtcttatt 240

cttataagtt gatgatgcag tggttataat gaatctttgt tttcctactt agtatatttt 300

gcataacagt tacattgttt tgatcctcca tttccacagg ctaaactgaa gaataaagta 360

cccctagacc agctgtagca gtcttgctta atatctttag acttatatgg tatctgattg 420

tatccttcta gactatagga ctgtacctgt gtttctatat actcatatct gttcaaactt 480

caaacagaat tttgttggtc tcactaattt aatgcagaga tgtcatattt caagatcctt 540

ggtggttggt gctagtccta accccaactc cgccgtttca taactgatac aatgaacaac 600

aacaaaaaac acttcaaatt ggttgtgcca cttgtgcccc tctttccagg ctaccttaga 660

ccatatgttg aactatcctc cagtgttcac tggcatcaac gcctgctcgc tttgcccagg 720

gcatgcatat tgccatgtct ccctacatag acacagatca agcgtgtctc gtgtaagccc 780

agggtcccac caagtatctt cgaggttaat gttgatgttg tcgaggatct ggacatggct 840

catattctgg ttctgaagac ctcatgccat gcccaaagct gtctgccgtc aagtcaaggt 900

tattagtagt agtattcaca ttagtccaga atctgaacac gacagacact tcggttacga 960

agataccacc accaccttaa aaaccgaaga tattattcca tgtgcccaac ctccatgttt 1020

cctgcgccgc aagtagggcc gcgccatgtg cccaaagtgt tgagttgttg atccaaatta 1080

tgcatatcag ggttctcggt tctcactgca tcatcattat tattcttgta aggccgctaa 1140

aaccggcgtt atgtaaacac tccatattat actctacat 1179

<210> 926
<211> 1256
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175582_G1, chr5:18702562..18703817, Cluster 6

<400> 926
tactcgtgtg tcgccgaaat ggacgcagct ctagcccatg atggttaatc ctgcaggtca 60

cgtcgtacgt gtcagaccat gtcggagcca ggccaattaa taatcagcgt acttttccat 120

ttccagaagc tggcttggct tggctttgct ggccggtggt tgcgtaagtg cgagcgaaac 180

tgatgaaaat cagaaaatgc tctggagaga cgaagcacat tgacggacgc tgcaggctgg 240

aacgtgtgga actgaaaccc ctatgctggc aggcggcagc acgcacgcac gtacaagtac 300

atatacaaat acaacacaaa aaggttggag tccaagcgaa gcagctctcg agaaggaagg 360

gaggattgga ggaagcagca gaagccagcc ttggccatgt gtgagtgtgt ctgtactctg 420

tactatgcag ctgcaactgc aagaggcaag agggaaacag tagacttgtt tttacaggat 480

tcagatggac cgttggtttc cagtcagggc cgtacgtact gacagtgctg tcgtctgccg 540

ctccagacag gcaggcactt cgtcgcacgc acagccgagg aggcgtgacg cccacagttg 600

cagttgcagc cgcagatgcg gcaggcagca caacgtagag gtgagtaatg aaagagacgg 660

ccggactgag ttgcgacatg tatgtaatca agaacttgaa ggagcgtcag actattacaa 720

caagggattc atttagacct actgttttgt gtaataatga agaccacgag ttgactgccc 780

ccattctctc tctctctctc tttcaggggt cactcgcctt acatcctttt aataactata 840

gtgcaaactg ataagggttg taatggggtc acagtgagag aaaaaaacat gtctagacag 900

ttgtgaagta agtggtaaag aagccgtcat cacattttta taaaaaaaaa actgcaataa 960

tagctctcgc tcttactatt aaagcacatc agacatgaac atggcggtgt tggtaaaaaa 1020

tagtatgtca caactcacaa tgtgtaaaga ttatacagac attatttagc tcgaagagag 1080

ccgacaaaga tgacctggcc gaacttctaa agttcatagc ctgatacctc atgttccttc 1140

actcatctta tcgtcaccag attattgcag caaactgtta taaaaatgta tgtacaaaaa 1200

ggcctatatt aagtggattt atatctgcga aactcgctat caacttttct attgta 1256

<210> 927

<211> 1373
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_178388_G1, chr5:32870080..32871452, Cluster 6

<400> 927
ctggaattct tctagaaaat ggtccaagtg gtttccgtcc atgctagtta ggagacaaaa 60

aaacatgctt gccttatttg gtggtccttt gttgatcata gaccatgcag taatcatgca 120

ggtcatttac aaggtcaatt agagaatatg tggaaaatta gtgcaacttg tcaacagatc 180

atggctacga cgaagtggtg ttataaacat tttagtccat ggaaatctaa tttgatcagg 240

tattgttctg agaaaatttc acccatggaa tttaattata ttcaacccta gagatggcat 300

gcaacaacaa ctaagaatag caaatttggt gttcgtaccg ttgctcgagt ctaagagaaa 360

caaagaattt caggataagc tagagcaagt tgtagcacaa atgctcctat atcagttcgt 420

tggtgccaag cgtgaggcaa tcaatgttga gtcaaatgtt gagcgccctg tggaggtgtt 480

ggaataaaat ttggatttga gcaaactaca aaacaactgt tcaactgaaa acgcctcatc 540

gaatggggat accttactca gtgaaaataa tccttctaac ccaacagttg gtcatgagac 600

tatcgatggg gagatgcttt cttcttttgg tcctcgaatt tatgtaccga cccaaagtta 660

tgaatattca atagtgaaac aggcaaaaaa aaaaactaat ggatctcacc cacatgtgaa 720

atgaagtaac ttttggggaa ggaatggtgc agggaagagc caaaactcag aatcagtcga 780

ttcatctgga gaagagcttg ttattcaaag gctagagatt gcgaagaatg atctacaaaa 840

cagagttgcc aaagaggtta cagggaatgc aattctacat gcgagtttgc aaagaagaaa 900

acaagcacta catgaacgca tattagcttt ggaaaaggat gtctccatgt tgcaagaaca 960

gttacaagct gagagggatc tgcgagctgc attggaagtt ggcttgagca tgccttctgg 1020

acagttttca agtgctcgtt cgatggacat gaagacaaag gcagaacttg aggagattgc 1080

tcttgctgaa gctgatgttg caaggttaaa acagaaggtt gtagagcttc acctccaact 1140

caatcaacaa cgttaacacc actatggctc tgtagtggat acaaatgatc accatcaccg 1200

cctccctggt cacttctcac agcaaacttt cttcaacaag gatttgatat gaaccttgct 1260

tttttgcaat caagagaagt agagaaatga agagagatca gtggagtcat caatggagaa 1320

actgaaatta acctttccat gggacccatg cagccacagt tcaagctatc taa 1373

<210> 928
<211> 1212
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_195119_G1, chr5:146427130..146428341, Cluster 6

<400> 928
tattggtttg ttttgtgtag cttcgttgtc atgttgaaaa aaataataat gaactagaag 60

acttaaggtt gagtaatgga gcaaagatca cctaattatt gaaaaaaatg ttaatttcac 120

ctacaaaata catgggttgt tttccttagc ttcattgtct tattgaaata attaattaac 180

tacaagattt taggtaaaga ataaatgaac cacatgatca cctaataatt gaaaaatgta 240

cgtttcattg aataactaca ttgttggttt ttcttttata tatcaataca ttagtctagt 300

cggtgttgaa accatatttc tctcttcttg tgtatttctc tagagcctag ggttctctct 360

gcaaagttac ctcatgtatt tttgcccttt gggccctatg gaatagatga gttgatgttt 420

tccttctcta acatggtata tggctagggt ttggctactc ccccacctag catgccaccg 480

cccatgagcc tgtggcactc atttgccagc gcgtcccccc acgtccgtgc gtgcttgtgc 540

ggtcacccct cccgtggctc ccacgcctgc cctgccctcg ttccaccccc cgcccatgtt 600

atgccctccg cccgtctcta atgttgtgcc tttcttccta gtgttctgtg ctcctctccc 660

tttgatatgt tttatgctcc cctaccttcc ttcgcccagc cgcatctttg tccacctaat 720

cccacctcca catcccactc cacacccccc tcaagcatgg caactcctca ttccgcacct 780

cttgtgccac ttcccaccat cacatttgat ggcaccaact ttcgggagtg gtccatcatg 840

tttcacgtgt gcctcaccac agcataaggg gtctccattt ggagttcgag caacttcgta 900

cttagctcca cgcttgttct cctctcccat ccttggtcga ggtggtcacc ttagcctaga 960

cagaggatat ttgtctttgt ggtgtgatgt tgtcttcctc gacaattctt gctacttcaa 1020

ctatgtcgct tgacctagct cctacttata ctctagctct agtggtggtg ctcttgccta 1080

aggggtgttg ttgttgttgt ctctgccatg actgtaaggc aacaaaacat accatcgaga 1140

agtgtaggtt atgtcctcca tgatgccgag gaggtgcccc gctattgctg ctcctgcctt 1200

gcctcaatcg cc 1212

<210> 929
<211> 1277
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_197223_G1, chr5:157796748..157798024, Cluster 6

<400> 929
tgtaacattc taaaattgta tcttggtaaa ttaagaaaat tccctaaaga tttagaattt 60

caagtgtatt ataacaatgt tatgaattga gactatcttc cctgaaattt aataaagagt 120

aaatatacaa atttggctac ataattaaac tatattttaa ataaagggtg gtgaattgtt 180

ttacctaaac tattcctttt gggttatatg ggtagtgttt ggttcggtgt caacgaagaa 240

tgggacggga tcaaccctga gttgacctcg tcccttattt tttgagagat gaccccatcc 300

accatttttt aagaatattt cttgaccctg actctgaatc ttcaaaccaa acgcaggtca 360

aattaaaatg atctcatcct atccctcttc attcatcctc gtccctccat ccaaacacat 420

aattaattcc tttcttattg aattttatac atgcaaataa ttatttgagc aaagtaaata 480

agaaataagt aaatataaaa taatttcatt catgttgtat gtttgtttca ttgttgcatc 540

taaattggat ttggaaattc aaaacctaga cttgaattaa atctgaaagt ggaaaactaa 600

aacagaaaag aaaaaaagac accacctggg tctcgttcca tagcacaagc cgagcgcacc 660

agaataccag atcacatcgc ggagctgccg acggatccgt cctcctgcgt cctcagccaa 720

ggctcgcagg tgtgcctcct ccgtgtgggg cccgtaggtc atccctagct acggaaccca 780

tgctctcaga ctccaaactg cctggccgag ttccatgcta gctctcgtcc atcaccatcg 840

taacaacccc acgcttctcc tcgacacctg gtgcataaga aggggagcta cgacccgacc 900

ctgactcata ggcgcggtgg aaatccaggg aggtcgttcg catccgctcg attatcctca 960

atgggagtat aaatgacagc tcgcgtactc ctcttcctca ccaactccac ccccccccc 1020

ccccccccc ccgctggccc cgccttcgcg tcctcccgct ctcagtgtgg agttctactg 1080

ctactcaggc tccttgttct cctactctgg cgcgtcgacg aggtcgtgcg tttccaactc 1140

ggcacagcgc ggtcgccccg tagacccct acgcgtactc tctgtcgtcg cctccctccg 1200

tcgcatcgac cctatggtgc tagttgaggt cacaagagtg ctattccata ccaacacaga 1260

gaagaagcga aagggcg 1277

<210> 930
<211> 1034
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200537_G1, chr5:176994861..176995894, Cluster 6

<400> 930
catttctctc taatccatat ccacatggat taagattaaa acatacacgt gtcttttcaa 60

aaaaaatgac aatttttttg ctatctacca gcttacatat tacattcctg cttgtaattc 120

aacatcgtaa gagatcaaga tacgtggcaa ggctacgtcg tagattgttt ttggcactag 180

aagttcgtct aataaggagg tgtgtgcggc gactacaatg aagagacata ctacgttatt 240

aacgtgctgg cgtttatcgt ttgttatcac tagccgcttg ggtgtaatca caggtatctc 300

aatctctgtc atcattcgtc acaactcacc agtcatcagt catcaccgcg atcgcgagtt 360

gcgacccacc actctgggcc tagcaggcca caagctattc ttatgcgtcg gcctaacaat 420

gagtggccgg cggcccagtc acagcaggcc caaggcttct cctcgttttt tgagacaagc 480

ccgagccttc tttcttaaac gaaactcaca agcatgaaac cgagctgtcg gcccaagtac 540

cgaaccagct agccggcccc accttcggca atatcgcgcc atggcttgga tgttggctct 600

gcccagtccc cctccccccc cctagctgcc gtggttttct acctgtgtat gaagcgcgcc 660

catgcacacg tggcgaaccg tttagcagca atatataatg tatggtgatt gtatgattga 720

cagagattaa attaggatat aagggcaagg acagaggaaa accaggttta gtgtttgaaa 780

gagttgcaca ttgtgcagag gtgataatta tagcagttac gatagttgca tagtcaatcg 840

acatgttcgt gggtttctat aaacttatat attacatcat tagcaagatt caacagctag 900

agatttgttc aatatataca tcactacgaa agtttcagcg gtctggttat atatacacaa 960

aagcattcgt gctccaaaag tgacgatgct cgtcatatta cctgtacaaa aaatatgagc 1020

gtcagtactt aaag 1034

<210> 931
<211> 1333
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200728_G1, chr5:177660033..177661365, Cluster 6

<400> 931
tctgtgtgtc accactcgct agagcttatt gaaatgactt tgaaatttgg ttaaaaaaaa 60

gagaactagc taaatttagt taccaaaaat atggcgaagt gatactgtgt ttgtgtgtca 120

ccgctcgcca gagcttaatg actttgaaat ttagtttaaa aaaacaaact cagagtagcg 180

agtgtcttct ccccaaagtt cagaacattg catctgaccc attagtgcta atgcatttca 240

tcatagcttg ttgtacgccc ttgagattaa ccatcacagt acagattata tgctcaggta 300

tccttgatat ttgggccatg tggtactagt gttgctattt gctagcgatt gtggcggtgt 360

ctgtcagcac tcgccagctt agccgcatgg gctcgcgcag gaacctctat tctgtttcta 420

aaccatatcg agcctttagt ggagcgtttc atgggccatg ttttcatgtg gtgggctaaa 480

ctgaagcagc gagtccacaa agcatcagtt caacccgacg gcgacactgc attgagattg 540

acagctagcg gactgagagt tttccttcac atgatgagta catgacatga tagcgcagtg 600

atagcgcagc tagggatgat gcagaggctg ggcgcggagt gacggcacat actgaggcga 660

gtggcagcac cagcgagtca tctgcggcgg cggtgctggt gcgggtgcgg tcctgcctct 720

gctgctctgc atgttcgcat gccaccctgc tcagcgacgt gcgccggtcg atggtctccg 780

cgatctgccc gaacgtaatg catagcacgg gcactgtcac gtcacgcagc ctgcagcatg 840

gcaatgatca accggcacag tccctgcggc tgcgtgcgtc gagcgatccc acactctcac 900

ggttgctgcg gcctgcggtc gtcaaagcag tcgcacagcc cggtgggcca ggcggcgacg 960

gtgcactagc actgccatgg aacgatcacg ttcttctctg ccgtgtgggc tcaacgtctc 1020

aggtagtcag gtgtgcctgg ttcggataag atcgtccaag tctgcctaga taccgacgtt 1080

cagtagcgta acatgttttt ttcttaagac caaagaccat tgttctccgg aaacatgatt 1140

gatcgatgta ccacgacatt aggtctggtc tggtacggtc atggtcttat tagtaaagac 1200

agaaccgttg cgagctagcc aaaaggctcg caacaaatgc aagacagcag aaaaaccatc 1260

ttaggtctcc ttttcctctg cagaaggtta gtggttgtgg gtgttaattt ccaaagagga 1320

gcgtcatggt aag 1333

<210> 932
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201044_G1, chr5:179547759..179548867, Cluster 6

<400> 932
tgagggacac atgaatatag gcgccacgcc aagtgcacga gcattccggc accggcagcg 60

cttgcagagt tgcaaggaca ctactacagt aggcatggtc gtagtcgtag accactcctg 120

ctgtactgta gaccagctca acctagggcg gccaggcacc cagtggccgg gcggcgcacg 180

cagttttgac tgacggggag cagagcaggg aagctgctgg agagtaagga cgcacgccgg 240

cacacgtgga gtggaggaga agcctagcca tttgaaatac agttacttcc atgtcgtgct 300

cgtgctgcag cttcagagct ggtgctcata tatgcggcca tcatcatcag ctcaccgttt 360

cttgggtgat gcagctctgc gttgcagtac agtggaccac atcttgcaaa atgcaagggc 420

tcaggactga tctatctaca catcagtcgt tagcaagtgg aagtgctgct tatttcaaaa 480

tgcaagggct caggacttca tgaattaatt gtacacttta ggatcatgta tgtcagctcc 540

ttatttcagt tttgttacat gtagatccct acaacaccga ttagagttgg ggaaggcgaa 600

cctcctcctt cttgggatcc ggtaccaact tcaaaaggta ctgaactatg tctatgtata 660

catagtttgc tttagtccgt agtagtttgc tttagtcctt attacttgca agaaaaggaa 720

ccaaagaagc ctagaaagac tgacaacata gaaaatatga tgaacaaata cctagaaatg 780

aggagcaagc aagtagaaga tgaagctgca agagaaaagg aagcaagaga aaaggaagca 840

agagaaaagg agacaagaga aaaggaggca gctcaaagtg aagatttctc catcaaaagg 900

tgcatatcag ttctgaacac aatggaagaa gtgaccaaaa tggagaaggc aaaagcatat 960

tcagtcttca ccaagagcaa agagaataga gagactttca gatgtgcatg tgaagcggat 1020

caagaattag ctttgatttg gctaagaaat gagatgactt agtaggtatg atatttgtgt 1080

ctttaccttc cactcaacca tattcactt 1109

<210> 933
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201690_G1, chr5:183868874..183869897, Cluster 6

<400> 933
agctcgacgc gggcgctcca gaagtccaga gcaaagttaa ttgtcgggca gctagctagc 60

taggctttaa taggcaagcc accacccatc tccttcctct aggctttccc catttggtct 120

gttccgaatg gcaatcgaga gctcgtcaca tgcctgctat atacatggag ctggaggatg 180

gagcggaaga caaaaggaca ttgccataca tactctacgc tgctgcagcc tgtactctct 240

ggaccgccct agaagataga taagcctagc tggaccttcg aggaaaggac ccaaagccag 300

cagagaggta gcgctagctg tcgatcgggg actggtcggg cctcgctaaa ccactagtct 360

aatccagcgc gcggcgttgt tttagtttac tccactgttt atatataggc acttgtttag 420

gccatcacgc agcagaactc gccgttttgt gtatttaaaa tttcgtcgat taggatacga 480

taagtgctac tggtacgcac gcacctggcc catgacagct gccgatcgag attgatcggt 540

cttacgaaga acatgttcct tttaaggtag gacgatttga cgaacataac cacttctgat 600

tataaataag cggaaaaaat acatgatgag gttacgagca cagattggat agagccatat 660

agaggggaaa aaacacagat taggccgggc ttgcagcacc ccagagcact ggaacacagc 720

aagccgattg agaaccttca aaacgcgcgt cttgatagta actagaggtc atgtacgagt 780

gttcattatg atagatagag tggtagacca aagccgcaag atctaagtta gtttctttaa 840

tatccattcg tttcaaagac tagttagaag ttggtttatt ttgagaccgc ggtacgtggg 900

tatacatgta gtttataaat caaagctttt ttaaaaaaaa ttgtctaaag gtaacattaa 960

tgcacatgcc caacgtactt agtagcatat acttagataa ttattaattg ggtagctatg 1020

accc 1024

<210> 934
<211> 1294
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201693_G1, chr5:183870768..183872061, Cluster 6

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (360)..(459)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (459)..(459)
<223> a, c, g, or t

<400> 934
ctatacatct agtatactcc taaatacagt atgtacgtag tacgtacaag gcaggcgagg 60

cggtgcgagt agtcgacagg tgtaccagcg cgtaggcttt actttaatcc cgcgcgtgat 120

tggtcggtcg ggcaggtaca tacgtagggt gggcaccacg ctagtacagc tagtaagcgc 180

atggtcgatg cacgacacga cgcagagccc catgcggtcg ggcactgcgg ccggacgcgc 240

gcggtgagag tgccgtgaat ttgggggttg cggcgacaca gtacagtgca gtgtcgtcgt 300

ctctgagtga tcatgtcttc catgtgtcat gtgtgtgcca ctcctatcta ctctatgcan 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnc ctttgcgtgg tgtttttctc 480

ggccccccag agagaggagg ggggggcaaa aaatcagtct cctcaatggg agagcacagt 540

gttgattttt gggccccccc attttatccc ccccccccccc ccaaagattt ctccccgcgc 600

ccccccccccc ccccccttttt ttttttttttt ttttgggggg gggggggggg gggagaagag 660

gggggggaaa acggaaaaaa aaatttccct cttgttgtgg gggggaaaaa aaaaaaaggg 720

cccccaaaaa ggtttttttt ttttcccccc ccccccccccc cccccaaacc ccccaccccc 780

caaaagtcaa tacagacgtc aagatgaata cctggtgtac ttccattccg gaaatcgggg 840

taggggcccc cccgatcggg ccccgggttc aaaaggggga aaaacccatg gggccggaaa 900

agctggcccc ataagtacgg ataccgagcg gctctaatag cccagcctag gaatcgtaac 960

attaaaaggg gtcgcttttt ctcaaatgaa gccccatggt tggtagccgc ttttccgcag 1020

gtccccccccg cgcgccgcgc tcgtcgaggc ccgcacatgc cggtgcgggc ggcgggacag 1080

cccgctcccc actgacccga ggaacgggat cgcccactca ggcgaatggc gatcatcagg 1140

ccttttcgcc cgaacatccc tgctacgtct tcggcttccc gttgaaccaa atactcgatt 1200

cacatcggtg cctggaattt tacgcactac catgggccga cagacattaa ctacgctgtt 1260

tctttcttaa ggactaaaat ggccttctta ttta 1294

<210> 935
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201994_G1, chr5:185535300..185536330, Cluster 6

<400> 935

tccctaatca aaatcaggtg cgtcttgttt ctgcatgcgc tggaaaagat acaaatctaa 60

gatattatgg gtcaactact tgcaaacagg tctagtagta tcgtgcataa cacagctatg 120

aacacaggcc tagccgccta gcacaagcag ccgcatacaa gcaagcacat gccaggatat 180

cgtgcataac gcagctatga acacaggcct agctgcctag cgcaagcagt cgcatacaag 240

caagcacatg tcagggaaga gcacgagcag tatgtgaaag atgaggatga gcagcacgca 300

actccataga gcggagcggc ggcaggctga gaagcaggtg ttgtgttgtg cgtgcgacgg 360

ttgagcaaag aagaaaattg caggcagaac gtaggcacaa ggcaatacca aaatggcttg 420

ggtcagacca aggtatggct agttgctact cagaaagcat ttgtgtagat agtacaagca 480

ttatgtgttg ctagttgcta ctccagcaag catttgtgta ctactccagc aagcatttgt 540

gtagatagta caagcattat gttgagcgcc cgatttggca ctggatgccc gaacggtccg 600

ggtaccgtat gcgggattta aagatagtta gtgcttaacc tcaaaagatg ccaacacatt 660

gctatctagg agcgctagga tagaggcatc tagatcttac ttatcactga gtaggcgttt 720

aggaatgatc ttgttaatcc gtaaaatcca accgtccatc cgcggccaca gttacttcat 780

cctcctcctt ccagttccag ctgctcacat ccttcttccc ttggagcgac ggttggcttg 840

cgcgcaccac cagcccacca gacggaggtc cacagccaaa cgccggtgcc tgtacgagac 900

gcggggaggc ggcaggacgc cccggtcgag gcggctgtcc gatcgagtga gcacaggccc 960

ttctcgctgg ctggcaaacc accgtcccaa ccccaagcgc gactgcgcga gcaagtaaga 1020

cgaagcttca g 1031

<210> 936
<211> 1235
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202272_G1, chr5:187027363..187028597, Cluster 6

<400> 936
ctctttgtaa aacaagatat gtatttattt attttgggac ggaaggaata attagttttg 60

ggatataggg agtagctagc ttagctgctg ttgtctagtg ttagcgtgaa atcttatatc 120

ttgtttgaca gggctttttc atggctgctc cctttgaact ccgatcctcc ggcactatat 180

catagagctg ccaaataggg ccttagtaag tttacttgtg atttgctaag caaaaaagcg 240

ccactttaat tccaatccta agcaccggag aaactttctg ctagctagcc gtgcatatct 300

aaaatatgtg tgcgcagact gttagaaatt tagatatttt tatgtttaat ttattccata 360

aataagacag tatagttgta gcgacgccta taagcacgtg tgaaatatta ctattcacaa 420

actatgcttg tgtaaaatca agacatgaca ataagggtag cattttgttc tcccactaaa 480

ttttacacta gtacaatcaa aattttgatg taattttatc cataaatacc ccaaccacta 540

taaaagagag aaaaattaaa atccctaatt gcatatcaat ctaccactgt ctgaagcttc 600

agatgtaagc tttgagtacc attttattta ccttttatat aaagcctcca ctatgaaaga 660

aatcaaaacc aaaatatttc cttagctaga tttgtatttt ttgcaaggtg acctaaggct 720

ctttctttct ttttctcctc gaggctctag atagtgtttt tttcgagaaa aaggtagatg 780

gaagattaca tacattcaaa agcttcagta gacaccgtct attcaagtga tctttagata 840

ctattgttat tagcatttga ctgtgaacct tcacaagcgg gacccgctgt gatggtaccg 900

tggcgtggaa attaaagcta agagcaactc caaaagccga ccaaaacatg ccccaaaact 960

cgttttagcc ttataaacca aaaatatctc gtccaatagt tcctctatct tacccaaaat 1020

ttgttggtcc cgcatctgag tcccgacgtt ccgcaatttt ccgcgttgcc attttctccc 1080

caatccgtcg gctcccgcgt gttgctgctg tttccgtgtt gttttgctcg cgcactcagt 1140

ttagttggca gcggagtgga aagcgacgac ggtgagagag aaagcagagg cggcggatga 1200

accgtcgaag acaatatgct gtcaacgacg gcagt 1235

<210> 937
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202593_G1, chr5:188709286..188710318, Cluster 6

<400> 937
gcttgtggtc acctgaccaa aaagttcttt ttgaagcaaa acattaatta ttcccaaatt 60

acaaaaatca tcacaaacat gagatatgtt gtgaattgtg atgcataaac gagcactcat 120

gcgttgcgcg aaagacttca ccgtctagag ccgccaaagg attgcaaccg aaaggacatc 180

gtcaagtagg ctccatgggg tggtattcca ttcgcctgca tctgccgccg acccaactga 240

ggcagtagta atggcacatt ccagggtcga ccttgcactc atgatggggg agctaaagtg 300

tagcagtacg cggcgtccct tgccctgaat cgttcatttg ctggtgcctg gtggtcttcg 360

gcagaagaac atcctacttt agaacaacag aggattagta aaacatatag atagaaaaaa 420

aaatgtaaga atagagttgc atgttacctt taatttcata ggattttctt ttttgaaagg 480

ttagatctca tgtctaaaat cctacaaaat ctcactacca tgcttaattt tatagaattt 540

gtagcaactt aatcctttgt tccaaatgac ccttcaaaat tcctcatttt tgctttgttc 600

caatggagac atggagcttg catgatctgc gattgcgaat cacacgcgct ggtagcaaaa 660

gctgagacgg cgcacttcgc tcctggtgct gatgacatgc tcgctcggtg gtgtcgttcc 720

cgctttagga gaaatcaaac atttttagta atatttatac tatataatta gtattattag 780

acacatcgtt cgatctgttg ttatagtaaa tttatttgta aacataagtg tcgttgatgt 840

tatctacaat tgtggttaaa ttttaataga gttaaactgg tataaatatt atcatttttt 900

tgacgaaggg gagtgctccc tgagcacagc ttggggccta tacggcgcgc aaggccacac 960

caggagttca ggactaaagg tgggcaactg ggcatggcgc agctgtgctc atctatgtcc 1020

accaaatcaa tcc 1033

<210> 938
<211> 1172
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203813_G1, chr5:195488021..195489192, Cluster 6

<400> 938
catatttata acgtgatggg tgactgataa cgttaaatta tgtttgttta agtccaaccg 60

taattggata ccaccctata aatcgatatc ggcatattca aacttgttac cgctcgtatc 120

caagcgtgag tcattatctt tgtcatttat gttacatttc gttaatcaaa cgacacctta 180

tcatttaggc atcgggagat agaagaaaga gcttctgtct tttgtaatta tgccaagaaa 240

gagcttgtgt ctctttacaa tgcccctcac atatgatgga tgtttggttg atagtgagat 300

agaggatagg gtgcaacagc tataacggca gggctagaaa aaaatcaatg gagaccaacc 360

tgagtgcaga gccacgacct ctcttgttcg cgtcagaaga aagaggggca tgcgactttt 420

tttcattatg tccactgata tgtgggagcc aaatacttat aaatctatca actctatcgc 480

aaatatgatc tgccaaaatg atggatctac acgtagattt atcacgatcc ctctactagt 540

ctactctata tgttggggtg gataaaaaca aagagtccga gatcttttt attatgccct 600

aacgtataag cctagattat agtgagatag atagaagctt gaacattatc ttaagggaga 660

aaaaaatata aaaccgtcgt gtgaacgtcg acaagccggt ctatcgtagc cgcagttcga 720

acggcactgg ttcgcctctg aaccagcgtt ttagtagcaa gtagcaacgg ctgcgcgaga 780

ctcaagcgtc ggaccgtata taaaaaatag agaatttccc atcacatgag attgatgcta 840

gaactaccac acaccaagca tcggttgcaa ataggcattc acgaacccaa atacttataa 900

atctatcaac tctatcgcaa atctgaccta ccaaaatgat ggatctacac atagatttat 960

cacgatctcc tctactagtc tactctatat gttggggtga agtaaaaaaa gagtctagat 1020

ctttttatt atgccctaac gtataagcct agattatagt gagatagaga gaagcttgaa 1080

cattatctta agggagaaat tataacaccg tcgtgtgaac gtcgacaagc cggtctatag 1140

ttagttcggg tatgacagac cgcagtttga gg 1172

<210> 939
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203953_G1, chr5:196255003..196256020, Cluster 6

<400> 939
gacccttgtc ggtgtgggac atgtattctt caatgatcct tctactgtat actgttgcca 60

gagcatgttc ctacccatct ccatttcttg agtcagcaat cgctattttc atatacatac 120

tatcctcctc tgtatcgcta ccaatcattc gtggatgctc atactgacat tgaaaatcct 180

accaccaacg ataatgtcaa tgaaattacc atcactaacg cttctcctcc taccattgaa 240

gctgctaaca ctacgctcct actcaacctt ttacttatcc atactcatat gagtatccat 300

atggtgcttc tccatatggc tcgtatggtg ctcctccatc gtttggtgct cgtcctcgtg 360

caagcatgat agtgccctta agcagtccca atgatgcagt tttcgaacca atccgcttac 420

tatagtgctc ctcaacgaca gagtattttt aagtttacag atttatatat tcatttgtgg 480

ctattgcatt ctatgaacct agtggaaatg gcaagaagtt atcggcattc taggccaaat 540

agacagaacc taaatctcca cagaaactcc tcaccatcat atctctatta ttagtagctg 600

ataagcaacc agaagatcac tctcttcaat ggaatctaca actacttgta catagtccaa 660

ccgagtggag cagattatgc tatgctactc gaagtggcca aggagaactt tcacaacaag 720

ctcgacaaaa ccgacttcaa tctggagtat atgtgacatg ctctttgcca tcaacttcaa 780

gtggtgcgcg aggcatggta atgacacctc tagtgatgga agcaaaatat catgtctcaa 840

tttggtcggt gactatagct ctgcatcact agctagactg tgttgtgata gggaaagagc 900

tcaatgcaag ggaaagaggc caacaattaa tgagtagcaa cgactcccta gtcacaaact 960

ctatatggct agtcaaagga tgacacgacc gaaattgttt gaacaatata acaactcg 1018

<210> 940
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204292_G1, chr5:198201760..198202896, Cluster 6

<400> 940
ttatcatgcg cgatcgccca gggctgaggg gcatcgtcaa ctagagccat atatccacac 60

atcatgtttg ccatccaatg atccaatcca atacaagtac gtgccgtgac agacccaggt 120

atcgctctcg cgccgcgtca ggactgtaga ctgtagagca acagggatcg gcacatttac 180

cgccatccat aagtttaact cgtggacgag cgagcgcggg gcgctgctcg gtgtcggagg 240

ttgcgtcgac acccgtggac tggccgaaca gcggctgccg attcgccacc gctcgtatac 300

cagtaaacct gagctcgtgc acttgtcgtt gtcgctctcg gcggaagcgg ggcggcagcg 360

attcgccggt gccgcgcgcg cgctccggcc tgctggccct gccgatttc acggagcagt 420

gcggggactg actaccgaga cggcgctgtg gctcacagtg cccgtgtgtt ttacagctca 480

acgtgggctc gccgcccctc ccgtcggcca ctgttgggtg tggtcaagca atgatgtggc 540

gcctgtcctg gtctgactgt tagtcggcgc ccgctgtcag atcttccctc ctgtcttctc 600

tgtctctcgg agtccacact cgcagttgca gtgctcaagg cgattcacag ctgtttgcgg 660

cgaagcatgg tcaactagca ctcgtggcct gccgtacacg tagccgaact agacataatt 720

tttatttttt tcattagtgg tattagtacc atgtagcctg tttgttgtac cacgtcactg 780

ctaggattta gacaatcttt tttatttaag gactgtaacg tactagagat aaataagaaa 840

ccaaatattt tttttgataa ctttagtatt gtttaaaaat ttcttatata taacaaagaa 900

atagcttgat taacaccgga aagaacggat caatttcaac gttcttgcaa ttcttgacca 960

cattttagcc gatattgtat atatatattg gagcccttag attttagggc cctgtgcagc 1020

gatcatacag tcagcgttta taggaacgcc tctgcctttt cagagcttgg accgtatcgt 1080

tcaatgtaat tggtgcaaca taagtctttt gagtcattta cacgaaacaa tgtgtgt 1137

<210> 941
<211> 1079
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204448_G1, chr5:199160383..199161461, Cluster 6

<400> 941
gacctgaaat cttaacagat taaagtagat aaagttagac aactaaccca cctataatca 60

tgtcgatcgg acttcaggat ctaaagctat tagcgaaacg agactgctgc aacagagtat 120

catgaaaatc aatcattctc taatttcgag ataaatcaag aatcacataa gattaattca 180

tcaaactttg tcagtcatta cttgatgcct tagcaatgat ctagatggtc cgaatcaaga 240

tgaaaatttg aaattaacaa aactaatcca gaattaaaac taggcatgca attaattagc 300

aaagaaagag gaacgagacc acactaatct tgcataaaca taaccttagt catcaatact 360

atgtgtacaa agttctctct aaaagcatca tagttttctc tcaaaatctc aaaaatatct 420

agatcaatct acttttagat caaatctatt gatattcatt ctctaattcg cgtctgggaa 480

aagcaaaaat tgatctctta tttataagaa cagagagtcc tattttagtc caaccgagcc 540

ctccctgggc cagccaatgc cagctccatg ggcccgctca cccatgctag cattgggccg 600

agcgtgcgct ggccagccgc cgagtgttac attaatatca aaactatata tagttgcacg 660

catgcacaag atgcaatatt atgttacatt caatatcaca taattcactt tacaaagcca 720

atgtcaatat taaatcaatg tttcatcaca cacgatttca cacaaccata ccaaccttgg 780

tgggttaacc actctggtct ctgatgggct ccctcccccc cagccatcat cctttccttg 840

tcttcgtgtt aacatcggtt gcagtggttg caacctaggt atcagttacc cgtgctgcac 900

ctgtgaggat atatgtgttc ctcatgatgg cagaattagc agtagagaca gtctgttcag 960

ccgcagctaa tgcggacttg gtcttctctg caaccatcca tttccttcat tttcccattc 1020

accactcccg gtgctgaact tctggcttaa tcccattgtc ctatactcct atcaaggga 1079

<210> 942
<211> 1110
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205576_G1, chr5:205538487..205539596, Cluster 6

<400> 942
ccgcggcgag ccacaccttc acgcccacac agtacgtgca tgctggcgcc gccgtacggg 60

cgcccggacg gcgtctgttc gcttgtgtga taataaataa tggccggcgg ccggggcaag 120

ggcaacgggc gagtgacgga ctggcctagc ccgcgcgctc gtacgttccg agagcgtcag 180

tgatgcagat gtgttgaggt gcgaaataag tcaaataacg ctgcacgccc aactactcgt 240

gcgcgaccag tgctaccact gtagtatcta cacggtctac agcgtgtggc cttcctgctc 300

cgtgtgaatc taaaaaaaca gcactaattt gagacattgt ttagaaaata gcactcattt 360

tcaatcaatt caaagaacat caccagtttt atcaaataaa tttagaaaac aacactacat 420

ctatattttt tttctcagct cacaagaaaa tggaccaaat tatccctatc tatagataaa 480

gtgttgtttt tcgaattaat ttatttcgtc ttaaacatca ttgctgtttt atgaattctc 540

cttccttgct ccgcgtcggg tacggtcaat gatgatgtcc ataacactgt ccgagtgaga 600

gtactgctac tacgtactac tacttccgaa gcttctcgta aatgctagta ctcctgctac 660

ccctagtgcc tatattatta gcaacatgga ggaagaaaag aaaacgagaa taaaacaata 720

ctgtatttgt agtcatacag agtaggtacc gtagtagtac atgactagat ggcatgcctt 780

tcacgtacat ggaagccttc tgatggcctg tccagatggc agcagccagc aaagcagtgg 840

gcagaggctc cgggctccgg cgctcggctc tgggcctcgt ttctgagcgc tggcttcagc 900

tctggctgct ggggcgccga cgccgtacag acgtggcctg cctgaacggc tgagaagctt 960

ttgcgccggt ggcgactggc gggtcatacc caggggccag gggcacgatg ctgggccctt 1020

ttttaatcat gacccccctct ctccgcctcc ggcctcctcc tcctccctgc gcctgcgcat 1080

cttttagcag gtcgcactgt tcgcgtccaa 1110

<210> 943
<211> 1221
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206017_G1, chr5:207888173..207889393, Cluster 6

<220>
<221> modified_base
<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (671)..(770)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (675)..(675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (676)..(676)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (677)..(677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (678)..(678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (679)..(679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (680)..(680)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (681)..(681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (682)..(682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (683)..(683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (684)..(684)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (685)..(685)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (686)..(686)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (689)..(689)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (690)..(690)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (691)..(691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (692)..(692)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (693)..(693)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (694)..(694)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (695)..(695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (696)..(696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (697)..(697)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (698)..(698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (699)..(699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (700)..(700)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (701)..(701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (702)..(702)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (703)..(703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (704)..(704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (705)..(705)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (706)..(706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (707)..(707)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (708)..(708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (709)..(709)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (710)..(710)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (711)..(711)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (712)..(712)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (713)..(713)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (714)..(714)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (715)..(715)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (716)..(716)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (717)..(717)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (718)..(718)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (719)..(719)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (720)..(720)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (721)..(721)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (722)..(722)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (723)..(723)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (724)..(724)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (725)..(725)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (726)..(726)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (727)..(727)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (728)..(728)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (729)..(729)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (730)..(730)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (731)..(731)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (732)..(732)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (733)..(733)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (734)..(734)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (735)..(735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (736)..(736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (737)..(737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (738)..(738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (739)..(739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (740)..(740)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (741)..(741)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (742)..(742)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (743)..(743)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (744)..(744)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (745)..(745)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (746)..(746)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (747)..(747)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (748)..(748)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (749)..(749)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (750)..(750)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (751)..(751)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (752)..(752)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (753)..(753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (754)..(754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (755)..(755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (756)..(756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (757)..(757)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (758)..(758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (759)..(759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (760)..(760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (761)..(761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (762)..(762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (763)..(763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (764)..(764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (765)..(765)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (766)..(766)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (767)..(767)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (768)..(768)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (769)..(769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (770)..(770)
<223> a, c, g, or t

<400> 943
tgtacatgac aagtaaacaa aatagtaccc taccgtgttt tgcatcctac atcaaccttg 60

ccacgattct tcatgtacac cctctaaaca tgtctcagta tgattgctct gttcctaact 120

aaaattgaac cttgataaca taatgcttta aagcatacct gaactcattc atgctaaatt 180

atatgtttcc cactatcatt ggagtagtgg cggatccaat gttgaattag gggggtaat 240

gtccaaatga ccaatggtga aggcaacaca agttgatagg agggctttat ttctctctct 300

tcttcttact cattccttct cctctacctt ctacctattt ctctaatgca gtggggctta 360

tttctctctc ttcctcctct atactccatc tctatatcta ttggagtttc atggacagag 420

ggggactaga tccccctagc cccttcagac ctgccactac attggagggt cttccttatc 480

ataaaagact gaattctcac cgggaagcaa atggtgaaca actaactccc catggacccc 540

atcagtcatg ttcacatcca caacagtaga ttccttttcc tttttgtttc atgtgcatcc 600

ctagcttgtt caaccatctc atgttctttt ctaagtccaa gaaattcata cttagattcc 660

tcattcataa nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 720

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ctcaacatcg 780

accaacaaat gcatcttatt ctcactattt aggtcacaaa atgcaaggaa caaattaaaa 840

tagtctacca acttctcttc ctctatcatg cccagttata tatatatata tatgattgct 900

tcttgtcaac ttctcgaatt caccatttca gcaaggttct tctgtagatc tgacatctta 960

tacaagtgac aatctacaac ccatccacta tatttgcatg gcacaccagc aaagctacca 1020

taatccaact tagtagtaag ctgactgaac tgaacacata atgtaaatgc cgcgtccaaa 1080

ccaatcatac ccattcaaaa ataagatcaa atcatcagtt taagttcact aatgctctcc 1140

cctcccacca aagaaacgac atctcaagtc aaatttaaca tgatctatta aagggttatt 1200

gagagggact agggtcttac c 1221

<210> 944
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_209699_G1, chr6:13100394..13101501, Cluster 6

<400> 944
ggcttccctt ggaacaacac cttctccacc ttcaaagagt gctcctcacc taccatttag 60

tagacaccaa aataaaccca tgagcaaggg caaacacacg tgattcacat gagcagcagt 120

gacgaaagaa aaatatctga aggaagagtg tgttcataca aggtgtcaaa gtattcaaac 180

ttgcagaagt atacattcct cacagggcag ataggccggg gtatggatct agcccctgca 240

tacgtcaagg tatggagtac atatagatac agctcttctg attttgtctc gatcaaggac 300

agcgaggcag gaagtgatgt gtatgtcggc acgtgcagct gactcacgtc ctccctccct 360

tgtggcagtt tccatctcaa cccctaaggg atcaatgtat ttgcaactgt aaaaagtctc 420

tgatcagtgg aagtaatata ctaagataca tgtctgtctg taatattaaa ttggaaactc 480

catggtgata tgaaagtgca aaatgtgata ctgttatagg tgtgacctgc catggcgatg 540

tggtaacccc caaatgaaaa tgaaggagct agattaacga ggatattatt gaaacaggta 600

ccagttggct agaagcaaga tctgattatg tataactgga gaaatgtaga tgtacatagc 660

agtatagcac tatctgttct catcaagtgg tagggtccta atcttgaagc tagcaagcat 720

caatccttgc ccagggctgt aacaatcaac agttttatcc tagctctaat cataaaagaa 780

aggagcagtt agtgactgcc tcaagaaaag taaaaacata aacaagcaac cagagagaag 840

ttcagcaaac acaaaattca ttttctcact ttaagagaaa atattagtgg tgcctctgag 900

tggtatagat caagtgaaat cttgttacat ggtcttagtc tgtttgaaac cagatttcag 960

aattttcaga ggaaaaacat ttcacattcc tttcatcatt ttagtagcaa tctatctagc 1020

tcaacaaaag atgcatgccc gtgctgaaat atgtgtgctt tgtaccataa aacaataaat 1080

gcaggtgtaa tgcatgtgaa accaatga 1108

<210> 945
<211> 1054
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2099_G1, chr1:10966932..10967985, Cluster 6

<400> 945
aacctaactt cactgaagtg gatccgtgaa cagttgttga tgcattgtac actgcagtcc 60

gttatgcaag attacaagtg gcagcgttct gtttaacaag tatgctcgtc agctattcag 120

ttatcctggc ggcaacgctc tgactctgat gtctgatgtg catgtgctgc atcacattgg 180

aaaaagagct catgcacctt actctgaagg ggctagatag ccaaaaaaac gctggctgct 240

acatttccta gctcccagga gttaatagat gcctgttaat cgtggtttgc tggttgcaag 300

tgtattaatg ttagcatcgg gcaatggcca cgcatgttgg caggaggagg aggaggcagg 360

agctggtcca agtgatggag gctggcagtg gcagacgaga gaggcattca acagaagagt 420

gagtgtgtta ccggctggaa tcccaatggg tggtagtacg tttctgttca tgagctcatc 480

ggcctgcagg ctgcggtcat gcgttgcgtg ggtgtcctga gctcctccgc catacgcatc 540

agagatggct gcgccgacag ttaatgggcg ccctgctctg ccccgcggca gcgctggttg 600

accgtccggt aacatcagac atccccagag atgactgcgt cggtcatgtt ctccaaaaac 660

ttgcagtgcc cggccgtctc tttcacgtag tacttactac tgcatccgtc atttcgttgc 720

ctcaacagtt gcgcgcgcct cagagtgcgg cagaactagt tccagtttgg agtggaggaa 780

accgggtggg taggcaaccc tgcctgttct tcagtggctg cagaaagttt ccttgattcc 840

tcagctgtgc tactggattg cgcatgggcg cggctacctc atctcatgcc atcgctatct 900

ctgctacctt gcattggggg gccaagtctt gtgaggcttg tcaagtgagt gctgcttctg 960

ctgcatcggg gtaagtgatt tgtctgattg tttctctgtc atccccccct cctcctccga 1020

ctggcttggc ttggcttggc tgatgggttg ttct 1054

<210> 946
<211> 1250
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_210220_G1, chr6:14762553..14763802, Cluster 6

<400> 946
gacaaaattt accaggtctc gtgaatcctt ctaagctcct gaccagcatt gacgaacaga 60

tagcggaaag ccagggagga gccgtccagg agagaaatca tggagaagat aaacaagtgg 120

ctgctggctt gcgaggaaga gaaatggctg gatgagtaca atatggtagg tccaaaatgt 180

gggtttggat acatcgaaca ctgatttcaa atgtggaaga cagataaaga ccaggcaaac 240

tatattgaat gggagaggat aaagccaatc aacatatgag aggtgattat tttaatttgc 300

aatttgtcta cataataaat tagatacgaa attgtttgtc atatattctt atatgttgtg 360

ttgtacgaat catactttag ttttacattt tacttttata tatgcttacg cctttgccat 420

aatttttgca ccattgatgt ggtgagatta tgaactcttc cgtacattat tatgcttatc 480

ccaaacatat gaaatcaaat aagtacaaat tgatatgagt ccgcttgcat attcttattc 540

tgtacctagg ggtgaatatt cggttcaagt gtattgttgg gtatgagctg atatcaataa 600

atttagcatt gcaagtgaat gaaatactga attgcatcca aagggtcaga atatagggtg 660

cggtttgaat tcaaatacaa tcttacagat agctaatgga cagggtgtat gtatttttgt 720

ctagatcgac ttaccatcta tgtgctgatt ctttgactat cattatgcat tcatactttt 780

gacaacagct gcaagttcgg ataataactg aatcacagat tgctgtgagc aaactaatta 840

ataacagccc caaaagttga caccattttt gtgcccgcac actgttctgt gaatcagaag 900

cagtttgaat tatcgagtcc tgatgttttt gtctctgcta cctccaagcc tgcagattct 960

atcaagaaaa attgatagaa tgtttttgtc tctgctagcc ttgtccataa cagccccaaa 1020

acgtttttgt ctctgctacc atggaccaag tctttggagt catgtcctga ctggaccacg 1080

tgaacacatg atactgggac cgcgtgaacg caagaacact aaaattgaca tagaaaaatt 1140

gattatgtca tactccctct attccaaaaa atagggcgca taatttttt cacaaatatt 1200

aatgcagctc tttacgatac ttttcttttc tctaatgccc ctatgctaga 1250

<210> 947
<211> 1181
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_213435_G1, chr6:34606735..34607915, Cluster 6

<400> 947
taatccggta acctagttat atgaaaatct aactctttcc ataattataa atgtgtctta 60

cttatctatt agaatcgtgt tctatttgcc tagaactctg cctttatggt tggattttgt 120

cctatctatt tagaatttta gacttgtctc ttctgttctg gtaatatctc tgccatatct 180

gtactacttc tatagtcatc atattagacc ttcgaaaaac catgacagct gagtttaggg 240

accagataga agatgactcc gacaaatttg accctacacg tcaatcgatg agaatgaaag 300

tccacatacg tacgggcgta gcaaaatttt aaagttattc gaatttttt gtattaacta 360

ttttccctat cgaattatta gagaatttca gggtatggca tttactcacc cagccaacca 420

gctcccgtgc aaagtttaca attcgaagga cgatcagcga gcagcagcac attgacatgg 480

ggcagtggct cgggtttctc tgctggaatg gtcatgcgcg tgcgtgtcgt ctgcaatctc 540

cttcccgcat ttgccagcaa ttaattaata aatgcccggc tctgcatggt tggcaggcgt 600

aattctcttc tcttctctgg tgttcttgag ctgcatgcgc cgcgccgtgc ggtgcggtgc 660

gtgtgttttg aaaatggaac ctgtgtcgca aaagcggtgt gaacatcgac tcggccttcc 720

ttgtgtgctc tataccggta ggagcactcg gtgtagtgta gacgtcattt ttatatctac 780

atgtaacaaa aaaaaaaccg aaccgatttt cgtttctggg tgagtaccgg taacgataaa 840

ttttaccgaa aaaacggtgc ttaccgagaa aaaaaatgta atccgtttgt atagttgcat 900

aaaggacagt ggacatcgtt gtccattccc ggccggttac ataaaaacaa tgtaaggaaa 960

ccagcagcga gaaattccaa taataataga cccaaactaa ttaaacatgg taatatagta 1020

gtgtatatat atcatccgaa gataaactag tacagtacgt ttgtatatac atgtttttgt 1080

tgtacgctgt ccaggtacgc ttaacgagga tattatattt atttaatcat gggatatgta 1140

tggtttgccg cgtgtcctca tcagtcacag tcagtcatca c 1181

<210> 948
<211> 1023
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2145_G1, chr1:11134920..11135942, Cluster 6

<400> 948
ctatatactg tcataaaatg ttccatagaa aaaggtacta attaccttat ctgtgtgaaa 60

ttctaattcg ataaagcctg aaaccacagg caggtgaccg tggtagtgac atttgtcaca 120

taaaaattcg atgagtaccg aatatggcaa agcaaactga tctctacttg ctcaatcgta 180

caacaatttc taggataaca aggcatttcg gggtggcggg aggtccgaag cagttgtgat 240

attcaccaag aggtttggca gaatggcagc tgggtcttca ctgccgatct aaattgaagt 300

agttctatag ccttctgcca gtttttcata ccaatccaat ctcatagcat atttgacatg 360

tagtgtttgg agcattatac tcaatattaa tctcaggtct ttgttgcatg tgtatgtgat 420

gtgtggaatg aaataaatat cagtagaaat caaactatat ggtgttttgt agctcgcctg 480

gtaactcttg gtagtttgca gtttcctaga catgcagata ccattgttga agtggaaatt 540

atcatttgtt tttttttct tgtacgttca gataaggtaa atgtatattc gtacattcag 600

tcgccataca aaagctcgaa gccgaattct cgggaaacga atctggtcgg tgtgaagcca 660

aatcagcatg gaagagagat tatatagaga cttcatgtcc gatccagaat ctcaccaaag 720

gcatactccg cgatgccgcg cgctccgaag tcgcttttcc taattaatac gtatttgaat 780

actggccata gatcgaggtg gcattttgta tggataagga gcatctgaaa gagggtagcg 840

atcgattcca ggcaatgcaa agtgggtacc aagagatccg aagtgtggca gcttgtaagt 900

ggctactgaa aaagggacca tgtgacacag cgatgctgtt tatgcttaga tcacaacacc 960

gttttgtacc tgtccgttta cttcactatg tatatagtca tacaaaacac tgttttacac 1020

tgt 1023

<210> 949
<211> 1240
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_217402_G1, chr6:63762351..63763590, Cluster 6

<400> 949
agtactctat ctaccatgga taacaatgga gaaaccagaa acaatcatag tagcaccaag 60

agggtgactg taattctagt gtggaataaa gatcattttg ggtatgttac atgtcattaa 120

ggacataaaa ataatcatat gaacaaaaga aacataaaca agaactcata gttgcatttg 180

tacatctgaa aggaaaatat tggttgaata tgacttcctc agtggtcata tgcagccacc 240

ctcaaacgat gtttcttatc tgagcttgtt ctccagggca ctgatgttca ttaatacggt 300

ttctatatat cacatagact gtgtttaaat gagattatat atgacaagtt tgccatttga 360

tcctaatgta actatgagta gagattatag agaacgaact tacatgttgt cccaacaaaa 420

ctttccattc aagcatatag tcaggcaagg aaagtcttat catataagta tgaagttgac 480

atatttcaac tatgtttcaa acctttataa ttatgaagtt gacatatttt agttgcttgt 540

ccaggctctt tataaaatag attcgccact gctacatccg atgcaccttc ccatgccacc 600

acaccacgaa tctcctcctc gagcaccagc tgcttggtgc acgcccacta ccccgcacac 660

aggtgtgcat gagccattga cacactctcc atgtagtcga acatcgacgc gtagaaccgc 720

tccaggaacg tgggcgtgtt gtggttcacc ttcgactctg ccaccaccgt gatctttggc 780

atcagcgccc gcaccgcacg caggaagctc cccagctccg gccacattcc tagagcgccc 840

acactctgca tgagctttat cataagcacc agcttgcttc gaattaggag tggatgtgat 900

atccctgaca ttggtgtcca caaggcccct gccatacccc atgaagctat gcaattctag 960

ttaaaacatg ttaagacttc taaaactacc ccatgaagct atgcaattct agttaaaaca 1020

tgttaagact tctactaaaa caaatacgtg tatgacatta tgcctaaatg aagtagctga 1080

tgtattaaaa aatgagttgc ccatgatcca agcatcaacc atcctcctga ctgcaattca 1140

gtagttgcaa tgaaaactat ccttccggta agacatgaaa caaaaatgtg ttgcgcagga 1200

tcgactatag cagcaatgtc catagctggt tttaaggaag 1240

<210> 950
<211> 1080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_220933_G1, chr6:85610295..85611374, Cluster 6

<400> 950
cttacaaaca cagaacctca tcggactaaa attttgtctg acattagata atatatgcta 60

aatgtagact agctaaaaaa ttctttcttc tattgagttc tacttatcaa taagtcgatt 120

agtttttggt agaccataat tagttaatat ttagacattc aaaacatgga tcaacaacta 180

tagaagctag ctaatgctat gtgcgcctgc ctttgcgtgc cattagccac ctggcatgtt 240

ctccaaagta agatgacgat atctacggaa aaaaatcttc ctgtgagcct ggcaaaagaa 300

aagagttagg tctgtatccg cagttgcttt tgttgcatta ttccttttt ttacaaaaaa 360

caacacatgc caataaatta gtatggtgcc gttcaaaact aaattctcac taaaaagaat 420

taatttcagg taaagtattt ccatgattac tactccaata taatacctac tgatctaaac 480

taattcatta ttagcttgtc ctgagcctac atttttttg aaaaaaaaaa tcatgctttt 540

tttgtgactg aagggagtac catgtagcag ctattgggcc aaagcaaagc atgcggttga 600

ggagagtgcg ttgtactata gtatatgaaa tcaaacacca aggcaagaca gctagggagg 660

cgcacacaca caccaccacc accactattg ggtcccggtt tacaaacaaa tagaaccgtc 720

ctaggttagc acttgcgctc atcatgcagc acgctaatgc aatgcatctc cttttcagaa 780

agtaaaccaa gttgtttcta aaaattgacc agcagcacgt agtgactgag aaagatactt 840

ccgaattagg gcatgtggga gttgcgatag gttatttcta acacatctcc ttctgttgtt 900

taatgttttc ttgactgata gaggaatctc cattgagtgc catgtaatga caaaaggaaa 960

atgttttagt actgtgcgat gtgtttgtca gctggtggta aagcataccc atcctgctga 1020

aaatatcaga aggtaattaa ggtgtgttta gttgcgggac agctaggaca gggacgtccc 1080

<210> 951
<211> 1358
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224336_G1, chr6:105344327..105345684, Cluster 6

<400> 951
aagaggcgaa gacttgactc ctgcagcatg atatcaggag agatctgctg cacgagtctt 60

tgaggtccca agggtgagct ccagctcatg ctcgtccgag gcgcactcgt gtatccgctc 120

cccctcacac gccttcagaa gaccagctag gcgacccagc ggccagcgtt gccgttgcgc 180

tgccgccgcc gccgctcccg aaggcgaaat cgtctggggc gccatcggtc atctggacat 240

cgtcgtgacg gatcggcacg ccacccatca caggagaaca cgtcccccgc tcttcccagc 300

tggggtgcac atcctcgagg cgccgccgcc ggtctccctg gggcctggac acaccgaacg 360

ggttcggcgg tgtcagggat tacagtgggg ccgtcatatg ggccttgggc tttggcctgg 420

tcgaatagca cacgggcatt ttctacaaga agcaagagga acagcgagag gggggaaagg 480

agaagagata caacatacaa catcatcttc ctcctttcta gctgcatcat cttcctcatc 540

tgtagctagc tgcttctagg gttagatttc cccttcgtta atcccctacg tattcccgct 600

tagcttactc ctgatcttcc catcccgagg tcgtgtatcc cggcttgtac tcattgtacc 660

gtgaaaccag ttgtgttctg cgcatctgtc tgtctgcgat ctgcatccat catggagtgg 720

gtgctaacac ggtgccacga agctgtagac gaagggccgg cggacgaaat cctggaaccc 780

ggccagccac gccgggtccg gagcgaccag ctgggctcgg cggctgggac ctgggagttg 840

ggaagggacg tatacctcgc cccgccagac catggcggcc actgatggac gattggccgg 900

tttctcgttc tgaaccagac tgtataagat ttgcttcctc aacatgcatg agccctggtt 960

gttgcctccc aaggtcgctt tcgctttcga gacgatgcag caagcaacta acggtcttct 1020

aatatggggt ccgtacgtag tacgcccaac agtcggcgct aggccaaagc atttgagcca 1080

acaaaccccg ttgcctgctt cattctgatc agctgattcc atagcacagg gcagaagggc 1140

tcaacgtgtt tgctgagaca aggcatttcc tatatatgaa cgccggttca aaccggggct 1200

ctctcaaggt gtccacgtca cccaaaatat tttcacacgt tcgaattcta atcaacagtc 1260

acgacctcgt tcctgtgact tcgttcttac ttctctatat gcctacagaa ccttctttct 1320

aaagtattct ccttccagcc gcacaactgt gttacaac 1358

<210> 952
<211> 1047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229440_G1, chr6:131756759..131757805, Cluster 6

<400> 952
gtataaggcc acccacaaga caaaggatat gcctagccgc accaagatcc tcatggcccc 60

taaaataggg acgccacact tgaggcgtac tcttgacaac cccataacag taacattatg 120

gataaggctc ccatttgaca tattaaatat gtgatgtgta gcctaaaaga tatattatcg 180

ccatgactta ggcagtaggg tattcaagac cactatttga tatgtgcatt agccttgtag 240

ccaagtgtgg gcaaggtagt ataccataaa atattatcaa gtacagatca ctgcactaga 300

tagcaactac gacatatcta aaggcacgaa ttccaacgtc catggaagcg acataacttg 360

cccctgtgac aggtatggct actactgaag aatgacatcc ccgacattgt gccaccaaag 420

acatagattt atgtactact acatggccag gataagatca tggttaccta tggttcgact 480

atgtaaactc tttcatctcg tgctctataa aatgagaaac aaagtaatga ttgaaggaga 540

ttcacatgaa catgttccaa gcacacaagg tcggatttgg tcctcacaag tcaaagaagt 600

caccccactt catctaaaga gtgcaatgtc taagggaaca cataaaggtg aattatggac 660

caaaatggta caattcccat cggaaccaaa gtgaaaaggg ggagctaaga ggtcatggtg 720

ctcagttaat ccttgaactt gtaatcatgt tcacctttat attcatcaat cgatggatag 780

caagataatg tatggtattg cgcacaatac agatagaacc tctctaaaca acctacgtgc 840

tagtttccgt tcctacccag acccaccaca ctgctcgtct acgtaccctc tcctccaata 900

actttttttc tctttggtac ttcatgtact atgatgtcgt accacgatga cggtgctatt 960

tgtatcaatt gttgcatata accaaatctc aagaattgca atattcctgt aacaacaaca 1020

tttgttgttg acgaggattt tccattg 1047

<210> 953
<211> 1094
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229553_G1, chr6:132185102..132186195, Cluster 6

<400> 953
gatacatggt ttttttcaa aacctagtac agacgtacac atatgtacta gccattgcta 60

atgaggccac ccatgattat agtgaggcct cccaattgaa tagggttaat gtatagacta 120

gctctccact gtaggaacaa tactaagggt tcattaagac ctagaatcag ttgttctagg 180

gtaagatatc agattgccct ctagcgctcc aatgctatgc aattaagatc tggtgcctcc 240

cagaggcctt ctctacctca cttcttctac ccttttgcaa ttgtgctaac tctaaaaatg 300

tttcagcgct agtgcaagtg agttaccatc ttcacaataa ttttgaaagg ggtttcacat 360

cctcactaga tctaatacac atgcatagag tcaatccacc tagtggcaca taaataacca 420

tttttaaata tatcctaaat tcgatcatac aatgtattgt atcttgattg gaaaaacaaa 480

atgacttagc ttataacttt accttgaacc caagcatttt atttttttct ctttcttttc 540

taagaattga gcacatgatc atcatatgtg ggcatccctg atcatctcca agagtgccat 600

ctttctcaac catggtgtgg atttaactta tctcaatcac aacactatag tagatgttag 660

tccactagtt ttctcaatta tcaaaaccaa acatagggct ttcaagggtg gcaacattga 720

tgtatacccc ctaaatttga gcacatgagg ttttgtatgg tgatcatcat tgttctttgt 780

tctattaatt cttagatgca gtattcactt tccgtatccc tctctccaac tttctctccc 840

ttattgttgt gcttgtagaa gatggtgcac tatgagtagg tgcacaatgg aggatgggtt 900

tggcagctaa gcgtccatga taggtggtgg gtaggccggt tgggacccta gtgtcaatga 960

tggcataatg atgctggcga gtttttgtga ctcatgcaca tgcctttcat tggcatgata 1020

ccttgtgcgg cagcccaaca ccatgactgc aagagatgag gtgacccaga gggtgcgcac 1080

ctcatttgag atct 1094

<210> 954
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229777_G1, chr6:132980468..132981529, Cluster 6

<400> 954
gacgcgacgc attttctatc cctgtgtgtg tgagagagat gggaatgaat gtgacacggc 60

gaaaatgcgt gcgtgctcat cgttccggac acgccgcacg aggttggccg ggtggtggtg 120

gactggtggc gagtccaggg cggcggttcc cgtgaacgtg ccaggccgga gtgagccgct 180

ctgaaatcgt gctgtgcccg gacactggta tggcatgggg gtgacgacgg cgacggggat 240

tggtgtggtg gtggccagcc agctcgcgtc ttggtcatta tggtcagatt tttctccggg 300

aacaggtttt cgccggaggg tccatggcct cgctgtctgc ttgtgtcggc ggtcactgca 360

ctctggtaga agcggtagga ggaggatctt ctcagctgag cccctcgcgc tcccatgggc 420

cggccattca ttgattgaga agtacatgcg cttgttgcgt gactcgcagt gctgttttgg 480

ccagcggacg tcattaagga cacatcacaa ggcagatgcc gctttgcccc ttcttggtat 540

ctagcccttc gaaaatcaag tcttaagact taacacttgg ccgctaaaat tagatgcaca 600

cttccacaaa acgtcccagt tagccacctt ttccacctat ctttttcact cggtaagaag 660

aattaacaac tcagacacaa taggatcaaa ctatgcgaga agattctaaa ggatagtctt 720

atctgtctta gctaatgact cggccaaata agcctcaagg gcaaccgtta aagataggtc 780

atgacagctg gatctatgtg ctcagcgacg agtccagaga ctcggcccac atgatcaggg 840

acatacccta ttcacaagga agttcaggaa gataaatatg gtaaagatcc tattagatta 900

gaagattagt ttggcatcca tgcaaatatg gcaaaaccca tttgataagg ataaaaccca 960

tgtaccaata gagataagca accatgcaga tgcagtacaa tatagattta gctagacttg 1020

gtaactatcc atattatgca accaacccag atacatattc ta 1062

<210> 955
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230092_G1, chr6:134561819..134562980, Cluster 6

<400> 955
ctaaaaaaac tttactagta catgtcatat aaatgagtta tgtctaagta atttttatt 60

gaataagaca taaggtttac aaacaccata tcgaacctat gtgtgtctta gttgtgtatt 120

tttactgtaa aaactgcgcc atagtgtcaa tatgctagtg tttgagatta ttattattta 180

tgttctagtt ttaatctaga aatcgactat ttacttaatg gccagcagaa aaagagaagt 240

gcggccgtgc gggacaccat ggcaccatgg ttctcgggcg ggaagccatc gggattcggg 300

agtgcaggcg ggagcttggc cggcgcctgg cgccagcgag gcaaagtgca ggcacgtcgt 360

tctatcgcca gtggtgacgg aggcagtagg ctcggccgtt ggcgcacggg ggcggagatg 420

cggccacaga ttatcgatgc gacgtccagt accactacct ttcgaaacaa acacgtttga 480

aatttgaatg aatggatgta cgtagccact agacacagct ttggcgccat gtaggcactt 540

ggaaaggagc acacaccaaa ctgcaatgcc tcatttatgt ctcgtttgat gtgataggga 600

tctgatgcgt agctagcctt ggaatgaaga gccagactgg cacaaatcca acggaatgaa 660

agccctagct cctagctgaa actttgtgca ccttggaact ttgcaggtat ccatacactt 720

gcgctctctc tattctgatt tacttaatca gcagtacttg gaatcacaag attgtaggta 780

tggtactagt agttaagagg gagagtaacg gtagctttta acctatgata tctaatactt 840

tctttagaaa gaaaatctta tttactattt agggcatgca tgtataaaac acataaataa 900

cctctatctt aagaggcatc taaggggata agtataaaaa aaccatataa aacacgtata 960

ttagtgaatg aacgtctcta acatggtttt ctaagtctaa tatatgattc catctataca 1020

acccaaataa atgagccatg tcttaaagga gttctagtga ataagatata aggcttagat 1080

acattaggtt gtataaacaa gtttcttaga tgtatctagt gcttggagaa ctgtaaccta 1140

gtatctatat tgtacatacc ct 1162

<210> 956
<211> 1118
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232110_G1, chr6:143978751..143979868, Cluster 6

<400> 956
aacgacattt tcttttcttt tctctctctc ccaatgacga tggctatggc tctttaattt 60

ataagaccac agacgcatag taaatctaca tacaagcaaa tcgtgtccaa tcccaaggac 120

agaaaaagac accatgttca ggtgtcatta gtcaaaggta cgacttgcag gaatggaatg 180

gagagcagct ggaaaacagt ttcaatatcc tcatgaacaa ataatacaag taataattac 240

agggaaccat gtgctgtgct acattgctgg tcacgtaacg tttttcagga atcaggatat 300

ttatttgtcc ccccccccc ccccccccca agaacctctt catcgtctcg atcgattatt 360

gccggcgttt tcgccacgta ctgtacaacg gcacatgtat aagtataatg atgaagacca 420

ttggcatttg aaaagcaggc aataacaatc gtttctttct ttgggggggg gggggggggg 480

gagaaataat agtaaatgtc atcaagaagt ggattattgc cagtagttta ttagtgtaag 540

aatctgtatg acacaagcca catttgtgcg ctccagaaca gcagctcgga aggcgcatgg 600

tattctcgtc caaaggatct catgtagaaa aacccgtgac caccggccag cttaatttgc 660

acaccgcgga gaagtcacca ccgccggtga gcagtcacgc tcaaggatat gcgcatgcat 720

gcatgcacga taacgataac gacgacgatg gcaacgcaag aacggagggg gcggcgatgc 780

gtcaactacc tccgagattt tgatattcgc cacgtacgtg ttccagccaa aggactaccg 840

tctgtccaaa aagagtgtga caggttgtag attgaagcca aactattttt tatttaacta 900

gcatatatat atctcatgtc aatgttatga tcgcaaagtg tggaagagag agatcgacgg 960

tggtggcggc agcgcaagtg aagagagggg gatgttggag tcgcgaggga gcgagagagg 1020

gggataagcg atgaaaagag aaatgatcca aataatattg tccattgaat ttgagtaagt 1080

gtgaaggtac ggtattatcc aacgatctga actgtagg 1118

<210> 957
<211> 1260
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232874_G1, chr6:147872987..147874246, Cluster 6

<400> 957
gcacgcccga tttatggata gtggcgcggg aagagagggt gggtcggacg aagtgaaaag 60

aaaaacgtct gaagctgtcc gctttgaatt aaaaccaact attcagctgt aatatatata 120

tagagacaaa aactatagaa ttagtacaag ctgatacgca agaaatccaa tacggaactg 180

cggttgttac gagtgatttc tatgaaagtg tatacaaatt atgatatatt ttttgcattg 240

taagcgcaaa attgttgtcc gcactcgggt cgtgcctcca ggcctccaag ttcttctaac 300

cctcacgttc acggagtcgt ggtcccctga gcgtatcgtc gcggataaag caccgccgtt 360

tgggctcagg tcgatatcga gatcgctcgc cgcctccgca acaaggccgc gatgcccgcc 420

ggcaagaacc ctctggaccg tacctgcgac tgcgagagtc aacatgagcc acagttttat 480

attgcgtgcg tgctcgttcg ccgcgtaact tacgtggcgg atgctcctac atgacggatc 540

agaggttgcc tgaacctgca aactcttcaa ctccttcaag caaattccac acatcaaact 600

tttcccaaca atttgtgcct cctcgccgtt tgtacatatc cactcctctc tctctctctc 660

tctccatcac aagcgcattc cacggccaat cctccgtacg tggcagcacc atgtgctggg 720

tgcgtagggg cacgaccgca cgatcggcac gcaaccgtgc aggagcggtc gtgtgcaggc 780

accgaaccac atcttcaaag ctcggtcaat ttggcacgtg ggcatcaata cgcacgagac 840

gcggtgttgc ggtcgacatc tgcacgtcta cacgagtcgt tgtcgcgacg ccttgccgta 900

cgcccccgct gcttctctct ttggtcggcg gggcgtgcgt gcgtgcgccg ctgaccgccg 960

tacccgcctg cgcggtggcg atcagagctc gagctttgcc cgcgaggggt gtgtttgact 1020

gtacgtaggg tagggtccaa atgtttttc atacaagggg tgtttggttt tctaggattt 1080

taccgtatct aaggcactaa aataaaatat ataactaaaa attagtccct ataaaccaaa 1140

tactccaggt ttgagccttt aattaatttt agttcaaaaa ttaatataaa tagagtctga 1200

tcctaatcta attcaattct taaattttat ggtgtacaat ttagaaccca ttaccactca 1260

<210> 958
<211> 1341
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233460_G1, chr6:149939661..149941001, Cluster 6

<400> 958
cttagcaggg catatggatc aaaatgaaca tctttttaag tgcatgagct tgctgtttgg 60

aacaaatgaa atcattggcc ttcaagcgta tcgtatatga gggacagcat gtccgttcct 120

tccatctcag gtttgtaaag aaaacaacca gatctccaac cacgatcaag aagagctgta 180

aaatttgcaa ttatgatcac aagtcagagt catgccatcc attctaaagt gtttttcatt 240

ccgttagggg aaaatatgaa acagcagata ttatgggttg gaacctgtac ttactatact 300

tcagcaccaa caagttatct tgttccattt cagttaaact cactctttct gttaaccacc 360

tagttaaatg tatatccccg aagtgcacac atacttgttc tcaataaact tatttttcag 420

gatgcagatt tttcactgtt ccgaattgct agatgtggca gttttcctcg aatgtgctgc 480

aatgtggcaa tttatttgtt tgtcatacct ttgtttttaa tcaatccaat ttatcccaaa 540

ctattgtctt gcatgttaag ttgagtttaa tttaggggtg caaatggtta cccaatgagt 600

ggacctgatg acccagcgca agtggacctt gcatctctag ttacatttgt cttctcagta 660

tgtgaaccaa aatagtcgaa agcgaacgac caggtacatc aatttgatta gtttgcctag 720

ttaatcggtc agttaactac tcatgattag tcagctcttt ctagttgaac tagttgctgc 780

tgacaggctg acggtaactt gggcttcagc ccagtagtat tcaaggccca tcccatacca 840

ccacatccta tcctatatac taaaacacag gctcctctgg ctttgaccta gctgccagct 900

gaaaggagca tgagcaggaa acaggaaaat cattcgaccg tgatatgaag cctactggga 960

tagccaatag gctaggcaat tgggcaatac gcttccctga gtcgactagt cgatgcctag 1020

tcacaatata ccattaactg caattgcctt ccactgggtg aacattatat tgcagtatgt 1080

tccaccttga aacctgcacc atgcaacaag aaaatagcag acttgatcta tgcacatcct 1140

ggatctagca agaaaccaag accccaattg aagttgaatt tttttgctat cttgttggaa 1200

agccatattt caatcaacaa gttagcatga aactcgtaag cttatactag gccccaaatc 1260

ccaccacagg aactggaaaa tccctgtggc taacagaaca tgttggaaat tggggccggt 1320

tgactgcaga aaataactaa t 1341

<210> 959
<211> 1290
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234051_G1, chr6:153207623..153208912, Cluster 6

<400> 959
gtcttgtgat tcacagacag aaaaggctga cgacagacat tgccaggcta tagcctatag 60

gacctagtat gttagaatca gcgctaatta tgcttggcta tataggattt tcacaactta 120

ttagtttaac catttcttag aatgaactaa aagcaggtaa taagcagaag ccgtttttca 180

cgagcttctc agataaacta ctttttcaat aaattgcagt agttgtgtca aacagagtcg 240

tagagaaaaa tgagaaatct gtcggccgta attaagagct aagaccaggg ttatggctct 300

ggtgtgccag ccaggcccgt cactgaaatt aaagcaaggg tgacctttct ttttatttct 360

ctaaaaaaat acattaccaa gttttaactt agtgctggaa ttaaagcacc ctgggggccg 420

gtacggtacg gccgcagcta tatagccaat cctataacaa cagcgctagc tccattctgg 480

tcgtcaatcg cacagttgcg agacagctag caccacattc aacactgacg agatacaaac 540

agatagtacg cgcgtacaac ttaaccatct gttgcagatt tgcagtcgca tgcatgctgt 600

cttgtgtgtg aatgaaaagc ttcactcgat gatcgatcga tcgatcgaga tattattatt 660

cgtctagtgg tccctaccct accgtttatt ttccttcaga aaaggacata cttgcatatg 720

cataattgca tatatattta ctaaggatct gtttagaatc aatctaattt tttaagaaac 780

cagtttttat tttttaacca taagagatca gcttcttggt ttttttttaag aatgtgagaa 840

tctaatttct ataaatcgag tcataaattg gtatgtttag aaccaactca atttctataa 900

atcggttttt taaaaaactg ggtgattcta aaaaaacagg gcctaacttc tcttacaaat 960

agaaatacat cacctcaaaa aggattgatg aggaggttaa cgaaaaaaat aaagatacgg 1020

gagagggagg ctttttaggc gaataggaac ttcgagccaa gctcatcggc atgcatgctg 1080

gcggtggcat tgggatggat gatgatgcat ggatggcttt gggcactggc ctcatcaaaa 1140

catcgtctcg tcccaacgca acgaagaatc tagctaggta cgacacaaac tgccactgct 1200

ctatcggtct cggcttcaat tcttcagcgg cggaagccaa gctactctag ctagctagct 1260

aggcgcttag gctgtctcca acaagaacta 1290

<210> 960
<211> 1126
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234055_G1, chr6:153216320..153217445, Cluster 6

<400> 960
acttatatgt tgccagtgtc gatttattgc ctgttgctac attttacaac tcatatgcct 60

cccgttctac ctgttgtgct tcagtgctca gcacgagcac ttgttttctt tgcagtgctt 120

ctgttcttgt gctagatatt tattttatag agtagctctg gttgacaagt gccagtcaat 180

gccttcctgt tttctgattg gtgcacatta actttctaat cagtcataat ctctattcac 240

atggttgctt taatttgttc tgctgaataa cttcaaattg tgtgaggctg attttggtcc 300

aggccatgct gtgtttaaag aggaaggaat aataactgtt gttcgcttta atgtcggcat 360

gtcagatcgt agtgagatgc agaaatgtac gacctgatca ctgtcttatc acttttacat 420

aaggtttatg caaacgatag cttaagcatt ttccattaac tcattgtgaa acttgtgccg 480

cacaaggaat ttgtatggcg cccgataggg cgctgctggt tctagtataa tatataacca 540

cccactgtcc cgctcgctcg taggctcgta gctagcgtaa cgaaccagtt actctaaaac 600

tagcgactag cttcattctg caatgactag accggagcag acagcaaaag agctagccac 660

acctgagatc ataaagagca ctagctagct atagtaagta ctacagcaac aattgcatgc 720

atttgacggt tatactccgt cctgttatta atgatgtgcg tgcaattgag cacagcacac 780

tcttggagtt tcatgatgat ggagctcccg tgcgtgcacg gatccagccg tgccaaaacc 840

atgcatccat tccatgtatg catgcagatt atgattcgcg gcaacagcca gtattactcc 900

ccctcctact agggataatt aaaaacaaat ggaaacgggt caaaaaaaaa ccctctttcg 960

cacgttcaat ttttgtttta cattttcttg cgaacacgga attaagttcg aaaaatccag 1020

attcaaatta aaacagaacc ggcggggtag gcaggtgata tatacaggga aaaaaattgt 1080

tgtacacaag tctgtaaaag acaggaataa aatacccata caggtg 1126

<210> 961
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234269_G1, chr6:153846338..153847404, Cluster 6

<400> 961
tagaacgtcc ggagagcatg cactttagat gtacagggat ggctcttgcc ctatggctat 60

cggaaggcta gggatctttg cataaactga actaaggtaa tgctaaatga tataattcat 120

catgtctatg aaaagcaaga acctacaaaa taagaaattt tgttctatat ggctctcgtt 180

agtccagtgt tgtgttagaa taatcttttt aatgagaaat ttatctaccc tatctctata 240

aacataaaga ttaatttgaa ttgatggaac cgaattaatt aaagtataaa aatcaactgc 300

tcgtgtgtat tggtgcctgc tatcctgtat tgtgttgtgt gctgctctgc ttgtgtgttg 360

cgtgttgcac tcctgaggtt cagtcctttc ctcctcaatg tggacgtgtg gtggtgcact 420

gctactctct ggcgttagtt gctgccttgc tggcctacag cacgatagct gctgctggta 480

gcaagggcta gtggctagca cctctagatt gtggcacacc acacacgaga tggtgacgct 540

tggaggggct gtaagcacaa ccgtggctgc agatcaggca gccacaggtg cagatccgtc 600

cctgggtctt tatgacatct gaggcctacc catggtcatt gatcctctaa tgggactctc 660

gggcacgatc gatgtggggt gcaccatggt attatctgtg gccatgctat gtggataagc 720

tagttttgct acttgtatag gttaatggaa gagttaatgg ctagattaat aaaggtgtaa 780

gtaataggtg taacattggt tactatatat tctaatctcc atgtaacccc tattattata 840

tttagctctc atagcacgag taaatgggta caacaacaat agcgcaaagc tacctctcac 900

ttctcagttg agttgtgtgt gaatctctca gtctcgatcc tctatgtgca cgaagagttg 960

ggagtggcct ctagaaccat cgaccgctaa agacacatac tcaggtgtgc ggacgatctt 1020

gttttagttt tagggagcat tttgcgacta ctcgctgaag atctcaa 1067

<210> 962
<211> 1086
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_236070_G1, chr6:162739641..162740726, Cluster 6

<400> 962
tggatagaag agttatagcc ttcatccgtc acggtactcc catcaagtcc gccagcagca 60

cttccacttg ctaacgacgg acgtgtagat agatcagtcc tgagcccttg cattttgcaa 120

gatgtggtcc aagaaacggt gagctgatga tgatggccgc atatatgagc accagctctg 180

aagctgcagc acgacatgga agtaactgta tttcaaatgg ctaggcttct cctccactcc 240

acgcgtgcgt ccttgctcca gcagcttccc tgctctgctc cccgtcagtc agtcaaagct 300

gcgtgcgccg cccactgggc ctggccgccc taggttgagc tggtctacag tacagcagga 360

caggagtacg tcctacggct acgaccatgc ctactgtagt agtgtgacta ttccgttgct 420

gaaatatagg ggagctgggg tggctgcaag cgcagccggt gccggaatgc tcgtgcactt 480

ggcactgcta ctctggcact ggcagtgctc cagtgtatag tatactcact atactctact 540

agatgactcg atgaatatgt acattagtgc tgcctggttt agggtacaca attatcacgg 600

ttttgcgccg acggtcgtct aaaaagccag ccacggaaca gagcccccct ccgcagcgca 660

gggttgcaca aaaaacaggg gtcgtgtcgt gtcgtgtcag gcttccgatc tcgttctcgg 720

gtatacctgg tggaggagca acttctcttt ttttaaatcc gtaactgttc cttagtgaaa 780

catttgataa aatacttcct gcttcccatc ccgattctaa catgtctcag cgtccaaatc 840

catcccgttc ttatgattag cacggacagc gcacgatgaa atgatgaacc gtacaccccg 900

ttataattaa tgctccagta tgtatatttt gctagtaaga acaggtccat gtctttcgaa 960

tcggggcgtg ctacgtcttt ctttgtatat gcatgccggt gccaatgccc gcgcgtgaac 1020

tgtgcgacgg tagtggtacg cgcacccacg ggaacagtct tctactactt taaaaagact 1080

tagggg 1086

<210> 963
<211> 1048
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236682_G1, chr6:166080711..166081758, Cluster 6

<400> 963
ttgaccatcc ttttatttcg ctcgcggtat ctactgccaa tcgccatctt cgcggtttgt 60

gtcaagaact agtagctgtt ttttttataa aaaaaaaatc aaagagttgt agcgtgataa 120

gactgctaga tcgaagcgtc gacatgacta catgcacaca aaatatagaa aagcgcgttg 180

tttgctagca gcagaggtat tgaaaagagc ccaactaacg aagcgctaca agtgcccagt 240

ccaaagcgcg gatcggtcgg tccagttccc gacttcccgt cgcctcgctc tcgccttttc 300

atgtatggcc gccgaatcgc cgccgatcga cctccagctt ccctacccct ctactggccg 360

acgagcaact acgactgttc ccttgtgccg atctcttcga gtcaatcaaa caagagagaa 420

agaaaaagga gtactccgta taatcgatcc atagcaacgc tgcatgcttc gttcgccttg 480

gagctaggta tatacactgt ctgattgaat tcgtttcctt ttattttgaa aaagatcgtg 540

ttgattttaa tatacataca gtttgggcat tgtgcattat taattaaaca actaggctac 600

tagtacctac tagcagtttg tttaattagt gatcatctca cagattgaca gacacaaaag 660

ggattgcacg tgtgacggcc aaaacattcc gcggatcaat ggatctgtca gttcgggtcg 720

gtagaatatt atattattta tataagacaa cccacgcatt gtttgctggc ctggtgtaga 780

tggttcgccc aaaggagatg ctccgagata tggagattat tgcatgagtg ctactagcgt 840

ctcctagagc tagctagtaa aaagagtgta cgtgtgcgaa ggctagtcac agtgagaatt 900

tcatgtctct attttaaaaa atgccacatc agctttatga atgaatgaaa caccctctct 960

taatagagag tttcatctca ctattttata tgtcaacata ctccttaaat gctgcatata 1020

aataaccaat atgatttact cgattata 1048

<210> 964
<211> 1364
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236774_G1, chr6:166628724..166630087, Cluster 6

<400> 964
agaataatat atagtagtac cccctatgca gcacccgctg taatacatgg atcacactat 60

ttcatcagtt ataaatacca tgagatgaat ccagaagaaa aaaaagttgt atgtttgaga 120

tttgtattgc agaagcccat tcttcagcct accgaactga cgtaaccctg gtgcgttgct 180

gaggctgagt cggagcaaag cagaatggtg actatctgcc tgcctgacga tccttttttt 240

ttttacagcg aaagcatgcc ggagcgtctg agtcgtagtc attgttttcc gcaaagggag 300

gctggccacc aaccagcata tggaaaagga aattcactct tggcgaccac agcattagca 360

cattccatct ctttacatct gtgcgcttgt agtaaattgt ttgttggctg acctgatgat 420

tacttgagtt agaaagaaac aaagcaaaat caccggtgat aggtagatag atggatggat 480

acacctgcta gcggagtggt agcaatgatg ctgcatagat ggttactcgt ctctccatcc 540

acacagccca gccagaaatc ataagggcac acaggttagc agtagtatca tgacgctgtc 600

actagtctaa taattatacc tgcaaatgca aatgcaaatg atggatgatc aacctcccct 660

ccaaaccgca ctactggtag cagcagcagt aaagtaaagt aaagtaaagg gaggaggaga 720

aaaaagggag aacgaacaga tcactcacta ctcaatgatc accaaggcca agggggggct 780

gaaaggcaaa gctaagcaag ctgccggttt agcgcctact cgtactagta cgtgcttagg 840

agcagcgatt agtactagtg tagtggtaat aattactact accactatag agtcagtagt 900

gagtgctaca gatcacagga ggccaggcta cgggggagta acagaggtgg cgctttggaa 960

atggtcgcaa agtggcgacg caagtaggcg gcgagagcag aatggaaatg ggcatcgggt 1020

tcggatgcga tgctcgtttc gttcgttcgc ggaaaggtat atatccgttg cttagcgggg 1080

gtgtgtgtcg ttgaatttgg ctcgtttttt ggtgtgccac ggcagcttgc cgttgccggt 1140

gttctcaaag cgggggggaa aaaaaacgga atcgtatcca tgcttatcgc gtatcggagt 1200

cctgtattat tgtcctcctc ttttggaaac agaaaaataa aaagagtaag aatagcttcg 1260

ggaatgcttg agccacggca gctgaggtgt acagctcttc acccaaggtg agtaacagga 1320

agagaaatca atttattcaa acgaaatgaa ttgatagcat cacc 1364

<210> 965
<211> 1148
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237912_G1, chr7:3870234..3871381, Cluster 6

<400> 965
cacatatcat ttagtagata ttaacatttt aagctttata attaaaaaca tcaaagaata 60

cagaaccaaa tgggtagttg acatctcatc tccatgatta ggcatgcggt tggccagatt 120

ggaggggggcc cagtttcgct ttctagttgg gcttggtgga tttttgtctc gtgcagctag 180

gcggcctagc gtatggttgc tacctcttcg tccccgcgat cggcggcagg agttcatgca 240

acttcctcta ccccgtcttc tactcttctt cctgtggtgg tttgaagccg gccatgcaag 300

gagcccgggg tgcagttggt gacggcggcc ggggatgcgg ctcctggcgc gattctccca 360

agtggccaag tcccaaataa gtccacctga tggaacactc gaggtctata gacgtacggg 420

gccgtgtgat ccaacatggc ccacccggag gcgcaggcag gggtcgtttc cccagcatgg 480

tgcggcggcc ggtgctggcg ctgcccgggg ccatggcgtg tggtgttcgt cctcaacgtg 540

tcgatgatga agctgcagat cagttctggg cgagttccag ggtgccaatc aaagctttga 600

ccccgggcta cggcgggtat ggtgccgggg atgacctcgg ttcccggcac aatacggcgg 660

aagggctggc cggcttggga tgtggtactg gcaggtcgcg gtaaatgcag cggcagcaat 720

gaagccaatg tatatatact agtgaattgg cacgcgccag cgcgcacgtt tgaatttagc 780

gaaattttgt aacatggtaa cagttaatat taatagagca tacgacatag catttaaatt 840

gcttattata aaagttcatt aacgatttga tgtgactgat gcattaaatt ttcataacag 900

atacaaacgc taaaatattt acaaacaaaa gcttgaaaat tcatgacaaa attttgatgt 960

tatataccat gataacagta aatatttgcc atagcaattt tacgaacagt catccataat 1020

gattctatgg aacaaaagac aacacgttaa aggtaaacat taccttgatt cagaggtaat 1080

aattgggtca tcaacaacgt gcacggttct tatcatgtag tcaatgcata aaatacatgc 1140

aagtcatt 1148

<210> 966
<211> 1105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_242675_G1, chr7:30168390..30169494, Cluster 6

<400> 966
tgtgcgttct tgatttgtga tcaatcatag ggcagcaata gtattttcta aacttataag 60

agtgagcaga caagccataa aatgtgaaga aaacagtgga ggggcataaa tatccattct 120

atttttcggt atccattaaa aataatccaa aatatgtaat aaaccgtagt gcgatactgg 180

ggtattttaa agcgcaatga attttagaat atattagcga gtggcaacga gagcaaaaaa 240

aaaaaatccc aaagcgcgca gcagcagcag ctctgctatc ctctgcttag cctaagccca 300

aaatactagc cgggccaact tctaagccta attgtgatat aaatgagctc tcgttttggg 360

gtcccaaatg caaattccat tgcaacttct aagcccaatt gtggtacaaa cttcaccaat 420

tccctccgtc cctccctctt tgctaaccta cggttttttc ctcctcagac caggtgcaac 480

gcctatgtct gccgccgccc ggagcatagc tccgatgatc gatgggggca tctgctctaa 540

ttgcaatgga ctcgcgagca cgcgggatcg aaccacaaca aagctcacgc acgtctcaag 600

caaccaacag ctcgccaaac gcaggttgaa ggacaaaggg gataacccgc catcaatccc 660

catgtggcga tgccaccgca gtgcccaaaa tctcggagaa atgcgcgatt aaacaacgaa 720

aatgcaaccg atagatcaaa gtccgaccag aaattaaaaa cgaagggaga aatcgcttca 780

ggagaaaaac tacagaatac catcagaatc ggtcgcgttt gggttgctcc ccatggccac 840

gcggagcggc tcgttgcgct tgctcttggc gtcttcgagg gccgctaccg ccaccgccgc 900

gtccggtcct gtcctcctcc tttcatccgc gtactctgca tgcgcataca ccaagtatct 960

agtaaatgaa ctcgatcgat cacatcccca gtgtaccccc aggacgcccc gggccgggcc 1020

ttcaacgcgc tgccgctctc cggcgcgcgc gcgtgtccct cgcggagcga ggccgcgcgc 1080

tctactcgct ctgcgtgccg ctcca 1105

<210> 967
<211> 1176
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_243330_G1, chr7:34630402..34631577, Cluster 6

<400> 967
taggagcctt atgccttgag gcaatgacca tcgctcttgg cattttagc ccattatgtc 60

ctagggatct catgagatta agttctcaag cccctcatcc tcattcctta gggcactcat 120

atgtctaagt ccctagagcc ctcatgccct agggcaatat aaatataggt gtccgagata 180

ggtcgtgtcc taaagcattc aacaacactt agacattgag ggtactctat tgtccttaag 240

gtacctaagg tcctattggg tcccgaagcc ttgagggaac aagggactca gagcacccaa 300

gtgtagtcat gtcttatgct agaaggatgt gtataggccc accatggata gtatgaccct 360

aggagatgga ctccacatat aaaggcctaa ggacaggttc gtatcactag cttaattgat 420

aaatcttagg tacaacacat taaatgtgtg atgggcaaca ttataggcct aataagcatg 480

ttgttaccat gacttagaat gtagggtgtt cgatattact atgatgtatg tgcattgatc 540

ctgttataac atattactat gctcgaggtc actatgttgt atgcatgcac ccatggagtg 600

taccatgaat tattatctag cacaaaaggc tacactgagt accaacttca tcatattgaa 660

caacatgacc cttgtgacat tgtgcctcga gtaggggaag ggccctggta caaccccatg 720

aacctaataa aatcaaggta gttggatctt agccagtgaa atctaaggtt catttaacct 780

ttgtcttccc ttgcactata taaaggaggg atggagcagc gtttttgggg gctcagatag 840

ggttcatcac acgaagagtt ctctcagtat gtaggcttaa aggtggatta ggacaattag 900

gctagaaatg ccaccacaac catgaggtga ggggatctat aagatcttca tgctaactag 960

tgtttgaggt tgtaatcctt tccttgtctt tgttcatcaa ttgatgagta gcaagagggt 1020

gtagggtaat gtgcacacta caaccaaacc attataaccg ctcacatact agctcccact 1080

catgcccaag ttcaacaagg ccaccaactt gcgccatgct ccctcctaac tctctttctg 1140

gtacttttat gtatcctggt attattgcct atacac 1176

<210> 968
<211> 1262
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_244203_G1, chr7:39643623..39644884, Cluster 6

<400> 968
aataaatgtt aaatataaaa ttttggatat gtgtttcaat tattttcttg aataattatt 60

atggtaaaac atcttacatg attttttttca tgctaggtta catgtgttgt ttgaactatt 120

tatataaata aaatgagata ataaataact aacataaaaa aattgcatga tggagtcttt 180

ttgcatgtgc ttttaatata gaaatttgga ctcatttgaa attggaattg aaaaataaaa 240

acagaaaata gagaaataat aaaaagaaaa aagaaacaag aaattaaaaa aaggcttaaa 300

gcctcacctc gacatgcatc atcccatgac cactcttgct catccaatct gactatccga 360

agccaagccc acatctcttt cccatgtttg tttttcccct tttttatata tatgctgtaa 420

cgatgacacc atccacgttg ctccatgtct tgctgctaga tgtgctcaaa atgccaatct 480

gttctgcatt ccgtttcaaa atctcacgtg aagcccctca tcttacaccg gtttcttctc 540

tccacagctc gcgcatgctc ctcatatctg gtaggtgggc ccgggcaaaa cagactcgtc 600

gagaagctca ggatcacctt gatctgaata ggcccgccaa gttcggcgga ggttcgatct 660

tttcataacc accttccaca cggcctcaat gacggagttt ggccatatat atgcatgccg 720

taattatctt ggacctccaa ccatagggca atgccatggt agaatcgtag ctagggcacc 780

aatgtcgaga gcggagagag agactggggc gtcgagatgg ttcctacgcc tcaccgacgt 840

ccggagtccg gtgagcgcat gtggagattt acagctcgta gagtactcgt gatgcctaga 900

agagcgagaa catagactcc agcaaccggg atttctcgcc ggtctgtgtt caccgccatg 960

gaatcgtgct gatcgccaaa agagagatga tcgtcagcct atgtcgttgc tcgtcgtggc 1020

atcgtcgggc ggagagggtc cctcgagtcc ggcctaaacc ctaaaccatt gaagaagagc 1080

tgaggaaagg aggaagggag gtagaagatg atcacaccta aattctatat attatgtcta 1140

tttactttgt aattcttcgt gtgacctcga tctaaccaat cagatcgctt catgtcacct 1200

atttctgtgt agtcctacta atttataaaa aaatatgata tcgtctaggt caaataattt 1260

gt 1262

<210> 969
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_252745_G1, chr7:100526625..100527641, Cluster 6

<400> 969
cgatgtctct ggaatcacct ggtttcacat tgctctacta gtggtaaagt ttttagcgta 60

atagtagtag tagtacattc taggccaaag ttttacggtt accagccatg agagcgacgc 120

caattgttgt gcaactagga gaatgggtgg actggaggag gagtaatctg tagccctcga 180

gatgattagg cgctgcatgg ggttagatca gcggcagtga ttgttgttgc ctgaccgcca 240

ggtgtaaagc gcgcgcgcgc atctgatcga tgcgaaacaa gcgacggcgg catgattagc 300

tcgcccgtcg atctgcctcg ttccacccgt cgtcctggtg gttcggcggc tgctgctgct 360

gcgtcggcgt cggcgtcgtc cgcccgcaga ctagtacgta gtggtaacat gtgaaccccg 420

cccgcccgct ggaatgaatc atggtcgccc gcccatttgc aggggaataa ctctgttgtg 480

ctgcaatgat gcctattctc ctctctgcta caatgcattg cgggttgttt gctgctctgt 540

gtcctgtctt cttccctctt tgctgctgct gctgctgctg cgctctggcg aggcgatgat 600

gatgacgaag atgatctccc gcacaggacc ctgatcctgg acgagtgccc gcgtgaaatt 660

tcgagccagg ccccaaaagt taaggcgctt ttcagacgcc gaacggaaag tctggccggc 720

gacaccagtc cactccacag cgcaccacag gccacgccac tgctcctgct cttcagctct 780

tgaccagaga gggtcgagct gctggttcgc cggacggacg gcctgtcata gtttacatgc 840

ccaaattaat agtgtttggt ttgaaaaatc aaaccatcca aattgaggtg gtgcatcata 900

aattcattcc tcaaatttgg tggaatgact tcattcttca tattagtact aactatagag 960

ggtgtttggt ttaaggaatc actacattta aattgaggtg gtgcatcatg gattcat 1017

<210> 970
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253669_G1, chr7:105647402..105648512, Cluster 6

<400> 970
atcagacaca ccgtaccact cgcagcctgc gctgtgtcta cgtatgcgcc agcaagtagt 60

cgttgctcta gcccttggtg tgacgcatcc cgtgcgatcg ttttcatccc cgcctgacta 120

ttatttttgg ccggacctcg acgtccaaca agtcatcacc agataactga taactcgcat 180

ggcaagaacc gggcggacgt gtggatgccc aagagacgac cgagtcaagg caggcagcag 240

gcagctctcc gtccttcccg gtctcgccat ggatcatgct gaccggggcc gctggcgtgg 300

cgggtgagtc gcatcgcatt ggagtgcttg tacactgttc atgggcaggc tgcctactac 360

caaagctcgc tttcgcggag aggaaaaccc aaggcagtgt gctgctgctg attggtgctg 420

cgacaacctc gggacccaac ttgtggcctg ccaaggatct tcctcccccc cccccaatcg 480

ggcgattagt gcaaggatct tccaaccaat gaaaccttca aatttacaag ttgaacggtg 540

cctccaaatt tacaagctgt gcaagcatct gcgaatggct cacggaatca tactacagca 600

ccgttcatcg cccgtcgcgt ggtcctccgg tctgggtggg cgcgtcgtcc atgcttgaaa 660

ggacgcttcg tcctccaccg tgtggtgcgg gtgtggcccc agcggagctc catccgtttc 720

ctcctcggtc tcgccttctc gtctccagtg tgctgtgacc tggccggctt ggcatcctag 780

ctctcggtgg gtactggata gtagtaaaac gcagtattcg gtagtagtac atgtatcgtc 840

gtctgatcgc cagactcctt ccttcactgt tctcgcatct agtcctggcc acttggaaag 900

ggcccaaggc tggaacgaaa ccttgtcagc gtccgccgca ccggacaaaa catttcggca 960

tccccgcgct gctgccggat tcctcctcgc ttgcaattgc aactccagtg cgacgttttt 1020

ttttttgctt tttagccatt tttgtgacaa aaatttatac ttagatctct gaaaaactta 1080

tttcccgttt tagacccgat actcggtgtc a 1111

<210> 971
<211> 1203
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253932_G1, chr7:107230896..107232098, Cluster 6

<400> 971
tgagtttaaa tcctagtaaa taaaaatatc ttataagacc gtgtctaaca gttcacatat 60

atggtcaccc aaatcacttt tttacagtat agactgcact attcgaaaag tagaatttga 120

atatgaggat gagtaagctg atggagatag cataatcccc tccaaccttt atagaattgg 180

aacaaccaaa taaggtctaa tgtgtgtatt acttttttctc taaaatctcc tctcctgtct 240

tctctctcgt ccagcttagt acaaaaagtg atgtacaagc ttttgtagtg tgcttagact 300

gtctccagcg gctaccctaa aataagagac atgaaactat agatgacacc gttcgagact 360

atttacagag tggagtttaa aatagctaag ggatgtgata gaggtagcct tacaattaca 420

acatattata gtatttttct cataaatggt gctttggtaa taactatttc acgtttgcaa 480

accgtaatag gtgaattaaa gccacatcat cccataacca actataaaaa aatctgaacc 540

catccaatct agtacttttg ctgttgatag gcatctgaat ctcaataaca cagaaaaaaa 600

gtgatgtgaa caagaagcga cataacattg ggaaaaaaag attctacaca aaatctgtat 660

tatatgagcg gcgtacgtga tggttctttt cggtagcctc atcatgacga atggctgcaa 720

cgacgaggac gagcacggga catggatagt aggaagggag gtcccagatc ccacggtgcc 780

tgcctcgctc catcgatcgt agtggaggca tgcatctccc gccgcgccgt gctcagctcg 840

gaggtgccat agtcggcgtg acgtggtagc ttgagggtct agaagggaga gcttccaaga 900

tcagacgaat cggagatgtg tggccgttgg tagttaggac taggtccctc aggtgaaggg 960

atgtcgccgt tggtagctag gccgcccttt cacgggagca ggtgtgtgtg ctgatgggcg 1020

gtcaatcaga atgaatgccg gccggccggc cagccagcca gcgagccagc gcgcggcttg 1080

ctgctgctgc tactactact aggcattttt cgttggttcg ttttcgtttc agagacacac 1140

atcgatccat cctcatcaat cagaggcgcc cggtccggct gggactgcta ggtgctcccg 1200

tcg 1203

<210> 972
<211> 1217
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254416_G1, chr7:109530194..109531410, Cluster 6

<400> 972
tttccacaac aaaaggggggg aaatgaggtc taagtaaggg ggcgcgttgg cagacccaga 60

ataaaatgtg agtgaaggca tacttgtaag gatgaacata aaaatgatag agtggaagca 120

tctaagttgg gctgaacatg agatattatg gtaaaaatct agtctctact acttgcaaca 180

aagaaatgag aagggcatga ggcctcactc atgtatgtgt aggtccaccc ctggttcgag 240

tatcactatt agccatgaca atatctagag tgaataacct tttcggatcg cggaggggggt 300

actaagggtg tgtttggttg agctttctaa gctagatttg atgccaaagt tctggaatcc 360

caaccaaacg agcacaacag tagaattgat tcctaaaaat ctatatattc ctctagttca 420

atttagaatc acctattacc taggtttttc agattcatac caccatgtta taagttgtca 480

tgatcttata gaatttatag ttgatggatg tttcaaccaa ataaatttca gtttatcaaa 540

atcgtcagct taccacagct ttctcataag tcacaactca cacctaaagt cggatttttt 600

tttcaaaaaa ttacaattga acccaactgg ccctaaataa atcaaactat agaatacggg 660

atcatcatta tgctagttac aatacaaaga tggaccactt tgtacgcaca ctattataac 720

gaaactgtta tgaatccaat atacatagtg cagcggtcca catggtagga taggatgtaa 780

agaagaatag acgggttggg ccgggtgtta ctttaattta actaacccgt ggttagcagc 840

tggtaagata aggttctctc ccgatctact gagctaagtg cttggccttt ggttgatata 900

tatgtacaaa cgcatatata ttacgccata gcattccctg ccgatatgtt aattaaatgg 960

cgcgcgcaca ctagctggta atgcatcgat gccttgttta aatttcttaa tgctgcttgc 1020

ttggtcccct gcccatcacg atctgtcaga cagatgtgtg gccaactggc cgtacgggca 1080

cgcgtgcagg tgctcctcta gctacaaata ggtcggcgcg gcacacctgc ggggacgacc 1140

gttatcagcc gattgccatt ttaggactac gtttagcccg gcccttgacc ttatgcccgt 1200

ccaaaagatt tttttaa 1217

<210> 973
<211> 1280
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255770_G1, chr7:117257219..117258498, Cluster 6

<400> 973
ggacgaccgt tgaaggtgat gttttaaata taatagagaa aatattaaaa ttatgtataa 60

ataaatattt aaataatgat tgttagtttt aaacctacat tcgtaaccat ttaactaaca 120

aaacgtatgt ctttatattt tatattctat acttaaacat aattagaaac aagtaatctc 180

gagaccggga gcaatcggcc acacggcctc gcctgcgcgg ggtgttcgta tcccagaaaa 240

aaaagaacgg aacgaaattg aaccaggata gatcatttca cgcgatctcg ccctgacgcg 300

cacgatcgac ggtctcgtca tcggtccacc gtccatcgcc tgccgcatcg ccagatgcga 360

gttgctcttg cccgcccatc gcacgccgct atcgcccgcc catcgcacgc ttccgtcgcc 420

cagtcgtctc gcgcaggact ccatcgcctg ccgccgtcgt caaaggggac cgtcatctcc 480

agtcgtgatc cacgccaccg cccaggatcg ctgcacacgg aagcccagga tagtcaggat 540

tcaggtataa ctgttgctgc tgcctgcgtt tcattgttgt gccaaaagtc aacttgaaca 600

atttcttttg tgtgacattg atgaggtctc tgcgaacata cataacctca tcccttgaac 660

aattatacct caactgagct ttttgttaag tgaccatgtt tctgaatttt ttctttctgt 720

ttctcaaaag tgaaaattac tgcagacatg tgaatccaaa accatgattt ttatgtggat 780

gaacttggaa aaatattatc ctatgcacgt accggttaat tatcactatt gaaaaataac 840

tagacttaat gcattggttt attgtggatg aactaggaca aattaatgcg aaaaagtttc 900

tttttgctat gaagtataat ttgatacttg ctaacacgga atagagactc tcacgtgaga 960

acttttagga gtggttataa tgttagtcag gttgactttt tctaaggcga tgagcagatc 1020

aaaagtattt caaggttagt aagggtgata cctagagaga gcgtagcaac ccaacatata 1080

ttgagtactc tatcttagta ttaagagttg gaagagaagg agtaaaggaa cctaggattt 1140

ggtagtggga ttggaaaggg gataagcaag ttatgtttaa agagaaaata tataataaga 1200

tggagtggaa gttaggtgag gataactcaa tgtagaaaca gatggcacat tgtatcaccg 1260

tcaatggcaa aagaagttta 1280

<210> 974
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257181_G1, chr7:124221633..124222794, Cluster 6

<400> 974
tgtcccaacc cggaaccagc aagacgccaa caagacccgg tgtgcccccc gtctctatct 60

ctctctctct ctctcatcac tgactgttca ttactagaag agaaaaggct gcagtgcagg 120

cctgtcgacc caatcaggtg ttcttcctta tccactcgtg aacctctctt atcgtcattg 180

atctgagctt gcatacaggc ggccgggcca aacgcacgaa tgattgccga atcccgtcag 240

tgcatgcata tggactggac caggaccatc gtctggacgc cgtgactgat cgacgactgc 300

acctgcacgg cacggatgcg ctccagcgca ggcccaggct ggctggctgg cgcacgagcc 360

ggactcgact cgaccagcgt cgccgtgcgg cagcagatca gaattcggat acgtacgcca 420

cgccgacgtg tgggcgccta gctagcggtg tacggctttt tgccatgcct ttgccggctc 480

cacgacttgt ccaaggcgtg ggccggccgg ccggcggacc gagtaggtag gtagccattg 540

ggctggggac cgggttctgg cttggctttg gctagcaaaa agccgcggcc gtactccggc 600

cgtcggcatc tctgcgatgt gacgccccaa ccgtaccaaa ataaaaaaaa aggaacacaa 660

gttcgtggtg actggagagg agagcggagc aggacgccag gacagacagt ttgaggataa 720

acatggtgag ggggcgtacg agttgccccg gccccttccc cgtcgctact ggccaaacca 780

acgtatctac tactattcaa tattgatggt acgcgagctt cattggttga ttataagcag 840

caaacagcat gccattttca cagctattgc attggtactg tacacatggt cgtgttctgc 900

acgggtacag ccttttgggt tgtatgctac tgagtgcagt gcagctcagt ggcggaccta 960

ggatttttac atacgatgtg ccgcaacaaa atttttatgt agacttctat ctaatgtata 1020

tataatttca tagtaaattt ggtaaacaat ttgatatata gatataaagt ttgacactca 1080

acaaataagc attaaaacta catacattaa acataaagat tgcaataata ctacttatct 1140

agctgcgctt cctcaacgcc at 1162

<210> 975
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260495_G1, chr7:142898730..142899811, Cluster 6

<400> 975
atccctccgt gcaacgaggt gcagtataga aagaaagaaa agcagacacc cgtagttgtt 60

accactgctg ctgctactgt gggagcggtg cgtggccacg ggaggcggta ctgtgtttgc 120

tttagaatct gtcacgtctc atgttttccc ctgttgccgc ggtacacaaa caatgagtgt 180

aatcatttgc gagaactccg cacccttttct ttgaggcgag gccaggcgac caaatgaaaa 240

gcgctcgctc gcatcccctt cttttgtcct agagctagcc cccactttca gtcccccaag 300

ccaagccgtt gcccgccaac gtacgtcata attcttgctt tctagttcta ctacctgccg 360

gctaaaacgc ccaccacctg gtctgaaaaa aaattatagg gcgtcgaata aatgtttttt 420

tcaaaagagc atgacgattc aggtttcata gattgctgtg catgccatcc tcatcgatct 480

ccttcctaga gtagagagaa ccaggcggcc aacgatcgag ctatgcatct agagcttcgt 540

caacaactaa tgcatctctc tcacagctgc taggcatgca gcagcgccgg acagtggctc 600

ggccaagcaa cgagctgaga gggcacgcgc gttttggtgc catctcctcg caagttttat 660

gcatggccat atgcagcgac cgggcggcca gacttgcagc catccatcat cagcagcagc 720

agtggtccat gagatcacga tcgccaatac tgggattatt ggggggcttt gtgcttctgt 780

atttttcgag ctgtaacggc tgggatggtc ttgttttggt ctatatattc cagaatccag 840

agcatcgtga gcctgtttct tccagaaagg gcccagtaga agaccgcgag agacgagacc 900

aaggcaatgc gggacgatgc gaagttattt tgtacacgga tttgttgctc agagcaaaat 960

atatatagga ggcttgcagt atgagatgcc cgataccatc taggcatcta ccccctaccc 1020

ctaggtttcc acgcgtttca cgagcaccag tatcggctat tagcaggtag agtgttcaac 1080

tc 1082

<210> 976
<211> 1296
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263486_G1, chr7:158978907..158980202, Cluster 6

<400> 976
ctaatagtcc cataacgttg acattttgga taagcctccc atacaacaca ttaaatgtgt 60

tatgtgcaac atcacatctg acaggcacac tatccccaca acttaagtat tagggtactc 120

gataccacaa tttggtatgt gcattgaccc tactgtagcc atgtgtgtgc atacctatgt 180

accataaagt attatcaagt acatgttgct acactagtta ccaactacgt cgtacccaac 240

gtcaatgact ctagagtcca tagaagtgac ataacataca tgcccttgca acatgtatta 300

tgccactaaa aaggacatct ataacaatat gcctgactaa aggcatggcc ctatcttagt 360

tgatcagacc catagtcttg ttaacatgta aactccactc cctttatcta taaaagggga 420

atagagtaat aaaggaagtg gccattttga aacataggaa caggattctc atacacaaca 480

tctaaggaca gacataaggg tgaattataa accaacaggg ctaaaactct caccagagcc 540

aagtggaaag ggggagctag gaggtcatgg tacttagttg attcttttga ttcttgagct 600

tgtaatcttc tatgactttt gttcatcaat gagtagaaat agaatataag gtattataca 660

cacaatggca caaacctctc caactgcatg tatgttggtt cctgatcatg ccaagattca 720

atattccgct cgcctatgcc cacactctct ctaataaatc tcttcttttt gtaccataca 780

taccttggtg tctatccatg atgccttcta gcacttttc tcttgagatt gttctggttt 840

gctatgcagc atggctatga agacaccaac ttacttgtcg ttaagagcag tcatgactaa 900

cacctgctct agcaactcag atcatgagcc acgccataga aggcatcaga acctcactca 960

gttttccaca ctaccgtctt tgatgagagg acatgcttta gtgaggttgt atggagtagt 1020

tcccacaggc ctaccttcga tgcttatgtc gactagggtg tgcaacgcca taggggcatc 1080

acaccatatg tctccatgag ccctagagaa gcaccaccac tcaatgtgtg tcactctcat 1140

agcctcatat cgggaccaag gcgatgcgac ctccaatcat gaatgttttt cctatcacta 1200

gtcatcatga tgggcttgtt gatgtcttga ctttggaatt tatgatgttg tttgttctct 1260

tgataaaggc tcttctctat aatccaccaa caccag 1296

<210> 977
<211> 1226
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264208_G1, chr7:162400452..162401677, Cluster 6

<400> 977
gtttggaatg caaactagac ctaataagag acgacaaaag atttatttct aattaaggtt 60

cacttgcttg tcatcaaccc tcactgtggc aagtccaaac tagtggtcca catgctaatt 120

ggcatcacaa gccaagccca caatcatggt gtcgtaagaa ccaaactaga gaagcactct 180

agctcgtacg atattactag agttgctctt cgtgaatctt ccatgtgaaa tgagcacaac 240

cctttacgat gatgatcaga cccaattaaa atatataata ctacttcctt gcatcttctt 300

aagtgtgcta aatctcaaat actttgccaa acatgtacat atgattcgaa cacctagtgg 360

tactagatgg ccgagacatc taattaaact cccctcttaa taatacatcc atctattcta 420

aatctatcat gcatcctatt gtgtcttgat tgatgaaaca aaatacttta acttatatat 480

ttaccttgag tacttgcatt ttgtttttct ccttcctcta ccatgttgaa cactttatca 540

tactttgttg cccatcacca ttgttttcat ggtttccaat cttccttaac ctcttatgtg 600

gactcagacc tatcttattc acaacactta agagtatagg ttagtccact agttgtctta 660

attaccaaaa ccaggcatga agctttcact accctagtca taatagttag tcgtgccccg 720

cctgccctga ccggacctct ctctcgctca ctctccatca cctgcccgac cctggccagc 780

taccgatctc tctcttactt agtctccctc accatagtca ggtcatggtc acctagcctg 840

ggggcatgga caccctggtc gattgctcga ctaggaacac aaccatgctg agttgcccat 900

gtgcctattt tttgtctaag gaagaagaat ggatcacaga gaatagagat tcacacgtgg 960

ggtatatcca atggcaaaat agcccattct gaccaaaacg tccttgtgtg gatttggata 1020

tattgtgtag acaaatactt ctctctctgg atgtcaactc cactaatgaa gctcctccat 1080

ggtgaatccc atatcttgat tcacattgga gttgtcctaa attggccctt tgaatcatac 1140

aatggatacc tttgattgtt agatcgatac attcatctga tctatgttaa ttttaggggg 1200

tgtggttaga cccatatgaa tggatc 1226

<210> 978
<211> 1152
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264943_G1, chr7:166851504..166852655, Cluster 6

<400> 978
ggggtggtcg actttcgctc caacactagt ccaaaaaggt tggcccatat tatcaacact 60

aagactatct tctatcagat ctcatatttc aaacattact ctgcataata ttgtcacatt 120

gtgtcatcta caatttggcg tgtcctattt tacataacct agtggagtac ctagaatggt 180

gacgaactag tgatgatgga ggcggccggg ggcgctgggc caacgtggca tgggaccgtg 240

ggataccggt gccgatgtga caagtgggtt actgtgtatg tgttgcatgg tgcctactgt 300

gtaggcgtag ccttgtacgt gggctgggcc tcatttcaga gtacgggcct ctaggaggtc 360

cgaagtccga tacaccacag gctatacgaa acagaaccga agacgcactc gattttattt 420

acagttttgc cgtctgctta aattaaaata gtacgcgcaa ctatgaaaca aaacagctac 480

cccagctaat aactgagggg gggggggggg gggagacaac ttctgtatgc agaattttaa 540

ctgtgtcatg atgtgacagt gatactgctg catgcttcag ctgccgcgcg cgctggtcgt 600

cactagctag ccattgttct gccagaagcc aagaacagca aacgtgtggg ggcaagaggc 660

catatggtcg atcgcatgct ttgttcatcg gtaggacctc tgatctcctc cggccgtctg 720

cgtgcgtagc atcatggggg agggagcagc gagacacgca cgcatgccgg ccgaagcgcc 780

cgcgcgcgcc tgcagcaaca gttggacgac gacgcgatgc ccaccgacga gggcgcatgc 840

tagccggcca gccactgttg ttccactcca tacgtgtcag tagtctctct ctctctctct 900

ctctctccat gaatgaagaa gatgcatatg catggtgtgc ctcagcagcc tcacctttcc 960

ttcgatcttt cgtcgtagct agagactgtg gcactgcagg gtggtgcaca gtagtactgt 1020

atcaatcctt gcttattggc tttgaatcac gtagaacatg catggcttcg ttccatcaaa 1080

agttttcgaa gaaggtgctt gttgcttgaa tggacaaagt aaattgctgc atttatgaat 1140

cattatctac tt 1152

<210> 979
<211> 1256
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265429_G1, chr7:169409903..169411158, Cluster 6

<400> 979
gctatcttcc ccgcaagtcc gtctctaggt ctttacttaa tataatattg agggacctac 60

aggtcaagtt tttattaggc tgctgttgaa cgaacaccta ttagagaaag tataataagc 120

taatataggc agacggtaag agatgccaca tcaaatttat ggtgatatag aagagagaga 180

aggggagaaa aataaaaggc ggactaggga ctactcacta gtagtgagct gagattaaga 240

gtggctgcat acggactcca aggccctacg tgagagagac atgagttgac aaaatattaa 300

atatactact tgtacaatga gaaagttatt atataggtag gtgtttaatt ggttatatat 360

gatatgacaa cattataaag ctcaacattg ctcttatcag actgaagttc gcttatatta 420

tattctaaca cgccctatgc ttacctacac atcaatccac tgaaaaaaat ctgactgctc 480

tttaagaaag gaagtaccat gtgatgagta ttttggatag agtagcttag gttcaaaaat 540

gatcttgttg aatttgaata ggatggataa tcccatgaag atattttgaa tgaacaccaa 600

ttctagtatt gtatgttccg ttttaaatgt tgtgttttct ttattagtct gattttgcaa 660

aagaccctct tagtgagttg gttatgtggt tcgagtaaca ctcctcaatt cctaagagca 720

taggtcgcac aagtctaaga tccggctccg gcaggtcttc ttcttaacgt aatatttagg 780

gggctatctt cccccacaag tccgcggcca agtttttatt aggctggttt tgaatgaaca 840

cctattagag aaagtataat aagctaatat aggcagacgg taaaagatgc cacatcagat 900

ttatagtgat gtagaagaaa gagaagggga gaaagagcaa aggcggactg gggactactc 960

actagtagcc agctgagatt gagagtgggc tccatacaga ctccaaggct ctgtgagaga 1020

gacaggagtt gaccaaatat taaatgtaca acttgtataa tgagagagtt attatatagg 1080

taggtgttta attagttata tgtgatatga caacatcata aagctcaact ttgctcttat 1140

aagttcatgg tttccaacat gatggatctc tgcgccttca agcaacgact gaaaggtaca 1200

taccagatcg gctattatgc taattatctt tagtgtgcta ttctaaccaa tttata 1256

<210> 980
<211> 1210
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267634_G1, chr8:4476359..4477568, Cluster 6

<400> 980
cacaagtccg atcgagctca aattttgtgg agatcttaga aacgtatttg tttaggtgtg 60

tgtaaaattt catttcaacg ggtgttcatt tggatcagtt tcacatccga gaacagaatt 120

tcatgatatt gcaatcaaca cttgtttgtg acacagtttt ggaccaattc ggacttttcg 180

gtgtccaatt tgcgattctt ttgttttgct agtcttgtgt gtgtattagg aacatttcga 240

aatcatgaga tcactaattt gctgatatga ttttggcttg agcaatttat ttatattgat 300

taaagtgaag tgctcaaatt tagtttttag caagaaaaat tgattggctc tcatttttcc 360

tgtcgagtcg tcctaccact tcttcgataa gaaaacaaat aaagaaggga tgccgttaat 420

gtatgtgcat tcttctagat aagaaaacaa ataaagaagg gatgccgtta atatacatgc 480

attctgctag caaatgaaca tagagaggga gagcaaaatt tggtattttc atttaggatc 540

tatgtgtagg ggcttctcac ctgcggcttc agcattggct cgcccgagca cccgccacca 600

ccaccaaaaa aatagctcct tcgtctcctc acttttgta gtcatgcttt ttcggagtta 660

gagcaattat caatagctat aagtaacgag tgtttgagat ggcttcaggt ttcagctaca 720

gagatatcaa tttaaatagt tttaaaatta actttaatct aaataataaa taaaatgact 780

tatctaaatg tattttaaag gcttacagct ccagctccat gattttctgg agcacctaat 840

gacctgtttc atcaactcca ccaaattttt tgcgcaacga tcgggaaagg gagcgggcca 900

ctgtgtcatg ctcgtctgag ttgaagaagg tcaccgcacc gtggaccaga ttgatcgcag 960

ccttacccac cagtaaaaca tcgtcatgta gttctttata atctccacgt tgttttccta 1020

gggttggcga gggaggttgg gcgccaggac gaccttgggg ccgtgcgtgg caatggcacc 1080

gccgcggatg accatggctc caattagccg ctgtcgttgg aagaaagaag atgaagctgt 1140

agccatagat ctcatgataa acgactatga ttagatcatg catatccctt cgcctaattt 1200

acgtatgagt 1210

<210> 981
<211> 1156
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268082_G1, chr8:7032165..7033320, Cluster 6

<400> 981
acttgcaact ttttatgttg aacttatgga agattctatc acattattta tttgacccgg 60

attggcatcc tcagcatagt gtccggccgt agggggccac acaattgact tttttagcac 120

acacgtgtat agtccgtact gtgtcctaaa ttgtggttca actgtcctcg atgtcaacct 180

ttatatatct tgtgtaggaa gactggccat gcgtgattgc atgtgtgccg tgtgcgtgat 240

gcatcggtgt gtgtgagtgt gcatgatcag gcaattggga ttttggacgg ccatggtcgg 300

tgagaatttc tgggacacat gaatagacaa catgatgcat gcagatgcag gcaacaagtt 360

gattgcaacg tgctctcgac tactcactcc gtcgtaatct atataacgtt ttttattcta 420

agacatacgt agtattattt aactagctag taaagtgcta tacattggta cgatttctat 480

ttatacatag cttatatata atataaaata caaagatatg tgtcttcccc gttggctacg 540

taaatatgaa tattagtttg aagctgacaa caatgatatc atttttataa ctattattta 600

ttttgttata gctttttat tatagatact ctaattgtaa cttatttgtt ttattttgtt 660

atagcttttt tatttcgaaa atctcttacc ttggcctttt attcacttgg tgccagagta 720

aaacaagagt ttggaataaa attatatctt taaaatccta tatagaatat attaatgatc 780

aattattagt tcgtgatatt gaaaaataca aacatataac atataatata ggaactagta 840

cactatacac tacatctaca atcatctaac aaacacgtac tcagcacgtc gccacgtcgc 900

gttaggagtc tgcgacgatt tgttttctct gtgattgcag taggctcatt gattcgtttc 960

tcaaattctc aacaagctac agctaacgaa aggactaccg aatagtgtct caaccgagac 1020

caattattaa atatccatag cacatatcat atacttatac ttagtacata tttagaggcc 1080

ccataccttc gggggggggg gggggggggg ggggctaggc ggccgcccac cctacccacc 1140

ccagaactgg ccttga 1156

<210> 982
<211> 1028
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269428_G1, chr8:13444438..13445465, Cluster 6

<400> 982
ccttatcgtg gaaaggattg tttggataga aaataccgtt ccgcatattc agtggcggtt 60

ggattggatg gaacttggcg gggccagcca gccggcgaga ttaggaaagc ctgccgccgt 120

gttcgtcgta ttccgaagca aagtaataca gtagtactga tttcttcgat cagttatcgg 180

tgtccatatg cttattcctt gagtcgtttt cttcttctaa aaaaagctac tcctataccg 240

aggcatgtac tcgcacagat aattcgtttc agtactgcag caaagatcca ttattaggga 300

tacggaaatc agtgaaagcg tagccaagag gctctttaat tcgtcgtagg aatttggcag 360

gaatcgagta tgattatgtg tccgcgttag cctctagttt gcgttgtacg tcacgcacag 420

cacgacacat ttggtaatag aatcatgttt ggttattatg gattcgtcgt atattttagt 480

gcatgactcg tatttctagt acgggtttag gggtttcaat ttttttggt tactaattgc 540

ttgtgtgaac ctatattatt tattccgaac aagtctaagc cttagtactg aatgcgctag 600

acttgctccg agaacaaatc tggcgtacta gtgtacttac aatagtacgt cttggtttag 660

ggcgcgttag tatctgccgg attgccatgt ttcgagcctc ctttcaggtt gaacaaattc 720

atctgatttt gacccggatc tagttgttcg ttttgatccg gattgagaac aaatccatct 780

gattttgact ccacattctc acttctccac ctagaacaaa tccaagtgtc ctctcacgta 840

gatcgattcc tggccaagaa tgagtgttcc actcgatcct aggctggctg gctggcttcc 900

tggcctagct ttgatctagg tttgccgaac ggacccttaa gaagatatcg tggaaggatc 960

ttttgggtag aggactcctt tctgcggatt cagcgcgagt tgaatttgtt ggaacttggc 1020

aattgcaa 1028

<210> 983
<211> 1116
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285452_G1, chr8:117450497..117451612, Cluster 6

<400> 983
gtgccctctg ttgctcaccc caatgagtgt attgttggtc actgaatatg tccaacggtt 60

caccctctcg ctcctctcct cggttgtcac gggatttccc cctctgaagg gagggagcaa 120

taatctcccc ccattcacta atcaaagcta tcaacggtgt aattaatctt ttaggtttaa 180

ttaatatata ataatatgta ttgctagtac aaatagtgta taatttttt gaactccaaa 240

aaataacata taaaggttaa atagcccaat tgaagtgtaa aggggagctg aataggggta 300

atggttggag ggggtgaaag aaatggaaga gggagaggta tttaaaaatg aatagaatgt 360

acagataggg ggagatgaga gggacattat tggaatcagc cttagggcct gtttggaagc 420

cctcaatttt aagaaaccaa tttataaaaa ctgagatggt tccaaacata ccagtttatg 480

ctccagttta gtttatataa actggattta cagattctta aaaaccaaga agctagtctc 540

ccttagctta aactagttta tgaaaattga ggtgttttca aatatcatta gtcgcttttt 600

tataaaccag tttctagaaa ctggagatag aacaagatag aacagggcct tactcgtgtt 660

agattaaaaa aaaatcttat atgtatccgc acttgcaaaa ggtccataca tgtataaaca 720

tgttcagtaa gatgtacttt tataccttca tctcttatgc ggaaatgtca ctggaagtat 780

ggaatcgact tctttgtgtt tatactaatg catattttgg ttggagcata ttcatgtcta 840

caagtctgac acctgttcat ttgttccttt ttcgtgtgtg tgaaaggatg catgttcatt 900

cttgaaatgt tttagattca gcatagactt taatctttca tcaaaggcga tatatgtgaa 960

cttcttttgc ctttttttct atggcttcgc tagatgaaaa gagggacaac ttatttatgg 1020

tttcgctaga tgaaaactct acatatgaag atttctacaa gataatctga ctgtcaaata 1080

gacggataga gtttacatat ggtaaacgag atatgt 1116

<210> 984
<211> 1241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285965_G1, chr8:120145198..120146438, Cluster 6

<400> 984
aaaacttgaa ggccagaaca atattcacct tcagcgggag actccggtat atactttgca 60

acttgcaagg cgatatttct acacaagcac cgaggaaatg aagatgttag ttgcagtgag 120

acattttgaa atatgtttac ttcaaagaaa attcttcacc tgcaaatgac tcttcacatg 180

ataaatcgtg atcaatggta cacccatcgc agtgagaacc cctttaggct ttgtttggtt 240

gttccattca cggccagagt gtagtggcaa acctcgaccg ggaacggaac aaccgaacaa 300

agccttaggt gtagctcctg aagaaatatg ataagaacct tagatacaaa gtacatgtag 360

ctgaacttcc caacacatca agtaccccca tgataacccg ctagcttaac acaagctatg 420

ctatagagtc agacatgtgc cacatgcaac actcagagct gtttcccatg gacaaggatc 480

agagatctca tggcacaaac attttccaat gtgattgaat ttaataacat atatgtggca 540

tgaagaatgt actcaattat tatacacctc atgtagatga ttatttcagc aatgcatcaa 600

gttcagccac actgacaaat actcaactga gaacagaata ctcactatat caggtccacc 660

aagttgtgcg atggcatcta caaagcgatt atgaagatca gatgtccatc gtaggcgttg 720

tctcccaccc ccctacagga ttatcagggt tgcttacgtt gggtccacca atagctccaa 780

tatcacttgc atgttcatta ctctgagccc ctctgtggtg caaagggcac agagaaattc 840

ttagcgtcat acatcgtcat gtgaatgctg caagaattaa gaggacctgt cattcaccca 900

aagtaaggtt aaacaaagtg ggaaaactag gataatgaat agtctcctga cgtttatatc 960

tcatcaaata tatcgaattg atgataaaat gtaagaaaaa aaacaaatta aaaaaagaac 1020

agacccagtg caggtggctg ccacatgagt gggatctagc cttacccctg cattttgcag 1080

tcctcataat ttcactgtcc taattatagg ctaaaatact ttgctttaaa agggaataaa 1140

aagagcagca tcagcgcatt ctggcattac aattcgaaat aaaatcaacc tgcttcgaaa 1200

ctatttaaaa taacatcagc acgcttcaaa tctaaggcca g 1241

<210> 985
<211> 1087
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286582_G1, chr8:123813493..123814579, Cluster 6

<400> 985
gggaagacgg aatcgtcgtc gtcgttacag ttacgatccg atcgtgacat gcgtgcacac 60

tgcggaggag cttggacacc gccggccgag gcagcagtgg tcttgaagtt gaaggctgcc 120

ttgttgcttt ggtgccatct atcacgtatt gaactactga actggtgtat gtagtccagc 180

ctgataacgc agctagccgg gattattatt tctcaaactc gatcagacca gaccagacgt 240

acagtgctgt gctccgcctc cgcgcgcggt attgaataga ttggtggtca cagagtccac 300

tgagcacggc aaagaccatc tcaaactctg gttttgagag tatataacta tatatgcagt 360

tgctcttctt gtttcgacga cgacagctag cggcattata ttatagtatt tggttttttg 420

tcatgccaaa tttatgtgct atgccaactg tccaataatg gcatctctaa ccgtagagta 480

attgttttat tttaaataaa aatctctagg gtaactgatt gatgtctcga aaactgctgg 540

gtcaggtcta caacctacta tcggagcaga gcagctatta tattgacgga gaaatatgaa 600

accgtaaacc tgagtccggc agctagcgtg catcgcgaga ccacttggcg cggcttattt 660

tagaccgaaa tgttagtcaa aatacgtacg ttcgcatcga ttctcgtcgt atcaaagtgg 720

caagcagcac gcgcacgtct cgatcagaag aacacagctt gcactctcaa gcgatggcgg 780

ctgaacaccc agggaaaaaa atatataaat tggtggtggt ggctaatctc tcagcttccc 840

ctcctatcat atggaaaaaa taactcctgc tgctgtaatt tctttgcttg caaactacgt 900

gcctgctcgc agacagcagg cacgttcctc atcggttgtt gattagatta gagcaactcc 960

agcagtaacc aaaaagtcta ttttgaaacc tactattttg ctagaggaaa aaaaagaagg 1020

aaaaaaagta tccaacagct ctccataaca tcaccgtaaa caccccgcac gtacgcgcaa 1080

aatagag 1087

<210> 986
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_287965_G1, chr8:131171626..131172632, Cluster 6

<400> 986
gaagaaatat agcaggtaat attgaatact tgtatgttat gaatactaat gctagcagct 60

accgctacca gtatgtctgg agtggactca caaataacat agctagcagt tcaagctcgc 120

gacctagaac agaaggaacc agatctacgg aggtttgcat gtgatgtact gtggccgcgc 180

gacatgtaac gttaacagat tttgacatga gctgttggag cattgttttt ttctggattt 240

attattttta agaagatcta gatgtacatg ttttgggagt tatatttttg ggaattgttg 300

ggcctttagc catatttacg tgataggtat aatgatgcgt agcgtgcccg ttctttctac 360

agctggttgg ttatgtgcca tgatggcatg atcagataga tcattgtaat aagcatccgc 420

gcgcatcacc atcacagcag cggcaggagg gtagtagccg aaaggaaaac caccaacagc 480

gacggcgacg gcgagaggtc aaaggaattc aggcgacagg atgaagggct ggtttcacca 540

accgcccgcc tagctccttc cggtgcgcat atgcaccaca ccaatgtgga caaacgatgc 600

atcgctcagg cgtcgtcgtc tctcgcccgt cggccgtcgc caagtcgcca tgctagcaga 660

gcgatcgagc gaggagaggc acgctaacga tggatcgtcg tccacagatg tgaagcggag 720

gtgggaccgt gggagacgat cgacggcgac ctcgctctcg tctccttcgt cggctgggcc 780

tacagggcaa tctcggccac ctgctacaca cgcaattttt cttagaaaag ggaatatata 840

attacatccg ctgcatgtaa aatgtatgaa gctgtccaac aaacaacgat taaaaaagat 900

actcccgaca acagcaacaa aacaaggata atactaacag cacaaacata atatgcgagt 960

ccaaagcaga gacaaaacga caaaacgcaa gctactataa tgtaatc 1007

<210> 987
<211> 1020
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_287972_G1, chr8:131211622..131212641, Cluster 6

<400> 987
tcttcctctc tctctacttt cccttccttg tgggacccat agaccatggt gaaaaatgaa 60

caacacaaat tgatttaagt acacataaat aacatttta catgtaattg tgaattcatt 120

tttgccgaac gaagaaagat tattcgttag agctaaccaa catgagttaa tatatacaca 180

ataatcctgg ataattgatt tcctaattaa tataggttca caaaattgtc catgtgtcat 240

ttttccatta gttaattagg tcatgttcaa attatatgca aaagagtgaa taaatatggt 300

actttatgga ttatgttaac acttgtaaat ataaagagtg taattcagag gacgttactg 360

tgtcggacaa gatgtgacgc aagcaataaa aagagataaa tataaagagt taaagatact 420

cataccgtat tccctttta ttgcattatt taatactgta caagttttca cgggtcatac 480

gctgtagtac ctaccaacgt gtgacttgtc ccagtctcct tttcctttga cctcagtgtg 540

gtccggtctt cggacgtcag gacggcaaac cggcgtgtcg tgaggtcgcc accgtacccg 600

cgcctcccgg ttttttttc tacggtactg cgtcgcgtct cgcccggagc ctctgcacgg 660

ctgcccgcac ggtatgcctg ccgaccaaaa tggtccgtgc tccggccggc ctccgggccc 720

ggcggtgcac agccaattct tgttttgtta aaagtaacga gccaacttta atcgaaagca 780

aatttatttc ccaaggtctt ctaacgaagt ttttacacac tttttttctt ctctctctct 840

cgtttatacg ggaatgacac gttcctttga aggagggtga tgtcaggttc atagatgaca 900

agatcgagaa aatgaagatc tggctgctgg agtattgaaa gcgaacggct aacctggagg 960

cttgaagaaa ttctgtggtt gttgctggat ttttagggaa tctatgtttt caagcttagt 1020

<210> 988
<211> 1299
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291274_G1, chr8:149143595..149144893, Cluster 6

<400> 988
aaaaatccaa ggaggtctag atccaactca ggagaatcat gaccaacctt caactccaga 60

aaccagccca gatgacaaac acgttgaacc tagctttact gatgatgtag aaatgtctca 120

cctagatgtt aggggatcct gctggagatt attctgatga tgaggatccg tagaaacctt 180

taaatctaca tgaaccttgc aacttaaata ttcggcctta catgagaggt acatgaagct 240

gctgtttcgg gatatatctc tttttgttta gtgcattgta aagttatttt gatgacctat 300

tcattgaact gtctttatta atctgttttg gggtagtgaa agtttctcta cgtgggaggt 360

gggttattgg cacttcgaga aacaaaactc tcatatctct attttctatg gcaaagatgg 420

ttggcattgt cagccgtgaa catactaaat cttttgaagc acaacagtct tagcaggaga 480

aacattatgg cttccaatca tcctctcgtt ttgaaaaggt acttaacatt gttacaataa 540

ccatataaat taggcatgtc tgatcttttg agttatttaa tttgtatttt ttggtgaaat 600

agaaattatt aaatttgtta accatccaac atgcagtttt gacatcattt gaatttggag 660

aaaaaattcc aatgtgtttg gagatttgaa aaatgacaat ggatccgata ctggcattaa 720

ttaacttggc tctctcaaac attgtctctg cagaggacta caatgatgat tataaattat 780

gtgttgttca tcttctgcaa tcgttgtgca ctaacatctt aacgaatagt ttgtttccgt 840

tgcaacgtat gggcatatac ctagcaatta ctcgagtggg gttcatgttg tagcaggcat 900

gttagtggca ggtatatttt caacagtgac ctgttataca atgtataagt tctagcaact 960

aacgctcaaa accaaggtca caaaagaaaa tgaaggtaga caatgttttt cttaaataaa 1020

agagggcaaa atagctgttg ttcaagaagt ctgaaaagtt gaaaagatga gtttgggtca 1080

gaagtcaagt gtcaaatgtt taagcattat agtggagaga aaaaactatg ttgcttgcat 1140

tgtaaaaaat agcattgtaa ttttttcgtg ggtacaaacc tttttgtctt ggtgcatttt 1200

tattgccatc ttacaatgca gtgcattttc atttagacca catgtagcat agtgttcaca 1260

gttagtcatt tgatgcctga tacctccaat cttctcccc 1299

<210> 989
<211> 1173
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_292062_G1, chr8:152967366..152968538, Cluster 6

<400> 989
tcattttcgc tgtgatgctt gctctctctg ttcgattccc ctggtcacga ggacactctc 60

tgctctgctt atatgccttt gaacggtacg cggtcggcgg ctccacacgc aacgcccgca 120

cgcacgtgca tgggtcgaaa aatacgcgcc ctcgacgtcg tcgtcttcct cgtagcactc 180

caacgtcgat ctgcttgcta cctacctact tccatttcga atgtcctcat cgtctgttcg 240

ttggatcgct aggtctctgt gcgtttgttc cagtccacgg cttctggacc gcgaaaccag 300

cggtggaatt ctccgatccc cgaatcggca cgacgcggat ttgcccgcca gcgtcagcca 360

ctcagcctac acgtacgtac tcgtccctcc actaaactac atatacggac ggagtaaagt 420

tgaaccaccg ggctcgggaa accgtcgacc actggcagcg tcgcgcgcga agccgcgaag 480

aatgaaaaag aaacagcatg cactcgcgca gcaaagctag atgcccaggc agcatccgtc 540

cctttcgagg gcggacggac gaactggata cgccgcaggg cctcgccccg tgctgggaaa 600

aaaaaaatcc tgcagccggc aacagagaag agaagagaag agatactatc tgaccggcgg 660

tcggcggata cagaacaaaa tacgagtagg atacacttgc aagaacagca aaggacattt 720

aatttgaact gatcagtaga tcatatagta cataattcat aaaaacaaat aaaatataaa 780

acctttttga aagaaatgag aattacataa attattaaaa atcaggacac ttctaattct 840

cttcgtcacc acctcttatg tctcgttttt cacatagttt tagttgctgt gtgggttctt 900

ttcgtgactt catccatgta gacggtagtg gcacggtgga gtgattcaac aattccttaa 960

atttcttaaa cagtttagat taaatcatcc tctgtttagt ctcatacaat ttgttgaaca 1020

tcttattctc cataactgag gactcgttgt tacttgatgc tggcccattt cccgttccgt 1080

tgagctcttt gccacatcac ggccaatagg atgtggtgcg tccgtattgt ctaacgaggt 1140

ggagctataa tcgttatcca agttgagatg ata 1173

<210> 990
<211> 1290
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292158_G1, chr8:153378612..153379901, Cluster 6

<400> 990
caaatgctat ttcttcctgc tacttgctct gttttctgat aaacctttgc atcaactata 60

ggcgtgcctt ttatgaccga aggatctccc ggaggtcagt ggtgatggta cggtctgggt 120

gaggtaaatt ttccgattac ttatttcttg atccatgacc ttgttgctga tttcatactt 180

aattattggt gagctatgtt tctttgtttc gcaggagtcc aagggttttg tcttcaagat 240

aatgggtgga tgtgacaagc aatgcttcac aatgaagcaa ggagttctga cttctagtat 300

gcaagtatgt gaactcccaa gagggcctcc aagatcagga agttgttcaa cctttctaag 360

gatgatgatg tacgcaagta cgtgaacaca tactgcagga cattcactac caagaacagt 420

gagctttcct acatctaact gcattgctac tgtatttatt tcattgattt cagggtgctt 480

ctagttctag ttcaatctct cgatgtcttg aaagtagaca taaatgtctt tgttatttac 540

cgttctatta gtattctgtg cttgttatgt gttggatagg atttatgaca atgagccact 600

gatttctgaa gttttccaaa ctaacttgtt tgcttagtag gtaagaaggt gaaaaagaag 660

tttgaggatg tcgaatacca aaagcttctt ccctgtcaca acgagagctt ggccaagagg 720

aggtccaagc tttctactgc taccaccttc gcttaagaat gttctatctt cttacaacct 780

aagtacatta tgctgcccta gctatgttgc atcagtgaac cctttctact tagacttatg 840

agttatcgtt gcaattttgt atgaacatgg tactggcttg tagcaatttt gtcagtacaa 900

gatgtttact attgttttta tttagcattg ttcttggtct gctgtctgca ccatacgtta 960

aatatctggg atttttctgc ttggttctat gggcattatc cttgtctttt tcttgatcat 1020

gtaaccagct gtttctactg aagtgggttc ggaaatcgaa acttaggtga agaatgatga 1080

ggctaccagg ggttagaagt ttcgtgtgat cacatttgat cctaccaggg gcagggtttg 1140

caatttcgga atggaaattc caaaaattcc ttcgtttcgg ctgggggcga aaaaatcact 1200

tcagccaaaa aaattgtgtg aatttgggtt ccgcgccaaa acggactaca aaacagccca 1260

taaatcccac aaaccctaaa tcgtgattca 1290

<210> 991
<211> 1154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292665_G1, chr8:156261822..156262975, Cluster 6

<400> 991
tatgcatgcg cgcgtctggt ggacccatgc aaagcaccaa aagctaattt gaccccgtcg 60

ccgtcgcccg tcgaggtgtc acagcacgat gacgagctag gctagctagc tgggcgatag 120

caacgtttgt gatctccctt ctctcaacac cacctacgta cgacggccag cagtcacgtt 180

agagagacgg cacaggtcca gtcggtcggt cggtcgctca tcactggctg gatcgatctg 240

cggcctggtc catgcatgtg acgatcgatg tcactgcgaa ttaagaaccg tgcatgcact 300

cgcttcatgc aagcaagcat gtacgtacgc gtccaagggg aagcgacgga gatccattgc 360

aagcgtccgt cgatctggac tagctatagg cgtaatggac acgggtgcca tcagccgagc 420

ctgttgcagt ggcttaactg gccggcgaat ctttgacgtc gtcgtcgtcg catgcgtaca 480

ggggacccat gcatcatcat catgcatgat cgaggcctct tagtttggcc tgacctgcac 540

acacgtatat gtagctcccg ctcttgccag tggacgcacg catgttcgcg taatcatgtc 600

ctgcgccggc ggagatgatt accggccggg acagagacgt acgtagtgct cctctccttg 660

taacgctagc tgtcgctctc ctcctcgggc tcctcgtctc ggccgccggc tcccgcgcgg 720

tgccgccggc gcgtcgtacg tcgacacgcg cgcacatgca tgcagttccc agtcgcgtgc 780

atcagctact atccgatcga cacacctgct ttgccactcg cagggttaac cttctcgatt 840

tgttatcgtg tcccggcagc gaccgagaac ggaaaaacag cgaaaaccgc tcgaatttcg 900

ttgttttcga atggttattg tttcaaattt gaatcggcgg tttttctttt tttttctcga 960

cggatttaat tttgtttgtt ctcggtggaa ttcgctaaat ttcgctcggg aaattgttca 1020

aatcaagcgt tggcgagaaa cgcgttgcct ctgggctggc cctctggccg gctgagcgcg 1080

tgctttcccg ctgcttatcg ctaagagatc tgttgagcag cgattgaatt ctcagtgtag 1140

ggttgacact tgac 1154

<210> 992
<211> 1233
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293477_G1, chr8:160232929..160234161, Cluster 6

<400> 992
ccaagcctgg ccgaaagtgc aggagggaga aatccatagc agaaaagcaa gaagacgaag 60

caggagaacc tgagctagct cctcatggtt gttgccgcaa tagaacgaag cagttcacgg 120

ttcttccaga tcgagctgca gcatgcctgc caaccctcct caaaccactt caaaccaaac 180

aagttctcag gtggggcgac aggtgataaa gcgaaagcga gagaagtggt ggtctatgcg 240

tgcgtgtgtg ttcaccataa attaaagcaa actagttctt caggtgcttg tgattagcac 300

ttgccgagtg gagtgattcg atcgaacagt ggcacattcg tcggtctgtc ctgacaggag 360

gaatgcagcc tttggtacaa cagttgcaag tacttcctta actaagagga tggatcatta 420

ttgctttttt tctttgtgac gacggtgagt tgcagtcacc tgacgacact catgttgaca 480

agtggcgtaa gtgtctgaaa atgatgttta ttgcatgtgt cacgatcaca ggaagatttg 540

gatgcctgct ttgtcgatcc atcacctgcc atggaaacgt ttttcacata cgcagtgaca 600

accgatatag actgctttca aaatgatcgc atggaaacgg ttttcagatg catttaaaga 660

gtggaagagc gcacttgtta cacatacgca gagacacaat cgatgatgtt ttctcacaga 720

ttgactcctg aggctgaggc tggaactacg tccgagcttg aacattgtgc agcagctgca 780

acaataacaa agcattgtat tcccaagtaa gttgatatag actaaagttg aaactcaaca 840

taaggcttgg gcatgtggaa gcttctagtc aacactaaat ctttaggtat attccaaagt 900

ctgcttttac tgtccctttt tatgtcaact tcagtctttc tctgcctctc ttcccaactt 960

cgagcctgaa cattctgtgg tttcagaaaa cataatgtgc acaaagaaaa tacatcggcc 1020

tgtatttctc gtttgtccga ggtttacatg atgacacaaa tggcttccct gaagctgctg 1080

ttacacaatt ctcaaatcct tcgtcaacaa gcaaaaatgg aagcaggttc tgaaatccct 1140

gaagatgctg tttacacaat tcagttttta tattgaagtt ggaacctcat cctatgctta 1200

atgaagagat acagtgggtt gaagatggtc tac 1233

<210> 993
<211> 1130
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293843_G1, chr8:161907788..161908917, Cluster 6

<400> 993
atagcaaacg cttacttaat aacacgcgct agctggaaac aaggcaggga gatgaatcga 60

taaatgcggt agcatgcatc catgcaaagg tatttcagtc taattttgca tacaaaaggt 120

acaacgtcat gaattaacag cccacggtgt actgcatcca cagctacatg ataggcaaaa 180

aaaacacctg gttgcatggg cgggtacgaa gaggcatacc gtttcggacg gaccaagctc 240

cctaaacctc cccatcgaac caatcagatg gtataaaatg acgcacttga tgtccatttg 300

gtgatctgct taggctatgt ttggaaatgc agttttaaaa tactgtagtt ttaagatact 360

atagtttaca attatacatg actcaaatac tacggtatta ctttaccata atattgctca 420

aaaccgagat ctgtttggtt acattgtaaa aacaaaatat atttatagag aagagaagaa 480

aactgagttc ttgagtagag tttcgaaaac tcaaaaaata acacagtttt aggtaaacca 540

tgatatttaa aactgtaatt tgtctgaaca aaccaaatac ttttttattt ctaatactat 600

agtatcacta aataccataa tattgtttca aaactgtaaa aatactacac atccaaacat 660

aaacagagcc tgactggtgt gcaaggattg gacagatctt tgctgattac aaggaagcca 720

atcaagcacc acaccagcga gagcactaac cactagtagc aatcatgtac gacgagtcga 780

cgaggcagag ggaggcatca cggaaggcga cggatgggtg gccgcgtagg tggcgtcaac 840

gtcggcgtcg tttgggccac cgcttccgat acccccccacc gagacggaac gtgcttatgc 900

ctgcaaagaa accatacttc catagattaa aaaaatgacg gaaagaacga agaagggaaa 960

aaagaaggaa tttgaagcgg acatgtacga acataaaaag gaatatccag ttaaccagtt 1020

ttgcttgttt aagtattata gacaaacata cagatagata gatttaagca aagtgcgtat 1080

tcggtgtcta accttgtcgg aatttaataa cctaaacaaa ggattgttgg 1130

<210> 994
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29396_G1, chr1:179830391..179831421, Cluster 6

<400> 994

attcatccat ccagtggtgt agacagtgga tggtccgggt gggccacggt atatcctaag 60

ccggtccacc ggatcacccg tccaccaaga tctatataga aaatactgac atatattata 120

tttacattct aatatataca tttataaact taaatgttaa atctatagtg ttatatgcta 180

tttttatctt tatattttga actatataat aaattattat atattatatt aaattattta 240

taaaaaaatt ttaatggcat acatcataaa aaaaatctat ctacgtcact gcatccatct 300

tccggtggct gagcatgcag atatttttct actgctgtgc agcatgacga tgcaggcagt 360

ccggccggcc cgccctgcgt ctttgaataa catgtaacac ctacctatac cggtagcttt 420

cagtggccta ataataatga tcatatgaat tatgaggtcg ctcgcttcgg attagagccg 480

actgtttaga ccactggtat gctatagtta caatccaccg tatagacaaa aacactgagt 540

tgctttgtct tgcttttggg ctgaaatatc tatgaaataa agaaaggtga ccaccaatgc 600

aatacgtata gtagctagct cgatgaccca tcaatcggtg acaatcactt tcctgctgtt 660

gtctgcaaag tatagtggtg gtaacatgca tggtctgcgt gactaataag gttggttaat 720

taggtaagaa gaaagatact actacacgtc accaagctag cccaggtagt agctactagc 780

tctcgccggc cgttcacctt ttccttagtg actaaggttg ccgcctgtca cctagccggc 840

cttaatctgc atgcatacat cctctgtgga attgctcggc atatgttctt cctctcttca 900

ttatcattaa ttagacctat gaagaagaaa aaaaattaaa gctccctttg aattagcacg 960

ttagttttga ccgtttcatg acctacgtag ctagcttagc taggcgatct ctacgaacaa 1020

acagtttatt c 1031

<210> 995
<211> 1330
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294149_G1, chr8:163676305..163677634, Cluster 6

<400> 995
cccgtacatc aaaacagcgg atgtcgtggc ggcgaaggag ttgttcacga cgatatatat 60

actagtgtat gtcgcgcgcc ctgcgcacga aattaaattc gtttctcaga ccttaaattg 120

cacatacata ttatatttaa attgaatata aaatatgact acatatatgc ttaaataatt 180

ttcgatttgt taatctgtct ggaagcatgt atttgataat tattaatcta ttgagcacac 240

atccccttt atgagagaat caaccaagag cgatggtaga atcttaaaag tatcatcaac 300

aatcaaacgg agcacataat tttacgctta acccaaagga caaaatgtga tggagaacta 360

aaattcatat ttagaatttg acatgccatt ccccccaagg gaataagttc aagagaccat 420

acacatgaag atagaagtaa tcagccagaa ctgcttctaa aaggcattca atatactggt 480

catatgtggg gtggacaatc cacacattcg tagtcaccaa atgcctccaa aaagttaccg 540

atgacttcta gataagtatg aatcgaagtc agaacaatga gggaaaaatc tgcaggaaca 600

ccaggaacaa ttcgctcacc agtggttctc gcggcggaga tggacctaac gcggaggcaa 660

agcggggttc ctcacctgtt tctcatacgc tgcagcaagc gcgcgctact gagattgaga 720

agaacgtcgg acgggaggag aagaaaagtg cagtcggacg ggaggagaag agaagtgcgg 780

ttgcacgaac acctaactcg gtcagccaaa tttttatggg cgctctctaa tagtagctgc 840

tgaagagatg tgcgattgcg ttgcgagacg aagaaaataa ataaataatg ttatccgcct 900

agcactatca tgtatgcgtc acatgtttta tggagttttc tttcatagcc gacaggggcg 960

ttgtaacttg acgttttaaa aaaaaagtaa agaaaaaagt tgtccgttca aatgaaatcc 1020

aatgaacaac atgaaaaagg tgatgtggcc accttggttg agctccttgg taaagtatgg 1080

ttctactaat gccaaaaggg gcaagagata tgccccтttt agtttgagag caacactaag 1140

caaaaacagc tggtgacaga aataatatcc ttaaatcccc ttcaatttgc ctggtttgat 1200

tagattagtt actcтttttc ataactaagg tggtgtacta tagttaatag ttagctggtt 1260

tgattggatc gagtatccta cgctgcggtg gctgcttctg tcgacagcta gtatgttggt 1320

ttgggatata 1330

<210> 996
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294519_G1, chr8:165718709..165719872, Cluster 6

<400> 996
aaactattga atatccgtat ccgttaacac tttatgtatg tacctacgta tgtatgtatt 60

cgagatagaa cgagtaaaaa acagagcgag cacaggccag ataggataat ttgattcaag 120

tagaaatcga gatattgcat tattgtcaca tgattcaaat ggctgatcac gggtggggat 180

ttatccaaac gatcgctttt cttggctgcg tgcctgcgtg catccagaaa aaaggcggaa 240

agggaccacg tggcgtgtac atgcacgcat gactttgatc agtgtgcgct ttgattaaac 300

taatcgtctg accttagatc ggcaaagtcc ccaggttaaa atgcgtgtgt cctggagggt 360

acaacgtaca aatccgcacg catcgcagtt tgcgccttcc tgatcgaaag gctgccgtcg 420

cctcgctgat atttttttct ttctacttgg ctcgtgtcgt cgtcactcac cgctggcggt 480

aataatgatt ttggggccag cttttctgcg accaacgcta gatgcagcgt gtgggccggc 540

cggtgcagca gtactgcaat acaatactac agatatatac aggtgggcaa caccccagac 600

gtgagggtga gacggtgaaa gcaaaaatac ggtcggcttc ccagttccca ccgacggcgc 660

gcacccgatg cccgcgctcg cgcgtccgtg cgccgcacag tagtagtacc aggctaccag 720

cggaagcccc gttcgatttg acgtccccgt gctgagctcg cctgctccgg ggaccatcgc 780

tcgctgcatg cacgagacca tatcagaatc ggacggaacg ggcgtagtat aggagtagga 840

caggaggagc cgagacaagg aggggagcgt gcggccggcg gtgcccagcg gagcggagcc 900

tgcgacggcg ccagggcctg acagcggact tgaatgcacc ccgggtattt cgcttactcc 960

agccctggtc ccggaccgca gcctggtccc ggcgcatgcc atggccatcc accccgcccg 1020

cccgcccgtc cagcccatcg acggctcgtc gtgtgtgcgg gccctgtcac gggcaatggt 1080

actcgagttc gcgactgttt cgacccagca ggtgcaggtg cagctttgcc caatactgca 1140

ggctgcgtgc gtccactgtt ggcg 1164

<210> 997
<211> 1332
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294521_G1, chr8:165720133..165721464, Cluster 6

<400> 997
cagagacgac gaccgggtcg gcccatgcgt cctcgccgtc cgtccgtcaa acgggccgct 60

ggtgccatgg aggaaaggaa ggaatacacg gatggatgga tcacctcctg ggcctactca 120

cgttggccca taaacgttat gatttttttt ggatgtggcc tgctgtctgc tgcacttgct 180

cgtcctctat tttatcgggg ttgttcactg aaccacatca tcatcggaat cttgcaaccg 240

ctgcactgcg catgttgatt gagagatgcg aacggtcaaa cctgaccgag tacccaaccc 300

aaggcaccaa cacaacggtg ctttgcatca gggtctttgc acactgcaca gtgcacacag 360

gagttgaggg ctggcaattc acaaagcatg cgctgcggcg tgccactttc tcagcagcca 420

cgcacaaaaa aaaagccgga caaaacgaac gatgccaatt gccaccgcgc gggtacggtg 480

gagccaaaac cgccagtgca accgcacacg gcagccggcg gcggacatgg catatcacgg 540

ccgcgtatgc ccgctccgat ccatggcgca gcgagaacat ggcaccgccc tccatccggt 600

cccgacccga cccttcatcc cgctccagcc cgtcgtcgtc ggacggacgc tgccgcaacg 660

tcaatgcatg cgtcctgggc tcctggcttg tgtcgtgtcc gtccccgtcc cgctcctgcc 720

gtgccccccc ccccccccccc ccccccccaca ccccggtaga tttcgctcgc cccaatactg 780

aaccgcatca tcatggcccg gccggcaagc tgcggccgtt ccatccatga tccacctgac 840

acgcaggaac ctcacgtctc ctactactcg tctactcgtg ctccgcgatc tttacatcct 900

acacgcagga gtagccatgc agctgccctg ccctgcccgt gactgcgact gcgaccaaag 960

gcggagtact agttcgctgc cggcggctcc tcgcgaccgg cgcagataat tagtactact 1020

gattctgaga tcgtgttgcc cagcccaccg gccgggccat gggggcggct cagttaagcc 1080

ggggtattag ccatcatggc atgtccaaaa aggatcagag caaataataa ggcggcagcc 1140

ttccgggggg cagctagctg tctaggcctg gccgggcgcc ctacgaacgc agcaccatca 1200

tgaacccccc tcgtaccgcc actcctccgc tcgcgctctc tgattaccca cagacctgga 1260

tgagcacact gcacagtctt actaagcatc ttcaacaaaa tattctgctc ctaaaatttt 1320

cttactaaac ag 1332

<210> 998
<211> 1364
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294697_G1, chr8:166620821..166622184, Cluster 6

<400> 998
cacctggaag gaacctggaa acaggccaat ccggtccata cgaacgggcc ctaagggtcc 60

gttcgtttct gctggaacag aacaagatta ctttcaaatc tctaaaattt atagtaatta 120

ttaaagaaat ccaagccaga tttattccac tcattcattc catgcgaaac gaacaggttg 180

aattaaatct caagcaagtt aaaatccttg ccaattattt ctaaactcat ccaatgagcc 240

ggaaacaacc gttcagtgaa tccttatttg tgatctaccg ttgaattgac tcgcccttgg 300

attgggcctg catattccta ttccaaaagc acttgaacat aggagctcac acaaaagcat 360

tggtaatgca tggtagcttg aatgcaatca cattctagcg cgtggccgag atttggactg 420

agaggcgatg gtagctcata atacagaccg gctgtcactt caaaactact gagactcata 480

gctgcatttc agtatttcag cctgaaaaat attaatcact cggagcgcta cactacaccc 540

atgctgctag gattaactaa tgcatgaata atcaaatcaa ccacagctag gattggtttt 600

taaaaccgtg gccggcagca gggagtaatt caactctctg cgctggcctg cggacagcgc 660

attgggatcg gattaattat tagaccggta ttaaaacctg aggacttgag gacggattcg 720

catggatgca cgcatgggcg gaacccggca tgctcccccg gactcgatga agaagagcaa 780

cgagccaacg acgacgacgc agtgcatcga gctccgcaac cgacaccgcc ttaaaacgac 840

cacttgctcg agatcggtcc atcggtgttt gtcgccgtac gatgcactca ctactggcaa 900

atggaggctt ctattctatg tatgttccct ccgatccctt cccaagcatg ggcattgccc 960

tctctgacgg tctgactaga gctagagcct tgggaagatc ctctttgact tctctgaatt 1020

ggcgcaactg ctggccagct gggttatgtt catggctgat gctaatataa tccacgctag 1080

gtaggtagct ctgtagtagc tgttgtcacg gctttggtta ttatactgcc tgtgcctagt 1140

accagtacca gcagcgttgc tttgggtttc tttaaaataa ccgggggcct tgtatatatt 1200

tattaactga caaattcttc tggatctggg aatgattagc gattcttcaa cagaagccgc 1260

ggccgcgacc gaatctcagc gcatgtgacc acgattatta gtactactag cttattggta 1320

cgcgcgtgtg tgtgtaccac atttttttgc tgtgaccaaa ctag 1364

<210> 999
<211> 1015
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295103_G1, chr8:168012428..168013442, Cluster 6

<400> 999
ccagtcaacg ttgctatatt tacgggttta agtaggataa actaaaccat cggtcatgca 60

tactctactt cccggcacta tcgccaattt cgcatgcata gtgcccaccg ctaatcatcg 120

gtgggcatgc gcgcggctcc cctcccctct gcgttgtcgc tggcgaacag aaatagcatg 180

cggcgcctgt attttggggg tgcaaagaaa cgtggaagcg aggcgccgac aacgtcggag 240

gtcggacacg cccccgcgtc cgcgtgcttt ggtcgcgatc gtgctccgag ttaacgggaa 300

gccaaaaacg tgcgccccaa ccctttcgct cgaaaaaaaa ccggaaacta tggtcagggt 360

gcaaaagaat ctgcaggcta gcgaaagggt ggctgctata caggacaaca gaggctgcta 420

tacagtaatt ttctcatcca ccgcaaaaaa atgcacacat ttatttaagc acggcgaggt 480

acagcaagaa gcggcttttt cctgcggtga cgacagtgct ttgacccggg caccttttc 540

agcgaggctg tgccgctgtg cccagcccag tgacgccatt tggcattcgt agtggacgag 600

ccagcaccag ctgactccca cccgctgacc ctcatgtaca ccaaaatttg aaggacgccg 660

gcgccaacga ctcgtgccgc ccacccctct tttgccagtt cagttcgcca ggccaggcac 720

gaggcaccca ggcggccacg aatccggttt ccgtctggtc tgccacctgg gacagtgacc 780

aagccgtgtc tcctgccacg cgtcaggtcc gcgaagaaga aagccggctc atgacgccga 840

ctcggcaact gtactgtacc ccgctccggc ctccggaagc cacttgtgcc gacggttgtc 900

caagtactcg ttcgtatcca gccaggctac gggctaccta ccgtcgacaa ccgtttagga 960

gccgccagtt gtccaagtac acgaaccata accaccacgc gcgcgcgaaa tgaaa 1015

<210> 1000
<211> 1119
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29513_G1, chr1:180523021..180524139, Cluster 6

<400> 1000
agcaggcact tgcttgcgga caggctttct attttactta tgtttcgatg atgattgagc 60

ttgcgttttg atgatgtccc atggcacccc tcgtggctcc aaagagcagc aggacatggc 120

agccccgccg gacggtgtcc atccggggaa tttgcatggc aaggatttgc ctcccctgtg 180

ctggctgccc catggttccc ctggccgggc tgccaaagga ggccttaggg tgtgtaggat 240

tcagttcaaa gtccaaaaat agaagcccaa atttttattt ttttgcctca atgtcattca 300

gctttttat gtagaaaaag gtgatgctaa cagaagcagc acacaggcaa aaacagctct 360

acaacatatg caatggaaga agtgtccgtg atgcaaaaga agctccttta atagcagaca 420

aaggttacaa gagaaaacta aagaagtttt tttggttggt tggttgttgt tgttgttgtt 480

gttgcataag aggtatgcat tcttatagtt gaatttgcgc aggcaggcct tcactatgat 540

gacaaaatgg ccaacacaaa caagccgatg gaaacatata cgaagttgag aagggtcaca 600

acattcggta tttactatgc aaatacagtt gacacgctct cgcatacgtt tgttttgctc 660

atgacccgaa caaattaaga tgtgtgcata acttaggact ggagatccga acaaattaag 720

gtgtcgggta gccaaacagg aatttggaag aacggctaga atccggaatg caacattgta 780

ggatggctgt cagatgcata ctgtatgtgc aacatttggt tacaacgtgg agccgcacgt 840

ggttgagatg aagcaacgtc acgtaccccc acaccacata tatcgcagaa gtaggtaatc 900

aaacataaat tcgcagtaca gcacgcaata ctgacccgga tggcacgcaa tccggggcaa 960

actgaacggg gtggggtcat gtagagagag aaaataagag ggaggggggа agaattcgtt 1020

ttgagcagag gccagaagga aagatatatt ttttttttg gtcgagcgct gacctcgcag 1080

agcaagatcg ggaggggagg ggagggaggg attccttac 1119

<210> 1001
<211> 1177
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295919_G1, chr8:171995210..171996386, Cluster 6

<400> 1001
aatcactcgt aaaatctatg aaatgtatta aaaaagttca ctttcagcaa atacatgagt 60

tatcaattct tgctatagaa tgaaaaatgt tctccatttt aggcatgtaa taataatatt 120

tttgagggaa tccaattata atttgactta atgtaaagga tcagattttg ctttttttaa 180

gaagcatatt ttgctttcga gaagggaact aaatgagttt agtcctggtg ttgtacaaat 240

gtacagtatt tgtggtccaa tagaccagta tatacttgca tcccccaaaa tatctcatca 300

ttgttactga tcaaaacaac tatatagagg aaactaagag gataggacca catttacttg 360

aattccatgt agcatgaaac acaactgcag ttgtactcat taagatttcg atcccctagc 420

ttatagctac tttgtagctt ttgaagcatc tcttttctgt ttcttgttta ctgcaatgca 480

atgtatttcg gctaatgttc actcactctc atatttgact cctgagcgcc ctgacacgtc 540

catgtagttt atgacgtcgc aatagcatac aagcaccgac tgccagattt cctggacaac 600

gtgtacggcg tcgatccttc tgaggtccac atccacatca gaacggttca gctccaccac 660

atccccgcat cggaagagaa gataactgaa tgggtgatag agaggtcagg cagaaggacc 720

agctcctggc aaattttctc gtgaggggгg ggggggggгc gtttccctga cgaaggaaca 780

gaaggaaatc tgtccacgcc caagtgcctg gcaaactttt tgacagcagt aggcttgacg 840

gccgtctgcc tgtacggctg tacctaactc tcttctcgtc tgtgtgattc ttcaaggtct 900

actcgactac tggctactgc catcggatgg ctcgactgaa ttaccatggt tcaaggaatc 960

ggtggacctc tggttctctg aagtttggta tagatagtac ttattattta ccatagacat 1020

caagtcgttg tagtatagtg gtgagtattc ccgcctgtca cgcgggtgac ccgggttcga 1080

tccccggcaa cggcgttttt ttccattcat gtaaattttt gcagtcgaca tactccaata 1140

gtttttatgc tatgttttgt tttcccacgt gcacata 1177

<210> 1002
<211> 1071
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296004_G1, chr8:172371402..172372472, Cluster 6

<400> 1002
actcatgcct gcgagctatg ctggattggt caatcggtat gtctaggaat tgtgcgaaaa 60

gcgttagtta cagtattgac aactcaggga atctggttgt tagcatagaa tggaatggga 120

tggaaacatc aaatcagaag ggcgaaatga ctagccaaac agaccatatg gttaggggtg 180

tagcttcatg gtaacagagg aacatgcctg ttgcctgtac catgtcttct ttgcggctag 240

tgctagtggt actattgttt gtcatagacg cccttaatca cgctgctgcg acgctattac 300

tgctccccac tccacgtcac tgcaaaacat gccttgattc gtcgttgagc gtccaccgat 360

cggggtcact ccggttcttg gcagattgcg gaccgtattt tcagcagcgc atcacatgcc 420

ccttgttagt gtttgttcgt ttacaccaat acagttttag attagcatgg attagaatta 480

aatacatgtc ccaaaatatt caaagaccat ttaatttttt tattcggtta aatccatcat 540

gaaatataac ccaagggttt ggtaattttt aaactatgga agacatagat tgtatccata 600

actcattaga tatggaacaa attcataaaa ctattgcaca agtttacatt agaattcata 660

gatcaaaaga ataaatagct ttgagacaca tttattagtt gatagattta attccaccat 720

aaaattagat gtgaggtatg gattcatcca attcatacac ggatcaaatc tatggtgaga 780

ttttatccta tgtaaccgaa caagacctta aaagtaagtg ggaacaggtg gacagaaaaa 840

gggcgagaga cgcttggcag cgccgcgcag gcacgaacgg gcaggttcat ggctcctgcg 900

cggtacgcac gccgcttgtc gtcgggcgcc gtccgccatt gacctatgcg cacgcacgta 960

tcaagcctgc acaaacacat tccactggaa tagtactcac tccgtcaaaa ctacaacttc 1020

agatttcgaa cgagtcgaac tttattgatt ttaattaaat atatataaaa a 1071

<210> 1003
<211> 1371
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_297529_G1, chr9:3313839..3315209, Cluster 6

<400> 1003
tgcctctgtg tgtgtcagtg tgtgtgtatg gccggctagc cgctagctga aaggtcgtcg 60

atcgatcggc caccagtgac ggcactctca cttcacttcc cggcttcctg cctgcctgcc 120

atcaacggat cgcgcggcgc tgtcgacggc cctgctgggc agggccggcg ctgaaagaga 180

ctgtagactt gggagagaga gagagtgggg ccgcgcgcgc ttggcatgca gtgcgtagcg 240

tacggcgtca gcgtaggagg agcttcaggt tcagtggttc ggtcaatggc aatgatccag 300

cggtctctgg tccccccccg cccactgcac aggaaagctt ttcgggccca tgctcatcat 360

catcatcatt catggcccat tctgaattct gatcggtcgg cttggcttgc cttggattgg 420

atcgccctct cgcgcactcg ccaaaatggg tctacgtcta ccgcgcgcat cttcctgatc 480

ctgccgaaca cgaagcatgc atgcatgcat gagtgcgcgc gcgcgcgcgc gtgagggact 540

agggagagcg tacgtgctac gccacgcctt gagccagttg cgctctgcca ccgtgacgtg 600

cgtactgcgg ggcgggcgcg tgtgtgggtt gacttccatc tcttcctctc gagggctgtc 660

ctccgagcac aaagagcgtg agtgcacggt caacggaggg ctcggattct ccgtgcctgt 720

acgttcgacg atactgatca cctattgcgt acgctacgtg tcttccaacc gcgcggcact 780

atcgattgac atggccggcc ggcgcagcaa ctttgtgacc atggtcgcgc acggccgcac 840

gtacggtacc ggaccattgc agaaaaaaga aacaataagc actggttgag tactactagc 900

tagctattgt atctgaactg taacgggatc taaacaatta ggattagatg cgacaatctt 960

ccgtcctggt ttcaatgatc cggtttagta caagatgtgt cgtttactac tttacgctat 1020

ctccagcagg cagcagctta ctaaatagtt tgcgagatgt gcaagctcca tacatactta 1080

aaagtttagc ctaagcttaa gaattttctt tagactgagc tatttttgc atacccacgt 1140

ccatgcctta cataacaaaa ataactagtt cttggtgcat aatcgaatca tttagaggtt 1200

tttatggggt taagtttgaa tggtagaatt actcattaag aaggtccatg actttttat 1260

aactttgtgg ttggctttct catagagtca aagatatata caatgcattg tttcattgag 1320

ataaatagaa gtatccagtg ttagctgtag aaatgttata aacagtaaga a 1371

<210> 1004
<211> 1271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298931_G1, chr9:9001394..9002664, Cluster 6

<400> 1004
atcaacaatc catgtatata taaatcgctt gctgttgtga ttaaacgcga tatatatacg 60

ctagtgcatg tgtacgtacg tgtttcagtt tcactagtca ctaacagttc cagcgccgca 120

cgtaggccga cgtacggagg cggaggacgg ccacgcagac tacgggcagc aagccgagag 180

caggggcct ggggcgcagg atcggagcag gcggcgagtt tgaagcgcgc gccccgccgc 240

tccccacctc cctttactgc gccattgatg cacggtagct gcgctgctgc cgcaatgttt 300

ccccgcggac gcgcttgatg gcgcgccagc accaggtcgc agctagcgcc tccgccaccc 360

cccctggccg cgggaccaaa ataatagtcc cggtcaccta ctccagatcg cgccgcttta 420

ctaaacagcc gcgccaccct gccgccgccg ccgtcctccg tcctcccgca ctctcatcgc 480

ctacctggct tcaccgtagc actagctaca tatagcgctg tggcacaaac tcgcacaggc 540

agctcgatcc gtgtagcctc gtatggtata cgtaggccaa gtcaagctgc gtctcgatca 600

gctagcagct gaaaaattgg cgtcagcgtg tcacacacca tgggcgccgg ccggcattgt 660

ttgtgctgga gaatatgtgt acgacagtat tgaatggtgc cttaaatttg ccatactgtt 720

gcggcagcgt agagctcgta gttgtcatta tccctccccc ggcccgtctc ctccggtgct 780

ctcggctcct gcccaaatga agtaaaggca tgttcaacga ctactctgag atggttcgat 840

tttctaagta caagagatac agttatagca tgtacaactc tgatacatca gttcagtttt 900

ctaagtataa tagacaccga agagattccg tgatacaaac tctgagtctt taggccataa 960

atacagttaa cggacaatat atatggaggg tcttgtagag acgagctctt tacaaagggt 1020

cgtctcttgt atttttcat ctaaccccct aaagacccat caaaagacca tatattaaat 1080

gatgttgtac atacctttaa aagactacat gatacaacca taaaactcta taccataaat 1140

gcagctaaga tacaattaat atacatggag agtcgtatag agacgtgctc ttagcggaga 1200

gtccgtctct tgtattttat taccccgtaa aaacctctca acagacctca tttaaggttg 1260

tacatgtcgt a 1271

<210> 1005
<211> 1121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300036_G1, chr9:13759121..13760241, Cluster 6

<400> 1005
cgttccctct atttttgggg gccgccacca caaaaaattg acccagtgtt cacctcggaa 60

ccgcgtgact ctcatctaaa caatataaaa aatatagtca ctcctttcat ccatactttc 120

ttgtacgtcc aaccaaacac accgttagtt tatgcaagta agatcacaaa ctcacgcccc 180

accggcctcc gattggggac tcagtatggc tgtgaagacg atgacgctga aaaatcacct 240

ccatccattg agcacaccta catcgtacag ctccgttgtc atcacccatg ggaaaagcaa 300

gcctgcgctg cgccttagga agagcagacg atggatgata tgatatggaa caatggaagg 360

caaggcaagg caaagaccac gccacactat tcaagtgcat gcctgcctgc cgctgacgag 420

gcaagcatac caccaccacc acctctgccg ctgcaaatcc cgcatgcatg tgtggctggc 480

atgccatcat aggccggcct tcgtgcatgc accgtatcca ccacacgatc tcggttcgtc 540

ccgtctctag cttggacgct agcgttagtg agtgtacgta ctactgccag gcaatcggga 600

ttctacaagt ggtgggttgc atcagctatg tatgcaaaaa tggtccactg ggttcaggct 660

ttcagatcca tgctgacatg tatctgttgt cacacactag tgttatgctc ttttttttc 720

atgtgtacta caagctgctg gtccactggt ctgatccaga tacaggatgt ttcaggaagc 780

gtccggactg gtgtacatgt catgttctga agaagcattg cattggggcc ttgggagatc 840

attgcagcag gcaggggttg tcgtgtgctt ccttcctttg gactggagaa ggtcatgggc 900

tcatatagca gataaactgt tgaggccata tggatagtag ggttcctgta gactgtagta 960

gtagtgcttt caggtaggca agcaatgttg gtggtaataa gcatgaatat ttagtccaat 1020

cgtagaaaag gatcttgcca gtttttttt actttttttt tagtaaagag ttgttgccaa 1080

tatattccgt aggctgatag gcctgtttgt gctcacgctg a 1121

<210> 1006
<211> 1302
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301132_G1, chr9:20236852..20238153, Cluster 6

<400> 1006
ctggctgttt ttgatcttca gttccagtta tactgaaacg tctaatgaag tttcaaagtg 60

gagttgcgcc ttcagctgat catttgttga tttgcatgtt agggaggtgc atttgagaac 120

atgtttgcaa attcacaaca tgaaaattga aatcaaaatg agtgttgtct aattgccttc 180

ttgcctccta aagtgtggca aatatattga gtcaactgga ttgttggtct gctgctacgg 240

aaacatgcct ttcagcctta ttaaaaaaag aaaatccttt atttgtccgg ggttaaaacg 300

ctgggtggat ttagtaggga catgagtgtg tggaatggct tatcgggtgt gcttagttta 360

gtttaaatca tgggtttaag gtgtagagat tacttgctaa gtttacaatg ggacctgaag 420

gagcatgcct agtctttttt ctcgtgttat atgcttacga gaagaccagt taaggatgtg 480

tgcgctcatg acatctcttt gcatgcaaaa atatttcatt tttctcttgt tgtgaaagca 540

atgaaatttg aactttccat caacttcatg agctaattat cccgtggacc acccaatgac 600

aaggtcatag aagaagctgt gcttgaggaa gctttgaagg attttagttc catactatct 660

tgtttcaact ttcacccctt ggcgtaatat atgtcatgat ttgtatttaa aatcattcca 720

atctgttaat ccttttttaga agttataaaa tttccttttt attgtctaga attgttcttt 780

atagcacatt acctgcattt gcaacttgag ttcgtttgta tctatgcaca aaaccatggc 840

tcaaagaaaa gaataccgca gaaggcatta atttaaactt tttatgaaca cagaatgccc 900

gtaccaacac atgatgaggg tgctggtcat ggtaacacga tggccaatta taatactaga 960

aaaggtagcg ccctatcggg cgctatactt gccgtctatt tgaaacgagg ggaacggcac 1020

acagtctgtt acatacacac acggcaaaaa aacacacaca cgtgtcccac ccgttcatcc 1080

ttgtgatggg acaaaaacac gcatgttata agttccatag tacaaaacaa aaaatacggc 1140

attggtagca tataagtgag tcatggaata aaatgcattt ctgggttgcc aaaaggttta 1200

acaacaggca gttgatatat acaaaagagt aggtttttct tctgccacta cacagtacaa 1260

gtcactgagg atgaacatca ggggaggaaa ggtaacatgc ac 1302

<210> 1007
<211> 1071
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301715_G1, chr9:23262237..23263307, Cluster 6

<400> 1007
tttgaatgtt ttgatgcccc cctactacac cgtctctccc agcccttga catgttttcc 60

gatacatagg acggcatcaa attaattgct gtcttaacct ctccatatgc agagcatctg 120

atgaattaga aaaaaagacc gttctacctt ttttttcaca tgcccttta aaaaagccaa 180

ccttaagtat cacgccatct agctttttg ttgtgtagtt cgtgaagatg gttttgagca 240

atatcaagac ccttccataa tattagctct cgtcttcttg tcgttctagt ttaaagtttc 300

attgtttttc tatatatgcg tgtgtgtgtg tgtttccact gcttagccac acaaaccaaa 360

cttaaatatt ttgtgttatc atcatcttct tcatccataa ctacaaggct tttgttttag 420

ctatcctgtg ccgtcgtctc gattctttct ccttgtgcga ttgaaagctc agcgtgggtg 480

ggttggtaga ctagctagtc gggacgtaca agaggttacg atgattatta attagccaat 540

gtttttaagc tgcggcatct tcgtctagct tgccctagct agctagggca tatataggcg 600

cgtagtgttt ttccctctgg tcttctctcc cttttcttct tcccactcgc aatggagtcg 660

cagtgccaag tcccaagcag cagctggttc gagaggcaga gacgacacga cgggatcgcc 720

agtgcaagag gaagctagca cgcagatcgt ggtctggggt tctgatcatg agcaggcacg 780

tagctagacg ggagaaaagg acgcggcagc cgccgctgat cgtcgacaaa agtcccgtcg 840

ctgtttgttt ggttttccgt tgtcttttcc gggcctcgcg cgcgtcgttt tcctctcgct 900

gccaccatga cgcctgccgg gcggaccgag ctgaagcgga cctcccagct ccgtccgtcc 960

catcatcgtc gacgacggtc cggggttctc tcatcccgcc tttcgcgcat gccaattcta 1020

acgtgattgt ggggacgctg gaggatcctg tttcgattca cgtcagttag c 1071

<210> 1008
<211> 1116
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_301769_G1, chr9:23450911..23452026, Cluster 6

<400> 1008
tactgctggc tggctggatt ggatacatgt attggtcatg atgattctct cgtcattact 60

ctttagcaca gatgcgctgc agtgatgatc cccagatcca ctgctgttgc ctgtgttgcc 120

atctgctctg atgaccctgt tcacccctgc cttttcttct cgtgttcacc ttgtctcctc 180

tctctctctc tctctgtgtg tgtgtgtgtg tgttctgcac cgcaggaagg gcatacctag 240

tggatgctca ttgccggaaa agtgcctgac aaacctggcg aagggtccaa caaagacctg 300

ggcaccacgt tggacatgga aaggggtcct attctgtgaa tggagtgctg aacggctgat 360

gagtgatgag gggcgatgat gctcaacctt ttctggattg catggcactg aacaatgaag 420

gcagctacga gtgtctaatt agagctaacc ctctctcctc ttgaagctta ttttaatcac 480

ccctttttgt ttgtggttct gcctaggata gtcattcaga gatgtgacaa ccagcacagt 540

tccacttaca ttgagatgac taagttgcgc tgcaagagaa atgtgaagtc gttttgcatg 600

attgaataag ggtgatgctg agcccttctt ttataggtta tgttatcatg ctttatgttt 660

tatccttttg ttttatacta actcttgagt gactatgatg gttcaaattt ccattagaga 720

gctgtgcact aaaggagatg tcctccatct tgatttgaga tcttctgagc tggtactgca 780

gatacagtcc aaacaaaaag ctattctgtc tccatttgtt gtgtaactag gatggcttgt 840

acctcactag tcactacctc catctcgaaa ggaatgcaat tttgtctatg caccctgaca 900

agcattcgtt ttgggggcag tggtaagtac aagtaaccag ttatgcggcc atgggagaga 960

cagaaagaga gagagagaga gaggttacat tgtgcttcca ctataaattg cacttgctat 1020

gatgataatg gttgaatctg agccactcaa gtgacctttt tcctcctagt accactgtct 1080

gaatactcct gccccttac ccccaattcc catggt 1116

<210> 1009
<211> 1246
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301770_G1, chr9:23452083..23453328, Cluster 6

<400> 1009
tgaattggtt aaagctttta ttctgttttg tactcgtgtg ctcatatctg cttgttcttt 60

tgtgctactt tgcaagtcct gttgatgata tgccctgatt ttgggctgtt cttcatttgc 120

cttgctgctg gatttgaacc tgcgcccttg gttaatgttt gtaggactga tatgctaagt 180

tagttccatg tcataagttc ctacctaagt gccgctcaat aacgatgaaa taaaattcca 240

atgtgaggca atgatctgta tcatggttga cacaagcacc tttgagcaat caaggctgct 300

atgttgttaa ccttgctctt agaggacatg gaaatggact cgaatatgtg aaatggactg 360

ctgacgaagg gcgatgatgc tcaacctttt cggagtcgca cgccattgag caaccaaggc 420

agctgcgtgt ctggtagcct atttaataat ccctttttgt ttgtggttct gcctaggatg 480

gtcacctgga tggatatatg acaaccagga cagttccact cacaatagga tgagtagatt 540

gggcagaaag agaagggagg gcctgatttc tatgattgag caaaggagat gctgagctga 600

gcccctttcg tatggtttat gcagcggtgc tttatggctc tgtttttgt ttcataccgc 660

gcttgagtgg ctaagattgt tctgctttcc attacagagc ttctgcactc taccatcttc 720

tgagctgatg atacctggga tattctttga cgtttgctgc tttactacga tggcccatgc 780

cttactagaa ggtgattcta tatctgtttg ctgctttaac taggatgcct tgcaccttag 840

agcatctcta gcagtcacca aaagaaaaga caggttgtgc atccttgaca acaaattcac 900

ctccccatga tagggagtag cggtcatccg tgtatctctg cgtgtttttt ccaagcgttg 960

atagattcgg gagttgtagc aagttctttt tttttcttgt tcatgtcaga ttgagtggtt 1020

tgtttttttt tcttacacaa ttgccattgt gctgataatg gttagatttg agtcactcaa 1080

gttacctcct tttcttctag tacgactgca cccctcgctc cggcggtttg tattgccgct 1140

gatccagtta atgtgctctt tgagtcggtt catactttct attccgtttt gtatcttgta 1200

ctgtgtcgtc ttgttctttt gtgctctttt ccatgtcctg ttggcg 1246

<210> 1010
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_302132_G1, chr9:26708297..26709392, Cluster 6

<400> 1010
tcaagtctaa acagagaacc agcaagcttt ataccgtggc tttattatgg cccggccggc 60

cggttgtctg cacatacatg ctccgtcctc tctgccatcc tgctaacagt acagtataat 120

gtgaatctgt gatgtgaaga ggccatgtgt gtcactgctg catgcatgag agaaattttt 180

ttgcacctgc agtgccgtcg gtggtcagtt tgtgttttgg tatgcatgca atgcatggcc 240

gcacggcaga gaaaagagag tgtggtacgt cggtggtcag tttgctgctg ataggccggg 300

ctagctagca gagctgtgtg ttggccttgt tgcatcgggg ggaccgatcg agtcagggcc 360

accgagccgg ccagccgatc gtcgttgatg cccgtcacat cgacgacgac gacgacagat 420

ggtgctgcga tgcattccat tatatttggg cagctaggga tcggatcaga tcaaggggg 480

acagggtagg ggccaagcca tgccttcaaa gctaacctct cgatcgcacc cattctcatt 540

tccaatgtcg ttaaaaagat gcctctttct gactcagtta tcatgcatac agtcaccgtc 600

gcgtcgcatc tttattatat atgcatggac taacgagtgt tgtttctgct tgttaacgtt 660

aggtaaactt tctttttttt tagccaggtt catcgttcga tcggcacttt ttaacatata 720

tatattgccc agtgtgagat gcatgcatgc atggaggcaa agctatagct agctaggttt 780

ctcttccctt gttagcagca caagagtgac gaaattgttc acacgtagta cgtgacagag 840

agcctgcagg ttggtaagaa actaaaaaga cacggcaaga gagatcgagt atacgttctt 900

cttataataa taagaggtaa catacaaaca cacagctaga tacttaagta gctactgtat 960

gtaggaaaat taagcagcca gcagctggac gccaaaaccc ttttaattag tttaatatgt 1020

agtcgtctat ccatatatat cgatctaaag ttgtaaaaag atatatagat gcttgacgac 1080

gttactagtt agatcc 1096

<210> 1011
<211> 1339
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_308690_G1, chr9:69410248..69411586, Cluster 6

<400> 1011
aggtgaagta ggctacgcat gattagctgg caatgcatag gtggggatta gcacggaaag 60

caactcatat aatagcaggt ttttggatac attctttatg aggttttaag gctatactga 120

gctgggctgg tttggcccag tgttacataa tgtatacaac gaatgtcaaa tgttttcttt 180

cgcaacacta tgtatatgat acatgttctg atattctttc tgtacatgtt acagtttgtt 240

tctttggaca gtctatacga gtatacatgt gaattctata gtctcattaa gtgaaggagc 300

ttggcctaaa cccataagag gctaatcatt aaagaacaag gctatctcat tttttcaagc 360

caaatggctg caactgtaca agttggtagc gcaacagttc atggcttatg aagaagcccc 420

accactttga ccggtagtgc aaccaaaatc gttaaattgt tgtctgcgtg tgatcaggtt 480

gtcaacactt ttgctcacgg tccaatctaa aaaaaccctt ataaattctt actaatgtga 540

ttccttcact ccacctattg aatgcctaag ctatttttga agtaataggt caatcaaatc 600

tgtatggtgc ttgttttgct attacttcta tctcttaaca tctttctcga aattctatgt 660

aggctaatgc gcggcaatat ggacctgagg agctcatgag catgaatcga atgagggtta 720

ttatgccaga tttaccttat attgtttcct tgtgaatggt agcatagaat tttttgcata 780

attactagaa atttaatgca aatgttttat agaatatttc aaatgcttga agcatttgaa 840

catctacatt agttgtcatt ctattttatt caatcactaa attatggcca ttcgtgctct 900

tcaactattt atacagctta acatttgctt caaacaatgg cttgtaatgt tctcttttga 960

agtatgagat gcaagagctc attaaccact tccacttatg aagagatcag tctgaaatca 1020

acatagtatc tttagctaca ttgtgaaatg ggttgcatct tcggtcgggc ggctgcgtcg 1080

tccctgctag cgcccaagaa gtgggggcaa ggagaggtct tctctgcagc ccaattttta 1140

ctgttttcta ctgtttttgt ctggaaactt cagccaaatt gcgtcatctt gactacctcc 1200

ccagctaacc aagatataac aacgacagat gctatcaagc ttgttattag ggatgttcat 1260

cattcaggcg ctatccaatc tctgatgcta tgtgctatgt aataatggca taatcccatc 1320

ggccgcttag taagctagc 1339

<210> 1012
<211> 1038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313485_G1, chr9:98500765..98501802, Cluster 6

<400> 1012
agaccccaat atagccgttt cgccgaacat aaaaaagtaa gaataaagcc gttccattcc 60

tcaccgatcc tcgatcaaac acaccattaa agctagcgat gatcgatgcc atgtagtatg 120

cgcctggatg tcgatgtagt agatggccca tcgaaagcaa ccccccggga cgacatacct 180

aaaaccggtc gcgtttatca cgcactgaga gcatgcggaa aaaggtggag gagggatctc 240

gaccgacctc cgctgatcac accccgtggc ccgtgtgcgt cggcgtcggc gccggctgaa 300

tctgcttctc caccgagata agcaaagcat atacttatat atattgcgca ggaccgatca 360

tcaacctcac tcagccggcc ggtccggtcc ggtcggcttt agtttttgga tcgggcaggt 420

cgacgaggtt atcctcctcc acaaagcagg cacgcgcgcg cgaccatcac cgaactctct 480

cgccgtctcg ccacgacgac gccacggggg cggatagcag gtgtgtgacc ggccggacgc 540

aaagtggaaa ggcgtgcgcg gcatctttgc ctcagctctt tttctttatt gctagtactt 600

ctctctgtcg ttctgctttg gtcattgggt aattatcatg tcatgtcatg gcaaaccgac 660

ctacccaaga cacgtcaacg accaagtggt ggctgaataa tgtatcataa aatattcata 720

ctatactcag ctgccgctct tctcagggat ctgctgtata tacaacagca aactcttcat 780

gggcgcgtgg attttagtct tcttccggac gatcgaccca ccgctattat gtgtgtggag 840

tgttaacaaa gctgttacct ctgtaaccta cctggaagat aggaatggtt agctgaaaga 900

taggaatggt tagccggata gatacgtaca gttagcttca acaccggata actattcaca 960

gttttatgta aatccttttg tgtattctaa tctatataat gagtgctggc cgccctgatt 1020

agtgcgagcc attctgta 1038

<210> 1013
<211> 1094
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315238_G1, chr9:107405094..107406187, Cluster 6

<400> 1013
gttcagttca cattttatgt gtactcgtca gtatataaga acaacctagc tagctataga 60

cagaaaacat gtcttcaccg tgtagagccg agctgaggag gctgctgccg gtggtccgat 120

agacttgacg tgacctaatt accacggtcc acggttacac aacagagcct acacaggacc 180

gctcccaact ctgcggctcc gatcgagtac gaggtgaagg accatgctca ggccacgtac 240

cgggtgtcga aacaaggtcc cgcgctctcg ccgtcgtcgc tagctcctcg cgcacaacca 300

cggcgaccac ctgctgctgc tgccggcgcc aggccaccac acgcactcag atttcagccc 360

acggaaacga acgcacaaag gtgtcgtgcg cgtgcgcagg ctctcagccc gtggccgtgg 420

gtgattggga cgttcacctc aggtcggagg aggtcgctga aggaacggtg cgggggagat 480

ccggcgccgt acgctggtgg gatccggcgc cgtacgcatt gatggagcct tccatttact 540

gcagcctcgc cgccgcagcg gatggcccag catgtcctgc ggcccagtgg ccccgcccgg 600

cccggcagcg gctggagctg gatgcacttt gatgatccca cgtggctgag attcgggggg 660

acggtcggat ttttactttt tgttactccc gtcccgtcac cgcgcgctcc gtccgcaggg 720

cctggccggc tgacctaggg aaccgcctcg cgcgggccag agctcagaac ggcctgatct 780

cgatcagacg gctccaacca ggacgagtcc tgtcgtgtct ctgtggtggt gtgttgcttc 840

tatcttagtt gtgcaaagat ttcagtgtta caaattacaa tgcgcgaagc aacagggtcc 900

gttttgctac tttagtgcag agacttaagt ttagttagtg gattaaaatt tagtctctac 960

tctatttggt tttagagact aaaagtattc ataacgtatt aaatgaatca taagagaact 1020

aaaataccac ttaacactat tccgtcatta atacaactga aataaaggag agataaaaag 1080

taaaattaat ataa 1094

<210> 1014
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315578_G1, chr9:109602047..109603062, Cluster 6

<400> 1014
tggcggctga ggaccgcctg tgagagggcc aaaagaacgc tctccaccgc ctagaccacc 60

ggcgcacgcg cagacgcgtc tttggagccg ccaccaagaa tcagatcgcc atgaatccca 120

tcaacattgt cttcggtaag tacaacaaca tcaatctttc gcgaggcata atacaaacgc 180

cacctccttg atcccgcccg cctattcctc cctagatctc ctatccatcg ctgctaccct 240

gcccagattt atacttcctg ggatggatct gtgtcattga gcaaacatgt ctacgcttat 300

cagtggaaga atacgtttat gctattgttc attattttaa tattggatgg attaaaatat 360

attatgttgc attcggggct gatgatgatg aaggcaattt ctgtttattt ggtatgaata 420

acaatagtgt tttcaggcta atcatcctga ttttcttcac tctacatggt gattcaatgc 480

actagctatt ctatggtttg acgttcaaaa tactggaata tgcattgtaa tatgttggac 540

tgaattttat tttgcctttg attatgcgtt ctgcaattgt caattatgtc aacacaaggt 600

gttatgtttt tctgacactc tatgtacctc aaggtgatag ctgaacaact ttctgaaatg 660

catattgatt tacttggtcc aggccatttt taggactaat tagatcgtgc ctttgaaggt 720

gtagttctcc atccattagc ataactgttg ccttgaattg taatcaatca caggtggtgc 780

ctcacagaca agccattttc acatttatct ccacctatac atggatgttt cttttcgatt 840

cacatttgca tatttcatta cggagatggt ggccactctc tgaaaatgca catcagcatg 900

aagaagggtc tgtcatatga agacattgca gatgaggatg agaaaacaat gtgtttttta 960

aacaattagt aacaacatgt tgtaacttaa cttgagcatg tgctcatgta atgctc 1016

<210> 1015
<211> 1345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320180_G1, chr9:134287176..134288520, Cluster 6

<400> 1015
tatcttagct tgacctaaca acttatatta catatttggg cttgtaaacc atctcatatt 60

taaaagttat caactataaa tctgaaatct ctttaaactc tatagtttta aaatatagtt 120

tatcttaatc cgacgttcta tgaaaaatta tgatttttt ttggccaaaa catactagca 180

ctgccacagt tcatatatag ctttatcctg ttggaagcac gaaccggcgc agtcggatgt 240

gataccatta ccagttgaat gaagcaacgg acagtggtat acctaccacg tactgccggc 300

tttattctaa ccagcagtaa aggtctaaga gtgattatgt attttggcgt agtgcattct 360

tgctttctag ctacatgtca ttttattttg aaatatctac gctagctatc ggcggaccga 420

gttgtgcaat gtgtcctcgc agacagatta ttcatcctga ttgtctatta agacacccac 480

tcttgctgtc aatcaatcaa ccaatgtaaa aatcatcatc cccttccagt tccagaggaa 540

gtatatatta tgcgcttgag cttttcatcc acatcttaaa atttctgaag cgatatccat 600

ccatttagaa tggagcgcgc gccgctgagc ggagcccccg gctttttttt ttggcttgtc 660

gcgtttgctg tgtggcatgg ggaacgccgg ccggccttcc tatatatctc cttttgttc 720

cgctcgatct ccattctttt ttcaccagat tttttgcctg aattctcgtg tggacagcgc 780

ttggtggctt ccacaaagga aagcgaggcc taaggcaatg atatccccgt atagcctttg 840

agctagctca tatccacaat ccactgtcct atgcgatctc agctagccca tgtggagagc 900

accaacaaca aaaccagcta gtacgtacta gcagtagcag cagacagcag tccacacgca 960

tgcaggccat aaagcctggt tagcgttagc gcgttctgct gctctgcctc gtcccaaaat 1020

cctgcgccta cagatccgtt catgcatgca tgcatgctta catttcgtgg tgcttgtgtt 1080

gtgtgtgtgt gtgcgagaag ggtgtagtag gttgcttcat ttgatgtctt tcaatggctc 1140

atttactgta cacagtggat tgtgtgcaag tgcctgccaa atcgacgacg acgacgacgt 1200

acgtacgtac ctacattaca tgcatggcat ggcctgccac tatggacctg tacttactgt 1260

acacatatac tgctgttaca agttggtatg gtatgattta cttccatgaa tttggatgaa 1320

ttcaagaata ttttttttag gtcca 1345

<210> 1016
<211> 1057
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320548_G1, chr9:135887542..135888598, Cluster 6

<400> 1016
ccttatatta ggggtagttg gaattgaaga agacttttaa atgactcatc ttaaacatga 60

gtgagttagt tttaaaatgc catgggggca ggtatgagct ggctggaatt aaagaggctc 120

ataggtggta agacatgaga tctttttgac aacatggcag agctagctag ctagcaaaag 180

ccacaagttc caaagatgaa aggcagcgag agtagtgtgt gtgtgtgtga gagagaaagc 240

atggtgctgg tcctgcactc ctgctcctgc aaggagccaa ggactcctgt tcgcagctgt 300

gtccagatct ggattgatgc aatggtatga caatactgaa aggcactcac tcactcactc 360

attcacagat agatagattc ctgcttacca ggacagagca aaaacacatg aaagaatgga 420

acgcatgctc gtactcctat atagtagcat gtactatatg tttgtagacc agtagcagat 480

ggtcgctgtg gtcaggtaga caaactgtac atgtgaaaaa gcaggcaaat gtacgtagat 540

agtgggggct gctagctagc ttgtagtata tatatatata ttgcattgtg tccacgacag 600

cagctaaaaa gcttgcgaaa tgcatgcaaa cggaacactg cagtgaccta gcgacggctt 660

ttgtctctgt gccccgctgg ctgcagctca gggtccagat caaaaggtct tgcagctgca 720

ggttgcatca tgttcacggg agttgttcct tagtggcgtg ctctttgcct actgtgcttg 780

tgtgtagtag agccatgcta gacctcgaca accagatcag cacgcgtgcg gttgtgaccg 840

gctgagacat cggtaagagg atcacggcga tccgagagct agcgattaaa ctaaagacat 900

atacctagga atacataggt agaggaaaaa aaccctatta tgtctggttc ggtacaagag 960

aatggaaagt gtccataggg gagaaaatct attgctattc aattttgtat aacaagatat 1020

ttccttcctc atgtattccc ttcaattact gtatcat 1057

<210> 1017
<211> 1214
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320809_G1, chr9:137261996..137263209, Cluster 6

<400> 1017
actagatgtg gcaccgccta aaagttattg cctaagaggc ccttgtggct acgactaccg 60

atactctttg aacgaggaag atgaaggagg tcacccaaaa ggctgaggag gaagattgcc 120

cgcctacatt gctgccaccc aagcttaggt ggaggttgag gaggtctagg acatgcggtg 180

gcactggagc aagaggcagt gttaggacat agatggtaga gatgggtgtg aatatcctaa 240

taaaaattag cctacaagtt cataattatc attatagcaa aattgattag aaataaagtt 300

ggtacgaaag tgtacacttg ctctagttct actttatgca aacccccta ataattctgc 360

ttgcttgatc tttagaatat attgaacaaa gtaaactact aactaacaag agatattaag 420

aaatgatgaa aatattaagt ataatctgcg caatgtagtt aagcaagtat tatgcaagaa 480

gtagatgtgt gtaattgcaa gagtaagaag tgcaaatcac ctagagcaag aaatgacata 540

agatgtatcc ctgctagatg gttcatatgc taattgatat cacacgccaa acccataatg 600

atggcaccat aagaaccact ctagaaaggc actccagtaa ctcacgattt tactatagtc 660

gctattcgcg aatctcccat ggagaatgag cataaaagcc cctaaaaaca atgatcgaag 720

ctgatgacaa acttcaatag acgctcaatg atcccaaaaa ctttgaacat ttagatgata 780

ataattacca agagtaaaaa gagtagtatc aacccaagtt gttcaactaa caccataaga 840

ttcaacattt acatgtgatg cactaggagc tctctagtct cactcaaatg ttgaagtaca 900

agatgcaagt tagagtgtgt ttctctagcc ctaagaggtg ttctaaagtg tgagtgaagt 960

gatgctagac aaggctggcc aagggatcta ttataggccc aactcaaaat tcgactattc 1020

ctcttggtgg actaaaatta gggatatcat acatgtctag tgcaccaatg tttccaacac 1080

taggtacgtg gatatggtat cgatggctat aaactagcca ttaagcttgt cagatattcg 1140

gtgcactcac cagaaatagc atcagataca ttcgacgctc attaggccga agtgtacatt 1200

ttacatgatt tttg 1214

<210> 1018
<211> 1345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320947_G1, chr9:137793579..137794923, Cluster 6

<400> 1018
agtgaccgcc gagaggggtc tcgggcgaat cgtggtttat accttattgt cctcggggaa 60

tgtgtgtgac ggcaaactcg gggttaatcg tgtttaggaa cgtaatccag atacctctaa 120

ttacgataac cgacacaaac aattgaaaaa tagcaataat atattttcat tatattaatt 180

acctttttt tcaaaatccc taatttgttt agtgatactt ttcccataca agtcatcgat 240

gccaaaaaga agcccgatat tgatagtggg tattgaagaa atatatatga agttgtcccg 300

tcgtatcatc attggttgtt tatacaaacc tatacaccga tcgtcagcaa tgaattaaac 360

tatacagtat accgtccaat ttacctcatc caatttgaca ttaaccaacc catccgctga 420

cgttcttgca agtccaatca ttgcagttgc agcaggggg caatgcgaag cttaggactt 480

cgacaaccat ccagcatcca aaaacgcccg tacgcggcga taacatacag ccgggccaac 540

gccaatggta acgtctgctc ccgcgtagcc tggtcctcac caaaatttta aaacatgtag 600

ctactgtacc gcattatttt aggcccggcc atcgccgtcg ccgattgctt gcaccgcatg 660

aacagctaac tctttggccg ccccacacgc atgcctgcga tcgatagacg atgaactctc 720

gtcgggagga ggagatggtc caaacgatga aacgatcgac gatctcgatg gcattaggcg 780

tgaactgctg gtgtctgtac ttgttcagtt tcacggtggt gcggtcgatg ccggccggtc 840

atgtgcactc tcggtcagca tcgacggcga cttctcgctc gtgccgcgcg ccagccatgc 900

atatacgttg tcctgatctg gccagggaca agggcgtgca tgggcggttg cgctggaggg 960

gagggagggg ctggccaagc aaagtccggg gaactgaatg tgaatgacat cggctaccaa 1020

atttagagac cgctattgat tttgctctgc tatatatcga gtatgcaatg catccatctt 1080

ttttttagc ctcccgtcgt tgttcgtact ttcgtacgtt gcgaaccaat tgcattgcat 1140

tatcattcct tcccggcgcg cggagtagat agatgtgtcc aattgtgaac taaggggtta 1200

cgcgtttgta tagggattat gcaaatcttt caacaagccg tagtatcaga agaagtaaga 1260

atctaacaag ataaaaacgg aaacttttcg ttcgatctcc cacttgtaaa aaaaggaaag 1320

gttagccaga aaagcgttag attat 1345

<210> 1019
<211> 1278
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321024_G1, chr9:138247695..138248972, Cluster 6

<400> 1019
tccttggatc gcaatacacg tgcggaggat gagctggatt ctcgcgtttt tcatatttgc 60

ccatatatga tatgagatga ggcttcgcgt gcaccgacgc aggcttagct agcgcgcccc 120

gttcgttggt gttgtgggct gcaagtttat taacgatttt aaatatatgc aaatgcggtt 180

gttacgttac gattttaaat atatgcgtgc ttccgtctac taagccggtc agtagtgaac 240

cggccatgta ccttgtcact acgctatctg tacgcgcacg gccaccacca gatccaactt 300

acccgagccc cccgaacagt ctccgatccg tcgcgctcgc acggcacgta catcatgtca 360

ccgcaaccgg cggagttcgg ctggcgtttt ctgtccggcc gggtagaagg aagaaaaaaa 420

aacgcggtgc acctcattca attgctgcat ggatccagct cgccggcctt gacttcgctg 480

atgtggctac gcgacggcgg cggcgaaatt ttgcccccca cccctctgtc cggcggcgtt 540

gggccgtcga ttcgtgggcg ggtttgctgt gtatgtgtga cgacgtgccg gcggccgtcg 600

tactagtcaa attggagctc tttgcattgt gtgtgttgtt aggtgctacg ttccacctac 660

caaggccaat tctgcttacg ggcttggttc atagcgtttt atcagtttca tagctcacag 720

agctttcaga aagaaagaaa aaaaaaggtg catcttgttt atatcactac aaaacataca 780

tatgatgtag tgatgtacca taccaacaaa tggtggaacc cagtgataaa aaatggcaaa 840

aaagaggaga gggtgtcctt tcagggtaac ctttcccccc tttttctccc accagaagtt 900

tgattacaca gtacggttca ttggtctcat gcaacaattg actaccttat ttttttcaaa 960

gtatttccat tttttcaaaa aaaaaaaact atttttttctt gaaaaaacaa aaatcattta 1020

aaaaataggt taccaaacta gcctttaatg ttttttttttc ctgacgtgta cgtgaggact 1080

gggggaaata ttctgctcga cctgcaagct ccagagacaa agaaaactta gtgcttgctt 1140

ggaaacttaa cggggtgttt ggtttgagga ttcacttcat ccaaaataaa gtggtgcatc 1200

atatgtccat ttcttaaatt tggtagaatg attcatatta gtattaacta actaattatg 1260

agaaatgaga tggtgata 1278

<210> 1020
<211> 1048
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321516_G1, chr9:140778117..140779164, Cluster 6

<400> 1020
cggtccggcg gaaattgtcg cctaccaagt accaaccaca cgctcatgcg cgctgtggtg 60

ccacgggcgc ttgtggcccg ctgccgtgta gtttctcgtg acaggacacg accaacgcac 120

accagtcatc aggtcgacgg tgactcgcac gaatgcccca gcctaatgag ccctcgtctc 180

taaccacaca ctgacaatct ggtcttgcgt ccacgcgcac tggtgctcca cgcgcaacgc 240

ctcggagccg ctccccaacc acgttcccaa agcctatgtg ccgctacccc gctccccccg 300

cctcagcgcc gagaatccgc gcctcccaag ccccacggtc ctgttctcgg atggtgctcc 360

cgtcctatac accgctaccc acgctccccc ggtccccccct cccttggcac cgagtcgtct 420

ggccgtgccg agaatccgca cgcgcccacg gctctgttct cccatttgga aacaccgact 480

ttctcgtttt acgctgttac ccgtgaattt gcaattagag atcgacgcca tttggcaatt 540

tgagatcgat gccgatttga caatgtcgag cgcaccttcc aaatcacgtt gacatctgcg 600

catgccaaat gtgccagtca tcccccaccc ccaatatata ccaccactgt ctcatgcctc 660

tttgcgtttt cagtccaagg atttgaactt ctagcacttg ctcttgcgac gaaagtcaag 720

gttagagatt tcggaacatt gcattctcat atctatagca gttttatttg tgtatgccta 780

ctgtttggtt tatatctcta atagtgccta ctgtttggtt tatatctaga acagattctt 840

agcttcttat attttgtacc agcgctctgt tgggttgtgt attgcttaca ttgtatatgc 900

ttacctgttg gttagtgtta tacatgtatt agcattctat ttgcctactc aatttaaagc 960

atttgaatta aaaaactaaa gaaattcaag aaaaaaaact agattcacca tataattaga 1020

tggggatatt tccattcttt cacccaca 1048

<210> 1021
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321826_G1, chr9:142638511..142639618, Cluster 6

<400> 1021
actgtaacag agtttaatcc tggtagatgc acgaaaagac gctccaaagg aagaaattta 60

ccatgaatct caatctcgaa aatcctccat gtagcgtcac agcaagaaag atttaataca 120

ttcagcaatt tcatcgatag catcagagct agtcttttct tgatctactg tacagccacc 180

cttttgtagg ttctggagca aacatgactg acgattcttg aacctcagtc aaatcacaaa 240

cttgcataga tacttgatca gtcaggtgtg gttacagatc tcgactcagt cccaaactcc 300

taattataat ttgtttgtgg tattgtttag catataatat acgttaaaca tagctttaga 360

tttttatttt tttcgatttt tttaataaga taagcatgtc aaactaggga caacaaccct 420

gctttattta tggatttaac atatgcacaa attactttaa tgatcttttt ttttcaaaac 480

aggcatctaa caggtggaca atattacatc taacagccga acctatttag caataacaat 540

cctcagaatg attcttgtgc tagttagaac taatcacaga caacattgtt gtctcgctga 600

gcaggtgaac tcacgaaaaa ggtgcatgtc agcccggcag ccaagcatat cacgaaaaca 660

tataacctca tttaaccgac aaacttttta aactgaacca actaattact aatccatctt 720

tcccacatag atatggatta gtatcatgtg ataaccatta caaaacgata ggaagttttc 780

aacgcctcga attgtctcac aaatagtaac gaagtgtcac tggaggtggc tttttcgaac 840

cgtacccaca agcttggcaa gctgtagatc ccgacggtgc tttctgagag acgacccgac 900

aacacaattc ggagaagaag acctcctgaa gacgggcgac gacagcgtct gaaccagatc 960

ctgcttgcag cggcccgagc tgggagttcg agcgaggacg gtggcggtgg cagatccagg 1020

acgccgctgc aaccctccgt catcgtctca tcgacggggt atggacgttg ccgaagctcc 1080

cgcctgcagt tgctcgaata atctagca 1108

<210> 1022
<211> 1188
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321933_G1, chr9:142999111..143000298, Cluster 6

<400> 1022
gcaaagcaat gtgcttcgtt tctcgattcc gacatctgag cagtagagag gtgcactaga 60

agggaaggca aatgctgtcg cgtgaaatac tctagcgtca gaaaaacggt tccgagggcg 120

gaggaaacgg aatacgacaa aaatgaaaga aaaatggagg ataacccatg gtgggtgtct 180

ggatcaaaga ccaccattta gcgcgtgttt gttagctgat tacccgagaa aaggttcgct 240

ccatccagcc agaccctccg tgtcatggct gtttgttcta tggttcgctc acgacgaata 300

cgcacccgcc tacggagcac gccaattcgg ggtttactaa accaaacaga aaaaagaagc 360

ctgattgtga tttcgcgttg tacacggcag agaacacagc aaacgcctgc tgttttctca 420

cctgccagaa tatctctgca aagtcgggga gaagagaagc tacagcagca tgcatccaaa 480

ccccaaaccg ctgtacagtt tcgctttggc tttgagtcgt tgctgctgct gtgaggttca 540

gaatctgctc aattcgatgc gatgttcgca ggtccagtca gacttcggcg aggtggggaa 600

aaaaaaggca aaggatgcta aaagagctca ttcagtttca tctaccgtct tttttcagta 660

tggtcttagg aaggtgatgg agtcatccta agctgccgca gtaacagaag ccacggcacc 720

agaaaagttg aacaaccaat cgccttcacc catatatgaa ttatgatgtc actgcatcag 780

atctgtcatt tgcgttctca aatttgttta ttcggttaaa ctcatcatgg attataaccc 840

aagggtttag gaatttttaa actatgaaag acattgatac aatccataac tcattatgta 900

tgaaacaaat ccataaaaat attgcacaag tttatattag aatacatgga tcaaaataac 960

aactagatta aaagatacat ggattagatg atggatttaa tcccaacata gaattgggtg 1020

tgaggtatag aatcactcaa tccatatcca cattaaattc atggtgatat tccatctatt 1080

gtaatcgagc aaggcctaac attagcgacg cagaaaggaa tggattgtca taccataaca 1140

caaccacggg aataagcaca tctacgacgt ccgattaagc cccagatc 1188

<210> 1023
<211> 1352
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322069_G1, chr9:143900482..143901833, Cluster 6

<400> 1023
gtctattcgc agtgcaggtt actctatatc cttactctat atctctattt atagtctagt 60

cattaagatt cattaattta tattccaatc ctccacactc catgcttgat gctacatcaa 120

actctgaatc cctcgtattt ccattagtcg ggcaagaaga agaagaaagc agcagcagct 180

ttcgatgtag ccggattagg gactcagctc gttgtctctc catcgttggc aacttggtcc 240

gcaatctcat tggcaccacg agatcgacta gcaattccat tggctggcac gttctggcag 300

ttgtgttatt agtctatact aactctatac acatcgcagc caatccggac atagaccata 360

acaaaaatga ttaagagatt catatacgtc gttagcatac cggcccataa ataaaaccga 420

caaaggcgta ggcttaaact agagcgcatg attagctcgg ggcatgcgca ctcactggca 480

aaaccttaga gggttgtatg caaccagaca agcagaatga tccatggacc cgatgccctc 540

ccacgcccgc agtaaagtaa ccctggttct aaactatctt cgattcggtt tgtctcgacg 600

acgaccgcct cacctatga gcggtgaccg gcggcaccga tcgacgaaag gagaagccgg 660

ccgggcgact ctctgtaaag taagtgtggt cgctttacaa tgttggatca tgcgatggct 720

accaggggat aaatttaggg ttcgttgcag tgcaggagta agctaaggac caatttagca 780

acctgcagtg cgctttatat ctaactcgtg cccacagtca ggcacgagca cgacgcaagc 840

aagttgcccc ggccaaaaac tattccccgg ccgagagatg ctaagctagc tagtgagtag 900

tgatgcaact tagcttgact agtgacgacg ctgactgctt gtgcttgagc agtagcaatg 960

ctcatcccag gcccacatat gatgaacata catacagaga agctatgaat atgatggacc 1020

agtatggcaa aacccgaccg agggatcaag tagaaggttc aagaaacatt atgtttcagg 1080

aggaaaaaat atattatacc ttgaaaccgt ccaagatatg gaaacccgaa acacggccag 1140

caaaaagtag ctgattagcc aagctaggca cttgaacatt atgttacacc agctagactg 1200

cgaccgattt caagattaca aatccctgat gtggtaacga ctgtagcaag ttgcaccgct 1260

gattgcgatc gaattcgttt tcttggaacg gccaacccaa atcgtgttgt tgctcaggca 1320

gcaattgacc tccaccagtg caacaactgg tt 1352

<210> 1024
<211> 1169
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322558_G1, chr9:146341053..146342221, Cluster 6

<400> 1024
gcatgcatgc taaccatgaa tgcaagcagc aaacacgccg gtcggtcggg ccccgtcgcc 60

cgccggccag acgccaccgc cgtccccgtc gtggggccga cgtacgtacg ggccgggggc 120

aacatgtgtc cgcgcgcccg cctttttac agtttccgtt ccgacgtgtc gaggaagaag 180

ggaaaattca ccggcgtgcg tgtgcagtgc atgcaaggac ggatgcatgt aaatatcaaa 240

atgcctgcct gcgtgcgtga gccggccggc ggttgaccga tggatggaga tggagccgag 300

ggcgcgaggc gaggagacgg tggtgttggc cgcaagcgcc gcgtcgcctt gcgcatggcg 360

gaatcccggg gccggggccg aggacgatga tgagacgacg gagactggga gcggtggccg 420

ggcgcgcgct ggcgctgagg cgcggtgcgt cgcccattgc ggttggtttt gtctccgttc 480

tgcctccttt gtttggggaa gtcttggcaa gatccactgg gttcgtcgcg tctatcgtcg 540

acccatcatg tcgcggcagc gcggttggcc ctggctagtg ggcgggcagt ggctgctggc 600

tgcccgtgcg ctgcggtgac gcgccggcag agcgccacca tgcgtggtgg cgtggcctgg 660

tgtgagtgga ggtggaggtg gagccccatg tgatttgctc gaccggtcca gggactggag 720

acggatcgat tgcttgattg acgggtttgg tgggttcagt tcagtggggg ccggctttcc 780

aacatgtctg ccgcgcgcaa tttcatgcgc gggtgctttc actgattatt ccacttcatt 840

ttgatttgta gatagatctt cttgtggaac aaaagactga gatatatact tttatatatt 900

gtccagcacg cagtccatcc gcctagaaag aatacaattc tagacgagtg tgatgtttta 960

gtattttata agtttaacca actatagttt tacaaaatat taatattcat gatgttaaat 1020

aaataccatc agattaatta aaagaaaaat ataataattc attaggagct acacgtatag 1080

ataccactca gtagaaactt agctaaatat acatcatttt cgctagtacg aaacctgtaa 1140

ataatttttt taatggagac agtgtatga 1169

<210> 1025
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323030_G1, chr9:148621405..148622444, Cluster 6

<400> 1025
aatacgtacc gtgataaatg gggcaagaac cgaccttgat ccgattcaaa cccatacaag 60

gcgatcagga tccgcaaagc acacagattt gtactagcta tgaaccacgg cgagcgagca 120

tccagcggcg atcacatcac atgaggccgt cgcaggcagc catggtccct gtccatcgca 180

tcggcaacaa ccaacaagac aacacaaggc tgggcagctt cttccagttc cagttccatt 240

tccagccgca catttatgcg ggaactatgt tgttgcacac actcatcacc gtctttcctg 300

ccatgacaac ttccgtcaca ttagtcgtag cagtagcgac tctgttgagt gcaggttaat 360

ccaagacact tgaaccgaca agtatatata tttatttctt tcctcttccc agctcgtcag 420

caataaagac aattagaccg agttggcaat tcagttccgt caggtattat tctgtgacag 480

gcaccctagg ccaacggacg acggaccgac gagttgtcac attagttcat atctagtcgt 540

agcagtagcg tgtgtgtggg tgtgggcgtc ggggacgacg gaccgagcgt cggagccgga 600

gaaccgcagg agagaaccct aggccgcacc gcaacggcca acggagcaga gcggggaccc 660

gagtccccga ccccgggtgt gtgtggcgca gagccggccc ggtgtctccg catccatcca 720

ggcagcagcg gtggactcgc catgccgggc gaccgcgaca ggacgcggag agagaagctc 780

tccttgcgac cttgccgcgc gcggttccgt tccgttccgt tccgttccgc ctccctccgt 840

ccctcttgtc gcaattactg acgcttggag cttactccac cgcctttact cccgggcttt 900

ttttcacacg gtgatccgtc tctcgccggg gatatcgcgc tccgacggct gcaccggtga 960

ggtgtgagat agctgcgctg ggggtacgta ctggctcctc cacagcgccg gagcagggat 1020

tccgaatctt gcaccgtacc 1040

<210> 1026
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323051_G1, chr9:148675320..148676349, Cluster 6

<400> 1026
gacaaggtca tcctcacgac tgagcagcca gcaacccaaa tatctgttgc aacgtccagc 60

ctaatagatg ttgttctttc tcctcacatg tgatgctcct tccaaatctt cgtcacaact 120

tctgatggat ccttagtggc ctctatggct ctaccaccat gatttcttgg gcattcgaag 180

cctaccttag ttcattgatc acaagtgtac cggcaatgtt gcaggcgctc tctattcttg 240

ccaacttttg ctttgcgtga caacttgatc ccatttcttc cttttcttct tcacagattg 300

aaccgaatga tttgttctag ttggaatgaa ctactagatg ggtctgtgta actagtgtgc 360

ctgtttgccc tatttgttat gaggtcacag attaaagcac tagccaaggg aaaggccata 420

ttcatcagaa ggttcatgat gctctctaca ttcttgcttt ccagtgaaaa taaatcatcc 480

cctccagtca tagttgaata aacctagctt gtttttttctt atccataggt gaacaatgtc 540

attacttcca gttggtaata tcaattgtgt ttagcaaaaa aattaagagg tggctactcg 600

acagatcaat ttgatggtgc attcagtttg cagatacctg tgcacttagt ctaagtgaag 660

tgacaagttg atttgttatt ttcatttcac aacatgactg atagatggta atagcatgtt 720

tttaaatgaa aggctagtga ttgagaaaga gaccatctca attgaacgat ttcaattgga 780

cgattttcaa ttggtgattt tgtagcctaa gccatggaga gggtttcatt agctccagaa 840

gtggatgagg gtatctcaac taaccggtgt agatcaacaa aaaaggtgct aaagtgtggg 900

atcacattga ttcagagcta ctagatagga aagagaaggc ggtctacaaa ttctgtaagc 960

tccacttatc ttctgctaaa ggtaaaggta caactcatct gaataggcac atttctatgt 1020

atttccatgc 1030

<210> 1027
<211> 1252
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323576_G1, chr9:151123979..151125230, Cluster 6

<400> 1027
tgcctgcgcc gccttccggc cggcctacag gaagctggga tccactttcg agcctgccgg 60

tagttgcagc ccggatcgta gtggtgccct gatccagcgg cagcgtcctg cggcacggac 120

agcgacgggc ctctctccct ctcgtgggct cgtggcactg tcagaccacc gccggcgttc 180

ccccggccgg gcccctactg gctactgtgt ccggcaacga ctactactga tgagtcgatc 240

ggcgatctat cgagcctctt gctgctggta accaccgatg agccgagcgt ctccgggtat 300

agtggctgga ctggctgctt ggactgggag tgtgtagttg tttgagctcg tcgtttgacc 360

gacaagacaa gtgaagcaga tttctagggc gcgccaggac agagctcctc attatgtggg 420

cacgtacaag gggtctgcct gcctagggct acgtacgtcg cagacaaaaa gtttgctccc 480

tcctcaaatt gctccgaaaa tcatcgccca gtctcgtcgt cgagacgaca ccttgcattg 540

ggttgggtgg actcactcag agctcggctt tccatcagtc agtcatatac aaacactttc 600

aataataact tccttccaag tccatcagtg ctgctgctgt gcacgcactc ctctcttgaa 660

accgcgagtg cgtgcatgtg gttcagtaaa gtacactttc aataagtgta gtagtatctg 720

gctatggctt gccaatgtct tggaatgaac gggaggtcga ctagtaaacg gccggctaaa 780

cgctagctac gataatccgt gtttctggat agaatgtagg tttcggacgc acctgcactg 840

cacagtccct gatatttcag caggtggtgt tgcatcgcgg tccaaatccc cgcttcaatt 900

gaatttaatt tgtgcacata ccattaccaa tttagatatt aatatgtttg atgtaatcca 960

gaaataatat atcaaaaact gcaacaatat acctctactt ttataaagca tcagttttct 1020

agttttcacg tagtcccttt tgcaaacaaa acattaaact tctttctatg ctaacttgtg 1080

gtcctaacgt gacgtgaaac gttaactcct acgtggaccg tgagaaagca ccaaggggtc 1140

gaattatcgt acttcttttt atgcaatgct cctagatagt actacctctc tagctaaagg 1200

tgtatgagtg tgtgagctag ctataaaaaa tggacatgtc tccttttcaa ct 1252

<210> 1028
<211> 1160
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325501_G1, chr10:5443772..5444931, Cluster 6

<400> 1028
ctgctgttta gatcattatt aaatgtgata gcaagagttg tcttttgaca gtttggttta 60

gtgagaacca tttagattat atagattatg taaaactttt tttctcggac acgtaggaga 120

tctatcgtat cctaaaggaa ctaacatcca gaggagttgt taggaaagtt atccctttcg 180

ctactgctgc ctcccataga tgtctttctt caccagctag aatctgagca gtcgtgatat 240

tatgtgaggt aacatcaaac acacatttgt ttctatgaat tcagatggtc tattccgaaa 300

ccgaaattta gtacagtgtt cagtttctac tttctaggaa gaaagagcat gattggtaca 360

ggaatgatct aaacttttag gaagaaagag catgattggt acatgaatga tctaaacttt 420

ttccaccccc aatcatgctc cattcaatgc tttgtattca agaagttatt gttcttagta 480

ttaatacctt tcccagtggt tcatttttct gcaattaata tatagtcaag aggtgctgga 540

gcactggtca tcaagttcgc gaagaggata agagcaaatt ggttggcaac gtgttcagca 600

gcgtggcttc cagctacgac ctcatgaacg atctctcatg agtgtcggtc tacataggct 660

gtggaaggac aggttgctgc tgcttgccct ttccgtttct tttatggata tcttcctttg 720

tcactcgaac tccgattctt ttctttcagg cttatttcca agctgaaccc ctttccgggg 780

atgaagcatc tcgatgtgtc tggtggaaca ggtaatattt atctccttcc ctcattgcca 840

gtagtttttt tagtggcgga catttgtagt aggaaaaaaa ttcgtcgact gttcatgtca 900

ttgttttgac ttcaggtgat gttgctttaa gtgtactgga aagagttaag agtgtgggtc 960

acagagctgt gcagggtact cttactgaaa cgaagaaggc acccatattt atgtctgtga 1020

cattaatcca aatatgctaa atgttgggaa aaagcgtgat gcagaaagag gtcccgagca 1080

tgaacttttc taatagattt tgttgcctct gtctcaagtg tgggttatgt tgttcaacag 1140

tttgttttta taaattctag 1160

<210> 1029
<211> 1387
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325954_G1, chr10:7436112..7437498, Cluster 6

<400> 1029
caaaataatt cggaaggtgt ttctcttaca atgtttggaa ttgtgatttt attatacttc 60

tttatactgc tgaggttgtg catgttgccc gaatttcagt taaaacttct tatagataac 120

tgttctaatc ttgtgaggtt gctaatattt atatttaaca ttgttattat tatttttaat 180

ttgatgaaag tgccttctat ttttatgttt acaaggtaag taaacatctg cttttagtga 240

tattaataaa aatatagaat aataattagt gtttttacat atcaatgcat ttttatcata 300

ttgatttcgt agcaacgcat gggcatatac ctagtctgaa atatgatggc cattgacgaa 360

acggactttt caagtcaaac atattgatcc tcttcaaggt aagataaatt taccaaagtg 420

aatgagactc ttgttgagta cgaaacatct ctggttacga ggataaaaaa ataatcttga 480

cattgatatt tggttgacat tgatatttgg ggtaatacgt taatttatca aaaaactata 540

cttaatttga tgggactcgg tcttcttcta attttcggtt gcctggtttt tattaaaatt 600

aatggaaaat atactagaac aaactaatag aaaaaacgaa ttagggaaag taaattcggt 660

tgatgtttta aaagttctca tgtttctatt ttctttttcc atcgccatct ccagtattat 720

agtacaacac tttcgcacga cacaaaccat cccggtctca ccctccacgc ccaccaccac 780

gacacaaaag ttctcaaaaa aaatagaaaa aaaaggaaaa gactccccta aatccccttt 840

tccttcccta gcatggccca gcttgccacc cccgcggccc atcccgcgcc gtcgtgccac 900

cctctcccca ttcttgagcc tgctacgccg cggcccaccc cctggcccgc gtcgcttcga 960

cctgcgccca ccaacaccac gtcctcgccc cctcgcatcg gcccaacctc gcgcgcaacc 1020

acgcctgcag ttgcgcctca cgcacatcgg cacatgtggg cagaatgtat cccccgtcgt 1080

cgggctcgcc tgtcaaccga acatcgtcgc ctcctattca acttcaactg ccagctccca 1140

agccacacgt gcccacatca ctaaggcatt gctaaaatcg cccgcgccta gtcgcaccgg 1200

ttcaaaactc cgcccccaat tctgcttagg cgcagccgtc cgtgatcgca tcatgcctca 1260

tcgccgagcg cctccgcccg agagctcttc gtcgacgtca gctacagtcg tgcccttgta 1320

gttgcacctg ctcgctctgc atcgcgtgcc cacgtcgtca cgccggagca gcctcgcctt 1380

cgtcgtg 1387

<210> 1030
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326465_G1, chr10:10390789..10391958, Cluster 6

<400> 1030
gacggagaaa ccgcctgcta gtcagggctc gcagtgtgat gcagtctgct gcagcgtcaa 60

ggctgctgct gggcactggg aatgcatggg agcaaggcac ttagctttgg cggtggcaat 120

ggcttgagcg gggctgttgg tggaagcagc cgtataggag taggagtagg cctgcttggt 180

gcatggatca caagaggcca caaattatga tggcaagggt acatatatat tgtaggattc 240

aatgctgctg atacactatt attcgtcagt gatctcagtc cttctcagga gaaggtattc 300

atctatctca tcagtacgtc tttgtactgg atggaaacta cgcacagttt ccactaaagt 360

ccatccattt cagcaactca aacccactgt gccatgcatt cgacccagga ggccgaagag 420

gggcgccatg acccgtcgtc tgttcttgtc acatgacggg tcaacggatg gttcttgcgg 480

gtacctctta ccgtagcggt gcgtggacgt tgacgggtca acgggatggt tcttccccag 540

aatctacccc catgatgtag cagctggtgc caagtgccaa ctgccaaaag atactactta 600

ttttgttttc acaaattttt aatagtttat ttcatatatt cgggtaacat tcacaaacaa 660

gaacgatcgg tgagatgcaa aacgcccgcc cgcacgcaag catgcctcct ctgccgtttt 720

attttggctc ttgtgccgag aagccgagca tcagcaacgg tcggcacctg gcccaagact 780

agaggaagaa gatgacacgg ggggcacgga cgcacggtga tcaaggccgt atcgtatggt 840

atcgtacaaa tggcgccagg tacagttcct ccgtttccat gaaacgagag acaatgcatg 900

cccatggagg atagcgcaaa aggaggatag cgcgacgacc tcctagtgcc ggctccactc 960

ctgccactac tatccccatc gccatgggga ggcaaacgtt gaaacttgga ggttgcggca 1020

cccgagtcca aaaacaaaag tgtttctagg gagctccgtc aacctcatgg atttctctac 1080

atgtgtgtgc ttgtgctatc gtgtcttgtc gtatctcgta tggcacgcac cagcggactc 1140

aagatttgaa cctagagtga tcgagaataa 1170

<210> 1031
<211> 1314
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33407_G1, chr1:204255126..204256439, Cluster 6

<400> 1031
ccaacgacct tttccctttg agcgtgagtg acacagatgt atctgaatca gtgcggttag 60

catcagtgga aaatgtctgc actgcatcag catgtacata tatacgccga ccatgtcgat 120

gcaccacctc tacacgcgtt cgtgttcctt tgtgaggatg acaggagagg gggggatgca 180

tgtttcatta gaattctaat aatgtccaag cattttgctc atcttcttcc caagacggca 240

aaacctgcag atagttccat cacaacaagt ttctctaccg acagaactcc ggatcgagga 300

gtcagtccag aaacatgctg tacggtacac agcctactac cggtccctct cgctcaaaag 360

ccggcactgc ctctgtcagg tgctgcggca gcacggcaag cgtgatgtgg ccgtcatgct 420

tttcgtctac gtgagatgaa cggacgcatg catatgccgg gccggctctc ttcttcttct 480

tcttccaggt tcagtgttgc caatggccga tggatgaaca gaacagaaca ggccggtggc 540

ctattcgtcc gtcgtcatca ccgcacccag attggaagat taccgcgggc ggcaggcaac 600

ggtcccgggg catcctgtct tgtcgcagcc ggttccagat ggcacaagca acggctcgtg 660

cctgcctgct gctcgcttta ctccagatag ccaacaacag agggcacact gttcgttcca 720

atcagcagcg tgctcctacg tcaggttcag acgggctcac gcctgcgagt accctcctcc 780

acttatggca ttgcttggag ctgggcaaga ttctattttg gaacccccca acccaacaac 840

agacgtactg tacctgcctg actgctccac agcaaggctg gcatctggaa tcttgttgcg 900

ttgcgcacct ccgacactcc atcgtctcca accaggacgg acagacaaac ttcagtcatt 960

tttgttagca taccccattc agcagagcac tctcactgtc cagcagaaat ggtttttatg 1020

tacgcacgat ctctgtttta caagtcatca tcgcgattag tcgagctagt cgtcagactt 1080

tccggttttc tagatcgtcc aattaagcat ctagatcgtt gattaggcat ctgattagag 1140

agtttctagt cgtccggtga tggctagggt ttagtggcga ctagggttta ctattgggct 1200

ttattgtttt ttttgcccat ctacagtcac ataaacagct tgcctccccc caccaaaccc 1260

tgcctacgcc cctctccaac ccgtggcggc tagggtccag tgcagtaact ggcg 1314

<210> 1032
<211> 1004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337389_G1, chr10:79131128..79132131, Cluster 6

<400> 1032
agatctcgca ctactggtgc tagtagctag cgcaaccaga cggtttttgc ctggctcgtc 60

gtcatcgaag cagcggcctc tctacatcgc atccagttcc agaccggcga acatgtcgtc 120

ctccctgttc ttggcccaga tcaccacgta catgcagtcc agcgaacatg agcacgatcc 180

ccacaaagct gcagcaaaat tgcaaaagca aacagtatta tgagcattag cagcagcatt 240

gcactggatg ccagcgtgcg tgcagtgcaa tgcaatgcat tacgtaccat cccagtccga 300

tccactcacc gaagaagacg aaggagacga acgccgagaa gaccgtctgg aacgggttga 360

acacggacac gagcacaggc cccttgcgcc cgatgctcca cacctggaac gccgtgcaca 420

ggccgatcac cacgcctccc tacacggtag gcatatagta tagcagcacc agccgttttc 480

actttcagtt cttgggtctt tcattgcagt tcctcaagct ttaggagacc atcatctact 540

actcgaggtc tttggatgag gatgccactg ccaggatctc tgcgcccagc tgggaaatgc 600

tgccggccgg gtcccatttc cacgggcggc ggagtcggca acctcagctg ctccgacaca 660

tgtgcatctt ctgcccatgc gagaagcgcc gacgtggcgc cgcgagggtg gcctcacgga 720

ccacggtccg ttctgaccac ttcttgtcct gggcagagat gggcagtcgc ttctggagaa 780

cgaacggatc accgctgctg cgtcgtccat tccaaaacgg catcggctag cactggtgtt 840

caatactgaa aaccagtgaa aatcaacacc acggcctcct cattcagact tcacagtttc 900

actagaattt ctgtggtcac gcgaggtggc agtctggcat acacatcagc attagtacga 960

gatctagaca atctttagtt ccagttatat aatctgatac ttcc 1004

<210> 1033
<211> 1015
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34158_G1, chr1:208202116..208203130, Cluster 6

<400> 1033
gtaagcggcc gactactgcc tttgtggatc gtccatgcac cctaccatat agtctttatg 60

actatacgtg ttagtaagcg gccgactaca gcattgtatt cagtcagctt tttctatagt 120

ttccccttaa atctctcaga acattctctt aatctctcaa atagagagga tcaaacagat 180

ctttttttcgg actatatctt cagcagccat atcctcgtac cgaaatagac gaacgagctc 240

acgagccggg cacgccgggt gggtgagtca tggctcgtga gcacaggccg ggcgtgcaaa 300

ctcgcgagcc gaccgcgcct ctcgccacgt gctgggggcc cgaaaagcga gctcacacgc 360

ctgtcttgta atgtttgaga gaagacagag agagccaaac attagcattt cacacattta 420

tagggtactt tatagaatgt ttcacacatt tgattcatca catgttgctt caagctagcc 480

ttccatgatc ttattggtcc acattagcat ttcctagcaa ttgcataaac aaaataaggg 540

caaataataa tttctctttt ctttgagcaa agaaaactat gcctgtatcc ttaataacat 600

gttagctagc ttgtatattt ttttcgctga agtctgtcta ttcttaacat gttagcctgt 660

aaatccagga agtaagtcga tgtttatatt ttctatccgt ttgaagcatg tgcatcttgt 720

tctgcaaggt aagggtaaaa acataccttg gataaaaagt taactaaaag gtaggcaaga 780

catataccag aaacgtttgg tagcaggaat aggctccagc tagataccat caagcacaaa 840

ggcacattgt aggtttggtg atatatataa ggctacaagt agtttggatt cggttaaact 900

ttatatgctg gatgactcga tcgttaaagt acgtactagt tcatgtaatt tgggatttta 960

gtatcctgat gagtgatgaa ggatgctgag gtgtgaaatg gttttttatt ttgag 1015

<210> 1034
<211> 1155
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345504_G1, chr10:124179966..124181120, Cluster 6

<400> 1034
aggtaacctt cctcttgcta ctttgagatg cactctgctg cttcccgcag gcagttggct 60

caggagtcag tcatggcgta ttggcgtgcg tctctttgtt ggttggtaaa gctgatatag 120

actggacaca acaccggtgc gcagtgtcta cagagtctga aacgagcgta aaaggtgcgt 180

acttttttgt ttcttttgat gaaggggaaa agggaaaaaa aaaacgaacg acatgccact 240

tgctattagt ttttgtccac cgtgggccgt ggccgaccct tcttttctgg ctcttcgtct 300

tgcgatcacc aaagtccaaa ccctcacgtg tcagcacctt cagcagatgc tgacgggttc 360

tctgaggacg aacggtgagg gtggggtggt gaggctggtg gcaaaggaag gccgctccta 420

gacggcttta gctagctaac cggtcatgtt tctttagcta gctagctagc taagcggtcc 480

agtcatcgga tcttaatgat ctaccttcgg aatacagaca agttccttag ctaaacctgc 540

cagaatgccg ttgaaaatcc ggggaggagt tggtgactgt ctgcgaatac acagttattg 600

gctgcttctg aaaaaccagt actgatgagc agggcaaaac acaacagttc ccgtctgcga 660

aatggctggt acaagacagt gaggcagttg gtttttgggt gacctctctc tgccgtctgg 720

tttggtaccg ttgccaatca gggtggtacg gtgcgaatgt gaacacgagg agtcaacgag 780

cagtctttcc ccggtcaaaa tatatatatc tcgtacacgc acgagttgat atctagtgga 840

tccaaacttg cgaggaccca tctttctccg tctcttcaat cccatcgttg ccgtctctcc 900

aatcgaagta tgtgtcaggg agtgattggt tctgcacaac taaaatgtac cggttcctat 960

cacatcaaaa tatttaaata ataattatag atattaaata tagcttaatt ataaactatt 1020

tacgctcaag aattgaacga gatattaaat ctaattaaac atatatttaa tactcataac 1080

taatatataa aaatttgacg tgtcacgaac taaattttag tcaaataaat caagcacatt 1140

tttcagcatg tcggc 1155

<210> 1035
<211> 1204
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34613_G1, chr1:210646760..210647963, Cluster 6

<400> 1035
cttctttctg actactctca acccgaaata agtgaggata ggatgcttga ttacagattc 60

ataattattt ttctattaca gtttgttgtt accgttgaca ttcttttatg ttccctttc 120

caatcattag atgcttggca aatatattct tcttactgaa gtaagaatta atgaagttag 180

tatccatttc agatttcacc ggtggttcta ataaaccttt aagggcttat tagaaccacc 240

agtgaaaata ctgggccggg aggctcccaa acccctttct ggttcagtat atgaagtatt 300

tttactccta taagttcagc tgtgaagtat tactaagaaa atcattcaca ctttatggtg 360

atctgttaga ctgttactct ataccatgac atggtaatat ggtagatact ttttgtttct 420

tatatgtcac ttctgagtat atgttgttga aaccttactt ttcatgctct tgttagtttc 480

cttactttaa ccctcctttt tttatacgta tgtttggcta ttgcactgtt caggtgaatt 540

tcaatggata gctttttttt tcttctagaa tatgcacgac agcgtattca gtatctttgt 600

cagctacata tatgtgttac atgctcgtac ctttgccttc ttacagggca aagaaagatg 660

tctcactgaa ctgagaaatg agcttaaaat tttggagact gaacatgcag aatgtcttgt 720

gaattacttc aatctgtttt tcacgcaaac tgaattgtgt gttaaagttt ttttcttaac 780

atgttcattt taagaaatgc aatacacttc atttgtaatg tccaaaatgc taggtacgac 840

ctcctgtgag tgctctaaaa gtttcatggt attaaaagct gtataattaa aatgatcgag 900

tgaccatggc caagtgagta ttgatgtttc acaggttcca aggctgtcga tttagttgcc 960

ctaccaattc tctcgatgtg ttttttcagt ggcccaccta cagaatgttt catgttccat 1020

tcccgagctg cagtggccaa actacattct gctaatgagg tgagagcaga ttattttgtc 1080

tctaattgtt gaatggaaag cagttatcaa ctgaagagct atgtagtgtt gcagtaatgc 1140

agtgtaacac tggtgcgaca atttttattt ttatttttg ctgatcgcag agcaaatgaa 1200

tctg 1204

<210> 1036
<211> 1275
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346310_G1, chr10:128993559..128994833, Cluster 6

<400> 1036
tccgatttca gtcgcctggt gctaggatgt ttgcctggct ggtgagctgc ttggcagggc 60

agcaaccaaa cataccgtaa gtatttcagg ttgtgcttgc ctacctggct agtggcttga 120

ctataaaatt ggggggtctg tcatgctgaa gggagtgcag cacggtgtcc tcgtccttgc 180

tcagttgctc tagggcgact tcttcgttat cgcctgctca gccacggagc tggagctacc 240

ggacgcctct tccggtgtcg ccatcgatcg atccgtgggg tgtgcgcggc gtagttggtc 300

acgatcttca cgacctgtaa cagacgaatc ttcccctagt ttctgttgca gaaagtagag 360

tacccgaggt gaagattttg ataaatctcg acaacaatgt tgcccaggct aggcatctgg 420

gtaccgtaag gctggattac actcccaaca ctagtagtgg gcaatgacat atcatgtggc 480

atagttgttc attccacaaa ttgctgagga tgactcgcaa attttaaact caactatgcc 540

tagacaagtt tagcattgct agctcccaga caaggtttac aaaatcggtc ggctatggcg 600

gtaaaccgct tggtttaccg aaaccgccgg gcccaatttc aattaaccat cgtatttttc 660

aaaattcact ctaaatttaa aaattttgat ttttttttat aaaaacgaaa atcgttagta 720

aaccgccatt ttggaccggt aaaccactat ttggaccggt aaaccaccat tttttgtcgg 780

gaaaccagat ttaatgccaa gactgagttc cactttaggc atttaagggg tgtttggctt 840

gaggcataaa caccgtatta gtggccagtt taggcatatt agccttgttt ggtgttatat 900

gctatatgtg aagatgttct atgctatatg tgaagatgat ttactgttag atgctatttt 960

tttcccagtt tgagtgctag ttcagagccc agacattgtt agtgtttaac tgtttatacg 1020

tgacatatat atgaggatat tttatgtcaa ctatatattg ttcttgtaag agacatgcca 1080

aacatagtct aggagcatgg agagaaggtt ggcacgagtt tcaaacgtaa gtattgtagt 1140

gaaacgaaga gcagagggat ggtacatgtt tgaagaagca tctcgcacat agaagtgcaa 1200

gtatttcata tgcatgctca tataactaca agcaggtcga tgtgttattt ttgtttcgtc 1260

gataaatatt tattt 1275

<210> 1037
<211> 1392
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347093_G1, chr10:133407699..133409090, Cluster 6

<400> 1037
atgagatcat gagagtcccc ttctggtgga cgaacggcgc aatcacttgc ttcgacaaac 60

tgcgtcgcaa tgtccagtat cttaaacaga gccagagcca gagcgagcgt ccgggtaaag 120

attcggattt cggaatggct ttgcacaatt cgagccaatt cagaggtggt cgatcgtact 180

cgaacactgc tctgtacgtc atcgaaacga ttgcgtgaag caggcagttt cgtttggtag 240

taggaactag gaagcagctc cctcctgaaa cgaaaacgag agacgacgta gtaccgcttc 300

cagatcttcc aaccattgat ctgaaccagc taagatactt ctggactcgt agttccacat 360

gacatggcat ttgcggagaa agatatgctg gacaacacaa cgccaccgaa accctagtac 420

tcctagaaga acaaatttag gtagcgctgc cctgctctcc tctctctctc tctctctctc 480

ttattatatc gcgttcgtct gtccctcgat gcagttcatt gcggttgtcc accaacgcaa 540

cgagtcgtaa cagaacgcga aagcgagccg cgtgcaccac cagtgcgggc agctctcctt 600

ctcattctca accaccctcc cctcccgtcc atgtgggagt tggaatgatg ggtgccatcc 660

gaaaagcgcg acagccgagg ctatagcgct gccaagttgc accgacgcgc ggcggctagc 720

tcactattac actgaggtca cggcggcctg gcctggtcgc cgtgcgtatg tatgcctggt 780

gcctgctgcg gggacggcac ggaggagtgg ttgccaccgt gatgtagatg tacttgcggt 840

cgccgaaact gaaagcgaag gtctgtctga ccgtggtttc tctcctccgt attttctggc 900

gtctgaagac atttcgccgc aatacagatg atccgcacgt cgtgatacag atggtctgca 960

gcaagtatat tttgttacgc gtctatagat aacgtaattt acattacatt aaacaaattg 1020

ggtgtttggt ctagtggtat gattctcgct tcgggtgcga gaggtcgcga gttcgattct 1080

cgcaacaccc catttttta ttatttctct gtatttttt ccctccttcc gttttttaa 1140

tcactaattt tccaaagcaa ggcaacatga tgcactcttt ttaaccagta attgacaaaa 1200

aaaaagacaa catggtgcac tgcaactgtg caacatgcca acattggtag ctcggttttt 1260

ttttaaaaaa aaattgtagg ttctcaacag tggtagttcg gtgtctttta tatcttttt 1320

tggtgttttt tcttttcttt ttaatctcta actgatcaaa acaaggcaac aatgatgcac 1380

tgcaactgtg ca 1392

<210> 1038
<211> 1372
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347237_G1, chr10:133813008..133814379, Cluster 6

<400> 1038
aaataaaatt aaatatcttt ctatttgatt ttaaatagta aggaatttaa ttctttttaa 60

tccccttcta accgataagt ctgacgaaac ttacagcaaa gaggaagccc gtcatccagc 120

caatgccggg ctccttgtag cttcccggca cattaccttc cgtctcctcc ccggccatct 180

cgtaggtcct cttgttcagc ccaagcaaga aggagccaag cccacctgcc aatccaaggt 240

tctccacaga caagaacgga atattcaatc gcaaagctca gcacgcctct tacggtctta 300

cctccgacgg cgatgctgac atgctgtagc aggcgacgac gcatgtctgg acgacggtgt 360

tctcctggcg ggtgaacggg cgcgtggcga cgccagagcg ggcgagcacc tgcgtccagc 420

cgcggaggac gacgaaggcg atgagcgcgg cggagacgtt gagcgtgggc cgtggggaca 480

agcgcggcgg agacgttcat attttaccaa gcaaaaatga tttaattttt cttgagaaaa 540

tgaagctcct aagctagtct ttaaaagaaa aaaaaaacaa cgacatctct aattgttgac 600

aggccaatac ctcataggaa acatcaaaag gtaaattccc tacctgttta tgctcttcag 660

tatgaagtgc tcttcatcat caagggagag tacacgcaag gctatgttta gaagtgaaat 720

tgttttatta tgtcatcgag ttaagtctaa tcttaaagaa gatattgcat cttggttact 780

caatttaggg ttgtaatttt ccccctctgc tcctctttct tttatttctt tgtatttttc 840

ctcttttctc tctaaactca gttcttttga tttaataata ttactgtagt acctttttac 900

agtaccttga cttaaaaaaa aaaggagagt atacgcaggc tgcaggcata gaactaaggg 960

agaagagcca tcgtcagcac acaatgagat gcagggttcc gtgcaagaaa tacttcgtca 1020

ccccgtctag gacgagccga tgggattaaa attgtgttcg taaaaagaat aaattgatgt 1080

caacacggat aacagaggtg aaatcctccc gctatatcga acgatgatga cctcaaggaa 1140

tttgtttatt gcagtcacgg tgccggctgg catgttcgta atggcctaat ctcttcctat 1200

cctcctttgt aactcattgg ggaccaaaga acgaacaaat gtaggtgccc aggcctcctc 1260

catccaccgg cttgccagta tcaatgaaaa atattcaggt caccctgcag tgaagtcttc 1320

agaataatgg tatcagtgag gtcgccgcct ctcgcccatc taggcgctcc gg 1372

<210> 1039
<211> 1099
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34742_G1, chr1:211335128..211336226, Cluster 6

<400> 1039
actgtggcac cgaacatgat actcagagaa catgtaaatt gcacactttg gtgcaacact 60

caccagacat gtctagtggt gtgtccagtt agtgtactgg atacttgaca tagttagcaa 120

ctaatttata gcctttggaa ttgtagtcgt tggaaagaca atggaaatgt ctggtgtaga 180

aatcagtggt gcaccaaaca tgtccgaggg ctctgatttc tatgcaccaa aaggtaatgg 240

ttagatttca tgttacggct acaaatagac cccttgaccg atcttggttg gcatcccttc 300

actccttgca cttgagaaca tctccttgga ctagagaaac acactccact catatcttgt 360

agttcatcat ttacttgaga ttgtagagct tctaatgcat cgcaagtagt tgtttcatcc 420

tatggcacta tttgagcagg ctcttgttac tcttggtgat ttccgtcacc taaatgctct 480

agagttcgtg ggattgttga acgactattg gagattaccg ttgaatccga ccatcattgt 540

gagggactct tgtggtcaat ccccatggta gatttataaa aaacaacccc agtaaaatag 600

tatcttgtta gagtctctct agtgtggttc ttatgatgcc cttattatgg gcttggcatg 660

tgatgccaat tagcacatga accacgtagc ttggactcat cataacgaga acgtaggtta 720

tcggcaagca atcgaacctc aaggataata cttgtgccat tccttagact gtgtggattg 780

tactccttac ctactcttac aattacatct atttacttgt acaatatttg ctctactaga 840

cttatgtaga ttatatcgag taatactatt gttattctct tgctagtaag tactttactt 900

cgttcaatat acactagaga tcaagctact agtttgtcta gtgggcttcc ataaagtaaa 960

tagtgctaca agtgttttct ttcgtgccac ctttgatagt aattatcttt gctctagcga 1020

tagttatgtt cttgaaggat aatttttata gaccattcat cctcctctag ccatctatgt 1080

catgtatcta ggtcataac 1099

<210> 1040
<211> 1182
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347483_G1, chr10:135332863..135334044, Cluster 6

<400> 1040
agctaataaa ttattagctg gattgaatca actaataaac taattgttag ctgtgaggta 60

gctaacaatt aattatgata ttagccgatg gtatttggaa cctaacaact aatttttagt 120

agctaactat taattttaga ggttccaaag aggaccttaa tgcaaccaat ttggtggcac 180

cactgcacca gtttcatggc catttgcacc tcatccacta ttttggaaat gaactggtgg 240

acagacacta ctacagcgca caccaatttt ggcaacaatc aaaatggtag ccatggtgag 300

gtgagactca caggtttgga tccaaaccaa atagccctca agagttgtat ggtagtgcag 360

ccaagcagat gtctgctggt ccctccgctc tcttcctgcc gctcctcctt cagcccagtg 420

aagcaattta ggtggtgttt ggctcaccga aatataacgt aaatatatta catgaggtaa 480

tggataccga tacttttgtt tggttgagct ctttctagta atactatcga atccaattat 540

aactagtaac cattaccatt cccttaacaa ggtctgaatc aaacaacacc ttattgcgga 600

ttcgcttgca gcgactaacc tgaatctatc catcctgatg ccgactaatc tgagtctatc 660

cactcaattt aatgctttgt tttgtccagg gctgtctgca taccattttg ctctgagaaa 720

gaaaattttc tctctggttc acttgaccat actgttctct tataggatcg acgggctgaa 780

aaattacagg taaaactaat ggtgctgtac acacttacgt ggcacgagtt aaacttcaga 840

ttctgcttca ctacctgttt atgccaaact aaaccaactg cagttttaac cgagcaaagc 900

tattttggat tttcccctct tattacttgt tccttgttaa aactcttgga atcacttgta 960

ttattgctgc aactgaaaca gtaaaacccc cgttacctac tagttttcta ttactcatgg 1020

gatggtggat tccagacatc catgtaaaat tagagaacaa actaccttgg gcatggtcat 1080

tttgtttatc agaattctgt aacatcttct tcctccaatc cagaattctg gaaccaattc 1140

aacactggag gcatcgttca gtcagtcctg atggaaaaca ta 1182

<210> 1041
<211> 1193
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_347484_G1, chr10:135334131..135335323, Cluster 6

<400> 1041
acacttgaat accggcggta acaaatttga ataagacgat atccatttgt agtgtggtat 60

caattatgat tagacttaaa caaatatgat ttaacgttat gggttactca ttacgttatc 120

aatatgtgaa ccaaacgaca ccttaagatg taaatgataa gacatgagta ttgttgtctc 180

tctttgtttc tgggtatctt ggctcggaca aatttttgca actcagacta tatccgagca 240

aaaaaacagc ggatagttgg gcttgggcaa cggttggtta gtttgtttca gttggattcc 300

ctgtactgat gtgctatttc atttgtgcat gctccgattc atatttcaga ttcgattgtc 360

tgtcctgtgc tgcgatgcac cgatccacga gctgtgctgt gcacgaggaa agacaaactg 420

tacagaagca attttctgaa tgggctgcga ttcattgggc cctcgcttaa atggaccgaa 480

tggtcctaat ggggagagct aaactttggg cttataaaaa ctgaaacaac aaaccttagt 540

ctattgcaat tctaacaatc gcatagttga agcctaagac taaacagatt atactaagag 600

ctaggtcatt aggaaaatca cgctaaacat gttcatagaa tatttacacc aaaagagagg 660

tctgtagtca cacaaagaaa gtgtcatcca tataataacc atataggggt atgttttacc 720

ttcaccctag atcatatttg tataaaaagg ttgtgtgtct ttctaaaaac catggagaca 780

gggatgatgc ctctcgctgt ttcacttgac cgagaagcga gaagtatact tctgcaattt 840

tttaccggta caaaattttg agccagctaa tttgttctac ataaaaaata aatgaatcgt 900

tattcctggt ctggggccca gcggaaacta aatcgcctgg ctttgtcgtt tccctcggcc 960

gtgatccgtt tgacgtgatg ttgcaatgag cttgagtttt atggtagttc gattgaccgt 1020

ttgggcacac gagtgttcct ggccattatt tgcaaagaac gtaaattcga ttctatatct 1080

ctatctacta tgaagttcca gttttaacgc tgcgtcgcac acaaatgttt cttccctcgc 1140

tcagtggatc gttaccctac ggatagacca tgtgaaaacc attcgaacct cta 1193

<210> 1042
<211> 1220
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348345_G1, chr10:139731170..139732389, Cluster 6

<400> 1042
aaaaatcggt ccatatgatc acgactcacg acgttgcgca ccaggtccca gggggtgtct 60

cacgggctcc gactcctgtg gagcgttggc aacactcgta cttgcggccg gacgcccgat 120

agaacttgaa ccgtttggac gaatgaaagc ctcgccgtcg agccagtttt gtaccttgca 180

actgtgcgag cgtatgcgta tttacggtgc atctagacgt agtcgtatcc acagcaccag 240

caggcagtag ccgccgcaga aacaggggg gtacagtatg aatgaaggcg cgctggaact 300

ggctcagcgg ccatggtgag cgagcaagta ccacgtgtgg tgtggattca tccgtgccga 360

ctctaattag tagaataaaa caaaatcaat caaaacggag agccacagac aaccaccaca 420

cggaagcagg agccaggagg tactagcggg ctagaggcgc cccttctcaa gaccggcact 480

caaaaccgaa caggcccgaa ggaaacaaag gcaaccacgg acccgggctc cgccgcaccg 540

ggcccccact cctgcatgcg cggcgcctgc gcgtacgaag agactgacag acacatggaa 600

cgaggtgcac gacgcgcagg gatagaaaga tgagtagcgt cgcagagcag aggcagccag 660

tgtttgtttg gcggcttgcc tgcgacaacg cacgcacccc ttgccaaaca cagcatttcg 720

cgccttttt tttaacgcct gcaaccacat gcacatgctg caccgaggcc tccgcccctg 780

ccctaggccc ctagtcgctg gctcccagca aatgagaggc gcgtcgaagc aactggttga 840

tcgttggttg cgcctgcgcg cggccgcggt gtgccgtgcc gtcgcatcgt cgcgtagccg 900

gcgtggacgc ctgtgctgtg tccccggctc cccgctagcg ccgcgcggcc gatcgggctg 960

gctatccgcc agagcccaga ggtgtccgcg atcggcacca tccgccgccg ctgatcgcgg 1020

ctacctgcgc gtacacaccg agttggcccc ggtcagtttc agcgcgtggc ggcaggcccg 1080

gggcaggcca tgtgctcacg gggggccgcg atcttggtcg catgcccgcc cgggtgcaac 1140

ggctcgctgg cgctgtcgct gcgcgcccgt gctcgtgctc gtgctcgtgt ctgacgctgc 1200

tgttcccggg tctactacgt 1220

<210> 1043
<211> 1307
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349752_G1, chr10:147131198..147132504, Cluster 6

<400> 1043
ccgcctagag gccgctccag atcatgcgat tgacggcgtt gttgtcaccg tcgccgccgc 60

ccaccacctt tattcttgtt gtctctagat gcgcgaacga gcacctcatg ctcgtgcgac 120

ggggcagctt gtggtctcgc cacccgcttt ccagcagtgc acacggtgtc ccaaacccta 180

aagacatacg agcgtcaaaa ctgaggtgga ggaggcagta ggtgatgcca tggccactcg 240

ctcgtctcct tagcgaaatg cagggacaag gcaaggtggt gccatggtgg gtgatagaga 300

ggtatagaag aggagatttg aagtggcata tggttttcaa aaattggagg gtttgttctt 360

tgcttctgta ctagggtgat tatattctca ggttaaggtg tcaaataatg gaatatatac 420

ataggttttc aaatacccac tgaaggcttg tttgagagca agagaacgga aggggataaa 480

atcccttcta ctcaaaatat actcaatttt gaatagaaac gggatttagc ccatccaatc 540

ccctctattt cttttgctcc caaacattcc tttacaattg ttttgtcaac actaccctca 600

aattaggata ttggtgatgg tataacctat tgtagtggga tggagcaata aaagagttga 660

aagaggctag acagaaggta tgtaacatcc ttgttacttc gaccacctac catggtgtat 720

gcagaaatcc cagggcattt cggttatagt tgacgaggta cgtggatcat atttcaggtt 780

ctatggtagt ttgccaatca ttatagttgt gtaaggcgct gacttagttg tgcaatccac 840

acacaaggtg tcatgctcca ttatactgtc ctcattgcta ggcctgtgca aaataaacca 900

aaaccgaact aatcgttagt attttcggtt ccatgtttta gaaaactgaa ataacatgtg 960

taatttctat tttatacgtc tgaaaaccga attaaccaaa agatcgagat atactagaag 1020

tccaatagac caatagaatt ttaggcatgc ctcaatttag ccttcccaaa tcataagtat 1080

ataaacacac ataccctcca aaacaatcca tcctcaacca taatccttta tccgggcttt 1140

tgtgcactct tgctaaactc taaattcgag tcagttctgt ctgtcctagt tgtatatttt 1200

ggttctagta ttttgggatc gaaaactata aaaactaagg aaccgaaaac gcaatcctac 1260

tcgttgcttc acgtctttga agatcttgtt gatatagata tggtagg 1307

<210> 1044
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_39573_G1, chr1:236189377..236190443, Cluster 6

<400> 1044
gtgttatgtg tttctgttat ctgcagacag aacattgagt gcaaacagaa cacttatgtg 60

tttcagttat atgcagacat ttcagttgta tacagatttc aactaaacaa ccatctgcta 120

tgtgtttcag ttcagtaaaa tacccatcga gtgcaaacaa ccaactgcag atatgtagct 180

gaattgctag agtgcaaaca gccaattgca gatctgccca tcgagtgtag acaatgcagg 240

tcattataag gcatattgtc aagattttaa agctgaattt gaaaacatgt tgatccaaat 300

cggatatgta gctgaatttg aaggcatgta cctgaatttt aatgcatggt tttcttaaac 360

ctgagtctaa gagcatttgg aactaagcaa aactgtgtat gatcataaca caaacaacag 420

atatgccatt tatgccagtg agttctactt tatttacaaa cgaactgcat tgtggcataa 480

ctgaactaag taatgtatta aatggagtac aaaaaagaga acattaatta aaattgtata 540

actcgggctg gttttaccac aaatagtgct ttgctgataa tgagtctcct tgttcttttt 600

gtttttatat ttttgaatga aagcatcaag ttcaggagct gcattatgtg aaacagtcac 660

cctttctcct atgtcatcgt agttgcaaac atattgtccc atatcgtcga agttgtattc 720

atattgtccc ccgtgctcat ctcgctaggg gatccactag ctctgctggt acctccaagc 780

gagcctccta ctatagttga gccacccagt cgaagcaatg tgggtcttta ggctcggagt 840

cctccattag tttatcctta ggctcggaat cctctaggat gtcctcggtg gtcatgtatg 900

agggtccctc ctccattgta ggcttagtac gcgggaattg tcaagtgcta atgtgaacca 960

ttcttccgtt gctcttgcag acggtcagga gggcacgtgc cacctatgaa tttagtaaaa 1020

gagtgctact tagtttccat tgagtaatat aagtgtaaga agttttg 1067

<210> 1045
<211> 1185
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_39955_G1, chr1:237960895..237962079, Cluster 6

<400> 1045
ctactcctca accaaacaca cacaccggtg tttggtacga ctccacaaca aagttcaagg 60

gccgaaattg taaattctat aaattttggg agctgcacaa ctctgaaatt gcaaactcta 120

gagttttggg gacaacagta caacacacct ccttttctcc gttgaaacct aaaaaaactc 180

cagagttgtt tcatctaagg tgacgtttga tttatatatt gataacgtaa tagataaccg 240

ataacattaa attatgtttt ttaagtctaa cagtaattaa taccacacta gaaatgaata 300

ccggcttatt caaatttatt atcatcggta tttgagggta aatcattaca attatcattt 360

acgttacatt tcgtgaacca aacggtacct aaagttttat attgaatttt gtggccgccg 420

tggctcgaca ccaacgtcga cgtccgcctc attcctctcg tcaacaaaga ggccgagagt 480

aaggatgcaa atgggccggc agtggcggcc cgcctcgcgt ccgctccaac tgcaatttta 540

atgtgtcagc ccacatcttg ccgctctcaa tttgtaggtt ggagcggcag actgcgaggt 600

gccgcaacgc acatccgcta ctgtctgctc tacgcctcta ccctgccatg gcagtgaatc 660

catcccacga aaaacaagca actagaaccc cattggttca tcgttttcaa ccacaactgc 720

tgctgctcct agtagcacca gtccagtgct aacattcaac aatttgcgat tttcatttaa 780

aaaatatcag aacatccaac gacaatacat tggctaaatc attgattcaa cacaatggct 840

taaacaaaca acatatgctt ccaaaatgta gctcccagat gaacctatga gtgacatatc 900

aactgaattt attttatgca cctatgttct taatcaagta ctaacgaatt gatgtacgtg 960

atgatagaaa aatttaaaca taacctaaga tgctaggcaa cccaccacaa acactagaaa 1020

ccataggtgc acaagaattt gtgtcctcag cttgtagaga actccacagt ttcagttagt 1080

gacaacaaga gctgcagctc aagaaaacat gtgcacaaac aaggtagaga ctagttcgtg 1140

ccatcgacag catgcaagaa aacataatat agcagcaatg taatc 1185

<210> 1046
<211> 1103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41303_G1, chr1:244762386..244763488, Cluster 6

<400> 1046
aaaataccaa aataataaag atgacataat gatgaatgtc ttattgatga gatttaactt 60

ttatataatg actctagtat tattgatgca gccaacaaat ttttaagaga attcgaatat 120

ccaactagcc ttgaagatcc atgaaaattt gttaacttgt gcaggtacat gtcaaatcca 180

tcgtgtacac ggcaactatc aggtggcaaa tttagttgaa attcgtagat tttattacta 240

acgacaaatt taatatttta aaaaaatcca tcgatttttt gaacaaatta ttttatttta 300

atgaacaaaa actctataat tgatgtgttc tctatctctc tatataccca catatagtag 360

ggaccaaggc cgcatgtccc ctcgtgcact caacccgttg gcgcgcgcgg tattacgtac 420

actgacctac cgacaaatga cgtcactctg catacagtat ttgtctatat accaaccata 480

gaacgacaaa cctaaagctg tcaaataata cagtcgatta gttagttgca gctatatcta 540

tatatgtaca ataaatcatc attacccaag ctactttctg tttgatgtat aataatcgcc 600

gatatcacac gaggagaaga gaagtttgat ggagatgact tcctggactc gcctggccgg 660

tgcgccccta gctacgtacg cactcgacgc tccacggcat gtattctttg tcgcgcgcgg 720

cacgttatcc gtcacgacaa actacgctac gtgtgcgtgt gctcgctgtg gagccaagcg 780

ctgttccacg tcactgatcc cggcttttgc taacaagata catgtgtgtt tttcttatta 840

ttatcaacca cgtcatgcct gcatggatgg atatatatgc atgggatggg aaccagctga 900

tcggccatca tcagcgacac aacgtgatcc gaggaggggt tgcgcttgtt ggcagcatgt 960

gagtgaagca ctactgcctg gcagtgagtg cgaggcgccg atcgagagtg aggtatctat 1020

aaaagtggct aactgaaaaa aaatatacaa gagacggact tttcatgaag agcccgtctc 1080

ttgcactcag gaaagactcg ttt 1103

<210> 1047
<211> 1093
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42991_G1, chr1:253311578..253312670, Cluster 6

<400> 1047
tggaggcatc actacaggac cactactcta ctttggcctc tacgtctttg tctttgtggc 60

cttttgttgt tcccaaagag atcactgttg tcaatggttc ttgccacaca atcgatacac 120

gttataggtc cctgttgtgc ctatgcattt gattatcgtt cgtctttgca atggttggtc 180

caaccctaac attgtttgga tcgtcctagg ggattatttg ttgcatcatt caacttttat 240

ggtggatgat ttgctgccaa tatcgcttta ttctctgtgg atgctttgct atacagatcc 300

tgtccctatg gtacattttt tgattatgga aacaaagagt tccggctttt gcatcaaatg 360

cgtacaacca ttacatgtca attattatct caatgaacat gtgcttgaat aatgaaacta 420

acttgatgga actaaatatc gtgactatgg ataacactag ccacactcaa gtcttgcatt 480

tgatcgccat tcatgattca caaagacttc cattgccacc acttccaagg cttgacacac 540

atcgagaatt tgttgatgtg tttccttctt ctgtagaagt ctccagaacc taaaccaatg 600

agtacctctg aaaatgacat gcacaattta tggtattggt ttgtgattaa aagccacctc 660

atttcgagta agccaaatag accaaaataa agccgacatg gttgtttggg gctccctcca 720

atggatgtgt tgccatcaat atttgtgcat gcccatgtcg tctcctttgg atgaatgctt 780

tatggttatg tgttcagttt ctctatagac aatcattgtg tcaatgcctt caattttctt 840

atacttagtc tttgtattcc gtgccatagc taaggctcct ctccccccta atttttctta 900

ctgatctatg catctagtgg tgatactttg attacttta taacttaact tatagctaat 960

aaactaactc tattattgag atccctccga caatgactat atatatagcg tgtagtgtgt 1020

gcgcacgaca gcgctctgaa gtcacgcctc gacgtcggcc tctgttcgtc gtgcacgcct 1080

cgatgctggc cgc 1093

<210> 1048
<211> 1346
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43736_G1, chr1:257328613..257329958, Cluster 6

<400> 1048
acatgagttg tagtggtaaa agccaagtgc tttataccaa gagagtaggg tttgaatcct 60

ctataccct tttttggata tttcgtgcca gaggggaaat ttattcgctc gttgcgctcg 120

ctggaggagg cgacacacaa cgaaactcac gcttaaatat agtagagatg aaattgttac 180

cgtgtctata tcttaaagct caacatggtg acctataaca ttaagattta actgctcaat 240

gtcatatgtt gtgacgctga agagttactc tgttagtgat gtagacatca tagtggcact 300

aatgtggcag gacatcgaca ccatagctta cgccgctgag gtctaaaata aataccacac 360

ctagttctga caaaattaaa gcgaacatca tctatttctc atctctctct aattctttca 420

tccttattta atcttttgat tcgaccaacc cacgtgtttc aaccagggca tccagatata 480

gatgttcatt gcttctacac atgtggttgt tttaatgtaa ataattattt gtaaatattc 540

tacttctttg ttccttgata tatgttatta aattactgat aagtcgttgg catcacttat 600

ttggaaccat gagaggtgac ttttctttga gtggatcaat gattctaaca agtttgatcg 660

aaggtatctc cttttcaaca tgtgaagatg tgatataagt ctagtcgaat tcagtcgtgc 720

atctacgtca acgaaaggca gccagtgagt gtgtacagga gactacaggc tgcagccaga 780

gccagactgc tgccttcctc acatcaatca tctcggcccc cgtcatcaca cgtacgtttc 840

gaaaccgctc acgtatcgta tcgtctcgtg ccgcggcgcg gagcccatcg aacacacaag 900

ttgcaattat gggtacggcg ttgatcaaat gggctttctg tgcgtattat attgtatatg 960

cctgtgctgc gctacgtcta cgtacgatcc agcaggctgc cccccgtcag tccgtgcgtg 1020

catggatcac gtacggtgtc tgcagggatc ttcgtttaag cattcaatcg gcctgtctat 1080

acacagctac tgactactgt gcagcgcgcg ttgccccagg ctaaataaga tatttattaa 1140

aaacgattat attttttat tttcaaatta ttagtatatg tatatattta cagtatctct 1200

actttataca acataaatag atattagtat agtggtagaa gccaagtgct ttataccaag 1260

agagtagggt ttgaatcctc tatactcgtt ttttttggat atttcgtgag ggaggggaaa 1320

tatattcgct tgatgcgctt gctgga 1346

<210> 1049
<211> 1054
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4420_G1, chr1:23051038..23052091, Cluster 6

<400> 1049
taccaactcc acgtccactt aagattcatt agatttatag tccatagata gcttcagcaa 60

tgaaaaaata aatttagaaa tgagatccac catggtgtat agcttagttt attagtaagg 120

gcctacgata gagtttcgct ttatttttct ccaagctgcg agagctaatt ctccagtaga 180

atgattccga atgattttct agtagaagtg aatctttctg acaataatat ttgacaacag 240

tctgtgaagt gatttttgag ggtttgaaga gtgtgtgttg ggggaggagg gttggaagcg 300

acagagagca ttttttttaga tcccacatcc cactctatag tacaaagcaa aactagattc 360

actccgctcc atcgaaagcc gcttatatta acaactatag atccatgtag agacaatttg 420

gttgaaattg cctaatttaa tcttgtgtta gactccatcc cgcaagtgtc tcttgttcct 480

tcttcgtatc atgtagcagc cccaccgtga gtttaggatt cataaatgtt attagtggtt 540

gtgttgctgc agcaagctag caacttagat ggctaaggaa caacatacat gtttagttcc 600

aattattatc tgtttttcta tagaaaaact ccagaatcga gcaatagccg ccataaatcc 660

agcttcctcc ctccccccgt tttttctcag cgcgactttg gcagcgagcg tgagcttgaa 720

ctgaaaaact acaattttag gccctgtttg ggagagcttc acttcaaaaa ctttagcttt 780

cgttttccag tttcactata aaatagttcc aacaaattgt taaggtgagt tccaggagcg 840

tttggtttat atatggactc caacttctat agtgcaatta atttgtgtgg gtttccttga 900

ttacccttga taattagtgg gttgtcgcta gagagaacgg aagttgtatt atgtgtaacc 960

agtggcatgg tgggtaattt tcgtacagtt tcatgaggag atatataaac aatgttcttg 1020

aagcaccctc taaggagctt catgaatttt atga 1054

<210> 1050
<211> 1095
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_45222_G1, chr1:265525826..265526920, Cluster 6

<400> 1050
ggtgccgccc tgccgcgaga caagaggagg gggaggctcg gggtggcggg gttgtgggga 60

aggttatgga tgatagatga tctaaataat attgtttatt gactttgagt gagtaagaga 120

gagagagaga gggggatgga ggcggcgggg tcacgaggac ggtgagtgat aatggatgat 180

tcaaataata ttgtttattg gatttaactg agtagcagag actaagttat ccagtgacct 240

aaatcattaa tattgattga gtgttaagtc tgagtgcggt ttgtttggtg gatttagtag 300

aggttatatg tgtgggggtg attaggttaa gtgtgttcta caaagtttaa aatgttgggg 360

ttatagagtg acatataact acaaaactaa aattggatgg tggttggtgc atgcaaccgt 420

aacatctggc accgacaaga aataatgctt aagatttggg aaactttcaa cgcactacaa 480

ctgttaagac ggaaggtcca ggatttgaca ttactaaaca acataaggtt tagcttccaa 540

cgacaagaac taggcatcgc acagtttcca cgaaggcagg gaatcttcgt cggcatttgg 600

caagatccac atgcatgtcg actacaacag aaagaaaggt ccatatgcat ccctagcttc 660

tcttctcgtc gtgctctgag atcgttagac gttagtagta ggcggttagc tgcctacctc 720

ggggtcccga tgcatggacc tttccttgaa ttttgcgaac gggaccacgc cagctttaga 780

atagatcgtg gtggatttga ttacgtttga cgctgggcca gctagggtct cacaactcaa 840

cacgcaccgg tccccccccaa tagacactgc atggtagtac tgtagtaggc aaggccacgc 900

tttcgcgaga gacctttgc aatggccatt ggctggctgg agctggatgg ggggactcgg 960

gagccatccg atccgcgtcc gacgagcaga gcacctgcga accacaacta gtgccgtacg 1020

tacagcgtgt ctcgtcagtc agtggctcgc gtggccgccg ggggcgcgcg aacccaccag 1080

cctgtatctg tatgc 1095

<210> 1051
<211> 1364
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50493_G1, chr1:293390914..293392277, Cluster 6

<400> 1051
tattttaaat tttagaaaag actcaaaaaa aaacttcaca ggctcttcgg gagctagcgg 60

tagggaggct ctctcgagcc ccctccgtcg ccgaggatat ctctagagat gtgcagcgtc 120

cacgaatgga acggttcgta cgtacagagg acaagactga aggatcgtaa acatgacatc 180

acacagtcca cgagctagca tgcaacatgc atatgcagct agcggttaca tgagaggccg 240

tagatgcatg tccagagctc gatcatgcat ggacactagt cgtacgtgca tggacacgag 300

ctagcatgca tggacacctc gcctttgcct tgcacgtctc catcatgcat ggacacctcg 360

cctttgcctt gcacgtctcc atcatgcatg catccaataa ccgctcgatc catcccatcg 420

accgacgtcc atgcatggac actagtccat attccatccc atagcttttt cttgaccatt 480

ttatggatgc ataccgttaa taactgagag gtatttccat ctagctaggt tagctacatg 540

catgatctct acctatggtc gacacataaa ctgtatcgtc gtccctagta aactgtgatt 600

gttccagaac caatgacata tatgtactag actaaaatct cctggtgtcc ttgttggtgg 660

ggtgtggccg gggggggga taaggtccgc tttgcattgc tgccggccgc cgtccccgtc 720

tggtgtccct gcgatttgac ggtggaatct ctctgggtcg cggcgcgcac acatccatca 780

tcacatgcag atgcaagcaa taatggctgc actgcatctg tctcgacctg ggcgtccagg 840

aaaggagagg agttgaggcg tcaaggggaa gcctctgtcc tgtcctggat gggcgctgcc 900

tttctttcac accagattcg gatcgtgccc tgtctacagc cctgccggcc tcgatccccg 960

cgcagcagag acgaggaacc gtgtggacct ccacctctac ggaacgagta ctacccctcc 1020

ggtattaaaa taataattat tttgaacatg aatacacata ccaagaagtg tttaattaga 1080

agtcatattt ccaatcgtat tcatactaaa taccttaatt ctctttaggg ttccaactgg 1140

tcagcaactc tgctctctat catgcctacc cgagttcgat tcttgtggcc ttagccgcag 1200

aatctttact ccgagctcgc ggcagagtag gagtgagctc gacatagtat atgaacagac 1260

acatacgagg tgagaggagt actagcctac atgcagctat gcaagaagag ggtgtgtatg 1320

ccgtgctgga ttgatgtagc ctcgtgacgc gcctttagtt tcga 1364

<210> 1052
<211> 1339
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52050_G1, chr2:1649213..1650551, Cluster 6

<400> 1052
gtcgggttgg tttgacatgt gcgacaacct tggcctggta gcggatgcga ggagggtgtt 60

cgacgaaatg gctaccacaa gcgtggtgct ggggaatacc atggtggcgt gctacgtcag 120

gtcaggggat atgtaagcta gctgctcgga tgtgtttcac atgatggcga aagggaccca 180

atctcttgga acacactgat gatggggtac ttgcggcatg gggaagcatg tatggcaagg 240

gagtcgtttg aagagatgcc ggagagggat gccgaatgcc aatagctaga gaatggtgat 300

tgttgcatgc tcgcagcgtt caatcggatg cgcctcgcaa ggttccaacc tgatcccgcg 360

atgatggatg tgctgatgtc cgcggtccgc ctgtgcacaa ctttgttctt tgtccgttcc 420

aagacaggtg catgggattt tgagcaaaaa ctgtgtcaaa atgaattttc atgtgccgaa 480

ttcattgatc gacattcttt actagttttc gaaataaagt tgcattgcag aaaatatttt 540

atcatttgac tgatcagatc agcagagagg cttcttgttt ttccactaaa acattgcata 600

gagattgata gagtgtcaga tattcataac ctgtttgtgt ttcatatatt ttgtgataca 660

agcatccatt cacctcgaga ggtggacggt tagatcttga atctctagtg gagttgacat 720

ttagagtcgt cgatctcaaa ggcagaatta ttgcaaatga attcagtgct ttagatttct 780

tgatttaatc ttggcacaac tatggtaacc taaaattgaa ggaaaatttg gtacaagaaa 840

catggttatt tcttgaattc ggtctctgat acatgcattc atacttcaga ttttttgta 900

ctacttttt ttttccttc tatatctttt gtttgcagta ttgcatttgt gacatctaac 960

tagtggaata ttgttttgtg tttctgtaag cagatgctaa gcaacagaac tttacatagt 1020

agcaatagca tggtcaggac atcatggttt tctctaaagt gctcagacat tttaaacatg 1080

tagaaattac atggagaggt ctgtctttcc aactactcca ttgttagtat gattcaaggc 1140

cattcttttt ggtagagaga gcgagcactg caagtccaag ttcggtatca ggtctacctc 1200

tacctcctcc gtcagatgat ctgcgtcaat gacaattggc atgggctggc aatctgcagg 1260

cttttccatg acctgatggc agtggtgacc ggtgctgtct ggacctttgg tgtcagtggc 1320

cgctaggctt tcatctaga 1339

<210> 1053
<211> 1297
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52292_G1, chr2:3003412..3004708, Cluster 6

<400> 1053
cgacaggtct tggagtctag ccctgcaggg tctgtctcag ctgtcaataa aacacccctt 60

ggccatttct tctatgaccg tttagacctt attcggttac aagagaataa atgccatcat 120

agatttaatt tggatctgga ttggatgaat ccatatgtca cactcaattc aggtcttgtt 180

cggttataaa aaaataaata ccaccatgga tttaatttag gtctggattg tgtaaatcca 240

tatgtcacac ataatttcat ggtaggatta aatccaccat ttaatccatg tatctctcaa 300

tgcaagctat ttttttgatc catagattct aatataaact tgtgtaatat ctttatggat 360

ttgttctata cctaatgagc tatggataga atccatgcct tccatagttt taaaaattct 420

caaatccttg ggttataatc catgatgagt ttaaccgaat taaaaaatta agtagactta 480

gattattttg gggtatggat tgtggcgtga atttaattcc aatctatgct aatctagagc 540

tggattggtg taaacgaata aggtctcaat tgacgtaccc acccatatgc gttgtcgcac 600

aacaacgtaa taaagcttca acaaccaatc actagatctt gctgaaaatc aagccagtta 660

attaccgccg gaaaagagac tctttggagg ctagcggaga catcacgcgc ctacaagtgg 720

gcaacaaacc aggtggactt tgagtccctc ctgactccat tcgtccccgc gacagattca 780

tgcaccagcc gtcggaggcc actcggagaa aaataacata tcacccccat gccggctgat 840

ggcaacaaga cacgtggaag cgtatttcta ataaaattgg ttagcaagcc aaaatcatgg 900

taaaattgac aaagttaaaa catgatgctc gtgtcctgtt gggctggtgt ggccccattc 960

catgagaaca cttcaaatgt gcaaggaaaa aaactcaaca tgcaaacaaa caatataagc 1020

ttctagaatc ttttatacaa gccatggaaa tatacaataa tcaagataac ttctagaaag 1080

ttttataaca accatggcaa gttatgaaat gttagatatt tgtttccatg ccaaaccttg 1140

tgttttcatg acaaacttta gaatcatcta gatacatata tttatagtga agtttgtaga 1200

gtatgatatg tgcactcacc catagacaat ggatgtgtat atataaagag tgtatataaa 1260

gagggtgtca cctcttattg gcattatata acatacc 1297

<210> 1054
<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5240_G1, chr1:26909690..26910780, Cluster 6

<400> 1054
aatgtatata tgtattgaag gcgttcatta atttcattgg tgattttact taacaaaaat 60

gtcgttgcat atgcacaagc tcgagaaacc agtacaaatg ctgtctagtc tgcatgcaag 120

ataaaagtgc tagattctgt ccccggcatt tttgaattat gcgcggggca gttcgtattt 180

tcgtgcagga ggggagaaaa cgacacatcg tggagttgca tcggatctat caccaacaac 240

ggtgacagga accgcagtgt atgtagcact agcagcagca gaaacaggag cagcaacatc 300

aaaaacgata gcattgcaca tttaaagccc taggccagga tactgaaata ctaaacgcag 360

agacagggta ttatttggcc acttgctaaa cgcagacagg gtatttggcc agctacggag 420

ctactcgttc gtcgcatgca tgctgccatg gttggtaaac gttcatttac tccagagccg 480

atcatttcca tcacacatgt atatgtacag ttaaataaat gacggactat taccagacta 540

tatactagtc cacctgataa agtaacagct cttctgtgtt tttacgagaa aggcgttatt 600

cacattgcta gcactcagtt ggttgttttt ccattagttc ttatcgttat ctctttatgt 660

gcgcgcgctc acgtggacgt gggcgtgtgt tgtaatagta ctgcagcttc cttccttaat 720

acctatgctg ttgtttggtt caccaaatat aactaaatag taacattaat gattcactcg 780

attacaagcg gtaacgagtt tgaatagacc ggtatcaaat tctagtgcgg tatctgatta 840

caattagacg caaacaaata tgatttaata ttatcaggta cccattatat tataaatatg 900

tgaaccaaac aacatctagg atgtgaggac atgcatttca tgcatgcatt tctcctgcaa 960

tttttagaat aagtaaaaca acagtttttc agctagagct gatagtggac cgcaaacact 1020

gataacagta cagaaacgat atcagtggcg atgattcttt actggccacg ttcctgaaca 1080

aggtaaacat a 1091

<210> 1055
<211> 1386
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5267_G1, chr1:27073647..27075032, Cluster 6

<400> 1055
aactaccaca agaacgtgtt gcccttcagt catcagtagt caagtatatt actcagctga 60

ttttatagc tcattatctt tgattaaata ggtgtgatgg atctgtattg ccagagggtt 120

taaggaattt tcactgtatg ggttatcgat gccttttta aaactcgcta gaacattgac 180

atatcgtgta aggctcgtat atgggcaact acactttacc atgtgctcaa gcgcagctga 240

gactgcctga gaattcatag aactcgtcta ctatggcaca cgcaccctat acacacccac 300

accaacagtc cctttgggaa attccccggt gcgataccca ccgttcgcct ggactgggaa 360

tcgaacgtgg gtggcaatcc tggccactgc cagcggtaaa tcagtttctg gcatcagatg 420

aaaacaagtt ggtgataagt agatgccttt ccttgctaac tattttctat tgtccttgaa 480

ttcattaagt tgtttattat gttcttgttg tttttagtct ggctgttaaa tttaggaaga 540

acttcatgat cacatggttt ttcatcacca attataccat cgtgttgttg ttcttatact 600

ttggaattta aaggcttaaa attcttattc tctacagcat gacattgcga tacaggattc 660

tagtcattgg ttttgcaact agttgctgtg taggttcttg acaacaattc aattgttaca 720

acttcagaag tcaactaggt tctgaacaga tattatcctg tttatatgct ttattggttc 780

gtatacatga tgtcagttcc ttctaacttt tcaggttagt aggactaagc tatggcttta 840

tgtggcacat attttcaagc agtccaaaca aggttatcgt ggagcctaaa ggtatgctct 900

ttggcttatg attttcttct cgtatggaca atacagttgc taaattttaa ttcatcatta 960

gttttgcaat gtgctgttat ttccagtaga atttttagat gttcaataat tttttacttt 1020

agttttctca ttgtcacagt tgtactgtat aacattataa attttggcat gttccccact 1080

cctgtcaaaa ctgtaaactg acactaggat gtaaatatgt tttgatgtca attggaaggt 1140

ttcagcatgc ctcttcattg tatatatatt gaatgattag aagagcatgt atgtaggaca 1200

gcgtgtttac gactacctca acaatgtgtt gcccttcagt catcagtagt ctaagtatat 1260

tgctgagctg atttttattg attgttatct ttgcttaaat aggtgtgatg gacttgtatg 1320

gccaagaggg tttaaggaat tttcactgtt tgggttatca atgcctttct taactcgcca 1380

gaagca 1386

<210> 1056
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53539_G1, chr2:9432896..9434007, Cluster 6

<400> 1056
cggcaggcgc cacgcgaacg ggatgggacg agacgagaca tggcatctcg cagcctggca 60

ctggcagtcc ccttcccctt gtcagatgcc atgccatcgc cagactgcca gttccattag 120

ccgccgcgcg caagctaccc gatggctggc tctggctggc tcatcgatga atcctcgggc 180

aaagatgagg gtcgtccact tccgtagtgg cagcgtagcg gtagtatact ttgaggcggt 240

gcactggcct ggtgcgtggt ggccgctgca actggagacc tgcgggcagt ccagcccaca 300

ggcgttagcg gcgccatgcc ttggcgacgt acggatgtga tcacgagacg gggccccgta 360

cgcaggccag gctcaaccac ccagcttttc gacaggtgac tccaaagtag tagtgtatat 420

ataactgaac cactccgcta tccccaacaa cgccgtcgac gcgtgaatac cagcggcagc 480

ggcgagagac agcggcgccg gagacgccaa tgcacgtatg agtcagactc cagttaggcg 540

gattctccat tccctaacta ctttttcttt aaaagtgaaa atttcttatg aaaaataggg 600

ttcctaaact gaccctaaaa atgccaaaat cgacatcatg tgagtggcta agattgcagt 660

acatctcgtg cttagagatc gaactcaata attaaagacc tataactcga caattaagga 720

cttgttctgt acatctcgtc cttggagatc gaactcgaca attaaggacc tgtaactcga 780

caattaagga cttgttctgt acatctagtc cttggagatc gaactcgaca attaaggaca 840

tgtaactcga caattaagga cttgttcgtt agagtctgaa ttcggaaaaa gagaaataga 900

gcgtcaactg aacatatagt ggtatttttt tgacaaagag gaacaccccc tgtttcatta 960

cgaaatagac agaaacatag ttcatacatg accacagagg ccactagaaa agaaaagccg 1020

acaaaacaca cgcaactatc agccgaagaa aacatgacac ggggaaagcc ttccaccgaa 1080

gagccacaga ccatctaaca gaactgacca aa 1112

<210> 1057
<211> 1192
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53958_G1, chr2:11582056..11583247, Cluster 6

<400> 1057
cgacatcagc gggattgcaa tgacacccgg gcgcgctatc cgatacaagg caattgttac 60

ctggcttttg tttgtttaca gcgcgaagga gatccaagcg aggcagccag tccgaaaacg 120

ccggtggtgc aatcatttgt ttgttttcag ctaacatgct gatcaaacta cagcctagcc 180

tgccagagga gcgtattaat tgcatgccca gctagttgct gctcactttg gacgtacaag 240

tctgaccaat tcgtgtggat gcttgtgcgc gtgcatggta attaagatat gtaattagct 300

ttagctagct tgcatgcgcg agcaggaata tattggatgt atgcctcagc tggcaagtcg 360

aacgactata ctatactgct gccatttcca aatacattgg atgtatgcgc tgacgacgaa 420

cgtgtgggtg gatgtgtgga ttcggatcgt ttgtcctcag ctgccatggt ggctaagaca 480

aggtcctctc gctgtttcgc agccaggatg catgaagcag ccgaggttac gtttctgatc 540

caccaaaatt tgaatcgatc ttgcacccgc accacgcacg tgcgtgagag agatatttgt 600

atgctcgcag ccgccgacca cgacgggacg tacgtgcatg aaccacatcg tccccggcct 660

ggctcaagat ggatcataca tgcgtccaga tatatagatg aataaactgc agtccgaact 720

cacgtacgta cttgagaaag tgacacgcga caggtcaagt gaaccagcga cgtatgaccc 780

cgcacatccc ctggctcaag gcacgccccc tcgatccgcc tcttctgatg cacgcacaca 840

ctgcagacaa aactactact cttattagta gtattattag tacgacgact cataactacc 900

taaaaaaact aacaccggct actggaatct tcgtaaggtg agcaaataaa acgtgcgtgt 960

gtaccgcctc tttcttatgt tagtagcgtc ctatctagca taattatata tacgtacact 1020

attttcttta tttgcaaggc acgatgcaac ttgaataggg aacgagcaac ttgaatcgtg 1080

cacgcacgtg agagttgacc tgagatatat attttcagga acctaacggc taacgcttaa 1140

gatcagtttt tatcacagaa attcctatca cgaagttacc aaaattgtca cg 1192

<210> 1058
<211> 1158
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54212_G1, chr2:13098290..13099447, Cluster 6

<400> 1058
ttggcggtgt ccgattcttc agcagttctg caggtctgta ggttggaaaa attcaaacat 60

gcaaaaaagc caagaaaaat tcaaacatgc aaaaaagcca agtttagcgt ttcctttaga 120

tagtttgttg gaacccatgc tttgtagata gcttccttta gctaagtgtg ctctgtaaac 180

ttgagattta gctaggattt ttatataagc tcttggagat gctctaagtg tgtttttta 240

tctcaactag tgactcatca tctttactct ttttaaaaac gctagttttg tgcctacgta 300

taagacgtta tatcatagtt gggccgtgac gtaagaaact atccaaactc aatatgagcg 360

gagtgcagcg cttctatata gtatcgcctt tctcgctatc tgaagaagga caagccaccg 420

agtgagttat acaaaaatat cgagctcctt ctcatgcatg cacgtataga ctcgatcgag 480

attgtcatcg tttcatgtga taatgcacag acattatacc ctgttgattc cacgaggaac 540

ccgcacggac cggatgttgc tcgtaacacg cacgtacgta cgtgagcatg tagatcatca 600

gtctccatgc gcgtatggtc tgtctcggcg ctcaaacagc cggccggtgc gcatgccgtt 660

atggcggagg aacgaacggc cggcactagt tgccgccgag tgcgcacgcc gatgccgacg 720

cccatctcga catccttgca cgcgcgcgcg acgacgacga ccctgcaggt ttccttgcac 780

gcgtgcggtc ccggtaccgg acacatgcct cgtcgtctgc cgcgcgctga aaccggccgt 840

gaagagatca gtcgcaatca agcaccacgt acatagctag taatgaattg atacttttgg 900

acgtggctga cattattgac gagaaaataa ctaaggcccc gtttcgttta gttggagtga 960

ctaaagttta gttattttta gcctctaaaa aaataaatat ggtgactaaa gtgtcgtgac 1020

taaactttaa ttttgtagtc atcaataggc tgacaaaaag ggagtaaagt atgattttta 1080

acttatttgt cctctctagc tagttttctt cttgcaacaa aacacctact aattcatagc 1140

agcaatatag ttaatatt 1158

<210> 1059
<211> 1335
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54590_G1, chr2:15019104..15020438, Cluster 6

<400> 1059
catcaataat gctgtagtag tatgtgtttc catgcatgcc tcgaacatgt atcatggcgc 60

tattattgat ggatatatgg aaatcatcga cgatttcgtt tttatatttt ttatacattt 120

cattgaactg gaaatctttg acgatatgta gtattggaag tacaacgggt gtccaataat 180

cacacatttc ataagctagc tataggagaa gccttagctt gtagctatac ataagaaagt 240

tgaagcaaag gtgaaaacaa acatgattcc tgtcgaacta tcttacttac gtataaagca 300

aagcgatatt aaaaaaaaac accgtacccc aacaaacggc tgatatatat gtgttttaaa 360

aatgctagta aatgacagcc tgcaagctaa ggtacgaact atgcctgcac gattataact 420

gtcaatagtg gatttaattc tatgcatgta tgaagtggta actatatcct cccctgcatg 480

attgaccaac caatataatt aaagcacaag ttccttttt tttccagttc caacagcatt 540

tgttgaggcc atatctctaa tgagcacctg agaaactact gtactagctg gtggaatatc 600

ggcagcaaaa aggagatatt actaatggcg agtgcagcta gctagctagc tgccactagc 660

tagctagcat gatatgaaga accctacaag tacgggagtt gggggcagaa attgctgcgc 720

ggcatgtcct ggacgcagca catgtgatta tcgtcgtctc tgcacactgc actgcacgcc 780

catgagagcg atcgatgtgt ggtcgaaaga aacggccctc tcccagtctc ccccttggct 840

gatctcttgg ttctaagcgt cgctacgagc tgagcgtgta cagagagagg gccgggcaag 900

cctcgcggtt ggcgtgctag ctttgatccc ccatatcatg acaaggacga gctcacatga 960

gcccaaccag ctgattcatg cgggccccac cctactcccg ccatcatcct ctcctcactc 1020

accacccgcc cggcccggcc tcctccctgc aaagctacac tacacagcgc gcggctgctg 1080

caccacagcc tactttcccc cggccggcct gctgcctaat tacctgctca tcaactaccg 1140

gagccattca cattcaatat gtactttctt tcttcctttt tttttaccgc gtggtcagca 1200

gacgacgcaa attcccaccc cccgaaattc aaagggacag acatcagcgc attggctttt 1260

ttttggctat atatggacat gcatgtgcta tgtgtgtgtt tagcggtata agtttatgca 1320

catcatcatt tcttg 1335

<210> 1060
<211> 1232
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54788_G1, chr2:16222633..16223864, Cluster 6

<400> 1060
gtcttgtatc ttttcattgc ttgcaccaca tataaatata ccaaattact cctatcattt 60

cgtagccctc ttcctctttt taatcttttc tgtccataag aaaaacataa atagataaaa 120

tgtaccagct ttatttttta tgttaaacat aaaaatagtc acatattttt tatgaaagaa 180

gaagttgata ataataataa tttagtgatg aacaaattga ttccgataat aataatacaa 240

gaaacaacaa catgttcttt gaattgcttg ataataagtg ctatttccta aacactatct 300

tcacatagtg ctgttttgtg tattctctct acggggtacg agttattgag ggagatgctt 360

tcgattcaag cagtagctgt tgacgagcct tgccctcctg actcctggaa cgggtcaacg 420

tgttggaatc ctggaacata agtggctaat gctgcaggcg gccctaacaa agcgttgcat 480

gtgcgagact gggaccccgg actcctgtca gcgtttcaac acgttgaaaa acgatgggac 540

cccaaactca gagaacagaa gctagcaagg agccaaggac aagtggaatc agaagcaact 600

ggtgccggtc gcatggagat ggaaccctgg caggacattt ttttacacaa gctggtactg 660

caggtctgca actcgacccc gaggtccttt gcagctcgcc tcgcacgcga ctcgaacgaa 720

acatttgttg aaggcacgtg accgtcatga acatgactgt gaccgtcttg aacttaagat 780

gcggtgcgtt ctatgaattt ggtagaacaa agtcatttat catactatta ttaattattg 840

atctataaaa aataaaataa ggatgaatca acttatttaa tttcacgaac caaataaaaa 900

aaatgatgaa cgagaagatg attgagtagc tcattcctcg aaccaaacac acatttatat 960

tcagattctg ttgttaaacg atgtgccacc gacgttaact gaacacagtc ttaactaatc 1020

acgaggccta aacgttccct acagccgacc agtttttatc ctgcaagtcc gcagtactgc 1080

aaccgcaact cgtctcgtga tggatcctgg attcgttggg gctatcgtgt gttgaccctg 1140

atgaatcgcg ctgcatttca cgttcagcag cttgacaatg atgggggggct agaaagggag 1200

cgtttgagcg tcgcagcaca ggcgaaacac ag 1232

<210> 1061
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55485_G1, chr2:19986409..19987475, Cluster 6

<400> 1061
ccttaacaat tataccatca gtatctatat atacatatag ccaacgtata atacaacctt 60

atattatata tgctgctcca agtgtgttaa aattaataat catgcacttt taacggccag 120

cttgacttca aagagtgatc aagaaaggta ttgttgcttg acagaagtgc ttggtcctac 180

actcctaccg ggaacaaaca gctacggaga aaaacattca tcagaggacg agctggcgaa 240

agaaacctag ctaccaacaa aggccacact gtctggtctt ttttgctaca tgacacctaa 300

aaagggccag acgtagtaca ggggtgcacc gtgcacggta gggacagtgc tactgctacc 360

attgtgagcg agcactacag cttgttttgg tcctggccac aggctgctgc ctgcattaac 420

ccccggccct aatcctcgct cattcctttt caaaataaag caccttagct agactatact 480

gttcatgcga gagcagatgc gaatcttcta ggattgggat caacaagagg catgcagtgc 540

agtgcaggga ccaaaacaga tcaaattaag accatctcca accattcccc cacaattctc 600

cccctatata tactttctat tatattttac tacatcgtcc caaaagatat tccctccaca 660

tccaggacgt ctctaaccgt gccattcaca ctatccagct cccctatata ctataatcca 720

gttatttgac ttttttcatc agtttttaaa gttcaaaaac catagactat tcgtattgtc 780

ataccacaca ttgtttttag gttatgataa tttaaagagg ttaatatcac aaagaaattg 840

agtgcttaaa gtgtaggaga ttggaactcg ccccatatgg ggggagtttc ttctctccca 900

ctatgtgggt tgtgggggtg gggtgttgga acctcgaggg gtttgacacc ctaaatgcca 960

ccgggtatgg ggtggggagc ccttggagat ggttgttcta cttctataca agctagttgt 1020

ttgttgtcaa agtactacaa tacgtaatca tcaaattaca tacgaag 1067

<210> 1062
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56197_G1, chr2:23764760..23765789, Cluster 6

<400> 1062
ttccgcgatg caagcacgcg caggtgcagg caaccaaaca caccctaagt gacgatggcg 60

gtggaagtga aaataaacag gtcggcggac gagtggcggc cggggactgg gggaggccct 120

cgagggcaac cgcagggcgc tcgaggtcga gggcctccac gcaggattta cagtttcgga 180

gagaaaaaat ttcggacccc aacgaaaagg aaatttccga aatcttaaat agatttaagt 240

tttttaaaaa tgatacattt tatattaaaa aaaggccaat ttcgtaaaca tatatttttt 300

ggacccacca aaatcaagaa aattccagag atttccgtcc gagattgtaa accccagcct 360

attgatcaaa cgtgattctg cgctgcctac tacgatcgcc aggtccgtcc acgaccgccg 420

actgcggatc gtcaggtcag tatgcagctc aacgtgattc aactcgcatc caacggcagg 480

tcgggatcgt cgagcgcgga tcgtcaggta tgcctgctct gctgtcatgg tttgcgttgt 540

ttttcccatg tcaatcggtc acggcctcat agcggatcat ggactgcatt gttttgaact 600

agtagctggt gcgcgccctt gggcgcgctt tatcacggat ataagctaga ttataagtgt 660

tgttattata gagaaaaaaa tatgtataga aattggtccc aactttaata tatagaaatt 720

ggtgcacgtg ctcattaaag caagggtaca tgtttctgtt atggctggat gaaacattgt 780

ccaacagttg cgtactgctt caaaattttc ttttctcggc cagggatgat gcaaatagat 840

tgggaatagg cttatacatt aatttgggtg tggttcgtca gtgaactgtc ctctcctccc 900

tttatacttt gcatctgatt agaatggttt gaaccgcact tgtttcctga ttagaatact 960

ttgcatctga ttgcacgtga ttttgggttt gagggatgaa gatgagagaa agaaaaagag 1020

ggatgtgcat 1030

<210> 1063
<211> 1218
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5985_G1, chr1:30294178..30295395, Cluster 6

<400> 1063
cgccgactac cccagcccag agacggcaga gagactggag tataatagac tgtttctgag 60

ggggaaaaag gaagcactga taatttgttg cgcgagttta attgggtggt gccagatgcc 120

atgccagggc gatcgccgac atgcaccaac gttgcggctg ttgtgacatg atcgcccatt 180

tccttttta gcaaatggac tgactacaag aacagaggag tactacccta aactcctttg 240

catgcttggt ttccaagcca aacaacctgc gcgacgggcg gcagggcaga gcagcacgag 300

cacgaccgac catgtatttt attcaccaac ctatgccaga tactgctctc aattctcaac 360

agagcctggt cgctttctcg gcaaccaatt aacctgcctc agagaacctg cacgttgcag 420

agtgcaggcc aactagtaaa ttgtagtatc ttcttaaatc caaatggaca atccaaggtt 480

gcttctactc gactgtcctg tctacctggg aattttatat tttttgtatt tcattaaaca 540

aaactaatta tatgtcgata ttaaatgttt caacatctcc tagggtagtt agagaaagtc 600

tggaaactaa aattcccttg gagattggga tggagcaaat agagtttaca tgggttaatt 660

aagatccaac agaccggatc ttatcttgtt caagtgctac gaatatacac acgagacgga 720

catcagtgta tcagtagttc agtacacatt cttcgtaaac agcctactgt ggtaacggac 780

tccggcgttc tatcgagcgc aacagaaacc aacgggcgct acagagcctt cacgggccct 840

ctatctatac tatacctcgc cggccgctca cgggacagct tccggccaac gaccgctcca 900

cgtatggcca cgtacaggca ccgaaacaaa actgcacgcc tgccccaccg ctggtcgata 960

tccaccatca tttgccctca caaattccgt ccgtgctttt ctgtttacat gtcgattacg 1020

cgtatctcat gcgtcccaca gtactgttct ataggggtag atgcgctgct gtttaaacgt 1080

cgcttagcaa ttagcatacg ccctgcgtga ttgcgagagt actaaattat tgccgaattg 1140

tgactcgtac atgcgaaatt gtcctgttca ttcgtcccaa ttaggatagt ataataaact 1200

taggcactgt ttggttta 1218

<210> 1064
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59894_G1, chr2:45763739..45764850, Cluster 6

<400> 1064
cgaaaaacct aaaacgtgag cacgtgtgac agcctccata actctttatt tgtctcgttg 60

tctcatgtga agagtagtga acacctccac atataatttg gttttctcct acttagatga 120

gtaatatggg actaaagctc tcataccatc tctatacacc accttagctt tcttatttga 180

attggaccac acacaagtgg gctaaatttc aacaccttct aacctttttgt tatagcctca 240

aaagaccttt tgatcacata aacgaacgat gtgtgatgat tgatgctcgg agagatgggt 300

ggttgggcgc gtgagttgca aatattctgt tgggcgagga cgcggggtcg tattagtgac 360

catcggtcca tgtgtgtatt tgtctgattt ttttatatgt cctacttttg ttaaattttt 420

acgtttatat ctcaaatttt gatctctagt gcaactacaa atggttgtcg ccactgggat 480

cggtgctatg acttaggcta tcaccaacag ttgcgtcata cgcatacgga agttgcacta 540

gccagacacg gatgcgcgac ggaaaaatag cgtgcacgtc cagtagcaca catgaacatg 600

caaacccact gaggagaatc gaatttttt ttgcaatcga gcggttgagc gctcatttta 660

catgaccagt gaattattga atgtggacgc gcaaggtgct acgcgcggcc gggaataacc 720

tgtttccagc ggactatgga tgcacatgcg gaaaataggc agcctgacat cacaaccgca 780

tcaggataga gagaggggag agggtattta gattgtcttc agccgacagt gtaaacttca 840

tcggtccgtg taaaatagag ggtttgcatg gtagattata ctgtttttag agtgaaactt 900

tagatttagg gtatgtgagg aggcaaagcc ttttttcaca tccacaccct catggagaga 960

tggtatgttt ggattgcttc tctcaaacca aaaataggtc gttaccgttg gcaacttaca 1020

tgtttggatg caggctaatt attggccggc caaagacatg cctagctcac tagctatttt 1080

tcctgcgaaa gttggccaat ctgtgggcag cc 1112

<210> 1065
<211> 1214
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_64459_G1, chr2:71895233..71896446, Cluster 6

<400> 1065
tataatgcaa aatcgcacag taatggtttt tgtactttag cttatctgat ttgagctatt 60

atgtgctttg attctgtaga aaggtgatgt ggctccttag caagaattca aatgaaaacc 120

aagtaaacag tataagatat tttacctaca aggccttgtg ctcggcaata atcaggtcat 180

cccagattcc cagtgtgtgc atcaacatac acattgcaat atacaaccca atgtacagca 240

taagaagctt gttctccctt tcttcagtgg catgaaacat cataagcacc tgaaatgccc 300

ttgaaatagc caagtagact ataagatgac cttcaaaaaa aatagactat acaatgtttt 360

cagatgtgat ctgaaatata tagatgaaac aaggccaaag gattaagaaa attgaaacta 420

gtacatcccc agttgaacta attaagtgta ctaatttact ttttttttcg tgtgcgcatt 480

ttatctctag ttcaagctgt ttaccttctc cccagttgaa ctaattaagt gtactaattt 540

accatggatt aagaaaattg aaattaatac atcccataat gcaaattgca aattgtaatc 600

cgtcccctaa gaatcagttc acacctcaaa aataacggag gggggtaaaa gaaatcgact 660

tgccctccgt tttatttgat caaatacact gaatttgaca gcccatgtat tgccaaagag 720

aacctggtca cgaactccag attatctaag gccagtcagc tttccctcca tagcctggct 780

agtggttagc aactatgcca ttcctgaaac aaaactttga cctcactctt gttgaaagca 840

aaaacggcta ctaatttcgc acgtataacc atgaatgccg aaagaaagaa taagaatccg 900

cttcatccaa gacagataaa gaggcgcgtt gagccacaag cctgcagcga cctgtcaaat 960

ccgctgcgtt ttggagttat ataatgaaca tgttgctgaa caagcaaacg gaggaggctg 1020

ataagctcgt cctgagaggc ggcgggtgac ccgtggccac cagaacagag cgtggttgct 1080

tcacctagca gctttgactg cagtcgcgag gatgcgaccc acgcttggaa cggtggccgg 1140

taggtatggg aggcacccaa ggttattcat cccatttcta acctaattct gcctgtttct 1200

cgaaaatgga aaat 1214

<210> 1066
<211> 1155
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_64601_G1, chr2:72464408..72465562, Cluster 6

<400> 1066
tcctccacac agcctcgtcg tcgtcgaagc cgacaccaga aaggaggtgt tgcacgcgat 60

gggaagcttt tgagctagcg cgggagcgaa cgagaggcag cggcacggga gggaacagtg 120

gatagcgagc ggtcgcctgt gcgccacatt taccgaatga aacgtgtcca ccaaaattta 180

gcgtctcctt tacaggacat tgttggacgc gttgggtaga acttcatccc ttagttttat 240

cgtaagcgtc cgttaccgga gacaatttaa atcaagattt tgaaaggcag ccataatggc 300

cacatctggg aatcgattta aaaaacaaaa atatgagccc aaagacaagc ctgttctaga 360

gcccaccgcc aagctcttcc aggagcccac aattgagccc attcaaagtg cgccccatcg 420

cttggcctac tctagacgca ctgccagcat cgagcccact tcatatgtat ggtcgttagc 480

tgtcttgggt gtatagatga tatcgtttgg agagtaaaat ttgacatttg gaaggagata 540

gaggatatga taggagagtt gttgaacagt gagcctactc accgctgtgg acaccaccta 600

gctagatcca actacaatgg agctctactc atctctgcat tggatctact ataaggagtg 660

agagggtgag gcgatctcca tgtccatagc gccattggta gggccggtct tgggggtggg 720

cagggtgtgc ggccgcccag ggcccccaga aggtatgggc cccctaaata taagtataag 780

atatgatatg tgctatgaat atttagtaat tggtcttgat tgatacacta ttcgttagtc 840

ctttcgctag ctatagcttg ttaggaatct gagaaatctg agaaatgaat cgatgagcct 900

actacaatca caaagaaaaa aaatcctcac ataagatgat tatagtcgta gtgtataggt 960

actagttctt atattatatg ttatatttgt gtatttttc aatctcacaa actaataatt 1020

gatcattaat atattatata taggattaag tcaaaaatat ttatcaaaac tcttatttta 1080

ttttggcacc aagcgagtaa aatattaaga taagagattt tcgaatggag tattgcctgc 1140

tacatgattt tgaag 1155

<210> 1067
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_75292_G1, chr2:143039352..143040438, Cluster 6

<400> 1067
gccttaagga ttagtagaga tatatattgt tttgtttgga cattagattg tatcttgtgc 60

accaaaagca acagattctt gctgatgaga tgtccccgtc ccgttcgtcc ccatgcagaa 120

aagcaaatat aaaaacacat caaagagatc gacgtcatta tcagcgtgga aagaaatact 180

agaaaatgca atcatctccg gctgctcgct gcccatatcg aagcagcagc agcagcaacc 240

agcgctgaaa gaaatggcca tcgctcgtca gttacgtgtc acttgtcacg gcactaaatg 300

ggacgttgcc aaacgaaaaa ggccgcgtgc gtgcttcgaa tccaagccaa ctacggcgtc 360

gccagcgcca cttgcaatag cgtatgcatt gctggtggtc gtctgaaagc ctcacaaact 420

tttgtttact tgttgtcagg ttaagggata tgcaatagcg tatccttttc cagttttgat 480

ttgaatcgaa cagcccctct attgctcata ttattattat atatatatat atatatatta 540

atctagtcac aatcagaaac aaagggaggg gtacacatga gcatcacaag tgggctctag 600

aacaatagct tgaggctgaa cttgagtaac aatattatta tagtacaggt agatgaaaat 660

gatagaatgg ttcccttcct aaaagaacgc tcggaggcga tgtgcaaccg atcgctcgtt 720

acgcacacgc accttcctgt gtctgtgagt gatcggccca cgaacatact agctaccctg 780

ttgggtttga gttagattga ggggattaag gtcctgtttg ggaaggtttc actttaaaaa 840

ttgcagtttc ggtttttcag cttcaccatt aaataacttc aacagattaa aggcttgcac 900

atagactata acttttgtaa taaatccaat taatttttga agcaccattt gaggagcttc 960

gaaaatttca tgaaactgtt ctctagtttc agtttttttaa tgtagagctc gtggagctag 1020

acctgtttga tagaagaagc tgaaatagac ttgaaattct tgaaatagag ctcttccaaa 1080

cagtacc 1087

<210> 1068
<211> 1129
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7567_G1, chr1:39752080..39753208, Cluster 6

<400> 1068
cataatacag tgcactggat ccagtggttt ggttttcgtt atgacttatt atagtagttg 60

ctccagaaca gaagcaatgg tcctgcggcg tccttactgc tttggtgagg ctccgtgtct 120

tccgaaagcc tactccacta atattgttgg ttccaggatc gagtgcttca ttgcgcagtt 180

gtcttgtctc caaacaatgc tgcaggattg aacaataatc agaggttaaa gaatgcttgg 240

acacaagtgt tgctgcggtg gagcaaaagg ggaccggatg attttgcaga agcgatggta 300

tctttattcc cctcggcagt ctggcaccag ccttcagttg tgcacgattg gtgccttgcc 360

tttgccccca tgtgagcgca tcatggccgc ttgtattgaa aaagaagcgg gatagccatt 420

cgtgtcgggt caacacttgt ctccagcggc agtttaatca tttgtgagaa cgaaactgaa 480

tacgacgaac ccggtgtccc gttctcgtgt gtagattctg atgacgatag ttgcagcgtt 540

ttgactgatg agtgcgagcc acgcctgcat gcatgatgca tgaatagcat tttgctacta 600

cttggaatct acctgtccga gaccatctgt ccaaaattcg gaagcacggg cgatgagaag 660

gtgtgaatgt ctcacgtttc acgtcagaac tctcaagtgg cccacatgtt tgtgccgtac 720

caggctttaa gctgccttca gcctacaggt ctggtggttc attattcgtt aggttaaata 780

atagatgcaa tcattaatat gcaggcatca gtcagtaatt ttataacaat aatcgtttag 840

taataaatgt cgtcaataat attgtagtca ttagtcaata tttttacagc agtaatcgtt 900

tagtaatatt gtagtcatca gtaattttac tgcagtcatc gctcagtaat tttactgcag 960

tcatcagtca gtaatagatg cggtcattag taagtaattt tacaccagta attacaccag 1020

taatcgctta ttaatagatg cagtcaataa tattgcaatc atcagtcaat aatattatag 1080

tcatcagtta gtaataataa ttttagcagt gaagaaatgt ttggttatt 1129

<210> 1069
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_78754_G1, chr2:163822722..163823727, Cluster 6

<400> 1069
tgttccaaaa tagaattaat cgattagcct gtgaatatag tttatatgtg tatctatatt 60

aattatcatt cgtttgaatg tggatgaaaa aaaaaactag aaagaagtat attttaagat 120

agatagagta ttatatttcg cagtgaatag agaaacaaac aaaaaggaat gaaaaaagaa 180

agggcaacgg acaaactgtg tttctctttt acggaaccta aagggaagcg gattgagatg 240

tgcaaactcc gcgcggctga cggtttcggt tggttcgttt cgttcaccag ccagccagcc 300

acagtttttt atttttcttc caaaacgtgg cagaagcgaa atgggacgaa agaaatatat 360

ttatatatag tacagtacta gtagatacta gatgcaaacg acaaagaaca ctgtgacgac 420

gaacgaacct ccgatcttta tttttcaacg agagagacga ttagttgcgg cgtgccacat 480

ctgggttgtt aacgacgggc gcctgatgac atcatccacc actgaaactg aaaggtgtgt 540

gaagccagca ctaatgaaaa aggatgatgg tgcgttgcgt tgcgtgtaac aagagaatga 600

cggacggcgc ggtgacaact acctggcgtg gcggctggcg ggtagtgcaa ccaactgtgg 660

ccgttgagtc gtctgccaca cagggactgg gagtctggga cggggacacg tctgcatgcg 720

caacgctggc cgctccgaaa tcatgagcgg agcacgcatg catgcacctc acctgagtcc 780

aacgatcact ggctgtaggt aggacatggt attcgaaccg gttacatcac cggatttcta 840

attgatactg aacgactaag atcctgtttg gatcgtcctg tctaactgta tgtcagtgac 900

taataattag ccgataaata attagctagc aacagttagt caggatatgt ttggagtctt 960

gactaataga tgtctttttt tttctttata caatctatta gcacat 1006

<210> 1070
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82738_G1, chr2:185765919..185766954, Cluster 6

<400> 1070
gtgtggggtt gtccacaaca ccctgaacct gacaatagcc cagctcgggg acatcaacct 60

ccaaccgaat gttgctgccc ccagacttca caactcgctc atccatctct gctgctagag 120

catttggaag cataggaact ctgtcgtttt ttatcagacg ccacgttcag ttcaagacat 180

ccggaggcgc tgcctagaag aagccagact ttggcgctgt aaaattacag gccattctag 240

tgtggtagat gcctggtgta atatatttca ttagcagaac gtgatatgta aaaaactggt 300

ttatctgttt tctatcaata tatctaatca ggtggggaca accgtccgcg ccccccccctg 360

ttgccctgtc aaaaaaaagt ttagccctac agcctacgcc accagagatc tgaaactctt 420

gcgctacaga acctaatctg agtagacctt ttagttctac acaaataaat gtatgagaag 480

actaatcatc aagaattgca gaggtatgtc tctcttgttg attaatccat cctagaacac 540

acaactacca atcgtcaatc catttacatc tataccactg taaaatccgt ctatttaaac 600

tttgcaaaaa accattcaat caaattgccc ccacactcat agcctccatt atatctacca 660

aacaaattac atccagactt aaaacaccat aaaaaattac ggtttagata gctagataac 720

aacctctctc ccttactcct caaaatctaa tgaacaatat catttgaatt attcctcatc 780

ccttcctctc cccctccctc gcgaccccac tgtcccctcc cctcactcac accgctgccg 840

ccgtgaaccg ctaccctcgc gccgccactg tcgacctctg cccttccctc cgtggaattg 900

tagctttagt accggatata tgctagtttc acagattgat gacttctttt caccaatcaa 960

aagaacctgc tcaaaatggc aacatatcca atcctcaaaa agatattgtg ctcatgtgca 1020

tattttagct caaaat 1036

<210> 1071
<211> 1140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83244_G1, chr2:188825297..188826436, Cluster 6

<400> 1071
ggctccagtc gcccattgcc atgcccgtcg ccgtggtcgc tttctccggt tctccccgag 60

caaaataatc accttcagca gacaaccgtt gccacctcgt ctatctcggc gctgctcaac 120

atcatctcag actctgcatc atacattcat actacactac actcctccac cgtgatccaa 180

actcctccat ccaggtcatc atacactcga tcgccagaaa taaacaaaca aacagaaata 240

aacaaacaaa taaaaatatg tttgtgccac tgcagacgca catgccagtt ccagagttcg 300

aaacagtgct cgatagttta atgggcgcag agcttttggc cacgaggggc tccatgtgcc 360

gctgctcatg gctccaaaca taggcttttg ttgtgttgcc acttaaacaa actcgatcgt 420

ggccatttgt ctatgccgcg tcgtcgtcgt cgtcgtcccg ctcgccggcc gctgctcgct 480

cggaacaacg ggacgggacg cacttggcta ctgctccgcc gctacatgtg tctataggcc 540

agcggcgccg gcacactggc atgcacagca cagtaatgac cggacccgcg attcgccggg 600

gaaacggcca agtgctccgc gtagctagca taaacctatc gtctatcact gcaggtgagc 660

ggtgacctgg cctaacactc gaaagattcc acgggacatg catagtagac gtatatctat 720

ctatctatct atccaatcat gcatggacca cgacgtcgag tagaattaaa ttcgtagccg 780

gaaaggagga ttaggcaggc tacagtggta gggagaggga ccggggcgaa aggtcgacga 840

aaagagatgg cgtatgtcct ggagtgtcgc cgtagtgctg gccgattggc atgtttcagg 900

ttgctgtctg ctcgcagcac gccatgatcg gctgccatgc tcgcgcggaa ggacgacagc 960

gatggagtta tggggaacgt cgttgatgca gacttcgacc tctcgattcg ttgcaactgg 1020

accatttctt ttttaattct ttttcttttc caagcaggac cgcagtttat tgccatgttt 1080

tctcaagtgt aagccttatt tagacccttt taagcgaaat agatttgggg atcaaaattc 1140

<210> 1072
<211> 1318
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83327_G1, chr2:189202027..189203344, Cluster 6

<400> 1072
tgcacgtatt tcgtgtgatt tgagcgatgt ggttactttt ggtaatatat cagcaaacta 60

ataataacct ttggtagcaa aggaaatagt tgtcatggtg accatgattg cactataagt 120

tgaaacctta tcaccatgca aaagtgattt acaaccaaat aggtatgatc ggattaataa 180

atttgtagca tggaaattta aagcttaggt agtcataggg aggaagacaa caaaggtgag 240

acatcaacat ccgtgtaata catttgataa aataggttct gacaaagagc tgccattacc 300

actcttgttt tattggagaa aaaaagctta tgtacacggt tcctattctt cttaagaagt 360

tcactgcggt acctctacag aacataatca tatgtaaaga aacaataaat gcaacaaatt 420

tctctgcata tgtatagatg gaacatgaag aggaaataaa tatgtatggt tttcgcaggg 480

tatattaata atttttggaa cataccaagc tcatcgctgg aggcccatga gggcatggac 540

gggcctcaaa tgtcgcagtc taaatttgca tctgagctag tttcgtttgc aggcccactt 600

gcacatctcc atttggtagt gtaccgcttc acgttttcat gatcggtgtc gtggtgcctg 660

ggccctagcg tcgtctagag ctagcggtgc gctagacggc ccctgccggg cgacgtacga 720

gcgacatgcg tcgctttccc tggtggaccg tgagaatcaa ggcacataat gcattgttca 780

ccaccaccat cacagcaaga acaaaaactg ataccaccta cgtctgaaac atgttctact 840

cgaactatgg cctcatgctg cacagtggca gggactgata gatctttgg atcttttcaa 900

taatcctaac cactagatca aagcacagac ataaattata cctctgttta gctccaccac 960

cgccgctcac atttgtcggc gaagctctga gctaaggcaa cgacagtcag agaagcaagt 1020

ccgacgccgc cggtggactt cgcgttgctc atggccttcg ctcaagatcg gcctaatgtt 1080

aaggtgggga accgagacac tagctactac ggaacctcat gtattagttc gtgaaccccc 1140

acctctctat agcctgctca acaggggcgt gaggtaaaag acccaacggt gctacaacca 1200

atgcacgtac acaataccaa ttcacgtaga caatgctaca agtagacgcg acgttatgat 1260

aaaatgatgg aagaagaaaa catatacaat ttacttgtga ttgattccgt gaccaatt 1318

<210> 1073
<211> 1277
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86688_G1, chr2:209108183..209109459, Cluster 6

<400> 1073
gtaggctgta cgtgcttgtg ggcggtggcg gatccaggtg ccgcatgcgt tgacatggga 60

ggagaaaggg agaagacaac ggagggaggg gagggaagaa aaggaggaaa ggaaaggaag 120

taacaatgaa gaaaaggaat gaagaagatg aagaggaaaa agagaaatag taggggagaa 180

aaaaagataa tcagcctcca gtccccttt tccacgtcag atcttggatc caccactaaa 240

tgtgggctac taaactccca tggactacac aaagaaaatg tattttaatt gaggcggttt 300

gcagtgaggg acgtaattat aagtcgttgc catgtaaaga caatgtattc taactgaggc 360

ggtttgcagt gaggggcgta attataagtt gttgccacgt gcccacgtaa acgacgatca 420

gaactcgaaa aacctcccca aactacttct ctcgttaact gtccgaaatg ctattcttct 480

gctatatcca ctattgcgtg catctcgttg cgtggtcgtt acaccaagtc gccaagcacg 540

aatgcacgat acaattacct tttgttgatt ggacgttggt tagcaaagta cagtcttaaa 600

ttttgacccg tttccaggag gaaaaaaata agcctacagt aatcgattgc acgtcactag 660

ttgagaacga agtcaacaac acgacctgca ggctgcaggc ttatattatc accggtatgc 720

ggatagcaac ctgacaccgg cgaacatcca caccccgcac gtttgactct tcattttcta 780

ggccatggcg gcatggcatg gcccatggag ccaataattg cccggacgat ccgaagcaat 840

gctgcactgc ttgtctgttt ctccgaccct gacatttctg cacgttccat ggccgcagcg 900

acacggaggc ggagcacccc tcgccacaca tgcagcagca gcagcagcag caggtcggat 960

atcgcttggc acacaagacg acaagcagag cacgggccga cgaagagcgt actgtatgta 1020

tatgagtgta tcctaatggc caacggtcaa aaggaggcag catgcatagc ggcgtgcaca 1080

gcacggccgt cgcggtcatc tacgatatcg atcacgactc ctcaacatct cttgtacacg 1140

tactccagtc tccagcacag agtgccagcg ccaaatttgg cagcggctgc acgcgtctac 1200

aagcacaagt acgccacggc gccctggggc gcgggcgcag gaaagcggcg accgggcctc 1260

cgggcaggga gacccgc 1277

<210> 1074
<211> 1022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_88611_G1, chr2:220146814..220147835, Cluster 6

<400> 1074
gaaaatatag atagggaaat aaatataaga aaaatggttg aaaatggtct aatattgaat 60

aatcctcctc gatccactta tccacattca tggtatggaa tgttgcatgc atggcgggat 120

atgggcacgc tctgctctca taggtggagc aatgccatgt gcagacatgg agcatggaat 180

ggtccatgta cgtcttccat ggacaaaagt aaaaaaaaaa aaggtgggga aacgttcccg 240

caacatggcg cacgccgaac aaaggtgaaa gtaccaaaac aaaggcacaa caagttttgt 300

tcctgctctc ttgtcttatc tagctccttt gttcttgggc aattttgttc tattggaagg 360

cgccacctcc ctcgctctgg tgtatgaata cggtgacttc gtgtctaacg gcgcctcctc 420

ggttccctgc atgcaagggg gttgtgcaca tttcccccca tggagtgtgg agctccaatc 480

tccccctgca tttaactgcg aaattaattc aattcaagtt tagttacttg ataacaattt 540

gtattatggt gttataaata tggtagtatt ttttaaaact ctaaaagcta atgtaaaaaa 600

gtcaaataac tcagttaaga gtaaagtgga gctggatagg aagaatgatt ggagagtaga 660

taaaataggg aaataataat tgagaagggg gtgtttaaat ataatagaaa gtacaaatga 720

ggggatttgg gatagagaat gattaggaat ggatttggaa gtctggatat ctgaattatt 780

cgtatttgta ttcgcttaaa atgttgatac gatatttacg tacaggcaaa acagtgcacc 840

ttagcactac catttgagtg cttgtgaata taacgatatt tacatacggg aacaaggagc 900

catcggtaaa ttgatatttt tgtaggcggt tgcttatgtc agtcgtatgt aaacatcaat 960

ttcaaaaaat taagaagtgt tgaaagcctc gggatgagat catcgttccg atgaagctgc 1020

cg 1022

<210> 1075
<211> 1080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_91018_G1, chr2:230945046..230946125, Cluster 6

<400> 1075
ttgttgctta attctgtgca catcagatca tgtacgcaat ccccccaccc caacacacac 60

acacaatcta cacgcatgct ttgttactgt agtaggccgg ctgcagcatg ttgtaaacgc 120

gaaagacaag gatccttgac caacttttg tttttcttgt ttttgcaaca gtttagggtc 180

agtcgtccgt ccccctgaga ccctttttgtg aacgacgaca tgatatgatt tatcaaccgc 240

ggcggccaca accatccaaa taaccttgcc aacccgtgac gacgcgagca atgcaagcta 300

gaaatggagc cgacgatcga ggcagaggaa attaaacggc aagctcgtgc gagggacgat 360

ccacgacggc agcctcctca tctgaacacc gtcgttcgtt cgttccacgt acgcaagccc 420

tgtcatttct tccttttgcc tgtcggttag tttcgatgtc agtggcgtgc tgcatgcagg 480

cactgacggt cacacaggat aggaaacgga gctagtagct aggaaggtcg tcgtcgacca 540

agaccaagtt aactataggt cacactcgag gacggccggg cagctgttcg gctgccatgc 600

aattcataga taacaaaata gtgtataaac cgtagccacg gtcagattaa aaccacagta 660

aacctgcttt ccaccgctct caacctgcta gctcctcact ctttaacccc tcagaaatca 720

cttcacaaaa gcctatttgg caaatagttt tcgtcgaata gattcacttg ctttcgatat 780

agaatcactc tattagggaa tctaactctc ggagctagct agagaatcat gcagcagatc 840

agatcgagtt ctaccaaagg agccatatat ctgttgcaag gggtgcatgg tatacaagac 900

agccctgaac ccatcgatct caaccacatt tgcatgccga taaatataag ttaagaccgt 960

cgtccgtccg tccgtccgtc ccagctaagt aaccatgcag catgctggcg gttaaccagg 1020

caatgcatgc atgcactgtc gattcattcc gtatgcatgc atgtagggct atctctatag 1080

<210> 1076
<211> 1114
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92963_G1, chr3:4720118..4721231, Cluster 6

<400> 1076
gtagtagatt gcaaaaggac cgggcaattg ataaaattgc tcagggtcaa cttgagaaag 60

aaaaggacca gtggagaaaa gtttttgttc agaagtgttg gcattgtaaa attgattgcc 120

aagcataatt tagcatttcg tggtactaat agcaaactgt atgatgataa caatgagatt 180

ttttaggttt ggtagagatg ttggctgaat ttaacccggt tattcaagag cacgttcgtc 240

gtattacaaa cgaagaaact catattcatt atctgatatt gataacgatg taaaaaatag 300

caatgaaggt aacaggtttg gcagataatg aacttggaga gtacaaattt atagtatcaa 360

ttgtcatttg gtatgaagta ttatatgcta ttaacttagt aataagcaaa cacttgcaaa 420

caaaggatat gcttatagat gttgctattg ataaagtgga agggctgatt tcttccttca 480

aaaggtacag ggaaataggt ttcctagagg cattggaagt tttgctagtc tatttttttc 540

tacttagtag gcccaatcta taattacgaa cagggcctcc atttatgccg ggacggccct 600

gattcctgac taccaagtac caagaggacg gagagcacta ccttacaacg tgtcgcaaaa 660

tagtcagtac taccttgaat tctttttttt ttccacagag aagagaaaga acgcgtgagg 720

accagttagc gtctcctttt cctcagcgat tgacaaaaaa gcgctcgatt tcactcagct 780

ttacttggat cgaaacgtaa cgtcttaacc gctacttcgc gtcgtttcag cccacgctct 840

cagcaaaacg cgaaaggctg agttggagga cgacgaaaac atctctctgc aggaagccac 900

tgatgaaact gaaatctgat gagcagatgc atggatccac caaggggtg agtgaccgtg 960

accgtgacct gctggcgacc ctgtccccag ttgccagtgg atgtctgtgt gagggcaaca 1020

gatctgatga gccctgacgg gtaggcgctc attagcctga caagccagag caggcaagct 1080

gagctgagct ccccgctgct gctacaggat ccat 1114

<210> 1077
<211> 1002
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93280_G1, chr3:5880691..5881692, Cluster 6

<400> 1077
tgatcgatcc cctatatatg tactgtgccg cgccaacgac aacgccagtc cagtgccatg 60

gatcgactga tgatgatcag gcaggcatta acaacacggc atacacgcat ggactgatgg 120

acccagcaga cgactgaaag gcatgcgcga gttttatttg tgtgctagct agaatgggcc 180

gtcccggccg ggaccacgaa gtgtaacgca agtgcgtgct cacttctctc tctctctctc 240

tggatccgac agcggaagac aagcacgact gcatgcatat cgtatgtcaa aaaaggtagc 300

acatgtacgt aggagtatgt atgcatatgg tatattagca gcagccggga ccgggatata 360

gccatgcacg cacgcagcgc agcaggcagg cggtaacgga ctaatggtac gggtgtgtcg 420

tgcagcatgc atgtttttcc cgacgaggac ggaacacggc cgccgtgcac tcgtcctcgt 480

cctcgtcctc gtcgatgccg cgatgcgtac tactgcagcc cggcccgttg acaatagaat 540

agatcagttg agcgcagcct cccacagcgt cagggatctc accggtccat cacaatcacg 600

ccctgcattg ccagcctcgc cccattagac cattaccgcc ggcatgcatc gcgatctgct 660

gcagtagtag tcgtcgtgct gcgctctttc tgctgctatg ctgcatccac acacatgcca 720

cacactcaga cactctctct ctcctttcaa aatctttgcg gtaaactttc tttgcagaga 780

gatagagaga gagagatagt agagtagtgc agcaagcaag caagcaagca tggtagtgcc 840

aacaaacacc gcggcgcgcg ctctctgact ctgactagga aagggacacg tgaagccgcg 900

cgcttgtcgc ttagcacttg gaagcacgcc caaactttga tgcgcggaat atttgatgtg 960

gaaagcgggg cagggcatat gcatatgcac cagcaccagc aa 1002

<210> 1078
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93486_G1, chr3:6741286..6742449, Cluster 6

<400> 1078
caggcgagaa agtagcctcc gaataattaa gcacggcccg tttgcttaca tctgactttg 60

attttttttt tctgctagtc ttggataaac atcagacagc caagtaggat gcctgtaggc 120

aaggccaagg caaatcatac gtggggattt gtgtgtgtgt ggccttgtgg cgcgttggaa 180

cttggatcgt agattaacaa agagacgaca cggccctgcg gcagtctgtt gctacgtact 240

gctggtagcc tggtacagag ctcccctctg cgcacagatt gcttttgcgg ccggcagttg 300

cgttgcgcgc cggccctgac cggcagcaga gaatctgtct gcgctctcct gccggctgaa 360

actgccaact caaactgcaa atgaaaaagg ctaaaagcaa gttcagttca ggtacaagct 420

cttttaattg tgcagaacaa gcacccccc ccccccccc cagcttcttc ttcttcttcg 480

gaggctttga aagttcaccc gccaaaggca ctgatagcga ttatatccac tcgaacgtta 540

caagctagaa gacaggtcac gtcaatgaac gggaacggaa gccaatcaaa gacgccttgg 600

cctatagcta gctcgtacgt tcttggactt taccacccta ataatataga gtattgttgt 660

gtagtagtat aacaatattc tcggatgctt aaactaagca agacttgcaa attaaaggga 720

ctggactcgc ggcgcgacag cgaggttcca ccgcccccgc ctcttgtcat gacgcccgcc 780

tctctcgata ttccggcacg agaaagcgac acggcacgct ttttttttt tccttttttt 840

ctttctttac aaataatagc cggagaagag cagaaatcgg agttccggcg aaacaaaaca 900

aatggaacgc tttcataatt tcttcaccag cttagaaaat caagttccaa tctagtgacg 960

accattatct atacgtcaat tcaaaggcta cagaaaatgg cttctgtacg tctacggtct 1020

attccttaca agatttactt aattatgata tggttcaaat tacctccaaa accaatagct 1080

agcggctaaa taaaattagc tgacatcttg gtttagaatg ggtaaactaa tagaccaact 1140

aattattatt agttaaccct tcta 1164

<210> 1079
<211> 1044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93980_G1, chr3:9320253..9321296, Cluster 6

<400> 1079
ttcattagaa cctctcaaga tacaactcat ttatgtgggt tgtatagcta aaaccgtatc 60

tagacttaga gaactgtgct agagatgtcc cttcaccaag ataacatctt ttgtgttttt 120

ttttttgca cttaccccgt tgataccact taagaaaaga aacatttttg tgggttatac 180

atgccctaag agattgtttg aatatcttca tgactctcga tacatgtcat ctcttggctg 240

catttataat ccattgtctt ggtattgtat cgtgcagtct cttaactgtc ttttatacct 300

ataaaaccaa accaaagtct tagagttata catgccctac cttattcaat tttaaagagg 360

ttgaggggat taatttttt atttaatttt aactctcaag aaatttaatc ttctcttgtt 420

cacttttaa tccgctcata accaaacaaa ccctaaggaa aatgtttgga tcgcattgta 480

ttgcaactag gttttgtgac actgcccagc tgcatattcg ttttagacga aactcaggtc 540

tttgtggtct gacctgatct gatcaatcta ttggttaaca gttgttgggc cagagagacg 600

tctgaacagc gcccagccct cttccgaatt gaaagcaaaa aaaggcatga tgactcggct 660

cgagcgatct ggagtcaaac aagtttgaaa gaattcggtt gcaacttgcc acgaatctgg 720

cctgcttcgt ttgaccgtca gatactgtgg gatcctatcc tttccctcat tggatacgcc 780

cacgggccac gtacagacct gcctggagat ctgcatgcca cgcagcaaca catgcttgga 840

gagttggaga tccagtcagt caagtttggc gctctcaagt ctgaactgtt cctgctacgc 900

ggctacgcca tttaaaaaaa aacaaaaact ctcctagaaa gagagatttc attatggtgg 960

ctgacaggac catgtaactg ccgtctccct cccaactgac tcgttgtagc tgatgcagca 1020

gtctcactca actcctgttt ggtg 1044

<210> 1080
<211> 1201
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93987_G1, chr3:9333799..9334999, Cluster 6

<400> 1080
atatatactt atacagtaaa aatggttggt gtagagataa tttggttgcg cgagttttat 60

aaagtttaaa ctgttgaact aaaccggtag taagaactag ctagatcttg cgtggagtaa 120

gaagtacatg ctgcaggcct gagtggcgac accggcacag ccaacgttcc gagtgatctc 180

attctcatcc catgcatgca aagtctgtat gcatgcatgt gatcatgtga gctagatggt 240

gcattgctgt tgtttaagca ctgatgaatc tgcgcttcgt gcccgccgct gtgcctcttt 300

gcttgcatcg gataccttaa aagaaactaa actattctcg ctggacgacg gcttcttgtg 360

ggcaacacgt tagtcgacaa cgattcggcc gccgcctgca cacaccgccg gccggcatcg 420

tccggcatcg tcgacctagt ccagggccag tttgatggca acgcctaact gtgtttagcc 480

agctaaaagc taataatcac agtctctctg aactttagat ggaattaaca ggtgttctat 540

cagccagcta gctgatcgac ctcatctaat ttacgctatt ttttgtttaa tcttagctaa 600

taattagttc cagctgactc atgacgggtt cagacgatgc actattcatg acggattaat 660

tcagctgatt gatcgatcat gacggctaac tgtgtaggct tttagtttat gtgcactgat 720

cttgagatca tacgggttcc gatgcacaac agtcaacagt ttcgtctttg ggcgaattaa 780

tggtctgaaa atgaaaacca tctggtacat gtaactttgt tgccgttcag ttttctgtgt 840

tactgaagaa ccgtcatgat caatcatgca gtagcctgtt tggttgccta gattttctta 900

atccagatac aactttcaag ctactaccta tttattctgg caaatttttt ttattttgta 960

tatatataaa ttagtcggat ttaatgctct cttcggttta agttatagaa cgttttggtt 1020

tttatggatg tataacattt gctacctatt taaatatgga ttatatctag atatgcagtt 1080

gaaacaatgt atctataaaa agacaaaatg tcttataatt aagaacggag ctagtttcct 1140

atattctaac gtgatgctat tttagaattg tatgatgatt cttgttgaag gcgggagtca 1200

a 1201

<210> 1081
<211> 1385
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93998_G1, chr3:9435029..9436413, Cluster 6

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1043)..(1142)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1074)..(1074)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1076)..(1076)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1077)..(1077)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1078)..(1078)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1079)..(1079)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1080)..(1080)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1081)..(1081)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1082)..(1082)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1083)..(1083)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1084)..(1084)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1085)..(1085)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1086)..(1086)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1087)..(1087)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1088)..(1088)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1089)..(1089)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1090)..(1090)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1091)..(1091)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1092)..(1092)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1093)..(1093)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1094)..(1094)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1095)..(1095)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1102)..(1102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1103)..(1103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1104)..(1104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1105)..(1105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1106)..(1106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1107)..(1107)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1108)..(1108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1109)..(1109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1110)..(1110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1111)..(1111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1112)..(1112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1113)..(1113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1114)..(1114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1115)..(1115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1116)..(1116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1117)..(1117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1118)..(1118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1119)..(1119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1120)..(1120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1121)..(1121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1122)..(1122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1123)..(1123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1124)..(1124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1125)..(1125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1126)..(1126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1127)..(1127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1128)..(1128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1129)..(1129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1130)..(1130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1131)..(1131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1132)..(1132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1133)..(1133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1134)..(1134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1135)..(1135)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1136)..(1136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1137)..(1137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1138)..(1138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1139)..(1139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1140)..(1140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1141)..(1141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1142)..(1142)
<223> a, c, g, or t

<400> 1081
atgaaacggc acatcatgga cgtacatgcc aggacaccaa atctttggtt aaacagcagc 60

aacaaaaaat ccacagtatt tctgtgttaa aaaataagaa gcagggaagc caacgtactt 120

ttttttctt ccgatttttc atcgccggtt aaaaagagaa ggtgagattg agagcctcaa 180

ggagaagtaa aaaaaagagc gaaaaaaaga gaggaatcct tttgggatgt gggcctcact 240

tccaacaggc cccaaggccc gggtgtgggg ctggggccag ggccagtccg cttttgtcaa 300

tgccgggcca tcgctgtccg tgtaaaaagc ggtgccagcg tgggccccac ctgctcgcag 360

gtccagcccc ccacccaacg gtcccaccac gggatagatc gcgctcgccg cagtctactc 420

tagggtgggg tgcggtgtgc gtggcgcggg tcaccgtgcg agtatcccac cgcggcggcg 480

ccacccgccc agtgtacacg agcacgccgc cgctggccct cttgtcttgt ctttggtgcg 540

ccgcgcgtgc accaatggat gatatgaggc catgagggca atatccaagc ttctacgaga 600

aatcacgcaa aaaaaaagtt tagttttctt tttctttttt ttgaaaaaaa aagagtttat 660

tctgatctgc tatgcagata cactgtgcgt tcgtacatac ataaaaattt aaaaagtact 720

atccaccaac tctcttgctc gcccaaggtg atcctcgctt gagccgccga acccagggcc 780

agtccggatc ttctgcagag ctcgtactcg gcctgccgtc gcttccacta attcgacggg 840

aatgatatgg gtgggagacg cagacgcatc atcatccgct gctgctacgg cgtctgggtg 900

cgccaccgcc cccaccgagt cctgcgctgc gcctgcgctc tggagaaggg aaaaaaaaga 960

gagagagagg ggagaagagc acaagaacga caaaaggcga gcgaggaatc cgggtgtaga 1020

gtacggacga atctctagat agnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1080

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1140

nntttttta attgattttt ttttttttca cgccccccct tttgggggg cgccccccca 1200

tattttctcc ccccccccc ccggcgaaac acccccacaa aagagatttt tttgtttttt 1260

tttttcaata aaggggggc ccacgggggg gggttccctt tttttggaaa ccccccccc 1320

gggatttccc cggggtgggg gattggttta tgggttgaga aattggggac gggtatttgt 1380

ttttt 1385

<210> 1082
<211> 1202
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94227_G1, chr3:10622478..10623679, Cluster 6

<400> 1082
ttttggaatg ggctagttac aaaaaaactg gctcggcaca aactagccca aactagctct 60

agcccttgga tccaaacagt accagtggtt aatatagtta taattggatt ggatagtagt 120

atctagtact actagtaaga gctcaaccaa ataatatcgg tatctattac cccatataat 180

ctatttgttt tacatttcgg tgagccaaac gccaccatgg atctatggat ctgctcgcgc 240

cgccgtcgct gccaccgtcg actccttccc cgcagtgtta gtctggacta tatggtagta 300

gtaaaggtaa tattgattgc ctgtcccagt aggtagattg atagtatgta gattgatagt 360

agtacgtagt gctgactcac gtgaaggcgt tacaaaaacg gctatcactt catcatcatg 420

catgtctcca acgacggagc cagatcagag gtgtcacttg tcctcgtgct ctaccgacct 480

tgttgccatg ctagtacggt ggtagtagct gtccaactca ccgtgcctag acgacatgga 540

atcgccaaca catgaaacat ctaatcatac atgggcttgc aacttgcacg tacgtactac 600

tcgttcttga tcgcctgagc cttgaacgcg catcagagct ggtgctgctg gtggtggtag 660

tagtatgcca gcgcacacac cacagcgagc cgactcagcc gaggcgcaca aaccagcaga 720

tgcaaggcgc gactgttcag tggcgccgct gtgccgtgcc gtgccgtgcg cggacgcgaa 780

cgcgacggcg gcgatcggcc agaggagcta tagggctagc tctgcatgca cgcgcgaagt 840

aacgcgcacg gcacgcgaaa agaggcgtct ttaatgcgca tgttcccgcg cgtacagcgc 900

tcgtagctgt ctgctatacg gtacgctggc gcgtctcatg atgtgcagag ccaaaggcgg 960

tgtacgactg tacgtatata tgcccgtata tggtacatat ggcgcgcccg tacaccgtat 1020

gagtgccagc tacgtcggta tgcgccgcca ccaacctggg ccctttttt agcctatcag 1080

cgtaaaaaag accgcggaca atttaaatta atatatgggg gtatactgcg atgtaatttg 1140

ccctccaacg tctcccttca aaactcactc tatataacgg gacatagaaa actccacctg 1200

ta 1202

<210> 1083
<211> 1028
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95334_G1, chr3:17035279..17036306, Cluster 6

<400> 1083
tagagtattt ttcctcgatg ataagaacta attaaacctt gtccaagttc gacacattag 60

aaacacatct cacacaagat ataacatatt tgccttagtg acgtcaacta ttagctgcta 120

agttaatgtg atcaactatt agctgacaat tcaaggtgat cacatcatat agtacacatt 180

agttgcctcg gtccaaaaca taggtagtgt catataatga gttctccttt cataaaatag 240

aatatgagac atcaaaccca cacatacaac atacaaaact ttaggattag tattgttagt 300

gtccatataa gatcatatat atggatgctg cgaaggcacc tgtagggacc ccgataaaga 360

gaattgatag gggggcagct attgctggac ctagtctttc agggcccatg ccttaggaac 420

ctaccttggc tctagctaag gtagacctga tcatgggccg cccgacccga caaacccaac 480

ttgacctccc gaaaaaaccc ggctcaaccc aattaataca acgggcgagt acgaaccata 540

atttttgaca cgcaccaatc cacgaactgg gcatgggtca tgatttttt atccaaaacc 600

cgacctgact caaaaaaatc taacataaag tcaaaaaacc taacccaacc ataaaaaaac 660

gacctgacac atccaatgac acatccaaca gggaagcatg agccaacccg acactaggaa 720

cacccacgac ccgacctaaa ctcgacccga cgtttgaaca ggtctaagct aaggtagaag 780

cccaccattc taggctgtat gatctcgtcc tcgaagcaga gttcttatag ccattagcgt 840

ctgtaagaac gacctaaaat ctaagggccc tagatgctcc taacaataag acacttctac 900

tcttggttct cttagtcgcc taggatagga cgtctgccac cactgcaata tgtgttcttg 960

tagaggttgt tatccctcca ggccctgagc ctcttgagcc aagcccttct caccatgcta 1020

ctcgctaa 1028

<210> 1084
<211> 1317
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96166_G1, chr3:21558777..21560093, Cluster 6

<400> 1084
aaatttagac tgtgtctaaa attatgcgct ttggaccgga ctattagcca caccacagtg 60

catccatggc tcggggcgcg gggcgcacca ctcgttggct cgttgcccct gtggaacgcg 120

atgcgtcttg ctctggagta tggacaggag tcaggagcca ggaggaccac tgctggtgct 180

ggtgctggtc tgtcgatgca atacatgcaa ggactgtatg tacatgtgct gtactgctgt 240

gcggtccgcc ccccagcgta tacacgaatt tgatctacct gtggcccgtg gccggacggg 300

cagttaccgt agaggcccac atgtatttta taacgcgcag tatctgtacg tataacgctc 360

acagaataac tccatttacg tgtacccacg cagcccatgc ataccctctc tctccccccc 420

tctcctctcc gtcgtccgcg tattcgggct gctttgcact gcgatgccag ggcacgacga 480

gcaatcattc agcggaattc gtcgttgcta accgtctccc tcccgggctt gtttggttga 540

aagtggactc gatccgctca tatccccttc caaccaaacc agtcaaagct ctttgatctt 600

ttagagctgg ttcagtgaca aaggaattga agatgatcca taggaaagaa aatttataaa 660

ggatcgaaag ataggattga gctagaacca tatcaaatag aaagagactt caaaatccaa 720

gtaccaacat atctgtcacg ttctttttt aaaaaaaaaa ttactttaag aaaggaatca 780

ctaagtctat gagataaaaa aaatgtctcg attttaaaat tagaacccag gttctagact 840

tgctatctag aatgcaaagt ctcaatagga ggatgagatc taaacatact cctactttaa 900

atactgttta ttctctgtct caaaattgtg ctttttaaat ttaatattag taagaaatac 960

catgtaaata tacgttgcca atggacggac cgatttaata tgctgtcacg cccgtgctta 1020

gatgggcttg tccgcaaact aaagaacggg ctattatacc atcttcagca gcttacttat 1080

acttatacct atatttaaac tacactatat aaacggtgta atctataatg taaaatgaca 1140

caaaatgatg tttttagtga tcatatagat gcaatgtatc atagttcatc tatatggtca 1200

aaaaacacat tttacaccgt agattatatt atttgtagag tattgtttga atatgaatat 1260

aagtataagt aagatgttgc agatggtctt acaggcctcg tgctggtcta ggcatgg 1317

<210> 1085
<211> 1351
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9633_G1, chr1:51040128..51041478, Cluster 6

<400> 1085
caaataaata ttttaatttc tatttatatg atatataaaa actacagcaa agcactgaca 60

actgactagt aaatatatta agaaaacata aatatttatg aaccaaatga gtatattata 120

atatagtttg caatatatct aatagtatta atttaatatc ataagtcatg gtgtttttta 180

gtaaattcga tgaaacttaa aaagtttgat ttaagacaac tcaaagaatt gatttattca 240

aatattttat agactaaaga gaaatttaat aagtaataat atacttcttt gattctaaaa 300

taaatatcac tatcgtattt gtgttgatta aaattttaga gtttgactat atttataaaa 360

aaatattagt ggtatttata tctctagata aattattaca aaaataaact taataaatta 420

tctaacatta ctaaggcccc tttgttttgg ctccttaagt agctccttca tcggcttctc 480

ctaattttca accaaacgag atgcttctta aaaagcttct ccttaaaaag aggaggggc 540

tgagattgaa gcaaggagcc acaaaaacgt agcttcttcg gctcctccaa cctattgtga 600

ctccaaccaa tgaataaaaa gaagttgtag agagagctgt tttgccaaat attttagaga 660

agcaaccact gctggagcag tgaagcccat ttctggagcc acaatcggag ccaacatagg 720

tggagcccaa ccaaagaggg cctaattata tactataggt aataatgttt tgtcatattt 780

atatttagtt gaagtttaca aagtttaact gttttaaaag cagaacgaca cttgttttct 840

ttttggtcg gagttgagaa cagtataacc agtgaagtga catcgccccg cgggccggga 900

aggaagcggt acccggtagg cgtgatgatg cccctgcccg gctgccgcct cgcctcgtct 960

cgtcccctcg gtgtcagacg gccagtcgtc gatgtcgttg gtgtgcaggg gcaaccggcc 1020

ggccatagcc ggaggcagtg caaccgcagc cgcgtccgcc gaacagcgag tgacgtgccg 1080

ttcgcacggc aggctgcgat gccgcacgga cgtgactgag ttgccagatc gtactacgac 1140

gtgctagcgg ctacttgtag ttgtagccta caatacgctg ctagtactgc gagatggatt 1200

tgagtcgatt cgctcgctag tcgcttcccc ttcccattgt tgctccgtga gtccgtggga 1260

cgcagcgccg cacctgtcga cgaggcaggg tcctcggtgg tcagtggggc aatcgagtgg 1320

actcgtggtc tcacgctcag cgataggcct c 1351

<210> 1086
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96490_G1, chr3:23179819..23180849, Cluster 6

<400> 1086
atcgtttttc actatttttg ttttttccta aattatatta cctcatacag gttatagcac 60

atataaaagg atgaactaac taaatttaaa aatttggatg taaaaaacca aaaaaaaata 120

aagatctaga tataacaaaa aaaatattat atagttttcc tcataagatg catataactt 180

atattttcta ccttccctca acaaatctac acaatacttc tctagacaat ttaagagatc 240

taaacaaaga aaataactat ttcaacaata ttacgtgaga ggataaactt ttgctaatct 300

ttttctataa aatgagcaaa aactacttca acatttttt ggaaaaaaaa taggcatcat 360

cacctcccct cgaagcttat agtgccatgg acaaagctac tctattcgcg caagctcgag 420

gatggagagg atttataaaa catgtatatt aatatcggtt tatcaatcga tagtaatatt 480

accaattgaa aacaccaacg aacattaacc atgtatatta gtatcgatta gtgtcttcga 540

tcaactagta ttaatgagtt agcatcaatg ctagtttaag ataatactgg tattaagata 600

aggtagttaa aatcgatagt gactcttgca tcagtactga acaatcggtg ttgatcttct 660

tagacggaag ccccttttctg tcgtgaccat ggccgcgttg gtggacggtt acctacacta 720

ccgccctggc ggcccggctc attatcgtct agccgagcta atgggccgat gcgggaggat 780

caaggagagt tgcgcgtgtg agcccactcg gaaagaatct ggatgggaaa agcttggagc 840

tgtgctcact tctgaagtga agggcacgat caaaatccaa cggctatgaa aaggagacga 900

catggcaagc tgagatgcta cagagccaag tgcaagattc gtctcgtaaa atattgtatc 960

aaaaggtgct atgtattcca tctgcccttt ttatgtcttg ttttgatatt cacgttagta 1020

atttttaaa a 1031

<210> 1087
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96876_G1, chr3:25355099..25356115, Cluster 6

<400> 1087
actgatgcat atttgcaaat tgcaattgat ccattctaaa taatttagct aaaaatgccc 60

tctatatgag ggctacttgc ttacttctac tgttttacag tgtcctgttg tgcttctgca 120

cgtttcagat cctcagtagt cccctgaaga aatatgcaat acaaaatcat attcttacgt 180

attataaatg gcaagaagca tttgatagtg ctgctgctac taaacatgtg gtcagaacaa 240

attaagatgc atcagcttca ctggtaccaa ctcttgcacc tgcagcctat ctattcgctg 300

tttctgtgat acggcagaac ccagaatcgg tcagcagagt gtgtgcttat gagacagcag 360

tgtgtgatat tatttgtttc caaaaagaga ccacggatga gaaggaacaa atacttgtaa 420

tagttcgcaa gtcagcacca ctgataaatg accacacctt gtacagaaaa ttttatcagt 480

aattctcgtt tgttcataac ctatcagcta taagccaagc ttctcatcct ggtggtgcag 540

atcagcaaaa gtagtcccta aagggatgag aaaagggcta aaatccctga taatcctcac 600

gatgtgggaa ctatggaagc atcgggatga ttgtgttatc aatggggcta ggcccaaaga 660

gaggactgtc ctgcagtcca tctcaaatga aggcaaacta tggtgtatgg ctggggcttc 720

ggggcttaga gaactattag acgggccacg gctgcctctc taatctgttg ttagtctttc 780

tcttttctgc agttgggtgg attgtctctg cctctctggc ctctataggc ttttcactat 840

gggcgggttt ccactggccg ctttaggcta gtgaccccgc ttttatgtac tacctttct 900

tccttctgat gaatggcacg caagcctttt gcgggttcaa aaaaatattc agttttgggt 960

ccaaaatata ttaacaaaat taaaagccaa cagtagtcca aggatgcgtt tggttca 1017

<210> 1088
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_99889_G1, chr3:43363947..43365323, Cluster 6

<400> 1088
cagtctgcac atgtagtaaa gaactacatg tacaaaaagc tgagcaaatt tttttaccca 60

ttagtataca ttatttaatg gccgggattt ggacatgtgc ggcgttaatg atggatatgc 120

cgtgcgatag tttatttatt acttcttcat ttttttaat aatgttgcat catgcacgtt 180

attgtgcttc ccttcccttt ccgcactgga cagaccaata atagtacaaa acctaataaa 240

ttcccccagc gtactacgtg tctgtcttag cctttccggg tcaaaaatgt ctgcccggaa 300

tcgtgccctt gccctcccgt tcttcgtcgg ccttctcatc tcctctcctc ccccgtgtca 360

ccgaataaat agatgtctga ggttctgtta aactaaatgt ttcaaatttt aatcgaaatg 420

tgaagaaaaa ccatttaaaa tctataacat caaactttta tcgttagata tgtttttcat 480

aagatactca atttatatca caatagatat gaaattcgag gaccggatcg gaccgaaccg 540

gtggagaaga cgacgagaac gaggcacggc acgcgtgagt gacgactcag aaacgagtag 600

gggggattcc catatgtagc aacaggtaaa ctttggcacc gaaaaggcgg ttgcagaacc 660

aaccaccatc tggcatctgg gggggagact ggaatatcgg attggatcac tcaccgccct 720

gctgcgtctg cgtccccgtc ccctgccatc cccattcatg aactccacca cccacaccca 780

ggggggtaaa aaaaaggtgg cagcagtagc ccttgcccct gggctagcga gcagcggtag 840

cacaaggaac aattttatgt cacgtacagt gcgtgaagga ggaaggcaac gagtgcagcg 900

tagcggacta gcggtaggag gaaggaggga gcgtggtggg ttcagtactc tgctctgggt 960

aaaggtttct ggcaggcctg tgcctagcgg ctagctagag tttgacatgg ctagcaaagc 1020

tgccaagaga acgaggaagg gaagagattt ttttttcaaa aaaaaaagaa gggagagaga 1080

gagatatgag atgagctctc tcgtctctct cctgatgaag caatactagc aagcaactga 1140

acgcttccct tctctctctc tctggcctct gggtgtgtga attattgcag gtgtcaggga 1200

gacagcaaag caaggtgttc cctcctttcc cctcaactgt tgttcgcttc tgtttcacct 1260

ttgcatccac caccttcctc ccatgcccac tgtttgcctg tttcccgctc cccgtccccc 1320

gtgtctgcct gtctcagctt actactgcgt tccccagaga ataaaaacca caatatt 1377

<210> 1089
<211> 2626
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_221721_G1, chr6:91309097..91311722, Cluster 7

<400> 1089
ggcttcccag ctggcacttt tttccacaca gtcccacgta tactgcagca ggtctgtcat 60

ctgtgcatgc atgttgaaac aaagaagaag caggtagtac cagatctcgc ttgcgcactt 120

gcacatcatt aattccagta gattcctagg atgatcaaaa gggagctggc tgtctcctcc 180

atcctcaacc tcatcaaggt caaggctgct cttgctgcag cagcatgcag tgcccaatca 240

tagatagatc tctgaagaag cccttgcttg gtttcgtact taccgatgaa cacgcaacag 300

atcgaacaac tactccaagg ctgcaggaaa gaaaagagag aaaactacta ctgttcgtgc 360

tgagcaaagt ccgtcccttg cttggtttcg tacttaccga caaagctctg ccctgtcttc 420

gatgaaggtt agtttatgcg atgcgagcac agtgcctttc gatgcatggg attggatcat 480

gggagctagg tgtataggat gagttacagt ttattattgc gcttcgctct gatcctatag 540

acaggcgaca ataattgtac agccgctagg ccgggtcacc gatcacatca cggggcacag 600

tcgtacgtac aggtacagta ctgttccttt gacgcgactg gggagaagag agagagaccg 660

aggaggcgct atcggctgca cagttgcatg gagtgatgtg agttaaagct gggaaaggta 720

caatttttc tcagagaagg aattaaagcc ctaggatcta gcgtcgaaaa agccatgcgt 780

gccattgcca aacctttact aataaattac tcctaattga tatattggct tcactcctat 840

aagcagcaga tatctggaga gatacgaagg aggcttaaag ataagcaaga atcgaggagg 900

gcacggggtg gccttttcct gtgatggagt tgacagccaa cactaccacc accatggccg 960

tagccccttg tatagttgta gttaccggaa agaaagaaag aaagaaccct agcgctgtta 1020

gccatgcatc atctccttta tttctttttt ttttcctttc tcccaagacg agtagccggg 1080

gggagcagta cgtacgcggg cccctggtga attctctggg ttttttttt ctctgaacca 1140

cctgatgaaa taaaaaactg caatctacac cccctcccaa ccccgtaccc gtccaacagc 1200

gactcgtcca tggacaaaat aaaatatttt ctgtcaggcg ggcgatccag ttccgtatct 1260

gtatgtcaaa tgaaattcgt ccatgagaat ctgacaaatg catggagcag tgcaaagact 1320

cggaagccac ctgctaccgt ctgccgcgtc tgggaggtgg tgtttgccat ggctgcactc 1380

tctaactacc ccgatcccga atgggtggtg ctggcttgga cttggacacc acctcttgca 1440

agtttgtggt agactggtag ttgtaaactg caaatcccaa tgcagccgcc aagccctagg 1500

gcaaccatac gcccctctcc ctctctctct ttcgccattg ccgacgcggg agcgggaaag 1560

ggcgcgcgaa agatgcgccg cgtttgactc tgcgctcagc accagctcgc aggtcagtaa 1620

agccacgtcg ggcggcgtgg ctgagagaga cctagagggg agagtggtag tgactagtga 1680

gtgacgggcg cacgtcgtcg gtggtggacc atccatcggc aaggcggtgg ggagaggaag 1740

acccaagacc cagatgggga atggtacgat agatgaggag gagggccatg gcccatgccc 1800

atgcatggtc cctgcctgcg acagggacag ggctctgtgc cccgccccag atcgatctct 1860

ctgcgccgga gctccgtccg gtccgtgtgg gggcaagctg acggccggcc ccggccccgg 1920

caggggcgag ccgatcgcag acagccagca ggcgtgacgc acgcgcgcgt cgcgcagggc 1980

catggcggag gaactctttt caggcagcac tgttgccata ccaatggaag caaagcagag 2040

ctccccggcg gcccggccct gcaggcctgc acaggcagct gcagctgtat ccggatctga 2100

cctcacctca gcaggccacg acgacgtacg gtacgggtcc gtccagtcca tgcatgcacc 2160

agcatggagg agacgcacga accaccggca gccgcagcag cggcggcggg tgcggcagaa 2220

agccgagcca tgcatgattt gcatgcgatc cagccgagcc aggtcaaggt gctcgcaaaa 2280

gtagttagga cgtcgcgtgc acgtagcggc tgtcaggtgg gcccgtgccg aggcagggac 2340

ggacgggacg ggagggtttt aatggcccta gctcgtttgt ttgctggcgg gagctagcat 2400

ttgtaaacta tcttacggaa attaaaggcc agctcaggtt cttcagttcc gcctgtgcat 2460

cgtcgatatg atcttcttcc cacaagaagg ttttctgaaa ttcccccacg cgatcacaaa 2520

tcactactac tcgtacgtgt tccaacttcc aacgcaattc cttttaataa agcggggagg 2580

gaatctggca ggtagagatg tccacgtctg caaaatttct ctcaat 2626

<210> 1090
<211> 1801
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_106240_G1, chr3:85750942..85752742, Cluster 7

<400> 1090
aaggagaaac aaaaggaaat aggaagaaaa cggtgaaaga aagcatgcat gcacactacg 60

caaatagcag caagcaagca gcaaaaggta aaagaaagca tgtatatagt gcgtgtggtg 120

ggaaaaagta aaaaaagaat ctcggccctt tggttttgac agtgccacaa gtgacccgag 180

ttgaaaatga atcggatagc acagcatttt agtggtccaa gaatctacac acgcgcacgc 240

acgcgcaaaa gcaaccctgc atatatgacc atatatggga gaagtgcttt cagagttcaa 300

accatgcatg catccaccgg ttttcagaat ctaatcttcc tttaatataa tttgcaagtc 360

tgaaccttca ttataaagtt gacatgaact ctaaatcacc cacattgctc ccttcaagcc 420

aaaaaaaaaa tgtatatata ttgcaggggt ctagcaacca ctactatcat tatcgcatgt 480

tttcattact gatcacatgc atgctgcagc taattaaagg acacacatgg acatgttcct 540

cagctgatga gtagtactaa gtttgatctg attcagcgcg ctgaacctga ccttattagg 600

tctgtacagg tgagatctct gctcgagcga tattacggta catgcaataa tgcggtcatc 660

aaaatccact agaggacgat ggatggatca gctggcaagc aaggtctaga agccccacgt 720

gctgaattac attcctgtgc aggagaggag gagaaaaaag aagcaagagg caccgcaaaa 780

ggcggacggg cgggcactaa agtctccaat atattcttgg cagcgacgtc aaccaacagc 840

gactctctct tcttgcccct gaaacaatcc ttcctccctg cctgtatggc tagttctaaa 900

gtcagcacta gcaaatggca tctaccaaaa aaaatatccc atggcaatcg agagacgcca 960

caaggatggc tggtagtagc ctgatactag gcgccacata acttaattta atttagctcg 1020

ccatttcttt tggactaaag gcctgtttgg acagctgctg taggcgcccc agcgcgccac 1080

acctgcagcg gtcgatttgg gcgccacact cgcggcagcc agagtgtggc gcggtgtggc 1140

gtccgagccg gcccaccaaa caggttctaa ttgccaccag aaaaaggaaa tctcaacaat 1200

aggggcagct gagctagcta gctagctatc atccagacaa cccgatgatc gtttctttca 1260

agcatatttc ggaagacgca tggatcatat tcgcatttgc tctgcagcac gaggagacag 1320

ttttctatct accgttctag ctgacaagtg agaggggaa gtagacgaag ccgatcgcgt 1380

cgcgccgtat tgatttgatt ggcacaaaaa agagcccacc acgtcgcatt gccttttttt 1440

ttggtttggt gggtggggag agggggtgct tatcaggaag accagtatgt tgtttcttgc 1500

actcctgacg ctgatggcca tggcctgtcc tctctagtat agctaatggc ccaagaagac 1560

ggcgatggtc attgaattgg cgtgtgtcat taagtggatc catcgctatc accaaggacg 1620

accaccaatc aatcaatcag gtagcaaaat tgtcatcgcc ctcatgtgca atcgccacca 1680

tgacatgacg ggatgtacga cgactggacg gaggttctca aatctcaact catttacacg 1740

cataaagcta gcacggcctt ccccactttg cagaaaccgt tgggcctcaa acgtgacagt 1800

g 1801

<210> 1091
<211> 1472
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_110490_G1, chr3:114860348..114861819, Cluster 7

<400> 1091
ttagcttagc acaataggat gtgaagaaac attgttgtgt cgtcttggac gcttatgtgg 60

gaaaaaaaac taaatctatt cttctttggt ttctgatata ttaaggtctg atgctgacgg 120

tgctttattt cttctttggc ggaactataa cgctaaactc tctgattttg gactttctaa 180

acttgggctg accggtagca agtcacatat cacaaccagg gtgatgggaa cgtttggcta 240

tgcagctcca gagtacgtag caaccggtat gtgtcctcct gcctatctct caccagctcc 300

agagtagtag agtacgtagc aaccggtatg gaaacaacga acgaagcttc tgactggcct 360

gcaaatttgc aatgccgccg atgggctgct tgcggtacgc ttagctgctt tcctggtggg 420

ctttgttaga agacaattaa ataataggct tttaacctga gaggaaatat gaacttgcat 480

ggcaatggac aatggtgatg aaggaatggt tgggtttgac cataccgcca ccagtagtaa 540

tgaacccata aacctagcgc gcgcaaatgc tgcacgagac agacagtgtt cagacgagtg 600

tatacctgtc tgtgtgtcat agttgaggat ggcgttcatt gctgtagtta ctgaactcga 660

agccagcatg catgtatgga ttacaggtgc atctctcatg ctatacactc gttcttgagg 720

caaagattgc tgtctgattt acaaagcaac atgagctgtt ttgctggaag atcatctgaa 780

caggagaaac ttgtgagtat tgtttcctaa tttgatcttt cggttttaa attcatacac 840

ttagctttcc aacattactc gtttttaccc ttagtcgtat ttttcccct cagctttact 900

cttcggctac tatatagcag aagaacaaaa ccgagtaaaa aaacacgact aatgataaaa 960

atgaggaatg acaaaactga tagggtgttc ggtttaagaa ataaactcat gatgtaccac 1020

cttaacttga atgaaatgat ttctcaaacc aaacaatctc taagattata tagattatat 1080

gaatactgga cgctacccac actaagcgca acggtgcgac tgtttactag atctatgtag 1140

aacgctttat cgcgcaggag ccctgaaaaa cttgccgttg ctatggatgc ggtagtccgg 1200

gatggaacac tcgcactcta aaaaagcaca gtacgtgcat tttgatttgg aatgcgacaa 1260

caacttactc ggtagtttga gagatcctca gaggccaact tgtaatgtat gaaacattta 1320

gcgagaaaga gagagaggaa ataaacagaa cacagttctt cgtcagttca cagctccctc 1380

accatctcaa atcggccttc tctcatacga gttttttttt ttctatttcc tatattttca 1440

aataggcatt ctttgcaatg cgagattttt tc 1472

<210> 1092
<211> 2028
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_111796_G1, chr3:123403968..123405995, Cluster 7

<400> 1092
ctctgtctgc tgccgcattg tatatatata acaggcagct actactagcc tcctccatag 60

ctactactag tagcatccat tctgcctcta cggctgcatt gcaacaggca gcagcagcag 120

gtcgtcagct agtagctcga gataaacggc atctgtcatg gcgagcaatt taatttaagt 180

agagtaaatg gaaggttagc acatctccct cactctctgt ctttttgttt tatatatatg 240

ttaggatttg cttggtgacg cgcgcggctg ccatgcacgc acacgcaccc gttccaaagg 300

gatgcatgcc actagctccc cacgtttgca ggctttatta cttcactgtc gtcaactact 360

caaatgcgcc tcaccaataa tgcagcaggg aaaaaaaaag ggaacaggat ttcggcgacg 420

gaacgcgcgg gaacttttgg atgaaagaaa aaacgtattg tttgcacgtg gttgaaaacg 480

atgtattacg atccatatcg tagcaggcta gtacgtatac aatgttatca gaaaagcttt 540

gctctgaaag taatcctgtt cgaatcgtcg aaatatggtc acaacctctg agctctgcgt 600

ctgccttggg tttggaataa tgcacgcttt gctgcatctg cgttgggttt ggcattcatc 660

gactggctgc cacagtcgcg ccgcgcgcac gctttgctgc atctgcgtac gccgggcact 720

gtgctgtgct tgcttgggag acgaatggat gcgcccgcgc gctgcccccc cctgcctgtt 780

ccgactgttc gtattcatga atcatgatga cgatggagag tccagctgct caactactgc 840

tgcttcataa ccacccacag gctggttcac ttgtctgctt gcttgcagcc aagccaagcc 900

acgttcatca gtcttctaga cgtcacgtgg agatgggttc tgagacctca tgtcatgact 960

tgctgctttc gaatggctag ttcttggttc caggagggtg tagccagtac agtagcgtgg 1020

caacagaaag gagagacttt tggccggccg cgcgcgtgtg gcatgaaaaa gaaaagaggg 1080

aggggctca aggtcattac aaacagaaac agcctttcag ggtgatcatg cagcatttga 1140

tggtggccat ggaacatctc atctggttag ctaaaccccc ctgcgtgttt agtttgtcct 1200

gctgaaagcc gctttttgg cgtgaggaga cgaggggccg gccggggcac cataaaatca 1260

accatcactt accaatgaaa tcccttctct ctctctgtct cactcacttt aacccttca 1320

cttctttttg tttttctctc tagcttgggt gacatctcag agtacgtgct gcccgccttt 1380

ctccctccac ttccaagatt ctcattgtct ttatccagag agagagagag ttgatatata 1440

tccaccacca ccagcacgca gtactagact agacatatat gcatgtcatg tcactttgta 1500

ggaatgctta caaagtagta gcagcagaga gaagagaaga aacaaaaaaa agagccacca 1560

caacaacact agagaatggt actatactac tacgctagag acaaaggaag tcatgcttca 1620

atacacccga gagaacgcga gagaagggat ttggtactga atgaactgaa tgaattcaaa 1680

ctctgcgcgt ggtcagtgct gagaatggta aaaccacttg ccatctaagg ggctgttccg 1740

caccatagga attttctggg ggctgtttat ttccatatat ggtttggatg aatccaagct 1800

ttccacccaa tccatcgagg gattcaatcc ctaaacccaa tcaacaaata tttgttcgtt 1860

tattccatat agaacaatct aaaaaatgga aactgaatag cgctatctga aaactgaata 1920

acgctatcta caaactgaaa actgaataaa ctcaatcaac aaacaagctg aaaactgcag 1980

tctgaataac actatttttt tttgacaaag tagagacgag cacatgta 2028

<210> 1093
<211> 1672
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114546_G1, chr3:139526566..139528237, Cluster 7

<400> 1093
ggtgactcgg ggcacaacgg tcagctgcat attggcttgg acaatattga gctccatttt 60

agctggaaaa cggagtactt caagatacct cttccttcct ccatgtgata tgaaggggag 120

tggtttttcg tcaggaatgt ggctggaagt gccccaccgt ttaccggttg gaaactggta 180

tcgatggagg aatgacacca cgaggcagag gtgagcccca agagtgaggt ggagcatctt 240

ctagtggtga tccagatgtt gaagcaacga ggtctcaccg gtgcgcagct ggtgcacaca 300

cctttatgca tcgctagatt tagcctttga tgggtcatca gaagccgatg caccagaact 360

cttgtgtcaa caaccccgac ctccattcct ccacaccgca cgcattgact gagatcgagg 420

ctagggtcaa ggttgtcacg tcattgtcat tgggatcctt tatggatgag gactcgcccc 480

ttccctttc taaggatgtt gtgggcacct tggtgagttc cttcttccta atgttttcgt 540

tcctttgtct tcctctattt gttccatctg acgtggactc cgcaggggat cggtccccta 600

gcaacatgtc ttccgcccct ccctaagggt ctcaccatca aggcagagca gaagcggaag 660

agggacatag aggaggagac cttggcggca cgctcaaagt gactcgaaac gaagaaaaag 720

aaaagggcct ttcaccctac tcgtgtgaag ccgagtgtgt gcctctttcc tctgaatcgg 780

aggatatgac atccactgcc tcaggggaa tggaggtcct cgtggcggtt ggtggtccgt 840

ctcactatgg cgatgctcag gctagctccg gctagaggga cggtctggct aacgacctag 900

ccacgcttgc ggtttccttg gagcgttgca tggagtccgc tggctttagg gcggtgaggg 960

agaagtggtg caggtggcac catgccctcc ggtgtcctcg ctgtcgctaa gacaccgtgc 1020

ggggaaagag cctgtgggaa ctccctcctc tgcggcaaaa gtggcgtctt ggacggtgct 1080

tcttgcggcg acgccacctc aggcgccttc ggtggttgct tggaagaagg tgaacaccag 1140

gaagcgctcc tcgcggtatg ttgggttatc tcgctcctct tgtctttgat ttcgatcttt 1200

gttccatatt tttccactga tttccttgat tagcatgtat gtgcggcgca aatcagtgaa 1260

ggacgcgact tctgcggcga ggggggcctt atgactcctt cgaccctcaa gcctcggtcg 1320

ttgaggggaa caactccttt gaccgtcatg gccattctgc cagccgacgt tgtttccacc 1380

cctcgtgcgc cgatcccccc agttgccctg gagacactag gagtgttggc tcctcacgtg 1440

gccctccttt agctgtcctc tcccacggtc gtccctaaga aggcctcatc ggtcggcatg 1500

gtctgccttg gtgggacctc gtctgtggag gtggtggttc cgacttggtc gctgctgccc 1560

ccttcccctt gcctccgacc gccatggggg tgagcgctta gtctgggggt ggcaccgcct 1620

ctagaggtag tcgagtcctt ggagtagcca ccatttgcca acgttgcctc ta 1672

<210> 1094
<211> 1693
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115348_G1, chr3:144615062..144616754, Cluster 7

<400> 1094
tccactttgg gcggttggca ctattatagg tgctacccaa aaggtcaatt tgcgatacac 60

tagaaagatg ggtattgtca ggattctagt gggagtgact gatgttgata gtattcctga 120

atcgacagat attgcggtag gagaagggtt gtatgaaatt tattttaaag ttgacaaagt 180

gtgcaaagat ggtgtttgga aggattataa gcaagaggta aagaaaggta aaggagatga 240

tgatcagcaa gatgaggact ttgatagtct taatgattat ctacacaaga atgaggctgc 300

ctttcaagat actgagatgg aagataaatc tatggacaat gatggtaatc cccaagagaa 360

caaggatagt gattctcata aacaacattc tgcgcaattt ggttcccaaa ttcggcaggc 420

tgcgcagcat cacctgactt tttcttatga acaaggatag ttgattctca tgaacaagga 480

tagtgaacct actaactttt gggatgtagc tttacctcct ttggtcgctg ctcaagaagg 540

acaaaatatc taggggttta ctccaatgca gactcagctt ctttgtcttg ttcaacaaca 600

gaaacaccga acttttgct tcaaggttca gtgactaatt tagtgtctaa cttggggact 660

gttgctgcta gtgtcggatg ccaaatgttt ataacaggaa atacaacagc agatgctaga 720

tgtcttttct caatctcctt cttggttcta ttgggggcca gcaacaaatg acacaagggg 780

atgttgctcc ttctgagaat ctgaatcaaa tgacttctcc cctagcaaca gctgatattt 840

cttttacttc cttaaatatg tcaacagatg agacttttc ttctcttctt catacaaaaa 900

gaaatatttt ctttgaacct tcgtctgttc cagtacgtgt caaagcccta gagtcgagcc 960

ttcctgatca tactcttgat acacaaaaat gtgggacctc tgatttttta cctcctttta 1020

ttgaggtacc tcgaattgca ctacaacatc tgtgcaaaac atttaatata agagctaaca 1080

tgatttttt gaaatggcac atgcgcttga actgttggct cagacagaca atattgtctt 1140

gattactcta caagaatggt ccaaaaataa ttcttactca aaggtcaaag actgggccaa 1200

caattgctgt ggagaatttg gtaactagca ggaggataga tttcgatgag gatattatga 1260

gcaaggctca gcgcttagga gccaagcgta atttggaaaa cattgagttc ttctttatta 1320

cttttaagcc taaagttatt gcttctaact taaataatgt tggaatccgt cttggtagaa 1380

acgattatga agtattaaat tcaattgttt ccatcaagaa catagaagtg gacatacttt 1440

cactatatgc taaatctctc tctccgatta tatcacgaac tttagaagag gacgaggagg 1500

ttgagattga cgcaaagctc tcccatgcat gttactaaaa gatgggatga gaatgcaaag 1560

ttgggtgttt tatacttgtg tgtcatgacc ttaatatcgt atcgcgttga aaaaaaacta 1620

atcactttaa atcaaaaggg aaggtttctt gcctacctaa taaattagtt acccccctcta 1680

aatttagttt aca 1693

<210> 1095
<211> 1534
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115698_G1, chr3:147185424..147186957, Cluster 7

<400> 1095
tctatattaa tagaggtggt tgccttaaag cgcccacctc cgttaaccca ttaatcgagg 60

caggcatagt atccacctct gttaatcatt gattaataga ggcagaggcc atatgttaga 120

ggcagttgca atgtccacct cctaaaatca ttttgcctgc caccattaat cattgtggta 180

gtagtggaga tagaacccaa gggatagata aaccaatgta tgaatccttt tcgtcatgat 240

ggttagttct tccttcctcg gtccaatcct tcccttgcgc ttgatcatca tagggaccta 300

gatgtcacaa tgcttgccaa caccctcaat gatgagatgt atagtaccaa ccaagcatac 360

ttggaataca ttttattttg tgtctagcaa gaaagatgga cccgcctata ggacgattcc 420

aataacaaac ccaggacctc tatcagcgct cgaggaagtt catacccca aatgctgcca 480

atacacattc aagaattcta atatagaatg gtacagtggg gcctagctat taggaccatc 540

gctccaaggt tccatacctc gagacctccc ctggcctcta ctagggtagg tgcttgaccc 600

tcaagaaatt tgatcttggg ccactccaaa aggatggcat ctacaccacc aagacctgtt 660

gagaacaact aataaacctg gggccctctt tgtcttgagg cacatcaaga tttagggcgc 720

tctgcactta tggtggtagt ctacatggat ggattaagga ctaggcccct agggcccctc 780

atgccctagg tgctcgtggt ggatttaagt gttcagtgcc cttcaagcac cagggcattc 840

aatcaatgac acttatctac tcgaggcctt tacttgtcgt tgggccttaa gatcctcgaa 900

ctcttgtatt atgaacgact aggcctcaaa ccccttgggg accaaggcct cccacgaaaa 960

caagggactt cctacgacta agtgtaatcg tgtccacaca atagaagaat gtgcttggcc 1020

ccactcccac tgagggcatt atagccccca aaacaaaaaa cctataccta gggcatactg 1080

acaggtccat aactctagca tagtgaataa gtttcccata caacacatta aatatgtgat 1140

gtgtgacatt ctatcttgac atgcacactg tcatcatgac ttaggcaaca tggtactctg 1200

gaccactatt tggtatgtgc atcgacccta tagccacaca tgcctatgtt agtgtaccat 1260

aaagtattat taagtataga aggctacacc ggctaccaag tgtatcgtac ccaacggcat 1320

gggccctaac gtccatagaa gtgacataat aggtatggca gccgatgaag aaggaaatct 1380

tcgacactat gccatgagcg aaggcatggc tctgcatacg actttacgaa tagaataaaa 1440

gggcatgggc tcttagttat atccaaggtc caactgatgt aacctctctc ctcccttgat 1500

ctttaaaagg tggggagtag agtaacatta aggg 1534

<210> 1096
<211> 2396
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115875_G1, chr3:148298052..148300447, Cluster 7

<400> 1096
aatgctaatg gtgcaataaa ttactgtttt tattcttctt tcagctctac atcaactagc 60

tatttgatac aattattgtg gatgcgagct tacatgtagg tctgccgctc gctttccgcg 120

aaggctgggg aacatgtgcc atgcatgcat gctatgatgc cgggcgtgag gagcggcgtt 180

ggcactgtcg aaccaaaaaa tcaggtgctg ctgccatgcc gcagacccgc agtcctgcac 240

cgcacgtagg taggaaggac tgtacgtgcg ttttttttcaa gtcgctttgt ggtacgtaga 300

actgatcgaa aaaaaaaatc aataaacaag gaatagaatg gctatgtcgc atcatactgg 360

gaaaccaaac actatctaat gccccattta gtttctagtc atctaactaa actttagtta 420

gtcattagag tactacgttt gtttttagtg actaaaccta actaaaaaat attaattggt 480

gcgattaatg attgcattat ctctattaat tagtggatgt ctgttgcact aagaaagatg 540

agaggacaaa tgaggtaaaa tttctactta agtccctttt agtcatcctt tagtgactaa 600

agaatttaaa tttagtcacc tcattttagt tacggtattt gctttttaa ggactaaaat 660

gactaaaagt tagtcactaa actttagtca ttccaaacca aaccaaacct aaaaagagac 720

ttatttattt attttatgtg tatgacaccg tcaacccaag ctagcaatgg tccacctcca 780

tccccccttgc actttggtta ttatcaaccg gaggagcagc aacagcacga gcagttagat 840

gatcgattgc gtcgtcgccc cactgacaga tcaatcgctc gcccggccgg ctgtcccgta 900

ccaaaaaagt tgccacaaca accaaaaaag gagcatggac cgtggattgg accgttcggt 960

ccagggagga acgatctaca cggactgttt attaattcat cggcacattg ctgctactac 1020

gagctgctca tgtatgcgct gttgcttact cgctatatca gtcagtcttc tgcatgccct 1080

ctcaacattg tttaagctgt actgattaag ggcctgttta gatccaccta atttttttaa 1140

aaaaaattat tttatagaaa ctgagctggt ttcgaacata tcagtttatg ccacagatta 1200

tagaaatttg attcacatgt ttcttttaaa aatcaagaag ccagcctctt ctatcttaaa 1260

aaaaataaaa aatggttttg taaaaattgg attgctaatt tcaaacaata cctagatcta 1320

gtggtttcta ataattcaag tgatgatgcc cccatcgcca tcaccatcgg agtatatcat 1380

catgcacgct tcaccttggg gcgggtggtg gtgatagcga tcacgtcaga caggtttggc 1440

aaaagcacat gccgctgccg ctgccgctgc gcccagaaac tcgcggcacg gtcgcgaaca 1500

agggtttagt tggcccgtac cgtacaatgg tttatttatt ttttgtttaa tagttataat 1560

tgtttgtatg ctcgtatgtc ctctcctccc tcgacggcga cgaggcggtc gccaggtttg 1620

gcgatgtcag tcgcgaggcc gacagcgatg ttcgcatgca ggtcggccag ttgctacact 1680

agctgaaaac acgagtacac gtagttgcgt ggcatcggca ggacggcagg cctgtaccgg 1740

aggggtggag tggttggttg ggtttggttg ccagcggtag ccgccgcgcc ccaccgagga 1800

aaaggggaa tgcacggtga gcagaaccac gcgagcgagc acgtgctgtc caacgactca 1860

cgactggtcc gcggcgcacg ggcgggcgca gggtaccgct accacacgaa tggttggttg 1920

ggatgctttt tgcttggttc gacttcgctc tcgctgtgtg cagtgtgcag ctgcagacta 1980

gtactacgcg ccaccacgga gtcagggacg ggactgctgc ggggagtacc tgtaacagtg 2040

acagcattat gggagtactc ggctactcgc caaaaaaaaa agagagtggt actatagggt 2100

tttttatacg atcaaatccc attaacttta gctatattta ttaaaaaaac accagcaacg 2160

tttacatctc taaacaaata tactacaaaa atatatctaa agacttttct ccccccccca 2220

tctctctcta catgataaaa aactacgcca tgtgatgggg gtaaatgaaa aaaatataga 2280

tgacctttcg tgaagagtct gtctctccac gatcctccat acatattgtc tcttagattt 2340

atttatgatt taaagattta gtgttgtatc atgcaatctc ttatctgtct attaca 2396

<210> 1097
<211> 1761
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_117811_G1, chr3:159555413..159557173, Cluster 7

<400> 1097
catcaattac ggcgttgaat aaaaatggcc acacatatgg agtactagta tattacccgt 60

acctggctgg ctgtagtgga agtggaaatg gagagggccg gccgggcatg gaaagcaaca 120

ggcaccccac gtgtaacgta cgtgcagcag ctttcagagc ctggatcgtc caggcagaaa 180

gagacgcgta ctagtatcac gtatgcgcat gctggtctag ctagctagtc tcttgttgtt 240

gttgatgatc tgctaccagc tagcgttgca atgcgcaggc aaggcttgca tcgcctgctg 300

cactacatgc agacatgcag tgcagcatgc aggtcgttct ccgaagaaaa ttcaagttca 360

gccggtcgcg atcgatcggt cgacgtcgct gtaaaacatg cggacgatcc gggggcaggc 420

aggcagcagg attcgatggc tccatccatc ctgcttcatt tctgggtgtg gttttggttg 480

ctgaccgccg gccggcaacc gcaccgcgcg acgccctttt ttttcccatt ccttggggcg 540

cagtgcaggt gcagtggttg ttggagcaga tcaaagtccc gcacccgtct ctttcttttc 600

ttctcgtcat caactcatca tcgtcatgcg gcatcatctc cagagaccat caccacgctg 660

gaggctttag cttacagctg atgataatct tctttacgaa tctagcttat taatccactt 720

ctacttacct agctctagct ctctaggcgt gcactgcaac tgcaactagc gagagcacat 780

tgattcgatc agttcctgtg gatcgacctg gagactgaga atcagccgag tgctctctct 840

caggacaacg caacgccgga tgatctgaat tggttcttct gcagatgacg gaagcgctcc 900

gaataattgg gtctgtcctt taaacttttg aaaaaacaca aataaagtag tactatatat 960

atgtatattc tttccgactt tgcaaaaggt ctagctgaat tttaagtacg cggtgacgac 1020

actgacgacg cggcgctgct gggctacacg cgtctacgtg caggcaggta aaccacttcg 1080

ccacgcaggg tgtggtgtgg catcatgcta gctgggccat gatcaggatt gggaaaatcc 1140

ggttatagct gctatgctag gcgccactac atgctactac cacacaaaca aaaaattaga 1200

tgttgttgac taatggcgat gcggtagatc ttagatccag actttgaacc ttctcgttaa 1260

tcatttttat agacaataat ggaacaaagt ccccgcctct atgtttccgc acttagcgtt 1320

cacttgttac aaattttggt ttaccggctt gcttgaaagg gaaaacaata atcgaagacg 1380

gacaaagtct attattaaat ttccatccga atttggcaaa gagagctcca gcgccgctac 1440

ctccagcttg aagcttcttg aacgaaaact tcccccttatc tcctcatact gcagtagcgc 1500

ctagtaccgc aaccagtatg ttccccgtgt acacagcctg caaaaatgaa ttatattttg 1560

cattgttaag acaaatatcg tttcgacatc gccaaataga ctaacacaat gccgctgccc 1620

taactagaat cagttttctc tcctttgggg tgacatctat tagtcaccct tgaagcatat 1680

gtgagacaga tctgggtgga tttaaccccg tagttacata tactaccctc taaatgattt 1740

ttttgcatga tgacagtcgg t 1761

<210> 1098
<211> 2863
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117866_G1, chr3:159802094..159804956, Cluster 7

<400> 1098
gggtgcaaga agtaggtgcc atgttaggtc tggggcctat atatactcta tatgcacggg 60

gtagctagct gcccttgttc tttttccaca tggaaaacac acacagagag tagtcgccgc 120

aagcagacag atgacaaatg tccctgatga acgaaaccct gtcgatcaga accggggagg 180

tcggatttat cattttctcc gtgactaatc ctggctctta cactcatcag ctattaaatt 240

acgcggcggc cgacgtggac ggggtggtgc cggatgcggc acccgtccgg ctgtatacgc 300

tttacctgcg ggggccgggg ggtcgctttc gggacaggag gaggactcgt gatcgatcga 360

tcgatcgacc gatcccttcc ggctggctac gcggtcaatt taaagcccag aagaagaagc 420

aggcggggca gctcgcctga tgtcagagcg caggcgagcg gtgtcgaatt gcctggcacg 480

gacgcgcttg gcttctcccg cgctggtgat ttgtaaaaag ccttaatctt taatttgcga 540

ggctgtccgg aacctaatcc agcttcgtac tgctacagaa aagcgcccgg ccgtctctgg 600

attaacaatg cgcgcttttg gtcctgcatg cgctagcctg cgcctacagc aggtagcagc 660

agcagttgct gttgctattg ttgtttaact tatcggggaa ggagggaggc agggttagtt 720

agcttctcgg tggtgttgtg tgtgtactgc tgcatcatct gcttagatca gtcaggcatg 780

cgtccgttgt gcatgttgat tgctgctttt gcttcgttct gaagaggaag ctggcggagt 840

tcgtataagc acgtcactgt agtctataac acagtggtcg tcgtcgggcg gatgctttgt 900

tcgcttcggg ttctgctgca gctacaatcc ccttctccta gcctgcttcc ttcgggatta 960

aagccttttg ctcgctcgtt ctttcaaaaa catcgccctg ttcgtgcatg gaccacccca 1020

atagtctctc tgtctacgtt cttcctcacc gaacaaacaa ggcctgctct tcagtgcacg 1080

aacaggcagc gagcgtcaac agcagcagca agaggacccg aggccggagc cggagccccc 1140

tcaagactct cccttccctg acgccgtatt attttacggg gaagtgacgc catggcggtg 1200

gcggtgcgcc cccggacccc ggtgggtgcg tgcgcgtgcg cgtctgcgtc tgcgtctgcg 1260

tccgtccccg tccctgtccc cgcccctctg cactgcggcg tgctctctcg cgtcccctcg 1320

ccatcagacg cgcgcgcatc caacgtcacc gaaacgtcga gcacagtgtg ctcacgccag 1380

tatgtcacgg agggacgggg tgcagtgcag ccaaaggaac cagggcgcga aagagatcga 1440

gggggagagg agttgttttg ttttccttcc tccagctcca cggtagtaga gtagccatag 1500

tcaggggcgg acggacagat ggggtaaagt gggacatgac cctccctcaa ttttaaaaat 1560

tcctatatct gatgttagct caatttttaa aattcctata tcttatgtta agtataaaaa 1620

aatagaaagt taggtgggct aaaacagtct cgtatgtatg tctggattgt ctcgatctct 1680

ttgttttagt tctcatatct atctattcgg ctccattttt tctgacatca cctgatccaa 1740

tccgctttga caccctgttt ctgtgacgcg cgacgttatc tgacctcgct ccctttctgg 1800

ctctattctt tctgaaagat tgaatatttg gattacacta gaatattcac ttttgattgt 1860

gaatttggag attagataaa tagttgatga ttattgctcc cttttattta gatatctaaa 1920

tgaggagatt ttttaccgtt ttaacggggt ccacggccgg tggttaggac ggtaccaatg 1980

tgaacgactc gtgtattgca caaataagaa ttttagaata aacaagtgtt gaatgggcat 2040

ttaatctaga tgaaatagtt gtatatccag ccttaagaac acaaattgat gattaggtca 2100

ttattcgacg attgatgatg agatcaatat tcgacgattt ttgcaccggt cagcaagaac 2160

ttaacgacat atttacttat ttttttacat tgtttctttc tttgaactta cgcgtattga 2220

attctatgcg gcaatagttt ttatggtttg tcgtgtgatt tttttggctt tctataagtt 2280

cccgtcctac gtccgccact gagagtaggt gttgcagatg gagttcggtt ctgatcgcat 2340

ggtttaaaat ttttaacccc gctgtctcga tgcggcagtt agttaaagat tgttatcctg 2400

gaggagtagc catgacatgg gcctatatat gcaggatgta gccatagata tacacgtact 2460

gagtacgaca gaacagtgcg cactcgatcc gttgctgtcg gaatttacac ggcccttcca 2520

aagtattcgg gggcaggttc ggttccacgt tcagactgac atcgtcttcc gtttgtttag 2580

tagccgttct gagcagagag aggatcgtca tgctttattt tgaacccatc agatgaatgg 2640

tatgcaggcg tagaaaaggt cgacccgacg tatggcttta acagtacata tatatatata 2700

gaattgaagc tgtgttttta catgaactgt actctagtct gcacactaga gttacatcgc 2760

agcgcaggtg gtagctagca gcctagcaca tcggaaggat tgattggtca gaagtcagca 2820

ccttagcttc aggttatata tattatgtat acctatatac aat 2863

<210> 1099
<211> 1772
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119456_G1, chr3:170057544..170059315, Cluster 7

<400> 1099
taaaaataat atttatagca cataattaat tagtattagt agatagatcg ctgaatctat 60

tttgataaca agattattta aaaatattac taacattcta taaaaatcta gttaaatata 120

atctcgatga tgcatggtat agcggccgat gagaaagtca agagttatat acacacactg 180

acacacgatg catggagacg agcaacgacc tcgatcttaa attgcacaca cacacgatcg 240

cggagcttct tgagcatcta acaattaaaa ccgtggccac tttatgtgca gtagtaaggg 300

ggcaagagca gagttccatt caaaatctcc acgagcaata tatgacaaat aaacctagct 360

agtagctagc tttattccat gccatcggcc agtcgtccaa ggacaagaac aaagatgtgt 420

tttgtatgca aaagacattg gcgtgatgac aaagtgcgta ctgcagggac gaagcaatta 480

aagaagcccg cccccgcgcc gagaaacgaa taactaataa ctagagcatc actgtcagat 540

aagaacatgc cggccgtgag ccctactacc ctgcgcacag tgtgtgtgag gctggctgtg 600

acccagcaga gattccagca tgcatccgta gctccattag ctcggcatgc agtgtggacc 660

actgtatcgc gtgtcagcac tcagcagtgt ctgtgcatat atatacgcac tttagggcac 720

aaatatacat atgcacagca tgcatggggc cggcggggcc tccgttttgt tttgtcgttg 780

cctcgtactg tgtgtagctc ctcgtgaaag aagaaacaac cagggtgggt cgtcttcgta 840

gtagccagag ggacagatct gatacgcgat ggttaaaaat agcgtccgaa gctgtcagac 900

agtggttgtt attctttttc ttccgaacat cgatctgcct atctgctgct gctgtaggca 960

acggaaaccc ggcccagcgt ctagatctat cgcacgtcgt cgctagctag ctacatggtt 1020

cgtacatgga ttccttccct ggaccacgtg cgttttggcg tgggagggga cgatgaaggc 1080

gcgcctctct gacaggtcca tgcatgcaca cagcaacgca tgcggagcgc gcgtggctcc 1140

aaaaccatgc gcccatgcag ctcggtcgcg cgcgcgcgca tatcacgggc gcagaaacaa 1200

attaaataga gttcgtgtgg gattcattat attgttaacc gatcgatctt tatatatgtc 1260

agtagtgaga atacattctt ctgttttttt taatttgtca tgacaagttt tatgttcctt 1320

ctaaccacac gcacgcacgc acgcatggac gatcgagtac acgtcgacag acgaccctac 1380

acgtacgtac ggaagcagtc atttcctgtc tcgttcgagc cgcatctgcg taacagtaga 1440

gtacatcaga tcgacggagc atgcgggagc agtggcgctt ctcgatccga caggtgaact 1500

gaatcggcca gaaggtttcg ttttacaaat aataataacc tgtcgtggtc atcgctacta 1560

atcgccaact tattaactca ccgcgcgcgc ggcgccagaa agttccaacg cagacgtggg 1620

cgggggacaa aaaaaaaatt gtcagtaaat gcgcatgaaa actacggcgg cgacggcggg 1680

gcgatgtgtc tgtctggtcg tcgatccgca gtcgtccaca cgcgcgagaa agaaagaaga 1740

atcttagcta atcagtgggc gggcgcgcgc gg 1772

<210> 1100
<211> 2074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120002_G1, chr3:173550485..173552558, Cluster 7

<400> 1100
ggcgcttctt ctcttgttcg ttcatgtggg tttgtgtgtc tgaaggggtt tggttgcgta 60

agagcttttg atcctatctg atctctcttc ttctcccttt gccctgaggc cagcctctcc 120

tttttatagg ctgaaaaaag ggtcgaccaa cagtggcttt tctgggaagg agtcacaagg 180

caagggtaaa accagcgttt tactctggat agagccacgc gtactcatgt ggggcgaggc 240

gtggcagacg acatggggcg acaatggtca catacggcat cagtatggct atgccgaccc 300

tggcctccgt agccggggct tggcgtatgc cttactaggc ctgccttgga ttctcctgtg 360

cacccggcac atggactgga tgtataatgg cagatgcggt ggtggcgcag ttggtgtgtg 420

tgagccgcgt tggtagtttc tggtccaggc ctctttgctt atcatgggct gtaagacttt 480

atcatatgta ccagacgtct ccgaggctct ctcggtctct cctggcggtg gcttctggac 540

atttgcgacc attttgcagc tgttagctga tcgaacttga agaatggtgg ctcctcttta 600

catacgtttc ctgacgtggc aggagttgaa aactcgtgat aataagaact tgcggaggtt 660

gccggttggt tgagctctct gtgcgcattc cgtctgggca gtctcttagg ttgtagaagt 720

ttttatttcg atttgcgaac tattgtaatt gtaattgtaa ttttgttccc gatgagtaaa 780

tggaatttcc gttcgtccgt ggctggcgaa aaaaccggag agtaataact caagataaga 840

aagaaccgca gacatttacg tgagtggtca ctggtcaagc tggacctgat gcttcccggt 900

agcaaagatt gcatatagag gagcatcgtc atggggctgc ggctgctaaa gtgcagaccc 960

ggaaccttca gttcccgact tctcccaacc tgaccgcatg gacgtgaagc tgggcaaagc 1020

gactgcagga tataaaaaaa ggcgcagcag aattgacctg gatcatgcac gacaatctgc 1080

acctgtttca gggccgtggc ctcgctgaaa cggtcagtcc ggttaggcga gctcctcctc 1140

tgactgttca tcgcaacgca agccgttcag ctacacgcgt cttcagtctc ctgcagtcgc 1200

agtcgcgcgc acgtaggagc cgttcagcta caagccgttt tctaagcata cctgcgcgtg 1260

ctagctgttg ttgggacttg ggagagtctt aacaaacccg tcaatggcag cgcgaaagcc 1320

acggccgaac cgtgacgagt tcggcgacgc gaatgtgcga tgaaagctac gtcggtgtag 1380

cagctgagcg ggggtcaaaa cggctgcgaa caggaaggag acgagcagat tccagtccta 1440

cttttattta ttttatttat ctaggatgga agtcaactgt tgcttactct atggatcttt 1500

ttttgttatt atttacagga gtcaggctca ggacttgttc tgcatgcatc agttacggaa 1560

cagaaacatt agaaaagtag gtgtctttgt tttgatgaat tgttccatct aaaatgagat 1620

ggtgcatcat atgtccattt ctcaaatttg gtgggataac tctatctctc gtattagtac 1680

taactaattg ataagttgat catcttattt cagaaaccaa acaaaaaagt gagaaaataa 1740

cagactagtc cgttactcaa atcaaacatg ttattagaga tgttttagat accgcgtggc 1800

tgatttcgat attttagatt agataccgcg tggcaagcat caattacgga gcataaactt 1860

ctcgtgcatg ttttttgcag caggaatcaa aaggtactgg tacgtgtctg ctactgtgtt 1920

gcgtagaaag ttctggtctt ctgaggcatg catcatcatc tatctatcta ttgctgagat 1980

cgatcagtgc aaagaacagg agagcgggga gaagagtatc ggcaacacac cagggtaccg 2040

tttggttcaa atatttgtaa cgtaatgagt aaat 2074

<210> 1101
<211> 1871
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122516_G1, chr3:187013875..187015745, Cluster 7

<400> 1101
gtcgctgcct ttcgccgcgc tccaaacaat gctgccatcc ttgggcagga gaagctccag 60

ctccagcctc caggacgcgc gtgtgcgtgc atccggccct ggccccgtcc gtctctggac 120

gaccacgatc tgcctccgca ggtggtccga tgcatccggc acgcgcggac cccacacgcg 180

gtggctatcc tgagctcgac acgcacgcct gtgcacgtta ggcgggtggc ggtgcactgc 240

tccgtcggtc cgtccctgaa attcggttgc atcggacggt tggccctgtg aagcaccagt 300

agggacgatg cactgcacag tagcctgctc gctggcggat ggccaggccc gagttcaggg 360

ctggaggctg tttgaccgcg ggtacgttat actagtacgt gtgacagccc tgcactgcac 420

tgcattgcgt gcacagccag taggctgttt gcaggctagc agcagcaggg gcgaaaaaaa 480

cggaaagata ctgtacctac cgcgtcaggc ttcacgggga ggccgttaat tggcttgggt 540

tctgccatct attttttttt aaaattttcg ttgccgtatt tgattttcaa aattgcgatc 600

ctcttcgctg aaatcatgag atgcatctta tgaaggcagg tacgggcacg tcaggttcaa 660

ggctaaatac ccgcagaaat ggaaaaagga ttcacaggta tcatcaatct gcgtggttcg 720

accgtcaagt gaaaaaatat gcagctagtc gtccagtccg agcttgaatg gtgtttgcac 780

ctagtgtacg tacagaaggt aatctatctg tactgtactg tactactgta ccacaccggg 840

tcaacctcat gcatgtattt gtccagtact gatattgcta tttgaggaca taaatatacg 900

cgttttcaag atcggagact cgcgctcgcc tcctagctac ctagtctgtg tgactgtgtc 960

agctatgtct ctacgtttga ccgatggagt gaaacctgca gcaaccaagc aacggtctgc 1020

gtagaacacg cactccatac gtacgtacgc gtttcgtttt caaaaggtta cgagtcgtgg 1080

actcggtgct agttcgtgta ctgtttctac gtacgtactt tgtgccttct gcatttgacc 1140

ggatcgaacg tgcaccacct tcttcgtaca caaaaatcga gcgtgccttc tctcttacag 1200

gcttagggca tgtacgagcc gtatcttacg gggtgtttgt cactgttgtg tcctgtggtg 1260

tataatataa atttaaatta ttttaaaaat tattttcaat ctaaataaaa aaaaacaaaa 1320

taattatcta aatatcttct aaaagcttgc aacttcaact tcacggtttt atgaagcttc 1380

taatgaactg cctcttcaac ttcaccaaat ttggcgaagg tgaagcggtc ccaaaacagt 1440

gacttaacta gtacttgttt gggagagctt cacttgaaga attttaagtt tatttcaaca 1500

ttttctatcc aaacaggttt agctccatga gctctagctc tacatgttag tttcatgatt 1560

ttttcgaagc tcctcaaagg gtgcttcaaa aacactgttt tatacctcct cgtgaagtta 1620

cacaaaaaaa atatccacca tatcattggt tacataactt attgatttat gtctctttct 1680

ccactcgcaa gtcgcaaatt attaagggta agtaaggaaa ctcacacaaa ttaattgtat 1740

tacagaagct ggaacttatg cgcaagtcaa acactcttga atccagtctt accaatatgt 1800

tcaagttgtt tcatgtgaag ctggaaaacc gaatctacaa ttcttgaagt gaagccctcc 1860

caaacagagc t 1871

<210> 1102

<211> 1506
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123098_G1, chr3:190155014..190156519, Cluster 7

<400> 1102
ttaggggtcc tgggaaacta gtaatcagca tgtccgatac cataatacgc gtccataatt 60

ccagggcctt gtcttgagcc gtgctgtgcg cagtgcgtgt agtatagtaa tgctgtacta 120

cttgtacatc atgttcatgt gtgtgtgcat tctgcaaagc gccgatcgag tgagatttgg 180

gacatatcca tactgtttgc tccccctctg tctttctccc gtctgctttt agcaacagac 240

aaacgcgaga ggtcaagagg cccgatgtac cctggctgcc ttgcatggac gcctcgcctt 300

tgtccccccct cgtgtggggg cccttgctcg acatgcgcgc ttatcaaggc atccatcatt 360

gcagttttct ctcttgtcct cgtccccata catttctttc ccaaggttta cgtattgttc 420

ccaaatccca agtcgcaaag gaggagaaag gtcgcatggg gatgtgtgct ggacatcaca 480

tgcatgcata cgacatgctg atcagtcgat acgtgtatgt agtgccagcg aaatggatgc 540

gtgcacggcg tactgccacg gatgtgtccc gaagccaagc gcgcgccgtc gtctacgctt 600

ctccggaatc tggacgtttg tggtgtctgg tgtgtgccac actgccatag gatcaaccgg 660

gagaggaaac caacgatggc gaactggcag ctatctatcc cgggatcgca tcgcgcggac 720

atgtgcgagg cgtcggggtc ggacgcatgg cgtcgaccgg atcagcaacg tcacgccgac 780

gtcgagcgca cttgtgggag cgcgggcccg gcccaggcgc acgcgtgccc ccacggcccg 840

cgcatacctg gacacggggc ccggccagat tccggctgcc gtcgcggcct ctcgcccaca 900

ccccctgccc ccgagatgtc cagcgcctcg cggatggccg ccgaggcgcc gaccccgcac 960

gaaagcgacg gatcgtgcac ggccacgccc cgccccgcgc ccggcgactg cgtgcgaata 1020

cagcggcagg ctggcgggct ggtctggaac taatcaacta acccacacaa caaataaaga 1080

acacgataca cgatcgagcg tggcatgcaa ggtcagtcaa cacccacaaa acatggatcg 1140

gtttcagtca gttccctaaa ccggagtgga tcgaacgaac tcttccaacc gcagacacga 1200

ccgaccacaa actatcactg tactactgaa cacagacagg tacgtaccag catgcaggag 1260

ccaagagcgc ccatctgcct gacgaagcgc gtaccaaacc tccttccttt ttaattaact 1320

aataattgac tcccatcgat caccaccacc actagcgttg aaaacggatg ggtaaaattt 1380

tgtctcgact cgtacccttt tttacatttg acctaaccgt ttccgtattt acggaaaaat 1440

atagcaacga gacgaaaacg gatggttatt gtaaccatcg gctcttttca atgacaagtg 1500

atctaa 1506

<210> 1103
<211> 1995
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124293_G1, chr3:196445004..196446998, Cluster 7

<400> 1103
ttcgtaacac ggaacaacct tttagggcat gtttgggagt gaagtatttt ttacagtttc 60

tatgtgatac catggttttg ggcagtactg tactatttta taccatgagg tgggttgcat 120

tcctgaatac tatggtttca aaatcatagt atcctagata atatggtatt tttgaagtat 180

tcgaaactcc actccaatca aagtttttat gatatggcta gcttttgcct aataccattg 240

ttcacagtgt tgtatctaaa caatgtttct taaaaatatg gtatttttga agctatcaaa 300

actataatat tatcataaca attacaaaca atcatcgttt tgagaaacat tgtcgcaaag 360

agtcacttat tttccttttc ctccacacac acgcccaacg tgtcggcttc cgccgggcaa 420

aatcctagtc ccaaaatgtc cgtacctggc cgtcccggcg aactctccgg tcgcggctca 480

ggaggcggcg gtggcggctc ccgcccgcat cttcgacttt ggctcaggag gggcctgtca 540

cctgtacgcc ccaaaaatgc atgattgtat cttgaaattt cagtatacct gtaacttagc 600

atgaagcttc tacacatgag tacttttttt tctctcctgg gtaacatctt aaggacaatt 660

catgtggact atagacagaa cgtgcatgga agtcctatgg tctactttcc cctcaaatca 720

atcaagccta attgtccgtt gactgttgta cacttgtgtc tcatatgtaa ggcccctttc 780

ctaaaccatg gttgacgaca gtcctttgta tatgaattgg tagatgtagg ctggaccgct 840

ggagcaaaca agttgggtag atataggctg gactactgga gcatacaagt tgtcgctggt 900

tctgtcctaa catgtatcat gttctattta gaaattctct aacaaaacct gaccatatcc 960

aaatttggag gcagccccaa tgcggcagtg ctagaggctt ctacatgagt ggggttcaaa 1020

gcatcgggtt attattttgg gtacccgaaa ggcccaaaca ggcccaccaa gacaacagcc 1080

agtcgacgga tactggactt ggactttagc tgaccagccc ccaaacagcc aaatcggcca 1140

aaggcccaaa tgcaaacgct tcctgtctac aacagacttt ctcgcaacca ttttctccac 1200

ccgcacagca gtctcagact cccagctatc caatgtgcat gtgcagcagt ttccatcagc 1260

cccaatccaa cgttcaacag tatcctcctc ctcctctacc agtgcaatga cagcaatcta 1320

gcccacagct tgctcaggca atgcaaccac aacatcctcc tgtgcaaact cagataagac 1380

ctcaagcccc accaagctac cctcattatc caccccagca gccattgaac accaccccta 1440

aaactcttct cggcattgta gctatgcaag gagcacacaa cgctgttgct ccatcaggtg 1500

ccagccattc tgaaccgcca tattacgtac ggaggggttg gcatcccact atctcagcca 1560

ccgccactgc gccacagcac aacatgcaga ggcaccagca caggttaggg ctcgtttggg 1620

ccacccctcc aagcaaaggg tcctacgctg gccttccacg gtggtatgcg ccatagggca 1680

atccgcaagg ctacagcaca tgctacgctt acccaccaag cggacctcca ggctccagca 1740

gcagtccagc cgcaacagtt gcccccaggt ggagtcgtaa tgagccatcc gggatcgcat 1800

atgatgcgtg gccatcccta cggagaaatg atggagaagg cgatcgccga gagtggccag 1860

ccaatggatt tcaacaccct gctcgacaga ctgaacgaag cagggtcggg accaccaccc 1920

gcacgcgcgt ggtgattggt gttagttatg tgacttatga ctattatcat gcagctaact 1980

cgctaacctt aaaat 1995

<210> 1104
<211> 1652
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124740_G1, chr3:199261794..199263445, Cluster 7

<400> 1104
tatacggcta cgcttcatca gttagctctg gcagcgccag ccgtccgtgc ttctcatgca 60

tcgacggcgg tcgtaccgac cgttaatatt acaacaaaga cggtaaaagg ttggacgagc 120

gcaggaggac gggtcgtcgt cagaaagcgt gagagacctt gtgttgtgta aaactgcacg 180

agacatcgaa ccccagaacc gaagcgcatg catgcatgca tgcacgagtc ccgcctgtca 240

gttctcaggg tcactattct atttgcgtgg ttagtaaagg catatatata tccgatgcgc 300

tcgcgaatgt cgaacggatt atggaccgat gctctggttg agctgaaccg atcagcgatc 360

gatgcgtcgt aacgtggaca catgaaaggc gaccgttcat ctgactacga aacgacaaag 420

gtactgtaac gtggaccaca tgacaaggca ttcaggacat cgacgtcgac aactatatat 480

atcctctaat aactaattga aaacctttga ccatccatgt tacccctcgt taattatttt 540

tttttaactc tttgcgccac cagaaactcc acaagttacc cctctacctt gtgccagagc 600

agcaagcagt ttcagtgttg catacaggat aggagccatt ttgcaccgga agtccagaac 660

aacaaacagt tccagttccc ctttccacac cattttcagc aagatatcaa tgttcacagt 720

tcagggcagg gcatttgtga tccttgtcct ctcatgttac ctattttaag accaagattc 780

ttgagtccat tttataaaac atcaaacaat cattgcccta ctgttccatt tatatttagg 840

aaacttaaaa atttaggagc ccaagaattt tggaagctcc atgtcgccgg tccatttatg 900

ctgggcactg gacgtgccgc ctactagggt gacggctatg tatggattgt ggtaggtgtt 960

gaataagtag acattttaaa atttaaattt aaatataaat catgaataac aataaataat 1020

ctagcaggtt gtttcccatc aggctaggat agtaaacagt atgcagttca catctataac 1080

agcagacaaa ctgaagaacg agactaggtc agatcacatc tataacatca ggctagtaaa 1140

cagtatgcag tccatttaca aactgaagga cgagactagg tcatgaacaa cagtatgcag 1200

atcacgcatg gtggagaaaa aaaagagaga gatgcacacg gtgaagggga aaagcagtgc 1260

aatggcgagc acgccaataa aaaaacatga gggtactttg cccattcatc aattttagct 1320

ggttttggaa cagctaatga gataacaact ttttttatt agctaagagg catttagcta 1380

acattttagc tagtaaatgc gtccaaattc actctagcct atatggagtt cgaaatgcca 1440

cgagccctcc cgttgctttt ctttttaaat ctgctgggcc aaaatgggaa atttccgcaa 1500

caacctgaaa aggaagaact tcatatcggg tttatcctgg gctcggaaag ctctcccctt 1560

tcagcccaac tgtacgtctg tacttaccaa gcagccgagc aggaggaaaa cgaactaggc 1620

ttggagccct gcgactgcga gcaaccggga ac 1652

<210> 1105
<211> 2345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125230_G1, chr3:201937208..201939552, Cluster 7

<220>
<221> modified_base
<222> (1778)..(1778)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1778)..(1877)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1779)..(1779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1780)..(1780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1781)..(1781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1782)..(1782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1783)..(1783)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1784)..(1784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1785)..(1785)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1786)..(1786)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1787)..(1787)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1788)..(1788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1789)..(1789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1790)..(1790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1791)..(1791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1792)..(1792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1793)..(1793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1794)..(1794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1795)..(1795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1796)..(1796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1797)..(1797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1798)..(1798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1799)..(1799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1800)..(1800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1801)..(1801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1802)..(1802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1803)..(1803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1804)..(1804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1805)..(1805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1806)..(1806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1807)..(1807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1808)..(1808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1809)..(1809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1810)..(1810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1811)..(1811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1812)..(1812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1813)..(1813)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1814)..(1814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1815)..(1815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1816)..(1816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1817)..(1817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1818)..(1818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1819)..(1819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1820)..(1820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1821)..(1821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1822)..(1822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1823)..(1823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1824)..(1824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1825)..(1825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1826)..(1826)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1827)..(1827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1828)..(1828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1829)..(1829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1830)..(1830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1831)..(1831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1832)..(1832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1833)..(1833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1834)..(1834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1835)..(1835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1836)..(1836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1837)..(1837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1838)..(1838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1839)..(1839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1840)..(1840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1841)..(1841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1842)..(1842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1843)..(1843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1844)..(1844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1845)..(1845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1846)..(1846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1847)..(1847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1848)..(1848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1849)..(1849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1850)..(1850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1851)..(1851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1852)..(1852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1853)..(1853)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1854)..(1854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1855)..(1855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1856)..(1856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1857)..(1857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1858)..(1858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1859)..(1859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1860)..(1860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1861)..(1861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1862)..(1862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1863)..(1863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1864)..(1864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1865)..(1865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1866)..(1866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1867)..(1867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1868)..(1868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1869)..(1869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1870)..(1870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1871)..(1871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1872)..(1872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1873)..(1873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1874)..(1874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1875)..(1875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1876)..(1876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1877)..(1877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1880)..(1880)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1880)..(1979)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1881)..(1881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1882)..(1882)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1883)..(1883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1884)..(1884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1885)..(1885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1886)..(1886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1887)..(1887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1888)..(1888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1889)..(1889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1890)..(1890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1891)..(1891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1892)..(1892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1893)..(1893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1894)..(1894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1895)..(1895)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1896)..(1896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1897)..(1897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1898)..(1898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1899)..(1899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1900)..(1900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1901)..(1901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1902)..(1902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1903)..(1903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1904)..(1904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1905)..(1905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1906)..(1906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1907)..(1907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1908)..(1908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1909)..(1909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1910)..(1910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1911)..(1911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1912)..(1912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1913)..(1913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1914)..(1914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1915)..(1915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1916)..(1916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1917)..(1917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1918)..(1918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1919)..(1919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1920)..(1920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1921)..(1921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1922)..(1922)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1923)..(1923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1924)..(1924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1925)..(1925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1926)..(1926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1927)..(1927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1928)..(1928)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1929)..(1929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1930)..(1930)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1931)..(1931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1932)..(1932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1933)..(1933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1934)..(1934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1935)..(1935)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1936)..(1936)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1937)..(1937)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1938)..(1938)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1939)..(1939)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1940)..(1940)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1941)..(1941)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1942)..(1942)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1943)..(1943)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1944)..(1944)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1945)..(1945)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1946)..(1946)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1947)..(1947)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1948)..(1948)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1949)..(1949)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1950)..(1950)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1951)..(1951)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1952)..(1952)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1953)..(1953)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1954)..(1954)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1955)..(1955)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1956)..(1956)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1957)..(1957)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1958)..(1958)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1959)..(1959)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1960)..(1960)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1961)..(1961)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1962)..(1962)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1963)..(1963)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1964)..(1964)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1965)..(1965)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1966)..(1966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1967)..(1967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1968)..(1968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1969)..(1969)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1970)..(1970)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1971)..(1971)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1972)..(1972)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1973)..(1973)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1974)..(1974)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1975)..(1975)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1976)..(1976)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1977)..(1977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1978)..(1978)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1979)..(1979)
<223> a, c, g, or t

<400> 1105
cactagagcc tcttctcgtg gaattacaca acttcggtgt cgtttggtca catatttgta 60

acgtaatagt taactgataa cgttaaatca tgtttattta ccgtaatcag ataacacact 120

aaaaattgat atcgacgtat tcaaacttgt taccgccgat actcgagtgc aaaccattat 180

cattatcatt tacgttacat ttcgtgaatc aaacaacacc ttcatgcggt tctagactcc 240

tttaccgaag taatgggggc tctgcatcaa ctatgggaaa agaaccctag ttccgatcca 300

tgtggattcc catgagaggc tcaatgtttc tctagcatcc ttcagtgcag catgggaagc 360

ttcccctgcc atacattggg ctccctctgt cagtagtgcc acttaaacat agggatgcct 420

gcaccaaata atgcagccgc ctgctcagtc tccttgggtg gtctcaacat ttcatgagtc 480

acgatgaatc ggacaatact tgttttggct ggctggctgg ctggtcactg gtggctgcgt 540

ctaaaaccca cgttgtggcc aagacttcga aatcttgcag cactagagct ctgatggtgg 600

catgtgcatc acagttcgcg agcaaatgca ctgcatcggc atgctgatgg accgggaccg 660

ccgcagcgtc aagggaggta ataacgtcgt cgtggagccc aaagctttga aatgtgcgtc 720

gccaattcgc catgttcttg gtagatacat cttagaggtg gatgtggcca ctggctgtcc 780

cctgcagacg ccacactcac tcggaagccc tgttgataaa gcggcgcata cacccatcga 840

agcaaagcgg aagcagtagc agacctccga tctgaatctg gaaaaaaaag ttggaagcaa 900

ttagcgattc tgcagcaaaa gggcaaaaga cgagtaggaa tttctcgtgg ttgacgacgg 960

tgcgtggatg agagggttaa ttaatactag ttactagcgt taatcgttcg taccgccgca 1020

cgagggagcg ggggtggggg tttaacacag agcgagaggt ggctgctgct gctcagctcg 1080

tgctcgactc gactaacgat aggacaacga cggctcggga ggcgacacct gccgcccatg 1140

acctgtgaca aaagctccct agggttacta atctaatcac cgtgtttggc cgctgctgtg 1200

tcagtctcaa tgatggttaa ttaggttgat ggccgaaaag cacaagtgca ctgcattcat 1260

ctcaccagat cacagagaac gctgaacgcc gacaggcctt tgtacggcac cagcagtaat 1320

ttcagtagca ctgaacgtgg aacacaactt gagaggccga aggcaagaca ctagggtcgt 1380

gggcccgcac gtaactacgg tccacgcgac ggtggtgggc tggtggccca gcggagcgga 1440

cagagtactc caccatgtgc tgtcgctttt caaagggtag agaggcgaag agaagtcggc 1500

aaggcgccaa gctactagat gctactgcta gcaggtcccc tccgtgcatc cagtacgacg 1560

gatgctcgtg ctccggtcga taggagcacg gccataacac gcgtcgtacc acggatgtct 1620

ctgggcgcac aaaacgacaa aacccaccat tcatgtgtgt tgtgtgtccg tttcaacgtt 1680

tttacaacgg cggtcaaaga ttgtacctac ggcaatagtc tcctacctat acgactattc 1740

aattacaacc acggcaatgg tcgcgggaga ctagcagnnn nnnnnnnnnn nnnnnnnnnn 1800

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1860

nnnnnnnnnn nnnnnnncgn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1920

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnc 1980

cccttccccc ccctccgaaa tttgagggcc tgttttaaaa aaagcccccg aaagggtttt 2040

tgggggggccc tccccaattc ccggggagac ttaaaagggg ttgcaagaac ttgggggaaa 2100

aggttccttc ccttggcccg ggcctctttt tttttcccgg gccatttgta tctaaaaatt 2160

acatcaaaat aagtgtacac catagtttgt cggtagaacc tagagatttt tcttctaaca 2220

caattgcggc tgaaaaaaat tcaatctagc gcttgaatta ttcgtgtgtg gccaaaaaaa 2280

aaaaattagc tgctgaaatc caatcagcgg gtcagaactt ttggatgcta gagcgtttta 2340

ctgct 2345

<210> 1106
<211> 1494
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126640_G1, chr3:208700302..208701795, Cluster 7

<400> 1106
ctctctttat atatataaag acatgagaag gagatctggt gaattgttat tcgttgaggt 60

cagtgacgaa aatatcccat agtgaattaa agttactttc accgatgaga atataatcac 120

caactaggtc aactgtagaa gtctaaccgt gacaaaacat agacgcgtga cgacaaacat 180

acatgcacac acaatatgtg attgattggc aacagttgag aaatgggtca actaagtaca 240

cgtacatgca tactgtacat agcatgccct aataagtggt cgtttggcat tcttctttct 300

tgggcagcat gagtagtgtg catagtcaag atgttgtcac aaattgccat ctttttggca 360

agattaggcc ggccaccaat caactcatgg gcatcccctt attttgtcaa tgctatatat 420

ataagacccg gtgctggccc ctccctccac tcatcaccca agtgttcccg gccttatcag 480

aatatagttg tcacctctct ctctctctct ctcttgcacg aaatgcaaag tgagtcagcc 540

ccctttttta acacaaggat gctgcccatt tctgtatatt ctgaaaacgc cgttcctaga 600

cctgcctttt ctgcctgttt tcgtggcttt tgttgcaacc gcgcgcggac aacaaatcat 660

tgtttctcta ggctaggtgt aaccgtgtac cacaccagcg tgaatgcgtc acgcatgatc 720

gacctagcta gctagtagta gcagaagcga tcgaatgaac aagtgctgtc gtctcaatgc 780

tttgccctgg caacaaaggc taatagcagg caacttcaat aaataatggt tatttgtgtg 840

aggtactcga tcgtatgcat ttgacagtgt gtggctgatc agaggttaaa gagtgcctat 900

ttatttaatt atgaggagtg tagagccata gtaggaatgg agaataaagc tcatactctc 960

accacacatg cgcccacttc taaataaatg ctaaagcatc ctactgagga ttgatgtgaa 1020

atttcgtcgt taaaatatct gcaacgaacg ttaaagttaa ttaccagtga attaaccgcc 1080

gttcatgatg gacggacgac accactgcga gggtttagat gccaggagaa aactgaaaga 1140

atgttggtgt caaagatctt ctatctggag aaggacttaa taatggtggg gacatgtgta 1200

catacaaggt aaatctcgaa agtgtataat gatggagcac gttgatcatt caaatattct 1260

agaagatctt ttttttaaaa aaaagtaaag gtgatttcac ctagactagg gcaagcacaa 1320

cccaattaaa tgaggagtct tttgagaggg gtctctagga gttaagtgaa aaaacaaact 1380

ctctatacat attgtgtctt gactacattt attatctaga ggctcaagat tgtatcatgc 1440

agtctcttag ttgtatctta tgttcaaaaa accgttccaa aggctcagtg ttgt 1494

<210> 1107
<211> 1588
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127038_G1, chr3:210603611..210605198, Cluster 7

<400> 1107
ggtattggat tctaacatct ctaattactt cgataccaaa cctactacgt ctaaacgggg 60

tggtgctagt tttattcctt tttcagatcc taacttcttc aaccaccaaa tctattgttc 120

tataaagatt tcaacaatgt ttgtgtatct tctaagtggc ctgatggccc taaaacaatt 180

ttagatgcat cttcctggca agcccatacg ttttgttgcg gtgaatatac tcaaacccga 240

agttagtctg gagagtagac caggctagtt ttgtcggctg tgcgttatga gactcaatca 300

ttcaagcctt cttaagtctt ggagaagtga gaattcatgg agacaacgga cagatcacag 360

atcggggcca aggaaggcat gcgctgcacc gcagcaccgg cgtggtcgct tgcgcacgga 420

gccgggcacc ggcatgcgtc ccgctttttt cctcggccgg tcgatctcac tggcagtctc 480

tcttccagtc ttcctcagtc actggagcct gtgctgttgc tgttggcact gtggttgagc 540

gcgcgcgcgc gcatggccgc gcatgggcgg gttacacgat actacatgag ttacgtgtgg 600

acaggcctct cccgtgccgc aggccagcca gggccccccg tgcccctgcc gtgcccgtgg 660

cagctgggcg gaaaggcaga cagcgcgcga agctccacac acatgcgcag gacagacagc 720

tactcctatc tcctatctgt tgcgccctac gaatgtcgca gcacaggaca ggactgtcct 780

tcccgtccgg cgtctgcaga ccaaccggac gcccctcttt gcctttggcc ttttgccttc 840

tttgactgcc tggtctcggg ctctgtctcg tcagtcaagc agctctggac tctggtacga 900

tgcatgtctg gtctgctgtt gtcgtcaaca cggcaggggt cagatcagat gatggcatgg 960

catgccatgg gatgcatgcg tgcgctcgtg ctcgtgatta caaccaacca agcctgatct 1020

cggctgcact tgttcggcag atgcaactgg tgtggctata gcagcagtga taatctacag 1080

ggcctttcag tttggatttc tgcagtgctg cagctgcggc caccagacaa gtgcagcgga 1140

tcagggcttt tagggcaaag tggacggact tgcatactat ccgacatgaa tgttactaat 1200

atatttccgt ctatacgaat atgtatttaa atatccgata gttcagatac ggattgccgt 1260

gcatttaaat caactatata tggacgttca tccaatttct aaagaaagaa gttacgcaat 1320

gagaggttga aatatgtgaa gtatattaaa cacaatacat atcaacaata ataaaagtac 1380

attgtaatcg gggttcacca aaccggatta agggtaaaaa ccggcgtcca ccgataaccg 1440

attaatctcg ataaatcggt gaaaacaaga aaccggccaa aatcaaaatc acctcagttt 1500

tgaattctaa atggttcgaa gccgattaat cggccgataa ttagcttatg acctgctaaa 1560

ccagcgtcac agaagtagaa agagccat 1588

<210> 1108
<211> 1592
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128517_G1, chr3:217654371..217655962, Cluster 7

<400> 1108
ggcatccttg acttgagacc atagggagac gcacggaagg cgaagactct aagttgtagg 60

gcccccatgc gtaaagttag cccctaaggg ttcaacacta ggtgtaaata agcctaagcc 120

aatactgttt cgtaattacg ccattgtgaa gtatattatg agaattaggt acgaacatac 180

tttagacctt agcctctacg tcgccctata aataccccg tccggcgtgt gaataggagt 240

acgggatacg cttgacaaga catcgagctt tcctgtgttg ttgagcatcg ttgtatcacc 300

aactcccgct ataacttgga tccacgtgtc aaaaacccaa caaatcacta ctatatgcaa 360

cagcataacg caaaattata agtcttcatt tgctcggccg agatagaaga tatatataaa 420

tatgttgttg ggcaataaca aggtctatat aaaaggagac gattctaaca attttgccga 480

gatataaatg tgtcgttccg atagaataag cattgtgtgg aaaaaggtgt tgagtcgctt 540

tagatatagg tagtgtttgg atgaagggac gcagaaggat gaagagggat gggatcattt 600

taacttgacc cgcgtttgat ttggaggtct atagtcaggg tcaagaaatg taattcaaaa 660

atggtgcatg aggccatccc tcaaaaaata agggacgtgg tcgacccagg attgatctcg 720

tcccatccct cgttgacacc gaaccaaaac actactttcg gtcagtttcg atagaataag 780

cattaagtaa ctgtctcgct gggctttaat ctttcggtca gtttcggtac atgtctggcc 840

cggtgaatgt cgtactgcat gggtacccgc ccacttggaa gaagatgaag ctcaccgcta 900

gtagtagcta agctttaccg gctttatttg gacggacgcc cctggaacca gttgtcgcgc 960

aacgcgcgac gccatccaat catccgacca ggcgtctgcg caggctggct gtcccacaat 1020

actacgggac ggagacgggt aatatctttt gctcggctga cacagcgttg gctcatggct 1080

gggcggcgat acagagtcac agataccgcc gccactagct gccgccttcc tcccgtcctc 1140

cacgggtcgg gtcgggtccc gggtgcaacg acggtgcggt ggagtcggac tcggagcgct 1200

ctcttgtggg agtgcggggt gcggctcgca tgcggcatgc atgcgtgcag tgcgccgtcg 1260

gtcgccaccc tggcccccat ccagtagatc gtcgttcatc gttagcggaa aggcgcagtc 1320

gagtgcgtcg gccgcgacga cttgcggatc ggtccggcga ccgagcccaa cgcagtgtgg 1380

tgtggcctca gctcgatcga ccggtcggtc caagcactgc agccaaagct agtggtctgt 1440

tagaaaggtc cagcgtgcgc ctcttcagcc tgcaaagcgg agcgcatttc cgcacgtact 1500

gttaagagat agtgtatgtg tatgtgatct cattggaccg aatgcgattt gtcaggtaga 1560

tgaaataaag agcgcagcgc actcgagtag ac 1592

<210> 1109
<211> 2104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128519_G1, chr3:217657322..217659425, Cluster 7

<400> 1109
gtatgtacac gcacgcacgt catacatgca tgctagctac atacacgcta tacccccctt 60

cttcctttta ccagattttg ccgtgatccg taccgctttg tttatgtgga caatataaga 120

cgacgtggac gtgaacgtcc catgttcagc caacggccat tgtaggattg tacgcgcgtt 180

gttttcttct gtaaacaaca gggtttggtc gacctgtact gtacgtatct gtttgtgtgt 240

gtgtgtagta gtagtagggt ccagtctgtg tcgtcgtcta gtagcttgcc gcagttcatc 300

gaccgaccga cctggcactt agttaagtgc gtcgtcgtac ggcagctagg cacctacccg 360

gccgtgttgt gattagttaa gttatactcg cgtgtgtttg tgtgtattag ctgtccgcaa 420

ctaatttagg agctagcgcc gccgaaagat acatctcgat cgtgtgttct cttctgttct 480

gcactagtac tgtattgcgc gcggctctat agccaataca tctgcacagt tgtacactga 540

atgtaccccg tttagacgct gctggttcag atatgatatg ccctgtgctg ctgacacgga 600

gtagtagtca accaatggag ttacctaatc tgcctaatct ggaacaaaag aatagcaaac 660

ggaatatact acatacatgt agaaaataat acaaattctg gcggtagact atctgaaaaa 720

ttgactagat atggtagaaa aaggctatca acatttatat gacactaaat tttatgttat 780

acaaatataa atgtttgtat agggttgatc aaacttgaga tgatttgact tggtactacg 840

ttaaaaattt gtatttttta tgagattgat gcaatatata acatatgctc tttgttattg 900

tcgctaatat agaaacatct tcggttacat catattagct aatagttatg tctagagttg 960

agtccataac taataagcaa gcaagcatgt attattcata ttaattcctt gggttttgga 1020

aaactaacca gcccgtgtgt taaaaccaca ctgtcgaaga gactggattt gttttaaatt 1080

tccttaggcc tgactctttc aagcatcgtg atgtcgagcg ttccagttgc aaccttgcct 1140

tcatatacgg ccgcctggtt gttttcagtt gaatagtata tatatatata cagttaggac 1200

cactatataa ctaatataat acacgcgagc accaagagca gagaggccac tgtttcttct 1260

caagctggat gactaggcag gcatcgtacg tccctattta atttctccat ggactacatg 1320

catatttggc ggtgttgctg attttattca gcttagctat tcttctattg cttgtcagcg 1380

cattatgcac gtgtagcatc gattcggtac gggatttatg tagcaggcac ataattggtt 1440

cagatgccag cagccaagtg catgcgcgcg gctggtttcc agacatgcat gcatccatga 1500

actcctgcct ccttcttcgg catatcgaat tcgggccggg ggaggggaaa gaaaatttct 1560

ggaaattcgt gttccaggaa gctccccccc caccagctag ccaaagagag tactctcgat 1620

ctgcatgatt gcgctggaaa ttctggcatg gattcttgaa acagtgaact aacacttcgt 1680

cttgctaact aggattagta gtagcttcct agctaggaag ttgcacgaac cgcacgtact 1740

ccgtactact cggctagcta gctacctagt ccgcgtggtc taaacgaaat tgttggaata 1800

atatatagaa atagtgcttc tgagtcatgt ccttgggcgg tgtccattgc caattttgac 1860

atgggatcag tgtatgagcg tacttgttat actagagcgt gcatatagtt aaggtcatat 1920

acagtagtgc tcaggtaaca caaaataaaa agacgtaagg cggcacatgc atgctccgta 1980

tccaagagga atactaggaa ggtctagttt ttcccccaaa ggaaaagaac tacagaaggc 2040

tctagccagt gttttaaata gcgggaaaat gaatttatct tccaaaaagt gcaaatatcg 2100

agat 2104

<210> 1110
<211> 1437
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_139762_G1, chr4:44502864..44504300, Cluster 7

<400> 1110
taccaatcct aaaaacatta gataagccaa aagatctaac gttcggaaat cagttcaaaa 60

catatctgga tcaatgaaag aatgtcgaca attgcatcgt cgacacaata taggatgtag 120

attattcatc atcttcaatc cttgatttcg tgcaaccatc gatggatgat gtgattgacg 180

atccaaagta agtaattgtc cttgttagga gcgcctagga gcaaccctag ataatggccg 240

caatgcaaaa tggctgcctg ccaataaaat cgacagttgc accagtgacc tcgtcgttgc 300

aatcatcgaa accattgcat ggaacaagat catgacaaaa gataatatat ctgacttcgt 360

cgttagattt atttagccta aatcttgaac aaactaacta gatctaaaaa ctacgaatga 420

aagatatata ttggatctcc tttcttctta cacacatgcg atgcacctga cgaaggaaga 480

aggaaagagg ccaggacgac aggagcaagt gcgctgatgg cggcaggcaa tacgcggccg 540

cgccctgcta gctacttcgt ttttagtcac actgcaagct agctcgatgt gactgcagac 600

agtaatggct accagcttga ttggcaccgg taataagttt ataaacacca gaggctgaat 660

cccaaatcct actacgcagc taatcacgct cacaattaat tgttctagct ctatagcgca 720

ctgtagctag caacactagt cgtactacac tactactagc tatgactact atccaaacga 780

gagatgcaga aagcgatgaa ggagccatta acggcccaga ctttctttca tcatatcagc 840

aggtctgtca acaatcgaca gcgcgaatgc tctctctctc agtctctcgt tgtcgggggt 900

tccgaaaggg aaagcgacca actgaagctg aagcgcgcgt cgttgtctcc ggccggcgct 960

gctgtcgccg cccatcacca gcgacatcaa ggccggcacg ccacagagaa ttgaaggccg 1020

ggcgggcttc atgaaatcat cgccagccgc aacagtcgcc accactcaca agcgcccaag 1080

cttacgtgaa ctctacgtga acacatctga tcgacgatgc ctaaccaatt aattgcccca 1140

cccatcccaa atacatgttg atttcttaca aaaaaaaatt gagtatacta ctcttataaa 1200

cacgtaccat caatgaaata ccgatgatga ggctatgatc gatgttgaag ttgacagaac 1260

cacataaagc taaaactaaa accatgactc gatcgagcgc agtggtcccg cgcgcgtgtg 1320

catgcatgcg ccaaggcaaa atctctgtgt cgtgtctcgt attcatccga tcatcatata 1380

tatcatctcc gtctctctcg ctttcactct ctcggcgcaa attaaagcaa gcaatcc 1437

<210> 1111
<211> 2161
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_143055_G1, chr4:64113919..64116079, Cluster 7

<400> 1111
aaccatgcgg ggcatctcaa cgaactagtc ttgatttctt gtgagagaga gaagcgaacg 60

aatggccaaa gaggcggctc tgcgcgttgc tgcggatctg tcaggatggc aggtgctgcc 120

cacgcaaacc gccaagaaac tgatgaaata cacgcagata atatactgca cgtctgcagg 180

cgacactagc caggccagct tgctgacgct acacgtacag ggccacacag cagtatacga 240

tacgatcgag tggtccatgc gagcacaggc cttggcaggt tcaggaggca gctcgcgatt 300

aatgccatca acaacactac tggtaggctg tccggagctg ttcccaacat ttctcctcct 360

atatatccaa tgttgcctca cattagttag atccctctct ctaattttcc ctctcctgca 420

gtcgttcacc ttctccatac aatctatcat ccattaatat ataaatttac tctgaactac 480

cacaactacc tccatgtggg caggcagcga agcaactcgc gggcctgttg agatggcggc 540

tgtggcggcg attcacctga cgaaggtcca tctactgagg ttatcgcatg acgttgcgag 600

cacgagagat gggtagacga aacaggttga cgccgtgtag gggggcgctt gatctagcag 660

gagagaggag tccaccggat agggggtcgt agagggcact gccgcggcga ttagagggca 720

actgtggctt tgtaggagag ggggaagtga agaggcaacc gttgaaggca gcaatatgta 780

tcgtattttg tcagttcaaa aaaatgttgc tataaaattt taatcggtta gtttttaaaa 840

gttaattcag tttatagaaa ttattagcag tatcgatacc ttctagtaat ttttttataa 900

aatagatctt tatctatcta atgatattaa ctacataata taaatattaa atttttttata 960

tttagttaaa ttttgaaaac gtttgattgt ttgttaaaca agagcggcaa tatttttatc 1020

acacaggaag gagttagcta gctgaaacgg tatatctact agagtgcctg taacgtgtac 1080

cagctgctat ataaattaaa ctgcggactg ctccggcaag ggcacttctg ccctctgcat 1140

ctacaattct gcagtaggca ggcaaaagtt cggatgtccg gattcatgaa cggacatatg 1200

ggtttatttt taaaatctat ctctaattga acaagcccta cattggaacc tgatctttgc 1260

atgttcaatt tttttgaaac aaaccaagga ggagagcagc cattatatca ataaagagga 1320

agacctataa taggcaaata acaacccacc aaagatgaat ataacaaaaa caactgctac 1380

aataaaatct acgcccaccc tactaacaac agcaacaccc taacaacaag agcacaagac 1440

aaaaaaaaac tcagtagaac aaagacaaaa tctaatgaaa aggcaaagaa acctccgcca 1500

caaagtccca aaaggcatga ccttttaaac tcaaaagctt cttgaggagg tcgggtggca 1560

acaaactcct ttagatggtc tgtgcatgct tgaattgaac tctcgttggg ctttctgtca 1620

atccccaaca atgcccatat ctttaaacac actacattgt gcaagacggg cacttcgacg 1680

aagcgaagaa ctattatagg acttacattg atgcctaact gttgtagtcg atggtgaggg 1740

gggagctaaa ggagggcatg caagatcctc atcctctcta gctttggtgg atgaagaaga 1800

cattgtctct atcgaaggat cctctagcag tcgaggttct gtattatcct caaccataga 1860

aagagaagga ccatctttga tggtagtaag aaagattgga tcctcaaatg tcatttgcgc 1920

aaccaaggtt gcttccacat catctaatgc gtcctccacc aaaacatgtt ctatattgtc 1980

ctcaatcata gaatgagaag gaccatcttc gttggtggta agaaagatgg gatcctcaaa 2040

agtagtttgt gcaaccaagg tagcttcctc cttgtctgat gcatcctcca tcaaaacaac 2100

atcctcaaca gaggtgacaa cttgaagcaa cgtggaggtg tccgaaggca cctcaatgtt 2160

c 2161

<210> 1112
<211> 2124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_154770_G1, chr4:145378407..145380530, Cluster 7

<400> 1112
gcgagggtgt gctcgaccct ccattccatc aggggaacgg gcgaggggcg ccgttggagg 60

ccgccttaga gctctctaag atacaagacc cttaagtgcc ttgggacttg aaataatcta 120

agttcacaag ggtacaaaat aatctaagtc tctaagggcc cttatgcctt gggatactaa 180

tcaacaatct aagttcttgg gccccctcat gctttgtgat gcccatgaga ttaagttcct 240

gagtccctaa tgtctttggg tcccttgtga tctgaggggc tcttaagtct atgtccctaa 300

ggcctaccat accctatgat gctatggagg caataggtgc caaggaagtt tgtccacgag 360

cactaaaaca acacttacaa actcgaggcc atatgctggc tagtccttag gagtatgcga 420

cctcacatcg agagagtggc caggccctaa acccttttgga gtccaaagcc tcatgagcac 480

aaaggactga gattggctaa atataatata gttgtaagaa agaaggatgt gattagaccc 540

atcggggata atgcaacccc aagggagagg cccgcaccta gtgacctaca aattgatcca 600

taatgttagc ttaatggata aatgttaggt acaatacaat aaatgtttga tagatgacct 660

tatgagtcta acaagtgtaa tgttgccatt acttaagatg tatggtactc aagaccacta 720

tgttatacgt gcatcgaccc tgtagccaca tgtgcacact tagcgtacca tgaagtataa 780

taaactataa aaggatgcac taactaccaa ctacatcata ctgaataaca taggtcttca 840

tgcctataaa agcaacatat catacctacc cctatggtag gtatgacatc cgcctaggaa 900

aggacacctc tgacactatg cgatgatcga gcatatgggt cccggtatga ctccaagaat 960

aggataagaa ttgagtagtt ggatcatagt cggtgggatc caaggttcat gtaacctctc 1020

tcatcctttg cactataaaa gggagggttg agtaacattt cggggtattt tgatccaagg 1080

ttcacatatt agagattttc ctagtagaca ctcttgcact tgagttcatc tagtatatag 1140

gcataaaggt agattatgat cattaggcta gaactcccac tgcaaccatg aggtgagagg 1200

agctatttta tgctcaccag tgtttgagct tgtaatgtct ttcttctatg tattcatcaa 1260

tcaatgagtg gcaggaggat gtaggatatt atgcacacca tggtatgaac ctctctaact 1320

gctcacgtga tggatttcac tcatgccaag gttcaacatg accaccgacc tacgtcatgc 1380

ttcctcctaa ctttctccct ctctggtacc cttggtacca tggtgttctt atgcaacaac 1440

atctaccaag ctaggttgat gggtgtcttt tcttttgagt ttgtcgtgtt ttgctatgta 1500

gcatgacgat ggtgatgtca atacatttgt caatttgagc aggtgcatgt atctaacact 1560

tgctctagca actccgacca tgagccatgc cataggaggc ataggaaaat catgcagtcc 1620

ccataattat ggcctccacc aggtggattt gccttagtgg gctcgcacaa catggctcac 1680

atagcccatc ctttgcttgc acccccacta gggtacataa tgccctagga gtgctatgtt 1740

gcatgcccca tggccctaga ggagcataat tgttatacat gtctcactcc tctagcctcg 1800

catcacgact agggaggcga cattacaagg atgagagatt ctccatgcat tgatcagctt 1860

ggtaggtttg ttggtgcctt gactttagtg ccaatgatgt cattggccct ctcgacacca 1920

tggaggctct cctctataat ccattggcaa cagatgccaa tgaagctact acaaataatg 1980

gagacaagtc attgtcaggt ttatagccac tactagggta aaccctagcc catctctccc 2040

tacataacat gacccaaaga aggctacatc gggtaggggt gagacttttg cacgatcttg 2100

ggctccaacc atggtctctc tagc 2124

<210> 1113
<211> 1574
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158162_G1, chr4:164190779..164192352, Cluster 7

<400> 1113
ccccggccag tccaaaagaa cctactttca agttaggcca tccttttttat aaaaatatat 60

aaacatttcc aacatcaagt attctcttaa taattctaaa atagctgtct gcacacattc 120

tatatatctt agttttgcca agacatataa aaatagtatt aatatttgta ttttcgggag 180

gtcgtcgccc aaaaaaagag agagcagccg gcagcgagac tgtccatggt gatcgtaaag 240

ggcgcagcga caatggcatc tagaggaatg aggttctttt ttttttgcg acttagcata 300

gttatcaaaa tatttaacta gattttaaat agttcgattt agaaaaatcc agaggacgat 360

atatacggat cagccccgga gccccccagc cttgtggtca gtggtcaccg cgcgacactg 420

tgcgctccac tgcagcaact tggcagacaa ggacggcgat caggcggtgg ctttgcgtcc 480

gctcattggg tggttaacat gtagcttcgg gagtccggtc gggccagcgc gctcgagtag 540

ataagcactt gcagtggtac ggtaggagta ggacgacccc gtacgtcaca cgcgtgcccg 600

gttgtcgacg gtctcggtcg cgtttactag ctcctacggt cgacgcctca cgtttagaat 660

caaaatattt aacacttcca ctcgattaag attttaactt tggtccaaaa gatgtggaat 720

atctctacct gagttttgag gcatttttt ttcaaccata gctaggttaa tggatatgcc 780

gtgttggtat atatcgtttg gtcaaatcga acagctagct accgccggtc ggtacctgtc 840

catccatcga tcgatcgatc gatcgatcaa cggtggattg gtggcagatg gtatatacag 900

tattgtttag gcaactagtc cgtctagatc gaagctagat gactaggctt aatgactgtt 960

gaatgaagcc ctgtgatatt gggcccctgc atgatggatg gccagaggcc agtcgatgaa 1020

ccagcgcatg cagcagtgcc atgcctaaca aagctagtag cactagagag agtgagagag 1080

caagcgagag gaggacaaag tttgcctatt tcttctgagt tcttctgatg catgccgact 1140

tggatcgatc cattccagcc tcaactctca agtcgctgct agtagactgt agtatcatcg 1200

atccggcgag tccgtgtgtg cagtcacagt ggtgggctgg ttggctagct gcgacgtcct 1260

gacttgtgtg agagagagag aggcgcgcga tgctgtagct actagcgcgc tgtgacgtac 1320

ggcgtggggt cgtgtaggag aggccggtag agtgctatag cagctacggc gagcgacgga 1380

gcgagacagc atgacaagaa ggtgacagca gcggcactgc acggcagctg ggcgcgcgcg 1440

gtgaggatcc caccaccacg accaccaccc cccgccgttg ctttcggtga tccccgcgac 1500

atggattata ttgctgtggc ctctcgtctg tgggatagcc gaaagcgaca ccacacggcg 1560

gggagcacag catg 1574

<210> 1114
<211> 1467
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159220_G1, chr4:171050368..171051834, Cluster 7

<400> 1114
agctcatcag catttagcct agaaagaaaa aattaaatgt tttgtaaaca aaatcagcct 60

aggactgacc aaatcgagga gccctcgcct tctaccagag cgggagaaat aaccccaaaa 120

atttggcgcc acgaattaag aaatcgataa cattccaacg cacccaaccc aagagacccg 180

cgtgaagctg caaacaaacc caaacctcgt cgttgtcatc ctcgggcgga ggcggtgaac 240

gtggccgtgg agaaaagggt ttcggttgcg gtgcgagccg tggtgcttct gtgccagctt 300

cccagctaca atagagttgt atttgattag atgcacgacc tgccaggaca gtctcgccgc 360

cgaaactgac agacacaaga aagtggagag gttgcgatgg ggctaagaaa acacgggcat 420

tgtttgtggt tgagaagaaa aaaaaaggaa gaagatgtat attgtcatga atcttgagca 480

ggtggagcag atatgaagca aacaggggaa cctgctgccg cttcccagct gtctagagtt 540

ttgtcttttc cataattcag gaacaaagct acatatgcaa caagactggt gtcatttcgg 600

aaacgttcgt tatgccgatt ctgatgacga acgaaccaac gaatgaatgc aggcaggcaa 660

cttcagtttt agctgcagaa acgagctaat aggcatcttg tgcttccata tgctagcttc 720

aaccaatgtt ccagcagagt aggctcagac tagctcaaaa acaactttag tatgggctgg 780

gtgtgggcct ttaatgtact gagtttattg agaactgggc tgtgtcgtta tgggccttga 840

gtctttgtcg aaatgactta acatactacc aattaatatg gtttagtcca ttctaattac 900

cgtttagtct ctgctttagt cctaccgttt ggcaatttag agactaaatg aaactactaa 960

cttttagtcc atcaaatcaa acggggacta agattatgtg ccatgatgcg tactgtgagg 1020

agtaatattc tgtcacaata ttcttttgaa gctcgtgcat gcctcgcaag attctgagtt 1080

cttttatctc ttcctcgttc atttctcttt tgcaacatgt acagtgtgag cagtagtcta 1140

gattcagtgt atatagtagt agcaggagta gtaagtaatg catccgcaga tcgacgagag 1200

acaacagcta gctagcaggg cccggccggg gtgtccttaa aacacgctct gatctggacc 1260

aagctactgc atgcatgcag cgtagtacta cgtacagtac agttggtata gctgctactg 1320

ggtgtagtgt agtgtagctg cttttatttc cattccatcc gccatcgctt gttgcactac 1380

tactgctcat atatttccgg ttcaacacag tgacgacgta cagtacagcc catgtttcga 1440

cgaggagacg tgcatgcgtg accacga 1467

<210> 1115
<211> 2144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170668_G1, chr4:231515593..231517736, Cluster 7

<400> 1115
cacccagcca gccacccaca attaaagggg ccattagtat aataacgcta gtcccatctg 60

attctgctgc tccttgaggc ggccccccta caccatcaac gacctctctg ttgcagacga 120

cgactccgat aaatacaggg aaaaaaaagc catgcgacgt cggcacgctg agtcagtcgt 180

cagtcgactg gctagctact aggatcctcc acttgtgctt gtgcagcagc acaactcagc 240

aaaacagaat caagcagaac tccaaagaca tggcatggca tcgtcctcac agcatcaagg 300

aggggaggac gagggcgaac aatgcgagga cgaggacgag gccgcgccgt ggctcttgta 360

tatctgcatg ccagacagac gacaggcgta cgtccgggca gcaagcaaat gcaagcgctg 420

cgatcgagca tcatcggcgc ggccggcagc ggtagctagc tgcatcaagg gtcgtcgggg 480

cacgaggtca cgagcccggc tagctctcgg gggctgcacc tgcactgcac ccggccagcc 540

catggtttcc aggtcggcgg catgcatgag atgagagaca tcatctatcc gatcgaggcc 600

ggcccaattc atttaatagg cggggccaca tgagacgcta gcccacttga ttactacgag 660

cgattatcgc cacatagcca ctactagtac taggtcatgc gcggcacagg ccccccagca 720

ggtaaatccc tctccacctc ctccacgtcg tctcaccatg ccatgttgct cagctagtgg 780

agctagggcg gtgctgccgc tggggcgagt gctgcccctg ctttgtaccg atgaatctgc 840

cccgggaagc gcggcaacag tacagtagta tggtttttg gattggattt aaaaagagac 900

actgctgcaa tcctatggaa tgagaaggat ccataccgcc attgctatac tctactacat 960

atatgtctcg agatatacga cacagatatt actactactt tacattgacg ctggagctgg 1020

actactacta acttctagta agcgaaaggg tctatagcca agttaattag ctgatctaag 1080

tagcactcct taggttctaa atttgaattc cagtagaaac gaattttaga ccgaggttaa 1140

aaaaagtggt tcccctagtt gtgtgcacat aacgggaagg gttaaagaac gagtaaagat 1200

ctgacctata agtgacggac cctcatattg tacgaggaga ccagctttcg taacctttct 1260

cgatcgtgac cattctcggt agagacggtc tttttcttac cggtcgagtt ttttttacta 1320

gcttttagga ttggtttcag atttccaatg gatcgaatgc ttgcccgttg ccatgccact 1380

ctacctgatc ttaaccggtc agttaagtag ttagttactc cagttagtta tttcatcaga 1440

ggtggggtgg tctcgtcagt ggatatggac tggcagttaa catctgctgt gcagcgcaca 1500

gcacatctgc cgagctggag ctggattgct ggagctgccg ctagcaggaa agcaagcgct 1560

ggctcgtcac cagatcggac tcgagagcgc cagagaagga cgcacagcac attgctcatc 1620

tcgtcttgtg gggcgctact gtaatactgc taccgaaaaa gggcaaggca gcagctgccg 1680

aaacgccaag cttgtgcagg ccaatatgtt ggacgtggtc gatctcgcaa aggagtagat 1740

tgcaccaacc aattcaacac aaaagattaa actgatagaa agaggtggaa cctccactca 1800

catcgagtcg tcgagtccag aagtggaata gaaacaagta acaattattt tattttaatt 1860

atgctaacta gaattcaaac tcacaactta tggctttgat ataatattaa gttgtatgca 1920

ccaaccaatt taatcctaaa acttaagttg acagaagact tctacaattt acttatacta 1980

tatttcaatt tcaacaatag caaggggccc tgctcgctgg cttgctggct cttgagcatc 2040

cgcatcgcac ggctctgcac ctagccgcgg cccaagggta cctgactacc tgtgtctgtg 2100

tctctggtga ctgtacccga gctactacag ccaacgctgc acat 2144

<210> 1116
<211> 1983
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172777_G1, chr5:2322428..2324410, Cluster 7

<400> 1116
acagctaaag ccttttgatc aagtgaaaga attgttggag cttagcagag actatcttat 60

caaccgtcgt ggttacctag ctaggcggcc ttttcagctc caaaaaaatg acgcaccctg 120

aagaacttgt cctctagcga acgatatgat atgatggctg ttgttctcca gatgcagtct 180

gcacggacgc tctgggtggc ccaaagcgca gcagcacatg catgccgcgc cgtgctgtcc 240

gttccccgcc gcgcgccgca gcaggctgcc tgcctctggc tgatacagac gctaagaaga 300

taagacgata gctcgccgat ggatgcagac tcgcacgaga ccgagacgag acgacggtgg 360

ccttttcgaa atttcgatac caacggctcg ctttgctgga gcgatcgatc gaccggatcg 420

gatcaaaagg gaaaccggcg gtgggtgcgc ggcgcaacgc ggtgggcgcg tgcacgccgc 480

acgcccggcc gccggcgact cgaccggcgg gaggcgtgtg cgcgtagtgc acgtcgttgc 540

tttagccgtg tgtcgcgacc acccttacgt acgtacccta gctagcctag cctggcgatc 600

ggtatcggcg atgatggcgt tgatgatccg atatggtcga tctatcccca gcggcgaggt 660

gtcgcggcac ggcacggcac gcggcgacga tgatgtatct gcaggtggat ggcggccgcc 720

ccccggctag ctagctatgc cgcactgcgg ttgacgcact gcggccgcga cgtcgcgctc 780

gctcgctgct ggcagcgtcg catcggccta cagcagctgc tagctcgcta cgtgcgcgct 840

tagtgcgcgt ggcgttggtg gcatctatct tgcgtgcaag cgtcgtggta cagccgccgc 900

cctgccctcg aggccggccg ggccacatgc atgcatgtcc cgtccgcgcg ccgtcgggcc 960

ctccggcgac cccacgaaaa ggagaggcaa aggcgaggtg gtggaccgcg gtaaagacag 1020

ctgcagaggt agctagctag ctaggtcgtc gatgtggatc catgtctgtg tccggggcca 1080

gggccagggc cgggcgggcg agcgcgcggc agacagggac gatccgaatc tgctgtgaaa 1140

gaaaggcgga ggcttcccct tgacgactcc tcggctcagc tctcctggac ggccgcggcc 1200

ccatcccatc catggcagca tgcagtcaga tgcagcgtag ggcgccatgg cttgcatgtg 1260

atgatccgtg tgtgcgcgcg ccgcgaccga gagagattcc acggtcaaaa tggcagggac 1320

agcagcgcag ctggggaggc ggggcaggga caggaccggg acggggacgg ggacggggac 1380

ggccggcagc aaagcgtaac gcaccaccac ccacaggagc ataaagctat acgtcctggt 1440

accatacgtt cccgtcgatc cgatccgatc cgtccgtctt atgatgaacc cggccgcatc 1500

ttgtaatgct gcctgcgtgt gtgctccaca aactaaacta aactaattaa cccctcttgt 1560

tcattctcgt tgatttattt tcatgcgacg acaattaaga gatcggatgg cgggtagagt 1620

gtgatcgaga ttcggaaaaa aattctctac agctggattg ataagcggct ctgcgacatg 1680

gtttggattt ataacacgag tccactttcc aatagtcggc agttgtttct ttctgcgtca 1740

gcatgatcaa ttaattaagg ctccgttcgg caagccagga accaaaccag ctcaagatta 1800

agtggatcct aggctgtcac ttattccggg tcgacagccc actttcagca taggaattaa 1860

tccggatagt tggtcacctg gctttattct gggctaaaaa ttgaagcgga ggagttaaaa 1920

ccaggcggct ttgattctgg tccaagacaa acgaacaact ctaataaact acatcagatt 1980

cta 1983

<210> 1117
<211> 2121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_17413_G1, chr1:96609808..96611928, Cluster 7

<400> 1117
agattttgat cacaagaggt aacaaggggg attagtcaga cgtagtggcc ctctgggagt 60

gagaggaagg ccaaggtaag gctcggggaa ggccaagacc acggttcaaa gacaccagct 120

aagctctagg caaagtcagc atccacatgg atagggagta tggtggtttt atggtagttg 180

atagtgagcc cggttgccaa ggcaaagtca ttgagagcaa tctttatgcc ggtgagggct 240

cccacatatg cctaataaaa aataagtgtg tgttccatgt actgaagaat gggacaggga 300

gcaccatccg acatctagtc gcaccaacga cgagagaagc cccggtggag aaggattttg 360

ataaggctcc cccaattaac cgaatcaaag gctttatgca aatcaacttt aaagatggca 420

gagaggattt tgctaccata atagtaacat agaatatcca tggcatatgc ataattcttg 480

gctatgttcc ttttttcaca aagccagtct gatcaccccg aacaagatcc ggaatatgct 540

catgtaacct tcgagtgagg actttagaga tggctttggc tgggcagttt tggaggctag 600

tagtgcgaaa atcaacatga gtcctagctg tcccttccag aacatatctt ttttttcttt 660

aatatgtacg agcgaggaca tctttaggta gtgtttggtt cggtgttaat aagggatgag 720

acgggatcaa ccctaggctg acttcattcc ttatttttg aggaatgacc tcatacacca 780

tttttgaaga atatttctta acctgactct agacctccaa acaaaacgcg ggttaaatta 840

gaatgatctc atcccatcgt ttttcgtcct tcctcgtcct tccatccaaa cattaatgac 900

ttgacaaaaa gtccattagg ggacaaaaag ggagtgcgtt tcctgagcga agttaataag 960

atgggtgaca attttgcagt cctgctcccg ccgacgaatg gaatcggtcg tcctactcca 1020

tttccgtcaa taagatggga ccggtagccg gtgtcgtcca tgtccatgcc tgcgcgtcgg 1080

aaacagagcg cgtcccgtgc ccattccagt actctcgact ctcgtgcgca cctcgtatgc 1140

agtatgagcg ttaccaaggc acaccggtgg acagcacaaa aggggttggg ctttttttt 1200

tgtagcccac ggtcttgatg caggtccagg aagacagcac acaggtcagc cagccattgg 1260

ttgggcgtgt gggccggccg ggccccctgt tacgtttctg aatctctctg aaaacggcca 1320

catgatttcg cgccctgaaa cccgcgatta cggcaacgac taaatagaaa ctgaaagtgt 1380

actgtatacc ctacacaagc gtaagcgtaa cccgcgttcg tcttcgtcga ccccagtccc 1440

aacagaggtt ctccccactg cccaaacgga gaagatcaga agaagaaggg gaaaaggtca 1500

gtcagtacgt ctacccctcc tccgccccgt tgtttgattc cttcctcacg ccgcctccgt 1560

tcctttccta gtccgtccat gataggccag gcctaaagta ctatggatga ccaggagaag 1620

caagtcgatc tcgcgtcgat aggggcgcgg gagcatgtgg tctcgccctg atcgctggat 1680

cgcttgtcgc caggtccatc tccatccagt cagctcctgc agttaagcat cagcccctcg 1740

gtttcgaaag tcgtctagct tccgggtcgc aactgatcga gggtaccagg tcgcaactga 1800

tcattggtcc cgcccgccgc acacacgtca gttctatacc acaagtagca atggagcttc 1860

gaagtcggag cctctttaga gggagccagc ccagatctgt gcattctgtt tcccacttgg 1920

ggctgatggg tatattcgga gtgacctgga gattactact aatactacta ctagttaatt 1980

gcttcctgcc aaagctaccg cccttccttc tcacctttcg gccgctacac actcatctac 2040

aatcactgct aatccatgca tgcatcacag taattaatca tcatccctgc ctctgcctct 2100

gccttgtaaa aaaaactaga c 2121

<210> 1118
<211> 1608
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174709_G1, chr5:13818222..13819829, Cluster 7

<400> 1118
tactactcta ttaagagtct agcgtcagcg tgtacatcct gtccccggct ccgcccccgc 60

ctgccccgcc tgccccgcct gtgtcagtcg cgtccgcacg ccccctccat gcagcgccga 120

tacgaaaagg aaacctgcac aaggaaatcg atggaatcca cggctgccgt gccggacccg 180

ggaagcaatc accgcgatcg tctcccgcgc tttccatcca tgaatccacg ctctcgcccc 240

ttgtaggaat cacggctgga tgagatacgt cctcaccatc agctccttcc atattcgtca 300

gtagggactt ttgttcatct tctctcaata gtgttttgag tccgacgtct cttcctccct 360

caactctggt ccactccaga accctaggcg gcacccacgg ccctcggatc cagcgtccta 420

gagcctccac ccgtgcaaca tcggggttgc cgcatggctc tcaccttcga tctcaagcga 480

ggcctgaact tatccggccg tcgtgagcac gcgctcgaac tgcaccatcg acagccgcag 540

ttgcgaagag cggaagacag gcaccggcga tggcctccac tgtcggtgaa gctgacctct 600

cgccgcctcc ggcttcagcg tgtgcggcag cagagtgtta acagagtggc gagaggaaga 660

gagaagattt ggggagaatt cgtgatcgaa gcggaagaac aggattctgc tacggcttct 720

ctccgcctcg ttttccctcg ttgaacacgg caaaatttaa atactggcta gcgcacgtac 780

ggacagcaca cacacaacac ggcaggcata acccattctg ggcctgtcat ctcggcccgt 840

acgcgcgtac tccttcttgg cccaacttcc ttcacctggt ccgcttcggc cgacacagct 900

cgagccgttc ccgccatctc cttcctgaca cagtgcgacg tctggcttca ccgaggcgag 960

atagtgcggc gttgggcgaa acagtggtgg tcctcctcat cccgacggca ggaggtcgaa 1020

cacctcgtcg gagaagagga accggtgcgc cgcagagacc agcagtggga acggtcccct 1080

gaccgcacca aaagcttccc cgaggagtac cgtggtgacc tgcggtccgg cccctcatcc 1140

gactatccga gggtgtcgaa gcgccagcgg cgactgtacg gacttcgttt tttatacttg 1200

atgattgccg ggccacgaac gcgaagcgcc tgcagggctc gggaggggcg agcggggaaa 1260

cgccccagct cactgcacca tgcgcgtggc acaagtttgt ctcgtcacta gccactacta 1320

aaaatccctg gcaggtaagc taagtttggc tggttgatcc aaatatgacc caagcatccc 1380

taggattgga gtaatagtaa tactcaagta cagtgtataa ttactgtcag aaaacatgta 1440

cgcacatata tgtactacta gctaataacc aaagtttaag tttggtactc cagcatatgt 1500

acaatctaga gaaacccgat gcggcttaca ccgtccgatg cataggcaac aagctacact 1560

gtgaatagag gaacgcctgc attttctgcg ccgtgtgcac ggcacaac 1608

<210> 1119
<211> 1860
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176218_G1, chr5:22016985..22018844, Cluster 7

<400> 1119
ttttaaatta atcatttatg caatggtttg cactttacgt tattcccaac ctttctttcg 60

atcttaaggg tccatataat agcttccccc ttgtgatact ggcctcttga ttgccaaatt 120

atcatgtgac acctactaat tgtcatcttg cttttagatg tacacatcat gctattacaa 180

tggctgtttt gtcatgtttt ttccatttga tcacgcttgg tgtatcactc atttcactac 240

cattatcctt acctttcgcc tctctttcca tgctagatat gcatgtaact aaactgacaa 300

aaaatgtctt ggttgtcctc ttagaaaatc actcttggta ctcatataca tatttgtttt 360

tgtttctcat ggttgatatt cccttatttg actcctaaaa agatgaacaa aaaggaagta 420

gacaagcaag tgcaaactaa gagacgacat gttctgttta ggattggaat ttgctgcttg 480

gtttcatagg acttgatgtc ctcagacttg caagaataat gttgaacctt catgtttcat 540

atacaaggaa taacaacaac ctaatttatt gcttccttat atattgtttc atatctccct 600

tgcctatgat ttgtgcgttt acaatagctc cattgtcttc cggtgcctat gcatgtactg 660

gtactgtatt aactgtgaac tccatagcca tgaattttgt tggctttgtc cacttttacc 720

atgctattat ttttgttgtg tgcaattata cattgcctgg taaatatttt aacaagagtg 780

acattttcca aaactatcta ggtgtatatg gacaggaaaa caaatcttgc ttatatccaa 840

ggagcaattg aatgaactga ggcatcaaca gccaaagcat cacatccatt aacagaagaa 900

catcaaacta caccatctta acctcaaaag atctacatcc aaatctaaaa ggtatccact 960

gtgcaaaaca tccatataca tggacgatgt gtttaatcta ctagggttct cgtatatgtt 1020

agtctaaata taatatattt tggtctaaga ataatgaagg catgtaaaaa agtatggatt 1080

gtcatgcctt aggcaacagg ccgtctgacc tgaagcttgt atctgctcta tggtcggtag 1140

ctcagccgac ccttggggtc agaagctcca ttttccccac tgaggtgggt tgcacacatc 1200

ctcctgggga cggctgtgtc caaccacctt ggggccaaca tggggtcttc tgcaaaaggc 1260

caaaccagct ccaataagtg tagcctgtat ggtgctctat cttctgtggg aagcatctag 1320

ctcatttgca aaaccagaga agagagagct aggcttagag agaggagagg gaagattgag 1380

aggcaccaat ccacaaattt gagagagtga tttgaggatc tagagcctcc cctcacttgt 1440

tggctcccac ctcttgtact cttcatcttt ataacagagt tcttgctcgc cgccacctgt 1500

gggttttctc tccgcaagga gtttcccaca taaatctatg tgtcttcact tgctgtggta 1560

ttttacttgt cacatgtggt gattgctcat catcttgctt gctgttggag ccatccatta 1620

tgtttcttgg tgtatggtca agttggcata tatgtgttct atgacatatt ggtgatctgt 1680

tgatggggtt gaagttgtgg tgagctcatt gctgcacata tattgttgtt gtactgctgg 1740

acagtgtgtg gttgcttgat ttgaagctta gatgcttcat ttggttcata cccacaaggt 1800

gttcgatgaa atacttgtga caacttagct tgctgttgtt tggtgcccgc tttcgcagtg 1860

<210> 1120
<211> 2003
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_184530_G1, chr5:73109398..73111400, Cluster 7

<400> 1120
aaatttacct ctctcaactt cagctaacaa atgtatatca tcatcatttt attttcttac 60

cgtggagtta ctaatgtatg tgggcaaaca actatttgtg ttaaggcatg tgttacaacc 120

gaagtaatgc catactaaaa caaaacatat aactccaata aatgttgtac aatcggtccc 180

tatagcatac aagtgactct tctaatacgt tagatcatga tccagctata gatttaacca 240

tgatttttag agggttttta taaatctcgc tgatggtgga acaaaaaata cacgacaaac 300

tatttgattg attcttctga gacggtgacc attcttatga gacggtgcgc tccattcttt 360

gcaaaccaat gacacatgag gcagtaacaa acgttttgg tcccaccttt cgtactcttg 420

tgtctcgcgt ctttaaagtt cagctgttgt ttggttcaca tatttataat atgatgggta 480

attgataatc ttaaatcata tttgtttaag ttaaccgtaa tcggatacta cactaaaaaa 540

tgatagtgga ctattcaaac tttttaccgt tggtatttaa cgtgaatcat tactattacc 600

atttacgtta cattttatga accaaacggc atctcgtcta gtattcgctc atacacatcg 660

tatcggttta caatgatcaa caattatgct acagggctac tgaagaatat aactttcctt 720

aatttttttt ggtatttcta gatatatagt ttttattata tacttagggt ttgtttagtt 780

cgttgtctaa gctgtcacaa tctgtccaac tttttgtatc taaggttaat tcttcaattt 840

aatcaactaa acttaagcaa attgtggtac aattagccaa gaaacaaaca tactcttaaa 900

catactctta gatatacact acatataaat ataatatttt tactatatat acacaagtaa 960

aaatatttta cgataagaaa tagaggagta cataatattt tttttattaa aatagtacag 1020

tatgacatat ggcaacaagg tagaaaaaac atagtactgc tggtaggtta gaggtaggaa 1080

gaaaaggtat ccaaaagcct ctcactccac cgcggcccgg tccggtccgg cacggcccac 1140

ggtcccgaat cgagttcagg gatgcacaca acacaaattt gaaatgaaaa gaaaacgaaa 1200

aacagcagaa aaagcaaaag cacttcgagt actccacacc acaccagtcc agctgtccgc 1260

ccccgccact tcgagttcgg ttggaggctt ggaggcttgg gcaaaaccct cctcgtcgtc 1320

gcgcgctccg cctgcaccac ccgccgccga aggtaagctc ccacccttcc caccgcctct 1380

tcaccctcac cctcttctct ctctcgcgcg cgcccgcgtc ggcgaaatgg cctctgcgat 1440

gcttctattt ccaagcgcgc taacgatgaa aaacccaaag tctccatgcc gtcccgccgg 1500

tcgccccgg gggagggaag cgggtcgctg gggaatgtgg gttccctcgc tcttctatcc 1560

agcgatcggg gccgcgcgga gggtgtttcg cctctggatt tcggcttcgc cggatctgat 1620

cggggttttg gcggggtttt ccgttgggtg gtggccacgc gtgcatggtg cttctgtgcg 1680

tcagaaatta atttgcagcc caaaccatgc gcggcgcggt ctggtgttcg gttccagtgg 1740

aagcggaaat gccctttgc tcgttgcttt ctcaagttct atagatcgac tagactggca 1800

acgcagtttt tgtagggtcc tgttttctga cgattgatgc atgtgccatg tgtgtgcttc 1860

tctatgtgtt ctgccgaatc tgttagctct gccgactgga caacgaaagg tggctgccac 1920

cttgcatccc attcactgaa tagcatgtta tttactagtt catggatttg cagccagacc 1980

tttgcttact gtgattgttt gtt 2003

<210> 1121
<211> 1460
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200220_G1, chr5:174983488..174984947, Cluster 7

<400> 1121

attttctgtg tggacatgac ctccaaatcg gcacttaaga tgatcttgag gttttattaa 60

atttatgcaa tagtctatca cctgcaagtg tgtaagttat tgttaaaaat tatagggtgg 120

gtaaaaaaat atacatacta gggttaccaa atgagaaact aagcatgaat tatctcatta 180

cctagatatc atagttggga ttgaatgtaa tccaacatga gtcaagttgg ctagtgggtg 240

ggagcctaag tgttctactc aagacatcta ggattcaatc cctgagatgg tagcaatttt 300

ttttttgatg cgggtagaac aatagcggac aggggagggc agaacggggt gagagcctac 360

ccattaccgt ctttatagta gtatagagat atagagataa tataaaatat ttcaaaatac 420

gatctataca tccttttgat gcaaggtaca aaaaacgact actaattatg ctctttacta 480

aacactaagg cctggtttta ttaccaaaaa actaaggaga tccatgagaa gaaatctctt 540

tttatcccca tagatcctcc tccaactctc tggtcactag ataagcacta aatgcagtaa 600

cgatcgtttt ttaacgattt tgagcacgag tgctcctcct accatgcata tagcagtatc 660

tgaaacaccc atatttccgt ctggattttt gctcggcaca aatgctcccc ttttttcccc 720

ggccaatggc cagggcacac gtccctttc cacgaggcct ttttacgaga tttttgctgg 780

ggtgccgctg tcgctggaag aagataagat tctatatacg gacgagggac gattcgataa 840

gctggctggc gtgaatctct tccttcacgt cgaggcggaa aagtacagaa gaggagggac 900

aaaagccatc cagtgacagc agtagtcagc gccggtcaca tttttggctg cttcgagaat 960

cggattacca tggcatgtgg agttcctgtc ctggaccaat ggagttcgcc gaaagctgtt 1020

ctcctctctt tctctctacc attagttaca tctgttaaaa catcggatca tattaagatc 1080

ggatcatatt agttatagat ctgttaaact actattagtt tgcgtttgct gctgccccgg 1140

aggcaaggcg aatgaccggc ccggcccacc ttcccctagc taggttagca accgttaacg 1200

cgtttgccgc ggtcaatggt tccattcgcc ggccctccga ctccgatcca acgcatcgcg 1260

tgcgtccccg ccgcgaccgg cgttctccta catcgcgtgg ctgcgtctat gccgattggt 1320

catacgctac ctatggtcac cggcccaata gatgctcgga caaagcaaag caaaaaaaaa 1380

aggcccataa atccataacg cttcacgcac aacgtaacgc ttcgccctcc tctgtgcgct 1440

gatcagatcg gaaacagatg 1460

<210> 1122
<211> 1637
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201123_G1, chr5:180129879..180131515, Cluster 7

<400> 1122
gatcatattc taagcatcta agtacttcac ccctggtgat gttcttggaa gcatacttac 60

tcatgagctc atggaggtag aggtccaaca aagcagaagg tctagataat atagcccaaa 120

tcagagaacg tgaatatcaa ggatgtagcc ctcaaggcca acaagtcaag caaaactata 180

acctcaagca agtcatcaag gccaaggcca agtgatagct ccaagtgtgg ttttggtaat 240

tgagacaact agtggactaa ccttcactct agtactatga atgaaatagg ttaaatccac 300

atttaagatt gagcaagatt ggcggtcgtg cttaaggcaa agggattttc gtccctgcaa 360

tcaagacaca ataaagtgca tgattagatt taggatagtt ggtcgtacta ctaagagggg 420

agcctaacta gataactgag tcatctagtg ccactaggtg ttgaaatcat atgcaccgca 480

tatatgccta agtgacacac ataagataaa gtgaaaatgt gtattgaaaa tattttcaaa 540

aatataatta gacactaata tgttggataa aacatatgag agttagcacg cttaagaaga 600

tatgtgaaaa cactctcagg tacgaaatca gcttatattt agttcatagt ttctagctga 660

gcactattgt gtccagtgtg gactggataa ggtgtactag acttgttcct taaagcatca 720

aatggcccaa tggataaggc actcagagag cacccaaaga gcctacaaaa gtacatattt 780

cagcactaca ctcattggag gtgtccattg gtatgcccag tgagtccacc agacatctga 840

tactattagc gattagttta tagccattga aaaggtacta gaggtgtttg gtgccctcaa 900

tttgtgtgtt ttaagaggtg atggttagaa attatagggt taattgtata catgccactc 960

aacttttcc aaaattagat aactagttca tttggatgcc atagattcta ttgtgggggt 1020

ataaatagaa tgtttagtag ccttggctga tattcttcga ccacaaacac ttgcatacat 1080

atcttgagga tagagagaca cactccactc gcctgcaagt tgtagttcat catttgggtg 1140

agattggagc acttctagtg caatgtatag agtttttgca tcttatggca ctagttccgt 1200

ggtttggcct agttacactc ctattattct tggtgattat catcacctag atagtctata 1260

gttagtggga tcattgagca cctaatggaa attgtagcaa gcttgaatca tcattgtgag 1320

gggaacatgt gctcattccc cacaggaggt tcgtaaagaa caactacaat ggaactatgg 1380

cttattggag tgcctctcta gagtgatttt tacaagtccc ttattgcggg cttgaaattt 1440

tatgccaatt agcatctaaa tcatctagct tggactctcc acaatgagga cataggttgc 1500

tagcaagcaa ccaaacctta gggatatatc ttgcgtcacc ttttggtcct tatagtttgc 1560

actacaaact tttattgtaa ttacattcaa tttttacatc atattagtct acgtagtttt 1620

gtgaagttag taattaa 1637

<210> 1123
<211> 1559
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201863_G1, chr5:184692781..184694339, Cluster 7

<400> 1123
tcatgtcccc tagtatttcc ttacactaat catgtcctcc gtataccaac tatatttaac 60

tgttaacctg aacactggtt actgttgggg atgaaatgaa agatacagtt tcgtttcgtg 120

actaaaagct attgatgtgt aagatgagtg acacttgtac ttctcaatcg tgcaccctgc 180

acatgctagg aaagaacaaa ccatttattt ctggtgtggc aatcatgttc ccttgagtat 240

tgtttacttt ataccaatct ggagactgat agcaacataa acttttgaac gggaatggag 300

gctcgctatt gcttcataga ctattgggtt gctttgcaaa cagaaaatac taatgttcgt 360

gtatcaagtg aaaaccggct cggtccatta cgagatgaac aaactactaa tgcttgtggg 420

gctgacaaag gtggctattt ttccaactcg agtgatcttt gggccggcag gcgcaggcag 480

agcaaaataa gctggtgggg gttctaggaa gccctttgtt ttctatgtcg ttgctgtttt 540

ggcttctaag gacaaggatc atccagcaca cgcatttaga agtggaggct atcagtttga 600

aagttcttgg cgccgcgtgt tgatgcttgg tcatgggaca tgtaaggccg aaaaagtgcc 660

tattattggt gcttctctgc ctagtgtcca tgatggcgat gattaggtgc acttgcaaca 720

ggcaggctca ccacctctgc ctctatggct tctccaccat tccaccagtc tgaaggagga 780

aaagggtgtt aaaagaattc caatggaggg gtccatgcag tgggctgtgg gcctcagcca 840

ttaaatcaca cttttgtaga atgccattct tcttaaatca cactttctta gaatttttct 900

ctcctttatt gtggtgcggt ttgcaccaaa aatgcatggc atattccctc ttaaagtctt 960

aactctgaaa taattatctg ttgcagttgc agatgcagac tcaagaacag tatattgcac 1020

gtatttttct cattttgctg cttttcatgg tcctgtgaaa ttttaggaag aactaactcg 1080

gctggattga tggaagagat ttttttttcca ctcgcactga agagttgaga gatgcagagg 1140

tatcaggtcg ataagcacga agtagtggca aaacaggagg ccacactcct caatctccct 1200

gttctaaaaa gtgcgcctca aaagaggaga ttgccctctt cagccttttg caaaaggcgc 1260

ctttatttct ctgcgcggtg gatctgtagg tttggcctct tcggtgagat ctgagtaagc 1320

ctcagtttgt tggtaaagat tggttagttg ggtggggtta agcctcaggt tgatcgttgg 1380

aagcttaact gctaagcaac tgggtagcaa gagaggacat ttggctttcc aaaattttgg 1440

cagcgagcat gcaaatggtc aaaagctgac accggattat tacttataga aaggttaatg 1500

agattagtac agatgttgtc atagctttta tcagcatgaa cgccttgggt cgctggatg 1559

<210> 1124
<211> 1833
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203676_G1, chr5:194644831..194646663, Cluster 7

<400> 1124
ttggttggtg gtatgatatt aatcggctgc ggaaataaag ccctctcaca tcgcttcaat 60

attttgcacc gtcggataca tatcatacgg ttgcgtcagg acaccagacc gtcgtcttcc 120

ttgctgccaa ccactccaat ttttttttc ttaccgaaac gttctggatc cattcttccc 180

caccctccct ttccccatcc ccaagtcaac acacgaccaa tgatgcagcc gcgctcaggg 240

gtcgctcccc ttgccaccgc gcgcggcgaa gactgcctgc gcaagcatgc tccacgccgt 300

cttccttgcc gtagctcaat cgtgtgcgcc tctgcggcac atgcaccgct gtttcatata 360

ggatcattgt ccagtttcct cttccttcct ttcccatata gaaaattaaa aaggttggtg 420

tttgtttctc tggagctttt tgtaaaccct gggaggaaaa gctttttgga aagcatgtgc 480

agcacaaaaa gaatttcgtg atgattttac actgtccttt ttttctctct ctctttctaa 540

tacggaaaag cggtgctata cctccaccat tagttctttt ctgtttcggt gtcttcctag 600

aaaccgaatg aatggttcca agcaactgga accggcccgg aactgagatg gatgaaaacg 660

tatttgaatt ctaaactgga agtgtggaac atgtagcgag attctggttt catttcaagt 720

tttcccgagc gtctttttt tgtgtcgaga aacatattca agtggtagta gttcctcaag 780

aaactgataa aaatcctagc aaacaacatg gaaacagaaa ctgagagctg caattatctt 840

gctagcgtgc tgaggtagtg gcagcacagc acgccgcagg ccgcagatgt aaaccaacag 900

agcgccgccg aaatatccat cacgattcac gcgccaactc tccaacaagt cgcgagcgtc 960

gccgacgtcg tcccccgctc ggtcaccctt cttctggacg cccgagtcac ctgaagccgg 1020

gacaggcgga ttatgcatgt cagtatcgct cgtggcgggg catcctcctt gcgttggatg 1080

ccagcgtcga gcggcggccg ggaatggtgg ctagctactg tctcagaatt cgtcggggac 1140

ggtgacggag agccacagcc acgcacggaa cggatcgaaa tgcatgctag ctactggttc 1200

gaggtgtctg tgcctgtgcg tttgtgtgat cggtccactg tccattgctc gttccggaac 1260

ctggattttg gtggtggtgg agtccatgaa attgcagatt ggttcggaat gactacacgg 1320

cgagggccga gggtgcacag tggccgtgca aagcgacagc cgttgccgtg caacaggacc 1380

ggccgtacaa gcagtactcc gagatgtcgt ccgctccgtt tgcgacattt ctcgcttgtc 1440

atgtttcttt ctgcaacacg cagcgaaatt cgtcgacacc agcgagttat agtcacatag 1500

acagtagtag ttttttatgt ccaagtgcac acgatgttca aacataagta tgcctatcgg 1560

tcaaacttct taatttaaac caaactagat tttaaaatat attagaaaca aatgcatttc 1620

tagataagtt tgtttagatt cggtgatcta atactaatta tatattataa attttaataa 1680

attttaatac atatacttag ctaaaaaaac tataaactaa aaagagttaa aataacttat 1740

aagttagaat cgagagacat gactaagtac tgtgacaata gatgttgatg agacgacatg 1800

tacttgggaa ggtagaggct cagatctcgt tct 1833

<210> 1125
<211> 1560
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204431_G1, chr5:199030715..199032274, Cluster 7

<400> 1125

tgaggcatca cgacgtgctt ctaggtacag atactcaaaa ctggatactc atatatagca 60

tattaatatt attttactgt cattttaaaa agaataagta ttcatttgat cttgatccct 120

ggcggaccgg tcgcgcaaga tctttgatct tcccacggaa ccaatgaatt gtagaggctg 180

ctagaacgct tgaaatggaa tgatgtttct atggaacgtt agacactagg cattgggcac 240

aaaaatgaat gcccctgaag cttccattat gggatatgta cctatgggaa taggtttata 300

gtctctccat ctcttaaact cgatttagtg cagaaacttg ctcttttgat atatagctta 360

tgacctcacc atcggttgtt ttttatgtat tccttacgtt tcactgtcct tgtatttcat 420

gttattgctc ttctttttac ctcaagttct taatttcctg tgctcaatcc cacaggtcag 480

gagaaatcat ttccatttga ttttttattt tgactctaag atatgagtag ctgagtaggt 540

acttgatata cttaaacttc aaaattttat cattatttct ttcaactctt tcactttgtt 600

cctagatcaa tacataagtt attaaggtac tagactataa atagaaaact tgaagggata 660

atgctgcgta gaactatata ggtgttgtgg tttcacaacg tttgaggaaa agtaaagcat 720

gcttggttgt gttgctgacc ttttttcgca gtgctctaga tgttgaggta atcagattag 780

cttgccttac gtttcaccct gcacaatggg attagatgca gtgtcctgcg aatgaggaag 840

ttgttctctg tatgtatgtg ttataagcaa acttttggga tgttgtttag caaatcataa 900

tgggatagtt tttctttgtg aaacattata atacgaagtg tgcaggttgg tgatgatatg 960

ttgttatcat tttgggtgta gtgggatggc tctgatgatg atcagctagt acggtatcac 1020

aagttaggtc cctttgagag aaaatcatat ccttctcctg catgtgcaca taagaatgga 1080

aagaagaatg agatagagat aaaaaatctg gttgatattt ttgtttccct tgttactctt 1140

attgtattaa catttctttt gttctttagt ttataattca ggaagtaaac catgcacctt 1200

aattagtaaa ccttgcattt tgtatggtga ctcagaggta cgacaaaggc aattagaaat 1260

atataaaatt agcttaccct gatgtctttg aggagagatc gacggtatac attctggctg 1320

gcattccatt tctttccttg gaagcatttt actcaaatgc ataccctact tcatttttt 1380

gtttgctatc ttttttatat ctcggcaaag tataaacaag attagtacac atactggtgg 1440

tggcatactt gcatgtactt cttttaaaca taaaaaacaa aattgaagaa tgtgttaccc 1500

aatcattcaa tcagttgaag attacaatac catgctatct atttcatgct catgtgccag 1560

<210> 1126
<211> 1864
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204480_G1, chr5:199364825..199366688, Cluster 7

<400> 1126
gagccatttg caatacatac aaactaacgt taacgacgcg tgcccggcca aagatgaaag 60

actgaaagat ggtgagtcgt cgtccatgag acatgagagc atcagagcat gcaatgcttc 120

gtacgcactg acgatgttgc atgcacgaag cacaagcttc ggtgtggccg gcaacccgta 180

ctactgcaac tgcaaggcaa gcagcacaag gcaacgcagc gtatagcgcg cgcgcgcggg 240

cgcagagtgt gcagagctag cgagcttgcg tggttgatcg cgtcgcgacc gacccgacgc 300

ccatgcggcc atgcccatgc aatggaagac accgaaacga acgggggga gaagaatcca 360

ggcagcgtcg cgtgatttcc gcgggatcca tgcatgcccg cgcgccaaac ccacccaccc 420

cacccgtgca tgcgaactcg cgcaagtgca atgcaagagg gccccccgct ctctcggcct 480

gcatcggtcg cgggtgtgtg tgtgtggact gcacagcgga agcgcagggg acgcttggct 540

ttctctctct ctgctctggt ctggtcagct cgcacgtacg tacgtacaac gccatatagt 600

agtagtacgt gtgtgtccgt gacggacggg acgggtcccc cgtccccggc cgcgccccca 660

cttgcaccgc ccccgttgcc ttgctccgcc tgcgttcgaa ttcgcactga ctttgaagca 720

ttgcatcaaa aggcagaagc tactaccacc gctagcgttt tttttaaact tttgcgtccg 780

cagacgcagc acgtggtctt atcagtctgt ctgtcagcca ttccctcgcg cgcgcgaccg 840

atgcagcaca ccagtcgtcg gactgccctt gactcgactg ccccccatgc atgcgtgcct 900

gcctgcctct ttgcattgca tctatctata ccatgcactg ttacggcaac aaatttgttt 960

tagatagttt ggcaagatta aactaacggg tagagtacta ctctgtttgt ttttttatat 1020

ataagcatat cagcacatga acaatattcc agaaagcaag ttgaggtggt tacggcagct 1080

ggcggttctt ttttttcggc ctgttgatga gaaagcagaa gcagaagccc aactgctcct 1140

cttcaagcag tcaagctggg aggaagaatc tgtgggcgac gggcgggcgg gcggttggct 1200

cagactgcac gcaggccgag gaggagaaag gctttgagcg cagcacagag agaagaagag 1260

gaggaaatga atgatgaggc actccattac gctatgattg gggggcgccc caaggagaag 1320

caacaagcga tcgagtaggc gcagcagcaa ctgctggctg cctggctgct actgctagct 1380

agcctgcctg ctacctaggg gcagcagcag ggcgcagtgt ggccggagag agagagagag 1440

agagggagag agaggacgga ggaggactca ggtctcatca cgtcaagcga acgcgacgcg 1500

ggcagagtgc cgggccgtgc atgggaacga aggatgggag cgggggcagc gggcgctgtg 1560

gcctcgatcg cggcaattga aggcggcagc agggcgcgca ggcgcagcgt tgccgcccaa 1620

tgcggatacg accgatccct cctccgtcct acgccctgac ggcgaccaga cgtggctgca 1680

tgctgcatcc acccgcccgg cattcaaggc gccaacccct gtccttcttt tctgctctca 1740

tgcatctgcc acagcccata ggacactgga cacccctctc cctcttcccc tctctctagc 1800

acttgaactt ttgcagtaga gtagaaaatc ttcttctgcc ttttccatcc acggctaata 1860

gtaa 1864

<210> 1127
<211> 1883
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205047_G1, chr5:202400499..202402381, Cluster 7

<400> 1127
gatgttgctg ctactctctc taaaatatac tccctctgtc gtatgcaggt acattattcg 60

atccatctaa gatatactcg cgggtctcta taactaatag ctaatcgcta tatttttaa 120

gaatatattt ggatctcaga taataagctc aattactgtc ttaggctctt agctaacaat 180

gagccattat atagtttctt gtagctaatg caggtaatag ttagttgggt ggttttctcg 240

gctaataagt tgagttaatg tattatcaat tagctattat ctatttttt tatagctaac 300

acagatatga tattgacgta cgcatatgcg cgtcagtaat ttattatctc tgcgcgcgcg 360

cactggcact acacagcaca cagcacagca ggagcacgta cagtacagtg tcggtacgtc 420

tcgtctgcta caccgtccgg ccaggcgagc cgcgcggggc catcgacatc gatcgagcgg 480

cggcagctgt gcagcgcctg cgctcccgca aggagttatt gtatgtaaac cgcacaacaa 540

agtcaaaacg caaacagcga cgtctggatt ttgttaatac gtacgtgcta tccccaggtc 600

gttgtcgtcg ccttcggcgc ttactttgtt cgacctttag gtgcacgggt gagatcagat 660

gagatcaaaa actttatatt atcctccttg tcgctagcat ctaattaata tctcacagct 720

cctcgcagtg attgacgttt tgtcaatgca aaaggcgtag ctagctagct ccagacagcg 780

catgacccct catgcgcgtg cccttagctt tgatcgatct ataatctact gtgttgcgcg 840

ttgcagtgga agagaattaa actatggagg aggtaaatat atttatatgt gcaatcgtgc 900

agctgtagtt caaatggtgc atgcatgcat gtccagcaaa tcgggtgtgg ctgtacaggg 960

cactactaga gcaaacaaga gctagctagg gagcaaaagt taatttggaa gtagagcaaa 1020

agagtatgca ttggtggcgg acaaaataaa gcgtgtgaac gatcttcacc caatcacccc 1080

agtggggctg gccctgcagg cagtaaaata ttgagcatca gttgccagtt cctgcaaaaa 1140

gcttttaaga tattcgagcc tgacggtgtt ggtttcctag ctcaactaat ataaaaccca 1200

tttgtttatg tgttggaacc tatgtgatta tattatccag gggactgcta gtgctctatc 1260

agttgagagc tagaggacga accaccagtt cccatcggct acacctgctg taagctcctg 1320

atgtgacgcg cctcttggcg tgtggcgaca aattatattg tcttccatgc catgtcctaa 1380

ttctctttac tgtactgtat agcagtaggt acatgtttga aagggaagat ggttctcatt 1440

tactatagag tgaagccctc attggccgaa caggtcccaa tatatgggta caccatttgt 1500

aaatcaagag agccgtcaat agacagatat tattcactga gttggaaaaa aaagttcttt 1560

taaaaatagt gtaagtacat tgattgttcc ccacctcatt atgtcaggta gaacacaaac 1620

caactgtaca ggtgtgtaca tatcgattat agcagagcgg gggtgcttgg tttttgttta 1680

tgtatatata ctatacgtaa acaaggagag agctgctaga cgacctgtca gtgggtgaca 1740

ggattttagt ttagcatatt attatcagct tccatagtta gttgtaagtc aactgcttgg 1800

atggataaat gcatgagcat gacgtaacaa gagtcgttta atttggagca ttattatata 1860

taatataata taattccgta tac 1883

<210> 1128
<211> 2930
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206621_G1, chr5:211083445..211086374, Cluster 7

<400> 1128
aagtcgtata gaggccaact ttatttttta ataacactc tagagaccat ttaaaagacc 60

ctacattaaa ggtgattgga catcgtttgc gtctagtaaa cgaacaaaaa gggcctatca 120

gattcagacc acgggtggcg gctctctcta cttgcatgcc atagaagtta gaattgatgc 180

tggggtccgg cgccgcgcat cagtgcgtgt gtacgtggag tgcgtcgctc tcgatcggct 240

tcattcaggc ggccgggccg tgcacgcgtc ttcggtttat tttgccagca tgtgtaagca 300

cggcgatgct ccggcattga atggcgcaat caatttgcca tgctgttgcg acagcgccgt 360

cgatcgggca gggcgccggg cgccctaatt cgtcattatc gatcgatccc atattttcgg 420

cgttcgggag ctggaaccgt tgttggctag ctcgtcttca tcaatgccgg cctggcctga 480

cctgtataag gtgttcctcc gtcccaggca tcgcggcggc tcgttcattt gcgctcggtc 540

cgtcgtctcg ctcgctcgtc tgtcgccgta atcccccggt cctgctccgt tcgtgcttag 600

gtgctggcct cagttgatgc caaatggtgc gtcccaacgg aagtgttgcc tgcctgcctc 660

gcgctgcttg ctgttgacaa ccatggcacc gccaccacgg tgaatggcaa gttggcaact 720

cgtactgctc cacgcccgag aacacgatgc ttctttttc tactccagca gcagcaacca 780

accaaccatg gagataaaga cgttcggtag attcgctcgc acgccgttta acaactagaa 840

acatgacatg ggcctaaagt tggtatgggc caagctcgat gacagcccta tgctaccggg 900

ctcagtccat tgcaggtcta agggtgtgtt gagttccatc caagtaatag tcatctctag 960

ttctatgatt ttgaaggccc gagacgaact tatcgtgatg ggtcctctcg gctatataaa 1020

aaatttataa catatatata tatacacaca cactaatttt acgacatatt tgatctcaga 1080

tagttcttca acaacttcgt ttttgagaaa cttctttcaa ccgaagcaca gtcataggta 1140

cagttaagag agttcgatgg gcatctgaaa catttggata gtattttgta tctataacaa 1200

acttcagaat ctccggcatt aacatcgaat aatttggcga actcacttgc aacaccttta 1260

attccgaata aaaatcatcg atctcaacat cggatgagtt ctcgtaaata attttttttt 1320

cgtaacgacg ctctagccag gcgtgcgatg tttctttcgc ttttgtgcaa ttcggcaaga 1380

taacaacttg atagcagccc tactatgcat gaccatcaaa tcaacatata aagagttgat 1440

ccattttacc agagttgagt agataagact ctacatatct aggggtatgg tttatgaaag 1500

agtaataacc atctatagat tggaggaaaa gcttgaacca ttcaaccata tatttagctt 1560

gtttactttc gatttcctcg tttccttttg ttaggagatc tctaaatgtc ttgaagcctt 1620

gatggtcaac atctttgtat tctagatttt gaaggaatgt ggtcgtaacc ataccatgac 1680

ctcttgtggt ttatatttat gaagtatctc tctttgtatc tttgatggct taaagttctc 1740

tctttggttt ctccttccaa gctcttcgtt ttgatgtttt gagggatttt gagaacctaa 1800

gttattggag tcatttgggc tggatggaaa ggtgctagga cctcttagga tcattgccac 1860

aaagtggcat gggctcattc acaagagcac aattctccaa ctctttgaac cattttgaga 1920

aacccttgtt tcgaattcat attgttatat atgactttta agtttaaatc tttttgagct 1980

cacatgttgt ggacaccttt ttgaaactcc cttgtgaagg tgtatgcaaa attttaggtc 2040

aatccgagtc tgttcctgag taaaagccat ggttttgggt tattttggac ttttgatgt 2100

ctgttttgtg attcgtttat ttcgtcagac ttgtgtatgt cctagcatta tttccaaaac 2160

acgcactcat aagttggttg ctatattttt ggtttgagca ttctcttcta tttccattga 2220

ggttaagtga ttagttttcg gttgtgaaag attgtccttc tacctattgc tagccgattt 2280

gagctttttg ctatgttctt cggtcatcac caagaacatt caattgctag tgggtgcttc 2340

cacatacctt gtgtgtcatt tggagttttt ggagattaag gtgtaacaat gggaagaaat 2400

ccaatattgc ctaagcgcaa agaattgtta ttggctccta ttcactcctc tggccgcctg 2460

atttgatcaa acaaaataaa gcatcaattc tatctcattt acatggggaa caatggaaag 2520

gtttacgagc aaatcaccaa aggataaccg atcgcactgg cttgttgggg caaggatgtc 2580

gttggattac cctaggttgg ccaacaaggc caaagtgcca tcattggtcg tcagatcaag 2640

cgatggtaaa aagagagata atagattgat tttattcgat tgaatgttgg aaacatcaat 2700

ttcgaccgtg atcctcttgt atatagggag aggtgaggcg atcttatccc aatagaaaat 2760

aaatatgttt tgtgtatttc tcacataaaa caccatttta gaaatgggtc agttcaaaat 2820

ctagacaaat caggtcaagc atatactcgg acaaactggc tttcacatgc cctagcattg 2880

ttgacaagtc gttaataggt aacctggtct gaccaacttc cccctggcct 2930

<210> 1129
<211> 2033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206636_G1, chr5:211159841..211161873, Cluster 7

<400> 1129
tttgtgtatc aagattcaag agtacatgag caatgcttat attactagta tttgtgttca 60

atgttgtata atctaactag tgtgtgacta atgcacatat gacatattgg cacttgaggt 120

tgtcattttt tatgttgtag tttcaattta gaaattctct acttttttcaa taaaatggac 180

gtgtccaaag cttttgaaat acgtggcctt taaaacatct agcttgcttg tttgcggttg 240

cagctatgaa taatttgcag ggtcataata tcataacaca gccactacca taatcataac 300

agtgccattg catggagtgt aatggcatgt ccgaacagtg attaagcctg cttctttgga 360

aggcagaaaa ggaaaagaaa aaactagaca gcctttcagg tacccttgac aggaagctag 420

caagctggct tggacagacc caacgcaatc tgcaagtaat gatcatgcaa caagacaaga 480

aatggacatg catgctggtc ccagacgttg gactcaacat ggctggatgc atcatgcacg 540

tatacacagc agcattacgc acacgtacta ctacatttcg gcgtcaatta agcatctagc 600

tctgatccat cagccaatag ccatgcaagc cccttaactc ttccagctag atcgacatgg 660

gcacccaggg cagggcaggg cagagcaact agctggcttg atcggccgat gagctgctgc 720

cctcctgcct gcctgtctgc cggcgtgcta atattaatca gcgagcagcg agctactcca 780

gtcttcggac ggtcagtcca cagggcacga cagcctcgtg tagtcctgtc aatgaacgtc 840

gccaacatgt tgcacagagg gcatgcagcc tggtccatcc tccagtgacc agtcctcctc 900

cacggttaat tacgccatga taaggtttaa agcttgctgg acgtactgcg actgcgttta 960

tggcgctgcg gcacacctgc ggcggtcgca ggctccgcgg actgcaaagt gattcgatga 1020

tgaccggtgg atctcccttg cagccttgca ggtcgacaag atcagaaaaa taaaaggtag 1080

aaggtgcccg tacgtgccgg gtctaggatt ccacaggttt gctcggggct gaggaggtcg 1140

agccatttcc tttccacctt cagttttcag acgatcggcg acgcaagtca gcgacaggac 1200

caccagatgc cggcggacgc ccgatcgata tatgtagcgc gggtttgccg gagatcttgt 1260

cccttctgtt ctgaatctgg atggtaaact gtttcccttc cataacgcat cgatcttcag 1320

acgaaccatg ttattatatg cgtaaaagaa agcattgatc ttcagacaaa tctgattgtc 1380

ctcgtgatct tttcgtcaac tactgcacgt ccaggtagta tccaacaggc aaggctgcga 1440

agcataattt gatttttgat ggctataaaa ttacgcgcta aaaatggagc gtctttgcaa 1500

ctcaccgata aataggagtt caggaaagat gcagctccac accatacata tgaacgttca 1560

tcaaggcggt tgtttagcaa aaaccgggca gggtcgatat ttaattaatc gcgatgaaat 1620

ggtagaaacg ggctaaattc agatccaaat tagtttttga attgaaacgg aagactgatt 1680

aatcggttac tgaaccgata aaccagcagc acaagtgtag aaaacgaacc acttgttttt 1740

tttgcaaaca aagcacattg aggtcctaaa aattgaacag aagatgactc aaatgttatc 1800

acaagtccaa taacaatatt taacagttca aatacattga aaccgtacgc atagtgggtc 1860

tgagggttca aagccgcagc cgtagaagat atagttagta gtgattcatg acatgaacat 1920

tgaaaatcgt actaagtgct cccttcctgc cttggtcaac gaaacgaaga aaaccaaata 1980

atggctctat tgcatcaacc acatacttca tttggtacga ccatgacaag ctc 2033

<210> 1130
<211> 2530
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_206641_G1, chr5:211168688..211171217, Cluster 7

<400> 1130
caaaagtttg aactagatac ttaaaagtta tttgtagtca acgttttgaa actttgattc 60

aaaccttctc aaaacatcga gtatgggcaa actataggga gtactgcaac aattgatttg 120

accaacctta acactaatgt ataattagct attgttttct atagatgtca gaaaatagca 180

taaatttagc tactgacata gtgacatttc agtttttttat atagacctgc tactttctat 240

ctccaactaa tgcactgaat tctcatttct agtctatttt aacacaaagt aggcgttaca 300

atcttcaaaa aatcactata tcattgaacc ccatttggtt gagaaatatg cattgccata 360

gttggaattg ttagcaccaa tgagggcaaa tgtatagcat gaattccaat aaagcatgca 420

atattttgac tatcaccaag ctacaaaagt ttgtgtattc atttcatggc ttggttagaa 480

tatcattact tacctatgac taataactat tactggatct taaatcttct gtaattctgt 540

ttcagtcttg tttacttgga cttgttttgt cagcacatct taacatgctg ttccctgaaa 600

agtgaaatct aacacctcaa ggacatatgc agaatggatg ttgcacgcta cagatcccag 660

aatatgatgg aggcatttgg tttaaatcat ctgaggtttg gttcatcaca tattgatttg 720

gattcagact tggatggaat ggataacaaa gtaagagctg gaggccgtta ctattctgca 780

aaaaatgcag tttctgaaag aaataaaggt ttcaaacatc tgaaaatatt taagggaaac 840

acctctgtaa tgctcgctga agattttgtc ccatttggta cacaatcact tcctttgaaa 900

agcacaactg tggaacaaga gctagaggag tcttgggaag atgaaatact tcgccggact 960

agggaattca ataagatgtc tcgtgaacgc cctcacgatg aaaaagtttg gctggctttc 1020

gctcaatttc aggtaccatg aatttctatg gttttatttg tgatgtttct ttgaagaagc 1080

tatgcttatt ctgccctagt gctccattgt cagttatttt gctcatttcg ttctgggaca 1140

aatagtttgc tcttacaaat gatttttaca attttgacac accactagag ttttgtttca 1200

gtcatcattt cacatttctg ttctgtatta tctctgccac tgaactacag gacaaagttg 1260

ctagcactca gccacaaaag gctgctcgtt tacaaactac cgaaaggaaa attagcatat 1320

tggagaaagc tgtggagctc aatccagata gtgaggaatt attgctttgc cttctgaagt 1380

catatggcaa gagggacaac actgagactc tattgactaa atgggagcaa atacttacga 1440

agcacccaga tagctctacg ttgtggaaac agtatctgct tctgtgccaa ggggaattct 1500

ccagattcaa agtttctgaa attcggaagt cctacgtgta tgctgtacag gctctatctg 1560

cagcttgcac caagttatgt aggcaggtta tacttcaatg cttctctgta aattactttg 1620

tctgtttccc ataccctat gaactacgaa acattgctaa cgccttttct ttttcttttc 1680

catacaggat aataaaagca tggattccaa atcttcatcc ttagttcaac tagaagtggg 1740

gttggtggat atatttgtta atctgtgccg atttgagtgg cagacaggac atcgggaact 1800

agcaactggg ctatttcagg cgcagatgga gtttagctta tttgcccctc ctttgtatct 1860

gacaacaagc agtaagcaaa ggctctttga acacttctgg aacagtggtg gtgccagaat 1920

tggggaagat ggagctcttg gatggtctga atggttagca aaagacgagg agagtagaca 1980

aaagttgtct atgcaagaaa attcacaaga gactgaaaca ggaggctgga gtggttggtt 2040

tgatccttct ctgggtaata ctgagacaaa tgatttatca aacaaatcac tggaaccatc 2100

attgaccgat ggaaatgatg ctgaagacct tgatgctgag gactcaccag cacaagatga 2160

tgttgaatcc ttgctgaaaa agcttggtat cgatgtagat gcagagtcca atagtgaagt 2220

taaagacgca gaaacctgga atagatgggc ctcaatggag ctgtcacggg acaatcagca 2280

atggatgcct cttcatgaaa attatggtaa ttggagtttg tcccaattat tactaggttt 2340

ttgtttgttt gaagttaact taatgctaac actggatttt tttttcttgg taaaagtagg 2400

atcaattcat tgtggtgatg ctccatctgg ggaagacaat gaccagcttt ccagagtaat 2460

tttgtttgag gatgtaactg agttcttgtt ttctctatct tcagaggagg cccgcttttc 2520

tctgatgtgc 2530

<210> 1131
<211> 2878
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208855_G1, chr6:6544648..6547525, Cluster 7

<400> 1131
gattatatgc aagcagagcg agtaggcgtc caatgtggct tcattccgca tctttccgac 60

aattttctca tgaaaacaaa atctagtttc ataaaataaa aatgttctat gtttcacaaa 120

ataaatgatc cgacttcact agaaaattgg tctatgtgtt taaaagaaaa tttattcaac 180

gctgaacaga agaatgtcca aaaatctaga gaaacgttgc ttcgtcaaaa ggaaaatgct 240

ctggattcgt gaaaagagct ccaacacaaa gccatgttca agggacattt ggaacatgag 300

tggcgaaaat taaatttaga aaagaaagaa ataaatatat tctaagataa gagtaaaatt 360

tatgtttggt ccttaaactt tagaggcatt tttatgtggt cttcaataga aaataattat 420

ctactactct aatctaggga tttactggtg atggcctaaa ggtagaaatg agaaaaccag 480

tgcaattaag agcaccactt taaaagactg tttctacgcc caaccttgga ttgtcctttg 540

tcaggtagct gtgtagattg agcaaagacg tattccgtct taatttataa tttatttgac 600

tttttaagct aattttaact agcttgtctt atctaaaaaa attatattta ttactaactt 660

ttactgtgat attatttagc atataattaa tatactttaa gtataacttt gatttttttc 720

atttttctcg aaaaatttaa ataaaacaag ccggtcaaat ttgacatata aaagttaaac 780

gaattataat ttcggacaga tagagtatta tttctcaggc tttcaataaa aatatacagc 840

tgtagcctgt acctcggcga gaacgtccat tatcttggag atgatcatcc gattttgtcc 900

gagtcgatct tcatcattta aggtacgacg agtcgcactt ggcatttcca gcaataattt 960

ccacagcagc catctggcct gcttgctgca gcgatggatg ggcaagttcg cggcacggtg 1020

atcgtcgagg tcgccggcaa ggtcgcctcc aaggtgatcg acacgattgg caagcggcag 1080

agcgtagacg agaagctgca gcggctggag atgctcgtga tcaagctccg cggcacggtg 1140

gaggtgtcgg agaggctcgg cgctgagacc gcgtcgctgc tccagtggcg ggacaagctc 1200

acggaggccg cctccgaggg gagccaggtg ctcctcggct ttcaacaacg gcgagctgcc 1260

gacggcgaca cggctgcggc tgcggctgcg gctcaaggga ccgatgagga gcaccaggac 1320

ggtggaggca gaccagtcgt gctagtgaag aacatcctgt tggccttgga cagaggcgtc 1380

cggaaagccg cagcagcgct gctctcctac agcgggtgtg cggcgtccta cacaaggcac 1440

acgctggtag gcatggcacg gggcgtccgg agcgccaccg cggcgttgct ctcctgcagc 1500

gagggcgtgg tgaagctaaa cagcacggtg gacaggctcg agcaggcgtg cgcagacatt 1560

ggacagttca taagtttgca ccatgcagca gaggcccaga cctcgcgggc aaataatgga 1620

gtagtctcca caagaacacc agagtccatg gaacgtgtgg tcgtcgatgg aaatgggaag 1680

aaggacgaga acaacacgaa aaagatcaac cagcgacgtg gagagcctgc acctgcggtg 1740

atgcgcaaag gctcattgga ggaaccggcg gcggcgaagt cagcggctgc gcagaggctc 1800

caagacgcgt tggtggaaat ttctaggaca gtggctgtgg cagaccgcca aggcctcaaa 1860

aacctagaat ggctatcaga tctggcagac gtcctccggg aggacaggag agcaggaggc 1920

gagatccttg gcaccggtag agagatcatc gccgcgacac aagaatcagc tcagcagctt 1980

cgcgccagtg atgcaactgg ctcggaagaa gagatagagc ccggcgtcaa cgagaagctg 2040

cagcggctgg agatgctggt ggtcaagctc cgcagcacgg tggaggtgtc catgcggcat 2100

ggcgccaaca aggccacgtc gttgctccgg tggcgggata agctcagtga ggctgcgtcc 2160

agggggcacc gtgttctact caacttcaaa cgacgagtca tgagagctgg cacggccgct 2220

accgacgcga cgaccgacga gggcaaatca ggttgcaccg tgttcttcgt gaggaaggca 2280

ctgcagggca tggcaagagg ggtccagaag agctccactg ccaccacaac gttgctcttg 2340

gccgccgatg agggcggtgc tgtcgagctt aataactcgg tgagcaggct tgagaaggtg 2400

tgtgcggaag acgtagatga cttcataagg ctgctccaag ctgagacctc gtcgcaggtt 2460

caggtaatgc acatgcctat gaaaaggaag aagctggaat taaaaacgag actagatcta 2520

gatcgctccg aaaacatgga tattattgct gaaaacgtac tacttcaaga cacttctgct 2580

tcaagagaag acagtaccag gggtagaaga agacttgtta tgtcatcatc gtcaggagaa 2640

gaagacaacg tcggcgattt ctggaagaac agaagaacaa gaagaaggtt agttggttcg 2700

tattcttctt cgtcttcatc atcaattaaa gaaggcgatg aagcaggagt agatgaagat 2760

ggttctagga gcagaagcac caccggttta atatcatcct catcgtcatc atcaaaagga 2820

ggaaaagaag attctcagag tacatggaca agaataagat taaccggcct attttcat 2878

<210> 1132
<211> 1599
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_209704_G1, chr6:13116147..13117745, Cluster 7

<400> 1132
ttgctgcgca cgtaggcatt atccttcacc atgctaccat ctccactgaa ccaagcaaaa 60

tagagttgaa ccactctgta gcaagcatcg attagtaaag cgaatttgcg ttggcctcat 120

taatattttc tagtaagcta atgaaatgat aagatggtat ttttactatt acactgcatc 180

attaggtgtc acaagaacca agagcaccaa aagaatgttg gtgaggaaga aaaaatattt 240

catgagaaat atatacctca tcaaaagaac tgtgctacgt cggcgagctc attgatccca 300

ccagtgatct cggtgatgag ctcagcgagg taggctctgt ggtcacagag atctggacag 360

tccaacccaa ctccttaatt aggtattgga acttggaaga acaagcacac aaacaaatat 420

gtgggcactg aagcccatga tttaaatcag cacttcctca cgtaactcga atagggaagg 480

gcttgttgcc atcgcctccg ccgccggtaa aaagaaaatg cctcattttt caaaaaaaaa 540

actaaaaaaa ctatgtacaa ccatgaactg aaatccttgt aaaaaccact gtgattgtga 600

aacttcatga ggccaatgtg gcattgctcg atgaatctgt actgctcggt cccgggtctc 660

aagtcctctt ccatgtgagc aatgcagaag gctaaacatg tcgtaatctg ttgcgtacct 720

gaagaaggat caatgttcag tcagtaacaa agttagaaat ggtgtctgaa gaaattgcta 780

tgtccataca tactaagaca ctatagttac cagaactttg cacggttttc agttggagtg 840

tagaacacag tttggacagg gacaccacat tctccaccga agtcgaggtt cccgtagaat 900

gaaccagtgc caggccaatc cctctcatgg ttaacactgc aaaagctcct cttcttgtaa 960

gcagcataca agaatacata tacattggag ggacataaga aagtatcgaa ctgagacact 1020

caattgacct accaatcatg tatggcaccc ttgaagcaat cggttcaatt tgagaggcct 1080

gcaaacacgg ctaggatagg tacctaacca tcagtatgga tgttacaaga agcatgttta 1140

tactccacat cagataatta taactcagta gtacacgaag agaaagtgat tagttgacat 1200

acaacacgac cacttgatca ttaattaggc caattcagag caccagaact gctcacaaac 1260

gcagttgggc ccactctttt cggtcgcaat ttgtttatcc agcagcgctg attcagcatg 1320

agaaaaaagt ttgccctagc atgtgtgcgc aactgaaatt ggatacaaca tctatcgaat 1380

aagcaagaaa catgcacggg caatagcatg gctggacgaa tctggtccag catctatcaa 1440

agaagcaaga aacgggaatg gaaaagctcg acggtataaa cagacaaggg agggaaatgg 1500

acatggcttg actcacatcg ggtcggtggt gtcggcgtgg ccgaacccgg cgaagaagat 1560

gtctcagcct tgcggttcac gccggcgaag aagatgtct 1599

<210> 1133
<211> 1731
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_223994_G1, chr6:103647410..103649140, Cluster 7

<400> 1133
tttacagaac accgtctgaa tacacgcatc aaaccctaat tactgtggac caagccttcc 60

ggcggcgggc ctcctttccg ctcgccatca cgacctccat atgcagaatt tggatcacaa 120

actcaacact ttttgtgtct ttgtccatat catcggtgga gcgatccaat tgaatcgctc 180

aaacatttta gtttgagtaa tcatctgact agccttgtag agcttttta atatctcttt 240

ctacgtatat atggactcac tgctacttat tgttgggttc tttctctttt gttaaagcag 300

catcactgtc actacttaaa ggcactattg tgcttgcaag aaggcaaaat ggaggacatg 360

caccatatga ataagaagta tctaatgggg gagaaaacag aggaggagca tcatatggat 420

atccatatgg gtacaaagga gggtttggat tggagaatgg tggtggagga ggagcattag 480

tgcaggagga ggactatcag tggtaagatc atcatttaaa ggagaaggag catccatatg 540

agatcgatag ggatacaaag gagcatgagt gggtatggaa acaaaggtta tggtgtgtgg 600

gaacaaggac aaatagaagt atcctcccga tgatgatgca caagagaaag gtcatcgaag 660

aagacctacc ccacattggt tggggtatta ggatgttgta gatattggcc attggtcaag 720

tccataaggt ttaaaagttc agactccagc taggatatat atataaagag tgggagacta 780

taatataaag aaaggcgagt gttttggaaa gtgatgggtg tgaataaacc tgaacatccc 840

atctttttat atgctagatt ccaagttttt taaagaagtt gagtttttct agattttta 900

gactttaaat ggtataaaat atggactagt caaaacatgc cacatcccta aaggtggtcg 960

gtaccaacaa attcaaattg gtataggtcg acaacttaaa taaaagacat taggtctaac 1020

cgatatgtca gtacttgtag tatcatatga cgctagaata agcaattaga gggggcgaat 1080

gattgtggaa ggctaaaaat aactatacca cttcctctta atcacaagac caaaataatc 1140

tacttttata aatctagaca gatttttgat atgttagtaa aaacattgct agccaaaatc 1200

ggtaacttag atctatttca aagtttaatg attaaactag atacaattat gaaacaaacc 1260

caattataat tatgttgatc acacttttgg gtttaaagtt agctacaaaa caagattgct 1320

actctagaga gtaacggaaa taaatctaga tctaattcat aattaaacaa taataaaaaa 1380

gattaatatt tcaaactttg ttgataagta aataaatggc ttagtaatga tctagatgaa 1440

tcaaaatgat aggaacaatt gaaatcaaag gttcgacatt agagtctttt cccactctga 1500

ctagactctt gaaccatcgc atgggcctca tctggcctgc tgccctcttg gtatacccac 1560

gaccgcccgt tgagcctatg cccctctttg gccttccgtg tcgctctacc gaccaggcta 1620

gctaccgcgt gggccaagtt cctccctaaa cctacttttg tatatcagtt cctccctaat 1680

cattgtacca aaaactagtt ctgtcaccaa tgatgaccat gtttcacctc g 1731

<210> 1134
<211> 2290
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225804_G1, chr6:112600704..112602993, Cluster 7

<400> 1134
catatgctag tagctagtat gatccgttga gctagcatat accatatgcc tcctggcact 60

gattagcagg cagccatccc aatcggaaaa aaggccctag atcgactggc ccggtggcaa 120

catcaacgtg cacacgcgca ccggcatggg cacatgatta gctgcaattt gaggggtgt 180

gtggaaaaag gagagctcgc caccaagcag ctggctgcag gatatgatga ggccaataac 240

gtgctctgga gctgtcggtt gttctctgcg ccgtcacatg tcgacccggt tggcgcctca 300

gctgcatggt tgcattgcat cgctatcgca tcgagtatgg cagggctgcc ggcagcagct 360

cagctgcttg ctgctgctcc ctcatccatt atcctccttc acctgcgtcc gtatgacgac 420

cacactttga ccgaacatgc agggtgaatc tgtactacaa ggacttaaca tgagctaatt 480

ggtagttaga acgaaattag ttcgtgacta aactatattt tgtctagcta ttattacctc 540

acggcggagg agctgtgagc tttgggcgcc ctcgactggc gcgcgcgcca ttcctctttc 600

caaaagatag gcagggcctg ctgtgtgtgc tggcagtggc agcgggcggc agggcaagca 660

catgtgtgcg tggccaccga ggcgagcccg tccgcccgtc cgcccgggcg gcaataggca 720

ggggcatcaa tcctttcgtt cctagggatc gatcgatctc atgagtgcaa taaagagcgg 780

cagcgaccat ttgctcgcct cacccggcct cacattcgcc cgcgcacaga aacacacgcg 840

cacaaagcat cagctgcagt gtggcagcag gcagcagcag cagcaatgca aggcgtcgcc 900

gtcgcgtcac tttcctcgca tttccccccg gcctgcacca tttcctccca gagcgagccg 960

agccagcagg gaatctgcag tgtccggccg gccacggttg caacgcacaa gaacggcgga 1020

gaaggcagca cgctacagac tatacatcta cagtacatag gagggagggc catgcatggc 1080

tatatatggg ggttggctgg atcgtcggtg atatttaggg gatatttggt tcctttagtc 1140

atcctcttta aattttaggg gttacactta agtttctaga atttctgttt aggagacctt 1200

atttagttat acagtttggt agtttataga ctaaaagtga ttaaaattta gtcaactaaa 1260

ttaaagctta ggagatggaa accaaacaga aacagctcct tattattgct tttgtggttc 1320

gggacgacaa cacagagtat ggctggccgc caatgcctcg gtcctcgccg tcgccggtcg 1380

ccgccggcag ccgaacagct ctttcatacg tctctctctc tccttccttt acattacatt 1440

acactacagg aacgtgcctt aggtccgttc attggcaatg ttactcggat ctgggccgtg 1500

gaagcccgtt cgctcctctc ctagttggcc cagattcagc tttttgttcc cgtcccgtca 1560

gttctcggtt tgcattgttc ctggtatgcg ctgctcgctc gcaactgccg taggctgctg 1620

gagcttcagt gagtgaaagt aggggatgca tggcaatggt ttgtcacgca catacaagat 1680

acaactcctt tgcatatgta ccgctgctgc aggctttggg gggcggcggc gccggcgccg 1740

gcggcagcag ctttgtacgc ggtggcgctg cgcaggccgc gacgcccgac gcagctggcg 1800

cgtgtgcgcg gtgaatcggt cggtgatgat ggcgacgcgt agcagaacta gcagtaccac 1860

gcccacccaa ttggccattg ttcatcagcc cgcccctagt actactactc tctctttctc 1920

tctctctcta tccctttcc gcagcgcatg cgaatgcgat gcgatgagct gatgaataat 1980

tcctgcccta gcttctgccc tgctgcggtt gccgcgccgg agccttttca gaaaagggct 2040

cagctttcgt cgctctgaaa cgctgcgcct gccgcgcgct gcccgctcct ctacctctcc 2100

ctcctttctg cagcctcggc cagtcggccc tcggccggag gcgcgcgcca tgccatcccg 2160

cgccatgatt tgcgcttgat gcgccgatga tggtgcatgc atgggcatgg ccgctactgt 2220

ctgtcgtcca ataaccaacc aaggcaacgg agctgcatgc atgccgtccg gcactaccgc 2280

gtggttcatc 2290

<210> 1135
<211> 1883
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226614_G1, chr6:117605253..117607135, Cluster 7

<400> 1135
ccaacaccat aaaacacact aacagaaaaa ggaagacata atgctctaaa gtgctacagc 60

tattgcagtt tgcatcaaca agtggaccat acttttaaaa ggcagaataa tctcagtatt 120

tactttcgga ataagaggat gttcaattga atatagcgac ttagttggct atttgcattt 180

taaaactaaa ctgtgatgtg atgcctccag ataaatgtac gcctgtagat ggtgtcaaca 240

ttgaagtcct cacaggggtg attatgaagg tatgattcta ggtttgacag tatcttcatg 300

gtttgggtat tgaaagattc tgcatatgca atgttgtagt actgttgtca tgagaaactt 360

aacacgatgt gcatgcatat cacactccag tttcttgcct tgaggtcaga agcacactac 420

actgcttcga ttgcacaatt tagaggaagc tgatttgact attacaagct taatgaaatt 480

ggataatgca tctttgacat caatgccaac caaagtctca gacatgtcag gtgattcttg 540

tatccatatt gtccaagcct tggtcaacat ggcatttgaa atgtacaaat accgagcctt 600

gagaatcgtg gtccgttgtc tttctttcat tggttctagt gacaaaatga ttgaaacctt 660

tttctgcagg tttgattcag ttgttgcatt ggctgaaaag gctaagctta taaatcatgt 720

gaactcagaa ctgaagtgat cctaaataac ttgagattag cgatggctcg agcccaagag 780

aatgactaaa gcaggcaagt ttgctgatgc atagcctacg gtgaatggct gaaatatgag 840

ccctcaaatc aactgcaacc ggtcatcata tcatgcttgc caaagctggg tcgatgtgca 900

aaagctgctg aggactgtga tatgtgtgat gttaattagt tatgtcatat gaatttgtgt 960

ttatatgtat tgttagttga aataatattg gattgtctaa ctctgtatca aaattatcaa 1020

actgcctgtc taaaaatagg gataaaaaca caatgatcat aatacaacag gggcaaaaat 1080

atatggcaaa attgtccagt tattcaaaac atcgttaggt gcatttcata cagtagcagt 1140

aaagtgtcct ttcgttttaa aatcacagag gtaaaatcac caaactcaaa gaagtatggg 1200

caaaattacc gtttcactta aaaatagggg tagaaatgcc aaaaggcaca atgtatacat 1260

gtgaatactt taaaaagaac ccataaataa aatattatgg gacatctaat gatttctacg 1320

gaaataatgc ataatacatc ataaaacatc tcattaatta gagagaaaaa aataaaaaat 1380

aaaaattgaa taaataaagt aaattcaaaa attaaaaggg aaactaaaag aaataaatcc 1440

acataaaaaa acaaagagaa agggaaaaga aagaaaaagg gaaaaaagaa gaatagttct 1500

tgtaataggc ctaaaacatg cgagatgggc ttctgtatgt gactatggag taactaaaag 1560

ccttttttta atctgtgagt tgggttaaga accaattgat gggccgaaaa aacagtagag 1620

aatagagcag agagataaag gacgtggacg tgattggtcg gcgccgcttc cgtcctgaac 1680

agaaaggcaa tggaaactcc tctctcagaa aacaagcaag aaactggctg tcccaccgtg 1740

ctgaccatgg ccgtagccgg gttcaatgtc ggagtgtgta cttttacgat caagtctggt 1800

cggaatcaag tttctgaaac ttgtagctgg gagaaaaaaa acgtgtcgat gttctttgag 1860

tattcgctga ttcatcatca tca 1883

<210> 1136
<211> 1574
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232704_G1, chr6:147031681..147033254, Cluster 7

<400> 1136
ttcctttgtg ggtggaatac caacgcttag gcaaaacggt ggttgaaaaa aaggcttagt 60

ccgataggaa gatatattag aataaaccat gcgactactg taattcgttt ctctgaccgc 120

gtaacagatt ataccttcac gggcatgttg gcaaaccaat tttttttaa aaaaagaaca 180

gatttttttg tccacttttt tcagttttct ttacagaaag ttgttatctg atcctcggcg 240

tatagatttc ctacttattc gcatcgcgca cggggaatat gcaaataagt gaacggacgg 300

acagggccac gcttgaaacg ttgttgcttg ggcaggttgg ctagctagcg ttcgagcttt 360

ctgaggaagt cgggagccac ttgaacacct acctgatggg tcgacgaccg ggacgtcgag 420

ggacacatgg acgattcgca gtcgcagaca cgcggcggga taagggtggt gcgtgatagc 480

gagagcattg gcgctgccac actgtgcctg tgcgcatcaa ttaagagaga cgacgccaca 540

cccgcatccg cttatgatgg gtctgaaccg tctgtcggta tctgctctgt tcgtccctgt 600

taccaattgc ggtgttaatt tatcagagat ctcacgtgtg gtttgtgatt aaaaaaaagg 660

agacgttatt gctagaattg ctagagtaaa tcctaccaac agtttgcaca aagtgagagt 720

agcagattat ttgtagaaag aatagattaa aggagcggat tttcggccga aagaatcaat 780

atagtcaaag cgatccaaca acaggttcgt tcggccggga gtgtcattca ttgagagttt 840

gagacagaga gagagagaga gaaaaaaaca gttagcctca aaatcgagcg atgattggca 900

aattaagtat ctttccactc agcatttgtg ggttggcaca tcatgcccta aaaaacaatt 960

ttggtccacg gcgaatcttt atcccctcga ttaaacaacc ccagcaataa ataaaaaaaa 1020

agagttgttc tttttattct ttctctttca ccaaagtcac tgatcctttt gttcctcctt 1080

atctccatca cctaatgcag cagcatcagt aggcaggcag gcaggcacgc atccatcaaa 1140

ccgagacctg ttttttgtt attctaagcc tctaggtacg gcggcggtgc tcatctcatg 1200

cacaccagca gcagcaataa acaaagccgg gagctgggga ggtttggaga catcaactgg 1260

ccggccgggg ttgagagatt tgcttggcga cagcgacgcc tgtccggcgg cgacagtgac 1320

cttcggatgc ttgggttggg ttgggttggc gccacaggat cgttcgtttg gctgctcgta 1380

caaggtattg atgtggcgcc actggatcct ctcactaccc tgtcttccaa accatttggt 1440

cgcttctctg tttgtttgtc tgaatatgtt ccaggttaaa gagctttcgg acaggataat 1500

taacattctt ttgtccagct tttagcagtg gctaacgacc tcggattctt tccatttgga 1560

ttttgactga gggc 1574

<210> 1137
<211> 2306
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233813_G1, chr6:152057142..152059447, Cluster 7

<400> 1137
agcacagcgt gagtcttcaa gatcgatact ttgtgtcttt atacgaaagg caatagccta 60

ataagctaat agtaacatca tttccggctg aattgggcca taccctggaa acggttaggg 120

cccatgcccc tgcgatttgg aatggaacgc gttatgctgc gccaacgtac aaagaccgaa 180

caaacaggtg ggactgccac tgtcactgcc gaaactgtcc taatgaacat cgatccttct 240

cttcccggct atgttttaca gtggcatgcg attgcctcga aatcacaaac gagagacttt 300

gagagaactt gccattcatt agcttctcgt ccttattttt agaggaaaat agagctgaga 360

tgcacttgga tgcctgccac tacccaggta ggtaatctcg ccagtctcta cctcacggaa 420

agcacatgca tataaacaac cctataaaat cttcgccgaa ttgcgagtac cagagatgcc 480

ggggcggcat aaaagaaagg gaaacctcgt ttccactcca cgatcgacgg tcagagtggc 540

agacccacca ttgggcattg gctaaaccta aatccgcttg cctttgcctt taaccctgct 600

tcacgtctga tcggcaaggg cgcgcgcgcg cgtgctctcc gcttctaatc tctaataaag 660

attattcgcc actgcaaatt tctttacgag attcccgcgt aaaagcgacg ggatgggcct 720

ctctctctct cttgggctcg agtgggatca ttctgatccg gtttaggaca gggctagatg 780

cagacaggca gagttgttta tggggaaacc aagccattat tgttctggta cttccttaca 840

gaattacctc ggtatagttt cgccatcacc atcatgtgag ggtgaggcgg attagtgaag 900

gatatataga aactgggtgt gcagtcctgc agactttaaa atggttttct gctgtctggt 960

aactgtgatg taggctaagc tgatctcgtc tgctggctgt tgcgttgcag ctttcatggc 1020

caccaaactg gaagcagact atggaatctc ttccctgttt tcagctttgg acttcgtgct 1080

cttaaactac tagtagggag tactggattc ctttgtttta tactatcaaa tttaccaggc 1140

tcttggttag ctgttaggta caccagaatt gccaaatgtt ccaggcacta agcaagagac 1200

gcctgtgctg atgccagggc ccaggagtcg gtggaacctg ccccattgac acatgcatgt 1260

tcgcggcttc ttgagaagcc gacctttca caatttttct gttattaccc aaaaccaaaa 1320

aaaagatttg ctttcgctgc tcattaatgt ttgaagtctc gcattctcag atgcacagaa 1380

gaaaaaggtg atcaatggga caaaagtagc cctcttaaat ctactcgacc agcatggaaa 1440

aaaaagttgc taatccaatt tgtggagccg tatcattcag atatgctagt ttatgcgcca 1500

tgcgcggatg cgcctgcgat gtgtaccagg agatgcatgg tgacctagac agccattgat 1560

gggagcaaaa agttgctgca tccattggtt tccccccaca ttgccttgtt cccctctcgc 1620

tctctctctc tctctatata ttttggtgtg agaaatttgt ccctcgacag accaattctt 1680

gcatttttc tgatcatccg tagcttcaaa ggcgaacatg atgccggtag tgtgaagcaa 1740

ttagcaatac atgcatcaat gtgtggtata gttgaaaact gcacccattt tagattccaa 1800

cttttgtgtg tcggccatta atttagggcg ttccctgaaa atcaagtttt gtgtgaaaaa 1860

gggactacta ggggcaacat tttagatgag ctactatgtt tttcaaagac gtatatgtta 1920

ggatgatatc tcatgcacct ttgatccttc atcgccctgc gttggcgcta ctttgagttg 1980

ccaatgttca taaaccagag ccaagcaacg cggacggggc ggactgaaaa acgtcgtttc 2040

taggagtaca cctttgtgga tgaatctaca tagggttcta agctgtttcc tttagtttaa 2100

acatatgcag acaagtagaa cagcaattaa tcccttcagc aaatcatgac tccgacttag 2160

tgacttccga cttcaagcat cttttcttat tactgccact tatccatagg cgctggaaag 2220

aataatcaac aactcaaacg tagatttgcg tttgttgtat gttaatctgt tggagaaaca 2280

acacttcgtg gtggcatccg taccat 2306

<210> 1138
<211> 1750
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234175_G1, chr6:153615952..153617701, Cluster 7

<220>
<221> modified_base
<222> (215)..(215)
<223> a, c, g, or t

<220>

<221> misc_feature
<222> (215)..(314)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (216)..(216)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (217)..(217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (218)..(218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (219)..(219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (220)..(220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (221)..(221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (222)..(222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (223)..(223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (224)..(224)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (225)..(225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (226)..(226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (227)..(227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (228)..(228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (229)..(229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (230)..(230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (231)..(231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (232)..(232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (233)..(233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (234)..(234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (235)..(235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (236)..(236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (237)..(237)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (238)..(238)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (239)..(239)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (240)..(240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (241)..(241)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (242)..(242)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (243)..(243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (244)..(244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (245)..(245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (246)..(246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (247)..(247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (248)..(248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (249)..(249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (250)..(250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (251)..(251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (252)..(252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (253)..(253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (254)..(254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (255)..(255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (256)..(256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (257)..(257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (258)..(258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (267)..(267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (273)..(273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (274)..(274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (275)..(275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (276)..(276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (277)..(277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (278)..(278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (279)..(279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (280)..(280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (281)..(281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (282)..(282)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (283)..(283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (285)..(285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (286)..(286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (287)..(287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (288)..(288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (299)..(299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (300)..(300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (301)..(301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (302)..(302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (303)..(303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (304)..(304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<400> 1138
tcttccctac aattcatgag ctatatgctt ccaagcgttc caattgtata tagtataagg 60

tagtggccac taggtacatc aaaatccaaa tgatcagtag taactacttt tagctaacta 120

aaacactatg atgcatagga acaacattca aagcatgctc cgaggtcatc agatatttca 180

aacaaaacga attcaagctt gaattcatcc aagtnnnnnn nnnnnnnnnn nnnnnnnnnn 240

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300

nnnnnnnnnn nnnncaaact aggaggattc gtcgcttttt tattattata ggtggtggat 360

ggcaagggca tcaaatccca ggccttgttc cctgccagtt ccagaagagt ttctaaatca 420

agaacggtga gtgattcaca aagagttgat taattctcct gaatagaact ggctttatga 480

ctactttgag cctctgtgcc tgttctaaat ccgtagggag tttcatgttt gtgaatgcca 540

tcggaaggga tcaggctctg gaatcaggga gcaagattgt gtatgttgtc tcgcaaatcc 600

tcttccatga acaagttcag gctctggaga agtctggtga ttgttaagtt tctgggttct 660

ctgatgcaat caggctagat aatatcagct actcacagct ctggcttaac agttgaatcg 720

aagattagga tacgttggta ggagtactag gaagccttag attctagcat tgggtaacat 780

gtctattatc ccatattatc taagtttaac aagatactca tattttatga aaaaaaacta 840

tactgaaaaa tcacgtccaa cagtagctat gtgtgtgtta ttccatgtat tattatcaac 900

aatgatagtt ctgttaccca tacttgtaat ttggtatcca tagtccaacc aagacataat 960

cttagcatca ggaggagtgt tctgacgaag ccaatagtat gcctcacgat aatcatcaaa 1020

gataactctt ccaccattat gacccttgc ggccaaaact atagatggaa aagagtaagc 1080

ctcacatcat caaagataac tcttccacca ttatgacccc ttgcaaccat gaatagtaca 1140

gattgctttt ccaggtgtgt ggagagacat gcgtattcct cctatgacaa attcctcagg 1200

ctccatgaag gtaagcctgt cttaatgggc ttgattgttg aacctgactt agtactttta 1260

tccatgtcac ggcattgaac cagacagtca ctcatgtcct taggatatta acggtataca 1320

tcaacaattc attctatttt aattgcttgc aaaacttttt tgggccttca gatgagttcc 1380

aggcatcaag aagtcaagat tccaggaggc ctaaaatagg taaacttgtt gttctataaa 1440

cacatgttct ccagatttta tgttttcttt gagcaatgta gactttgtta tgccactatt 1500

tatttcctac tatttttat gtgtggcacc aaaattgtag tacccttctc tgcaaaacct 1560

gattgctagg cattgttact actcttcctt acctttctc aagatccatg tattgtacca 1620

caaaattcac acccacctat ggaagaggtc tcttatggtg cttcagctcc acatgctctt 1680

cagttccctc aagtaaaaga ggttatggtc aatggcgttc gtgtgaaaga tgaaatactg 1740

tgagacttgc 1750

<210> 1139
<211> 1952
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234187_G1, chr6:153654750..153656701, Cluster 7

<400> 1139
caagccacca agcttctgtg atacgattct tcgttagtgt gcaatcaaag cgatcaagtc 60

gcacgtgaca cgcccacacc tggaagatgg aagacagaag acggaaggcc ggatgttgcc 120

gttcagcact taccattcgc cctaaaataa gttgggtaga tagcgcaaat ctaccactat 180

agatgggttc aggtattggt gctgcgcatg agtacaggta ttaaagtggt aagtttgtag 240

tctaacgggg ctaggtcaga gatagagcaa cccgaccatc ttcacatatt gtcatcccta 300

gtcaggccgg tgtgtatacg cgaaggaccg tgtcgacgac aacagtgaca gacaacaacg 360

accagacagt ataaattcct tggcagactc gatggactag ccagacgacc ggcctattga 420

ggcagccgcg cggctctcga cgtggttgag tgagcctccg tcgtgccatg cccagaccgc 480

tagagatttt cgctggccag tagtagtagc agtagcagat cacatcacaa tcacatccgt 540

aaggcgtaag cccgtggtcc atttgcagcg cgtgcgtgcg tgcggtgcaa gtgcaagtga 600

taaaagaaaa ggtcaaggaa aggagaaagc agtaaagcga agcgcccgtt acgttgacag 660

cagcccactt attatcgcgc gtaaataaac caagcttgtc tttactccaa agcactatag 720

gacgatcgac gacatgcaca tccatgccac tttctgtagg accattttga ttttttttt 780

ttttggtacg gtctacctag tcggcccgcc cggccggaaa tgctccgccc cacgcactaa 840

tgcatgttgg tttcaacatc accagctagc taggaacatt gtggcaccga ctggtagtcc 900

ctgcatgcgt atacagtcct agctacgtgc gtgctagtag cggtcgaact tgcaccggcc 960

ggaatccgga acgcaggccg accgcagcgc acacgacaag agacgcgcat gcgcgcgtgg 1020

acggcgagtt ggcgacgacg acggaagact gcgaagcgat ccatctcaga cgacaatcga 1080

agcgaaaggt gaagaaaagc acgcgtgtag catactagca tccatgacac ggtcgatcga 1140

tcatcactac gtaggtgacc gggaaaaaaa tcaaaaggag aagaagaggc aactagcggg 1200

ttcatttgga cgtgcacgtc gcggccggcc gcgtacgtgc gcatgcgttt atttcgccgc 1260

cggcgtgcga cgcgaccggc cggcgcaccg cactgtggaa aataaaagca agtagcagac 1320

gcctcccccc ttaatgacac gaaaacaaaa caacttctat gatatgagat tattatatac 1380

aggcatgtct tgcacccgtc taagtagtct tatcatactt gctcttagca gttcaagcat 1440

gacgacagta atggcgctgt atgtatgagc tcgcatcctc ttgtatgagt tgcggacttg 1500

cgggtagtaa ctgaatggtt caccttgcaa gttgcgggta gtaatacatc aaagatatat 1560

tgtcatcaag tctcttgcag tgtcgttgct gtgagataga gttcgttctc ttgtatgagc 1620

tgatgatccc tgcaactgca gtgtctgttt tatggacgtg tgtctgtgat gaaggttatt 1680

acatacgcat gcatgtgctt acgtgtatgt gatgaaaagt cggtacagac tacagacgca 1740

cgtttacacg tctgtgatct gtgatgtctt ttttttttct ttttacataa cgccgttaaa 1800

ccttcggctt cggtttccac cgccggtcgt ggttttcgcg agactggatc caagtcttgt 1860

acacacagtc ctagagcagc cgccgcacgg cgaaaatgct tgtacgttgc accggcggtc 1920

gagttacata tatattcaga gagtgcgcgc tt 1952

<210> 1140
<211> 1532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234881_G1, chr6:156686894..156688425, Cluster 7

<400> 1140
aattcggtca gtaagaactt agcgatatgt ttacttcttt tgtttatata atttttttt 60

attttaactt gtatcgtgta ttgatacgaa acttggattc tatataatac tagctagttt 120

ttaggttgtg cttgatctta tcacctagtt ttcttacccc ataaattccc gttatgcgtc 180

ccccactcct gccaacactt gttgagagct agtagctgtt gagaacgtct cggccggggt 240

ctcgatcact cttcttttct acgtcaaggc gaaggcaact tacagattat attagtttat 300

gcgagatcgg tagagtccca tggatcttcc tacgccaaca actcacctgc tccccacgtc 360

acacaacagt cgctcactga ttgcagaaaa aaaaactagc aacgcccatc catgatggtt 420

gcgcaagaga gatgtgtttc tcctagctat agcatttgtt tgggctttgg cagctctctt 480

caatccattc accacctaat tttccatctt aatcacgtgg attgggcatt tttcacgtgg 540

attgagaatg ggctaggtag ctagggtgca accaaataag cccgtaggtg cttattttaa 600

tacacaaagc aagcatccaa acgcaagtgt ttgactacag attgcttctg ctgtgtccag 660

tcggaaacaa gaatggacta aggctaatcg ctatttttt agtaacaagt gacgaaagca 720

gcacaagctc atttttctct cttccagttc ttcctccttt ctctcctatc tcccacttct 780

ttctctaatg aagtgggggt ttattttccc ttttcttctt cctcctcctt ccttaacaac 840

cctcaatctc tttcttcaat gtaatttcat ggatgggggc tggagcctca acccctcttc 900

agatccgccc ctggctatgt ccaatctttg gtcatataag ctcaaatcaa atttaaccaa 960

tataaacggc ggattctact cgtttgtttc catatttttt ccaaaaatac tgataagtat 1020

cggtttcaga gttctaaaag cagctccaaa aaaccactaa aacataccct aaaatccgtt 1080

ttagacttaa aaacaaaaaa tctcctctcc aacggttccc caaactttcc ccaaaatttc 1140

cagcatcccg tatctaggcc ccctcctccc tcaaaatttc gtgacacgat tcctccccaa 1200

tccatgggcg tgtgcgcttc gccggtcgtt tcccgtgtcc attttgtcat gcgctcggtg 1260

agaaagtaac agaggcattg gaatctacat gtcatattga gaaaaggcag aggaaggtga 1320

tgttttcttc atcccggcat acactcggta cctatactgc attaccataa cttatgtgag 1380

gcctttagat gtttatttgg tcaactcatt ttttactagg agcggcaaaa cttgtggctt 1440

cgcaggacat agaaatttcc ctagattttg tagcgtagca tgatcagcat aaatgcccat 1500

gtactgtcgt caacacgtag gagcaaagag ct 1532

<210> 1141
<211> 1840
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236953_G1, chr6:167638080..167639919, Cluster 7

<400> 1141
cgttgtataa agttgttgag cacaagagac atgaggatcc ggtcgctatc attatcatca 60

taccagccca tgcctctcag tctcagcttg caatgaattg aaggaggtga gttgctaact 120

gatgcttcgt aaaacattgg taagcaaaca aacaacctta aaacgggtca atgagaccga 180

aaccaccggg tattaaaatc aacacatgct gataatgcta gtaggtcgcc aaattctgct 240

gcaatgtcca acgaagaaag atttctgcga aattaagtac agatcataat actgtttgac 300

actgtatttg agcaatgggt atcactatcc actcactcca gtacctttga ctttgagcaa 360

tggttatcgg tagatcgctg agctaacagt ccatcaagct ggtcaacaag caagtcgtcc 420

aagcaaacag ctagcgtatg ttcgtatgca ctaaacagct agtgtcttgg ttaataatgc 480

taaatatatt ttttattgtc ttttcccttc gaattaaagt cagctgtttg gtctactgca 540

actgcaattt atagcgacaa aaacaatata gaataagtac gaattaaagt caagcgaata 600

gattgttggt taatgctaga cagacatatt tgtccttgga ttcttaaaag gattcaaaaa 660

aaaaagcaag ggattaaatg ttaaaaagaa attgctagag aagagcgcta ggctgctggc 720

gtgtttcagc gcgccggcgg acacccatgg tgctcgccgg cgttcacatg ctgacgctac 780

cacagtagca cactactact ccgacgatcc gacaactgct actggtgcac ggaacacacg 840

gccgtgaatg tgacgggtgt ccgcgtcacg gtcggggccg tgtctgccgg ccggcgatgc 900

caacacgccg acgtgaggtg ggcatgggca gcaactagca cgtgcggcgg caatcacgtc 960

ggtgttgcct ggccggccgc cggcgaagga tggacgactg gagtggactg gaggagcaat 1020

gcaaataccc accggacacg gacacggaca cgcagcagcg ttgccgctcg tcccatttgt 1080

caacgaaagc tatcggaagc caagccatcg acatcgacat tgcacaggcc gcttgcttgg 1140

gctgaatgtc ttgtctgatg ggctcacgga ctcagacctg cctctgctct gcaaggagaa 1200

gcaaggaaga cgagacagga cacccggtct cctctcaaga aggaagaagc cactgtccgc 1260

tcctgcgtca tgccacacgc ccacacccag cagcaattcc cagacttgcc ttggcccttg 1320

gacaggattg gagacccaac ccataaactt gcacgtgact tttacaactt tggtctctat 1380

tcatgtatac ggtatagctt gtttggttgt tatgcaacca aagaagccat tgttctagta 1440

gtgttaagtt acacatgttg ttggaagcca ccattcctgc ctagcttata tgaatgtcca 1500

catcgaagct attttctgcg agcgttggat ttttagatgc aagaacgttg tgttgtgttg 1560

gatacgagaa tacagttaag cttattatgg ataatttggt cttaaacata attagtatgt 1620

atgtcctcta aatatgatac gatgaagtgc taagggattt ttatggaaag acttagatga 1680

catgtttaca actatatccg ttacttagaa gttctattat ttaaaagtgc taagggaatt 1740

ttatggaccc cctgtcagac tgttctggta tgtgactgtc ccgaaggttt gcagtcttgt 1800

caggtgcacc ggactggatc catgtgccac tgtaccatcg 1840

<210> 1142
<211> 1704
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240014_G1, chr7:15678897..15680600, Cluster 7

<400> 1142
tagccgcaag ttcatttcta atctccttcg atcataaaag aatttaagtt tctaaatttt 60

tggtcgaaga gatcccacca cttacatatt cgtaaactcg taaattttgc agtacgtagc 120

tgtgcgcaaa agaactcgtt attatatatg taaatctagc tagttttgac cacataaaat 180

aatattacat atatgatagg tcttttaatt tattattctt cccctggtcc agatattacg 240

catacacaac tggcaagtaa taatcgggga aactattcca ttacgtttaa taatagagat 300

acatgtattc cattacgttt gtagtatata taattttggt cagttagtta tatatactac 360

gtactgtacc ttttgtcctt cttacagatt tgttgtgact actattaata ttgccgaaat 420

taagtccact aggatgtaat aattgaccca atattatatt atactaaatg cagtgaagca 480

atatttagac gaacaacttt gtctttatct tgtagtttta atttttccaa tattattgtt 540

gttatgacat cagagcacac aaatcatagg aggcgcgtcg ttctgtaccg ctctgtacct 600

gctttatagt ccttgtgagt atattatttg tatgaacgta tgtatacatg catgtattca 660

tgcgtgtatg taattgataa tacagaaggg cgactgtgta cagtacggaa ggacgcatga 720

gactgtgatg acgtccacgt agtttgtcgt atcccgccgc cctacgtcag tcacatcatg 780

tgcaagtgca aagttgagta cgctcgtaat tagtacttaa ttattattag taaactctaa 840

tccatctgtc tttactacta ttctttttgt atcggtactg cactacgcct ctagctactt 900

taattaatac tgtgtcttct ctatcgtctg gctgatgcat gcatatctat tattgtcgat 960

cgatctatgg atatataggc tggaaatgat cgaaaacgag gctccaccac ttttattttc 1020

atatattatt ttaacgaaaa tcataactta tgatattatc agaaacgaaa acatgattgg 1080

tgcttcaata gtacgtatcg aaagctaacg aaagtatacg attacttcga taatgatcgg 1140

aaaataaata ctaaaataat tatttttaaa cgacaaccaa tgctaaccag ataatatgat 1200

agccatatat gttataagta tgacttgatc catatcatac aactgctacg taaaaacaaa 1260

atagacatag atgtggtatt aatctaaccg tgtattatgc atgtaagtcg catacgacat 1320

atacttgcca tgtcacacag aacaatagaa ataataaaac atgagaccat aacaaagttc 1380

attgtctcca ttttgacatt gatatacaat caaaccggca ataatatagc acgatgggta 1440

ggacacaaat tttagtacgt acttattaat agttgacagc atgagacaag tccacaacca 1500

caaccaaatt ctatgagaca ctcagcataa tggcatgcat actgctagtc tgctagactg 1560

ctagtcatat tccatataga attttagatg ttggtaggct actacgtaac ccatgaaccc 1620

aacatccatt tgatctcacc atctcagttc tcacactcac acgctcgcag attcaccttg 1680

ggcatgtcgt cctcatcctt ccac 1704

<210> 1143
<211> 1658
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_243300_G1, chr7:34452240..34453897, Cluster 7

<400> 1143
tatgttatat atactatata agaataatgg cctattttaa gtcctagacc tccaatttgt 60

caggacgacc agcaccgaca aaaatgaagg tgaaactctt ctagctaaac tgcttaataa 120

gtcctagctt tagctttact agtgaaactg atctaccgta gatcaaagta aatgcaagat 180

ttaaattcac ctttttaata tctacgaaac tattccaaac atgctcctag taagagcact 240

agctagcacc gcgcccgatg tggtatgggc cggggcgagc gcgcgtacgt gaccgctggc 300

acatcgtatt ttataattgg acgaccgccg ccgcagggag acaaatcatg aatgaatgaa 360

taatactcca ctccgtccta ccttcaccga gaggagagaa aaagctcgcc caagggcggc 420

ggctccgccg tcgacgtcgt cgtctgcgac tgtatatatg gccgtacaag ccggcgggcg 480

gaggcgacgc atcgtcgcgg aaccttcttg tcgtggatcg gccggccggc ggggcgaggc 540

gacgcacgca tcgcggaacc ttcttgccgt ctgcgtgtgc tccaggtcca ggaggagaga 600

tcgacctgtc tctgtctttg tttcatattt atatatttta gtatatagtt ttatatgtta 660

tctgtctgct gctgcgtacg tgctgcagcc agtagtgact tggttttgta tatgcgtatt 720

actgatgacg gaaatagata tgcaggttcg tctctgatgc tcactgcgta atcttcttct 780

cattattgtg tttgctgctg atactactac tgctagtatg gttaggttgt ttatatactc 840

cgtctgaaga agactaattc cgatcgagga tttcgctacg catgcagtga acaactgaac 900

ataatcatcg atcgcataac ttattattat atgatgctag ctaataataa taacggttac 960

tcctcgtaag tagatagcga cagcggcagc agagaggttg atccggatag ccgggatgat 1020

gaaagagaca actcagtcgc aagtggaagt gcctagcttt gtcttgtgtg cgactaaaga 1080

caagtggcag ggtctctcct tcagattttt ttctataaat aaacaccgag gatagattgg 1140

tcatttccaa caggggttt tactttcaca catgtagtat ccttcatgta gtagtttcca 1200

atgttggtga agaaatagaa gtaatcacat acgtctagaa aaaaccctta ataatatata 1260

tacttttat tttatatact ttaatttggg agcttgaaaa taccggtgaa taaaggtaca 1320

tgttgcaaac tggtttcaac ccaaaaaaaa ctacatatct cactagttca tatttgctgc 1380

tatatgtata gatctcccgt agatttctat atataaagtg ctcaaaaatt attaagtgtt 1440

gtggcttttt aggctgcgtt tggtagcgct ttttcagctc cgctccaaag tagaatcaat 1500

tctcggatgc caaacggtca aaaaaccaga cgcttcaccg aaggagcgga tcgaatcgcg 1560

tccaataatt gtactggcac atgggagcga aaaaaacatg ctctaccggc tctctcaccc 1620

gctcgggaat ccagccacaa gcctaacctg ccttttgt 1658

<210> 1144
<211> 1430
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255779_G1, chr7:117302854..117304283, Cluster 7

<400> 1144
aattccctag atgtcatcga aaattatatc cattctttaa tgtgctcata tgttatacaa 60

acaaaaatta tctactagat gtcattcagt gacaaacaag ggatgaatat aaaatccgat 120

agcttacatg ggatcccttg tgcaattcgg tcgcccaaca ccatcgcccg ttcggcgtgc 180

gcgtgcgtga cgacagcaaa gctaaccgat cctcttgcac gtctaaattt tcctctatct 240

cccagctcca tcagggtccc gtctcctact cctcttttta cgcagtggca gtggcactgt 300

tcatcatcag atcaagaaga tttttcatct tcatcttttt gacgtacgta gtggcactgt 360

aatcacccat ctaataacac actctaaaca cccctgcact gcatgtgccg tcgccacctg 420

tgcgatcgag ccgtcgtcgg ggagtcactc tcgcgagaag ggacgggacg gcaatgtggc 480

attcgaattt tcaacaaagt gagaaggctg caacgactgc gagccggccg gtcaccggtg 540

tgaccgtgtg aggccaataa atccatcttc catcaggcac cgcccgcccg cccatagtct 600

tcacttgccc atctagtcag cactcagcag cagctatgcc tcctatatat gcaggaagcg 660

aagagtaata ccctttttt ttgaatcacg gtacactcgt ttggggtgtt tggggtgaag 720

tatttttttt ataatttta gacaatatta tgttttctac aggagtattt tatgccatga 780

gatatttgca tgctttccta aagactatgt tttcaaaact atgatattat tctggatacc 840

atgttatttt tgtagtatta gaaactacac tctaactcaa aattttcatg atatggctag 900

cttttgccta agtaccataa tttgtaatat tgtatccaaa caacagataa tattcttgaa 960

gcggaccaaa actatggtaa atatcatgat aattgcaaaa tataagtact attcattctg 1020

ttatgacttc tttttattag ggatattttt aaatagtttg tttatcttat tgtttataaa 1080

aaaactgaat aaaattaatt gccattgata tctaaaagta aaattgtttc aggatggaga 1140

gagagtgagg gagtaggtgc aacaaccttt ttatttggtt gatgtggtag tgatgtttct 1200

gtccggccaa gtctaggaga gaagctgatt ggttgaattg atggggctcc tcaccccgca 1260

gccgcaccgg cgcaccctgc tctcttgtct tatgcaggat ggctgtcctt agcgcatgga 1320

gcaggcctgg ctcaagaaat tgatgttgca tctcgagaac ctgactcatg caaaaccaaa 1380

acacttggct aacactgttt acaaatttac gtttgatata gaaggtaagt 1430

<210> 1145
<211> 1762
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257063_G1, chr7:123588284..123590045, Cluster 7

<400> 1145
ggggtgtgcc atacgctctc ggctcggggc acataaattg tctaaagcta tcctcagcgg 60

taacttcgta gcacttttc caacgctgcc acaccgtcga aactgctatg aaacaaaaaa 120

tgaaacaatg tctctcaaca caaaaaattt cacttcacta tttcatacac taacatatcg 180

attaaatgat gcaactagat gaccaataga aattaataaa atatgtgaag atagaataaa 240

tcattctcga tggaagtttc acacggttta caagaacttg gaaattagct agcatggttt 300

tgtcccccac tcccccatga aaaccaattt catccaatga aactcaatcc tcataaatat 360

tatgacatgc catcaaaaaa aaagtttgat gttgcacact aataaatacg catgaaagaa 420

atcaccgttg tgaatagcat aacaaagaat ccattgctaa taacgttagg tgtttttagc 480

gcactctctc tctctctctc ttctctgtca gcgagaatgc atcgtcggcc agctccgaca 540

tatatcgttg gggccgtcct aaatataata tctctaatga cattgagatt tccaaacaat 600

tccaaaatta tatctatttt gagacgaaag cgagtacggg gtatttatta acaagagtat 660

atgcgatcat tttcgccatg cggtcgattt cacgcgacac cgctgaatcc gaatcgatcg 720

tggacttgtg gcgactccga gtaccactcg accgggacga gggaatatag tagaagctag 780

cgggttccca tcgtggcccg gccggtgtgt gaacacggca catattcgtc gaaaaggcac 840

aaaccttcac gcatttctct actgtactcc gatatcgccc taccctacta ctactattct 900

gctttttttc tctctagaaa agcttttgcc atctctattc aatgacgacg cgcacgtacg 960

aactcctgat tccttttttct atttatcgtt ataattgccg acggtccttc gtcgcgagga 1020

taataaaaca atgatctcgt acgttgacaa taacaccata tatatatata tatacaaaca 1080

cacaaaaatg tcgtgtgtgc ttcgcagatc gcgagaccat gcatgcatca tccgtccgtc 1140

ctggaaggtt tcgtccagaa gcaaagaatc cccgtgcata tctttgctcg ttttttttatt 1200

gcttttgcg agaacgtaca cacacatatc tgatcctgat cctccttttt ttttttgcgt 1260

gcaaggatat gatcgaatgc cctttgtcgt tgtcgcgttg acaaacagtt tccaaacagc 1320

gtgatgcaag ctgctgcacg gctgcccata ccagtagtat acacacactc gcatctacgg 1380

tgtactgtgc gctgcttacg tgatggaacg gcacgctgtc agcgtacgta cgtacgtagc 1440

tacagctgct cgagctggac gcgacgctcg atgctacgtt acgtactcct aaatctcggg 1500

tcgattggat tttcggatca ccctgctatg acgacttttt ttctccttgg cgcagcgcgg 1560

tataccagta aagagccaga ccggcgcgca gcctttgcat gattgatcga tgcgcaacag 1620

aagagaggcc gggcatgcat ggctctgccg cctgccgcca cgcgcatgca gacgccatgg 1680

tcgtgcaagg gagccccggc ttgcacggtg gacaaccaag agtcggcctt gagctccccc 1740

tctgacagcc aggcaggggc cc 1762

<210> 1146
<211> 3259
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257067_G1, chr7:123593006..123596264, Cluster 7

<400> 1146
atctcttttg aaaagccgta actttaaaat ccacgactta ttagctcaac atctactatc 60

ctatacaatt agctgcagag ggtggactcc tagaatttgg ggaactaggg cggccgctgt 120

ggtggcacta tgcccggagc cggctctggc acagaggcac tgcttggacc tggccggctg 180

gcctggcccg atcatcgcag cggcagcgca cgcacgggcc ccggccgacc gggtcgcgcg 240

aggccaagcg catggcgccg ctgcatggct gccaccgcca tggcgcgcgc gcgggcgtgg 300

gtccccccccc ccccccccccc cccccaccgg cgacggaggg cgatggacgc tctgcgccga 360

ggcgcacggc aacggcatgg cctgcctgcc agcctgcctg gagtggtcag ggcgaattat 420

tgggagcggg agcggccgag cgggcatggg attgggatag gaaaacgacg tgtgcagtgc 480

gtggcacggc cgcatgcacg cgccatggcg ggcgatccca cccacccatc cactggccgc 540

tgcgccctcg tcttgtccct gtggttctct ggttccccag cacagcggcc gatcccaccc 600

acccatccac tcgccttgtc cgtgtgcggt gcggcatcga tagctagctt gttgttgccg 660

gacgtttgtg cttgtctctt gtccgcatcg gatgcgtttg cgacccgcag cgcacaggac 720

caaagctcgg tcggtcgtac tcgtactacc aacactgttg cctcgctccc ccccccccc 780

ccccccctc aatcgccatg cgctgcttcc gcggggacgg ctcacggaac aggtgcggcc 840

atgctcattg caggggcct gatggcaaca cgcgcgcacg ctagaaccac ttatactgta 900

ccttggcttg gctccatgat gcacgcaaac agcgggaacg gcatgatgca tggacgactc 960

atggtttcag cacgtgagtg tcgctgtcag caggcaggca ggcaggcagg atggtggccc 1020

ctgcaggaag taaaatattt cggttacgtt tggtttgaac atgctgcgct gttactactg 1080

ttattaatca cggattcatg gacacgtcgt tttcctatcc acatgctcgc tctagcagaa 1140

ttgttgtaca caagctactc ctatccacat gccatatagt agtcctacta ctgttctagt 1200

agtagcttgt gtacaacaat tgtcagggaa gaacacagtc gcgccttgaa aaatctcata 1260

tgaaatcacg aggcgggcaa gcgcgcaagc aagcattact caaccacttg catcacgagt 1320

caggacacac ggctgttaaa aaccgtacta ttactgtaac ccgcgaggct tcgatgccag 1380

atctatcgaa accgttgagc tgtaaacata acaactgtag agacggaaaa taccagacga 1440

cgaccctcta tttctttatt taccataaca accatgatca tgacatccta ctacccccgc 1500

gcgtggctgc tgcttaatta gcttgctccg cgcgtcaggc aactttgaag ggggaaaaaa 1560

aagaactacg ggagaggata caccgataca tgactactgt agactgaaga ctgtacagtg 1620

ctacatgctc gatcgctcta gcagagggga actgcagcac cattgattat ggccctaatg 1680

atgccgggac ggaccggggg cagcgaaaag cctggcgatg cggatcggtg gccgggggcg 1740

ggcatgcaac gcgcgacgag ccgacgacga cgacgtgcat ccaagcacga ggctgctgcg 1800

gccacgacgc aatgatgact ggctacgtac ttaggcacac gcactagcag agtagcagca 1860

cgcgacgcgc cagaccgagg tggttaggtc gtcctggtac ggcgacggac tgacggtttt 1920

gcggtacgca tgttcgtagc gaagcgagcg gtcggccttc ggtccatctg gctggcttaa 1980

cttggcttgt cttactgcag atacagctgc ttctatctcg ctggctaata cagcatacag 2040

atacagcagc gccaattgac atgcaagact acatcgtggg cgtcgtgaca gctagctgct 2100

gctttcgaga tactgtaaag caaagacaat gacgaacaaa tgattgcaca agtcaaagcc 2160

gaggagtggg gtgcgggtgc gggtgcaggg cgagcgtgca gctggaccat catctgcaac 2220

agatagctct gctctggcta ggaaaaaggg aaagcgaggc ctacctagac gcagcagaac 2280

acatctacgc tacgtccgtg catgggccat gggccccctt ctcagctttg accagagcgg 2340

caggcaaagc tccccaacgt gcagtggagc aggagcaccg tcgtcgaagc tcagccactg 2400

gccaaaagca gatcgagcaa ttaagagaaa ccagcagcca cactgacccg catcatttgc 2460

accagccgcc tctcggcaaa cgttgcgctg tgcgcataca tgtgctagta atagtagcac 2520

acgtcttcct cctcctccgg cccggcccgg ccgcctgagg cagtataggc aggtagtagc 2580

aggctaacta gtggctagcc tgttgcgatc tattagcgcg cgtccctctc cagtcaccac 2640

gacaactttt ccccccacgc gacgcgagac aaacggggga cggacgggag aaggctttat 2700

ctggacacgc acgcctttgc attgcaccca cctaacgccg ccgctgacga tgactttgtt 2760

aatacacgga cgatcgatcg atcgcgcatc caggggggt ttagtccaac atgcttagcc 2820

aagtaatcat ggcgattgcg ctagcgcccg cgcttttgtg gacttgggcc acataccgca 2880

tgtttggttc actgctgaga tggtgcagct gcatccgtgg aactttaaag cacattttgt 2940

ttggttattg aatgagctga tacaggcgcc cggtatgcag aaaagacagg cgagccaggc 3000

tccgcagaga cgctcgttgg ctgcgtacgc gcgcgtgcaa gcacgcctca tacaacctta 3060

tgttcatgca cgcaaaacca aaaacatttt ttggtttgtt ttttttgtta tatttctaac 3120

taaaagattt aatcactgaa ctgattttat atttatgttt ttggtatttt atgaataaaa 3180

ctagaccaca catgctgtat aatacttgaa gatttatttg tacacttttt ctaatacacg 3240

ttctgataca gataaccaa 3259

<210> 1147
<211> 2004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262784_G1, chr7:155767046..155769049, Cluster 7

<400> 1147
taacgtcgag acatgttacc tggttgccct ctatagataa aaataaaaat aagacatcta 60

gaaattttaa aaaaatataa gaaattagac gagcggacta ggagactatg tgggctggca 120

aggatgtttg gcggccagtt agatagccca cgtgcacaaa ggccaacttc ggcccacgaa 180

acgtcagtta caactggagc ccaggcccaa cgtccagccc gtggtcctgc attgatctgt 240

tgcagttgca gttgctgctg agagtagcag ccgtggtata tagaagaggt ggagcagagc 300

tcgccgccga atgacttgtc ctacacggct acacggcgct ggtggtggcg tccggccgac 360

ggggatgagg tgggccttgg cgtacgtctt cgtctgccat gctactggct actgctcctt 420

actttgcatc gcatcctacc ccggaggacg ccgtcgctgt ttgtcgatct ctctgcactc 480

ctcgatgatg gcccaagccc cgcttacacc gatgcagggg tacacacgtt aacagcgacc 540

gtaaataatc tcatcccacg actaattcga ctctctgaaa gagagcggcc caactaccat 600

taactgaacg tggcctaaaa tcttgcgatt tcaagcacct gaaatgtcgg cgcccgtgat 660

taagatacga acgaatgaga gagtaaacat gaacagttgt gattagtttt cagctagcca 720

aggcgcacaa attactagcc cgcgtcacac tgcagttgcg tgccatcggt caaccgaaca 780

ttcaacgagc catatgcaag ttttctaccc aatgcggtgc cccaggcttt gctcacaaca 840

caagcaagaa gcggcggcga gcgttaaaca aatcgaggtg attccaaagc attgcttgat 900

gctatgtgca tgcccccatg gccctgtgcc atttgaccca gacagtgttg gagtttatta 960

gacttggtct aattgtttag caataaattc agaataaatc tcaaacgctt actcatgaaa 1020

tctgacattg tcttacacaa cgagcttaga actgaatcta tcagatcata aagatcttat 1080

tcgactcagc ttttgacttt gtcgacaagt tcggaactga attcgttaga tcatggagat 1140

cttagtcgac ccagtttttt actcaatctt gtgcgacaag ttcggaactg aattcattat 1200

gtcgtggaca ttgtaacaaa gttagtttca gaacctattc ttttgtgtgt ggttattcta 1260

agtctagtcc tcatatataa cagagagggt gttctgcctg aaaggtacga gaaacaacta 1320

atccactacg atttagtatt ttaggcaaga gactcggcgc tgcggggatc atacctgatg 1380

attttaatct attatgtgga cgtgctttta tttactatat atgattcatc catagtttat 1440

gtattgattg ttttaaaaaa ataatttaat cttaaaagta cctaacaacg agcacaaagt 1500

acagacactg agacagatgt gtgtttgatc tcagttcaga cacaccgaca cccacaggca 1560

ggagtgcaag tgcaggagag gccagcatta attagtgcct ataatcgtta ctgtaagaat 1620

cccccggtca gcggtttggg ggcacgaatt ccgatgtcaa cctgcatggg cggccatgca 1680

cggataggct agagtttacg acagccgcaa gctttgtgtg cggggtcagc cggacagggc 1740

agagtgtcct ctgctgctgc atgctacgta tgcgtgtgcc ttctctgctg ctaataagaa 1800

ccggccaagc aatgaagcaa gtttactata tttttttgt tcctttgcca ttttgacacg 1860

caatattatt ggtctcttac actttggagt ttagtgtgca attgatttgg agcagccatg 1920

gaaaattagg gtgtgggggc aaattcgcaa ttctgtactg tgctgtgcaa ctgatttttt 1980

tttgtttctt tatattgtgt tatt 2004

<210> 1148
<211> 2262
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262990_G1, chr7:156676884..156679145, Cluster 7

<400> 1148
ttcacaatag acattgaaga ccatttctat agtagtgcaa gatcacttgc tgcttttctc 60

gcgtggacag gcctgtttcg ttttttgct ttgccgaatg atgctctctc atctcatctc 120

tcccgccgct gctctcggca gtcgtctacc tacctacgcg caccttgca tgggtgcgag 180

agaaagaaag ccctcctagc tgcctgcgca aagcaccgtg tggagcagaa gttagagaag 240

agaacacaca acacccccat caaggatcgc gggccgctag ctctcatcaa ggatcggaca 300

aacgcacggc gagagggcga cgcgcgccga tgcaccatgc atgcagatct gctgctcgat 360

ccgcatgcag cccactggcc gccaacctgg ccattggcca gaagcaaaag cttttgcttt 420

tgcatgcccc tgcagcctgc gcctgcagac gctagctttt ccccccggcc tcttcctctt 480

cctcttcctc ctcctccctc tgtgagtcca ccatccccat gtcgtccccc cgctccgctg 540

gaagactggg acatgcatgc atgcatgcat gggatcagtc ctcagtcggc cactcgctcg 600

ttcactcatc gctttgcatg cgctgccgtg tgttcagtta atcagctcat cagtcgcgtg 660

tgctcagtga tcagggcgag acgaccctac aaccataacc acaattgcag cagtcaccgc 720

tgcagggaag cctgcgcagg tcggatcaga accagatcgc ttgcaagttg ctaataagta 780

agtgatcaga tcgggcccaa ctcccaagcc tacggatctc ggtgattgat tagccgcgcc 840

gtgaccgtac gtgtggtggt tacagtacca gtgtctgcgt tgcacgtacg ggtttgcact 900

tggcgtacgt gccactactc atgcaagtac gcggaacgca gtaatataat ggcagcttaa 960

ctatgaacat ctgaaacaga cgatggtccc atctcctaag gctataaggg gggtctccac 1020

gtacgtactg tacagccatg tcgagtaaca ctcctgtccc aaagatgaga tgccagctga 1080

tgcatgcaca ctcactacta cgtacactgg gagttacgca gcagcagctt agcattatat 1140

taacccttgg actggtagta atacgagatc ttcttaacct ttggagggac tgactgacca 1200

tgcacgtatg accagcaaga ttgcaagaat tgacgagtcg actggcaact gcacgggcag 1260

gtccgctagc tgtacgtggg gctgccagca aatccgccga gatccaggca tgcatcatgc 1320

atgcgtggca aaggtccgcg tcgcggacgt ctcacagtga tccatcgatc agtaaattca 1380

ttccgtgttc atgatgcacg tcaacctgat aaggatgtat cgaacgtcgt ttctagcagc 1440

tagctatatg gaacgaagta tcggccctct gctggccaat gtagtgcgta cgtgtcgtgt 1500

gtgtcactct ctcctttcga tgactccttg ctcaagctca actagcagac cagcaccctc 1560

ggatccgata ctatatatag atcggtcgcg tatatacgta cgtacgttcg gtgggtagtg 1620

caggtcggcc gcatatacat cgggcaatat gttctagtag tgtggccgat tcgatgcata 1680

ttggatcaag atttgtgttg tcgtttggaa gagagagaca catgtgtcat tctaagaggg 1740

ccggtgacct gaccgggata tggaagaagc gctgcatgca tgcaaaccat aaatgaagct 1800

acctagcaag ctctggatcg gagccaaact tttcttcacc tgcgtactta gctcttgcta 1860

gggtttatag atcggaatgg acaaaggaag ctttttttgtg ttggtgaatg tctgactgct 1920

agcgactgta tgagctagct atagtcattc atatatgcat gcatgccacg caaaagcata 1980

caatcatgac caaacgcttg cagttcaatc ctaattatat gaataccagc tacgcagcca 2040

gccagccttg cttttggtgg tcttgagatg tgctagtgtg tatattggtg taatgttggt 2100

aaaagatcga gtaaaataaa agttgtctct atataagacc agtggttaac acattctttt 2160

tatggtgtat taattggtat cttgaaattg ttaaaggtcg tagtttcgtt actgccgtaa 2220

tgaaatttgt tattacagtg gtggggaaaa aacgctaaca ca 2262

<210> 1149
<211> 1786
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263130_G1, chr7:157159272..157161057, Cluster 7

<400> 1149
tcaacaggaa catttgctga ctaatcttct tcgttcctca atcatgtgtc cagtagttag 60

tgctatgatt gcattactat tatttttagt aatggaaaat gaacaccata accaacctct 120

gtatacgtac ccagataaag ccggtagtcg tactactcat gcattctttc aatagtatgt 180

tattgttatt tagtcaatta gtctctacac actccactac tgtgtgtcaa tccctttctc 240

ttttttaga gcgccaagaa aaggcggatc aaactcaaaa ggcatgacgg agaggaaacc 300

tgttcgcacc aagtgctaca aaaccacacc attcgttaaa gggagaggca agccttttct 360

aagattccca ctcaggaact gaccaagtat atatagtaac cagagtgcag gtctcttggt 420

gtagtagaaa actggagtag cttgtcgctc caagaagacc aatgagacca cgtggcaaaa 480

actgtagcgc agcagcctac gcagtcaaaa acgaacactg tctgcatacg tacacgagct 540

agctagcact agtaccgtca tgcttacagt agcgtgaggc atttgtcggt acgtaggttg 600

catgggtata aatgcgatat tgccgtgttc ttgcatgcat gccttatgtc tacggccgcc 660

ggccaaccgg ccggccgtcc tatcctaaat catggacgga gtatctctct tcgaccaccg 720

tacgtacgct atcaagacgg atcgcctgag cgagtacgtg tcgcatacat gtacgtacct 780

ctccttggtt tccataccaa aaagaggata tgtcgcatac tttcacacac atgcatgcat 840

gattggatga acgccgcaca cggtcctgat cgccgccgtc gccatcagcc ggcggggaag 900

gtgaagaaga gcacgcagca gtagtgattc cgtatagcac cactaccacc tggacctgga 960

cacgattcca aacacctgta actggggtag cttaattagc acgcggtaca ttttaccttt 1020

tgcctagcgg aataacgccc acagatcaaa ctgcgccgcg ggcggcgaag aaaaccgagc 1080

aatcgatgag atgatgatgt gaggaggcgt cccggcgccc gtacgtcgtc catccgtgtc 1140

gacccgcggg ggtgaagtca accgggttta tgattggggc cagggcgaag cgacagcgac 1200

ggccgcggcc gcgcgaggag gtggcagccc acgcgtcccc gccgagacgc gccgggcggc 1260

ggccgcgacc gcgagcccgc gacgacgcga cgaaatcggc caaccaaagc caccgagaac 1320

acggagccgc gcgggcgcgc ggggatgtat ggactatgga gcgtgtcgcg atcgcgatcg 1380

cgacgctcgc gcgggcccct acgaacgtac agtacagacg gcggcggccc ctgtgtgcat 1440

cgatgcgcgc gcacggacat tgccggctac gaaaccgccg cgtccatagc tagtttttgg 1500

ttcgacaggt acagactgta gtaagagtaa gtactatatc atagaggaac gctgatttgt 1560

tctcgcgcga ccgtgcaccg tgtggctcgc tgcagggtgc accgtgtggc tctccctgct 1620

ggctgctgcg ccatcctttc ctaatttcta cacgtgagtg acggccggcc ggtccccgtc 1680

gagcggtcaa caactatata tactccatgt gtataaacta cgtacgcaca tgtacgcctt 1740

ttgttctaac ttcaatgttc cagcaacggc tagtaatgcc atccac 1786

<210> 1150
<211> 2041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_263619_G1, chr7:159745763..159747803, Cluster 7

<400> 1150
gctaatattt ctatccatgc agtttcctac acgtgcattt tcataattat cggtccacga 60

tgagagagat tctctctcac gcccacaaat ttctcctcca tgattgcagc caggggtaac 120

cagcggaaaa aacaaaacta cgctaatttt cgtgtaaagc ctttagacgt cttgtttcat 180

atgaaggagg gagtgtgtat ctaccgatgc cgctggatag cgaaacaaat cttctgcagt 240

ccttagttcc tcttgtgaag aggccagagc accacagctc tgagaaatgg gatgccctgc 300

tgtaaagaaa ccacatggac ggagatggtc aggtacagat acggtctttg gtagtttctc 360

atgttgagtg tggcagtctt accaaacaac aacacacgct gatccaatgc ttattcaggt 420

tgacgtacgc gatgctcgac aagacgatct gtgcactgtc aaacgtgttc ataggatcat 480

cagggtacac cttcacgcac tcttccggct gggggggggg gggggggggg ggggctgggg 540

accagcgtcg cgctgtgacg agtacctctg ccagggtgag ctgcctaact tcatagcaga 600

gccagattga gaaggcgact tcccaggagg atcgatcgat cgatcgatag ctgcaatttc 660

ccccgtcgtg tccatatgtt ctattcacta aaaaaaaagc tggcggtgtg tacatctagt 720

agtgtgatct gtggtagggg ccagaggggt ctctgtatcg gtgtgatagt gatacaaaga 780

gcttcgagag agagaacttc tctttgccgc tgtttcttgt ttgtgcagta actaaccttt 840

gttagatgat gacgctggcg ctctggttcg gtgccgattc ttcacttgca ctgttttcta 900

aacctttgct gtcattggtg tactgaaact cgcatagtgt catgcgattc agtattccaa 960

atcttcagac tgttgttact cgagaatagc ctttgaatcg cgtgaaagat atacatatac 1020

tgttagatag tataaatatg tgtaatattt ttttactcaa acgattgctt aaataagtac 1080

tttagagaat actaggtttt aaaaaaaggc tattgcttgc tgggaccgga atttgtaata 1140

gactaatagc tagcaaaagt agtcgggtcg ggggttgaac gttctagaga agagagatgg 1200

agatgtcgtg ccactgccgc cttcgccctt ggggagcaga aatgcggccg ttggcagtcg 1260

ctagctgcgc ctgcgcgccg tcgtcaacga tcagaagtgg cgtgcgatgc gctgcctgcg 1320

gcggcggcct gtgactgccc gttgtcggtc gcgctgcaca aaagccgttc agagctcaga 1380

ttatccgaaa ccgaaacgta ctagcacctg cagtacttct aaaaaaatgc cgaagcatct 1440

ttgactcctt gttgttgtta cacacttgaa atcgtcatcg ccgcctactg gaaagcatga 1500

agagtacggt acactctgta ggactgtaga gaagtaagta ctagtactgt tccaattcca 1560

tggagacttg ccggcaggcg gcaggagagt tggcgcgcgc gtgcagcggt cggcgaccag 1620

accacaacgt caggccaggc cagtacgtag actgacatgc tggaggtgct ggggatatcg 1680

tacgtgcgtg cgtcctgctg atgatcgatt tgtccctctt ttttgtagtc aaacatgctg 1740

gagcgctagc tggggatatc atacatgcac gtccatgagt ccatccaacc aatcggctgc 1800

tatatctcgt aatagatcaa tacaacagtt tggttttagt gtcactaccg ttgctttttt 1860

tttcttcccc caccattggg atcttcaatt ccgtgttcag ttcagtatac tgctcgattc 1920

tgtccctctt tttttagtca aacatgtaca aatatcctcg gtatcctccg cttgctctcg 1980

ccctttttcat ggcacgggaa tcaaatctga atcaaacacg ggtcgatccc accgccaaac 2040

a 2041

<210> 1151
<211> 1566
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_26395_G1, chr1:160709153..160710718, Cluster 7

<400> 1151
actatatttg ggtaccctag tactcaaccc aatacatatg agttgatgag gattgggtgt 60

aaattagttt aatttacacc ccaatactcc ttaactcata tgaattgtgg tgaatactat 120

ggtatccaaa caagccatta ggagaccggg tgaaaatact ccccgcggtg aaagatatag 180

gcaaaaacca atctcgatgg ggcagggtac gttccatcaa cccacccacc ccccgcccaa 240

tcctcgcaac ccgtcggggc ccaatatgac aggtggaacc ctacctcagc gtccgtattc 300

caaattccct gatcctcatc cattccaatt caacggaccg actaacccta gcttctgtta 360

ggctggcgcc tagtgactgt tttcgtgcgc tccttcggcg ttccatgttc ttgcagcgcg 420

gcggtggcct gctgccctgc cggcctctca cctccagcac tccatcctcc tgctcagctg 480

ctcctgttcg ttggccccgt tgctgcgttg ttgcccttgg gccagccagc cagcacgcca 540

aggagcaaca gccacggaat cacggagatc tactgaatcc agaaattcag gtgagtcttt 600

gctttaattg tatcccctac tttaaccctt ttgaattatt tccaaacggc tgaagtcaac 660

ttctctttga accaacacca ccttcctggt cttcatcatc agaaacttca atctcttcca 720

cttccgcatt tcctctaact gctttggagt cattaacaga tggtaaagaa ccctattgtg 780

actgcgattc attgacatta ttatcatgat tgtggttgct cgatgacact atcttaagac 840

caactacaaa ttagcaagaa ataaatatat ggtcagtgat gttaagcatt cagtgaatga 900

tgctaacaaa aaaaacacaa ctacacaatg ttctgtaggt tttaacaaaa aaaaagcaat 960

tctatttgag caactgcacg tactgcacaa tgttttgact attgacacaa tagaaaccaa 1020

atagatagta caactatttt agcaaaaaaa aactcaactg cacgtacttt aaaatatttt 1080

agcaacgaac aagtcattct attcggccat acactattta ttccattaaa attgtaagtg 1140

aataactgaa aatcaagact tagttagcag gatgcagact aaggtagcag atttaggtag 1200

caagattcag actgaaggtt taggtagcag gatttggact gcaaatcaat aaccacgcac 1260

aaactgcaga tctgtggcga gactactaaa cttatttgct acttaagttg ctcacctaaa 1320

tttatagaat cagtaaatct ccgtgatccg tggttgttgc tccttggctt gctggctggc 1380

tggccctagg gcgacgacgc agcaacgagg ccgatgagca ggaccagccg agctggacga 1440

tggaggctgg aggtgagagg acgacagggt ggcaggccgc tgtcgtgctg taggaacgtg 1500

gaacgccgaa ggagcccacg gaaacagcca ccaggcgcca gccaaacaga agctaagact 1560

agggtt 1566

<210> 1152
<211> 1596
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264962_G1, chr7:166950792..166952387, Cluster 7

<400> 1152
cgcgttttaa ttcatgcaat ggtcatagat acattttact tttgtgtata atttagattt 60

agattgaatg gttactttac acaaattttc ataaatttag agttggtaat ttatatacga 120

atttggtggg ttattttaaa gtatctttca tagagagtat ttgacaattt acatacaaat 180

tttaagcgtc attttaaatt atttttttatt ataccagtag tgggtaattt atatgcaaag 240

ttaagggggt tatcctattt atttttttata atggttggcg tagttatttt tttataaaac 300

ataaaagatc caatacctgt tactggcgat gataattaga gtctactaaa ctaccatatt 360

tgttttgaca aaacaatctc acaattagtc ttagaggctc taaaagatta aactttcaag 420

gcattaagat tctacacgaa accactggaa tacacatgat tacatatata tagttggaga 480

ggaatatata ggcatcaaac aaagacttta gagggttcgt gcttattgta cagtcctcag 540

tgcgagacac ggagcataga aacctagtcc ttgggttaag aaacactacg cgcatgcacg 600

cattttgtcc ttctgtccgg ccgaataaaa aggcgtgtac ccgttcttgt cttgtagaaa 660

ttcgtggcct gaggcctgtg tgcttcctgt ttgagatttc taaaaagtgg gcctagtgta 720

cattacttac aaagcaagtg cattgttctg tcacttggaa ccgctgggtt gttgcgcgcg 780

catagcatta gttagaagag tcttctcctg caccaaacgt caagaacaaa acgggccggc 840

cggccggccg gaaggggatc tatccagcgc tagcaggtac tgcctaacaa atggcttgtc 900

aactcagttg tcatgttaca tgtgtactct ctactgggta ccaaattggg tctggaatag 960

tgcttttgcc gctttgctat gaaaagacct gctgttgatg tagtagtact actagtgtta 1020

cctattgatg ccttcttgat cgacgaccca tgatggggca gggccccaat tgtactagtt 1080

catgcgtata cgacaaaggt tcaaaccggt tgataaatcc gacaaacagg ccaaacggtt 1140

tgaccgtatc atggatttac ccctttgaat ttaggttatt ttataaattt tgaacaaatt 1200

tgataccaag tttcctatca atactatgga ttgttttaag acttttcact aaaaccaaat 1260

ttgaaaacac gctatagatt tcgaaacaaa aattaaacaa gtttcgaaaa aaataaaaac 1320

ccatcggttt tgccgattag atagccgccc ctgctagccg attaatcgtt cctaggtaga 1380

gataaactgg tggcctctag tagctaggtt ttaaggattt tcttcctttt aatttcaaat 1440

cttgataaca tttgtgccat cttttgttca aattttgtga cctcaatata ctttattggc 1500

caaatgacaa gtggttcggt ttcttcacac gtactgccaa tttatcaatt caatgaccga 1560

tagtggcaag cgatgatgag accgataatg gttata 1596

<210> 1153
<211> 2343
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265074_G1, chr7:167601265..167603607, Cluster 7

<400> 1153
tttcttttcc ttcttctttt ctctgtacgt cctatctttt cccacgttgg gccacgggtg 60

ttgtggcgcg agttcggtcc cgttcgctgc ctagctcacc ggcattttct gccccgtatc 120

acgggcagtt aaccccgtgt gtgtgactgt gtgatcacag acgcaaaatg cagttggggt 180

tgtccggagc acgtaaccta cgtgtgtgac acggtagcat actagtaaca tgcatgcatg 240

catgctatcg tcggtcgtct gagccgcctc tcatgcatgc acagtcatcc tgttcctgtc 300

tgtaaattaa gaactagagc gcgtgcggtg cgacgacaac aataccacaa gtccagcgtt 360

attaagccac tgtttaggtc agctaaatgc actaatgatc tgcactcgac cggcgatcat 420

cacacagatg caagcacgct gcttacagtg ctgggacaag atgaccacat gtcgccactg 480

gagcgaattg aaggaccgtg ttcattacac ggagtaatta gcgcgccggg tgccgtatta 540

ggcgggtttt gattttgtgt gtgccctgtt gaggtggcgg ccggccatgc atggtcagtt 600

gcactagcta cttgacgagg ccaatgtgaa agctggaacg aacagcatga cttatctcag 660

atgtgttaat tattagtggt cacgagcgca gggcatgggg cgttatattt tgcggcatgt 720

gtcactgtcg agagaggggg gaaaacagtg ctaccactat aactagtatg taaggtagta 780

aggacacgta taacggtatt gaatacgctg tttctaagta gcaacgtaag tagcaattaa 840

atagtaaaaa cctatgtgga cgttaattaa gtaggagaga gaggcatcgg tcatcctttc 900

gtgaggagat ggggtttagc ccgtgttcca atgccatgag acggtaatgc aacgactcat 960

tcggtccgtg ttccacacat gaattaaatt ttttatagaa tataacccat ttgtatgact 1020

tattatttat attgtctgta cgtgtttttt tgtcaataca tatataaata acgggtatct 1080

gtgtgggctg tatatgccct accagtgtac acacctcttc cagggagaag ggagaaaagg 1140

aaacaaaatc tcgcattgta gtctgaatcc agaggccggc cggcattggg gccaccagct 1200

ggctttgaat acgtgctcca tgttctccga aatcctcatc agagcattca atccatcaag 1260

gccccccgat gcagaagcct tcttgccagg gcgaccgggt cacagaggct cagagcccct 1320

ccaggctctc tccagcaaga aacgagagag ctgcgacctg cgagcctgcg aatttggcaa 1380

tttgggtgca gtgcgcaggg gtgcggggcg cccacgcaca cggagcacgt atggatgcca 1440

atttcgtgcc cctttcacag attttacagc tcgggaatgt cacgaaaagg agctatgcat 1500

gcatgcgcta gtgcatatga ttgagcggtc gttggggtgc atgggctggc gacgacgagc 1560

taggctgcgt cccggtgtcg tcgtcgtcgc cgtcgctggg actgggagtc gtcaagccca 1620

tcacacatgt cggactgcta ttattaatcc tgtaattttt ttaagaaaaa taaaataaaa 1680

tttagaagac acgctatata tatatataca cacacacaga catttattgc atggacttta 1740

gtagcacttg tacagctcag tttttaagag cgaaatccat ccagcaaacc gtgtgcacca 1800

gcagcgctag ctagtacact gcatgcgcgc gctacttcgg gctgtgttat cttcgtttat 1860

gattggatca tgcaatgatg catggtacca gacaacacgt acgctaatct ccaagaatca 1920

acgccttaaa catgctcatg catgcgctct tttgcacata atctgcgaaa tggcgatata 1980

tcagctgggt ttctgaccgt cggcaacaaa ttatggtacg caaattatta gttgtgctaa 2040

gccgcaacta aacacgctgg gaatttgatt ctacttctct gttttctatt tatttttca 2100

cacggtaaac ctggctctgg aaactattta agtttcggtt gtggtaatgc atagtttacc 2160

ttatcttaga gcatctttgt ttcatcttat atattatata gtctagatta taatctatat 2220

gtagctgttt agatgatcag attatataaa tgaagattat tgatcattga aacacaaagg 2280

caaagataac agtatcctac gcgcgtgtgt gatttggggt agagaagaaa aatgtcagaa 2340

att 2343

<210> 1154
<211> 1494
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265989_G1, chr7:172441135..172442628, Cluster 7

<400> 1154
cgccatggat tggaaacata tctgttgcac tggcaatctg taagcagttt catggatcgg 60

aaacgctgga ggaaaccagt attagaacag tttcagagag agagagatag agagagagag 120

agagagagag aacagtttca gagagagaga gagagagaga gagtaatccg tgagcaccct 180

gatctgatct tgagacgcta tctcctgtcc ttgccagttg cgatgcgcag ggcaggtagc 240

acccaccaca ccagacctaa aaagctcgag ccgacgctga ccgtgaccgg accggccgtc 300

atgcgccgca cgcgtgtgcg ggcgctggcc agccgccgcc accgccacgc cccgaagcgg 360

aaagccggtg accaaccacc attcggtcgc gggcagcaag ttgcggcggc aggcggcacg 420

ggccacgtga cggccccgac gcgcgcgtcc acggctccac gtgacggcca tcgtgcgaca 480

gcgccgtcca gggcccatgt ctgtgctgtg ccccaagccc cgcagccttt gcgccctgga 540

tattctgccg tgggccctcg gcccgtctgg atgattattg ttgcggcgac ggtttggatc 600

tgaaaaattg atcgacgcac ctgccttttc ttttcctttt tttttgcctc tctttggcag 660

gataaatata aatagtgttt tctctcttgg tcctaaaata aagtatgcat ctgattaatt 720

atttttaaat tttaactatt aatatagaaa acaaatcaaa atgcaatgca accgtggact 780

tagcgaacct ccttgaattt ttcgatgctt tgtgtgcact ttttattcct tttatcttct 840

aatcactctg tctaaaaatt tacaattcta cctataggaa aaatggcata catatttatc 900

ttaagccaac atatgcaaga cttactcaag tatgtacaaa agggcatacg tatttatgac 960

ttaaaatata cttatttgat ataaaaaata tggacgattt ttaatatgga tttgatcgaa 1020

tttaatttag ttcgactcca ataatacgat aattacattg ttttgaggca gaggtgatat 1080

ctattagcaa aacataatct agtcatttaa aagtatttct catgtcgttt tattatacgt 1140

gacaaacatc agtacctttt ttgtgtgcaa agggagccaa atgatgacct tatgcattga 1200

tgagatcaca caagtctaaa aagggataaa ttagtctcat taaaacaatc ttgatgcaac 1260

agttagaaat ataagtggca ctgtcgtact cgcgtgcaaa attgtcgtgc catgtaaacc 1320

tacaccacta ccacacaata tagtagctcg tgtatacagt tttaaaacca tccaaagaaa 1380

atcgactaat ttaccaaggt ttcttagggg taatgttgag cctatttcac catttgaaca 1440

tagtcaaaag cttaagcaca atatctagag caaaccaaga acaacacaag caca 1494

<210> 1155
<211> 1623
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268075_G1, chr8:7026746..7028368, Cluster 7

<400> 1155
acacagacat ccactctgac gtttgcatca ggcaccaagt acgtgcgtga tcctctccag 60

cctagccacg ccacgggcgt acacaagtgc gcaagtagta gcttgcgaat tgctgctact 120

agtggtgact ctgccgatcg atggtcaccc cctcgatcgg gcaggtagga tcgctgttgc 180

tggtcctgcc actatactca ctactagcgc actacagttg atggtaataa ttaacaggag 240

ataagcacgt actactagtg catggatggc gactgcacgc tcgtagtagt tgagtctcgg 300

tgcagtgctt ctccttctcc ctgtggcggc taggctgctg tggacgacgg ttccgaggtg 360

gacgccgccg ccgccgccgc gccgccagct gccgaatgca cctgcggtga agtaaaatta 420

aaaccacggt ccttgcacgt ttcaccatct tccagttcca cgggcgtttt tttcccccac 480

ttggcgcgtg atgagcgttt cagagagcca gagtcgacct gtcttgtcca cttggtcggt 540

ttttaccctt tttttcctcc tttttcttac agcagaatca ggagtcagga ccgaccgacc 600

catgaggcca tgaccatttg aagtgagctt ctttttttcc ccaaaaaaat aagtagtcaa 660

ttgtgcgact gtggaatttt gttgcagcta gctgctccaa agaaaaactg gaggaggagg 720

atcgaatcca attgacctca catcatcatc gtcctgcagc agacgcaagc aagcaggaac 780

catgcatgtg tgcagtgcag ccagcgccgc tagagcagac tcggaccgga ctttcgccgg 840

cttccctttt tacagtgcac atccggctga tgacagccgt gcgtgcgtac gtgcgtgagc 900

tctgatcgaa tcgaataaag tttattttcc agactactag ctgctagctc attcacagat 960

ctctttcaac gcacgtgtgg tcttttcttt gaaatggaat cgtcatcact cctatatatg 1020

caataataat gggatcatta tcacacatgc ttaaagaaac cgagagagat agagtagtat 1080

gctgatgcct cgatcgcttt agccccccg ggggtagatt ctgaattgtt cacgtgttga 1140

cacccgtacg tgcgatacta gctagctgtt gatgacttga tgcctcgctt tagcctgaat 1200

gcgatgtggc ggtgagaagc ctccatacat ctgtaagtcc tagcatacat atcgccaaac 1260

cgtagtacac caggcaggca cgttacactc gctagctggt ccttttgact gtgccatgca 1320

tcatgcatgc atgcgggcat tcggtgttgc ttgcttgcca cggcgtccaa ctcatgcatt 1380

ctataccgtc cacggtttaa attttttttcc atttagggcg ggacagctct cgaatcactt 1440

ccacgtacgc agggccggcc ctggggtggg cggccgccct gagcccccga agttatgggg 1500

cccctaaata tgtattaagt ataagtatat gttgtgtgct ataaatattt agtaattggt 1560

tttaatcaaa cactatttga tagtctgttc gctagatgta gcttgttgaa aacataagaa 1620

acg 1623

<210> 1156
<211> 1696
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269226_G1, chr8:12602981..12604676, Cluster 7

<400> 1156
caatactgat tccatgcata tgcatgcatg tgagttatta tcaatcgtgt ctacaagtgt 60

agctgttgat tttcctataa cgctgtgcca tacacatata ataacctatc ctatagatag 120

atttttaggg gtatagatag atgtcaaaat cagatgaaag gcggcttcgt cgcagtgaca 180

cggcgctgtc agcaggttac ctgatccaaa gcacccacgc aagcctgtaa tggttctttg 240

acccttgatt tgttgagaaa ggcacgtagt atttgatcaa cttagctaac cattaaatta 300

gcacatacaa atccccatga tctaagcact actagttcaa aatcacacag ggggtaaaaa 360

aaaatgcacc ggagtaaagt catcgtacgt agatgacagc tatatatata attaaccacg 420

tctcctctct aaaagcaaat aacaaacggt aacagatcac tgaagatatc atatgatatt 480

tatactacag gaggaataga tggcctatat aattaaccaa gcttaggggg acaggggtgg 540

gccttgtttg gaagctgggg aagaaagagt gacttgagaa agagcgagga gaggagggaa 600

ttctgggtga aagacgtacg taaagacgct ttcgtcgtgg gtggtgtggc gatgacattt 660

atattgcgtt tggaaaagct gcgagaaatt ccagctttcg ctggggttag taggatttgg 720

ggcagatttc tttccaaccg ggtcgaagca gaaagtctaa actaaccgga aagcttttgc 780

tgatctgaac tcgtatacat tccagagctt gtttagccac catctgagaa cgcacaagag 840

agggtgatct ttgcgcacta gctatagtta cagctgagat ctgtaaaggc aggcagaggc 900

agggcacgcg caccactgat cttgctggac aatatcaaag ctagctgcag ctgcacgaac 960

tgaagtactt ggtggttgca ttcattcacc ttttaataac tacaagtcaa acatgatatt 1020

tcttctgaga tgatatactt cagctagcta gtgccagtgg ttcactcaaa ccaaagcagt 1080

gtgacggcaa gtacaacgac aagaagacca tcgcactgcg ttgccctgcc caggttctaa 1140

atcaacacgc atgctgctgc tatgctacta cttcttcttt ttttttctg ggaagtcacg 1200

actgatatac agactcgagt tgcacagcaa caatatcagg cgatggctct gtcgtcgtct 1260

gttctagctt ctttaatttg acctatgtat atatataacg atctcattta ggtgtgctgc 1320

tcggtgctca ctaactagca ctagctgatg ttctactcaa gtacagaaga aagtcataaa 1380

acatgattga ggaaattggc tctccaacta tttttgtcag tccgcacagt ttccgctcct 1440

tccgtactat ggaccgattt cttaacctgt agctttctgt gagcagctgt tatgtttaga 1500

tctttcaaca ttgatcccag tcccacctat tgctgttgat taattcccac ttctggtagc 1560

agcaaactct tttcacatga gtagactgtt gggaacggta acacgcttaa taaagggcga 1620

gacaatctaa tttatctttc tctaaaattt agatctcaat ttttttctag tcaaaatcta 1680

tgcaataaat aaatat 1696

<210> 1157
<211> 1666
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285772_G1, chr8:119255045..119256710, Cluster 7

<400> 1157
tacgggtgta cccagccact ttggacaagt agttgaaaaa aaaaacttaa tatcatcaaa 60

acagcagcct gaataataag agcgtgtctc ctatccttga gggccatgag agaaaaataa 120

caaaatgaca accttaaggt aggcaatctg cagcatgcaa tgcatcaaat aagttcttaa 180

tcaatattgt taacagtata tattaaatat ctccggattg acgttgttgc taaattcacc 240

actaatataa cccccgatat ttctcgcatt cacgccattc tgtaatcggt ttgaccaatc 300

atcattcctc ctcgaaaccg accaataggg ggcgagtcgt cgtggcacga ggtggaggct 360

gtggggcggc cgagatgtac tccgcgctcg tcagcatccg gcgtggtcgg ctggagatta 420

caataaaaac gattcattag tggcagctgc gaggtgatga ggccagcaca gatctttatc 480

tccaaccata agcaagaacg ccaagcttat ggcttttaca attgctgtac gagatgtcgt 540

tattatagtt caagattact ctacatggac aatctagtgg ttacggagtg attgtcgttg 600

gactttcagt aaccaaccag ccgtgcacac tcggtgttga tatttctcta gtggcataag 660

tgatggagga gatgatatca tgtccattaa caaattttct tttatacaaa tacattgaag 720

tccctcaatt tctttttttt ttacttttct ccgcgatagt cagaacagac atggaaactc 780

atgcatatgc atgtacatgt atgtatgctc agtcttagaa acacacatag acgtgtttta 840

ccctactttt tcgaaagact aaaggccagt tcatttctgg cggtttggtc tgtttcagac 900

ctcgttcagg gtggaacgaa ctgctccggt ttcgaatttg gtgtggcaca ttttatgtgt 960

tcgttttgat ctgaattggt acgaaaactg gcctggtttg atttttttcc ttcgctccac 1020

aggccggcac cgatccctac ctcatcccct ccaaatcgca tccggccacg acgcgaagaa 1080

tcggcggcgt ggcgatgcga agtgtcggag tggcggcgtg cagccccgat gacgacgctc 1140

ctcgtcgcct tctcaccggt aaggagctgc tatctcttcc ttcccttctc ccatttgtgt 1200

tcttgatgtt gccgagctcc acacccctga gctcgtagcc caatcttctc tgtcgaatcc 1260

cctccttgct agggattaga agtcaaaaga tgtttggttg gtatagataa aacatagttt 1320

taaatatcat ggtttactca aaactatgat atttttggag ttttgtaaac tccacttagg 1380

acctcagttt tctatttttc tctctacaaa cactttgatt tttttcccaa tgtaaccaac 1440

atatctcaat tctaaataaa actgtgattt tactatggta aaataatacc gtattatttt 1500

tatcatcggc acagccagct tgcgattcta ctgtagacgg cttgtgagct ttctgtatgg 1560

atctctatct ctttccctag ttcaacagtg cagagcgccc agccgtgcat ggaccactgg 1620

gtgacagaca cctcagcaac ctacgaacag ccaagcccat gcatgc 1666

<210> 1158
<211> 1805
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_289919_G1, chr8:142376792..142378596, Cluster 7

<400> 1158
caggccatct aatcaactca gctatagagg ccacggttta gccaagcact ccattccacc 60

aacactactt gtgcgcacaa gttgtgggag agcaggtatc caaaacaaga gtgggtggtt 120

cgttagttat ttttttcata cgatattaac tgtttactgc actgagtatt taatacggac 180

tttttaaaaa ttttcaataa gttggaaata cgttggagca aatccacttg aatttaacaa 240

agacaactat tttattggta aggagtatat aagtatatat agagagagaa catcataaca 300

agttctattc tacgtacgcc catttataaa catagacaat gtaattaata tgtgagtgat 360

aaataaataa gcttcgtcta gcttaacttt tgcttgcaat ttgagttcaa tcgctcacct 420

gctagttaag tcatcttatg atcgctttcg ttttagaaga aaaaaaagcc tgcgtgacca 480

gctggactgt tttctcaccg tgtctatata ttcatatctc agcgaaggtt gcggtccagt 540

tcgagtacta gattagaagt cacatacgtt ctctcgccca gtttctcgct ctcccccgtt 600

gctaattaac ttgtttttta atgcccttgc tggacgatat gcatggatcg atcaagctct 660

ctcctgtgtc gtcgcttgca ccaaagtcct agtgtcccgc gcgtcaccac atcactctcg 720

ccgtccgcac atgtaataga acaccttata tatctcagca aatcacccgt tgaaatttta 780

tgggaggatg gagtaatagt agtatagcag acaattgcac ttaattacat aaagatcatc 840

tctcttgctt ggcgatgaac aacgccgcgc agccagtttt tttttcttca aagtctacac 900

tgttaaatat agtttcagcg catttgatta ttattgcctg cattggcttt tcggttctac 960

tacctaccag tccttttaat taacgccctt tcataattat attggtcctc catctttctc 1020

aatcagctct catgttgttt aattctatcc gggctagagc tagcgctagc taggattgtt 1080

ccatgggagt aggtgttgac agtttcaggg cctcgataga tctcattttc gagtctactt 1140

cttcttccct acgtacagct aggtaggtaa aaaagaatta tgaatctgag tcaaatgttt 1200

gattttcttg gatgatgacc ggggaagtga ttactcctta ccttcgatgg agcttctccc 1260

cattcacatt ttcagtctgt atctttgttt gtttgattat tcaaatcggt tatttgattg 1320

attcattccg gttactcgat ttcaaccgct gtatatcctg cccctcatgc atgtttgact 1380

ctgattttat tatcatacta cgtagttcat aacagcatgg ccggtgttgt gctacgactg 1440

ggaaaataag gccctccctc catctggttc gtttgaggaa ctcaccgttt ccatcttacg 1500

tgcgtgcttg acagaaatgc cttgactaca ttctaggtga tctaataaag caccttatgt 1560

ttgcaagtta aatagatccg gttgtgtgat taataaaagg acaacaatat aatagtagta 1620

acaattcaaa tatggaattt tgtaaggctg attccaacca tgcattcccc ctcgcatctc 1680

cctctatttg tacttttatg atttatttt aaatacccca gctctttcat ttacccccta 1740

tttatacact ccctattcat ttttaaatat ctcctctct ttcatttctc ctactctttc 1800

tcctc 1805

<210> 1159
<211> 1938
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291724_G1, chr8:151219312..151221249, Cluster 7

<400> 1159
aatttttgtt tctctatgta attctatttt agttcctaaa ttattgaata cagaatctaa 60

atagttttca tatttaacga actaaaataa aataaaatag aaaaactaaa aaagtcgcta 120

gaaacaaaca ctcccttatt atttgtctat tgagggatgc ctacgaaaga atcttttgac 180

ctgaactata aaatcagtag acggttacag ttttgtgtac tactctgcag tctgcgttaa 240

catcagtgcg ggcccacggc cagatcagaa gcgacgggga cttgtgttgt ccatagtctc 300

cgacgggcac ctccacggct ccaccaaaca ccccccttag tcatcagccg cccgttgtgc 360

gtggggcccg agatccgacg gtcgcggacg ccgtcgatgc ggagagccac agccgctttg 420

gagatcacca ttcaccacgc cccttgtttg tcgccgttat cttgttgtat acttgtacta 480

cgtattaatt tatttgccac tatatctgca tttaattcaa cgcccgtgca aaagcaaaac 540

tccgaaccct cttgttttat ctgacgcgac gctagtggcc tactactacg tccctgtcac 600

gagtgcagga gcgagagaga gagagagaga agggggaagg aggagcaggc ggaagcggcg 660

catgcaccgg aggcagaaag cgggcggggg gctccatggg gcccacgtgt cggggaaggt 720

aggcgctttt tggggagagc ttcttctgca cgtgttcttc ctcgcgtcct cgccgtggcg 780

agccgtgatg agcacggtac tagattccag atacctacta cctctacctg accaaaaata 840

ctaggcgcac atgggagctc caattctcca aagccccaaa accgggcggt tctccggctg 900

ctagcctcca gttgtgcctt tgcatcatga taattacact tagcacaaca tagtacgtaa 960

tgaaaccctg tcctagctga ataattcccc caggactaaa cgtttagaat aaaaggagta 1020

ggatagtcaa agttgtctat ctttttttat taagtttgca tgttactttt aagaagctaa 1080

taccaattct caattctcat atcgtaaaac aaacatacat aggtgtgggg gggttgaccc 1140

tgatggctga tgtatcaagt ttgctaaagc atggtacaat caacatacga tttgctctgt 1200

tcgtataaaa actgttgtaa ctaacgctca catgactacc agtgctcttg tttattcaag 1260

tagcaacaca tcattgcttt ttattctttt ttttcaaaaa aaaagtagag gaaaacatca 1320

tctctgcaca tcaatccctg ctggttcaac ttgctatggt ccgccaatcc ttatttacat 1380

agtttaaatt taaaactcgg aagagaagtc aaccaaacta tctcaaggaa tattattttc 1440

aaatcgagga aacatattct acctaggcta cttgctcttg ttgtatgatg attataccta 1500

ctagaccact tgcggcaggc actataataa gtaggacatc aatgcgacaa catttaactt 1560

ttcatctcta ataactgttt tagtggaatc catatttgta tgttggacct aggctagtgt 1620

cagtggggtt tcgtgagttt tatttgcgtt caatacgctg tcacataaac atgttcgtga 1680

tgtgacaaca tttttaagaa gagagaagaa acgagtttta tgaggataaa actctcctat 1740

cataattact aattatttat aagtagtaac attaaatata ataaaaccgt ggaacgtaac 1800

ttttttattg agaatatatg ttgtgtccat atttttattt aactatatat gattcctcta 1860

tcttagaaac aacgctacaa aactcatcag acattgcctc cctaaaaatt aactagctta 1920

attcatccct agaaacta 1938

<210> 1160
<211> 2139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29179_G1, chr1:178419168..178421306, Cluster 7

<400> 1160
ttggccggtg gccaacttaa atacaacatc ttttttagt gggcatgtac aaccccgttt 60

aataccccgt ctcttgaggg gtctctaggg tgttaaatgc aaaaaaatac aagggacgaa 120

ttcttctctg cacgactctc tatacgtaac atttatgatg tgactgattt taaagaaagc 180

tcattgtatg atgcggttta ttactaggtg tctcttatgc atagaaaacc aatcaagagg 240

cttttatgtg tcgcgtggtg ttattatttc acagcttgtt tatttacgca tgcatgcatc 300

atcgcactct atatatgctc cactttcctt tactcaacat gtatgtacaa cagacatgca 360

tggataaaca tatataatgc cagcgagttc atctgatccc gttctgcata aaaagtctga 420

gttgtagctc actcctatac caggatggtg ataacatgtt tatcaatgcc tagtttgtat 480

taggactggg atgtatcaag aaatcatcaa catcaagatt ctctcagctg ttgttggact 540

tggcacgtct acggccaaga agctgcattc tggtgcctag gaaacccacc gcatggattc 600

tgaggagaca atctgctgga agagagatgc attctagttt tgttacatca cagttgctct 660

ctaatcatca tagtagcctg ggtttgtacc atgtgctagc tcctagttaa actgctctgt 720

cagcttgttt ctcatgacaa acacaaagct tcctcctcct ccattttgga acattttgta 780

ttgattgcca atgacatgtc tagagatttt agaattttgt tcaaattaat cacgcgctga 840

tgagtttcca ccttcttcag aataaaaata cattctggcg ggctctactt ttcatatctg 900

ctaaatgttc tcatgttgcg ttattttgaa gatggaggat gtttccctcc tgaggcgacc 960

caattgtcga gcaaaaggtg tggctccagg cttcaaagtc atgatcttgg gtgcagccac 1020

ttgcactatt gatgaagatg gacccccttgt ttcagtgctc catctatatg atgtcgtcaa 1080

cgcacctggt gtcatagcta agtggctgac atcagccaca tgaacactgg tgctgtggta 1140

tgctcaactt tatctgagat cactttacga tatctttgaa tgttgattcc gaagaattgg 1200

atggtagatt actgttgtag ctagttgatg gtacatgcac ctctattgca gttggatatc 1260

ttaggtcgta ttagactatt agctatttcc tagtgtactt aatactcatc ctgaaatact 1320

ataaattttt ccactaaaac gcttgggaaa caaattgaag tttccctgtg gaatatagtc 1380

acaatcgttt tacctggatt tcttcaaacc attgaagaat tatattttta gtgtcttaca 1440

gctcactgct aattgtggac aaagctccaa acagaaatat ctttgaccta cttggtggtt 1500

actttcagtt ttctgatata agagtttagt ttttgttggt ttccggttat gtactccact 1560

actccctgga taccccttgac cagcctgtgt tgtgttatag aaacacataa taattcatct 1620

tgttcaccat tatgtctatt tttgtatctt ttggtttagt tatgctaatc tctaaattct 1680

gtaggtatgt ggcttcttgg gccagccaca gttggaaaat gctctgacta gaatggatct 1740

tgtaataatt catgttgggt gtccctcaga aacctgggat gacaattgac tagggatgat 1800

ttgttcaaca taaatgctag aaacctagaa tagtctgtat cctgtgtgaa ggaattgcaa 1860

aatgcttccc taatgcaatt gtgaaaatgg tttcatggtc aatctttgtt ttaaattgct 1920

cctgctctaa caaatcatgt ttccaagaga aataggagga gcagatcagt ccaaggagcc 1980

ttaatagcca atggatgggt aaatggtctc tctgggagcc ttccggcgca ggtgttgttt 2040

gagtttctgt tggtctggga tttactccaa aaggtgcaac tgtagctgta gcctaatgtt 2100

gaggaccagc accggtggct gccgtcttcc ttggggctg 2139

<210> 1161
<211> 1970
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29180_G1, chr1:178422012..178423981, Cluster 7

<400> 1161
tcctgtcaac tctaccattt cctccaattg ctcctgaatt tttcaagaaa gctggaactt 60

atgaccctaa gcatcttttg gatgtgacca cacttgatgt agtgagaaca attacttttg 120

tgtatgtata tcaataaggt ttgccgtgat atgttaccct attgtattcc ttcatgggct 180

aaaaatattt tctttttaca gggagaggtt cttggacatg acccaaggga ggtaaatgtt 240

ccagttattg gtgggcatgc aggattacga tactaccact cctttcacag gtcaggagta 300

ttttcaaact tcaactgcta ccaaatacct cacttcgcac atacagaatg gtgggacaaa 360

agtagtcgag gtatactgtt tgttacagtc tacgaatact cctatgctgc atctcttatg 420

cacaatgaag gaaaaaaagt cagttccaca tatcctctga cctcttttca gtttctctgc 480

tatgtatatt gattcaattc tgtgtccaat taactgtatg cacgctggtt tcatatgttt 540

ggctgaattg agcacagaaa gagtccaatg tgcttaattt tgagaataag aagtagatca 600

ctagtgccag tttatgcaca atcactgcgc tatatgagac acactaggca cattttgca 660

taatggttac atcttgatcc tgacaacaag agtctactac tatgtgcctg tttatgtgta 720

acataacctt atcgttttca taccaatgtg aaatactagg ttcttggtat ttgttattta 780

catatgttaa ggtattgctc ttgttatttt ttttcccgaa ttctggattg ctgtgctaaa 840

taaaaaaaac atgttttttt ttttgctcat tattggtatg tttcaggcta aagctggagc 900

aagatcagca actctttcaa tggttgggta tcttgtatgc acatcaatgc ccataacgtg 960

taagttccaa atgttgattc agtgaacacc aatactacac ctttgcaggc atatgcatat 1020

gcttgcctgt gaggattgcg tggtgatgct gggatagcag agtgctctta tgtagcttct 1080

caggtttatt ttctttcctg tatacagttc aaaaccatat ttcaggttat gctttgattg 1140

acctttttagt tgacccgaat tattgatttg tgagttgtgt ttctctcgtc ttgtggttga 1200

aggccacaga gttgcatttc tttgcatcca aagtgcggtt aggttagggc gatgtgttaa 1260

acgagtttga gaggtcaggt tcttgttatg aattgaagtt gccttgcatg gtctgcagca 1320

tgattcatca gccattcaca catgctttcc gcttaagtat atcccagtaa gattagtttg 1380

tttgttcttg cctttcatct agaactacag gttcatcttg cttggccact catgtcttcc 1440

ctatgacttc ttttctcatg cgcatggaca tattggtcac aagtgtttca tagaccagaa 1500

tacagttccc aggagaaagc atggatgcgt catgtatgca gccatgcgtg ctcaaccctg 1560

aacgaacata gatgtggcgt gttctggctt cctgagagct ctcatcttgt tatccctctg 1620

taaaactgtg tacacggctg tgctaaaaaa ctataaatat gtggcctcca aaggaggaaa 1680

tagaagaaga aaaaaaaatt gcttctgaag tctgaatgtt tggtccccaa tgtacgggat 1740

cagatggtat tagataatac gtttgcagtg tatggaactg tgtgcgaatc acaactgaga 1800

ctgtccttcg cgctacgttg tttagtcacg taaatccatg gcgggatttg tgcatgatgg 1860

gttaacttgt acagccttca gctatatgta cttctctatt gctgggtacc tggtaccgag 1920

agagaggaga aattttggct gtggtggtgg tggggatatg aatatgatac 1970

<210> 1162
<211> 1578
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292667_G1, chr8:156265822..156267399, Cluster 7

<400> 1162
ctcgtccctt atttttgag gaatagcctc atccaccatt tttgaacaat attgtttgac 60

cctgactctg gaccttcaaa ccaaacgcag gtcaaattaa aatgatctca tcctatccct 120

cttcatcctt tctcgtcgac acgtatacgg cgccgctgca gcagctagcc gttgtagtcc 180

atgtgcgggc agtgcagatc cgcttaattc ccggacgaga cgtacgacag caccggcggc 240

cggctaggag cctaggaccc gacgacgcaa cacaaaagga gtggacgaca tgcagccgag 300

atggagacgc gagatggagg ggcgcgccac cgatcgaatt gcaaaaggga gtgggaagct 360

agctagacta gagcacatgc cgagcaaatt gcaaaagtgt ccctgccggg cggatcccaa 420

ggacccggca catgcgcgcg tgcgtgctgg cagcctgcag gcacggctgt ggtctatcgg 480

cggccggcca tagccatacc cttctcctcc tcttctccga tcccatgcca tctatctagg 540

gaagggatcc ctcttttgcc cttttggcac gacgagagag tgaccaccgc ccgccgcccg 600

cgcgcactct agtgtaaggt agctagtagc gcctcgccac tcgatcgcat gcacgcactg 660

ggtgggcggc actgcatatg caacctccca ggtccttgga acgaaacccg acccatgctc 720

tacctcctgc atgcatgctt tccgagcatg gctctggcct ctggcagggc cggcctcgct 780

cgcgctctct cgctggactg gccgccggcc gccggggctg gtgccatact gccatgcata 840

tggtacgacg tgcgtgagag gtagacgaag aacggtgtgc actgtgcagt gctggcccgg 900

caccggcacg tacataaagc tgctgggtgc gcgcgcgcgc gcgctatcta tcatatctat 960

atcttccaga gtatctcctg aatgacaagg cctccctcct gatcctgcat gcatgctgat 1020

gatgatgatg atcactgacg acgacgaccg accgaccttc cgcggaacac tagcgcgcta 1080

gcctaggcgc gcgccacttg tgccgtacct cctgtcgtca gggcatatgc accggagatt 1140

ctctcgtagc catagccatg tcacgcgagc gaggcgcaga gcagtgagct gacagctgag 1200

tgcgcgctgc agcctggcct gctgcaggcc ggttactata tacgttggtt ggttggtcta 1260

ccatatcatg cgtgagggct ttttgtcgcc ggccggcctg ccaggtctgc cacgcgcgag 1320

agctagctaa ccgatcgcgc atgcagatgc agccttgaaa agtcaatcaa tgctgaccaa 1380

tcaaagcctg tacgtacgtc tgtgtttaat cgcagctttt atttcgcttc tcgaccacct 1440

ctcttagctg cttgatgatc ctttggtcta gctacatgga gtggcgcgcg gccgctagct 1500

agtgcgcgct cggacggtga ccagtctgct cgacctgtgc tctctcagtg tgcaaatgca 1560

tgcttgcctg ctcctgtg 1578

<210> 1163
<211> 1626
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292888_G1, chr8:157729270..157730895, Cluster 7

<400> 1163
cattatttgg atataacatt gtaaaccatt gtattaagca aaatctaatc atgttataaa 60

aactttaaat tggagtagag ttttgaatac accaaagata tcatggtatc tagaatatca 120

tagttttgaa aacatagatt taaaaaatgc catcaaacgt ctcatgacat aaaatactat 180

atggtattag tattacatag aaactgtaag aatactccca aatggacccg aagtgtactg 240

attccagctt agaatgttta ttttcaacac ccatctcatt ctctatctca taaaacaata 300

tttacacaat cataaatacg atttgctgga catagcctta tgcaaatgca aaatgccacg 360

ttcgtctggc tttagagaca attaacaccc ccaataattg tacagtgcta cttacaaccc 420

cacatccatc tatgcttaga agctaactgg cgaatatttt ttttgttcaa gttagcttac 480

ataatcaact tcgtgttaga taaaatagta aaatgaaaaa gaaaggagaa taaataaatc 540

tactcagatt catgcaggct tttcgtcaac aaacagaggc aatatacgtg aatcttcata 600

ttacgaagca ccaggggcca gggcacacgc caagcttaga ctttgtgcga ggtcacatga 660

ccgacgaaac ctcaacagag ggagttgcgt tgcgtccacg tgcaaccaag cgcagatgtc 720

aaagaatctt tggtacaagt atgaatatgt ccgtaaagac tgatcatcaa tgagactcga 780

tggctgataa agacgtacta ttatgaacca aattatcttt gcacggacaa gaaatcgtaa 840

gtagacgtcc acatttttgt gtttggatca atttactcct cctccattgc aaattatatc 900

gaaccagtgc caattgcagt tgcagcgcac cagtgcatgc caattgcagt tgcagcgcag 960

gcgagtgcac tcgaagccag agggtccaaa ggagaagcac agctcgagcg cttcatgctt 1020

gagtggatgg acgtgtgtgt gtgtgacaaa aacgctttgt gacatgtaca gcaacccccc 1080

tgcatgtctg gggcatacat cttacatgag atctatgcat atatccatgc cgaccaatgc 1140

aggttttccg tagtatatat tcacatatga aagcctgaac tccgcagctg ttctgttgca 1200

gcgccatcac cgatgggggg catatggcag tggcagcacc gagtaatagc ttcccctcgt 1260

taatcgaaac gggcaaaagt cgtcacatgc acgaaagcgg gcgcgacgac ctcgatagca 1320

agatgcagta gtgcagatgc cacaaccttc ttcctccagg gacagcgcag cgctacgctt 1380

gcccacaccc acacacatct cgagtacctt tccccggatc agcgacactt ggacagacct 1440

tcttttggtc aggcgacgcc gaccgccacg gaaaaagggc ggcgggctgg caggcttccc 1500

gacgcccatc gcccaagagg caagagcggc gtttggaacc tggcagtggc agcgacagca 1560

cgccgaccgg aaaggatggg cttcgccgct cggcgcggca atttcccggt ttattttcac 1620

cgggaa 1626

<210> 1164
<211> 2436
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294390_G1, chr8:164958335..164960770, Cluster 7

<400> 1164
catgggcctt ttttacttca tcacctactg caagagcttc ttttcagatc attcgccagg 60

gggttattag ctaaggaatg atgccaggtt tggcgagcca tttaacaagg ttatgagatc 120

ttttgggcgg atgtgatcaa ccaacaatta tcagattaat tctattatgt gtacgcaaac 180

aaaacaaacg aacaaaataa atgtcgacgc atctaattgc aacaaaagct gagctcggcg 240

actgctggtt ccaggttcct atcgatccaa tccgtggcgg catcacatgc attattatcg 300

tctgttcact cttgtcttga tttcaggaaa cagcgtacac atcaacagct tttcaatgaa 360

cagtctggac tactactgca ggatctaact aaccactagc taattgagat cttagcttag 420

attggctcgt ggtacagtta gatctaacca aaaactggtg agtgagtggg tgaattagtg 480

gtggattagc gtgtgggccg gggtctctcc aatcgttatg cgtactcggc gggtcaccgg 540

ggcacctgtg atcgcaatct ggaatccctg gagctggagg tgccactgcc ggctggctag 600

caggatcgga ggtgcccatg ctgacatgca tgctgtgctg atgctgctag ctctctatca 660

caatgtatcc ttgtattctc ttgtactagt aacaagcaag ctccaataat cctgcttaat 720

tggaatgaat aaaaaaagca tattttgtct cgaaatgcac gaattttata ttactattta 780

ccggaacaat atagtttatt gcatcgtcag ctgcttgtcc tcttccttcg tcccttgtcc 840

actatttgat tgaggctggg gacaagctaa gggctagctt ggggaacgag acgagcaggg 900

tatatttctg gagatccggc ctggacgcta gggtacaata atgcaaagat tgtttaccac 960

cagcatctgc ttgcacacgg gtacgcactc catgcatgaa ttgttggcat ttttaaaatt 1020

ttttttgat ccacatgaac tgacgacgaa ggacagtcca ggacgcagct agcagggcta 1080

gctagctgag atggatagat gaattgattg gttccagttt gtcagcatca tcacatcggc 1140

tggtaacgta tatatgtatg ggcaggcaga tccaggacag tacagagaat aagagtttag 1200

tagatgcatg gatgggttta gcatgcaaca atgcatgctg atgtgccatg catgtttcat 1260

gtttgtgtcc tccccaggcc ccagccatga gggtacagta cttgctaagc tctctgatgc 1320

gtgattataa tattgttgct gagggcaaac aatcaggcat ggagcggcat tgacatgctt 1380

gttggatcga cgtacgtgca atgcaacaca acatgcttgt tggatgcatg gtcgctgacc 1440

ttgaagacaa agcgatccat catgtacatg gcttggtggt ggtggtccgg gccatgcatc 1500

tgactctgtc tctcatcgct gcgacgtaca tggcttgttg tgcaccgtgg agggatcgaa 1560

aaggacgaac tttcacgagc tgtccgtgtg attgatgtgc cctgtcctac aggctacaac 1620

tgctatatgg gacgacgcaa accctgtcgt cctgcacgta cctacgtgcc ggccgggccg 1680

ggaaattaaa gcacccgtat cggactgtag gttgtactgt ttgttagata accgtgcact 1740

ttgaaagttt aaattagttc ataaagcaat tgtacaattt gttagatgta attgtgtact 1800

tttaacatta aattaattcc taaaaacaat cataatatga accataatca tgtatagcaa 1860

ataaaaatat acatatataa cagattaaat ctatcttgaa cgtatctaat aactcaaaca 1920

caagcgaaga actcagcatt actcgtagca tggatctctt cggcctggtc aaagattagt 1980

tcgtggtgtc gttagatgtc gaagcacggg tcaacttggc tagccgtcgc gtgatcacgg 2040

tccaaaaaca tgattcgtct caacacatgc aggttcttca atgaagtaag gtattaaaga 2100

cactgctctc tccatcatcg tcacaccaac gccaagaatg gaggagcttc acgcagcatc 2160

aggggctctc tcgtctaaaa ccctaacccc tagtagattg attgttctca taacttttga 2220

gggaaatacc ctctattata taaagggatt gtgctcaagg taaccacaca taaagaggta 2280

tgaaattgac tatgttacta tctccatgat ctaatggatt cagtttggaa cttgtcgcgc 2340

aaagcataat cagattatta tagaaaatgg aaaacataga agtggaatta gagtcggttg 2400

ccacgttcca agtcccaagt cacgtgaaaa aacaca 2436

<210> 1165
<211> 2791
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295573_G1, chr8:170216005..170218795, Cluster 7

<400> 1165
ttttgcacta atcacaattc acaagttcac aactgaaaaa cagaagaaga aaaaggaaat 60

atacttgagc gttgggttcg tgacccaata gcaatattct acggcggccc aacaacaaca 120

tttttttaa aaaaaaagta gcgggtgttt gtctggttag cggacgactc gaatccgacc 180

agtcgaacac atatgggcca cccaaagcac cctaaagaag ggagggaata tgggcgaagg 240

ctgaagattc gccaaaatat ttgggccttt agctgccttc ttttgtctta ctcgcaggcc 300

tttctagccc acaagcttct gccacatcca aatccgaaac ccaaaatccg gcgactcgtc 360

ttttgtttct caacttgtca acgccacagg ccagcctccg cagctgatcg gtgcatgcat 420

gagtgcggtg ttgtatctgc gcacctgttc atctcatcgg ttaccagacg cccccggctg 480

cttgtgcttg cattgatcgg tcgtggatgg agatggaaga ccctgccggc cgcagctgcg 540

tccagaactc cagatgcgag ggcacggacc gggtgtgctg ccgaaaggcc gaaatgcaca 600

caccgtcagt ttcaatcaaa gaagaagaag aacttgtgct ttggctttga ttggttgttt 660

ggctgcatat tggtgaagca gacccagcag gtgttctata ggtgtgcctt cttgggtgtc 720

ccagcattac tactcccttg ttctcactga agatttggat gtcttcgtgg cgcagattca 780

tcatggtgag tagtaggtcg gtcagagtgt cggtggtagt caatttcagg tcttgggacg 840

atgtggtggg ttccttgatc cttggccaag ttgtgcagtg ccatgtgggg gtgatgatgg 900

aggtgtatgg acctagctag aacgtatgaa gtaattgaca tgaattctat cttctcaaaa 960

cgtactcctg ctattatatc cttttgctct gtagaaacct cttatgtgaa cacacataga 1020

atcatctctc ttcttctgct tcgagttgca tctgagtctt ttggtcccct ctacgcatgc 1080

agtttggaga caaaatgagg agtgcctcct aacgtggtgc atgcgaggtt ggtggcacgt 1140

cgccggccgg aggggaatgc tccaaatttg tctccggccc ctcgacctca gccagccagt 1200

cgctccgggc ccatccctag ttttcttttc gcaatcggct attttagacc gtgtccgtgc 1260

ttggagtgcg ctagctagaa aagcaaccgg accgtcgttg gcctttcgca atcggctatt 1320

ttggaccggg ccgggatggg ccgtggcccc cctctctctt attatttgga gcgccattta 1380

taggcctacc aaggacagga accccaccac cacggcacca ccctgccctc ccgctcatcg 1440

catccatttg gagggccttc taggcttcta gagatggctg atgtgatgca gcaggttgct 1500

gatgtgatcg accgagcttt gttcatgctc gatctgctaa gtagtgctat cgtttcttgt 1560

acgtgtgcta gccaaaaacg gggaaagagt aggaaatgca ggccactttg caactactcc 1620

gatccgggcg gccggagaaa ttgtcttgat ggggtcagcc atttttctag ggtacagggg 1680

ccagtacagg tacatgcacg catgatgcat gcacgccaag ccgtcccctc cgattgctct 1740

acctaaaagg tgtgtccact ccatgcatcc atgataccct ggagattgat acgggggtg 1800

gctaccacaa gtccacaacc acaatgcaat gcaagcgtcg tgcaagcaag ctttcatgta 1860

cccgacgtcc gacgagcccc gattattctc ccgtccatac atctgtcccc tctcaaccat 1920

tggaagttgt ttatcttggt aggtactagg tactagctag gggtacgtat cagctgatcc 1980

tggaactttc cttcatgcgg tgatgcctga attcgtacag caaaaacgat gggcaaacat 2040

ctactgtgac tgtatttttt tttcagcagc agagatattc gttagtgtct acaacttgat 2100

gacagtatgc tagaaaccaa cctttatccg gtagctagtg tctacttgat gacagtatgc 2160

aagtactgat cgggggggaca aaggtacaga tatataggta ttgatggcat cagaaagatg 2220

aggaaatgca tgcaagctca caccatcatg attagtaggt gccctgatta ttgtctccac 2280

taacaaaata ttaatgtggt ggattaggtg caacatcagg atccccccct ggtactatat 2340

atacatttat accacaaaac agggcaatca ttcgtatgac ggataacacg tatgtactac 2400

aacaacttga caattaacat atggcaattt gtaggataaa caaagagtgt tttcaatatc 2460

tgccccgcgt aaaacgcagg aaccaccgca aaacaaagaa aggagaaata catgtggaac 2520

aaatagaggg acatcttaca aattaaggcc tcgttccaaa catctaaatc tagtaatagt 2580

taggagctaa tgttagttga gaggtttaga acggatcagg taatagacta gctaatggta 2640

acttatacct ttcgaataac tattagttgt tagctgctcc aacccgacta aaatcagctg 2700

ataacatatt agatgactaa gaattatctc tagatgtttg gaacatggca taagtcaata 2760

gacgtatgca aaatattaat atatataaca a 2791

<210> 1166
<211> 1624
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295587_G1, chr8:170243956..170245579, Cluster 7

<400> 1166
ggtctaaaat agcaaatttc ccgcctcagg agcaggtgtc aggtccgcat cacgagccta 60

gccgagccta gcctagccgg tacgctacta aacgagacgg acatcatgca tgggtgcacc 120

ttccgtctac gtacgttcct aatcgctcgg tgacgaataa ataatcgacc aggagtccag 180

gaggagctta tactaatggc gtatcgcagc tatactcacc gcaacgcccg acaggccgat 240

taaaaataat cccgcgggga ggcctgcccc ccaccccacg gccacggccg gcgacggcgg 300

ggtgcatgat ctcggtgatt gatcttccta ggcgacgcat gttttatatc tcaactataa 360

taacaacaca ggtacatatt tagagaacga gggttgaagg atcgccgagg cttccaagtt 420

ccaaccttgg tgttatggtc tacggatcga atctattatt acctcagcgt cacgagtcac 480

gtcatcaata ttctgactat aaaaatacaa ttaaaatctg ttcacttttg attaaaatca 540

gttgtttaaa ctggtgtaac tacaattcat aaagacaaaa atattttaaa aataatagaa 600

atcgataccg atttagacag gtaacaaatt gtttgtatag gcctcgcacg tgtgttgtca 660

catcaggtca aagtctactt agacaggaat tgagttgtct tctatctccg tctacgagtc 720

tactaccacc agtccagcag tacatttttg tgtacacgag tacgggtgct atcatcgtag 780

tagtaggata ggaggagtac gcagtacgtg gcatcaggtg ttcctccatt cactttattt 840

gacaagggct cgtgtgtttt gctgccgctg ggatgccgca tatatgcaat ggtacttgtg 900

tggatcgatc gataaaatct gtaacgacat ctacctctat cattggttcg atctcggcac 960

attttaagga cacaaaccac ccagaaatta aagcgattgc aacacgtacg ggtgtaaatt 1020

cttctctgca agctgttagt tagaatggtg caaggtcaag ccatacattt ggtcgtgcct 1080

tttttatttc tttatggcta tgaaggtatt tcttcattta ttgctatagt gggtgaaaaa 1140

cttcgcattt ctgttctaat attttcttct tgcctaacag gatgttgctg aaaaaataat 1200

gacgttctca ctgcaagacc ttgaacatca ggctacagat tgaagaaaag aagctcaaac 1260

tcctagaaca tcatgctcgt ttaagggatg aagttgagca tgaacaacaa gaaatcatgg 1320

caatgccaga taggatttac agaaagtctt gtcaaacaat gcgaacgcca acttgtggag 1380

cttctaaggc aagttcaaca gttgcagaga gcttcaaggg agaaacatca gaaatccatt 1440

ttcctgtggc gcaaaatgca tagagcttca agagcgaaac agttcattgt gtttctaatt 1500

tttctaaata ttttctattt ttcttttatt ttttctgatt tttaagtatt ttgccgggtt 1560

ttagcatctt ggttgccaaa cagtggcaga gaattacacc cgagtgagga aaatccgttt 1620

gttt 1624

<210> 1167
<211> 1982
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295746_G1, chr8:170994895..170996876, Cluster 7

<400> 1167
tgttatacac acatcattgt tgtattatta cactactatt ttgctttcac cataaaatta 60

tactatctta tttgagttcg aataaacttt taaatttgaa aggcttcatt tatccatctc 120

agctatgtta aacctgtaaa ttccccaaat tttatttaaa aatgaaactg tacatttaga 180

ctattagctt ccttctacgt ataccctttt ttcactattt ctttttttat aaaataaggt 240

aactaagtgt ctgagttgtt tgctttgtac tgcatacaac ctaaccctat agattgtatt 300

ttcttttcaa gccaaaattt ttaataccta tatgttgggt tggaggacag ctacttttc 360

taaaaaggaa ctataaaaaa ttattaggtg aacctttata tacttcagcg ttgtacactt 420

tagcgtctat caaagccggt gtatcatctt cgtcaatatt aaacaaatat agttgttgca 480

tctcagttgc ccatcttgcc catctgttct tcagaaaccc tggaagacct gtaaatgttt 540

acactaatgc tccaaacaaa catattttct tttccttgat gctccaaacc aacttatgtt 600

cttttcatcc tcaggatccg gcatggctcc ctaggccgag gtcggagaga tcaaagacgg 660

tgaacgggtc acagtcacag cccaggccga gggtcgacag cagggcaagc ggaggccgac 720

tggatagacg acgcgccatt catgaagagc attaatctca gtcaatgaag actaaaggag 780

ggatattact attcgagcaa agcacgaggg agtttagttt ccattttaac ataacgtgcc 840

gcacgtaacg tacgatttcc attttggaaa gcccactcca ctcggctact ttctttaata 900

acaaaaatct cgtcacctta tttttctgtc cgatatatga aaatctcgta cgtctctatg 960

ctttgtgcat gctatagaaa attgcaactt gtgtgtgagg gaggggcttt ctctttgtaa 1020

agttgatttt tagggcggcg agacgcgaca attgtacgtc gtaccaattg gttaatacac 1080

catcgggtca aacttatggc gcgctgcact gctaagggaa gatacatttc tatttatttc 1140

ttaggcatcg ttgcgtagta ggtgcaacaa caatatttaa catattatta aaaaaacaat 1200

ttctcgataa gtgacgagtg taattaaagt ccataaattt aattaagagt agtaaaagat 1260

atttttctct taattattca ctaattcctt ttaaactcgc tagaaatccg ttctttcgtc 1320

agaaagggag taatatatat gaaactccaa atgccacgtg acatccaccg cgttctcata 1380

gcaatccagc ctactgttcc ttcctgtacg tgtacggccc tccaatccgg ccacacccgc 1440

acgtgtatca gtattagtag tagataaacg aaaggggagc acctcaagaa aacgacttgt 1500

acaatctgat cacatcacat cacaacgact ttgcagcctt cataggattg gaacgcgtag 1560

taaagtaaac gacgggattg gacgaatggt atgctacaga aaacaggaga gggctgaacc 1620

tgaacgctga cggtgacggc gactgacgtc aaccaaataa aggtagcctg cgtaagtaaa 1680

ctagtgttta ctacataaac aatagataaa ctacatgtaa tgagtaatat aacatgttca 1740

tatagcaaat taaatatgtt ttgaacacat ataacacaaa gatgagtgag ttactcataa 1800

ttactcaacg aggatcactc caacatgatg gaaaatgagt ttgtggtgtc attgattctg 1860

taggttttca tagtgcagat gagcagtcgt acatgatcac tgccaaaaaa aactcatttg 1920

ttccaaccca tataggttct ttagcaaagc gatgttttag agacagtgtt gtctctgcca 1980

cc 1982

<210> 1168
<211> 1491
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2976_G1, chr1:15176287..15177777, Cluster 7

<400> 1168
cacatcggcg cttctgctcg gcacggcatg tgaaactgtc agggcacagg ggtaggttta 60

ctgacaaggt ttgatttctt ttccagctgc tgagcacggt ccgcgactgg gagcaaattc 120

aatgcccttg ctttctcccg tcccggccca ttcaaaccgg gccgtcgttt tagttttttt 180

tatgttttac ttggttttag cggcgaggcg atgcaacgaa gaccacagca gcaaactact 240

attgtttcag ggtcatttct aatactctct ccgtcctaaa atattaggtg gcgcttggca 300

gagtttgcac agcttcgctc agagcgagaa tcactcttac taagccaaat gataaaaatc 360

ggaactgctt catattgaga gtggagtgaa tctagtctac actatgtatt agaaagtgag 420

aaaaaaaaaa catgcttccc actactccca acatgctccc cactctttaa cccctcatga 480

atcatttcac agcctatttg ccaaacaatt ttcgtcaaat atattcactt ctagtagaga 540

atcactcaga atcaccaatc agctctcgga actagagaat tgatcaaaga caaactctat 600

taccttcaat gatatgtggt tatgattcat gttggcaagc tgtgatcctg ttgctgctgt 660

tcccctggta ctttttttt tgtgtgccgg ttgagttttt atagtttatg ttgtgctgca 720

tatgaatgag ttttggtagt taccgtggtt gccgttcaca gcggcgttgc ctgctgttca 780

tatgttggca atccgtgaat ttgcatgctt ctatatatga gtttggtgtt caattgtact 840

tatatactac caaaaaatac catagtttca gtgggctgaa gaaattaaaa cccatgcatg 900

ctagtaatgt catagctagg tgtataccat ggttttccaa taccaaactt agctaccaaa 960

cacatactac tgcatctgta tatataatgc actggtgtgc agccgtcagc cgtgtgcctt 1020

ctgaagcgtg aaacctggta aaaaaaaaaa aaaacggggg aggcaagaag catcagggca 1080

ggcaggagga tcctagtaca tatcctactt actggcttgc agcaaggcta gctgatggct 1140

gcgtgcgtgc ttacatgatg atgatcatgc gtgtcgttcg tactcgtacg aggatcgagg 1200

aaagacacca taactcacct tcaacagaca cccttcgtta ggagcatgca cggatagatg 1260

gcgtctagca tatcgatagg acatgacaag tggtacgatc cccgtcacat gtccatggag 1320

gcatctgata tggacacggc gtgtatctat cgcggctgga acagaaccag cgctcgcgcg 1380

gcggtcggcg ggagggacag accttggctc cgtgcgttca ggttgtgctt gtgccgcgcg 1440

ccacgcacgg tctccgccgc ctgcagctga aattttagat ttacatccta c 1491

<210> 1169
<211> 3702
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299907_G1, chr9:12810342..12814043, Cluster 7

<400> 1169
agattgattt tagaagtcaa tttgcgagaa cttttggaga tgctctacta tttatttctc 60

ttttggccct gtttgtgata gcttcagctt aaaaaaattt agtagaattg ttagagcagg 120

tcattagatg ctataaaaaa ctatataacc gaaggtgtaa gactttaaaa gatatttaaa 180

taagtcattt tatttattat ttagaataaa aatattttta aaactattta aattgatatt 240

ataaactatt gctttacatg gagctaggaa ctggagcatc ccaaagacct cgaacgtatc 300

tcgaggactc gcggaactac tggagcacag agcagtttgg aagcgaacat cgcaaccagc 360

agagcgggcc ggcccatcgg ggaggaggag accagcaaaa tccgctagtc ggcgaggtgc 420

atggtccgac cggtcagacc ttaagcggcc ccttgttgga cgagttggtg gtctgtttgt 480

tgtggggatg tcgtgtgttc tcgcagtcgg cccaatatat cattgtgttc agttattcgg 540

cctggtgagt ggtgacggct tgggagctcg gccgtcgtac agcgcagact ccgcggaggg 600

atcgcctatc gttttctgat ctccccgctc ctcctatgtg cgagccacgt gactgaacag 660

aaatgacaaa ggatcccaaa ggccgaagac caaagcccaa aagcaaaaag ccgagcccac 720

tcgcgcaaag tggagatccg catgcgcgac gcgcgctact ttcagagctg agacgaagca 780

ggggaccctc aagttaaacc atcactgaca gtgggtccgt cgttgcactt ggaccctcat 840

gccgtctcag cggcgctgcg ctcacgccgt cgttcggcac tccggcggtt ctgcccctct 900

ccactcgatc gctggccgcg cgcagcgcgc tacgggctac ggtgctagtg cgatcgccgg 960

ttatgccgaa agcggcgctg ctctttgtta ctgcatgtgc taatcacctt taggatgtga 1020

taacggaaaa agcgaagcca cactttggtg acctttctgt acgagaagtc gagaacaaac 1080

gaacggtgga tcacacgcgt ggcaccactc cacgactgcc gacgggacgg ggacggggac 1140

ggcgcgacgt acgcactact ctccaccggt ctccactccg ctcgccaccc gcccgcctgc 1200

ctcggaatcg aggccggccg gtgctcgtga ttccagtcct ccgtcgggcg cggcggcgtc 1260

agcgttcctc cgccgtgtgc cgcctccctc tccatggatt tcgtctgccc cggcgacccc 1320

gcggtgcgat tcctaaaccc cgccaaaacc ctacttgttt ttatttttac cccgggcgcc 1380

ggacgtacgc tggggttttt gaattaccga tcgcgacgtg gtcctaaccc gtgactgttt 1440

tggggcggcg atctctcggt gcaggtatgg gacgtcgacg ggaggcgttt cgggccgtgc 1500

ttcgcggatt tatatccttg ccttttgatt ttgatctcga gtgggttgca gttgcagttc 1560

tgtggtttgt tgtcctcgag tgtggtttgc cgttggtgtt gttctgaggt ctctccttaa 1620

cacttttgtc gtggttgcac ggtgctggga ttcgctggga atgcgatcgc cgcggttgct 1680

gcacttgggc tcttcctcgc caagaggaac acaaacagag ctcaggtact tgattttgct 1740

ctgcatcatc tactacttct ccgtttaata aagtaatcga tcatttttgc gatcatttcg 1800

aggagcattt cgctgtcaac attcaggcta tgttgactat ttggaattcg taggaaagtt 1860

agttgctaac catcgtctct tccagattct gcttttgcat gacatattgg cattcaaaaa 1920

ctgtaaggga ttagacagcc gagatactcc tatcctaaaa tagttgttgt tcttgttttc 1980

gagaaatcaa ttctttttaa ctttagtcaa atatatttta tagtatataa ccagtattat 2040

tagataggcc attgaatcta tctgtataat aaatttattt agagatgtaa atgcatgttg 2100

ataatatttt ctataaatct agttaaattt gagaaattct aaccaatgta aatattatag 2160

cggcaactat tttggaatag cttttcttgt tcctatttgc attttacttg tttctatctg 2220

catattttga cctgatgtga cacattaatg acggagatag ttgcctcctg ctgtagtact 2280

aattgtatgg gactactgtt cagacgtact ttatgtaagt gcgttgtgct catagagggg 2340

gtaaaaataa gggtgccaag tgccatctac tatacttact gctgctcagt ttgaattctg 2400

attattcatt gttatgttta cattctatgc ctacaaagca ataccttgct gtccgttgtc 2460

aatgtattag gccttatatc gcattatata tttcacatgt ttgtttacgg tagaccattt 2520

ggagtattca agtaaagctt gcatgttgca ttaccgattt cgtcataagg ctatccctag 2580

taggtgccat atgcgaatat gcattttgag cggtcacggt acatatgcga gcacgcaaat 2640

gagaggacgc ttcgaataga ccgggcatgt agacgctcaa ataaacccac ggaggagaga 2700

gaaaccatag atttggtgta tgtggagggt gagcgcacat tttccgcgtc ctcatctgcg 2760

ctctgctgga aggggctatt gtggctcgcg agcacacaaa atgcacatac gcacccgttt 2820

aggggctcta ctggagatag ctatgtaatt gtagaattag caccttcagt tactcatgaa 2880

taagtcgata attgaaactg gatcaagatt tcagaaattt ggtggtcata ctaatactag 2940

gaggattcaa gcagctggca gcataatata ccatccagat ccagtactac ataataatat 3000

tatatgttct tgcattaaag cacttaatga aacaagaaaa cttgacacaa ggcaaaccgt 3060

aaaaacaaca aattacattt taacaccata tagaagcaat gcccaaggag agtggctctg 3120

tttacattta atgcctgtta cctgacaatt atcttattta atttatgttc ttcattattt 3180

gtaccttgtt atgtataata atagttctac tgttgtagaa cgtcacaaga agtttatcgg 3240

agaagttgct tgcattcggt gtgcctggtt ttgcagcctg cctttctttg cttggattga 3300

ctatgctagc taagaagaaa tttgaaggga aggatgttaa aaattatgaa ctattcttca 3360

catgctccca gtttattgca tgggtaagaa ctctgttatc ataatgatct tgtttctctt 3420

tcgagtcata taaatgtttg aacaaatgtg cttatggttg gtgctaaaca ttccttttga 3480

tagatgtctc taagtcttgt ccgtgtcagt ggggcttggt ttgaaatcct ctataaccca 3540

ataatgtgct tcttctggat attgaaggtt attctagaga tacctcattt gcaatacaag 3600

cttatcttac tgaaggtatc ccattatttt acaaaacgat ttcctttatc ttcaacatgt 3660

taataaagct gtggaaggct tctacatttc ttctgtttta tt 3702

<210> 1170
<211> 2242
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300082_G1, chr9:13942358..13944599, Cluster 7

<400> 1170
attcctcata gttagttagt tagtactaac atgagtaatg aaataatacc accaaattta 60

tggaatagac taatgatgca ccaattcatc ttgaacggag tgattactta aaccaaacac 120

tcccttaatt atccttgtgt catcattatt ggagaaaagt caacgccaac gattaattgg 180

cgtgggttgt caacagccga caaacgccac ctaatatgta tatatatttt ttaaaaaatc 240

tttcagagct tcggagttcc gagtggtttc aaaagccaag ggaatttcga aagcacgcgc 300

atggtaaaaa ttgaaattca cgcaaacttc gtcgggaccg gatctgcgag aagcaaaaca 360

agcccttccc acggaattgt gtaaaagctg tataaaatgg cagcatcgat ggcatctgca 420

gcctgcccca atcgcatgcg ccgccaccac tgaagtctgt gtgccattgg ttgtgaatgt 480

gaggtcaacc aatgaatcta acatcgatcg tcataatttg aagtcaataa aaaatccttc 540

acacgaacta caaacattgt accagtacag tgctgttgca tcggcagctc agcagcctgc 600

cagtaggtgc atatgcagtg cagtataata caactagcgt gcttagcagc agattggtct 660

catcagctta gcatccagtt cgattgatga caagccttgg gaacccctcg catccatcgg 720

aaaatcgtct atatatatga gacatgagtt gaagagtttg gacacacgca cttcgaaagt 780

ccaaactcca gaaaccattc ctcggcgagc gctgcgctag cagtacgtag aagccggccg 840

ccatgatgaa tcgcagaatc ctagcttgtc tgctcatggt cgtcgtcgtc ttcatgggtt 900

cgtctttcgc ccgccgcggg gcagctcccg tgcaagagga cgggaggagt gtctgggccg 960

cccgccggcg gcgtcgtgac ggcggcggcc ggcaaccacg gcagggcggc cgcctacggc 1020

taccgcggcg gaaaggtggt ctggaacaac aggcgctcct tgggggcgag gatcgtgcgt 1080

ccgccagcgc cggtgtcgaa caggatgaag gccgcggcga tgcctgggcc accgtcgccg 1140

acgacgagag tgtgatgcct ggcctggttg gctggctagc agctagctgc ttctctcctg 1200

atgtgtgtct ccagtgtcca ccttgggcat gcgcgtaccg gtgactagtg tgaacgtttg 1260

tgtatcttcg gctgcgtcaa actgctacta gcagtttacc ctaatctgtg ctttggagtt 1320

tgggaattct gtatacatac atacattatc ttttatctct atgtaaagtt tgcctcgtta 1380

gctagtgttc tacaatgaaa tctcaatagg cacatcttat tatatatact aggtatgtgc 1440

ccgtgcgttg caacaacata caaaatattc aaattaaacg catctgagta gccatgcagt 1500

gaaactattt tggtactttt ttcgcaatga tagaaatatc taaagttggg taatctgata 1560

tgataggtaa catgacccat aagaaaagat gaatagaaat atgcccccca caagccaaga 1620

tgaacacaaa tatgccctcc cacaagccaa agcacgtgtt ccctctcatt caacacaagt 1680

agagtccatg ccatctagat ctagtcgagc ctgatgacac cgtataattc catcggtgct 1740

gcagtgacat cctgcatagt gagcacaaac atgaagagtg agatcgacct aaatgcctct 1800

tatgatcata gaactccgaa ccacctacaa taaagtgtgt gaaaatatag aataagatga 1860

aacaaaaacg ggataaatgc atgtagttct ttgtgtaaac acacacctcc tttataaagt 1920

tcggtgtatc catgatctct gcaaagcttg gtcttagagc aggatattgc tgctagcatc 1980

tctgtagtag ttcaacgagc ataggatgtg tattggtgca atagtaagcc taatattgtg 2040

catgcagtgg tattgtatat gccagattag gattcgaaac aaaaactcca caacactttt 2100

gaagagtatt ttactttccc accaaacatc agaaaagata caaatgagtt acaactcaac 2160

attcgcattc tatttggaac cttttccttg cagcaaaata tagtatgata atagcaagat 2220

gtgatactgt tctttttat ga 2242

<210> 1171
<211> 1623
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301283_G1, chr9:20901268..20902890, Cluster 7

<400> 1171
gacaagggta catatagttt tgatttggtt aacaaaaaat agcgataagc ttgcttcttt 60

ttgtttatat agttttcttc tttgaacttg tatcgtatat tgatatgaaa cttgaattct 120

atgtaatacc agtttttac tggctttctt aattttatca tatagttttt tgccccccc 180

ccccccccc cggtaaattc tcgccctgtg tccgccactg gtcttcactc ctcaacacct 240

acgatggtcc gatgtggatt caacgaaact aatcttgcga ccgtataagt taaaaggcca 300

tgtccaagtg acgcaaaatt tgaactctaa aaggaaatta gaacgaaacg tttctatgat 360

ccgctaatcc tttcatatcc gtatgagtta gaggctagag caccgagtcc caacacatag 420

caaccagggg cggacccagg acaaaacaag agtgagagca cacccgtgag aattactatc 480

aaaataacag agcgagggca tccaagttag gttgagcacg ggacataatg ataaaaaatt 540

atactctact aattacggga taaaaacaag cgagagcata tgccctccct ccaaccaacg 600

taggtccgcc cttgatagca acgtatatag tgcacgtttc ttttcgaaga cacgcaaacg 660

cataatacga tagttgaaca gatctttttc gagctgtgag tgatctagat aatcacgcaa 720

caagttgtac gtacattgca tatcattatt gcaacacaga acaaacagca gctaatgatg 780

atactagtat tggaagcttg ggaacaacag gaacgacggg acgaagaagc cggcgagcga 840

gtgagcttgt ttgttgtacc catgtgctcg tcctagctct tgtaacgcat gcattaactg 900

ggtatatatg tcgttgcaga cttgcagaag ggcagcaata gctagcatgc aggtcgatga 960

tgggcgccgg ccggcgtggc atgcacatgc gggcgccggg aaatcccgag gcacgccagc 1020

ttggatgggg tgtacggccg cgtcgcgcgc acgtgtcccc tccgatccgg ctgcgcggcg 1080

ggcccggccc gcacctccac tccatccaca tgcggcacgc cccggtcgtc ggtcaacgtc 1140

acgacggaac catcacttga tatgacgatc atcagtagta gtactagtac tataaagaaa 1200

aaaatagcag tcgtactata acagtgtata tcctagcttg ctttatatat tattagtcct 1260

ttttaaaagt acgtttctta gcctcttttt tttcaattat actactacgt caaacaattt 1320

ttaaatgtaa caaaaatcta tatgcatgtt tatgattgat ataccggccg aatatacgag 1380

tacaataatt attgtactct aacgtgcatg gcaataaggt gcaacatatt aacgacagtt 1440

gtactcagca tcacgtactg ctactgcagg tccagctata tagcctacct gtaaactgcc 1500

tgtaccttgt acgacgttgc gcctctagca tgcagtccgt taaccgcata cctgaaagag 1560

taggttggac gatgatgatg agtcgttaca agctgctagc tagtggcaac taattaacac 1620

gcg 1623

<210> 1172
<211> 1801
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_302185_G1, chr9:27326416..27328216, Cluster 7

<400> 1172
cttcctcgac tagaagatct accaatgctg ccccgtctcc aagcgggact cctatctagg 60

acagtttgct gatcatgttc ctgtagaact gaagtgaaga gagttttatt atttgttcga 120

tgcaaaactt agctttgttc ttattcttca tgccgattta tgttagtgtc gttagtgagt 180

gaagttcagt cttgttgctc ccgccattac taagtgaagt tcagtcacaa acttggcttt 240

gttctttttc ttcataccga tttatgttag tgtcgttact gagtgaagtt cagtcttgct 300

gctcccacca ttactgagta aagttcagtc acaaatggcc actttatagt ctgagttgtt 360

gattgtttct acactttatg ttagtgctat ttccttcatt gagggtctgg tttttgcatt 420

taggggaga aaacactaca tcacccaaaa gacgcttgct tcatataggt tttacatgtc 480

acacctcatt tctaatggaa aactattttt tgcattttaa gttgtcttat ttccttagat 540

ggatttggaa cacagaagaa aggaactttt tattgagaca gtggctaagc cttgtacgct 600

ttgatttgga gtaggattag agcaattcgg tactacagga acaggagcaa tccccttct 660

ctcatgtccc ataattcatg tattccctga gttgttgatt gtttctatct tctgcatatc 720

aataatcacc gctactgatt tttacactaa tgttggattt gtatccgttg ttgtgttgaa 780

aaactgtgtt ttttgggcat cgaccatgtg gactatggtt tttttgcaat ttattactaa 840

gaaatttgac catccttgtg gtagaagata gaaacaacag ttaaccagtt acagcgtgca 900

agccaggctt cggaggaaag aagattttat ctacaccatg aactgttatt gttgtttgag 960

gtatatgaaa ccaatccccc ttttctcttg tctcataatt cctgatgttt gcgatatgta 1020

tgctactcgt gctatggatt tggaaaatag gtttggtaat tagtatggct acctactaag 1080

tcaatgatgt attcggtgat aaaaattgca tgcatttgat tttgattttt gtctaaggca 1140

ttaatgcttg ttcctaattt tcctatgttg ttatatgagg aatacaccat tgtgttacat 1200

atttttcta tttaaatcag tggcggtgcc ttggtacctt aaacaggtcg ctacacccat 1260

gttggtagaa gtatagtgat atgatcatcc tttgttctgt ctggtgctaa ggtctgatgt 1320

tatttagttc gtctgcttgg gaattagctc aatttcaaca taaataatct cctcaattgg 1380

ctacactagg gaggattttc caggctaaaa aatcttgaac ctaatttttc gaacaaacct 1440

aatttttgca tagttgagaa aaaaacgaat agaatacaaa aactcttcag ccaaaaggac 1500

aaagtaatat tattttcaat gatagaaata aggaaacgaa tcagtagtag caaaaaacac 1560

atttggttca tcgattccat tattttcatt taaaaaaatc ttgactattg tggaattgtg 1620

ggtatagact tgttcaagca ggcgcatact ctctctattg accctcaccc cttcctattt 1680

tgttctgctt gcggagctat tggtttttat aagtgtgcaa ctaaagatcg gtgactatat 1740

cttggtttca gacccatcaa atctgtttcg agttccagca aggagcagcg aagcacacat 1800

t 1801

<210> 1173
<211> 2985
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313588_G1, chr9:99021063..99024047, Cluster 7

<400> 1173
attaattagg gtcagtttag acgattgctt gtagaaaatg cagctgatga tatatggctg 60

tccgtatagt gattctatga gagacggagc agctgccaaa aaaaaacatc tgctgaacag 120

ctgatgtttt tagctaggaa atagttcagg tattaattct atgacctaat taaccctgac 180

caccagccaa aattaaccac attttctagg catagcgcgc ataagtgaga acccccctat 240

tatctgatcc gaaactaaat gatcgtcatt tttctcattg tctgatccca ttaaaaattt 300

gcaaggatca acaaaaaaca agcttgttga tagctctata tatacatacc caaaccacgc 360

aagcagcaaa ttaaacaagg tgattgagta gagcatcgat ctatcactgc cagagagaag 420

cagctagcac agccaacttc atccggccgg atagataacg cacactcttt ttctattcct 480

ttccaagtgg ggtagaaggg ttaactggat aagaattcgc ggtctccgct gcaaaagaaa 540

acgaaaagga agtgcattcg cgacagaaga tcgtaagcat cctgatgtat cgagtctacc 600

tactactcct ccccccccggg ccccgaaagc agctttatcc taaactagag caacaggggg 660

ggggggggga gagatagaga gcttcaattc aactccgtag agcgaaaaac tttatacata 720

ttattgccta gtgcaacagt tcgttagaca agagagatat caaggcaaga ttattttatt 780

gcttgctgca ttattaattt gggtgagaac ccggccgttg gttaatcttt tttgtttttt 840

tttggtttgc tgtgattgtg cagtggtttg agaagctttt agataggatc cgtagtcttg 900

gtatttagga tcagacaagt cttgagtccg aattgaatcc tgcaggcaga cgtatacgca 960

attgaacgag agacaattac agtcggctcc tacttgtatg cttgattgag accgacctgg 1020

tgtagttttg tgtgccagac tgtcaggaga gaagtagtgt cgtcgaattc cccacatttt 1080

cctttgaact taagtttttt tttggttcaa acaaatcgag caaatactgt tgcacgtgcg 1140

atgtgatatg agtgcaatgc aatggtttgc tgcatcctta atagcaagaa aaactacagg 1200

ttagctggtt aggtggtgtt agaactaaat ggtgttagaa ctaaatactg ttgcaatcga 1260

tcacctcaac aaagatacca aatgtacacc acccgtggcc tagctcaact atatatcttc 1320

aaggaaatgg actacagcgg ggagaggtat cgctgtggac ccattcaatt tggctgcaca 1380

cgtaccaacg cacccagatt aaaagtgcga atttaagtgc aatatttgag acatatccgt 1440

agaatgccat atccacagaa aataataatc agcaacaaca acaagaagaa gaatagactt 1500

accatgcaag ttttccccac catatcactc tcgagaattt cttgcgatat ccaaaaattt 1560

ctcgagagaa taaaccagct caattcttgt cgagagagaa agagttggca accggggcca 1620

aaaatgtgat cgcgtcaaac tgccgcgcgc ccctttttgc tcgatcgatc gatcgatcga 1680

gtgtgtcttg attagttaat tagttcgtag ctaatatata tggcttttgt gctatgagaa 1740

agacatcttg ccagcagcag cacttattaa tgtagtatca aaatagcctt tgtgctatat 1800

atgagaagga gtggcatgcc gtagaatgtt tttttccctt aattaattag gacccgatgc 1860

gtgtgcttga ttaggctagc tagagcttgg caggcaggca atccgctctc tagttgcctc 1920

cacaattccc ttctccgctt ccgcggtagg attcgtctgc tttccgatcc gccccccttg 1980

ttgcttggtg gtggctagtg gtggcgctgg cccgtaccca gcctcagaca aaaaatgcgg 2040

ccactatagc tctcgtagag agagaaagag agagagggag aggggaacaa aaaaacaaga 2100

agaagaagaa gaagaaatag atgagtaaac agaagaggaa ccttgcatcc gagggagcag 2160

aagcggaaag gagtccggga ggctccggca gcagatctgg caggtgttgg tgacgccctt 2220

gccgggcctg gcctgcgggc ggccgttgag gaacacgatc ttggcgctgt tgatcacgta 2280

cgtctgcacg tgggagatgt cgatcagctt ccccacctcc gacacccgga tcacgttgtg 2340

gtacgacgac cgacgtatct gcatgccagc atgcgccgac tagaactatt atatacatgc 2400

caagccaaga atgaagaagg caatcaatcg ctcgccgccg cgctgacctg gacgacgtgg 2460

tggtctcggt gcgccggcag gcagtaggcg cagagggcgt cgcccgtgca gcagccgagg 2520

cagaagaggt tgcactcgtt cttgctcagc tccgggtgca gccggcacgg cacgaagaag 2580

ctcgtgccca gcagcggccg cagccacgcc gggcccaggt cctcctccga ccgcaccgcc 2640

gggctcctcg ggctcgccac gctcaccatc acctgccgca cgcacgtacc ataccaccga 2700

attataatcc atcagtcacc aatcacacac catcatatca tgcgccgtct cctccaaatc 2760

aagcatcgat tgcaaaggcg atcgacgacg tacaccaaga gaattctgct ttaccatttg 2820

tacagcaggt tcctccagag ctacagcagc agctgacata tatatatatt tccctcagtc 2880

gtctttgcac cgacgacgac gactcagccc cgccctgcag accaggctgc acaaggcatc 2940

ctcgctccaa ggggagactg aactgaagag agacgaagca aggag 2985

<210> 1174
<211> 1728
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313600_G1, chr9:99075789..99077516, Cluster 7

<400> 1174
gaaaaatgga gtaaaaaccc actacatcct agtttagaga ggagattgac ttataagtac 60

tattttagag aagttagagt tatggatgct agaagagaga agcccactta aattagtgct 120

ataagtttgt gactaatcaa atatatggtc atacaaaaca ttgttttgtg tatatgttcg 180

taaataaaat atcgtttaaa aaattactgc attttaaaat ttaaatttat gttaacatta 240

tatgtagtcg ttaataagta gattaattat aaaattaggt aaatttttcg atcgaccaac 300

aaatattgat atcgttttcg atagtttctg tccctatcta cgaccccacc ttccgctcca 360

gacagataca cggcgcttca aaactcgtcc tactcctacc aaaggcattt tacagcgcgc 420

ggctgtagga gccgcctgta ttccatccca tccatccatt caccgtgctt cttccgccag 480

tctcaaggcc atggcggtgg cggtggcgga gcagcctttc gcgacgtctc cctcctcaac 540

tcaacttgct ctcccgccac cacactcttg ccgcactgtc acatttccgc tttcgtgatg 600

tcctggcctc caccgacgcc gtcctccctt cgtcgccgca ctcctccgca gccgttgcgc 660

gcgcggtcgc gtgcaagccg ccacccgctc ctctggctcc aataatggct tcgtacgtct 720

ccactacgct cctcaatacg tactgcaagc tgagaggtac ttctgatgcg cagagggtgt 780

ttgatgagat tccgtgtgtt ctaggctgca gggtaatggc aggcacacac gcaagtgttc 840

tgtaataaga gaggcctttg agcccttccg acggatgttc caggagctgg cctggcctgg 900

actgcatctt ccagctccag atggaccgcg tcctaccata cttgttaatg cccgataggg 960

gggaatttgt tggcactaga agtgtgccct gttctctgga atctgaaagt ccttcggtcg 1020

gagtcagtgg tgcaacgctc tgaggtggag acatgtttct gaacacagag acgaggaagc 1080

aaaagcaagc aagcacatgc agcgagtgag catccttgcc ttcggatttg gagctgacac 1140

agagacaagg gaagaacatg cgagatccag agttcgcccc gtacgtaggt ccgaatccaa 1200

tcgcctggtc aagtctgttg ctgccggagg tagacggacg ccttaccggc aacaggtagc 1260

aaaagcataa gccagtacag gcgagtggct ggcaatgcat tgaccggcaa agccccaacg 1320

aacgatcgcc gtccgtccgt ccggggccgg aatacgtgca tcatgcatgg tcacttcatt 1380

attagctacg ctttggtcgt tttggtgcac gggttaaagt gcgcctcttt ttaatttacc 1440

ggcgaaagat agtgcatgtg cttctctttg acttccacga cgacgttcct acggatgtgt 1500

gctttgcttt ccagtgttac ccttttttct tccttcattt ttttttactt ttttctaata 1560

cactagtgcc ctatttggca ccggtgggaa aaaaatatag ggcaaagaag ccgtgtccga 1620

taatgtggca ccgcaatcat ttattacagt cacaagaaat tatggtacaa aaaaaagctg 1680

caatcacaca aattatgatg cgcgatgtta cctcaaattt aaagaaca 1728

<210> 1175
<211> 2532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313790_G1, chr9:100092040..100094571, Cluster 7

<400> 1175
acgtcaatgg gaactaaacg gttgacccgt ttaaatagtc gatgacctgt ataaacggtc 60

taaatgacct aaatggaaca ggtttaaacg gatttaaacg ttgtttagcc tagttttggg 120

tccttttctt gatagggcca aaatgcggta ggctcaactg cattgtcctg ttactattag 180

agtttcgtca ccttctctac ctgagcttgc cttctttcct ttggtttttt tacagtttct 240

atatatgact atatcttctt ctagcctgtt ttagttgttg ttctataatt agctcaacta 300

ggggtgggtt tggatgtctt gaattggtca ttttggttat atggatatgt aatgtgtaat 360

gtcagagctg ttgtccgttt atcacagttt tgtatcacta aacaaatata tttgtggatt 420

tactcttctt ttctaggtac atgtttaaat ggagaggaca tcaaaagctt tgtgtttact 480

taaaaaaggt tagtgaaaaa ctatttaatc ttgctgaaca cgtttaaaca tgtctagacc 540

ctaaacagag ctcgccgctc atctaccgtt tatgtcacca ttgataagaa taggtccaaa 600

catttttttt gccataacct aagatatcat gtcgaagcaa tatcttactt aagatacaat 660

ttttctctct tctattaaat accttgacgc atagaaaaaa aatcctatct acaatctcat 720

taaagactgg tttggtgaca agagaattac atgatctata gagagaaaat catttactat 780

ttagaaattt cctccctatg gatcgcctct aatttacaac cgacccctaa taaggttgca 840

aacaatgact gaacgctaaa gcaacttttt ttgaatttca aaatagaaca ggtgtacaaa 900

tatcatactt ggtggaagtc agggggcggc agcttggagc ccggagagac gtgcacgtag 960

ctaacgatgg agaagatatg cacgctggta gaatagaagt cgatagcagt tttagtaatt 1020

tttaactata taacgtgatt cttttaaaaa ataatctaaa ataaactact cttaagaaaa 1080

tatgagatta tcatatttag atattagatt atgtaatcta aatctataat ttagatgttt 1140

gtttagatat ggattatata atctattaga ttgacctaaa tataatacta cctatcagga 1200

atagcataac tgcaccttat atgatccttg atccaccacg cacgtagcaa agctcaaatg 1260

cccgtggatt accaccaccc aagggcaaac ccgtgccgct ccacagtatc ctcggggcca 1320

gccatccgcc gttccggctt cctccgcatt gtggtcttct gtcttcctgc ctgcctgtaa 1380

acccactctc cctcgccccg cctttgccgc cggtaatcct gcccactctc cacgttttgt 1440

tccagtctta actctgaagt gaccgcgcga ctgcgccgtt gatttcgggc ttttctcttt 1500

ggcctctggg gctcgtgggt tccggcggcg cgcaacggtg ttcggttacc cttcgtctgg 1560

gatatttggg cgtggcctga ttgcggtgcg ccggtgcctg ctcgttgtcc tgcttggggt 1620

ggggttttgt gccgcagtgg tggtgggggt ttggtgcttt cgcctcgacg tcacactacg 1680

ttgtttgcgt aaatcggtgc gtaatcggtg gtcatttcct ctcttaacta atttccttta 1740

taaaagagtt aactgatttg tttgtgaccg cgaaaatttg cattcaagtt tcgaaaatgg 1800

ccgcagttct cgtgagggac tccgctttgt aagagtttgt atgtattaat ttctctgtat 1860

gtttacgtgg tttagattgg tgctcttggg tgcgtttatt ttcagttgaa tgctgtgttt 1920

gctaggatct cggattcgaa tggaatcaaa caagcgacca atatttcctt ccgtggtcgt 1980

gatttcgagc gcttgccgct tggtgctgat cttgatgcgt tattggtaga attggtgcaa 2040

tgttgaaggt gtattagggg ctcgtttggt ggatcacggc cttttggcct tatttgtgac 2100

catggatttt gcattggacg catacctcct gggtcgggtt tgtattactt atttagtttg 2160

tgtagtactg agtatgcgat tgtgatagtt tggtgggaat gccaaaagtt actattcgtt 2220

ctcttggtat atgttccatt ttgaggttac tttgaagttt gaagcatttc ctgggcacgt 2280

aatttggcac ttagctgtaa atgatctgct ggcaggtgtc agttttttt aatttcagta 2340

gaacttcccc catgggttat gaaaaggaaa aatcatcttg tagcctgctc acttgatcta 2400

gtaggaagag taattatgct atatcctaat aatagctgtg gacctctaca tgcctcttgg 2460

cttggactag gaatgtatta tattttggct tcattttctt cttcaacttt ggataattga 2520

tcatacttat ta 2532

<210> 1176
<211> 1724
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_314278_G1, chr9:102375008..102376731, Cluster 7

<400> 1176

cgaaaacaac caccaaccca gtaatcaact ctacattgtc attaatctac ttttctgtct 60

aaaacaaaag cataacaggc taacagctta ctgttaccct caaataacca gtaattttct 120

tttcatttat ttatacaaat gaaaaacatc ctgctgttat caactttaag cgacagttac 180

attacagata atttgttaaa cttaatttgt tcaattctgt tatcaacttt tgattcctct 240

gcccaacatc tgcaaagctt acctggacac cattaccttc caactatcac tttgaaattg 300

ttgaatttac gactacggca tcgtaaaatt tctttttgtt cctgaacagc atgcctaaga 360

aagaaacaaa agattagcag catgggattt ccatgcgcac atgtcaagtc tattcccagg 420

ttcatgtccc agccaccgtc actttctcaa aagaacaaaa gctaggatac aagcaaactt 480

ttccgtaaaa aaggtgaaag caaagtaaag caagattgtt ttgaccctaa tgagttcatg 540

gtccccttg actacacaga tgcaaaacag tgtactaatc tacagaagcc acagtccatt 600

ggtatagatg ccatgctctc tctaactaac tcagcttttg taactggaga tcaaaataaa 660

tcctcagatg ccattcgagg aacgaccaaa gaaaacccac ccatgcgtgg acggctggac 720

cacattcctc aagtgcttgg tccaagactc tctaggcaaa cttttgaccg cggttggaag 780

aaaccaaaaa ctgaacgcaa ccaatgcgag cgaaagcaat cgtgcactga acattcagtg 840

tttcacaact gccagtccct tcccccaaga ggccatggct cgttttagct acaggctcgt 900

catggaatcg tgccagtttc agagaagggt cacgcacaat gcgacagggc acgaccagaa 960

cagttttgtc gcaggatccg acagactgtt tcagattatg cctgaaaaca gctagaggtt 1020

caaacactgc agaattcaga cacgaagcag aactgaatac cttactattg gtcttgacac 1080

agatgtggaa aacaaaaaaa aggtgaactt ttttcgttgt ttgaggtgga aagtagagct 1140

ggcttgtttt ttggactgat cagtttggtc agaataaaat gccaaaagca tctcataacc 1200

gctagaagag gtgaagagca cggcatgttt aaatactcga ggactggttg agatgctgct 1260

ggtccgtacc gatggcgtag ccgctggaga tacttcctcg atcttccgtg tgcagcgcct 1320

ctctggaatg atgccaaatc cgccgtcgga tcgcgactcg gaactaccgc cgccggcgac 1380

gcatctcgct acgaggacgc ggcggggccg ggctacgtgg agagatgaac gacattcttc 1440

ctgggcttgg gaggctagtt ggtggactgg gctcgatatc atagtaagtg gttggcccaa 1500

tctggaaaga gagaaaagga gaacgaaatt agaccagcaa cttttattat taattttata 1560

tctatactac ttgttaagaa ggtaaaagta gtctgtcgtt ctgccgtcct ccgcgcagaa 1620

aaaaaaaatc aaaccatggc tgtctagaga tcgaaccttg gatctattga gcagaatacc 1680

tagccttcca ccctctagtc aacatgactc atgttaaatt gtat 1724

<210> 1177
<211> 1755
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_3160_G1, chr1:16129908..16131662, Cluster 7

<400> 1177
caagtcattg ctagcggtta ggagaaatgc tttctcagga gtgaggagct acaaggccat 60

cacacgcttt cgacaggtcc ttggcgagca ttagctaaaa taaaatgtaa tatttattat 120

tatcaattta atatcttata tatagacaat atgctcactt taatattaaa tgtatttatt 180

attagtattt gtttggtaga gtctatatga ttagtttact ttagtcaacc attgattata 240

gtgcgggtac gacatcgtcc ttctcgacca ataaataaga ttgtgtaccg tcgcaacaca 300

aggatattat actcgtttac ttatataatg caccggcgtt tgaattgctc tcgcttttgg 360

aagcaaaact cacacacctg cctacaacaa gaaggtcaca ccgtacatga acagctctac 420

tgactggtgg ctttttatta cactggcgat gggcgatgga agggtgtagc tgtatacagt 480

atgtagagct accacgcctc cgtatgtatc ctggagcgat aagggtgacg taagtagtac 540

tacggtctac ggagcctcta ggcagttgtg gacaaagcga ggtgcgagtg cgaggagggc 600

accggtttat ctccctcggg ggacgtgcca ctaccaccca gtcggcagtc cagactctct 660

ctctctcttc tgtacgttct actacgagag acaaagacgt ttgtgatttg tgccgcccgt 720

gcatgcagat gcagcctact ccacggaatc acctccacac gtctcccgtg atcaccccgg 780

tctccgcctc tccggcagac ggcagtacgt gtacgtggct ccctgccctg cggattccaa 840

agtccaaacc aggctacagg ctgcttcata cggttttaaa gtgctccagg gaagaaaaca 900

aaaaaaaaaa cacttcagat ccaatatttt tttagctgaa cattacattt acagatttcc 960

tggagcacat tactaagaga tgctcaaaca aaatcagatc tagactataa agttaaacat 1020

aaattgctca tcataccgtt aattaatggg aagcatccat tcttcatctt tctttctcct 1080

tcccgcgtcg cgcatctccg cccttagcca cgagcccacg accagcctgc cggccccagc 1140

gggccgccgc ggcgagctcc ggacaagcca cgacgagtcc cccctgcccg ctcttggcag 1200

cggctagcca accctgcctc cagccgcctc gcgcctgggc catgctggtc tcgttccagg 1260

acgtaggata ggaactagca agtgagagca agctggtgat gcgtcgatcg ctcgctccgt 1320

ttcgcctttg tttttgcgtt gaagctatcg agcatagatg cacttgctgt acagaggaga 1380

cccgaggtac gtagtacgtg aagtctagga gggtcacgac aacggaacca cgaaacggga 1440

gcggcgcggg gcgattgttt tgggaagatg atgatgcgtg catgcttggc ttggctgcct 1500

gcttcgcgac gtacgggcat tgattgattt gattgaaggg ttgcttggta tccgtgaaac 1560

tatggcttcc ggttcccgag gccgctgcat ttgcgtcgca agcagacaaa gcagacagcg 1620

atggagaaat tgcatgagtg tcccttcctc cactgcctcc gtacaccgct cgctctgcgt 1680

tctgcgcggc cggcgcgaat aatttttttc tctattggag atggggagat acatgctgta 1740

aaaatctgcc caagc 1755

<210> 1178
<211> 2079
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320664_G1, chr9:136492541..136494619, Cluster 7

<400> 1178
aatgaaacgt cgtcactctc actctgaatg ggcgtttcac gcgatttcca gtcttccgag 60

cggcagcgtt tggcgcggag agtatttggg ccagattccc gtgcttcttc catcagacag 120

cccgtcacga tttgccattt gggctcttgc acatgtgccc gcagaattcc tgactatttt 180

gcaacctgcc tcagatttca gccccaagtt tcgtagttgc gggcagcaga tgttctgaat 240

cttgtgttcc tgtgaatttg tgcatctgat ccatcgacca caaatcatgt tccatcctcc 300

tctgctaccg tgtcaggacg cacgcacgca cgtctgagca gacggaagcc tcgtaccatg 360

tcgccgaaaa ccatgtgaaa taataaaatc agaaatgttc ttgagcgact cattactgaa 420

ctggaaaagc ccttcccttc agccttccag accttggaga gtgagctgga agccatttcc 480

tccatcccgc gcaatgatgg cgtcgtcgcc cccactgatt cttgcatcaa tgtttaattc 540

tgcattaggt caaggctaag ataacactgt tcatcatagc ctgctgcagc aatcagtgaa 600

gtaatctatc gaagaacact ttgccctgca ttttcatttg gtttcccccg tgcctttggg 660

acgcacataa cccatgagca gaacagaaca gaacagcgac gcgcgcgggc agctcctgca 720

atgattcagt tcgattattt gtcttaaatc atatataact cttaaaacgg tggaatagtt 780

ttctaagtac aaaagataat aaagaagttg tatggacttg agcccctaaa tcataaatac 840

agttaacaga ccatgtttat aaagaatcgt gtagagataa aaatagtttg tctcttgtaa 900

ttttttagtt aacctctaaa gactactcaa aagaccctct attaaatagt attatataca 960

cccttacgaa agattctctt gggatcagtg ttacagcgtt catgtatggt cattgtttta 1020

tctcgactct ccagatgttt atgttatact taagaataaa aaaggtccat tcttctatcc 1080

tgtaaagaaa cgattgaagg ggaaacttaa gcgctcaatc atttgacggc taggatcagt 1140

atcacacggg gggaaaactg ggggtgctgt gctgaaacaa cgacgaagct ctatgcacgc 1200

aacgcagaga ctggattaca gtgtcggcga aaccgctctt gtgggcacca aaccaaagcc 1260

atttctgtgc tcgtggcacg aaacagtccc agtccctcgc tcgctcgctt ggcgttggcg 1320

acagcacatc gctgcgtctt tggagccgcc gcttttgcag cgaactgtgt gtgtgagttg 1380

tccggctttc ccatgcaatt ggatggatag tcacatgcca agctacatac agttcccggt 1440

gctcggtcgg caggcatgca tggtattggt gcccccaaag gctcggcgcc tacctggcct 1500

tcctctgatt gcagagcaga gaaatgttcc atgggtcagg gcgcaaggca gctagggagg 1560

cagacccgcc catcgtgtca gactggagag gagaaagcga gcaaaggcat tggacatacg 1620

ttccttttc atcagtgttg tttgagccct gcgtcatgtg cttctgcgac gcagccagct 1680

ctacacgcac agcgaaaagg agacactctg gattctggac catctcgtct cacctctctc 1740

tctctctctc tcccacttca tgtttttta ccactgaaat tatggggaga aattcaacta 1800

gtgtcaaagt taggtcgtgt ttgcaacatc tctagcttta gaaaaacctg gtgaagctaa 1860

tggagcaagt cattatgtgt tttagaaaat cgtggagcta gacctataaa catttaaaag 1920

acatttaaat aaatcagttt tggtttatta tctagattaa aaatattttt aaactattta 1980

aattaatatt ataaactctc gaggtggaac ttggaaccga cccaaacacc ctcttagcta 2040

cagtttcaac tgttagatgt atatattgtg cagtatata 2079

<210> 1179
<211> 2241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321631_G1, chr9:141428149..141430389, Cluster 7

<400> 1179
aaaggccgcc tccacctcgc gcttggtgtc aggcctgcat ctcaactcag gccgccacaa 60

ataaaccctg ccggaaggac cttaattact aaaggacccg tacagtaacg tttttacaac 120

ctttaccact ccgctcgcac ccccagcaat caaatacagt actactacta ctgctaatat 180

atcgataatg cagtgtatat atgcaattat gcataaactg aaggcagcct catgagcaca 240

tgccacggtg gtccggctgt ccatgacctt caaatccatc gcgtgcggct tcgttgctct 300

gcttgcaaca actacgtgtg ttcctttcct agtaccatgg agcagcaggc gtcgagggcg 360

tctcgccggg gcagccgcac cccgcagtat ttcccgtacc tcagcagcgg cgggacttgc 420

attttcagcc gacagggaag gaaaaagcaa gcgcatcatc agtgcctttt gccggtgagg 480

tgagtactcg gctgaaactc ggaaatggaa ctcggaaaag cgaccccgac tgttcagttt 540

tgcttcccag aagaacagct gaactgttga acttgaaccc cccaaacaga gcccaggaaa 600

acggcagatt tggcagtgac gatgtgattc gcacgtccgg ctacaaccct gtccatgcat 660

ggtggttgga acaagagcac tcacagaagt tcagactctg ttcgtaccga aggtgctgtc 720

ccgactcccg agcaggtcgc cgacgttgag ggcctgtgag gacgccgtcg ccagcaggag 780

gagaagcagc aacgggcact gagagagtgg atgccatcct ctggcgttcg tttgcgcgtc 840

tagctccgcg tgtaattggc tgtggaagtt tcggcccgca tcttaccggg acaggatcac 900

aatcacacgg acattgtggt catttgggca ggtcttgaag caaagctaca gtagctgcct 960

atataaaaaa aacgtttctc gtagtacatt cctgcgccat tgtgtgtggc aatgcaccgt 1020

agcaaattca tgtgaggcag tcgtgtaaat cttgtttcct gttccgtagc aagttgttaa 1080

gtggctacac cctacacatg cacctctcaa cggcagggcc accgccagtc cgccactata 1140

ccaagcttac ttatatacac acacctccct gctgatgtgc taactagtga ggctttagtt 1200

agctgttcgt gatggtgtgg tgttggccca aatgcttgtt gttggtatgg agcaagtgat 1260

tttggaggtt gataactgat gcaccctggt gactattatg ctccggtcgg aagagggaag 1320

gcggtgtgct attgcaggtt tatttatggc aagaaattag ggaacgaatc agggatttcc 1380

ggtcttttga tgtatctttt gttaataagg aacggaatga ggtagctcac ctgttcggac 1440

agctaaatat atatagcgga ttccattaat tacaagatag ccccctgaat tcggacatca 1500

cctgatccgt acatataaca ccttccactc tagtactcta ctacctaggt ggtccacgca 1560

cgagactaca agaggcagtg tcacaccgca ggcacgagcg tactactaca ggttgcgtca 1620

ttcaacgtcc gaaatagcac ggcgcagtct tcggttccag aaatcagaaa accgggcaaa 1680

aaacagccaa attaaagaag cgaatcatga atcgattcag ctacatttat gcttcctttc 1740

tttaattttc agtggtattt ttttagaaat actcttagga ataagatatg tgtgcatgtg 1800

ctcatagcta ggggcggtgg ggtgtgcagg tatgtgaccg tctatgtgtc tgtgactaat 1860

agtataggtc ttattaaatg aaatgttgtc attattttgt atgatgtggc tatgttgagt 1920

ttgtgatcca aaatctggat aaggggctaa gttggcgagc gaaactaagg agaccatgtt 1980

gagtagaagt gttgtcttta atgaatctga aatgtattat gctaaccatt catctaatgc 2040

tcaacagtca ggtccacata aaataagtct tcaggtggag aacttagata tggatgacca 2100

tatatttcag gatgctgtta ttccggatcc acaggttcat gatatttaac ccatcatcga 2160

tgattctttg tctactgagc attcttctcc tgttgtgcag caaccacaac agtctgttgt 2220

agttgagagc gccaaaagag a 2241

<210> 1180
<211> 1596
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322626_G1, chr9:146708798..146710393, Cluster 7

<400> 1180
tatactgtgt gtgtactatt gtcgttgagc cgacactgtt aattgggacg agggagatag 60

ctatctctac ggcacaggcg aggcgaccaa tagtgatcgt cgtaccgtac gtgctgggag 120

ctgggtggga gtgagaactc tcagatcaca acaaagctag gctagctagg ccttctttcc 180

ccgcgcgcga gagaaaggga cgcacatgga cagatgtatc gagagagcgc gggacatcaa 240

agagagcccg tcgtcgtcgt ctaggtctgt gtccggtggg ggttggcgac tgatgcgacc 300

ccgcgtggtg atgtgatgca tcctcagttt cctctccagg aaaaaagcgc ccttcgtccc 360

cagcttaccc ccgtggtata aggcgccgca gcagcagtca gcagaggcat ccgatcccat 420

tccatccatc cgatgcgtca ccttttttact cgctccgccg atcatcccac gtttagctgc 480

ttaggccgct acggcggcta gctaagttaa gctaagccct ctatcatcta tctactgccg 540

gccggccggc gatggagcaa attacgtaca attacatgca taccctgcct caaacacctc 600

aaacaaagcc attcatacat gcactactag ctagctagag tcctagctag tatagtaggc 660

atgcagcagc tctaccccgg ccggtcatag cgagtgcact gaccatcata ctacgccccc 720

gcgcgcggcc gccctatcta tcagattcat aatgcccagc agctcagctg ctggccggcc 780

ggccgggctt taaagctagc tagcgatcgc atgcatgccg gtttagggta ggaggagagg 840

aggaagattc taggatatct tgtcacttca catgtacacc acctttggtt tggtcgctag 900

ctgcgtgctc tggtgccccg ccggccgcgg ccagggcatg ttttttttcc cgggatgtgt 960

agccatccgc gcgcgtgtct gaaccaaact gcatgtccgg cggacgcagc atgacctaga 1020

ggctagcgcc cccttactat agcctctgct gctgctgctg cgctgcggtt gctcacgcag 1080

ccggtactcg cccagcagtg gcgacactgt tgggggcgga cgggcatgct cgtcgtcagc 1140

gctcagccgc cccgccggcc gcatgtgtcc atgtgcgcag accattgatt tgatttggac 1200

gccggccgag gagatatcat catatgatcg atctgtggtg cccggagaca tttgtagcgt 1260

aatactatag tactactact acctgatcga caatacggag caggcggggc tcatgcagag 1320

agctcatcga tcacacgccc ttcctcggtc ctcagtcaca catcacggtt tattattgtt 1380

ctgggctctc aagtcctaac cacagcggct attgatcccc acgctggacg gtgcatatgt 1440

cagctgcaaa ccgcgtgcat agtgatcgat caatcgagtc ccttggattc ttggaacaat 1500

gccttcgaag taggtcggcc tgcatgcgtt aatagctgta tgacggccaa tatgtctagg 1560

taaaaaaaat cagaataata accatcttca tagcac 1596

<210> 1181
<211> 1471
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323064_G1, chr9:148774567..148776037, Cluster 7

<400> 1181
tgagacgaga gggggaaaat cactctgtgt aataccgttt cttccactga tcgagcagca 60

ctttgagacg aggaaaatcg tagcgcattt gaacggtgct agccccccat ttttttactc 120

aaaagtctgc tgctgaagca gagtgtgtac tgtacgtacg tcctgtagat catcctgtgc 180

atgcatgcag atcgcagaag catgtcatca aacaggccgt gccaaaggcc ttaattaggg 240

aagcaagcaa gtagcaagcc tacaacggcg atcaatgcga ggcggccgtg tgcgctcggc 300

tcgacgcgcg tggtcacaag ctccgggtcg gtctccctgg ccacttcccc ctgttggtgt 360

tcgcgaccaa gaagagctcg tgacgaggaa cgaagaaccg tgcggtttta tgcgtgcgtc 420

gtcctgaacc tctgaccccg ccgcccgcga catgagcatg cattactctg gaaagctggc 480

agaggcccaa gctctctttg actccgagct tgacatggca cgaggcacgt acgggcatgc 540

agcagcagcg gctggccatg ctactagccg gccatgcatg gagtaaaatt catcgcgctc 600

cgtttgtcac cgcgcgcacg gcagtggcgc cgcgtttacg gggcgtcgca cgtgagggct 660

gccgtggatg tggatggatg catatgcatc taattaaatc accctagggc tttgcgtttg 720

tgctgggaat ctctcctctg ttgctgtatg cctgcctgta tctgtatgct tccgcgacat 780

atgcggccgc cacagctgcc gcctcgccag cgtgcgtgcc gtgttgctaa ttttttatt 840

catcatcgcc ggcgtcatcg gtttagcgtt tggaaggatt agcgcgcgcc gaagagtcaa 900

ctgattagcg cagtcccagc gcgacactgc tatcagtttt catagcgcta gcctgtttct 960

agtgctgatt ttatttgagt tccatcttat cgggtgtcat aataattagg gatacctact 1020

agattataat tagggatacc gttagcctgt ttttgacgaa cgccctttgt atatagtggt 1080

taggtacgta gattgagata ctgatatata catcctaccc tagatctagg agtacatata 1140

taaatatatt ctgtgctgtg ctgtgctgta ctccctgaca tattggctat atatgttgag 1200

ctgacgacga caattcaagt tgtggagctc agtgtggatc agtgctattt gcgcgtaaca 1260

aaaataatat gtgtggctgc atctacttgt gtcgtacctg ttgttgttct tgcatgcatg 1320

catgcatgac atgcaactgc atcagagagc ctgttcacgg ttaattaggg tcggagcgag 1380

gagtgcacgt acattctggc ctcccggaat ggaggcatgc aacgtagcgt agtatgcaaa 1440

agctgctcac gctggcttgc tttccctgca c 1471

<210> 1182
<211> 2234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323236_G1, chr9:149756206..149758439, Cluster 7

<400> 1182
tttaaactgt tttttcgctc caaaaaaaaa cgttgttaaa ccgctcgtat gaaccgtttt 60

tttattttac aagaaaataa attaaaaata acaggattta tatgcaattt gctcaattca 120

cgttgcatag taaatactaa ttcatccata caatatgttt tcaacaaaat gacatacacc 180

atacatatgc aacgacaaac ttcaattctc acgcaacata cattcatcgg tcagcgctat 240

actcaaatac aagttctttt agagttcttc cacgaggcca cgacacatat gtcaacttgt 300

ttcacattac ttacatattt agctcgagtt atagcgaaag cactcaagca tgttgaaagg 360

atcgtgatat gagtccattc cgtagacata gtcatataca aaatatatga gatacgttag 420

atagaaaaaa agaacgacaa ataaatactt atcgacgaac caaaaaataa cacaccggtc 480

tgcttgtagt tacatgtgca ggcacctgga taacaacata gaatggttga acatatgtgt 540

catgtggtac tagtggatac atatttcaca atttcaatat gacgatggag acggaattta 600

atcatacaca tacataatcg atggtggtat ttcggctggt ggtccccctg acccggttgc 660

cattaccatg cataagggtt caagattggg tcgtgttcag acagatagtt agaacttgag 720

ctacttgagc tacgaattcc atcttggaaa tgaaattgaa cgacgtcgac cacttattgt 780

ctcgtgttgt gaatgaggtg catcattgta aggatcttgt gtgccatgga tgaattgact 840

tcctctagtg agcatacaca tttaacaata actaatccat aaactattga gcattcatat 900

ttaacaataa ctaaaccatg atatatttaa caataactaa tctataaatc ataagccatc 960

aacttatgta acgatactaa catataacat atataaatat gaaacatatt gttgatacta 1020

aatctaaaac cctaaacacc acagaactaa acctgggcaa taaataatat tataaaacta 1080

aatgtgggta ctaaacatgg tttaccggaa ctaaaacatg gtttacctgc ttcaaacgtg 1140

gtaaaccacc ggcttctgag gataaatcaa caggattact gacgagttca tacatttcct 1200

attcttaata ggctaaactg atttaaattt agatatcttg tatacaaaat tactcactag 1260

aacatgtaga ttttttttt aaatccgaga gagagagaga agagcatgtg accctgatgc 1320

tcgtgcagcc ccggccggga aggaatcttc catctactgc atccaaatat caaagctccg 1380

ggtgagatga aacgcagtgt cggtgccagc gcgtcttttg tcgaaacatc agcagacgga 1440

ggatgcattt cgctttgctt tatggacgga aaagagagag aggaaaagga aagtggcttc 1500

gtatttgtgg gagctagatt gcgaagaaca tattctgtaa caaccgagac cagtcaacgg 1560

tggcttctgg tgtctctggg cgagctgatt tgattgtatt gaaccgagct aaaaaaaaat 1620

ttgcatggct cctgaacatg catgcgtggt actcgagaat tttcttccct gaatcttgct 1680

catgttctca tgaatcaaca aatgccgcag atatttattt atttatttat tttccctgaa 1740

aacaagcagg ggagcgcgtc attgcctcat cagtgaagca ctactgtacg ttgctgatga 1800

gcagctcacc cagcgcatct ctttcaagtt tttactaaca agcagtggag tgtttgcact 1860

gctcccgcct ctcccggggt ccgggacatg agcatgcaca tgccatgcca atcccacgag 1920

ttgcgagctg ctcccgtctg ttccagtcca gcggccaatc gtcgggctcg gaggagagga 1980

caactcatgc aggggacatc tggtccgccc cgaccgacca atccagtcgc ggtctcctcg 2040

gcgaacatgc acggcacagc agcactagcc aggcagccgc catcgctgtc gtccaatcaa 2100

attaagcggc agaggttgcc gaggcctggc tccgttccgt tccgtggcac ggagcaatgc 2160

ggccgtgctc gtgctcctgc tcgcggttca ccaatcatgg tgcatgtgta gtgtagacaa 2220

gacagccaac tagt 2234

<210> 1183
<211> 2576
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323580_G1, chr9:151136784..151139359, Cluster 7

<400> 1183
acgtgtggga gctcgtgtca agactcaaga ggcaagcgtg caaacgaccg gaaataggag 60

tgaacggaga acgaaaaaga aaaggcgaga gtgacctgaa aaggataggc ttttaatgcc 120

tgcttagacc gagagctagc tgctgaaatc cggggagtgt agtgtgactg tgtgtgtgag 180

aggagagagc gcttgcactg tggcagagag aggaagaagc aactttacta gtagtaattt 240

gctagtagga gtaggggcga ctccgcgact gggttgtttg ttccgaaagg gatgggaggg 300

aacgcgtatt aatacggaga gggactgtca ctgaggcgcg acgagagggc ccaccgctga 360

gtgaagttcg gcccgcccag gacgaagaag tggacacgag ctgccctggc ccggcccatg 420

ggctccacgt acaaggccta aaagggatgt gacagtggta ccgtaccagc agacacgtcc 480

acgtccttgt aacggccaac atgcaacgtc aatgttgatt ttgtccctat gtaaaatata 540

agatttgtat tgtagaatga cgctatttct ttaaaatata tgcagtacat cgtgtaaaaa 600

ataaaataga tgataagaaa taggataagg tagctgaggg agacacctta gtaccttact 660

acgggatagt cttagcatga ctactgcccg gcttcctaca aagccaacac aattaaccaa 720

atattatgaa ggcattgtac aactgattat ttaggtatct acattaatca ggttagaata 780

tctcatgcat ctgtttagag caactctaaa aacctagcta aaactaatag tattcgggtt 840

tgttggggca acgagttgag ctactctggc tcgcgagctg cacaaaatta atgatggata 900

taatgaggtg agcaagaacc gatcacaaag aaaaaaaaaa cagtgcgaca tcagaccgtg 960

tatactaacc tttgggcttt ggcgcaatga aactgacggc aagtgttgac tttggagcgg 1020

cggatgcaag ggccagacca gcttgcattg tgtgatgaac gcaacggacg gcagcagtag 1080

tggcaccctc tgaatctctg cagatggtgg gcgaaggcga cgacgaagac ggagtagcta 1140

gcttttggca gttggtccgg acagggagaa ggacgtgcat gcgtcctgtg tagggacggg 1200

acctgagatc gcgtgatctc tgggatcgcc ccgtttgagg gcggtgcacg cggcgtggtc 1260

ctaacttcat ccacgagatc ttttcttatg acaccggccg tataggggcc cacgtacatt 1320

tggtttgcgc accgatcgat ggggacgatg catggagtac gtacgtacgt tgtcatcatc 1380

tcatgcatgc atgctgtatg aaaaagctga ccgcgcacag ccgggcaggc agcaacgcaa 1440

cgtcgtacac tcgtactacg tgctcctgcc tgattgcagt ggccgccggg gacgcatatg 1500

cacgtcgatc ttcccatgca tgtcatatca gagcctagag cgggcctgct ggtgctggct 1560

gctgctgcaa agtgggactg ggaggtggtt taatcgctgt gtgcgatccc tgcgccggcg 1620

gccccgcgtg tctccggcct gcatgcaatg catgcagcca gcagcctggc gggcggggac 1680

cgtggtcggc ggcaacaaca cgaacacacg gagccaagtc ttgccctgcc gaccgccgtg 1740

cgcgcgccgg ttcccctgtc agattcagat gcctccatgg acatgtgacg gatcggaggc 1800

tgtgcaccac ttgtggcatg tcctgtcgat cgaccgatat actagctagc tagctactct 1860

ctccatgcat gcagcatgct ctcctaccga ccgaacggtg tgtctccgtg tctgatgagg 1920

ctgtgggtgt gttttctgtg gtattttcgt cgctgcaggc atcggtagta ggcaacggaa 1980

atgaaaacca atccctgtca gtaaagtaaa cctactgccc ctgcgccctg acagcttcac 2040

atgcccagca gaaggcagaa gcgccggccc atgggcgacg aaaaggctcg gaggttcgtc 2100

aatgattgcg ccatgatgat gctgatcgtg ggtacagtac agggccgctg ccagtccgtg 2160

tgtccgcgct ctgccaagtg ccaagtgccc agtgcccagc ccatcatctc tcagctcgcc 2220

tgaagcgcga ggaggaggca acggaacgga ccggtctcat ccgtgcttct tgactgtttg 2280

gctgctcgcc atccagctgt accagcacca gcagcaggac agcgtcgaag gtactcgatt 2340

cgcagtctga ccgatgcaca gcgcatgtgc ccatttttct acctcctgga caacaacatt 2400

cataaagcgc ggctcacgtt cacggccggc aaccatagtt tgtcttgtct tgaacaaggc 2460

cgggtggcag tgcgatttgc tcctgtcgtc tgaaacaaca acgagccaga ccctggaact 2520

tgcattgccg gtggatgcaa agaccaagac ctagaggcta gaccctagca actagc 2576

<210> 1184
<211> 1462
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325196_G1, chr10:4000171..4001632, Cluster 7

<400> 1184
gcacgaatat agacagccaa tcaagagatg gaacacatac cactcatttg aaaaattcgt 60

ggacgcctac acgcgtatac ctcatggatg aaccgacgac aagcaagccc tagcagattt 120

ggtacctgca tgcaagaaca gtaggtccat gaataaaaca cttgcaccgc ttttacaaaa 180

agacaacttg taccccagtg cactactata gaataggatg tgcacaaagt gacaccaagg 240

gtacagtaag tagatccttt ccacgccatt cggaatggac gagatagcta aaaccaaaag 300

gtagtctaga ttattgctgc aaaacgtgta caccctggtg gaaaatagat gctttattat 360

ttccaggatg cactgaagca gaaaatggtc atccagtggc tagtttcata ctgccatcca 420

tgcatccaca tcaaataggg accggaccgt ccattcaagt caagttgatc aacaggagca 480

gggcatccat tcagttcggt ttgatgctca taacatcctt cacaaaagca gtggaagtat 540

tacaagaact agtggttcgg gtgtttcatc tttcaataac taattagtat gataaatgat 600

ttaaggacga ggtagagaat ttaaaccaat ctaaccgttt catatgcacc atgtgaacta 660

tatccccaat ccaaacaatg taataagtaa agcctgcgcc tgtacaagag ttcgcaactc 720

cacccaggta tgtcaaaaaa aacaatagta ctggccttgt cagaaaacaa ccctttacta 780

gctcagccca tcctcaactg atttcccatg ctcgcgacct ccacagggca gcgcagtatg 840

ggcttcctct tgcaccatcc ttgggatacc gtggaattag tctgaccaat atagcttaaa 900

taagtataat gcggcagttt gttcttgctg tccagcatgt tcgtgcactc catattttga 960

tattgatgta aatcctgcaa agtagacaga acactcgaat cacagccaag tccttttcaa 1020

gtccacagtt gcatgtttaa tgtagtgaag cagcaccaag gtttgatcaa cagagtagag 1080

atgatcgtta ttcctatcag gtgttttgtt aataaaatgg gaaggagttg ctttcaaaac 1140

tcggtccggc agggtaaggc cacccaggtt ccccgtgggg gcaaggctcc gcggggatcc 1200

aacctgttcg gagcgggttc ggggacggtt tctctgcccc gaaaattaat ggggcggaga 1260

cggagaagaa actaccccca cagggctgat tggggaccaa taagaaaccc taatgtgtat 1320

gtgtattatg tgatttgtga gagtgtcaga taagttgaaa taattgtgac ttgtgagtta 1380

tgatttgtaa tataaggttg ttacttgtta gttgttttag acttttttat tttgttgtat 1440

tttgataatt aatatatttg tt 1462

<210> 1185
<211> 1515
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325313_G1, chr10:4435583..4437097, Cluster 7

<400> 1185
cagagagaag caaaaactaa acaaggacaa aaaaacaagg aataaatggc aaaaaagcaa 60

gacgatccat aagtatatat tttatatttt taatctccgt cgccattcta tcgcgctaag 120

tggtaagata ttcacgttaa cattcattag cacaatccac taccatatac aattatattt 180

ttacttaaac tatttacagg actaagaacc attactcact aacagcgaca aacgaaaaga 240

catactacag tgatagatct aaagctcttt ttgctgctga tcatctgcat gagtacatgt 300

tttaccagct gtctgtcgat gaccttgcac ccttagcgta tcctcgcagt tccaacccat 360

acagatgaac tttatgtcat caatatcgag taaactattt agaacagaca gctttatgtc 420

atcggatgag ctttatgtta gttaagtttc cagttcagtt ttttcagttc ggcagtcaga 480

gcatggctac gacccttcag tcagttttgg tcatgcgcgg cgttgtaagc tctgatatgt 540

gcacgttcgc atcctgagca agttggtaac cggtaggaag gttcggatac ctcgacgtgt 600

tgggtggcga acgatttaga cgggcgatcg aaactgctgc tacgtattcg ttttggtttt 660

cttcagcaat acagagtctg agaatggtgc ccagtttttg cagcacaacc tgacggacgt 720

tcagtcagtt ttttttgta cggtatttcc taattagcac gattaaaatt gctcgatgta 780

acaactgatt tgagcaatga ctaatctgct gctcgtcagc caacgcagca cactctccat 840

cctcctaaat tcagctgacc accattctat atcacgtgca tagagctttt ggatctagcg 900

tctgaattta tttacaaaac cagctgggta gaatttaatg gtgttggtgg gtaatatggc 960

ggtagatgtt acacggggga tcactatatt gaagtaaatt tgcaacatta ttcatgcgtt 1020

gtgtaaaact ggacgtgggt atactttggc catgagattc gggtccaagt gaaaactttg 1080

aatctagacc caccactgca gatatgaatc tcttaaagct tagatcccca ttcaaaacct 1140

agctagaaca cattactcaa acagtcgaat tgcttaccag aacgagctgc acattacaag 1200

ttggcattgc ttcagatagc cacacggtga cgacactagc taggtaactc acaagcgcag 1260

gaccacaagt tgttgcatga ttcatctttg cattatgtgt ctgtatgcaa gacatgcatc 1320

acagatgaat gaagccacag ccttggatag atgaggagtg gacgtcgtgc aaagtagatg 1380

tacatgtacc acatgcatca tgggatgaat cgtgccgcct tttcggacaa gattcattgt 1440

gctactgtat tcgtgtgaaa gaaacatgca tgattggatc ataagcagat ggaagaaaac 1500

atctccctgt agtca 1515

<210> 1186
<211> 1574
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3279_G1, chr1:17002863..17004436, Cluster 7

<400> 1186
actgattggc tcccttgagt tgtttgtcat tttttaggtc cgtaataacc aaataaataa 60

aagtaatcat gtattgaaag tgaccaacaa gggaaaagaa ccttcctaaa tacaacatgc 120

ttgaaatgat tgtttactct agagcgacac aaaccacgca catggccaaa tgcatagaaa 180

tggacccaaa acacaattat tacataaatg gtaaaacatc tataggaaca tcccaaatct 240

aatctacaac atgtatcatg ttggtgaccc tagaaacatc cgttgttgta agtcgatgat 300

catgaacgtg aatatggatc aggacctcca aaagaagacc atccagaata aataatgtga 360

ctaaacgtgt aaggtagggt gccagatgtg tatcgacctc ctgagttgcc acatgcacat 420

catgtagctt gcatgtcgtg gagtgtagta actaatcaat aaatactcat ctagcggtgt 480

aaaatcaatc taataacata aacctcaatg gcaaaaatag attgaaacta cacaagataa 540

ctaacagatc ttgtcaacaa caacacttag tacaagatct actagggtaa ggtgataaca 600

ttgtactacc ctgacacaac ctaataggga tcatgtcagt gcagcatgcc acttgaaaac 660

cattatgaaa agggtggtga tgtgccaatg agatgagaag catgcactgc ttagatgaat 720

gaatgccttc tcattattat gatcataaat tgttatattt taaaatctat ggacttaaag 780

tggtaatcac cttttaatct atcctaatgc atatctaaga tacatgactc gtagggccta 840

tccttctatc tagactgaat acctcctacc attgaggcca tcgactagaa aagtttgcac 900

caatcctatt aggatttggt gtcaacacat gccccttat tttagtagaa tatttttatt 960

tagaaactaa atctttgcct tgtggaaaat ttacaccttg ttggcggtca agcgtacttt 1020

tgtgtcagcc aactctgcat tacacaagct ctcctcaata cttggaccct ggcacttcca 1080

cttccaacag tccgctttct ccaagtagta ttagtgtgca tatgattctt tctaggcaga 1140

gcaaacccat cgcagatcat ggtgtcctct tcttcttctt cttcctctgt tgggagcagt 1200

ttctcctctt cctccctcga tctctccttt ggttcctctt cttcatgctc cattcatctg 1260

actccacacc attgccttgt ctccccccttg tcgaggaccc ctaggactat atctaggata 1320

ccaaccccaa cctatatgac tatacttaga tagtggttga cgagcgagta tgatgaggat 1380

atcactggtc gatggtctat ccccccctcat tcctcaagaa tcggatgatg actagagtta 1440

ggatgccatc tacaaggcct ccgaggacaa ggtcatctcc tcataagagg aggaggaggt 1500

gaagtggtgg cgaagtagca acaacaagga gtctgagaag tgtattttac atgtcatttt 1560

atttttacat gtct 1574

<210> 1187
<211> 1637
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33891_G1, chr1:206878484..206880120, Cluster 7

<400> 1187
tcccctacga gtggggtcgt tgctccatag ataataagtc gtgaaaacca ctcaagctcc 60

tattagggct tgtttggaag caagtgtaat ggagggattg aggaggctag aatccttact 120

attcaaaatt gaataaaaag gaattctaga ctcctcaatc tcctccattc cacttgctcc 180

caaacaagtg cttagtgtat tgttacccca tagatgggtc gtgcaaacca cgcgtaagca 240

tggctttatg tatgacttca caaaaatatg ataaggttgg ggttgatggg tcttaggcac 300

tctactcact tgctatataa aagggagaaa tatagtaaca tgtgggggcg atgacattcc 360

tgctagaaaa tctccccata gggtcaggat ctagaaactc tcatagatgg ttcattcaac 420

ataaagcgta ggcatagagg tggattaaga aaattaggct aaaactctta ggagaaccaa 480

aaggtgagag ggagttagga ggtcttgatg ttcagttgtg tttgaactta taatcttatt 540

cgtatttgtg ttcaccaatc gatgagtagc aggaggacaa aggacaatat acacactgta 600

gcccaaacct ctctaactgc ccacatgcta gctcccagta atacctaggc tcaacataca 660

agtaatctaa gccccgctct ctctcctttt tagtactttt catagcctag tgttgttttg 720

caacgacatt tcacacgcca gatagggaag gcacctttc tctttgaaat tttcatgttt 780

tgttgtgtag tatgactgtg gcaacactaa catgattgct ggttacagaa gctgcttcta 840

acacctactc taacaactta gactatggac cacatcaccg tagtgttgaa atctcatgta 900

gtcttctcca ctgtcgcctc tagccaacag acatgcctta gttgggttgc acgatgtggt 960

ccccataggc tagggtttag tttgtgccct agctaggtgt gtaattccta ggttcattac 1020

atcatatgcc ccaatgggcc ctagaggagt ctgaccactc tacacatgtc actcctccaa 1080

cctcacatta ggactaaggc gaggcaatct ccaagcatga ggatttctct ttgcactagt 1140

catctctatg ggctcatctg tgcctcaact ttagtgttag tgatgttatt tgccctctcg 1200

atgttgcaga ggaactcctt tgcaacccac tagcgtcaga catcggtgtt gaaaacctat 1260

tgaaattcca aaagaacaac aatagggcaa cacagttaat ttgttagttc ccttctttgg 1320

agggggattg aggaaggata ttttaccctt agcatatggt ttgtaaacac gtttaatggt 1380

tcttacttca tctcctctaa atattcttac atgaaacaat gacctttgag tcaaacggta 1440

gtatgaggac aaacaattgc cataggacaa agtaaggatt ggaaatgcat gtgcgaacag 1500

agaagtccat acatgggtag gcatgagaac tctatcaata tatttatacc ttttaaatct 1560

ctcttttgac tcaagcaaat ggcatgcatg agttcccgaa atggttatga ctctagagta 1620

tctaaggtac cagtaat 1637

<210> 1188
<211> 2153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338978_G1, chr10:87399947..87402099, Cluster 7

<400> 1188
ctctacccct taaacccacc agtctaaact aaactacgta cacccacaa atcatcccac 60

acactcatgt ctctactaaa gccagcaaac aatttaaccc cagataaatc ccaatataaa 120

aaaccaacgg tccagatcat tttatttgtc tattctctct tactcaaaca catctgacgg 180

acattcttta atgaatcatg cttcaacgct actcatcaaa catctacgtg cctccctccc 240

cacgaaatcc tcttccccaa actacctccg ctgctctcct taacttgatc cccaattctc 300

tctccttgat ccctgcacgg cgacttgctt gggaggaaaa tgaaacatgt gcgagcccgg 360

ctgtgtctgc catcttgaat tgcccttgct gcaaacaagc tcacatgaca ataagaggca 420

cggcttaatg caaccacatg ggagcgagac gcccccattt ccttcatcct aggtcgttgc 480

caccatgaat gttgttcctg ctctacagac agatctccca gcgcgtcgtc catccatcct 540

ctattcctcg tttcctgttc atgctttcgt tcttggatgg gtgccaacgc catgctcctc 600

tgccccctca ttctctcgcg gactccaacc gtgtcctcct gcccgctccc cctgacagca 660

tacgcggcgt gggcacccga agcgcttcaa tggctctccc tcggaggccc ggccgcgggg 720

agatcttccc cattttatta atcagtgttt taactatgaa attaattctt ttttatataa 780

ttaatgcata aaatgtgtat tacggtacta caaatacgat gatatttttt aaaaactcca 840

aaaactgatt ttttttgcaa ctaccactgc tctgatccat ccacccctgc gagctactag 900

ctctcgtccc ctgcgcactc acaagagagg tcggccggta gaccagacgg caagcggtca 960

gctcggcgac cgtcgtggag cgggaggatc aggcgctgct ctcgacggag atcgtgaact 1020

gcggcgtgga gccgtccggc ggcccggacg ctggctcgcc gacctagcta ctcggtgcgc 1080

gtgctccacc gcctgccgga catcatgcag tcggtcaacc tcaagtacgt acgtgtgcct 1140

tgggtaccac tacctcacca ggcacggcgt gtacctggcc accgtccctg tcgtcatgct 1200

cgtgtgcggc gccgaggtgg gcagcctcag ccacgacgag ctgtggcgta aggtcgatcg 1260

ggactcggga gaggccacct gcgcgatcga cctcgccagt cgccaccgtg ctcgccttcc 1320

tcgccggcct cgccttgacc atctctgtct acatcatgtc caggcccagg cccgtctacc 1380

gcattgactt cacctgctac aagccgaccg acgagctcaa ggtgcgtgca tgtgcatcat 1440

cagcacaagg tttatgtgaa ctcctactgc tcaccacaca tttgatagcc atacaccatg 1500

cttcttagcg catcatgtat tcatgcatgt acaaggatct tgggatacat atttttattt 1560

tcagcaaata attatatatg gttagaaagt gtgattattc atcagaccaa aaagtgtttc 1620

attcgtgtga tcatcatttt actaacaaaa agtagtctat atctaaattt ggtcgagacc 1680

ctcgccttcg tgcaaaagcc agatatcaac atgttggcaa aattattaga atgttggtct 1740

gacatggagt acaatgtttc agattgcaaa caagtaagct atactccttc atcatttttg 1800

taatcttgtt ttttctctta cttgaactat ttgtttaact tgcatattct attgcccgat 1860

tctttcatgg gtcacttcac cttatatata cttaacatgg acactacaat catctatata 1920

atagacttca tgcctatact atcatggttt aagggtaatc atcccagcat gcattatatc 1980

cataaaatac attatattgc taataatatg aatgctgtca tggaattggc caatcctaca 2040

tggaaaaacg atatttatat gtggtgtcgt atagtaccaa catgggttcc aagaacatta 2100

aactggtaat tttttataac ccgaacaact tattattttt gtctacatat atg 2153

<210> 1189
<211> 1415
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344419_G1, chr10:117728239..117729653, Cluster 7

<400> 1189
atctatgaat tcttcctacg ataaaaaaac gagccttctt atatatggca catctagcaa 60

acgtcccctt tatggagaaa aaagcatcaa cctagactat gcgtggatta agacatgtca 120

tattctcaca gtgattgttc ttatttttctt taaactctat ttatttcttc ttactgcgcc 180

acatctagca ttctcaatgt ctaagtgtgt gatgaactct caaatctagt aggcatcttc 240

tgctaagacg atcatagaag ccaagcagcg cataaaaatg gtagaaatga gaggcatcaa 300

gaaacatctc actaaattct cactttctgc cgatggacta gcgaactcgt cttttcctaa 360

tactgccatt cctatggctc aaacagattc ttttctttct ctttttgact ctcgtcatta 420

gcgcctctgt ctaaatatgt gcattgggat attatttgaa atcaatgaag caaaaggaag 480

aggaaggagc acctaagaac cataggaatg agaggcatca ggaacacgac agtgcacatg 540

tcctccgtgc gagacgagaa attcagagca ctcgcgttcc ttcatgttct catccctact 600

gcccttagga cctctctttc ttcctcttcc gtgctcacaa attctcaatg gcgaggagct 660

cttgccatgg aaccaccctc atcatcaggt gtgcatatat atagcgacct ttggagtgcc 720

tggctttgtg agtaatggaa gcacgccaaa caatagggtg gtgtactgta cgggcaatga 780

agaacatatg caacgaatca tagtggggcc ctgtaaacta tagcaattgg ttaatgtcct 840

gtatggacaa tgaagagttg atgcacggag cccagatgct aaacttcagg ctgtgccata 900

tctgatggca ctatggcaga catgcatgtt ggccaattaa agtgagattt gtttttgata 960

agttttgacc tgagttgttg aattcacaaa aatggagtgg ggagaaaaag gagccttcaa 1020

cttcaattgc atttacttgg attcatcaat aaagagagca tgaacgattc caacaaaaaa 1080

agatttttt ttaaatatgt ttaagatctt gcttcttgct tttccataaa aaatgttgtt 1140

gcccagactc gtgagtctcg tgacggaaat ttaaggtacc aaagtgaaga aattaaaaca 1200

gcaggtaaag caaaacttag tacttccttc gtcttaaata acaaattatt tcaattcttt 1260

aaacaattca aaagcatctt aaatttaact aaattcatac aataaaataa taataattgt 1320

gataacaaat aaatgctatt agatttttta ttaattatat tttatagtat acctatttga 1380

tattataaat ctatatattt aaaaatagtc aaatt 1415

<210> 1190
<211> 2289
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344662_G1, chr10:119131667..119133955, Cluster 7

<400> 1190
aaattcaaca acctcgacat cagaaaggaa ccccgtctca gcttgcttct tgtggcactt 60

gcttgctgcc cctggccggt ataaccctcg tgtgtctggt gaaacgtacg tgccatgaaa 120

acttgtgtct acaggctcca ggttctaggc cccggcatcc gttttaaact tgcccgtttg 180

gaagtgtcaa tggatgcatg cttcaggtat ccgttctgtt agtcaagaca ggaagctacc 240

cagagccttt ttacggctgt tatccccctc cctctacaaa tacaagggat tataagagtt 300

gtatgatata taatattgtc gttgcgttgc gagttgcgac accacagtag atcaaaagta 360

cgcgagaaaa tcagagagga agagacgaac atagacctgc caccgtactg gatcaggata 420

ttaacattac tatgcatggg gttgtttggt ttgtagggac ccctatacac acatgcgcga 480

tgaggattta cagaggttca gttcgtttga gcctgagttc ctacgtcctc tgtatgagtg 540

acatttagat gtaagtgtgt aggcatagtt gacatatgtg cggtgtgtct aagctaccaa 600

gtatgaagag caccagctac cccttgtgat acatattgtt gagccgagcg atcgagggag 660

ctcacgctca aacgatagct ttttctatgt gctagctcgt tgaggaagtg aagttcagaa 720

aggtgaaggc tacaaaaccc aagaggggaa aagcactttt tattctgctc tacaccttac 780

tgttatagca taagagagaa gagagttata tctctctata ggcacgggat cctacccata 840

aacatgtgca actactccta ccttgtcata gttattgtac catatgctaa gcacctctaa 900

catgccacaa catcaattat gacatgccgt aatggagggt ataggtacct atgtctccga 960

gtactctgta gttgataacc gctgaaggtg catatactat atagtgttca tggatatata 1020

cacctatgat ctgaggcggg gctataatga tgcttttggc cgctatgtca cttttgcaat 1080

aaatagatgg acaaattcca tatttaactg ctcgacgcca tgtgtggtta tcctgatcat 1140

gggagcatgt agtgttgggg ccatatcatt cggagccatc ctgccctgag ggcgtcttga 1200

ggagtgctgg aggaatccca tgcaaggccc ccgtattatc ggaccctagg gctaaccgcc 1260

atgggacttg ggcctctatg cgtagggccc caaaaatata ggttggagtt gagtgaggct 1320

ctatgggtct gccttctgct aatgaagtca tataggttgt tttgacacca tatggggtta 1380

tgcctttcct agaataaagc taacagtggt acttgggccc accataagcc caagaaggtc 1440

cataggtgac accaattttc ctgcaaacat ctaacaaaac aatataatat gtgtgcaggt 1500

aatctgcttg cttcaaccat cctggccagc agtgaatgtg tcaaatagta gtcatatcgc 1560

ttgactatca aattacaagg gtcatgtgat gctttaggtg ttgtgcctga tcgttgcatg 1620

aaagggagag aaagccacct taaattttgg gcatgtggtt ccatcttcct tttgctttaa 1680

tacttcgcac aatctattgc acacatgtca acaagctccc ttatctaccc catagtcgac 1740

acgaaccaac catactcgac tcatcccctc attcttttca acaccatgca aactcccttc 1800

ccattgtact tgataccgag ctcgcaaatc ttgaaccaag aggagttgga caaggtgtgc 1860

ggctcctcaa ttagaccttg ccactagccc ccaacaattt gtgggttgtg atgatcccac 1920

ttcaaatgcc ttgagatgtt tggggagtat atcttcatct agtccttcac gatggttggg 1980

ataaacttct cactattgtg attcttcctt cgtatcttgg agtcctatgc cttttagatt 2040

aggcacctca ctcgcaactc catcatcacc ttgttgacct tcgcctacct gtgtgaggca 2100

ttcatggggt gaggccctcc atgacattgt tccaaaactt cttcatcctt taggtgttga 2160

gtagttagaa cttgttaaga gtatactacg ttcaactttg ctcaagactg agcctcgaac 2220

accatacatc tcactcaact tcactagcaa gtgggagcat tggagggaga tgtggtgtac 2280

ctcattata 2289

<210> 1191
<211> 1680
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34516_G1, chr1:210078433..210080112, Cluster 7

<400> 1191
atgtgccctg gcgatgtaaa tttgatcaaa ttgggcactc ttcgctagtg gatagattgc 60

atgcgttctc ctttcccaac gcattaagca tgccgagtta cccgccgatg atgtagatac 120

tagatagaat atgaaaagga ggagccgtag tggggttggt agcagccaca ggaaaattgg 180

agccacgcga cacgagcttg actcaatgcc ccaattaggg acgggcacag ttgggcaagg 240

cgaacaaccc cgagcaccca gtccaggcac ctgcccaccg aactaggaat cactcctgct 300

gctacagtag tatccaaact aggcggtgac ggtgatcgtg agcactgggc gctggcgcct 360

gacgtctccc ggcccccagc tcggtcaaaa cgctcaccaa ccgtccccat tccccaaccc 420

aagtcgcact cgcacaccgg ccgcttcgtt cctatagaca tatggtccgt tgaccgtcaa 480

ttccgcaacg gtaggtggaa aatttgctgg aggaggtgtc ttcccctgga ttgcccgatc 540

taatttagta gtggctaaag ttaggattaa ggatctaagt ttgcaggata gagaaaacca 600

aggctttcga gctaaagctc agacaaacca aggctttcga gctaaagctc ttgtctgagg 660

tctctcccat tcacttctaa acctaatcgc ataagagaaa atgactaaaa actcaagtga 720

ttgtatggtc ttcgatgaaa gagagaactt gaaggatggg gctagcttcc atcctgtgct 780

gtcagcaccg atttatttag aatcggtaca aaataaaact ttcgtacagg ttttaactgt 840

cgtatcatcg tagaagacat atcagtaccg gttggtatct tcaataggta ataattaatg 900

aacattagta atagttacaa acactaaccg ttactaatgt ttcccttcat aacccctctc 960

ctacctccag ctagcgtcaa gaacagagcg gagatatgtt catgatgcca taatcttcaa 1020

tgggagaagg cactgtctaa tgtttttcca aaaaaattgt tgaagatttc attcatttat 1080

gtgtgagaat aggttagaaa gttcatcctc tcatatagta tggttgcaat acttacttgc 1140

tttgtttata tttcttgatt gtatggttca ttatataatt tagagagaga gagagagaga 1200

atagtgagtt catcctctca tatgtcttgc aatgtgtatg aaggtaatat agtttagaaa 1260

aaatcataat agtaaaaaat gatgcaatta agtttttaaa actaagttta taaaagggta 1320

agatttagaa agggcaagaa gaccatggtg ccaagactaa atcattgaaa tgacaatctt 1380

gtattccata tggtagagaa cttaagcatg gtctttagaa agggatctgg tggccaacct 1440

accccaagtg aagatagaaa ggcaccaatg tccaatgctg aagaagaagt taatattttg 1500

gcacctacct ttctggaaag tatcagatgt ccgccatgca atcaacatga tgcatctcac 1560

aaagaatatt tacattaaca tacttggttt cttaggcaca tataggaagg acaaagatgc 1620

actagaatca cagaaagact tgaaagctac aaaacaacaa gaggacctgc accattatac 1680

<210> 1192
<211> 2173
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345436_G1, chr10:123846279..123848451, Cluster 7

<400> 1192
gacttaggct aaactttagc agaagcaacc aaacacaccc ttaaatacac gccgttcatg 60

agaggtcagc agggcagtgc aataaattcg atgcgcagtg agtcagtgga ggccctttcg 120

cgaagaggac cctcgacgtg gtgcacgaac ccgaagcctt ggatcgcttc gataagaagg 180

gcctggagta tgtttttttc ttaaagtgta aagtgtgctg ctgtggactt tgctattcag 240

tccaggtttt tttgggtgcg gccgttgagt aagaaaaaaa aaactatatt cccaaacatg 300

ccctcaaaga gacccttaaa gtgtaacgca atattttgtg tgcagtgaaa atatcaacgg 360

tacaacaaac gacattttga tacactctcg tacatgcatt tattagaaaa aaaagatttt 420

ctcatgtata gcactcgctg gagattctcc ctgagagata tacagtaatt gttactacta 480

ctactacata gtttaacatt tttttcttct tttgtcgtga tattggaagg agcatatata 540

tatatatata tatatatagc accagcaatg aattagtgat atctgaagat ctttacaata 600

tactagtcaa caatataaaa taatgtaaaa atactcctaa caacccccctg aatgtgattt 660

gcccactgcg gcacgggagg cgcacaagga ccgcaggccg cgccagcagc ggacgagaaa 720

ctgagcatcc cggtcatgtg actggatcct gaccagtacg taaatcgcct ccaactgtac 780

gtaaatcgcc tattgtgact ggatcctgac gtcataatta cgtacggccg gtgaacatgt 840

gttgacgtcc aactgtacgt aaatcgccta ttctgaccgg atccctgagc agtacgtgac 900

agggtacgtg tgtcacccac aagcctagca tctctgctct ctagctagca tgcttcaagt 960

atcatcggta gctcgcttgg tctgtgcatg agtcgtgaca tgtggctgca ggagcctgga 1020

ggagaaagca tagctttata cagagagatg agatctgcaa caaagccagg tctcaagcat 1080

atccatcaga cactgctaac taccgatcgc agctggattg ccggccgtct taccttagct 1140

gacttttttc tttctttctt tctttcttaa agacaagttc ctttaatttc aaggtttaag 1200

cgaacactaa tgaggtgtac gttggtttga ggaatgaact agtccatcgt cttcttactg 1260

ctcactattt ttgtttggtt tgtggaatag aatgcgttga tccatcacca tctcattcct 1320

catagttagt tagttagcac taatatgagg aatgaagtca tcccaccaaa tctgaggaat 1380

gaaactcatg atgcaccacc ttaatttgga tgatatggtt cctcaaacca aacactctat 1440

aaatgatctt tttgtccggc gacctcgcag agatcatcct catcattatc tcgcggtgcc 1500

cgcagcaagc taaggagggg ggctgccgag aagaaagcag cgaggggggcc ggtggaaatg 1560

atcgatgcca ttgacttggg cacctctagg ccattgggat ttgggagccg aggtggcgtg 1620

gtgaaccgga tgattggctg ccgcgggcat ggcggtggac cggactggtg gaggacggac 1680

gtgcatggcg gattggcaga cgatgtgtgc ctttctccgg agtccggact catccgtttg 1740

acccaggacg gatcgccatg atgctggcct cctggccgat gtgttgtcaa gacgattggc 1800

cgccgccatc gccttcatgc ggtgcgggag tagtcgtcga gccatctgac cgtgaccgtt 1860

ggcgaagtca gaattgtaca ggatctcggt gagaagagct gacaccgccg cgcggctcca 1920

tgttctcatg cccccttgtt taagaaaacc agagcagagt ttgttgaatg gtttttccat 1980

ggaggcacgt gatgcacacg gaacaggcaa ggccatctgg ggaatggctc gattggcttt 2040

cgctggccga cacggcaatg gcgacatggc gttgcgctgc ggctgcccgt ctggggccca 2100

ctactttctg cttccggaat gtggcggccc aactaataat gactcgtacc attattattt 2160

agctgtatat att 2173

<210> 1193
<211> 1554
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34733_G1, chr1:211276642..211278195, Cluster 7

<400> 1193
tcttttgagt ttctaatgtg gatatagaag caatcaataa ttattttatt taattacgct 60

aattaggatt cgaactcgag gtctctgact ttgatatcat attaagttac atgtaccaaa 120

gtagtagtac aaccccaaaa gtttaagctg ataaaaggag tggacaattc actcattata 180

attctaacag gagaaacagt attctctaaa ttcaaaagat cgcaagatcc aaagcgaaat 240

ggaggtatat tactgaatat ttgcgtccac gaagtgtttc atatgttcta ccactatata 300

ctaggacgtg taaaactaaa agaaagaaca aaaaaaatat gatcctgcaa atggggaaac 360

aagcggttgc tagtacaagc gaaacacaat atgttgcttg attcatgtta tgtacaatca 420

aaaggaggtg tcacctgagg gattttatcc catatcttag caagatagta ttaagcggca 480

ggcgcaactg tgagaccgct cattcattta caccataaaa aatatgttgt gagtacaagt 540

gaagactcaa gaagcgtcaa aatacagtat tccgtaacca aatcaaagca ccagaccagc 600

aagaagtcga gcgtttgttc gagggtcaat tcggacgcaa gaacaccaca agaggccaaa 660

attcacgttg tgtacaaacc atagaaaggt aaatacggat taaagagact cgttcgatgt 720

acgcaccttc ctgggggcgc ctttccggag aaaaggaagg acgcattctt cttcgggagc 780

acccgccgcc gccttctcct taccccattc ctccgctttc gcgacgatcg acgtagtcga 840

gggagcctta ggggacctgc gacgactcct tagagtggag gacgacgcct ccgagggtag 900

gctgcggaca cggagttgga ctcggaccga gcgacgggga cggggagtta ccgcgccgga 960

tggagagggc gcatccgcct cggcctctcg cggtggtgta gacgcgctca tgggtgggga 1020

cggtagggag acactccgac ggaccctgat caggattgtg gagcggcgtt ggggctgcga 1080

ggacgtcaac aaggcggtct cggaacacgc gggctgattc tgatcgtcgt cttgacatgg 1140

gggggggggg gggggggggg ggcgatcaaa cgagtggaac ggcgccgcac cgccgggggc 1200

gcggtggagg tggtcagggc ggcctgaggt gcccacatgg cctttaaact tcgagcagtt 1260

gctgaggaga gcatcgaggc gaggtggagg cgggaagaag aagagaggga aaggaaatgc 1320

cgttgcgggg ttggtcggtt tctttcgttt tgttgggctt attctgggtt cgttagggtg 1380

tgcagcgatg ggctacaaca gtcttgggcc tgctcgtttg atcaaaaact aaggcccatg 1440

tttagaacag ctacaagcct acaactctat gaaatttgtt gaagttggtg gagtatgata 1500

ttaggtgctc cggaaaatta tagggctgaa gttgtaactt gtaagccttc agaa 1554

<210> 1194
<211> 1861
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347406_G1, chr10:134778484..134780344, Cluster 7

<400> 1194
ttgagccgtg gggctctacg acacctgtgc gttggcctag gacacgggat ggtgagatca 60

tgaggcacag gtttgcttcg ttccatgact gttccttggt cctcattatg ccctgcagtt 120

cctgtacctc tcatagattc cccatggact gatcgacatg ccgtactagc caccgcgcct 180

gtacgacgcc cgacgccaac acatgcacat ttaacaccgg cgagtcagtc gcgcgcggtg 240

gctaataata ataacatgca aaatcccagt ccaagtactc tggcattcga cggacgcccc 300

catgtccaca actccacatg caggagacag atcaggcacg ttgacaaatc ttcaggaaat 360

gcaggcgcat cttgtcacga cccactgcac tgctgctcgc ctacagaagc ggatcctgct 420

gccgcgccgc ggccaccgcc gaagttgacc gcagcaggcg actcgagatc gcaaatggct 480

cggctcggcg catcatgaaa ttcgccagcg ccaatggccg cgagcctgga tgcgtgtgcc 540

acggagaatc ccagggtcgc aaggggacag aaacgagacg gctcacatgc gtacgaacgc 600

cctggcgcac acgcgtcgcg ccggcctgcc tgtggaagtc caacccccct tgtttccccg 660

ctgttttcgt ttcggtggct cagccagaag aagccacctg aaacaaggca gtcagaccgg 720

cagctccctg gaatttcctt ccccggtgag cgccccctcc tctcattgga gcatagtgaa 780

ggtaatgttg ggtgactggt ggctccatgg atgctgggac gtccttggcc ctccaaggat 840

ctcagtgcga taaggttctt caaacctttc gatgctctca agaggccggt tgatgtggcg 900

ggtattgatc ttgacaatgc tatgtggtga gctagttttg ccacttcgct aaggccgtct 960

ttagatcctt ctagcttatt gtttgacggt ggtaaataat cagctagcaa aaattagcca 1020

ggttatgttt gtagacttgg ctaatagatg ttttttttctc tttatacgat ctattagcac 1080

ctatccaata gctgatggat aaacagtttg tcaaccctcc gattaacaat tagtcaattt 1140

atcagcccac ctgtttggag gctaatgtgt taaaattagt cggcaaattg tttgccacga 1200

ggatcctaac atgccctaag ttcatgtagg agttaatagc tggattggtg gagatgcaat 1260

ggacttggaa tgggtgtatt ttaggttgat taccccatct tttaatcttt ttttttaact 1320

cctaccacta tatctagctc tcgtcgcacg aacaggatag aatacaacat tacaacgcta 1380

cagctcgctt ctcaattgag tagcatatga atctcctcgt cccaatcctt tacgcgcata 1440

gagagttaga gcaaacctct agtatcatgg actactaaat acactcgctc gtgcgtgtag 1500

agtgtagacg atcaggtttt tggacaatgt tttcgtgacc gttcgctaag aatcttaatc 1560

ctaaagggct ttcaagggac ggtaatatga acatctacac tatggtccac aacttcaaac 1620

aatacatgat gtcaacttat atggatgcag tcaccaattc cttgattctg ttttggagtg 1680

tttggtttag agaatcaatt aatctaaatg atgtgtgcat catgagtcca ttccataaat 1740

ttagtggaat aaactcattc tttatattat tgctaattat tagcctatta ggaatgcaat 1800

ggtgatggat caacctattt cattccacaa accaaacaaa aaagtgagga ctgagaagat 1860

g 1861

<210> 1195
<211> 1621
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347529_G1, chr10:135624844..135626464, Cluster 7

<400> 1195
ctagcaattg tttagtcgtc gctagttgtg cgcgtcatgg tccctaatcc cgacaagcac 60

gtcgcctttt ggccaatggc gtgaggataa gcgccgcccg agaccgatcg agagcgaggg 120

ctaatattag tggcgtgatt aaacctagct taatccatct cgtcgagtcc gcgactgaga 180

ccaaagttaa gcatgccgca gctggctgtc tgtgcaccca ggagcgagag gaagaagaga 240

gagagccgcc gccgcactcg ccgaccgacg cctccaccag gaggcgagag gccatttttg 300

catcggtaaa gctagctact agctcatgtc ggggacggag gcgagcgcgt ccatacgtac 360

gagtacgcat gcgattctgc agcaggggtt ctcgttctcc ctccagattc acacagcaat 420

aatcaacaac aagcgcaggt catataattt ggtttcgtgg cactagtagt ctgtgtgtgt 480

tggttggcct gtcgctgttt caagttgaaa gcaacaccgg gaaagtccaa cctccgggtc 540

cgatggctgg tagagcccct ctgcccttgg acgttcgtga tttcggagat atgtcaccga 600

gaaatgctgt cggctagcac cagctttcaa catcatccct aggcgacttg caggttaatt 660

tcttgggaac cctaatttct cctccctttt cttttatcga tacacaaaca cacatcagct 720

tggatcggag acacagtacc cacacaccac aagcaacgcc cacacacaca tgcatgtgtt 780

ttggcaactg actacatata tgctaattaa tggcggaaat tcttaaagcc tttttagata 840

cacctcgatc cgcaatatga attgaggtgg attgaagcgc agcttaaact aacttacact 900

cgaataatcc acctactaaa caagaccgaa tgtcttttct gttgagaaca aataaattta 960

accgaagctt cccggtcatc gatgcaccta tgctaataag cagtatcagt catatgcatt 1020

atctaaaaaa aatatgttgt ctctgtgccc ttcctaatta tatatgagat gtatgtcctt 1080

tcctactgat acatactata tatatttgca gcccaaagga ttgggagatt ctgtttgttc 1140

attcaccaat gatgaggata cactactaca tacttaatgt agtgtcacca agaaagtaat 1200

aagttaatca gaggaataga aaattctacg cttactctca tgtcgataac ttctaattct 1260

agtttagctc ttctttgccg gttctttccg ctggcttttt tttagttgct gttacaagta 1320

accagcagtg caaacaattc agccacatga ctatgttcat caattccttg gattagcagc 1380

tagcaccatg catgtgttga cgtttataat aaaacaccgc atgcaaaatc tatctccaag 1440

tcaagtcaaa tactagatta ttgccacgca aaagtttgta taaccacgga taacattaga 1500

tatgagaaga agttacagcc ttatgtttct tttttattat atatattgtg tgtcgttggt 1560

gatactatct aatgagtaga cgagcacctt gtttaattaa tctctatact atgtgtgcac 1620

a 1621

<210> 1196
<211> 1848
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347531_G1, chr10:135627046..135628893, Cluster 7

<400> 1196
tatgataaca atacttaaat aaatgaagta cttaaaaagg cttgttataa tttattattg 60

tttcagccaa ttttttaaac ttcaagaacc actaatattt actcattaaa tctttttttat 120

gcatgatagt ttttagtaaa caaacttaaa catcactgga tgtactgtaa ggcggcggct 180

ctggggtggg gcagaggggt ggccgtcccg ggcctccaga ttcatagggc tctgatccta 240

gatataaatt cagtagttag actatcagtg tatgatataa tagtttatca acaaagtacc 300

aaaaagttta tggctacgac gtattcacaa tccgatctta tctaaacatg ttagaatctt 360

ttaaggtaat attataatat gtatcttttt atttactaat tgcttgatat aaatgttttt 420

agatgtatct taagtgttta tattgataat atttatatat aaaaatattt agaatgacca 480

ctattttaaa tcttgtccta agccccaaaa tctcaggacc gccactggta ctgtagctgc 540

tcaagatcaa tgaagacgac aagcgctgcc ctgatcagca tgcgcaataa gcaccacaaa 600

gtgatgacgg gaaacgagag gaaattaaga actcgagcac atgtacgcac aactaacaga 660

cgggcggtta tagtttatta ggcatgcatt tgggacaacc gatattaaag aagaggaaaa 720

gattctgcat atatatatag actttgtttg ctcggaggcg cgtcacctaa tcatgtggcc 780

atttgaagct agctagcttc tgtccctccc ccacacccat tattatcaaa agccaatgat 840

cgattagctc gcaattattt tagggttcaa cggcatcttt gccagggctg cctttagcta 900

aatggccact gaagataaac accacacctg ttcacacaca cacacacctt tgataagaac 960

gacgacattg gacatgaaat gtgaggcacg aacgggaggg atggaaggct taatgctgtg 1020

aaaggtgttg acctaacaag aaggagatga ttgtgtgcgc gtgtgtgtac ttttaatttt 1080

acacggtagc tagagagaga aaaaatactg accgaccaag agttgattgt gcgcgcacag 1140

agacccggcc ggccccttgt cgattgataa tgattgattt atcaccgctt tcaactccat 1200

aatttagtgg tttaaataaa ttgttaatat gtcatgtcaa atctagctgg ctatatatat 1260

gtattcgccc ctgtcatctc cagctagata tccgaccccc aactcctgcc ccgcacatat 1320

atagtttata catatggtag ctagatttgg accaatgcag atcgattaaa atgttatctt 1380

tgtgttgttt atttacctac gggaaagtgg tgtgcagtgt ggggatgatg gctagctcga 1440

tgcttgattc tgctaacaga atatgtgacc aatgcaaatg gctaactggc taagtagtac 1500

tatatggttt ctatatgact atatccctct ctaatattac tatatggtta attaatttct 1560

actcaggtca tctgtcatgc tcaatccctg ttccaagtaa aaaaattact agattattat 1620

tactccaaag cagagcttag tttattatgt tacttgatga gctatatata aattaaacat 1680

gcaacacaac tacaaattat taatacatcc agagtgccgg acccaacaat gttacttggc 1740

atgcatctaa gtgcccgttt gggagtgctt ctagtcggct ccggctctgg ctccttgccg 1800

gagccctccc aaacggcgtc ttaaaaacgg ctccatatgc agagcggg 1848

<210> 1197
<211> 1993
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349390_G1, chr10:145105129..145107121, Cluster 7

<400> 1197
ccccaaactt gaccgcgcgc gtcccagcag aggcagaaac gggctagcta gcatgggttg 60

cccgttgccc ccagcttcca gtgcgcgacg ccgccgccgg ccgtcagcag cgtaggcgac 120

tgagaggagg gggaacgtga gggtggcctg acgagcacga cacatttcgg gctcctttta 180

taaccttggc atcggatctt cccatgtatg gcgcggagca cgcatcgtac gtacgtaggc 240

tctgcacgca gcaacagcaa cgtacggaga aaaatgtttg ccgcggatcg gagatccgtt 300

accatttgtg gcactactgt gctgcagtga atatcaagta tagaacatgt tgacgtgcag 360

gatagacgat gggcatcgca tgccgcatgc agcatggaga gacggtgcat gacaccacgg 420

ctggaatgga cgattgcgaa gttgcgaccc gcccggtggt ccacgcctgc tgcgtcgccg 480

cctcgccggc cgcgcccgcc cgcgcccgcc ggtggcgaga gctagctcac gtgagggagt 540

agtggcttca tcgatgcggc gaaccaagga cagggtggcg acgatggcga aacttttct 600

gcgagcgata ggcgacacag gtgccagccg cctcagcaca gcgctatctc gccgttgcag 660

ccttgcaggc ttgcagcctt gcagattact caagccgctt caccgtccca tctgccatgc 720

tagcaccacc actactggag aacggggttc cggtcaacaa catttgttcc agttgtttta 780

aaaccggtat taatactgga gaatggggct ttcgtctaac aacgtttgtc tcggttgttt 840

ttaaaaccgg tattgatact ggtgaatgat ctttctgtct aacaatgttt gtgtcggttt 900

ataaaaaccg gtattgattt aatttaaagc ttcagtatca gtttaaaacg tctagcacgt 960

caagaggata tcagtaccag ttaaccaata ctaatattta gttatttaga attggttcaa 1020

agacaataag tcctaatata tttagtaccg gttgcttgac ggaatcgtta ttaaatataa 1080

ttgtagagtt cgtgcataga aatttagtac tggttgtggt caccaaccaa ccgaccacaa 1140

ccggtactaa aataaaactc cttcctcttc agtgcccagt cacagagatc ggttagtccg 1200

cgggtactat aaaacctctt cctcatgtca caaactcaca cccggttctt cgtcttccac 1260

tcttcctctc ctagatctct tcagcctctt ctatcgttgc cgcctcaata gacccagtgg 1320

atgtcctcct ctccatccag ctttaatctc ggatacagag tgacagcagt gacatgtaga 1380

aatccggtgt aggagccagt tcccaaccaa tattgaatgc acaatccgca gcagagagtg 1440

cactcgctca atcagcgtgc atgttgacta tgccagctgc ttaacggtac tggtgaaact 1500

gatctctctc tctctctctc tttgctttgt gttcagtagt gtctagctct tcgtcgagtt 1560

gagtccaaac taaaacgtcc cagagacgtc tgttgtaaag acccgtgtct aatatgatat 1620

gcgtatcaga aatccgatgt aaagacctgt tttttaaatg ttattatgct cgattctttt 1680

agagactttt atatcgttgt tttggtttaa gtacccgaga atcaaacata tttttggatc 1740

ttggttgcat ggggtgcatc ctaaagcaaa aaatctcatt atcacaattg ttgtagcctt 1800

atgttgggtt atttggataa cctggattaa tttagtgttt aatattatcg gacaactcat 1860

tggcttaggt tatagagact tttgtagaag aaaacatgtc gacgaatcgg agtagcatct 1920

atgcaaattt tctctcgttt tggttgaagt tttatgaaca agattacgtt ttgagttttc 1980

cagcctttct gtt 1993

<210> 1198
<211> 1486
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349833_G1, chr10:147810423..147811908, Cluster 7

<400> 1198
gtatcgtagc tgcagcctgc aggcaatgtc ggaggctccc agcactaggt ccatgcgtgc 60

atgtgcatcc ctagctagct gtcctcctac agtcccagtc cccaccacac tctcgctggc 120

cgccgccttg acgtcgccgc gctgcgacgc acagcggatt cctgggaggc ctcgaactcg 180

aaccattggt ggtggtgact ggtgagtggt gagaggatcc gagaccggta cgccgtacgc 240

gtgggaatag ggagcatttt gattcgctcg ccggccggac gggcggaggc gcggagcgtc 300

tgccggcact tgccactacg ggtaggttga gtacttgtac cactgctaga gaaggctagg 360

caggcagcga tgcatggcca aagcaaaagg ctgtcctggc ctgtggcggt ggcggggcgg 420

cgctcgtttg tggcctggac ctgggcggag ctagggaggg gagggcctca gatcatggag 480

aaatgatccg tgcctgcatc gggggccgac cgttttgctc ggggcggggg ccgggggggt 540

ccgtgacccg tggggacgtg agcgattggg caagcgagcg agtgcgccgt ggggccgcgg 600

tggtgcaaag ggagattgcg agcagcggga gatattttcc gctccaaact tggctgtcag 660

cctatgactg tgaccgtgag gctgcgcatg catcctctgc tccgccggcc ttgcgtacgt 720

acgtaccggc ccaagctaca tactagccgc attccgcagt tcggtctctg gcaggcagtc 780

gcctatacgg tgccgtccag ccgcctgcag ctacacctgc cggaacagta ccgtcccgcc 840

tgcatgcgac aactggtccg agaacagtgc gatggcgcga gcagatcacg cgtgcgcgtg 900

cacgcgcacg gcacccgcgg cgcggcgcca tccgtccgtc cttcctggcc tgcaggggac 960

gggacgggac ggcaagcggg cgggcggggg ggaccgggcg cggccagcct gagcacaagt 1020

ctcgctcgcg cagtcgccgt cgcaggcgtg cagcgcgtca cggcacggca cgcaggcgac 1080

gcgctgcccc agctcgccgg gcccggcggc cgcacggtgg tggtggtcgt cggcagagag 1140

agcgatggac acggccgggg acagcaggcc gcgcggacca gggccagcag ggcaatcggc 1200

ccctccagct tttggcgcag ctatagcgcg cgcgggggct ccggcgctgt tccctctccc 1260

tctccgccct gccggcctgc ccccagcgtc gaaaagccaa ataaaggagg cggtgttgct 1320

ctcgtacatg tcgcgctgct gtccgtaacc gtaccccggc gcgccgccgc cgccgccgac 1380

ggcggccctc cacctgaggc accaccccca agtcccaacc cccatccggc cggatctcgg 1440

agcagcgccc cacctttcct tcgcgtacgg ccaggctcca tgccca 1486

<210> 1199
<211> 1476
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37213_G1, chr1:224099949..224101424, Cluster 7

<400> 1199
attacgagga ggtgatttgg atgtgctagt cggaataaag tcatacacta gagtcgtatg 60

tatagcacga ctcatattga aaatgttagt attgaattag atccaatact aattttacta 120

gttttaaaaa tgagttgcaa tacaaatctg ttgattaaat gcaactgaaa ttgcaattac 180

aatcaataca gagggtctag gatctgaatg gtgagttggg gatagttcaa taccaaggaa 240

ttgggatcca attttgactc taaattcatt agacaaccaa atagcagaat tcagaaatcc 300

tgatttcaat tctcaattcc ggacttcaat atctacatcc aaacgggctg tcaagtaaaa 360

cttaggacca acagtgacat ttatttaatc atttttactt cactgggaat aggacctaac 420

attgtttcta tacatatctg tgtaaaagac acttctctag ttaaagaagt ggaaagcgca 480

aataagagtt aaaagttgtg tacctttgca ccatcgtctt tggattctat caataatata 540

gtaccataac atgtgtcaca gaaacccttg ctccctctaa cgccaaagaa tttgccttgt 600

ttgacgcacc ctttgcagac agagtacgta caagtataac acatgtattg tactgccttt 660

tcgcagctgc tgcatatgtg ccaacctgat acatgtggca tcaagaaatg agtgcatatg 720

aaaccatcac atttgaaaat ttgaattgta acagtaactc atgcatgaac atatccatca 780

ttgtacttct ataaaaaatc acaagataat tttgtcctac ccagatgcca tatagttcca 840

agggacacat ccttctctcc tatagtccta tggcaatcta agtataataa atatttttgg 900

ctcggtcttt aaacatagat ccccaacaaa gaagatcaca ttgcacgagt tatactgcta 960

attttgtcct cttctaacaa gtcaacatat acaatattga atcagctccc atttgcatgc 1020

tcaagtcaaa tgagatggca gcattaccat aactgactaa ctcatttaat atgggagtat 1080

atgcattaat taccatatgt ttctgcttga atgtttctat aattaattat ttacagcttt 1140

tggcttgcat tatcccaaaa gttatggtat gtcaaagtgc tataacaaca tctacttaaa 1200

cattaatatt tgtaatacta ctcagtatct attcaataat gattcggcat taaacaccga 1260

gaagatgcag tccacaagag aaaagctcac cacaatccca cttgacccga caccgaaaga 1320

aggattcatc tcgcttgatg cacgcaggat ggtacacctt cgggcaaccc ctaaaggcaa 1380

agtgaagctt atcagcatgc gcaatcaagt ggaaaccgcc aaccgcatta ctgttccgca 1440

atacaagagc taatcgcgcg cgtgcgcgca ccttcg 1476

<210> 1200
<211> 1791
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37539_G1, chr1:225882885..225884675, Cluster 7

<400> 1200
taagcctcgt ttggacagaa ccgaacgcaa gcactcacat gccatggttg gtggtggcga 60

ccggccggtg ttggtgccgg actgccggcg ttgctgttgc tttccttgca gtgcgcgtgt 120

ggaagggtcg tgtggcggcc gttgccgcgg acgtcgtttt tcgcagaaca gcgaaaggat 180

atattcgctc caagttacag ggacgcgtca accctacttc ttcctggtcg ctactggtac 240

atcctagtcg tcttgttcag agtagcacag acaattactg ctgaattgtt cgcctccttc 300

gagcgatctt tcacagcctc gctcctgctc ctttctctgg aattttctgc ccctgccggg 360

ctccaaagtc caaatttaac gcaggaatct gaggctccac acaagtgcgc ggcaagtgcg 420

gaggggggagg gccatggatg gatcgaccga gtgggaggcg acagagatgg attggatggc 480

acggaacgta ggcttgtttg gcttactgct gcagcagtgt tgcagttgca atccatacat 540

agctgtagcc ggattaaaac agcaacaaac tcgccttgcc agcactaaac gcgaagtggt 600

tgggtggccg attagcggca gctgatcgct actagctcac cgctggggca tcgacaggat 660

gctcgtgcaa tttccttggg tccattttcg tccttctcct tcagcgggcg aattcataat 720

tgtagtagtt ctagctacaa gtctacaaca aaccagatag tggttattag atggataatg 780

gagtacataa ttaagccggg ggtaggtctg gagtctgaac aattagcgcg tcattggaca 840

ggtggttcga tggaaattaa gataggaggc tgagaaacag gttacaggtc aacagcacaa 900

gcgaacaaga agcggcctgc caggcatgga tgcacccgag tgatgagagc atctcagttc 960

gtgtgaaagc gcacagcaca cacaggtctg gatctgcctg actgaccagt agccgtgtag 1020

attcgaactg accaacgcct ccctcggtcg gtcagtctcg gtcccggtca actcgtctaa 1080

tcgtcttttc ctcgcccgga acacgctggc atgttcgtgt ttatagttta aattcatacc 1140

agtccaatac ggtacacaaa ttattcgata aaatattagt gtacaatgat taaatgaaaa 1200

cgaataacac atatattatc attgatctta atatctcaaa cttagtttaa atatgtggtg 1260

ataagtacaa ctccaaatat ccgaaacaaa cataacttgc aatagataat tatgaaaggg 1320

tgaagttggt cttactttta tggaaatggt gtacattaac tttggccagc atagactaag 1380

aagctacttc aatcacaaaa tagtgaatct catcatcgtt ctgcatataa agaacacaaa 1440

gctcaaaact tcattcacct ctgtcagcac gcaaatgatt aacatcagga ttatcgcacc 1500

cctcacaaaa caaaacaaaa caaaacgtgt agtacataaa tagatacaac tacagaaacc 1560

aatcagaaac ctgtttgaaa gtggacacct cagctatata tccatcttct atcctagcaa 1620

ttttcaactc aattgcagcc ttcatgatat catcttcctc tgtaatgcct agcatctata 1680

cggtgattgt taagcttaaa catgttagtc aacaaactat taaaaaagac aaacaatcca 1740

atcaattgtg aacttatcca acaaaaattc agaatgcggt cacacatttt t 1791

<210> 1201
<211> 2205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38577_G1, chr1:230936231..230938435, Cluster 7

<400> 1201
attcttttga gcctgagtgg aatgtttgcg ttgaatgcat cgtaactaaa tgggatctac 60

tacgtggaag tgcaagcaga tagcagaggt agagatgctg cgaaatggaa gaccccactg 120

catgcatgcg ggcctgcaga cgtgcagcta gctagctagt tccattccat cccaaaccta 180

cctactaccc ggccggggga acaaacgtgc gcgccaacat aagccgcatc gaggcgacac 240

gatcagttgg gccggccgcc ggcgcacggt gaaaagtggc gacggcgacg cgagacgaac 300

acggaagaca tgaacagtcg cggtgtaagt ggagcgcccg cgtggagagg gagagggaat 360

tgaggagagc acgggtggtg atgcttgctg cactgatccg atccttatcc cttcccggtt 420

ccgggagtgt cgtcagtgcg ccgacgacgg agcgaagcag cacggcgccg tcggcgacag 480

cgagacatct gtcgtccagc ggccccatcg tcctcagcat tccagcagag gctcggagtc 540

aaacaacagc gacgtcgcct tggagcactg ggctgaccca acccgcgcgc gtggatcaca 600

cgacgtacgc cgtgcatgca agcgctggcc ccgatcgccg ccgggcactg gccccgcgcg 660

cgcgcgcgcg gtggtgcgag ggaggcattc cgtgcgtcgt tgcgccactg gcggctggcg 720

cattagcgta tgcgaaacac aggagtggta gcatctttgt caaacacgct tcctctgacg 780

accaacctcg gcatttgctg ctctgagcct gtgtcttgcg cgccgcccac tggtaaaacg 840

tgttcgtctg aaaagcaggg caagaacgcg actcccgatc cgtagtatca tactatcata 900

gcgtcaccga acttctcgca ctcgcacgca ctgatcaggt actggaccac ggcggccaaa 960

agtccgcacg gcaagcgacg atgatcgaca gcgagcagtg gccggccggc cggccggccg 1020

acggccacac actcgagcgc gtgcatgcgt gcagcgcagg ccagccaggg gtgtgagacg 1080

acagagcgga taaggggcga gggccgaaca gggaacagta cgtgacgggg ccagcaggca 1140

ggcaggtcgg ccggccgacg accccggcag cccggcgaca ggaacgccag gcgtccagcg 1200

ctgcctgcct gcctgcccgc ccgctcgctc tccacaccgc atcatttcgg acacgaaccc 1260

gtcggtcgat cgagtagcta ggccgagcga gtaggcggcc tagcgtagcg cttggccagc 1320

cactcgctga accggcggtc caactcagcc ccccttcca ccgcaagcgc ccgcgccgcc 1380

gccggcccaa cgggaatggc gggcgggagc tgtgggagcg ccgaaagatt ggcgggcaaa 1440

gtcgtggtgg tgtcaatagg gggtttatcc cctgggagtg gtgctttttg ctcactcttg 1500

ggtttaccat ttgcgtgcaa actacagtaa gaaacagtgc cagcgctggg cctggagccc 1560

cccaactctc tcgcgcacag cacagggatg cccagctggc cagctgccct gccatgctgt 1620

ccactgcctg tttggtttgg atgggagccc ctcccctccg aacagctccc ggccggtgtc 1680

tctgtccact ctgcttgtct gtgttgatct aagcgatcgt ttacacgcgt ccaaaatcga 1740

atgccgaggg cccatgccac gcatgtgtct gtccgggctg aaaccgcgcc gtgcagcgcg 1800

ccggatgggc acacggccgg caccaagatg actagatgag ccagccagca cctcgtgtct 1860

cctcgctctg ggcgtccgcg caaatgcggt cgtcgaggca cccatcgcta tgccggccgg 1920

cgccgcacct ggcgcatcat tctgctcgac ccctgccact gccaacacgg acgccaaaag 1980

gtccggcgcc ggtcctcatc gacctgccgc tcctcctgtc tccgaaaagc ttggcgtcgt 2040

atggtatggg tcaccaactg tatgagtcta gatgacggaa actgcccccc cgcaccggct 2100

gtaaataaaa tcttttgttc gaccgtggcc aatgtccccc tcaccccaca cgtctccaaa 2160

cccagctttg ggagcctgcc ctctagcacc acgtcctcga gcttt 2205

<210> 1202
<211> 2303
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40563_G1, chr1:241240280..241242582, Cluster 7

<400> 1202
cgaatctaga tcagtattct tgggacgatt actccagtcc atccatccat ccatgctgtt 60

agctatacta ggtcattgaa attgcttagt tatgcctgaa tttgattgac cttgaccccg 120

tctattactt gtttcttttg gtcatcatag ttaggtacat gtgaacagca gggcctatct 180

tctgcttttg cttcttagca atggcgaatg caaacaaaca cttgcaacct tcaaccaaat 240

caagcaatga cagaaagtac caaggcacac tggttgcttc tccagcaaag gacatttcac 300

cgaagtgtgt ggatcgcatt gtgccatcgt ctcatctatt tctcgatgta cttgatattt 360

gaggacctct ctgcatacag caatccaaag gtttgtttac caccacacca tgctcaataa 420

tctatacttt tattattttt aaatgataaa atatccggag ccgatggatt gttgctcttg 480

caccatgcat tcctgctggt ttttagttgt ttactgacca gttgattcag cacgaaatgt 540

gtttgacaca ttgggtaaac tttggaagag ttaatgtttg ttgaattgga cctattagta 600

ttgaccacac atgaacaata atagcacgtg aaataattga accccgcatt cgagcacgca 660

attttgaggt gtctgtatga tcaggagctg atggggttca gggtggcatg tactccgcat 720

gatggtagtg caccattgag gtttgaggat gcaattgagt gtgatattcc tggttaagtt 780

tgcaaatgtg gacttaatat caaccgagtt aattatatac taaaacagag tctacaacct 840

agaggttttc tcttcctttt aaacacatat agatatctaa acttcaatag aatttgattt 900

tcacctaagc agtgtccatc aattaaaatg tttgtcatca agaaaaaatc tagattctat 960

tgttatcctc taagcattga cttactctgg tgatatataa ttagttttga gtgaaatact 1020

cggccgactc catgcccaac aaaacactcc acaacaccaa aactgttcct ttcagcatgc 1080

tcactgaaat gttcaaatat aatagtgaaa cactccacaa caccaaaatt gttcctttca 1140

gcatgctcac tagcatgctc actgaaatgt tcaaatataa tagtgtgccg tcgcaagaga 1200

aggtgcaact gctggcttcc tccgtgcatc ttgttttatt ttcagcagtt cagaaagcat 1260

ggcttcacag cctggatcat ttgcaagtaa atccatcact aaaagaattg tttgtacttc 1320

tgttgggcat tttagtttag aggtgaaata atagatacag atctattgct ttttactatt 1380

tcagcatgcc tagcttgcat tctcttttct gttggggttt tgtatcagaa tcataattta 1440

attgtgacaa tatttcagaa tttaatcatg acagtattat tttgacaaaa ttcatgcaaa 1500

acaaggaatc taggatcctg gagcctgatt caaaaacaaa tacctttata tgctacttac 1560

catgaatact aaagtgccac tgactatgtt ggctaatctc ttacccagaa tctgtcacct 1620

aaatgtatgg ctgcttattt gcagatccct cgatttgggt cagtgaacaa tcaccctcga 1680

caaccatcta ggtaagatgc tggtaaatga tgcagaatta actaaatttt ctagatctgt 1740

aaatatacac cagtgaaaaa atgtttacgt aggtggagag aacacctcaa aacaaagatc 1800

agaaatttaa ttgaaactaa tctaaaaagg ctatctgaac tcatatgcct cagatactaa 1860

atagattgtg ttatctattt taaagagaaa aaatgacttt aagaaagcat ataaaggtac 1920

acgtattacc caattaaagg ttggaaatgc atggaaggtc tactcctact atgatcaact 1980

tttatgattt gtttaactgt aattcctaac tcacaaagtg ttgcccaaaa ctatgcaggt 2040

tgtcatcaga agttgcaggc cttccgaatc aacagcatga cattgttcaa caaagttttc 2100

tcactgacaa cttggttcca cagaatttaa caattccttc tgtcaaatat ccaaataacc 2160

acagccagca atcactcaag tactgtattt atacaccaac atcaccttcc acagtttctg 2220

taggacgatg gcattatagc atctagaaga actgtcgtat gaaactgtag gcgctgaaga 2280

ggaaggaaag catgaagttg ata 2303

<210> 1203
<211> 1788
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40999_G1, chr1:243194930..243196717, Cluster 7

<400> 1203
gaaattcaag accttctatc aagataaccc agttagcatc aaaacccaac tgataggcat 60

tcaggcactg gaggagactc ctcttcgatg acaacttctt ctgggaacta tacatgaaat 120

aacaagctca tgaatgctcg ctatgtcatg aaaatgcaac cctacatata gaatatatac 180

atcaaacttg taaaaaacac ttcctacaag gagctaagca tccttaaaca tcgttcaaaa 240

atctcaaaac tcaagtaact ttatctctcc tctaaggcac taggtgtcct aattacctaa 300

ggtgaaactc ttttctattt tgagcaacaa ttagtttgct gagcagatca ttttcaaaca 360

gcttcaaacc taaccaaagg gttaatatga ctaagataag cttacttaaa ttttcctata 420

atttttagtg ctccattttt attgctaaaa ttcatataaa cattttagg gcacttcttt 480

attatctaaa aatcaatcaa ttgctagaaa accataaaac tattttattg cgaacccaac 540

acaatttatc tcacaatcta ttttaattaa gtgaaaatta gttaatcaac taaacacact 600

ccaatataaa ccaaactttt cggagagcca ctctaagcct gcaataccaa actcaagtcg 660

agattcgtga agactgcaac taatctgact taaacgtaac actgaacagc taccgaaaca 720

ctgacgaaac tttttttac catttagtcc cttttgtcca ttaattacat gattgcgaca 780

cacatacaaa attacaaggt cggatccaat agcgcgagtc acaagccggc tacaaaccct 840

catggaaaaa tctttcctgg acactcacaa ctacaaacac tcatgaaaaa tctttccctg 900

gacactcaca acgattctat tcattggaac acttagataa cgctgtcgaa cctgaagaag 960

atggagcgtg agcggcaaag actgcgacga ggtcagaggt aggacgtcaa gtaaacatcg 1020

cggttgtagt ttccttccct ggcacatggc cacacgacca atagagaatg aggcaccgca 1080

gcggatcctg gctagagagg acgtagatgc ggcaatctgc aggaattgac gccgaacgaa 1140

ctcttgccga cagtttcaac aattaaaatt caacgacgaa ccggtgaggc gaggcaaacg 1200

acgccgaata aatagggtga cgacggcggt gcggaggcta ggatctactc cgatggcgag 1260

gttgctgcga cccatggttc ggacgggaag gagccgagga cgagctgagg cagcgcgtcg 1320

ggttgaagcg agctcgcgca ggacacgccg aagttgagtc gtggcggcac acggctcaca 1380

agtgagcacg ttgaggcagc agaggacggg aggatctggc gatagttgac gacgccagcg 1440

agttctacgg atgcaaaggc gcgaaggtgg acgatgctgc actaaagagc tggagcacgc 1500

acgacggcgc gacgacgacg tcgtgatggc gaggcgagga tgccgacgtg gagaggacgg 1560

ctgggtgccg gtgagcgcgc acaccaagga gtgcggcgag cagcggcgta cgtccagatg 1620

cagcgacgag agaggtcgag cagtgagaca cgccggcgtc tcggagctgc agcggagctc 1680

gagcacgagg ctaaaggcga gcggctgagg aagtcgacgt cgagctgctg ctgctccacc 1740

gatggggaga accagggtgt gttgactgtt gaggaatcag ggacttgc 1788

<210> 1204
<211> 1488
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42117_G1, chr1:248692952..248694439, Cluster 7

<400> 1204

atttatatgt ggagcacggg ttaggttaga aaaaatatga gaacttttg caaaatggat 60

gatagtaaaa atcataaaaa ttggtgattt atagtagtag agaagagata gagatttagt 120

gaactagacg ttcttgccac gtagggtggt gggttaccct ttttgattta ttgataagta 180

ttgtctttcc tcaccatgta aatatatgat attcaccaca ggccgattct cgaaaccagt 240

tagactggtt tttggcagaa ttgcgctatc tgaatccgca agggttctaa cgcttcttat 300

agcatgtgac ccatcttttg tggttgtgga aattttgact actttgcggc caatttgtgc 360

atgaacagat atatctgcta agatcacaac ccgtactcca cgtatcgttc aggaaaacgt 420

caccgaagat ttgcgtgacg cacaacaaca aacgtttcgc ttccccttcc gacaaaaaat 480

ggtttcgcgt tgtggagatt gccatttcca gagagaacaa actgaaattg aaccgctaac 540

ctccttgtgc ggttgtgctg gtcctcgctg accggtcagt ccgccgggga ggcgaaagag 600

aaaatgaaca agtcacctgt ggcgattcgc cgattccaaa cggctctcga cttcccgtca 660

agatgagggc gcgcggcgcg ctcgtggcgt taaacgacgg gggtagatgc tcgggagctg 720

ttcgacggaa tgcccaaccg gcaccaaata ctacggctta ctaacggacc ggcccgcact 780

tcaggctgct agctatcgga ggagaagagc aaaatgcaat cgaagaacga aggagaagat 840

gcggctgttc aggactccac cagaggtatt gcacctatca ttgtgaacat aattaccagc 900

atagttatca tcatggtatc tcaaaccatg gtattaatat acatgtgcaa gactagtcaa 960

taacaaaaac tttaagttag tgtagagttc aaatactcta agaatactat aatatcgata 1020

aagtcatagt attcaaaaca aagtttttta cactatagtc aaacaactct taagaaaaag 1080

atactatgat attctttaat accataattt taccttaaaa ctctaaaaat aatttacttc 1140

caaacaccct ctaaagcacc gataactgcc tttgtcaaag atttatgtac gcagaatgtt 1200

caacatttat gtccatcaaa gattagtaaa ctaagtgcat gtttggatcc attgtgatta 1260

taataatcag ctaaaataat ctgattgtga tcctatgatc caactgaggc ctgctttttg 1320

gagattatgg gtatttgtca cttgaaccaa cgacagtcca ggaatccaaa cactgcgatt 1380

attatagtcc acaattcaga ttataataat cctataggta attgagatta taatactcga 1440

gctgtgatca caacatgcgc taagaataaa tttaataatc aagtggag 1488

<210> 1205
<211> 1790
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44095_G1, chr1:258907357..258909146, Cluster 7

<400> 1205
aaggtgttgg agggttgcag agaagggatt atgtggcaga ggctcaacga tgtcgtcgat 60

gcctaagtca aggtgtcgag tacgcttggg ggttgcctca tgatggtcct aacatgaagc 120

tagaggagtg gaatgcgcag aagggtcatg ctccccccaaa gcccagagag gcatgaattg 180

tgacacctct agggcgtgca tgctttggaa ggagcatgaa ctaaagcatg gtttcatgat 240

tagcaccatg tgaccctacc aggcgatatc ctcccactcg gacaagacca ataggattg 300

catcaccgtc tatgttgcat cttatgattg aagttcctag agtaggtgtc aaaggtgact 360

gctccatcaa gtggacatgt tgggtgacgc catggctaca catcgcaata aagcatacca 420

aatctaagaa aaaaccaccc ctattcccat gatatatcca taacttttc tctctttagg 480

gtacttatgg taccttgatg tcttcttagt atgtctgttg tctatattgt tgtgatagtg 540

cacctacttg accgtaatat cgcccatcac atttaatgtg atagaaggga gccttatcta 600

gactgttagt accacgagat catctaaagt agaattgatc gtagtacagg agccatacct 660

ttgggggcct tcttgcccta ggagtaagga cattcatatt ctttggtctg caggtgctcc 720

atatttaacc gaatcaggag tactgttttt aatatgaagg gccctaatcc ccaaaagggc 780

catatgtccc attacttgtc aggagtctaa ggtcaaggga actccaggag ttcgaaagag 840

cctcaaaatc tagaaagacc taagggccta ggtctcactt gtttcgagag atggtgatga 900

ttggaagagg ctcagaggta cgataaccct tagatcgggt tccttgatga aatgggccta 960

tgtatgagta ggtaataagg tatgggtcca ctgtgggcat gtggctgatg ctagaaggga 1020

cacactattt cgtccattga gattcttgaa aggtgtcttg acagcattcg aaggtataac 1080

ctttctcata tgctaacaag gatgccatat tgaaaccatt agagataaaa ttagagaaag 1140

caaacgaaga aagtattata ttcgttaaca atgtactgtg agaaccagct agtatgttgg 1200

gtaggtaagg aaacaccaca atgacaaaag aggggtgaag ctaataaggc taattttatg 1260

tcatacaaat accattaaaa ataaattaat gaaacaaaca aacatacact tggctaatta 1320

ctagtgctaa gtagctaact agggatgcat ttttttgggt ggggaagtgg catttaggca 1380

cactccaacg gttcctgggc ccctcccccct gttggccata gggtggccag ggacacctcg 1440

acactcgtcc aaccgctcct catcgggcct gcatgcacgg gggacataag attttcccca 1500

tggaagctcc ccagtaattg attgtattta ctgttaaatt aatcctattt gactttaatt 1560

aatagataac aatgtgtatt atgatactat aaatatggta ctatttttta aaactctaaa 1620

aactggtata taaaagacaa ataacccaga taaagagtta aatgggagct gaataatggg 1680

aatggttgga gatgagaaga aatatgggga agaatggttg aggtggagat atttaaatat 1740

gaatagaaag tatgaataga gagatttggg aggaggaata gttggagata 1790

<210> 1206
<211> 2080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44345_G1, chr1:260382869..260384948, Cluster 7

<400> 1206

cttgtataat aaaaactata aatttgaaaa ggccaatttc atttacaaat ttaaatggag 60

ctagcgaata gtcatgtaca atattaggac taccatatag attgtgctaa cgctacgcga 120

ttctggagag gaggggtcga tggctacatc gacatgagtg agggggaggg ggtggctggg 180

tcgcagggga tcggaggggg tggcggggta gtggggaggt gaaggggtga aggatggtac 240

aaataatatt gtctattgaa tttgagtgag taagggagag agaattatct agcggtctga 300

accgtttttt ataatgtgtt aagtttgtgt gcaatttgtt tgatggatct agtggaggtt 360

atatgggtgt gggggtgatc tggttgggag ggcttagcaa agttcaagct catggattaa 420

attactcaca tataattagc tacattgtct tgtacgtatc catgcatgaa ttacgttcta 480

atacttgtct atttcaatta gaattacttg cgcatgcgga agagctagct ctgctggttg 540

atggactacg gtgacaaagt aaaaaagaaa ctctttggac cagctgagga aggcaattgt 600

ttcgaatctg gctgctgcgt agccagacat agagaatcct tttagacgca acgaggcccc 660

agcaattcat tgtggcgttt tgcacccaca tcaacccgcc gcgcccccct tcacaatagg 720

agccagaaca aaaaaaaaac cactactcct ctctctccct cacacacaga gtgagagaga 780

gagagacgca caagaaatca gtaggtcaat ctctcctctc acctttacat cgtctttgta 840

tttacaaagt tgttgatgac ttgatgtaga ggctgtacct gctggtttgc tacccctagc 900

tagctatatg tcgtccaatc ctagttgagc tctcgatctg gatggccctc tgattagtcg 960

tcctttgctt ggtggtgcct gctgtgtata tcgccacccc ggccgcttgc ttccgctagt 1020

agctagtccc ttcttctctt ctcgatcagt ttgtttaatt ggcagagcgt atgtatcaca 1080

cccaaggcga aggaatgtcg tcggcggccc agatcgcgcc ggtgccggag catgtatgct 1140

acgtgcactg caacttctgc aacacaattc tcgcggtaat atatatataa ccccgatctg 1200

atctctagct agctagcctc tcgatctgtt tgccccctc agctcgtttt ctcccccggc 1260

tctctcgatc ggtttttcc ctggttgccg gcctctgaac tgaagcgcag ctatatatat 1320

acagcagaaa gatgcatgaa aaatagttga ttggctgcgt gcgcctgcat cgtcgtcgta 1380

tagtagttag ttttaatttg tacgaattgg ctgttccgct ttctggattt catcagcttc 1440

tggatcattt catcagagct tttggtctaa attgaaaatt ggggatggtt cttgcatcaa 1500

attaagtctt gggaacaaga tgactaatta gctagcagtc ttagacgaag ctagtcagca 1560

agttctcaaa gcattctcgc cttctgcagg ccctcctgta ctttttttct gggaaattat 1620

cgtcatcatc gttgatgagt ggtggtcttt atattaatta gatctcaagt atatatagct 1680

ttgtttgcct gcaggtgtat atgtgtgata tttgtacata tataaagctt cttcagcacc 1740

gcgctagcta gcttctttcg cataaccaga gtccgatccg gccggtggtt aacttatttc 1800

agctaatatt tgaaacacaa tacatgtata cgacataggg caatagattt actcgttacc 1860

ttcttgatcg aactgcaaca gagagtgcat gcaataataa ccatttttaa gacgataaaa 1920

aaatttagtg tgtaccgcgt ggatctttag cttttatgct tttctatata atatgtagac 1980

catatctcac ataaatcgag gtcgtgtcct aataaatata ctaagagata tattgactaa 2040

aacaaaggcc ttttttattg actaataata ataacatata 2080

<210> 1207
<211> 1406
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44363_G1, chr1:260447389..260448794, Cluster 7

<400> 1207
gttaacgcct gttgtttccc tttcttcttt tctaaccatc ataattttat gcaacccatt 60

aattatttgc cactatcaat ggcacgtgtg gaccctattt gtcatcaatg gcacatgagt 120

gtcatgcata agagatttga aattttgtct accgatggta aaaattatga atgagcttcc 180

ctacataggt atcttgttta acaatataga gcatgtttgt ttgagcattc tagaatccct 240

tggatctcag ctttttaaat ctttcaaaat ccaagaagct tttagaagtc aaaagctaga 300

ggtgttgtgg acttatgggt aatcatatga gcctccacta ggctttgttt ggttcactta 360

actagtatct actatctgtt aataattatt tttatctaaa cagacacaaa tgatatacta 420

gttaattgtt attagctaaa attctatata acaactattt cactagatgc accaaatcag 480

ataatagcag ctaatagata aatagttata attatacccc actaattagc tatatattta 540

aacactcttc tagccccagc taatagatag gatattagtt atatgctatt aagggcatgt 600

acaacccaca taaatgacta gtattctaag aggtatctaa gagtgtaagt gaaaaaaaaa 660

cacaagagac atattttagt gaagggacgt ctctaatacg gttctctaag tttaagatac 720

ggttctatcg atacaatcca cataaatgag ccgtgtattg agtggttcta gtgaataaga 780

taaaaggctt gaatatatta ggttgcatga acgagtttcg tgtatcatag tatctaggtt 840

gtggagatgg tagcattaat tagctctagc tagatagtac atgtatgtga ccttcatgcg 900

cgtgcgtggg cctcaatttt atgaatgtcc gccggcccca tccaggtgat gagacaacag 960

gaactcagga aggtaccaaa gcaccctagg cgcgcaggcc atggcccatg ggcatatgca 1020

acagctagct cgattgcgtg cgtagcctcg ctcgcttttt agttttcttt tcacaccctt 1080

ttccctttc agcttggccg ccggccgccg gcagcctagg gttgatttga aacgccgtga 1140

cgagttcgct cgcccggcca ccgagcgagc aggacgtagt agtagtagta tgtagagtag 1200

gatggagatg catgcatgga cgatgggtgg tgtcgcggtg gggggtgatg ggatcggatc 1260

cggacgtaca gtagggcagg caccgttcgt gtgcttccgt atcctccaga tctctattgg 1320

cgtcgcttcg tcgtcagggg tcagctatcg aaacgacgcc ccctccactc actgcgtcac 1380

tgcgtgtact cctgtcgccc attacc 1406

<210> 1208
<211> 1695
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4465_G1, chr1:23200649..23202343, Cluster 7

<400> 1208
atagctcaat ataagttacg aacagctcta actccgcaag acgggccata gcattttatt 60

ttgaatatag gttgtatgca ttttatagag atgctgctgg ctcactttag tgggggatga 120

gaaagcttct caccaggcct atccttaagt gataataacc aatgaacttg caaccattgt 180

gagggttgtc ggttttccat ataggaaaag acatatagta gtattttctt tggtcaagtt 240

agagctaaat ccttaagaaa catatagtag tatatgtttc tttagcattt tctgaatttt 300

ctttagaatc atttctagtt ctagctagta gctactgtga acatgctaca gactgttgag 360

gaagaaacaa atcaatgatg attcaataca ccatcactat gatgcacttc ccacatggca 420

taagattcaa tccaatgtga ggtcgtggga gacgatcacc aggttggtct cgtagctggg 480

gtcctggtcc agcctcccat tgtcgatgtg ccgccacggc gactgtagga agcttgccta 540

acccatggtg aaggagaaga gcatagggag acgatggacc tggtcgactc accagcggac 600

gtccctcggc ggtgggggac tcgccagcgg aggtcccacg gcggggcgag cgtcggagga 660

gggtcgaggc aacgatttta cgtgtagata tggggagccg ctcatacagc aggtgtgcca 720

tgacggtcgt cttctccctc tattcactaa ctgcagggaa gaacacttgg gttctacgat 780

gtcgccattg tcgtgtagag acgccgaagg gaaggaaaag agacctcttc ttcgtcgtca 840

cctacacttt tttctatcct gagttattac gcctcgcgat gcttccagtt atccagtagg 900

aggccgacgt gagacgcggc gagaggtcgg ccacgcgaag cgtaaacttg agcgacgttt 960

ctgaccgttg tgaggcgatc gagcggctga aaataatcga ggtgataggg atatgctggt 1020

aggccaggtt tactcccgat ttatatatat gaatttaatg tgatccatat catataaatc 1080

aatagcaaca ttggcctccg tagcatagtg gtagtgcgtt cgcttcgtaa gcgaaaggtc 1140

gcgagttcga tcctcgccgg gggctctttt ggtgggagta attaattatt ttttataatt 1200

tatataactc acgtgttttt cttcccggga tattcgtttc ttcggtgttt ttattattac 1260

atcctatcac gctagaaaaa aactagtaaa cactccgggc caagtaaata gtcaactaac 1320

aaatctaaat aaactagtaa acaacaaatt gattcacaat caaaccgact cctaaacaaa 1380

aagcatttga gaaaatctct gtttctaaaa catttgattg ccaaatctta cccacttttc 1440

tcactatttt cttctcggtt tggttgtcct gtcgttgtgt cttttctaat actagggtcg 1500

tgcatgtgcg ttgcaacgat tttcatatat ctcatggtag acctttaata atgatgcatg 1560

cttcaattta aaggacatgc attgctcaaa tctccgagga attgcagtga agcaaaaata 1620

ccctagactc taaataaaat tgtcccccac caaaaaagaa aatgtaaact aagtgtacaa 1680

atttgtaaga gttgc 1695

<210> 1209

<211> 2626
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47492_G1, chr1:278447333..278449958, Cluster 7

<400> 1209
ttatgaaata tatttttata ataaattata ttggagctat aataaagata aatattggtc 60

actatgaatt tggttaaatg cgaaacactt ttattgatat acattttaga agaagtgctg 120

cccgcgaaat cgtccttaca gctcccgcga agccaccaaa ttcacgaaac tcgggaaatt 180

gagaagcacg ggcgccccgc gtggcatgac aattcagtaa atttgctaat atctcactac 240

aataaataag aacgaaactt ccatctagac tttggcttag cacttccctt ctgatcatct 300

acgcttttgc cacatttatt gtgggctaca aatcaagagc attttggacc tggcgggcca 360

ctcggccctg ccacgttctt tctttcgtcc cacatccatc tgggctttcg gcttcatggg 420

ctcattccga aaccaagaac ctgacgggcc tgccgtaaat gctgcgccgt ccttgcgatt 480

ccccacaccg acaccgtacc aagtactgta ctaccagcac caccagcgcc aggtcagaac 540

tcagaaccct ctagcctctc gaccagtcaa cagttgtcag gcacagttgt gggccaagaa 600

acaaaaagct gcagccaaaa aaataaacta cgcggtcgcg catcccacag tgacagcgct 660

ggtcatccag caaaacgaga gagagaaacg cacttaaaca gtgccgctgc cgcgcccgtc 720

gagccgagca cgttgagagc cggagaaagt ttttttttt tttggttgca gccgcgaaag 780

cagcagacca gagtaccagc cgttccgcta cttgtacagt tctgctactt gcctctctcg 840

ttttctgtgg aggagaaacg gaacgccccg cgtgtttttg ctgaagcggc gccatcacgc 900

catagccttt ttctgttcgc tcgcgcgctc catccgctgc tcgtcgctcg ttgtggcaaa 960

acacgcgatg gtccatgccg tccggcggcg aaatgcactc gtgctttttc ttaaggcgca 1020

agcgcaagcg caagcgcaag ctttcttccc cgcacgcggc ggtcgctacc ggccggattt 1080

agatggaaga tgcctgctcc tccacccggt gccgccgcat tcgatgccgg ctcgcgtggg 1140

cggagggaca ttcgttggat ccgagggcga accacgtgtg cgttgtttcc ccccgcacag 1200

tcgctatcaa agggcctatt cgatacagcc atgcagctag taaattagtt ccccctttt 1260

tttttgttga ctttaactta acgcctgcga acatgggatc tagtagtagg agtttgaatt 1320

gagctcttcg taattctagg accccgagag aagcgtgttt cagggtctga tcgagttcgg 1380

accaatcgac atcttttcct gattggcgct caggattttg agctagctgg agtcaaggtg 1440

ggactgtggg agtggtgatg attaaatcta attctcagtc tgtctcacat ctagagcggg 1500

ggagttaccg tgatatactg atattcaagg gtggaccatg gcacggtcca aaaaggacaa 1560

tatagtcaca acacggcact attttttttg ggctatatat gtctagaatc tcaacacgat 1620

gactatatga ttcacgatgg actatatgat tcgacctgta ttttgggttg gcaccacatg 1680

aaaatagcaa caatataatt ttgtagtatt tgctccttcc gtcctaattt atattgtttg 1740

atttttaaca aagtttaact ggcttgtctt atttattttt ttcgaaaaaa actacaatat 1800

gaagccatat atacaatata tattatatga taaacgatat cataataaaa gctaataata 1860

agcatgacgt tttccgaata agacgagtcg ggttaaattt aggacaaaaa attcaaaacg 1920

gattataaat tggaagcata catttcgtct aattctcgaa tagattatag aagttgttac 1980

attttataca aatataagat ataatatata ttgtttatgc catgagcaga aaaaaaacta 2040

gaatatatat tttgagggtg tgcttataca cttctcgaat gcttggacca aagaaaatat 2100

ttatcgggcc gtatcggcac acggttggat gtgcctcagg tttgctagga caagggtcac 2160

gaaaccgatt gataaatccg gctaaccggc ccattaatcg gtaatcagtc ccggcctgtt 2220

tggccgtatc acgggtttac catttgaatt tgggatgttt tataaaattt gaacaaattt 2280

gatgtaagat ttctataaat actatggatt gtttttaaga ctttccagtg aaagcacgct 2340

acggatttca aactaaaatt caaacaagtt tgaaaaaata taaaccattc tactttaccg 2400

attagccgcc cctgctagcc aattaatcgg tcacaagtcg tgataaaacc ggtggcctct 2460

agttgctagg ttttcaggat tttctttatt ttaacttcaa ttcttttaac ttgtgataac 2520

atttgggcca tcttttgttt aaaccttgtg atcccaatat acttttattt gccaaaagac 2580

aagtggttcg gtttcttcac acgtgacgcc gatttatcga ttcaat 2626

<210> 1210
<211> 1787
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48267_G1, chr1:281834112..281835898, Cluster 7

<400> 1210
agtgacgctg gtgctcccgg tgctgccttc gctcctgcct ttcctatggc ggaaacacga 60

ttgataccat gaaagaatga ggaatttgtg taatcactcc gtgagttgat agtttagtca 120

tgattgtaat atataggcag cgcttatgca ccaaaaagga acctaatcct ctaactatgg 180

aaggtccaac tatggaaacc attagaaaag gaagccaatc ttgcaactat ggtaaactca 240

gaatatggaa actaatccct atggatgggc accgctaaca gcaccaacta taataaccga 300

acaagaccta tattcgaatc ttagaaaagt ggggcttcaa ttaaaaatat ttgcataaac 360

aaataattac tagatcgatc gagctccaag acacaatcca gattaagctg acaataattt 420

aactctaacc catatccact aaaacagtat ttgatgaggg agagggccgg aacacaaata 480

agcattctta gggtccatcc aaaaatgttt acctaatata tataaggttt aattagcagc 540

tggaaccatt tatagtctcg tttctacaca aacgaaagta tctttagggt tggtttggtg 600

actaaggatt acgaggggat ccatggaagg aatctccttg ctatccaagg gattccttcc 660

tctgtttcct atagattctc tcgtgatccc tgatcatttg aatagcaaag aaatttctca 720

tatatatctc cttataatca ctggtcacca aatacttagc tgtattatct actccacgag 780

atagcggcgt ccatcgacct aatgcaagca cccggccgta gctctcatca gatgagcgag 840

gagaccgtgt cttctgctcg tcctgtcaaa tctatgtcga aaagatatgg gctactctgc 900

gtgcccgtta catgccgtgc atgccagcag gcctgagtcc tgaggcacat gatccgtccc 960

gccaccccca tcacatcccc agccagtcag caatccttgt tgggctccag cgcgcctcgt 1020

caagatgatt caagagaaga atataacgag caaacagcaa aagatggaga tcgcgtgtga 1080

catgtagaaa gtgaacaaca aactcggtcg cgcgctgtta ttaaccacca aacagttgta 1140

atttgcacag gctatccgtc accggtcaga ccttattgtc cggttattcc tatactgtat 1200

ggattgtatg acattgaaaa aattatgcaa aattttaact tatttagaat ttaaaaccgt 1260

tcaaactacc taattcatat ggattcacaa taaaaccaac aaacccaccg agcttggatc 1320

cggaattgtt tataaaatgc atagtatcac ggtcgtgcat ggtatgttcc atcgagatcg 1380

gatatgatgg tcaaagaatc tcatgtcact taaagccttc ccttatcacg tcctttcctg 1440

caccctggc tagacagtag gcacacacta gtatggttgg tgctacgtgg cctcgtcggc 1500

cttgtcgtag gtattctttg tttcttctgg cggtatttag tatatatata tatatattaa 1560

agcttgttcg aaatctgctc ttagatgtgt ccacgatagc gtttttttatt ttgaccgtaa 1620

gatcctcatc taacggcgca ttatggtcct ccctttggc ttctgcacag aacggtaact 1680

ccttttgttc tcgacttctc gcgaacctac cgcgttgcta atctggctgc tccaactcct 1740

cgtatcctga gtcctccgga aagctttgcc ctaggaagaa gcgagga 1787

<210> 1211
<211> 2353
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50719_G1, chr1:294676851..294679203, Cluster 7

<400> 1211
agaagatatg atgcacgcta aatgtttttt taaacatgac agagtcacac atacttgttg 60

cattacatcg tctatgataa atcctaggtg ggtgtagagt tttgtcgagt atagttgggt 120

gatgtgtttg caacgacgac gaggcggagg ccatccgcta ctgcaaccac caactacatg 180

aaacgaaaca actcatcagt aggtaacttg ttatttttc ttcatatata caagtctatg 240

tgatggacca gtgaaaaaaa aaccattttt cattatttaa tgaattgtgt tgcgtgccct 300

tctgtttaag gcatttcatc ctgctttttt agacctaaaa tttctaggat tacttgcaga 360

atgtttttta gtcgagcgat caagcagtaa ctcagcgaaa ttgggttttg tttgcttcta 420

agtgtatatt aagctaacct ttatagtttt caaagtccaa acccagctac cttttctaaa 480

tacatgaaaa taaaagtaat gttttagttg ttgcatctta agtgtaatat tttaattgac 540

cccctaccct cccaaaacac acaaagggca aaaacgtcac ataacacatg tcatatgaaa 600

ctaaaagaag gttggtatcc tgcttatggt ttcagaacgt gcattgttaa tttctacttg 660

atcttatcta aagataacta ataagggttt gattatagta tgtgtagcag ggctttgcac 720

tagcttgcca agctgatcac aaccctcttt tacatgtgct tcacccaatg tgttaaaaca 780

acacaagaaa gttattttct taaagcaaaa aaatgtaact caatattgca gaatatactt 840

tattctctca tatatgttag ggtgcacttt ttttttgaaa aaggagtagt agatttttt 900

gaaaaaggag cagtagagaa ggtccctact gaattagtat taaaagaaaa atagtagttc 960

agaagctgta cagaggaaga caaaaaaagg aaggagacaa caggattaca gacctttaag 1020

ccttgaagtg aaagccaaag aggaataaca agatcaaatt tacagtttc cctaggcata 1080

actataggag cagctcatgc tttagatgct gtcgacaacc ttcgatagtt gggtttgttt 1140

tcaaatatcc aagaatttct gtatttccag atgcttcaca tctttagaat aagaatttcc 1200

atagtgtagg caatctagag ctgccctcta gatatagctc tgaggtgacg attggtgcgg 1260

ggaggtgaga gacgaatgga gttccaacaa tatgttaggg cgcgtttaca ttggcaaacg 1320

ttttattcaa gtcttaaaca tgtgtttgtt tgcttatttc tatattgctt ccaaatatgc 1380

tttcttcaag atggatttag ataattggca aaacgagaag tgtacatggg tcatttatgc 1440

ctattctgaa atgcataaat taaatattaa gatgccaata cagaaaacaa atgcaatgtt 1500

ggttgttggg aaaggaatag agtgtgcata tgcagttgca atataaatat ttttaccaac 1560

tataaaaaca atccaaatag cacgcaaaca aagtagtata tgcagaaact tcttactttt 1620

tatatttgtc attaaaatgc actaggttca taaataaaat gatgtaactg cacatatcct 1680

ttatatctgt actaatgggt atactggaga tgttagaatg attgatgggg caatattcca 1740

gtgcaacata caaatttcta gggaatggag gccacttatt ttgtcaaggt agacgaaatt 1800

aactgtgttt acttcgacca aatggacaag ctaaataatt atggtgctca caatcataag 1860

tcacaacatg agatatttga attaagggaa gcctataact atagggaagt tggtctggat 1920

cttgtaaagc tcctaaagaa attcgatatc aacgccactc cagtctgtaa ggtactaaaa 1980

aaattcgata tcgactccat gcaaatcaaa ccacccctac actcagcttc aataggtttt 2040

caggcatgca atgtgttact tgagaaaagt ctcagtcaag ttgatcattg agcgtgcata 2100

gtaatgtggt cttttctcgt gccaccattt gcacggagcc acatccatat gtgtatataa 2160

tcattgtaca caatcatttt attgagcatt gtactagatt acatatttat attgtcaata 2220

taatattatt agtgttacga tgatatttta tcacactaat tttgcattat agtgatattt 2280

accgtttcat atttatgttt tccatattta tattttatac taattttaaa ctcccgtgac 2340

aacgcacgag tat 2353

<210> 1212
<211> 2188
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5177_G1, chr1:26570199..26572386, Cluster 7

<400> 1212
gaacttaccg tgagactctc catttatcat gcaaacataa aagggattaa aattatttgg 60

ctagaactct caccacatcc atgatgtgag agggaactag aaggtcttaa tgctcattag 120

tgttagagct tgtatttttt ctcatttgtg ttcatcaatc aatgagtacc atgagaacgt 180

agggttatgt acattgtggc ccaaacctca ttaactgcct acgtgctgac tctcacttgt 240

gcctaggttc aacatggtca tagacctacg ccgtgctccc tcctaactct gtctcttgta 300

ctttgtatac cctgatgttg ttacacaatg ataatcatgc ttgtaaccta aatattatct 360

atcaattgac aaataattgt tggtagtttg gttgggtgta tttcaaaatt aaatgatatg 420

tttttggtta ttggaatgtg tagtaaagga gacttgtcaa aatgcaattg tacctgctgt 480

attctcatca ataacggaaa aatatgtgaa acgttggatg tgtggccttg tatttttttt 540

gtgcgtgcat gaatatgtgt gtacttatgt cgaacagaac aaattacact ctccattatt 600

tcctcaatat aatgcataaa atcgagctta attaatgtgc aaagatacca tgaaaacggc 660

ctttattctg aatttttat ttggccacat attagccgtc atacagctgt atattatatt 720

aatgtatgca gtcctaacta cttcgaagca aacatacata gtgagtagat tgtccccgct 780

tggaccatac tatcatatgc aatccgattg ttccaaagaa tccaagcgat cgacttgatt 840

gatcaatcgc tatgcacaca caaactatgg gttgcgagtg gcgactgaca ccgtccagag 900

tggggatcac tgtcgttagg acttgagagc tcacaacaat aaccgtgatg tgtgaagcta 960

cggggaccga gggaggggcg cgcgtgtgat ggatgagctc tctgcctctc tgcatgcacc 1020

ccctgctgct acatattgtc aggtatatat agtactatac ctctacgact acaccaaaga 1080

aggaaccaaa aattgaagta tgctgtacaa atctttccag ccacagatcg atatagtatc 1140

attgccaacc catcatcgat ctaaaaaaaa atatcattgc tgccaaaacc aaaccaatag 1200

catcgacaca tgcacatttg acgcatgcgg ccggacggcg gggcggctga cgccgagcga 1260

tccaatcggc atgcccccaa cagtgtcgca gctgctgctg ggcgcgcgag taccggctgc 1320

gtgagcaagc tgctgctgct gccgcctgcc gcaggaggga gaggaggcag tagggcgcta 1380

gctagggcat gctagctgcg tccacaggga cagttccaga cacgcggatg gctacacatc 1440

ccggagaaaa acatgccctg gccgcggccg acggggcatg cacacccaca cacacacaca 1500

cacaccccca gctgcggtgc tcagcatatg gcgcgcgccc gcgcagcgag aggggcagag 1560

cacgcagcta gcgaccaaac caaaggtggt gttgaagtga caagatatcc tagaatcttc 1620

ctcccctcga tcctacccta aaccggcatg catgcgatcg ctttaaagcc cggccggccg 1680

gccagcacac acagcagctg cgtgctagta tgatcagtgc actcgctacg gccagcgggg 1740

gtacgcgcga cggggcaaga tagctgctgg atgcctacta tatactagga gtagtgcatg 1800

catatgcatt tgctcgccgg ccggccggcc gtagaggcgt acgtacacag cggcttagct 1860

tagctagccg ccgtagcagc tagctaaacc ggggtgggga tacggtggtg gtggcgatcg 1920

gcggagcgag taaaaagtga cggatcggat ggatgcctca atcgctgctg actgctgctg 1980

cggtggtgac cggtgactta tacctagagg gagtaagctg ggacgaaggg tggaagggtg 2040

ggcgcttttt cctggaaagg aaactgagga ttcgtcacat caccacgagg ggtcgcagtc 2100

tccaacctcc accggacagc aacctagacg acgggctctc tttatggcct tatcatctcc 2160

ggccggccgg ccatctatcg atccccgt 2188

<210> 1213
<211> 1813
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54628_G1, chr2:15278954..15280766, Cluster 7

<400> 1213
ctgataatct aattctagct gtgagctagc gattgtggaa aagctataat atagggttaa 60

aacaattgtc aactgtagat tctgtagagc atgacaacta ggtaacatgg atgatggtaa 120

tctaaaaaaa tatttagggt aagaggtgat tctaaattga aatagaggaa tctatagatt 180

ttcgagaatt tattgtgatg ttgtacccgt ttaattgaga ttctagattt ttggcaatga 240

atctggttca aaaagctaaa ttggtggttt ccgtcaatct taattgaaag tagtcagtat 300

ctgagtagta aatactcagg atgccactga agtgagaaag caattgaact atccttatga 360

tgaggtatgt atgtgggaag acatgctgat taagactaag cactttattg caaatgtatc 420

aggctgccac atggaattgc ttagttaatc taagcactat atagttggca tagtattttt 480

tttaattgaa ttcttagcgt gaaggcattt gaaatgagct gatcaggcag taacgactaa 540

cgaggatccc ttacgggaca gaagcacgag tgaatcaact gatattgtga cataccatag 600

tattgcagcc tgatttggct tcctagaacc aaacgagatg ctccgcagtc ctattcaaga 660

atgcttcgga aaaatatatg atttgccttc tgaaactgtt tgcttctccg tggacgactc 720

cggaaaaagg gtagttttgt aagatatggt cattccatgg aaggctagaa aagcagtcag 780

ctggaatgtt tcttaactac agtatgtagt ttagtctgtt acgatccact gttggctatg 840

cgggttcaag ttttatattc acctttcaat agttctgcag tgcacacatg ctgacctatt 900

tttatgttgt cgacttgttg cataatgctg tcttgtctta tcctcctacg gcagactgtc 960

agactcctct agttctcggt agccctccat cccaaattcc ccaatcatgc atggaacaaa 1020

agttgatttt tttttttcg tttgatccat cttcgttcag actgactggg agggaggttg 1080

gatattttcc ctttactctg tattttgcta aagattaccc agatggtcct tgagtctgca 1140

agtttccggc cagtccagca ggaatccttc agcacttcgt caaccgcgtt ctggaggcga 1200

gatagggtct ggctcggtct ctttaacccg aatctgatga gaagtgatcc tggtaaaccg 1260

aaatttgagc acatccaaat atccaatgca tatgttatta ctttatgtga aaacattaga 1320

aaggtttttt tgttctgctg tgccttaact gttccatgga aagtggaatg gatcaccaca 1380

tccacgttgc aaccagaaca gatccagccc agatcggcgc aagagagggc tgagtgggca 1440

tggtggtggt tccaattatc cgactcacaa tccaggagac ccgccactcc tggttccaag 1500

tcaacaaagc ttccaccatt gttaattctc tcctcctgta cttgcactgc ctcttgaaag 1560

ccctatccgg ctacccccct ccccgctgga tccaggctgt gctagtcata cacactcata 1620

ctaccaatta acaagagagc ctgcctgcct gggccagtcg tccatgcgga cagtgacaag 1680

tggtggcgtt tcgtgaggaa ggaaccaaac tgagagcgat taaacacacg gactacatat 1740

atatacacat atgccttgcc cccgtcggtg ctctgaattt ggatcgcgtg gactcgccta 1800

tacgtgctac tat 1813

<210> 1214
<211> 1527
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54878_G1, chr2:16813413..16814939, Cluster 7

<400> 1214
tatggttgga catggtccaa agtttagtcc gtaataaagt ttagaagtaa ggatacaaac 60

acacccttag ttcctggaaa tgacttttgg aaaagtctgg tgtgccgcat gtcctttcgt 120

catctgttga catcccacca acaattagat accgatggtg tttcttttct tttttcctgt 180

gggcgacgaa gtggtaagtg agccggtact tccatgagat tgagagaagc agtatccaac 240

cttgtgtgtc tctaccaaac atgcagctag gtacgctgat ggctgaccac attgagcgtt 300

cgtaccaaaa caccaactgc catcgctatt ctgcatgcgc ttcctcctca gttcctctag 360

ctagagagag ctaccaactg acgttctctt gctatcctgc tgcgcttcct tagtagtagt 420

aggtaatgcg gacacgagca ttcgctggat tcagcatggg cattaaaaaa agaggaaacg 480

caattcttgc tcgctggacg tacgagtgcc acgcgcgaca acctgggcag aggacatcaa 540

catcatcatc agcaggaatc cttcgtcgtc gttgcgttta tccgctgctg ggtcttgtgg 600

ccaatctgga cctggccttt gccctttggg aatagaaaaa atgcacgcgg ccgagatgcg 660

cttcagtcac cagatctccc cccgctgact ccccccgaac tgctcccccc tcctctcctc 720

ttcgttcacg tgcgaatgtg ggtgagccgg tacgcaggca gagtcagacc aagaaacggg 780

tcgacaacca ccacgccagc gagtaggaac gcgcgcgcaa atgcggcatg gcgctggtat 840

ggccaatggt cctcggcggg aaatcgattg ttttgttggc ttgttgccac ttcggcgagg 900

acgacgacga ccgtcgaaga agaagaggaa gaacgggcaa ctgttcctgt tcgttccacc 960

atgcatccat ccgccttgtt tgttccatgc cctcgccgtt cacaaggacg gattaaaaac 1020

cggtcacgac tagtcctttt ggcgcttagt attagagtag tacgctatag attccgggga 1080

tcggttacgg tacgaattgt tttgtaggtg tggtttagta tggtccaatg gctgccccac 1140

tctacgccct aaaaggtcct tgttgttgac ctgtcttctg tagccatgta ggcttggtac 1200

tatggttgtt attatacttt atataatact gccttcgtca atgacaaaac aagactgcta 1260

ttctcacttg ttaagaaatc aacgaccatg tcgaataaag ttggtcgctg caaaatagca 1320

tatgaacact cttaatacaa cggagacagc gctaacaaag tatagtagtt cctagaatct 1380

agatgctacg cacacaatga cacaaaggta gggaggtttt tttcccctca aaccaatcac 1440

catacaggga ggttgacctc caattatacg ttgtactttc ttttctttat ctcgacgaaa 1500

atcaccaagg cacagttttt cttcttc 1527

<210> 1215
<211> 2692
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57107_G1, chr2:29053457..29056148, Cluster 7

<400> 1215
taactttcag gaggttggag agagcgatgt gaccgaagaa aacatagtat gaaactgtag 60

ctgagactcc aaagctagct agctagatca tagccactgt ggacagatta aaaaatagaa 120

acgaattggt atggacaata cagatgcatc gtcacttaaa aagtttatgg acccaaaaca 180

ccgcttcgtc cacagttgat ggacctaagt gaaacatatg gtcaaaactt aattgaccaa 240

tggtgcattt agctcttatt atattatacc agggaaaact ccaattactc cctccaagtt 300

gtttcatcta tgtttagata gcctcctaaa ttaatgtcgg atccaatttt tcttgaacat 360

gatttactat tttgtttctc cacgtataag ctgaatatta atatcaaatt gtgtgaggtg 420

atagagagga tatcataagt tatgctagaa aaaaaatata cattttaatt ttttaccaca 480

gtttccatgc ttaggaaatt tagtagtagt aagtaaacag tagagataca atatcatgca 540

aaatataatg atgaaaattt tataatttat ttttaatcat aaaatatgat atcttctatc 600

acctcaccaa atttaaacct aaaacacaat ttttctggat gaaaatttta taacattatg 660

ttgcatgtgt gttattcgag gtagtcttat aatgtggtgg aagtgggggt aatttgatgc 720

atgttagagt catatataag ggtattttat gtagatcttg gcaatctaaa tgtaaatcca 780

gagggctact tattagatta aactcctatt tcataatgga agagatagat atgcaaccta 840

gctaggggat agattcatac gttttttgga gtactttata atagtaaatg ccggtattaa 900

tttctttaaa aaaactgata ttcacctact taactggtgt ggccagatgt ttatgttttt 960

cgaaagaact tctaaggttt acttacctct tgttatatag tcttgtatat ccgtatgctg 1020

cagctgattt aactgttgct cctcaacaat tattcatcca atttaattca catatgtaga 1080

cctacaaggt gcagcatccc gtgtcctcgc tcctgtgcaa tcagcctatt aaactatata 1140

tcagtccctt gtcgtcaatc catcaccatt ttttttgata ctgtttgcaa acagggtgtt 1200

ttgattctag actctggagc tgcggtgacg accgtacctt ttctcttgct gtgtgtacgt 1260

agttgcagca cttgaatttt taacaaaaag acctgccgaa gcaaaaaggt tttgccattt 1320

cagtttcctt cacacatttc ggttttcgta cgaatacata caggagttgt cgttgcgggt 1380

atcatgaggg ccgcaaatga ttgtacgacg aacggcgtca gccaatcaac tcgatccacc 1440

aataaccagc agccaaccgg caactctata gagataaaac acgtataagt attagaagtc 1500

ggtacaatta aagccaactg aataggctgc ttggtgcaag catttcgagc cgccccgtcg 1560

tcgatacatc atcagcggcc ctgcctgctg tggtgtggtg gtacagtggt agctagtgtg 1620

tggactggat tcagacaagg ccaaatcgca gtcggacacc cgggcacggc gaggccccgc 1680

aggtgacgcg cgcgcggttg ttgccttgcc cccgatggat ccatcggaac ggaaggcgac 1740

cggccggggg ggtcgtcgtc ctggtcctgg atctggatgg atggaggccg atggatgcac 1800

cgcgaaaacc ggttgccgca aggaagagag cacggagccg tcactccacg ggcaagagag 1860

ccgaaacggc tatggccgtg gccgctgcct gcctgcgaca actgcacgcg cacgcctaca 1920

tggcagccag atccagatgg cacgcggcgc gccgcgaacc ctggccccaa tcatggagcc 1980

tgctggggcc ctcgatcgtt cccgccgcgc gtgccgccaa taatttaatg cgtgtcccgt 2040

gcgtgcgtga ccgaagcgcg acggatgtgc ctgtgtggcc ctgtgcatgc acgcgcggcg 2100

cggaagcctt tccttgcctt gcctcgccgg gacgcggcag cgtgccagca gctaccgccc 2160

gcccgtcctt gtccgcgcgt cgggcccgcg cgccgcggct gctgccatat gggatagcaa 2220

tggcatacaa caggtagcca aagccatcgc tgcgggcatc cttgctagct gcctacaaga 2280

gggaaagtac gatcaaccga cgagctgtat tgatctcaaa tgctgtacgt acggtatata 2340

tgttgcattg cattacaaca atggctacta gtagccaaag cctatctaga tgagtgcgca 2400

gcaggcacgg ggcgtgcatg gacaagtgaa gatcgtgggt gccctgcagt acgccaaagg 2460

aaggttcgac gcggcgtggg tgtgatcgag tcaagacctg gagctatctg ttggagctgc 2520

gttgacacct cgatgtagat ccaaaatcga ggaacaaagc cgtcagtatg ccacccgtca 2580

aaatcgctat gtgatcgtct gtgacacttg ttaaaaacag tcactacttt tttaacagtt 2640

acatcctttt aaaaaaacgt gtcactaacg actgtgcaca tgtaccatct ac 2692

<210> 1216
<211> 1425
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57248_G1, chr2:29650518..29651942, Cluster 7

<400> 1216
actagagtac ccaaactagg cctcagcgtt ttttatattt ttttaattaa aatttaatta 60

gtaatttagg taataacata gttattagaa agatagttag ttagaaaggc acgcacgccc 120

ttttgcactt gtggatgttt ctaattgtca ccccacacca ctgtccgtct acccccgcgt 180

ttatctcgct gtgaagtgta gaggaatcct gtcctgtgcc tgtgccacgg acctagctag 240

cttgccggac ggcatatcct cggtttatcc ccgccgcggc gccggacgaa ccgtaccacg 300

cacccaggcg ctccgctttg ttccgtcctg tcccggtccc gagctttgct tggtttgcaa 360

gcgatccggc agcagtggta taagccggag gagattcccg gcctcttcgg atctcggaag 420

cttcatcgct ccgctcgcca cgcgaatctc actggccact ggctgcagcc tgcagcgcct 480

ttatttgcta cgtttttgtt tgttgcttca tcggttgtgc taccgtttat aaaaagacct 540

gatacgatct cctccttatt ggcttctctt ttctgggcaa ttgagtgcgc atgcattaca 600

agtggggaga atgtgatacc tgtgcacgtt tatatatagg caccgatacg ctatcgcggt 660

ttctttgtgt taacacagat cagccaaatc tacaatttta gtgtagcaaa ataaataata 720

attatcgtcc atgcgtgaca gatgagcgag ccggagctat gtgtaatccc caaaacttgt 780

tcagcaacac tactgaagaa aatgacagtc ttacccttag cttactcatt actttaaatg 840

tataggctta aggttataat tgtaattttt ctgaagttgt atctcacagc tataaatata 900

caaacaattt catgcattaa atacactttt tggccagaga gggaatcaaa tcgctctgcc 960

tatgaaggcg tattcccctt accttcgtat tgtaacttca aggagccaaa tatatttttg 1020

tattattttg ttaaataata aaagaaggga ggaagtaatg ttcaataagg ttgaattatg 1080

tgcttcatct ttagatcatg cacgatctac ctttatcgtc atttgcttct tctctgttaa 1140

ttctttgtct tcatccatta atcaatttct tatttgaaag gaatagacta gaggatgaat 1200

atgaagcttg atttaattat gttgccttgt ttttggtatc tccgagggat aaaaaagagt 1260

gaccaacaac ccccgttgtc aaagtaataa cgacaaacaa aagtattgcc catgtcaact 1320

agttatgcgt tattctacag gcaaaactaa agcatctcct cttaggacga agtttcattc 1380

gcatataatt acatcagtaa cttcgcagtt tctacaacta gtgga 1425

<210> 1217
<211> 1594
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60041_G1, chr2:46731106..46732699, Cluster 7

<400> 1217
tctgatgcat ctggtagcta gttgcgtcct tcttcgcata gtatcgatga tatctagtgc 60

tttatcttat gcaccattgg acacattcgg tgttgtcgag cagcatgcgt tttcttcatt 120

tcttcacatg tgtttgtcca ggcttctacc atcttgtgac ttataaacac actaagagtg 180

cgttcgtttg ttcaggattg aagccaggaa tggttccagg tgattaaagc ttatacaaat 240

tagataagca ttcctggctg gattggttct aggtcatgat tgcggaacaa acgaacacgc 300

cctaaaacag tacaaaacct ttgatttcac cgttgtctta tggggtttgt agaactcaca 360

aaataaaata gggatgtagc tagaacaagt ttcccaaaac atcagaggcc gggggttttc 420

tataaaacat ttttcttact tgcagaatat ttgatgtaca ataaactagt caatacagca 480

tgtaaaaaaa atagagggag tacatgcaac aactgctccg gcgacctccg atcccgtcca 540

gattaaactc acggagtgaa ctcatctggg tatagaggag accgagccat aagatgataa 600

gaggcccggg cgggcggaat ccggagagga ccgttcagag gcctgtcggt acgcgcccga 660

tcgatgggca tgcgcagtgc aggtgcaggt gcaggcgcag gtgcagatgc agtagcgagg 720

tgaggagggc gcgtacggcc atgaggaagt taaggttatc atcaggcagc catgccagtg 780

aagaggacga cgggtggtgg tccagtgcga gttgctcgaa cgaatcagag tcgaggcact 840

gttccgtgaa caggacactt caccagccgc ctgctgggga atccatcgac gggctaatta 900

tggagatgaa catgggctgg tctcgtcgtc tacggccggt ctaccggcct catctcttcc 960

acactcatgc atgcatgcgt gctacggcgt aggcgcgtcg gcgagctcgc ccgaggagcg 1020

gtagctagag ccaggatgtg gacgcgcgcg cgctctgaac aggcagagat cagagacgac 1080

ggtgatcagg attcaggcgt gagagctttt ctacagccta tgggctagta taggcggcca 1140

tactctactg tactgctgct gctacagatg ctcagtagct agcggtcata catgctctag 1200

cgtgtccgcg ccgccgtaca tgttcggttc ggacatgtat agctactact acgtacgtac 1260

agagtatata ctacgtatgg tacgtctctc tcgcaacctt cctgtagtat atagtatgtg 1320

gctccgatcc atcggagatt cagaatcctg ataggtgcac aaatctgtct gctcccaagg 1380

actcatgtac agtgctacgt gctgtggcag ttgtgagtcc taagctcata cagtgcaacc 1440

gcaatacggc gggcgggaca gcgctagcta catacacgat cgggatattc atgcaaatat 1500

gcaatgcatg gttctctctt ctcttagtaa caatatatat agatgttaat aatgggatcc 1560

gatacccatt tacccatcta gaattcctct gtta 1594

<210> 1218
<211> 1578
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_63010_G1, chr2:62491218..62492795, Cluster 7

<400> 1218
ggggcacatg agctggcata ctatctgtag agggccatgg cagttggcaa aaatgccctt 60

ccctattaac attgcaagct tggtgtgcca gctacactct attgtgggtt gtggcaactc 120

tatgagtgag gaggtatcca taatcggtgt tggagacatc gatggatgga tacggtggtg 180

ctcaggctac aatttattga ggctcgttaa gtgcagtgta gtggggaagg tgtgatgatg 240

ttagagttag ggtgaaaggg gcttgctttg tggtccttta gcaagccatg gtaggcacat 300

ggcaagtact attcctccta ctaaattttg ggtcatgtcg tgccacctag catacctagg 360

aagcatctta agtatgaccc taagcatcaa actaggcccg actaggctta gtcaccatca 420

agtcgagtca tgcttgtgct aggccaaaaa gacgagcttt gtgtcatccc ttcgagctgc 480

tagatgcatg tcaatccata taggagcgag tctattaaag ggccttggct tggtaggagt 540

gtgggcgagg ctgtgcaatg agggtgtttc ccaacataga tctttttaga catcatctaa 600

ggcatgatac caatatttgt gatattcttc aacaaaaata gctatagcgg ttgaaaagat 660

ctaaggacgc ttagaggggt caatagacta ttaaaatttt ctacaagaac aataacacta 720

aacatgttta atagtgtgac agacaattat aaaagccact atttttctcc catattatat 780

atagtgcatg cttccctaaa caatttgcaa tctccacatc cgatcccata aaatcattaa 840

atttggcaaa tgctttctct tttatcagtg atccactatc aactagatcg atgaagaata 900

tctaaaatct gcttttggat aagtgattcc cttgtcacta cattcttgga tcccacctta 960

actccaaacc tggtagcttg cacacaagtt aaaagaggca ttcttaacaa caagtggtga 1020

gctaacaaga cctaacacta agctacacta ctgattagag agcaagaatt aaagtagcaa 1080

ccaaacaaac tactagccta gacaaactac tcaagcaact acacaagcac aattaatgaa 1140

ttgaaaatat tagtgtagaa agagcaaccc tataactctc aaatgaaaag aactggatcc 1200

tcaccaatcc cgacaaacac aatcaccaag tcaagcaagt gagtgagaag tttgtttatc 1260

cttagggatg tatatatgtc aacatgtgga caagagatcc actgacagag caatcatcta 1320

ttcatatagg actagcatat agcccatgat aacactacga tcctatagag ggaaggagag 1380

gggtcaacga tggtggtagt gtgaggggag gggttggcgg tggcggcatg agtgggggcg 1440

agggttgcag ggatgcgggg gaggggaggc tgggggcggc gaggtcgcgg gggaggggga 1500

ggtatgattc aaataatatt gttcattgga tttgagtgag tcagagagag agggttatcc 1560

aacgatctaa accattgg 1578

<210> 1219
<211> 2511
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_63068_G1, chr2:62717159..62719669, Cluster 7

<400> 1219
ctcaaatcac agctaagaaa tcatccctca cttaaagagt ttggtatctt gatttgagaa 60

caagggaaag ggcaagccta agccttttt gttttccaaa acatagtaga cttaggcaag 120

ccttggtggc gagccaaacc acgagataca tatgtgtctt atgtgattca tttacatttt 180

gcatattcat attgttgagt tagggtttgt gatcgatcta ctggctgatc tacatactgt 240

gatttatgta ctacagacag gctagaaatt tactagatct atgttctgta ggttatattt 300

tgaatttggt ttaatcttcc ctacgtaggt caacagtacc accctctatt ctaatagaat 360

ctcaagttgg attttttta caagcctatt caaccccctc taggatgaca tcatatttta 420

ggagatccta cacatatcgt gtgcataaca ctttggtgca gatattaaat cttgtccatc 480

tattatagat ctaacatcct tgttgtcctg tatatttcac aagaaagaac ttccgccact 540

actctccatc acttatgtag tacttggaga gtatttttac aaaatatgta gatcagccag 600

gaacgtaaat attcataaac attgtacgac tatgacacca tagaagagga cagtcaagtg 660

tttatggggt gtttgggact gttctaggtt tcagctctag tgtggatact ttaaatgtaa 720

ataataaaca aaatgactta tctaaatgtt ttctaaaggt tcaaagcttc agctccataa 780

ttttatcgag catctaatga cttgcttcac cacctttacc aaattttcta aagctggagc 840

agttccaaac acccccctata tatgggtgta aggtacgaca acgatggaat agtgggagac 900

actcaactat ggatgtaaat ggtatggata ttatttgtcc gtattcgaat ttgatacgtc 960

taaaagggct gagatcctat ttgtatctga gtactcaata tttgatctgt atccgtattt 1020

gcaaagttgg atatttaaga cgtcgatatc cattcaaatc ttatctgatg cattgatatt 1080

attcgtatct tatccgaatg cgaagagaaa atatgaaaac aaatatggta caagtaaatc 1140

cgtacgagta atatccattc atatctgatc agattgcacc catacactca acccttgcat 1200

ggatcgcgaa gaagattaat tttgtgttct tatattcatc agctacaatt atcactaaag 1260

ataaaattca actttaattt gatgttagta ggggccgcga gaatgcgtac ctcttcaacc 1320

ataaattttg acggccactc tcccgcttag ggagattgta agcgagcact cctcctacgt 1380

gcaatggaag ccagcctagg ctaagcctct tcttgatcga ccatagaccc cgtccagata 1440

agtatggatc aaggctgcac ctggggtcca ctttgtagtc ctccctgatg ggcaggtcaa 1500

gattagcaaa ccgatacggg tttaattagt tgatactaaa cccctcgtca tcaactaata 1560

taatgttagg tcataatata aggcctgcgc tgggtgaaag cccacccgtc tttttggtac 1620

ctggcccaaa cggtgtattg gatacttata cggttctacc cgcccagatt agcgtttgat 1680

gcacggagta ctatttttt gggatgagtc cagaaccaac gacggtcttc aacagtgaga 1740

ccaagaaaga aagaacctgt tgcggcacag aatagatgtg cctgtgatga gaatgaagtc 1800

gctagttgcg gcaaggacag atcagagggc ttcagatgct gggttttctg attgctacgt 1860

gatgagaaag aacagaacct ccagcgcgaa gatgtaggcc ctgcaggcgc cccggggcct 1920

gacgctgctc accgggctgc tctgcttact cctgaacacc cacatgccga gcgcagctcg 1980

ctgggagaaa caaatatacg caggcacaca gccttctgag attttaggag ccaggggcga 2040

gtaatgcgag cagtcgtgca caatctgggt tccccaactc gatgacagga gcaccattgt 2100

aaaaaacaaa aaaaggaaaa aggaaatcag atccactatt cctctgctca agaaagccta 2160

accagaagga taagataaag cctaaccaga agggtaagtg gttttaacga tcacagggag 2220

aagagggagc tgaggcatga ggcaaggacg aagaggtcaa ctgccattaa cgcactagcg 2280

ccagcatacc aaacagatcc tcctctgctc cggaactaag gcaagaggag actagagaaa 2340

agaattgtgg ccagtagccc agtatgcata tacaaataca gaggagcact ggaacactgc 2400

tgcgtacccc tagtaaagaa tgcgagaccc gttgagcctc caacattcga gtttctaaat 2460

tagtaaggtg gctatcccat gaattccgct aggtaaataa aacaaaccta c 2511

<210> 1220
<211> 1609
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_75365_G1, chr2:143392005..143393613, Cluster 7

<400> 1220
ctgcagcagg agccctcgca gctccggctc ggccggcccg tccagctcct gcactgctga 60

gtgctgacca acatgtgaag attctccagc ttccagcagg tacgtaccgc cacagctgac 120

cgcgtgtctt cgtgggcagc ctggaagtat actttggaca atgacaatgt cagatcttcc 180

aggttttgtc tagggaagtt gttgcacggg cattcgtcgt cgtggtcgtc gtcacctcgt 240

ctttttggcc cacgagccac gaaagctcac acattgttgg aaaaagacac gaaattcgtg 300

atggtatcta gctagccaat aacaataagc taataatttc ggtcgacggc ctaaaaacct 360

ttaaagatta tccatttttc ttgcagtgac acgaactgcg gtgcaaatag taatgtcgcc 420

tagcctaaca ctctcgctgc cactcaacta ttgtttttta tctgatatag tacgcggtac 480

tggaagttca gaaatctgga agggagaaaa gatacggcta ttagcagcat caagcagtgc 540

gtaagacatg acagcagcac atagcaggag agcctgattc gaaaactggc gattttcaaa 600

caaaacacgt cctccttcac ttcctatggt cgtcacttcc tatttcttga ctcaacagac 660

cttatttgga gtcaatactg ttttcttttg tttacatgat ttttctatat gcatctaata 720

atgggtgtgc ccaatgagta tgtttactgt cttttccaaa aaaaaaaaaa cagtattctg 780

agttgaaaca acgacataat gcgcataacc gacatctgat gttgtgtttg tcagaaatgt 840

gcggttcctt cgaaatttgg cgaggatttg gtctggattg gccccacgcc attaaaaatg 900

gtcgctaaac atgtcttgag ctttatacat gggaacccat cttctactgc atgctgcacc 960

caattgctac tcccttgtgt gccccgtgcg gtcgtatgtc gtccccttcg ttggtctata 1020

gctccatgtt gcccccacgg catgcacgtt cattgtcccc catcgcggca tgtgagccac 1080

ccccaccacg tgcacatgta tcgcctccct ctgcctggtt gagctccaac gcccatgcct 1140

aggcatgcag tgtcttctag tgcctagctc cccaaatctc taggaactag tgtcgtcttc 1200

catagcctgt tggtttcagc gtgcataaac aaaacatgat tggtcactgg gcatatcata 1260

ccactagtag tttaatctcc tagtttgttc ctcgatgcaa ggtcgagatt aacatgttgc 1320

ttttagtttt taatcacgtg atctataatc gaagaacgtc gtatgtctcc ttgcgccccc 1380

gatcatgtag acatcgtcgg ccatgcacgc cagcagccaa cttcgtgccc cacccatcct 1440

tgttgccccg tcatctgctt tgcttcaagg catacaactt tctctgtact agaattagaa 1500

tgcaaatgtt gtgaatgtga tttttagttg ataattgttg tgaatgtgct tgttagtttt 1560

tatatgccta ctgaaattaa actgtgagtt acactagatg cccgaaatt 1609

<210> 1221
<211> 1772
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80379_G1, chr2:173768968..173770739, Cluster 7

<400> 1221
gcgagctgac ggcaccaggc acgagcaggc cggcgacagg tgcagccctg ccccgcggcc 60

gccggccagg cattgaggga ggcatgcatg cgacggtgca tgggtcgcgg ggagacggac 120

gactgcatgc atgcatgcac gcagcaggcg cggctcgagt ggggactccg ccgacgtggt 180

tggtcgaggc gctccccggg ccggccggcg accgaccgac caagcgcggc ctcaaagtga 240

gcgccggcgc ctcgcacgct ccgcagaaaa tcatgctgcc tgtgtgcgta cgtattctac 300

agttctacct gaaaactgct tgtgttctcc ctccattaat ttccttagaa tcagtctatg 360

gatcacgttt ttttttaccc agatccctaa ttttccccca tcttcctctc tggcctctcc 420

acgcgcctct gtatcattcc cgcgccgtgc gctcatcgat cgatcgccta gctagctagc 480

ttgctgcagc agcacgttag ggactcgtca ctgtgcatgc atgcattata tattgatgga 540

tgcatgcata tgcatctcat ggcatacatg cgtgtctcat tccagcgatc tagaaacgga 600

ttcgaagaga gacagacatc cctactatac tttgcacact agtaagtgcc tgtacgtata 660

cgtacgtaca tgcgtgcgtc agtgcgtgcc actgtgcatg tcgtcgacca cgcacatacg 720

tacgctttcc ggcagtagtc gtcgtagccg cgcgcgcgca gtcccctagc tagcgaatgc 780

accctgtgca gcgggccggg ccggccgggt cgcgttacta ttgggctagc tcaggcgttc 840

aggtcgtcca cgcatccatc caattgatga tcgaccaccg gccgccgtcg tcgggtcagt 900

cagtcagtcg tcacaggggc atgtacatac atacactgtg ctggttgcca cctctacagt 960

tgttgttgga gactacagcg cgtcgtcgtg gctggctacg tactgctgca ctactactgc 1020

ttcatacatg aacagaccta tagctctgtg tgtgtctatc agttggtgga gtagtacgcg 1080

tgcctagcta gctacctctg aggagagaca gggagagagt gagctgacct actagcttgt 1140

gtgtggtgtg ctgtgggagc gagtgtgtgt gtgcgcgccc gcgtgagaga acgagcgagc 1200

agatatgcgc ctagctgaac gcgctgctgc tcgctgtgtg gtggctagcg tggtcatgtc 1260

actggcagcg tggcacgcac gacaaggata ctgttgcccg ggccctcaca gccctctctt 1320

cctcgatctg ttgttgccgc gcgcgcgcac atgcatgcct tccgaattcc gatgtgcact 1380

gcacaccacc gtttgacaac aaatggatca cacacaatca ctcgaccgtt tctcactccc 1440

tctccctctc tgcagaaagt acactaccgt cacatcgtct ttcgtcagag ccttggtagg 1500

gtagctcatc acacacagct gagacgatct ttactttctg ctctcaattt gttagcagca 1560

caatatactt ctataagttg atgaacatat gctctcaatt tacattggct gcactgcacc 1620

tgcaccggcc ggtgctccag ttttggtgaa caacaagcgc gcgcaagagc ggctggctgc 1680

gtgcatggat gctagctagc tccaagctaa tacatctgca tgcatgggca cgcacacagc 1740

cttgcataac attacgcctt ttttaaacct gt 1772

<210> 1222
<211> 1833
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81775_G1, chr2:180532393..180534225, Cluster 7

<400> 1222
cgtgttgggt ggtacaccaa acatgtgcac tagatacatg atttgttctc tcactcacta 60

tagttttcgt ccgagtacca agaggtccaa tgtgcacagg atgtgcctaa ccagatagga 120

gacacagaga gtagtaaagt gagttattca actataacat gcatcagacg tgtctggtgc 180

tagcacttga tgccacaccg aacaagaaac tcaaagagca tttgaattgg tatttcagct 240

ctaacaagta tcgaacttgt gacaagcaat aatgtctagt tttgagctgt tgggatgtaa 300

ccattggaga tgcaccgaat gtgtccagtg cgatcatcga tggtccacca gttatgtttg 360

atgccatcac aatcaaccca ccaagaggat aacaactata tttctttggg attccataaa 420

tagatcttgt ggcttgcttt ggccatactc ttagcatcct atacacttgt gcacacctct 480

tgagggatga gtaacacact ccacgcactt gcacctcttg agggatggtg aatcacattt 540

agtttatgca tcttgtgaca ctagttgagt gacttaggct agttattctc ttgttactct 600

tagtgattct catcacctag ctagtccgaa gtttgtggaa tccctgagag gctactggag 660

attgttgcca actccagtcg ttgaatataa tgggctctta tggtcatccc tcactagaga 720

ttcaaaaaga gcaactctag tggaattgtg gatagttgta gtgcctctct agtgtggttc 780

ttacgatgcc ccattgttgg gatggcatgt tatatcaatt attacatcaa ccacatagct 840

tagactcacc acaatgagga cacaaaccac caacaagaaa tcaaacctcg ggataaatca 900

tagtcattat tcttttgtct tgttaggttt aatcgctatc acactttcat ttatattcat 960

atgtttgtct tgagtggtag ttgcttgagt agctctagag tagcttgtag ttgtaactag 1020

ttattaactc tctagtgtat ttgtgtagtt gctagtttgt gtgcttgagt gaaatcaact 1080

tagagacata gcaactagat ttgttcaagg ggtatgcttg ttgtgaaata gatctagagc 1140

aagaagtagc attaacacca ccttctatac taattaaact ttgttgtagt gttttgtggt 1200

catgtaagaa atttttatag gctattcacc ctctctagcc atttaggtac tttactaaaa 1260

aatgttgcat attttgattt gattacctct cttcatgtag tttataccaa aaaatgcaca 1320

taaaatatca agagaaaaaa atccaagaaa acaaagccat ctaacaactc tagacataac 1380

atagaactct agatggcatt ggaaaaaatt ccttcttatt tctcatttta attttattat 1440

ttgttttcct ttcaaattta ctagagcatc atggtaacaa attttttca aggttaacat 1500

atgagaaaat ccacaactaa ttccattcat tcattgtgta gcagcctaaa atagtgtgtt 1560

ctgcattttc tactacaatg taatgtagaa ggagacagaa aaattgtcaa taagctatga 1620

gcacatcttt tcattggtca ttaatggtta tatacacaca caggggaaga ggagattcta 1680

ggagaatggc ccagctgcca tatcccaaga tgtgaattgt gcacatatat gtggtcatgg 1740

gaattctagt gcatgagagg aacttccaca tactacagaa catgagatcg tggtttgact 1800

agcaagatat ttccccatcg atttagtcta gat 1833

<210> 1223
<211> 1435
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83489_G1, chr2:189846504..189847938, Cluster 7

<400> 1223
atgccctgta ctgtactact agatagctcc taggtcccat aacaatgact gtctgcacag 60

aaaagagagc tgtgtccttt gcctgtactg tactgtacaa tgccctgtac tgtactgtgc 120

tgggtttttg gtagctgtgt cctttgcctt ttgtctctct ccgacaatgg accggtttcc 180

agtacttgga tggatcatgc ttgagccagc aagaaatcca tttggaactt ggcgattcac 240

agtcgcctta acctaccact acttaactac tactacgtac tactgttgct agcccctgtt 300

accttagcag ttttgttgtg ccaacaaaac gattcaagaa ccagtgccgg cgtgtgagag 360

aactgtttcg actgcagcag tcgattcttc ttctttttat tttctcggtt ctgaggccaa 420

ggccaaacaa tgcaatggat ggaggtcagg tcaccagagt ccatcgtcgt gtcattgttc 480

gcctacagta cctggactgc acgccgtcgt acagtggtcc cgttgcttcc tcgccgtcgc 540

gcctccgctg ccagtgccag tgtcagtgcc aggtgccagc cagctctcac cgatcacctc 600

aggcctggcc tgtggagtca ggaggagcgc gagcgcccac atgcgcgcgt cgtattcggg 660

caccaagcgt gttccctttc ccatctgcgt gacgtcgtgt acaccgcccg ggcagcagca 720

cggaatctaa tcttgcggct gccgctgggc tggtgctggt gtaccgcctc cggctggctg 780

gcgggcgggc gcgctggccg cagctacaga gacgcgacga cgacggcggg agatggggag 840

cagcgagaga gagagagaga gaggggccg ccggccaagg ccgacgcagc tactgccgct 900

ggcactgttg ctgacgcttt accggcggta actgtgcgcc gggtcgttgg cgcacgtggg 960

ccgcctctgg gcgccgtgcc gggcccccgc gcgcgtgcta gcgcggcact gtgcgcatgt 1020

gacatgggcc ggggcgcaac gagggcatcc tgttcctgcg tgcctggtct ggtctggtat 1080

gcctctgtcc aagcgaggat tttgacaggc cggctcggat atccaaatgc atactgttgt 1140

gagtacacag tagagtaaaa ccacaagtga agtccaactt gtttacgatc gagctgtaga 1200

aattaacagc tctcaaccgc tgttctttcc atggtaaaac cagcctctgt cctataattt 1260

tgagagccca tatacgagct cattgtgatg agtcttctat agtgtataaa ttttttataa 1320

tatatatata aataatatgt gtaaaatata aataaataaa tacattgata tatattcaat 1380

ttaacatgtc tgataattat cgataaataa agtcgaccaa ataacaatat attta 1435

<210> 1224
<211> 1884
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85048_G1, chr2:199366640..199368523, Cluster 7

<400> 1224
gagcaccatc cattcacacg aagacaaggt tcgcgggcta catagacata tttaccaaag 60

agaaaacgat cagaagcacg tgcgctgatt ttatattgaa ttgaattcat tcacaaggcc 120

caggtagcaa tagcaaagaa tagactgcct gttaccacag ccacgccagc agcagaatat 180

atatatatgc ccgcacatgc tgacagccaa aaacctgaga atattatata cacaaacgct 240

gcaacagctc ctgaaccaag cgtcacaaat gtcttccacg caacacataa ggcatcgacg 300

gtcgaccaga ctctcgatga gatgtatgga ccttttcgag ctagctacag aaagtcatca 360

ggcatgcatg tggttaaggt ctttcatgtg catgacaagg aggatacggg ctgaaggctc 420

ctgctttagc atgatattga gatgcctatg gcggtggcgg cggcctttgg ctgataatgt 480

tcatcagtgt cgacttcttc aatctcctgt ttgtgtgaac aagcagacca aaaatacaaa 540

atctaataag caagcattga agtgatgtca taccatacgt agacagcccc cgacatgtgc 600

atatgccaac atttcatcta aaaaaattgt gcatgtgcca atagtcctta cacaaacgac 660

atccaaattt gtgaggctgt tcccattgtt gcagcatgtt atattcctac ataacttggc 720

attttaaaca cctgctaagt gctaacctac ataaattgag atttcaaaca tccatttggg 780

gggctcagat tctgaagggc aagtatatga aaacagagtt ctccctttgt cgccgaacaa 840

aaaggttcct cagttctggc agcgtctaca aagaagttaa acatcttttc aaatgggaga 900

caaacttttt tattggaatg gccagcatat atatcctaca gctctactac tttgacctat 960

ttagattatg ctctgatcct gatattctag cacctcagtt gtatgacgat ggtgactgtt 1020

cagaagtctc cgtggagcac aggtggagct cctggagaac ttgggagctc aacttgattt 1080

tgtgtgtaga taataggaaa gagggtaagg ttatagagtt tagataaata caaatccaat 1140

gctatactac taaaagtccc tctatagatt cttaactgat gtaggagtga ctcatattca 1200

ggcaagggca attttgagta caaagtacca atgagaatta atgtttataa ggcaattgtt 1260

tcacagaaag ttacaatctg ctgtgacttc aagaagagga gtttacattt tactgttgtt 1320

tatgtggtca acaggaagca gtacgccact tttttgttgc tctgtagcaa aggatgctct 1380

ggtgctgtct aacaaattcg tttggctgga atggtttccc aatctcaaga gctgacttta 1440

ggagagttgg ctccaaatag gaacggtgtc tctaagcatg gcaatgtttg ttttttcagg 1500

tttcgcttgg gcattgtgaa ataacaggaa caagatggcg actaaacaca ccttcccaat 1560

aagcctatgg gcatagtcaa cactggtgcc gctttcttgc agaaatgcag accctgcaga 1620

aggaaaaaga ctgcgggatc tcgatgttat gacggagaaa ctcctgagct agctgcatag 1680

ctttagcctt caaatgtgcc aagctcagat gtgggagaga tttaactgta ctattctagg 1740

gcagcttctt gtattgctta gttttcgtct cttggccgcc tagtgtttct tgtacccagt 1800

tcctgttacg ctggtatccc cagcatactt tcgcctgcgc acagcgcccc aagcgcggcc 1860

gtcaccgccg ctatttctcg tgca 1884

<210> 1225
<211> 1667
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86985_G1, chr2:210633586..210635252, Cluster 7

<400> 1225
aaggtacgac aggtgataaa acgatatatg atttgtgcat ggatatgtac ttcagcttgt 60

gcaacataag acaagtaaga aatttaatta tctgcgtgcg gttattaatg tcttaaaaat 120

tttaactctc gtggcaacgc acgggtacat atctagttaa taaataagaa catgtgttgc 180

cgtcgtcgtg ctcccgtcgt ggattcggat catcggcagc tgcgcgcgcg gatcgtcgcg 240

attcggatca accgctgtgg aaaacacagg ggatgcttgg aggtgcagct tgacattttg 300

gtttcagata taaatatatg cttgtgtgga atggatttca cctacggcag ggcaccctca 360

tcctcgtagt cgtacgtgtg tgaactgtga agtggtttcc tgtcgtcgtc acgggttctc 420

cttcagctag ccggcatgct ttctttttc ctgagctgaa ctctctgtgg acaatcttgt 480

ttcagaagac ggaaagcatt aaccttagct tctgaataac acatgtattt ttttttaccc 540

tttctgacga gcgagagcgg cacagagaaa gagaaaggtt aggtgatggc gccgaattgt 600

ggtcgttggt ttctcaatat tcctccctag ctaaagatga aagacgtact gtcgggcagc 660

tatagctaac tacagatgat tagttggcac gtcctagact cctagctata gcgagcatta 720

ttcattgctt ccagtggctc atcctcagaa agacgtgtga tcaatcatgg gcccgtggtg 780

catatcgatc ctcacaaaga attatgccat tagctatagc aagcaatgct cgattggatc 840

ctgccatgaa gaagaacctt acggcatgct ggttcttcag tgcacacaca ggcatctggt 900

tcttcgaact ggccggaagc aactcactga aaatcatgcg gtggttcaac cgctaaccag 960

cggcagagag acatgcgcat gcacatacag aaatactata cacatacata cctgccgaag 1020

cttctaactg ccgccgtacg tccttgcatt ttcttcagag tagatattag tgaggacgac 1080

agagacgagc agctgagtcg atcaggttaa taaataaaaa aacctacaga cgtgcatcta 1140

ctccagactt cacatgaccc gcaacaaatg aaaacaagtt cgacctcgag gtcccagcca 1200

ccacctgagc gagcagtttg tggtccagga atgagtgcgt gtgcgcaacg ctttgggtga 1260

acgagaactg catctgcaag cgtgtgcgcg gaaaggcgcc atcgattagg agacttttgc 1320

actgtaaaat gcttatggtc gccgacgatt cgcatcgagc tgttctttta gggcagagat 1380

cgcacgcatg tgacatgcaa tgcaagtggg gtcgttgcgg ggggcagcgg ctgagttgag 1440

tacttgagtc ccatctacca acagcaacag gctcgttcgt tcgtttaaaa gtttgttaag 1500

ctactgaaga atggcgagct catttgaatc aaaatgcttt agtttaatga tttgatgata 1560

tgctacacta gcctgaggtt tttaaaaggc ttgatgatga aacaattatg aagcggttct 1620

aaatcaccaa aatacgaagg acgaatttgc tgattcttaa aggactt 1667

<210> 1226
<211> 1474
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_899_G1, chr1:4730112..4731585, Cluster 7

<400> 1226
cacgacaaga ttagcggagg gaggggaggg cgagggcgga gccgtggtga agcaagtggt 60

ggacgcccac ggtacaaaac tctacaacag atggcatgta tgtttcatgt tattatacaa 120

ttatattcga ttagagaaca ccatttctct ccaccgcttt ttcggtaata attgttgcaa 180

tcaatcatca catatgcaca gctgaaggtc agaggacaag caagcctgca ctgcaaagtg 240

caatccttcc tttgaaggta aaccaaacac cgcaatgaca acattggctc ttcaactact 300

gttgctaaac atttaaacca caactaaagc acaatttgaa ggcgtctgcg atagcatctc 360

ataaatatgt agatcaaatt actatgcact ccatttctcc aacagaaaat aaaccattac 420

tggtcacctc tgcgaaggca acataaatgt caactatttt gcagagaaag caagagaagc 480

tcaaactcag aggacagtgt tggtggtaac caaccagaag tagaatgctt agttaacagg 540

ataaagtacc atgaatagta atacaaacca tttcgtttaa ctccaatgtg ctccaacgtc 600

tcttcgattt caggttcaag ataccttagt ccggttaaac attgtataga aggtagcaaa 660

tccatatacc ctgattggtg caacttcgac aattttagca atctgaatac agagaaaaca 720

ttgtctgaag tacaaaaaaa cataggaaat taagttttcc aaacatggtg acaacagttt 780

gtaaacagat aatagtacac aataagacct aaaaacaggt gccacaagca ccaaaccgga 840

acacatgtaa ttttcttgcc tctaatttca ttatacatgg ttggtgctat cctgaaaacc 900

ttgggtgctt atcacttgat caatcgtctt gctctatggg gacttttgct cacctgccag 960

tcacctgcaa tagtcctcaa atatcttata tcaacttaat gcctcaatca cattctcagg 1020

gtatgtttac gttcattgtt gcaatagtat gggggcttta caaaattcct agatgatctg 1080

ataccagaca tctacattct tactatgacc tcaaagtatg tacaagcaga cagtttccta 1140

gcaccagcag catgctttaa ttgtgacata ggagaaaggt agctcattaa gtaaataaat 1200

cataggagac aaaacatgtt ctccacctgg ttccacctct ttgaatttca ataaattgaa 1260

aaaacatctg tgatagcaaa ataaatatgg agcacaatat cactttgtta cagtacatgc 1320

caaaagtcca ttttactata tctataccag aaaaaaacta tgattccatt gcgacatgga 1380

ccatggtaga ttatattttt gggtgttgaa ggctgaaaca aaaatatcca catccaaata 1440

agcacttacc ccctaatgga tatcaatgat ctag 1474

<210> 1227
<211> 1430
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_90017_G1, chr2:226638869..226640298, Cluster 7

<400> 1227
cacaaccaaa aagttgcttg gatttgaaac aatcacatga tataacacat aaatcctaaa 60

ttacttaaac tgccatttga acagcatgta aacagtaaac aaaagttgct atctacccag 120

cacacaacaa aatggaactg cctggtatta gttggttctg gctatctttt cttaacataa 180

acttaactct tcattgtgca aagagatgca ctccaacatc tgatcttaac agaactgtgg 240

aaacagttta tgcatccagt ggactgaaac tgaaagcgac cattgtgaac tctgaaatat 300

agtggcagat ccagatgtgg taacgaattt aattcactgg acacagtccg tcgatgcaac 360

accatcattt ccaataacat gctacagtca atcctaccag aatgctacaa cagcagattc 420

aacacacgaa ctggacgaaa agaaactcca gtcgcttagc aaaatgccac ggaccacact 480

tgtaacacaa ttacacaatc ctatacggaa cggcaagcgc gcacctgagg tagacacggc 540

cgccatgtgg aggtcgttgc ccttctccac cactacctcc atctgcccct cgtcactgcc 600

tccctttctc tggagccagt agatatgtgc aggcgggagc tagttataga gcatatttca 660

tgtgtcgttg atatgctgtc gtactgtacg cttgagtgat gcatatcata tgatccagag 720

ttcccactct gaacatgcaa gaaaccctat attgtggggg acattttggt gattggagaa 780

gcagcaggta ggcatctgtt gtccttggat ccagaaaaca gagataacta taagatgctg 840

gctggtttta tgtttcaact gggagaaccg gagaagtaca aagttgtcga tgtcaaaata 900

actggacttg agactaggct gtagctggac tgaaggtggc taaagattgc aatacatgct 960

agaaggtatg atttcagcat gtttgcatgt tctttaaaaa atgattgcat caataaatgt 1020

gaatcaacat ttgaatctca gttggaattt cttgtaccat ataaagatca cttgtgttaa 1080

tataaagcaa aaactcctct agtatcattt caaacttcaa aattgtacct tgtctcactt 1140

accatgtggg tcctactgtg atcatgcaat gcagcccact gctgaaagcc tgaaatggat 1200

gaagtgaagg gacacagttt actaatacta ctaatactat acgtggaatg gaacatttgg 1260

tattcgattg aacaactggt aacaggtgta aagctccaaa gtatacaaag agaacaagaa 1320

gagggcgagc tgttgccata gacaatggta tctctctaga gagaacggta agcgacagct 1380

cttgggcttc attggaacta ttttttagg aagtgatcag ccgttgcaac 1430

<210> 1228
<211> 1450
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94193_G1, chr3:10468903..10470352, Cluster 7

<400> 1228
agtagtgttt ggatagagag acgaagaagg atgaatagag atgggatgtg atcattctaa 60

cttgacccgc gtctggttta gaggtccaaa gtgagagtca aggaatattc ttcaaaattg 120

gtcgatgagg tcatccctca aaaaaataag ggacgaaatc agtttaggat taatcccatc 180

cctagttgac accgaaccaa cactaactaa aacatcgtag ctgtccacgc tgaggagagt 240

tggggacgag ggctgcccga ccgagtgacg ggtcgacact agggcgaacg ggatcgcgct 300

tcgtgggctc aaacgaggga ggagctgatc gtgcgtgcgc ccgacgctat ggatgctgct 360

tcggcgacca tcgctgtcga ggatacacat cggggcacgc ggatcccgca cgtcctgggc 420

acttgggggc ggtggcagca tgcttgcgtt gcgttgcgtt gcgtgcatgc aatgctgatc 480

gactgaccac agggtggttc acaagcattg aagggacagg tgccgagata gagcaacgca 540

acgcaccgac ccggccggcc tcgtcacctc gacgacctaa cgagacgctg gctggcaggc 600

tgcgtgcttg ccgatcggca ttacacagcc gtttcggggg gcgggcgacg actcctccga 660

acaatctgta gcacgtgctg cactggcgct gcgaccacaa atggtgccgg acccgagcgg 720

tccactctgg gtaggtaggc agcaggaaga ctgaccacgc gttgcttcag tctttcggac 780

gagagacgat ctgcaggctc tgcccaacta tactatagag ctgtgttggg tgggtgggca 840

ggccgggctg gctggctggc gagagcccaa aagccatgcc tgccgccgcg accggggttc 900

ggtggtggac aggagaggag cgcgggcgca tggccagcca ggcacgcccc agcggcgtgt 960

aagcgacacg tattggcggg caggcgggac gggacagccc gaccccgacc gagccacgcc 1020

gtgtgggcgt cgtctcgtct ccgtccgcgg cagagatgac gatgagacga gcggtcgatc 1080

gaccacgcca gccacgacca cacgacgcga ccgcccggac gggacgcctg cggagcggga 1140

gggcatgtgc ccccccctcc ctccccgtgt cgctcgacag ctcagacggc accggatggc 1200

catggccgga tcagggtcca gccgcagcag cgcgggcgcg gcggcgacgc cgtcagcgtc 1260

ggcgtcagat caattcgatc ggccagccag agcgatcacc ctgtctgtgt gcggcccggc 1320

catgcgggcc tagtatcgtg ggcttgcagt gcgcggcttt tggtgggcct cactcacgtt 1380

ttgctttgct ttccagccca cacaaccccg ctgaacttgt gccgctccgc tccgcatcaa 1440

ccggccaact 1450

<210> 1229
<211> 1560
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94205_G1, chr3:10528400..10529959, Cluster 7

<400> 1229
agattagaaa caccgacaag agacaagctt gcctccaagc aaccaaggca gcgaggacac 60

gagatagaaa cgccaagaaa agtacatcat catttataca gtggtgagtg gataacccaa 120

atgtatataa aaataaaaga ggtctagttt attatttttt ttacctttct cacgagacac 180

aagtaagcga gagccttcac aaatccaaaa gcatatgtta gacaaatcct gtttcatcaa 240

gagtaagcga gagccttcac tcttggtaaa acttttattt ggacagttat gtaagttttc 300

tttagagcaa ggatgtattg ttgtagcagg aagaggtgtc tctctatgtt tggctgacga 360

tattcgtggt caaggtctca aggagaagat ttacacagta cgtggcccct gaccgttggt 420

ggactgggca gggcagggcc gtggaggggg gtggggttct ttacgtactt tttctcctct 480

tgacacgagt cagtgcttag ccccggccag ttcgtcccgt gaatatccct tttgtctgct 540

gccacgtccg cgcgcgaata ttccttccct ccccccctatc tctgctttgc tgccatccgg 600

ccagtttcga acgtcgagcc aaagccaaca catactactg taccgtactg tgtagcatat 660

agtacataaa caagctactc tgatactgaa ctgagttttt atgagctctt ttcagacaat 720

atacacatac acagtttgct ctttcgtttt catcttcaga ggaatgcaca ctcatatcta 780

ctaatgaaac ccatgaacaa cttgaagggc aatgcgaaaa acagacaaga ggaaatcaga 840

cagaggcagc gtgtgggcct gcccgctagc ttatttattc gacgtcatgg ccgccgagag 900

atctatcgcg aataatgagt gtgccagcca tgggctaaca ctaacagctc gccatgatgc 960

gcacgtacgc gcagtggtgg gtgggggtgg ggcgcggtgc gggttgccga ttcccccaag 1020

ccaacgccaa tgcgagagca gacgaaggga gggaagggga attgaagggg ggaaaaaaaa 1080

aagcagcggc agcagaaggg attaggacgc agcgagaagg cgtagtagaa aaaagaacgg 1140

ccggagctct tcaggaatct aatgggatgc taattgtctc cctctccctg cgttaaggtt 1200

caggttcttg gagtgaagca ccccacccca ccccgcaaat ccttgcacgc aggcacgcag 1260

ctttgagaag ctagctttcc gtctagctag tggacgggtc cgggaccggg aggaaggaat 1320

ccgcacagaa aaccatatcg ccttggcgcg atccggattt gcgccgtgaa tgttccgttc 1380

ctcctcccta tccgcctgct cgatctggat gaccatggcc ggtggtgcta gctctctctt 1440

gagctgctgt tgctccgggc tgctagctac tgccgctcgt tcgttcgatc gtgcaccgcc 1500

gaatcgttcg tgccgtgttt cctctttcct ctcaagttca gagcggcagt agggatgaag 1560

<210> 1230
<211> 1882

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94271_G1, chr3:10947994..10949875, Cluster 7

<400> 1230
gttcttaaaa attagttcat ataaactaaa cacctcctaa atcacatggc ttgcactact 60

taaacggcgt gtgtttttt tggttggagt gagcgccgat cgagtggtgc acggccctat 120

tctttgtcct ccttttgctt tcacatgttt agaaaaaaaa atgttttctt cgtatttgaa 180

ttattagagt tggcaacttc tttcgagtcc ttagcgggat ggagtatcga tcgttaaccg 240

aagggaaacg acatcggcaa ccggcataca catcgccttt caagtccgca gcgcgatgga 300

aagggacatg gcgtgctatc gttgccggag gaaaacgatg gagaacgacg agagccgggg 360

aaggcgatga tgccccccg attcgatggt tcggcggaca gacagacagg ccaggcacgc 420

caggccgcgc gccgccggtg acgggtcgca ggcgcgcgtg tgtcgtctga gcctctcgcc 480

gtcgggcgct aaggaccgac gtccaggcgt tccaagtcat gaatgagatc gcggtggacc 540

aagatggcaa gatgtttgga atctaaagac ggggacgggc cgcgggcgat gggtcgagtt 600

ggctggcgcg ctggtgcaga catgaacggg aacggggcac atcgccgaac ccgcgcgctg 660

ccaagacacc ctggacctgg ttggcatgta ctataccttc ctggcgtggt gaccgagaac 720

gcaatatctg ctcacctctc ggctctcgcg tcgcgcgcga gcgcgcgcca cggactagcg 780

cggcagcacg gtgacaggtg cggtacagta cagagcataa aaaatcttta cagaaaagaa 840

agagtacgta cccctgctgt tcgtgtatgc gtacagtaca gaacataaaa atctttaccg 900

gaaagaaaga gtacacgtac ccgggctgct cgtgtatcgg tgtatgtgca gtacagaaca 960

taaaaatcgt tacagaaaag ggtggattag agagtgggtt ttacgaaaag catttggtcc 1020

acatctctct aaaatgtatt ccctaaaaca tcgtaccctt gtgttacaac ggagtccaat 1080

acgtataaga atcaaactct ataatattac tacatgcatg cgagttgttc taacgtcgta 1140

aatctcgaga tatgtaaaga acgactcgat gcacattgga atcggagtcg tatctgtcgt 1200

cctcaacaaa cactagagta cataaagtac tgaaaaaaga gattgggaga aagcggggca 1260

tatgcaagca gtgtgtgaaa tctaggcacg tggacaatta ggagagattc ataatgtaat 1320

gcgtataata catatgtcct cttcctactt aacgattgat gaacataata gtgaagaaga 1380

ttacaagctc atagcacaat agagcattac gaccgcctag ctccctccaa cctctaggtt 1440

atatggtgag agttatagcc tactaatcgt aatctacctt tatacatgct ctatgtgtag 1500

agtaaattct tatgtgtgtc cgatcatgaa ccgaactaac tggttgaact gaagttctct 1560

accacgtgat aagattgaaa tccctttcct cgttaccttg ctcccccgtt tatagtgcaa 1620

gagaggagag atgtcacatt aattggacct tggatccaac cggctaagac ccaactacat 1680

cgttcttatc ctattcatga agtcatacat ggacccatac tctcattatg gtacatgcct 1740

tacttattgt gagggtaggt ataatgtgtc gtttgcacgg gcactagggc ccatgccatt 1800

ggatacgaca tagttgttga tatgtatagc cttctatact tgataacact ttatggtaca 1860

ttgtcatgag catgcttggc ta 1882

<210> 1231
<211> 2729
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94326_G1, chr3:11230027..11232755, Cluster 7

<400> 1231
ttctcatccc acaacttttt taaattttca ataccaccac ttctcacatg attctatctc 60

ctagcaaaac agcacacttc cacacgctca aaaccgcagg tgccatctaa atattatttt 120

tctcatcttg taatctactg tcctaacaat tattgtggtg tagcaacatc aggatactgt 180

agctacccaa atgtattgat gagtgaagga cagagcgagg gacacaggct agaggcacgc 240

tgatcctgga tactgtcaag ttactatcat acgagagatt tataatgctt gcaggtatat 300

tgccatagtg ttgagatcgt cttgtacatg tactcatgct gtaggggttg atacgtactt 360

tcatagtggc aggacctatg acctaagatc acaccatggg tacaacgtag ttgataaacg 420

gtgtagctgc ttgcacttta taatgcttgc aggtatgttg gcaaattcag gcgtgactac 480

aaggacaatg gcacgcactg tacaatgatc ccaggtaccc ttgctatcca ttgttgtgcc 540

tacagggaca atgtacagtg gtcatgggta cacctgctac ctccgttacg gcaacagtgc 600

acctctttga gcataatgtc tcatgtcaca tttaatatga tggaggaagc cttatcttaa 660

cagctcagca cccggtggtt gtcctaggta ggggtataca tggcaccagg gttataccgc 720

tagggtcgtc ttgccctaag ggcttcgatt accaagttgt ggatgtagcc tacaggggtc 780

cttacacttg gcagaacagt gaatttgatt tccgaccagt agagccctga acgccaagag 840

agtcctaaag gccaagaggt tcttggatct ggtctttcga catgggggca ccagacttag 900

ctagagccgc cgggcatgat ccctagagta cgagatctct gggacacggg gctcgtatca 960

acgccccccc ccccccccca ccttcaggtt tcttgtactg atgtaatctt cagaaggcat 1020

ttgaacaata tgcggagata tgatttttcc tagatgctaa caacaattat tcttaatcgt 1080

gcaggatcca agaacttagg gcttcccgtc ctctaatcta ctagttcaat atcgtgtgtc 1140

atagttattt gccttgagct cttctacatg tcactcattg ccttgtattt taggagattt 1200

ttccattacc atgtgagtca atggtatgcc aaataagtta atcaaatatt caaatacgca 1260

tgacttgaat gctctgcctt ctgcaaccat gcgtaattaa tttaagaatt acataaactg 1320

aattcatttg cataatttca ggaataacag atggtaacca catggacagc agccaagcat 1380

catagaacta ttctgcattg tgtgccatga tattaaaaat ggtagattcc atacatataa 1440

gaatcttaga cataattatc agctccattc attcaactaa tgaggattct aacagagtga 1500

actgtttcat gcttaagcca aatcaactaa atggattttc tgtttccatt gcatgccaca 1560

cacaatgttt cagtttgtta atcctattga gcaagattag ggagcaaaca caggccccgc 1620

atgtttgcga ttcgactcct tttgtcagtg catctgtttg caaacagtta ggagcctgta 1680

gttttgccga taaaggcagc atattactat gtccaagaca agagaaaccc ggaggagact 1740

atcaatgctg aataaataac tggaccctgg aggcaataca gtagtttcgg aaatggatta 1800

gtgtaaccat acccttctaa gactactact taaaaacgtg caatattatt tactactccc 1860

gaaaatctaa tagtaataaa ctaagcagct gcttgaaaaa aacaactaat cgtaaaaatg 1920

aggacctcag ctgaggccac cagattaaaa aaccaaaaaa atgcatggac gcaaacacca 1980

cgtaactggt aagtggtatg tactatgtag cattcgattt ctccgcgtga tcaggaaaac 2040

cgagaacagc aatgcctgcc ttggcataag gccgaaagcg tgatgcccgt agatcctact 2100

gtgcaccctt cgatcggggc acaatcggct cggttcggcg caaaattgag cctaactttc 2160

gcagagaccg gtaaccccac acccctttat ctcggcggcc gcacctggcg ccgctgcagg 2220

gcacagcaag gaggaagata cagccgccct agggaggggg cgagcccgcc atatgacgag 2280

ggcaggaatc tggcaatatc caagcaggta gagacaaggc gcaggcggga atgggaagcg 2340

aacaaaaatc caggcaggga agggggggcga tcatgtacca gcgcctccta ggatcgtgga 2400

tcttgtcgcg gcccgcttgc ccttgtcatc atcattcatc tgcctcccgc cccgcgtcgc 2460

gtggcgtaca ctccgtacgc gccgctcacg cgatccctct cactcccaat cattcgcggc 2520

ggcgtcgtgt ttcgcggtgt cgccatcgcc tgtttttta acctcggttt gggcctttgg 2580

gagcggaact tgaatggagg attggaggct gggtgcagcc acagtgcatg acacctgtgg 2640

atcgctgccg ccgcggggtc ggccggtagg acgagagcgt tttggaaggc cgcttggttt 2700

tggtgcaact gccaaacgtt tatactgtt 2729

<210> 1232
<211> 2790
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97752_G1, chr3:30045047..30047836, Cluster 7

<400> 1232
cgatccgtga atgcgacctt aattatttga attgattgtg tccaatgtca cggggatcct 60

gggaatgtaa gttttcttgt caggtacatt ctaggtgccg tttggttcac atattgttaa 120

cgtaataggt aaccgataac gttaaatcat gtttgtttaa gtccaaccat aattgatacc 180

acactacaaa tggataccgt cttattcaaa tttgttacca ccggtattcg agtgtgaatc 240

gttaacatta ccatttattt tatatttcat gaaccaaacg acactctaga cgtatccata 300

ttgtcgattt cgtcccgcac ctaccaaaga gccacacaat gcaattgatt agatgtaaca 360

gcacgtcact tcaaagtttt gaactgagaa caggacacat gcttccaagt tgcaatcttc 420

tgcacggcct gacaccgcaa ccaatcgatt cttcatattc ctgacgcgct ccaacatcag 480

cctgctaact tttctaaggc tgggtaagct tccttctcca gagtcgtgtt tcgctagctc 540

cgtcgtgtgg ggctcccccg cggcagtggc ctgcaccacc agccacttgg ctcttcatgg 600

cgctcttccg cccgtcatgg gcaccgatga tggtggcagc ttgcactcca tggcccccgg 660

ccgcctgctg gctcgtctcg tagtagtccg tggcgaagct agggatctag gactgtacca 720

gctagcgttg gtgccgaccc acgctcagaa tcagccgatc agcggaggcc ggcgggctag 780

gttgggtcgc gctcgcttgc tgagggacta cgtcgctggg atcgccctct ttctcggaga 840

ctcgctttgg ttctagagag gataggtcgc tttggttcta gaataatcga ctatcatcga 900

gtatgcgaca acaccaaggc gctcgtccgg cgagggcagt tgcatgaagg aaaacatgaa 960

acggttttca ccgtcggaat tggatcggac gaccaggaaa aaagaagatg acgtggcatt 1020

ctaagctgtg agctatgctc cttcgcttaa tatataggaa ggaatagggt tgtacactac 1080

cggcatagta ttctgcgaca gtaaactgtg tgctttgaac ctggcattca gcaggttaat 1140

taccagctgt gtaggtagga gctactaccg tgtcgcagaa gcggttcaca tgcatgcatg 1200

ctcaactaca gcctacagga gaggagatga ccgagtggcg cgggcagcaa gtcatccgtg 1260

tgcgtcgaga cagtagtagt cccgtgcacg tagtacgtgg ttttgtctct gtaaaacagg 1320

gcggaaacga gcagcggccg ggaaaaccgg gtgccagcca tgcaatgcct gttaatcaag 1380

cgtactatac taccgctggc taacttcttt tttttctctt tgtttttctt cttataaaaa 1440

aaaaagaaga aaaaaagtac cgggtggctc tgggttgtgc gtgcgactgt accccggccc 1500

catctctgcc aacttggccc gcaaatacca tcgaccatct cgtggtacgt actttaggcc 1560

cggtgcggcc gcttcaactg tttgagcaag cgagcagcag agcagcgcat ccatccgttc 1620

cgtcgccatc cctcctcact ccgatctgtt caaagtagcg ccgccgctgc cggtcttctc 1680

gtgaccacgg gctctctctg tacagctagc taaaaacttt cgtatccatg tcgttgttgg 1740

agtagccatc ccagtgatcc ttattcgcta tggctggcta cggctttaat ctcgctatga 1800

ctactactta tacagtattt tatctttata gattatatct gtggtagtcc gaacagctat 1860

aacaactacg ccatgcacca ccgccagctc tcgacatggc aacacgtacg tacgtaccat 1920

tacgcgtcgc aagcattaac tacttaatct ggactagtag tagcagtatt gacgatgatg 1980

acgacttgat gaaagatcag gcgggccgcg aaccgcggtg cgttgcgctt gcggtgccgc 2040

gccttcgccc tgctgcactt tccggtgacc cttttgtagg agtattttct tttagctgcg 2100

gcgcttccga aagcgatacc cccatatgca tatgatctgt gcgaccgtga cgaccctgtc 2160

cctgtctgtc atcgatgagt cgtcgtgctc ttcttctgtg tggaaaagaa agaaggcccc 2220

cacgcgctcg actacccgat caatcacaga ctccgcgcgc gttcgttcgt ttctcagagc 2280

acctttccac gtggctcagt tctatacgac cgcgcccgcg ttggtggaga cgatgctgca 2340

gacgcgggtg gaggggccac atgtcacact cccacttcag acagcattgg catctaatag 2400

aattacatat tctaatatat atatatacat tccacacata tatgcactgg tgtggtgtgt 2460

agcacacact cataccatgc acaggaaagg tgcaggtaac atgctattta tatttttgg 2520

gtatcaaagt tgtcttcgct actatgcact atatataaac aaagaagatg actagaattg 2580

ttatttggag acaaaaaaaa aatttccaag cgctagtaaa cgaatcaaat ctttctattt 2640

ttttccataa aaaagataat aagaaagatc atacaaacct aataagagct aaatacgtct 2700

gtttaaaatt aaaattgata caagattgtt aactaccatg gcaccacgtg gaattgccac 2760

gcctggtagt tattgcaggc acagatgcag 2790

<210> 1233
<211> 2241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83937_G1, chr2:192746622..192748862, Cluster 8

<400> 1233
acgcacacaa taaatttaat ccagtctaca aatgtcttct ccttcatttt aagccttggg 60

gtttgggaaa ctggaatata taggacatgc ttttatacgt gccctacaaa ctttactctg 120

ggatgatgca ggttctaatc acatttggtc gaaccaaaag cttgctcaat tgaactagag 180

tggtatttca cataatttgg gtgaggggag aaattaaata gaatataatg acatttaact 240

gtaattagtt aactctttta atttgtatgt ttgatgtatt ttatcccttc tagctgccgt 300

agtgtccatt tcctcaacag ctcaacattg aaaaacgaga cgaggcacct aaattgtgtg 360

cacacactgt gcatgcaatc acgctgcttt gcaaactctt ttgcagtctg tttacaaggg 420

tgaagtcata tatatctgca cagtagtgcc ggtgaagctt gacgatggct ggaacaaaat 480

ctcgctgatg tgacaaaaag ggtgtatata tatatgtgta tggcacaaac tgctacgtag 540

agacgcgacg ctgcgggtac aagctcatgc aaattaaact gctgacttgg cagaatttac 600

ttctctgacc gcttctaatc ggaggacgcg cctgacgaat aattcaagat ctaccttcca 660

atccaagtga tgagaactcc tctattcatg tactgtatgt atttcgtcgt aaaatatttc 720

ttagctgctt accctatctc ctgcatctcc tttttgcgag aaattcacag agggcgtgca 780

tggagagaga cttcggtcgt caccagagga gacatataca taatactacc attattgtga 840

ggatcccttt cgcataacct agctagctgc acattggcct tcctgatgag atccagaaat 900

ttggcagaat gtttctgtta gtttcctgac tgattgttgt gcgctgaatg gttaggctct 960

tctcgatctg ttcatagcat gcaaggtgag ggttcttact agtccgaacc attatttggc 1020

taccggcccc ttccgatcca aagcaaaagc gtaccgttac tgcttactcc gcctggtcat 1080

ttaacgtgct cctcttccat agttgtacgt accataccat ctctatctat ggtagtagta 1140

tcatgtgacc accggttgtt gttgtattgt atgcattgca tgccaagcgt gatccgcatt 1200

aaatgcttct cttctcttta gcgtcatccg tgctgactgc cgactgccga ctgcctgctg 1260

cagtcgtcct gctcggtcta gctagcgctc tgaatgtacc cgaaagcact gcgtactgta 1320

ctgctttcag aaatcgggtc ctgtttgtgt tatctgtgta tcgatcgaaa ctgttcgtgt 1380

ggttcacagg aacagtcgaa atcgttttga ctaggcgcaa ggattggaat tgagcggggt 1440

gctgcaggcc gccggcacag ggctcgggtc gtgggcgttc tagctggcga gcaaatggtt 1500

gggcaacacg cgctgcggtg tacaggccaa ggcggccagg ggaccagtgc ggcgggcggg 1560

cgggcggtgg ctacccagca gcagccccgg ccttgccgcc tggtacacgg cgcagagacg 1620

gggccgggcc ggatgcaggc agggcagggc aggggacgcc gggacgggca acgcaacagg 1680

gcaagcgagt aaaacggggc cgcacaggca cagcgctcag cgagcggtga gtccacccac 1740

ccaccgcacg gcctggtccg gctcatgtgc cgcggccgcg cgccatgcca gcccgggcca 1800

cggccgcgcg cgcccgcgcc caccgtgccg gaccacgccg cgcagacccg tccgccactc 1860

cgcctccgcg tccgtgccgg tgccgcaggg gggtcgtcag gcgtggccgt gaaacgatct 1920

gcgctcccgg cgtccaaggc gctgcgcgcg gccgtacgta gcgccaaaag ctggcgtacc 1980

tgtactgtac tgggcgtagc atgtagtagg tagcagcagc actgtattga gtggcgggcc 2040

ggcggcaggt cggtttactt gcagattgcc gttggtggct ggccgcggcc gggtccacgt 2100

cacaaatgac gggcgggcag ggcagatcgt cgtgccgtgg catcgcaggc cgctggcagt 2160

tgacctctga gtaacgtgac cacttggtgc agcatcgggc gcccacacgt agcattgttt 2220

gctcctgtcc cccatttagt c 2241

<210> 1234
<211> 1507
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11368_G1, chr1:61632994..61634500, Cluster 8

<400> 1234
tgcatgcgtt tagtgacgca ctcgctttta gaaaagagaa gtgtgtcacg tacgatccac 60

cgtacgacta gatgtcattg tcttttgttt taaccgagcc tatccggcta tccctagatt 120

cctacgtgta gcagcacaag aacccaagta caatggacaa aagggcccta tgacctattt 180

aaatttgatt ttggtgttta gtgatcgaca tgactattta aattcatatt atttccctat 240

aatatttagt tacaccgact aaaatttagt ttatatcaca tcaaatatct aaatatcaac 300

tacaagtatt aaatatagtc taattataaa actaattact taaacgaata aggatccagc 360

ctgaacctat caagcctgat tcttagtatc accgatccaa acacgctcta gaggatttcc 420

tgtgaaaaat tgggatcgca tctctagaat aaactcaacg tcacctgtca ggctgtcatc 480

ggctaagtac acacaaggta gtgtcacacc aagaaatgta aatacaacag aaaaagttgt 540

aggtctagtg cattcggaga acaagtgaga aatatttttt ttcgtgactt ccctacgaag 600

cagacacaat ccttggtaaa gatctaaaca aagaaatata acagtgagcg ctagcactta 660

ggaacaaaca tgactccgct atggttggtg gttaaattcc agatggctga atttgcacaa 720

acggctcaat atttgtttcg gattaaaaag tcggctgctg ctgcaactgt tacgaaatct 780

tcggcggtct cacaagattt ggcaacgctg tccgtcattc atgagctccc gtccgggcgg 840

cgggcggcga cctggtgaga cgtcggcgag ggaccggcga acgagcagag cgggggcgtc 900

gcggcgcggg ttaatgcgag agcgagaggc cagcggaagg cggggacagc aggggccgcg 960

gcacggagca ctccagggcc cccggcctgc caccatgtcg cccgtgcccg cggcaagcca 1020

gcgacgcccc cactcttccg gtcgccttcc ctcgccgcgg accgcggtgc cagcgtgccg 1080

tgctccgcac ctgaccgtgt cttccgtgat ttgcttttag gacacggcac ggcatacacg 1140

ttgcatttcg gtacacaaga ctgcgccgcg tacgcgtata tacgcgatga ttccagggtt 1200

ccgggaggat tcgttcaact ccactgctta acttcaccgt ctataaaaca ctcctcgtta 1260

atgtaattct tctagtacta tatcacctta tttagttggt cctccttcta aatcataatt 1320

taacttaaac aataacatga atgtcattgc ccctagccaa acacgaggaa tactctaaat 1380

aaagataaaa agtgctctaa ccaaaggtta ggaacaagag tatataaaac aaaacctacc 1440

tttttcaatc atgtatatga ctaatgtcgg ttacctagga ataaagtacc caaaataggt 1500

acataaa 1507

<210> 1235
<211> 2495
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11765_G1, chr1:64085014..64087508, Cluster 8

<400> 1235
cttgcatccc caccgaacac aaatcttatc gtctcctggt tttcgaaacc acgacaaatt 60

actgttgcta caatgaagca ctaaaaagta gcccgtgaga acttagagct atcttataac 120

gtcactaata tatatatcag gtgcaggtgg tgtatcatag tcttaaattt ggttgactac 180

gctgatggag gcggagctat tttctaaaca agctttgctt ctgaaatctt aaatttagtt 240

gactaggcta atggaaacca acagccaaca caacttttt gagaaccaat aggcaacaca 300

actgcacagt gaaatacacg atgaagctaa cgctaggatt aaactgactt gcaaccatgt 360

tttcccagga aaactcccaa attaatcaga cacagacagc ccataacaat ctatagatgg 420

gccggcattg tctcaattgg cccgccaggc gatttctttc ctctactcgc ttttcttttc 480

ccatgttaac taaactatca cgaaagagtg ctacccggat cggaggatga caggcaactg 540

cagttacgcc gtacgttctc agctagtctg aagaaaccat ctctttcatc ctcttggcta 600

gggctagcct tcttgacgct actgctttgt tgctttgctt gcttcaaatg atggccattg 660

tggcattgca catagatgga ccacagggcc gggctttctt gcactgttgc acatgacagg 720

tcgtcgagct agcagagccc ggagcactgc catgcgagcc gcgcgtccgc ctgtgcctgt 780

ctgtctgatt gtttgctcta ccgaactaga gagagtactc ccaaagctcg acaccgacgc 840

gtgctttgtc ttctgccgtc gtcttcctat cgtcctcctt ttctgcacgc aaacggaagg 900

ggtcgatccg atccttctag tcatactctt cacatataat aacaaatttt tttcaagcct 960

gtaaaaaatg cgtggaaact ctagctaacc taacccctgt acgcactgca ttattatgca 1020

tgtaggggct agctggatcc ttgtccttgt tttatcgatc attagcagta tctagtgtac 1080

ggcttgacgt tgacctaccc tatcaccagc agcactacca cgcgtttctg tgtggctgcc 1140

aacgaccgat cccacccagg atatttcttc ttcgtgtcta ctcttgtggt tcaagcatcg 1200

tctagttatg tgtacccttg ttttcaggac catctatctg actagctatc tggtaataac 1260

agccctgacg aatgtgaata agaaacacgc atgcacggag tgaattgtcc ttcagaaata 1320

aacctttaag gatggtttga aagcccaatt tctaaacgaa ccaacctacc ttttcccgta 1380

tgcaaaaccc accgtggata tgggtcgtgg ggaaatttca cggcttgttt cgaacgtgct 1440

ctcccggacc agcgctcccc cgacccggcc tatcagtagg gaaaatgctc ccccaacaca 1500

ttacctcgcg caaccttccc cacgggcaaa gggagacgat gcaagggatg ctccaccgtc 1560

tgcacgtcac cgtccgctcc gctgccgcag cctttccttg acacggtcgc gagcgggaca 1620

cgaggtattg aaccattgcc accttccctg gcttgccgtc cttcatcgtt gtccccgttc 1680

agtttgctat ccttcactgt cgtcttccat gacacgatgt aaggtcttcc cactcctctc 1740

atactaccta gggttttgaa tcattcccca ttctaatgtt agatcttctt cgattcttga 1800

tctccaagat ccaatacaag gtcggctctc ctgcaagtct gtggcacatg gagcgaaccg 1860

agcaagtccg cgcctccacc agcgtccacc gctcctccac caagcaagtt cttctcaccc 1920

tctctactcg tttcctggat gcgaattcaa ctcacgtcgg ccaggggtga accaagaata 1980

aaattagagt gagagcatac ttgtaaggat gaacatcaaa ataccagagc atggacatct 2040

aagttggact gactagggga ccatatggtg aaatctgaac tataatactt gcaacagaga 2100

agtgagcgag ggcctaggcc ctcactcaca tgtatgtagg tccgcccctt ccaagagatg 2160

cacttagagc gaattcaatg tttggacaag ttctaaaagg ccctaggaac atattggaac 2220

acattagaaa agttagaaag gtcagatatt caatatgatg ttctaggagc taagtctcag 2280

tgacatttag tgaaagggtt gagcaggtct aaaatatgaa gaactatgac tcaatgtggt 2340

tggatggact aaggataagt ttatctaagt catataagtg ctcaagagta tatcgaaacg 2400

aagagaacaa aagagaagaa aagaatgtct agaaaggaca agtctagcta ctttgaggtg 2460

caccgagctg gtctggtttg gcaccggacc gggca 2495

<210> 1236
<211> 2052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120376_G1, chr3:175960964..175963015, Cluster 8

<400> 1236
gtacaaggcc cggccagtcg tgattgttca ggctacagta gctagctgct agctccatat 60

atatcagcgt ccgcgtgcag aaacagtcaa ggctgttgcg gtgcagctcg cacagtcgtc 120

gcagcgctga gaggagtgta gcttaagcaa gtgatgtagc ctctcctcac agtcacagct 180

agctagggga tcggagagct acaaaatcat ggaagcaacc accatgactc cagtgaccag 240

tgaggctgct gtggacgact gctatttgtg gtccagcgtc aaagctgcag tccgcctttt 300

acctacacaa gaaacactgt tgctgaatcg atccatcgtc catcgtcggg tagatctgac 360

gttactctct tgctacaacc ctctatggtc actgcaaact taacagacag tcatattttt 420

taaaacctac tgactgcata gacacatttt tgaaactagt catcttttaa gatctctctt 480

atatatatgc aatccgtacc atctctctat cacaagcaga actgcatgca ggagtgcaga 540

accccgtaca gtagtgtgtg taagtgatcg actgaagagg aagacatacg gccgtgtgtc 600

aggcttggtt caggaaaact agtactacag gagtacgtac gcgcgtatac cgacaacgtt 660

agcggcaaca tcatcaatga tgcacgaatc attggtcaag tgatcgtata gagaaaaaaa 720

agtacactgg ccgggcttcc ccgacatgac gaccgcgcgc acgactgaac gaacaacatc 780

gctagacctc ctgtattata tgctgtactc tactgcctgt cagacaatca atgaagttat 840

atcgctcctg tgtagtagat tcgtcgcccg tcgacgttcg cttcctgtgc agtgttttcg 900

tgtttttta ataaaggaat tgaagggttt ttattaatcc atatatagtt ctgtatcaag 960

ttgattgctc taataattgt aaaaaaaaaa tccatgatcg tctgtgttaa ttgatacata 1020

aacgttgttg tagctaaaat tctgcgaagc aacttctaag gacaattcaa atccgtgtcc 1080

tgcgtgccag acattgtacc gcgccgaccg ttcggcaatg tttcagtttt cttcgctgta 1140

tatgaccgga ctgaaatctc cggttacagc agtactgctg tttgctgccg tccttgggta 1200

ctctccttcc ccggaacaga acgtccaact tcctctcgac tgcacgcacg tacgaacact 1260

tccctttga tgagctgatc tggcccagga ccgattcaac cagtgcgcgt acatcgtcac 1320

ggcttctcca ttgccgtagc ctcctacggt ctgcactgtc ttgtgtggtt cttcaggcct 1380

tcaggcaact tataatggcc atcgttcttc agggaaatgc atttctgcaa cttatgcagt 1440

atatgccacg atcaggattc gggactaggc atggacgacc aatggtggcc ctgcagaggg 1500

gcggtcgctc cgggccctga atttataggg cctaattcta gtcatgtgat ccaatagccg 1560

atcaacaaaa ataataaata tctaaatatg ttagaagaaa attataaggt gatactataa 1620

tatatatcct tttatctact cattatttga tataaatatt tttatatgta tttgagcgtt 1680

taattagtaa catttatata ttaaaaataa tttgaaggcc ctctgtttaa aacattgtcc 1740

ttgtgcccct aaattgagcg agcgcgatca ggatttccgc aacttataat gcccatcgtt 1800

tcttcaggga aatgcatttc tctgcaacgt atgcagtatg acacgatcag gattcgggac 1860

taggcatgga cgacggagcg agagcgcgag agcacgcgac gggtgcaggg accgagcggc 1920

gcgcggcgtt cacatcacac cacagggaca cgccaggcac acgggccgta actgtacgcg 1980

cgcggccccc cggccccaat catgcatagc acgggcgcgc cagaggccgt gcacaagcaa 2040

tctattctcg tc 2052

<210> 1237
<211> 1511
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120460_G1, chr3:176350309..176351819, Cluster 8

<400> 1237
ccaagcaaac gaagcagggc aacagccggc cggggcgatt ggtggctgtg gcgaaacagt 60

gaatggggcc tggaaagctt tgcaggagca gcgcccaata attcacggcc ggggctctcc 120

attacaactt gtccgcacgt acagcgctga atacaatgaa gccaatatcc gccgggacga 180

aaacaaggcc gagaatttg caagcgccgc gtgccctgcc cgtcgttctg gactcggcaa 240

caggacagca ggcagcgtcg tgcgccttcg tcgccccgcc cctggatttt ttttcggtcg 300

gcccgatcca cacggtaaaa aacgaggagc gtagtgaaaa cagagaccgg cgtttgcgaa 360

ctaactagta gtaccaggta ggccagcgcg gcccgcccag gctgccgcga atgaatgcca 420

agttgtccgc attagcgcag ctaagcgcgg ccggctttcc gcagctgggg ggctcggctc 480

ggctccgctc aggagttcgt gaccctgaca tggtcagtga gcttttggcg ctagttagct 540

gcgaatctct gtgcgcggcc ggcggccagc accccgcacg ggccgcggca gagccttttg 600

cgccccgtag cctgccgtgc cggagtccgg tggcggcgca tgcgatgcat ggatgacgac 660

gaacggcagg cgcgcgccgc gacgcaagcc ttggcgaggc ggcacgtcca ttaatgctga 720

cacacggtct tgggcttggc agggttcacg ggacgccgcc ttcgtttggc ctttggccat 780

ccgctacaga gtacgtacag accaccagtg caaactccac gcgaacctcc aagctactta 840

ctgtaagggc caatgcgagc tcgcgcgcgg cgggcggcgc cgagagcccg agacgcgcgc 900

accgcccacc accgggtcat tatgggggtt gccggcggtg gcggcgtggc ggctactcgt 960

agcgatggaa gggggtgctt tacatttatt attatcggga catcactaat cccgatccgc 1020

gctatcctgt gacccgcgag ccgttgaagc tgcgcgtgac gccgagctcc acctccacac 1080

gcgtccgaaa cgccttcatt gccgtgtgcc cgtgtccttg tcctgttcac cacctctctc 1140

gttttgttgt gctgggcgag cgatctattt tgataaccac cttaacaaag tcaacgcaca 1200

gttaaagcta tacactctac tccgtcggtc cttaaatatt agtgtcgcta tagtttccgt 1260

tcaaaagttc tttaaattca aattaaaaat atttaatttt atgaaaaagg agaacgacac 1320

ttatttttag aaacgaacaa gtacattcat cctactagta cgttagctat cctagacatt 1380

ttctacgttc atctcattat gatcgtacta gtatgttatg cacgatactc ccaaattatc 1440

agcagccctg cgatttacat ggtcgcagga tgctgatcca cgtatctgtt ctcgtttact 1500

gaaaggagaa t 1511

<210> 1238
<211> 1542
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121304_G1, chr3:181071480..181073021, Cluster 8

<400> 1238
ctcaccagtg gctaggatga caaaggcaaa aaaagatgga gcgtgatcgc aacaagagta 60

caggacctgg ccgttcgttt ccagtggcag cttttagatt tgctccggcc gccaagtcgt 120

gtgtgtgtgc ctgccgctgc tgcttctagg gtgctatcga cattagtttc ttatgcagca 180

tgattgggat atactgatta tactctctat tcttcgatat gggaggggaa aaaaagagga 240

aagggatata catgggatcg ggtcacgaac ggtctcatgg aatctgatgc tgctggcgtc 300

aaccggccga gcccacggta tctgacaaac aaatcagacg ttcgtgaaaa cggcacgcat 360

tgggtcgatc tagacatcta tgtctagccg cgcgcgtgct ttgaaaacgt ttccaagcgc 420

agacaaaaaa accggcacgt gggcgcatgc aggaaacaaa caaaaccgga aacctatcgc 480

tgcctctgct cgtcttcttc tccaccagat ctgcaccccc aaggaagagc aggaaagaag 540

catgggggcg cgccacgctc gatcgtatcc gggggagggg aagaggaagc ttccatgcag 600

caggatgcag gacacttcac gctcgcactg cactgcacgt ctgcactcgg tgcgcgctgc 660

tcccccccta ctcgcctcgc catcagagcc cgcgcgcgcg gcgatagata gttcagtgac 720

gaagcaaata acaggtggcg cccgcgcact gcgcctgcaa tctggtggtc gtggtggcga 780

ggtcgcaggc agcgatctgc tcgcacttac tttcgtttgt agtgtactag ctcggtggga 840

gctgaaaaaa gcatgggcaa tttgtgtgcg gctgcccatg gagagagagc gtctcggtcg 900

atcgtgcact ttcgcaccag tggacggtgc gtcactgctc ctcctctcca gactccagcc 960

atacagtata actgactcaa acggttgcgt gctgagacga ggcactcacg cgatccctcg 1020

acctctcgcg aggagagctc accaccgcct gtctgttcgt gggtagctcg acacgttaga 1080

gggcaggcgg gcgccgcact gcgctgccgc tcgccaccag tttggctggc cttgggcttc 1140

ccgtagcagc gtgccgtcca cttgcgcggc ggaggagcca agaatctcca gacatgccgc 1200

tctaaacaag agcaagatga caaattctga atggacgcgc gagcccgccc aagtctgtcc 1260

tagacaccaa ctcgagacgt acgtcaccga gtaaattaca caccggcaac gtggtaagca 1320

ctcgtagagt ctcccttccc ctcccctgga tccaccgtta tgcacaacaa ctgaataacc 1380

ttactgcata tataagccag ctatcagtgt gcagttgaga tgacctccac aatcaaatta 1440

aggtcatgca ccctctatac tgcagctatt gggatgatga tctcatctac acctgatcag 1500

tagacaggcc ggatctttct cgcgcgtcct aatcgaaaac ca 1542

<210> 1239
<211> 2736
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121468_G1, chr3:181909715..181912450, Cluster 8

<400> 1239
ttgccgatat ctggagtata ttttctcacg cgtggtctcg ggaatcatgc atgcaactat 60

cgcccccaag agctacaaga aacgggggaa gataaaactt ttgggcgact gcaacgggca 120

cgatcgtcca tccaggatac cggaaagatg agtcaaacga gaataagaac tagaagcaag 180

tgtgtttttg cgtccaacaa tgattagggt tcagaagagc gacggagaag cctccccatg 240

ctttctttct agggagagag agagagagag gcgctaatgc agtatacaag atgcagcaga 300

gagattaagg aggccaatga tgacaaaact gtcgttttct gttgtccaag gaggaggtta 360

atttcgacgg tcattggctg actgccagtc aaaaaggtag ggtaaaataa ctccaggcca 420

aattcacccg catcagcata tatatgtacg gcatgtgacg atagatgacg aaaaacagca 480

ataacaacat gcagatgcag ggactcagtc caagctcttg gtgcaattaa catgtccatg 540

attgaaaact tttgcatgtg tgacagtggg gttcatgtga tcagttgctt ggataattac 600

atcatgagag tgactgggtg cgtctttgca cttgcaagga ggcctgtcga ctgtctccct 660

actgctatga ttcacctact gacctttttt ttctagcagt ctagcacaag acattctgaa 720

actctagcac atcacatgaa ggccattaca aagccagttt ctttcggctg gcaagcaagt 780

ttccaagggg agatgttttt tttttcaagt agtcgacgcg tagggtagga attagcaaaa 840

gggggttaga attgagctag gatgaacaga gccctataat taagggcgca ctaattcccc 900

cactcggcca ccctggccag tattttagag gggagccgcg gactgcatct ttttctcgct 960

gctgctgctg ctgcgtcttt ggaatttgta gctttggcca aggctatctc agctctcatc 1020

cttttcgttc atctccctag aggcggggag tgtggctgcc gattctttgt cggccggtaa 1080

caggggggtgc tttgcgcaga taatctttgt taaccagcta tggtttcggt tgcgcgcaat 1140

cagtactgct gcttcgttct tgaattcttg ttttggtgct ccagttcatc agctttttt 1200

tttctttcta aatgctcacg ctgaaaatgc tactgatcta ctgcagaata caggtaaaat 1260

gccgccttct gcagctgtta tcctgagcct ttttccaggc aacgccgcgc gacagctgat 1320

gttggctaat aacgcgctaa tctttcaggt agactggtag ccttatatag ctccgtgatg 1380

atgagaactg gggacagaat gtgacatgca attgtgttag tgcaaagcat attgatttta 1440

tagtggtaag tagcgtgcaa aaaaatggtt ttcaattagc taaaacattt agaattagga 1500

gcaccaatgc taccactttt gtccagtgga ggaagaagca aagggaatca gatgaggtgt 1560

tgcattccct ccctatatta tttgaattac ttacacaaga agtgaaggcc caagaatcaa 1620

atgatggcct tgctttcttg gctaattcaa tcagagaagg aacacatggc atgaacatta 1680

gaaagtgcac tcttggatgc tatcgttgac cctagtaaga aatgtagggc cgtagcccac 1740

caccaccctt aacccaatta gcaaggctca tactcggggg ttagagcaaa accaaaaaga 1800

ggtgatcttt gagcactcaa agggatcctg catgggaaag taacattaac ctaatgaggg 1860

aatcaagatt aaggaccctg aatgaaagaa taaggtcaaa aagttttaca gcaattccat 1920

ataaagggag aaaaggtcat tgtaaaaagg gtggaatcag agcaatgtcg gaacattatt 1980

tactgatgct gcatgaccaa ctgctactcg gcgtaacatc ctcttaaaaa tggtaatgaa 2040

atattccgtg tataagtgta tctagccact tgcttagtgt aatttacaat atactctctc 2100

tgtcctaaag ccttgttgat gttttgagtt ttttagaaaa taatagtgct taacagagat 2160

tgctcatgta tcccaattta ttgaagatga accatgctaa ttaaggaata aatttctcgt 2220

aaaaaagaat gtacgaagac atgcagacca caatctcaag ctactagtat aataatataa 2280

gccaaatata ctgtccagca gctaaatcat caagttttct ggaacactta ctgaatccca 2340

gaaaacttaa cattttagct gttttctgaa cggagggagt ataaaaattg tacggagtat 2400

atgttggtga cgataggcta ctagcttaaa tccttttttgg aaaaaaagca cgactggcag 2460

catttagagt tgaaaaatat agtagtttct gttgtgaaca tgtgattatc aaataacgtt 2520

tgccgattga gtttcctaac tgtatataat tcgttgcctg taatgttctc atgcaaaaat 2580

atttatcacg aacaccatat gcttttataa gatctttgat aagtgaaact agtgatagca 2640

tgatatataa aaaggttacc acatagtatt tgtatcgact cagaaccgta gataactgat 2700

gctttgaaat gttaggggtt tattttcata gacgcc 2736

<210> 1240
<211> 1712
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121802_G1, chr3:183443956..183445667, Cluster 8

<400> 1240
gagcgctaca aataatttta ttttgagaca aagagatgat tccgcagcta gctgtgatct 60

gatgagcatt atatttcttg ttttcggtat ggcctgatct ctctggcctt gcattgcttt 120

cacatatata caaaagagat cgaggacgaa gacgaacagt ggttagtggt ctcccttggc 180

ctcgcctagc ctttattttc tccctcactt tgtcaacgat taaagggctg gctcgatctg 240

tgtggctcaa ggaggaaaag ccgacgatat agctgctcac cttcacgtgc atgtcctgta 300

cgtatgtgat ccctgttctc ctgtgcatcc acccccggcc ggccagcggc atcgtcgtca 360

ggtgcgcgcg ggcctctccg cgctcgtgcc gccactgtat cgatcgcgct gcgtagcatg 420

catacagtct acagtacccg gccgcaactt gtctctcttc ccttgcgtcg gtgccatgcg 480

tcgccgttgc tctccgccgc gcgcgtccgg ccccgcaccg tgcaattgca ctgtgcagcc 540

ggccaccatg catcggcgcg cgagaggcgc agctaggcta ttagcgacct cctcctcgat 600

cttgctgggt cctgacggtg gatcacgcac aggcggccgg cccgtgttct tgtcggcggg 660

aattgctgcc tagcttggag tatcatatag tatattgtca gcagggtctt gtctgaaatt 720

atttgcatac agacggcaac tatgtgcctg ctgtacatta gcctctctcc ccctggcttg 780

caccatattg ggcaagacaa aggctttact actgccagca ctgtaggaat cttgaatttc 840

ttgcaacttt ctgtgcctgt gtctagtaac tacgacagta tcacatgcaa tcatgtagca 900

ggttcccact gacatcacct cgccgccgac aacgtacgtc tggtatcatc atcgatcgac 960

cttctatagc tactagtcta atctataaaa aaaaggggaa tgggagcgta cgtacgtgct 1020

tcattaatat atgttcgatc aacaatcgat cttttactaa ttaattaacc attttcagta 1080

cgggatagtc atctctcatg aatgacagac atcattggat tcttcatgga cgatgatcat 1140

cagcatcctg ccatttaaaa gcatgtttgt gtggttaggc gccagcaggt ggagaacctg 1200

tactacgctg tggtgcatat atggagccgg ccaccatcat ctctatcgtc gccttcttct 1260

ttatgttgga catcggatag tagctagtac agtaactgtt ttgattgcat ccaacatact 1320

gtttgttaat acttgattgc atgcatgaac cgaaaatcta tggcacaaat taaagccagc 1380

atacgaatta tatatgacta gttttcggta ctcttttgcc gatatgcttc tgttgtaaca 1440

gcaagtatca tccgctgcct tctccttgta agcatacatc ggatgctctt ttcttgcaac 1500

ttatataaat atttaatata tataataata tgcaagacat ggatccataa tttgctctgc 1560

atgacgtgtg gatgcttata aagaaggtgg ccaaatcagt acttttccga tgctctcata 1620

ttgaatgatc gaatcaaaca atcatagaag ataaatataa gctaacaagt cttgctttcc 1680

aaaaatccgt cgcccatgtc ctcgagacgt ag 1712

<210> 1241
<211> 2055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123075_G1, chr3:190081958..190084012, Cluster 8

<400> 1241
tgggtctgac tgatcggcat actatgcggc tgttgaccag ttggacgacg ctgcactgac 60

gagaccgcac ggccgattga ccaggtcaaa atggtctgac aactggtagt cagtctggat 120

gaggggcaag caatgattgg cagttgcacg cacgcacgca cgctacagga gcagcacgtt 180

cggtacagag cgattggccg gtttggcagc actccccggc cgctccaggt ccccctctcc 240

cgcacacaac acaacacaca atgacacaaa cccccgtgcc agtcagtccg gcagccccca 300

gccccattcc agcaagccgc gcacgcccgg agccgcggag atcattaccg ccaaaggtgc 360

gccaccgcgc cgggggccgc cctgtcgtct ttgtaccgtg ccgtccacat ggatgcctgc 420

ctgtttgttg cctgggggtg tgctgtagcg gtaggctcgc gctcgcctgt tccggcttta 480

aacgcaacgc ctttcggcct ttgcctttgt cgtctgctcc ccttgatccg ccgatcgcca 540

ccagctccga tccccctcac gactgggggt ggacgaacta acgtttcggc cttttgaatc 600

gatgtcttta cgatccaatc gctggaattt gtacgagttc gtgtgtaaag acctgatcca 660

aacgctcgcg gttccaggaa gattggcaac caggcatgcc cacgtataag cgcccccggt 720

gctttataga acaactaatt aagctagtat actgctggag ctggagtaca aagtcacggc 780

tagagaggga acgctagctt gtcatatgca tggaatcgta catggttgta tgcaatttat 840

ttgtaggaat tttaaatcca tgtaccactc ctcatttcta ccctctctag ctagtaattg 900

atgaggcgat tttactaata caatgaggag tggtgctaaa ctaagggcac atatgtaaaa 960

atgcctaaag tatggtaaaa aaaacttagc ctaaatcact gttttttttat ggttagggtt 1020

cgaatatgca tggtcgcagc cgtactattc attattagat ttgtttccgt cttcgatcgc 1080

tgtcatcttc agagacctag acgcctagct agtactacgt acgtaccgag atcaatgagt 1140

tgctgacaca gatgtctgat ctaggagtat cagttgagcg ctgcccagtg atcgaattaa 1200

gacgcccggc ctgccaaaga gaaataaagt tcaaatggga gcaaagtgca attaatcgca 1260

aaacaacatt caggaccgca cgcaccaata tgctagaact tctccgacac tcctaccctc 1320

cattcctcca agctgatgta tatcttctct ctcagccctt gttcagttac gagggatgaa 1380

atcccaccat aaatttaata cgggtctgaa tttggtgaac tcatacctca catcaaatca 1440

tatggtggga ttaaatctat catttaatcc acgtatctct caaagctagt atttttttga 1500

tccatggatt ataatataaa cttgtgcaat atgtcaatat cgtaatgaat ttgttccata 1560

cctaatgagt tatggataga attcatgttt tccataattt taaaaattat caaactattg 1620

ggttataatt tatgatgaat ttaaccgaac aaaaaaatca agtagatttg gattattttg 1680

ggggcatgga ttgtaacata gatttaattc taattcatgc taatctagag ctggattggt 1740

gtataaacga acaaggcatt atgaggttga agagacagag ccatacatgt tctcatttgc 1800

accttctttt ttattatgtt gggaacaata tttcatttta aaacaaaatc tccttcatat 1860

ataaaacacg cttctttttt atgcgcgccg agcatttcgg taaaacatgt aatcatgcat 1920

gtagaacaaa gaaatgggcc ttaccataat atatttcccc gaagttttta gtctttttt 1980

ttatggagtg ggagtgtggg acgggtgctc taaggacaag gagtgatttg tgcgagccat 2040

ggatggtaac atatc 2055

<210> 1242
<211> 1570
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123450_G1, chr3:192110195..192111764, Cluster 8

<400> 1242
ttatcatgtg cagttcgaac aatgacttga gtatgcccct gtcattccac caaggtttca 60

atttgaagtt gcttgctcat ttctaaatgg atatctggcg tctcgaatcg tcttgtttga 120

ctatagcctg tcaattgctg actctggtat ggtcgaactc gaacataagt agtagtagct 180

tatgttggga agagaggaat tggaaatcac ttgcaccaag cttaaaagaa aagatccaag 240

aaaccgagtt gttgttggga accgattgta attttgagag aataacaata ggacaacata 300

ttcccctact actaatttaa agcaacagtg tccaatatga cgtatgttta tttcttcgta 360

tgaaaacctt agtaggagag agaaagacga ggagtgggtg ggagggaagg acagggtgca 420

ggaggaacca gcagacgccg tggtggaagc agcagcgacc acatttcatt gtctccatgg 480

atcggtgtgt ggtgaagcta tcaaactgac tataaatcat tttctgagag aatataaatc 540

agtcttggca tgtccgttgc aagctcctag atatatggag ttgctggtaa tggcatgcac 600

attttaatca ctaaaaatta caatctaagc actacatact gcttatactg ctactgaact 660

ggttagcgtt agtgaggtca ggtggtgaat tattgctaac agtttactcg ccaatgttgt 720

gtttattcag ctcatcacat atcaaattag cattaggcaa tgatgctcct tatctaattt 780

tttccatttc actgcttatt gtcatacaca attatgtaga tcctaacgaa actgtgaaaa 840

tggttgtctt agggagaact gtttgaggtg ctcaaggatg atctatatgc ctgagtatgt 900

ttgcgatgtt gctttctcac tatttttaat aaagattttc ttgctatatg ttacataaga 960

gttgctacta ggaattggct aggacattgt acactcagat attgcaagta agaaaatttg 1020

ctctagctag ttagtgcatt tttgttggtc ctttgaatat tgtactttgt tttttctaga 1080

tgcatgcagt atcatgtcat acaacatctt gcctgattac aatgctcgga atcatcctga 1140

cctttatttg gatgcccccc gagatgcaat gaggtgggat tcatggaggc gacttattat 1200

tcgtgaaact aggcaccggg atcctgactt agtgtgtctt caagtaagaa tccagtttca 1260

atgatagtga tggcattcac gcactgcact ctttaacact gttgtctgga agctgggagg 1320

tagataggtt tcaggacatt gctgtaggaa tgaagagcag aggtacgaag gtatatttta 1380

ggtacatcac ttccttctca aagacatttc ctttaaatat ttttatgttt cagttcttca 1440

gtgatagttc atgatcagag gcgaactgga gatactagag atggatgtga catgttttgg 1500

aagtcaaaac agtatggatg atgcattgtc ctttattata ttcattgatc cgaataacat 1560

ggtattttca 1570

<210> 1243
<211> 2017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124525_G1, chr3:198034890..198036906, Cluster 8

<400> 1243

tgtactactc tttcttcttc aagcattacg tgcttcgcat gtttttttaa caaaatcttt 60

ctagtgccgt catggcataa cgagcataca atgcaaataa aatttatact aatctcaacg 120

atactcagat tctatgtaca actatatttt catgatcaga aaaaattgaa tcaaacggac 180

cctctattag ttctctttta ggtttactga caaaaagaaa acttcacgac cacgatacct 240

gcagtgaaga atactatagc tgcataagca ggtctataaa acctttttc cccatagcac 300

gaggcacgag caccagtgga gtgtggagag ccggctcgcc gtctatcgtg tcaactatac 360

tttaatcccg cagcggcacc ctcgaacggt ggtggtgttt agttagtggc ctgtcgcggt 420

cgcggacaga tggatccagg gggctcggta gggtggctgc ttttgttgcc gatgcatctg 480

acgctgccct ggctggcttt aaattgagca ctcatgtgtt tgccccttc tttttcggct 540

gcacacccac cacgcgacta gcccagggtc tttgttgtag tgttacctct cctagcgcca 600

gtacgtagct agacgactga ttccgggctc atgctaatga agcgcatgtg ctacctcaag 660

ttgcatgttt ttaaatgtta gctagccgtc tgcaggtgcc gactgccgag gaacaaaagc 720

cctgaacctg tcgaccccgt gctccttttt ttttccttcc tctatttgtt ttttctcgct 780

ttttggtgct tcattcagta gcactccaag tccaaggaaa taaacaaaag ggtactacta 840

ctacgcacat cgcccacttg cgggttggat tggatctctc tctcccccca atcagaaaac 900

cggatcctcc atacgcggcc ggcctgtact ttctacatgt ttcaaatgtg gctgcctgag 960

ccccttccgg tcttcagata gccgtgcatg tacaggagct tgccctttgc gttgctagag 1020

gcggcaagac cgccacgttc cagtgtctca cgttttcaga cctgggtcaa tcaatcatgg 1080

aacgaatcaa acgtccacgt gtcgtgtaaa tcgaaagacg ctgtctgtgc tattgcctgg 1140

aagcgtggta ctagtattgt agtgacataa caaaagccgc tttccctcta ttactcttca 1200

ggctttcctc cgcgacacca catactgtac caccggtgca tatgcatacc acgtgtaggt 1260

gagtggggct tgaccggtca gtcacgaatg gaagacaaga gagcccggat tatccagcaa 1320

agacgagaca gcaggatgtg ccggcacgtc ggcgccacaa atcacgtcga atggctgggc 1380

ctggaagaag tgggttgcac tagtatgata gtgtccgcga gcccgacgcg ttcctcggat 1440

agtgacaggt gtcagccggc gggtacggct gcgctgcagt catcacgatt cacgaccgaa 1500

cgacgtcgcg gcagggtcgc cgtcggcaga aagcggagcg ggaaagggcg ccatggatgg 1560

cgatggcgtc gccttcggcc ttggccccgg cgcgtcgcca tctgatccgg ttgggctcgg 1620

ggcgataaga cggcgacgcg catccgtcca gcacgcgcat ccgctgtggc caggaaccac 1680

cgcacggctc ctgtttcttt gggccgtgcg cgacatcatc ttttttccg gatgatttga 1740

agggaccacg gcggtggcct tgtcttgggt ttctttctac gctcgaggcc cctgcacgcc 1800

tgggtttcgg cctcttcttt tcggatgcct ctgctccccg atgcacagtg cggcaatgca 1860

cagtgcggca gactctgttt agacatcgac ttttttccag gtaggtaact gtgactatcg 1920

tgttgctaga tttaacagtg ttgcacggtc tgctggagtg ccataatacg agtgtagctc 1980

atattttatt taattaactt aaataatttt agatata 2017

<210> 1244
<211> 2095
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127935_G1, chr3:214853021..214855115, Cluster 8

<400> 1244
ccatggaact tggttgtttc aattccttca actcatattt cttctctaac tcaaattggc 60

tccaagattg tgtttcgttg aaattgagct atacaaccta tttgcatgag ttaattatgt 120

tcctaggggt atttaaaact tatccaaata tagagcacat agaaacctta tattcacact 180

tttagattta accggattta tatgaaaata ctaatattgt gatgtaaaat aaatataatt 240

agttttgtcg tgaaatatat gtttataaca aatcagtttg gatattaatt agatgcagct 300

actgtttacc agaaatttag tcgaatttga acaatttagt aaacccgtac gaccttcagc 360

gtaaatagtt actactttct ttatgttgtt gtcttggcgg agggaggacg tgacgtgata 420

cgggctcgcg ctcacatgca aattattcag tcgtcgtctt tgatcctgaa gacctgaacg 480

aaagataccc gtgcacaccg cttttacacc tgctgcgtga tgcgctgttg tcactagagt 540

cgccttcatg atcgaggtgg ttccccggcc gaagctaaac agccagccaa tggagtagta 600

gtaaacggtc aatccgtctg cagtggcagt gcgtgcatgt cacatcgatc cgtctctgaa 660

tcaaagtcga tctctagcag ctagtagtag tagtagttcc gtagaatgca agcatcggga 720

cataactccc aacatctcac acatcgatgg cacgccgttc ttggtgtgca ccgcttttac 780

agggacgaga cgacgacgac cttcgggctt tggctactac ctatacgtag tagacgtgac 840

tagcaagcct cgtaaaagat gcatgcattt ttttttgatc tcgtacgtca gaacaaagag 900

agcgacgtac ggccttcgct cggaacaggt agcacagcag gctactagag gatcgacatg 960

ttgaagttga agcacgatgg gctaccgtgt tcgctattct tgtacagagt gacgacgcca 1020

tgcatatact catatataaa agattatttc cggtgtggcg cgcattggtt ccatccgtaa 1080

aataaaaggc gcatacgcgg aagcactcta gtgctcatac tcgaccacta cttcagtcaa 1140

aagggcaatc atgtgaacat gatgaatcac ttcatcggct caaccacgaa ttcagagcct 1200

cgatagagcc cgtggcggtg ccggtctatt gacttgggcg gcggttaagc ccatgcaacc 1260

acggcggcac ggcgctacgg cggtgggagc gtccacagga cggagacgga gacggatgca 1320

gctggcgagg cgtacatggc atggcggtgc aatgattacg gcggccaagc tgcggcccga 1380

caggccgact cgcctacccc cgagctgggg gacctgccgg cagttcccct gcactgcact 1440

gcacccgccc cgcgccaggc gccgctcatc tccacgtgcc ctccaccccg gcccctcccc 1500

cctctcctcc tgcctagtgg gccatcctcg ctacgcccac cggggcgggc gagtgggcga 1560

ctacagaaca ggctactagc ccaggggcag ggcccagcca gcccagtcag tttcaagttt 1620

gacatgacga gtcaggtcaa tgtcgtgggg cccactcgag cgaccgcccg cccgcccgcc 1680

cgcgggctcc cgttatccca tgcaacattg aaccaacccg cacctcgctc tatctcgtct 1740

ctggtgactg atgccacagc atctctcgca gctcgtccat atctggaccg ctttgccact 1800

gcagagccaa atgctatggc caccagctga tgctagagca gagcggcttt acacttctcg 1860

gcaactactc gtgtgatcgt gtctgatcag tatactagtg aggcaagagg aatgcaaaat 1920

tgcgctgcta tagtaattcc ttagaagaat aaaatgacta cttactacta tggtaattta 1980

tgaataattt tattaagaat aggtagtttt agtcaatgtc atccttaaca taaaacaaga 2040

gcactaagcc gctttaattc ttgcatggaa ccgtcacccg tgaccgtgac tcgcg 2095

<210> 1245
<211> 1996
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127937_G1, chr3:214865038..214867033, Cluster 8

<400> 1245
cgcgccggca aacaaaggag acaggatttt ccacttctcg atcgccgccg ctggccatgc 60

acgcgggaac aaagcaaacc agaccgatcc cgatatgcga gcggcgacgc ggtgatggat 120

ggcgtccgaa tttcagcgcc gctgttccga gatgcccgcg cgtacacgta cggccagagc 180

gtctcccctt ttcgtaccga atcgcataga tgggcgccgg ccggagctag aaaggcacac 240

gccggcccga gcgcggcagc ggacactgaa ccttggccgc tgccgctgtc ggcacggcgg 300

ctggctcagg tcggccaaac acgaagcaga ccgtcgccag cttttgacgc gcgcgtgtag 360

gtcgtcggtc cgttggagct gagctagcta gcacgcacgg gtcgatggat cggtggtcga 420

aggcgacggg gtggtgctgc tgactgctgg tagattctga tgcaaattga gctagccatg 480

ccaatgcact gcgatctccg gtggaatcgg atgcgagcgg ccggccggcg atcgactgct 540

cgctcgatcg gtccttggct agctagcgca tggacaggga cttgtcgccg ccggtagtcg 600

tagcagcatc tacgcaaaac ggaactagca gcctttgcat cgcgactgga ccgtgtggaa 660

aaagcgcaac tagctagctc tcgtcgtcgc tgccttttct gatgggacta gctagatcgg 720

ccggtgaggc gtactgtgct ttgtattgca cggctgggag tgagccctgt gtttgattga 780

cccatgcagc tgcatttgca gagtgctgct ggtccgcgat ttagagacgt tgattgaagc 840

tagctatcta gtaacgacat taacttcatc ctgtgtttct tacggctaca tatagtagct 900

cattacggaa ctggtcggca ggccaccaac ccagcgaacg tgacgcgatt tccgacaagg 960

caaagcacct gaattcgagc ccccgaaaca tgacagtctg gtcaccgcct atggtatggt 1020

atggccgaca gatcgacacg gggcaacgcc gcggtcttag gttgcccgag attgacgtaa 1080

cgttaggtcc gtgacccccc ccccccccccc ccccccccct gcctgtgtga gtaacatggg 1140

cctatttaag acggcgcggc caattaagca gtcaaaatgt tgtcatttag ttagtccggc 1200

cttgtgttga gagaacaagg tcaaaaaaaa aaaactacaa gggtagtaca acacaacaca 1260

tagagagagg gtctcgactt tagcagcttc aaacagaata tggaacatga cctcgtccca 1320

tatatcccga aaactttgtt ttccaaacaa gtaacgagaa tatgttggag taccatttca 1380

actgtaccaa aaacacaacc tcctaggccc agtggcgtag cgtatctaga gggtggacaa 1440

tatgggctta ttttgattct actaaagtat atagtttttt tgaattattt atttcttttg 1500

attcttatat gttgtaggat ttaaaatgaa aacttatcta tttattttga ttttcataag 1560

attagaccat cctaacttta aaattctaga ttcgtcactg ccctacaccc ctgtgtttgg 1620

gaacaatctt ttccaaaacc actgttttta aaatactata gtagtataca ttagtcatga 1680

caatggtata gttcaaatta ctacagtttt aaaaatcgag gtccagacct aaatttagaa 1740

tactttaaaa caactacaat atttacaaat acttcagttt tagaaaacta ggattttatt 1800

agctagcttg ctaaacagta ttctgtatat aatactgcaa tatttgtgaa tactgcagta 1860

ttcttccaat aacaatgcaa atagatacgg cctttagttt ctaaaaatag ccccacgttc 1920

ttccatgttt ctgtttcttg atcacgatgt gcatcgcgga cgccttctcc cactcccacc 1980

gggcactgta caagtc 1996

<210> 1246
<211> 1500
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128579_G1, chr3:217941681..217943180, Cluster 8

<400> 1246
caggaacggg acatcggaga gattgattca gatggtgttg gaaagaatta gatcagacag 60

atagatgtaa gactggactg agaagaagga cgagaattag gagaattgaa ctgatccaac 120

taagagacct aggatagaac taatttgatc tatctaaaac ttttaatttt tttctatact 180

tacatataag agatactaaa aattgagggg ggccacggca cctgcccctt cagcatctct 240

tatcacgaaa tcccagctcc ccgaaccatc atgcggattg aaagctctat cggagttgat 300

ctttaggaga tcaccctctg gtttcgccaa tctcacagcc gacctcctag tagattggtt 360

agtttgcgag attttggaga tttcatagaa ctcatgcgcc tggtgtgtgg tcatgaaagc 420

gagctctaaa gcacaacgct cttgctcacc ctcccttctt ttgtttcttt cattccacca 480

tgtccaaagg atgttcacaa ctgtgatctg ctttatctct tccaggttca agacgaaggc 540

aaccacttct tttggatttt gcatcacttt cagtttactc ctgatttctt ccaaccccac 600

agccctccat agttctttca cttctttgca cttgaaaaat agatgtcccc catcttccca 660

cgtttttggg caaatcacgc agtttctatt gatctccatg ccttggcttc ttagcgtcat 720

tctcaaggcc acagtattat gagccaatcg ccacaggaaa tgtttgatct ttcttggggc 780

attgtatctt ccaaagctgc ttccacatgt tctcctccat tagtggcatg cttgaactag 840

aagaagagcc atgtttgctt tgttgcctaa ccgcctcttt gtgtactttg tatgctgatt 900

tcaccgaaaa ttccctttac tgtttgcatg ccatgctggt aaatcctgca tgtttgtgtg 960

cactggaatt gcaagaatag ctttggcatc ctcttactca aatgtttgtt ataccaattg 1020

ggcatcccaa gtgccactat aagggtccag cagattggca actttcacga gcaggtttga 1080

tcctcttctt gacaccggcc ttcacgtgtt tcaggctggt atccatggat cttcccaaat 1140

cttgatactt tgaccattgc ccacctccat atgagcccta atttaatgac ctcaagccta 1200

ttcaggatgc ttctccaggt gtatgaaata ccccctttg gcctcgcttg caagatagag 1260

cagtttggga agtattttgc tttcagtact cggctacaca gagattcagg atagtacaac 1320

aacctccaac attgtttcac aagcatggca agatttaaaa catagatatc tcggaacccc 1380

ggtcggccgg tccaccttgg gcttttggct tggtcaaggt atcccatctg atccagtgca 1440

ttttcctttc cttgtcctga tgactccacc aatacctgca gatcatcatc cttatagttg 1500

<210> 1247
<211> 1589
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130752_G1, chr3:229080344..229081932, Cluster 8

<400> 1247
caaatcatca tatatattta tatattggta gttgtcttaa atcgtgtatt tatacatgtg 60

gttaccagta taaacatata gtttaactta gactgtggcg gtaaacttga agagagccac 120

aagcaaaagt agaaatacgt ttaagacatg gacctacctg caataccatt agtagtgact 180

agtcgtgatg catgatatac gtagtacgag gagtacgtat tattagagag acatgagcta 240

gctagtgctt tctacgtgga tatgcatggt gcatggaaat aacgcgcata aaataattaa 300

gtggtatttc cactagctag gctaagcatg cgatcgatgc gctagcttat atatatgtag 360

ctagacagaa tggctggccg catgagggcg tgaaaggttg atcaatcgac atgcaatgcg 420

caatgcagtt gcgacgagaa gagctagcag aagatgcgcg cgcgcgccta cgggtcgtca 480

cagacgtccc taggcggcaa cgaacgagca tggcttgacc tttggggtgc atggaaggga 540

aaggggcaca tggatgcatg acgtctctcc ctccctgctg cctacctaaa ttcttggacg 600

atcccgttca tggtcatggc cggcatacca agatcaaagt tggttaaaac ggacacctca 660

cgcacacaca catgcgccat atattccggc cccccgcagg ccgcagcggc ttctcacgat 720

tctctatcgt gcactgcatg cgtcactccc agttgatcgt caatcgtgca tgttttaagt 780

agagaatatt aatggatctt tgccttttat tagctttagt cctggttgtc ttgagatcca 840

ggcttaacat tggtattaga tccactataa attcacggac tacatgatga ttacaattga 900

agttatttcc acaaccagaa taattggagt gcacggataa gtgcctttta aataaattgt 960

tatatagaca tgaatctatg aaacagaata cataactatt tatgtggtcc atgaaaatca 1020

gaaaaccaac ataggttgca gaaaaatcca gaaatgacaa gtggagtgca cagtagaata 1080

taagcccgca aagcacaaat atgtccatgc cttatttata tgaacagtta aatgaacatt 1140

catagtagtt ggtaaaaagg tgaattcatc tcaatagctc aacctctgtt cgctagcatg 1200

acagtttgac atgtgatgtg ttctcagttt gttgacaaga aataaaactt taaatttgaa 1260

ccatcagcaa cattctctaa aatgtatcat tctctaaata taaaacacag aaaccttgca 1320

atgctagcat atatcattca tgaagaagtt atgccaaagg ctatcatgta ataaattgga 1380

gaagaaaggt taacaatgat caggccacaa gcccaggaca caggatcaca aaaacaatga 1440

atatatttgt gtagtattga actaaatatc aaaagaaatg gacagtgaat taatcaggtt 1500

ccaatataac ccaagggaag aggaaactaa cactgattaa atgtttcttt acttttttcat 1560

taaagtagat ctcacagtga agcttgctt 1589

<210> 1248
<211> 1419
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130777_G1, chr3:229237813..229239231, Cluster 8

<400> 1248
ccttcctttt tgcaacaagt taattcttta taaatctcag tgttcgtatc atgaccaaag 60

atgcttcttt ttctgttatt tcatttcacc atgttttata gaattttcat aaattttgta 120

tcaattacta cttagttctt gaaatttttt tgtaaaggat aaaaaatggc taggcccctc 180

aattctatta gatccgatca tcacattaag ggtattaggc gctggccccg ctgctagaaa 240

tacctagatg atttggctca ggtagaattg tggtccctta ggggaagggc ggtagtacca 300

cctacaagct ctgctaccgc ccgatgctaa gcctcgaaag aacctcccca ttactctcat 360

catactttga tagtcgttct aagggtattg agggattcga tcaccctcgc tacaacgtta 420

cctagacatc aatttggatg gagtagggct ccctttgggg aatccgacaa gtatcgtcta 480

cacggctctt cttgccgcct atgacctatt catgggatag caaaagcccc tctcggtttg 540

gttcactgat agggtaacag aaagaccatt ccaagggtaa gaagaaggac ttctccacag 600

gtgaacaaca agatttcttc ccaaaggtac aaacctatag ggtctcctga ctcaatcacc 660

aacacaagga ctactccggg agtataatag ttgttgagtc ctaggattta gccttttaaa 720

tgagaccctt ctgagggcct attttaatcc ctttcgaagc gatgaaatca ctgggtctca 780

ggactcggtt ttctaaatag gagcgacata ctattaaatc tcttgattta tgtaatttcg 840

ttctggaatc cctgatgcag atctattttg aagcatccta acgatagtca gataatatat 900

tactgattcc tttgactcgg gggcttgatg ttgtgtgcga cccgactggg tatggtaatg 960

gacagataac ccttccatgt tagactcgag ggctcctata aagaatatat actaggaata 1020

cctgagatac atcaatagtc aaggcgctga caaaggagag caaatgactc aggtcaagtc 1080

agggaattcg gacttggaat ggacaactcg gactcagctg gtagacttag actgaaattg 1140

gacggaacca caagtctaaa ccagatcggc atgcataaac agataagaaa agacaatgtt 1200

ttttgtaaa aagacggttt ctagttacgg tattctcacg tcttaaggga acccaaatgt 1260

aaatttaaat aaagatatcc tagatggtag gacaaactgt ttagcatgga tcttattcca 1320

tatgcgatgc attaccaaat atcatttcta taatttcttc ccttcttaaa ctataaaaga 1380

tgccccaaga gagtagaaga atacatcaga aggaatagg 1419

<210> 1249
<211> 1796
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131605_G1, chr4:1979600..1981395, Cluster 8

<400> 1249
catggtccct aaacctctaa tctcaatacg ggttggactt taatcaagat tgtttatgat 60

tgtctattgg acatatctcc aaaaggcacg ccccataaca ctcttgcgcg tactattact 120

cttagagcag gccttgaaaa cgagtgtctt ccaagagttt acctgttcga gtgaaggacg 180

gtaatcacat tttaagcagt gttcataagt gatatgattg cttgctttgt cctctacttt 240

ctcttgttga tcgatgcttt gtcctctctc cttccaggta cacagctata tacgtgcact 300

gcaccgagtg agacgattac accaactagg caccatgtct gccactgggc caacgttcgt 360

gccatgtatg ttgtcatttg tcaatcacct agaataaaaa ccaactgaac tagtatatat 420

acgatataac aatatatatc gcaatttcaa gatttttttg gtgggtggtg ggggtgggtg 480

ggggtggggt aattgcagtt gttctttgga tctgcagagg cactgtaccg atcgatcttc 540

actgttgagc aggtattcag tgcccatacc tcctagctag taattgctgg ccagccattg 600

caggccggag ttatatgcct tgtatggcta ctcctacccc caagccaagt actaatagaa 660

cacgacgatt tctctctata taaacggatc ggagaagcgt catgcatgtc accgtgactt 720

gcaaagcagc tagcataggg aacatcgaga gagagatgag ggtagcgatg gtgggttccg 780

gcctaagcgg gctagtggcg gcgcatgagc tagcgagaag tggcggcgtg cgtgtcaccg 840

tgtacgagaa ggaggaccat ctcggcggcg ccaagaccgt tgccgtggac ggcggagcag 900

aagaaggccg tgtcctcgtc gacctcggcc ccgtggtctt caacccggtg cggaacatgc 960

atgcatgtac atatatatgc acgcaaaccg ttggccacca tgcatataat gctctcgttt 1020

gggttaatta gctagtattt gttataaaca gaattgctac ctgctagaaa gttcatagta 1080

agaaataatt aaacggaaaa ctatcagaca aattccaaaa tctattaatg agccacttgg 1140

tggagatcga cagagacaga gacagtgatc agtgctgggt gttccttcga attcattgag 1200

agagaggtct ccttttcagt ggcagacgac tttaatccct ccaatccatt taatggattt 1260

tcagaggcac gcattgctgc ttattacact aacatctttt ctaatgtatt gaaagaatta 1320

aatttctcgt atgcgtaggt tttacatgca tggcgttgct actctcgtct gttgtaagta 1380

agttgtaact cacgatctaa attgcaggtg acaagcccaa acttgatgga atggtttgaa 1440

aggctagggg tggagatgtg cacatcagac atgtcattct cagcaagtat gcggctaaac 1500

aaaagtagtg aaagcttcga atggggtagc cgcagtggta tgtctggtgt tctggcgcag 1560

aagagcaatt tgcttagccc cagattctgg ctcgtggtcc atgagatatt caagttcaag 1620

aatcacgccc tcaagtgagt tcgatgatgg ggaattattt gtgcattctg ccataggccg 1680

gccggccata taaattcatg ctgaattatt gataaaaaat tgattcttta ttttgatttg 1740

caggtacctg gaggaccaca gaagtggtcc taaccgcaat gaaactttgg ggcaat 1796

<210> 1250
<211> 1787
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132451_G1, chr4:4904846..4906632, Cluster 8

<400> 1250
acgatataga tgatgatgca atgcagtcca caaaatcgtc cagaaagagg tgaagcagtt 60

gctggtagaa tacgccatca ttcgtctgtt actgttagtt gtaaatgaca aaactttgcc 120

accaagcatg aacacgtcac atatcagatc gccacgccaa aataagtaac ccctggaata 180

tgctatttaa tttaagttca ttaacatttc ttttagttag caatatagct agggttaatg 240

tcccaataac attcagtatt ccacgtgggt cttggagtta attagacaaa aatcgtcata 300

ctacaagact caaatgtgta gcccctggct acctatttgg ttagagcgca gctatgtaga 360

gaatcagtaa aaatgtgaac taaaacgaaa acaatatcgc tcgtaagcaa tgtcatcgta 420

agtccctatt tatacatgtc ccttgtttaa ttctgctttt actgagtgaa agcgaaagtt 480

tttgaacttg aactgtatcg agttggttct tgaactcgga aaacatatcg agtggagtgg 540

cctaggacaa gaagcaccgt cgagcttcga tgctggagcg gaaggagaac atgggcaatg 600

aaatcagatt gcgctatgaa tggaattata agctcactaa attgtgtgca atgttaatga 660

agtgtgtata ctctggtttg gagtactatg caagtgtcac aaaaaaaaaa ggcatcagtg 720

ccgcacaata aaaccccggt aacatcgcta gcagtggcca ctactttgac ctctgcaata 780

cgtgcttgtc tgaaccacac acgttctgta tccattatca gctccattct agagactaga 840

gagctactgc ctagtgccgt ctgattaaga agcatcagga agaaatatca ttttttattg 900

ggaaaaagaa agctttatta aactcagtaa atttcaatcc gaggatacca tagactaaga 960

agacctatgg cctctacaca gctagggtgt aaacaaccac actcacacac atacagaaaa 1020

gaccagtcaa acctagctaa acatggcgaa ctacgtcata ctccattgtc ttcacaacag 1080

accaccaaca tagcaaaact taggtcccgg ctaagactct ccgaagacaa tgccactcca 1140

aggagaacat gatacgcaca cgcaccatcg ttgtcgtggt cgaaccaccg aagaccagac 1200

caaagacttt caccacagag agtcgatcat tttccatcaa tcagtgcctc catcaaaacc 1260

acagactcgc cttgctcata tgatccaaat cactttcgca tgcagtttgt tacttaggct 1320

cactttgtag ccatcttacc atagagatgc gcttcaatta atcttctctt tatgctatta 1380

ctgttattta gcgggctata aatattttgg cacaattgtc gttctgttgc atatagaaag 1440

agggaacatg ccgatatacc ttccggaatc cacatagaaa tatgtgcagg aatagccgtt 1500

aaattcttag aaagcaccct agttttctcg agaaaccgtt aaattctgta aaagagcaca 1560

ctcattattc tctattttgg cagctaagga tcctttaaga ctcagtttc actgttcgaa 1620

gtcttggaca agctgtctat attgtgttgc gttcatagca ccaaataatt gcaaaaaaat 1680

tgaacactga aacacaattt attcggggaa atttagtcat atattctcac cattttatac 1740

aaaggttaca atacgaccta aaatatattg ctagattatt taattgg 1787

<210> 1251
<211> 2154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136231_G1, chr4:23195381..23197534, Cluster 8

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(149)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)
<223> a, c, g, or t

<400> 1251

atacacatgg gctagttgga cgaatcaagc tgaaacatca gacgcccccn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnc acacacacaa acacacacgc ggttatacta 180

ggccaccata atttcggccc cagccgacaa gctaaaaaat gaccaaactc taacaacatt 240

tagaatctct gtaatttggg taacaaatca cagcattagc taaatcatcc taaagacaga 300

agttgattca tccggcgact cagatctatg tgaagcacat atttcagata tgagcaaatt 360

ttgacaaaaa aaaaacaaat tggtagcatt atgacactac ttgcagagta tattgaagta 420

tgcaatctat aaattggcag aaccatgtcc aaatcaaatc aggacatgtt tggatacaca 480

tggctagttg atagtttggc taaaaattag ctatcatcct aaagacagaa gatgattcat 540

ccttgagaat cggatctatg tgaagcacat atttcagata tcagcaaatt ttgacaaaaa 600

aaaattggta gcattacgac actattgcat agtgtattca agtatgcaaa ctatgaattg 660

gcagaaccat gtccaaatca aatcaggaca tgtttggata cacatggcta gtttggctaa 720

aaactagctc cagtcaggca tgcctgctta acaactggtt ggagacttgg ctaaaaagtt 780

agccgaccta ttagacccag ctaaaattag ctagctaaca actaacccaa catagcctcc 840

gattatgtcc agaatttgtt tgtacccaca cacacatggt tataccaggc gagcataact 900

tcggccccac atcaggcgat ctgaaaaatg accaaactct aacaagaggt ttagaatctc 960

tgtattctaa gcaacaaatc acagcattag ctaaatcatc ctaaagatgg aagttaatcc 1020

atccttgtga atcgggtcta tgtgaagcac atggcatctc aggataggca cagtcacatg 1080

aaatgggata acttacgtag cctcttcaaa tcagaagcaa caccatggct atggctcaag 1140

tgctccaatc ctccaactga ccaccccgcc ctgccgctga gcacactgcc cgtcggctga 1200

ccacgccgca tgcccttgcc gccgccgggc tgcagggccc acgacgccct gccgcgcgct 1260

cgacggcccg cgtcacgctc aggcctgccc ctggcgccca gcccgcgctg gcagctgcgt 1320

gccctcctat ccacccgggc cgccgcgccg cgccgcgcct gccacccccа cccacatcgc 1380

atctggcgca gccgacgccg agatggccta ggcgcgcctg ctgctgtgcg gtggtcgtcg 1440

tactggcacg ccgccatgcc gagtactata acaagcaaag gtttgcctgg agctttctcg 1500

tatggagaga tgcccccatt cgattttaaa acgtctagtc cacatttttt tttctatcca 1560

ccttcgttca aacaatagtg aaaacagaca taaatgtaaa ctatattcat attactcaat 1620

aaatatgtaa ttaatctaaa acaaattata ttttgagatg gagaaaatgc taatttttta 1680

aagttgcaaa ggtgccatcg gacaagaaca ccaatctctc taataaaaac accagacgca 1740

cttgaactgg ccttatcccg ttaaaaaaaa tgaattatat tttaatttat agatagagta 1800

ccttcagaaa tgccaacgcc agatgaaaca tgagacaaga ctgtctgctg attcccagcc 1860

acggactgct caggtccttg tgcatttgtg tgcgattcta tccataccac cgctcttgtt 1920

tatttattat atatacgctg gtgtaagacg ccaggttcag ttattatatt gaacaggtca 1980

agatgatttg ttccgattcc aacacaaaat aatagtcgta tgtatgaacg tgtctacaaa 2040

aaatttccac ttgatttccc agtctcccat gacgtttgtg tatgagtcca ccttccagtc 2100

tagataatct aaccaggacg tccacgttca acgtcagtgg agtgaaaagc acgt 2154

<210> 1252
<211> 1629
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_153894_G1, chr4:139979597..139981225, Cluster 8

<400> 1252
tatataagat tttcatagat catatttgct tcttagacat atattcaacc caaaccatca 60

tgacatgctg cacaattggg ctaatctgtc acataccctg gcccaacatt agtaaggccc 120

agtccagcaa tcctacagcc tacttctttc cccatcgtta ggacacagga atgcagtagc 180

agtcagaata gcgcgggata ttcagccgaa caaagaattc agatgttcgt tcgaacaaag 240

aattcacatg ttcagttggt aagtcgtcgc ttagcctgaa gccgacgccg acttcacctc 300

aagggaagca agcagacctc gctacatcgc gcgatgctgt cattccacga atttgtatct 360

gcgtatgact acatatatat ctccgaaatt ccctcgaatt tatctgttat attcagatcg 420

caatatctcc ttaccctgac agccgggttg gattgagaaa agaaaagctt tacgaagcgt 480

tctatgcgtc attcctcggt cctctggcct ccagtagcag tagcaggatc aggatcaggg 540

cccgtttggg gacggagatg ctgatacggc ggcaccgcgg cagtaacttc aggcctggtc 600

gtccggggac tccgtggagg taaaacccag tgctggtagt ttctcgtgtc tgctagaata 660

acatcaccat caactaaagc atgcggagtc gtacagcaac actgtaggca gcgaacggct 720

gtacatgaga ccagatctgg aacaaacaag gagtcagagt catttactac tacggtgacc 780

gaccggcgat ctgaagcatg aacagccaca caggtaaaaa ccatcagagt acattcggag 840

ttccctgcac tgtcaataga gcctgcgaga atactgtagc acaaggctcg atccgggcga 900

gatctggtct ggtctgaact ctgaccagat caatcctcgg tgtcacaaca cagccacccg 960

gccgaaggtg aaaaacaaaa actggatccc ccaccctcac agagtgaggt cgtggtactg 1020

gcacctcctc aaccaggtca gaattggagc acagggcggt ggtggtacaa tctgtcatgc 1080

ctcatgcgcc ggtgctcgcc ccagcctcgg cagtttttat tgcgaggtac accactgcta 1140

caggacgatc agtgactcag gactgtatac tatactacta ttccaatgaa tgcgaatcgt 1200

tgttcttgcg tgggaacaac agtcgtgcgt gcctccttcg ctactcgagt actcgttact 1260

ctctcactcc aattcccagc tcagtttcac cggccgacaa tcactctcca agaactagag 1320

cagtactcac cctgtctaaa aaagaaaaga aaaaaattat ttttcaagaa tcaaacaact 1380

taaattttta tcaaaagtat atataaatat aataatattt atgatacaaa ataagtaagt 1440

actattaaat agattgtgaa atatatcttt tagtacatct agttaaagac ataaaggttg 1500

ttggaataca ctataagtga attactcatc ttttttaaca gctaagcttt tgagtttatt 1560

agttgttaca taaaaattaa tatggtaaca gagacagagg tcacgagttc aaatactagc 1620

tagcacaat 1629

<210> 1253
<211> 1640
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157567_G1, chr4:160105626..160107265, Cluster 8

<400> 1253
cgggcgggca ggcaggcagg cgtggtcgcc gcgcactctc ggcagggaga attgaaggga 60

cccagccctt gccccttggc cttggacaca cggtgacgat gcagcgaacc tgggcgcgga 120

ggagagagag aggctaggcc agtggggacc ggggaaagga aaggagcagc agccttgggc 180

gtcgagagag accggcggcg tcctgcgtgc gctccagctg ccgcgggccg gggatcgcca 240

aggcgcatgg cgcgcgacga tgcatccgca acgacctgat gtgaccagtg ctgactggag 300

agatgccgtg ctgtttcacc tttcacgatg attggatgaa ggatgctcgt cagcagctga 360

gattgacgag accagttaga cgagcagcat gcagtccatc ggcacaggcg acgaaagacg 420

gcggtgtttg ggaacatgta tggagcgagg cagcgagcat ggaggtgtgc cgcttctacc 480

aacttctccg gcgacaaatt cggcaggagg tcgccagatg atgacggtcg tgagcttcgt 540

gatagtgcct tggcaccgaa gaaaccagag gccggccgga ctcccgtgcg ctgcacctgg 600

acggagaccg acgggtgcag cgcagtgatg ggatcgctca gtcatcgctc accatcagcc 660

cgggaagtgc ctcgaggctg ccgactcgga tggaatgggc agccgatggg atagggtcat 720

gggaggtttg tcctgttctc gtctggacta ggtgaaactt ttagaacgcc cacacctcca 780

cagcatgtag atagagtaca taacagcatc agattaggtc gcagagggca gtattctatg 840

catgccaact agtgggaaaa tatgaacagg atcatgggga aaaaacaagc ttccagtcag 900

gctttaaagg tacaatcaca gagtgtttag aagcaaagtg tttttagagt tttgaggtaa 960

aaccatgcta ttgaagaata tcatcgtgtt ttttgccagg atatgtttag ctatcttata 1020

aaagaaacta tgttttgaat accatagttt catagatacc atggtatttt tcgagtattt 1080

gaaacttcac tccgatccaa agtttttatc tattactatg cttatacatg tatactaaat 1140

atcatagttt gatatacttt gtcttcaaac acgtattgtt aaaagtgatg tacaaaatac 1200

tgcgtttgtg tcatgacatc ttaaaatcgt agaaatctaa aaccatggtt ttaaaacact 1260

ttccttctaa acagtaacac accaccagta gcttcagacg ccggtatttt gaacatttga 1320

ggagtaacag gagtggccat cacatgagat tttggacaac tcagtgctta atcaactcaa 1380

gcagcgtcat ttcaactcgg agtctaggaa ggatgtgatc agatgaaatg attcttcgtt 1440

cgtaaattga actttagccc tatatgtaac tatgttagtt tttgacacgg aataatccat 1500

aggtcggata tggaccatga tttttgactc aaaaccggac ccaaaaccaa ccctgctacc 1560

caaaaaaacc caacccgaca tgtccaacag ggtggcacga ccaacccgac ccgattcgac 1620

aataggcacg ggtcgggcac 1640

<210> 1254
<211> 1420
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157615_G1, chr4:160282032..160283451, Cluster 8

<400> 1254
cgctcgaccg cacaggctcc ggcaggcggc agcccaggtg aaagtccagc gagaggcgcg 60

cgcgtgtgtg atagtccgcc ctcgacttgg ctggcggcgg cggcggcggc ggcagagcgc 120

cggcgcccat acccggccca ggagcacatg cggcgcgtgc caccgccggt tgggcggtgc 180

agccacgcgc gcgagcggac gacgaggctc gggaccgcta gctttcttta ttactatttt 240

ttttaccaca tgtgaaatcg agcgctagcc tgctcggttt gatgtccctc cttctggtcc 300

tggcctcctg ggtgtacccc tcgccttgtc gtatgcgcgc ggtgtctatg tcatgtgaaa 360

cgcatgtgga gtgcatgggg cgctcgatcg aatgtgatgc acgatgcacg tttcggaatt 420

cggacctaca gttccacgcg aagacgagct gcttttggaa cgggtttttt tttgggttcg 480

tgcgtaacac ggtgttgtcc gtacaccacg attttgcgca gatggatatg ttcgacggtg 540

tacgaaaaac gtaaggtttt caagttggat ttgattggcc aaggccacac gatcttgctc 600

tgaagggcct tacagtaggc ccgacagaag aagaaaaaac cttacatgag gcccggaaat 660

acttcaaggg ccgatatttg gactgtctgg ttgattggac acccatgacg atgccaggct 720

attttcttcg gggccggatt aaaacagtgt acgcccggcc catgaggttt tttttttgc 780

ccctcctgtc tccgctctcc tttttctttt cctccacacc gctgatcagg ttccgagttg 840

ttcgtgcagc ggagatgatg gtgtcgttgc taattcgtac tgtgtcacac aaacggaccc 900

gttacatggc ccgattagtc gagaacaata ctaatttggc gttggacttg ttacagaatt 960

aggtattctc gtttgatttt tgatccaatt agatgcgaac agattggcgg caatagaaag 1020

attgtgagtg ccatcttagc gcatgtttgg catatctgat atctccggag tagaactcca 1080

agttggagta aatgttttct accaaaacac ctcgactcta tagttttttt ttgagttgta 1140

gtaccaaaaa aaactgaagt accacttccc tgctttgaaa accagctaaa ataaacatag 1200

atgtggattt taagtgttta cccgcaagtg tctcacgtta caaaaataaa cggttcgagt 1260

taataattga gttatatcta taaattttaa gtacaaaaca ttcatgaatc attagccaat 1320

ttacttgttc aaaataatca ttgttgtatc ttaatcattt ttacgtagaa caaataataa 1380

actaaatttc gggatggtta cgagtcacct gcggttgaac 1420

<210> 1255
<211> 1753
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160672_G1, chr4:179080122..179081874, Cluster 8

<400> 1255
ttcaggcagg tgcatgaagg gttaggggcg accattcacc ctatttagct ccccctatat 60

actataattc agttatttga ctttttttcat cagtttttga agtttaaaaa atcatagact 120

atccacactg ctataataca cattgttttc gggttacggt aattaaagga gattaatatc 180

ataaagaaat ggattaatta aagtatgagg gagattggaa cttacctcat atgtggagcc 240

cctatgtggc taactggcta tgtggggtgt gatgtactgg tgtaaggggg tcattggagg 300

tgtttgtcac ctcataatcc actggacgtg gggtagggga gggttacagg tacgtaggag 360

atggtcttag atgaaattac agtgtagtaa aattttccca tccactagaa tctagtcggg 420

tggatgaatc gccagacgct aggacaacaa gagcgccaat aacaaccgat cccagttacc 480

ccaggcccag agcggtatct cgcaggctag cgcggcccac tccttctgca cggctgctct 540

ctggctattg ggaactgtct ggcgacaagt cgacaacgca gacccggccc cacaacatat 600

acaaccctca ccaaccggtg agcgcctcac ccaacacttt cgagcgtctg taggtaggct 660

gaacatctat ctgatcggag ttaacacggg catggattac agcactccag tttctgctcg 720

ccgacgtcat gccttcgtgc attcatccat gtattcgtca tcatagttac ggtacaaatt 780

tctgcaacgg acaagacgat gaagtcggtc tcccagccca atgctgtttc tcaaaagcct 840

gaaggcttct ttgctctgaa ctccccatta ccaatgctgt ttctgaagta ctcaacattg 900

aaaaagagct actatactag tagtggatag attgtgatct acacccaaca ttgaaaaaga 960

gctggctgcg caacctgcaa gggagatgtt tgtgggcgcc gaaacaacat ttaaggaagg 1020

tgaacactga acagagctaa atccaaactt aaattccaac tgcacgcgaa aattacatta 1080

gctctagctt ccactccgag acatgtgcct ggtaagttag caaagtttta catattatca 1140

ctttgttttt ctatcaatct agccgcgcat catattttag agttgttgct aatggcaaac 1200

tcctgcttaa gcacacaacg tgagctgcag ggaagttctg gtttaaaatc ttctcccatg 1260

tgtgggtgac agtttgaaac tattttgaca ggttgagttg cagaaaaatt gttgctatgc 1320

tttatcaata tcatcacttg ttgacgtcga tacataatac ttcatttgtc caattacaaa 1380

tcccttgata tgtttgtcat gataaaaaag acggagtatt ttggcttagc attcttctgt 1440

gtatatcatg tacacgtaac atcatactgc cctggttgtg ggttgtgcag cggctcagtt 1500

ttctgctagg atgtcagtct ggatacctat cagtgatcac tctttttttc agatggaact 1560

gtagtcttac gaagattgat agccagttgt ctgagaacac tttatgacgg tcacatacaa 1620

gtgcctgacg accattgcct atttacatgt actatttgag tgactctgct tttcttctgc 1680

tgtccttttt ctgtatcaaa tcgaagccgc aacctgatga atcgattcct ttgtgcaggg 1740

tgttcttggg cag 1753

<210> 1256
<211> 1935
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161119_G1, chr4:182290745..182292679, Cluster 8

<400> 1256
cgtagcaaca gagcaggaag tgttcctcta tcggtgcatc agagtcagaa atcgccttcg 60

gcgtcactat gatgatactg acctcacctg gcctcacaca tcggcgtcac tgacgctgca 120

tgaatctaca cgcgccgtcc tcttcttcgg cagcttctcg tcacttctct cccgggctgt 180

agagagctag tagaaaatgg cgcggtcgca tggaggagac gccaactcga gcaaggcagc 240

ggcgcgccgg tgcacgtggt ctcatcaatg cgtgagcatt gccatatccc tttgggatta 300

cggtgaccgc tgatgatcct gataccacgc gagcttctga tacacggagt tgctgtcgct 360

aacgaacttg cagcgcactg ccgctgatag ccgcgctgcc attgttgacc aagaggaacc 420

tcatgcgttg catccgtcgg cctcggccat gcatgcatca tcactcatca gtggtagctg 480

ggctccgacg atcaccggac aagcaggcat gagccaccca cactgccctg gcaataagga 540

gagaggtgac tctgccgagt cataatccat ctttggccaa ctatatgtaa attataataa 600

ataaacacct aagcccctag ctaggtataa ctgcctaacc taaacacttc aatttatagt 660

tttattttac tcagggtgga cgtttgacac gatcttgata ctgcagcctc ctttttcagg 720

aggctgctgg ttggcaggta agcagcagaa tggccgtctc aaaaaaaaaa cctaaaccca 780

ttccattatc aggaagcgat tccatagtgt agagatgaaa tttatgacca ggtcatcgta 840

atatagttgt gtatcaataa ggcaggcacc aatcggtgac ctttcatagt ttggtgctgt 900

atgaaaataa acctagaagc tgcacacaac tgcctgatga atgttaggga ggttgacctg 960

aactagctag tgggtggatg tgtggatcca atccaaacta cagcgtgtta ctagtaaata 1020

ttctccgcct actgaacacg acacgtagac cgtggaaaac tggtgaagcg ccaccaaacg 1080

atcggtgttc tttcgcaaga aaatataatg agtatagaca aaagcttttg ctgtctgctg 1140

atgaattcac ttgcgacttg ggaatcccct actggccaag ccgtgcaggt ggaaaaccca 1200

catcgaccag agcttcggcg gagcgtgcgt cgcctgcagc cagacttcga cgcgcgcgtc 1260

gtcggtacgt agccggcggt ggtggtggct gcttgtcgtt tgccatggat ggactctacc 1320

gctgctccag gccactgttt tcggcgtacg ttcacggtac gtggccggtg gtggacagga 1380

cgtacgcaac agagacagag acacagagag agagaggggg agcgaagacc caatggtcga 1440

tccgatggaa cgatcgccct ggtccgcacg acgcccgcga gaacgaccaa ttgatggaga 1500

ttgcatgggg gcttccattt tccctctcgc tgttgccgca ctgcaaagta caaacaaccg 1560

cccccgaaca cgtacgtcct aacgtccgtt cacgtgcgac tcctgggaaa aacgatccag 1620

gctagcttcc ctccctcggc ggccaaaaac cgcgtctgac cgttggatat atatttttt 1680

tttggccggt gatgaggatt tgaggtagcc atcgcatcgg tttcaccgcg ccactcgccc 1740

gtgcgtgcgc cccgccaggg cacgcacggc acgacgccga gccgagcagt caccaccggg 1800

ttcgctctct cggcaaacat tgccgcgcat actacccgag ctgaccgcag gcatccgaac 1860

acggcgcgta cgtggcaggc cgcaggggta gaaaaggagg aagagcagtg ggtgtgggtt 1920

ggctagtcgc gttta 1935

<210> 1257
<211> 1503
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16772_G1, chr1:93076603..93078105, Cluster 8

<400> 1257
ctggtaatag tgctaaatgc ctacctaacc atcgcgctac tgctacgttc tgggaccgga 60

tctgcatttt ttgggatcta ctattcattt taccccgctt tgtctctctc agacttcttc 120

tggaagaaca aacaagtctg cacgcagaca ccgcagatgt caccctgct gactcttgtt 180

gctgcaatcc aagatcgtaa ttgaggtctg ggcatacacc acacaacggt caatcgttgg 240

aaaaacaggt ctctctccat cttgcagtag tactgaccga cacatgtaga ggaagctggc 300

agcaggctgc acggtttctt gctcgtaaat acttttaaaa tagcgcgtat ggttccagtt 360

ccagcctctc gtcagggttc ttcgtcggtg gttggttttc acgcacacgc atgaccacac 420

caccgcgcta ctattttcat tccatgatac tcttctaccc ggagtatatt catctctccg 480

gatcctaact aactgaacgt acatggtcaa aactctagac cgcgggagct gtatccagga 540

ctttctgcag aggtctcaaa atgcacatgc cgtgttaccc tgactcgatg ctacatccgc 600

gtacctacca tcgtcgtgta tagacatctg catcgattgg cagccgccaa caagatgcag 660

gcgataggag caaggtaggc gatcagggtg agagtgagac catcggacac acctgctccg 720

gatgtatccg ctaatcacta catctaatcg tactcagtaa atcttatacc ttcagtggga 780

gcaaacaaag aaggtgacag actgacagta gtgtatgggg cacgagcacg tccttagcaa 840

tagaggaagt agtcgtgcct cagggcgaca ttgtcgtggt catggtggcg gcgagctgcc 900

ctcacctctg cactccaaca gatcagttag ggtttttctg tgtgtatgtg atggcgaggt 960

ggtccgggaa aggaaagctc ccaagacggc cccttgcccc ctttttatag tgtagcacat 1020

ctgcacatgg tgaaggaaac cacaaccatt acaattatta tgctctcgat catgacgcga 1080

taaaaaagag tcaggaaccg tgtggatttt cggtaaggtt gaaaacaaat caacataaac 1140

caatcgccaa tgcttaggga tacctgctag ctaggagcaa tcacgatgat gcggtcaaat 1200

ttgtacatat tggctttagg gatgtccaaa gccatggcat cgaacggtgt gccaagtgat 1260

caactagctc aacctaataa aatagaggga ttgcatattt ttccaaacta tttttataca 1320

ttttaattat tgtcttgttt tacctctgta taggtggata atagtcatga tcaacctgta 1380

acaactgtaa gatgatggag cggctttcgt tttagaagat ggttacattt catgagatgt 1440

atacctcata tgcaaggagc attggtttta gcatttgaaa agagcacaga agatggttac 1500

att 1503

<210> 1258
<211> 1867
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172865_G1, chr5:2762554..2764420, Cluster 8

<400> 1258
cgagccccct tcttgatgtc aagggccctc cgcttgactc tcccgtggag agtcgagcgg 60

agactgctac gcgcagaatc caatgtaccc tccgtttaat gatcatgtgt aagaaatgtc 120

tgattatagt gtgattaaac aaattgaggt caagttcggc ctctgcacca acaacagtaa 180

ctatatcatg tggtaaaaat agagcataag gaactaaagc atgtgcgtgt aaacgggcag 240

ctaggcacag atatttacaa tgacgacggg aatgatttag tgtcagaaat atctcgcagc 300

agatagagca agcagcagcc agtatagggc agtggcagca gtgtataccg ggaaatgttt 360

ttgtttgttt gtttttccat tcattcacga tggatggtcg atccattcat ggcgaagggg 420

gaatacgtac cctgcttgtc tctagcatgt gtcgtcttgc tattgatacg gggcgcgggg 480

tgcatcatgt gcatgagacg tacggtacat gcatgcatgg atggcgaaag aaaagaaagg 540

cgaggcgagg cgaggacggc gtgtggtgcc agaggagtga caccgcgctt tattagctag 600

ggcatgcagg agccatgaag aagctgcatg catgctcaag caaggcgggc atggccacca 660

gtagtctacc acagccacat gcatgcatgg tgtggccata cagatataga tgccgcgtgc 720

tagcgtttgg caggggagag cgggtcgtag tagcactggc actgtagcag tagtgggcat 780

tggcagctgg tggcgcctcg atcgggcctc gcgctcgctt cagctcaaag caaaagatag 840

tggggcttga tttggcgtag aaacaccgga gaggtctctc gctctcccct gtttccctca 900

ctcctcccca tgcctcaaca agcgtgacag ttgtctcagt actccacagt gagtgagaga 960

gagagagagt gtgtgtgtcc tgtgtgatct tcttcttgaa ctataaatag ggcaaggcac 1020

ttggggccat tccatcttca ttcacttcca gcagtagctc acactccgat ccatatatat 1080

atgggctagt gcggttgctt cgacagagct tggtcttgcg ctgctagctg caaagaacga 1140

cgtagctact atacatacac atattcatac tcatagatag gaatagtgtt agacatgtga 1200

tggtgagaac ctgatcatgc aagcatctga ggatcggaga aggaaggaag ggtatggaac 1260

agtccttgaa gctcaggagg gatagcgcct aggaaatcac acatagattg gagccacgaa 1320

gaggaaggga gaatgagaga gagagagaca gagcagctat gctgctctgt ctctctctct 1380

cactttctct tggatccatc tcaaggttct gtctatatat gatgaatcga tccgaagcgc 1440

tatctatcct gagctccacg gcttgttctt accagttacg taccacgtac gcgccgccgc 1500

cgccgccggc cgatctcgag ctcctcgcgc gctcccagct agaattgcct tctgtgtgcg 1560

tcgtactcct tcattctttc ttgttgagat gcaggaggcg agcctgagat tgatcgaggt 1620

cgtcgtcgtc gtcgtctcgt cgctagtagc ttcgcttcaa gttcaaggac atcatcgtcc 1680

ccggccggcc agtgcgcgtc cgcggccgat ccaggtgtct catcctgctg gctccatgca 1740

tgcatgcagg catgattact ttagtagtat atccgtgtgc aggcggatga ggtgtgtgtg 1800

cgcgcgctca ccagtcgcac gtgttatcat gcatgcatgc aacttgcaag agctttgaca 1860

agttatg 1867

<210> 1259
<211> 1631
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172953_G1, chr5:3320325..3321955, Cluster 8

<400> 1259
tctatttaat tttaagcttc tatttaatac tcagaattgg tattcaaaca tttgatttga 60

tgtgacacga cctaaactgt agtcaggaaa ccaaataccc gccctaagct tatagttgtg 120

gtagattgtg actaggtatg aacaaaaaca gctagcccta attaatctat ctatgctacc 180

cttactagcg aagctagagc taggtccaag taacttgcca aaattctttc ttaaacaaag 240

ccacgatata tatgttcttg cagctgctag cctcgatcga cgatcccctt tcttaaacaa 300

agccacgata tatatgttct tgcatgcatg tgtgtgagtg tgacaatcac atcgtcaaga 360

cttttgtata cctgagaacg ataggtaacc gcaaaattct gattaaataa cacttggatt 420

ctccaggcat aacatgaaag tggaacagga tcaactatat atatgctttt tatcatcatt 480

tgcatgcagc tcgaccagtt ttcaattttc tgtcagggag ggaatagaat atctctaggc 540

tctagagcta gctagaggac tgaccggtgg aacgaagaac cacaacagca actcactcat 600

gtccaatatg taagcgaatt aattcagcgg gcaattaatt atgcttttcc acgctgcttt 660

cctgcggaga agagagcaaa agtgctgcaa gtggcgaata ctaagaatcc atgaattcag 720

tgtgtgtgtg gcccccagaa aaggttctgt attccttggt cgccctatga gagatccagc 780

tgtagaatct atcaactgcc tttggtcatt ttcgatcaga caacaagcct acacattttt 840

ttcgcgagaa tttcagcatt catcaagatt agcaagctag ctagatgcgg tcgcatttga 900

aaaccgtcca ttgagatgcg ttaagatctt ggactgctcc tagaaatcta ctgtaccagg 960

caagggcaag aggcaaccgt ccctgaaact ttttttcaat taaatttctt gcatcaaccg 1020

aatttagcta actgaactaa ttaaactttt tcaattgttg cgtaaataag ttcataacct 1080

tttcaaataa acgcacctag aaaattttgt tgttgccctt tttcatctga ggatgtttag 1140

gggtctagta tctgaacaaa agggtagtat ccagtacctg aacataaatg actatataca 1200

gtagtatgca tggtgatgtg ggtcggtcat ttattagttt catttcttag gcgcgtaccc 1260

atgtgtatat ttcatacaaa tactgtgcta ctggagaggc atgcgatgtg ctatgaaaaa 1320

agaattttat tttctatcgt tttggtgcgt tttatagttt ttatgattct tgtaaaaaaa 1380

aactaaacct ccttgtttga ttttttgaga tggctgtata tctatacctg taaaaaaatg 1440

ctccattaca cgagttctgc agtctatcga cagtgcctaa agctcatttt gtgtagtgga 1500

gccgtatatt tatcgcaata aatcatgatc tgctttgggt cacatgatag aatagaatca 1560

gcatttgtgg agggattgcc taaactagct acatagccct agctggccac caagacgcat 1620

ccgtgctcac a 1631

<210> 1260
<211> 1528
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174632_G1, chr5:13401563..13403090, Cluster 8

<400> 1260
ctggaatttg gagacgaagc gcgcgcagaa tattcgggtc aaatagaatc agctacatac 60

tatgtgcatt agggctcaca taaataatcc atatcttgag gagtatcaag agagtaagtg 120

taaaaaaaat acaagagaca tatcttgatg aagagatgta tctagctcag ttctctaagt 180

ctagatacag tttcgtccat acaacccaca taaatgagtt atatcatgag agattctagt 240

gaataagata tatgattata tacaaaaata gtttcttata tgtttttttg tattttgaaa 300

accgaactgg agtcttaagg ttgcacatgc cctggatgta tctagtgttt gtaaaacctg 360

tttgtaaaac cgcaacaaag tttctacatt gtacatgccc ttagggatgt taccaatttt 420

ggtagtgaaa cgcaataatg aattaagcaa taattcaagc ggatcagaat taaatgagac 480

gtgtggtgta gactgtagag agtactctac gatatgtagt gggatacttg gagcagtaat 540

tattactaaa catgaggtgt agtaaacatt gacgggataa cgctgcacat taaatactag 600

tatcagtaaa cgatgcaata tgcacgatca tggtccgaga gaatattcgg atcaacacat 660

ctatctcctg cgtttatata ttattaaaac tgaacgttac cgttttttgt tagtagtgat 720

aaagatcgat taaggtaact ccagcaacgt tggatgtgta taacactgtt ttgtattgta 780

gatgtactct ttttatataa ggagaagttt aaaatagaaa ttacgataac gtaaagtggg 840

tttttaccgg ctaaatttga acgttttccc tttccttccc tggtcctgta cttgcagtat 900

tgcactgtcg cctgtcggtt catcgatcgg aacgacgacg tcgtcgcgcg cggcactatg 960

ggcactagta ctttggtggc agtggcacac gttcgtagtg tgtgtcactt tggtgtctgg 1020

agcctgctgg agcaagacag caagtcaggc tgaggccggc tactcagctg ggcgagtggg 1080

tgttgctgcg agctttggcg gatatcaggg tatgcatata tggcaacggc tccaaaaacg 1140

cgctgctgcg actgcgatgc cctgcagcat tgcaatggct ggccggccgg tgcgcgttgc 1200

ttggaagaaa gatgctgtcc ggtcggcgaa ccagcctcga tcagccatgc ggttgtgatg 1260

catgcgcatg cttaacagtc tggaccctaa cacgggctgg gtgaagctga agaggaccta 1320

atttttggta gttttgtttg actgaattat tggtagttaa gctagattag tcctactttt 1380

gggccggggc tggctttctg gcctagctca acacataatt gttttttttt ctccatacgg 1440

acggcgtaca tgcgttcaaa ttttaaacct tgacctttta cttttattca cgtacggtgt 1500

actgaacccg ccgtagtccg gtagaaaa 1528

<210> 1261
<211> 1794
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174637_G1, chr5:13404549..13406342, Cluster 8

<400> 1261
tgtgaggtat acgatgaaaa tcataaaact aggaaaatta gtgttttaat atagtacaga 60

tattattctc tgaaccaaag acacacacca gaatacaact cacatatgca ttgcacgtgt 120

gaagctccga cacacagggc gcaacaactc agctgctttc tttacgtgat cagattgcta 180

gagtacttca caaagggacg ccgagagagt atcgttcacc aacctggcag tggcagttgc 240

cgcattgtac tagtgtacaa aagcccagct gaacggtgat cagtggcctc ccaatgccat 300

tctgtgtagg cgatcacaga tctatcaaca ccaccaaacc caagccagca cactgcaaaa 360

caccaaaagg attgaagcaa gctgccaaat ggcacgcgtt gcaggaacac cgaccctgcc 420

tgattcagag tcagaaatgc aattatagac gagtctatgg gcattgtcac tgacagaatg 480

acagggcaaa gataccacag tttcacgcga aaacatggcc gtggcacgtt ggccgctcga 540

ggcaacaact tctatattgg catagccaga atgataatat tgttgtacaa ctcagttaga 600

gatcgagtcg cacgatcatg ctcgcactct ctgattaggg acgtaacaat ctgttggtta 660

ataagttctc ctttcatacc acataataaa tagtcaaaga accgatacgc gaaccaacat 720

tcataccgag attcgatcta atatctaccg gccatctttt cgactccccg aaccatagcc 780

ggagtggcca tgggcatttc tccgcccttg atcagcatgg catctccttc caattctgga 840

ggtacaaatc tatgttctat gatttctaat ggctaggatt acgagtcgag gtcttaaaat 900

ctaatagtgg tatcaaagcc atggttttag gctcgggctc taactataaa tgacagtttt 960

ccttaagttt tatgacaaaa tccgagaaaa acacctctta actctttgta ttcgtgttcc 1020

tactcacgta gaacaagcaa aaggggagaa agaaactcta acccaacatt tccacctttc 1080

ccaaactcta atcctaaggc agtccataat ctgagcaccc aagcacacaa agaaagggaa 1140

agcagacgtt aggaaagcag ccatgtgcta tatattcgaa gacctagcct acacacacat 1200

ctgtgaaact gtattaaatt gttaaatatt tttagtttgt taaatatttt taaattacgt 1260

taactcgtct tttctagtta ttacttatag cttcaaatct agtttcattt acgataaagt 1320

tcaataatca ttatccttct cttgattact attttcattt ggtatgaatc atgatcggtt 1380

gtttttctct aaatgtttgg gtgagtaatc tttaggcttg acaaacgagg atggtgaatt 1440

catttttac gcatctcata ttatttaaag tgcatcactt gtacacgagc acaaactcga 1500

tggcatgtaa gtgattttag ggtgtgattg acacacaaaa taggctattg ggagtgacaa 1560

acaactcctc aagtctaagg actaaataag aatatttaga aaattagtat atttggatat 1620

ctcatttaaa aacccattga agcttgattt ttggttaata acatcctaca ttatttttag 1680

ggcctgtttt gggaactaga gatgttctaa gggctaccac tcaattggat acctaattag 1740

ttgttgacta atcttgatta gttggatgac agaaaataga atggaactag gtaa 1794

<210> 1262
<211> 1540
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174698_G1, chr5:13804245..13805784, Cluster 8

<400> 1262
gtgagtttcc tgtgttttgc gtatttgaca ttcagctaca tcattgtaga cgacgacggc 60

gcatttgagc tgcaaatggc ttccatgcag tttagtatgt actggccagt acttctgcac 120

ttacaacagc ccagagtact tccacgtttg tgttacgtac tagtaattag cattcttagg 180

aggcggtgtc actatctctt acaggatagg gtaggtcagg gcaatgcaaa tttttttat 240

gtaatcggaa agggcagggc aagcgttgag caagcatcat gatcagtact gaacaattgg 300

ttctagcaaa actaaatatg tcagggttca tgggtgtagt gatcttgcaa tatttctgct 360

gcctttacta tatttctaca tcttaacatg ctctattctt ctcgtgctca ttgtggcggt 420

gcaaattgag ttgtttaaga gaactcaagg ttacgaggaa atctggcatt ttccctgacc 480

caactttctc cgacttccag tggctagtag gtttatgtta ttttcagttt ccctttgtca 540

gataggggtt gttggggact gcttcacttc acaaaattct agcctaatgt agtaattttg 600

gcatgtactt gactaacaac tttttggaaa gttgtttttt atccatgttt tttggatgct 660

ctttgagttg ctctcaattc gaccccaaaa aaaatgcacg accaaatctt tcccaacgcc 720

ctcctctttg ttcgatcaca ctttcttttc ttgctggaat gtttgctcca cctatttatt 780

aatgggaggt tgctcatttc tgtggagctg tggtttctag atacgatggc catggcgttc 840

ttcttccagc tgctcccaga tcaccccggg gttctaatag ccgcagccca agtaaacgat 900

ggatttctgg ttacgcagcc tcgcacatca attcgattgg tgcagctcta tgttgtagcc 960

atttttttct cttcaataat tgtttgctga aacctggtga cgagtacagt ctctgctgct 1020

gcgtggctgt gatgacaaaa aggttatttg gttgattatg attcttaatg ccatttaagg 1080

atcaaattgt gatgacctat ttgtgcgtgt ctgagccgat gcaatgaaga gtccattttt 1140

gctgaccgtt ctgctgatct ttctgctaag gattttgcac tattgtttat ctgattttgg 1200

tcgtgggatg gtaatcaatt cggggtgcaa gtatcctttt atctgtagct ggcaggatga 1260

atggcaaagg gaccaatctt gaatttatgt ttgtcgattg gatttctggc atctttggaa 1320

catctggcat ggctgggatg acaaaaacat acgtttctcg atcctgatac ttggttttat 1380

caaggaccaa actttgatga cctttgtgcg tatctgagcc gttgcaaatg agtatgtttt 1440

ccttatttat tgttacaagg ttatggcctt ctgtgcatct gggttatcca gggtggctat 1500

ggtgacacaa atgttcgttt ctcgatgata ttagttgtgt 1540

<210> 1263
<211> 1564
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196803_G1, chr5:155106415..155107978, Cluster 8

<400> 1263
tttgtattga tgtttataaa tagtttgtga gatagtgagg ccgatgataa tatatgtatt 60

gtttgttttt atataattat tgcgacctaa agtttatcga ataattacgt gccctcacac 120

cgcacgggta cggtactagt taccatttta atgtatgtgt gtcaacggag gtaaaaaccg 180

gtcacccggt aatattttgc atggaataat agcataaatt tttcgtggcg cagccgcagc 240

cgcagccgca gcctgccgga gtggcggtgg tggttattac aggagtagct agtgagagct 300

gccaaacagc tccttttcga tcttgatcaa tgcatccaac agacagtcca gaatgtcaat 360

tcgagcgatt atacgtacgt acgtctatat atatcccctt cagttgaaat gaattaataa 420

agcattccgt caaacgaacc actcctccta taattattat aaataacccc cggccgctag 480

tgtgccgtgc acctggtcca ctgccttttc ccgatccgct gctagctaaa tgggatcgga 540

tttggtctac cgcccggcgc cgtggacctt tctttctcta attttctatt tcgcccgcgg 600

gtgccgtgcc ggtggctggt agctactggc tagctagctg ctgcgcaggc aacacacaag 660

gtggtggcat gtggaatcct atatacggac gcatgcatgc acgtacgtac gtgtacgctt 720

ctaggtttaa ttagtatact gctggtcaaa agctctctct tctcatcctg cgcttgattc 780

atggagtata tattaattag ttttgtgcat accacaacaa agtgagagct gtcacgtacg 840

cgtgacacta acacgcaaat attacaaatt aaactagctt ccgtccaaat aagtccaact 900

gtccaagtga aatgtaggcg ggcgcgcgat tccgtcgtgc tttgtggtac tagtacgacg 960

tatgtactag tcggcgaaac gacacgttga cgaatgacga tcgattcggt ccacgtacgt 1020

ttaccgctag tacggcaaaa atagggcttc gtgcatgggg tcatcatcaa tgcctcccag 1080

acaagaatct tacctgacat ttgcaaaatc agacgttgta agggagattt aagcagctcc 1140

atttcttgtt ttttttctga atctaaagat attttgtaag ggagatccca caatgatttt 1200

atttcagata agggggagta tacacagttt tacgggtcgg ggcgattgca gcgagagttt 1260

tacggtatcg gctagcgatt tcctcgttct atacgagtta acaattaact ctttgacaaa 1320

cgtatctttg ccgttggaaa cagttggcgg tgtgttctcg aagatccagc cattcctgca 1380

cttccaaatg caccacacca tcgttactat gatttccatg catggagcac agttttgcta 1440

gttgggtctt gattctttgt aatgccacat gaaggttcga cgttctaggc ggcagaggat 1500

cccgattatt tgccagcatt gcttggcgaa tccgaatctg aggaacaggt gcgacacata 1560

tgta 1564

<210> 1264
<211> 3103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200253_G1, chr5:175216246..175219348, Cluster 8

<400> 1264
accaaaaaca gcaaaacaac ataaatgaca aaacaatatg tctaaggata aaattagtat 60

ctcaaaaaac aaaataattg acgagagtgg gatttgaacc cacgcccttt cggaccagaa 120

ccttaatctg gcgccttaga ccaactcggc catctcgtca tgctggttat attttccaca 180

tgttgtattt tatccataaa cgattttctt gtgtcaacgc accaccattc cttttactcc 240

tctgaacctc tgcagattat acagttcctc ggaactgcaa gaacacgtga gtcgccaatc 300

cgttcttatt cacttcctgt tcttcaatgt aatccggaac gccatctcct cttacactat 360

ggtatgtcgt ttccatgagg tatataattg cattaaggat atcttgctgc ccttttccat 420

tgtagataaa gagtgtcatc gttaataaag agcgtctcaa tcttcagaag atcatacagt 480

tcttgatttt gggctgctga ctatgacgtt gctgaactca ataaaacaaa cgatgtctca 540

agaaagacag gcgatctgaa atcaagctgt gggccataca aattcaactt taagccctga 600

gagaggtcag agttaatttc tgtcttgtat gaagtgtagc attgcttagg ctgcttacta 660

tgacgacgtt gctattgaat tattttaatt tatgtctttt accagaaaac aaccgtaaca 720

aataacggta tttcaaacaa agtaacaaga aggatttta gtttccataa aatattgcca 780

gatacagtta cgagttattc tgatggtttt cagttcttga gaaaaaaatt aggtcagaca 840

taaaactttt gctggaagat tgaaattaaa aagcttagtg cgtacaagaa ggcaagagaa 900

gacactagta aagtactgtc actgcgagag cgccaggtcg aactaattac aaaggtggac 960

ttttacatta gtttacttca ggacactgca aatctacgtt actactgcct tcagcaaaac 1020

gtgtgacatg acttaattca gtgggtctcg aggcttatca tatgtaaccc tgtttgctct 1080

agtgtaatct ttcaatgcca tgcatgtcgt ggtcacatat tcacctgcca agtatgggcc 1140

cccatattgc gttgtttctc actggctctt ttgcattcat cgcgtatata catgtgcggg 1200

ccgcgttttg tttacaacaa aggttgcctt aacaggtttt aacgtaacag tggtcgtgcc 1260

ggagtggtta tcgggcatga ctagaaatca tgtgggcttt gcccgcgcag gttcgaatcc 1320

tgccgaccac gttttttttt gcatttgatg atgcacattc tttatcgttt ttgcgcctca 1380

ggtagtcaac tttttgtacg gtttgcacca agtgattgcc tagaatccag cctatgtaat 1440

tttttagcat caggaattat gtagtttcta tttatgtttt atgaattatg taatctttat 1500

ttatggttca cgttattttt tatttatgct ttatgaattt tgtagattat atttgcttaa 1560

ttatgtaatc atgtgtattt attttaataa aactacatgt ttatgttgtc taaaagtttg 1620

taaaagaaaa tttgatgtgg gggtaagatg gttgtagacc gacgataaag caatgttatt 1680

aaaacactgt tcaagcaatt tgacctaaaa caaaatttta cgacatttaa atgtttcatg 1740

catttaagac ttttagctac tttggaccga gcctaagtct agaccgtggc gcttgcccta 1800

ctccctgaag cccgatggct agcatcgacg tgtgctgtcg ttcgtttgtc gtgccatgtg 1860

cgccctcttt ctccgcgtcg tgtgccgctg aactaagctg ctcactctcc ctccatgtcg 1920

tgagtcgtga cccgtgtacg ccttgtgttg cccttctcct tccgcgtcgg tgtagtcggc 1980

gccatccaca ccgcacaggc acagcccatc ctttgtgcct ttgcggacgt tccacagccg 2040

gctccgcgcc cccggtggct agcagcgact tctctcatgt ctcatcctct ctactaacct 2100

cccaagaact tcgtatttta tctgaagtta tattatgata tattgaaatt ttgttgaaga 2160

tgaaactata gcgaatcgat ttactggaaa tggtccgaat ttttctttgc accttccttg 2220

ccgtgccgtg tccgctgtct tggagttgga attggaagca cctccggtcg agcgcggcaa 2280

gcaagcaact aacatccggg tgacagatgg agcggattgg cggcctgatc gataggaact 2340

atgccccagc gcagcaaggc ccccaacgtt gtctctgtcc attcatgacc ccctcgctca 2400

aaactacaaa ttctacgcgc ggcacaccaa ttatgtccgt gtgccgcggc gtccgtaata 2460

accagccagc tagagagcgg ccgggagaga tagagaggtg gagcagatgg ctctgtcgag 2520

gacggcgtgg atcgccggcg gtctggtcgc gcggctgctg ctgatcgccg tcctggcctt 2580

gaccgtgcag tcgaggttct cgaacagaac ctactacgac ttcaaggccg ccggctacaa 2640

caacgatctc cagagctaca cgtacgtacg tcgtcgtcgt cgtcgtctcc gccggcgccg 2700

cgtggataca gcttaacgac tattagtaaa ctccaggcct tgctgaaacg gttcttgctt 2760

gtgtgtataa ctgtatctgt atatatgctg catgcgtgcg ccatcgggga caaaaaaaaa 2820

aaaaggtacg cggtggtcgt ctacctcctc tgcaggggca agcggatgat gacgcccagg 2880

cgcccagctc gctcatcctc gacgtcagta tgtacgccga cattgtacgt gcgctcgacc 2940

ggaccgcgat cccgtaccgt agatatatac tcctccactc atgtgccata ggtttcaatt 3000

cgatcgtgat ggtgcaggtg gtcaccgtgg tgctggccag cggcgtgggc gcgggcttcg 3060

gcgccaccga cgacgtcttg gagtacgtcg agcatggctc gcg 3103

<210> 1265
<211> 1495
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201486_G1, chr5:182591393..182592887, Cluster 8

<400> 1265
gcgtaccagt aattgtaaca tgtgtgtgtg cgcacttttt tgtaggtggg tgggggtgag 60

gggaggggat cataattgat atctaccatg acactaaact tgacatcatc tatatcacct 120

taccgtagct gcttaaggta cgtagtgcag ggaccagaag aaccgcacta cttgatgagg 180

cctgaaatcc aatgataaga cagactagct tagaatgact aggcattgca tcaaaggttg 240

ccgctttaga atataatgcc tcatgtaagc tccagatgat accatcttgg tctcggaagg 300

ctggctagtt gtaaatggag gagaaagaga gaatataaaa gagccgtaca acgctttgat 360

cgaatccaat cgtttccagc ttcctgcaat cattagattc aaccgcaacc aactcattcc 420

tacagtatct ttcatcgttc ctaaatcatt tcattcgtcc gaaccgtatg aattttgaaa 480

taaaaacgga tgagagagag agaatagtcg ttccattcgt cagcatatac aagcccaaac 540

cacccaggtt cagcccgctt ttggcgacgt ggatgcggct gaccaaagcc acgctggctt 600

gcatctgctg ctcagagtga tatgagcgcc cacgcacgca ctctgatctg tgtcccgctg 660

acggtgtctc gttggtcgct gctaattgtt cagcagtacc gttccgtgac atttggtcaa 720

ttgtcatgct agccacgtac acggttcata gttgtgtttt tacatgttaa cattttgtt 780

tagtttctta caatccaagt ggtcgtgccg gagtggttat cgggcatgac tagaaatcat 840

gtgggctttg cccgcgcagg ttcgaatcct gccgaccacg tttcaattat ttttttgtaa 900

attatatata tattgcatga tattgttatt tctgtttcca aattttgttt caaagaacgt 960

gaactttgtt ctttttggta cttttcaaag taaaaacagt gaacctttag ttttcagtct 1020

cattgcaaca cggtgtttct catgtaaaaa agggtcttgc gcctaaccat ccacgtcccg 1080

ttgtcggttg tcctcttcct cttatttcaa ctttcagttt catcatctct ctgctacatc 1140

tctagcatcc aatcacctct tttctcgtta agcaccagtg acggctcaac tagtagcttt 1200

acaatttcac acactacact accatcacag aatcacctac cagaatgaga atgagatcaa 1260

tgcttgcgct tgattaatgc atgagatcag gatttaatgc ttgcttcact ccgacaaggg 1320

cccagttagc agcagttagt agcagcccta gtagcactgc aaggagacgt tcacgccccc 1380

ggtagctgcg cccacgggag aatcggccgg aggactactg gacatacgat ttcaggggaa 1440

gggaaggtcg ctgaacgacg acgcactgat gcggcgcgcg tttcgtgctg gagga 1495

<210> 1266
<211> 2093
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202600_G1, chr5:188746226..188748318, Cluster 8

<400> 1266
atgtggccaa gcataaccaa gccagccaac caccaaaaat aaaaaggtgg tcaaccgccc 60

ttctgcccac cgccagtaac gcagacgtgc cagaatcaaa cgctttcgcc gcgctgaata 120

gaaatagaaa acgcaaaaat ttaaatccgt ataataattg caaggcgata ataccaacgg 180

accaacctac ccacccgcac cctctcttgt gcacctccgg ctcccagtcc actgcctcct 240

gccaaaataa atccgtccgc tctccagctt ggtggcacaa tcccatcgaa agctagggtt 300

tcaagcctct tccgacttct ccttcccttc ccttccccac cacaacgcgg ccgccataga 360

cgcggtaccg cgcgaactcc catagatctg agcgagccac cctgcgaatc atcccctgac 420

gcaccaaatc tggtcagaaa cggtgaagag ttcggacacg atcttaagcg tcgttgattt 480

aagaccacac acaaacacat ctgtttgccc ttccccccta ttttttcct gtttcggacg 540

attcataaga acagacctgc aaggtttgca gatctacctg ttcaagaacc agggaccttg 600

ttttggacgc ccagaacgaa cccttgaccc tgcggatctg ctcgatccgt tttggatctg 660

cttgcttttt tctggatcta gagagaatgt tcaagtcgat ggtttatttc gtgaacatct 720

caatcgggga ggttgaggtg tggcccaagg gccaggcgag cgcaggcctg gccgtggcgg 780

cgtgggcgcg agatatccgc gttgaccgcc tttccccgcc cagcgagcgg tgccctccgc 840

tggccgtcat gcacaccgtg gccgtcgccg cccgatgcct cgtcatggag tccaggccgc 900

ccgtcgccgc cgacgtggcg tcgctgcctc tcgtcgacat gcacgccgct tgcctcaggg 960

acaacaaggt atatacagat tattcctgac ataaaaagag cttcacatcc accgtccacc 1020

gtaaaaagag agagagagag aataatctga aaacatgaaa ggacatcaca aatattatat 1080

ggcggacgct ttgatgaaag gaatgttttt tagtcttatt acatggacaa gcttacggga 1140

cataattaat tcttacattt aggattggaa taattctgtt agttttactt gaacgatcac 1200

tggacaagga tttttggcag gattgaatgg atgactaaga atgcactgat atttttcagt 1260

gatcacaccg acttggactc atgttcattc actttcgttg aactcattcc tagctatacc 1320

atcaattaaa gtaaagaatt tttaacttta ctgaggctag atggaaggac ttaagaaaca 1380

gatatttaag tttaaaaatt gggatgtctg aatgccatgt attggtgctt tggaattggg 1440

actcaattct gatgatctgt gaaaactggc atttatttga tactcgttgg cttgaatcat 1500

tggatgccgt tagttgacca tagatatagt tgtacatcac actaactgaa tctgaatttt 1560

gactcctgat ttctgataac aagttgaaca ttaaaacata taatagcatg gaatgcctga 1620

gtctgtcgta tcaagttact gtgcagatgt ttttctatgg caatcgtata agttaataaa 1680

gtcccttcac gttggtatca acatttccat attccatatc aaactttgcc tgattttaga 1740

attcaggaaa tacaccaatg aaatgacagc caattcagat tttgcaattt tggacctaat 1800

ttttgccgt cagctggatc tccatgcctt gatgacccct attttcttaa atatcactaa 1860

gaatttaaga tccatagctc tggcgtgcag tgttagattt aaataagtgt attatttaac 1920

tcttagagat ttcaacattc atcttcacct tacacttgct ccttcatttc cttattattg 1980

atttggaaac cacatttatg gttctatact gtatatatca cattgaatgc tttaattcct 2040

tgtgctttca gaccgcggtt gttgcacttg gagatgaaga attgcattta gtt 2093

<210> 1267
<211> 1925
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203239_G1, chr5:192407488..192409412, Cluster 8

<400> 1267
aaaattagta gtagtagtag tagtacgtcc cactctctgt ctctccgaaa atgtggatgg 60

atttgcggtt cgttgggctg tctgtctgtg tcaacacaga aggacagagg cagactcatt 120

caccgaacaa agtacgccgc accctgacgt aatattatag taggctactc gttcgcctac 180

tcgtgtttga actaaaggcc ggcagtatga ttgcgtgtca aaaggctcat gcgcgcgcgc 240

ttttctgccg attcaatttg attgagggag ggagacggtg aaattagtat atgtacatgt 300

atagaatcca ccggtttaaa ctttacaaaa actcactcca ccaaatcagc tcgtacccat 360

aaacttcaat aaatcccgca aacaaattgc agccggactt aacacaccat taaaaccaac 420

tgtttagatc gccggaaacc cttcaatcca ttaactactt aaatacaatg tacaatatta 480

tttggatctt cattcatctc ttctcctctc ctaccaccat gaccccacca ccccacgctg 540

tctctcatgc cgtcgttgac ctctcttttc ctaaaatcgt atagttagca cgaactataa 600

tctaataaaa taatgcgatt tgaatcggga cctgaggtga aggttgtgat ccagagtgaa 660

actgacataa cgagggggag acaaagtgag atcatacagc ccacccgagt taaatggttc 720

aggtagtact gtgatgcagt ccgtatctat gtattttaaa atttcaaacc aagccaaatc 780

aacccataat cgacgagcga tcagcggcag agcaacgcac gtaatggaaa gcccaactag 840

gcgttggaat gtgtaataag atactcgaaa acggacggac ggacggacgg gtgtgagtgc 900

cgatgcatcg caacaaccac agccagccca gcccttcggc ttgctcacgc ggcgaccgtg 960

ccaaaaaggc ccatgcgcga ggcggcctgc cgcgcccact gccccatgcg cgccaaactc 1020

gccgacctct ctctcgatcc ccgcggccga tgtcccgtgc ccctcaaatg ctctgcagaa 1080

atgcacaacg caagcaaatg cagctcaagc tgacgcaggc agcagaggca cgcagtgcta 1140

ttcactaccg ccatgccgcc ccggatcttt cacgtaaaac aatggcaaga aacgttcgta 1200

tacggtgaac tttgtcactg tttctctgag ctcaaacttt gtccgtagga tttttagaca 1260

ggaagccccc ccccccccca acttctaaaa tcatacaaat ttgctcctgc gactattctg 1320

gaagtagttt tagctaaact gacactacgt cagctgtgca acatagcgcc acatcaagtt 1380

taagggaggt aaaccagtct atattaataa tttagtggct caataggcta cattattttt 1440

aaaaaaaata tatattacaa aggttaacac gtatcattgt ggtttggact tacgacgagc 1500

gattgtcaaa taacgtcttg agttgagtcg tgtgtactaa ctaagacgtg agtatatgta 1560

acacgcttct tggtttgcta atgatccgcc ggctggtgcc actactcgtc cgtcgtcctc 1620

cgcgcgatca gggctagccc tggcgggaag cagggtgtgc agctgccctg ggcctcaaaa 1680

tttgtggggc cccttagata tgtatagtag gtctataggt gtcaggcttt aaaacatttt 1740

ggtccagtcc atctcttcga aaaaagtcca ggcgagagaa aaaaataaac cgtccaatcc 1800

atctgtcatg tgacctatat tccctaattc ttaatccttg ttcctcgaca tcgtgacgtc 1860

agtcgtcacg cacgcccgca ccagctcacg cgtcgcagtt gcaacctatt cccaaacagg 1920

gcgct 1925

<210> 1268
<211> 1505
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203488_G1, chr5:193733588..193735092, Cluster 8

<400> 1268
cgataataaa gttaaccaat gtgccaactg ccaacacact tttcagggtg cacacccact 60

taaggcccaa tcaagagggt ccccaccaga gggtgacccc ataggacaga aaggggttg 120

atcgatacac cccatttgtt gcctaacccc ctaagtatgt ccatctaaca taattgcctt 180

cgagcgtacc tcgatgcaag aaagcacaaa tgcgacacat ctaaacaccc catttgaagt 240

cggtcaagtg gttacaatgt gcaacatatg gatccatgga cccgcctctg cttgcctata 300

aatagaggtt cacacctatc cctcttgatt catggcttca agtgaagagt agcattgctc 360

cattttaccc ttagtagtgc aagatagttt agtgtgggtg ttagagtagt gagtttgttc 420

tagtttctag attaatcttt ttggagagtc aggtatagct cttatacccc tttttagtaa 480

gactttactt cgtttaatat gtttattctt tatatacttt actaagttgt tactttgtac 540

aactttatac ttactatatt attgttgtga tatatatatt atcttatagt cctacatatt 600

agatcgatga tccaagaccc acacttgtat atgaccattg ttttttcatt tcatgcacta 660

attggcctat gtagagtagt gagagtacat gtaaacatgg tgtttatact agatcttcta 720

ttagattgcc gcttttgcta gcatatgatg acaaccatgt ttatttttt tatatcttat 780

catgtggttt aagcaagttg ttaaaaaggc cggtgaggct cccgaaataa ggtggctgct 840

tcgacttgga gttttgtcct cctactatct caacgacctc ctaaggcttt gtttggttac 900

ctgcagtttc tcaggatgag ataaaattta tcaactagac atccaaacag tttgtattcc 960

atgtcttgga taatgtgcta tctgaaataa tctcagttat caaccataca ctacatttc 1020

ttgggtattg tgcactatct agattctgaa aatgaaccgg ttccaaacgt ggcctaagta 1080

tacccattat atatatagag tcgatctatt tgtggtaatt gtacgattaa ggtagaaaca 1140

gcaaatcctt tgctccccat aaatataaaa cagttcatgg gcatgacgta cgtacgtatg 1200

ctggtgcact caaacctgat acggccgcat catgtagtac tccggttccg gtcaaagcgg 1260

cacacgcgtg aatgaatgcg gtacgcagac gagcagccgc aatgatacgc cggccacgct 1320

cagtcagagc atgcagcgca gggcgcagcg gcctccgcag acggcaaccg ctcactcctc 1380

cagtcctccg gcctccgcag catcggcatg cagctgccac atgattgccc tcctcggacc 1440

cctcgcctcg ccgagtcgcc gggatcaatg cgacgtgatg ggctagcaca tcgcctatac 1500

gttcg 1505

<210> 1269
<211> 1929
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203661_G1, chr5:194563445..194565373, Cluster 8

<400> 1269
ttgatgtgat aaaacaatat aaacacgggc gcgagagaga gaaaataagg gcctcttaat 60

atattgtaga catgcaaact tggacctaaa ggtcagttct gtttgaagag tatacttgga 120

tgaaagaagg cccaaatgca ggtaaggtaa ttcctccctc cgatcgcagc caaattggat 180

ttggagagca tattcggttt cacgtaggcc ctaaaagaaa gtgcaaggag gaaaaagcag 240

agaaaccgcg ggatggtgga acccgtggta ctacttgtac ttggactcat cgcactagcc 300

aagccagcag ccatttgtac ctggccagta gtcatatcag tggaggcaca tgcaccgctg 360

tttcatagga tcatatagtc tagtttcctt tgttttcctt taccgaatag aaaataaaaa 420

agatcgatct ttgtctctct ggagcttttg taaaccctcc cggggtgaaa aaagcttttt 480

tggaaagcat gtgcagcaca caagaatttc atgatgattt tacatgcatg gctctctttc 540

ttcttcttct tttttattat ggaaaagcag tgctacctcc accacccctg ctctgtttca 600

gtctctccgg ttccgaacaa ctgcaacccg gccggaactg agatggatgg gaacgtattt 660

ggattctaaa ctggaagtgt gaaatatata gcgaagaaac acaggtacgt agtatgtagt 720

agtttcccaa gaaactgaaa tccacgtggg aacaaaaaaa ccgataggcc ttatctggtt 780

ggtgctctgt ctcggaccag ccatgaagtg gaagcaaccg agagctgcaa ctatctcttg 840

ctagcgtgct gaggtagtgg cagcacagca cgccgcaggc tgcagctgta aaccaacaga 900

gcggccgaaa tatccatcac cacgattcac gcgccaactc tccaacaagt tgcgagcgtc 960

gccgacgtcc cccgctcggt tacccttctt ccctccgcgg cagctgcagc accgtaccct 1020

gcccagcact ttctcgtcct ccaccagttc cgcttccggc ttccgccgtt cggagccagc 1080

caatgcccaa tgctgttgtg ctggtggata gcttggctag cactccaatg gatatggatg 1140

aacgtacggc cgataaggac tccctagtca ggagtcacct gaagccggga caggcggatt 1200

atgcatgtca gaatcgctcg tggcggggca tcctcctttg gatcatgcta ggtggctgtg 1260

tctgtgtgtg tttgtgtgat cagtccactg ttcattgctc gttctggaac ctgaattttg 1320

gtggtggtgg agtccatgaa attacagatt ggttcggaat gactagacgt cgaggggtgc 1380

agtggccgtg caaagtgaca ttgcaatagc ctcaacgaag tggcagatta gacagttgcc 1440

gtgcaacagg accgaccgta caagcagtac tccgatgtcg tccgctccgt ttgcgacatt 1500

tctcgtttgt catgtttctt tctgcagcaa gcagcgaaat tggtcgacac cagcaagtat 1560

agagtataga cagtagtatt ttttttatc caagtgcacg cgttgttcaa aaataagggt 1620

ttttatagca tgcctatcgg tcaaactttt tttaaactaa actagattta aagttatatt 1680

agaaaacata tgtatttcta aataagttct tttagattcg tcagctgaga tagaaactaa 1740

ttattttagc ccacaaaaaa attggttttt cctgttacgt tgcttctgct gctgcaaatt 1800

aaggcactat ttgggaacac cgtttttcca aactgcagtt tttcaaatac taaagtatac 1860

tttagtaatg acattactac agtttacaat gcttcagttt tcgtatacaa cagtatccaa 1920

tacattaag 1929

<210> 1270
<211> 1483
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203772_G1, chr5:195132053..195133535, Cluster 8

<400> 1270
gttataatta ctcagtattt aattagttat tatttgtaaa taatataaat acaattagcc 60

aagtactgtc atcccatccg ctttattcta tccgaataaa caggaaaaat aactcgtcat 120

attcatctaa ccaaatatat aacatagata ttcatatgac atcactaaat atatatgcat 180

ggagtggagc catataacca aagacacagc tacagggctg aatggacgac cgcgtcaccg 240

tcaaagctga aatgccaccc aggttcacgc gaagaataaa ggccagaagg gtgttccgac 300

cccagacttt ccaaaagggc aaaatggttt tctctgctac gataacattt aaaaaaacgg 360

aacattggtg acaacgacga tgtgccacat tcacgggagg tgacctgccc tggtgcccac 420

tgcccagcac gactactgtg tactgctcga gaaagaacac ctcgaccacc ttgcatttag 480

ctgttgcgcc tagcttgctg aagattgcag aggcacgagg tcgtcggctg aaaactgctc 540

tctagcccgt tcgctgatgt caagctctct ccccccccccc ccccccccccc cccattccct 600

tcgtcctgtt cagctgggct atccagcccc aaatctccgc atgctgacac gggtgccggc 660

cgctggtcgg tagaaaccgg cagatagcat aggactggag cgccgccgca tatgttatcg 720

gtttgtataa tgcaaagttg caaaccgcaa ctcttgtcgt gcgctgcgag cacggacgtt 780

gagaaggcat cacggtcacg gatgattggt cctgtgagag ggacgcgagc cgcccggctc 840

ttggcagcca caagagcgaa gttggcaccg ccggattggc cggccgccgc tctcgcgtat 900

gctccaggcc tgaagcaatc tcaaggccgc cgttgtgaca ggtgtcgcct cttcatgata 960

cgtatattct gtgtcccgag gtgaagccgg ggactgggta ggcgaagaga aggaaaagaa 1020

tgagaaaaaa gatagagaat tctaccgagt tcactgtttt tgacccaaaa tattacctaa 1080

cccgaacaaa cttgacacca ctcacacaac aacaaaaaat agaggccaac tcaacctaac 1140

ctcatcacac taggcaaggg tcgagtactg ggcgtgccaa acgacccaac cttgatccga 1200

ccagaggcgg acccagagca attaaaatga gagtgagggc acacttataa agacaagcac 1260

caagacacca gagcgggggc atctaatttg aattgagcag gggaccttat gatgaaatct 1320

agtctctact acttgcaaca aagaaatgag cgagtgtcta tgccatcact caatcataca 1380

taggtctgcc cctagatccg acttgagcct gacctaattc gacgtttgaa caggtctaat 1440

atatgtattg cttgttttca tgtaatcgtt atgcactaat act 1483

<210> 1271
<211> 1839
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204491_G1, chr5:199393768..199395606, Cluster 8

<400> 1271
ctctgcagtt tagaacaatc agtagaaaga aagattagga ggaaattttg cttaatgcac 60

ttgctattga tatttgttta tttgtgatgc taacaggact tcacaaacac taacaatcaa 120

actacaccct gatattattc tcttgttttt gcggacaata caccaagagg aggtgttagc 180

gttaacacat gtaattgatt tgctccaaaa gggattcagg taagtaattg tgtttcatat 240

actgtaaaaa aacataatca actttgcaca atgacttatt ttgtgaacta gagtaaaatt 300

tatttttgt atgttgcatg cttttgcaaa ctcataaaaa acttatttgt gagtagctaa 360

acatgttcct tacatcaatt catatttctt ctattttgta aaactcatac aaaaccaaca 420

ccattataca actgcataaa ctttggagag gacacaattt cttacttata tttatgttcc 480

aacgacttac caatatgagc tagtgggtca tgttggacta tcaagaatcc acaaatcaca 540

agaaactact ctagtgtttg gtaaacattt atatcatcga ttgtaggacc catgacagat 600

ctaagaacat ctagtgtttg gaaaaaatac aaggcatcag gcaaacaaat taaattgtgt 660

gcaagaagta cataaatggg atataaatat taggtgcatc aagtacataa ataatgatac 720

aagttctgtc gtagcgacac ccatagtgaa gcaaatgtag aattacaaat ggataaagtc 780

ggttatatct ttacataaaa aagagagggt attgctgtaa tagatatttc aagccaacaa 840

ctactacttc ctaaaaaaga agagagggtt catactccat ataaatacta gctccaactc 900

gcgtctgatg atgatataat ccgattttta tactttctgt tgtacgagaa tatttgctag 960

aaatatgtga cctatataat tcctgtactt gaataatttg attcagagga tcaaatcttg 1020

tgcattcgcc tatcaaattt ggagcaagat gcaagacaac ggtgttgcgc gctcactagt 1080

ggcttcacgt cttcttgctc aacatcaatg tgtcgataag tgaaggtggc aactgaatct 1140

agaggaggct caatgggggc ggtgactgca aaagaggctc gagcgagtga cggccttggc 1200

tggatctaga gtgctggtgg acgaacgagg tggaggcgac gatagatctg gaggggtgac 1260

aaatccggag gaggacgaga cgagatgggg aggggactgc gtgtccagcc ttctgacgag 1320

cgttttttgt ccccgtgaaa ccggactgaa ccggggtcac actttctcgt tggttggctt 1380

ccaaacgcca aaatagctac actggtattt tcttgcacga gggcgatata acttgggtga 1440

aggctgaaaa acccacgtgg tttttgggct cccaaacgaa ccctaaaggg tttccctgga 1500

tgatatggtc atctaagatc cgatacgcaa aaagtaaggc accatcgttt ttattctaaa 1560

taagcatatg ctcctctatt aagcatcaag tcgatcattt ggatcacata tatacttaat 1620

taatccctcg acgcacaaga aattgcatcc tggttggcag caacgaagac taaactcacc 1680

gatcgattca cacttttatg aagtttgtag taagctatgt ggcccagata gagattttag 1740

cgaagaattc tctatcaagg cttgttcagt tgcatcgaat aggattaagg ggattaaaat 1800

ccctttttat ttaactttga ttagttgatt aggaaggga 1839

<210> 1272
<211> 1466
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204917_G1, chr5:201693435..201694900, Cluster 8

<400> 1272
tagtaaactt atttagagat agatggtaaa tatttttac tgctttctat aaacctgatt 60

tgtgatgaaa gggaccttga tttatgatgt aacgagttac agggtaccgc gccacactac 120

cctccaatgc agttaagtct gacaaccggc acaagctctt gtggcattct aatttattgt 180

atataaatag tttcaataag cgaacaaaca tttagaccat cggcggacta aaataattcc 240

tctaacgata gacgacaaac ttcgcaacat tggtaatgtc aactaaaggt ccgtttggaa 300

actttgtttc tcaagaccag tttataatac cacgatttaa tatatgctat aatataacta 360

tgatatattt tacattagtc taattcaaca cctgtttaga gacatagtat tttagttgta 420

atataaatga agactgtagc tatgcacagc caagtttttt tgaccccaaa aatacaatgg 480

tattaacaaa actatggttt aatacaaagt tcttacgtgt gctctcaaat gtcttttagt 540

ctaaaatact atgatatctc aaacgtcttt tagtctaaaa tactatgata tgctcaaaca 600

ggccctaagt aacccgaacc ggcgaacaag gaacagtaac aaaccaaact gctggtgtga 660

cagggcatat cattatcgcc attgcacatc tcatcgttta agtgccatca agctgtctac 720

tgcaaatata tttcaattac acgggataga agcataatta agttccaaca atggggtatc 780

atgaatcgaa agcacaaaag ctagaaacga tctattcaga ggcatcttca gccgtcatgt 840

agtgaagaat gaccatagct tcttgctgat tgattgactt cgcctctctg aatcatcatc 900

gtcctgctct gctccaagtt cacttccaga aggcgtcatc attagcacat caggcagtgc 960

aacttggcca tccacgatat caccatcttc ctcaccagca ccctgggcat gggcatcacc 1020

aacttcagac taaaacaaaa cgatagggtt acatttagat ctgggctctg gtgatcatac 1080

gtgctatacg cttataccca tacaagcaca aatggcccaa atgacctatg tatcgaaata 1140

ctgaaaatca attcaaagat tgcctgaaag gaatgtgtag ctacagcatt ggcagtacac 1200

gtgagcagta cagaacactg cagcaaaggg tattattacc tgcgaaaact ggtgcaactg 1260

ggatgcgcca tattctgcag attcagaggc tctcttgctc tctggggcag gttcctcgtc 1320

aacctttgat gttccttctg tgccatcagc agtagcttct aatgtatgct tatttcctgc 1380

cttcgcagtt ttctttttgt cagcttgagc tgttacagtg gcagcatttg cgctttggaa 1440

caatgcaaca caaaagtatt agtttg 1466

<210> 1273
<211> 1825
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205050_G1, chr5:202412582..202414406, Cluster 8

<400> 1273
ttcccgatac ccgatcgatt ccgtctttcc gtacgtgcct gcatgctcaa gcatatatag 60

atagaatttg tcgtaaggtg cagtgtcaga cgatgtccaa ctggttacgg tcatcaacat 120

atattaatat tagttaacta atggcatcat cacggacgga tccgaattgg gataattact 180

agaggtgtgg agacagacaa catataatga ctacgagacg tcatatacaa atacaaatag 240

acattatata tatacttgtc aaaaagtgca agcttcgtcg tttgatggac acaagtctga 300

gttccatata tcggcgacga gagaggcgca ttgcgtgcgt tcgtcgagtc gaatcgcgta 360

ccgtcgatgg ggcgcgcgac aggccagcaa gtgattatta tactagcttc ggtactaatt 420

aactatagct tggccgcgcg ctgattgatt actgtacaga gaagcaaagc atccgatggc 480

ggccggctaa ttaaaaacct gtggcgggct aaagacggat taaagtagct atagctcgca 540

tgcaagtggg tggggagaag cgattaaatt agattagctc tgggattaag ataaccccga 600

gcggcgcgct gtctcttcgc cggacatgtg ctcgcccccg cgcttgtcgc gtttccatcc 660

accaccgtac cgatcgatcg acggcccgcg cggctcatcg atcagctctt ccggcctctg 720

ctgtcgtcca tggcgcccgc ccggccgcgc cctcgatcgc tctcgttaat ttggactttg 780

ttggacagcg acggcggcag gcaacccagc cgtagtaagc aagcaggcgg ccggcgtccg 840

ttgctttatt ggatggggct ccatcgaaag gctagttgtc tgcgatgacc taatcggggc 900

taggtgcacg caatccggcc ggccggccgc aatcagaggc cgcattattt cgccacttgt 960

tgcgattagt agtagtgctt tgccatttgg tcgtctaccc cattcgcatc gcagccttca 1020

gggtatcgtt tcgtaataaa gtaatacgta tgttgttatc agctttatcc gcctcaaatg 1080

tcaatgttaa tttagcacca aattgtgcaa ttatatatat tacttattga agacttgggc 1140

tacttattgc ggtccatgta tataagcata aactgtgcac tagccaacaa tcctcgcctc 1200

cggtcatcgg tagatgcatg gtacaatgat acagtataat ataaagggcc ggaaaaagaa 1260

catgcaatga tgcgccacgc tgttaaggga aaacccaagg tagacacgtg tcgaccggag 1320

gcgaggagcc gccaggttgc acttgcacca gctagcgtcg gtagcgatgc cgatgcggca 1380

tgcatccgag tgggtcccgg cctggccacg tgggaaaggg agcgggccgt cctccggact 1440

ctggagggac ggcgcccaca cgcacacgtg gggggcggcc cctgcgaacc gcagcatcat 1500

ccagcgctgg ctggcgtccg gcctgttctg gtgcccgtgc ccgtgccctg gccaggagac 1560

gtcgcgtcga atctttcatg ctgctgccat gggccttggg ccagcgacgt gaccaggcgg 1620

cccgcgcggc cacgtgatgg tgccgggtga tctccgcgcc gcgccctttc cgttccgccc 1680

ccggtcgctc gcgccccgtc ccgtcatttg acactgctga cccgcggatt gctgctgcta 1740

gggcaatcgt cgatcgtgtt ttcaatcgcg gattgctgct gtagcttgta gatcatgcaa 1800

tcgtcaaccg tgtattcgtg ttgct 1825

<210> 1274
<211> 2362
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205661_G1, chr5:205827685..205830046, Cluster 8

<400> 1274
gcatagatat aaataagatt gttggaagag aatgttagca ctgttcctct ttccacatcg 60

tcacccgctg aagacaatac tagtacccta ctagtaccga cgctgtggcg ccaagggccc 120

aaggcccatt aaccagcgct gacccaactc attcatgaca gaactaagag tagctgtaac 180

aggaacagga tagtactact tgagagagct cacaaacgtt gcaaacgaat cgctagtttt 240

tataatcctg ttcctgacaa ttcgttcttg tcctcctcta tcttcttctt ccccgcgcgc 300

cgagctacca gcctaccacc accagacgag gagtaaattc gaattgaatg cgtgcatgaa 360

ccaggacagg acaggaagcg cttgaatgca tacgtgcgct cggctctttc accacgcctc 420

gctcgctctg ttgtcacggc tctttcacca ggacaggaca ggaagcgctt gaatgcatac 480

tacgtgacaa aagcacggcg gattgaaggc tctgttgtca cggctggctc gtgacccttg 540

gtcgcaagcc atgaatgacg cgggatccat agggctagcc gggcagtccc tccctccctc 600

cttgtccggc cagccgggac gcgccgggct caggctcaca cctcggccgt gggcggagga 660

tgggctgttc ctttcggtgg cgcgtgtcag cgtgtgtggc actggcaggg acggcacggc 720

ggtctttggc cgatgggggt cggtgggcgc gagtatcatt gggactttgt catgccagtg 780

ccgccgatcg tcatgcgtcg tcggtgggcg cgagtatcat tgggatttgt cacgctagtg 840

ccgccgatca tgcgcctggc tgggggggac ctgcgtcgga gcccggaggc tagctccagc 900

ggacagagcc atcgccgtcg ctgctcatag cgcgtagcag aagggctgat gtcgtcttcg 960

tctgttccgg ccggtggtcc ctctgtcatt tccaaacata ttgctaccta gcactagcag 1020

tagcgagtac cgtgcgtacc agctgccggt gcaggtaata acacttgcaa ccatagtttg 1080

taggaggata ttatattaga cggttgccgg ggaagcagta acaatacttc aagatagggt 1140

catacttata ttaattatgc catgttctaa acctcgccca aaacacttct ttttagcagc 1200

tctaacccca gctaactact aatttgcgga tctgaaacat gacattagac ggttgggtaa 1260

aacgagaaat gcatgatcat tccgtttgca tgtcggtcgg ctacctaatg tggtgttaag 1320

tcactgaccg gtaagcaatt gctttcccat gattagtgtg ggacactcca ttcgtgtgtc 1380

ttgactcatg ggccatcccc ccccccccg gtcatcaaat ccatgcgata tattttgttt 1440

gtcttctttt atacacacaa gaaacgtttc tgccctaaaa tctgtgattg taacgcctcc 1500

ggtgttagtc acaaaccgaa caacgggttt aaacttttaa acacgagttg tcgagtgata 1560

atcagagctt tggttcaaaa aaattatttc aaaatagtga caatcggtta tctgaaaaat 1620

aggccataat ttaaactttt taaagataaa aaaccacact cttttgctta catattgacc 1680

ttttgaaaaa atgtgcatga gtattaatca tgtttacttc atattgcatc acataagggt 1740

gagcacaacc tcaagttgat gtatttgttt gatcataaga tgtttgttct tctgtgagac 1800

gatccttgtg tttgtaagta cgtagtaatg taaccaaatg ttgtttgatc atccaaacag 1860

cctagaacaa cttaggataa aaaatgagat agagttcacc caatgtggag acacggtatg 1920

ttcgtcatcc ccttcacgac tcgtctaggg ataatgaatt tgtggggggt gggcttggag 1980

tatatcagga ggaaatgcaa cagatttagg taattggagt tatgaaggtg tggtaggtgc 2040

gtaaactgcg ttgtcttgtg ttttttggta gctatctggc attgggtata ttgggaccta 2100

gaaaaaaaat gtgctaagtg atcagcaaaa tcttctttgt ttttgcccat gatctttaaa 2160

aatccatcta tttcttgcag ggttagcttg ttttggcttt agtgcatttc atgtaacagg 2220

ttttatatgc ccctaaggta tgggtgtccg atccttaacg attaaccgga aaagtacaag 2280

gtgtaaatct tgcatgggat acagatgatt ttgattgctt tgttccgaga ggaataactt 2340

tactttacat gatattgttt tg 2362

<210> 1275
<211> 1631
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_2058_G1, chr1:10816667..10818297, Cluster 8

<400> 1275
ggcttgaagt gttaggatgt cacgtattta tataggtaga gaggtgggct tatatgacag 60

atctaatctg gtacttatct gttattccaa taatattatt gttaatttgt actaatcata 120

ttagacctcc aatttaaata aaatttagaa tatattctat ttaaatttta aattaaattt 180

ttgggtgtta tacgcgagtt gaaaggagta ttttttttaa tatcttattg caatatccta 240

atttatatcg actttacctg aggacttcgt gtacaaacaa tccaactaaa catacatcga 300

tacattatat taccttatat ttttatttct aacttctgct ttattttaaa aatttaaaat 360

tcaagtctaa tttaaagata ggttaaattt tctatttcaa gcataaattg caacagaaaa 420

aaattcaaca taagtggaaa gtatttttat taattaattt atctatttaa gcaaatgctc 480

caaacaatac atataactta gtaggtataa ttcatgtaag atattttacc ataaaattat 540

ttaagaaaaa taattcacac acaaaccaaa tttttatatt taatatttat ttaaatttta 600

ggaaaatagt tttagtttat aactttatta taagaactct ttaaatttat atttttagga 660

ttttggtgta aagtgctaaa ctaggatggc ttgttgtgac ttcctatttt tttgttttgg 720

gacgtgactt aaaagaacta aataagatta aatgatttta tcacttttct aaaatcacca 780

gactttagtt aagttgttga ctcagaagaa atattcttac ttcttaagaa accatccaaa 840

aaattaaaat actgatatat ttatattaga agacgtacgt cgatctcaat ttctattccc 900

tttagttcct acttccaaac aaacctacac cgtacgtaga ccattcctca acccctcccc 960

accaatttgt ttaactaatc tcctagacac tcactagccc tcgtgtccct gcccatgtcg 1020

tggcggacat gtacacgtac gcactagctc cgcggaataa tgatgcaagt acaccaccag 1080

cgcgaacttg cacgcacaac aaggagagta aattaataga aacaggagat gaggagaagc 1140

agacaagctg caatggcgcg cacattatcg taatcatgcc ctggccctga tggagaaaag 1200

gttgcacggg aggcacccgc cgcatcattg atccataaac taaactagtc aggttacgtg 1260

cgcaacttac ttctattcgg cagcatgggc ttttgtttat gctggaggcg ggggcggctg 1320

tgtcgtctgc agagctggtg agctttgcaa caactaaccc ggtcgatcgc taattgttaa 1380

gattaatcaa ggacaatcta gtgtccttaa tcatgagtat cgtcgtcgtc atcatcatat 1440

gcagtgcctc cggtctggag ttgatgagct caatcaaatc ccttttggag ccacgtagct 1500

ccagcatcga gtttgactca taaacgcgca caagttgtaa tctgtagtgt ctccatattt 1560

cgaatcgaca cccgccgtta cgaaattcat actagttttc atcatgaccc tgaattttta 1620

gaccaagatt t 1631

<210> 1276
<211> 1830
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206222_G1, chr5:208920154..208921983, Cluster 8

<400> 1276
ccatggcaga cattgtttta tctgacatag tcaactgcaa aacactaagc tctgaaatta 60

gatcatttag gtcaacatca gatgagccat caaaagagaa tgtttttgc aaatttggtg 120

caatattctc ttagctcaat agtatccaat gacttcaagg ttgtggattc cataaaaatc 180

caaatatgtc tttcaatgat tggagttctt caaaactact ttttaatgaa ctaattgcaa 240

tatcaaccat ggccaaaaaa taattaattt caaaagcttt tttagcttca agatttgctt 300

cctcacaatc aatttcatcg tattgtttct tcctcttagc ttgatgtttc attggaagtg 360

atggccctac acccaattcg gaagcaaact ctttgccaat gatcaaacta gaagcaaatc 420

cattatttct atagtatctt atattctcat taggtagcat caatgcacat tggtcccttc 480

tctactaata tatcccttga cttgttatca agattatcct aatttcttga tcatagatat 540

cctcaataaa aacaggttgt tcatcaacaa tgacattttc tgtaggaggt aaattaacca 600

taggctcttg atcattcaca ttgttatcat tcatgttggt gtcaacattt tcttctggtg 660

tagagctctg atcttctggg ctattatcat gttgttcctc cataggaact atagccatct 720

tattttggtt ccttgaagtt attggattac tagaaaaaaa aattatccaa ggctcctctc 780

tgtgtttcta taaacttatc tactcgtttc ttcttcttcc ttttctcgga accagatgga 840

tactttctag atgacatgac tgtacgctga aattaaaaaa aacaccgtat agatgagcac 900

gatatgccta cctcctcgcg acaggtacac cctaaaccca aacgaatctg tttgcaggaa 960

tgatgctgct gaccaagaag aaggaaacag gacatgtgct agctagggtc aaagaaaaaa 1020

taggcaacca tatagatgag cacgacgaag gtgcagacca aaccagaaac gaagccgcag 1080

ctgcttatta gctggagccg aacgccaccg agccgatagc tataggcagc cgcagctcct 1140

ttgtttccca atcgttgatg gatggccaca agtgcactgc aggctgcagc ctgcagcagc 1200

gctgcagcgg cactttacat ccagggtcaa tcgcagaact ttctggagac gcccaacttg 1260

agggggatc cgacgtggaa ttgagacagc atgtgcctgg agcagtgtag tggagtagta 1320

gaatggaaca agcgtcaaaa cacttcataa ttcacagatc tgcacgtatt gctacctcct 1380

cgcgacacgt acacctcgtc gctcttgggg ccactgttct cccgttttgt ctgttccgcc 1440

gcccagtgcc gccggagccg ctgccctgca ctcctcaaac cgcacacctg gcagtggcac 1500

cgtgcttggt cgccgttacg cgtgagagcg tcgaggcggc acgccgggac gagggcgagg 1560

gcgagggcga gagcgagcaa gtggtgccgg tggggcgcac gtcggcttgg ggaccctgga 1620

cccggacccc acggccaacg acaagtggtc cgtgcatgcg cgctgacggc gacgcgtgcg 1680

gggacgagtc cctctcgcgg gttgtttacc aggtccgcgc gagctggccc ttggcctttg 1740

cttgccgtct cgagcggcta ctggcccact agacaactgg cagagtacag tcagtagccg 1800

agtagcggcg cagctcgcgt ggactgacta 1830

<210> 1277
<211> 1862
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206616_G1, chr5:211070037..211071898, Cluster 8

<400> 1277
cctaaatgtt ctatacgcaa gctttctaaa tgtttgccac acaagattac tgtacaggat 60

tactaaatgt tttctacggg cacgggacgc gcgcttaagt tactagtagc tattcaatgt 120

ggagtggtat cttcttcacc agcaacgact ccgtttctct ctctctcttc catccgtccg 180

cctggcctcg ctctccctct gctgccctct cctcacaagt tttcaatgct cctactagat 240

gcagcgtggc atcatgtatg tagagataag atcatgaaga ctgtaggctt ctgatgagct 300

gctgccagca taaagaaaaa aggaatagcc agcgctagtt ttgttgtttc acagtcaatc 360

tctactagta ccaccggtag tactagctac atctgttcga ttcatgtgtg acacttgata 420

acggggcacg gttaataaat ttgagaattt atctataaat tcgtaataaa aaaaagcatt 480

catagcacta cgcttttaca caggacgtcc ttttttttttc tctttccacc tgagggctga 540

ggccagccaa cagaacaata aaaagggaga acttgatcca ttccggcctc cacggctcca 600

cctatcagtt cacgaacctc cgggaaatga cgtatcaatg cataagatta ctccttttt 660

tttgaatcaa attcgtggag cttgtcatga cgtatgtaca tttatgcata gccgtccaaa 720

gtcaatgcac gtcgcatcgg tctcccatgt ttcagtgcca cttctagtag tagttggtca 780

taaaagagag gctgatcctc ctacttctac tctggagtac cacatcccca tgagtagtag 840

tcaatccggc acgcctcccc atggggagca aagcgagaag caattgcctc tggcttagga 900

aacagactcc caaggaagat ggtcaaccga actcgtttta aaaaaaaaaa tacagtctct 960

ataggctcga gatttcagaa tcttttggaa gcacctgaac ccttcatgcc gtgggttggt 1020

ggtgcaccca atgacgaact gctctgccat gcacgcgtgc agtggtagga gagtattgtg 1080

cgccaaatcg gggtgtcatg aggccatgga agtgccaaca tgccggtttg catatggatc 1140

caagcccacc agcttagccc aaccccgtag aatgaattct tcagtttggt cttttggtta 1200

tcgatcccga tatataccat tatcgcatgt gccccacatt caccaaggat ttaatgccgg 1260

ttcgtctctt tccattccag ggttgcgttg cagtgctgcg ccggatctgg gcgggcagaa 1320

atccggcccg tttgtaacaa ggcaaggcgc aggaaacgga accggcggcg ttgcgtgacg 1380

ttttttttt ctttattgtg tttgatttta catgccatta taaaaatctt gttgacactt 1440

gatagagatt gatccagcca tgtatcatca agggctaaca acacggccta ggttacaatt 1500

aacctgtcac acacatagca agcaactcta agggttgatg aaaggcgatg taaagaccga 1560

ttagaacgat ccattctgtt attgtacttg gttgaggtcc taaatttctg gcaaagaatc 1620

tggttccgca cgttagcacc atcatcatat atactcccgt agtctggtat atgaacgcaa 1680

cacagagctg acagcctaac agccgtagcc agcacaaaaa tactagtgct gtgaagcgcc 1740

atacgcaaac agtagaagcg tgctagaact agaattgaac ttgcctgctt gcgggtggca 1800

ggaaaactca accgggcctc tatatatgac tccagctgtt cccagtattc ccacccaaac 1860

cc 1862

<210> 1278
<211> 2179
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2067_G1, chr1:10840663..10842841, Cluster 8

<400> 1278
gctttagtag ctagaacaag gacagggaaa aggaaagaat aaaccaatgg aatcagggcc 60

aggggggat taatgtataa taggtagatc atcagccgtg atccagctgg gagcatgcat 120

gcatgttcag ttcagataga tggcatcatc tatcaccgcc ggtcaaagaa atggggaatt 180

attagaggcg gatccgagca ggggaggagc tagccgctag cccgctaagc caatgcgtgg 240

agatgtggcg gcgtcatggc tcacatggct tgcataagcg cgctcttctc gcaaggcgcc 300

aacccggttg gggttggggt tgggcgtggg cgtggctagt caaatttggc cgcgtccgtg 360

gaagtggaag tggaacgccg ccgcccggtc ggtggtccaa tataactgtc cgttaattaa 420

tatatactac tactatgtat aagtataacc cccgtcctcc tccggatcaa gattatttgg 480

tgggttgcct gcagctcccg cctcttcagt acttataata ctgtgttaaa tgaatatcgc 540

tagattcatc atgtagtata tctagttaga atcatacata tagagttgtg tgtgtgtata 600

tatattcatc gtagaataat tcaatacaca tgatagagtt gtagatatgt atatattcat 660

cgtagaataa tgcaacttat atataacaag aattacaact tggctccttt ctggcgcctg 720

gtagtacgta cgtaaccgga ggctcgcgca cgtgtggggc cgcgcgccat gatcgttcgc 780

cgacttcctc ctcgatcgat cctaattcta acctacgtta atcatctctt ctgtattgat 840

ggcgtgcgta tgcacctggg gctgcagggc agttgtttat gcagctcgtg aagcgccacc 900

cctattgtac attcttgctt gctttatttg cgtccagtca tctggtcagt ctgtgcacga 960

aacctgctac tagcaaatgg cgcgcgatcg gcggtggaag ccaaaaacgc gttgtttact 1020

gcagcttctt ccccacgccg tgcgcggctg ctgccactgg caatacttac agcgggcgtt 1080

ggaggatgga gatggagcca aaatgttggt cttcggatcg gagctgcagg gtcagtgtcg 1140

tcgtcctgtg cgtcgctcgc gcgcgtgtaa ctttcgccgc gaaagctgat cgaaaaggac 1200

atcaaactca ccgcgccatc atcaaactca aaccctacag ctccccccctt ttgtcttgtt 1260

tgttgctaca gatcccctcg cgcgcgtgtc ttgtttctga aacgcatgga tcgatgcata 1320

gacatggaca tccatgtaga gagatcgcat cgttgaggcg cctctgccta gggaactcga 1380

gctcttttct tcttcgcgtc gtcagtgaac gacagcagct cacttcctgg cctgcactgc 1440

ccacatcgtc gccgtgcgtc gtcagcgttc gaatgatatg gcccggccta ggccaactgt 1500

cgcgcggctt actgaacctg aacggtgggt gcagttggag cttggacttt tgaagccctt 1560

gcgatgagat cgacagacca tcactccgtc cgatcctata atagtcggtg tgttttagat 1620

ttagacacgg aaattaattc tataacaagt aggaacgtac atgaaacagc aagctagggg 1680

agatgcaaag aaatagagct aggcagccaa acaagatgaa ttttatgtac gttcggttgc 1740

tccatgtcag aaagtgagca caacagctat tctagagggg gatacaacat acaatataca 1800

gttcgaatcc tactatcacg tcggctattt taggtcggat agagcacgtt gcatatttgc 1860

atgccgatct tccatatatt ggctagtttt tcggtgccat ttagaatgga cgtcggacga 1920

tacgtggatc cagcttgctg cctgggcgca agtagcgtcc gctaatttta tggctatata 1980

tatatatata gatatgctgt gatatgtcgt tgtcacgacc gtcgttcaaa cttgacctct 2040

aaggctctaa tcatggagca agcgcaagga cggtgagggt gcagctccag actgcacgta 2100

caccacgcaa cagacgtagc acccaaatgg tgctgccagt gctcgacctg ttcctgatga 2160

tgaacatgga cctgagtgc 2179

<210> 1279
<211> 1642
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207364_G1, chr5:214518413..214520054, Cluster 8

<400> 1279
cattaggtac tctcccacag tttacagctt tgcactgttc gcattagaat atactactcc 60

acatgggaca tgaccgacgc tctctccctt ctctgttctc ctgtcccaaa ccatcttgtc 120

ttttttttct ctctgtctct ctttttttctc tctttataca tactttcatt cattcacatc 180

tcctagtcga tgcccattaa aaaaaggtat atatatatat agtgttcgat aaagaggatc 240

tctgatgtag ccagcctgaa aagaacctgg gaacagtttc atatgcaagt gctcacatat 300

tcagagacgg tcgcgtttgt tggaacagag acatcacaag caagtatgct tctaaggtat 360

tgtagagaac taagctagag agagagagag agacttattg taaggattta tttggtgaat 420

aacagttgta ttttttgtgt agcatcagta gtgcttggaa tgttgccaag gatcggagcg 480

gtcagccttg cagttcatta ctgaactctg ttttttttttc tgtttctttt tctgtatcca 540

acaaagctac taattaaaag aaccatgtat attacgttat gtaaaggcca gggttcccac 600

tcgatctgat tgatttcttt aattaatctt agcagttggt cttggtagga ccgggcggag 660

gagtcgaagt ctttgccgca catgcaggca acgtgatccc atgttttgta ttctcatttt 720

gtttctcctc tcccttgttc caaataccta atggccctaa ctaactgatg gaaacagtcg 780

ctagtggtat ttggcaatga atgatgatga gctagctagc tagctagccg tgtattttgg 840

ttagctgcag ctaacaccaa ctgctttatt ttggttagct gcagagcact gttacagtgt 900

acagacgaga cgactctagt agagagagag agtcctgcat cttgtctgtt ccaccgatcc 960

agtacacgcg cacacgtacg tacgtattcc tgagtcctga ctacgaaacc gcaacggctg 1020

acgccttgtc agcttgtgct agtggcacgt cggattcagg gggcgatgcc aggtcagtgt 1080

tacaggggac gtctgcgcgc gtacagctgg cggcacccga acggaaggta atcacgtcac 1140

gtccgttccg tcggggctgc cactgcacaa aacctgggca caagtccacg tcgagggagt 1200

gatccgcgct acgtgacagc gacgacggaa caatggctga cgacctcgcc aaatcaaatc 1260

aagtcccctg caccagcacc cccgagtccg aattctttcc atggtttcgg ttcagccgtt 1320

gctttttctg ccctcagctg agcacctggc agtgtgtgca acaaggcgat cgagaacgag 1380

cattctatat gacttgactt ggtgaatgca ttcgtggcac ccctagctat gaaccggatc 1440

cacccattcg acggcatcca tgtatggcct cttccagcgg cctcggagca agatccaggt 1500

tcgattcgat cctcgagcga tcacaaagcg ctaaaaatct catgacgtac gaatatgata 1560

aatcaccgat cgtagaagtt tcaagcacga acagttttga gacacaatct tagaacctgg 1620

ccaaaatgtg tctaaaatcg tg 1642

<210> 1280
<211> 1786
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208518_G1, chr6:3874129..3875914, Cluster 8

<400> 1280
cggggttgct gacagagtca catgcatgtt agaggggata gaatagggtg gggaaaatat 60

aatataatat atgttagttg gtataagata gatatataga gtaattgtga ccataaataa 120

ttattaaata cagtagagaa tatctcttac caggatggaa tattcctttt agtgtagaga 180

aatagggtat aacgagtgtg gataacctta gattcgtata aacctcattt catttaaata 240

tatagctgta gatgcatgat agatataaaa tttaggccga gcttcacttt aaaagtttca 300

aatctatttc agcttcttct atctaaatag atccagctcc atgagctcta gcttcaaaaa 360

aaattgaaac tagaggccaa ttttataaaa aaaaattgaa ctcctcaaat ggttcttcag 420

aaacattgtt tttatacctc ctcatgaagc tgcactaaaa ttactcatca tgcaattggt 480

tacatgacct accgatttaa atatatagct gtagatgcat gatagatata aaatttaggc 540

cgagcttcac tttaaaagtt tcaaatctat ttcagcttct tctatctaaa tagatccagc 600

tccatgagct ctagcttcaa aaaaaattga aactagaggc cgattttata aaaaaaaatt 660

gaactcctca aatggttctt cagaaacatt gtttttatac ctcctcatga agttgcacca 720

aaattactca tcatgcaatt agttacatga cctatcgatt tatgtccctt tgtttgtccg 780

ctaattatgc atcaagggta attaaggaaa ctcacagaaa ttaattgtat tacagaagtt 840

ggagtctatg tacaagccaa acactcttga atcctgtttt accaatttgt tgaaattgat 900

tcatagtgaa gttggaaaac cgaaactgta acttttgaag tagtaaaacc ctcccaaaca 960

aagcattaat cccattatat tttcttcaat ggaagccgcg aaaatggtga aaccaacctt 1020

tatctggcta gacattcaaa aatcaactaa ttaatcgtag ttttaacaac aaaaaaactg 1080

gtggttttga gacaagagta gctattttgt ccaggaccag tcttgcctct gataataaag 1140

gcgagcgcgt gtacttgcct ctgattacac tctaacaatc aggtgcggcg gtcaagttgg 1200

tgcacataca cgcgccgccg ccgccgccgc catgcatgca tgatgctgat gcaggcctct 1260

tgccgtggcc gatcgacggc gcgtgtcaat ttactccacg gtggtccaat cgccgcacgc 1320

ttttatttac tctcacgcgt ccatgaatgc actgggccta ctcgtgcatg aatgcatgct 1380

gggccacatt cgctcgcgtg cacgccggcc tgcttcattg cacagtcggc attctggtac 1440

gttgggccgc aatacagata accgccttat catgttgatc catacgtgac catgtttact 1500

aattttgtat ataggagatc tgttttacta gagagagatt ggctctcccg ggttgtcgtg 1560

gtgagtcgtc gtgtgtagcc gtactctcag tatgacgtcg tttgttactc cggctcctat 1620

atcgattcca tcactgacat ttttgtagtg gtgcacgccg agtcccacat atcagtctca 1680

tggtacggtc gtacgtggta tggctttttt tatcgtcatg agctatttgt cacctgtcag 1740

cgtgcgtagg catacactcg gtatgacgtg ttgtcccgtc cttcga 1786

<210> 1281
<211> 1421
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_217622_G1, chr6:65268295..65269715, Cluster 8

<400> 1281
gtctaattat tcaacaggaa tcatctctgt ttcttcttgt agctcgttag tggaaataat 60

atctatcttc ttcatcctac catgcatgtg acaacagctc acacacctcc ggatctcatc 120

tctctgacga tgcatatgct aaaagattgc tagctagtag cagctgattg gccctgtaag 180

gttgttgtga atgcttatgt gttatggctt gctgtaacga caagcactta ttaactatgc 240

aaccaatggc agctgcttaa gatatcgcta tccacaagaa gactaacact atctccggca 300

gtgacctatt ttaaacatca ttctataaat agtacaatct acattgtaaa ataatacttt 360

gcacggcctg ctgaagataa caacagcaag taataaggtc tcctctcgga acgacatctt 420

cagtgacata ctaaagctat aaatgcttag gtttaatagt gtgcggaggc ttatgatgat 480

gtctttgtgg ctaaattctc gatagccagc cggtcttttt cttcctctct gctgtgtatt 540

tgtttgtttt ctctctcggt cctctccttg ttctctcctt tttcactatt taataaaatc 600

taaaatcgtt tccctgcagc cttttccctt aaaagaaggg cgggcgggca aacgagacgt 660

cgcttgtttt tatatatcgc cgatcgaaca atcttttaat cagtagcatg cgttctgttg 720

ctgctgctgc atgcgttctg ttggaatcat gtttcttgta gctttgttag aggagataat 780

atctatctat cttgtggatc tggatcacct ttttacctta gcttggcaac aaaggatcgg 840

atcgatgatg catgactcgc cgcagagctc cagaacggcc ggtggctctc tgctggctac 900

ggacggcacc gatgcatgca tgttctcttc tcctttgtgt tttttcagtt tccatgcaag 960

gcgaagggct tggcaccggc ctcctctact cttcatccat ccctatacca tgtgacagct 1020

cattcctctg cccggccggc attgatgagg tgaggcaaag gaatgggcga agtggcattg 1080

catgttcgat cggaaaccct cccgtttctg tcgagtgcgc gtgagcgtga cgatatggca 1140

ccacgctact agctttcttc ctgcaactgt acgtacctcg gtaccaaaca tcgcgagcga 1200

attcctagac acacctttc gcttccagta caatggcaga cgatgcggat ggctccattc 1260

tccaccagag acgtagtagt gacgtacgga gagagagacg atcctgtacg aggcgcattc 1320

atggtccgta ttccgtgtcg tacgcgtacg tttgcctcta ggcgcaaaat aaatctcgta 1380

cgtttcctcg gcattttctc gctcgctctc tcccaccgta a 1421

<210> 1282
<211> 2317
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222396_G1, chr6:95314003..95316319, Cluster 8

<400> 1282
gtttgtaaat atagtgggaa aggcatgcaa gagatgtcct ggaactacgt acgggtgtca 60

tctcgctctc tctaagggaa aggagtgccg tggacccgcc cggcatgagc acttgtcaaa 120

ttatgtcatc agtgcatata tagtcaacga tgcaagcaac ttcctccatt taaaattaca 180

agttatttca attttgttaa agtggtagcc atgatatata tgtatattag gatggatgaa 240

ctgatagcag caggttgagc agctatttcg ccccttcga attgctgtca ggtaaagtaa 300

accagcgctg ctaccatgtc gtctaaaatc ttatttggtt gaagttactc taacggcatg 360

catgcccccc ccccccccc ccccccccc ccatctgtcg ctgcggtgcg gggatcacgt 420

accgaaccca tgtggatcca ccagtcagat gtcgaaccgg ggcggccggc ggcgagaact 480

gtggccggcc attgattggt catcggccga tcgatccgca agatcagtgc gaaagacaaa 540

gcgggcggca gacgtcgacg tctgcgcgca cgccgcagtc gccggacgcc gtgcgtgcag 600

taccagtgcc agtggcatga cgggccgtat gcctgcctgc tggacctgga cggtggatgg 660

tggtgcgcca gcaggcccag gcaacgagcg gccggccagc atccgagatc gagccgatct 720

cggcgaacag tttggctttc attccgcggt cggggtcggg gagctagctc gggcgctgcg 780

cgctgcgtgc gtaggggcct cgccgcctcg gtcccggctc tcgctgcccg cgcgcgcgcg 840

acggggtatg gtccagtatg tgggggggtgg ccgaggccga ctcgccatgc acaatagtgt 900

aatggcgtaa tgcagtgcgg tggccaggcc cccgccggcc gccccgacga tctcgtatcc 960

cgccgcagag cgtgggcggc ggggtagtac agtaccagta cgtgagcccg gcgaggctga 1020

gcgtggtgga ctgacgcgcg gcatggctgt gcgtgcgctc aggtatatat ctgtatgcct 1080

gcatcttttt agctagctag ccagctagct cgaggtccgt tcaaactcat gtaattcttg 1140

ccaccacgta ctagtacgtt atttgtgtat atctatactt tcttaactat tttgttcgtg 1200

atacaagtta gttgccaatt catatgttgt tcaaattcgt tgatatatat atatccactt 1260

tttgcatctc accttgatag atgcatgtgt gtgtttgcgt gtgtttatta aactgaaatt 1320

atacttctta ttccatagga taataataat actagcttgt gtaggtacat atatcgatca 1380

tccttaccat gtcgtcgtga cagactttag ccatgcacga aataagtttt atatacttct 1440

cagtttgcca ttatttacgg tttccttttc gcatgtacat atatcatcct tgccaataat 1500

tactctcgcg tgtttatatt gaaccgatcg agcgctcgta actaaaggta cgtaaatgct 1560

gtttttttt acggcattga aggtgtagta catctcacgt actgtagtgt attgactacg 1620

tacgtaggtg taataaattg cctagtatag tcttactgct ccatatatat gtaagaacaa 1680

agaggtatat agacgacaga aaatgtgttt accgtgtagg ccacagcagg caggcatccg 1740

atagatatga gatcgacgag ctatagatga ctgcggccgg gccggtggtc caaccgactt 1800

gacgtgacct agtagcttgc ctcggtccac cgttacacag gaccgctcct gcactgcact 1860

gcactccatc gacatcgaca tgaagatacg cgactctggc gcgcggctcc gacgactcga 1920

ctgcacatgg cgctccgagg tgacgaacca caaccaaccc cggcccctga ctgactgctc 1980

gtgtcacgta cgtgccgggt gctgaaacat ggtcccgcgc cgtcgccgtc gccgtcgccg 2040

tcgctggcgg tcacactcac accacacggc atgcacggtg gcgccggcct tctgcagctt 2100

ccagcccaca gccccacact gccggccggg aacggacgaa ctcaggccct gtttgggaat 2160

gcagttttga aatactgtag ttttgagata ccataattta caattataca tgacataaat 2220

actacggtat tgctttacca cagtaaaact acagtattgc tcaaaaccga gatatgtttg 2280

gttctattgg aaaaacaatg tatatgtaga gagaaga 2317

<210> 1283
<211> 1630
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224611_G1, chr6:106739093..106740722, Cluster 8

<400> 1283
aggcactttc ccacgctcag ccagcccagc cgccctctcg ctttgtccca ctgacgcgcg 60

gggccctcgt gtcattcgtc catccctctc gtacgcacgc gcatgttcca ccttcggtca 120

ccgaccggcg gggcccgctg gccatccaca ccgcacgagc gtgccctgcg ctgaccaaca 180

ccgccaacct gggcaccctg ctcatatcgc agccacacca cacgatttcg atgacatgtg 240

gggacataga acactgtaga tcttccaggc gacttcacca atccccggca accaccgtat 300

ccatcgtaac ggcgtccgtg atgccgcctg gaccctcgca tgtggttcag ggtgctctcg 360

actgaagctc ctggatcgga ctccgccgtg ggcctataaa gccaggcgac ctcctcgtca 420

ccatacctct aggagccgag gccgccacat ttgattccaa ggatccctcc tagctcgtag 480

tcaggcatga ccataggcaa ctgatcatgc gcgtgaccac tagagcaggg aagacgaccg 540

gagcccaatg gaatttctcg acggagacct ctctacacca ccgagccgag gagcgcgtgg 600

gcggtgcact acgacgtccc tactgcgggt aagattgcca catacctatg cgccatgatc 660

tcgtaaatgt gtagcattct gtgtttttg gtacgagcta taaaacgcca ggggcgagct 720

ctcgccggtg cgcgccgcca tagtagggcc gggcgccgct aggatgttcg gcggggagag 780

agaagagggg tgatgggtta ttttggtact tttgttttga ttgtagcacg gattaggaca 840

gataaagtag ttggtggtat agacgtatag cttatttgcc actatccctt agaatcacca 900

ttagggcgta aattttgtta ttttttcttc gtgaccactt gcacaatttg caactaccgg 960

ctagtatcat cgtcgttgcc cctactattt agtatcaccg tcagagctaa cagtgtgtgt 1020

gccatttatt atggaaatgc aacatatttg cgttaggcgt attattatgg ttcagcctca 1080

cgcgattgtc aatatggttg acggtaaaaa taggatcatt taaattgtct cgtaattata 1140

tgagactttt atagcaattt catttatacg atcggtgaaa ttttgagagg ttttggattt 1200

agggaccagc gcttgtgtac aacacatatt acttggacaa tccctttttat atcacaagat 1260

agttctccgt ctaacttggt tttataggaa atgtcatgaa tgatatggtt caaatgtata 1320

tgtgatgtga tgcttaatgt ttgatgtaat tattttgcta gatagtgata gtatagttct 1380

tgatgttatt atggaggact caagcatatg agtacatcat ggacaagaac ttggtgatgg 1440

agatcaccat gacaattgac aaaggccata ctatctcata ttaatatcat tatttgtgat 1500

attttatttt cctatgatat tgttcgttca tatattaatt gcgttgcacc tataaatatt 1560

ctattatcat ttggtagacc tgctaaagta gagtgtcatc tattatcttc atctaataga 1620

gtgtcatcta 1630

<210> 1284
<211> 1419
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224681_G1, chr6:107107921..107109339, Cluster 8

<400> 1284
gttagttgtg tcatttgacc tccccctcca cacacacaca catagctagt catagcttct 60

atgaccaacc agacatagca tgagacatga gctctagcat gagaaccttc ttctgactta 120

gatgaggagg cacttctcat gtagtttgga ccactccaca cacttaacac cttacacaat 180

tgtgtcggtc cctccatagg acacttaggt tttgtaattt agtgtgcttg atgctaaggg 240

agagtgggga caagaagtat gtgagatagg gggagagaca tagacatgga cggtggatct 300

tgctatcctt atatgttata ctctcatgat acacaattat gttcatatgt tgcatacaca 360

tttccttcca tgcattgtat aatactttat gttgtatgtg tatggtaagt tctgacatgc 420

gctactctca ttgtatttat atagacactt gtgcttgttt atactcttac tttatacttc 480

atgctaacga gttttaatca tgtgcttatt tttaatcttt cactcttatg gtacatgtta 540

tgaacttagt ttgtatgaac ttgcactaac atttcatgtt ttaaatctgc aagttcaaat 600

gtatagcctc gttaaagcca cagaaggttt gtatggactt tatgttttaa gtcacataat 660

ctttacacta tttaaaccgt acgttaaata gtgtctgtgg gaatgacatg tgaggaagag 720

agggatcagt gtctttaaca acaacatggt gtccagcgta taacgcaggt tcgagggagc 780

cactatggtt agaggacgag aagaggccac caaattttag acacaataga agaccttgct 840

agaggcgtag ggacaagctt ggtacgttaa atatacggac aagatccttt acatgacctt 900

gttggagaga gccttatgta acacggatag ggtaagtggt caagttggct aggcctatgt 960

gaagttggac ttattgggcc aaagtcgcac tagatgtccg gataatctac aatctacatg 1020

ctttgtcttg tacacagttt caactgtata ctgtatgtgc acaaatgagt taaatgacca 1080

ttctgggatc cagcacaatc ttcatcacgc aggagttatc tgctggttga ctatactaca 1140

tcggacttgg taaaaaaata gaacctgatt ttatcgttta cgtaatgatc ggggctgcaa 1200

caatttatcg aatacacctt cataccgtat atacaataaa ccggaacaag gtcgacgtat 1260

aaacggataa accaacgttc attggtaact tctcggccct acaaacttaa ggccgcgttc 1320

gttttgggcg gtttggccta ttccgggact ggttccaggg gaaagaaatg acccggtttg 1380

gaatcggacc gtttctttga gaggtgttcg tttagatct 1419

<210> 1285
<211> 3673
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231479_G1, chr6:141137593..141141265, Cluster 8

<400> 1285
ggaggccatc tcctttcccc cgaccgatgg agcggtggcg cggtttgcca gcgaaaccca 60

tttctggccc agatgccccg aactcgaatc agaccggtgc tacatgaaat agattcaatg 120

gtgaatcgat gggtgaagtt cttactggga atcggatgct ggtgtgtgcc gtccacgacg 180

cggggtggac gggtgatgct tgttgaactt tggcgagcaa ttcgcatctt caccgccacc 240

atccgagcgt gcctccgcca caaagatgct cggttcgatc ctacgatgct cctaagccac 300

atgtccctgc agaatcgatg gtgcacttgg atttcgccgc ggcgccgacc atttccatct 360

cggtctctct cttcgctctt ctctgtcccc tgctcggcac cggcatgatg actatgcgag 420

gtggtcgagg aggcatcctc gcatttatat cgtagaggcg gggggagtct cgataagctt 480

ggttacttgg tacatctacg agaatctcgg gtggttgcaa cggccttgcg tgcaaagaac 540

tcggaactca ggctagagga caactctagt gcgcggggtc ccacgtggta gaggaacaaa 600

gctgagcccg tgtgtgctga cgccacggac ccgcacgcca gccacaaaat cgcgcctgcc 660

cagagcttct agccatgact gttggggtgc taagaagcga tagtaagtat aataagactg 720

actaggtgga cttcaaacag ttccaattca ccaaaatcct acgtggcagg gtgagaacat 780

aagagagaga aaaagtgggt gcttaataag gaacgaggct cttgcgcatt ttatgaggag 840

tcaggctcta gcgcatttta ggaggagcac acgagcctgc ttgcagccta ctgtgggact 900

taaggctgac tctttctttt tttttcggcc aatctaaatg attcctctcg gggtcggccc 960

taaggggggt agggtgtgcg gccgccctgg gcccccaaat ttttggtccc cctaagtata 1020

taccgagtat attatatgtt atgaattttt agtaattggt tttagttaga caccatttgg 1080

tagtcagctg ttagctacaa cttgttggaa atctaaaaaa cgaatcgatg agtgtcgccg 1140

tctttagagg aaacaaagcg tcgtagactt ctaatgcgac gtgccagcag tgcactgagt 1200

gcgtttttgt taaatgtctg tagccatatt gtatagtgta ctagtcctta tattatatat 1260

gtgtatattt tcccattctc aaagattaat aattgatcat tgattattgt atatagagtt 1320

gaaaagtcag attttttttgt cccaaactct tatcttacct tggcaccaag tgattaaaag 1380

gtcaggataa gagattttcg gatggagtat tgtgtgttat agaaattttc gagcatgtca 1440

aagaggtgga ttgttatcct aatgttaatg tctctattgt atatcaattc ttatttattg 1500

tgtctgtgac tgttctatct gccgaaaaag cgtttaaaaa ctaaattatt gaaaaacgat 1560

ttgagatata caattatgtg ttcataagtt tctatatata agtatgtatt atattatata 1620

catacataca taaggagatg agaggggcct ccatattagc ttttactcag gggccctaaa 1680

aatgccaaga ccggccggcc ctgatttctc tgtctaactt ggagttacct aagaataaat 1740

ttatcatatg tattgatttt attgttggct cttgatggcg tggtaagagc ataggatcag 1800

ttggccttgt tcgtataaag gaagatatga tccagtaccg gtctctccgc tgacagcgtg 1860

gggccaccat ggggctacgg tgtgacgtca gttcaaaagc aaatgaaagg agcgggggaa 1920

ggtgcgtaca ggactagcta gaggagtaaa agagctgcag gccgaccgac aaaaagctca 1980

aagaaccaaa gacgaacgat agaggagaca gagacgcact ggattcatca gcctccaacc 2040

ccaaagggca aaaggtcgaa gacgtactcc tgtactattc aaatctctct ctctctcatc 2100

aaccagcagg tcgaacagag gcgatgaatc cgcacatata ggacggacgg gagaactatt 2160

tcctgagaga gctagctgga gcacaggagc agtactggca tggcaggggt gcctatcatt 2220

ctgtgggtgt cttttgatat gtcaatggca ctgttcatct gtctatccct gcatacgata 2280

ctgtagaagg aaatcgaatt tgcgattttt tgattcaaaa gggctgctca tcgatcgagg 2340

agttcgtact cgcgtactag atttcattct gaccgactgt cggggaaata aacctcacag 2400

ctcccccact ggacggaaga gaaaaattaa caaaagatcg tttcagttac tttactgtat 2460

tccctgttta atgaactctc tccccatgta aacggagact cccctagctt accatatctt 2520

tccttttcag tttgtatcct tttctcgttt agaacgctcg gctaaactgg tttcagcagt 2580

ctgcctgacg catacgcaaa gaaaatgaga gaataagcac ggataaataa cagttgtata 2640

ctatcgtcat agacctctag attctagatg catgcatttg tagacatgat aacaacaact 2700

cccaagatgt agcagtacgt agcttgcatt tgagagccta attgatgatc tgtttaaact 2760

atgtttatga ttcgtggatt ctgcaggccc aaacagaata ggggacatta ttgattgatt 2820

atatataata atgacaatct acatacgatg catattgttc ttctaacaaa acaaatatac 2880

catattgtta aaatccaaca gtatgcgttc ttcccctagc tagctagctt gaagatatat 2940

ggtaagctaa gagttcgcaa actacaatta atatgcagac taataaaaca aacattattg 3000

ccttggattg ttttggagaa tgctactttg agtcacttac cccttcttat atatagaacc 3060

aacagatgaa aaaacaaacc attgtaggta gtatactata tattccacac acagcttgat 3120

gtgcatatca aaagacaacc tgtgtgctgt cagtttttga aattctaaag caacggccgg 3180

ggagcctgtg tatcttcaag aaatatttaa gataatagct gtatacagca tctctgctgg 3240

tcacacaaga agtgtccctt atcttggacg ctgagtacat ctctaagata caattggaac 3300

tacaaaatat tctattgtac tttatttta agcttaaaaa tgatactact taatatataa 3360

tatatttttt aagagaagcc tattgaatcc gtgcacttta ccattactat aagaatattt 3420

atgtatggat atatatttaa agtgttagag ttataaagat agttttcata tgcatgcaaa 3480

tatatggatt cacaaacaac acattaatat ttaattgcaa ggagcatata atgcaggcag 3540

ccatataatc tatttaaata tactaacaaa aagttatccg tcagtacata ttttttttcgt 3600

tttatttatg agaaacattc atgagcaatc tctatgtact aatctattaa ataacctaat 3660

aatgctcagc gcc 3673

<210> 1286
<211> 1452
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232941_G1, chr6:148098491..148099942, Cluster 8

<400> 1286
gttcagggct aagatctgca tcacgccgat actttaacaa caattgctac agtcttggac 60

cttgtggtgt ggcgacgaag gttacaaaat tgaaaaaaac aacgtcgaca gcaggattcg 120

aacctgcgca ggacaagccc aacagatttc aagtctgtct ccttaaccac tcggacatat 180

cgacgtctac gttgagttgg ctactaaata cgaacaagta cttgctacta agtacatatc 240

gactaatgaa tggaaactgt tgctatgcac gcatgcgccc gtcccctgtt cgcctccttt 300

ttgtcccatc cctctcccct atatgagtat ctccgaggcg tgtagcgccg ggctggcggc 360

gacgccgggg ccccgggaca tacgcaaggc cggccggccc gccgtgcatg tgcggtcggt 420

cgtcgatccc ggctgcaaac tccgaggaaa agagaacgca acagcgaccc ctcccctctc 480

cttttcaacg acgtcgtatc cctctgtgga cgatcgtgct agattggatc gaacaattat 540

tcaatttccg ttcagcgcgt ccaacagtcg ttccgggtta gctagcttac cctgctgcca 600

gtaaaattcc tgtgctcagc catctccatc catctgtgtc taggctttta cccgtcacgt 660

acgtcctgca tatatatgcg cgactatata tcattgtttg ctagggtttc agatactgct 720

gtggataatt acaacgtacg taacagcaac agctaacgta cgacccgctc atatggagca 780

acgacaactt ctaaaaagaa gaacaaggga gcctagctaa atcctaaatg cacgctttac 840

tttttgggac tgagggcgat ggctgccagc tttgtgcgcg gcccgggact tgcaattgca 900

aagcaaaaca caaagccact gcgagaagcc atggcccatg ggtctagacc agttgccagg 960

gggcgcagtg gtgcatgcac attaattcgt ttttgaagga cgtacgtaca gcatgcccgg 1020

atcattcatt aacagcgcgc taattcatgc tgctgcagtg ctgcagcggg tgtgtgagtg 1080

tgtcctaaag cgagcgactg ccctatgttc tctcattctt gtttgttttc ctcctaaatt 1140

acataagtta gattatggta gaacagtagt aggataaaat atcactttga gattacaaat 1200

aagctaaaat aatctaattt atataatcta gtagggaaac caacacaaaa ctggccatga 1260

ctgcttgccg ggttgaagtg gaagccgcac tttagacttc tctcctgtca ctgctttgga 1320

ggcaagatca tgaaagatat actagatata tagctaggct tccttgttct gttcgaaatg 1380

gtatcctact agcaaagacc atgtttttt tgttgatgca ggacagaaca cagattgtag 1440

acgtcaaaca gc 1452

<210> 1287
<211> 2198
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233593_G1, chr6:150747574..150749771, Cluster 8

<400> 1287
tagttgaccg tgtatcagtt tctatatttc atattataca ttggtttgat gggttatcta 60

aaatatctat cttttatata tagtacaaac caacacaagc tttgtttaag gggagtgctc 120

gtttttact accatggttt gaacttttt aattatggaa acaaaatatt ctagtctttt 180

gcaatctctt gcatacggcc ttacaaattg aaaaaaagac aaccattcat tttaaacatt 240

gttaaaagta aaacatcaac aaatcaagct ccctctgttc aaccctagcg agcgatatgt 300

gttgttgtag aggcaaatat cttaaaatag cttattttgt actgcgtccc tcgcgcatcg 360

aacaaaacag acgcttagtg gaagtcaatg tagacgtgtt tacttataga aaacaaaata 420

ttaattcaga aatcatccgt tccatctttc caaaggagac gaggaagaac caaccgaaga 480

atgcctctgt ttcatggtac ctgcaggttg ttcatgttct ggacgagaga gagagggaga 540

gagaaaaaaa agcctcagcg aagttggtcc cgtaccgcag ttaagaagct gtagtatata 600

gtagcctgca tcgccgatcc tggtacgaac cagcgtgatc ttggctccga ttctcgtgtt 660

cccctccata actcttctgt ctgatcttcc gtgtcatcat cggcttcgta aatgcgaggc 720

acactacttt catgacgctg gtaattactg ctgcacggac ggtgccactg aaccgcagcg 780

tttacctaca tccactcgaa gggcattatt actagtacta aagtatttgt gccaggtccc 840

tttgacagtc ctacctattt tagggtgggc cggttttaga tttttaaaga tgacacgtga 900

aggagaaata gaaagaatag tcggttggat aaaagagata aatcaaatat taaatatgta 960

gctttgtatt attatatagt aactatgctt cgtatattgc taacctttag gtcatttccg 1020

gtagaagttt tattgcacgg ttttcttcaa aagtgacaca tcaacttttg tatctatgaa 1080

actgtgtatt caaagtttca tatggatgaa accgtctctc ttttcataaa actctttgta 1140

tctctctcat cataaatacc gtatcatgtc atcaaatatg gtgatatgtc atctcattct 1200

cagtaatgag aatgaaaatt acggtgagaa ttgactaaag taactttaga gcaatcgagc 1260

cagccagctc taaattttag cacatctcat aattaaaaaa tgtaatctca cggaggggtg 1320

cagatcgcac tagcaatcta gcatcgatgt ggacgtgtgg taacggttga cgttattata 1380

ccatttatgg aggggcgcag agggtttttt tttaatcaga gcgtatcgtg gccctggagt 1440

atttatttat cagctctaaa ttttcagtta tgggtcgacg atccgttcgg ctgcctgcac 1500

tactgcacac atgattagag ttaacttttt gtgaccggat cagctctatg gtacggtgca 1560

tgagttctgg cgacgaccaa caattcgatt aaaagcaagc aatcgccacc cgtatttaat 1620

ctgaccgaat caccgaatca atagcctggc agaagatagg gctttgaaac caaaaccttg 1680

tcaagaagca gctagccttg accttctgaa gatgcaaagg gtgcctctga actgaagcct 1740

cgagaagcag ctagcagctg ctcccctggcc tacagcatgt gctgatcctt tgttaatgcc 1800

agagtggggg ggaggttatg gacacctaaa cctttggcta aactggtcaa gttgcggaac 1860

gaggagacgc ggcaaatgca ggcgagtgac ccgccaccat gattttggcc atgggatctc 1920

gctgagttca acgaagcgct agcgtgcggc agatgaatca tgcatggctg ccggctctgc 1980

ctctgcctag tagctttgat cggtgtggcg gagcgcggac cgcagagcaa aacgctggcg 2040

acccagggga caccatgaat gatgcaccta gcgagaaaca tcatgacgcg ccggttcttc 2100

cctaagggca actagctact acatggccat taatcttgct attgctgttg ctatccagta 2160

cctggaatcg tcacatcttt atcgtacgta ggtgtcgg 2198

<210> 1288
<211> 1671
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_233659_G1, chr6:151038923..151040593, Cluster 8

<400> 1288
tattcagcag cggacggacg ggctagcttc atggagcatg catgggagct agagggagga 60

aaggctgccg ggcacattcc agcttctatg ttgttgtagg acagtagggg agcagtacgc 120

tccacactcc ggtagtgtcg tcgttcggcg tgaaaaggag ctagaacaac gacgctctct 180

cgtcaagtca ggatcacgtt aactcatgtc agcagttcat gagctgtaag catcttttaa 240

ccagagacta ctggccgtag gaatggatgg agacgtaggt gtttttgatt ttggtgtgta 300

cctgtgtgct cttctctaac ttatgatggg accaggaggg ccagttttgg tgcttttgtt 360

ccttctgtcg gcaatttcgt tgctttttcc cccctgagaa tagactggta tcataaacat 420

tttctacgct ttgtctaagg ttaaatatct tttcactaaa cactgatgct aactagctag 480

catactggtg cccagtagac aacatctatt tcactctggc tggatggcat ggcagctgag 540

agcaactaac tgataacacc ggaggacagc acatcaggtt cgaatggagc aaattctctg 600

aaatttaatt ttgtctccta gctaccatat atatatgcct gcaaaaaaag acgctatctg 660

gtacgtagta gtataaattg tcgtgtgtct attttaaatc tcgacttttc ggacaaagta 720

ttattataat ctacaaatga actatatgga ctttgtcaag attgaaattg aagcttttta 780

ataccagctg ctgatatgtt tttaaggtga tttaatttgt accggccgcg gcacctgata 840

atgatcagta gtgcaactgc cacgcccacg ctgctagctg caacgcttct gctttgaacg 900

cgaagcgaag acctttcctt gttttgtttc ctttcccccc tgtcactaac atttctcatc 960

aatcaagtga tcgacaggat atcaaagcat ttgcagcggc aacaggtgta ggtgcaggtg 1020

catgcatggc atggggccat ggggggcaca caactgcggt gcgaaagcaa gcgcccaaag 1080

ctaaaggcca acggcctttc gacgacccta agcctaatcc gcgtcaggta gtgggggttc 1140

tcgttaagca tatgttcctc ttccaccccc ctttaagata tggccgatct gacgatcagt 1200

ccctggattt gccacttcca aagggaaaag gggggatgcc gtgcaatgcc tgccttttgt 1260

ttgtctagtc cgagtggcca tctctgttca ctccggccgg acgcggccgc tgtcacacac 1320

caccaccacc gccgcctcct cctcctcccg cagcagcagc agcagtggcg caacgcaacg 1380

tgctttccct cggaaatgac aagcggcact gtgccgaata gaataattgc ttttcttggg 1440

aaatgcaggc aggcaggcag gcactggcgc tctgaaccag agctggagtg caagtaagcg 1500

ttcagcagga ttggatggct tttgcatcat gaatccctgc cctagatttc tgcctgcggc 1560

gcactgctgc tgctgctgct gccgcctgca gctgactgtt gcatggatgg ataaacaatt 1620

catcgggact agtagccttt ttctaaacaa atttcttttt tttacgatgc g 1671

<210> 1289
<211> 1607
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_233741_G1, chr6:151566369..151567975, Cluster 8

<400> 1289
cctttggatc cgctttggtg ccgacgaagc gccaagacaa gactgtgctg caaaaaaacc 60

atcgcttgtt ttaatctaaa acatctgata cggttcgaga tcgttgtcag tcctccctcc 120

acagcgagag gaggagcgaa cgcagcgaaa catctcggcg tgatgacagt gacggcagct 180

agcgccacgt taacttggca gctaaggatg tgtttggttg cttggtctag cctgagccag 240

gctcagtgag aggaccagac tcaagtgagc tcgtatgtac agagacaacc caaaatgttt 300

ggttgcctca tcaaaatgag ccaggcccat atgacacatt gtttggttct catttttag 360

cttgacctaa ttaggttgcc gccagttttg atgtgtaaaa tgcagctccc accaaatttc 420

aaaatttaac taattgcaat catctaaata tgaactaatt acaatagatt tgaactaaaa 480

atatgattac agcagattct agatgctttt cagattatag ctcaaaaata tgaactaatt 540

gcaatcttct aaatatgatt acacccagcg gaccatgata gttccgactg ccatgctttg 600

agctgggacg aacatcaacg attccccgct tccccagatt gttgtcattt ccttcagctg 660

acagtgctgg aacctagtga ttttttaaa aaaaaatgaa agggagacaa aagtttagaa 720

cccgacgaca ccaacctgat tgactcgcgg tcgcggtccc ggccgcgtgc gctggatcat 780

cgtcgatcga ccgtggcgat cggcgagctt tcaatcatgc cgccgaccgg gcaaggaaag 840

cagatcgaga cgtatttatg cgctcatgtg gcggtgctgt gcatgggcga ccgccttatt 900

agtgcctcct tggcccttgg ctgccgcgtc gccagcgagc ccatggccat gcctgttgcc 960

tggtgcctgg tggtggtggt ggtggcacgc tcgcactggc gcacgcatgt tctggtgctg 1020

gcgcgatcca tcggctttcg caggcgcgcc cttccaatcg cggaagactt ttctgcctgc 1080

ctccttgttc tcgtgctgtt tcgggggtcg acaacggatt ctggtacggt tggtgtgctg 1140

gcgtagcggc gtagagctgg ggcctggggc gggtgcgggt gccccaaaaa aaatcatact 1200

agctgcgtct gcgtggagcg ttgcggcgcg caacggggga tatactggga gtctgggact 1260

gcgattgtca cctcggatgg gttgtgactt gtgagggctt ctccagtgaa gaaaaaaata 1320

cacctacacg agcattaagc agtttgaaca acgcgacgcc cttcagtccg gcgcgcacca 1380

ttgcagacaa cgacggtaag ctcctgacag cctataccac atgtccacat catgtgagcg 1440

aatgctgggg cagttagcac ttggcaccag agtcgacttc gtctggggca gcaaagcccc 1500

tctgagagtc tagttctttg gatggcttgt gtcccggagc cgaattcagt tccaatcaaa 1560

caacttgttt ggtcagtggt agattgaagg gattagaggg gacttat 1607

<210> 1290
<211> 2230
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_234358_G1, chr6:154159673..154161902, Cluster 8

<400> 1290
cttatatcga agcccagagt gcctgattga gcccaatcat ttgatacaat catgctatgg 60

ccttgcttca gatttgggtg cgcaacagct catgtgtaac tttgcagtta agcttttctg 120

ggacgagcat aaagtctgag gcttcttcct ggctgcttct atttgaccac ttcactgctt 180

gccgaggttg cagttgatct gctaaagtat catcattttg ccttggattc cttcgcaagt 240

cgcaactgtg catactctct cggacagcta tcatacctgt actcctgggc tacctaccac 300

aagtccttgc ctgtttgatc tgtaaaagat gtacatgcaa gatcacaatg ccttaagcac 360

atgtaagaat ccttctggac aggaaatata tgccaaccaa agaattacta tggcaacttt 420

tgcagaggtg gtgagggacc aactggaact gcagtgttgg atacaattac atacagggtc 480

cgggtggcag gccgaggagg cgaggacatc accgagctgg catgggtcag ggaatttgct 540

ctttttttct ttccctgccc caccaaccgc ctttctcgca gagtcgcagt gacctttgtt 600

tggttggctg cggtactgtc actgctgctg tgcctgtcct gcggcaggca tggcacgaac 660

gagtgaaaaa gagagagaga gagggaatct gatgcatttc ttgttcgtgt gttttactac 720

tttccggctt gccgcaagaa aaatgtcaca aatctaccag gcaacacctc cttcctttcg 780

aactttggtg cgttgatagg accgtccttt gaaatctcca gttcatttcg tccggccccc 840

ttgagcttgg aattttgaaa gatgtacccg tacgtctcag caactgtgtg taccttgtgc 900

tcctagtcct agtccttgcc gtgcattgtc catgtcatgc taacaagttg ttgggagtag 960

cgtacaagcg cgaaggacgc atctgcaatt tgtaatgcac tgccgacgcc tgcttaaaat 1020

ccaacaattt cacatcacta gacagtctga ttctctctct catgattgtc acgctcaaaa 1080

cggatcatca tctcgttcat tatttcaaac tcctctacaa acactgtaaa acagcgttat 1140

acaaactcgc atacacggtg ttgacagagt tggcctaagt cctgacaaat gggcggctgt 1200

tcggcgagtt ttcaggacca ataaaatata gcgcaagtac gatcaatgct aaatctagag 1260

tactcttttt catcgctggc gcacggggca actccgtcac cgagcgtgcc acgccgcaac 1320

cgctcacgtc acgctcggac gccggcgcca agctcgaacg ccgaggagtc gcagcagcat 1380

tctacccttc acgtccgcgc gctcgcgacg atctccggtc tggcccagtc gtcgccggat 1440

agcagcagtg aagccagcaa tgaaaaggaa gagctggcgt ccattaaaaa aagagagaag 1500

gtagacgaag gagatcttct gcgcaaatat gggagaagac tgggctttgc ttttgtttgg 1560

catttgtagt tctaatgaaa tatttatcag cacatattta ataaggattt ggaatgtgca 1620

aacgtgtcag tattttattg ggaaaaacgg tttcgagaac ttctgttgat atgattgcga 1680

aaatatagaa aatgagatat tgagagaatg aaatttagat gatgttgtag agaacgagat 1740

gttttagaat gtgatgtaaa agacaagaaa tatttattta aaagatgaca tggcgtatgg 1800

tttgtgtcaa ttcgtttttt gacattatta ttaggtgact gcctgtcttt cgacccgaat 1860

aagcccaaca agatttgctg ggagtcatgt tcattgcaac tcatccaacg ccttgtgcca 1920

tgcttgaagc atagagatga cacgagatgc caccccacac actttctctt caacataaga 1980

ttatcctcac tgctgttact ctatatttcc actctaaaag agatatttta gttcagtcag 2040

caagattctt ttctctatac caattttgca tgcatccgtg ttactctata agttccttta 2100

tatccaacta ctaaaatttt attcaaccat tttcaaccac cctctccaat tttaaatata 2160

ttttgcaaga gagatggagg ataccgtggt ccttgacctt accctggaaa tatcgtaatc 2220

ccaatgctac 2230

<210> 1291
<211> 2537
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234495_G1, chr6:154835874..154838410, Cluster 8

<400> 1291
gcgctactgc agcgtgaaga tgctagagag attcttcgct aggctcggca aacaaggtac 60

cgaaggtcgt tgctctagat atttttgtga aaagccgatg gagtagcaat aatagacttt 120

gcttatgagc tctcatattt gcttttgtta aagttcccta tttctttttt attagctaat 180

tattagctga atacattgta agaacctggc tatgctctgt tgcagaggcg ggaatcattt 240

ttttttgttt tctaaaaaaa tattgtactg tacgacaacc gcatatatcg atatgcatat 300

gatgcaatta tatgtatata gtttcatata tagataaata tttagtttat atatgtagga 360

ttactcgctt gttcaattcg ttgtggcttg ttgcagttgc gacttataca gtattttatc 420

tctataaaat acagttgtac gtagcagtcc gaacagctgc atatatgtta gttgaagaac 480

agagaagtag aatatactga gtactctatt cgctgatgta ctcttcttgt tctccaatgg 540

tatatatagg ttagataatt caaaacagac tatagatgta tgtgcagttg gaaattcggt 600

gcatgcatgc atgatagcta ctagctgact tgttgcgata aagctaacaa taatagctcc 660

tcctctatac atatagtata actgaaccta aaataattat ggaagtaaat aattaatatc 720

tgtagtcgac gtagcttgct catataatag tagtaaaaaa aactatgtat atatatagcc 780

ctgtgccggc cgtgttagcg tgtgagaatg catatcatat attctcgtgc atgttaagtt 840

tgttgaagta atggctcctg acggaaactc ggagcaaaat ttgtagtgtg ccactgttcc 900

gcgtcttttc tattatataa aagctgacca gtgaccagca tcgggaggag cccggccgcc 960

tagggaagcg agaagcacac acagagaagt ttcttcctag agagagaggg agagagacaa 1020

gcgcgcgcat ggccgccatg gagtacagca gcctcttgcc tctggcgctg ctggcagggt 1080

ggtgcgccct cgcggcggcg ctagtcctgg ccatttctgc gtggctgcag cggccgcgcc 1140

gcgtcgcaga ggccttccgt cggcagggcg tggacggccc gccgccgtcg tcgttcctgt 1200

cgggtaacct ctcggagatg caggcgaggg cggccgccgc ggcggtggcg gaggccgccg 1260

gcggccggga cttccagaag gaaggcttcg acgactactg catgaagatc ttcccctact 1320

tcgagaagtg gaggaaagcc tacggtacgt ctcctccgtc gaatcctgcg gcctgttact 1380

tatatatatt attattattt ggtgcttaat actctctagt aatgccttgg attatcatgg 1440

ggtcgccgtt ttttctcata caatatgtat gtataggctc ttgcgccata gatatatata 1500

gagagagaga ggacagtatt actagtagct tgttgccacc ttcaattcag catgggtata 1560

ctgctgtccc atctcccatg ttaaaggact ggcatgttat tttttagtag aatttttta 1620

ggttttatag cctttattaa acctaattaa ctcgtagaaa tagaaattac aaatactcat 1680

attctcatct cagtttgtac atgaacaaca tatagatccc atgtggggcg gggtacggtt 1740

gtgctacagc ggcaagcaag ttgactatat taactagttg tagtttatta ctgctagtac 1800

gaaaaatttg caaagtcact gcttacaaca caagtgggcg aagaaaatac cactgcaccc 1860

ctacgtaccc aaagcggggt ttgagttgtc aatgaagtta acatcagaaa gctagctagc 1920

tagcaagcaa gttaaggaag gcaaaagaaa agcagggaga atagacaaac aaatgcatga 1980

taggaagtgg cgcagtcaac tactataccg ggtgttcagg tccgtgaatt accaagaata 2040

tcacagacaa ctaataagaa aggaattagt acataataaa aacctttcaa caattaatat 2100

actaaaaaga agttcgtctg actagtaagt aattgctgag agcacccaac cgcctagcta 2160

gacctaatat acagctagct agctagctat atggtagcgg cggataacag aaatctgtct 2220

ctctatgaca tcagcaagcg atgattttta tattccacta gttgattctg ggtaccacgt 2280

tgtattaatt aaaataaaat ttttaacata ggagagagaa cttcaagtaa aaagataaaa 2340

aaaatgcctc tggttaaaat gaatggactt aagcccaccg tcttctctgt tgttagatcc 2400

gccgcatgta cacctcacgc atagagcgta agctggctgt atctgcgtat atatgcggca 2460

aagctcggcg ccagaaactg tccgtgtctt tgtgcgtgtt atgtccagcc tcaccatgca 2520

tggccgttgt gacacag 2537

<210> 1292
<211> 1657
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263135_G1, chr7:157171136..157172792, Cluster 8

<400> 1292
taccctatca aatttttact cgcgaacacg cggataaaag gtctgtttag acaggcgccg 60

taggcgccgc agcggtgcca cacctacggt ggctgatttg ggcgccacac ccgcgacagc 120

cggagtgtgg cgcccgagcc agcccaccaa acaggctcaa aatgtggctg ttgtcatctc 180

taacggcggc agtttgtcct gccgggttca ggcctccctc cgtttaattc ctgcagcgag 240

ccagcgtgga gttggccgaa ctcttgtcga tgcgcatatg cgatcggctc gcgcctgatg 300

ccgcgccgtg caaaaccgac gtagccgcct tggaccgtcg aaagatcccc gccacctgcg 360

catcacgccg atccggagga cgtggccgtg tacacagcaa aactttgag catgcagcca 420

tcaatcaaac ggccggacgg atcgagatcc atggcgccgt gcgactctgg acaaaatcag 480

tgtgtgtacg tgggtgtgta caggtgtgcc acctgctgat gtggtgcgcg cgtacggaga 540

cgatggatgg ttgaacacag cgctggaggc agtagagtgc gactagcgtg cggtgcggtt 600

gccagttggg cgggccgcgg gcgtgtctct ccgtgtgcag caggggccag gtttcttcca 660

aagatagtac tcccgtccta gtgtatttgt tagctaaagc gggaatcaaa tgtcaaaaag 720

tttgccagga gtgtaagcag ggggcaaagg ggagagggaa agcgaccgga caaggaaaat 780

gcgaccagtg agctagctat ctttattcga tttaattatt aacttggtcc aagattattt 840

aacatgtatc aaataaacct caatacccag aaataaataa agattatata actggggctg 900

cgccgctgcg ctgaagaagg gtgatacaat cgattgggac ttggactctt gccgcctatg 960

tttgccacct gggccgatca gatttctgtc gtgggagtga aagacggata gacgatatac 1020

atcgagggag gaaagaagta cagtgggatc tagtttgcca tctactatga aaatagtaat 1080

gacacagtat ggcacaaagt cccaaattcc caatcatcac aattctaaca tacccaaagg 1140

atttattagt catgtttgga acacgtacgg tgtttattct gagtcacacg agacaactat 1200

ttaccgcgga acttctacgg agttactatg tcacgaatcg ccaaacactc ttgatgcggt 1260

aaactaacga tgttccgtag agacgtgtcg tgtctctccc tagcctacgg tgtctacgtc 1320

gattgacttt gagacgaaga tcacatcaca ataattgctt gacacaagac acacctccac 1380

ttgtacaagc cagtacatgc ggtgcattac aatattcgat taaggtttga ccattcaata 1440

cacacgtccc tgaccaaatt aagctagaga tccagaggac acacgtgcac tttacttgta 1500

aaaactacca ttgcataatg aatggcattc ttaatggcta ctaccctatc cgaatagtga 1560

gactacaact catattaatt tcaaataaat atgactattt atttacgata tctgtcttcc 1620

ttattttatc tctatctagt ttttaaatga gtatttg 1657

<210> 1293
<211> 2112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264245_G1, chr7:162666555..162668666, Cluster 8

<400> 1293
agactatggt taagaggcta gcagggacga gaccatccca aggcttggga ccttggaggc 60

gaacgttaag aaacttgaga tagaatttat cctgattcaa atattacaaa aagaaagagt 120

acacatgttg tgggatgcct ttgagcactc aatcaagggc ttgcgcgatg caggacttat 180

ggccattgtg tggggctccc ccacccgaga gaggggaagc gtgaggtgcc tggtttgggt 240

tcatccaatt tgcaaccaaa ctgacaaatg atcaacggac atgagatgac aaaaaacagc 300

ccttcatata attgtcgatg tgatgtcgat gttgaagagc tggaatacga acctctctat 360

aaaacgtaac acccctatat agaggaaggt ggagtaaata taaactaatt atataagaca 420

gccagttcac gatacaaata tattaagtct aaataatcta taaccaacat aattttactg 480

cagaaaacat gtactaataa tagttgtata gtagacaata gattcagcac gtaacccatc 540

atgatttgta taattaatgt tataatgggc tcattcttct aacgggtatt tccgaattag 600

atatgcacgt ttagttagag attaacgtac tatatcgcac cacttctgtc tacgaggtcc 660

acgtttcgtg acccaaaatt tattggtctg ccgacgtgca ccgccgcacc ggtaccacgc 720

cacgtgagcc ttttttttc ctttttttt tgggtgcttc ggggacagcg gcgcctgcgt 780

acacgcgctc ctgcgtcctc tcgaggtagc agtagcacac ctcatcggcg actcaaaccg 840

agtaccgaac accggcaggc tgctctagct agtgcaaact gccaagtggc caagctcgat 900

acatgtagct tttgttgatt ggtcgttggt tagcaaagca cagtcttacc cgcttccagg 960

agactggaga caaccacgcc tacagtaatg gcttgcacgc cactcgtacg tagtacatgc 1020

aatgcaaacg aagtcaacaa tacgtacctg acagagttgc gttcgcagtc ttatccccgg 1080

tatccggata gcaacctgac aacggcaaac atccccattc acatccacca cgtttgactg 1140

ttcatttcct aggccatggg tccaataatt gccccgaaca aatggtgcac gagttatcgg 1200

tttctccgat cccgacatct ctgcacgttt catggccgcg gcggtacgga gtaccccggc 1260

gccacacatg acacacacta cacaggcatg catacagcag cagctcggga taagagcgtt 1320

tggcggcaag acgacaagca gccgagaaaa gagcgtactg ctagctacag gccgacggcc 1380

aaagggcgcg gcagcaccgc ggcaccggca ccggcacgga gccgtcgcgg atcgatcacg 1440

agcctcaaga tctcctgtac agttctccta ctccagcacg gtgccagtgc caaactttgc 1500

agcagctgca cgcgagcgcg tactatacgc atacgcctat catacaggag cagagcagag 1560

atactaaaaa agctgctcgt cggtccacac ggtgcggtca ggaaagcggc gcccgggcct 1620

ccggcaggga gacccgcatc tgtgtctcgg ccgcgcggcc gggcggcgat tcgggcggcc 1680

gcgcagttcc cacttcccag ccgcctcgcc ggcccccgcc ccagcgctcg ccggacggga 1740

cgaaacgttg accagcggcc tgccgctatc gcgggcgctg gccactcgca gtccgacgcg 1800

gccatgaccc gcgattcgcg cgtgatccgc accgcatttt cgcggggttg accggcccgc 1860

agccgggcta gaaaccgtgg tgccctttg gactggagcc tgctgcagtg caggcaggca 1920

gaggcagagg cgacgtgctg cggaggaagc actcaaggcg aaggcgaagg cgaaggcgac 1980

gaccgacgtg tcggctagtg cgcgcgcggt cggagtctcg gaagatccgg caacagtgac 2040

gacgatgtgg atcgctgacg gatcgacagg taacgcacgc agagtcaaac gcttatctga 2100

ggaggcccga cc 2112

<210> 1294
<211> 1642
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_26433_G1, chr1:160853131..160854772, Cluster 8

<400> 1294
tctaaaacac ccgcttaaat tccaccaacg ctacttccgc ctagcagtcc agcacagcat 60

tttgtgtccg aaaaaggaaa tccactccaa ctagttaggg cacgtttcac gaactttgag 120

agtgcatcat ttgtattttc cagatactcc tggaaaaaaa aacacatgta tcaccggtgc 180

tcatcggcat cggcctttcg ttcacggtta ctttgtcgga ccgaaatgac cgtatttcgc 240

tgctaactga aaaaagaatt tcgtacggat tttagatgga tttcgattta aaatatataa 300

aaaatacaaa agtcaaattt tggtcagcaa aataaaatcc agagatgact gcaaattgtg 360

aaccctggtg gtgtagactc gacccacacc ctcgccctta cgcaatgatg atgacaagca 420

tgatggcacg ctcgcctcct ctttcaaccc cccctaaccc taatccagct gttactcggg 480

cacaggcttc caggagaccg gaatgatgac gcttgcctcg gcggcatcga ggacggagcc 540

gggggcgtgt cccggagggg gtgctgcatt ctgaattctt cgcggccacc gatacgcttt 600

actacgtact gctgctttcc tctctgaaaa gctcagcact gaattttagc cagagctcgc 660

ccgtgcgagt gagcaactga gcatgcatgc catgccatgc ctctgtctct gattacttta 720

tcattggctg ctagctagct gctactgtag cagttagcag caccacagcc cagttcagcc 780

ttcttgggtg ttgtttacgt tgtcctcaca gtctaatctg ttcttttgct acactgtctg 840

tatgtctgtc tgtctgtctt gtagcctgta gttgtgtgca agcgcaacag gcctgcatca 900

gtggcgatgt tttggatcgt ccagaccgaa aaaacggctt gagagatgag aagcgcgagc 960

ctcacagtca caggcacagg cagcccagcc agctgatgac atgtttcgtc ctcacgcagc 1020

tcatgcaaaa gccctgcagc aagttccagt tcgcaggccg gacggaggag caatcttttt 1080

cttcagaaaa aaaatctcag gagtgtgtgt gtatgtgtga gagagagaga gagagcgtcg 1140

acggacgggg cgaacttgca ggagaggaga ggagaggaga gcagactagc agaacagagc 1200

aggcagagag agcccagaga aggctagaag cactgcccta ctatttgtct tttcggttca 1260

gaaaatgctg ttctggctgg gcggtgcccg gtatgtatat gcttttgatg agaagctagc 1320

tagctccact ccactccact gcacgcagac gcagtcccgg ccaattgctt ttcccgagga 1380

aaccatcgag atgagctaag cctaagctag cccagccgcc ttttccccgt cctgaaaatc 1440

atggagtaat tggtggagaa aagaaaagaa aaaagagcac ccccgcaaaa cccctggcgg 1500

agctacgtag ccttttgcct tcacaagtat gcaaagggag acgagatcga gaggaggcga 1560

ggccaccttt ctcccctacc tacaaagctt ctactgttcc agcagcagcc tcactaagca 1620

tgacgaacgc gcgcatttct gc 1642

<210> 1295
<211> 1801
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267690_G1, chr8:4790784..4792584, Cluster 8

<400> 1295
aagcagagga gagagaaaaa cgctatggtt aattcgaggt ttgaaccaat gatttcgttg 60

gaagaaattt gaagcaccaa gtacatacat ggagcaaact ctggtcgcgc cggcaccacc 120

ggagcagagc agaccagagc accacctggg cggctgcccg tcgcgtcgtc ccaccgccgg 180

cagagaacga accaaccgcg gcgcgggcgg tcgtccttgc tccctgatcg attctgtcgc 240

gcgcggatct cgttcgatcc tcgcaatcat ggaggatgga gcggaggcga gagagagaga 300

gaggacggcg cgttgccaat tcgaggacag ctcctcctct cgcctcctct ggctctggct 360

gacgcgaatc aatcggaatc ggaatcagag cacaggctgg ctggctggct agcgaggaaa 420

ggaaaggaaa ggaaaggccc atgatgtggc atgcatggct tttgtgctta gacagatttt 480

cctctcccga aaagaggtgt gtcagaggac gaggaatctc tgacgtggaa aacaatatca 540

aaaggctggg ccctggcccg tccgtcagct ttttcacact cactcgcagt cactcacatc 600

ataccgtatc tctttcatcc cggacacgac tttttattac ctgccgtggt acctggtaaa 660

taaaatatac aatataatat aatcggcacc tagaagcgtt gtttgaaatg gtacagctac 720

cacaatacat agagacacaa acactgtacc atttatagag acaaaaacag gattaaagcc 780

cggcaaacag actaccgcat gcatgtctgc atcgattctg cacgtactag ctgctagcga 840

agactgtgaa acgcatgtgc cgcgtggcct gcgtgcccac ggttccatat atatccgacg 900

tcggcttcaa aaaaaaaaga tctctgcaga tcgatggcaa cgacgcgcaa gcattattca 960

agtgtgtgtg ttttttttc ttcttccaga attgcaggcc actgaattcg acctttattt 1020

acttcccttc agaaatggca tctataaagc gcccatatca aacagcaagc acatcgctgt 1080

cccagcagca gcgcctgcgc ctgtgctctc tcctcttctt cctcaaccct cgccgcaaca 1140

ggagagctct cgatcagcgc cgcccggccc acctcgcccg cggcctaaca ttaggctcgg 1200

ggactacggt gcagccaagg atgacttgcc gatctatcgt cgatcaacga gcgacgcctc 1260

tgatgtctga tctcgacatc tatcgtcgtc agaccatcat catctatcgg caagttgttc 1320

ttggctacac cgtggctcct gctcctgatg taaggctttg tcgtctgcgg cgacacgtac 1380

ttttttttcc cctatcgtcg tctgatgatg atgatcgagc tgagggtaat ttaaggaagg 1440

tcaatcacat caaatcaagg taacatataa tataggacta gtagtaggag tttacgtacg 1500

attattcatt ctacagcatc tgttcttctt ctaagcaatc acgtaacgta cacctgctag 1560

ctagtatagt gtcctgattt atttagcaac tagtacgtat gtactatata taacaagacg 1620

agagaagtga caggaaatct atagcagtga taggataaag ctcttgcaga ttatgcgtgt 1680

gtgtggcact gctgctgcca gccagtgcca aggccgccat gcatgcacaa atccgtcgtc 1740

tccaacttct tgcagctgag ccagcggctc aacatgtaac actctgccct atccccccc 1800

c 1801

<210> 1296
<211> 1471
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269387_G1, chr8:13291814..13293284, Cluster 8

<400> 1296
tgttattgta taggttaggg tcaaaactag gcaacctaat gggtatgatc agataagaaa 60

ctaaaataac tggagtaccg gacagggtta taagacgatg ggacggccaa acaaaaagca 120

taatgtagtc atttacatgg ccgagccgca cgtaattgca caaaaaaagg atataccagt 180

gaaatacttt cacaaaaaaa gcaaaaagca aaaaaaaaaa aaaaaacggg gcctcttgat 240

ctcctttcgt atggtcgctc agaattcaga aaccgatctg ctgacgatgg gcatctcgcg 300

cgcttcattt gaattatcag gtacgcgcgt ttccaggcgt ttgattatgg atggtcgcct 360

ggggctaaga aacactgagg aaccaccatt ctcatttcca tgcgaaacat gaccccgcgc 420

acgtactcgt atcgtattgg ttgcccatct ttcattttca ggcttcagca aacgacagcc 480

ccgaactgac ggcaaccaca tgtgctcccg tgacggcgat gtgctcccgc gacggcgatg 540

tggctcccga cgttcgccat ggcgtggccg cggcccgcgg tcggtctgga ctccgggctg 600

gcgcgaccgg cggatgctgg ccgcgtccct cgcgcaggcc gccgacgcct gctggctcga 660

tcaggctcct ctgttacatg tgattcagag tttggacttt ggagtagtca catgcacaac 720

tgttaccgtg ccaagtctga aggtttgttg tcctcaaaaa acaagtctta tggtagatag 780

ggttcagcgg gaccggaagt gtgtccatcc tgtcgtttcc attcttttct tttctgtatc 840

cgccaagtta tgggaagaag aaaaaaggtg tatcaaaaaa acgtataata gatgtagccg 900

tgtaggcgtc cattcgtgca gtgttcacgt gtgaaaaaga aaacgacgtg tgtccttgtt 960

ccggcctgca ctcgcgcagt ggtcctgatt gctgaccgac accgaggtga ggcgatcgag 1020

tggcgggtag ccccggcgga gccttctcgt gcgtgcacgt gcgccccgtg cccgtgagcg 1080

tgcgtaacta gtactacatt gacagttaca gacgcgatgc atgtgcccgt gtcatgagtg 1140

aattagcagg tgctgcttgt tgagtactag taatggccta atggcgacgc cggactactg 1200

ccccatttgg ttctttagta cagatactaa agtttagtta taagactaaa tttaatccct 1260

ctcctaagta aaatatggcc taatggtgca aacggccttt cagcgtctcg ggcagccgga 1320

cttgcgggcg cacgagcacg acggcgcaca cgtgagttgt gaggtagtat gatgagttgc 1380

ccgacttgaa cgtttggttg ccggctcaga ttatatatat tattgcctgg tgaaccagca 1440

tgaactttct tacattcatt tgaacgcggc c 1471

<210> 1297
<211> 2115
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2781_G1, chr1:14388912..14391026, Cluster 8

<400> 1297
tcccaactgc tgttggaaaa caaccataca atgttctcgc caccgacgct actctacaac 60

tatcattcgc acaacaaggt gtgatatata cccatcatcg attcgatcga tctcctctat 120

acacgattcc atcttggtct tccattatta accactccat atatgccaag ttgcaagcaa 180

atatgtatac aacattaggt ttaagactgg tcaggcccgt cgcatcaacg aaaaagaaga 240

tcggttttgt ttcttagctt atggcacaac tatataggtg tttattttat agaataaaaa 300

tcctagttta agccatcatg cgtatgttat aagcattaga agttagttta ttattattag 360

aaaaaatata tacactagtt gtagatcatg gcactactat atccggttct tgatgaacta 420

ctgtatactc acatagtcat gttagtttgt atatgcacac cttttaattt ttaattctat 480

ttattttgtc ctttcatcac tcacataagc taatttttta tgttgttccc tgatggctat 540

aatctcattt tcgatgttca agcaattgcc ttttgtttat ttgatgcttt ctattgctaa 600

tttatgcttg ctacatatct acatatgtat acataataaa aatcatgtac ttaaaaagaa 660

aaatgactta taaattaaaa taggtgagag aacttaattc tatttttatt gcttcatatt 720

agggttggtt tatcattcct ctcccttctc tgattcgtgg tttcatttgt ttgatattat 780

tgtttcatgg gcctagttta gtaggtgtgg atctagcgtg gtggctaggg agggtcttgc 840

accctctacc tacatgttgt ccatagaatc cccatgaagc atctcttaga tttctaacta 900

tggatgaaaa ggagaaaaga tgacaaggaa aaagtgaatg atgagaaaaa tgaagatgat 960

ggtgagcacc ccctcttgca tgatcttgga tccatgcctg tagtttagta agggatacat 1020

gtaaaccaac atattattgt tattattatt aattatatga aggctacttt aaattgacca 1080

atagattgaa acatttacca caatatttgt tctcctacct agggctacat acacctacaa 1140

ccatgtattt cgcacaatta cgatctatgt cattcctcct ccctatacta atcatgggat 1200

gacctaggga gctacatcga tatggttgaa acatacctaa ggcccaaccc aacaaatcaa 1260

gcaatagttg taagaagaaa agaaaactcc tttcacatac aatgtttgta ttcgtctagc 1320

tccatttgtg aataatgatg ctcacgacac attcgacctg tccaagtgcg aaggtgccat 1380

ggattgatga ggatagtcac cgacgagtca aaaagattct tgaagtgaac aatgtgtatt 1440

ccccatctcg ccccctagtc ctctttctcc ccagattcca aattcgtaac ctctatatct 1500

ctaattagat gtttaggccg ttgtagaggg caccaacgcc cctatttgtt ttcttatcat 1560

tgcaacattg acttgcccct tgctcaatag ttgtggacca tagagggcat gacaacaact 1620

gagcatgtaa tctccacaca agaactcaac ccaactcttt tgaactccct aaggcacaaa 1680

ccataaccta tttgttattc aaatattcaa tagatcaatt taccctaaaa ttagtttagt 1740

taatgtagaa aaagtaggta gagagaatta aggatttttt gttaaatgga agaatatgac 1800

ataataaaca cttccacgtc cattggatag cgtaggatca agaagtaatg tgtatattta 1860

tttgttgtct aaacttttcg gcatatttct ttaggattga ttaacaataa ggtagacaat 1920

cggagaagat gaatgatcat ggaagctaaa aaatactata agacttccct taaatctaat 1980

acctaattgc accttgtttt aagttatgga caaaatgcta ctaattctgt aaagaatctt 2040

aatctaatga acctcaaact ttttagaata aactagataa aatccttgaa ctaacccaat 2100

tggatccacc ttaat 2115

<210> 1298
<211> 1545
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285693_G1, chr8:118836388..118837932, Cluster 8

<400> 1298
ccgtgagtcc aataattctt cttagtattg aacatatttt ctttgtgatg gatatttact 60

ctatttattt attgtttgta ggaagtcata ttcccacaag atgcaggatc tatgcaactt 120

ggtcaatgac tatccaccaa tggacatttt tgcatatgaa tgcattttat cgtacacgat 180

aatctgcaac cacaaattgt ttgtcgtgtg gtatccaaaa agtttacatg catacatagt 240

tttagcattt ttcattgagt atcttctgct ctctatttga aagaagtgaa gttcttccaa 300

tccccaacct tataaatcat gttttactgt tgtgaattgt tttgcttatt agatgtagaa 360

atttttgttt tctataggaa catagttttt taattgcacc ccaaaatatg ctagcttata 420

tattttggtt gtgattagga gtgtcgggcc actggctacc cgctttttt ccctttttc 480

ctttttagga cactttggag acaatagttc ttatggtgct ctatctattt ctattttagt 540

aattttagat ttgtaatgaa ttgtttattt gattgagaga tacttaatgt atcaatgcag 600

ccaggaaagc aggcttccta ctgagtttga aattaccaat tgttgtcatc cttgtgtttc 660

ggacaaggaa aatgttcttg ttgttcaagt tatgagatgg agtggtggct cttatcttga 720

agatcaggat cactggcggt tgtctggtat tcacaggacg tgctcttact atcaaagcca 780

catgttactc ctcatttaaa catgaattag gtgccccatg ttatgggttt gtcaagattc 840

agcataataa ctcattagtt aattttaata ggtagaaatg cacatggcat ttggctatct 900

ccataaaccc aagataaata tggatccatt tatgcttgca ctctaaaaga atatggagca 960

tcagctgtga acttttcttc tattagactg atagtatttc acatactata ctaaatgagt 1020

gtgagtccac tgttctgttc tttaacctct ctctaggaag aatccatggt ctgtattgtt 1080

ttgctgaaaa ggggatgtgc taacttgttg agattacaca tggtatttac atttgtatat 1140

gttttgtcca tttccatttc ttaaataaaa tatcctttgt agatttttat cacagtttac 1200

ttcttcaaag caaccttgga tgaaaattcc agtttagctg atattgaggt cgctctgatc 1260

ccaatcttgg caaggtcatg tgaataggtt agtgccttag tggagattat ttgatatgac 1320

cttcaaagtt caaacatttc ttacagtaat aattgatatc tgttactcag aaccacattc 1380

gaaccttgta tatgacttaa aggtttttaa taaaaccaga ctccactcca ccaggtatga 1440

ccgccctaat ccccgtcctc accttcatgc catcagtatt ttcatgttag tacactaact 1500

gcaccctcat gtaggcttta tgtgcgctcc tggacaagca attgc 1545

<210> 1299
<211> 1799
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285825_G1, chr8:119586280..119588078, Cluster 8

<400> 1299
ctaatctctg taagcgtaga gcctcatggg ttcagtggca ggctagtgcc agggctgctt 60

gaactaagga atcatggcca gcatagtgta cttgctaatt gttattcaaa aactgttttc 120

ttaggaaaaa aaatatttat gcatcgtttt ttttcctttt tgtaaacaag aaagttaagc 180

atgttacatt ataggaacca gcatactacg tgtattaatt tttattcaat ggctattttt 240

ttatatggca agatatctca tgtagatggt cagaagaaag gaaggatata agagtgttaa 300

ctggtcccta acctgataga ttattagtaa atactagtct atcttgcatg tattatgcat 360

ttaaattatc tgatatataa atggcttgtc acaagaatat attattgtta ttcctgcctg 420

taggaaccat gtagcacaat cgagttaata ctaaacaaaa tgcaaacagt tatatggtct 480

taatcttata aactttagca tcctatcatt agattaagtt attatttcct atgtgaaaga 540

tctgtacttg tagataactt ggcactcatc tttagagctg caaagaactg taaaaacaca 600

taattatcag caaaactaaa gaagtgatac tatctggttg atcactgggg ggaaggaaat 660

agaagaatgt gtggatgtac aagttataca cccagttatc tattcaggac agccccctag 720

ttgatacctg gcctataggt tcatccgtcc ccctagcgcc taatttccag acaccctgcc 780

tgtgtgtcaa cttatcatgg tccattatat gtgttaggaa ccacctcacc atcagcatgt 840

ttggtaagta gcgtttgggg agctaaaccc agactgcttg atttctgatg acccaagttt 900

ggccttctgt agtttagtag ctttgtcata tgactgtaca attctgaaca gtgtttacta 960

ggagttggta tgacattggc tgctcaaaat ggtctcacac aaccataaca ggatcataca 1020

gtttgggtct agaaaccttg tccattgtca tgggtacacc aatactcaat tagtttctcg 1080

tccaatcctg gtcatcagag cgataaaagg cagagtacca accaattaaa atcagtcatg 1140

aatagggcaa tccaattgca caagctactc atttgttgaa tggagtcttt gtccagacac 1200

catgaacaca cagattctca attccaaact atcgccttgg cattgattct ttttctaggt 1260

gtccttggca tgtattcatc ctcaagttgc ctgcatattt ccggtgagct atgcttttca 1320

tcaatatgca tttctcatca atccacctaa atctttttt cttattcgca ttgccggcat 1380

ccgaatctca atattccttt gttgtgcagc aaataagctt tctgtggctt tcacagaaca 1440

tatgctgcca gacaataaaa ataaactatc gcggcggcga ctatcttacg cttagtgatg 1500

gttactgttc ggggatgctc ttttagcaac tagtctagtc tagtggttat gtgatgctct 1560

tgcagttcac aggcagcgag gaggcacctg aaggattcat tcttgatatg gtatctaatg 1620

caaacttgca ccctatattt tcttgcattg tttatagctg tacatgtata atgtgtgctg 1680

atgcgtttgt gctaatggtt ggatttgttt gaaggaaatc tgtggttaaa gtaaatcaaa 1740

ttgaggcgat gaggcgaaca actttgatat tctttgcttg gagcatcgct ggagcatat 1799

<210> 1300
<211> 1473
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_28771_G1, chr1:176062139..176063611, Cluster 8

<400> 1300
ccttgtagag tagtagagat atattgagaa cttcaatgag tatctttggg taattgaagg 60

cattgattca atcttgtctc agttttaaag aacccacaac ctaaggtggt aaggccttat 120

taatttttt tccgagattg atgtctctca tcatgtccct tctctttgga gatccacaac 180

cacattcaac aaggtagaaa tcttgctaaa aatttgtggg atgcatatat actcattttt 240

agtaacatat ctacacatcc actctagttg aagctgttga tgaaaggaat aaacacaata 300

tgtgcagctg cactactgtt ttctctcatg atccgtgatt gtaaaccaac catctactat 360

tttccaccta catatatgct cttttaatct atctcgcatc tattatttca acaattccaa 420

ccatctagga caaatgacat gtaacccact cccttcttat tattagtagg gtctctaaga 480

acaagaaaca caagtaaaaa aacaatgtta cgctagggat gaaatgcatg cactcgaggc 540

aatgacagca cagaaattac gtcaccccta ccccacttag atcacgacat atccaaagag 600

tcccaaccat gcttaaaaaa ccctccccat gcatccccat ttgttcccac ttcattgcgc 660

aacataatcc tagctagcta tttcctctct ttcttgtgaa acaaaaacaa atagaatggt 720

gcacactagc accatccgat ctggatcgtc ctacgcgttg cattggctgt tagtgtatgt 780

gacgaagaag aagccagcca tagtgctagc cgtggtggcc atgctattcg tgacgggcac 840

gtgcatggcg gccatgtggt actgtagctt cgacctcctc ctaacggtgt tctgcaccta 900

cctgtggctg ctgtacgggt ccctctacct gtggcgccgg ctccgcgcat gctaccagca 960

cgcggtcctc cgccgcggcc tcggctacgc gaccgtcggc ctcggcgtct tcctgtcggc 1020

gatcttcctg tacagcttcg cgagcgtcat cccgctgctg caggccgtcg gcgtctggct 1080

cttcgcgctg ctcgtagcgt actgcctcta ccgggtcatt gtgctgcaca tcgaggagga 1140

agaggaggag aaggagggcg ccgtgctagt agcacagccc cacaaacacg ctgtcgtcat 1200

caggcctcta gtttgatcat gtttgactac tgtgcttaat tagttgtgta caattggtgt 1260

tgtttgttgt atatattata atgcatgcaa tgtaagtcgg cctgatatat atcatcctgt 1320

cgtcgtcact tattagcata tatattcgta ctaataatga gtaatataat cttgtatata 1380

tgtcgtctat atgctataat catagtaaag tagtaaagga gtattttgtc gttacttatt 1440

attggcatat atatatttgt ccaaatgttt tgc 1473

<210> 1301
<211> 1952
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_289301_G1, chr8:139100796..139102747, Cluster 8

<400> 1301
tatatatata tatatatata tatatatata tatttactat ttctcctttc cgccatatat 60

tctacatcta tcaaaacaac tggttttaat ttgaatcggc ttatacagta ttttgtctcg 120

atcaattaaa gctacagtag ttcaaacaac tagttttaat ctgaaacgaa tagtcagagt 180

gtccaacata gcactgagat tacatgaccc gatgttatta ttgaaatacc atgccatgta 240

atctcgacgt tgttgatcat aggaccaact gtgaacctct taaggcctcg tttggctgga 300

ctccggcttc ttttaagaat agctacaact tccgttactt tgaagaaaca actcctctgt 360

aggagtcaat atatcgtttg gcaaaacgct tgctcctgta tttttttaa ttgttgcagt 420

caacaaaatc ggttgattga tacattctta ctgcattgca ttcagagaac aggcaagtct 480

agtctacttt gctgaaccaa attgatacag tgatgtctgc tgctcggtga acctaactac 540

tacttggaac tgcttcctgc tggtagttgt tgctagttgt ttcctgctgc ttcaagtgcc 600

cgtggccagt gaccggtggt ggcgatggtc cgacacgcgt gtggggagag aaggcacgga 660

gccatgttgg agctacaatt cggggctccg gctcctgaga tgagatgaaa actggctacc 720

gctcctaaga cggagccgtg tcgtttggga gggcttgaca aggagctgga gccagagcca 780

ccaaacggga caataagggc ctgtttggac tttggagatt taaaaacttt agcattagtt 840

tttcagcttc atcataaaac agctccagca gattgttaag tggattccag gagtgtttga 900

cttacatatg gactccagct tttaaagtac aattgatttg gataagtttc cttaattacc 960

ctcgatgatt agtgggttgt cgtcgcgaga gtcgagagat aacagaagtt gtatgttgcg 1020

taaccagtta ccagtgacat ggtggataat tttcgtacag cctcataagg agatataaaa 1080

acagtgtttt tgaagcacct tctaatgagc ttcatgaatt tcataaaact tgtatctagt 1140

tttgattttt ttcaaagcta gagctcgttg agttggatct atttgggtag aagaagttga 1200

aatttttgaa gtgaaattat agtacctaaa ttttatagaa aaaatgagca aaaatattcg 1260

gccggccact gccacccaga tgtgtactac acacgaaagg gacccctact cggccgcatc 1320

cggggatatg tgaaccagct ggccgtttct tgtaccacgt acctgggcct gccacgtcac 1380

gtacggtcaa gtcatgcggc gcgcgcgtat tcatagcgca ggaaaggctg taccactacc 1440

agtacaaata cagcttccat tttgtggtgg tatatactct cacgagcgaa taatacgcct 1500

tcgtacgcaa atgatgggtg ggtgcgagcc tggcgctttt ggacctactg tgctactccg 1560

tcagtatttt cggtcccata gtccatacga acagtaaaca tcacacgcca tgccatgtct 1620

acatgcatac atagcataca tacatacatc atcatacacg cgcatcgccc atcagggcca 1680

ggggtagtag gagtagggtg gtgccgcgct accgttctag tacttgcgtt gtttagatat 1740

ggctgtaccg gcttcggttt taaatggcgc ttgcaaatca cagttcaaac tggtgaacag 1800

tagtgctcat ctagtactgc tcaactcccc tctgctcctc tgctcgacac gtactagcaa 1860

tgagggggc aaaacctgtt gcttttggga tgggtcgtgc gtgtgacgaa ctcaagagcg 1920

acaaaagcgg ttggttttta aaatcgtgtc aa 1952

<210> 1302
<211> 2121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294101_G1, chr8:163377908..163380028, Cluster 8

<400> 1302
cctgatcgaa tcagttcccc gaagaacttt tggaacgaca aaaccgaatc accagttgta 60

atcatttagt gagaaaggac gtgcgactaa gcgagtccaa ctcatttttt tcactagcaa 120

agattgcaca ctaaagccaa gcaagtcatt aaatcaatct cagatcggag ttgcaagcag 180

cagacttgca gagagagatt tgactaacca aaattattaa cacaggagaa acggacgcgc 240

acgcacaggg ccggcacgca tcacgtgcga cgtgtacact gataaaaaaa atggcggctg 300

cagggttaag gtatcgtatg gggggggtct gcgatccaga aaacgacatg gcagggggag 360

ggggggggggc aacctgtaca tggatgtcaa taaccagcac cgagcggcga gtgctgttcg 420

atctggtggt agcacctgtc tgtggtcaga ttcgtaatgg ctgccatttt gccctggcca 480

cacaaggaac tcgcctgcca ttttgcgccc ccggccacac aggcgcatgt gagtgctgcg 540

ttggcaccgc gcaagtgggg cgcaccagta ttgccgtcgc cgaaaacgaa ccgcacaaca 600

caacccaaca cggcaacacg cccctccccg aattcacagt tcgcttgatt ggttaccagc 660

ttgcacaaag tcaggctccc gcgagcctga acgataggat acacatacac tcgttctgtg 720

cgtaccaact aatacaacaa atagtctcaa aatgtattgt ttttatatcc gctcagatct 780

cacgtgcaag caaccaaaca aaatcttaga tagaatcaac gcacgcggtg atctagaatg 840

tgatgatacg gccaaccaat gagacggagt ctgaaggaga agcactttca tcatcttcct 900

ccgtcgcctg cagctctacg ggggttgcag tgcagggcat ctcccgccat cgaaggaagc 960

aaagggttct ggttgcatcg cagtatgatc ttcgattgct tggtaggtgg agatcgtaat 1020

gagaatacct ggacttgacg catgcagtac aggtcatagt gccactggca ctggcaccgg 1080

caccccatgt tacgcactct tcgctggaat ggaatggaat ggaatggaat ggaatggatg 1140

gataagttga tctgcagata tatgaatggt gcctgaaatg tggcatgcag tattattttt 1200

tttaatccag attgatgttt tcgagtgaag ttttttttca caattttgaa aaaaaaaact 1260

gcagtattat taaatattgt agtattatat tcataatggt gtttggcaag ctagctaaaa 1320

tctctgtttt taaaattaaa gtattgtaaa tattgtagtt gttttaaggt attctagact 1380

taggtctaga tctaagtttt caaaactgaa atattttaaa ttgttgtatt gttatgacta 1440

aagtatgttg tagtattttt caaaaactat ggctttcaaa aactttgttt ctgatcttgt 1500

gtcaaagaga ccttccgtgc cagaatatta gaccgagtga agcaggaaaa cgttgaatat 1560

acttagcaag ctgagctgct ttggatacca gcaggtttgt cagtcgcagg taggatgata 1620

attaatactg taccatccac cttggcgcct tgcagaaatt gctaggctcg tgtcgcctga 1680

atgagaatga cccactgaga atgtcgatcc gccaacgacg acgtcgtcct tcacttcata 1740

tcgtcaaaaa gaggaagaaa aaagagagag agagagagag agagagagag gaagatgtac 1800

acggcgcgga aagaatctcc tatctctcta tgtgcacggc tcgagggggc gcgagccatg 1860

aacgcgacga cgagcgatga gcaagcagac atgatgctac attgctacgc gttgaaggat 1920

gcaacaggat accatagggg atccagtaaa accttactct gattgatcac gtaccaactc 1980

ttgcaagggt agcccatgga acaaagacaa taaaagataa gtcacctgaa cttcacacat 2040

gtccaccttg tcagcaaact gagggttcat catcttagca acattctaca gctagttcac 2100

cagactgtac aatttataga g 2121

<210> 1303
<211> 1415
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294172_G1, chr8:163908934..163910348, Cluster 8

<400> 1303
cagttgatct gcttcagtga cgtgagtgag tcccctcccg tctcgggccg atttgcgtcc 60

ccaacaagta tctcaggccg gccgtgcgcg cccgccgact catgcatggg catggcgacg 120

actgacgacg agcacacgca gctagcgggg ggtaataata tctgggtcgg gcgggttagg 180

gttcgcttta ccgatatttt ttttgttagg taaagacatc ggctgctgac tttgagatac 240

tccaatcgtt aaaacgtacg gcgggtatct atctaattaa tccgttacaa cagagcaggg 300

aactcgatcg attattgtca gaaacggcat cgcgtctcct ctacagctgg agcgaaccgt 360

cgcggtctgg gcattacggg gagaagccgt tccatacttc catcgcggag cctctcctcc 420

tgggctacgg ctaaccatgg caggcaggca gcctcggcct cgaaaaagac cccgacggag 480

acgctcctcc tcctcccctg gcctaactca gctccgaaac ttaaggagga cgcgtgagac 540

gagatgcctc acgaacctgg aaaacgtagc ctgcgtgcgt gtgcagtgca gacccgtgct 600

agctcgctcg ctatgcgtct tgcagttacc cgacccgaaa gttgccagcc tagggtgctg 660

cttatgcaaa tctgcagagg tcgcatcgtt ctcatgcacc ccaacatata taacgtgtgt 720

agcaatatat gctgttttcc cgtaaaagca agaaaattgc tgatttgaaa cgaaggctag 780

gcttatatcc agtgaagaag aaacaatctg catcagagag agcaaagggc agaggttcgg 840

tactactgtc actactactt cttcccatat gagattatcg tttgagatat tagttagtcg 900

tcctttctcg atctgtctct cctcctccaa ctccatacaa gattcaaatc aacaacgacc 960

ctcactcgct aggtcaaccg atggatcagg cggctcaaac cataaataga ggtagatatt 1020

ctagccgcct ctagctgtac atctctagaa atcaggtggg ccgaatcaga ggcggaccca 1080

aagtgagcca tgcccctgct attttttttt acccttttata tacgtaatag tcacttaata 1140

taaaatatag aaaaattaag gttttgggtg agccaaacag cctgttgtag gccttctcat 1200

cggatcagcc tagtccaccc gacttcggtc cttcttctcg acctattcct catatctata 1260

tgtaatacgt ccagcctcat tcttatgtat tattatattt cctgatacac tatccatatg 1320

tttggttatc tgtatttgct ggtgcttgca tcgtgggatg caatgagttg gtgtttagtt 1380

gttgtcaacc tgactctact cgtgcgaggt gtgtg 1415

<210> 1304
<211> 4180
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294227_G1, chr8:164020781..164024960, Cluster 8

<400> 1304
cgtagttgct gtgaaccatt cgtaccttgc acaattgtgc gacagataat cgtcggacgg 60

tctgatgaat acagaaaagg ctagccgagt gctaacaact atgtcccacc ttggggtaat 120

aaataccccct tcaatcagac aaaaaaagca tgttcgattg tgatgagatt atccgtgtga 180

ttggtgagcc tcgccgcgtt ttctaggtat ctacaggtgc agtgtatgtg tgctcagttt 240

ctaggatgca gcgtacaaaa cacgaggcaa gttatggtca atgcatacga ggagtctgat 300

tctataacca caaaaatatt tgtatttaaa aaaacacata gaatcatgct atgagattta 360

atttttttta attcattaca aaaaatatat ggcatagtgt gtctaatatt aatttagtgt 420

cacgtttttt gtattttaaa taaatctgat taaccgaaaa agaaatctga ttgaagacaa 480

ctctgagact agtttattta gggccgggaa aaagagtgag tcgtaggcgc aaacaagtta 540

gaagcgagcg acgatatgga gcttgcggcc attagcttaa ttgcttgcat tattttggag 600

atgccgatca gaatcagatc gagatgcgga gtgtgaatga agcgagcgcg cagaggagga 660

tcgaatgaat tgatggcccc cgttgacccg cctgccggcc gtcctgctgg cgccccctgg 720

tgtccgtctg gctggtgtag gtgggtcgca aaagcgagca cgcgatcgag gctagctagc 780

ttgtgttccc gccgctgcaa gtcgcgtctt ccttcctcca cttcagcgga gtacggtgcc 840

gcgcgtgaaa gactcttgcc gtagactttg gtggccaccg cgcgtacccg atgagtgtag 900

taggagcagc actagtctcc tcgttctgcc actctcaaat tctgcgcgta catgcacgct 960

tgctgcggtg atatcatcaa ccggccggaa tatacgtcgt cgacgacggt ggtggcgcgg 1020

cgtgcatggc gacgtacgta cgcgcctctc gctgcatgcg atgcaaacaa acgcgcgtgc 1080

gcggggcgcc ccgtcgtctt ccggcatcta tccatacagc acgcacgcac gcaccttctc 1140

gtcgtgtcgc gccgccttag gtttcgacac ctagctagct agctagtcga cggcgatcga 1200

cttgccacgt agtacgagag agtacgtcgt cgtcgtgagt cttggtcggc agctggtagc 1260

taggctctcg cgttgctgcc ttgcttgttg ccctttgtt gctctttgtg gtcgatcgaa 1320

gatcaggaga cgtcgtacgt acgtagcatc gccggccggc cggccggcgg aataatggcg 1380

ggcaaagttt tccagcttct ctcgtcggcc gcccggctag ctggccgagc aagacccatc 1440

gatcggcgac gatagatcga gcaacgacga caaccgaacg tcgtccctcc ctcgtttgac 1500

aacaagcatt cgtcgatcgt caaagatgca cgcgccatgg acacatgcat gcatgcatta 1560

ttggccggcc gcggccggcc ggtgtgtggc ggtggtgctt cttcttgttc ccgtccgcgg 1620

tccgtctcta gtttctcttc tcttcgtgat ccggtccggt cgctgaaagc ctgaaaccac 1680

agacgaaagc ggaaaagggc agagcgaaaa cttgacgcgg ccgggcctgc atttacttcc 1740

ctccttcccc tcgggagtgt gtacgtgccg gccggccggc ggtgacatga gatgagagct 1800

cctccggttg gagtggatca caagtaaggt tcccgcgccc tgctgcctgc tggtgacttt 1860

ccagttcgac gaatcgacta cttttggctt ggtgtggcgg cgcggccggc acacgcgtac 1920

gatcgagctg tgtgacacac gaattaatca ccaacagtgt acacgcatgc atgcatgcgg 1980

cgcgcacgta cgtgttccac ttggctacgt cacgtcagat tggaaagctc gcatgggatg 2040

catgatgagg tgtcgtctat gcatgtgctc caaatccaaa atatatacgt acgtacgtag 2100

tcgtttccat ccatatatat tgaacgtcac gataatacac atatataggg tacggtggct 2160

ggacacatgt atgtatattc atcacacggt catcatcacc gccctttctt gatcggagct 2220

cgatctggtt tgtgtactat tgttttaatt tctgacgcgt ggtttttttt taatgtgatt 2280

gggtcacgca gtatcttttt gtagttgcga gtaaaaataa taactcaccc tcacgcatat 2340

atatctgcgt acgtgcttca ctagtcatgc atacctgcgg aatacttgga tgacttaatt 2400

tgattgattt caaaaagaag aagaagctag cctggaattc tatcagattt ggtgccggca 2460

gaataatgtc aaggaaacct catagtagtt tattcgatca gtacgcagat gcagtaccac 2520

ctgctttgaa gaacatcgca ctaataacag aagcagatga gcagttggag acttggaggc 2580

gagacagagg ccagtttcct agtgctactg gtgcatcagt tctagccgga attggcggca 2640

ccgcgtcatc ccgtccgcct gaaacttgct cgaacaaaac cgaggagagc gagatgggct 2700

tttgcggtgg cgggccattc cgacgctacg ccaccgaccg gtcactcctc gcctcgcgcc 2760

atcaggagtg gacgtaggcc caagcccact acgacccagg ggcctacaag agattcagcg 2820

tgggcctgcc cttgctcttg ctgagccgaa tatgtaccca acccagagac agagaggcag 2880

gcaggcgaaa ctttgggcct aggttacagg gaggctttcg gctccccgct tctctgttgc 2940

caaggcccag ccgagcacac tttgactgtt cgactcgact cgagcatgct gcagcttctg 3000

ctgctaccga atccgctcct ggtacgttac agcttctgct tccttgaagg ctcctggagg 3060

tgactggtga ggctgtcgtg gatcgctgac ggtgccttgg cccgtctcgt gcgccgatcg 3120

atttgcgcgc tccaagtttc accagactgt cgtggatttg cgcgctccag cttttccggt 3180

cagagttcag acaggctggg gcgcgggcta aaccgccgca acagcacgat atcagcgagt 3240

gcgaattgct attgatgctg caaaaggact cgaatatctt cacgggaaag ttcagccttc 3300

cattgtccat agggatatta gatcgagtaa tatcctcttg tttgaagact tcaaggcaaa 3360

gatagcagac ttcagtctct caaaccagac ttcatggttg tccagttgca catgagctca 3420

cctcgggcct acggatatca tgccccagag caagaaccct tttattaaag taactacttg 3480

tgttacttaa ctttagttgt gctttctgct ttggcatgta ttgtccaatt aattttcgag 3540

taggacagca agttggatgg tgtttgtttc taagttgtct gattaatttt aaaaagtatg 3600

ccttttttatt tctgaagtcg aacataaagg aacacattag aaaccaatca catcctcaac 3660

tttctggcac ttcacatgaa cagtttaatt tctttagcct ttgctcattg gatttggatt 3720

acatcattac aagccatctt ttgccaacta tataaagtgt gtgtttgatt gagttgtgat 3780

ttctgaaaag ctattgtgat ttatgatttg tgaaaatttg ttgtgggtcg tggattgtga 3840

aaagtcgtaa tctgtttaat tcaaacaagt atagaaacct acctcccatc tctatctccc 3900

ttgaaacaac tatgaaataa ctctattttt accatttaaa aagcagaaag caggatccaa 3960

tgcgctttca aaattgtatt acccaacagt agttatttct ataaaaaaaa cagcttccgt 4020

ttcctacccc aatgatagtt tttttttgc tttttgaagc aaaatcagtt cccaaaaacc 4080

caaccaaagg cactcaaggt ccacttttga caatgttagt tattttgttt tgctgtagtt 4140

ctagaaaaaa aagtaatatg aaaaccactt gcttctccaa 4180

<210> 1305
<211> 1581
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295514_G1, chr8:170057581..170059161, Cluster 8

<400> 1305
aatattgctt tctgtatgcc ttgtttggga cgacttcact tcaaaaattg caacttctgt 60

ttttcaactt caccataaaa cagcttcaat atattgttaa ggtggatttc aagagttttt 120

agcttgcaca tggactccag cttctataat ataattaatt tgtgtgagtt tcaataatta 180

cctttgatga ttagtggact atgatgagtt ggggagagag acatggataa gtagatcgtg 240

taaccaatgg ggtggtgggt aattttgtgt agcttcatga ggatgtatga aaacaatgtt 300

tttaatgcac catttgagaa gctgcaaaaa aatcttgaaa ctaccctcta gtttcatttt 360

tttaaaagct acaagtagta aattcatgaa gtgaagccct cccaaacccc tcccaaacag 420

gcccttacaa gtatctcaag tttaataaat atttcaacac acaatataaa tagatattat 480

tagactgatt atgatatata tttatatatt taacatatta aatctacttt aacaaaaaat 540

gacaagttaa gaattctgtc tttatttgta tggagcaaat agataatata ccataatttt 600

tattagtcag ttgcccatat gttactacga tttctatatt cagaatattt ataatattta 660

ttctttgttg cacacaaatg gttgtgagcc caaatgatta caatctaggc gtgggagggg 720

cgggacggtt cgaacaccag caccggagat gacgcacgaa gggagaaact cttacttaag 780

ctcttgttta gacacgagta ttcacctcaa tccacatgta ttgagataga ttagagtaaa 840

acttaaacta atttatacct gaaactattt caatgtatat gaattgaagg tgaatacgag 900

agtattcaaa taaggtctaa atacagtaga gatatacact ccgaatctat cacaccattt 960

ttgaccatag gccaaaggcc actagctagt tgctagttta gaaacttaaa tccttttgag 1020

atcccttctt ctttttcagt gtgagaaata cctccagaaa tacctctccg tatgtgcctc 1080

ctctttcttc caaattagcc ctcgaggggc agagacgggt caaaactcca ctgtgagcac 1140

aagtagtata ggctatagca ccgtactgcg tagtgtactg tacaggagtc cagccaacac 1200

acggacgcct ccgatttgat atttgattgt tgcagagatg gatttgatct gtatactgta 1260

gcaggtactc ctatctgata ttctgacgaa gacggcgggg cggtcggtgg ccgtacggtg 1320

gcggttggat gcgcctccga gtccgagccc gcacgaagct tcgtggcagc ttccagttcc 1380

tcctcactgt catgggatgg gcgcatggca gcaccctctc catttgtcca gtacagctat 1440

ttggagctgc cgcgtgcacg tggagacggc gcaccgctcg cggtgggtcg atctgtcagt 1500

gttgctcacg cgcatcgcct gcccgacgtc gcgtgtacta tactatttat gatatgtagt 1560

aggcaggcat gtagcatggc a 1581

<210> 1306
<211> 1536
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295531_G1, chr8:170138567..170140102, Cluster 8

<400> 1306
ggccggagcg tagcaatgcc aacttgattg cgttcttcag aatttggatc acaaactcaa 60

cacacttagc ctttagagca tctatctcag catgcatttc accctccact ggcccaaact 120

ctgaattctg aacgtggtgt gtaaccatgt gatcaaaaag gctgcgtcgc cacaacctgc 180

tttgaggatc gccggagatt caactgacag gactgccaac cggctctccg aatgacacta 240

agcacaaaat gctgctgctt ttcaggtgct gtcatgtgcg tgtgtttcag aaatcgtggc 300

acccatctta ttcgtctgct ttttgacctt tgaatttagc tagctctttc aatgaaagag 360

gaaaatgaca tttttataca tacacaacaa gctgtaccgt aatagatgag ctcagcatta 420

ggtcagggtg atctccgttg atcattcaca tcctagagct tgaaggtgat cgatcaggac 480

gccagtcctg ggtttcagga acctcggaaa gcgtggttgg ttggtcatga gtatacgttt 540

ccattttgcg agtctgtact atagatccaa gacaatgcca attgtcgcca cttaccgaac 600

gagtggacgg cagccatttt ccagctccgg ctccggaggt ggcggtgtga atgaagaaat 660

tcagagactt attaggtctc aggtatggtc aggctgcact ccgtacagga gtccaagata 720

tcagggcggc gccgtctgat gtcaccgtga cctaatcgca gatgtaatgt aactcggctg 780

gcgcttcagc ttcacgttga agccggccgg tctgctgaat aatgcgagtg ccggcgaacc 840

tgggcttctg tcgcgggcac ggctagaaag cagtacacga atccatgcct gtttctccgc 900

agcgtttgct gtctgtcgat cgtggtgccc tgtcctgtgg tctcggggtt ttaatggcgc 960

cgaggcgagc tgatggtaac cgcagggacg agggtggcca gacgtggggc gagcaccacg 1020

gcgagggtta cccattcctc ttgttattaa cgcggcgcct gatgttaccg tgcgtccatg 1080

gacgcctatt aactgcctca aagaaggctg aagccgcgct ggtggtggag acatgctgcg 1140

aaggaaggaa gagtcctggc tcctgagcgc gacggccgga acgtgacgag ccatggattc 1200

agatctggag taccagtggc tgcaacaggt tcattgcatc ttgaatcgtt tggtttgagc 1260

tgaagccgtg catgcggccg gctgaatggc gggaaacgct tcacgtcgtc gatagatgga 1320

gatgaagcgc cgggaaatga tctatatcta tgcgcgctgc caggcgaaac cgctgctgaa 1380

aagactagaa agttgtgcgt ttcttttcag gccatggatc tgacgcctct cccgttgaga 1440

ttgaatggaa tatcgaatct gattgtaggg cttgttcacg taatctggat cagagcacct 1500

gatttaagcc aaattgaagc ccagatgaag tggccc 1536

<210> 1307
<211> 2145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295565_G1, chr8:170204575..170206719, Cluster 8

<400> 1307
gaatagtgat gggatgatcc gtaggacgat gtgacacaag attttctttt tccattcctt 60

tccgtcgaac aaaatggctg cctttgattc ggaccacctt tcgaccaatt gtgtaaagga 120

tattagcagc agccagcaaa cacattcggc ctataatctt tccaagtgct gaagaaggcc 180

caataacacc tgttgggtga agcagagccc atcaggacga tatgcatgtt tccattaagc 240

aaagtaatct atccccggc cccgtagtct tctatgggaa acaaatgtaa tactgaggtt 300

agatcatttg ccttttccat ttaattttaa aatttgtgaa caaattatat ggtgagtact 360

ttgataatag ttaagttaaa cttagctctt caaaaaggta taggctatga atcctaacct 420

aacctagggt accgtgtaat agaatcctat gtaagggtca gtgtactata gaaaagtaca 480

gttctgatta cattcagaac ctttcctaca taatgcacat ggtgctattt gtaaatagcg 540

atggttagaa cgtatataat taaatactgt atatcagaac ttcttaccaa cagttgagat 600

ggccgagttg gtctaaggcg ccagattaag gttctggtcc gaaagggcgt gggttcaaat 660

cccactctca acatttttt tagtttttt tctcacttca tacatatctg ttttctattt 720

tcagttttcc aacaccataa ccgtacaata aatcggtttc ctattttata gattttgtta 780

attgttctcc tacagacaaa aaaaaggaag agtgtatggt atgtgacgaa tggtagaaag 840

tgctactgct agtttcatgc ttgctacttt gctagtcgct ctttaattag gcgtcgttgt 900

gagagactca gacccttgtt ccatcgagtt ttgcaggtcc atgcagttct ttgcagaaca 960

ctcttagtct tattatgttg tgttgctcag ccattggaca tgcaccagca agcccagaat 1020

aaatactgtc agaaagcagc tagtagccat ctagattcga ttattttcat tccgaaagaa 1080

acctgtttct aatgcttcga acaaaaaaaa atactgtcat tattttgtcc gcgtggctga 1140

tgaatgagca ataatgtgtg gattgggatg ccaggagctc aacgtgcaat gcaagccatt 1200

ctgccattcg tgcagtcagt gtgattcaaa caatgaggta aaaagggatc cattgatgca 1260

gtgtatttac gttgtgctcc aactcatacc cagtgaaaga atgctttaac taatttctcc 1320

ttgtgtggac cacatgatcg tagcttatag gtaagcaagt aagaagagta gcgtcttttg 1380

gtttagccac catagaaatc aattgcttga catatcagag aaaagcggcc ctcttatgac 1440

tatgaacata gagaaaacag gaactcagtt ggaacattct caggtctgaa gagccttcaa 1500

gaatagtcta gagtagaaac cattaaaaca ttatttgcag tgaacatgcg cttaacctct 1560

tctttaagca atgcatcgta ctatttcagt tactaggatt tgaaggcctc ttgttattta 1620

tgctcggaca ctgaatgctg gcatctgtgg acatcctctt gtagttgtgc cgcttgctgc 1680

tgttctgaag aagtgttaca gtttttgtg gtagcttaca ttaagagtta aaaattgtgg 1740

agtcatctaa ggacatcctc accggaactt aaattgttaa actccaatgt cgagttatga 1800

tcgtggtggt tattcttttg gaaatctcaa gtaaaaacac atatatggga gtacggtgtg 1860

gtatccggta gctccaaaag acctttacag gcgtcacgtg tattctaatc tgctaatctg 1920

ctgcttatac acctgcagtg ctttcggata cgcccagtac cagttgcaaa gaaccacttt 1980

tgaacctgta ccggtttagc ctgctgttag cctgttaaag cttgcccacc tgttgtctgc 2040

aggatatgta tttggtgttt gtaaggtgtg gccagaacta tgctttgtgt ttggctgcaa 2100

gatatgtatt ttggtgcttg taaagtacat attttgtatt ttggt 2145

<210> 1308
<211> 2065
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295581_G1, chr8:170236261..170238325, Cluster 8

<400> 1308
tcgagactca cgacctgctc tagccgacga ttttttttca gccctagtca ggactgagga 60

cacctctcgc ccttctcatc attcataaga gggctagaca aacaaatgtt tttttcttta 120

aaaaaaactt gtcgtatacg ttacaagcca actattaaca agctgaatcc acgccgttgt 180

ttctaaacct gtggtggtac gacgcacaag agcaatcagc actgacatgg tgcttagatc 240

accacgagct atactatata cattaacgaa aacaatggtc atggatggtg gcaacgaaag 300

gaacagaagc tgaacacaag gacccgaacc atcgtcccta gcctgcaaac gcatctatct 360

cgacgagtca aaaaggaaga agagtgttgc gaaatatctt cacactgtta gtctcgggtt 420

tttttttaa aaaaaagaaa aactgattcc tgaacggcaa tctggcaagt atcactgtca 480

gtctgtcact gcgagggtcg agtaatgact cgcatcttgc ttttcttttg gactggtcgc 540

agcttacagc ctccggagtc cggagcgatc agaaacctgt cgttttttt tttttgcagc 600

cgcaaagcca aagcgggagg cggcgtgggc gccgggtggt gctgcgcggc gcgggcagcg 660

gccactcaaa cccgtgtgac ctgtgctgtg cccacgcgtt tcagtcgctt tcctttcctg 720

ttccccggtg gttatcccgc ggcccacccc agcaccgttc gtcgaaccgg aacgaggcgc 780

tgatccggag ccacgccacg ccgcgccagt tcctgcagct cgccgaacgt gcaaggcatg 840

tgggagatgg gagtcgcccg ccatacgcgc ggtctgaccg gcccgcgtca tgaaccgcat 900

cattactcga gcaagcaagc atgttatctg ctgctgttca tcgtcgccga cagcactgcg 960

acgtggacca cggagacttt gtggcgcgcg cttgcttcgt tgagacgccc cagatttcaa 1020

gaactcgaaa atgaacctgc tggttactcc ctgcggccga gcagtcgagc ttggtacgcg 1080

ctgttgtcga cgatcagcgc agctgcagtg ctgcacagtg aactagctag gtttcgcgac 1140

taaagagtgt tttcggagac tcgcagtgta aagctcacat cagagatcag acagaacgga 1200

agaacaagcg tgacctgtga agatagaaga aaggggccat cccgaggtcg aatgccacct 1260

tggcgtacgt gccgagccga tactctcttt taccatgctc gctttggccc cgcccaagcc 1320

ttatcctttc agcagtcagg gcggtctaca tgttgcttat ctattgctag ctgacaacct 1380

caggcttgtc aacctgcgtc cctctcactg gaaactcaag tgaacgtcat cgtcttatcc 1440

tcctccaagg gacgatgaat acgagcgagc ttctggcgcc attcagaaaa aagtgctgtc 1500

tgctgttgca attgatgagg tgcagttcgt ggaatgctgt tgcaattgta ttccaaggcg 1560

ctgaacattg aaatagtgtt tgactttacc tacgttctgc gtattattca ggatactgca 1620

tcatcagccg aagtagactt ctctgggccc tgcgcattta ggtttttaat tcaagataag 1680

taggagtcgt tttctcgttt tctgagctgc ttgtatcatg caggtttgac gcccagtaca 1740

gaatatctct cgagtggggg acaaaatcta acacgtcaga cgtccaaaac catcactcga 1800

ttgatatttg agacaaaatt ctactcccgc agttcacata agaaagcaat ttgcatttca 1860

aaaaaaagtc aaacagttta ggattttgac tgaatttatg ttaaaaaaag cactagcatt 1920

cattgtataa aacaggtatt attgttacat tagttataga atatagtttt ataataaatt 1980

tgtatggaaa catggatgct attagtaatg attataaatt tagttaaata gagcgcgacg 2040

caaaagcgtg cacccgtgcg tccac 2065

<210> 1309
<211> 2318
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296212_G1, chr8:173613635..173615952, Cluster 8

<400> 1309
tttaaagatg ttcatgccac gtcattatcc agttacgtag agatgaaagg gcacctgaag 60

ttttagtgag gtataagatt tgctcttgac attgcaatgt gtctgaatac tctatcaaat 120

atatattgtt tatattgtct atccttttga taaaattcta tgtacctcgc agtttgcaaa 180

atattgaccg aactgaaaca ggtagtgcta cacttttta tactcatgta gaaaaaaata 240

tactcattac tcgcttgttc atcagaatgg aatgattgtt ctttttgctg tggaagtata 300

tctgttttca gataacagtt ttgtatcgat tcagctggat acaattcaaa cagcactatg 360

aagcttgttt ctgctcctct acaattgaac gcaaccaaac agagtgttcc ggatttgttt 420

ccttgttcag gagactgaat tatctctgag tgcaaagcta agccaatcat tcatagaaat 480

ttgtcaccaa agctcattaa tcattagttt gtaattgtat tagtgtaaga ctataatata 540

taagtggctg catgtatttt atacactatc atacttcggt aaggtagcat gtaggaatat 600

ttgacctttc tggaagcttt tagagttggg tcaaaatgat gtgtgtattc tttctttctt 660

ttaattgcca tctgctctct ctttttgtta ccatatttat acatacttgt ttgtttgtgt 720

catgtttttt atggtcacag ggatatgttg gtattgtaaa tagtacaaac tgtaattttg 780

tttaagtgct attttgtgta caagtactgc ttaatatgtg tctgaaaaga ttttattttt 840

tgaagtgatt tccaaacttg aacgggaatc attcttattc tttgaaatgt cttatagcag 900

ttattgttta tgtgacattg tactgttttg tttcttaaat aaacaccatt ttacaaattt 960

tgcatcatcc ctataggcct atagggcgcc cgaaagggcg ccgcctgttc tagtctgaat 1020

aactccgagg gaactgaagc ttggtttgtt cctcttcctc tccacgtacg gacgaatcag 1080

cgagtcacac gtagacggct ggggaaatgc cgaaatggtg cgtacatgca tgctatcata 1140

tcacacgggt atatgtatat gagactaaac taactaacta accaacagat gaatcttctg 1200

ctcctttcgc cttcccatga tgcgttagtt tttttattgg atgataatat tgatggatta 1260

gttagagggt ttatttatta tatattactc atgcctgtat gatgatttag aaccatatcc 1320

tgcttactac tttgctactt aaaaccatgc taaaatacag ccaaagtagc taataagcta 1380

agtataggaa tatgatatga catgctagct agaatatagt acatgtcgac catgtcgtga 1440

gctgaggtcc gaaaggagat tgcttttgct gtggggccgg ggggtccgac cgctgcatga 1500

atatcaatat cgatctcgca accatgcccc ccccccccccc ccccccccccc cccggccagg 1560

agagtgctag gtatctactt ggcggattta gaattgggat tatctgggcg aatcgaagct 1620

cgctttgttg ctctagtggg gtgcacaatc agtacgtagt ttcgcgccgc ttcggaaaag 1680

aagcccggcc cggccgtatg cacgacggcg tcgaccggtg ggcgccgtgc tgcatgcctc 1740

ggctcgatcg actcataaac caattattat taaatgcaga aaaaggtttg catgttcaca 1800

gactataaag attgtcaaat actactagta ctaaacatgg tccgtcacta atgccgatga 1860

atcaaagagc taccaagatc accaatcaca tagctaacaa aaagttccac cttttaatca 1920

atctgctagc tgtagaccaa ctggtgacaa acgagctatt cctctactta attattacac 1980

attcacatgt tcatgaatca aatcttcagg ttctggtgga acgcctggcc tctagcttga 2040

tgtgatgaag agctggtgct gtctggtttt gtaatgccaa gtaggccggg gtgcgtgtgc 2100

atggagcagt ggcgcggtag ctagctcgac atgcggatta ctaaaaggga cctttaagca 2160

acagccaagc tgatcgatcg taggaaagaa agaaagaaag agagaaagag agagagagaa 2220

aagagaattg gttgggcgct tgcatgcatg tgtcccttta tatattagct gtacagctag 2280

ccatatacgt atacctgatg cctcctacca atatatat 2318

<210> 1310
<211> 2124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296288_G1, chr8:173931223..173933346, Cluster 8

<400> 1310
tcgtggctag tgtgcctagc acgatgtaat ctatgtcatg gttttttatg tgagcccgtg 60

ctgggccgtg tcgggtggcc catttacact actgtcgctg gtgtagctgc ggaaaagaaa 120

aaaaaggctt gtgacggccg acgacggggc acgcgggtgg gctagtcggc ggcgaggatg 180

ctgggggtc gccgccgccg ctggatcctg ctcgagactc tgctgccagt gactggcgtg 240

ctaggccgtt tggtgaaagt aaaagcgaaa cgaacgagcg caattcggat tctgttccgg 300

ccgctatgca aaggtcggcc gctgactatt aattctgtca atcggctctt cctagacacg 360

tgtgtggctc agtgatgcga ctaatcaccg tcccgtcggt ttctggctgg ggcacccacc 420

acccagtcta tctcacgcct cgcttttgtt actcccaacc caaccgataa gagctcttgt 480

cgtttatgcc aagttcagga cgtggaccat ccatcgatcg tggaacaagt tgggcgagca 540

tgcgtgggca aatatctgcg tgttggaaat tagctatact cccaattaag actccagctt 600

gcatgtacgt acaccagcca gctaactctc tgctgatgca gcacctgtgg tgctgactgc 660

tacatctgtt aagttcagtc cgcctctcgt ttcagataaa ctctactggt ttccttttgc 720

ccatcatgat aaactctata ctagagttgt tcagcgtaac aaagctatac cgtctttaac 780

acatgtttct tttaggtgcg gatcttttt ttttttttt tggtcccgct catggtgctt 840

acttgattct ctgtcactct tacggccggt cttcccacca aatctctcta tccgatccgg 900

ccaggttcca ggaaagaaag aaagaaagag tcatgatctc aggggaaaaa gtgtaatcta 960

attacagatg atacaggcat acagccgctg tctctacaga tgagatagtc tgaacactgt 1020

acagactgct acttgtcctg gtgcgatgcc attgtactac ctaatttagc cctgctagtg 1080

ttagcctaat aaggttagat tacacagtag cagtactact aatcatgggt gggaagcatg 1140

gaattgttct tatcttttgc ttttatcctt aatcttcgat ggccgaatct attcctgcca 1200

tcgaacggtt cagattgcac cgccgccgga gcacagacaa aacaaccgat tccccactaa 1260

aacttggcca ctgctaaacc aaaaacaaaa acgctagctc gccatgctta tctcgctctg 1320

cccacagcca cggtgtacgc gggagacgcc tcgtttctct gcacattcaa aatcagccac 1380

cgggagggag gctgcactgc actgcactat cctatcccac atggaaatgg aactcgatct 1440

ggaacaatgc tctcacggtc acgaatccgc cgacgaatta atggatgcct gatcgtccgg 1500

acccatccag tctagtctag cagcccgttg ccgtcactct cctccggcga cccaaccgaa 1560

ttttctcggc ccggtacagc gacgtcgccg gcgactttcc aactcacccg ccgcaacttt 1620

cgcgtcggag ggggcagctt ttgcgtcgga cgggcactcg cggctgcctg cttttcctcc 1680

agcagatgca gatgcagatg ccaagatctc caagtaaaac aagtgcgcag agaaccgggc 1740

ggcgggtctg gactcctttt tgggcgacgg cgacgcgtcc gaccgcctcc cttccttcct 1800

tcctccctct ctctctgacg ctgacggctg acccccggct ggctgcctgg ctggtgctgc 1860

ggtgttgact tgactccagt gagcgtttgc gagtgaggag caggaggacc tgtgcatgat 1920

cgactccaca ccctgctact gggacaaatg cgtggtctgg tcgcggaaaa gaggcgctgg 1980

cgcgagagtc aacttgcgca cgcgcgcatt ctacgactgg tccttcctta ctcgtactac 2040

tactctacta gtaaaaaatg acaacgctgc ttatccggaa ggatgcggca tcatgttcac 2100

ccaccaatgt tctttctttc ttta 2124

<210> 1311
<211> 1514
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_297874_G1, chr9:4773378..4774891, Cluster 8

<400> 1311
cgaacctgtt ttaggaagat tttagatttg gattccattt ttgaccagtg acgtgtaaat 60

cgaaaaaact agatgtcttc tccttctttt ctatctctat ttttatctac tcctataaag 120

taccagttta gatgatcgtc atgtatcaca cgcgaagtac atagaaatgt atatttttta 180

cttcccattt cccatctaac aattagataa gtcctatctc tgccacaacc agataagata 240

agttacacta acaaccaaat aggtacgctc ttaactactc cagtaaagga acatccgatc 300

gcctatacct gtccatatgc ggtgacgtcg aacagtgcaa catcagacaa gcacgtgctg 360

aacagcctga ctctgagcac gtgctgacta cgacttgagg ccgagcatcg agccctatcg 420

gcgaagccac gttaagtttc ccttatacac aggcaccggg ataaaataaa gttttattaa 480

tagctacctt aaatttacca tgtatttatt tttaaattgt ataatttcct ttatgtttga 540

tagagtgtgt atcagtgtta tttttgaact ggcatcgcct agcccctgtc ggctgccgcc 600

gagtccatcg tcgaaccgaa ggaggtcggg gtggaagaca gtgagacggg agagggaggc 660

cctagcgtgc acgatgtgat gttttaaaca gtgcatgttc aaagtgacaa aaaaactatt 720

atatttcaat cacaaatttt gaatttcttt ttgtttgctt tatccagaac ctcctatgtg 780

ctatttcact gcggagaatc aaagagatgg accgttggaa ccaagagcat ggttgaactc 840

ccctccaaaa ttgttttgac atgttatatt gatctttctg cagaggagag tgaatactat 900

gattagatgc aacatgaaag gagaaacaaa atgcaggaat tcagtgacag ggattcaatt 960

ttgactaatt actcaaccat gctttatttc attctgaggc tccgccaact ctgtgatgat 1020

gttgcattgt gtcctttaca cgtgaaagca tgattttctg caaactctat cgaaggtatg 1080

ccctttttta ccctttttata ttaactctgc atttttgtta ccatgatatt gtatgatcat 1140

agcatgcttt tcatctaccc tactcaatag ttgaaatagg ctaactcaaa tggatgactt 1200

gttacttaaa aaaaatataa ggacaatttg gcagggctcc ttggaagtga ttctctcctc 1260

tcaagccaaa caaaatctta catagattca agtggagagc agacaagaat cacttctcca 1320

tttacactgg gagctaagag ctaaaaaacc tgcttcacct ggctctccat tatttatggt 1380

tgagatctga ggagaatcaa ttgtcatcag ctcccaacct tgctcccttc tatgaatcca 1440

ctggaatcac accatcggaa aatcaagaag caaagttaac taaatgagtc catgatatgt 1500

cacctattgt attg 1514

<210> 1312
<211> 2022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301840_G1, chr9:24044103..24046124, Cluster 8

<400> 1312
aaggatgtat ttggattttc tgactaaaat taagtctgtg tcacaacgaa tatgtcaatt 60

atgaatatta aatatatgtt taattagatt taataaattt atctcgacat atgtggaatt 120

agttttataa ttatctatat ttagattcgt aattgttatt taaacattcg acatcacgtg 180

tattaatctt ttggcggaac caaacacata ctccacggac gctgccgcct gccgccgcca 240

acagtgccgg gcgtttcctc tgaccgagca cgccgagccg tccgccgtcc gcggcggaat 300

ttatacgctt ctgctgtacc gctgccaccg gcatttatct cgtagcggga tactcctctg 360

tcgtctcctc tgacgagact gtcttcgtct cgtagcgggt aaaggatcgg ccgcgtacgg 420

cggagtgcta gcagatgcgt cgcgtcgagg agggcacggc cagccgggct gcaaggggag 480

gagcaacgct gcaagcctgc aacggacgaa aaagggctcg cgtgtaagct tgctcctgca 540

cacagaaaag aagcagcacc agcagcagac ggcaacgctg cttcggtgtc aaacgatcgc 600

gtgtactctg tacaagtagt agtatgagac tgagtgtagc agtaccatcg gattctagtt 660

tttgaaaccg agcaaaattt gtcccaaacc gatggcgttc ggtggtggtg ctgggcgggg 720

cgacctcacc tcgagacacc caggacctca tctatctcgg tgcgtgcgac cgctgcctgc 780

acagtgcaca cctgatggag gagtttgtac tttgtagtgg gcagcgccac ggaatggaag 840

aagagaagcc gacaagcagc gcgcatgctg tgcgtgcctg cctgcctggt cgcatcggat 900

tcctgcgcgc gccttccgag gcagcggagc ctgcccgggg gaggggacgg ggaaattacg 960

cccgtgcccg ctgccagatg gacaaaggcc acgcgcccgg cgcgacgacg tgggtccgac 1020

gccgagaaca agtgcaaggg ccacatcgta cttttcagat aaaaaaatgc cttcactagt 1080

cttctcttat tataacacat tgtttatttg gtcttatttc attttatttc taatacgaaa 1140

ttaacttaaa atgacaagta tttgtaatct aaaattatga tatttaaaac cgtcaagaaa 1200

aatattaaag ttcccatgta tgatgcaatc cggaaaaaat agttttggtc atggtaaaga 1260

aatagaaagt atactcgtat gcataattta aaaagttaga ttttgttgtg cagaaaactc 1320

atattcctgg tatttgttcc atatcgtttt taagttaatt tcagattaaa aataaaaaga 1380

aacaggacca actatataag aggtgctaaa atgcgagagt aattacatta atgaggggtg 1440

ttttctatat gtctttacta actagagaca ttttctagat ggtcaagtta atgagtggca 1500

tcagtcaaat tttctcgacg tcggccgata ttctttccac ttgcattacc tgccgaattt 1560

ggtccgctat agatccaatc aactgactaa caatcaatca taagtaggtc tttagatgct 1620

tattttagat cattgttttt gctctttgta attatttaaa ctatattata taatctaata 1680

tgattatcta aactagatta tataactgtg taaataaaca tatctaatac gattatttaa 1740

actagactat ataatctata taaaataagc tagattatat acttatgtga gaaaagagac 1800

atgtcttaag gccatgttta atttctttag tcatctagct aaactttagt cactaaagta 1860

ccctattttg ccaatggcta aacatgacta aaaatcatta attatatcat ccctattcaa 1920

tagggcacat gaaggaaggt gagagcagat atagtaaata ttattttagt cacttttagt 1980

taccttttcgg taactagagg actaaaattt tggatgagac tt 2022

<210> 1313
<211> 2861
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313453_G1, chr9:98349349..98352209, Cluster 8

<400> 1313
tattggactc attctgttgc agagaatacc ctaacatatg cttaaaaaac gccatcaact 60

atggctactt aagttgacca agcttgaaaa ggttttgcag ggaaaacaac gtaaaagaag 120

gtgactgctg caccttcaga gtaatcaaaa caattgtctt ggttgtcaca gttgtgtcca 180

gctagtgtga ggctaggagt ccgtcacaat atttttcttg ccaagtctac ttgtggtttg 240

tgacaggtca ggtggtcagc tcttggttag ttattttcgt gtggatgtta gtctctgtta 300

gtctaagaat atataactcg aaaatctgtt agtctaagga atactgggct actaagtttg 360

aagcaccaat atacttattt ataatgttgg cagattactt ggtgtacaat ggtagatttt 420

taatctcatt tcttgccatg tccacattcc gcacctgcta attctaagtt ggtcacttac 480

cagttgtaca tacatgctca attctgttta agaagcagaa tgcacaataa aacccagatg 540

ttcagaggat cagagcacat gatacttgtg cttgttttgt agcagggaat tgatgctccc 600

cgcagttttt ttgctggttc aaaacaaaat ggcttcaata cggaagtggt tcttcatgac 660

ccaatgcaag ctttgtcctc taaatttctc actaaggtga tggaattaca ctcttttcag 720

aacagctcgc gactgttcag gtctgacaaa acctaccagt tctgatagtt acctcacaga 780

acagctcacc ttttcttttc cttttatttt ttttccagat tctttggttt acaccttgtt 840

gagatcagca taaatgttgt ttagaaccaa cagtcaagtt gcagtcactt gccatatggc 900

agtattaaat tgaagattgg agtaaagatt gtgccaccga ggagctacct caaccaggtg 960

agaattaggt tcttaagtca ggttcactga acaatagaat tcctatgatg tcaaaatctg 1020

gaaggataca ttattagctt cagggtgctg aaataatcac tcaaaagcag aaaacaggaa 1080

cgtttattag gtgaaaaggt ttgttaaaaa tcgtacttga taactaccag aacaactagg 1140

tcagtaaaac agcattaaca atggttaacc ctcgagaaac ctggtgtgct ttttcagaga 1200

aaactggtac accccaagta cagaaaagtc ccttgcgcca actcctctta gctgtaccac 1260

acggtctgaa gatggttctc ctccatccaa tgttgtctaa agtgacaact caattctcta 1320

tcacctttta tcctccaaca acagaaaaca caaaagaagt cgcagaggcc gtttgaagct 1380

tagaagtttc acaaagtgtc catttgaata tggactatgg agacatatat tgccatattc 1440

cacttgaagt gtgtgtgata tacacatctg catgattttt tttgcttttc agaactactt 1500

aaaaaacgga ttcaataatt cataactgtt ctccacaaat tggcttgatc tgatcatgaa 1560

ttatacatgg tatctgcata tataaattct agtatcttgg tacagttgca tacatgaaat 1620

cttgtagatc tcccacaatt tgcacaattg aaagtgaagt atatgccttg ggaatttttt 1680

tactttctca gaacgacatc tccaccatct cttgagaata ttcaggttca cctgtcttgt 1740

tcacaaaaat cagtggattg acagtcaaag acacggtaat ttgtaattgc accgcactgg 1800

agaatgtaag tggtacaaag tgcccccgag gacagttgat tcggcaccgt tggtctaaag 1860

agatgatctt tttgggatca ttttccaaca agaggtccaa tgaattgtca caaatcattg 1920

gctcgttctt atctaactgg aggacatttg tcctgagagg atttgatacc cctaaagttc 1980

ttctgtcgag aagcttgata cccctaaagt gatgatggct agaggggaa ttcgaacgtt 2040

aagggaaaga aaggatgaga gctcacagac aaatccttgt gatccatcta agttggatcg 2100

aacctttgc cgggtaaagc ttgcatcaca tgttcttaag agcttggaag ctggtgattc 2160

aggtgtaatt aaattgcagt ttaagcgaaa ttaattaaaa tatgtcaagt ctgatttgta 2220

ttttgatgga cttagatagc agtcgaacat atgcacgcag aatgaaataa attgcaggca 2280

acacatcaaa ctacacgtca aaaaacaaaa caaaacaaaa tcgtgcccat cagaatccag 2340

aatctgattg ccaacttgca ttgtgaaggc atggaggaca tgtcattgca gcgtgcacaa 2400

gaggtgacta atgcaagatt gattggtcat ctaacgcgac atcgtgatcg gtcgagagga 2460

gacccaggcc cagggacatc gggacatggt taggttacat tgctaggctg gaacacggtt 2520

ctgggctacg agataccact atgcatgaaa tggggacaag ttcacgggac aaacgtgttc 2580

ctgatcaaac ttttgtcgga gaaaataata gccttctccg agtttttata aattctccaa 2640

ttaatggtcc attgtgcggc taagagtttt aaacggccga gagctgaggg ggtatgtagc 2700

tgtagaatat gttcacttgg tcgaaaacac tataccgtcg acaaccagaa tgccacccga 2760

tccatttgtg ggtgaaattt gctttccgtt ttgcagcacg gatgtttcgg gattactagg 2820

gaaagaacag tcaatgaaca tgcatttttt ttcaattttg c 2861

<210> 1314
<211> 2590
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321807_G1, chr9:142446811..142449400, Cluster 8

<400> 1314
ggtgaaaggt ggatgcagga caggaaagac gccgaagagg cggacggcga gacgggaact 60

gaatggttga gcgcgtagta ctggtagtag catttcatat tcggccagcc taggcacgtg 120

ggtttccatc ccggggacgc ggcccactag gcccaattgt gttgcggcaa ctcttatgtt 180

ttcgttcgtg ttcactggtg gaagccacgc acgacaaatc gtcttggtct ttcctcgcag 240

gagagagaga gagagatggg tgggaaaggg agctcgccga caggaagctc cgacgaccat 300

ctctatgcct ttttttttc tagctacata tcttatcata ctatctagta tatgctagat 360

ctagatatat atgacagttg ctattgtatc tagataaagc tagaacgatt atagttcgaa 420

atagagagag tacatatgaa tatattttta gaaaaaaaaa acatctaccc aagtctaaaa 480

ctgcacacaa ccacttttta caagatttcc aactagaata tcggataaag ttgtgtgcca 540

tgcagagaga cattctcctg gcttgtcaag aagaaacaaa tgatgggatg aaagagattt 600

gatggatgag cacatgtatt aaaaatttcc ttttcagata gggggactgg agccaggtat 660

cgcttccatt ttacaccctg cagattaccg ttaaaacaga ttcctaacag tcctctcggt 720

tagcatccaa tctgcttcaa gctatagcta ggttgcaact tgcaaccgtt aggtggctcg 780

tggctgctcc caaagcttgc aaataaacat tcttcaggct agagcatcaa aaaaaaaatc 840

cattctcaag ctaacaaagc gactgaagtg ggaccatcat cacatcgctg cagcttgatc 900

tgagacatac catctcacaa ggctgacttg tggtcccacg cacctcacag ggctgattgc 960

atccatgagt gcgggtaaag tgtcctaccc acacccagcc acaagatgtg ggtcttttct 1020

gcaccaaagg gaaagttgaa gcggcgactt tgttctttgc caaaaggaaa cactacatgt 1080

gtctctttat ttaggatctc ccttcatcag cccgtcatct ctttaactgg ttacctttgt 1140

ggcatatatg gggccctggc tgtggctctg cctcggtgga gttggccttg gattccatag 1200

tctgaaaacc aaagcagtga cgcacggcaa caggttgtac tattgttgaa gatggttggt 1260

ctgtggagag ttggtttacg actgatctga caattgacgc actccagtgc tgatcctctc 1320

attccggttc catccagagg caacctaaca agcccttagg atttaactga agtggaaact 1380

caacagctat gttggttcag gaagcagatg agcgagcttg cgcggttcta acctgctgca 1440

agaaatggac ctaatcaggt tgtttagaaa ggttcagaat tagggtcata atatccacag 1500

cctgtactgt gtcctatata acctaccttc ctgatcagtg ttttggtgcg ttaggctatc 1560

ttttggtgga tggactagct gggctatgtt ttggtgggta ataagagcct catttgagag 1620

gcaattagtt gtgtcaaaga gccaaaaagg gagggagggg gagagagatt gtataactta 1680

gccgattttg tcacacaaaa aagggaagga gtagaatgca taacagagac tagactgttg 1740

aaaaggagaa aagggtggcg ttttcacctg cctgattgaa cacttcggct ctttgctttt 1800

ataattgatc tggttttggt acgtgttcca ctgaatagta caaatagact gacctcaacg 1860

tggctcgaaa gcgaagataa gatcgtttag atacaagatc ctatctgcga agctcgtaca 1920

aagatgtagc tgaacgttgc ttgtttgcgc tatgatggag gaatatgata atggcgaaca 1980

attgcggtgg tcaagatgcg ctggtactag taggtcgggt tgctgtgaca taaacacatc 2040

tggatgctga tgaaaaacac atcgattgca atgctctcca tgatgttagt gactgctcac 2100

taaaccacct gtctcctcac caaccaagga atcatgatct caaagaccta ttagagaggg 2160

atgccgtgca aaaaagtgta cattgtagga ctgatctaga acatgtagta gctgctggct 2220

cctgcagcag catagcaact tgcgaatttt tcaagcgaca agaagggata cagcagcgca 2280

ttatttgtgg ctatacatac tataattaac tatataaata aaattatatg ttaaaaaagt 2340

cagaatgatt tataatttag aaacatggag gttcacacgg tggattggta taactttgtt 2400

tggccgaatt gaagatttgg agccgtttgt ggggcacaag gtggtatgtg ttgctatgtc 2460

ataagacaag accctctagc ggttgtactt atgtactaga cctgatcatg ggcaacccga 2520

tccgacctga tcaatgcgac aaacgggtac gaaccatagt ttttgacccg caacactcca 2580

cgggccaggt 2590

<210> 1315
<211> 2961
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322317_G1, chr9:145161477..145164437, Cluster 8

<400> 1315
gataggtatt tttgttacac taaccaaata attatttacc aggataaccc aagaatctaa 60

actatcccat tattataatc tacatcagca tagattgtca aacacatcgt ttcccattat 120

tatatgcata atctagaata taataactcg gttatgatcc aaacaaagcg tagattgtca 180

aacatatatc atttccctcc aatttatata gtttagcacc aataagttgt actattatat 240

atctaggtat actacataaa cctagttata tataatgttt atgtagacaa agaagcactt 300

ttattatgcc tctatatctc tatatgtagt acacacagag aacacgtttg tagatagaag 360

cctcctaggt cataaaactt tatttgatta taaaaaaaca acacagataa acttgacata 420

taggcatctt attctcatgc caatttgttt tttccttgga cgaatcgacg tacgggagaa 480

agccggccac gcgaaccaaa gcaaagcttg aacaaggggg aaagggtgtg ggtgctgaaa 540

ggcggcaaga tcgtataaac acgggaggcg tccaagtgaa cctggaaaaa gaccatccga 600

ttccgcgctt gcgatacact aacactacta tctatcgacg tgccattttc aggaccaaaa 660

cagctgaatg ccgcctggac agggatcaag attccatccg atccggtggc tcgactagtt 720

gctcgaggat cccaaagcaa caacgccgaa ccagcgtgac ttgttgaagt atcagaattc 780

agaacgcgca tcagcactga tcgagcacca gcagcatcgg tcccgcgcgt atccgctggt 840

gccgtcctcg tcgacgtcga ccctcgacct cgcaggaggc aaaagcacgg gagcaagtgc 900

cccgccgcgc atatgtccgc ggcatgtcat gcactcatgc cctgctagtg cccggaatcg 960

gagatcccac tagctagcta gccccgtccc gcctccactc cgctcgggcc cacctctagc 1020

tccccgccct tccttccccg tggcatccac catcgatcga ggtcgttgcg ttgcgttgcg 1080

ttcgacgaga tgcgtacgtg cggctgggaa ggatatttcc gacgccgacg acgcagttgc 1140

gttgccgttg cagttccagc gtgacacggc tcgtgccggt gagcgcgcgc ttcgttcccc 1200

gagaactcgg tgctcctgcc gccgccgccg gctatagcta ggcggcgagg tctcgatcgc 1260

cgataagttc gggggtggac gtggattcca gcccagggag cggcgtacta cttatacgtg 1320

cgtgcgtgct cgctcagtcg ctcgcctgtg catgcatgca gacgatccgg accctaatct 1380

ttgaggacag tgagaggctg ctttgagagg atatgcatgc atatatgcaa gcatgcatca 1440

tcggaccggc cggaacaatg tcgccgccag aataatgagc caacagtcga gttcgtgacg 1500

aatggcgccg tcagtagtgc tcagcagcac ccagtgggaa taatgggatg acatcagtac 1560

cacagaggtg gggtgggggg gacaggttcc aacttccaag ggtcgtggaa gcgaagtcac 1620

ctccggatgg agaaagaatc cctagtacta gtagtaggct agtagctcgt cgccggccgc 1680

ctttagttag tttgcatcgt cagacgcagt gctggctgcc aatgcttcca ccgggggggaa 1740

aacacacaca gcatcagctt cgtcatgaaa ctttcatgac gattaccgca gagccaccag 1800

ccttatgttt gtcgagtttc tattggattt ggatggatgc agagacatac taccggcgaa 1860

gctactcacc aaaaccaaaa cgtacgttgc acgacgacga tctcgctcgg tgaaaaaaag 1920

atctcaaatg catgcatgca tattgactat atattattcg tgctacatgt ttttgagtca 1980

ctcgttgtac tcgtacagca gaacagcaaa gccaataata actgaaaaaa tacatctgca 2040

attatatcct tctggacccc ttaacgaaca tctcaccaac cgttcgaacc tccatgtggc 2100

actcgtgctg ggtcgctagc tcatgtctgt atatatatag tgtatagttc cgaaagcctc 2160

ggttaattat cacgtgttgt gacgctcttc ttgtagttta gcgtccgatc caaagaataa 2220

tcatgatttg atgatataat ttggttcgaa cggttgaagg tttttctata gcagaagatc 2280

atgtagtaga aaataagcta tgtttgctaa gcatgctttt agcatgtgga ctactcgttc 2340

ataattatta gtcgtggccc gtgggggtct taaagtgggg ggcgtttggg gtacagcctc 2400

ttcacggctc ctagagctgt tttaatttag cgcttcttgt tctattttat atgcccagac 2460

gtcctctcgc cgaccgcacc tcgtgaaaag tcccggaaaa tagcagtgac tcaagttttt 2520

tttttgcgct agtggagtgg agccgaaagg cccgaaagaa gtggagttta cctgctgagc 2580

tgttgactag tcgagagttt taaagcacga ttagcagaac tagagatgaa cacattgcaa 2640

attaataccc gataccccat ttcggaacca ggagccaaaa tacctaaata tatatccgaa 2700

atgcccagct acaatttcga atagtaacga taataaaaat caaaattatt tcgggtagtt 2760

cgagcatata gtttcttttt ctttctttct ttctttcttt ctgataaagc gcgcgtaagc 2820

tcctttgccc gtccaaacac gtgaccctcc tgagcctgtg cacgtctcgt ctcgtctcat 2880

ctgatccgaa acgatacggt tgggccgatt ggcaattccc tttgtttttt ttttttggtt 2940

ccattgctta cgcacccact c 2961

<210> 1316
<211> 1833
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32236_G1, chr1:197795350..197797182, Cluster 8

<400> 1316
atcatcacaa gtcacgcgaa acgcaagcga gcgcacgcac gtgtggcaac ctccatagta 60

ttttatttat ctcatgtgaa gagtagagaa cactcccact tataaagtag tcctctccta 120

tctagatgga tgatatgata ctaaagtcgc gtgtctatct ctacgcacga ccttgacttg 180

cttattgaat taggccacac actagtggac ctaattccac cacgcacatg attataaaaa 240

aaatgacaga tcactagatc agaacccaga accgttcgcc ccaggcgaaa cttcatccag 300

gcaggcggca gtacctttat ccgcccccca tgtggaatga aggaaggaga tctgaaccct 360

ggacacaatg tcagagactc acatagtaca tgggaaaagc tgtcggttgt ttcttgcgaa 420

atcacccggg tgctccgctg tcccaacctt ttttttgtt ttcggtgctt ttacatcatt 480

ggcaccaatg cgccatgtac gacctgactg accctaacct ccccagctgc cgtgattttt 540

tttcttgtgg aggcttggat ggacggagag gctggccacg ttgtgggctc tgcctgtttt 600

gtttttttt cttctttctg gttgatctat ctatctgacc cagtccaggc tatggtatat 660

ggtattccgt atttggtagg tcaggtcagg aggaccattt tggcaccgag cggtttggtg 720

agcagaaaca gaaaaaaagt gaccgcatca gctgctccct cactagtccc gtatgcggac 780

acgcattagc aactggagtg cagtagtagt atgatactgt actggtggaa gtcacgtgat 840

aacgcagcgc tgtcacatgt ggactggacg gggttgcccg ttccttgttg tctccattta 900

gaagatggtg tatgagcagg tgcagagacg gctctgtaaa gccagccggt tgagttggga 960

gggagcatgg gatgggattg atgcccttcc tgccagccag gcgcaaggaa ccgccacgct 1020

cgtcacgtgc tgagcgacca ccaagcaaca gatactatgc gggcccagag cggcagtgag 1080

ccatcagtag tcaaagccac caaccgatac cgaaataaaa ccaactggtg cacgatgatg 1140

acactagatt tgctccgtgg ctatcaccca atccgtcttt agatagagct ggtgacgaat 1200

tcaatcaaga ctgctttctc tactcatgcg ggccactctc gaatttagat attaattaga 1260

gtgtcatcat ggctttcggg ttctcaccag gcgcgatcag gttcaggccc agcagttccc 1320

tcccatccca atgagccacc gacaccaccc ttccccccccc taacgttcag gagctgcacg 1380

ggtcctttcg ggttctacaa cgaattgctt gactgaacag tggctacaca cgacacgatg 1440

tggcagcaga aggttttcgc cccggttgct tccgtgcctt actgccttgc cttggtcgtc 1500

agtacagtac aggatcatct atctcgtcgc gcccggtatt tgggctttac tggcatgatt 1560

ctggcgagtt atggccatga cagcaaaggc ccaggatctg ttggatcggt tagcccgcgt 1620

tcgcttctgc tgccgatccc cactgcatac tgcatcaggg accgctgccg tgacgtttca 1680

acacaaagat cgtcgtcgac gccttccact cttcagctgt tggcagccat gcaccgcgtc 1740

ggacaactat ttctgtgggt tgctgaaata ttcagtcaac tagtcaagca gtttgtttcc 1800

tcctaccgac ctgctgtcag caagccagcc aaa 1833

<210> 1317
<211> 1587
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323153_G1, chr9:149384148..149385734, Cluster 8

<400> 1317
cgtactaatc accgcaacag acatggttcg cctcaaagtt cattgtacag cgtaactttg 60

tcgcttgtat cgaacatttc gtttgccttt tggccgatgc atgaaccttg agaaaacgcg 120

ttaattgtca gctagctctg tctttggttc attgcagaac tctgagcttc atcagtaggc 180

agtagcgctg cgtgcgctct gtaaaagcat tggaagagat acgagtatta agcttcggag 240

aaggccatgt tcagctaaca aagccatttt tcccccgttg ggtaaacaac agccttgttt 300

gtacaatgta catatagagc actagcacaa cacaaacaaa gtcaagtgta tatctgagaa 360

gtcataaaaa tactgaaaca tatgtcaggc atagggccca agctttaaat acgtgtaaat 420

gaagatcatg gtcctgataa tgtataattt gtcacttgtc aactgcttat cctcctcaac 480

ctgttattaa tccaagctgg tttacgtcgc tttacagatc agtatggtct atccacacac 540

cttgtttttt ttttcccatc ccgtggtcat tttcatgctt tattagtgca tcgtgtggta 600

ttgaccattc gtattttctt atgcatatcc tgtgacggag gaggctggag gtagatagca 660

cacccataat gccgaggggc actgtcaggt caggtcaacc cccataatat gtgtcgcgcg 720

caatgtcaac gcggaggtgc tattaattag actagacgca cttgcgcagg gttgcccact 780

atgttgccac gccgcgcctg cctgccaagg tgatgatggc ccatcgcgta cgtagctttg 840

agttgacttc gttcgtcttt cgttctgatc tcacagagag aaggctggag acctggggaa 900

aaaagagaga ggagcgccat catggtgtgc taagctaatg gaaggattag ttcaaagctt 960

aaaaaaggaa tgtgatccgt tgaaaaagaa gggtttggat gtccaacaat ccaacccagg 1020

gagttgggcg tgacgagaag attcacttgg caaagaaagg ctggctaacc ctcgctcgta 1080

tagggataat gtgtgtataa tcgcgtaggc tggtataggc ttgatcgtga cagtacagta 1140

gtagcttggt aagctagcat tgacctatgc tatgcaagtg caaaataagc cgtctggggt 1200

ttcatttgct ttgttgaccg cgcttggaat tggaacgcgg gactgctgct gtgctggcta 1260

tggatttgca gaggctgtgt ggctggaagt gggtggagtg tgagccagag aacgctgatc 1320

tgatcgacca cttccacttg ctcggttgtc acctgccaaa ctccaaactc actatgcgca 1380

tccaatcgga acagctctaa gccgttttac tgtacctgaa actctgaaga aagggaaccc 1440

gtgcatgaac cctgctgcct taggaaaccc gtgcaagcct gcagaattgg tacgctgaac 1500

taggcatgtg cctgcgttgc gtgccattct ggttcttagc acaaccaacc acggtgcctc 1560

cgcccgggcg agtggagtgg gccggcg 1587

<210> 1318
<211> 1592
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323848_G1, chr9:152262288..152263879, Cluster 8

<400> 1318
actcctcggt taccgccgct tcgctagccc acatgcgcgc aggcctccat cgtccatggt 60

ggttgcccaa gctaagctgc caagagacag gccgggcgtg ggggccatgt gaagtgctcc 120

cctcgctcgc tttgcagctt ctgaaattct ccgactatcc acagggactc ggacatctta 180

gagcccatca tattcaagac tagggctaga ggacaaagct gtaaatcaac tatgaactag 240

aagctaccac cggtggataa acttagctta ctatggacac agtgccgact ctaggcctag 300

gcggggtggg taacctctag ggcccaaaca ccgagagggg ggccaaaaaa tgtttcctac 360

aagtttttgg ataatcacga gccacagaag tgttacacaa gttttgcaga ttttttttc 420

tcatgatatc ccatctaatg ttggtatcaa tgattttatc aatgaatttt aagacttgct 480

agtaacttta tcggatgttt tgatgtcagt aactgatatt cttcagttca ttatagttac 540

tgagattctt cagttcatta tagttgtaaa ttattatcca aatatcggta ttgtatatag 600

gattttatcg accatttcta tgatcacagg ctcagctgaa agaagtttct cagagttaaa 660

aatattaaaa atatatttaa gattaactta tcacaagaaa aattaaatag cttagctata 720

tgttctatca agaaatatac attaaaaaat attgatctga acattgtcct tacatttttt 780

gtttaaaaat gctcgacgga gttatttatt ttaatatata tatatataat ctaaaattgt 840

aatttagatt actctaaatt ttattctcac ttaagatatt caaaagaatt tactgttatt 900

tactattata taaatgaaca aaaaaataaa ttacgtagat gtataaaaaa acagaaggaa 960

ttttctttta ttgccaaacg cacaaaagta ttgcgagctg gaagctcgca gaagaatcca 1020

acagaccaat aagtgtttta ccaaaatcct ttgatcctcc atcaaatcaa aatttcagat 1080

gagagggagc catgctgcat ggtactttag gacagcacaa taatgtaagc cggtgactgt 1140

gaaacaagag cgcgctcgac gatgatgatc atgcggtaca aattaattac agattgctgc 1200

ggctcgtgtt caatccgctg gatggttatc attgctggct ggcaaacgct gaaacgcccg 1260

cgtccccgtc cccctggctt cttgggccgc ggcgggcgcg aacacacacg agtccattcg 1320

ctcggcagcc cagacacccg tcgacccggt gtctgaaact cgcctagatc agctcgggat 1380

ggtttggact gtttcttaaa tgggccgcgc cagaaaatca atcacagaac aaattggaga 1440

tgggtcgatt ggttactaaa tttgtttctg ccgtttgaca gttgacacaa atgtttgttg 1500

aaaatacgta caacaatcct attgtcaaaa gctgcatgtg aagatgacta tcaatatgag 1560

acaggaatga ccgattgcat gaaagcaatt tt 1592

<210> 1319
<211> 1614
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325492_G1, chr10:5390203..5391816, Cluster 8

<400> 1319
aaccacctaa ttaatgcaat tataaaaaac acaatctttt gaaaatgtag accactaatt 60

ggagatgtga aaatgaagcc cataaggacc ccaagcattg tttgattaag agcataggtg 120

gaaatgaagc ccatatatat agggattctt ttgaaacact gaggttgctt ttttttcctc 180

agggattact gctgaccagt atcgtgtaag tttctcaact actgtcagcc ccaaaaacaa 240

attcagaaca agaaacgagg atgaatataa atcatcctct ttagcgatga tatcgtgtag 300

tttatgtcgg tctgagttag tattctcttg ttcatcgtgt gtaatattac atcatgtgtt 360

catgcaagat aatatacttt ttatttcgtc gtcgcgagac atttccaccg atcaatacac 420

caaatcagac accggcggct ttgaatgagt gaccatgcat taaaattaaa tgcgcgcaag 480

aaagggatca gagcaggccg ggcgagcaag gtcgacccgc ccggcatgaa cttcgccgtc 540

ggcggcgccg gcgtcgtgga ggggacgcac gaggcgtcca aactcggcac tcaggtcgac 600

aagttcagga gtctgcttgc ttgtctggca cggcgtcatc tccaaagacc gcgtggatgt 660

cgaccaccat agactgcatg gctcgagcaa tacgcaccat atatgcacga gattagcatg 720

cagtaccggg cctatctagc accatttcca cgagattagc agggcatcaa cacagttaat 780

cgtcgtaatc tgcgatgctg catgtcgacc accaaacaaa caaacaacct agctggtttt 840

acgtcgtcgt gcactcggtg cgcgtggtgg ccgacacaac aagcagcaag ggacgacacg 900

cgttgccgtt gccgttgccg ccatggcatg gccacgcgga ccgccggagc agggaagaaa 960

gaaaactaaa cgcgtgcgca ccgcacgacc acaaaagcac atcacgcgcc ccgcctggtg 1020

catgcacgct ctgcatggcg gcgcctcctg cggaaaaaaa ttgtctgcag tctgctgtaa 1080

attcagcgcg ctgcagtccg cccctagatg gatgccatgt gtgcactcat agccatcaac 1140

gatggagaaa caaagtagcc aaaactaaga cgatcgcctc ctagaggttc ggctccggct 1200

acaagcagct gctgccacac gatgtagtca ccgtcgctgc gtcgcagcat tttttctcca 1260

gccagaccca atctcgccta catagccgtc tctttttttc tctagccaga ctcaatctcc 1320

cgcaggaggg agttgttgtg tcgccgccgc catgctcctc caccactacg atgtgtttgt 1380

aaactcatgg aatccaaagt tagaataagc cttgaacaca tatggttttc agtctttcag 1440

atatctgttt agtctgtcag ttctcgatat tgttcagttc agtttagtgt tttagctcct 1500

gatagtcttg tggaaaggag tcggctgtct gtcattgtgt aaagaccaag agcacataat 1560

atccaatagt atattatttg aggtgcacct aatgctgtaa aaaattgtat tcca 1614

<210> 1320
<211> 1890
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325727_G1, chr10:6541331..6543220, Cluster 8

<400> 1320
tgaagtttgt tacttttatt ttacctcagc tggtacttca atctccactg acccaacatg 60

cggtatttgt tgttcctctt cttcacgatc ccaagaagga gcatttaatc taacatcagg 120

aagtgatcgt gaggtctaat aataaaccct aagacttcaa tgtataatcg atcaacagga 180

ccttgatcag ggagcaacaa catggatcga tgaccaagac atgaatggtc acgatgaagc 240

gaggagcagc cacagaagtt acctgaggat cgacggtgac ggcgacagaa cagctgccat 300

gccgcctttc ccgtccgtga cgaagctgtc caggaagccc tatggagtcc gtccaggagc 360

cgattccggg aaccggacgg gagccgagcc gtgcgcagca gaagtgcatc gcgagcgcgc 420

gcggtgcgat cgtccgatcc cggacggacg tcgatgtgcg ggggtgcgca cgccgctctc 480

tgtgcgcacc gcgcgcacag gatttttttc ggcccaggtt gggtcgtggc ctcgtgggga 540

gggggagtag gcgactagtt cgaccaccgc ggtccacggc gacgaagcga ccgacacggc 600

ggctgcgcgg tggggtccgg agcggtatct cccgtcagcc tcgcggcggt ctgttctgct 660

cgctacgtcg agttcgcttc acggcatctg gtggatgatt cggtggggcc cggccacata 720

tcgagaggag agagaggtgg gggtagcgtg tggtgtgggt gcgcgggcag gttgctttac 780

acttctgcga atgaaagagg ggggcaaaag agccaaagag ggcaggatac ccgtgtagtg 840

ttgcccacaa acacaaaaaa aaaaactcca ccgaagcttc atctatcggc agctggaaac 900

tgaagcggtg gcccgccatg tgcccggcgc gtctctgtcc gttttaccgg ttcgtcggcg 960

cgccgcgaga ggcgcgtgac ccacgtcacg cagtgggagt ggaaacggta cgctacagag 1020

cagagacgac ctggctgggt gcaaaatggg tggagctgcg aaggcaatgt atgaactttg 1080

aataactgtt ttttttcgc tacataaata attatgctat tttacggaca gagaaaactg 1140

gctgatggta tctggaatat gatattctaa gaaactagtt tctagttttt cttaatacat 1200

agtgactacc ctaatagagt attaaaagta atgcgaccat ctgtgccaag tagtagatcg 1260

gcatggtgga aacaagtaaa ataatggaac gcaagctaag cttagagtgg acacaaagtc 1320

actcctatat atatataatc atatcgtagc atagctatac aatagtagcc gagaggtcga 1380

tgaacgatga tgccggcttc ttttgggcat aggaaacgtg cggagaacgg ctcatcatcc 1440

aaggccgggc gcgccggggc gggtcgtcat catcggttgt gtttgattcc cggagcacgc 1500

cagagccggg agaagcttcg ggggtagacg tgccatgccc atgaggacct ttgggagttt 1560

gggcaattgg gtcctgcgac actccagtcc agcgtcgaca atttgctttg ctgtaccgtt 1620

tggactcggg ccttgtacga gtgcttcgtg cggattctcc gttcccggtc caaccgatcc 1680

atcgacctgg gcacctgtcg tttccgtttt gggttctgcg agtgcgagga cacctcgacc 1740

gatcggtttg acgatttctg ctagcgccca acaattaagt cgtgctttct ggtcagagtc 1800

tctaggctag ttttcctggc atgagtttcc agatgcatgg tttctgatct ctaggctctc 1860

tgtgtatgtg tcgcgtgcaa ttttcagatt 1890

<210> 1321
<211> 1777
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337002_G1, chr10:77190041..77191817, Cluster 8

<400> 1321
gcaggacggt tggcagcgag aggcgcgcgg ccgatggggg ctggcggtgc acggagcaaa 60

cggcgcgagg gggaggggcg tgtggaacag ggacgccgca ccccgtcccc gaccgttgag 120

ggaacggggg cgggaggaca ggacagctga gctgcctgca aggcatggtt ggtggggccc 180

atcgtcggct cggttgccgt gcactgcacg ctaggcaacg tcctcgtcgt cgtcgccggt 240

ggcatggcat actgtcccaa gacgacggac ggtccagaga gacgcctcaa gacgtcgtcc 300

agagatgcgt gcgtggctct acctactact actactgaca tgtcagggcc ggtccgtcgt 360

gtattattgt aaggtgtaca cgtacggtac agtgcatgtc agggccgtac gtagaaaacg 420

tatccagtcc gctgcttgct ggtggcattt ggtgtgcagt gcatgcatgc atgcatgcat 480

tgatgcatgt acgtacacgt acgctcgcct cgcctcgctc gctgctgcac tgacggtcta 540

ctgcccgtcc gtcgtcgacc atcgcatcaa tgcagcagca agcatcatcg ttgtatcatt 600

cttgctctgc accgccgccc caccggcgca gaaaagccgc atgcacgctg cactccgatc 660

ctaagtgtca aggcggcaac aacaaggacg aggatcagat cgagcacgca catcagcttg 720

ccatcatatc cggaagcgtg cagaagatgc agatcgtgtt cggcaggcta ggccttctgg 780

ttccttccac tcaaagtgac caggctgctg tgtactactg tgccacagtg tcacacacac 840

ctttggagtt tctgaagaag tcacgctgcc ttttctgcgt aaactgcata tgcaggccct 900

aattaagggt acgctacttt aggtttagga acaagggttt ctttttttct cgtcacacga 960

aacctcatga tcaatgctgc acgactgcac gccacgacgt atgtttggtt acaagtatgt 1020

tttttttgg gggcggccgg gggtagctga gcgttgactg tatatagaat gctattttat 1080

ctttaccttt tctaagtacg taattgactg acagaggtca aataaattga aacgtacata 1140

taacagcagg ggagaacagt atataaaata cgatatgttg gccctttttt ttctctctct 1200

cttgtattta ttaatcacaa gtcaactggc gcgcgcttgt ttttgatgtt atacgttttc 1260

atcaagctaa atcaaatggt tttatttgta tacaaaatat ggcaacatgt tctaccaccc 1320

taatgagttt atagatggtt acatgacata gtagtacata gatatcatat agcatatcca 1380

gaataaggtt tgcttctgta atgacacata atatttagag acaaaatgaa gaacatgctt 1440

cgtctgttga atgttgtgtt caaaagtatt ccggcctaca cccaatataa cagtaggata 1500

ttccaatcgt agagcgaagt tttggtttat ttgaagttct agctgcatcg tttacctagc 1560

tgtgttgcgg acaacatcta ctcttgttga tttttgggat cagttctagt tgcatcgttt 1620

accttgttgt gttgcataca acgtctactc ttgttgattc ttgggattgt gtttaattct 1680

ggatgaatgt gggatgaaag tttagttgta tactatagca aatgtactaa tggaggtagt 1740

actataagct gagatgagaa ctatgatcct ttttgtt 1777

<210> 1322
<211> 1981
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_338340_G1, chr10:84025720..84027700, Cluster 8

<400> 1322
acccccctcac tggtttggaa cccaaccgct gtaggttaga gatgaaggga tcttgaataa 60

aattcctaat gattcacatg ggatatatgt cttacccaag ggtccatctg agaaagggta 120

ggagaaggat aaaatatcca aagaagagag ggataatgct gaaaatcgac ggaatcccct 180

tctccatctc caaaacctaa ccctccgtac cgtttgttgc tccacaaaat tgctgggcac 240

ttctagggta agtcacaaca caccttcgct aacatggtgc gctcaaccct tctccggtga 300

ttctagtcga gatgcaacat cttggtgcgg gacgccaggg tagagcctga agctctagtc 360

gaggttatca ggagaatgtg tagagaagaa tcgaggaaga tggccctaac aaggtgaaga 420

tcgatgagtc tctgaaacta gtgagaaagt ggaagtatgg aaaaccctc aacaagatcc 480

ctttctactt gggaacaaca acaacgaaag attgagaccg aagaggaaaa atgtggaaag 540

ggaagtgcat ttgaagggag aagaccataa tatttgcaag ttaagaaaga gctatcctgt 600

aaccctaatt ttaataaagt tgattatgct ttctgccact tgaagaatca tttgacccat 660

gattgtcatc ttcgttatcc ttgtggaact tgtggttttg ataatcatgt ggtgtttgat 720

tgcaaatgat ccattcccta taattttggg cctgagttat gtgcggttca agcggaacat 780

cagagttttt tctttattga agagaatatt ggcaacaaaa tgactaggga gaaatctagc 840

actattgcta tatctatggt gcaagggatg gttgatgaaa aatagattga gtgagagttt 900

atgaatcttc tgaagaaaaa cgtttggaga tggtttgcca catctatagg gtataataag 960

tttcttatga gattccctgg tccaataata ataatcaatg acttggacta ttttagaccc 1020

gtaagaatga ggactgtaaa agctcaaata actattgatc cttggtcttc tacgatcagt 1080

gctaacgata gtctctagag aggatggttc aggataaggg ggatccttgt tgagcaaagg 1140

tctataaaaa ctataactaa agttgcagat ctagtgggga aagttatgga aatagatgaa 1200

aaactagact ccacaatgac tttgttaggg ccaggacagc ctgtagggat attaatgttg 1260

tccctagggt ggtcaaaagt gctctgggtc ttttcatcta tgatttcttt tttcaaagac 1320

aaacacaaag ggaggaaaat gaggagaatt tgggtgctac tgtgaaagtg gatgataatc 1380

ctcataactt tgctaaaaaa gcaagagttg aagggcagat atggaagaaa ctttggggaa 1440

aagtgggatc tcagtcttct ggatccatga aacataactc tggcaaggag gaggagcaga 1500

gttataaaaa gaatattgtg taggtctcat ctgataagaa aagtgtaagt gcgatggaga 1560

aagggaaagg aattgtggag gagcattatt attctgaggg gatgtagttc agccaaaatt 1620

tggaatgcaa tgaaagggct caaatcactg atagtgaaga tgatgaggaa agtgacttgt 1680

taggtgataa tctgctcaag tttggcgcta gtgctggtgg atccattccc taggcgaggt 1740

gtaatacaca gaatgcaagt agggatggag ccattaaaaa tatgttactt caaaaaaatg 1800

ggggtaaaag ttctgttgcc attgaggaat taacaaactc tgatcctaaa gataacaaca 1860

acaagaatga acctatcatt ggtagtcaag aaaacgggtt ggttaattca tctcaaggta 1920

ttgataaata tgggatgaac tttattgtca ggactgataa agctgaatat gtgaaggttc 1980

a 1981

<210> 1323
<211> 1868
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344235_G1, chr10:116611996..116613863, Cluster 8

<400> 1323
attaccaaat ttaatggtta ttattccttt ctattttagt tccatacagg ccatttgcat 60

aacatctatt tcagcgtgaa aacaataagt tatcaaacaa cttccacaaa tgccaaaaga 120

cttcactttt catatgatgg acaaccatgg gcatgatagc atttttgtgc aaccaagact 180

tccctaccaa gtcaaaccac tgattaatct agttctccca cctgccgacc gccacatcaa 240

tcagccacac taacgatcac gctattgatc accatcagct cttatctaat ggagcatttc 300

ggtgcacaac ctttatcatt agcctacaat cacattaatg ctacattagc tttcctttta 360

cagaatttaa tttgaaatga aacactacat tatattgaaa taaaaaaatt atccaagtac 420

atcattatgc aaataaaaat tacataattc ataaaaacat aaaaataaat aaaattatat 480

attttacaaa aaaatattgg tacaatacta ctaatctcag ttatctttat cttccacctc 540

tttcacatct tctttctctt ctaattttaa atgcttagtc aacttttaa tgtcaacctg 600

tggacccttt ttatgttact gtttatatcg atggtggatt aatccaacaa cttattgaat 660

tgctcaaaga attttgattg agtcatcctc tagctagcct tataaagctt gttcaactta 720

atctctctaa gacaagggac tcgttcctag ccctttttctt atacattgag ctctttccct 780

atcaggttca atagggcatg gtggaccgac actctctaat gatatgtagt tataatcgtc 840

atccaattta agataggata tcttactccc attgttggag tcgccatcac catgccgcgt 900

gcaccacttt gactgataat gaagagtgcg ccacatgtgc tctagcttga agtcggtttc 960

atcaagctta ttgaggaagc tcttcttggt cgtcgaggag catagcgcca tttgctcgct 1020

cagtcaagcc acatacaagt ggttgtatat gtcatcaaag agggtgacct tgcggttgct 1080

tatgaacaat tgatccttca tttgcttgga ggacggtggt gagaagcttc catagtggag 1140

ttgtgtatac tggctatttg gtcctagaag gttgatctct tcttgccatt ggccgcaatg 1200

tgatccagga agtgtagtag ccatgcatgg acctataaac tataaactca aaaaattctt 1260

gtcaacttaa aaaattatgt tgagttcata tgtgtgtgtg cacgtgtgcg tgtgtgtact 1320

taccaatctt ttgttctcca tctttgtcca atgcccttgt tgttagaatt gggtaccacc 1380

ggattaagcg aactggtttg aagctatttc attgtggctg cttaggggca ctatcatact 1440

tgtaggagga tgaaatgtgg ctacttgagg tgttatcata cccgcaagag agcgaaatga 1500

aagatgaaca ccaaatggag aagagcacca aactaaagag caaacaaagg agcaccatat 1560

ggatgacaat acgaatatgg agggtatgga taagcgaaag gttgagaaga agcaatggtg 1620

ataggagttt caatattagg agcgtcagta gtaagatttt tattagtagg aggaggagca 1680

tccatggacg atcagcacgg atagagatga gaatatggtt ataaaaagat attatagact 1740

cgaaacaagg acaaatagaa acatactttt gctgatgatg gacgagaaaa agactcgtcc 1800

ttgcattaga catgttcaaa cgtcaggtca gatcgggttt ggatcaggtt tgggtcaggt 1860

catgggtt 1868

<210> 1324
<211> 1576
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34728_G1, chr1:211255425..211257000, Cluster 8

<400> 1324
aaatggtaaa aaggttaaaa ttatgcacaa atggaacttc gaaccatggt tgttggctcc 60

aaacctacaa tcacacacac atctggccaa caaaacatgc atgtctttgt tataaatgga 120

aaccatagca acttagatac acgacgaata atgatctaat gaactattga tagtcatcat 180

aattttaatt tataaactcg aaatatatga cttatatgga acaacacatt tttttcttaa 240

tttaagtatg tgaaacctaa ttttaagcac acagtattaa atatctattt atacaccatt 300

atttattata tatatatata tatgttaaaa tttaaaattt aagtatagtt aaaatttaag 360

tatatatatg ttaaaattta agtatagtta tcgtatgcac ctgctgtcta cggggagaga 420

gacaccagtt cgctactcta ttttttttcac aatctcagct ccggcaactg agccaaaccc 480

aaccctagac cgacgaaatc gtgttttacg tacggctaca ccatgttcgg ccgggtccgt 540

ggagatacgg gcaagggaca acggtctcct ccgcgccgcc gccgacgcac gcgtcgcgcc 600

tgtcggactc gaacccgccg gcagcgtgaa aataagctac atgcccacgc acgcacgcac 660

gcgcgcgccg cgccgcgccg cggccggcca gccgcccgaa gcgatcgtcc cccgtctgca 720

tgcatgcatg catggaaggc aatccatgca acacgcgagg gagagaggga tcatggcacg 780

ccgccgccca agtacgcgcg cgctggccct gcctcgcacc acgtcgaaca ttggcgccct 840

cacgtcgaac acacagcatg attccatggc cgggcggccg ggccggccat gattccccgc 900

ctttttttcc cccgtctgga gccggcagcg cccgtgccgc agccctcagg cttgcccgaa 960

aaagaggtgg gcggcaatga gtgtgcgacc ggggagtggg cgaggacgag acgcgagctt 1020

gccaactgcc atggcgagcg agcctgtgag cgggcgcact gggcagcagc aggcacaggc 1080

agcacccgcg ggccgcggca gagagcagca gcagcagaag agcaggtgcc cgtcactcgg 1140

cagtcgggca gtctggcctc gtcggctcgg ctgccctgcc ccgtgccagt gtggcagtgc 1200

gcctgcctgc cttggacctc ttcttttcgc catatcacgg ctcactcagt gtcctactcc 1260

tactcgtcgt ctccttttat gttttgttcc ctttttctaa tttatttaaa aaaattgtct 1320

tttctgtcta tccgcccccc aagctttggc atcctttgct ttcactcgct tccttttca 1380

ctttcctctc tctcctcttt ccctcaatct ccttttttt ctctccctcg tcgtctttcg 1440

ttggctttgg caggaggagc caagaaagcg accttcacgt acatcgtgtg ctgaaacaga 1500

ggaggaggcg ttgtggcctc tgatcaacgg agtgcgttcc catggccgag gaggagccag 1560

acccgcatcg cctatt 1576

<210> 1325
<211> 4006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349363_G1, chr10:145013139..145017144, Cluster 8

<400> 1325
aacggtcacg agataattgt gcgatggccg tcggaggatg ttcttttcag ggacaacaca 60

tgcaaccatg caattttgtt cagactgttg tacatgagcg acgacttgga caaaaaggta 120

catctcaacc agtatgaaaa agaattatga tatgctcatg ggcctccacc caagttgaca 180

taagaagcat atgaaagggc cgagaagaat tagaaataga gcaaaagccc atgtagtttg 240

taaaacttgg ccagacagtg acagcttcaa ctcgctagac ggcctcatag cgagacctgg 300

agtcctggac caggaattct ttaggtttta ttcaaccaaa ttaacatttt cttggcccgt 360

ttattaatga actaaattgg gatagaaagt tgaaatgcag atcttcatgt ggttgctcct 420

tcaactgcag tcttcacagc agacaaattg cttggcaggg aatggatgga aaattggcaa 480

tcatggcatg catactcaac ttcaacatga acccggttct cctttgatta tgaactggct 540

gttggtatag cggatttggc atgcagtggc agcttttggt caggtataga ctctgttgag 600

ccttgagatg cttcacaaaa tagttgagga aggaactgtg aacaacgtgg actggatcag 660

agagtagctc ccataacatg tgcagatgct gttttcgtat acttgggagc aagatttatg 720

ttgaaaaaaa aacttcgaaa atgtttagat gccttgcctt gaagggagtt ttgtgctaag 780

ccgtgagagc tcgatcagtc attgtatcgt tgctttcatg agaatcaaga tttatgtgtg 840

cagatgctgt tttcgaataa ctcaaatcca ggcaatcata tcatgcatga aattgatgtc 900

aactcgttca attcatataa atgcatggac cctatatatg catattctta ttaatgcttg 960

tatcaacaac ttatccacca aactgtcgac agcctcgcca gaacggcagc gtcttgttcc 1020

tgctgccttt ttgtctggcc acgggtacgt aggcacggcc tgctcccggt acgctagcta 1080

tacgggtcgc tcatggcccc catgtctgca ggcgcgcgta ccggccggca gctaccatgc 1140

atactgtctc cctccctgcc ccggccccaa cgacgacgac ttgcctgaga tcgagacggg 1200

tcctgcacgt ccatgtacca tgtacgcacg caggtgatcg agctagctgc agctagcgta 1260

tcgccgaaga accaccgttg cacctgtgtg gggcaaaaca aaacaaaaaa tccactggcc 1320

atcggccgcg cggcggggcc gggccggcgt ggctggaggc gtccatgcgg tccgtatcgg 1380

ccgggaccgg agcatgcgtc gaccggccgg gagagcatcg cagtaatggc gccgtgccga 1440

cggcctggga catgctgtcg tctgtcgacg acactcccgg gccgcgcccc acgggaccac 1500

gaccacggcg cctgggtgcg tgcgcgcatg cagtgcaggg cgcccgcgcc tccgatccgc 1560

tggatggcgc ccgcggcctc gcgttaacga cgttgtccct ggaggcctga acagggcggc 1620

gcgcgacagc acccaacggg cgatgggcca tggccaacga ccccagcgcg cgcgcgcagc 1680

gcaaccgtcg gtacagcgag tcggcgtcag cgcgcggcgc cgtggaaaac gaatgacgct 1740

gtgcgccgcc gggctccacg cacggaaaaa aggtcgtcga tcggccggct cgcgctcgcc 1800

gcctgatgag atatgtgttc acacgagccc tcgtcttctt gtcacgtcgc agtcggatct 1860

gcgtgaatgg tgacctaggc gcgtctatct ctctcacggc cgccaaggtg cacgacatga 1920

aagcatcgac gatagattga tctccatctc cgccgtggtg gttacaatac actcgcggtg 1980

gcttaactga ttgcgcacgc atgtcggacc gtcgaatcta tcggccgtcc gtcgacggag 2040

caagccagcc ggggcgccgc gatcgaaagc ggcgcagcta ggtaaccggc agcaaggctc 2100

atacgtctac ttgcatgcct ggcctggtga tcagaaacgg cggcgacgac gacggtgatc 2160

tgatccctcc atgacctcgc acctatcgat ccatcgggat catgcatccg ggcgtcgatc 2220

gccgtggtgg cttcctggct gcgtacgtca catcgtgctc gtgacagcag cagcttatgg 2280

ctccctatgc cggcgacagt gcggtggcag cgggcaacaa ggcccggccg gtcacgcatc 2340

tatcgtcggt cgatgaacag cctcggttga tctgatggac atggcgagtg atggagacga 2400

cgacgtgttg tacgtgcgtg ccggcggtct gccggccggg ctaaccgctg cattaaccca 2460

cggccggtcg gctctgcttt tttgcattgt tggagtaccg tcttgtggca agtttttgtt 2520

tgtccacgca cgcttctcct tacaaagtga tgcatcgtgc ttgttcacga aagcttttcg 2580

aattatcagc gtagttgtgc attttattgt gagcacacgg cgtttcctat aaactaaatt 2640

aatgatgtgt ttggtttgag taataattct atctaaatat gagatggtgt agtataagtt 2700

tattcttcaa attttgtggg acgactcaat tctttatatt catgttaata ataactagta 2760

atgatatggt gatggatcaa cttattacat tgtacaaaca aaaaaaagtg agaattatgc 2820

ctcaaaccaa acacactata taaatccttg tagatttaaa atccaaaaaa aatcttgtat 2880

gctggagcct ggtgaaccct cctttattta ccctctacaa gtttggtaaa aaaaaacctt 2940

gtgatccttt tgtttctcct attatgatgt tcatattgct tcgcataaaa tcaaaatccc 3000

tgaacgtaga aacgctcgtg tggccgcggg tggtgcagtg cacgtactag ctaggcaggc 3060

tcaggctgtc ccacgagccg atcttgtatc cgtgtcaggc gtcgaatcga tccggcgcgc 3120

atcaaaaaac gcgagcgcgg gcttcgtggc cgggcgaccc gcaccaccgc cgcttcgtac 3180

acgtgtaccg gggccgcgcg taagcgcgcg gcgggtgtgc ccgggctttg aacagcatct 3240

ggtcaaaggc gccgccggga tggatgatga cggtcgatgg ctgctggctg gtgaatcgga 3300

tcgatctccc acctggccac ctggacttgt cagcgagagc agtggcacac cagacaagca 3360

cacctcctga tgacctgatc cacagacaga gacacgggag gaagagcctg cccgacccga 3420

gagctttcag ctttgaatcg atgagcctac gatccgccta tacctgcaca tggtacggtg 3480

tccaagttcc gacgtgccca aactccgacg cccacctcgg ccaggacaga gcccaaggcc 3540

actaatgtac agtggagtac ctcccagtta cctgggcctc cacctttat ctactccact 3600

ccccttccaa catctgcacg agcacggcat ccacaccggt tctcctcctc ctcctcctcc 3660

tcctcctcct ccttttttac cacacacgca tccacatcca cacctctgtc cttattacct 3720

gtcgctacgt gcctgtaaaa tctctttctt aaactaaaaa ataactaggt ttataaataa 3780

catctttaga taattataaa actagataaa gactaaaaga cgacctgaat ttattaaacc 3840

taattaatta cataattcat agttgatatt caaatatttg atgagacaca aactaataac 3900

actccgaaac ttacatgcac tgctgggaga caaggggaca ggattcttgt tcgctacaaa 3960

aagtcacggt acgggccggt acagttcagg gccggagaat catatt 4006

<210> 1326
<211> 1911
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_36927_G1, chr1:222982816..222984726, Cluster 8

<400> 1326
gctgttccag cttcgcatta ctccagcgca gatgtccttt ttttttatcg gcgcggtcgc 60

attactccta ccatccgaat tcatatcaaa tctctcactg ccaccgccgt tgacatgtga 120

attgtcgtat tctaatctaa cgcgagattc caacgccgcc gaccgcctta tccgaggacc 180

ggattagcac gagaaccccc atagtttccg gcaccacaca cctcacagca cagcaaagcc 240

acagaggtgc ggtcacggtc gtgcgtgtca acgacacgga cccggcatgt ccgtgccgtg 300

ccgtgaaacg gaagcgatta ttggctacct tctcttgtcc cagtcctgga cttttgggga 360

acccgtggcc atgcatgatg tgcagttaag acaaaagggc ctccgcgcga agctcagacc 420

cccatcatga tccccagcac aaaaatggtt ccaccctgcg gtccggtcac tagcccgaca 480

gtgtgattgg ggttcttgtt gtcctgagcc ttggctcgca aaatcgtcgt catcgtgttc 540

ccccgccccg gccgaaaaca caagggcacg ccgacgacag aggacgtacc agggcgagcc 600

ggcgaggcat caaacccatc tcgcgcccac cgtgccgtga ctttgccatg gtcaggacta 660

gagctctgat ctccgaaaca aggccaatag ccaacagggg gggggggggg gggggggtca 720

tcaaagtaga gctataggag cctaggctag gagcagtata gggctctgta ctactgcgag 780

cttttcctcc tgctcccgtc gtcagttggt cgtcgcagct ttcttcagga tcagggcccc 840

tggctctgcc tgcctttgcc gtccatgtca cgccattgcc atgcatgcag gagcatgcag 900

catggcggag ccccagaccc agagcctgtg agatggatga tgatgccagg ttaatgattg 960

cgctgcagag caacaacgaa aaataaagtg tacgctgcgc ctcctggcct gacgtgatgg 1020

caggggcgga cctacgttga tgcgagtggg ggcacaggcc ccgctcattt ctctgttgta 1080

agtagtagtg tctagatttt tactatgagg tcccttgttc agactaattt agagacactt 1140

tctttagtat tttagcgctc atctttgtaa gtatgtcctt agtcccatta tttcctgggt 1200

ccgcgcctgc gtgatgggac aggtgcgtca cggatatcaa tatcatatcg gcgacttccc 1260

tggcgcagag ctcagccgga acgggaacgg aaccgtctcg gctgggctgg gccgggcctg 1320

tccttcgaca tgggtgggtc tcggtctaca cgcagtcgcg ctggtacggt ggcgacagct 1380

gtgagatcga gcaggacacc ccgtgcactg ccactgcacc gacggacgac ctgtggactg 1440

tgtgggcaac gatccaacga cgcaataaga gaagcgcatg catggcgatg tggaggaggc 1500

aggcatggac agagagatat gcagcatggc cagcgactag atagcactga ccatccggcc 1560

ggtgtacgta ccacgcgtgt gtgccgtgac cacgtcgtgc atggaccgtc cgtcgcctag 1620

tgtcgtatgg ggcgcacaga gtcgccggcg tcagctagcc cgtcactccg ctcgccatat 1680

gtcatcacct ggattgggta cacactagac aacgagtgtt ctgtgccctg ccatccggac 1740

gggatctcgc gtttgtcgcc atctcctgtc tcgtcacctc gcgggtattt gggcgagcca 1800

ttcaagtgcg ttcacatatt ttcagcgaaa cactccaaga tcccgccggg ttatgctaac 1860

actcggcctt ttgagatgta gatggcgtat tcgaattcga ttatttaagg a 1911

<210> 1327
<211> 1528
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43693_G1, chr1:257183639..257185166, Cluster 8

<400> 1327
ttatgtttag gcactgatca tgctacccct acattaaaca gagttgttta gttaggggtg 60

gaataaccgg gacaaggtag cttttagttt tcctggtcat tctgctacaa gttgttatgt 120

cgaaacgctg aaaattctgg tttaaccaat gagacttgag atcctggctg gcagccaatt 180

ttcctggtcg gccgtcagct gtagttggca gctaccatgg ctgcctccct gtgtcctctc 240

ctggctgggc agctagatgt agctgacctc ggctgtcttg acgactgctc catggctggg 300

ggatgggcag cacgatggaa acggttctga accttggaat ctgatgaagt caggtgaaac 360

ttgattaaaa tggctaatga cattgctgtt tcaaaatagc tgctgtggga cagttgtttt 420

ttggagttgt tcttttgtcc aagttttatg gatgctcttg gagttgctct taatttgacc 480

caaaacagac gcaagttggc catatctttc ccaacaccac cctctttgct ttcagttagt 540

tatctcatcc ttatcgattt gaatagatat ttacctgctg agactgagag tttactctta 600

ctgagtttgt cgtgtaatcg atcttgattt cttttcttgg ttgaattttt tctctgccta 660

tttattaatg ggaggctggt caaattcaag gagctgtggt ttccagattc agtggccatg 720

gcgttcttcc agtcgctccc agatcaatct agggctctaa tagccgcagc ccgagtaaac 780

aatgggcttc tggttacgca ccctcacaca tcaatttgat tgctgcagct ttatgctgta 840

ggctgtagcc atttttttctc ttcaatcaat gtagccagtt cgctgcagct tattccgaaa 900

cggcttctgc tacagtattt tgtctctgaa ttacagctgc agcagtctga acagctgtct 960

taaagccgca gcgaacaggc tagttgaggc ctggtgatga gatctccctc tgctgctatt 1020

gctgcatggc tgtgatgaca aaaaggttat ttggttgatt atgattactt aatgccatat 1080

aaggatcaaa acgtgatgac cttatttgtg cgtgtctgag ccgatgcaat gcagagtcca 1140

tgtttactat ttttcctgct gacattatca ccttcgattt ttattcctgc tgattacttt 1200

ttggcagtga tggtttctag tctgatcctt gtgttcctga cacttttgt ctactaaggg 1260

ttttgcacta ttgtttattt attctggtca tgggatggta attaattcag ggtacaaata 1320

tccttttatc tatagctgac actttgacag gataatatcc ggatggcctg ggacagaaac 1380

atatgtatga cctggctggg atgacaaaaa catacgttgt cgattggatt tctttgtagt 1440

gtcttcgtat ggcctggctg ggatgacaga aacatacgtt tctcgatcct gatacttgat 1500

ttttttttcaa ggaccaaact ttgatgac 1528

<210> 1328
<211> 1802
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44531_G1, chr1:261612949..261614750, Cluster 8

<400> 1328
acttagagcc accgacatga gttcccttct ccttcccact agagcctcgc tttaatttgg 60

aatgacgcac agtttaccca gattcctgct gcataaatcg aactaattaa gttctaatct 120

ccttcctacg aaacataatt ccttttccct gtcgaataat cagagtccct tcccttatcg 180

aatagtctgc aaagcaagtg gatcccagga gcttctgcag atgataaagc ccgacatcca 240

catgggcaac tctctctgag tctaaaatcc ctccccaata aataaagcga aatattccct 300

caaattctct ggacgaccag catacagctc attgtatgca ttgcgcgtat gcagctgcga 360

cagaggccgc aacaactcag ctttctttac gcgatccgat tgctacttcc caaagagaag 420

ccgagagagt aaacactcac cagcctggca gtgcttaatt cagctgagtg atgcaccaat 480

cagtggccac ccaatgctat tatatataga tgatcacaga tctatcaaca ccaccaaacc 540

caatcccttt ccagcacact gcaaaacacc aaaaggaccg aaagcaatgg catgcgttgc 600

aggaacacca aacctgcgtg attcagagtc agaaaggcaa ttgtatgagt ccatgggcat 660

tggcattgac agggcaaaga tacctacaca gtttcacgag aaaacatgca ccgtcgcgcg 720

ctggccactg gacacgacaa caacaacttg cctatattgg cataggcaga gtgataatgt 780

tggttaagat aacgagtgct atacgcatga aaacttcttt cataaataaa ggcctacatc 840

tacatataga gacatgaata atgaagcagc acgatctgaa gcatctaggt cccctactat 900

tttttaataa gaatgaactg tagctgtgac gacatgccaa agcctagtag atattttatt 960

tacgtacctg aatatgattg gcccatcact gctctcggtt tgtacttgtg cacatgtgag 1020

atccaagttg aaaacgcacg atcatttcaa cagggaaaac tacacttgag taggaggcag 1080

ggaactgtac aagtttagct ctgaaacaag tagctgatgt tccagtggca gctaatcacc 1140

aaacaagcat aatttggaaa taagggctgt cactatcaca ggaaaaaatg acgagggatt 1200

tatgcacaat gacattagaa tcactaacaa aaagcattag gagaaatgga agctgacaaa 1260

ttttgtctta ccaccttgta taggatcttg cttgcgtgta ctaagtctgg tcagctcaag 1320

aattaagaac tattacagat gcaactacaa tcactacata tattctttct agaagtcaag 1380

ttttgaaagg ctacatcgtc ctatagaatt cagcccacaa tgactaaata gttgaggcaa 1440

atataaactt tcttttcttt ctcttaaatt taactgaaca aaaaaaagat caggaacaaa 1500

caagaaatac aaacagggtg tttggtttga cagaagaact catgtggcat ccgctgaacc 1560

taccagcata gaatgggttg gtccagcact tttttacgga gtgtctttgt acttcaagtc 1620

cttttacgat taactctcct tgaaagcacc tgatgggtgg tgcagttcca agctgaaaac 1680

caaacagcgt tgtcagcttt ggttctagga tcagatcatt ccaggtgacc tcgtgccgca 1740

aaccaaacat gctgaaacta ttaccacttt tccttgtgtc tttcctcata tttcaccaat 1800

aa 1802

<210> 1329
<211> 1758
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45202_G1, chr1:265436426..265438183, Cluster 8

<400> 1329
taggattacc gtgaccgtcc gtgattggga aaaaaaatcg agaaataaac tacaccgcca 60

attatatacg ttagcgctaa cactgttttg aagcccggta agcgctgcat gcatgcacgc 120

gtgcgcgtgg tgagggagca tcgcacagag agctccacgc gtgagccact gctagctgta 180

cgcgcggaca cgtcaaatcg caagcgcagc tcgacatgca tgcttgatgc tggagtatta 240

tatagtacaa gcgcagagct agcatgcgtt gctgggtgca cgccacggcg gtgctagtag 300

actagtagta tagtatcgat acggcccagt gttcccgtga tcgtgtaagc actgaaagca 360

gtgtcgaaca acactggtac cgtagccgac tagccggcag cggcacgaca atataaggct 420

actgtgtgct gtacaggaaa atagtctctg actgccgtgc cctcaggagc ctgtttagtg 480

ataaccactg ctcacgacgc attgctccag tccagtccat gtccgtacgc gcgcgccaga 540

gaccagaccc gaggtggtcc agtgaccagt gcgcccatgc atgcatgcat gcgcacgtac 600

tgtctgtcac aggcatcgtc tcacgtacgg tatgccgtat tgccctcgcg cctcgctgta 660

gtagcgtgca tgcgtgccgc cgttctcttc ggcaacagcg ttcgttcccg cgcgcgagtg 720

acaacgaacc gaggctcgtc cgtccgtcac gtctgaaaag ccgcaccacc acacgtccac 780

accaatcacc atacacttcg tccttccaac gtacagaacc agcccggccg gccggcccgc 840

atacgtcaac aagaactcat caccgatcgg acgggcacgg gaagaccgcg tcaaaatcca 900

ccaccaactc gtcccggccc ctgggacggc agaaacggac gcatcgtcgt gctcaccgca 960

gggaatccgc gcgagcttcc cccttcccta catccggagg cgcaaaaggc agggcctagt 1020

gcttccccat ccccagtttt ttttttcgtc ttctttaatt tacagcagga agccaggaac 1080

tcaacccaag agggaaaaaa aatcaatccc cggagaccgg agcccggagc aggtgaagaa 1140

atcctagaat ctccagcacg tctgccccgg tctccattga ccataaccat atgaagaaga 1200

aaaaaattgc ttttccaggc atggcctggg atttgccgag atctcccctt cccggcgtgc 1260

ccaggcacag ccacgccaga taggcgggcc ccaccgctag tagtatagcg tcgccccctc 1320

cttcgtacgt gtacgatcct acctacggcg tatcgacgaa cctcgctctg ccacgcaaaa 1380

caaacaaagc aaaattggat gccaaatgca gcgaatcgtc tgtttgctcg aactgacacc 1440

gccgcgcccg cgaagaacag tcaataaaac cgggggaaaa atgttgtcac ctgacctaat 1500

aaaaggtact acaagttctg cattgtcaag gcgtagtagg cataaagggt cccccacaga 1560

gatgtggtca gacggcgtgc gtagaacgta tcgggtagga gacgacaata cgggtcgagc 1620

cgtacggaaa gtgttgggca cgccgcacgc actactaccc catctgtgtc gtggacgata 1680

acctggttgc tgcgcggggt tagagaataa tcagcttggt aggttggttt taatctgtac 1740

tggcttctac tatactga 1758

<210> 1330
<211> 2129
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47943_G1, chr1:280212766..280214894, Cluster 8

<400> 1330
cagagcgcag gccttttgtt ttgcttcaga accctgccca gcatcgtcgt caaaatgtgg 60

gcagataggt tctcccggat tctcgtttca tatggttgga ggccggcgct agaaataaat 120

tcttgacgac aaattgtatt ccagtgcggc atctctttct ggttggtgat cagcttctgg 180

atcaagtttt atactagcat gagaatgtag cgtggtatct atctaggata atgaagaagg 240

gaatttgcag ctggtggcta cagtaccaca gtagcatgtt tacaattaca gcacaccata 300

cttatggatt cggtgagtct aagaactctg taatatatat aggacacgta gactatttac 360

gtacaaacaa catactattc atattattcc tattttctag agcataacgg cggcgtgtaa 420

aaatgttaaa ttttgttttt ttctctctct ctctctctct ctccctcaag aggattagga 480

ggagatgatt ctacatcgtc tcttctaaaa tagttatcct tcttgctctt tctgaggatt 540

caactatttt taagttaacc aaatatgtac atgcaaatat cattatttat attatataat 600

tagtataact atatagttgt tttttgaatt tttttgtaat aaatttattt aaagatacgt 660

acgttgttat ttttatttgt aaatatagtt aaattaaaag gctttaatca ttataaacac 720

tatggtgata actattttag aacgaaggaa gtttttgata gagaagccgt gtggtgtaca 780

agaatcgtaa aatgaatgat tgacaccgtc gtagcaggct atcctgattg gaaccattag 840

agctagtagt tagctaatta ataaattatt agctgagttg agccaactaa tgaaataatt 900

gttagttgtt atataggtag ctaacaatta gctattagct gatgttgttt ggaacccaac 960

aactaggggc gaagctaggg ggttttgttg gggttaactg aaccctataa aatttgaaaa 1020

atactataca aatatattgt tatttagtgt atttaaatga tgatcagtga aaccgaccct 1080

aatgactttg ttgtttggct tgttccctgc caacaactaa tttttagtag ctaactatta 1140

gttttaaagg ttctacatat ggtatacgaa cgaacacttt ttacactcta cccattcact 1200

ttttacacaa ctcggacaag acagaccgga accggttgga gatagcaaca agccactgtc 1260

cacattctac gtttggataa gagaaggcag gtacaatgga ttcttgtgtc tgtttccatc 1320

atctctcgac agagtcatac tagaacccga cctggaattc cacgcaccta cataagatgt 1380

tgctctcctt cctctggcta tttttattct tcacgaattc tgatggaggg ggttcgtttc 1440

tggccctgaa atgatggcct gaggtttgag attcccgacc cgttctccaa acagtgaagg 1500

ccagtggata aaggatagag tccggtccgt cctgtgctgt cacggtccag gtgggaaatg 1560

cgtgggagtg gaaaacaaac aagaaaagca agccgcaaat tcgcccgtcc ctcccgcgga 1620

tagatggacg acgcagaaac tagccaaaag ccaaccgtac gtgaaccatc aggcaggcat 1680

cagtgtatag attccagctg cccgccgcat gctagaagaa atgtgcggtg ggcacgtacg 1740

taaaacgtgt cgcgcggcga ctcggcgggc gggcggagac cgtacgctac cagatgcggc 1800

gcgccgatcc cgcgcgcgcg acgcgagcga ggggaacgac cgcgtgctat gcttccactt 1860

tggttgggtg atgtgagccg cgtcaccgcg cacgtccgag cgccccgaca gcgtcgcgcg 1920

tgggcgcggg cagcggacgg cccccgttgt tccgctgccc aggccccaga gcccagagga 1980

gagtactagt actactactc gtacctccct gcccaatcca tatccactac agatgcgtgc 2040

acttgcgccc ctctcgccga taaagggaaa atcactggcg gccgtcgcgt tcggttggcc 2100

agttgcgcac gcggcattag aggtggata 2129

<210> 1331
<211> 1458
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49881_G1, chr1:289843608..289845065, Cluster 8

<400> 1331
tgtaataaga tatgtgtcat cattttttag tgttgttctg gcagtattta atagtgtatg 60

ttggttagtc agcgtatggt ggctattcgg taatttagga atttgtgtga agaaaacaaa 120

acaaaatgat tctttgggca aaacactaaa aatagtaaac ctaaagtcgt tgttatcact 180

ccagagcata ttttcatttt tataaatata gtatgagaga aattttatgt aggaaagaag 240

cataataact cttcagtgaa gcataataac tcctacagcc catacgagtg gtgaagatta 300

aattctgcac aaagaacgac gcaatgaatg ccttcattac caccttgccc agctgatcgt 360

attatcgttc cctgtagatg cttcaggacc taggatttgg tatggggaga agaagaaaat 420

caccttgagg gcctatccgt atgcggtgga agggagtagg caaatgaagg gaaatgggat 480

ggagaagaag ttgttcaaca tattctgctc tggttatctc acctccgcct ctgcgcatcc 540

cactccatgg ctaactgctc cccacttcgt cgttgcggca gcgccatctt ccaccggtac 600

cttttctcct tccccaccac ttttctcctt ccccaccacg caacactggg acaaagcgcg 660

caggggagca gggacactga cgaaccaaag tcgctgctcc cgacggcgat ggtgccatga 720

cttagcggac gtcggtgggc tttgctccgg cgccgggaga aggacgacgc ggagggagcg 780

agtaggaaga aattagatga ggcagaaggg taaagaaaca aggggagacg tcgtatcaaa 840

cggaagtatc cagagacacg ggaagcatcc ggagacggag ggaaggtatc cagagacacg 900

aggaagtacc ctgagaccga ggaaaataga tcaagcgatg attgacgatc ggacggcgtg 960

tgtttttttg acgacgtgta atatatagaa tatagaatag agtcggatgc aaaggttgcc 1020

ttccggccgg tccatgtaag acaaaaaaaa tctacaccct ccgatatgat ttttacggct 1080

ccggccacct ccaccaccac atctctcaca ttctgtcacg ccgtctctct catctctgcc 1140

tgtccagctc cgcgcttcct ctcatctcgc caccatgtca gtgccacaac atgcaacacg 1200

ctccaattcc ggctcaccac caccggcagc cttggcgcct gagtgggccc ggtcccgtct 1260

gccgctgggg ccttgctctt ccttggcttg agcagcagga cacagaaatt gtggccagcc 1320

ggatcagcga tatcggcggc agggcttcgg cttcggcctc ggcctccgcc gccgacgcgt 1380

ccacagccac cgcgttagct gccccagggg gccaggcgcc aacggaccaa tatacaccag 1440

catcatatct tgatgtta 1458

<210> 1332
<211> 2073
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51803_G1, chr1:301157898..301159970, Cluster 8

<400> 1332
accacatttt cgctatatct tcaaagagtt ccatctgaag aatttctcgt tcatttgctt 60

gtagagatta tgttgagatg aattatcctc aataattaag cacgttactg ttagcttcaa 120

atagggtctt ggtaaaaaat tcaggcaatc ttcagaaaca ggaattgcct tttcagtgtt 180

tgaatgatca gacatattaa agcaggggga catggatgta tatccacttg cagttaaagc 240

tgaaacaaca ttatctgttg atcacccacc agatgtagat gaccaaaaga tgaaaactcc 300

taactcacat atcacccagg cggccagacc gtgtttgaaa tgaaagaaaa tggggattat 360

caagtaagag ttgtttgcca gatcctttgg gtcaatggaa ctaggtatga acagcaagaa 420

atatatggca taggaaactc catggaaggt aatgctgatg caaattatcc agggaaagaa 480

tgtgttattt gccactcgga accaagggag atactattat cctcccatgt aggtatatgg 540

taagtctgtt ggtcgtctat tcaagaattg catttttttt gtaaaaacta gcgatctact 600

tcggtataag ttttcattat ttaattgtat tctaaattaa aaacatagtt atcttttgat 660

aataatattt gcttgccaga tcctcaattg tatgatccac agtattccat attaggaata 720

ttggtccaga aaaattagta gttccgtact tatgtctaag catcttccat tttctcgtaa 780

ctgatttaat gttgcattag catatgtaag cttctagcat cgcatggctt tgccgacctc 840

tgttgtatct gcctatctag aggtcagaga ccaagatgcc aaggagagtg tgtatataca 900

catcattcat gcatgtgcca tggctacctg aagaagcgtg gtgaggagga ttcctcaagc 960

caggttgact tctttttgg gaaaaggatc tagatcacta agatatgaca acttgtttga 1020

ttcttatcca tcaaaccttg catctattgc acgactccat tcaaaaaggg tgctgaaact 1080

gaaggaagtt gtgctaacaa gctactgcag aaatgaggtt acaaataact gttagcatgt 1140

tgaaatcact ttaatattca tctaattttc agttgtcttt cccgataatg tgcggaacaa 1200

cagaaaatat ctcacaacct ttcttgtgat atgcagatca agtccacata actaactttg 1260

gatacattca gaattctaca gtgtttggaa tgggagccca ctgggtctta tcagattgct 1320

gctaaagaac ttacagaaaa tggcgctgta agtgatcaga gtggaccctc tggtctgatt 1380

ggtattcaac tatcaacaga aatatctgat ggaagtcttc cttcaaatcc ttaaaaggca 1440

atcatatatc atcctacagt cgctcatctt ttagcggtat gtgtctaccc agattgtttc 1500

tttgcctttt aaagtccatc ttttgcgtaa tattggcagg caaataaaat tttcgtagga 1560

ttgcatattt ccttgtaaga atttcttttt tccccaactt atttttttgg gaaaaaggat 1620

ttagatcact aagatatgac aacttgtttg attcttatcc atcaaacctt gcatctatta 1680

cacgactcca ttcaaaaagg gtgctgaaac tgaaggaagt tgtgctaaca agctaccgca 1740

gaaatgaggt tacaaataac tgttagcctg ttgaaatcac tttaatattc atctaatttt 1800

cagttgtctt tcacgataat gtgcggaaca gcagaaaata tctcacagcc tttcttgtga 1860

tatgcagatc gagttcacag aactaacttt ggatacattc ataattctac agtgtttgga 1920

atgggagccc actgggtctt atcagattgc tgctaaagaa cttacagaaa atggcgctgt 1980

aagtgatcag agtggaccct ctggtctcat tgatattcag ctatcaacag aaatatccga 2040

tggaagtctt ccttcaaatc cttaaaaggc aat 2073

<210> 1333
<211> 1469
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51949_G1, chr2:751005..752473, Cluster 8

<400> 1333
cgcaacaagt gcgctctgca ctactcggct cagtgtcctt tttcatatat atatatgcca 60

ctgttctgct ggtctatcgt cgaaagccta gctgggctgt gggcgggaaa ctacaagttg 120

tctggaattg aaagaaagaa agcggggtaa attatgatga tgatggcgta cgcgatctcc 180

tcaaatcatt gcgattttac acaacaacat acatattaca tatagctagg aaagggaata 240

gattcattag aaacaccatg atgatgatgg cgggaaggac cagcgacaag aaatgggccc 300

agaccaccgc ggggcccgac ctcacatgac gcttgtcgac cgcgggaagc agcatctccg 360

tggtgggccc tccgtgtccc cttcggcccg ggatggccca cgtgcacgtc gaaagcgtga 420

gagcgagagg aggacgccta cctaagcgag caatgcaaca gccatcatcg tcattcacct 480

tgcctatcca tcatcctcgt cttcttctgt ctatccatgg cgatttggcg ttataaccac 540

ccccaccccc acccttctct ggctacgtcc tcgctttccc ttcctcccag ctgcctgccc 600

ccccttccct accctagcta cgcacgctac cagctgcccc ccatccatgc cgtccaggaa 660

gctggtggag gactccaaag ggatcgcatt gatctattct cacctgccgc ctgctgcatg 720

cgatgcgagt cgacgacaag atcagtgcaa tccctttgga attttccact cgcgccttca 780

cccccgccgc acgtgccaca cgcccctcca tcttccatgg attccatctc tcatcaggta 840

tctctctctc tatctgctct tgcaagctac ttccatggat ttgatttttg ttaagttcgc 900

ctacttgctc tccacgtacg tactggctac atcgtttctg cgcaccacac acccaccagg 960

ccatgaggaa tcaatttgct catgggagca tgatgatgca gacaagtaca aacatagtat 1020

ataataaaaa tagctgccga ttcattcttt cctttcgctc atcgttttcg tagttaattc 1080

attcattggc atggttaagt atgtgtaaat acttacatgt agatatatca gggtaaaggt 1140

ccagacagga cccatttaag aggattgaat atgcctgcag cggtcggccg ccccaactgc 1200

acctgcacgc gcatcagtgt atttcgatca actctctctg tcctttctgc tttctccaaa 1260

ttaatacact tattcctcag acgacactgt cgctcactag tcaaagcagt atctagtttt 1320

taccacttta gagtgaaaga tacatatatt tttaaaatac tctgtttagc attacattac 1380

attgtaatat tcagttttga ttgtgaattg gagatgacag cattaagaag acaaattgat 1440

gatgagatta ctgttcgcca attcatgat 1469

<210> 1334
<211> 1671
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52480_G1, chr2:3871160..3872830, Cluster 8

<400> 1334
tctaagcatg tatatgtaga tatagagatt aggtatatat atcgatacaa atatgagcgc 60

acatatataa atattaccca tcacgagaaa aggaatatat gtcgaggaga attgtgatat 120

agatatacat atagtacgtg gctgctgtac gtgtgatctg gacaaacgtt taatttggac 180

agaaacaggc actgcacaat atagtcattg cgggtttgca tgccccgaca gctccaagaa 240

catgatccat gcaggcatgg gccatatatg gacaccgggt cattagcggt tgggcagtag 300

ttcatgtcat ctgttaatta agcatcatta ttggcaccgg acaaatcgtg taagcgttcg 360

gttacgagtg cattatcaca taaccactcc ctctagctcg gatttattag caagagctag 420

caaaggcagg taacagaagg gacgcgcgcg aaaagttgca ggcctctcga tcggccacag 480

agacatacgt gttccttgca taccttaacg ccgcatccga ctgcatgcat gcgtgcatgc 540

tttctctccc ggtccgccgt gttcgccgat cgtgtgtgtg atgtgcacgc gagtgattag 600

cacgccctac cagtcggatc ggattctcct ttcgcccggc cgtcgtcgtc gtcgtcgtcg 660

tcgtcgtcgc acctctctcc cgtcccgtcc ggcgtcccgt gtgtgcgtgc atgaggccga 720

cggcactggt ttagacgttg gaccaaacga aaataataat gcgtcgttta ggcagcaggc 780

tataggtaag catgcactag cagcagcagc agctatcact cccagctgct acagctagcg 840

cgagcgtata gcaacgacga ccctagctaa gctagtagcc agtaactgac ctctccctga 900

tcgtgatgcg taaatggaag aagaagaaaa aaacgagaag attatcttat ctatatatat 960

atgcacgtcg tccgcatact ctgattactg atacggtgcc cgcgcaagac tttttagaat 1020

ttattttgtc acgggtcagc gtcgaatcga ctggaactaa cgggcactta attattagct 1080

tgcgcggatc atattcatcc atccttttcc cgctcgccgg ccggctcgcc gtcgccactg 1140

gagaaggagc ggtcggggtt cgtgactacg agcggcggcg cggcgccgtg ccttcttgga 1200

tcaccattca ccaccaggat tgttattagc tactactatt attattattc atgccagtat 1260

gaccgatcat cttttatgtg caggtacaag taggccacca aacaaatatg cagctctgcg 1320

ctctgaccaa gtcaaatttc atttgactaa gtttaataaa acagtatcca tgcttacatc 1380

tttgataagt agtatggcgt agggagaaaa atatatttca tggccagttt agcgatacct 1440

atcgatatat ataatagtaa cccttagatt ttttataggt ttaattcaat gtaaaccttt 1500

ttcatttcaa ggaaactgaa aaggcatata ctaacgtact agcggtatca attcgtgttg 1560

gggcggagcg gctagccggc tagagagaaa gagagagaga gaaaatgcac caccggcagg 1620

catgctgccg ttgcgcgtgg aatgaagcct cggcgggcaa ggcaatcaat c 1671

<210> 1335
<211> 2479
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52877_G1, chr2:6009430..6011908, Cluster 8

<220>
<221> modified_base
<222> (1011)..(1011)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1011)..(1110)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1012)..(1012)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1013)..(1013)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1014)..(1014)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1015)..(1015)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1016)..(1016)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1017)..(1017)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1018)..(1018)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1019)..(1019)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1020)..(1020)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1021)..(1021)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1022)..(1022)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1023)..(1023)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1024)..(1024)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1025)..(1025)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1026)..(1026)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1027)..(1027)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1028)..(1028)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1029)..(1029)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1031)..(1031)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1032)..(1032)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1033)..(1033)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1074)..(1074)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1076)..(1076)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1077)..(1077)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1078)..(1078)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1079)..(1079)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1080)..(1080)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1081)..(1081)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1082)..(1082)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1083)..(1083)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1084)..(1084)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1085)..(1085)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1086)..(1086)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1087)..(1087)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1088)..(1088)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1089)..(1089)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1090)..(1090)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1091)..(1091)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1092)..(1092)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1093)..(1093)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1094)..(1094)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1095)..(1095)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1102)..(1102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1103)..(1103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1104)..(1104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1105)..(1105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1106)..(1106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1107)..(1107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1108)..(1108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1109)..(1109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1110)..(1110)
<223> a, c, g, or t

<400> 1335
ggatggatac atgaaatgtt tgatccaata atcaggttgt tttctttgta ccgggcctgg 60

aagaggagta cattcatagc ttgaatttgc actcgatgct ttgaggagta cattcgaagt 120

tgctgagttt gaagcaggta tagtataaag gagttgcctt gcaagaagtt tggtatcaag 180

gtctatgaag gagttgtacc gtttgagtta ggatttggtt actactgcga ctgcgactat 240

tcttatggag atctttgaca aaggagaccc atgaacgtgt actgtacttt gcagagttac 300

gctgacaaat ccaaaagctc agtgaacgag cgtcaccact ttgcaatgaa ccgtgcatgc 360

atgggcaaaa cttgccacga gatggtactc caacaatgca acaagcagaa gcagagccgg 420

ccgccgtggg gtcaatacag cggttagccc gtcgattcgg ggaacgcagc tgatgctgta 480

tccagccggt acgcacgtac aatacgtcgt cgtgtacgtc ttcatcaacc gccatgtcca 540

tcagatcaac caaagctgct caccgccgat ggatagatcc gtgaccggcc ggaccttatt 600

gcccgctgcc actgccgtgt cgcaggcgta gggagccaca agctgctgct gtcacgaaca 660

cgatgtgacg caaactagct aggaagccac cgcggcgatc gacgcccggg atgatctcga 720

tggatcgata gacgaaagat aggtgcgagg tcttggagat caagatcatc cgtcggcgtc 780

gtctatgcga cgggggcgcg gccaagcaag caatcggcct tatgggtcct gctggcgggt 840

acctacctaa ctaccgtacg gcgcgccacg atacatacgc actgactaat cggagtccac 900

tgacgatatg ctagtaacaa ccaaagaaca tatataaaag caaccggtcc ggctcgtccc 960

gggtcccgga agaacttttg tgctgccggc ccgtgtcggt aaacaacaat nnnnnnnnnn 1020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1080

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn acggcgcgcg cccaggaaag caatcggcca 1140

tatgggtcct gctggcggtt acctacctac tagccgtacg gcgcggcacg atacttacgc 1200

agctgtcgat cgcggcgccc tggcggcttg ctctgtcgac gcacggcacg gtcaatttaa 1260

agcaacctgt ccggcgtggg ccgtgtcccg gacgagcatc gtgcgcgccg cgccgtgtcg 1320

gggacgacga cgtcgcacgc atatatgcgc gcaccttggc catgcgtcgg aggatccgat 1380

tcgagcatgg catggcatga gatccgacgg tccaacacgc gtgcaatcag tcaccgtaag 1440

tgtaaccaca ccacggagat tgatcgatcg agcggattgc tccacagtct attcatcgtc 1500

gatcctttca tgtcgtgcat cttggcggcc gggggagagc taggcactct cagtcttagg 1560

tggcgagccg gccggtcgac gacgaccttt ccgtgcgtgg ccgcacgcaa cagtgacacc 1620

agcatgcgcg ttcgttgtcc acggcgccgc gcgctgacgc cgactcgctg gtaccgcccc 1680

ctaccgacgg gtcgctgcgc tggccatggc ccgtcgccca ttggggcatg ggcgtgggcg 1740

tggccgtggc gctgtcgccc cgcgagcacg ccgccctgta aggggacaac gtcgttagcg 1800

cacgtccgcg cgagcgccat ccagcggatc ggaggaggcg cccgtcgcgg ccccgcgggg 1860

catggcgtgt cgtcgagatg tcccaggccg tcggcacggc gccattactg cgttgctctc 1920

ccgatccagg catgctccgg cggtcccggc cgatacggac ggctccagcc acgccgcccg 1980

gccccgcgcg gccgacggcc agcggatccg acgcgctggc tgcagctagg tcgatcacgt 2040

acgcgcgtgc gtacacggta caataagatg tacgtgcagg acctgtctgg ccgtctcgat 2100

ctcaggcaag tcgtcgttgg gccagggagg aagacagtgc ggcagctgcc ggtacgcgcg 2160

cctgcagaca tggggctggg gggggggggg gggggcatga tatgaacgcc ccgtagcgta 2220

cagggagcag gtcgtgccta cgtgcccgtc gccgaacaag gcagcaggaa cagcacgctg 2280

ccgttctggt gaggctgtcg acagtttggt gcatacgttg atacaagcat tgagcggcgc 2340

agcggaatgc atggaccaac aaatgtacga ctggagagtg gagacacatg gtcgatcgtc 2400

tggttgccat caagattatg catgtcactg tcacatacag attcattacg ctcctactat 2460

ctgaacgatt tgacaacga 2479

<210> 1336
<211> 1965
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53126_G1, chr2:7194923..7196887, Cluster 8

<400> 1336
ctgtgttact agtaaataat taagaattgt cagtatgtca tattatcatt tagtaattaa 60

aatatcaaaa ctaactttga taagtgctaa tatgctagtt agtgtataat ttgtatgcta 120

attaaaataa ttatgatatt atgtattttc tttattgtta taacaaaagt agagttagtg 180

tataattata aatatataat tagatgttat ttataaataa aattaatcaa ttatcttcgc 240

ccctataagt agaccttgtg atttgtgcat gttgttaaat tggctaaaaa ttagggcaca 300

aataatctct aatttaccaa ttttggcgta ggtttgttcc tcttttctac ttctcgccta 360

actatagatc taatagactg ttactcaagc ctaatacgac atgaaccata cgcagcacaa 420

cgcttacaca taacattact agattaagga ggacgaagct ataaataaaa gagttagagt 480

ctttttcaac ccatatattt cttaaccttt tggctatgat aaagtgtaat atttgtttat 540

ggaccatata ttcactttaa tattaaattt gtttttatag gtatcaaata tgattgtgtg 600

ttgtcacagc acacgagcat tgtactagtt tttttgcact cctttaaaat acaagttttg 660

ggtgtcagac atcatataaa acgtgcaggt atgttcttct cctccgcttc tcgcataaca 720

aggaatctaa taggttgtta taccataaat aggctatgag cataaaccaa gtagccaaca 780

caacaggaag tcacacacag ataaatgggc catgagcaac tactaaaacc caacataata 840

gcaagccaca cgtaatacgt cgcttccaca tattatcatc taactagtta aaggaggacg 900

agtgatcgaa ctttttttca agtcatatat ttctcagcct aatcattttt tttattaaga 960

taaaatgtaa tgtttgtttt tatcaattta atatctgata tgtaaaccat atattcactt 1020

taatattaaa tttatattta tgaatattaa atatgattgg gcgtggtcgc aggctcgcaa 1080

cgcactagca ttgtaatggt tttggtatac atacgagttt atggtatatg caaccaatgg 1140

gaagcgccaa tactgtccga tatgtaatat ataacgctgt ccagtgacac caggagcttt 1200

atttgcacaa attggagatt ctagcatcgt ctatcatgga gtcaccaacc aacagatttc 1260

tcaatcttcc cgccatgatt ttccccgtgc tcttgctttt tctcagaggc tcggccgctg 1320

gcatcgcatc tgacacgctc agcagcgatg gcaacatcac cgacggcgag attttggtct 1380

catccggcag ctcattcacc ctgggcttct tctccccgac cggcgtgtca gcaaagaggt 1440

accttggcat ctggttcacc gcgtccccgg atgccgtctg ttgggtcgcc aaccgtgacg 1500

cccccattag caacacctca ggagtaggag tactggcagt cggcagcacc gggagccttc 1560

gccttctcga cggctccggc cagaccgtgt ggtcttccaa cacgacgagt tccgctcctg 1620

ccgtggcgca gctacttgag tccggcaacc tagtcgtgcg acagctgagc agcggcaacg 1680

tgctctggca gtcgttcgac cacccgtcga acaccttgct cgccggcatg agactcggca 1740

aggacccgaa gactggcgcg gagtggtcgc tcacgtcgtg gcgcgcgccg aacgacccga 1800

cgaccgggga ctgccggcgt gtgatggaca cgaggggcct cccggactgc gtctcctggc 1860

aaggcaacac caagaagtac cggacggggc cctggaacgg gctgtggttc agcggcgtcc 1920

cggagatggc gtcctactcg actctgttct ccaaccaggt cgtcg 1965

<210> 1337
<211> 1576
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53430_G1, chr2:8957754..8959329, Cluster 8

<400> 1337
gttgatgttt tgtatgttta acctgaaacc tgtgtttgca caaggttccg acagcatctt 60

ccatggttca gacaacaact tctgcatcaa atagttttgt tcagatttaa catagattta 120

ttcaaactaa aaacttttt caacacatat tctgtgttgt cctaatatgg cgccggtaag 180

ggcgcctcga gttctagtgt attgaaaggc ctgtggaccg aagatagata gcaagcactg 240

caggaggtta taactggttt cgtctctcgt agtagtaggt gcggtgcatg cattaacgag 300

ccctttaatg ccacgtgttt atcatcgttt cctaaagtta tctgcagctg tcagttgggc 360

aggcatatgt aagcaaaaaa aaaaggtttc tttgtcctgc tgaaccctag gctggagaca 420

tgtatcgtgc agtgatgaca ggtgacgagt cagcaaccac ttggtgcctt tcgactttag 480

tgtagttgct ttgggtggtg ggatccatgg acatgagcaa tagcatcacc atattcatct 540

gtgagaggtt acagggcctt gagttgagtg ccgcttaaaa ctatgtcact ctctacctga 600

aagcgtttgc atttggtagt agcctggtgc gcgctggacc acttgttcaa acggttagag 660

gtcagctggt taggtctggt cggtatgttc gccttgctcg catctgcgat cggacccctg 720

acgaatgaac tacggttcta tgtagcctgt tttcgctcgg ttgcttcttg gtcacgatct 780

ttagcagctg ccaagcttta cgctcggggc catgcgtctc gtcggccggt gtagggtagt 840

ccgatccccg attcaggatc cgatcgttgg ggggtccctg gattttaaaa ctcggcacgc 900

gtgcggcgtg cagttgcatt tttgccgccg tggtcaggag cagtcagtag agcgtcactc 960

acacgagctg tgtgtgtgac atgggccggg ctgcgcgtgg ccgggatggg gtcactgccg 1020

agcgtggtgg tggtgactgg catcgtccga ggctccaggg gcgtgttccg cgtgtacgta 1080

cgacagcgcg acgaggcacc cggggactgg ggagagcgca cgagccccac ccccacccgc 1140

atgcccgcac caacccagca ggggattcgc cgccggggaa acgctcgtac gcgcacgcag 1200

ccgggtggca gcatcggcca cgcgtttcga tgggggcgca ccgcgcatgc actatctccg 1260

agtgattccg atcctctctg ttagctacgg cgagactggc gagtcacgag accagggttg 1320

gttgccggct tgcattgccg cgatcgagga cgacgcgctc ggcggtttcg gggtagcatt 1380

ggttcggatt ccggtgcacg gccctagctc gtatacgtac aatacgcgct ccctgctgcc 1440

ttcaccgacg agacgagggt gccgacggtc gggtcggatg cggttgcgcc gccgccgaca 1500

gggttggaaa ccatgggccc gatgagcacc tctctacctc tcttctttgt cgcagaaaaa 1560

cagacctggc acctgg 1576

<210> 1338
<211> 1824
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53446_G1, chr2:9082224..9084047, Cluster 8

<400> 1338
aaatcggcct ggagtgccac tgatatacgt gcaatgtaaa tacttgtgca gtatgttcag 60

cactcgccca ggaaacgcag tcagacataa aaacggtaaa ggaacaagac aaaaaacaaa 120

acttctcttt acatagtggt caccgatcag tctatgtaca cagactgaca gacgcttatc 180

aacagataaa atgacagctt catccagctt tgcactatca tgaataccgg tacctaccag 240

tactgaaaac acgagacaca gagcacatct tgctgtcttg ctgattcagc caccattgat 300

gaccatagat tgatcattct gagtgaaagc acagtatgcc atggtaactt cacgtgtaaa 360

cgagagttga gttgttcacg catagcaatt taagttcact acatcagcac tatggtaggt 420

caaggcaatt tcaggaggca ctatacagaa actacatttc tgaaggtgtc taaaaggtgt 480

gtgtagagtg tgcttactag tagtttagcc accatgaccg aaatgttttc gagctcgtac 540

caagattacc taagctgagc atcatcccag atctgttggc caccctcgct gtcaagatca 600

acggcgacca caaggcagca agcatccagc actgcacatg ggccaaagaa tgagctctgt 660

gtcaagtgtg agctacaacc atatagggat cagctaagct tatcatacct tccttttttt 720

ttctcattca gccactactg cagcctacaa aggatatcat aatgggccga cccagtcacc 780

caggacgcaa tatgttggtc aatcccacca gttagtacca cctcggtagc tcagatgagt 840

agaagatacc ttaaaagttc agctcaggca acttgcagca cgaccttact tgaacaggat 900

ctgttctata ggatcgtact gttgcatcct tgattaataa ggaggcaagt acttaaacct 960

ggttgatgag taaatgacct gtgggccaga gcgtgattaa cggccaggat tcagtctctg 1020

tgctttgtct ggtgctgtag atgatcgttc ctggtcagga gcccctggct aagggtggcc 1080

cacaggttgt ctgacaggtc ttcaaatctt tttgccctgc ttcagttgaa caatggacac 1140

ctcgacattt tttttgccac caataatgat ggaatcatgg aactgtgttg cgtttgaagg 1200

gaattttgat gctgtgctgt gtttgaagaa acatttgagt aaaatatttc aactggcttt 1260

tcttcaacgt ttgcccaccg attaaaaggg gagatctctt actcgttttt gccattagta 1320

atacaatttt ttagctgtga tgtatttgaa gagaatttaa gtaggatatt cctgtcacca 1380

gctgttctgg ctcaatgttg ctctcaaact aaaaggggca aatctcttgc ccgttttggc 1440

attagtagag ccagacttgt ggtacaattt tttagctgtg atgtatttga agataattta 1500

agtaggatat tcctgtcacc agctgttctg gctcactgtt gctctcaaac taaaaggggc 1560

agatctcttg cccgttttgg cattagtaga gccagacttg tggtacaatt tgccagcttc 1620

gagttgctgc ctcatctctg actatgcgaa tctgcaatat gcaacacatt agtattgagc 1680

catcatgact ctttatttct ttccacttga tctgcaggaa gttcagttgt tttgatttcc 1740

ctttttcttt ttcggttgac aggtaaaact gtacgcttaa aaaacccgag tctatgcagc 1800

tccggtgcct tgtgattgtg agtt 1824

<210> 1339
<211> 1452
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53548_G1, chr2:9493472..9494923, Cluster 8

<400> 1339
gctctgcgtg tacctgcgcg tcgccgtttt atacccgggg ccgggacgcg gcctggcagg 60

caggcaggga tgaccggggg aacacgtggc gccaaggtag ggaacggctg ctctcgtgtc 120

cggcgttggg ggtatgacgc ggcgcagcgc gggcgcccag cacgccgaat cggcgcctca 180

cgggcgggag gtgggagcgg atcatgggcc gtctcatggc tgggcgcggc ggcgcatgtg 240

cgtgcagggc gacgtgcgtg gccgcgtatg gtgcatgcga accccaaaac cgccggatag 300

tccgggtcct ggcacgtcac gcgcccgcct tcagtgctgc gcgttcacgt tcgcggccgc 360

tccggatgcg gaacgatcga gcgaggcaag gcaaggcaag gcaatgcatg gcggcggtcg 420

ggcggtgccg gtgatgacct ctgctgcatg ctttagctgc aagaaatgga tatcacattt 480

tgagcttaga gctgtatgca ggtagccgaa ggctggaacg gaagactcca tatgcgtatt 540

caactcaact ttgcatcatt tattacacaa gtacatatta tgcaataaaa atcataaaca 600

caactccgac cttagctcag ttggtagagc ggaggactgt agtgttcgta gataaatcct 660

taggtcgctg gttcgaatcc ggcaggtcgg aatttttat tttttgaatc tcatcagatt 720

tttatcaggt tcgtctgctt tgaattcttt ttatttgttg cagatttttt atcagatttc 780

tctgcttttt aatttcttgc gctttttttt tacctcatca gattcctcgg ctgctcagtc 840

aggtttgacc agagtcaaca gcagctaggg attaaagttc aggcaattgc aattcagttt 900

tccaacaaac gccgccccac gttgacagga cctgtcaatt accatgtttg agtatctttt 960

ttctaaaaaa aaagaatctc atattttagg tcctgcttat atcatatagt aagttgctcc 1020

tggctaatta gaagaagtgg gtaagattca gctgatagta gttcgttgga agggtctata 1080

aactacttga cgttgattaa tgaactactt cattcctcat aaaaaaacaa agtatctgag 1140

agttcatctg tcacaaacta ttttggattt taggtgagat actaactcag tttgaaaaga 1200

ccacattcac atcatttatt tattactgac ccaaacatga taaagaaaag ggggtggtga 1260

tggcatgcgg catttggttt atcgcaagat atatgcccta gaattctaga tacctcaaat 1320

tctactgtct gcaatctgca tcctaaaaaa accttgatgt tttctgattt ttaaaatagg 1380

agcgatcaat caaaactatc catccatata cgcttattta ctgaaaggtg atcaacagta 1440

attaagaaat aa 1452

<210> 1340
<211> 1669

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54146_G1, chr2:12796673..12798341, Cluster 8

<400> 1340
cacaagagtt taggtgaagt aaaacaacag ggccatcgta gtaacagcag ccagcagagt 60

gagggcctcc cacaaggtcg gggaatccaa ttccagcgtt cccgagggac ccaacaagaa 120

caaggtcggc cctttcgttt gggccggcag gaggcaaagg ggcctgctct cttctattgg 180

gccagcacgg taactgggtg tcggtctcgg ctgggtaatt gtggctcacc ctgcttctta 240

ttttttttt ctttcgttca ttaaatttag gacaaggtaa ttgtgctcac cgaccgtaaa 300

aggatgtccc gggaaaatgc ctctgccacc ccccaccccc cctgcggcgg gctcccacgg 360

cacagcacct gcgttaaaca cgtcacaggg cttaggcagc gaaaggcgca ctgcaacaac 420

tctgcatctg tatctgcaaa tgccatgcat gcaccacctc tgaacatcca aatgtgccgg 480

tacaggggc cgcgcgcggc cggctccatc cttggactac cattcaattc cccggcgccg 540

gtgacgagca tcgagcgggg cctgcctgac tgcctggcgc tctactagct cccagaacag 600

gcaaatagtg gcgcgcacgc gcgcgtggcc gcgcgcggta cggtgacccg tcgccgtcgc 660

ccaccacggc tcggtctcgt tctcggtcga tctctctcct acacacagtg cgtggcgggc 720

aggcccatcg ggcgacgtcg tacgcccggc cggacagggt gtgccccagc gcttgaatgc 780

ctaattattg ggcgcatcac gacccaatct ccagtcgtcg tggccgctgt gcggatcaca 840

caggagctcc gcgtacggcc acgcacacac cggcgccgcg cgcggccggg gtgcttgcgt 900

tgcgtcttgc gatgccgatg cctacgtgat cggcttgcgt ttcgtgcgga gacttttgcc 960

agcccgagcc cgaccagcga tcgctcacgc cgccggcagc cgcgcgcgcg tgccacgcac 1020

gaactcgacc agcgccaccg gccgacgacg tactgcctag ctagctcgat ctctgcgcag 1080

ctggacgcct ggcgcgagtg gtgcgcgcgc gcgcgcggta ggagcggcgg gcgaggccgc 1140

agcctggctt gcagcagtgg aggagctata gatgacggtt ggttaacata aataaattac 1200

tagtccgtac ttatatattg tgcctgccaa taaaacatcg cagcaccagc agcaacaaca 1260

aaaaaaaaaa ccgtccacct cgatcggctg ggattcattc gctctcttgc atctgcgcct 1320

tctctaaaaa aaacctgctc gctagctcgt tcatcacgct acatttgttt tccccttttc 1380

acggaaaaaa aaataatgaa gcggctaggc ggccggccga gtagtgttcg ttgatgcaca 1440

gcagggatgc acgtacgtat atggtgtgtg taaacatata taaatcatca ttccgcatag 1500

agcgaagagg actattacac acgtctgaca gacttaacag ttatatggac tgtgctgata 1560

cgatgcatct ctgggtggcc gtaagacacg tgcacgtggc catgctgcta caacagaggc 1620

actcaccgat cacaggcacg catgcatttc tcctcctcct catttgacc 1669

<210> 1341

<211> 1798
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54900_G1, chr2:16867142..16868939, Cluster 8

<400> 1341
tttgtttact tagtgtgtat ggcgtgatgc tttctcgtta gctagtagat tttgatttga 60

tgcttttgtt cgtgctggta gtatatagga tacagcaaat ggtcgttgcc cgcccgcctc 120

ccaaaatttt cgctaaatat ttctctactc aatctttgtc agaattacct gtaccttcaa 180

atctggatta atcaagcatt tttttagtga cgacacactc cagggtagtg gtaagtattg 240

aataatactt gtccgtatac tgctgctctt ttgtcgatct ggtgctagtg gtcagttttc 300

tgtagataca taaacccact atttatttaa aagaggacag actccacatg agtaaagtct 360

agcaaaggga taaactcaca aagagaaacg cagcagctaa gctgcagtgt ttttttaaa 420

aaaatatgtg gattctgatt tctggtagcg tatcggtcgt tgattagatt atgccgtcct 480

gtctgctcca tcaggtcgat ggtggcaatt atatgaagtc cagtttgtaa atgctacgat 540

gaagtagaag ccttggagca gtgtttctgg ctacaggagg ccctcgtatg ggttgcattt 600

cgttgcccac gggccttgac gccttgtctc tagtactcgg cagtgacctt cgcttaaaga 660

gaagtcaagt ggggagtact cggcaggcag tggagttgct tttgtttcag gttttgctgc 720

tgttgcaagc tcacagcttt gcagaaccac tgctcattgg tcaagaaact ggagaaccta 780

aactgcaggg tcgagaaagc tccatgcgac aaaacaacaa atgcgtgcca cagcccacat 840

tactgaaccg aaccacagct gcagggctct gaattcttag ccaaacctac tatgatgaca 900

actgatggaa gtttggtcag gttgggcatg tcatttttg ctgtttgcac gacatgcttt 960

attatcataa accggtctac taaaattctt gcgcagtcag cagggccggc accacagtac 1020

ttccaccgcg ggctttggct tgctttgtct attcaaagga atgagttggt aatcgatgca 1080

ggattaacgg gaacaggagg ggcgaggcat gattgctctc tcccacccac tatggccgtt 1140

tgacagcgag acaggaccct gtgtcaaggt cagtacagaa ccgtgccagt tcttggcgcc 1200

tagctacctt ttcagtaccc ttcaatgtca aagcccagaa agcttgtgtg cgttgggggg 1260

tttgatcatg gcctcctcgc cgctgttgcc ccccgcagct ttctctatag ccactgtttc 1320

caccacgcat aattgccagt tcacaaagca tggcatgatg tcgaattgtt gacgccgaag 1380

cggccgcagc aggatgtgtg ctcgatggct tctgctccgt gcgccgtgct tctccccctc 1440

tgcgacgctg cgactgcgag caagcctact gccaaaagct catcatggta attatttgta 1500

cgtctcttgc ggcagggatt gacaatctcc gcaacttttg ttgggagatt ttctttttt 1560

ttttgttcgc cttttccaaa tcccatcgtt atgttatttt atagtgcttc ggtgagaata 1620

tgagatttca catgcagtgg cggaccaggt ttcaagccta aatgttgtgt tgtttagatc 1680

acaggagcta aaacaaaaag atactgaagt ttagtctctt tagatctaaa aagatccaaa 1740

cagtaagagc taaaagtgac taaaatgata aaaatatcaa tttagtcatt tttagctt 1798

<210> 1342
<211> 3244
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55802_G1, chr2:21599108..21602351, Cluster 8

<400> 1342
aaaatcatta tgttaatttg tatattttcc attataaaac ttcaccgtcc ggcaggccta 60

tgacttgtgc catcattatt ctttttttcta gacgcgatgg catggacaac caaataaaat 120

cattataaag gtgagttgaa gttgagagtg aatcgactta tatttactgt ttataagtca 180

atctactctc aagtccaatg taccttcacg ttggtgtcgg tactgcgata gctcgtttag 240

tttacgaaat gtaacgtaaa tgataatagt aacgattcac actcgaataa cgacggtaac 300

aaatttgaat aaaatggtat tcatttgtag tgtggtatcg attacgatta gatttaaaca 360

aacataattt aacgttatcg attacgcatt acgttaccaa tatgtgaacc aaatgacagc 420

tgaaatgtac cccactgacc gtcggtgaac acccgagaac gcccgcatcc ttcgcgacga 480

aacaaacacg ctcgctcttg ggcacgagag aacgtcccta tcgcacacac ccgcacgtat 540

tccatccaca agctaaacac acatcctttg cttctctaat tttactttgg ccgctgcctt 600

ccgtcgacgt cgtaagctcg tgtggccgct atactcacag tagacgacca aagacgtgcc 660

gggcaacacc tttggtagct agcgcaaaaa acattcggct cgtcccctcg tgcaagcaac 720

ggcgacaccc atcgactttt tcgtctcgtt ctttgccgcg tcgcgaatca cctttcagtt 780

tcactgtgca gggcgcaaga caaaaaggac aggaggagga ggaggagggc agccatgaga 840

aagttctgga ctcctagcta gcccatctgg tccctgccgc tgaacgggtg gccaaaagga 900

gtcctctcgg acagtgtcaa gataggaacg tgaaaactat tttgccagct aggcaagagg 960

gcgagacgga ttctcgagga ttcagcagat tattattccg tagacgtatg agatgcatgg 1020

ccccacgtat atttggaagc gtttcgttag gggaaacggc gtttatttgt cgaataaggt 1080

tctctggctt tcttcagctg ttcaaggcaa caatggtaaa ctgtgagaga gaatattcat 1140

aaatggctta aaaaaaagca gacggagatt acacatcaac tttggctttg gcctttcatg 1200

ctctcacagt ttactgtagc tgcgagggac tgcagccgca gttgaacaaa aataaaaata 1260

aatgactatg acattatttt taacaaataa aaaataagaa aacgtcgaac tggtcagggt 1320

ggtttcgctg gtctgcgtct agtgtccggt gtggctggat tgctctctta aaatcgatat 1380

atgacaaatc atggtcagag atatcgacgt tctttcatag aaacggttct tatgtgcgat 1440

ccggattagt gcttgttgac acatactgta catcataatt taaggcaaca atctcatcgt 1500

gatatgtact acgtactatt ttaattgccg tttccattgt agtcagtact cagtactggc 1560

tgatagctct tttcaggcgt gtgacgaagt gaccagcttc agcgctctta atctttggca 1620

aaactcgtcc ataagtagga atactaatgt ctggcaacag gtctcggtcg tcataattgg 1680

agagcataat actgtatgtg ttcttattag tgcaccggat cacgtgctct gattggaacg 1740

gcagcgattc gttctcaagg aaaagcagtg tggctaataa gttcgtattt tactagtagt 1800

agtattttga cagctacttg agaattatta gcacaagtag caccgcaacg gcaccacaaa 1860

atcctgtcgc tggttcatag cctgcgcagc caatgcgagc atgacagatc tattgtgggg 1920

gtggtggggg ggcaagcttt attataccct catctccgct cgctcgatca gtgaccgccg 1980

attcaccaaa tcaaaatctc tttcgccctt gacggcgacc tcagggaaga caaggggtga 2040

catgagagaa cactgaggcc tcaagctacg ggagagtgcg gtgtgcttgg gcgggcctgc 2100

gcgaccttct tctagaaacg ccggaaagcg gctgtgggcc tactactgcc cttcttgtgc 2160

ggttaactgc ccagacgcca ctggagtttg aggggtgggt gatgtggtgt ggtggccaaa 2220

ccaatgatgt gcagctgctt tacggaccgt tgcttgcttc tcctgttcct tgtgcgttct 2280

gtcctgactc ctcctcagcc atgtatggtg atatgcttgt cctgtttcgg ctgccgcgtg 2340

ggcggttacc gctgtttggt tcgccagtgt ggtgtgctct ggctggccat gggagagctt 2400

caggaatctc tcaggcgcag ctgcagcgcc gctttagacc acgaccagga ccagccgaaa 2460

gcacgctcgc cgccgtgacg agacgggata ggacggggtg actagttgcg tcaaaggagc 2520

gcgaggctgc ggccgccacc acgcgcagcg ccccaccaca ccacaccaca ccacctcacc 2580

tcggacgcgt cgaaccgtcg accgcttgtt cgcgccacgt ccagaggtgt ggccaaagtt 2640

gtcacctcgg ccgtgagtga ccaggcggca ggcgcagacg aaggcgtccc gtcccgtagg 2700

ccacctagac tagaccgatc tttttctgaa ctgtctaggg aggaggacgg ccgcggtagt 2760

ggcagcttta gcgaaggaca gtgcgcacga gctcggctgg taagcgtcaa ttctaacgta 2820

ctgtacgcgc gacggcagcc caagatgtgc ctgccgtgga ggcccgagcg gacactggaa 2880

gtccttgtcc tgccgaccta gcatgtccgg cgattgacca gaacattagc gtacccaacc 2940

gaggcgctgt cgagtgtgct aatgatctgc tcaatcagtc aatcgccgga catctccaag 3000

agttagtggc aaacaacggt gcacagagag agacggtgtt gttagtacat actactagta 3060

ccatataaac tatagacaag actgtctatt tgggccttcc ccttacgttc agtagactag 3120

tactgttaag acattttcgt aggcccagtc agtgcacaag cccaacaact ccgtggaact 3180

accgggccct cccacctcgc gccattttcg ccttggtttc ttgctctggg caaggattcc 3240

ttct 3244

<210> 1343
<211> 1538
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_56055_G1, chr2:22942388..22943925, Cluster 8

<400> 1343
aagcagacgt gctatgagcc tatggttgct gtggtgttaa ctgttaactg gagatctctt 60

tgatcagctc gtatttggct gaacctgaac tgtagttttc cttttgggtc tggcagcctc 120

tatagcatat aagaaggaat ggacctacat ctacatttag atttggttca tggcatgttg 180

ttgcgtcatc acagtttggc aggtcgcgct attatcatat gattgctccc agttactcag 240

ttagccatga gtaccatcac atgattcttt ccagttagcc atcagtgttt caattaatct 300

cgggccttgc aaagaaatgc aacctgtgga cttcggtccc catctgaatg tattatcgga 360

agaaccggag accctgtggc catggtggta ggcacgggaa ccggcactct tgcagcgaca 420

tttggggaac actaatagtt gtttggccca ttttaagata tctttttatt gcataattgc 480

cgtcgtccct ctgctgtttg ttccagtgtc cgcggctatc tgctatggcc tgtgttgtcc 540

ggctgccaga gttgtgcatt attgcggcac gatgcctatg attagtagtt gattactgtt 600

taatataata tctactagac tgctactaat aatctcgtta gaagaaccac aaaatatggc 660

atgccccaat tcctaggtgt ttttctttac tggaaaaatt ggggccgact gtacctgctt 720

ccaccactac tgtagcaggc aagcaggaag gaaaaaaaat ccccctcata cgaaatgcaa 780

actcattatg ttgcagccgc tcacatttat aagctgtagg tccaccatat ttattagttg 840

taggctcata tggacaaaat gcaatcagcc cgaaacagtt gtaactttta tgtccatgta 900

gtcctgcagc ttataaatgt gagggagtgc aacagaataa gtttgtatac aatatgcata 960

ttttttcac agcagaaacc aggtgatgat ccaattatga ttgcaagcag acaaatgcaa 1020

atggagtgcc tcttgccttc gctgtattcc taagcaaaat gcgagctttc aaaaagcgtg 1080

ctgttctggg ttttttttt tttttgcgtc tgtcgcaatt caaaatgacc agcagcacat 1140

agtagcgctc cagcaaaata cccaagtgtt ttcaactccc ttggttctaa gagcgcaggc 1200

ccgtgtttct tatcatggaa aacgccatca atagcaggct tcctgattga agtgtctgtc 1260

tcatgagcca gccaaatcct gacgcaatct aacaatagaa agatgatgat ggcacatact 1320

gtgtgtcctg tacctcggtt gcattcgctc gttttcgtgc acgcaaagtc tgacagtctt 1380

tgaagtgggt gtcacgtctc tttgtgtccg ccattttctt ctttactcgt caggttcaaa 1440

gcgtctctag atttgctagt tgaaaactgg ttgttctagc actgtctgac gtgcttactt 1500

tctgttttct taaattgtat aataaactga tgaggggg 1538

<210> 1344
<211> 1697
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56735_G1, chr2:26929737..26931433, Cluster 8

<400> 1344

ccattatatc attagtctat tagggtagtc tagcgtagga gttagagttg aggtagtgag 60

ctttgctcat atttctagat ctgagagttt ggtatatcta ctgtaccttt ttgtttttcc 120

gtaagattct actttatcca atacattatt ctttttttcta cttggtcttt attttatgta 180

acattatttt ttgtgatagt gttgttaatg tatatctcga agatcatagt gttgttcgcg 240

attaacggcg tcacaacttg tataaggtta gtaggctagc gaaccatact gacagtgtgc 300

atgtgcgcca agcggccaag gccccatgcg aatccctcgg ttctggcgca agtaaacgac 360

aggcagccta gtgacacaac gacatggcca caaagttgct gtgcgcagat gaacacgtga 420

gggtcgcagg caagccgccg cggcgcaccc gtaccgtacg tcgcaccgtg ttgtgccgcg 480

gcgcagatga tgcctgctcc acaagaaaac aaaaacaaaa acaaaaacca gggaagacgc 540

gcgcgcaagg ggccaaccgg ccaagggcga agggaaggga acacgccatg gcgccgtgtg 600

cgcatgtact taccaaggag gagtccatgg atccttctga gaaagaagga agcgtgcgcg 660

acttgtgctg cagacaatgg accgtgcatg atagtactgc acgtagctgc actgtactct 720

tgtttatttg gaggaaggtg tgaaaggaat ctacatggaa tctgccttga ccagtcggaa 780

acgatttgca attgatgggc actcacatgc tgccggccgg ccgcgcacga ccactagctc 840

agcaagcaat ttgtaggtaa tcaagccagc tgcatcattt ggcatttatc tttggtcgag 900

ttgaacatat agttgggtgc ttagatagat cctgcaatgg cagcatggag ttagatgatt 960

tacacatgtt ccttgttcag ctattccacc tgacaacata tctttgatcg agttgaacat 1020

atagttgagc tcttttcgta aaattaaaaa aaattacata tagttgggtg atcaggtata 1080

tcctacaata acaccgtgga gttgatgact tacacatgtt cctgcccagc tattttcctg 1140

ccaaacatga tgtgtatgtt ccttgcaaag ctaaaagcaa gaatgacggc cagtttagat 1200

ccatgatata tgtacatcca ccggtagata tttgtcagtg ttcatgaatg accatacttc 1260

tgaaagttgc caagatgttt ttagagcaat gcacggggaa caactaatgc cggccacaag 1320

ccacggagga cctaccccgg atctagctaa ggacccatta tgctctggag aatccaatct 1380

cagagcctcc tagatctcta aggcttttcc aaccttcgtc acatgtcaga acatatgaga 1440

ttgaggtccc cagggcccta gaggctcccc aggctttagg gcgctcctaa acttctagag 1500

ctctcatggt cacgagagcc ctctgtcctc acccttcagg ctctctgaga tctctagctt 1560

caaagtcttg atcaatggtc acgtcacagg gcttgatgcc ttttatgtgg aaaatagggc 1620

tcttgactcg gctaagtaca agagcatctg cagactaaat atggttggtc atgccctaca 1680

ataagacgac cttgaag 1697

<210> 1345
<211> 1490
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_59200_G1, chr2:41488931..41490420, Cluster 8

<400> 1345
ttggatgtac atgcccccaa aacagacggg gctaacttgg gcagttgggc tagtggagga 60

gaacatacac gtcggcatca acaactcagc aagtcatctc catttgccat ttggggcttg 120

cctccaggtc caggctcatc tgcgccaatc aagcgggtag atcgtcaggg ggggattatc 180

aaggctgaca aaacgcaaga ctttgaatgc catcaatggc gaggggggcgg gtttggtaac 240

ccaccaaatc atgcgaccac ttgttgatgc ggctgtttgt taacattgat ggagaaccgt 300

atccgatgcg gggagaggtc gtcgacatac ccatctgtgg ttaactggtt atcagtctca 360

gttaaagcta aagagaagag ccttaaagcc cactacactc tgtggctgtg caaacacact 420

ctgtccactc ctgatcctgc ttaacaaatg tgattcagta tgctcctaaa gcctgtgcgg 480

ttccatcctc ctttcccccc ttctcgagag atttcactgg ttcacgagac ctgcaccatc 540

ttctgttgct gttttttttg ccttatctac gacaacattc ctcggatgaa cctggagcaa 600

gaacctggca agcaatctat ggcgtgcgag gatactgcag ggcttggggc cctttggcgg 660

cactcaatgc cagccaacca cggccaggag gaccccaccc cacacatgat gctagacgac 720

gccaccaagg cacaccaacc caacaacaca cgagggccag gggtatggta caccttgtat 780

aaatacaact cctgacacgc agtaagaccg gtttcaaatg tctgatgaga ggccaggagc 840

attgaatcgt ccgtctccag gcaaaggcaa acagatagat aatggttctc ggatcaagta 900

gtacgatggg ggtaactgta atgttgctgc tgcagccttg gggtaaaaaa caagtctgca 960

gatcgcacag caaacataca aagggacagg tgaacaaatg caactgcagg gaacaatgtg 1020

aaacggtgtg aaattctgtg cagaattgtt ccctttttt tatgagtttg aaacttgagt 1080

actaacggtt cttgggcacg ggataaggcg cccattgcgt cagtctatct gttcatagtt 1140

agattagatc tcgtttggat caacttttc ttttctttat ataagcctaa gctgggcatc 1200

taacagtttc ttgtaagttg ggctataacc agagttataa gctgagctgt ttggatcagt 1260

tctagatttt cgagcagcta gcaacttatt tgaatcaatt taaacgtgac cttaggccct 1320

atttatttcc ctcctagact atataaaata ttactttgga atcataaata aactaaaata 1380

agctaagcta gcttatttgt agtcctaaaa tgatatttta tccttctacc tttccataat 1440

tttgaaacga aaccagcagg atttgggcag ggaagatgag acgcaaggga 1490

<210> 1346
<211> 2277
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5982_G1, chr1:30262071..30264347, Cluster 8

<400> 1346
tgtactactg tgtctatgca cataccttag tctttatttg gttcttttag tcaagtattc 60

tgtttggttc cagtgactaa accggactaa aaaccattaa ttgatatgaa taatgattgt 120

attaccccta ttaattagtg tatgtttgct ggaaaaaaga aagtggagat aacaaataaa 180

gtaaaaattc tactttagtc ccttttagtc acctcttgat gactatagaa ctaaatttta 240

gtcacatatt ttaatcacca tgtttgtttt tttaggaact aaaagtgact aaactttagt 300

cgcttaaaac caaacgggac cttacacgcg cctacgctca attattgagg cgtacgtacg 360

tccatctggg ctgcacagaa acggatacat ccactgcagc actagtcgat cgatgagcga 420

cgtcgactga gctaaggcca accgaggtcc gtggcaccag gcaccagcta gctagctaat 480

cagagtccgt ggaaaaaggg catcgcatcg cagctaaagg cggccgcttc ggtgacatag 540

tatagacggc gagccacgtc aagtctactt ctctgtttgg ccaagatcga cacgccattt 600

gtcacggctc cggccggccc caccactccc gtctttggcg tcgatcgatc gggccagaga 660

gcgagcgcgg cgcgggcgaa agctgcgaag tagtatacaa caacatggcc gcgaagcagg 720

atgtgacacg gatcgcgtag gcgcctcggg tatagtatag gccacgcctg gctgtctctg 780

gccctgcatg cacgagccgt cgcctccctc ctgcgcccag cgtcctggcc gaccgaccgg 840

tcgcgctctc gcgtgggacg ggggtgagtg cgatgcggct gagataggtg cacggcaata 900

tgcaacgagc aaagccatcg gcgtcgcgtc ggtggagacg cgagagatgc cgtggcgtcc 960

tgacgcggaa gcgaaacgag gagagaggac ggacgccccc cccgggggggg gggggggggg 1020

gtccacgggt gattcgcgta cgtgcttgga cagccagcag cccggaccgg acgacgacga 1080

cggggcgatc gaccggcgta tcgtcttgcg ttgcatattt gcatgctaga ttgacgcgtg 1140

acgcgctgct ggctccagcc tccaggcctc cttgtctgcc tgtgtcgctg cgcgcgcggg 1200

ccgcggagcg tacccctaaa cccaatcccc ggtcctctct catcatgtga tacatgagtg 1260

catgcatccg tgtagatgat acgtatcaca cacgtactac tgggaccacg tgtacgccac 1320

acactagact tttgtatcct tcacgatgca accagactag taagaggaat atatatgctc 1380

gtcatcgttt cgctgtcgct gtcagaaaac acactattgc gatcgttttt ttttacgctc 1440

cttaactagc tactactaca gtacacggag ggcagcacaa taatgagtac tagtagtgta 1500

ttcacttctc cagtccctga atctgcgtat tactgtgcgt gacacaacga gggcggagca 1560

acgcgtggtc aagtcgtgtc gtacggtgcc cgtacagcgg cggccagttt gtgtcccgta 1620

caccttttgt tctcttttc ttgacacaat cacattttct tcctgattaa accagccttt 1680

tcttgacaca aacacatttt tttcttgatt aaacagttac tgatggcgcg cgcgcgttga 1740

tcctgaattc ctgatcccct tgctctgttt cccacaggat gctgcgcttt ttgacatctc 1800

cgtaaccaca accgctccat gacattctag actactacgg gcagttacag cgaaggattc 1860

taagtcttgg ctgtagcacc ttctcctata tggcaaacga cctgaaacct tatgggccat 1920

aaatatttga cacgtttacg gattatttta gcaccgagta gacctaatac aaattgcgta 1980

catttacatt ctctctttat ccatatttat ggtctgtgtc ctttgcttcg cacattgtat 2040

ttaatttagt ctatggctag gttacatctt accttataat tctaccaact cttgttatat 2100

atagcccgtg tgccacaaca tcaggaatcc agattttagc tttcagtttt ctgtcttatt 2160

agatcatacc atttttttgc gtatatattt gaagttaagg ttctgaagtt attgtacctt 2220

ctattcaaaa cactattcta agtctttcat tacattctta gcctttctag cgaggaa 2277

<210> 1347
<211> 1766
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61423_G1, chr2:54278298..54280063, Cluster 8

<400> 1347
gccaaaattg ttttcttcga aagctgactg aacttctccc catgaactcc ctttctggag 60

tttagaaaac cactcatgtt tttcgaaatg ctgactgaac tactccacac ataaacagct 120

aaatagagta ctgtttatac gtacaatgga cagtttataa gttgtttaat gctcgcaagt 180

agccacactc aaatatgaat atgatccttt tatacgtgtg ttgctagtgg attcaggaaa 240

aaccaaacga ttaaggccat atatgtttgg gagatctaca cttcaagaat ttcaggtcta 300

tttcagcttc ttctatccaa acgtgaccaa ctccacaagc tctagtttca taatttttt 360

aaaaactaga ggttaatttc atgaaatttt tgaagctcct caaatgatgc ttgaaaaaca 420

ctgttttcat gcctactcat gaagttacat aaaaattacc caccatgtca ttggttacat 480

gaacatgacc taacaaatca tgtctctttc tccacccgct aattattaaa ggtaattaag 540

gaaactcaca caaattaatt gtattataga aagtggagtc tatatgcaaa ccaaacagtc 600

ttgaaccctg tcttaccaat ctgttgaagt cgtttcatgg tgcagctgta aaacctaagc 660

tgcaattctt gaaataaagc cctcctaaac atggcctaag ttgaatataa tttcaatatt 720

ttatagacta gtaattctgg cagcatggtg cagcatggat attatagata agagtatgtt 780

aaacgtgttt atataaagac tgattgaggt gtctgtgtaa caaacgatat taatggttct 840

acaaagtaaa taatatgtgt aacatgtggt ttttttattg tttctagatg actgttctag 900

ttggaaggaa ccaaaaagat ttgaaccata acatttcgga attcgatttc gaccctaagt 960

tagcgtttgg tcctagaacc ggttgggatg gagcggctcc agcatcgtca gagaacggct 1020

ccgtccgaga gattttggag gacggatgta caatatgtga gcataatttt tttagagtca 1080

ctctgatact tacatagaat tagtccaaac aaaaataaat gaagagtgga gcggcttcat 1140

cccatcgtag tcaggaaccg aaagcagtgt gtggccattt gtgctcagtg tgggtgaggg 1200

tgaggccctc tggatcccac ccagcgacac accaataaaa cttgcacgca atcgacaaaa 1260

aagaaattat caaggcatac gcgcgccgca attcgacaca cagatgtgga gtgcaagggt 1320

tggccataca tgcgagaaac gcggcctggg aatcaggaga tacgtatgga gcaggccact 1380

cacatccagc catccaggat tggaggggca caagtttgga caagcctctc tgaagggtac 1440

tagtagtaca ggacaaagcg caagatcttt ttgtcagcta tggtgcttgc attgcatata 1500

aaggctgtgg cgagatggag tccattatat tttaagacaa caacaaggca ggcggccgcg 1560

ttgcatccga acaagaggca aacaccgatc actcgaaagg atcagaccat tggcgttgtc 1620

gtcgttctcg gtgcccagaa caacttctgg ttcgtcaaag tattactaag attagacatg 1680

cttgcattgg atgcatacta gtcaatgagc atggcggtag attctacttt cttggcttgc 1740

aaagatccat gaaatgccgc cgggag 1766

<210> 1348
<211> 3506
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80142_G1, chr2:172489654..172493159, Cluster 8

<400> 1348
cccaccaggc ctgaacattt gattttcgat ggattctcgt tgcaagtaca aagtggaaca 60

acaatggccc tggttggtga cagcggcagt gggaaatcga ccgtgatcag tttggtagaa 120

aggttctatg acccacaggc tggagaagtc ttgattgacg gggtcgacat tagaggaatg 180

aagcttggat ggatgagagg aaaaattggt cttgtcaacc aagagccggt gctattctca 240

actacaatca gggaaaacat tgcctatgga acagaaaagc caacacttga agatatcaat 300

agagcgatac agctcgctaa tgctgctata ttcatcgaca agttaccaaa tgtataactc 360

aatgaactat tacgtccgta atgctattta tttattatat agatgctaat tttctgccac 420

tcccattgtt aatcagtaca tcttgtgaaa catccgcagg gtcttgacac aatggtgggg 480

gaacatggaa ctcagctgtc tggagggcag aaacagagaa tagcaattgc tagagcaatc 540

ataaagaacc ctaagatctt gctactggat gaagcaacca gtgcgttgga tatggaatcg 600

gagcgggtgg ttcaggaagc attggttagg ataatggttg aaaggacaac aattgttgtt 660

gctcatcgcc taagcacggt gaggaatgct gatgtgatat ctgtcctaca acacgggaag 720

atggtggaac aaggtatttg cttattgacc ttaagaaaac ttatttttct atgttcttcc 780

cataatccca tttgcagctt tcctaactat catctcttca ttttgcaaaa ctgttcaatt 840

tctgtgaatc ctgagcaggt tcacacgttg acctgatgaa gctacctgga ggagcttaca 900

ctcagctgat tcgtctacac gagactcaac aagaggcaga agatgtccac cctgacatgg 960

aaatttccag gagatcaaca agtaaaggct cctcctcttt tgggcagtct atccctgctc 1020

cacttggctc acccgatcca acggaagtca gtggtgctcc tgacacagag gaaggagcta 1080

cagacagagt gaaagtgggt aggtctcaga agaaagcttc gatcgccaga ctcttcaagc 1140

tcaacaagcc agagactctt gtccttgcac ttggttctat agctgccgta gcgcatggca 1200

ctatatttcc tatctacggc acgctgattt ccactgcgat aaaggtgttc tatgaaccgc 1260

cacaagagct actgaagggc tccagattct gggcaggcat gtttgctctg ctaggcgctt 1320

gcgcgtttgt tctgattcca gtgcagtact tcctgttcgg actagcaggc gggaagctcg 1380

tggagcgcgt acgctcgatg acgttccgaa gtatcatgcg ccaagaaatc agttggtttg 1440

ataaaccaga acactcaagg tgatcgattg tgatgcatgc atgatgatgt tcggaaaaaa 1500

aatctattat tgtcagattt ttatctattt acttactgat accataagtc tccaaacttg 1560

tgtcagcgga tcaatttgcg cgaggctgtc taccgatgct ctgaatgtga agcgactagt 1620

cggggacaat ctagcactga atgtccagac cgcatcgacc atcatgtcag gcttcaccat 1680

agcaatggtg gcgaactgga agctggcgct ggtcatcaca gtcgtgatcc cttttgtggc 1740

tttccaagcc tacgctcaaa tgctgttcct gaaaggtctt aacagaaacg caaaggtact 1800

acagccacac tcaaatgctg tttcatatct cgtcttatta actgtttttt tgatcggggc 1860

gcacagctga ggtacgagga agcaagtcag gtagcaacgg acgcggtcgg tggcatcagg 1920

accgtggcgt cgttctgcgc cgagagtaag gtgatggacg cctacgagaa caagtgcgag 1980

tcgccgagga ggcaagggat gaaggaaggc gtcgttggtg gcttggggtt cggcttctcg 2040

ttcgtcgtct tctacctgac gtacgctctg tgcttctacg ttggcgcaag gttcgtccac 2100

caagggacag caacgttccc agaagtgttt agggtgagaa gacgaatcgt ccttatcatc 2160

atatagtaca gttcgtcagt cagtcagtac gtgcatgcag catatttatc cagaacagtg 2220

gcttctcagg ttttcttcgt gctggctttg gccacaagtg gggtctcgca gacgagtgcg 2280

gctggggcag acagtgccaa ggccaacgac tcggccgtct ccatctttgc aatccttgac 2340

cgtgaatcca agatcgacta cagcagcgag gagggcgtga ccatcgcgag cgtgaggggc 2400

gacgtcgact tccagaaagt ctgcttcaag tacccgttga gaccgaacgt ccagatcttc 2460

aaggattttt cactgaggat tccttccgga aaggttgctc cttttttttt aataatttgg 2520

acacatttct tccacctgac cgacgcagag cttgatctca ataatgccat tatatatata 2580

atatattatc ctcgctgcag actgtcgcgc tggtcggaga gagtggaagc ggcaagtcga 2640

cggtgatcgc cctgctcgaa aggttctacg acccggaatc cggcaagatc ttcatcgacg 2700

gcgtggagct tgggaccctc aaggtgagct ggcttcggca gcaggctggg ctcgtcgcgc 2760

aagagccggt gctgttcaac gacacgatcc gcgccaacat agcctacggg aagcaaggcg 2820

gggtggtgtc ggaggaagag gtcgtggctg ccgccgaagc agccaacgcg cacgggttca 2880

tcgccgcgct gcccgacggc tacgacaccg tcgtgggcga gagagggagc cggctgtcgg 2940

gcgggcagaa gcagcgcgtc gccatcgcac gggccgtcgt taaggacccc aggctgctgc 3000

tgctggacga ggccacgagc gcgctggacg tggagtcgga gcgcgtggtt caggaggccc 3060

tagaccgggt gatggttggg aggaccaccg tggtggtggc gcatcgcctg tccacgatca 3120

gaggcgcgga tgtcatcgcc gtcttgaagg acggggcggt tttggagaag ggcaggcacg 3180

aagaactgat gcaggtgaag gacggagcct atgcttcgct tcttgagctc agttctagtt 3240

ctgcatgatc agaggggtag ttggcagaat ggaggcgtgt ctgcattttt tagattaata 3300

aggaaccaaa gtattccaga ctccagacgc gtgcttgtgc acggataact agttaatcgc 3360

acaggtcact acggcaaaaa catgtatttg gtgacgtgtt tccgatttta tgttgccaat 3420

taaatctgtt tagcgactcc taaaaaagat atcactaata gaaccatttt agtgacgcgt 3480

ttttataaat acgtgtcatt gattga 3506

<210> 1349
<211> 1465
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80564_G1, chr2:174556325..174557789, Cluster 8

<400> 1349
cctgcatgta gtattgaaca tgtttacatc accctgcagt tctgatcact ggagctctat 60

ttcagttcta aacatgtttc tccattttat cacctgggtg tctggtgaga aggaccttaa 120

ttgtggtaga gtctattttg gttgtggccc tagaacattg catcatgtca gctctctgtg 180

tccaaagact ttttttttat cattatgcaa aacttgcctc tgtttacatt gttgtactca 240

tggtgtactg tttaatttat catatgattc tcgaagtaag aactacaatt tgatggttgc 300

tgctagctat gaggacctga caaggccaat gtgcatttgg gaagagaact tgaagagcaa 360

ataaatattg tcttagattt tatgattttc tgaacatgtc gccatgtatc agtgtcagat 420

gctgaatgag ttatcttctg tgatgttgaa tcagttgtct tagaattatt tgaacttgtt 480

tgcatatacc acttgcatta tgttatcaac atcttcagtg atagaacact gaatcatgct 540

cctgctgttt tcaaaagctg cagtaatgtt atgcactatg gaatgatgct aaggttttat 600

tgagcaggtt gatctctcag ccaccagaca ccagacacgc agccggggtt ggccagcgcc 660

agccaccagg ccgccgtggc tccgacttcc aacgtcgtgc cccgcctggc aaccgaccgc 720

atccaccgcc tcctggctgg ctgggcaggg tagacacaaa ggtctcatcc agtgctccac 780

tcctccggtg agcactgatc tgatctccac aatagcaatt gcgatttta attcccaatt 840

tctaagcttt gcattagtag gtgtttgact ttattttctt gtaatgtgga tgcagtagta 900

taataacttc attggattta attattgcag catccttttc tgctccgaga cacctgctga 960

agctggaagt acatggtaca aggatgatta ctttaattga attggtaagg aaatgttggt 1020

tttctcgtcc aattcagata ttctcgtttc catttgatca cacgtgcttc gtacatcacg 1080

tggatagtct gtatgaatcc taaaaagatc taaatgaaca tcgtcattta attaatatag 1140

gtcggtcatt ttgcaaccct tgttaacaat aaccaaactg atggattttc taccgccgta 1200

aatttcaagt aaaatttatg ttatgatgtt caacttttct tgtcatgtgt ggcggaaaca 1260

taagtaggct ggataaatag ttttgtaatt tttatgccta aacatgttca aacaaactgt 1320

ttgtaatcta atgtatgcaa ctttgatgct tagctgttat gttaaatacc gaatgtacta 1380

taaaattata tattagatag aattatatat aaaaaaaatt tgttgtggca caccctatac 1440

aaaaatccta ggtctgccac tggct 1465

<210> 1350
<211> 1645
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81773_G1, chr2:180529319..180530963, Cluster 8

<220>
<221> modified_base
<222> (747)..(747)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (747)..(846)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (748)..(748)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (749)..(749)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (750)..(750)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (751)..(751)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (752)..(752)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (753)..(753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (754)..(754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (755)..(755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (756)..(756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (757)..(757)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (758)..(758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (759)..(759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (760)..(760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (761)..(761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (762)..(762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (763)..(763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (764)..(764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (765)..(765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (766)..(766)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (767)..(767)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (768)..(768)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (769)..(769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (770)..(770)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (771)..(771)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (772)..(772)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (773)..(773)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (774)..(774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (775)..(775)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (776)..(776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (777)..(777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (778)..(778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (779)..(779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (780)..(780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (781)..(781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (782)..(782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (783)..(783)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (784)..(784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (785)..(785)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (786)..(786)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (787)..(787)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (788)..(788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (789)..(789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (811)..(811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<400> 1350
tgtgaatgct cccacaccgg atagagccct tcctttgtac tactctctgc tcatttgtta 60

atggataccc gattgccctt gctgtagtat gggtatgtgt gatattggtg acggtcccta 120

acaacttttg ggcatgcgat tgaggttcta ggaagaggat gggagcttga gcttgctgtg 180

cgctcttgtt tggacgtgtg gttcagggca gggatgccaa atcgagccag ggagtgcgcg 240

aggttgcgcg agtgggatgg cggctggttc agttgctagg cgaaggtgcg tgctgcgacc 300

gagcgtggat gctgaatgta tgctcccggt ccctgtcaac gatcgcgttc ttgctgattc 360

gtatgcagcg gctgcagtga gggggaaatc ttacgatcta gggtacgcag cacgaggatc 420

actcgacacg gtggcgttat gagggaaatg cacacgatgg ggcgcgcgag atgtgtaaaa 480

gcgctctagc ccactacgaa atactccgat ggaatatcta gggcaaccta gtagcgctga 540

ccatagagag aaagcaaatg atgtttggat cagctagatc acggataaga ctgaaggact 600

gttccatata actgatgata ccagtcctat tgtactttgg ataactgcta agttgtagaa 660

taaaatccat attgcctcct aatattggat aaatggtctt aacaaaggct acaggctcaa 720

aaaggtatgg gcccccaagt accctcnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 780

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnctct gggtgagcgc gcgtcatttt tattctcacc atcggcccaa cttgtctgcg 900

tcccgaacgc atatgaaagt gccagtactg acaggaatta agtagtcgcg gattctttta 960

tggcagtatc agaaagaata tcttcacttt gaattgcgtt aagtcctatc tagttgtgcg 1020

cgtgtcgacg tacttccctg cgaggcggat aatagtgttc caataactcg ttgtttatcg 1080

acagcgccta aactaaatcg aataatttgc ccacccacgt caagtgtttt gcgacagccc 1140

tagcacagcc cgctaagaag catagagcat acacatgtct ataaatagaa gtgcccatct 1200

ccacacctgc ggtatggttg cactcccacc ctctattctc ctagccgcca ccatcggatc 1260

ctctccccac gctgtcttcg tcatcccccc gtggtcttca ccaacggtca acctcagcat 1320

gggaaccagc aggtcctctt cctcccccta ccaaagctcc catgactccc ccgccatggc 1380

aggtgtcaca tcccttccat gttgcccgtg gatgccggag ccctccccag aacagtaaga 1440

gtacaatgcg tttatgtgtt acacaaccga acaaggccta atgtgtcatt caagataggt 1500

ttgcttagcc aaaaaaatga cttcttggta tggtctagtg tctaaagtag tccctgtaaa 1560

ccttacgaac gagaggaatg tgtttctttg gaatcttagt aagaacgacg tatttacaga 1620

ctgatccatc tataagatta tgata 1645

<210> 1351
<211> 1466
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82147_G1, chr2:182653682..182655147, Cluster 8

<400> 1351
atgacggtcg ctatcaagta tgttctggct ttgcaactaa cttatgtcca ttctcctaaa 60

ttcgcacgag atcgatctcg ccagccgctg aagaaaattc catccagctt gacccgttcc 120

agtggccggg acgggacgtg aagcaacgcc agactggagt tgtggaattc agcctccaga 180

agctgctgtg cccaaggcat tgaccgcacc aaagcgtgtg actagacggc tcctcgcgcc 240

tcccacggcg ccacagctag ccacggcccg cttgaagttt tctcgcccta gccgcggact 300

ggtcgtcgtc gcggtcctgc cgtgccgaca cgaaagtacg cgggggctcg cgttgcgtcg 360

ccggccgaag taccaatcgc tctgcagctt caggcttcag ccatggacat gtgtacagta 420

cagaagatcc catccggtcc ttagcctcgg ctccacctcc gcggcacggg cgacgccgat 480

gtagaatttc gcggcaaatg tgcagcggcg ccacgcggtt ttaataagcg cgcgcgcggg 540

ggtgaccgcg acgctggctg gcgcgatgcg catctgccgt accgttgagc gcgtcactca 600

gtctccgtgt gctagcttag cttgtgagaa acggaagctg agatcgtcga ggcgtggcgc 660

ggcatgttgc tgcatctggc cctgtagtag tgtacatagg caggcaccgc cgcaccgtgc 720

gtccgtgcct gctactcagg gcaaactact agctagctag tcggtttctc cttcaggtga 780

ctgtccccat gatagcggga gcggcggctg caggtcagct gctggtcgta gcgggggcg 840

cgcgctcgtc tggttccgcg gcgctcccgt ctcgtcctct cgctctcctc ctcctcctcc 900

tcctcctcct cctctgcctc gtcggcgccg agcaggcggc ccctacaccc ggtgccgccg 960

gagagaggcg gcgcgtggac gtggacgtgg gtgtgatctt ggaccgcacg acatggctag 1020

ggaacatcag ctgggcgtgc atggagctgg ccctccagga cttctacgcc gacgacgacg 1080

acgccggcta cagcacccgg gtcaggctgc acctcaggga cgccccggcc gggcccagcg 1140

ccgtcgacgc cgcgtccgca ggtacgtacg atgtcctgct ttatttcagc atccgcacta 1200

agacttgcaa ataaatccac actgcgatgt aatcgaatca gcttgtccgg gcttcatggc 1260

ctcatgggaa gagctcacat tatcagctag ctgtactata cggttcttgt accccgttgg 1320

tggttaggcc taggccgcgc gcgggcaggg agcgacgact tgcgagagct agccatcttg 1380

agttgaggtc attgttggtg gttaggaact ctgaacgccc gacgtgacga tcgtgaaagg 1440

tatatatcgc aaagcaattc cctaac 1466

<210> 1352
<211> 3165
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82750_G1, chr2:185835222..185838386, Cluster 8

<400> 1352
aaccggtata tgcattgata gaggggaaaa tgttttacga taattcgaaa gtatggcttt 60

tttgggaccc tactgatatg ggcccgcctc tggacaaaat tgaagcacgg tgaaaactat 120

actcagcaat tcagcatcag caaagtcaca agctcttgac cggtcccatg cccggagtgc 180

aggttcacca cttcaccggt cacctaccac ctgccgtggt cgtccgttct ggaaggctga 240

aactgcattg gggcctgggc ctcgcgtacc ggcctaccaa cagtgtacaa cactgctggt 300

actcggacag tcgcaaaaat cttctaccag cgagccagag acacagggag acctcttaca 360

ctatacagta gcatttttaa aaaaaacgaa attgaatatg tacaggaaaa ctagcttttt 420

tccttcggag aaaggacgag aaagtactgc agagagagcc caatgttgcg acgaaaagac 480

gtacaatttc agtgcagaca gtatctctgc cttttctccc ttttccgtca cttttggagc 540

ctgatttccc cacaaatcac ggccgctgag cttttccatt gtacccatac ccatttgcct 600

tttacctcag tcagtctaga cgtctaatct caagctcata gaatgaggtc tgtttgatcc 660

caagaactaa taattagcta aaaatagctt tagtggatcc aggcactccg gctaatgact 720

caattaatag gttagaataa acaatctatt aataaaacct tattaagcat tactgttcag 780

ctaagtattg gcaactacta ttagttggtg aatcactcag ctaatagccc tgttagtatg 840

aaaaataatt gctctctcca tactgcagta tgaggatcta cagtttagat ttgttcagaa 900

atataaggtt ttttagatac tccactctct atatctcctc tgtcttcttt tgcaaaaaaa 960

tatatatatt aaggttcctt ttaaatttgg tgtcatctaa atcagtaaac aataattaag 1020

gaaaataacg agcgaactac tccctgcatg ttaattagta agggataagg taatcttttc 1080

ctaaactctt tgtttgtcta aaaggcactt ggatactttg tattttggga cgtagagagc 1140

agttgactca ttatagctag tagctatata taacacctag ctggatttta aaattctaag 1200

gccttatttg gttgcgtatg aatcggagat ggttgatgag attaaatatt ttttctattc 1260

aatttcgact agtaagagat ttaatcattt ttggtcaatt cttctaaccg aacatgacaa 1320

caaatctcaa ggcggacaca ccactgacca ctgaggctac aatttcacgt aacaaatttg 1380

aattttggca tcaagttttg ttatcgtact aaatccagcg aacttgaact tggatatcca 1440

gagatatagg gctcagaaac aaatccagcg ggtgcacctg gatagatcca agaaaacaac 1500

accatgtcat ctcttcgctt actgcaagat agacaactca tcttcttcta gtagtactaa 1560

atgaggcact accgcccctt ttattttgtc catcctcttt gactatgccg acaataatag 1620

ccagatcgac caaggttggc tatgcggcat tgttgctgtt tcgatgattg gacgccaaat 1680

taaaggagca agctatgcta tatatagctg ctagggtctg ttttcagatg agatgtaaat 1740

tgtcctcgtg gctcagtacc gatggatggt caccattttt gcatgccact gtgttctatt 1800

tttgaataac gcaaccaaaa ggcgctgccg cggaccagac aaatcatggc gaacttgtac 1860

caccgaaaat gtgaaacaaa gttccttgcc agagcttacc aacttttac catgtcgtgc 1920

catacaagtt ctggcaaaaa attaaatttt gtgcaccttc gtttgcagcc tttaggtcct 1980

gtaccctaag gacacgtaat gggtatacta actcattcac ttcttttaaa tgtttgtgta 2040

tattggttct gtgcccattt ggtctcgact cgctgttgca gtgcggccgc gtcgggcagc 2100

cgggcagccg cgtcggcagt gcggccggag cgacaaatgc cgtgcaggaa ggaggtcgta 2160

gaacccgagc atgaccttgt cgaaccaccc ggcgtcgtcg accacgtaga acgtgcaccg 2220

cgccggtcat gcatcgtcgc cgcctccaga cgcacggcct cctgccgcgc ccacctcgtc 2280

gttcgaccca aagctagcta gtgccgccgc gaggagctcg tgagtcgtga catgcgcggg 2340

gagctaatta aagtccccat cgccaaggct gtcgccgtac ccgtacactg gacagtgcag 2400

ccgtgcatcc cgttcgcctc cagctagcct ccggacgacg atcctttccc gccgcctacc 2460

ttggcctggc caccaggcca gcaggtaacg cagggtgacg aagaccgtga ccgcgtgcag 2520

cgagctcacg tcgttcttga tgtagtggcc gagttggggg ggagtgagca gtagtggacg 2580

cgcagcgctt gatcatagcc tggccaaatc tgatcgagac aatcagatcg cgtgttttgg 2640

aacacgtgct gcaatagaga tgcaccggcg tcacggcagg cgcgcccagg gtcgccgggc 2700

cctggaccct ggtccgccag gaccgccatg gggatcgagt gagcccgtcc tgaatgttgc 2760

tgtagatgat gaagcacgac ccggggaacc tctggacctc cggtctcgac aggagcttgc 2820

tgaggcgtgt gctccagggt caccttgctc gccatctcct actccatctt ccgacttccg 2880

ttgcctcccg taattccagc cgaagtgaac atggcccggt ccgtaaacat gccgaggaac 2940

agatctgtag gatctgtcac tgaagtcgtt ggcattgttg atgaggtacg ctgcttgccc 3000

agcatatgcg aggaccagag aaggatatat gctacacaga aatgctatat catggacaat 3060

tcacaaggaa ggatctcaag gttgcagtgt ctatgaaaaa taacctgaat acccttctta 3120

ccgaagtgac caagatctga caacatagct tcagcaccag tacgc 3165

<210> 1353
<211> 1596
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82871_G1, chr2:186536450..186538045, Cluster 8

<400> 1353
acatgcccgt ttcctttggg caagtggccg ggagcgcacc gtagctatat gctatagctc 60

ccggccggcc ggatgcagca gcactctcca tccatgcatg catggctggt cgccttttcg 120

atcggtttat caatgtacgc gtgcccttgt gcgcctgata aggacgtagc cacggctttc 180

gttgcatagt attttacggg caaaccacat tattaaagcg aaacagccgg actagctaat 240

cacgttccac ctacatgatg agtggctcaa aaggagggtt gggttgggca attaatggga 300

atcctgcgtc gcgacaattt gagtgctggc tctactggag gtactgttct gctaactgct 360

tcatgtgtgt gtatcgcttt ggctccaaga atggttaaaa ttaaacgcgg ctgtagatgt 420

actgtacgct gcctgggaag tggcaaggac cttgtagaga gtctaggtag actgagagag 480

agagagagag agataggggg acgggttgac tggggtttga ctgggctcat gcatgcatgc 540

agggggtaat taagctggcg acggggacag gtcgaaaaga ccacgtgatc cgccaccgag 600

ggtacgcgcg cgcgcggtac tcgctcccgc ctgcggcgcg gccttcccgt ccatcggcgt 660

gggaaaagac ggccattata tttgcgcagt gcagccttgc gcggtctgct ccggccgttg 720

ctggttgctg ctgctgcttc agcaatgaaa cttttgcaga ccggcgacgg ggaggatggt 780

gtgatcgtcg tatatgaaga tgccgatacg gttccgtcaa tcaaatatgt gcagctcaga 840

tgcatggagt gaggatgtcg tccatcgctt agcttgttgg tatttgcccg gtggtcattt 900

tggtgtctat ccatcagtgt tgtgtgctag ctggaggaag ggtgccacgt acgatcagtg 960

ctccgtatac gcattctgac cggtgctctt gaaatgtcgt ccctactgtt gtatatgaaa 1020

ggcgcgcggc accagtagag gagcactgtt gggtagtata tatatgtact attcccgatt 1080

cggtccgtgg catcaggcag cactgtagca gactagcagg caaggcatgc gcatccgaat 1140

gtattacgga gtgttatgca catagtaaca ttttgtactg cgtaccctcg ggttctgggg 1200

tttctcagtc tcacgtgact tttagggcag ccggtgtgga gtgtggacgc ggacaacgtg 1260

gctatagtga acttgtctgt cgccgaccag gacaattact gctactctgg gatacatcgc 1320

ctcaagcaac taaataaaca aggcaactag taatgaaaac tctataacta ttgtttgcat 1380

gtcatacgtc gactagttag ttgcccgtgt atatataggc agacattgtt taaatgatat 1440

agttattcaa atacgatcta aacccatata cggagtatta ggttagtatg aatggcgaga 1500

tatatatgtg gtgtatgatc aaacaagata aagttttttt ctcttgcttt tttcacactc 1560

gcgagaatag gaacggtggg ggaggagata ctatac 1596

<210> 1354
<211> 1561
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84630_G1, chr2:196742777..196744337, Cluster 8

<400> 1354
tctgaacttc tgatcatata tatactacaa tcatgccggc aaggaccggc gactgcatat 60

ggcacatgcc taatattgat aggtcggcga ccgaccggtc ggcgagaaag gaaaggcaaa 120

gcagaaaatg aggcccgaac ctgggatatg tatgttgcga ctgacccaag ctacgtcgtc 180

ttccgttcta actaatcgca ttacggttaa gttaggtagc agtgccacgg gagcgcgata 240

aaaaaggcag aagctaccag aattttcctt tgaatctctc tcctgtttat cagcagcaat 300

ctaccaagac tttggatggt gtcgattatc ggttcgcagt cgcaatcgcc tacgacgtac 360

gccgacgacg gcaggcatac tccattccgt ccctagctac ctgtacatat atatgcggta 420

gcacaccaat ctctctctct ctcactctct cttttaacaa tctctctatt cattaattaa 480

gggctcaaac aaaatatgaa aacatattta gatcgtgact atccaccgtt ccccgcgtcg 540

aacagacgac gacatcgtca gattcatcaa cgagccggta ccacgtccat gttcattcag 600

cgtggcacgc agcaacgcgt ccacggtcgc atacactgtg gaaacgttcc acgaatctag 660

cttgaaggga cgacgacgcg gtgaacggcg attcgctgga aaaacgaaga cataaatcgg 720

attagaaaac tagacggtct gcgaactaca gttagttact tagtccgagg ctctcttgcg 780

tttaactacg taagatctcg ataggattag cataaggtcg agctgatgct gtccttacca 840

gcagctacag ctagctcggc ctcagctctc cggctgtgca atggccgcgg gcttgaatat 900

tccgtgcgtt gcgaattttg caaatccagc atgcgcttca tcaggtcaat catatatatt 960

ggcttagctt gttgttcatc gagagagaga gagagatgga gagagaaaaa caggtgttgt 1020

ttttttttat aagagggata tatactctcg tttctattac ttgcataaca gaaatacaaa 1080

gtgttttacg gaacggcttt tccccagcga cataaccgca tggtggccaa gttcagaacc 1140

cattataaga cgatgacacg tctagaagcc aggattattc cacatcatca gattcatcat 1200

cagtgtccgg cgatctgcct tccgcttaca cagcccggac aagcagttta gcaccctctc 1260

tgaagaatat cctgcgaatt cttgtttgct gagccctgcc cctgcccaac acgaaaacag 1320

gtgttaattg ttctatggtc aaaccatagt taattacacg ttaggtacgt gcattcgacc 1380

gtttctttta actcgcgaaa ataaagcgcc acacactact aggcacgcgt gtatgtatga 1440

acatatgacc atatggtaca attttgtcta tgtttttttg ggattgggtc atcttgcctc 1500

atgtctgttg atataagcta gagataagtc cattttagtt ttaaatttgg tttaagtgaa 1560

t 1561

<210> 1355
<211> 1861
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8701_G1, chr1:45746354..45748214, Cluster 8

<400> 1355
ccaaataaca tccaaacatt caatgtgaca ataacatacg aatttagttg ggattagatg 60

aaagattaaa tccctttgga ttcatgtgca accgaacaaa accttagagc tctttcaatc 120

atgttctaag attgtgttca acagtttact tatatgatta cttaaaatat tatttttata 180

ttgcagattg tattatttct agagtgaaca cgcggagata ctctaacgct cgggtggttg 240

gtgggatgaa cgggagaggg tgtgagagtg agccgcatga tacaacgatg tgctggcctg 300

ttactaattg ggcccagttg agcgattgga cgcaggccgc tttacctggg aaattttata 360

catgggccga gccacgttat gtccccgtat aaccttacga tgagcgggtt cctttcaatt 420

tgggaaggtg gggtccgtat ggcagccatg actcgtgatc acgcgcacgc atggagcagt 480

gcgccgaaca ttcggagcct cgtcaccttt tttttctccc ctggcgcgtg tgcgtggaca 540

gcataccgcg tcatccgtcc gcttggttga tggccacgga caaagggtgc gggcgtgcgg 600

cccattactg ggagaactct agatagatta gaggggggag catttttttt ttcatcaaac 660

atcaaacgag ggagagagag caaacaccca tgatgttaac ctgccttcag cgtccgcgat 720

aagctcttgc tcgaggtcga tttggactca tccatgctct gccatgccac tgccaatctg 780

tttgcgccgc gcgagcttgt cgcgacgcgc cggcagcaga ttgctgccgt gatggcgtga 840

gcttggatta gcacatgggg tcgtccgcct ccccatcccc atcttgctca gcccatcatg 900

ggtggccaga ttaagcctaa acagtactat gcaatgaccc caccaggtta agggatccac 960

gctaatccac agctggtatc gcctatcagc agccccccc ccccccccc cccccatgat 1020

tactccacac gtacatccaa cctttgcccg gcactggtgt gccccgttcc gtatcatgaa 1080

tccaggatcc cgcgctttat taggccatcc ttacatcaca ctatttctaa tgttgacgct 1140

tcaataaaaa taagataaaa tgaagaatga aacattattt cttaataaag tgtttcgtac 1200

cataatttta taggtaccat aattttatag gctaacatgt gacttaaatg ctacatctaa 1260

ataaccaaaa gaaatgaatg aaatagataa agatgaaaca aattgttcct aatagtgatt 1320

tcacgtgttt tacaatacca tggaaacttt tttggcatag ttctattatg atgaaactag 1380

tttcatctat tttataataa ataaatatag taccatatca ttaaaattac catgtgacat 1440

actaattaat ataatgaaat atctcataaa ccttccattg cgaacgatct tattgtcttc 1500

acgaagccaa aacagggcgt ctctcaagtc ccaacctaca acggcattcc gtctagtcca 1560

tactcgacat attttctatt ttctctatat aattatataa agcctattta gtaacaatgt 1620

tttttaaaac cgtagtttta gaatactata ttttacaatc gttatggcaa taccatggtg 1680

ttgattatct cctaaaatat tatatagtgt ttgaatacaa cattatatac catgatattt 1740

agataatatt gtggcagacg taggaggaga atttacgggg gctaaaaaac gaagcagaac 1800

cttaaaaaac aagtgttaaa aataattcaa ctttcatatg aatacacaat acaaggttaa 1860

a 1861

<210> 1356
<211> 2371
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87098_G1, chr2:211186412..211188782, Cluster 8

<400> 1356
aaagaatatg agacagatga aaagccaaag aagaatttgg cagcagcagc gatgtgaata 60

gatcctcaga aagtacctga cgtaacagtt aggagatcta ccacaagtgt tcctttcatg 120

ctttattacc accaaagatc attaataaaa catgatgcta ccaacaaaaa ttgatacaat 180

ccaaaaacac aagggacaga taaatcttat tgttcaactg gtatagtagt taacaccaat 240

tcatttttg ttttaccatt cctttggcag tgcaattgct tttttgttta ttttatatag 300

acagctttgt agtgcaaagt gccaattttc tattgtggta atagatttat atattgacat 360

aatagaacat gtgtccatat gtttctcatc ttgtaatggt ttccgtgacc aagaacatta 420

tctccaattt ttttcatttt caaggatggt catatatgat ccagtcaact acatctggct 480

tgcaaaagtc tgcagtaaca tgaggataca ttttttttg ttttccagga ttgttatata 540

tgcccaaatg tgaagtactt aagagaaggt gctttcatta atgttgatat tgaaaagggg 600

atacaagatg gacaggtata aagcaagcaa ctacgttatt tgtttcttcc actgaccaat 660

ctgtaactgt aatggtatgg ttgacgtcct gcaaactttt gtaaccacat gctgaacacc 720

ctgcgatcag ctggtttcct ctcctttgca ctggcaacat tctttttttt cttcttcatt 780

ttcttgcgat aaacaacaga attacaacca ggaaactgat tttcagcgag ccagctccac 840

taactaccct gcagtggctc gctgaaatca gtgaaaagta accgcttcat ttaagaacaa 900

cagccttcgg tctgagctac aatttgaata tcatggcatg gacatgatta caagaattgc 960

ttgagcttgt ttgttctcta gggaatgatg aatcaggaat gccgttgctt ttttgttgat 1020

ttcttacgtt ttttcctgct gacagaaagc agttggcgac gaagcaactg ttgtaaagaa 1080

gcggtaagga tccatatggc gtggaattgg gcagccgtcc gtctaccttg cgtgccttcc 1140

cccagctgca tgtatctgtg tttccgtctt gccacaagca gcccacaacc acaacttggt 1200

gtcttgtata cctgtgcctt gctttccttg gttggtggtg acagggccat catgaattag 1260

gcatgacttg tttccattct ggtattgtaa tgtgtatcat tactgctagc tgctatatct 1320

tggcagtcca cacggtggca ggacctcagg ccgttctttg cacggcagag ctcgggagca 1380

ggtgtcccca gtttgtgtga gccacggcag ggccggaggt cagcgtcgac gagatgaggg 1440

cggtcctgga cctgggagcc gcaggcaggc aaccaaccgc ttggcctgca cgccacaatt 1500

gacttggccg tcgcgagcgg tgacgggacc gcgggcgtat ccatgtggat gtggccgtct 1560

ccatcggcaa gatatggatg gcctgtccag cttcccatcg tgagctcgca agtgaacgca 1620

tgaatcacaa cacgtacagc accagtgccc acaccacact gttctctgct cgacgacgcg 1680

cagtgcacgc cacagttgtc gtctactcgt cttgccaagc agtgtgcggc ggcatgtggc 1740

acccccccaa agcagaacaa cgggcgccac agttgcatcc ccttcgcagg tcatagcaca 1800

ggccgcgaca caaagtcact ggccggacgc ggaaacactc tctagtgggc ggcagctgcg 1860

aggtggacga cgacccgacc cagggcttcc ctactggcta gcctacactc tctcgagtct 1920

gaactggagc taattgcatc agtggctgca tgggagcagg tcgtcgcaag gcctcgacta 1980

tttcctttcc gagaattatt catcttccgg tactggtagg tatccatgcc tagccagcct 2040

gtggtgtggt cactgtgtgc agtgtgtcgt tcaaggcaac cgtctcaaca ttcaaccagg 2100

gttacgcaac catttgttga atttacgagg actactaata ataaataata atgtaaaaaa 2160

tctaccttct ttggaataac atgaaattag tggcggattt aggataattt tttaaggggt 2220

gatagttaaa tatattagga taagaagaga tatataagag gaatgattga gctgatgtag 2280

tgggtacaca gatggccgct agagtcaagt atgtgggtgt gcagatcttg taccaccggc 2340

acttagatcg tgtcaagcag ttcagtcatc t 2371

<210> 1357
<211> 1671
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89116_G1, chr2:222650876..222652546, Cluster 8

<400> 1357
tgatctgaac agagagccgt ctcgaatcgt cagtgcagtt cagctggaag accttagatg 60

atgaccaggt gagagtttgg caccttgct gtgtttttt tggtattgga atggagggag 120

tattatttgg atgcctttac tgattgggtt acaagaggtt atttcttatt caggctaatc 180

tattactcct tccaaagaac agccaaggtg gtggtgaaag gaaggtgtca gaaggtctgt 240

tcgttccatc tctttgcagt agatatccgt aattactttg ttactaccag taattttata 300

tatatcctca tttcaatgaa cagtcaaagt agttttgatc acaccggcag acggcagtat 360

caattgtgaa cactgcagat ggatggggga atgacacttt gtgattactt ctgcagatgg 420

aaagaaggat gccgtcggtt cattgctcag cgcgtcagga tgcttacact actccgtgca 480

cggcatactc gttcaaatac ctgcacaagt caagtatgca ctcaccctcc aatgcacatt 540

agccagggta agctatcacc tctgaatgtc cctttaagca agtgcttacc ttgtgcttcc 600

aactgcagaa agagttttcc tagttacttg catgagggca tgcttgaggc catctcaatc 660

caggcattgg ctcaggtaag ttcacctgtc atacttatac atcttttagt tttaatttta 720

tactatggcg ccgaatttat aattagcttg tagccttgta ctactaccct ggtctcgtgc 780

tcgacaaggg cggcgagccg gcagaccatg tcagtgcagt cggctgcctc tctgcagctg 840

atgacctact tcagagagct gaagggcctg gttgagtgtc tgcttggcag atcctgtcac 900

aaggtctgat gctagtccaa cacaatcaat cgattgcatt aatcaagata tgtgctgacg 960

acgggatctt ttacttgttc aattgtacgt agggtagggt acctcctcct tggggtgtca 1020

tgaaaaacat gcacaaggaa atcccagacg tcgcgtgcaa gaagttccaa gtgtatcggc 1080

agggtacgag ttgccgagca ctgattcatt ctgggagaat gctaatggcc agcctcagat 1140

tcagagtgcc gaggagcatc cgaacgatga cgaagatgaa gtagatacaa aatgatagtt 1200

ctcatttcca aatgcttctt tgcattgtac cacccaaagt agcagaagtt gtagtacact 1260

ggagttaaaa aaatgcttag tccaaaaatg ttttggattc agcatatgcc tcgactgaaa 1320

aaggcatcgc gatcagctga tcagcatctg tataactgca agtattacca tatgataaag 1380

tctcgatgtg taatataatc ataaataata ggaaattata gttggcttct tactgtaatc 1440

gccttagttt tattttccca actgtatgaa cagagcatca cagggagaaa aacatggcac 1500

gcaacgcatt tcaatagaac aatagttgtc tattcatcag gtgcatggaa gttagaatct 1560

gtactgtata gtacacaatt tgaaaggcca ggctcacgtg tttactaatc cagttgtcag 1620

ataaggttac atttgtacac ttcatggtcc ttccaaatga gtctcgaaca t 1671

<210> 1358
<211> 1452
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89535_G1, chr2:224233042..224234493, Cluster 8

<400> 1358
ataaataaag cggcttgtat tctatgttct gttaacaatt aactatgatg tgtgaataac 60

cgccagtcaa gagagaaaca gtacttacca gattgtgaag caaattaatc tgcaggtttg 120

ttcctcaaac aaatcaggta gatgtttcct cattgcagcc tcctccaaat tcacggcgtc 180

atcctttcct ggaactccat cccacgcatc tttggaccac cctaattgcc tgtagttcag 240

tgagtacaaa tgatggtctt caacttgctg tcagcagagg ggcagtacgt agtgtaaaat 300

ctcagaacat gcatactaat tattggaaga agaaaaaacg acaatctctt aattgtaaaa 360

ataagtagac atttcaacga gcatcttacc cagcagaaga caagcgtgcc aaattaaact 420

atgcaattgc caaaatagcg cagggaatgc acatgttccc ctgtcaaaaa ttaaaaaccc 480

cctaatgtta tgtttcttgc agtaatgtgc acaagtctct atcaaaaatg ctaacaggag 540

gatagtggca agcattccca taaacagccg aaccatacga atcgctgtgg aagcccacaa 600

cttctttgtt agatagggca cattattagg ctttgctagt gactaaaaac atgtcacaaa 660

ggatgcgagt tctaaatgtg tagagtactt acaacgactt catcaggcaa taattcatac 720

accttggtaa gcagtaatct tttgctgtta ctctgtggga tctctagctc gtactctata 780

tgggcctgaa aacaaagaag aagaaatgtt cagagcgaac tccatcccag cttcaaaggt 840

tcagggcaag aaaacagttt acatgcatct atcatcatcg cgttatcgaa ttacgggtcg 900

atcacacata gatcggacac gtgataatac aatctgctaa accagctcaa catcccaaag 960

ctgctgcaaa aagctcggat tatatcagtg gtaatcaagg gatgactaat ttttttagt 1020

ggtaaagaag gggacgagtg tagctttcat cggtctgtaa gaaatttgag cgaattccct 1080

agatgccata atcgccgtca cacgtaccgt ctgcttccat tactggtaca tgggacccac 1140

ttgtcatatt cgaacctttc tatctctgac cgtcagtccg tcacacgcac gcatatacgc 1200

ttgctgtcct ctggaaactg tgcattttgt ttaaaagatt gtcttggaat ctgatacccc 1260

cacacgcatc atggataggg aaggaatcta gctaggggtg attgcatggt tcctagtcta 1320

gctgagaata agagatgctg tctgtctgta taaaaaataa tatattgtat atataggatt 1380

aaaccaatac tcctacaaga ttataatcat agtttttata atcttaaaat aaatggtgat 1440

tcaaaagaac ta 1452

<210> 1359
<211> 1441
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_90457_G1, chr2:228647866..228649306, Cluster 8

<400> 1359
acttcaatgt agaacgctac accagtttga agaaaaccag ttttgaacgg accaacaaag 60

ttagagaact cattttgtta gttttctaag ttcggtgacc caagtacatt ttactctatt 120

ttttttagtt ttttgcgcaa agagataata ttgacataga gtacactaat aaatatacgt 180

gcacatacaa tttcattcta atggatataa gctgatacaa aattacaact tctttattga 240

atatccaaat gtacatgtag ctcctttatc gaatataaaa atcttaatag agtattacat 300

atttttagta aaaaacgtga aaatacatct gagtttccca tcgctggctg tctaagtcca 360

aggagttcca ggagaatggt ttaaagcgag ggatgaagtt acaacaaacg aggtcttaga 420

gtagaaaaga aaaaaaaaac ggcactcaag ctagtctcaa tacaagcttt aaatcaacta 480

gaacgaagcc cattaataca ctagtgtagt gttttctagc ttgtttacat cagtgggacc 540

cttctttctt atggtaaaac tataactgaa gtggcccttg agtttataca gcagaggcga 600

actggacaac acgctcgacg cgagccatgg agacacaaac acgtaggggc acggcacagt 660

cagcaggcag ccgccgaacc atcgatcgag ccatggccac cagtccggcc actcacgtcg 720

tgctgctccc cttccccttc aattccccgc aagggccatc ttccaggcat gctctccatc 780

gcgcgcctcg tccatcgctc cgtccctgaa gtggccatca cacttgtctc caccgcccgc 840

aacattgccg cacttcgcgg ctcccccaga cgcctcggca gcgtccattt ccctgcacgc 900

gttgccgttc gtcccagcgg accacggcct tccagacgac tgcgagtcca gcagcaccct 960

cccggtcgcg cagttcatca ccctcttcga ggccttcgag tccctggaac cggccttcga 1020

cgcactggtc agtctccagc ctacggcgcg acgccgccac tgacggcggc ggcgtctgca 1080

tcgtcgctga cccgactgtt gcatggacgg taaacgtggc tcggcgtcat gggtgctccc 1140

acgccctgta ctgtacctga gctgcaggcc tgcagcgcgc tggactcggc catcctgcac 1200

gcgctctgga gacacatgcc atctctgcct ttcggccccg acgtagcaac atataacttc 1260

ccttgagaat ttactacaat aaaattacaa gcgacgaaga gtttgtagct tgtatacacc 1320

ggagcattgt cttcgtttct gtcgttgtgc gcaatagccc accagcgcaa tggtatttca 1380

gcatcctacg tgtagatacc atggagacat tgttgttgtt gctacagtgt tgaagaagac 1440

g 1441

<210> 1360
<211> 1509
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92714_G1, chr3:3213661..3215169, Cluster 8

<400> 1360
aatagaccta cacgtttcac atgttacaca caaaattgat attttattat agtagagatt 60

atatgctaaa cactatcaca ataaaaatta gtaataaatc ttttgaataa tacgagcaaa 120

aagtcaaata agttataaac tagaacatat gagtaaaaaa ttaaaaaatt aaagctattt 180

tacttattct ttaactttaa gaaattttga tataaatacg caacaatgtt tatgacacta 240

aataaataaa ttactaacat ataatttatc taatgatacc agtttgatgc tagaaatata 300

ggttggctcc tttttttaa ttttttatac ataacaacta taggaattga cttattattc 360

tggaacggat gtactcagaa cgttcgttgt tatttgagaa gcggataaga taattaaacc 420

tacacgcttc acacatgata cacgaaattg atattttaat atggtagaga ttatgtgcta 480

aacaatatca caataaaaat tagtaataaa tcttttgaat aatacgagca aaaagtcaaa 540

taagttataa attagaacat atgagtatat aatatgttct tccgctcgcg ccggccatcg 600

aattttctct gacaaaccag ctgcaacgat cgatgaagcc gctccgtctc ttctcgtggt 660

cggttctcat actgacgtcc atggtgctgc tgctggcgga cgtcgatccc gtcgtctcct 720

ccaccatccc tggcagggca tacgatcttc agcttcggcg actccttcgc cgacaccggc 780

aacgacatcg tcgtcttcgc cgccaactcg ctggccaacc ccgcggcacg gctcccctac 840

ggcatgacgt tcttcggccg ccctacgggc cgcaactcca acggacgcct catcatcgac 900

ttcatcggta agcagcagat cgagccagag aaaagtctgt ccacatatcc tgccaaatta 960

gtctctgttg gtttgtctac cgactcagtc gtgaaccgcc gtgacagctc agaagctggg 1020

gctgccgctc ccgccgccgt tcctgcagcc gcagcagcag cacgacggca gacaaggctc 1080

caacttcgcg gtggccggcg ccttcgcccg cgacgccagc ttctataggg acatccccgt 1140

cgtgggcgcg ttcgctctca acaccagctc tagcgtgcag ctgcggtggt tccagtcgct 1200

gtgcggccgc caccaccctt accaagctga tgagtgccgg ggccagttcc gcgacgcgct 1260

cttcttcatg ggcgagttcg gggtcaacga ctacagcctc tccttgttcg gcaagaacct 1320

gtcgcagatc aggtccttcg ttccggacgt ggtcaaaacc atctccacag caacggaggt 1380

aatgctggct gctcttttt cacgctgcat gtgcatgcat ggccatgggc tgctgctgct 1440

agctgacagc tgactgccca tcatgccgcg cgtgtcgtca ggaggtgatc aggcaggggc 1500

gacgacggt 1509

<210> 1361
<211> 1816
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92962_G1, chr3:4718187..4720002, Cluster 8

<400> 1361
aataccttc tctggctttg caaaatgtga ttttattcat cgtttttaa ctttgtgatt 60

ttaactcttt gttttgaaaa caagtcgtcg ttacatgcat gcagtgcagt tgacgatgtt 120

aaacctggtg ctcaaagaaa aaaaatgcct atgcgattta ttatgatttt attcgacatt 180

atattatgta attgtgattt ttacccttgt tgggttgcgt ctctaagaaa agaagaaggc 240

tagtttggac ttttcattcg tttgttttca catttttaaa attttaatca ctaattctga 300

ttttcactag cggctttgtt ttcaaaatag aagggtaaaa tcacaaggtt gaaaaaacgg 360

gggtaaagtc acaattacaa ggtccatgaa gggtataatc acaattgtct caaacataga 420

acaccaaaag atgatgtcta tcccgatcta aaagtttgat gtagctgtaa ttaatagaat 480

cagtaaaagt cggtacaaat taaagctaag acttctaaag ggtggtagct ctcttgtcga 540

gtttctgcgt gcattcatct cgctgttgtg ggttgatact gacatactgt agattctggc 600

cggtggatac atcgcatcgc atcacggcgc atcagcacgc agcaatgcac tatatatgct 660

gcaagaagat gtggatgggt gtcctgtgga aaggacagag ctttggtttg cctttgcagg 720

gtgttttctg tcccctcatt tggctgcgat ggaatgggaa acccgccgga tcagatgccc 780

gtcgtcgtta ataaatcgtg taacagcacc ggctcgatcc atctcgcgat cattccgacc 840

aattttaatt actagcagcc attgatagca cgaccagttt atattagcta gcatgcagta 900

caaactgcag ggtgtcgccg acgttgacga agaaggcgtc cccgtcgagc gggacggagg 960

cccaggcgcc gtcccgcagc gcgacctcca ggccggacgt gccgttggcg cggagcaccg 1020

agatgatctg cgggtcgatg tacaactgta caataatgca tgcatgccgt ggcgcctgca 1080

cttgtattct acggatcggt cggagtacgg tacgtacgtg catgcagtac aataatgcat 1140

tgttcatgtt catgctgtgt tcttctgctt ccggcctgca gaggctctga cctgcgaagg 1200

ccaaagccat gcatgcaaag cggacatcac gttacacacc tgccggccgc agctatatat 1260

attggccgtc gcgtcagcgt cgtcgtcggc ggcggcgctt ttcgttgtgc acggcgctgc 1320

tagctgcgca agcgtgccgc cgtcagtgaa accgtgtcag catgcatgcg cggtgactgt 1380

gatctcgaca ggttttaact catagtgcat gtcatcttct gtaggagtag gcctgccggt 1440

tatcctccct gttattcttt ttctcttttt tccttcgaaa aaaatacatc ttattacatt 1500

cctgagttgt tgtctaactc tataaatttt tttcatactc aaactccaaa actaggtaat 1560

ttccacacac cctgcaaata attttgaatc cgcttagact gcctgcctct ttgatctggc 1620

tagaagtggg cctgcctgaa gatgatgacg gtggacctcg ctcccctcga tcagtccccc 1680

ctaacaactc cgcatggttg ttctccctcc aactccaaca gttcttattc ctccaaacgg 1740

tacgtggggc ttcgctacat atgttcttct cccttcgagc ttcgatggtt gtaaattact 1800

tacaaaagga tgtcga 1816

<210> 1362
<211> 1521
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93007_G1, chr3:4868456..4869976, Cluster 8

<220>
<221> modified_base
<222> (782)..(782)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (782)..(881)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (783)..(783)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (784)..(784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (785)..(785)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (786)..(786)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (787)..(787)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (788)..(788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (789)..(789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<400> 1362
agctaattcg aagtcataat taagatcgag tagattattt gtcatgtggt attgttgttt 60

atttccgcca aaacataact cctcacactt gatctgttca aaggaaacag tgcttgattt 120

ccagacatac aattacagtg tcatgagttt attctcatta tcatactagc taattgagtg 180

tgttgatttt ctgtagcaat ttggtatctc ttttggggca gccacgcgca agaaaaaaag 240

gctaaaaata ctcttctccc attgtagacc aaatgccaaa attcacacgc acgtagccaa 300

cgactttgct gcaaaatgtt tctgtttggc tgctcatgtt gaaaagtaaa gtcttggtgc 360

cactcagact caggtgcata atccacaact cccgtgaaca cacacatggt gaattggtga 420

tgtgatgcga tgggagagat agatagagag agagagagag acatataaga gagactgtga 480

gcgggagcaa gcacatggga tgaagccctt tgctgtgaac tgcaggagat gatgcaagag 540

aaacagaaga tcgagttggc atggcagttc ctttttatct atctctctct cttccttgtt 600

acctcacaca catacacgct atcatgggta caacaggatg gagctaacaa ccccccccc 660

ccccccccc ccccaaaaaa aaacccacat atatggtcct tgaaaaagct agctaaatgt 720

gcttctaacc aagcagggtc tactcaattg tttccatggg aagagatata acgacgatac 780

annnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ncccccccc ccccaaaaa 900

aaaaccacat atatggccct tgcagaagct agctagatct gcttctaccc aagcaaagac 960

aaccaaaagg aaacccaagg gaggagatgc aaggacgata catggatgga tatatagatg 1020

ccttatattt tttgtgtgta caaacatgct tgatatgcat gctgcatagg agtatttcat 1080

atcacggggt gtgcgagatc taaagcctgc acgcatcagc catcagctcg atcccttctc 1140

tctctgtctg tcgtctctac agctctgtca cacacatgag gaagccaggg agctagagct 1200

aacacagtga gaaaggaaag ggcataaata cagcaagaaa agagagcagg accaccacca 1260

tggccaaaga agctcagctc tcccctctcc cttgcgctcg atctcacgag tcacgacgac 1320

tcacaagatt gaaaggccgg ctgagcacat actaccacag tacacataca gcaagctctg 1380

tgctagatct acgcaaacat ctagctcacc tcacagggag agcacacaat aaggggggaa 1440

tggaaatacg cagaaaggaa ctgtggcgat ttctttcccc cggccccctg ttgcatgctc 1500

tcttctcagg aacaccaaag c 1521

<210> 1363
<211> 2006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94314_G1, chr3:11216826..11218831, Cluster 8

<400> 1363
tgtcttagta ggcctccagg aaaaaaaata gatatataaa tataaccaag actgatgctg 60

ctcagtagta gactgatatc accagatcag gggcacaggc tgcggaaacc atatacacag 120

ctcaagctag ccgccgtcca gtccggggta gtgaagacac aggtttcaca ggcaagtggt 180

aagtagcata ggcatagcat gatgccgata cgtataggta ggtgtagttg ccagcatcaa 240

agtttcaagt gcagagctcc tttttacctc tttggtgaaa aaaaaaggaa ggcaaaggca 300

tttgacagag caaacagtac agcagccagc cactgcactg cccaggtgga gcgcaggctc 360

ttcttcccga ggccgggttc aatagggcaa gcagaaaaca catggatgca ctgcacaacg 420

tccaacacaa cacctcattg cgttgcgcat ctgcccacaa gatattacca aactcctctt 480

gtgccgtcgc ttcactactc tactactacc agccaccagg attcggaatt gtaaagcagc 540

caccggaccg gaacaacaaa actgaaaaaa aagcgaacct gttgttgtta ctttaaactg 600

ccgctctgat gttctacaca atgtcattta attcgggaat ttgggccagc ggcgagtggc 660

ggcgttatgg gcaagaaagc tctcatcttt agagatctcc aaaggggtcc acacccttg 720

ttcttcctct cgaaccgagg gaagttctag atttgtagct cccatgtgtt tctggtcccc 780

ataacggacg gcatgtgcca gagggcatcc ttcctccttg ccctccatgc ttgtgaggtg 840

gcatttttt tcttgctata tagcaacgag ccataaagaa acgaggcaat tggcatgcga 900

aagagcatgt gacccaagca cgctgcataa tcacctttgc gattagaata agcatgcgat 960

gggttttaac cctcttgatt gtttttcatg aaccaggggt cagggctaac tactgtataa 1020

tactataatc acacacccgc cgcgagcata ctagcgtcct ccattagccc ctagccgaca 1080

agcgaagcat gctttttgta tcaaaaccag agggcctaga aacaccttta ccgtcacgac 1140

ggcagcatga aaagccgtga attgttgtaa acaattgagc aactcatggg cgagttttaa 1200

ggaatagtgt gtgtgtgtgt gtgtgtgttt agcagccgaa ctagtagaac cgttgcacag 1260

caccatggtg taaaaaacat ctgactgcat gggaccgcat tgacatttct aaatgatcct 1320

actgtttgat gcgtattcat gacatgctgc aaaagtttgc actatatttc tgcatgactg 1380

ggaggcttac tttcactttc gagctcatca ttcatgtgac tgaagcatgc aaagagaagc 1440

cctttgcagt agcaaatgat aggaacaccg gtttaggact caaggatgga ttcatgttgc 1500

aggatgatat atggtttcaa agatggatat ttgcgagcag cagagagagg gaaagtaagg 1560

gtggaacggg acaagtggat ctcttaccag ggaatcgtct cttgtccttt acctggtact 1620

acagtaggta atttacctac tgtagtacct tttgtttgct gatgatattt ctgcttgtac 1680

atctcgccaa caatctccgc ctctcatcgg ctagtcaact atgtgaatct ctagaaaact 1740

tctttttctt acaccaatca atgaagatat tcagtcctca tgctgcatta tttatactgc 1800

acagaagaga tcgcaggatc atataaaact tgaacccaac ccttcaacag tagcgtatat 1860

tatggtactg aaattgccag ctaatgcaaa gtagtttaat catagcacac tccatgtgac 1920

gaaaacagat ggcacttcta tactggcatt ttttttacta tgttctacaa aataatgggt 1980

taatcggaac atatgcatgt gtacta 2006

<210> 1364
<211> 2038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9573_G1, chr1:50684824..50686861, Cluster 8

<400> 1364
tggacgagac tgtgagaaca ctagctggaa atgggacgaa aggatctgat tacagaggag 60

gaggacaagg aacaaaccag gcaggctctg acatttttc cctagctact ctggaatcat 120

cataccagaa acaaaagact tctgcataca acttctataa gctacataga ttgttcctaa 180

cactgttttg gttcaccctc aagtggcatt tgtggctgtt agaggaacat gaaattttgt 240

tggaaactag ctgcaagtat caatagcttg tcttgactgc aaggagcata gtccagcaac 300

cagcctatta gatttgatat ttgaacatga tatatcagat aagtatagcc acaatattgc 360

tgatctgtat aaagacatga tttctgctca tattatcaat gaaaccctct tgtggtcgag 420

gttatccaca aacacatgca aatactctgg tagtctggta ctagtagtta gagatgcctt 480

atatggtcaa tatccatgat tcattgactt atttgtttac aacatacata acccttaca 540

aattcgaata acctgtgtgt aggatgtcaa ccgtataact tatgttctgt aacatacttt 600

acgttgaata aatttagatg tattttatca actgcaatgc accctacact tgtttccaac 660

caaatagata tacttagatg gcatcatgct gcatcaactg actccatatc atgagaagtt 720

gggatagtta actagagagt gacgttcatt ctagcaatct gtctttgttg gggggctccg 780

aactgaagac attttattag ataaatctgt ccgccctccc ttggaggctc tggactaaga 840

ttcctaattc tgcttaccct ctcctcctct atgcggctta tatagtcctg ccgcctaata 900

catctaacca atctcctata tttaagctaa tctccctaac ccttaacagc tggtacaccc 960

ccatttagcc agctgttggg atatctttgg gtgcctatgc ttagtatgct aatacgtacg 1020

gcccatgagc catgaaaagc atcaataaca gtcttcaaaa ctatttatac tttaaactat 1080

aaattcaagt tcttaattta tcataacatt gtaaaagtac attatggttt tctagccaca 1140

acacacaagg aatatgtatc aggttcaatt catcaaccaa caccatacca caccatctta 1200

tatttagatg aaataagagg caaatgacca tgcatgcaag aaagggaata tgtttggggg 1260

ggggggggtga gtcagcattt atctgaaaac tgaggtggtc aatgactatg taattcagta 1320

ttgcttcacc tgtatgtctg gattagtgga ttaattcagc acccttggct ttatcatatc 1380

attgtttatg gtagatggaa caacaattga ctggaaagtg ttcatgcagg tcctaaattc 1440

accatgggat gtatgctacg atcccgcaga ggaggccgtg tatattgcaa tggctgggca 1500

acaccagatc tggaagcaca atttacatga tggaataacc aaagttatta gcggtgatgg 1560

ctatgagagg aatctgaatg gctcaaggta acagattctg gcattatctg tcaggaaagt 1620

tctaaatgtg ctgttttaat tggtcttaca gcgcagtaat atgtttatga agatggttaa 1680

tgacggtttc tatctgatga gtggctaatg atatttttgg cgatatttcc ttgtgataaa 1740

tacatatgtt taaaccgctt tattttatcc gacaagtagc aaatcctgta tggatcttgg 1800

agctggagct gttccaaaca gtgtaacagg ccctatttta cagcttgaag ccatgtttat 1860

ttttttcctt tttatgctaa tttctgtgaa agttgaagta gaataaccat tccagatctt 1920

ggcgtacagg cttgcttctt atatgatcag cctaagactt ttcttccttt aatgtgttca 1980

tttgtctcct gcacatcctt gcacttgatt tggttaatac tttgaagttt tgaattta 2038

<210> 1365
<211> 1653
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95748_G1, chr3:19093504..19095156, Cluster 8

<400> 1365
acagataatt ccaaccgtga aaaggttcct tctgggactg gaaaggctaa acttagagtg 60

catgaggtga gttgatatct tgtctttaca ttcaaaaaag ttgatatctt gccttcctat 120

tgcactgcct tgtcaaaaaa gaagctttgt agtgtgcaaa ttttgtcaaa gactgactat 180

attattgttt tttaaatata ttaaatttta ttatgatctc ccataatagt tgagattatg 240

caagcaaaca taccatgaac aatacaattt attcatagaa cccctcagtt ttaaatatgt 300

ttttggtttc agcaccagtc gatgctttcc aggatcatac aaaagccatt aagttgcttc 360

acctggagtc atgtcatctc ttttggaact atggggaatt tggccgtcga tgtgggtcaa 420

cacgaaggca caggtagctc tgcattttcc ctcacattag tttttgctgc tattgtatgt 480

acttgaatca atcatgtccc attaatttct tttttgaaga atgtgtggtt agaagcagta 540

tgacgaacct aaagtatata atcaaaattt ctggataaat taaagggtat atttttgcca 600

ggtggttgtc ggttagtttt gattaaatta agttgaatga gaatgagaga atgtgcatta 660

ggtacttgtt atattgttaa tcataatagg gcaaaccaag tctttggctc taatatattt 720

ctatgctaaa gtcaagactg tcttagcaca tgggtaggcc tgtgatttta cctttccctt 780

ttgggagtgg cgtaggttct tcctacaaaa atagaggcaa aatcacacct cctaaacatc 840

ttttgtaatg ttctcttttg cttgtaagtt agcatttctc atgctagcac acaacatgta 900

aacacaatca ttttttttt gcaaaaagaa agtaggctaa aagaacgaca acaaaataaa 960

aaaactatga cactatctta cttcttgtat tgtccatccc atgaccctaa ggttgcttgt 1020

ccagactgca cttcatgaaa agtgggtagc tgttgagata gaaaattaag ctggaactgc 1080

aatgagtcga gcaattgcag agcatcctgt gcagaaccat taaatcttgg aagagaagtt 1140

gcttcctcta ttccttctc tgtttttcc acatgattca attgtagtaa tgctctcctc 1200

aagctatgaa acatattatg aaaataacta aattgtgaac tagatgtttg tttcaaactg 1260

gttgcttgtg aactcaaatt gaaacttggg acacaatctc ggcataaaaa cttgtgagct 1320

tggccgcttg ggacagaaac ttgggaaaaa ctagggaccg aaacttgtga acttgggata 1380

taaactgaaa ctgaaactcg gcatggttct cataaactga aaccgaacct ttcaatacta 1440

ggcatggaac ataaatcaca ggttcagtaa ataaatcaca ggttcagtaa atgagtcatc 1500

ggaccttacc tccccttcga tatgtactat ggcggtttct atgtgctcgt gtggcatatt 1560

tataataata ttgcatattt attagtgtta cggtgatatt ttgccaatgg attttgcata 1620

tcgaaatggt gtttatcgtt ttgtacctat gtt 1653

<210> 1366
<211> 1696
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96491_G1, chr3:23181104..23182799, Cluster 8

<400> 1366
aatgaacaga gtaaggtcaa tctagctagc tagaagcctt tttttcaaga accatatata 60

tagaggaaga gacgaaggac tgtacgtact aggacgaaaa gattcctatc tgccgcattt 120

cctttcattt ttgttaattc ttgttccgac aaacaaagtc tggatccaga tggttgctta 180

accccgacaa tctgtcgccg ttgtcaacgg atttgtcccc ttgtttgtgt accagtcagc 240

agaagatgcg agcactgtac tgtactgcag ctgcagtact agtccagtca ttggctggct 300

agctcctact atacatacta gtccctggac cctagctagt tcctcccttg gcattgcaca 360

tctagtaggt tttcaccggc tataggatga ttgacagcac acaaagtggc tgccacccta 420

cgatctgatc tgatctgatc gctgtgcccc cgggtgttta ttttctagag ccgcggccgg 480

gtacacggac ggcgggccga tgggccacca gctaacaggt aggagtacca ggctaccagc 540

acatcacagc aggccggcca gccggccggc gggcgatttg atccagctcc ccccagccac 600

gcttcgctgc atgcatctga tcgtctgatg ggacggatac atacacgcaa caggacccag 660

tgccagtccc agctgcatgc atgtctctcc agctcgaaag cctgaaacca tacgggcttc 720

cttttgatgg atgccgatgg aacacaagtg tgtgcgccac cagcaccagg aacagccgcc 780

cggccggctc aactgtctac tgggatcaga ctactaacct ctgaacccat ttgaatttat 840

atatgtaaaa attttggagg caaagggttt gagaaaaaac gacagagaag ggtacgagtc 900

gccatgcaag cacgtactat ggctgtacgt acgagtgagt agctagtggc agtgtaggac 960

ggttggacct gatctgtttc ctctctgtcg ccagccacct tgacgatcga cgacacaagt 1020

cttttctcgc tcattgttct cccatgcctt tccagctttc ctcgtccttt cttttgccac 1080

cattcttttc tctccaaatg ctacctctgc cagccacatc catttttttc ggtgtaagac 1140

ttgcgtttat aacggatttt ccaagagttt ttttttgggg gggcgagata tgtttgattc 1200

ttttcaggga acccgtaagg ctgcaaaaca atctgcaaaa ctcataagat tctttttttt 1260

tttgcttgta aaaaagatga acagaagctg agtcaaggtg tcaagttcac gaagaaagac 1320

tccaagtctc caacttatga ctgagagatc taggactttg ttcagagcta gtttgataga 1380

cattattctt gagaagctcc cggaactatt ttgcaccttt ttctatcaaa caagtgaaaa 1440

gcgaggtacc cacggatgga tctcccgaaa tcccactgag acatgcagct atcacacggt 1500

agattcaaat aggcagcttc ttagggttat atctattcga atataatata actgaattat 1560

ctatctcttt ctattagctt acccttttgg gtagaactag ttggtacatg caacttaata 1620

tggtatcaga gtcagaggtc taaagttcga atcttaacta ccagcttaaa cttttatgtt 1680

gaactggagt aatatg 1696

<210> 1367
<211> 2222
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96877_G1, chr3:25356184..25358405, Cluster 8

<400> 1367
tgttgtgttg tttaactaca tctcttaatc aatgtatcta attaaaaaat tgatttcaca 60

tttgtgttcc taatttttt acaaataaaa ttagacacca cttgctatat atttttattt 120

catttattct aacaattaat tatttttagt cccattttat tttctatttg ccaattgcca 180

tatctcttct ttgaattaat aattcatttt tacaattcca gtttttatat tttctaaaaa 240

atatttttt atttcattta ttataatatt taattatttt ttatctcatt taaattccta 300

tttgtcatat ctctttatta atatatcaaa cttagataag cagcaaaaag caaggtccaa 360

gctgctttta aatttgtact ataaaaaaac tggtttttca agtactacta gaaaagctaa 420

acccctttag ttcagcttct gttttttaa agtagaagca agttcaaaaa actgaacaaa 480

acacaccata aaaaacttaa gatagcctcg agcattgcat aagaagattt tctcacacgg 540

ttcgaaaaaa cactcgaacc cttgccccac tcagtggtac cgtagcacat gtaagaatga 600

tcatgactgg ggccggacct tagacttgta ctgtggcata caaacggggg cacttttta 660

acctcaaact gaaaattcac tcaacgggaa gtcaaaatca ggacttgagg aatgctactc 720

aagccatcca accactcagc tagatgccct actctgacta atcactgcta ccagattaaa 780

aggatatgaa ttagcttcaa aaagtttctg caactgcaag gccactgcta cagagcttcc 840

ttcagaaaga aaaccacaaa ttatgttttc tttacatgcg cagaagccag aatattagaa 900

catgaaacag atacgcacag ttcagaacaa taactgcaat accagccagg cacgaagcgg 960

cttgccaatt cctctacaac tggccttaga ggcagctcta taaagtatga gaaaactatt 1020

aagtgctgtc caaaaagttc atttggtgta cttggcaata tgtaatgagc aaatggtatt 1080

atgagtcatc tagtttccta attgaataaa tattaccctg aactttcggg actacaggtg 1140

atattgaacc ttgaactcat ttgaatagac aatttctagg gcattacttt tttctctcga 1200

gttgcgcatc aatataataa gaagaaaagg tgggtccaac gtagaccagt acaggacact 1260

tatattatta atgaaaaagg tacacatttt ttttaacgaa cggtgagatt ggcagcaaca 1320

ctcacaattc ttgcttgcaa tgatagtgtc caggtctgca tcatcttgaa atcttcaacc 1380

ggattatttc ctaggtcctt tcaaaatgtt aatcaaatcc taatatcatt ccacacctat 1440

ttgcatctgt attgctatac tatcctgaga gtccaaccaa atcagatcct aaatcttgaa 1500

aaacaattga actgctattc atacaaagca accaaacgtc cagaatgtag cgacttgagt 1560

attgtacaca tcttgcgggc aaaacatata aaccaattaa cagatgcaag ctaggtcgcc 1620

cgtacctgca aaagaagtag cttaggcgtc gcaaggggag caccacggcg gtggcgtccg 1680

ccacgttgtg gcattccctc accgtgacgc cagagatgaa actgccttta gcccttcacg 1740

acataccacg tgctccacat caccgttgtg gatggccaga tgacgggaga tacggcggcc 1800

gcggtgagcg cggggccgaa ggctggacga gcggagcagc cgaggcgtgg ggccgcagga 1860

tggaggagcc gaggtgctcg ggcggagggt ggaggccatg cagtggagga acggaagacg 1920

gcggatgagc ggacgagcgg aggaggcgga gctggggtcg gccgcgcggg ttacggggcg 1980

gcggcgggac tatgctattt tggcgctcgc gttgtgttcg tgtgtttcct tcctgtacaa 2040

attccatcga attccaagct atactagaaa attagacgca ctatatatgc cctacacata 2100

aaataagcaa tatatgatag ttttttccac gaacaatgaa accacaaatg ataataaatt 2160

caaggcacat gatattttag cgtaagtgag aatagtatta atccttcgac tatgcaacca 2220

gt 2222

<210> 1368
<211> 1481
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97398_G1, chr3:28217368..28218848, Cluster 8

<400> 1368
caacactaga cagcgacacg gttttatatc gatttcgtac ttttcggtgt ccactttgcg 60

atccgttcgt ttttgctggt ctcgtgtgag tcttaggaac atctttgaaa tcatgagatc 120

actggttttg ctgatgtgtt tttggttcga gcgctttcat catctcgatt gaagtgaagt 180

gctcaatttc agttttagcg cagcaaaagt ttgatcgact cccattcaca cccaccctcc 240

ggacgcctca tcggtcgttg atagtatagt tagtattttt ttaaaagtgt ttttattaaa 300

caaatttgct tgttctctat gtttgttatt aggcttaatc ttgtatttaa gtgtaccttt 360

agagcgggtc cttagccttg gtgaggtagg acgaacgcag gtagcagcat atatatatag 420

cgccaaaaca gcagcagcgc gcgtgcgaaa ctgatggtgt ggcaacatat atatatataa 480

aaaaaaacag ggtacgggtt ggtgatccgt ctatcagatc atgagatgca ggcaggcacc 540

ctgggctgaa atagacgaaa gcgaacctca actaaccgac gccatttcat cggctttcgt 600

cttcttcttt ttttttaaa aaaaaatgat atgatctaac cgaccgtact accacgcggt 660

ggatcgcggc ctcgacccac caccactgct ccacctccca agctgctggt ggatacacta 720

gtatctgaaa ggtgctgatc tatttgtcgt ggtgtgctcc ttgttgccgt caccggtaat 780

aataaggaaa cagcagggcc gggtaacgtt ttagtaatca gtagtcgtgc atacttatta 840

tgagagcagt atcaacagat ttatttgttg cctatagcac tatcaacaaa tcagctcgga 900

catagcaaaa cagtacgtag cttcctcctc ggatccactc ctccgttccg ttgacacctg 960

cgttaggtga taggcgaaat aatgcaacga tagaagacga caactacgga gaagaagagc 1020

gcacgcgccg agcttgtgga cggtggcccg cgagcccagt ccgccgccgg ggccggggtg 1080

cggaagcggt aaataagaca aaaaaaaaat ccacacacgc cggccgagag ctgtaagatt 1140

accagcatcg ccatcacggt gcacgcacag cgatccgtcg tcggccgatc cacatccacg 1200

cacccacctg aatcgcccgc gacaccgact ggtacggtcg agttgccgtg ggctacagga 1260

atcctacgtg tctcgccgct gctgtcgccg gggggcggcc gccatgcatc cacgtcgcct 1320

tgcgcgctcg atcgcccatg acctcacgga ttaaccagcc acgcgatttg cgtggctggg 1380

gattaccgat tagctaggta gtcatcttgt attcgcagac gtgtattcgc agacgtgagc 1440

ggatggatga gaccggagag gggggggggg ttcattccag a 1481

<210> 1369
<211> 1388
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37146_G1, chr1:223833176..223834563, Cluster 9

<400> 1369
agcggcagag cgggggccgt agctactgac tcgaggctgc tcaaggaaag gaaaggcatc 60

accgacccaa agcgccacca ttggttcacg ctagcagcag gtgtgcaggc ctgtgcaccc 120

tcttattggc ctcgctcgcc gctgtgaaac gccgaccagg aggaagaaga agaagagcgg 180

cggatttagt ggcacggcca tcatggatgc ctctgcatct ctgattagac ggaaccaaat 240

catactacct agtatcgcgc gcattccatg cacggtctct cagctcgggt ggcataggat 300

gcggcagttt agtggcgttt aaggggggcg ccgcggaaag cacttctttt tatttctgat 360

cagatgccta ggctcggttc gctgaactac ccggcggtgt ccggttcctc ggcacggacg 420

catcagtggg gcaaactgtt gcgccacgct gtgcgcacga tctctttact aattttaatc 480

gcggcgttag cagctaacct aggtttgtgt cagttgtggc gaatcaggtc ggccgccgct 540

ttacaaatca cgacgcgtcc agcgaccttt ctctggcagg ccggggtttg gaccgggcga 600

atgattggtg ctggcacgga ggcaccgggt cagaactcag aagtggcgtt tggtttcgga 660

cccagacaga tgggcgcata gccactgatc gaactcgacg aactgctccc tgcgcggctt 720

tgccaaagcc agaagaagca tgcgcctccc gttgccagca ccggcgctcg tcagccatga 780

atgcaggttt ccatcggcgc ggcggggcct gatccaattc acagcgttgt cagtggagga 840

cacagagccc tgacttcaca ggcatcagag catgagcagc aagctcagag agtcggagag 900

gtcagagcgt agcatctgta gcaacaacga agctccagct cctccgaaca tctcgcgaac 960

aaccggtcgc cgacgacacg cgggccctaa cgatgccctg agggtcttct acacgctgct 1020

ctggttttgt gtactctggt caggtgtatg ctattgctga ttgatcgaca gcctgacaca 1080

ctaatttttt tcccccagtg gtaagtactt tgttatatag aacgcacccc gatgttcaga 1140

atcttcggat cggcttgttt cccagttcct accttccatg ccacgagatg agatcatcga 1200

ctactatttc cctccctgca gaaaaaaaaa tatatatatc acatgcatct tcttccatta 1260

ttgcacatga catgagcccg gtatatatat gcgctaacga aacggcttct tcggaaattt 1320

ttcaccatca ggatcgcaat gagtgagccc gcaaggtgag gaatggagct cccgaccgtg 1380

cggcttcc 1388

<210> 1370
<211> 1191
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10884_G1, chr1:58458445..58459635, Cluster 9

<400> 1370
tcttctctct acatatactt tgacaccgaa ccaaacacta cctaattggt aaaacatctt 60

ttttttagg caccaggggc atgctgaacc tggcgtcgtt gctggttgca gtttgcagca 120

gcaagcgcta gttagacctg ccatgatact tggccgaaag caggcaatgg cgtagtagcc 180

tttacgttgc taaagccaaa gcgcctgaac cgactcagcg gcgggtcgtt cgtctctggg 240

gaatctggcg cgaatttggt ctgaacagga cacgtttggg gcctcatgcc cggccccgtt 300

cgtcccagtg aatccgacgg cgaccgcctc ctctggccgc tgcgacccgc cgctggcgcc 360

acgggacgac ggcgaccgag cgctggagga tccacgcaga aaaccgtgtg aatttgaggg 420

ggttttctat cgggaacaga gattttaaca tggcaggcgt tcagcgcgca tggtgcgggg 480

agctgtagca ccaagcatat cctatccctc tttcccgtcc actccggtcc ggaccagaat 540

taagtttcgt ccagcaccat tttttttgc gtgtgttgtc accggcggcg ggaatgctgt 600

cgctgttggt gctgaatgga tcggcggtgc gtgcgtgcgt gctgcacaat gtactactac 660

aggaaaaacc aaataccaaa ccggcttttt cggctcaaaa cttcacgctg atgaagagat 720

cattaagcca gccggccagg catttgttgc caacgctggc gcaccgtact ttttttttc 780

ttggcgattg ggcatcgcgc tggcacacgc caatgatact ccggacgctt tgtcgtgtat 840

gttagcgaac ctgttggttt cggttcaaga agggacgttc agccgaataa tgaaccagcg 900

aatctttttt ttttttttgc tgttcggtgc gtggcacgcc atgtgccggc tctgctgcac 960

cgaaaggaaa cgaacggagc agcagtttc aggtacgctc ataactcacg cttgatccaa 1020

acgctaatca caggtcttag cccggcccga gtacattcca gctgcggtta gaacagacag 1080

ccgccgccgc cgccgccgcc gccgccgccg cctgcgccga gatctccgta cgctggatgg 1140

aatagtagtc acggagttgt cgagcaaacg agagaatagt agttggtaga g 1191

<210> 1371
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1098_G1, chr1:5582601..5583834, Cluster 9

<400> 1371
acgaaggccc acacattgtt cattcatata gtctcctttt ccacttgaag aataaaagct 60

ccacttccag tagtcctgaa gacgttggcg cgcgcaattt cctagaagga gcagcgtacg 120

ggaccgtacg cccaatcatg cggctgtcga aagggaccgt acgcccaatc agatggagcc 180

aagacccttc gtcaagtcct ttctttaatt tcatggtcgg tagaaacgca cgcgtcgcat 240

gggcgagccg gcccaggcgt caccgcgtca cagccgcggc ggctccaggc acaggcgtca 300

gcgttcacgg ctcgcgagag cgaatggcgg ccggccggtg tcctctgggc tctggcctgc 360

ctgcctccac catgacacca tggggatctt tccttcgctt tctgatccac gacaccaata 420

atggaggggt ggtggtcgcc gtccaacgtc gacggccgca ccgcgcactg actcagctca 480

gctccagctc cagctccaca cgcaaaccca cccaacaggt cccatgcagg taaaggtaac 540

cacacgatct tctcgggtag gccacgccac cgcgtgtagt tctataggaa tataccatgt 600

aataaaaaat ctgatatggt aattaattta ataaaaagga agaaatagtt tctaaagaaa 660

aaacgatgtc ttcacgaatc acgagaatct agagcgaacg gcgtcgcgac atgacacctc 720

agtttctatc ccttgccttc aaataatcca gtgcgctcgg gggcacgaag ctacggagtg 780

gtggctgacc ccgcacaaga cctctagtgg cgccgcggga gtccatccgc atggacaccg 840

ttgagcggat cccactgcga gcatgagagc tccacccatg gcccgagtcc cgacgctagc 900

tattgcgcct ccatacccgc cgctcggtag ctcctgtcgg gcctgacgcc gccatccctg 960

ccatggctca acgcacatta ccgtcgctgt ccactagccg ggtcgcaccc tgcgttggct 1020

catcgcaaca cgaggctcat cctcgttgga caccggacgc cgttcatgga ctcagcacca 1080

cctcgccccg gttctctcgg cccccgcagg atgctttctt atcgcgctct cgtttgtgga 1140

cgctatccga aaattaggca atttcggtac taacttcatc gaaataataa ctctctacaa 1200

ttaaaattat gtataagtag agtttgaaca ttta 1234

<210> 1372
<211> 1255
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118161_G1, chr3:161961982..161963236, Cluster 9

<400> 1372
catcgtgtgc gttcttaaca cgaacaattg caagaaatga aggccaatgg catcattcca 60

cccctcttgt tcgttcgatt ttttgactgg gtcgccgctg cagaaattcg gtgtgccccg 120

cccgcggact cattagccga catacactgt ctggtggggg gcgtacgtgt catgtatctt 180

gaatgaagaa actgacgcca caggctactt gcattgcagg tgtccaagca aagctctcgg 240

aagggaagcg tctcgagaga gagagagaga gaaaaatcaa ggcgatattt ttgtttgggt 300

ggtggtggtg gtgagtggaa gcacaggcag atcgacagga tcctgtgttt gggtctctgc 360

tacagtactg ggtggagaag atatgataaa caagcacagg cagcggtctg ctccatcccc 420

tagctagctc gcgattgacg gaggggaagc gattagtaat tagcgagggc gaaggtggtg 480

gtggtggtgg tggtggactg ccgcccctgg ttttctcccg tgacaacacc accatgcatg 540

gctcacatag tccaagcagc tagccacctt ttttcagaat tcctcagact gcatgcatgc 600

atgcatggca atggcatgct cgcgactccg gctctctact accggctgcg ctactccagc 660

cgtcggccac tgtgcctgag aatctactgt gccccccgag ctgatccgct cgatcggaca 720

cgcactgttg ccgtcactaa ctaactagca ggcaacaaca tgctctctgg tttacaccct 780

gcgtgcgtgg atttgtaaat actcctactc ctatcctacg tgtaattata gcgagcggga 840

agctaaggac agtggggtgg gctcccctgt actgtactgt accctgtgtg cgtgttcctg 900

gccgcactac tggaggagac gagggaatct cctcaaatat atacagtatc aggctcagga 960

gggagcgtag tgtagacttg ctattagccc ctgttgtgct aaagcctagt aatgcccgta 1020

gaattgacct tcgtctcaga tgctatcact gctgcttcgg cctctgttct gcttgtgcta 1080

gtacagtaca tatatatcat ccatcaccag tgacgactcc cgtcaactcc aattgcaata 1140

ggctaatagc cagtaaaatg taaacagaaa catatgtaat ataactccgc atctgcggtt 1200

gcagggtgac gaggccaatc acagcaacag aaaagcacca ttattctttt ctcgg 1255

<210> 1373
<211> 1202
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118162_G1, chr3:161968659..161969860, Cluster 9

<400> 1373
gagatgcctc ataatataat gaacaggtca gcttgggggg cggccaccgg gcagagagag 60

atctacctgc cggcggctgc gcgcgcgcgt gccttggggt gggtgaagca aacagggaag 120

atcgaagcca agttttcagc aaggagatgg gatgggatcg gtttatcaaa ggctgccata 180

cgtactatat atactaataa actacacccg atttcccaca ggtgagattg tgagaagaag 240

ggtggcttct cagtttttt gtcttattaa aaaaatccca gacctcgctc ctaggcttaa 300

accccatgca tataatccct cccttgaact agtaatcatc aaagaagcaa aaaaaaaaaa 360

acaaacccct aactaccgct actaatacta tagtagcttg catcagcccc gagaaaaccg 420

ccctgccaat atatcaaagg caattgttaa ttaggcactc ccgtcgtcgt gctctttctc 480

ttcctacgta ctcgctatta ttagttgcgt gtggattgat ttgattgtcc tttcttccag 540

acacagaaac agtctctggt gcaacctagc tcgctcgtgg gagtcgcgac gatcgacctc 600

tccgtcgccg atggatctgc ttgcattgca gctcatcact ccaatgatcg gggcaatttt 660

tgctgctggc ctttccgggc tccaatgatt tattccctgc gactgcgacg acgacgggcc 720

ggcgggggcg ggggatcttt gcttgcaacc aaaggagcag gccacgatcg agggagtact 780

gccgggcgaa gccgctgcac gcaccgccgg ctgcgacgca acgccaacgc aacgcgacta 840

gggtgtgggc atgcatgcag atgcaggcca tggatcgatg agcgtggata tatacgccac 900

ggcacggcga caacgtaggg ccctgtgtgc gtgatgagcc gactgccaca ccggtgtacg 960

ccgtgctgct gccatgaaga agaaaaaaat ggtcccgatc gatcgcctca gacgtgtgct 1020

tccgtctcac ttcacctggt ctattgtatc aataactacc aacacgaacg gggttttgtg 1080

tagcaaaaca cacacacaca cacacacaaa ggtagaaata atataatcca aatacgaatc 1140

caaaaatgac gcgaattcag acgatggccc ctcctcctgc ctccaaccaa gacgacccaa 1200

cc 1202

<210> 1374
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118183_G1, chr3:162078012..162079047, Cluster 9

<400> 1374
tgtatataca cggaccgatt attgcgtcca gcagccacca aaaaagcagt ccacaggtac 60

ccaccgtcgt acgaacacac atattttgag ccaggccaat tgcatctgat agagtactat 120

catggagcat ggaccatgct cacccatctg tggatttgtg cggtttctat ggttcaagaa 180

ggctgtgaac gtacgtacgt acgcggcggc ctcccctgcc gctcggctcg atccctgatg 240

gtccgcgtgc tttgctaccg ttgccagtct cgcgcgcggt ccttgcaacc acgccggtgc 300

agcttgcgat cacccgtcag ccagcaccag caccaccacc ccccgtgagg acccgcggct 360

ttctcgcgcg tcgcttgggg ttgtgcgccc tgccgtccgg gccacctgcc ctctctaaca 420

cccgcacggc tggcgcgaag cggaacgagc gcggcatctc cgcggtccgt gggatgggtt 480

tgtgccgcac ggacgcggcc acggaggccc ccccgcatgg cacgggctgg attcggggcg 540

gggcggacgc ggcggcggag gcggtggttc tggctgtcgg ggcggggagc gaggacgtga 600

cagggttccg aggcacacag tcatcacaca cgcgcgcgcg ggacgcatcc agatcggtcg 660

gattgccgac gggacgggtg gatggaaggg gtccccgtgc aagggctacg gttggctcca 720

tgcagtgccc ccatgcacac gcctagctag gtgcctccgc tgcctcgggt ctacgagcgc 780

ccgcttgttg agggagctcg tggtctctat cgaccaccgc tcgcttgccg cccgcggtgg 840

tgtgtacttg gcctaagttc ttgtgttgta gctgtactac tgtgcttttg atacaaagac 900

tacacagctg tcggctcggt tcacgtggcc tatatagacg agcatctagc cacaggtcca 960

gatgacaaat tcgtgaggct taattaattg ctgtttcgcc ttttttgat ccatattaaa 1020

tgtgcctact tactat 1036

<210> 1375
<211> 1159
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118184_G1, chr3:162079157..162080315, Cluster 9

<400> 1375
aaacccacgt acaaggaccg gtttattttc aacagacctc acacgtaacg gacgaacctt 60

gatgttgaaa aaaagggaag catgcgggta ctgcagtcaa taaacccaac cacaaccaac 120

acataaagac gggtaatagc gctgcaccgt agcacgttga tggaacgagg cacgcgcgct 180

tcaactataa agacgggtga tagatgcata tgcagctaaa agcatatcaa tatgccatac 240

ggatacgggc tagggtgcac gatcaccctc atcaaaacac cgagagagaa ggagaaaaaa 300

aaagttgtgt gcggactgtg cagagaccca ggtcaacatg gccttcgttt cagcggaact 360

cacgtcatct catctcaccg tcatgatgcc ctaacaagaa tgaaatagca gcagaatcgg 420

gggaacagaa aacggaagat actcttaacg ggctccgaag cgtcgactag ttgcccatca 480

gtttctcgcg tcatttgggc cattgtattt taggcccaat ttgtcctcgt ccacacgcgg 540

tcagcccgaa caagcaattg caagacagga ggcccatcaa agtagcccgg ctcgtaacat 600

gtcatgtcac cccctcggtc gtccactgga gagcctcctg ctgctcggcg ccgttgattt 660

ccagtttgtt ttcagcgaaa ttcaggctca taccttctct gtgactctat gtctgtgcac 720

ggtgcgctgc atacttgtct tgaagccttt cctcatataa aaacaaaaaa tgttcagctg 780

cgggagttcg acatgtgcaa cgccaagaac gaggtggctg ttgcaattgc aatcgagccc 840

aatttcccgg agtgcttcaa cagcatggcg agtgcatgga ggggtgaggc cagtcttcat 900

gtgtccaata aaaatatccg taaatatata gatggtcaag gattaaattt gtttttggtg 960

tagatgtgac tttccctctg ttggctgcta gaaaaacaga agcaaataat ataccaatct 1020

tgtgtatggc ttcttagtct cacctacaat ggccacacca ctggtacata gatatgaaag 1080

tttagaccgg actatttaaa gctgacatgg catgacactg tataaaaata agagtccaaa 1140

ttacgacccg acacgaaaa 1159

<210> 1376
<211> 1270
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120143_G1, chr3:174783801..174785070, Cluster 9

<400> 1376
atcatgtacc ggtagcgaaa accagtgaat actggagtag ggatattcca acagaaccgg 60

tataaattct cgtccaaacc ttaaaacacg cataacaaat ttgctcaaca gtatgtctct 120

cgtttcaaac tccgctagcc atagctttac tgctgcttcc acgtacaacc tctctctttt 180

ccatctgttc cctcggccgg aaaacatgat ggcgcagcca aatcatggag ccagcgcttt 240

cattcggcgc catgccgcca tccatgtgat cgtgtacgtc cccgcggcgg tccgccatga 300

ttaaccgggc gctaaaggta atcgctaatt aggcgcggca gctttgtttc tggtactgtc 360

ttgtgacaag cacagatgtt cagataatgc atgtgccggg cgacaagcag gtgctgtgca 420

tatctcgctc acggggcagc cagccgccag gcaggccggc cgggtgccaa atgccaaatg 480

ccgcggcgga caccaccacc accaaactgt ggaatgtggc ctcgtgtaga gccctagccg 540

gttgcctgca ggatgcaagt atgtacgtgt cgcgcggcgt gtagcccgtg tgtggccgtg 600

tcaagtggtg gtatgggctg gtacgccgcg caactgcacg tatccttcca ccggccggac 660

cggccagtca attcctggac ctcggtagta cgtgtacatg acagctcagg cgggatgagc 720

cggccggtgc gggggccgcc gagactgcgc gcgtgagagc gacggccgga cccggacgtg 780

tgcgcgcgcg gcaaccgcgg gggcctgccg gtgaggcggt ggcctgccga ctctgggaaa 840

gctgatgcgt gcgtaggtag cctgcgctct cttcatgcat ggtggcatcc agatctttcc 900

ctcacctgcc gagcccctcg tgcccaagcc cacggatgag ctgtgcgcgt gtgtatggtc 960

aggccattcc tgctgactgc tgctgcgtgg ttggaacgct cgtcgagttt gccgaccgac 1020

gatcgcattt agtacttgag agggatgcgt cagggtgtgg acttcgctag tgtatctgta 1080

gtgtttttt ttgggttcat gtaggcggtg acggtgagac gtgcctgcgt gtgctagcaa 1140

atgaagaaga tctttgcaag tgcaattaga gcaatgctaa ccatccgtca atccgtcatg 1200

tctatctaac ttgtccagcc aacgcattag gctgccgtaa catcatcatg gcggtcaagg 1260

gatgcactac 1270

<210> 1377
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121020_G1, chr3:179502702..179503725, Cluster 9

<400> 1377
gtggaatgtt aagtattatt gggataatac tctcacattg ctaacgaaaa gaaatgttaa 60

tagacttaaa taatgtttta gtggtcatat attgagaaac tgaaattggg aaggacggag 120

ccacatgcac accatggggt agaactctca cgtgaaccaa tcggaaagtg agagctaggg 180

ccatcacgct catttgttac tggagcttgt aattttattt acatttgtgt ccaccaattc 240

atcatactta aactaattac atataatcca cttcaacata tatggattag tggattacac 300

tgctgatgcg aggagaacga tttcccactt ttatgtattg agagagaaaa gactacgtgg 360

tttcacaact gatttgattg gcgggggaga gatgggtagc cacattgtgc caaaaacaca 420

aaagagctca aaagtttcgc cccgccccgc tcactccccc cacgtgacag cagcgcagcg 480

cagcgcagca agcgaaaacg tgcgagtcta gcagtacgta ctgttgcgcc agtgcagctt 540

tacttttac ctgtgcatgt ggtcacacga aagattgcac agtaccctaa agcgacactg 600

gcgggcgggg cccgacccaa aggctcactg tgcttctact gtgcgcccgg tgttcccact 660

ttcacctgtt tttattattt atcatgcaga tgctatagct atccagtcta gtctaccctg 720

cctacagtag caacgaaagc ataccacagg ccggaggagt ggttccttca cagtcaggta 780

ccgtttgtgg tcatgcactc ccatcacact gagaacacta atgggcgaga ggagcggcca 840

cgtcatattc ccaggccttg caactagcct agccctgcac gcccgcccgc cctcgtcact 900

ccaaaaccct gcgccattac tcagcggcgc cgtaatcacg ccggatattc ctatccccga 960

gcgacgcgtc gcagctgacg tcgtctacgg cctgccgctt cgcatggctg gatcctggtc 1020

ctgg 1024

<210> 1378
<211> 1092
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121718_G1, chr3:183133480..183134571, Cluster 9

<400> 1378
tacgttacca taaaaaaaaa aaccggtgtc gtttactact ccattgtacg ttcaccgtaa 60

atttatatga tcctattagg cattctaggt gttaacatac atgacaagtt cacttcagtt 120

ctgtttacat gagcacggga gcacctcact tgcagaagaa aagtcacacg taccggttgg 180

aatgccagca gctggttcgt cttctgtaga atgtagtatg tgctgctact gtgtttcact 240

tgacgacatt ttttgcaaac taaggtgttg tcactacgtc ataagcgaca atgggaatga 300

gaactgctag tgattccccg cttctgttgt gaggcatgga tggaagatac cggtgagcca 360

tctaccacca ccaagtgcca actacagtat gcctgaaaga ggggaggggc tgctgcccaa 420

ctatatatat atgtaacggg tactacatta gtaatatcca cttgtgactt gtctctgttc 480

ctctcaggaa gcgtgtttga gagaacaggc ctgaaacccg ggccatgctt gtgtctgtcg 540

tcctgtccag attccagaag gcggccatgc atctcgcgcc tcgcgggagc ttctcgggcg 600

caggctggct acgcagaagg cggccacaac cataagaaag cgaattcgat gggagacagc 660

aaggcaatgc agcaccagta gctaggccat agcatagcca tgcatggggg cgtcgcttcg 720

gctatggtac cggagaaaca gaaaggaccg gatgcgcgat aaccgacaag catccctggt 780

gctcgtcttc ttccgtccgc ggtttttctg atagaccgat tggtacggtg ttcggttcag 840

gacttcaggt aatacacgga caaaaatacg taaatgacgg ttgacggact agctcgctgt 900

tggaagctcc cccgcctaca ggctacagca cgtatcattg gaccgcaacg ccatcaatcc 960

atcatcattg gtagttgaac tcctgtcaaa tctcattggc tcttggctca cggtagagta 1020

gcacagaccc ttagcttccc caatgacaag aagccgtgga cgctcgtgac gggaatggct 1080

tccaccggcg gg 1092

<210> 1379
<211> 1323
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121719_G1, chr3:183141723..183143045, Cluster 9

<400> 1379
tgacaagaag cctgttgtgc gttgcgggcc actcggtgcc cactctcacc aatgtcattt 60

actgctcatt tcgtgcctcc tgttcctcgc gtcatgtgac ccactgcgat ccaaaatgca 120

ttatttttt ggctgttcac ggaagctatt tgaccaccta ccaggaaaaa aaaaattgta 180

ttcgagtcgt ccaaaacctc ccctccagtc cccagcttat aacagcgact tctagtagta 240

agtagatcga gcctacttgt cctgctttgc tttgccttcc atgcccggac tgccttcaga 300

tgcatggttt ggtttcggtc gttgatgatt tgcagagttg gttggttggc tcgcttcaaa 360

tcagagagcg actgctgctg ctgcagcgag cgaacgccac caatcaaatg gaaccgtgag 420

gggtcttctt ccgttcttcg cttcgtcgct gctcctcttt ttttttactc tcggctggta 480

acctcacctg ctgaatgtac tattgttacg tgcgttcgag agagtttcgc gacggttcat 540

ggagcggtgg tggactgcta ctactacgca cgtgcagact tgtctcggcc gtttgagcgt 600

gagaacaaaa tgctcagtca accgtgccgt gcagacttcc aacccccttt ttttttgccg 660

gataacttgc catttttttc ttttcgtttt tttttggaac gcgccatcgc cgtgcgcacg 720

tggccatcac ggcacaaagc agagcctgag gccgtccggc aaatcgcgag ctcgccacca 780

tggacttact ggctgtggac ggacgggaca cgcagacgga actggatacc tgcgcttgtt 840

gctgtcccgt cccgggtggt tggcgcgtgc gcgtccggct tcggcaggcg acgcggccgc 900

ctccgcccgc cgtgcgggcg gcatcggcat cggcatcggc aagcagccct ggaccacggt 960

cacggatgca cgaagaagca tgtccatgat tagccttcta ctatcatccg ccagaacatg 1020

caagattata ctcctacatg caattggtcc ggtcccgtcg gtacgcagtt gctatagcta 1080

gttggtgctg gcttcagctt cagcctcatg cgagctctgg tactctgggt gcacgtgaag 1140

ttctggtccg tggtcgcgat cgtacgtacc cttgcttata tgcgtgcatg gatcaaacat 1200

caaggtcatc acgaaccatt gggagttggg gggcaacagc ggtgcgtgcc aattttcctg 1260

cgaggattgt ggtcccaatt ccccatacaa gtcaaactcg ccaggaggag atcgacccgt 1320

aca 1323

<210> 1380
<211> 1123
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122629_G1, chr3:187617637..187618759, Cluster 9

<400> 1380
agcgaactgt ctttgggagg ccttctcgac cgccttgccg agccgctcgg cagagtgact 60

ggttggatag tatgccgtct ttaaaaggct tttttggggc acccggtttc taggtacccg 120

acataaacca actcatacat atggacgggt aaattaagct aaaaatagtt tacagtgtca 180

tatgaacatc gtccacatgc gaggagagta attttggact tgttccattc atcaaggttg 240

aaaatagcta acttcttgag aatagggtat ctggattctt aacagcggcg attgacctgc 300

catgccggta gttgttagtt gttaccagcg tccgaagcga taggcttcga ctgagttttc 360

agcccattcc acaaaagaaa aaccgaagaa agatgtggtg gtgcccccat tcgttaggtt 420

ataatgccga atcccgtatc agctttatta cctttagatg agcactaact aattaacccg 480

gttgattagt aacctgaaca tctctgccta ctgcctttgc tgagtggaaa gcctgtcgtt 540

accggagcta gttacctgca cggcaaccgt tactcctgca gagccgtggt gaatgcagca 600

tctagctacc tgatggatga tggctctggc tggctgatgc agaggaggag cctcgtcgag 660

tgcatgcggc gtcgtgcgcc aacgtttctc cacataaccc tggcgccaga ggacaaaagc 720

atgtaggagc agctctttcc accaaactga aactccttta caatctcgac gaagtttctc 780

cgcacatgct ttttgtgttg tgctttacgc gcgtgtacag agcgccctga tgcgatcgta 840

ggcggctggc tagtcggctc ctacaaggga gccaagccca agcggacggt cgctctcgta 900

ctcgtactcc gtggaggggg aaactaatca atcatggagc tgaggccaca ttgcattgct 960

gttgccacca tggctactac gtatagtact gtagttagta gtgcgcgctc gcttgaggtt 1020

tccctactca gatagcactc acgactctag ctagtgaggc tgcaactgca aatcaaaagg 1080

aggccttttt acgcttcccc cccagagtaa actggtgtgt acg 1123

<210> 1381
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123383_G1, chr3:191744762..191745931, Cluster 9

<400> 1381
aagtttgcaa ggctctcaag gcgagagact ggtgacttag gtccgaatga agaaggtgcc 60

ctgaagcgct cgtggatggc gctcaccatt tccgacaaga ggtgcatttc cttctccagt 120

tcctccaagc ggctttgcgc ctcgacggag ctcccttcga cgacatcgaa tttccctttt 180

atagctgacc gggaaaaatg tgagccgtgt gaggggggaaa gcagacgata aacgcttaac 240

tttagaagag accgctagaa ggcgttacct tgcagatagg ctaggagttt ttcctccttc 300

ttggttcgac cgactaactc ctctaaggcc gcaactcggg cttcggtgac ttctcttcct 360

cgctctagaa tacggaggtg agagcttgcc ttcgcactct taagatatgt gagggttgtc 420

atttctgcat ccctcctcgt cgtctcaacc agggcattat gggcgtcttg gattgacgca 480

gcgcgagcgt gggcttcggt ggcctcattc ttcgctgcca gaagatcacc ggcgaaaagc 540

tccaatgcct ccctttgatc gagaaagaag ctagattttt ctgccagtgt cccagcaagc 600

aattgaagaa gaattgttag caaggggagc attctcctta ccaagccatc tacacacagt 660

ttagtgccag cttttgacgc gcggccaaga atcgaccgag gttggcttgt agcaccttct 720

cagccatgtc gctctcttcg ttcagctccc tacacggggc ttggggcacc actttcggtc 780

aagcagtctg gagcaagttg gacgcttggc taaccgttgg ggcctagcag cgtgatccag 840

aacttccctt gagtagggac ggacgatgcc ccctcaggca atatggtctc cataaaaatg 900

gagcccccgc cccctccggc gaggggtgca ggggaaggaa ggcggcccgc tgtgtaaaaa 960

atagagggtg gcgagcctca gccgctcccg ttgggcccga gctatgacca ttcgaggaca 1020

tcaggagaca cggacctgag acaccgcctc caaaaccgcc ttacggaggc atcaccaaag 1080

cagaacttga cagcgcgaac gctccgccat cctcgtcgac ggtaaacgtc gccttcctcc 1140

tattagagac caccttcctc acgtgcggca 1170

<210> 1382
<211> 1182
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123393_G1, chr3:191779063..191780244, Cluster 9

<400> 1382
ctttcacggt gatgcatgta tatagtggta aggatacata atcttttact tgcaagtttc 60

ctagagaatg tggtagaggt gtctaacacc tttttcctta caaaaccagc taagtttggt 120

aggccgatta aaatttgcaa gctttcgtgt tggctggata tggccaacaa aagttggcta 180

atttgcacgg atcacctacg gaaaatttgc taatttccgt tgtttagtat ataagaatta 240

aataccgatg aaaatgagta aacgcacatt tttcgctaat ttccgttgtt tacatggatc 300

atctagctaa tttacatagc tatatttaat ggtaaacgca catttttttt gtagaccttt 360

taccggttaa aattaggaac ggacttttga ggtggcagtg gcacggacaa tatggatagg 420

tataaatcca ggcatccagc agccgtgatc tctatcggaa accgtgcagg ccccgggaac 480

gggcaaagct gacacaaggt agtagtagga taggacttgt ccgcgcactc actgcattca 540

acttgtgtgg agtggagcgt cggggtgatc tcgcgcatgt tctcatctca cgcccgcaaa 600

tcgacacatg catgtatcca tctcactcag cgaatgcacg ccgttccaca atccacactg 660

tctttccaga gagaaaggac tgggattatt gagttggttc ccgtccactg gatagacgta 720

tagacacgca ccgcgctata catctactag agatagacaa gacaagaagt tgatgcgagt 780

ccatctccat cgctgcatat cttggtgctc catcgatcga tcgccgctaa cgggtggccc 840

tggacggtta cacgcccttc cgcctttctg gctttggagt ttgatcgccg gccggtctca 900

gtacgtgtcg gcagtacgca tatgcgcgcg cgcatgcatg caatgcaaca gcagctttgg 960

cttttgcaaa tcccgggtgt ggcacggcat cagcacttca gcagcatatg tgacgatcga 1020

gatcctgccg atacgggggg gtccaaatct tggtcgaaaa gctctttttg cggatttggt 1080

tcgtttcggt cgacatgcag tgcaggtcat ggacatgcat gaccgtcagt acgagtacga 1140

gtggtatacg cgcgcatgca gcaacaggcg gcggcaagca tg 1182

<210> 1383
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123958_G1, chr3:194725359..194726408, Cluster 9

<400> 1383
atgtgcgcac aatcgtctgg aaattccagc ttgctcaagg cactacggtg cccctcaagt 60

acgattggtt gaataataac tagagaggaa cactcaaaca tccagacgat aaagacatgg 120

aggcagagga aaacaaacct gcgcccacga ggccagcaca agatctatgt cacgaacggc 180

accggcagca aatcaggcaa ccccatgagt tcggtggaca gcggtagccg gtagccccaa 240

accaaggggg acggactgag gaacacagag atggagaaat tgcaaagccc ccaaatgcga 300

atagtggatg gggaggacgg ggaagcagac gttaaaggca tgaaggtaca aatctctggc 360

cgatcacagc gccgactccc atcctcgaca gtgccgagac gtgcgggaga ggtcggcgat 420

gcagagcacg tgaccacgcc ctgccttgca tatatcctct ctcacaatag ctgaacatgg 480

tcctacgtgg atgcaagggc ccaccagagc tgcgacagat cgacctcttc tcggtgacga 540

aggcgagcac gggctcttct cggtgacgac gtagcgtgtg gacgaagcgc gaccgggtta 600

gaacggatgc tggccccggc ggtggagtgg aacccaccgt cgcgttcacc ggagggggggc 660

aacgcttgtg gcccctcacc ggccacgatg gaaggcaaaa tgggacgcgg cgcagactgg 720

tttggtgtgg acggtcgcct ccaccgaagg gcagcgagcc tgcgacgccc atggccacaa 780

acggccgcga cggaaggcga ggagatggac tatgcgagtg tgggggtgta tgtgtgtgtg 840

tgtggtgggg ggtgggggggg tgctgcgctc ttgtggcggg aatcgcgggc aaggggcatg 900

tcgcgagctc tatgccatcg cgcgtgggtg acttcggttg caataggatg gaatgagata 960

acacgatatc ttaaataaga ttgtttggtt taggatcaaa atttagaaca tgactattta 1020

gtgttgtccc cagttgtccc tcaaatttgg 1050

<210> 1384
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125047_G1, chr3:201019673..201020724, Cluster 9

<400> 1384
acccatctcc caagttgtcc atacggacca tacataactg atattggcat gtttttcata 60

tatgcgttcg tgtagatcca tggcggaaat actaaaatat tggttcatcc gttcaaatcc 120

tagtcccata caagggatga tatgtttgtc gttcatattt atttgctgat gtacgcacat 180

acaattcaca tgaagcacac attactaaga tctgtcacac aagtcccatg caatagattt 240

gtagtagaca caaaatctgc gtagagttat tcttttaaaa agactgtttg aaagagagtt 300

atgtgagaat tcaacacggc cgctctgtca aagaggcctt aaaaaaagca ctttcgttgt 360

cagaggcaac ttctctgcag gtcttcaaag gatactgtag cagtgccacc gatgatgggc 420

gtcccgacaa cagagctgag catgcgtttc gacggtttcg ttgccctgca cgaggacgcc 480

acggcggtgt gaactctctt ctgcttctcg acatgcatca attcttctcg cgttcgcggt 540

gtcgccatcg tccatcgagg agccagagcg catgcctgac taaacgggtt gactcgatct 600

ctctccgcca atgtgcacgc acgcacgtcg gtgactcttg cgcccgcccg ccagtcgcta 660

gccaagtgcc gcgccacttg atcccagatg gctttaaccg agcgcccggc gggatcgcga 720

cgtgcaagtt gcttcgtcgg gaaggggagg gtggtggatg tcgccctcgt tttgtttatg 780

tatcttgcag tcctagtata tatggaccgg atgcagcagt gatgcacata cctatctggt 840

actcctatct cacatgcagg atgctatgtg ccgtacagat catatgtggt gcaaacgaac 900

acctacacct accaacagct acacggctac ttagtcacct atggtatgga atgcatcgtt 960

gtggaagtca acacgatgct agaaattgtg gaaagagact ttagcgaaga agaaaaaaaa 1020

cactagtaaa ctacacaagc aagcagagta ct 1052

<210> 1385
<211> 1259
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125267_G1, chr3:202128269..202129527, Cluster 9

<220>
<221> modified_base
<222> (668)..(668)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (668)..(767)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (669)..(669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (670)..(670)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (675)..(675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (676)..(676)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (677)..(677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (678)..(678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (679)..(679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (680)..(680)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (681)..(681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (682)..(682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (683)..(683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (684)..(684)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (685)..(685)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (686)..(686)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (689)..(689)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (690)..(690)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (691)..(691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (692)..(692)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (693)..(693)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (694)..(694)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (695)..(695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (696)..(696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (697)..(697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (698)..(698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (699)..(699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (700)..(700)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (701)..(701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (702)..(702)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (703)..(703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (704)..(704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (705)..(705)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (706)..(706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (707)..(707)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (708)..(708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (709)..(709)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (710)..(710)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (711)..(711)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (712)..(712)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (713)..(713)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (714)..(714)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (715)..(715)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (716)..(716)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (717)..(717)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (718)..(718)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (719)..(719)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (720)..(720)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (721)..(721)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (722)..(722)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (723)..(723)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (724)..(724)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (725)..(725)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (726)..(726)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (727)..(727)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (728)..(728)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (729)..(729)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (730)..(730)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (731)..(731)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (732)..(732)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (733)..(733)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (734)..(734)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (735)..(735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (736)..(736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (737)..(737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (738)..(738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (739)..(739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (740)..(740)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (741)..(741)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (742)..(742)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (743)..(743)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (744)..(744)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (745)..(745)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (746)..(746)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (747)..(747)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (748)..(748)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (749)..(749)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (750)..(750)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (751)..(751)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (752)..(752)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (753)..(753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (754)..(754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (755)..(755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (756)..(756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (757)..(757)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (758)..(758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (759)..(759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (760)..(760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (761)..(761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (762)..(762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (763)..(763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (764)..(764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (765)..(765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (766)..(766)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (767)..(767)
<223> a, c, g, or t

<400> 1385
cttgacgcga gcaaggctcg ccggggcggt tttgcgatca cggcgatgta ttgaagcccc 60

gcacattagt caattttaaa actacgggcg ctgcctggtc gaaacagtga gacgcgcgag 120

gatgacatcg tggagagcat tagagtcgac ttaagtccga agaagagctc gacgacctca 180

cggagtgatg gcgacccgga ccggagtgct ggccccagtc ccatattgtt gagatgctgg 240

gagctcggcg cgggcggctc atcgagtggc aagtgatgat tcgtctttat catgagcata 300

tcgctctgtc cggtgactag ctgagcctac aggaagtatc gcgggttggg ctctggagga 360

tgttcatggt ggtgcgctgc aggtcggatt ctggcggcct cacctgccag tccacgaggg 420

ctatccggtg cactagtggt gtagggtctc gtgtaggctg tacacttcgc gtctctaacc 480

gtgatttcca attcgcagct gagtggaagt cgaccagatg atggcatggt gtgcatatct 540

gtcgtgagtt gtcgtagggc ctattctttc gcaactacct cgacgaccct tgctggagcc 600

gagttcattg catgatgtta aattgtagaa gtttttccgc atcaacgtgt tgggcagaac 660

ctagcgtnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 720

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnntca gcgttcatcc 780

gaacttaaaa caacatcaat gaacaggtga ccaagactag acctgatccg ctgtgcatcg 840

agcaaggatt ccgtgactct gctaggcagt atccccgacg cgtaatcacg tctagtaggc 900

aggcagctat ccatacccgt gcaacggatc atgcgagggc tctattccag gcgcgaccac 960

gtagtcgatc gtgactgaca ctgcagtgct tggtctctac cgagtgctag atgtcgcatc 1020

cgacgatcac atgctccgaa gctatgcgac gccacatttg gcagattgcg gcttccagac 1080

ttaatgttag tcgtttttc gcgcttctag ctccgtgtct cggcgtcccc gataatatgg 1140

gtagcgatgg ggcaatttac tcgctggtgc atccgaaccg gggcgttgtc gctcagatcg 1200

tgtcactgct agggctcgcc gatccagcag cgagggcaag tgattcccgt ctagccggg 1259

<210> 1386
<211> 1032
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126206_G1, chr3:206586509..206587540, Cluster 9

<400> 1386
cgggtcttcc ctcttccctc tcgggcggcc cttcacgaat cacatcgcca ggtccgtccg 60

ccgtcggata ctctcttttc cacacacacg cgccgaggat tttgtagctg cgacgttcac 120

ggaccacgcc tggaatctca agtagcaata aacaagtggt ggttaggaat cgccagctac 180

catgtgcatg tgacgtgtaa ctaactgggc tgcgcatgca tgctgtgacg tagaccggat 240

aataagttaa taacaaaata aaaacttcgg tgcgcgcttt tatttttgg ggggtattgg 300

gtgatatgga agtatagaac acatgggcgt gcagatgagc ttaaaaaaac gttttgattc 360

ctgcatctat gttgcggtcc gggtccggta cctatccatc catctacccg catgcactgt 420

tgcaagtgtc atgtgatgag tggtacatcc tgtggtgtgt gtgtgcagtg tgcagtgtgc 480

attgggaata gtttttgcgg cgtggcgggc cgatccgcat ccgccgagct ggcccgggtc 540

ggcgccgcgc gcggggatga gatgaatcaa tgatggcaga gaccagtagg ggcgcggatt 600

ggctttgcct gtgcagcaca cacaaggata gatcggatag agatacgggc atgggcgggg 660

gctgccacgg tcgggtgggg ggataacgat cgcgccaatg cctggaatca gtaggagctc 720

tggctttttt ttttctaatg cctgagtttg agccaatgga gatgagggag aagttggcac 780

gtctggaacg aacacgtagt agcatttttt ttgttttaca acatggcaag tagccgaact 840

agtagctggc aaggttggaa ggctggcccc gaaccgaaac aagcaaacga cgctatgccg 900

ctatggtttc ctttctaatt ttattcccca gcgagcttta ccccttttcgg ttcacaactg 960

tttagacgac catataataa ccacgcttta ataaatctct tgttacctgt tcccgtcagt 1020

actttgctgt tc 1032

<210> 1387
<211> 1275
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126749_G1, chr3:209113531..209114805, Cluster 9

<400> 1387
aacataaagt tattattcag agctcatacg aggagcttca caaaagaaca tggagagctg 60

cctctcaata ccacgtcttt tcttagaagt ttttgtaact attccattcc accgattcta 120

gatctgatct atcaacttca tcagagagca gctctactcc aaagttttac aatttttaga 180

tgtgtttggc ttgtaacaca actccacaaa tttgagactg tgttggaaaa tgactttgtt 240

acgtgcgcca cctcccaagc ggcgcttctt ccacactggc agcccaccat ggccacgatt 300

cctcctcctc ccctggccga gcccacgttc ttgagcgcag gccacatgtt cttgaacgat 360

tcctttccac catggtcacc tattcttgag cgcaggccct cggcgcgtgc aggtcctcgg 420

cgcctcgcgg tcgcacttgc aggccaccgt cgctctctgt tttcatgcga ggaagaaaat 480

gtgttgggga ggaaagaaca gaagaagaaa caaaacatta ttttctccat aacgagttgc 540

attgaattgt aattaacccc caattccatg tttttgggtg agtagagttt ctagagttta 600

gaccgttggc aagcaaatag tggtgcagag ctgcaaaacg tggagttgag ccgtcccaaa 660

caccctcttg gtagagttga agagccaacc tctttggtta gtgaagcttg tgtggagttg 720

aaaatgggag ttgccccaag taggtcttcg gtgtcgtcat ttgcatggca aagttgaacg 780

atatgcactt gcgcaggaaa cttattggca tcacttcaaa ccatataagg atcactacac 840

cttttggttt gggattaagc aattcaactt aacaaattta ctgacgacac aatattaata 900

gagacatgaa acaatgaaga gagagagggt atcaaagttc catatgataa aactagttca 960

tactactgcg aagctagatc aatttgaccc atctcctcga tcagctgaca atccgctaga 1020

catttttttt ctcataacct gaacaaaacg tatagcttgt tatggaattc aggttgaatt 1080

tcacaagaat ttattttgtg aaaggagccc cctgttcaat gtaggccaac tagcgacatc 1140

ccaaatttcc aagaccattt ctttttcttc gttttgcaga ctgggcccgt tttaggaggc 1200

ccaccctaaa cctatgtcga cgagcatata ctacaagttc gagcattttt tactcgtgat 1260

tcagcgcaac cgcga 1275

<210> 1388
<211> 1367
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127252_G1, chr3:211740333..211741699, Cluster 9

<400> 1388
atattggaag agcttatagt ctaggtcaca ctaaccgctg ccaagtactt aaagagccag 60

atactcttgt aaagtgtttc tttaggacga aatggacata gacactagta agtagggcct 120

atttgaaggg caaaaaagta tattcgaact aaagtattct tgtatggata tgtagttgtc 180

ttgttgctaa agacagactc ttttttggg atagattcac ggtgaaattt gatgtccact 240

ggtgtagctg cttcacggct aatctgatat cccgatttgt tttgtttaat atgaagttgt 300

cctaaataag cccctcacgt ctagatccag atctggattt gatgctgact gctgtgctgg 360

ctaacccctc cgtcacttcg tttcactgcc agaaagcaaa atactactac taactaggta 420

gtacagataa tacgagagcc attacataat gttcgtaggc tcatgggcct agatgaccag 480

gggaataatc ggccgccagc cggttgattg ctgtgattag gtgtgaggag gggctcgttg 540

gccgttggga gaatgcagag gcacggaggg gccgagggaa aaaaaaacac actcccttgt 600

cgtgtttctg caatgagaaa aaaaaaactg catcgtgtct cgtccttcct catcagcagt 660

gcatcaccct gctcctacca gccggcgtcc atcgaatgct agagcggtag agcgcactga 720

gcaggcacca cacgcgcgcg ctcgaacacg cacgacacaa taaatcacac aatcctggcc 780

cgcgcgcggc tgctgtaata gactactctc gttgaaagcg tgacgtgacg tgacgcaatt 840

ccaagctgga attggagatg gaggtgccaa catggacgtg atgtgatcct ttgacaggat 900

gctgtacggc gcaaccatgc atcatcaacc acgagtattc aaaggggaga aagcgcgaaa 960

acaacgctag gtccacgagt tttgtttgta taccgactcg aactgactag acagtagaca 1020

tggcaataaa agagagtgcg tactttgcgg aggaaaaaaa tacaaaaatg attcgtcgtt 1080

ttgctaaaaa aatacaatta ctgtacaaga catatacgta atggcttaaa ttacttagag 1140

acggagtaga agatggatca cgttagattg gtattgtatt aagaagaaac tcagcaggta 1200

cggtccctcg taaatcggga atgtgcgggc cacagcaagg agaaattttt taagcaactc 1260

agaaatttac ccttgacgaa gatcaaatcc tgtttctaga ggtgctactc ggtagtctta 1320

accattacat agaagtccca ttcgcaacac cttagcatct gccaaca 1367

<210> 1389
<211> 1150
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_12754_G1, chr1:69865634..69866783, Cluster 9

<400> 1389
ggtggggccc gccggcagcc agctcccagc agggcaggct catcacggac ggggacggct 60

actagtatac agtgtgcagc ttcaaggccc acctgctgag ggtcccgcaa ggcggcgacg 120

gggccctcaa ccctgcggcg gaaattgatt tgagtacgca tggtgaccac caaccgctgt 180

cgctttccta ccctctcacc gccacgcggg gcctcttgag ctttaggcaa atagacccgc 240

cggtgggggg cccaggccca ttagtggttg ggtggcatgc gtcaacgtca gggaagggtc 300

cccggcccgg cctgacgtgg tgcgtccctg tcgtgtagcg gggagggggc cgtgcgcccc 360

ggcgaatggc gggcgcacac gcgcgcgagg gccacgtgac cggaccggag gcggagggtg 420

gacggactcc cttccgggac tgacgacgac gacgacgacg aggaggtcat ggtgacaggc 480

tgacagcgaa acaggagaat aaaaaatata atgttaaata ttaattacga tcccctctgt 540

acgtgtagcc cgggagtcca cagatgtgat ctgtcgattg cgatacatac atatatactt 600

gtctattttg gtgacggaga aacacaaggg tatatataat attaaaataa agtactaccg 660

tggcatattt atgatatttt gacatggggg gaaaaaagag acgtgctctg tcacggtgtt 720

tgtctttatg ttttgttgga ccgccatcag aaacatcggt tgcgtctgag gtgagcccct 780

tggtccatat ccaacggccc gcgcacactc cacggtgggc gcaacggaac caacccacga 840

accggagacg gagagaggga ggaagcgggt cacgtcacga tcgtcaccag ccggaccgga 900

cggacagagg ggttgcccca cgcgcggcgc aggtgggccc aacccgcggt actagtatac 960

tatactccta tggctcggca cgccttccca ggaccaggag ccccgcgtgg cagcctaggt 1020

ccgtgtacgc acgggcgggg acacgagcgc ccggcccgcc tccgcgtgtc ctcgcacacg 1080

cgtcgcgttt cccccggcca cacacgagca ggcatggcag tgaccgggct ccgacttgaa 1140

ggctcgcgag 1150

<210> 1390
<211> 1207
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127581_G1, chr3:213409204..213410410, Cluster 9

<400> 1390
gggagcgaaa cggtccgaat gattttgtaa acacaaagtt tttttttgg ccgcgcacgc 60

aacaaattaa aagatccaag aacaacatgc aatgcaagtg cgtgcatgca tatcgaggag 120

ggtgcgccca tggtccagga gtactactac aggacaaggg aaaaaaatga ctgacgatcg 180

acgtgcacat gcttcacata aggagtcgag ccctctggac cttggccaaa cagaccagaa 240

cagggaccgg ccggccggcc tggcgctggc ggggaggagg aggaaatcaa tagccgccgc 300

aggaatctag gcctgaatgg cgctgctgca aattgtcata tgcatgcgcg ccacatgcgc 360

ggccacatgg tggtcgtggt gctgctgcat ttaagtgctt tcccggcgct ggatcacagg 420

atctcgtgct cccagtgtcc agtgtcccca cgctgcacca agcacgcaga tcaaaatacg 480

atacgtacga tcctactgcc acgaaatgcg atctagctag agaaagtgcg atctagctac 540

agcgcgtgtg cgtccaatat acgtacatgg ccaggccagc tgcatagcgc cgcggcgagc 600

ctggcgtcaa ggagagaaga agaagatgat gacgacgacg acgacgagag tgttggctgg 660

tagcaaccag taaataaata gtcgcgctcg cgcgtgatga tccaccggcc ggaaacgaac 720

aggggcggaa aggagaagga cccacctgag atcctgcgag gcagccaaaa gttcgtcacc 780

tcgctttcca ggtggtggac cgtacgccac gccacgtaag gcagaggtgg atcatagccc 840

ttggtagtag gtggttgggg gccgcgccca ccacgttgcg tctcatgccg acagccggga 900

gcacgtggcc gccgatggct cgcgcgactc acggggcctg tctcgcgcgc ggccgttggt 960

agttacgggg gggctcgggg ctcgggagct tgtgtctgtg taccggccta ccgccctacc 1020

tatgtagtat accaacaaag aagagcaggt ggacgtcgtt ttgtgttgaa gaggcgcaca 1080

tgctctcgat acatgcgcac atgtaccact gggtatcgac agtccccctc catgcatcct 1140

gttaaacaag cgctatgtac tacgtatgct cttatgataa tgataataac gatggtcccc 1200

aaatgca 1207

<210> 1391
<211> 1336
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129240_G1, chr3:221558199..221559534, Cluster 9

<400> 1391
ggggccaaag acacgtatga gttgcttgct cctcccctgc atcagatgta acttacttgc 60

tggctggaga cagcgcctta gaaaaatcgc actgccaatt attaagctag ctaggaacaa 120

gtcacccgga aagtagacat gcatataata gaagctagct tcaccataaa aaaataataa 180

taaatgctta tatgttaatt aattgtataa cttaattata ataataatct gcgtgcgtgg 240

gagaaaggat atcaaacgaa ctaaacagac cgcgatgcga tatatattta gtttcgaaaa 300

aaacaggtcg tcagaatcag aagcgaatca tgtgtgtgca aagtcaaaaa aaaaaaagaa 360

tcggatccgt gtgggaaaag aaaggccgca agatacgaga agcggcaagt ttccctcctc 420

cctcctgatt cctgattact tgtaactagt tttatctgcc acgcacgacg acggttatat 480

tagttgtttg cacgcgcgcg gcctgagctc caaagtctaa gcagcacgag ctcagtatta 540

tattatttta tgtggggccg gtttcgtgat tggctcccgg ccggagcaaa gctgctagta 600

ctactttggc gaggcctgaa cctggatctt cctcgatcgg cgagtagaat atactgtact 660

actccgcagc atgcaccgct acgcgcgtga cgagacgtca ctcactcttg ccgcggtgtc 720

cgcatccgcc cggcccggcc gcacatgaac gaacgtgttg acgagagcgt agcgcgtact 780

acgtacgtgg tggcgcacgc agcagacgag agacgccgga cgcatgcaga cgcagaaggg 840

gaacaaacgg agcggcgctg tacgtgtcac tgtcgaggtg gataagggta tgcacggtgt 900

ccacacaaca cacacacacg cgatctgcgt gccacacata ggaaaacccc cgttttcccg 960

tttcgctgcg tacgttgcag gggggcccga cgcgacggct gctgccccgg tcgcccgaca 1020

cgtccctgtc gcggttttgg gtagtaatcc aggccagttc acgtcgagct agcagctgag 1080

ctctactacc tctacgcgac gcgaccaccg tcgcgcgcgg attacagcct gtcgtcgtgc 1140

gtgcccgtgc ccctgtctct gtcgtggcac cgtgattgat gatgatgacg acgacgatga 1200

cgtgcgcagt gacgcgacga catatataca tgccgcgtcc cccgacccaa cgccgtcggg 1260

gacgccaacg gacgaggcgc gcgtaccgct agccagcacc agcaccagcg ccagccgcag 1320

gcacgcccac gccacg 1336

<210> 1392
<211> 1244
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129571_G1, chr3:223292266..223293509, Cluster 9

<400> 1392
gactaagaag gaagccctcc ccaaaataaa gtagatggag agtgacttga gtctgtatat 60

ttgtttaggg atgttctaaa ctcatgtaaa attttaatgt aaggaagttt tatgatgatc 120

tgactctgta gaattatctt atcccgacca catatcaagt ctgggtcaga gaagagactt 180

agctatacta atgagtgagg gtaccatggc cactaggcgt atggtcattg cagtccatct 240

agtatagttt ggcctttcta tccaatcgat ttagtagggg tcaggtgcat ctaggccttc 300

cgaggaggtc attgagtagt gaggattgac cctttgctgg caatggggtt gcatggttgc 360

cactcataat gtgtcggttg ccatgagaga catcaatttt ttcgtattcg tcacattgtt 420

tgtactgatt ctaagaaagt caatatagat tacaacttac cactatgggg acttctgcat 480

cttcctattt gagatccttg ttgtttcttg accttggaga gttgcttcac ttggattgat 540

tgatcatacg tcaaagttga ctttgttgac gaccaaggat gaggtgtaag ttcatagtgc 600

gttagttttg aaactatttt tgttcataag aacgtgataa tgggttgact agcttgttcc 660

ctgaatacca gtgggtggta cgagtaaaaa ttgaacttgc taggcttgtg gaccttcatg 720

tccacaatag ttccagctgg gacgtttcca ccttgtttgt ccaaccctat gcaccatggt 780

ttctaggaaa caggcgagct cgatgatgct tttagctagc aaccgtacat cactggcata 840

gatcacataa atccatctgg ctctaaaaag cctttgtctt ccaccttctg gccagcatcg 900

tccttggtcg gggttagtat cccacgcaac cttccttttc ttggaccgct aaagaatctc 960

ctcttcaacc cacaatcctt gtacaaatgt ttgataggga aagtatggtt tggacaaggc 1020

tgctccaatt tcttttcaaa taaattaggg gtctctttaa tgggtaattg aacttcttta 1080

gggtcgacga caattgcagg caggacttcc gtctactttt ccccttccta gtcttcttgt 1140

tgcatttcat gtgcttgttg gcacgaccaa gggtcccctc attaggagtc ctcccaaact 1200

cgaccatgtt gtaagtctgg ccgtgggtct caaccccaag tgtt 1244

<210> 1393
<211> 1014
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129866_G1, chr3:224686989..224688002, Cluster 9

<400> 1393
cgtactagta aaacaatgaa agcagcatcg cgacgaggtc ggagcacctc gctgaaatcc 60

attccttgcc catggtcaca actcacaatg tctacgcagc agaccgcggt tggcaaccga 120

gcgtggccct agcacgaaga caccttggtt ctccattcct tccaaatgca cgagaaaacg 180

aataggagca aagagtcgaa tccatgacgc tggcaactga gacgatgtcc cggcagcgta 240

gccaccaacc tatcaaggtc aagccgtcaa ggaggcagcg tcgattagca aagatgcaac 300

cccgtaggag atgaaggcct gtttgtagag ggtgcacacg tcagagtcct gacggtgcgc 360

gcgccacaac tcttcggcgt cccgctggcg ctcaaaagag tgaccttgcc ttcctccaat 420

gtaagatgag gcgaagtcgt caccgtctcc tcgattttgg atcaccaaaa attactttga 480

ttctgcgtga ctcttatcca aacactatat aaaatacagc cgcccttggt atttctcctt 540

gtacgtccaa caaaaacaca agttcggatc ttaggatctt ggagtccatg cgtgaccttg 600

atctctggcg ggggttgtgt ccttggcgtc caataacggt tctaggccgg cctccatggc 660

cacatccaac cctcctattg gttggttttg gatctgacgt ctttatgtcc gaccaacata 720

atgtttagtt gcattggcgt ggacgtgttt catcatcccc aataagatta gcataaaata 780

gtcgtttgat gtgttaccag ctgggaagtc agtgtcggag aaggaccaga ggagaaggcc 840

gcagaggagc acgccgacgg ggatgaggtg gacgagggcg cgagcgaggt cggcgcgcga 900

ggcatccagg gcctccttct tggccacgtc cgaccgtggg tcatatgtcg gcagttggtc 960

cacgtccatc acgcccgccg tcgagctcgg acccggcgat gccgccccgc cagt 1014

<210> 1394
<211> 1241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1317_G1, chr1:6796702..6797942, Cluster 9

<400> 1394
aacatgtttt aagatgtctc tagcaactta tccatccaat cagtcatctt atttttatt 60

ttaaacttta ctctacaaat agtataatcg atagtacaaa ataaagtttt gtatgactat 120

atatacgatc ttctggagac agtcttgtag cagtagaaaa gagtagagat tggtgtgttc 180

tggtcttctg gagacctcat atacgatctg tcgccacaac gatgcgatgc gctggcctgg 240

atcgcctatt cttgtcgctg tcgggccgca tgataagtac aggaaacgga aacgggctgc 300

tgtctgggcc aaaccagcgg cccgagactg acggcgagaa atatctccgg cgggagccag 360

gtcggtccgc ggggccgggt cgcgcgacgg cctctccttt gcccctggac agcgatccat 420

ccatccgggc gccgcggcgg cggtggccgt cactgcgctg cgcactcggc gcacagtgcc 480

cacgccacgc tcgctctagt gctgccgatt ttcatccaag tgcttgcctt tgaacgtcgt 540

catcgtcgtc gaaagaaaag tggcttgggg gtgcccgttt cacgttgctg ctgcactggc 600

tgaccgcaac aagcctgtcg acgatttgtc ttgtggggtt tcattagcga gcagagaagg 660

aaagtgggtc caataagttg atgggctttc ccagctccaa agatggccat gcaaaatgat 720

taactggccc agtgggtttc cctggtccaa gacgaagctc atggagaggt cacgccacgt 780

tctgctctgc tctgctgctg gtgctggtag ggttaatttt ggaacctgaa cttgatggag 840

gacagacatg cgattgtttt taagaaaagt ggaggaaaag gcttcgcaat taaaggagca 900

atttgaaatg gaggagatcg acatgagaaa tacgatgctt tcaccgtcgc tccctttatt 960

cctcagatct cttatgctta cttttgtctg gcttttctag tccaatcggg tgtgtgaccc 1020

acaacattcg ctcgaggaag atcggatcgg tctcgtcggc gtccttttat ctcacaaact 1080

gcaccgactc gaataaactt tgtttctaat atgcgttaat tatgatctgc aatatccgtc 1140

ctccaaaaat tacgattctc actttttaa gggctattat aaaatcttaa atccactcca 1200

gaattcaatt cccacgaact gagtaggaaa ctaagctaag t 1241

<210> 1395
<211> 1185
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132822_G1, chr4:6544371..6545555, Cluster 9

<400> 1395
aagaaatttc atacgagtgg tgtagaaagg gttatgatat tagcgatgac aattaacata 60

ctgagaaaaa aatacagtgg tatgtacaga attttttttt tccaaaggtg aacagctctc 120

cactacggtt agttgcgcgc gcacaaagtg gaaaagaaag gagaagaaaa aggaaaagaa 180

gatggcgacg ctagttctat gagaggtaca atctcgcctg tggcgtccaa tcggaacaac 240

aaaaaaaaaa ggacgacgat cgtgaggagc atgccgtcca tgtcatgagg atcacaccaa 300

gtcccgggct caccgaactt cccctgttgg aaaacgatgc tgcctgctgc ggcaaccagg 360

acagaaacgg tggcgacaaa taacacataa ttccggcctc cgcgtctgaa tcacacagct 420

gcgttcctgc atcagaagaa actttgccgt ttggttggct tcattcggta gcctggctac 480

tttgtttgtt tggttgactt ctctcggtag cctggctaac tttgcctgtt taattagctt 540

ctctcggtag ccggactgta tgagctagaa ccgctggagc ctaactccga agatgcgacc 600

aatttattca tatttagaga gtcgggctca tgatgcttta aggagcctag atccaaatct 660

atgtgtaagc aatagagctc gcatgtgtag aacctagctc atagcaacca atcaaacagt 720

agctacctac atcccgcgat gcaaacatgg acagatacag gcaaccaaac gcgccctttg 780

ttttaacag cagccttcac cggacgtgct tttgttaaga ttgtgtcgaa gtggcagaca 840

tgaacatcat ggctggcgag tgaaccgtaa gtcaacctgc caatattata tcaccacttt 900

taaaacgacg tatgctagac ctgaactgta ctagaaaaaa aaacaaatta tacagcatag 960

cgcaactaca ttccaacttc gaaaaaaaac agctccaggg acaccaaagc ttaagctaga 1020

aatgaacaaa acatcatctg aatggcggcc tgctgaaact gtgaaaccca acccaacaca 1080

ggctgcacat cttgggctac acacctgccc actcaaatct tattagccag tcatcatctt 1140

cttcctcacc accggcacag ccaccccaca acttgcccgg cttct 1185

<210> 1396
<211> 1316
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134539_G1, chr4:14695427..14696742, Cluster 9

<400> 1396
ggcttaattg gtagtagaga ttctacgtag gtaagtagaa tatcatttat ggcaatcggc 60

cgtttttccc tttttatttt cttgtccata agtttcccct tttttgtggc tatgaattat 120

atttgtttgg tcgcatacag tttttaagaa cacgggccca accggcaagt caaaatggtc 180

cctttcgttg cttcaataat ggacggccac cttatgtgct ttgcaagata aaggctcgat 240

cgtagccatg cttgtggttt cacgcagagc acgggtcgcg tctcatcaaa cagcactgca 300

ctctagtaca tcacttgcac acgtgtgatt gcgccccgcc tcttttacat agcactcata 360

aataaataag cagatattca tttcatttgt agaggccaac gactgtctgt gtgcatatat 420

gcagtgagca ctgatgagca ggtgctgccc ccacccacat aggtgcacct gcaaaagtac 480

agtgcatatg atgatatgat ctgtggcgga tccaaagggg ctaggggctc catctacatc 540

catgaaactc cattgttgat agaggtcgag ggaaactcca ttgttgatag aggttgaggg 600

tagagaagat ccggagagga ggagcaggaa gaagaggagg aggagagaaa aataaaccca 660

cctcgctagc ttgtgatgtc tccgccactg gtctttttcg atttccattg ctgttgtggg 720

ctgcacagct agcgtactac acaaccatga aactgtaagg atatttggca caactaacac 780

cgatgtaatc ccttgggttt caaacagaca tttggtcctt gatgatttgg cacgcacgac 840

acctgctgtg tttattttta gtacaggcac aaggggctag ttgttgaaaa tgggccacag 900

ttcggttagg tctgaccaga aacagtgtgt gccccaacca aacttcgctt tcattttcgt 960

attcgaggac catgcatgca tgcgctgcat gccgtagatc cggcttggca ctaaatgatg 1020

ttgaactcat gtcgtgtacg ttgacctgtg ctgtgctgta gtcagtagtc acacacacga 1080

gtgtgtgtgt gtgtgtgtgt caaactgtgc cgtctctctc gccggattca cagagaagat 1140

ccgacccctg gaccggtgct agctggttct tggcctgcca cacccacaca tctgggaaag 1200

agaaatgcaa gtcgtgtgta tcccgcgcgc gcgtccactc cactgaagcc acacttgttt 1260

acccttacat gtgtaagata aatgttgaaa caaaatggtc cagggcagat tatata 1316

<210> 1397
<211> 1051
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137664_G1, chr4:30917810..30918860, Cluster 9

<400> 1397
ctatccatct agccttttat agttttccca ttgaaaggaa gccaatcgac aatatgaatt 60

tttgagtccg acatagggac tcctagatat ttatatgcta cctcaagtca gtcatgccat 120

ctttggctac atcattggta atcaccatca agtacgccct taacaggcta cctcaagtca 180

cccataccac cttaggttat gtcatccata tcgatcgtct agtacaccat cgatggccta 240

cccaaagtcg atcatgccgc ctctggccat gttgtcagga atgaccattg attatgccct 300

cgatgggcta cctctagtca ttcgcactgc ctttggctac atcgttggca acaactgtct 360

agtacaccct cgatggtata cctcaagttg gtcatgctat gcctctagcg atgtcgtcga 420

caataaccca ctcaattatt acttcggaat gctatctcaa gctagtaatg atgtcaccag 480

cctcgatcac tcgaggatgc ctttgacaga ttccctcgag caggtcaatc gattatgttg 540

ccggctgtga ccactcgaac acaccctcga tgggttccca tgagttggtc acaccatctc 600

caactacatc atcaattatg accattcagg aacaccaccg ttgatcacat tgccattgac 660

tacatccttg agtatgacta ttcgaacatg caattatcat gcttcacccg agtcataact 720

aggaaccatg gatgcaccct caggatcata aaggggacaa tggtttcaaa atcaccctcc 780

aactaattct ataaattatt tagaggctcg gaggcaagac ccacctggtc tagtgcgtgg 840

ctgcggttga ctttgataat aatacaacat tagggtgcaa aaattgttag acttccatta 900

agactaacct tgagtcaaat tctctaagtc gcacaaggct tgaggtccac tgctagtgct 960

atgtacctag ggtacctaac cacatggaaa tatcccaaga aggatggagt acaccaaaca 1020

ggctatacaa aaagctctac ccatatgggg t 1051

<210> 1398
<211> 1005
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13931_G1, chr1:76600997..76602001, Cluster 9

<400> 1398
attccggtaa tgaggaaggc ggctgggtac atgtggatca gaatagtata gttgggaaga 60

ggagtggact cgtggagaag ctgcagcgct aagactacct aataatgctt gtgtattcat 120

caagtggttt atttagcgcg cgtgatactt gtgattgatg agtagtgatg atgacaacaa 180

cagcttagcg ccttaatcag catcaaacaa caagattctt tatttatata tatactatag 240

ttgtactgcg gactggaaca ggtggtggcg tattaccaag agtccagcgc cacctgctca 300

aaccaactgc cgccctctaa ggctaacaag tcgttgatgc tatagacccc gtttcatacg 360

gaaagcttcc cgtcagcgtt catcaggagc agtacaaaaa gatgtctgaa accatgtgtg 420

cactgtcgtt ttcactttga tttggttagt ttataaccag ctgatgaaag tgaacaggct 480

aataaagtcc aggggatcta gaatggagag ggtcattttt catacctag ctacgtgcat 540

gtgcatgaat atatcatata tgtcgtccat ttcagcaggc agcagccagc catgtggatg 600

ggaacgaaac ggcaggctgt ggtctttcat tgcatactaa tcagtaatca agcacgcctc 660

agtccagcag gctgtcctgc tgacgtcgcg ctcatgctta gctgcatcac atcttcgcct 720

taatcctgac tcgtgcttct ttgtcttacg cataaattcg tggaagcttc gtatgcgcgc 780

cgaaaaaggc tttgccccgg tcaggagtac tgcacggcac cggaaatgta tgtatatact 840

ttggtcaccc atctctgcct gccgacaaat tcaggccgcc ccaggtgcta tctttttata 900

tttgacacca aacagtatta aaaatagttg tatttaaagg tgttgtatct tgctttttc 960

tcctaagctg aactgataat aaatcaggga aaatagattt attcc 1005

<210> 1399
<211> 1192
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_145950_G1, chr4:83187780..83188971, Cluster 9

<400> 1399
attttgtata catgtgtgtt gtgcgagacc agccacgccg atacagttac tgtgctcacg 60

ataaaattga aaaggacaac cccattgttc cagtcattta gtcatggaag aaatgatcct 120

ttccaaccca atctcctagc ctttttttctt cgaaagaaag gaagatctgc ccgtttttat 180

ctattcccgc ccgcaacaag atcgatgatt acccaccagt aaaattccga gaagcctaca 240

cctaccacaa acttcctctt ttttttttg gttgttgttg tttgagaaaa gaagaagtcc 300

ataaagcaag attcccgtag gtgggcactg ggcatgcgat gcaaggacag gtccatcagt 360

ccatccgtca gtcagggaat agcagctgcg gtgcaggagc acgcacaccc agctccctcc 420

ctcccttgtt cccaatcatt tgctcgctct acgtgctcct gctcttcacc gtcggaggga 480

acgggtcttg tctgacggta cagtcctcag caaggattac cggtaaacac ggcatcgttt 540

atctgtaaac ttaaactagc actggattta acaagcgcac aagctagtgg acactgaaca 600

ggcccccgg ccgtgccata caatcaggtg gtaataatgc agcaattatg cggctgctta 660

cccctggggc tgggggtgg gaagccaata atgttacctc gctgacagaa aaacgcatag 720

ggaggaattc ctttccggat tcccttgggt ccacaatcaa tccccttgct tttccctcgc 780

cggtgcctga gtgactctga tgagctcttt ggcaaatgga tgacctgtgt ggaactctga 840

tgagctcttt ggcaaatgga tgacctgtgt ggcttggcca aatggtgagt gagtggagcg 900

gagcagctgc cgctcactca gctcctcctc gactcgcccc gggcatcatt cacgaatctg 960

cttttccccc agccccggaa atacgtttaa aggaggccgt tttcagggac gagatgaggt 1020

tgattaaagc aaagcagagc agagcagagc taagctttct tgattccttc ccagaatgtc 1080

gctcgagctt taggcaggca ggtgactgaa aacgtcaact gcgagggaga agagaacacg 1140

catatgtggt gaccttatcc atggcgtggt gtggtcgtgg tcgtgtgtcc cc 1192

<210> 1400
<211> 1212
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14600_G1, chr1:80486200..80487411, Cluster 9

<400> 1400
tttagggaaa aaaattctcg gccggccggc ctatatcacg agcagatgaa cagaaaaact 60

gagttttagc tctcgaccgt acgtcgcgct cgcatggata ttttgtacta ccgtgcgcgt 120

accaacaatg gcatcgttat cggcgttcgg aaaaaaacgg cgccggctgc ctaataaccg 180

gcgggcgggg agggggagat gcaaaggtgt agtgtcgtgc tactacgctc gctattctac 240

acgcatataa ttccagtggc cggccacgta tcgacgacga tgacgagcaa ctcgatctgt 300

tggaagaaac gaagaagcgc atatcactgg ctctaacaac tctttttttt tttggttgtt 360

gttgttgttg tctcgagaag agtggggtac gtacaaggat gccatcgata gacgacaaca 420

caccttggt gataatattc tacaccgtca ctttgtagct agcacatgca cacatctcca 480

ccccttcatc tttccaccct gtaaagagag agcttatcgg cgcaacgtcg tcgtttatat 540

agtgagtata tatatataag tggagttcgt tcgaattaat cgacagttgc atcattgggt 600

gggcagagtg ccagcagaga gggcgcccac ggcaaaacgt gacggtccga ctggactccc 660

acgcgccttg gattctgctg gagcggtggg tcggtcacac acgacaacgt gatgacccat 720

catcagctgc gtgcccaccc gtacggacgc tacagagaat agagagccga ctagtcgtcc 780

tatctgctcg attccagccg gcgacatcag cgccagcggt gtagagcaga ggaggactgt 840

tctaccggcg gtcgtccggt caattcccgt cgtcgccgcg gcaggcggca gcaaaaaaac 900

tagcagcttt aatttgacgg gaacgggttc agcctttgtt tacaacttgt cttgccaagc 960

tgaaagtgga gagctactct ctcttcagtc ttcgcgtacg tatactactg gtgtagtact 1020

acgtattatt cgttccacac ttccaccgaa tacagcggcc ggcgtcgtcc accggtagac 1080

agctgccgcc acgtctcgca ttcctacggg ccgatggccc caagcgtgcg tgtgtgtgcg 1140

cgcgcgctct gatgctgact gtgatccacg cttcaagcta tggctggtag tacggtagta 1200

gcagctgcgt gt 1212

<210> 1401
<211> 1231
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15412_G1, chr1:85023530..85024760, Cluster 9

<400> 1401
tacgtatcga cgccagcaca ttgcaaacgt ggcatgcacg tccgacgccc cgctgatatt 60

tctgttatga acaggaagaa acatataggt ggtatggcgc tccagtgact tgctcgtcgt 120

tgcaggggac gtgagcatgc atactctgac tccgagccac taaaactgac aacgtgcgta 180

ctggtcctat gtgtgttggt gacatccaga acgtcactgc gttttacccc ggccgcaagg 240

caggtgactg actgtgtgtg tactagcagt attgaccgag cagtcgaatg gatgccggcg 300

ttgtccattt taattaaccg gccggttttt gaccttaggc tactgcttgg gataaacgtc 360

gtctgtctcg ttctttcaat tctgaagtgg cctaaactgc tgtcccgata cgttcaagtc 420

ttccttgatc accgcaagta ctttagcact actcgagcgt cacggcaaaa ctactcaacg 480

ggatgagacg acggaaaacg gcgcctaaac aaagcttccg gctcaaaaaa gggtggtcag 540

gcgccgcggc agcgaccgat tcgctgaacc ggtctcgaga gaggggatac cggtccggtt 600

gtcactggat gcaccgcgct ggtcgatcac tgggtgcatc cgtgcgtgcg tgcttagttg 660

cgtagcgttc actgaaaagc aaggcagcag ctggtctgcc cggtcacgca gcccgctagg 720

cctggcccag ccagatgctg cctccgatgc acaacgaact aatcacaaac gcgcaccgga 780

aacacgtgat ggatggatcc atccatccac ggaccggatg atgccgccta acactatcga 840

tcgggcggcc taaagcaaag cggccccggg ccccgggccc cgggcgccca ctcgcgtcgg 900

cgtcgccgtc ccccctcgc ctcgccgccg gagttaagtg cccgcgggtc ccactgcctc 960

catccatctg tggatctgag accccgagcg aaccaatcat tggtttcgtc cggtgcagcg 1020

cacccgtcgc ccaaccggac ggacgagtga gcagagcact gatgtgatgg atataggccg 1080

tgcgagatct cgaccgaagg gagccaggca ggggagcatg gcgccgcgca gttcaatgcg 1140

cgcaggccta cgaacgtata cagatcaccg atcgatccca gcgggggggg agggcgccaa 1200

ccggtgaggt ggtgggcagc ggtcacggcg g 1231

<210> 1402

<211> 1011
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1553_G1, chr1:8018961..8019971, Cluster 9

<400> 1402
acccactgga gcgctagcgc tagcgctgat tgttgtccca agaaaacact aaacaataac 60

ttgggttcgg atatatataa cactgcacaa taatttaggt tcacgtatgc ccgaatatga 120

gaaaaccaac aaaatagaca agattttgct ggtgagaaaa aaaaaatata atcaatcaca 180

cagctaccaa atatcaaaca gataaatata agataaacac gcatacatac cacggaccgc 240

acaaccagtg agaaaaccac ctatttgcta tcagtatata cccaatttgc attctttacg 300

ggtgccactc gtttgactga tgggtatttc agctatgtgt agtttggaat agttcgtgtt 360

cgggtaccag gtgtcgtgcc ggaccctaga aaaggctatg gtgccatcca tccatccatc 420

agcgtctacc gtcgccgttg cttttgagca acgcactgaa tggatcccaa ggctcgatag 480

ccatgcctac tacgagtccg aggtagctag gaatcctacc aggataccga catcggaaca 540

actcaaaagc gctcctgctt tcagagacag gcgtggattc tgcagccaac tcattgccta 600

cgcaagaatt caacccccaa ctgtcctagt atgagactct tctccagcca catgttcctt 660

tcagttttat attgggcgga atttgatgct gcaaaagaat ccacggtact cttgatggac 720

ttcacaacac aaaatataac atcctatctc cataaaaagg gggggaagaa aaacaacata 780

acatgcaagc tacttgcata tacaagtaat aataaaaaca acataacatg cacgctactt 840

gtgccgttgc catgccatga catgccatgt agcagcagtc ataacatgta gctcggttca 900

gaaccctata tatcatcagg cagacacgcc aaatatgcta cacggcatcg caaacagtcc 960

aagtatcatc aagcactagt tcctctctta atcacacagt tctctagcac a 1011

<210> 1403
<211> 1244
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156598_G1, chr4:155314998..155316241, Cluster 9

<400> 1403
atgccccaac gcgtgaagcc tagacgagga gctccgactc cagcggtctg atgcacgcga 60

ggggagcgtg gcttcaaaag cccctgcgtg tgcgtctgta cgatgccatg ggagctccag 120

cggggtgatt ccgatggggt aacacctcca gcactgagcg ggcgtgccat cgagatagac 180

tctggagcct ggagcctgtg cagtcacagg tcgcatcgcc gtccgtgtct ttgtcgtcga 240

gctcggtggc atcaacaagc tcgtcaagca tcggcgcctt tccatggccc cggttccatt 300

ccatatattg actgcatgca tgtcgagtca tcatcgccat gcagtggttc aacccgattg 360

ttcgttgtag tatatatgta gataaatata tacattgaat ttaatcatcg ccatgcagaa 420

ctagataaat gactctagtt cttgacttct tgcagattcg gtggtaaggc attttacctc 480

ttctttaata caaacagaaa agatgtgttt gagtttggat tcttatttct atccaaatta 540

tgttaagcat aggactgttt ctacagtcat aaagttagtt agaggagatc agatagagaa 600

tagaaaaggc caggtaaaaa aaataaaaat aatttccata cgttacgatg aaagatataa 660

catatcgtga cttcaagatt tattcaaaac taatcgtatt atagaactaa aacatttttt 720

tttaagggcc tgtgctactc gaggcgttgg ttgagcacac gaaatcgaca agtctggttg 780

taagagctgg gcccatccca tcgtactccc ggcccgaaaa tccaccgata cgtggaaagg 840

agggtacagg gccggagagc acataccaaa caggcgcatc cttgtcaccc atgcgtgtgg 900

ggctgtactg ctgccagagt tggcccaagc ctgaaaccca ccgcggtcca agattctgta 960

acctgtggcc caacatcaaa gttttcaggc atcacacggg ctgagccatg gcctcactct 1020

tcaccgatct gtctcgctga gaatttgtga aaactgaaag cccaccgcct cagggccttt 1080

tcgattatgt ctagatcgta gaggattaga gaaattaaat ctctcactga taaaaattaa 1140

atagaaaaaa gttaatctcc ttcaattcag acgctactta ccgttccgga ctttcgattg 1200

agatgatcat tttgaggggt ggaccggtgg tgtttaccga ctac 1244

<210> 1404
<211> 1258
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159522_G1, chr4:172516439..172517696, Cluster 9

<400> 1404
aataaagggt tatacacccc ctatttcgag ggtcctatat atgaagtcac cgaaaataag 60

agctctattt ttttggcaaa aaaacattca ccatgaagag accaaaacat ccgacaataa 120

catcaggaaa gcttccgtca aagctcacct tattaacgaa agtcttcgca gcagtacgtg 180

agtgactcaa caatgctggg agaagcacac gaataatagg actttcgtgc taaaatctgc 240

tctatcggca cgtacgtgcg acgaatacaa acttcaacga cgacgacgac gacgacgctt 300

ccaagagaga agataactca ggctggctca gagtaaaagc cggtgagggt ttttatcgat 360

agactggtcc acaaacgtac gcaagcacgt gacacacggt catccatggt gcgcggcacc 420

cagagcgcag agaccgcaag cggccgagtg cgtcaacacc actcgcgcag tgcacgactc 480

aagccgccaa catgcatgca tgggtactac ggaggtcagg tcacacagac acaggcgatc 540

gacgacgtcg ccgcgcacca tgcatgaccg ctgaagccac cgcgcgcgga gcaaggggac 600

ccggccgtgc ccgtcccacg agcacagctt aagcgccctg aatgctttga ccgcctgcac 660

gtgtgtaaca accctgcctc ctcgtcacct acatgctact atctatacac gtggcgggca 720

gcaggctaca taggcaggca cttgcatgca tgcatgcatg cccggccatg acgtagctag 780

ccccttccc attcgtcggt acggttgttc atcgtcactt gagagaacgg tactgtctca 840

ggtgatctta gcctatatat gcgcatccgc atagactatg agtctccttg gtacagctta 900

caatgcaagc cgtttaatag gccagtctca acctagaaat tagatagttt ttgtggtcac 960

taactaggat atatatcaac taagctaaat aatatatgac atttggaatt aaggaataga 1020

aaaaaaaaag gaaatggatt cttataccac aaaccatatt tacacgagaa ccactataaa 1080

aggagataag acagatggac gatataaaca aaatgggttt tctacatttt ctcctactct 1140

ataccttaat tagttttgat ctactcattc taaccatgtt tttttgtgta gctttttaga 1200

gaaacgtgtg tcctaaaaac tatattgtgt gcatggggcc taccatgcgt ccacgcca 1258

<210> 1405
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160231_G1, chr4:176509399..176510509, Cluster 9

<220>
<221> modified_base
<222> (957)..(957)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (957)..(1056)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (958)..(958)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (959)..(959)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (960)..(960)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (961)..(961)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (962)..(962)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (963)..(963)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (964)..(964)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (965)..(965)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (966)..(966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (967)..(967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (968)..(968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (969)..(969)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (970)..(970)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (971)..(971)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (972)..(972)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (973)..(973)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (974)..(974)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (975)..(975)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (976)..(976)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (977)..(977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (978)..(978)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (979)..(979)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (980)..(980)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (981)..(981)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (982)..(982)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (983)..(983)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (984)..(984)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (985)..(985)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (986)..(986)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (987)..(987)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (988)..(988)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (989)..(989)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (990)..(990)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (991)..(991)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (992)..(992)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (993)..(993)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (994)..(994)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (995)..(995)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (996)..(996)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (997)..(997)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (998)..(998)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (999)..(999)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1000)..(1000)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1001)..(1001)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1002)..(1002)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1003)..(1003)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1004)..(1004)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1005)..(1005)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1006)..(1006)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1007)..(1007)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1008)..(1008)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1009)..(1009)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1010)..(1010)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1011)..(1011)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1012)..(1012)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1013)..(1013)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1014)..(1014)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1015)..(1015)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1016)..(1016)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1017)..(1017)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1018)..(1018)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1019)..(1019)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1020)..(1020)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1021)..(1021)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1022)..(1022)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1023)..(1023)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1024)..(1024)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1025)..(1025)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1026)..(1026)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1027)..(1027)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1028)..(1028)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1029)..(1029)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1031)..(1031)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1032)..(1032)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1033)..(1033)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<400> 1405
gctaatgtcg tgtcgttagt agctacgttg gtgcagctac gaaattattg gagtggtctt 60

tcagtggctg ctgtttttga agttgataaa ccgggtttta gtttatccca agatgaaatt 120

gaatttgatg tacggattca gggagaaccg ggttatcaac ttcagaaaat gcgaccgctt 180

ttagagttac tgaaataatt ttctggaaaa acattatctt ttctcctaaa gaacgagctc 240

agcggggaag ttgttgtggc atggtgcgtc tcacaaatct cccacttccc cgacggttgc 300

cctctcctgg gcgacgccct ccgctctgtt cttcttggcg aatttgagtc gagagctacg 360

ggcatgccta tcggcccagc ccaggggagg tggctccaaa aacccaccct ctgcgcccct 420

acagccgggg gggggggggc gaataccccc cccgtctttt ggcggtgact ggtgccggat 480

gatagctagt gtcagatgat agctgcaacg gtgcctaaga ctattgtacc ccccaaatgc 540

ttggtggggt tagtgatggc attgtgccta gtattgacaa gactgtgttc gcgtttgtta 600

caagtattag tcggttggtt gcttggtggt agcatccagg tcttgatata acacgacagg 660

gctttcgtag ttgggtatat ggcctggccc ctcatccgaa ttgattgtcc ctgctcttgg 720

ccctctatta gcgtgcttgg ccggaaggta acgacccgtg gcatggttag atcgggggga 780

cgcaaacagt cctgaagggt ggagtggccg gcccttggta gcctcactga ccgtctgtgc 840

ccccagtctt tctctcccag cctgtgggag aagtctcgta ctatctatcc atggtgggac 900

tgatgtgatg agaggcataa gtctagactc ggcggagcca cgatgatcac taacagnnnn 960

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnncccg ctacggcgag ccgtccacgc 1080

gcgccgtccc ggcgagtcga cgccccccc g 1111

<210> 1406
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160842_G1, chr4:180378032..180379064, Cluster 9

<400> 1406
tacggtggta caagatgaga cggtacgggt aaccaaacat acgataagag aatttgtgga 60

ttcaaaatct attctgcatt atctttttt atagttagat acgactgttg tttctagacg 120

aagggatgca cacatttcag tccaacatca aagccatgtc gtctgtccga tgtgcgcggc 180

gggatgatcc ggacatcagc cgtctcctct aatttttcgt ggacgcacag ctgagaagat 240

ataagtagta ataataccat tgattctatg tagcgtttgg tttcagagct agtggagaac 300

ttatgatgga actgactcca ttgcagagag aggctatgtc cgaaagattt tataaaatga 360

aagccgccgg atggttcaat atttaagtat atttttaga gccactctat tgtatatata 420

atcaatctaa acacacaaca aaccggaacc aatcagatca agggccagag aggcagagat 480

tctgagtgaa cctaggcacc tattatcaac gtcatctact gttcttccag tgttccgtcg 540

gccgtatttt tttgacatga acagtgatcg tcattggcac caactatgta tgtgtcacat 600

ctgccagcgt tggaagatgc aaggcgccca tccagttttt ttgtatcgac gttcaagggt 660

ctccgtgacg ccgtacatgc tacgattgtg ctactcccaa catggcagag gagaaaaaaa 720

ccgatgtcgc tgtcgctggt ggaagaactg ttctgcgcgg ctgctttggc tgatacgacc 780

tgtaggttcc ttcagatacg aacagcggaa cagtatacgt acagccgagc agagactggc 840

gtttggcacc tgctgccctc tgcatgcgtg tgcgtacagg agacctggaa gatcgccatc 900

tgttcttatc tcttccgctg ttgctgcaat ggtggagacg atcggttcgg gagcatgacg 960

ccgtccctga cgtcaaacgt cgtcatgacg agaggatgag agagagtttg cgatcgcgat 1020

cgggcggctg cta 1033

<210> 1407
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161093_G1, chr4:182048449..182049498, Cluster 9

<400> 1407
cattcggtcg actggccatg tccattttac ttcgtgttgt gtcgtgcttt agacttctat 60

tatcgccaaa tagctcagcc caaactttta tgtctaccca cgagcacagc ctgagccata 120

cccgtacggc gagggtaatg gctggactct cgtatcagtt tcacttgtac cctgtcgctg 180

atcaggtgaa ccacgacggc cgctaccgca gtaataacca gtcaatcaat attcgaaaaa 240

actaggcaat caattcatgt gctctgtgtc cgctgtgatg ctgcgtgccc atgggacatg 300

atcgcagaga gggaccatat cgtctctgca cacaatagta gtcgtgctgg ggcgcccaaa 360

acatcttcaa ggaaatacac cagtttcagt ggcagcacag tgtttagcct ctgcgctttg 420

atcgaataga tttcgttaga tttatcaagc aggtcttcaa caaattaccc agggcgagtt 480

caagtttttt taaaaaagaa gaagaagaag aagattgttc tggtttgatg ttgttttcct 540

tgcgttgatt gatatgtaag gctcgcgaaa gcacaagtca gactgtcggg gcattcgaca 600

ctcgacagca ccagactgcc catgcaattt gtagaacgat tgtggcgatg cagctgctag 660

aagacaaagc aatacaacag cagcgggaca ggatgcaggc gtagtgctat ggtggctttc 720

gatgttggcc atcatggagg cacgcccacg aatccgtatt ttcttatatg gcacttgaat 780

atgatggatg ggtgtacacc gatgatagta cgcctgaatt ttccgtgttt ttgttgtttt 840

taccaaaatt ccacattcac atatctcgtg aaactattat tactacgttt ggatccttga 900

tcagcgtcgt gacctatctc gtcgagtgta agaaatgtaa tgacgaaaag aaagataaat 960

taagcaactc agtgttctat ttttaaccat gaactttgat tgttacccgg tcgaatccca 1020

tttaatagaa aaactatcta catatgtaac 1050

<210> 1408
<211> 1092
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16432_G1, chr1:91236617..91237708, Cluster 9

<400> 1408
gcaccgtctt gttgttgacg acgtgcccac gcgacgaaca accagacaag ccttagcgag 60

caagcgttcg tattcttcct tctacctctc accgaacaca tacaaaaatg tgggaagaac 120

tcatcgggtt ccctccatct gaactaaggt aaaagtaatg gttttatact tctctcaata 180

ctgctataca cctctttata aattggccta tgaggttttc taaaaattat tcagattttt 240

aaatgagctt ggttcgataa ttgcaacata aacaaggccc cagtaattgc ccctacaggc 300

tacagcgcct ggccggggag cttctataac cttcgatatt tttttctatt cttcacaatt 360

tgatttattt gtttcctttt tttcatgcct gcatgcacgg actacagtac ggagtatatg 420

gtactctata tgtgaacgtt agtttgggat aaaatccaaa ttgtagatgt aattttatta 480

tatcatggta cagagtgacc ggtgctctat cactgtgcct gccagaggct gaccgagaaa 540

gtgatgatct actcgctatt ttgctcggtg gatcgagttg ttgggccgtc aatcagagac 600

gcgcggtcag gctcaggcgc tcagctcggc ctgcaaacgg aagatagcgt cgcgtgtcgc 660

catggattcg ccggacacat ggccaccagc aataggctgc atcacgacat gacagtagta 720

gctgccgtac ttgctagtcg acgccgggta caggacgctg ctgcagtctt ttgactccat 780

cgggcttggc accgaccgca tcggcgccat gtccatgtag gcgcacatgc cgcggaccgc 840

ggggaaacag ctcaatcccc ggcggataaa gaaaaggcga aggagaaaag gtgcgcccga 900

aaaaaaaaga ggacgtgtat ccatgtgtcg gaataaaaat agatgggtga agatcttaat 960

ccaaattata agtcttttta gacaatgtgt aaaccaaact tatacaactt tggctataaa 1020

taacaatttt attatttggt tttgaagctt aatagtcata tgcatcggct taacttaaaa 1080

aatattttta ca 1092

<210> 1409
<211> 1221
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170646_G1, chr4:231493941..231495161, Cluster 9

<400> 1409
ctgaccgcgg gggacggtgg gtgtcggggc cggccggcgt ggcgtggagc caacaggatt 60

gcagaggaga tctcaatcgc agccgaaccc tgcctgacgc aggccaatca gccagcctgc 120

tgcctgcctc ataacataat tgcgtcatca atcagcacac gcctactaca gtacagtacg 180

tactacgtac agtgtcgcca tgtccattcg gcattcgttt cattctggct acgtacaggt 240

ggtggtttcg aatgaaccgg cagatgaaca gaacaggaca ggtagggttg gtattggaat 300

tggaattcca tggggacgcg acgcgagagt agctagctac gctgtcgacg cggccactat 360

agtagtggag tactactact ctttaatccg gttcaaacat gtcgaagctt tacgcgtacg 420

tacccactcc tacctgcctg cttcttctgt gtgttacttc cgtccgtgtt gtcgtccacc 480

caacgggcca aatgcgaaca aattggagat ctcgtcggtc atgcatgccg atccatccat 540

ccatctatat actaccgtat gatgtttttt ttttgttgct ttcgttggac aggtagctag 600

ctaggcacga cgacgtcaaa aaggcgcatg aatgcatgcc atacaataca caaaggtagt 660

ctgaaagtgc ttggccgaga ccacatacaa attcttgctc gttgaatata gcccagaata 720

cacgtaatat atatatatat atagttaatc aacgccaggt ctgcgtgtga attagactag 780

cctaaaggac gtggcgtcgt acgtcatcgt tcgacaacct tgatgaagcg cctcgatcag 840

catattcaac gctgctgtat atgcattatt ctgcggtcca gtcaaacata tgctgaaagt 900

ctgtacttat tacgtcacac acgtatatat gaccgtcgtc gttatccccg atactgatta 960

ctggatgcaa gatgccaacc aatgagtcca tatctgcgaa tataaataca tcacaccaga 1020

tgtcattttt gattaaaata gaatcagcat aatcagaccg acccaacccg gacctatcgc 1080

gctttcggaa caaacaggct tggtccgaga agtccacaaa taataataat aataaaactt 1140

tcacaccgtg tcctgcagaa gaaacagtag cctatcccga ccttaaagca tgtcgtgact 1200

tcattcaccg cgccgtccag g 1221

<210> 1410
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171183_G1, chr4:234514360..234515421, Cluster 9

<400> 1410
gctaaaaaaa aggccctaga agacatacaa agttagctag cggctagtgt tggatgacca 60

taagacggca gcaagagcca gatgcgcttg tgtgtaagtg taactgatat tctacaagga 120

gaacaaagtg tccatatcta actagttatg catcattccg gcctcttgga gctcagtttc 180

aatatagggt ttggcaggtt taattacacg agaggacgac actgggggta ctatactacg 240

gtgccaacat tgttggaggc gcctacctcg cctcggtagt gctccatgac tcctacttca 300

acctgccgcg atggaccctg cacaacagca tagctagatc tagctagcac tttttgtcga 360

gagcttcttt gttatcctcc cacttcctat gtttcttgat gaaccctatc gtgaacatgt 420

gctaatctcc ggccgatccg attgtcctgc gtatggctgg cagcaggacg gaggatctga 480

agatctttga atcaccagtc ggccgatgct cgcgcgtgcc tcgattcttt tctcgaggct 540

agctagctac ctacaggtga cgcatgcatg catatatagt tgcatctgcg tgtgttagat 600

gagcacttgt aaaagagatc atgtgatgag gggggggggg gggggggaga gagagagaga 660

gaggaggaag acgcggccgg actatttagc tatccgtgtg tgatgaaggg cagtagcagt 720

atatgtgctg ctttgatgaa ttccatggtt ggatggcatg gagggagcga tattggcgag 780

gttcaatcag atgatgtatt tttcttatat ataaatttgc atgcatgaag gtgtgaatcc 840

agtgtctgat tgagccgcgc caatatcact tccttccacc ataagtttac acacagagag 900

gattgcagcg agcgcgtcta cttccaaagg ttagaccact cgttatttcc tcatttccaa 960

attacacttg tctattatac tccctctgtg ccattatagt gttcgtttta gcttttcttt 1020

gtccatatta aaatagatat caatgaatat atatatatat aa 1062

<210> 1411
<211> 1349
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171923_G1, chr4:238115087..238116435, Cluster 9

<400> 1411
ttgtatttgt agctgtaatt attatttaaa tattggatgt gacacacatt aacttttgtt 60

cagtggatat ctattcctat ccataccagt ataccacacc acacctttgc atcccgccgg 120

cgccgagcac cattttcccc ccgcccatcg tcacgtcagc tccatcgtga tcggtcactg 180

tgtctccgcc aaggacaggg acaggccacg cctgccgtgc tgcgggaggg gatcggagcg 240

gcctggtgct ggggcagggg ggcagtgacg tgcttgctgc gttttattta ttttatttta 300

ttatattggg gaaccaacca aagtacagta cagtatagta gtagaagaga acctgatgtg 360

ccatccatcc atccatccat ttgggttcgg agatcagatg ccatcgcctt tttaattgcc 420

ctttggttcg tcaccgttcc accgtccatc cacggatgcg cgattgcgtg gtatcgtcgt 480

cgtcgtcttt tctgctagct gctgctgcta ggagcctagg agcagctggt tcactgtgta 540

ggagggaatg gaatcgtctc tcccaaacgc cacccgccca tccatccact tggcggctag 600

tcggctacac agccaaacgc acgcagccag ccaagttgtg tggtgtggtg tgcttgtgct 660

cccgtcccgc ccgacgagac gagaggacgg cggtcgacga acggtcaaaa gacacccttg 720

ctctgcccga ccgatcagct gccccccctct ctctctctct ctgtgcctgg aaaggatagg 780

gatgctcacg aagcacaggc acgcaccggc caccggccac cgcagcgcaa gacgacgaca 840

cggcactggc agcagagcag aacagagcag atgagaggcc gggagtcggg aggggacagc 900

gtcgccaggt cgcgggagca ataatggctc atggccggag cactgcgcag atgagagaga 960

gatagagaga gagacggtcg aggagaccgg ccggccggtc gctgtcgtgt ccggatggct 1020

ctgccagcgc ccgtggggtg gaggacgcca cgccaggacg gtggccggtg ccgtggcctc 1080

aggtaccggc acatggccgg cgcgagcgag ctggcacctg gcagagtgaa agcgaccacc 1140

agccggcagg gccggtccct ccctgccccc gatccagtcc tgtccagcac tgcttgcttg 1200

cttgcttggc gcgggggtgg gcgaatcaga aaatggtgag cccgcgcacg cttcggctgc 1260

agcggcggcc tgcgctgcgg tagagacgag atcggggtcg gagtagcacc tgggcacagt 1320

cgcgagccgt aaaagatacg ctatacaca 1349

<210> 1412
<211> 1000
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172219_G1, chr4:240345335..240346334, Cluster 9

<400> 1412
tagaaaacat taatcttgta cgttgtattt taccgaaaat accattaaaa aataaaataa 60

aaatatgata tatttcggat taatcagaaa aacatatagc ctttttacca cattttcttc 120

taatttttta ttttttaaat cttgagaaaa gttttaaaaa gcgaccgaaa aagggaaaac 180

ccattttcaa atcgggccag aaacgagaac cggtctggaa accgcggtaa accctgatct 240

caagcgaaac cataggataa cctggcacac ggtgggttgc ttttcgaaaa tcccaataga 300

gacaggctgc gtgccaacaa cactgagccc atggtggtgg tgcacgtgcg catcacagtc 360

gtccgcgcgt gaaaatctgt cgctgatacc cccgatcgga tggcccagtc tcgttctcgc 420

gcgaccccat ccctacggga gcaggaggat acgagacgac ccccgaattc ccaccatgac 480

acggactcct ttcccaaaag cgtccatgac atccaaatcg agcagagcca tcggattcgg 540

ggccgcaaat cggacgactg ctaccgtggc ctggatgttt ctccggtccc ataaatacgc 600

cgcaatcacc cccacctcca aacgctcgct catcgtcgcc ccgcgtcctc tttgcctagt 660

atctacgata cgagcgagct taagttccaa acacccgaat ccgccatgtt ggtatatcag 720

gatatccttt ctagtgcgtg cgaacttaac tcaatctaat tttctcctct attccttacc 780

catttgggtc gattgctgag ttggcaattg gaggcggatc tggttcctcg ttattctgtc 840

gatttgtatc tcagactcaa ggctctattg tgacctgggt agctataact gcgatcaatt 900

caatgagttg ttgtgtgatt cgtctaatcc gttgtgcgct ctggtacgca tttttgcagg 960

ggacaagctt ttgtctgact ccttctcgta caatgggctc 1000

<210> 1413
<211> 1090
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174513_G1, chr5:12661008..12662097, Cluster 9

<400> 1413
tgcaagcata ttcctaccaa attttcttta caagcgcttt ccacgcacga gtgtccaact 60

accacacccc atctaccaag taccactacc attccccca ccgagtcacc aattcatcac 120

agatcccaga gcgaagctgc attgcatgcg gctacgacga aacagatgac atgtcgcgcg 180

cgggcccgcc tccgatcaga actgttccgc acgggagcat gagcatgcgt gcgggtgcag 240

cttttggtgg cttgccaggc ttggcttcgt tcagttcaga tcactgccgc ggccaatagc 300

tgactcgatc cggtgcggcg tcagttctga cttctgaagc agcctctcga tcggtcgcgt 360

gattcgcgtc acgtgagggt cgtcgttggc gatcggtgcg gcgccgatcc atcgaggacg 420

acgacctttc aattgcaata ttgcgagcca actgagtggg aggagtacat cttgtcggtg 480

aacactcaaa tcgcactagt aatcaaagat gttgatgatc aataatcata agctctcgtc 540

agtttcacaa tgtcaaaagt caaaggaatg aggatggcat gcagatccca tacaccactg 600

atggtagcgc agaaatcttc cgagacgggc gtcgagcacg agcttgtgcg ccagtatctg 660

atttttatg aacttttat tatttcttcc ggtgcacgaa caaggaacag caatagtttt 720

atgcgcgtcg gtggagagaa aggtccaagt agatgttatg tgtttgtagt ttgtttcctc 780

cacacatctc acagatgaat catcacatgc tcagaatgtt ctaaataatt agagattttt 840

tttctatcac gagaactttc tttctttatg ttttatttct cctaattata atcgtgtgga 900

atataaagaa aattttgctc ttcatatacc cctatggcta gatagtaatt ttaagtggca 960

tacttcttat ttgttttggt gagagattga aacaatgttt agcggacatc ttttggagag 1020

agagaaaaaa aaaacacaag gtccaagtgt gtgttatgtg tttgtttcct ccacatcttc 1080

tatgaatatt 1090

<210> 1414
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174747_G1, chr5:14092056..14093289, Cluster 9

<400> 1414
gcaagcgggt atcatggaat atataggctt ttgacatttt ttttttgggt gtgtgaatga 60

atgaatcgat ctcctcatca ggacagcata caaaagccaa aggtaggtcg cgtcagctgg 120

cgtatctcgc gcacacacag actcggttgg catcgccgcc atgatgccca tgttatttcg 180

agttgatggg agcaataata ataataatag agctgctgat agcttgctag cccatagagt 240

tttccacgca cgcactcacg catgcgtcaa caccaaaacg acaacagcag gaaaagaaaa 300

gaataaaaca aaaaaggaat atgtatacgt atcgcattca ctcgcatggc tccgcgtgcg 360

tcgtccgggt cgatcgatca ggcataattt tacccacgcc ttttaggctt tttcacaaat 420

ttcaaccccg ccttttcttt cctctccttt tccattcggc ctctcctttt cgttatcaca 480

taagtatccc tatatattcc ttgcccctgt ggcacagcct gatcggaaaa aggcagaagc 540

gattccgatc cgtgcgttgc cactggtctg gtctggcctg gtggacgcac gcaatattat 600

ttgcatctct tttgctgtgt gagtgcatag cgacgacgca cgacgacatg tatatccatg 660

ctctctgtcg ccatgcgtct tctcctgccg atgctgccgc ctgagatgtg aacgtagcta 720

gctagtagcc agtatagctc agtgccttaa agcactaact acacaaggct caaaaggcta 780

agcgtacagt atgtagtgga gtatgtgtag aatgtcgaca tgggatcacg tgccgtgccg 840

tgccgtcttt gtttgatgga tggcgcttct cgctttgccg tccaaggagg aggaagaaca 900

actatacgtt tcgttcttgt tctttttttg gccagtacta gctagagcgg agcaagtgct 960

gtactacgtc accaatttgt agtagtgggt attattattg ggctacacac gagcaaaaaa 1020

gatattcgtt tcttttcctt tattgccgat cgatggaaaa aaaatcccac gtccgaccga 1080

cggatccacg gtgttattac ctttaaaagt tttgtcaaac aatgtcgtcc cgccggcggc 1140

cgtgtctctt ttgttgaact ctagctgtat agaacggttc ccccttccag caagtagtgc 1200

attaggtttc cgacgtgacg catcgttatc tcta 1234

<210> 1415
<211> 1302
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176403_G1, chr5:22774960..22776261, Cluster 9

<400> 1415
catagtagtt gcacacgcgg gcgctagggg tctacatgac agtagctgag agaacgttac 60

agggcgcggg agggggcac agagcacggc gctgaggaga ggagagtgta agcgcggaag 120

gtgaagtcgt ggtagcatca gatgtccata ttaaattttt taatatagaa atatagatca 180

atagatatga ccttctctct tccatcccac tttgtgcata ctgcacacaa ccaaacacag 240

cgagtagcat caggcatcac gcggcgctaa acgcttgcgg tcaaatttaa aaaggcgccg 300

gtgcgagagc gaggccatgt agccggccac tgccaagcgc gtacgtgcgc gcaggcccgc 360

gcccgcggaa cagacaaaaa caaggccaac gagcaacgag ggggatgggg gccgcgcggc 420

gcgcgcgagg gaccaccagc agggatgccg gcacggaccc agcgcgcgag cgcggcgtgc 480

gatgcgatgc gatgcgatgc gagtagcagt aggtgaccgg tgtttcggtt ggtagctagt 540

ggcctacata cagtcccccc gcccggcctc ctgctcgtca tgcactcatg caccgccgcc 600

gaggggagcc gcggtgggcc ggcccttgtc tctcccctcc aggcacagca gagaggcgac 660

ggttgtagca ggttgtacga gtcgtcgtct actcctccta cctgcccctg accgccttgc 720

tgccggcgcc gccgcctcag cgtcacggat cggacgcgcc tagaagacgg gacacgggat 780

gatgtgattg gtaggtgtgc gacctgttcg atggccagag agtgccaggc accggtgagg 840

tggaggttgt acttgtacgt gtgttgaacg agctaatccg ggtgcggcag actggggagc 900

aaggcgtagg cgtaggccgg tggatgttta ggcaaggcgg gcggggagca agactggtcg 960

ggtcgtcgcg cctaataagc tggcgtttgc agtagccatc acgtgtcagt cagcgatgca 1020

gcgacagatg catgctcttc ttcaccatcc gtggattaaa ctctaaaaaa gcagtactac 1080

tagtggtgtg cccccgtcga cagacaggtc attttccctt tcctggccgc cacgtcagaa 1140

gctctgaaga aaccggtcta gtaatgcctg cctgccaagt gccaacacac gctgtgccag 1200

tgccaccctg catatggctc tctgcattct gcaacgatgt ggcgacgact gcggtggctg 1260

gctccaaact agcgtgcgaa aaatccctcg cggtcaccaa cg 1302

<210> 1416
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_178311_G1, chr5:32464110..32465145, Cluster 9

<400> 1416
aacacaagta catctgccaa gcccttagct acgccgaccc agccctcgcc tattccagtc 60

gagcccttgg ccgcgctagt cgatccctcg actgcgatag gtccatcatc aattgccaca 120

aaaccgagag gttattctct ctagctagag attattcgtt ctttaaattt tgtatcttga 180

cagtcgttgc ttcggtgtag gaaccatttg gacgcccaca ccaactgcgg tggcagcggt 240

tgggtcgatt tcgacgggca caaagcacaa ccattccgtc ttccgtgacc tccgcttcag 300

tagctgccat tcttgcttgc cggcttgtcg ttgatgccac gcatcagcgc tgctgacaag 360

tactccgtaa caagttgcac caacgaccgc agcataagca gacgcgagca aggccgtacc 420

cgtcgctatt gagaggtcca cggcgaaggc acagcacagc agcacgtgtg cagaaactag 480

ctactactcg tccaggcacg tgggcggaaa aacttgacaa ccttttggt cgtcgttggc 540

tgaggcgctc agcagccaac gttgctgctt gtaggttgta gtagtaatga aaggacaggg 600

ccggccgatg gctcgcgtgc tgccttgctg cctgtctggt ccgcccgcgt gggacgaaaa 660

ttatacacag atacgcatca tagtgcagga gattcgtctg tttggcatgg tctcttgaaa 720

atcaagcagt agttttatat gaggggggagg ccggcaggta cggtggtttt taaatccgga 780

gataagacca ggtcttggga agatcgatcg ttggattaat atccagcctt tgtgtgtcat 840

ttgctcctga cctcctctat gacatttgcg aagataaaag agattatggc aatcaaagta 900

aaaggagcta attatctttt ggctttcaga atatggttgc aaggtggtca gttgatgatg 960

tgggagaata tttgtaagat gagtagggag tttgattgtc tggctttagc caccgaaaat 1020

aaaggcatgt attttc 1036

<210> 1417
<211> 1277
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_185386_G1, chr5:79850214..79851490, Cluster 9

<400> 1417
gctgcatgca tgcatgccct ctttcatcac acacacagac aaaagtttac agctagtgta 60

cgcctcctta tcgccaacct tgcacagaaa ggttacaacg acgacaagtg tgctaggagt 120

aggagtagta gcatgtagta gatagacttc ctacgacgat tgcaagtaaa ggctcgtgtg 180

gacgtgacgt actgacgtgc agagcggcat gcagtgcagg tcagccggcc gtgcttggag 240

aatttggggg gtcgcattgc agttgctgcc catcccaatt ccatgtggca tcgcgtcggt 300

ggacgggtgg cagtggcact gctgcatgca gcctacggtc gcctcccccc tcagctcgtc 360

gtcatcgtgc gtccactcac tgtctcacta ctgcaccagc actgctagct gctgcctctt 420

tccttctttt ttttccccca gtacaccccg gccagagccc tagcgtaggc ggtagctact 480

actctaacta gcagaaaagg gaaactgtcg tcacagcttg gcagacagac agcgggaaaa 540

aaaaaaggga gatggatcgg agggttggag aggcggtagc aactagcaaa gcagagcaga 600

gagtgagagt cagcaggtgc gtgcatgggc gcatacgcgc atggccgctc gaaagcggcg 660

tgcatgctct gcttcgagct gagccgacag ccgaaaaaag agagcgcgga aatgtaaaag 720

tgaaatggca ggcagctcta cacctagcta gctataggtc tagtaggcgt agctagtgta 780

ctcgagccca tactaggagg aagagtagtt ttttttatt aatgagctac tgacggtcgg 840

ccgtcggaga aggtatgtgc atgtcgatcg gcgcatacac gtcgacgacg ttacacagcc 900

aaggaataaa taaataaata gataaataaa aaggagagcc atactagaac cgaagcaaat 960

aataataaat cctagtacgc gcgcgcgggc accatgcata ataaccaggc caaaaaaaaa 1020

ttctctcgaa aatagccggc cggccaggtg cagctagcac gcatctgcta gctagacacg 1080

gcagtagcgc tatctgtctg catgctagag actgccacta tcagagctgc tacttctggg 1140

ccattcggaa tgagagtact actccgttgt gtgctgcatg cgctcgctgt gtgttggagt 1200

tctggcggca gcagtaaata tctcaaaagg caacaaagaa tatatataaa tatataagat 1260

tataagttac caagtat 1277

<210> 1418
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1912_G1, chr1:10021311..10022323, Cluster 9

<400> 1418
tgactatggc tatttgcatg tattaaacga tctagagata gttaaacaaa ctatttggct 60

gtccgcgtca ttgaacatac agataacttg tatgtggggt tgaacatacc tttacataca 120

tggcgtggag cagcctccga tccaaccaat gaggtgtttg ccttgtggtt acctcatctt 180

gcttaggtta gtgtaagcgg aggatctcgt atcctacttt tcaaagctct cgtgtactga 240

aaacggtgtg gattatttgc taaacttgtt tcattccaat gaatttgtct ttcttcatcg 300

atgttgtgac atgtcatgag catacggagt atttgctcaa gttgctatta gtttatttca 360

tactatatct atgaaactct catgacaacc tacacaccaa gattggtcat tgtgctgtgt 420

gcaaatttat agcattaaac tacgcacact gtcagggtga tgtttaccca gaaaaccacc 480

ctgcaaccct cgttaattgt ctataggtga accggcacca atctgaactt tcgaacgcat 540

catgctgtca tgcatcacgc atgcctcaac tctcgagtca aaccatgcgc gttgggtata 600

cgatcaaaca cgagctagta gtactagcat ctatcgcctc aattatttgt attaacacga 660

ggacgaggga aatgcgaggc gggcaacgca ttcctttcac gctgcctgtg cctgcaaatc 720

gcgatgaccc ggaactggaa tgacaagtcg cataggatag tcgaccggat agcatgtcag 780

gtttggttag ctcgcgggtc aaaatgttac tagccgctcg cgtagcgctg aagggttgct 840

cggtgcagtc gatcaccgtc catcatcgac ctgatactga ctgcagcggc acccgctcgt 900

catctctagc aggccttgca ttgtttttat atattgtacg tttgtagagt aaaatttaaa 960

atggtaagtg atatagaaag tgagataaga agtctaatat tatagtcaca ctg 1013

<210> 1419
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198287_G1, chr5:164142830..164143868, Cluster 9

<400> 1419
tctttaccct aggagagaag tctacttgtt agacacggtg atttgtgctc atgaagattt 60

tcttattgcc accgtcgaag agcccatctc accgacccag ctccatcaac ttcgactaca 120

acttctgatt acatggaggt tgaggtacgc ttgggttagg cagatggagc cacatccatt 180

tggggttagc ctttttaga tggggatgtg atctaaaggg atattatgat tgatacgagc 240

ccctgtttca tccagcacta tactatctgc cattataggc atgatggcat tccactctgt 300

ctttgtcgtg gtgtcttcac taggagggga tgggttgtca cgtttgggtt ttcccttgta 360

ctataaggac actacattca taaaacagac aatctcttgt tttggtcagt tgatccgatg 420

gaatggtgca gatgtttcaa tggctaggtt tttgtccaaa tgcttattta ataacctaga 480

ggatgtccct tgtacccttg ttttgaaaat aagtagggac ctagatggtg agacctattc 540

gtgggtagtc catgtataca tgttgaatgt caatttcttt gatggggcgc ttaatgatga 600

ggttgatcca cgaccaaaca atggtaaccc ccactctctc cttggcctag ttttagagta 660

ggtggtatag atgtttgatc aattcatgga ggaagttaac aatcatccac aacagcatca 720

acccatagcc ccaactcatc gagggcggaa acattattct tgttgcgatt gtccacacct 780

ttgtcatggg tctggatcca cgtcgtgaga tggctgtcta tatgaagccc atggaggagt 840

agtgggtggg ttctccaagt ctaaagagtc tggtctcaaa agttcacaat cttgctaata 900

tggacaacat cacattcaat ctttcccata gtttggatgg cgcgggtgcc tccatctcag 960

tctcgctccc ttgttttaaa gacgagcctt caagagtcta gggtttcaaa ttccaaacac 1020

catgtctgtc agtgaaagc 1039

<210> 1420
<211> 1015
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198700_G1, chr5:166409127..166410141, Cluster 9

<400> 1420
tttttctatt gctagattct tataaatttt tatgttagtg gccaagatct ctaagaggtc 60

tagttttatg attttgccta catgggcctt tggacttgtc taagaagggg cttgggctcc 120

aacctagagt gccttggaga cctggagacc cttgatggct gtgtgggcct caagatctag 180

atcttatgcc tagggcacta gaggctagaa agccttaggg aacatgatgg ccctaagact 240

tggtcccttt catggagggt gctgaaggat ggaagatccc tggatgtcga gagggcccaa 300

gatctattcc cttggcattg atgacaccaa aggttgtgaa tgtcttagtg actaggaggg 360

cctcgagacc cgcctttgac ctaaaaggtg ttaaggctaa gggagcccta aaggccataa 420

tggcccaaag gttaggtccc ctagcattga gagccatgtg cttagtatga gctgagcatg 480

gggccttagg gatatgtcga tggtatcatt tgagccctct ttaggtttcc ttttgatcac 540

tagatctttg ggaggcatat tacacacatt cgacggtgtg gtcttccaat aaccctaaca 600

tcactgtttt ggagggatct cccaccccta gcattgagat ccttgggctt agtctgagct 660

aggcatgggg cctcagggat atgtggatgg tatcagctga gccctcttta ggtttccttt 720

tgatcactag atctttggga ggcacattac gagcactcga cggtgtggtt taccaataac 780

cctaacatca atgttttgga gggaatccca tcaataagtt gatccttttt agtggaattt 840

cattgggacc tttcaataat attgccttct tgagaggcat ttctaggttt ttctcctata 900

gtcttttgga gagcttagct atttcatgtg tctggcttgg gagttgggac ttagtcgcaa 960

gctaaataac tcggtgccat agtcatagga gcatttcaag ttggctctaa gtgcg 1015

<210> 1421
<211> 1283
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200519_G1, chr5:176908836..176910118, Cluster 9

<400> 1421
taggtacatg taccgtatac gcatgcaaaa ttagttagaa caaaacaaaa atatcttttg 60

aatggtgatc ggtgaacgtt catggtaaca tgcgtgttct gttggctgat cgggtgtcaa 120

tatatgttta gagtcaataa ctaaggttca aattctcatt tacacataat ttttagtaat 180

tttaatattg aaatgtctga gcacaacgtg gaacaaggaa actggctgcc aaaaaaacgt 240

tgtaatcaac agcgaacgtg gccaacaaaa aaaacacagc atgatgaatt catcaggtaa 300

agtctagcca tctaatcgat gagacgactg atccacttga actgattccg cgacccgact 360

ggaaaagatc tcttgcgcgg tcctcccaca gatgttttct tctctcatga caggactgca 420

cggcgtactg ggctactggc tggttggctg gccgggttgc gtttgcatat ttgcaagtac 480

cagaaattca gatcgccgta gctacacaaa gtaggccaca tcccacatgc acgcatgcaa 540

aagagtacta gctcgctttg cagagggagg ggtaactgga actggaactg gacgaggacg 600

aacatgtgcg tggcggtatg cagtgtgctg cggtgaggcc cacgtacttg tataatttgg 660

ctgtgacgat gatgcatgca tgtgttgctt gctatgctgc ctactagctg tcgtctgtgg 720

gagcagctgg actgcatctt ttgccgtatg ggcgcttgac cggatagggc caaacaggat 780

atgcgcgcca accgtcgggt caacccattc ctgtttcctg ccacggcgag gctgttaggt 840

tcactgtttg gaatcccaag gcagcgcagc gcagctactg ctgtattctt ttcggttcgg 900

ttcggttcga tgcatattgt tctcgtacgt tctttactga ataatacgta atgcatgggc 960

ggcatataga tacaccaaaa ggcacttgat ttttttttt gctatgattt caagtatgtg 1020

taatccgcgt ttgactactc tcgcctacag taattacgaa gtaggagacc ctgcccccac 1080

acagccggcc cgaacgcgct gctgtgacgt gttgttgctt cgccgccacg tctctttctt 1140

cttccctcta agaaaaaaac tgcagcacac agccccccgg ccgtctcctt tcgcagtata 1200

taagcacatc gtctccctca caacgtactc taataaaatc gctcccctct tgacaacccc 1260

ccccccccc ccccccccaa atg 1283

<210> 1422
<211> 1313
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202979_G1, chr5:190717228..190718540, Cluster 9

<400> 1422
cctagaggtg aagagtttta acctcgacaa ttgcactcta aacttttga caataatatg 60

aaacggggaa aaaaccctaa caatatggtt ggagcatata taagttctta ctgaaaccaa 120

gtaatgacag aaaaaatcgc acagtgatac acgccacaat taacagatat acaatgcaat 180

cgtagctgtg gtcaactagc tgattatatt attcttcaaa atgctgaaaa gggtctaaaa 240

gaggcttgga aagcgaagca ggtaattatg taccgcgcgc ggaagtgggg ctgcaaaaga 300

tgctggcaaa caaaacacat ggctggtggc agctgctgct gctgcaggca cgcacattga 360

tgtttccaga ttgagccacg gtttgctgga ggcaggggg cgaattccta tcattgcgag 420

ctgctgcaaa agcctcttct tcaggtcccc cgtagtatgg gccactggac ggtccactgc 480

tccccgatgc gcacatagta cggtgtcatc aaatacgtac tgctgatgac gctcatgcat 540

attatattta ttcccagctc acgtttaaac tttcatatgc taaatgcact gtcatcgtgc 600

aaataataat agtgcatgtg tactaggctt gtttggttca caggctgaga aatccgcctc 660

gtctagtagg caacgatctc aggtgtccga tttcagatgc ctaggactag attgagttgt 720

ctaccggtgc tcccaggcta tggcgccgac caaaaactct aagagggtgt tcatttccgt 780

ttatttcaca tcggcgcagc gactgagaac tgaataatct ttggcaaacg cctcccgatg 840

agaccatgat ttttctgcct acagcccatg aagagcaaaa ccaacatttg aactgcacca 900

ctgattccct atgtcgccgc cacggcgccg gccggctcca aacgcaaaca gggccaaaac 960

tagctagcta gtggcaggcc gggtcgtcgg ctgtgctgct ggcacggaaa taattgacaa 1020

gtcgcacacg ggtggcgtgc tctgctccgt gcccaagaaa tcaggagcga gctgataacc 1080

gtgaacagga acagttgcgt acgtacgtat attctgccgc gccctgcgca ggcaagcagc 1140

ggccgcagcg gcaacaaaag aatagaaacc ctaaagtggc ggcggtgtcg tagcttacca 1200

ctgcgcgcac acgtcgagac gacagcgtcg gagagatatg atgcatatgg tagcatgcgt 1260

gcatgcatgg agcaggccgg gccgccaaaa cgacgcaagg tgacaacaag gag 1313

<210> 1423
<211> 1388
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204800_G1, chr5:201110846..201112233, Cluster 9

<400> 1423
gcgcactcga cgacccgcgc gcgagagacg acgcggctgc gttcaaaaac tgaggctggc 60

tgtggctgcc ggcctcatcg ctatcttccc gaccgtcagc gaccgggtac gcgcaggcga 120

cgtcgttgcc tgcgggcagg cgaatctcga ccgttgacct cctgtacatg cgttgccgcc 180

ggagtcatac aaaaacaaat aaatacagtg gcagtttaaa actagcgtca ggtcatgaga 240

tgcgtcgtgg acagtggcac aagatgtatc gggtgccgtc tgtcgctaat gttgtatttc 300

tgttataaca aataaataca gcacgcaaca cgcagcggtt gtatatgaat gtggccgcgg 360

tggaatttgg taaggaaaaa aaaaaaggag cacgcgtgca cgacctttt tgaccgagaa 420

aggtatcgtc gttcgttggt ggacgtgaga atcggagaga ctgagtagtg gttggtctcg 480

actctcgact ctcgagaggg ctcaaagctg gatcgtgtat gcggcatgag ccgctggtga 540

ctgagatgtg agaacacggg atggagcttc gtcatcgagg tggatagcat tattatacaa 600

tacaaagaag atgaaatgaa gtgacatggt ttttatattg ctccaagtcc aatacgcgcc 660

agcacacgca aaggcaaagg gagcgttacg tttacggacg gcaatgctcg ctcacgatgg 720

ctttcaaac ttgaaacttc aaacatgact actactacaa acatactacc tgctgttgca 780

tgtgcatgac cgcttctcca tttgaagaag cctgcgtagg tgtgcggtgc gctaccgagc 840

ggtgaccagc agcgtagggg ttgattgaca cttagcttga cagtgatcag gggactaaaa 900

cgtcgtctta actttgacgg tcgtccgtcc cggcggtcca gccaggtgct cgtccctgct 960

gatcgcccaa caggcaaact tcggatgcag attctcttca caccgcacac acgcacaaat 1020

tatcgtacgc ctgcctgctg cgtgggtttg acttcgccaa acggagcaat cagagacgtg 1080

cgtcagctag ctagctcagg gtgttgttac ttgttagcgt gcgtcggaac gacagagagt 1140

caagggcggt ttagaccgtc tccaaccatt ctctctaatt ctccaaccat tctctctcaa 1200

tatatttagg atgttcaata tatgaactta ctatgtttat gctgtttatc tgaccagtat 1260

aagttatgtt ttatatcagt gtccgatgat tgaaaatcgc ctacttttct cgagtgcgag 1320

aggagggtaa cgaataggca gccggtagta ctcgcgtcgc gtgtcaggac aggaaccgtg 1380

gtccgtag 1388

<210> 1424
<211> 1161
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206146_G1, chr5:208551499..208552659, Cluster 9

<400> 1424
ctagaactaa atatgattca tgtaactttt agatatactt tcattgtctt taaatattat 60

gatttgaatt attatgtcct aatctgtctc tatgactttt cctaagaaat tttagaaact 120

tagagatgtt tttgttgttt aaaaacttta tagatatcca tttaattttt ttactaaaat 180

ttgatggaac catttataag gctgtgacaa cactatttat agagtggagt ttgaaataga 240

agatgggata agtaatgttg ccggagataa cctaactgac ccaaggagat ttttaaatgg 300

tttatttttt tcaaaaagac aaagcacaac acatttttat ttttttcaaa aaaatatgaa 360

ggttgattat agaatataaa atataaaaaa cgtgtgttat gttggctaaa cgtaaaggcc 420

tgaaattgaa tccctacttg aactgatcgg cagcccattt aaaacattta taggtacact 480

acttgaacta tatacatgca acaaagcata ggtactacac aatcgaccta cacgccgaat 540

gagcccacta gcccatatat gcctccacaa ttggaccgca ccattgcagg tgcagcctgc 600

aggagtgcag gtttgcatcg caagcagcag acacagggca ctagggcagt cacacacaca 660

gcagtcgcca gcctagcatt tgcaagtaag atcgacagac aggtcggcac gatctgctgc 720

tgctcgattt gctgaagaga ccggcggcca cgatccagaa gaacacaagt catcggctac 780

ggacgggagt acagtacagt acaggaccaa ttaagtacag tacaagcggc atcgatcgcg 840

cctgccagac accggagcag cagttcgcgt cctccctccg gccgtccggg cagagcgatt 900

tgccttgtcg gctcgccgcg aaataaatgg gcgtacacgt ttgcgcgtgt cgtatcgtac 960

cgtaccggcg taccgcggca acggcaagct tcgtgccgct agctgccggc tgtctctagc 1020

gcgggccgcc gctaaagacc ctttgcgcca gtggacagca aacggaaccc cccatctccc 1080

gtcccgtcct ggacgaaaca gacgccagcc agatgcgcag gaacttaaaa taaacaacgc 1140

gagcagagca gcgacgataa a 1161

<210> 1425
<211> 1193
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206891_G1, chr5:212220015..212221207, Cluster 9

<400> 1425
gacgaggcgg tgttgtagac ttgtagtgca cgactgcact gcacgtacgg ccggccggcc 60

ggcgaactga cgacgatgat gggggcgaga agacatgctg gagaaggagc gcacgtgctg 120

catgcgacga tcgaccgcgc gcatgcagcc agctagcaga ccccagaggc ccagaccagc 180

ggccggcggc ggcctgaggc gccacgccga cgggccgggt cgacgagcac gtgccctgct 240

tctccagcac ggtctgctcg ccccctccgc atgcacgatg gagccactgc acgcgaagct 300

cgctgacgct gaggcacaca cagtcacaca cacacacaca cacacaaaaa aaggaactgc 360

ctggccgatg agctagacga tcgaccatgg gcagggcagc gtggcgcact ggcgctggca 420

ctccgagtct ctggcaggcc gcaggcgtgt agtgtgtgta tatataggca gcaagcttgg 480

tcgtagtggt gtgtgtgccc gcggatatct agctcgaaag caccaagctt ttgggtgaag 540

aaatggaggc cgggctcgga cccggacctg ctggctggct gccgccgccc gcctcggatg 600

cctttgctga gactcgagac gacagacgac gaaacgcagt gggccagtgg aagaccaccg 660

tacgaattga aaacgaaacc tgggatctcc gtccatccgc gccctccata gatctcccct 720

ctccctcccg gattgcagtc gctgtcccag ctgcattctt taagtttgaa acttctcgtc 780

cgcttcttta atttcacgac gatcgacggc ggcgcaaatg gtagctaatt taaccagctg 840

atgagagaca gagggcacgc gcgtctgccc ctcgcgtcgt taccgccagt ggccccgtgt 900

gtcgctgtgc acagtgcacc gcatgttcta agtgagatct gaattgatta tatatatact 960

gcttcatagt catagtagga atcaattcag acgacggaga cgatgagcta gcagctgaga 1020

tcgcggcggc gcatgcatcc gatccatgtg ggagcgggag cgggcgagca cgcgagcgca 1080

tgccggacag cgcggcggcg ggcaaggttg tcggagcctc ggaggcggtg gccggggaca 1140

gagcatgcgc gcgcggggca gcggcgacgg gcggtatctc tactacttat ata 1193

<210> 1426
<211> 1115
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207127_G1, chr5:213273749..213274863, Cluster 9

<400> 1426
gggtctaacc gagtgggcag gatcacgacc tgtgcaactg cacggcctgc gcaacagcca 60

cagatgatct acgccatcat ttcgcgactg accgccgccg acttgacgcg tgcactgttc 120

gtctgtttgc tcgccaacac cagtccgacc cgtaccgtac gtgcttgacc aaacaacacg 180

gcccgtctgc accgcagagc agtgcacgct gccttgctgc atggtgctgc gaccgcttcc 240

gttgggaact cggaagccgg ccaggccgcc accaaggctg tcaaaaagtt gtggtgaaaa 300

agaagaagaa aaaaccccaa gcggctgcac actgcacgta cgcagaagtt ccaggaactt 360

tgcgacttgg gagggatggc acgtcacaca cacacacagc atcagtgtac tgtatgaaag 420

aggaaacacc acatgcaaga tccgtcgaga cacgtcaggt tttgtttgcg gcctcatgca 480

ggagctggat acacggcacc gatcatcact ggtcagatga caaagacgta cgcgcaggaa 540

gaaggctacg atcctgtggc caggaacagg aggaggacga cgcacggagc accgggccgg 600

gcgcctgcct ctgagtgccg ccgacgaagc caacgcttgc acgccagaaa tgggcgaagc 660

ggaacacacg gttgcttccg tcctcggcca acgtaaacct aaccctcacc tcacccagcc 720

cctgcttgct cgggacgcgt gccgcgaccg aggcacgtca cgtcacgata ggaaaaagcc 780

gagctcgagc gtgatgggcg gactggcagc gagtcggcga cctgtaggcc cgccgtagcc 840

gtgactagca aagacgcgca ggtgatccgc cccgcccggc gcccggtggt ggtcatgatt 900

gccgagttcg ttttctgtca cctccagcta atcatgggca aacccatcaa cggcagtgcg 960

attagccgat tagcgcggcc acgatggcgt catgattgcg ccaatccact ggtaaagtgg 1020

catcgctttg gtttttgttt taatactgct gctgctgcac accaagagaa tgaccagcag 1080

atcgtgtata tgactgtagt cctcatacaa aacac 1115

<210> 1427
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207244_G1, chr5:213741968..213742983, Cluster 9

<400> 1427
attgctagta gtacgtagta gctacaacaa tcaacaatag atatagtatg atccagcttg 60

aaattaaaag gctatatatc tacagtcgtg gcgggaggag ctgagtgtag ctaggcgctc 120

tccattaggt ttatttatgg gcgtgtacac atggtaacag tgtggtagta cgtacgtact 180

tactatagag agaagagcta tcattcagtc gtcgatcggt ccagcaagat tctcctgctt 240

ttgctgcaca tttagttgct tgtcgtccat cggcgaaaag agcgcgccgg gcctagcatg 300

catgcatgta cacagatcga aggaggacca gtacccggcc gatcgatgat catgcatgtt 360

tgatttgatc ctcgagggat tatgggatac gatgaattat tggagtatat actgaagaaa 420

agaagtagat agatcgatcc atatccatcg agatcgatag gtacaagatg ctaaatgaat 480

gacagatcaa tcgatcgtgt gtctaatatt atttgagcac gagcatgatg attcttcgat 540

cgatcaataa tcaattggtc gtccggccaa aacatggata tattaattga gacacacagt 600

gccggattac aacacacaca cacagtgacg cagtgtgcgt cgtcgttact gcgaaataaa 660

tccgcagtct agagacatgc atcatcactc gacgtgtggc cccgtcgacg tgatcgcctg 720

ccttgctatt acgtagtaca aacagatgta tagtactgta cgtttaattt tggatcggag 780

agctagcata gcaggatgga atggaagaac ccacgtggtc gcgtagtacg taatgcatgc 840

cttacatata tttactacta cgcgcgctac atgcacacac acacgtaccg tacgtactgc 900

tactcctcgg taaagagcta gagatctcga tcatgcatgc atgcatcagt aggaccatgc 960

atgctctcgt cccttcctct ggcgccacgc acgcttctta ttgacgacga tctcca 1016

<210> 1428
<211> 1397
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207324_G1, chr5:214274062..214275458, Cluster 9

<400> 1428
cttgtgccgt cttcatacga aaaaaaaaga gagaaccact ccttgctaac ccagtggccg 60

aatcccgtac accggatttt tgtgctgcgg cagactgcag ccttgaagaa cgtcggacgt 120

gctctgctta catacatttg ctcaggcgtt gcccatgccc ttcatcgatc aagcggatgt 180

tggaacatcg attagtttac acacatgttg gtttacaggt ttttgtatgc gcagattgtg 240

ctctctgctc tgtgcaccat gcatctcgca caacgtacag aacgcgcatg caaattcact 300

agtttatttt ttttcttctt ctctgattta gcatatgtga tatgtctgca aaaaaaaaat 360

gaaatttata tcagcttata cgcggaaact cgaatatagt cgcattattg tttacaggct 420

agctgccttt gttgagcttg agcgtgttcc ccgttgcgtg ttcgggtttt ttttctgagt 480

gttgtagcta ggagattagt atcagcagcc caggagaaaa aatgtgctgg atctatgacg 540

atgctgaagc tctctgcctg aaaaaatgtg cagcccgtat atgaactggg cctgcggggc 600

taggcctatg tgggccttac agctcgatcg atgggttagt cagggtttca tcatcgtcaa 660

ccagatagaa ggctctcttg ctcactagtc actcctccgt aggttagcgt atctagctag 720

tactagcagg acacgatccc agcagacagc gcgctgtttt ccgtgtccgc cagaaaacgg 780

ccccgcccgc gtgcgaggga aactgaccag gcgcaggcgg accggaccgg aggacgcgag 840

cggagaccga ggggaattat tccggaatct ggtaggcggt agcggcggca gcggagccat 900

ccgtgccgtg ggcactggca tcccaggttc cctgtcgcgc cggatctttt tccaccggtg 960

cggatgcgga ggagggcgcc agccaatgat tcggtccggc cgcttttgcg cgcccaccca 1020

cgcaggagct tgtatttgca gtgcagcacc cgggctgatg ttttccgccg cgcctcccgt 1080

tctccctgtc ttttttttc catgtactgt agcagcggcg cttcctgctt ctttcttctt 1140

tctttttgt ttgccccctt tccggaattg atgtcttgaa agggagacga gtcgagtaga 1200

cgacgggtcc ctttacatgt atatcagaat caaagcaaag aaagcaagtg ctggtagtga 1260

gtggtgcacg cacacgcggc ggtagcgttg cgtggatcca tcgtttcagt tcagtggcca 1320

ggggcgggca caccgcgggg ttggccaatc atcatcaaaa ggaatagaat tctcgtgctg 1380

tagctgatgt atacacc 1397

<210> 1429
<211> 1238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207499_G1, chr5:215071525..215072762, Cluster 9

<400> 1429
agagcaactg tagaagtggt ggacgctgac gtctaccttа tcagttggtt gttcctcgca 60

atttgtccgg aacaatttcc ccctgctttc ggatacacgg aaaaaggtgc acatgagatg 120

agaggttttc agctgtaaag agaagccacg aaagccacgt ttccttcctc cttgcttttc 180

tttctgcggc atttttattt cattttcttc gtttctgact tctcctcttg tgtggttgct 240

gctgtttgta ttgtacgtgt catctgtcat gggatgatgg agaatgaggt gcagactgag 300

ggtcaggttt gagatagatg gatgttttca gagctgaggt tggagaagtc cgccagaaat 360

gctctggtcg tatgcgttgt gctgaccatg gttcttgtcc atggtgaccg cagctgttgg 420

tatcttgcat gcatgcgtcg tcttgccatc ccatcacctg atctcgtatc ttgaaccaaa 480

ggagctgagc ttctttaggg gaagaaaaaa actgaaaaac agtggcgcat ctctcctgaa 540

caacatgatc catatgggtg cccagcttcc aagaaaaaaa aaacttcctg gtgctagcta 600

ggcataaata caggacaatg tagcatcatc ggataagggg aatctgggtt gatgcaattc 660

ctagggaggc atcgtataat tcaggaggca aggatggagg tgaggtgacg gcatggcatc 720

caattggcaa tggccttatg gccagaatgt acctttctga tacctaacac tgccattcag 780

tggtggtgga cgtggtgcat attcactgct gcatcgggaa cgggaaggaa agagctccgc 840

gcatctgcat ccactctgca cagtttctgc atttcctccc tccctccctc accacgtcca 900

ccacccaagc tgaatcacca ggtcaatgga ttcctctggg caaggctagg ctccttttt 960

ttctgaaggc tgaagccggc gccgccatcg ttcgtgcacg gcaccctcct ctccggggct 1020

gctgaagtgc tgataaggaa tctcaacact cccctcaagt ggggagcaga ctgaaatgcg 1080

ttgagcacgt gtccactacg tacctgcctc tgtatctgta tgcgatgggt tgcgtcctcc 1140

atcactgcta cgtacgtcac atagacggga gttcatcttt tcttcttcag ggtactgtta 1200

cagggtccct ttcaggtcat catcatctgc ctctcact 1238

<210> 1430
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_212845_G1, chr6:31431184..31432328, Cluster 9

<400> 1430
tcgagctggt gtgtaatgac agcattatag atcaggaatt caggacattt accctatggt 60

cgaaatgtga ttttcgttcc acctaagata taaacatgaa attttggtcg aaaatggcta 120

atataggaga agacaaaaaa ttagttactt tggctaggca agcagctagt tatacagttg 180

tataccaaat acctgtctcg aaagtaacaa cggtccaacg tccaagagca agactagtgg 240

tttggcatgt tgctcccagg tcagacaatg catggccagc gtgggccttc ctctagccta 300

cctgcaaacc aaacctgata acccttcggg caacccaagc gagtcgagta gtatgcatac 360

atgtcagagt tggctggcct aggctagccg tccagagtcc agacaccaca aggaaaaggt 420

gcctgccgtc tgggttagaa caggtgacaa gatgggtact gccatggcta gctgcatgca 480

gggacgacga tatccatctg aatttctgtt cgatttgtat acacacacat ttgaaaagta 540

cacgcgggca agaaacacac gccgcccagc ccagcccaga tagcctcgga gcgttaattt 600

gggcacatcc gatgatccga cgatacatgc atgttgctaa gcagttccat ggctccttgg 660

atgcttcttg cttgccacct cggagaaccg agcagagtag ctggaagaga gggaagagca 720

acctgcatgc atgtgtgagc atgtgtttgt cgtgctgctc tgttggtcgt ctgcaatcct 780

cctcctcttc gtcgtccagc acgatgggac cggagagaga ccgacccaag gagcgagcgg 840

aaaccgacgg cggtcaaacc gaagcgcctc cgtcgaaggc acacgtacga cgtggtgggg 900

gcacgctctc caagtcaagc tacaaacatc caacaatcct gccgaacttt tttccgcacg 960

cagcggcaac cggcaggcat catcagaagc gcaggagagc acatcgcggc cgttcgatca 1020

gaccgggacg aggcaggcag cagcagcagt ggtcgtccaa caagtccatc tcgatgatcc 1080

agctacttcc tggtgtgcgt gtctgtcttg tcgtagcgga ccgtttcgtc tgaacagcag 1140

atgag 1145

<210> 1431
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_2164_G1, chr1:11219739..11220900, Cluster 9

<400> 1431
ccgccgctag atgtaatata ctgctcggaa ttgaaagcaa ttgagcacgg catgaagcga 60

cataagaggt gcgctttgta gtctatcaag catcatgctt gccgagttgt cgagttcata 120

ttgtgatata agttggattt tgcggattag ttgccaaccg tattgatttt aaacgagttg 180

gggttcttag tttattatag acataagcat taggaattaa gtgcatttca tacgtaattg 240

tctagttttg aaccttggct ctaattctat ccaaatttag cacctaacta tcatagccat 300

ttgactttga cccatcgacc tttttaggtg atctttgagt tgatatgaca atatgctttc 360

ctttatttgg tttctagtgt cattgataaa ttagtggcac cataattgtt agcgctcgaa 420

gaaagttata cccctagttg ttgtcaaaac acatttaagt agtttaatcc gagagactaa 480

ctttgagatc ccatcataac aagaccaccg ctcctagatc ggccttgagt cctagaaacc 540

tcccctggcc tttgccaaat gggagtcctg atactaaatg acataatata aaaatgttca 600

gatggaatga ctcctcagtt gcaaaagggt ccggtggcct ttcgggctgc ctagatactt 660

tgaggcctcg acccctagtg ctctagaaac tctaagggta aaatatttaa gtccccaagg 720

caccttaatc catagggcac tgactagaga tcaagtgctc ggggcaccat gccctagggc 780

accatgggac taagtcctcg aggcatccta tgtcccgagg cacttataag tataagtctt 840

cagggtcttt catgtctcga gacacttatt agtataagtc cgcgcctcgt gtcctagatc 900

acttataagc gtaagtcttc ggggctcctt atgtttaggg gcactataat cccaagtctc 960

aggtgccctt agtgtcctag gttaatatgg taatgggtgc tcaaggcaat ccatctcctg 1020

agcaccaaca aaacttagtc gtatgaggcc cttcgctagc cctagggtcc ataaagagtc 1080

tccaacctca tactccgaga gtggtcggga cttgggctct ctagagtttg gatccccta 1140

aggagctaag cacttaggat ag 1162

<210> 1432
<211> 1077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_217718_G1, chr6:65926463..65927539, Cluster 9

<400> 1432
acgcctttgt gttttaaata tatagcagaa tgattaaaaa atgctactag tcaaaatatg 60

gcaggtccag cagcaagggg aaccgaataa catggcaatc atcgtgggac caattgttcg 120

ttggtgcctg aaagtagaga gtagtgttgg tctactctca aatgacgcgt tgatcgtcgt 180

gtctgatctc actgatggag tagcccgaga tcttccacat gcccgcgtaa aagcaggttt 240

ccacggcttt ggccagacgg agtgcacccc atgatgatgt cctttggtaa tctatgatgc 300

acatgaagac tggagaacct acgtgcggtc agtgagcgag tgaggaccgg tacgtagacc 360

tttgtttctg aaaacgaaaa aggcaaaccg ccccccccccc ccccccccctg ccgtgtgcaa 420

tctctagtaa actacttact ggtcactaga gcagagtaca tgaccatcac gcatctgaag 480

ctgctagcta ccagtgatca tacgaacaaa gaaaaggaca gcgcggacga caggcccgcc 540

tgccccgttc tcttccatgc atgcagggca gggtagcgta gcgcatcagt tagttgcgaa 600

gcaaagcaaa gcaaagcgtc cgcagtggaa tacgtctcct tccttaccgg gccaagtgtt 660

gtgttggttg cttgccgacc tgtggcgtac agtacgcctt tcaagtttga acacgtacac 720

gcgctggacg tacgctactt ccccaggcgg gggcggcatc catccatcca tccagagtca 780

ctaacattgg tgtcagatta ttccctacgt taatcccgaa cgacccccac cgagaaatcg 840

aattcgccgg acaggtggcg cggcaagtgt atccttcttt cctcagcaag cgctctctgg 900

gtaattagcg agagctaatt aacgggccac tacgctcgct ctcgctctag aacgaatcat 960

cggcgaataa gaccaccgct ataattacgt cgccgggtgg tgcatgcttt gacaaatcag 1020

ttgtaacggt gcgcgcacta cgctcgcgcc agcgtaaacc gcgcgcgttc gtccacg 1077

<210> 1433
<211> 1349
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_217719_G1, chr6:65927573..65928921, Cluster 9

<400> 1433
cgtctagaac gagccagaca ggaggccgcc gtccaccgcc acgcactgaa gcacgcacgt 60

cgtacgcccg ggtgacacgg cgacgccggc gagagcttcc ccgccttctc gccggacgga 120

caaacatacc gcgacggcgc aaaaaaaaaa aaaatcaaac gcaggtttcg tcgctagcag 180

tagcaggcag cggccggcca catggcgaat gatctggcgc cgggacccag ggtccaggtg 240

cgaggcggtg gtggtgagcg tccacgacgt gcgtgccgcc gtcttctgtg gcgatcgacg 300

tgacgtgctc gctgctttca gatgctgtgt cgtcgttggt gtctgtctgg gatccagcta 360

gcgccaagcg gggcctacta ggccggccgc taccccggcc taccgccgtc ggtaaccggc 420

cggaagccgc gcgccgcctc ctgctccgcc cgcgctctcg tcggtcacca actgtgtttc 480

ctttttcgat cgacgtcaca gggtgggtca ctgtggcagt agcgttctct tatcccgagg 540

cagcagggac gtcacagggt ggatcgcgac gacggacgtc ggacggacgg ctgaagaatc 600

tacgcacgta gcgcgctacc tgatctgccg actacagtcg tcgtcggctc ggcgaggagg 660

agggcggatg gatggatgga aggatagtaa ccgctcagta aaaaaattta aaacaaatcc 720

gcgtcaatcg atcgatcggg gtggtcgctc gcatccgctg gccggccggt agtcgagacg 780

atcacccgtc gaatcatgga atccctcgcc tttttccggg agaaaaaaaa caaaagctcc 840

gtcatgccat ccacgcgcga catatatatc atgcatggcc catacataca tgcatgcatg 900

catatgatta tatccagggc accaatagaa gacaagtttg tttacgcgag gaattctttt 960

tagcttacct tacgtattac ccgtattatt ttcttcttcc tctgttatta tatatttgaa 1020

tatcgagcac cctgctctgc tacttatttc tctctctcca tatccttcta aggccttagg 1080

acggactcgt ttggttatag ttataggaga ttaattgagg aggattagtt agctagctag 1140

ctaggcgtta acattcaagc caacatcttg catgcgttac tcttggatca agagcacata 1200

atagatggct agccttttgc cgaagcacta caacctttg tgtgtgtgct tattaggaaa 1260

gtccatactc tcgtcgtccc gaaaaatcta ataagaacta gagactttct ctctcttgcc 1320

ttgagaaagg ggaggataag attcgacag 1349

<210> 1434
<211> 1149
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225290_G1, chr6:109886085..109887233, Cluster 9

<400> 1434
ggctttaata tatagaaaat aactagtata tcactggtcc gtcgtgtcat cgctcgcatc 60

ttgatatgat catgtggcat gtgccgaggt tgatttctgc gagctagggc ctagggctag 120

gctgttaaac cgcgtgagtg agcgtgggcc aggccgattt tccaaacgca ggtgagcttc 180

ttaataaagt ttggaattct tcttttatat ataaaaaaag agacacacca tcctcattat 240

tactacacag gtaatagcgg cgacaggaga tggccacgat cgtcaaagta gctgcgggct 300

gcagagcatc gtcgttcatg agcaaagtcg ctgtccggtg cagctcagct ccagctgccc 360

cgcgacagac accgcgcacg gcgcacgcgg cttcgtacgg tagcaggagc cgtggcccgt 420

cactgccgtg cctgacgccg tacgctgcca gagagagtag gcaggcacat ctcctgtcgc 480

cgtctcaccg cctacgtccg cccccaccgc caagaataaa cagtaatcac ctactcacac 540

cgtttttttt tgttactaga tatccgtatg aaactgtaat aaaaaaatat ctaatacgat 600

aaagataata ctgtagtaat tgaagttagg atataaaact aacgtgacat gtgacgtgta 660

gttggtaggg gtgtgtgccg ccaagtgtga agtcccactc ccaccgcggt tcctaatcat 720

gcagccgcag cagcgttttg gtgccgacgt ggggggggaaa aaggctgcca cggccatgtg 780

gccatcatct catctcatcg aggcaggcaa gatctatgtg tacagtcaac tcgtcggcag 840

gttaaaaacc cttccgcctc cagctggaaa cgaccaaact agtagtacac atttcattga 900

ccagtcggta gcaggtgtag ggttaggttc agacgttcag tcgcatgcaa gattaaccgg 960

cccacagcca accaatcgat tactctcctc tcctgtactt gctagctagt tcctagttct 1020

agatggatgg ttaagcaaac tccactaatc catgtacatt agatgatatt tatagcaaat 1080

caaattacat ctcaatcaat ttcattacag ttcaatctac gtggaattgt aataaccaaa 1140

caagaccta 1149

<210> 1435
<211> 1088
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225889_G1, chr6:112943426..112944513, Cluster 9

<400> 1435
ctgcatcttc cgatgatgat caggggcttc cccccacgta tccccttatt ataccctaag 60

ggagcacgac gattacatgg aagcagttac atgttagatg tgcaaataaa tgacttatag 120

ctgagttggt tagatggtct aagtagtact tttgtcttga tcttgtcttg agttcgattc 180

aacttcccgt gggagtaaat tttagagtat ctttccggaa gtagagtttt tttttacata 240

tgccagaggc aaaccgatgt acagctgaac tgttgttatc tagctcattg ttttcatggc 300

aaacgtccct aaaagccagg tatctacatt attccagggt gctgccaacg cgaaaggccg 360

gctgacacag gaaaatctgg ctcagatgat ttttttccct cccgcaccca ggagccttga 420

gcgagacaaa aaaaaaagag caaagcagag gctgtgagac actccgtccg tcctccatat 480

ccaacatgag gcccaaactc cccgcgaccc cgctcagcct tttcgccccg atcacacacg 540

caaaaagctg gacgcgcact agacggccgg cagcaagcaa acctctcact cagacccagc 600

ttcgtctttg ccatgcactc tgatacagcg acgatcgata gttaccgtgc acgagttcaa 660

ctcggccaca ttcctgtcca gtgtccacgc ggaccagctc gatcggcgtc agccgtcagg 720

tcaccaggcc cggcgccgaa gcggtgaggt gaaagaaaat gacgcgcggc gccaccgcac 780

cgtgcgcccc tgtctgtctg gctgtctggc tggcctgctt ttccaccact cactcaccca 840

gcaccgtgca ccgacccagc cggccgcgat ggaaaaatca tgccaaagat tccagaacca 900

ctaccactgt gtcgtctgta tcacctcgca aaataaaggt gatctgatga cccccaagac 960

ctaataataa aggacataac gtagcatagc ataaccatca gccatcacgg tggactttct 1020

attagtggcc cgtcaaaaaa agcatcggat cggagcagca ttgccactta taggcttata 1080

cctagcca 1088

<210> 1436
<211> 1051
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227594_G1, chr6:122673076..122674126, Cluster 9

<400> 1436
ttaagtacaa gctatgccaa actgggtgct tttgcgacag cttatcagtt gggttgcttc 60

tcaaaatgaa ctacaagcat tgcaataatc catggtagta gtccgattga tatgatcaat 120

tccaaaatga tttaattgtt ttttatatga atgatgtaat tttatttgct tgttttatgg 180

taatgaggtg gttgtagttt aatcataaga actgtgtgat atagcgttgc ggtaaataag 240

agctgccatg atcgattagc aggatatcaa taactgagat ttgacagtgg atagagacca 300

tagtgaactg atgagtcact gattattccg cccgttggtg tccacctgtc gtcatttgct 360

gaggtactgt actagtacat cactactcta ctactactac tccatacgtc gtccgtcggt 420

gcaaatggag ccaagtgttt cgttggccga caaatggagc ggtggtggtg tggtaggaaa 480

aaaacgccgg gtttcccacg ctacgtactg catcgttaac tcagtgcaag ctgtgatgtt 540

tacgctgatc aattactaat actgtaaggc tccatctatc ttggctgatg agacttgttc 600

caagctagcc atgccatgta cagactctct atcggtctcc agagatccgg ctataaaatc 660

ctgtgatgga tgatgggttg taaaatgtat gtgcactaga agaacccaca tgacaaaaaa 720

caaccagatc ttttttttt atatatagga agaaaaacaa gaagaactag aagcaaggaa 780

cagcgagatt cgcgacaggc gtgcggcaca ggagatgcat gtgcaaggcg tggatcgcga 840

aacgggttcg tgcgtgcgtg cgtcagaatg gaaggcgcga acagccggga gcgcatctcc 900

ccgccccgtt gcacgcgatg ctggattatt cgttccgggg caagtggggg ctggctggaa 960

cacggaatag aatacggttc gatcccatct cgcgtcgcca ataactacag ctgccaggtt 1020

atatgcgtag acattaagta cgactatttt g 1051

<210> 1437
<211> 1134
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227627_G1, chr6:122972471..122973604, Cluster 9

<400> 1437
tattgttcaa cctcgaccgg cagcaggttt cacatcgaag gcatcaggcg tgccgagttt 60

tcacccgcgc gcatgcacgt catcgtcgtc atgtcgctag gatgcgaaag ctggggcatc 120

tttacctaac tccagctgcc tgcctgttgc atgtggggtg gcgagatgat tagctttctt 180

atataataat ataataataa ataaacgtac gaacgggaag gttggttgct ctgtgatgga 240

ttcggtgaga ggtttgttta gcaagtgggg cagcggaatt gcaagggaag cagctgcaga 300

cagccgaatt agtgtgtgct cgtcatctgt ctaggtgatg gtacctcttc gtcagtttta 360

ttttatggag gaaactgaaa ggtgggtgaa acgagagtcc atgggcggct gcctattccg 420

ttccatttcc atgttcctgt gcgtatccca ttagtatgac ctgtcctaat cgtccagctt 480

agcgttagcg acagctctgt cgatctagct agaatacggc catggctcta cctgttgact 540

tttggagcat cagacagaca cagacgacgc ttgctgatct gaacggtgat gaggtaacaa 600

gtcgtacgtg tacagcatgc ttatggtgtg atagattaga tgacggtggt ggcgataagc 660

atgcatatgg tgttgtagca gatcagatga tggcatacac gaacacgacg tacagtagta 720

cgtgttcgtt ctaagagtta tgagcactgc cccttcatgc atgtgggtgt gcgtggagat 780

caacgaaaaa cttgtctcat aattaccaga aaaaaacaaa gcccctaaaa agaaacgtac 840

ggaaacaatc ttctacgggc tacgacttgc atgcacgatg cagcatgtca cgtataccaa 900

ccaggtatac atacatatat acgcgtcaaa attcaaaaag agtacgtata gagaacaaaa 960

agcacgctct cctccgctca actgggccgt cgaagatgaa ccggcccagc atttggcgga 1020

cgctccggtt cggcttccag gcagggcggc cccgcgggtg agatcgggga gcgagggcaa 1080

cggattccaa cttcacagca tttctcctaa aaatatatct cccattaaac agat 1134

<210> 1438
<211> 1025
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227958_G1, chr6:124689722..124690746, Cluster 9

<400> 1438
ggccattttg aacatataaa tgcaccaaca ttccaaatat tgctttctgg actaaaaaac 60

tcagattaac catttgcaga catgaggaag ctagcaaatt tagtttcatt agttctacca 120

acctatgttt caagttattc attatttaag acatacacta gataaatgaa tagaaacatt 180

ttctgcaaag tgacgcatgc caaatatata tttaattcaa agctagacac ataccaaagc 240

catcgcaaaa gtttcacaat ttttgaatca tgcatacatg aggtatggca ttttaaacat 300

tcgaagtatt ctctggaaaa aatgcatttt ctggattttt aactggccaa atctttttct 360

cacccacatc tacctagcca gagcgaatac aagtgggtct cgaggccata gtgaccaaca 420

gccaagtagc gtacccgtgc atgggcgctg gaacacgacg cgcgcacgac atcgccagag 480

cgtgcccgtc acgctcacgg tgggatgcgc cggtagcgag gtgcgcgaca cggctcgaca 540

aaggaggaaa caggaaatgg gcgtgggcat gagcttaggg accagagctt accacgacgt 600

ggagaagcag ggaagaggat tgaaaggagc tcattgatgg agcttccatg cgagcggagg 660

tgaggctcgg cgtgggctta gagaaggcgg aggagctttg gagaagctcc ctaagcaact 720

agacaagcgg gggcgagcac accggcgata aatttccacg acggtgctca gcgagctcgg 780

cagcaatggt ggcaatgtcg gctaggggag gaaggatacg aggtagggtt tgtgaacaag 840

gacatgggct tatataggca aggtgcagac tgaaaagacg atccgaacat gtgtcattgg 900

ctaaccattg caagggcgtt gttagctgtc gtggctgtta accaacacgc gtgtggcact 960

aacaggggag gggaaggatc tgacaagcgg ggcccaccga gaagcaagcg ggcggacgcg 1020

cacgc 1025

<210> 1439
<211> 1017
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229515_G1, chr6:132074862..132075878, Cluster 9

<400> 1439
tatgatcact taaaatattg ttttataatg tagatgctaa tgtttaagta tagagttgag 60

tttgaatata agaatataga tcaataaact gttgatagcc ttatctcttt cccatgccac 120

aaacgcaagg ggaaacatat ctcttccacc gatggttatg aaaaatcgtt cagcttctcg 180

gctgtgacgg cgctgccgcc gtccaggatc gtaggcactg ctaaaggagg accaccggtc 240

caccgccatg ggccgatggc agcggcaggg aggaggaggc agcctgttcg cgcacggttg 300

ctggcatagg gtgcgtttgc ccctgcttgc cgcgggagcc tctccgtcgg gcgtcggcat 360

tcgcgcgagc actgccaggc agcctcgtgg ctagcgggcg ggcgccgctg ttggcctgcc 420

gcgcgagcac tgctgacctt gtggctagcg ggcggtcggc ggtctgccgc gctagggcct 480

gccgcacagg agcaaccgcc gccgcgctgg tcggtagacc gggcaccgcc ctggcctggc 540

gagcgaggtc tggacggccg gtcgggcatg ccgcgtgcgt gccctgcctc cgcaagcctt 600

ccacgcaggt gcgaggtagc cgctgccagc ctgccaccgg gagtacgccg gctttagtca 660

tcgccaccgt ggccacagtg gccgaagggc ttggctcggg ctgcatgcgt ctgacgaccg 720

agctaggaac cggttgggtt agtgcggagc agaatcacca ccgcggcgac gatggccgat 780

ggttccatcc gccgccaccg atgagcgctt ggatttggag caggccgcgc caccgccggg 840

ccaaggggcg caggcaccgc cgctgatcag gttatgtgca gccaccgtgg ccacaccggg 900

tgcgcggcac tgtcgatttc ggcctgccat ggctgtggct gcattcgtgt tgctgtggat 960

ttgaccggat acgggcgcgc aactgccgcc aatcgcagct attgcggaca ctaccga 1017

<210> 1440
<211> 1208
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230776_G1, chr6:138072402..138073609, Cluster 9

<400> 1440
ggctgatcat gacgcacgaa taaggtgctt ctcagcatct agatttatcc ttaacgttag 60

tgcatgcaag cgcattccat atttcatgat tccagtgccg ttgcagtcag ggaactcgag 120

ccgttggaac tttcaggcga ggagggtgtt tgaagaatgc agaggcatag cccatgacct 180

cctccatgca tggctgtcct cggaacggaa ctccatgcgg acaggggagc aacgaccagt 240

gctccgctct gcaagtcact tcatcgctgc acaggaccct tctgcttccc tgaaactgac 300

gctgtcacga gcctgactag tcgatcgact ttatgatgat ctctgaatga tgggagcctt 360

ggccgtttcc gtagctctca tgcgcctaaa acaatttcga ggttcttcag tttcaggtaa 420

aagtaacagg atgactgttt tttactatat gtaaagggat gtttagtttg agtaatcact 480

ccatccatca tgaggtgatt gaatgatttt tcactactaa tgaaggttat tagtactagc 540

aactggagga agaatacgat ggtggggatt tgactggcag gcagcacctg ctcctgctct 600

ggcacagtgc cgccgccctg tctctacact ctacgtacca gcgcagacat ggtacgacac 660

tgacacgtaa accgctgcac tgcatggctg catcgatctg ctgcatggag gtatactatg 720

catttttct tcctgctgtc cagtgtttca ctgtacgtac acacatgcat ggttccaatc 780

catctttgct gtgtgtatag tagtattagt tgcgttgtac agcagcacag tgccgttgtt 840

gtcagtgtgg tcaccggctg gccgtgaacc atccccacac acagccacac gggcagagag 900

actcatccac ccacccatgc atcctctagt cagcagacag caccatgtca tgtgtgctgt 960

tccgcagatg ccaccgggca cctccgttca cctgcctggc tctgcctctc gctgcctgca 1020

tccactcgat cttgcatgga accatcagcc atgcagcgca tttggttgaa gtgcgtggca 1080

ttagcatatc acaactctct gcatgcatgt tgtgaagttg ccatggagga agaaagctgt 1140

gttttggtgg ccaggggaga gaaggggtca attaacaccg tggaactgga atagaataca 1200

gttgtaag 1208

<210> 1441
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231838_G1, chr6:142420376..142421520, Cluster 9

<400> 1441
tgtcatccct agctacagga ttgctgcatg tatcaaacaa tggtcttgag tacttatgtt 60

gcctaaggca tggcaacagt gtggttatca gaccttataa ttgtacaaca tatttaatat 120

ggtgtacgag aacccttttt tgaagtacta gtgttatgaa actatcagta gaccctaaat 180

gtggcattgt gcctttaggg cttgccatgc ccttagcagg ggggctacta cactccttag 240

atttgaaggt gctttcacac ttagccattg taagagtccc tctatcccct cgtgatgccc 300

tgagtccaag agaggattga ggcctggcca ccgaaatatc caatgctagg accttagaga 360

ttctagggtt ggtagagggt cctagctact aacaaaacat acaactgttc tactgttagg 420

agcaccctag aactttaggg gtcctctgtc ctagatcatt cttatgaaca acagtggtca 480

aaaagaactt aagtatgtga gcgtctcata gcctatagtg tcatggcacc taggtcttag 540

actaatcctt tgggagcaca ttggctacaa tagcttttat tctttcaagg ggcccaagat 600

agatctccct agaatgacgg gcccatgcct tcatcgaggc caaggcaagt ctagagcatg 660

gggcctcggg tacttcatag ggatccttga aggcatctta gtagaatcta gtctcatggg 720

actgtgccga accaagatgg tttagataag gtgtgagagc tcctaggctg gatcacacaa 780

cctacttcca acaatgtcaa ccaagtgaga gctccactgt ggacccctta ggaggagtca 840

tctagtcacg agagtatatt tccttctatt ctcatgtgat ggttggccta aatttccacc 900

tatcatgctt ccttattaga actcttgatt actatagctc caagttggcc atctctccca 960

atgttcttct ttccctttca accttcacac acttatgtca agtgttcttg ggggtgagtc 1020

catgtgtaga agtttttcct cattttttcat ccttcgagct ttgagcagct aaaacctctt 1080

tggcaaagtc tacttacacc tctacactca cccctggtac cagactccat acatggccac 1140

taaca 1145

<210> 1442
<211> 1104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232305_G1, chr6:145282610..145283713, Cluster 9

<400> 1442
cgcctgatcg gaggtagctc atcttcatcg taatgacgta atttgagcat gtatctatat 60

atttctgtca cagttttgac ttttgtatgg taagatggag acaagctgtg acgacagtag 120

gacaaggctt ggcaagcctt atacgtgaca cagttacatt tatgcagcac aagtccagac 180

cgtgcttacg tacgcacgtt tcggcagcat taggtcatcg agcttggggg cacgcacgcg 240

catttccgtc atccatccct gcgctggggc cggcgttgac cacgcctgct ccacggccct 300

ccccagtctg gaacggccgg tccacgtcag cggtggtggc atgaaaatgt catgcgcaag 360

cgcaacatgg ccagttaata aataattcgg gatctagccc ggaaccacga caggggaacc 420

gatctagttt acctgatggc tgatctgtgc atttccttgt agacaaaaca agcactcctg 480

ggaaagactg atggtaacac tgtattaaca gcctgacaag aaccacgtag cgcgatgcaa 540

ctcgaaccgg tttaattagt agcgatgtgt gtgcgcgaaa gaaatctggc gtcaaaacgc 600

agaggccacg aacgcggcgc catcatcaag ggcaggcact actgattggt tggtagtgcc 660

agtggacctc ggcgctggtt ggctgttggc cccgggcacg cgcgatcccg tcagcgtcga 720

ccgctctctg ccccgccgcc catccccaat ttgctttgtt ttatttttaa tcactcggtc 780

gtcggctaac gaccgttggc tgcactgcat aattgcctct agtttattgg gcttctgtat 840

gagcagggtc tgcctttgct ttcgaaattc aactctccta aagatgacag gccctgatgc 900

gccataatgc tcattagttt gtgggaaatg agacaactat aatatataat gctcgtcatc 960

gaccaaccgc tgcgtgctaa ggatgttcta tactgtattg gtccacgcgt tgagctgaca 1020

ggatttccac ttttttttt tttttgcgtt ttccttaact tggtgatgtt tgtagtagca 1080

ttttgtttta ttttagaaaa cgat 1104

<210> 1443

<211> 1003
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232831_G1, chr6:147677421..147678423, Cluster 9

<400> 1443
aggttccatg tagaaagtta cctcaatttg atgggattaa ctttgccaag taaaacatac 60

gagaaagtta catcctcttt ctccttcaaa ttgttcttat aacactcctc tatgtctgtc 120

tcgtgtggaa gaggccgggc gtgtgttgag aggtggaaag ctcgcggcac cacgaaaaat 180

cgcaattccc cagcgacggc catccctttc acgcagattc cacgcgatcg ttcttgggtc 240

atgacagcga gcaggagcag cagccagcag ccaccagcgg atcgatctga taacggacgg 300

gtgggcgcca ccgcggcggg gcgcgaccac cggtgaccgg ccgcatgtgc ggatgtcccg 360

ccaacagcca ggcgcgccgc gggaggcagt ggcagccacg gcccacgggc cacggccgac 420

cgcccccacc cagacccagt tcgcttcgct cggccagccc cagccccagc cgcggcgctt 480

gatttttcgg ggaacccaac gaatcacgcc tttgtttttc gtgtggacgc agatttttt 540

ggccccgtcg tcggctcgcc gtccacggac cacggcgcgt ccactccacc accggccaag 600

aggacgcgcg cgccccggtg cccatcgcca tcgacgatgc cgacgcgagt cctttttttt 660

ttggtcatcc cgcggtgctg tgctgtgctg cagtaaacga atccttttta gcgtggttta 720

ccagtaatca gtccgctaag gacctcgtgc cgatccacgt gaaaccttcg cgtgaaagga 780

aaatcgatcc ctgttagcac gcgacgggca ccttcgttct gcgcctgtcg gtgtccgtat 840

gggcgcgcgg ttccttcttg agcttgaggg cgagggcgct gaacatgact aggattttgt 900

ggtcgctggt cgactttctc tttctctctg tgagataccg atgatttgac aactcgcgat 960

gccaaacttt tcctcactgt agtcctgtag atatctccac att 1003

<210> 1444
<211> 1338
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2338_G1, chr1:12506998..12508335, Cluster 9

<400> 1444
tttatactgg gacgtagaga gtatttagat ataaccgctg aaactttaga tattaaaata 60

cgaaactata gtgcggggaa ccgagcatta attgtctgtc ttccgtagcc aacaccgtag 120

gttcaggcct tgggggggtta ttattcctac tagttgcctt ctccattgct ccaaatgaga 180

tagcacatct cagaatagta gtactactct actagtagcg cgtacgtacg gtatgtacat 240

ttccatggca agcgcacgct tggcagcaca gagcgcatac ggccggccgg gcaggcgtcc 300

tctgctggcg ggcgccgtac gtcccttccc ctcgcctcgc tcccaactcc tgtcctgtat 360

acctacggct cccagtcggg ctagctgaga caatgaatgc gcgcgcgcgc ccacaggcac 420

gagaggccgc ttgttcgtcg atccgatccg acgccggcat cggcaccggc acggagtagc 480

taggtagcct gaccgtagtg tggtggcggt caaactcaaa cagggctttc gtcctactcc 540

tccgtaactc ctaatcggtc gacccgcatg catcgtgtct agccagccgt tccttctcac 600

gacacgggag cggagcaaag ggcacgagac atcacgtcgg tcgccaccgc ctaacgctca 660

tttgttcgga ttctttgata cgaggctgat gcgaggcaat tctgcttcgt cttccggtgg 720

aacgggtgat ctgaggttga tagagaatct tggtcctccc tccgtagcca ccaaaaaatg 780

gtcgatacat tccgccgtgc atccaggccc cgtcgacacg cacacgcgat cgcttcacat 840

ggatctgcca ttgccaagca gcgccaatgc ggatgggata ttctgctcca gcgccagcgg 900

gaggagaagg caaaggcgct gtccggtgtc cgctctgcct tctctcgtct cgtgaaaaag 960

ggagcgccac ggcccacggg ccgggcccct ccaggctcac catcacacgt gcaaacccgc 1020

acgggagcac tgcaaacgcc tgacacgcgc gggaccatcc aaccccacca ctccactttt 1080

atcgaccggt gtactccttc cgtctgcacg ttcagaattt attttaaaaa taagtacact 1140

tctaggtact accaatcaac gtaattccag ctacgttttt ctattttctt ccttcgtaaa 1200

gtacaatccc gtagctccta ctacaactct cctcccccga tcgggtctgt gttagtgcga 1260

gttctattgt ttttcataaa gaagaagacc atctatgtac acgagaatcg ttcgacatga 1320

cctgctcata caacgaga 1338

<210> 1445
<211> 1123
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2339_G1, chr1:12508905..12510027, Cluster 9

<400> 1445
taaaacatgg gatttggagc cttgtgacca cgatcggcgt ctgcctaaca ggatatgaac 60

gaaaacataa cacggtgatt acgtagctat agcttaattg tctgtccatg tgcactgctg 120

ctggatctcg ttcacctgcc aagtccgaca ccaatcaaca ggcatgcatg tagtttgtaa 180

agttggctgg ctccactcca cagtctacac tctacaccca atgcgcaagt actagtctaa 240

agtactaccg tggctacagc ctacagcatt cccttccctg ccgatcatcg atcgacaact 300

caaaaagtga aactgctctg ctttgcttgc ctgtaggctg taggctgtag catatcatca 360

ctcgtctctc cccaaggcta gaactagaag ctgtctgggt ggtggtgtct ctcgtctcgc 420

tctccccgtg atcacatcag ttcacgcgag gtcctatcgt accggacccg cgggcccgcc 480

ccacgtgcgg cacacccact tctcccgtgt ccggcccgtc cccacggagg actgcccgat 540

ctctctctct ctctcgcgtc tttttttcct ttccaccagc cggtgaccgt tgaccaccgc 600

cacccgcgag accgcgaggg cgagagcacc gtggaccggg tctacgtggc gcggggcagg 660

gcaccgcccg aggcggaggg cccagcagca gcgatcttga ccgggcccga gcgtgcggtc 720

gcggcggggt ccgccgtcaa gcagcacgag ggagggaaag ccaaggccac ccaccgccac 780

cggcccacca ccaccgcgcg agaatcgccc ccgacacgtg ggcccgccat gtgcctgccc 840

gggtcgtttc ggtcacgtcg gcatggggcg cacgaggggc gtggcgccct gcccgtggcc 900

gtgggggtgg gaccccgtcc ctcgtcggag tgggcctcgt atccttcgcg tgcaccactc 960

cacccaaacg gggtacggtt cgtgcgagcc ccagcagcag tgcagaggaa gtgtgcggct 1020

ttttttttt cgccggacgt gacgaattga tggaccgatc tggcgacgcc gcgcatgcag 1080

cgtctgcatg catgcatgga aatacctgtt cccgtgcgag cag 1123

<210> 1446
<211> 1242
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234240_G1, chr6:153772394..153773635, Cluster 9

<400> 1446
tcctaaaaaa accagaccga ggagacagaa aaaaaacagt ttctattttt ctctttattg 60

gacccacatc acaggataag ctagaaaaga gctagtgctc tttctaaaaa taagaatgta 120

actgttttct aaaaataaga atgtaacttt tagagctagt gctctaaaag tgaaggagtt 180

gcgtagactt tttctttttc ttatagaggc ctatatgagc gtggtgagga taagcacgac 240

acctctagct ttgcgagacc atcgattttg ctgaagtagt gtacttcact gcacacgaaa 300

gcagtaacaa gtggaggaga atgtttgcat ggctcaagcc gttgataaat tttctctgat 360

gttatttttt gtgaaaaacg atttctctga tgatatttgt acgaataact tttaaaaagt 420

taaaaagaat gaagaagaaa aaaaaaccac gctccggccg gcggctttgc cgctgtcttt 480

cccgggccgt ccacgcaaac ccgtgctagc tggagatttg ccagcccacc actctgggtc 540

gttgcctcca cgctcaccgg ccggcgcgca cgccagcggc tcgtcaacat ttccagctgc 600

ggccacgtgg catcccgcca cgcctcatcc tgagtcataa ctggatcgga gggacggatc 660

gggtcaaacg cagcgtggat ttgtttttaa tcggggacgc gaggctttg gggcctaaca 720

cgtggctaat tgcgcatttt tttagtctat tttatttttc ttaagaaggg aaaggcaacc 780

ggtattctat tctatcgcgt gcgtgcgtag caggacacac cgacctggcc gtactaactt 840

gtgaagcctg catgcccacc gtgctattca ttcagttttg tcaaatgatt ccttttaccg 900

ccgaaggttt gacggcgccg ccgcggcgcc ggcaggctag ctgcctttag attagacata 960

tttctcgccg gatgcgcagg ggcatgtagc gtccggcgca cgtagtcgtg aacgcagcgg 1020

tgcgtggtac ttgagtcggc acgggccttt gtcaattttg gccacccatc tctgacgacg 1080

tgagagatct agcagccctg tacttgggcc tagctactcg ccgccatatg ccccttctcc 1140

agttctcttg cctctctcgg catagcatac aacaagtgcg tgccaacttg gttaggcatt 1200

tgtttctgcc ctgccacagt tgttgtttgg ccgttcgtta tg 1242

<210> 1447
<211> 1343
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235293_G1, chr6:158642439..158643781, Cluster 9

<400> 1447
ttatacattt ttgtatagac cgtcatacaa aaattgaatt caagttatat gcaaaatatc 60

cacagtttgt cacgatatcc gtaaaatata tggaccgtca tagatcaagt tatatgcata 120

taatatacat ggccatcatt gaatctctca agcccattta gtcaggctag gccgaagcct 180

ttttgtcaaa aatgaccgtt acagattttc tgagcccatc tagcccagac aaagctatga 240

attcgaatag tgattagatt gtatttttcc ttgacagccc cataagcaaa agccacgcca 300

ccgacgggcc cttggagcgt cacatcactg agcagcgcta cagtatcggt cacggtcggc 360

gaggcaggag cgctgttgca ttgaccggtg gacaggagca gcagccgcct gtgactgtga 420

gagccaaccc aacccaaccc aacccaacca atggcgcaag taaatcacgg gcgggcgggc 480

cacgccacgt gaacgtaggc aggcaggcag gggcagacaa gaagggcaga ggtcagagac 540

gagcaaaaga cggctggacg cagcgcgcac tccgggaaaa gcagacagac accgcccccc 600

gtgaaagccg cgcggcctcc cgacctgctg ctgctgcgtc atgtcatgtc atgtcaatcg 660

tctgacgcga cgcgccccac cagaaaggga ccgactgacc gccgcacggc aaggcctgct 720

tgtcttgtct gacgcgcaag caagcaaggg agtgaaagct agctacctac gaaagcaaag 780

gggtcgtggg tcgagcgccc gggcgaggag gccgctgctg cctgctggtg ctggccgagc 840

cgtggcgcag gctggcggac cgccaccggc tgaccgcgcg gtcgccacga caaaagcgac 900

ggcgacgcga tgcatgcgcc gtgctgggtc gcggtgttcc ggcagacgca gacgcagacg 960

catgactaga tagatactct actcctcctg cctacggcgg cgtaccgtac ctgcatgttt 1020

cggtccgtcc gtgtatgcaa cgcggcttct attcccggcc aggccgggct ctcttgtctg 1080

cccagacacg cttcacattt ccgtttaccc aatgtgccat agatttttta ggctaccatc 1140

tgcattctga aatgctactt ctatataaag aaatcatata tagttctata aatgataaat 1200

aaatgacttc tctcacgtgc ttaccttcta tgtgcttttt atatattgtt cctgttcctg 1260

atgactcgat aaggtaggca gaatgtacct acaacttcgt agctaataat gaattgatct 1320

tttcatttct gatccgtcgt tta 1343

<210> 1448
<211> 1044

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235525_G1, chr6:159694352..159695395, Cluster 9

<400> 1448
ctaagttcgt gtactgaaat atcaggaaaa ggcaggttgg ctttctacaa gaacaggagc 60

acattccata tgaaatccga tagctagcta gaggagccac acacacctgc atgcagaaag 120

cagaaaggtt tcggcggaat agtccccggg ctcggagcat atgccgtccc atggcgcgct 180

atataaacca ggtcaaggcg tagacacatt catcagatca gagctcggaa aaaaaaatac 240

agggccgggc cgggggagag gtagctggca tggcatggca tgtgcttgct gagcatgaat 300

tacagggtac gtctcctttg gcacagcaga atgcacacat catcagtcga gagagtaagc 360

tcgctgcgtg ctcgccggcc tgggagcgga agtcgcaggc caaatggcgg cggtgcagat 420

gcatgaacag cagctgccgt atatatgcgt gccaaaggag aattgccctg cgattctagg 480

ctcagcgatt tcggcgtggc ggttcgtcca gctccagtgc gtagacccca gttgattaag 540

agccaaagcc aatgtcagat acatggtata tttacagttt gaggtgggtt tgcgatgcga 600

gtgcgactat atgttcaggt aattgtcttt tataattaag ctagctatac tatacccagc 660

atttttttac ctgtcattag ctgtatatgc tttagtacat atgaatgttc aatatttata 720

ttttcgtctt attataaaat tggtggaagc agtggtagag ttggaagcac attgttcgat 780

ttaaagtatt gattgatagt tgaagtattg atgagtttat gattgaaatt tggattaaag 840

tattgattgg tagttgactc gattgaagat ttcaaaaata ttgaacattt gaattgttga 900

ttcaatatat atatgggttg tgaattttcc gaacgttagg attgcagctg tgaggagata 960

tttgataaca caatgcggtc gacgacctcc atcatcacca ccacctcatc cttctgctcc 1020

acctcaagac aatagccatg ggtt 1044

<210> 1449
<211> 1205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235821_G1, chr6:161471748..161472952, Cluster 9

<400> 1449
aggtcttctc gcagtgccgg ccgcgccgca catattgtga taagcatcca cagcaaaata 60

attaggttca gtttgcaaga gatcagagaa aacgacccag cttgattgcc actggtttgt 120

ttcagcctcc aaaggtcgcg tgcttctttt gtctcactcg cacaggtgtc actacgcctg 180

gatccaccca tcatcaggcc agccgccagc cgccagccat caggtcgatc agttcagttg 240

cgtctgccgc ctcgcaaccc atcttttaaa caaaaggggt agcttagctt cgccggcggt 300

catcaatcca ctaacctaag ctaggtgggc actggcgggt agagatggtg atcactggtc 360

gatgtgtcac gtgtgcgtcg ttctgcgagc gacggcgaca catgcatctg cacccgcccg 420

gcccgccggc cctcgcgcca cggcacggcc agggggcatc tatctatcgg tgtctctgcg 480

cgatgcccgg caaccgaccg atcgacgtct gtgaggtcat gtagtgtaga aagatcagaa 540

gtcggccgta cgtgcccgaa cttcagcggg ctgcggggct cgcaccagcc gcagggcagg 600

gcggattcgg ttcggccgac gacgacgaca ccagacagct actcgttcgg gaaatcggga 660

cgcatcagcc ggcgacgacg cagcaacgca tgggggccgc gaataagttc accagcgaag 720

ctgcggcgaa tcaggccagt ccatggcttc tagatcgcgc tctgcagggg gatagagatc 780

catcacggcg cacgtttcag ctcggcttgc gttagttacg caaatttttg tttttgtttg 840

agatcgatga ggaatggaag gcgacgtcgc cgtcgtcgtg gatcccagtt taatatgcgg 900

tgcgaacggc gaccttgaca tgtgaaaaag acgtcgcctt ggacgacgtt cggctccatc 960

gtcccgaatc attgtacttt tgtgtgggcc tgccgtcggt cgccggatat gatcggagga 1020

gggaggacga cgtggtgaga acggctgtcg tcctggcctc acgagccacg ggggagggga 1080

ggtgcgctcc gtgcacggaa agcggccggt ttccgtatgc aaggcaaaag attcattagc 1140

caagcatgaa gcatctttcc tcgactaata taaggagtat ttagtttcta gtgactaatt 1200

tttat 1205

<210> 1450
<211> 1298
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236381_G1, chr6:164510504..164511801, Cluster 9

<400> 1450
ctagtatcat gcgctcagcg tctctcagcc tgtgcgcacc atgcttttc cccgtcggaa 60

atattctcca aatgtccgcg gcgcatcaca agcgcgcgtg tgtgtgctcc actgctcgtg 120

tcgaccccca gcggcgcgcg cgcgctctct ctctctctgc ccatgcccca tgctgatgcc 180

ggctccccaa gaccccacct cacgacgggc acgggccccg gccgaccacg agcagcagga 240

gagggcgagg gagacgcaca cgggagacgg gacacgcacc cgtcgcgcaa tcatactgcg 300

aatcatggcg ccctcccctg cccctgcccg cctccccgcg cgcttcgggg cgcgtcgcgt 360

tcgcctagtc gcatcaggtt caggtccccc acccccccttc ccacacggtg gcgcggggac 420

tgcccctgcg gccctgccct cgctcgtcag tcgtcacggt tcttttcctg cctctgcgtt 480

gcctgcccca cggcgcgtac cggccagcag ccgaatatcc agtacagcca catggcgccc 540

cgccgccgcc gcgactctgt gttgcccgcc caccacttgc gacggcgacg gctgacgcgc 600

gccgcggtac ggtaaaactg ctggagacga atagtgcgcc gtgtcgtacg aaccagacgt 660

cgtgatccaa ggttacacgt ctacgactca ctcactaatc cggtcttaat aaaaaaatct 720

acaagacttt cgtattgcaa tatatagggg ggggtagatt taagcattat agtatcatca 780

cggggacacc cacgtataca gggcccgttc gagtcagctt ttttcttgga taatctagac 840

agtagtttat atatcgtgga ggttgcgtgg tggtgagaaa gatgaacgag tctgcataat 900

tttagggttt agaaagagcc aaatttctct cggctcgatg atttggcgga ttttgcatca 960

ttgatttgga tgatttttca cataagtgct gctcacaaaa acggactcag aagcgaatca 1020

ttttgggaac aagcacttgg ccggactcag aagcgaatca ttttgggaac aagcacttgg 1080

ccgccctcta agtatgaggt tgaagacacc ttagagagtg gaaggccctg agatactaag 1140

ggttgtttgt gttcgaggga tacactcttg tgagcaccac taccttatta cctcgagaca 1200

caatgggttc taggatttag gtcctatttg tttgagcttc tcgtcaattt attagtgtaa 1260

aaagctggag ttgaaacaaa catatagccc tatttgtt 1298

<210> 1451
<211> 1361
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237735_G1, chr7:3177679..3179039, Cluster 9

<400> 1451
catcaccaac aaataatgca cgccatgaac acatgcaccg gccggcctca tgtattcatc 60

gttcatgtat acgcctcttt ataacacgta cactgccact catggacact gtagcagcag 120

cagcagtgtt tggtgcacat gtaccatatc acgcacgcac gaccatcatg aactggccga 180

cacgttgcgc gcgcgccaat gcaagaagct tctttaagct aaaaaaaaac tgcaagtgtt 240

tgtattagct actagtactt ggacgatcat atcgtatcag catacagggt ctgtacatac 300

actgctgcat tgcctgcctt tattattaac tgcacatgca ctagatcgaa cggcgcgcgt 360

acgtatatat aattatatgc atgcgcagtc gttattggag tacatacgaa agtcaaggtc 420

tagctatttg ttaattagaa acacatgcat gtataatgcc aacggaatgt agctagcgtg 480

taccaaaaca gctatagcta gcgtgtgtac tcgtctgtgt gcaagtgaca gtgtaactgc 540

agtacgtacg tgtatattca tatatatata catccgttcg tatcgcgtac atgtacgtac 600

acagctatag ctagcgtgtg accttctcct cctccttatt gcatgcatgc atgcacaact 660

gttggtgtgg ccattgccat gacagatgga catcaagcaa cagttgactc tcacacacac 720

catgcattat atgccatcgc cattctctct ctgctcgtgt agttacgtta gttgtggaca 780

ggtaccgtac gtaccctggt atagtaacag tgtgtagaga gcatgcacgc ggcagctgca 840

gtgtctagac gacagaggta cgtagtagta gtgatatata tgcagtaccc tgtacacaag 900

tataaagagt catgggatgg gttgctctcc ttcttcagaa aagaaagcct cgtcgcatgc 960

agcgctttga attggatagg ctcaggaggc ctcaatcaga tcacttggac atatgtattg 1020

ctgccattga gggagaggcg gagagaggcc cgccctgcac agtagtggcg ccacaacact 1080

gttgccaagt gactgcctgt gctgtgcctg tgcagttggt atttgcccta gcacaacaaa 1140

agtggctcta ctaaataccc tacatatcct actaccatcg atcgaccaca tgtacagtac 1200

agtgtggtgg atgcagatga gcacattgct tccttcccac tttttccttt atacgaaagg 1260

gaaggctgta cactacatgc atgtactccg tcctccttct ctgttagttg tgtatggtgc 1320

tttattagac actggttgat cgataactga tatgcttttt a 1361

<210> 1452
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238349_G1, chr7:5968659..5969769, Cluster 9

<400> 1452
gaccccaaat tttccatcta tataataatga actgttgtct agaatcagca cagcgaacaa 60

aaaaatgttt ttatggatct tttagtttgt actatacaca ttgttttcta aaaagttaga 120

tataaacata taattagtac tatgatctct tcaatcacac gataaatttt aaaaaaaaat 180

gatagcctaa aagggcttat actgcctagt ttgtccagag acccttaaaa taaccataga 240

gctagccgac cctgactata tattttgatg gagaggctat tagaggagct agcccgtcgt 300

ttggtacttt ttgttttgga gctgttgggt gagcctttga aagagtcggg agcctatgtg 360

gtgttggcta gcgctattat tggtggggtt agcaaacaaa tctgtctcgt cttctcagct 420

agcgaaagaa actaactgga aatcgcgcgc tggattgtat gaacaatcgg tgttgacgaa 480

attggcaaca gcatcaaatc aaacccagaa tccgctagct ggaggaggag cttaattata 540

ttattaacta tacgatgctg attacggact aattaagcta acatatgtta gtgtgcagtg 600

agactgatag ttgcaccggc caattcagtt ggaggccggg tgcggattcc acgtgtgaga 660

attctgtttt aatttacacg tacgtacacg gtgcgtgcgt gtgagtgttt gacgatatga 720

tgtgtagtac gcgtgctgct ggcttctagg aagctacgcg accagattcc tgccttctcc 780

gacgccgctt ggctggatgc caggaggttg cagctcagct gatagcgcca cctcactagg 840

agcagagcat gcaggagatg gagctggagg cacaggagcc gggttcggtg tccacgtgtc 900

ccatcacctg atgtcaccct gctagctaat cgcatacgat cacctgggtt ttaataattg 960

accaaggcct actctgatag tgatggaggc gtcgtcctga gtgacctaac caggctactc 1020

tacacgcttg ttctaacgac gaccaagtct tgtttcccaa cgacgatact gctttaattt 1080

cctcggagct agcaccagta tcagcatcat g 1111

<210> 1453
<211> 1163
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238350_G1, chr7:5969854..5971016, Cluster 9

<400> 1453
taaaacgagc gagtattata gtattatact gatcttgtcc agttattagc ttgcatgtcg 60

ttgatgtacg tgtacgtata tacgtacacg cctcctagct tgaactctaa tgtgccagct 120

agctagtgtg tgcaagcatg catggtgccg tgcaggggg gtatgcatgt gtcgtcaccc 180

acagtagtct cctgaccgat cgagcttgat taacctactg atgaacacat agattaacaa 240

ataaaggtgc atgatgcgtg actgatgact acgagtgtgt gagtgcgacg gcagcgtcat 300

cggatcttat tagcacagca ggcgtgcctg gctatccagt ccagtacgaa ataaatatat 360

aaaaaaggtg attagggcga aaacggcacg attccgcgtt gaaacggtcg aggagaggca 420

ggcagccagc caggtggaaa taaaagccta tctctactgg catagcaccc agcaggtata 480

gcttttcccg ctttctctgc gtgttgtgtg tgcggtcggt gcagtctgca gtgcagtgca 540

atgcgagtgg tacggtggaa cgccgccggg cgccctgggc ccgacacgta cccggagtac 600

gtgggcgcct cccactggat cggaggggggc tgctgtgtgt gtgctacccg gccgggccaa 660

ccgccctagc tagctagcta acgtacaccc acgctgcacg gtgcagcact gcattatacg 720

agaacgaaac aagaaggcgc aggtgatgac gcgtgtatac gctcttgcat gcacccctg 780

gaccaaccaa aaggtgccgc gtgtgtgcgt gcgtacgtgt tcacctcgct tttgcttttg 840

atggggtgct tcactcactc ggatcatcag caggcctacc tagctatagc taataagcgc 900

tgaagccaac agctatatag ccatgcatcg atcagtcctg gtcctggaac tgcaagcacc 960

acaacgtaac acacgtacgt actttggcga agcaagcaag ccaaggggct ggccatggct 1020

agctccaagt gcggtgggcc gccggacgtc tctgcgctac ctaatgtacg ttaatgtcgg 1080

gcatcaagca caaattaaag ggcactttat gcttcctttt ctaacactaa attgcattct 1140

agatggctag agaggggtg aag 1163

<210> 1454
<211> 1121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_252700_G1, chr7:100245591..100246711, Cluster 9

<400> 1454
tccagtccta cctctagcgc tagtgctggc cccccactta cttatctagc tgtacctgtc 60

aatggcctct ccttttcagc agcgagcagg cgttttgccg tgccgccgcg gtgacacaca 120

cacagtactc gccaataaaa taaaaacgct cttctttttt tacacacgta gtaagaatca 180

ttagataagt tattgaatat atctctatac taaattcatt caaagatgta attatatttg 240

cccgctatta gacttcgtac tatcgctact tgatcatcac ctatctgcct tggttttcag 300

attatttttc ttggttgtgc atgcaagagg cgcgagacgt gggggacgaa aaaaaagcgg 360

cggcggttga taggccagta ggatgatgag aagacaatag ggaggaagag aagagggtgc 420

tcgcggtgtt tgtatggttg gttgtgcata caaatggtga ggtttggtag gaaggttcct 480

ctggttcctt ccttattttc aggaacaact atagatagaa acaccctatt ttggttgaaa 540

aatatagctc gtccttagct tcttctaaga tgtagcattc gacgaagaaa aaatatggga 600

gatgagccaa tagaagctct ttttttctgg ctcctgattt atgctgtttt tttggaggac 660

ctcatcactc ttttatagga agagcctatc aaagcctcgc ctttggtaga tctttacgat 720

cgagaagtcg ttggaggagt cattgaagtg ccgtgtcaag gatacacagt ctaggtacgc 780

aagcgggcta gtttgttgac aaagttaaaa cattagttag gttcccgagc ccacctgtat 840

ctttcggatg agatgaaagc ctggaacctg cggcccaggc tcccagcctc tgcaacacat 900

cagcgcaaca agcggtccgt ccgctaagct tcggcccttt gggtttgggg tgggcaacat 960

ccaacagcga gcctgtgttg ttgtgttggg ctacgacttc tctctgtttt agcattcctc 1020

tgtgggcaac gccgcaacgt gacgttgagt gggcttagcg tggcgtggtc gctgagcaag 1080

tgtgtgtaac actttgatta tgtgactagc taggcccagt t 1121

<210> 1455
<211> 1185
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254305_G1, chr7:108825190..108826374, Cluster 9

<400> 1455
tgctacttta tgaaaaaagg tagatatagg accgagtact gctacattcg cattcatatc 60

atatccacta cgtacatttc tgagtgaaaa aaaaaatatt tttcctacaa taaatccgac 120

attgagctga ccttttttct gtgcttggct ctctattgtt ctgctgtcaa cacggcatgc 180

agaaacccga actgtggacg gaggggaaaa ctgacaagtg gcagcaatga tgataaagaa 240

taagtaaaca acgacaacgt cgtaccccac cagatcagga tatgctgctg atcgaccgac 300

tatggagtaa ggagtatgga gatggactgg acgcgtcgtc tacctttcg tttcgttggc 360

aaccggcgcc gacccacgct tgcaaagatt tggattggat tggcagtggc actacgtaca 420

atcccggccc cctgcagatg gcattgcacc ctccacagct ggaggccagc tgcatgcaat 480

gcactactac tgtctactac aatgcaatgc aaaccctacc actccatctg ggatcgtcaa 540

cagctattgt catggacatg gtgattagca ggatctggat ccctccgtgc gcagcggttg 600

acctaacccg gccccccac cggccaccac caccacttcg cgctctcgcc tcttcggtga 660

cgacacatga cggagaaggt gacgccgatg gtgcgctgcg cacgggctgg cctcgctcgc 720

gcctctaatc aaacccaacc catcaagaca atcaccgtgc gtgtactgtg tgggctgggg 780

aatctagaga agcccatgac gaaaccgacg ggggaacgcc caccggactt gaaacgcaag 840

ggagcaagca ggcttcaatt ggagggagcc caggaaagct cgagcttccc gggaaggagt 900

aatggcagac aggcaggctg gttttccggg caagaagtaa taatgaccgc atccaagttc 960

cgaatgccgc ttctctctcg gaaaggcgaa ccgcgaatgg tgcatgcgca atttgaaagg 1020

cgactcgtgc atgcacgtca agctgactcg cacttctagc agcagcagct gacgaagaca 1080

tggcattgtt tggacatgcg ttagcacatt cttaatgaaa caaatccact ttttgcacat 1140

accctagtac taggagcgtg cctctggata tatacaccct ctggt 1185

<210> 1456
<211> 1322
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255412_G1, chr7:115142223..115143544, Cluster 9

<400> 1456
aaccactagc tcctttcctg gatccttttc caaaacaggg tggcattttc ctcctttgga 60

acatgtctct atttatctcc ccctttacaa acttatatat tggccttcct tttaaaagtg 120

tgcatacaag taaccggagc aagactgttg gtacttatgt tttcaagata tatccacggt 180

agttgtggtt ctagagagct atacagtcta gaatgttgcc tgccgcttga agatcgtcgc 240

cgccgacacg atctgaccta acctcccgtc gcttcacctg ctcggctcgt cagcctggcc 300

tcttcgcggg ctccagcgat atatatacca gatgcctttg acagcctgcc atagacccac 360

acatgccaaa attgctctct caaaagctct cgaacagcca agccattttc ctcaatgatt 420

tttgggacgc caaattcctc atgcccctcg atacgatact cctccaaccg gctctaccgc 480

gtgccgcacg ctgcgctgcg ctgcgctccg tacgcactca ttcgcgtgga cggtggacct 540

gccgctagat ccggcacacg gacagagtca cagagagaga gagagagaga tcgcctgtgc 600

cctctcggtg gtgcctgccg ggcgggtgac ccgcgctctc tacctgtccg ccgctggcgt 660

gaccggagtg aagacggcga tccacaccgt acgatcgcga ggacgccgcg tcactgcagg 720

ctacagcctt gcttcgcctt gactgcagcc ggtgacctgg ccacctgcac ctggggccct 780

ggatgcacac ggtgagtgcg aacggtacgt agtagagcag ccgcttctgc tgcgtggatg 840

tgcagtgcag gagcctgcgg tttcgaatag agtggaataa aaaaattact tttcaatgga 900

agatcagcaa tggcgagctt gaatcctccg gctcctgcat cagcaatggc ggcatgcagg 960

tgcagagggg gctcaacgta cctaagccgg tgtgcaccca gtaccctgtt gcctcttttt 1020

ttttgcctag gaaaaagcaa aggttgtgtg gatctatctt ccgatggtaa tgggaaggat 1080

gcaaaggatt tctctgtttt cggtgctacg aaccagggca ggcttaaatg tgccatcaga 1140

tcgtaaacca gggcaggcat ggcaacctcg aatgtgtcat cagattgttg tgcgaaatct 1200

gtggcggtag tactgaactg atcacacctg acaaggaagt gtccccccct tttgaagcaa 1260

cctcgcacag ctgtggcggt actgaactga ttatctggca ttgctgttgc tgatgatgct 1320

tt 1322

<210> 1457
<211> 1124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260278_G1, chr7:141585663..141586786, Cluster 9

<400> 1457
aacagcacgg atctctctac gtggaattga ctgtctgtca cgcaagcaag atatcaggaa 60

gaagaacatc gttgccgaga agatataggg ctggaaattc atatcacacc tgggccgatc 120

atccatggcc cctagggaca attattggcc tttctttagc acgtgctagt aatatgggcc 180

gagcctaatc acgatcacgt cgtcatgttt ctttctacac gaagcggccc caacctgata 240

tgtcttggaa attggaatgg acggcgtcac gcctctgaag atagtgttat atcgtttctt 300

cttacatagc attcagcgac aaagatgaat gaggatgact cggtgctttt cggcgatcat 360

gggcgggaga ccggtttccc aggtttagac gccgagaggt tatttgtggg aacgacgccg 420

attctgcgcc aggaggaagc aaatggacat ttgaagatga tgttgtcgct gtcttcatct 480

gcttgatggc ataggtcaca tgtggcattg ctgatgatcc ctttttttcac tagattcggg 540

ttttttaacc ttggtggaga gaaggaactc cacacaaatt ccggtttttc aagttcagag 600

gcagccattg acttgatcac tttgtacagc atcccagatt tcaggtttcc tgttttgttc 660

ttcttcctgg ttagtgtgtg aaaaatcatg gagctttgc tgaagaatgt tgagttcttg 720

tcgagcaggc ctgctcaagt acagtttcag gtggttttcg acccctccta gctgcttgac 780

tgacagttgc accagggttc tttgcatgac tcgcgatggc aggcaagtag tctgcgatct 840

gttcgaaatc taaccagtca tcaagccaga aagaggtggt tctagcattg ccgattttga 900

cagaggtaac ctcttggtac agagggagca gccactgaag agttttccca gtggttccct 960

cttcaaactt atgcacgaat aacagtgtgt tttcagtcat ctgtctgatt ggccatgctt 1020

cgctgctgca gcttagatgt tttcgaatgt cgttacatgt aaaatccagt tcctttatcc 1080

tatttatttg ataatttcat ttagttattg aggcttgaga aatg 1124

<210> 1458
<211> 1140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_262299_G1, chr7:153187385..153188524, Cluster 9

<400> 1458
gcgcgccgcc ggtccggtag cgcaggcgct gctagccctt tgacgtcacg agtgacgcgc 60

ggatccctct actactgaca caggatttgc gaggcatgga gcgataagat aatttaaatc 120

tggcaagttg caacttgcag atttgatttc tatatctact ccctccgatc cggtccgtcc 180

cacgaagctt atgttttagg gttcaggatc tgtactagaa aaacaaattt atatattgat 240

gcgttttaga ttgatggaca ctgcctcgca gatcatacgc ggttctagtt taatagcgag 300

ttattcgtgg atcatcttca gtgaataagt ggtacaaggg tacttcgttt tcattgaacc 360

cgcggtccta gcctcccctt tccttacccc cttgctcgcg ccgcgactca taccgtcaac 420

ccttcctctc acaccgccgc caacaacgtg aatctccctc tatttttcgg gatgttttcg 480

agatcgtagc attagcataa gctatacagt ggcaaccata gaacatcgaa gcttttctgg 540

gtgaacttcg aattgacctc cggtgctatt gctactgcct gcaacgacaa acgacttctg 600

ctgtagtgct gtttgtttta tcatccggta aaccaacact tgtctacctt gttgctgcta 660

tggaaactca ctcagttttg gtaccattca ggagttcaga gaaacaacaa ccataaccac 720

gcgacgccca tcagtttgat gccaatggag ccatcgatgg gtcttgtctg cttgcctgcg 780

ctttttgctc aatcaaggac ggcttttaga acgtgtttgc ttgggaaccc accactgccc 840

agacccagag ttgtttgatt cacacagcag atcgagtcgg tcggttttgt cagcttgggg 900

ggtctggatc gctgtctgtc ggtgtgcgtg taggtcatgc tgcccggcct gatttatgaa 960

ttgaattgag agttcggtca tatgaattga gagaaacaac agcagatcgc tgtttgattt 1020

taagtctgcc tccaactcca acaatcatat gaattgaatt gagagttcgg tcattattgc 1080

aatgattatg ccaacatctg tactagttta ggtgcgaggt tgttcgggct ataataaaag 1140

<210> 1459
<211> 1130
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262401_G1, chr7:153829141..153830270, Cluster 9

<400> 1459
acgagtgtcg gcacacgcgg ccacgacggc ctctcgttct agtttccggc ccacgccatg 60

cccagtcgct gcgcgggcgg ctttataaca gggcatgctc gatcggaatt agtaaatttc 120

agccaatttt acagtacagg ggaacgcata ccaggcctcc cccagtccca tgcatgcaat 180

cttgtagatt tcaggtggaa ttggttccca gacggcttga ttaattattg gcggcggtga 240

ggggccccgg cttgattaat tattttctct cctccgcaac cgtcgcggtc atgtccattt 300

tttgttgtaa tgacctggct cgatcgtctc catgcatctc gtcgtcgtct cttccatctc 360

tacagtcagg cgtgtgtctg acgcgccggt tggtctcggc agaccgtacg tcacctccat 420

ccaccaccac accactcgat ggccggctcc atgccatgca tgcgcgccgc ggggtctcga 480

tcgcctcggc ctgaggtcgc gcgcggtgac gcggtccgtt ttcccgtgct tgcaccgtgc 540

acgattcatg cacggcatca cagcagggat cggatcggag cgcaggcgca gcgcagggga 600

gcgtcctgtg catggctccg ctacgcacgg cggcacgacc ctcctccgcg cgcgtgcatg 660

tgacgaacac gtacgtacgc cgtgcgcgtg gagcggtgga aggaggacag atccggtgga 720

gcgtggagat ggagtggcgc ggcagctagc tgcatagcga gtgtatacgt gcgcccgcgc 780

gcgcgtgccg acacacgtac ccgccagacg gcctgcacga cgccagtgga tcgcccggtg 840

tcaaggttaa tttctgcgac tgggatgcat tatgacgctt gcttgcttgc aaattcgaag 900

cgccaaaata cgaaatgtcg gattgttctt tggaccgcct cgacggcttt aaccaggtgg 960

atgagcaaca gacgccgtcc gacaacggcc agaagaaatg cgtcgatccg gcccaagaga 1020

agggtgaggc ccagtacgaa gctcttatgg cccaaaacta tctgaatgca tcctgtcctc 1080

ggtccgccgt ctgcctacct ctctctctcg actccttcct ctagccaggc 1130

<210> 1460
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263139_G1, chr7:157196138..157197290, Cluster 9

<400> 1460
atctcctcga tctcctgtaa atccatttga acttccagcg agcgctatag tcctacgtca 60

tcaaattcaa tacaaacaaa caagcagaca tgtatgcata cgtatgtata tactagtagt 120

atactgtact tcctccgtcg tggtccctaa aataagttcc caagaaggca atcattttaa 180

atttttaatc aaatatatat aagattacat taatatcatc aacactatat aattggcagc 240

attagataca tcaatcgtcg gatctggcta tttattttat ttatttaaag atatatatat 300

tgcaaatatt tctataaaat tgactgaata tagctaggaa attttaaccg gaacacaacg 360

ggtacacacg tgaagcagtt atttaagtac cctagctagc tagcgacgta cccggtatgg 420

cggtatcgta ggtacattat atatgattca gtacgtttca tcacgcgccc cggccgcaag 480

acaaaaccgg ccggtctaga tttggatgta actttgaaat agtgaccccc gtacgtgtct 540

ctcgcctcgg ggacagtata tctttccatg gactatatat atatccagat tattaatagt 600

agtcgatgac gaccctgatc ttctggtaac tccctcccag cccagcagcc agctagctag 660

ctataccagc ctaccaatgc aaatgcaaag atctgcgtac gcgagcagcg agacgacagt 720

acgggagttg ttacgaatca cgcgacatgc atacacacac acacgcactc tggccagcgc 780

tagcttacgc gtgtcctcgc gctcccaata atctactgat gataccccag cagccagcat 840

atatatgcgc attatagtat taattaggct ggggcgatcg agacgacgag atctgcagtg 900

aggtcacccg tggtcgtcgc gcctgctcca tccgaacgtt gacgacgtta acgctggctt 960

ccttcttttg gccctgctgc attagttaaa cgtacgggat ggattatata tatatatacc 1020

tgtttacttt attatacgtt gagagtacga cccggaatgg tttttgaaaa ctcgggcgta 1080

taggtatatg tgtgaggagt caaagtgctg ctgtgtcgtc ccgtccgtcc cctccagcaa 1140

atcggcatgc atg 1153

<210> 1461
<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263804_G1, chr7:160616813..160617903, Cluster 9

<400> 1461
tgtcaagacg gacgggggcg gcctgaacca ctggcctcgc gttatctcat ttaaccaacg 60

caaacagaaa gctcgcgcgg cccagctgcg ttcttatcgg ttattgcagt aggtcacggg 120

cggcccagac cgcgtgcgct gctctcgcag ggtcttcagt catagataac ccttttcaat 180

ctgagctccc aggcaggcat gtcaaaatgg ccggcgtgcc gtttcatttt ggcccaagca 240

gagtaatacg tggcccggct aaggcccagt gacgttcggc ctactatttg agaggacacg 300

atgcgccctc gtgtttattt ttttagatta ttccaacgat acaactttac ttgatgcgat 360

tattacaggt gtgcctcaat tgttcggaca gcacgttcca attggtcggt cgagtagcac 420

acatagattc gtctaacatc tcgttgtcat tgtcacgata gtgtatttca actgttttcg 480

ataggagatg ggagcacgcg accagctagc ccgactctcg tcaggcatgg tgcgtgagct 540

taacgtcgtc agcaaatgtc acaggtaaat ttgttgtcgt gtactagtgt attttgtgtc 600

ggaattttct gtgcagcata gcatagcagg ttattggcta ggcggacgag ccaaatacct 660

tggatccgcc gttgcacaga ggccacacac accatttgcc atcagtaaca aattgcgtgc 720

aagaacttaa cactgcgcac gtacacagcg gttcaaccta tctaggtcct aggcgtgtca 780

cacctgtaga tgagtagatc acggctgttt caggcatttg ttttttgggg attggaaaag 840

attcgctgct cttgtgcgtg cctcatgcac ggcgtgcatg gctggagaat cgctctcgtg 900

gcggccgcag cgaggctcct cactaatcaa tgttatcctc aggttttgta cgtagttttg 960

ttttgctta tctttttgcc tggctttgct atgccactgt tacggccacg ggttttgcat 1020

gtcgtttgat ccgtttgctc tcgatcggtt ggtacgaatt agcaacaact tgatgtggtc 1080

ctgcagaatg c 1091

<210> 1462
<211> 1243
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265081_G1, chr7:167619903..167621145, Cluster 9

<400> 1462
tctctctata cagcttcttc aaggcaagcc gagtctatat gagtctgagt ctaagtctaa 60

acgagtacgc taacaaacct cgatctttct ttttccaccc ccgtcgggct tgagccacgt 120

ctggctaatt ttttttctcc ataggatcag tgtttgctcc accgcacctg ttcatgtatc 180

caatcagttg gagatacaca cacggtcgcc ggtttctgac cgccatcccc tggacgcgac 240

gcaacaataa aaataaaagt ggggctttcc ggtgcagcct gccgacgatc cctgtgacag 300

agtaggcaca gcctagggca catgaataaa gagaggcaga ggcagtagcc agggcaatga 360

atgcctcgtg ttaccttggt actttaataa gcgccataga tagaccaata cgtacagtgt 420

acgtatacgc gcagttatta atgtggtgca ccaaacccgc aggccggcgc ggcgcccact 480

cgccactcgc cagtgcggtg cgcgggagga gaccgaccga ccgaccgacc gatgcatcca 540

ggaaacagca gcagagtgtt ggtaccctgc agcacatgcg cgcgagccgg ccgcctgcgc 600

ttgcccaacc tgtgggtcgg tacggtaatc tagaagcaag aaggagatgc aggtcaacgc 660

gcaggagtaa agcccatgcg acgccaagtc aacatactag agattccact gcacaggagt 720

agtaaggagg agtacaagcc gcacttggat agctagctac acacgcctag cagtgtgata 780

cagtatatag gttttgattg ctgcgagaaa tctttaagtt agctagccta aatcactccc 840

tttaaatttt gccatcttga tcatttcagt ccattttagt caaaatactt tttcattaat 900

tttaaaactc gttgtaccaa aacaccattg tttacaaaaa aaagacacta ttgttagagc 960

aagtttaata atatagccta tcatgggttt tatgactttg gcatgttaag tgtaatcaac 1020

taaagttcta gtcatataat aatgcaaact atatatttaa tactcgactt atctttttc 1080

tctcatggag tcgatgacta gtctactttc agcgggctat tactattagt gagcaaccta 1140

tttctctctc catttctcac ttctcaacga caccataaat ttgatgtggt atatgttata 1200

gcccacctac gtcaacttct taggtcctgt ttggttgagg att 1243

<210> 1463
<211> 1349
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266066_G1, chr7:172795787..172797135, Cluster 9

<400> 1463
tcgacacgaa cggtatatta tatgacagtg acattaattt gttcggatat tcttcctcga 60

ggaacgcatg tgtgatgaac ttgcagtctt gagacttata tatgctcgct tgagttggcg 120

tgggtcagtg tggctgtgtg agcgagtggc agcaatagtt taacctgacc ggcggacctg 180

tggtcacttt cttggcctgt cctgggatcc gtgcgcgcgt tctgaactac taatccaatc 240

gaatcgaatc gcacctcgcg tggtcccgtt ttgcacgaat tttggtcggt actgacggtt 300

ctttttctag acaagttagg cgccaatttt ggatggatgc tgttgccaaa gacccaaagt 360

gcgtggagtg gagtggagtg gagtgcctat ccgcgaccac atctacaacg acaccaacat 420

catcaactcg acacaaaaat caggcaccta agataaatgg actccatcag tacgcccgct 480

cgtttgcgag ctctacccaa ttgggctcag cctgtacacg cagtgggccg gcatggcata 540

aggcccagca cggtctctcc tactaaaacc ctctgcttcc tgcaaaagca aggcatgctt 600

ttgcagtttt gccaaagatc caaaaccctt tttttctcaa tctgcaaata ttgtacacaa 660

atgaacatga tttcatatgc gcttgcttcc aactgagcag gaaattcatt caacttcgat 720

tcatgtaaga aaaagtggga gcgaagtggg ggaacaaata tagatccaaa acccctttc 780

tcggtctgca agtattgtac acaaatgaac atgatttcat atgcgcttgc ttcgaaatga 840

gcaggaaatt cattcaaaat ttcataggct ggtgtgagct gccgagcatc ctctgtgcta 900

tatgtttcct tcagcaatgg tttactgcaa ccactgtgga tgatagctgc ccctccataa 960

aggacccaga caaaggatac atgcgagacc tccctgttct caatacaaaa ccagtcagtg 1020

ttaccattgt tatggacatg ggcttgcatt gcataccact ctgttaatgc atgcatgtcc 1080

atcaagcaat tttggctagt gtccttgttt gttggtacat caactaacat gtttagcaat 1140

cagaagctgt ggttcatgcg ggaaggttcc tgatgacacg gtatttagtg atgggcctaa 1200

ttaggataac agagggcagg ttggttttgt gtcctttatt tgtataatct ttggagtttt 1260

ctgttttgtt taccaattgc tcagattgat atgttttgga gatatacaga tccgcatggc 1320

tggaaatgtt tttgaaagca ttgagtatg 1349

<210> 1464
<211> 1400
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266130_G1, chr7:172965587..172966986, Cluster 9

<400> 1464
ctcctcccgg gcggcgcgcg agatgatgcg cgcgcatgtg ggccgatcga tccgggcggc 60

gcgctaccta cggaaacacg gtgcggtgcg tgcgcgccac cgtggagtgt gagcggtgct 120

ggtacggctc cggccaaccc accacgacaa gaggcgtgta cagtggccgg acttgcttag 180

ctgatcctac actgcacgca tcttgcatgt acaacagcag caggtgaatg cagctgatcg 240

ccggttatta ggttgatagt atcatcttgg agcggcactg cctgccagta ctccacactg 300

ccgcttgtcg aagatgctcc ttggcggtgg caggaacgat cccgtacgtc cgggtcgatc 360

gggcacgaga tcgaatcatt agcgcgcgcg cgatgattcc tgtgccttcg cctttggccc 420

tttgcctgct gcagcagaac gaacgatgat ccagccccag cagcccccgc gaccggaatc 480

gaatcatttg caatcacctc atcgccgtcg ccgattgaaa tgcatggttg ctgcattggc 540

tgcggtcggc tccaatccaa tccaataatc ggatcctttt ctcttgtttg ttttttcagt 600

actccgccta tcctacctat attcattcgt cactccaccg acaccgacca gtagcgcact 660

cctgtattgt atttgtatca aagggctctg aattgcgtcg cccccagtac agtacaggcc 720

acaggaggat caaagcgaat cccttcggat tcgtatagaa gcagtcgagc gtcgtgtcgt 780

ggaccaagca gtagactttg catggccccg ccccagcctg cattagcatg ccaccgtact 840

gctgctttag ctccagagat aggccagcca gagtgacgcc ctccgtcgac ggacgagctc 900

catctccacg gagacagaca gtgagcgccg gtacggtacg ggctggctgg tacgtgaaaa 960

gctgtctctc aatggctgtc gctgaatcac tgtgatctct gtctgcctgc ctgcgccctg 1020

gtcctggagt agcttggggg agtcgggatc ctcccctctt cggctcttcg ccccgccatg 1080

ggcgcaggcg cgcctgcttc agccccgtcc ctagggcctg gagccctgga cctctctgtg 1140

ctgtgtgtgt ggtccggagt ccagaccaga cagacagcag taggtttcac tccgtatact 1200

ccagagatta cacgcgcacg tacggtcgac atgcctttca aattatttga cttcctacct 1260

tgtctaatca atccattgcc cgagcatcaa tcaaatggga cggaggccgt gcatctctct 1320

ctctcaccga tggaactgtg ttggctccgg cctccggatc gggaccgatt actagggttg 1380

aatctttaac cggtgttatc 1400

<210> 1465
<211> 1398
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266233_G1, chr7:173523501..173524898, Cluster 9

<400> 1465
gtggagggac cgacgaatcg ggagagagtg agtgaaggaa attgtagacg actagacgta 60

cgagagatat attcgctcga agtaaaataa tagtattaag gtattgtaga tctgtagact 120

ttatagatgt taggtttgaa acagcagctc acacacgctc gtcaatatct aagtccagtt 180

atctagctgg tgtttgaagt taggttcctg cagctagctc actgaagagt gacgatcgag 240

ctgttcgcac gcatgcacac atatagcgcc atatgcaagc gctgtggtgt cagcagacta 300

gcaaattaga gaggcttagc taagacacgt gcatgctcat tgcacaggtg gagtttagct 360

aagaagctac gtcgtctgga gcgtggcgag caacacgcac caaacatctg tgtggcaact 420

ataaactgaa aaatatatgt gctttgatta tagtagcaag cgctgctgaa gctgaactag 480

ccaaataaag agttcatcga gcagcagtgt gccaagagag attcgcatga caaggaaagg 540

caggtcaagc aagaacacgc gaattaatcc cgatggttga tggagactgg actggagagc 600

gaggcatgca tgaacctata tctttctatc aatctatctt atcaacacca ccacatgcac 660

ccagcagcca accagctgct tattcttggc aagcagtgcg ttaacgttaa aggcatgcat 720

ggtatctata gcggcacaaa gctaattttg cgttttctta gccttttcga cccgtgcaga 780

agctatctgc agtctgctac atatatgaga tgcgtaccac actgcagcac gtacacgggc 840

acacggcagt agtagtgcgc tcgtgtcgct gccatgcacc ttattagctc tgctagctag 900

cttcctgtag tgtccagtgc ctattattag tcagctagca aagcaatata atgttgcaga 960

cgacgaatcg tcaaagctac ccgtgcttgg ccgtaacgac agtggcacgc gcgcgcgcac 1020

cggccggccg taccgatcga tccaacaggc aacagcgacg ccgcagtaac ttgggcgggc 1080

ggccgtgcgc ggttagtcgt cgcgccgtcg ccgtcgacgg cacgtgtcgc cgtgcgcgcg 1140

ccgccacctg tggagtggat agtccttgtt gcgagccagg catcggcgcg gaaggcgata 1200

gatggatgga gcggcggcga cgacggcgat cgacgacgca ggctccatcg cacacaacaa 1260

gctagctagc taagctagtg ctcttcttcg gcactccact tgccaaaaat tgacgtccat 1320

gccataccaa ataccagttg ccaacgctgc tgtgccatgc agctccgtga cgcaacgacg 1380

atagctgctg tggctcta 1398

<210> 1466
<211> 1168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268912_G1, chr8:11004103..11005270, Cluster 9

<400> 1466
gaaaatcctt gatagcaaac atcaaggatc gtccaaattt tttagcatca gaccgtccga 60

aattccctat aacacgcatc atctccactg acctcgtgat gcgaacgctc gttgtgacgt 120

gtcccactcc caccatatat cttccaaact gtttgaaata ataatatgga catcagacct 180

cttgttcgtt cacaactttt catcgtatgt aacttaaaca aaggattacc actccactac 240

agaaaacaaa taaatctgtc tcggttaaac ttttttatgt cggctaaaaa caaaactggc 300

atagattaga tgttttccat cggctacaaa acaactgacg taaataatta attatttaca 360

taggtttcaa agtggcctac ataaataaaa ttattcatgt aggtttgcta aaaactgatg 420

tacataaggc ttttacttac gtcggtcgtt ctagccgaca tagattagtc gtaaaaaccc 480

ttttctcgta aacccgcctt acttcagttc ctcatcctcc cccgctgcta actcacgccc 540

ctgctcatcc ctcccggtgg ctgttcctct tctcctccca tcgtctgctc ccccacctgg 600

tgacgcctcc ttgcccgtgc tcgtcgtagt agctgccccc tacttgaact tgtcatagcc 660

gccgccgtct tctcgcccgc aacgtcagca catggttcct gctctggtct gcccataacc 720

agagagtgtc tcgacaatgt atgtggttgg ctcacgccat tgtctctcat ctgtgcagga 780

gaaggaagct gccattgtcg gccaccgtgg gaaggagccc actggtcaca cagctctagt 840

ggtagcttat ccggtcaagg taaggtttcc ctatgagcaa gccctcctca agtccccaga 900

tcccttctgt ccacgttact gcgacttctg ctatgcataa attggttacc gcgtggcatc 960

tctcatgttc cattcatgaa gtcctccttc ctaacgtcgt actgggtaag gtgtagtgag 1020

ccaccagatt aggttcagtt aaatgctctt gtcatggttt gagaactaga cagacttcag 1080

actgctgtaa cttaccaagc gtcgaattgg tggtgcagga gtagtggttt tgtacaaaca 1140

caccaagttg tgtcgtacaa ttcttatg 1168

<210> 1467
<211> 1231
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270127_G1, chr8:17981651..17982881, Cluster 9

<400> 1467
aatgcagctc caccggaccg gagttgggat cagacaaagg accagacgca acgcagcaca 60

tatgcacggc accgcggtgc agcgactgca gacgtgagga gtggagtagc agtagcaggc 120

aggcagcact catcagcaga tacggtacac agctagtagg acgggagatc gggaaacaga 180

gacagacaca acagccgacg ggacgacgga gtccgtccgt agttcccctc cgtaccctac 240

ctctccgtag taggagtata ctgctactag acggcagcag cttgccgctg ccaggacctg 300

acctccgaca gctgtggagc gcgccgtgca gcagtcgcca agaaattgta cgcatctccc 360

gcccagccgg cgccgtccgg tcgggggcag ccatccatcc ccacccctcg ccgccgaccc 420

gcacgcacct gcccaacggc caaggcctcc cgccgtccgg tgcgcaccgc aaatcgcact 480

gcactgcact gccgcgccct cggctgcaca agacagacag accgagacgc ccggccccgg 540

ccggccccca ggcagtctga ccgtgacgtc ctccacaccg ctgcgccacc acccgcctga 600

cgcccagtag tacttgggtt gaccattcgc ccccccgtac cgtactgtgg ggagcgtggg 660

cccactttac gggcgcgaat acttgtgcac gtatggaaat ccaaattgtt taaaatcgtg 720

tcaattttta ctaatatttt atattctagg acttgtttta tatcagtgtc tgataatctg 780

agcacgtata ttccaaagct atacatatgc tgcccgcccg gccattcgat gcaggcatat 840

aactcggcgt ttgggttcgc aggtgtggga agtgggaacg cagcaacccg ggtcggggtc 900

gctcgctgtc ttgggactgc tgcaagctgc cctacgggcg gaggccccga ggggcctgga 960

ctagactgca cttgcgccag agtgctcgga acgagtcaag atgtcaaagg ccagaggggc 1020

aggacagacg gagagtggaa gggggcaagg cggcaagggc caccagccca ccaggctacg 1080

gcgagagcta gtacagtact cctatcgtac cgtagcctca tagggactgg ggaggcgatc 1140

gatcgttctt ttgctggctc agatacccac gggacacggt ggtacgccac gcatgaggcc 1200

gtctcccacg agggctttta agggatgttt a 1231

<210> 1468
<211> 1036

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270614_G1, chr8:20812601..20813636, Cluster 9

<400> 1468
atatattgtt atgaatacat gcgagttgca tctgattctg attggaacag ccgcatcatt 60

attggatgga cggtttatca tatcgtatta tattcttctt cttccccgct ctctgtgata 120

ggaagcgctc gcgctagctt ggcagccagt tgccaatatg ctccaaatta ataaaccaag 180

tttattcccc tcaattcttg gacttactgg atcgagaaag cgatacacac acacacaaaa 240

agtacgtagt agtaaaataa gaatcatgtt cgttcgtgca aaaagcaaaa caaaggagga 300

acaacgagag ccgagtaata taactcaact agacagaagc aagctaatag gtcaagctga 360

tctggctagc ttgcaaaagg ctgcgacaaa cacgtacgta gtgcgcagtc aaatcaatga 420

agggcctttt attgctgcta ggaatcatat gcactcttaa ttattttctt caggttgcct 480

gtatcaaaac gaactgtttg cagcccagaa gcgaaagttt gtgataataa cttccgtcaa 540

aaggttagtg agtgagtgcg gtcgtctcgt gaaaacctca cttgtggtag caacaatcta 600

gtgagccaca gtgttgtctt agtaggatgc taaccaactt ggtgacgacg ttggctgaag 660

taatttgaca ggggcacgca cactagcagc actgtagcac atgctgacat gcatatacag 720

atactattag atacaaccaa cagaggttat cgtcaaggac atcctcaaca agtggttgac 780

aataaaatca catgatgagg ctaggccgga tgtgtgtggt gattgtgcgc ttggcggcgg 840

cttctggcga gttcggcagg cagtaggcac acaaggctac aagggcattc tgcgtaattg 900

ttgtgtcttt ctctagggct ttctgtgcac agcacagatg cacttgtaaa gctccaactc 960

ttttcaacaa tgcatatata atttattgag aaaagtttgt ttagcctagg actcatcgtt 1020

tctcgtgcaa agcatc 1036

<210> 1469
<211> 1143
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270648_G1, chr8:20954978..20956120, Cluster 9

<400> 1469
tgcttattta tgtgcttgtt aatttgtgag gtgtttctcg ggtttggtat agagttagtg 60

cttctacagt agtatctttc gagtgatgaa tgagtctcta ctcttcccta tgaacgaggc 120

tctagtgtac cctagaaaac tctataattt actcgatctg attttctttg ggtagatttt 180

aaattgccat ctagataagg tttgtggaca tgacagttat gattggcctc gatacatctt 240

ggttcagcgt acctagcttc gtccgccttc ccacgtacgt acagttgagg actaggaatg 300

ctgtagcacg gatcgggaca cctccgggct ccggccatta ctcgtcaagt ataatatctg 360

catgcaaagc tgctggcatg tggcaaagcc gcatatatag ggtggacccg tggagtatat 420

gagtatgaca gtacatgcat gcatgcatgc acgcgtgagc actgttcatc gatccatcat 480

ccatccatgg gagctgagag ctgactagct gagcgagacc atgacatgag agcctaaagc 540

ctcaacaaga cggcaggcga gaagtcctct ttgtagccta ctcgctttcg ctagttacac 600

tctgcatcgg ctcgggtagc gtcagcccgg cctgttgttg gtctggatgg aggcaacggg 660

gccggccgtc cggcctgctg cgtacgcgtg ctgcctgccg ttgcatgcat gcgtcgccgg 720

ggaattacgc ccctggctcc atcgacgtgg gcagccgcct accgcagcgg aagcgccggc 780

gacgacgacg acagtcgaca ggcgggggcg ccgatgcgtc catgcgttac tggatgcctg 840

gcccgatcgg ccgcgcggcc ctttttcttg ccccatccct cctggtcttc tccggcttcc 900

tctcacccac tactcacctg cacctgctag ctgcgcatgc acacacccga tcctctgccg 960

ctgcttggcc agtagcaatc gataccttcg ctgggtttct gcgccggtgg gcgacggggc 1020

tcgagaggcg agccgccgtg gcccgccgac tggccctcgt ggcctcgtct acgtacgctt 1080

ttttttttt tgtacaaaca cgctgtttaa aaccgcttta aaacttcact ttaagaccgc 1140

ttt 1143

<210> 1470
<211> 1101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282509_G1, chr8:101856221..101857321, Cluster 9

<400> 1470
aagttaaaaa aaagcctaaa tctaataact ttgtcttaag ctagatattg agtcagaatt 60

atatttttg tgtgggcgaa gtagattgga taaacttaat aactttgtat gaagctagat 120

attgagtcag aatcatattt ttttgtgaac gaagtatatt gtataatctt aataactctg 180

tattaaggta gatattgagt cagaattgta ttttttgtg tgaacgaagt agattggata 240

atttttcagc atccccccct cccctcttgt agaacgtcgc cttgtcggac gtcaaatcgg 300

agagtaacgc ccgacggccc cgatctggtc tccgtacgga catcgcgcga cgccgccggt 360

ggcgtcgctc tcagtttcgc ttcgccgaca tcgacggcga gtgatcccgt gaaacgtgcc 420

catcttttca catcgttttc tggctgtttc ggactctaat aaaacgcacg aggaaaccca 480

gctaatctat acagatgcat gcaagacaaa gctaccagcg accattgata tatatggccg 540

ttgacaacaa attaaagacc agtgaaaaaa aagctacatg tgaataaaaa ataacggagt 600

actaaaagag gcagtactat cactatgcta caaaagtgaa agcaaagaag aagaaaaaac 660

tggtgaagga cgacggccgt agaatcactg atgatgacga atgaccatgt cgtggcaaaa 720

aggccggtgc ggtttgtttt tgtcgcattc atctcgaaag gtgaatattt ctttcgacgc 780

tgcggctgct ctgtagtacc gacacaaaaa gtagagctcg gactagggac tcgcctagcc 840

tggccggtgt ctgcggtctc caccatctga gatccggggt ctgtggtcat gactgacaca 900

ttcaaacagt cacgtggctg tcacggttct agagaaaaag gagctgtaaa ccaaagaata 960

tagtggacaa tgtattactc gtgcagtcgt gctagtgtcc ttttaagcaa ccgtagtggt 1020

gcactgtttc atcgaggtgt gaggcatcaa cgtgccaggt tattctcatt tttaccccgg 1080

ggttcaaata atgggttact t 1101

<210> 1471
<211> 1352
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282821_G1, chr8:103632663..103634014, Cluster 9

<400> 1471
ggtaattcat tcaaatgaag tgggtatgtt gtggctttct tgcttagcct aaaaagaact 60

ggaattcccc gggcggcgaa ggccctccct ttcgtgcaga ttccacgcga tcaattcgtg 120

ggtcgtgaca gcgagcagta gccagcagcg gatcgatcga tctgacaacg gatgggcggg 180

cgccaccggc cgcatgtgcg ggtgtgtcct gccagcagca aggcgcgccg cgggaggcag 240

ccacggccga tcgccctcac cccaccggcc cacccacggc cccgcgttcg cttcgctcgg 300

ccgggggtta acgcggcgcg gcgcggcgct tgaccacggt gcgtccatgc accagcggtg 360

cccatcggcc atcgccatcg ccgacaacga caacgacgcg aggctcacga gagcccattt 420

gtcatctgcg ctgcagtcgg taaacgattc tttttcagcg tgatttcacg ctgatcagtc 480

cgccagcccc gctccacgtg aaacctcttc gtcaaaggaa atccgatccc agtaccggtc 540

caccagcacg agctgcgcct gcgcctgtcg ctgtcggcgt ccgggcgcgc gcggaggtga 600

gcgctgaacg tgcgtggtgg gctcctcagg ccgtctcgcc gccggcggtg attaggtggg 660

ggttcgtcct cgtctggtga aaggccgtca tgctctactc tcttgccaag ttgccagcat 720

ccatgtagta cgtcttaatt tctatggtgt ccgtccggtc accggcggcg aggcgcgact 780

tgaacgggct ttttttttt ctttcatttc tactgtattt gtatctcagg tcgcgtcact 840

gttcactcca cactctagga tggttttctc tagtcgctcg cgggtcgatt ttctctgcgt 900

gagacaacga tggtctgacc actcgcgaag ccaaccattt gatctgtact ctaacggggt 960

cagacgaaca acgctatctt cggcgacgcg cgcggtgagc gcgcattcat tcattcattc 1020

attcattcat tcattcatgc accgaacaaa tcggtccaat cacattcgta tgtattgagt 1080

ggactaggac ggtagaaagg gacacctgaa ctcaatttcc cccgctaata agggccatgt 1140

catctttgca cacgctgaca tcctagtaat atattattag tactacatgt acttatgttc 1200

ctacctaatg ttgtatataa tgtatatatt tatagagcta cacactatct atttgtatgt 1260

ttataccacg tgcccgtctt agttttgaca aatccatcta gtagtttaag ccactcagta 1320

tgtatcaacc tactcagcac tcttgtccta tt 1352

<210> 1472
<211> 1195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284217_G1, chr8:110800625..110801819, Cluster 9

<400> 1472
cattggcaga ttcagaaata gatcaaagga ggggctgaga ggatggagat agccgcaata 60

caaatgaata gagccaacat agagagtatg cacgaattag aaacacgtgt aggttgttgc 120

atgccgtgtg catgggtaat gacctattat atgcctgcat cttgtaatgg tggatcttct 180

ttctatgact gctaaaatca ctatagagca ctaagaacat ctccaataat gtcttaaatc 240

agtgccctat ttttttcaaa aatagggctc aataagtcat aaaacagctc caacgatgtc 300

ctattttata tttttttatc aataaaatat aagagatacc atgaagtgaa ctaaatatac 360

tacactccgg attagtgtca tattcttatt ttatagatca tcctcaacaa tttattttct 420

aaactacatg attcaaggta taactgttgg agctcaattt gtttggacca aaggtgcagc 480

atcaacccga ggctgctgga gatagtctaa cgtgaccatg cttctctaca cctgtttcta 540

aaggaacggc gggtcgttgt tgctgtggat cgtcttcacc acgaccacac cgccgctgga 600

ccaatgagat cgaggcctca tatcgtaccg atcgagctta tggcggagga gacgccagcc 660

actgctacct catatattat cctcctccac gatctccggg ccctttgggt tctgaacctc 720

atgctcctcg ctcgatcgga tcctcatcct caacttgctg ctcgatcttc aggcttctca 780

gtccccatcg ttagaagagg tagctctctc aaggcacatc ttcaggctga aactcgcagc 840

ggttgcagtc atatggtacg gtgttcctat tcgtggccag cagcactgct gttgtcgtgt 900

tcgtcctcct cttcgccgta cgtccctcgc atccctcccc cccacccccc accccggttt 960

cgtatctttc cgcttccatc tcccaatgaa acgcgggcga tagatgcggt agcggcgagc 1020

agccacatga gtggctacga agaagagcag ggcgtatccg cgtatgtgaa gtaacgtgga 1080

tggatgagag gcagataaaa tgaagagggt gaagctgtga gaatggagca gacggagaaa 1140

acagaagcca ctagaggtgg cgttccacgc tacactacgg aaagcagccg attac 1195

<210> 1473
<211> 1060
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_284287_G1, chr8:111176773..111177832, Cluster 9

<400> 1473
aacactgcac caacaggcag gccccatcgg ccagtgaccg tgcgtgctca ctcacccacg 60

cggtggccga caggtggttc ccctcatcag tcgtcttcta ccccagatca aactcaggca 120

atttggctgt tgcaattgcc accgggattc tcggaattca caatctagcc aggcaccatc 180

tggcttatcc ttcatctagc ttgactcgag gatatctatc gagtcccact tggagtcctc 240

gggccccaca ctccagatgc gtccccgtgc tcatgttgtt gcttcgcatc tcacacgatt 300

gcaaccaccg ccggtcgtct ccatctcacc cccgccccta tataaatgtc tgtgcacatg 360

tacctttgac cagaaactcg tcgcctcaca gtcgcacgcc ccaaagcgcc ttacatgcat 420

cgagattgac caccgctgcc gtgagagagg ggggagtgcg agccaccatt gtcgccatac 480

gttcgcaaca tccttcagag tccgagatca ggccagggcg cttcgccatt cgacacgcaa 540

ggcgtccatg tcctatccag gcgggattat tggtcggtgt ggcggtaact gctcaccaga 600

gcaaccccat cactatgaag ccgcacggag tcgatgtcgg ggcttgcgcg gttcatttgt 660

cggtaagaca tcgcccaaca tgtctatctc gctctcctct ttgcgtagga acttatagcg 720

tatgggttag agctctggat tggtcgggcg ccttgctcta gcgagtatcg tcgcagcggc 780

tatgctgctc tgagcactgg ccttcaaaag ggaggagatc gatctatgac cgtcgacttc 840

ttgatgggtg gctagggtta gtgcttacgc atattggttc ggatttggta tcgtagtcgt 900

tcgattcata tctttcggat gagaagcgat ctcagggctt taaattgggg atgtcgattg 960

ctgacccgag gggcgagggc cagcaatgcg tatcctttca ctattttaat ctagacctta 1020

gatcctgaaa cggatagctc caagccgatc acatgttgct 1060

<210> 1474
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285467_G1, chr8:117591942..117592942, Cluster 9

<400> 1474
ttagattagc gcgcacgtgg aacataactg tagctagtca atagtcatag atgcatcgat 60

atgcgaccgg cggtcagacc gcgagactgg ttagttcatc agcacgcaca gtcacagctc 120

acggccagtc gtggacgtaa ctgaacgttt cctcccctgt tagacgtcgt ttctaggagc 180

tgttaacttc tgatggacgt cgctgaacga catgtagtac tgcagcagca catgaagcca 240

agcctgctgc tggcgacatc agtgtttaat taaggagcac gcgctacaga cgtacggtta 300

tctcgtcgtc ggcgagatgg cacaagttca gtgtatctat ctgggaccgg gagcctgatc 360

gagtgagtgg caggcagtct ggcagaccga tagcctccac agggcttgct tgaggtgtcg 420

tgtcgtctca gctgcagtct ccgcagcatg caccggctca cggagcgaca ccgcggccca 480

tggctaggcc taggctagcc gccgtcggta tgtcacgatc acgatcgaga gcagctagca 540

gccctgacag tacgtctcta ttcgccatgt gatccaatgt ttttgttgca catgtgttct 600

gtcatgttct ttttttttta ctattttgta atactagcta ggaatgagat actaacgttt 660

ggcttaacag tgtttggctt ctgcattttt ctttaacctg caatttgcct gatattatta 720

cactacctaa ctgaaaatat atatatggca gatgctagca gaaagaagct ccggtctgtc 780

tgtggaaaga gagacagccg ggacacacca caggtccaca gtccactact ctaataataa 840

tataatccca cgtctaggtt catcaaaccc gggggctggg atacgtatgt gtgcgagggg 900

gctgggatcg aattattaga gcgatcctgt tcagcttcac ttcacatcgc aagtaatgta 960

atataccacc aacgagtact acatcatact attactacgc a 1001

<210> 1475
<211> 1106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285689_G1, chr8:118806509..118807614, Cluster 9

<400> 1475
gagccatgaa tgacccctcc ctatacggct ataccctctc tacgtggcct tgttggctgg 60

ctccgacgac ctgcgggcaa ggtcgcgctg caccgttggg acgagacggc gacaggcgta 120

caacgtattt ctgccgagtc ggagcaccag taccacgcga tgcgttatgc gtatgccagg 180

tgtggtgtgg ttgtcgtagt gctcttttat atattatctc agctatatat agccgccgtg 240

cttatagcct tatactatat ataatataag ttatataaca ggttgttgga ggagtagcta 300

gtaggagcgc aggagggagc tagagcgcgc ggtgcgtatg ctcagctcag ctcacccgct 360

agctccggcg tagaggatgg cgaggtgcgc gaggtggaga agcagggcac gtgtgaattc 420

attcgttcca tcgacggtct ggcgccgact cacgcatcgc cggcgcggcg agctgagcgc 480

gtgacacgga aagcaggtcc gccgcgccgg cgcccgcgct ggccgatcga ccggctaact 540

gtagctccac gaagcaaagc caggccagcc ggccgatcga tgcgtgcgtg catgtgccct 600

tcttctccat cgggcacgcc tcgcctgcgc atcttttgtg accggtgcat gcaaataagc 660

aaaaagacgg taggtttgtc ggctggtttg gtggagagaa atggggccag gttcttaatt 720

gcaagcggct gctgcaaggc aagcatgtgc atgtgtgagt agtcttatgt tttgctccgt 780

caccatgcaa tgcatgggtt ctcttttcct aataataacc attctcggtt ttcatgattc 840

cgagcaaaaa agatttgtgg cctgctccac tgcaacatta ttcatctgcg caacttttt 900

gggtctaaca ttctttaccc ttttgtctat atattatata gctagttatg caggtttgat 960

gctcttctag gctagtctct actacttctt aagaccttag tgtaaatgtt cataagcacg 1020

gttctgccaa accgcttgcc tccacccccgc gacaccccag cacccaaacc acgcccgctc 1080

cccgcgatgg ccgctcatcc cgccgc 1106

<210> 1476
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290498_G1, chr8:145292452..145293492, Cluster 9

<400> 1476
gcctataaac aggacaaaaa caaattcatg agcttgatcg ttttttttg gacaaaaaac 60

aggcgcttga tcttgccaaa gcctgaaagc aacaagcaaa tgagcgtctg tatacgcaca 120

ctgctgaagc tggacattcg ctggagtccg gacgtggttt cctagtcaaa tcgatgtagt 180

gtagcataat gggcctcgca gagcacgaag gcccaaagcg ccccacactg cagcgtggtt 240

ctgtactggc ccacgcgccg ttgcggacgc gcctgactgc cgctctgcct cctcgaaggc 300

tccaactgcg aacggaagcc tgcgcttcca tgccacccag ccgttcaggg tcgactgata 360

ggccttctgc ccgcctggca tggccgcgga ttttccttga tacgtaacgg tgccaaacca 420

cgaaagtgat ggacggttgt cactgtcaaa cacgcgagct ctctggaggc ggagacccag 480

cgttacgggc ggcagaggaa aagtcagagc ccgttatcca tgtccagcgt cctaggggta 540

catctgatca tgcaaggcag caacagcaag cgtagatagg ccggcggaag tggttactgg 600

ttaggtcatg agctggttat tatttcgtgc aacgaacgcc ggtgggcgct gaaacgtgta 660

gccgtaggta agcagagcac gacggcaccc acagtggact agatagcaca cttttgatag 720

caacatctat atcatctacg taacatactt cagtgaattc ttgcaataag catatctata 780

ttgatatctt attgctgttt ttaatattta catacactct ctgtatcatc tcggtttctt 840

cgtatcggct ctcataaata acaacactct ctctgttgat ttaatttctt gccacataag 900

ataaatgctg atatgaactt tttttataga gagctgactt agtaacattg tggctctcct 960

gagcatgtcg acaacaattc ctcgtcacgg cgactacgag gaggcgacaa ttcaacgact 1020

tgtgaggcga tgatgtctcc c 1041

<210> 1477
<211> 1105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292438_G1, chr8:155045342..155046446, Cluster 9

<400> 1477
gttgacggta aacaaagcat cgtagtgagc gaatgaagcg ctggcactga tccctggtgg 60

cggcagcgac atctgcgaac gagtgcacag acacaaacag ctgggtgcac gcaagttgag 120

ccaccctgcg gacatttgag gtcgccgaga caggtcatgt gacgacagtg tggatggacg 180

catggatcga tccgagagcc tggggagtgg ggaacgccca gtccaggcgt tacctgggct 240

gccgcacgcg ctgcagcctg caggcctggg ctttgcgtgt gtctctcgcg ctctcgccat 300

gtgcggtgcg ctttcagtat ccggcgtgtt tgccgtgtgg gagggagtcg caccgtcaga 360

cttgttctct ccatccccat ctcagaagac agactcctcc atcgtccatc cgcatctcag 420

aagacagcag acttctccat cgttgtgaag ccaataatgc gaggggttg cccttgccgc 480

ccgcctgctg ggctgggcca gagagagagt tttcgcgcga cgcgacgaca tcgccgccga 540

catgcattga gttgttcggt atcagatggg caggggcaac agttttgctt tttgtttatc 600

tcttgtcgtc agtcctcgcc tcctcctgcc tcctcttcgt aacgacaggc agcagaccca 660

gaccgatgca ggcgcatgca cagtcgtcac ctgcctgcca acgctgggcg tacaggtggg 720

aagtgggaac tgcgatcagc agttcagcac caaggaggaa ctggagaggt gcggattgtt 780

atctctcttc tgatcttctc cacggtcagg acgaagaaca cacgagtcgt gagctgtgac 840

ctgaccctaa tctaagcatg catgcatgct actctactca cactggccgc tgctttcagc 900

catcaggtag cagcgagcat ccaatccaat gactctaaac ccatcgggcg tcttggcctg 960

attgattgga atggaacggg acgggaggag ggggagtcgt ctgcgtccat ctcatcactc 1020

cagtgaggag ttctcagcca cgcaagttcg tccgtcatct gtcatgcatg cccatcatca 1080

tatcgaccgg tgcaggacgt ggctc 1105

<210> 1478
<211> 1381
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293943_G1, chr8:162543458..162544838, Cluster 9

<400> 1478
gtattgtggc gggggtgctg gtggccggtg gcgatgccga tggcgacggc gattagcgat 60

tagcgattag cgagcggtgg ttagatcttg accgggcgta cgtgcgtgtg agaggggagc 120

gggagccagg caggcagcac tgcggattag attgcgatcg cgagagcgag cgaggccgag 180

cacgagcagc gattagtatt agcccaagac ccaagacccg catgcgtgcg cggggatggg 240

atcggtggtt agcgagggca atcattgaca cgggattaga ttagattaga ttagattaga 300

ttagatgtcc gggtcccggc cggccaaggc caagacggtc agagaggaaa ggcgctccgg 360

tgattccgtc cgttacgcgg cctgcggcat tcagcgcagg tccggacctc ctctacagca 420

gcagtagtag taattcctac cattatattg gcagcgctaa actatactcc atggcccatg 480

gccgtgccgt gctggatcat attgtcgagt tcgtgcgcag cgcggggtac tgtactgccg 540

ccaggcgcca cgccacgcca cgcatcagcc ggcaatccgt caggtcagaa ctcagaaatc 600

gggaagcagc gggcgtgggc ttgcgtgcca gcgtacagat agtgtcacag tacagtacag 660

tacagtacag tacagtacta cgggtgtctg tccggagtgt tcgtgcccct gactgtagca 720

gtagcagccg gctccttttg ctaccagtcc cccaaacaaa catttcacgc tgcgtcgatc 780

aaagtcacag gctcacagct gatgtgatgt acccccctgta tatacttttg cagatgccgc 840

atacatcccc atccataggc cgtagcaacg ttgtgattgt tctctgaaac tcctccggaa 900

atccacaccc cgccctgact agtagtagta gtaaaataaa ctagccacag acagacagac 960

ctttgatgtt ttttttaatg tgggcatgtc tttgtttttt ctccccgcaa ttagtgctgg 1020

tgttgctgat gcgattgcaa tgggtgtggg tggggtgtgt tcgtcagcga cattccgttt 1080

ccgagggaaa ggaaatgatc ggtcgatgtg tgggcctctc tgtacaagaa caggtcgcgt 1140

caaaaaacag tgcggcaggc ggcagctgga ctggccctgg ccggatggat cggtgagggg 1200

ggccgccgcc cgccgggcga cgtgatctga tctgtggtga caatttctga ggaattcggc 1260

agcggagggc gcgcgcaggg atcgacctgc tgcacctgct ggctgcgtga atgatgcgcc 1320

cacacgcgcg ttctgctgcg tcgggcgctt ggcttgttca acgcctccaa tgatttttct 1380

t 1381

<210> 1479
<211> 1086
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293950_G1, chr8:162551507..162552592, Cluster 9

<400> 1479
aagtgcacct gatccgaggt tcacggtcta actgcaatcc gccatgcaaa tctttactgt 60

tactgttaga gcttatgagt aaataaattg cagtactacc ggtagtagta cgtaatgacg 120

cggtacggag aggactggcg acactggatc aacgcgtcgt atctaaaact tttgtgccgg 180

gtgtcgggag atgggacgtt agggtttacg agcggtggtg gcggtgataa accatagcag 240

ggggcgggct aggcttacaa agcgcgcggc acggcacggc ggcgccgatg ctttgctgcg 300

ggagagcttt tgtacgtgac ctgggctctg agtctactaa aaggcagtga cagtgagtga 360

aaaaaaaggg cagtagatag attagtgtaa gacctggaaa gagagggtaa agaaagccgg 420

ttggttagtg cgccgcgtgt gcagcaggac gactcgctgc tccaattggc cttggcttgc 480

tggttgcggc cgctttccat ccatccacgg tgcaggtgca ggtgcagcgc agagagatac 540

gtagagagag agagatgtct gctgttctct cttcttcctc tcctgtactg tacgtttatg 600

gatttttta tgatacataa attaatacac acaggccttt tgcgaagggg gaattcccgt 660

tcgtactcgc agccgtattc tgtgctctgc tcaccggcaa gcggagcaga ggcatgtggc 720

tgtcagcgcc gatcccgagg tggcgattag aataagatgc ggggacaccg tgccgtactc 780

gtatctgtct gtaaactagt agtgttccac cgtcaccgtg ccctgccctc ctctgtgttg 840

atgaaaattg gagcagatca gcagagggac ggacgacgct cgaggctttg ctctgctcac 900

cgccccccac caggcaccag ctcgtaccgc ctgtccgctg tcccatcctg tcagcgccac 960

cgccacccgc aaggaacggg tcggagcgat cgcgtccgcg atttcattgg atccgtttcg 1020

tttcgcctcg tcgcctcgga cggcgggatt aaaaaaatgc cacctctttt ttagttgact 1080

agctag 1086

<210> 1480
<211> 1021
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294304_G1, chr8:164635623..164636643, Cluster 9

<400> 1480
gtcgtgccca aaccaaccgg ccggccgtac gtagggcggc atcactccga tccatcactg 60

ctcgctcgct ctctagccac tcgcccccct tcgtccctcc ctccctccct cctcgtccgg 120

cccgtcgtca ttcattcgct cggggtgtcg cggcaggtcc aggtcacgta ccggcgtgcc 180

tgcctgcctg ctggccggtg agctcgctag cgagcgaggt gcatgaacga accgtacgag 240

tacggctgaa cgacgcgaag atgccgacgc ctcattccgc gcgcgccggt ggatgggcgc 300

gttaaatacg cgggggatgg agcagatagt tgcagagaga gagagagcag cacagcgata 360

gcatagcgtg cgttgcgtac tatagggact ggttgcaggc tgactggaag tgacaagtct 420

ttggaatttc ggagcagcgc agcatgcgag cgaggccgaa tgaatgaatg gaccaaggac 480

aaggaatgaa tgcatgtgtc tgtgtctgtg tctgtgtcat ttgttggcaa gggcgcgcgt 540

gccacactgc ctgctgcagc gaccagtaaa tgcgagggcg aggcgaggcg agcgcgcctc 600

ggagtgcacg ttgacactcc agcagagacc gccacactcc ctctcctgta gctgactagc 660

tgtagtcctg tcgttggagg ttggagccgc agcgagcgtg gagggtgtga gagggttgac 720

tacttgactt gacccctctt cgtcttaaga cgtgggcgta tgcatgcaac agcacaagcc 780

agcggtgtgt gctcatatat atatactggc actggcatag gactgagctc cacgatttgc 840

aaccgaggac cgacgatcta gccgaaaaat accatatcag ggtcatgcat ggtcgtcatc 900

cagattaact tcaacgagat ttgttgccat ccagtaccgg aaataggaaa aattcctgta 960

atccaccgaa tcccgctcgg aattttaaac ctttcatgcc tccacatttt tttttcattg 1020

g 1021

<210> 1481
<211> 1357
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_294497_G1, chr8:165626838..165628194, Cluster 9

<400> 1481
cgcatgaacc tctctaatca cactgacgga gaaggacgat tcgatcgcct gcagcaggcg 60

agccaatgat tggtcgccgc aataattgtc cgtaccggca gctgcagcgg tatctggtgc 120

tgttccggca ggcgccagat cggcgagttt ttttttcttg ttttcttccc cgcgcagtca 180

gctgccgcgg ctcgctggcg atgatggccc gtacaaaatt acccgacggg cgacgcgata 240

ttccattttg caccacgcga ttggcgcagc gcacccgcac gcatcgagat cgtccgtttc 300

agaaaattat aaccgggctc gggcccaccg tgggcgtacg gtccgtatgg acagcagatc 360

caccggcgga cgcggaccag tcaaaagaac ccatgccctc ggcctccttg gattcttctt 420

ccgagcacgc ccgtgtgact gaggaggtcg ccactcgcca ctcgccaggt agcacgcaga 480

aggccgaggc agctgctgtc gctggtcgcg gatggcccat ctggccatct cgtcgcagat 540

gagatgccac cactacacca gtgcggcagt gcccccacgt actcgtgtac tcgatgcagt 600

acagtaacgc tgcttcggat ctgggcaaca gtggagtggc acgtagacat gcatggcgtg 660

ggggtagtgg ggaccttcct aaacgactcc gatattctgc tcagcgcgaa atggcagaac 720

tctttagtac tgttcttttt cttcaccttc gaaaaagaca aggcacaagg aggggagggg 780

gcaaggaggg ccaagcagga ctgctgctgc ttgcggttag ggggtcactt cgcacgccac 840

ttgactggac catgtcccgg acgagcaaat gctcgcacca aaccctaagg gattagtgcc 900

actcactcac actcgtaccg gaaaggggct aaccaatagc agcgagcggc agcaaaaaaa 960

aaaaggagga aatccaacag tgcagagtgg ttgagcgaaa catgaaaggc gggctggtgt 1020

ttgaccttgt tccgccgcgt ccacgtcagg tctctcgcgc tacttgattt tgactcgcca 1080

acctataagc ttttagttag aaaagcgccg aggtgaaatt tcttcttggg gtcgcatttc 1140

agtgcaacga taccaacacg ccacaccttc ctttttttaa taatggaata aaatccgggt 1200

ttcgcctcga aaagcgccaa agttacacat catataacaa cttcaactac tacgtaagaa 1260

ggcaaaaact gttagcctaa aagaattaaa ctctccctta ttcctcaccg atgcaacact 1320

ctcttaaaaa aagaagaatg atcaatacaa cgcaatc 1357

<210> 1482
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2952_G1, chr1:15140557..15141587, Cluster 9

<400> 1482
ccggggacca tatcacaatt catagggctc ttcagacctc tgggtctctc ccggcctcct 60

agcgttgttc atgacatggg accatgtcct aggccctctg gaccttcgta gctcttgagg 120

ctaggaacaa gctccatgtt tggccaaggt tggggcatcc tatatgctaa ggcttaaact 180

agacctacta gataccttc aatatgcccc tagggcaaaa cggtcccaga agtagaagcc 240

ttagagcata atggatcagg tggtatagcc ctaatgctat gtgtgccccc actcgagacg 300

accacgtggc acaagacgat taagataagg ctcccatcca tcagattaaa tgtgatggat 360

gacaatgtgg tcaagaaggc acattgtttc cacgatagat gcaataagtg tacccgccat 420

cactgtgtga tacatgctat tgtccttgta gccatgccta aacatgttgg cgtacctgga 480

agtattataa ggtagaggcg gctacactat ttaccaacta caccatacct aacggtgtgt 540

gctttagtag ctaccactat aacaatacag gtcaacattg tagcacgttc aaagcatgca 600

tcgtgtacga ctccatgttt gagagaagac aggaatagtt aagcttgtgt tggacagggc 660

caacaatcca actgtcatgt aactcactcc tcacttgagc tataaaatag gagggtagag 720

caacatagaa agggcttgag acacaaacct caaaccttgt ggctagatat ctcaagagac 780

gaacccaaat tccatagagg aaggatagtc agttaactac agaccaattg gtgtagaact 840

cttaacaaaa caaaagaaca gtgagagcta ctcattcatc tggctcaatt gatatctaag 900

catttaatct tcttcatctt tgtatttatg actcaaccac acacaaagag gacataggta 960

ttacacattt actgctcgaa tctatataaa tctctcgtat gctagtagcg taaggttgtc 1020

tccagcgttc c 1031

<210> 1483
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296259_G1, chr8:173826201..173827245, Cluster 9

<400> 1483
gattacggat aggaaaatgt tcaaggtaga tgagcattgt ctgtctctgg ttgaaggcaa 60

actaatggac tgtactttgt taataatgtc cacgaaatca aagcaagttc atcgcaagcg 120

tgacggcttc ttggttactg ctcatggtat gatactatga ttgctcttga cgagcggata 180

tttcggggtt gtaaccagag attgagcagc accatgccac cagccaccca tgcgacactg 240

tggcttgtgc attcgtttaa agactcgagc aaagatggtt gtccgggtgg accacctgaa 300

gactgcaaaa ctggccgggg taaattaaaa aaaagtggag tttaccagca aaagcaacaa 360

cagcgcgaga ctgcagaaat gcaggagcaa tcaagggttt tgggctggtc cacacgacac 420

ttgatctgaa aaagagttgt gggggcatga atgatccagt aggttgctcg caaaaagatg 480

attagggctc ccagtactgt cctatcgtca actaactgta gctaaccgtg gacaaaatcc 540

atacaagatc gcgcgcgcag ccgctacggc tagtaggagg ggcgccgtgc accgggcaac 600

agcacatctg catgcattgc acgcatcgcc ttggcccttt tcttcttctt tttttctccg 660

tccgtgtcct gggctcctgg gacgcctacg ccttttggca gcctcgtcgg ccaccagagc 720

ttgccgccag catgcgtcca ccgtgcactg tggtctctgg tctcctctcc ctcacgctcg 780

tcggcgtcgc atgactgggg ggaaaagcga gagcgaaaca gagacgagca gagaggtgca 840

gtgcaatgca aagtgggaca gagcacggcc ggggccgacc ggcacggcgg cacctacttt 900

gcccgtcgcg tgcggtccta acagctatag gtacggcggc tacctatagc tgctagggtg 960

ctcccgtgcc gggcaaagta gggtgctgtc gtgccggtcc tgagctatag gtacgacagc 1020

agcagtacat cactctactt tgttc 1045

<210> 1484
<211> 1177
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_297811_G1, chr9:4527625..4528801, Cluster 9

<400> 1484
gtacatgcgc taaatctaaa atggtctata ttagggaaca atatcaatag attgaagcca 60

gtgggttgga tagagcatct ttcagattgt tcgacctttg gaaaaaaagt aatgtaaatc 120

taagatttat gatgaaacat atatttacta gtagatctag gtattataga tagaatagat 180

ctatcagtag atctaagtat tatagatcta gagaattgtt tagatcaggt tttaaataac 240

atagatctag agaattgttt agatcaggtt ttaaataacc ggctatagtt ttcgctatag 300

cgagcaggaa aaagctatgc actattgatt catttagccg ctatagcccg ctatatcctg 360

atatagtcgg ttatttacat ttttgagaat cacgccgcta aacccccttaa cccgctatta 420

aatccatggt ttagatatac aacagctagc ttcacattta cccctctcct ttgttcgcac 480

gtcttcttcg tccggagtcc gaagaaaaac cggcgaggaa ttccatgaca gaccttcttc 540

gtgttcttca gccacctcgc acatgcagcg gaccccggcc ccctccatag gacccgcttc 600

gaccacaccc catgcacccc tcgcccctgc tgcggagcag cgccgccgcg ccggctggct 660

ggcaagccct agccgggcac cccaccccag tccacgctgt cacgtccatc cggcttggtt 720

cgagagcagg ccgccgtcgc gcctgcagga ggctgccgcg gcctcccgtg gtgccagccc 780

ctgtcgctgg cccgtggggg cacaggtgcg ccatgcgctg cagccagcca acggcagcct 840

catcagccgg tcgtccttct ccccacggcc gagggccttt gctgagctta atcagacatg 900

atggcaccaa tgtgaggtta cttggatcac gaggcttcga ccaaattatg aggatttacg 960

tttgttggct gttacaattg gacagaactt atgattagct ctattcctta gacgcaaatc 1020

aattcaagct tgagtatagc cttgggcatc ctatgttttt tgatggtaca aagacctaca 1080

ggacgtacag gtatattaaa acgaccgaaa gttttaaaaa gccagcgaga atatacaaat 1140

gaaaaaaagg gagaatcatt ttcagagttc tgttctc 1177

<210> 1485
<211> 1075
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299655_G1, chr9:11554674..11555748, Cluster 9

<400> 1485
gatttgatat agcgtcttgt aagacttgat gaaacacgtg gtagttgatg taattcacat 60

cggtaagtag acgtgtagca tgacgtagtg cgcgaataca taacaccgcc tccacacaac 120

agttcacaca ttcgggatga cactcgtgta actgtgattt tagagtgatc gagacgaact 180

gcatgtgcgg caatatagcg tattagacta tctcgttctc tattatacct tctactttaa 240

attttaaaat acaaacagtg ctatgtcagt attttatatg attatataca tgatatgctc 300

gacataacct tacatggtga cgattaaatt aatatatata taaatactgc taatttttt 360

tagcagattg gactcgaaga gtgtcctccg ttgcgtctgc gggtttgctc catcgtttta 420

gttaatccag caaaaaatac ggaaaaaaac acgttttagt tattccatca tcatctgcgg 480

ccagatcgac ataaccttac atccacgtat tccgtccatg gaaagagatc gaacgtcgcc 540

gtcgcgcgag ccgtcccggg ccggccgtga cgacactacc aaaggttctc ggagtcggag 600

gtgatggcgg aaccgtgagg aactgttgcg cgtgacctac acagtgggac gggtcatcgt 660

cgtacgaggt agcaagccgg ccggtgcaac cggtgagcga atcatagcgc agcgccagag 720

gccagagcaa agcaatcccg cccgtgtgca gcgacaaaac ggcgccgtgc gtggcgtgcc 780

cagatctgtc gccgagccac ctgtcgaccg ggccgggcgg atcgcgcgcg cgcggcgctt 840

tctagtacat ccgctttgga gttggatgct tttctttggt cgctctcgcc tttcgtccgg 900

ccgggctcag ggttttattt tactagcgac agtgtacgtc gtgacgagat actgacgtgc 960

acacgtcctc atcatagttt attactacgt atcgttcagg aggtagtaca ggccgggggg 1020

aggggacctg tcacgtgggt tggtggttct gccgaaagca tctcgcctct cgtat 1075

<210> 1486
<211> 1056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301176_G1, chr9:20326706..20327761, Cluster 9

<400> 1486
tatagctagc tgatcgagga actaataacg catcgatcga tcgctcacca tgtgtctgat 60

ctgagtggct agctcctccg atccgatccg atccaatcat tcgagctaga gcctctacca 120

tgaatagtgg tggacagtga ccaatgcaaa tcctaaccta gctatagcta ccaccaaaaa 180

gcacacgaca agaccaccag ccggccgggt tattgcaggc tttttacgag ctctgccgcg 240

ttgcgttgcg ttgcgttgcg tccatccatt ccatcacaca cacaagcgcg cgccgccgtc 300

ggttcacctc gtccgtccgt agtggccggc ggggagatga tcgagctagc gcaccgcgta 360

ccgccggcac agaaagctcg agtcgttgtt tcacccggcc atttcatata tcctgctctg 420

gagctagctg tagcaacggg gaagtgtggg catgcatgat cgatgtctcg tggttgacct 480

gctgcccgtc agttcaggga aggagcgagc ttgctagcta gctaggtagg cagagatggt 540

gaaaaggaag caacaagggc ctgcattcac cacgagtggt ggtgcaccgt gcagcatgtg 600

gtcgtcctgc attcgtgtcc gagtgattta cagagctcca aactccaagc tagcattgtg 660

tttgtcgctg catcaacttc gtcgtcggta taacctgatt ggtaaccatc ctggggccta 720

gagtccgcca taaacacgaa gtaatcatct aagacataca agcagtgttc tgagtcagag 780

tcaaaacccg agtcagatca gggttcgagt cgatggtggg cgaagcccga gtttgagtta 840

gtagtgcggt gaatttgggt catcctgact ttgtcatggt gtatatcgga tcatcgaaag 900

cttgtccgac ggacacaggg accgtcaaac aatccatggc aaacccgaaa ttctcgaatg 960

aatccaacat gaatctgaga gttccaaaga atattttgtc cccttgcgtg aaacccatat 1020

atggttgcta tcagatctct gatgattagg gtgact 1056

<210> 1487
<211> 1126
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301834_G1, chr9:23959203..23960328, Cluster 9

<400> 1487
tgggtgggcg cttggccgtc tctagcactg ggtcaccgga aatgatggaa agaacgagac 60

agatctctgc ccggttctgt tgattctgat tccacgagga atctgggtca cacgatcgga 120

ttgtgccgtg ctctttgtcc gcgccctgtt tcgccacaca cgcgacgcca acggccgtgg 180

ccctggccct ggcccctgcc cgcctgctgg acccgctgcc gggcgggcgg cctggcctcc 240

gtcagtcacg cactcacgcg tcatcagcgg tgtgctgcat ccgggcgtct gcgtcggctg 300

tgctgctgtc cgtgtcgtcg gaaagcaagc cctggacctg tccgcccgtc tctctacacg 360

taggcgtagc gctgtcgccg atggaatgga atatggattg gaatggaaga aggtttactg 420

ctttctctcc atgtgaataa tagtggtgaa cgaacgtggg caggaatacc cgcctgccgt 480

cgtccactgg cactggcact ggcactggca ctggcacgcc aactaggcac ctttactttt 540

tccctctctc tctctgtatc tatctctttg caaaagctaa ctggcgagag caaacaaaca 600

aacaaaaaga atctagtcgc gtgccgtact tggctagttg gcttcgccaa acaatggctt 660

caaacagacg attttgccga gctactacaa aaggaggaga gaaaaaaaca cacggcacag 720

gtgatggccc atcactagac gtatgtacac cgcatgggcc tccatctaac tcatggtcca 780

tcaccagatt ttgcccagcc cacgatccag gccgtcgaac tcggggttct gggcctcttg 840

tcttgtgccg gcacatccgt cacggaagaa agagcagctg ccgggatgga gcctgaccga 900

aggccccaag caggcagtcg cctccggctc tggttgccgc cgaccgccgg gcgctggtcc 960

agcggccata ggccacagct acgcaggcgc acgagggagg ctgcacggat ttggtccagt 1020

ccaatcagct ctcaggcgca gcggcagcgg ggctgcccac ggcagcggta tgatggccgt 1080

gcgcctgctg ccgtgttagg cgtgtcaagt tgagctctca gaaaac 1126

<210> 1488
<211> 1038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_302142_G1, chr9:26801296..26802333, Cluster 9

<400> 1488
aacaacacct cgaattatta gacggctagc gctagctata gctgcgtact acgtcgtcta 60

tatatcagat atataatcct aggccacatg attgcgtatg gtgagtgacc tcgacgcatg 120

cacacacaca cactatatag ctgccctttt cttcttcttt ttggtaacgc cgtcgttagc 180

ttttgttgcc gttgcagccg ccaccagtag caccaccgcc caggacgaca agggacgatg 240

tgaggctcat tgtatgtgca cgttactcgc tcctagccag cagctagccc ccctcgacga 300

tcagcttcct aataacaatg tgtacacgtt attaatgaat tcgatcttgt tgtttcatgg 360

gcaaggagct aggtagctag acaactctct gtcgatcgat cgattcatct atcgaggcac 420

acacatcatc ttccacacac tgctatcaga gttagttggc ttgtttgctc agctgcaaca 480

aacgacgtct ccttttcttt tctttttttt aaagaagaat cacacatacg ttgcaacaaa 540

ctagggtttc gatcgacgtc gcgcaggtcc ctgctacgta cgttgttgtt gcttcgtccg 600

cgcgcgcgtg gatacatcct cgatctcccc tccgatccgc tagctagctg aataatcctt 660

ttcctcctgg acgtgtgacc gaccagccgg gcgcgcggag ccatggatag cgcacacaca 720

cacacgcagc acctttccga catggaaagg cagcggcgat ggagaaacgg agagacgatg 780

ttacatacct gtctccaata atccaatgca aagaaagttc caaaattaat cctctggcta 840

agctatctag aggccggcaa acggtatctc tcaaagaaaa agaaaaagaa aaccaaagga 900

tatgaaaacg tctctagctt gttagtttct ccgatcctct ttgatcttgt ctctacatgt 960

tggcgtctac ctttaatgcc atttgcttac cccggcccct tttctgatta tttgtgcatt 1020

catccttcaa tcaattta 1038

<210> 1489
<211> 1331
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_31025_G1, chr1:190534119..190535449, Cluster 9

<400> 1489
ccactgaacg tgactgaaga gagcaatgca gagatgattc gccttcaccc actgcttgat 60

ccatcgtatc gtatcgtatc ggtgactggt ggagcgagca ggaggtgctt gtcaccgtca 120

gataacaagc tttgctgcat cgatgatcat gacacaagtg tctcagctaa ttgagctgtc 180

acacgcacga catttgtata aatgcattga gcacatgtag gtcttgtttg gatactctaa 240

cattcacgcc aatctagatg tgttaaggta tattaggtta tagattagtt taatttaaaa 300

accaatccac ataaatacat gtgcattggg gtgtgagtat ccaaacaaag ccgtaattga 360

gaattaaatc catcgtcgcc gttgcaaatt ggaactcgca tacgcatgtg catctcgatc 420

tgaatgttca tcactgatgg gcataccgta cgcatggatg ggtcagatgc atccacaagc 480

taagcgaaga agcagctgca tgattggaac tctgcatgct gttctgaaac tacgactctt 540

gagcggacaa gcacatgctg ttgcgttgga gggagggaga cgagtatgcc tgctgcaaca 600

ccttgataac gccaggaaaa aattcaaacc gaacaccaaa caacagttgt aaaccctcgt 660

cgttgcaaag actttgaaca cgtcgtctgc tttgaagcga agtcgtcttt agcgactcgc 720

cagagctaac tttgccgagg agaactcggt cggcatcttc cttttcagat agaactcgcg 780

tgcggtgcag ctgctcccgg ccgtcattct cattttgact agacgaagaa gcagtacaat 840

acatactata ctctatacac atatgccagc agtcgtcatc cacaggtgtt cctagctctc 900

ctgtcacgtg ctagctactc tccacagatg tttctgctat agacagcact aattaataat 960

gtggtcgcgt agaggttaag ggcttgcttt tgcagcctta attcggttcg ggtctcgcgc 1020

ctaacagttg ttaagctctc tgctgtgctg gccaggccct ctagttgacc tgttccatca 1080

gctagacagc ggctccactc ctttttttc ctcgcctcaa aaccttagcc agcagcgaaa 1140

ccaaaagaaa atgagagaaa aaagggtgga gccgacggtg gttgttggag cgtcacagat 1200

gttgcaaagg acaactgatg ctgcaagccg tctccattcc atgcatgatt atccaatgat 1260

tcagcaaaag aaaaaaagaa atcattccat aggcactaaa accaggacag gttaccacaa 1320

aagcatattc a 1331

<210> 1490
<211> 1196
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313012_G1, chr9:96087705..96088900, Cluster 9

<400> 1490
catccatcca attggcaaga aggatgcatt gcatgtatag agaacatgcc agtaaccatg 60

catgtagcta gctttgggag cacaaaggcc gcgcgggcgg gcggacgacg cggttgggag 120

gccaaaggct gggccttttt tgctgtaccc tttgtccgtt gcgcttggat tggatgctcg 180

ccggtacgtg ccgtttgcaa ggctgatgag agatgccgga ggggaaaaag gttactattt 240

gttaggtaaa ggagagcatg cacgacgcat gcatggtgtt ggacgacgac gattcgatcc 300

atggccacca tccgtatcca gtgttatgtt atgtgtggtc ttttggctta ctggcacttg 360

ccctgaactt ttgcctttaa cctcacatgc atatgcatgg tttgttggca tgaagcttcc 420

gtcaggactc aggagtcagg accatggctg ctgtagtggt ggtgtgtgtg ttttactggg 480

gcagagatgg atggcccagg cccagcggat aggccacaca tcagccatgc aggtacgtag 540

tagctaggtg aaaacaggac gacgtgtgtc ggtgtgtacg tacgcggtac gccatgcatg 600

gcctccacgt acgtatacca ggggcagacg gtgccgcgtg cacggaagga ccggcacgta 660

cgtacgccat ggccgcctcc gtacgtgtcg tcacgtactg aaggtagcga gcgattcatg 720

gctagggttt aatgtttttg gaagggtggt tggttgcctg cctgcctgtg caggtgaagg 780

tggagcagca tgctggttgc tggatatgca ctagagctag aggagggaga aggtaaacca 840

tacagtaata ataatataat tctggagccg atcgactgcc tggcgggggg accattgccg 900

tgcgcgtgtg tgtacgctag ctagcctgga gctggaggga gaaatggcta agcgacgggc 960

cggccgcatg tcttaccggc agcggcaggg acggacggag gaccactgct gagcactgag 1020

cagagcagtg cagtgcagcc cctgcaggat aagatttcaa tttcccgcag gggatggtga 1080

tggtgaggag aggcagatgg cacccctgcc cctgtccctt ctcctgtaca agtcgtcgtc 1140

gtcgttgtca tcgctcgatg cccgatagat agggaggagg acacggtagt agtacg 1196

<210> 1491
<211> 1285
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313526_G1, chr9:98757919..98759203, Cluster 9

<400> 1491
aagtgcgatg tttcccgcta cgctagccgg tacatgcata ggggaacagg gcgtcatgtc 60

acgttggacg ggaaaaacat aaacaagtcc acgatgttct acaggccatg aaatcagaag 120

acctaccatg agtcttgtgc atagtattat caaggttaca ggggttaaag atccaatttt 180

caaggacatt ctctgatgta gacacgtaat caaagaatag ggttatgtag acctattccc 240

ttaaacttac ataaattagg tagttacatt acggttagtt ttcgtttatg atggttttaa 300

cttcttgcca tgtgaggcta gcgagcttct cgcccatgta cacttgtttt tcctgtttga 360

tcgtcacaac gcaatatgta aaatttgtgc cggaactatt aaaaatcgac acattcaatt 420

tcattgttct tcgatgatat cgattgtgat gccatgatgt tctagatagg gacacacgaa 480

aacagttcat aagtgatctg acggctatga cgaaagggcg tttttgaggt agctaattaa 540

gcttagagca cggcgtgtgg aaatttgagg tgcgtcggta gtttctatgc aaagatattg 600

gtggttggct tgattagcac ttatgcgtgc atgcgttcta tgctagctag tcttatagtc 660

ttgccgcgta ctactgactg ttactagcta gtagccacta gccagtagcc acaggcgcgc 720

ggcagcgtgc aactcgtgcc gccgctgtgc tggctaatca gccgacgacg aaacatagca 780

gagcagatca gcaagcactg cagcagtagt taaactctga tgagtcaacc aaatacatgc 840

agagaggaga aatggcgagc ctgcacggca atgtcgctgc ggcctgcaga gcacacgcgg 900

tgggtctgta ttttgacagg aatagtactc acgtaacgtc cactccgact ccaccacgct 960

ttcgtcttcg tcctacagga tcaaatcgcg gcgcatgtga tcaccgacgg cgacacggct 1020

cacaaatcac agcagcagca acaacaaccg actcgtgtga actcgtgtgc cctgcgtcca 1080

tgcagtacac ggtccggtga ggtgatcgga cgcgcgcggg cccttgcctg tcctcgcgcg 1140

agcgaggccg ccgcgtcggt cgccttccat ctcccttgtg cgcacatgct tcgcactctc 1200

catccccaaa ccacacgagg agctgcactt ccacggcgcg gcagcggcgc cgccgccggg 1260

cctgcaggtc ttgatcgtct tgtac 1285

<210> 1492
<211> 1386
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313664_G1, chr9:99388930..99390315, Cluster 9

<400> 1492
atgtatggtg ctcaacacca ccagaacaca tatgtgtgtt ttataccacg tacatgcact 60

taatcaataa tgaaacagtg aggtgaagga ctctcaggtg gcacatatgt gtgttttata 120

ccacgtacat gggtgagtgc ttataccaat gtcttcaaga agggaaacgc tacatcatga 180

catcatcgcc atagctagca ttagcaaagg ccagagacca agcgaagttt ttgcttgaag 240

acctcaaacc aaacaccatg ccatgcatgg ttgagatctg aagcatcggg gcacagatcc 300

gccgcttcca caaagattag aaagagaatt gagcagggag gggatacaca tacacctcta 360

cgaaaaggtg cagcgatctg ctagggtgtg tatggcggtg accaagccca tgtttccgct 420

caaagcggca gtgcggtgat ctgggcgcaa taaccagcat cgtccagtga ttgattattc 480

ttctcgtcac caacacaaag ctaagcaagc gctttgaggc cgatccaatc cgacatcccg 540

acctcgtcct cctcccacct ccatccactc cagtccactc caagcacgcc ctttgccccc 600

cacaccaaac aaacagctca gcctgtccgt ccctttcgcc accacgatcc agcgcagttt 660

attaatttaa accctcgagc acgcgcctgg caggtcagca gtaacatgct cgctttgcca 720

atggccgtcc ctcccgtccc gccgtttcga agccgacaaa tccgcgcgtc atcagtgcta 780

atctcgccat caaccagcgc ctacgtgtcc cggctcgctc gccggcgtac tatagtagtg 840

gcaccgagcg gcgccgtgcc gtggcccggg gtgggagccc atgtgcgcgg caggcaggga 900

gggatcatta gccgccgaca tggggcgaaa gcacgcacgc ccttgaaaaa aaagcgcccc 960

taatcctatc atcatcgggg gtctaatcct actagtttac tgttcgccgc cgcacccttt 1020

gcgccgacga cggagtttta gcggcgagtg accacatggt ctgcgctgcc gctgcgcctc 1080

ggagatttgg ggcagctggc ggcttggggc gcgtgcgtgc gtgcctctgc cagactgcaa 1140

cagtgggttg ctgcacagga gttatcttgg cgtacggtac tacggttgaa tcaatctgaa 1200

tccaagccaa acccaggtta ctactccgac caaatgggtc attggcaagc cgcaaatttt 1260

gcaactagga gtctatcaaa gagtagagag atgtgcacga tctagttagc aacattgaca 1320

tgatcacatg acttgtgatt ttgtccgtgt attacaaatg ttggtcacat atataagagc 1380

aacgcg 1386

<210> 1493
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_314893_G1, chr9:105343220..105344350, Cluster 9

<400> 1493
tgttacatta attctcacat ctggatagtc tccgtagaat tctgattggc ccccaattaa 60

gagacgtgta ctgcaagaat aagatgtcca cgtacaatta agccgctgtc agtgcgagct 120

aacctagctc acgcgcacgt gcatcatgtg gcgatcgaac gaaaccgatg gagagacttg 180

gagaggtagc ggcgcgaccg aaaggttaat ttgcatcgct gctggctcgc tccatgtgtc 240

atgcatgcat ggtctcggac gctgcgctgc gctggaggga gggaggccac catatgcgcc 300

atggacactg gatgatcgga cgagccgcgc acatggctgc acatgtcgcc tcggcacttg 360

gcacttggca gcggcccgct gggcggcgag ggccgagggg gacgcccagg acggaggccg 420

tgttgacgga cgcgcatgtg attgggctct gcggacacgc aagcttagct aggcacacag 480

atgctctatt ctgtctgtgt gctacaatgt acgtgctgga tgatatatag cataggaaaa 540

caagacttgg cgtgtgtgag cagccgagta gcttggtagg cgtgtcgacg tacagtcagg 600

cacatatatg gatcggacag catgcaggat gatcgacata gttttgcatc gtcgtcgttc 660

gtccgtgcat gcacgtacgt atagtgtagt agtagacgcc atctttctgg gacggaaatt 720

tcctggaaac aagggcccgg ccggcagccg cagttcgtct ccttttgctt gaaccgcggc 780

gtgccccgtg aaaggcaggc agatcactga ctcacatggc gaccacacat ggatatgcgg 840

tcgcgcgcgc gggccgccga tcgaccgagg ggggcctgca tgatggagtc gaaaggcggc 900

gttgcgttgc ctcttgccct acttcgacat cttcgtgtgc catggtatgt ttcgctggtg 960

cgtttctagt tagcaagcac gtggtgatct cttaatgtaa tacggagtac atactagttt 1020

aatactacta cgacgacagt ggatcacttt tggaaaagag aaaaggagca tatatattta 1080

gcgacgcctg tagtacatcg catacggact actaccttat catatccctg c 1131

<210> 1494
<211> 1232
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315720_G1, chr9:110312548..110313779, Cluster 9

<400> 1494
tccttccaca gcgtggtggc tgcgcggtgc ggtgctacgt ccacatagcg tgcacgaaag 60

atgcttggag tgagatcgat aggtgtttta gacacaaacc cagtcgatcc acgcaacaaa 120

caaagaagaa acgttactaa aggtcgatgg actttaatcc ctgcaacaca gagtcattag 180

ttatgagtca ttagttatgc aagtatgaag atcggtgcac tcccgtgaat aaatttgttt 240

agtagacgca aactcactgc acatatatat atacacctgt tgcatttgat aagaccagcc 300

catcaatatg ctctattgca caatggcgca tgtgtaccaa tgcaccacgc actgctaaag 360

ctggggacgg tagcaacagg ggcacgtgaa agaagatgaa ggtgcgtgca tgatacggtg 420

gtcaatggct ctggccgacg actcgcggtc tgctctcatg cacgtttcct aaagcgtcag 480

cccgcacgtc acggccggac ccggtacccg tttctgcttc ttctagatgt ggacccgtct 540

tcctggtgct cctgctggcc cgctagctct gcttagtgct tgcttactgg caaaaccgag 600

ctagcaaatc agtgaagtcc aagacgaagg aagcaagtgg ttagctgaag ctccagatca 660

ctggcgacac taacactctg ctttctccca gcagggagca caaccgacaa aagcgaggtg 720

gacgtgttta gaaaccagaa ccaggtcctt aacgtagatg aatgtaatgc ctgttactgt 780

gttccaaaac gtttgcatac tggcggtttg attctctttt ttttttttga agtaccttga 840

cgagtttatt aattagcaca gcacgcttcg gggttgtatg tctcgttttt atataacagc 900

acgtgcaacg tatcgtccag gcatatgtcg acacttctga atgtgtccgc cgccaccttg 960

tcaacaagac gtgcgtcact gcgtgcatac gaagtcacga agatatattt gtccggctaa 1020

gacagtatta tcgtcgttga ttccataaca aaaatctatt tagatactga ggattaattg 1080

tttagtagct aaaaattagt ttgctagcta accggtaagg tatttttagc taaatcttag 1140

cccgcctaaa ctagttaggc ctatctgatt cagacaacgt ctaagaaaat tctaaagaaa 1200

ttttttctgg agaaaacttt tgttcacttg gt 1232

<210> 1495
<211> 1105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319855_G1, chr9:132818766..132819870, Cluster 9

<400> 1495
cgtacgtcac tgcacgtgat gacgggacag ttttatccgc tgccgcccaa cgtccccatt 60

gcaaaatgtc tctgccgccc gcgggcccca actggtctcc tccgattggt tagtccagtc 120

tcggcgtcca agaagaaaaa aaaattcccg cgggccccaa ctgatctctc tcatgttcta 180

gacggaaacc tcgtgcactc acgatcatga tcatggcaga gcgtttcttg gctgctgcca 240

ataaatgagc acagctatcg catctgcccg gtcgatgaaa aggcaccatg catggactgt 300

actactacta ccgtgtatga tcttgggtcc taaaaaggac caggtatacg tgcctaccac 360

gagcatcgcg tactagctta caggtgcatg gagtcgatca gctactcctt gacccgccag 420

ccaacacagt ccgtccgaac tgccgcaacg tttgctctac ttctctacac gtggtatata 480

gatagcttct ccaccgtgtc acgcatcttg ttcgctcgtc acgcgcacat tgttcacgtg 540

gccgtatttt tttttactcc gcatcgatgc acatgcaccc cttttctgac cttgcgagtc 600

gattgcgagg caccgcttta ttggtcacgc cgtagcgttt aaagtaagta cgtccgcgca 660

tcaggaacga aaagagttgg accaaaaaaa aatgagccat gtcctccaag gccgccgtac 720

gtaccccgca gcgtgcaagc ggttgccctc gatccggcgc gcggtaagac ggggcgccat 780

attatacgca tggtacggag tccaccatga gtgctgtact gctgctgtac tgtagcgtgc 840

gtgatgcgcc gacggggggc gggccgggcc gggccggagc agataaggtt tggtggccag 900

aggcttccaa acctaccctt atttgttcca gctagtagat cgacggccct agtatttcct 960

ccgctatttt cccccgtggt tagttggtaa cgccctcact gtcactcact cgaggtaccg 1020

gatccctcgg tcaagtgctg cttgtacccg tgctacacta cgaagaagtg atacgtcatg 1080

actgtgcaac tgatccatgc atgcg 1105

<210> 1496
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319886_G1, chr9:133063381..133064614, Cluster 9

<400> 1496
gcttggttcg gttaactagt cgacgttctc tccttgtcac ttgtcagtgc ttcggcgcag 60

ttttccattg caggctggct gctgcctacg cctgccggcc aaagggtatg caggcagcga 120

aagaagaaaa aaaaactatt ctaatacctt gtagcttgta tgggtacgtg gaaacccctg 180

ccgccagtac aagatgatag tagtaacaga agatggggtc gggggggctc ttgctcttgt 240

ccatgacgta ctagtgctct cttcgatgcg gcttaacagt ttcagcttct catacgaaag 300

ctcgctcctg tactcgcaga ttccctgtcc gcgacaggct gcgatccaac agcacctggc 360

cgcacagtgt ttactcgcga gcgcaccgtg acatcaacat gccccaatag atcaccggag 420

gacactgcac ctgcggcaga gaacccatca acgtctcggc tctgcaggca ggcacacaca 480

cacacacggg acctaccctg cgcgaaacag catgtgcccc tgcgcggtga gtgttggatg 540

cggatgctgc catctcccct gcctcgtcgt cgtcgaccgg cctgcaaaga gaggaccgag 600

acattgagtc tgttcagtag tagcagttag tatttcttta cagctgcagt ccattctcac 660

gacctgttac tgtgttacta ctgtgtgtaa acagcagcag ccgcgctcgc tgccaagaag 720

caagcagttg ggcaggcaga cccagatgca ccggcgcgcg gcggccgtgc gcgtgctagc 780

caagttgccg gcgggtcatg atcgagctcg accgaccggc acgcacgggg cccctccctt 840

cccgcgctgt ccaggtagca ctgggatctg ggcgtgtcgc cacggcgcgg ggcaccttgg 900

ctggcaccgt ggcacgacgc gactcgcgcc tttcccgccg tggcttggct ggcctcgtgg 960

gggttcttgg cttcttgctc gtgccccgat caattcttta cgaggggtgc gtggtgtcat 1020

gtcacgaggt caatctctgt cgcagccttt gcagctggct tccgtgcctt tttctggccg 1080

cgttccacga tgtctctctc cggcctccgt ccgggtgtgg gttaatacca taaaataaac 1140

aacggccacc ggcctacctc cgccacatgc tttccacttt gacgtgaatg tatatatgtg 1200

cttgtaacaa agctcacgct tgtggcatca gttt 1234

<210> 1497
<211> 1092
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320525_G1, chr9:135817412..135818503, Cluster 9

<400> 1497
cataaattag tcatctgata ctacatcata gtctatattt tcatagcatg catgcatgca 60

tggccttggt tgcgaaaatg atgcaataaa taaattcaac atgcacttaa aatttgtgtt 120

gcttgctggg tcattattga ctcgttgtac aaaaacttaa atagtagttc tctgtctacc 180

gtgtaaaatc attgtgcaag gtaatcaagt cacaccaagt gtagggtacc atcctaatta 240

attaatgcaa agcgcgctaa ggggtaccat cctaccggtg gccccggccc cgccatatat 300

acacatggca tcaaagcact tctaatataa gcacgatata tccagtttgc gtcgaaatga 360

agtacagagt aagcacggag gagctggcga gcaggtcaat ggagcagcat gtacacaaca 420

aagaactcgc catgcatgaa tatgatagcg gctagcctag ccttttttcat ggtttccccc 480

cttgttgtgc tgcggctgcg agcaaaaccg cggtccggtc gatggcctca ccggttccat 540

ggctacgtct acgtgtacgt aatcgtagcg gcggtgctcc agaatgtctc cctcccgccc 600

tctcgccggc ctccgaccgg cggcggtgcg caggtgcctc gaagacagcg ggaataagga 660

ttggtttgga aagccacgcg ctgacgcgaa gaccgaacga gctgggctct tccccgtgcg 720

tgcatgtcgt tgacgacctg ctcctcctcc tcctgctgct gctgccgccg cctgctggca 780

tgaaaaccca ccaacccccc acacagagag tcgcgcgtgg cgagtcgtaa actactgctc 840

ctgcgccttg ttcgccggac caggtgcagt acgcgtacca ggctttgcca ttgcgatacc 900

acgcccacgt tgtcagtgta aaaaccccct ttgcatgcat gaacgaacga accaaccgtg 960

aatattcgtg ccgaccaatc gtagctggac aagttctgag tgctggtcca gcaaggtact 1020

cgcatcgaag gtgcagccgc tgggtctagg cgtaaggcgc cgtgggaccg gccgtcaaat 1080

cgagaagatg ca 1092

<210> 1498
<211> 1372
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32088_G1, chr1:197064525..197065896, Cluster 9

<400> 1498
gtcggggctc gttgtcgtga acgttaagat tgttgcgccg cgtgtggccg ctgcggaccg 60

ggtctgctgc tgttcatcgg ggctagggta ggccgtcggt acgtagcccg agtcatggat 120

cggtcagaca taatatcgag tgagcgaggc agttcggcac ttgggctggg ccgcctgtgt 180

gaccgagggc cttggatcgt cgctgtgtgg gggtgggggc ctgcgcgagg atcggcggcg 240

ttcccgttgc agcagcagac agcagtacgg tatcgccatg cacggcccgc acgtctcggg 300

gagctctgca gcctgcctcg tgcgtgtttg gtgggcaatc acccttccat cgcttgcacc 360

atatccatat gtccatgttc atctgacctc gacgatggac gacgaggacg agccgtaagc 420

cgctctatcg cgccacgaga gcgaagccag cccagccccc gggcgtggat gactgcacgc 480

acacggcaca ccgcatcatg catgtaccgt gtgcctgttt cctggccggt tgcggacgcg 540

tgctctccgg ccagtcaagt tggacttgga ccatatattg tcgcgtgcgg cgcgtacgcc 600

gtacgtacag gcgtacacgt agttctgtgc acacgtggcg aacaaaagcc aagagacctt 660

tgcgttattc aagctctctt gtctctcctc gtcctcgatc gctagcatac gtacgtactc 720

cagactccac tgtggcacga gtgtgtgtgt gcatgcatgt atatcatctt gaattgatga 780

caaaggcaaa acggcacgag ttccaggcgc gttccacgta cgcacgcacg cacgagagac 840

aaggccaata acgcggcgcc cggtattgac gtacagcggc tagctagctg cgaacagaag 900

tcaccggtcc aaaaaattct gacgactgat agatggagcg agacgacgac tgcaatgcaa 960

gtctgcatgt gaaaggctaa ttgcctgccg tcgagttccg tttagctaga gagacctatg 1020

catacgcaaa acgaatgagt agcttgctgc ccttgtggat tggctgcgcc atatctagcc 1080

ggccgtgccc gtacgtacct tgcaaaacat gtattgcggc acagcacagg cgcacagcag 1140

gctgctaggc gctagctgcc gtgccggtac aaaatggtac accgtaccaa agtctggcgg 1200

gcgccagtcc ttgtccgccc ccgtttttc tgccttcgcg tagcgtgtgg acgcagcatt 1260

tgcacgtgta tcagtatcac cacgcatatg caatggtact ctatctgata actaactaac 1320

taactaactc cctgtgatgt ggatgtgtgg cactggactt gtaatcaaac aa 1372

<210> 1499

<211> 1191
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321861_G1, chr9:142815557..142816747, Cluster 9

<400> 1499
cggcccggcc cggcccggcc ctgttgtttg ttattaatct caaaaaacta aaaagaggaa 60

aatatactgc gtttgttcgc gtactacgtg tcggatgccc gtcacgtact catgggcgtt 120

ttgagaggca aattagtctc ccaaacactt cctggtttct cagctctgaa gaaaagaaag 180

cacgacaggc gggcgaagat gatttctctt aagcgacgct aacagctcga tcaggcatgt 240

cacttggtcg gtttgtcttc cttgagaaac caggcaaaga tgcgccaacc tgacgccctt 300

tcctgcattg actgccctgt tgttgtgtga gtgctagtac ctgttattgc aataaggcaa 360

taataattag acaggacgtg gtaaatttcc acgtgtgtga aagtaaacaa agctgagcag 420

cgcggtaggt agggtgggga tgcagtggaa agcgggttcg ttcagatcat atccagctcc 480

agccgccgga aaagaggagg ggatccaaag ataccagtcg cagcaggcac caggcacagg 540

cagtaccccc tcacctcttt tctctctctc tctctcgtcc ggagcaagct gcaaagccct 600

gttcgactag cctggctcta ggtctgtgca tgtgtccgtg acgttttac tccatagacc 660

acgtaagctt agatacagta catcgtcctg aagttttcca agccgtgtca acagacagcg 720

agtcagcggc acgtccccat aaggcactcg tgcgaccata tattaccgtc atccataatc 780

taatcggaat ccgatcatat ggggagacgc aaggagcgct agcggttgaa gcgaacgtgt 840

ctacgcgcgc gagctagata gaactgctac gatgatttgc cgttgccgag ctcgagcacg 900

gccgagcgca agcggccaga ttttgctctc agtagggtgg cacgtattac aacctgctac 960

acaacgccac ttgacctacc aagtcagcga ggcgctcaca acgaggcaag ggattcaata 1020

caatcatcca tccaaacgcg gggtaagata tttattcacg cgtctacgat tataaccaca 1080

aataaaactc cgtactcatc cgttgatata aacatctcac acttacatag agtttactat 1140

atttctcgta tctttgatag ccacgacctt catgtatcga tggatgattt t 1191

<210> 1500
<211> 1004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32267_G1, chr1:197986714..197987717, Cluster 9

<400> 1500
gtccgtgccc acccttcact cgctcacttc atcctacatg atcgccacag tcgacctttg 60

agctccgtca tcccgcatgg atgacagtaa ccctgcgggg ctgttcgttt tcatctcgat 120

ccatatgaat cgaagaaaat taggtgagtt taaatctata acaaattcaa atccttatta 180

ttatttttc aatttcgtta aatccacgtg acatagaaat aaatgaacaa gttctacatg 240

tacatgtgtg gccgcttccg ggaatgattt ggtggagctc atgtggttgt ggagaaacgt 300

tggttttgcc gccgccggat gacctcacct catgtatgga taattggatg tactattagt 360

agcttttgag ttttcaagca tcggcagggc agcaatgtct ttttccttgc ttgcctggga 420

aacaaaatga tggtaggaag atgagagaac agtgtcatct tgcactgtgt gcagtgtagt 480

gtagcagacg cgtcgccgct gaatttttcc acagttgagt cagtgtgcag agtggaggtg 540

gaccaactct ccaactttgc gcccttctct ctcatagagt agtctcatcc ggaagaccgg 600

aaggcccagt agatggctaa aaattattaa ttaatggggg agcttcaaag ccttgttcac 660

tggcacggga cagccctgca cacaaacctc atcatcatcc ataataaagc ccggccggac 720

atgctcaacg gcagcatctt gattatttgg tagcctgtcc tcgataactc tcgagtatca 780

agtcacgctt gatcacctgg tcggctaccc aaaaacacaa ttatgtagct agatatgtgt 840

ttgttcaagt gcacagctaa aaatatattt atcgacatac cctcttgtga gcattgtcat 900

tacttcggag agagtattat ggctaatgtt ttgccaccta gaaaataaaa aaaaaaacac 960

ttccaaaaag agtggtgtat agcctcatgt ggtcaaatat aagt 1004

<210> 1501
<211> 1390
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323038_G1, chr9:148644238..148645627, Cluster 9

<400> 1501
cctacctaag ggagccacgc tggttgatta tgcttatctg aaccatactg aaaccggcaa 60

caaaatgatc gcagtaaatg ttttggaggc tctactcttt gttgaacgct tctatttctg 120

ttcttgctaa tgcaaatgca ggacagcctc aatccaggaa gaagagacaa gattcatctg 180

caattctgca tcttcaatgt ctaggatatt ctaacatctt agtttacatg ttttgtcagt 240

catggcacgt gacatttagg tatatttgac ttgggatact caagattttg gtaactaagc 300

ggcgtaacag tacacactta aggtgcttcc caccgtctgc aggctgacaa caaaggatag 360

tagcggagct agattgcttt gctgttgtct ccctgttttt tgttagaagt ggatttgttc 420

ttgcttcatt tttgggacag ttgaagtgca tctagactct ctagagacag ttgtgttgct 480

agaatcacga ccaaaagtat tggtccaata ttaggtgtct gcttgctcat gtagacggta 540

ttggtagaac tactgaagtt ggtttcaaga ttagtgcaac ggtgacatca accaagcgca 600

cgagttgcgg ttttttctga aatcatttga attatggaca gtgaaaggat acccccccttg 660

ttggctcgct taaatacatg cagtgtagtg ttgtttactg cctccttggg gatcaaatgc 720

ccaactgcaa acacataatt caaatgattg cagcacgaac atacaacgaa cataccacga 780

aagacacaga cacccctatg gaagggccac tgttgaagga gaacgaaagg cacagtcaga 840

tggcagccgt gtacaggacg aacatagaac gaaacagtaa ccaaacgtga aatgcacacg 900

tagcacgctg ttacgaagag gtacactgca gctagccaag cgtgaaacgc acacatagca 960

cgcgcaacta tcctcgtccg gtccccttc ccttcccttc actatcgggc ggcacaggaa 1020

agcgaagacg acaggctgat ctgacggcac ggcacggagg agcaaagcca acgttgtgca 1080

cgcagtacgg cggggttagg cgcatgcaat gatatggtaa ttcatgatgc agaagctctc 1140

ggttagtgca ggagccactc actcatttgc gtttgcgtcg cggccggccg gacgggacga 1200

tgacggatca acgcgattgg atgggcggcg gttcagtccc gtcctgtatt ctgttgaatt 1260

ctgctaatca gcatccaggc ttttcctttg gaattgggga aaagaaaaag gggagcagct 1320

tcaggattag cttcacggcg agagcgcata ctcccgcgtg atcactctga ttagtggctt 1380

agtgcccgcg 1390

<210> 1502
<211> 1325
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326460_G1, chr10:10381583..10382907, Cluster 9

<400> 1502
tagtgctacg ctagaagcca caaattcaga aaggattgga gaaattaaaa tctactcctt 60

attgaaaaga aggcataact agtctttcgt actagcttga aagccacaaa tttagagagg 120

aatcggagag aataaaatct acttcttatt taaaattaaa taagaagtga gttttagtct 180

ctccaaatcc taccgaatct gtggcttcta aactggcctc tagagtatga agtaggtcgc 240

ggtggtggtt ggcggcatta atattcttat tcttcttctt ctgcctctgc gtttctccat 300

aacacgcacg ttttattatt gtttttgtg tgtgtgtgtg tttttgtttc accgagtatc 360

tactactgca tgttgtgtga tttcccaaag atggaggccg atacgtaagg gaggggcga 420

aaagtggctg ccatgcttgc ttgggtgcgt agctggctgg agcacgtact cctatattgg 480

aggatcgtgg gagctggagt atgtatgagg caatgagtgg cgcccagggc cagggcagat 540

gggatggcca tgccggagcg gtggtagcaa gtagcaacgt agcttttgcg catgattgag 600

agcagagtag agcggagcgg agggaattga atttggaggg aggaggaaga aagtgggggg 660

caggggcagc agctcatcag ctttgttttg gcctttgcgc gggggggggg gggggacact 720

gcaggcaggt gcggtgcggg ggaagggagg gagcatctaa tgctgctgct tgacagctca 780

tccgccgccg gcctctccta ctgcctcgtc tactccactg tatcccattt cccccggcct 840

ctgtactgta tgtgtgtgtg gtctctttta cagtgtcctg gactactggt acttttcacc 900

ccttcttgta cttgactttt actttcaccc tacgtgcagg tgaaatccaa aaaacaccgt 960

tacagattta ctgaataaat ctaagcgtac gtccgttgaa agaagtggct ggtccgttga 1020

aaaaaaaagg gtaataacgc ggggatcgct gcatttcttt tttcttcttc ttcttctttt 1080

taatagatct tatattttaa acatgccggc cgcgccgatt aatgtctctt gtacctgcgc 1140

ataatatact acaactttgt ctttgaaaaa ataataaatt cccagtgggt cagtggcgcc 1200

gaagaagatg atgatgggtg ggggaatttc ggggtctcct gccagtcaac tccagcctgg 1260

cccacccgcc ccggatcgca ttaaaacaag cagcacacag tactgatctg gtctggtctg 1320

ggctc 1325

<210> 1503
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_329014_G1, chr10:24425623..24426658, Cluster 9

<400> 1503
ttaacgtttg cttttctatc gcagagtggc ctccaccgcc ttcgatcacg aggtgtctcc 60

ttctattagg tcgttgtgat tgagtctacg ggaccctccc cctcttcact tggagtattg 120

gggtgacctt gccgcttctc gtgcagccct ggatgtggcc gatgatgaag taggcctact 180

tcaggaccag ttcaccaagt ctgatggtcg agttgctggt agggttccta tactactgcc 240

cctatgtctc ttatcgtcct taattctctt ttcgtatttt tccttcattg ttcagttttg 300

gaaattgagt tggagaagct tcgtcgttgg gcggactagg ttgtggaata tgtcggagcc 360

cgcggctctt ccttggtgga aaatttgaaa aatatcttgt gtcacaactg ggatatcgtc 420

gacttcagtg tacagcgagg ggtgatcaaa gccttggtca tcagggagct cttgtctggt 480

tgcgatctct aggatgtcat tggccttcct taggatatac cgaatgatgg actggaggat 540

gtcctggagg gctacgacga ggcagttagt catgttgtgg aaaggttgtc cgcaaatgat 600

atcatccgca aagcctgatg agctcatgat gtatctcgtt ttgacattgt gtctttatga 660

aggaatataa tttttatttt agtttcaatc gtttgagttt tccttttgtt aattgtgatt 720

gtgctttggg gtcacgagac gcctatgctg atctgtttcc cccatcgggg ctcgtaggcc 780

tgctttcttt aggtccatag ggcatctttt taaacaggag cacatgctcc ttgttgccca 840

ttcttatggg cagacgtcgt gatctcttgt tcctcgtggg ttccttggtg accctcgctt 900

cctcccggtc gatcgctggc tgccatgaat cagggaatac ctttaacggg tgatccttca 960

aggcaatggt atgggcattc tttccgcttt tgtaaggtct tacccattcc tctcatccct 1020

gttgatcccc tttgac 1036

<210> 1504
<211> 1152
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337008_G1, chr10:77259269..77260420, Cluster 9

<400> 1504
catgacgtat tgacgtagag ctaaaaaaaa tttgtactac taatttgcgc ggctgtcggt 60

ctctcaattt ggcgcgcgcg tgaccataac gcgcgctgtg cctgtgcggc gacggagacg 120

gagacgcgga cggccgcggg agtagcgagc ggacgggcct cggtcgaggg aggcagacac 180

acggcccggc cgtgattgcg ccatctctcc tgcagcctaa gatttttttt ttagccaggg 240

ggcgggcgag ccggccggcg agcagaggaa tgatgatatg gattgttcgt caagaaatac 300

tcctcctgtc tacggtgtac catatctttt tcgtttttct tatatatata tatattgctc 360

agacggaaca tgtactgcta ctgtttttcc cgaataacag gtgttccaat ccatcaatca 420

catgcagcca cgccagacga caaactccgt ccctgtatat agtagaatcc catccgtacg 480

gaaatttgac gcgctttgcg ttgctgtatg tttaccagga tctgcacacc ccacgttaat 540

taaccgaggc ggtgcatcag agattcatct cagagtggcg cgccggccgg cgcatgcatg 600

catggtgcat gcgctggtac ggtgaacatt tgatgatgca tgtgcacgaa caagatttta 660

ctcagggaac caaacacccg aacgcaactc aactcaactc aactcaactg agctgaactg 720

aactgaactg ctacggtgat cactcggccg agctgctggc tggccccctg ctgatgcacg 780

gtttttcaaa ccgtgtgaag aacgccacgc cgcgtcgcgt tcctccgccg ctcgttccac 840

gtgcgccggg cggcgctgcg gacggcggcg gtggtaccaa ctaccaaaag tccaccacca 900

gcagacacgc acgcagtcag cagagccaca cacccacggt atatcatctt tgaattgcct 960

tggcctacta cgtagtagct gtggacagat ggccaggcca gatgcatgtg ctgctgcatg 1020

cgcccacact tccttccccg cggcccttga ttagtgtaat gctaataatc gcctgcttag 1080

ttttccctcc ccgtcctgtc ggtctgactc tggcgggcca cgcgccccgg ggcccggccg 1140

gcgctgctag ct 1152

<210> 1505
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345075_G1, chr10:121406311..121407360, Cluster 9

<400> 1505
tcagggacgg gtgaaagatt catcgccagg gaccagcacg gggggagccg acccctccac 60

ggttcatttg ccatttttgt tagtgggaga agcattaata ttgcagtgat tttttatata 120

tctatcataa gttcataacc aagaatggtc cggacgtcgc taggatttcc tcgtgccaaa 180

cggccgatac aacgaagcat cgttggtcca gtggcgaggc aacttgacgt tgcattcatc 240

atgcagtata tgtggtattg gctagatgct tgctagctta acatgtccta gtccatgcat 300

acgtacgaaa ctatagggaa tcttgtaaaa ggtgaactct tcgtgccaca tactaccatt 360

catctagagc tcacccgtac acacgacaca cagtccatgc atacgttgat acgtacgtaa 420

ccggcggcta atataacagc gcagagctgg atcagccaca cagaggggtg attggtttga 480

agaatgagga aatctattat cttcttattc ctcaaatttt tttatttggt ttgtgtaatt 540

gaataaattg atctatcatc atttcatttc tcataaggta ataaattgat ccatcaacat 600

ttcattctta gccggaccag tagaggccat cgcgtccctg gcgcccaggc tgtgctccgg 660

gaagaagaga gcccgccggt gaggcctcat ggatggcgat caatggcgtc agatcggccg 720

gcatctgcat cggacgctgc tggtggaggc ggagaggaaa gtgctccgaa ggtgcggacg 780

actcgactcc tttaacgtga gtgcgtggac gggaacggct gtggcagtgc gtggagcagc 840

ggacggaggg aggctgcccg ctgcctcgct gcaggcccgc aggtaggggc ttcagtgagt 900

actgcttaag ggcgggggag ggataccata gaggaaaagt cacgttgctt ttaggtttaa 960

caagggcata gcttattttt tatttaatta aattaaataa attctatgta tatttagatc 1020

ctctttggta gggttctttt aaagtctccc 1050

<210> 1506
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347553_G1, chr10:135695637..135696669, Cluster 9

<400> 1506
taataaaaat atatataaca agtgtagtct agttttattt gtaataatat caggagcaca 60

taagtgaaat catttttat taatacaatt attaagagat acagtgaaac aaagtatata 120

taaacaatat acaatttcat ctcaaataac ttttaggtca cgagataagt tacaacgggg 180

ttttcatggc tctcaactaa accaagcgca ccgaagtatt gaggttagat acgtatagat 240

gtaaaattac gcatgtgccc tctaatgtgc tggttcacat aagcattagt tggtgtttat 300

cgaaggataa gattgcttgg cggtcggtgt atttggtgtt tatattttat gagattttag 360

tcctaaaaaa cagtgtattt ggtgtttaca ttctttttgg acaaaattta aaacacggat 420

tctatttgtt aatacagagg gaatataaat ggatagtact agcaccgagc ctcaagcccc 480

ttcagtcctt cacaaatccc ccgtcactaa aagtccttca caaatcctcc tgcgcgtcct 540

ccggcgccag cgcgctcggc cgcgtccaaa gcctcatcga gcgggagcac cgggtcgcgc 600

gctcgcgctc cgtcgccgcg cacggagtcg accagcggcg gataagtcca gactatgggg 660

ctgggtgtcg ttccagaagc cgcggcggcc ttccgcggcc gccgggtgca gggacgtgga 720

gctggagtac gacgacgcgg tggcattggc gaagtcgatg tcggtgttga tcgcggcggc 780

ggcggcggcc ccggagccca agacggcacg gtgggggagg ctcatcccat ggaagatcaa 840

ggcgctgcgg aaccgccccg ccggcgatcg gcgagacagc gtgagatgga accgatcgcg 900

ttgtagcccg ggtcagtctg ttgttcattt cctcgattta ggtggcgttg gctggtcgat 960

cgatcgcgct cgcagccgct tgcgctaatt tactgttttt tctctatgtc tgttgttttg 1020

tctccttgta ctc 1033

<210> 1507
<211> 1140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347607_G1, chr10:136001767..136002906, Cluster 9

<400> 1507
tacagtacga tgtagcccca gctagctccg agcagcagtc actgttaatc attggaatct 60

tgaacattcc tctgcattgc attgcattgc gatggaggag gccacagcaa ggttcaatgc 120

accatgtgat cgacgcgagc ggagcaacta gtgtttcttc gtcagggaac gggaccaaac 180

tcaccaaact ggccggcgtc gctttcccgg cacatgtttt ggaggacctg caaatcctgg 240

ggcgcgcagc acgctaaact gggaagcagt gttgttcttg caatgcgatt agttttgtcc 300

ttgcatagca taggtgggtg ggtgtgcgga gttcctggcc ggccgtggtg ccatcgacga 360

agcccctctt tctctcggct cctgttcttt caggcgttgc tgcctcttgg aagaattagt 420

gtggaggacc gaccgggacc tatatatagc tggctgttta tttggtagct tggccacacg 480

gtaccagctt tctgagtctg cgttgatttc agattctaac cattttgtcc tgctgggctc 540

tgctgtgcta cctcatggca atcctggagt atttgcatgc atggggccgg ttgcagcagc 600

atccctcctt tctgagtctg cgttgatttc agaagcgaga gccacgttag ttagcgacct 660

gcgagcctga aattttcaag ctcgtaacgc gaccgagccg cacctagccg aggcaggctc 720

gtttccggta ctagacgtga cgtcaattag gccagcattt tttttcttct gcacgttcgc 780

tagaaaaaac agctgcgaac tttgaaagtc caagtcagac tggttgactg tggagaccgg 840

ccggccgatg gatgtccctt tcggtccggt cccctgcgtg cgcggcacca gaaaattttg 900

aagcacaagt aggttaggac aacttttctt aaggaagcaa acaaaaatac ggacttagag 960

gtagtatttc gtaaacattt tcttgcattc ccaagacgca cactgagtgc aacgcaacgc 1020

atatcacctc acactgctgc tactgttgac cggtactgcg agcgacaagc ggcgattacc 1080

tctacacata agcgacgtta gcttctgtga attatcatgt aaaagaactg caccgactaa 1140

<210> 1508
<211> 1141
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348706_G1, chr10:141602002..141603142, Cluster 9

<400> 1508
attacgttat tagtttttat aagtcagcta atttttggtt aatttttttg gcggctaaga 60

gtcgccaaaa ataacttatt ttttgtggcg tatgtcttat tttcgatgac gattggccat 120

taaaaatgaa ctttgtttct gtagtgccgt taggcttgta gctcgatgca gcatactaca 180

gctactcagt actagtgtag gtggcttgtc cctgtcgacg caggtagtcg atctgtcgtc 240

ctctttcatg ggccggccga aaatgaacta gagataccgg tgatcttcgt ctatcccaat 300

tcttatgtaa caacatatag ttagctagcg tcgacagcca cctttcggct ttcggtgacc 360

tgacgacgcc cttaatttcc tccatcgaga cctggatcga ctgcgtgtgc atgcatgcat 420

gcatgaggga ataaaattaa cggtagttta gctaggtttt tgttgcccca agctttgttt 480

gcttggcggt ttctgtttat gtatgtcgtc gtcgatctgc gattggcatg caggctccaa 540

cttaaccaac gttttcccta attaatcgtc ttcttatatc atgcatgctt gctactaatc 600

gtgatcgaca atctcgatcg ccttttttat tagaagaaga agaaaaaaaa agagggtggg 660

atctccgtct cggcctacat atctttgctg gctgcccgtc ttcgtcgccg ccagcgcacg 720

ccacgtctcc gatccctttt agctcgctgt aggtgcaggc gaccgataga cgatagatga 780

tctggttctt cacgaaaccg agaaggtttt tcacgccgtc gatcgatgtg ctggccggaa 840

cggtcggccg ccggcggggc gggtgtgtgg ttggcatgtc accatgcgta tggctctggc 900

tagctacctg cagcaagtca cagctgctgt gctagctcta tctgtagctc acgtacgcat 960

cgcgtccgcc atcgccaatt cgccatgcag gtacagctag atgtacgagc acagtagggg 1020

tgatacttac acgattccta gcagctagca acctagcatt actttatatc tgattgctta 1080

gacactcgaa aaatcctact ttatttatat ctgaatctga tgattgctaa cacactctcc 1140

a 1141

<210> 1509
<211> 1099
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348891_G1, chr10:142775833..142776931, Cluster 9

<400> 1509
atgaagattg gtttggtgca agaagaaccg gagaggatcc ataaagagtg aggacaagcg 60

gcgtgtttgt tttgtttcac cactgtcatg tgagctgcgc ggcacgcaga ggacaaacat 120

tccggttagt tagggtggtg gagaaggaag gagctcacca ctcatctaga catgtgatac 180

atctcgtggg cgtgggcctg attacatggg aatcgcacgc actacactgc actgcaggat 240

tttaatttca gtgagttcat ctgaatactg atctccaaat cacataaact tgattttatt 300

cgatcatcat gtagtaatcc tgaatacatt tcgcggcgag aattgtcctc gcggatgatt 360

cagaggacgg tgtggattga acaaataaag aagacgactg cttcagctcg tactcttgcg 420

catgtgtgtt gcagaaaatt tcagaagaag cggccgttga gatccaaaat gatcaagaag 480

ctgctcccgg tttggttact tctggagtcc ggacagctac aataatctag tattatctac 540

tagcttaatg agattggctc gcttatcatc tcatctcatc tcatctcatt agcttggtgg 600

tagccaaaga caaaagagaa aggcatctag accgaggtag tcatgtctcc tttacctgcc 660

catcaatcag aactaccata cctactgaat ccgtcaggta caagcagcaa cattagataa 720

cacacttctt ttgtaccatg ttcgaaccct aataaatacg ttgtcaccgt ccgacgagcc 780

ataagcccat acccatacct caacaaaaat ctatttattt agaaccccat caacaaaaaa 840

aaaaagattc atagtaccat gtgcaaaaag atgcactgcc gtttggtacc ctgtgggagt 900

gtgggctgtg gccgctcagg acaggtttgg ggatcacaca aggatccatg gggagtaatc 960

acttgttatt caaaataaca agggatcaca caaggatcca tgactacctc ccgaaaggcc 1020

gaaagaaaga taggcagtat aatgaatgtc ctgacgaaga atgttggcgg acaagtgcaa 1080

cagcaatcag cgatggcca 1099

<210> 1510
<211> 1236
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3498_G1, chr1:18175470..18176705, Cluster 9

<400> 1510
gtaaaccata tataaaccat atataaatca tccatatctc tcattactca aatatgtggc 60

tctcactgac aaaacagccg ggagatgaga ctcaagtgcg caggcccgca cggccgcagc 120

aagagggtca tgtttgtata aatttctcca ttgagtttgt aaaaaggtat ggattgatga 180

ataaccgatg tcagtgagtc aatcaaaccc caccgccgat gaatataaat tgtaaaaaaa 240

aaaatcaaaa gcttcgtcct tcgcatgaat caagttgaag atccacgcct gaaacaatgg 300

cagggccatc aatcctattg ctgtagctct accgatcgcc gctgaattca aaggaactag 360

gccggccagc gctcgcacct gacacagcat gccgccatgc cctgacctgc atacttgccg 420

cttttatgaa tgcgcagcat aagctttctc aaaaggcctg tttccaagaa aaaaaaatat 480

caccaacaat tgtccagtcc agcagatgct cctgattagc acccataata ttactgccta 540

ccacaggcaa agactagcaa attccatcca caggaaaaag aaaatacagg acctggaagg 600

caattttgca tctacggtga gtatgttctc gtgccttcca ccgttgcccg cagtcatcct 660

tttagtccag tactccaagg acaatgcagt gctagttgct agccttgtcc gcatcgttgc 720

ggatccaggg acccgtgacc tggctgcctt tggagggagg atcatgcagg cgtagtaggg 780

gaggcgcgtg ggacggacgg gagggaaccc ctcctgggcc cgcgggaatt ccacggagga 840

atcgtactcg tactcgtcag gaaggctagc tgtagctgca ccgcagagag tatatttttt 900

ttatcacttg taccagttat cagtagtctc gcctcggtaa tcggaggcga tttgtttggt 960

tggacgctga cgtaggagtt ctgacatgca tgcccgacac tcgccggggt tgctggtcaa 1020

gctcgccggc cgtgtcgtgc gcttctgacg gctggcgtgg cgtgttacac gtacttgatc 1080

tcctacgcta tacgcgatgc cttctgtccc ttgccatgga catatgtgct tttttgcctt 1140

ctgtcccttg ccatggacat atgtgctttt ttgccgtggg taggagtagg atagacgacg 1200

acgagtcgac gagctcccgt ccctgagcgc aatgcc 1236

<210> 1511
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35552_G1, chr1:215194742..215196025, Cluster 9

<400> 1511
tattctatgg cccgaacatc gagcactcct agggtacagg gtcataggaa ttcaacgacg 60

catgaaacat aaaattagga ttaataatat cattggacga cactgtaatt ttctgaacca 120

ctaatgcagc tttcattgaa ccctaacaga caaactgagc cttaagcgcg cgaacgcagt 180

tgtttctgag aaaaaaaata gaagcccact ccatagccaa ccatttttt ttctatggat 240

gcggaggttt ttgttttcat tttcttcgaa tagttttttt tccttcttat tggacgccat 300

tcacgtgaca cgcctcctcg tccacattct cctcatcaat gatgccactg cacaagtgag 360

tgacgaggag tcaaataata ctccactctc tatctcattg tcctcgtcct cgtcagatcc 420

ccccccccccc ccccccccccc cacaaaaaaa acattttagc tagctcttgt tttgtagcaa 480

ggagagccta tgtaataact ctccaaataa tttaatatct aacacaccac tggaaaatat 540

cgtttgaaat taatgaggcc cgtagaatta cccagactct atgaacattc gaagttacga 600

gcgatgatta aaaaaaaaga atagccaaaa gacagcaata ccatcgtcag caggtacgcg 660

ttcttccaag ttccaaattc ctgatgatgg cgactgctaa atgctcatcc ctctcgagaa 720

aattaaaacc ttcatccttg tagccgcttc ccaatgctgc ttgctaggct tggaaggtgt 780

gtgagtagca ttaatttttg catgcacgca tgcaccaaca acgtgctacg cagggcttta 840

caaacgcaag tggtgacctt ggacggcaca cgcgcatcta tactcatgca tatggaggat 900

gaaccagccg tgccattcat ggcatcatag tatgcacgtt atatatcaca acggatcgat 960

cgatgtgtca tgcatacgat gcttccattc catttgcagg cactacgtga tgaacctgct 1020

gcttcttgcc ttggaggatc agtcggcgac tcagccctca ccatcacaac catggatact 1080

tgcatgccgg aggtcctgta aataaatgat atatactact ggcctataca gcacggcaag 1140

atttttcttc tccttttttt aattctgata atgagcacgg caggttaaat ttcgctacat 1200

atatagtgtg atgcgtatag caaatctgat acgtaccact ccggcacggc cactactgta 1260

cgtatttccc aactcgcaaa agag 1284

<210> 1512
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35573_G1, chr1:215349772..215350933, Cluster 9

<400> 1512
tcgttagata accatatcat tttcttactc tcttaaatct aatatagaat gttatttaaa 60

tcacctctta ctccactcgt gccgctcctg ccgctgccgc cgccgccgct aactcctccc 120

ctcggcggca tggctacatg ctagttattc ggcagaaata aaaaaaatac tgaagaaagt 180

tgcatttcat atatgtatat atagctgcca tcatctgttc ggtcaaaata atcatgcgtt 240

agccattgtt ctagctactg gcatgattag ccactcttgt tcacacaacc aatcaaagca 300

tctgacttga cccagtccat gccgcccgtc agtgcaccgt gttccggtgt cgacgatgcc 360

atcgaggccc gcccaatcct cgactgaaac agacacaaaa aaataggcct cccgaaaact 420

aacggtgatc gtcacgctct gctctctcct gtcatgcatt aacacttcgt caaatcattc 480

ctcggtcgat ttggatgaca atcacggtcg atttggatgt cgatcgcgcg agccttttga 540

catgggatgt gaaaagcatc gtcagggccc tggattagga gtggccaggt ggcggcgggc 600

ggacccttct tgcacttgca cacaaaggaa gagatcagat cgccacaccc acgcatggca 660

tgatgacggc gagagatggt tggttggggt ggccgaaaga ttgtgttctc tcccaactaa 720

catggccata caacaggaag agaggaagat cttgcattgc atccggcgag gccattgaca 780

tgtgcagcgc tcgccatcgc aaaaggctct ctttttgcct cggccggccg gcagtccctg 840

cgcatccagt cgcaccggac gcgtgtgatc ggggagggcg ttagtgctca tgtaaatgtc 900

atggattcgt ggactcttgc tctttcagtg cctcaagacg gctaccgact acagtaggaa 960

atgaaaattt ctagctcacg tacggtgctg cgcttctgtt agttgttggt gtgtgagaga 1020

acgaagaggt gcccttcact tcacctcatc atgggcaagg atcagggggc tggatgaact 1080

gcccagcaag gcagcagctg ccttgcctta gaactcactg ataaccagtg taatctgaca 1140

gagcaacccc tcttatagta aa 1162

<210> 1513
<211> 1095
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_37130_G1, chr1:223776229..223777323, Cluster 9

<400> 1513
tataaaatgg ttaattcgca agtaagtatg aaatataaat atcgaacaca gacttggagg 60

tgttattcgg aagccgtaac cattacgcta gaggttcttt tgcaaataga attggtgcta 120

gaatctgagc aactacttac taaaggctta tctaacagac taacacagct tcaccagtag 180

atttataaga tgtttgaagt tgtccccccc ccccccccccc ccggatcatt tgcaagcaac 240

tacgccaatg aaattcctta aatcatggtt acgtaggaat aatgacatga aatgaaacta 300

aaaatagttt ctttttttt cataatttta ccttacacac ttgtgtcctg tagaatctga 360

atacaacttt attagcttta taactcaaga tactcgtaga ctccaagtgg gaaaaaaacg 420

ttaagctgca taaaacggaa tcatagatgt cgatatttga atggtctcct ggagctactg 480

tggagatagc gaactatttc tgaaaaatgt tctgctgttg ctttcttgtg taattcggaa 540

tggctgcttg cttgctcagt cagaccttct ctctattaat atcagcagct ctcctatctg 600

atacgttttg gaaaaatagt actcaatcaa cagttatttt ctttcctagc tgtcacgcta 660

ttgtgtgaat gaatgacccg ttctctgcgg tgcggacact ggacacgtac gctaccggag 720

cgcctgcggg tgtgggtgcg tcctgcttcc ggtttcaacc gctcacgctt tcggggttgc 780

ctcacagcgc cgtcgactag cttcccagcc ggcagctccc ccagttctgt atctgtagct 840

ttcgcaagtc cgtgtggaaa cagccacacg atctataatg gccctttgg ttctaacgtc 900

agtcaaggtt gtggttgtag cagcctgcca gacatcggat gcaaagccat cggtttctcg 960

attgcctggt ggctaggatc gatgcctggt ttcttgaaaa cgtgcctgat cagatcagtc 1020

accaatcaaa caggccttaa ttatcttggg gattggatct acttgctgcg cgtaagaacc 1080

gctacactag ttcag 1095

<210> 1514
<211> 1076
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37810_G1, chr1:226933796..226934871, Cluster 9

<400> 1514
gcgtgtgggc gtgagacgcg ggcgcgtggc actctcgtgg gtggcaggca ggcacaggca 60

ggagcaggat gatgggccgg cgcaggcgcg cagcgggttg gattggatgg accacggaga 120

ccagtaatca ctgcgtttgc atgcgcgccc aggcacgcat gttgcatgtc tcaactctca 180

ccgactccag actccaccga ttgactcgac aaattgtctc caccgcgcgg ttaacagcac 240

agtatatact actgtgatag cggctactaa ctagcgccta gcggtgaggt tcgtcgcgac 300

atggctgtcc cgttgttttg tttggtttgg ctgcccggcc cctatagact actgattaat 360

tttttaaaga atctatttta tgtatgacat atctatggtg ttcgaataat gtttttgtac 420

ccctcacaca ggcccgcgcg ctaccgatga cagtagacct atataatccg gcgacagagt 480

ttgttacatg tatgtactgt gtcgtccgtg aacgtccgca ggaatggatc caaaggctgc 540

gcacccgtgt gcactgtaca tcagtacacg cctcccaatg aaagttgggc cacacgtgca 600

acccaacaag catgttaaca aaaggatcgt gttctgtcgg tctccattgt agctagtttc 660

ccacaaggac cgtgtcgact gggagatcgt tgacagcata ttatagcatt agtggtgatt 720

ttgttgattt gcccgtgatg tgtatatgga tatgtgctct agtattcaat ttgcgtgcac 780

ctttcatgat acggactgag tgaaagagac cgtcactggc tacagctgag aaaatgggcg 840

ctgcgtgccg aagtgccaga cttccagctc catccaggag taacagacaa tgggccggag 900

tatttaactc gttgttgatt agctaaaaca acaggaagat atgttggttg gagtacaaag 960

ataactgcat gcaacgggtt cattcacatc acatcaagtc cagcaaacag gggcccgttt 1020

ctttttcacg actgtcactt gtaaaggtga atcggaggag ggtgcacgga tgtttt 1076

<210> 1515
<211> 1207
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38544_G1, chr1:230827506..230828712, Cluster 9

<400> 1515
atccctttat tctagatttt tgaactctag aaacccttag agcattttta ctttgttttt 60

taatcctcta aaagctctaa cgtggagtac aattaaaacc tctatctagt aaggtttata 120

gaaggagatc cttaattaaa gctagaaccc gtacacgagt gatgactgat gagatagatg 180

gctttgaccc ggcacatggg cgacgcaggt tacgaaccga ccccccctggt cctgaactcc 240

tgatgacgag taggtactca gcttttgtct ttggtctcta catactctct acgactgcaa 300

agtgcccccc cgcacgtggc aggtgaagct catgtagtca tgcatgttca atagtacacc 360

ttttcccgt gcctgccgtc ttatgaaaac gcgccaccga attcaggtgg cgtgtggccg 420

tgtgctgcgc atgattgaca ccgaacggct gtacgaagat ctctcacaat ctatataaaa 480

aatccatctg ttgtttttcg tcacacgact cttcccctga tttgcttctg gttgcgtttt 540

cttcctctgc ttagcttagg acaggtcggc ttcgagggtg cgcctcttga cttgaagggg 600

cctctgctct actactagct agctttatat attacggacc aagttgcatg gtgacccagg 660

tagccccgtc atcacagttc caaacagttg ccactctcaa gcttctcatc tttttagtga 720

caaccaccat gattacgaca agaagccaag tctaaaagcc cttcgccgtg acccatggat 780

ttttgttttt acggctcatg catgctaagt tgctaacacg ccctgaccgc gctgtggtcg 840

tacgcagagt gtcggttgct ctctacgcgg gtgtagtgta ggagtatttt tttaaatcag 900

aatggtgact actggagtac tggctcgagc aaacttcaaa cacgccggtg atgtaataac 960

cggacccacc agggaaggaa gagaaagaaa gaaaaaagac aaactgtctg tggcgcgtgc 1020

gtagatgtgg ggtgcaggac acacggaaac agacgtagat gctcaaagta ccgcagtcac 1080

acacaagaca gcaggtgact tgtctatacg tctcatggga gaaagcgaca tagcttgccc 1140

gacactgatt ccgattcgcg atcctagatt agcgatactt tctgtaagaa aatgatccct 1200

ccgtcct 1207

<210> 1516
<211> 1404
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4161_G1, chr1:21695526..21696929, Cluster 9

<400> 1516
actaactagt agggggggctg acctgagccg taggaaaaca acacaatcat ggaactctgg 60

cgccttccca tgtccttgcc gctcgccgtc gtctccatgc atttggcact agtcaaacag 120

agctagaaac gaaaggaagg ggtggatgga gaggtagctg atcattgggg ggtggggatc 180

tgttcttgtc gtccaggatc tgggagaata tgcaatgttt tatgggcggt accatttctg 240

tacttgatgc ctgtcagtct ttcgttcgtg agggtgtgga atctttcttg gattattttt 300

gctcctaagt accctcgcct gtctgtctgt ttgtcaccag tgcgctattg cgccgattca 360

ctgctctcgg acaaattgag gtcacatggt ttgtgcatga tccgtgaagg aaccctggcc 420

ggaccccggt tagtagtgta gtagttcctt ccgtcacatt cgttgtcgat tgtcgtcatg 480

ttaggtcaaa gtaacgatag gtcaatttgg aggcagagtt agagagagat agctagaagg 540

tggctgcgac gaccgtagta cgatctccgt tgacactcgc agagaacgtt ggacttttgg 600

tagtagcaca aatgccaggt gcacgctcgc ggcatggcca gcacgcatgc cggattgccg 660

gcgttaagac tttgaacggg agaaggcaga tccagacggc gggggacagt acacggacac 720

ggcgagcgag atagaagaat cttggcttgc caagcgtgta acgtcgggcc tggctggtgg 780

tccaaactca ccgaggggggg agagcatgcg gtttttttgtc ccgtttcccc gtccgttgca 840

tccatttgtc ccgggctcgc tcggcgtgcc atgcggctgc tgccttggca catgtgcgcg 900

cgctgcctct tctacctcgc ttggtactct ctctcagggt cccctggcca tgcccttgcc 960

tactagttgc cttcccgcac ggttggatgg atggaaaaac agacggtact agtccttctt 1020

gccgcgaggc catcactggc caaccacatc gttggcctgt accgagtgtc cagcccgtcc 1080

atccgagctg accctaatct ccagctagtc ttcactgtag cctcagctgc tgctgacgct 1140

gcaataggtc ggccggccgg tcggtctgtc cgttttttac agcaccctga tcctgatctc 1200

caccgtgaga gatgggagag agatggcaat gggccaaggc caatgccaat ggcattggcg 1260

cattcctcga aagccaagga ctcttaatgc catctagcta gacgccctag ctttacagcg 1320

ccatccgcgg cagccttttg tatccggcaa gcactgcact gttgcgggag gaccaggata 1380

acgtggctgt tttgcgtgga tacc 1404

<210> 1517
<211> 1187
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42334_G1, chr1:249530422..249531608, Cluster 9

<400> 1517
aacacctcat taatttcccc cggccggcac gtactgtcga tatcatcatt tactgtacta 60

ccgcttgccc ttctgccttc tcctccacac atatatgccc gtcccccacc cctagacatc 120

ttatccctca cacacagcag cacaatccac cagcgcacta ctgccacact gcacgacgca 180

taggatagga ggagcctgtg actgtgagcc aggaccacat gagagcttct tggagagcca 240

tggcggcggg gcataccggc cggaacagca aacagcaggc cgccgaccgg ttcagccggc 300

cgtgctttgg ctaacagtgg atcgctccat catcatacat gcgctagctg tcgctgttgc 360

caacttttc tgtactgccg tgccggggcc tctgctactg ctagtgctag cttatctcca 420

acgaccagct agcagcaatg caagcgcgac gtccccatcc atccatcacc cacatttcct 480

ctttttcctc tgtgacttgc ccgtgcgcct tgtgttctat ggtacagcgg ccgtacgcaa 540

aaccagcgcc atctagctaa gctagctgct gcctgtaact actaatacat gcacgcactg 600

atgagagact gcatgtgcat catacagtgc cgcgtttttt aatttaatcg atcgctaatg 660

aggtgtttgt tttgaggaat aagccagtcc tttatcttct cactcttcac ttttttatc 720

cttggttcaa tttgtatata tgtttaacgt gcaaatcata tatataaaac cagtggattc 780

gctagggaaa ggagtctcta atcgtcgtca gatgtgtgaa tagcaagctg aatgtatgtc 840

gtcttgtcag ctgtcaagtt aaagtttttt tttctaatat tgattccgtg tggtgattga 900

tatctgttag attcttctcc tttctcgctc gctcctctct ttatcctttc cctctcagct 960

atccgatttt attttatttt attttatttg atactggcag cgactatcta gctccacagg 1020

ctggttacat catcacgcca ggcacacaag ttgattaaat aaaaagattt tatatatagt 1080

atgttgcaat tcattgccac atgcccaact tgagcgatgg gttgagtact tggatggcta 1140

gcctttcttc acacttcatc ttaatatcac agacgcccaa gttactg 1187

<210> 1518
<211> 1238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42511_G1, chr1:250876855..250878092, Cluster 9

<400> 1518

gttgatctta ccaattgaaa gcagagatgt catatttcaa acttcttggt ggttggtacc 60

caactccatt gtttcagaac tgatgctatg gcggcgctgc aaattggttg tgccacttgt 120

gcacctcttt tcaggctacc ttagaccatc tgttggacta tactccagtg ttcactggca 180

ccacctaact tgttttgaca gccctttgga caaacaaatt ttttattgtt ctttctgtgg 240

tgactaacgg aaacacttat gcagtcaaag ataaaacaca ggaagggccg cacacaaaag 300

aaacactcat ctactgacat cccattcgtc tcagttcttt actttgttca attgagtcat 360

ggcatatgac aaggatttcc ctttaggtca ccagataccc tgtcctgact tattgggtac 420

aaccatgtga ctgagcaaca gaccactggg gagaataagt accaggatac gaccacagtg 480

tcatctgcag attgaatgat ggccagtgaa ttacatctcc atgtgcaact gcctagccta 540

taacatgaat gaactgagca ccaatgcctc tgatcatagc gtgcatctct ccagttcacc 600

tgtcaacagc tgagattggt ttcgataggg acctttctgg tttgtatttg tgcaccccca 660

gaatgtgagc attgattgat tcctggtcct aaaggttcaa gtccaagctc caaatgtatc 720

ttcaaggttg tgttctgatc tcatagtttc tgatttggta ttctaaacgt aacatggatt 780

gacatttcac gttcttcttc cagggttgac agaaccaccg atcagaggat acaacagaat 840

gaaccgtttc ttttgaaatt tgatcattta ggtcatgaca tataacgtgg gtctcccctt 900

ggagcaccgg ataccctgtc tgtcctcact cgctgggcct gggcatcacc atgtgactga 960

ccaccagact gctggtgctg tgcagtaact accaactgat agatactatc acacagcagt 1020

gtctttggca gatagacagc gagctccatc tccatgtgca gctgcctctc ctctagcacg 1080

gacgcagcat caatgcctgc tcagtcgctc agggcatatt gccgtgtctc cctacacgga 1140

tacagatcaa gcatgtctcg tgttcgtgta agggtcccag caagtatctt cgaggttaat 1200

gctgatgtcg tcaaggatct gaacatggct catattat 1238

<210> 1519
<211> 1390
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42936_G1, chr1:253146989..253148378, Cluster 9

<400> 1519
ctcgtcacta tagctgatgg tcattcactc taaaatgact tagtatttat ttatagcagt 60

atgtaactat tattattata tagccagttg aatttaggtc tataataaac tttatttaga 120

gatacaaaag ctaataatat ctttaataaa tcttgttaga ccttcaaaag tttaaccgat 180

ataaataaga agcaagggaa cacgaattta ctttacagat caaaagcggg ggttacggtt 240

gcacgcgcat gtgtgatagg tgaaggatcg cttgcagggt tggccatcca tggaagacag 300

gttgtaccca gagctcgacc ctggaagctt gtggaagttt cgcagtttag cagtgatgat 360

acttgagctg tttgtacacg ccaacgtcaa gaagtagagg gagagcagag gtgaacatat 420

tctcgtatcc atccagggca ctgcatcttc ttattttgag gggcttttga aacacgtatg 480

tacgcgtaca cgtacacgta cacgcacacg cgcactacga gaggaaccga cgcgtcctcg 540

tagatgcagg caaagcagac tgcaaagacc cattgacaaa caacaaacag cagtgtcaga 600

tggcccacaa gggatctagc ccatctggcc cgacctatgc gggaggccta gttgctgagc 660

tcacaggtag ccaggccgga gagaaagtag caccgcaaat gttgtgaaac aatctccaag 720

ctgacccaac caaaccatta tagctgttgc cccaaactgg accagcccat tagagtttca 780

agtttattcc cacgttccca cccagaccgt atcagcccaa ttaggaaacc aaaccagtaa 840

agcaggtttt ggcccaaacc attaccaacc tgtgtgcgcg tttcgcacga gagaaatata 900

cgccatgatt ggttcaggac ttctggtgcc caaccgtgac tgtatgtaat ataccatgtt 960

tgtttgattg gtcttgtttc tcttctgcaa ggtctagtac atattttaat tagttggctg 1020

ggtgattaaa aatgccggaa aaaataaaaa aaaattcata tagcaagtga gattgggttt 1080

gagtgcggtt ttggaatagc actcgtgggt gcaatcaggg acgacattag ctagacttcg 1140

ctattgtgat tgcgggcggg tttttgcttt acccgatcca ttgtcattcc aatcgggtag 1200

atagggtgcc aaccaggtgc taagcgctca aaaacataag gtgtggattt taaaatctat 1260

gcccagtgtt acccttctct aggagtaatg gattatactt ttttactaat agactggtgc 1320

aaaagcaatg gtgttaaact aaggtatgac tttaagggtt catttggtta aaaggagaac 1380

gaatttccct 1390

<210> 1520
<211> 1246
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42938_G1, chr1:253148940..253150185, Cluster 9

<400> 1520
aaaattccac cgtacggcgt actacgcccg cttatgcctc gtgctcatgc tgcagatgca 60

cggagaagca gcggctgcgc ggctgtggca gattgacgcc ggcggcggcg tggcttcatc 120

actgatcggc gcggcggtct gtgcctgctc tcctcgatcg caacgcattt cggcgaggtc 180

cagaacaccc accgttccat tacggatcag gaacacgtac gggcgggatg aacactgctc 240

tcctcatgct gcagtcgtcc atccggcagc cacggccacc gcccgcccgt aatcaattag 300

ctagcgacgc atcggccgct gcttgctggt gcgtgcaatg cacgtacgtg tgggtatgta 360

gttgtactaa tagtctacta gtacgactag ggtgtgcgcg cgcgcgtgca ggtgcagtgt 420

gcacggagcg ggtccagcca ccgccgcagc ggtacggaac gcccccgccg gccaaacgga 480

gctagaagag gcgccaacgt acagctagca gcacctgcac cggcaccata ggtaggcatg 540

cactagctag gcggcacgtg gtccaaacac gccgcacgac acgaatcgat gtctttagac 600

gatgacgatc gacggcgagc cacacacaca cacaggcacg ccaattggcg acgcacctac 660

cactccccac ggcccacggt gccatttaaa gcctgtcagt gtcactacac gcacgtactc 720

ctaccaaaag atcgggttgc ttcgcgcgtc gcgcgtggac aggattacta ctaattaaga 780

ccgtggccta catacactga ccctgacgac tctattacta gtatgtctat tgccaatcat 840

tagcgcaccg cagatgaatt caaatgcacg caccggccgg caggtgatgg aaaccgacgt 900

actatgtaca ctgtgtgccc cttcactagt actactacga gcaattgtac gttagtatta 960

cactaagcta aacagtgctc gaccatcatg accaacctgg atcggctaag attaaatgga 1020

tatggattgg gattgcacgt gccggataac atcatgggtc tgagcatatt aattagtaag 1080

ctttcgactt accactacat ggtactgctc ttaatttatt ctaaaatacg tataggtcat 1140

gtttttctta tttcagagat aaaatacgta cggtttagtg gtataaaaca gcgatcggct 1200

gatcacgtgt gtcgccactg gccccatgcc cccatccaat cctata 1246

<210> 1521
<211> 1199
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44649_G1, chr1:262184424..262185622, Cluster 9

<400> 1521
tactctcatc ttccaccaca gcagcacaat cctcagtggc cccttgttgc ttcaccacca 60

cctcctggtc ttgggccacg gctgccccca actcatcacc aggtctctgt ctctgtgccc 120

cctcctcctg accacgcgtc gggaaacaat ttctgttcgc agagcgccca tcaacagcaa 180

gaccctcctt ctcccgactg tcttcagctg tatcccaccc ttcctcggcc ggtaacaacc 240

ctagctcctc ctcccactca cccgcgccac gcccagcaac ctgatcatcc ccgtgctgcc 300

gctggagagc aggcaacgag ggcaggtgga ggctgctgcc gcccgaggcc gcgtcggagg 360

caaggggcc gtcagaggag gcagcgggcc ccgcgtcgag taggagcccg aggcccacat 420

tggtagccag cgggttgggg ccggagaagc ggccgatggc ggcggagagg gtggcgggga 480

gaggaatgga agcgaacagc ctcctcccga ggccaccgcc gctgccggta gcggtcatgg 540

acttggaggc gggcttcggc gagcaaggtg gcggatcggc ggccaccgag gcgtccttga 600

actcgtcctc atcctccacc ccagccatgg cagcgtcggc agcggcgacg gggccaggga 660

cgggggcgag ggccgagggg tggagtggag gaagggaggg agaagaaacc ctaaaccctc 720

gatcagtctg gaagctcttc ccaaccactt cgctcacctc gttcttctgt cacccacttc 780

aggctttctc ctcgttctgc cctcgtggcc tcgtggccct cgtccttgtt ggttcctgtt 840

ggttggagac ttttgtgttt gtgtatggca aattggcaat cgtggcctcg tggccttcgt 900

gggggactgg gagtctggga ctctgggagg gtgggcccca tgagctgtgc ttgtttcgag 960

ggaatctgta tacgtccatt tctatggaat ataatgttga tcactactag tacgagattg 1020

gctttggatt gattgcgaac gcgtgcatca catgatcagc tgggaatccg ggtccttttc 1080

accgggattt ggtagtggag tacctgggag caggagcatg cagtaccagg attggaactt 1140

ggaagtcctt ggatgcgtcg gtttcagttt ttttttcctg attctgatcc ccgtcccgt 1199

<210> 1522
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46254_G1, chr1:271001437..271002581, Cluster 9

<400> 1522
aggaaaccaa accagtatat tcagctgcga aaatacatag agagatgtgt gctcactggc 60

agtcctgctg cttgtaatga tgtgtcaggc caactggatt tcttggcagg aacctgcaca 120

acacatgaac acaacttgca ggttgctttg tttatcaatt gctagcacaa tttggcggct 180

tggttccaca gaagctgcag caattggctg ccatgttttg ccctagttga cagttgaggc 240

cacatgaaca cctcattacc ggccgggggg gatatctatc tagggcaaag tgtgatctgg 300

gtgggggatg ccaaattggc aaggcaagtg gggagcatgg caacagggcg actactgcag 360

ggtgcaggtg cagggctgtt gatcaagttg gccctcatgc ctgggctctt ggtggtgctc 420

agggaaacgt cgatccatgt gccaaaagag aatcagtgac taagcatgca gctcatcaag 480

gctgactgga cgtgcattat tactgaacaa cctggaatct atacaaagac ctgctgatcg 540

atcgattagc aagttgttgg tttctgacta attagaggat taaagcgaga ggacacaaat 600

ggacagggac aatgatcaag atctagcgag atctgtttag gatggcgcgc cgccagatgc 660

ttctttctcg aggcttgatc gacgcgctgg cgattcacgc atgcagcaca gtctcggcat 720

gcattcagtg tagagctctg gtttgctggg gtacctcgca gtctctcaga ttgcactgtg 780

cgtacgcgca gtctcaggat ctttttttccg gcaacatcat cgagctcaag attctgtggc 840

aaataaacag gatatttaac aagcagattg gaagcttata atgcctaaca ttgttgcctt 900

caggatactt gtttttcgag gttgaaactt gtcatcggta gcccaccaga acagttgaga 960

cacaaaagca caggagatgt atcgtctagt agtagaggta accacaattg taaaatgatt 1020

ggaagtcaaa ctaaggctcc atttagcacg actttgggcc tgtttggatc ctatgatcta 1080

aagcaacttt agtcacttta gaagttaaac atctaaaatg taaaagctaa aagtgactaa 1140

aatga 1145

<210> 1523
<211> 1011
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46393_G1, chr1:271761348..271762358, Cluster 9

<400> 1523
gaggactctt acactcatct cgtcgagcta tacatggact aaccagcatt attagccaga 60

aaataatgct cacgtacttg tgtacatggg gtggcttacg ttcttcgaga ttaggaaaaa 120

tggcacatgt tttaattcgc ctcaagcgtg gctctaaagt gtaaaggctg atgtcaaatt 180

aattagctgg ctttacgttg ttcgaaatta tatacagtat agtgcttggt taatagtaag 240

ccggggtgat ctgaccgggt cacatgaact ttggaaaagt taagtgcagg gggttagtag 300

ttgactgatt atcggctcac caaaccaaaa gtttagcagc acgcgtcccc acatgtcgct 360

cctctgtcgg ataaatgttc gcgcccgcgt tcatttggac ctcgacgtgt agtagagtca 420

gagtcagagt gcgccagcgc cagttccaaa aaaacaaaac aggacagaaa gagtctctct 480

ggttttcaga acgtcggcat gcagtcgcct caagcttcaa atcctcaacc aactcgcaac 540

cgaagaacgc tagctgctcc accctactac taccactacc gtcgaagggg atggaaaacg 600

tggctttcga tcgcttaccg gccgttttcc tagcgtcggt gacggcgcat agctgggtgt 660

agactactgc ccgctttctt cttaaggatc gagtagacga ccgcggtctg cgcgtactaa 720

ctagctcgtc gtcgctgtcg tcgatcgtcc cggcggccgg ctggtcgatc ggacagacag 780

tgcagtacat gcatggatgg cgcgctgcgg gtgcgggacg ggaccatcag gatcgccgat 840

tacattacac gtcgaccagg cgtggcttag ggccacaccc accgccgcgc gcgccacccc 900

aacaggcgca cctcgtcaca tgttcatcgg gggggggggg gggggggggg gaggcggccg 960

gagaccgtac cagacctgac ctgggtacgg caccggccac cgcatccata t 1011

<210> 1524
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46407_G1, chr1:271778543..271779583, Cluster 9

<400> 1524
taggggtatt tttatttttt gaaaatgaat aaaacataac aaaggtgaac ttttaggtcc 60

tggtctgatc agcaagagat ttggaatcca gcttttacag tctctaggta atccatatgc 120

tagcttttgg tcaattcccc ttatgaagcc gttttttttt tcagtgctgc tttataatcc 180

acaaatctgc aaagtagctt ttactatttc tactcaatcc agatgaaccc caatggagtg 240

atttatttac aaggaatttt aactcgaggt cgaatcttat ccaagaaact acttgacgaa 300

gggagtgatt ataatttgta gcgtcagatt tctcagtaaa tagtttgcac gtcatgtatt 360

ttttaatgt ggtagtaaaa ttgattattt agattgactt tataacaaaa ctaacgcctt 420

tttttttct cagttcggat cagagcatgt gctactgtat tttagtgctt gtgggcgacg 480

tgcacggtgg gctcctccca gcggctgacg gcggtgtgcg actggtcaga gatacagata 540

cgctcggccc agcgggcagt atggcttccg cggctcccct agcctcgtca cagtcgcacg 600

ttgccggcag gcaggcagcg ccgagagcac actgccacgc acgcgcccat ccgtgtcggt 660

gctgtcgcaa ccccccgacg cgcagagctg tgggctgcgg cactgttgcc tcgctggctg 720

gctatcgatc gccgttgggt gtgcgatgag atcgccgaga cggcgacgcc ccggcgcatg 780

ccgccgcgct gacgccgatc cgaccgcgcc cacgacgcgg gcacggctgc ccgcgctact 840

ttttcgccgg cttcctgcgc tccttcttgc cggtactgac ttgtactggg gacaggccag 900

cgccgaccag gacgtgggtg ctactgggcg cggatggtcg gctctgctgt catcttttct 960

tctgatggcg atgacactgg aacgaacgag agtcgagaga agggtttcac tgccgtgtac 1020

tagtctatac tagtctatta t 1041

<210> 1525
<211> 1369
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46525_G1, chr1:272336364..272337732, Cluster 9

<400> 1525
tggatttcga taattatagt aatttgatta catttccgcg caataacatg ctcgagcctt 60

cgaagcatga tgataataac atgacgaact ccacagccga aacgctctat atcagtgtcc 120

tggctagggc tacggaggtg gtttcgaagc tgttagctct agggcaatga cgatgaactc 180

ctcgccgagg acgccaccgc gcggccacca gggacgaggg cagacgatgg aggggcaatg 240

caagcaagac ggcgggctgc ttctttgaac cggtcggtgc gagcggcggg cgatggagga 300

ggagagcaag cagggaagac gaacctgcag ttccaccata ttattattta ctgtacgggt 360

ggcggatcaa acgtaaaata gtctggagct cgtagatcag cgtcatccta attaatttat 420

acgtagtatc tctgttagct tagctaagac tcaatatagg atactctagc tagccttgtc 480

ttctcaaggc aacacggtaa aacaaatgta cgcatggaga agcacgaagg caacatcgag 540

agatgttttg ctcaatgcaa gtacctaggg agatgtctcc ctagctaggt actccccggc 600

ctcggtctag ctaaacggac ccaactattt ggtgaccgtg ctattaatta attgagcgag 660

gttttacgct accccacctt gtagagatcc gtatagctag ctggtgtggg ttcggattag 720

ttcgtatcct tttgcgtcgg ccgggcgtgc gcggaacgca gcgcacggtc acggtgtcat 780

gctgctccac gtgccgctcc cttggatcct acggatccgc cgcgatgaaa gcaagagcag 840

tattgctaat gctccccccgg cccgctgcgc tagctatccc cccaccactc gtcgaaagtg 900

aaaagggcgc aggagattat cccctccgtc cgcgaggggt acatacggag atacgtatta 960

tgctacgagc ggtacactgt atacacgcag tacggaaggg aacaatacat acggtatcgt 1020

acgtatgagt agctcttgcc tagcccaagt ctacggttac tggttcatgg gcccacgtaa 1080

ttaagacaga agccggagca gtaaaagttt ctccaagcga cattatttta cgggccacgc 1140

acgcactcat ggagcggtgt actagtagta ctagtcaatt tccggtttgc tgcacaaatc 1200

ccaacccccg cggggaccac gtcggaggaa gaaggaagga aggcgggacc gcacgcgaga 1260

gagagaggcg accggaccgg acccgaccga ccgtgagagg agagggtagg aggaggaggc 1320

gcacggcacg cgtccccgtg taaacaagcc gagattccca tcccctctc 1369

<210> 1526
<211> 1367
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46709_G1, chr1:273335641..273337007, Cluster 9

<400> 1526
ccaaacatgg ccttatggca aaatcaagag aagtgtatgt ctttgacatt tttttacatg 60

caattgttct atcagttcac aagtgcatat gtgtgagaag ctccttagct gggcaacaac 120

ccctcccccct ctgaggtcat acgtggtcac atcattgctg atggtgatcg cattgcagaa 180

gagcggcacg aaccgcaaga gtagattagc agctcgttag caacagtggt tgctctggag 240

tagtttgttt ggggaggttt gaggtgtcca tagcggtcgg cacgtgtggc cgatgacaaa 300

agtcgatttg atgggagaaa agaaaccgtc aagttacgac ttgctgctga atgcggacaa 360

ccaaatgaca cattgcagca tcgagctaca actacaacca atggcatact gtaggtacca 420

tcggtctaat ttcatcaaag acgtcgtcta taccttgctt catgacgatc caatccacgg 480

atggatggat aggaatatgt cgggctagct tagcttggac gtgttagcta tataggatgc 540

cgcgtgagcc gtgagggatc gacgtggtcg tgagctccgc cgcagcagcg caagcgcatg 600

tgcctttggc ttggccttga cacgcgcccg aagccggcct gcatgctccg ccgcctcgcg 660

ctcgatcccg ggggaaggga gtggcgcggc cggccgcggc aacggtaccc tgcctgcgca 720

gcgtccgagg cagaccagac cggccgccgc cagaggccag gcaggaccag tccaccacgc 780

gcgtgggaaa tctcatggcc ttgtcgtgtg catcgctgct attactctcc cgaaaaaact 840

atcgcagctg gcaccaaaag ttacagccgg gttacaacct agcggccgcc tagacgccgg 900

cgcgcacagt cacatgccat cccacccgcg ctctctctct gtctctcacc tcttcttccc 960

atgcatgcag caaagcagca gccagcatgc attgcctcag tgcctctgcc ctagctgccg 1020

tgcctgcgga ccgacgacgt cgtctgtcac tgtgagacgc tgatgagtca tctctgattc 1080

gtctcctctc ctcgcacgcc cggccgggcc gcgcgcgcgt gtgctgtggg cgactgccga 1140

ctgtaaataa aggcggtaaa actagacccg gggcaatgtt tttacccaac aacaacagca 1200

gcagcctcac gcaccgcgcg cggcggctcc acaggtgagc acggccgcgt cctgccctcc 1260

tccgccacat gctgccccgc accacagtga gctcgactgc gcgccgtcgc cgaggcccga 1320

gggcgaggac ctccgcgcgg ctcgatagtc ggggtcgagc acgacag 1367

<210> 1527
<211> 1044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4721_G1, chr1:24212305..24213348, Cluster 9

<400> 1527
gcctgacggc tccttatatg gtcgataaaa acggctcttc cgccgccgcc gtctgcattt 60

ggtggtgctg gtgcttccct gttggttccg ggcggtgtcg tgggcaagat cagagtcaga 120

gaggccgtcc gagacagcaa gaggcatgcc aaacaggacc ctgcatgttt cgaacggtaa 180

aaaaaaatgc aaatgctgcc caggtttcga cgttgccact gcagtacctg acccgagttg 240

gggagctata ttccaattca ggacacggaa aggacgtctg ttcacgggct ccgatgagat 300

gggggggctgc aacttttttcg gcagggcgat acgagcaggc tgcaggcgag cggtggtgca 360

gggtgcagat ctgctcggtc gcttcctgct ccatgcgtca ttctaggctt ttttttttct 420

ctctctctct accgtgccac ggcacagagc aaagagacag agagagacca acgatactaa 480

tcacacaccg tgcatgtcag tcaccatgca ttcaccgact cgcgcacagt caaaagttaa 540

aacgcacgac gtgaaaaccc cttgtccaca ccaccagtac gtgcaccaca cctctgggtc 600

ccaggcagca cgacacctcg tcgcggcgct gtcgatatgc agtatgcacg ctgtgcagtg 660

cagcgtgtct gcacactgcc gttcgtgtac tgtctagaga ctacttgcat gtacagtaca 720

gctccgtccg tgttgcccac atcaagggcc aagccatacc atacataata ctatatggta 780

gagggcatat aagcaacgta cctgacggct ctgtgggtgg tgactggtga caggcccgtc 840

tcgctcgcgt cttgacgtgc gaccgaatcg aaagcgcggc cggggcgcat tccggattgg 900

gaaacaacga gctttctgcg aggtccgccg ctagctgctg tcttggttgg aaatgctcgg 960

tcgggtcgtt tttttacgtg aaagatacaa gtcgatcgat cgtctcgtca cgtccgacga 1020

cagccgcaga aaaagcattc gccc 1044

<210> 1528
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52572_G1, chr2:4290711..4291841, Cluster 9

<400> 1528
ggtggtgtga tactgaagtt taattcagta ctggttgtaa ataaaccggt attgatgacc 60

taggatgaaa gctagcacta atcttcaata atcgtgatcg caaaaaaaaa agaactacta 120

tattatttct ctcattttag tttttgtctt ttaatttgtt tttcgctgtc gtctatttca 180

ttgcgacagt gagcacaagg ttgtagagac ggtcaggcca ttcgacgacc tagggcagtc 240

tattgtcacc ttctttgtgg caggtccctc ctaggagcat gcatggttta tcgggcttca 300

aaagctctcg tcggcgtatc ttatatatat atatataacg caaaatggtc gtctctacaa 360

attgactgac cagagatgat cacactgatc acgccaccac taatgaaaga aaaaatgcat 420

aacgctgcag gccatctagc gtgattgttt tgcactgtta ttggcaagtg ccccctttg 480

tgatgtatat agttcccgca taagacaaac tctagcaacc aaaatctgat tgggacaaat 540

atatgtgcat ataacacagt gcagccaccg aaaccctatc tgcatgcagg ttagctacca 600

ttgagctcag ctggtttcag agagccaaac cacgtgcatg aacctgcacc ctgctagctg 660

ctgctctttc cgagcctcct gctggtgaag caaaagtcag ggcaacacag tatcgacggt 720

cagttggctt aaggaagagg tccacaaaat ctctatcatg cagactgggg ggaaatcggc 780

ccatcacgcc tcgtagctcg atcggacgcc gatcgagttt tgatgagctt ttgtgggtct 840

gaattctgaa tctgatgcgc tgccatgcat gcatgcatgt gtagacggag cttttggcat 900

gcatgaacaa ggacgccttg ttcgtcctgc gccattccaa taatttgttc ggccgggcag 960

cttttgagca aggtagggta gggtaggggg ccggggaccc ccgatcgatg atccagtact 1020

ctcactcttt tactcgcttt cacgggtaca agcatgtgca tgtgaacaat caagcgcaca 1080

gaagcggtcg ttttgccaga agatctagct gagaatacgg cgcgacagca a 1131

<210> 1529
<211> 1176
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52758_G1, chr2:5290113..5291288, Cluster 9

<400> 1529
gtttcaactt tttttcgttc taacgagctt ttttaaaaaa aatctggttg aacggagaat 60

ataggaaaat gaaggcctcc tcctcggatc gtgtggctgt cgccccggga gcagatcaga 120

aggcctggtt gttccgttcc ctccccatca ggctctcgca caattagctg tcccacgttc 180

attcgcgctg tgacacccta gctattctta tggctggctc tgtacgtact gtctttgact 240

cgacgcctgc aaacacgcgc cgactttgtt ttgactacat tcccatgtga tgcgaacatg 300

cgatgcagag ccacgacgga ctcgaggccg tcgcgaggcg ccctgcaaga gtcaaacgaa 360

cgaacgaacc gggcgatctt ataaatgtgc gtcaaacaac atgcagtgag caggaaggag 420

ctcgcgccgc caacggcgaa gaagatcgcc ggagccactg actgggttgt tggtcgtcct 480

ctgtgtggct ctgtcggcgc gcgcgggcgt caaaccgact agtattcgag ttcaattggt 540

ccacgcctac cggacgctgt tcctactatc gtatattcgt atactagtat atacagtacg 600

tacagctgag ttggcacagg tggccagatg ggaatagata aaatacggct cagaagaccg 660

tccgagaaga atcatgtgtt gttttcatta gctagctcac taacaaacac gcgcggttgc 720

tatatcatca tgactcgctg acacatctca atatctcatg gatggaagtg tcacagactc 780

acaacttcct cgttcgaaca aactcgtttt aatttttcc ccctttcttt cgtcaggaat 840

aaaattaaaa gtctattgtc ctcgttgtac accaaactaa tagttcgtat gactactgaa 900

ttattggctg gggtcgctta tgcattcttt attattcgca tacgtataca catatatttt 960

ttccccattg gatcacgagt aatctgcata tattcccttc tcgccaataa ccgaaacaaa 1020

catataagta cgaacacgac gggtcaatgt gtttgtttga ggcaaaagtg ggataagtcg 1080

ggggcgacat cgtaccctca atttttgga atctcgctgc caccaaaaac tatttctggg 1140

tttacttcgc ccctacggga ctctcatcca aatatt 1176

<210> 1530
<211> 1092
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52821_G1, chr2:5557796..5558887, Cluster 9

<400> 1530
aggccctttg gcgcatggta tccgctacat ttcccctcga cctcaacaga ggatagactt 60

tggaaatgga gatcctattg ccactgccct ccctcccccg cactagcagc cactccaagc 120

cactagctcg cgcgatcgag gttgaggtat cagttcagta ccggcgccgt agccccacta 180

gtacaacgtt attgtccacc tatagctata gcctctcgtg cgtgtggtcc agcgaggcga 240

ggtgaaggcc tggtctcggg tctgccctcc cctccttttt gatctgccca tgccgcccgg 300

ccggccagcg acacgtcgtg ttggccgtcc ctgtgctgcc gccgctggat ccaaccccac 360

tccagtcttg cccgcacaca aacacatgca tccacggccg tccgcatacg ccgtcgtcca 420

ctagtctagt cctcgctagc gaacgaacgt gcatctgcac gtacgacctg ccgacgacgt 480

actaacctgc gtagcatagc acatgcgcat cagctgctgc tggccgggcg ggcgcgggtg 540

gctggcgtgg cgggacaaga cccgaatcca ggcgcgcgcg cgcgggggcc acggcgcgta 600

ctggccgatg ccctggacgt cgcgagggca ggtcctctac tggccaggtc cagctccagc 660

tcgccctcgc ttagattttg catgattttg ggtttggatt cgtccgtcgc gggtaggaaa 720

gccggccagc tatccgaccc cccccccccc cccccccccc ccggagcggc ggcgctcatt 780

tgcccaccta ctaaaaaaaa gaaagcaatt atcgggactg tcatgttgcc atcatctgcc 840

atcacagata aacagaaagt atcggctgcg gactgcgtag ctataaaccg cgaaaccgtg 900

catcgtcgtt cgtcgatcag gctcctctgt cttggccgag agaccatcga aacatcgccc 960

aaccagcaca cgagacggca attccttctt cctggaccca aaacgtacgc ggtagctcat 1020

caacccgtca cgtcttttct ctctctctct ttttttttg tctttggcga ggcacgcgcg 1080

gttgaactga ga 1092

<210> 1531
<211> 1201
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53447_G1, chr2:9098834..9100034, Cluster 9

<400> 1531
agtttttct tcacagtaat cacacagcat tttactgttt gacaaagtta tcctgatccc 60

tttctgcgct gcacgagtag tatagtaaga actgtacggc ggacggagat taagaaagct 120

aatccctttc ctggagatgt gtgcaccttt accacacccc gcagtccaaa gctccaaact 180

atatactctc ccgtactagt agtactacag tatggtggtc aaacagcagt ccgcgccggg 240

ccatctcatc tcatgtcatc atgcgccagt cacgcacctt tatcctctcg ttcgttttcg 300

gacgctgcat gcctgcatgg caggggcagc cattgactat ggaattgaat gtacttttgt 360

cctcactccc cgcgtctgca gccggcatgc tgcaccgtgt cacgtctggc caggccgggt 420

gacctcatca agtgggattt tgtggtgact ggccaaggct ctcgccggtg tactggaggt 480

tgcggaatcc ggaaacgcga tggagcggcg atctgtttcc cttccctctg gctctgagtg 540

tggaggagat tgacatgtga gtagatgagg catgcagtcc ccctgcacat acatacgtgg 600

gtggtacgaa agccttgcgc agcgcaagga tcatcccaat ccaatgcagc cagccatgcc 660

catgcagcag agtgaaatgg aacagacatg accacgatga atggctgaat ggatcttagg 720

accggcccgg ccgctacaaa taaatgattg actgtttggc gcacaaaccc acggcggcat 780

gggagaaaga cagactagac tgtctcgagc gcagcagagt cgtcgaggcg aattgcaatt 840

gcaacagcca acaggttggg cggcacgctt ttgtcagcag gtactctagt gcccagatta 900

ctggtggtag taagcacgca cgcacgctgt agtgtagtat gagccaagtt tgggcgcatt 960

ccgacgtagt acgtagtata cggcaagggc gaccgttggg gggctctcgg tttgaggaat 1020

tccgtctccc cgctccgccc gagcagtagt tatcgcgttg taattgcctc cctggaaaga 1080

gaatcttttt ttttttttt ttgtttgtac taggggggca ccgcactaca atacgagcga 1140

cagtgtttct ttggcccgca tgcacccacc aatcatgggt ttccgttcgg actcggtatg 1200

g 1201

<210> 1532
<211> 1214
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53522_G1, chr2:9369121..9370334, Cluster 9

<400> 1532
acacgcacac cacgcatgcc agcgctgttg ttgcctggaa atgagcagat ctgcatggta 60

cgttgtggtt gcctcctgcc gctaatggga gagcgcacac agctggctag gctagctgtg 120

gcacgacgac tcggccggcc gcccgggccc cagcgcggcc atatgcgttg tgcgtgcatg 180

ctcctgccgc gctccactcg atccctccgg ccctgcttct cgcgtgcgtg catgcatgca 240

tgcatgtatg tgtgtggcac gttcagtgaa agccaggcgg ggggctttac gccccggttg 300

gggctcaaac gaggctacag ctagctggct gctgaatcgg ccctcctgct ggccagctgc 360

tgcgcgtact acctgggagg tgggagctag agagagaaga gataggagac ttgatgggta 420

cgcatctgcc cgcctgttgc ggtacaacgt ataggccggg cccgtgcttg atgggatcgg 480

gaaaaaaagg gggggccggg gggcagcctc gctcatggca cgcatctcat tcggcctcat 540

cacgtacata catacaccca acacacagcg tcgcatctaa gtaagccaga gccagctacg 600

caaatatgcc gccacgcata ccatatcatc attatatcat cgcgcatcgc agcagcggta 660

cacgcgcgct ggattgtgga ggtggtaccg gtgtacgtac gctagtagta gccatatgcc 720

atgtgacgtg ccataatgta gatctaagcc cgccggccgg ccccctttta ctttctctgc 780

tgacagggtt cactaataac taattaataa agcgcggcgt gcgacgtgtg aacaaaaaaa 840

aaacccctct gtgttagtac ttgagtacgt acgtacgtac gtactggtgc tgcggtgctg 900

ccatttccct gaggaccaaa aatacgtgtc ggagtgcgta caaacggcag taccaccaaa 960

cttttccgcc acgtagatgc ccgccataac tcacggataa cgactctctc tctctccatg 1020

cctgttttgc taaaccggcg gctaggcaat accgctatgc atggtaacta gtagagtagt 1080

acttagtatg cattagcgtc ccaagtgaag agctcctctt gctatgctaa ccgccctgtg 1140

cacacagtac cgctagtagt gtagtgtagt ataggcgggc ggagtggctg ccatgccatg 1200

ccaccatact ctac 1214

<210> 1533
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54064_G1, chr2:12137873..12138909, Cluster 9

<400> 1533
ctcgagatgg acatcgtcgt tgggcccacg tggggtgcag gcccgtggcc tatgggcgct 60

gggccgccgg ccggctggcc tccacccggc gccgcttcgg gtgagaagtg agaacagctg 120

gagcacgacg tcgaaacggc ctcgagttga tgcaacgcca agttattccg tctctcgtcg 180

tcagtcgtca cacagtacta cccggaactt ttttgtccta caagtcaaca aaaaaggtaa 240

aggtgcgtgt ggcaggcttc gatgccacga acgtagagtc gctctcggcg ctcctgcagg 300

gagcaggaaa gcaacgcagt cctgtagcta aggttcgatg gggataggag gagcatgggg 360

atgggagttg ctgtgtgctt cctgtacagt ccaagacccg acgacttgct ttagaaccac 420

caccaacttg gtacgtgatg ccacaaacgc acgctaacga aagcggtaga aaaatctcgc 480

agaactacta ggcaattgta aaccagtgat atgcctctgt ccgcagccgg agcggaagct 540

tgcctcctcc cggtccatca cctgtaccag ctgtcctacg atgcccaacc agcggcgaac 600

gccttctaca cgcgcccggc gccccacatg gtcgcggagg cgggatacac gcagggggag 660

gggcccgtcc cccgtcgcgt acaggtgccc cgaccggcgt accagcgatc gatgaggtgg 720

ccatggccat ggcgtacagg tgccccgacc ggcgtactgg accatgctaa tcccacatgg 780

tcttctaaat aaaactttgc cattgcccgt tatctgctcc ctacgatcca ttacccgcct 840

gcgtcgcaga tgttttcgag gcgcggtgta tagaaactag aaactggcaa agggaagcca 900

tttctggaga agaaataaca catgctgctg acccctgact agccagtcag ccctgcttga 960

tagtgatata ccttgcaatt tgaatatgtg tagggcccgt gccaggtcca gctagcagta 1020

gtagtactgg ggtagca 1037

<210> 1534
<211> 1152
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54319_G1, chr2:13554993..13556144, Cluster 9

<400> 1534
ggtggtcgat gggcagcgcg gaggcacggg atcccgccgt gcccctgcgc gtgacgctgc 60

cgtaggcaac gccgccaccc acccaccact ggccgcccgc ccgccccccg ggaggcacgc 120

acacgcacac gcacgccgag gactttctgc cgccgcgtga tgtcactcgc ctcctgcctc 180

cccatccgtc gccacggaac ggagcacatg gacacccggt tcggcctcgg cctcggcctc 240

gcacccggct gtccgtaacg tgatgtcacc aggccggccc cctccgatgg gccatggcat 300

gtagatacta gtacccgtag ttgtggatca actggctgaa gaagatttgg atgtggattg 360

gatcgaatcg ctggcgaggc aagtcatgat tccgggggggt aggatatttg tggagttctg 420

ctggttttgc ccacggcgaa agcgacgggg aggagggaca ccgccgtact tgctcatcgg 480

ttccttttt ttcccgcgaa gcgttcggcc ttcggcgtac gagcttcctt ccctaccgaa 540

ttctgccaaa caatggccga ggatcggggc ccctcgacgc gggcatccct gctgtggtgg 600

ccggtgttca cgagggcgta cggttcgtgc tcactgctca ctactggcac tgcctcctat 660

cctcctccac tccagttcgc cgttataatt gagctgctgc tgcctagtgg tatcgtgaga 720

gtgagtactg ccctcccccc accccactcc gcttttgatc cgaaggagaa tcacgcgaca 780

aaaaacaaga ttttactaaa agagaaaaga aaaataaaac aggcgacaac gctagctgcg 840

tacggagcat ccgggcacga gagagattct gagcaaatct cacgcgacga cgagtgcggc 900

cctggctagc acgaacgaaa ggaaaagggc gtctgtcgtc gtcgtcgtct ataatgcacc 960

gatggacgca gcacgaatcg gtgccctttc gagcggatca gatggaatgg aaccctaacg 1020

aaactcccac caaaccaccc ttttttattt tattttcgcg gggcgctagc ttttcctcct 1080

gttcatggcg catcatcgag atctatcgct ttcgtcccag cagcacggtt cacagggcac 1140

aggtctcggg tt 1152

<210> 1535
<211> 1319
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54857_G1, chr2:16632574..16633892, Cluster 9

<400> 1535
ttggtactag gatcacgtac acagcgggag actggtccat acatgggatg gaatggatca 60

tgtggtgatc gccgacacga ttaaaacttt tgtttttact tttccggacg ggtgagttag 120

cgcagcacgc tgtgcagctg aagaccagag aaacgtgcac ggtcgccggt ggcgctgaat 180

gtttcttcag aaggaaccaa ttcaccggtc cagcttcgcc gcaccaagga cgaccgtggg 240

cgtcgtggcg gccgcggccc ggccggccgt ttcttcaatg acttcgcccc gcccgcgtgt 300

ctgccgtgcc gcctaccccc gcccggggcc ggaggactgg acgtaccaac cacgggtcca 360

cggcggatcc gaactttcct gtccgaccgg ggcggggcgg caccggtgcc gtgcatgcag 420

caccgcgcgg cccagagcca tccacttcgc ttcggctggc agtgtcgagg cgtgacgtga 480

cgcgggcacc acgcaccagg ccgccttttg cccccactca cccaccaccc gcggccccgt 540

gcacgggatc ggattcgccc ggtgctcccc cgccactaga cacgctcccc ccggggtcac 600

gatcgtcagc ccgcgtcgca cacctcgcgc cgcgcggctt ccggtgcgaa acccgcccgc 660

ccgcccgggc gaacgccgtc aggctggcgg cgtgcgtgcg tgatttccct ttcgcctctg 720

gccctctgcc ctgttcaaag gggaagccga gccagccaac gcgtgactgc cgcgcccgcg 780

acaaggaggt gcacacgtaa ctggaacgta ccgggggcgg gcgacgagta gagtgtttcg 840

ttcgccggcc gcgccgacgg atcggagcgg attgccgtgc cagatttgac cgcgataatt 900

aatggcagct agtgttttag gcaccagcct ctctgcctgc ctgcctgcct ctcgcgtgcg 960

tgcgtgcgtg cgtctgcgtc gtagtcagcc gatacgtctc ggaacctgaa accagtcgcc 1020

ggaagccaat ccatctgact ggccagctgg ggcgctcgtg cgtgcggtcg tatcactcca 1080

ctaggaggaa gccgttcctt caagtgttct cccagttgaa acttgcgaca aacccaacca 1140

agtgacccgc acgcacgcag tcgcgacgag cgagccagga tcattcacat cagctgcatg 1200

ccgaccagcc gtgtgcactg gagaacggag gaaagacggt caattgcgtt cgatcggcgt 1260

cgccggcctt tacaggtcgg ttggtcggcc tccgtgatcg cgaccgcaaa tgcacggcg 1319

<210> 1536
<211> 1148
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55312_G1, chr2:18747830..18748977, Cluster 9

<400> 1536
gttttaaaat aaaaataaaa aaacctggga aatttcaaaa tggagaactt aagatgtcca 60

tgtcacaaag tcaaaaccgc ataaggaatc ggacgggaat gatggggatc gcgtggtaaa 120

ttaggctcta tgctatgccc ccggcccccc gcctcgtttt tactggccgt ggtgccatca 180

gcgtcgagat aaatgagcag ctggcaagtg gcaatctcaa tcgagcttac gacgactact 240

cgatgccatc agatttgttt tataggaaca gcgtggactt ccctgtgcat ccccaattcc 300

catatgcatt catgcgcctg ttatttcgca atttctgctt agtttattga cttccttccc 360

gatcgatgat ctcatttcca tgcatggtaa cggtcagcta aggttacttt tgcgcaagtt 420

ctcgagctta aactccacaa tcatatcgat aacaacggat taactgaccc gtccgtctac 480

cgcgtcgtat gggatctttg agctgagtgc tccgtatgta tcgatctata cattatatat 540

actgctccat atacattaac tataccgcgt cgtatgggat cttcaagcaa gcatctgctg 600

tcgtagttat tagtcaaaac atataaataa acagcctgcc catggatgaa ttatgacttg 660

acccgaacgt ttcacaaaac acggggagaa catacggtac ataccgggcc cgagggtcgt 720

ccaggccagg ttcactgaat ctcgataccg ttaaggaaat cccggccgcc catccagagt 780

tttctttttt attcgatttg tcctaaacag aaactccatg cgagtcccaa aggtcaactc 840

atgtgcttgt ttgatatgat ctacgactac gggaagatgc gctacgcagt tagctaggga 900

tgcaggatac tgtctccatc tgaatcggta gtgaagatca ttgtcatggc ggtgccgccg 960

gtggccagtt aggtgacctg atgtccatat taattagcca tgtgactgtt tgctttgtcg 1020

cacctcgcac gcgttgccag caattaggtt aggttaacgt ttaagcagag tatgccgttg 1080

caactggggg agagaaggat cgcctcctac atggtcctgc attcggccat caccggtact 1140

gtaccccg 1148

<210> 1537
<211> 1259
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5551_G1, chr1:28458733..28459991, Cluster 9

<400> 1537
gttgtagtac tgaagtagaa cacttgtgcg gggtcgtcga accaaagaga ttgaacagac 60

agacaggcag ataaggtttg gccgtttggg ctaggggcac gaattgtttt gtcgggcaca 120

ccgtacgggc actgttgctc cacgtggggc tacaacaact agcggctggc gctgtgctct 180

cgtggtgtgg tcaccgcgtg agcgcaccag cgcagcgccc gctaacggct cgcgagcacg 240

gcactgttcc ggccaaccca acttgccgct gcgccttgca cccgcgccac agttgcaccc 300

acgcattcaa atcggttcat gcacccgcct ggctgagcgt ccatgtccat ccatcattgg 360

cctggtgctg cggcccgcag gtggaggatg aggcggagga ccacccagca cgcaccaggc 420

agcagccgtg tgcgtggtcc gcccagtgcc atactgccaa gtctgctgcc atcgcgagca 480

gggtgggtgg cgccggcgcg ccagagccag catcggtcca atcccgaccg tcatggatcc 540

atccaacggt caggaaatca agcagcgccg gttgagtagt tacggagggg ataaggtggt 600

acgcctacgc tagcttggca ttctcctgcc ggatcatttc attttggggt gggggcatgg 660

tttccgtttc tagatgtgaa agatttttgc tttcgtgacc agggagggca gtcggggacg 720

caatttaaaa cctgccgcta ccgttcctct ccccggtccc gatcgctacc tgggtgcgcg 780

cgtcagccat cgccgtcgcg gacgtcgcgt cgactgctgc cacggcattg tctcgtttgc 840

acatcgaaag ggaaacggac gccatcgcca tcgatcgttc attagcagct ccctttccac 900

tgatcaaaca gtaacgaagg gcactcaagt gtcgtgccct ggttcgaatc gagaaggatt 960

ttttgtgtg tgtgtgtgtg ggtggtgggg agggaggggc agacacggga gcgtgtgatg 1020

tgacgatggg cctggccacc tggccgtcaa cgcgggggtc agatcggttg gtacaatgat 1080

ccgctgatca cgacgcctca atttctccta cagaaaatta tctatttgac actggtaaaa 1140

cctctccttc tctacctatc tatcgcctag cgtcttttgt tccctgtttc agcactcctg 1200

tcacattcgt ctagctgtag cgtaaaattc cctcacaaag ataaaaaaaa catattagt 1259

<210> 1538
<211> 1373
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5552_G1, chr1:28460099..28461471, Cluster 9

<400> 1538
agatatatac cacagatcaa agaaaacaac cactcgacct ggctctctcg ttcgacggtg 60

cgtctcgcgt cctaggccat agattgggcc gtctgctact tgctgacggc ggccatgacg 120

cagtggttgt cgcgacagct agtctagtgg cgatggcggt gtcaaagtct agcgtgtggc 180

ggcggcagtg cgccgtgtcg aaggtgccat ggctggcggg caccagatgc taaagtggcg 240

ggcctatata tgctatgcac cgtgtcggag cagttattac cggccgtcgt cagcacatgc 300

atgtggtcgc gaacaccatg ggtcagcagc tcgtgccgag tgccgacgcc ggcgggcgcc 360

gtcttcaact gctgcgcctg cgtgctagga tggctcgccg tctactgcgc caccagcctg 420

ctctagatgc tcagctctgg ctattccgaa tcacgagaga agataagcag ctaaaatacc 480

gagacaggtt atttattgtc tgcaaacaaa taaataagat taaaaaatac acagcagcag 540

gaaccacaca tcaagctaca ggaaacacgt acgagggtac cgtgggtaat tggatttaac 600

gccgttacga tcaaaactca tcagtgaacg aggattggat ttttttaaat ttcaggttca 660

aattaaatag ggaacgagaa ccttttccgc tgtcggaatt ttttctcgtc caactgcgag 720

tcccgtgggt gcgaatacgc acgcggtgag ctacctacct acctacctgg acgctgtacc 780

gtttcaggcg tgtgtgggtg caatggcatg ccatcaggtc caggaacctc tctcggtttt 840

gagcctgatt acatgattca tctatggaaa tcgggctcga ccggtgatca gtcgttgtct 900

ctgggagcat ttgatgagga tcgagactct ctcgcgccga tgggttcaga taagattcgc 960

atctcgcgtg ctgccgtttt cagcgctttt gttttgattt ttccagtgtc agcctcaggg 1020

caagcaatat ggcattctag ctagtcatgg aggatgggcg ccagccgcca gcagccagca 1080

ggtcgagagt acaccgtcgg gcgtcagcat gtgcatcggg ctgctttttg ctactgttgg 1140

ctccgacaag cgcacagtgc ttatcgtaca ataatgtctc cggatttaat ccacgtgtcg 1200

tgctcttagc cgcgagatta gtcgctacca ctgtcgacgg tgacatgaca gtgtagtagt 1260

acccttttt ttcaggatat tttgctgtgg catgtccagt gtcctcatat cccgaggcgc 1320

gggagtattt cgtttcccta tgtgttggag aaggcgagaa gcatttctct att 1373

<210> 1539
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55855_G1, chr2:21801214..21802350, Cluster 9

<400> 1539
cgagatttgg tctatccttg attcgatcag cggggaatat tttggcttcg ctctactata 60

tatgtaacaa caaagcgaac tcctcgaaaa aattgtttgc agccttgaac tgttggtggt 120

attgaattga aaaaaaaccc aattatttcg ctgagtccag acacaccagg acatgatgat 180

agttatctcc atgtagaaag gtactgatat acttcttttc atcctctcag tgatcttcag 240

tggttgcaga tgaactggat aatggacacc aactggatag cgtagtacct tcaacatggc 300

aacaagttca gcgccaagaa tttctggagc cattgatgag catcctaaat aaaatattgg 360

agccacagta cagacttttg caagtagtga gtagtgacat actgacatgc atcacaaact 420

gcttgcattt tacagtgggg attcaggggg ggggggggga ggggggggga caggcgcagg 480

cccatgccca tgccttatca ggtagaaatc ttataataat gatttccaca tctctcatct 540

gatgcataca tcatatcggc tgctgctttt ggagttggcc tgtgataaac tagtgtgctt 600

agcttggcat ctgagggaga gtgatgcttt gatccaaagt cagcatcaca tgcgtgcgtg 660

cgtgcccatg gaactcgaat agctgggctc ctccgcgcgc tggtaatgtg agttattagc 720

tgccatcgcc gtcccttgac agcatcacca ggggcggcat cgggcaataa acaaagaaag 780

ccatctggtg gcttcttttc tgcttgaacg ctagctctct ctccttcttt taaagtcggg 840

cgggcatgag cggtttgtga cgtcgacgat gcgtccccgt agtgccgatc ggcggcaggc 900

aagcaagcag caactccaac atggaagtgc cggggaaaca attgattgcc ctcgctttca 960

gcgtcagcca gtgcatccgc aactgagttt tttatatatg ggtcgccgga ctgcatgggt 1020

gatgatgtca acagattgat ccgtcgctgc gtggcttctt ctgacattga cagatctgct 1080

ccccccccct tttttccaat ttttttatgg atctgtcatt ttttttttt tttttt 1137

<210> 1540
<211> 1240
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57382_G1, chr2:30562307..30563546, Cluster 9

<400> 1540
tctaaggtgc tatagtagga cctaggagat gacaggatga acgggacctc tctacgaaag 60

aaaagcagta gtatgtgtca aattaagcca ctagcggggt tccgatctga aaatgagagg 120

gacagcaaac catcggataa cacaccatgc atgctttcaa aggcaggcag tattccaaca 180

cttgtacgcg tcccatgatc tttctttgct atatatcccg gcgccttgat ctatccatcc 240

atcccctgat gcattttagt gggcattcac caacaaacaa acctaaaccc caaggacaat 300

caactatcgc gtcgcagact cgcagcatgc atcaacagcc gccaaaaaaa aacccggatc 360

atatcgtatc gaatgaaacc acatctctgg agagtcagtt gcgtcgcaaa cccgactcca 420

caaagccgca gaagcagctg actactttgc gccaatcaat ccgcgcacga cggcgcccaa 480

agtctccagc cgccgtcgtc gtcgtcgcgc tcgccggccg ccacgtacca gtaccaccac 540

caccgccgga gacccagcgc ggccggcggc tgcctactat gtactactag tctactaata 600

tgtaccacgt gccaattagc ggccgcagca tgcaggagcg cagacaaacg ctgccgggtg 660

cccgggtcgc gcgggtctgg atggcgcccc gctggctcac gctcacgcgg aaaggtgagc 720

aaaagtggcg ttgcgctgcg gcgaaagctg tggggactca gggcagggca gggccgggat 780

gcctgccgtg ggtggccgtg agtgggggcg tggcgtcgat cgccccgctg ccttttcgga 840

tcggggctcc tcggtgctgg gctgggcgcg cgtgcccgtg aggttgcttt cgtccgcgct 900

ggtgaccaaa cccatgctac acgcccccgt cgccgtcgcc gtcgccgacg agctagctag 960

gcctgtgatg tatccgacct gtgctcacaa gcacgcatgc cgtcgccgtg tttgatcgcc 1020

gactgcggag ggaaaaagaa aaaacccggt tgcctcgtta gtctgcctgc ccgtgctctc 1080

tctctctctc tctctctctc tctcgccagt cgccagtcgc cagtcgccac agttttccgc 1140

gaccgctact agtggagact caacagcaaa acggccggtg caatgaacct cgcttcgacg 1200

gccgacgctt gctaatcgag ccggatagct aggtagctag 1240

<210> 1541
<211> 1160
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5757_G1, chr1:29391529..29392688, Cluster 9

<400> 1541
aaaggtcttg taatttggat ctcgagcgag cagatgttaa tacatgtatt tatatataag 60

ttgacgaatt gtagcttgaa ttatcggaaa cttgccttgt gcttctcttg ccaactgcta 120

tactagtcgt ttttgccttt ttgcacagag ggggtgcgtg cgtcgatcgt gcgtctgcag 180

acagaagaca agcagctagc gtcaaacact attagctagg gtgtttagtt ggaagaaaat 240

agaccctggt cagcggtttt tcttcattca tcaaatagaa aatacgtaca caatacccta 300

ctagatgaaa tacgtacgca tgcatggttg gtggtacaca actggcgcga gttttaaatt 360

tccaatgacc gcctgattcc aaatccctgg actggaccca tccaattttg tatacataaa 420

tgcgcttacg tcacagggac cactgagtgc tagtacttgc tagcacatga cacgggcagg 480

catctcgcgc tcctgcggcc ctgccgcatc gcatctccaa ttctccaaaa atctgcccaa 540

gaattatttc caataacaaa acccaccgta aaaaaatagc cgagcctcgc gtccgtggct 600

ccgagaccga gctgcgatca ggaaacggac gcgcgcgcga gcaggtggcg ccgcggtgcg 660

atctaaacca gactgccgga ccccgacatg ggtttgcatt gcatgcgcag gattcgccgc 720

gcccgtgacg cgcgtgggcg tggcggacgt acggccccgc accaccgccg ccgctgaccg 780

ctggcgccgt gacacaagcc acgctctcaa ctggacgcgt gctgctgctg ctggtggtcg 840

tacacgtgag ttggttcggg ccaggcgcac ggtgcggccg tcgcgacgtg caccatgcac 900

cgtgggccag caccagctgc atgcgtgaca tctaatgttt tttcgtcgtg tctgaaacgc 960

tgaatccctc cagcttcatt attccaccca tggtttcatc ggtttggctt cgatcctacc 1020

tgtcgcccta tcagttttca aaaagaagga aactgtgcca gctagcgact ttccagtact 1080

gaccccgccg gtcggctaac ctgatgtgtg aataccacgg gcgctacgag ttgtttgagt 1140

acgaatctat gctgtgtagt 1160

<210> 1542
<211> 1105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5791_G1, chr1:29549608..29550712, Cluster 9

<400> 1542
ctacttactc ctgtgcctca ctattgagtg gcatcgcgga gcatcactaa aggaatatag 60

tataattata acaataaaaa agaacactag tatcaagctg gagatttaag acctgtttag 120

gagggtttct ctaggtacca ccctttccta cggtatccaa ggggttagag ctggtgagac 180

caaaattttc tagtttgacc tgcttcattt cagttcaatt gaaaggaaag ataaaaaaaa 240

cacagttttc tgttatattc tataaaattt cttagaagct aaagctattt tagagaagat 300

ttctattcta aatggcgccc aaccaagcta ataagctgtc gtcaactggc gtggctgccg 360

ctttgtcgca gcttggtcac acaaattcca gcgggttgga ctcggcctgt tgccctcttt 420

ccacaccacc tcacgctcac agcaactgct ttccacatcg gacaccgaac cctggctggc 480

tggctctgga aaatgagagg aacaaaagaa aaaaaaagag aacataggaa aaggggcggg 540

gcttcgggac tgtggggcag ggcatgttgc ttcatcctgt gacacccttt tccaatgatt 600

ggtctggagt tcacgttaca cgcatccttg actgggctaa agaaatagta ataatctctt 660

gtttggttgg tctgcagggg tcctgctgcg ttgcgcgtcg cccctgttca ccacatggcc 720

tgccggggat gaacaggcgg aggcggcaga gtaacggaac gggatcgatc gagcgatcgg 780

actgccggtg cttgtcatcc aacaaagtgt gcgctttatg tgatgatggt acgtgcggca 840

tgtaatctag ggtaactttt tttttcttcc aaacacgatg ttgcaaaata tatgtactct 900

agtctagaat agactatatt ttctaacaaa acagatgcag ctccacagga ttatttgcta 960

aaaaaagtaa gattgtgaga gcgtcagagt tttttctgga aatttcattt ttttgtgaag 1020

ttgttctacg gtgaaattta ttcagcaaag tttgtgagca gtcccaaata aaaccttaat 1080

tctcatagtt tttatctttc tcaat 1105

<210> 1543
<211> 1182
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58039_G1, chr2:34670136..34671317, Cluster 9

<400> 1543
gagttctcat caaaccggtc taaaactccc tcctctctct ctctagaaac gttctttgaa 60

gttagaattc atcaaaaaaa cgtactccga agacggggtt taaaggatgt ataacttggt 120

acatctccac atatctattt tgttttaaaa actgagattc agaaacattg cagattgatt 180

cttcaaaaaa aatgataaat ttcgattgca cacgcagagg acaatctgat ttgttttgta 240

cgaaacagcc tacaacgagt tagaatttat tcttcgcaac aaaatataaa cctgtgtcca 300

tttacaagtt ttttttaaa aaaaaactga gagtacactt tcggatgaat tttgttcgaa 360

tttacggcgg tatttgcacg atgtttctat atacatatac acatgagtag taggtgaaat 420

ggtagtcgat ctcatccata ccagatacca cctactagta ccactgcagc tacagagcta 480

ctctacagtt cttctactat agcagtataa cacgtgacgg cgtcgtctac gttgcgttgc 540

cgatggatcc aatccagcgt tactgctctt gtgacaagtc tctgagcgcg actcgccaga 600

cttgtcgtcg tcgtcgccgc tgcagcctgc atgcagcagg gatcgggttg tgcttgtgcg 660

tcgtctggct agttccgatc gattccgaga ccaaacatgc atactatact tgcgttgcat 720

ccgtacgtga tcgtctgtct gtcgatcgat cacagggcta ccaaacaaca gctcgcgtcc 780

atgactgcgt gcctgccgct cgatcggaaa aacgtcgcat gcagcccccc tctttagcaa 840

gtaaggagct ctgtcttctg atatttttt tttaaaaaga aaacactaca atgaattaaa 900

cttggtttag aaagaaatta aaactgacct gaaaattaaa cctcctcgtt ccgagaacaa 960

ctttgttctt cgtttcagaa cgaaagaagt actagtactc ggtgtcggcc ggtacgtgtg 1020

agctatctag ctggttggtg agtactgtag tacgtggtag cgctgccggg atcgagattt 1080

taacgcacgt acaacacacc gagcacactg tactaccaag gccgtgtggt ggcgtccttg 1140

gctatagtta gcttagctag tataggggggc cgatcgcccc gc 1182

<210> 1544
<211> 1114
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58638_G1, chr2:38126726..38127839, Cluster 9

<400> 1544
gaatagagct cagattttga ccatgaggta taccctactc aattcaacgg agatatctac 60

tttatcattt tggtggttgg ctttgcaaac gtatcctcgc tcccatttcc ctctgctgac 120

tccgtggccc caagcagaat gacacacggc tcagcacagc agcccgatat gtgctggtgc 180

caaagtgttt ggctttatcc aggcgtggga gccccggtga tgtggccctg cgagcggaag 240

gggtacacag gtggggccct gacgacgtgg tggtgccgtc cagccgggaa tctcatggga 300

ccgcggtctg tgcaccacga caattgtttt ggattccgca ccacggcggg cgggcgggtg 360

ggcgtgtcga cggtgggtca cggtcagagc tgtggacttg agagtgggtg ggtggaggtg 420

gtgactagcg gttgctccta tcaggctatc atgcccgcca aactccgatc acgcagcccc 480

cttatcgtta tccgcaccgt gaattcgtct cagtctcacc cctggtgtga tctgagtctg 540

accctaatcc tatggcgcca gctaatcagc tgctacctgc tatgctagta gtagtatttg 600

ccaagttgga gcgcacaggg atatatatat tactagacta gagagtggag aaggtatatc 660

cttgccattt tgttttcgat ttcctccttt gtctaataaa aaaaattgaa ttagactagt 720

acattattat atgggtcgct gtccgtgtgt tcatctattc ccactcatac aaaaggcgga 780

tcccatttgg cttctaaatt tccactcaat caacattatt gggaggcgta taacacttcc 840

attggtcata attaaggttg aactgcagcc actttagaaa tgggcagagg ctttcctatg 900

tgccattata aaaaactatg attttatata agatattaaa attttgatcg cctatacatg 960

ccgttaatct gatttctctc tctctccata ccgcttcaat tgtatcgtat ttggctctag 1020

cagtacaaac tacggtacaa atagtctaaa acaccctcaa ctctgaatat actattgttc 1080

taaaggggga aaaatatata ccaactcgag atcc 1114

<210> 1545
<211> 1307
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58888_G1, chr2:39595577..39596883, Cluster 9

<400> 1545
tagtgtgaag aagaacgact agcgctccct ctacgatgag cgtatgactc atggagtcat 60

gagcccatga tttcgcgcct cttttcccct caggtactag gtcatatcgc cgctaatcac 120

acggccgggc cggcaatgat gctcatcagc tggtcccgac gtcccgtagt acgagtccaa 180

aagaaagtgg cccgcggaaa ggatgcactg atcggggccg aggcaaacct gttgaccgat 240

cgaactcgaa gagcggagga gcctggatcg gagattcggt ggccggcgag agtgacggcg 300

ccgcaaaacg ccatgatctc tctcgcctct cctctcggca cccgccgtgc gcactctact 360

tgctttcggt catgctcatg cctctcagcc tgagaattga ctaatcacga cgcacacatg 420

catgatcacg tcgtacggcg gcatcacggc ggagccggct tttaagcttt ttagttcacc 480

gaccgatcgg cagattggct tcgtaatgat ggctactcag gtttgttagg acggcctagc 540

tagctagcta gccatgcgac cactcagctc ggtggagatc gcgctttatt tccatggcgg 600

tttgacgtcg acgagagcta gcttttgctt gaccggagct aatctacgcc atagctagca 660

tgcgctggtt ggagcggccg cgccggtgcc cccgcgcgcg ctttgcgtgg cgtggtcgaa 720

ccccaccggc gcgccgcacg caccaacatt cctcgagcca cgcccgcgca cgtcgtcgcc 780

gccgccgacg gcggccacgg ctttttactc gctcggaccc tatctagcta gcgcggcagc 840

acgcacgcag gcgccgatcg atcgattggc cgatgatgaa gcagtgctgc atgcatgcgt 900

gcacgcgttg ctttcggtcg atggttcggt tccccacacg tatactccac tgtttgcagc 960

ggcgcaggcg tgcgcgcggc acgtcgtcac tactcactgg tgctgtctgc gcggcgcgat 1020

ttcatcagtg catgcatgca tggttccttc tcgagacgag ctagctagtc acaccggcca 1080

caactcttgt gtcatccaat ttctatagcg ttgtcacgta gcctaaaaaa ataatgtgac 1140

aaacaattaa acgaataaag agtaagaaat tgggtcttgc acaatactta gtttcaacac 1200

aatatctaag acacacgaga gaataagagt attaaattca gtttaatcta tactagactt 1260

aaagtaccag tttcaacggt cgtcacacag tcatcttttt acaaata 1307

<210> 1546
<211> 1166
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59830_G1, chr2:45200927..45202092, Cluster 9

<400> 1546
tgtgtattac tttttcccac cagggccaat acgacatcca tcaaagggaa tgtaaggtac 60

tgcccagtat aaaaaatata tatatatgta aacccctctt atgtatcatg gctttatagg 120

ggaaatgaca cctcgctctc ttgctatcct ttgctccggt agccttgtaa cttggtgccc 180

tttgcgaggg cagcgtactg cgtacgtgtg gttttacaac ggagcgcgcg cgtgtaccgt 240

gtgcacagag aaaactatgc atctggtatg tgctgatgct aggcacgcat gcatgcatga 300

acgttgacgg ccggttcccg gtagaacttc tcgtatactc gatcgtgcag acagtcggtg 360

tgttttgctt tcattgaccc gtaagtacgt ccgatcgaca tgcgggtccg ctcttccgag 420

ctagcactag cagtccgtcc ggctgatcca agtccaaccc ggccgggcat gcgcatgtcg 480

catggtatgg tacgaccgaa agcgccggcc gccggaagaa aattaaccat accgctgctt 540

ttctcagtcc atcaccatta acgaaaccta accgcggaga ccgcagcgga agggtggtca 600

tcgtttccag ttttctatct aactacccgg tcaaacgaaa caagcgcgcg cgcagcagcg 660

caacggcagc cgcggatcgg acctgactcg tgcagcgtgc actcgcagta acatagctaa 720

ttagctaccc atacataagc atggctgcat gggggcagct gcgcggaatg gaacgcggac 780

atacgcagcg tgctggcagg cagtggcggc gctcatggac gtcaggggcg tgtcagcgtg 840

gaacggctgc gccgatgccg aacccggaat atgcgggtga cgcgacgcca gagcccagag 900

atcactgggg ggaaaagggg cttcccgctg gtttcctttt tcctgctggc gcgcggggcc 960

atttggtagc gcttccgcag cactcagcta ggcttcctct tttcccaacc aaacggcgtc 1020

cgtcagaaat ttgatgatga tgctctactc tacgaatgga ggagcgctat actactagtg 1080

ccttcccatt cgcaagcccg aggtgcctag ctactagtct gtgtgtactg tcaactcgtc 1140

aacatcctcc tgcggctgct ccccgc 1166

<210> 1547
<211> 1064
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60386_G1, chr2:48416191..48417254, Cluster 9

<400> 1547
caccgtcgcg ccgtccccac atggcagccg tgcacggctc ggcagtggcc agtggcgtcg 60

gggccgcgat gacgcgtgta cgcgccgccg tagttacgcc tcggattgtc cggaaaggaa 120

acgtggcagg gaccgccacg cgcaccgcac cgagggagag gagagctagg agcactactc 180

tgctacgccc acttgcctca gcggaattac ggagttgccc tctcgagcct ctgacggcct 240

gacccccccc ccccccctcac gctgcacgtg ttggtatcgt catcttcgcg tggccagcgt 300

gcgcgcgcgg tgtgccagta tgtgtgcgcc cctgctcgct cccctcgccg ggagcacgag 360

cagtcggggt acctcgcata tagttgcatg tgcaaaaaat tgagcacacc ctctataccg 420

gccgtgcatg caactacgta cagcgggggc accgcattct tctgcgtggt gacaactcag 480

acgagcagtg acagtgagag ctttcaccga acgagccagc gagcctctct ggtcgcatgc 540

atgggtccag ctccagtctc cagcatatgg gtcagcagag tgcgtgtaag ctttatactc 600

gcttcgaacc ataaaaatca gtgcttgccg cagcgagaac cataaaatca gtgtgtactc 660

tgtgtctcga tgctggctgc tgctttattt atttattaat ttgtggtggt ggcgtggcgt 720

ggcgtggcgt ggtgccatgc gccgcggacg cccaccacca agcacactgc acacggcgcg 780

ggtaacagca cttacgtctc catgacctcg actgctgctg tcctttatat atggtaagga 840

atgaatgggt acgattcttg gacagagaga gatagagagg ggagacgcca tgcccatccc 900

tctccgggta cagacgaccc ggcgagatag agaggaggac agaggacaca aacacacaag 960

agggcagtgg cgtgatgagc cggaggccgc acgcgcgcac ccatggccga ccacgtcgct 1020

gctaacactc gtgcactcat tcgtcgcgcg cgggggggggg gggg 1064

<210> 1548
<211> 1068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61010_G1, chr2:52324114..52325181, Cluster 9

<400> 1548
gattaaatcc ttcaaatgct attatttact aggtctcgat cctaggttcg gagctcggtt 60

gctccccctg tcgatgggag gacggggact cccccgcatg tcgcttagca gaaaactgga 120

gcaatagaga aagttgaaat aaaggcaagg caaaaaccct gatggaatgc aagtgtaggt 180

agggcttacc gcgagaggct cgctagtggc atggcatcga atgaagacca tgaagagggc 240

aagggatgtt cgtggaggca ccgatgcatg tcacctgagc acatctaact ctggcagcat 300

tcatcctaga caacaccaag gaaaggatgt cttcaccaga catcacttct gcaaagcgga 360

tgaaactatc caccgaagaa ggcaattctc ccagtgcttt cacgaagatg ggataactag 420

tccttcaccg ataaacaggt atgttagagg aagggtcggg cggatcctct cgtaatcgca 480

cgacgagccc aagacacccc ccatcagtgc ctaccctaag gacatgtcag cctcggctcg 540

cagctccttc tagcatgaag cgatgcttga caccattgag cggcaggcag caatagcatg 600

cctcccccca agatgactga tacaagtatc gtttattagt gatcctgccc tttacactag 660

gcaaaaacat cacgtctcca gctaagagga gcttcatatg gaacctctag gatgaagcct 720

agaagccctg atccaggcga ggtcccttgg cccgcatttc acaaataaaa ccattgctga 780

atctagcctt tatacgacaa tgagaatgga actgagatat attcgtgcaa cctcccattg 840

caaagatgaa tactcacgca tctaatcagc tacacctcca ttgccctcag ctctttcctc 900

tgttgtagca gctcgacgca gaagaaatac tgccatatgt taaaattgtg ctctacaccc 960

aaataacctt tgcatagcgt gataaataaa tagtggcaat gtgttggatc tcgttcggat 1020

tcaggtagtg cagttgtact tgtagataat tgagaagaga cgcgacaa 1068

<210> 1549
<211> 1179
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61500_G1, chr2:54756344..54757522, Cluster 9

<400> 1549
attaggcatg aatgttcggc gaagctacat actactccgg tatggctatc tctgccggaa 60

atgctagtag tgctttatcg tttggtttgg taagcagccc agaacacacg gtctgttgca 120

cttgcaccta aaggccttgg acactctagt atcttatcta cgagtcacta cagctgcctg 180

gatctgaaac gtaacgctag ctttttgcat gtggaggtgt cccagtagcc gctaggaagg 240

atatcgacga ttcagagact tggcgtgtgt gacggtgcaa ggctaatttg gacgcagatc 300

tgggtggatt atttatttat ttatgggcca gaaagaccga aaccacggcg cgctcggcat 360

gtgtcccggt ggctctcggg ctcctgatag tacacagctg cacggggcgc cggcgcggcc 420

gccggactgc tccattgcac atcgcccgtt tcccttcgcg ggccaatgac aatgattgca 480

cgttcgcacg caccggacgg aactgcaagt atatagtact aatattagat ccgctcaagc 540

agattatcta aaatttaact atatgtacta tttttacaat ggtctgtact gtagagtgtg 600

tactggataa gtaaattgct gagggtagtc ttaatagtgg tagatgagag tcgaggatat 660

taaccattca gaccttgcta cagtaaacgg agctgaaacg ctgttgagtg gacaaggaca 720

actcacgcag gcagctggct ggcgtgtcct ccctaggaaa ctcccctagc agcttcgcca 780

tccctactcc ctagcgcgga gtctcatctc atggatggag cccgcccatc cccgatcgcg 840

agctgtcggc ttctccgcca tccacggctc gctttcgcta cttgccttcc cccactccac 900

tccactccac cccaccaaac caacccaatc agcgcaccgg gcccggtcgc gctcgtttca 960

ttctccgcat cgcactcgtg ctgcttcctg gtgctcgcgt cgcgtccttc tgtcgtgacc 1020

ctcgcgcgtc gggtcgggtg tggatcggag gagccgtgtt ccccggtggt gtcggcgtaa 1080

aacgcgacgc gctcccgggc ggcttcggct gcctgcctgc ctgcgggtca aaggctcaaa 1140

gctacggggc cccgctcccg ggcgccagtt gccatcaca 1179

<210> 1550
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6470_G1, chr1:33278066..33279218, Cluster 9

<400> 1550
aacagctcga cacatggaca gacatgctta actgaaacca aacaatagca tgaaggggag 60

agcacgtcac atggactgct gatgctgtcc tccgattcca tggaacgcca tgattaaaag 120

gcaagagaag agacggcgaa gagcctgccg aggtgtcaac gggtgctggc ctttgttccg 180

ctaagattcc tctcctgccc cctctctgtt gaaatcgaaa cccatcatta gccagccatt 240

gcatcaccac tgccccccac ccccaccttt gccggacgat cgtgcgcgtc ggaccgggca 300

tcggacggct ccgagcacca ccacaccgcg cagagtccgc cgcgagctcc tttcgtcggc 360

gtccccaccc catgcacggt gatgtaagta gggcggccta gcagcgcagg ccatggcgca 420

cacgctgccg gtggaaaagc aaacctcaaa acgccgcccg tcttttcggc gccttttttt 480

gcaaggaaca ggcggacgta cgctttgcga attcggccgg gggtgcggtg cggggctttg 540

cgtcggccac gcggctgcgg ccctgcggga aagcgagggt gatttgagcc ttttgacctc 600

gtcgcgtccg gcggcggggt ggcgacgagc gggcggagcc ttggagcgtg ctctgaatct 660

tggggccggc cggccggaga gagagagagt gtgtgtcgcg tcctcgctca atgtgaaaac 720

atcaaacatt gcgatgtatt gctcggtaat cagtagtaac aggagatgtg aaagtgtgtt 780

acagcggcgc gggtgaccga ccactcactg ccatgtctgt aagctgccgc cgtgacatca 840

tccatgcccg gcaaggcggc aacctgtatg caattttaaa ttccagctaa ttttgttatt 900

aatatagatg gtgttaaatt tatcttggaa ggctattctt tcaatcacgg ttcacgacgt 960

gtatgtcagg acaacgagat tagcttgttt gtttctatac tttttttcg atttccaata 1020

taaatagatg gctgatataa aaagtaacta gcacaggagg agcccaactt cttatgtcta 1080

aggtcagcgg gagtttcttg gattaaataa caatatataa gtggtagctt ggctgtaatc 1140

tgatatgtag acc 1153

<210> 1551
<211> 1149
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7699_G1, chr1:40242253..40243401, Cluster 9

<400> 1551
cgataggtat aatttgccac ggcgatcaaa aaaaaacggt ggtgtaataa ctaataacag 60

agcgaaagca aatggccgcc gtccctttct aggaacgctt ggcatctcct gctgtccctg 120

ccttttgctc tcttgggcgc aagcaacgca tgcagaggat caaaacccct ggccctggcc 180

ctgggacgta ctacgcctct tctgcgcgct ttacgtgcaa gcaactgctg cagcctcctc 240

ctgcagctag cgcctccatc attctgtttc ccttttccgt tttcgtgtta gcgtctccta 300

cgtacggcct ggatcgatgg atcccaccga tacaaacaaa caaacaaacg atcagacata 360

cagatccagc ggcgcatttt cgtgacatgt cacaggacct cgtgtatcgg gttttggttc 420

ggatctgtac tcccgattga gttgttttgt acggcacgct gcgcacgcag ttttttttgtc 480

ggtggaagca ggagtatagc atactagcat gcaatcaaga gctgagagcc ggtcgtgggg 540

cgcgcggcat cactttcctt gccacgccgg cccactgcgc gcagcgcatc tactactagc 600

gggactgcgt gcgtgcgtga cgcacgttgc tgaatgctga tatccgtgtt tggcccaccg 660

gccgccgcgt cgtgtgtgta gcgtgcaggc agtactgtac gtttgaaaca tcgatccgaa 720

cggacttggc ctcaccgtgc gtgcattgga cgggacgggc tctgccaccc aggcccccac 780

cctgctttcc ctgtcccaat ctcccccaaa tgcatcctgc ggcattcagt tttttgcgtc 840

tgctgcgcgc atgcactggg tctgggtccc tcctcctcct ctctgcctac gtgcgtgaat 900

gcatgcacgc agcacgcagc acgcatcatg ctgtagtacc aaattggtac tagtaggctg 960

atgagttgag cgctcatgat tggcgtcggt catgggagac gtgccaatag tgtcaggtca 1020

gcgagcgcat cctggagcag gatggaatgc agacgggtca ttcccgcccg gccgccccca 1080

ccccgttcgt cgtttaccac gcaggcatgc atgttcaaaa tcgattttga tcgaggcagg 1140

ttgctggcg 1149

<210> 1552
<211> 1110
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7723_G1, chr1:40397581..40398690, Cluster 9

<400> 1552
ggaaaaaaaa aaacaaatct accggcagca gtccaggccg gtggtagtat gtagtagatc 60

ccttgaagca tatgcacgcc cgtctgtcgt agctagctgc tccttatact gaaagaagaa 120

tagcgcgcgt gatgatgcga ggaccgatcg aaggctagaa tattcccatg tgtggaaacg 180

gtggcgtata aacaaaccag gataggatta gaaaaggcgc aagcaagaac gaggtcgtcg 240

agcgacgaac cggcaactac tatactacca ggatggatgc gatcgctact agctagctgt 300

tgcttggaag cgacatatag atcagggagg gagggaggga ggggaacacc gacaccatgc 360

gttacgttgt ccctgtgcca ttggccacaa aaaaacaatg tcgtcgtcgc tagctcgacg 420

cgacccttt ttgtgggcca gatgggtgaa ccattatagc tagctctggg atcaatcaga 480

tgagacgacg atcacaccgg atcgtcatgg agtgtgctgc tagctagctg gtccggacct 540

atcctaatgc gcaggcacga cgaccggctg ggccccggct cttctcgcac ggccgccacg 600

ggactgtgtg tggtcgagac ggctactaca tgtattcggc gcgcccatac caacgtgcat 660

ctgtcacacc tctgcgtgtc cgtctatcct tttcctcccc gcgcattatt tgtatttgat 720

taaacaaacg cggggtggaa catgcgagtg ttctgagggc aggctgattg atccgatccg 780

atgggcagcc ggcaccgcac gccatgttcg cctccatgca tgtggatggg ggaccgcgat 840

ttaggtcgcg ctcgtgttaa tccccggccg ggcggcaaac gccaacgcac gcgggccgcc 900

ggctgcggtt tgccggtgac ggttcgtgtt attaggcctg ccggtcctgt gagtgacgtc 960

tcgtctctgg cgacgcagcc gtgatctggg gttcggcggg aggggaggtt tgagtttgac 1020

aggtttatat actgctgttg aatgttgatc gatggggatt tggcgttcga caggtgcagg 1080

ctcaggctca gtagatttga tgctgcaata 1110

<210> 1553
<211> 1200
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7724_G1, chr1:40398749..40399948, Cluster 9

<400> 1553
gcgtaaatat ttttttccaa taaaaaaagc atacaggcct accatctata ggtcaactgg 60

tcgagcgtag tagtagttgg tggcggtggt ggtgggtgac gacgacggct acagtggcgt 120

atgcttacca cattaccaac tgggtccgcg gtggcgcttg attgcttgct tgctttcttt 180

ctttctttaa ttgtcgccac cggccgcgtt ggtgcggtcg attgacattt gaatctgtct 240

cgacgcgagt tctacccccc aaaaaaatag agaatcgttt ctcctgccat gcacgaggat 300

gggaccttga tattcttttc agctagctac gtggttctcc ggcgctatta ttccaaagga 360

attattaaaa ctttgtagaa gcaggtaaac gaggtcgcca cctggttctt ctgcatcctg 420

agaaacagga gcggagagat attatttctt cttagaactc tgtcagcaag tacatttgtt 480

ggaacggagc cgcttccaga gctgtgtgag gaagcagtga agcacacgta taaactgaca 540

agacgcaacg caataccgag ccggcggcaa acctgcgcat gcgtgccgcc gagagccact 600

gccgcatgcg ttttttgccg gctctctctc gctctctcgc gtaggatgat acaagtaaaa 660

cacgctacta atctaattgt agtagtcttc catgtttgag tccgggttgg gcaggtaaag 720

agagctggcg cggcgcggat ggaggggaca cgtgaagaag acaaactccg tgctggactt 780

taactgacgg ctgctagtag ctcgcaactc cccaaccaac gacgaaccca cgagcgaggt 840

ttacctgctc gcccggtaac ctatagcttg acgcacttaa agataagatg accacgcgcg 900

aactaataat gctagcgcac gcgagttaaa accaggtggc gataggcttt gaacacgata 960

tctttttttt ttcttttcct tctggctaac cgtccacggg ggatggtcgc tatcagttgt 1020

gacctctaga tgaggcttat agatagatag acgatagaat cgtagtatag ctaagcttta 1080

cgtgattttt ttatagatat aattcattat ttattctatc aatattaatt tatcctatgt 1140

tatttttaa aaaaaactaa aactatagat tttttttac ttctcttgcc atttctctac 1200

<210> 1554
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81004_G1, chr2:177115468..177116513, Cluster 9

<400> 1554
cgattgggca gctgcacgcc ggtgcagctt gcgcgttgcg gcagccggca gctagctact 60

acaagctggt acagtacgta cgtaggaaag caaccacagc acagcaagta acttcacctg 120

tgtatctcat gatctgaagc atgcatgcaa cttgctgccc ggcccagcgg cctcttgtcc 180

cttgtgcgct cccaggaggc ggcgggcgcg gcgaaggcaa atcccaaatc ccaatcccca 240

tcggagcagc aactgcgatg gagaaagctc caccgcagca agtagctagc aggtcgcgag 300

gtcgtcgccg tgcaaagaat gcgtaccaaa aaaaaaaggc ttcctggaag gaaaatctga 360

gaggaacctg cggatgcact tgcctgtcgg tgagccggtg acaatggagt aatggactgc 420

catgacgacg tttctgcgtt gattggccac caggctgctg ggaccgagag cgactcgagc 480

gatgtgaagg gggcgtggta gcggcaggca gctggcgttc gccgttcggt gatggcttcg 540

tcgtttttcc acgccctgca gccccgctcc tctctctcct cctggcggct gcctcgcctt 600

gcctgacgga gacaccgctt atttgttata ttatatgaga gaggaagcta gctcttgctt 660

gatgattata taagaatata tataatcgta tgaaaaacaa cagcaatcta gtagtcgacg 720

cagaaggcgc cgatcctgct gttcagttct tggcggtcag ggaaatacct ctggtgccgc 780

gcgcgtcggc gaggtgcttg cttggacctt aattagtgcc cttttgttcg ttctcatcag 840

agagtcagtc gccattcgcc aagctcgatc acattcaatt cctagccaag ccaccagcgt 900

ggcagagacg cactctgatc cacgatccat aaatgaggta ctctagatca catatcagtg 960

ctccctctgt ccacatgatt tagtcgtttt agttttgttc taagtcaatt agtattaaat 1020

ttgaccagtt atgcatgatg tttcat 1046

<210> 1555
<211> 1336
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81602_G1, chr2:179833126..179834461, Cluster 9

<400> 1555
ccccccttagt tcccaagtga gttctggtta acagcaggat gggagacctt gcaaacacgt 60

actggagctt tagatatgct gtttggagtt ctgcactgca cctgtaataa acagcttata 120

tataaatgca tctctgcaag acgcgacaat aatgtctcta tcgattctat ctccaaggta 180

cgagagcagc actgagcttt tctcctagct atcatgtcaa ctaatgagat agcatgcgcg 240

ctcgttcgtt cggcctcacg tgccttttct ccaccatacc agcagaaaac cactttgcag 300

tacgagaatt ggctcccaag tcaacatttc gcgcgcacat cctgcaatct agcttgtgtg 360

gtactcgatt ggagatgtct ctgcctggcg tggaaaggca catccaggat tgtgtgctgg 420

tgtggtgcca gtatatattc gccaagaact tgctaggttc atgctcgaga ggccgggacc 480

tgtcattcca attttgtcat ccttatccac catgttgtag ctaggtcacc tttaatttgt 540

cgacgtatat agtcctgctt ttatttgctc tatctatgta ctatgagatg atatgcatat 600

atatatgtat ccacaatgtg atgttcactt taaagttgct tattatctcc aggcatccct 660

ttggtcggga gatcaagtca cgttctgcag gcacctcttc ccctgcttct atgttctatc 720

tacgcaaagc catgggcggc cgcgagctgc atgcatgcat gcgcgtcgct gttgcctgct 780

tctttttccc accccggcgg ccatgatcga gcacggcgcg ggcttgtcag ataggacgca 840

cccgtacgtg gaggaggatc gggacgagat ctcgtgcacg catcgctttt gcttcggccg 900

ccggcatcgt ggaatggttc aggtgcaccg catggagttt gggcttccac ttttacaagt 960

ctacaacgca tgtgatgcga gtggtcaggg ggtgatgcat gatgtcacag tgctatcctg 1020

gtccacatgt ctttgctagg gcttctttgg gtagatagag aataacgaga ttggtgccac 1080

atgcccgaaa tccttcacct ctttgtggaa ggtgttgcag gcttcactac aagaccttta 1140

ccaaggatct ttattgcgta ttagactacg acagaatact aaggcaatct cttgtaatat 1200

ctctacacca catcccgcat gtacgtacta aggcaatctc ttgtaatatc tctacaccac 1260

atcccgcatg tacgtaggcc cttggcatcc cacccaaggt cagccttcct ctgtcccatc 1320

tttcatagct aatgtc 1336

<210> 1556
<211> 1305
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83639_G1, chr2:190863378..190864682, Cluster 9

<400> 1556
tactatactg tttcatagca tcgattgagc tgtacccatg cagctcaatt ggttctagaa 60

aaaagaaatc taggcaaaac aagctacaga aatgtcctaa aaggagatac atacgcaagc 120

agcctattat attccgagcc gaacaaatgt caaaaaggac ggaatttttg aaacgccggc 180

ggacggggtg gacgcggcaa cgaagacgaa gcagggagag cacagccaca ggaagctaga 240

acgggaagca acgcacagcc gcacaggaca cgtgcgggtg ggcccgagcg ccaggtacgg 300

ccacgtcggc agtggcccac gctccccttg acccggctgg acgacggtga gcggcagggc 360

cgcaggggcg ccgggcctgg gttccctctc gccccaacca acgcgtagaa aataaaataa 420

aataaaaaca attggagcag gaaactgttg acaagcagca aggctacgta ctctaggatt 480

atctgttcca gtttgtagct attctgtggt gtcttttcct ttggtcttcc ttaatcattg 540

gcacataaaa tataaatgtt cagccccagt ttgaacgatt actactgaaa tgttggaagc 600

agagcatacc gaactgtcat cgatcttgtc cacttgtgca agccagaaaa gacactactg 660

ctactgctac cttgccctgt ggcggtccag ccctgatcca gggtcctgcg agaatatcaa 720

gacagtgaca gcaattcaag caggttctaa tagcctgaat atcggtcatc actcacatgc 780

cacagcagta cagcacctca aattattccc ttaagaacag ttcttcttta atatatatac 840

atatccttgc ctagatcaag ggctcttgtt catcatgttg accgcccgaa atcgcagcgc 900

gcgcgcgcgc tctctctctc tctgaccagc tctatcacac acttacgttc gtcgaccaaa 960

acaaaagggg gcccccggtt gtgtcatgct tggaccctct cattttcttg gcaccgattt 1020

gtctgggggt gcagacgccg atagttgagt gaagctgaat acctgtgcat tgactaaacc 1080

tcccctcctc tgaaagttac tggttttttt gttgtgcgtc aagtttctga atctctcgtg 1140

gcaagaaccg atctgacggc tcaagcggtc ggatcatgca tggaatggac gaagaagtgt 1200

gccccccccc ccccctttc ccttgatgaa ccatgcgtgg ctctcatgca catcatcaaa 1260

accagcgagc gatggtttga gagtgagaag cctggctacg aacca 1305

<210> 1557
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83950_G1, chr2:192802097..192803260, Cluster 9

<400> 1557
ctgcaaatgc aacggttctt cgttgctagc aggtactata gtttgaattg aaaatgctgc 60

agctacagcc actggaatta gttgcagcaa tcaaggcact actccatctc ttttgtttta 120

cagttacagt gtgtatccat ttagttagga taagagcttg ttttcatttt atgtgattgt 180

tttaaaaaaa ctaccatcgt gactaggttt tctagtataa aatttaatgg cagcattgtc 240

aatcactatt aaaaagtagt agtactcaca tggatggaaa cgacaacaag tttcctgctt 300

tcagacggag cgagtgtggc tacgaaaatg ctcctacatt tagcggtacc accatattgg 360

actagccacg gtttggcgat tcagcgtgtt catgtaaacc aagctcgtac acgtacaggc 420

aggctctcgc gtccttccaa aaccctgctg ctctcggggg tcggcgcatg cggcatgcat 480

gatgcctgca cctgcaagcc aaggctgcac tagcacgcac gcagccccgg ccagacgccg 540

gctgaacgag gacgacggtc acctcgttgt ttccttgcga ttaactccgg ccatcggcgc 600

gcgcatccac ccggggttcg gttttccctg gcccccgatg tgatgtagcc atggcgccgg 660

catccccaac tctgttgtca cctgtcacca acagcaaaaa aagcttgcgc agccttaatg 720

gagttgtggc atgcatggct cttcatcgga tcatcagcgg agggtgacga gctcgttcaa 780

tctgactctg cagcctacgc gaggcaaaag ctgaacctaa gcatcttgct catcagaatc 840

agagagcatg caggtatgca gctttgctgc gggcaacaca cgtacagcta caacagtgga 900

aaacaaacat cgggatcagt tgttcgtgct gtataggtgg tgtccatact ttttttttgg 960

tatctgatct gatcgatcaa gagaggctgc agacagacat caccattttc accaatcaaa 1020

ttattgcagt aaattacttt gtatcagaca tcgctatatg tacatctgtc gcaacaatgg 1080

cagccagcca cttcccaatg aacgctgcaa catcggcaaa caagggcaaa acaacttgca 1140

aactactaca tccacgacaa acag 1164

<210> 1558
<211> 1213
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84195_G1, chr2:194493196..194494408, Cluster 9

<400> 1558
gagaaagact ggttggggaa acttttttagt gctggagttc gtgttggtgc tagtcttaat 60

gttggacttg gtgttggttc ctgtctaact attcgatttg gttcatcgtc taggagacaa 120

atcagcaaag tgctttgctg caggcagcat attctagtgc taaccttacc ttgacaccat 180

caaggatggc accgcgccgc acatgagttg tatagctggg gctggcccgt taattagtgc 240

aatccattgc ctaagacaac acggtttggc ggtgcaccca tgaaccgtgc cagcacgacc 300

acgccttgga gctatgctta ttagaatgtg ctcaagttgt gccgcgtgtc tccggaccgg 360

cgtacaggac tacgcgggac atgcgagatc cgtgcacaca tgcatccagc agcagcgacc 420

atgcatgaaa ccgacagctg ctcgctcttt acgcagaagc tagcacacac gacgacgacg 480

acgaggaacc gtaggcgacc atgaaaccga ataacgtact actatactag cttagctgcc 540

atcgtttgta agaaagaacg cactcaactg aaacgcgggc tgtgtcgagg acatcaccag 600

ttcgctgaag ctctcagcga actctgaccg agagaagatc agcctgctat gtcttgtgac 660

ataaaactac acgtcgtatg cggccgttac acagtctagt gtccacaccc gacgattcgc 720

catcacacag tcgccccggc gtggagtcac ccgccgttca tcgtcatcag cgcggtacgt 780

acggcgtgcg cccaaaattc aggggtctct gaccgcgacg ccgcccccgt tgttgtgcga 840

ttattttaat ttacgagatc acgggatcaa tcacagctgc gatatgcgac gacgcgaggc 900

actcgtatta ttggcagggg gggcgctgga gtatctggga ttgatcccat gcatcatcat 960

gggatcgaaa actgggacgg gggattacaa gctgcaggac gtcaatgact tcgattggcg 1020

cggcgcaaga tggatggatg gatatatagt actagtagcc gcctaggtca actctagcgc 1080

cctataccca cacccataac gtacttgtca aatgtatgta acctatatca agaagaacta 1140

gcagctagaa cgaagggcca acaacgtttg tgtacgtata agggtcaaga tgttgcgacc 1200

agctggtgta agg 1213

<210> 1559
<211> 1197
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86403_G1, chr2:208065627..208066823, Cluster 9

<400> 1559
atagattcca tggttcattc tcatctgaag gttctgtgga catggaaaga agtttattcg 60

cctgtgttga cagttcatga ccgctccagt ttggggacaa cctagatttg aagaggtgat 120

agtaattttc accggcatga gaatgcagag gaagacactg aagaggtgta cacgagaaga 180

agtgaagacg cgcgggagca aggttttgag gtgaaagcgt tgaagaggtc tgggcttgcg 240

tttgtccaat ctagttgggc ttgggcagaa ttaggcctgc gcgcctgcga ctacgagtct 300

ccctatttgg cttcttctac ctctgataca tccttttcca aattgattga gcatagtgta 360

caatcaagca aggaactgtg acatccgggc ggtcgtcgcc gtcgatcgag cagggacgct 420

ccggcgtttt ctgcggttac gttacgtgtg gcggcgaggc gtcgagagcc gaaaggcggt 480

cgtccccggt tgcatggtcc gatgattggt gcgacgaaac ggcaatgcca tgtgcaccag 540

ccgccccccg cgaggacaga tgcggccgtg gtgctgcgct gtaccatcac tgcacaggca 600

ccgtgttagc gctacgcgag ataagcgagg gtcgtgtagg catgccgtcg atggtcccaa 660

ctcccaactg tcctgtctgt gatccaaaat ggcacgcaaa gcatcatcga tcatcagaat 720

ctacctatcg actatagacc atagaacgat cgtacaatcg tctagtgttt cagagcgaca 780

taccgctaca acaaattgag atatggtgcg accccaaaaa aagtatcgtt ttcgttttct 840

gaaaaaaaaa tagatacttc taattttaac cccaagaaaa aacatacata gttcttaata 900

ttcataacgt atgattacta tagaccatag aatatttttt aataaatata ttttaaaaat 960

gcaaatgttg gtaatatttt tttttttttg cataaatcca attaaactta tcttgtttcg 1020

gaccggagga gtacacagcg acagcgtacg ggtcgttaag cgttcccatc tccctccaat 1080

caatcaatca ggactcagga caaaacgagg ctacaatcca aacaggcctt cagctcgcgc 1140

cgtcagcatt tatttgtttc ttccccgctt cgtcaaacgt tcaatcacga cggcaga 1197

<210> 1560
<211> 1339
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89230_G1, chr2:222975471..222976809, Cluster 9

<400> 1560
caccgatgga ccacggcgcg cgatcgtcgg cgtggtctgt tcccggccgg attcgcttcg 60

ggcaaccttc tatctactaa aacaaagcaa aggctggtct gcgagccaac gcatgtcatg 120

actgcataag tgagtgtatt acccaatacc cactaacgca cgtaccgtac gtacagattc 180

aaaaaaaaaa gcgcggtact agtatattgc tcccggtggc ataacgcagg ctgatggtaa 240

tacatatata cacaagcggt ggtgacactc ctgaaatacg actctttatc aagtgtttag 300

cgctttaccg agtgttgata atgcagcccg ttccattagt gtgacttagg tgacacacac 360

gtttgatttg tactgtgcat ttttttaaa aaaaatttaa gaataaatga ttttatacaa 420

acaattacta tataaacaac agataaacca tactcatgca cacatccaac tgtatatgga 480

gcgtagaact agacatatat ataacataga cccgtcttat aatttaagca atccctacgt 540

agtggggcta gaaattaaag cctacgtacc ctgcagctgg cttcagttag cagtgcatgc 600

acgagtaggg atacgtgttt ggatatatgc cttttgtcct ctctctctct ctctctcact 660

ctgttctctc tctgacgtgt atgctctttg agaatttggc ttggcgtcgt ggcataggca 720

gtgactacag tcctgtgtcc tcgacagcga ctctgcccct actacatctg ctgttcgcgc 780

tgcacctagt acaccgtgtg tgtgtgagag agagagagtg cacccaggcc ggtgctgtca 840

cctgtgctgt gcctgccgcg ggcgggctgc gtctctggcc ggctcggcgc cgctgcgcgt 900

gctcgcctgt gtcactgtgc gtgcgtgcat gtattgtagt cctacgcacg tagtagagga 960

ggctgccgat actgtgcgcg ctggagaacg agaagcaaag caacaggcgc aagagccaac 1020

aagcatcgac gagagttttg tatttctccc agtcccagca ggcggcgccc ctctctatta 1080

ttctcggaga gtgtgtgtgt gtgcctgttt atccatcgcg ctactgcatg tttatccatc 1140

gcgctactgc atgtttgaaa tagtgtagtg ttatatatac tctcgacatc aaccgctcag 1200

tgtttgcctt ctgcatcgtc ccatagtgca tgaggggaag tgacgtaaaa aatgcatggg 1260

catgcatgca tcaatgtatg tttgttaaaa aaacaaagtg acatgcatgt ctacaagtta 1320

gcaaggggta cgtagtaac 1339

<210> 1561
<211> 1132
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9236_G1, chr1:48650500..48651631, Cluster 9

<400> 1561
cctttcgcga cggcgcactg tgctacgcat gcagcgatgc ccgctggcgg caccaactta 60

gtagcgcgcg cgcgcgccgc acacacaggc acatgcacgt tctcgctcgg gccgccattg 120

gttctagatg gcatagacga cgacggcctc tggatcgatc gcatgttttg gaagcacgcc 180

ggttagcggc tttgtcgacg cgtgaggctg tttggttttt atcggttcgt cctttgcgct 240

gcgtggcagg cgcgaaagcg aggttccatc gccaaaccaa tgcgcctgcc acagccccag 300

ctccaggcgg caggctgcag gctgtccatc catatcccac tgccactggc cagtgggcac 360

gggtcacgca cgcactgtgg gtgggggtag gccttgtggc attggattcc cggcgtcgat 420

cagcgtcgtc gcgcagatgt gggccttgtg gcttgggcgc acaataaagg aaggcttcag 480

ttccagcatg gcatcaacct cgtcagtcag caggctcacg gccggccggt ctctctcatt 540

cgcacgcacg cagcgctgcg cccgtccctc gtctcgtctg tcatctgcgc caggacacca 600

gcgcaccgca cagaggccac gcacgcagca ggctagaata gaacgagaga atcatcattc 660

gagaggaagg ggtcaacaag agctacagct acctataggg tgtggtgcgt gccgcgagac 720

cgacgtgccg tgcgcccgtg tcattggcgc tggtactgac cgtcgtccgt cgtccaagta 780

gcctctgatt attccggccg cttcactgtg cctggcggcg aaagcacgag ctgagcaggc 840

tcgtactact actagtctac taccactacc acagcccacg ccgcatccca taacctggtg 900

tcgcgttggc tcttgaaacc cacgtcgtcc cctgcgccgc gcagcgctgc aggccacttg 960

tcctgtgcgg cgtgtgacgt gtcgaccgag cgcgacgcaa cgaccaacga gaggcagggg 1020

caggcaggca ggcagggctc caattgcggc cgccggcggg tcggtgtggg ggtggtggcc 1080

aggtggggtg ggggcgtcca gcagcggcgc gtcccccgca cgcaggcaag tg 1132

<210> 1562
<211> 1398
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92768_G1, chr3:3470352..3471749, Cluster 9

<400> 1562
aacgcccagg ggccaggggg aatgggagct agcgcagctg tacttgtgta gccatcctcc 60

actccatcca tccccagatc tctcccggcc cggccggcct ccgcgcgcgt ccatgtgttc 120

cattggctta atttgtttgg ccccccatcg tacacttcgg attgtttggt tgcacttgca 180

ccaagctaga aggagatcaa gagtcatgag tcatgactaa caagagagat tacatgtctc 240

tcaatcactc tacagccaga taagctctac aagggtaatt atttatttta ggcaaaaagg 300

taccccttt ttctcccgtc gtcgtcgtgc acacccgtcg ccatgagaat cgacgcgcat 360

gcccaatcat tcacgcacat gtaaggggag tacacgcaca agacggccta gctttaattc 420

ttcgaggctt ccgccacctg catgcactgc acggcacccg gcagccggca gccggcacat 480

gtctgtccct ccgccaccag cagcagcagc agtcctggcg gctcctgcac gtccagctag 540

cgcacccatg catgattgat ccatccatcc atccatctgc cgtgttctcc gcatcgctgc 600

tatctgcggc acttcacatg catgtcacac tcaccgggag cacgtacgca cgccgcaggt 660

atgccgtatg catatcgccg cgcctcgtgc atggtgttgg ctaccggata tcgacaggtc 720

gtcgatggcc gtgtggcctc tgttcgatcg atcgagtctg cgcgtactta tgcagcatgc 780

acacaccggc cggtcggtcg gttgttgctc gatcggccgg ccgcgcggag tttcctatgc 840

aacgtacacg catgggtata tatggcgagc ggtggcttac gtgggccgtc taacggccga 900

ccgccatcgc cgtcggggag tagctagatg agacgacgag tcgacgacga cgacacggaa 960

agaacaacaa caagttgatg cttttatagt actactagta tactagctag ctagaaaggc 1020

ggaggcccta gcactagcag gctagctagc tagtgccagt tgcacacaca aaaaaactca 1080

ccgtcgacgg gttcgacgat cgatgcatac caccgatgca ggcagcgcgc tagcacgcac 1140

gatcggccga cctgccgcct ggatccaccg catgcatgca cctagtagtt cgttggtaga 1200

gcacgtgcgt ccattatata ctgacgctaa cgagaggctg gtaggctagt ggagacagac 1260

aggttaacac aagcagcagg ccggattgcc aaagatagat agcagcatgc agtacgaaga 1320

aataatgcta gctactccag ataagcaccc ctgtaccctg aattagcaac caaaccaaag 1380

agcagtaaat aataatag 1398

<210> 1563
<211> 1169
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94042_G1, chr3:9562743..9563911, Cluster 9

<400> 1563
agcgtgcgca cttaaaaagg aattcgatta cgtgcatggg tctccaaccc ttgtgcgaac 60

ctctaaagct tatattgtta gccattatac tatcttcaac agcttatcta ttatatttct 120

catattatat tttaaatttt acaagaacag tttataatgt aaatagaaca ttgttttgga 180

tgactataga taagctggac acggtgccac ggaggggaag tgaaagactc gtccgtccta 240

atccgtacgc gggaccgaga tccgttcatc ccgatggagc cccaatcatg cagagatggc 300

atgcagtccc tccgtcatca tcaatcagaa catacaattc tggacgagga cgacgcatgc 360

gcagcgcgac catcggatga tgagatatag tgtaaaaatc acacaccgtg ccctgcccgg 420

ccggtcggca tctgcagtgc cgttgccgag acgtattatt attaattatt atccaaacag 480

ctagaccgcc tcggcggttc gtgttcgtca cggcgcacgt cacggacgac ggcgacggcg 540

acgacgtccc ttgccgccgt cgagtccgcc ggcctgcctg gctgccccga tccaatcata 600

tgctgtctgc aggctaggct agctagctag gagccacacg tgcggcaatg tagtatagta 660

tattcggagc agcatctata tgcaactcac ggagatgtat gaggtcgggc ggattccgtc 720

gccttcgccg acgattggga cggggcggcg ggcggcggcc ctgttgtttt gttgctaact 780

atactagcgg actagctagg taggccagcc gccgcagccc gcagcgggag ttcggagttc 840

ttttccttgt ccggttgtcc ctgtgcgcgc tcgcctgcct tctagagcat ggccgcgaca 900

tcgattggta ttacttaatt taatttgttg ggatcgaatc aaaacgacta gtagatctct 960

gggtatcgca gtatcgtatt ttgaaggcat ttaccaactg tgttagggct cacctacgtt 1020

ataatcctag tgatatgcat cttcagactc catccaatgc aacgcaacgc atggggcaaa 1080

atcttctctc tttgttgcgc gaggagagac ggtgaaaaat gtgacaaaga acaactaatc 1140

caatacaatg tatctatgta gtaagcgcc 1169

<210> 1564
<211> 1077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94627_G1, chr3:12825319..12826395, Cluster 9

<400> 1564
cacaaccact ccgcccccac cccctgtgac cagaattcaa agggactgtt ccctcctaca 60

gtgcaagtgt aaccttgaat ctgtaccgcg aggacccatc agctcagctc tcagcacaat 120

atttttccct cctctctctg gcctcagtcc catgcatccc acacagatca gacacagcca 180

tagtgcatgc atctcagttt tcacaaatct tcacacgcca gctagagcta gctatagctt 240

attagctacc tggtactttc ccatggaaat aacctaccta cctgttctaa ctctctctct 300

ctcttctctt ctcttttcct tttatttcct ttttcttttc ttgttttaaa gaaaaataat 360

ctacttattt gttctaaaag aaaagaaaag aaaagcagag ccgcacattt gaaaaaaaaa 420

ccaaaacaaa acaaaaagaa agaaagaaag aaaaaccagg ccagccatgc atccaaaaca 480

ttatgcctat gggctatggc ggcatgggct acggtctggg aagctacaga caactctact 540

agctagctag ctagctgctg tttccactga aagatttgcg attttgttgg cgacgacgac 600

gactgacggg cgtgagtttt cagcacttgg atgcaagttg gctcgatcta gaggagagga 660

cacagtcaca caggcacagc cacgctaggt cgtgaacctg gggaaaaggc tgccgccatg 720

ccatgcatat gcagacacca agcgtcgtag gccgggacta gctagcccta gtagctagct 780

tagctcagca cccggcctct cctctcttct ccatcggccc ccctcccgcg ccccggccct 840

tagtagctgc agcagctgct gctactagct agctaggtcc aacgatttga tgcctgtgga 900

tttcaggatc gaattaatgt tggtgtacta ggatagtggc ttgcacgcac catatctata 960

tcttgtgttc ttcttattgg ggatatctta gggagatctg ttggcctttt tgtaagttgc 1020

atttttttcc ttaataatta ttatctttac tgccgcaaag gacgatcgat tttagtc 1077

<210> 1565
<211> 1363
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94779_G1, chr3:13718082..13719444, Cluster 9

<400> 1565
ccatctagtt ttgtcgcgca tcttaactaa gtttaaggca cgtcactgcc cattttcatt 60

cgtggccaaa cgtactttgg gatctttggt tttcatgtca tgtcataccg gtccaaaatg 120

accagaccca aactttgagg tatatagacg tacgtagcca gcacccagtg gctacggtat 180

gcacgtcacc cattgaatcc ggctccgacc gtagctagct gctctgctcc ctccttgtct 240

aggcaactat atataaccgc cggctcggcc atcctgtcgg atcctcctcc cgagacgata 300

gcttgcgagg ttggttcggc gccattttca tgcatggcat gcgcctgtcg gccggcggtg 360

accgcccggc aacggcgagt ccgcgagtgg cagcagccgg cagcaggatg gatggaatgg 420

aaacacggca ccgccaccac gggacgatcg cggcacccat atgctcaggg agacgatgga 480

cctttccaac gacgaccgct gcacgcggcg gaagatgaga ggaaggatgc attgtcgtca 540

gacgaacgcc gccgccgccg aatggccgga acggattcgc aggacgccag caaacacgtc 600

ctccaagcta gtccacgcca gcatttggat agaggcacac gtcagcacgt gccacagcta 660

gctcttggat tggcggctag ctagctagat cctagatgga cctgatttta acgtcattac 720

gcgcgcgcgg cagccagagc cagccatctc gatgcccgcc cgtcgaccgc atcgaagcag 780

agaggaaaga aataaaaaaa ggtcgtcttg cgaggagacg acgacgactc gctcgcggtc 840

gcggcaatca agaaggccgg gcgtgcgcac acaccgatgc tgctgaacgg tgagactcga 900

aaggatcacg gccggggtca gactgtcaaa acagaagaga acacaaggaa aaaaatgagc 960

aagtactatc agattcctac agcagcactt ctgatttctg aagcaacgat cactgcgtac 1020

agtacgtaca gctagcccaa cctcggcgtg cgtatagacc agtgaccact gaagaagaag 1080

tcactgtcac gctgaccact gaccatccac gacagattta acccaacggc cccgagagct 1140

gcgctgctca gaccagaccg cacctgtgtc atgcattgca tggtagtact agctagccca 1200

ctagcaccgt acgtgaaatt tcaccgtact ggtcctggcg actggggcgt cctccactcg 1260

tccggtccgg tccgtccagc tgcgccggcc cctgcccagt gacaggcatt caaaggcgca 1320

ggcccgtctg gacggtgacg cgtccaccta gctactcatt tct 1363

<210> 1566
<211> 1002
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95425_G1, chr3:17441085..17442086, Cluster 9

<400> 1566
ataaaattca gatacctctg tatttgtaac ctcttgcatt tatcattatg agtactactt 60

gtgctcacca gtatgaattc ttcaactact tcattaataa gcttgcactc attgccccaa 120

ctgaaagaaa attaatggga ttacagagag ctgcaattct atcagctctg ttgtcacgag 180

ctttggatgc tcctcttctt ccttcttatc ccaggtactc ccatactaag gggcctatca 240

tctgaagtct gctcctagta ttgagtacaa atcgctactt gtccaaatga aatattgaaa 300

tatgtgttta ggatgagaat cttacaattc tacctaattg tcaagtgcac atatctacag 360

ctgcctagat ctatgtttgc tcctagtaat caagatcttt ttttttttt ttttgcactc 420

aggcgaatcc agaacatgac aagccaccgg cagagttctt cgagcagatc gacaagagac 480

gcgtcgcggc ggagcgcgcg gggtcttacc cggtcgagct cccgaagaag ggagaggccg 540

ccgacggcga agtaggagag ggtgaggtgg ttgacctcct gggaggcgta ttcgtcgggg 600

agctccgtgg ccatggcctc gaagaacgcc acgtggtgca ggcgctcgaa atcgcgcttc 660

cccatctccg gcggtcggca gccgagagcc cctggtcgcc ggcggcgtca gcgccgccgc 720

ggtgcgccac gatctgagaa agccacgcgg acgcaaccaa tcgcccagct atgcgctaaa 780

ctgttttttt ttttggcccc acttcgcaga gagcacttca gacgttgaac atgtaggttt 840

ggagaaacta agactgctga attcggtggg aattttgcat gtcaatgcag gatacgagta 900

tttgtctcgg ccgaagaatt tcccacccct tcacacaagc ttttgctgcg tgctgctcgc 960

catggacacg gtccacatca ggatgtcgag ccacgtaaac tc 1002

<210> 1567
<211> 1200
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95526_G1, chr3:18042365..18043564, Cluster 9

<400> 1567
aatactcttc acgatcataa aaaaagtata ttcaggtgag ctgataacca cagtttatta 60

acctgggctg attcgctcct taacatgtag cgtccaaccg tctgttcgca ctcgcttgct 120

tatggtcaca aaagacaaca tgcaaggagg acaattgcgc aacgcaagcg aaaacgattt 180

atcctgcgcc gatgaaaacc aagactttgt ctaaacaggc caaaatcaag acgaagtaga 240

gggagaaaga aaaaacgaag tctcaaatag ttgcaagcta aacaaataga atttgaggac 300

cgctagggaa aggtaagaag aagacaataa aatcaaagga gatcttaaaa aaaaaactga 360

cgcccaaatc acgagattca caatatctcg atccacactg acagcgaaag cttcgtagga 420

aagaagctaa acgggcattt attttactct tatcgtctcg atgaccatgc agcgtccggg 480

aaagagacat cggccagttt ggtctgaagt ggacacgaga gagggagagc agagaatgag 540

aagaagggaa gccgaagaca cgtgtggttg gttggtggat gaggacgacg ctgcaccggc 600

acgctagtca ccctctcaga tgagggtgta ggagattgat gacctttgac agcggcagag 660

atccaaaaca gaggctgacc tctagaggtc tgtgcgtttc tcttcaaaag gctttgtcga 720

gacaggctga cctcttctag ttctcgcgga caccgctgaa aacgccactg cggcgtcaca 780

gtcacagaca acagcctcca tcagtcgcta gcgcgatggc tagattagac gccatacgtg 840

gggagcttgg agctcccggg taagaggaag acgccgtcca tccgatcaac ggcccagatc 900

caagtcaact aggccagcaa ccgatcaatc aacgttatag aaattggtca actatgccac 960

atttgcagaa gcaccctgat tttttcccct acagtacaag cgagaggttg tgcgtaggca 1020

aatttctaga aggtcctaaa aacttgtttt cttcacaaat ataccattaa aagacccttt 1080

agatgatatt ttttctctac tatctactat atttaaagca ctagtttcat atgtcatgtg 1140

tcctgcgtca cgtgcgaaat attctctctc tctcccgctt ctcgtctaac gtgcgaaata 1200

<210> 1568
<211> 1331
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9693_G1, chr1:51412643..51413973, Cluster 9

<400> 1568
cataaataaa aaaagagatg accccacgtg catgcatttg gattcacccg cgacttttcc 60

tggctggtcg cggagataga tagattatta ttcgaatttc agcgtaagag atgcatgaac 120

tctccactca taactgatta gttatgcgcg taacgcagaa tggaccaaca acgacggcta 180

atacagcgta ctgcgtgcat ggtctcagct aattgctcgc tagctagctc agagccgaag 240

aatcgtcttt gactaaacca gccttaagta tactgccact agctagtaat ctttagacct 300

tgaactaatg tgtatgggag cgtgtcatgg accggacgac tcgtctcgtt gggcgtcggc 360

gtcgtcgcac tcgcacgtac tgctaccgac cctttggacc ggacgcgacc ctggtcgacc 420

catggtctga gggtgtgttt ggttgttggg gccgagatgt gccatgtcgt cgggggtatt 480

ttttttccac gctagacagg tcgagacaaa aaaaatggta gtaggggctg cacgtggggt 540

ccacagtgag cgccactggg cgacgtgctg accttcggga gcgggcaggc gcagcgttag 600

gtgccagtgc cagcgcggct gatgatgcat catgcatggc atggtgtggt gccagctgca 660

aagtagtagt actagtacaa aacaccggct gacacttgaa ttgggttttc atactagttt 720

gatttgacat gtgccggttt taagtccttt ccggtgtgtg tctgtgtttg tgtcagtaca 780

tgcaactaac tgggggggtct agaaaaaacgg agacatgttg gaagcatgca tggcttctag 840

aagacatcac gtaagaatta tgcaaaataa ccagaatatc aactgcctcc tcacttcaat 900

tcctagttgt atagtatagt atccttcagg tcttcagcct ttctttttg tcctgcgaat 960

atttttccc ctctatggaa aaacgccgcc agaagaaata aagtggactc ctagtcctag 1020

atgtgctgca tccgtttact ctacactagt ataattatat ttatagcaat taataagata 1080

cgattaagga aatgaatgca acgtattcac gggtccactt ttcttttaat cggactcgta 1140

aattattaac aaatgcatgt gtgggactat gtccacactt tgctacgcta atatatttgt 1200

tttaacaatc tttctaaaga catggattaa tttggaacga gtcaagcagc tcatcgtcgt 1260

aacattatat tggtgtaata atatatgccc actactgtac gtaactcaaa ggcaaatgtt 1320

aatatcgaat g 1331

<210> 1569
<211> 1355
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97772_G1, chr3:30209253..30210607, Cluster 9

<400> 1569
gagagaatac aagtatttac aacaaagtgt ttgacaaaaa aaagtgtttc atctctaaaa 60

caaagtgttt tagtttcatc tcttttcaca catagagcta cttttaaaaa aaacaaagtg 120

ctttaaaaaa aaactattta caacagctcg taaagttgtt gatgaaactg taccaccgaa 180

agacgaccaa acagtcctgc aggagagaga gaatacagca gcgccgggga agagcttcgc 240

tatctcgttt tccatgcggg ttggcgtgcg cgcgacaaga ccgtgagtat cggtcgtcac 300

aagcaccgcg acggacgctc tgatgaatcg gtggtcacat catacatgat cgctggccgc 360

tgtctgccca tctcgctttt ggactgggat aggacaggaa gagcgaagcc gagcgagacg 420

gacaggcggc caaggaattg ttagtcgcca gagcgtgggg acgacagcac acttgcattg 480

gtcaaccgca gatgtcgaga cttcaaacca catgctgttg cacatgtttc ttacaatctt 540

acttgtcctc gggcgttgtg ctaagaatta agattgcagc agcgtttgtt tctttccagt 600

ctatactagc agctgaccga tgctatctat gttcacggtc acgcggtagc caagcaggtc 660

caacatgtgc tgggaatcga aggacacaca ggcacccagt ccaaactcgt gggtacgaaa 720

aaacgtacgt gtcagctggg acggacgagt gtttccttta atttgtcctt aacaactttg 780

tatatacgac acttcttctt ccgtttttt caatgaacac gtgtattttt tatgccgtcg 840

agtgaccaat tcactgggcg tcgatatatg gttttgttat tgtttagcaa gagatactat 900

cttcaattcc ctgcaacact attttattcg acgttagaag cctgagcata acatatgcaa 960

gagagtacgt gttcatatac tagtgtgtaa tggctgctaa ggcttctaat aaataacctt 1020

ttttattat tgttgttgtt ttttttttatt gaagtctgga agatacctaa cgacgttcgt 1080

ccagtggcca aggtatagac tctttccttc catcgatcta aaagggcatc tttattgttg 1140

actgaacgtg cacacatggt actgaaaacc gattttgtgg tgacactgac acgttgactc 1200

ttcattaaaa tggcatgacg atgttacatt gttctgggga gccagcaatc ggaggcctac 1260

caaattggta ttgcttatga catagatcca cagtgagacg ggaatttaac gtacggaggc 1320

ctaccaaatt gtaaatgatt gagagttagt gattt 1355

<210> 1570
<211> 1227
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_97776_G1, chr3:30212031..30213257, Cluster 9

<400> 1570
ccaataatga tggttaggtc attcaaggaa cacgtccttt ggggaagtca tttgtctcta 60

tccactgcac acatgcaccc gaaataaccg tctcccgccg gcctggctgc gtgcgagctg 120

gttgcgctcg ggctgtcaac caatcagccg gagtgagacg ggaatttaac ggaggcctaa 180

caaattaaac gattgagagc tggagaatgg tttggatctg aacaggtcaa gctgagcagc 240

cagagggaga taggtaggca gacatcacgc ctgaggatag agagcgtcgt cgcatggctt 300

aacaacagtc gatgaggggc aagaagccaa gaactagcta acaggctcaa gagggagata 360

gataggcaga catacatcaa cgctttagat tgtgctgacg aggatagaga tttagaggat 420

ttaattgccg atcgggcact cgatctctac tgtaactgta gtaatataat atagtattaa 480

ttatgtagct ccgtgtagag atattgctct cccaaatacc attagtccat tattctggct 540

actcgtccga tgatcctgag acgcacacct ggactccaag tcagtctccg cacccccatc 600

gaagcgagtc aaaaaggcac catgctttcg gttcatgcga aggcactgca cgcacgcagt 660

ggatcggatc cacggcatgc cctggttagt taatcctctg ttctaatcac gcttactggg 720

agcacacgtg tccacggaca caggggtacg gagacggaga gacggagggt agtgagtggc 780

agcagggagt tggcatttgc tccggatcag ccacttgtta ggtagccggc cgtctcctgt 840

ggccgaccac gcctttcgcg ctgcctagtg cctgctatca aaacccaatc atatcagaca 900

ggggtggaac gactgaatat tcctatttaa ccttgtctag tgcactgctg ccccccattt 960

tcatcgcccg ctagcgtgtt gctgttgccc gtgtcggtta tgtgcggagt ccgctatatg 1020

tgcgtgagaa tagtaaattt tacaccttta ttttttttttc ttcttcgtcc tcatgatttt 1080

gcattaaacc ttttgtttac cccttccgcc cttcggcgag gcgaggcgtg cagcgtacgt 1140

ccctgtctcg gcaacctagc ctcgtcgatt tgggcacccc actcgccata gttatgccgt 1200

cctccatcct ccaacaccac cggcaat 1227

<210> 1571
<211> 1370
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156393_G1, chr4:154313884..154315253, Cluster 10

<400> 1571
acggaagttg gcgccgcgag agcaggacgt ggtttggacc agaccagatc agagcgtcgg 60

tcggttcctg ttcctggtgg tatggcaccc atggaggccg ataaactaac tagtcaaggc 120

attggatccc gcgggcctgg aaaagcagtc accggctctg gacctgggac tgggaggcaa 180

gccctccggc ttttgcacca cggagcagac acgggctcca ggaatcgatt cagtgcagcg 240

gcacgccgag gcgcctcaca tgattcctca gcacatgcct gcctgcactg cacagccggg 300

aagtctgttc acttgtactg cgtcgtccct tggcgcgagg atgatagcta aggctcgctt 360

cccgcgacac acgtacccac gcacgcacgg aaccagaacg ttttgccgac ttcgtgtgat 420

caaggaccgt tgatcacgcc gcgctgctac taaaggatat ataaaaaaaa tgacagcgct 480

cggcgtcttc aggcttcaga accgttgatc aaggacgatg agcttgagag ctgaatccgg 540

acggatcgga ctgcgtcgac gacgataaac agcagtgcct gcatgctctg ttgtgcagcc 600

gtacgtgccg tgcgccggtg tatgtctgca tgcgcagtac ttattttctg aagcaggtat 660

atacaatata ctagctagta cactgtggta tctgcaacgt agtactgatc tggattctcc 720

atgttggcgt gtatactctc ttttcttcac aggatcaagt tcatgcactg agcaccagat 780

cagattcagc caccgatcga gggagaggga gtgccggagc cggagcagga caggggcgg 840

cgacgtccca cgtgcacggc gatctcaatt atattctcat gcatgcagcg gacaccggat 900

cgaggaagcg cggcaaagcc tcgtgatttc gatcggacgc cccgatcgca tcgcatcgca 960

tcgcatcgca tcgcagcagt gcgcaagggc agaaccgcag ggcatggcgc ccgaacggag 1020

cccatcagcg cccagtcgat cggcaagccc agagcgagct tcaaagtttt gctagcttcg 1080

tgccgaattc atgtccatgg atatcggaat gtgcatgcag cagttgttgc cgggcaattg 1140

atgcagacaa ctcttttttt tttttcaaat atccgggttt atttatatat atacgagata 1200

caatagatag ctttggccac aagcgattaa atgacgctgg tcggtaggga agcttctggt 1260

ggagaccaga cttgagaaaa aaaataaacc caagacctat aaaggcaaga caatcatgcg 1320

tgctctgtcc tccgggaaga taaatggctg catgaagcag ttgaataaaa 1370

<210> 1572
<211> 1107
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1044_G1, chr1:5342001..5343107, Cluster 10

<400> 1572
agacacaggt gccagaactg ctgtcgtcca gcgcaatgcg cacgcaacta aaccttgttg 60

cacctgttct ctcttctccg tggcgttgct gcagcagtcg ctccctttgt cgtgcgtggt 120

cctggcctgg gtgtttccgt ttcatccatc catgatccat ggacgcgagc tgtcctactg 180

atttgcttac atgcacacga tggcagagga atgccgtccg cagctgtcgg cccaaaccaa 240

aacaaccctt gctaaatctg ctactcgcca atccaccatg gcatcggctc gctctcgccc 300

tgctccggga cacggcgcgg cgatcgccgt cagtcccacg tgaaggccac gcggccaggg 360

cggtcgacga cggcgcgcta gcccgcggcg gaaggggaca ccgcgggcac acgccagggc 420

gctcgattcg tgcggcggag ccgcctccga tccgtcgccg caggctgcag ctgcacgcca 480

acgggccgcg tgccggccac agggctgcgc gcggacaaac cgggccttaa atgcccgctt 540

tggcgccgcg cgcccacgtc gcgttcgcgt tcttgccccg cggacccagt gaaatatatt 600

tctgtaacct cctaccttat cacagtttga tccttaacct tttctacctc atatgacagt 660

ttgactttta attatgttat cagtaacttg cgaagtatag aaatattgta gtataatttc 720

tatactatac ttcctctgtt caatgtcgct ttgggacgtg taattgtcaa ttttttctta 780

agtttagttt taaatttatt acagaaatag attaacgttc tattcaataa tacaaaaaat 840

aggttaacgt tgcatttgat ctgcagaaaa aggctgaaga tattgcacta aaaggcccca 900

gtgggctaga attgaatgcc gttggagttg ggctggcata aatgatgccg cttcgcacct 960

ctcgacccgt cctgtactcc tgtgacctgc atgaccgagg ccgctgaatc aacatgggct 1020

gcaaccgcaa gcctggatag cccagctatc acagcgggct ccaacgtctc ttcatcaact 1080

gtaggttttt ctgtacagtt tgtttta 1107

<210> 1573
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11170_G1, chr1:60149693..60150733, Cluster 10

<400> 1573
atgacctgat cagcgtgtcc ctttgctgtc cttctagaag gcatcaagca attttgacct 60

ggagcagggc accacaccgc gtccgcgtgc cggggctgcc cgtcagcgtc acctcaccgg 120

cgtacagagg cgttcgcgga aggtgataga aacaccagtc cagcactccg gctccagatc 180

cagcagcaca tcgaagccca cgagaacagt aaaccgccgc aagaagcacg ccaatacacg 240

caaccaaaca aatcatatag cctacacaaa gggaacaaac gcattagtac ccacttaaaa 300

actgatctta attagatcga ttctaagact agttgatttt taatagtaat ccaccatgac 360

gtttgctcct acgttcattc ccgaaccgag gtggtggagt acataaacaa acagacccag 420

tgtcccttcg tttggtctcc ttctggcttc tagaagccag ccagcccatc gtgcaaaatg 480

ccaaacgctg gagcgcttct agaaggtggg ggtgcgcctg cgcctgcgcc gcgccgcgcc 540

ggaccggccg ctgctgccac ggcgtggcgc cgtcagcgtc agccacgctg tctctcctgc 600

gccgtacgta atgcctttgc attgcctaaa cgatgccaac ttgccaagtg acacctactg 660

gctaatacca cctgcaccca ccgattagtt agtgctactg ctctcagccc attcgggtac 720

gtaccttatc cggccccgcc tgtgggaccg agcctgtaac ggaacggtgc tgtctgtgca 780

tgtggcacag tagcagatca tatacgtacg cctcaacgtc agcggtgaag acggtgaaat 840

cgactgtagt atcggttttt ctttttttt tccttctcct ccttccgtgg atgcatccgc 900

acccccaggc atcaatgtag ctttgccact ccatacctaa gtctcctttt gtattttgtg 960

agctagctgc ttcatttttt tatccaaaca aaacgcgtcc tatgtattca tataatgtaa 1020

acatttgtag ccacacgtgg a 1041

<210> 1574
<211> 1078
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115620_G1, chr3:146657842..146658919, Cluster 10

<400> 1574
agtaccgtta ttaccagcaa agctcccact gtcaaaaaga agaaaaaaga atccaattct 60

gtccagaagc tcagatgttt cagtgaagaa tcataaaaaa gttgtgcttt aaaaaatgtc 120

atgcctggct aataataacc cattaaagca taagcgtcga accaaaggat ccactgaatc 180

atcagcaaaa tattggaaac tcaatgttag ctcgaaaatg ctctcgtctt tcaactaaag 240

atataccgtc taagggccca cccatcagca ttgtacatat gaccaaccaa aagcatttcc 300

agctaacaac aaaagctcta tttaatcaac tcagatccac caaaccctca aaaaagccaa 360

ggcaggcttc caatttacat ctcacgcagg gcccagaacc aatgcaccac tacaggattg 420

aatgctacga ctgcagcatc ccaaaatgca gatgttttta atgtggagac agcttttggt 480

acaagaaaat tttggccacg acttttgggg ctttgccctc aatattgatc agggatgcac 540

atcggacaag ggtggctttg acaaaccaaa ttctacggat cctaaaaaga gaacactcgc 600

cccaaataaa ctatccactt tgacagctga caattgctgg gagaagcccg caccttgttt 660

gcatcgaaca gctccccaac agtacacctg ccaacaatcc cttgtccaaa acgctataag 720

atttcacgaa aataaaatgt acgcagcgca ttcagatcca ccggacatag cagcagaccc 780

cagtcattta gaaattttct caccctgcta atggcaacca cgaagtctcg aatttttgtt 840

ccaaggatcc agagagcgca acggggcggt cgccggaggt aacgccgcac ccctcgaaac 900

atggagcatt tggcagggaa gaagagattt gcgcggaaat atcgacggat ccaaaagcat 960

ccgccccccgc tctggggctg cgaggaggaa ggagtagcct cggtccccat cgatctcacc 1020

aggggaaagg aaaggaaagg aaaggagaag ggaggaaaag cagagcattc gtgcaaac 1078

<210> 1575
<211> 1302
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117457_G1, chr3:157760674..157761975, Cluster 10

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(195)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (150)..(150)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (151)..(151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (152)..(152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (153)..(153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (154)..(154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (155)..(155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (156)..(156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (157)..(157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (158)..(158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (159)..(159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (160)..(160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (161)..(161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (162)..(162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (163)..(163)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (164)..(164)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (165)..(165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (166)..(166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (167)..(167)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (168)..(168)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (169)..(169)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (170)..(170)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (171)..(171)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (172)..(172)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (173)..(173)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (174)..(174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (175)..(175)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (176)..(176)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (177)..(177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (178)..(178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (179)..(179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (180)..(180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (181)..(181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (182)..(182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (183)..(183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (184)..(184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (185)..(185)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (186)..(186)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (187)..(187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (188)..(188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (189)..(189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (190)..(190)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (191)..(191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (192)..(192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (193)..(193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (194)..(194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (195)..(195)
<223> a, c, g, or t

<400> 1575
tgggagggag ggactgcaaa gtcaaagctc atgcgccact tttcgtggac aatgcaatac 60

gcgcgcacgt caaaaaagtc tagcacagag aattcnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 180

nnnnnnnnnn nnnnncgcgc gccgacaagg catagcctca ttttcatcac cccataggcc 240

cagtaggaga aaacgtttcg catgacccaa ggcaaacaga gagagggagg gggtgatgtg 300

cacgtccgtg ggcacatccg tgcgtcgtgg actctaaaat aggctttgac ccatcagagt 360

agacggcttc gtgggtcgcc gtcacgagca cccgcagagt cgtgattcgt gaatcatagg 420

cagcaccaca ataattgcag agcacgcgcg attcgtcgga ggagaggtac ttgtgaccac 480

gggcccggtt gcggcttttt cctggcacgg cccacgaagc agactccctc ctcgcacact 540

ttttctcgtg gcctgctggg ccccgctcgc tacacaggaa aaatgagacc acaaggttga 600

tagcatatag ttggaccata tgacgatggg tcgtctttgg accatgtcat ggtggtttcc 660

aaaaaggtga tgacgacccg tacgtcggta cgtgcgcgcg cgccccttt attttacttt 720

attttattcc gatcgaggaa atcccacacc acaccaaaca aagctttccg ttgacaagcc 780

gtgcagtatc caaacaaaac ctctgaataa ttgattgatt gaccattgaa gatccctgga 840

ccggtcctag tcgatcatgg gagggaggga ctgcaaagtc aaagctcatg cgccactttt 900

cgtggacaat gcaatacgcg cgcacgtcaa aaaagtctag cacagagaat tcaaccgttg 960

aagagctagc agccggcccc tccgagatgt gaccggaccg ataatgatcc atgctactat 1020

ctgctttctg cgctcgtgtt tttgctaggg aggcaagata tcacaacagc aaaatagaaa 1080

acatacatcc tacatagtat ttccaacagc tatcggacat taatctaacg ttataagcga 1140

gggaggacct aggcctctcc tcgtttcttt attgcaagta ttagtatcta gattttcact 1200

gttaagtccc ctgctgagtc taactaagat gctctcgctc tagtatttta atgtccatcc 1260

ttataagtat gtcatcgctc ttgttttatt ctaggtccgc tt 1302

<210> 1576
<211> 1014
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117597_G1, chr3:158448500..158449513, Cluster 10

<400> 1576
gagaccatga gacagaaccg gaacagaaca ctgtacgtac ggacacggtc attgcactgc 60

tccggcagct ggagcagcac agctgctcgg caccagtgac acagtccaca ctccacagct 120

ccggttgtcg agagaaggaa gaccagttgc cacaacacct tttgtcgaca ccgtacgtac 180

gatgatacaa atacacgaaa cttttgcctc gtcggtcgcg ttctctaaat cctattctgg 240

tttagcctga cctcacaaac caaagggaca aaaaaacggt gtctgctggt attttaagac 300

ccggggcggc aaccatcgat gcgttggaaa ggccatcaga acattcgaaa ccaaacagta 360

ttgtttaaca tgagtaagtg cacatccaca tcagaaaaaa aaagagagaa aataaaacaa 420

attaccacgt cacgccttcc acgatcagac agacgactgg ttccacgcat cattcatcaa 480

gcagcgtgga tgagaatgac agcgtctgct accctcatca acacgccaaa taaaatgtgg 540

ccagggtaga tagaaccaat gaggtcacta gcaaccacag ccaccagggg aaaaaaagat 600

gagctactat ttttccccct ttttgaagta aaaaaatgga ctgctacata ataaatggag 660

caacagaaat ctgtgttagg gtactgggta ctgtaacatt tcagcgtagg acaatgctga 720

tgtagtggtg ctagggtaaa atactactac catggaccac cacccattga cagcaaacca 780

tgtgcccctg acgatatcaa agtactacca ccacacatca tgtttcggtt tcatgagagg 840

ctgagcaaga cctactaaca ggtaccaaac agaagcatgg tttgcatccc acttgtaagg 900

aacagcatct cataaatgga tgtggcaagg accccaaaaa aaacatgtgt ggacatgaac 960

gaaatacacg caaagaacca acgaaatgca gacagcatga gattctattc agag 1014

<210> 1577
<211> 1151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118123_G1, chr3:161639872..161641022, Cluster 10

<400> 1577
gtaaggatga catttttcct agggacaggc cctcacggtt acccgacccc aaatggaccg 60

ggatgggact ggaattctcc ccacggccca cgggaatggc ttagcaagaa ctcaaaactt 120

aatggagcag ggtgaggata aaaattcacc cgtgtggatc cgatgaggac atagattagt 180

agtcagatcc tccccctcac gcggtctgtg aaggttcaac caaacaaatc gttcccactg 240

tgaccacaca taaagatgca aaatcctcaa tcactaaccc taacccttgt ttcattcact 300

cgaatgtcac tcgcccacgt gacaaagcta gtttgtgcgt atacaggttg gagaaccctc 360

tgacatgttg cgatagtact atgtaatggt tttggtagca gcataattgt atgcgacggt 420

gtagccagaa cttcaaagtg actggtataa taatgtaaca taactatctt cttatgatac 480

tgtacatgta ataatccaaa tatatgattt actaaaaaac agtataaata gttttctctg 540

tcgagggctg tataaacagc atatttaaat atcgtacgcc tgtaatacat tgggccgaaa 600

tgagtggtct atggctcacc acggaaggaa gggttgcaat acttgcgttc atagattcgt 660

gggcctcggc gctgggcggg acgaggtcca gatcaggatc gttcaatccc cgcgtaggtg 720

aataatgtcg gtttcagccc aggcagaacc gttgggcttc gcacgggagc ccacgtgcac 780

ttggactgaa cagtccgtag ctagtagccc accgcgcaac cactctcgcc ttttccttac 840

aaaatcttgc ccgcccaacc atccttttt ttgttccaca agatgcctgg tcctggagca 900

taaaaacaca aaaatatcgc aaaccgacgc gtgaagacgg tttataatac ccacacccat 960

attctttatc cagagacatg atttcccaaa cagaatttcc tccaaaaagg caatcaatct 1020

gaatgtcgtc cgaaaatttc ctgaggacgc actttttcc cggttgacga ttgtgatgcc 1080

acccccaaa aaaagtcagc accacggcaa tacgggtacg ggtacggcat ccgtgcccgt 1140

gaagaatgcc c 1151

<210> 1578
<211> 1403
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118761_G1, chr3:165734799..165736201, Cluster 10

<400> 1578
attttactac acgaatgaaa aaacttagca ggtgggcgcg gccaatagct ggagtacgta 60

cggtcacagc agccgcggtg cgctctggat tgaccaggct tgctcaggtc ctcactattg 120

ctcggcagtg ggtggacggt ggcgagcctc ccattagttc ccgtccgcac ggtgactaca 180

tggtggccac ggcccacggg ccacggtcgc tgtctcatgg tttctttcgg ctggacgccg 240

atggccacaa agagtggtgg tggagtgcta aaagctacta ctaggccgat gtccggcatg 300

gaaacgtggc ttcttgccct ttcgcttttg gagggcaaag cgccgcccat gctctctgaa 360

acggaagcgt cacgaaggaa gggaaactgc acccacgtca gccagttcgt cgtccgtccg 420

tccgtccatc cattcgatcg atccaccgcg cgcacaggtg cgacgctgcg aaagaaaata 480

acccaggtga tgatgatgcg tcaaaggctg gtgatggctt tgcctagctt ctcggatagg 540

ataggcacat ccccccgtca tcgcttgcgg ttcgcagcag tcgtagttga gcggcgacgg 600

ctgcctacgt tttctttatc attggcatca tcttcttcct aatagtatta atattaataa 660

taataaataa tcggtgtcct gtatctgcct gacaaatcaa tcaaccgatc catggttcat 720

ttgtcctgcc actcggtggt ctctctcgct cgccgggact acgggatacc agaccacaag 780

cgctggcgat ggcgaggagg ggcaagtcaa agggcggccg aaacggacgt gccaaccgaa 840

agcctttctt cggcactcac tcacctaatg cataagcctc ctgcgctgcg gtgcgctgct 900

taaccattgc gacccctcgc gtaaccggca agggaaccaa tccccccag attttctcgt 960

tgacgaatta gccgcgccga ttcgaatgga tccaccgaat aaggaacctt cgcgtctttt 1020

ccttttcctt ggcgagacgc cttcggccga ataattagag ttccttcctt tttttttga 1080

aagattgaag gagaaatggc tttggaccga cgggactgtt gggctgggtg aactgtccgt 1140

ccgcagtgga gtgccgtacg tgtacgagga caatgcagca gcgcagccgc gcaggtgtgt 1200

gtgtgtgtgt gtttccaatc catgcgatgt tgtgaccggt gctgtcctgc aagttcctgc 1260

gagctttgtt tggcggtcca actactaatc accagcttag actacgttgt gcgttgctgt 1320

tgctggtcca aaaagatgct cgctagacgg cactagagca cgcacgcgcg cgcgcgtctg 1380

tgacctgctt tctacggcgg caa 1403

<210> 1579
<211> 1068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119006_G1, chr3:167069322..167070389, Cluster 10

<400> 1579
catcgtaatt catttacttg tttatagaaa tgttggtctt gtgagtcgcg ggcgatccac 60

ttgtgcatgt ggcgtgtcgt gcgtggagga gaaggagagg acacactcac acagactagc 120

tgctgtacgt gtacgtggag acacggcggg ggccgccgtg cgccggcggt gggagcgggc 180

tctgacgtgg ccggataagc gcgggccggg agggcgcgag cttgtggcgg agaagcggcg 240

agcgccggcg ccccctcgtg gcgtggcggg gcgcatcgtc ctagctagca gtcgtgtcgt 300

gcgtgcctgc cgcgcgcatg tggcgcgtgg agcccggcgc ggtcgcggtc acggccacgg 360

cgaggcgagg cagcaccggc agggaatctg ctgcacggca cgggtgtata ttcttgtaca 420

tgtgatgtgg gttccgcctg gtgcttccat tggttggagt tggacgcagc ggcctctccc 480

tggccacgat tttgatcccc ctcctcttga agcgctgtgc cggccgctga ctgtgacgct 540

atgccagttg tgtgtgcctc gctttcgccc tactgctgct gaaggaagga agatggatgg 600

atggatggat cctgcgtgca gggacgtgtg caatctgctg tgcgttgcag atgtgcagca 660

gggatgcatt gtatgcgacg aattcgatcg tctgacgcat gtggcaaaaa ccaaaaggag 720

gcggcgcggt cggtcggcga catgcacgtc tttctcacga atttggacgg ataagtcctt 780

ttttcccct ccgtttcacg aacaaagact tttcgcactt atttgcgcca aactgtgaag 840

tcgcagtcca cctccgagaa tcttattaat tattattatt acgatcgtgg cctatatacc 900

tagagggatt ccacgccgat tcttttctcc cctcttttct tttggaaaaa agaaactgca 960

aaaataatct ttggccaaat ttattgccgg gtcgttgtcc tctgtccggc gcgaagatgc 1020

tgaatttgct ggaccaccaa gtccaccatc ccgctaactg agagtcag 1068

<210> 1580
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119971_G1, chr3:173374521..173375684, Cluster 10

<400> 1580
acggccgatc gcaatgatta aagcgtcctc tggaacggca gcgggactga cccggggagc 60

agcgcggctt tctgctgcgc attcaagaaa aggacccctg gccctttgcc gcctgtgtcg 120

ctcgtcctcg tcctcgtcct cgcacccgtc ggtgtggtcg gtcggtccac ggacccatgc 180

cgggccatca tttcccttga ggaagacgga gcgagagcgg gctgatggga gtggagggtt 240

gcccatggac cgatcggcgg cgactggcca actgggtcgg atcatggcca gaaggaaaac 300

gaggggggc ttggtgtcgc ggtcaggtct tggaagaaca aacgaggtgc gcgtcggtct 360

gggttgaaac cggaatttgg cagctaggca ccaaagtttc atcatgcctt tcttccctgg 420

acaacgagcc tcatgatgtc agcggctaaa agaacccgga tactgccgta taagtctgga 480

tacgatcaga ttatatggcc gtgtaaaaca ctcattattt acagagttgc gtgtgaaaaa 540

taaggataag atatgagagc tactgaaaat agccttagat atcttcaaac aaatggtcat 600

tgttttcagg taaaaaaaaa aacagaccat aagattcatt gcataactgc tggacaaaaa 660

aaaacaccaa tccagacatc cagggttgct ctatccttcc ttggcagtct gagctgccaa 720

agctttgcgt ctgagacaca cgccaccaaa gtttgacgtg gatgtagaac cgaaaaccac 780

ccccatcgct tcgcttccag agctgccagc agcaaagtgc tgaaaaatgt ctcgaggggg 840

gttggtgccg gccttcctaa cgcagtgcag gtcgtttgag gtggaggctg tccaatggca 900

ggtccgttga atcctagttt ggcccagacg acccagagag tcctggcaaa ggggcgtcct 960

gaaaccatat gatctgcggt ctctacattt cgctcacaga cttcacatca ggctgtgtca 1020

aagatcttcc gcatcaagtt ggcccgacgt tgaactcggc gaaccacgag caaccaaata 1080

aagaactgaa cccgctttgg agcgaagcta ttctacataa atcctgcgcc aaggcgtcct 1140

taattagact ttatcctcat cagt 1164

<210> 1581
<211> 1282
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_119993_G1, chr3:173523656..173524937, Cluster 10

<400> 1581
gatcgtcgga ctgggcagcc cgcaggccgc agccctcgcc tggcttgtgg cttcagaaag 60

aaggaacgga ggagccgacg gggctttccc ttccctcttt gtcatgttct gtcagataag 120

ataagcgatg ctacgagccg cccagatgtt ttaaagaatc acatttttca tgtaaaacca 180

ggtttgcgtt aatattatga agtttttta tatataaata aataggcttg ccaactttgc 240

cgtgtaactt tagacattta gtgtcggttc ctgagagagt tccatggatg tgcaatcacc 300

atcggtcctg cagaaccgac acgggctgtg gggggcccgc ccgactgtac tggattcgcc 360

gggatccgac cgatcgggcg caggtagctt tcagccaagt gcatgccaaa aaggcagcaa 420

ggatgtccca attaagcacg aaaaccaccg ccgagcgcaa gcaaatgcac tcacaccgcc 480

ccgggggca cactgcatgc tagcgcgacg cgaccgtccc atccggctcc gactccagct 540

ccaatcccat ccatccatcc gcccagcaga gcagagcaga gcagagcacg acgatcggtt 600

ggtgcgaggt gcctgcctgg tgcccgggcg cacgcggcgc ccgggtttgg tacggggtca 660

aggcctcgca agctcagctt cgccgtcccg tgaccccgcc gggcccccct cgcgcgggca 720

cccgggctcc caccaccacg cgcgcggccg gtgggcgcga gcgtcccaac aagggagcag 780

acgcgcgtcg cgcccgtgct ctcgccctcg cccgcctgga tcacactgcg cgctgaccgt 840

gacgcgcgta ccaaccgcgc gcgcggcccg gcctcgttcg ccttgggaac gccgaacacc 900

agccagtggt gtactactac tggtgtgtca gtgtgtgtgt gtccagcctc cagcgctccc 960

tcctgcctgc accgtctgcc tcgggccctc gcccagctag ctgccgcagt gccggaactg 1020

gacgtagctt ggggtaggtg cggagtctcc gatgctgcgc tccccgtaga attgctgtcg 1080

tttacagtag gttggggttg gttggttggt gccatgtcgt cggcacgtac gtcggttgac 1140

gacgtgcgtg gatgcatgcg tacaggtacc cgtaccaact accaaggcat caaggcctaa 1200

agaattgatc ggtactggat cctatgagga aggcggaatg gtccgtgccc gtacatggct 1260

gtggttcggc cccccggcga gt 1282

<210> 1582
<211> 1077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120436_G1, chr3:176262096..176263172, Cluster 10

<400> 1582
ggccggcatg cagggtgtac atcctggcat cagctcgggc aacgacggcc gtggcacatg 60

gcgctcacgc gacgcgcagc ctggcgccaa tggatttctg ctgtgaagta ggagtatatt 120

ggttccaagt tgggatgcta cattgctacc tgctggcggg tggtggcgac cgtctcgacc 180

ttagctttcc tttctccggg ccagctagtt agcttgagtg gcttgagtgg ccggactgga 240

ccaacaagtt tgaccgggcg cctgtctcct agcgcctcta gtacgtgtgc accagcacca 300

tcctcctctg cttctcgctc catggaattt aggcattgtc cgtgtactgt gcgactacta 360

gtctgtctac ttgtaatcca aatctcaaca ttttttttt gcgaccgtgc caatgacacg 420

tacatcatca agaatgagta gagaaaaaag attacagctc tttatgaaca gtagctagca 480

tttagcaacc gaaacgagga cccggaggag cagaggattg cataaacgca aaacaaaaaa 540

cggcgatgat taataaatct caacttttgg gcgctggacc ttattaaaaa aaagaacact 600

ttgggtactg ctggagcggt tacccatcaa ccgagatgcg cggtacacag gactttagcg 660

caaaaatgaa aatcagtggg gctaatctta tcagtatagt gcaaatgtgc aataaaaagg 720

agagcctaat aacaacaata atggtaaagg taagtgcggt gacgggtcag catcacttgg 780

tgccaatgcc ggatactttt tccctttccc gccttcaact cggagagcaa atgtttttct 840

acggtaggta cggtacgtac gtcggtagct ttggcttccg aaacactttc atggatattt 900

agaagcgcat atatacatcg aacttatgcg ggcaaatttg tctgcaagta ctgtacaaaa 960

tatagctagg attgtatcct aatgctgtcc gtaggacgta aacgacgtct caaaagataa 1020

agatatagtg caatgttccg gagcctatca acatctaata cacacagtgc gtgctta 1077

<210> 1583
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120513_G1, chr3:176560757..176561769, Cluster 10

<400> 1583
aaaggagaat aatgacacgt cgaccctgac tgagacaaaa aaaaagacat ggataactaa 60

actggggccg tcccaaacta aaaaaaacta ggaccaaacc gcccccatcc tctccctttg 120

cgagaaccaa acccaacttt cgttccactt cagtggcgct ggccgctggg accggaacta 180

acagagggtt agactagtag gtccagcgtt ccgatccagg gccccatcct ccagccttga 240

aatctcaatc acacacagcg ctacatggcg aataactttc caataaaggt gtgccagcca 300

gagacaacaa agggccacgg atattcgtcg atccactcgt gcgccctctc tcgtgcaaac 360

gggctccatg tccccgcgtg atctcatctg atcgatcaag gcgacgagac atccggttag 420

gtgagggcat cctccactcc actgctacgg caggccaatg cttgcgattc aacctgccga 480

acaacacggc gacgagcggt caacaggcag cagcctgcgc gcggacggac agtagtgacg 540

agactgggag ctctgtctga aacgtccgca gcatgcggag aatcgtgaga tgggtccctc 600

gtcgcggacg acgcgaaaaa tgcttcgacg gctctgggtg atctgctggt ccgttcgggg 660

ccgcggcgcc cgaacgaacg gaaggggacc aaccgcaaca gctcctgcgc tgcagtgcag 720

gaacgaacga cgggcctcaa caaacggggc gccaccagtt gcctcacccg tcggccgcat 780

gcatcttatc atcacattgg ctcaccagtt gccaaagtgt cgcggcttgg acgacgcagg 840

gcaggacctg gtacctaacc acacgagctc gctcaggctc acagccgaga gcaaacgccg 900

gatttgaact ctcgttgtca gttgtcagtc acggactcac ggtcacggta cggtccgttt 960

ttttacacta acggggtgtt tggttactcc tgctaaagtt tagctcgggt cta 1013

<210> 1584
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1209_G1, chr1:6177628..6178644, Cluster 10

<400> 1584
catgctagaa accctcacat ttatatccac acgtatctat catttgcagg tcgtccacaa 60

gagcacagaa aaatgataac caagtagtca agtataaatt ccgatttatg ttcgtatggg 120

tctaaaggcg gtagatgtga gggctgtaaa taggagggtt tgcaattgat atgcaaggat 180

ttttttccg actccatctg catcactctt ctcccgtttg ccttccatat tcttaccaaa 240

tcctatgtag tagcaaccga atccatagga attggctcgc cgctataccg ctcaccgcat 300

gcgtttcggc cgttcagcgc gacaggttac caaaccgggc tgtggccgct ggctccgtcc 360

gatgggcgcg tcccgcggct ccggcacgac gaaaaagaat gggcgtctca gcccgtcagc 420

cgtgacccat gagagccagc aaagaacgca agtgcgactc gatcctctcg gcgtgtcgct 480

ctcgcagcag tggtgggacg caatcacgcc agcgtcagcg tcggcggctc agcgcgcatg 540

ggccatggcg taagcgtaat gcctcaagac gaaacagttt ttggttggcc tccctggctg 600

cttgtgcgtg tcatcacgtg tacgaacgaa cgctgggcct atatatagta gttgccggga 660

agcacagtga aagcatatgc tgcctgtgcc tttcgcggtg ctggctggct tacgtggatg 720

gataagcgca acgccagatg gacgtgccat gtgtctggtt gttaacaaat cggaggaagc 780

ggtcgcatac tcgtgtggac tcatggcgct ccccccctctc cctccccctt ccctttttc 840

ttctgtatac tgccaggtcc ggaccggcat aattcaagac ccggtacgga ttttttttc 900

tttgataagg atcaatgata tactattaat agtgactgag ttaataagct ctaaattttt 960

ttctttgcgt cgttacttca aacatttcta ttgtacgtag gtacggtaat aagctct 1017

<210> 1585
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121153_G1, chr3:180201194..180202301, Cluster 10

<400> 1585

tccctctgat cccgacaaga tttgagttcc taaactatcc tttcatttcc ttatccacca 60

aaccagacct caaagtaaaa aaaaaacgtg gcatcccaaa cctgttctgg ttactgactg 120

aattcaatgc tgtgtttact ataactatgt gcggcaacgc tgattatcaa acagcccagc 180

ttagtagctt acgtcaagat tcgtgaaggg tatccatccg ccaatgatgt gagagagagg 240

gagaaggaag cggtgaatgc aggtggacac acatgccatc tgcagataac actagagtta 300

caacacaggg tttttgtgag aatgtatttc tgactgaatt cagtaataca cttgcactcc 360

tccattgcta gctcctaata atggcatcgc gcccaacacc tcgcgttgac gtggttatac 420

aaatcaccgc cgcagattag cagttgcagg aggccataaa caaaacaaag tggtggttca 480

ctgaccaggc gagcataaag aagcatttgc gaaagaagaa cctacaggca aatataaaga 540

aatgggtcct gccgctagct agggcgggag cgggatggcg taattcacat ggctcgaagt 600

ttatattata tactagtact tagattatgg cgggatggcg taattcacat ggctcgaagc 660

ttatattata tactggtact taattagttt attgctccac tgcgcatcta cacaaaccat 720

gcatgggaaa gaagttaaat tgccggtcaa agcagcaaca gcctaccagt agttagtagg 780

taggtcaggc tcaggctaca gcgaggacat gcattttcta aaccctaaac agtgactagc 840

actctagcag tcgctaatcc tgtgcgtgcg aaggcttatc tataaggagc acacgcatcg 900

tgcagctgga gttttgttcc agtcaacctc cgctgggggg atcttcgaga cgcactcgga 960

gggttggccg catttggtgg ccaccgatcg tagagtctac agagacatcg gactgttttg 1020

tgcagttgac ggccagaatg gatgtgcatg tatggttagg gttgaacgct cgatttgatt 1080

cgttagtagc tcatagggct gtttctga 1108

<210> 1586
<211> 1226
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122051_G1, chr3:184676446..184677671, Cluster 10

<400> 1586
ccgcggaaca caaggtcgat ctcctctcga gcttacctga gtgaagaagg accgacagga 60

cgaagcctgg gtactgatga ggcgtgaccg tgaccgtgat gataaagatt aaaaaaaaca 120

gtgaacagct agatttttct tataaaggga aagcagtgtc ctcctccgta ggcgtgtaga 180

cgaagcatgc catgtcggtc gagtgagtgc atatgagtac actcgggttt gcttttaatc 240

acgggggatt gagtactcct cctcttatgc cttaccatta ccacgcgaat ttatatcgag 300

cattggcagc tggtgcagcc tagtacacca ccctacagag agagaaaaaa aaggttaaag 360

aaagtagtac tcctgcgtgt gggccgtacg tggatcgctt tcgattcact caaaagcaac 420

gtctacattg ttagtatcac tgtgtgcatt gagagactgt gattgtgcct tggggatcgc 480

cgggcagctt tgtcgcgttg ctgctgcgaa gattcggagc gtaacgcacc atgtgatgtg 540

tgtgattgac ccatagcaca cactagtcgt cccacagtcc acagatgagt cacatatgtc 600

taccgcgaga aatttatacg tacacacccc ccgaagtgtg tgccctccct aactcgaggt 660

cgaggatgct gtccgtgtcc cgttccgtta gctagtgttt tgcttgcctt acgttacgtg 720

ccggcgtggc gtgcaggtgc agccgggacg ctgctggcgc atcccgtccg cgtgtggttt 780

gcctcgaccg ttgccgacgg cggagggcag cggcccagca ccacccgaga gaggcgagcg 840

agggtagccg tcgacggctc aaagcacgcg ccggcgctgc tgctggccgc cgcacagcac 900

caggtctgtg acgtgcgaca caggaaagga actggagaca cgagaaaaat cggtagcggt 960

ggggttgccg ggtgtttcgt tttactactc ccgagtcccg acgggcccac gtgctttctt 1020

cttggctttc acggccacag caagcgtcga tcgcgcaggg cgggagccgg gagctcgagt 1080

gcgtggcgag gcacccaccg cggccttggg ctttgggcca catttattat ggcgcataga 1140

gcctgctacg cccggcgagg acatgcccag atgctctagt gggtggtggc cacatttatg 1200

gcgcgccctg acactgccgg cgcggc 1226

<210> 1587
<211> 1270
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123391_G1, chr3:191777044..191778313, Cluster 10

<400> 1587
aaaaaatgac gcatgacgac cgttgaaacc gatgctttaa ttatagtata gaaatcttcc 60

ttaaatttag agaggagcct tgacaggctc ttgttcccaa gtcccgtggt ctgatgtcaa 120

accaaaggct gtggagttgc tgttgtgcgt cggtggcttg gtgagtgatc tgggttgtct 180

ggtttggagg actgactagc gctgtcggtg tctaaacctg tcaaagtctc tgaactgata 240

gatacattga acacggttcg taaaacagat tttgcgccat ctcatcccgg gtgggttccg 300

aggtgcgcgt gcgcgtgcgg gtccgtccgt cactagacat cgagtgcgcc atcgttacgg 360

gtgctctgta ttcagatttc agacagacca gcacagcaca caacatgaga tgtttgctat 420

cagattcaga gctgcttgct tctgatcttt tcgtgttctg tatccaccac catggtcacg 480

gcgccgatct gctggctggg acagcagctg catgcccact aggcacgagc gcatatctct 540

catcgcgcgc cgggagaatc gaatcaagca aaccccaaat cacagtaagc tcgcatgcag 600

cccagcctca tgctggtcgg cggatgtgag ggcctcagga tctctcaagt ggcacgcgcc 660

aagttgggtt gcacagcgca gcgtgcgggc ctccaacagc gatagactgg agaccgggga 720

acaagagcgt gtgtgtactc gccgaggtgg atcattgtta ggtattcggg cgatcgcttt 780

tgcttttgtt gctccccgaa caggatcggc ggcaacgaca catggccgag gctgacgacg 840

ctgtgttcct gcccgccgct gctcgcagtc tcagtctcag cacagtgcac agcgcacatc 900

ggcacatgca tgcgcaccca cgaactggcg atcggagcct atcgtcttgg gctgcctttc 960

tttgcgcgcc gccacgcctg ccaatcgcga actcggcgcg tgcgcaagcg tgacggcacg 1020

agatcggccg gccgatctcg ccttcagttc tgctcttgta gagagaaagc gaaggggggg 1080

gggggggggg ggtgcttaaa ataagtgcgc gttccctgat gctggttgct ggctgcggcc 1140

atcgcggttt cgcctgctgc cagccaacat gctcgtgcca tctccaatcc tccaaatcag 1200

atctttattt tggtaaactt caatcccatg catgactgct tgccaggcct gtgacgagtt 1260

tgcatggaac 1270

<210> 1588
<211> 1214
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124212_G1, chr3:196059336..196060549, Cluster 10

<400> 1588
gtgtcgtcct cgctggcacg agctagcttt tgaccacggg cacgcaggca ggcggcggcg 60

actgggctgt gagctggcac cagcgccgcc agcccgccac ataagcgtgg ccggtcgtcg 120

cagtttccga ttggccagcg cgcagcagcg gccgggcaga gcgtcgctgt ccgggtccag 180

gcaccaggcg gtccctccct tccgtggtcg acagtcccgc tgcgaggcga ggtttctgtc 240

ctgcaggccg cggctctggg gctcctctcc ccaggctgcc aggcccccac ggccccacct 300

ccttcggtta ctggtttacc cgtcctccta cacttgttcg ccgtgtgaga gagggacccg 360

taccgcgccg tacgtgacgt tatagatctg cggtgcagta cgtacgtctc gctgtaccac 420

gccttcaaca cgtgcgcgag cgcgaatgac agcctgttct atcgtctctt ggccttaatc 480

acggagccac aaaaaaaagt tcattgctcc tcggttatga aatacatata tttctcaaac 540

taacctaagc aaaatgattt tgagtttgac taagttttgg gaagataaat caatcgactt 600

ctgaaattat cctacactaa atggtttaaa atcggaccaa atataaagaa aaaaatcaat 660

atttatgaca tccaattagt accaatagat atgtcgtaat atatattttt gtaatcataa 720

tttgttcgtt tgatgtcata atactgttag ccttcattat aaaattggcc aagcccaagg 780

taatcataag agcagcacta tagcttagta tcaacttcat gcttcatggt aatttactcc 840

catagacaac atgacaatcg atatgatgca cacagatcct actcctttga tacaggtaat 900

atttcagcga caaatatcat tgctcgatta ttgatcggca tatacaggca cacaatcaca 960

cactgcacgt agttaaggat tgtgtggttc gaaacttccc aagtaaagag ctggccacac 1020

agcaaacgaa cgtctaggat tgttccatca accaaacaag ttcttcggac aattttacta 1080

aatcttataa cattatcttc gtgattaccc tgtcatataa ataaagtgaa acatgaataa 1140

aacatatact tctcataaaa gtttcgtcgt acgttttata taatttagtt ttatgactca 1200

tgaaaaattt tata 1214

<210> 1589
<211> 1349
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124257_G1, chr3:196353477..196354825, Cluster 10

<400> 1589
atgtaaacta gcatagttgg ttaggttcta tgttatgtgt cacatcccaa aattggtttg 60

gttctgtttc tcccatgcat ggtcattcct tcacatctct tcctcctcct tcacacctcc 120

acatctatat tttcacatga gaaacagtgg ggagctatcc tctccacata tcatcctctc 180

ccatggttgc ccctcccatt ccccttgctt cccctccatc cctcaaacca aaacagagtg 240

tccttgttgt ttggaaccaa ttttgccact ttgttttcct tcttgggcac ccgacaagga 300

tttggagatc ctttttgcta cccctctact ataatatagg tgatggatat cattgttgta 360

atggaggcca ccctaatcaa cgacatcatg agcatgacac ctcattatgc atgttgtcgt 420

cattggccat catcagcttt gtctcctctt actgccatcc cctaacccta ggtgagtccc 480

ctcaccttcc ccatgttgtt ttcacattcc ttattgcata tcatgtgtta tatatgagtt 540

tagaatgatc cttgacaaag tttatctgct atatatgttt gtccttgtgg cttagttagt 600

aactgccaat ggaaacaact atcagtgtct agggaggggt ataccctgg atattggcaa 660

tactcctttt gagaaatcgt aaacacatgg aaactcattc tggatctggt tggtgccagc 720

cttgcaccat taggtctcca tgccctcgag ggccatgtgc tgttccggcc aagtttggga 780

ccctttaggt taggggggca aatcctaggg tactctaggc caggggccaa atcttagggc 840

cctccatgcc tccaagtccc tctaggtcgg gggtcaaatg ctaggaccct ctatgccttt 900

ggagtccttt aggtctaggg tcaagctcct aactcagcta aatctagagg cccatacaag 960

ctagggccca caaccaaaga cccctagaca ttccttagga tgccctaggg tgggaagcct 1020

tgggaatagg agggatctag gcgatatggc tctagtgcca catgcacctc tactcaagac 1080

aaccacatgg tgcaaggtag acaagctttc gtccattgta tgaaatatga tagaagacgt 1140

tgcgatgaag aaagtgcatt gtcaccatgc ttaaggttgc aggtgtacta gtgaccactt 1200

tgtggtatgt gatgttacta tagatgcacc taaacatgct agcgcaccgt acgtattata 1260

gagaatagac aaatacacca tttaccaact atgttatagt gtgaaatcat ttactttcca 1320

ctacgacatg acatacctac cactacgcc 1349

<210> 1590
<211> 1191
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124986_G1, chr3:200696536..200697726, Cluster 10

<400> 1590
atcttctcct ctccctcttt ttctccttcc ccgggcctat agccttttat tgtcatactt 60

aagctgttct cacgggctgt agacgcgtgc catgccagta tgccactact ataatcggcc 120

ggccaattag acgcgcgcgc gaagtgaagc ggcagtttca gacggtcgat gcatcgccat 180

cgatgtttct tgtttctact gtgtcaaccc acatgctctg gtgcatccac tagctgctaa 240

atactcgatg aaggtaaaag aaaatccgta ctttgcatgc ctacatgaaa gggtatacgg 300

atggagtagt tattcgcgaa tctgtgaagg atgctcttgt cgtaggatgc atgggcgatc 360

agtgcggggc atgattactg cactgcacac accacggcca cagtgccagc tactacagct 420

tagcttctcc gctgtgctcg acgacgttgt agcatgcatg cagcaggcgc cacgcacgcc 480

acgattcatc ggggccatgt gggctgtgca cctttggagg ctctcacggt cgaaacgact 540

cagcggcgtc gacaagacgt gactgtgcgc cgtccggata ccccggtgcg cggccggggc 600

caaaacatcc cgtcgccgtc ggaccgatcg gcaaaaagtg ccacgtacgg gggccacgcc 660

atgcttcgaa acgtcagctc atgccctcct cctccgatcc ggccttctca gaaatcaacg 720

ttgaagcaga cgatctcaca gcctcagcct cagcctcagg catgtagctc acgcgcgtga 780

tcgggcgcct gtcaatggct gacgaatcac cgagccgtgt agacttcacc tgagccagca 840

catcagttta ttaaccactg ggcgattgcg catccgatgc tggtacgctg agtgcaagtg 900

catgagaccc aataagcctg gctagtggct acgtgccggg ccggcgcgcg cgacggacgc 960

gaggagagca gagcatcatg cagcagagca caggggcact gattagcacg cgcctgggcg 1020

tgttcggcag cgacaagacg cgaccaggtt tggcaacatt ctggccccgg gggcgggggt 1080

gccctgacgg cggcgtcacg tctcggtcga ttgatcgggg ctcgggcgac gggacggggg 1140

ccgggcctgg gcgctagctc agcagtcgcg ttgcgcgaaa gccgggagcg c 1191

<210> 1591
<211> 1301
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125235_G1, chr3:201995123..201996423, Cluster 10

<400> 1591
tacgaacttt acgaacatgt cactgctgcc gaattggttc gcccacaact agcgagcgcc 60

ttgtcgtgat gagctcggaa tcgccgcaca tttctctgga caccgccacg tacgctgagc 120

ccccgccgcc ccacgggcct ccgcccgcct cgagctgccg cgcagtgccg tactgccgtg 180

aagggattac gaccgtgacg gcgcacgaca cactgcacaa gttgaattga atttgaagaa 240

aatacgaacc ctgcatcctg ctagagcgag ctcacgacgt gcacacgtgg tgagacgtgt 300

cgacgggcca gtggctctcc tgtgaacagc gtcgcaggcc acgaattgaa tctctctgct 360

cctgacaggt ttttgaactt ggacgtgttt gactcggagt cgattgctca aatgatagcg 420

cgcggataaa gccgtcattg gtggcggtgg taacccgttc cgtgcacgcc agctaagtag 480

tactgcacaa ccaggatcga tcgcctcttg cgttctacta ctactaacta ccagccacat 540

ttttttcttt aaaaaaaagg ctcctggatt taggaagaaa ccgacaatta ttgattggat 600

cataggacga caaaacgcgg cagacggcca ctggtcgcgt cgtaattatt gggttccaag 660

caggcaggca gcaggcagcc tcggaatgct tgcttgattg gaccagcatt aactaaccgg 720

tacgtagtaa tggtgttgtt ctgtcgtgga gggtatcagc atcagcgaca tgaaacgcgt 780

gtggcatggc acgacgggat ttgtgcacaa ggacgacgcc atggaccagt agttttttt 840

agacacgggg cggcaggcaa gagaccgcga gaaactgatg gccggtgact aggacaagaa 900

ccgatgcgtc taccgctagc tagcgacttg catcgaagaa gcaagcagga atgcaggatc 960

cgcgatcaga tatattattg gtcattaagt ccataaagac attgcagata tgggctggga 1020

aaacggccca tcttgttcga aggacctcga cgaagacacg aacacgaggc gcacaacgta 1080

gaaaggcaat tcgctgccgc ctaaaattgg gccttggctc tctctctctc tcccgcggca 1140

ccgccgctcg gtcctccttt tccctcccaa gtaaacacat gttgtccacg tacatgaaac 1200

aaagattgga tcgagttcat tccaccaatt attatggtgt ttgagtgaat aataatctta 1260

cataacataa cagatctcgc tgcgacttgc gagcggcgaa t 1301

<210> 1592
<211> 1380
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125753_G1, chr3:204465580..204466959, Cluster 10

<400> 1592
tcttctatct gatcaacaaa gcaaagcacg tacgggaata cgggattata taatgcaaga 60

ctgtttgttg ggttttaatc tataccgcat tatattgctt ctataatatt ttgtctctgt 120

aaatcgtagt ccgaatagct ggctcgaaca ccctagcatg gaaagggcct ttcgctggcg 180

agatatcgtc ccacctttt atcctagcgc tcgcctcgtg catgcatctg atatgtgtat 240

gtatattaat tggatccacg cggcgccggt cggtcagcgt ggctactgtc aagtcgtcgt 300

cgatcgatcg atcgatatat gcgtgcgttt tgcaaaagct gtctaggagc agccagcagg 360

atgcatgagg gagaaggaga accctagacg acacgatgga gacgcaccac gcacacgcta 420

gctcgctagc tagtatagtg gcgttgagga atcatggcac gtatgattaa gtgccccaag 480

gcatagcagc gttgcatgca ctgtacgtat gggagtttgg gcacgtcctt tacctactca 540

gcgcggggtc ttctctccct catcgagttc tcctcctgct gtactgtacg tacagtacgt 600

ccctctctct ctctctctcc tctgtcgttg ctgctgctgg ctcgctactc gttcgtccgt 660

tcgtctcaaa gagtcacaga gggccgctgc cactgcgcca tgagagagcg tgcagctagc 720

taggagggag aggccgagag ggagagagag agagtagcac agtgcagctt gcatcacgca 780

tgcactttta cagagcgctt ttgggctaat agccagtaca gccgagccgg tgggtggtgg 840

aggaacggca tcgaccgacc gacgaccggg gtaccctccc ccccccccc ccccacccca 900

ccccacgtcg tagggcctat atatgctatg ctgcggttgt tgggctgccc gatgccaaaa 960

gacattccct ttggggctga cccccatgca tgcaagcgtg gaagcccgcg cgcgcgccca 1020

acgacgacgg cacggcaggc agagggcaga gggccagagg ctgccctgcc gcgccccgcc 1080

ctgaattcgt gtcgagaaca atgcgaggcg tgcgccttga gaagaacacc ggccggctcc 1140

aaaaggcgcg tgtgtgcggc cctcctgcag cgtgtttgct ccccacatgc acgcacgcac 1200

gaatccactg ctagggatag ggaggaggag gactggcagg cagcagctct gcagctggtc 1260

acacctcaca cctgctgcat gcatgcacgc acgcacggcg ctctagcctc tagctcgccc 1320

agtccacgac ccggtaaatc ggaattcgga acgcctacaa tgaatgttgg ctgctacatg 1380

<210> 1593
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126676_G1, chr3:208825656..208826682, Cluster 10

<400> 1593
ggaaaatgaa ctgatagaaa tctaacaaca ctgaaaactg tgataaaatt gggaaactag 60

gaaatggcca ccatggtaca gataaaagat tgaagaacaa tgcttttgtt ggttacacct 120

tgagaaaacc atgctgttgc agaggggttt gctttcaaat ctagtacgag taacgacaaa 180

gccagggctt gccaaaaaca ccgcatgaca tgcggttacc accagtcaag gccccactca 240

tcattgccat ggtagatgga aaattgggca atttcctacc aaaactacta cagcaaccaa 300

catttggcta aagatacatc attttagtga gaagttcatc aaggtctcat cacagcccta 360

gtcttaacac ctaaacatta gagatgaggc catctatggt gtatggcaag agccaaagtt 420

ctcgagggca tttgataatg agttggatat gtggatcgtt ggtcatagtt tttgttcttt 480

ctttgcaaat cttctgtaca agaacttgtc atattggcct agtttgaggc ttcttaggac 540

agtcccaaaa gtgtcgatgg tagtttccat aacattgatt atcttgccat atagatgttt 600

tgctgacgtg gaaaaacagt taaagaagat aggtagatat tgtttctccc ctgagaaatg 660

tttctcgggc tccaacagga caagaaaaca cccatactgt gttggggcac ccatgtcatt 720

tccatggacc aggggcttca ttttgcacca cagcaggatc cagtgtgctt ttctcctggc 780

caccttcgcc tccctcaccc cgagccatcc atgacaatga gcatgcacaa tcgtcctccc 840

ctgcatcatt atcctgggcg gagagaccct ctttccccaa ctgatcccca accaatgccc 900

agctctaccc ccattgatcc tgctccatct gcttcacatc cttaatctct gcaaggatgg 960

atcaataggg aaagggaggc atggaacgag acaaaagatc gaagtcttct agctccagaa 1020

gacacac 1027

<210> 1594
<211> 1342
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126731_G1, chr3:209073940..209075281, Cluster 10

<400> 1594
gtacgccccc attattgact gtgacggtgt gaccccgcga ctaccactcc aactcttgct 60

tgcttgctag agactatagt acacgtacta gtcgagatag tgctcgcctg ctgtaccaac 120

tccctagctc tagctgctgg ggggcagggg caggggccgc cgcagccaac cgtggcgcga 180

catgtgtgct ggctccgaca cggcggccgg gccgccggga tgagcaagtc gtcgctccga 240

cccgacggag ggagtaagaa aacgcgcggc acgggccacg aaggccgact agtttaaagt 300

tttttacgcg cgccgcgcct acgacgtacg ccagccggga caggacagga accccaaccc 360

ctgccataaa gaaaacgtcg gatagttccg cgtcggtacg tacaactcac aggcgatcta 420

cacggagatc cggtgcgtcg ggctcgggca gcgccgatcg atcccgtccc cgtctccgtc 480

cagcagaagc ttcgctggtt cgaccctata gctgacgcgc cagagcccag accatgtaca 540

gatgagcgcg ctacctgctg gtggtggagg gtgcatcgga cactagggat ggactgatga 600

tggccgtgtc cgataataaa cattgcatca gttaatgaaa aaaaagaatc tttagtcagt 660

tttagggtaa ctctgacaat accgacaatg catgatctgc acatatatac cgctatagta 720

ctacacaaat aacaagcttg gcgtcgactc cgcatcagca cgaatagatt cttggtctga 780

tcacgaccca tgagatcaat tggtccgata ataaatacaa acttaaacaa caagcttggc 840

gtcgactcca gcctggacat ccaagagtac tgccaggtca aataatacaa cgcggacgac 900

attacaataa taacgcgcaa gcagatggat cgactaataa agaatatacc tcgcaaatga 960

ccaaatgtaa tggagggatg acatggacca aagccagatg gcaatggagt ggagaacgtc 1020

ttgtcatcac cagaagaacc gaatcgatgg ctctgcctct gctatgtgac caccatgcat 1080

gcatgaactt ggcgctaaat aagcaggaga atctgtcccc atcaaactcc ttagaggaga 1140

cagcatctac cccgcgaatg gtcgctcttt tttttggttc taatccgagt ttattaataa 1200

taatgggtta gcgagcaatc agattggaaa aaataatgga tcacgcctcg cgtgccccgg 1260

ccccctagtt ttaaatttca tctgagtctt tatatttctt aggacttgtt cgcttctacc 1320

ttaatcaata tgaattgagg ag 1342

<210> 1595
<211> 1215

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127197_G1, chr3:211530754..211531968, Cluster 10

<400> 1595
tatatactaa gcaagatatg tcgtagacaa cctaagttga gcgggaaaat ctatgccaca 60

ggtctctgaa gggagaacag actgacatta actatttttt tttctgtagc acatcaaatg 120

aaatttgacg taacaaacga atatggagcc tttgtttttt cacgtaactg ctgaagcttt 180

cgcgtggcga ttattcgttc tcctatcata tacaaataat atacactgtc acgtaccccg 240

taggtgaacg tcgatgagca tggcgcgcta ttgcacgggt tgttgaaaca gtgggaggcg 300

atcgattttg tttaactccc agcagaaaac tagttaatga ccgacattat ggtacgtata 360

acgaagacgg aacaccgtga gatccatctc agcgtgcgtg cgtacatgta cgtcctggtg 420

ttgcatgctg ctacatctac atgtggatgc acatgggacc agatcagaag aagttcagaa 480

cgaccatact cagcctgcag gtggacgtgg aaatatggac gtacgtacgt gtcgtgcccg 540

cgtgcgggtg cgccccgcca cagcctcccg gcgccggcgg tatccgtgcc gacttgcatt 600

gcatgcaccc ttggacgtgc cgacgtgcgc atgcaccatg cagccggcag gcagcagtgc 660

agcacggccg atttctcgct ttctcagtaa ttattcagca gtgtgctccg tgcacgtatt 720

gtaatttggg ctccgcgtac gctgccttaa tttggagcgt cagttacatg ttgcgttccc 780

atgaggaccg tctgtctgct gcgtccagca gttcctcgaa taacgtttgc cacgaatttg 840

tacattcgcg cggggcatgc acgttgtgtg agaccgtgac gcaggcagag ataatcccgg 900

ccggccggcc ggccgctccg ttcggatcgc cgttcatcac gctgcgcagt cgaagcgagc 960

gatcggattc cagaaggaag aaagaacccg tcgctttccg gcctcttccg tagcgtttga 1020

ggcaagcgac tgcgcagtgc gcagcgcata gccgccagcc cgccacacgg cccgcaccgc 1080

tctctgccca ctgcctgcgc acatggcctc tccctccgta cgcctcacgt ggtgggcccc 1140

tgccactgta tcttcttcgc accgcaccgc agggggtacg tcccggcctg tgcccgggcc 1200

cagcgtctgc atgcg 1215

<210> 1596
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127627_G1, chr3:213609483..213610488, Cluster 10

<400> 1596
ctgttacaaa ggttacagcg ttttctcggt ttcaaacacg cgcgcgccga cagcgcgtgg 60

gtttgctaca tcattatgtc cgagtgcaag attaataata cagcttgtta atggctgtat 120

atattatttt ttttgcaggc catctcccag tcaacttagt tactaataat atatattatg 180

ttttttctc taacgaagtt tttttttct acgtgtaact tagctgtaaa tttgtaatct 240

actttccttc tttatttact ttttctctct tcttcgcacc atctttcagc tttttgcata 300

gtttagtatt tttttatacc tgctccaata aacggtaagg tgcgagtgtc cagagactgc 360

gagagttaaa gatgggcgat agaaatgggg agcgtaaaag gttgcaacgc acacagcaaa 420

cacctatgcc ctgcaaggct gcaacaacaa tagcatgtga gcacacagaa ggcgatggtc 480

ccgtccagtg tacgtgtaca gagtgatgtc tgcggtcacg cagcggcccg tacacccatg 540

agcagctccg aacttgatgc aaaaccagtg gtgcgcactt gcagctaaat cagtgggtgc 600

atcaatggta acttcgcgag caagagttcg tggactactc atagccgtac acggcagtgg 660

tgctgacagg caggagacga ttgccgggtt gcgtaatttt cggagcaggc ggcttcgggg 720

ctccggcagg aatgagcaga gcagatgggg tagtcgatgt gcggttttgc tgcgcaccga 780

cgctttcggc cgggacttta ctcgcgccgg ccatcttata taaccactgc tctgttgatg 840

atctgagcac ggggggcgac agacgcaacg tacgccagtc ttgatggagc gagtacgaga 900

agccatcgcc atccgtggcc agcatctgtt atgctatctc caacacctta ctctacatca 960

tctcttattt aaaatcctac ctatataaat ttacaataca aaatgg 1006

<210> 1597
<211> 1206
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128077_G1, chr3:215476120..215477325, Cluster 10

<400> 1597
tttgcacggc ccagcgctag ctgaagctca ttgtgctgcc cggtggacgg aacggaaccg 60

gcgacgtaca tgtacgtgca aggttgacac acttgagcct tggcatgctg ccaggatgtg 120

ctcatttggc gacatcataa gcacatgaga tcgctagcta gacagcgcgt acgtgacggc 180

gacaacacaa aggtaaggga attgaaaatg caaaagctac aaattaaact ggtggcgtca 240

tgcgcgtttt ccctttgtcg tgcatgcatg catattttgg ggtagcagta gtagtaggtt 300

catcttacct gcactaactg taactctgtg agttaggttc atcctaccta ctttgggtcc 360

aaagtcgtcc tggacttgga aaaaaaacgt ttgttagcag gtgtgtgtct gaaagctgaa 420

cagataaacc ctcgcagcat ttcacggcac cgagccaccg agtgcgtgtg tacgtgctgc 480

ttgacgagaa agccacaccg cacaccagaa gggaatgaac ggaaacgagg agaagaccga 540

ccaaactccg acgtgaggtg ttcggtgtgt cctacttgtc ctcgaccggc tctgcactgt 600

gcgtgcgtct gtgcgaacgc gtggagcaca caggtctccg ccgttgaatc gatccgcgac 660

atgagagagg agttcccgcc gcctcttctt tctgtgtcac gctacccggc cggtctcgta 720

aatccgccgg ttcactctgc tgacacgttc tggtaaatcc gccggagacc cgtacaaacc 780

tacgcgtgca gctagcgcgc gccctttccg tgttcctacc agcgacagcg agcggcagcc 840

acacaacgta aacctagcac aattgcacag acctaacctt gtatctgaca ctaccgaaca 900

cgtatgtatc cgggacaggg tcgtctgcgg atggataggg aagagtgcta actgctacag 960

tagcgtaaga gctgaccggc ccaacgtgca tccaagcgta cgtgcgcaca tctttaatcc 1020

agaatgcacg caaaggggct ccagaaaccc cctgtattgt acgagtcgtc gtctgacaac 1080

cggggtgatt atggtaatac tattttgttt gcaaattcat gtggcggcgt ggcgctagct 1140

gcaccggcaa cgcattgaca ctcttccggt cttccctgag cgcattgaca ctcctccggt 1200

catggt 1206

<210> 1598
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128232_G1, chr3:216468326..216469462, Cluster 10

<400> 1598
caactttaac ctcaaaccaa acacacccta agaggacaac agtacccttg gaatgaagag 60

ggccgtttgg caccaaaaaa aaaaacgaga gcgcttctcc tacagtcgtg agtcgtacta 120

ctccttgcag cggaagaaaa gggtcgtctg accgcctggc tttgaccgac acgggatatt 180

aaaaaaaaat gtggagcacg atacttgagg cacaaagcat cccttaaaag gtctgtaaac 240

ggcctaaacg gcggcaatca atccgatcgt catcgatcaa actttccaga cttgtgtacc 300

agcacattat tatgaggagt gaagtgaccg cgcggcgaca aggagtgccc ccctgatttg 360

gtggcctcga gcacctcggt cctaaacatc agcgccgaag caactaacgc ccctgggatc 420

cgtggcgtgg tgggtatggg tcggctgcac gcctgcacct gctctgcaca gcatcgatcc 480

ctacgcgacg accgtactct ccactccagt ccgcagcgat tatcggcggg actcccaacc 540

tgtgctatag cgtatccatg atttccgccg tcgtttcact cgctcgtgct cgtccatcca 600

cccgtaaaag acctgccgcg cgacctaaaa gccgtcgtct cacctctcac gtttcctccc 660

tccggacggg gggatccatt gatggcagca gccagcatgg cgtgaacgaa cgtgaatcga 720

aaccgaatgc accccgtgtg caacgcagac gcagacgcag acgcagacgc agtgcagtct 780

ccccggccgg acccggacac ggccggcccc gtgacggacc ggtgcgagtc acgcgcggac 840

caccacgcga cgcgaccaag attcacaacg tgcagtgcct gcctcgctga caccggccag 900

ccgggccagc cagaccagcc ggcccagagc cccagaggca gggccatgga ttggaagcac 960

agcacctgag agtccgtgcg ccttgcataa atccggccgg ctcgtcccct cctcccctgg 1020

ccgcggccgc gcgacacccg ccgggccctc tccacgcgga cgatcgacag cagcacggcc 1080

gcggaggcgg agtagtttgc atgctacgct ccacgtgatc tctgctgaga gaccgta 1137

<210> 1599
<211> 1155
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128488_G1, chr3:217576424..217577578, Cluster 10

<400> 1599
gtaagaagag ttttctattc aatagttttg catagggtct cattttccct cggcacggcc 60

ctgacgccaa cactggcgaa caccatgggg cctggcccgg gagactgggg gccatgcctg 120

gaaaagacac aagcgaacac cacggcgatc acacacaagc ctgtggaacg gccataaatt 180

cgtaaagtga ctggaggtgc atccactatc cagcgaaatc gccggcgatg ggagctgctg 240

cggtgcagtg tgcagcgccg gaaagcgcgg cccagcactc gatgaatcag tccatggcgc 300

gaacttttta cagcatcggt tcggtcctgg ctgtggctcc catcttccag gcctcctctc 360

caggctaccg gtccaagaag tctacagtag tagtcaccgg tcaaaaaaac tgcaattatt 420

tggatggacc agaccagacc agaccagacc tgtcgtatcg tagtagtagt agtacgtact 480

tactgcacaa cgaacgcctc cggactcccg ggtccaagtc gggacaggaa tgggtttctg 540

tcattctgcg caacactcct gcatgcgctg cacgcacctg ttttttttta acttttaaa 600

cacccgcttg cagagtttta cttaagtact aagtacagta ctacctaatg ggctaatggt 660

taagaaagac gtgacgtgat ggatcatatt catacgtgac tgaggacttg gtggtgcgtc 720

tggttttgtt cgctccgcgt cacgtcaggt cagctggacc gaacccgtcc tagcccaccc 780

ggccctgttt gtctctgtct ggacagaggc ctagagggtg gcacggccat gaacttttgg 840

gccttttggg cttcagggca cacagcggat ccggcacctc taaggccgag tctagcacat 900

tgtacctaag catgtacaaa gcactatttt acactacaaa taatactgtt tatatagtgt 960

aattttaaat aagaggtgag atagaaaact agacaggaga gctgctaaat atagcctaaa 1020

acatagcaga ctttccgaac gtagaagccg ctgggtcctc catcgtgcat ccaatagcca 1080

gtgcagccca atatttaaaa atcaatatgt ggaaggtgat tctaaagtta acttaacgaa 1140

ggcagttccg gttgg 1155

<210> 1600
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130128_G1, chr3:225830670..225831767, Cluster 10

<400> 1600
tgcatgtccc tctcgcgcaa tagcattagc atgggaaatg ccaagaggaa gacgagaatc 60

ttgagaaggc aagttgatgg cacaaaccga catgtcattg agattccatt ctcggtcaat 120

tggccattgg tgggctcgga ggcatgtccc tgtagcgtcc gttcaccttt cagcattgcg 180

tgttgtgtgc gctgcgctgc actaaacccc cagtacacat ctacaacggg ccccgcatga 240

cagccgcaga cacaggcaca caggacgacg attccaccag tgtgtttgtg tggctggcga 300

ccatttcctc ctcctccacc cggacgggat tgcttgcgag attctcccac ttgactgccg 360

agactggcca agggaatgca atccaccaaa tgacggcagc tgacaacgac acggtttgaa 420

aaaaaaaagg agcgaaagga gcttcttgga tggcaacgcc ggttactgat ggtggatgaa 480

atgaaacgag agccgtcatt cgggagaaaa gaaaatcacg ctgtgccaaa aagaagtcga 540

cgagctgtca cgggcccaac tgtttgatcg cgatagctct tttgcctgtg tgttggtgcc 600

tggtggtcct caccttgtcc caaatttctt tttagcgatt tgtacgctct gacaacgacg 660

ccttcgctct agtttatctt acactatcag gcgccggctg tcatgggcac acaagtcacc 720

aatgtccact ggctgattag aatacgtagc agagcaaact tctccttgtc agtggatcga 780

gtgaggaagt cttgtcgtcg taacaaggga aaacatgtcc cactcagaat atagcctggt 840

atgacaactt tctgcaatgc aaaacgtctg gatgcaatga actctcttcg gcgctacttg 900

cgacgaagag gaccgcatgc taccaggtat catcagggag attaaaggac cacatcatta 960

tgaaggttag acatgcaaca agattcttca aaaactgtac aagaagggat cttctgtgtt 1020

cgaatattct cgctgtccta gtaacatctg tgatataaaa tgagcatttt ataaatatat 1080

attttatgct atatgaaa 1098

<210> 1601
<211> 1000
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130272_G1, chr3:226773985..226774984, Cluster 10

<400> 1601
ccagcaagca agcaagcagc ttcgcttttt atccgcaccg gccatggcca acgcgacaag 60

gccgaccacg acgtccgtct ccttttgtgt ggcttgtggg tagccagtta gccactagcc 120

agacagcccc cggctgccct tcggtcgtca ctcgtcaggc acacggagcc gtgacggaag 180

acaaccgagc gtggcgacgt cgcatcgcat gggactgacg gacggacccg atcgacgggg 240

cggggcctcc ctcgcttcct ggccggcgcg ccgcggcacg gaagggaacg tgcccgtgcc 300

agtgcccacc ggagagcatg gctggtctgg gggcgaggct tttgtctcgt ggtagttgcg 360

tgttggtaga cagagacggg cagacggcat gggcaccgtc atttggcacg acgcttggac 420

ccaccgtcct atgcatgcag catgcggcgc gatggtccag tccagtccag tctcaataat 480

ttttcgtgtg tcaaaggccg acgaagatta gaggattcta gctgcaaatc tgcaagagat 540

aaagaaaaag gtgggagaag ccatttcaat tttgacaaag tttggcctct gtttcggctt 600

gagtgctcgg ccaaatgttg catcgtgggc gcgcctcgcg tgcgccgtag gcctttctgg 660

cccagtatcc tatgttcctt acctccatgg gccgtggcct atgttgctac ctctacggtg 720

cttgggccct agcgtcacga taggctcgtg ccaagtttgg gccctcgtcg tgaagaaagg 780

tccttttctt ttttgttttc tcaaaaaaaa aaaagtgcgt agacaatcat aaaaatgcca 840

aactactttt gttgcgtcac tctaaactag atctacacag tagatacata atgctatatg 900

ctttagcgta acctaattgg tgtagtcgca tatctaggtg ttcttgataa attattatat 960

gatgctttta tttaattcga cgttgaatat gcatggctag 1000

<210> 1602
<211> 1314
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132101_G1, chr4:3739362..3740675, Cluster 10

<400> 1602
gacaagcaat ctggctagga atagttctgg gtggccaatc cccaagaact gaacatgccc 60

taaaaattga aaatgtaaaa aaaatcccgg cctttctgct accctcctgc tgtgtcaatg 120

gagaggtccg caataatttc caaacgctgg gcacgtacgc ctttttttct tgtttggttc 180

actatgccat ggttgatgct tgcccttgtc ctgtccttgt ccgcaacgca agcaacagtt 240

ccaagagagg gttgcgatac cttgcccatg tctgcaagcc atccccggtc ccaatcccaa 300

acagtaaaca ctgcaggcac aagcaaccgg cacctggaaa gagcccagag cctagcataa 360

atagcaatgc ttgcgctccg gcaggtgcag aaaaaaaaaa tttgctgggc ccagattttg 420

ttcaaaggtt gcaaagctgt gctgcgactc gaaagccatg acagcagggc tctcgagagt 480

tccaaggccg actgcgagga acatgactga tttggtgatc aggaattatt ataaggagga 540

attacaaggg tgacatagga ttccttccta taaatcctct gaggattcat gaccaccaaa 600

tcagccgtta atgtgtttat ttgtctcata tgagaatgta atgtgcagaa tcatcaatga 660

tgatcatgac atgatcatat atatgctcat gcatgtatgg tgcatgcata tgcgcattat 720

tctggctgtt gtactctttt tgttctgtcc atgcacgtac aagatcagaa acattccgtg 780

caagtttgtt tgtcgatctg gctttcatgg cgccaagttc gagggctttg cattcaacca 840

ctgtgactgc cgtgctctgc tctgctctca gtgagctctc tctctctctc tctcacacac 900

acacatggac atgggacggc tgcagaactg ttgcgagcct gtcccctcac tctcatcctc 960

atgccatgtg tgttgctgtt gcaatgctgc agccagcagt ggtgagaaaa ggagttttct 1020

ttcaccgggg cggcagcaaa ctgatgaatt gagcacagct gcgactctct gcctgaacca 1080

gcacttggat cgtgaactgt ataaccactg actaaacctc ggcaacgaag gcgacgcacc 1140

atctgcaaac gcatggagaa gtgcctgtat ttttttttt tttgtggtgt gcagtgcagc 1200

tgcagctggg atctatggac aggataaggg tggttaataa tgtttaatta gtcgtggaac 1260

agtttggtgc acatctttag gggccgttcg ttttttttccc gaaatggagg catt 1314

<210> 1603
<211> 1249
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_135697_G1, chr4:20176047..20177295, Cluster 10

<400> 1603
agtctttgag tccatccata aatatgagga tagcacaaga taacgaaaat gcctttctag 60

tgaaattaac cccagtaatc agacttgttt tgaagttttc caacttccaa taaagcagct 120

aggcgcacca gcccaccgcc gcgccaccac cactgccatc gtgggggggcc caccgctcat 180

taactcctcg cgcaataaaa gacacgagcg ccgagtggcc gctcccggcc ggcagccgca 240

cgtcgctgcc caacccaggt ccaccgcgcc cgtatctacc ctcccacctg cacgcgcggc 300

cgttccttat tcttggccca ccggtcattg cacaacccga gcggagcgta agtagatcgc 360

cggaccagca cttgtgcgac aatgaaggaa aagaccgggg tccgcgcggc tgcgaatgga 420

gcctcagcac gcggtccgcg tcactggcag gtggggacca cggggtccat atttctgtgg 480

gaccgcacgg tcagcgaacg acagtggaag gcgtcggtgg aggaggctgg gcccggtccc 540

ggcggcaggc gcggcacgcg cgaggaggag gaggaggagg gggctgcggg gcccgggtcg 600

ctgctccttt gacgccccag gtcgccgcgt tcccacacct cggccgcacg tgcggagcga 660

gctgccgcgc ccgtgacctc tcctctcggt caggcgtgcc tgggccgtcg gtgggcgatc 720

gaacagacgc tgggacaggc agcggaacgg gaagagctgg tggtattcgt agggtggtat 780

ttccccctgc cattgctacg ggtacacgcc tatactgacg gtggggcggt ggcacgcagc 840

agacagcacg gctttgggcc tttggccttg gacaacacga tcttgcctca ctcattgctt 900

ctttcggttt gaatcctttc gggtcgccat cggatctgtg gcggatctct atttgctggt 960

gcatgcatca tgtgtgttct ttctagtccg tttaagctct caatgttggt gaagtatagg 1020

ttggttaagg tgtgtggttg aggttagtat atatgaacaa catctgttac cgatcgagaa 1080

gtctctctct tctctgctgt gtggtttgaa atgtacttgt atttttttgta tataaccttt 1140

tagtatagtc tcacctcttt gtagagataa aaacgaatga gaaaattctc atgtcatcct 1200

atgcataagc tggctgttgt agctcgtttc tactatctct cttctcttc 1249

<210> 1604
<211> 1246
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14037_G1, chr1:77149184..77150429, Cluster 10

<400> 1604
gcccacgcca tatattatat atatctaaaa tgcccagttg tcccatggtt gtttcttgca 60

cgtaaatcct cccgatctga ttgacaggtt tccccagaat tttcgaggtc tgcagctttt 120

gccccttggg aatatttttg agcccggcgg ccgcaacttg gcgacgggca tctcgtcctt 180

ttccgccgtc cctgtgcgct ggcagcttgc ggctggaccg gacccccccc ctgccgcctc 240

gttcctgata cgatgcattc tgctgcgttc cgccgcctgg atgcattgca atcccatcac 300

gcctacggtc ggaagagata ttttctgctt tttttgtact cttgaataaa gtacagctag 360

aacacgcccg cggtgatcgc gagtacgccc ggcgctccgc catctcagga ttttcgcgat 420

cgagtacgcc cgccaaccaa gcggctccta tcacgccgcc actagatcca gcgccttcgc 480

cgtcgcggcg gcgaccggcg ttcgtgcagg caggacaagg tgaggcaccg ccgcgccgcc 540

gaagtcgcag agcaggcggc caagagggct cccccgctgc tggacgcgga gccgcggacg 600

gcatgatggt gagcgccggt ccttggtggc ttcttcgtca acgccgcacg gctcgcctca 660

ccccacccca atcttctccg tctccctgca ccaaaaattt caaaaaaaaa aaagtaccaa 720

tagtgttttt gagagttcgg ggcgatcggt tatagatgga taactatcct actatgatgc 780

cactacgtct cgccatgtag agagcatgac ccaccacacc gtcgcggaga cattcgtcgt 840

cggaactaaa tttttcatgt catacgcacc aactactagg attgagagat atagatgcta 900

gtgaacttag acgcagcaag gtggtggtgc accgtcgagt caaaggaaga cgcgtggatc 960

gtctaccgcc atgaccacat agtgttcgcc acaataccac gctatgtatc gtctgacata 1020

ttggctagtc ttcaggatag gagaacactg ttaaaagagt gggcagcaat taagcggatc 1080

cacattgggg tctagcgggt atgtgaggcc acaagcagca ggtctgccgt gggttcgtcg 1140

ctttggctct acatcgtatg acgactacaa gggcatgttt gtggtggaca ggccctcaac 1200

cgagaccaat gcaagtgctg cgacaatatg gacattgggc cattat 1246

<210> 1605
<211> 1349
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155801_G1, chr4:151407646..151408994, Cluster 10

<400> 1605
ccgtctggca atggcatggt ggtggcgcgg catagccagc ccgagcgccc gaaggtgtgt 60

ccagctcatg cgtggtccgc ctacctagcc cgacgcacgg ccagctcgtg cagcacagca 120

gcagcatagc tggcctggcc tggccaggcc cagcccgacg gcgttcgtcc aacgcacctc 180

aacatttttg gtccaggtcc acctactgtg actgtgagag cggcagatgg ggggaagatg 240

cgtacaccga ctgattggat atgtgtttat atatgtattt aagtatttga attctcaaat 300

cgatagattt atgcgtttga atccatccat ataccgcaac gcagtatggg ttgccctccg 360

tgtgcctccc caccactgcc ttcgattcaa atacgtacga attgctccaa cttgtacgat 420

tccagttcca gttcaaccat gcatcttcgt cttctgaatg aagaggcatt catatcatct 480

ttgtggcccc ctatttaagc cacattattt accattctat atgcccctgc attatatcct 540

agctatagat gtagcatttc gtggggatga ggtgattcgg taaagtggcc ggaggagtca 600

tgaagggtct agtgtagaag ctagcaagtt ctggttggaa ccgctgaaca aaccagcctg 660

ataatttctg catcgtacct tgcgcggacc tactctgttt gttctatgat gccacatcgt 720

cgtatgattt ggttttgctt tccattgtca agcaggcagg tagtagaggg ctagaaggca 780

attgctgggc ccctgttttg gtggaccggt tgaggcaatt atgtagcgtg tttattagct 840

acgtactgta gtactatagt agcacgtact ctcactagta caattttgct ttgacctgtg 900

tttagagata aaatgtgctt ttttattttg gtgtcaatca tttgtggtga gtgccgtcgc 960

gcccagacct gaaatttcag tgctagaacg tgaccagcat tgagcatttc cagcaagatg 1020

cagcgtttca taagtagctt ttgttgcacc tcaacacata tccggtcact gtgtttacta 1080

ctgtttcctt tgttttaaat tatcggaagc tctaacattt tttttatctt atattcagat 1140

acaatgtata tcgatacatt cttcgaaatg ggaagtggtt tcaatatact atcgcttccc 1200

tttacagaaa acatatcgat acacattata tcgagatata tgaaaaaaaa atcatgtgtt 1260

taaaaaagtt ttaatagctt agaatttaaa atggagggag accgagagca ttctgcaatt 1320

tggttgctcg gaccagtaga gatagatgt 1349

<210> 1606
<211> 1295
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156994_G1, chr4:156971837..156973131, Cluster 10

<400> 1606
gagtacttgg gtgttgggtc aaccaatcct cagcacctgg gtacccttc aagtcaaatc 60

agtgagctag tttagtcgaa aagataagag taaagtacag tagcggttta taaatttgac 120

acgttgtgtc acctaaccct ccaacttaaa aaatcagaaa aactggtcct cgaactttat 180

tggtccatgc aaaaccatcc aaatccgtat ttgcagtttc tagatgttcg tggaccgcta 240

atgcacttta aagataacat atttcgtatg acactacata gtggggattt gggttcggca 300

ggctgctgtt gtggcggctg gctggagcag ctttgcacac tgatagcttt tgcaacaaaa 360

aaccacggat catatattat tcatcgacgc gtctcagaga attccatagc ctatctggcg 420

gcatttgaaa acgagatctt ctagagcgtt tgttgcgcgc tccaacatcg tcggacgatc 480

ggatcggatg cttcctcgcg agcggggtga aaggcgcgcg tgtcctgata gcgaaacgag 540

gtcggctgtg gaactaaaat taaaggcgcc acgcatgaat cggggcggaa gcttcaccgc 600

tggggccgag agaggagcga catgatcaca cgagtcgcgt gcttggaagt tcttgccgcg 660

cggtcaatcc tcagccactc ggctcaactg aggcgaggcg agcggcgagg attttttttt 720

tgacccgcgc actgaggtcg tgtctcgaac cacatctccc tcgctccctg cactacgaat 780

gtagatggac gggcctgtgg gcaagttgcc gggagtcaac ggcctgttac gtttgctggc 840

ccgcggttaa tggtgtagtg gttattgtat actcttttca aatttaagag gttgccaatt 900

ctcaaaccct gcgcgtgtag tactttctct cgggagcgaa tctagacaaa aacaaccatc 960

gatgacatct ctattaaatt ataaaatcat taacttattt aagtgctaaa aaacatatat 1020

tctaacgaag attactaaaa ttcattggta tcacatgaca ccaaaaaaag ggcctagatc 1080

caccctgttt tctctcggcc atacctctta aattccgtca atgagttaga tttatagttt 1140

aatctatgtc aaatgaagaa atagttttcc attatttctc gttccgttat tctcttccat 1200

gactactcgg ccctcacatt agcccatttt actaggagca gtactagtat gtgatgaatt 1260

agaaattaga gttcggttta ctctcccatc catga 1295

<210> 1607
<211> 1227
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157215_G1, chr4:158130203..158131429, Cluster 10

<400> 1607
ggcgtgaaaa tcagagcggc ggtagcctca cataggtgtg gtcagagcac gtgacatgtt 60

tctctactcc cgtggattag gattagactg gaccgagagt gtgcgtgggt gaatcggtcg 120

tgacgggaaa cattggttca cataccaggc agttagtttt cgtgctctgt ttaatattcg 180

cggtgtgaaa ggcaaccgta gccgagcaat aagcatacaa gggcgcatat gcaccaatat 240

tgcaataata tatacttgta ggcagctata gctgtagaca tgtcaatttg gcaatatagg 300

gaacacaccc ctacgcatga gagatgatat gcgtgcatgc aactgtctgc gtcgatcatc 360

aacaataaag aaagaggagg agaggagaac tgtagggcga gcaggagaga gtggatcgga 420

agaaaagagg cgtgcggcgt ggaggaagga gttgaagtag gaagaggacg atcgacgagc 480

cgacggaggt tgggggcgtc agcgctagct gtgcgtgccg gcatgcagct gatgctgcgc 540

tgcccgttga tctgcccgac ccgatggatg gacgcgcgcc cgctgatata tgaccgaccg 600

actgaagtga ccaggcttcc atcttcacta gcttcctgct gcatgcctct ctactagctg 660

cctacttttt gtttcctagc ttccctggcc cggccggccc tccacacgga tcgatatccg 720

agcccgactc ctacgattcc gatcgatcct cccgtttttg taccatttcg aaatcaacta 780

cagtgcgtag tacaagtacc agtctaccac gggagagaga gagccagtac taccgtggca 840

ttgatcgtct ctatatacgt acttggattt tcgctctaac aagctgcgaa cttgacgtta 900

atcgtggtag gtggccggca aagacctctc cgatcctagc taggttatga gagcgtcgtc 960

agagcatgca atgcttcgta cgcatgcacg aggcgcaacg cgcaagcggg tggccggcaa 1020

cccgtacgta ctactgcaag gcaagcagca caagcaacgc agcgcgctca gagtgcgcag 1080

agacactagt agctcgcgag cttgcgttgt tgaccgcgtc gtcgcgaccg ccaggcgcgg 1140

ccgacgccca tgcatggcca tcaggcatca tcagtccatg caatgcaacg cagggcactg 1200

atacgaattg ggagaagaat ccagagc 1227

<210> 1608
<211> 1047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158719_G1, chr4:166860977..166862023, Cluster 10

<400> 1608
gcactgaaca gatgtaccca ttcaattgtg aacgttagag gcccgaatgt tacattcagt 60

tattgaaaaa gtggccagaa actcaaatca aaagggactt gaagtattgt aatatttatg 120

actttatctc tagagttaac acacaataac ttcgttatat ccaaatatta ggaacctata 180

tatatatata tatatattgt ctcgagcatg tgaaaacagc cttcaaagac gagtagacag 240

ccgaacacgc gagcaggaaa cagacactgc tcgtgtgctc cacgttgcag aaggactgat 300

gattgcttcc ctcccgtccc gtgctctggg ccggatcgac ctcggccagc acacagcagg 360

aagattcgac ggaaacgaag atggcgagca cgcgctatac ccaatggagc gccggtcggc 420

ccctacctgt cgggactcgg gctcgttcca aacgacccat gccgcacctg accgtatcgt 480

gcgctgccgt tccgttggaa ccggccggcc aaagttgacg cgtcccacga cggcaactat 540

aacccgcgcc tggcacggcc agccagccca gatcgctatc ctgttagcct gtcgccacct 600

aaaacccgcc cggcccacga gatctccagc ggcgccatct cctgtgcaag gggcaggcat 660

gtggccgtct ctgtatgtag gtttatgact tatgagcaag ctaatatact tgctactcac 720

cgtacactgc aggcggttgg acgtgggagt gagcaactgt gttaccatgt ggttttgtgg 780

gtccttgctc gtaatgatgt gtctaatcat gtcccaaata ttagtactta ctgttgatgt 840

tattataaca aaagcactgc cgtcccgagt tagctcagca gaacgtacaa aaccaaaacc 900

catttcacgg cggcacagtg ccacacggga tccggatcgc cggttcactt cagcctggtg 960

gggcctccct ccaggcacag ccaggtggac accagtctcg ctgctatttt tctagtcccc 1020

accacccggg tccgctccgc tgtgccg 1047

<210> 1609
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161072_G1, chr4:181893404..181894548, Cluster 10

<400> 1609
ctactagcta gggagctagc acaaaggaag atgtgggttg cttgtgacgt cgatcggggt 60

cggggcacag gcacgtgtgg gagcccacgg gccacggctg ccttccgcgt tgggcgagca 120

tgcgcatgca atcgggtccg ccccatgcat gcagtaaaca cgcgacggcg acgttcaact 180

tggtccgatg ccttgcacgt tgcaccccgc tctcgtgcgg tcctaccaca ccgttactac 240

tactatgagc aacttgccat tggctacaac ccgactctgc ttcgaccttc gatcgcttca 300

cagacagggc tgtcagggcg gacaccggac acgtacctgc tatttaacga tcgtacaatg 360

ctaggaatta aggcatttta aaatttaatt taatgtagaa ttataatata catatacaag 420

tgaaatatta atactctgct actcacgaac ttaacaaata tacaacatga ctttgctgag 480

ggtccgagca cccattacct gttcctaatt gccttttgcc gtaccttctt taggctctgg 540

acccaccggg caagcttatc aatctttagg ctagctacac gaggatggat cacactccta 600

catcatgcga atgcatgcct ccatggatgc atgaatacta tacatgcatg caacacatcc 660

attgttgatg actttcacct atagtttaca caaccaccca gcacaagtgg cggattcgtg 720

atccatctct ggctggaggt taattatctt ctttttatc atattttcca aaaaaaaatc 780

cgcctctcct cttcctcttt ttctctctct ctctcttcct catcttcttc atttctctaa 840

cttcattctc ttcttcctcc ctccccttc cttcctccac tgttttctca tgcgcaggga 900

ggctgcagcc cctctaagac ccgccattga ccccgcgcat accacaaaaa agaccggttt 960

tggaaatggc agaggccaga gggataggat tcggaaatga ggtgccaaac atgcacccta 1020

tagcaaatag gtctgtaata agtatgtgga gaaaacatga gagagaagag tagagtacta 1080

gcttatataa cggggttaga cacaagaata taaaaaactt tgtaaaagag ataagtcgag 1140

aatgt 1145

<210> 1610
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161722_G1, chr4:186051971..186053005, Cluster 10

<400> 1610
tctaaccaaa cggggcctaa cttgtggcct cgtatgggtc tcttgaagaa tggaatgtaa 60

aaatcctatt ttgggtaatt tgcattggga gaactcattc tgtgacgtac ataaatacgt 120

tttcaaataa gagattatgc actagcagaa agtaattttc tctcttaaga taaataagca 180

acgaatataa ctttttttaa tgagctttca acaaaattct tggaagaatg aataatgtgt 240

gtgttgcatt cccttattcc tttaatttgc ttgaccgaga tctccagcag ggatttgaag 300

cgattgaaga tgatgaagga cagacgacga tgcccaagtg gattagcttt tgtcgtgtgc 360

aagtggcagg acagatgatg ggacttgctt gccatcgagc ggcatggcta tggcggcgag 420

gctaccggtg atgtgcatgc gctagtcata tatatatacc gcgcgcgggc cggggaagag 480

acgactgcgg ctggatagat ggagtttttc gttctttgtg gcatgcggca cgtggcgcga 540

gctgcttgat gcagaggttt gcatcggagg agtttgtgtg cttctaagag agcaaggtga 600

gcggatcaat gctgcatctc aggaggctac gagacatcgg gcttagaact gcaccgaaga 660

aggaagaaca agctaataat gtggcaaata atttcttatg tggctcgaat tgttgtcaag 720

ttctcggtgc cacctatgca gttacgtacg tcgtcgtcgt caagtatggt attggattca 780

actaactctt gtctaagggt tagtttggaa agtcaaatct ccttcaaatc tcgaggggga 840

tttgaattcc taaactagcc attaaggaga gcagacatgc ttcgactaga gaaagaatct 900

agcaactttg atccgttcag ccctaaatct aaccgcgcac gctggcaaat ttcctggatc 960

cagcatatgc ccttagcttg atggtagaaa gtttacagat gcgatggaga accgacgcgt 1020

attaacagag gtggt 1035

<210> 1611
<211> 1089
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162954_G1, chr4:191958011..191959099, Cluster 10

<400> 1611
aacacgagaa gcacatgagc tcgatcttct ctttttttt ttaacaggga cgctcgatct 60

tctctttggc gtcgtccaca ctccacaacg ttagaacgtg cgtgtcgttc catgtgcgtg 120

cgtgcgccca caaacaagca tctggacaag caaagagtgc agagtactcg actgaagctt 180

gctcgacact ggacggaagt ccaagcgcat gccgtggaac ggagactgac cgagcgacga 240

cgaccatgca tatgcatggc gtgcggtggc atcgctgtca gtgcatgcat ggaagcagga 300

acgaatagtc ggcacgcaca cagacgacga gtcgacgacg acgacgacaa cgatgcggcc 360

ggcggcggcg actgactgcg tgcggtttgt aattgactgg tgcgctatcg ttgtgttgtt 420

tgttcgccgc cgccgccgtc gttttctggc gctgcggtgc cgccggtccg tgcatggcta 480

tagctcgcgt ggcgtgcgta cgtatctctc tcccgactcc cgactctctg tggccggccg 540

ggggtctgcg gtctaccatg cccatgttac cgtgcaatta ggaaatatac agtgaataat 600

gtcttgattt gtgccttcga ctaaacagtt tagagagctg aatgtcaaag acacatctcc 660

atggacgaac cgacgacctg aagacaagtg gggacaacgg ggtttattta taaaatgtct 720

ccattttaca gtgaagacaa gtggggacca acccgcaatt aggaacgggc agggaggagg 780

aaaaggtagt gctaactgca gtctactagt ggagtagatt gaaatgacaa ggaaattaaa 840

gtgtatgtat atatattagg tacggtcaaa gccttacaca cgagggcaca tcagcacctt 900

ctgtacgtct tctatactac tagctttgtt tagatataac tgaaagttag ttaaaactag 960

cgctatctat tagtgtgtat tcaaacatga ggactagcta ataggtgaac tgttttttgt 1020

tttaaccaag tctttgacta gttgttaatc aaccataaca aatttagggg gtgtttggtt 1080

tctagggac 1089

<210> 1612
<211> 1078
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_168_G1, chr1:981361..982438, Cluster 10

<400> 1612
atcacaaaag taataatata tttgaactag ttggtcctac aagagtattg tctaaaatta 60

tcttacaatt taataaaata ttggagaagt gtatatatct ttgtaatatg gttagagagc 120

aaattagtta aattaatgat caaaatgact attaagggca catacagaca cagtgtatgt 180

accagtcgta tttattcaag cctttttac gaaaacacct ccgtttgttt cgtcgtctga 240

tgaagcgatg agcacgggct cgtgctcaca actagcagca ccaccagaag ccacggttgt 300

ccaggtcaat attataagtg atatataatg acagtttgtg ttatccttca caaattttaa 360

actatgtaga caatataaat agacaaacca ctatataata tgtttgtttg tgttgtctat 420

atacgttttc taatatatat acagacatca attgtttgtg ggctgtaaac acagcagtca 480

gctaagtgtg gcggtgatga ttgcgatgac gattattaat ccattgccag ccggttcgtt 540

gaccgccacg tcaccgtcgt cgtcttcctt gcgtccgtcc gtccgtcctc tccatcaatt 600

gcaattggtt ggaaggttgg agagatttga tttgctggtt gtactactgt cgaaccccag 660

cccgtccgta ccctacgcat cttcctctcc catccatcca ctctttgctt catcgatccc 720

cactgctgtg ctgtgctgtg ctgcgtagct tatccgaggg gacaggtgag ggagtcgagg 780

gggacggcgc atgaaagaaa gagaccgagg gggaggcggc gagagcgaga aggcaccgcc 840

gacggcgaga cctaggatgc agacaaggcc aaatccacat cgatggagcc aagcccgatg 900

gccgttggtg ttggcggccc aaagaggagg tggacgcgca gtcggaggcg gaggtgcgta 960

tgcccatcgt cgccatctag ctgcgcctcc ttatatgccc ctccggctcc gattagctta 1020

cctccatcga tctccccacc atggacgcca acgccaatgc cctcggcatg gacgctat 1078

<210> 1613
<211> 1009
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170952_G1, chr4:233216961..233217969, Cluster 10

<400> 1613
ctttgcacc ccctctcctc actaatgaac cacaaaggtt gatgtcgcaa tcagcttgat 60

gcagtgcatg atcttccttg cttggacact gcctcgagtc accggataat gcccattaaa 120

actgtttagg tcttgttcgg ctgcgtctga acgtaaggag attaaattct cttctattta 180

attttaatta aaatttttta catttaattt tgactatgaa tagacttaat cctcctcaat 240

ccctttgatc tagacgcagc caaacagacc taagacgacc ggtacattta tgataaggac 300

attaagaaaa aaattaactg agaaaaggta agggaatcta tgtaaggtat cacatttcta 360

ttaggtatct tagctgacca ttttttttttc tcttcggttc cggtaagatg agggagctcc 420

gccggctacg ctaaacctgg aggagctgtt gacgccgcta tttgggggcc caagaaggcg 480

ccgatacgag cggccatctc caacccttttc cggtgctctg ctgtctgctc ctcgctggaa 540

gtgaagaggg cgtaccggaa tattcagaaa cgttccggag taaaacatcg gaaggcaccg 600

cccgcgtttc gcctcggctt cggggctccg acgcgcgcgc cacgttccgt ttccttcgct 660

tgctctgctc atgcgttttt tgcttccgct gccgtgcaaa ccgtttaacc gctaaacaac 720

agttcttcag gtttttctta agtgtttagg tttagttaaa ctctgttttg ttaattcttt 780

ttgaataaaa cggaaaggaa aatacggaaa ttcgagtaca gggggcatgt tccctttgga 840

gtggacacac ctttggcgta aaatctgtac tgctactgcc tactaacgtg tccagcgtaa 900

acattacttg atctgcgttg gagaaagcag ctcgaagcca aagctaggta cttggcaact 960

aaaagattct cccctatata tatagcgcct cgtacctaaa tacctaaat 1009

<210> 1614
<211> 1012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172761_G1, chr5:2256315..2257326, Cluster 10

<400> 1614
acttctattg cactggccgc acagtggttt tctagcatgg cctactctaa ccctctctac 60

ctgatgagga caagcatatg gatggatgga tggatggatg aacctccttt tttccatggc 120

aggcaatggt ggtggcgcct acacgcgaac gtttttaaaa tgcaagaatg tagccattgg 180

agtaagtgat taattatcca tacattctgg ggatcatgat ttgaggcagc cagtaacgag 240

aggaatacct tgccgctctt gcattgcatc ccagcaagca cgcacgcact gccttctccg 300

gtgtccgtag tgccgcttca catcaatcca tcgccaaggg taaattttct atctgggttc 360

agtcgttaac cagcacatgc acgttcccat acaatcccga attaccgagt gccaatccgc 420

atcaatttac atcgctacac gagtagcgta gccaccccca ccttgacgag agatcgcgat 480

cagggccaaa gctgcctgcc actgcaaccg gtgaagagag aacgacgcat tggattctga 540

tgctacgagc gagccaggtt tctagaacgg cctgcaacgc atgcatccat gcttgctttg 600

gcctgcaaag agaacacaca cacacacaca cacaaaagcc ggtcaatgca tggctatgcg 660

cgttctcggc gaggggacag cacacgattc ggcagaaaac gtttcgcgtc gccgggaatc 720

ccccccgtcg gcgcagacgc gcacttggca aatcacaggc aagactcaag aggcgcgcat 780

cgagcgagag tctgcttcgg gctgaaaaga ctggcagttt ttttttttctt tttttggtgt 840

ggacagaaca tgttcttcgt cttcctccct ccttccctcg agcgagagtc ttcttctctc 900

ggcggcagct gcaggcctgc aaatggaggt cgcaagttgg taaacacctc gcaaatcaca 960

aggcgcaagg atcgatcccg gtgtcgctag cagtggcgcc cctgccttat tc 1012

<210> 1615
<211> 1354
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173534_G1, chr5:6609408..6610761, Cluster 10

<400> 1615
taaaaaaaag tgtgtgaagg caggtgttgt agttcctgcc gctaagtgct aacagttgct 60

acttgcagca ggagtcatca ataatctacc cacacgctgt agcgagccag atttccttgt 120

cgatctatgg gcgtatcggt caggtttagc agggagtagt agtagtacaa agtagaaacg 180

cactacgcta ggcaagtatg catcctggct gctttgagta aaacaagcat ccgttgccag 240

tcgctaaact ccacgcttgg caacagaagc tgtgaccgtg aggaaagact gggactcacg 300

agaccttctc tcccctgtgt gtcacatgtt gcagtcagcg tggttaatgt taataatctc 360

gtctgattat aagccctgcc cagatgatct gatgtactag tactagtact acgtgcggcc 420

gcctttattc catctcgcag tttcctggtg agcccatgaa tgcggctgga gtagtgacgt 480

cgcttgggct cgaagcatac gtaccgctcg ctgtccactg cccgctgggc cccacccgcg 540

ccattagtta gtgcgacgga acggaacgcc accggaacga tctactagga gtctaggacg 600

agttctgtcg agatgggtac tactactctg accgaacccg ttcgcttggc cgattgtgac 660

gggcctttca ccgctggacg cctggaggac tgccgccagc ccgcgacgtc gcccactggc 720

gcccgccgcg tggccgtggt cgtgttcgtg tccgtgtcgt cccgtcggat gggcgtgggg 780

tgggagtgtg ggactatggg agggcgacac gcaaacaaca cagacgggac ggcggaggca 840

gccagcgttt tggcttcgtc ctcagcttcc tttcctactc cgccgttgct cctgctctcg 900

cggaatccga ggtcggaatg aagcccaacc caatccacca gacccgaacc cgatacaagg 960

gtggcgaccc ggatcagatt acgcgaatag tagtgccttg attaagtagt gtcgtgatca 1020

gtgtgtagtg ctcgcacgct gtctactcct cgtgatcctg acaaaagggc gtgcgcgggg 1080

ctcacatgtc aggcccaggt atcgggacgc aacgcaacca cccacacaga cccaggccgc 1140

gcatcgacat cgcatctact gcctactggt actcacaaac ccgagctgca tgcgccactt 1200

tctcagtctc agggccgggg ggtgggcccc gcgtccaggc ctttgagggc atctgcggcc 1260

gcggccattg gatcgaccaa aagaggcaga ggaagagaac agcgaatacg ggtacagtac 1320

agcgccagta cagttgattg attgttttct ccaa 1354

<210> 1616
<211> 1086
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174619_G1, chr5:13299668..13300753, Cluster 10

<400> 1616
ataccaacgc agcacgcaga gacgctgatc gcaagccggg attttgccga tgctggtgag 60

accgtgagag cggccatgtt ggcccctgtt gagtgctgga ctgctggccc ctgttgcctg 120

cccaacacac agctgaccga tgccctttc gtttcttaca gattgggtgg cctaaatagt 180

ttctgaccgg attactttac taatttattg ataaactttg atcggataga acggtttcga 240

gtgtaatcga tataaaacga acaaggcaat tgcacagtcc caactcagaa agccgaacca 300

ttttccattg ttgtttgttg actttggttc aatataaacg cacaaatcat ttcaacgaaa 360

gacgtactaa ttttactatc aacgtgatcg agtttgtcga atctttaact ttttggggtc 420

ctccgccact gcagtgcgga gaatcaaaga ccgccacatt tgctactctt gtacgttcca 480

aaggttggta tcgactcgtt ttcgtgctct ctggctgcac caaaaacgta cagtgcgtag 540

aatgctcagc agtgatcaga ccaatatatg catcgacggt tacatttgtt ttgttacggt 600

ttctcaagtg cctcgagatg catggtatta cctaaaagat ttctgtcctt agaactcaag 660

cccgatcgac ttctgtctca gaagattcgt acatcgaaaa tcctaccaag tagatatata 720

tcgaaccaaa tatccagtgc caccttagca aaagtgctta ttagcatctt aatacagaca 780

tgggcttctc cacaaccata gtatatacag catggtcatc tagcattaat tgaagaccat 840

taacacaaca cagcaagtca atctctccaa ccaacttggc ttcaccaccg acgacgaccg 900

ttaggaatac attgtcagtt acctaatcag taatcacaac accccagatt gatagccaat 960

ccggtggtgc gtagcttggt actcgcattt tagtaagaag ctttgttcgg atggttattg 1020

ttcggttaag atcagcggca gattcaggaa cgagtttagg gagaagctga ttttctaaca 1080

tgggcc 1086

<210> 1617
<211> 1262
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174680_G1, chr5:13652873..13654134, Cluster 10

<400> 1617
tgtgccaagg aatcttatga tactcccttg agaagaaaaa aaactggatc aacagtattt 60

ctaatccttt ggctgctgat tttaaggacg taagctggag ctgcaaatgc tgtatttatt 120

tttttataca acctgacgca gcagcagaag ccagcagccg aacgaggatc gtgttcaaac 180

ttcagcgatt cagtcagcca tggttgccga ccctgtacta tggttccggg aagcgaaatg 240

gtccggctgg accaagtggc acgagtacga cccccacgac ccaagcctct cccgagtccc 300

gaaacagaga ccggggccgg cgcggcgcgg cgccgtgcga ccgtgtccat tgatcccttc 360

ccagcttgcg gtcgtgatcc cctggccgga cgccgggccc tcacgtcgtc cgcgtcgctc 420

tcagccgcca tcccatgcag cgccgcaatg ctgagagccg ccgaccgcga ccagacccac 480

cgcgtccaag cagctcccat cggccatcgg ccatcggcct atggcctatg ccccggcgaa 540

ccatcaccac ggggatgcgt cacgtactca cgtgcccttg gtaccaggaa atgctgatcg 600

atttgattcc tcggaaatct gcagcatatc aagcggcagg cccaacaaaa ccagtgaccg 660

tgagatctct gtacttgcga acccgtagcg tcggtcgccg ggcacgagca ggaagacgtt 720

ggagcgtttc atcaaccgtc cggtcaggag cagaaatcca atcgggtgag tggaaggatg 780

aagaagaggg ctccaattat tcaagctggg caggagttcc gtgcatgggg ggttggatgc 840

cgctggctca cggcggtatt ccggtcacag gagtgcggcc tggatgtggt tttggcgccg 900

gcgataaact agtgccatta gtggcggagg tctgccattg ctgaagggcg ggcggtgatg 960

tacccaagcg aggaggggag ctaacaaaaa aggctgagtt ggtacaccac aaacctttag 1020

ttttggcgcc ggcgataaaa agagtgccat tgactgaatg attctgtaga agtcgatacg 1080

gaataaagtt aaacaaacaa gctattagat gatactactt gtattaaact tgggtaagtt 1140

tgaactttat atacgatgct acctgtacag tgatgtatgt acccaagcga ggaggggagc 1200

taacaaaaaa aggctgagtt ggtacaccac aaaggtttag ttttatgcgt gctcaccagt 1260

ca 1262

<210> 1618
<211> 1000
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174758_G1, chr5:14108767..14109766, Cluster 10

<400> 1618
cctgttctca aggtatcact aggggcctca ggccccttc gagaagggct ccggaccccc 60

tagcggtcct ttttcacctt acttcatctg ctcttgggcc cccagacccc tctaggtgga 120

ctctcgatcc catgatgggc tcctccagac aaccgttacg ctgaccacca agcagggctc 180

atggccccac tacatccggg ctccagcata ccctagcttg tcgggctccc gacacgccac 240

gtgtctcggg gcccgcgaca accatggtca atgggagggc ttcaaactcg ccgcctggct 300

agccgtccat gccatggtca gtcaaggagt tggagttaga agacataatg ctcctgttcg 360

acatggcaag tgcaactgtg ttaacatcat gtccactctc tggatgtcag gccctagtaa 420

tctggggagt ggcgccagcg tggcactgtg gcgacatgca cgctataggg cgcgccctgg 480

cacgaccact atggcaacat gagcgatact cgtcatggtc tatcacatca tgggacatct 540

actttataca tcacgatgtc taaccacccc ggtcattcgt gacgtacgat acaactctca 600

ggtctcatgt ggtggcatgt agagcctgct cctcctgcca tgttctaggt tttcggcata 660

caggcacatg ctcgacatgg cactcgggat atccggtaca ggtagggcat gtacctacaa 720

cgccactgac atttccacag gacatcaggc tgacatcagc atggtttcca taaatgcagc 780

atgggacatg cgccagggtt ggccccacct accagatgtg accctcactc ccttggtcta 840

taaaagggag agggggcctc ccttaaggag gaaaactaga tttaacacaa cagaaccgaa 900

cacgcccaag ttactctagg gcttgtcttc ttagacgacc ccacatattt tcactcttgt 960

ctctaactag ccttctgtat taggacgtag ccaatctctt 1000

<210> 1619
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1771_G1, chr1:9054000..9055040, Cluster 10

<400> 1619
aagcgctgtt ttaatcagca acggccacgc aaattttaac ccttagtttc tcctaaaata 60

catatcgttt gccgatggat tagtatcgtc catagacctg ctaaatacaa aatgtgctga 120

tgtagttttt tcttctgttc tgtcatgaac tatttggata gctgttagtc aaagtttgta 180

aaaaaaaaaa ccgtcttctc ttaatttgta caaatacgtt gggacagaaa cggtagcttg 240

agaaagctga aagcgtagcc ccccttgatt tcggttcaaa cgaaagcaac agccgctacg 300

aaactagcag ggggtgacgt aaaagcttta aatatcgtac gtacacctgg aagtagggat 360

tgttttctta gccggcgcgg tgaagcccta aaatctcagc ctcaaacaga caacttttt 420

tgtgtgtgtg ttggtgtcgt tgaagatttg ttgaaatcca tttgagatcg gggggcgcga 480

cggcaccagg ccaggtggac ggcagcgaat ggatattttc cggcgggttg gtctcgcggg 540

gcctcccacg tactcgcgcg caaaaaaaga ggcggcgagg acggcagatc tggcccggag 600

cgctggacga acgcggtcct tttggctcca cttgctgttt gactgtttcc agagaccaga 660

ggcgtaggct ggtcgcattt gcatcgtgca ttttgctagg agactggaga gccacacaca 720

ccgaacgcta tccaccgccg ccgcctcctt ctactggtag ccaaaaatta cacaaaaaaa 780

agaggagaga gagagagagc aagaaagaga atggaaagtc gacggaagtg tctggaactg 840

ccgctggagg accacgagcc atggctggtt gcaggacgaa cttatctatt gtcacgtgaa 900

cttcctgctc ccgcattcac gatttgtcac cgggctctct gtctgtttgt aaaaaaagga 960

agaagaagaa aagaacaatc ggtctatgga tttggttcgc gtggatacga atagtcccgg 1020

cgttggcgca gccatgggtg g 1041

<210> 1620
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181751_G1, chr5:53008097..53009102, Cluster 10

<400> 1620
tgccgcacgt gttatgttgt ctccaacagt cttcccttct caccccgtgc cttgctccat 60

atttcaaatt tcactttata aacattacag tctataatgc aaaacaatga ttaccattta 120

gactctgtct aaaaccccta gagctattag ttagccagct aaccaattat tagctagatc 180

gagctagcaa ataaactaat ttttagttgc gtgttagcca acaacaatta tgtggagtat 240

cagttaggat attcaaaacc cctaaagcta attttagcat gtttagcacc tacgtaacca 300

ttaagaagtg gaggttccaa acaaggcctt tacaaacagc atgagatctc gaggacaaat 360

aataccacgc atgtttgccg atgcggttgg gagtgtacag agaaatgtgg accctgaaat 420

aatgatgcgc cccattggcc gcattactgc tgcccatttt ggtgatatga atttaaagag 480

agagagagag agagcgtgaa aagacccagc tttaggcctg ccgccggcca atgaccgtca 540

cacaaagcgt ggccggcctt cgccttccgc ccggtgcgct cccaactttt ccaccggttt 600

gttgatatgg tatactgtat cgatattcga attcgataca ccaggtgggg ccggtggatg 660

tggctgtgcc tgtgctgcgc ggaatctttg tcattcgata cacgactggt ttgtttgggc 720

ggcgcacgtt cttcgacctt tgcgattaga ggaaggcagc tagccagggt cggtcggtcg 780

gtcagtgtga tcggcggcat atactgtgtg cctggctgtg tgtttgcttt ggtttgcagc 840

cacctgtgct tgcgcaaggc atccagggtt ttggataggt tttcgcacgt ccacgttcga 900

tcaggtgggt ggcacatata tagccgacgg ttactacatc taaagttata aggttatata 960

tgtaactcat atatctcata aaggttattg ttaaactata tatata 1006

<210> 1621
<211> 1118
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181873_G1, chr5:53903288..53904405, Cluster 10

<400> 1621
atttgacctg aatacgagcc gacccaatgt ttcatcaggt ctaatcacaa ctcacatatg 60

caaggtacca gagatacaca cgaacatgct ccggcaattc atgtatgtgg ctggatctcg 120

cacttcattg cacgcgttcc cattatcgat ttcagacaag gtctggtccc tctgcctctc 180

cacgcgtacg tgcgtgtgta tgtgtcactg atatgtatat actcttatta atgtattaca 240

ctattacagt agatctgact actcatcgtc cgaaaaaact aaccacaaat aatcctggta 300

ccgtacctaa caacctacct ttgctgggtc gtcctcgcca actgacacac tgctactata 360

tatacgtgct tgattgacca ccatgcatga taaacctagc ttttttcccc atcagctatg 420

atagtacgtg gtattattcc aaaaagctac ccacgcgtgc gtgcgtgtcc ctccagggac 480

cgtcgggtca gcaaagtaaa caagaaaatg gtgccccccc tcccatatcc acgcctttgt 540

gaggtggccg agaacaatgg gataggagta gcgcatatac tctcgaccac atcatgcttt 600

caatcagttg tgctggtggc gcgcgggcgc ggcatggaga cggacggccg gccatagaga 660

aagaacggtc ggccggcgta tccgtccata catatcccac aagtgtagct cgggttcaga 720

aaagacatcg gtgggacgga gagtggtgcc tatctttaat ttacctgtca tttctgtcaa 780

agcaaagcaa tccatcgatg ggtggcgagt gaccggccca ttctgaagtc gatccagcaa 840

cagcaattgg cgcctccact accacttggt ccgtcgatag agacgggtgt gatgaagatg 900

aaggcgtagg tcgatgcatg catgcatggc ctaatactat ttgcacgaat tgcttgcttg 960

ctgttgctgc cttcttcttt tgcgggagat agataagttt agctagagct atatagctgc 1020

ctgcagggag ctagtagtag tgtgtgtagt gtgtggatat gatgcaggtg aaacgggatg 1080

ggcaggtgca ggtgatatgg tatctctgca tggatgat 1118

<210> 1622
<211> 1347
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_185582_G1, chr5:80823742..80825088, Cluster 10

<400> 1622
gcccagatta ttccactgtg gtctttgtca tggaaagaaa gaaggtagaa gataggggag 60

aatggtttgg ctggccttgc ttttctatga tcaggtcgca tgtcacggaa ggcaaaaaaa 120

aaaaaggttt tctgaacatg taagcaagta aaccaaggaa ttgaattgat tccctgtgtg 180

aaccacaaaa gtcacacgca cacatcgatc atcgacctac tatatatcac agagtcgatc 240

aatcaaaata gaggcaaata taacatataa taagaaagga accgaactct ctgatcagtc 300

gcttagcatc tatctatata ttactatatt agcttgaaaa aaacagcagc agaaacgatg 360

aagcagctga aaagtctcaa gtgatgtgct cgatcgatct ctctctctgt ctcgatctct 420

ttgaaggagg agtacgtact aaaaatgact agtgtggttg tagtaggtgt gtgtgcatgt 480

ggtggcatgg ctacctcgtg aagcacaagc acgtcgtcgc aggtgagagg gcccccgcag 540

cgtgctgacg agctagctag ctagaagagt tcgttgcgac gttgctgtca ggtgtgagtg 600

agtagtctcc ttcctactac cacccacgtc tagctagcta gctagctgct gtcacagaca 660

agcagctagc ttattgtgtg accagtatcg gatgcttcgg ttggaatcca aaacggagcc 720

tctagctccg atccatgcat atgcatgcat gcatcccttg atctatagtc cacgtttaca 780

acaagcacgc agcttgatcg aggttggtta gacacacaca cacgcacgca cagagtagtt 840

tgggatggaa tggatggcag cgtgtgtgtg cgtgttaggc gaaactggac tggaccttgg 900

atctctttca cagcgccggc cggccgggca cgaagacatg caaccaagag tacgtatgca 960

acagctaagc taagctagta acgcatgctg tacgtaatat ctgacgacaa ttaatttata 1020

tatttatctg catatgtgta ttaattatta ttgcgttatg tcggccggcg tcttctaacg 1080

ccgccgaacc tttgttgacg acggcgcgcg caggctgcga acgggtctcg ggttcggagg 1140

accaataaac gacacacaca tccatgatcc atctgtggtt tttgtcacgg tcgtcgtcgt 1200

cagttagtta tcacctaccc ccctgctagc tagtagatgc aagccatgct gtctctcttc 1260

ttccactgtt cctctacctt tttctcgtgc atgcacaagc tgagagagtt ctctcgaagg 1320

ctagtagata gcagagcaag gaactga 1347

<210> 1623
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198027_G1, chr5:162758667..162759711, Cluster 10

<400> 1623
gttgatagta accaacatgc atccatagtc acaaacccca acacttccat tctgataatc 60

tgaaaggaac taaacatata atacagaccc agaacggcaa cagatgatca gtattagtga 120

caaaaggctg atttttttcaa aaaaccatcc tactgcacct catttctgaa agggtcccgt 180

tcctaccaca tgggggcact agtccgatta agcaaaactg aatgggagag caacctaaat 240

gcagtaaagt ccaatgaata aaccgccccc taaaaataga agcaaggatt atgtcagtgt 300

acttgtcacc actgccagtt agcacaaatg agcaggcaca gtccagggcc tacagaatgt 360

tgctatacac cagagagtta agtcctgcgg acaggagctt ctctttgaag cgtaaatttg 420

gtaacaaata aaagggtcag cgcatatcac ctcgtcctgc aataaggctc caaacgctca 480

tacggctaca gagaattgca cgatctaaca tttaaaacca ataagtacaa aaaaaatcaa 540

ggcttgcccc tcaaagactc attgttaggc gcagttcttg aacaacagca gatatgtttt 600

atatggttgt tacgcatacc atcgtcgacc taacgggagg ggaaaaacat gaatcaatca 660

gaaacaggtg ggtggcgaga cgtctcgccc aaccacctcc tcagccaccc aactctgggc 720

accccgcaaa aaaacgaaca atccgaagaa accctccgga acgcgagaat tccggcgcca 780

gcgcgtccca accaccgcca ccttccaatc aatccgccgc cacgagtcca caacaacaac 840

aaaactcacg acgcagcgca ggaacccgcc ggcgcggaaa agtacgacgc gaaattcagt 900

aacgacagcc agccagccag aattcaggaa cgaagacgac ggcacgcgcg cgctgggcag 960

cggcgaatcg gccgtcaatg cagcgcgacg tccaacaggc acggagaggt gtaacgacta 1020

acgagacggt gaagagggta catac 1045

<210> 1624
<211> 1172
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199571_G1, chr5:171169523..171170694, Cluster 10

<400> 1624
tacagtataa actggtacgg actaaagtca agtaaacata cttgtaagga ttagattata 60

ttctcctcct ccacaaaagc acagggcgca gcatcatttt gccctttatt caaccggtcc 120

atgtcctgcc cctctctctc tctctctgaa aggtgctgtg ttctatatat gttatctttg 180

ctccgctcac cttagtatcc ttctcacttg gcattaggat atggtactat atattttctt 240

agaaagaaat tggccatttg atgtactagc tgcttaactt tgggaggagt cgttggcacc 300

acatcgagtc tttgaccgta catcaggtca ggccggtgga aacggataat ccatgatgac 360

gacaagaaag ttgcgttttt ttatatatat gcaagtttac tcgttatata tatgcaagtt 420

tactcataat catcgtcaga gggctttgaa cgctggactt gatacgaaca gaccccacac 480

ggactcgtac gtacccgcta cgacaaggcg tcgcatgaat cccgctggct cgcttgcagg 540

gatcccagat ccacgggctg aattccggac caagaaaatg ctccattggt ggtgagtggt 600

gacctctaga tccatcgatt ttcaagcgaa agagacagtt aaaaagacta tacacatgcg 660

acggagtggc tctaaattat ataattgtaa aaaaacaggc tctacgtgaa aagacagtgt 720

ctttttttc acatgttggc acttggcagc gcagcgccac tcggtagtag cagagaaccg 780

aagcaacgta ctactctaga tcggaaagcg aggcaggcgg cgatgggagc gcgccatcca 840

cggcgagcac gccgcttttc cccgtcgtca gtgcgcttgc ggagagagac gggatgcctg 900

cagctgcaga tgcggacggg cacgcgcacc ctttccccgt ctcgtcttaa tctcctttgt 960

taatttgttt agtggagtaa ggtaaggtcc tcttttagaa tgccagagct aatagttaat 1020

tattagttaa taaattatta actggattga gctaatgagt taattgttag tagtgaggta 1080

gctaacaatt agctttggta ttagctaatg gtgtttggaa ctgaacaact aatttttagt 1140

agctacctgt tgaacatcag aaatggaagg ac 1172

<210> 1625
<211> 1152

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202240_G1, chr5:186834231..186835382, Cluster 10

<400> 1625
ccgctcccat gatattctgt ttgacgaaga actcgcgtgg aacagctgca tcctaatctc 60

ggcgagggaa aagtagtggg tgagttagga tgacggtgtt tgttaatact cctgtctagg 120

gttaggtgaa gaatggcgag gactggtaga ttcgtgtgct ccaacctgca ctgcaccacc 180

acctttgtc ggtggcacac gtgttgtgtg aaaaaaactg tttcacagag gactggtgca 240

gatgcagaag ttcccgcaga cactcgatgt ggacgcccgg tggtttcaga gtttcagttc 300

tccttggatt cagaaaagaa gaagaaagag agtttcagct cccatctgcg cttccgcagg 360

tatctgcggt ccgtcagaat aagaatcgag ggaacataac gccatttgtg gattctcctg 420

cacatgcgag atcatgcgaa agaagggcca acgaagtagt ccacgacgac cttggtccat 480

tgagcctgct tgggagccca cactcccggc ggggaaccag gcctatgggc cgtaatgctt 540

tacagattct tgaaggctct ggcgctctgc tttggattcc atcgcttcct gtggcaaacg 600

ggcaagctgc gtcggtggtt tggacagcgc aattcttcaa ttcagtccct tgtttcaacc 660

ctagcgagcg aacaattcca gtcatcaaat cgagatcttt caccgcaata ttccattgta 720

agggcttgtt tgaaatgcat tgcttgaacg cagcgattct ttagcaccac aactacacct 780

gaatttgtac taccagttct tgcgttatca atgaagacag tgacactgaa ccaagaacat 840

atttgggatc atgatatagc acttcatgtt ggtctcgtta aagatgcatc ctgcatgatt 900

gctaagtttt ttatgctgtt agtacagtgc tttatgcttt aaggctaatt aaactggaca 960

ctggttgatg gagaaggcaa agcagacacc ttaagctttg cttagaagca tagctagtac 1020

ataacaaatt tgtgtttgga tgtatgctcc tgaatgttgt gaccgcattt catgttcatg 1080

ttctgcagga cacggatctt gccaaaatac tacatatgtc ctaaattaaa tcaactttta 1140

gagttttctt at 1152

<210> 1626
<211> 1222
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202526_G1, chr5:188487768..188488989, Cluster 10

<400> 1626
aatcacgatc tcgttcgtta taattagtta gtgttaatat aaataataaa gttatcttaa 60

caaattttag gaatggattc ataatattcc ctctcacccc ggtcaagtag ccggtgaaga 120

cctaatgctt gtactacatt ggttcgagtg accggtgtgg aacagtggaa gcattgcttg 180

tactggctgc gagtacttcc attcatcatg gcttgcgtgc cgagtgcctt ttccctggag 240

caccgggaag gcgggaaccc tggcttctct tccgctgtac tgtcgtactc gttgcaccag 300

gatctgacga tcggcagact tcacggtgat ggacggatgg agcgaatctg attcgtggcg 360

ggccaatttt ttccttctct tcttctgttc cgggatgcga ctagagacga tccaagaatc 420

tccgggcgcg gcggtggcgc ccctcctgtc cactgcctgc cgaacacgac gatgaacagg 480

aaccgggtga actgtttgct gactccggcc tccggggtgt ttttttttg tgtgtgcggg 540

tgacggcggc gctagtaccc tttccatcca tcttgctccc tgttgctata gtatttatgt 600

ccgttaaagt gtttagattt aagtttatat aaagtaccag tagcatttgt atctctaaac 660

agtttattaa aagacagatc tacctgatga ttctaattac atactagtat gtaatgacca 720

aacagtgaca ccgagacggc gtcattgaag agggtgggtg gcagtggcag ctgacaggtc 780

aggcgcgtgc tgattttaga gttcaaatga agaaaaaaaa acaatgaggc tgcgataaaa 840

atagacttgt cgcacgtggt ttttgacttc gagcgtgtct cggctagtcg gctatggaag 900

ccggaggcgg cattttgagc ccagcctaga agcccacgaa tcccctctct aagttttgag 960

ccattttgac ttcggcccgt tattttcacg cacttgcatc tgccgctgcg tccaatctct 1020

ccatctatcg tgcttttggc agcacccaag gcccacgctg ggccgtactc gtaccacgct 1080

tcactagtgt cagagccatc gtgcctgata aatcattgta ccccataatc cagtactaca 1140

caaattattg cgcccgaccc gagaagcaca cccccgatgc tgtctccgtt tttattatta 1200

atcactgggc gatccagaca tg 1222

<210> 1627
<211> 1165
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203938_G1, chr5:196179263..196180427, Cluster 10

<400> 1627
agcatggaga cgcaaacgtt ttatcccgtc aaagtagata gatacgtacg tgtgctttga 60

cttgagccgg tccgctgcca cagttcccta tcagatgcag ccggatcaaa tgcagcgtgg 120

tggggtttca gaatgtaagg cgctacgaat ttctagccct ttcgccagcg gaatgaatat 180

tccggtattg gttcaagtgc agcatggtag ggtttcatga aagcgatgct gtggatggtg 240

cccgcggggc tcgtctcgtc ctcctcggtc ggcaccccgc tcgtcgcgtg gctctccgtc 300

ctcgcctagg gggctaggag cgtgtcgcag cttttctatt tctcaatcat ccgtcctcgg 360

cacgcgcatg ttcttggtcc tgggcttaat tatgtatggg ctagccaagg cctcatgctg 420

tgagagatgc ttctcaaccc tagggcccag ttgggtgcag tgctgggcct tttttaggct 480

tgggcccaaa gactcagcgg cggcggcact gcaaagcgcc tggccgcctg ggacttcttt 540

ttttccattt cttcccgtct ctcgcggtgt gtacggatcc gcagaggtca tgttgaggcg 600

agctctcacg atcaatacag tctttcaggg gcagaaacca gctgtcctgt ataattgccc 660

gcccagaagc aagggccaca gggacgggac ggggaaggct tcgtccctgt ccctgtccac 720

caaagcattg catttgcatg ttcctgtcct gcctcctggt catcctgacc tgaggggacc 780

ttggttggtg gtcgaatgga gaacggagcg tatggctcca gaatgcgtac ttttcaccgc 840

ttttcgtttt tcttacagtc cctgactgac atctaacgga tcggtcccat cccccgctag 900

agctggtgat tatgcagttg atgagtacga tgagtatgca gcgacacatg cacgcgttga 960

cataggtaaa aagcaacggt acacaacaca gtaatgctag tatacctaaa aaccaacaaa 1020

accgagaact atcacgtatc cgcatcgcaa accatctgat gtggccaggc atgtgctttt 1080

tttgtgcgga cgtgattcag acctctcccc ggtagcgaca acattagacc tggcattttt 1140

ttccagctaa cttcgtgtca tgttg 1165

<210> 1628
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204455_G1, chr5:199202709..199203739, Cluster 10

<400> 1628
agattaggct agtgggtgaa cgtctggcac gcgagagccg ccccccccccc ccccccccct 60

atctgcagct tgattggtag cagacgaaag caaaacacgc gcgacagtgg tcaactggcc 120

attctctcct accacgtgcc acagcacatg catcgtggac aagatataac tgcccggcag 180

tgcaggctcc agaaaaaagg agaccgagaa gggaggaccg gaggatgggg ttccattcca 240

tcacgcgtgc cgacgcgatc acgcgggtgc tttgctcctt tttcctcacg cggcgcacgg 300

gatacccacc tattgcgggc cagataaacg ggagttgacg agccgggctc tggagctcct 360

ttttgggctt gggccttgcc gcagcagttg ggtcgtccgc ggggtgtgaa gcggaaggcc 420

tcaacacttg agggacacgg tggttgtgcg ggctgcgtag gagcatctgt tcaagttcag 480

agacttggaa caaatcgtcg gtgtcaggta aaagtctggc gatacctggg cggctgtaga 540

agcagcagct ggcttgagca gtgagacgtc gaatacttgg atgtaccagc gatgtatgtg 600

gctgtagact gagacttcac gtgtggtttg ttcatgcgtg ccatatcagg gccaggtgac 660

ggaggcttgc ccctggccaa agaccgatgc tgtacagggg aggtctgtct gattcaggcg 720

ctcgtaacct tttcttgctg cctagtccca tgctcgccgg tgatgaaacc aacaaaatcg 780

aaagcgtgcg gctctcgttg acaaggcaac agttcatcat gtttcccatc ggttcacgta 840

caggacaggc agggtgaaca gtgccgcctc gagctccggc tactgcccgc tacatcgtcc 900

gccgccagcc aaccggcgga tggtgccgaa acagccaagg gaagaggcgg gcgtggccgc 960

tgctggcggc ggcggttgtg tagtagctgc ctgtttccaa gcaaagcaag ccacgggagt 1020

tttgacgcgg c 1031

<210> 1629
<211> 1335
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204461_G1, chr5:199231709..199233043, Cluster 10

<400> 1629
gttatagtat ccgattcacg cgcgcaagga aggtttgcca acgcacgcag gtggtgttca 60

gtagtgggac tcattcggcg gcgtgggatg tggtcaccag tgtcagcgaa tcacgctgca 120

ttatacgtac atttggttcc ggactaccgg cgtaggagtg agataatgct agggcatgga 180

gggacgctgt gttattaaac gccgttactt gttgagacaa acaacttcgc cgtacgctgg 240

ctgcaacttc attcctatta cgtcagcgcg gtactgatcc tacaaccaaa cagcacagag 300

attctgcagg ttggttttag ttctgactga agttctgcac gaccgaatga aactaaactt 360

atgtagtcac tagtcaggca gtgcagaaac gctgcggagg agacatatag accgcaatgc 420

agagtgcgcg tacgtccttg cccgtgtggt gcgccacccc tagtaatcat cagctcgcct 480

atctattata ccttgaaaaa gaaagcggac gctccttgtc atgctatgtc taaactctaa 540

agacgtccac tgggttagtc acccaaatcc tgcttaaaca agatactacc tgttggtaag 600

cagaccaggc ttcctaatat agtaatgagc aatcatgccc cttgtgggta tggtatcgcc 660

atatatatta tatatcctat tcggctattc ctgcctgctt gctagatcaa atcagatctg 720

ttccgtagtg gcttgtactg ttttttttctt ttctttttttc agttcatgaa ttgcttaatg 780

cagcagcagt acccccctcgt ggcagcacga gcgtatcgcg ttgccatttg actgatgagt 840

cgtcgtttct ccatgtcaac gtcacgggat taataagtta cttattcgtc ttgtccgtgc 900

acggaatccg gtgtcctgat ttctctaatc cgtgagggtt tgctactact gccagcacgt 960

acgatgcatg tcacggtggt gcactgtagt acgtctgtac ctgcgcgcag cagcagtatg 1020

tatgtatacc cccatgcatc tgcatctgac agtcaaattg cgggcaaagg gtgcggtttt 1080

gactgtcggt agctggaccg ggacacggac ggtggggctc cgctcctggc gagatgatgg 1140

gtgggaccga cgccggccgg ccacgaggca tgcgaccacg gcggtgatgg aggcggaatc 1200

atttttaccg gcggtgatgg aggcgacccc gcgcttaatg tgtgtgtgtg tgggactgac 1260

tccacatcgc agtcacaaac agctccgtcc gagaagaggg gctagctgcc gctgtcccca 1320

tccgtgcaga tgccg 1335

<210> 1630
<211> 1292
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205136_G1, chr5:203043125..203044416, Cluster 10

<400> 1630
tccaccgtcg gccggcccgg cagccctggg gtaatccgcc cgctcgcctg ttttcacggc 60

gccgacacgc cgaggtaaaa tggaattatc ccgtcaggat tccggagagc cagatcctgc 120

gcggtggtta aaccggtaag gtgtagtttg agagccataa atcataaatc ggagggtatt 180

agatggtata aaattctctt tttatttaat ttttaataag tgaggatctt tgtctgttta 240

atctctttca gttttgtggt tccaaaacta acctaccccg gaagaatacg ctgcaagggg 300

agggatggca cggcacggca cgatgcgaaa ataagctatc ttcctctacc agcgtatttt 360

tcttttgttt gttattgctg gatgtaaata tatgtggtac tcgacttggc tacttggtcg 420

acaagaccac tcctacgtac gtggtggaga tattctgttt ccgcggacgg acaagacaag 480

ttcaccgggt tattattata agccgggcaa acaacttgta cgcacatgtg acccaagttg 540

gcatatacta ctacgaccac acaacacata cagtacgttg tcactagcac agtccacata 600

tacctcgcca ttgtgctgtg tccatcagtt tgctacagta cctttgaatc gcagaaatgc 660

aaaacggcaa tgtcaggctg ctacatatat gtgtgtagag attcttgtcc tgtgcagttt 720

cctttcctgt gtgctagttt tggctggtct tgcttgcagg tgggccgtcg cacagttttc 780

ctcacacaac aacacattgg gtccgtagtg ctgctagttc agcacctgtt agttgccaac 840

ccacggcgtc gatcgcctga aacaggcagc gatgggtggc tgtacctgtg gctgtgtggc 900

agtgtgtaag cgcaactggt tgcaaaagta cgcacgcaat gtatttgcac ggatccatga 960

attgcagatg gctggagagt ggagagggac cggaggctgc tcactagtag tagtacggct 1020

gtaagcgact ggatttaaac ctgaaagtcg tgttggtggc tggctggtca cagctgggag 1080

tctcttcaga cttcgtggtt tgcagcgcgt cgtcgtcgtt caatacatcg tcgactttac 1140

atagggtaaa tgcgcaagaa tacatgagac tttagccacg tttgggctcc caatacgaat 1200

ttctgtgatg gtgattcggt tacagattac tactgtatgt accagttagt atcatgtttc 1260

gataaccaca cagcctaacc aagtactaac cg 1292

<210> 1631
<211> 1080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205637_G1, chr5:205744546..205745625, Cluster 10

<400> 1631
aaacgatcac caaacgccat cactttcttc caagaattaa agcagtcccc agcactggcc 60

caacacatca cgtcgatggt gaacctgaaa gagctcgctc gggccagcgg atgcggatcg 120

ccacgaccgc gacccggcgc tccgaaaact tccgacgacg tgctccgcgt cctctcgatg 180

acacgggctt ggtaaagttg gagccggtgg tggccggccg acgccgcggc ggcaccacac 240

caaccgtacc ggacctgccc gtacgtaata ggggctggaa cgagagaccg gtagcttcca 300

ggaggggtgg gtgggctggc cgcctgcctg acgtgcatgc atgaaccaca aggcgatcga 360

gcgacggcga tcttctaaac atcacagggc gatgccgttg gccagtgccc atcattggca 420

tggcatggca gatggcactg tccagccggc ctaaaagaac tcgtgctctt gtccgcccgg 480

gagtacgtac gggcatgaag catgtgaaag gaattgaata caatggcgta gggtggttga 540

tgaccaccag tgtgtgtggg ggagtgggga tggagttcat cgcactcaca agggtgatac 600

cgagatggac catttggccc taataaaaat catgtaaaac aacatctttt atattgtaga 660

ttgtattatt tacatgatga aatttaagat gaagacgaga taagagatat gataggtaag 720

ctgctgtaga cagcttttag ccaaaaaaaa aacgaaatat gaaaagcgca gtggccaagc 780

aggatgaacg aatacaggca atcattagtt gcacttgcct tgcgtttcca cctctccagc 840

ctggtcactg ccagcttcca gcctgtgcag ctgtgtgtgt ggcgtagcct tacacccctg 900

ccagcatgcc aagcgatgtg ggggaacgga catcgtgcac caagagccgt ccgatttgga 960

agtagtggcc acagtttctc cccgcgcagt atcaccgcat gggaccatga tatttaggag 1020

agtgatttga tttgatttgt tttgtattgt ttttcagaat cctatatatc atgatcacag 1080

<210> 1632
<211> 1128
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206072_G1, chr5:208159476..208160603, Cluster 10

<400> 1632
ggccacaccc gcaaccgcaa ccacgcgcgc cgcgcgggcg atttgctcgc tcgccccccct 60

ttcggtccac gtcaccggcc gccccacccg aaacgcgggg gcgcgtcccg ttccattcca 120

cctttcgcga cggcggagcc cacatggatc cgcggccacg gctccagccg aaccaccggg 180

cgcgtccgca tctcgtcgcc ttctcatcat ctctcgtccg cgcggcgcga accgcgtcaa 240

catcccgcgg ctcgaccgga tgcgcatcac cagatatttt gctggcgtgc ctggaccaga 300

atcgcagcgg ttctgtcagt gctccagcag cccttctacc gtgggcaaaa tttacgagcc 360

gttcgttctc cagtttcctc tggtcgcgag ttttcgtcgg taggttgcaa ttgcaggacg 420

cgtcgggcaa tagcagttct cggccataaa aaaaaattca accccaaaat gtccggacgc 480

gcaacgttgc aattcaatgg cttgtccggc agcacgttgc aatcgccttt taccgatggc 540

gcatgcatta atgcgcccaa cacgcatttg caattttgca tccttcgtga ccagtttgac 600

ctggtttaag taaagcacat tatcctcctc cccttgatgc ttgtattcta gtacgttggg 660

ctttttttca ataactgaat aatagtttga tctgctgaac cagttacaag ttttattatt 720

ttttactat taattagctt ccaggtgatc caaactggat tgaaaaaatc tcagcgaaac 780

ggctccaata tgacctcagc cagcatgtgg atgtgtggct gaacatccaa aaccatacag 840

tagcgatgac tcggtcttcg gtccacttcg aaatcgactg ggaaccaacc agctttgaaa 900

ttttttcccc cttcaccccg ccttattttc ttgctctgtt gctctccaag aactgacttt 960

ttttttttt gctcctcatg tttttcacga aaatggcttg tgacgaaaca gccttctcac 1020

gtggctacga agacttctgg aaccatgatt aaccaataag aaaggcataa aattgtacag 1080

ttgccggtag cagcaggaca tacaattggg gatataattg aggaggta 1128

<210> 1633
<211> 1081
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206112_G1, chr5:208353075..208354155, Cluster 10

<400> 1633
agaggatagc acctaaagct agcctaaagg catacatata tagctagtag cctttatatc 60

cgaaagaaag aaagaagtag tggctgttat ctactgctgc actataccat acgttctagc 120

tagctagtat acccctccct gctccgcgcg cgcgcgcggg ccacagtcca cagcagtctt 180

gcttcgacga agctccaacg ccatggagat gaactagctc ttcttcttct tctttcggca 240

gctttttga ttgccgcgga tgaagcccct ccatttccac gtgcttttgg cctggcgacg 300

tacgtggggg cgtggggccc ggacgacatg catgcctccc catgcacgca acgtacgtga 360

ggggacgtta gcgcatggga gcccgacccg cctcgtcgtt gtctccgtgg tcgtcgtcgc 420

cctcttgact tgttcctcct gcctgctccg gtccccgtgg ccccatcgtt aaattacaaa 480

acgcgcggag tgggttgatt agcgcgcgtt tccacgtcgc tttcagggtt gtcccttgag 540

ttggatggtg acagagcgtc gttcttcaac acatatatat catatcaatg gatcctagta 600

aaagctatat atataagcgt cgtcgtcgtc ggatctcgct caaagtttta aaattactgt 660

tcggtcagtc aggtttgtaa tggcagaaat tttcccaaat taagaaccaa acacggcgga 720

gagaaacgag aaagtatcac gttttctgca ggcttcggca aatttcgact tttttgttac 780

tggttagagg aacgtatatg acaactaatg gcgcttggct gtgatgattg ttctacgtat 840

ctcctgcatg ctaatttgaa ttatgaatac aaaatacagc gaaatcctag tcgagctagt 900

aggttaatta tttaacttgg tcctgtatgc tctgccacat ttttcaagct ctgcttatca 960

aaatgacatg catacatcat ccacttgtct agtgactaat tttagttttg agctctgtca 1020

tgaggtgatt gctgatctgt ttattcgtgg ctgcatatat atatatgtat atatatatat 1080

c 1081

<210> 1634

<211> 1192
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206150_G1, chr5:208568231..208569422, Cluster 10

<400> 1634
aactgaccct ttgtatgtag gcccgcccct caatcgaacc acatgtgtgg cggtctccaa 60

ccaggtttgg tcaaacattg tggttggtca aacattggtg ggtcgtggat ttgttgctcg 120

tgtaggtcag cgtagccagt agcatggtag cccagtggcg agtggcgagc agtacatccg 180

ggtggcagtc cgcagggtga aaagccggca ggaaaccatt cacggagaac acagaacagc 240

catcgatacg tcaaacgtct ccatcggaac aaacagtgcg tatctaccgg tacttggaca 300

acgccagtgc cttttcactt ttctcatcgg tgtagtgtgt tcatgccagg cttcacttca 360

cgcatcggca gcggcaggtc tcaaaaagac cagcgccaac cacagcgtcg ccgtcgcagc 420

aaacccaaac catgccattg ccatgttgaa ggcagaggtc ttcaagctgc atctgcaagc 480

aaaagttccc ccagcaatgg caggtggcag tggtcgtaaa cgacgatcga caggattctc 540

gggagctagg atacgatacg aacatggaac gacattactg cggctatgcc tgtttattgt 600

tcattgaatt cgacccgttc cggcggggca gcaggagtct gtccgtgcct actgtgcggc 660

ggctatgcct gcgtcctgcg accgagatct ccaaagaccg agagcttttt cctgctgcac 720

cgtggccgat gggaaggtga ctgggctctg ccgtgcggcg acgagacgag aggcgggagc 780

aaggacggcc ggccggccgg gggaagggga aggggtaggc aaaggcaagc aaagcgttgc 840

tgattgcgag atagcagtta actggatggg acgcttcgag tggagctgac acgcgggcac 900

gcggcgcttc tcgggccgga ttcccacaga tgcggctgtg gaaagctacg ctgggctacc 960

cagttcgatt ctctaccgaa ttttactatt ttacactgtt tttgtccatg catattgtaa 1020

ctgcatcagt ttaacaatcg actttaatct aaagccaaca actatagcat acttcagaat 1080

catttgtcta tccaccggta tatatgtact ccgtcgtcta tcgagctgac gctttagggc 1140

ttgtttgaga actttatttc tcacaaccac gtactacggt ttaatatatg tc 1192

<210> 1635
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206371_G1, chr5:209725570..209726691, Cluster 10

<400> 1635
cgtgggagat gggcgccatg atgtagcggt tgagaggagc acgtacgtca cgttcgagcg 60

tattgacggc gaataaacta ctagtaggtt tagcggcaag ccgccgatcg agatccatgg 120

atggtggtgg ggagatcttg ggaggcaagt gcacaaagta taccatcgat gatggatcaa 180

ccagctggga tgggagaggg ggcacgacga ctagcgagct ttgcttagaa aactggcgac 240

agggcgggcg tatgatagat agtcagtcag gcgtaagtac gctttgtgaa gatccccagg 300

ccggagacat tccgcgaaaa ccatcaagtg gtggcactga aactttggtc tggtcctttt 360

ggttagccct gggtcctagc ctgggtagct ttggggtccg gtagtggcag gggctcattc 420

ctgtcacctg cttgccttgc ctggctctgt tgcggtcggt ctgccaagac ctgttccatc 480

tgcagctccc ccacctcctc ccatcccatc tactacaaga agaaatctct ttcacagact 540

actccgaacg agcccagaga gatcgaaacc tggcagcctg gagtaaattc gaaaaggaga 600

gcctgctgta gtgcgctgtg gcggtggacg taaaaaacaa gaacgagcct gcagggacga 660

agggaatgac agagtttaca gcagagatgg atgctgtcag ataaaacgtc caaaatgctc 720

gccatgaatt cgatgcgacg cgccggcata ataaatccgc tggcgctact agtggtacgg 780

atcgtatggt gtctgcaaat tctggtggag tagcacctaa tcatcgatct gtatgattcg 840

atcggcggtt caggtaagcg acaggcaaat ccaccgccaa ggtgaggtgg aggaggagca 900

cagtacacgc aaaggaccga gctgctatag cggcgaggtc tgtgcctcag ccctcagcca 960

accacaactt cgtttagcac catgtagtca gggcctcagg ggtacttggt gttgcctgtt 1020

ggcctgtcgc acgtacgcga ccccccccccc ccccccccccc ccccgctctc cgtacgtaca 1080

ccaacggatt ggatttgtaa ttatgggggc ttgctgaact ag 1122

<210> 1636
<211> 1290
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206376_G1, chr5:209736647..209737936, Cluster 10

<400> 1636
ccccaatggc gaattgatca gcagcaaaac tacattgctg atctcagatt tgctgatcag 60

cagcaaagca tggtcctaat gatgagttga ggtgagcaag agaactacgt gctccaaaaa 120

tgacagaacc gacagagctt ttcttgcagt gatgcattta acttttgtga ctgcacatgt 180

gatgggatgg gaacgaagac catgcacgct cgttgtgacc ccgaatcctg ctttttttaa 240

gggaatccta cggatctcag ggagaaaaga aacacatagt tccaacgatc aatgcaatac 300

caccctcgga cagtacagat cccaactaca ccctccagcg aaaaagtgtt catccctgaa 360

tctcacgcta agaactaaca gattcgtaat cgccgattac gcaagagtgc aagagcaaga 420

ctacttgacg gacgttaact atgcctaggg gatgcgtaga acactgcagc tgtcagccaa 480

atggacagac ttcaataaag gacagcagca ggagatgaaa gcggattttg gtttgagccg 540

ttggtctcct gtccgtagta cagatctctc actcttctct gaaccttctt cctttgcgag 600

cccggctaca tgccgatcgc cgactaactt tcggacaggc gagctgaggc gggtacaaat 660

ccgcaaggcc atgtgcacaa gcatgcagta ctgtactggt ctactatgcg taacataatc 720

atgaaaaaac aaacctattt gctcaaagat gcacttatag taatgcatat agcgtgctac 780

aaagaaagtg aaatgtcttc attatggaac gtcatagata cttgaggtgg tgctctatcc 840

gcggaaaata atgtggtttc aattcactcc tttgtgggct ttaaaaaaat tggctccttt 900

gtggacggag aatacacatc ccaccggaag ttcaaaaccc atcatatcat ctcgatgctt 960

ggagcgattc acattcatat tcctcctgat tggttgccga cagccacagg gccttgcttg 1020

cgcggggctg caccggtgga aacacacgtg agttacatcc cagtgcgtat gcaggccaac 1080

gagcgtaaaa tggctttgac tgcacccgca tataaagact gggcgtagcc gtgtaaccaa 1140

ccaatcagga acgcatgcac gatcaacgct tgtgagagcc tgggcattag gagctgggca 1200

accaatcaca cagattatgt atgaaagcaa gaacatggtg taatgtttgg cagcacaacc 1260

gtccgtacca ccgtctacca ggacaaacga 1290

<210> 1637
<211> 1133
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206567_G1, chr5:210758106..210759238, Cluster 10

<400> 1637
cgctagtgca ggccgcagag gaagcagaca ggccacggcg gcgtcagggg actggcccgc 60

cggataaaag gggttcctct tctccaggac cccatttgct cccctggctt tgcttttgca 120

tgcgtggtta tcgtctgaac agtgcaggcc acctatctaa agctgcaggt ggacacattc 180

agatttgcta atccactcca atatattatg catcgaaagt attatccgcg gcaatcatgg 240

acttgggacc ggttattccc ccccccccc tggcttaacg aattggaatt ggaccccatg 300

cgatggcaca cggtgccaat gagacgagaa tggatatgtt aacagcacca ttgcccgacg 360

ctaatggctg cttgataaat aaaaatgata agaagaggga agtaggggggc caaagccaaa 420

gccaaaccga actcgaaaga gaaagatcga aaggcgggat ccacgctttt cttctctatt 480

gccctgtcga tcgctcgttt gtgctgtagt ttagtttttt acccttttacc tctaaaagca 540

tttctcactg atgcctgacg aagcatttct cactggcgtt gggcatgcca aatgggggggc 600

aacgagacag acggttaccc cgatgcgaac ggatgggacg gagacacggc gccagcggct 660

gtcgcagtaa ggattggaat tcgaatccac tggctgccgg ccccggcagg caggagcagg 720

acggggcacg tcggacaagt ctcggggtcg aaagaaacgg gccgccaaat ctacgcaggg 780

ccggtagcag ctgtcgacca gcagagccca cccactctga atttctgaaa caccagcctg 840

tattcctcag tcccattctt gagcgcggta agctcttgat gatctgaaga agatattaaa 900

aaaaaagaaa gaaagaggtg tttgccggtg ctctactgct ctgtacatcg ctggatagtg 960

acttatatgt tatccgcttt tatcctgctt cgtccaatga tacggccacc gctttttgcg 1020

cttttctata gatccacggt gcacgccagg attttctgcc ctttcgcggc tgctgcacca 1080

actaactttc gtttcaatgg cgtattggta cacagacagc ctttgctttg ctt 1133

<210> 1638
<211> 1297
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206572_G1, chr5:210771799..210773095, Cluster 10

<400> 1638
attgacttcc cggcgcgcgc ccccgtgatc tgaatcttga cccgcgcact cggcgagatc 60

gcaacgtacg gcgagatcgg acgtgcctct cctccttttt ttttactgcg gcttgcattg 120

gcgcacgcac gcgcgagata gtggcttccg atgcatagaa tagaatagaa tacgatattt 180

cctgtccacg gtgagcagtt tggttctgta aaatagtcgc tcgtcgacgc agattagaag 240

gccgggttgg tccaacccgt acgtgcgcca agttttttc ccattttctt tttggcagtt 300

agataagcac tgaagacgta cgggaccaag atcaaaacca aatacccaca cacatgtgtg 360

tgagcgctgc aaatcaggga ctatccgtga cgtccaaata atattacttt gccgcgtaat 420

taagcaaatc agggacggac gatcggtcca cacggcacgg gccacgggcg cgccgcgccc 480

acttgcattg catgcggcca tgccgagcca gctcgctagc ggcccgtggc gcgcggggcg 540

gcggagtgcg acgtgcatgt tgcgtcgccg gccgccgcgc gctgttaccg tgacggagga 600

gatgcctgcc gacggctccg atctgacccg acggcgaaca tggcttcgcc gctccatgat 660

gcgatagata gatagataga tacatgatcc aggtccaggg atctatggac catgcatgcc 720

accatggccc gcgacacctc aacagtgcac caccttatca aatctcaagt actgtgacgg 780

tgggaccggc cggggcgatg cacgcacctc cgctccgctt gtgtcgtgtg ggtggggcct 840

acctaggcac agggcgtcaa gatcgcagta ataataacaa catctgtata gtactacatg 900

attggttaat cattatcgtc cgctaccaac tccctcggcc atgcaacttg caatcactat 960

tactgttaca ggaataattg ttgtcgacgc tatgattttt tttagcgatg attcgtaaag 1020

agtaattcta accgattatt catgaaaggg tagacgtcat aagaaatgta accgtaggtt 1080

caaggccaga tacatctcca ccggtgaatt tcctaaggat accactagcg caaatcatcc 1140

atctatatat acgcatggta ggcttaagac aaccccaaaa ttaacaaata caatggtggc 1200

tgttaagtcc acttccaatg taaacctagg atctgtattc ccggtaactt taagtaaact 1260

attaggggcc gtttcgatcc attattttga aggaatt 1297

<210> 1639
<211> 1167
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206653_G1, chr5:211201081..211202247, Cluster 10

<400> 1639
tcctctttta catatacacc gcatgcatgc atgcaccaaa tagtagctct cacaacggtt 60

ttttttttt aataatggaa caagccaggt accactcgct catgataggt aataatgaac 120

acgtaaaaaa gattctgttt caaagattgt aacacaaaac acacaagtag atcagctgac 180

agggaccata aacaaattga attgaagaat caaacaacaa caacactgga acgatcgatc 240

gatccgttac atctttcgtg atgcacataa gaaataatac atataaaaga ccggacacaa 300

acaaattaaa cgaatcagca cagtggctta ttgcatcgtc tgccatgaaa caacttccga 360

cgacgacgct ctcagaacgt ggaacggtca tgcgttgaga gctctgaatc gatcagtcct 420

tcgtctgggg tgacgagcag ccgcagagca gctgccagat gctcttcttc accttgttac 480

ggcctcccat ccttcttcca gtggctgccg gtacggtgcc gggcggacag cacacaagct 540

gagatgctcc gataagatgt tcctggaaac aggaaacaga acgcccggcc cgacatgaaa 600

gctagttcgc cagtgcaaag ctgctgccca gcccaactaa taaaaatata ctgtacgtaa 660

aaactactca taggtcatag ctgtcttcga ttcgaatact gcaagtaaac ctgccaatcg 720

gacagggcat gcatgcaagt atgcaactcg atttctagga taagaaaata cctgagaaac 780

tgatcgaact gagcaaggca ggtttgcctt cttcctttgc attggtgcaa gtgctagcat 840

gcttagctcc tttttatagt gttaaggatg tagcgactgc gcttattagt agcatcccct 900

gacctgaata cctgatactt ggtttagtaa ttcaacgaga atttactata ggaaaagttc 960

gcgaggatca acacgaacat tcagtgaagt ggtagtccag cttctagcag gagtgtatgt 1020

atcttgaaac gtgtggtccc ggcggggcgg caatcgcgga accttggatt ggagcgcaag 1080

gaagttgaat aatcagtata catgcttgat gaaaaatgta accttaaact gacgacccgt 1140

ttggcccccg cgtcgctccc gcgtgca 1167

<210> 1640
<211> 1072
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206713_G1, chr5:211533664..211534735, Cluster 10

<400> 1640
cggaggcatg aatggtggga cgtgggcggg gtaggcagca gtgtacaggc gagggtatat 60

gtggatgatg aggctacact tttaatagag tagtataaat ttagataaac catacgattg 120

aagtctgagt agttcaccaa accaagttta ccgaagcacg tcgacccgaa gcatgcgcga 180

ccgataggac agctgtgcgt tgcaaggcgc taccgaccga tctcccgtcg ccatcagcgt 240

cgcagtgacg ccgtgccccg tccgcgacgc gcggcgtcgc ccgggaccct ctggcctctg 300

gcaagcgggg gcggatccgc actgtccggt ccgcggcagc gatagcacgg cccggcggga 360

tccgcgcgtc cggtcgtttt ccaacagcga tgcgcctcgg gccgctcctt ccttccttcc 420

ttccgggacc gcaagccccc gtaccacgcc aagcgccgaa ccatgcgtcc atgctgtacg 480

gcgacagctc actcgcgtcc gcgcgctcgt gaccgttgcg cgcgcgtgcg tgcgtgcgtg 540

cggggcatgc cgcatcccgc atgcttgcgc gcagaacgtc ccgggagaag gagaggccga 600

gggactagtg actagtgagt gacatctcac tttggacgga cgtcggacgt tgcaagtgag 660

tggcactgtg gtttggtttc ggtgtgtggt gggctgaccg acgcgacacc cgagagaggc 720

aagctgctgc gtgtgtggat ggtgtaccac cacttctata ctcttggttg gagtttattt 780

caactgaacg tcatgctgct ctgatttaaa atcttgatcg agtaagggca gtcatatcgg 840

ctctttaggg ttactgcgag agaatatata gtcgactcaa ccacctgagg cgcgcttccc 900

tgtaatcatc catgttttta taatgatgaa ttgaataatg tggatcttag cttcatttgt 960

ttcccatagt ccacaccgac caacctaagg aatgcaactt aggatatgcg tttcgccaac 1020

gtatatatga attagataaa gttgatatca gctctcagga gacaagccgt cg 1072

<210> 1641
<211> 1127
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207049_G1, chr5:212789252..212790378, Cluster 10

<400> 1641
ttagctaggg ctttactatc tatcatgcat gatctgcaga gacaccacac ctccaccggc 60

aaacgtacgc acgcagcgca gattaaaggc ggttacgacg tgcttaataa gccggcgcgc 120

ctcatttgtt tttgtcctct ggcccttatc cctaaacaag cagcagtctt gtccttggcg 180

tctagctccc cgatccgctt tgttcctacc catctgtggc ctttgtcgac ctagctaagc 240

tagccactac tcctctccga tccatctcct tgtcgcgacc gagcaagctt cacctactgc 300

gaaaaaaaga tcgatcgata aaagcttggg gtggttttat ttactaaatc acttctgcat 360

gccgttatca tcgtccaata atttatctgc ttgccagatc gagcacgtac ttgaagcaaa 420

ttaattaagt cttcatgcat atattttcac tctggttcat tcttatccca ttcccatgca 480

tcatctatcc caaactgcag gatggacgaa acttacatgc acgtagtaac gtcagtagat 540

gaattgtttg gcggtagtac atctgtgatg agaaagatgt cgctttccaa ttccacatac 600

cacatgcatg ggccgccagc tgagaccttt tgtatattaa tgcatgcata tgcccccttt 660

cagtttcaga ggctgcccac gcacagcaga gagtggttat aacgaaactt acagcgtgca 720

tttatttgtc ctctggccct tatccctaaa catgcagccg ttttgtctct gtcagctacc 780

gccgcctagc ttagctgctc tctctctctc tctctgctct gttccacgac agaccgtcat 840

tattccctct ctatcccccc tccatttcga cgcacgatgc gtacctacga cgacgacgta 900

cgtactagct gcatatgcgc tctgccatgc atatgatggg atagcgtagt atttattctt 960

cgtgtatctc taggggatag cattggtgct tgtgtacagc agtcaagatt agttattcaa 1020

atatgcccac agcggcagca gtagtagtag ttttggatgc tttctctctt cctctttctc 1080

ggaacagact gaagggcgta caagaaaaag aactgcaact tgcagcc 1127

<210> 1642
<211> 1310
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207052_G1, chr5:212863755..212865064, Cluster 10

<400> 1642
gttttgatcc ttacttaaat gtacttaaat acagtagaga tttttcttat tactgacgca 60

attatatgac gcgaagtttg gctgcaacta gttgcaggtt cagttggagt gacctattgt 120

aactagttgt ctttgttgtc cgtattgtta tcttcagttg gagtgatcta gtttgttgtt 180

tgtctttgtt gcgtgttacg ttggtcttgt ttggccggct gccgcatgca ctttagcaca 240

ccacaccata cttccttgcg ccgcttaatt taacgtgcgg cgttgttaga ttggttcgtt 300

tgctgcgctc gcggccggca cggcacgcca cagtggaagc acagcatgtt ctttttttt 360

cattttcgt acgtcgacga tatgcatgca tgcaaatgca tgaattgaat ggtctgctgg 420

tcgacgacgg agatgcggac gccatgcatg ggtgcttata tgcatgcatg cacgagcact 480

aataacacca ggttttgtac atcattagtg tgttccgctg tgattcatcc atgcacgaac 540

gtaggtagca gctaggcgcc gcggtcgtca ctcccaactc atcgtcgcca actgaaccaa 600

ccaactaaac cacgcaagag gaggcgacgc ggtcgatgtc gctctcggcc ggcatagatg 660

ggatcggatc ggagctagac ggtcatcggc atataagggc ggccgctacc cggccaaggc 720

gcaaggcaac aagccgcaaa aggggagagc tagcgtgcac caccagtcca ccaccgcctg 780

tgctgtgttg tgtgtgcatg tggcgcccat ccatggtgga aaaaggaaaa aaaggtagta 840

agtgctaggg gagcgtccgc gcgcgcgggc gcatgtatga atgcgctgag gcgcaccgag 900

gagcaggtac ggtgagcgcc gggctgccta cctaccctgc tgcatgacca cagtatatac 960

gcaggtgacc gccggaggcc gccacgacga cgacgcacgt acgtacgtac gatcccgatc 1020

cggcggtcga tccgccggcc cagcctgtgc tccacacagc cgctagctat ctgcttgtcc 1080

gcctgctccg cgccgaatca tacgcggccg gcatatgcac tggaatgcac acacacaggt 1140

tcactgatac acataggaat acacgtatag ctgacagata tgaaaaacgg gctgggcttg 1200

gatttgggct aataaggttg acgtcatcag gactcgatcg gcccaaataa taagtccaat 1260

ggattggagc ttgaacggta gcagcacgac agcacgtacg tagtgtgtta 1310

<210> 1643
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207123_G1, chr5:213269375..213270527, Cluster 10

<400> 1643
ttccagtttc atcataaaat agctccagca aatagttaag atagattcca agaacgtttg 60

acttacatat gaactctatc ttctattgta taattaattt gtgtgagttt ttttttatta 120

tctttgatga ttagtgggtt gtcgcataga gaacggaagt tgtatgttgc ctaactagtg 180

gtattatagg taattttcgt acagcttcac gtgaagataa aaaacattgt ttttgaagca 240

gcttctatgg agctcgatga attttattaa tttgacctct aattaatttt ttaaaagcta 300

gtgctcgtga agctagatct gtttgggtgg aaaaatttag aacgaatttt ttaagtaaaa 360

ctctcacgaa catgggcata ggaagcacgt acgctgtgtt acgccgagta gaggattgta 420

cgggtgcttc cctgcgtacc tgcaccgtat gcgtgtccgt gcggacattg catgggggct 480

gtcacgcaat gacgccgcgt tggtgttttg ctgtctggaa ggtgggtggc tccaggcttg 540

ggaactggag acggttcagt gcggcgctga aaacggctgc catgctcgcc gcgttgggct 600

ccggcgaaag gcgctgcgct gtttcatgag tccgcaatgc ctacgtacgt acatacatta 660

accgataaat cgccgagtcc cgatgtcaag acctggacaa aaaaaaaaag gactaccact 720

gcaagcgaag gctatagtgt ccctatttttt attagtactt acttgccact atcaagccct 780

aaagtgtagt atgagacggt gatgtaggct cattcatatt catatgcttc gcttgctgtc 840

tttggtcgcg ggcatacagg ctttaacata tctatatgca tacttgcacg atcctcggtg 900

caggtccacg gcaacgttag ctgacacgat agatttcgtc gcattccgca aatataagtt 960

tacactttac acaagcctta tgtgagattg tagtaaggtg ttaggtgata actgtatggt 1020

ctcgttatgc gcaggataga agtacttata gggctgtccg aagtaggtaa tccaaactac 1080

ggtcctatcc tgttcatcga ctatctgatg aatattccgc gtaacactgt aattacaata 1140

ccgtgctctt agc 1153

<210> 1644
<211> 1148
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2103_G1, chr1:10974235..10975382, Cluster 10

<400> 1644
cgaggaggcg gtgaaccggt gagtgaattg gcgagtcact gacgtctgtg cagcagcagc 60

atcgaagtcg cagggcagtt gtagacggcg aaaagacgtg cctctgctca tctgctgcct 120

ccctcgtgac tgtgactgtg gagcgcacgc atggcgattg gcatagcacc ccctctcgta 180

cacgcctcgt gcaggagtaa ctctccctgg gtccgcctgt agaaacggcg aaggttcggt 240

gtgcagtcct gctcctaacc tggacgtaca ggtacagaca gggttgggcg tccgtgcaat 300

ctcttttgct ctccgtctct tcttcttctt cttctattca agtgctcggt cgtgctccct 360

tttctcccgt aggccatact tgcacgggaa aaaaaagaga ccgtgcgcca cgccccaaaa 420

ataaatgcac gcgctcctgt ctgtgtcggg tatttccatc cgcaaaaaag agacagagcg 480

agacgagata cgcctcctgc acacatactg ccgcgccgtg atcaccgatc ggacatgagc 540

agtgcattac ttggtactgc ccacacagcc gaggagacgg cacgggggag agatgtaaaa 600

caacagagcc caaaatcatt gtcgccccgg ccggccggcc ctcacctcac cgacagcagc 660

agcgacagca aaactagaaa ggctctgtct ctccccccttc ctagagtggt agtagttcct 720

acttgtagag ccccccctccc tcctctcgtg taactttgcg ttcgttcggg caccgcgtct 780

cgccgtccac catttcacgt cctcggcccg cccccacacc gcacatcgcc tgcactgctg 840

cccggcgtgc ggcctcgttc cgttggtcgt cgtcgccggg gcgggggcgg ttaaaaggaa 900

agggaaaaaa aaaggcgcag cgggcgggcc acccgtccat gcggctgtgt ccggcgccgg 960

ccgtggatcg ccgcgacagc ccaacagtgc cccccaacag gagcagcagc agcagccagc 1020

aggccggtcg cccgcccggc gtgcgatgtg atctgatgac cgtgcggttg gtgccgtggc 1080

tactcagtag tacttacagt cggtggcatt gccgccgcgg tggtggcggt gaccgagccg 1140

ggagcatg 1148

<210> 1645
<211> 1364
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2104_G1, chr1:10975416..10976779, Cluster 10

<400> 1645
gcgacggcgg atgggacgtg acgtgcgtgc gcttccgctg tgccgcactg ccgcccgccg 60

tggcgcgcgc aaccaaacca cgcacgcaga cgcagttctg gtggtccgct cccgcctccc 120

tcccgggccc cggcagcgaa agcatatata tcggccgaaa ttagaggccc aacacgaggg 180

cgagcggacc gggtacgcgg tggcgtggcg gtgccccccg gttctgttgg gctatatagg 240

cctcagaaag tgacgccgcc acgggagagg ccgagctggc gccaacttgg ccagtgccca 300

aaatggcgac tccctccggg tccgggccgc cgctccatcg actagttggc ggtcgctgcg 360

actgcatgtc acaggaccgc gcgctagctt ccaagcaaaa cccacggcta gtcggccgga 420

cagggacgtc cgatgcctat gttttttttt aatatcttag taccgtgaac tttggtgcat 480

gaggtttgaa cacgagctag actgctggaa cgtatacgta tatacatcaa cagctagcac 540

taagctctgt gtgcattcgt ttccctgtca acgaccagcc atgcccgccc gctgcccact 600

ctacgggcag gcatacacac atacgccgcg ctgacttgag cgagccgcat gcatgcttcc 660

tctcgatttg cccgacgcgg aataaacaag acagattccg ttccagcggc cgttcatgtg 720

cgcgaatcat tcgccgccac ggagcaaggc ctgcttgcac cgttgcacgc atgctgccag 780

acgcaagtca acccccccc gtgacgcgct gcgctaacca agtggagaga gaggcacatg 840

gaacggcgca cctgggcaac aagcaatcgt cgtaatccgg ccgtttccaa gcctccattt 900

ctttacacga tcaccgtcag gcgacgcaag ctggccgccg tgccactgcc accgtcgatg 960

gtcaaccctg caatttatta tcgctttgtg tggagggacg ttcacggtca cgggtcacat 1020

cacataatag ttatcccctc aggtaacaaa aaagaaaagt atcggccttc agctcatctc 1080

accacattaa ttatggctga tagtatcata tactgcttct gctggtgaag acaaaataaa 1140

aaaggcggtt cggttaacca aacctgcatg gtgttgctgg acagatggtg gcttgcatga 1200

cagtgcacta cacttaaagt taatcgcttt ggcgatgtct gcaaatttgg tgggttacac 1260

aaacctacct cgatgatgtt gactgcttgt gggggccttg cgattgctgc acccaatggg 1320

gtaagcgagt gggagaggat cccctgcgct gatcttatcg tcgt 1364

<210> 1646
<211> 1114
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2107_G1, chr1:10982088..10983201, Cluster 10

<400> 1646
tcgtttccgg ccctagtcta gggggctcta tgcactgtcc agacctatac ttgccgacga 60

caaagcaaag cgtgctatat accatccgtc cactcccaac tgccaagacg tgtaccacca 120

agagctctgc gtccattccg ttgatgttgg ccttgagcgg agccacgcgc tacgtcgtac 180

gtccactcca tttatgttgg ctcttggagc cacactagac gtactccgat ggaccaacga 240

aacgaaaagg ggcaaataaa aaaaaattaa aagatcagta tccactagcc atattgttcg 300

ttccaatctc gatcgcagca gcgcatatag attagagagc gcagtgtacc agcgcgagca 360

ttctgtcgta ctagctagtt gctaagaact gacgcgcatc tggcgccgcg ctgcgccacg 420

tcctcccctg ccccctcggc acggcggcga ggtggtcgcg gcgctgcccc ctgctatgct 480

actcacagtg cggtcgcccg cgtggccgcg tggacaccgg cacggggagt gcgcgtgcac 540

gtacgcctcg gcatcggcat caggcagctt ccctgcatgc aggcggcggc gcgcgcgcgc 600

gaccagccca cccgagcttc acatggacgc cgccagcttg gcagcgggga tcgacggcgc 660

ggcgcccgca gcgccaggcc gggcccccag tcccccacct gcgcaggtga tcgcgtcgcg 720

cgccggcccg gccgggagac gatagagaga tgcatgggac ggacaaggac gaccaagacg 780

gcgacgcgcg gtcgatcgat ggcgagatcg cgcggctttc caaatcattg ccgcgcccgg 840

cagccgtgcg tccgcgtcgc ccgcgccccg accccgatcg atccctgtcc acttttactc 900

ggcagtcggc aaacaagttg ttgcctgcac cggcggatgg agatccaagc tccacttctt 960

cgtcgtcttt ttttttgccc tccatccggc cggcctgttt cgacgaacca cacgtagtat 1020

tacgacaccg gcagggctgg tcatgcatgc aaatgcaagg gcgttagtcc atttgcgctc 1080

tcgtcagcat caatcgcgac ccttcgccga gtgt 1114

<210> 1647
<211> 1212
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_220195_G1, chr6:80989078..80990289, Cluster 10

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (496)..(595)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (503)..(503)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (552)..(552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (553)..(553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (554)..(554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (555)..(555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (556)..(556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (557)..(557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (558)..(558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (559)..(559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (561)..(561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (562)..(562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (563)..(563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (564)..(564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (565)..(565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (566)..(566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (567)..(567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (568)..(568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (569)..(569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (570)..(570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (571)..(571)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (572)..(572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (573)..(573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (574)..(574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (577)..(577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (578)..(578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (579)..(579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (580)..(580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (581)..(581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (582)..(582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (583)..(583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (584)..(584)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (585)..(585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (586)..(586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (587)..(587)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (588)..(588)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (589)..(589)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (590)..(590)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (591)..(591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (592)..(592)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (593)..(593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (594)..(594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (595)..(595)
<223> a, c, g, or t

<400> 1647
atgttcattc gttcgtgtcg agtgaagacg ggcgaggggg acgcgcccac cgacaacaca 60

gccggcgagg acacggccgc gcgcaaagac gggcggccga acaggcatgg acaagccact 120

gcagctaggg atggcacttc cgcgattata gaaaggagcg tgggcgagga gtgctggcag 180

cccaatttca gacaagagca gaagagcagg acggagcaga gctcgctcgg actaagtcca 240

aaggttcgta tgcacaagag tatcgcaggc gataatcagg ctatattgtt tacggaagaa 300

tagagagggg atgatggatc gcgcccgcga gacgcgaaat attgggaaaa gcaaaaaagg 360

ggggagaagg cgcggctggg tcggcttgct atcaaaggag agagaaacgt agtgagcata 420

gaaagatcgt caggaaatga atcagcagat ggaggtggcg cttgtcgtgt tattcatccg 480

ggtaaggtga gaatgnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnaattc 600

catctgtttc tataggcgtc aaatacgcaa cacaagctat taaagttgta atcctgtccc 660

cctcaattac acgtatgcga tggataattc aaggtagacg tcatactttg ggcatgtctg 720

taggttaatc agtctgatat cggaacatga aagagtagac acgtcagtcg tctgtatgct 780

ttgacacgta tcatatcata ccttgctata tatcatcgga tctccaaaca tacttccgct 840

atacacgatt gccaactcta ccgtacaccg aaggctgtgg taaacgaagc tatgggcctg 900

ggaaaggaga tctttatgca tggttcctgt gtgctagggg tgcggtgcaa tgtcatgtaa 960

agttacaagc atgcccttga aatttataca gatggtgtac gggtattata tcgccacaat 1020

ggtcctccct tcttcgttgg tgccccccga atggcggcgg cggcgttttg tcagctgcgt 1080

ccgcgacgcc tttggttagg tagacggaga gagtgaggag gcgactgacc gggcccccga 1140

ggagggaatt ttggtaaaag aaaaaagggg ggagaaggtg cggctgggtc ggttgggtcc 1200

aaaggggggg aa 1212

<210> 1648
<211> 1326
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222089_G1, chr6:93584126..93585451, Cluster 10

<400> 1648
gtgataggct gacaactaga ttacccatga atccatattc caaaaaaact ctatagaaaa 60

aaaaacggta gcaaacagtt agatggtttt cttatttcta aagataggat cttccgtgaa 120

cattttgta gataataaaa agtaacaagt gatccggctt tccactcttg caaggttagg 180

ggccaacagt ttacatcagt agaaaaaaac catcccaaca agcaggaagg agacaacctc 240

aagctaaatc ttagaaacaa actaatttaa ccgtctctaa ccggcaacaa gcattcttca 300

acaaagacgt catcaacttc actttttttt agctgaggcc aagctcggag ccagtatctt 360

tcctgcacgt attgttaatt gatcagttta atatggaact gttgtccaag catgtcacac 420

gcatatattg gcgtactgta gctgcaaaat gatagaagat acaagtcatt tgtacttgat 480

gtccattggg ataaggcaac gactacacac attggttgca aaatttaac cccaaggttt 540

cctacctttc tctgcgatat ggtggcatat atacttctct tgtgaccagc gctttgtccc 600

catcgtgcac caacaggaaa cagtcaagca tgaagcatca tcacaactcg tgcaccaacg 660

ctttgtcccc cgtctccagc gcccccaccc ggccgcccgc atgcgcttgc tacactgttc 720

aaaccacgac caccatggcc gtatctcagg agaggtattc caatcccgat gacgacgacg 780

acgagcaatc cgtcagggca aattccggag cggctgccgg cgcggcagcg tctcgccttc 840

ctcgtcatgt cccattcccg aatcccgact ccagtccagg cccatcaagt ggtccgtgta 900

gtggccgggg gagcatgaga acataacaca tgaacttgct tgtagatcgt agtcagcact 960

actacgctac tgacgctggt aatcgatgaa gactaccaga accaggcgtg gctcagaagc 1020

aataagcaag ggggatggaa tcatagcgga agagcagctt gcgggacagg catctgttct 1080

tcctcctcgt gcaaaaagga ggggaatcga cttgactcga ctgatcataa cgaggtcacg 1140

ccgcctgatc agcagatcaa tggccgacac agccgtggga tcacagctct ttcaagccgc 1200

gttgctgaag acggaacatg cgcagagttg gaagaacgga acgcatctga ggatagtggc 1260

acctagctac agggagagga tggaaaagca gggaaagcaa catgaaccaa aattgcaaaa 1320

gaaccg 1326

<210> 1649
<211> 1237
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_223692_G1, chr6:102305927..102307163, Cluster 10

<400> 1649
tgctaggact caaatacggg acgcgtgaat atttgggaga agataggaaa actgttggat 60

gtggtatttc tgatttctat ggctaaaacg agttttgggg tatgtttatg tcgcttttta 120

gacttgctct aagatagata agtctagtgg agaaaaccaa cgtggcacaa gacggtcccc 180

acacaaccac ctcggcccga cgcttctaac gacctctgtc ctcctctagt gacctttgtc 240

ctccgttcaa agtactctca caaacactgg cggaagactc ttatggcaag gtatgacaaa 300

tgtcatattt tgatttgatt gtctagagaa aatattcctc taatctacaa ctacaagtct 360

aatctatcgg ctgccatgtt tgttctggcg taatctaagg aagagtacat gacacttgta 420

ttatttaggc cactctattg ctatattcta tcggtttgtc gatgtctaaa tcctaatagt 480

ctatatataa ctcgtctaaa ctataatagt cttcgtgtat gtactggtag tagcttgctt 540

tcttgtacac attagttact cgacattatg aatgatgatg atcagtgaat attcttcgct 600

gtcaaagctc catctttctt tcacttgtac aatctctctc gactctcgtt tttttttgt 660

tttgtaaaga atatatatat ttccttggtg agcagttcct tggccgatag ctagatcttc 720

tcgccgcgat tgaggatgag gaggaggtgc tctgccgggt tcggtttgtc cggcgtcttg 780

tcgccgggca acgatcaggc gttggtgttg cctgttgggc acggatttgc ctttgcttat 840

gttgtggagg aggcgcgagg cgggaggtgg gactgggagg tccccgtccg gagtcgggac 900

tcatggctgc gggagctcga gcgcgaccgc cgcggcggac ggggccgatc gggatcggaa 960

gcgtgctcca ccaccacacc agtgacacgg ccccgcccct ggaccccggt ccagcgtgcg 1020

gcgtggcggc ccggccgtga cccgtgagct gcgtcgccgt ccgccgcgga aggctccgcc 1080

caacaacgat gaccgccggc tgttgacgct ggagtcttga cagcctgctg ctcgctcgct 1140

cgctcgtgtg cgactgcaac agcatgcagt gacacccacc aagttgacga ctggaatggg 1200

acggagagaa cgtgatcaac agacgctcga tccagag 1237

<210> 1650
<211> 1238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224238_G1, chr6:104970841..104972078, Cluster 10

<400> 1650
cccctctcgc gatgatgagt cggtcttacg cgcagctaca atgacatccg gcacggcact 60

tgcgtcgact gagccgatgg tgatcgatgc gaggctgaaa acgtcttcgg ctgcgtacgt 120

cggcagttgt gtacgcgtga atacgcgaaa ctaacgccgc caatgatggt atgatcgcgc 180

gccagcgcca ccaaccgcgg catgctgtga ctgtgctcga gttcgtcagc gatcgtgttc 240

gtgtggtgtt cgtgtggcgt ggccgattcg attctatggc gcttgaaaac gatccatttc 300

gttggcttgt cgtcgttgct gttaaaagcc ttttgtttgc atctcgatct tctttacttg 360

cattggctgc tagagttttt gaatttgaca tgccagctct cgttgtacct gtacgtacct 420

gatacgatcg gctccggttc aaagggcgtc gagttggtcc gatcgacatg catgtatgtc 480

tcttttaacc ttgcgacgac ttgcgagaaa acgacgaaca atttaaataa tgtcatgaat 540

aatctagcta tatatagatc ctgtacaacg tacgacacct gatgcagaag cagaaatcat 600

ttcctccaca atcgtgtttt tcttcttctc ttctctcctt agctaatctt cttataatat 660

atggctatat attaggggca tggacgacgt ttcgtcaact gtacgttggt tggagggtac 720

gttgcttgct tcagtagtgt tttacttttg tgttgcgtgg ttaacgcgag tttttaattt 780

acctctcgtg tcatgacgac tgacccggtc aggcggtacg gtcaccgatt gtttggtaca 840

cttcaggctt aatccacatg tgctgagttg gactagagta cctaaactag tcttcagtgt 900

ttttatgtag cggtgagata tatgatcaac aacttcttaa aaaaatgtcc gtcaggccta 960

gctacaggta tgattttcgt acgtagagat tcaatacccc tgttgtgttc cgatattact 1020

tggtaaccca gtcatttata atttatcttg gacggaaaaa acattcagag gccaataata 1080

tgaaatgtca atagaaaata caaccttcat agttgttttt atcttcaacc ataaggcata 1140

tgagaattta gtcataaata aatcctagct ttatgtttca tgctgtcgtc atcatctaga 1200

aaaaggccac cgtcgctcgt ggggtccact tgatcttg 1238

<210> 1651
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225895_G1, chr6:112963784..112964784, Cluster 10

<400> 1651
acacctacga tcgacatgtt cgcgtatccg gctgtattcg ggtatcgtcg tcgttgcctg 60

actgaaggcg acctcgacac accgaacaac gacgacggtg gtggtttcgg tactatcttt 120

ctatacgcgc cggcgttaga aaaacgacag agaaactgcg tgcagagacg ccaggagaag 180

gtacgttacg gtgtcctctg cggcatacgg cacgtacgac ggcaggcgcg gagtagtggc 240

tcgcggagag gagacccggc caataagtcg tcttccatgg ctgccatatc atgcatgcat 300

gcatggccaa ttggccatgg tccatgactc catgtcacta aaactcgctg gccggtcatt 360

atgaaaccga tgcgtacgtg tggctggcaa tgtgaaactg atgcgttatc ttgtcatctc 420

gatcgagcag ttaatgaatc gatcggggct ccatcaacaa tcggatcgga tcagttcctg 480

acaagggtgc aatgagtggc ttgatgttgc atatgggtgc aagcaaagcg atgcgttttc 540

ttcttcgctg cgcatcaatt gggaaaggga ttggagatta ggctcgtgat cctgcatcct 600

ggtgttaatc acggggatgc ccgagcacgg acgccgcaga gtttaggtat tggggatcag 660

ctgggactct gggaggagct gaagcaaccc gtcgggcgta cgtggccact tttctcgcct 720

cgttccgtag cagctgcggg tacaagccct agttgatggc gcgcagtgtt ccatccactt 780

tgtatatcta accaaacaca ctctaggctg gctggctggc cgagagggta gacagagaca 840

cagacggcaa ataaaatcag tctgcgccgg ctgaccagta gagaagtcga cgcgttcatc 900

ggctttactt gaacaactgt tgccgatcgc tgactctgag tggaagccgg ccagaggcag 960

tttgcaggct gccggctcat gtctagctat gccgtacttt g 1001

<210> 1652
<211> 1080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228586_G1, chr6:128057817..128058896, Cluster 10

<400> 1652
cccaaaaccc ccgcttaagc tagcggttgt agcacaaaga acacaacagc atacagtgag 60

agcagggtga taggtatggc tccgaactcc caacgtcgag gatggagacc aaggtcgtgc 120

tccacttagg ggctcggggc cagctatgac ggctatcaga ggcgaggctg ccctaaaggg 180

gaggggcga cgagggccca aggtgagcca gatccaatga actcaacgac tgctgcacgc 240

tacaactgag gtggagtgct gcctgaatcg cctcgacgcg gggcccaagg gagtcctcta 300

gagcgttggt tttcaccttg tagtaatttt aacatagtca tagaaaaaaa gcacatgtta 360

caagatgcgt acacataaca ttaggctgca aatccatcaa gccatcaccc atgtggcacg 420

cacgtttttt caatttacac attctcttca tggcagctcc gttcattcac atcgtggcta 480

tcttcggcct ccccaatcca taatccggag ccctcttttg atgagtttct ggatccgcca 540

ccgagtggtg taatatacat gataagtaac tgttggactt tacgtgttaa gtaacaggtc 600

catgaatgaa aattcacgcg tcagtcatgt ttcattcgta gacagcgaaa cctgcgatat 660

gaaccgttgg atccatcgtc tccgccggat tagtcgtcgt cttccctgac aggaaaaggc 720

cacttgctac cgtctactag ttagtgcagt agtagtgcta ccgggttctt ttcttccgta 780

ctcgctgtcc ctctcaggtt agcatccatg tagcaatcat cgagaatact acgttgggag 840

tgcaataagt aaagtgacat tatttgtttg ctagcatacg caaacactga ttactgtctt 900

actcgcactt gactccataa aactattctt tgtttttctc aagtataagc tcgccaagtc 960

ttcgaggtgt ccatgcatcc ttacattaaa aaaaaacata cgtgttctcg tcaaaactgc 1020

cacctaacgt tagttccacg aaagcaacct tttacaacac cgttccgcgt gtgcctacaa 1080

<210> 1653
<211> 1194
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229827_G1, chr6:133201965..133203158, Cluster 10

<400> 1653
acaaaacaaa acaaaactgg aacaagtagc agctgggccc cgcttgcttg ggaattggat 60

tgagatccgc agccagcatg cgcagtgtcc aggctggaac agaatttggt tgtgcaaacc 120

caaggaagga tctcatcttc tcttgtcttt ttttttccgg tcaaaaagaa ataattaagg 180

gaaaagggcc gacggtgggt ttaggacata ataataataa tgatgatgat ggagcatggt 240

tgcaaccgca tccccgcaat cgagcggtag cgggcccaca accaccgcac gagatgtgag 300

agctactgcc acgcgttgct gcagcactgg gtcacttgcc gcgggccaca gcgagaggcg 360

aggcccgcgt gtcagcgtca ctcgcctgtc gtcggagtcg gagcgaagcg ggcgggccgc 420

ggggggtgtt gatgggcccc gcggtgaagt ggagtgtggt tgctggtggg gggacacccc 480

ccactcccgt ccctaactcc gcggggtcca cccgccgaga aataatgcgc cgcgcgggcc 540

cggcgcaccc gcacccaccc tccctacggt ctcaatgacc cgcgggaccg gccttgttgg 600

gggggagggg accacatgta ggtgacgcaa cacagctggg cgctggtgca tcggggcgga 660

aagcgagcgg ggcgagcgcc cggcatggcg agctgtgcgg atggcgacgc ggtcggggag 720

cagcgcccgg cggcagtgct gccagtgcgg gtgatggcaa cggaggaacg ctctcggctc 780

tccccctgga aatggagctc tcgctgtcac tgtgcccccg gccgctgtcc cagtcccacc 840

accatctggg cagaccgcac gcctgcaatg caacgcctgg tcatgagtgg ggtttttatg 900

aggtcgctcg ctcacactgg aacgtgtggg atctatttaa tgccattata acgctttgta 960

ctggttttac tacaagaatt tggaaggttt ttgggtgaga acaggcagat tggtttcttg 1020

atttcttcag agtaagcaaa ctctttctac ttttgaccag ctatagttga acctcgttca 1080

tactgccttc gatggaaaaa aatggtctaa ttgtcttcct ttttttaat aaaaactgtc 1140

agactctgca aactttgacc aagattgctc tttgaaatat ctagcattgt catt 1194

<210> 1654
<211> 1156
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232213_G1, chr6:144671749..144672904, Cluster 10

<400> 1654
taaatagaca aaaaaaaatg agagagcaag tttccacatt cacggtgata gttaggaaaa 60

gatggataaa ataaggttga gaaattttag ctctctaaaa ttggatatat gtttttaat 120

cgaaacagac atgcttatag tgtgaatgag tcgagaatat catagtgcta tatttttaag 180

attttatttt ttagaaaaga tctagaggtt tgaaatgaac tattccaggt ggactgctag 240

aggtggatga tgagccaagc actttttttt ttgttttctt tgaaattgac gtaaccttat 300

ttatcaagat ttcctgaatt gtttgatatc taactctaag ctgagtttaa ctagccaagt 360

cgaagtcgtc aaagttacgc aaaatcaatt caattttatt ttaaaaagca aaatgacatt 420

tctgaaacga gtcacgtact agtgtctagc cgtaaagtgg accacattgg ataatagccc 480

gtgcatggtc atggtcgtag taggatactc gtggtttacc ggatcctttt gtactgcaca 540

ttttatgacg acgaaccaac gagaatcttc aattgagagt ttgtaataca ggaaccttgg 600

ctgccaagaa atcttcagcg gacgtccagt ttgattgact catcagttct tggaacttga 660

ttggaagaag tgcctcgatg ccggccggat cgtccgtccg tgcactacac acgaatacga 720

tgcggcacat tccaaatccc tatactctcg ggccaccgaa aacaaacacg atgtaaaagt 780

ccatccgagc caaacgaacc aaaacctttc cgaaaacaat gtagcccccg ggtgcataaa 840

tcctcccccc aatgagttca ccgaacgacg tacgtcgtag cgatggcacc ccggcgatgt 900

gctggtgcgg ccactgcggc gccgtccacc gcctccggcg gagggcgggt tcgcgtccta 960

cgcggcgtgc ggcagggtcc tcatcctgga cctgcaggag gatgcggtgg cggctccacc 1020

tccacggcag ctgtggcgac gtaagagggg agggccgctc atgacggtta cggcggcgtg 1080

gcgggtcgag gcgccggcgc gagacccgaa cgcggagatg tgtcggacgc tgactccgcc 1140

gtcacccata caccgg 1156

<210> 1655
<211> 1194
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232311_G1, chr6:145312630..145313823, Cluster 10

<400> 1655
tagttttggt gtctttgtgt ggtgatcttt cttcttcaat ttttttttt ttgtgttttt 60

atattgagca tattcaacaa tgctagtgat tgaattgtat cttgtcgcct taatttagtt 120

acaaacccaa tttagctcgg cctagactag aagatttaat tctcctatag ttataaatta 180

aatttggtta tcttatagtt ctaattaaat ttgcctagtg tctttttta atccttgatc 240

ctataatacg gcttgatcat ataatgcaca agtgctccga cctcgacgga aaactgcctc 300

cgcttttctt tccctgatgc gatgcgagat gcaaggaata ccaatagtgt aaaaaaaacc 360

cagacatagg tgatggatgt gttggatgct aatggatcta tattgatctg aatataataa 420

ggtaataaat tccaccgaac acacttgtgt agacctaaaa cgcgtagtgt ggacagaagc 480

ctgatttgca tgcgactgta tggtaggaaa aaaggtaaaa taatagtata cttcagaagc 540

gaacgactcg acaaacatga gaagaagaac gtaaagcatt ttgtttatgt tcatccatga 600

ttcgttttcc tctgcgtcat ggcaacgctc ggtagaaact tcgatcctct cgtagcaaaa 660

ttgaacttgt caactcccga ccagagctaa gcttggaaga attttctagg gaatggaatc 720

gaaagccccc aacggctctg ctgagctctt ctgaacgaac cgtcaacagt gcagcagtag 780

atcagatctg gctcatcagt cacccgcgac ctcgaccggg agtgcacgca gcacgcagca 840

gagagagagg gctcagagcg cgctcgcttt caagcggaac cgtatccgcc gcatggttgc 900

gcgtgctcgt tttcagcaaa gaaagtcgct ttattatata cccccgcccg ggcattttcg 960

atcaagcaca caaatacaag cgggctacgc caaagctcct cgagcaaaaa gacgccatag 1020

aaggagcaaa aagtccctga accggcacag caggcgccta gcttggcgcg actccacatc 1080

aactcgatcg catgcaaacg agcgagactg aattggagct cgcgcgcttt cgctgcattg 1140

aagagccctc ctcgtctgat cgggggaaca ggtaggcagc agctagcact ggag 1194

<210> 1656
<211> 1297
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234616_G1, chr6:155447376..155448672, Cluster 10

<400> 1656
tcctgttggc ctcttttcta agttggataa atccgcatct gatgcaactt atcctgtctt 60

gtacccaatg aaactgatct caagggaagg tctactcctc ctgaatttat gatgtgggtc 120

ctggaaaaca cccaacccaa gaaaaaaaat agggaatttc ttgagagaat actttggctc 180

ctgaacatgt tagaatgtca cttttgctaa cacgatctaa acggtaaata aagggtgacc 240

cattgtttat agcctatgat aacattaatc ctaaccagtt aatcggggtg ctagaatgtc 300

acttggtcgg atcacggatg cactcggctc caagcctcca accctacctc tacctgtgtg 360

tctgtgttat tagatcagag caatctctga aacccgactt ggtcagctcg gtctctgttt 420

ccccgtgata ttccgatcag tcagtccatc gctacgagta gcttggggac cgacctaatg 480

catggtttct ttgtcctggg gcacctagtg gcttgcactg acgcaacctg tgctgtgcag 540

caacggcgtt cggcgtccag cgtccagcca tccaccttct cgtccatgac gaccatgagt 600

ggctgggtcg ttttggcagt tccattctga tatctacgct gcactgttcc tccttgaacc 660

gtgtgatttg ttgcagggga agttttttt tccgccatgt acagcgagtg cgtgccgtgc 720

tcgtgcagtg gctggcatgg catggagtat accgactact atagtgcata atcctagcgc 780

agaagctact gaaatgccta ccgttttcgt tggcgccatg ctatgatgct atgcttccaa 840

gttgggagaa ccggagaagg atgtcaccac aagacaagac aagggtttcc acattccaac 900

tccacagctc tgaactggga gctgcgaaac cacgggcagc gcaggtccac accgctcgag 960

agattctctg atgattaggc tgtctcctga agctattcta tcacatactc tatttcaatt 1020

acactatagt ataatataca gtaaaaattt cctattttac cctattttac actatctatt 1080

ttacacgaat ggtataacca taaaaatata aaatgctatc tctactatta gcacaagtga 1140

attctctaga gctacatctt ctgccttgtt gcaatatgtt aaacatagaa gaaagttatt 1200

gagtaggagg gtcctatttt ttctagctta ccgtgtatgt gtgccactat aaatatgagt 1260

ataaatatga ggtgacccac gagagtatca tgttatt 1297

<210> 1657
<211> 1273
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235815_G1, chr6:161466907..161468179, Cluster 10

<400> 1657
tcggaaaaaa ggcccacggg gaggtcaaac cctgcgagtg tgacgctgac gctgatgcga 60

gcgagtgcga tgctgataca gccactctat ggcgctggca acgagcgctc aagctcccct 120

gcacaccacc cctcgatcgc cacacatgcc gatcgagcca ttgtcaattc cacacccgtc 180

gcgattgggc gcaggtgcaa tccggcgtgg ctgggacgcc aggctaataa gagggctcga 240

gaagaagacc tagctccgag gtgcaaatat cctcagcccg cgatcgaatt catgtgccaa 300

tcggcgtgcg tctcaccgtc gaggatggga gcagccggca gcggcgggca actctgcctt 360

aaccatactt gggttcaaag acgaactagg ggaagagaga cgaaggaaag gtatataaga 420

gagacttgat atatgatcgt acgtgtgcta catatatgtc aacatctgag atgagatggc 480

tatttaaagt ttactgtgtt aattagaatt ttttacatca acaaatggtt atctgggtag 540

taccatacat atagctgcga caacgtaccg attcatttgc acttttagat tacaaaaagt 600

tgtttctata tatacttgct taaattccgt aaccagcagc agtatccaca ctatggtatt 660

ttaacacgat ttttttttct ttcaaaacct ttggagaaaa taagaaagac cgattattac 720

tgttatctta aggatttata tatatggact acataaaata tgatcgtatc atggaacacc 780

caagattctc cacacgcaaa aaaagagttc cgcggtcccc tcttaatggc acgtgcttgg 840

ttaattagta tcccaaacaa gtaggttgta gataaggaca aaaaaagaac ctttgtgacc 900

actactactt ggttaatcct tctagctagg tccaccacga aagaagctgc aaacgcccac 960

ttttggtcat tctcaatgac cctctctctc ttgctattgt ttatacttaa tttaatgaag 1020

gagcaggtga agctagcttt cacgttttac agatccagtt tgttggttca ttggacgtac 1080

gatgcctgta gtgatgtaga tgtagtgcaa ccttttctta ttggtcgggc tgtgcaactt 1140

ctcgctgtgt gtatttgcgt ctgctgccgc caatgcctgt agtgatgtat ttgtgtattc 1200

tcggatgtga gcaagcgcgc atggaggcgg ggtgaaagag gatgcaaacg cgagcgcttc 1260

acaggaaaca cgt 1273

<210> 1658
<211> 1367
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235934_G1, chr6:162139345..162140711, Cluster 10

<400> 1658
ggggaggggg gggggggttt ggcccatgca tacacaatga cagcctgtgt ctgatttttt 60

tctccctgaa tacacagggt cactcgtagt atggagcact atattgccag tttttacctg 120

tgtcacaact gctgtcagtc agtgagtgag agagagagag agagagtcaa tgcacagctg 180

agcccaaacg aaagcagagt tgcgatttgc gaacctgcag agcacggcca ggtgagaacg 240

cgacgggatg acccaaatgc gaggtcacgg ctgacgatca accgagtgag cgtgcctcct 300

ccggccgtta caccacccaa cccaacccaa gcagagcaac tgctcctgct agtccagtct 360

ctcaacgcac gcagccatac catctgaacc aaagactcgt cggacttgag tattcctcgc 420

gggccgggtc ggtccacgaa ggaccagctt gtagtatcta tcttcctgaa ctggcgttca 480

ataaatattg ccaaaggaga gaggactact attgccacac ggccacggga gacgaagacc 540

tccatgcctc caggtccagg cgccggccgt ttttgtgcgt cacggccagc gtcaacagcg 600

ggcgcgagct ggttaagcgc tgacgcacca cgcagcttgg actttttttt tccgttctcg 660

ttttcccatt ctgttcccta tttctggaaa ggaaggaacg gggactgctg gcatggttcc 720

aataactctc tctctctctc tcattctccc tgggtttggg gctgagctga ctgacctgaa 780

gaacgcttga ccttcttcat ggggtgacgc tacgcctgac gcaggctcac gtaacgactg 840

attgttcagg ttcctgggag ctcagctaac ctaacctctg acaaaaagtc agcttaggcg 900

atgattccgg tcagccacac cgtcgtcgtt cacgacggca cctggggttt ccggaaccat 960

ggatggatgg ggcgtgcaag tgacaaaatc tggcagcccg tttggtggct ccgcaccact 1020

tgtgcccttt tgtctggcct ggtccctttg gggcccggac gttgcactgc acacctggac 1080

tgctggacag gtctctagat gcagcaatac gagtatgcat gccaagtttg ttgacagttg 1140

gaggagctgg cacctggcag ccacacaaga attcttgggc agggctgctc tttcgtgggt 1200

ttaggccaac tgacctccag aacatgtgca atctactact agtattaagt ggcatctaga 1260

tgcgtacagt aaaacgcgct gtcagcggta acaaaccgtt ggtccaagat cggagaaggc 1320

tgaacgatgc tgccacggac aagggaaaac aaaaaagatc actgcca 1367

<210> 1659
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236036_G1, chr6:162566681..162567778, Cluster 10

<400> 1659
acgggtggat ggatcgactt ctcgtcgtag gatgcatcgg cgcccacaaa ctaagtaaaa 60

ggtgatcgcc atgcatgacg tgcgtacgca attaattaat tagttaatta gtaatgagag 120

caaacaaaag cgtgtgggcc gtggggtgaa tgcgtggtga gtggtgacga cggcatatat 180

aaacacgtgg aagaatcaca gaaagatgtg tgtgtgtgtg tgtgtaagac ctggacgatg 240

atggacacgc acgccggccg ccacacccac acgatagata aggatggatg gtcgtgtccg 300

gcgccctcgt cctcgtccgt gtgcttctct tgctcgatca atcgcaaact aaacagtcgg 360

caaccaacca agttgcggcg gtagatagat agcagaaatc tctctctgtc ttttgtgctg 420

ccgctaaaga atggtatact ataaaacaac ttggggctcg tgatgaggtc acgacgattc 480

gacgcgtata taaaagaact ggataaaaaa ggatcatgtg catgcgtgcg aacgcagatc 540

cagtaggctt gcggccctgt cagtgcacac gcgaaatagg aagcgctggc gtcagccacg 600

cgctgatata tctatctatc gtctatatag ctactataca tatataccac atgacatgat 660

gcccttgatt aagtaataac ctcccacatc tatctatcta tctatctatc gcataccacg 720

attaaactag ttaatcccca cagtatccga tcgacatcca tcgctgcacg tacatgcacg 780

ccacttctct gagatgagat ggcccaaccc agccgccgct ttcagataaa atgttctctt 840

tccccctct ctttttttt cttttaaaag aataaaggaa cgatgcttat gcatgctagc 900

accagttaag cagagttgat taaaaatcat agaaaccgtc ttgctgcaaa aacaaaatgc 960

cctatttttt aaccgaaaat tgatgattgt cttttaaaat tttgaacgga ttttttttta 1020

aaaaaaacta aacagacggg aaactgatcc tgaaccggag gaccggtatc agaaaatagt 1080

ctcaaaagtc aaaaccca 1098

<210> 1660
<211> 1154

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236038_G1, chr6:162568074..162569227, Cluster 10

<400> 1660
ttcagtttat cggtcgacac gtacaccgtg tgtggacatg ggacagagag cgccgccatg 60

gcttgcagga cactggcgcc gccatggctt gtgtgtacag cagggaggtc ctgccgccga 120

ccgacctgga cctggctttt ccaggtgctc aggcgaccct agctcgtcga ctggtgtggt 180

ggctgtcaaa gccggatgga ggtgcgcagc gcgttccgca gagggctcgg tgctctgatg 240

attttggagg gtcagtagta tcactatcac ggcaggcgat gaggaccctc tctgcgttgc 300

tcagtaggtt ggatgtctgt ctgaaactct atagttagaa gccgcgaaat taaagcattg 360

ggggcactcg caaaccaacc cgcgcgcgga tccctaccaa atctgcatat tttctttcgt 420

aatcctgcac ttaatcatcg cttgatgtgt gcagtgcagt gcaagagagg gacgcattgg 480

catgtatggc agctttgcag agcagactgg cagggcatga tggatggaga cgaaggtgca 540

gcaccgatag aatagaacta gggaggtcga tgggcagggc gaccgagcaa tcaaacaagc 600

aaaaaatgcg acgggcactg tcgctgttgg cgatacagct gctgcacctg cactgccgct 660

gtccaggggg gagccgagct agggggggatg catctgagga ggaggatagc cagccgcagc 720

cgcctgctct cctctgccgc tggtcggtct ggtccacact tcatgtgaac gccacgccgc 780

ggccgcgcgc gcctgcctcc ccttccccgt cctcggaccc cgcagccgca gcgcccccat 840

gccactgcca gccagccgct gtggtgtgga ctcctcggcg gccctgctgc ctttcccatc 900

ccatccgccg catggcgcac gtcgccctca cggaacggaa cccacgtggc gcggcaaggg 960

ggtggaggca gctgggtggg cccttcggct tgcctctctg ctctgtcctg gttcgtgtct 1020

cgccagcacg accccgcccg cgtgcatgga cactggacaa tcattggcgc ctgaaccctg 1080

gatcgtcact cgccacgctc cacttatact ccgctgttca tcaccaataa tcgcactcac 1140

ctgttgacgc ttca 1154

<210> 1661
<211> 1307
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236039_G1, chr6:162573892..162575198, Cluster 10

<400> 1661
caaacagtcg gttttatatt ttctcgttga ttctatgagg tggttctgaa ataaatttaa 60

ctgtacaagt gaaagccgat tactgctggc cctcagcaaa aaagttcaaa agtccatgca 120

tggtggtcta ctatactata catattctcc acgtatgtgt cccttgctct gatggtcctc 180

tcttagcttc cttcaagccc tgcagtagtg catctcacac gccacatgtg catatgatca 240

gtgggcgcga tcgatgtagt acatgtttgc gaaaaaaatt ttcaggccat cgatgatcgg 300

agtcggacat tccgggcagt gttataatga ggcgataata aatgtctttc ttgtaaatct 360

tgctatcgat ctgatctgtg acgactgcat gcacaccact ggcctggctg cccgcccgga 420

aagcaacgga aagtacgtct agctgtttgg cgacgtcgac gtcgatcgag ctagagaaga 480

gaacgtgggg atccatggag aaaaaacagt gcgcggcatc tcgaactggg aagagcacgc 540

cggcttctag agaacactgg ccgggcgtgt gggctccaac aactaccgct tcccagtcca 600

tgcagtctcc cctaaaattt aaaacttaaa acatataatt ctcattacca actatataga 660

gttccagttt caataattgt tccgtgtcac tcttcccgct taatataaaa ataaattaaa 720

attggcagat ataggggttt aaatcttagt cgttgaatcc acattctcac cccacctaat 780

ttttttact ccgtcactga gtgtaagcga tatgatttgt cattttactt tcttctcttc 840

ttggtgttta aacacacaca aaaagaaatg gtccccggta gatgcgaggt aaattccagt 900

gggaagagac acgggcaaca gctagcctag cttcaccgac tggcgactgc tccagctgat 960

ccatcgaaac agataaacta aactatggca gccatccgtg caggcggcag acgaggctac 1020

acgtctcctg cagaaaagac ggacggccga gctagagaga gagcaggcac gccgtgctgg 1080

cggactgctg cttcgtacga ggatacctat ccatctgcac tgcctgctca acatgacgtg 1140

gtggccgtac ttcgggattt tttactcccg cgagctaata atctcttcaa cttaaaataa 1200

aactgaatat ctaaattatt ttatcatata aaataacttt tattctcaaa ccagctatgc 1260

ttaatattca atctgaatac tagtttactt ttatatgtat tcgatca 1307

<210> 1662
<211> 1295
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236404_G1, chr6:164553788..164555082, Cluster 10

<400> 1662
catgcatatc agtacttttt gatcggttgt tgcagtacaa ctacctcatg cttttccgga 60

tttccagctg gttggttgac cccgtgcagc aatgtcagca aatcagacta tataattttt 120

aatgttgctg ggagaatgtg cagaagcagg gatcccgttt ttttggtttt gtttcttcat 180

tttcattgca aagagaagac gagcaaacag aagagatgag agacgtgtga cgtgagtggc 240

gtgaccgggt catcatccac cgatccacgg cacacgcaaa cgtaaaaatc gtgccgccgc 300

cgacctgacg agacaggttt ggcggacgcg ctccgaatcc ggcacgcgta cggccggtgc 360

ctcggtctcg actctcgccg ccgcgcgtgt ggcggacgag cgcgcacgcg gtcgagcgcg 420

tcgtcgctgc gccgtgccgt gccgtgccgc atttgcgcgg tcgcgcccgc agcggatcga 480

tcagacgttt ttctcgcttg cagacagcca ccgcgtcacc caacacatac caaagcatga 540

cgcgatcacg agcggccatt gcaaggacgt gactcggact cactctgacg tcctactcgt 600

tggcagctcc ccgtcgaagc gtcgacagca tcctaggctc ctagccacta tagtcgtcac 660

ggccgcgtaa gtgagtatga gtctgtttga gacagctcag ctcaatgatt tcaattcttc 720

gtcagagtga ttttaagtaa tcatctagta gaattaaatc taattggcgt aaaacattcg 780

ataaatagcc gagaatgatt tttaaggggt tggagagtaa ggaacaggag cacgtcggga 840

gcactgtaag tacaaaacag ataatattcg cttccaccac agagcatgtt agctttttgt 900

tgtctgttac ttgagagtga ttttcgctgt aaacggagct acaatatatt tcgtctgttg 960

gtgggtgttg aaaaccaaaa ttatctatct tataaagtat actcctactt tgttccagtg 1020

taatacctag aacgaacttt attttctgat tatgcgtgca aaggggctac gagcctatac 1080

ttcgatgata cttttaaaaa aggcagatat ctcacataag tccgtaaaaa gtttattagg 1140

actagtttat aaatccataa ctttctataa ttgaaggata ttattaaggg gaagtaaaca 1200

tttccccct aaaccccaac ggatttaagt ttcaaactag tcctaatgta gaggctcttt 1260

atgaacatgt agactaatcc attaccgtgt actgc 1295

<210> 1663
<211> 1295
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236662_G1, chr6:165975716..165977010, Cluster 10

<400> 1663
agggcgcgcg tcaagacact agtactattt actcagtggg ctagcgacgc tgcccgtaca 60

gcactgctga tagacaggtg tagtcctgct ctgtctgctc gggatggcat gccgtcgctg 120

cagtctgcgc catgctgcag ctgcctcggg atggcaaaag gggatggatg cgactgcggc 180

tagggcgcta ggcatgtact cctacgcttg ccgcttgctc ctctagctgg atcagctgag 240

ctgagtgccc tgggtgactg ggtctgggtg tgcttgatcc catgcaggtt gagaacagaa 300

gcagtggatc cctgccccag tgccccggat tccacgtccc atccccaatc ccactcccgt 360

gtacaaaggg agagcgtatt gtactgtacg tactactagc gtcgtacaga cctgctgcta 420

tgcatgcagc agttgccctg gccagcaggc tgctgcagac atgaacacac gagagtgtcg 480

gcctggcgat gagcgcccgc tgcacaggcg ttccatcccc ccccgtacca cgagtgtccc 540

tggtgcgggg gaagcacggc actcgtagca ctactagtct gtcgtggttc ttcttgcgtc 600

gtgaaacttg gtttccgaga cgggattcac gattcagatc caaagaaaat gcagcaaaaa 660

aacatgcaca aggactgccg aaaggacagt cagatgagct actgtacgcc agaccacagc 720

acgtcggtat ggggctatgg ccatggggga tggtacaggc ccactataaa agcagacaga 780

attcgagtct tttgagagca acatggtgac atgtcctgac tgcccaacac gacgtgtttt 840

cgttccaaaa ctcgagcgca aaaaaaactt ttgcacgcag ctggtttaaa ttagaagtcc 900

taattatata ctccacgaat caatggttaa actctacatg taaatataaa gatgattgct 960

ttataaaaaa tacaacgctt ctaaacatct ttatttttt acataatatt taaaaccgcc 1020

aacttaatta actcaagaat ctagtcaccg tagctctagg gggggtgtct aagccatgaa 1080

gctcagcaaa caaaaaaaat ccatacctat aaaaggcaca acttctaacc ctagtgtacc 1140

tagaaggcca ccttattacc tggatgtcgt cagtgtcttc agttacagtt aatacatagg 1200

atgaaaaaga aatcgccatt gctaactctg actatgaaga aagtgcatat cttatgtcag 1260

tagcatggag taccatatgg ggtatttacc tctat 1295

<210> 1664
<211> 1107
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238375_G1, chr7:6304622..6305728, Cluster 10

<400> 1664
ggctgcttct gtgattggat cggatagcca gaccagatgc ctctgcgagg gcgccggcta 60

gtggccaacc ccaccctgat gcgtgatgtc tgactgggga cgggactcag catcagcgtg 120

ctccagtcga gcaggagtgc gtggtagtag tacactgaca ctcacccatg catgggcgga 180

agcggaatgg catctgctac ctccgatccg tctctctctc tctcactgtc tctgttatta 240

cgtcaatgag aacgaagaat gtaaaatctt gcagtatttc ttgtatcgct agccgccaca 300

ggacaggaca ggacccacca ttgcagactt agctcgatcg atcgttcgtt cccaaaatta 360

aacgacagtg actagctagc tagcccgggc cgaggagagc gaggacgacc gtcggccgat 420

gacgcacgcg gcgctgcaac agtgtcgtcg ttgcccactg ccccgcgctg cgacagtcac 480

tgttgtggct gctacacata tataatactg ctatactggc cgtggccggc cagggcgacg 540

tgggcgacca agcaagctct catcctgctg caacagtcac tcttcgcgcc aacatggcaa 600

gatcgtccac gtccagtgca tgcaactagc tagctagcta gctgccgacc ggccggccgg 660

aggcctgccg tcgccattct tgccccatcc tgctcgatcg ccatgcacgg cccacgcccc 720

ggcctgctgc gtgcgtgctg ttagaccagc ggtcaagacg ctggagtata gcacatgcac 780

acacaccccg gccggccatc tgtctctgtt tgtcgttgca agagtgcaag acagcgcgcg 840

atccaagaga gatgagctgc ctgggagagg gcacagggca aacgacgaca aacgagggac 900

agggaggcag cagcagcagg ggttcaatcg tgcacatcag aggcgtgcgg cgtttgcatg 960

cattcatgca tggattattg attgcatgca gttgcttgtc ttcctaggct cctatagcta 1020

cctagctagg gtgtactact gttttgggac acaatgcaat gtgccactat atatgtgtgc 1080

cagctagtcg cagctctcct ccctcat 1107

<210> 1665
<211> 1399
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_250331_G1, chr7:85704354..85705752, Cluster 10

<400> 1665
accttaatta caaataagaa taaaaatata tgtgcgaaat attgataatg ccggcgagaa 60

tattttccca aacgctgcgt cataacgcat cagtatatat gacacgtgta gaaatcattg 120

aagtagttta cgattccaaa ctctaacaaa ttatacttaa ataagcaaaa ataatgcaat 180

aggtaagttg cccaatcgcc ttggcataac acatacatga gtctgatacc cttttactac 240

tcaatttagg cgtcattcta acttattaaa ctttttacat aaataggcat accaaatcaa 300

gagtccatat tcgtatctag gtactacatt gttcgtaaga cgaaaagtca aagtaacaat 360

atacttattg tcaggaatat tttttaaaca caaaatacat ggtaaaaaaa cgtagaaaac 420

tgaaacaact atataaaaga aaaggaaaga acatgcatta tgaatgtcgg aatgctgaat 480

aaataacata aaaaagatat tttattactc agtagtcgag tatatccgta cgttggtttg 540

gttttaatat aagctgcagc aatccaaaca gctgtattta atccgaatcg aaatatattt 600

aatattcggt gtcgcattag taatcttgtg tttatagttg atatgtcgaa ctaagatata 660

tttggtgttt atgtttaata tctgaggaat atctcgtagt atgtattaat ttttttccaa 720

attaacattt ggaaattctc ttggttcgaa cttgcagtca ggaatctgtg cgaggcggtt 780

ttgggggagt cttggtagcc aaggaaggtg tgcacgagag cataagccca tcatgcccat 840

gcaactacct acctccaccg ccactagacg actcgagacg cgagcgtgtg ggtgtgggtg 900

tgacgctgac gactgcctgc gtggcatcct acgagagtac ctccgccgca gcctgcagca 960

tcgcgtcgcg tgcgtgactc tgcgggtccc acacgcggcc actcaaaccg gtccgacctc 1020

tccgccttcg gcctcgaacc gattggccgt aacggcccca ttcatttctg cggccgcagc 1080

agcagagcat ccgagcggtc gggctctggg atgaacggtt ccgatcgccc cgtcctcctc 1140

ggcgtggaac gggcaggtcc actgcatcgt ggcgcgcgcc cggttttctt ggactccaag 1200

tagccgggtg ttcccgccgg gtccaccacg ccacgtcgcc acccccttccc gttaccggcg 1260

cccccactct gcagctgaac cgttgctcct gtagcctcgt cggctgccct gtgcacaggc 1320

gcacagtagg gccggctgga gacgtcgcgc gcaaggaacg tgctcggctg cgctcggttg 1380

cgttttttt actttgata 1399

<210> 1666
<211> 1404
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_25586_G1, chr1:155187202..155188605, Cluster 10

<400> 1666
gggggggcgag gggacagaga ggggtgggcc gccgctggcg gtggtgtctg acaaccctag 60

ggtttggggg gtgctggcgc aaactcagga agaatactga caaggtgagt gtctaaaaaa 120

tttatagtgt aaaatttaga gactattacc atccctaatt atgagtgatt ttagtgagat 180

tatatctcct ttttttctct ctcgctccgt cctgtcaata tgctacgtag taccttgagc 240

agcgcagaga tttatagatt ctatctatat acatacatta ggcagtagca cagactcctt 300

tgccacgtca gcgcgtcgcg ctggctatgc ccctgctact gctagcctgc cactcggtcc 360

ggcggcccgg cccacacgcg cgcgagcggc tcttcggcac ggcacgagtg gacgcatgga 420

tgatagcgac ggatccagca gcagcacgag ccgacgaggc gacgacgacg acgaccctgc 480

ctgcggctgc cacaggcaca gctgcacggc gcggtggcta cgacgatcca tgcatggcat 540

gagggaccag cagcatggtg gtgtgtccag gcctccgggg agagcacagt ccgtgtttct 600

ggccacgacg tgcatgcatg ggccagaggc ccagagatct ctgctcggcc acccggctgc 660

tctgctgcag gccctgctct gatagtctga tgggaatcat gggatacgcg acgccacggg 720

gagccgagct ggagagaagg gtacataccc atcccgaccg aaataactga ccgtacgtcc 780

tacattttct aaaagctcct tattcggctt tactttaatc catattgatt tctactgctt 840

ctatagttta aattacagtt gcattagtct aaactgctag catcggcaca catgaggacg 900

gacacggacc tgatcgacag gccgctgctg cgcgagctag caggagtatc ttgccgcctg 960

ctcaacagca acagaagcct tggcgcgccg ttgctgtccg tcagtactca gcattgttga 1020

cagcaggaag gaaggggcgg acggacggac gggtaacgtc gctgtccgtc agtcctcact 1080

cactagtcca gtcctgcagt gcgacccgcc cgggacagcg agtggggccc cgcctccccg 1140

cgcgcgccgg gcgggggcgg cgggcccggc accggcaccg gcactggcac tggcaggggg 1200

gcaccgccgg cgtgcgtagc ggggcggttg tctcttctgc ttctggcctc accaccacca 1260

caccgtccag tccagtactg ctagcaccag ctggggaaga acaactgaaa caaacaactg 1320

tgtcacgtac gtacgaacgt acgtcgggac gattaggact aataccggct gccatcatgg 1380

cagcctggca cactacacac acag 1404

<210> 1667
<211> 1201
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256599_G1, chr7:121221842..121223042, Cluster 10

<400> 1667
atcctagtgg cggccccttc tatctcaatt ctcaaaagaa aaccgtgcca taatctaaac 60

ggataggaag ttgtgaaatg ctgacgtggt gggaccatgt ttattatttt ggattgaacc 120

gaatctaacc ctctcgtaat cctataaatg aaccaagggc gaccgtaccg tcgtctcttt 180

ttccatgtga ctttcagctt cccgcacagg tctgcgccgt cgctggtgac gctgtcgtcc 240

tggccggcgc gggccccgtg catcacgttt cggttcaaga gagaagccaa cccttacaca 300

cccgccttag cctaatgatg atggttccag gcccagcacg gccgttactg taggacgacc 360

aacagctcgc acgagatatt ttttttgttc agcgcttcgc cagatgtcct tttaattaga 420

aaaccagatg cgacatgcat ggcctcggat atttgcagcg gctgcagcta gtgctagtgt 480

gtcaactgtg ctagaggcct accgtaccga gcatggacca gcaccagccg cgaaaatcac 540

gtgcgcgtgc gctctcaaat ggtgatccct gctctggccg gccccttct ttgaatgcga 600

tgggataact tgcatgtgca ccgccgtagg caactcggca tatatgtgcg ccctggtccg 660

aaacgcaggt gaacgccatg aatcgcttct tgttttatgc ttcgtgagca tgtactagag 720

ttttcgaaaa acaaatggaa gcacgtgtgt cctgcccagt gccggcccgg ctcgcatcga 780

ccaagaagga aagtaggcag tagccgtcga cggccgctct tccggtcgca gaaacgacgg 840

gctctaactc taaccgaaga acgaagacct gcagggctaa ggtcatacta gtccgtacaa 900

tgctgtaaaa gtctgggcgc agggaaagat ttgaaccaca gacagagcca ctgggctgtt 960

tttcttcggc gacacgccga caccgacgcg acaccgacgg agagagcccg gacgagagcg 1020

cgcgtacgcc gcggtgcgtg cggaccggcc ggacagagat gcgtgcgtgc gtgccgaacc 1080

cgacgcgcta gctgtcgcca ctcgccagac gccacgggtg gcagtggcac gatggacgtg 1140

ccgaggcgtg cagggacggc aacgccgacg ggcgctgcgg ggtcgcacgc accacccaca 1200

g 1201

<210> 1668
<211> 1248
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257502_G1, chr7:125857805..125859052, Cluster 10

<400> 1668
aaaaaaaccc cggaagcaat ctggcctggt gttaaaaaca tgtagctggg cctacctttt 60

agcgaccact acggctccag aagccttgtt ctatgcgcat acgcaatggg ctacagacga 120

aacacatcaa cttcatccaa gtttcttcct gggccggatg acctcgtccg gaagcaagag 180

gaactttctt gggcctttct acttcattac ggtttcggcc ttgagtaggt tagtagtact 240

cggcccttaa ggtcaatact ttgggtctag cctgttatac aaggcagcgg ccgttgcctg 300

atatatactg gtatacagct gtagcacacg ataatacagt agtggtagta ctgaacaatg 360

gagttttatt caacaatttc ctcatgtgat tctttttgtt gactatatgt ctgttttgtt 420

ttggaagccg taacaaggga ccgcacagaa cgatacgact agtaggaact aggaagagaa 480

cagggaaggg ggtgggaaag tgatgacaag ttcggaattc ctgcagccaa attccggtcc 540

taggcctcac taatttggac cgagagaaaa agcagacaca tatctcttcc gtcttagcag 600

tcaaacgaaa cacctagcag aaccttctct gtgcgccgtt atccgtatcc agttcgcttc 660

cgttctcgcg tgagatcagc aaaagaagct agccttgggt ttggactgac cagctggcct 720

gcaaccgagc ggatggatgc gcgccggggg tggctccaaa agtcagcatc ttgtcgcgtg 780

gcaacggtca gcgctggcct caattttctc cgccccgctt ctgtttcagt tggtgtgagg 840

cgtttacatg ggcgatcaga tcaccgagtt ggacaagcaa ttccccaacc aacaacccct 900

tcgcttgcac gccagcatgg tggagctatg cttacagaat ctccggttcc tgcactggca 960

gaacttttt tttttgggtt cttaagatta tttttaaaaa ctctaccatt ttttcccttc 1020

aaaattaact tggatcacgc tcatttctct agccacggtc aaatcacatt gcctcgcaat 1080

tcagtctaac gcggttagtc gattgctatg attaaaaaaa tatatatttg ggtagagatg 1140

taaagaattt tagtcagatc aaatacgtta cgaaacttgg ttgaatatag tatagtagtt 1200

atatgttctc tatgcttcgg ttagttattt agttagaaat ctcctgat 1248

<210> 1669
<211> 1160
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260479_G1, chr7:142815406..142816565, Cluster 10

<400> 1669
cagctctctc ttgttaatta gtgaaaacta tattttcaat agatagtttt acacacatgt 60

gactttcctg tgttataaat ttatgtagga tttcaatagc atgaccattc taatcatgcg 120

ttttattcct gatttttgag aattctgtgt ttccaatgag tccttcctta gctttgttat 180

atcaaacggg cccttgccct gccatgctgt gttcagccaa cctagcctgc tgcccctcgt 240

tgaatgcact cacgattgaa cggtcgtctg cggtgccact gccagatcca catgccctcc 300

ggtcactgta ctgcactcac tcagggctca tctcatctca cgagccacga ccacgactca 360

cgggtacggc gcacgtacgg tcgtggacgt ggagtgagac cagttgcagg tgcaccggat 420

ctggtcttgt ttactcctat actgatcagg ggataaaaac aaaatctaaa ttagctagat 480

tttagatcat ccaaacctac caccacgaca ccacccccttg actagaaagc ctgagaccaa 540

ccagcggggc ctgtgctccg gcctccgtgt cgtcgtcgtc gccggacgcg cgaccagggt 600

ccgggggcct gacatcacat cagtcgcatg aaagatccgt cgagctcagt aaatgcttca 660

cctactaggc tactgccacc gccaccgcca ccgccaccca ccacgctcct ccctgcctca 720

aacggcgtgc tcccaacgtg gctcagccac tgttgatcgt tttctgaatt cctgtcccgg 780

gtttgatccg gagcacattc ttgtgtctta caaaaaggta gtagaagacg aacttttatg 840

aagtttgatg aaacattact gtttatatat atatatatat atataatgtg taataaatag 900

atttagatca attacaataa atttattttg agataaatat cgatactgtt ttattaagaa 960

gggagacaga taggagtact ctttgacagg atgtagcagg gagaagcacg tgcgtagcgt 1020

ggagctacga actggggaac tgccggagcc cggatgctcc tggctggtgt catgctactc 1080

agagcagtgc tccttcatga ggcattactc tgagcattga ccttaagcag gccatgcacc 1140

ggtaccgacc gtatccatcg 1160

<210> 1670
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261029_G1, chr7:145720572..145721578, Cluster 10

<400> 1670
gtacgttcac acccctaaag catagaaaga aagctacttc ggctgatggc actgcagtag 60

aactgtagaa gtcagtcaag tgagggtggc cttcgcgttg gctcagcgct agctcttttg 120

caggcaccaa ggcaggcagg cagcttccga gcacggtaca gtaccggggc ggtagcagta 180

tatgtatgcc tgttggctgt tgcctgtata tatcacaggc tcaggcaaac atctcgccac 240

gccatgcatg catgcgccgc ttgcttaatt tatctcgatc ggcgaggagc ggaaggactc 300

aggagaaatc tcagggagag cacatcatcg tacgtgttgg agccagacga ggcaatcgga 360

tcggacaagc gcgtgaatga atataatgat ggaccatggt ggtgggccac acagcacaca 420

cactgatgag atgagatgag atgatagatt gatgagcttg ccgtgcctcg ctctcctcag 480

ctaacttcag ttagctttgc atcacctata cggtgtgagt gtgactcatc ggtgaacggt 540

gataagaagc tgtcgtcaat tgattcgatc agctctgatt gagggtaccc aacgactaat 600

taaaccaccg gttaatttct tcgggcttcg gttggggaat gcagtagatg gttgaccgat 660

agctgactgg tcattcatgg ttaatttgtt taatcgtgta tctattgatt tttcatcacg 720

tacggccgga ggtatttatc ctggcccatc aatatctaca acgcctctat ttgatcattg 780

gaggggactc tctgttcggc agttcgtgtt cgattttgag ggcgccctac tatcgatccg 840

aatccgatat agggtttgat ctccatgcta tccagcaaca gcccaataaa acgatgtgtg 900

acttctcgtg caatatttct gatgggtcag agacatctca tctcgcatgt cttctcggcc 960

tccatcttcg tcaccttcca ccatggcatg cgggattagg gatgcac 1007

<210> 1671
<211> 1235
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262398_G1, chr7:153825804..153827038, Cluster 10

<400> 1671
gacagttacc tcggccgacg attttatttg gcagtcggac ggcattgcgt tcgttttggg 60

tttgtttctg tggactgcgg gttcacgagc actgaccacc ccaggttcag gggattgctt 120

gcggtggagc aagtgtatac catttcaagg agtgccgccg gcctgcggta gcaggcgtca 180

cgctttcact tactttccag aagaaaaaaa gggcgagaga tacgggttac gaattctctg 240

tcgcacacag agtatcaaaa actctatatt ttttcttcgt cctcgacgca tatatttaca 300

ccaatctttt ttttttttc caaagatctt tggtggttgt tggtttcagg ggacggggat 360

atatacagcg gtagggctcg acatatggac cacgcgtccg gatcactcgt gatcttacgt 420

gacatgtttc ggtgttttct tgagaaacaa gattcgactg gtaattttct acataatttg 480

gtaaaaaaaa actgtcggac cacgacaaag ttaacatgtg tgcttaaccc ttctgcttgt 540

gtatctccgc tactactagt tggtttggct ctttcaggtt cggtttaaat agcgattgaa 600

tgatgctgag taacgtctgg gcatgaccgg acggtctggt ctgaagacgg tctgctctta 660

aaggaggaca gtctactata cgatcagata ttcagattac attaggtgac acggcatgag 720

cagcgcgctg gctagctgtc gtaggaccca ttccatcgtg agctgatgaa ctgatgagcg 780

gtactgagct gagcaagtta agcagcatgc accctctcag ggtcacgact cacgagttct 840

gccgctgact gacgggctcg aatgctcgat ggagcaatgc cgtgtcagat atatatgcag 900

cattattgca cgttagatcg ttcgtgatgc caggtacgta cttatgccga cttgttcgat 960

agatacatag caaggttctt acaacgactt taaactacaa gtaagtttca ttttgttttt 1020

ttccctttg aaaggaaaaa acaaaatgaa ataaaaggac ccagacttaa acatggacct 1080

tgcagagtta gttgccgagc agttagcacc ctcaagctat gttgcccaac gacggtttgt 1140

gcatacatgc ggccggagat atcaggagcg gagcgccatg tccgggcctg ccaggtagct 1200

ttgcgtccag atcggatcac tcacacagtc acaca 1235

<210> 1672
<211> 1369
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263401_G1, chr7:158455498..158456866, Cluster 10

<400> 1672
acgcagagac tgagacatgg tcttgatgtg gcggcacgcg ggaagaacag cgtgatggct 60

agtgggatag agcagcagca gcagctattg gagttggaga tgttctcgat catctacgct 120

aagaatgtca gtgcgtaaaa gcagttttgg tactcagaac ttggatggtg acacaaaaca 180

tgcacttgtt cagcctttcc aaaacatgcc gccgtgcatc cctcaagttc ttggtctgta 240

atctagcatg tttgtttccc cgcgctgcct cctctgacac tccgcccgtt tttgtccaca 300

gccaaaccgg agctaacgac ccacgtcacc gaggcccgcc tgccggccgg ccggcgtcca 360

atgccgtcta tccgtgtgtc gtatatatca tcacatcgaa gcacaccgac tgaccaaccc 420

cttgcccgta tcggtcattc gatcccctac tcgttctccg cccgcgttta atcatatata 480

aacgcgcgcg cacgggcatc gccgagtccg tcccacccac ccacgaactt ctacgagttt 540

tagttcgcgc gcggcagggc gtctcacgct cgatcgcgcg accgaggcga gggccgagaa 600

tgaactacta caaccagcag caggcgcccg tgacaggtac gtacggtcgg tgatcctcaa 660

cgagctcgat ccggaaactt gtttttttctt ccgccacctc ggcttcgatc acggtttgaa 720

ctgaccgcgt gccttttccg tcgctctgcc aagcagcgta cccgccggcg accgcgcccc 780

cgcttccggc ggggcagccg tacgtgcagc cgccgccgac gcaggcgagc cacgtgcagc 840

ccgcgccgcc gccggggtac cctggcagct tcaacggtgg catgatgaac cctccgccac 900

tccaggtggt ggcgccccag acgcagagcc gcggcgacaa gaccttctgg gaaggatggt 960

aagcttcgtg cctttcgatc gcatgacacc atgcatatat aatgttactg acccccactc 1020

gctcgctggg ctgccttgca gctgtgcagc cctttgctgc tgctgcatcc tggacatgtg 1080

ctgctaagca atcccggagg aagcaataga ccaaaatagt acctggaagt atcgaacgaa 1140

ctacggcatg ctctccattt gtatctgtaa gagagtccgt ctgtacctgg agaacaatta 1200

gtgtttgcta cttactacct gtaacgtgac atacgtaccg tcaattttat tgtgttggca 1260

tgaggtttgt atttgtgaat tgcgatgaag gtaataaaga gttatcaagc agacagacaa 1320

gctggaaata aaggggaaaa aacagataaa tgttgaacat caaaagtgg 1369

<210> 1673
<211> 1047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263644_G1, chr7:159860381..159861427, Cluster 10

<400> 1673
ggcccactgg tcactgcagt gcacgcaggc ctgccttctc gcttgttgca ttgcatgcga 60

gtctgacggc tagctagctc gggcgggggg caagagatct ggatgcatgc atggcatggg 120

ggacgaccca agaggcctcg acagctttca cggtccatgt tcttgcccgg cggacagacg 180

ccccccggcc gccggtttgc ttcactgccg gccttgttcc gcatccagat cgtcacatgt 240

atcagccgct gtcctgcagc cgcaactgtt tgaatatata aaatactgta aaaaccataa 300

cccccaatcg gattaaagcc gcagcaaacc ccttcccctc gcattagtat tcccatccac 360

caacctgttc tcgatcttac catgaataat acagtcacgc acgctctttg tttcgctgtg 420

ctttgctgca tttcgttggg ctgggaagag acctgaacct aagatagatt atatatatga 480

gtccaacgtc tgcctaggtt tttctactac gcatgcaatg gaatcttgat gcacatagat 540

tattgagcat cgcattctga tgatctatct catctctgaa ctgaattgaa ctccgtagga 600

cgatggtgat gatccctagc tgtaggacgt agctagctgg agctaatcga tcatgcatgg 660

tatcagagga ttcatgagta gtgtttgccc tgcgtcgtca gtccccaacg tcccccggtc 720

gcgcacgtcg cagatgagac tgcgttaata cggccttggg cctgcagccc acgccacaat 780

tcaagagtca agaccgccca acctccagca ggctgcacgc taccagcaac gccacaggct 840

acaaatacag agagggacca ggatggaaaa cacaggcctt tgcaatggat tactcctaca 900

cgagaatatc agcaagggcc tgtccgcatc cgaaccaatg gcgatactcc acatgcgcta 960

ggctgttttc agtagatcac ccatatagct gtgcagaaca cagtataaga gcaactttaa 1020

gatgctctct ataaaggcag cgactgt 1047

<210> 1674
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264301_G1, chr7:162981741..162982902, Cluster 10

<400> 1674
ctatagttat ctcttaacca gagtttatgc aaaagaccca ggcttcttta ggtgcaacta 60

cggttttgac taaatatgag taaccctatt ctaaaaaggt tatgcaacct ttgttctaga 120

ccttaccaag atatcacaac acaaaatatg gaagctttaa atacgatcaa gatacaagct 180

ctcgttgacg cggcgatatc tttagcgttg actaattcaa actactagtt cttcataaaa 240

tacatatttt tgttagatat cttaactgct agatcttcgt aaaattcaat gataaatatt 300

cttctttttt attaatctcg taattttcac tatatcgaga aacgtgaaag ctttttttatt 360

cggttatatt aacacgatag ataaaatagt tagaggacgg gtagatagat agataaccat 420

aatttaaaaa acgaaggtcc cttggtgcac aatcaaccgc gacagcctgc ctccctacga 480

taatatatga tgataatacc ggtgtagcga ctgacagggg agccccaccc cacgtgacgt 540

ttttttctgg agtgtcggag acagcgactg ttgttgggct ggacgcctgg acccacgtgt 600

gcttgaaaac gcacagcaca tgctctttct ctgtgctgat cagctcgatt ccgttctctg 660

gtagcttagg ctggtagccg taggaccgga agaactgggc aactggcggc agtgcaccac 720

aggcccacac ccacaggtag tcaggtacgg aagcacgctt cgttaactcc tcgatcgcgc 780

gcgacgcgac ggcaggctcg caagtcgcaa cccgcggcgg cccggcgatc gccttcgctc 840

aatagcctgt ctgcaggctg cagaaagttt ggtaccgcaa agcccatccc agggcggcgg 900

atctagaaag cttagacacc aacgacgctc ttggctaaat tcgccgctag atcccaaggc 960

cgtcgttcgt cgtcaagctc gcacactcat ccacagttca ctccaggcgg cgcatgcagg 1020

ccgcccagcc ccgctgaaac gagagcgcag cgcaatcata caagaagcgg caggaaagtg 1080

tcagcgtcgg ccagcctttt ttgcctttcc cgagagcgtc gaccagcttt tgccgagact 1140

gcagccatcg gccgatcgtg gt 1162

<210> 1675
<211> 1168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264305_G1, chr7:162998974..163000141, Cluster 10

<400> 1675
cacgactaga cgggctcagc ctaatttcca gtactagtcg acgagatggg ggtgggtgtg 60

ctgcgtacga agcgcaagtc ctggattgtt tgggctaagc ctaagataga atttgataat 120

agcgagcagc gcgcaagcaa aactgaataa cacgcgacag cacagcacct gatcctgcag 180

ctactagact ggatggctgc tggagactgg gcttggcatc ccatagtctt gacaggcgga 240

taatcttctt tcctgctgtt ggatgcaaaa aaatcacctg tgaagcgcta atcatccgga 300

tccagtaaat cttttgcctc tccatcgtct ccgagcaaaa gacaaataaa gcgtacaccc 360

atgcattagc cgatgtgtcg tttcagaacc tcgtacagcc acaaagacgc gagcattgca 420

tggatgggag agcggtacac gtagacgata gatgatggcg caggcgcgcg gaccatcatg 480

acagggcagg cacgcaagta tgtacatgca tgcaaatact tggctttgaa gctcatgaaa 540

cccggccccc actctccgct cgatgatgca tggtctgaac cttactacag cagacgttag 600

agattgttgt acgttggtgc tgaaacctag ctagaacctg aagggttcca tgaccatgat 660

ggttgctaat cagcgtcagg cttgatctga tcgtcggttc gtcacggccc ctagcgtagc 720

ttgtagttga tgtttccgaa gatgcatgcc tcgcttcatc acccacccct agcgatgctt 780

ttccagagca ctgccgctga gggtgacggg tcatgcatgg ttttcccggg ccctgccagc 840

ttcacctacc cctcgtacgg cgtacttgtt cgtgtagtgg gcggggcggg catggtggtg 900

atcatggcat gcacgatcaa ctgggtggtg gcctcgtgag gacgacgctc gtctcgactc 960

ggcccatcct cacgtctctc acatcactgc tcgaatcctc ctcgtcgtcg gcaccaacgt 1020

gatgcattga caacagttga caggtggctt acaaggtcac ggacggtaat cctccttttc 1080

gacacaatca caatgaggtt tgtataatac tccttttcga ctggcctgac gttggtgctg 1140

gagcatcttg ggcgagaggc ttggcgac 1168

<210> 1676
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264694_G1, chr7:165471876..165472910, Cluster 10

<400> 1676
gggggcaacc gaggctcaaa gcacgcggcg gccagcggct ggccgccgac cgggacggcg 60

cagccgacga ctggactgga ctgatcgatg cgcggtgtac gtgggcagag ggtgaccctg 120

cggtgcaggt gcaggtgcag gtgagcattg gcttgttgtc ctcggttgga gctggaaccg 180

cgccgcagcg tgctgctggg cgcccgggac tcaccaaccg ggaacagaga agatggttgg 240

gtgttgtggg ctggtggtgg tccacggctg atgcttatta gtgcttttcc cagggtgatg 300

gccggcttgc gtcctgctta attctctgtg atttgatctg aagatgatgg atggatggat 360

gctgaaagtg gagacagtgg caagggcgtg catgccctct cgtcccgttg ctcacacgct 420

cgtctcgctc caatcctacc ctaccctacc ctaccctacc ctcggtgtga ctgagtcggt 480

ggccaacctc tgagaaggtg ccaaaaagaa aggtacgagt gttgcaagcc accgcccacc 540

gacaacgctg cgcctgcacc ggccgcccag accccagtgc gccggaggcc agagctcaga 600

gtcacagcac agcacagcac agattgctct gcgcccacgc cacgcccacg caccggacac 660

ggcgcatgtg atgtgacgcc agcctgcgcg gccgccccgc cctcggcttt tcaccgccgc 720

tagctgccgg gagtcggtca cgcactgctg tgctggtggt gctggagtgg agcgggcacg 780

ggccgtagta gaaccttgct attattgctg ccgcttccat gcatccaaag gctcagcttc 840

ctctgaggcg gactccagca gtccacctaa atcttattat aaatattttt tgcactgttc 900

tatatggtag actgtactgt tcgtagaata tagttcaaat ataggtatga gtatagttaa 960

actgctggag agagtatgag ttgacatgta catatacatt gataccggta gaaatggtta 1020

ccatctagct aagag 1035

<210> 1677
<211> 1174
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265119_G1, chr7:167814413..167815586, Cluster 10

<400> 1677
taccaccgat cgtctcgacc tgccgttttt ttacactaac agagagctca ctctctatgt 60

agtagcgtgc aacaagcaga aacgtactag gccccaggtg tgctgtagct attatttttg 120

acacggccgg tgcgcgcgtt atttcaaagt acgtactctt tttcgcagcc ggccgctgaa 180

gatttgctca accgatcagg ttacgaacga gaacgagccc cctgctcgcg tcggtctgtc 240

tggtccggga ccgggagcac ggactggcga cggagtcgac agtcgagcaa gcagcagagc 300

atcgtcctcc gtactactcg ttcaaaacgc caaactttga ggcccgtttc ctctgtcggc 360

ctgcaaccaa ttaactactc gtaagatgca acaggcacct gccgacagct cttgcgatgc 420

aaatgcacca gcaccagtcc aagttcatca aacaacgcca acgccatgcc ggatcgtact 480

gcacggcgcc aatcctgctg caatccatgc ttgtaacgct agctgtcagt ctgcagcatt 540

accagtatct gtcgttgcaa attgcaaggt aacagcacac gctagggcta agtaagcccg 600

accgaccaga tctgggttac cgcggcgtca tgccagctaa tagcccgtct ctctcgttca 660

tgaaggcaaa cgaggcacgc gcgcacgtgg cagcgtcaga ccgtgcccac ggcgtatacg 720

caggcacact cgtacggacc ccgccggccg tctggttcgc tcgtcgagca agcgcgctaa 780

ccaagttggc ctcatccggg tgtgcacaca gcacgcacaa gctgacacgc accgcacagc 840

aggctcctag ctagccgtgg cgctttttg taccgagacc cctggacccc aggcgacagt 900

ggcccgacac acgtacgggc cagcgaggcc actggccgga tcttgctcgg ctccgcccga 960

caccagatcc ggatcagcgt acgtgcaggc cataagaaaa tgggcagggg ggggtgcggg 1020

atgcggctgc tgatcatcga cgtgcgtgcg tgcgatgcga atgcttgctg gacagacagg 1080

gtggctcgca cgacgtcggc cgtccggcta gcgcggagca atttcgacct gtgggattcc 1140

ctttgccggc cgtacctgtg gggctggcag tggc 1174

<210> 1678
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265141_G1, chr7:167946648..167947687, Cluster 10

<400> 1678
ctgcttgacg cacgcagatg cggtgctagt ttcacgtcag gttgggttgc gcttgcgctg 60

cgcgccacgc cgcgttgatc tgcggcgcgc ggggccgagc ggtgcacttg ctcgtcggtg 120

acgccgacgt cgtccctgct gcctccatcc cttgcagagc cagcagtgcc agagaggcga 180

ggacgagcgt cgtacgccgg cgcaccaaac ttaacaggcg tcggcttaaa gctagcaggt 240

gatagatgct tgctagaggg gtggtacccg acgtcgcagg tgtccactag ccccgagatc 300

gtgtttggtg gctacttggg gaccccgtac gtgtggcgtt cgcgttgaga ttgagatccg 360

gtggacctca cagtgaaagc ctgaaagggg catctccggg acgcggcagc aagctttcaa 420

ccagctgcat ctaccgtacg tggactgtgc ttgcagagaa taagtataga ctgcctgttt 480

tttttaaaaa aaaaaactgt gcacaataca atgtacaccg gccgtgtaca tcataatatt 540

tttttactag tagctccgtt ggcaaccgta attaggtaga gagactcatc gtctaggtta 600

tgcgtggtat ccccgtgtct cagtcctaag tcctaacccg tgacctccta gacacacaaa 660

tgcacacaaa atgttcttac aaataaatta taattaccat gtgtgtgtat agctaataca 720

gatgtactgt acatgtgtca gctccaccca ttcaaataaa actcttcata tatatacaat 780

aatgggatga tcgtccattt tgaactggtc taagacgatg atatatatac tctcctgcat 840

actgttcacg ggtcgtagta cgtacgtacg tcggtacgta gtataactac tatatatata 900

cgacgaacga acatatatgc gccgtgtgcg tcatagattc cgtgctagca tgtggagacc 960

cggggtggcg tgtacgtacg tacggtagca gcaggggcca gcgagacggc gaccatataa 1020

taatatactg catccattaa 1040

<210> 1679
<211> 1205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265142_G1, chr7:167947821..167949025, Cluster 10

<400> 1679
taactcaata ttttttgaaa caagacgagt atttaaagtt ttttaaaatt aacgatatca 60

tatatttata aaccggggta tactgcagcc agcagacagt tcttacgcat gcacgcggta 120

tcttactaca taaaccgatg agtactgcac atgtcagttc gtaatcgccg aaagatcgct 180

gcccagcagg ggcgtgatta gtttagttta cgactaataa aataggggtc cggtccggtc 240

aggccgggta atatatatat atatgcaccc gacagctgga gctgctgttg gccaacctgg 300

agtcagtata tacgtttcct agttccatat ttccatccag ctctctctct ctatatatca 360

agtcagccat atgctccatg gatcaggctc ttactctcct cgctgtgttg tacttttgtg 420

tatatatgca atgtatatat atatgcgtgt gtgccaacaa aacaattcgt gccatatata 480

caaataagct agcggcggca tttgactccc tgctgctcga tcaggcatcc gatagtgtgt 540

gtattatcag tgtatatata tgtagtccag acgtccagtc cacatctctc accgttgtta 600

ttacctgctc catcgatcga tcgtcgtaca tactacatac gcgtgtgcga tttcttggtt 660

attatatata catgtacaca tattctctgc gtacgtgcca agtcaaataa gcttagatgc 720

atgaggtgag cttttaacct aacagcttgc ccgatcaata ttatatggtt gtggcggata 780

atgaactgat cgatgatgca tatgcatgga tcagcatcga gatcttcttg gagctagcag 840

cagtggaccg caggaggagc atgcaccacg cacccgtcat gtcttgtccg cgctggccgc 900

tgggatctat atcagcagaa ctggatcact ccaaataatt ggtgcgcgcg cgcgcatgca 960

cagttcttgt agcgcaccat gcaagacata tgaactacta cctagcttaa ttagttagtt 1020

agtttggatt gtagcgctag gctgctacta gtggctgcta ctcttttgtt cgctcgtgaa 1080

gagcttatat attggttggg aaataaaagg ttggttttgt ctagttattg tgcgttagat 1140

ttcgttcatg tggaatacat gcgtgatgga cgaagagagg ccccggcgtg gcccactcgc 1200

aagac 1205

<210> 1680
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_265643_G1, chr7:170820932..170822165, Cluster 10

<400> 1680
ccggggagaa tattttagcg caccaactcg gttgcttgca ccaaaagtgc tcccaggcct 60

ccacccatcc agtacgtgac gcggagtcct ggatcccaaa gcaacgcaag gcaaggcaag 120

caagagcggc agttttgact tgttaacaat ctttgaggaa ttctctgtgc tggttaacac 180

ggtgtcaggc tgtcagcgag atcgtattat atattatgtt atatgcagtc gcgcgcacac 240

aggcagcagc agttcttgca gttgcagacg cacagcggat ggcatggcat gcacatgaag 300

gccacatgca gcagctagct agcttggagg aaacggctac tgtattattg gaatcccccc 360

cagggtccat tctagctagc cagccatctg atgaatatct agtctagcta cgaatctcac 420

tggctcaaga aggtcaagca gttccattag tacctagaga gagagagaga gatagataga 480

cagggagatc gaggtagacg tttgaggaac agatcaagat gagaatgggt caaacaggac 540

gaccagaaac agcgaaggca tgtactccgt ttcagaacaa taataataat tccgtgcagg 600

gaatggaact gcactgaaca ttgtcaaatg ccaaatctct ttatttattt atttatttat 660

ttatttattt ctttaaatac aactactgga tgaaaatacc actagctgtt ggcttagccg 720

gccacttgac acacacgacc tgtgcttttg gaccgtgtaa aaatggccct cggagcgccg 780

aaaaaaaaaa ccctcggttc gaagagacga ggggtgcaag tttcaagaag agccttaaac 840

ccgccacctc ccacaccgcg cctgctgatc gggagggagg ttttggatcg ccggaagaac 900

catttgtttg tgggttttga agcagacgat gatgggatag ggatcggtta ctggttcctc 960

aagatccaag cttagctacc cagtcacagc cacagccagc aagtcctgtg cctgtgctta 1020

cgtgcagtgt tgaaaagcca cgccatgctt ttctgctgcc caagcaacaa acagctcgca 1080

cgtctctttc gggcgcgttg cgacgattct ggaaacgccg atgctgtgat ccatcgtgag 1140

cagaggagac gaggctgtct ctcatgtgag ttgtgactga ctgactgact gactgtggat 1200

ttgaaccagc aactcaacca cgctctttca acgg 1234

<210> 1681
<211> 1071
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266226_G1, chr7:173482318..173483388, Cluster 10

<400> 1681
ctcacctcac ctgttgttcg ttcctggccg aattcattcc taaacacaac acaaggaagc 60

tgcatgcatg tcatcgcaac caaatacacc aaccttatat attgccactt agatactaaa 120

ccgcgtaatc tggagatctt tcctatagaa aaaacaaaac aaaacaaaac aaacaaacaa 180

acaaatggaa atttggagga taatcaagca tgccaatgca ctgcttaact tgattttgcc 240

atgcctcggt tccgcgcagg catgtcaacc attttcagga tgttgcatgg ttcaaaggcc 300

tgccggagtt ttggtatcag agggcatctt ttggtgccat cttccccatg gtaacttggc 360

cttctttcaa gaagatgggc cttttgacgc tcctttacac ggcgagcacg ggcggggaac 420

tagcaaaaaa gcaatccaga gtcctggtgg ctaaaaaaga gaaatgtgtg cacagagcat 480

tgttttgttt catcaacatc cactggccgg caaagcaaag caaaaaagaa gcgcaggtag 540

tacatgcaac aaaagtgaag tgggctacta gtgcaagcac agactgcatt tggtcttcca 600

catcctttca gactttggtc agtagcactt cactacaggg gggttcagaa atttagctaa 660

aacatcttca gttctgttgt tctactgttg ttgttggatc atcatcatcc ctccatctcc 720

atccatatac caaagtcgac caacaaggga ccagttgggc caggccatgg aggcacagca 780

tagcagcaaa ggtctgacct ggaaacagat agcatctcgt cgtcgtcgtc gtcgaacatg 840

gattcctgtt gggcaccagc agactatggg ccccaaacgc gcgtgacacc ttacctgcca 900

acacatcatt gcacgcttgt aaccagggtt tctacgatgt aaaccggatg tagccatagc 960

ttcatcaaag ctcccacctt cggttgttgc ttcatgacca agtttttagg gaacctacaa 1020

gtcgtgaaac gagtgcaggt ttggcctttt tctagctttg tctcgtacag t 1071

<210> 1682
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266456_G1, chr7:174331317..174332550, Cluster 10

<400> 1682
ccatccaaac atatgtatgt caatgtatct gaaactgaaa gcagcctact cgctgcttgc 60

tcatccatgc atactactac gactgcgagc actacactac cagcatacac caaaatagat 120

ttgctcggac cagggaagca tatgtagcag actggataaa gagataggca gcgccgacgc 180

aacattcagg tgctattagg atcgatggaa tggagatcca agtgagcgcg atggcagcac 240

gccatgctag cttgctcata tatatcatgc tgtcgcctcc tttgactgat gagaagggaa 300

gctgttggat gaacaggaag agtacagtgt gagtgtgtga catgacgaca atgtggcttg 360

ccggtccatc catgaccatg catgctgatg cattgttatg atacctgtct atttttgaag 420

tttgaactgc taacggaaat aacttaatta gtagcatgtt tcggctgtta tgtagctaca 480

gctgcaatcc ataaagacaa actactatag aagtcgcagc cggagcaaat atggtatttt 540

aagcatagat gctggatgct tgtgcttgga gttggagcac gccaccaaat atatccatgc 600

atatagaacc acaattaata caataataat ataggatagg atgtatagga cgagagaagc 660

agcagtagtg cctgtgtggt acgtagctag tacaagcaag aaagctacag agcctgagcc 720

tccacaggag gagaggaggc aaacaatggt ggctggcgat gtttgtttgc aggcagcacg 780

aacccattcc atgcagatgc tgacgatggc agctagctag ctggctccac cccctgctcc 840

ctgctgtccc tggtgtgtgg tgtgcactgt gaactgtgca gctgcagctt caggtcgtcg 900

tcgtcgtcgt cttcgtcgtt cagttgcgcc agcaggcagt agcaggccac gtacgtacgg 960

cagccgttga gctgtgacga cccggcccat ggtggatgcc agcggtgcca cgccaggtga 1020

accctgtgca gccattaaca gacgactcag tgttcaggtt tcagcatctg ctagctgctt 1080

attaatcgga gagaatctaa cctgcctcct gccatttgcc atgcatgccg atgccatgcc 1140

acacactgca cccggcctcc caagaattta ttgtggccac gttgtcacat gcatgctagc 1200

tataaactgc accagcacct gctcctgctc ctgc 1234

<210> 1683
<211> 1236
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267584_G1, chr8:4254781..4256016, Cluster 10

<400> 1683
cacaacgaac gagaacgaga ctcaagtctc tatccaaaat aatctgactt cgccatccaa 60

acttgttgta taattccaat atcattgaac caagagaaat aaaggttttt tatcccacta 120

tatagacccg agcacgtctt atatgaaata aaaggaacgc agagattatc aataatgaac 180

gtggggtagc agtagcacaa tgcaagaagt ggacaacaca gtttgtaatg ttcttcttca 240

acagaatctt tttcattcac tcggggtcgt tcttaatggc taacatacct tcggcttcat 300

taaaaaaaca gaaaaaaaaa aagaacaaac attcggcttc gatctttagt tgctagctag 360

ctagcatgta gtagcacaaa aaacggcaca gcatgtatag gcgttgatca atctccatct 420

aaggacagta gtcacggtac gttcgtctca tgcgtctccg tgagctcgtg gcgccgcatg 480

gccgcatgac gacggcgggg cccagccgtg actcatccag ctcatcttct cgtccgcacg 540

ttacgtagac aaggccttag taagcaggcg gtggccaatc ccgccgccgc cgacgacgac 600

gacgacgaag cagcagcagc agcacaagcg cttcggcggg tggcccatgc ccatcccgtg 660

ctacctcgat cggaaggaac agcgaccgcg atccagctcc acgactcgcg cctgcaatgg 720

aacaagcaga ggcgatcgaa tcggtccgtg tcgcgcgtgc caggactcac tccgatctgg 780

tcatctgggt tcaccggagt cgtggctgcg gcgcggccac gtacgcgcgc gcgcaggggt 840

ctttgccacc atccagacca gactccagag gagcttctca gtgtccgact gtccgctctg 900

cacctcggcg tcttgttccg gccgagcagg atccgatcac aggccggact gtgtgcaccg 960

ttgcctaggg ctgcgtacta cggggccata cccggtacgt gatacgtaca attcacgcct 1020

cgatcgtgag gagtcgggca ggacacttgt tggtcatctc tcgcacgcca ccgtacgtga 1080

tgtgattgac ggcacgtacg ggcatgtctt tgggactttt tatatataaa atgcggcgct 1140

ccttttttc acctcgtttt cggcgtgctc ttaggcatct tcgacattgt tttgtaaaac 1200

gctgttttat ataaacggaa ctaacaattt cattta 1236

<210> 1684
<211> 1068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268883_G1, chr8:10867839..10868906, Cluster 10

<400> 1684
tccatgacat aaaagtcata ttattcttca ccaaagaccg gaaggggaa agagaaagca 60

actgaattcg aacagcctgc accttgaagc gcctgaaccg aaggaaacga cacttcgaca 120

ccgcggataa gcatgcccag cgtcggcggt ggaacagaca ggagacgcgg cgcacggagg 180

cggaggtgcg ggagtaagtg gcgggcgacg aggcagcggg ccatgaatag gtgggaagcc 240

tgacaacgat atccaaagac cagagtggag gaaaatcttg tcagggtgga gggcagagtt 300

ggcgcaatgg aaatggggtt gaagcgtcga tccttaccta ggtccttcgg tggtttcaga 360

actcggctgg cgagttgctg tggcagcggt tggcgccctg ttggcttcct cagtccgcgt 420

cgggctagct gcggcggctt gcgtccggcg ggcgaagagg cggtggggaa gggggaacga 480

cgccttcggc cgcgtgccgc gggaaagggc agatacgtca gacgcggcgc aggcggcctg 540

gcctggcgga ggcgcacacg acggcaggtg ctcgagaagg ggccgtgggc tgatgatcat 600

gggcctcatt gattgatgat atggacctgg tgcagcttgc atattggctt cacatgttta 660

cctcttccca cgatccaaaa aaaaaacgat ttggacattt cgtttttag agaagtcaaa 720

taatttaaac tttgactcaa attataaaaa tgatattagt tataataaaa cattaataat 780

aagtaataat tatataatat attcttataa taaatttatt tgaagacata aatattgatt 840

atatatttga ttacatgact agaacagatc tcataaccat tttttaaaaa gagagtacat 900

aacaagaaaa attgtatata cggcctcttc aagtattctg caagttcgat ttgcctccct 960

taatgaaaaa ctagattttt agattcttag aatttttaaa cggtcaaatt tactgtttga 1020

gcgatttaaa aaaatatttt gattgatatg tcatcacatt aaccacga 1068

<210> 1685
<211> 1179
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269090_G1, chr8:11802195..11803373, Cluster 10

<400> 1685
ggtcttgagc tcggaacgca cacacaaatt tatttgccag agataagttc gaaacacgga 60

cacttagccc cttttgatag atcaaattcg aatacggaca aataatatac cttgcatccc 120

tagttttagt aacggttgta catattcttt tttttaacat acgatttttt tttatgtttt 180

actagttata tataaataaa tataaaccct atgttctagt atgcttctat aacaggcata 240

tttagatagg agtataaata tggatacagt ttattatgag ttttaacgta ttttttgcac 300

ataaggttgg gacattggaa gcattattta ttgaatatcc gagtcctgtc cttgtttgtc 360

gtctatagcg aaaatatcgt ccaggaagtt ttcagttggg cacaggttgg tgaatggtga 420

tacctatttt ggttaatcct aggacactac tactcccatc tcgttatggt ctttaatccc 480

agttgtctac tagtagtatc cttctccctg accatgatca cgcgtgtact gtggcggtat 540

gggccgaagg aggaggagga ggagctgtgc gcctgtgccc gcgtctcgca cggcacgggc 600

gccatcaccg ccggtagtac gtactgtacg ttccactggt gccagaaaag ccggtgcgcg 660

gtcggggcgg cgggcggcac gtactagtag ctggcatgga gcgactagcg aggctgctgt 720

tgcagcacgc gtgcacgtac gaatggctga ggccacaggc cagctactag ctaggcctag 780

ctgtagcgtt cgtgcgtgcg acggttcccg tacgaggcag ccgaggcgga ttgtcatcgg 840

attctccact gacgtgacat gccacggagt actccaacta cagcttacta ggtcaatcac 900

gtccggcagc tgcagcgttc gtccgtgcca cgtcgctgcc gccgtggccg tgacatgact 960

ccggctagca gtactgcctt gtcgcgtttc ttcgctgcta gcgcgtgcct ttgcgaacta 1020

ggaggagtag tagtagtgat cacaggtaaa gtagtgccat gtactgacat ggctccagct 1080

agtagtactg catgtgcact acacaacacc gcgctgtata ttttttatgg gcaggcaggc 1140

aggcagggcc ataggcggcc gcactcgcat gcgcaatcc 1179

<210> 1686
<211> 1327
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270191_G1, chr8:18430985..18432311, Cluster 10

<400> 1686
tgatctgtgg aagtttcatt gctcgcattt actgaattat tcaaacaata gaataaccat 60

ttactatcgg aacaatactt ttttttcaaa tcatatcaat tgctaggatt aaaacatacc 120

attatgctat tatattgacc ttgtcctcac cattgatcta tgttaaccga gcacaaacgg 180

aaaaaaaata gattgcagct tccaactgtt taactttagg acatcgatga aatttgtagc 240

aagcggcaag ggacggtgca gccgtggagt cgctcatttt tattggtatt gctgcagcag 300

aaaaccaaag aaatcatgga gtcccttgtt tcactggtat tgctgcatta taaaaggggg 360

accagtgtcg actgagatgg atccgcactt ctagttgcgg ctgcgtttcc ttcacttctc 420

cgacgtggag ctgttcatcg acccaaatgg gggcttctcc ttatcggaca tcgacttaca 480

ctctctctct ggatgactca catgttggct ctgaccatag cctccgtctg accggcaccc 540

aacgtgaaag tggtcattca gcagctggcc tactccgcca tgaatgaggc gttgcgcgct 600

gagtcatccg tctggcattc gaagttcagg cgagcgacat ttgctctcga acctcacaaa 660

aacatctgag tagagaaatt gtggtggaag atgatagcaa aatacctcgg cgaagcagcc 720

agacgaacgc gaacgcagcg cgcgaggagg gaggtgctcg accagggact gacgagggac 780

cgcaaacgcc gtcgctatcg tggacgtcga cagcgtggta tcctccatat ttttctcttc 840

gtgtgaactc tggaaagatc ctcctcttgt gaattctgaa aagccctcgg tgccagatga 900

gttaaacaga cagggagaac gctccactcg atggggctcg tctgtgaccg tcgatgctaa 960

atcttgcgag tgagatctga tagggtgacg tggacgcgag agacgagatt tgctcccgcg 1020

attaatatat agaaataacc atttttatta acctgaatat ttttttaag tttatgaata 1080

aagcagttag aaatataaca ttatacagtt ataaaaatta ctcagttata tatgattttt 1140

tgaacggcgt accatttaaa aaaatcctgg tgttcagaag ctagcgatga actgatgatc 1200

ggctgatatc gttctgcgct atagcaccga tggagagcca ccgcaatact cttattttga 1260

ttttctgcga acatcatccg taaactttgc ctctctgcgg gtttgcgagt taactcgctc 1320

gcagcag 1327

<210> 1687
<211> 1047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270455_G1, chr8:19855368..19856414, Cluster 10

<400> 1687
gagcctcttg gagaggctac gtaccattca tacacaagca gctggtgtgt tctgcacgca 60

accaatcatc gtctccgctt gagcatggct acacaagaaa ctttaatttt gatcgcggtc 120

cattagcatc cctaatggca gccaataacc aggtcatgca tgagctacgt actcgcgtgt 180

gaacagtgga gtacatggca gtacagccgc gtcgacgacg atgacgagcc cggccagtca 240

caggacaggc cacaccgtcg gcgtcagccc acgcgcgtac cgtacgtgta tatatatcgc 300

catgtgccga atttcagagg agaaacgcgt cacagcatgc agcatgtgcg tgtggtgtga 360

ccagtcgaga gttcgcgcgc atttgattgg ctgccagaaa tagaacagca gaaagatagg 420

atcccgtccc gtccctcgtg cccgtgcatg catgcgaaaa ccgagctgcg atgcgagcgc 480

gagtgcgcga cgcacgcgcc tgctgccttc ctgctgattc catccaacaa ctggcaggcg 540

caggcgaagg cgaccgcgac cctcccatcc atccagtcgg ttgccatcca cgcgcgacgg 600

ctgcatagct ttaagcgtga agcaaaataa ataaataaaa attcaaaacg gattttgatt 660

ccatctcact ggcaatggca agtcgtcgtc gcagcgcgag gttttcgttg agattccagc 720

gaaggcccgt tgaaggggag ggggcgctga cctcactcct cgccacgcga tgagatcgtc 780

caccaagctg tccgcgaacg tgttcgcatg tgggggccca acgccgacgg cgaggacaca 840

agcgataggg agccggtgag gccgcgcgcg cggtacatct gaatcaaccc ttttttaaaa 900

aaaaaccatg acggcggcag ttctatctct tgctaattga ggataaataa aattggcctg 960

tatgaaaaaa aaaactcaag ccaaaaccat tgtgttgaaa ttcgactcca ccagagatga 1020

tcatatgaca aaaaaagctc catactc 1047

<210> 1688
<211> 1174
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_27178_G1, chr1:164644535..164645708, Cluster 10

<400> 1688
gtgtagtctt tttttatata tcatatcatc gtgggcttag tttggctctt attggggcat 60

cgtagctcca gatgggcagc ccaataacgt ttcgcggacg ccatggcagc caccgcccca 120

gcctgcggcg gcgaggaaga tgctccggcg gatatgatgg aacgcctctt ccgatctccg 180

ccgccgtcgt cccggtggcc gggggcgtcg gcatgtgcct ggtccaagaa cttaacttgc 240

tctgtgattc tgtgaacttg ataggtaaga taaacatctg ttgtaatcac agtggttttt 300

attataatgg gttctatcca agtttgcatc agtctatcca agcttattgt cttacgctgt 360

ttacatactg aagtttaaat atggatggat aagttgatga aggtagccta ctgctcgttg 420

ctgtgaaagc tgccattttc agattctcca agcagctaca ctacagatat gtatggacgg 480

gcaattttct accgaagttt tggacagaga aagtggacac cgcatctgcc agccatagct 540

tcctaagcgc ctgtttgaat ctcggactga agtttagtac gtacagtttt tggatgctaa 600

ttacaagggc taaaaaaagg taatggcgct gcagataagt ggtccctttt gcatgcattt 660

cgccttgtgc aactaactat ctcatcaact tgccttttt ttcactacat tatcatggaa 720

tctgtattcc atccctacga gtgcatcagg tcattttgta ctatacattt ggctgtcttt 780

tgccctgcaa cttagtgcat tgtctcatcc aatggcgtca gtagttacca gcagatcctc 840

tcttcaccta catgtgagga gtagctgcag aggatcttgt tgcgtttaca ggcggatttg 900

agcatttctt gtgagatgca tcgcatccat gtgcgcttct cagagctgcc gagcccatgc 960

atatgcactg gtcaaacatc gggaacctat atatatatca cacaagcgat taggttaaag 1020

tgtgtgcaaa ggttagacga ccttttggtt agctgcttta atctgctcgg gttggcatac 1080

taaagtctgg ccaacgtgca agggggctta tccagctttt tttccatcaa tgatggcaac 1140

ccaaacgcat acaaagctaa cctgaccctg agga 1174

<210> 1689
<211> 1112
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_277835_G1, chr8:72301368..72302479, Cluster 10

<400> 1689
gtctggacag gcaggcagcc agaacattag gggcctacag tataccattg acacacagtt 60

tcgtttataa gctgcagtga tggtctgaaa tctgccattt tttcagagat ctgtgagagg 120

tatgattggt ccttactcct gatgtaaact gtgtgttctg acttgaagta tatactaagg 180

agtaagtata aatttgtgtt ttaactcacc gtcttgcttg gaaaattggg tctctgctgt 240

tttactctgt ggaagttgag ttgcattgcc tggtaattga tatagctttt gttttagctc 300

ccccccccgg cagtcaagga agagcggcaa ttgcttacca ggcaaggcat acaattcggg 360

gtcggagtcg gtatcagtgc agcctccaaa cacagtacag agcatacgca aattgtcggc 420

gatcgttttg gaaattggaa ctcctcctgt gctgtgcaga tgtgggctcc tgctgcttgg 480

acaccatgcc gcttggagct ttccaagagc gatcgctcct ctgcgatgcg accgcctctc 540

gctctcgtcg tcggcgactt ctccgcacgc gtctcgtatc taccgtaggt aataaggccc 600

acctgtcctg gatgacgcaa cgcgtgctca cgctcatgac gccaccgcgc acgtagtgga 660

aaagtggact aatgctgctg gcagggttag ggtcagggtc agccccccttc agtagttcag 720

tcatcggcag atgccctccc ttttcgcacc ggaagcaaac aaaagctcgg tccggcacat 780

ccatcgacca gcgccacgac tccggtcagc ggcggcggcc aaggccaagg ccagaaagaa 840

ataggaagat tggacagctc gggtcacggc ctcatacaac tttaacgtca aaccaaacat 900

accagcatgc gttaagaaac gcaagggaca cagtgagatg caatgaatgt atgatactac 960

atccaaacaa aagctatcat agggaaccaa agaaaactag ctagaggtct ctttgaaaac 1020

gcaggatcgc taaaacatag cgataagaaa aaaaatgtag atttgtatgg cacttaaagt 1080

tccatatata tatatatata tatatatata ta 1112

<210> 1690
<211> 1285
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282656_G1, chr8:102707112..102708396, Cluster 10

<400> 1690
caaatttacc actagatata tgggcatgca tttttatttc tattggtgcc tatatataaa 60

ttatgaaccg ccaacgaaaa attacaacca ttagcaaaac tcgaccgtgt atactaatta 120

atgtgtagtt ctatggaaat atagagccaa caaacgatgc caataaaacg acacacggtt 180

ggttctcatc cctaacacac aagcatatat aaataaatgc atgtatccga tgctgcccca 240

ctccccacct ggtctagtag ctcgctttcc ccggccgaaa taatgcaggc caatccactc 300

catggcaccg ctagcttttg acctttatta tatctcgccg gcggtcgtcg tagtgctttt 360

gctagtaaat gatcgagtgg cgtcctatct tggcgctttt gttcgaaacg tgagcgcaca 420

ttctctggcc ctggtttaag gttccacatc aaccggctgc ccagctaggg gtagtacggt 480

ctacggtgta agaaagggca ccgggcagcg gggacacgcg cttggatatg gtcacatgtc 540

ttgttcagag tggcaacatg ttgatgcctt tttccgtact agatcagctg gtcgcctgac 600

ccactcagtg gtcgaccggt gggtggcggc ggcgatgccc aagtcatgcg cgtcgctgcg 660

gttccttgca acggccaatt ttacccacca tgtggcgtcc aagtatatgt cgctcgctgc 720

tggtcgtcaa ggcgagatcc agagggccat ccagagaacg gcagcggcac atgttggagg 780

tgcacgtgca aggaacagcc agctagcgca gccgcgcgcg cgtacgtacg aacgaacgtt 840

ctccgactgg cggacggaca ggatgtttct gctgccgtca atgaccgggc ggcgacggcg 900

acggcaagca cagcggcctg ggcccggcaa gcaataatga gccaccgcgc tggatcagtc 960

gctctgagtc tgagagtacg tgagaggcac gcgccaaaga gaagaatcaa ttattgtatc 1020

tgtagtggag ccgagccgag acgagaggga gggttaggaa tccccggaga tccttcccgg 1080

aggccggaga tccgaccagt catgtcgatc gatcgtggtg gccagggttg ctcagcccac 1140

gtcgcgtcgt ccctgtgtcc ccgtcgaggg gatcctccgg tgctgacacg gcggcgcggg 1200

ggagatctcc tgtgctcctg gaggctgggg ccttgcctgc tgcctgctgg ccttggggtc 1260

tactctttcg tctttccagc tcgcg 1285

<210> 1691
<211> 1347
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_28517_G1, chr1:174286222..174287568, Cluster 10

<400> 1691
gtaaacaaaa ccctacagtt tatggcactg gacaagcata catatatgag ccatggaata 60

tatatatgtt ttttgaacaa cgagaaatat ctaacctctg ccactgccag ccaggcaagc 120

aatcatggac ggatggacgc cacgtgtgcc cgcgccgtac gtcgtagtag taggatccat 180

ccaaagcttg gcagcaacta tccaaaaaaa aagaagaaaa aagaagacaa aatacggagt 240

gcggacatcg acgatcgcgg tggtgtacgt ttgtttgtct ccgtcaacgg cggcatggcc 300

aggctccgtg attgaggatg atcttgtcag gaaaagcgag ggccagtcag gccaacgcat 360

gcaagcggcc gtgcccgccc ggcatggcag ccggcgccgg ccgcagccca gccgccagcc 420

agccagccgg ccactgcgcg cacgccaact tggcgacgcc tctatcgcct cgtgcgccgc 480

ggcctcgccc ccatccatcc cactcccacc aggtcaggtc acattgtcag ttgtcacagt 540

cacaggggaa agaaggggtc acagccggct gggcgccacg tgtcgacacc ctatcggtct 600

gagttattcc aactcttttt tttttacaaa ttactgaaca tatatcctag tacaggctag 660

tatataaata atgctgccat cgcacgtacg caggcagtcg gatttgggcg tggtacaaca 720

atgacagctt ccagttagta ctagctagct gatgtcaaac caagccactg ctaagacgta 780

cagtacgtac aggtggcgtg ctgctaagca gtggcgtcaa gagcctaccg ttactggctc 840

caagtttccc gacgtgtcga tttctagtgt agctagatta attgtttctg agcaagcaag 900

aggaaacagc gatgaacaac cctgcagttt attaattgat cacacaccct tttggatcga 960

agaagaagaa gacgataagc tcaaattaaa aacaactgcg cgctttgaca cttttgcccg 1020

atcgatcgag taaacaaatg caaaagtatc accactttgc attggtaaag caaacaatca 1080

ggctgttaat tgtcaggagg agatttgtct gttctcttgt gtgtggatac ggacagaagc 1140

catgttgtcc ttgttgcttg tttgtgtgtc gtctactttt tagcaatttc aacatatgga 1200

ggttgcaagc atggttctcc tcgcgtgcct tatcctccta tagctagtag caggcagcag 1260

catggggttt tcatttgagc tttttacaga tccatcaaat catcagcgcc ttttgatctc 1320

aacatgatag gaacgttcac ctagcta 1347

<210> 1692
<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285800_G1, chr8:119379104..119380122, Cluster 10

<400> 1692
aaagcgtcgt tcacacggcc acccgggaaa gctaacggct gccactgcgc tgtccctgtc 60

cccgccggcc gccgcctcac cgggcgcgca tcgcgccggt ggattcgccg tcgaaaccgg 120

ccggtttccc agccagcccg gatcgttcga ggcgcgcagg tcttcgattc gccatgcacg 180

tctctttcct ttccggtcgc aagtcatgag aggcaggcaa cgtggcggcg gcgcgcgcgc 240

tcggatccgg cggtgggatc gacgagatgt cgatgtcctg accagaccgc cgccgagtcc 300

gatccggcac atggcgttag cttctcccga gtgacccgat caacgggagt actggaggga 360

tcggacgacg cgaccacacc cggcctttta cgcgccgcgc gcgcgtgcgg cctccccgcc 420

cggcgctcga tcggcgtcag cgcgcgcctt cttctctcca tcgcggacgc tgaaatgcat 480

ttggtgccgc tggccggacc accatgcatt attcacacgt gcgcgcgagg gcagaggcag 540

acaactcatc accggggccc ggccatcatg accagtgatt gaacgaacaa aagaagctat 600

agcttccagt gacacagcta gtcaggccac acaccactct tgcattggtg tgtgctgctc 660

ggctggtccc agccccacac ggccccggct gtgccgtgtg cctaatttc tgcagccgca 720

aaacaacggg cgggcatgca agtgtaggat cttgcattct caatacccta gctacaaata 780

aagttactat gggggcgttt ggttggtttc ttgctcatcc aaaaacccgt gtttgtttgg 840

ttggttggat cccgacgagt ggtggatatc tcgctcggtt ttcaccgaaa aaacggtaaa 900

atttcccatt cctgttactg ggaaacgaaa acaagtccgt ttttcagtgt gtctcggttt 960

aaaatttgaa aatataaaat ttaaatttgg tcaagaaaac ggctttttca aaagaatca 1019

<210> 1693
<211> 1152
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285907_G1, chr8:119898391..119899542, Cluster 10

<400> 1693
caatgtacat tatcaaaagg ttcacgatgc tcgtttgcat gattacacca ttgcatctca 60

aaagtagact acaaattatc attcgtgaat cacgagcgca tatgatggtg tgatgcccga 120

agctcctcgc gctcacattt ctcatcaaca atacaatcac cagcgacacc gactgcatta 180

gcacgctcgc ctgtgccaga tggagtgggc tcccctacca ttagctctcg gagccatgct 240

ctgcctcacc attcaaaagc tcgacgattc attgacgccg ctcgtttcgc cctgttggat 300

ggaccaccga caaggcattt gattgtgatt caaatccagg ggcactaaga ctgaagacgg 360

tgatgcttcc agctgttctc cggttcgaac atgcacaatg ctcggatttg cgcaagtggc 420

tttggaggtt ggggtgcacc attgacaaac ttgtcagaac ggaggagctc cgtcgtgaac 480

aggtaagatc caaaaattcc aaatatattt ccaaaaagaa attgccttgt gaaagagctc 540

gttcgtgcta taataattga gatacaaaga ttgaagctat ggaagggcac actacccaaa 600

cctaaaatct cccctcccaa aatgctagga gatgtggtta tcaaggacaa tcgatcagac 660

atacccatct gcaccaaaga tgttgaagca gatcctacct gcaacatcaa tcggtgagga 720

gtcacaaagc ccggtttaaa ttcaattgag caacattggg catcaggagc catggtcgga 780

gcttgctacc atggtgactg caacgtgctc aacagaaaca caaaaaattg cgtcgaacac 840

gtcacaatca tttgacgggc aaaaatgcgt cgaacacgtc gcagtcattt gacgggcacc 900

cagaaatcat ggctccaaag gttcagattt caaaaggtgg cccaccaaag tcataggatt 960

tttcgagagt ttgcttgatt acaacaatcg acgaactagc tccttctcgc tacactcaag 1020

cttgcctatt ctatgggcca aagttgatgc ccctccagta acaccaatcc gtaccacaca 1080

accaggtgac tcgacccact tatcattgct aggatacaac ctctccacca aaccgacatg 1140

atccgcattg aa 1152

<210> 1694
<211> 1151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290732_G1, chr8:146477950..146479100, Cluster 10

<400> 1694

atagtgtgct taacattggc cattggtcta ctatagcaca gttttggctt aggccctcac 60

ctgctggact agcgggcggt gcactgtgcc catagcaagt cttcattatg gccttcgctg 120

ccttcaaagt agaggtaatg atagtaggcg tcatcccgca tcaaagggtt tggttatgtg 180

ggaagtgaag tctattccga aagtcttcaa taaatccttc tttcatgggc accctaagcg 240

aggcgggcac cctaatgatc gatgtcggcc ttctccccta caatagaaat gctaagttta 300

ggtactcacg ggtggaacat ttggtttact gcaaatcttg agagattatg caaggtataa 360

accatagtaa ttttgtacat atactcgtgc aacaattttt tttttctttt tccttgggac 420

catcatcagt tcctcacgca ggtttgaata tttccgaaat tccatggaag agatatgcca 480

atcgtatgaa gttccagtac atcaattaga aaacatgtcg cagtcgtacc catatctgct 540

tcaacggtgc taatcaatct agaaagtcgc cccttctttt taatgttgaa aaaaaacaga 600

aatatcaaaa gtcaaaaaaa aggaacccca ctacaaaacc atcccaccag tagtatagca 660

gatcagcgtc cgagcacccc tgtataatcc attgagaaaa gagtggaacc actgtgggtc 720

cattgagaaa aggtctagga catggggact gcacactgga ctggacttcc caacttctca 780

gagcaagtca cggtcgtttt tttttctacg agaattgtta aggaatcata gcgattgtca 840

tcaaccgatt ttacgaagaa aaaaagaaat cagttcgaaa ccctttttc aatttggcaa 900

aaccatacgc atatggttta gaaaaataac agtatggcat tggcacccgc acctccgcta 960

ctgctagctg gcgcccacca acagaagccg cggcccgcgg agctaaggaa ctccaggccg 1020

gaaacggcag aggcttcgtg ctgcttggtc tctggtctct cgtcttcatc tagaagagga 1080

tcaacagcag cactgaactg atggaatcgc caatgccttt tccctgccgt ctgcttccat 1140

ccgtgcgcga g 1151

<210> 1695
<211> 1004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290967_G1, chr8:147711488..147712491, Cluster 10

<400> 1695
ctattgtctc cggaaccttg tattgtggaa gaacctccat aaattgggac ggataggatt 60

tttggacagc aatcgcggcc gttgatctat actatgatat ctacggactt cgacagcatc 120

gcgagaagaa ctcatcttag accagactac ggcgatcctc gcgactatta atgacgaatt 180

tctcattcgc gtttctacta tatatatatg tccaagatat atttaatctg ctacgtggac 240

atgtttttta tttgctacgt gtagagtgat tgctttatta tgatttttt taagaaaaaa 300

tgcaacatct tctaacatta cgttgctgcg attggaaccg aagaatactg cgcaatcacc 360

atcaatgcgt ctcgcagcat ctttccactt ccaccaacct aaagccacca caaataatca 420

gccttgtcca atcatccttg acactactca tatatatgct ttatatcaag tcggattatt 480

ttttataaaa aaaaggaatt cagttttctc acctactcta ctccgctcgc ccactcaggt 540

cagcactatc gtcaccacgg cactagctga aagcctgcaa cgctagccaa atgagccctt 600

ctgccgttct gatgagctct gtctctgcgc atacgagctc gatccgtact gccatgtcct 660

gtactgcaac tccatggcta ggcgtatact tctgcggatc tgttgactgc catttattcc 720

atgccttaag gcttaacccg tgccaagtct tccgaggtcc agtgtcgccg tcagagcaaa 780

atatctagaa gcacttaaac tacggtcgag gtcacaaact accagtcgtt ctcggtagaa 840

gcgggcgggt ccagcctacg cctaccaccc cgacagcggt tggaagagcc ggccggccag 900

aaggggcagc agcgcttgca gacaagaaca acaacgagga caccgtatcc ttatccgtcc 960

acgtacgctt ccacgatctc cctcgtcgcc gtcctcgtca cggc 1004

<210> 1696
<211> 1231
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292356_G1, chr8:154658977..154660207, Cluster 10

<400> 1696
gcagctgctc tgctcccaca ggcacagctg tcttccgcta tagaagtttg gaatatttac 60

aacatcaggc gaggggcgag cgccctacat tggcttcaag aacaaaggct gggctagtcc 120

taataatttt tgtttcttct tcttcttcac ctcctaacga aatttacatc aagaggatta 180

tagaaaaaca tctgtagaca tatacactgt ttatgaaaga tggcctaggt taatttctga 240

aaagtagaag gctttcctta aaaaaataaa caaccaacca tagatgtcat gtacagtact 300

acggtagagt gagatcaaca tgcatgcatg ggacaaagtg aataataggt cctcacctaa 360

agcaattcct tactagctcg aaatgtcttt cccttaaaaa aacataattg aatgtcatat 420

ctgtcggtag ttgttgttgt tgtgggggggg gggggggggg gggggggtc atgttgaatc 480

atttccgaga aatggccagc cgctaaaccg gtgaggaaaa agggaataat tatacagagg 540

aaagtgtgtg tggccgtgtg ggagagcaac tcgaggttta aggtagtacc gaacaataat 600

taaaatagag ataaggttcc tgttttcatt tcaaaagaag aaagttcttt agatagaacg 660

tatattatat atagagggga aaaatcctcc atgagtaaag gtgaattcgg aaggctatct 720

atccagaaac acatatcaga atcccagctt ggtgctcgga tcctgaggcg ggcagagggg 780

ccgcgttgcg tcatgagcag cgagcgatca tgcgcgctag ctcatcgcca cgcccacaca 840

cttatgagta atactccagt attcctgcct atccgcgtag aaaagggatg tgcccctcgc 900

ttctcttgat aagcacttgc tcccaacttg actcgcatct atcctccctc ttttagtttg 960

gccgttccct gctgatcctt ggatttcacg cgtcaaagaa agattataca taaaaaggtg 1020

cccggttgcc ttgtgttgga ctcgagacct gcagcagcac gttttcttgt tgaaggagga 1080

gctggacatg tacattagta caacacagca cgagacatac gtgacttgca gatgcttcac 1140

ggccggctga cgctgatgcg aggcaagcac gtcgggatcg gatcaggtat caaacgtgaa 1200

acgcccgcgc gccgccaccc gataaaaaaa a 1231

<210> 1697
<211> 1028
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292684_G1, chr8:156370240..156371267, Cluster 10

<400> 1697
ggccagggag gtgtgagcgg gcgggtgggg caagggcgcg tgcacagtcg gggaggtgcc 60

atggaaggcg tggccaaccg tgggagggag atgacactgt tgttcgagga aggagattat 120

acaaaacata agaacatgta tattatgttg gcttagatgg tgtgaatttg tgagtgtata 180

ttatttcagt tctttaccat gtaaatttgt gtttatatta gttccagact gatttttaaa 240

aaaagaaaca aaacgaagtg gggttacttg aacggtgggt atcgactgac tacggggcct 300

gtggagcggc gatacctaca agggattcga cccactcttc ctccttgtct cctatggaag 360

gaaaggaaca cacgttgctt ccgcggcaga gggacctaaa tttagcaact aatttgcaca 420

aatcaagcgc aaagtcgagc agtgggcccg agagcagctg tgtttgtttc ctcagcaaac 480

agtccatctg gattggagtc tccggttctt ggatgactac actgactcca tgtctccgac 540

gccgatgcca tcgtgggcca tgttagtatg gatagcatga caaaagtgtt ttgcttcaca 600

tggagaaaaa caaaagatag ctcgcaatat acatgttcga gaaactgaca agcatctact 660

tactttacaa ccatttttga agagccttag ttcgtctctc cggtttgaaa tgtgtcgact 720

tatttcttta catctccagc tctctccgga ttatcaggga ctggaaaaaa tcctactatg 780

caggacacag caatcgcgca tctcatcaaa gcaggggcag gaggcagttc caacagtcga 840

ccgctcaacg agccatttca agcatgcaga atctggcagc tcgaaggcgt caggacgctg 900

aactcctatg gagcatccac atcctgctag cggacgaagt aggctggccc cctgctacca 960

ggaccgaaag cgggctcctc ccacacaagg ccaatcgcaa catggatccg gcctcgcccg 1020

acgacaac 1028

<210> 1698
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293940_G1, chr8:162540395..162541410, Cluster 10

<400> 1698

tgttggggag tcatctataa tagtgccagg acaatatata tatacacttg tcccgatatc 60

ataccagcat ttaaacttta ttttaaaata ctttgcagtc tcgctatcca attaatctat 120

attcgtcctc tcaatacatt ttcctctctt ttcctggtac atctctatgc ctcttttctt 180

atggagggca tttgtttttt acctacagca ttggtaccaa tatatggttc taaaagtcca 240

ctattttaat actacacaca cacagagaga gagagagaga gtataactat gattaagaaa 300

gaagatattc ttggtagctg ttagtacgtt cagagttacc actacaacta caaagcggta 360

acccagtaaa gtggcgctgc attgccaagt cgcacctgat tgattcggag gagacgctag 420

ctgaaaggaa caccaacacc gctcgtcgtc tgcagttacc accagtacca cggcgggacg 480

atggtccatg aattcccctc ggattttcca ctacagtgac agccacagtt gcgctagtga 540

tcagcgacgc cctgcagcta gcgtaggcgt agctgcgtag gatcaccgac tgactgacgt 600

tcccggtggc ccgcgaggcg agaggacagc ccgcgaggcc cctgcgcgtt caatgcaatg 660

ctcaacaact gaactgtact cctaccggac ggacgacgga cgtttgtacg ctactgtaca 720

gccacagcgt ctcttctgct gcgcgtcgtg gcgtggctca ggcgttcaca ggccggtggt 780

ggccggagcg ccggagcgga gcactcacta gtcactcact actcactcac tactcagggc 840

agcttgctcc gctttactac agcggcgcta gagagccgag tactcactca ccctgctcag 900

ggtgcggccg gctcctagtt tttaaaaaaa atttttactg ggacggggct gggagaatgt 960

cagcagctgc aagggccgca aggcaggagc agcagtcagt cactgattgg gagcat 1016

<210> 1699
<211> 1334
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294298_G1, chr8:164630636..164631969, Cluster 10

<400> 1699
gtgttagaaa ccttcagtga gaatgtcctt atgtgtatag ctcccgtttc ataggatcgg 60

gcgatcgggg gtggggcggc accgtcctcc tcggcaacgg ccaatgagcg gatcgggagg 120

ccagcggcgg ggctgcgggc taaacacagc caagtgatgc tattgaatgc ggcatgcatg 180

catgtactag taagtaagcg aggaaggaac gcagatgcat gattgagagg caacggagcg 240

cccccgatcg gcgtcctttt ccaagccccc actcgaccag gacccttttct tcccattcaa 300

ttcaatgccg tgatggccac aattcatgcg tcgtcgacaa accagacact cggccatcat 360

gatgacaaag ccccggcccc cggccctccc tggctgcagg cagcgaatga ttaggagaat 420

ttcgagtcac tcatccaacc aagcggtcga tcattatatt taacccggcc gcggccggtc 480

gatccatgga tggatggatg gcagcagatg tcgatcgatg gatggcttgg ctgcagatgt 540

cgatcgagta ctgctcctgc ttctccttct tcttctgcat gataatcgct cgtaacttct 600

gggagacgtc aaatcgacat gcatgctgct gtgctgatct tgttgccaca gagactgcag 660

actagagggc tgggctggac cacggctggt ggccggctgc catttctagc tcggccattc 720

aattccgccc ggcggtttga cacacgaggt accgcccggc cggccattca atcggcgcgg 780

gtggtaccgc cccgccgcgc gctcgctcgc tcgcggctac tcctccatgt gttccatgtc 840

gctggcctgc tactacgtgt atgatggtgc aataatctag tatctaccac tagtcctcca 900

ccaatctgcc gccaccgtgg cggtgctccg atatgatttg agccgtggct ggtcgatgcc 960

gtcagcacgc gcgcccggtg ccggcgtgtt ttttttttgt tctcatcggg gtcaacacaa 1020

cgcctgctgt acgtgcgaga cgcgcccgcg ccggccggct tgttgcgttg gtaattaaca 1080

gcccagccca aacaattaac cggcgtggcg gctccccgga ccccgccgga gagcggagag 1140

gggactcgga gtcgcgcgcg cggcgtgggc gtgggggggct cctgtcgggc ggccggccgc 1200

cgtgccgtgc gcgcggtcct ggcggcggtc atgcatgcag atgcagccgg acggacggta 1260

tgggtaggtc cggataataa ttcagctcgg cttctccgtc tcgctcgatc gtttagcggt 1320

tcgtccaggg tcca 1334

<210> 1700
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295369_G1, chr8:169250182..169251221, Cluster 10

<400> 1700
atttctcctt caagcttcaa atcctactgt ggcaatctgt gctaaacggg gccctacagt 60

cttggagact tggactgctt gcctcgcggt cagggctttg taatgtccgt ctccattttg 120

gtgtcttgtt cagcccagtt cgcatgcact tacaacaaaa tgacgccaaa acagagcagc 180

cagcagcttc cgctgatcca aatccattcg atcatctttt gaaaggctgc cggtacggtg 240

ttctctagca agccggcgct cacgtcgttg ctcgttatgg acgagtccgg ggttcttttt 300

tcccctgttg ttcgtatcgc ctctgcccat ttggctttga tgtttctgcc ggtcctcaca 360

gccatgcgac caagccatgc cagtggcagt tgggtttcaa gactatgatt ctacgaaggt 420

tttgaagagt gctcgagttc ccatctccat ttctccaggt gcaggggagt caaatggtac 480

aaataatggc taacaaactg aaagtttctg tgcgtcaaag ccgagtggcc gaggcagaac 540

agtagactcc aaagtttcag caattctggt tacatggaag accgactgga atctatactg 600

gtgctggtgg taattatttc ggaaacatgg tagactgata tgtacaccga tcgtcaccgc 660

ttttgtctct ccagtctctg ccttcacccc cattcagcac acgttcactt ttcgtaaaag 720

tttcagtcta ccttgagctt tatggatggt gtattgagac gaaggcacgc acaccgtcgc 780

acgacctcat cagcgatgat caccaggtta cccacaacat aggaagaaga atttggaaac 840

tggaaggggg cagaagaaga acagaaagat acgcggaatg attcgcttgc ccccccccc 900

cccctctctc tctctgtgtg gtgccaagat tgtgcctttg cttcgacaga catcgaatag 960

aaaacaaagt gagtatttgt ttgtgcctat agactaatat ttcaggtaca cgtctgaact 1020

taacttgtct ctgatgtttt 1040

<210> 1701
<211> 1366
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295976_G1, chr8:172229825..172231190, Cluster 10

<400> 1701
tagaggtttg gaacatggcc taaactgaca actcttcgag attgaagaag tcaccataaa 60

aacctcatta tcaacaaaag catcctatat cattgaaaag tttaccactc aaggtaaacc 120

atatattatt ctctagagtc aactatcatg cgctcataaa atagaaagcg cgtagaaaat 180

ttaggcaagg gtttactttg gtggtgatgg ctcttggatt gaaaaagaga ggaacaataa 240

tataatatca accgatcaat actacgacac acagaaattg tggtttctat gaccaatgca 300

aactatgcta acctgtcaga ttaaaaccag tcatctctct agaaccctta ttttaacaag 360

ttagcgtgca agcaactttg aatttgaatc gttctttacc gtagacatta gtgtgtgtgt 420

gtgggggggg gggggggggg gagagagaga agttgatcta gagcaggtgg tccagaccac 480

cttagattta caaggaacaa gcacaactgg gggagaaact tctgaaatga tctgggcatg 540

ttcgtgttcg tgtacccatt gaccaaaatt cagaaactct agaaggaaac cttgccgcca 600

gatttttta ttttttttac ttgagcatct tttcttcttc ctctcccctg acgggccggg 660

gcaggtagaa gaagccttct tccaggtagt tgccttggca tggcatgcct gctggtgccc 720

actgctgccc tggcctagac gcaagttgtt ggttggtttg gttcagacgt tcaggcgatc 780

aggctgagaa acgccggaac aacggcaagt tattccagtc atgcgttgcg cattatttgc 840

tgctgttcgc aaggcgtgtc ctcgtcagcc tctgccacac gcgttcttct ggtcaactag 900

aattatctat acacaaaaaa aaagatcttg gcactccaag gtgtttatta gaacaattga 960

ttagcgttgt gccgctgtat tgttaaaaaa actattttga aaaagatgcg aaatggttcc 1020

tccaactcca aagcttccag tttttcctgt ctcccgtgcc gtactagccg cagcaaagaa 1080

caaagcctga agtgcactac tcctgctgct gcatctgcaa tggattggtc acatgcgtag 1140

gtcaagcaat cgaatgtgct acacggaatc tacggatcat ctagcgttct aacgtgtgtg 1200

ctgctttgtt tcccaaccca agttgccgga accggtggtc tgatctgatc ctgatgtgcc 1260

gtcctcttat ctgaacaata taatgggggt actcctcaat aactgccttt tggttttggg 1320

gggcatttgt ttagtgctga gttggttagg gttgataaag agtcga 1366

<210> 1702
<211> 1192

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299997_G1, chr9:13486320..13487511, Cluster 10

<400> 1702
gctagagata tgcgtggtta aatgaaccgt cttttcagaa gtgtcgccgt gtgtggtgat 60

tcgaattgat cggaaacaca tgcatgcatg cacggcgcag aagctagctg gagctggagc 120

ccgatcgaga ggggaaggcc aagaaccagc atctcttgcg atttgtgaag aagtattttt 180

tccgtagcac agtacgtcgt accaagtagc taggggagga gtacgctgat tcattcattc 240

atggcagcgc gcgcgtagta ctagctgctg ccggccttgc cactacacgg agctaaagct 300

aaagcaagga ccatatgcat gagatcggtc tgccccccgg ccggcccgat cgctctcatc 360

agcaattact atgaagaact agtaggtagg agcagcttga actcgctgcc agccggcgag 420

ccatgggcga cgttggcgcg cggccgggca tgcagatgct gatgcagcag cagcagccag 480

caggtcaaaa acgagaggat ctgcagttca tttaaacccc ggatttcgcc ggagtgaatg 540

aaatgaatgc tgccgccccg cctcctcagt cctcacccgc ggctgctagt actagtacta 600

ctttttattt acgtgggcaa taactgcgga tcctgcggaa tttggcgcgc cccccgtact 660

ggcgcgggct gccgtgggcc gtggccacac tggccgagtt gccagtgcgg cacctggcgg 720

ctggcggcct ggctctggct tcgcacaggc acagcacacc gagctcggcg ccccggccca 780

acgccaacgc catccctggg ccctggctgg ccagacgaga cgcgaggctg cccgtctggc 840

ggtctgggcc tgcaggggtc gccagcgcta cgcgacgcct gaaccgcatg tccccgtccg 900

ttgctcacgg tctccgtttc cgaggaaggg agagagcatc ggacgggggа aggggaattg 960

atgatgcgcg ctggcggctg gcgctaccct gccctgccgt ctgctgatcg acaagagcgg 1020

gctgcagacc ggtgctcgcc gacatccaca acttttgtag cacccgtccc cacaccacac 1080

acacacacac gcatcctgca gattccgatc ctcatgatga tgatttccgc tgtacgtaca 1140

aaaagtacta cgtagtacta gtacacgtac cggctgatac cgtagataaa tg 1192

<210> 1703
<211> 1134
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300335_G1, chr9:15361529..15362662, Cluster 10

<400> 1703
cggaggaagc gggggagagc aagggctatt tatacagaaa ggaaggaaga aggaaagaag 60

tatggcctgt gcgagaagag gggggggagat ggcagcgccg ggtttggttg gtgtgggact 120

gggagggagg ctaagcaggt ccccaatccc aagaagaata tagaacctga acactactcc 180

aagccacagg ccaaagccaa gaaagctctc tctctctctc tggacccgac ccatcatctg 240

gctttttggg cagatcgatt caaggagctt tgttcatgtg aggggagaca aagggccagt 300

tctttaatcc acacttggat caaatataca cacacaccca gtgtgcgtgc gtgcacagga 360

caactgaccg gtgcttgatc ggcttccttt gtggctagca cggtgggctt cgcggtgttt 420

cacgcacgaa aacatgcctg ttaatgcggc tacgatcgac ggacgacgac gctaaaggca 480

agcagaggca gcgggaaaga ccggagcttt ctctcttggg tcggctcagt gagtgggata 540

cagttcacct gcatccagtg accggtcgat tggacagcgt ttccacgagc aattctaaag 600

cgagggattt gcatggggcc gtggtcgatc cccctgctga ccgcgcgcgc gcccgcgcaa 660

aaggtgtcac ggattggcgc ctcgcgtcgc ttgccttgtt tgtttccggc agagagagag 720

atcagcgggt ggggtacgtg tgtgcgtggc ctgaacgcgc gctcagcttg tttcccgcga 780

aaggtccgag gcccggccgg ccgccatgga cgggcacccc ggtcgcccgc ccgctgccgg 840

ccatgttcgt tctcgaggcc tcaaaaggag cacgcgcgcg cgcgcccctc ttcctttcct 900

tgacagttgc atccaccacg cacggcacca tctatctatc tccattctcc aacgcgtacg 960

atggatcgcc cgccactgcc gatgggatct caggatccac ggcttcggtc gctccaaggt 1020

gagcaggcac cgcgccacgc ctgctgactt gctgggacgg aggacgctcg ggggtgccgc 1080

ccgggcccgt caaatttggc cgatccatta gtcttacggc ctcgatcaga gcgg 1134

<210> 1704
<211> 1008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300497_G1, chr9:16650937..16651944, Cluster 10

<400> 1704
tgccgcacaa catagcttca cgagatcctg cagttctagc aggaggcagg ccggccagtg 60

attctaacta acgcatcacc ctctgcaagt ttacgtacgt gccctggtac gcttctccct 120

tttatctaat ggctatcatt gttagattaa ttatagattt agtagtgcta ccccccttcct 180

ctaattatcg tgatgctaca ataatttaga ttcgtcacct tgagatcaat aaatacaaaa 240

cactcgcatc caaaagctgc ttgcagggtt caagctcttc ccacattcat acacaaggtc 300

gccactattt tgggaattgc tcctgtaaga agatcaaact ccacctgcac tttttagaag 360

attttgaata gaaaagcatc acctataaga ttttgaactg caattgaact ttacttgaac 420

tgtttagaag attttgaact gcacttgaac tgtaaactac tttctggaca cccgcatctg 480

actagtttgt ctgaaacatt taacagctgg tagtggaacc gaaacattga caagcaaact 540

tgtgggttca agctcttctc ataatcaaaa gaatagatgc tggctacaca taaagaaata 600

tttcttccat gagaataaga aatatttaca ttataccata atctcctgat agagactagg 660

aaacaagaag cagacgaatc acttgaagag gaaacgggac ggatgacaag cgtggtgcgt 720

cggtggctgg gtagaggagc ggctaacgcc gacggtatga ggctgtccgc gggtggggag 780

ctggccgcgt cggtgattgg ggagctggcc acgccggcgg gggtggatgg aggcgcgcca 840

gtgactgccc agcagggatc gccgtgcggc tcggccgctc gggatcatca gcgtttgggg 900

agggaggcag ctggcaggtg gaggaggcgg cgcgatggaa gattcgttgc ctcgttggtg 960

atcgcgaata ggttcgctca accgaggcct catatttacg tcctctac 1008

<210> 1705
<211> 1002
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301793_G1, chr9:23531631..23532632, Cluster 10

<400> 1705
ttcggacgta accacaaatc ttttcattct ttcttttcac tgtatctttt ctcatcccaa 60

cgccatcttt cccggccacg gcgaacctcg agttcttgca tggtctctag gttgatggta 120

tagggcaggg cacgcacgtg tgtgcttaac ctgctgtcat ttttgtttag caaaaaacta 180

gtagcacagc atgtcagcat cgttatccgg ggacctctca tgcttatagg agaacaatgt 240

cgtgcttctt tcctccacaa ataaagagga gaactctact tcgcagttgc ggcgtcagac 300

atctcaactc ttgcaacgta cgtttccttg ccgcccgggc aagtccgagt ccgtacaagg 360

aaccggtcgt cgagtcgagt ggggcatctg aaaaagctca gcatccggtc cggtccggtc 420

cagtccaagt gtcccacact ccagctgcag ctcgacgaac agaggtgaca cgaacccaac 480

ctgggatggg gggggggggg gggggggtag agagatcagt acgtttccgg acagagctgg 540

aacggttggt gcgccgtgcg cagttcttgc tgacgatagt ttagaaacgt ttcggttggt 600

gcgcgcagtt cttgcggcgc ctgccatgtc tgaacctgga caccgctacg tctagctccg 660

ggacaggaga cgagcgcttt gaccggttct gattgtacac gagtccggag aagtgatcgg 720

gattcgggga cagttgtgaa gcttcgcagg ctttgactac cgccacacac gtgtgtgtgt 780

gtgcttgttt actagaaaga tggtttggtt tggtagcaat agcgacggtg aatttgagat 840

aatgacatct gctgctgtct gctaagaaag actggtcagt gactctgaat aaaagaacct 900

gcatacatgc agctagatat aaaagaaaag aaacgttgaa gcgtcgcata cctacttgtg 960

cttgcgttac ctacctttac ccctgttggc tgttggaagg ct 1002

<210> 1706
<211> 1144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_307149_G1, chr9:59404399..59405542, Cluster 10

<400> 1706
tgccattgca acacctaaca gagtaacagg tgtaggatcg gagatggtac ggctatttca 60

gctcatagcc atagccgggc cggcggccgg acaagtggta cgtggcgttg gcgtcgtgcc 120

gtcgtggtgg tgcacagcaa ggggacagcg gggccaacta gccaaggaag tggcactggc 180

agtcgcaggt agtcagggac caggccaggg acagggagtg gagccaagga aagcaaaccc 240

cgctagcgct agcatggcag aggaccgcgg cggccaaacc ggcggcagac cgcagatgca 300

gatgcacggc agggtggggg gcgaagctga acagcactac tacagcagga cggcggcatc 360

cagtgcaata atgtcggcaa ccaaatagcc aaaacacgag ctgggactcg aggttgagct 420

acccgaatca ttctcccacc ataaaatcct ttaggttctc gttactccga tctcgtaaga 480

gcatctacag caggatctca aataaataag cttctcaact aaatttgaga gattatatca 540

cagagacaag tttagtaggg cctctatgaa agccttaaaa aataagtatt ttttcacggc 600

tcctcctcac ctctcatttc tagagaccct acttcattcc gctctccgcg tgcaggtgga 660

atcgccttta gcacccccca agtttcaatt tgagagttag atagaaattt tatttaattt 720

agtgaattat ccttttttata tgtacttgaa actaaacaaa taaatggcaa atacaaataa 780

tttgtgtgtc atgctggatt atttttttatt gatgcgtttt aagtgcagac tcaaaatttg 840

aagcatggtt taaaatttga aatttgaaat tgaaatagaa aagaaaaaaa aaggaaaaga 900

acggttgggg cgtcttccga aggtcctcaa aacactaact tagcggctat ttcttagctt 960

gttcgagtgt cataggtata atgccaaggg caaccttcga ctggagtgac cacgcttgtg 1020

aagatgaagg tacaagcttc ggatgaatgg tacgagtacg tagtggatga acaagtcaag 1080

accaagagaa acattgaaga cttgttcaac aagacaaccg aaggaaaaaa caacattgtc 1140

ctta 1144

<210> 1707
<211> 1119
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313519_G1, chr9:98671824..98672942, Cluster 10

<400> 1707
atatcaatat aacctgctcg agttgtttca atttttagt tgattttctt tcttttagct 60

tccagttttc atttttttag tcagagttga tttgggtcaa cgtggtgcgt ggttttattt 120

acatctaatt actttatata gttttatttt tctattatct aataaaaacc gcggcaaagc 180

ttctgccgtt tttttcctaa tcaataatat aactcgctgg cttgggcttg tgatgttttt 240

tttgttgtca ctccatatgt cagcctgata gcaatgcccg cctcgatgac cgaaacaata 300

gttaaggacc cacagcccca tgaaagatat caccgaggac tggctcggtc ggcacactgc 360

gccgccgtcg ccatcgtccg ccggaggcgg ccgagagaat ctgccatggc acctgaccct 420

gatccgacaa gagaaaacgc cagcagcaac gcgtcgtggc tgggtgtcga acgcggctgc 480

tcgagcgtcg aggtgaacgc cgggcgggga cgcctgggtg ggtccgcggc gagcgcgacg 540

cgggcgccac acgcggcgac agcgggcggg cgggcgatga ggcagcagcg gcaggcgaga 600

agcgcacgcg cagatcaccc ctcggggccc gcgctgcgct gcgctgtgca cgcggcacgc 660

cggccggatc accagatcag tcagtccgac acggacagcg tttctagtct cgcttcggcg 720

cttcctgaat agtcgggccc acatcgcggg tttccgtggg ggccacagag cagttgttgc 780

gttgttttcg agtggctagg atgcccgagg gtgggggaaa cgtgcgtgag gtccaccgat 840

gcgttgaggc ctgattctct acgcccacag ctatagatgt gccagcacag gagtagaata 900

gaatcccaat tttagagcga gcgaacaact gatttcggac agtgccattc gtgcaacatt 960

agtttttgag aaatttcaca tgaaaaatcc aaagtataat aaatgaatcc tagtttgaaa 1020

tataaatcaa accactgtga agtcaagtca gtctcagcgg aaatttcaag tcagatttct 1080

gtgtgggttc ccgtgagcag atcttgcgtt ggatgctgt 1119

<210> 1708
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315535_G1, chr9:109309277..109310317, Cluster 10

<400> 1708
ccaagcgtgc gtgagccgcg gcagctttgc tttgctagcg ccagcaacgg aatcggcggg 60

agaggactag aggaaagggt tcggtccacc tgctcccggc cgcaacgcac acgcactctg 120

cactgcaggt tgcgcacgct tgcacttgga taaggtctgg tgcaaatggt ggtgcagtag 180

ttcgagcgta gattaagtgg accgcgctcc taatccatgt tacctatacc tccccgcgga 240

tcagtagtgc acagcgtcac agcgcagtgg acagtcgcac ggtctcagaa ggtagcttgg 300

tgtcgcgttc cccgcgcacg taaaaagaga accacaaaag tgctgttgga gttaagcacc 360

accgctgcag ctgcagccgc aagtgcaggc aggagtggaa ggcgtggagt ggcgtcggcc 420

tgcggtccgc gtctgcggga gtgcttgcgc gccgggtttt gtgccaagcc cccctcttct 480

ctctcggcgc ttttcttggt gggaaacttg tgccgacccg ctaacatcac actctactac 540

gcactcccat cgtggacatg ggagtcgtgt tccttcttca caaagacgac tgtcgagtgt 600

cgacgactgc tcctccgatc acgtccgttg ttcactgtca tgtacgactg cttctcacta 660

gtaagtttac tggcactggc aggcaaggca gcaaaacatc ggcaggacgg cagccggagg 720

cgttcgttcg ttcgagcgtg gccagcaatt tggaacctgg gagccagggc accgtgggtg 780

cagtgcagta aatgaggtgt tgcaatggcg atttatcggg gggtggtggt ggagtgaatg 840

gatccacgag tttacgttgg tgctcagtgc tgctctgcca gccaacgtcg gatcgtattg 900

atgcgtgctt ttccctggct gtgaggcccc gccgccgtac cccgtccgtg cgtcatagga 960

tacgcgcgca ggcaggggca gcttcgtgtc tgtgtctgtg tctgtccaac gtgttgttgg 1020

ccgtggatga ggacgagatg a 1041

<210> 1709
<211> 1175
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_316095_G1, chr9:112337130..112338304, Cluster 10

<400> 1709
gtgagagacg ccttgaggaa tttgcataat attgagcacc ttgatttgag ccataaacag 60

cttatagggg cccttcttgt ttcattgtat ggaccgaaga caatgaaaga aatggtactt 120

gacaataatc tcttgtccgg gcaatgagcc ctgctatcgc acaactcaag tatcttaaga 180

agctttctgt atcctcaaat tctatgtcta gtgccattcc tccagagttg gacagtctgc 240

agaatatgga gttcctggac cttcacataa atgcacttaa cgggtcaata attccttgta 300

ccttgatgca agccagaata atatctgcgg ctcaatattc cctagaataa ctgcaatggc 360

aaacctaatt acaattgatc tctctttcaa atgcattggc ggggtcacta ctcactacct 420

agggaaattg gtcagataca gaatgctcaa tctttaatgt tggatataat ggttttaatg 480

gaagcactca tgaagagatc gatgaactaa ctgctggagg cagcggcacg ggtgacgtcc 540

tgacggaccc ctctctgcca gtctgccccc atcgaactcg aatgcctcta ctgcagtgct 600

gatcatctca tctatatctg gcattgatgc tgcaactaca acatcaccaa caccagcacc 660

ttggggcact gtcatcctcc tccatccata gttggtcctc actccactgt cctgttggga 720

tcctcgcccc ctgtactttg gctcctcctc ctagtcctga aaagtctctc ccaaaagaga 780

gtcttttta ctgggagtca agtagggtaa gcgaggcagc aagatttgac cggcaagaag 840

tgagtgaggg tagctcccac tcctagcaaa gctctatgct ccgcgtgcgt gtgtgcgtta 900

tgccttatgc cgtcatgtaa tcctttagct tcctcaagta actgcgcagt ggtgcccagc 960

gtgagccctt gcctgtagtc gcagccgcta tgaccattgc ctcgtcgtcg tcggtgtgca 1020

aggacaacga tgacgacacc tccttcttcg acatcgaggt tgcagtgtcc cccaacgaga 1080

gcgccgcatc agacgtcgag gaggagcggg tagagttcaa cttgctgtgg tgcccgaggc 1140

caccgtcatg atggccgtgg accgtggacg tgccg 1175

<210> 1710
<211> 1003
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31980_G1, chr1:196435231..196436233, Cluster 10

<400> 1710
aattaaaaat ggggaaaggg ctcgatggtg gtgaagtttc accaccacgc tggcacccat 60

cacaggcgac gacacagtga cactgacatc gagagagaga gagagagact cccaagcctt 120

gtgattagca ataacctgct tcagatccgt ccactgcatg tactgtcaag cgccacattg 180

tatacgcatg catggtccag acagatcatc gccagtcgca gtcgcagaga gtgtggatca 240

tgcagtgagg caactgaaaa cagttggcga gcatgtgctc tcgcacagaa ggaattgttt 300

ttttttttg gcatttttcg tttatatcca tatccagatg gcctctaagt tttcttaaaa 360

attttccatg ggcatgcatg tggcggctga acaggaagga tgtcggcacg gcacggcatg 420

taggcagcag atcagagatg atgaggctcg ctcgatgagg ttccccggcc atgcatgaac 480

gatcggtacc catctgcagg caatggctgg cattattgcg acgaagaatc gaagcactca 540

ctgactgcct ccgtctcaaa aatgcctact gctgtgctga cagtatgttt tttttaacag 600

tacagtaaag gagaccataa ccagtatctg cagaagaggc cggcggccgg cccacgggcc 660

cacagcaagc gtaacgacct tccactccag ccagccagca tgatgcgatc gatgccagcc 720

atggctcgtg gtgtgtgttt gtgtggtatg attctgcaag ccaagtgtca tggccccacg 780

aaccgaccaa gcccaagcag agtgagaccc actacatgat gagaggaatg ttgcagaaga 840

ggcgcttcct tcggatctac ctacggtact actagtttgt gttgtcaacg tttcaggagc 900

ctttgatgag agaggccttg agagcatctc caacagctgc ttcaaactct ggtccaattc 960

cctattttag gtaaaaagaa ctaaaaaaca tctataacaa tcc 1003

<210> 1711
<211> 1097
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319854_G1, chr9:132817636..132818732, Cluster 10

<400> 1711
gatgtccgga tgcaggttgc tttcagtctg gtgattagct atagggcgcg ggttttgtcg 60

tggcttatcc gatctggtga ttgcattgac gtcgtctacg gcccgccagc acgcatcaga 120

taaagttgtt taagcgcgct tcttccctcc cgtcccggct ttctttttct gcgtcacggg 180

aatatgcgag ccccccctgtg cggcggacgt acgtgacgac taactacgta cccggcgtat 240

gctgccgcat cgcatattcg catgggtctc cagaacggaa ttttccatgc tggcccggtt 300

cctactgtga cggtggtagt atgttcgtga tactttatat atatttatat caagacatgt 360

tgtggtgtcg agatcggcat ctcatattta gcttgtacac aggaggaacg taggccagca 420

aagcccgtaa cgcaccggcc ggcggctatc tgtccgcctt ctctccgtcg gctagcttag 480

ctgtggccgt ttaatttctt ctctgccctc ggcatgcatg cgagctcttc tagaaaacac 540

agagccgaaa caagtggccg ttgcactaca ataatacact acactgcact gcaatttcga 600

caggttttgt gcaaccttgc ttttcgtttg atcctcgagc tgttgagcaa cagagacata 660

aaccaaatgc atcggatata taggccggtg atcccagata gtacttttgg ggaaagggat 720

ccaacgaaaa aaacctttt tgtttcataa aggcttccat tccatattct agctctcgtt 780

gacaactgtg tttgcggcgc acacgctcgc tctatcgttg tccacctgat ttgggctgtc 840

gaaaagtgtt tagggtttag atagatagat agaccgtgta gcccatgcag aactagatgt 900

tatatttctt ccgttaattc atcgttttct tctcaaaata atcgaaacag actcatgtta 960

taagttttgc tcaacgactg tgtcaaaaat ggaggcgtaa ataggcatca ttcgtcgagc 1020

aactagagta gtgtggactg tactgtgaat tttctccgag agacgactgc agattccatg 1080

ctcagcgttc tggttct 1097

<210> 1712
<211> 1211
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32090_G1, chr1:197066462..197067672, Cluster 10

<400> 1712
gtccgcaaat tggcatgcat agtcaagggc cggctaataa tcatagatcg tcacgcgccc 60

atgcatgaaa tgaagactac tcgatcacac gcgctgacct gacgacgaaa gcgtcgtgct 120

tcaatattta ctagtattaa aaactttact acgagtctac gacgtgtaca aactgttgct 180

ggtatcgcta gctcttccat cattcatgtc aatactacag cgcgccctct aatctgaaga 240

gatttttttt ttgggttctg tgtgcatata tatgcatcag ctgagagcat gggtctctgg 300

acccggtggc agctgatcga aggcgaggtc actcgcattc atgctttatc atgcatgcat 360

gctgccacta ctgagctgag cactgacaac tgctggagtc gtgtatactg tgtgctgctt 420

taagtcaact ccagctagca tgcagtattg agatctttat ttttttccc caatgaaccg 480

aacaagacgt acgtagagac ctagcagttc ttcgaagcaa gatatatata catacacaga 540

ggcccctgat gcgccccgaa agtatttaat gtttgtctag tatttatttt atctaataaa 600

ataaaaatct ggattacgat atcttgtgtc tgctggcggc gcatgcatgg atgtacggta 660

caggcgtaca gctatgtagc acaccgcgta ggtgtatagt attattcatc aatacatgca 720

tgatgccaga gaaacgtcat gcgcgacgac cgtgcgtgga aatgcaagcg cacagagaca 780

cggcaccagt ctagctacga ctatacgagg atggatccac gtacgtacgc ttatacatgc 840

atgagagaca tgtcatgtac gacgactgtg cgtggaaacg gcaagcgcac agagacacag 900

caccggtcga cggaaccaca gattgtacgt ctctctcctg ctagctgctg cgtgggtgtg 960

gatcgataac gacgacggga aggccgcgcc ggctaacatg ttcgtatctt ttatgacccg 1020

acccgatcac ccgaccttga tatatagtgt acgtccatga tgcagcagct gtcattctct 1080

ggccggcggt ggctgctgcc gcttgctttc ttttgccttg ccgtgccagc cggcctactg 1140

accaaccacc ctccggtgac gcccgcttct ctcgcgtcca tgggctatct cttgcgcgcg 1200

atgcgttgca t 1211

<210> 1713
<211> 1309
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321300_G1, chr9:139741700..139743008, Cluster 10

<400> 1713
taattcggta catcttccac ggagattcgt gcatctgttt cgctttcgca gtgtggaacc 60

aaacttgttg gttttattag catacaaaat tttaatcttt tttttatagt gcgactaaag 120

gtatacttta gaaagagctg cgggggtggt cagatagatg gccccgctcc gctgcgtgcg 180

atgcgaacgc gttgttgggc gggtccacca tcatccatgc cgcccgtgcg tcggggaggg 240

tcaaagaaat gcgccgcgtg acgggatgga agaagcttct acccccatgc caatgacatg 300

ctcttctcgt gcatgaatta tatgcatagt atagataatc ctaatcgtcc acaggccact 360

actgacagcg accatcccat ccccccttgg atggttaatc atctgtagcg ctcgccgtta 420

tctgttaacc accttgttgc gttcgtcggt tggttgcgag tttgcgagct cttgtggcac 480

tagcagtagc agccgtctgt tgaagaccac ggcacggcac ggagtcggtc ttcttcacgt 540

gttcctgcac gccgcgccac ctctctccct tttacctgcc caactcggac tcagacttgt 600

gtggaagatt aaaaggcgtg ttacttttt ctctatacga ttgtataatt ctaccagaga 660

gacggacggc actggctcac gtacggccgg cgctgcgtgt cgtcagtttg gttccaaatt 720

aatgcacgtt ctgacggaat ttcagagacg acgagaagag aacagttgct cagatcggcg 780

gctaggtatt gtggcaagca tgaagcattc cgtcaccaac aaaccacaac gctcaattgc 840

ccgtccaaaa cactcgcgca tgttccggct tgccgaagca caggggcatg caacgatgca 900

aggtgtcggt gcccccccgg gatttctctc gcttccaagc aacagctacc acactactca 960

atcgcatcca gccaggctgt tcgtcgctcg accttgcgtg cgtgcgtctc tcctgtgctg 1020

tgcccttact gcttgtacct ttcttctaat cctggtttat acgccaccct ttgttgcacg 1080

catgggaata ctctgccttc gatgatcggt cctccaaatc caatcaccgc acgccagtcc 1140

aacacgcacg cacgcggtat tatgctttca gtacacggaa cacgcggtcg ttctctttca 1200

gagcacgcca ctcaaacacg cgggtttacg gtcagagtta aatacgcatg gtctccggac 1260

aaatgtacag gaataaggca ttttgtttcg atcgcaaaac agagtgtgc 1309

<210> 1714
<211> 1004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321646_G1, chr9:141536682..141537685, Cluster 10

<400> 1714
atatgtctca actctgtcgg cgtttccaaa tcccaatcat ccggcatcac tacactgctt 60

tcttccactc cacattcctc tcctcttgat ctatatattc cgattccttc ggatgatctg 120

ctcgaagata tcgtagtaca gctgatggat acatgcacgc atcttcaatt aattccaaac 180

gcacgcatgt gctcatgcaa cttgaagacc caaataaagc gcgcatctgc cgaccagtga 240

gcgtggtgac cgtcacagca tctgggggg tttgacgaca tcgccgccat acatatgccg 300

ggttgacaga cgggtggtga aagcgcaaca attaaccgca cgcgcgcggt cagcagactt 360

gcacgggcgt gcagtcccat cagccaaaga tatgggaata ttatatttct tgttcttgtt 420

ctttttcttt ctcgtcccat ggccatgctt tggcgatcga gaagcccctc tgaccggcac 480

agtactctga atgtgctgct ggactgaaag gaaggggcgg gcgagataga taggtcagga 540

ttctcgagag atcgatcgat ctgccgggca gattgagatt cccggcgagg aggacaggat 600

acaggccgat ctctctagtg tccggccggt ggcatatata tatcggatca caatcgcgtc 660

ggtgccatgc ataacgactt cgatctgcct ccaaaaccgc aacgcaatgc agctgtcatg 720

tgctcagtct tgcggccgtg tgctgctgac tggaaaggcg tcgtcacccc ccctcccgcg 780

cgccggattc ctgacggaat tgcgagagct tgaccggagc ttcggctgaa cgaacagaga 840

cgtgctccaa ctcgctgatt ggaacatctc tcgtgtgaga tgggaatctc gtgctgtatc 900

tttctccaca ggtttcgcct cggcctctcg ggtggtgtag tgctactagt gctctcggcc 960

tcttcagctt attggtagcc attgggtagg ccccggcggc gccc 1004

<210> 1715
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321647_G1, chr9:141542280..141543349, Cluster 10

<400> 1715
cggctcccag ctcatgcatc acatcacctg atcaccagcg cgcgcccaca tttgtaaaaa 60

gaagaagaag acgacggccg ctcacgcgcc acgggaaggc cgccgatcat tggcgtcggc 120

cggccgagag ccgatggcga cgccgcgagt cctcgttcgg tagctccgct ctgctcgctc 180

ccacacgcgc gccacaccat ccacgcgctc tcgcttcctt ttccctttgg actcagctcc 240

ggccttcttt ttagttcgcg tcgcatcaga aaggcgagcg gcacacacgg cgcatcaaaa 300

aaaaaaaggt tgccagctac ggacccggtt caccaaccaa aacccccggc cccagatcgg 360

gtggcggtgt ggcacgacaa cggcaacgtc acgcacgctt tggacgccga ccttttcgtg 420

ttgtccaggc tgagccagcc agacaagcag gcccagacga tgagacgagt agagacagcg 480

ctgagccgct gaccgtaacc gcaaagcttc tgcagacaca agtgggttca gagtctaccc 540

aggccgccgt gccttaggcc ccacggccca ccggcgtcgg ccgtcggtcg gcgtggttat 600

ccgcttcgtg tggccacgtc acaactttct gataatttgc agggaccggc aacaagtaat 660

ccagtaaggc agtaaccgca gtacactgtt taagcgtcaa acagaccggt tgctggcttt 720

ctcagttccc tctggacaaa aaactctctg cagcatagga atttctgaat tcgttaggaa 780

actacactat agtgccgtcg aactcctgct gactttgtgt agaattctgt ctttcatctc 840

tactatattt ctaccatatt taaatgggaa tctttcttcg tgcatcacat ctctactgtc 900

actgcccgtc aacctctctg cagtatagga atttctgaat tcgataggaa actacactac 960

agtgtcgtca gactcgtgct gactgtgtag aattccgtcc tttatcccta ctatgtttta 1020

agtgggaata tgttgcatcc ctactcacgc agtcacgcgt cgcatacttg 1070

<210> 1716
<211> 1090
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323675_G1, chr9:151658119..151659208, Cluster 10

<400> 1716
cctaaaagtc tctagtctca cgttatggta ccagctggac actaaaccct ttgggggccc 60

taagctccgc aaggataaga gatcaagtgt gctcatgtca taagatagaa ggatgtgact 120

agacccatca agagcagtac gaccatgaga gcaggatctc atacctaaaa gcttttagat 180

aagtctatag cgttgccatt atttaggctg tatgatactc gagaccataa tataatagat 240

gcagaagact acatgggctg caaactatgt atgataatga acggtatgac atccttcatg 300

gttctagcgc gtgtacctgg cgggatgatg agaattttta taactagtac gtgctcctta 360

gttttttaa gggaaaaaac aagtcggcga aagaggtcga gtccagaacc gctttttctt 420

gttggtgatg gactgtatgg tccaggtaca tgatgccgct gtcatgtcct ctcatcctga 480

ggatatttcc ctacttttc tcttttgata tatcatttga cctggattag gtgctaaccg 540

cgcgcttctc ctctgcgaag aaattaaata atcgtaatca ttcagcgagg agtgtctttc 600

gagagaaaaa gaaagaaagg catctggtct cttgcactcg cgcagtcgta cgaccgtgca 660

gaggcgaccg cgggaatggc gacggcggct atcctacaac cgcgagaccg gctgagatcg 720

tggtgatgca tggatgagat gcactggtgt ctggtagtaa ttgcactggc gacgacgacg 780

acgattacgt ggaattgcta ttgctatcgg atctaaagct tccgtctacc tctatctcat 840

ccgctgagta gtactgtatg tcgcggcatg tacgtagtac catcaggagg atgtgtgtgg 900

tcaatggtta atctctctct ggtcagcact cagcagcagc caccaccgat cgcgttcacg 960

tacgtacaca cgtggcacgc cattcattgt agctaagcta gcaatcaccc gcccaccggc 1020

ctgtgtgtgg aaattctgga acggatctct gataacgaca agtctagata tgtcgtggcc 1080

ggtgtgtatt 1090

<210> 1717
<211> 1125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323705_G1, chr9:151756951..151758075, Cluster 10

<400> 1717
tcgacccaac agggaggcca ggagcagagg actatggccg tagccggacg tggcgggcgc 60

ggcaccacga ttctcctgcg gggagcgcaa ccctgaggtg gtggcgcgcc tcatcggcgg 120

ccgggatgcc gtgcagcagg cgctcgactg cctcgccgac gcctcacgat cgaggccgag 180

gaagccaatc gtaatggcgg ggcgtagatt tggagccata catttcaaac tcaagcgccg 240

actgctagca tttgcttaaa cgtgttgtaa gcgacgatct ctaattatca atgtttgtta 300

tgaaatgatt ccaaggagga agctttcgca agcaatactt acgcatgttt gatttttcat 360

attataaaaa cccgagagag aaattttaga taattcttgc atgtcctagt ttagtcttca 420

cttagttttg tttctctatg ttgtgaccct gacgcatgca ttcagttcat gcggggagcc 480

ggggagcgtc agctggcatg cacggcatgc gcgccgtgtg cggcgacagc gccacgatcc 540

tcaggttgtg ggcgctgatc tcagctgtta gcctgttagt ggccattgtt ggttgtagat 600

gttaggactt ttatattttg gcaatgataa accagataag ataagctgcg gcgaggacct 660

tcgctggttt cctttctaca agaaatactt agctttctag catttgatcc gtgtatgatg 720

tgtcgtacaa tgaatacaat cagctcagca tttttacttt gtatatagat gaaaaaaaac 780

tttgtacatg tcttactttc aattgctaca aaaagtgatg cttggttctt atccaatgtg 840

tataatcagt tgcaggttag aattgccccc aaattgtttg gcaacaagaa acagatgtaa 900

cttccttcgc ggaccatctg ctacgactac ataggaatga atatatgcgg tatgtgtcct 960

caacttgaat acatgttgta ctagcttgca atcatgcctt gtgtcagttt tgtgaaagcc 1020

cgggtactat cagatcagtc tgcatccagg tgtcccgctc ttgcacaatc tcattcagtc 1080

attccatcat cagtcttgac tgttcaccag taatcaccac agcaa 1125

<210> 1718
<211> 1264
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323751_G1, chr9:152058426..152059689, Cluster 10

<400> 1718
cacgagctgc tggagaggaa ccgaatgccc atccatcagt cccggagaaa ggccgcgttt 60

cgtttagggc accgcaccac ccctgccatc tgctgcaggc tgcagaatct gtcagtcccc 120

gtcccgtggt gtcgtgtgct gtggctgtgc tagctagcta ctagtactag ctagcactgg 180

acactggact gcactgcact gcagccgaag gaggggatag atcgcaggaa gcctaagcag 240

agctaggcca aatccccgct ggggctgtgg cggcgccgcc ggagaacgca acgcgagctg 300

ccgaagtggc tggctgctgg ctggtggctg ccctcgcccc gcgggccggg cttgcgcggc 360

agcccgatcc gcgccgcgct acgggtgtcc ccgctttggt ggtacacggc gcgaccggcg 420

attccccccc gtccagtcct ggacccccgc gcctacgctt gctttgaccg tccgggaacg 480

acgtcctact acacctgagg tgacgtggta tatatacctg tacctgtagg ggaatgctgc 540

tactgctagt gctagcgagc gctctcgttt gggccatcgc tgtttctagt gctgcctaaa 600

cttatggggc cgccgtcgga acttgctggg ccgattgtac ttggtagggc caacatgtgg 660

ccaggtttca gccggtaact acagtggctt accaccggcg gatttcagtt catgtccagc 720

gccgcggcat gcgcgcccgt gcgtgcgtgc gtgcctgccc agcccagccc tgacgcccat 780

ttttccacgt cgttttctcc aacgatacaa gcgaaacaag tagacggctc cggcgcggca 840

gcagcgcacg acggggttgc ttcagctcgt ggtgtccgtc cggtcgctgc cacccccggc 900

ttgttctgcg cgccagtcgc cgtccgtctg tctgcggcca catctaggcc ctagctagcg 960

cgcggctctc ttcacataat tccagtcgtc tactgtacgc acctcttctc cgcaccagac 1020

attctttggg atgacgtata ccgggacgac aagccggcgt gtacgtacat cggcaaccaa 1080

gcatacatca gcaatcttga tagtttttaa acatagagac cgatgaaaag tatgaccggt 1140

tgttgttcaa atcacagcaa atatatctag ctattcatta ttcagatcgt atacatttac 1200

aaacacatat ataacatcaa atacatcacg taaattatct ataccacata tacatcgtca 1260

cata 1264

<210> 1719
<211> 1086
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326029_G1, chr10:7923778..7924863, Cluster 10

<400> 1719
tcccaaacag ggcctaaata taagtataaa aatagataag ctacagatag ccgtaggata 60

catgatatac acctctctcc cttggctccc ccctctctct tgcccctaaa acgaggtatc 120

gtctcaatag caagaatctc tatgttttat tcagtcaact caacacaaat cctcacaagt 180

gagtgacccc ctttttttct atctactgta gacaatcaca tcaattgatt cctcaaacta 240

aacacgatct ccatgctctg ctctgccttt gtataggtcc atatactatc atccagcacc 300

agcagcacat ggattgatta tatagcacgt gaaagaaaga aagaaagaaa aacgacacat 360

gatgctaggc catccgtggt ccactggcat ggcatgggca tggcacacct aatcaaatga 420

tggtcggtcg gttcagctcc aacgactcaa aaaaaaaaaa gggaggcttc ctcttgtcgc 480

tacaaactca tcagttggct atgggcatgc atgcccatat ggataaaaaa aagaacctgc 540

acgacttccc atatatacac atatacatat cgtgcagtgt ccagcaacca gcatgctatt 600

cacgtgtgcg cattcactca gcggagtggt tagttttcgc agaaaagaaa aaggagagta 660

ccgtcgtttg gggggctgg ccaacccaag agattagacc aacaaacaaa tcaagcgttc 720

atatttttt tgtgtgtctt caaatttaaa acatttttt cttttagctt tgcagagacg 780

gataacgacg actacggata agttaaaatg gtcgcaaagt cggtgggacc agcactccac 840

tggattgtgg aaaacgtacc agcacctgtt gctcgaagct ttttttacct ttaccaatga 900

aagcgaaagg cttgggacgg agaggcgtac atccagcagc ttcgcaagtg ccttgcggcc 960

acggaaagcg gcaagccaag ccagtgatgt gtggacttcg tgttggttct cttatcattg 1020

ctcgcaagac cggacccggt cgaacgtagt tgctgccact tctcctgcac cttgtggata 1080

agggcc 1086

<210> 1720
<211> 1142
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32689_G1, chr1:200489040..200490181, Cluster 10

<400> 1720
aaagcacacg acgcgggact gcagcggcac agcaacgtat cggtatccac atcgcgatcc 60

gagccaggct ttccgaaagc tgcgccatcg cgacggcgag ccccatcccc aatcgtcctc 120

ccgtcctctg cagtgcatgg gtcgtcggtc tgttcccgcg cgcgccgccg agaaccacgc 180

tggagcagcc gaaagcccga aacgaacggc tgctagcttt tgccttttgg tttactccta 240

tgttggatgg atccatgctt agaggacttg cattctttca tgcattggtg acgcatggaa 300

cggattgaga tgagacgaag gaataacgac cgtgcagtct gtacgcacgc acggaacgga 360

aggccggaaa gtacagcgcg ccacggccga cgattcctgg cgaagtttcc tgctgagcgc 420

gaaggtgtga agcgcaacct ggcatggcag cttgcaaccc tgcatgtgtt gcttgcaacg 480

gcggcttcat gcactcgtcc tgtctagccg ctgccatgca tttgcatggc cggctgtcct 540

gtcaccgtat ccgcacaaat atgacgaaga gatatggaca gtgaaagttc ggtcgaaaaa 600

ggaatatagt tttcgatttt agtctttgag ataaatcgac tagtatttct aattttggtt 660

aagcctatag gtaaaatatc tataaaaaaa tatagttcac actgagtttg catgtttttt 720

tctctatact tcagatagta aaaatacagt gaaaaaaaac tataaatcta gaaaactaga 780

atattttata atttagaata gaggaagtct tataaattaa cgttaattaa tcaagcagga 840

taggatattg gcatcttacg gtaatctgtt ttagtgcata taaaggatat ccccatgttg 900

taatctgttt taattcatag gatatccaaa gaggccctta cggtaataat gctgttgtcg 960

ctggagaagc taataagttt gccgaagaag acaagagcac taatatacaa gtaagatcta 1020

tggtacgaaa tgctgtaaat tttttaatgt acccacataa gctggcatat atctagaggg 1080

agccattcta ctcttaattt attgttatac tagttgggtg cccgtgcgtt gcaacggaga 1140

tc 1142

<210> 1721
<211> 1097
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338241_G1, chr10:83309515..83310611, Cluster 10

<400> 1721
ttgggtagca agcattgtgg tcttccgcaa gtgcattggt gccatcacac tcttggcaaa 60

agttgatgtg gagcccggta gctaagctga attgatctag gatgcatcgc aaactgtgtg 120

tgggcggaga cagtcccttt gaagaggatg ggagtatcat ctgcgtactg aaggactgct 180

ccaagatccc ccggaacggt gggacggtca gtttggctgt ctgatttaat taaggtccga 240

aaaacgtcaa ccaccaggag ggataggcag gccgggtggg agagggtctc cttggcaaag 300

gcctcttttg catcgaaacc aagagccggg ggcatccatc aagtgtacca ttggcttgaa 360

gagcagccca atcatcaacg gcgtcaaaag cttttcgcga agtctagctc caagactagg 420

gtggcaagtc acctttcgtg gcagcattgc accacttcga tcgaggcgtt tgctcgaatt 480

cttcttcctt ctacagtctc tatacctgtc gtggccggta aaaaacatga gcttcagaag 540

ctcgatcgcc atagcgttct agagataaat caatcggcca aactcctacc tttctttgac 600

aagttaggcg gcgagacctc agtagtcagt agccaaggga attagctgca cgaaacactc 660

tgagcatcaa atcaatcaga gagagagaga gagagggaaa agacagacgc aggtcgcaat 720

cggaaggaag aagggtgcaa tgaacccatg gctaaagagc cccaaacaaa cgggggggcc 780

actaggccgt ccgatgctcc acggcgagtc gacaagtggc gcggggagaa gaccgcgaga 840

ttcccagcgc gaggattggg ggcccaaggt acaacaagta gcccaccgtc cgtccctctc 900

ggcgcaccac tactctctct ctctttttt tctctcttcc tctctgagtc tgagatgttc 960

tgttctttct tgcctccttg ttgttgttgg ccaaccaccc aactagaacc ttccgtccac 1020

tcgctgcttc tctcttcctt tggttttggc catctgaaag acgcagtgga tcccagtaaa 1080

gtaggcaatg gtggata 1097

<210> 1722
<211> 1289
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34329_G1, chr1:208970002..208971290, Cluster 10

<400> 1722
aggctagcaa agcactaata atagcagctg ccgcgccctg gtcagttgca tccccccgat 60

gccagccgat gcagagtggc ccatcgcgag tcgcgacttg tttgccacct cgcgcggtgg 120

ttcggctgat ttcttctgct gctacagtaa tactagatca tgtacatagt acagtctcgc 180

agggtctcct gttgtatata ccgatgatgg tgtgactgat gcccaggccg ggccgaattt 240

tctttgacac gaagaaaccc caccccaccg gagccggcgg gaaacggaca attccgtcgg 300

ttagctagcg ctagcggtcg attccccgtg gttgaaccga acgaaaccgc atccgcgtta 360

acaaccgcga cgtgcacgtc ccactctccg gtctactcca ctccgacccc atcccgcatt 420

cgcgcgcggg cggccgacga gtcgctggag ctggactctc gctctagtct cactactgtc 480

tcagtctcta gctacctcag ctcaccgtgc ccactggcca cgcaacgcat ggcgaccgcc 540

cggccgcccg gctctagaga tatatggtgc gctgcacggt tggtctccgt acgtcactgt 600

ccccggctcc ggccgcgcgg aggaagaaaa cagtgcacac accgcgtcca gctatagctg 660

tctcttccgc gcgcgcgcgc gcggcgctag cgctttccct ttgtcgcctc gccgagacgg 720

ccgacgtacg tgggagagcc ctcacctcac ctaccggccg gccggccggc gtgccggcct 780

ctccagcctg tcctcctacc cccgcatggc ttcttgcctt ctcaccgcat gcatcatcag 840

tttcgcgctc tctatgcgtt tgtgccacac atagctgaac tgtaattgat tgattcgatg 900

tataggggat taactgcaac ttgttctacc atgatgcatg atggcctggc ctctcagtcg 960

acactctcga cagtcgacaa ttgagcatat ataaagaact caccggcgga cagcgctaga 1020

gtccagaaag ccagccagct agatggacat ccatcgcgac agaagcagcg gcagcgatca 1080

cgtacgggct cgatcgacga gagcgcatgt gcttgttcgc cctctgtcgc ggtgttctct 1140

tgggcatgca cacactcgca tcgtcgctac tactactcag tgtcaacctt gtgacgtgtg 1200

taccaacgtt gcatgaggac ggcggacggt cgtcgtcgcg gcctctaggg ttcctcgatc 1260

accactactt tccagccaca cgctaatag 1289

<210> 1723
<211> 1280
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_34365_G1, chr1:209122138..209123417, Cluster 10

<400> 1723
aagaatagag aactgtatgt tttgtattgt attgtagtct agggacgcta caggccccca 60

tcctacatgt cttccttctt aatctatctc attcaggatt ccagaccatt cttcgtcggt 120

gaaaagaaaa aaaaaagttc gatacacttg gtcctcacct cacatttttc tcgccatttt 180

cccttgcccg gttgccctga acaatcttta acctctagta gggaccatat gtttgtaacg 240

ctatttcata gtttttgcaa acacacaagg gtggcgcatt ttagtactcg gagttgactt 300

agtagactat ggcatgttag atcagcatgt atttacatac aaacgaggca tgtatgtatt 360

catacacagt cggggtagaa actgaaatca aggagatcta agatggacaa atatcttact 420

gatctgaaat catatacaca cggggtagtg tatggaaatt aaagaccact tttttagttt 480

attacatata tttttgctac atttacattt gtatagtttt tttatcattt gtcggtgcta 540

aattgctcct gctgctgtca tctcctttga cagtatcaaa tttcataatt tctaccaacc 600

tcatcggtcc gacaagcccc ggcacctcat cggcccgctt ggaagtagca aagtgagtat 660

tcgcgtccct aagtcaaaaa agcatgtttc ttttttgcta taggatccca tattctgctg 720

gttgagctgt cattcaaaaa aacagacatc aaagattcaa aagacggggt gttcaacatg 780

taggaagcgc acaaattagg cagatcgcca cctttgccca acatgcagga cctaccctgg 840

cgtggcgatg agctcacgct gcccgtgctc aagccaaacc aacgccgtct cgcaaggagt 900

gggagcttct ttcaggtgct caaccacagg gtgctcaaca tgttttgtgc tctttttaa 960

aatatatttt tcaaactgat atggaaagct ggcatccatc ccatagtatt gtagtagagc 1020

acgcttttca tttgtagagg cgagatgcac agcatagtgg tggcatccac ttctcatctg 1080

ctagcatcca cttggtcggc tgaggaggcg gacggcggac cggacctttc ccgatgtggc 1140

tgccccccaa ctggcgtctg gcgcccccca agttgccgaa aaaagtaatt cttctttcgc 1200

cctcccgtgt cccgtcgcct gttagtttct gctttgtttt gagtgcaggc gcagatctgc 1260

tgcccacttg accgagatcg 1280

<210> 1724
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345383_G1, chr10:123571300..123572421, Cluster 10

<400> 1724
tttctgtgtg acagaccaga tagactttta catgattgct ccgagagtta cctttctttc 60

atttcatctc cgttccgcgg cggcagaaac gagtcaggtc ccctgcaggc tgcagatccg 120

ccatggaggc agccagtgtc cccccgaagc gaaaacacgg gaggacgccg atgagctcat 180

ggccccggcc cgcgcgcgcg gtcacctgtc ccaatagcat tcattttcat gtgaccggct 240

gagacgacgg attgtctcgt gcgtgtcgag cgccatgcat gacgcgcgag gcgctgcacc 300

gacaagggag gaggaggtcg aggtcgagga ggaggaggag ctaggagatc tcgcagcagg 360

gaatgattgg ttggcatccg atgcagctgc tgctcgtgct agcgctggtg atgctagccg 420

gccgggggga gggcggggcg gggagctccc actgccctgc tggtcctagc acgttgcatg 480

catgcacccg tatgggaatc tcgcagtgac tttgcaggaa tgattagcct ttgttgtgta 540

ctacagtacc atgaaatgct tcggttccca gtccaagtct ataccaagca tagcatgtcc 600

tatccaagtt aaggaatgta ggcccacttt gttacgacga ctgagacttg gtttctgcag 660

ctcttctatc actgcagcgc tattgtagtg tacacagctg tagaccgtct tgctttcgga 720

catggtacac gaccagttta gatcatggac gcatgacgtg attgaatgct gaacgtacgc 780

cgtcgttata cacgcagacg cagtaggggt ttgttgtgag gcgcagtgtg agctagggtg 840

aggccggcct cacgtcagac cagagctatt cagctaggcc cagccgccca ggagcagcat 900

gtgtgcggac tgattccctg aaccagagat gcgcggcatg cgccaaacaa agcaagcatg 960

cagcagtacg cccaggcgca gtctttttag aagccctgcc tccctttcg tgagcccggc 1020

ggtctgcggc tctgcatggc aaagcgattt cgatccatgt acaatagtac aaagtacaat 1080

acaccaactt gcgcccgcac cagcctgccg ctgagagaca aa 1122

<210> 1725
<211> 1159
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346043_G1, chr10:127368080..127369238, Cluster 10

<400> 1725
tgtgccgcgc cgctgcctgc ctacgcagtt gttttgcgct ctgctagacc agtgaactcg 60

cctacgtacg ctacttgcgt tggtctcgtg taattagtat gcgtgtggga gagaaacgaa 120

atcgacacga ccgcccggcg cccgggccgg gtatccggcg gcggcggcgg cggtcagggt 180

tgcttctcga gaaacgtaga tgaacagaac atgcctcgtc acaagctgaa acatgtgttg 240

attagaaacg atttccgcca cggcaccggc ataaacaggt cgcggaacca gctgagcagc 300

taacgttgtt caaagaccaa cggccatatg tttggttgct ctcgtttctt atgtatatac 360

catgtgtttg tgtttggttt cccgcatatg aatactgata taatcatatg tttgattatg 420

gctctccata tatatttact atggctggac ctatgtttga ttcgctgcat ctagtcatat 480

ttgcacgcac acaccgacat aatctaaact tatttgccag catccattta tacgtagaaa 540

ttgatattac ctagtaaaac aatctcatgg gaacttggct acacacgtca aaacatccaa 600

tcacatgaat actgtatacc ttctctctct ctctctcgaa aagattatgg aatattacat 660

atctgcaccg gctgattctt cttcctgcgt ctgctgcgcc gcgaatcgtg tcgcggtccg 720

cgcgcgggga agcaatcccg tccggaactt gagggcgcgc cgctcgtgca agtggccggg 780

cgggccgggg gtgctcaatg caagtcgcaa acccaggcta cgtgtctacc taccctaccc 840

agacgggggt ttggtttgtt taactcattt tcggtgatcg catgtgctta tagcttcgta 900

atcccaattc gaatttgtta tggaacgacg tgcatgccgc tgggttcatc atgcgttcct 960

tcctaaccaa gacaccagaa aacgccaaga tcacctaggg tgctcacttc ttccaaaatt 1020

ttcgcgtccc gcatctaggt ccttcctccc tcatatttca tatttacgtg tcaggatttc 1080

ctactctcta agaccgtctg cagtagtata catagtttat ccaaaatact attttgtact 1140

attctacact agactgtac 1159

<210> 1726
<211> 1332
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347340_G1, chr10:134403683..134405014, Cluster 10

<400> 1726
tccccacaag caagacctat accctgcata tcatgtgata ctgtactatt tggccaaaaa 60

aaaaaaccaa ccatacttct ctattttcgc agctgtacct gaacgtgcca gtgtttaagc 120

ctgctggcat gaacttcgaa ggatatagca atcttcaatt tgatggatta cattggcaaa 180

aaaaaaaatt caagctctgc tttcctgcat agtcacatgc aaaccaggag gtatcatgcg 240

tctggtctgg tcatgggctc atgaaactga aggtgcgcag ggggtgcatg gaaactgcca 300

cttgaagtct ggttgcagaa ttgggcagtg tggaagcatg actgcatata tgagtatgat 360

gactgctaat tgggttgtta ctcaggatgg caggattcca ggttcagtga ttcgtgtctg 420

gtcgtcttgc atgtttcatc tcccttcttt ttccctccct gctcttgttt ttgactagtc 480

tccgtcggca atgcgtcaga tccagttcaa atcaggtcac tggtcaccct agagttagac 540

ctctaaaagc agtgcaaact atttacgatt ctgcaagtgg ctgcacactc ggcgtctgga 600

agcagttctc gttggctatt tgcacaggcg tctggaagca gttctcgttg gctcactgac 660

caaaaaaaaa aatctgcaaa ctggagccga ctcttctctc tgcaaacaac ttgattacgg 720

ttttttctct ctgtcagaag agtgtctcaa atcttatata tatcaaggat ccaatcgctt 780

tggacttaca taaatcaact gaaacaaaaa tacaagccat ccagtcatcc cggaaaacag 840

gaaggctgcc ggcggcggcc agagagtgaa tataaagtct tagaggcaat aagtggtttc 900

agctgacgag ttatcgtgcc acttttgatg tactttatta accgataatc gtctcataat 960

cttggattga actttcgact ctcgtggttg ttaattctat cacattgctc cgtccactgt 1020

ctgtccatct cagtcgttat ctgctgattc tctccctcga aaatactttt gtgtaataca 1080

gcgacacatg cgcagttgcg cacacagggg tggtggatca aaaggagacc tgggcgtaaa 1140

acctaattat tgtggtcaac agccaaaaac agtcttaaaa gcaagacggg cacggtccca 1200

tatggggagg gtacggaaga caaaaaggag taggacagga cggcctagga ttgtaggatg 1260

gctaaacggg ctactgtgtc gctgacacta ttaattacgg cactattatg catgatacta 1320

ttagacacta tt 1332

<210> 1727
<211> 1312
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347544_G1, chr10:135672879..135674190, Cluster 10

<400> 1727
ctcatttcca ttaaaaaaaa ctacgtcacc aatccaatcc cttcatcagt tcctctgttg 60

ccaaccagta gaatccctca tcaactacag caaggattcc tgaggcgatt attggctaga 120

ttctccagta cgtgcgtgat gccaccgttc acggcgctca gccgcgtgca tgcaggagct 180

agtactagta cactgccgga acgtacgtgt gcgtgcgccc ccagtgcgcc ggccggccgg 240

gccattcgcg cggcgtgcgt acgctgccgg catcccgggt gaggtgggga cgtaccggtc 300

gcgcgcgggc agtgccgccg tgccggtgcg ccatggcacg cgagcgactg ggcgagcacc 360

gaacagtagg gtgggtgtag gcctggcctg tagcctggga agccctgcgg ctgctacctc 420

tgcaactgca agcgtctcca tcggggtcgg ggcgcctctt ttcatgcgcg gcaggtcggc 480

ccggcccggc ccggccggcg ggcgcgccgc gacgcgacgc gcgcccctcg cgtcgcgcat 540

gcattattgg cggccggggg tgatgtggcg gtgcacggcc acgggccatc agcctgctgc 600

ggtgcgggtg cggggtgcgt acagcgtaca tgccatgcgt ggcccgtcgc agagctgagc 660

gacttgttgg acttggagag aatctgccgc tgcccgatcg atcccgtcgg gtcggacgta 720

catcgtcacc gattcatgcg cgcagatgca gatgcaggcc ttctcggtcg cattatgtta 780

cgcgtgcact gctcgcaact tgctgattat tactacgtac tatgtacgac gagcctaata 840

gtggttgcca gtgtgcgtac caccaccacg ccgccatgcg cccatgccca tgctccggcg 900

aggacatcca tgcatatgaa cgtacgaggt ggtgtgtgct cctgacccgt gacgcggtcc 960

acaacgttcc tcgcgcaggg gaggcaggca ccggcgcgtt ttctgtaccg taccgctctc 1020

tgcactgcat tgccggaaca tccttttgga tgcaccgagc cacctgggca ttcctctgca 1080

cagcacatgc atgcacatcg cagacaattt gcacctcctg ctcctgcttg gcggatctga 1140

aacgcagagg ccaggaaatg gtgtgtaatt aaacacgttt gaagttggtt aggtggcatg 1200

agtagtagtc tttacaggag cgaatttcat gtcgcggtta aagaaatctc ctggcgtgtt 1260

ggtagccctg atatgttaca tggattttca gaccttcaga gccatgatac tt 1312

<210> 1728
<211> 1139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347547_G1, chr10:135683142..135684280, Cluster 10

<400> 1728
gcttatggta tgtgccgcag gcccgcagca ggttagctga attcacgagg taatgttcat 60

catttggtat acaccttgag ggttccacca aattctttga gagacagaac tgggagctgg 120

acattttaac cgatggtcgc cggacattcc gagcctagtc atccgtattt gttggatctt 180

gtcaggttga tcagtctatt cacgagctct gctgtttgag actcagagag atgggtgaat 240

gattcttcct ccgacaggtg cgtttactga tcaatgaact gtactagtat ctcgatccta 300

cggcaaaggt taggttctct tgaacaaatg cagcatctct gaattatagc attccttgaa 360

aagatgagcg ccattcattt ctgcactggt accagctagg gctaggctag ctctagcagc 420

atctgctctc ttctctacca aggtggccac tatttatgtc agttagttct cacactgttt 480

tccacgcagt gctttatgca ctgctttgta atagtaagta tcgaattgga ggcttatgca 540

atgtggcagg tttcttcttc tttttctatc tcttctgagg atcctgtggc aggtttgttg 600

tagtaggatg aaggaacccg atggttagct gggtctccag ggcttgagaa agcccaagat 660

ccgctgcttt cttcagagta ggaaagccag cgcgaacgtc ttccaaggcg agctactgag 720

ctcgcactgc tctactgatg gtgtgaagag aactgtgcat gtttgctgat ttatttgtgt 780

gtgcgtgttt tctttttttt tttaaaaaaa aagaaaaaac agcaatatac acgagagact 840

agacattgtg atgattgccc atttgattca ggcctaattt ggacagaacc cagaaatcat 900

gcaacctttg ctgctttcct aagcaacgag cttcttggct tggcaagccc tgattcctgg 960

gacctagtca ggcctactag aacccttca acgtctcctt tcgaacgaga cgcgcacgca 1020

ctggacgact ggactggacg aagaaaaatc tggcaccacc gcttggcctc accaaagtca 1080

cagcctttca aaattttcct cgttaaaagc ggggccggcc ggggggactg acctgtgcc 1139

<210> 1729
<211> 1158
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347758_G1, chr10:136694232..136695389, Cluster 10

<400> 1729
aacctttttc atttcaggtg tttcttcccc tgttgttgcg tttggggtgg ggtgggggga 60

agggggtaga cggacgggta cgtagtgtcc tctgtcctgc atgcatggcc atgggcaggg 120

cagtgctgac tgctgaggga tcaggcgagc tgctgctggc agttgggcaa cagctcgctc 180

ccccatgggc gcaggcgcag gattattctc tgcagcacct accagcccta cgtgcctgct 240

cccgggctgg aatcatgtca tcataaccta tttgtgttgg tgctcaattg ctcatcgagc 300

aagcctgcct gcctgcctgc gagctactac tccacggcag tatggtccct tgccttgagc 360

tggatggaca cggatccgga cgtcgtccgt cccacactgc cagcggtgca gtctgctacg 420

ctgctgttag tgcctccgga ttattagatc gaggtgcaag ttgttgcaag aacgatatgg 480

ccggtgcagt gggatcgagt tgcgctagct cctgccactt tcctgtaaac ccgtaacagt 540

cttcctcgct ggtggatccc ggacccatcc aatcggcttt acagctcgct accaaaagaa 600

aagaaaaaaa gacagataat tgtgcgtgcc tgtggcgtac ggtgtggact ctgatctgcc 660

tgcctgtgcc ggtgtcaatg cctggccctg gcctgaccta ctaccctcga taacgggcgt 720

gcggggaaga ttaccgagtc gcctcgactg cagacaagct aggaacagac tgcacctgca 780

tgccgacacc gcggttgagt cgttccacgg tcgtccgccc gccccatgcc atggcactgg 840

caccagcggt ggagtcgtcg tcgtcgctgg agcgtgatca gttgatcacc gcgcgcgcgc 900

gcgcgcgcgt gcgggacacg gcgtggcgcg gtggaaccgg tgcaacttgc cgcgcgaatc 960

gagggtacat gaaagcaact ccctttgact cttggagagt tggagtcagt gacaatatat 1020

atggccatca tccggacgga cttgcaaacc ctgactgcat gcaatcacag gctgtccacg 1080

tccggtccaa aaggacgtca cagaaaatca gcgacgccgc ccccgagccg agtggatgcg 1140

cattggacta ttctgaat 1158

<210> 1730
<211> 1075
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348625_G1, chr10:141082849..141083923, Cluster 10

<400> 1730
cctaagtcac tgcttaatac aatatacaat aaataagtat gcgacggtat atcatgtgac 60

ccatcccagg aaaaatagtt atttagtgtt tttgtacgtt agctcatatg atggtctcaa 120

tagtaatatc acaactcatt ttttgacatg tttggctagt tgtctagctt gagcctataa 180

aatatgctgg aatggttgaa agcgttattc gtcactctaa acaatgatga ctcaccacta 240

taacgattta acatttatat aaaaagcaga gaatggttta acaatttgtt aagccactct 300

agatcgagtg tatagtgtgt gtatatatca tgagcataat ttgagagaca aagcgttatg 360

ggcacgtcct ggagtgtagc gaacagggta cacagactga cagggagtgc gtgtttgcta 420

ttcacatgtt ccacactgca ccatcaaaag caaggagaaa actgcagcag ttttctcgcg 480

attttgcatg ttctgcattt tttagtatgt cccaggtagc atgtgctgaa actgaaaagg 540

ctgaaacaga tagatagaca ccaccgagat cgaaaccgag agcgtttctc atagacacgt 600

ttgcggccgg tgcacctccc ctggacggct tcacgcaaga gcccaggtgc tcggcccggt 660

ggcaacggca tccccgtccc ctctaccgta cacgtcaatg gcacgtgggc tccacgcaac 720

tctacgtggc ccttgggcgc tacgctatcc catcctccgt cacgtgacct tcacgtctct 780

gacatgcggg gccacccatc ctgccgccgt ttcccagctc gcacgcacat tgccaaccgt 840

tggattgtcc accagctcga tctctccctc tccatccgcc gattgcgatt cgtttgggcc 900

cactcgcaga gagttacaca tcggcacggc acatgggtta gagaatggcg ccgtcagcag 960

caggagtaaa ataaggcaat ttctaggtat ttatttaggc gcaggctcgt gttatcgccc 1020

cgttaattat ttaataataa tcggattcgc agctaattaa atctgtaaag tatat 1075

<210> 1731
<211> 1370
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348915_G1, chr10:142818740..142820109, Cluster 10

<400> 1731
aaaaaacacc acacggtcac ggcgaacaaa aaagcggcta ggcagtaggc aacggaaacg 60

agtgagcgtg catgtgcttt cgtgtgcccg agcccggccg gccgtataga aatcgtcgtc 120

caatatgggg acgagacgac gaccgcaccg tacgtcgtcg tcgtcgccgt cgcaacacgc 180

gtgggccccc gtttgcgcgg caacgagacc ggcaaggcgc tgacaggcta cgtggcgtag 240

agacgtgacg tggcgagctc gaccgggcgc gcgagaggcc aggccccact gccccagcct 300

cggacgcgaa cggagggagg atgacgtgca gaaaacgacg gcgggcggga aaaagtccgc 360

ggacggggga cggcgagcgc gtgcgtgcgt tcctatcgtg gaagcaccag cagcacgggc 420

cgccggcggc ggtacgccaa ggatgtacgg caggttggcg tcgcggtaaa agtaaccgcg 480

acagagcctt tcgcggtcgt gagtcactca ttgactcaac gctcgttttg caggtagatt 540

tctcgaaatt tgattttagc tgagctggta caaatccgct ttaagttata agttgtggaa 600

aacaaagata tcttggtaac atgcatcata tggatttgga aaaatatgga gtcgaggatg 660

taattctaaa ttgaacaaaa gaaatatgtt gatttttttt ttttttgaaa tctactacga 720

cgttgtaccc gtctggttgc cattattcca tatttctcga actcacgagg atgttgcccg 780

actatggtcg aaggtttacc gctcgacagg agctcaagct agggtttgtc gaacaaacca 840

atcgcggaag gattacggcg tccgcgtagg acgctcacgg aaactacagc ggtggcgaaa 900

gcgaaggcat ggaagagtta gagtttgcat aaccctaaaa gcatcggatg gtgtatttta 960

taacctatcg gaggaatgtg aagcgttccg tgaagcactg aaactggagc cggccctgga 1020

tccacacccg tcgacggttt tctgaccgcc gtgccggtgc cgcagccgtt cacgacagga 1080

tgagcggctc tggctgtacc tacggccctg gagtcccaaa cgctcgtacg gcacgggcgg 1140

cttcgtagtc ttcgtcggcg catcgtcctg acgaggacga tatatgtatg gaacggtgaa 1200

tttctggtgg actcggacta tccgttcgta ccgtaccagc gtacctatat aatatccaca 1260

ccaagtaatg gccatcgaaa tagacccagc cgtgcgatca aaaaccccac cgtacggtcc 1320

aaccgtccaa ccatgctgaa actgaaacac gtggccacac tcgattgaat 1370

<210> 1732
<211> 1348
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349477_G1, chr10:145610418..145611765, Cluster 10

<400> 1732
ttctttggtg caaattactt gatatatgct gttaaaggcc acatgaatga aaggtgtaga 60

agaataaagg ttagcgaaag tgaactttca gggtagttcc ccttttttctt cttttgtaca 120

cagacacaaa tttcaggctg ccctcagtcc tgcaactggg aaaagctagt aaagaacaaa 180

gggaaagaga caaaacaaca caaaggtgaa acttgatgcc aatactttct tggaggaaca 240

aattaagtgg atatgctttc acatgttact tctttctatc catctgtaca agtagtaacg 300

acttggtgaa ctgatgtgtg tgttgtatac ttgtatctat tgtttgcttg cttctttgag 360

cgcgtgattg aacgaaaaaa aaaatccatg tgatattgtg attgaatgta accgacgagt 420

tgatgatggg caggaggggt ttcaacttgg gctacgcgtt catcaacttc accaccacga 480

tggcaccccg catgctctac tacgccctgc agaagtccgg ctggaccgtg tacggctcca 540

agaaaaaaaa aaacgaccac aaggatgcgt agcagcagct gcagcctgaa gccagtagct 600

aggaaaagga gtaaacttgt tctgagggaa aggttggggg actttggacg gtagctgcgt 660

ctgcgtggtg gtggtctgat cgggatgtct gtagtctgtt ccgtagagct agcgtagcgg 720

tagtgtcttt gtactgtggt gtagtggaga gtgtttgtgt gttccatttc catgtcatgt 780

gtatacggtg tacctgttgt gtcttgaact ccgatgagga tgagtggtag cagcgcgcgg 840

ctgggtgtat ggtttgtagt actagtaggc aatgtatgtg tgtgtcccac tttcactttg 900

gtgtgttgtt catggaactg gcagaagctt ttgtgatgcg atgcatgaat gattccccga 960

gagagcatga atcccagagg aagagaaggg cggcagagaa tctcttctct ggccgtgtcc 1020

gaatccgtgg cgccatcaat gcgaccgggc gagggttcgc ggtcaaacag ttgccactcc 1080

ggtgaaaact gggaacggct cgccgatctt ggggggcagc ggcagccggc gacgacatct 1140

cccttccgcg tctggtcgtg ctgctgcgtt gcgtcgcccg gccctgtcct ctcggtgcag 1200

atgtgtgttt tattatctta atgctttatt taagttgtta acgtaatttt attaaactta 1260

agtcagaatt tgattgttct tgatttacta cattgttctt ccgatagatg cctcacattt 1320

tccttttttgt tcaggtaaca ggcatgga 1348

<210> 1733
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_350037_G1, chr10:148836066..148837072, Cluster 10

<400> 1733
actgtcagga agaaacgtaa taatcactga cttgtagcca gaaagagaga gatgaggtga 60

ggaattatct agcttgagca gcagcattag cagtaaagtg aagcagactt tggcaggtga 120

cggccggtgt ggtgtcgcca tcacatcaga tgagatgagg cacctgtctc tgtcgcctcc 180

tcccaccatc accaaaaaca cgaactgctt gctatcccaa gaaaaaggaa agaaattttt 240

tttaaaaaaa atacccaaga cacacgagac gagacgtgag agtgacggaa actccagttc 300

gtttcagcat atgtatcatc catccatcca tccatgtggc tggcctgtta gatatcatat 360

taggatcttt actgtgtcca acttactgaa tccgagatca ctagatagat aatgaatgga 420

tctgtatttg ttaactgcta atacgtgtta cagagggata gagagacata ccttggtcat 480

gcagagctgg agatggatct gatccttacc gatgacgatg cctcgattcc tgcagtcgcc 540

gctgtcctgt agaagagggc gatgagtttt gtccgtggat tagtatttag agcgagggat 600

tagtgttcgc tttctcacga ccccttaatc ctttatatag cttcatgtaa ccgggctcta 660

accatggtta ccgtgagccc tctcaatcaa agatctgatt aaggagattg acagttagat 720

ttaagtctaa tctagtcatt ggtgaccgac gaccgtagaa tggaatgatc caaataaaag 780

accgagaccc agggtggaca cgacgggatg gatggaagct tcgcttcgcc tctgctgctc 840

gtccagcctg cacgttgctg ctgcttcgag tcacagcagg cactagctgc aatgggccgc 900

actagctaca ccgagcatat gcatggttgt tggcgcacaa ctcatcagat tcagagctag 960

gttgggaata taggctggta cgtatgagcc ggtacgagag aagatag 1007

<210> 1734
<211> 1399
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37120_G1, chr1:223767449..223768847, Cluster 10

<400> 1734
aagaaaagac ctgagtagcc tggctggaat gttggctgga tcatatgctg attacgcctg 60

cgccatgacc aaagaaacgc tcacttctta ccctcccctg caataatttg cagccacgag 120

caggcgagct cgtccagtgc gattacgctc ctattctaat gccattatta tctgcatgat 180

atgatggttt tgcaaggaag gtagcagcat cacatgccat cctctagcta ggttgtgctt 240

gtgccatgcc atgccatgca tgatgtataa aagggagaga taataatgtc tggattaaat 300

tcttttggac agtccgattg attttttta tcagttagca ctatcaacct cgtttgattg 360

tgcgcgaagt tttgaacaca gatttctttc ttttttaaa aaaaaaagga aactcattcc 420

aaatccactg gaaccatcaa catctttttc atcggagaat tattaaatgt ggctagcagt 480

gcaagaagta ccttctctta ggacgaagag aatgttactt tacaagttgc ttacgatccc 540

ctccagattt tcgacgccct aacgaggagc acgtcacatg cagatgcagg cactgcagtg 600

gatagagctg aaccagcgcc agtcccttta attgcaagtt ctggtgactg ctggttgtgc 660

tgttgcaagg ttattattgc taatcgcgat tagtacgaga tcagaatcca gagcagttct 720

atgatgctgc ttttgacgac gccaaaaagg gtatctgcct ttctcgttat gtaaagtaaa 780

ttagtgagac cctcgtctgc agggaagcgt agaagactac cgtacctgtg cagaatcaga 840

tctctctctc tgagctgtta actgtcctgt gacgatgcgt gggtagctag ctgccgctgg 900

agcgagtaca cacctcacca gcaagctaag ggagatgatg aaactaccac cactgaacat 960

gcatgcaaac aaacacgccg atactagcta ccaggcacag agtagcacag gttgttcgtg 1020

gagaaaaaag gcagccgcag cgggaacacc aaccatgcat ctcggcctaa tccagatctc 1080

gtgtactacc ggttcacgga ttgcaggcat agaagaaaag ggggggggag ggggggggag 1140

cgaggccttt tgcatgcact tgtaaagaac taacgattgg tttggttaac caacgaactt 1200

atcaacgact gaagtgtctt atttacttaa ttggaggttg acatctgcag agagagagag 1260

agagagagag agaggttagc tacttaaccc aactgctatg acatcatcag cggcaataac 1320

acaagcaaaa ggccagaacc tcataactat aatatcgacg agtaatattc cgaaaaagga 1380

attaaaaaaa ccaagatgt 1399

<210> 1735
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37143_G1, chr1:223830251..223831289, Cluster 10

<400> 1735
gcaacataag tgtcttaaaa accaagcaat taagtcgttg cagcaccgat ccatcactga 60

cagcgatggc cattcgagct ctgcaccaca ttccatgcgc ttcacggtgg cggccgcccc 120

cccctggtgg cactggcgcg ccaggagtac aacaacatct ctctcatgcc ctgtccctgg 180

ccgctgcgac gagcaagcat ctagccccta cccctgcccc tgcccctgcc caggccccgg 240

cgcccacgac gagagcacaa attctcacgt ccttttcgct tttgtcttcc ccggccacgg 300

gcatcattgt cattggccag cggaagaaga attaatgccg acgaagattg ccgcccggac 360

gctatggctg ctccccctttg ttatcggcga cgttcgggtg gctggcatcg gcccgccatt 420

tcgccgtcgc cggcacgctc tcgcttttcg tcagccggcc tgctagatcc gtcgccatcg 480

cccatcggac acacgacgag tggcaatgaa gggcaaagca aactcagctc ttttcataat 540

ggcctcggtt cttattgacc tggtacgtac gtaggtgcta gctgtgttag tgcaacgaag 600

aaccgaccgc aacacatgtc aaggattgtc cgtcctgatc taatgcggcc tcgttgtgac 660

tgagaaatga gtggaaccag atatgtctcg gttgcgtgtt atataggcac ccaaacagtt 720

tccggtgtgg ctcatacatc aaccaagaat tacaacaggt aaacacgaga aaaacccaaa 780

ctaccttagg aaacaacgac ctgctaccta tcgtctctta acttcagcca ttatggtcgc 840

ctaactagat tagggtcgat ggaataagtc ctttgtggcc tcttgtggaa aactacagcc 900

agcatcttag taattgctgc agtctttgtg ttgagtataa tagagtataa catctcttta 960

gaggacatta tctcagtttg gtctctatat gacatcatct ttgtggactt tgtagaacaa 1020

catatttgta tgtcagggc 1039

<210> 1736
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37226_G1, chr1:224246612..224247628, Cluster 10

<400> 1736
aagacgccga ggggagccgg tggccggggc cttgtcgccc ggctggtagc tccgctcgag 60

acacggcaga gacggttgta gcaggttgta ccggtcggag gagtggttag gtgcccggct 120

tgttcgacgg tcagagcgtg agccaggcat cgacgagaga gggttgtgtg ctgaatgagc 180

ctatctagtt gtggtcatgt tccacagcgc agacaacaca actactcgtg cgcaagagaa 240

aggtgcagca ataacgaagg aataatcgcg ctctgtggga ctgtgccgct gccctcgaac 300

gccggtagaa gcagtgcgtg gaatctctac agttctggcg tagcagtagc tagctgctat 360

gctagcagcg accagccaac cagccatgct cttgaagtct tgatcaccat ctgtgcgcgt 420

tgacaggccc ttctcccttt ccaggctgcc acacgtcgga agctctgaac cggttttagt 480

actgccaagt tgccaacaca cacagtgaca ggagaggcac agcacagggc atggcaaaga 540

caaaaggccg cgcgcatcga cgtggcttgg accgtgcgcg agcgacgagc ccacgagagg 600

tcgatagcca ttagccaagg cgctttcttg ttcgctctcc ttcggtcctt cgcccgacgc 660

gacaggcagc acacccacca acccgtcgcg tcctgccccc tcctgcggcg cgcgcaggct 720

cggagacgca gcactaccgg ccaccgcctg cctgccgatt cccaggacgc actggcctcg 780

gcttgtctcc ttccgtcctt cgcgccctgg tgctcgctct cagtcactca gtcaggcagg 840

ccaggcctcg gctgcccccg ccttcttttg cagacccggc ccgccgtctc aaaagagcgc 900

gctctaccag atctaacaat cccgagtgcg tttaattttc taccaagatg catagatatt 960

tgttacgata tgaaatttca gaaatcgtaa ttgtttatac tatttttacg aactcag 1017

<210> 1737
<211> 1358
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43087_G1, chr1:253907937..253909294, Cluster 10

<400> 1737
ccatgattca agcgacagag ttcacttgag tggcacaaat gatatgagaa aacagagttc 60

actggcgtgc ctggcgctgc gacgcgcccg tccccgtcgg cttgctggct ggctggctgc 120

tgcttggccg gcgtggtagc ggcatgcccg gcctcagtca ccgtgggttc gagatgtgct 180

agtaacagaa ggtgggagaa aaggcgatcc agaaaacaaa aaggctgcta aaagtaggac 240

aacaaactta attcagttaa acacctggtt tagtgacaac aatagagatt tcagggattt 300

tttttggagg ttactcgtcc attatgtcat caatcttgtc ccccttagtc ctttacgctt 360

gtgaagtttg gaggaaagta gctgcttttt cgcccgcccg ctcaactcaa tcccgtgccg 420

gccgttcacg ggactggaca cggttggtca cctctccggt ctccattgtg tggtggtggg 480

ctaatcgttg gccacagctc tccttcattc acctgcagtg tgggctaatc gatcatgcat 540

atagcatgcc caatctacac aagacaaaca ggttgatatt aatttattgc tgatcgcttt 600

gatagataac aagttgacat ggaggcgtag acgctcaggc tcagcgtcgg cgagctcagc 660

atccgacaag gacgccaccg tcgccatcgg atggggtcgg cgcctcccgc ccggaggccg 720

gactactaca catacacatg cacttgtgta caacaacttg cagtgcagtg cagtactaca 780

gagggaatcc tcgtcctcca cacgcggttt catgttccac gacggccggc gacgccacct 840

gacaccaacc ctctgagatc tgtggctgct tgcctcttcc ttggattgga tcattgatta 900

agtagtatac cagtggcatt aggattttgt ggtgcgtgca agaacacagg tgctaccttc 960

cgccgccatg atcgggatgg cgagatgcgg actgcatgcg tctggtcttg ggacggtggt 1020

cgcagcaaga tctggatgga tgcatgtata gctaggaggg gaaatggcca aagttgaagt 1080

gtctccgtcc agggtctcat aagcctcgta gtagatgcaa aacgagaacc aacggtgtac 1140

ttctagctag taagacctac aaaaatattt ccatagtact actcctaacg aaaaacacga 1200

tcatttttaa cgagtcataa gaagcaacgg aaggcagcac cacctgtaga aaactgagat 1260

aagatccatt ctaacctttt gtttaatttt caacctttga aaccgagtac taggcgtcca 1320

ccaattgtcc aagcgcagaa attttgacgt tcaccaag 1358

<210> 1738
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4358_G1, chr1:22496537..22497632, Cluster 10

<400> 1738
atggtcagct tttacctttc gcgccggagc tctctggtta gtgcgagaag ggagtgctga 60

ctaggagtga cagtgcgtcc gcacacgtgg cccaatgcta actggaggcc gagccttgca 120

cgtactagtg ccggttggag gagcacaaag tcagcagcga gccatgaaat gaaaaaaaag 180

aaagaaagaa agatggagcc tgtgtgagtg tgaggagatg gtgattggag ctgaacctca 240

tgatagctgc aagacgaagc ctggaaccaa caaatcacgc agcagatctt gatagcgcca 300

aggaagaatg agcctgggcg cacgattggg ggaagaaaat gtttgaccta cagacctgct 360

ctttttttta gtgggaaatc atgttacaca caggctgatg cgacttgcct ggaaccattg 420

ctgttcagta tatataataa ataagaaact tgaagcgccc cgtttttttt ttaaccctac 480

gcccacaccg cagcaaacat gaaactgata ttacaggcca cagatttcaa gtacatacag 540

aatgactctt gaacccaggt aaaaaaaaga ggtttcaaat gcgaccacca aagagaaagc 600

aatcggaacc tttgaaacgc gaaccaaagt gcatgcaccc cgcagcaaat catgaacggg 660

caggaccaca gttgatggca gaacaatacg aggataaaat gcacgggtct gtgcaatcag 720

ataaccttag caaaagagag aaaaccataa cagatgcaga gaacagtggg gcgcatacta 780

cactacaccc atgcatgtgg atcaggtcca agtgtccagt catggtggga atctgattca 840

tcccggtggc ctagcaagcc ttttttttt tatccaatga tagtggctac tggctactgt 900

gtgtgcgcca gcttttggtc gctctctcgc ggctatcttg ttgccgcatc cacctaattc 960

ctccgcaggc ccccaccatg tgttactagt acatcacacc ttccgtggtt cccttatccc 1020

tgcttcctat cacttcagat attctcttgg ctcttgagac catgaattga caccggccac 1080

atcaattcca cccaac 1096

<210> 1739
<211> 1311
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44031_G1, chr1:258436126..258437436, Cluster 10

<400> 1739
taaactaaaa ataccctct tattccggcg gcacccgttg tttgacgaga gagaaaaaag 60

catagacttg gccgtgaaga cagacgaact tggccgtgaa ggcagacgaa caaagcggcg 120

ggcgataaca ttccattcca ttccatcaac attagcgtca tgcacctgat gcaattaatg 180

agaagcacat gggaggccat catgtttgtt cttcgtttag gtgcagcgcg tgactcctcc 240

ctcccctcac tcatatcatc agctccagcg cgggccgggc tccttcatgt cgacgtcgac 300

cgtcgcctgc cgagacgggg ggcggcgacc cacctgtacg gctgtacgca cgcacgcgcg 360

cgctcgcgag ggggccccc cctcgcgacg tgtgtcgacg gcgacgcagc atcgccgcgg 420

tgaacgatgg acgtcgacgg ggatcggact gcctgtattc cattccattg cggtcgccgt 480

ccatagatgc ctagctgttg atcaatagat agatagatag attcaagatt ctcattctcc 540

cacaggccag gctccgatcg acccgccccc accgtaccgt ggtttttcat aatgtgctgc 600

tgcccgcaac aacgcgcaaa gcaagtctgc aaccacaaca taataaagcg tttcaataaa 660

cgcatcatgc atgatgccga ctttagtgta ccgtacccgg cggacacaca gcgagcaatg 720

atttgatctc agggcgccac gcgtcactgg gcactctcgg gcagagacgc catctcggcc 780

gttcggtcca tatggatcga gtcgacactc cacagcagcg tacgtcttgc acggccaacc 840

actccatgtc agtacgtaca ctccgtataa tttgtttcac tgctcatttc ctcggtgctc 900

acctgttgta cacacagtac gtacacgacg gtatacgtaa agtctgttgt gcagcatggt 960

tgccctgccc catgtgatat cgacgcaatg tactgcatgg ttccccacca gggtcaaagc 1020

acgttactgt gcgtgacgcc agagcatacg cagacgcagg cgcagctagc ctggttgaat 1080

ctgttcgtgt ctcaaaggtc aaactatgca tgccactgtg ccgggtctgt caggtcgttt 1140

tcctaccacg gttggccgta taggtgctgt gctcgttgcc tgtgagccat ggcggtcaga 1200

gaggggccag ctgggctctc gtctcggtcg cgtgatgacg accggagagg gctctccatg 1260

gacaactttt ctcctcccct cggcggagcg tggctggtta ttgttgtgct g 1311

<210> 1740
<211> 1173
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4544_G1, chr1:23561344..23562516, Cluster 10

<400> 1740
atatatagac tctatatatc caataaattc atatttacta aaacgttaaa tctacgagtc 60

agatttatta ttttaataga gtttctaagg atgctcgatt aactcaagtt cgatcaaaaa 120

atgatttatc aatctaagtt taacagagtt aaaacgtgac ttctttctct tttttctttt 180

ttctcttctt ccacatatag ccatcgctct agccttacct ctttgtgcct aaccacgtcc 240

caccacaagc tctgatttgt acctcttctc gccttgacta ggcctaattg gtggtcgcgc 300

ccgctcatct cctcgtcccc acatgccctc tccatgacca gtagtgtcga caatgccata 360

aacctcacct ctctctctct ctctatccat tttcgattgt ttgatcgtat cttagtcgtg 420

cctctctcta accacctgcg ctagccgcac cttttctcgg tcagacaccc tagtcgtggc 480

tctcttcgac cacaaggtta tctgtgttct catatttata acataataat gggtaactaa 540

tgacattaaa ttatgcttgt ctaagtatga ttgtaatcag taaaaatcaa tatcggtcta 600

ttcaaattga ttaccgctta tattttacgg tatatttcgt aaaccaaata acaacataga 660

gacatagagt tgttgtgcag tcttccattt acgcggtaga tccaaattta ttttaatata 720

gctgccccac agtaaaggtt agatatatat ttatctttta aacaatcaaa attggcctac 780

ccggtcgctg ctccctctac agagccgcct ggaacggccg agcacgcacg ctaggcaggg 840

taaaacccgt acccacccac gcctgaggtc tgaccgtctg aacacttcgc gcccgcagtc 900

ccgcggctcg ctaacgttcg tgtaggcgcc gcacggctgg ttggctggct gggtgtatag 960

agcgggccaa atcgcgctga aatccgggga aacggtggcc gcacccgcac gccacgccga 1020

tgggaggaca gcgacggtgc tcggattctg atgctgtccg tgcctgccga agtgacagca 1080

aattgttgct ctgcagtacg cggctgcttc tggtcgacgg aaatgccgca gatgcttcat 1140

gtgagctcca tcggggcaaa cggacatgaa tgg 1173

<210> 1741
<211> 1354
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4549_G1, chr1:23588008..23589361, Cluster 10

<400> 1741
gggcgtgcag ccaagcgcac gtactccgtc cgtccgtgct gacactgcac aacaactact 60

atctaataaa gagctctttc gccatgcgtt gggtatttcg taacgaggtc aggtgtcaaa 120

gcgagcggcc tggccttttt tttttgcttt tggtaatggt aacgcgctag ctgctgctct 180

ttctatctgc catgcctgct attggccgtc agttcgggtg gatcgtacct gaaatgaaag 240

gctcggcaga gttgtttccc ataaatccca tgtttctgtt cttggacccc aaagaagaaa 300

aaaaaaggct tcatctggac ggcagcaaga cagatctggg ttgtgtgtaa tgtatgacct 360

acatcgatcc agcgggcagt gggggactct acggcggcac caactccacc acacacactg 420

ttttgaattg gtgacgagtg atagcccctc acctactgca gaagaacttg acccccccccc 480

ccccccaaaa aaaaaaaacg atccactggc cggccggtcg tttccggcgc gctatcgtct 540

accggcggtc agctttgccg gcgaactagc cagcggcacg cgcaaaagtc gagatgagct 600

aaaatgcaag cacgctctga atctgaatgg agtccatcac agcgacagcg agtacacaca 660

caagacacat gtctgtggca tggttaaaca ctgcgcagtc acatgcagga agctgtggac 720

gtcttgaccg ttgaatcaat cagcacaggg gcgcggtcga gagggcgtgc gtgagtgtcc 780

ccgtgtgaaa cggggcggtg ttctgacttg tgatccctga acttgtggtg cgcgcacgcg 840

ctgtggcttc tggggtgcgg tgcgggggca cttcaatttc ctgcctgccc gggttgtcac 900

caatcatcac tcccttgtgt tagtgtggac tgggcagtgg ccaggtctgc tctcgtgctc 960

gcatggctga agccagacag caaccctgcc cccgctgccg tccgcgccgg ggaacactgt 1020

tgcctgcgct gcgcccgccc ttcggcagct gcgcccgcaa tcgcaatgct cccggtctcg 1080

tccacggctc cacgcacgag cgggcgtccc atcccatccc atgggctcga gcccgactgc 1140

cgcctgccgg cgttgccgcg gggaggggtc gggtcgcgca ttgaaaactc gtaggcgacg 1200

tgattggttg gttgcagccg tagctgcttc gacctgctgc ctctgcctct gccgccgcgt 1260

gcaagactgc tggtcccagt ggtcctgcac ctccgctggc ctggcctcgt gcctgacggt 1320

gacggacgcg gcctgggaga ggtacgggtg tgcg 1354

<210> 1742
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45908_G1, chr1:269040924..269042006, Cluster 10

<400> 1742
tatgggttcg acaccttctc caccattagt ctaatgctcc tgtttaactg ccagctaagg 60

tttgcttcaa tcatatggta cgatggccct caaagatggt taggaacata ggctagtact 120

tgggccagct actaacatct gagggttgtg ttgctggttt gttctcctaa gttccacaac 180

ggcaaggatg tgctgctaga tgttgttatc ttgtgtattt gctctctaag gaattgaaag 240

atcagaaaaa gggtttgtct ttgggtatca acctttgac ttacagtctt acattcagat 300

aaatttagtg atgattcgtt ctgtgcttaa cactttatgc acataactag aaagtgcaaa 360

tatatgctag taaactaagt tatggtgtgc acccttctt gttttttttt ttggaaagac 420

tagttgacaa aaaaaaaaaa atcctatttt aaattttaga actcaaataa aagtcttctt 480

gttagagatc ctcttataaa ttctctttaa ttatcttgtc acccatatat accctgtgtt 540

taacgttgtt gggcgagcta gaccatgcaa gcatgatgat gtgtctagga taaggctcat 600

atacggcctg tttaattggg ccgatccagc ccttgtacgg tggactctga gctgacggta 660

gcgtgaccgg aagcaccatg gccgatggcc gatgcagcgc agctcccttc taccctcgcg 720

ctcgcgcttg tgggctctct cgcagtcgca ggctcgggcc gtcgggcgcc cccacaccac 780

atggcacttg gggggcttcg gtccgtttcc accggtgcag caccggaggg cggaggggg 840

tcgtggtccg tacgcgcggc gccgagggag acgcccggcc agggtcgtgc gtgcatgtgc 900

gtggcgcgag gaagatctgc ccttgcccgt ggatcgcgtg gccgcgtcgc cgtctccgtc 960

gccgccacaa cacgtggacg tgggaggtat ctccggggca cgccggcgtg agccccatgt 1020

gccgccaact cgtgcacggt ccgctccagg gggtctggat ggactggact cggtggaaaa 1080

ggg 1083

<210> 1743
<211> 1165
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46181_G1, chr1:270671671..270672835, Cluster 10

<400> 1743
cggccccgcg gcggctgagt gagacaggag cgtgcaaggc gcggaggact gcactgcacg 60

tccgcgcgcc ggccgcacga gggaatgttc cgccccggct cggcagacta gtagtgcgtg 120

cgccctttg gagtttttt ttgccgcgcc cttccttttg acttgaccgc ttctcctgca 180

ccgggtggtc gtgcctagga cagcgtgttt cactgtctct tctcttccac tccggatgcg 240

tcgtggtttg cgctgtaatc tgcgtgggaa actagagaga tgcatgacca acatctgctc 300

cgtgcagaat tccttacgat gtttttcccc tatttgggcc ctggtataac ggttgcttgt 360

tgagaaaaca ggttatctga gaagttggta agctattttt agtttattgt gagaaaaagc 420

tgaactgata aactgttgta gaagctacaa gtttaacgca gtttctgctt aaatatatca 480

agaagctgaa aataagttat acaaaaaata agcttacatg gactgacact atataaagga 540

acaagaaccc agaagcaaag tcagcacaag tttcatgtgc gctaagataa tgacaagtag 600

tcagaactcc agcgatccta ttcctaagtc ctaactgctg cgctaagatt tggttccact 660

ctgcggctga gatctgcgtg gacccatgca tgcatacaca cgccactggc tcgaagaagg 720

cctcgtgtta gttgaagtgt ccggtgaaaa cgcatgtgct taagggtgga tgaacatgaa 780

ctgcatgctg ttccgatcag attccggcct taaacaagcc gtatatgttg tttgagaaga 840

acaaaacaat gaacatgtcc cagttgtaaa gtgagctgca ttatattttt ttgtagagta 900

ggaagggttt aggtgcacgc attgttcctg gggatcgatc tgcccacatc gtgccaatac 960

gtacatgcat gatccatcta tctgcttgta atctaccaac cgcggttgca ctcgagtacg 1020

cagctgcttc tgtctgggat gcgtgatttg tcctctaccc gcccatccgt catgatcatg 1080

atcggtctct gcattattga tgatgcagtt agccttttt ttaacctggc aaagaaagag 1140

atacaggcca aacactggaa catac 1165

<210> 1744
<211> 1125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46189_G1, chr1:270702129..270703253, Cluster 10

<400> 1744
agcctgataa agagaagaga agcccctagg ctgaagctca ttggtgacgg aggtcgcgcc 60

cgcgcaagag ctcgcccgca gtgcgggtgc ggctgtgctg tgtgtagagt gtagaccacc 120

gaggccgcgg gcctgccgtg aaaccgctcg aggcgcggcc gacatggatg gatttcgcag 180

cgccagtgac agcgccgacg aaggtcctcg tcggagccca agtcgagggc caccggccgg 240

ggaaggcgtg gcggcagatg gacgtgcctc tctttcacgc ggctgcggct gttcgttgtt 300

ttccacctat tgagtagctt tcaacccttg taaataaaac taaaataagg cttaacagtc 360

caattaaaag cgggctcggg cgccttttg cctgttcatc aaatcaggag cggggaaaca 420

cacacagacg gccacacagg cacctgagca gcaggctggt gagatcagaa ttcggatgat 480

gtccgaagtc caatccgcag cctgtacctt tttggtacga gggcttgatt gctgatgatc 540

acttcaagtt caagcatcta ctactactac aatacgtact actctacaca tcatgcgcat 600

ctcgagacac ttgattggct ttcggcgatg acaaggagaa ggacggagca acaagcaagc 660

agcacaggac cgagcggaaa tctgattgaa aacgccagcg attacgggtg gaaaaaatcg 720

gacgagcagg ccgacggcga gtcggcgtgg gaggaaagct gaaagcgacg cgcgccgtcc 780

gattccagcc aaacccgata ggtcgaagaa agaccctgcc ggtgcggtgg tgcggctgta 840

ggatcagacg actgggacag tgaggcagcg gttgccaggg tccaggacca actgaggagt 900

gaagagtgac ttgactgatg ggtgatggct gcggaagggt cgccgtcgct cgtctcgctg 960

ttcgtgggcc tagctgtccg tgtttccctg ccgcggcggg actgcgccgc cccgtccagt 1020

tgcctcgtcg accttgacgg gttagatgtg cgcggcgcgc atcacctcga cacctcacgt 1080

cgagtttttt ttgtttttgt ttttgttttt gttttgtgat tataa 1125

<210> 1745
<211> 1015
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47449_G1, chr1:278160156..278161170, Cluster 10

<400> 1745
aagaagagag ccgaagtgca cggttaacgc cgtaccggcc cgtttcccca ccgctgcgga 60

agaatcgccc gcctactgaa tccgcacggt ggggcgtctg ggcgagtgaa ccattcggcc 120

cgcctgcagc ccatgccggt gccgtgcatc cgtgtcacac tctacttgca gtcgacgacc 180

cggcatgtgc gccactactc tacgcccttg tgcgccgaag agtgcaagtt cgaagaagat 240

acagcttgct tgcttggtct ggtcgtgaga tactatatct tttatcttta tcctactaac 300

tagtactgta tcttctatat atacagagag actacaagaa gtgaagcagg tcagcaggtc 360

aacaagcgag ccaggtggcg cacgaacggc gactggcact tgtgcgcgcc ggctcgcggc 420

cggagacggc aggggtgtgg tgtggacggt ggagcagcta gctgattgcc tagctagttg 480

cctgcttgtg cgctttccgc gaactttccc accgacgcgt agtacgtagt tcccgacgcc 540

acacggctgt catccgtcgc ctcgtccagt ccacccccgt ttcacacgac gagacggcgg 600

gagccagccg gcgagcacca ccaccgaaaa ccatcgcgat cgagcaacac gtacgacggg 660

cacatgcacg atccatggag acgcacacgt acaatggcgt agcgctcccc accgttgctg 720

ccgcggacga cgaagcgcaa ggttccgcca gcaagctaag ctaagatacg gtacgggtgg 780

cgacgatggc gaggtctcct cgatcgcaaa aagagaggga cgacgaggag atgcggcgag 840

gtcggcgcat gcattcagtg ggccggttcg cggacgtcgt tttctaattt agggcaggac 900

caggctagct actaaaggcg cgcgccaccc ggcccggccg gccctctgcg ctcatgcatg 960

tggacacctc acgtagcagt cgaagcagat ggagatgcgc gtggtcgagc gaaag 1015

<210> 1746
<211> 1276
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49167_G1, chr1:285106666..285107941, Cluster 10

<400> 1746
cacagtggtg tactccgatc ctactttact attgttcttg ttacccatta ttggatgagt 60

acctcttgtg cactgatgta ggtacgtgaa taactgtaat tagttggttc gtggcgaatc 120

tgcattacgt gtcccatcaa agaaatcgag taggtcacca tgatgccctc cacaatctac 180

aagcccagat taatggccgt tgatcatgga gtttgaattc gacgagtata tatatagtac 240

tgtacgtact aattaaagat agttgattta agaactatat ggtcagtgag tttttagatg 300

catttcggcg ttccctttcc tatataaaaa acggtttagc caaaattagc tccttgatat 360

atataaaatg tcagtataat aaagacttag ctttgccttt gtgaaaagca cggtagtccg 420

tagagagaga aaacaaaagc actgagagcc acgtacgtac ggtacctgtt gttgcaacac 480

atgtcacgtc agtgatgaag ctggaggtga caccagtcca cgcactacag cacgcgccaa 540

tatagtgtgg agtacaaaaa actttcaaga aaaaaagtcg tctttggagt aggttctttt 600

ccttttcccc atacctccgc tatggttgag aacgagtcat gcatggctgt ctggctgctc 660

gccgcaactc cgctgaagcg tgcgtgcatg tctgtccagg aggaaaaaca cacaacgacg 720

tgatcgatca ctgagagcag tagcccgcca aaactgcatg acctacacgg tctctctctc 780

tctctctctc tctacctttt cttttcgttt tgagaaagga aactacaata ctgatttgac 840

cgtttgggaa acgattggtg tgactagctg ttcctaagat acagatacgg aacccacatt 900

caattcagtt tacttgtcac gcatcattca tcagtctagg caaaagcaaa gctccgtcat 960

ctcaaaaaaa aaaagggtac taccatacgt ggtggttgat gggccatgat tcagagtgga 1020

gctagctgcc acgagaggac ggagcactag ctacatgagt gtgtatatga tgacggtgag 1080

gaggtattgt agttgtagct atctgctcct cgataaagct agctagaagc gctagctagt 1140

agaagcaaca aacgaacaag aagttgaagt gcgcacgcac gcacgtacgt actccacctg 1200

ccaatgaagt gggcgacgac gacgcgcaac agcaaggcag ccggcaatga ccggggacgt 1260

gggcttcaat ttgcac 1276

<210> 1747
<211> 1150
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49242_G1, chr1:285524395..285525544, Cluster 10

<400> 1747
ccactcaatc actcctacat tgacaaaaaa aatccctatc actgccaaaa aaaatgaaac 60

tacagatccc attaaagtca aactatattt aagttcgctt gacctaatgt tttatttata 120

attgcatcgt ttcaggaacg gctggatgga ttcgaacagg attcacattt tttttcttgt 180

tttcacggtt gcacagttgt catgtgtcat cttcccactc tatgtaaaaa taagatacaa 240

ttacgtacag gtgaggattt aaatctgggt tggtggctct aagtccatac ggaggctcta 300

cgtcacctaa ccaatggaat agacattttt tttatgttaa aactaagtct atccatataa 360

taaaaccgta tgactagtgt acaagtatct gtcagtcagt cacgatgaag ccaactgtcc 420

ggtaaatcct caagtatcaa cccaactgtc cggtaaagtc caagtgggaa taatgatggt 480

tccaaaatag ctcctcgagt ttatccagaa atggtccaga tccagagagg ccgcagcgag 540

caggtgccca gttgcggtca cgcaaccggc caaaaacagc aacaaagaca cgtcaactcg 600

atcaactgtt tattccttgc cttcccgagg agagagaaac aagcgaaaag cacatctcct 660

catctcctat gctacgcgcc tacgcacagc tagctagctg tacgaaaaga tagaagagcg 720

ggcttgaagt cgcgcagcgc tacgcgacag gcagcacgga gggaggaggg agtgcgttgc 780

cacttgccgc cacagagaat cacgcacgag cggcgagcga cgagaggaga caggcgctct 840

gccctgccct cctgcccgaa cagagccggg accaagcagg gcccgtcgga ggaggaccaa 900

ccactctcgg gcgggggcag gcaaggacaa ggacaagagc agcagcgtca cgacgtcttc 960

cggtgccctt ccctgtccgt cgtccccgcg gccgagccac agacagccgg aacaccaacc 1020

gaatgcccct caatcttggt gtcgttgggt cgctccgggc cacccgcagg ccagtaggtc 1080

gccgtccgtc gcttcgccgg ctgcagcgca gggcatcggc gcgcgcgggt gtgcggcgcg 1140

acgtcaccat 1150

<210> 1748
<211> 1379
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49631_G1, chr1:287986848..287988226, Cluster 10

<400> 1748
gccgcgctgc tgaaagatag aggacggggg ctgagagaga gaaaaacaaa agaaggccgg 60

gcagcaggca ggcaggcacc acaaggcgta gttggcactt ctactactac tactacgtga 120

aaaggagagg agaacgacgg cgacctgccc ccgccggact cgcgcgagcc caacccgtcc 180

cgggccgggg gaaaacaaaa ggaggaaagg gaggttcccc tttgaaaaaa aagaaggaaa 240

taattagcaa ggcaaaaaaa aaaggaggta gtagtactag agctttgttc gtgagggctt 300

ttttgtgaac aacgtgtaga cgccgacggt agagagtggc aaaaaaaaaa aaaagaagaa 360

gaaggagaag cagaagaaga agctgctgct ttgctagtgt cgttttgcgc agtagtacgc 420

ttgattggtg tctttaacag tttgttggtt tttatactac tactaataaa gtgggggtta 480

cgcggttcac gaagaacacc gccgccgatc gtttgcgaac tgttccattc agagagaaag 540

agagatcgat cgatctactg tccagtcaga gaggtttagg cgtccaatcg tcgtctttgt 600

gacccaccac tttttacgca aaattcttag ccaaaatggt gatgccaact agctagaaat 660

gccggatgaa ccggcaccct acccttcctt ttcccgacaa cgttgacacg agctagctag 720

ctagatggat ggatggatgg atatttcgaa agagaaggaa ggccggagaa aactgggggc 780

gagaatatat gtcaccggcc tctcccccca cagctgcatt ctttctttct ttctcatgaa 840

gctgactccc agctacctgt gggctgtggc tcacacgcca tcgatcgcag gcagataaaa 900

atatccgcag aaccgtcggg ctctagccgc acgacgagtc cccatccggc ttgcgttcga 960

aggcccttgg ttcaacgtcc aaaccatctt cggaataagc ttctttttca actgtttact 1020

aaagctaaga aaatacgtag cgtgaatggg ttacaatggt ctacaactaa gatagaccaa 1080

aaaaacttat gatgtaatca cgcgttgtag acacaagtat aacactatag atcttgttca 1140

gatattccta tcccttctgg attggataga atttagaaaa aaaaaactta taatttttt 1200

ttgacttatc tgagatttaa accactcaat catatctaat ctatatgaat tattgagagc 1260

aaaacgatca aaccggtagt cctttacaag aaggcaaaca ctgcgggatt agaaacctcg 1320

ccagcggttt catggactcc acagtagtat tgttttctcg ccctttatat atagaaaga 1379

<210> 1749
<211> 1202
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50284_G1, chr1:292228526..292229727, Cluster 10

<400> 1749
gctcacttag tgggcgtatt tgactggcct gtgccgtgtg cctacactgg ggcgacggaa 60

acagagcggg gccgcgacgg ccacggctcc ttcctcggtt cctccttgga catcactcgc 120

gtcgtgtgcc ccacgggatt ccacgtggtt ttgatccgtc cccatccctg catccctttt 180

ttccctgccg caccactacc cgtcctggcc acaccacccc actaggccaa cgatcgacgg 240

agaaccccgt tccgttcacg cgtcattcat ctgtccatgc ttcgctctct ttaattttta 300

ctaccggcca gccaccacca ccgcccccgg tccggccgcc cggtcccccc ctttttgcc 360

cgtcgcgcta gcgctacgcc gcgccgcgga actcgctcgc gggacaggag acgaattcgt 420

cgcggcacgg gtccgtgtcc tcggctccac gccgtgcgag agcgagacga gaccctggtg 480

cctgccgcct ggctgcgtga ctccgccgcc ggcgccattg ctggctgccc tgccccgcac 540

cctacggccc gtgccgactc gcacgcacgc ggacagcgcc tgcgaggcta catgcacagt 600

ggacatggtc ctgccccatg cccgcaagtc tactacggct acgggcacgc ctcgtcgggt 660

cacctgacgc caggtccacg gcgacccccc acctccgttt ccgttgtttg gcggctagct 720

tccggtcact ggaatcgacg actttttttgc ccgacgcacg gtgtacgctt gatacgactt 780

gggtacccta tactatgcta tatggctaca ctagagacac cactggacat gtatacgcca 840

gagccgtccc gtgcgtgcga ttttccaaac gattgcgatg gcccacctgc gagcgtgccg 900

gaattccgtg acagcggaag cccatggaca gtgcgcagag tacgtttttt tccctaaaat 960

attgcgtccg ggctagtagg atggatgacg cgtcaaacga tgagggtggg tgggtgcagg 1020

agcgggacca gtgccacgcc caaaaaaaag tctaccatgg cttattcaaa cactcccgag 1080

aagaaacaac ttcaaagtag tagtttctaa cacaaagaat ctttctaaat ttcgctcact 1140

ctaaaatcta actaaagttt tgttcgtatc atattaaata ttcgaatatc aattattatg 1200

at 1202

<210> 1750
<211> 1378
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50552_G1, chr1:293633847..293635224, Cluster 10

<400> 1750
cctccacacc atactctagt ctctagtgga gtggtgtgcg tacgtacagt acatcctcca 60

actagccagt cccgtagcca tgtgagcttt gtcgtcgtgg cgcgaagcaa agcagcaccc 120

agcaggcagc cgccaaacga gagtcacacg cacagctcgc ggcacttaac agtgcgcgag 180

aggacctgcc gacgccaaac aagagtcgat ctgacagtgg cctgtgggtg gatgtggaca 240

gacagacaga ccaaggcggt tcggcgtctt ggaacccgcg ccgcgaacac gtacgttaca 300

gacggaagca tgctccggtc cggccgtccg ggtccgggtc cgggtccagc ggtgatgttg 360

agacagcgag tgcgaggaag aagaaacggt ccggaactgc ggctgggctc gtttgttctg 420

ccccccccccc cacccccagg ggtcgccgct ctggacggaa cagcggcaca tggatggcgc 480

ccgccaagtt tccatgcggt tgttgttgtt cacacgccgt cgtgatcgac tcgtcgctta 540

gtactgtcgt cggtgtcagt tgcaatacaa cccatgtgca gtgggacgag acggaaaagg 600

tgtgtgcgca gcgcagtgct caagttcaga actcagcgct tgacgctcga gtcagagaga 660

ttcgggacgc tctctcggta gacgactcgg tgtcggtgct cagtacccag gtgatccgtg 720

catgggagta ttcggtcgtc tgcctgcttg caagacgcca tccacccacc caccggcgga 780

ctaggcgttt ggcgccacct ccttgtagtt gttggcttgg ttaattggac gagccgggtg 840

ctcgaaggcc tgcctgcctc gtcatctttt tgctgcgtca tgggaattga cccgcggtga 900

gaccaatcca atccaatgat gcccgccgtg accgacctca cgccagatac cgcgcgtacg 960

gagtcagagc tggcacagtc gcatgtgcat tgacccgacg agaagaagat aatcacagat 1020

ggagcggaca caaagccaca gcccacagcg gcacagcacg cggctcaagt cagccgttag 1080

ccggtggcgg tacgtgtgtg tcagtgtggg cgggcggcgg cgcggtacgg ccgggacaag 1140

cgtaagcgcc gccgccgcct gcctgcctgc ctgccgcaca cgtcgcggag catctagcta 1200

gctagctgtg cgtctctgtc aggcagcgag tcggccccgc tcgccgcgtc agatcggtgg 1260

acgaggacgc gtggtgcgct ggcgccgcgc cgttcgtcgc ctgcagcaaa agctactggt 1320

gtgggcagtt gggcaccgca ttcatctatc acgcaccagg ttctcaaatg gttcgagt 1378

<210> 1751
<211> 1136
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52706_G1, chr2:5074470..5075605, Cluster 10

<400> 1751
tatattaaat taataataac aaatattaca ttttatcttg accaaaagac ctataaatat 60

ataagttgaa aaagagtcca cccatttttt taatatctcg ttgatcgctc ttctccgtta 120

gcggggtaac actatgtaga agtgttacgc tgcgtgtgac tttgtatcgt gttaggcctg 180

aatgatttct ttggatgtgg cttcttgttt tgtcttgtcg tgtttgatta gctagggtgg 240

tttttatggt ccatccataa ggttttcaac tgaaatttcg tagtcctttc atcactgagc 300

acctggagat tcgttttacc cctcgttttc aactgctaga tactttcaga ccaaaagcat 360

cccggacgca attgcatctc tttcgaccaa catcacgggg catacacagg cggcattcga 420

cgacgtcacc ccaccagtca ccagccaatc ggagttagcc caacacgtga ggcttttcct 480

caaacccgaa gtatatgctg ctgtcaggat cgtcggcaag ttgcaggcga gaaacgcaca 540

caagctatag ctaaagctaa gtatcgtgct ttgtgttaac aaatcagcag tcgtcttagt 600

ccggtgcagc taagcagtag ttaccaaaag gaaattgcat gcatgcatcc ttccatcatg 660

tagcgaacaa aaagaagcaa tcaaaaggaa ctctgtggaa gaaaaaaaaa attctgacgt 720

acgagcacaa aaggatcatc ggctagagtt tttctttcta gtcgatgata caaaacaaaa 780

cttggattgc atgggcaatg caagctgtgt gtagtattat tgggacgact aagtgagcaa 840

gtgctgccta aaataggctg acattcacat caagggttag gcagggcgtc acaagttagt 900

actgtaattg gtaccttcca gtctcctcct atcgatgtgt cccgtcgtga gcgctccacc 960

agcatggagc tagcgaaccc gtgcagcgca gggagatgta gagtagagct acatgttttt 1020

cggtttcttt tccagctgtc aacatgttgg cacacgacca agacccagat aagaagcagc 1080

catggtccat ggaaatccta catcctgaga gctccgcagg ccgacacgtc gtggag 1136

<210> 1752
<211> 1113
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52953_G1, chr2:6179270..6180382, Cluster 10

<400> 1752
taataggagt aataagcttt ggccatcgat cagacagagc atcgctctca taatggcaga 60

gcacagcatg agcaggcccg cagattaatg gcgccgaggt gaccgtcctg cactttgcgt 120

gccagccaaa ctagggtttt ggtcgctggc acgtcgggct cctccggccg cagcggcggt 180

cgtagccgta cgctgggtac cagttcccct cctcccttcc cgctgtgcag tccacgatat 240

acgtaacacg ctcccctgcc agtacacctg gttcctcccg gttggtagca cgtagcctcg 300

cacacgcact gtgcaatgca tgcccacctt ccttgtcgcg tgtcgccagt cgtcacacaa 360

cacgacgccg cgccgcgcca taggccggtt ggttttggtc cgcgcgcggt gtacttgcgg 420

gctgcagcgg ccgtgccgcg cgccccgttg ctgccgctga cgggcgtcgt atgcatgcgt 480

gggtgacgga gcagagtggc ggcattgttt ttggtgtttc tcgtctcgca tggcccatgg 540

ttgcggtcgc ggcgcgcgta cgagcccggc aggcggggag gttggttggc cgcgcgtagc 600

tagagcggcg actgtttgct gcgatccgcg cggtatccgg cacactattg cgccccccca 660

ggtcggcgac gcctgctgga cgtacggggg gcaggcggca tggggcagcc cccgcttccg 720

gcctccccaa cagcgcgccg gcgcgtgggc gtacgtgctg gaccatccga cccaggcgcc 780

tacaggggca gaggggctac tagagagacg ttcgttgaca attaattgag tcgttattag 840

ctaggtcggg cgtggtctga tctacgtacg cgcgttgtat tatcctcgcc ctggacacca 900

gcaaaactga gacaaccaga ttaaaaaccc ctttttata tcttgtgcct gacctggcgg 960

tacagtgtgg cgtataacga ctgacctgac aacacagacg gacggcttgt aatataagca 1020

tcgatcgatg cgtacgtaga gcccccaaca tgtactgtgc ggaatccagt gtatagattg 1080

aacagagagc ggtgccgtac gcgcgccata aag 1113

<210> 1753
<211> 1255
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52956_G1, chr2:6181414..6182668, Cluster 10

<400> 1753
tatacacttg gcttattatt taacgtggac agttttgatt gatgtgcatc tttgatagct 60

aatttcttct tcgtatattt ttaaaccctt caaatttaag atattctgca ggtattataa 120

gtacaaaact actacgtata taactataca cacacacgta tatactaata aggttagatg 180

acgacacatg aaacgacagc ccttacaaaa cactccaata atacacttga atcgtgtgta 240

gcaataatgg gaagaaattt ggtctgaaat tagagataaa ggaaaagggc aaagcaggag 300

actactagag aaaatcgaca ggtctgcaca aacatcaaaa tgtgactcgc atcgcatgca 360

tttggctcat tcgtcaggaa ctagtagagt acgtagtttg cgtcgtcgtg agagcctgtg 420

attgagaatc ggcaaccgaa agcaggcggg cgatcgcgat gctctgaggg gggcgcggtt 480

aaaaatttta aaaccatcgg tatctcgttg ccatggtagg tacagacggt cgatgacgca 540

catggtcggc gctctcggat ccgtgctgcc atgccgcgcg tggccggtgt acgccgagcg 600

ctccccccga ggtccactca gaccactact agtccatccg ccacggcacc atgcatcacg 660

ccaaccggtg gcgtggcgac gcacatgggc gttacgttct cggcgcgcgc tagatctcgg 720

tcggtcggtc ggaccggacg gagcgcgcca gaatgatcca tgcgatcatg cgaccgtacg 780

taccggcctc caatcaggac gccgccgccg agcgcgcgca gcgagagcgg ccaggcgctc 840

cgttcttcgt ggcggcccgc catcgaccac gagtccacga ccagagcgag cgtggtcctg 900

gtcctgcggc ttgtggttcg ttggtctttg tctttgaccg agctggggac gggcgggcgg 960

gagacggaca aagctagcta gctagcgtct cgtctggtgc catgcatgtt ggtgctgggt 1020

gcgccctctg tccggtccgg ggcctcccgc tttgtttgtt ttcgtcgttt gctcgaaggg 1080

tggcggatcc aacgcgctcg cgcccgcgcc cggcctcgtg ctgtcgcgaa caaatcatag 1140

cgtcatgatt ggccttctcg actctgactg ccaccaatcg gtcgcctaac gagagagaat 1200

ccagggagca tgcatctata tggatgtgtt tggttgtctg gtccagcctg agcct 1255

<210> 1754
<211> 1147
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53517_G1, chr2:9352624..9353770, Cluster 10

<400> 1754
atggccgttc ctttcaaatt attgagtttt ctggtcctat gttttgcggg tgcattcttg 60

tgcagtttcc acgtttcccc ccctgctcat gtgtacttgt ttaaatgtaa ttcagagtgt 120

gcagtcacgt acgcacagac ccacggttca tgttcatcgc tcgatgaatc gcctggccac 180

acctccgcac atgcaagtgc agtccgccag gatgccaatc gaagcacgca cacccaagtt 240

gatgcttgca gttgcaggcc ggtgcgcctt ctcggcacgc catcccacgt ccgaggtact 300

actagcggca gcgccggtct gacacgcacc cggtacgaga ggacgcgagc agatgaagac 360

gaagacgaag acgaggaagc agacgcctgc ggcccgtgaa aagctgccgc ggttgctttt 420

accgcgaccc gatcacgcct attgccgtac gtccttggag taccgcagca gcactctgca 480

cgcccgtccc gccgtccgct tgcacgatgg gaacgcacgc gctcgtgctc gctgcgatcg 540

cttcggtcgt tccaccggcg accgcggact tttccgccgc cgtacgtccc tcctcgatcg 600

accgcgcgcc ccgcagacgt ggccggtcca tttctccacg tcacctccct ctctccgcca 660

cgtacgtggc ctggcagcgc ccagcgctag ctagccgggt ctcgctgtcg cgcaaacggg 720

cccacgcgtg tcacgtgtgt ggtgcgtccc atattggaac gaccaagaag ccggagattt 780

tttgaacgca ttgtatatac tactactata ggcacaagaa agcacatgca tgcttactcg 840

tttccgttgc cttcgcccag ccccagctgc ccagcagctg atgctttttt tattcgccgt 900

gaccgtgtgt tatttctttc tttctccccc ctaatacgac cgaagaaaag cacgtgcatg 960

catatatata tatatactac tactactgct actcgcttcc gttgcctagc tgctttatgt 1020

gctggggcct gggggccatg catgcatccc tttttttaa ctgaagaaaa aaaagtctaa 1080

cctgatgcta attgctagct atagctatca ggttgatggg cacgctttgg cagagattaa 1140

acagagt 1147

<210> 1755
<211> 1095
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53712_G1, chr2:10499926..10501020, Cluster 10

<400> 1755
ggtgcatcac tagtagactc ttctgcctgg atagaggact gcaggtgttc atgagccgat 60

cgagatcgtt gcgtgttcgg ccggcgggtg ggtgggcggg ctttcgttcg acttcttgcc 120

gttgcggcgt tgcccggccc ctctgccgcg tcagatgcat catggatgga tggttcggtg 180

agctacgccg gcccgccata tgcatcgctg cagcagcatg ggtacacagc ttctaacaac 240

cctatagttg ttaggatcgg gtcagacatt gaaccgacga ctcacagtct cacagcgcta 300

catcatcacc gtcagttgtc acgcagctag ctgatccatc catccatgat atgtggagtt 360

ttgttttttt ataaaaaaaa aaggaaaacg taaaggcgcg tgcgtacgca gagggagatg 420

aggaaagtga gcggctcaca aatgaatggt tcgcatctgc atggtgccgt ttaactgcac 480

gcaactgcgc ctcacggaag cgtacgtacg ccgacgcaag tacgtacgtg ctgctttaca 540

tatgcgtaca cagcttctaa caaccatagt tgttaggatc gggtcagaca ttgaaccgac 600

gactcacagt ctcacagcta catcatcacc gtcacttgtc acgcagctag ctgatcgatc 660

catgtggagt ttttttttca ttacaaaaaa ggcaaacgta aaaggtgcgt gcgtgcgtac 720

gcagagggag gaaagtgagc ggctcacgaa tgaatggttc gcaactgcgc ctcacggaag 780

cgtacgtacg ccgacgcaag tacgtacgtg acctaaccca gctactgagc ctacaaccat 840

acgtcacttg gacggcatgc ctgctcatgt tgacatgtcc tgccgcctaa acaaatcaca 900

cgctccaacg gctacgtacg tacggtgcct gagtcggtac gacgcctgcc taccccgacc 960

cgcgcgcgta cgttgttgga aaaaggaaaa ccgtgctgga attagaatag aaagaaaaaa 1020

gaaggcatgt gtccgtgctt acggtgccgt cgtcgatacg tctggtcgat atacaggcat 1080

gtgtccgtgc tttac 1095

<210> 1756
<211> 1367
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54250_G1, chr2:13295310..13296676, Cluster 10

<400> 1756
cagttccaat atccagggat cttgacagca cagtaatagc tagcactagc tagcagcact 60

gctggtctgc agctgcagct gcagcaacca gcagcctgtg attgtggttc tgctttgcag 120

ctgcaaagtg ctgttcttct cacgcgatcg ctgccttcaa ttcgggggt ctaacatgtc 180

accgatgagg ttagctacaa tgtcactcga atctagtagg tagaagatca gctgagagag 240

cctagctagc tagtagcagc aggtcaataa gctttaatca aagcatcggc ttcaacattc 300

tttttgattt gcttctacac aacgtactac tacgctgtat acacagtgac gcacgatgaa 360

cacaattcaa gtccagatgc gacaacgtgc gccatccatc gagtgggttc cacttcaatt 420

ccacggtgag agaaatgaag cacgcacgcg ccaacaaggt taggtgcagg gaaggtaaaa 480

cagcaacaaa atggttggtt accctaactt agactcgagg cactggctgc cacacacaca 540

cacaggcaag gcgagcagaa tctgcagtct ccggacgata tagatggtgg aaagggacga 600

ctactgactg gttgctgaac gggcgtcagt ttagtcttca ccaataaacc ttttttttt 660

taaaaaaaag aagatttctc tctctctctc tctctctctc tctctcggct ttatttatgt 720

aggtgtcgat ctcaggaccg acgaacagct tccttcggtt tctttgttaa ggtttgtgtc 780

tgctcaggag tgttgtcgga caccctacag gaatcaaggt tccaaccaaa acctgatcct 840

ctctcaattt tgttctcgga actatagcat attttgcacc gtggtgtgct gttttttta 900

tagaactgac gaagcaggcg gttgatttcc aaatccaaac gtgaggtctc tgagattccg 960

agttatgcac ataatattaa atatagtagt atagtacaag tactgtactt gttgacacaa 1020

gactgatgaa cagctagcta gctagcttcg gttctttgtc aatggctgtg tcgtcgtcga 1080

cagcttaatt aggagtgtcg ttgtcggaca ccctacatac agtaacaatc aggattccaa 1140

cacggaaaaa gaaaagaaaa atccgatctt ctaatatata tttgttctca gaggaaatat 1200

acttagtata cttcgcatgt gcgctgtatg cgttacttgt tttttagacg ggcgaagcag 1260

ctaggctagg caccttgatt tccaaatcca aatgcgtgtg gtgcgtgact gcgtgagcta 1320

tcagtagttc agtactagct agcatatact tgtgtacaca cgtacta 1367

<210> 1757
<211> 1106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_54429_G1, chr2:14226400..14227505, Cluster 10

<400> 1757
gacatatagc atatgccgaa aattcgctat tcaatcaata gtgccgctga ttggtcaccg 60

cgggctgggt ggccccgccc ggcgcgcggt atttggcacg tccgtgggcc atctcgaatt 120

cttttgatcg tttcagttat tcgttccgtg ggccatctcg ctgccgactg ccgagcccgt 180

ccagtcccta tctacccgcc tgtcgagttc gactcaactt tctcacaaaa cctgccgtcc 240

acccgcggcc cgcccaccgg aagcgcagag caaccatggg cacttcgatc acctgtgttg 300

tgcgacggcg agccccgatc tgcccgcgcg ttctctggct ctgctccaaa ccgctggcct 360

gcggctgtgc gacagcgaca tcttcgtgta cagagacaga ggggagacgt ccttctgcag 420

ccaggaccag gagggccgcg cactacgagc agatgcaggc agcacaacgt cattcgctga 480

ggtgttcgtt tggttccacg gtgatcggcg tgccatgagc cactcactct ttccggcatt 540

ggcttcgtgg aactaacacc gtcggttcct gaaatctggt gcatgtatca gaatctcgtt 600

tccaaattct gatggaaatt tttttatgta aacaatgtct gcactgaacc acgggatcag 660

ctccgtcggg aaacaaatgg ctgcttacat tttatttatc gtacaagtgt acttaaaaaa 720

ttgattgata aggaaagagg gcaccggtga gtgcgctaat tgcgtgatca gctgctcatc 780

aggtggctaa aacaaaggac cggagtggag gggaatcgtc acatccgcgt cagattggag 840

attcgaggac acacgactac acgagttgcc catcgctgag tcactgcaat gtggagacag 900

gagagagagg ccccgcgtcc tcgtcatagc tttgctggac atcacaagcc gttgagacct 960

gaccgtacga gtataactga acatgtgtcg tccacactac taccagtcta ccacgtaggt 1020

catgactggg cagcatatcg acgctgtcca ccaccaccat cccagcgccc tggtgcctcg 1080

gcggatgatc cataaagact agtagg 1106

<210> 1758
<211> 1129
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54439_G1, chr2:14263442..14264570, Cluster 10

<400> 1758
aactcgacgc cagatagttg catctgattt gaactgttac ggtccaaagc tgtaacggaa 60

aaaaaaaatt tggcccgagg cagatgaatc tcctcactcc agacttccac aggttacaaa 120

gcaactctgt ccatcatcac tagctgttgt tgagtaccta tcccaggtaa tcatgcatgc 180

accattgcct ttctcgcact agctagttgc atggcacgcc taaaaaaggt ggccaatcag 240

cgatccgcgg cacacacggc acgcttcatc gcacgacaag acacggggga aaaaggaagc 300

aggcaggggg ctctccatgc agattgattg gccggagtat atatattaaa gctctcgatt 360

gcgagttgga tcgcagagac tgagcgttag gtgccttcgc cacaaaccca caagcacgca 420

acgcaccagt cgggcagtgg cagtggcagt ggcgcccctc atcgatctgt ttggttcagc 480

gcagtgcagg tgatgggctg acgcctgacg ggagagagtg gtagatggag gcagcaccaa 540

aagaccagga gccaaccacc aatcagtggc tcgtcgaccc ggaattgttc gatccatcaa 600

atcggccggg gtgtgacgtg ctgcgactgc gagggaccaa aaccagcggg ccggtgagcg 660

gaaaaagcgg aagaaatcaa aatgtcaagc gtgggtgggt ggtttacttt ggacccatga 720

ggccatccat gagttttgta gagaattctt tcgtggccac tccaacacac gacaatttct 780

tcaactcctt ttactactat cagcaggatt agaatataaa aaaaacacga ttaaattttg 840

gttattaacg gtactaatga agctaggcat gtgtaactaa taccttgtga tggtgtttta 900

ttctctcata taaaaaagca agaaaataag gcctgtcgat acgaacgacg acaatgtcaa 960

tgacaacgag agggttaaat ttttttaaat agatgatagt gagacaagtc tataagattg 1020

aagtagtaat aaaaaaaata ttgttactgc tacgagcact cgtgcagggg gcggacgggc 1080

gggggcaggc acgcaaccag taccaggcca ggccccggtt ttgcttgct 1129

<210> 1759
<211> 1056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54463_G1, chr2:14464556..14465611, Cluster 10

<400> 1759
aactgatcct cgccattggt tcaaggagtt caacacccca caccacgcgc actctctacc 60

agacctaatt gcgcacatgc cagctcgttt tggagtttga gttgaaagcg cagcatgcca 120

agtcggcaca aagggcgcaa aaagaaacgc aaaagaactc ggtggtgcag ggttgcattg 180

cattgcgggg gcactcgcac tcacacgcag acgcagcaca ggtcaaccta gcctaatccc 240

tgaaacgaga cacgctgggc aatgcggaaa aagtccagtg gacacagtag tttataacag 300

ttcaataatg gcatggataa gttaaagagt ttgtttctga aggttgtgta tatatgcatc 360

gtccgttgct ttatttgcgc tataatgccg gccggccttt gctgctgttg attggcacac 420

gaacgactac tggtagctaa aaagctcaga gcctagcttc ctcttcaact gtgtcattaa 480

aaaagtttga acatttgttg gattccacta gtttatccac gcgtgcactt tctggaattc 540

aagcctcaag catcattgga cgatgggtgt ttaaaatatg acggacacgg ttgttcagtg 600

tgcatcggtg ggatgggtgg taggcggaca acttcgtttc aggcaatcga tctgcaaata 660

ggtagtgcac gatcttttg catccacagg tcaatggagc acgttgtgga agccggaaag 720

acggaaagga acagaaggtg catgtggatt aatgaaaacc ctaaagtcta aactggcatg 780

ccagtttctc attgactcag acactaagga catgtacaac ctatagtctc ttgattgatt 840

ttctatgcac aagagacatc taagaaattg cattatgggg agtgtttaaa atatgtcata 900

tcataaatgc tatcgagaga cattatatat agagagccgt gtagagacgt actcttattt 960

aaaagcccgt cttttatatt ctttttacg tttgactctc tagagaccct caagagacaa 1020

tgtattaagt gggttgtaca tgcatctcta acctat 1056

<210> 1760
<211> 1352
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54602_G1, chr2:15117938..15119289, Cluster 10

<400> 1760
caaataattg ttccgccgta acagattacg ccggcagcca attccattgc cattaccgga 60

tcacccactg aaccaaacac caccttagct ttcggtcgtc ctttaccgcg gcttcatcga 120

atatatagta cagttatata tataagatca aaacatacct attaaccgaa gaacacagaa 180

gcataatatg ataaaagaaa aatacgtata caagaacgac atcgtagcag ttatatctac 240

taacaagcgc atagaaacag acaaacagtt atctattaac aagcattact gcagacagat 300

aatattttat ccagattagt gtcatttctt gtgtcagtgc aaggtttggt actgttctct 360

ctaccactga tgaagaatag aaccatgatg aaatgccagg ttggctaatg cgtcagctaa 420

aagagacgat gtccttaatt atgcctccct cggtgtggat ggcaaaacaa cccactcgtg 480

tagattagct tcgacggcgg ttcacgatca tcatgtccgc gaccctaccc tgtctgtgag 540

gtttgtccag gttcgggtga ataatctagc tagaaacacc actgcatgtt tgcaaagagc 600

tagcccaggt gggtggctgt caatgtagga tatgaccggg tacttgatct tggaaacgga 660

tgcggtagct ggtggtccag caaagcaaga gctttggcgt ccggcttctt ctcattgtcg 720

tctggtggag gagctaataa aagtctctaa cgaaatcaaa cttcttcatt agctttgttg 780

agtgtgtgtt tatttgttta ttaagaccta gctggaagag catgtaatag gggctgcccc 840

tgcccacgcc gatcgacgga ggcaaggcag cgtgtgttcc tcctagctac aatgaactgg 900

ttctgaagaa gacgacgaag caataaaacg aaaactgttg gcgaatacag ctgtgaaagc 960

gacgggtcat gactcatgag aaagacgggc agacacaagc gctcgaagct aagctataga 1020

agatgccatc gatcgatcca taccaagcgg cacgtacgtc cgcctccctt gggcttgggg 1080

cgtagctgga ggagtgggcc cgtcatcgaa aggctagcct ggacctgaca cgtgggggcc 1140

cggtcgtccg tagcagtcgg ctgcagtggt ggtcctctcc gacgatcctc atcctcctct 1200

tcctctcgtc agggaaatta ttggagcacg caagacggaa gaaatgtatc tagtgcacaa 1260

gcacagcctg tctgtctgtg tgtcctacca ctcctgcata tataggagta gaacagtggc 1320

ccgaaattga ttacgatgtc atcatcccat tg 1352

<210> 1761
<211> 1097
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54859_G1, chr2:16636181..16637277, Cluster 10

<400> 1761
taacgttact ctgcacgtag cagacatgag aatgatttaa taacggagcg taggtcaact 60

tgttgggtcc tttgcgatga tggaacttgt ctgttcggct taaatccttg atttgacatg 120

catggtgttc atatttttt tgaatttatt ttagggcttg tcaacgtttt tctttgagta 180

gtaggcgaca taaccgtcga caatgaaaca tctgcatgcg atgactccgt tcattttaag 240

acctaataaa gtttatacat gagtatttaa tttgtgtgtg taccatggtt aaaaaaatgg 300

tttaatagag cttgactttc tttttaaaca aagaaagcct tgaagagtcg aagcacgatt 360

aattaagaat cgaccaaacg ttgacaatca ccgcaagggt gcaaagagta atcaacccta 420

gctaggcgtt tgacatgtat atgagccggg ccaatcggat gatgcggcgt gcatatgtat 480

ccagcactga tggcgagcta gctaggagcc aggcagctag ctagctagct gtgatgaatg 540

aacaaggacc tggaaagagg aacacgacgc ttgctagttt gttggagacg atcagacacc 600

tctagggctc gcccgctatc aaggggacat gaatgaatga atgaatgaac ctgacaatcc 660

gattggggaa cggccattga cttcgtgaca gaacgtgaac cgccgccgct tcctctctca 720

gattgatggg ccgttgactg atcggaagga agggagagac gattcgttgt tccgcgccag 780

acgtgtccgg ttgattgggc gggggggact gcagcgatca tgttctcagt tacggcacgc 840

acactgggcg gcgcacaacc acgcagatgc attgcatcgt gtgcgtctct ggagtacagg 900

actcctccaa ctcatcacgg gcagcagttg atatatattt gtcagtcttt gtatttatgc 960

attaaaaatg atagttttag acttttagtg ggttgtacgg cacagagtag tatagcagta 1020

gtactattat actccatata tgtacatagt actgtagcta accgccagtc ctggcttttg 1080

gggcatcgaa acagtgt 1097

<210> 1762
<211> 1130
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55062_G1, chr2:17586035..17587164, Cluster 10

<400> 1762
cgttgccaca tcttgaagcg tattgacgac tgatgattgc tggaggagtc aggaacgtga 60

ttgcatataa ttattatata catgcctcac tcaccaacgg aatcacggca ccattctgcg 120

tgcactgcgg tctctctcct ctccgtgtac caaatcctct gttgccccaa ggccgcgcgc 180

gtcagctgca tgctcatcaa ctcgcattag agacaatgtg gcattaggac caacgaccga 240

ccatgaatgg aggagctgct aaccaacgct actgcagtgt tgccagcttc ttctgacact 300

gtgattgtct tacagcgcca aggtgatgaa atgacgagac ggctgcgttc ggccaagggg 360

aactcttgtt gccatacagt acttactagc ttgcgttcat catgtgtcct aatatatggc 420

gttcttctct caagcgtgta ctgcaaatga tcgtgggtga atggaggtgt tgcataagag 480

cagaggccag gaaaatctga aaagaaacag tgaaggcacg tagaatgccc acgggaagaa 540

aaaaaaattg gcacgggatc tacctcttgt tcagtggttg cattgcatgg atggaagtgg 600

cccctgtctc tgagacatgc ccaaaagtga agaagacagc tgaacaggtg cagcggtgtg 660

attgctgctg ctcagacgcg ctcgagttaa tttttctggc accagtagtt gctttgagat 720

tttagcacca tgcaatgcat gcatgcttct ctgacgcttt ttgtgcgtct ggtttgagca 780

acggacgtca ggcggtggtc ctggtccaga ctgaactctg actctgaagt agccataata 840

acacccgtgg agagcagcgg gttgatggca ttgcaatctg cacctgcatt agatgataag 900

aaatattcac atttataata tcaaacaaat aactataaga ttaattacaa atatatttac 960

aaacattttg atcatgttaa catgaatcat tttaggagtc cgtcaccata gaccatggag 1020

ttttcaatca ctacaagcgc agcgatagat cagaatctct tgttcgtttg gctttaatcc 1080

gtacgtgctt ctactgcttt tatagcgttt tctctaaaaa ttgcagctgt 1130

<210> 1763
<211> 1191
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55290_G1, chr2:18701578..18702768, Cluster 10

<400> 1763
tcatctggca ggatgggttg tggaacctgt gggcggagcc ccctagcgcc cctttagatc 60

cgcccctgcc gaaaaagaca ttggaaccta ttggaagatg ttttaagtct tatttttatg 120

gaacatataa ttttacggaa cccttgtgga cttatagtta tgcgaatctt gcaaaggatg 180

ttgtatgtgc agcaggtttg atgaagatgg cgcccaccta ctgctgaaat gtaaagaaac 240

acggagggtt tggcacgaac tgaacctaga accagtcaga tgtaagttgg ccgaggaaag 300

acctgctgta gtgtagacac gatggaaatg gtgtttgcgt tggagaacaa aacgaagctg 360

atggttgcca cactgctatg gctgtagtgg ggtgagagaa acatgcagag ggaggaaggg 420

catggatcga tcggcattgg aagctgcgta cggcacggct tcaatgtctg tccagattcc 480

gacaacagag aagggaactc atgtgcgggc caatgttcag acaaagagac ggaggaagat 540

cgaggaagcc acctgacggt gttctgaaac cgaatacggg tggcgccttt ctcagtcagg 600

agaagtcagg ggggcggccg gacggggatt cgtcgtcaga gatggcacag aacaagtggt 660

gaaggcggga ggagggagag aagagtttct ccaggatgct tttcacgcag aactgttgcg 720

agtcctatcc tatcaggctt gaagaaagct gttaatatgg gcatttcact tttcacgctt 780

gtgcttggaa acatgtgcca ccatggtccg ggatgctttg ctaggagaag actatcttct 840

atcagcgatg gcgggaatca tcacggaagc gaagcacttg atgtctgcag agtttgtttt 900

ggtttctatg tcagtttgat gatcgggtgc agaagtccta gtgagtctgt aatcacttgg 960

gaggttgccc cccatggtgt tggggttttg gtgtccagtg attttagttt acctactatt 1020

cataagtaat ggaatcccta ttttttttt aaaaaaaaaa agaagaagaa tcagttgcac 1080

cccaaatagt tattcctcga caaaactaga acagctaacc acgcataaag ctaacagaac 1140

cgaattcttc tgctggcgtt gggcgccaca tcagataatc tcctcgtctc a 1191

<210> 1764
<211> 1105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55594_G1, chr2:20540802..20541906, Cluster 10

<400> 1764
agcttccggc gccgctttgc gtggatggcc ggccagcggc cacattatcg gtttggttta 60

ttgagcgcga gtaggtcgtc gtggtacggc tgcttctgct ttcccctgcc gggtgagtgt 120

gctccgagtc atagttcggt actagacgat aagcgggttg atttgacacc cgatctgaaa 180

tccgaactga gttttttcc ctctctctta tatagaccaa tgccgttgat gcattatcgt 240

cacggtgaaa cacctgtagg atcagaggag gagtatgatt attcaagaga tttcccccct 300

gacaaaagat tttttgacg gaacgtgtcg ctgccgtgcc ggagcaccgg tcttccggaa 360

gcaaaagcga agcgcccggg ccttttgttg tgtaattgtg ttgcaggaag ggcgcacgtg 420

acggatggag acgtgttggt gcctcggata gggcatgccg cacacatggg ggcaagtccg 480

tgcgcgtgtg agtcgggcgc tgttccgtgg aaacaggtgg tgtgccctcc tgccgcgagg 540

cccgccgccc gcgggccaca cgagaggcac ggaggcggac acggctctcg aaggcgacgg 600

cgcgcgccaa cgcggcaaca cgtgggatga acggcccggg ctgctccggg aacggaggag 660

ctgcctcgtc ggttaaacgc aacgcgtcag cgcatggccg tccggcacgc cggcgacgtg 720

ttcgactgct gccgcgcgaa gtgctcccat cagactatca gaggaggatt tctggtcggt 780

cagcggccca gcgccacgca gcgagcatca gttgtttacc acagcagatg atatatgttg 840

tgcacatgct tcgtgagctt tcgcgacact gttggtcggc cgtgagcctg tcacacgaaa 900

cgggtcggct gcactggctg cggctctccg cagcagcgag ctggttcagc cgatcagtat 960

tacatggatg ttgtctaagg cctaaattaa aggatacgga gtagatcggt gggatttgag 1020

acaaaacttt agctatggaa agagactagt gaagagcgag gtccatgtgt ttgatctgag 1080

taagcatatc ttgtgtttct gcgtt 1105

<210> 1765

<211> 1157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55852_G1, chr2:21797636..21798792, Cluster 10

<400> 1765
acaccacaag ggcaaagtcg tccttgcagg gatcggacta aacgcaaact gcatgactcc 60

gtcccatgat ccgctgtcgt cgggcacgcg caagcacacg catatgcggg ctggagcgcg 120

agagcgagag gtacatacac actaacacac acgcacagtg cattatcaca acccatgcat 180

cactagtcgc tacccccccac aagcggagta ataacacgca tcagtccggt ggccatacat 240

ccaacgacaa ttccggcccg taattaatta acgtaaaccc taaacagtcc gcgaccgaac 300

ggcgaacggg gcgcggcccg attcgctggc tgctatcagc agccgcgcgg ttcggtgggg 360

tggcgtggcg tgcgcacgac ggagacggag ccacggaggg tgcagacggc gccttcctct 420

agtagtaggc caggaaggcc acagctatac tgtacgagat tctgcaccgc agttgcacgc 480

cactgttcgg gccgggcgtc accggagtgc tctctgttgt ttgtgcgtgc gaggcggggg 540

cggctggtgg tgcagtggtg ctgtgttcgg ccgcctcgat gcgtcggcca catgcgcgtc 600

gccggtttcg ctcgcgtcct cggtcatcct cgtcatcctt ttttttaat aattgtatgc 660

gcatgaaaca gctgtgctaa ctgctagagg atgttagcgc tgtactgcta ttagcgtggc 720

gtaccaacct gacagcagag cggcgttcaa atttcttaca gacagacatg catgcatctc 780

ctctgaatag tcgttgctgt tgccatcgaa taggaggaaa gtactgacca ttaggtgtaa 840

gtatggagct agtatattat tatctcgttt tcttcagtag tataggccaa acatagggaa 900

tcgcctctgt acgtagacgt agcgagtatc ttccttgtct ggctggcaac aaaaataatg 960

gtcccatgcg gatgagtgag aacgggcacg ggctctggaa gatgtaactt gcaagtctca 1020

gtttaatggg agtggaccag catcacccat aacaagctaa tattcggttg cttaatccgt 1080

caccgcgtca acttgcttcc attgagcttt gatgatacat ctgtttctac gacacgcacc 1140

ccagaagcag catccgg 1157

<210> 1766
<211> 1159
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55913_G1, chr2:22039408..22040566, Cluster 10

<400> 1766
cgctaatgat tgtgaggcct gcactcgcag tcgcagggga agtaataagc agctgccgcg 60

ctttctgatg gcacccatcc atcattccaa cgcccacatg ggcgggacgg agacggacgg 120

tggtgacagc aagcatgaga ggagcgctgt ccgccgcact gggcggtggt gcgcgtacgg 180

tgctcgctag ctttcacgtt cctgaccttc ctcgctcgac ctcgagtgct tggttagcta 240

cctccgttgc agctcacctc gcaattaatc tccctctgct tggtggcttc agctagcctg 300

ctgcaggttg ctgcatgggt gagtgagtca gtgccaaccg aaatgaactg catcgtcgtc 360

tgagctagaa tttacgtaca ttctttgcta gacatcggag gtagtacggc tagacgggcg 420

atggaaatga gccgagagag tgccgttccg acgtcactca cgtcactcgt cgatcgggag 480

tgcatccatc ggcggtgttg cagttgctcg cagcacatgg gccatgacgt tctgttctcc 540

agcgtatctt tcggcagatg tcatgtcatg tagaactacg agtccagaag aatagcagcg 600

gggagccggg agactgtttg gcaggctggg ttcaatggtt ggagaatctg gaagcgtgcg 660

atgtcgttcc cgttttagga aagagctgct cgtgctgggt gcatagcata attgagagcc 720

tcctctctct ctctctctct ctctcccccc ccccccccctg catgtgacgg acacggacca 780

cacagtgggc actagctagg gcctgcggtg cgacccacta cgacgagtcg tcgcagctca 840

gcggccagcg catgcaggag ggctcaataa ttcagcgcag cggcgtccac cgtgttgcgc 900

cgcttcttta tttgcacgtc taaatccact cgttcggtgg gtggtcgtaa cgaaaggcgg 960

tccgacaggt gtctcctcca gcaacgatag agaggacagt ggagtatgca ggaggagaat 1020

tcacgggccc aacaatacac tacaataaaa ttaagcaagc tagtagaaaa ctagtattac 1080

acataattta aattctatga caatatataa tataagttca aaaggaaaac tatatgagta 1140

atccaaaccg tataccttt 1159

<210> 1767
<211> 1150
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56939_G1, chr2:28045808..28046957, Cluster 10

<400> 1767
aaagtttagt catttttagt atctaaagaa gcaaacatgg tgactaaact gggatgacta 60

aattttagtt ttttagtcac caaggactta actcctaagt atgggattgg acaaggctat 120

gaagaagacc aagtgaacaa catctgaaga aaagggctag gaactgtgtt gaagaccacg 180

gaagatagat aaggaccgag cgagcggatc gaacttggcg catgaaggtt cacgattgct 240

ggagacgatg atgaagcggg taggactaga gccgagccga gccgcatttc cgttgacagg 300

agagggacat ggctctgtcc gttttagccc gcttttgggt gcaggattgt tatagtaaga 360

taagattaac agcgacatgg atgccaatat atagttggca gtggtgctaa tcccaaatcg 420

gtaaacctac agtatacacc aatgtattgc ctcaagccaa ggggtggtcg taggtagcac 480

gtagcagtag cacagtggcg gggccggtcg tcgaccgacg ttacgaaagc tgctccggta 540

ccggcagcca ggcaaagcat gcaagccgga aaacctgacc gaccgaccgg ggccgggcac 600

gagcgcacgc accaacccaa ccgcgcgctg aagagtgaag acttcgcccg atcgagacta 660

gagcacgcgg cacctaccgc cggcggctgc atcgcgcgcc aaccggcctc ggcatcgact 720

ccatcgacca tcatcccgca accgcatgtg tgtttggtgg gagttgtgga tgcgcggcgt 780

gccaagcgcc caagccagcc atcccaagta ataagtgccc aaccatccca ctaccactca 840

ctactcaacc agccaaccaa ccaagccccc ggccggcata cacatcgacg tgacgtacgc 900

cgccgccggc tgcggtaggt accgcacacc cccgccgcgc gggagaactc atggaccggc 960

ggcgatcttg acacatggac catgcatgcg cttgttgcat ggtgatgtag aggcggccgt 1020

ctccaggaca gatttccatg tcgtgtctgc taacgcggtg tacgtggcgc tgtcttgcga 1080

tggcggtgta cgtggcgtca tttgctgcat gtattgttgg attggacatc cttgtaaacc 1140

tggaaggagg 1150

<210> 1768
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58137_G1, chr2:35322345..35323455, Cluster 10

<400> 1768
atcgtcaccc agttgccttg tagggaaggc aacggcacaa gagaaggcgc gccatccctt 60

tttccaagaa tatctaaaaa acaaaattac ctacatataa tagtacagtt ttcaatctta 120

ataacctaca aatcatgata ataaacgccc tccccaatcg cgtcacaagc ggacaaatct 180

cgtccatgca tgtattggtt tcttggtttc caaggtagtt ttctgtttgg taaaaaaaaa 240

attaaataac acatatactg cttaaaaaat catgaacaat tcattttgaa taacaaaaaa 300

gagaagcgga gcgccgctct atctactcac ggcacactcc ggcgtctgtc ggacgcgtac 360

cggcgtacgt gcacgggagt ggcgtcaccg ttgcctttgg acggtagcag ggcgcgcggc 420

atccgagtct tcgagttcga ggtacgtcaa ggagcggtgt acgcaggcag tagccgagac 480

gaccccatct gacgcccggg ggacggccga cggcgacgag acctggagaa tgatccagcc 540

tagatgctcc gttccgagtt ggctactgct acgttaaaaa agtattggta ttgtacatac 600

tccgtaggta cgtacacgca tgcatgcatg cctgtcacac ttcaaccttt ctagctagtg 660

ctcgatctgt tgctaaatgg tttgtgcatt cctaccagag ctggagcatt ttattgttga 720

agctcctaat caagttaacg atccgtttgc gcgtggttat acattgtact actgtcgata 780

tatccatccg tttcggttgt actgaagcaa ggacgtagta cgtacctcaa gtactgactg 840

ggaagaaccg tcaactgaaa ctattgcagg cgcatgagag atgagagcga cgagagttga 900

gagcaacagg tgacacaggt cccggcgtgc acgcaccagt cccctggcat cgtatagtag 960

gcggcgtcca cgcagaggat tgccaccttt attccacaaa tccgtggcaa gcaggcaggc 1020

aggccggccg tgcgcgcagg gacgccgaat cggccggagt ggagtcacgg catgggatac 1080

ggcggagtcc gggtaggcga tagaggatat a 1111

<210> 1769
<211> 1114
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58378_G1, chr2:36829225..36830338, Cluster 10

<400> 1769
ttggcacacg tgcgtatgat tctatccact atcacgcttt tattccgcta tgttaccatc 60

ccgtcgtaac gatctatgat tctctacttg tattttatct agattgaacg tggtggatat 120

actagtacgt agcataacat gttttttttt gaaaacatta ttacgaaact ctcgagggat 180

ggtaaacttt cggtggcaag tcccaataat ataatgacgc atcaatcagc tatagttagg 240

cggcatggat cgatccttta tacatgtaga gaaaattggc acccaaccga tcaacataca 300

atactgtccg tccatggtgt gtgaacagtt atgattggct tgttccaaca agttcagcgg 360

ctctgcatgt ggttggtggc tactagagga gctcatcatc cgtcgtcctg gctcctgctg 420

ggctgggcag actggtgcac gtacgtacgt acgtgtgcag ggcattgtta aaccgggccg 480

gggcgctctt ttttgtcgtg gtgcatgcct cggaatcccg ccgctatttg ccaaaaggca 540

tctccgtccg tcgcactccc gccgtgcagt gacacgcagg ctgctcccgg cgcaccgcgc 600

acatgccgct tgcgtgccga cgatcttggc tgctggtcct ttgcctacta gctagctgca 660

tgcccgtgcg tgcgtgcatg ccaatggtgt tactcgggtg actgttgcgc catgtgatgc 720

atgcccacgc ctagtctgcg gcgcccaagt gaaaggaaaa aaaagatttc aagtgaaagt 780

acgctttggt tttggttagg cgccgcggtc gatcgtccac atgcatgaat gaatgcatgg 840

gtttggttgg tgaacgtgct acagtacgct gtcctttggc tgtggtgcca cttgtttcac 900

ccatcatctg cgagagcagt aatatgtttt tggtaacgaa caagatacaa atgctttgga 960

atttaggtat tgtcatgttc aactaaattt taaaaaaata ccacatcatt gttgagatga 1020

tatatatatc tgcacaaata aaatattact gtactctcaa tgatagcaca catatatcag 1080

aaaatatatt gaacttaaca aatttaaaga ataa 1114

<210> 1770
<211> 1202
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59828_G1, chr2:45198615..45199816, Cluster 10

<400> 1770

cgcgtgcgtg caccgtgcag tgcatgtgtt gtttccgctt cttctgcacg cggtgagcga 60

tcgagataca atgcagtaag tgggcctcga cgctgacggg cggcgcccgc tgcccgctag 120

cgcgttgacc acccgtcgtc caccaacctc ctgccctgcc cagcccagct cccgatcgct 180

tcttctttcg gcgcgtgggg aggccgggtt agcttagccc cggtcgcgcg cacggccgtc 240

aaagccgtgt accggaccga tcgggcgggc ctgtcaacct gtctgattac acttgatcag 300

gattcagagt tgagataaaa ggaggccgcg cgcgcgctaa aagaaacgaa agagagagcg 360

gccgagaaag ggaagctaaa agaagaaaag cccgagcatc tcctccatgc atgcacgagt 420

atacatacaa tggcaggatc tacacaggat catcggatca ccggaatgga cagccctttt 480

gccaaaagct tctggccctc tcgcccaaag ctttgcttgg ccctgctgga ctggtccccc 540

tcccggtccc ggtcccggtc acgtagggtc ccccccccac ccccaccccg cgcccacatg 600

cactgatctg cttcgtcttt cctgaccgtg gacggcagca ttattctctt gttgagcaac 660

ctggacgcgc attgcctgct gctacttgtg catgcgtgcg tgcgtgcgag cgaatccccg 720

tgtcgtgtat aaaaagcgag gagtacatat atctgctgtt cgttgctacc tacacctact 780

acggtgctgt gtgctggaga ttcgccatgc atgcttgggt ttctttacct agctataact 840

aagctactct ggaatattca cacgttggtg aatagtgggc gagtaataga atgttccggg 900

gtttcgttcg actgtcgtgg tccagatttt ttttagatgt ggactgatgg attagcttag 960

gaggctgttg tcttgtctag ctatagctat agagcttagt ctctgcctct ttggtggcgc 1020

atcgcctttc ctctgtttta agggctcaat ggattttgcc aaactagccc tgacaacatc 1080

atttttgtaa ggaattttca ttcatttttt ttgggaaaaa tgaaatttat tagaaaaatg 1140

gaattaccaa agtagtccag tccctgaggg gccgggggaa atactatttt ccatacaagg 1200

at 1202

<210> 1771
<211> 1325
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60387_G1, chr2:48417288..48418612, Cluster 10

<400> 1771
gctcgcaacc agaaaaaccg ccagctaata ataatcgtac gtaggagtac ttcccgtttg 60

gtttccctcg tgctcgtgca tcacgccgta caccacacct cctccctgcg gctgcgtgtg 120

acccgactct gacgcacgca cgcacgcacg gcagaatgat tctccggtcg accggccagt 180

ccaatcatca ccacgccaac acatgaatcc cgcccggttg ccggggtcat cgcttcattc 240

tcttgattaa taataataat acgagtccga ggatgatgga tggattgatt gaggccaaca 300

gtacatgggt tcagcaagag caactccctt ttcagtttag aggaaaggga aaagaaagaa 360

gaagaaaaac aagtgcgcgc gtcatcggcc tggcctgcgg cctcctcacg tccacagctc 420

cgtctcccca gtccccctca tgccccgtac gtcatccgtg tgtgacgcgc gaggaaacgg 480

aaccagcgac cgccgggcgc cggtacccgt tcgttctgag ccgctcttct ctacttgcct 540

tgtcaatact acttacgtca aataactgcc acataaatag agtgtagaga tatatacacg 600

cttcttcttt tcttttgagg gcattgcaca acggtcaccc tccctgcatc gacgagtcat 660

tgttggcagt tcctcacgct gcacggcatg ccacccccccc ccccccccccc ccccccccaca 720

cacacacaca cacacacaca catcggttgc gtctggtgtt tttttggctc aaacacatac 780

aaacaagttc gaccctatcc tgtgctttct agcgacctaa aaagctccct gccattcttt 840

ttttcgttcc gttcctaaac cagtttttt taagtatagg tagcagaatg agtagatgga 900

tatttaactg gaccactaac tatctatgaa tgaataaaca gacgaaaaaa agataccccca 960

atgcatcatc cagcttttt tcgcgtcagt gggcggcacc tgcgaccttc gcctgcccct 1020

gccgaaccta agcgttttga gagtaggcta atgattctgg ctgccgggag tgccgacgag 1080

gtgggaggca aggcaaggca aggtcgacca cgaccaccgc cctctgcatg catgacgcag 1140

cggcgaaccg cgagcagcct ggctgccatg atgagccctc gccgcgcgcc gcttcgatct 1200

cttcctcttt ccacggctgc gaacgagctc tgggcactga cggcgtgtcg ccgccagcga 1260

cagcggcagc ggccagtagt acaatccatt tgctcgacgc aagtttcggc acaacaccaa 1320

acaac 1325

<210> 1772
<211> 1032
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62347_G1, chr2:58762231..58763262, Cluster 10

<400> 1772
gccggcacac ggcaaccaca aggtgcacat ggagatggag ttgacaatgc taggctgagt 60

gcatcaatgg tgttgatggc aggagagggg gagggagagg gagaaaaggt attatttttc 120

tattcttatg gtggttagta aacttgtgga tatacgttgt tataaactag tattttatag 180

atgaactata caatgttatt cagttaaatt atatatagaa tatttaaatg actatagact 240

gcttttggag caagcaattt ccactctctg cctcgcctgg tggttccgag ttccgacgac 300

atcgcccata tccagagttc cagacacacg cggctgtcgt actctgctgt atacactgca 360

cgtctgcacg gctccgagga ctatatattg gcacttgcta cgattgatga tagaagaccg 420

caggcacttc gttattacta ctactacaga tacatacacc gacagcgcag agagccggca 480

gtaatagact aatagttgcg ctgaaatcac acctctttct tgattggctg tatatgaccc 540

ggccggcctg ctgatttcaa cgctgctgaa tgctgacact gtgcacatac agatacagct 600

gcacgacgta cgcgcgatag atcctgcaca taatgtgcgg acactgttcc gaattttctc 660

gcctcactgt gcttgcatga aaatatggtt ggcagagtac gtaggagagg ccggtgctag 720

ctagctagct agctagcatt gaatcgtcga tgatagccac cttgacaatt ttctgaagtt 780

gcaagtagca gcccatctat ctatctatct atgctactat atatgacaac gacagatgat 840

agcgacggtg tgtatacgga ccaggagttg ttgtttagct agcctgcgta caagcaaagg 900

tttaaagcaa ctatatagtc cgctgctggt atgttgtaat ggcgggtatg cacttagctt 960

tgttcgtggt aaactggttt ggtcatgatt aggaagaact gagaagaggc cccatgtcga 1020

ctgctacgtg ta 1032

<210> 1773
<211> 1144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62707_G1, chr2:60878805..60879948, Cluster 10

<400> 1773
cacctccatt cttttaccat tcgcgatgga ccgtagcgtc cgggccatat atacttctgc 60

attccacacg cgtgttgtac tctcgtagaa caccaagacg agcagtgggg tcagccattt 120

accacagcgc tgtccatcgc cccggcccgg cccccgtcgt ccgtccccgg agagcccagt 180

cggtgcgctt gtcctcgtgc tcttgacggc tcgtacacca gccggtccat ccgtttggca 240

cgggccttgt cagtcgtcat ccttgacacc ccggcgcgcg gacgcggacg cggacggggc 300

cggccggcgg ggcacgtcgg acggcgggac catccaccac ccacatcaga cacgccgcgg 360

cacagatcgt ggatcggcgc tagcaacacc aacacggtcc acgcaagtaa tgccgctgct 420

cagctcatca gtgtcgcgcg cgccaagcca acgtacgtac tacacgcggt acgtacgcgg 480

tacgccccac ctgccctgcc acaccgccgt gcaggtgtgt ggagccgtgc gctagctact 540

gcgcggtgat cccacacaca cgtcacgcgc cccccgcgca ttaacagcgc gcaacgggaa 600

gagcgtgact gtactgacca ccaacaggcg gtaatggccg gccggtcctc cgcctccgat 660

ccggcgatcc gccagcgcat gtgtcgccat gcaccgccgg ccgctgctgc gcctgcgcgc 720

gccgtcggcc ccgcgctgca tgccggacag gccccccctcc catcggatcg gacggaatcg 780

agtcagcagg gctcgggcgg gaccatcgac agtgacaaac atgcattgat gcatggtcga 840

tcgatgggtg aaacgctgaa actaactgct ccaacagcaa ttgcatacag tggacgcgag 900

ttaagccgcg tacgggtgta cgtagtaggt ctgtttccct gcccccacgg ccaccggacg 960

ggcgcccatg cacgcatgca tgcacgaaga gagctgctgt tgtgttcatt cagcatctca 1020

acgagaccac agatcgacca tctttgtcat gtgtttgtgc tcgtacgctg tcgactcagg 1080

cgggtccgcc ggacggccgg tcgcgatctc gcccataatg cagcgcgatc gcgctatgcg 1140

gtgt 1144

<210> 1774
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6276_G1, chr1:32096951..32097992, Cluster 10

<400> 1774
tcgagtgagt tggatagtct gcagtagcac caaatgtgtt tgatgcttcg ccagatacaa 60

catcagatat gttgtgtatt gtgtagtttt agccttgaac tggcatgtct agtgtgcacc 120

aggtatggta catcagacag ggcacctaaa gggcttgcat aagtgtttcc agatagttta 180

cactcatcga tgtgtttggt gtaccaccaa acgtggcatt gaaaggcaca cctagatagc 240

atgtaaattg tgcaggttag ctaagtacac ttgacatatc tagtgtgcca ttggacttag 300

caccagacat gtactcatac agaatgtaat atatgcatca gaaaacctag tggcaccagg 360

taacttaaca ttagagcgcc ccaaataaat taactacaca aagttttata agaagctaat 420

aagagtctcg aggccaatcg agccttggca tgctttaaag atcagggcct tagtgcccta 480

gggcgtccta ggctatgata gtctaagtac tcgaggactc ttatgccatg gggcactgat 540

gaataattca agcctttggg gccctcgtcc cttgggacac tattaatggt tcaagtgctc 600

gaggccgttt ggcccctaga gcgctcaatg gcacttatat actaggggct ctcttttggc 660

tccaaggtcc caaaggcccc caacttcata ttatgatgac ggttgggcct tgaacccttt 720

ggggcccaaa gcctcgtggg gacaatgaac tttatgccat taagtgtaag cctgtctcaa 780

gactaaagga tgtgcctagg cctatcgagg gtagtacaac tccaaggttg gggccccaca 840

tctaaacatt gatgacaatt ctattacgtt agattattgg ataagtatta ggtacaaaaa 900

actaatgcat ggtatgtgac attataggta tgacaagcgt agtattgcta caacttaggc 960

cataggacac tcgaaaccac tatatgctat gtgcatcgat tttgtagcca tgtgcacaca 1020

cacgaacata ctaggacgta tt 1042

<210> 1775
<211> 1363
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6510_G1, chr1:33427017..33428379, Cluster 10

<400> 1775
aacgataggg aagcgttgcc tacgtgtggc aaaagaaccg gccagcgaag tagatacata 60

cacccacccg cctgcgagac gacgacgcac gtcgtccctc gtgtttgaaa attattccgg 120

tatgagccgt tctagcattt agcgagcaca gactgcgccg cgctgctcgc aacaacagga 180

aactggttgc cggcttgccg cacacatggc tcttgctatg ttttggctgc aatgatcggc 240

ggccacaagg gcaaaacaaa agggtggcat tgggcattgg ccggccgtgc accacctaac 300

gatataattc tgccgcctct cgctccttct cataagattt caaccattta agtgcaaccg 360

cgaccggacc tatatagcta atcgtaggaa ttgaacgaac ttgaccagca gtagtccaaa 420

taattgcgcg cgggacctac ggacgggagt gcgctgcact cttcttcttc ttcctcgctg 480

gccccctctc actaccatgt ccgtctcgtc tccattctcc ggaggagcta gcgtagcata 540

gctgttggat tggatcaatc gtatccaggc tctgggccgc ttcaatgcat gccgggccat 600

gctggctacc tgtccaaacg aaacgggata acgggaccgc gagcccgctg tcagcgcgag 660

gcgcggccaa ccggagctcg cgggaagccc gacggtgcac gagggcggct ttgccgggat 720

gccgaatagt ttggctgggt gggggtgggg tggggagagc agaggaatgg tgcgcccgcg 780

gcccggccgc cgatgcagta tgcaccgcct ggcgaattca agtgggtaca gctgagctac 840

tgcgttgtca ctgccggtgc tgcagctcca aaggacgcgg tcagtaatgg ccactgcgct 900

tcagctgcac ttctaggtct tgccgccagc ttgatgggac ggtgcaggta cggtccatac 960

gcccctgtgc caccctcgta tagtaagtag tactccgtta ttagggtgat gtactggtgt 1020

gtgacatact ggcagtacta cgaacgatta atatataaaa tatatactat taaattttat 1080

gatgatctaa tgatcccacg tcgaattaaa cagtccacat atgatacgac aataaacaat 1140

aaatatattt tttaaaacaa aatagtgatt taattttcac acgaattgga aagcaaaaaa 1200

ccaaaacaaa ggatccaggt aaagcacagc tataaacaga aatccaaaat ataaataact 1260

tatgaaaaaa atggaagttc gatcattgca taataaccct agagtatatt aagtatcaga 1320

aagatagagt taggagagag cacgtcgtaa gttggtgatt gtg 1363

<210> 1776
<211> 1353
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7692_G1, chr1:40227717..40229069, Cluster 10

<400> 1776
cgttgcccat cgttatcgcg acgatcgggg ctcgagtacg agtagtgatg caaacggtaa 60

tcggggacca gggtattgtt ttcgagattt taccatgttt cttgacaaat agaaacggta 120

gccataaaaa taaaaaaaaa agttacggat aaaatatagt tgaacaaccc aacagttgaa 180

cattaaaacc ccataggtca atcaagttgg caagtcgtta aacctcaagc ccaaacgagc 240

acacaaaacc agaaaacccc cacctgctgt gttgtcgcct aaaacgaacg tctgtggctg 300

gacgatccaa tccaacaggc atggacgagc ttggcgccta gctattcgcc taacctaacc 360

cgaggtagct gtccctctcc cgctctagct gtgcctgtgg acggccaccg tcgccatccg 420

tccccaacgc agccggaacc acttctccag ctcgactgct ctcgacagac gatgggcccc 480

ttccctacct agccttgcct tggacttgac agcatcgtac gtgacgctcc actctttccc 540

ctcgcgccgc atgcacgttt cgtttcctcc gctccgcagt aaaaccgtcg ccgtcataaa 600

aaaagcgaga ggaggagaca gaagaagacg ctgacgcacg gctaaatcta gcaaattcgg 660

cagtgatcag tcggctgagg cgcctgaaat ttaacagatt ctacttggtg acaggtcgtg 720

acacatcgga aggcaaaaca tcagagagca gtgttccagt cgtctacagt acgaacagca 780

tccccgcctg aaacagtcga aaaacaggag gtcagaacaa aatcagcttg attaacagca 840

tggaccgccc gcgtcgagca cgttgcctgt tccgcttggc ccatggatgg atcacgaggc 900

gaactagccc tgaagcgcaa cacgggacag cgcggcgcac gagcggacgc ggctggcaac 960

gacacatgac gctcatctca tgacgcgaag ggcacttggt gtaccaccga caccgactgc 1020

ccccccccc ccgccccgcc cgtctcgttc ctaacctacc tgggcgtggg catattcctg 1080

gcaacgccta ccatcccctt ttttttgttc actgggttgc gttgggttgg cacgtgtgct 1140

gcgctggccc ggcacgagtc cacctcgcgc ttcttccgtt tggcgaggag atgcatcagg 1200

gatatgataa tagagagaga gagagaggga gagagagagc tcaggccacg gcggggacca 1260

gcttagccgg agcttagttt ggaagaaatt ggagagaaaa tttttgaatg ccacatgcgt 1320

ccatgtgtac ttggaggcga caaattatta gct 1353

<210> 1777
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7953_G1, chr1:41279823..41280909, Cluster 10

<400> 1777
agcggcgatc gcgatgcttg cttattggcg cggccgctag ttgtcgtccc ctgtcacaca 60

acgctggctg gataattttg tctgcaaacc ttttgccgtc gattagaaca agtatactag 120

ctagctacct gttcttccat cctgccatat atggtggctt tacctaaaat cttttgcttt 180

aatctgggcg gtcgctttcg tcctccattg gttggctttt gtgccctatg ctgtacctgt 240

acgggcaagc gtccgggtgc tgacgtgttg tcctcccacc ccacccccac ctccgtcctc 300

cgaaggtgaa ataagtaata ttttgctgac gcgaccggta tactgcttat caagcgctgc 360

ggtgcttgta gcgacgacga caatcccagc gcctgttgat tacaggaagt atagttggaa 420

aatccatcca gtagatttgg atcttgtttt agcgttgtcg gcatatccac tcaaaaacca 480

ttttaaagca atgtgactag tataaactaa taagttcttg ggaggataat aagcaggaga 540

tgatggcctc gacgacagcg attgcgtgat ttgcgaagtg gcagcttggc cccgtcccgc 600

cgcagtatct gcgtctcgtc gtttcgataa gtggcctctc gcccctccca aaggccgccc 660

atctgcgagt tcgtctgctc ccaaaggaag agcagggccc tattattgca gctggtccac 720

gaaagagaac ggtggctggg actgggagca ggagggagag aggttggggg tttgataagc 780

caggtcgcgg gacgttttca cgtcgtgcct gccgtgctta ttggccagcg ggtgtcgctt 840

atgagataac gctacttttt tttggccctg gccgggatct tcactgtgga taacccgtcc 900

tgtgacctcc tctatcttga catctcatgg tcttcctcgt gctttagact ttgaaagcta 960

aggctcaagg accaagagag gcgtgctgtg ggcgattgat tgcttgctgc tgctggttac 1020

ccctgtactg cgtgcgtgcc acaacgattt gtgacggaga gttttcgcta ccgttgaatc 1080

atggtac 1087

<210> 1778
<211> 1301
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8113_G1, chr1:42159989..42161289, Cluster 10

<400> 1778
gtcgccctag ctcctgctgt agctgtttat tgcaactaaa ctaaccgtag gctgccgaaa 60

acttcaacag cacacatatg cttgcaatca gaaattcccc gccccgtgca tttctcccaa 120

ccgaacacaa ttcttccgca tgatgaactc atgattcatt ggcgatgcgt gcagcatgaa 180

ctcacgattc atgcgtgtac tacgtgtgtg tgtttatagc attacagtag tacataatgc 240

atgcgatcac actgatcata taggacatgt gaatgggata caaattacaa tgataataat 300

atataaagcc gcaaccgagc cttcatcaac taggcttcca ataattaatt gaaacaacat 360

gtccacaact tactacgcac aaaagatcag agtaaaatat gatgtaagct actatcatct 420

atctattatt ccggttgtta attaaagcga aaagggaagt gcttacatcc cagcccattg 480

acattagttg tttgcaagaa tattaataat actgtacctg ctgtgctgct acaccaaagg 540

tcaaacaata cataataata ctatctactc gccatgtaca tagctaacgc gcgcgcggtg 600

ctcttccgcg ccacgtatat atatatacgc gtattcgttc tctgtacgac gagagggttt 660

gttgatagga gttgaagact agagattcgg tccttgactg caacagcaac agcaacagca 720

acagcatcca gatcgagcag ccattcaatg tgctttgtag atccagacga cttgttcaga 780

agcagtgcta gactgctaga tagtagatgt gtggcgtgtg tgtgtggaca gcgttgcaga 840

gaagagcaag tttgagtacg cacgcgatga cgcgtttcta acagacgtgg ctaattaatt 900

attctgtata tgcaaaggcc aagctcaagc tgctcatgac gtacctgacc gaattattag 960

gcagttggga tttcccaaaa tatgactcta gcgtgcgtat ttgacaaatt tcttttgcat 1020

gcatgacccc atgcactgaa cccagcgcta cgcccgcagc cgtgatcgag ctcgtcatgc 1080

ttcaatcata atagcagccg gccaaacgac gcactgcggc tgcctttcat tttcgccgct 1140

gctggtcggt accttgacgc agaggaatag tcgcatttcg cctagcagct gcagcagcct 1200

gaaagatgtt gaggagtcgc ctctatgtgc tgtggtggct gcacacagct atctgatgac 1260

gacaacagta cgtccttgaa ctgaataatg atatatctct t 1301

<210> 1779
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81527_G1, chr2:179460608..179461653, Cluster 10

<400> 1779
tgtccctctc tttctatcta tctattgctc tctctctccc gcatgtacca ctttggccgt 60

cctctttaca atttggatca caaaacttaa caggtcctct agtttagctg gggtgtgcgt 120

ggagatcttg cccaccacaa atacaagtag tgtgatccaa acccaggtcc gcatcaccat 180

gaatcaaacc tggctatctt ggaataatgt gggttgtatt tgtatcgtac cgccaatgtt 240

ttggctgcta accgatgagg tcgcgctctg caagttgcta gtgtggagcc catgcactgg 300

acctggaccc cccacacagg caaacgtacg atcgcaggtg gacgctactg tgtcccacgc 360

ggttttgggc tgtggacact ggactgctgg accgcatgca tgggtgggtg gaaaggaata 420

ggaacggagt cgtcgccgtt gctgccagct catgtgatcg cgatcccctg gcgcgcgtga 480

gtgaggcgaa tagtcgtcga cggcgacgtc tcgacgtgcg gaccgattcg tgtgtcgcac 540

gagcacaccg tgcaccgcca cgcaccgatc atgccatccg tcacgtggcg tagagtccat 600

atcccgaaac gagcggtcca tgcggcggga ccacactctc cctagtccgt actacacatc 660

tcgtttatca aaacaaaaca aaacaaaaag ttcaaaatta taaaaccaaa agtcaaacgc 720

gtgctttgaa acagaagaaa acgacgccaa aaaaaaatac cgtgaacatg catgtatgtc 780

ttcaaagttg aaactagtcg gttggttcaa gtctggatgg aggactcgac cagagtgttc 840

gagaccgaaa ttgctcggtc tctgatattg ttgcaacgtc gtcgtaagtc gcggtctttt 900

atttctgatg atgatggcca gaaatcttgg gaaatccaga agcccaaatc tagaccttcg 960

ttgggactta ttagacgtcc accactctca ttattgtata cgagtgaggt gtttggtgat 1020

atgatgcatc ataaatccat tatata 1046

<210> 1780
<211> 1362
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82317_G1, chr2:183556440..183557801, Cluster 10

<400> 1780
attttaagtc ttgttttcca aacatatgag ttttttttatt acgttttaaa aactagtatt 60

atagtttttt ttaaaaccaa gaagctagtc ttcacaacta aacttataaa ctatgtggat 120

tcagacacct tttcctagtt tctttttttct ttctaaaagc tggtttctag aaaccagttt 180

ttgaaaaatg taggatggat ccaaacacag caaatctaat tgaaacttta gtcgctcatc 240

gcaacaggac gagaggatta cacatatata tgcccgcaac gacggaatcc gcgcaagtgc 300

tgcatgcgaa atcttggagc tcccaagtca gatgcatgca cgtacgtata ttgtttttgt 360

aatcagagtc aattgctcgg agtgtaggac ccttccaagc tttaaaacaa aacacagacg 420

gagttgaaga gcagactcct catgcaatga acttattagg caaactaacc atgaatgaac 480

gcgtgcgcgt acaataaata atctgcacgc ctgcttcgtt acacagtcca gaagacgaca 540

agcaagcctc tgcacatgaa cggatgaacc tgtcgatgga gccttgcttt aaattcggaa 600

cgcgcacggt gccgactgca tgcccaccac tgccagagaa attttttttt cttccatttt 660

cctcgtcata ggtttctgta ttgatttcgc cttgctggac cggaactcgg gctacaatga 720

accagcggga tcgatggacg ctacgtacac gtagggatta cgagaaaggt tggttacacg 780

gaagaaacac gcgcggcact cacactcagc agagtccatt gcatcggagc agagagagag 840

agagagaatg tcaagtcaag atcgttcgtc ccagctgatc catcacccga cggaggacga 900

tctcgccgcg gccgctcgat cggctcctgc atgcaggcgg gcagtttctt caccaaacca 960

aacgcagcac gtcgaccgcg ccagccagcg gctccaaaac cgcattggag ttgggacttg 1020

ggagacccat cataggtttc cagctttcct ctgtcagttg ccagtttgcc acgccatctc 1080

ggccggacag tttccctctc cgtgctctgc tcgcagtcgc gcgcgaacgt ctctgaccag 1140

gaatcccgtc ccaaacagag aaaccgagca tgcatgcatc agagaccagg gagattaatt 1200

gcgtgtggct actactgcgt actcgcgtgc tacacggcac agactagcta cagcctcgcc 1260

acatgaacag ctaccgtttg tgactcatga ctaacactag gagcatcctc gtctctttta 1320

tcgaaagcga gccttacttt gagttttagc acccgttatt tc 1362

<210> 1781
<211> 1171
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82430_G1, chr2:184140716..184141886, Cluster 10

<400> 1781
caaaatacat catagtgcaa caaggtatgt ccggtggatt atacaatggt atggatccaa 60

caattaacta cgtcctgtgc aacgtatata cacgggatag atgatcgtag gtagcccaac 120

acgtacgtcc ggtcgaaagg cgattctctg cctctggttc tggctcatcc tgcaagtttt 180

ccatgggcta gcttaatcat gggcggacca tgggtcggat ccatctgtca acttcgactt 240

ccctgagctg tcgcgggccc cggagggctc aagacgtatc tgggctcgtt tcccaggtca 300

tcaggcacgc gcaccgcggg ccgggagagg ccggaactgc atgcacatcc ttgttttttt 360

ttatagcacg tcgcggtcgc gcaccagcaa cgattgaaga aaaccgcaac gatttgttgc 420

tggattccac ggcgcttcct tctctggatg gatcgggtgc gaatgtgcct tgtcgtcctc 480

gccgagaaat agaatgcctc gacgaatggg ggagctgcct gtcgcggcca cgccactcct 540

tggtacgtac cggtacctgg tagtagcagg cgctagcgtc acgcaaccgg aagtcgatac 600

tcgtgagagc atccaacgaa ttcgtctgtg cacgcgtcgc atggcgccaa agtggagcag 660

ggccgagccc gagcgcttgc gttttttttgt cggcgggcag cgctctagcc gcctagcctc 720

tagtacagac aggctacaag tgctgaagtg cagtacacca ggtcatgcgt ctgtactgcg 780

gcctgctcgc aatgctgtac ccgtccaata gggcactagt acgctgccct ggctcttgtc 840

gtctgtcacc cccaacgctc atgccagatg tcctcctagc ttaggttaca tttgggtttg 900

acaaattcgc tccctgcctg gaagttctag atgccgtttc cctacggggc gttcgcaaca 960

gtcgatatcg acatcgccgc cggttgactg cagttcaata aaaaaagaac gcactctctg 1020

ggttcactaa ggctaaatta acacacgcac agtttcctct gcattggtat tggttatcag 1080

agagaagtgg ggacttgtaa ccatacgtac gctctccctt tgaggctctc cggctagcga 1140

tggtatttct cacccgtttt atttcctcac a 1171

<210> 1782
<211> 1408
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83359_G1, chr2:189331715..189333122, Cluster 10

<400> 1782
acagacttgg tcgacaggtg agtcatttta aaagagacca taggcagatc ctttaattga 60

tcggaacaca ttacataaag atgtagagta ggtgataata taggtacaca aataaaccct 120

tttcggcaga gatcaacttg ggcttcataa aacggttatg cgagagaaac taggggggtgg 180

agaagctacc tttcctttac tagacagggt gataatgggc gtcctgtaca tggcctaaac 240

tattcgtcct tgtaatccac gagtaataat cttatcttcg gagccgccag cccgccagtt 300

tgatggatcc taggaagggc cggaacacgc tgtacgactg tgtactatga tggaatgagt 360

tcctgtcctg tggagaggga gagagagcgc ttgttttaat gcggcattgg ccgtccatgc 420

atgacatgct agtgttagcg atctgcagtg cgtctgagta aaaaaaatca tgatcagacg 480

atttgatgtt tcctttggtc tgacctgtta gagagcacac acatgacaca tgggatgggg 540

gccatggggc aagcgcaatg tcacagctag agagcacagt gaagcaaacc ccgcggtcgc 600

ttgtaccaag ctttgttggg tcaaaggcag gttcttaaac ttgttatctt atcttaggtt 660

gttaaacaag aagtaatcaa caagcacggg tcgagataga tgacttcacc aattcaatca 720

tttacagcag cggacataaa atggactctg cctctgtcag cactggaaac acggatacat 780

gcacgaccac ctcacgtggt gtcacatgcg cgagcgaaga ctttgatctt tggcgtggtg 840

gtggtggtgg catgcatgac ggaggtggct ttggcttggc ctctgaccgc tgtgacatgg 900

aagtggaacc ggatcctcgc taatctgacc gacaatccga agcccaggcc gagtaaacaa 960

ctgcgagtag tactaagaca tacggagtac tcctcctaat agatagtata taataatggc 1020

ttggcctggc ctgcactgaa ttattcagaa gcaacctgac gagagggaga gccctgccca 1080

accacaacca ctccactcct ccccgtgcaa aaagaatcca gctcaatgat ggaggtttgc 1140

ccccgcacga gagtgatgat ctggacgcaa tcaagtgaag attccctcac ttaacgcacc 1200

cctagtaaaa tgattagact ctctccaacc gatactctaa atatttctct accttaaaat 1260

ttagaggatg cggccgtcct atatatctac aacaatatct tctaaacagt cctctaggta 1320

tagaggccgt cgttgagtcc tctacatgtg tagagctttt ctttcccccc cttcatccat 1380

tttaatacta caaacaactg atttaaca 1408

<210> 1783
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85950_G1, chr2:205776927..205777943, Cluster 10

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (115)..(214)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (150)..(150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (151)..(151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (152)..(152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (153)..(153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (154)..(154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (155)..(155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (156)..(156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (157)..(157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (158)..(158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (159)..(159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (160)..(160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (161)..(161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (162)..(162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (163)..(163)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (164)..(164)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (165)..(165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (166)..(166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (167)..(167)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (168)..(168)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (169)..(169)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (170)..(170)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (171)..(171)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (172)..(172)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (173)..(173)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (174)..(174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (175)..(175)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (176)..(176)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (177)..(177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (178)..(178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (179)..(179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (180)..(180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (181)..(181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (182)..(182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (183)..(183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (184)..(184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (185)..(185)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (186)..(186)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (187)..(187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (188)..(188)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (189)..(189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (190)..(190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (191)..(191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (192)..(192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (193)..(193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (194)..(194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (195)..(195)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (196)..(196)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (197)..(197)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (198)..(198)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (199)..(199)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (200)..(200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (201)..(201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (202)..(202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (203)..(203)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (204)..(204)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (205)..(205)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (206)..(206)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (207)..(207)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (208)..(208)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (209)..(209)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (210)..(210)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (211)..(211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (212)..(212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (213)..(213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (214)..(214)
<223> a, c, g, or t

<400> 1783
ttttgttgta ctatagaaaa tcaaagtaat tatacaaatg taaatacata atgtaaaaat 60

aaaaagtaat gtaacaatgt ttttcctaaa gaacgaatca agctgatcat caatnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 180

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnncttctc tgtgtgaact tgtgatcagt 240

gagaccgtga ccgtgaacac gagaatatta acacccccc ccctaattaa cacatgttaa 300

ctgtaaaatg aatataagtg aaattttgtt cctccgagta attctaagta ttttgaagcg 360

ccttcacggt aatcgtgttt ttttaggtag ctcgacatgg aaaaaagata ctgtgtctga 420

tatggatccg tgccattcct ggcgtctaaa gtcgccagca cgacacagcg gccggccgga 480

cgctgtcgga gtcgggcacg gcacggcgcg cgcgcgcgag acgcggacca gtcaccagag 540

gcagtggccc gaggagcgcg tcgtggcgtg cgagtgcgcg ctgcctgtcg tgtcgccggc 600

cgcggactcc gctcgtgaga ggctccagca gacagctatt ggaataggca ggcaggtgcg 660

agtggtgctg ccgtgctaat gtcttttcag atttgaccct tcctcggtgt cttgagcggc 720

ggcatcgttt agggaattga ccaatcgtcc tgctcacgta cggacacctg caactctgca 780

cgcgacattt ctccgtggtt caaccgtgca agcaaacagg acagagcatg tcccgaaaga 840

ttgcggaata tcgctggctg tagatagcac tgatgactgc tgccgaatcg ctggtgagcg 900

acagattgga tgggagatcc agatcacgcg atgggttggg tacccgtcgg tactggtacg 960

gtgcctgccg agttgctgta cagcacattt cggccaggtc acatacattc cagacta 1017

<210> 1784
<211> 1107
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85987_G1, chr2:206044069..206045175, Cluster 10

<400> 1784
taatagattc atgacacaaa ttagtctgtg caattagttt tgtaataggc agttgctcgt 60

aataattggg aatctgcagc tcgctcaggt acgtaccgct caggtacgta cacgatcgga 120

agagatttga tttgtgtagc actagcacca acggcccgtc gacaaacgcc acaggggga 180

gggatacgag catctccgaa cgcgactgga ttgggcgacg acccattcga ccaacatcaa 240

catgtcggca aatacaatgc gtcggacggg tcgcctgagc tacacaagac cacaagcgga 300

gagcgaccgc acgccaaact gaacgtaaaa agcaagcgcc gaaacccaga cccagcagca 360

ggtttccgat cgatcagcgg cgccgtgatc gatcgagttg tagggttaca tgtcctatgc 420

agatgcaggt aatactataa cgcaatccca cgtacgacaa acgcatgcca cacgtgccgt 480

gtaccgatcg gccggtcgcc ggatcggcaa aagcgagtaa gcgacccaat cctgcttcct 540

gcagtgcaga gcccgcccca ccccaccccc ggggccgcga ccgcgacagt caagcgaccg 600

cctgcccgcc ccggacggcg ccaaacgcgc gccatgcggc gggagtggac gacgagcgaa 660

gcttcttcgg tcgccctccg ccgtcccgcg cgcgggcggg cggtgcatgc acctcgccgc 720

tggcaggaca cacggattct tttcgatcgc ccgcaaaggc aaagccccgg ctggcggggc 780

gtcgcgtcag ggggggccag ccggcggctc gcgcgcgcgc gccgcggctg cacgtaccgg 840

gggcgggccc cggccccggc cccggccccc caagtctccg ctctccagtc gccgaggggc 900

aagccaaccg gccgcgcgcg ctctgctgtc gcgggttagc acacgtacgg tacggacgac 960

gtggtcgcgc tcgggccgcc aacggcgaaa ccgaccgccg tggagaaaag gcgcgcctgc 1020

ttaatcgcat tgggttgggt tgcatcaacg cgtgttttgg tgggaggata agctggttta 1080

cagctgcgga tgatggcaac tcatgtt 1107

<210> 1785
<211> 1244
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87548_G1, chr2:213811149..213812392, Cluster 10

<400> 1785
gataccctgc ttcggatcgg agcagctctt ggtgtccgcc ccatgcgccc gcgcgcgtgc 60

ccgggctgcc gccgaccgcc gctacttcgc cgacatgctg cgtccccgcg cgagagctcg 120

tgtgattgtg cttgtgctgt gccgacgtct caacgcgttt caatccccga actaaccgat 180

ccttgcttcg attttaattc ttttcgattt gaaccaaaga agaagaaaaa ggttcaggga 240

ttaaaaaaaa gagtaccaag tgtccggttg cgtatcgttg gtgtcaatca aagcggagca 300

agcgaacccc aaaccttgaa gcggagaaaa tgcgtccgaa ttgaatagtc ggcgactcgg 360

caaagaggac cagaccagcg ctggacggcg gcagaaaaaa aaggaaagcg tggccgcacg 420

atcgggacgc gctcccccgc tgtccctttt gacgcgattt tcctctgttc tgttctcata 480

tagtcatatc atatccggcg cccactggtt cttctttttc gcgatcagta cactcggtgg 540

cctgatttca aatcgccgtc ggctatctca atttgcgggc ggtagcgaga agccacagag 600

ctcggccaca cggttttgtt cgccgcagcg catcccgcgg ggtgccagtc cgctttcaac 660

gcctccgact cggccactcc ccacggtccc acccacagtt tggcagcaag cgtttcgagc 720

ttcgaagcca atgtctcccg ttccctccat atttaaacgc gcgcctcggg cggggcaccg 780

ggccgcgggc tgaccggcgg gtggggccag gaatcgaagg gcgtcgtagg accccacttg 840

gcagtgagag acggtgtccg ggcatggatg atcacggcca atgaatgggt tcggtccgct 900

tcgggcttgt caaaccggcc gcactgcaag atcctcctgc tgcctgctcg gaacgaagcc 960

gctagccgca ggccacagag cacaagcaga ctgaccagcg ctcgtagaat tgcaaaactt 1020

actgaatgca gcattgtact agtgaagttt tggaggattt ttttacgtga ggtctaacca 1080

attggaaatt tttctataga attgaaggtc ccatactccc atacaactct attcctattt 1140

tttttctatt actatatttt actaatccta tattccaaag gagacctgaa tatttttatt 1200

gttggttata gatgatattg caaggagtta agctctatta ttaa 1244

<210> 1786

<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_91074_G1, chr2:231206222..231207227, Cluster 10

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (879)..(978)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (891)..(891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (892)..(892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (893)..(893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (894)..(894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (911)..(911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (912)..(912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (921)..(921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (922)..(922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (923)..(923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (924)..(924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (925)..(925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (926)..(926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (928)..(928)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (929)..(929)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (930)..(930)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (931)..(931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (932)..(932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (933)..(933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (934)..(934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (935)..(935)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (936)..(936)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (937)..(937)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (938)..(938)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (939)..(939)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (940)..(940)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (941)..(941)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (942)..(942)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (943)..(943)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (944)..(944)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (945)..(945)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (946)..(946)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (947)..(947)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (948)..(948)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (949)..(949)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (950)..(950)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (951)..(951)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (952)..(952)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (953)..(953)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (954)..(954)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (955)..(955)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (956)..(956)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (957)..(957)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (958)..(958)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (959)..(959)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (960)..(960)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (961)..(961)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (962)..(962)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (963)..(963)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (964)..(964)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (965)..(965)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (966)..(966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (967)..(967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (968)..(968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (969)..(969)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (970)..(970)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (971)..(971)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (972)..(972)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (973)..(973)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (974)..(974)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (975)..(975)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (976)..(976)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (977)..(977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (978)..(978)
<223> a, c, g, or t

<400> 1786
gcatagagga acaaaaccat atatatgatg aaattcgatt gcttttctag aacaaataca 60

atatggctaa gaacttcttc gaagtaacac agcatattcc cgaaaagaag gctcacatag 120

aaagaaagta gctgaccatc ttgtctatgg cattgtgaga agacccacca atcttgaagc 180

cgtcttccat tctgttcttg agctccatgg ctctttccct catcgcatca ccctccctct 240

ccttcattag cttcctgata gccctaacaa tcttgcctct ttccagctcg ccttccagcg 300

caaaccctac accccaggct tcctccacgt acctcgcgtt catcatctga tccgcgaagc 360

agggcctgca tatcatcgga acgccctcgc tgatgctctc cagcgtcgaa ttccatccgc 420

agtgagtcca aaacccaccc accgcccggt gcgccagcac ctgctgctgc ggcgcccatc 480

ggaccacctt tcctctgccc tccactgcag cctcgaagcc gtttggaaaa tctggaccgt 540

ccaaaccctg cactaccact actacgtctg gccgaaccac ccatagaaaa ggaaggccac 600

tgttcgccaa acccgaagcc acctccaaga actccctgga gtccatggat gccaggctcc 660

cgaagctgac gtacagcaca gatccagacg gctgcgtctc cagccactca atgcagccgt 720

agtcctggtt cagtaggcta ctccccgtgc tctcggaaga aagcttgtgg agagggccga 780

cagcgagtac caggggatg ttgagctgat cacggatcgt ctccagctcc gttgcctcca 840

atgcgtcaca tgcgttgatc actagaccgg aggaattcnn nnnnnnnnnn nnnnnnnnnn 900

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 960

nnnnnnnnnn nnnnnnnnga tctatgtgaa ctaaggagga ggttcc 1006

<210> 1787
<211> 1198
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94135_G1, chr3:10284229..10285426, Cluster 10

<400> 1787
gcatgcatca ggtcgggtcc agcgtacttc ctacgcgcgg ctaggcgtag ctacctatat 60

accttcactt cgtccctctc tccgatcagt gtgctcaggc aggcgcgacc atgcatgcct 120

gcctgccggc ggtgccggcg cccggcagga tatttcgccg tttgggttgg gggtaggctg 180

gtaagttgat ggatggggat caccggcggc atggaccgga ttattcctga aacaacgcgt 240

agctagcctg ataaaaccca tgcatccacg tccaccatca gatggatcca tctccactag 300

ctagcagagt agcagtacag tgtacgtatc actaccaccg cagcggcaag tgcaagtgac 360

ggttcggttg ttggttgcat tgcaattgca tgcaccgctg ggctactata gctacctgct 420

gcgagagaga agagagaacg tgctgctctg ctgctccatg cttccaccag ccagccagcc 480

agccagcttt acacgcacga cgacacgaga gcagctggcc ataaactaat gctagggcta 540

atcatgagcc atccaactgg gttaggtcga ccgagtaggt ggctagctag ctagcttcta 600

gctagatttt ttgacgcttt gcggacggcc gggatgcagg cagcgctggc cgctgggtcc 660

gttccgtggt gcttgcaggc ggcgcgaaag actgctgtgc tagctgatct cacaccaccc 720

ccagtcccca cactggtaaa ataggatcgg atccgggatg ccgccaaaac ggccaccatc 780

ggaaacaacg tatagtatat acgtacttac taggcgacgg cgcatgctcc aagacaaatc 840

acgacgccca tgcacgatcg acgacgcaaa cgccgtcgtg cggatcctct gcgctgccga 900

tctgatagca ccgcgcgcaa ttaaactaat tgaacagcca gtgattatta ggctatatat 960

agccccaatc gaaacgcagg attattagac aacaaaaaaa accccgaagg aataaaaaag 1020

aagttttgga agtactagta tggtaaggag tatatgcaca tgcgatcgaa acggacaagt 1080

gaaaatcaca tggtactgta ttctgtataa cgagcgaacc gaccgtcatt attaagaaga 1140

aaaggctgtg aagctatata ttttcttctt cttctttttt gaacaactag tacatgct 1198

<210> 1788
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_94784_G1, chr3:13725710..13726744, Cluster 10

<400> 1788
tatagtagcc agttagagca ggtgagccag cagtgagcga ggtacacagt gacttcatct 60

cattggaata caatacatgc tacagaaact aggcgggttt tgatactgtt tgggcacgca 120

tagccccatg tgagagaggc aagggcatcc aatccatcaa cccttgaaca aggcactact 180

aatcaatgcg ccatattgcc atgccaccta ctacttgtag tatttactaa tcccacgctg 240

gagctactac tactggtcta gttaacccta aacgaacctt ccattaacga ccactagcag 300

ctgcgtgcgt gcgtgcgtgc tctgctgtct gctcacagcc tcacaggtca agtccactct 360

ctaacgccgt tgaaaccact ggtggcccat atattgctta gtactaaatt tcaccacaca 420

cgaattagag cagtgttccg ttgctttatt ccaaagctga agatctaaac ttgctgtctg 480

ttggaacgca acattaattg tgcagcgtgt gccttgagaa ccggagcctg tgagaaagct 540

aggacgcgtc tccaaattaa acgccgatgc agacggccat ccgagccttt gccggccggc 600

gacgcatcgg cggcacgatg actccatgca tgcggtcgtc gtcattgatc gaacgcgatc 660

ggcgtacgtt ggtcagtctt ggtcctagtc ctagcctccc gcgcgcctag tacgttgctg 720

ttgcctggtt gacctgggga tacacaggca caggcactgg cacaggcgca cagcctactg 780

ctactgctac gtactactgg agaggaggcc cgctgcattg catgcccgtc gatgttgcgt 840

ccgccgaaaa ggtgcagact actagcttgc agttgcagat caatcgcgtg cacgcgtatt 900

gtatcgtcga tcggtcgatc gatcggggac gcaaacgcgt gacgaatgga cgaaccctaa 960

taacgactga aattaaacca agaatgtctc ctgctcctgc accgcaccga actggagctg 1020

cagagccagc tgcgg 1035

<210> 1789
<211> 1025
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95244_G1, chr3:16577870..16578894, Cluster 10

<400> 1789
agaaggagag aatagtgagc accactagca agaaggccac agagatcaag taaaggtgat 60

gaccataaga agttggggat tgaagaggaa ggaggcctct cttcccaacg gtttggagtt 120

aggaagctgt cattatagaa gccattatta cggttggtac atctacgaga tagcatacag 180

tacaaattaa tatcttaata aaatggaact caaaatacta tagctcatta aagtcgtcca 240

tgacattggg gtcactattg gtctcctctt tctcccgctc atcttgttgc tgttacttct 300

ccttcctcag ttcctctcca catcatatcc ttgtcatcct acaattttgc ataaaggagc 360

acacgaaaag aagagcacga acacgaaaag aaagagcgaa agaccagtac atgcacacta 420

taattgctct aacaacaata acaaaacaac aatactaagt ttcaaaaaca cataattgaa 480

ccaaacatct tagaacatga agaaaaaaaa acatgttgaa ggtatttata ggggtggagt 540

acatcctcga ctacacaaca tggaccgttg tttccttttc ttacccttt acgctcaata 600

catatattta atttttctc gagggcgatt ctgccatcac gcggccttta ttttgggtat 660

agctagctgt ttgaattcca ccggattcta gaagagacag acgctggact ggatggtagc 720

cagagaatgg atcaactggt ctcacgtctc aaaactcgaa caattcacgt gcggctatag 780

gattggtagc cgcccggcat gcgcggcact gtcattgtgc gtttgaccgt ttgtgctacg 840

gcatcccgaa atagatcgct atacacagta cgtaacacgc tgccagccct ggaattcctt 900

gaaaaacaaa cagcacctcc aactccaagt ttaggctccc tcgactcgcg cacgcatgca 960

tggtgcccgc gccgtcgtct ccgtgtcgtt ttaatccccg ttccaccgct ggttggccct 1020

cgatc 1025

<210> 1790
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96381_G1, chr3:22733784..22734825, Cluster 10

<220>
<221> modified_base
<222> (29)..(29)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (30)..(30)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (31)..(31)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (32)..(32)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (33)..(33)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (34)..(34)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (35)..(35)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (36)..(36)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (37)..(37)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (38)..(38)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (39)..(39)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (40)..(40)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (41)..(41)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (42)..(42)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (43)..(43)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (44)..(44)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (45)..(45)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (46)..(46)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (47)..(47)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(128)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<400> 1790
cgaatcaagc tgaatataag aatgccatnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnntt ctccggaata atcggcagga gcagagcagg taaaccaacc cgtcctactc 180

cacacccacc gtgctccgcc ctctgtccgc gcgtgtgtac aaacaaccag tgcgttgctc 240

ggtcacactg tgatattgat aacacgcctg caacgaaggg ggtaggtttt agcagcatcg 300

tgtacttgtt tatgctcctc taccgatgag aggaagacaa gtctctgtcg tccgctcgta 360

cgccccccca cacgatgcta attcgatctg gacaacaagt tgcgacgaaa gaaaaaaaaa 420

accggagagc gggaatcgtc gtcgccgtcg gcggcacagg cacgggacag gaggcatgcc 480

gaataaaaca cctccccatg tacgacacga ccggagacga atgtcgcggg cacccaaatc 540

acatggcgtg acagggacac tgcactgcag gcgcctctgg acaacccaaa cgtggcgcag 600

cctgctgcag atgatgcaac gcaaccgctc tgctgcttgt atttgaattt tgaaaccaag 660

acgcctttgc ctttgccttc ggcgtccacg tccatcattg cctgtgcgtg cgtgcgtgtt 720

ttacatggat catgcaattt acatttgcag gcatccatgc tcgtcgatgg gactcggtat 780

cgtgcccggg tattccggca cgagagaaag gcaggcgtga cggatagaat aagacggcac 840

gagaaaaggc cgaagatctg catgcccgct ttcttgttcg cacactgcgt cggcctaacg 900

gatgacttcg attctggctt gctaaaacaa ttaccatggg ccatgttctt gttttatcag 960

gtgggcttca aatcgtaatg cgagcgcggc ctggcccaga tccagaactc cccgggcctc 1020

cggtgttggt ctggtggtcg gc 1042

<210> 1791
<211> 1158
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96419_G1, chr3:22958390..22959547, Cluster 10

<400> 1791
gaccgcgcat gccatgcact gcactgcaca gcgccagctg cgtcgtctgt gcgctgtgct 60

gtgcctgcgt gcacgcgtcg cacggttcgc ccccgcacgg caccaccgca ccatgtgcta 120

cctactggta gcagagcaga aggcactagg cagatattgt agacttggat agcagtagac 180

gcagcaaaaa ggtcgtcggg cacgcacatg gtggcccggc gccggtacct gtctgtctgc 240

tctagtgctt gctagtacgt actgtatgtg gacagctgcc atggccgacg ccagcaggca 300

cacgtcgccg cgtgacgcca ggtgcgtgcg tgcgtgcgtg cgcgatggac atatgtggtg 360

gactggtggt ggtggacaca cttggtttgg tgccaagcgg ggccgagacc gtgatgcatg 420

cctgaggtga ctctcaggtg aggtgtacgt gtggggtgcg ggccgtgctc tgcgccccgc 480

cccgtgtccc gtctgctggg tcgggtggct gttgggtcgc cggccgccgg atattttaat 540

gcgaccgagt ggaccgcgtc gccgactcgc cgtagccgcc tagaggacag cagacagata 600

ctcgtcgagt tctcgaatcg ttttctgtga cttggacgca ggaaacacga gggagagcgg 660

tctcgctaga cagacaccat ggggatcgca cacgtgacac gacacggtac ggtacggtgg 720

ataataataa aataaaatgc gcttcggacc catcgcgtca cagtccggtg accgggtcgt 780

tgctaatctc tttcgctgtc atgtcccccc tcccgactcc tccaattcgg ccattcccgg 840

ccggcctgcc tgtcagcagt agtataatgg aggagcgtga gaacgaagac catgcacagc 900

aagtaactga ggttcatgaa gcaatgccac agaaatagga gcgcaccaag agaagtcgcc 960

atcctatata tgtccgtata agtgggctag agtgacccat gtaaacaata ggccgtagtg 1020

ggccgcgcga cgtcatgtgt tgcagtataa aaagagacat aggctttatc aaaagtatac 1080

cgaaaatcag aacaaaagaa tacaaaggct gagacaacgt ctcgcggcca aaacattatg 1140

aaatacagtt tcatataa 1158

<210> 1792
<211> 1134
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97417_G1, chr3:28346683..28347816, Cluster 10

<400> 1792
tatgtgttcg gagtgttccg gctctaggct gcacagagca cgtgcccccg gaaacaaaac 60

gcttgtttgt tccgtgtagg agtaggtggg cgtgggtgca tgctgcagct gtagacctgg 120

tagctactag gctaggtacg ccgaacacga acgccagcgc gggcgcggca ctcatgcgaa 180

acgccgcgcc gaccgcctga cggctgattg ctcagcattc agcaggtagc acaaacatcc 240

aaagctgcgt ccatgaaaat cgaatccata atatatatac tcctcctaca tcgcactacg 300

ggccagcaca tacaaaaaaa atacgtgcaa atgttggggt aacgtaatcg gaggagcaag 360

atgccccacg caactccacc cgccagggcc agggccaggc cagcaagaat gcaaagcaaa 420

actaggcgac aagaggacag gggcctgcac tgccgggctg ctcacggtct cacccagttg 480

gggctgttgc tgtggcagtg cctggcacaa gaatgagaag cttccacgca atcagcagcc 540

attcggtgcc cgtccttgct tgccgggccg ctcccaaacg cgccacgaac cgacctgcta 600

ccttcgtttt tttattcctt ttttaattaa tatatttagt ggcacaacag gtaaggttcc 660

attttattgc tagccgttac tagagataaa cctttaatat cgatttttgg caagaactgt 720

cacgtgtcac taaagatggg cctttaatat cagttctata gcaaagaaac tgtacgtacc 780

aacgaatttt tattttccgc acatacaaat tgttgttgat ggatagtaca ttaattaata 840

tgtgcacgta taaacggtca agttctttcc attacgacat gtgacacgaa agttccttgt 900

ttttttttta tcttagttcc ttctttgacc ctacttttgt ttgtctcggt tctacttttt 960

tctgcgcagt tccttcttcg tctctagcaa ggataaatat gctcttagcg tcaactaacc 1020

tttaacgcac caaataaaaa aatgttttaa actaatggtt tgttgatagt tgaatgtatt 1080

ttcttatttc ctgtctaagg gccagttcat gattaagttc ttcaccgttc taaa 1134

<210> 1793
<211> 1106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_984_G1, chr1:5005906..5007011, Cluster 10

<400> 1793
ttagctgatc accatttgtt tgtttgttca gaattctgat gaccaatatg ttcgttcgtt 60

tgtttattca gaagtctgtt ggccacttgt tctgtgtgtt tgtgttcgaa gccatgcata 120

tatggctcgc cgcggaggcg tcatatatga tgtatacaca cgtggagcgc cggcgcaggt 180

caatcatctg ccggccagct gcccaggggg atcaccgggg agggaaggct ggcagtgcag 240

ggagggcgag ggccgcgccg ctatgggtgt acagcagggt ccgtccgccc gcccgcgccc 300

gccgtggcgt gcgtgcggcg gcaccgacag gccgcggtcg cgacagctgt gggctgtggg 360

cgtggcgggg gctggcgcgc accgcctcgc tgtcgcggaa ctccaacggc ggccaacccc 420

acccccaacg cgtggcgggg gctcaagctg aaccaccgcg cgggctgccg actgcgcgtg 480

tggaccagcc agccagccag ccaaaccaaa ccaaagcaag gcatggcaac caccggaccc 540

ggctgctcta ctcggtgccg cccgccgacc gcgcgtgccc cgcctggggc ctcttctcgc 600

ctccacagcg tttgtacttt gcggattcgg tcggtcgctc gctcgcttct ggttccggta 660

cacgtcagga ctacctggat tgctctgctc atcagcctcg gctccggccg tccgtgctcc 720

tcccatccct tgctgctgct gctgctgcgt tgcattgcat tgcagctgta catacaggac 780

cacacatgcg acgtgtcttg tcgtgtcgcg gatgttctct ctgcgtctgt acagtagcag 840

gcagcccaca cccacagtgc ggggctagct ttccagctcc gcaaggacac gtccccctac 900

tgctgtacaa tgtacagtgc ctcctcacgc tgctacaagc taccgtctcc gtccgtgcgg 960

tagcagtagc agctccgatc cgtccagcac agcaaccaca cgtacgctcg ctcggtttgc 1020

atgtgtttgc cgtgaccgtg aaggacagcc ggttagttct ggccgcctcc ggccgccgcc 1080

gcgggcgccc attctgctgc accgtc 1106

<210> 1794
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_99593_G1, chr3:41747027..41748050, Cluster 10

<400> 1794
gaacataagt gctagagttt agctaaaagt atagttttaa attttagcac tatagataca 60

aaggattcat gtggtagaca gtttgccggc taattttagt atattgtgct tcaaacaaac 120

tgactaataa attagctaat tgttaatcgc acggctgaca aatttgtcca ttgctgattt 180

aaccttgctt gctaataggt ggtaaggaat cataaaaaca gagaaaaaac atcttgttgc 240

taagactcta aatatactct gatctaattg tttactggct aattatcaac caacaattaa 300

acatacctta cttttagctc tgataaaata gtgtagtggg tgccactctc tgcaggcgag 360

taggcgaccg aggtaacgcg cgcgctaggc ggtgtgcgcg gcagtgcgcc tgcggctgcg 420

ggccggtcgt ttgacccctg tccggccctg cccctggcgg cctcgcctcg cctgccgagc 480

aaggccagcc agctcccgcg tttgcccaat gcccagggcg gcaggagccc tcttccatta 540

ttttaccgcg gtgaccgaca ttcctgcgcg cggtcgccac gtgggtccgt tgctccccgt 600

gatgtgggca ctgttcaatg tgtttctttt tgggcgtgaa tcgcgcatca gcgtgggcgt 660

ggccgtgaag ccgcaggaaa ccgcgggccg cgagcgcgtc catctcgggg gcggtggtcc 720

cgctggacca cggacgacga tggccgccgt cgcctcgccg tcgtcgtcgt cgcgtaatcc 780

gcccggcatg cccgtgtcgg agggaaacat ggcctgttct tcctcccagc gcagacgtaa 840

tcatgccatg gccacgggtg gcgcatgcta ttaagcctga aaggctgaca gcccgcagcg 900

gttttggcgt gctgcgcggc tgtggctgat tagcggcgtg tggggcaggt gctcgtaccg 960

cgcagctact ttgctttttt tgcttccggg ttgcgtgacc aaattccaat agaaaatggc 1020

gtca 1024

<210> 1795
<211> 1709
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_343678_G1, chr10:113837795..113839503, Cluster 11

<400> 1795
aagatccctt tatttttgaa gtggtcttaa tttttcttag aaaaaaaaca tatccatggc 60

taatttgatt cgtgcatcgt tagcgccccc tctaatccat ctttgggtcc ccccagctga 120

tgcgaccagg gattagaatt ttattaattc cacccatcga gacgcccccc cgccgtggaa 180

gtaccggtgc ccaccagcat cagacgagac gactgcaaat gccaaatggg tcacgctcgg 240

ctcaacacag gtgtgtgcgt gtccccctag taaaccccat atggtcactg gtcagtgatc 300

gcgctcttgc gtgccgttgc ttctgctgct gctggcggcc tcgaggcatg cacctgccgc 360

cggtgcgatc tcgtcgtgct ctcctgctgt tctggttcga cggctcgacg ccacacgagt 420

acacgacacg gcggcggcaa agagcgagtg ggcatggcgg ggggtacggt gcgagccagc 480

ggcggtggat gatggatcgg gattcgggaa ggtggcggtg gcggtggatg cggacaagac 540

gcacccaccc gatcggcctc ctgctgttcc ctgtctccga tggagatgtc gcgtacgtgt 600

cgacttcgtc tccatccaca ccgtacgtca cgtgccgtta ccagaggtat ccgaagccca 660

gctcgatagg ctctccctcc gtccgttggt cgccatcggg gtggacggac gcgaggccat 720

gaatagtgtg cggtgggacg ggtgacgtgg agcccgctgc tctctctctc acacacacac 780

atgtgcgcgg cgcgggggtc gatctcgtcc taatcctatc actccggcgg ggacatccca 840

cggcacgaag gaacgaacag gaggtccggc cattcaccct tcagcgcgag atgaacacca 900

tgccgggcac acacaagata aatgcatccg ctccccgtca acgtgacggt tcaactgtcg 960

cgctacagtc tctctctctc tctctctatg tagcagcatg cacggaggag tagttagcgg 1020

gcaggaccac aggctcctgg tgccgggcga agcaggtcaa cacaaacacg gacacgtcgc 1080

gtcgtcgtcg cccacccaac ctgccctagg agtgtagtac gaagacacgg ctcagccaat 1140

ttctctccaa actttttttc tccatctact cctacccgta aaaccgaggg ctgctactac 1200

cggtcatagc ggcattcatc gcgcctaacc accgccgccg gttcacgccg acatggtcgg 1260

cggcggcacg gcaacgggtt tatgacttct atatatgtgg ctcagctgct caaataacga 1320

ctgcgatcta acgccgctgc cggtgccaaa tgtccaattg atgatggcgg cggccgtaag 1380

ccgtcagcga aggaccgtcc gtccgcgcct gttccgtagt atgtgtggac cgtggtatcc 1440

catccaacga ggctggagat acgtaaacgc cagaatccaa gggaggcatg gggtgacacc 1500

acccacccac caccccaccc ggcctacatg tcgactccca tgatgtagta cttgccaggc 1560

agacaggaat cagcgtagga gagcactgag cctgcttcga tggagaagcg cagcatgttg 1620

catgtttgct tgtggaatcc taccgtgtcg aggaccactc cacggatatt gttgtccata 1680

tttacaactc ataacatact gcggctata 1709

<210> 1796
<211> 2501
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10030_G1, chr1:53412522..53415022, Cluster 11

<400> 1796
cttgtagggg aggggcgtca atgacacgag cacttacttt gtgcggtgcc atagtccgtt 60

cgagtggtcc gattggtttg gacatgtaaa cgtgctggtg tcttgacgtg agtaattggc 120

acgcttgttg gaggcccgcc ttagaggcca ggtttgatac aaccaaggtc caacccaatg 180

cacgaacctt gcttcggcgg gaagccctcc tggttgtgca aaacggccca gtgagcgctg 240

gaagctaggc cgagtggcgc tacaagctgg gcccaagtgg tatgcgctta attttccgcc 300

gacaagagga tactgagcga tctgcaaccg gtcactgtta gtaacttatt agtacatcca 360

tctttatatg tgacatgacg cgaccacaac gcgtagcgta gcgatcatga atccaccgta 420

cagtaacgaa aaccgtgtgc tgtgcgtgcc ctcctggccg tccggtccat tttgattata 480

aatgtctgaa aaggaaaacg ccttcttttt tttttcttta gaagatacgc cgggcggcgg 540

tgagcatcaa ctaaaagtgc gctcactagt actaatagca aacaaataaa tggacgcgtg 600

gagtacacga tcggccgccg gggcgaatta aatgggcagc gccgcgtcag tgcccgccaa 660

tttgacaaac cgcatggagc ccgcccgccc cagctagacc taagcttgaa gtacaaacga 720

aaaccgatgc ccgtctctgt cgcagctccc ggctagctcg tgtcgccgtc gtccgcccca 780

gaacgatcga gcgctcgcgg atcggaggtc aacggtttcg ctccgcggca ccaatccggc 840

acgcactgtg gtttcagctt gctgcgtgcg tttgtcaagc tggccaccat ggccggacgg 900

caggcaaagg caactcatgc ctgtgcctcg gctccgcgtt gcgggcactc gcccatgctg 960

ccatgcacta tttaccttgg attggatggg acggcggacg cgagggtcgt cgcgtccggt 1020

gtcgcgcacc gatccagtag gaagaacgca agctgcgagc agccgcagcg tgggtgagag 1080

gggtgagctg gttcggtggt tccgcttgct tggattggga tcgcaccgcc ggccggccgg 1140

gccctctcgt gcctctctgt acaggcatca atttcttcca gcctgttccg tttccggcta 1200

gtccctgggt acaaaaaaaa ctgaagctcg gagtagatca gtagacccgg cgcgctaccg 1260

gtattatgga ccttctttag tttattcggt tcataactgc aggaaggaag gaggagctca 1320

ttcgtgaatt gtcttcgctc cacgaacgga tcaggcagcc ggcccatttc tgcgagtaac 1380

taactgcata gaagagaagt cgctgacggc gcatcgtgca ccttccaagt ttgtttttt 1440

ttctccttgg cgaaaacctt ctaagatttg tccatctgca caagtgcatg gctggtgtcc 1500

aatgctaaac tataatcaaa cgttaacctg atcagacact cgtgcacata ctgcaaagga 1560

atatgtatat aaacatactc tgttaacgaa ctttgtggag gagcatatca tgtcataccg 1620

gatttatgtt gtaaactcca tcgggcctaa acccacacga acgctgtctt ggaaaaaaac 1680

atcatctagc aatctgttgc ttgtaaaact ctcagaaccg ccgcaacgcg caactacgat 1740

cgaaacgtgt tctaatagcc gccatcctgc tgctgggcac acttggcact tggcagcgac 1800

gacgacgggg gggaacgtcg ccgtcggagt tcccaggtgg cgcgccgcgc gcgtactcaa 1860

cgggggggca cacttggcag cttccgccgt ccgcgacgcg actacacgca cgctggagag 1920

gacccggagc ccgagattct tggaccagac gaagaaaaag ggcagacaca atcaaaccaa 1980

acctagttac agtatgtaca cacaagagaa atcgtggatc cggtttcgtt gtgtctggca 2040

cagctgcgtc cgaatggctg gagaggacaa aacgtgtagc cctactacta gactagacac 2100

cccctcgcaa taattgtagc cgcgtcgaga tgccacagct agcagttttg ttaccgaccg 2160

agatgacacg gttggagtcc tgactgacgt ctcacttttt ttcgtggagc atatatacac 2220

gcatatacat gggtgatgga catgccacga gaactaccag gactataaac gggtgtgcgg 2280

cctgtttgtt tctggtgtgg cacgagtaaa agcaccgctt gaccgaggtt tcagtcactt 2340

gagtgaacgc gcgacaggga cgacaagagg gcgtaccaac cacgggaaag agagagagcg 2400

agaaatagag aagacgctct actagaacgc gggtaggtat ggtctatgga agcctctggt 2460

cactacacct tagagcatct cgagagatta gcaaaacaaa c 2501

<210> 1797
<211> 1571
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_100860_G1, chr3:48504880..48506450, Cluster 11

<400> 1797
tgataagaat gaatggaaac catagtatag taacgtaaga acccttagct tgtgagtatg 60

tatgattggc tctgacccaa ccagtaaggg cagccgtaat tatcaccatg catgcgtccc 120

ttggcactaa aaaaagacct ccatattttc gtcacaacat gaatcctggt gcaaatcgat 180

taaattgagt tcccaacatt tgtaacgacg acctcgcatt cggttactta attagccact 240

gccatagtcc gatgccgaag tctgccggtc tatctataga atatgcgagc atttgaacac 300

taatcgtgtg gctgtgtttg gcgtgattgc tgattgggtc atctccaagc caagttgaca 360

ggtgacacgc aagagcctcg gcagagacag agacaacaaa gtgtacctaa cggccaacgg 420

acgacaaggg aggcggccgg gctcgggacc gggctaggaa ttaggacacc acgaccgcgc 480

cgccggcccc cctccactcc actccacgcg gccggccgga ccgaacgagg gggatagggg 540

agacccgccc cccgctttcg tcgggcgctg agcgtccgtc cctcgcgcgg ggcgggcagc 600

agcagcgacg cctgccgtcg tcgtcgtcgt tggctcctgc tgctgctact actacagtac 660

tagtacgtgc ggtgggacgt cgctgggcag ccgaagcgcg cgccgggccc aggcccgggc 720

ccgggccgtc gtgctcggac tcgatcggag ccatgcatta ttatatttcg cgcgccgttt 780

cgccgtctcg ctcgacgacg acgacgacgt cgcggggcgc aggccgggac gcgcgacgta 840

caagccctgg tcttggcgcg ctgggccgcg ccggagcccc accgctgccg gccttttccg 900

cgctcatcac tttcctctcc tgttgtgcta tacacacgat agctgctgct ccgaccgacg 960

gacggacgga cggacggacg ggtacgacga gcgaggctgc tgcgtggaac gttttcgatg 1020

acatgcatgg cccccacgta cgcatatata tatgtgcgtg caccacgcgc actgtcggtg 1080

cacaggcacg tcctcgtcac cttcgctctc cgtctagcta gctctgcgcg gagattgatt 1140

aatttaattt aaaatataat tggaacggaa acaacgacga cgcatgagtg acgctagata 1200

tgacgtggtc ggccttctcg ttcttctcca ctgacccgct gtgatgattg acagaatgac 1260

caagagcggg aaaattttgt ttctatatat tctgggaaga tatatacgta cgtacgtaca 1320

tacatacgta catgacatgt cggacggaag cacagaacgt acgacgccgt cgacggagac 1380

ctagctagct agctagccac actatatagc agatactgtg ggtttggtcg actgtaacaa 1440

tcgcgacgta ccgcgcgcgt gtcgtgtatc tgggcacgta cgtacgtgtt tccgaacggg 1500

caaacatcag tgacagtgaa aggcgcaaca gtcgggcgtg tacgttgccc acacatgcta 1560

gctagttagc t 1571

<210> 1798
<211> 2052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_101177_G1, chr3:50114579..50116630, Cluster 11

<400> 1798
attacgttac caatatgtga accaaacggc accttatttg cttccttgat cggggatgca 60

attgatggtt gccggtgaat gcaacaacat gggccttacg gtttctgcgc acaatgacaa 120

tacacagcaa caacctttc tccgatcctg ttttttagac gcatcaaaca tcaccgagta 180

gaaatcagtg actgaagtca actctgcctc ttggcaggca cttttgcaaa tgaatcggtg 240

ccaccaccga ccgacgatgg catgcaaata gtctcggtct caaagacacc aaatagtaga 300

tccaaacagt aacgatggcg cgtcgaactt gcaggccgat taaaacgata gatttttttt 360

gaatcttatg tttggctctg atacaacttg ctatcaaata atacgaatat aaatcaaaca 420

tgaggcacat aattaagtga aaaattgcag cggtaaaaaa ccatgtgcgt gcatcggtga 480

ggagagttta tagaacaaag aataaaatga attatctctt cccgcgtgac ctacaaaatg 540

tctatatata tacaattgat agactacagg tcaatacaaa aataaatccg ctaataatga 600

tatgatacaa gttgaaccgc gggcgcttca aacgtcccta cgagactcac gtcagtcctg 660

aactcgcctg acttttaagt ccaactgcgg acacacatgc tcatttttg aatctgtgtg 720

cctctagttt agcactgttt gttcagtttt gaggtcggct ccaattctct ccgtctctct 780

tggatttctt cagtcttgtt ttcggacgtg caggtgctgc aataaccaaa gagcggggcg 840

ggcgaccagc cccgtgcgca gacgataccc acctcggtat ttttttaaag gcggtggcgc 900

agaagatata tttgtagtgt aatgttaacg atgttgatgc cgacgccaat taaaccaatc 960

atcacctact tgatacccca gtttggtcaa tgacgttctg ctcgtgcagt ccacacacga 1020

aatctctcta tatacatttt cttcagagat tgacgagacc ccaggagcag tggactaaat 1080

taaagctgac gcgatcggcg atcattaggt acgtgacgac gcgcgtcgta tgagcggcgg 1140

caactcaggg gtgcagggac ggccagcggg cggcgtcgtg gcttgtgcgc cgccgcgcac 1200

atacaacgtg acgtgaccga ccgtcgacga gcagtctcat gcaccgatca agagtccaac 1260

aacacgcatc cagtcgtcca ccgataacaa ttccaagttg aatcgaacgt gcgcgcgcgg 1320

caacacagaa agggaggccg ccttttgatt aatttggagc aggagcaaaa cggcgaaatc 1380

gtgcgtgtgt gcgattttaa atagagaccc tcgcgtcgcg tcggcttcgt acagtgggga 1440

tgcaccggaa accgctcttt tccgaagcga accaccgtcc ggaccggaac tgacctaacc 1500

ctgcaacctg catcgcatcg catcatccct tgcgcaccat ggcaattgca cgcgttcttc 1560

tttatagata gactatacta tatattatat agtatagcac aggccaggac ggcagcacac 1620

gcggttcggt gccgatgaca atgggtccgg aaaagcatgg tgggcccgcg tgccatggtg 1680

ggcgggatcc atgtgagtgg cgccccctt ttcgctttca tcaaagggat ggaaacaagg 1740

acgccggagc gcaaaagtgg tccgtcagtg cgtgcgtgcg tgcatgcgag agaggccact 1800

ggcgaagcag cagccgccgc acatgctgat gctgaacgtg gaaatgcttc gcggcgtcag 1860

ggcttgcaac agatgaccag tcacgcacac gcacccaagc caaacccaac aatcaggata 1920

agctgcttat ctttacctgc tcttccacta gccgccccat agtgtgtagc cgttttccca 1980

acttccccca aaggatgtcc cgcccttgtt cggttggttg cattgcacct agattagtgg 2040

ggattgaagg ga 2052

<210> 1799
<211> 3135
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10878_G1, chr1:58450084..58453218, Cluster 11

<400> 1799
aaaatcgggc agacatgttg gtcgtcgttg gtccaggtcc tggagcacgt acgcacaaga 60

gatgcaccgg gtaccacaca cagacacact tgtgtactac ctccacttat gtactgcatg 120

cccgtgacct gcagacggtg cacaagtttc acatgcaact ccgaaccacg gcgcatgtac 180

cagacacagc acgtacggta catgcaccat cgtctcctct tctgaaattt tcatttttt 240

tttctcccaa cagggtccac taaaatcgta actagtccgg aaacaaaacg aaatcaaatc 300

ctccccaccc cacccgccca cgtccacgac ctttccatgt ccgaaaccgc gagacggctt 360

cctgcacgca cgaactccta ctgaaacatt ttttccgccc cttcaaacat gccccaactg 420

aaatattggg ccattcaatc caaaatattc cgaaaataac acggtctact cctaacctgg 480

ccgctgcaag cgtgcgcatg acaccgatgc caggcttagc aaaatgcaga ggctgttcgt 540

tctggaccaa gaaacctgac cccattggtg aactcggctt aactaacatt atctcctcct 600

ccgatccagt aaacaaccgc acacagaacc gcgcgctcgt acgtcgggcc cgcccaccag 660

aggccggcgt ttgacgcctg cggctggaaa ggtcgccgcc ggccctctcg ccatcccgga 720

agaagcttcg ccacccccac ccccacccc gggcctgctc ccggtcgtcc cagctgccag 780

ccggtcactg acgttaacct gagcgcgcgt gagctgagag ccgtgcacgc aaccatgtcc 840

atgtcaccac accagcaacc ggggtcgcgc gcgcgcggag acctgtagct gtagggccat 900

ctatatgttt ttttttttt ttttgctttt cattgcatca tcagaatgca ggtgcgccga 960

gtgatcatcg ttttcactcc gcaaaccggg accggccggg ctctagttta ctcgtgataa 1020

accgccacct tttccggccc ttgcttccgg gctaagcctc cccggcccgg ccgggacagg 1080

cgagagggga cagcttgatc gggctcagaa accgatggcg agaaggcctc ctgtcgctgc 1140

atccatggcc tggcctggcc tggccacccc ccgttcattc cccgtccacg gccggcaaga 1200

tctctctttt tcgcgaaata ataaacaata aagcaccact ttatttcgtg aagtgtcaag 1260

gtagctagct agccacggat gatcgatgga gaccaaccat ggcggttggc gggcatgtcc 1320

tgcctgcttg ctttcacagc ctacgcagct ccatgtcagc gccgtggatc tttgcagcgc 1380

aaagtcgcca cctacctgcc accccttctc gctctggaat gtgcgtgccc atccgtctgt 1440

ctgaatcagc gctgaaagga tcctcccgcg ccgaccaatt cccatcacga acctagattt 1500

ttatttttg ttcctaataa cccatggcca tgggttagga ggtgcattat taggcaaagt 1560

tcagcgatta gtttactgtt gcctttattc agaaaagctg tccctggaga ctggagtgat 1620

ggagacagcg ttgttcccgg caaggactgt gcatctccag ttaaataata taaaactcag 1680

gtgggaagag ttaggtgaca gacagaccga aatgtgtccg tcaaaatgca cgatggttca 1740

gcggaggctg gcgacaaaat aaagggtgag agataatatt tctctctctc tctctctcta 1800

tgatcttggt ttgcttttta aaatttcagc caaacgattc agatatcgaa aatggcaaac 1860

aagtacctca cgagcataaa caatgtgtgt atattttcga tagtgatcga tggatatagc 1920

ggagcattcg aactagcaag ggaaccgaac atgatactaa aaatctccaa aatcgaaaaa 1980

ttgtgctctc tcaagttcaa ccgaggtaaa ataagcatgt ctctaacaga tcgtatatat 2040

gatcgtgtaa aacactgatt tatactatat ggtgcattgt tcacatagtg taatttagaa 2100

tagaagatct gataggaaat tcgcatgcca ttgccaagct ggtctagcca gaatacaagg 2160

acgaggtttt gcgccgcaag ccccaaaaca tccctacaaa atcttgaaat cctctatttt 2220

aggttagatc gagataaaac ttggcacact acttcaggat atctagaggg ttttgactcg 2280

tcctatctat tgagtctgca tgaattgacc aaaccgcact tcagattaat ttgggttttc 2340

tccacaacca gcaaaaagga aaaactatat acttgtgtga gatctgctcg aaccaccttg 2400

catatatgat ctcgagtact cataacacat agacaaggcc aagaaacaaa cccaaaacac 2460

acacacacac actaattgga gtactaaaac atacaaaaaa aagtgaagat agggctccaa 2520

aagataaggt gcaattaaga ctcggcaata caacccacaa gattgggcta tgaaaactgg 2580

acacgaggaa aaaagagcaa gaagaactca acaaacaact cacaagaggt aaggtcttcc 2640

attcccataa cgtttatcag ttacagagtc gaattacaaa gataaataat tagtgcagtg 2700

tctaaatcat ctgtgaatct caatagaaac aagaggaagg gaaaacctac aatgacaaaa 2760

taaaacgatg tgctagagag aagaggctcg ttggatcttc acatatgaca cctcaagttt 2820

ctaaaccacc aaactactct ggagtagtat actctctatg ctctctccat aacatatgtc 2880

gcctcttaat tctgaatcgc caagtcttct aatgccttcg cttgacttga tcaacctctc 2940

gctttgattt tgtcagcacg ctgtactcct acatttacta ttacacttgg caatgacccc 3000

aggtatcagt caccaatggt ttgtctttca gtttctccaa tcacctcgtt taagctcgac 3060

attcatcctt caccaatcct agtccatcga cataaacttg catgactttt atcttcgatg 3120

tcggccaccg tttgt 3135

<210> 1800
<211> 1532
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_111669_G1, chr3:122494753..122496284, Cluster 11

<400> 1800
catgatgtac aaagacgacg taccatgcgt caacgtatat atgtatcgac atcgtgcacg 60

cgtactagct acaccgttca cgtacgatgg agcagcccgc cggtgggtcg acgacacgac 120

gtctcgtcgt ccctgtgctg ttggctgaat tgaacgtacg tacgtaggac tccgtacgta 180

ctagttagct agaccaccgg ccggacacaa cagtgtatgt atggtgcgtc ggtcgacgtc 240

gtcgtcagtg tgggcgccag catacatctt cttgcattgt gtactgcatc agttgcagca 300

gctagttagc gacgcgtacg tacgcgtacg acgcacgata tgatgtggtg gcagggccac 360

gcactgccag tgatgatcgc cattccctaa ccaccgggcc cctctcgacc tcgatctcta 420

gctacctgct tgctaagcta gctatatata cttacgtaca tacacgacga aagagacggt 480

acagctaccg tatagacacg tacatgctag ctagctcctt ggatcgacac gacgaccacc 540

gcccggcgca tattcagctt gccttccttt gatttctacg cggggctagg ctacgaagga 600

gacgatacta ctacgacagt gccgaaggaa gaaccagcag tccgtgcgtg cgtgacgacg 660

gatcgttttc cgtacggaca cgatcgacga aggtccgtgc accgtacact acgagacgac 720

gtcggcgttc gttggtggtg gtagctaggt acgtggtgca tcgtgcatgt atgcaggtat 780

catcgatcgc aacacctagc cagctctctg catgcagctc acctgccggt gctaccgatc 840

caagtacatt agacagcaca cgtacacacg taacgtaacg tggattgacc agcagccagt 900

aggagtggag tggcactggc atcacacacc tacgtatcta gctaactggc taaccgaaac 960

ggcgtacccg gatgacgcca catgacataa actaagcaca gctactacct ctaatatgtg 1020

tatcacgtac tactacttgt tagtgacacc gtttatgact cttaattgta tgcatgctga 1080

ataatggacg agagaaagat agtgtgaatg acctctttga agggtagcga gctaagctgg 1140

tccttagctt ttgggccagt gctggtgcaa ttaagcaaac atacagtaga tcgagctctt 1200

aagaactagc cacactccaa cagtccaact gacaaaacgg aacaaatatg catggctcta 1260

tgcatctgtt aaatcatgtt gtgtgtgcat gtttgtgata gatgtgcaca cgggcgtggc 1320

gagttagacg acgttagtca acttaaacac acggccgggg catggcatgg cagctccgtt 1380

ctatactagc ttcattgata gcagcgcagt gcagctatgt cgacgcagag ctatatagct 1440

gagcaattga gcgtcgatcg atgacctctc cctctctctc tcccttcaca tcacgtgccg 1500

cgtcgcaggt ctccatgaac agcggtcacc tg 1532

<210> 1801
<211> 2807
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118163_G1, chr3:161969894..161972700, Cluster 11

<400> 1801
cgatgacgat cttactactg caattcggcg gcacgcaaat cttttaccaa tatcagagat 60

cagcagtacg acgtgacgta atggctggcg ccgaagagga ccggggcgat aatgggcgga 120

tcaacgcgcc gtacgtgcct cacttttgcg ccggtgtcgg cactgggaga ctgactgact 180

gagagataaa tctacgcgcg ccctagggct catcgcggtt atgactttta caaagcgagc 240

gccgcacggc agcaggcagc gccgatgctt atgcatgcat gcatgctgca acagagctct 300

ctctctctct ctttctctgt acgtacgtgg cgtccttttg gcgctccaat cagaggcggg 360

tggtggtgta ggctatataa gagcctgcta aaaaggcgac ggcagtacgt gaggtgagta 420

gaaaagggag taggttaacg taagacctgg aaagaggact agaggagggg ctgagaaagc 480

cggttagcgc gtcgtcctgt ggtgtcgtgt gtgcaggacg agtagatata tatagagaga 540

cgagggacct cttgtaatct tgttgttctc tgtcctctct tcgcttgctc ccttgatctc 600

tttccctttt cttctatctt tttatatata taaaacgaag ccctttttc cggaggggg 660

ttgcctttat tataactata tgtacttgtg gccgtagcgg cctttttct tctgtgctcg 720

tctcgccagc agccgaggcg caggcatgtg actgtcagcg ccgatcccga tgcgccgatt 780

agaataatac gtactcccac tactactgct gatgctgcgc gcgcaggctg tccgtagaga 840

aaacgcttac gtataggtgc ccaccaactg tctggagtct ggactggcgg cgctccaata 900

ccccgcggct agttgctaat cccttctccg ttacttcttc tccatcccct cctccttaca 960

tttgttcttc tgtgcaccgt tgcaacataa gggtataaat atatatataa aattaactgt 1020

ccatttttta cacaaataaa ctcttcctat caaatctgtc tgccgcacgc agatcgtagg 1080

tgtggcctgg ccgtgtggac gacgggacgg gcacaggctc gggccttttg ctctgccccc 1140

cacctttccc tccggctcgt actcgtaccg cctgccccgc tgtccctctc gtctcgtctt 1200

gtcagcgcca ccgccaccgc caccgccagc agagggatcg gagcgagcga gcgcgcgcgc 1260

ccgcggtttg gtttctcatt ggatccgttt cgtttctttg tactagatga tgagcctagc 1320

ccttaggaga gacgggaatt tcgtttccgc cggccaatgc aagtcagagc tcgatcgaaa 1380

aggcatgcgc catgcatggc aatggcgtgg tcaaggtcaa ccaccgtagg cgaagccgtc 1440

tagctgccgg tttcctacta cgtgcagtgc acaagaggga ggaggggcgc ttcgccactc 1500

actgcccatg gccgtggcgc cgaaacattc ccaacgctgt ttcagtttga ctcggttctg 1560

ggatctcgtc ttgtccacta cttgtctagg ataaagcatc gtgagagcga gcgagtgcta 1620

tacgaagcgt agggatgacc acgtccggtc aatgtgcgtt tcgtagttga gtttctgcat 1680

ggcgtagttt ctcttcatcg acaatttcta gaatatttct ttgaatcttt taggctagct 1740

cgggggcatt ttgtaatgat tttcaaacaa tacaaagtaa tggacacgta ttacaaaaat 1800

acaagtgtgt tggaaagtcg gaaggtcaag cattttggc caaatttaaa ccctataagc 1860

aatactagct cgtacaaact ctggccgcaa tacatatttt agggcgaaaa aagtaaaaaa 1920

aaactatcat ccatcagttt agttgccaaa agtatcataa ctatcttcac gcgggtgaat 1980

agtgacctat ccgcgacgca gtcattcgca ggcgcctgag ctcccaatct ggctagtttt 2040

ctccgttccc gcgcacggcg caccagaggt tttccttcgc gcctccactg ttcctcccca 2100

ccactccatt tcgcgcacga gggagcacga cacacggttc atccggctgc tggatctctc 2160

aaccaagagc tcactctcat cgacgtcgtc tcgaagtagc aagtctccgc cggaatcttc 2220

ttgggcgatg ccgatgcaaa atccatccgc ctcggcggat gattttgagg taagcatcaa 2280

cctcctcttg cttctttgtt gtatgaaaaa aattgtgtct ttgcgacgtg tgttgaatga 2340

tgctaagtct tgttgcactt atacccaaca gtagtttagt tcttatttcc cgataattca 2400

cacgtaaata tcacaagttg aacttgagtt gttgtgaaat taatatgttt cattttgcat 2460

atggtgtctg tttgcaatga ttatatgttc cattacattt tattgccaat tctgcaaata 2520

ttagttatgt gaaagaaatt caacgatagt agctatgaat actcgacaaa actagtattg 2580

gaaatgaagt ttagattcct ctcattcatt ttttttgcc atagtaacta ctaacaatgg 2640

aagccagcta tatattacat taacctaatg agcgaggaaa aaataacatt tcattggatg 2700

actttagtga tgtttttgct gtcatctcga gttgttcctt tatgaaagac caaactagaa 2760

aaggtatgct aatttcagct agcaggtgga tttattggtc gtgtagg 2807

<210> 1802
<211> 1969
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118872_G1, chr3:166424125..166426093, Cluster 11

<220>
<221> modified_base
<222> (1342)..(1342)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1342)..(1441)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1343)..(1343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1344)..(1344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1345)..(1345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1346)..(1346)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1347)..(1347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1348)..(1348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1349)..(1349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1350)..(1350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1351)..(1351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1352)..(1352)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1353)..(1353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1354)..(1354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1355)..(1355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1356)..(1356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1357)..(1357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1358)..(1358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1359)..(1359)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1360)..(1360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1361)..(1361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1362)..(1362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1363)..(1363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1364)..(1364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1365)..(1365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1366)..(1366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1367)..(1367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1368)..(1368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1369)..(1369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1370)..(1370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1371)..(1371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1372)..(1372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1373)..(1373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1374)..(1374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1375)..(1375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1376)..(1376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1377)..(1377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1378)..(1378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1379)..(1379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1380)..(1380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1381)..(1381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1382)..(1382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1383)..(1383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1384)..(1384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1385)..(1385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1386)..(1386)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1387)..(1387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1388)..(1388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1389)..(1389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1390)..(1390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1391)..(1391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1392)..(1392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1393)..(1393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1394)..(1394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1395)..(1395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1396)..(1396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1397)..(1397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1398)..(1398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1399)..(1399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1400)..(1400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1401)..(1401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1402)..(1402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1403)..(1403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1404)..(1404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1405)..(1405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1406)..(1406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1407)..(1407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1408)..(1408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1409)..(1409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1410)..(1410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1411)..(1411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1412)..(1412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1413)..(1413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1414)..(1414)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1415)..(1415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1416)..(1416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1417)..(1417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1418)..(1418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1419)..(1419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1420)..(1420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1421)..(1421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1422)..(1422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1423)..(1423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1424)..(1424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1425)..(1425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1426)..(1426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1427)..(1427)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1428)..(1428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1429)..(1429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1430)..(1430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1431)..(1431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1432)..(1432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1433)..(1433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1434)..(1434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1435)..(1435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1436)..(1436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1437)..(1437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1438)..(1438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1439)..(1439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1440)..(1440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1441)..(1441)
<223> a, c, g, or t

<400> 1802
cctagttcac ctttatcttc acattcgagc atcgtctata tgtttcacca cacttgtaga 60

tcacaagtta aaaaaaaaat ctgttgtata atattatatc acggcaataa taaactgaag 120

ccggttatca tttttggcaa ataataccgt ggacatatat atacacatgt acgctttgcg 180

ctatgttcac tgtgacgaaa gccggccggc gggagagtgg agaggaactg aggccaggcc 240

atgcagcagg aatctcgcat gtgttgtcga tgccgaccac gcacagatca aaatcaaagc 300

aacctttttt gttttcttta ttccattcta tctagggaca gaggcacaga gcacgtactc 360

gtagttagta aacctttata taagaaacca ctcatgcagc atgatctgcc aataaacaga 420

ggagcttaga gcgagcgagg atgagcacga agaatcgcat gcatgcgtat gcgtgcacag 480

acacagacac acgcgagagc gtccagtcca gccccccgtc aggttttcaa gtaagcagag 540

cagagcacca agaaaaatgg tgcaaaaaag acgaaggcgc gcacgcacat gtccatacac 600

gaagagaaga gaggagtgcg cgggaaggga acggtcgcgc tcgcgccgca gccgacatgt 660

agcaatgcac gcacgagcca gcacgacggt ggcgctgggc tgctgcctgc gtggatgtgg 720

gtcgatgcga gtatctgcga ccacaagaat tacatttcat gggttttcat tgatatttat 780

acacagagac acaagatgaa ttatgggtct atgattatca cctgaaccga aagacccaac 840

tgtactagcc aatcaggagt tagaacgagc tcgcgtgtgc ttatatgtgg agggggggag 900

ggggggaaaa gagcgtcggc cgtatccccc ccctgtccct gaccataaaa ctggatttgg 960

ggttttaaca tcttagagag aaaagcccac ccactatttt tgcgccggtc tgctatttat 1020

acgcaggtcg gggaggataa acaatattta gtttttacaa gatttatcgc ttattctcgt 1080

cttaatcagg agatcgtgca cacttagatg ctaactcggt atagagacct atattcgcag 1140

agcaacacgt cgctgttcga tggtgggctg tacgatttag agctctgccc aatccagatt 1200

ctataatccc gacaatcctc agctcagaca ggggggctag ggacggtgac ctccaccgct 1260

ttgcgtcgtc tagagggagc actcaactgg agtcacctcc tcccaacttg cagacgagag 1320

ggtggatccc ggcgtcagtc tnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1380

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1440

natactggcc ggaaaacgag ggttggaacg gagccttcaa tcccaaccca ggccttgcaa 1500

ttagccggcc tggaaccatt ttgtgtcccc gccagggccc cgctcggggg gaaacccccc 1560

gggggggtc cccgggggat accccaacac ccccgggggt tttggggttt ttttttttt 1620

gccaagcaaa aaacccccc ccttttccc cccctaaaaa tttaaaaaca ccccccctctt 1680

gcatttttg gggttattga aaaacgaggt ttcgacccgt cggtccgtta accgaacgga 1740

cctgtaggtt gggtgtttta aaacctttat taaggaaata aacaaatcaa acaaatttta 1800

gtgcggttca ttattttacc gggggtccgg caggaataaa ccaattaagt attttaaaaa 1860

gaaacattca agtaattcaa cgtttaccgg agtatagcgg taaatcataa aaatcgttca 1920

acgattagaa gactaaattg ctaacgagaa aaaagatcga tgagtcaaa 1969

<210> 1803
<211> 1653
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119988_G1, chr3:173513503..173515155, Cluster 11

<400> 1803
aaagctggtg tgcagacatg catggtaaaa cagccgcgat cgatcaatca gatcaggaaa 60

gaaaacactt gctgcattgt gctctctaac gaaacctgca cagcacagag cccgaacttc 120

gctcaaatgc gtcctcacgc gggtttacgg caacctgacc gcgacaacgg cgaccgagct 180

ggtgagtgcc ggcgactttc cgcgacagtt tccatcagca tcagcagcag ccgccgtgta 240

tgttcactgc ctgccgcgcg aacaataacc gcgaggcggc ggaacaactg cacgatacga 300

gagcgacgag gcccgtcgct gtgccgtgaa ttcgtgggac ggcgctcgcc gcacgggcgg 360

gcctgccggc cggccgttag gatccagtgg aagcgagccg cgcgctctgt gtggagtaaa 420

gccgacgtcg acgtgaacaa ggttgcttgt ttccccggac ctgaaaacat cgtcagagaa 480

gaaggtgatg catcggccaa tcagacgcag ggagaagacg cgaagcatgg cagttggcac 540

agcagtacgt acgagttcct cttctcgtta cggttctact acaaggcacc agcggtcgtc 600

gttccacgag tcgtcgagaa ggccaggcac tgtagctctt ccaaaaggca ctgccgttgg 660

gactggtctg ggccgccggt cgccgactat cgatctggca gtctcctccg ggacgctcta 720

cccacatgtc tgacgttccg gcaagtgcta gaatgaatgt cacatgaccg accacccatg 780

aattgcagac cgattttagc ctggacccaa cctctgcgac tattaaagca cagtgcctaa 840

catcctaacc tagccatccg aacagtagag gcaccaaagt tgaacacgta ggccgtcgcc 900

agtactctgt ctcttcctgt acgccattcg cacaccagtg gtacagcatc ctgcagcttc 960

tgggtctggg agaaggtatt ggcaagtcac atgcccagct ggtataggta ggctggtaga 1020

gactagagag tggtagacgg agagacagta ccaccgcacc aggggtccag ggcatggagc 1080

ggtactgcaa aatcggacag ttggctttcc aactccccaa gcgcacgatg gctgctacct 1140

cgccgttgtt gcggtaccgt tccggaagca acgtcactcg cgccagcttt cattcttggc 1200

cgaaccagca gcaaccgcaa caggttggct gcgccaatca ttaagatccc tcatgttagt 1260

tttcggggcg ggcgttaaca catcacctca ggctgacgga tggaacagtg ccaccggcgc 1320

cggcgcctca tccatgacac atccgcggca aagagctcta cggaagcgca cacagtctcc 1380

atgattagcc tgaacgtacg cctcgtgttt tcatccctgt ttttttcttc tttctaagct 1440

ccccatggaa aacgccgtga ttttggaagc ccactgccca cggtcagtgg cccatgtgat 1500

gatgagcttt gcgtgttgta ctgttgtaac tgggaggcaa aggcaaacgc gacccggaaa 1560

tctcgcgcgg ggcgcacgac ggcgggcgga aatgagctcg ctctccgcgc gcctgtgact 1620

gtgactgtga ctgtgagcgg ccgacggcga ggt 1653

<210> 1804
<211> 2445
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120290_G1, chr3:175539793..175542237, Cluster 11

<400> 1804
gatagtatat accttgtttg ataaaggaag aaaattaatg tgtgcactaa tctttcttaa 60

gaaatgagtc tcaaaattaa aggtgttaac tagttagatg ctagtacgtt gctacaatag 120

tgtagagtat aaaacctgga catgtatgtt ctagtggttt ggtgccaaca aacactgttt 180

gaatatctac ttatatatta tttttagttt ttcttactat ttaaacgtgg aggagaggtg 240

tagggaaact atgtagtagt agtagagaag tcagtgggat atggaaggat cgatgggcac 300

agttataggt ggcgggagga gattgaggcg atccaccgtt ggagggcggg gcccattcca 360

agactgatcg cgcacatgag aaacgccaag aaacggtcca aaagtagcta aaactaaggc 420

gcacaaagct gccggcccct cgctccattt gctatactat ctttatccaa cccaggccaa 480

atcttgaaat ctaggcaggg agagtagtga cgcgcacact caacacccgt cgtgttcgtg 540

tacgctctca ttctcgtggt cgtggtcgtg gggcagggca ggtacccggt gtgagtgatc 600

cgcgtcatgt gagggcgcat cggctcacca caccagctgc gatcttccgt tccgtcttcg 660

gataagcaag cgctgtcctt ggggggcgcg atgattgggg agatcagatc ggtcatccga 720

tccagccccc tgatatatat gcgtatggat ggttggctgg cgtaaaccaa agctgcatgc 780

gcgctctgat tcctcgatct gcccccgtcc ccgtccccgt ccccgtccgt ccttggcctg 840

tgtgtcacgt ccgtgtcacc tcgcgggggc agcgcagcgc agatgcatcc acaccaaatc 900

ttccatggga tcgtcgccct ttatggcccc gtttgtcgtg tttctcctcc tccaacgcac 960

catatcgcat cagtgcctgc gctgcgcctg cgcgtcgccc agcataggcc agtagcccgc 1020

agccgctggg cccccgtgta cgtattgaac aggggaggaa ggaagaagag cggttgccat 1080

gccacgcgcg gaactcatgg aacacgtaag gagacgccac cctgcgtacg ttacatctgt 1140

cagcgctcag tgtcctcgat cggctcctgt tgcacagttg caggatggga cgagggcagt 1200

ggccctcgcg ccgccgccgc cgccgcacgg atcgagcgcg cgcgtgcgag acacacgtac 1260

cccgccccgc atccccccct aggcctaccc ctggtttata gtggccgtgt caagggccgc 1320

gcacggaaaa agcgttcggt tcgtgatgaa agctggccgt cgccaaactt tgccaatcac 1380

aagtcgccat cacatcccaa taatactgac acaacacaac acaacacaga cccggtcctc 1440

agctcctgac cgctgagcac gccaactgat gagcatctgg ttttctgcca gaactggtgg 1500

tacagagaat gcaatacgcg tcaaccaccg gcgctgattg atgtgacgag gggcactaca 1560

ctaccaccgg cgctcacccc ccccccccca ccccaacccc gtcggaatca gtaatcacgg 1620

gctcgcccac ctcgtggtcg cctcccagac tcagtcccag cgagggagtg ggaaaaacac 1680

ggcggccagt cgggcaccgc acgaacgcaa aagcgcgtgc cgccgacttc ctcgcatcgc 1740

ctgtcgccgg tgggggacca acggccacgg tggctccacg tcatcaccag cgaccaaacg 1800

gtggctccac aggggcacgc gacgagatcg atcaggccca gcaccaagtt gccctgaccg 1860

gaacccgcgc aactccggcg ccaaaggacg gcgagggcga ccggaatcac gaagcgtccg 1920

cggatctctg ccgctagata gattctcttt ctctgcgtgt atcccggtca ctgccacggg 1980

ccaccagtcg tacgacgtac gtgctctgaa gtagcatgtc ctatatatga gctgtgtggt 2040

ccatgtggta ccaacaacgc tttgttttag caaaccgcac gctgaagctc aagaaccaac 2100

ttgcaatggc atcagatcag tgtggcgtgt gtggaaagtg aaaagagaaa cgagcgtact 2160

gcatgcttcg atccagtgct agagcaacac cgaatccaaa ctctacgagc tcccattccc 2220

aacggcaaaa ctcgtcttag ctacgtacgg ttttcacatc gaaaactagc tctaagtctt 2280

ttatcaaagc ttggctacac aaagattaca aacaggtata ccttataact atgaaatgtt 2340

catccgccga aacttatata taccatgttt agattaacta gaataagggc cagtttaaat 2400

tcgttattag tactaaaatt agctagcttt tctctcaaaa gatag 2445

<210> 1805
<211> 2151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120729_G1, chr3:178151264..178153414, Cluster 11

<400> 1805
atgactcgat gtaattgact aagattaata tagcttcctt ttcaaaaaat ataaattgcg 60

tgaattgagt actcatcttc ggataacatt ttattatcag tggccaaagc aactgaagcg 120

accacgagac gcgagaaata tcgtgtgcaa tccgtgcctg tgagactggc cgctgatttt 180

cctgacgcat aaccccgcaa cgtcgatggc gtatatccct cgagaatttc ctcccgcgaa 240

agttatcgct gcaagcaaaa gttgcccgcg tcggcgacac catggtcccg ttccgggcct 300

ctccgcccct cgcgcgccac cgtgtccgac aggaaatatc ccgcgcaacg gacggccccc 360

gacgggcttc acgttcctat cccgccggcg tcctccggtc cggcccctcc cgaagatctc 420

ccggaccgaa tcagctgcta gctagctagc attccgctcc gcctgcgaat tggacggtcg 480

aaacggtctc tagggtctag gctgtggaaa gagggagaga ggaccagtcc gtccttgcaa 540

cgctcgaccg atagtgcacc cgggggggggg gggggggggg gggggggtgg cgcccgcctg 600

ggccacccca ggccgccgcc agcgacaggt gaagcgtctg ccgggggggcg ctggccatgg 660

ctgccggggc aatgcaagct gccaaagcta ggtgcgtgca aaagttggat cgccatgcca 720

tcactggcgc gcgcgacaca gagcggcagc gtgtgcgtgc cgcttagatt ttgttctctc 780

cacttgtcga cgacgacgac gctggtttgg ttcctccctc ctcctatgat tctatacgaa 840

gtgtttcttg gtttcgcttt ttttttcttt tttgagacgt tggtgcgctg acagtgccat 900

gtagggtcgt gccccggcta gtgcctgcct agcgtggaga attctgagaa tgaccttaga 960

tggcggcaac ctcacagcgc cagggtacgc gttagaaaat gacggagatg agagagcgtc 1020

agtggcggaa cggaaccaga gaaaattaga gggcggtgcg tttgtcttgt aggcgttgaa 1080

aatataggca gcaactatgg tgaaactatg attttttttt tagtggtggt ctttcgatat 1140

ttttgtgggc gtgcatgcgt agcttcgacg ctgatgagcg ctatgtcttt ttaagttttt 1200

actttccgaa tgtagcgaaa aggagagaaa gaagcagaat gggagcagta tgccttgtgt 1260

aacaagtcag atttcagccg gttctctcga agcaactccc ctgcaacaaa ttgatatgtc 1320

cgaatcaatt gtttgggcta agaagatctg agtataccga ttaatcgagc ataccgctaa 1380

tgctactgct ataatgtctg aactctgaag cgtaacgctg tgtgtatgtg acttgtatac 1440

tatggaagta cagagttgca ttcgcgtcta ctagatgcgt cgatgttcac ttctgtacag 1500

acttttgggc agcctgttca agccagcaag gcgttcaacc gtgttacagc aggcaaacgg 1560

ttggtagcaa agatgactgt tccaccattg tgtggtcatc cttcagctta aaaaaccctt 1620

ttttttcca gttcagcgtg tagatctcaa catctgtggg tgtaaagatt ttgatgtccc 1680

tgcgcctcct gctgtttttg gcagcaagtc cagacagtga agcagcatcg actcggtaga 1740

tagataccat accaatgaaa tctccaacga tcaccaccac cacatgtcca gacgaatcaa 1800

gttggttctg ctcaatggtc ccgaaccaca aagcagatct gaacggtgtc cacctcccga 1860

tctagcctag ctacgccgtc aaaattctga aattaccgag acatacggag cactggaaaa 1920

tcgtctcgac tcggcactgt acctgctgct agttttccac accggttagt tgaattctgc 1980

atgcgctgtt cctgttcccc tccaagagct cgtgtcgtga ccgtctctcc tactaaaagc 2040

acccccccctc tcaaactcaa aaaaaagggg gagtgacagt gtttgcctga aagaagtgag 2100

cactaaggaa ggttgatgga atcagacgat cttttctctg gatggaggca g 2151

<210> 1806
<211> 3003
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120998_G1, chr3:179435768..179438770, Cluster 11

<400> 1806
cgcaggtgta gatatatgat cgagcagcaa cccccggggc ggaagggatc aggcatttag 60

tgcgggaact agcagataaa aagatagaga ttcccatcgc aggcataacg catcacactc 120

gtgcacactc tgactctgca ctggcgcgaa gaatccacat gccactgggc ctaagctggg 180

gcacggcata tacccaccca gcctatgaac ccaaccgcct gcttgcttgc atcgcagtcc 240

caccctctct ctctcccctt ctttgacttc accgattcca tcgtcaccac tcgccatggc 300

caccgatggc ggccgcgaat atccaccccg gcccctccgc agtcgtcccc gactccactc 360

cttccttccc acgcctttgg cccgcggccc ggcctcctct ctttccgtgc cggattccgc 420

gagcgtttcc gtgtgttcga tcgattccgt ccatcgcgac gcgagtcagc aacaagtgtc 480

gcaccgcacg agagcgagcc ccaggaccag gatcctggca gtttcttcga tccaggcttt 540

cccggccgtg agagggtgtc tcgttgtcgc ctcgtgcgtg cgttgccttt tggagatgtg 600

ggcatgcacg tactacgttg gagtgtccgc gacgaaacga actgcgggct accacgtacg 660

catgcgaata tttgcccggc cggcggcgag cgaccacgac gacgagcgca cgcacgcacg 720

gcacctgtag ccctggcata ggccggagca tggctccgtc ggtcttgcat gcgcgtcgtg 780

tcgatcgacc agcgtacgtg tgcatgcgtt tggaccgtgg aggggtggag ctggagtgga 840

gcgatctggt gggggcggag actggagatc gaccgccgct tgcctgcatg cggctgtgcc 900

gaactccata tggggctggg gtttgttggg atggtccaaa agccgcagca agctagtaga 960

tcggatcgca acatttcaac gccgggatct ttgaatgcga gagggcagga agaagaacct 1020

ttgccaactg gatcgcgcgc gcctgttccg aggagttggc caacctgatc tgctcacctg 1080

ttgcctctgc gttgcattgg ccacctagta ctagtagcca agctagcggc acgagtcgat 1140

cgcggcacgc aagccgtgcg tggcattccg attcgtatcg tacgtcgtcc acacatctgt 1200

cgcgccgcca taggctccag accgaggcat gcatgttgca atcaggcgct tgctttggtg 1260

tacactgtac acagacacag acagggtcct ggcacatcaa cacacgtctc gtgtgccgtc 1320

atcatgcaat taagcgatgc atgtcatcct cccctgactg gataatccat ctatccatct 1380

atctgtttat ctgtctatcc tcagaaggag catgacagac ggacacattg acactgtccg 1440

agtgcctgat ccggccggca gtggggacta ccgtaccgcc ggaggctaga tattatctga 1500

acatgagaac atgcacggcg cacgtacgca cacatcgcgg cgcggcccgg cccggcccgg 1560

cgatcatcct tatctcgata tccttttgcc aagattccgc ccccgagatc gagcaagatc 1620

tgtccaggtc cgtcgatacc actggcaccg taccgtctcg cgcggcggcc ggcggggcgc 1680

tggggtggcc gtggtcgtgg tccctcctcc gttggatgga atcggcgtga aaccggcagc 1740

tagcctccgc cgtcccgtcc acacgatccg attcgctctc gcgatttttc catacctgca 1800

ggctgcagcg caggaggcga tccggaacgc gaggccaatg cttgcgctca cggctcacgg 1860

cacgtacgtg ctagtcaccc aataatcgct gcgtatatct ttcggattcg gagcctacac 1920

gtgcaccccc gcgcggcagc tcgcatcggc cggtaggccc gcgccgacgt gtcgcggatg 1980

ccgcgcggtc ctgccctgcc gcccgccgcc ctccgttccc tttctatcct gttcgccgcc 2040

gacggcgacg cgcgggggcg cggtgacggg aacgacagcg accgatgctg ccggctgccg 2100

gccgcgcgcg gccggggctg gctgatcgcg caccggaaaa ccgtctatgt ccgggccatg 2160

gcgcagcggg gcggggcggg gggttaaagc agaggttgat ggaaaagcag ccggatgcgg 2220

ggaatcattt gcgggcgggc cgggtggaac gacgatccaa gcgagccgcc cgcgcccccc 2280

gtcgacacgc cgggcagcag gtgggtacgg catggacggg ataagcaggg aagagaattc 2340

ggcgccaagc atgttaagtg aatgaaggcg gggagctttt tgggagccgt ctaatccacg 2400

gcctgggacc ggaggatgga taaccaatgg actcgatcgt caggttccgg ctggcccagg 2460

aatatagcag gatgttgttc gctcagttcg ggctagccag gaaggcagca agctgcgctg 2520

cgcagcgcat agatttgtcg ggggcaatgg accattggag tgctgtcggg agaagggtgg 2580

tttgcaggaa ttgccacatt cgtggttgtt tttttgccac taccaccacc atatcgagtc 2640

gcctgagagt ttctgaggcc agcattcaat gttccttgta atctaaaatc ccaatttacc 2700

ggtcatttta ttttttata gaatcaaaac atcttaaatt taaataaatt attcaaaaaa 2760

gatagatcta ttatgatatt aaacatgtat actgtaaata aagaatctaa ttatacatgg 2820

acgatatcat aaataaagca tataccattt ctaaatttcc agattgacca aagaatagct 2880

ccagcaccaa tgattaataa gttcctaaga ttcttattca aacccactag ccatctgcca 2940

aagaggtcat ccaaatttga gagattctga taattgccat cagcaagaaa catgtttgta 3000

aaa 3003

<210> 1807
<211> 1550
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121905_G1, chr3:184074381..184075930, Cluster 11

<400> 1807
tgaccatcct tttagaccgc acgcacgaca cgaatgtaca ttagccccta gggcctaggc 60

atctacttta gaacatgtct atgtattgca aagcgatcga agagcgcgcg ggacggagcc 120

ggccggcgct gcgtgcgctt ttatgttacg accgggcatg ccagaaaaaa acagacccgg 180

gaaaactagg gagaaagtcg agctcgtctc cggtgacgtc ggtgtagtgg tgcaatccgt 240

tcatggaaat gccgggccct ttcggatcgc gtgcgaccgt gcgtgcgcga ggaaaaaaaa 300

aaggtcgtgc tgtcgtgcat gagtacaagc aacggaaaag gccgtctgaa cccggttcac 360

tggatcgggc cgcgtaaata aaggagcgaa aacgaaagga aaggcgcgca gcagaaaccg 420

gcgagagggg tagaccgcac tatagtactc aacttcaact cacctgaccc gacccggggc 480

gcggcgcgcg cgacaggccg taatgcgcga gcgggggaaa cgaaagcaac tgccggcggc 540

gcgagggcac accgcccggc tcgacacggc cagagcgcag cgttattgct cgcgggtgtt 600

ccttgagccg atcgagtcgg ctggcttgcg caccgacccg gccggccaac agctagccct 660

ttgctcgtcc gagaggtcag ggctttccgc ccgtgccgtc catggcaaag cgcctgccgg 720

cccggtggag gcggtgccgt acgtcgcgcg tggcgtggcg ggtcacggcg ggcgcaccac 780

cgccacgatc cagggtgggg tccgttcatt tggttgggag acccaaccca acggtggttg 840

cgtacgttgc tctggtagtt tgttcagttg ccggaagaca tattggtgac tgagagagag 900

aagcaaaatc cagccgagct gactcttttt ttttcccttc agtcagtctc agtcgcggac 960

tctgctacca aaacctgtag gccgcgggcg gggccgtgtg agtgagtgat accgcttgtc 1020

cgcttgtcct ctttactgct gctgctggta ccgggtctgg catttaagcc ggtgagctag 1080

ctgaggcgga ccggccggaa agcggaacaa taatgaattc gaacgaggcg aggcgaggcg 1140

ctgccagccg acgtgccccg acagcgctcg tgggggcgcg gcgcggcgcg gcgcgccagg 1200

tgacgccacc gtgacgcctt ggcgacgtcg gaggccacca ccgtgggttg gcgaccgtgc 1260

gtgcgagcgc gatgacaaga ggggaaattg tttctactct actagctgag aatagaaacc 1320

aggaaggagc ccaagtgggg ggtagtggtc ggcatccaca cgacccagaa gaattgaggg 1380

cacacagcac gacgccggct gtgttgcacg tcacgtgtgc gtgtcgcggc cacttcggtc 1440

tcgtcttccg ccttgcagta ccctacacct acacggaccg aggcatccaa caaacaggtc 1500

gatgggtcac ctcaaacacc gccacgaatc tgctggagct acacgcgcgc 1550

<210> 1808
<211> 1595
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122291_G1, chr3:185939930..185941524, Cluster 11

<400> 1808
aattagaggg attatttgaa tttataaccc tgccatttgg aaagctcgtg tcttccttgt 60

aaattttcaa gtgatcgttg acaaaatgta agcttgttac tattagcaac ttagctaaaa 120

agagatttga ttatatgact tgtatatttt tgcatgaaag cagttttgtt aatcaaattt 180

tttatcgtta tgtgtatcaa cgtctgagga agcccatatc accagatggt accaatacat 240

ctttcaaaga tcccaacaga aaaattcaaa gaggatccaa ctaatgttag tcatgcgacc 300

ccagggtcct aagccctagg ggagatggat catcctcaaa taaggttggg tccctcacac 360

ttggggatcg gtcccggggc ccctagactt acaagattct ctcggtcttc gggtcttgtc 420

tggataaaag acgaatctcg aggcctaggg ccacgaggct ctcttggtgc tctttcgatc 480

tctcggaacc cttagtcaca cgacctttcg agctagtggt tgggtctcaa agccctcttg 540

ggaccctaag acctccacat gggaatccaa gtgctccgtt caatcaacta cgatggcctc 600

tatagactaa ggcatataac caagcctcat ctttaggtag gagggcttta gggggtgcga 660

acatagagcc atggccacct ctaatcaaga gggcgatgca atattaataa tttggataag 720

gctctcatgc atcatattaa atgtgatgga taatatcgcg ataacggggt gcactatagt 780

catgccaagg gcagtagaca tgtcgagaca ctatgcggtg cacgcaccac ccctatagcc 840

atgcctaaac gtgctaagtt gcctataagc atcataaggt ataagaaact acactattta 900

ccaactacgc catacacaac aacatagact cgagtacctc ctttacgaga gtgcatatct 960

gccactatag aaagatgtag tcaacaatat ggaatattca tgacatacca tcatgtatgg 1020

ttccacattc gggatgagat agagcagtta agcctttgct attaataggg tccactttcc 1080

caataggtat gtgtccttct ctcctcactt atattataat cattatttta atcatcaaga 1140

tttgcgtata aaagtgttct ccaaaagaac catagagtct ctctcagaat taaaaaccta 1200

aattaatcct gtaatatatc taatcagtgc ctatttttc cctcaaatcc tcgtctactt 1260

aaaaggaaaa acatcctgct cgtccggact attccatagg cccctctagc cggctggatc 1320

atgcgcgccg agcccaagcc accactttgc ctccgcgggc caacctgctc taaaatcgcc 1380

tgttggacca gttgggccgc ccagcgcctt tacggggccg tctgcgcgct actgcccaga 1440

cgtggctgga ccgccccggc taatgggcca acgccgtcca cacggctggg ctggcaagcg 1500

cagctccctg tccgctggag cacgctgctt gatcttgagc cagcgccgtt tacacaggtc 1560

gcaggcaagc acgcacgcag gatgctcttg agaac 1595

<210> 1809
<211> 1784
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123394_G1, chr3:191780323..191782106, Cluster 11

<400> 1809
tgcagcacac gatgcgccat gcgtggcggt tgacgaaagc agcagcacgg gtgctgggag 60

ctccttggca ccgtggccgc gcgcctgcat gccttatcgg catcgtcgtg gagcccgccg 120

ctgctgctgg gcgcggtggc aaggctaatc gatcggatcc cgctgcctgc gctgctctcc 180

ccgtccccga tcaacctgaa ccggccgagc gcgatgccgg cgggacgtca catgatatgc 240

atgcatgcac tacttgagcc gggccacggc ggcacgagct ccaacaacag aacactttga 300

ccacctttt tatctacaac cggagggacc taggaagaga ctactgtaat aaataaaaca 360

aaactgtttt ttacatcatg ggccaattca gcaatcttgt ctcggcccat taggcattaa 420

ccatcggtat cacgtttaca ttaccgatca acagcactac agccgcacca gcacacgccc 480

taaaccccgc gggtgcagtg gtagtggtac gacacgtgtc cgatggctcg gtgggtttta 540

ggatctagta ggggtttagg gtgtcgtgta ctcgtgtcga ccttgtgctg cggcggcaac 600

ggcaagtgaa gcctcgcttt cgcctttcgg tctctagtct gtgtctctac taggggcgct 660

gactgccggt cagcgagccg ccacgtaggc aggtaacgcg tggactcttt gacccgggag 720

aaagggctac ggaaacgcga gtggacccgg cgacgactcg gtcgtgacag cgactcggta 780

gtagtaactc gctcaggtag ctagctagca cattttttgc gtgcatgatg acgactattt 840

aactgcttta attattcact gggacgacag tctcagccgc agcccgcagg ggtcttatca 900

gagttttatt tatatttaac aagctatatc acataaattc gataattatc ataggatata 960

aaaagaagtg tcttttatag tggtcaaact atctcgacag ggttaccagc tatctataag 1020

ttataagatt aaatatctat aaaattatag aatgcaattt ttttatacta aaaatatgtt 1080

gtattcatgc atgattttat gctttatttt attccatatg atatgacagt cttgaaaata 1140

acgccactaa aactgatctt gcccattaca aaaatgctgt gtgcgctttc caacttcccg 1200

tggaggcggg tagtttggtc gtgtcaaatt gggccttttt gaccataata tattcgttgg 1260

ggtgatgcgt gcatgtacaa agctgttaag ctgataataa agcttgttta taggctgtgc 1320

ttgtctgctt cttagcggtc gaactcacca gggaatgttt gaaattagta ctgaccatgt 1380

gtgaacacac acactacatg accgaattgc tttgctgacc aatcgccttg acttgttggg 1440

ccagcgagtt gcacgcagtg ccgttataag gtaagggata cataaatcaa gtgttcgttg 1500

agaaaacgta acagtaaaaa aaactgaagc gccccttcta gaaagcggga cactttctct 1560

ggatccttgg tgttttatat ggaattataa actatgttct gtgattttct gtatatcttt 1620

tataaaattc ctaaagttct aaagagagaa ccaaagtata tgtgtataca taagggttat 1680

caatattttg agggttcata ccccaaacat gagaacacac tagtgcacgt gtttaaaata 1740

cagtacgtgg tggatctaga atttaataga aaagagagtt aaag 1784

<210> 1810
<211> 2284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123992_G1, chr3:194873122..194875405, Cluster 11

<400> 1810
caaatgtccc tagaaaatca tgggataact caataggccc ttactgcatg ctcaacaatg 60

acccattacc agagtcagtt ctaatgtggg aaggtcctaa gtggccttaa tgcattgtca 120

tgtaatgatg caatattcaa gaatgtgctc tagctggcga agggtagaag tctaccagtg 180

aaagtctacc atagatccat gtattgcggc cctttctcaa ttcgtacgcg acttgttcga 240

tcgtcgcatc tcggcgccgg cggccggcat ggatctatcc atgatggggt tgggggggct 300

ttgcattgga agctagcgct agcccatccg ccccagtcct actcctgcct gccgcctgcg 360

catctcctag cgcatgcatg cacgcatttc tgttgcagct gctggcctgc tgcggcacgc 420

agatgcagat gcagatgcag gcagcagcac agctcagccc gctgccgcac aggaactaat 480

ggccatctgg ctctctctcc cacctttcac ctattcaatg tccctgttcg tctgcttgct 540

tgctagacgc tagtggccag tgtctgttct gtccccagcc agagctacca attaagtttg 600

cctcgccttc gcctcctcca tccacgatcc atccatcctc cctcctccct ctaaataaac 660

accggaccac caccagcctt ctctcctttt tcccagctcg cagacttgca gtgctgtggt 720

gaccatgcat gcatacggca ttatattgca gggcgcggtc aaggcgtgaa gcacgcacgc 780

agacgcagcc tcatatatca gcctcaaaag gaaagggccg tccggccggg ccgggccagc 840

gtgaaatcat gaaactgcat gcgagcgggg actaccatgc actaccggct ggatctgact 900

gcagcgcgtt tgcatgcaag tccacatgca agcgcgcgcg cggccggcgg cggcagggca 960

gctgctctgc ctctgttctc gtgtctctta attctggccg gccggtggtg gtggtcttgt 1020

gggagagggg gggtgcagtg cagtgggccg gccgggtaac gttgttcata agagaaatga 1080

aacgacctac aaatggatgg aaccagagaa cgtgcatcca cgaccgacca ccagctccaa 1140

gtctctccaa catgtctgga ccagactacc gcaaccacac atccagagtc atccatgcat 1200

gcaggaaagc ttgtgtcgtc gctgtcgtgt gtacatgcat gcatgctgat gcccggccag 1260

ttgatgcgta tggtctccga tcatgcatgc aggcaaaagt gtttccgacc gtttactgca 1320

ggtgaatcca cgcgcgccca atcgatgttt tccccccggc ctccgatcca tttacaacag 1380

gtgtacatgc attactacgt ctgctcctcc tgttcctgct gctgctggtg gtggtagggg 1440

acctctcgat cgatctgatg agttgtcccc aaggaaacca accaaccaac ctatatatca 1500

tgcatgctgc tctgatggac aaaatgagag ttacatatgc gcgcgtcact tgttgcgtcc 1560

tgctaactct aagcagacag cgcctcctca agctagtagg ctaataggag tatatatgag 1620

tactactccg tatagtatat atgtataaga tactcgcacg catgtaaagc tttataaatg 1680

cgacgccgcg gccagaaagc gacatcgatg catcgcttcg atctgggtat tactccgtat 1740

gttgcagtga ggcagtgatg cagcctgagc tagagtgcag ccgcagtggg aaaaaaaaaa 1800

taaaagataa agattgcttg cagagtgtag tactcatgca tgcctgcccg tctagctagc 1860

tccttgtttg gaagttggag ccgccaaatc acaacgcgct gtgcttccat taatcctctt 1920

gggcagaacg cgcgcgcgcg cgtcgtggcg agagacactg ctcaactgaa acgtaacggt 1980

gcgtgtcctg aattggtgat gcatgcatgg tgaatggaag aactagtact agtatatgat 2040

tagtcgtcat ctttgatttg tgtgctgatt caagtgatct gagcaggtat atcagtgggt 2100

gctagtagct gactgtatag tgtatagacc agtccacgtc aggccatatg aaccagcagt 2160

ggcatcatat tctgatctga tgcatgcatg ccacactagc tagacccaac ataggttgat 2220

ccccatgcgt accttgcact tcatagtata accttcgttc tcatcacaca tcggtaaaaa 2280

atac 2284

<210> 1811
<211> 2171
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124131_G1, chr3:195732164..195734334, Cluster 11

<400> 1811
ctgtatgtct ttgtctcaga cctggtttgg atactctaat attaactcca atccacatgc 60

gttgaagtcg attggagtgt aatttagttt aagttacact ccaatccacc tcaacacatg 120

cccaaataaa tcctcacggt cacgaactga agccctgcca aaacaaatcc tcacagtcac 180

caactggcgg cagtcccagc accagcaagg agacgcggcg ccgtttcgtt tgagcaatgt 240

gccctagtga ctgtccggta gtccctctca gattactata ggtttagttt tgggtcttta 300

tggactgtag gattatatgc tagctagtgg tagcatttga ccaccgcaga aatagtgcct 360

tagtgctgag gttgagattc cgcatgcctt cctcaaggag aggctaatct gcgtagatta 420

tatgctagtg gtagcatttg acgaatcgtg agaggcgtcc atggctttgc ttgcatactc 480

gacaatttga cgaatccgta gaactgacgc tgcggcctgt ggcagtacat gtactgaata 540

cggtagacgt tattccacgc atcaccgaca ggcgtgcacg cacaggatgg agcgtctgga 600

cagtggacag caaccatcct aacaacgaca cgtggcagta acttaaataa acaaaacgaa 660

acggctacct acgtacacgt agcactacaa gcacggcaat taatccttgc attgcactgt 720

tgtatagtgt atgctgctga gcagatcacg tcgactgttg atggccggcg tcactaacac 780

gtacggtcgt cgatccacta gctctagctc cggtagatat atagggcagg gcacaggcac 840

aatcgcagag atcgtcagtc cggttgcggc agacagggca agaggggagg cacggccgca 900

tcactagccc tgccggtgcc gggaggtgcc cagcgcgcat cagatgcacg ggctgcaaaa 960

aggatcgtat gcacagcacg acaccaggtg tggccgtgtg aacgaattca ggagtcagga 1020

ccggccggcg cggggcatgc acgaggtggc ggcgtgtgaa aagtgaacgc gcggttctga 1080

ctccgactcc gatcccgatc actaccgctc gttactcctg tcggccggcc gcgatggcgg 1140

tcccgttccc gtggcctctc tcggcaggac ggggtcacgc catgtgcgcc cgtgagcgct 1200

gccgtggccg cgtccgccgc gcccaccgta cctggaggct ggaggcttcc attccattcc 1260

gccggattcc gacgatctcc gaaccgaccg tttcttctac ggctgtacta gtactcctac 1320

gcgacacgcc catctgctat agcccgtacc tggcgtacgg tagagtggca actggcaagg 1380

cagtgttcgg ttgttgacac caccaaccac tctcagctac ggtaggttgc cttgcctgcc 1440

ctttgtgtct agatagctct cactgtgccc actgggctga taaatgtact ggcacaccgc 1500

ggaccagcaa gtgcctactc tacttctgct ctgtttcgtg gtactgcacc gttcatcaag 1560

tagctaagta gcttaaccgg agtggtaaag agagcacgga cgctaggcgc ttcgttgtca 1620

cggagacgga ggaaatccag agccagcagt ccggccggtc cgagagaaac aaaattccag 1680

gcgtcatgcg tgccgacata acataacata acataacatg tggccatgct caaatattaa 1740

ttccagcaaa ccatctcgaa ccacgtcgat actttctcga tcgtcttctt aattcacctc 1800

gttacctctt tgctcagaca gaacgagtga tggtgaggtg tgttgattga agatacggta 1860

cggtgtgctt cttcagtttt ctgtcagtct cggcctcggg cgcacgacac tccatctctc 1920

tcaccggccc tccgttgcag agcccggccg ggcccctgga gttcatcata ctgcattgat 1980

accacatctc cgtcgcgtga ggcgtatcgt cgaagcaaag cggagaggcc cctgtattaa 2040

tactggcctt ccagcctgtg agtgagctgc attattaatt tattattgtc attaaagggt 2100

ctttggactc ttccttctca cgtaatgagc ctacaaggtt ccctgaattg gaatctctct 2160

tccaattttt a 2171

<210> 1812
<211> 1923
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124791_G1, chr3:199608891..199610813, Cluster 11

<400> 1812
cgtgtctaaa cttaaacttt taaaaaaaat aggactaaaa taagaaatta tggacgagtc 60

cgctactagt agctcaattc gttgttatgt acatgtacaa ttgcatgcat gcgccaccga 120

taacggtgaa tttaaccgaa aatattgacg ggtcataaaa aagaacagat ttgctatata 180

acatagattt tcatgaacct ttaacggtgc ttcgctaaag aatttataat ttttttatgg 240

gggtgggctc accctgataa acacccctat agattcggcc gttgccaatg ccaccggacg 300

tgataggtgc tcgcataaat gtgcgtttgc tggcggttcg atcgccttcc gtcgatcggc 360

tggctcgatc tgcttcaact taaattctga ttgtgtgcgc tgcaggagga gctagctagc 420

cagactggaa caactggtat tcgtactgta tataaagatg tagcatgagt acgtgtcttt 480

ctggattttt ggttggcgag gtaatcaata tttctggata tatctaaatt gcaggaggag 540

ctagctgggt atatacacct gaaattagtg tgtatcggta cggtgtatat gtatatatag 600

gtgtttaagc taagataatc aagagctagc ccgcaacttg gttgcataca tgctccaata 660

ccaacctgtc gtgggtccct ccaataataa tctaaatcta tgtgtccagt gctaattcaa 720

catacttcct cgaaaagaaa agaatgaaga cggcatgcac agtaaaccaa gcgaccatgc 780

agttgtaatt gtatactaca gttctaactt ctaaacccag ccatgaactg aataatagat 840

aatataatcg tacgtacgct tgatatgcag cgtcgttgca cggttcaatt ggtctcactt 900

caccttcgtc ccgtgcatct caccagcagc acgctttatt tggtcccgtc cggtccaaca 960

gtgagtggcg cgcgcgcgcg cggcgcccca cgccagtctc ggtggtgccg agtgccgacg 1020

gggtcggggt atactgatca ggcaccatcc atggccccgg ccggcacccc gagcagacca 1080

ggacctttt tttcgtgtgt ggagacgcat gcatgtgacg caacgtctca cctatcggtg 1140

gcgcacggac gaccgacgat atgcatggat cggcatttac gcgatcgtgc tgggaccgcg 1200

tgcgtgtgct caatcagtgt gttgccgctg tgactgtgag gcttcgcatt cggttatgca 1260

acaagaggat catcgagagc tcgatcgttt cggtctcgcc ggcggcccgg gttcgtgatg 1320

agacgtagca ctagctagct agcttcagac ctcatcacga gttcgttaca catgtgcata 1380

tggccatata tgcatgtcgt gaaccgtcct gggctcgctt gacgtttctg tacggcgatg 1440

gcggatggcc gccgagcgag gagcgctaga accggcagag cgacagtgtg catgccatgg 1500

ccatggcatg ccatgctcga tggagtgaca gggggggggg gggggggcg agatggtgct 1560

cgctcacatg gcagtatcgc gatggagaac ctaatccgat ctctgtcctt gtccggtctt 1620

caaagcagag ggggccgggc cctccttgga tgcggacata gcctatctgg caggtgatgt 1680

gacacccgaa tacagtctac agctacagga gcagtaggag tttcgtcgag caataagtaa 1740

atttcgctgc ggctttggct tctacttttt ttttctactt tattatagct gcactataat 1800

agttgagctg cctagtatat gcaatccgga ctatttatgc gatggtagcc aattgtaaaa 1860

gctggtttgg gaaattacgc ttgtgcctat atataaaact accgacggcg cacactactg 1920

ttt 1923

<210> 1813
<211> 2075
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125238_G1, chr3:201999656..202001730, Cluster 11

<400> 1813
ggttaagtca gatcgagtga tccatgatta gatatagaac ttacacgcaa gtacgatgag 60

cttgtgcttc gcatcgcatc gcatctggta tatgtgttcc ggttcgatac cgcaacaaca 120

cataaactct tttagttctc ataaaacaat attgaaattc aacttcaagc gcgtgaataa 180

ccctttgaca ttcctcctat ttaagaataa ttcttgatgt gtcattattt tttttcaagc 240

ctctcgatat tacaatcatg tcttagaatt caactgtaca cggatgtttc tttgaacatg 300

tacggtaccg atgtctctag tggtctccat taaatatgtc caaatcttta gttaagatgt 360

tgtcgggttc atcacaatcc acatcattaa aataaattga gataaaatgc aaactaaact 420

tcactctaat ccaccttaac acatatgaaa taatgtgaat tcgactacat acaaataagg 480

catcaagtgt tatctaaatg ttattagccc cacttgtccg tgcattatca cggtttctat 540

tatgtgtgat ttattggtta ggtggctgtg aatgtggagc taacaactga ggttcaaatc 600

ttagtttatg cacaatgtta ctttatttt gtttaagtgg aaagattaca tagccgatca 660

ggctgatacc gttcctgcgg gctgcggtaa ataatctttg caggagctcc gcgtgagtgg 720

ctgaatcttg gactggcaaa cgaaaacgac gtccattttt caacaattac atatggctct 780

gtttggaacg agaggacgtt ccttacggag agccaggttg tttcccatcc ggcctgcact 840

gctccaacca taaacaatgg ctttctgtga taccagaagc cagtgtgtat tcagattcag 900

gacttgaggt gacgaagagg tgccatgcat gagtcagcat catactacac tacacacgtt 960

tacgttgcca acttttagat agtgcaagag cactgcagat gatcgggtag tgcatgggtc 1020

ataagactac tactactaca agagagtgtt gaaggaggaa gatgcatcaa tcctagatcc 1080

gttccagttg tgtggatacg tatgcgttta catataggaa cagaacagaa cagcacaagg 1140

cacctaactc ccacccgctc gtgtgcttac gccgtcaaat tctttgctga aagcgtcatc 1200

atcgagtcaa gattaaaaag aaaccaacca gcagctgatg gcaattgtct ggcggtcgcg 1260

gtcgcggcac ggtaaaaaag cgacgaatga ctgggccgcg tcgtgctgtt gggcccccta 1320

ccggcctcgc ggcgttggtt ctgcacggcc tcgatccgcc tgcctccgaa aaccacttcc 1380

ccagaagcgg acgccagccc gcgcgcgctg tggcagcaca gcagaggcag aggcagagcc 1440

agccaggtgt tcgtcggtcg tgttggattg agcagagtcc acgcttccac aggacagcca 1500

gcccctgtct gtggcgcgcc cactgaccgt ccgcaccagc ggcgtcgctc tcactcgcgc 1560

gtcgggctat ctccaacaga cttcttatct cactgcaaac catcccatgg ccttctggag 1620

tacgtactac gagcagccat taatgttgaa cacgttggca agctgtgtga ccgatcctct 1680

acttctcgaa gtatcagtgg gcgtgggcgt gggcgtgggc gtgggccggt gggcgtgtgg 1740

tttccctctg ctcgcgattg agagggatgg atcatggata tatctatcat atatggaatg 1800

catcgaacgg ggtgccatga ttgatacagg acttcctggt tgatgccgag gttttcgctc 1860

tacgctaaaa ctgtgtatct gtgcatgtca cgccgaggac ggaagaagac ccgattcatg 1920

caacggtgca ggccactcgt ttcatgcgca gcagcgaata aaccacacgt aataagcaac 1980

ggtgcaggtc ataagcattg actagcggtc tcgtaagtga ctgttagata gtgttcggtt 2040

ccgcagccag ttaagatgaa actgttccat acctg 2075

<210> 1814
<211> 1998
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_12600_G1, chr1:69093901..69095898, Cluster 11

<400> 1814
aggttatcat tatcgattca tagccacaaa ccgacaatga taaatggact atatcactat 60

tagttagagc catacaactc tagcgatagt tcacctgtca ctgcaagtgt actaaccatg 120

aacactgtcg gctccgccat aatcaataac gacggttcaa tagtgactga atgttttgac 180

agtgcgtgac atgccacaac gctacgggcc tacgacatgt atggaattag ggctaagact 240

cagctagtat gacccgtggt acaaggtagt tcagtagttg tcgccatgct tcttcctaga 300

gaagagggcg atgatggaga gacgaggatg acatgggatg atgggaggcg aattgaagca 360

gcgtggatcc aactatgacc tccaatagcg atgtgttgca caaaatgacg gctgcgattt 420

ggaaagttct ttcttgtgtc gatgacaatg tggatgaagt gtgcttacat atatcaaaaa 480

cctaaagtgc tagctagttc ttttttgaat ggaaaatgct atgcgcacga ccagaatagt 540

cgactgttgt acaaccagta aatatccacc attggttgaa tgtgatcttg aataaaaata 600

cggttttaaa tgatgttttt tgaagtcttg gttggttctt caacgttgat gtcccgtatt 660

ctctggttcc gtattttcaa cgttgacctt cacaaagttg aagtttgagc atagaagacc 720

ttcgcaaagt ttgggacatg ttgaaagagt ttgattattc aaaagcatag ctcaatagtg 780

ccaaagcagg agttttggac tcagtccgtg aactcagtgt ttccactgac actataatct 840

tccgtatcat ttatctccga atttatgatg tttatgactt tggtacctta aaaaaaaaga 900

taaagagtaa tctgcggtgc ggggaacatt ttcgctatag tgttcaaaga ctgtgtccgc 960

ttagaatttg cattttcagt gctcactcat atgccggccc tgctctggcg ctggcgcctg 1020

ctgcctcgtc gcggccgccg cgacgacgac gtccctgccg ctgccaccct tgaccgcgcg 1080

cacgtgccag cgccgctcgt gccctcgcgc acccttcctg agcagaggtc cgagtccgaa 1140

gccgccctca ttgccccttt ggccttttaa gccatggcgg tcgtatctct ccccttctca 1200

ggaatccccg caaaagttcg ctctgggttc gccctcgcct ctcccacgtg cgccagagac 1260

ggtgagccta cctcaccctc gctctcggtc cgctgtcgcc gcagtgcagc cgcccgccgg 1320

acacgcagct agccgggcgg ggcccctcgc acgcaccggt cgttgttgcc tgcattgggt 1380

gcggccggac gcggggaggc cctccacgcc cccggcgtgg ttgccgtggc cggcctgctc 1440

ctcgtccctg ctcgtgtgtg tttggcaggg gctcgcgtag ggacgaagag atcttttgag 1500

gagacttttg taaagtcgcg tacgaggaga agtttctcat tttggacaaa atagtttgct 1560

agtttcgcgg ggtcctttat gcatttttgc gtggggcagc gtgatgggcc ttgccagccg 1620

ccttgtggga ttctgccctg gccgcacggg ccttttgcac gtctcgttct gggccggctg 1680

cgcagcgtgc atgggccatg gcctgcacca ggtccggacc cgttctggtt ggaggagttt 1740

actttccttt tccttttaa gttgaagaac ttctaaaatt cagcaaaggt cgctgaaaat 1800

atttaaaaat ggaaaacatt ttttgagttt ctcatgaatg tatttatgca gtatgtttac 1860

aatatcctgt tttttaatat gaaagttttg ttgtaaatgt aaataaatgg ttttaggttc 1920

tcaattcgta gatatagcta gggtaattca aaagcagtgt aatttttatg gtagaatagt 1980

ataaagatgt atgggcta 1998

<210> 1815
<211> 1506
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126660_G1, chr3:208767485..208768990, Cluster 11

<400> 1815
caatatattg tctagtttct ttattaaatc caaaagggaa tttgcgaggt ttgaattcag 60

catatatatg agcagtatat gagtcacgat cccacagata cctgtgtccc ctagcttgtt 120

cttgttggtt cccaactgca tgcatgcatg ctcttattac gtgacgtacg tggtaaatta 180

accgcgccat gaatgaaccc catgatccct gcactgcatg cgcaaacggt cgcggcaaaa 240

gcgcatctgc ggatggggaa aggaagacga ggagcagcgc caggagccag gaggcagcga 300

gcgcgcgcgt ggcgcggacg taaacgacac agcggagcta tcagctgaca cgatcgagct 360

cgacgacgac gagcagagca gctggcgtgt tctttgtgcc aaggtcgcgt cagcagccca 420

cggtgtattt tcctaccggc ggcaactgaa ataatggctc aaaagaaaca caggtgacag 480

gtaggggggc gctgggcgtc gtcgtcatcc atcgtctctc cctgcatgct gcgctagcta 540

gctgctactc gacgtccgtc tccgggactg aaactgagag ccactgtctg tggtcacatg 600

tttgtttaaa tctaatcgta atgagatact aaactataaa ctaatattgg cttgttcaaa 660

tttactaata ttcgagtata aatcattact attactattt acgttatatt tcgtgaacca 720

gaccctgagg ttctcaaact cgacgcagcg ggtttctcga gacgactaca actccggtac 780

ggtgtaccgg tagctcacat ggctgcatga cgctgatgcc tctggtccgg tcaaccctgg 840

gaaaccgttg gctcttggta cgggagtgga agactggaag ttgcggttgc ggttcgcagc 900

ttcgtgcgcc cctgccgaaa caggaacctg gctgcaggaa tggtggtcat gccgcgcgcc 960

gtacgactag ggaattagct aggggcatgt ttccatcgat cactgtgttg tagtacgccg 1020

agcgtcttcg cctttgacac cagacacgga ggtactgagg tagtacgctc ctcgctgctc 1080

cagagctcgc gtctgtacgt gaaatgctcg cggccgcagg tttgattgct cttgccggtc 1140

gcggacggcg ccacggtttt ctggcccgtt tgattgctct tggctcttgc tctgctccgc 1200

tgcgctcatc tgagagcgtt gctccttcca cttccactgt ctgtagtaat tgtgagttgc 1260

agtctctagt gtgtgtgtga cctgctgaac ctgcggcaaa tttaaattgc cctaattacc 1320

tggctagcta gatcgtgcag gtgagtgttg tgttcgaccg atttgagcgt taggttcatt 1380

caacaagtaa aacaagccgt ttatctccta agcgcaaact actgtcacag gcctcgcgag 1440

cacacctcac gtcgttagag ttatagggct tgtttggtgg gctggctcga gcgccacacc 1500

acgcca 1506

<210> 1816
<211> 3043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126685_G1, chr3:208873857..208876899, Cluster 11

<400> 1816
aaaatattct tcgcaagtgt ttgtagtgat taccgcggat aatttttttc gtcgtggggt 60

tggagtagtt ctccgttgcc atccctaaca aggcacaatg ataaaaaaat gtagccatcg 120

agccaaaaag tccttggttt gacatggacc ctctgcaaaa tacagattgc ccgcactaga 180

tttgtccttg tgctttatta attgtattat gcacaagacc gaaatgcatg atccaagctt 240

ccaagtaagc tcaatcaaga gacggagaaa aagccaaaaa cagaacacca cgccacgatc 300

acgtctacac tcaacagcat gcgtcgtctc tgtcctcgat cgcttctccc tttttgcttg 360

tatttaagtt ctaggttgcc ctgcccgtgt caggattgcg ttgccgccac gcaactgatg 420

gagaccatat gtataggtgg ttgttattgt aattttcatg attctgacac atgctatcag 480

tatttatcta tttagaaatt ttctactatt gttatgaatt cttcaactta aatagtacct 540

ccgtatcatt tttttatata aacatttact gataaagctg actagacagg ggtgcgctgc 600

cgtgcaggct catgtcatag cgataacgtg tgcttagaca actgctgctt ggcttatcgc 660

tttattagct gttgccaaca taaatataaa ttatactaaa tataataaaa aaactacatt 720

gaatttaaga aattcggata gtaaattgta cacctcgatc ttatagcatg tgtcagaatc 780

atgattagat ttagtatata tatactccta ctatatcttt accaacaatg tagtagccat 840

ttaactgccc ccattaaatc taacagggac agttaggaaa acgctgctcg ctcgattagt 900

acgtgttgcc ctttgtccaa ttgatcgggt tcgggtactt tgtttttcat gtttcacaga 960

accttataga ctttcctgca tggctgctgt gtatctgcat agagctgtat gcacgacgac 1020

gagcggacac ctgtacttaa actagtgtcc ctagctaggt agatgagtag atctgatata 1080

gccctcaaca agtacaccca caccggccgg cttggaattt tggcccatgt gttccgggag 1140

aggcacgtgg tcgtccgtcg cgatacgcgg gcagcggcga cggcgcgggg taaatgtgac 1200

gcctgtgcgc tgtacagcag ccgcgacgga ttattggttg gattgaaaca ataaatgtgg 1260

ttgattggtg tggtgccgcg ccgccggccc ccgcccctaa tgcccggcgc tgaacgcggc 1320

cgatcgattt caaatctccg gctgccggcc ccaatgatca cgggcaaaaa gtctgtcgcc 1380

gcgtgcccgc gtgagagtcg tctctgcttc gcggaggatc tctccgagag cgcatgatgc 1440

atgatcgggg gatggataat cagttcaatt cgtcgtcgtg gtcatggagg aacaaccgac 1500

gatgcatggc atgcatgacc tgctgctgct gcgagcgttt cgtcgttcgg ggggcgcatg 1560

cagtgcagtt gtagtagact agtagtagta tacgaatacg aagagcaggc ggcggacgga 1620

catggcatgg ctagcatgtc tctcgatcgg gcccggccgt tagttctttg gacgctaatc 1680

attaatgtta gcatgcaccg ttgaccggcc tctatctcta tctcgatcgt acacgtatac 1740

cgcagccgat atcgatcatc atatcatata taaataaagg aagccagctg ccatagtaag 1800

gactactgta agtctgtaat aaggaacaac cgtactacgt tgagatctag agcttccatg 1860

gccacattaa taccttatta tatatatata tataaatatg tacgtataat actatagagc 1920

attacttact ctcgaatggt cgatcgaata cgtgagagga gattatcatg tcgtattatc 1980

gttaaattgg cagtaatggc tttgtttggg tacttttgta ttgacctcaa ttcacgtgtg 2040

ttgagttgga ttgtggtgta aattgtgtaa gttacattac aaatacatgt ggattgagca 2100

caaactaggc ctgaggggtt atcataaatg cacttagaat ataatgtgtc attagcctga 2160

ttactatacc ctttgaggct tgatgagcga tgtcgagagg aaacgaaaag gaaacgatcc 2220

agcctggcgt acgaccgaat cccatttcaa ttccacgcag gccgctgccg gggtctggtc 2280

atcaggcatg atatataaaa gcgagcgacg tctcaggcag gcaggacagg aggcagggcc 2340

cggcggatgg aaatttgtcc gcgactccga ctactagctg gcggtgcttt agcagcaggg 2400

aggattggag gaagcaagcc cgcccacatg cctcaggcaa gagggctgct ctggttgtgg 2460

ccattgcttg tgcctgtggc ttccagctca tcatccgttg accgtggtac gtacgtacgt 2520

cgtcagacgg tcagcagggt aggtgaacac gccaccgcgt gtacgtcgtc agacagtcgg 2580

tgcactgcac ggtgctactc catccagggg ctttctactg cttttgttca agtgaaagtg 2640

caggggcac aggtagtatg gatcatgatg gcatcatcac atttttggtg aatctatccg 2700

ctggctgaca ttgctttacc ttttttttc tcatccggtg tgccagacgt atttatgcat 2760

ggattgcttc tactgcaacg tatgtactgt acctgtactg tactacagca agctgtcgca 2820

gctagcagcc ggcaacaacc aaggcagaag ctggctcgtc actcaccgca ctggccagca 2880

atggagaagt cgagttccct tcaagagaca gacatccaac ttttaccaac caccgcaggt 2940

taggaatcat atattatata taagctggat caatcatata taggcaggca tgcatagctg 3000

caagtacgta catgcataca tcaagcgtac atgggtgggt tag 3043

<210> 1817
<211> 2612
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127133_G1, chr3:211140002..211142613, Cluster 11

<400> 1817
cactggcaaa gagcacgtac aaccgagcag gtcaaagcac caggggcctc aggctctaag 60

gtaaagacac gaagaagcaa ctgaatgcta ctacttagaa caagtttaat aatataagtc 120

aacatcgggt tttataaaaa aaatgtcata ttacatgtag ccaactaaaa gtatacatat 180

ataataactc tccaatagta taattttggt ccacctcttt ggttcacaaa atgtcttgga 240

gtgtctaaac aacaagcttt aatttccttg ttgctccatt tctcttttt tttcatgtca 300

ttataatttg atgtggcacc tcttacatac accttgttat atttgctcta cacagacatg 360

atgtggacag ggcgtagcga cactccatct aataattgag gatggaatta attaatcgaa 420

tggttgcccc cacgcatgcc tcgatctgtc ggtcacagtt ttatgattgg ccgatagtgg 480

tgacacaaac gcaagagacg ctgcaccact gaagtgcgcg atcgagcccc tttatttcat 540

ccaccataac aatgcgcgcc ttgtcagtgg acatgatcga gaacatgcga agaataatat 600

agtagtagta ataatatggt agcagagccc tgcaaccgct ctggtccact gtgtttcgaa 660

gtttgaacgg tataagtgct tcttgttgct gaatagtgta tagccgtatg cccatatata 720

tagttactca caccagatga gctatttctt aattacaaaa aaaatgatat agggactcgc 780

tgtttaattt tattgtctat tttaaacttt actttataaa taaaaatgta gaataatatt 840

ttgtacgaca tatgtaacga tattttacgt tactctcgtg gtctatatat ggcatttgta 900

aaccagccgg cgccaaagga aatgctgcca agtagatgat tggtctcctc ggtcgatcga 960

tcgatcgatc gctcacgtac gctagctgcc agctagtggg tcgcgcgcgg catggaataa 1020

tccggcacgt ggtccgcacg tacgcccttg gcacggaatt atatatccag ttgttgacag 1080

gcacacggtg ggggccgcgt gcatgcatga ttgactcgga agcttcaatc acgcagcgcg 1140

ctggcatggc acgtacggtg gaatttcccg taccgtcgtt cgagacatta gaggcagcaa 1200

aagagcttgt gtgcagagat ttgtagctag tgcatgcagc tgtagcagac gacgacgagt 1260

cgacgacaag tggcccgtgc cgcgtgggcg tggactccat ttccggaaac cggaagctct 1320

agaaatcatc gcaaccggcg actcgaggca ggcagcaggg tcactgtacg tgtgtcttat 1380

taattgatcg atcgatcgat tggatccaat aatgaatgga tgcgtcgacg tactcccaac 1440

aacaattata ctctgatccc caccacacac accttcaaag ctactgctac aaaagcatcg 1500

tcgatcgagc acatatttta tctccccctt tctcagcgag aagacagaaa aaataaaata 1560

aaaaggacct tagcttgttg tatatgcttt cggtgatatg tatgcatgat tccgtaaagt 1620

tcataaatta aagcagcagc agtcttgtgc taagcctacc tagctaaccg aaatgggtgc 1680

agaccagcgt ggcatgcatg cagcgctcca ccctttttc ttctgggcta aggaataccc 1740

tactactata ccggccccgt atgagttgaa gtaaccggag tcgatctcta ctacggcagc 1800

aactcacatg gtatttccca gagttgctgc cgtagccgta ggtttggagg tgccatggcg 1860

gcaagtgcaa acaacagctc cactaatcaa tgcatgcagt ggatggatgg agtacagttc 1920

aatgccagta gtagtgaccg atggtgtagt tctgttgctc tacagcacag agcaccgtgc 1980

accatgcatc ttcctataaa ctgtactact actagtatct gatgaggtta ttattgttat 2040

ttatgtttcg atttaatgtg aaagctgtcc tctctctcac tctcgacgag agacggacct 2100

caaagagcta ctactactac cattggtaga gctaaacagt actccggccg acagcaacag 2160

cagcagcagc agcttgttgt tttccgtttc cgggctgccc gcacgcacgg gcatgcacgg 2220

cagccgcgac agcaacgggg tccatatcta cgtcggcgcc ggccggcaag cctatccaca 2280

aaccacgcac aagctggctg cacgtatgga cagccttgca tttggcttgc gcgcctgccg 2340

ggcggccatc cctgaccctg aggcagacag gaccactggg ctgggcttgt aggtactgta 2400

tgtaatgctc ttggaaaggt aagagactga ggcactgtgc tttgccctcc tgcatgcttg 2460

cccgcccccc tcctcccttt tccagggcac tgttgcctct actaggagct agagccagca 2520

gatctcggtt ttcatcccgt ggcacttgcg ggtgtgccac ttgcccactt gactcgctgt 2580

tcctgagcta ttgtttcatt ctcttgctta gc 2612

<210> 1818
<211> 1827
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127583_G1, chr3:213411264..213413090, Cluster 11

<400> 1818
ggcaatagtt tgttcgttta ttaaacaact agtggttttt tagctaccac ttagctactt 60

actcgttatt atcattttgc tagtagtaaa ggcaatagtt tgctcatagt gtgtagtact 120

actagcatgt agcaatagtt tgctcgttta ttaataaaca ctagtgctag tagtacatat 180

tcatctcgct agcttccctg cgcgtgagga agcaactagg cagcgcgctt ttggatggtc 240

ggcacgccgt cgcatttgga ttaggctatc cagagtcccg acagtggagc tagctagcgg 300

cacgtacgcc atgcagatgg cacgcctcaa gataataaaa aaaggaacct cctagctctt 360

gtactaaaac gggcatctta cgaggcgcga cgatgcttca cttctagtaa gtactcctac 420

tccacacgat gtaatgttgc gacgcgggac gagctgcgaa accgacaggt gaaaccgacg 480

gaggagcgag cgccgatggg cagaccgtgg aggcgtggat tgtcatcaat ccacgcaaac 540

gcaacacgcc cggcccgtcg cgctcgtcgg ggtccagaag ccagacggac ggtccaacca 600

gacgcgcccg catgtcgccg gagccggaac acacacactg caccccaccc aagacccgaa 660

ccggccggcc gcacggcatg gcgacaggcc atgcatacgt acgaaggaag caactcgacg 720

tctgtactct gtacccgtgg ccggattcat gccgagatct ggacgtgagt actagtttca 780

gaagatcccg gcggtcaagt caccgacctg gacgtgactt ggtacctcgc tcgtgttcat 840

gttcgtcaaa acccacgccc acacgggcag taggtgcacc gtgcacgtac tagtactacc 900

gaatactagt ataccaccaa ccaccgctca gcccgcccgc tctctctggc gcgaccagat 960

cgtccctgtc gggatccgcc cgccgctcgc ggtctctcct ccagtccagc gcatcccgac 1020

gtgtcggccg gctcacaggt acccatccgc gtccgatccg cgccagcagg ccgatcccca 1080

agtcccatcc tctgacgcgg cccgaccagg tctccaccga cgggatggag aaatcatcca 1140

gtcctcatat agataggagt actagtacgt ggtttccaat taatgatctt cttaataaat 1200

aataatcgta atatatgcag tagtagcagg ctagcagcac cacatttcgt gattttgttt 1260

actccgcctg aacacgcccg cgcggatccg gtcgatcggg gcctgcctac ccggcgacct 1320

ggggtccaag acgcagccgc actatcgctt tcccctccgt caacgaccca acggccggcc 1380

gactcatcgc caacgcgacg gtgcgtgccg ctgccgccct cgctctcccg aacggccgaa 1440

cgtgccacga ccacgaccga cgctgacgct acgagcgacg tctgacgaaa tgcccggcac 1500

gggcgcggac tcccccgacc cgcggcaagc caacctcgcc acgcaaccgc cggtggttgg 1560

tacgcccgca cgtcggatgc tcggacgagg acgacatccc cccctgcgcg cgtcggcacc 1620

tggttgccgt ttttacgctg gcgtggctag gcagatcagt aacggcaaaa attgctgccg 1680

ggactgtctg actgtctcct catacctgct ccatttctat acttctagta cagtactgag 1740

taccagtgca tttgttatgg cttttctttg ttattatgta gagattcaat tcgagagacc 1800

atgcagctgt atatgatgac tattata 1827

<210> 1819
<211> 1837
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129241_G1, chr3:221559568..221561404, Cluster 11

<400> 1819
gcctggccca gtggccggtg gacgtgacgt cgcttgatcg ggggcgcgcg cacgtgtcgg 60

gccgcggggt gcacggacgt gagcaagacg cttcctgcct cgcccccggg ccgcattcct 120

tttgtaacgc cttctctttt acacgggacc gtgacaggcg acgccgacct ctccaccgcg 180

gcggcgtggg gtgcgcgggg ccgccgcgcc gaggactctt tgggtgggtg acgattgacg 240

aagcagccgg gatcggacga cgaaggcgcg ccgcgcgggt gtgtatggat ggatggaacc 300

cacggagccg gggccgggac cgcggcgcga cgcgcgtcgg cgggccaaaa gtactagccg 360

agttccctcc cacctggctc accgctcacg gctgcacctg caccagcacg cccggtcccc 420

ggcctccgtg cacccacccg cacccaacct caccaccact gttttgcttc gtgcgctgtg 480

tcggggaggt ctgtccccgt cgctcttcgt tttctcgcag aggatcgctg ttgagatccg 540

tagcctgcag ggcgtcgact cctgcctgcg tttctctaat ctggcgattg atctgctgga 600

acttatctag ccccggatgt acatttttct gatgggccaa aaagcaacaa gcctaattac 660

gcttccactc cggtctcctt cctcttgcta attaggaagt agtcctcgtg tgtcaaataa 720

gattagtata aataaaccta gaacgatttt tcgttgcatc ctgtcacagt atctccaaaa 780

gcctctttta aacatgatct tttaaacttt tttttttgg gtttgggggg gggggggtc 840

tcacgctagt atggaaggta tagctagttt gtgcgtcacg attttgttgt ttttatctcc 900

gtttctagag gggcaggcta agatctgaaa ttttgtattg acacaaaact gtggacaaaa 960

gaaaacttct tcaacctctt cataggtcac cacgggtgac gaatttcaca tgtgtgtgtg 1020

gggggcccta acgtgctact attttatttt tttgtcgctt catttctcag tcacttgtga 1080

gttgtgacca agtggctaat gcgattcttt ttatatagat aaatattata gcagtatagt 1140

taagattcga acgggatcga atcaattgca acttcagctt agataaccca atagactgct 1200

actgcatgac ctcctgaaca tgaatgagat tgcagaacgt tgtagtctgg cagctactgc 1260

cacgtacatg cccagatctc agacggacgt cctgtcgcgt tggagtaaca gatcgaacag 1320

agagcagtag tcatgcttat gttgaaaggc gtccacctgc agaggagagg agaggagagg 1380

agaggagagc aacatggtag tagcagtagt atagagctat agctgggcag tgccagcagc 1440

acgtgggcat cctccctggc gtcgcacgtc ccggggccgt cgggctcggg cgctcctcca 1500

cgaaagaacg gacgctgatg ctccggcagc tagctacccc actgactact actactacac 1560

gacaggactc aggagcgagt agtagtagtg tgcactgtag tactgtacta actagtgtgt 1620

acagtacgag acggagcgag catgatggtt gcatgcatga tcttgtcgct gtgccgtggt 1680

gcttgcgtcg cgtgttgcca ctcagtctcc aggcgcagcc aggacaagag tgcaggatca 1740

tgcatgcgca ggacagagag gtgtagtagt actagtaatc attagatttc ctttgggaac 1800

cgccgaagct gtgtagaggt gcctgccact tgccagt 1837

<210> 1820
<211> 1860
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129849_G1, chr3:224667329..224669188, Cluster 11

<400> 1820
ggatgcaacg gcgacttacg tcttggagtg tgcatgcttc gcgtgcaaga gcaggtggcg 60

gtgcatgcat tcatgtaggg gaaccgaacc ggaacagaac aagaaactaa agaaaggacc 120

atgtcaaggt ttttcttctt cttcttcttt ggcacaatgg cattgccctt tgtgcaacgg 180

agatatcgta tcgtactacc acaccgatct tgtacgcgtg gtggtgcgat aggccggtca 240

aggtcacatg tccatgtgca cagttcgcac gaaccagcag cagctggtaa cagggaccag 300

gctatctctg ctgcatgcat gcatgcatgc atggcgcctc gttttcacgg tgggccgggc 360

ctgacgccct gaagtgaaac gaacctttag ctgttcacgt gtagtagtag tagtagtacg 420

tagactagac aaaacttgga tcggaggagt ccggattcta acaaacacat atgcagttcg 480

cgatgccgta tccatccaaa aaggcttcag ccagatgcaa acccaaagcg gctagaacac 540

aaacaaacga acggacgaga agtgcagttg atgctgggta tggacgtatg gtggtggaga 600

ggggagggga ggggcgaggc gacctgtgct ctgtctcgga acatgtgctt atcttttggc 660

cccgtcgatg gaacaagcgc tggtaactgg taagtattat atgtatgacg gtggcaactc 720

gccgtgcagg cgtttacaag gctatctctg atatactcat cctccacact tggaacaact 780

ggtaagctct cgatcattta cgtggtcgca ccgtcactat tagaacataa aaaaaaaaaa 840

tgcgcatctg catccgatcg actcgcagca gcaggaatgg tttgtaagag gagaaacgag 900

ctagtaaaag atacccaggt gtggtttgtg gttccggatg tcaaggggg caaagaaagc 960

aagccgtcgg tccatagaga tcacacagaa tccgctgttt tgacgtcggt cggatcggtg 1020

atcgaagaaa cacgacggtt gttgcgttca ctttcatctc aagaaacggc ggcagcagca 1080

gctaccagca cattcagatg aactagagct gcaggatgct gtggcccccc ccccctgcat 1140

cctccgagct tccacgcatc agataaacta tagagcagcg gcaggctgga tcacatgggc 1200

gagctccaaa gataagatcc gccccggccc cggcccctgc ccctgcctac acccatatta 1260

actgatggca gtggcagtcg cagcgcagcg gcggcactga ccacgccacg ccccactggg 1320

cgcgtgcatg catccgcgcg cgcggcgcgg ctcgatcgat cgttccggga cagatcagag 1380

agcccgccat cgcacatgga aggagccatc acttgtttta tggggcaggc agcggcagcg 1440

ccggcagcta gcgtgggcgc tgatttgatt taattataag aagaagatgc ggcggtgacc 1500

cgtgtcgtcg tcgctcctgg atctggactg gactgtggac ctcaatcgcc ggatcgtgca 1560

tgtagcacta gtgttatagt tcgtcgccgt agagtctctg tccgttccgt cgccacgccc 1620

ggcatcagct ttcggacgcg aaagggagag gtgtggggaa atacaagccc aggaccagta 1680

tcggtggtag tagtataatg atgcgcgctg agatcgatat ggcatgtcga ccagctccac 1740

cagcatggat gactctctaa cccttcctgt cggcggtgaa tctgctttgg gcggctgagc 1800

ttgtttcttt tcccgtctcg ttaattaata agtgactaac ggtgtgtttg attgcaggta 1860

<210> 1821
<211> 1707
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134273_G1, chr4:13417323..13419029, Cluster 11

<400> 1821
tttgagacag tgcccagttc ctcgctcaga aattctctta tctggctccc aaaattacgc 60

gcctctgctg cgttcacgat ttgccctatg acacagatac ctgagcccga gaattgctgt 120

gcccgacagc aacacagcca actgacgcgc cgcgtcgtgc cacctgatac gatacctgtc 180

cggctatccc cgtcttgact gactatccgt ggcggccggc gagtggcgct ggaaatcaac 240

gagaggcctc aatctcaggc gcaggcctgc ccggagcgga ggagagatac ttttccaggt 300

gaccaagtgg gcgaatggcg tgagcaccaa acgctagcgc agtgttgggc agcgtcgtcg 360

ttgtggtctg ctctgccttg ccccttttcga cgccgcacag acgggtggat ccattgatgc 420

caagaacacc ttcacccttg accacaagat ttatgttttt taaccaaaaa gaaaaaagaa 480

acaagatgta agccacaaaa ctacttataa tttggaacgg atgcagcata cattttttct 540

tttctttttt gctactaaga actagacgat tctaatttct tcgatagtta tgtcagctgg 600

gaagcgcata tggactagca acagaaacca agacgacgaa gtctggccac gagccatgac 660

cgggctagct gcagcgatcg atcaagacga ggcatggccg ccggtggatc tacctttcc 720

ctgttcgcca aaagggacac acgggccatt ccgttcatga cgagacctag atgatatgga 780

ttgtgcgcct ggactgtaat aagggacaaa gtgccatttg cgaagaaaaa aaaagaacag 840

ctagacagag agaggcagcg aatcctatcc cctgcacatg catggtggac gcgttcttcc 900

ggcaagctgc gctagactag acagcaaccc cactgcagga ttaaggccag ggtctgatta 960

gttgggtggt gctggtgcat gcatctgccg cgtaaagaat ctccaccatt ttttctcgct 1020

ccatcacttg aggctgtcca tcgctttttc tttttagcca aggttgcagt agcagtacag 1080

gatataacaa cttggtgcaa caagggcaat cctttgtaat tctgttagca tcggcaggca 1140

gacgaaggga aaccgccgcg cgcacctgga gccggagccg gacagctacc agcaccgcca 1200

cttgtcgtcg cccgcaccgc accgcaccgc accgggctgt gtgccttgtg ctgcagttgc 1260

aattgcaact cgcagtaaac tagctactga taaaacaaac aaagatccca tccatccaac 1320

catggttttg gccgcgaaca gcagcaagga cgacgaggga agtcagaccc ggctggcctc 1380

cgcgtcatcg ccacgggcgt tgacctgccg ccatcccgtc aggtccgggc ccggtgccgg 1440

cctctggcct ccacacgccg aaagacaacg gcgcctccag taaaacgttt ggcggcgtgg 1500

ccgtggaagg tttcaaggtc gccgacgacg cgagatcgag attcatgtgc agcgttcgga 1560

attcgaggca tgctctcctg ctcgcactaa ggctaatcac agtgctgatt tcatgtctct 1620

atttccaaaa atgttaatac tctctctcaa tagagagttt catctcacta tttcatatat 1680

caacatactt cttaaatgct gcatata 1707

<210> 1822
<211> 1521
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_139485_G1, chr4:42804231..42805751, Cluster 11

<400> 1822
gctaccttta tcgttagggc catctctagc cctaggcggg cccaagcatc gaggtggcac 60

aaaaaaatta tatgtttctt ataagttttt gaataatcat gatatgcata agtgttacat 120

aacttttaca tatatatatt ttttgctatt acaactcatc tgatgttgat atcaataatt 180

ttatcagtgt tttaactctt gcaaccaact ttgtcggatg ctttgatgtt agtaaactga 240

gatttttgg ttcattaaat gcattgttat ccacacaaat gtgttgcata tcggatttta 300

ttgaccaata tatcatgtga tgatagcttc agttgaaaca agtttctcaa agctaaagtt 360

atcagaaaat tatttaaggt caattatgtc gcaaaatggc ttagttacat gttctatcaa 420

gaaggataca tggaaaaatg ctgatatgaa cattttcctc atagatttcg cgtggttgaa 480

ctgttgaatt taagggacag gcgcgcgccg aacttgtcct ctcctccaga agccaccgag 540

ctaggacgaa gcttgggaat ttgttgctac tatatactag ctatttcgac ccattctcac 600

attcaggttg gcggatcttg cttcagtcag tcagcaaact tgtgctgcaa cgcaacggca 660

acgcaacaga agttgacgct gtcccggccg tccactcctt cattttgcgt gaactagctt 720

tacccgcctg caaaatctgt gtcttcttcg cgcgccggct gatgtgaaac cgagactagc 780

agctaggaaa aggcccagtt ggtttgttac atacgtagtt gaaatccgtc tgccgtactg 840

cctgcatgcg tcagatttgg ctggctggct ggtttgacca ctggctagct agctcattgt 900

gcgtgtacgg ggtcagattt tcaacactat cgtaccgccg tgcactcggg gagtcggggt 960

cctcctccct caggaatctg cttgttggcc tgagacttgg cccgagaggc tggtttcaga 1020

acggaaaact gatgaggtag cacaggatat cagcggaaaa accaacacac gtatgaagcg 1080

ccccggagcc accggcggcg gcggcgtgag cgcccggcag ccaccgccgg cccacatcgg 1140

tcggtcacgc agcattgcaa cgctgacctt aattcctggc cggacgcgga cgttctgcga 1200

ccttgtttac gcacgacgca agaagatcga gccacgcatc gcttaccgaa gatcgtggaa 1260

ttcatggctg cagagtttcc cgcgcaggac agtttcagca gccgggacgt acgtacgcct 1320

ccgatcctcg tgctgtgagg tgagcttttc ttcttctttt tgtttataat cgaaatacat 1380

gaaccatgag tgaacatggt tttttgcatg catgattccg gcctctacgt acagcgcaca 1440

gagccaatga aatgaaatga gaacaaaagg cagccatttg gtgatcagaa aattagagta 1500

gattctcacg aggagaaatc c 1521

<210> 1823
<211> 2094
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_145842_G1, chr4:82662841..82664934, Cluster 11

<400> 1823
tcttaacccg catgctgcga ttcagtgcgt caagcgacaa ttgacaaact cttggtgcat 60

ggaagtcata atgataatgg catggtgtat ctggaaataa tgcagaaatg gttagatctt 120

tttttttga aataaaaact gtaggattca attcagataa aagaaaaatg gacagcgtat 180

ttgtttacat gtcatagtgg cctacgtatc catcaagggc tggtacggtt cataacacct 240

tttaccctaa tacttattga gcttaatgta aacttcaagg atagatggcg caatggatcc 300

tcttggagat attttttaa aaaaaaagtc cgaagcacct agcgccatgc agtgcatgaa 360

tccatatatg ctgcggccat acagagaggg gttggagtcc accggcgttg gcgacgatcg 420

atcactgccg acgcaagcag catgcaagca ggcagggcag ggggtcggat gagccgacca 480

tcgttgcgga aatggtcgtg agggaaacga agagagagta caagcagcag tgtaggtgta 540

gaggagacat aatttgatca agaaccagct agcgcagcag ctaggcggtc gagcctatag 600

ctagctagag ccgatggccg gatggagagg gcagccaccg tgtctttgtc tcgcattcca 660

catatacccg gcctccctcc tccatccata tcgcgctgct gggtagtttc tcccagctct 720

ctctctctct ctcccgattc gtcccgttcc gttcaagaac gaccgaatga ttgtgccctg 780

cttgtgcagt cgcgcactct cctcgatcag tgtccgtctt cgtcggtcga cgactcgact 840

cgacttgcgc gtcatctcga gaacgaagca cgctctggct gtggctctgg acgcctggac 900

cagagaccat catcatgagc ctcggagagt ccactccaca tccacacgcg gcggccggcc 960

ggcgggcgac gtgtgacgac cgacctccac gaccctaccg gctgcgctag ctagctctcg 1020

gcatggatca tgggcgcgga gggaaacgac ccctagctcg aaggccgaag cgcgattagt 1080

taatttacgg gggtgtttgg tagtaggttt tttactgtaa agctagctag ctaaacgtca 1140

cgagtaggac tagtggtagg gggagatgat gagtgcgcca atggccaatg gctgtgcatg 1200

cgaaccgccg cgatggatga tgggtcggtc gcgaaaggat cggccggccg gatgtgacga 1260

tgacgacgac gacgccacca catgcaccat ggcacgcatg atatgctcgg catggcgggg 1320

cccgcgtgtg ctcttgatat catcaccacg acattatgac gttcgcgggc atagctatag 1380

cgcgcggccg gcgcactcga tcgctggttt ccgtgggtgt ggtgtgggcc ttgctgttgc 1440

ttcactcctc cggaagaaag tgagcttttc tgtccctttt tatacaactc cggcccagta 1500

ttttgcgta cgtaaacgta ctcctactta gcactacttc cacatattaa ttagttttcg 1560

attccgcgcg tctatggtag gtcaatttaa cttctagcta gactcgtctt gatcttatct 1620

aattcatata tagaaaagaa cataaatatt tgtgacacca aaagataaat gagaatctat 1680

tttatggtat atctgatgat attaattaat gtcataaatc ttatcgctcg tttctataaa 1740

ttcaacgcca catataaaaa tgtttgattt aacactacta cagaaaaaaa tgattttagg 1800

agccttctta tttgatttat ggacatacta ggtagtaggt acgaagtgta cttgtctcct 1860

aaaacacaca cgggcaaaga catgcaaatc ctttttttaa gacatccaat aactaccagg 1920

ctaccggctc tatatatata gatcaatcaa ctgggacaaa cgtcttaaaa ggctcgccag 1980

ttactagtgt gtgcagctcc tctcagcctc atattacact actgcataat accgtccctt 2040

aatttcagta ctggttcctt tagaatggat actaacaata gttctataag cttt 2094

<210> 1824
<211> 1532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_154285_G1, chr4:142657322..142658853, Cluster 11

<400> 1824
ctttactaag gttaacacgc tcttacacgc ttctcaatgt tcttaggtgt aagccatcaa 60

cccatgatag cgaatctttt atcttctcta gttcctcggt accaatctcg acgtccgttc 120

ttcaccattc ttagtccatc accatgaaac cgtgtgacct ttaccttaat catctaccac 180

atatctgagc tccgcacttg tgcaccacta aatcaaatcc gagtatcttc ttaacaataa 240

ctcatcacac ttaaacatca cggccgcatc ttatctatgt attcgcacta gttgcaaaca 300

tgaaatttta cttcaatttg caaggcttca cctctagcta cgaagtctcg aaggtggtga 360

ggaatcgctc agccatttaa ttattcctat gttaattcgg tggtggcggc gaacggtaac 420

cagaccgata gatgatgttg atggcaactt ttaaatcact tgaaaaaaaa tcgattgatt 480

tatttttga catgcatggg ctgaagaggc cattattatt tctatgatga tgctcacgct 540

gtcagattgc aatgcaagaa ctttagaccg tttccctggc tatcatcgtt gttatttatc 600

cagaggaata taataaccaa caaaggcaaa ttctatcgct gacaaaaaat catccagatt 660

agctagtgga gcggttggaa cgagagccgc aacttttttac gcagtctgta tatccatgta 720

ctccgtcgta gtgcttgctc caacgctgta gatgataaaa aaaaggcctt tcgatcggtt 780

cgggaaagaa aacgggagcc agattttcga tcctttctga tcccttgcg cagacctgtt 840

cagaagacga cgatgtcgta aataacaacc cgtttttttcc aatcagattg agagagagat 900

agaggaagat gtcatgcatg caaccactcg tcgttatcct gctctttgac aattgagaca 960

cacacacaca catgtatgca tgcactttaa ttatgcctct gaagcaggca gcgaaactgg 1020

ccgctgtgat ttgatgcgtc gtaaacgact tttcccgtca gctcggtcgc tactgggata 1080

cttgtacgac catcaagtgt ggtggaagct ttggacgacg acggggtcgg accatcgatc 1140

agttgttcag ctgctttact gttcaatgca tgtgtagcgg gcgttttggt ccccgggaag 1200

tcgcgccggg gacgaatcat gtgccccgcc gtcgccgtcg agaaaggaga gcgacttggt 1260

ggatgatact atagaataat acaccgtcag ttgtggacga tgtcagcggc aaaacagcgt 1320

agctaaagta tttggctaat tgtaccgtcg accatgcaac gcgatacgta ccgtacggtc 1380

gctatgacga acgggcacga gctagtacgc gcgcgaacga aaatacaagc aagtttgtat 1440

tattgctagc tgatgtagtc ttctccgtga cgaagtggcg ttccaggatt gccgtgtgtg 1500

accaggccag cagctatctt gcgacatttt tt 1532

<210> 1825
<211> 1513
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158474_G1, chr4:165628959..165630471, Cluster 11

<400> 1825
atccagaatg taattttata tcgcgcgcat ggcgcgctac atacactagt atataaatca 60

tcggaagcca aaccgggact cgcacaaaga gggtgatgaa cgcagtaggc ccaaatgcaa 120

atgtgtccaa taatattcaa ggtgggtttt caggcccaac taaaccaaca tgtgcgtgct 180

actgggctaa actttacaaa ggcgctggtg caacaatctc atagcgggta tttatttggc 240

ttcaccgttt gcttcttcta gcgaacacat aacacgtttt tttttctaac tttgtgaccc 300

tatccagctc tcgggggtcc ggtagacaag tggagttcgt gccgtgcgag tttctgaaga 360

ggtcgtgacg gtagaaggag aaacttcccg tccacatgat acaatagcaa aagtcactac 420

gtggccaacg acaaaagttt aaaacattta acaatcccca catgccacgc atagtgctct 480

tccttttctt ttctcttttt ttctgtaaaa agaaaatagg aggaggacgt gacgagagat 540

tcacagcgct tccaactatt tgtgcccaca tatctgcaca tatggacgaa gcaagaagga 600

gaaatctaga ctactaagac cacgcgcgga cacacagctt cattagagca ctagttcggc 660

gtctatacgt gcttgcttac tgacaggtgg gtcctgatga gttaggttcg cggaaaaagg 720

tgccacaccc acacgcgcgc ggcgcggcgc ggcgtggccc gaacccgaac ggatagggac 780

gttcaccagg gcggcaacgg caacgagctg agccccaacg acgatggagg ggatgggagt 840

cgcgcgcggc tgcacggtgc cgtgcgaccc ctggacgtgc aagcaaatta aaaagagagc 900

gcaaacaaaa gaatggatag accaagaacc gacaaatccc agtggtcgat cgatcccgga 960

aagcgacgcg ggggggcgtg tgggagagtc gacaccgccg ccggcgggca cgggaaggcc 1020

ggcgcgcgcg cgcgacgccg ggcaacacga tcgccgatcg cggaccgaca ttgcccgatc 1080

gacgggcgcg cccactcccg cccgcggtcg ggaagaaaga agtaaccgag acccacggct 1140

ttctccaacc ggcgggctgt ccgcgtcacg gcgcagacgt aagcgcgcgg gcgcggctgt 1200

ccgcgtcgcc tttcgagtcg gccagcatta gcgtcatgat taactaatga taatagtgca 1260

atggcctcgc tgctctccct ggctcgaccc agtcgcttta atagtttaat gtatgtaccc 1320

aagcaaagcg acgctgcctt gcatccaacc aagcttgcta cgcctctgtc gctcgtgcca 1380

cgtacgaaaa gccgaaaagg gtttgggcgc agggcgctct gctctgatgg cttgttgccc 1440

agcagaggcg attaataaag cggtaaatga tgcatcatgc atgcgactat gcgagcaggc 1500

gtaggattaa ttt 1513

<210> 1826
<211> 1741
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159603_G1, chr4:172771600..172773340, Cluster 11

<400> 1826
ggtattgtac taccatagag ttcaggcgac agtgtgtgag ctcggagagt gggaaataat 60

aatcgaagaa ttattaatac aaataaaccc taaaccaata aactaggggt ggcagaacgt 120

gagagaggta atataagtga tgaggcctac agcagctgct gattcgttat caggatagat 180

gaggggaaa aaaatatggc tgggatagcc tcctgggttt tgaacgtttg gggttgaagg 240

gcaggcagac aggcaagcag gggttgtgtc gacggaagtg acgatccact cccctccttt 300

tacatttgac ccgctcgtcc tctctctcga tccaccgggt ctatcaggag gaggacgacg 360

acgggaaaga agacgacgac gggggctagc tgcagctggc ctaacgtaag gacggacgaa 420

gggggacgag gtgcacgcat ggtgcaatgc aaccggccaa gtcgttggct gggagagtac 480

taatctagca gtagtacgtg ctcacactgc ggcggttaaa tgttaacgga tgcagctagc 540

cctgccggat ctttcactgc atcatcgtac gcgcgaggag caatcaatta gtgccggtca 600

ttgtattagc accagcaaag cacgcaacag caagttggtc gctgcaccgc accgcaccgc 660

accactagtg agagcttgag gactagtaac atgggacggg gcggagagag aaaacaatca 720

ggctagagag agagagagag agagactgtg tgtgttgtgt tctcatgttg tgtgtgagga 780

cagacagaca cacggtaggt acgccagcct ccctcaccgc cagctgtcgt ctcgtccccc 840

cgcctttcct gtcgtgacgt tgaagtttcc tcccgatccc ccctcccccg attttttttcc 900

ccggctgtgt gggagggagg gagggatttt aaagaagaaa aaaaaacaga ggagagagaa 960

ggtgctgctg ggtttccctt tcccctctac acatggcacg tgagggagga actaaccgac 1020

ggccaccgct ccagctctgg atcctctgcg gccgggagcc gcagccgcga ccatccgtcg 1080

cggttaccgc gaccgagagc ctccctctcc tcatcctcca gtagtccagt ccacggaacg 1140

gaagcatcca cccggccgcg tgcaaacgtc cccattggcc gccgcggctc ggctcggctc 1200

gtccgcgtcc gctgacccgt atcctgtaca cgcacgccca agtcgcgcgg caggacagcg 1260

agcgggcagg ccgcaccgca cgcgctgcgg gggggcggga ttggctgtgt gattgagagg 1320

gacgcggacc ggcctggcag gccttgcgtt gcgtccgtcc aacgacgcgc ggcgcggact 1380

cgccggcgga atctggcggg ggtgtggccg cctgcctaac ctcaccttgg ttcgttcgtt 1440

cgttctggcc tctgacccaa cccatgcacg tcggtacgag tacaacaagc atgtttaccg 1500

aacctgttag gctaggctgt tactgtctct aggcgtaatg cgtttggtcg aattaaaccc 1560

gatccataga tctgatacag accttcgctt gtacgtaatt tttttatata tatacgtata 1620

ccatatgctg cggccattgg cagtgccacc gactgccggt ggtggatcgc atccgaaact 1680

aagccggggg ggggggggag ggcgtctgtc tgaatggcag agtattcatt cattcggtat 1740

a 1741

<210> 1827
<211> 2972
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159605_G1, chr4:172774108..172777079, Cluster 11

<400> 1827
cctgaaaaag gagccgctcg cctttgtact accctcctcc tctgctcctg gtaccatgga 60

gcagcagcag tagtgtccgg tcccggtgca gaagctacta gatggcccct gcctgccgcg 120

tcactggcgg cagggctcca tcggccggac acgggcgcca cgtacggcgc tttatgagcg 180

gcggttggtc gatcgatcgc gttgcgttgc gttgcgacga acccagccag ccccgtccag 240

tccccgtccc cggtcacggg accagctagc ccgtccgtcg gtcggtcggt cggtccggcc 300

gcacggcggg accaacgagc cgttaactgc cctgggcagc ccgatccagc gtctggtgcg 360

cgccgttggc agcagccacg agcgagcgca cgctgtcacg ggaggaagca ggcggagagc 420

acacaggccg gcctttctgt ttatcccgcc aggtagatcg ggtttagcga gatgattgcg 480

gcggtaacag cctcgtgatc cattgcccac cagtaacagg ggccggccga tccatctctg 540

acgacaacgc tggcatatag aactcgccgc gccgatcccg aggccgcgag gcgaccaatg 600

atcgctcaac atgcggcctg catgtcccca tatatatata tatatagtac tatatccgat 660

atttttatt tcaaaaaaaa aaacaatcaa taggattcca ttaattcaat agctagacca 720

tgtgtgccgt acgcgtgata cggtggcggt gcgtgcagtg gtgaactgca tgaagtggcg 780

gtggccgatc gatccaccac ccatcatcac acatgaccgt gatccggtcc gggcacgtcc 840

ggccagccgg cgacgaccgc aacggcagcg cccttggaca cggcgggagc tgaacgtgcc 900

ccggtaacat gtccgcgtcg tgttcctgtt gccgctgcga ttgcgcgcgt tgctggctag 960

cgcgtggggt agtagtggtg agtgtgcgag cacaggacaa aacgcaaata aaggcacccg 1020

catcatgcat gcatgcgtgc tgtgcatctc atgcgtcttt gttccatgta agtgcctggt 1080

gctgtgataa caggcgcgaa tcacgggatt agtttacgat gacagcgtca aaaggagaga 1140

aaaaaatgtc agaggacacg tatatatatg ggcatctgtg atccactgtc tcgcaattca 1200

aacaggttga tccaaaccgc aggctacgcc agtgttccta gctggctgtt tttttttgt 1260

aatgaatatg gtttttatat cgatggttcg attataatta ttaatcaagc taattgatcg 1320

attataaagt aggtgtagca cactgtaaca tgcatgctaa tggcagcagc gatgggtcag 1380

cggtagtaca gagtgaggcg agtcatgtgc gtttgtgtga tccaccggtg cgacgacgta 1440

cggtgccccc accggacgac gccgcgcatg tggctgcaag ctcacccggg gctgggccgg 1500

gcctcgccgt cggttgcgcg gtcgctacct gctgctgccg ccgctcatca tgcgcctgca 1560

ccggcgtgcg tgggcgtggg cgtgggcgta ggcgtccgcg tggatgtgga tccatgcatg 1620

atccatctca cctatctatc ttcgtcaact tattcatttt catattcata atcaaatttt 1680

gctatacgaa tagcgtaatc tataatataa aatcgtgttt taagtggcca tataggtaaa 1740

ctgctttaaa tgtatgtatt gtccgcgcgt gtatatattt gcgctgtaaa ttcggatttg 1800

gtactgcttt ttaataaact tttaactttg gctcaaatac agaatcctaa atttttagga 1860

ctgggctggg gcgggggtgg agtaggtaca gacgtacagt gcgattcaaa ggaagctgga 1920

atcgtctcgt gtgcatccta tcgatggatc gcctgtattt atgctagtat cctactacca 1980

ctactacgca cagtgcgtac cagtgacagt tggtggctgt ccgatggacg acgatgaggc 2040

cattgaccag agactggcct tgtggtttat ttgctgatag ctagctagcc tgagtggctg 2100

atgacgatgc catgccagcc tgcagagatc ctcgattgct agctgcttgc cctgggggct 2160

aacgtacgac gaccgagtct gaatttgacg acgcgtagta tgcgtgcaat ggggttcgtt 2220

tctttcccgg acagcgtcag cgtgtgattc acagtggggt taacgttact actttactag 2280

ccatctagcc ctcttgttcg ttgacaagcg agacagtgat gctgaccgtg ccaggtaaac 2340

tgcatgcagc ctgcaggcga ctggtcaatc cttttcgctt tcaccctgcc ccacagccac 2400

aggtcgttgt agcactccgt caaaaaatgg tttgtttttg cctcggcaga cggtgtcacg 2460

ttgaagcggt attgtaattg tactagcatt cggggactgc ccacgactac gaacctgtca 2520

ggttgctgga ttgatcggtt cttgcgcact gcatacttgc agcttccttt ctgtgtgcca 2580

tgtccaaatg ggcatggggt tcggacttcg gagccaggta acacatgcat gcaggtcatc 2640

agattcagag gctccttcgt gtgatgtgtt gtgagttgta accatgcacg cacgtcatgg 2700

gcaccacttt tttctgtctc ctttttcttt ttttttccaa ggatgatgcg cgtcgtgctg 2760

tgcattcctc gcatagtcgc ttgtgtttct tgccttttaa gatactgttt tcttgagggg 2820

cgagtacgta tttttcaatg gcatatcctt gaccggacag atttctaacg atacagctca 2880

cgtacagacc tttttcatgt ttgggtctct agattgctgc ggtgcgcgcg cggttgcttc 2940

agcctataga caaacagaca gtcaaacagt tt 2972

<210> 1828
<211> 1434
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_160623_G1, chr4:178750783..178752216, Cluster 11

<400> 1828
cgccaatgtt gggttgcaag ttggcatata tatttgcttt ccttgagcgg tgtggcatca 60

tcaaaatcag cctatcttat ccctgaaaac gggtggttct cgtgccattc ctaccggagg 120

gaaaaaagag agagagacga gacgagacga cgacgtcggc agcggagtgg actggaccag 180

caggcgaggg agacggcggt cagtgtcagg caataatgcg cgggagacac ctgcatgcat 240

atagcaatag catagccgat cgaatctgcc agcaccggcg cgtgctgcgg cccagcgcga 300

ccgcgcgcgg ccatgggaat caacggcagc ctttccaagg ggtacttgcc gcgccgcagc 360

cgctgttgcg ttgctttcta ctacctgcca atccgcgtga cgtgcggttg tctcgccgcg 420

ctcgcggctg ccactgacag tgctgctgct gctcgctccc agtcccatct gtccaatctt 480

cgtccccgcg attccacttt tccagatctg actggacttc actaggccaa gggcgcgcgc 540

gcgcgcaacc gtaccgccag catccatagc tctcggaaga acgatccaat gaatttactg 600

acaccgatct gatctcaacg gcccggccgg ctccagatct accgcgcaca gtgcagtgcc 660

cgcggctcca tcgatgagga caacacagcc acgaactgtg ctgccgtgtg ccgtgcgccg 720

tgcaggggat cggaatcgga tgcgacagcc caggtccctg gaccatgcac gcgcgcgtgc 780

gttgttactc ccccgctagt ggctgtggct aggccggtca cacgtggtaa ctaacaatgc 840

tgggaccagc gcgtaggagt atactacgcc tgtcctgtat gtgtatcccc ggcctactgg 900

tgtcctacgg caccggcgca ccgccatgaa tttgcgcgtg ggacggaacg gaaggcgtga 960

tccggcgatc ccgttgccgc gagcacgggc tgggccccca cccccacctc gtgatctgtt 1020

tacggcggcc atttatgcga ccggggttgc aagccgccat gtatgccact cgatcccatc 1080

cgtccggcat tcatggccgt catgcgcacg agcgcttggc cggtggacga cgcggcgttg 1140

gcggatccaa agcgtaaatg gcctcacgac ccgtccaatc gtcggaccgg gccgtgcgca 1200

cctactgtat ggtctcacct tagagccttt gacgggctca attcgcgtcg tcaccattaa 1260

caatactata cttttgttac tctctcttta accgaccatc acgttcttcg tttgtttccc 1320

ttttataaaa aaatttcggt gcggcgtagg ctacaaaggt ttgcaaattt gtgcagactt 1380

ttctattaac tgcgctgacg tatagaccct gtttgaatac actagattta atat 1434

<210> 1829
<211> 1516
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160711_G1, chr4:179615212..179616727, Cluster 11

<400> 1829
gtgtgaagga atgatagccg tcgtcggtcc cttgtacccg tcgtcgctga tctttttatt 60

tttatttttc gtgaggagaa gaaaaaggaa ggaaaccagg gagggagtga tgatcaggac 120

catcttccac gcacgctgct agctagcctt tgagctgctg ctgctgctgc cgtccatgac 180

catgagcctt gctttgattc tactcctcca ggggagtgtg ccaacactgt ctgacaggca 240

gctagcgagt gggatcggag tcggagcagg gtgaaagagg cctccctcga tctccttttc 300

tttttaattt acgcggctcc atgaccgtac ggaacgggtg gtcgatgcga ggaggacacc 360

cacccaaggg ctgatccgat cggagccttc cccccgggat agacggcgac cgacggagga 420

cgtttcgcct ctggtggtca tctataatcg agccggccgg ccggttctct atccatgtac 480

ccacgtcaca tgatatatat atatatataa cacgccgggg ccggcggtcg acgtggccgc 540

tgggcgggaa gatgagatcg atcgatgctt ccggaccaac agtacaggtg caaaggcgat 600

ggatggttac tttttttcg gggggcacc aactccgcgc atgcttgctt gctaggtgtc 660

catcgatccg gcgcactgct atgctctccc ccctcccgat cgccaccgag gccagatcgg 720

ggcatgggaa ttattggaca tgataaagga tgacataact cgactccatc catcgattga 780

gagaccgagc ggtgcgcgga cagggacaat ttacactcca acatgggagt gtgggacaca 840

caccggtgcc tgcctggcta gggctagtca accgatcgga tggaagctat acgtcgtcgt 900

cctccgatcc gtcccgcgtg gagtacgtac gaacgcagtg cgcgatccgc ggggaatggg 960

cacgatcgca cgagaattcc atgtccatga gcggtggaat ccgagggcgg gcggctatat 1020

acacggaatt cttccctagt actctctcca tatatcgctt tctctcggtg ctagctcatc 1080

actctcgcac gagacaacct tagcttattc ggtgggggtt ccagataagc cacgaaaggt 1140

gccatcaaca aagtaaaata aacgagagag agagagagaa aaaaggccat ggaaaaacta 1200

gatctttcgg agtggaggcg cgcgcgagat tttgttcctc tctggatgga gttttgcgag 1260

attgacaggc gttacagcca actgattaac cgagacagga gcggggcaga tatagagaga 1320

gagagagacg cccaccacca aaccatgcac gatgatgaca agtgttgtgt gaccgaacga 1380

acgcccaggg cccagggagc agcgccagca agcacccgtc gcgttcaatg atggctagct 1440

agctaccgct accgctgctc tggtggtccg cgcgctgcca tggctgctgg tggtgttatc 1500

gtcgtgctag tgctac 1516

<210> 1830
<211> 1594
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160712_G1, chr4:179616859..179618452, Cluster 11

<400> 1830
cttggcatcg cggtgtgcac ccgtgggaga gcgacggcga ccccgaccga ctttcccgag 60

gccgtacgtg gctggtccaa gactccaacc aagtccaaag gatgatgccc ctgccatgcc 120

gctacctcga gtggaaggaa gggaagtgtg gaacgaccga tgcatccatc caccaaagct 180

ctcgcaccca cccacaccca cccatcgacg acctcctgtc ggggttccga actgaacaca 240

ggcgggcggg tccatgcagg gcgccgatcc agcggatagc gacgctgcct cgagccgatc 300

caacggcccc aagaccgcca gcgagtagtc ctcatctccg caccgcagtg gcgtgcccat 360

cccgaattgc gcgggccggc agagctgcaa ctgcaactcc ccccctcgtc tgcctgtccc 420

gacgccgacg ccgacgccat tttctccgct tcgcctgctc agcggcgcca gccacccgtc 480

gcacgcgaga gcttcggaag cgcgtgcgct gctggatcgg ctgcgacacg gctgccactg 540

gcattggcgt tgcgctgctg cttttattta tatacacaaa ggggaattta agcgcagcgc 600

agcgcggttg gtcaatacta tacgatcaag ggaagcgtac cgacgatcag acgactaatt 660

gctgcaaata aattactgac taatcgtggc ctgagcagga gatgatggcc actcgcgctg 720

cacgatttcg tcaataaaca acagcggaag tactgccaaa tggaaaagct agtggaaaca 780

ccgaaagctc tacctttgcc gcctacgcat ttcctactgt cgccgggagg aagaagaaaa 840

aaaaaaacct gcgcagaatc aatcgtcgag aattcggaat tcacaagggc caagaagaag 900

aatctgcgta cgccctagca agtgctacgt gcaaaaccat tcatgcatct tcttaactgg 960

ccaaaaaaaa aagccatgtg ctgcaactcc caactccaag caaacatggc accgtggagg 1020

acaaataatg cgagtggagg tggaaatggt ctcacctttt ttttttttg ccctccactt 1080

tgaagccact gttcttctca tcgcctgcgc gcgagaaact tcgtctccca cctacctttc 1140

ccgggcacct gattccccca ctgagatgca cctttctttt atgtcctttc ctgagaaatg 1200

cacctggtaa tttctcacaa gacacaccac acataaggcc tagtggctcc ttttttgtg 1260

tgttgtttat cgcacttagg ctgctgtcga gcattgagaa atttattagg tattgtccgg 1320

gatgactttt ttgtttcgtc ctggcctcgt tttatagccc tttattgtta tagcctttta 1380

tttgcaacaa ttcctggagc caacatagaa ataatgtgat gccttgtttt taacaggagc 1440

atcaaattct aaaaattgtt gtaactttta aattgttatt tgctaatgct tcaccaggct 1500

gtattaggtt caccaactgt agttaaaaat taagttttag aatggtactg catggtgtca 1560

tctttgtaca tcctaggtaa tataatgcca tgac 1594

<210> 1831
<211> 2248
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162326_G1, chr4:189130194..189132441, Cluster 11

<400> 1831
ttggcccatc tactgagacg acgaccggct gacttggcta aggaatacgc gggaacaaca 60

cagcaaccgg ccggctttgc attagatgca ctcctccacc aacaggcagc gcagcgttgc 120

tagctgttgc agcatatgca tcagatgctg ctactgcttt gcattacttg cgtaacgacg 180

acgacgagga ggaggaggac gcagcagcgc gttcattctc attccgcgcg caaacgttgg 240

gaaacatgag cggcgcacag acgactcgat ctgataggtg ctttgtgtgt gttgtggtct 300

ctgcatgcac agtcaacgat gattgcgtgc gtcgactgtg tggtgctgtg cgtgtgctct 360

tgattacatg accaccaaga acgatgcata tgcaccaggc caggcatgca gctagcacta 420

gcagtcgcag tgcaaaggaa aatgtggtga agctttcgga tgtgcgtgtg ccgccaaatt 480

gtcatagaac cggcctgtcg tcgtcgatcg tacgtgtatg tccggccagg aaagtacgta 540

ggactcgctg gactgactga ttgactgact gactgactga ggtcgtcaca cgaccaggtc 600

gagtccagca gccgatgcaa caacgcgctt cggtctgaaa ccgtgcgttg cgactggact 660

cccatcatcg gcatgcagtg aagtgcagtc tcgatcgcca tagatataga gaccaatgca 720

tcctaaaata tggaagaaaa atctagagaa aacccctatt gaaaaggttg gcagcgacaa 780

ggaacgaaaa cgagctagaa ggcactcccg gccggccatt aatttccagg caagtgtacg 840

gtatgctggc agtcagtcgt caggtcaagc ttcggctggg ttcgtttgat gtggcttgct 900

aacgaactca acgctagcta tatagctggc cctggccggc cggccggccg gctggcttgg 960

gagctttatc acttggagat ttcagagtcc actcgacgat gtcaagacgt tcgtcgtcgt 1020

cgtcgtcggt tacagataaa ggcgcgtaat gctggagtta gactgagtga cgacgcacgg 1080

acgccagcca caaagaatag tagtagtaga gagagagtat agtcaggaac agaaagaatt 1140

caagacagag aagcttcccg tgtcccttct tcctcgagga gtcagaggca cgataacgcg 1200

agtttggttt ggctagtgac ctccttttgg tcggccgtga gcgtacgtgt tgcagtcact 1260

ttttacagag tggagtttga aattaatgaa agatgagata tgagttagtg ttgccttgta 1320

ctagctatag gagtacgcag tcttctttac tcctgaaaat aaaagtagcc gactaacctg 1380

gtcagacgga cccaagaatc ctgcacattt tggagtacaa accgttggat tgatcgcatc 1440

agactcgatc agggaatcaa gtcggacaat aggctcgcgc tttggttgag ctagggcata 1500

taacaataat atgttggttg tagacttctt ttataccaca agaaccagtt tatgggtaac 1560

cctttcgtca tacactcgca caaaatccaa tgtaatcctt atgcagctgc tagtgaaggg 1620

aagactacta cagtcgtctt ctttgactct gatcatcaaa cctctaccag ctgtatggca 1680

tctcatccca atcctaaagg tataatccca aattctgctg tttgtaatgg ctaatgttac 1740

aaggttaaga tcttagaagt atatagtagt gatatcagag ccatgttttt aggcttcaac 1800

cctaactcta gatgctagaa cccttctgtt ttagatcaaa atccaaacaa atcccttcaa 1860

attcttgaat ttgtggtcct acctagttag aacaacaaat ggaagaaagg aaccctaact 1920

cggcatccca attttcctaa accctagccc tatgaaactc cataggaaga gaaagaggcc 1980

cttagagctt atgtggccat tgctgatgtc ggtaggccat ggaagaaggc ggcactaccg 2040

tcgatcttaa gcgtgaaggc agacataggg ccttatgaca ctgtcgcgag gcctttcaat 2100

agcgggacac tcaccctcgg gtgtgcgcgc gcaccagcga gaggtcgcat agacggcgtc 2160

gacactctgt cgtgcctctc tgtcacagac tagatagtat tgtatcttcg ttggagtcga 2220

taatgtaatg tatacattac tagtttca 2248

<210> 1832
<211> 1705
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173220_G1, chr5:4909246..4910950, Cluster 11

<400> 1832
acgggcccca cgagcacgtg acgtaccgga tccccccca cccgatccca ccggcgcact 60

gccagactgc ggagtggtgt cactgtggca gtggcggcct gcgccgtttg tctcttccga 120

tccgatcccc tagcaggctc aagctgtgta gctgtagccc cgcctggtcc atcatccacc 180

cgccgtttgt ctgtgccagt cgcggaggat gcatgcacaa gcacgactcg taagccgcgc 240

gtcctagctc tctgccaccg catccaaatc caaggaccac ctgaacagaa ctcgaccggg 300

gagaaacggc catggatcgc agcggacgtg ggggccacct ggccgctgcg cctagcgacg 360

ccggtgggcg gtgggctctc ctccacctct ccgtcgtcgt cgtcgtcgtc gtccgcactc 420

gcctcaacaa ctatctatcc ctaccctacc aagaaagatg ggtccgcggc cttcccaatc 480

cccccgccga cgtgtctgtc gctcattggc cgtgcgtggg cgcacagaac agaagtagtg 540

cctgtgccgc cgcgcgtttg gcctgccctc acatccacca cctgttttgg gcgtgcctgc 600

ctgcctcagt gagtgaaacg gtcagttcag ttcgacggca gcagccgggt ttctttcttt 660

tcttttcttt ttctctttct ctctcaagtg agcgcggcgg ccgcacacag tgctgcgaat 720

tgcgatgcat cttctctgct gtctggcctt tacttggcgt cgcacagttg cactgttgca 780

ccacgtagtg gtcggggcat ccactgtgtg cgccccccac ccgtgcggcc ttgcctgtgt 840

ggcgctggca ccaccccacc gccgcgattc gacgacggcg acgatgatta gagtaataca 900

tatagcaaat tctactttat cagtgcctat atatataact ataagtgcta gattattata 960

ggtgcgcgag gctggggagc agctttccat cttgtcacgc caaattaggt tagccacact 1020

aattactccc cggaccgaat ctcttgtatc caaacctttt ctgccgattc gtctgtaggt 1080

cacgtcgctg ctccccccctg tgggctgtgg ctctcctcag tcccaacttg cttgatgatt 1140

ctttatcact tggcctttcc catccgcgtt actgtgcttt attatacagc ctcctcatcc 1200

acatatgatt ggtgcacatg gattcccccc tattttctgg acgggccggg tccaaataaa 1260

caatattata ctagctaagc taatcggggg ttttttttcc taacataaaa aatggaaagg 1320

aagcttggct tttataaaac caacagccgg atgtgatcag ttcgcgtatg tattcgtatc 1380

atcacccgct ttgacgaggg gaactggact ggacggggtg tggtgtggtg tggtgtgggc 1440

gcgtcgtctc caagcgcgac ggcgacatat ccatccatgt ccgccgcacc gcacggccac 1500

ggcccacggg acaagagatg gcagcagaaa agccacccgg ccgctgccgg ttggacttcg 1560

gagatgcagc tccggcatcc gggtcaaaag tttcctttgt tattaccgct ctttctctgc 1620

ttctttcctc cgctgctggt tgacgaagca gagtatccaa tcagtgaaga cgacgacgac 1680

gacgtgttta cgcctaatcc cggga 1705

<210> 1833
<211> 1659
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173224_G1, chr5:4924455..4926113, Cluster 11

<400> 1833
gaagttcaaa cgaaattgaa attcttgaag tgaagctctc ccaaacaggc cttgggtatt 60

tatttggttc acatatttgt attgtaatgt actcgaaccg ttgaatcttt gactggaaca 120

tgtgtagatt tggtatacat tatgccgcca gtcagacttt caaatataat tctcgagaag 180

tcaaataatg actaaataaa cttgtataga aatactaata cgttgttatt aattacaatt 240

gaaatacgtg gactgataca agctccatat ttggctgcat tctttttacg gaccgaggga 300

gaagggaggg atatgtgctt gaacttgaag tttggtttcg gactttcggt tccatgtttc 360

tctgctctgt cctcgggaag gcaatgaaca aacagttgtt cgagttgatg tgtccttgtc 420

tctgtttgtt ttggccggtt gcgtgagtgc aactgggcat ctgctgctgc ctccctcgcc 480

tggaccattg cagggtacca actaccaaga gcttctcttc tgcgctgtct agagcggagg 540

tttcggtctg gatttccaag taaaatccag cgagcacaac gaaccagctc aactgggctg 600

gccgttcacg cttctttgag acctacccta attcacccaa ctcaacgtta tatagaatag 660

cttaacttca gtcaaaccta ggattttatt gtttttgaca gagatagcgc tttttttaa 720

tttgtcattt tgagagtggt gcaacgaaat taaaggcctc agatgttgct ccctccattc 780

tgaacatcgc tacaaatttg tcgattagct ggtggtgcgt tgttgaaaca attccatcgc 840

catcgaaagc caaaacaaaa attctcaagt taacgtacgt gctgactacg gtaagcactt 900

ttgaaaccac aaacaaaacg aaggaaaaga aaaagagggt tcaggaggaa ggaaggccga 960

atgggtacaa caaaaggtgc caaatgggat gcagtttcct ttattttcga aagcaatcgg 1020

ataggacagc tactgattat attaaaaaaa aggaaataaa cgataaaccc taagtattat 1080

ttttccggct gtcaggtggg gcagctccgg attcccagct agatttcctt ggatcgctcg 1140

tcaccaaact ttcgatttgg gaatcggatc ccagtccttt ttattgctac tagtcctatc 1200

gtcatttttt gttgttgttg ttgtgcggtg aagcagacat tggctgcgac tgcgaaagct 1260

gcagttcgtc tttccatcta ataaaatctc accgacagat ggcagcggcg aatttgacag 1320

ccaatttttc aattccatgc cctcgaatat caacatctaa atcaagcaaa atagaagaaa 1380

aaaaagtgag atgggctggg aacgtgtggc tcgggtgcca gccgcccctc caaagctcgc 1440

catcgcgtgc aggtgcagcg tgcttcgcgt cgtgagtttt gaggagggtg ttttgtcatg 1500

ccgttcatgt gtgcagaccg cgataataaa ctaataattg cggcgggccg aattgttcca 1560

cgcggctctg agcgaggtac tgatgagcag gctttttggg tcgcagatca ctagaccggc 1620

ccggcccgcc ccgtctctca cagtccggcc acccaactt 1659

<210> 1834
<211> 1526
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174019_G1, chr5:9822725..9824250, Cluster 11

<400> 1834
ggcgggcccc cacctccctg ccgcacttgt gccactggcc tggcgctctg cgtgttgctc 60

ggagcctgcc tgggagggcg ggacggaggg acacggcggc agcagcacct cgcggctcgt 120

ccgtactagt acggtacgta cagagctttg actgtcctgc cgcgtccgat cggctcggct 180

ggcacgccta ctcgctactc gtactggtct aagtggcgcg gggcccgggg tcataaaccc 240

aaagctgcag tggaacgaac aagtgatgcg cacagtgcgg tgcggcccct ttctgcttct 300

gccccctgaa ttcgggacta gccgcacccg cgagctggtg ataggctagc tcgtttgtcc 360

gaagtgagcg acgcggggtg gaagcgtggt agtaggctgc tcgtctcgtg ttcgtattgc 420

acacagcggt ggctcccgcc agtccgctgg tgatctgccc gcgctgctgc cttgcttgcc 480

gctggtcgca gtgacgacga cgtctagtac gcgcgagagg ccgccaagcc gggtcagggc 540

agggcaggtt ccccggccgg ccccggtgtg ggagtgggac gcacgaaatg cacggtgccc 600

caaactccgt agcgagcgcc gctggcgccc gtggaacggc gctcgaagcg gcccctgcca 660

gcgacgtcag cctcggggcc gacgggtata acttctcgtt tttcttgtct cgagacctgt 720

cgggcccccc tttttccagt ttcttctatt cgggcacgcg aatcgatgcc cgccctgccc 780

ctgacgattt gcctgcaacg attgcacgca cgaggacgaa ggacgggcga tgtctccgtg 840

cacgctctgg cctgcgacgt gtgcatgcat ggagctgatg ataattggtg cccaagttcc 900

ctttttttct attaattttt tttttgcggg taaattggtg cacaagtacg gcactgttta 960

tacattgttt cgtgcatatg gtaaagagca aggaaaatga tttgtggcaa ggcagtccat 1020

cgtgcctaac cttatcggaa ctaggactga cgtacgtacc cttatccaac cacgcattat 1080

ggactgccta tataagatct cgctttatcg taatctaatc gtttttacac gtgcagcggt 1140

cgcgcggatg acgtgtctat gggggtgctg aaaatgattg tgccgcgact gtgagggcca 1200

aattacgtgc gctgaacacc aaccaatccc ggtcaaccgt atagaatttt tttaagcaat 1260

ggcgctgtcg ggacgtgaat ctcgagccca ccgttggcca agcgtgcgct ccagccgtct 1320

atgagcgcgg gaaagccaag gagcaccgtg atctggtctc tgccgacctc acagccacga 1380

ccaccactac atgctaaatt ctaagaatcc cttgatttga tctgctaaat tataggaacc 1440

gttccatgta atatctctat atgcaaccaa ctggagatct cgtacgtagc gtgcgtgttc 1500

attacacctg attgacgtgg ccgttt 1526

<210> 1835
<211> 2896
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174338_G1, chr5:11797178..11800073, Cluster 11

<400> 1835
tttaggttgc tagagtgggt tgcagcctcg cttgattctg ggtcgtagga ccatttttt 60

ccccgcaatc cacctatatg actgccacat ttaggccctt ttataataca agaataattt 120

tagagaaatc atagtaatca atttattttc gtagagaaaa cacagacacc aggaaaaatc 180

tcagccttag gctctaatct tgtcaacact ctatataagc tggcacgaac attgtttgaa 240

aagaaaataa aaaatcggtg agcgttgccg atcttaaacg tatcagtcag atcgctccgt 300

gacatggaca cagaacaacg ctggtgtgag gctgactcca gcggactctt tagatggatg 360

tgcaaaacaa tattttatat tgcagacgtt actatttaca taatactccg tagaattcta 420

aatcgatacc taagatatgt agtgtgtagg ctgagagtgg gcggcagcgg cacaggttcg 480

aggcacctgt cattctgtct gtcaagctca cgcgccgaaa ttcttcaccc acccaccagt 540

ccccgcgggt agcgtcgcgt ccccggcgcg cgcacgaatt tctctccgcc ggccagggcc 600

cccccgtgcg cacatcgttg tcgtcgatcg ccgtccgccc gtcgcggcaa gagaagaagg 660

cgtcgccgtc gagggccagg ccaggcagga cgctctccgg gcgcgcgatg acgcggcgga 720

aacaaaaatc tcgcgcctgc acggaacgga atcgaggaca gccacatgac gcggacgggg 780

gcggccaggt gggggcggga gaacgtgtcc atggggccgg ccggccaacc gcccgggatg 840

ggaagggaaa cgaacccgga cgaacggaac ggtggccgct gccgttgcgg agggccccac 900

cggccggcct aacggccaat tgaaaaagcg gcgcgtcgct ctctgctgcg cctgcgcact 960

atgcccccac acgctcgctg ccctgagctc gcccgcacca gagaagaaaa tcgtcgtcgc 1020

gccgggtcca gtccaggacc tcgttcgcgg cataatcaga ccggccgatg ttgacggccg 1080

atgttcgctg cccagagttc ttttttcctt cactggtcgc ctagatgatg gcctaatctc 1140

ttgtttaacg atctgttact atattttatg cagtttggga ggtcgatgaa cgagtagttt 1200

atgcatggac tatcctgggg gtgatctcag ctgcggaaac gacccgatcc gagcccgacg 1260

cccgtatgca tacgtggtgt ggtgtggctg catgcttgcg tttgcttcca tttgtttcgc 1320

ccagatcgtg gctgatctct tgcgtttgca cgcagccaca gggcacgagc tgggttatcg 1380

tctgatgact tgtgccatga tagtagggat tactatctca cacacaacct aattaaccaa 1440

gagaccccgc ggccacggag caagcagtat aaaaacaaag ccgtcacatg cgcgccttgg 1500

agttggcgcc ctggaagaaa tctctggcat ttccggcgag caacttgccc cgccccccga 1560

atcgcctctc cgtgagaaca ggtgtgggaa ggaccaccgg cccggcgttc gaatgcggcg 1620

tgttttgctt aaaaaaaaca gcatgttcca agtgccagta gattagccat tactaaacga 1680

gagctgcata cgcaagttgc agccagccag atagctagcc tagctactag ctaggaggtc 1740

tcttgccgag attcggacct aaatttgtag cgtgccactt gtgtgcgatc aaataagcaa 1800

cgctagtact ctacgttacg gcgcctaatc gcacatgtgc atggtcgcga cttgttaaag 1860

ttgaggcaat tatacaaacg tttcacccgg gcaaagatcg aagaccacac atgataagtg 1920

ggttcggcat ttctaaagac ctccagtcca gcccggtcaa ggaagatacg gcagtcttgt 1980

ataggtcggc ccagttagag gaataggctt cgatcggacc actctatgac caggcaggaa 2040

attgtggccc aacctgatat caagataaaa gcatcgtcgg cccagttgga gaaataggcc 2100

tcacccgaac cgctcggtga ccaggcagga aaatgtggcc cggccttgat atcaagataa 2160

gcctcgtcgg ctcagggtta acctccacgt acatgtgttc atttgtgtcg agcttaatgg 2220

actagcacga agaacgaaaa aagcacaagc tacgacacaa aataatttta gaccgggctg 2280

ggcttgagct gaggtcccgg cccaaggacg ggaacgagcc cgacccgttt atagcaagca 2340

cgaaaaagct cattttaggc atgaaaaggc ttgcatgcgg aaaaaagacc cagtcccaag 2400

ccacctaggc acagacaata agcctctatc cgagagaaaa ggcccagttc gatccagcga 2460

taccaggacc ccagttccca acctaaacgg ctaaacctaa acaagccatc tcggtgatgt 2520

gaactcaacc acctaggcgc gagccctcca ctgcccccac ccccgctgct gccatcgtga 2580

agacgtcctg agacacgagg cccgagtagc gcccagctcg actgcctcca tgcgggcacc 2640

gacgaggcga catcccgacc aactaggagt accgacgacg cagcgtaggt cctcgctgag 2700

gttcgagtcg gcgacgccct ctaggctcca gttgagagtc caaaaccaag ctccaccagg 2760

cccacttcct gcagctgtca accatggcgc caccgtcgcg accacccgac ccacagaccg 2820

tcgtcccgac ggtccaagca actccggctg cgccttttg acttgctact gctccacgac 2880

ctctagaacc agaaga 2896

<210> 1836
<211> 1667
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174374_G1, chr5:11894443..11896109, Cluster 11

<400> 1836
ttcatgcgtt cttcttttct tttctttttt tgattttggt ccaggtgctc tttgcgtcca 60

ttggacttgg atgccacggg acactggacg cctcttcggt ggaacggcgc aacttgcatc 120

gagtttctcc tttggtgcgt ggcgtgagcg cgagcgtgtt gttggcgccc gtcaaaatta 180

tgcacgtctt tcttcctttc ttccttcctt tctttttggg aaataatgcg tgtcttttca 240

aatgatgcta cagcgctact gaatctctct gttaagcggg ccgattcagc gtccgatgat 300

ggttgagatc cggattcacg tcccagctgg tcagacgtac gggctcggaa tcgggtggcc 360

caaaatcgaa accatgctcc aggaacggtc agcaacagtt ggacgaccgc aaaggcacgt 420

ggccgctatg gaatggaatg gaatggaatg gaacaaatat ggaattcggg catctagccg 480

ttgcttgggg ggctcggccc tcttccacgc atcagcgtat gggccggcca ccgtggcccg 540

ttactcgtag acgatccaag gaccattagg ccccgcggta gaggtacaga aggcagatcc 600

agccaggccg aaaggacggt tttccgggaa agccactttg acccatctct tgcgtacccc 660

atctcttggg cccatggcag gtagtcttat tgatggcaga aacaacttag gacttcaggt 720

gactgaatat atgacgctat tttttaatta ttttcggttt gtttctaaag gccaaacagc 780

tgtgttgctg tggtcgtttg tgttgtttcg ccgagcatga tgggccgccg gattgcagtt 840

cgatatcggc tttggtgaaa ctttgcatat tcctgatcca aactttacac ttaaaaattc 900

agatactttg gacaactacg ttataaattc tatactcagg tattcaatat tcgtactcta 960

cattcaggaa cttggtgttg tcatattgta aagggctttg tactgcaagc acgcgcgcgc 1020

taaattaaag gatcgatcgg gcagctcgtg ctcacgccgc agcagctggg cggccgctcg 1080

cagacacgcg ccgccccgct ctgtaccgta ccgtggcgtg ctgctgctgc gtgcctaccg 1140

acgcgaaccc atatggccag gccatatctg ggggaagaga cactcggggc aatcgccgaa 1200

ggacgcagac gcagtaggta ggtggtcgtg gagacgcacg caggtggcca tcaggtaggt 1260

ggtgggagtg aagctcgaaa cagatcgggt ccttagccgt gaatccatgt atgatcttgt 1320

agtacctagt tctcatgaca atcactgatg aacacaacac aaagagtatt tgctgggcgt 1380

gatgtagtta gtagtacttg cgtatctgcc tttttgtgat ggcggtgtgt gcccacattt 1440

ccgaggcaga tctttggccg agatagatag aaccgtctcg atagggcatt tattcaggat 1500

tcgtgaaagc ggccgggccg gccatcatgt tactactaac cgccagctag cgctttttaa 1560

caacacaggt ctggtcttag cttgctctca ttagcaagac ctgtgagcac ggggatccat 1620

aaagaactgc tgagaactgg agtgtactgg tagtgtagta gagaata 1667

<210> 1837
<211> 1518
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175543_G1, chr5:18555078..18556595, Cluster 11

<400> 1837
ttatctatat aaaggagggg tctggacagt ttggaccgtg gatagtccgc aaggactttt 60

tctgtgctca acagttacgt ttcagatgca gtagtcgcat ggagtgcagg aatagtacat 120

tgggaactcg atcgatcgaa ttctggacac actacttgtc tactttgctg acaaacaaac 180

aagcttgtgt gctctccgat cgggcacgtc tcttcttgtg tttctctgtc ctcacctcat 240

ggttgttcct gttcccccaa tcacgctgcg acaaaagact gtctcgatct cccaagtctc 300

aacagcaact gcatgcatag cagctaagct agcagtggta gttagttact tgtgagctgc 360

gacttcgtta aagcatcgtc ctagctatag atagtctggc aagtggtgac aagctaggtt 420

tgatggagcc tgctgcctga ctgacggaac gagggcacgc acatggcgga aactaaccaa 480

tgcagcaggt gcttgtttcg tggacgggag ggagttgtgc atgcatgcat ggagacgtag 540

gagattcgtc ccgtggatta ctaccgctag ctagcttcat cgattatagc cgccggccat 600

gagaagaaga gttcgctgct ggaactgcag ctgagcttgc ttggcaagtt ggcatctccc 660

cgacttttta tcctgttttg ctttagcgaa cacgctacct tttcctttac gtcagtcaga 720

tgctgagtac tcattcagta tcgcgtatgg ttcatgaatt tcagcttcgc tacccttggc 780

caacatatat atgttcaggg gttgaccctg cgccttccac agttcctcgc aaaaactgca 840

gcttatttcg tcacagcttc taatttttat acagtatttt atctctataa attgcagcta 900

cagcagttca aatagctgac ccatatcaaa tgttgtccaa cacgtgtgac tgtgtgcagt 960

gtgcaggagt tcagaaaaat tgatcccaga gcctacgaaa gtgcgttaag aaagtgaaac 1020

agaaactttt tttttaaaaa aaagccctca acgagaagca acaaaaggta tgcaaaaatc 1080

actgaactct gatctgcact ggcattgaaa ctaaggacat gcggtgtgct agagaaagca 1140

gtgcaacaat tactgttcga tcgaaagggc tatgcaatgt gcgtctttat ctcataatgg 1200

accatatgta ggtactgcct aaataaacat gccgacacta tccaacgtct gcaaggaata 1260

tatagaagtt ttgaattatt ccttatagta gcactaacta gtatcagatc gtattcctta 1320

tagcagtact aattcattat tagattgtgc gatacgtacg ttaacttatc tgcttattcc 1380

acaaactaaa tgaaaatgtg agaaataagc agcccataca tacagactat ataaagagtg 1440

ttcgtcaaac caaacattgg tgtcataaag atctaccgac tcctaaaatg cacgttgagg 1500

tcctaaaata ccatgtca 1518

<210> 1838
<211> 2482
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177465_G1, chr5:28124618..28127099, Cluster 11

<400> 1838
ttcaaaccta cccgggaaaa gaaacgtgcg cgccaacata aaccgcatca agacgacacg 60

atcagttggg ggtgcgcacg gtgaaaaagc taaagcggcg acgggcgacg gcgacgcgag 120

aacggaaaga gacatgaaca cgagtcgcgg tggaagtgga acgcaagcgt gtgaggagag 180

agagaattgg ggaccgagga gtgcacacgg acgcctaccg cgcgctgcgc tgatccttat 240

cccgctccgg ccggggccag tgcgccgacg acggagcgag acacgggcac gtaggacagc 300

gagacatggt ccagtcccgt cgccctcagc gtttcagtag agcgggatcg gagtcaaaca 360

gcgacgtcgc cttggccttg tccccagggc ccaggcacgg cacggcactc ccccctccc 420

ccccaaccca acccaggctg aagtggggga gggcggctgc gcggctcacc caaccgcgcg 480

cgtggatcac acgacacgac gacgccgtgc agcgctggcc tagcttgccc cgatcgccgc 540

cggccgggca ctggccgccc gcccgcgcgc gcggcgcgcg cgcgttcgtc gttcgcctgt 600

ggtctccacg cacgcacgag tcgcccactc atataaaacg tgatcgtcca ggaaaagaaa 660

ggaattctga gcgcccggcc cgtccctttg tccactccac actgctacat actgctagca 720

gcaagaacgt aacaactccg atccgtagta tctatctatc tatcacccag ctgctagcgg 780

taccgatctt ctcgcacggc attgatgaat catgcagcga tcgacagcag gcagtggccg 840

cctggctggc tggctggcca cactcgagcg cgtgcgtgcg tacaggtaca ggccagccac 900

aggggtgcga gacagagctg ataagggcgg caccgggggc aggtcgcagg cctagccggg 960

aacatcccgc gacggggcca ggcacggcag gccgtccgac tccgacaccg cccggcagcc 1020

cggcgacagg aacgccagtc gtccagcgct gccggccggc cggcgcggca tcatttcgga 1080

cacggacccg tcgggcgatc gagtagcgag taggcagccg aagggccacc tagcttagcg 1140

cttagctagc cactcactca accggcggtc caactcagct cccaccgcgc cggggaatgg 1200

tgggggagcg ctcggttgga gtgggaagga agattggcag gcaaagcctt ggtttttata 1260

ccatttgcgc gcaaacctaa ggccttgttt ggtttagggc tcgcaaaagt acagttagaa 1320

cttagaacag tgcctgcagc actgaacttt ctcgctcgcg cccagcagct gctgtcattg 1380

ctgtccactg cctgcttgtt cttgtctggc tgggtggatg gagtcatgga gccccctcca 1440

aacagctccc ggtgtccagc gcttgttcag ttgatctcag tcttaaaacc gaatgcccag 1500

ggcccgtcca agcatgcatg tgccagacga cacttctgtc tgggctgaaa ctgcagttat 1560

aaacactgat cattcagcct gggccaagat gagccagcac ctcgcgtgtc tcctttgccc 1620

tggggcgttc cacgttcgct caaagcggtc gggccggaca ccgttcatgc cggcgcggcc 1680

gccacccgcc acctggcgcg tcattctgct cgagccctgc caagacggac gccaaaaatc 1740

taccactcat ccaatctgcc gcgcacagag tcgatctgct gctgctgctg ctcctttgtc 1800

cggaaagctt tggcgtcgtc gtatggatca cgaattgcgc gagctagctg agggaaggag 1860

attgcctacc cccctcacac gatagacaga tagatagata acgaggaaaa cacgagaatc 1920

tcgcactgga aacgaaagag aaaggagggg cgagattgtt cagagctagt cgacaagcag 1980

agtgcttgtc aagcaccggc cttcccaggc cctgatgttt tggctttcgg ccacgcgcca 2040

gatgctcgcg cagatctccg gacgcgatgg tagcccggtg acgagatctc tgggacttga 2100

catcgatcgg gggccaccct gcccatatgc cccctccgcg gggaaggcct agggcgccta 2160

gccatggcct ttgtcctcct cgagtcctcg tccgcatcca acaagtagta cgtgatctgc 2220

tccatggatt cccccagatc aacttggctt tttgtcattg tggtctgtct gtactcgtta 2280

cgagatttaa ttctgcatca tccagttaca agggggctgt agcctctagg catctagcag 2340

ctccacgggt cagcctgttt tccattgatc atggtgtggg tttgggcttc agcttatcat 2400

gtgtgggtgt tcggcgagtg gcgttggagg ctggagcggt gatcacgtgg ctctagaggg 2460

cgcctggctt caccaccgat at 2482

<210> 1839
<211> 1451
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_17930_G1, chr1:99974789..99976239, Cluster 11

<400> 1839
acagccaact agctaataag ttggcgcggg gaactcaggc ccagaccgtg catttgcagc 60

cgcgccgaat acacaggcag caggtcagga agaggtcgtc gcccagtccc gggtgaggag 120

acgagcctgt tccggtggct gttttgcagc cctatatata actgttgaac tgcagctaca 180

gagtatttgt atcactggtt ggcagcagca gcagctttaa gaccatccac atccatcacc 240

ctcctcccga gtcccgaccc ccgactgagg tcgtggtcaa cgacccgggg ctcatgtgat 300

cttgacaccc agcagatcag agtcctgtcc cagtgtcccg tgtctgtgct gcgcttctct 360

gcacctgccc ggagacggcc gacggccgac ggccttgcag gctgttgcag ctcccgtcgt 420

ctagcgcttg acgtgccgtg tcattatcca tgacatgtcc caaccaaaaa gacgctgtgt 480

gcgtagcagg tacgagcggg cagctgcgag tacaaaaaca aatcccatcc ggatcaaaga 540

gatacgaaac tttggggttt ggagcggcaa gtcctctgtc ctttgcgtct gcactggagc 600

tggagcgggt ggagcctccg agcctggact ggagcacgag gccgcgatca tctttggggc 660

gaaagcaaat gcaaatccga ggagcttcga tccatcaatc aattccctcc gccggcctgg 720

cgggatgtgg acgaacccca ctcgcccgcc ctacagactc ggaaacagcg ccggcagcgg 780

gacccacaca tgttcctcgc ctcggcaagc tccccgccca cgtgacgtga cacagcccat 840

ggcgtcgtgg catccttcac tggcctcggg cggcatcggg gcccacatgc cagtcatgca 900

gccgcggcgg caccgctctc cctctgcgtg tgctcctgct ccctctgacc ggcctgccct 960

ctgactgtca ccagccactg atatgcacgc gctcccgcct ccctgccatg cgggcccaga 1020

tgaggcggac ctcggccgcg ctggtacgtg tccctccgaa gtacgccacc ctcttttta 1080

ttttctctgc gtgcgacgag agagaaaaca ggtgagacgg cgccatggct gcagtgggaa 1140

tgagaaagaa agatgagaac caaagtaaag caaaagaaaa cgcaaataaa taattaatta 1200

tttggtccgg gcctccctcc gattgattcc ttcacccgcc cgtagcacgc caaaaaaggc 1260

aaacctttt ttttctaatc gcccgttgat aatactaacc gctgtgtcag cggtacacaa 1320

ctagcctcgc taaatcgcgc ctaccgtgac atctttcggt gccgcgactt gtaccaatac 1380

tttcagaaca aaacaaaaga ggggcttctt agcaaccatt aattaattat ggcttcgtgg 1440

caaataatga g 1451

<210> 1840
<211> 3100
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_180179_G1, chr5:42844362..42847461, Cluster 11

<400> 1840
cgcgcagatg acgcgcacta ataagtgctt caagaccgac gaccgagctc gatggctcgc 60

tcgctctcca actaactcca actgctgagt aagtacggga gctgcactag tgcacacgaa 120

tgcacgtacc ggccggccca tcggtttgga cacagtgcat gcgtcgtcgt cgtcgacggc 180

ggttgcgcgg tcgcgcgagt cgaggtgctg cactgtatgc acggacgtac gtacatgcgt 240

gccggggccg gggccggggg ccggccgtcg cgtcttggta ctgcgcgctc gcgccgcgcg 300

taccgtacgt aacgtaactc cccggcccgt cccggccgcg tgcattcatt cttccgatgg 360

agaagtgcac gtcgttactg ccggatcggt gtagatctcg cccggaccca gccggacgtg 420

tccaccatta tctctcgcct ccgggaccgt acctcgacga ggcgtgtacc ccgcacgtac 480

atcggccggc tatgcatggt agtacgtcgt cgagcacgca gcgcgaggcc ggcggcgccg 540

atatctacgt acatgcatgc gcatcatcat atcgtacgca cgctggagca aagtcgtgcg 600

cgtcgtcgtc gcactcgcac gcacggcaag tgtgtgggtg tgggtgccac ctgacccctg 660

tagactgtgt ggatgtggtg cctctccatc cgcgtgtgtg tatgtacctg cagccaggag 720

atggatgcat ggagccccga tcgtacagac gatggagagg acgcgacaca gctagcccat 780

gtcgtgaagg catctagctg gatcggatcg atcgtgtcgc gagtcgtgac ataactgatg 840

atagcctggg aagcgcagac acaccgggcc agaagaggat gaggccacgg gttactgcag 900

ctgcacacac gcgcgcgcat gggtcgtcgg tgcgcggcgg atctttccag ctattagcta 960

ccacctgagc ccaccacagc actgcccgcc cgcccaccgt accggcgttt ttagctgacg 1020

gcaacggcgc cgcggatcgc gcgccgacac gggcagagga cctgccgcca cgcccccaca 1080

ccccccccccc ccccccacgc atgcatgcat gcatgcatgg cgccggatcc ggtccgtacg 1140

cgtaccggtc cgccacacca ggtgcgaaag cgaggcgcgt cgatcggccc atgcattcat 1200

gcgcctgctg ctgctgcagc agctacctga acggccggtc tgcaggtgcg gtgcaagtgg 1260

gcagccaaaa agttgaataa tttgccagtg caaatcgcag tgcgtggatg atggttgatg 1320

ggtgcgagga ggacgtcgca acggtgtagt ggccctgact ggctgctgac cgcgacgact 1380

gtgagcgagc gggtggtgcc atgcatggca ctgccaactg cacccactgg cgcgcgggcg 1440

cggcactgca gggacggacg acgaagcttt tttccgcgcc acctagcttc ctcccaatca 1500

caataaccca tcacgcctcc atgcatgcat gcatccatcg gtcgcacggc ctcttcgctc 1560

cacttgtccg gttgtccctg acgaccctga tgagatcctc gctcgtcgac aggcttctag 1620

taggtcgccg ccccccccccc ccccccccct gcccacgcat cgtcccagcg gcggcggcag 1680

gaaacggaat taatggagtc agtgacgaac ttgctgcccc agcgaacgcg tgcagtagtg 1740

ctccgagagt ctgaggattt ttacttggcg agctccgcgc agccgaccac ctcgctttac 1800

agttttacgc cggcacgcgc ggcacgactg gcggcgacgc cgatgccgat gccgccgccg 1860

cgttatcgca gccgtacgcg gcgtcgcgta ctccggccgg atgcttccgt ccggctcgat 1920

cggacggatc gtggaaataa gtggccaaga tccgcgattt ttaatttgtt tgtcggagcg 1980

ctgtccgtgt ccaggtacgt gccgtgccgg cgtccgtgcg tgcgtgcgtg ggtgtgcagg 2040

tgggtaggtc aggccgtcag cggtgtagtg tgtcattgtg tggcgacgcg gcatgcagtg 2100

gcatcgcagg cgcagccggg tggatcccga tcggcggcag cagcagagtg aaatgggggg 2160

ccagtacagt acacctccgt acagatgcct gcatgggcgg tttattaatt cagaccatgt 2220

aattaatgtc catcactcat gcaagcagag ggggtaacta gtagtatggc agtgaaagag 2280

ggatgaaatg catggacttt atctactgtg ttggtcaacc tgaaggtgtg gcaagattac 2340

gatggcatct ttgcagtaac caaatgacga tgtgaggagg tcgtgagggt aaatccgatc 2400

tcgtaatcta tcgggtatgc atggtatatg gaggaaatga gggatgatct gtgtttgttt 2460

ttcccttggt gtgtgcgcgc gtgtgtgtgt gtttttcccc tctgggagat gagctctgac 2520

gaacaccacc gcaccaccgt tctctgctgc cagtgttact agctgtgatg agaaacctgt 2580

cgggatttat ttcggctctc gtacgcgtgc aattgattcc gcgaccagac agtgtttata 2640

tatggtgcac gttgtgcatg tgatccgggg attatgaaat tatgcggcag ccgcacagcc 2700

ccccctcctc tgcacttgca ggacggcagg gacgagtgtt tattgttttt ctatgcactc 2760

tgacccggcc tctttttact cgatctgcga gcgataactt tgtggtttta gcgatcaata 2820

aatatatgtg tgtttggagt gagagcatta ttagtttatt actccactca ttaatttctg 2880

atgagtaacc ttgtatatat atgcgccatc cgatccattc tgtaattggg attgtaattc 2940

ggttacttta gctttgtacc aataagtcaa attcctcaaa ttggctgggg gtacgtatct 3000

ggcacaactc gtagccaaat ctcttggaag agctgctggt aattagtagt actgcttcat 3060

gctcagcact cagccggtgg taactctcca gatataataa 3100

<210> 1841
<211> 1521
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181916_G1, chr5:54185964..54187484, Cluster 11

<400> 1841
agtgtatccg tgggccaaaa tattttcact cgtctccata cggttgagta tcccttgagt 60

tttgggtttg cacgttaaat tgctaaccct gacagtaggc actggtgggc ggcagcagca 120

gagcagctag cgcggcacac acattgacac tggtggtagc gcacaccccg tacgattgca 180

tgctggatga cgatgccacg gaggggcccg gccataacac ggacggggcc agcagagcac 240

agcaatgatc gcgtgccagc tcgatcggtc gctgggtcac tcaatcggca gggacgggat 300

gggtgactcg tatggcagtg gcagccatac cgacggatgg attattcatg gatgggggag 360

agacaggaaa aatcacgcat ggggactggg gggcatcgcg atacattaca agctgacgct 420

gcccgtgcct gccgggccct agctggcgtc ggcgaggcat attgaagtgt atactaccag 480

actaccacca gtagcagcag cagctagcta gccattcacc cacacgcata gcggttgcgt 540

gttcgtcgtc cgttcccccc ctgccctgcc ctgctgcgca ctgccactgt gactgtgtgc 600

tgggggtccg gtacggtggc gtggagtcgt cgcagcgcgg ggttatgagc gctgccgcct 660

gccgggacgg gagcatcggg tgcgctcgct ccgccgcgcg cttttaagcg ccggagacca 720

ctgcctgcct gcgtgctggg tgacgacgga cgcagcaggc acgccccccc ctctcggtcg 780

ccggtagcat gcacggcacc aatgtcacga tttgcagtac agttaatagc cactagatcg 840

gcggcgagat cgtcaatgcc acattattca tgggctcgcg tcgtggccgc tagctggccg 900

tgttttaact ccacagttac tggctggcct aggtactgct ggcagtacca caccgtacgt 960

ctacttgctc cttcctaaat ttctaatttt tttagtagag tcagaatata ataatctgga 1020

agctacgcgg ttgaatggat ctacgaacgc cccgcggagt ctcccgttcg agaccacgga 1080

atctagcgac cccggcccat gcaatgcacc gacatgctcg acggcgatgg agcgagcgac 1140

gagcatgcgt tcccgccgcg tggtcgcgag gacgcacgta cggcctcgct cgggctatca 1200

cgtgctgccg tccttgctct cgcgacgtca cgtcgcctcc tctaccccgc gcacgcgagg 1260

cgtgtcgcgc tgccgtcgtc ggccccgggc cctcatccat ccagtttcct tttcgctctc 1320

acggaccacg ggccacacgg cgccacgcgg cggtgccgga gcccggagcc ggggccctcc 1380

tcttgcacca tgcatgagcg tgatgcatgt gacgagcagc cagcgccgac gatgatcgtg 1440

tttagaaaag tatctgagaa tgaatctccg atgtctgtat tccattaacg taaaacagta 1500

aatacatagt gaacggacgg t 1521

<210> 1842
<211> 2591
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_182884_G1, chr5:60243679..60246269, Cluster 11

<400> 1842
caggccgacg ggtgcgtaaa cggccatgca aagtaatgtt tcgtgctgca gattttattg 60

tttacataat agagtttaaa ttagggactg agacagtgag tggtatagga actcagcagc 120

tagagatatt ctagtcctcc gacactgtac gtgtatgcat catcttgatt tagacggcct 180

cccaaggaca ctgttgttcc tttttcttgt cctgtggaag tacgtagtgg agcgacagta 240

gcaatgagaa tacagtggac tagctagctt gtccggcttc aaggttgaca aaaggtcgtt 300

ttctcgtgat caatacatgc tttatagtat atatatacgt acatacatac aatacagtat 360

ctccgatccc tctagacgtt agcttcatgc tactcattag ggcgtatata ttaccctctt 420

cgcaaagatg aggtgcatgg gccacaagaa tttggcaacg gatcgatcat gtgcaaacca 480

gctggcactt gaggtgaaag tagtcatgat ttttttttctt cttcttcaaa ataaccctct 540

cccaccatat gctagctgtc aaaataaccc tcccacctct cctgatatat agtgatatat 600

attattaaat atccccctct cctacctccc aactacgaac acgcgttggt ttgcatgcat 660

ggttttcatc aagtgattgg tttgcatttg atatgttgtc ccccaaggat atttagaaga 720

aaacgaaaac aaattaaatc tgttgatatg tgcattggtg caagcccctt ccgtacatgc 780

atgatgacga tcgagttagg cggccctcgc tagattttgt ggaccacttt gaccctcgct 840

ctcactctca gctggccagc caacagcaaa atttgacctg cagcacagct tctgtttcac 900

gagcaatgca ctgcaatgca agcaagagat gtagctagct ggtgctgcat gctagctagg 960

cgctatatac ctcgactctc ccctgccctc cactccatgc atctcgatct tccgccacgt 1020

acgtctttca gaatcctgct gcgcgctagc tagctgtgca cagcaaagaa ggaatcagac 1080

ctaataataa gaacagaaat caaattattg ggccaataat gcatatgcta tcgatccatg 1140

cacgcacagc tcatcatatc aagcctgtct cctcgatctg tggttgctta gctagctgca 1200

agggattttc actgcgcgac gatgatgggc cgatgacgaa agtgtagtgt agctgagctg 1260

agctgaggta cactagctag acgtactacg cgtacgtccc accgtactag ctctagctag 1320

ctaacagcca tgcattatat ggacggacgc gtgacggtca ttattagagg tagctagcac 1380

gtattagcac tagctatagc tagtgtgggg atatatatat atatatgatg gaagaaacgg 1440

aagcagcagc aaattaaagc tatatatata ttaggcagct atgcatgaat ggagatggtc 1500

ccaaatgtac gtatatactc gtatattgtt agctccgtcc tctacgtaca gatagataag 1560

cgttgttgtt gtgtatatag ataggtatcg tcctatacaa agacagagag agagagcaga 1620

cgcagcggca tggcatggca tggcatgtgc ccgcgccgct cgctcgaata aataaagggg 1680

aaaaaaccta attaagccgc gccatcatct caactaataa cctactagct actaccacta 1740

ctaataataa taatatacat agccgtcgtg cgtcgccgtg tacatgtagg aaaaggatgc 1800

cggccggcta ataggcttgc ttgcattgca ttggctggtg gatcttgggc agtgcgcgcg 1860

cgcggctgca ctactgccac ttgcatggcc tagtacccag tgctctctag tgcttgccga 1920

tgggaggcag caggcagccc ggccagttgc aaacagacag acccaccttt cgttattact 1980

aacagcgaga acgcaaaagg attacacagg ggcagccaat caggtacaat taaggggctg 2040

gcaagtggat gttgtgctgt gcctgaataa cggctctgcg gtggagagcc tgtccatggt 2100

gaagagccaa tagaaaatct tcacttcatt agggacctta agcatccata caaatgcccc 2160

atcctccaca tgcatgttgc agcgagctag cagcaagata gcctcccgag aagaggatgg 2220

tggatgcatg cagtgagcca gtctgctgca ctgcatgctt ctctctggcc tctggcctgc 2280

tgggacagac agacagacta cctctgccgc cgccgtatct gcctctgccc ttgtgatcca 2340

ccttcttctc aactcctccg atgacaccag agttttccct tgtctgaaac gacatgaatt 2400

ccgacttgtt tgctgctgaa acattcattt taacagcctg taattaaaat gaatggatgg 2460

acgcgtcctt cgttctgtgg ttcggtgtca gtagtagcta gtagtatttt taatggtcac 2520

ttttgcgctt tccttttctt ttaatgaaaa cattcatttt ttttgtcgtt gataggaaac 2580

atataaatag c 2591

<210> 1843
<211> 3559
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199583_G1, chr5:171183943..171187501, Cluster 11

<400> 1843
cgtgagaacc aaacacatct tggttgttta cttgtgtacc aatctatact ccttaatgtt 60

tgcaattggt ttccctcaga tatttttttt gtcctcccgt tttgtaattg tggctgagca 120

tggtggtaca gtagtaatct tcgtctgtac cgcgtgctga gttgcgccaa agcgacagcg 180

ttaaacacag ctggcgtcta tgcgttcctc acgtttttaa aaaggggggtc ctgttcgtgt 240

ctgaccaagc tacatcgcag gttcaacgca ccgctcgaga gcaagcacgc agcgagtgaa 300

tgtctatcgc aggcatctct gagcactcac tcgtagtagg acaggacagt ataaaaataa 360

cggttgtcag agccgcctgt tactcgtacg gctgtccttg cggtggccaa gactaccaaa 420

aaaaaagaaa tccgtccccg cccgtccgcg gatttcgacg cgctgtgctg ctctgctcgt 480

cagctctgcg cggacaggac agccgcacgg gcgtggattt ccgcgcgccc cgcccgcccg 540

tgtgtcggca cccgcgccca atccgggccg cccatccgtc cgccgggcgc cacagggacc 600

acggccagtc aaaccggtca atccccgctt gcgtgccccc ccccccgctt gcgtcccccc 660

gtgccccggc gacggaggtg gggaagacga gaaggaaacc ggattggcgg aagcctcgcg 720

tagtcgcgtg ccgcttttct tctccgttct cgctcgctcg agtcgagaac ggaccgatgg 780

atggggtcgc tactggccct ccgccctcgg gcgcaaatat tcctgcgggg cccacccacc 840

gaacccaagc aggacagcca tccgacgtcg ttcggcccgg gcctcgccga ccgatgcatg 900

ccatgactgc aactgcaacg tacctctctc tcatccgcag ccgtcggggg gcaagggcaa 960

cgtgtcgaca ggagatcgcg cgctggggcg tgcgggacgg gagcgagccc ctggcgtgtg 1020

ggggctaccg ggcagggatg ggccccaggg cgcctatgag tggggctggg tttgtccccg 1080

gtcaaccggg cagcacgcgg gggcggggct cgtggggtgc ggtgccggtg ccggtgcgga 1140

ggagatcagg agagggctgg ggcgcacgtg cgggacagct ggcgcgggtg cttccagttt 1200

tgaccgcatc gtgctcggcg tgtgggggggc ctggagcctg gagggtcgcc cgcagtacgg 1260

cagtagtagt agtaatgaca cgcgcgttcc gtactactaa cattaacgga gagcctcagc 1320

tgacctgctc catccctgtc tttctcggtc ctcatcatct aggccatcga cgattcagtc 1380

tcggcaactt gtacctacta ctatcctcat cgatcgaatt cgtcttttcc taatcctgat 1440

caaagagttc atcagcgcgc gattcctcgt ctcatccgtc gacatcgctc gtcgggttgt 1500

ctctctctat ctccggccgc ccttgggctc ctcctaaagc ttccggtcat ggacggtggc 1560

aaaaactgaa acgctgtcgc tggcatcggc agtcattttg accaccgcct cagccttcat 1620

ttcagacacg gcgagcgtac tcatcctttc gttgccaaaa aaatatttaa caggtgtctt 1680

ctttcaaaaa aaagtacaac atcattatat ttaataaaag gaaaaaaatg ttcaaattac 1740

ttccctcgcc tgtaggtaat gaccatataa tctcctaaaa tattttcctc cacttaaccc 1800

cttcctctat tcgagttagt tcaatctacc tcttaccaga atctgtcttt tctatgtata 1860

aactgatttt tttagttcaa atttaattgg ttagtacata atgtcataac ttaggctaaa 1920

aatatattat gactgtccta gtggcaatga agaaatgact atttttttag tggcgaagaa 1980

gaggaacgag tgtagctggc ttgatgtgtc cgtccgtgca tgtaaccatg tatgccgacc 2040

acggctgcgt accccatgca ccagtcgtgc gccacatgtt tagccgtgcc aggcagtagc 2100

atcggcagac tacgtacgta cgtactggtg caggtgacgg agcaatccaa tcccaagctg 2160

catcgtggac tggtagtggt ggtggcgaga ctgctctgct cagcgtcagc tggacctgga 2220

cctggaggct ggagctttca cgtcacatgc atgcatggca ctggcgcaac gcatgcatgg 2280

atatatgcat ggcccggaaa acgttgggcc ttccgctgat gcagataaaa taacctctgg 2340

ggattactcc atagtactcc ccctcccccc ctgccagtcc ggtccacgtc cactctactg 2400

tacctgtact gctatactgg gagattttaa aggcgcctgg gcctggcaag gctggcgtgg 2460

gataaatgga ccggcggggc tttctggatg agcgagaaaa tggttttctg acccatacta 2520

ctactactac tacagtcgta gcggcctgtg aaccttgact gcggtgcatg cagatgcagt 2580

gctgctagct cattgcacac aaaacgctca gggccgcgct gtggctctca catcatcacg 2640

gtcacgacga cgacaccaag ttggctatca gatcgccgat cacgtcaggc cgctgtaccg 2700

cacgcgtacg tctgcgcgat caggaaccac cagcgccctg ccccctgcgc gctccaggtc 2760

gtccaggcga cccgggtggg gccgggagcg aggcagcgga gacccgcgac gtggtggacc 2820

gaggcgcggc gaggagcatc gcctcgcccg cccctcgcgc gcccggaaaa aaaaagccgc 2880

gggcacggct gagttgaaca ggcagcgccg cgggcgtgcc ggccgcctcc tccgttttgg 2940

gccggcagag gcgtcgcctg tcacttggcc ggccgtcgtc gcggaaagaa cggaagaaag 3000

aaagcgcccc cggtcccggc cccggccccg cctttcacca gtctttgacg gtcgtcgcct 3060

cgcctgcgcc cgccgcgccc gcgcgcggta ctttgcctgc cgggctctga accgcatgct 3120

tggtgtggtg gccccctga ccctccgcgt cctgttcgat gcgctgccgc tgccgctgct 3180

gcctgctgcc tttcaggtgg ttctgagcgc tgctccgggg tctcatcgtg tctctctcgt 3240

cgttctgatc gctgatcggg gctgctgcgt tcacgagcta gctagctacc accgcatgca 3300

tgttcaacta aaacataaca actgttgtcc aagagctcgt ccttagaagc cccttattag 3360

ttctaccaag tggattcatt tggctaagct aggtctctca tgtgagatat gaatgtgagc 3420

atgcatgcat gtctcttgtt ctatttcttg ctattctgaa ttatgctgta tttgttctgg 3480

attgtgggat gaggtcccat tcaaataatg caataacctt ttggaccgcc taaggtagtg 3540

tctatgctcc tgtataact 3559

<210> 1844
<211> 2254
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200759_G1, chr5:177853281..177855534, Cluster 11

<400> 1844
ccaaccacgg gatccgtcat cagccagcac gctgcacgcc ccaaatttgt gtggcgtgga 60

gcagcaggct cttccgtcgc gagttcgcga cgtgtaacgt gttgctgctg caaaccattg 120

cgtctttaat cttacctgcc tagctcatct ttcgccttgc gttctcgatc gatctccccc 180

ttttttgcta cttttgcgtt gtgatcgagg atggattgct gcctcgagta gaaagggaca 240

aagggtgccg tcgagagcac aaaaattcga ggcagcaaaa ccgtaacgct ctcatgcatg 300

tctctcggtc cgtgaaaact actacacggc ggtggttgtg agtttggaaa gcatggtccc 360

tgcagggctg gggatcagct gccgcagagt gggtgctgca ttgctggaga gcctctactt 420

tagttctctg atatatgtgt gtgtgtgctc ctacagaaaa aaaaagaatc taagaagaaa 480

ttcctactac gaaaaacaaa aaaaaagagt gtgtgctcct acagacctct cgatctgtct 540

gtctgtctgt cttatgtgaa actcttttag gtctgatgaa atttatagtg ccggggctcg 600

gcagcgaaac gattgtccct gtttctgcgc gtgatttccc gaagagtgac ccctcgtacg 660

cggactttca cgcgccgacg cgctggcggc gagtgctgac tgataaggac acgtgtgtgt 720

gcaaggcgac gcaggcagct cacggttgca acctagtcgc tgctgcctgc tgcctgcgtt 780

tttttggtag aggtaggccg ccaggccggg tagtcttctt gtggtagcag gcagcagaca 840

tgataaagaa ctgacattta atatctacag aaaatcaggc ttcgattccc tgatgatctc 900

tttcggtggt actaaaagac atacagcgca gcggcagaaa cggagctagg tgcgtgcggc 960

gtgacacaca cacggtgtag ttggctcttg cacacctgtg aggctgctga atgctgattg 1020

accccggcct agctgacccc gtgtgttgga atggaactgt ttgctgacaa gaccggggcg 1080

gggcggggca cacacgacca cgaccacgat cccgccgtac gtaccttcca acatctcctc 1140

ctggctgcct gcctgcctgt ctgtctcgcg cggtgaccct ttgtgcgtgt cctcgcacag 1200

ccgctgcatt attctccctg aagcgagctg gaacggaaat ggcgctaatt aacgatgatc 1260

tgtgcctagc ttgattgaat attcccagaa tgcatggcgg cgctgctgcg tgcccgcccc 1320

cccgtccatc cagagaatcc cctccgcgat gatcaggtcg gcatatgcag catgccgata 1380

agagccggcc tgccccttt ggaataggat acgtgtgtgt gggtgtggca ggcaactggc 1440

atgcaaagct attggcttcc ttgtcactta tctatctatt gactcggagt cagaggcaaa 1500

gtcgagatgc tagagggagg gagggagggt tgagtcaagc atgcgtggtt gagccaagtc 1560

ttccagtgac ttttgcataa tcgttcgatt cggtcctgca tgtacacacg atcttgtaag 1620

aaccatatgc tattcgacgt gttcatgcat tttggggcat catatgatat ttagggaatt 1680

aagataaaag caaagccttt tttttatacg ggccgagaga gagagtgtgc cacacttggt 1740

tcacgtttag aactatctat acatatggaa ccgtcgcatg cttacatatt taggtcggtc 1800

gtcgtcgatc taggacatcg actttttttcc cactcctttt tctacaagaa tcacatacta 1860

ttctagtggc cacatatttt tccgtgctaa ctagcaattg atgtacattc tttaatgaga 1920

gccacaaaat tctttgatga gaatgtggca tgtattctca aatcaacccc tcaaagactc 1980

caaggaataa gcagtgaaac aacacggaag caacaagtgc agcggaaaac acaaatcgaa 2040

acgaagaaaa cacaatagga acacaatctc tctataatta agcaaaacta gtttgactga 2100

gagaaccggc ttggctggct ggtaggagaa tcggtctggt cagcctagcc gatttttct 2160

acacaacacc tcgagtcaag atgccaaaac atgttcttga ctcaaaatca actccactcc 2220

ggtttgcata tttagtttta caaagcagcc gctt 2254

<210> 1845
<211> 1425
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2014_G1, chr1:10666111..10667535, Cluster 11

<400> 1845
caacgccgtc cggctccggc cacagttcac cagccatgta gctgtagtag cccaccatgc 60

atccaccgcg cgcgcggtgt ttcactgttt cctggtgaaa acgcgtgagc caaatccgaa 120

atcccgagtc ccaaccggca atcgcggtcg tcgtcgtcgc cagacgccag ggtcaccgtg 180

cggtggcgcg cggtttctgc tgctcagctc gggcacgggg cgactgcgct gcgctgccgc 240

gaccgaggaa tcccggggtc gggcctcccg gcgatctgga ctgaatcccc tttgtagtct 300

gtcgtgctag ctcgtgggac tggaatggaa tggaacttgc cgacctgctg ttgaccgacc 360

actcacttcc ctccccgcct ccccggtcgc tggcctgcta gctagataga gctgagcagc 420

gctgaaatgt ctcgattctc cgcccacacc ggtccggtcc ggtcccgtcc cgtctcgcct 480

gcacctgaca gggaacggcc atgcaatatc atgcatgcac tggtcactgg agtccggccc 540

actcgccagt gagcgggatg ctctcaacca ggcagtcgct acaaccaaat gatttgattt 600

tgggatgacc ctagttggtc aacatccacc gaaattagtt ttgaatctta cttttcagtt 660

tttttctatt taataataaa tctggacctc cagatctaac tatctagata cataaataaa 720

ttttctgaga catcagtgag acgaggcagg aagaggagtt tccactgatg ggctcatggt 780

gggccacagt ttgtcagctg ttgggttggc tctctaaatt tatcgtgggg ctatcttaaa 840

tgtttttta aaataagatc atcatatacc taaatttaag ctgctcaaat aaaagtttta 900

tattttagat ctagcttttt tagactcggc tgtctcaaac agtttctctg actccatcca 960

ttccactatg gcgtttccaa gttccacacg gttacgcacg cgcatagtcc ggactccgga 1020

cccacagctc tgacggtgac gccgcgcggt gcaggtgcgg cagtgcggca ctacacctgt 1080

cccatcgtct cctttgatgc attgctcact cacactcaag tcacagaata aatccaacga 1140

cctacgaatt gcgcggtact aatcggtcat ccactttact ttaaagataa acgaaaaccg 1200

taaaaaaaag tcggaaatac ttcaggtaca cgtcgtacgt cggatatcaa tccttgaggg 1260

gccccttttg gttcggtttc caaagaaaaa aaaatagaaa tgggcaaatc ttgtgggatg 1320

agtactgtac atatcttcgg ttcatacgag acgatacaac gaaaacacag gaaatttttc 1380

aatcattcaa cttttaaggt tagtttggac actacatttt tctaa 1425

<210> 1846
<211> 1436
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202514_G1, chr5:188478202..188479637, Cluster 11

<400> 1846
ggagggaata cacaaagagc ggtaactggt ggagcacgaa aggcacggag acggtgcgcg 60

tccatccgta acaggaaaaa ctaaactcta gtggccaaca aggactgtga attaattcat 120

cagtgtcaat gcatctagct agaacaccgg tcctggtcac tgccattctg ctggttggtt 180

cgatcaatag gcttaatttg catctggcgg cttcagagtc agtcaaaaaa agtaactatt 240

atatgctcgc cgtatatacc ttaacgtgca gtggtattac tagatgatat ttgctgattc 300

tgttacagtt accggcttat aaaggcgaga taaagtggcc agcagcttat gaagcagcga 360

ccggtaggag ggagggaagc aaagcagttt ggcgtgtttg ctgcccccat gggatcccct 420

aggaacactg gccgttccgt tgcggctgcc gcccccactg ttctttcctt aacgaggtgg 480

tgcaagtgca accgcgggag cgagaaagcc agccaagcca agcccatggg gcatgggccc 540

ctgcctcctt tcccctgccc tgaccctgat ccaaacgcct tttgacattg acctccaccg 600

ggtccggttg cagacttgca gctgctgtcc gacggcaaaa ggcggccgtg cctgttgtaa 660

aggcggccag agcacgacgg aaaggcatgc ggccgacgcg atcgcggatt agttactgtt 720

gtactcgttc gtccgtgcgt gcgtgcgtgc gcgggggctc cacctccgat ccccatccga 780

ttccacagtc caccccgggc cccgccggca gataaggatg gcttctttaa tggatgcgct 840

agatgaacac aggctacatt accggcagct tttctgcttg gtttgtgcgt tccagtggaa 900

aaagcacatg ctgacaggaa aggctcgtta cgtagcagcg gtccgacgtg ccgaccgggc 960

gtggtggcct cagggtcccc cccggcccgg cttacgtcgc acacgcttgc tgctgcggca 1020

gcaacatgcc cttcccagtc actgctgatt cggctctcga ctagaactag cgctgggact 1080

ccgcacggca ccttttgctc gtgcgccgca cgccgtggca ctcgttggag ggtcagcaag 1140

ccgttatata tgttggggac cggcacctcc tgcaggtctg ggcagctttc cgtcgggttt 1200

tgagtcgctg tccggtgcta ttggagacct tgcttgcagc tgtagtgtag ccttgtaggt 1260

atgaacaagt aactgttctt tacactgccc gtgccctggc tttcacttgg cttgccggta 1320

ggtagcaacc agcacgagca ttgcagcccg gagattagtg gaacttgtct gccgaggcat 1380

tcgggtgaca aactaattag gtgtttggtt tgatgaatca ctctatccaa aattaa 1436

<210> 1847
<211> 2455
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202715_G1, chr5:189297040..189299494, Cluster 11

<400> 1847
attcgagatg gaatttgtgc acttggacac catcggtacc ttgtgcaccc gataatacgc 60

tgcaaaaaac taacctctcc tttggtgcct ctaatataat taagatcaaa gctgaggact 120

tctatatata agtgattgtc ggtaaaggca ttcttgcttt cacccaccac acagtggtaa 180

aagctagaaa tcgttgcttg tagaaataat aatcatcata tctctagata tacacacaca 240

caaaaaatcg ttcgttatca tttgaattgc tataactatg gaaacaacgt actcatggac 300

tgatggtggg tcgttttgct tgctcgagac gattcacttt gctcatagtc ctatgataac 360

gaaggagtgc tgagtagtga gtacacagta cataccttga agtgtttggc actggtagtg 420

ccggaatcag tgaacagttt ctctgaagaa atttgcaatc agtgaacagt gcagcattaa 480

aactgcataa tggaacaccc aaaaagtttc acagagacga ccacctaaca aacgacgata 540

aatctaattt gacgaagacc acgcatgcat gtactgaggt aataagggca ctcattccac 600

aaaggaaatt ttatgagaaa aactgacgta gagtatcaga tcgaacaagt tacccaccgt 660

ggtgaaaatc agagcacgcg gtgaccgcct gaaaaaaatg cgtagtagta tgcatgctca 720

tagctcgctg gcgctgctag ctgttggatg atggatccca gtcccagcag tattccatcg 780

ttattcccga gaggcgcggc cggcaggagc aggagcagtt cactgagcac tgcactgcac 840

agcaggcgcg gccggggcag gcggcatggc gcggcagagg tccccggacg gagaggagga 900

tgaggacgac gacgacgatc gagcaggcga ccagcaggag ccacgcgccg ggacgagaac 960

caaggaaaaa aacgcgaaag ggacgtgtgc gttaattggt ttcagacttt tggcctttca 1020

cgcgttaata atcagtcacc ccattttagt ttgtcttcac agttcacaca caggaatcgc 1080

cccggcagtt tgtctatgaa attagcagat cagccgatct atgtgaaggc atgcagtaga 1140

gaacagctcg tcattgcatg cgtatacgtg tatactccta cgtactacat gccatgcgtg 1200

cctgtatttt ttttactctc tgcaattgca tgtgacgctt gcagcctttt tgcaggttgt 1260

cgttggttcg atatcgatca gctagctagc tagctatagg tcctctcgct ccgctcctcc 1320

cctctccgat ccggttcgcc attgaggcgc tacagcgcgc gggtcgagta agtggccgca 1380

acagttgccc tagctacatg tccggtaccg gtagctagct agctaggcag ctatggctac 1440

aacgtatcac tcacatctcc aactggtgca acgaacccgc tcctgcttgt agacggacgc 1500

gatagatacc tttgccgcga tgaaaagctc atgggacggg ccgggtgcat tgaagaaggt 1560

gaatgtacta cacgtcagaa acgctaaggc atggagatgg agccatggag gagggcatgc 1620

aatgcaatgc aatgaaggaa gggaaggctt ttccagtact ttttggtgat ttgacctcac 1680

actatcccat cagcagcccc gcgctcggca acaaaagagt cagcagcagc agcaggagag 1740

agatcctcta cgcattcaat tgcacactac acagtacaca ctgctgcatg ccactttctc 1800

ttttcccccc ccacatcgcc gtgctacaca tgcacttttg attcctcaaa ttcctcccgc 1860

gcgccctatc cccctatgct ttcccctgcc gactgcccag ttggtctccc ggggcatgta 1920

cggggacaca ggggattttt tagtataccg cgccggcctt atcaaagccg tgcatgggat 1980

tctggcaaag ctacagctct tgctgcttgc cgtggctgtc gcagatgcgt gatcgccggt 2040

gatatgatca atcgcaagcc gattttactt gcccatatgg atcagcatgg attatttcat 2100

cttctcctgt gcgtgaatcg tgacgacaaa ataatggcaa tatatacata tataggtgca 2160

ccgtacccct gtatagatga aaaagaattt tcttcaacat atatacaaaa aaaagatagg 2220

cgaaaagcat acaataccaa aacattatca tcttaataag actccatatt attttatgtg 2280

caatgttgaa cgttttacaa taccgaaata tttcttgtta atgaaacata tataaataaa 2340

accatgaatg ccagatgtta tggtttctaa acatatataa aaaccaggaa taccaaaaca 2400

aggggattct agccactcta atccactcca gatttgtggt ttccaaactc gccct 2455

<210> 1848
<211> 1612
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203867_G1, chr5:195686024..195687635, Cluster 11

<400> 1848
tactgatgat ggctgatgga tcgatgggca accgggccga gcaatgacga gggaacagtg 60

tgacctactg tacgcttgcc agcagcgggc agccatggag aaggaccaca gcacacttgg 120

gtcgcctagc ccctagctag ctagtgtctg tgcccgtctg cctgactgct gccacgacgg 180

atcggagccg ccgatcccag gatctagtgt cccagaaaac gtacgctggc gatgggagtg 240

gcgtacgtgc gcgcacagta gtgcagcgag acacaggcac cgtgtgcact gcatgtacaa 300

gccccggtag gccggtacag ttatcatgct gtcggagggc atctgacttt cagtacgggc 360

caagctattc ttctggttcc taaataaaat agttttcaag gttgcgtcat gcaagattag 420

ccatctcggc tttcccaaat tatctttccg tgctgtgagt ggctaagcta ctaatggttc 480

attaacactc cgtacgtact tgcgccgctg gacagttact ctactgtata ctcaaaatta 540

aagagacgaa tggagcgagg gagttgatga agcaagagag atgcatggac cactacacta 600

cactactggg gttggttgaa acgtaacagt gggaaccggc gcacgtgcgg atgtcgatag 660

gcaagcagca gacaagaagt cgttagcacg atcttaggtt agatatcccg gtcccaccgt 720

cacgtaagcg taaggtggtg ggccgggcat gcttgcattg catcgccccc aggcccagcc 780

tacgaccgtc cggcaggctc gacccgagag gctagcatag caagtacgtc caacatgtcc 840

ggtctgcgtg ctactccgat ccctcgatcc atgctaagtt attggttatt ctaattttgt 900

gctacactaa ataaagtata atttaaaaag tgatttggat ttcggaggag tgatggggct 960

gatcgataat ttccttttgg gagccgccgg acgcctcaaa ccgctgtctg tgcaagcgtg 1020

tcggtcaggt ggctctatca ttttggcgcc tctcgagtct cgactctttg gtcttccacg 1080

cacgcaaacg caacgcatag ggtaatttcc ctcgacgaat ttcctgggcc tggcccatgc 1140

atggcgataa ccttactttt gctgcctgct gtgcctgtga gtaccctatg atatgatatg 1200

ataacgataa tctggctgat gcgtctgttt aagctgcact gcagacctgt agagagacgc 1260

ctgcgctagg gcggcccaga cgagcggagc gcgatggcaa cgtccgatac ctgtgcctgc 1320

ggaaccggcg gcagcgtcgc tctcggggat ccccggacgc ggaaaaacca gatatgcggc 1380

cgcagcagca ttgtaacagt gtacaggacg atgccgcgcc tgcagtgcaa ctacaactac 1440

tacgtcgtag tacgtgtgag gatcgcgcgc caccacacca cgccacgccc gagccgcgcc 1500

gcgccgcgct ggttttttt ttatccacgc gaacgtgcac ggatctgctg cctgccgaaa 1560

ggcgcgcgta gcaggtcgcc gtctccggcg gagaaaagag atggcgcgcg cg 1612

<210> 1849
<211> 2373
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204854_G1, chr5:201391775..201394147, Cluster 11

<400> 1849
ccttgcgccc acgagctgga cgtccaatca cgctcaatat atatgtccct ctccctcctg 60

ggtggactct cgccttgtcg tatgcgagcg ctgtctatgt caaagtgaaa ggaggcatgt 120

cgagcgagcg agtggagagc agagagctcg aatgcgatgc acgatgggag tgtggcacgt 180

tgcacatcga actcggaaac gagctgattt ggtcgtgccg tgcgaaactg cactgtgtgt 240

acatgtacat cacgatctcg cgcagatatc ttcgacgatg gtgttagcag acggcaggtg 300

agtaggtgac agacaggtaa ctaggtaaga aactgttgac atcgaagggt gagagtgatg 360

taaggcccgg aaagacttta aaagggccga gacttggacc acttgattgc gcgcacccat 420

acccatgatg aggccagact attttcctcg ctcgagaggg ccggattaaa atggtgcacg 480

cccggcccat gagggctttc gattatcttc acccccctccc gtaccgtact cctccttttc 540

tcccgccact catcatctgg aaaacaagta ctacggggca ggactccaaa cccacacttc 600

caaagccgaa gcatgctgtt cgtgcagcga acatgacaat accgttgctg attcgtacca 660

agcgtcgcac aaaaaggagg caaggactgg agtctgaact ctgaagggca cgcagcgcag 720

gccctaggtt ccaacttaca agccagtcgt ctgcctggaa ctctggacgc tacagacctg 780

atgagaacaa agcgtcgctg ctaccgaagc gaagaacgag taccgagtaa gtactgtact 840

gtactgtact gtcggtccgc taccgtttca gacagcgacg ccttcgatgc gtagacgacc 900

catggaccgg agccgagagg cagcgaatgt acagggacaa catcgctgcg accgttcgtc 960

acgatgccat cctagatcct cgtagtctgt ctggggaccc ggcaatgcag cccccacgca 1020

gcaggaatag gacagacagt tttcgtgcgt tgtgcccgcc acacgcactg ctccattttg 1080

tacaacacat acatacatct ggaattccgg agcgcttgtg tgtgctggac tgctggtgtt 1140

ttttaatctc tgaatgaagc aatggtgcta ggctttgtcg tttccgtttt ctaaggaaaa 1200

ccgagacggg acatcaggca ggagccgtga ccacaggagc tacgtacgca ctgccgctac 1260

tcggtaggcc gccgtagctt tgccgggcgt caaaacctga ggtgacaaca cgggcataga 1320

caggcagcca gccagccagc caggaatctc tcgagtgcgg ggtggccggc tggccgcgag 1380

cgccgagcgg agcagctcgg cggccgaagc cggcaactcg gcgtgacgcg accagccgac 1440

cacattgtgc cctacagaac gcgggcatca tgccactgcg ttccggtcgc cgaaatggag 1500

gcactttcgc agccgcactc cgcaatcccc cacgggccca caacacacac aacagtaaca 1560

cgacagagcc ttcgcaattt caattccatg tctaatcctc aggcaacgac tgaactcgtc 1620

gctgccgccg ctgtccacat aattttgctc tgggcctcac cgcagtgccc aagcgaaacg 1680

gatctgatcg acggccttca aattctgttg agtgacggca gctgttacca tttgttcaag 1740

caacgcttgc ttgcaaagcc tactactagt ctcttctctc ttgtcgtcgg ttcagtcgat 1800

agggtcgtgg tggcggtact tgcatcacgt ctcaatagga tgtatcatga cctgttccac 1860

gtccctatgt agtgtaggcc taatgatcgt gcccgggttc atgtgggcgt gaacatatga 1920

tgcaaagagc aatgcccttg ggcgtttgat ggacagggcc taaaaaaagc tgttctccct 1980

cggtccacaa actagccata tatcaaagat aaaaaaaatg accttaactt ctcttgaaaa 2040

tcaatcattt atatgtcttc aaatacactg tatcaattta aaatctatgt cttaaattat 2100

acggtatgtc acatccctca aaaccatcaa ctccatctca gtgtgtctgt cttttaaacc 2160

ccatccacgt atacgtttat actaatcttt gaaacactat cttactgaaa acaactcgta 2220

cggttgtcac ccaagaaaaa aaaacaatgt catgactatc taactctttt taaactttgt 2280

ctcacttaga agactaaaca aggtaacaat tagaataatt agttattgag gatcctctct 2340

cagattccta aatttgttaa gctcgagtcg agt 2373

<210> 1850
<211> 1618

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205692_G1, chr5:206159180..206160797, Cluster 11

<400> 1850
caagagtacc tgtacttggt tagagatatg ctaatatttc aattgaacaa aggaaaaaat 60

atttcctctc aatgaggaga agaggtttgc aagcatgaca caatgcgatt atagagagaa 120

gctcgaaacc catgacaggc tgctgaatgt agtttgttac ttgtgcgagc cggtacccat 180

ttcaccaaat ggagagcgaa cgtatctcga aaaagatagt ggagtgacgg gagctgacac 240

taacatttgc agcagtccct cctcttccaa ctgccacccg atatccacat agaaaaaagc 300

tccaacgact aataatccac tagaagcaga agctcgttgg cagaaaggct gcaggatctc 360

tactccgctt ggtgatgttt ctctaccatt tcctcttcgg ctcttctttt cttgaagaaa 420

aatgagagcg cgtaaagtag atttggtatg ctcaagatgc tatgttttgc gaatcaagta 480

aagaaacaca cccttgtaca acacatgaag aaaaataaaa gggaggggaa aaggactcgt 540

acacccaaaa ataaaaaata acggactatt gcagctttag tttttcattg ctttggcatc 600

aacagttcac aacattttct gatgaaccaa accaaccaac caaccaattt tttttccata 660

tataccagtc tctacatgtt gggttatcgt gttctacttg tacatgctag tgttaaaaaa 720

tcggtgcagt ggacttgtat taaaaaaaaa gacggccgca tatatctagt ctccggtgca 780

gcaacgcatt agcaattaca agcgaggttc cttgcccaga attttctcgg gtggttgtgc 840

catttcccat cttttattat tattattact ctcctttccc cttgcctgcc gccacccccg 900

ccgcactttt gcaaaccgtg gccatatatc cttgtggtga cgagacgacc aaccaaatca 960

tctgtaaacg agacccttaa tcgtcacaac agctgaaatc gtactacagg aaaaggcgtc 1020

gatagagacc atgacgtttt gttctgttgt gcctcagttt tccaactcac ctctctcctt 1080

cacaaagaga acaacgatgg gtagggcatt cgttccacaa agcaccaacc ttcaaagcct 1140

gctgtgtcgt aatgtcagat cacattactg ccaggtcaag taatgacaag tgaggacctt 1200

ggatcaagtt acagtggctg cttcggcacg aggcgatcgc gtgtccagca tcagatcgat 1260

ttgacagtat cgtcaacgat aatcgggtgc gggcaagcca caagcgcgac cacgtcggta 1320

cggcaaagga gtttccgtag tgtatactca agtgagtgtg tagtacgtgg gcaaagcatc 1380

tttttcaggc tcgcaaaagg ataaaaacct gctcgtgtgt tggtggtgca cggagacaaa 1440

agcaccaaaa acaacacagt gcctcagatg gtggcatggt gggcaacgtg cagcggtacg 1500

tgtgccctgt ccacggtgca cgccttttct tttccggttc tccggccgac cgacctgatt 1560

ggttgttgaa ggaacggaaa ggcttggctt tacatgatcc atctcgtctc cctcctgg 1618

<210> 1851
<211> 1731
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205869_G1, chr5:207126273..207128003, Cluster 11

<400> 1851
tggagtggag gagggaagag gtcgacgacg gtgatgatag cagcgtgagt gagggaagag 60

gttgatagcg aagatagaga gagtgagaga gaggaagggg aggggataca gtggagtaga 120

gaaggggatg gtaggagagg ggtcgacggt ggtgcgaaag gagtacagtg tttggtgggt 180

gcaacaaaat ttcactgtgg atgtgcatca tcatgcattg agcacgacgc ctgaaatgga 240

gaggaatctt tttgggcttt tctttctata tagcaaagcc tctgttattt acatttagaa 300

gtaacaaaag cacgcacacg cgcggcagga accacacatt catgacacgg gaaaataggc 360

tcggtgcgac attgcttgaa gaacgaaaca tgcatagatc agaaagccgc cgcgcgccca 420

acctagtgct gcgcaggcgc gtacgacacc gtccacgcga gcgcagaaga acgggaggag 480

gtcactgctg gccctggccg ggtgcggtgg ggcaacaaag acccgtgcgc ctgcctgcgg 540

tctgcctgcc tgcatgggtt gtcagaggca cgccctgcgc tgcgtccgtc atgggtgagt 600

ggtgcactgt gtggggatca ttaccggccg gtgtgggtcg atccagttga ctcagcggcg 660

ccaaccacct acctgcgcgc gcgcgggggc gcccgtggga ctgggagcga gccccggccc 720

acccgggcgg cccgctggat cgtggggctc gggggcggcg gacgccacct gggcaacacg 780

tacggattct tctgtggcgc gcgcgcgagc gagatcagat gacgaggcga gaggcggttt 840

gtgcatggcg acgcgccggg cggggctgct gtcgtgtcgt gacgtccctt tcgctgtctc 900

cgtggcggcc ccacccgcgc gcggatcgac cctggggttt ggctggcccg tgacgcccgg 960

tcacttgcca aacggataac gattgacaac tcccaggcag ccacctgacc gtgcagtact 1020

gtgctagtga tctctgaacc tcatcagcca gccgccgcgt gggtcgggcc ggacagacgg 1080

cggactggta ctcgtacacg gtctactagc accggcaggc tctctctagg ttctgcggcg 1140

gcgggccggc cgcggataac gaaccgcttg gcgatcggca tggcggcgcc cagtgatgca 1200

tgagctcgtc agctggatgt tgtcgatgga tcgctacgtg cagggtgtac gtgcaagttg 1260

tagggcagat tccagaaacc gctttgtgga cagtgacttg atggcctggt tgggtacggc 1320

cggttaggcc agccccctgc ccctggccgg atctattttc gctgctggtt ccgttcatct 1380

ggccggcgcc ctccttgcaa gaccacacac aaacacaccc tttactacca ggtgtacgtg 1440

gcagcgtgtc ccggacagga ccccgcacct aacaaacatt tcggacctcc tcgctctgga 1500

ccatctctca aatgaatgag gtggcagcgg acggacggcc tgcattttgg taaggaaaaa 1560

ggcaataatc cacacgaacg aaaaggaaag gaacgccccc ccattgttcg tgctcgtgca 1620

acgtggtgac cacagcatgg ccagctggtc aactgccgcg cctgcttacc ctatcccctt 1680

catttctgtc tctgaaagtt ggctttagat tagcgcgtct ttagtgtcaa c 1731

<210> 1852
<211> 1779
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206477_G1, chr5:210286639..210288417, Cluster 11

<400> 1852
gtaattggtt ggtcaaagta ggatgcatag ggacatggcc tctttcacga tatgatgttt 60

aaaaaacaat aaagacaccg gttataaatg gtgaataaaa tcgtcctgtg gctaagatta 120

aaggaagcga ttatagattg tggtatgatg agattgcgcg ccttctcaga acaatcccaa 180

ccgttaaact agttttgttg taccatcatt cacggtaata ccgtgcaccg ccaggcacaa 240

cctgctgctg ccgacgacgg atatatatat agaaaagccc tttggttgca tatcagattc 300

cgtgctaccg ctttcaacca tcaaggaaaa gatgcagcga ccacgctgct tacgacgatg 360

tgccatgcac gatccaggct gagcgtgacc attccgtagt ctagagccgg tagtgttgga 420

cttcctgtat gccacgctac tacacttata tatacttcta gattaactcc gatggatgga 480

caaacctgaa atccaggagg gtcaaaaaga aaaaggacaa ggaaggcaag ctggcgacca 540

aaacccgcca caatttttca aacggaaatt aacatcgcca tcgcgatcac atactgctgg 600

atcgtcggaa tcgccacatt gaattccgac gacattgctt tcagatctcg tactccagat 660

gcagcagacg tccacctcag acagacagac agagacaggt gtccgttccc gcgcagatcg 720

ccccgagagg tcaacagaca gactgctcat aatcataaat aagcgcgcgc aagagccaac 780

ggatcagctg ccgtcccgtc actcacaggc ccaccacgta cggcgtcgac gcggtttaac 840

agcctagccc gcagaccaaa aatgcgcccg acgatatgat gcgatctctt ttttttgggg 900

ggggttcgtc ggaatggatt gtcaaagagg aggaggagtg gggaaatgga cagcgacctg 960

gagtggttaa ccccctcgca ggcgtattgt atctttcagg cctcggccgc aagcagctgg 1020

actgcattag gagcagtggc gggcagaggg aagcttccgg tccggttact tgcgagatga 1080

ttcgcgtctt gccctctggg cgatcggttt tttctattag ccgaagggca gggagaattc 1140

tgccggctgt aggacttgca gggtattttc tgtagcttag tttaggtttc agatctcctg 1200

cccaactttg tcaagttcca gagatacgca tgcatgtgtt gctagttcct gcctgctgtt 1260

actgctagga cgtcgtgaac agatcttctt tctattttac ttgttcagaa aaaaagggtt 1320

gtgccaggaa aaaaaaggtt gcagctcctc ttgctccaga tatatgtatg tatggttgtg 1380

ttgttacaga tcctagccgc tgttagtact gcacagatat catccgtttg tctggagcag 1440

acatttttct ggagtcaaga ttcaatcgat catcatcagc tacgacaccc atctagtgat 1500

ctagatgcag aatctctctg ggacgctcgc ttcggtttcc tttgtacttt tgagcgagcc 1560

tgatatgtcc acatcaaccg acaacagcat ccgagaccgt ttcaaaggtg ctgtagacaa 1620

ttaaataggg ctatggttaa agaagaattt gtaatgaaac aatgaatggg ctggcgaagt 1680

tttaggaatt ggcgacacag ctgtcctgca aaaaactttt tttctacata aagcgattcc 1740

aatttcttgc ttcagataat agtgcttgca attagggat 1779

<210> 1853
<211> 1541
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206488_G1, chr5:210416620..210418160, Cluster 11

<400> 1853
cttctcgatc tcatctgcca tccagcaagc tccgtacgta cgtcgcaggt atttgagcaa 60

cttattgcat gcatatcggc atgcatatgt atggctctct ggccggcaca agccaagacg 120

gacttggcca cccacacccc gttatattat tacataaata atgtgccctg cagatataaa 180

aggaaggccg tggtgcctgc catgtatatg tgcggtggtg tacatgcacg cattggagac 240

tacagctagc tcagtgtctc ctttttttg tcttcccggt attaggggca accacttgta 300

ttggcttggc tacgtattat acgtatgtat gcctagagca cttgcctgaa aagaagataa 360

ggtgcagccg tgcagcgtgg ctaccacgta tcatcacgta tgtacgccga acttgaaagg 420

gattacgacg ctgctcgtta atctcctgag actgtgacac atgcctcacc agatcagagg 480

tgacctaatt tgaagccccc tgctggaccc cggtccttca ctggctacgg gagtgagcca 540

catcacgtcg gacagtgcgc gcgcgcgtgt tcggttgaac cgatcgatca tgggccgggg 600

tttgtcttcg atcggcgcca cgccccccta ccctcccttt tggctgctgt cgccgtcgcg 660

gcgccccgca gaaaggggaa aaaaaatgca tgcatccgcg cgccctgctg cgcgcgcaca 720

ccgggcagag aggcactggg cggcaacgat ccggccggtc ggcggtgttg ttggtgcggg 780

cgaccatgag gaattgagag gctccataac gccctgcgtg ctgatctggc cctgaatcac 840

acgcaccgca gcagctctcc ttttcctcag gtcaatgtct gtgacagcgg aaagctaaat 900

tgcgtgcgcc atggtgcgct gcgcatccgt ccatgcagcg ccatccagcc gatgggctga 960

acggcgaaac aatgggttaa ttcgtttaga gatcagagag ctgagctagg ccatgtttgt 1020

taccccggtt tacgtattca gcttatttaa aatcccctct cttgctcaac cgatccctct 1080

tcatcctctc cctcccttca cctccaagct cctctgtcgc cattccctga atccggcgcc 1140

atgctataga gatccttctc cccgcgtcca atggacggag ctcgtagcgg atcaccgcct 1200

atcaccgcct cctgtcagta gcgcgctgcc acaaatctgt catggtccct ttcaacctca 1260

cctcgagcat gatgcttctg ttttcgaaac atgctcgtgc tgtcctaaaa agctcgaccc 1320

atgtactttt tgttacctcg acttatatat ccagcttata gaagacactg aaactgatag 1380

tcataatcat tcactataag ttttttttatt ttaaaatcta aaaatgatag ttgatggctc 1440

caattacaac gaaagaaagc agaggtgcta tgcagagaag tactgatgct tagacttagg 1500

ctactcaatg gatacttgtt gattgcatgg tcatgtatag g 1541

<210> 1854
<211> 1712
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206608_G1, chr5:211045717..211047428, Cluster 11

<400> 1854
ttttgcagga tcaactattg atctcctata tgtgctctca agatgaccca gatgaagacg 60

tctgtggtcg tagagtggaa gacgtgtatg tgtgacgtac gatggcgtat gaccattgac 120

cgttgaaagt tatgctttat aatagtatta aagatagaga tatataatat gtttgcttga 180

ctttaatctg tatcattttc taataatttt atagtatttt gtctatataa attactggtg 240

caccagtccg aacaatctta tactagtctt tcgttaaatt attacttggt ctgagtgcta 300

cgtctctcac ggtagtgggc cgtcctgggc cacaagcgac tctgctgcgg ctttgctttc 360

atgtagtata aatagagggc ctggccttag tgccgtcaat taaaagcgta cgtcgcccac 420

cttgctttcc cctaggccct agctggtgga ggccgcacaa cacgctactg aaatcctcct 480

acctaaaccc taatttgatc tgcggcctct cggtcatcga ttctcaaagc aattccaatt 540

catggaggaa atcctcgatc catcgattct ctctaggcaa ttcatggagg aaatcaggtg 600

tgctctggag gaagcacggg aggagcctga tcggaagttg aagacattac agctcccgga 660

ggaggaggag gagggttccc gaggcgacac cgtggatgag gaggaggagg aggaggagga 720

ggaggaggag ggttcccgag gcgacaccgt ggatgaggag gacagcgacg atgagtttaa 780

gggtttcgac gagaatggcg acctgtgtct gccattcgtc gtctcctggg atccgccacc 840

agtactagtt tgcacggcag gcaatgataa cctcgtcgct acccaaattg ttttctctat 900

caaaattcgt tatgtttgga aactccacaa gcaacatcct tagaccaaag agaacgccgc 960

taagaattgt gtaacattta agatctacga tagttatgaa tgacagtttc aaaatcgtgt 1020

gatatcaaaa tatttgggtt ttgcaaatca gcaatattca ggcagttact aaaaaaagag 1080

tttatacaga ccgtataacc agctgaatac aactgttttt tcttcaggag caagttttac 1140

gatggaggaa gcagaagaaa tagttgactc tgtcaatgaa aggaacgatg acctgctctc 1200

agcatggtgt gaaatggtta acaacaaagt gactcctttg cctgcaacgc ctctacatat 1260

tcttccagcc ataaccacat tctgtgtttc tggatatgag tgctaccacc tgcgatattg 1320

gactgaaatt acttctgaaa gtaggtgaac taattattaa cgacacacta ctctatcttc 1380

tctcttgtgg ctcattttct ttctatatac ttgcagctga tccagatcat ccatatttca 1440

aaccctgtga gatgatgcaa gtgttctcct tgggattatc aagccctctc actcatcctg 1500

ttaatattta tgggtatttt tctgttcgtg ataactggga accactccgc aattatctat 1560

ttaagcgctc aagagctgat ccagccatga tttctcaggc aagtgatgct tgttcttgtt 1620

ctgaatagag aatctttgta ctgtcattta taactattga tatgttatac aacagtgtaa 1680

atagataatg ttacaactca agtattacat gc 1712

<210> 1855
<211> 2020
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207085_G1, chr5:213063717..213065736, Cluster 11

<400> 1855
tgcctgcagc cgtgtgtaca ggctccagca ttgttgtgca gccaatcaat caaagacaca 60

agcacagtta acgcatgcgg gaacattgag cgccaggagc tgggtaacca atcacgagga 120

tagagatcag gtcaacagat cgtattacta accctatcat ttctccacct cgcatgatac 180

gggaggaagg gctctatcct agcccgacca gaccccatgg tcctcgaaat ctgagccgat 240

tgtagaccga ctatagagct taagacccta gtatggagaa tagaggagga cccgtgaggt 300

gggtcacaat ttacaggagg atgggggtac gaacgaaacc actatgaact caagcattcc 360

aacgacgttg aggtagcaag tgtcactatg ccaccaactg tagtctgcag ggcgttcccg 420

gtctaacgga agtacctgta gatatataga atagtttatc ctcgtaagaa gaataggacg 480

cctcacctcg tcccgaagta caccggcaag cacaagacaa atcgcaaaag acctttttct 540

tacctattat gtactcctcc atgaggagac ccttgtaaga ggctcattca ttgaacaata 600

aaaggaaggg ccagcctcaa caaaacggac agaggaacaa aagcattgtg ctagcacaaa 660

gaaagagatc tcgagattca cagcactcgg actctcactc tcactcggac tctcactgtg 720

ctacaccaaa tcaacactca cacacgcact ctagagactt gataactctt tcctctctca 780

catgtatgtc gcccatacta cgaccaatcc gatatcgata gcgcaagtca tttaaggcta 840

gagtagaaac attcagaccg aaccagtata gctcttgtgt tcaccctgta tacacaaatt 900

tactcgtcgg tgctcacaca aaacacctac acatggccac ttcactaaaa accgtacaca 960

tattccacgt gttcttacac gttgagaatt gaacaattta gtactcataa aacctttttt 1020

ttgtggacat ttggagtgtt cttactatat tagatattgc atcatcatcg gtgggaactt 1080

agcttcttta cgactaatta atgtagactg ccgtatcagt tggcttttca tacatatggt 1140

ttgtacgtca tgaaaacctg ccgaaccctt ggtagacgca aagaaactct ggaccgaacc 1200

gagtttgcaa acgcgtatga tgcatatgca tatatccgta cgtttatccg gaccggccga 1260

acgaagctag aaggggggcaa ggcacatgtg gccgatgcag gctcctcgaa taatggggcc 1320

gatacggcga tgaagcaaag aatatcctgc ctgccttcct tgcttgcttc tcgctcgttc 1380

atatgcatgt acaacggcat cattgggatc acatgcgcgc tcggcttgga cgatgcgccg 1440

ggatggaccg agcaagggcg aggcagacag aggtgagctc tctcgttcaa gaaatccggc 1500

gagatccacg gtgagatttt ttttcttttt ggaaaacaaa agcatatccg cggcgtgcag 1560

gctttgctgt tggtctgaag cgctaaacaa tggtggtgat ccgcaagcta gcatgcatct 1620

cgtcaaagcc ttgacaggaa cgaggacgac gaccgactgc cgttccgcag ccacgccacg 1680

ccgcgccgag aaggcgcatg ctcttggcgc gtgtttttt tttatttgcg gtgtggccca 1740

cattctcggc gtcctagtcg aacgaagcga gcatggacgg caagtgaaac atgacgtcgc 1800

ggctgatccc tctcttcttc tagcggacga ccggatcccc aagggcatat tcgtcgacct 1860

gtgcgtgcct tgcttccata tgcttgctgt tgctgtgcgc actttttatc gagagaaaga 1920

tgacgtctgt ggttcacaga tgacatgcgt gtgtgagaca attgctgagt aacgagcgaa 1980

agatttttt taaaaaaata gcacaacaac ctttaaaaaa 2020

<210> 1856
<211> 1765
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207335_G1, chr5:214342638..214344402, Cluster 11

<400> 1856
tttgtgctcc atattggcga agtcaagaga catgttgcat acgtatacta acttatgcta 60

aagttagtga gtataattgg tggcttatct gaaaatttga attatactcc gaactgcaaa 120

tgatgtactc acatatccag atttgctgaa ccgttaaaag gtggccgtca cgattaacat 180

aacattaaca aataattcta acaaccaacg gttttttat taaaaaaaaa cgggtaccca 240

aagaccacac tgtcgtggca ggcaggcaga gacacgcaca ttctgaaaag ctgagatacc 300

atctgctgtc aagttggcgt tggctttggc tttaccccac aggcagtgac agggaaggcg 360

cagcttttcc cttcccttgg cttcccttgc ccacggtctc atgatgtggc gtttggatcc 420

caaaaagatt ttaagaaagc cgataaaagg aattctacaa gtttgattac atttgaagac 480

ttcaaaatat ttgggttaag tttccgataa attgtccagc ctgttttgga acaaaatcta 540

gacgaccgga ttctcaaaat ccggagccga atggggcaag tcactacacg ccaccactca 600

ggaatcagga ttcagaaagc taaatgctca tccatcatcc atcattccat cgcgcatcaa 660

ggtcggcaca aggcaccaag ggagggccac tgacaggcag gccgcgcccg cgcgtcggca 720

ccgggcccac gtacgtgtag ccccagcagc tcgtgcagtg agccagtcgt agggccaggc 780

cagacgccat ctggtctcct ctctgcagat cgatctggtc ctctgtcgtc gtctgatctc 840

acttgccttc tcgctcatgt catgcatggc cggccagcgg ccatggtcat ggccatggcg 900

ccctgcttga atcttgatga ccagatagga gttctcctac ggtctacgga gctgccactg 960

ccaggaataa taatggaata tggatttcac tgcaagcaag caagcaagca agcaaagggc 1020

caatggcagt ggcaggtagg catgccttct acggcccgaa actgcatccc accgctttct 1080

ggttctttcc ctagctagct atagccgctg ctagcgatac gctatttcct tcggcaaaaa 1140

aaaaaacatt tcactttgta aggtatgtat tcatacaaag tattaccaat atctgtacat 1200

tatgtaacga tactaaaaac tatgtgtatt ctttttggac gaagccttcg agaaatggtg 1260

taggattaaa aggccaacgt cgtcgtctac aattttctac gggccatgat tagcgatata 1320

gcgtatattg tacatactca atgatggtaa aagtatttaa catatatatg gcatgattca 1380

taagtctcat gcatcggttc aaggtattat ttattttaat tcgacaggac taaagtatat 1440

atgttacctt tatattagct tttatacgca caaactcttc ctttaatttg tagctagatt 1500

attgcatcct gtcgtacttc cggccgggtg acaagatgca gcatcgtcct tccatatccg 1560

ctgtctctcg cactggcggc atcgtccttc caagaacttt tggggctagc tagctgttga 1620

gtggcaaacg ttgcctagcg gacgtatcac gtacgtacca ccgcacacaa gcaatggcaa 1680

ataaacgcaa gcacgtcacg tacgcggaga ggcacataag gccctatttg ggaataaagt 1740

ttttgaaaat cacagttttt gaaat 1765

<210> 1857
<211> 2761
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228992_G1, chr6:129868303..129871063, Cluster 11

<220>
<221> modified_base
<222> (208)..(208)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (208)..(208)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (262)..(262)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (312)..(312)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (320)..(320)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (441)..(441)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (471)..(471)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (471)..(471)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (621)..(621)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (621)..(621)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (690)..(690)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (690)..(690)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (739)..(739)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (739)..(739)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (746)..(746)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (746)..(746)
<223> n is a, c, g, or t

<220>
<221> modified_base

<222> (786)..(786)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (786)..(786)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (883)..(883)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (890)..(890)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (927)..(927)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (939)..(939)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (939)..(939)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (952)..(952)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (952)..(952)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (954)..(954)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (954)..(954)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1030)..(1030)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1038)..(1038)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1058)..(1058)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1096)..(1096)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1101)..(1101)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1108)..(1108)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1108)..(1108)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1114)..(1114)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1114)..(1114)

<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1138)..(1138)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1138)..(1138)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1181)..(1181)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1181)..(1181)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1203)..(1203)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1203)..(1203)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1219)..(1219)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1219)..(1219)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1222)..(1222)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1222)..(1222)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1256)..(1256)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1256)..(1256)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1273)..(1273)
<223> a, c, g, or t

<220>

<221> misc_feature
<222> (1273)..(1273)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1278)..(1278)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1278)..(1278)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1287)..(1287)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1287)..(1287)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1289)..(1289)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1289)..(1289)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1292)..(1292)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1292)..(1292)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1299)..(1299)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1299)..(1299)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1306)..(1306)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1306)..(1306)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1337)..(1337)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1337)..(1337)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1347)..(1347)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1347)..(1347)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1383)..(1383)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1383)..(1383)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1432)..(1432)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1432)..(1432)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1523)..(1523)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1523)..(1523)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1558)..(1558)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1558)..(1558)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1572)..(1572)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1572)..(1572)
<223> n is a, c, g, or t

<220>
<221> modified_base

<222> (1574)..(1574)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1574)..(1574)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1578)..(1578)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1578)..(1578)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1620)..(1620)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1620)..(1620)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1622)..(1622)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1622)..(1622)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1638)..(1638)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1638)..(1638)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1774)..(1774)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1774)..(1774)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1789)..(1789)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1789)..(1789)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1798)..(1798)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1798)..(1798)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1812)..(1812)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1812)..(1812)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1815)..(1815)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1815)..(1815)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1819)..(1819)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1819)..(1819)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1826)..(1826)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1826)..(1826)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1896)..(1896)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1896)..(1896)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1919)..(1919)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1919)..(1919)

<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1940)..(1940)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1940)..(1940)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1972)..(1972)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1972)..(1972)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1974)..(1974)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1974)..(1974)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2027)..(2027)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2027)..(2027)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2072)..(2072)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2072)..(2072)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2130)..(2130)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2130)..(2130)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2133)..(2133)
<223> a, c, g, or t

<220>

<221> misc_feature
<222> (2133)..(2133)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2173)..(2173)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2173)..(2173)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2187)..(2187)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2187)..(2187)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2198)..(2198)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2198)..(2198)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2214)..(2214)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2214)..(2214)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2281)..(2281)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2281)..(2281)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2320)..(2320)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2320)..(2320)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2367)..(2367)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2367)..(2367)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2381)..(2381)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2381)..(2381)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2402)..(2402)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2402)..(2402)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2433)..(2433)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2433)..(2433)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2443)..(2443)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2443)..(2443)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2452)..(2452)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2452)..(2452)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2455)..(2455)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2455)..(2455)
<223> n is a, c, g, or t

<220>
<221> modified_base

<222> (2522)..(2522)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2522)..(2522)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2546)..(2546)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2546)..(2546)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2581)..(2581)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2581)..(2581)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2599)..(2599)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2599)..(2599)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2655)..(2655)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2655)..(2655)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2689)..(2689)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2689)..(2689)
<223> n is a, c, g, or t

<400> 1857
cagaaacaca ataatgatga tccatactta tcttcccctc ggctcttctt atggggtaag 60

agagtagaat aaagatatat gtcacctagc cctctcgtgc gtggccgtcg cgcgtgcgcg 120

gcacatcact ccaaggtgag gcctccccgc cctgtgcact gcgctctgct gaggagggga 180

gctgcagtgg tatgagcatg gccaatgngc tggtcatcag cgcgccgcac gcgcagatct 240

tgtcctctga gtgttaccga cnttgctgag gccttagtgg atggacaagg agacaaacat 300

gctctagagg angagcgcan aagattagta tatagcagtc gcatatcagt gtgagtggcg 360

catctgtgta cgtgtctatt gaatgtccat gtgcttgtgc gcatactcca gtatcaagtt 420

catataatga ctgtatggac ncagtcgtgg ataacactgt tacgcgtacg ntgatatgtt 480

gtgtaatgta ttcatctgac ttcgcgccag gatacatgcc aggctcctac atatgcttta 540

tctgctcctc gacatgtatc gctacacacg tgatgcgctg tgtgtcccat gcattctgtg 600

taatatgtga gaatgcctgt nggcatacag acatctcgag acgcacgctc accgcgcctg 660

agctaaaagc aggtaattac agaatattgn aatggtacga ggatcgataa cagcaatttg 720

cgtgtcatgc atcgcatant gcatangaaa tacttatggc gactcttcgt cgactcactt 780

actgtnatac cgcgttacta ttaggctaga gctctctgag ctgttgtgac ttctagcctt 840

gtgcttctct cctccgtgtg ctctgatatt gtgcggtgta cgntgctcan ctctgatcta 900

tacttgtatt atgtatacgt ttcgcangta ctcatttcnc tacatgaaca gntnatgtat 960

agacgactta tctgttgtct ttcagtgtct actgcgcgaa tacttcactt acttctgcaa 1020

cacagcacan tagaaggnat atctatctac gctgcagngt gtgttgatca tataggaact 1080

cctatgcgtg agcagnctga natatganct actncatgtt gtgtacttct gtgctgtnct 1140

ctcgtctata tctacactac tgcgttgtgt acgtgcccag ntatgctact ctcctcctca 1200

ttngtatgtt actgtacant tnattttgtg catcagtctc tctctgtata tacctnctgt 1260

gtaacactca ttntactnct ccttgcntnc tngtgcttnt gactcnctgc tcatatctat 1320

tgatgatcta tcttgtncgt agttgtncta tatgcgtgtg gtcacgtaca ctccgctgtg 1380

acnctatact agacacgcat cgcacctaca ctgtctctac gcctgatatc gncctgatgc 1440

acttgtacgc tgataatgta ggcttctgat gcactctgct actctcgttc tctccttact 1500

tctcaaatct gcttacttat atntgcatct gtgacttatg ttgagtgaat agctctantc 1560

gcgtgtctcg tnantganct ctgactacac tcgattgatg tctcgctcgc ctatcggttn 1620

gncgcctgcg cgacatangt gttgacgtca tgtgcacgct agtgcgctct gcgtgctgcg 1680

tcgttctcct cttctgcact gccctgtccg tgatactgac ttgctgtaac attatctact 1740

cacggtgctt cgtgagtcgc acgtactact gtantctctt ctgtgagcna gacgcttnta 1800

cttggacaat gnacntgtna tgactnctca gtatataggc gcataatagt gagtgatgtg 1860

ctgttatgct ataatagctg taaatcgagt cgatantctg ttatgttcac tgaccctgnc 1920

gccttctcta ctccacgcgn gcgtgcctcg tcgctgctct acacgtgctc gntnatctac 1980

gcgatgccga gcctctcgct tgtgtgacta cgactctttg tctatanact acctacctca 2040

cgccacgctc gcccttcgct ctcattcgct anttgattat gcgttgtagc tcatgacttt 2100

gctctattat tctgtaacat gtgacgtttn ctncttgact tattctgaca cacttatgtg 2160

gtatatgtct ttntcgtggt atttaanttt ttctgctntg ctctttttt actntctctt 2220

gtgttctcac ttcatcttcg tgtcgtcgcg tctgctgtcg tctgctagct cgcctatact 2280

nctgtgatga tactacatgc attctcatct tcgacatatn atttggctga cttgtgacag 2340

tgacactatc atctctatct atgtcanact ctgctctctc nctgacctac gtacgtgtct 2400

cnactgctgc cgccactcca gtcttctaca tcntgacacg cantctctac tngtntgtac 2460

tactgttagg tttatgatac tcagcgtcac ttcacgcact gtgttacgca tctctctcac 2520

tnctgactat ccctgctgcg gactgncttg tcacctttt cttcgtcgcc tgctcgttgt 2580

ngtgagcttt gtgtcattnc atctgtctgc tctgctgttg tctgatgctt gtacgccgcc 2640

cattatgctg ccttngatgt gctgtgcagt gcatgttgat tgactgctnc gcacgtttgc 2700

gtactgatca ttgacattga tccgagatac tatgggtctg tgtgcgtacg tgtagctgat 2760

g 2761

<210> 1858
<211> 2241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231814_G1, chr6:142321458..142323698, Cluster 11

<400> 1858
actttatagc agtgtgttat ctgattacgg ttgcacctaa ataaatatga tctagcatta 60

ttagctaccc gtcacgtacg ttacaaatgt gtgaactaaa tcacacctta cctttcttcg 120

agaccccttt catccatgta aacgacgcga ttaaacaata tatataatgc tatatacctc 180

caagatataa acaaaagtat ttttttttcc tcggcaaaat ttaatcttat cccgatgaac 240

tatatagcta gctagcgctt agtcttgcga gatgcttcac ctagtcatcg tctctcatgc 300

atctctcttg gtcgccgcta tgtggaaaaa tgactagaat acaattagtt atgggtttgc 360

acccaatttt gatcatgcca gtggtggtca gagcagtgtg tatgcatggc ggggttcagg 420

agacgatgtt acttgatgtg catttcaact aggttgaatc tatcactcat caacttttta 480

tatacatgca atcgctttaa ttaggtcgtg cttggtttcg gacgagctag gtgagggttg 540

agaagaaaac ggtttcatta ggttttcttt tagcgaggtt taatttagtg tcatctctca 600

acggacacgt acatatacct tcatcttggt cgtatatata tatatatacc ccggccggcc 660

ctaagaatgc tctgaaaatt gtatgcagac agtaaggctt caatttcacg tgaagtgaaa 720

tgcatgtaaa ccgcataatt aaatgggtgt gtctgtattg tagtgtagcg acatgtaagt 780

attatttggg tcgatcaacc atcatttcgg gcgtttcatc gatctgaata aatcgagctg 840

tagtaggcca catatcaatg gttgcttgga gatgcatgca tgcatatgta tccgggcctc 900

cggtagagta tatatggaca aattcacgtg tcacggggga gaaggatggg aagccagcct 960

ttcggcttgc tcacgttacg taacttttt ttgtccaagt gcatgccttg gaatcgatca 1020

gtcactgata tatggttgtg aaagctagct agcctagcca gacagcccta cgtcgtgctc 1080

gtttagttat tagtgcttgg agttggactc gatcagtcat cagcctgaga ctcatcaagt 1140

atatatatat atacgatggc gatgttaatt catatatata tatatgatag tagctagtgt 1200

atatgcaaag cgtcctccta atctaatcta atctaatccg cgcgcttgct tcgctttgct 1260

tgtcccttac gccgcccacg tgtccaagct agccccaact gccccggccg ggcgcccatc 1320

gacggtccgc cattagtctc gtcgccgccc accacctgcg ccccagtcac atatggatgt 1380

acgttgacga gacgggcagg catgatgatg ctgtagcttg gacacacaca cgggcgggcg 1440

gccggcgtgc gcgcgcgtgc atgtacttgc ttggcgtact atcattgcaa ctagctagtt 1500

ggacagccac agctcgttat ttttttccgg ccggtacggt ttggtctcga tcagacgctg 1560

caatacgaca ttgctaccgg taacgacggg tgcgtaagca agccgacccg acgacacccc 1620

tgaccgaccc ctttctgaaa acgcaagcag cagctcagca gcgcggccag gtcgtagaaa 1680

cgcccatggc tgacgatgtt ggtgtatatg gcgtttgctt gtgcgtgtcc ggcgcgcgca 1740

cgccactctc tcggcctggc gtgccgtccg ggtgcctagc tagctaccta gtcatggatt 1800

attattatct cgtcacatca atgccggcgg ccgggagttt gcttctgggt gtctttgcgc 1860

gcggcggcga ccggccggtc cgtcgcctgt gtgccggcgt tatatgtgcg cgcggctgac 1920

ctgggcggga cggccgcgtg ctgccggcgc accgagttgc cgtccggcgt gattcgtgtg 1980

ttttgtcgc acggcccgcc cacatcgtca gcaacatctc cgattcggcc acgaatccgc 2040

cgtcgtcaca cctcatgcat gcgtggtaca caggacgacc caagttctgc gcatgcctgc 2100

gtatgagtat gtaccaagta ccaacctctt ctcggatcag aaactaatta agcgcaattg 2160

cgccaagtct atttcgacag ttctatcgtt aatatagatc tggaatttaa tattgagcta 2220

gggtgacgtg ctcatgaata a 2241

<210> 1859
<211> 1940
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232310_G1, chr6:145310547..145312486, Cluster 11

<400> 1859
gatcccttga cagtgcagcc gtctccatgt tccccccccc ccccccttcat tccaacgtca 60

ctctaggtcc acaggcacgg catggtgttc cagacggaaa acggtggttg gtatggtagt 120

actcgtatgc gtcgttgctc acgtcacccg aacgactcgt cggcacgact tgtcccgtcc 180

cgtcaagact gcccgagaac tacgtgctgc tgtgtcacag tgtgcgctgc atttcctagt 240

ttcctaccgt gtcattgcgt cccgtgcgaa gacgttgcag ccggctgcac cagctggtcc 300

cgagttcaac ccgtggtcgt ttcgtacgat gtgactagga aggaccgaag gaacgccctt 360

tccttgtgcg gttcagccga tgcccggtgg cccgggctag caaaacctac cgaacattct 420

gcggcgatgc gggcagcagc tctagcgttc tactcacttg tggtggctgg tgagggaccg 480

gccaccgcac ttggcctcgc tcgtgcaggt ggtctactct gcctcgatcg gccgggatgc 540

agatgcccgc gcccgtacgc gaaagatctg caaaggcaag ccactgcaca aaagaggtgg 600

gatagctagc agagataagg cgcgtcgctg tagcacgcag tgcctgcctc tagcttagct 660

tagcttagct accatccatc cgattccaat gcagcagtgg acagtggtca cctacctatc 720

aaagatctct cgctagctca tctcggcaga ttccccccctg cgcggacggc gtgcggcgcg 780

tctcagctgt gaaccccacg cgcaccaggc cgaaagatgg cgccgcgaca gtgccgccgg 840

tcggcttccg cgtttcaggc tcgcagaccc aggcccaggg atagatcgcc cggcaagttg 900

cgccgacatg cgcctgctgc actgatcctg tttgcagtgc agggactgtt gccaaaatgc 960

ctaactgccg ttcgtgctcg tcagctagct cgtggctccg tgcttgtaca tggtcactgc 1020

actccatatg gaccatatca tggaggcaca aagtaggagg agctgattat atatcccttt 1080

cgtcttcctt tttcatcgtc ttcctcaagt gcagatgaaa ggaactccga aacggacgtg 1140

taacgcacac ggacacgggc gggcggcgta gcgtagcgcc ttttttttatt agacagttta 1200

aataaatagc tactactgtg gcagcaccag cccaatcata tttacctgcg ttcaaccctt 1260

gctcctgctt ttcgaaaaca aacatggtgg aagcatcact atccgagcta aggatcgcac 1320

cgagatactc ccaaataaga acgcaacgac cctcacctca gctccaccgc ttttggccgg 1380

taaatgtacc tcgactcctc gactcactca cctctctcgc tccgcttttg atcgagtttt 1440

gagttgactt tgcaaggcga ggggacgatg acgatgaaag aacttttggc tgcgtcaacc 1500

atgtaataat ttagggatat cctctcctgt atagtatata gagtattttt acgcgatatc 1560

tcagagaacc attagacgat aatatggacc tggtccggcg agccaagctc cgaggtccta 1620

aaaacattct ctctacgtga cgagtctgac gacagtttct gtgcgcacaa accactgtat 1680

atatatccag tgccccctgt ggtcagcatg actttttttt tcctaacttg gcaccacttt 1740

gctcggcttc ttttggctag tgccttgagc acctctatat cctgagtcca tcaaaacact 1800

cttaagtcat agatctcgct tcaattgata tttgattttt tttttccaac tgttccaata 1860

ggttctaaaa tgttgctagg gcattttaaa tggtccaaat taaagaccat ttcctactca 1920

atagttttca cgagaagcta 1940

<210> 1860
<211> 1423
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232885_G1, chr6:147895455..147896877, Cluster 11

<400> 1860
gttgcataag caaccgtcgg tgccgtcccc ctgagcgtga ctggacgagt cgtcgccaat 60

ccatcggaaa gagaaagagg aggcttgaac ggaaggggga ggccacagat gcacaaggac 120

agtggacagc actggcgtgt gacagcaagc agctagcaga cacagccgtt ccttgcttct 180

agacgcctcc gtctctcttc tctgcacatt cttttcaaga gcaggtacgt acgtgcgtgc 240

gttgcacatt ccattccatc gctcatgcat ccgtgcaaca gaatcacgag tacgctcacg 300

cctgcctgac gatggaggga ggcactggct cctcgtaccg gacgattgga agaacgtgat 360

ccatgctcga tcacaccacc tgcggtgtcg gcacacacac acagtacgtg ctgtgcgtgg 420

atacctgcac cggtcaaaaa ccaagcatgg atacgtcgtc gtcggacgaa ccggcgagcg 480

cgggcgggcc tctcgtttat ctatttgctg aaacttgttt cttgtcttct actatcagca 540

cacatggcgt gggtcctgtc ccgacggctt caacgaggag cgacgagcga gtcgatcctc 600

ccctcccgac ggctcagccg taacaaagcg tcattttctt cctccctctt ctccccttg 660

tcttgtgttg tgtcctcgtc atcgtcatcc cccgttctac cttcctttct tcgccggata 720

aagccgtgag gcatgtcgct ttcgaggttg tctcagcccc agtacaggca acggagcgcc 780

cgcgtcatcc ggacatgccc cagagccgct tttcaccacg acgcaacgca acacaaaccg 840

agagctctcc acctcttgcg gccgccatgg gtcagtacga cagtacagca cctcatgcca 900

cgagggaaat aacgtcgaca tcggtgtaga cgtccccaac caggaccttc acacacatat 960

tatatagtgg agtgggctag ccaggacctt cacacacata ttatatagtg gagtgggcta 1020

gattgagtgg atttaaatct ttagcgacta agaattcttc ctaacttttg taatctcatc 1080

caatacatat tgaacggaaa taacctgctt cgtgttgtgt ttgctctctt tgttctctct 1140

tttgctgcta aagttctttt gttgtgttgt gatgtttgca gctatttatt taagaggttg 1200

tcttgtttcc tacaaaacga ggcagttgtt agttacacca gaatcaaaga aattcaggtg 1260

gggttttctc ccccttgaca gtcagaaaaa aggatcatgt tcaaaacctc taaaacgaaa 1320

atttagagct aaaattaggt aagacgtaat ggaccaacta attgctagct ataaccaaaa 1380

taaccattag ttgttagttg tcccgaccca gctacaacta gct 1423

<210> 1861
<211> 1526
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233629_G1, chr6:150836004..150837529, Cluster 11

<400> 1861
tggactaaac tgttgtagtc ctaacaacgt gaaaatcgcg aaccttgttt ggcccaagga 60

gctattttgc atcccgccgg accggctcag gccgttgtgt tttgtgtaga caacaaaata 120

gctggaaact gtgtcccgtg aacttggctt ggtcttatac aaccatccaa cacagactag 180

tatcagagag ccgtgagcgt cggccggcgc aggaggaggc tgacggagga cgccatctga 240

aaacaggccg gcttctcttc aaatttgtcg tgcctgcact cctgtagtcc tgtgcccccg 300

cgcgcctgtg cgtgcctgcc actgataccc agctgccttc gagcagcatc gttggtgatg 360

aaggggcgat aatgataggg agagactgag agaaggagcg cagatttgga gtccggctat 420

gcatgcgctg cgctcccacc caggtccacg gtggccggct cgtgacgcgc cggttgttgt 480

ttttttagg ccagcaagag ggacgttcgc tgtcgcctgt cgtacttatc agtagtagta 540

caggttttgt gcgatagaag cgccgcgatt tcgtcacaca aaaagaatct cgatgcattg 600

gataccctcc tgggcttcgg catgcaacga acgagaccga gagcgcggtc tttttgaaaa 660

ggcaggcagg cctcgcctgt gggttttcga gtggcaagga caggcttgta tttgtagtag 720

gctgtaggcc ccgggaccgg gaggcgggag cgttcgacac gtcgagcggt ttgagcgacc 780

acagttcgca aaaggagacg gcaacacgct ccatgcccgt cgtccatccg gtgtagcagt 840

agtattatga gattggctgc ggttaggaaa agaccccaaa atgtgcaaac aaagaccccg 900

taagttttga aaacaaaata ctaggagggt tttgggcgtc tgtctgtctg tctgtctcca 960

gacggcacgc cggctgctct ttcggggtgt cgagcgaacc gaactctcgc cttgtttatc 1020

gccgctggcc gccgcagcga cgacgcactg ctgcgtccgt cccccgcccc gccgcccccc 1080

gtgacctcgc tgccgtgtgc atgcagcaat gcgcaggtca ggaaacgcag cgccaccaga 1140

ggcgagtata tttatccatt tcgtcgaacc agataaattg atcgcaaccc catcgtcgga 1200

tcgtcccaac agaatgctac gattaaacca accagattta tctacatctg cctaccatta 1260

aaatgtcctg ctcttttaca tcctacagta aaatgtattt tcagaaatgg actctttgcc 1320

agtacccaaa atggaatagc cttcaaattc cttcgcggcg gctgcggcgg cgatggtcga 1380

ggtgacctat ttttttttt gcgtttgtct cttccgtttt ttttatttct ggattgtcgg 1440

ttccaaacac cgaatgacct ggcaaaaaaa aaaaaagaca accatggcca gccatgcacc 1500

gagttcgtct cggtctctgc agaggt 1526

<210> 1862
<211> 3596
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235216_G1, chr6:158290523..158294118, Cluster 11

<400> 1862
gcgaaggcaa gattcatatg atgcaaaaat aaaataaatg agagtatgcg ctttaagata 60

attattgcca atgtaagatt catacaatat aaaaagatac caaaatctct aaattgatat 120

actactaaca cggtgtacca acagtattaa attaatgatt tattgacaaa cataaaatgc 180

tatataattt atttggtata ttcatacatc tactagtacc aataaacatt atcaaatacg 240

atatttttat aatatcaatt ttttgagtta cacgtactgt gactttccca ggatttgtag 300

atgcctctaa atacgtgaat taattaacca tagtgaactt tgtttaacat tttcaattga 360

gtattaaggt taaaatgttc attttaacgc aagtaaatat ttttaatgtg aatatatact 420

tgttacaagt tttttataaa tttaatttat aattagagct ttattttgtt ttatatctat 480

tttgcaagtt tcctgtttta aatagaatag gcaacgtgaa aaccaaaaaa gggaaagctg 540

gacctcagtt cggcccatag cgcacgtgca cggcccataa cctacgcgcg acggtccagc 600

cgaaacaggt cggcggttca gcacgagtga aggccggccc aaacaaggag gcagtaacag 660

gccacgcagt tgcgcatgtg aagcaattcc agcccaagcg cggaggcaat aacgcggacg 720

tgtcgaaaac gttacagtat gagtgttttg cgcgagactg tatttcaaac tccaatgtat 780

aagtaatgtt gtaatagtat atagaattgt ttttttcacg accatgtaca caatttccta 840

gacacatcta agattccatt tatattataa atttaaatag tttaaaaata tttttaatct 900

atatagtaaa taaaatgact tatttgaata tcttttaaat tcacaatttt ggcttcacga 960

tttattagat attagtgact tgctctagca acttcatcat ttttttctgg tgatgaaact 1020

aatcagggtt tagatccaca attctagagc actatttgcc actatttaac tatggttata 1080

ttttgttctc tacttctcct tgacagtgta taaagtccaa tacaaattac attatcacat 1140

caggaagaat ttgtgtgatt ctagtacggc taataatgag attttaaaaa tacgccataa 1200

acggtcatag actttacgtg tagcccttcc tctattctct cctctcttcc cccaaatcga 1260

tgagcagaaa gggatagcac gacttcggtc gattcagccg gcggtgaccg tctccggcgc 1320

gaacggtggt gggctagcga aatgggaggc cgcacccgtg ggtgcaagcg cccaggcccg 1380

aatgggcctg tcaaagcgga gccacgcggc cacgcgggcg cagatgaacc tgtattgcgg 1440

caagcgtacg ttcgcggttc gccggtggcg agggggagca ctacggtttc ctaggcctag 1500

cgtgcaccgg tgaattctta tggcctcgtc agggtctcag ggatatctcg tagtacgttg 1560

accgcgtgcg gcagcgggtg gagcagaggt gcgccggcaa tggcactcca acaccgcata 1620

agggctagag ccagcacgaa caacagcttg ggtttcagga caacggtggc gatggttctc 1680

gagtgccacc actgctggcc gtataggttg gagcaagaag cgtggatggg ggtggctggc 1740

tcaccgtgat tctgtttcgg cggccgtggt ggcgacaaca cgggcggcag ggggctgtgg 1800

ctgaagatga gcctgccgaa cgcgcgcgtg gtgcatgcag gaaagacgac ggcggagtcg 1860

tcactggctc acctggcaag ggcgggggcg agagtggtga ctagaacgac ggtgaatacc 1920

agtgtgtgac gtgtctggtg ctccagaaca cgcccatggc catgtcaatg gcgacggcgt 1980

tcacgcaggg gggcagagat gagcagacgg gcatcttcgg cttttgcagg gacgcaggac 2040

gagggagtgg tcacgggcat agcacggcga ggcacacgac gcacgggcgc acggtgtgca 2100

tcgaggtcga gggacgcacg cagcaacgcg tggagcgtgg catttcactg agcacctggc 2160

gtgcaagtaa ctgggcacgt ggtgattgcg ctcagcgatg tcgggagacg agaccgacag 2220

ctaccgagca cattgggact gtcgttcgta tagtaaagat aaacccgtga cgcctaaact 2280

aaaaggttgt tggatgtgac tcccaattat ctacagtacg tttcttattt agggatctaa 2340

cctaattaat ttcatcagtg ctctagtgtt gtaggcatat actatttaaa cttgtaattt 2400

tggagaaaaa aaagtctttt agtatacaaa cttaacagag catggcatgt caatatagca 2460

atatcaatca aattatcgga caaattttcg aagctccgat tcaaaccaac tccagactcc 2520

atctgtggaa ttccaaataa attattgagt aaagctaatg aattatttca gtcatttctg 2580

taggctgatt catatatagc ggactggtgg atcggtccac aagcacacac aattagatct 2640

gatattttcg attgttgaat tttgaggaga gctttctctt attgccacta aacctctagt 2700

ttaaatctca tattttgtag actgtgtagc ataggatttt cccgtttcag acgtttgcta 2760

gcccatgtgg ccatggctgg taggccctca tcagtctgat cggatgaaca gcctgatggc 2820

ctggtgcagc aaagcggttt ggtactaaaa ccttgtgtgt ttgtgactaa taaaccgtgt 2880

tgacgtgact actcgttaat cctgacgatt taacctgacc tagaaagttg tcgggccgct 2940

ttgcagattt gcttccatcg tctcgtgcag gccgtaggtt aggttaggta cgagtaggca 3000

cggtctgctc cgggcccttt ggcacagtag gcaggcatgg tcttgtcact gacacggacg 3060

cttggtggct tgtgcttggc atgtgaacgt gaatgccaag atgggaggcc acaggccaca 3120

acaggtggcc aggccctttg taacggcttc gctgtcgccc ttcgctcgac gctcttgtcc 3180

cgttgctaaa gcgtacgtgc tggtgctgcg acgacgaagt ggccgtccct gtcgcctccg 3240

ctgccggctc tgtggccgct gccggcgacg tacgcgcgcg cgcggcgggc cacggccgcg 3300

gccacggcca cgtacgtacg tacgaccccc ggcgggcgct gatcggtggg ccctcactcg 3360

atcatgcatg cctcgatggg cgatgtctgt tagcgtgtgt tcgtactggc agctggcccg 3420

ttacggtgtg ggccagggtc gtccggcaag ccatgagatg acacatgaat ggatgtcgtg 3480

tcgtgtcccg tctcccatgc cgtggaggta gagctgagct gatcccagtc ccagagtccc 3540

ccaccgccgg cttctctgct tgcgctacaa tagttggtgg tgggtcgcgg acgcac 3596

<210> 1863
<211> 1565
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235220_G1, chr6:158295947..158297511, Cluster 11

<400> 1863
gacaagaatg gcccaccaat ttgcatcgga gatgcctact tagtttctgc ccagccataa 60

tagcttggtc tattgcagac attcctaact gaagctagct ccaaatctga tgcaggctca 120

gttgataaac gaaaccaatc acaccctacg gctacgggaa cgggagcgtg tgactgtccg 180

aggcagacag cgaccaaaga aaggctgctg agcctggcca cctgcatcgt cagtcaccgt 240

cgcaccggct actgctcagg caattcatgg gcgagggccg ggacaaaaaa aaaaactgaa 300

aaaaaacggc ggcagccggg ccgcggatga ggtgaaaatg aaatctgctg accatgcaca 360

ctgcaaccga ggtagtaaaa acctgacgag cccggcgtgg ccatctggtg aatttctggt 420

gcagacgagc agagcgcgca gtgcctctcc tcttggattt ccgtgcccgg agctagcctg 480

cagcatgcag ggcacaccgg cctaccggca ttggcaccac catcaagact catcaaccgt 540

gcagccagca gcagcgcgcg gcagtacatt ctacgcacac tcctgggcgg gcgagcgaga 600

cgaatcccag cgcccgtttt actgtagcgg cgcccgcagt aacttgcggc cgcagccccg 660

ccccggcggc gtacaggtac tgtacacaga cagccgccaa gcgtacgtcg tcgttgccgc 720

cagtttgggc ggcacctgtg tggctgtgtg tgcgcctgcg cctgcgcgca accctcgctg 780

ctgtagatga tggccggccg agccgcatat gcagtccagt ccagttcagt cggcagcggc 840

gcgcgttaat taattcgcgt cagggcgcgc gcgctcggta cgatcctgtc attcctgtgt 900

gcgtgaacgt gatggcgccg ggcagtccgg tgatctcatc tactagcact agcagtaagt 960

agctcggtga aaacggaacg tcgtcctgtc ctgcaggcgt gcgttgtggc ctgtgggatc 1020

gtggagaggc cggggtccgg caggccggca ggcggcagca tgaagagggg gtgcatttgg 1080

cgtggtcgcg cgtgtgggct tcggaggagc tagggaggga ggacagacac ggcatgcgct 1140

gctgcgactg cgcgtattaa agaggcatgc agtgcagctt tgggttgttg gttgacgcga 1200

ttcgttggcg tacctaccgc gcgcgcgcct cgcttcgtgg ctgctgctac ccgccgctag 1260

tgcttgagtt tgaggtttcg gcagcggcag ctccatcatc cgcgcggccg ccgctcccgc 1320

caccccagta tttaggccag tggcccagcg cacagcgcac agtgtacagg accaccgcct 1380

gccctgcttt tgcagctatg gctgcctgcc tgcctgcctc tctctctctc tctccccacc 1440

tccccgcgtc tctctccttg tctctggacg agagagacag ccagccagcc tgcgtgtctt 1500

ttagtgcagt cactggcctg ctggccatga tttccagcca gccctgccag tgtgctgcag 1560

gcacc 1565

<210> 1864
<211> 3137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235932_G1, chr6:162101610..162104746, Cluster 11

<400> 1864
agcatgtgta tctatccgtc tgtgttttgc ctggttgggc cagacgggcc atcgtgccat 60

tcgggccatc atataccaga cgagccaaat aaacgtacca tcgtgtcata cgggctggca 120

cgacacgtct atgtcttagc cttttcgtat cagtgtgtct ctgtggttgg tacgatggac 180

aacacatata tatggtacct ctaactaatc gggcctgtcg ggctcgagtg tctagcgtgc 240

cgtgttccga tcgtgctctt gctcctgtat agagctagca aagccataga ggaggtcagg 300

agatatatag cagaaagctg ccgacacttc acccttggt caaaacagtg ggggcgagcg 360

agacgcagaa gcttccggcc ggcctgggcc tggcgtatct attgggcgag ccatggatcg 420

atggagccga tcgtcctcgt cgtcgtcccc ccatgttgga aagcaacgtg ccatcatttc 480

tcgccctggg gctgtaataa gctcatcatc aggacaggaa ttctctggat gcgtgtgcgt 540

gtgtgcgtac aagagaacgg agcgcgggtg gccgtgtctg ccgcagtcag tggcagactg 600

gcagagtgcc cccttgacag cgcgcggtcg gcacggtcga cagcgcacgc ccgtcccttg 660

tccatgcagg caggcaggca ggggcgcagg gcatctggac atgagcagca gcaggagagt 720

gcaggacgga cgtatgtgtg cacacgtgcg tgcgtgccaa ggcccctgca actgcagcag 780

agtatatcca gtctgcaggg aggactgcag actgaacgtg aaactggcaa ctgcatggca 840

tcgagtcgac gcccaactcc tgtgcggcta gctgtgtgcc tgacgcaacg ggcaacaact 900

gctactgact gacgcacagg cggccccgtt tctgcgtcgc tgagtcattg catgcagcac 960

tgaagaccag cagcagcagc tagcagcgac aacgacatct ccggtcagat cagagagagg 1020

ccgtcagaca gcagttcctc tcctcctcac cctaaacccc ccatgcatat atgaactgat 1080

gatgaacgaa gcggcggtcc acatcagggg gaaagatttc atgggaagca accggccggc 1140

atgcgcatgc aacgcgacgc aaaggttttt cggtcgccat gcacctcatc gtcatcgatc 1200

acaggcacag cgtttagaat atttggttca tcaagcgatc gacgagagca acgcaacgca 1260

aagtcagtgt gtgtggctgg tgggataaca gcgcatgcat gcatgcatgc atgatcgtcc 1320

gccgggcgag atcgttcgag aggtggttgc gccttgcgcg ctccctaatt tttcactggg 1380

gagtaataat gcctccgatg tgcatggagc gcccggcctg acgtgacggc ggccggactt 1440

gatcgagcga ggcgccatat ctttgctgcg atggatcgcc acgcgcgggg aacggaaaat 1500

atcgccgatc gctttgccaa ggaaagaaca gctagctagc gcgaggaacc ggagtttcat 1560

ttcatccaca tccacgccgg ccgcccggcc gggcttctga agaagctagg agaaaaaaac 1620

gtgtcgcgct gctctcatct tctttttcac tgtttcaatt ttttttctga cgacgaaagg 1680

cactactgca tgcgtttctt cttcattctc tcatgtgtct atattattgt tggattggag 1740

agaaagcaaa aaaaaaaaaa aggaatctcg ctgcatgcat gcatgcatgc atgtatcgtg 1800

aattcgtgat atattgcttg cagtttacaa catcatttag ctacgccggc ctatactata 1860

atagggccgt ctgtactagt ttaaaagttt aatggtcatc agctgtactg tcagcgaatg 1920

aacgagtggc gcgcgcgcgg tatggaaatc tgcccggggc gctgctgtgc agatattcgc 1980

gtgcaatcgt caggattctg agaacaggag ctccaaacag tgggccaaat caaatcgcct 2040

catgaattat ttgtcggtaa agaccgaccg gccggtcgaa gcatcgcccc ctgaatttga 2100

ttccccttct agattgactg cctacaccca ataaaataca cggtctatcc atcactgaaa 2160

aagactgcgc aggtcaaatt taatttagta gtactaactc tcgacaaaaa aaaccccatg 2220

aagcgtggtt tttatctcca aaggaagggg gaaaaatcag ggatgatact tgtagctagc 2280

catatccttt gtaggaacaa aaaaaaggct aggctaatta aattaggtgg acagctatag 2340

ctttgcttca tcagtgcatg cacggttcgg ttcggtttcg catggcttga acgaacgcct 2400

atacccaacg gcttaatcat gccgggttac tcacacaagg caagtgcacg tcacgctatc 2460

tgttgtgatg gcgacggcat ggcacccgcg caccaacctc cgtcgccatg ggctcgtaaa 2520

cgcccaacat gtggctgctc gtatttatag ttttatatga ttgtgaattt gatatttatg 2580

tacactatat ataatatata tgcatgcaac tctaagtgtg tgtgtacatg tatatatgga 2640

ggtgtctatt agtttgcata acttcaaaga ggagccaaca tgatgcatgc tcctccctcc 2700

ctttttttat gctttccttt tcaccttctc ccccctttcc tttctagagg aggcaagtca 2760

agatcaggga ctcgagtaag attctagcag ggatcttttt gtctacaata gggacatgca 2820

tttgtagaga ctaatcgagt ggcaattcta cgtgttcccg tagattcggg atacgacgta 2880

gtctagtcat tataacatat acatatcttc tacgtacgca ctttttctcc attcgaaaat 2940

acgagtccat ctggcaggat attattaaca cggtcaacat taaatcaatt ggactagcaa 3000

taactagaat atctataaaa gaacgttttt taaatggaaa tagcaactcc tatcatcctc 3060

ctatatacga cgacatcacg tttaaacttt gtaaaacccc accaaatcaa atcatctcgg 3120

cactcgtaac ctccact 3137

<210> 1865
<211> 3027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235948_G1, chr6:162161644..162164670, Cluster 11

<400> 1865
agtagcgagt ggaaggacac gcatatgtac cgtcgcgggg tggaatattc ggagtgcata 60

tgcaccggca ccggaacgca gcggcacgtt cacgcagacg caaaacagcg caggggcggc 120

tgcagatgct gctgttgctg cgcgcgccgt cggccgtgtc tcggcgccgc ggagcgacgt 180

gcggccggcc ggccggcgca ggcgacactg ggcacacgcg agcgacgtgc ggccggcgca 240

ggccacgccg ggcgcaacaa gtggcgtcgc gtgaccgtga gggcgcggcc aggttgggcg 300

gcgggggctc ccgctctctc tgtgtactcc catgctgtgc gccgaccgaa agcggcgcgg 360

tggatgcgtg cggcgcgcgc tttgcggcgc gggcggccga acggggtggg ccccgcagaa 420

acggtggggg ttgggggaat gtgtggatgg gcgggctcgt ggcgtgcggt gtggtctgat 480

ctcgtcggat gcgttgcgtt gctttgcttc cttggccagc gtgagctcag ctccacccag 540

tctgccctct gccgttgccc tgccagagtg cgccgtcggc acgcccgggc ccgccaagca 600

agctctcttc tcctccgctg gcctcggctt gattctacgc cacttcactt cggtttccac 660

ccacccgagc caagtaagaa tccgaagctt ttgccgttgt ccgtctactt ccagatcacc 720

accccacagc atgacagatg tggccggcct ggccgcgctg ctaccaccgg cctagccgtc 780

gtccgatgca ggaatcgaac gaccgttccg gagtggacgg cgggcgtgtc ggcggtgctg 840

gacgttcgtt cgtacgtgca ttgcacggtg aacgatactc tacgttagaa tccagtgacc 900

tagggtgcca cggcacacgg gttatggccg cgcggcgcac accggttaat gattcgcttc 960

gcttcgatct cgctttcacc acgaggcacg agctgcgtcg tcgcgcgtgc gctgtccagt 1020

cttcagtgcc cactgcccgt gacggcggtg cccggcggcc gtgccagctt ctgaatcact 1080

ggaagcgcgt cagatgatcg aggggcgcca agatggagaa aaaccggtgg tttgcgtacg 1140

gcttgcgcac atgagctgag cttcgacttt tttctggcga tctggagacg cctgcctttt 1200

gcaacgccca agtcttgagt tggaaggtcc gctcctctac taaagtcacg cagacgcgta 1260

tatacaatgc cagccaccgt cacattcttt aactgagggt ttacaggact tttcttttaa 1320

aaaaacccaa ctcgtccaat catcgcacta aagacgaatc ttccatgatt gggctcggct 1380

tcgttgctcc actgcgcatt ccgtgtggtt ttttagtcct cctcccgcgc caatggcagc 1440

caggctccgc aaggagaacg aacggctcct ttttttcgct gcgtgctgga ccagctccac 1500

ttgtgaaggc tatgtgtagc aggtcaaccc ttgtgagttt gacacttccc cattggtctc 1560

tgtcccagaa aaaaaagggg ggtgccggtg tacttgcgga gcttaccgag tttgccccgt 1620

tgaccacaac accgctggtc gatggagggt tgacgagcaa cgaacagggg cgatacggga 1680

tcggcggtcg tgcgtccggt ccgatctcgc cgggcggagg agatctccgt gcagataaga 1740

aagtgacgcc ccacgaagtc ggccgaaaag cgcgcgtacg ggaggccggg agggaggtga 1800

tggccgagct gcccgtgccg caagcctacc gtgaggtgta gtgcagtgta gtgccattcc 1860

agttccagtc cacccatcga tccgtccatg tctttcgact ccgacttgca cccagcgctc 1920

gaactgaagc gagcagccgt ctgcggcctg cgatgctcac tgctggtcgt ctcgcattgc 1980

agcatgcttg cgcggcacag gttcagtgga tccatccatc cttgccgttt tgacgcttca 2040

ctgtggtagt aatgaaccca gcatcggcct gctcgctgca gcacctgtgg tcagtctcct 2100

agctagttac ttcttgcaag aattcatgcg tcgtcttgag ctctacagta gtctttcccc 2160

cccttgtttt gtgtggcttt tcagcgacag gaagcgtaaa gatcttgccg caccgcgatc 2220

cagtattggc caaaagtgag ctgaactgag ctgaatgtca acgccattgc ttttgtcaat 2280

ggtgcggggc agtcgacgaa aaaaaaaacg tttggcgcgc tttgctttat gttccggata 2340

gctagtggag tacagtagta tatagcagcc agcagggtca gcggccaaat tattcttata 2400

taatactgta gcaaagagtg tagttgagtc aatgtccttg ccaaaaaaaa gcacagtatc 2460

aagggacatc catcaatagc agtggatgtt gacttgcaaa ggcttgacaa accctgtagt 2520

ttattcgatg acacaaagtt gaccacaagt ggaaaaagga tgggatttgt ttgtttcgtc 2580

gtccctactt ttcagagtcg agcgctgtat tgtatcgtca attcgctgtc ttttgggctg 2640

gccaactcca acagatcaca tcaagcccag tctgaaactc tgaatttggt tcctgcaatt 2700

ggcagcttgc cactggccct tttggcattg gcgagctggc gtgtagtgta ggataaggct 2760

gtcagttggc taaccactcg gcatctcaac cctcaagtgg atcaaataga cactgcggca 2820

agaagcatag ctagctggtg gaggcagcta tttttctgca ctgcacgggt gctggtctac 2880

agcagtagta gtagctgaga aactttggac aaatcgacaa aagggctgct gcgtcaatgt 2940

gtccgtggaa tttttcgacg agcgcggcaa tcttgtttat tttacgagtc tcaatcttgt 3000

ttattttgaa agaacacgcc atgctta 3027

<210> 1866
<211> 1459

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236349_G1, chr6:164283113..164284571, Cluster 11

<400> 1866
cgacccccta cccctcagtt ccccccgatg tcggggtcat gtcgggtctg gttggcctag 60

ctagcctccc gctcctgccc ggccgatgcg acgcgacggc gacggcgact gctgcctgcg 120

tgcatgtgac cctgccatgc cgtgccgctg cctgcgcgcg ctgcctccgc tccccgtcgc 180

cgtcgcctcc ctttggccct tgcaatactg tagagacccg tcgacgcacg tacgacaccg 240

tcactccgta ccacgcgtca ccggattgtt ttctggtctc tctccgtttg cctgggtcct 300

gggctgggca gcctcaaata aaggctgtca aagcctgggt gtcccggcaa aagtggtaag 360

tacttgtgtt cttaaaaaaa tagatgacaa gtgattcttc tctctaaaat aactacacat 420

taggttaaga ataaagagat tcatgttttt taaaaacaat tatatacatg tcgtacctcc 480

cataaaagat gtgatcatct gtagttttgg ttgaaacgag gtaggaaagt aaaataatga 540

ctacagctag gctttcttat acccagatac acaattacct ttattatttt ataacagatt 600

gaactccaaa aatatatata gtacatgact gatcgagggg taggccggta gtgctactgt 660

gcacaggggt gctggccatg cacagtacct ccagctctct agtacataca tctgaaaagg 720

ggcagtgacc acacaggacg cctgccatac aagggttcac atgtgtgctg ccgtggagta 780

gtactatata acataccgta tgtaataaac gacacataaa aaaagaaacg gcaattcaca 840

caggtacgtg catgacgtac agttaatgaa acgggattat gcacggagag ctagctagct 900

gcacgtacgg tgctccatca actgccgcat gcgacgacga tagcctcatg ccctcatgta 960

accacggaga gtacgtgcct gccgcctggt ggtcaatgca cggctctctc atgcatgcat 1020

ggcttctttg ggagaatctg cgactaataa caggtgcacg accacgagtg gcaaattcgt 1080

gtctctagtg gataccatgg agttcccttt ttcttctcgt ctggtcagcc atcgtacgtc 1140

tatccattta ttactctctt caccctaaaa aggaataaag tgcgcctcac gtatatcgac 1200

aagcttaact tcttcttcat ttttttttaa aaaaaactga aaacaatatt gatatttata 1260

tttctaaata attttattac aaaaattata tcccaaaaca atttaatggc acacatttga 1320

agagtttttg gcttatatta tatttggtag ctttaagagg aaacgagtga ctttctacac 1380

aggaggcgga gactagacag tgggtcatat atacttgtct tttgtccttc catgcttact 1440

aatagcaaaa tgggtcaac 1459

<210> 1867
<211> 1626
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236382_G1, chr6:164513529..164515154, Cluster 11

<400> 1867
tttagggacc tgcttgacac gtcaaaaaag tttaggtatt tatttttta gactatctac 60

atgcagtaga tgttttatta ttattattat ataatataac tttttaaaag tttgttttgg 120

ttcatgggta taaagtaaca gaatcgcggc aaactctaaa acgttggtca gaaaaaaaag 180

gagagcaata caggactaca ggtacagtac aagagatgcc gacgtgagag acgagtgtcc 240

atgtctttgg tcttcgtgac cagttcacgc tggcactggc aggtccgtag ttttgtttca 300

cgcactggta cccgccacga agctccagtc aaaccaggtc ggctttgcag gccagaccgg 360

ttcgagccag aaaagctgag ccagccgaca gcagggcccc gcgacccaga gtgcgtacaa 420

agctccccag taatctatgc tgtgctgagt agtagcgtgc ttgctcgggg ccgagagccg 480

tgcacgggcg aaaggcagtc acgcaggcca gtgcagttgc tgcggcgcaa cagcggtcgc 540

agcccggagc ccgcttgtgg gttgtggtgg ctccgggctc ggccgctcgc cacccccgt 600

ccacgtcttg tcacccttcg ggctggtttg gaggtgtctg tctgtcttgc cattaaactc 660

gcagctagac tctcatcgca agccaacaaa gactcctccc tgttcacgcc attgatcggc 720

tgcccgtcag cccggggccc gcgtaacagt ggccaggggc ggcctggcct ggccgccgaa 780

gcgagggcgc aggcgcggcc gcggcacggg ggaacaggca cagcgctctc gctcgcttgg 840

cgcgctgcgc ctgcctgtgg cccgcctgga tgccaatgcc atccggtcac tgcttacagt 900

ttacagcagc gcagagcagg agctcgtgag gcaagcaggt gggtcgaatc ggggtgacga 960

cggcgacgca tggttcgttc acaaaacgcc cggccggccc ggcccctgcc caggtcccca 1020

ggcgcggacg cgcggtggca gcgggccatg gggattgggg acgagagagc cagccgccca 1080

gacctgacct gacctgtgcc ccggcctcgc acgcaccagc gcaggaacag tgctctgact 1140

ctgtctgacc cacacgcccg ataaaagcga ggagaaagtt tccgtctcgc tgccgtaggt 1200

ctcgccaggc ctacgcttac tcttcagcca gcctacgccc cccgtcctcc tccacggcct 1260

cgcgccctgc cacccgtttc catcgtctgg cgcacgcgcg gtttttctag tacaacgccc 1320

gtggccactc tcaagcgacc aagtagtaca tgacaagctt ggattctttg atggatcgtg 1380

taaactagag catacgtatg gagcccagaa caagtataaa tttctatgag ttctatgtta 1440

tggacaatgt tagttggtcg taagatttat attggtttga gtagaacatc tctatatcca 1500

gtcttcatgg gctcacacta ccgatacctc tatttctcga tgctaataat agaggttaca 1560

acggggtcaa gaggaaaggc ttctaagtct cttacgaggg agtgacacta aagagagtcc 1620

tacatt 1626

<210> 1868
<211> 3474
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236472_G1, chr6:164867039..164870512, Cluster 11

<400> 1868
ttttacctg gtttgtcttt ttacacaaat agcatacata taagagcatc tccagaagtt 60

tggtttagtt tacttgctga actaatagct ctagcaaatt aacttacgga taaagagttt 120

ctctcgacta tggaaactta cgagacaaag cggggtgttt gatatttatc gtattccaag 180

aagctcttgt accaagctat gaagggcaat atttttctgt gtgttttttt tgggcagcat 240

aaagctgctt actcagatgt acaccctctt ttcctgaacc agaattaaaa gcttagcaac 300

atctcctttc tccccccgga gagcaaaaac atccgtgggc tgcagcccgt aaactgacgg 360

ccccgtctgt gggctgctcg tactgggctg gtaaagtcta cccatccagc agccacgccc 420

acgcgttgtt gccctgccct ctaaaaaaga ccagccaggc tcaggcatcg catttgcgcc 480

tccgttctgc tgcatgctat ggatctgctg ctctcgcctc cagtcctagt tctcatgtta 540

ttgaactctc tctctccttt tttcaaaaaa attatctaga tgtatcgtat agataccaaa 600

atgtcttgct ataatttaag gtgaaatgaa gtgaagtctt taatataaag taggtcgtca 660

cgatgacagt gaatcctaat gagcgctccc cggtagaaac aatcaaacaa tgcaatcatc 720

acccatccca gtccgagccc ggccatttcc ttctctgtct ctctctcgtc agaacgttct 780

ggaactggcc cgtatcgttt tctactactg ggcatggggc tcatcatcat acacaccagt 840

cgcaccaaag taaaaaaaaa gaagagagaa atcatggaag gaactggaaa acgaaacaca 900

accgtacgtc gccagcagtc ggcgtcgccg gcaaaacgca cgcacgcacg caccacacag 960

ctagcgaggc gtctcgccgt cgcgggtcgt cagcgtcggt atagtaaatg atggaaacgc 1020

cgtacgtcgc cggccgcgta ggtcagtcag tcccaccgct gagcagtggt gccgtgcggg 1080

gccatccatc catgtgtacg ctctccgggc gcggtacgcg tggccggcct actacacccg 1140

gtacgcacgc acacatgtgc tcgcgctggc atggcatggc atgcacggca cgggcagtgc 1200

gttttgtatc catcgagcta gcccggcctg actgatacag ggccgctcgc ccgctcgtgt 1260

tgtctacagc tgccggacgg gacggaggaa gaaaaaggca agagcgccga agcagccagc 1320

ggctcctgtt gttccctctc ggaagccgga aagcagcagc agcgacgccg acgcaggtgg 1380

gtgcggcggg cgcccggtcc cgggtcacga caattcacac gctgctgctg ctgcttctgc 1440

ctcagctgct gagctgcttc gtctgtccgt ccgtccgtct ccgtcgcttc cgcctccaca 1500

ccacatgggc ccagcgcgcc ggtgcccaaa cgcgctctcc ggtttctgcc cacgcgcacc 1560

gcacccgtcc gcgtcgaaac atttttttat tttaaaaaaa aaagtcgagt aataataaac 1620

cagcgcccga gcgcgacctg cgttgcgcgc gtggcgccga gacgaaaggc gtcgcacaaa 1680

aggcgcgggg aggcatgggc ctcgcttgtc ccgactcgac cgggagggcc cgtgcgcccg 1740

tcgccgtcgc tgtcgctggt cccgcgacgc acgagcacgt gcgccaaacg cccaaaccca 1800

gccgcttttt tgttgttgtt gtaatgttgt tgcgtccgtc actcggtgcg tgtgcgctgt 1860

cactcaagtg cagtgcatga ggcaccggcc gggcgcttgc gcggggagcg ttgcactgca 1920

ctggactgca ctgactgaac tccacgctgt ggggtggctc tggcgcgcac acagcacgga 1980

gcggtgagtc agtcccatgc catccagcgc ggccgcagat atttcggcca cgtagtaaag 2040

tatgcagctg gaatctctga tgctgtctga tggaatggaa tgggatggaa tggaatgata 2100

ggctagagtc cttccagccc tagaggtgtc aagatcgccg tcatcaatgc tataggaata 2160

ggagtgatgg attttcgtag ggagcgagcg acgagacgta ccgtaccgcg taggcatgca 2220

atcagtgccg cacgaggaaa cgacggccag ccactccttt gtgccggaga aagagagaga 2280

aaaactaacc attcaattgc aatgacagta ctagactagt aattaatgaa tcgctcgctt 2340

gtagggacgc cgagagtgcc tgcagctgca cggccagtct atctatggct ctcgtggctc 2400

cctcgtgcac ctcgttgccg tagactagaa tgcacaggta ctactaatag cctgccccga 2460

ggtatcaagt gtgcaaaatg tatagtaaga ggttgacggt ggccacgcgc atgttttcac 2520

ggtctgcggg cgcgatcacg gtgcgtggcc gcgtggcgca ggcacacacc gaccgagcga 2580

gcgagcgaga gcagcctgca gccgcccacg cgtaccagcc tggtaccatc tcagaggcgt 2640

ccgagatatt tcctctctca atcatgccgc cggcgtctcc ctgcccatcc atcacctgcc 2700

gcgccagaga gacagagagg ccgagatggg tggtggcgtc cgagattcag ctgccgccgc 2760

cgatctatcc ccactggcca ccgcagagct cgctctccct tctccgtctc acgcgcgtgg 2820

tgcggcctgc gggggaccac ccagagaccc gagcagccga gctcgctctg tcagtcgtca 2880

cgggcgcaag gcaaccccaa cccccaaccc ggcagcagca acgtgcatgc gtgttccacg 2940

acgcataaca tattctaatc gcagtgcctg ccgcggcagc agagatcccg tcccgatccg 3000

ggcacggacc cgcggccgga tctcgatcca tcgtcgtttc gctctcgtct ccttcgcgat 3060

cgcgatccag gtcaccgtca cggcggcgtg tatggaatgg agggaccgac cgaggagagg 3120

tgttggcggt gactcctcac tagcagtgca gtgcagcaga gagacttccg ggagtcattc 3180

ctagtggtgc cacgtccacg ctggggcccg ggtctttacg tgtaacgtac tgtgcgttga 3240

ccctctcaca gaggcttctt ggcgtgtcgg ggcggggcac gcaaagcgaa cccgagccat 3300

cgacgttttt ttttggttag ttgaagcaag catgcatgct cggcacatgc tcgatttttt 3360

aattcttctt tcctctgtga tgcatgtgtt gccctttcc gcctgcatgt gtgtctcaga 3420

cgaaaggtta attttgttcg cagcgtaact gccacttgat cgctacgtgc gtgt 3474

<210> 1869
<211> 1479
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239096_G1, chr7:10987875..10989353, Cluster 11

<400> 1869
agtgtgtgct gactgctgaa tgatcataca acaaatagac ccttacagag aggaggtaac 60

tgggaagcag tcccggttca tcatcatatc aagagtaaca tatcgtaacc gagaggagag 120

tatgcatttc tgccggaaaa gtgtggagtg aatgtgaatg atcgagcggc tttgtgagaa 180

aatatcgccg acatggagcc gggtgatcag tgatactacc atcggtgccc gaccctccgc 240

gtgtgtgtcg tcgtgcacac ggcacgactg ttcgggcggc aagtgaaagc gagcgtgggt 300

tgccgcgcgc cccgccccgg cccggccgtc ggcctccact ggtcacgggt cacctgtctg 360

tctgcctgct tgcctcggcg tccactcgtt tggagaatga caggggaagg aatgtgcccc 420

ggcaggcaag gcagtacgtg cggtacggtt cgaagcacgc gagccgcggc gagcgtgcgt 480

gaggggcggc gatcggttcg gctgctccca atctgtcgcg gacccaccca aggaaaggga 540

cactacaggc aggttagcgg cgtccgaagg caaaggcaca aagccaatgc aaccaaccaa 600

tgtgtcccgt ccccatgccg cgtgaccgcg tcccctcctt gcacgccgcg cctgtgagac 660

tgcgagcgag cgcacggggc gggaatggaa cgcgagcaag caggcggtgg cccaggccta 720

gctgcacgaa cacgggacca gagcacgctc cctgcgtgcg ctgcccggac ggacggacgg 780

acgtgcgcgg ccagtggcta ggctaactgg cgacgcgggg ctattagctg tcatcagcta 840

gcggaggggg agagccagag ggacgcgtcc atagtacaca ccacagcaca tagcggcgat 900

gaccgtcggc gctttagcca gccgcgtcgc ggtcgacggc cccagaagac cctcttttcc 960

taaagaaaaa aaaaagacgt actactacta cgtgctgcca ccatcatcat gccggccgtg 1020

gccaccgcat cgaacgccat ttgcgccaca ccatcccggc ccgcctatct gctctgctgt 1080

ccgcggcttc ccagacttcc attccacgcg caactcgttc ccagagctgg ccaggaactg 1140

accagggcgt cctctcctct ccgtgtggcc aggaactacc cggcccatag agcgatcgcg 1200

aaccgacgga tgcagactgg tcaacgaggc aaccacaacg accccggcct ggacggcgac 1260

ggacactgtg gaaaattttg tactgccaac tacctccgtt ctttttttta ataaaaagta 1320

tgaatacaaa ataagaattt gagaggaggg atggttggag agagagagcc tcagatacct 1380

ttttttttct tatttgattc gtgtttgact gacgccatat tttactagtt tgagattatt 1440

taggatgtct ttggtggatc gtgcaaaata gaaaacgtg 1479

<210> 1870
<211> 2590
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2457_G1, chr1:12870713..12873302, Cluster 11

<400> 1870
gtagtcgtga ctctgttagg atttttagtt agggtcctta agatcctatt cttttagaat 60

tctactaaga cgttttatat acttggtcat gcaaccaatg agtatatact atgtagcaac 120

taaatcggct tcagacatag cacagcacct ctcatttctt tctttgagtg tggattgccc 180

gatttgtgaa gtcgatctgc cgtcagacag acgagacagc tagccattta attgccgaaa 240

acttgttcca actaattcca atgtgagtgg gtctctccat tccttggcct gcccccagtc 300

ccggccccca cactaccagg caaacatttt gagcactttt tggttgcctt attatgttgt 360

tggcagctgt ggaactgaag cgaagaaacg ggataacatt cagagaggac gctgattgcc 420

tgcagagggc gaagaagctg cattacggat gcatcgctta ccaacgcgag acacaatgca 480

aggccatagg agaagccctg acggtgtgct gttcttttta taacccgtat aatatatgta 540

ataatgccaa accttcgctt gtgtgtaagc tctaaagtct ttagatactg gtggtgggca 600

ctattgagcc gagatcaatg tgggatcgtc cgagtccgag gaatcacatg catggggtgg 660

gggtgtgcat gatgaaccct tctcgatcgg agatcgatcg atcgccctcg ctcgcttgct 720

agctcacgac aaatatggct tgcaaacaaa agccccgatc gaccgacgac actacgcatg 780

acagacgtcc tcgtcggacg tcggtcagtg ccgtctgtac aggcatctgg aactgacgag 840

agagacaaga gacaagagac agagatgcgt ccagctcagc gaagagagag agagagagag 900

agaacaggag ggatggccag gtcgcgcgtg caaagtgcca ttatgcatgg gccattcatc 960

attttcattc ccttctctcg ggtccggatg ctgccgcctg ccgccgactg cgatgccgat 1020

ggggccgtcg ggccggcgtc agctacgagg cgggcaagcg cgagcgagag acaactcaga 1080

caaagcaagc aaaagcaatc atcgagcgag cgagagacaa ctcagctcgg cacgccatca 1140

tcataagcac gcacagtacg tacgtgcact gtagtagtgc atggctctcg atcgggccgt 1200

cgggtgccac tcagtgccag ctcgatcgcg gtcggcaaat ggcatggccg tacgtgtgtg 1260

tgtcgagtcg agtagccgaa atcgcggcgc gcgacggatg gatgagccag cagtgccgac 1320

gaaccaaccc tcctgccccc ggccccatgc tatgctgcca tacacatctt caagcaagca 1380

tgcaatgcat gtgtgagccc ggcccgccgg gaaagatacg gcgcggcggc tcaatattgt 1440

caaacgaggc ctagctagct actagttggt tggttggttc tttgcagtca gtgcccgtac 1500

gtcaccccgg tcgtcggtgg tgtgtgtgcc tgcctcctat ctctcgatgt caaacgcagc 1560

atgtgaggag ctcgtcgtcg ggaaatggcg gggtggtggt acagtgctga tcgctgaata 1620

ccatgcatgc atgtggtttc agctgcaggc aggtaacagg tcgtggtatt caatcatggt 1680

ttgcacttcg ccacttcctg ttgcattata tatattgcag ttgcagcacg atcgacgccg 1740

gccgtccgtc agaaaccggc ggccggcatg cagctccagc agtgtgccgt gtagagcgag 1800

cgcgtactgt ccagtgtcct ctatatatct cgtctgtgct ccttgtgtgc ctttgcaatg 1860

caagtatttc acggcaccaa tgcatgctag ctacacctca gaggcagagc agactgaacg 1920

cccaagtctg cggccccttc cattaattta atccaggcac tgcaccggcc ggcaggctcc 1980

tgttgcgaga ggaggccagt aattaaaata aaatggtggc tgctccggcc ggcaacctaa 2040

tcttgggcct catcgagtgt gcgtggtctc aagtcttcta aatataaagc tagctagtac 2100

cgtggtcctg cacaggagga gctagtaatg accagcagcc atggattcca tctgcagatc 2160

aacgaccgct tgttaacgcg ctaacagtag cacatgcttg aatcgatcgg gaaaacccta 2220

gctagcttac tagccttgcc caatctagca cgctaggcac actgttcata tcttcccgtt 2280

ggtcgatctt ccgagacggt gattatttct ccaagaagag gttcgttaga tgcatcgccg 2340

caatatatat gcacattttt atcctcacga tctgacccca tcacatttca tatgtggtaa 2400

taatcaggtt ggacatgggg cggaacccaa gtgcagggaa ggcccaggct gctctattag 2460

tgctaatgaa cctataaaca tgcaccaaac agtatgggta caaagtacac aagactatat 2520

atttataata taagtattat tttttgctcg ggctctcaaa gatttctaga tccgcggagg 2580

aaaaacaagc 2590

<210> 1871
<211> 1834
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253362_G1, chr7:103957565..103959398, Cluster 11

<400> 1871
agctaggaat cattccagtc cattaatctg taacaaacga acgaggtctg aggtgtacta 60

gcggatgtgg gccatggcca gtgggtcatt gtagcacgtg tacggcttag tcctctactc 120

tctttatatc ccgttaacat acatagttgg cggagcggtt cccatccacc ctggatgtca 180

ccgaacgttc gcaccactcc taccgcttgc acctcatgta gcacgttgat ctacccttgc 240

ccttctacca ctttctactc ccgttggcca tgatggttgg cggtagcggc tcggtcacca 300

tggggtgcca tggtcgcgac ggtggcgatc gatgccccat ttccttattt cgcttcattt 360

tcttcttctg cttcatactt gtcatcctcc tctgagagag agaccgcctc aaaaaaggaa 420

tttgtcagtc gtaggtaggc ccgaatttcg aagagattag aaacactgga gctcgattta 480

attcgattag atttgattca gggagtagag aaaaagaaag acagaccttt gggcatcctg 540

gccaacaatg actcctctag ctccatccgg atactagagt ccatatgctc ctagagctgg 600

tgcctagcct tgcctacacc aaccataaca agttttcatc tgaccctcct caacatggca 660

aaagccaagt tctgaaatga aactctgtgt tgactgctga agaaatggag gtttttgttt 720

aagctggaca gtgcttgcat gatagagaga agtcaaccca tgttttgatt tgacgcctgt 780

caagggttct aatggggaaa ttgcttcaag catgcccaag ggggaacccc cgaggctaga 840

gatgctctct tgactgatgg agcccacttg taaccatgca ttgatgggga caaactttta 900

ggtcaaatga tgctgaaaag gaaaaactat ggtaagcctg ttgtcaaggc agaaacacca 960

aagagaagga ggacgacccg acaaacctca agcaaaaagt ttgttgctgc tcagtctaag 1020

tcagcggtga ctggaaaagg tcaagttaag ggggcaagaa gaaagatagt gatcaagatg 1080

ttacagagga gtcttctttg gtggattggg ataatttgcc gagagacagc gatgaaaaaa 1140

agaggaggag gaacttcccc ttaatcatca tgagaaacgg tcaatggcac aacatgatct 1200

tggtgtctct atcctgccaa aagttcaggc taactttgag ggtttggact tgtcatttta 1260

caccatcgag ttggacgaaa tcgttcctaa ccaaccgttg ataggtaagg ttgcactttc 1320

tatgttggct gatatacctg aggttcgtga tgtagacatg ggtaagaaca gcagggcgag 1380

tgaccggtga gccccaagca ctagtagtcc ctccctgtga tccatagatg gaaggtggag 1440

gaaatccgag ttatgaaaac actaagatag gaaccgtctc atggcttcaa gaacatatcc 1500

cggctgactc aatctcatcc cgtaaggcta aaaatgttta ggcacctgct aaaagcattg 1560

ctggaccact taccgactca accctagccc ccgaggctga aaaggttgag acatcgattg 1620

aagttactcc tgagccacaa gttgactgaa ccccagcccc tgagactaaa aggattgatg 1680

ttttgattgg gattgttagt tagccacaat agtctactct aggcgcttta gaagtcaaca 1740

tcccaagtat ggctgaagaa cttttcacaa agaagtctgc tactgttcct tcaccagcag 1800

ctaatgtgag aggttctgac gttgccaagt ttga 1834

<210> 1872
<211> 2068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_25470_G1, chr1:154326166..154328233, Cluster 11

<400> 1872
ttgcttttgg catcaaatga tgatggcgtc gatcggatcg gatctcacac caatcaggta 60

gctggtcgat catcaccgcc gacgtgtgtg tgtgagtagt gctacgacca ccggactgat 120

gactgtgcct agctttaata taattgggta tttgcaaagg tatgtatggt gtagacaggc 180

agggatggct cagcagaatc atcactcact ttgagcccta cgatggacat ggatgtccgg 240

taggagatca tatatcagat gcagaactaa ttaaagacgg ttttttgctt cttgcataaa 300

caacaaggat catcagcatc attgctcgga atcacctttc aggtattaat aattattaga 360

tgaagcatat atatatgcat gcatgttttt atggtgtggc acatatatat catatatagt 420

tcactaggtg ggacttggga gtctgacgac aaagatatat agaattcatg caactagcta 480

gatttactcc caagaaaaag actggtacgt agcactctcc tgtgttaatt aaacaaaaca 540

aaaaacatgc tgccgctgtg agtgacgatg ccgctgctgc agtcgccatc agagggaatc 600

tgcgtgcttt gagagatctg cttttgcaaa ctccaatgca gcctagccac ctctctctct 660

ctgcctctgg cgcggcgcgg tcatgcagtg tgtgagcgta ggaggcgaga gaggaataaa 720

gcgaggtggc gcaaggccta tgcgagacga tatcacatca aagaaagaga aagagagacg 780

agcgagctcc gggcccccca ccccccaacc cgggcccacg ccgacccctc tatccatcca 840

cctacgacga cgatgaacgg atcgcgcgca cacaatgatg gcaacggcat cagctgagca 900

gcagcagcag atgtgttgga agggacaacg tgctgacaaa agctgcgggc tggaagtttg 960

ctaactcagg tgcacatgct ttcttgtgct gccgctgccc ttgggtactt gcactcttgc 1020

agtgcctatg cgtgccctgt gggctgtgat gctggtcgat ctgcatgcgt tgataggttt 1080

atgtgttcgc caagattcgt tggtttggtt cacttcactc tgatcaaagc acgggattga 1140

aacgaaacag aagaatggac tagtgtgatc aattcgagta aacatcccct tagatcaaat 1200

taaattaaat taaattagcc tcgtggtcta ggtaggctag gctagctctc caatccagcc 1260

ctcctagcta gctttccctt gcttccccct aattaaaata aaatatacgc gtaaaccagt 1320

caaaaaagga aggcgacagt gcatcgagac cagatagaag ccctactccc gggctccggc 1380

acacaggcac agctagctgc ttgggttggg tgtgtgtgtt gcaggcagca tgcagggatc 1440

gagcacggag tccgatgcgt accggccgat ggctgcgctt gtcagacagg gagatgcctg 1500

ctcgcgacaa aacaaaaagc gcagctgcta tagctagcca aacaattccc ttcttctgtt 1560

tcttcctctt ttttttttg cttctgtgtc tggtttccct gttcgacgct ccggcggtcc 1620

ggccatctct ttcgtccatg tgctcgtcaa tctgtctgag catgaaacag gcgatcagct 1680

ggtccagtaa cgtaaagcag cagcagcggg cagcagcggc agcttcagct tcaagttttg 1740

catctcttca gatgtctcgc catgtgtgtg tgtgacagcc tagctagcta agatatgtgg 1800

ccgcccgccg tctttgcgag cgtgttcgct ggtgtcagag aaaatccaga gaactagtac 1860

tggccctggc cggccggcat gtagtggtaa gctctaggtg tgcctgcagt gcttcctttt 1920

gacccccctat cacacagcat ggacgactct ccgaatccat cccgtacgta ctggcgctcg 1980

gtatgcgtgc gtctctgctc ctggaagccc tcatcctcat gcatgggatc ggagacgttt 2040

gcagtgcaag aaacctgttt caaattaa 2068

<210> 1873
<211> 1630
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255675_G1, chr7:116395016..116396645, Cluster 11

<400> 1873
acgaaaacaa agcgtgatcg gtcgacgaat gattgaaaat gaacaaaaca aggcatttcg 60

ttctagactc tagtacacgt ttaatttcgt tctagactct actacacgtt cgaatcattc 120

cgacgggaat cggacacaca cgatgcatgc cgtcagcact cagcagcagt aataagtagc 180

agaaaagcct agagttttca ggtaataata gtgcagcttg atcatactat atatattgca 240

caatgaaagc aaagcgtggc cggtcgacga atgaatgaaa atgaacaaaa caaggcactt 300

cttcacctac cgtgtcatcc ccggcccagg ctcccagcca caccacacca cacgtatggc 360

tggcgtcgct ggggctgtcc gtgtcggcga ccggtcaccg gccgcggggc tagctggacg 420

ggggaggtgg gggtgctagc tagctactta gctcgtgtgg tccgtgtggg cgcgcgcggt 480

acatgcagtg ggtgggaggt gtccgtcgcc ggcggtcggc gctgtgcgca cacgtgcggt 540

gtgtggaccg ctagccgcag gcggggccgg agccggggtg gatcggatcg gagctagaag 600

gagggagcat tttgggacca aaccgaagcc cgtgtcggac gtgtcccgtc tccctccgtc 660

ccttgggatc atgatcacgg ggccgtgatc gagctcgagc agctagctag ggctcgaact 720

cgacgccatc gatgccattg gtcctcgcac agctagcgcc ggctcatgat cctcaggttg 780

ttgttccctg aaagacgtcg tgggagccta gcactgcact ggcaaaggcc tgcggtggca 840

tgcatgatgc gcaatcatgc gtgcgtgtgc atcgcactcg caccccaccc cacccggatc 900

gccgccttgg aatctcgcaa aaagagtttc agtcggtcat cgattattag tgtgcggccg 960

caggcaggca ggctcggtac gttttgctgt gctcgtgtcg ttgcactact ggttggtaca 1020

gcaatgccaa tgctatagca tgttaactag tagtacaact gtgagaaaaa agtgagaacc 1080

gccggccgag ctccacaact ccatgcaagc accagcacag caaggggcag tcccacgtgc 1140

gagctggttc gttggtattg gtacagtgag tcacgcgggc cagatgggac aggcaggggg 1200

aaggtgccac tactggccca cggcccgcga gcgtgtgtgt caacctcagc cgagcctcac 1260

acgatctttt ctcgtactcg tacccccgca atcatggaac ctgtgctgct ggtgcaccgg 1320

gccagagcgc gagcccaacg cgccccccac cgccgaggct actgtagtgt gtgtaccatc 1380

atcaggcatc tgccaccagc accagcgcca gcgccaggct cggccggttc agtttcggtc 1440

catccccgtg acctgatgcc gccgcgtgct ggatctcgtc catgattgct cgccgctgga 1500

aacctgctgg aggatccaca ggccgggcgc aggcacaggc acggccgcag cccgcaggcg 1560

caggcatgcg ctcgtgattg cgcgaatcat ggccgtccgc cccacgcgcg cggttaccga 1620

cggtcgtcaa 1630

<210> 1874
<211> 1568
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257190_G1, chr7:124265771..124267338, Cluster 11

<400> 1874
gcaaggtacc gaaccggact cgcctcaggt gtcctaatcg aggggaagtt atgatcttct 60

ttcacaccgt gaatataaat taaagaagag gagtgacacg tgaaccaatt tttgtcatat 120

cctctccgcc aaacacacat ggtagagata tgatccgtct ctaaacggtc agtaaataaa 180

aggatgtcgt cgtcttcttt gtcgactacc accacgctaa tgacttctcc tatcaacagc 240

gaaggtataa ccttcaacct tcatttagtg gcttaaggtc tacgggacgg gcaagttttc 300

tgtaatctca caggagagag cactagacat tgggcagagc acattaacgc atggatacga 360

taaatgcctt gagaacatgg cacctgcacc gtctctgctc ctgctcgtct aactcgtggc 420

ctactggtgg cctcagctgc aaaacggagc agctctgatg gaagtaagac aatggtgacg 480

caaaggaact agtataagtt ggaggggtta tgtcgatcga tcgatcgcac ttcccactaa 540

aaaaaacaca cacgtctttg acaccgcagc actgatccca tcccatgcgc agacagtcgt 600

ggacagatgg acctggagcc ggaggttagc gcgcttttaa tcatggccgc attcagcttt 660

gcatctgccg acatgcttgc attaaaaata agcacacgag tccatctaat ctaagcggca 720

ttccagaggc aaggacaaag caggcgcgcc actgacagct atctcggaaa gatttcagct 780

gcagtatatg gctggttctc ctttcgatca gaacgttcct ctctggcgct cgctcagaca 840

gaagccacgc ccgctgtcag tggtcacgag tcagtcatcg ctgtgggtga cagcgagctg 900

ggaatccgac aggaagccca aagccgaagg gttggcgttg tgtcgtgttg tgttggtcta 960

tcgctctatc tagcgcagca gacagcacac tagcagcatg cataatctga cggtacagta 1020

caccagtcac cagacctcag cgcttctcta ctactatctc tagctgccgg ctgttgcacg 1080

ttcaatcgag aatggagcag gaactgctct caattcttcg gcgccgcctg ttggacttgg 1140

acttcggagt ctgcaaagct ggactccata tctgatcggc ggaccaccga gtcagcatca 1200

aatgggccta agacacattg tagatctttt gcgcagccca cattgtagat cttcagtttc 1260

gggccctccg gttccgggct tttggcccag ttttccaagt atgaaattgg aagcctaaac 1320

cattgacgat gaatcagtga tctcactctg gtagtctgcc taaactgaag aagaagaatg 1380

tacttaaaac ttgaggttac cgtactagtt gtttccagag acgcgatagg atgccggctt 1440

accctgatcc gggggttccg attccgacga aggcaacgaa acgaagcccg gcctcgagga 1500

aaggcgcatg caagcgcatg cgccgcagtc ctagtcctag atctggagcc tggagcgagt 1560

gtgggtgc 1568

<210> 1875
<211> 1648
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260276_G1, chr7:141583602..141585249, Cluster 11

<400> 1875
tggcactgtc agagttcctg acatgctcaa gaaataaaca attaaagttg gatgcgacca 60

acgtgagaat ttgccttctt gctgtttttt cttcaagtca tgcatgcatg gaggtcaacg 120

gccctctgca cttttaccgg gtcagctcgc gacttgtccg gtcgagatcc acagtttcac 180

ggtcctcgtt cttcagtgac ccagctaaat tctgccgcga cggcaacgga gttatctccg 240

agttgatgcc cctgcaaaag ctacaaaaag tacaagaacg taactgacca tggagcaagc 300

ataactcgta cgaacagtag gctttttctt aggagcgatc ataatgccga gcctctttac 360

ccaacaataa tactagtgcg tttttctcta tcttcttttt ccctgccata atgcttcgcc 420

tttattagct tttgattttg ggatatatat ataccgccat aatgtatttc gcgaaccgcg 480

ctttttgagg gcgtggagag ggagggccgc cgatcgatgt cgatcgagat gtgcgcagct 540

actagctact atagctagta cgtgccaaaa acgccatctg attctttctg aagcttcgcc 600

tcaggaaaag cgtccccatc tcaagagggt ggagattagt atatatgatt acctaatcag 660

tgtctcgtcc ttgttaaata tctcgatttt ctaacggccc tcatgctgcg ctggacatgg 720

ccgtggtgga gaaaggagcc gattcacatg ggtggggtgg gggggcagga cgagaatctg 780

aatcgcgctg tcacgttttg gtgtggaaac cttgcaagag agtacgcctg tactgtgatt 840

gttcaggtca tcaagtgtaa tcggaagtag ttgtgtcggt agaattcatg ctttccactt 900

ctccatagcg aacagccatt caaccccaca cacacaccaa cttcttgaac gtttcttctg 960

cgaactataa aatgaagttc aaaaaaatgc agcattttgc ttttgcactg tcggttgctg 1020

catataataa tatagcttaa aaattcatgt tccctctctg aattcaacac gttcataaga 1080

aaatatatgt cttcaacatg tattaattta cagggcactc gcgctacggg tttggtttgt 1140

tcaacagcga gctgagagct ccgctcaatt aacaaaacag aaggaagttt gtcggtcagt 1200

tcttcacagg agacaggcaa tatacacgag ttgaaacgaa agccacttcc tggccaccac 1260

tttaccaggc ttgtatcgtc caagaaagcg agcaaatagt atcattgtac caggatgaaa 1320

aaggcggcga caagaaataa gtaaataaag aaaaaggagc agtagcccca ttcttgcaag 1380

agcacatgaa caagatgcat gaccaatgtc ctctgctctc tcttcaccaa cagctaacct 1440

ctctgccgta ccccccccccc ccccccccccc ccctgtcgct gttcatctgt tggtaagcac 1500

acgacacgtc cataaaagac tgttaagcag cagagggcca acgccataca ggccacagct 1560

gtggacattg aattagcgaa ccaagcaaga ccgacccccc ctcgccatta gcgttggttt 1620

ggacggacgc acaatcgcac atgcatgt 1648

<210> 1876
<211> 1674
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260289_G1, chr7:141606268..141607941, Cluster 11

<400> 1876
taatttactc cggtctgtag tctgtacttg cggtattcta gaacaggtga cgagaggaac 60

aactgaagct gagaaagaga cgtggccgaa agtacaaaga cgcgacaaaa tggtcctaag 120

ataagataaa tgcctccttt agagaaaaga aaccctaaca tgcatgcata tctagttgtc 180

attcttatcg gcaacaacgg aacaaacaat ggcgtagtta agtttggatg atctgcagag 240

gcatccaacc gctgcgctcg gtggtgctcc aagaaaactc taccagagaa agctccagaa 300

ggtgtggcgt ggagcgacca cgtgtgcact ccaatcaaac aaacctcgac tgcagatgca 360

atgcaacata ctatgcattg gaatagatta atacagagtc caagttggat ttcatgctga 420

tccacttcat cacacacata gattgaatca ttgaagtaga tacatgaaca tcccaacacg 480

agatgtaaac gcatcgctat ccgactgaag tcagaggcat cgcgtgtgcg tctgcaaaat 540

gttcatggta catgcacatg cgctggatgc atggagctct tgctctccaa gcagatggag 600

ctgtaataat ccgatagcga cgtgatggat tccagaaacc aacaggggtg agaggctgag 660

gatcgtagac gcggtttcag ctcttgaagg ggcgggggca cgagagaaag aaccgctgga 720

tgtttcagac aaccgagttt ctgctcctgt acaagaaaca agagttcatg agacggactg 780

cagagtctta aattgatccg acacacaaga gaaaccgctc ctccttaaca accgccacca 840

gacctaccat tgactacgct tcaagcctgc atcatctgac ccgccatttc agcaaggctt 900

cccttccccc gaatgcctgc atgcatgatt gaacaattat tccccaaact aatggatact 960

attattttct tcctctggaa aaaaaaacaa taataaactg tgaagtgtct gcgtcagttt 1020

gctccatctc tggacaggca gacgagacgc gactcagcga agcaaaagcg atctcggacg 1080

gttcagcagc atggccagat agatagatag agatgcacag gaacactcgg acgtgcctgc 1140

caataacgtg tgctgctgcc taacagcgct gccgtttccc gatctgaacg ggggcttgca 1200

cgcatcggca gctaaagtca cctgctcgct gctctgttga ggcctggaga aatggacgtt 1260

tgtttgagac ggccagtgct tggtgcagtg cctgatagat gatgtcctcc agttggatgg 1320

cattgccgat ggactgaaaa gaaggtgctc gtgaatactc atgatagtct cagatggaca 1380

tggcaccgtc ctcttctttt atatactaac taaaagtgaa aatacaaaat catctcatcc 1440

acgctcactg ctgcttctat ttcttataat gaaacagggg gcgttgccct tttggtcaaa 1500

aacgctcact gctgctacag agaagaaaaa aaaaggctct tgggaattgg aattgtaaag 1560

gccggtgccg gtcacttgtt ggttcaaagg aaacttcagg agcgaccaca gaatgttcat 1620

cccgtgaggt ttgttggttg cctgtccaca tctgtcccca tccctttcc aacc 1674

<210> 1877
<211> 1793
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260319_G1, chr7:141694238..141696030, Cluster 11

<400> 1877
tactatatat gctgcttctg agttctgacg atgtcaaaaa aaaaaaaaga gtggaggaaa 60

aagagacgcc ggcagttata ccgacctgtc gcggtcacga gactggcccc cgtgcccccg 120

ccggccggca caaggtcatg cgcgggcggc tgctggctgc aggcgcagcg agtcagtcac 180

agtcagacca ccggccgcct gcgtgtactc tactcggtgc tgcttcaagg ctcaacagtc 240

tgcgagaccg cgcgatggcg tgataaccgc ctgtgtacgc gtagtagacc gtagacgcag 300

gcagcaagct gggcgtgtac gtgtacacag acaggctgcg tgctgcatga ggggtgactg 360

atgactcagg agctgttatt agctctgcca tgtactcagt tgatctgacg ccctgacgaa 420

ctgcatgtat gcgcgtcgtg ggcctgttcc caacctacca gtcttgtatg atcgtatctt 480

tttcctccct cgtgaatgat ctctgccgcc agtagtttta tttcaggacg agaggtaccg 540

acgtaggagc actccaatac tttttatctc gaaaatggca tcggcggcga ctggcgaggg 600

catgcagcag ctgctccatc caggaagaag acacaggctg caggggcgg ccggtttatt 660

tgtcagtgca agacgcacac agagctacca ctcgagagct tggccagtcc aaaaggctac 720

tggaatccaa tatttcagat cctgttgcga gcctgcgacc aacaggttgc gaaaactgac 780

ccttctgagt tctgaccgag gtccatttct tgctttggat tgaagaagaa gatttggggg 840

gagtttaaca gtcctgcaga tttgcacttg cataaccttc agtgcgtcta tcttttcttt 900

tcttttattt gttacgtgaa caatcgttcg acggcatcgt gcatccagcg acgaggtttg 960

ttgaaccgtt gcgcgaccta atgccattga atcacgcacc tcgaatggtg gtcacggagg 1020

tgccacgcta gctataccag ccagccctgg atcaacaacc caagccacca ccaccaccta 1080

cctaatcgcg gaggctcaac agtgatagca cttagtacct ctctctaaac cgcaccaaac 1140

aaacctacct aaatcgtcca ttattagccc ttaattcctg ctagcgcggt tcgttcggga 1200

attcaaagct aacacgaacg acgccaacga acctctgtcg cctgccgcgc gcgcgcgcgc 1260

cgaaagaatc cgtctagtct ctcatgaatc ttctccggca gagacaacat ggcacatctc 1320

catctccttg cgctcgacga tatcggtacc agacacagag agagacaacc acaggacacc 1380

tgcatgatct ttcaggacaa aaaaaaaaca gcaactaaaa cggaggagac gtgcggttaa 1440

ttggtgtcct aaataaagcc aggcatcttt gaacatttcc tctcgaagag gtagtaatgg 1500

aacgacgaaa aaaataaatg acaaaagagg tatccaaaat tctgaatacg aagttgggat 1560

gtagatagga atgctgatta tctgtggaat tagatgggtg cagagtgacc ccgtcaatcc 1620

atgatgggtc atcttggatc acgcacgcac aacatgtcct gttccccgtg tttcaatctt 1680

atgtgattaa aaatgcacgg aacaggacat gttgtatcgc gcacttcagc cgctgctgct 1740

aaggcaaacc aagcgagaaa cagaccagac cgttaagctc cagcatctca agg 1793

<210> 1878
<211> 1426
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260985_G1, chr7:145323037..145324462, Cluster 11

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (336)..(435)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (342)..(342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (343)..(343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (344)..(344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (345)..(345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (349)..(349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (350)..(350)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (351)..(351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (352)..(352)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (787)..(787)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (787)..(886)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (788)..(788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (789)..(789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<400> 1878
cgccggtccg ggcgagggcg ccatgtccgg gcggcacgag tcggacggga ctcatgtacg 60

ggagaagcgt cgggagccgg gcggagcgcc atggacgggc gggcgggctg gaaggtggag 120

catggcctgg gaaagttagg cagggagaag aaaggaagta tgagcttatc cgctcaggga 180

agcgtctgct gtacccgtaa gggaagggag aagttaggca agtgagaaat gccgccggag 240

tgcacaggta gtaagaattg ggggaatgga aggggcggcc tggacagatt taggctcaat 300

ggatcaacgt gggggggga gaggccagag tgtcgnnnnn nnnnnnnnnn nnnnnnnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnntaaga aacggggaaa gtaagaaacg gggaaaggtc gcttaacgta 480

aatatgtaga tatggaggaa caaatacagg gtattcttta taagaagggg gagaaagctc 540

tccatttctc tcgcgggtcg aatatataat ttccagaaag atattgatga cagggcgaat 600

gcgggtctgt tgaaccgttg cgtacgctca ctgtcacgcc gctgcacctc tctttaagaa 660

acggggaaag gtcataaagc ggtcgtcagc gtgcccagaa tccagagaat cgataccggg 720

tgaacccaag acgtcaaaat ccgacttgct cacgcatcga tacactcgtt gacgtgcacg 780

ggacagnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnntcag aagattagta 900

ctagcctacc cttggatccc agactctcat ttgctagaac gacgtgcacg ataagcagcc 960

gaggtcagag ttagcctgat ttaatagtcc attattgcga caaccatctt gaccatcgta 1020

actccagtga ttaatctatc gtactcgtta tgcacactga ctctcgtatc tatgcagtcg 1080

ggttggccgt gtgccgctgc ttcagctttc tctgcttcgt cccgaagttt ttgtactctt 1140

ccacgcgtgc tgagcgctca ctagcagcag cgagtcgacc tgtcccatcg ctatctccag 1200

taccaggatg agggtgcgac ggggggggcaa gaccgcacgt ggcgctgtgg atatgagtcg 1260

gagctttgcc tcgacctgtg cggccttatc cgtgtcttct gagttattat cggttctatg 1320

tggggtcgtg aacgtgtctc cgtgtatggg tcgtgggtgg ccggtatttg agcggtggca 1380

tctattcagg ggcgacgcgg ggatgagacg gggttcccat ggccgg 1426

<210> 1879
<211> 2183
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261272_G1, chr7:147195191..147197373, Cluster 11

<400> 1879
aacacgtata aacaaattct ccacatgtat tcgttgttca taatttatga ttaatgatat 60

tcttcatacc taatttcctg ttaaaagagt ggaattagag ccataagtga cgctttgaat 120

gcgatgaatt tgaagaaagc tgttgcgatt tgaatcgtac gaactaaatt tttttgtcag 180

cttaaaacca ccattatgtg ttgtattggg ctagtgtgtg attagacatc gtcattggct 240

cattgcattg tgaactttta tattggaccg ttgtagtatt tagaagcatg catttaattt 300

atgaatatcc tgcaagtgtc tttgatgtat acgatattca ttttctaccc gtccgaataa 360

tatgtgatcc gcacttttat tacctgaaca tgaacctaaa tttgcgtgaa aataattagg 420

atagaatatg ctactcatcg gtgttcatcc cgttttatcc ttgatcgtgg gtgcatatct 480

gtacacacct ttcagttggg gatgttagtg gtaactcgta aggtgagttc agttgagatg 540

gagctgggcc gagctagcct ggcctacagg ctacagcgca gggcgcagcc gacctccgag 600

cactctcacg tccgtcgtgc gggcgtaggt gcaggagcat caaggcgggt aagcaaaagg 660

tgcagctcaa gacttgtggg ggcttcaagc cttcatggac gcggaggggg cgaagccggg 720

cgacgtgttc gtcgtgcggc acggagcaaa caccctgcgg ctgtcgtggc ggtcggcggg 780

cagaacctat gtagtccatg gggggaaaaa tatggagcga tattttacac atactctcaa 840

aaccgaaacg tgaccatttc caaaataaga aacgtgacta tatgttgctg gtggctgcga 900

agggcgagag ctgagggaaa accggaaacg gagcagcact gcatgatgcc gtccactaca 960

ggggatggag agggcggact ttgacggtgt ggcctggcga tctcccggtt ggcgcacggt 1020

cccgggacgc gcacccgtgc caggcccagg tctggcacgg tcagtgcttc gcagcccgca 1080

ctaccgctgc tgaggcgtcg cagtgtatcc gtccactcgg ccactccgct ctcacctcat 1140

catgtagtac accacgtacg aagtacgtac gtgtacgtca aaagcggcac acgaccgtcg 1200

accggtggtg cgcagacaca cacatcaccc ggccaaccgt ccttcctgcg accgtaccta 1260

tactgaaggc agcatgccgc cggataagcc gacgtacaaa agggggatag gccaggccac 1320

aggccacttg cccactggcc cacagcaaaa cgtggcgttc gaccgtcctc cgggcccgtc 1380

tacttttgcc ctactgcata gtacgcgcgc gtatcccgcc cggacacgta cgtgccgaac 1440

aattcggcgt gcttccctag gcgaacagtg gggtccctcg tccctgtgct gtgcatgatg 1500

tgtccaacct gttagtttag acacgtgtcg cattgacata ctcccttggt acgtgtgcgg 1560

ataatgtata cgggaatacg gctgtactac tggactgtac tggtattcct ggtacaccat 1620

ggtgcttttt acattggaaa tattctaccc aagtcccttg ccttctatga ttctactagt 1680

ctttcttttt tacggttgct tcaatcatcg atatgcagtt gatcaatgat catgccgtta 1740

gataaataga gcacagcatt tcaacattct ttatgactgg acgtctggac ccactggcca 1800

acttggaaaa caagtagatg tcaacacagg cgagacttgg aaattgaccg agaaccaaga 1860

tgaacacgat gccacgtgag ggacgatcgt ttagtaaagc aaacggaaat aaaaaaaaag 1920

ctacagtgat atgacaggcg atgatatttt gtaataagtg aacgatatgt gtggaaacac 1980

agaggcggag actctgttcc attgtcaaaa aaatctaaaa acattgcaaa tatcgatgaa 2040

actcacgatt tcgaatctca caaatgaaat actatgcaca aacaattaat tccataggga 2100

caatcatgga cgagttattt aatgtgggat cttttgagtg atctctaaag ggttagttga 2160

cgaaaatcaa gagacaagtc tac 2183

<210> 1880
<211> 2029
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261785_G1, chr7:150030450..150032478, Cluster 11

<400> 1880
caaacgaaaa ggacagcacg aggagggcca gctagctctc tgaaagcccc cccatgcaga 60

agaatagaag gtgagattat catgctgcag ctgcggttaa gccgtcgctg tcaggccggt 120

gttggattgg atccatgcga caacagtacc cggatgacca ccacccaagc cgatcgtcga 180

agcagtgccc tctgcgacgg cgagcacaga ccaaaaccca cgggcgcgat tgcgtgatcc 240

gcgggtgaat ccgctgttca cgcgtccggc atcccgccgc ctcctccatg catccgtcat 300

ccccgccgat ccatgatctc atggatcggt cgtctgctgt ctcatctgat tccgaaccgg 360

cggccggaga gcgaggcgac cagtgaaaag ctagaaagtt agaaccacct gacgagttgg 420

acttggactt ggatcgtcgt tgccactgcc accaaagctg ctctatggct ggtggagcag 480

tcgagtcgag gtagctaggc ggttggtgca tggtcattgc ccagcagcgc cgtacgtacg 540

tgtgcaccat atgcacatgc atgcatgcat gcagatctgg cctaactatt tatcatcatc 600

atctcgtctg ctgttgcaca agatacggac cactgttccg gcatgcgata gtttctgatc 660

gtctctacag actacagtgt gttatatatc tagcctagtt tctagtagct acggccacat 720

gtcacaggat cgacttgctt gttgaggtgt cacccggccg tgacccgtgg ttgatctaga 780

aaaaaaaaat ttattcacat acggtatgca aactggttca ggtgtagcca cactcatatt 840

tataggctgc gggtccacat gttcagaagt tactgattgt aacctctatc catgtggtat 900

gccgggattt tttttccccc ggttgatctt gttttgtgac ttgcattgtg acgctgtcta 960

tttattgtta gtatgacatt aggtttgact caaaagtttc aaacactagc atatatcttc 1020

aggagggaga gtccgcgcgc acctgcaccc tgagtggcct aggtaagcta ataaggcaca 1080

cgaaaaggca gcaaagatgc tctactagct caattattta ttatagcaac taagtgcaca 1140

aatggtcttg atagatcatt attataagcg agccagggag gaggattagc tcaccaaact 1200

ggtagaagct caggatcgtc catatcttca agtaacccca aaacattatt attggcggat 1260

tgaaaccttt agtgctaacc aatctccggt ctctactacc tctccaaagg cgtaaagaat 1320

tactccccct cggttttaaa ctataagtta ctctaacttt cttgtcgagt caaaacattc 1380

tcaaatttaa ctaaataaaa gttataggaa caactataaa aatgtatgac atcaagaaga 1440

tatactacac aaatatagtt gatgacgaat ctaatgatac atatattcga tgtcataaat 1500

actattatct aataatcgga cttaagatgc ttagactctc caagaaaatt agaatgatta 1560

aaaatttgta ggatggaggg aattctggta agtttgggca ggtatataga caggcagtac 1620

acagtttatt attggcccaa aaccttaacc acaaagaaat aaggctaatg tcttgcatcg 1680

gtaattattt ctgcgagtag agtagggatc gtcagatcgg aggagacaaa aaccggagag 1740

ggactttggt tgacacgcac aggcttccat gataggcttg gagttgcata ataacacaga 1800

cacacagtag gcgctacgct atactgcata gtactgtaaa cgacaagagg cctagctagt 1860

tgagttgttg gcagcatgca taaatccccc atccgacatt tccaattgct gatgagttgt 1920

taccattagg cagcgccccc gtagtttttt cccatccgaa ctttgaattg ggtgagagat 1980

cgtagcagct gaaggacgcc gccgagctga ggcctgaggc cggcctcta 2029

<210> 1881
<211> 1441
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_261786_G1, chr7:150032595..150034035, Cluster 11

<400> 1881
acccccccgtt ctgtggcaag agtcaacaag ctgcagtgag agaggtggag aggacctgca 60

tggtggctgg tgtcgtcgtc gtcattgtct cactctcacc aagcaagcag caaccgccaa 120

ccggcaagga caaaaagtgt caacgctttc cgagcagaaa ggagcctgca acgccttgtg 180

ttccgttcca atccgttgca aaccaaacca gccagccaaa cacacacaca ttgcagcggt 240

gtcttgtgat cctcttctcc tggcctgggt ttccccattt tcctctgcct tttgcccggc 300

cctccgtctt taatcatgca gtcatgacac tgtttggaaa atgaagcgcg agactcgtgc 360

tacactgcta gtagggatga ccgaggcaca tcagacttgg gttgggtggg tggtcttctc 420

cggccggcgc gaatcgaacg catcgcacgg atcaggggcg cccggacgga aagcatatag 480

ggacgggggg cccaggaggt cagcgacagg ccaggggggg aggggccctc gactgacaag 540

ttggttgccg gtgcacgtct taaccggccg ggtgatgacc ccacgcacgc tcgcgagccg 600

agcccgtcgc gtcacctttc ccgcccccgg ctcgctgtcg tccgagaccc tacgcgtccg 660

tccgacgttg catccggacc gcgacggggc ccaaggaccc cacctcggaa cctgctgcgc 720

tggggtgggg ccgttgtaca ttgtacttgt gcgtcgtatg gactcggtcg agctagctag 780

gtcgacgcgc agcccgcagc tacgcctacg tacgatgaac actgccggcc gatcggtgcc 840

gagctaaatc gagtccaccg cgattcgagg cacttgatga gccgccatga gtattttgcg 900

ctaccctacc gggggccatg gacgacgacg acgacgtacg tacgtacgca ggggttggct 960

ggcagggttc ctgttgttgc ggcgtggcac ggggggaaac caggcgtggt ggctgcggct 1020

gtgcgtgcag tgcagatgcg agagatgcca tgccagtcgc tcgctcacat cagtcgatcc 1080

cgtcgtcgcg gccgcgccaa aagacagcca cacaccggcg tttgtgtttt gtttccccaa 1140

tcttccgtac gttgagcccg acgacagaaa gcctcacctc acctcacctc gtcgtctcgg 1200

gtcgtgtcgc gtgtgctgtg agatgatccc accaaaaagg caaccagcct agcagcgcag 1260

gtgctgctgc acagccggac cggacagcgg caggcagtca ggctcaggca cacatccagc 1320

caaagcggcc acgcccaaac cccaaacgta cgtacgtatg gctacatttt gacgcgtcac 1380

gcgtgaggaa cccacttgcc acgccaacgc tatttgctgg aacgatgaaa catgagatat 1440

a 1441

<210> 1882
<211> 1973
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262148_G1, chr7:152372154..152374126, Cluster 11

<400> 1882
tgtctaaaac actgcattag taacttagaa ccctatcagc tatcgagcac ggaatggatt 60

gggtgggtgt ggggaggaga tgaagtctct agattgcgca tatggtcgta taaaaaacta 120

ttttttaata ttgatgatat aatttatata gtgcattttg aaataggaaa tgaggtaaga 180

aagactaccg tatataggcg ggtcccgttc acgttctgag aaagttgtct ctctagccta 240

atcagactcc gagcaaaatt tgatcggttg tgtctaggtc ttgtcgctga tccccaggga 300

gcaactacaa aaaaaaaaac tcttgtttca gcgtatgatt aaacggtgca gggtggagtg 360

gatggctggc aacgaaaaag aaggtggaca cttgagttcg aataatttgt cccagcgtaa 420

tgttccaata ggatcatata ctgcagctac cagcatttca attcgtattt aaaatccaac 480

atgtttattt gtctttaatt tgtaccgact tctattattt acatagtatt tatttttata 540

cattatagtt gcagcaagtc gaacagctga cttcaatacg aattattccc gtatcgtccg 600

aacatgatac atttcctccg agccacaccg cctgccaccc gtgtatgcgc atcccatcca 660

tcgcgcacag aagatcccaa catatatata tgcatctctt ctgctggccg cactcgcaac 720

ttgcgttcag tgatgacgac aatagggtca ccggtgacgc ggcggctcac cccgaccccc 780

gtcgtcagtg ccgtcacgca gtagaaaata gacgcggcgc gaagattcgt ggcgtttgcg 840

cgccgcgagc ctttccgccg gcgaccgggg cggacgtgga cgtgcgcagc cgtccgtcga 900

cactactcgg cggcacctcg ccgttgccgg gaagaatcca ggacaggtcg ggattccact 960

gcagactgca gaccctacgt tgaggccgca cgagattgat tcccgattgg tggggaggag 1020

agaaagcggc aaagcaagcg cgatgctcag cgggcgataa aggagaataa tactaacgat 1080

aataatgctg tagataacct ggcggctgtt gtgcagttgg ctggctcctg gttctggcct 1140

ggggccaaaa tccttcgggc tgatttggtg ctaagggatc ccaaggggat cccttgccac 1200

caaattagcc cttcgggggg gtcaaatgct cgccacgagg acgagggtcg ggtcgcttta 1260

cgaattacgt acgccctgag cggtggttgc gttcgtcttt tgcgaacaca tagctttcat 1320

aatttacggc gacaaaagga cgggaaatca tcgaagaaca ggaaaatcct ccaaaacctc 1380

tacaggcttg ttcatttgat ctatgcgttc gtcttttgtc tcacccgccg cacttgttgt 1440

ccggccggcg tcggtttagc gccgaacacg gactgcaatg cttcgaaact gtgctgtgct 1500

gagcatgctc cctgtgggtt ggattggaca ggacagtccc caacgcttga ccaacactat 1560

ctgggcttgc acgacatttg tcttgtgtat tcaaatgctc ttctttgaga gacattcgct 1620

ttgtactaaa gcagaggaag cctcatttct tcttcttctt cttcttttca tttaaaaagg 1680

aaagtttgta ggttgaacgc ggactgcaat gcttcgaaac tgtgctgctg agcatgctcc 1740

ctgtgggttg gattggacag gacagtcccc aacgcttgac ctatctgggc ttgcacgaca 1800

gttggcttcg tgttatcgtg tattcaaatg ctcttctttg agagacattt gctttgtact 1860

aaagcagagg aagccttatt atttcttctt cttcttcttt tcattgaaaa aggaaagttt 1920

atatataggt cgaattatgt agagaccaca aaagaatgga tgatgttttt ttg 1973

<210> 1883
<211> 2048
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263438_G1, chr7:158753890..158755937, Cluster 11

<400> 1883
ctttgcatgg tgccctgcgc tcgcatcctc gctccatctg tgcaccacat ggcctggtgg 60

agactggggt tgccgggttg gttggcttgg ctggctggcc ctgcttgtgc tctgtgcact 120

catcaccagt tcggcaagcg tgcacgtggc ggcggatgaa tgccgcgatt ttatttagac 180

acgaaggaga tcgggttggt tagattcgtg tactagctac cgagcagcca gcgagtggcc 240

aacgccacga tggctagaaa tgttcggagg accagatctg gcattaagaa attatgagcg 300

gtccaagtgc gaaaggggca tcgaactcct ccgatatcct acgatggata agctcgcaat 360

cactcctcac tccgctgctt cagctcacag tctcttgaaa gcatgtgcac aggcgggcct 420

actaattcct cgcgtagtta gtggtgcagc agcagcagca tcttggtggg tgaatggcca 480

gtgactggac cggcctcatc aacctccgca caagctcaaa agcatactgg ccaacacaca 540

gctgaagtgc tgaacagtgc cgtaacgcag tccggccggt ggcaagatct gaagggctgc 600

atgccccgca agcgcacaca tgcttcctcg ctactcttac tttactgcgc cagcgcgcga 660

caggccccgg ccccgcaccc gcacccgtca tgggcttcgc gaccgcgacc ggtgattcga 720

tcaaggaaga ggccgagagc gagctagtac gaaacgaaac ccgcatggat ctgatgatct 780

gatcctggcg agctgccacc cacggagccc atgacgcggg cacatgtgcc gccgactgcc 840

gacgagcggg gacggtgtcg gaacgagagc cggacgattg tcccgtcccc ggcccgcggc 900

ggcctcgccc gataaggtgc atggatctgg ggaagacgct cgcacatgcg catgacgggg 960

acgctctagg tgactaggtg taggggcgcg gcgcgcggcc ggcggtggcg cgcatcgctt 1020

gccttctttt ctctggagcg tcgtcgagtt tgatggcgat gtggacgtcg gttcggcacc 1080

agatctgcca gtgcgagcag gcctgcctcg atcgaggtga agtcacgttt cgtgttcggc 1140

agtcgatggg tttcgtttcg ctgtttgctc gtgcagctag cagcggtagc ttccgccttc 1200

cggggagcta ttagattcgg caaaaaataa ataaaacccg agagcgctgc acatcgcaca 1260

tgcgatgctg gtagttggac tacacggcgc gcggtgctcg agcgagggcg aatgggcgat 1320

gaaacatgct taccaggctc cgtttttta aaaatttttt ttttctcggc agcaacaaat 1380

cgaagattag gcgtgcatgc gcgtggcgtt tcgacaccgg ccaaagcgcg ccgttttttt 1440

cgaatacgtg acaaaacggt agatgctgta tctatgtcta tgtctctact aagatataca 1500

gcgaagcaat tcgtggtctt gtttaatgga aattgagtga tcgagaaagc tcgattaatc 1560

atctctactg gagcagaaaa gaacgccgac aagcgccact cagcgctgcg atatctgagg 1620

ataacgagac aaaaaagaat acaaagaaaa gaaaatagga gggggacgat caaaagaaac 1680

ggaaatgaaa acccggtcct aaaataaaag gaaaatacag tcaggacatg tttagatata 1740

gggatcagag caccatttct ctctcacttg acctttgttc tcggtcgcgc acatatgtgt 1800

gccatcctgt gtaatttaaa gcagacatgc aggatcatgc aaaaaacaca ccaaatctca 1860

cagtaataat ggctcactta agaaaaacta gacgaagcga actcccactg tccacatcca 1920

cacaataaaa tatcccgttt cacttgggcc acgtatcttt taacaaaact gtatgctgtg 1980

cactgtgcag agactattcg ggtggcctgt ccgctggatt gacgagagac gctctctctc 2040

tcgattct 2048

<210> 1884
<211> 1737
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263827_G1, chr7:160737124..160738860, Cluster 11

<400> 1884
acagtagccg cctgctgctg cttcgcctcc gtgtcgtcca atggttatcc ccatgtggcg 60

tggcgtggcg tgtcacgcca tggatcgcgc ttcgcagcaa ccagtcctga agcgccgacc 120

cagcgcgcga cttgcgtgct caaaccagct agcgggaggt cgtggtgact ctggtggtgt 180

acggtttccg tggccccgat cgatgagacg atcactcgac cagcctcgct ccgggctaga 240

cgccttttgc ggtcggggtc ggacgctcgg ccgggggggga tggacacacg acaccagcac 300

accgcgggcg tcgccatccg ccaggcacgt gctctggttg gttgctgtcg tcggtagaga 360

cgaggccggc cgggcgcgcg gtcgctagtg cctggcccct gcgcgtctag gcgggcgcag 420

cagcgcgcgc agtgcgtgcg gcatgcatgc atgcgctata tttgttgaca agtcatagag 480

catctccaag tattatatag tacagatgaa tatggaatga gtgacagtcg atcggtagta 540

aacgaacgag tcgatagtga atatcgtgca tgtgggttct acttgtacag tagctgactg 600

ttgccgattc gccccccccc gatccccgcc tccgtgtcgt cgtccaatgg tcatcgtctc 660

ctaattgtcg cgtgtgtcgt gtcacgccat cgaccgcttg gcaccaacca gtcctcaagc 720

gcgcgccgac cgaccccgcg gctagctagc tagctttagg ttgcgtgcat gctggaacca 780

gcggcagctc gtgcctcgtg gtcacagcct cacatgggtg ctgtggtacg gtgtccctcg 840

gcccgatcga tgagacgatc actcatcaac cctcatggct agacacgccg gccggcgccg 900

ttgcaggctt tgagactcga gagtacgttg cggggtcgac ggatgacgct cggggatgga 960

cacacacaca cacacacgac acgacacgag cgcaagcaat atcagaggtc gacgggcgtc 1020

gccatccgcc gtgcacgtgc tccttgtagt ctggttgtat ggcgtcgata gagacgagac 1080

gagacgaggc cgggcggtcg tcctgtggcg gcgtctaggc agcgtggtgc atgtgcatgc 1140

ggcatgcatg cgctatttgt tgacaagtca tagggatctc ctgtagcatc ggcagcgcgc 1200

atgcagatgt gcattcgtcc cccccgtggt ggggcgcgca gccggctggt cgtcgacacc 1260

gcgcgtactg tgttcggata aggctatccc gcctcctagc taggacggtg gcggaagtac 1320

acctgtcgac tgtcgttggg gggtggtgat tggtgaaggt gtatgagcaa acccgatcga 1380

gtgaccttat cgaatccata tccattcgtg agatatgcat tcgatctaca ccctccgccc 1440

ataccatacc ataccatacc caacagcagg cccactgtca gcacctgcgc gtcccagcag 1500

gcgtcacgta gctgatcggc tagtggctga tcacagcagg gtccccagga gcaggaactg 1560

cccggcccgc gtgatatttc ctggctgtgt ggaggtctgg accggagaga cccagccgcc 1620

ttattatcca cccctagcta gccctcagcc agccccccct ccacatgcgc cgcacgatcg 1680

atacgtcgtc gtccgtccgt ccgtcgcgat cgactccaga caccagaggc ggctgag 1737

<210> 1885
<211> 4158
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263831_G1, chr7:160745089..160749246, Cluster 11

<400> 1885
tgaccaaaat acaagaactt caaatatggg gcggcagcac gtcatcccgt tcgatttatt 60

gctaggatgt tggcatgcgg tatgagatta gttgttaacg actgtgaaac ttgcttgtcc 120

atgtgttttg ttaacatttg cagctggtat agttagtagt accagtccac atcgcagaac 180

tttcaggaga gaataataaa agtgatggat gcatggggtg gcgaagaagg gtaatgaaag 240

cacacaacaa gctagggaaa aagaatttac gatatcccaa cactgcacgc aataagatcc 300

gttgacgttg aagcagcgat gatgatatgc aagagctagt ttttgcgcgg atccaaggag 360

ataataagta taagttggag gttgggaagc aggggcgtgg cttgtccggg agtaagggcg 420

cctccgcttg tttaatcgcc cccgcatcat ttaacaaagc aagcggagat catggagcat 480

gtgaggggac gatcgatcga gcatcacatg atgatgggga tggattaggt agtgttgcct 540

cgcctcgcct cgcctagcta attaattaac tactcccgtc ctgatcatca gttcatgctg 600

atcccttcag ctaatctcgg ctgggaacag cctagctagc tagctatagc tagctcgatg 660

tgcgtgtaaa ggacatggtt atacttatat acactgcctc gatcgggaca cagctaagct 720

cggctgatga gtgccattaa gaaattctag tctccttaac gccctgcaga taggcacgct 780

tgttctctta tgacgagaaa gttctagggc acccttgtta attagtttag attgtttgaa 840

aaggagatgc ttcaaggcgg tggcggtggt ggcgatataa agaatctggg aaaggtataa 900

gctgccgttg aataactatt aattcatgag catttagttt gggatcccgc gcgttagtat 960

ctggctatct ggtaataaca agtcggtcgt cgacgtgctt gtcgttatta tttgcttgct 1020

tcctctagtt tttttttct tcttcaccac actgcactgc aataggggtc aaccaccgag 1080

aaagctacca gcagcgcagg gcggcaggca cagcgcagca cgcatatgca tcgccgggcg 1140

gctgacaacg cagaggtgag agataataat cttggcgcgc gcggggcgga ttgcaggttc 1200

cttgcaccag cggcagcatc gatctcctcg tccttgtgga cccgccgccg ccgccgccgt 1260

gcgtggcgcc ggccccctac ccctacacat gcattgccga gagcgtccat ccatggcggc 1320

ggatctcctc ccgcatcctc gcgagctgac gacgcgtcta ccggaaacgg gggcgaggga 1380

tggaggggc cggggtcggg gccggatagg ataagcctta ccggaaacgc gctaggcaca 1440

ggtcaacacg ggtggtggac gggaccggga acttgccggt aatggaagga gggcgggtag 1500

tacttggcct gcgcgcctgc ccgggtacat gcatcgaccg cgctgtagct gtagctgtcc 1560

cgtcccgtcc tgggcagcag atctctccct caccaccagg cgtcagcagg ccggccatgg 1620

catgcgcttc atcggatgcc gtgactgagt tggattcgaa cacatccgag atccggtcct 1680

ggtttttaca ccttgtaccg tggctttaca gttgggagga atggagggtg gcatcagctt 1740

gcagccctaa gtggactgac cggaacggga cagacgcatg gccgagtcga taagctaccc 1800

ctttcctggc agtgaatcgt acgaccggat agactcgggg atttcctgca tccagcgaaa 1860

agctgcactg catgcacccg atcgaagcga agtgttcggg tccaacaacg aagtgcagtc 1920

aaacaaaaaa gttactggat tctttcagta gaataaaaaa cagtagtagt agtagagtag 1980

aatttccact ggtgcgtagt agtaggagta ctgcacatag tactgcccag attgtacccc 2040

aaatcccgaa acgctctccc gctccgagaa cagatcagta ctggcggcgg cagtcgcagt 2100

tgacagcagg tcgtcagcag cagcactgca gcggcggcca gtagacagcg ggacgccccc 2160

ccctgcgcgc aggctgctcc tccgtggccc cactcctcag ccactcagtg ccgcctcttc 2220

cgaggactga ctaatcagcc tgtggacagt ggcgcgtttg gaatcccgga gcgcacgaaa 2280

agcagagatg gcgctgcgcg gccactgcag ttttcttccc cggatcggcg ggccgcggcc 2340

gccgggtgcc gacacgtccg gggcgcgggg gcgtgtggtc cctggcgccc gagcctcgcc 2400

ccgggcgacg cgtggggacg ggggtggata cctgtgcgtc ccgtccactg gcatcggccg 2460

ctgcccgttg gcgactggcg cgatccagcc agcccccagg cgcggcgcca gctgccagtg 2520

caggccatgt gcctacgtcc cctgtctccc gggctagcta cgcgcctacg cccacagtgc 2580

cctctcctgt cctgctgcta cggctacggc cggggctgac tctctggcac ggcactgact 2640

gcctcgcctc gcctcctttg ctttgctttg ctttgcttgc gcagctgatc ctagccttat 2700

ccactgttcc tttcccctcc ccctgcctgg ctcgcctcgc cagaaagcat ttccccccat 2760

ccttgctgac tcgccgagtt atcttctaat ctttcttgct ggatctgttg tgtgcgtgct 2820

catggatatg ctctaatcct ttgatggcaa ggcattggca tcggcatgtc cgcgagaata 2880

agatgcaacg tatctcgcat actacggtgt gtgactgggc gtgttcttca tcggtgcagt 2940

atgatagtct gcatctttgc ttttgggggc gagacttcgc gcgttgtttg tttagttgtg 3000

gtcctagacc tttgattaaa ggatggggtt ttcagtccca gttaggaaaa caggattgaa 3060

ggggtttcca actcaaactg caaccacttc atgcactagt gttcacttca atagatcatg 3120

tacaacctag atactatgtt ggtgttctcc aaacgctaga tacatctaag aaacttgtta 3180

atacaatcca atgtatctaa atattttgtt cactagaaat tctcaagaaa tgactcgttt 3240

atatgggttg tataggtgga accacatctt acacttaaat taccatgcta gagacgttac 3300

ttcactaaga tatacgtctc ttgtgtgttt ttttttcatt tacctccttg gatactcctt 3360

aagaaacatg catttatatg gtttgtacat gcacttaaat acattgggtt gtatgaacgg 3420

gatttctaaa agtatctagt gcttggagaa ccacaccata atatgtaggt tgtacatgtc 3480

ctacgtaact aactttgaga caccacgctt cgctaatggg atagctaggt taaatggtcg 3540

agctgtacac cacgaaataa cacgctagct ccctataaag actattatgt gtgtgtgtgg 3600

gtgtgactta gagaatctcc tgcccgatct tttcaaataa agtgatggcc ctttccagga 3660

gcaagcgcca ccttgtcgac cactcttgtg tctgcctaga aggtcgtgcg ctcccaagta 3720

atctccaaat taagcactga catatatatt cgtgcacccg gcccctactc cctccctcga 3780

tgcaaagctt tcaggggact gggatcaaag acaggaaaaa caaagaaagg gacatcgaga 3840

tcagagaata atacataagg cccggccggc cgggcacttt ggaacaaatt aaaggaagaa 3900

tatagatgaa ttataaagcg ttcaaaccat atagaaacat cgctctcttt gaagttaatg 3960

ctttggaaca acgaatatcg gattctctaa aaataaatct tgtgatattc ctatgaaatt 4020

atttgttttt ttagtaattt tgcaggattt attctgctgg ttggagtgtt ggacctcttg 4080

aaaaccttcc ttttgcgtac gtacgtcgct cacctagttt tccttacact acatttaaac 4140

gttcgttctg gaagtttt 4158

<210> 1886
<211> 1440
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263846_G1, chr7:160773315..160774754, Cluster 11

<400> 1886
aacattaaat aaacaatagg tataagaggt attaaaaatg gaggggacca atgtccccca 60

tttgtcctct atgtggatcc gcccatgatg tggggctatc ccatctggat acttttattc 120

aatgttagtt aggttgactc ctcacttagc tagggccagg ggaggtctgt agaactcagg 180

gccctaagag cagtgtggtt ccgttatggt gagagcctta aagtcagtcg atttggagta 240

aaaagattat ttggctggga gaaagaagca tctaatgagc aaaacatggc catcgttttg 300

gagtagcaat gagagaggca acgcatgaat ggatcgactt gctacttgaa gtagcagtat 360

ttacagtgct aaatggttct tttgcaaacg tctcgtttcg ttccctccgg ttttttctta 420

aatttgcaag ctcgaaatgc ttcagctctg tactgcgtgc aagctatgag cgcgacaatt 480

aacgcaacgt gcagatcatc gatcatacga aatacgacat atcctctcgt tgcatgcagc 540

ctgtagcggt agcgctgaac cttgctaaat acgtgtgtcg caacggaggc cgcaaaaaga 600

tacaggatta ggcagcctgc atacaaacat gcatgtaact gaagataaga ggtcctatta 660

ttttctctga acactgattc tgaatcgaca ggaaaaatac gtagtggtac aggacgtctt 720

ttctcttttg cttaacatct cggctggccc tcggaggtcg tgcggtggag tggtgccggt 780

gcaggatgct gaagggaatg tactgctact atgcatcgtg ctgcgtcagg gtaggccgcg 840

cgcgtcaagc catctgactg tcagagccaa ggaccgtaag tacatacctg cagtcacgcg 900

ggcctgcata cgggcacatg gcgggcgcag gcgctgggga gcattcgtct atggatctgg 960

tggtgttggt gatgggcaac cgaaactgtg ttcacgtacg tccacgaagc ctactaccaa 1020

tagcatgcat ataatcgttc tgatgatgcc aacgtgtgcc attgcagcgc caccactgaa 1080

cgccacgtgc cgggaaccac gcagatgaat cgcgtgcgtt ccgctttaga aaactcagac 1140

tgacaaggat gcaaatggcg actgacatcg ttgggaacaa attaaaactt ttgcagggat 1200

tttggatctt caaccctagt gaagtagtga taggcggaac gccggcctat cgcgctcgtg 1260

cacggccgcc gttaaaccta cctgaaatac aatggcttac atgcaaaatt ctggtcaaat 1320

atatatatgg aatggaatga aatgggtact ctctctattc aaattatata aggcccttta 1380

tattttctaa tatattatgt ttactatata atcaaattat aagacgtttt ggtctgttaa 1440

<210> 1887
<211> 1926
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264079_G1, chr7:161910276..161912201, Cluster 11

<400> 1887
gctagctagc tagctgctct tttcagcagc tatcaccaat acgtacttgt agtcgatctc 60

gtagtagaga tggctccacc tcccatatat aggcacgaaa ccatgaacct gttttcattt 120

ctaaatagaa tagctaacag taacactgtt tgtctgcagt gcactccgtg cgagcaaaac 180

aatgtgcaca aagaagctag caataacaag atctatcagg cccttgcgtt gcattgttgc 240

gtacgtgggt gttgagtcga ggtggagcgt ggctggcaac tggcaaagca atgtctgatg 300

aggacgacgg gccaaaaaaa gggacgagct agctggagca aatagtggga gctccttttt 360

agggggggggg tgggggtgtgg ggtgggcatg gtgcatggag agagacgaac acgacctcat 420

ctctttctct ggttcccagc agcaacaggc tcttctttta gctatagaga gcatggggtt 480

tgcactagtt ttctctcaac tctccggccg gcgctcttcc atgccgtgga cgcgtgatag 540

attgagatga tgcatatgcc gcagaactat tattattcga ccagctagta tactatattt 600

atatataacc actgcatggc gttggcgtgc atgcaggagt catgcatgtg aaagcacggt 660

gcatgcagca gtgttgttgt ttatatatta gacgatagct tagcgtgaca attatggcta 720

gctaggttaa ttaagtctat gatgagacca agataatgtt ttgttctgct cacacacgca 780

gcttttcttt gctccgggga agatgcgtgt ggattaatct ctgcatgcat gccacgctct 840

aaccaacagt tagcaacaaa ttgaaggtcg atctctcttg agtggccggc cggtgtgtgc 900

ttcatcctct cgagcttgcc actctctgcg cgatctccta tgatcatggg ctatatacta 960

gtgcacaaca gacgtcaaaa agtgttcaga gataacaata tatatacgat tgcgcccatg 1020

aatcattagc agcgcaaaag agaaataaac tacactgctg ccggtgcgtg gccagggaag 1080

cgatatatat cgccttcaaa aggcagctag ctggtgccgg gcacggcgct gcatgcatgc 1140

atgcgatgca cggccttttt gtcagcgcac tgacctcgga aagaccgaca gcatccatgc 1200

aggcacgaac acacatggga tccgcagcgt gtccccagca ccagcactgc cgccgcccat 1260

cacgcaccgg ccggtactgg tggctcggtg tctgtctgtc agctcgggct cggcgcatcg 1320

ccatgtacat cagtacatgt acgtacgtac atgcagcatg tgtggccatg catgggggtt 1380

tgcttctact actaccacca ccttcccttc actcctagag acgccagcag ccccccggc 1440

ccgacagggg ccagcgccgt gcatgcacgt tcatctttca ttcaagtacc aactgctgct 1500

agtgctgcta gtactgcact actagaccga gggctgctgg ctcacagtga tcggtcatgt 1560

ccatgcaaca agcacgcagg ctgtgcgact gcgagttgag aaagtcttgc tggtcgtgca 1620

ttcgccatca ctgccctgcc cggcgcattg tggcaatgcg aaaaaaaggg gggaaaggat 1680

ttcacatcca cgcgtaccct ttggtctttg gtggaggagg tggaggaaca gcacctgtgg 1740

gctgtggccg aaagcgagcg agcatacgag agacgggatg aggcccagca agggaactgt 1800

gcaaaactgg cacacaaaca cgttgggtcc cccggccggc ccgggcttgc ggaatgattc 1860

catgcggtag cggctaactg cttccgccat cgacatgtcc ggctgtttcc cctttcaaat 1920

tccaag 1926

<210> 1888
<211> 2901
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264096_G1, chr7:162024498..162027398, Cluster 11

<400> 1888
cattgattcc tttatttatt ttttactcaa acaacgggag ccacttcttc cttccaaagg 60

agcagggaac ggacgccacc ggagccacag ccacaattcc acatttccac caacccagcg 120

gcggatcgac ctccgcagtg gctgcctctg ccccgcctcc acagcaccca tccacatgct 180

ctgccggctg ccgcacgaac ggacacgtga cgcgagccgc gccctgctct gcccctcgcg 240

ggcctcgcgg ccccccaccg gatcgcaacg agatcgcgcg cccggtcccg ccgcgccacg 300

tgttaggcgc gcccggttcg gggccgcaag ccaaaaaaaa aaaaaaaaaa aaagcgcgcg 360

aaagcgcctg tggcgacgct ccactcgttc gtccgttccc cagatccgca cgttcgtttc 420

gttcggccgc cgctactacg gacgccggcc tgagtgttgt tgtgaacacc ggccaaatga 480

cgcgcgcgag tggcaatgat ggactgactg ggggccgcgc cggcacccag caagcaccat 540

gatagatggc ggcgagaagg gaccgcacat gcggaaccgg atcgccaatc atgtggcgcc 600

accatactgc ttctctttct catcaaaggt ttatttgttg gatgctgggg gcctggtgtt 660

cagaagatat tcccgttgcc tgcttacgtg cgtgtgcgtg cgtcgggtgc gctctctggt 720

gtagacgcgc agtatatgcg ctccgctttg ggctacccgg cgaccaggaa aatactgctc 780

gcctttcctt tttcaggcgc ggtatgagcc tggcgtttgc ggtcaacgca gacgttgcca 840

tagtgtggct ggcctaggaa cgatggagac accacggttg gccttgacct agcttgacac 900

cggcaaccgt aggcaattct tcttaagtgt acctagccag cctcttcacg ttcgcttcaa 960

tgcatttcac gtcccgttgc ggattgctgc agctgcgtat atctgcatgc tatggagaga 1020

ggctgcacgc gtactcctac cgtccagacg tcctactgta ctacgcacac atgtgaaata 1080

aagggagcag gcggccatgg gcgcgtaggt ggcgagggcg tgatgggaac agcggcgagc 1140

acagcttggt ggccgtgcat ggccctgcaa tttgaatggc tcttgggacc gccactgatt 1200

ggtaggtcac ctggcatccc gccacgtgtc ggcggacggc ccacgctgga tgtggacgcg 1260

ccacatgcaa gcacccggct ggttagtttc ggtccgatca ccgcggaatc aaggcgcatg 1320

cggcgacgag ctctgctgca ctgtgtgcag cactcgttcg tggtcgccgg catgggccac 1380

gacgacgacg agcaatgacg ggcgcagcgc acgtagtctc gtacgaattg gcaacacaga 1440

aacaggggg cccgctcgac cgaccaaacc aatcgtagta aacgcgccga tcggtgcccg 1500

ccagcgcgcg cgcgcgcgcg ctcgctcgtg ggcttcgtgc gcgcgccgcc gccgccacgg 1560

ctgatgagcg ggcgaggcaa tgcgcgccgg cggccggcgt gcacgtcggc acgcgaccac 1620

gcgtctccgg tgcccgtcgc tcgtttcgtt gctcgggccg gccggttcgg taatgcatgg 1680

tttcgggtta ggcgcgcgcc agcacggagc cgtccgattt aaggttcggg acagctgctg 1740

cagccacgcg cgcgcgcgca ccgcatgggc tgcgatgcga tgattgattg accggccgca 1800

gccgcagcgc agcgcagcgc aaataattgc cgtcgccaaa tgattcgggc caagctcgat 1860

cggtcctaaa ctcctaatta gacgctcgct ttctgtaccg gcggatggtc tgggggaacg 1920

agtttagcgc acctttgaa ttgcgtccgc ctgatcgcac gcgcgcgtta ggtgattagg 1980

tccttcctgc ttctttttc ccccatgagt ttatggtatt actatatagt taggcgtacg 2040

gccactgctg ataaaattgc ggtcacatct ggtcatcatt tgcccgtaga aaaaaatcct 2100

ggggagctgc cgtcttctgc tgggctcggt ccaccgtgcc caccgctcag gtcagatgat 2160

agcggcagtg ggcaggccaa gaagcggacg ccgcgcgcgt ctgcttccgg gttccggctg 2220

atgacagcgg acctctgcta tctgcgcaac gtccgcgtaa catcactagc ttagcctatc 2280

gatttttta tgaaaaaata taatagtatt cttgttttgc aattcaaatc aaatatgcag 2340

aaagttagac tctccaacag ctggatgagc tgctggaaac cgctgtttct ggagtacatt 2400

cttggtttac ggtttcccgc ttgcttgagc tgtatctcgc cggaaactag ggaaaaaaaa 2460

gttcgcctgt ttctcgagaa cacgagagtt cgttgtgtca actgtgcacc tcaaacctca 2520

actcgagtta ccctttagc taggggttac gtacatctga acatttccgc tgtcgcgttc 2580

caaaagtacg tgtgcatgat agtcctcgat tgaccgcagc cctgcatgca ggcgtttcga 2640

ttcgtggtgc tacctagact ccagaaccct tccgagaaga ccacttctct tccgcgcgtt 2700

cgcgcgttgc attgaaacat tgaatcctta tgcgagcaat gacattgtcc acatgatgac 2760

gactataata ggcatctgca gcactatatt attggcgagt tgcatgttca tgccggccgt 2820

tcaaatcatg caccgtcccg ggcttgatgg cctgctcttc tcttttatta ggtgctcaat 2880

gatgcgctcg acacgtccga a 2901

<210> 1889
<211> 2122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264302_G1, chr7:162994802..162996923, Cluster 11

<400> 1889
cttatgaaac atagagtgac tccataaacc ctattagtat atatgctact gctgctgacc 60

ggtaatcaaa aaacatgttt ggtttggcga aagcactata tatgtttgga agtatatttt 120

tctgccttgg tcagattttt aataaccggg agaatatgtc ggtgaaatta ggccacacag 180

gcggctgaca gtgttgtctc cttcctcctt cctcgcctat aactataatc gacgggtgta 240

gtgtagggaa ccaaggtcta acaattgtag aagcgtcggg aattttccaa atggagagcg 300

agtctctgcc gcggggtgat tgtctacgct acaccgcggg actgattagg gccgcagtac 360

gtgttaatta gctagctggt ggcatgtgat gggcagacac tacgtggatt ccgtgttgac 420

atggatgccc gccagaaagt tattaatatg ctcgcatata tcgataaaac aaaaccgagg 480

acgaatgtgt aatttatagt acgtagcgta cgtagcgtct aaagctacct tattatgggt 540

actacattgg aattctatga cgtaatcaat ttaaaatttt ggatgcaatc tgccgacaaa 600

tgattgctta tcactaacac aacacaacgc gcgcgcgcac atgtactcgt acgacgtgtg 660

gcaagtcaga aactactagt ggattcgttc gtcgcgtcgt cggaacgtgt ctttatctct 720

ccgatcccta tctaggggtg gggtgccggc tccccgcgac gcacggcacg agacaaggag 780

gacgccgcgg tggagtagaa ccgtgggaag gtgacccggg cgagggaggt cagaaacggt 840

ggtagtggta ctggtgcgca tgcccgtgtc ttcaacggcg gcacgcgcat gcggcggggg 900

ctgcgggggg aacacttgga ctcctcagca cgccacgcca cggggcagtc gtgctaccgc 960

gcaagtgcca tctcttgctg tccacgctct tttccgtccg ttcatatata cgatacgaac 1020

gcatccaccc gccggcacgg atgccaaggc caagagttgt gaatcactgg atctcgtgca 1080

gctgaaatgg gaactgcaaa attgccccag caagcagcgc gcaggcaaca gttgcactca 1140

tcagttcagt tggtcgtgat tattaatttt taatcgggga aaaggacgat gcatgcactc 1200

atcagttggc cttgattatt gatcacactc tatgcacccg tcttctagag cgcttcccta 1260

ccactctgac ctcctcacaa taatctgtgt agtaccggag taacagcatg cctgctcccc 1320

tccgtccctg ccctgtctcg tcgacgcagt gatggcgcat ggcggcacgg cagaggtaac 1380

gcggcgcgtc accgttcctt ttcctgataa cgtacgagca gccatatgcc ataatcgacc 1440

agctaataac tccgtgtact cgtaaggagg acgagcacct gtaacaccag acgcaggcag 1500

aggagaacag ctccagctag tgagactaga ccacacgtca gtcgtactgt cgcctatcca 1560

cccgcaaaaa aaaaatattc tgtcgcgtag agagcactct atctaaaacg caagtctctt 1620

ccaatcaagt cccccgaccc aatcatcagg cttctcctaa tataggagtg atgcccgatt 1680

gctagggcga gaccgtgcgg tagacgtctg cctgctaatg cgattgatgt ttttttttc 1740

ttctgaaacg acgaccggag aatcactgga cgtgatgtgg accgaggagg ttgctggcga 1800

tgacggggtt gccggagttt ctttcttttc ttttttttta aaaaaaaggg gaggtttgct 1860

gtgctgactt ccacctcgtc ttcttctggt ttggcgcctc gcgctgtgcg tcacgggtgg 1920

ccgctaccca cctgccaccg ccatactcgg cggctctgtt tggtccctgt tgtttaatgg 1980

atgggtttgg ctgctctact acatgctcta cgctgtcgtt gcgtacttgc gtggttgcaa 2040

tctgtctgcc ccgagagaga tgcacaagac acttgagagt tgagacttga gacacgagag 2100

tgttggatat atagcatggt cc 2122

<210> 1890
<211> 3896
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265088_G1, chr7:167626489..167630384, Cluster 11

<400> 1890
tttagttgat attttatctt atttactgta tctacgaagg ccaattagtt agtaaatctc 60

tatttatgtc ccacgcaaat atcaggcccc gctcagattt tggtctgggt ccacccctgt 120

atcaagagca tcgatgtctc catgatatgt aattatttat agatggcagg atgaaacacc 180

atgttattag tgtgtaagta tcatacgacg acacatctag aatgtctatc acttgtagca 240

catgaacccc ttagagactg tataatttag atactatacg ttcggttctc caaacactaa 300

atataactaa gaaacccatt catagaactt atggtatcta aatcttgttt cttattcact 360

agatcccctc aagacacgac tcatttatat gagttgtatg agttgaatcg tatgtagatt 420

tataaaatag tgctagagac gttttcacca agatatcgtc tcttatgttt ttttatttaa 480

cacttgatac catgccctta ttagttatta ctccttctaa tgaggttcta ctctgaaagc 540

tcattgacgt tttgtgtttg cggcctataa tcaatatcgt aatcaacaac tgcgacatac 600

tactcgggag aagtgtataa gcgtagccga aaacatggaa atggcgaggt aggattcaca 660

cgaccagtgt ccagtccagt ccagtccagt gcagccgtcc agacggagga aaggacgagc 720

acgcacgcaa cgcaagagca gagaggtagt actgcgccga cggacgggac gacggctgga 780

gtcaatctgg aatcaaccct agctagggac aggccagttg cgcgcgtcaa gcaaaagcga 840

tggtgcacga tcgcgagagc tgtgactagt tccatctgct acacgtgtga cgtgcgtgtc 900

tttgtcagag cagcaaatat ggatcgagac gcggcacagg acccctaggc atgaggtcgc 960

tcgtggattc ggccggctag ctaaaaactg cttgaattga cgatggaatc gagctctggc 1020

tgccggacga cggagatgac gacgatggat cctctcggcg acgacgtcgt ccatatgccg 1080

cagcggcaac gtttctccga ttcgtacgcc tgaattcaag gccgtagcgt cggcgtcggc 1140

gtggcctcga ggcgccaata caatcttgcg cgtgatggtg tgtgtacctg cgacctgctg 1200

cccgtccacc cgctgctggc tgccgccgta cgtattggct gtgagagatg gaagggcagg 1260

atgttaacgg ctgctggtgc catgtctcct gtactgtagt agtaccaccg gtgatcggtc 1320

catggaccat ggtgtattaa cactcgactt aacaacaagg gcagcatgca tgcaggggta 1380

tctctctcga tccattgtcc gtggcgaaga tcagcgtgcg tgaatactga agactgaaga 1440

gggagtgggc aactggcaag aggcgatgag ggcgagatgg ccagtcagtc atggctggaa 1500

accacgcaca cgctcgagcc catgcgtgcg tgacgcacgc agtgatgcgg gtcgcgctgg 1560

gctagctggt gcatgcatgc atgtacgggt ggtgatgatc cgtaagagga ggccggtcgg 1620

cccctcctga cacgtacgtg tacgtacagc atgcagcagc agacaccgct gcgcctgcgc 1680

tgcgttcatg ctccatgcat gcgcaggtcc ttccatacca gcagcgacgt cactcgtgac 1740

catgcatctc gatcggtgcc gacctggccc tccagctggc tccttggata tggtgactga 1800

cacgtccacc gtccacgccc cggccggact tgccatagcc aggagccagg gggcagaacc 1860

tgctagctgc cgcgtcggat acgctggccc ggcccgccgg cagctcgatc tatcggtcgg 1920

tctcgaccat actacgtacg tgcacactgc gctgcgctgc gcctgcgccg cgagcccgcg 1980

acgcgagcga tcgccaagca gctggcacgc acgcgcaccc cgcccatgct cgatctatcc 2040

gttcagactc tatctgagac tttccgggct cgcggcgtta ctccccggcg ggacgaggag 2100

gtcggcgatc cgatccaacc ccacggccgc atcccccgta ccgtccgagg aggatgcacg 2160

cggagccagc cacgtcgcgg tcggctcgta cgtcccgtgg cgctccatga cgccgcccgc 2220

cacctcgcgc gcgccatgcc atgctcaccc gcgtggggcc gggccggccg tggccgtacg 2280

cgcccatgcc agcgtagggc cgctgccggc cggccgccgg ccgttcggtc gtccaccccc 2340

tcgccccgc ccaccagcag cagcggcggc gatcgatccc cgctgactga ctgacggtgg 2400

ggtcagactc agacggatat attacgtttc tagcgaacgg gccgaggccc attccagagg 2460

agcatgggcc accatcaatt ccgatcaacg ttaggggggaa aaaagagagg agaaaaaaaa 2520

gtcaacttct tcctagaatc tgcccggacg tttcctgaat ctggacagcg ttattatacg 2580

ctgtactagt actactgtgc gtgactacgg ttgcagcccc gtttgtttaa caggatcatg 2640

ccgcatctgg cgtgtgtaca gggcccaaga tatttctgcc gcgactgcct ttgttcgtcc 2700

tttctctatc gccatccgga tctctgtaca attggttatg ttagccatta atgcatgacc 2760

ccaaagggcc aagcaagcaa cgttcttatc cctccatttt catcatgaaa aagaaaaaaa 2820

agaagaaaat attagttgct tcactcgtag gtcatggtcc acatgcttat gaacactctc 2880

aagtccaagt tctgcggaga cggagaagaa cataagctaa ggacagacga cagattctag 2940

gcaagaacga cacagcttgg ctgcctgagc ccacacgcat ggtcatggag cacccaaacg 3000

tcaactcttg gctggcaaaa cgctgaacga aattatttgc aagggaagaa ggggcctagg 3060

cgacgaaaga aacgtgtgtg agtacccgat tgacaaggcg atcgagccct aggagggccc 3120

atcataaatc tggcccagct catcacactg aactagcagt tactcatcag gacgtgccag 3180

agaagttaat catcaactag ggttcacata ctgcttcaat caagatcact aactaaactc 3240

caagcgaggc aaacgatctt cctttttttt tatgctaata caggagagct gatggatgat 3300

atacatccct tcgagatagg ccacttgtcc acacgtacac tccttggtga tgctgcgttt 3360

gcgtccatgg tcatcagtcg atagcgtgca gttcctgaca acccttcttc aggcgtcaaa 3420

ctccatttat gaatctatca cacatattga cgagcgtcaa actaattcca agagctttgc 3480

ggctgattaa tttacaagaa gccaagtcgg gcaccacaat cgtcttgtaa ataaataaaa 3540

aacgattctg agttcacaaa agccagcagc aggcggtctg aactctgaaa ctagttccag 3600

gagtagatgg cttagggctg ggattttaat tgggcttgca atttgacatg ccaccatgaa 3660

ttgactagct aacaaactga atgatcagta caggtatttc cagtgccgtt gctgtcgaac 3720

cgcgcaattc gtcagagctg ttccttcgtt tgccgccaca agatcggggc tagacggcga 3780

caacagacag cgaggtcagc acaaatagtc tgctgagtgg acgacttcac cattaatgct 3840

tcgagagaag ctgccgttgc cggtagctgt acagtgtggt ttgacaggtt ttttta 3896

<210> 1891
<211> 2056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265213_G1, chr7:168273877..168275932, Cluster 11

<400> 1891
taattgattc ttacaatatt aatttattct aacaataata ccttaggatc tttatgcttt 60

ataaaaataa atagtttgct ataaaattta tatttaacct ctttttttatc ttctcgatat 120

gcgatatgct ccattgcggt agtattgcta tccctacgta aaggtaaagg cgttatgcag 180

cctacttttc gcacctattc actagtttat aactaagcta agaagataac gtacataact 240

catgtaacac gatataaggg cctctttagc acgactctcg ctcctctaaa aacacttttg 300

acttagactt ctttggcaca ttggcttcta tgaagaagcc aaagctattt tgcaatcgtt 360

tgctttttgt gtttttgtat caaatgtgta tgaggaaaca tatgaggagc cggtagaaac 420

tatatttttg gtgctctggc tcccagaaat aaaacgaatc caacttcaga gagctctcaa 480

cgagaagcca ttttttgatc gtttggtaga gcttcacggt aagccttgac cggagccgtt 540

caaagagccg tgccaaatgg gtctaaggat ccccgacgaa cgtggcgtcg tctgccgtgc 600

cacaagcgcg gcaggtgtcc accctgctag atcactgctc acctcaagcg caagtgtgtg 660

gctgttgttg tttaaaaaaa agtgtctggc tgttgtccac ctcacctccg aggactatga 720

gtcaaatccg agtccgagta tggacaaacg gacaaggcac accgcacacg ctgacacgcg 780

acggcgacgc gcacgaactg tcagtctagc tactactact acgccctact cagagtacgt 840

acgtgcaggc cacagcgacg gcgcgcgacg tcaccgccca aggccgggcg cgcgcaatgg 900

ctagcgccgc acgggggcac gcatacgccg cagcccggcc ggccgcagcg catttcacgc 960

gaggagcacg acggggcgat ggagagggac gcgtactaac tacgtcgcgc ggcccgcccc 1020

tggccctttt ctgctatact gtactagttg ggttcgtctt gtcgcgagca ggaccggagc 1080

aggacgggtg cgcgggggcc catcgtgcgt gcgtgtgtgg gcgggcgggc tcgcgaaaga 1140

gagagagaga tggagctgcg ggcggcaggt gggacgtcgt gcgcgtccgc cgtgtggtgc 1200

cagtggatgg acacaagcgc acgctggcgt ccgctgcggg agggagtgca atgcatggcc 1260

ctgttgctcg acgccgtacg gatccggtgc tcctaggcaa gtgcgtgcca ttttagcttt 1320

cttcttgtga tcagtaatta agccaggctt attactactg tcgtctacgg attaaagttt 1380

atagaaccga atgaagcata aattcacatc tacgacgacg ccgaacaaat gaaacgcgtt 1440

tgcttgtgtg ccgaacatat acgtaccgag catgacgtat gtatgtattc agctgttctg 1500

tcggtgtgga ggatgacgac gacggagaag aagaagaaat atatgcctaa tagaaataaa 1560

aaaaaagaaa agaaagaaga agaagcacgt gcgactgaat tatatgcatg ctgccctgtc 1620

ttgaggtaac aaaagctggg tagggtggcg acccgaatcc tgccagtgaa aacgatctgt 1680

cgtgtcgttc cattgcaccc agagctcatc atcgccagcc tcgtgatttt gtggccgcac 1740

actgtgtcag cgtgtggccg ccgtacacgt taacaatcag taacctttta gaaaaccccg 1800

gcccggccgg atgagggagg ttgctgcatg gacactccag acaacacaca cacacacaca 1860

gcgaaatatg cgtggctacc attggcttgt cgtctcctcc gctagcccac cgcctagcta 1920

gctagattct cctctaatta atcgcaattg aatgcgtccc ggggcctggc ctgacagcga 1980

tggcgcgcgc agccggatac atgcccatgc gcccatgcca tatgcgtgcg tgcccctgtg 2040

cccatgcatg catgtg 2056

<210> 1892
<211> 1790
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265628_G1, chr7:170663457..170665246, Cluster 11

<400> 1892
tatatagact aggttagttg gaagtggaag tacctttagg cctctctatt ctgatcgtgc 60

tccagctatg ttatccataa tctggtaaca acgaaagtac acaattaggt actagtaatt 120

accacgtgat tgggagttaa gcttttggtc aacctttat tatattaggg tcttccacta 180

taaaaaaagt ccaccacttc tagtagtctc tccgatcagt taaacatgat aaaacatatg 240

atattagtta tgaaatctct ttcgatggag ttatttgctt ctttgcactc attaaacatg 300

ggctttcgac agaatgccct cgttctaacc ggtgaggcga aggcggtggt cgagactcga 360

gaggacgagc agccacgagg cggggaagac gaaggagagg atggaacgga acaggtggtg 420

ggaggagggg caaaccgaaa gttttgatgg taaaaaatca atatttttt tgctaaaaaa 480

atagcaggag tgcatggttt aagaaatgca tacgagtgaa gcccccataa agagttcctg 540

caatcagcca atgaagttag gctgactccc tacgtatcca aacttgtgag gggatgtaca 600

accctattta atatgagatc tttttaaaga tgatatttag ggataactga aaaaaataca 660

agagtcaggc ttttcacgaa atgcttattt ctaaataact ctatatatgt tatctcttaa 720

ctgcatttat aatctatgag ttcagagttg tatcatatgg tcctttaatt gtctcttata 780

tttgagcaat ttttacataa gtggactgag aactgagaag cgaagtgttt ggtggccaga 840

atccaattct gacgaccaga agccgaatca aatataataa gccctataaa gagtttgcgc 900

gtctagccga tagaattaga ctacatactt caccttgtat gagcatgtac aactctattt 960

ataatatggg atctaggatc ttttgagagt gtttacggat aaccagcgtc agcagatttg 1020

gaatccgtgg atgcgcacgc cgtcgtactg tacgctcgcg ctacgggcca agtgatcgag 1080

caaacgatag tgtggcagag gatgaaggca aacaagcacc gcctcgttgc aaacgatagt 1140

gtggcaggca agacgcctag ccgccggctg cgttgagttc catgtgtggt tgtgctcgca 1200

ctcgcagtag tagccgccag tacgagtacg tacaccacgc aatttcatgc gtgcgcgcag 1260

acaatgttgt ccatgcatgc aatgcaaagg tttcatcgaa gacgaagcta ggaaaccatc 1320

gtcatggtgc agctggctcg cctgcaagat cctctgtacc cacgtcagca gaattggaat 1380

ccatggatgc gcacgccgtc gtacgtactg tacgctcgcg ctacgggcca agacgccaag 1440

tgatcgaacg aaagtaacac ttttacagtg cttggtgaaa tctccgttgg agcacgatga 1500

ggtttgatta attcgttcag gagcccggat gtgcggcggc aagaacgtcc ggactgggtc 1560

gccgtcgagc ggtgtggtgc atggacgctg gctctcgcga gtggagccgt gacgcgtgtg 1620

caggtgtgta tgtatgtcgt cgcatcgccg cgcacgaatg atgctgcatg cagaatgatg 1680

ctgctgccca ctgcaaggag gccatcgact agctagcccc gtagaccctg tgcatgaggc 1740

aacaaatggt attggtccca atcaatcaaa atcagttttt ttttcaagag 1790

<210> 1893
<211> 1950
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266442_G1, chr7:174247527..174249476, Cluster 11

<400> 1893
aaccaaccaa accgcatcaa agttgaaggt gttgcatcct tgagacaaag cacatccttt 60

ggattttgct gtgttaggta gctccgccgc tgtgaagcta gctaggtgtg tggaatagaa 120

atgaagggcg cagctagctc atggctacta gctaacagcg cacgagcgaa gcatggtaat 180

aactatgttt ttaccaaggc atcatatatt gtactgtcgt ctctctctct ctctctgttt 240

tttgccaagg catcatatat tgtactgtgt cgaggataga aaatgtaacc ctcgagacga 300

gggagactcc tagccctatg ctacgtacta cgcagctgaa agagtcgagc tttcacaaaa 360

gttgtggggg aaagaacggt ggtaggcttt attcttgggc gcgtgcatgg ctttggcatc 420

acatgacatg agcagctgcg gcattgccta gcctttgcta ataagcttgg ccaaatgacc 480

tcttatttga tgtggtgtct atatatttat atttaatcaa gctttagata atttaacaaa 540

gaagaactgt gttgttcccc acatcaaaca actacactac actagtgtaa tgaagatgtg 600

ggtggccaac gtagtatata tactcgctcc agtacgggtc ctgttgcgct ttctcttttt 660

tgccaaagtg tggagcatct gcttggctgg agttcccagg agggaaaacc ggccctcaaa 720

tgctcggatg acaggtggta ttggctgctg cagatctgct ttgcacgaca gccaagggat 780

ggagaaggaa ggaaggaagg aaggagtggc tagctagctg ctggccctgt ggctgactga 840

ctgactactg cgagtgacac cgaggcgagc ctgtgagcgc gcgactgcgc gtgagtgcaa 900

acatggcgtg ctgccacctg cgtcgtctgc gactgtctcg gccaccggcc ggggcctctc 960

cctctcccgc gccccgatgc tatccagcac agcacagcac agcctctgtc tcgccagcca 1020

acgtaccttt catgtacaac aacaacaacg tattttatct tcatcttaaa ccaactgcat 1080

gcatttcttt tctactgcac cagcagcagg atgattattg tctggatgaa ttgaatgaat 1140

atgaatcgtc gtggatagca gcagcagcca gcagcagcga tggttctgtt tgctcctgca 1200

gcctgaacct gaataataat ggcgcctcgc tagctagagt acctcggccc tacagtaacc 1260

aacagtacgt gctagtaaac tcagcagctg ctgctgctca ctgtcgtatt ggcactgctt 1320

ctagcgcaac gaaaggagac caaagcaaag caaagcaacc ctaacctagc atggggcata 1380

tggcgatcaa tggcgttggc gcctagcgca gcagcaggta ctacgtacta cagtgctcca 1440

ataatcgcta cagctagctc ttcacgatag gagctctcga tccaatgaac atgcacgata 1500

catagcggct acctatagct cttctctgaa tctgttcctc gctccttgtt gcattgtcct 1560

cggagggacc gatcgagact agcttcagct ggcttccagt tgcacttcgc tctctctctc 1620

tctcacacac acacacaaaa tcacaaactg catgccagcc agcacaggca cgcactccag 1680

ttcagttcgt cgctcccaaa aaaagaaaca gattcggtgg gcgctgttga tcttctcgta 1740

ccacctcttt ctctcgcttc tcgcttgctt gcaaaatatc tacgcactcc aacaatccct 1800

aagcaccggc tactatttaa tgcctatcac tagttttagg tcaaacaatt gtagcttttt 1860

ttgttgccgc acatggattg cgaccataca ctaacgaaac atactgcaaa gcctcgaaaa 1920

acaccttggg aaaacttttt tgcccgagta 1950

<210> 1894
<211> 2081

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269092_G1, chr8:11804415..11806495, Cluster 11

<400> 1894
gcatggtggt ggcctgcttc cagcagcctt gcctatgcct ggtgcggtga ggttacaggt 60

gaggcgagag atcggacggt cggttggtcg tttgttctgt gcttgtccga gctgtggcca 120

accattagca gctggattgg agtgttccgc cggagattgc gctgcctttt ttttttgcag 180

ctaacatcct tatttccatg ccagtagcgg cgagatcgga ctagaaaatc caggcgtagt 240

atcgatttgc tcggtagagg aaggaccgct ccttccgata agatgcagca aagggataag 300

cagaggggcg gcaccacaaa ctgatctatc caattgtacg catgaaagga cggccggcat 360

ccatatcccg cgaaacgtca ggcacgcccg cggtccgcta ggtccaaaag atcgcctgcc 420

gcacgacgac gaatgcgcag tgtcggcagg caaccataaa cgccatgcga gaaggcagcg 480

taacgagcgg cagtcggcgc ggcaatgctc tcttgcgaca tggcgacact actgccttca 540

gatggagatg ggacgacgac cctcggctgc tgtgccaggc cggttacaga acgccacggc 600

gcgcgggttc ggttcggacc tcggactccg gttgcatgga gtatggcagg acgggggacg 660

gcggacggcc agtcggccgg aaacagggga ggcgacgtgc cgctgccgct ttgcggatgg 720

atctgacggg agatatctga acggccccac ggcgcgcaga gtgaactgca ggcctcgtag 780

acggggaggc cagtaggtac ggaagtcacc tcgtgttgaa aaggtggacg acacactgcc 840

cacgcgccgt gtgacctttt aaaagaactg cgcgccaaag gcgcttcgct acggagcaga 900

gccgaagccg aggcgaggcg tgcatggaac tgcacggatt ctgaggcgag atggtggcgt 960

ttcgtccctc gcggttcccg ccagccctgt gcgaaattgc tgccgcggtt cccgcttctt 1020

ccatagccat ccacacaagt acagaacagc gcagcttgac tgccaaaaac gatgtgctcc 1080

ctaatcaaca agcgaaccgg gcgtgccgcc atggcggcgc ccaaagacaa ggagcacggt 1140

tggtggaagc cgttaccgcg tactactagc agaagcgaag cagactgcgc acgtcgcgac 1200

gggcagtagc caaggttcag cacttcagct ggagctgctg cgtcggcaac tgccgccgac 1260

tcggcatcgc ccggcggccg tgcgccggcc tcgcgctcgc gggtggagtc ggcggcgcct 1320

ccaaaaggtg cggcgctgac cgcctggcct ggcacaacca ggcgcggcct ggcctgtccc 1380

cgtcgcgtca cgctcgacga ttctgacccg cctgtcgcgg ccagcactcg cggcgggccg 1440

tgaccggcgc tcgggtcatc gttcggcgcg gaacacccgt ccttttcggg cagcccgccg 1500

caccggcggt gaagacatgg agcaggtgcc tctgcctgcc acacgcggag gaggcgataa 1560

tcgctctctt tgtcatttca aatcattttt tcttcttctg tatgaaaagt atcagcgtat 1620

gaccgagttg tgttatgtcg attctagtat tttacgataa tacgattata ccaaatcaaa 1680

acgatatcga ttctattacc gtatcgaaac gatatcagtg caaaaagagt tatataatat 1740

ttagttttac ctaaacgctc cacatgatcc tacataaaaa tataatatat aatattctgc 1800

tattacgatt ctgcgacact actatataac aattaatacg aataattatt taaatgattt 1860

agctatagta aaatattgtt taaagctaga aggaaataga ataatgctaa aagttctatt 1920

gaacatataa gcaacgaact aaattaattt aaattaatat tgtagccttt agtatcttac 1980

ataaaacata taatttacaa aatcgatact attaaaagac tgtgatgtga tcggatagta 2040

tcagtggaaa aagtaattta ggagggacag acagcctcat a 2081

<210> 1895
<211> 2321
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269307_G1, chr8:12911686..12914006, Cluster 11

<400> 1895
acgcagtggc gttgcggaag aagacgagtg agacgacggc accgcgcgag caaggactcc 60

gtacgtgggt cggggtcggg ggcgcacttg tagtacgttc ctgagaggca gctgacagcg 120

agagaggcga tgtaaaatcg ataggttggg agttcagttg ggcgaggaaa aagctcagga 180

gaaaaaccag ccggggtcgt cgtaatcaat ctcgcaggcc aggactggca gagacagatc 240

agcgccggtc acagatttgg gtggcgacag attactttac agtgatgtgc caaaaccttc 300

tttcctcgct aaaaagctca cacagtcatg catgtcttta ttagcaattg ccacgaactg 360

atggtccggt ctagacgaga actaactcca agggactctc gccggaaaac tactccagag 420

gactcgccgg aaaacccaag ggtgcctggc cttgtggtcg cggtgaaaga aaccttcgtc 480

ttccgtggtg ggtcgtccac ttgggacttt ctttgtcggg gacagggcag ggcaccgctc 540

gcagcaatcg tggaaacttt ctttgtcggg gacaaggcct aatgggattt gtccctggca 600

acatcaaaaa ttctggcttc gccctcgcac tgcgagcgac gtctttgttc actcgtcagc 660

ctctctccgc gtgcagactt gtgactgttc tctgaattct gataagtaca caaggccatg 720

ctacgacgtt cttttaccac cacttaacga ttaacacgac agaccaaacc gagtatagta 780

tagtagacag aagagcgagc aagacgaaac aaagctcaga gaagatgcct cactttcgtt 840

tggactactt ttggtgtgcc gaagctttgt ctgtttcagt gcaacttgga gccggacggg 900

cccaagaaca ctacaagctg ggcagacgac gtccatgtca ttacgcgttc acaaaaccgc 960

gtcgaaattt ggggttggtg taatgatcgt tttatttagc acacaccatg tgacaatacg 1020

ccgagcaaag tgctgcaatg aaacctaaaa acaaggtgag ctcaaatatt atggacacct 1080

tcgcaactct ctattgaagt tatatatgcg tgcaaaattt cagctcagac ggaggttgtt 1140

tggatcggtt ttgcattttt ttggaacttc gattcggggc agataataaa aacaaggtga 1200

gcgagcgaca ctgtttttt agacttttca gcatctgttt tgcgattggt tcgtttattc 1260

actgggctcg gactcacgta cgctttagaa acatttccaa acagtacaat cactatactt 1320

ggccgatata tatatatttt ttggtcggag catccttttt atatataagt gctcaacttt 1380

ttttttcaat tttggaaggt tttcctcgca agcacatttc taagctgttt tacactatat 1440

atatatatac tgagcactgt ccattagagt gaagtttaga tatagggata gataatctgc 1500

tggagatagc ctagctgatc taatttaagc gtttcgatca tcatctagcc accaccggct 1560

gacgtttact catctctctt gggtcttgga ggttcaggtg tagcgttatt agaaagcatg 1620

ccaaagattg cctgagtgta aaaaaaagag ctttttttatt gactctattc atcctctctc 1680

tctaatcgtc cgactagatc cttcaaatta tcggtttcca tgtcatgttt tcagtaaaga 1740

aaacctctgg tcaacaaagc tctaacacac tccagtttga agacactata tatcaataat 1800

gttctcacaa taatgacgta cccatactac atgtgactgt gaattgcgac gggggaggag 1860

taaagtacga aaccgcatcg cttgaaaacc agttgatgtc cgttttgcgt cgagtcatgc 1920

cggttggttg tcaaacacag ataattaagc atagtagagt agaccatacg cagcgacagc 1980

agtacatctg tctcagtcaa tctctcacct acgtacctgc caatttggtt gtggctatat 2040

atggcgcctc ttgatgcggg ccgggatggc cctggcctga acgtgtcggt tcttgcgtac 2100

gtgtgggtct ctccgtctct gaggtggtgt acgtgaccgg caactcgtcg gaatggaatg 2160

gaatggaatg acgatgttaa ctcggtgagt tcatgctcgc gcgcactcga gaagcttctc 2220

ggtaacattc gcgaaaacat tgactactgt tcagtgaaag cgaaacacgc cgcgacaaat 2280

ctgacaacca aaacgcagca aagcgattgc cagttcggtt a 2321

<210> 1896
<211> 2552
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270540_G1, chr8:20526239..20528790, Cluster 11

<400> 1896
aacaagtgct tgtctggcga gttactaaat gaagcgcctc caggggaga aggcgtgtca 60

gcgaaactcc caggggacat cgatgtcggc ctcccatgaa tcggaaagaa cagctaatag 120

agtcaatccg ggattatgaa ggccatcgac gcaaatcagc agcgaaactc ttagcacggg 180

gcgcagacca aacaatatag caaatttctc atatgcggag atccgcacag ctccgcctca 240

aagcacgacc agatgaatcc gaggcgcggg ccgacggtcg cctccaaaac gacactctag 300

gcctcgcgtg tatcagacga gcacgggttg agaaaggagt tcgcctggga ttgtcgatgg 360

cgacacacga cccaaggtcc caacccaaat caccaggagc gggaaagaag agatctgcgg 420

ctccgctcag tgctcacatc aaagaactgt tcagggagcc catctgccgt cttcgcagcg 480

ggacatgacg cggcggagca gacggagacc cagaacctgc aacggtttc tctacgccgg 540

caacggaacc gaggtggcac gggcgggaag ccgccatccg gttctctcag cggcgacggc 600

ttcctggacc tcgtccacga aatctggggc acgtattcga acgaagagga aaaaataaaa 660

cactgagcca tggcgaggaa cgcagaagaa tcgaaacgca acggaaaagc gtggaaatca 720

tggcgatggc gccaggaggg acggccggag gtccggagcc cgccgaggta gctagggtcg 780

aagcggcggc ggcgatgggc gtgccgcgtg cctgcctcat ataataagaa ggcagtgcgg 840

aatgatgggc tgggctcatg tcgtcctctt gacgggctga gctattttgt gtcgccgtcc 900

tgtttccttt gtgggcctag acgtccgagg gtcgctcggt ttcgggctgc tcgtttccgc 960

aggggccgtg gccggggccg ccagcaaaag tcgtcgtggg cttttagata gatacatgga 1020

gatggagtac cgtcttcgtt ggacgccggg caggctgggc ggaacgcgaa cgacggcgac 1080

ccgtggtctg gtcgaagctc cggcggcctc cggccaccgg ccagggcgtg ctgagtctga 1140

ccacgtttcc cggatgtctt ccgccctggc atttggccgt agcagggagc cgatcgagga 1200

caccatatgt tacacgcggc ttccttccct cccctcccct cgggtccgcg tttcggtctt 1260

ggttcagacg gacctgcgct tccccacatc tggccaattg gccaccggtc ccggtacccc 1320

caccaacatc caaagcacgc gttccttgtg ccggccggcg gcggcggcgg ccatgagctg 1380

tgctggcacc accgcgcgcc gggccaaccg gtcggacacg tacgcaccgt ggtgtggtcc 1440

ctccggcacc ttattattga tcgatcagca gcaggcagca ggcagcagca cagcggccac 1500

tgaacatgca tgcatgttct tcgttcgtct gtctagacta ctagagtcga tacatacttt 1560

cacctcggca cgcagacgca ggacgggtct tctcttccac cgttcgtcca tgttcagaca 1620

tgccccttc agaccgtatg attttccttg ggtttttttt cgatttccat gacagcgcca 1680

aaccctggtc gcagctttgg aacgtccggt cagtcatgga ttgccggcag ttccgacccg 1740

tttcgtctcc tctgaatctg aaagagaacg ttctctctgt cagactgtca cgtccggcat 1800

ccaccaggat ttcttccagt ccacgggaca agcagctcga cgtctttgtc ccccccctgcg 1860

cgcgcgggct agctcagtgg ctgccgctcg ctcgccacac cgtcggtcgc atgccataca 1920

tgtgtgcgtg cacgctgccg cgctctcgaa atgtcccacg tccttcgcta gttcgcttgt 1980

cgttggtttc gagacagtga cgttgccgga gaaaaaaaaa actagagcta gctcgccgac 2040

ggatggtggt gccgtgagcc aagggtttct ttttaagccg tgggtggtcc tcctgacctg 2100

accgtgaacg caattataat tcggccagaa ctccggtgac gatattttga gccctcatta 2160

ccggatggcc agcgcatgca gcatcgtttt cgtttcgtct cacttcctcc atctcgttct 2220

ctctgcgtgc cggtgccgct gccgcatggt tttcctcggc tgtttccaag caagcaacgc 2280

atgcatgcat gcacgcacgc gcgctgggca ttgccacggc ccacggtcca tggacgacga 2340

tccaacagtg cgtttggagg gagatgcgta tggggtgacg aacgacgagc tgctcctgct 2400

cggtggcgcg gggcggtcgc tcaaacatcg cattccaggc tcagaaatcc taaggaatca 2460

gctcaaatca agtttatttt atagaaacca gctcagtttc ttaagtacta cacaaaaagc 2520

tcttcaaaat tgtaaccctc ccagggcata tg 2552

<210> 1897

<211> 1694
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270964_G1, chr8:22796502..22798195, Cluster 11

<400> 1897
acccaccgat gaggctggat ccatgttaag gtagcctatt atttatccta ttgatgatga 60

tccatccaca ataattccag cttttgtttc atatgtatga cctgtccctg aaagatagtc 120

tgatacatgg ttttgtcgtc gcatgcagca gtgctggtag ggaatgactt ggccagcgac 180

gcaaacatcg tcgcagaaca cgcttattgt tagatgacaa gagaacgcat gcatgcactt 240

gaccatataa taggagctgt atgctgcaac tgcaaggcga tcagaacctg catgccattg 300

ccaccatcag gcgaaagggt tgggaaaggt tcaccgccgg ccggccgccc gggacctgga 360

tcctgcaacg taatgcaaac cagctacatc agcatctgca tggcgtttc ccatagctac 420

acttactcta aaagcctctg tacttattgt aagtgtgatg agctagagct ctatgaacta 480

taattataat ggttagttct cgattaatgg taccacttat ggtttacgtt tcgaattaaa 540

gccatctgtt cggaatgctg taatatacat agacataata ctgttgaaca gcggccgcga 600

actgtctact gttgttgcca aatggccggg gatatacacc atcctcagac atgcaggcaa 660

ataaacacat gtttctgttt ttcttgttgg ttgaagttag tttgaaaaaa aaaactaaca 720

ctttatatag ctatacaaac aagtagccag atctaactga ataactgata caggacaaat 780

aaacatgtcg cctgaaccgc tagctatagt gctatccaga ctcatctcgc acacgccggc 840

tactcgtggc caggctaaca aacagttccg cagcagctag caacactgcc cagtccttgt 900

agagtaccat caccattttt ttcagacaaa aaaaaaagtc atcgaggtgt gcgccgcggc 960

ggtggaggcg ggaacgaacc aaacgttacc cgccaaattt ttacccggga agggcccctc 1020

cgcggcgtca gcctgatcgg cgcagcgaga gaggagatcc cgtgtacgcg ggcggtgggg 1080

gcgtagcgta gcggcgcccg cgcagtccaa tcggcgccag ggccggcgct ggtatcgggg 1140

acggagagcc gcacccgagg cgctaccacc tgcgcgttcc tgggcccgga tgacacgtgg 1200

ggcccttcgg tcgggtagcc tgcgagcgag atgggcccgg gcgcaggaac agtgcagtgc 1260

agtgcagtgc agcaaacaac agcttccgcg tttcattctg agttctgacg gggatatgct 1320

tatgcgttta taccctccgg aactcgggat atttggtcga ccaaagcatg cgtttgagct 1380

gattttccct ccaatgttct aaagagagac taaagttata atgctatatg ttttgtatat 1440

agattcttat cataaatcct gcgtgtttca gttcatgtta ctgtgcttac catatgttca 1500

aagggcctac gagtcataat aaaagggagt aagtaatata ggaatggtac cgctcttggg 1560

attgtagctt caacagacac atacattgtt ttttttcttc aaaatatttt cgtaaaggta 1620

gcaaaaccaa atgcatagag gcaccaacga acatagtagg gtttgagccc cccaccgttc 1680

aagattatgc ctac 1694

<210> 1898
<211> 3271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285639_G1, chr8:118421323..118424593, Cluster 11

<400> 1898
actgagctag cttagcacac gtacgcacgt tagtcgatag acgacaagag ggtatagatg 60

ttggttgttt agcgctactc tccagtgagc agattttgag caaatgaaag cagttcacca 120

gcaggcagca gacagcaaga tcctaccagc agcatgagtg tgcatatgca tgtacatgca 180

tgcatctcct aggctaatat aacagggcgc gccctttgcg gcgccaacag atcgcggttc 240

ccctcccccc ttctgcgttc caaacgtgaa ccatgcgcgc ttgtgcgtgg tcctaagaag 300

cagtacctag cgcttgcttg gaaagccgtc gtcaaatacc agcgacgatc ccccatcccc 360

ccccccccccc cgccccgcta gctaagctag caaggttaac ctcacctttc tatcaggaag 420

cggcggcggc gacgtacgag tcgatggcga cgatggaaag ctaatcgata gtacacgctg 480

gctggctatt gcagtcccga ttggaaattt ctgcgtgcgt acgtcataga tctcctccga 540

gatcggttgg gccggatggc ggtaatcagt agtagcttta ttaatctgct ttcgcacagc 600

actagctagc ttgtccgatc gatgcttatt ttacttggca aattggtact gctgcttacc 660

cccctgatta cgacctcgcg tggcatgaat gcgcgttgtt gaattctcca tcaggtgccg 720

tcgcgtcgcc actccaatgc acaccgagac ctgacgtcaa caaggcaggc aggaatgtag 780

gatgcggccg gagagagagc gttggacgtc ggaagcatat atagagaggc tcgagctaaa 840

tgaaaaaata tataaatgaa ggtctcttca cgagagcatg tctctacatg actttttata 900

tatatgttat cttttaaact atatttatag tctaaggctc agagttatat atcatgcagt 960

atatatatta gttatcgctt gtacatggaa aatggaccgt ggactcaagc taagattgta 1020

tatatatgac ctaaaattaa ttagttaggt gcatgtgagt tgctaggatt tgtatatatc 1080

acattaacaa cgcacgtacg tacagctccc gcgaataata aacctggtca atcgcacagg 1140

tgcgagcggg acggcacatt caacactgac cagacagata catgcatgca tagagcgtgc 1200

tgtacgtact ctgcatggta acaataacca accactcgct agtggtaacc caactacaaa 1260

ttaggtacta cgtgtactac tctaactatg gaatgtagtt ttataacaaa actttaagat 1320

ataaatgctg gtattgtttt tctaaaaaac atattgttta gtaactaccc aaaaaaatgg 1380

taatatatac gttccttttt aatttaatct gagagagtga gtagcaggac aggcacacaa 1440

gtagcatgca tgcatgcgcc agcataatac gcgcagcagg aggacaatca tgcgggccgg 1500

gcaccagttt ctcaggtgat ctgactgcac agacgtacta cgtgctagct agctagtaga 1560

gcggaacacg cgcgcgtgcc ccctcgaaca tgttgcgagc atgtcggtcg tcgtcgtcgt 1620

tggttgtaga tcgagtagta cgttgggtag tccgacgtcg gcgtgggaac atacctactg 1680

acatgcatca tgcatgaggc catgcatgca cagggcagtt ctggttacta gtccaccagt 1740

cccgtgtacg agtattcgat cgatcgtcag gtatccctca tatatctacg tcggtgtggt 1800

tccatatata tccgatatgc atggccagtt ttgattgctg tattcctagc tactttcacg 1860

ccagatcgcc cagttgttgt ttttttaga accattggga cggactacta ctccccagcg 1920

ggcagcggcc catgccattg ggatcacggt cagagctagg ctggcgaggc gcactgtgtg 1980

agctgatcga tatgatgccg gtggactacg gaattggaat cacgctgctg taatgtaacg 2040

cggcgggccc taggactagg acggtggccg aggccacctg ctctgggccc gtggtgcttg 2100

ccggcggcag cagaggaggc ctggtatcaa cagttccaat tcgggcctgg gcctgggcgg 2160

acgccgtaaa gctgctactg atgagtgacc tctttatttc aaacctttac ctaccttatt 2220

tgggccgcac atataatatt cttttatcca atagaaatgg acaggagagt gtatatagat 2280

tagagagtga attattattc ttggataata agccattcat tccatcacta gaaaaatgaa 2340

tggatcagat aaatatactt cttctttcca cccctagttt tttttttctg tgcacatcca 2400

ttcaaatgat aacgaacata tacatacatg catgcaaacc gcattcatat ctaaaacgga 2460

ttatactttg ggacctgcgt atatctggct acactaatct gcacgaagta gccgctctcg 2520

ttatgacgag ttatttctaa tcaatttcgt gagttttaag gtttgatgga cctaacgttt 2580

ttttagggtt gggctgttaa catacatgcc cgcatagtca tttggtgtcg tattgagccg 2640

tctgaaaaaa aaaagatttc aatcacattt ttttacatgt ttaagagtga ccgtgaggtt 2700

ttaacagttt tgttttatta agcattgtta cgcattataa caccaagcgt ctgtagtcca 2760

acggttagga taattgcctt ccaagcaata gacccgggtt cgactcccgg cagacgcagt 2820

atcctaattt tttttgtggg gtgggtagac ggcccgtttc cattttgtat tgttaagggc 2880

ctccaaggct cgatgggcct cacggcagga actgggccag aaccagtatt tccaattttt 2940

tttgtggggt gggtagacgg cccgtttcca ttttgtattg ttaagggcct ccaaggctcg 3000

atgggcctca cggcaggaac tgggccagaa ccagtatttc ccccctgtgt ttcaggtaat 3060

ccctttttgc gatgtaaaat ggagtaccat cattttagc tactttagaa actaaccgtg 3120

gaaccgaaat gatagaagca tgcatcttgc tatagtacag gaaagctgaa gatgaaactt 3180

gtataagctc ataaccaggc cgaggtactt cctccgatcc atctgaatcc ttgtggtctt 3240

acaagcacct gaagactttt agcatgagaa a 3271

<210> 1899
<211> 1705
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290662_G1, chr8:146017658..146019362, Cluster 11

<400> 1899
tgtgcgctgt gcccggccat accataccga ccatcatatc cagagccaga ggccaagtaa 60

agaaaaagtg caaaacgttg ggccagcaag caggagcagt ccaaaacgca cggacgcgac 120

aagtttccgg cctggcaggc agcttgtgtg gcacgagagg aagcagtact acacgtctct 180

ctatgaggaa cccgctggat cgcagagacc gggggtcggc ctcatccata tccatcacgc 240

aggcacaacg acggcgacgt cgggtatcag ggctatatcg ggtgtgtgag ctggccgtag 300

atagagtgta gacgtacgtg tagctgcagg gcacacatgc atacatatat accacacgtc 360

gaccgccagc actgcactgc actgcactgt agccatacgc gtcgcttttg ttgccagccg 420

gccaccgggc gctgtacggc tggagtaggg cttccttttt ttttttgcg cggtgggcga 480

cgagaaaaca gctgcgccca gcgccggggc atggcgacgg cggtcctgac ccccccaata 540

atgccccccc ccccccccccc ctgcggaggc gtaacatgcg ctgcctgctg cgtccggcgt 600

ccgcggttgg ctacatgcta cagcgtggag gtggatggat gggtgggcag gagcaggatg 660

atgccctcgg tccgccggca taactaactg cacgcgggcg tagcggcaga cgaccggacc 720

gaggcacacg tatttcattt gctgctgctg gtgatgccgg cgggggcctg ggcagatcac 780

tgaatgaagc agtgtctgca gattatcgta ctgcgtagta ctaggattgg tagatggaca 840

agaaggtact tattcacaca tagtagctag taatagcgtc agtagagtag tagctgttgc 900

acgtgctagt atttaccact ggaacggcgc ctgtcgcgac caagcgaagc gttgccgatt 960

gtcgtactgc cctgccatct ctttaagcga cgcgttgctg ctactactac tgtgttcggc 1020

ctccacttcc cagacacacc aaacagacag gcgtcgcgac tcgtgtcaac agctaccagc 1080

gccgcccgtg cctgccttgc ctagctcggc ggcaagacga cacgcgccgc cgccgcccag 1140

tcgatcgagc gccaaccgaa agcggcgagc gcaggagcgt gtcgtcgcga tccagtcatc 1200

cgtggggacg tggggtgggg tggggcacgt tccaactgcc cactggcaat atatagcgcg 1260

accgctcacg gccacgggcg ccgcgatcag aattccgcgc gccggcgacc tgcagatgtg 1320

cgagaaggat agaacgaacc aatgcaatga ctcggttgcg tcctcaccgg gcggagcagc 1380

tacatcgacg tcgtatgaca tcaaatgttt gaatatcaat tataaatatt aaatatatat 1440

ttaataaatc tatctcattc tttaatttag ttttacaatt acactatatt taatatcctt 1500

aaacattatt cacacactcg atactatata ctttaattta gttctacaat tatactatat 1560

ttcatatcct taaacattat tcacacactc gatactatat acgtacatat taaataattt 1620

attatcgcct atatttttat aataaactta ttatttacat tttctataaa actagttaaa 1680

ggtgagaaag tttgtcactt atttt 1705

<210> 1900
<211> 1521
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_2929_G1, chr1:15088803..15090323, Cluster 11

<400> 1900
tcggttggtc cacccttta gcgaagggga tggtcctggg ttcgagctct gctctttcca 60

tgatttttcc acctctgcct gagattttag ggtactgaga ttttagggta cacacgcgtg 120

cacgttcacc gtgcaagcgg ccaagcggcg ggtatgcatc cggttcatta gatcaggatc 180

atagttcatt agaccagatc ttagatgcca tcgttactga cattctctcg tgtcctacca 240

agttagcctc tgccaagcag gggtactagt tgctgtaagc cattgcaagc cgtgcagtgc 300

cagcagatca gcttgtgcct cctcaaaacg ctgtccccca cacggccaca ctggactagt 360

ccgtgccata cagggcctcg ccgccatagt ccgctagaag ccaccaatcc aatatgtaag 420

cagttgcctc tcgttgttga cgtgttaacc tcgtttatta cttaaatatg gtagttcgct 480

ccacaacttg tcgctccatc aaagatagca gaaatgcatg cagatcttct gctaccgtca 540

gaagtcctcc ttgcgcacaa gaacaacatg cgtgtgtcac attagcaaca cacctccagt 600

agccacatcc tcccgcgatg accgtgcgca agatacaaat tgcctaaacg ttgcaaagtg 660

tacacctagc gtaaagcatg tgctgttgac ctgtagcatg gaagaacatc aaatagagtg 720

attgctaagt atactagtag catttcttaa agaatatcat gcatgcagtt cggtatgcat 780

atcaaaagct ctttgtgcct ttgtttccct cttgaacgaa acatcagcta cgaataattg 840

ttcggttctg atattaattg ctagcgacac atgtttgggg acgaaagaag cagtcagtca 900

tgaaggacgt cttccacaga ttccaaaccg tggcggcatt tgattgatga gataccatac 960

cagcaagcaa aattaagctt gaccagcagc agaatttgac gtgctggcat ttccctttta 1020

cttataccgg acctggtttc gtggagcatc tgcttatcgt tatcgatcgg aaaaggagta 1080

gagtgaccgg cggcggcggc ggcagtagta catacagcga cgacgacgtg gcgatctcta 1140

tatacatcta ccgaatatac ggcggtcgag tagtgcgggt ctctccagac cgcctcctgt 1200

ttattcctaa acctttttcct tttccttctc ctctcctcta ccttgcgatt cctgtcagac 1260

gagaagatgc cggcccggct ttggacgaca tgtgtgtctg ggctgggcgt gggcgcacgc 1320

gcggcgcagg cgaatccgcg acgcaaaaaa aaaggcaccg cccaccaccc ccggccggtg 1380

cgaatggcgg ccagaccgcc acggcctccg cgctggccgc tggcgcccct gttgactcgc 1440

gtcgtggtgg aggtggacac gccgcgcgtt cgcatccgct cctctgctct tgcctctggg 1500

caccgaggct agacgaactg g 1521

<210> 1901
<211> 1899
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293205_G1, chr8:159114330..159116228, Cluster 11

<400> 1901
tacgtagcga gcgttcgttt ccaacgagcc aagctggcat agtcgcatga gatgagccac 60

actcctccac gcaaccaatc acaccgtatt tgtatagcta tacctctact agccactact 120

agctggatgg ctgctaggcc atggccacac ggagcgactc gtggatgtgc ccatgcttat 180

tggttccgaa tcgtccgagc acgacataac tagaaagcga ctacggtagg cggcccagtg 240

aatcactagc gtttgcttgt tcccggctct tgccttttgc atgcatgggc tgacgatgat 300

gggcgtcggc cggccggcga cggacaggag tagtagggta tatgatgggg gatcgcatgc 360

attgcatgca catatgatcg agctttcttt ccactgttgc tgttggcctt gtccggtcgt 420

cctcatgcac gatgcatgcc aggacacgct attagctgtt gggagttggg actgctagct 480

gctaccgcct ccccggccca agatgagcca tatatatacg acattgtacc acagcgtgca 540

tgcgatacct tgttcgtcgt catgtggtgt gcagtgcata cgttgtgcac tcggccagca 600

atgcatgcaa ggagaggaga gaaggtgcgt gggcgtgtgg cagaggcata cagtgaaatt 660

gcaagtagcc ctgccagtgc cagtgccagc cacgcgcgcg ctctgctgat cgggatctgc 720

atgcccggcc tcttctattc ccagcggccg gcacgcacgc acgcatgcat gcgtggtcct 780

gatgtgttat cggcccagcc catgcatgct tcagtacgtg tcctgcgccg cgccggtagc 840

tagctagggc cggccgcggc cagccagcct gctgggggggc gcacggcgtt gtgatcggcc 900

gtaccgtgcc ccggcacata tactgttgag ttgccttgct ctacagctag gtccgtcttc 960

aacgactcgg atccatcggt acgtacgttc ccgtacgtcg tcgtagtata tgtatatatg 1020

ttcccctcgg attcgatttc gatggaaggt gcatcgtgca tgcatggcgt agcagtagga 1080

ggagtattat tgatgtccat cgtcagctgc acgccggccg cgccagctag ctcgaacgaa 1140

caaccacatt tcgttcgccg gccggtacga cctgccgtgc tgatagatcg acagccaaga 1200

cgtacggcga tgcacggata tcccctcctg attcttgcta gctgctagct gctagctgct 1260

gttttattta gcacagggca gtgcgtagga gtaaacattg tcgtctagtc ccgtattttt 1320

acacactaca ctagagaccg tcttacaatc tggatatcac tggaattctc acctcctacg 1380

tcgtatttgt cgtgccgtgt cgtatacgta cgtacgtacg tactcgagac tactcgtgga 1440

tgttagatat tcagcaggcc ggtccgtccg taggcatacg acgtgtgcca gccagctgcc 1500

agcatagtac gtgtacatag cagcgcaaga cgatagatgt aatgtggcat cgttttgatg 1560

agtcgtacgt acgtcgtctc accgatcggt gggacataat tgccgtagcc gacgacgcga 1620

cgcgcttgca gttgaaggcc ggccggcttg ctacacgtac aggcgtacag cggatagatg 1680

aacgagaacg agagcgcgcg tcttgagctg gcggtgacca tgcatgcagc ccccgccgta 1740

gcccgtagta aatggacggg gcatgaagat ttgctgcgac cataaacaaa tccaccgaca 1800

ggagatataa cgtaatgaat gtttcgtgtt gccttcatta tattcgtagg attttatgca 1860

taaataaggt ttatgcatgg tagattctgc ccacagata 1899

<210> 1902
<211> 1422

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293947_G1, chr8:162548940..162550361, Cluster 11

<400> 1902
gagtcatgat ccttttaaaa atcctagagc tacaaagcat ggcacggaaa acacacggcg 60

ccttgtatat aaagtagtaa ttgcttgatg tgcgctaacg aagcatgaat tcaggagcac 120

aagatggaat aggaaaacaa acaatattat tgtagtaaca ataaaaaaac tcaatcccat 180

tacatggctc gttatgcgca ggtcgatcag ccgagtcgcc gcaagatttg gcggccttgg 240

gtcgagcgaa gagggagacc aaagccaagt tttcggcaaa gagacgagat ggggatcatc 300

atctcatcaa aggctgcctg ccaacgtttc caccggtgag aaggatggat ttctcatgtt 360

ttttttttct ttaagaaaaa tctaggctta taccccacgc atacaatcct ctcccttaaa 420

ctaatcaaga aagccaagaa aaaaaaagaa gtcctaccgc tactactcta gtagctggca 480

tcaaccccaa gaaaaccgcc ctgcaaaaca tcaaagacat tgttaattac cctctgacat 540

tgtactcttc ccgtctacta gttgaatata ctactactac tggctactgc atctggttcg 600

atttgattgt cctttcagac acagaaacag tctctgatgc gatcactgtg atgctaagta 660

ataatgcttc atacaactct tctttaaaaa aatactaaaa taatatagta gtagtagtac 720

ttatgatgct gaatataaat actgaagtgg taaggattgt gcttagaagt tcagaaagtt 780

tggaccgcac acactgtatc acgatgcatc tatttgtttt ggactttcgt attattgctc 840

atttgcttgc agatcactcc aatgatggaa ggctcgctcg catgatggca attgagcgtc 900

ccatcccccc ctctgtcagt cagtcagtca ctcactccca tctaattttg ctgctggcct 960

ttccgggttc caatgattgc cgggaaagat ggtagctgcc tgccgccctg ccccccacct 1020

cgctacgggg gggcgttgtt ggcgctttgc ttgcaaccaa aggagcatgc catggatgca 1080

tggccacgaa cgaggaggac tgccggccgc tgcaccggct gcgacgcaac gcaactacaa 1140

cgtaccgggg gggggtccag gacatggccg tgccacggca cggcgagaat gcaggctgcg 1200

gtggtggccc gactcccaga ccggcgtact gctgctgctg gctgtgctga catgggaaaa 1260

aaaagttggt cccaaacgcc cgcgccgatc gcccctcgct cgtctcatca cctcggacgt 1320

gtgctttcat cttacttcac cggtttttc ttagcgagga aacgccgtct acgatatcaa 1380

cacgcacggg agttttgtgt aggaaagaat atgcatccaa aa 1422

<210> 1903
<211> 1578
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_294605_G1, chr8:166163918..166165495, Cluster 11

<400> 1903
gcgtgctcct attgcttctt ctttttccct agaaaaaaaa acaatttgtc tataacccaa 60

aaacacgctc cgaaaatggc tactaggaat ctataccaag ttgccgagag agtagagact 120

ccctcctgga gcatttatga ggcaaccatc tgaactagag tttagataca cctgactgac 180

tgagaccgat cgatcggcaa cccgacttgt gcgcctctgg cagaacatta caaggtggtg 240

tagcagctgc aatacgccaa gtcgccaata ctagtgtttc tttcgctgtt accatgactt 300

tgtgtagtag gctgtagaga taacccttgc attaacaacc gttgcttgga cgacataagg 360

agattccagg cctcttggag gattcccgca tttgtttgtg ctaaattgct ggtggctaat 420

taacgactct gaccggcgaa gcaagtgaaa gacaagtagc atacagaagc agaactcccg 480

tgcagactct agtctagtct actaacagta ttagtgcaca gcatacgtgc agtagcgcac 540

caacatatgg catgaaactg ccgcccggaa cggtctgaac aatctcagtt cttggcgcaa 600

cacaccttta attatcctgc ttccacattg caggaatgca tgatctctcc cccaatttga 660

cgaggcgcca aatagcagta tgcatgatct ctcatcatca ccttgattag aataagatgg 720

taagtcagca acttgagcat agcagaaaat gacatgctcc atcatcatcg gtatcgggaa 780

tccccatccg ttaattggaa ggccggcaga aaatgaccgg tgcctgcgcg cgcgcgccga 840

tgatgattgc tttggtcttg ttgccttcgc tgtcgatcga cgtgctgatt gaaaaacatc 900

gattactaaa agacgaggca aaaatgcagt gctaagctag ctaggttggc tgagaaaatg 960

accataatga cgacaacgat aagtgccgga gctttgtgat cgccgaaaag gggtacgtct 1020

cttcctaggg aagaaaaggg agcggggaaa cactagctgg aacacaagaa tctgcaagga 1080

cactgacgag gcaaaagtat gaagtacaac taacgtaaca attaaatctc cagtagtaat 1140

taacagactc ggttcaaagg caaactcttt tttttttgt ctagaaaaca gacaagattc 1200

acagcttaaa atgagatgtt ccaacaacaa agcattgcat agcacatggc gccatatata 1260

cagaataaga caactgatca gtattaagta ttagaagaag aaaaaaaaac ataatgaaca 1320

cttccacagc aaccagccaa tcagctgcct tgcgcaaatc gacatgtcaa gttgaaagat 1380

ttatgctaca tccaaatggg tttctcaggc cggcttcagt tgagacgctt tcgtgtttct 1440

ggcggtgaga tgagttccaa cattcattag ccctttatat aggagcaact attggttcag 1500

attttggagc aattcaacgg gaagtgagaa gcaacaaagg ataaggctct gtgcctagag 1560

attgagattt gtcaaata 1578

<210> 1904
<211> 2997
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2959_G1, chr1:15155754..15158750, Cluster 11

<400> 1904
tttccccttt tttcttaata tttccaaact gggtattaca ttggatccca tgtgctaaaa 60

tttagcaagg aactaaactg ttattggacg ctaaagttta gtacttcatc tttcagcatt 120

tctatttaga tatctaagag ctaaatttta gcgagtgtac tgttaaattt tagcctaaat 180

gtttctgttg ggctaaattt tagcaagtgt actgttaaat tttagcatat tccttttaga 240

gtggtatggg tgtgcataga ctaaatgttt ccgttgggcc ctaatttaac gatgtgtacg 300

caggcctgtt tagatgactt ggtaccggca tatggcctcg tactgtttca tttgatgacg 360

cgagcgtgcg gcccatgcag cagcagcacg ccgggaaggc agcggatttt gaagtactat 420

tggacagcgc ggcgcgggga ccgggtcgtt ggcgcgcggt ggagtggggg tgggtggtcc 480

tggcgtcctg ccctgcgcga tggtcgatgg atgccccatg cgcgtgtaac cgcccagccg 540

tcgccatccg accaggtggg cagacgtacg tacggtggca cgcccacggc ccatcggcca 600

tcgcgatcgc gttcgtatcg tgtcctctca gctcgcagtc gcgcgcggag tgcagcaata 660

acgaaagcgc caacggaagg cgctgtcgtc gtcagttcac cgcgcgccgg cgccctgtgt 720

cctcgtccct ctcgacttct cgtccagtaa gaactctcgc gagctgcgga gctgctggcg 780

atggccggcc ggtgggatcc gacgtgcgtg caacctcgag gccgcaaaca gcctggtgac 840

agacgaagcc agcaagcacg tacgtacgca cgtctctgct ggtctggatg tgtatggata 900

tggacgtctc acgtctggac gtcgtcgtcg ccgttgtatt gtatcatgcc aaccacttcc 960

gtaccgtacc ccctcgcgtg ccaacatgac caccgccggt acgtctccat cgtcgtcggt 1020

acgtttccgt cgtcggccgt cggcgtctca ggcagctctc aattaagcgg acgtgttttg 1080

gtaatctggt ggaacgccgc gcgcactgag ggtttggggg ccccggcgga cgagcgagcg 1140

agagacggtg catgcatggc aaatggcaac gagagggccc gcccgcccgc ccatccaata 1200

accaacccag acgtagcgca accaacgtac gagtcctgtg ctggcgcgta cgactaccac 1260

gctagctgcc gcgacatgcg aactacggtc caccaggcac cagccatgac aatatatact 1320

gtatatatat ttttcttctt ctttttgttt ccgctctctc aagttcctgc tctgctcctg 1380

cctgtccgcg gtgccgatcg gcgagagagc atgcatggac atggaccacg cgagatccag 1440

gaaccggcac gggcccatgc gtggcaggcg gccgtttcgt caggttcccc gaaatgcccc 1500

aactgcgcgg ctgcaggatg gctcatggct ggctgcctag ctggcccgtg acagacaccg 1560

atcgatcggt aacgacgacg cacgcacctg aagcacagga aggagcctcc ctctcgcatg 1620

cacgttagta ctcccgtcgc atgcaattgc aaacacagga gtggtagtac cgctgcctgg 1680

tacatgcagc aggctacctc cgcgtgacac gtttcgaatt gtttatttaa tcgcaagcag 1740

gcccgagctt cctgtgcaga tccaatcgac cagacaggct caccaccgct aattcattta 1800

cgtatgatct ttagaatccg cgggcttcat caatcaatca ataataaagt ggaagaggta 1860

aaaagaaagt acggtactaa aagagaaggt gtaaaaaaaa accgaaagaa aggaggggcc 1920

gggggcccag gggtggactg tggtggagtg gttggttttg gttgagctcg cgacgtcccc 1980

gtcggaggtg actggggccg gggctggctg gccagctcgc cgcgtgcaag ggcaaacggc 2040

aaacctatta agaaaacgaa agcaaacgcg tcgaccgcgc gccagcgagc cgccagccgt 2100

gcgcgtgaca tgcgctgagg cacgggcgcg gggctcctgg ggccgccgta tcgtagcctt 2160

tcctgggcac atcaacgcat gcatggcatg gcacggccct agtagagtag tagtagtact 2220

accctccgga ctccggtgtg caggtgctgg ccactgcgca gccggtacgc ggagccggcc 2280

cggcagcgga ttcgattgga cagagggagg ggaggaggaa ggaccgaaaa gctgacaagg 2340

gcagcagcgg ccactgccag cgcggtggtt gcggtacagg tacagctagc tactaggctg 2400

gggagccgcc acggctagtc gatagctgtg gttcctgtgt cgtgtctggt ctggcagact 2460

gggccagtgg cattgcctga ttacagaaca gctttatgct tcattcaatc agtttgattg 2520

aaataatcta ttgcctggat gtgcatctgt atgttctgta gcatagcatg cgggcggtgg 2580

gcagtggatg cagacgtgca gggaacaaga caaagcgatg ggatattgcg tcaagtggga 2640

gggaggagga ggagactgca ggggaggccg cccgtcagcc gagaaaaaag agccccctcc 2700

tgtcctgtat tgtacaccct cccgtctgca ccggcaccgc tttcgcgctc gcacgaatgc 2760

atggatggat ggatggatgg atccggcgtg tcatcactca tcaaaggttc agacttgaca 2820

aacaaaagca aagcgaacga ggctgggagc ctgggactgg gaatagagtt gctcatcaat 2880

ctcttccctt cccttcaact ggcactgaat tccgagcatg cacatcatca gaacccgcca 2940

ttggactagt acgtactata ggggtgtttg gttgctccta ctaaagttta gcccgag 2997

<210> 1905
<211> 2984
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299992_G1, chr9:13480201..13483184, Cluster 11

<400> 1905
gtgtataagt ttttggtact actcctgcct actgttatat atttcacgta ttaaattacc 60

ttctaaaaat aacgtataat catgcataac tacttaatct aattaagtgg acggctctta 120

ttaatgattt tactttcgca ctaactatat atagggttgg tgaaaaatga gacgttcatc 180

atcaatatgt acataattga agatcaaaat tgtagataca atattcattg aatacgccta 240

tatatatatt gaagtccggc cgggaagtgt cgttcgatcg ggctaaccat gtctgatatg 300

atcctctgca ggtataactt ctttgattga gtcgatcaac aacaatgaac atctgtctgc 360

ctgcacacaa taacaaaaag gctgtcaact tttggtgtgg tgggtgataa agggccggcc 420

ggccggggtt gtgtacatca gtattcagta cgagcattcg cgttgttact atctaggagt 480

ttgtgtacat cagtattcag tacgtaacaa aaattaccta gttcattttt caccaaaact 540

ttgtggacgc ggcaacatct catatataat agtcatctat ctaggagtaa ctaattatat 600

atatattgta ctttttgtt agtgtgtttc ttttaaaacg aaaggtttga tgcgtaatat 660

tgctcgcgtt acgtgtcatc aacgccatgc atattatata tatgttaagg acggaaacct 720

tctttaattc ctaaccaaaa gcttcgcagt acttgtgcaa atagggtcgc gagtcggtcg 780

acccctcaaa aataaaagga agttcatata tacatagctc ccgaccatct atcgattttc 840

aaagtcggca gcagtattgt ttcagtggcc atgccatgcc atgccatcca tggacccgtc 900

gaaatgaata taacatcgtc gccatcaacc catccttaat ccgtaggttc cggcgaatcg 960

tcgtccaacc atgtcgcccg tcgcgcgcgg cagaacggaa tcctgtgcgc ctggtccccg 1020

gcccccgccg gccgaccggt ggtctagtct actactaaaa gctttctacg gagagttaat 1080

ggcgccatcg aggcatcgac gacggctaat ggtgcgatct gcgacctcat tattgcggga 1140

tcgaaaaaga acggggccat cgatggcagc tttgacgaac tagctcggtc gccctgtctg 1200

cctgcctatc cgccaggcgg ctagctgccg cgtccccggt cgcccgagcg gccgccgccg 1260

ccgccggccg tccgtccgtc gacccgccgc catcatgagt tcatgacggg gctggcgcct 1320

ggtgtttatt gcgcctactg ttattaccca cgtacgtacc ccgcgcgcca ctactactac 1380

tacgcagcag cagtttattg ctcctcttca atgacagatc ggaggcgctg tgcaacagcg 1440

gtggcccgcc atggatctct cccggcgcgc ccgcccggcc gcatttatga aacgaatccg 1500

cgtgatccga cgtctgcgtg tgggcggggc gttgtaggga gggagtgctg caaatcggat 1560

tctttgcagc caaattagtg accttattgt ttgtaggacc tgaatgcaag cacagcggtt 1620

ctgattgacc ttttctccaa gctagcttta tagtatatat ctcaagccgt agaagcacgg 1680

gtccttgatt gacgtctgta atccatatag acaaaatatt atagaaccag tataattcgg 1740

tacaaattaa aatcaagtga atacaatagt tgtgatcact ccggccggta gtgaatgggc 1800

attgtcttaa tccaattcca cgagggaaaa tacattatgg cacataatga gtgtgtgtgt 1860

gtgtgtgttt ttcatgtcta tatatgatga tccactgatg gaccggcagc tttgaatact 1920

gcatccccca cttgttcctg gaggcgcaac tgtggaagcc ccaccaccga tgggccgccg 1980

ggcaccatgg tcgcttgttt gcgagctcga tcgggaggcc gtgatcgatg tttcagatca 2040

gatcaatggg cccgaaaatt agcttgccac agtacccaaa cgggtaataa tgacgcgagt 2100

agctgctcct tatatatcat caattcatca tcatcatcat tattgttgta gtttttaat 2160

aatatcccct agctagttcg agttgatccg ttgtcgacgg acagtttgta cgtggcggcc 2220

ggggatcgtc gtcctatccg tccgctactg ttacgctgct agctccctgg attctctcgt 2280

aggtacgggt acggccgtgc atgcatatgc acgcgtacga acgcgcggcg attacagatc 2340

tccatccgcc ccccgccaag tcactgtccg gaccttcggg tggtgggga tccgcgcgcg 2400

tcgtcgtcgt gagaatcatg tttgcgtttt gctccataac agacgcgtac ggcgaacgtg 2460

tgccacgtgc gttgcgtata ctagctataa tatacgtgtg tcatcaggac acgtgtcacg 2520

tatgcacgta cgtgtgtatc ctaatataca tacatacata catactctga ctgtgggtgt 2580

tatatagcta ccgccgggat gcatgaggta tacatgcatg catacagttg tattactacc 2640

acctagtgta gacgtttgca cgtacgtata cgtcctcagt gtgctagcta atagtacaac 2700

atagatacgt acatagtaac gcacacatat atatacacca cccagcgtgc gagctaacat 2760

gaatatatat atgacctgaa ttacgtacta ctgtaagggt agtatattgt ctgtctagtg 2820

tagtagtagt gtgtgttatt gcagccggcg tacagtatct cgtacccacg tgcacgccga 2880

ctgcatgtat attcaatcac gatacgcgcg cacgggtgag agtaaatagg ctccccttcg 2940

aaccggggaa aaccaaagga aattaagccg gccggggaaa aacc 2984

<210> 1906
<211> 1451
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301175_G1, chr9:20325171..20326621, Cluster 11

<400> 1906
taaggaatcg cgcacgcact gcagcggagg gaacaaattc agcacatcga tcggcggcaa 60

tgatacaaca gtagtataag agctgtcccc ttctttcaaa acgacggatc ggagctatag 120

ctttacgata tatgctatgc ttattaggtt gtagatgcct ctccctccaa cgggggtgc 180

cgcgaggacc atgatctgcc gagaaagaaa gggcacagca gctagctagc cagccgatcg 240

attgagacga gagaaaccga gggatcggaa caaagctttg caaaggccgg gcaagtacga 300

ctggaatcca acgcgggga aaaaagatag gccggcccgc gtcgtcgtct acgcctacca 360

ctcgccgctt cccccgaaaa agagaggccg gcgattcttg tgcactggaa cagtaaagga 420

gattgattat tccccattcg ggcggccatt attggtggag gtggtggagt gctcggtctg 480

tcacatccgg tggacggagc tagctagctc tccgatccgt cgtcgacggc ggatgcatcc 540

gttctctctc tctctctctc tcctttgctc gatcgcccac catgtgtcaa cgcgttgggc 600

cgcctccagt ctccagcatt gcttttcgcc ataccgagac cggccggccg gtagctacta 660

ctactggctc aatccacgat cgacgacggc gatctttctc gttctctgcc gcgcgcgcgc 720

gcgcgtgtac attattatac tccctccggc cgttctccgg atgatatctc aacggatgtt 780

gaccgatgga tggatcgatc gatcttgcag atcagtcagt cagagctaat gcatgctcgt 840

gcctcattac attatatgcc tagcatttag tcatcagttc cgttactcct cactcagtcg 900

tcgatggatt ctttcttggt acagtacacg caagacgcaa gacttcttgg gcgatgatag 960

cagctgacaa gtaatgtaat acatacatac atacatacat acatgttctc aacgacgaaa 1020

ggaattctta ctggaatagt agtatatata ttacgttgat tgagcggtag acgatgatgc 1080

agacgatgat gcgtgcaagc taggtgcaat ctcgcactga tcacgaccgg ggctaaggct 1140

atctgcaggc cgctagcagc atgcgtgcac ccgtgacact tcacgcttga tcagcttaat 1200

taagctcaag cgtcgagcta gggagagata gcgactatcg agatatggat ccggacggcg 1260

actctcgcac acgtacatgt acatcacttg ctttctgctg ccagcatatt tgttactgct 1320

gagagataga ggcgacgtgg atccggacga tcgagcagag ctagcagcta gcacacacat 1380

gcatatgcag agtgtgccag cgcgcagcga gactctgaaa cctgaacgat cgatgatgtg 1440

attatgattc a 1451

<210> 1907
<211> 1499
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301733_G1, chr9:23326263..23327761, Cluster 11

<400> 1907
taaagaaact aaataatatg tgtttttga ccggggtaac gagtagtatt tattattttt 60

ttaatgcaga aaggtaatga tttcgatgat tcgacgaacg ttcgtctgga cgaccggccg 120

gccggccaat ggattcgact cgcgattgac gcggaaagtt acgcttcaac tattcctcgc 180

aagtaatttt actgagcgcg tggttactat tactatccag tagtgcaccc acgcgattgt 240

acgtggtcgg cacgtatata tgtagcgcta cgtacgcgcg tagatttgac cctgtcgtcg 300

accgtgccca tgatgatcca ctaccgtcac tagctagcga cgagtcatat atattataat 360

tatacacgcc agaaaataaa tgatgcgatg atgtggtagc aggatgtttt cctccagatc 420

tttccccttt taccttcgat ccggctgtgg tctgaaggct gccccgcggc tagcgtagta 480

tagcctggac acaactggat cccagacgac gagacgacac caacgcgggg tccgatcgaa 540

agcaaagcag cgagcacgtc agtacgccac gcaccgtgtg tggcccggcc gctgctagcg 600

accaaacgtg agctttttcg ccgtcacgta cggtatgtct gtcgggccgg gccccggacg 660

atcgacgcaa acgcacgcga tgagaggaac actgatctcg ccatcgccgt cgtcgtcgac 720

gtcgtggtgg tcgccgccgc gtgttgtgtt gtacgcgccg tatacgtgca tgcgccagcc 780

gccgtataga tctacggttc agaagatctc acaagataaa agtcagctac gtgccgtaaa 840

tttaatctcc tccatcctgc tagctctcgc agtgcgcgca ccgttaaaac tgaaatgtca 900

ctagaaccgt cgcgattctg cgcttccccc ttttttttctg gagtagtgga ggagcggagg 960

ccggcgatcg tcgtcgtagt cgatgattcg gttccagatc gcattagctc tcgctaatta 1020

gtaattaccc atctgatata ttcccggctg cctcgttaat ttctccggcg caatcatgca 1080

tgcgtactgc atggcggcag cagcaacaac aaaaactgtt tttttgaaga agtcaaatat 1140

atatatattc agctagcttc gaccgaatac gtataatgaa caaatatatt aataatattt 1200

tatcgcgagt ggcatttcca cgtcacgcat gctttccgac ggccggccgg gcgtattacg 1260

ttgctccacg agacgcccag gcacagtaac ccccggtcgg tcccctccct cccctacctg 1320

cacctgcact gcacgacgac tggcgagggc cgatcgatcg tgcaggtggt ggccgatccg 1380

atgatccatc gtacgtgaca gcagggcaga aaaggcagag ggcggcgagg tgcatggcta 1440

catctggcgg ccatgccgcg ccacctgtcc ttccccctttt tcctcgtcgg cgaaaccct 1499

<210> 1908
<211> 1509
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313675_G1, chr9:99452166..99453674, Cluster 11

<400> 1908
gttttctacg acaacacatc tctagcacac ccgatgggac cactacatca gctcttcatc 60

tacatgcccc ctcaaagaat ggcgttgtcg ggaacaacat cgatcaaagt gaatggccat 120

aagccaaaaa tcggtccact ccaactcgag gtcctcaact aggagctctt agagtactac 180

aactagctag gtacttaaga cctaggttga taagctccta aaccatttca catggacccg 240

tagcaacgac atcaaggtca cgagcacttg aattcactac tagaggaagt caacctcgcc 300

acaccctcgg aggagcgcaa cgctgccctt cgacaagaga tgaactacat gatccatcaa 360

gtgatggtga aacagtcgaa gatcctcctc aactccatgg agaggatcat tgcatgagtg 420

gtcaaatcca ttttggtcgg caacaacatg gttccaaggc ccacgtttgt gtcacatcag 480

gtggagaagt tttatactcg atcgatggag atgatgtagt ttagagcatg ataaggcatg 540

aaggcggaat tcaacatcta tcaccctaga gcattgaatg acatcccctc ggtctatgac 600

caatcaccaa cattcatacc agaggggttt gaatgcaagc tgcagtacat gctgctatgt 660

gaggggggaat agcctcccca acggtcatcc cctaccactc aagataagaa taaaaatagt 720

tatcctaaac tatttgagtg gcaggctaag tttgaaagtg ggtcgactct cagcagcatg 780

acctcgtttt atggaggcgc tgacatggct atcatgtagg aagaactatt agggcttctc 840

aaagaccagt ttggaattct ccccaaacag aaggagacca actacatgaa gccctattcg 900

aatgagtttg accggatgtc acctccatcc aagttcaagg tcccttaatt cttcaagttc 960

aacaaggccc acaacaccat caccattgag catgtgagcc aatacatagc tcaactagga 1020

atagcagcag cggtcaaaca catgaaggtt cgactcttct ctctatcgtt atcgggacct 1080

atgtttggct catatacatc actcgatcct aggtccatca cttcttggga gcaactagag 1140

gagcagtttc atgcacactt cttcgacttt gataagatga tgatcttaga cctcatcgtc 1200

ctctgacaac ggtagtgttg gtcttcagag gcctgctcta cccaacacat aattcctacg 1260

acgcaacaga cttttaattc ataagcaaaa tgttggccca agcatcaact tgtttaaggt 1320

ggcatcctga ggcctagcat ggaaggtaca taaagtcgat atcttatcta taggtccaac 1380

aagaaagtga tgaagctgag gtcactatcg tcgattgggc ctagggcgta taacccatct 1440

ttccccccct agatcaaggc tcatgaggcg gtcacgggat tcaatttcga cctcatggag 1500

atagagcca 1509

<210> 1909

<211> 1420
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319856_G1, chr9:132819904..132821323, Cluster 11

<400> 1909
agctgcaccg gacacacgtc tcgcgtgtgc atgcctgcat ctcaaatctc aatcaactgc 60

aagagaagct cgggcttcgg ggttgattgt gtccgccctt ttttttttc aaacgcgtat 120

catcaactgc atttggcaac atccgaaaga tgtttacggt ttggccactg ccactccaag 180

tctctccagc tagaggccgt agtacgtacg tgccaactcg gtcggtgaca actgttgcgc 240

gccatgtcaa cggctacaat caataatgag agggatgtct acttgtctag cacgcaggac 300

tacccggacc cgcgctatga tttttctctt ctacaatcta cctgtcgcta gctagcagta 360

ggtttggttt gatttgtgtt tgccctttct cgtcgtcgtc tcgtccaaga agctcgggct 420

cccgtcctct ccgggcgtgt gggtgtggct gcgtcgcgtc gcggggagcg gagctgccag 480

cctgccaggt gtgccccgtt gagcgttgag tatgcggtgc cacttgggaa ctccgacggc 540

gacgtcgtcc ccccgccccc ggtcgtcgta gtggccaaca gttgcgacgc ccagcgcgcg 600

cagggtatgg cagctattac ggcacgtttt gtaattacac gtgttgcggc ggttgttctg 660

agagtcgtag aagcaaggga gagctactgg atgttctcca cacagcgtgt aggtttaggc 720

ttcatataag ctagctgttg ttttacaata catatatggt acaacttgtc tctccttgag 780

aaagttcgtt aggagtgtgt tattataccc tattcctaga gagtggagga agggtgtcag 840

attaacgctc gattaattag tttaagatta gacaccatgt gcgcgcggct gcggatgaag 900

aagggtgttt gattagacgg gtctcatact cgaagagttc tccggcccgt tgcctgcatg 960

cgccgttagc gacctctctt ctttctttct tttcgtgacc gtgtatatga caccccgaaa 1020

tgggccggta gcccacgcta gggattagtc gggccagatg gcccataatc aggtcttgga 1080

ggtccatgtg cgccacctgc cgccatggcc ctcgcgtcca ctccaccgtc cgcgtttgcg 1140

cgtcccggct gccggtcgcc gctccatcgc catggcgcct ggctagcttg acaaacgcat 1200

gcaacagctg aacccatgtg ccggatcgaa gccgcggagc gaaaaccgtt gacctcccac 1260

ctgcgcctct cgaaggggtg ctgttcgttc tggagcgttg actgtgaccc ggtagaggat 1320

agagacgggc atctgtaccc tcgcttcaca ctgacgcgct tctgctcgtt tagggcggtg 1380

cttggttagg ttaggtggtg ggtgcagccc ggtctagttt 1420

<210> 1910
<211> 1540
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_321088_G1, chr9:138586953..138588492, Cluster 11

<400> 1910
actagaagac ttgttgcaac ttgcaagtct aaaaggtcat gtaagagccc aaggcacggg 60

ttggaagaag cttgaacgaa gacacgatca gctgcattga acgtgtccga atatgctcta 120

agtaaaacac cggataacag aacgacagta tgcaccgaac atgttcaacg tgtcactaaa 180

tactgcacgt gacagtactt agagagattg cacaacaact cgagacgagc tataacaaat 240

gagacgagtc ccgtgcaaca ccggccggtc aatgcaccag atgctcgtgt tcagaaggct 300

gacaacaacc agtaagaaat tgaacaccta cttataaaac tgtggtacat gcaatcttag 360

actatgacgg tgaggacagc gaaccaaaca tgccccgtta gttgctcggt cctacgcccg 420

gtcgtgcttt caccttgcac gtcgtttgcc gttccaaggg aaattctcac ctagttagtg 480

ccctttttt gtgccagaga gaacgaggtg ctttggacgt tgaagttctt cgtgcaacaa 540

ccggttaaaa ccgaaccctt acgtctctac tcgcagacgc agtggttatt acgaaacgtg 600

tttcctttcg caaataaagc acctcagtag tcacaccaag cggtgcagta cgtacatcct 660

caccagtagt agtcgggcca tgaatagaga gactcgtaac cgagtggagt aaaatggaat 720

gcgttctata cgaattaaga aaaaaaacat aaattccgtc ctttttgtta ggttgtctgg 780

tcacggctgc aagcaaagga tgtggctggt gcgacaaaag gaacccctaa ttaactagtg 840

gatttgacgg ccgtgggaga tcggtttaat ataaatactt tgtttttta tttccttcga 900

gacctcacca aagccttccc aggtcatagt agtaagaatg cagagtacgt actagtactg 960

gcctccacgc tctagaaagt tctgggctca ctccgcgctg gacgccggct caccgtcacc 1020

atcttcagtc aactcaaaca cttgagagag aaaaaaatac aggaaaggag ctcgattgct 1080

aatgacagct gttctcctaa tgacaaccgc taacatggac gagcggggac acacgacacg 1140

agctctcaag tctcaactgc cgaatttgtg tgacctgctt ttgtcgggaa ataaattacc 1200

taacttttt tctctatata tatctctctc tcccttcatt ttttttttg cctaaccttt 1260

caatagttcc actcaaagcc gttccctatc taatttggat agagacgagt catggcctag 1320

agattcagac agatccgttc tactctaatc gtttgagcaa tacctgaata tgcaacataa 1380

ttatagtagc tctaaaaagg ttaactttat tcctttcctc gatagaacaa atcagcgaaa 1440

acaaatggtc aaaatacaag tggatagcat cttataagcc ttaattaatg cagcgaagca 1500

tggtcctttt ccagaaggcc taatggggat ccatttctgt 1540

<210> 1911
<211> 2546
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321863_G1, chr9:142819624..142822169, Cluster 11

<400> 1911

gttcgcacgg tctaggaaca tctctaatag attttctatt atcaaccttt atattaaact 60

ttactttata ctgtgtttgc acattttata cacgctccgt acgtagaaga taaaggtgtc 120

gaatcaggac gaaaagtaaa gtgtgagcat cttctcgaga atcatggctt tctaaggcta 180

tgacattttg ctttccatat ttgatttata ccttgctacg tcattgtgca gatatattat 240

tttatttagc cacttaactt gcacacctaa aaggtttttt ttttttttg caggcgcatt 300

tgagcagttt ctgcgctttt ttccaggcgg cagtcgctgg gcagtggccc atcctcgagg 360

agccagaaag aacggttaac cttcaataaa cggtggcttg gcgtagctgt ctttctacag 420

ggatgcggag cgggggacg agactgttta cagcatccct atagaaagaa cgacagatgg 480

gctcccgcgg tcccgcctcc cagaccccag tatatccctg aacctggggg aaacactgtg 540

tatatatgca aatgcaacag aagagatgca aatgcaacag aggagagaag agtatatgcg 600

cgcgtaaaca gtctcctgga tccctctgac aacaaagaaa caaacaagca ggagtaacga 660

cgagtagaca gcgacggcac gagcgaacga cgcctgcgca ctggtcaagc gtagagcttg 720

aattcttggt gtggctgaaa ctggaaagcg tagagtatac tgccctgaac tgaagcgcct 780

ttgttactga agatctactc cccgagaaac ggtgacagga aggtgaaatc gctcgctcag 840

ccggaatgat gcatgaccaa aaatctgtgc gcgtgctctc cttggctcct ccctgtgatg 900

gctactcctg ctaaattgct cgaagctagt agacggtagt agtagtgtag tgtgcgtgcg 960

tgtgaggagc agggatcgac gttggtccca ggaataggac caggtatggc tccgtccccg 1020

atggaacagg acgccaacca actgcactgc atcggaggtc tacagcacta ccgcttttgt 1080

cttggctgtg cttttcgtct gcgctctctc ctctcctctc ctctgttgtg gagcacgtcg 1140

atccatcttc cgctctttgc ctctttgggt ttttttttt gcttgcttgt ggtcaagtcc 1200

ggttggaaag gccgaaggag acgagcgaga gggggtccca ggctcccacc cagcccggcg 1260

gccgcgcgcg tccctttctc cttttcggat gccccgcgac gcagcaccgc ggcagcggca 1320

ggccatcgtg ccgagtcggt tgccgcgtcg ccatccccgc tacgctatct ttaccctggt 1380

cctcgcgcgt gttgttattt gttaacttgt cacaccacca cctcctccac gtacgccttc 1440

ttccctttct ccctctcggc ctcgacgccg actttgctcg cgctgacatg tactacaagg 1500

tacgtgcgcg ccgggccggg gtgcctggac cacaccacag ccggcgtcca aacatactac 1560

acggaaaaca ggcgcggcgg atgccacggg cgtgggcggc gtgtgtatac ggcggcgtcg 1620

gcgacatcca taggcttatg cgctggacga tggggacgtg acgggtggct ggcgtgggcg 1680

gcgtcgtgta tacggcggcg taggcgacat ccatagtcca gcatggtgct gtgctgacag 1740

tactaggaaa cgaaccacgt ggcctgatta atctgtgtag ccgtggtcct caataccacc 1800

ctggcgaaaa gtggcgagcg tgccgtacac tactcgatgc gcgcgctcaa cgcatacgac 1860

aggatgccat gcaatgcagg taaaggccag taccttctgc ggacgacggc ggcagtgcac 1920

tgccgtatac gacaaggatg tgacataatt cgtcccagtt attactgcag ctagtataaa 1980

tatacagttt acacaagcat gagcaaaata aggatatata taacgacagc agcagcaact 2040

gttcgtcgtc gttagctaca acgcctacta ctagctgcat gcgttgacaa aactggaagg 2100

acgcctgcta gacctaacaa gttttctcgt cagacgatcg tgttcgtgtc cagctgtgtg 2160

cgtttagcta gcgtgcgcgg agagaaccag cccccggcca agaattggaa ctcgggtgtc 2220

gtcctgtgtg tgtgtggttc cttgcgacaa aagcaacaag gcttcatcaa ctagcttcaa 2280

gtggtcgcgt gctgcgtgca tggacaaaat cacaaaaggc gcatgtgcgc ggtgcgccac 2340

acggcatgag agatcgtcaa ttggatggga tggtgcatta tcagcagaca gcaggcaact 2400

aagtgcacaa caaagatgaa agttggtgct aataatagag cctatatacc tagcctagct 2460

atagctatat attaaggatc tactgtagaa gggtactagc tactataccc atctctcttt 2520

ttgttcctca gacagacctt cacgtc 2546

<210> 1912
<211> 1700
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322827_G1, chr9:147650987..147652686, Cluster 11

<400> 1912
tagtaatgcg catcgcaaat aagcacacgt gtgtagagta ctatatgcat gggcctgaac 60

cgtaggcaaa cataatcatg gaaatctggc gccttcccct ctctgatcga tctcgtgccc 120

gtcgccgcca tcatctcgat gcacttgcca aacactcaaa cagagctgag acgagaagaa 180

tggtgagtga tgaagcgttg gaggagcgga tcattggggg tggatctgct cttgtccgag 240

atctgggaga atatgcaaac gttttatggg tggtgctgtc actgtactgt acccggtgcc 300

tgtccttggt gaggctatgg aatcttttct tgggttaagg acctcccgct gcagagacag 360

ggaatcgtac gaaccatgca gtacacacat tacttgtcgt catgttggac gaatggaagc 420

tatgcgccta ccagcagaag acccgattgg tcaagcgata ggtcaatttc aagggagaga 480

gagagagagc gagcgctgga aggtggctgc gagtctgcga ccgtagtaca gtacgttttc 540

cgtttccagt gaagtcagtc atcacagagg tcgtgggacg gacacgtggt agtagtagca 600

caaaccagaa ccagcggaag ggcccacgcc aggtgtactc ccgtgtgcca gggcccaggg 660

ccaaccaaca cgcgtatgcc gcggttaaac ggacgcgacg acgacggaga agaaccggag 720

aaggcaggcc tactgcaggt gcagcaccct ctccatgaat gggccaatac gtgctacagc 780

accctgcacc ctctccatct ccaacgccgt cccccgtcac ctgtgagcct gatagtgata 840

ctgattgctg gtcttcaccg tttcactgta gcctcggctg ctgcgcacgc tgcagtagtc 900

ggcctgtctg tcacacacag ccctccatgg tgacttggtg agaggggagg gacaggacag 960

acggctatcg gcaatccgcc ctcgaaagcc gaggattctt aatgccttct agctagcgac 1020

cctaggttta cagcgccatc cgcccatccg cgccggcagt ttttgtatcc agtccagcaa 1080

gcactgtggc gggaggccgg gcggggacca gggaacccct cgccggagcc ggaccggtga 1140

ctctctcacc gcgcgcgaac agttccggat aagatcagcg gccgagaaag gcggcctgcc 1200

ctgtgcgagc tgcatcccat tcacaggagt gagcactagc cactagcagg gctgggctgg 1260

cgcgttcgct ttccagcctc gccgatggcg tacgtgcatg gccttggcac tttggcaggc 1320

ctgcgccagc acccgtgctc gcgttcgcgt cgctggcgtg gtgttgcagg tgctgcggcc 1380

ggctgcggcc gcttgcttga acgacacacc gccgcgcgca ggaccgtcgt cctctgcccc 1440

caaatcccca atgcattacc acccgggcac ggtgtcgccg agtttggtga cctgtatttg 1500

tccaactaca cttgccacca ccacctatat cttttggtcg tcatacaata caatacactg 1560

atgatatacc acctccatcc gaaacaaaat ctaaaagctc aattacactc tttgttcaag 1620

tatctacaat ttaataaagt taacttttgc gacactgtat tttatatata acatggaaat 1680

atctggtatc atcaatattg 1700

<210> 1913
<211> 1676
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345198_G1, chr10:122268382..122270057, Cluster 11

<400> 1913
cgtcatcatg tctcgcatgt gattgacgcg cgaatctggt tgcgccgcgc ggtgcttttc 60

cggggaacag gacggctaga acggggaaca attagggtcg ccgccgttgc atgccatgcc 120

gctgcctagg ctggcgagcg cgatttcttt tccgttcccg aagccggccg gccggcgcgc 180

tggtacagta gtagtatagg tatagtagcc cgccctctct ctctctctgc gtctttcccc 240

tctatgcatg gctgaatggc tccatgtcca tggccacagg ggcgggcacg gccccagact 300

tcaaaaaaac gccagggcgt ggatctccag acaacggccg gcggtagtat gctgctgcct 360

gtccgtgtga cgcgataacg tggcggacac gggggttgtc catttcctct cgttcccacg 420

caccggcaag ttcgagagct gtactactag gagcaagaga aaacccaccg agagcgcggt 480

ggaactgtgg aagaagcgca tggactgctc cgcgccggcc tgcccagccc gaccacagca 540

gttgcagaga agcagcagga caaggcgagg ccaacaagca acacagcgag gcgagctggc 600

ggtcaaagtg gccgggcgcg catgcatgca ggggctagcc caggacacgt cgcgtccaac 660

agttcggtgg gtgattggga ctcgattccg atgagacgag acgagacgcc gtgatttgat 720

tttgatttcc tcactgatcc gttctccgtc ctgttcgcgc gcatttggct agctagggct 780

aggcggctag gactggaatc tagtggagta cgagtactac gtaacgtact gctcctggct 840

ccttccactg ctccatctcg cgctagctag gtacagcata gtgtatcgac agtctgctcc 900

aggccacagc gtgggagaac tggcaaagct gctagccgtc tagctactac cactgctaca 960

gtgctactcc actagctacc ggtggctgct ttctgcctgg gtcacgccgt cacagcactc 1020

tctcggccca gccctgctag ctgcagacta gcgcagctag ccatgctttc acctttcatc 1080

tttcatcaac gggaagcgct agctgctgta ctatactgtt actggaaccg acgacgttga 1140

tcgaggcgtc aacgactcct gtattcctac tgctcggggt ccaaacggtg cgcccgtttt 1200

ttttttttt tttgttcttg agccgacgag cgtcagcgtc gggtggccgg ccaatacgta 1260

acgtactccc gccggcccat gtatgcatat gccgcagtct gctgctatgt gctagtatgc 1320

cctatatata gctgctgcct tgcctacgcg agcgagcgag agagagaagt acgaggtgat 1380

tttgatggtt cgttcctcca ctggcgccgc tggcactact gtgcgattgt aaaaagcgat 1440

gggatagatg acttgtcaat gacggattga taggcgcgcg cgtacttgcc ctccagacac 1500

tgtcgagcgc tgtacgtagt aggcattatt gtaggagatt gtacagccct atgagcaact 1560

ctgatgcttc aaaactagta gagatttttt tagaaatttg aaacccaaca cgagctacag 1620

cggaatctca cagcttccaa atttggttcg agagaccccc ctcaaccgta ttacca 1676

<210> 1914
<211> 1862
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345199_G1, chr10:122270362..122272223, Cluster 11

<400> 1914
caagccctga agcaacgttt atttatcttt cctttctcca gtccagcgcg agcatacaga 60

gtctcgcccc gcggtgtcca catcaaataa aatgtaggac ccctgatccg agggtttcta 120

gtggagttga tgataggttg gtaatggacc agatagcgag ttgagcttga gcatgtgtgc 180

cccggcccgc tgcatgcatg gacgcatgga gctggccctg gcctggcagg gggggggggg 240

gggggggggc atgcacgctt cctcgagcca tgatagctgc cacgcgcggg gcatgggcgc 300

atggcgacgg ggctaaaaca gcgagcggtc agtgacgtga ccatgtagtc cacggtaggg 360

ccggccggag gagcaccggc gagacggggg ccagccaaaa gccccgtgct ggcagtccct 420

cacatgtgtc gccggccggc ccgttgctct gctcctccag ccccgcgcgc agtccagtca 480

cgtgggggcg caggcgcagc gcagagccgc agatggcctc ggcccgcccc cgccgtaccg 540

cgcggcgtgc tccggctcct cccgtcccgc ggcacccgcg catggcgtac cagagcctac 600

cagcagcagt ccagccagca cctcggctgg cacgtggcac tgcagtagca gcagcagcac 660

acgcacgaat ccatgcgctc ggatatctct gcagtgcatg cagtctgcat gctatgcgtg 720

cagcggccgc gaccgccgca accttgttca ccgcgcgttg gccggttcac acgcacggcg 780

gggcgcatcc gggagcccgg cgaggaatgt ggtctctgct gccagtcaga cgcgggcgcc 840

ggactcgttc gaattcgcgc gggctagctg taagcttgcg gtacttttt tttagctgcc 900

ggcggctcag tcccagaaag attccgtgct taatttttt tcccgatagc acatcacatg 960

ctggtgtagc ctgtagataa acaaccgcgt gctgtacctt ttttttttgg gaggtagcat 1020

actagcatga gcttcctggg gatacgtcga gagcagttgt gtgggccgag caaagcaagc 1080

gaccaagcgg tgtgcaagca agtgtgtggg ctatgtgaca cgttgggcta caatgggtca 1140

gatgaaattt actcccactc ccaacacaaa ccagatgagg aggtgttttc tagctacata 1200

atttctacta catttttttc cccttcttca gactccatag aaagaaaatg acaaggtata 1260

aggaacagca taaagattag catcggaagg aatttaaatt gctgctgcaa tacatgtgtg 1320

gctagccaga atactccaca cagcctgcga aggcgacacg acattcttcg attattagca 1380

taaatagggg aaataaatag tcagtaaaaa aaatagtcgc ggcaggttag ctagattcag 1440

ggaaagggca aacaaagggt gacgtgacta ccattcaccg atacatacat gtgttatata 1500

cgcaatggga atggaatgaa gtgttcagcg tactaatttg tggttcaaag tacacataga 1560

accccggcca taaaaaagga ttatgtcgcc gcctcgtgat cgtgaagcag cctgattgtg 1620

aatgtggaac tatatagtaa aacaaaaaag aagaactgaa cacaatctca tcaatcattt 1680

gtatcatgta tttattacac aaggacagga taaagtggca gctttacatg gctagatgca 1740

ggtgctaatg atcagtgaag ttctgaaatg tgacactcgg atgcaacttt ctgactgagt 1800

tatcagataa aaaaggaaat cccacctgta tatggacatt agactggctt caacggcgca 1860

cg 1862

<210> 1915
<211> 3006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346851_G1, chr10:132346201..132349206, Cluster 11

<400> 1915
acatgtaccc ggattctctt atattctagt actttgttgc tgctggttga attgagatat 60

tagtgttgct aacagcccgc gcggtagaaa gtaacgacat cagctgggag ctagctagct 120

ggtagaatct aggtatagca caagtgactt tgaggttcca tattgctctt tgttgtcaag 180

tgacaagctc ttattaacaa tcacagtacg taactggctt cttcttgcgt actacgtgtc 240

cctgcaagtc gacatcgacc atcgttgggg gcgtggccag atgatgtttg cagcaagttg 300

tgagtgtaca tatgcgtgca cagacagtaa aacgacaatc ttgataatcg cttgattctt 360

aattcaagat cgactggctt gcttgcgtag cgaattggcc tggccgcccc ttgcatgtcc 420

ttttgctgtt cttgattgac gatgacgacg accttgactt atagttgccg cacgatccta 480

ttatatccgt gcctaaacta actaacaaag tatgcgtcta gcctttgtca tctcatctaa 540

cttttaccgg tgccaatcga cgaacatata tgccgttgcg taaaagagga atgttaatta 600

ggctgagtcc agcagcctgc gagtgcggac tcggaaaaca cacacagcta gctgagggac 660

gagcgtgttc ttgcgaaaag ttgggggaaa taacatagat gatctacgat ataaatcaga 720

tcagcatcat catatctcat ctcatctcat ctcatggacc ttggctttgc ttcgacgacg 780

gcacatgtac gattgctcag atactaactg tgcgatcata caaaatggta ataacataga 840

tggtcgagga gaacgaaggt tgacaagaat atatctccgt ctgcagaagg ctcccgacat 900

atatggcgtc ggtcctcacc ttcctcggag gctcagctga aagcctgaaa attttactca 960

aatgttcaca aagcttatat ggatgactac gtacgtacaa tgagcgcccg cctcgtctct 1020

tgaggttctg aatttagaaa cgcctcctca cgagccacca cacgcatggc ggccgcggac 1080

gctaatgcgg tgaatttaca tgagattttc atgagaacta gtctacttcg ttttcacatg 1140

acaataagtt ggtcaagttg cccggtaacc agtccggatc tttctttttc ttttttaaa 1200

aaaaggagag ttgttcaact cgtgcgagaa aatccagata agattgtgcc gttttactag 1260

caggcccttg aggctagtcc acgatgcaat acgaattaaa gcctcgtctt cattacatta 1320

cacggttgta gggaaggccc gcgtggtggg aagcaaaggc ccaaggagac ctatttttt 1380

tcgagcaaaa gtgttaagca aagggtctgg tactggtact acgaatctcg ccacgcacgt 1440

aaaaatgctt cttttgcgca agcaatccac acggaatact ccttgtgcac ataaatatca 1500

cacttgttat gaaatgtatt tcacgaggat atacatgatt attgcatctg tcttaaaaat 1560

aagtgcactt ataggatttt gtgataagca acatgaaaac tacatattac ctcttttgga 1620

cgtggaataa cggttgtgct ttaaaagtag tgaaagtaaa aaaaagaaaa ggcctgtcag 1680

gactaggtgt aacatatata cctacaagtg cactcttgtt ttagcagcgc aaatttgaga 1740

tgctagaagg tatactcact cagggcactc caaattaaaa agaaaaaaaa aactagatgg 1800

tttctatgat taataattag gatatcagcc aaacaaggag cgccacagtg tcactgccac 1860

tccgttctgg cgccaagaat ggtactacag tagatggaac ccagccgcgc cgaacggatg 1920

tggagcggat ggcccctgct gcgcttccct tcccaactag cggatgtgga gcggtgtcgc 1980

ttcacttttg gccgcgcggc tgggtccgct ccacgcacca cgcgccgagt caccagcctg 2040

ccagcgtccg gtccacgaat cacgtcccgt ggactttgga cgacacgtct ctgacccggc 2100

tgctggtgct ggatggacct cataatcagg caatagattg cctagcctag gtaaccaagc 2160

aacaaacata tggctagtag tgaaatgctg cgactggagt accgtcagct aaacgcagcc 2220

ggcaatccac gctctgattg acacagcaga agccggaagc ctttttttt tgccgggcta 2280

gaagcctacg tctacgcgcc gtgcatccgg tgaacaggtg atgtggggaa agcgaccaga 2340

gcgaagcccc ggaaaaacct ggtcgctgtt aacgacagtc agcggtgtag cgatccaaca 2400

gtttgtgccc agcacgcgat agcagtacgt acgatgcaaa acgatgccgg gacaaccttt 2460

cacttccaga cttggattgg acacggtagc tagctagtgt tccagagttc gtttcggtgc 2520

gtgtcttctt cttcttcttt tttgtttcgt acccacctgt ttttggccca ctgctgggac 2580

gctgtccgtg gtagatgtta gatccatcgg tacgaagccc atgccaagaa ttttttggca 2640

gaaactggtg gccgcttgtt tttccgcccg tccgtccgtc cagtgggctg cgcgtctctc 2700

tgccctctcc gtcccctcgt acgtacgaca ctcctaacga ttccctgcag cgtgtaagct 2760

caacaacagt ttaccaaata ctccacatgt ataattgagc actatacatc atggcgaacg 2820

taacacttac caatagacca taaaaaagaa gaggtcgatc agcacataaa actcataacc 2880

gagtgtgtac gctcttagta ctaccccgta gatacagcaa aaactggtat taataaaaac 2940

acccaatgct agctgcccat aaatattctg tccgtaccca tcccaataat aaaagagcgc 3000

aactta 3006

<210> 1916
<211> 1519
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347549_G1, chr10:135691591..135693109, Cluster 11

<400> 1916
ctcgtgcgac gcaaagtcga aacgccggac ctgttcttcc gcactagtag gatacggact 60

tttgtaaaaa aaaaacgact caacacctgg aagtcaaccg tgtgaagtcg agggactagt 120

agtactacta gtatgctagc gctaaagatt tctggtccag ataaagcatc caattttgac 180

ccggcgacgg caagacggga gaggggccag caaggggtat tggctgttgc ctgttgcctg 240

ttgcctgtag gtgagttgag ttgagtggcg gccggggagc cgccacgcga gggggagagg 300

gcctcacgtg tcgctcgagc acatggtgca caccacagac tacacagaca gccgacaggt 360

ccacagcgcc gtccccgttc cgccacgttt attggccgaa ccttctgggc tctggcgcgc 420

tcctcgtctg cagccttcaa gactgaagac ccatcgtctt gccttgggag ttgggactcc 480

cgcagctacc gtggtcctca cgggttgcct gaaccctgaa cacaagaacc gggaccccgg 540

ggttttttg aatggtcaaa ttgccctagg cagactagta gagagactgt gcttggtgct 600

tggtgtttgc atctgaactg aagcatccgt tcccacgcaa ccgaggttta acggtaacgg 660

aacaccactg cactttgatc ctttccttgt ggtttgttgt gaacgaatct gccaaattac 720

gggttcatgg aatgaaggat tcgttccgag ggttgtgccg ctgattccaa tcagaacgga 780

atgaagttcg atgctgatgc tgtggattac ctgttcccca tggtgcgcta ggtcacaaat 840

attccgcccc ccggtcccta gttcgcgccg aacacgaaca atattcctac gggcctggac 900

ggcacgcaca ggcacagcac agaggtgggc acggagcaaa agcgacgcat caagcatgtg 960

gcctgcgtcg cttctgctgc ggttcgcagt tcggcgatgt gatggaggcg caccgcgggg 1020

ccgggtcggc cgtcggcggg gggtggggtg ggtgcgagcg tgtggtttgt aggcgggcga 1080

ccggttggga aagcgacgcc tgcctgcatc ccctcccgcg ccggcgtttt gtcaccactc 1140

gccctgcaac agaccggagc agcgcgggag gggaagcgaa aatgcggtcc tgcttgtcgg 1200

cctgtgcagt gcagcacagt tgccggccgt tggttcttct tccactcgtc ggcgggggct 1260

ggggccaggg tagcagtcag tctgctgtta cagatcaacc ccacgtcggt tgggggcgtt 1320

gcccgtctga tccgactctc tgttctcgcg tttcattcca tcaccatgcg accagtgttg 1380

tctgatggaa cgctgagttg agcagagtgg catctttgtg agaattcaac aaaaagagac 1440

gagagacgct agttaacgta aacgatagcg cgcgttctgt ttcaaaacta actttgagaa 1500

gttggaatta gaaacaagc 1519

<210> 1917
<211> 1427
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348259_G1, chr10:139298815..139300241, Cluster 11

<400> 1917
aataaacact gccagatgtc aaatcaaatc cgccgcgtat ctgaccgaac tcgttgcgct 60

gcacctttcg tgcgcgaccc tttgacaata aagaaacacg tctcgcacgc acgcacgcag 120

ggtctcgtat ctatcctagc cacacgacga cgagacgaac tgttgggcgt ctgcatgcta 180

ggtaaggttc gctgtgtctg tgtgcgctgc gctctctagc gagcgttacg tcactgtgga 240

acacgtaccg agaagatttg acgtgccgtg ccgtgccgtg gccatttgcg cccacatgca 300

ccgccactgg aaccacacat ccatttctgt cagtcagtgt agcgcgcggg tcgacaggca 360

cacacgacac ggcacgtaac gcctcctatt cgcaggtcag gttttattcg cctgggcggc 420

ccagcactcc acttccacta gctagctgcc ggtgaggtca ccacgcgccg ctccggattg 480

acccgctggc tggcgagtgg cgacggcccg cgaagcggaa ggaccgaagg ggacaggagg 540

acgagccgga aacgagcacg gcctgaagtc tgacctgctc caaatctcag tggacgcacc 600

ggcgcccggg acgaccaacc accaccacca cttccactcc cttgctctgc tccgcaccat 660

caagtcaacc tgttctcgtc ctccctcccc acgacgacgc acgcgcgggg cgcggtggag 720

atggtaggcc aagcctaaat ggagccacgg tggaggtcgc tatccatcct aggccggact 780

cgctccatcg gcgcggcgcg gggacctgca gacgcccctc gctctcccgt ccatgtcgct 840

ccaggaatgt ccctagcgct ccggtccccg ctccctttcc gtttcgattc gggtgccgcc 900

gtgccgggaa ttgttcgtgc agcggtgcag cctgcaggtg caggtgctga cctgctgtaa 960

acctgtaacg cgcgcggttc gagtttgtaa acctgtaacg gtccccgctc cgtgctgcgc 1020

cggtggacgg aacgccagtc actcagtcag tcggcgggac agtttgcctc aggtgcgtga 1080

tctttttttt tcctctcttg ttggagaatt agttccgaga gcataaaaca tcatgggaac 1140

ggccggttgg gctaggcaac gagagtcggc ccagaaaata tgagaggccc atatcaatgg 1200

tagactcagt tctcctttca tcaagcattt cctctgggcc tacttttca cctggacctc 1260

aaccttggag atcagggata ccgtcatccc tctaccataa ggcagcccat cgacttccca 1320

ttcggccagc gtactcggcc cagcatttgt caggtgaccc atcccgttac cattgcattg 1380

tttataaact agtggatgag ctgtttgaga tagccgcttg tcactct 1427

<210> 1918
<211> 1540
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348380_G1, chr10:139882335..139883874, Cluster 11

<400> 1918
ctctttaatc caaacagtca tgtcgaccac cgttgaaagg atgtaccaca attaattcat 60

agcaaaatgt gagtagttta attgagtcga tgcctcgggg tatcggccct ctcgaggtcc 120

ctaaggatta gttatgacca gtcgtgctag gaaaaaaatc aaataaagag aaaaatgatt 180

agttatgatc agtcgtggta tccacaaact tatggaatct atgtgcatgc cacccatgtg 240

tagaagtata gcatgatggg ttgtttggtt acttatgcat gtgtaatttg gtgcacaaga 300

gagttacctc gatagactat tcattcaaag cactcatcag atgacagatg atgatgcccg 360

gcctgcagaa attagcaact ttgactgtac cgttctattc caaaatacat ttgcgcggcg 420

gggccggata ggataggaca gtgtagctag ctctgtccgg gtgtcaacgg aagcgtacag 480

tatgaatcag cgacgtttag acaagattag acaatgagtt cgtacggtgg gcaggtgtca 540

ccgatggagc ccccacaccg tacccggtga ccacgagacc ctctgcttga tccaacatcc 600

caatccgcgg ctagggtatt atgattacgt ctgtgttttt gtttcggact gcaatctata 660

agacaaaaac attgcaaatg cattagaaat cagttcaaat taaagctaaa caattgagca 720

aaacggaaca gaggtctcct ttctgcgaaa ccctttgcac accccatcaa acggtttcct 780

cgtccagggt cctgtcccgt gtgacatgca tggccgacgg agtgatggct gtccgggtct 840

cccggtcact gcccagaccc cagagctgac tgacgtccaa attccaatga ccaatgcaag 900

acagcgaggg tctggaagtc tctctccgcg ctccgctggc gtttgcgttt gcgtgcgaaa 960

tcaaacgcct cgaagcggaa atataaaata tcgcgaggga aactgaagac attaacggac 1020

gtggacgctg tttcggctga cggatccatt ttcccgcgct tgatggaact tgatcgggtg 1080

agaaaaaaag atccaaaagg ctccgttgcg tcatcgcgtg gacgaggacg agactgcagg 1140

aacgggaacg ggcaatggca tgctgactga caggccgtca tcgcacggtc gtgtctcaag 1200

tgcagccgcg aggagtacac tgtacacggt acacgtaccg acgagagggc ggatcccgtt 1260

ccttcgtgtt tggtggagct gcagcggaat cgctagctgc ggagggatcc gatgcggcgc 1320

tgtgcatccc tgatacctcc aatgccctgc gttattcaat cccgatgctt atcttcgtct 1380

tctcgccctc aaacaaacaa tttccagttt tcactgcatg catggtaatc gttagcgctg 1440

ggacctttca ctgcatggta cagtaataat tagcgctggg aactgatgcc atttgcgtca 1500

tcttctccgg aatgaacgaa cactatcact atccgctttc 1540

<210> 1919

<211> 1486
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349253_G1, chr10:144515021..144516506, Cluster 11

<400> 1919
cttttcagaa accaaagaaa aggcatgcat ggccgctgct atatatccca tgattccgtt 60

tactatattc atgtatatgc gtcacggatg atatgcatgt tctcagcttc agaaaaagaa 120

agggatcggt gcagtacgta gtggggttac tgcatgcagg cgctgctgca ctgcgatcgt 180

gcttgctgac agcacaagta tatggtatat ggtacagcga aaagaaaagc tagctgtttg 240

gttatcatgt gtggctgatg catgctcatg gagatgcatt atgaggatga tgttaatata 300

agaccaatgc aagctgatga agaagaaaaa tagcctatgc tgtgccctgt ccaataattg 360

atgcgtcgac ggtctcctcc ctatcctggc caccgatgat tgatggagca agtagcatgg 420

agacacttgc ccacccaccg ttctcaaacc cagcgagagg aagagagaga tacgtgtgtg 480

tgtgtattgt atccaagaca tatcttgcaa acatataata atgctgtcca tgcaatcatg 540

catgatacat atccttaacc atgcatacct aacaagacgc tgctccaaga ttttttttt 600

aaaaaaaaaa gtcagtcaaa agccggcgtt tccttggacg gacggaccaa cacgaaatgt 660

cttcttcatt ccttcgtcca gtgagaagct ctgcaccagc tgcacgcctt cttccttctg 720

caggctccaa ctgccgatcg agacttgttc ctggtcctct cctgactgac gacgtgatga 780

ggacgaaggc acagcttgga gtttcagacg atttcacctc ctcgtcaggc aggcttacct 840

gcaggctctt cccggtgcaa attctcgaga ttctcatgcc tgctggtata tgcatcccaa 900

aggaagctag agtagtgttg cttcgctggt cttgtttcga tcaggtcaac ttctgcacag 960

atgatgtata tacctcacgc gcgcgtacgc ggatataccc tctgaagaag acccatcacc 1020

gttggtgctg aactttcagt cctagccacc agtatgagca gcacactgat caatcatgtc 1080

ggccacgcag aacgtcaaaa tatatttatt tttttgctga caaaaaagaa acgccaactt 1140

gggctccgat tgcgcgtttt ccttctcggg cgggccacag cctgagagaa taacgaacga 1200

ccaaaggcgc aagaaaaaga cgctgtggac ggtggatcga ccgatcgtcg cctcctcctt 1260

gcttactgta cgtatttgga tttctgactg ggttctgtac ctcagtttca ctctccacaa 1320

gatgatcgaa ctagagtcta ttagacgctt tcatggatcg tcttgctaat tgaagatcat 1380

agtactaact actaagcatg cagcgaaagc catcacacgc catcagctta taggccacat 1440

ctactcactg atcaacactc tataggccgg ccgccccgcc tgccta 1486

<210> 1920
<211> 2781
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3605_G1, chr1:18639579..18642359, Cluster 11

<400> 1920
ctaataaagc gagaaataag gaggggatgg ttggagttag tgtgttttga ttttagactt 60

aacacctcca atgcatattt tctatagcag attttttttat gaagaatacc atttgatgaa 120

caccaacata tattaaaaaa tgagaacgat catacgtggc atggcagtca tatagcatga 180

gccatgatag cataacttgt gtggttctct tctcctcact ctagcatgta aatccagcca 240

acatggtgaa taccgtgcgg agcgacacat ttgaacccaa gcctcccgca gaggcaccat 300

gcaacaacac tgcacgacta gctggtttcc tctcttgatc cgcgagtaga ctttgttaat 360

ccctttcatt tccctgtcta ccaaaccagt ttttagtgag aaaaaaattg tttctatgtt 420

ttctattctc tctattaatt catgtgggta ccttagcaaa ttgtttagta ttaagatagt 480

taagggtcca tttggatcta ctcggaactt tagagctcta aaagttttag agcattttaa 540

ttgagaaagc aggctaagtt taaagctaaa tctatatcag ctctaagttt gaaggagtga 600

atctaaacag actataaaac aaatagaaac tactattaat gttctattgg gagatgatta 660

gtggcggtgt ggtggccatt aggagaggat tagtagtagt ggcgtggtgg ccttatatag 720

gcccaccaca gccacttgcg ttctgctgac gagacgaggc ccccctcacg ttgtcggtaa 780

ttgccgttgc ctttgccttt gcttgcaggg gaggggaggc atttttgtgt cctgtgttca 840

ggaacgtgtc agtgctccgt aaacaaactt tatctggcat ttgattttga aagtaaaatt 900

caaataacag gctcggtttt ttatggaccg tttagttgtc tccgaacttt gcaaaaatga 960

cactcgacag gtcggttagt ttacatgcga cgaaggaagc gaggtgccaa ggataaacca 1020

gtactgagcc gaagataacc acggatgctg caagccttgg tgtcgagcaa tgtcagctgg 1080

atcagctcga gcagtcgcat aaaagcagca gagtacaaaa cccggcgcaa aaactaagcc 1140

ccacgccacg cactgttgcc gagtccacat gcagtgcagt gcaaggggg gcttagttta 1200

caaggcagcg gtaggaaaga gcgggagata ggccaaggga ctgcccgttt gtttttgttt 1260

cttcccacat cttttattgc gtgcagggat ggctgtcagc caagggcatt gggattctta 1320

gcgccacgca tttgtttaac ctccccctcg cctgcttctt aataaaacca taaacatttc 1380

atctcctgtt ataaaaaaca tgaggacaca gctcacagtg tcccggctcc catgctgcgc 1440

tgcctgcaaa tactatacca taacacggta atatttattt tcgccttccg tcgatggagc 1500

cggtgcacag ttgctcgctg tccgcgatgc atttgtatct gtatgcgacg cagagatgcc 1560

gatctcaaca gtaacaaact ggtttagtaa taagagaatt agaaacgatt catagagaag 1620

aaaatccttt gttatttaaa ttttgaatat caatagattt ttatttttt atggactcac 1680

ttcaattctc ttgtcaccaa aatagcccta aatggctaca accccatgtc ccagttccaa 1740

gtttcttttt tttttcttct caccctgttt cgagtgacat gccaaggaga acatggcata 1800

gtacttggtg ttgcagcaaa tcgaagatat gttccgatca gcgcagtggc cctcctagtg 1860

tcactagact agagctgggc agaatgagca ttcggtacca gcagtcatct cgctatctca 1920

gatcatctca aggcccgtct tcctttctgt ccagtgagcg agcctgctcc tgctcaatca 1980

cccgtcaggg cttgtgatga tgcccaggcc tgccaaattt caggcacaaa gctgttgcct 2040

gttgcatcga acaattagca gtgtaacaag tacacatatc ttcagcatcc atatcctttc 2100

agttccagat tcttctctct ctttttttgg ggggcacagg aggaaatagt gcagcttcaa 2160

tgcaatgcga tgtggttgga tggtgatatt atattttctc aatccagaga gagcagtcat 2220

cacatcatgc ttggacagac acatcacgtt ggccggtggg gcgtggcatt agtttacctc 2280

tgatccgcag caggagcagc tcaattactt tacccggcgg cggctgcggc tgcttctgcc 2340

tctctgcttc ttgtttatta gcatgagatt tcaaaaggcc cggatcggcg atggtgtcgc 2400

tagagcagag cagagcagag cgctgcggat tcctttccga tcgagttgca gttgcagatg 2460

ggctgtccat ctccaaacac cggaaaggcc acgcactata atttgacctg acctgacctg 2520

accatatcat actgcagttt gccccgcacg gagagacgga aactgggtgc caaaagcggg 2580

cgcctttctc agtgggcttc ccgcacggga tattctggtt cagcttatca tttgcgactc 2640

gagcgctcca aggtaccgcc ggaccatgcg ctcacagaac agaaactggg agtggttttc 2700

ctcactgatc catcctgctg tctatcttac agcgtatgcg cgcgccgtcc ttgccagatt 2760

tcaaatacaa atccacctag t 2781

<210> 1921
<211> 1784
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37214_G1, chr1:224102365..224104148, Cluster 11

<400> 1921
gcctgtagcc tgtagacgac ggggcgccgt ggttggtcgc tgcagttatt gggctcacgc 60

ccgctcaagc agtgggtcga ggaggcggtg acggcgtgcc gccggtgccg gtgccgtgcg 120

tggcatcatg ggtgggtgcg caccttttga ccagtgcggg ctgcggagtt gggcagtttt 180

tggccttgat tatcaccgcg gttcccggcg acctttttgtc gcgcccgttc tccggtttct 240

gcggaacgcg ggcgccgtca gcgtcgggca ctcagtcggg cggggagcgg gggagtgggg 300

acgctgtgcc gtttcagttc gcgcgcgcgg ggggatccac ccacgaggcc acgacccacg 360

acggccgaaa agagctgcgc ggggctcggg aagtcggggg agtgccggag tggcgtggga 420

cgacgcgatt tccacggaca gagggatcta gcatggcgag caggtcgtgg agccagtggg 480

ggtatctcca acgtcttttt attgctggca cggcgagccg gcgaggggcg ccgagcgtcg 540

tggatcttgt tccgcacgtg acgggcagaa gctccggtcc gtccttgcta gcgatcttcg 600

ccgacccttc cgttttgcgc gatgcagcca gacgtgtgct tgcttcccca tcgtgtatct 660

ggcccagcct gcattttctg cacatgctgg ttctggccgc tagctgtgct gtgcctgtgt 720

gtgctcgact cgtcccacgt tccgtccggt acaccggcaa gtatgtacac gcaccaccaa 780

gtgttgtgtt ggtgtgcatt tggtctcctt gagaaattaa ccaatggctg tcaggctgtc 840

attgttgtat ggacggttga gtgcagagtt ggctaagcca acgtgacgtg caccaggttt 900

ctgatcagag gggggttacg cacgtgccgt tacggccttt tagccagtgg tggtggattg 960

cgaaagctcc tttggttttt agtgcgtgga cgcggacgcc gacggatgaa gaagagtagt 1020

cccggtctct aaaagctgca cgagtaaaac aggccactga taccaaaaaa aaaatataca 1080

cgtcagaaaa gcacatgttg cttgatcgga tgctaatcca gttagtgctt gtggtttcgc 1140

ctttggacag ggtggaaacg gaagtatact gctcgaacgt agtagcagta actcggccaa 1200

agaacggaag agagaaactt gcggaagtgt ggtgtgtggc acggcgggcc cgcccgacga 1260

cacaaaacct ggtacgcaaa ccagtgctag tactgcgttt gacgcgcgcg cgccgcgcgc 1320

ccaagcacgt cgtgacacgc cagacagtag ttgcacacag acttgtctcc cagggacagc 1380

tatcgatcga taaccagcag gcagcagtct actaagcaag gacgacgaca gcagccgccc 1440

tgcatcacgt accctctagc gacgcaacaa cgtgctgtgc tgcccgttcg ttcagcctgc 1500

cgctgcgtac tggccactgg cagtggcaga gctacggtca accaccgatg ccgactaaca 1560

tcgttacatc aatgacatgg tgatattctc ttatacctat tcgttaaata gaagaattgg 1620

taccggtaaa aatatgatct taacagcgac ggtccagcag ctaggcgtcc ggtcagccag 1680

cccatgggcc atatggccca taatctcagc aaataacagg ccaatattca ataatctacc 1740

gggacacctc ttggctcttg tgtatcactc ctagggtgac aata 1784

<210> 1922
<211> 1408
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37265_G1, chr1:224467351..224468758, Cluster 11

<400> 1922
tcatatacct aaactagcat aaattctatg tctcgtgcgc taccggtata actagattac 60

acaagtaata aataattagt ggcaacaaaa gtggagtact aaattttggg aagaaatgga 120

attagtggaa acaggactga cctattgctt ttgtcactca taatggtgta tggcctagtg 180

ttgataatat tgagaccatt cttgaatgtg gtcaagaaca atttccatgt attgctcggc 240

taaactttac aaaagtgccc aagctatagg gtatatggag acatggagtc atttccatca 300

taaaccggcc tagatatttt agattggata ttcaaaaaat taaatgatta aagaaattag 360

tactctaacg ttattttgtg tcaatcccaa cagcagagaa caattggaaa ccccccaccc 420

cgcacaacac acacagtttg tttttatgtg aaaagcatca acacgcaaaa ttggctcctt 480

ctgcaagcgt ctaaattttg cagtgttctt ggcggaggtg gacggagaat atatgtatta 540

tttggcggtg ttgtttgtag cttggaccgt cgacaaagtg ttgcaggcat catcattttc 600

ggccggaacc gcgacagccg gctggggacc tgggtggcgc cggccatgca tgtctgacgt 660

cgagtcgcaa ctcgcaaggc ggagcagaga cgaggctcca cctctctcaa ggtcaaggcc 720

gctgttgcgg cacagccgca cagcacaggc gaagcaaaat aaaagccgga cggacgaata 780

gggcattgca tctcgcgggg gcccggcccc aaggcggaag gcgacggttg tcccgagagg 840

cgcggaatcg gccctgcgaa cgttggaaga gccggagaag gggacggagt tgagcacatc 900

tggtgtggga cgcggcggcc ggggtgacgt cactgtgctt gtcgcctcgc tatgcgcctg 960

ccccggcgag ctgatatttc ttgacaaggg atgggatggg atgggaaggg aagggaaggg 1020

aatggagacc agtcgctgag cgggcgggga ggatttgtga caaaaaaacg agttcaagcc 1080

aaatgcggaa ccgcgcgcgc accgcagcca cgggttaccg tctgacagcc actactttct 1140

gttagggaaa ggtgtgattt ttttttttca tagtgcagca gcaactacaa cgttgcaaaa 1200

aaaaaaaaat cacagccgat caatcaccgt tgtataacat gtaaatcttt cgtattcctt 1260

ccttcctcag gtccaaaata aatggttcgc gtgctactct ttgggagtca aacatttta 1320

taatcttact gaatatatag aaaatgttat caactttcat atcttaaaat aagtttgtat 1380

agaagaatgt catatccgta aaaaagaa 1408

<210> 1923
<211> 3626
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3733_G1, chr1:19232372..19235997, Cluster 11

<400> 1923
agctacatca tgaactgttg tcatctacag taggtgccaa caaatatcat gagttttgtt 60

aaaaccattg ctgttcttgg acagcaatac ggccaacgtg gctccgtcca tgctgatgac 120

aatggattgc acacagattc taagactcca tgtgagagga agaggtggac taggtattaa 180

atatgtagct tgtattatta taaagttatt atatgtatag gcttctattt gggtatatat 240

aagacatgat aatattataa agttcactaa agattatatt attaaactag ctgtgtcgat 300

caaatccatt ttgctggtac gtcggcgggc cctcactcac acactatgaa aaacgacagt 360

ggaaacgtag gagcacgcag gcacagcagt agaactagct cgcacggaaa agcaagccta 420

cagagcacag tagggtcacg gcatctcctt cgtgctcaaa aagctcggac agttgccggt 480

accactttta tcagtaacgg ctacaggacg tgggcacgtg gcgagttttg cacggtctcc 540

agcgcctagc gcaaaaatcc aaccatgcac tcaatgacac gcacgtttct gaagcgcgga 600

gcgcagcaaa ggtcaggaaa gcaaccacgc gtggccagtg gccggcgagg aggaggataa 660

gactcgaaag ctgcacactg cgatggtcgt tttcgctaat ctggcctttg tcgtcgcctc 720

gtcggcgtct gagatcactc cagatcagtg agatgaatgg cgcgcggctc cagagaatgg 780

tgccatgtct gacttttcca cgcatgtgaa aaatacgtcc aaaggcttca ctgtgcgtta 840

tttacacacg gactgttgcg cgcacggcgc atccgtcgta tgtgtgagtg tgaccgcatg 900

ggttgggtgg gccgccgaca cgaacagctc ggctggctcg gcacggcacg ccgtggccgt 960

acccgtagta cgccgcctgc ggccggagat cgacaaagca aggcacgcac gacgaggcaa 1020

ggaagcgggt gagaatcgcg tgtgtcgtcc cgtcctctag gctctcacag cctctgcctg 1080

tttccccgga cgacgccaaa accgagtccg attcgtctac tccgcggctg atgcctctgc 1140

ctgtttccat tcggcgcgtc tgctcaggca tctgaaccgg ccggtgacac ctaggcgcgc 1200

gcccttcttc cctactccct agtatcgccc ccgcgcgctg tgcctcacct ctacccgtcc 1260

gcctgtgcgc aactgccgac gtgttcccgg gcgcgcgggc tccggcgctc gtccaccacc 1320

ccacccggcg tcgcggccac ggcgtcgcgg ctgtcacggt ccgagaccga cgcaccacgg 1380

ggccggtggt cagtagcaag gacccggcag cggcacgccg tgtcacttct aaaactgtgg 1440

gctcagcagc ggcgaagggg agggaggctg cgcgtggctg gcggtggacc agtgtaaagc 1500

ccgccgcgcc gatgcagcag gagagttttt ttttttagtg cgcgtggcca gaaccggcca 1560

gaagactggt ggtgagcgag actagcgggg cagtggcaga gcactagcga acaccaaatg 1620

tccggtagcg atcgaaagct gccgtcctgc atggcatgcc agccacgccg tcgcgtcgtg 1680

catggatcca gacttccaga gcagcacagg tcgagtcaac acaacagccg ctcctttgcc 1740

tttattacca cgtggcatgt ccgttcctgt agcctgataa ggctggcgtc gggcccgggg 1800

cgggaccaga tttgacgacg ccctacagtt tgtagtagcg gtactactgg acgttgcaaa 1860

cggtactgtg tgcgtgctct gaccggaagc ctgccccacc cagctatggt ctcgggtcac 1920

cgaacgtggg gcatcgccaa ccggtgtgta tacaggattg gtatccacac ctccgaaccg 1980

atagacgcca tgggctatgt atgcggcgtc gactgtcctc tccttttttct agttggtgac 2040

tgccggtggc ggtggttctc cgcgctgccg ttggtcctcc ctccccgtcc gtgaaccctc 2100

ccaacctgat gctgttctct tcttcggggt ggcgaggccg tcgtttcccc ccgtgtccgt 2160

gattccgtga aggccggctg cagtggcaga caggcgcagc gcgccgcttt ctttcgatcg 2220

cacccgtcgt ctcagcagca gaagcagcag cagcttttcc actgtcctga caggatcact 2280

cacactcctg cccatgccat gcactgatga ccgatgcacg cacacctcgt ttcgttttcc 2340

aaagttttct actccgggca cgggcggtct gctgggcagg gctgggcctg ggcatgcgca 2400

gaactggtgg atggcatcgc agcacggccg aaccgaacgc gaaccggaac agagctccgt 2460

ccccggcggc ggcgccggcc cggccaatgg agaatcgtcg tcgggtccga gccgagggac 2520

gtgggaagaa gacgacacac acacccacac ccacacgtcg ctgcccgtct caggtcctgg 2580

cactagggag tgggagtgtg tgttggcact ttagccatcc atccatccat caatcaatcg 2640

gtgtcagtca gtcagtcggt cggcagtgcc cacgactttt ttttctgcgt ggggtgggcc 2700

caaaagaggt tgcttctccc tccctccctc cgcgccctgc ttttttcaga ggtctaggaa 2760

tagattcccc ggctaccccg ttctgagggc gcgggaaatc ggacgcagtg gctggcgttt 2820

cgtacaagag ataggaactc ggataacagc gtccatacat tgaaatgttc gggcttccgg 2880

aacacgtcgt tcggatgttg ggcaatgctc atctgttcag gttgtgctcg aataaaacgc 2940

agcagccagc gggacagtct tcacctcact atcttttgc gtcggtggcc tgttcctttt 3000

atgaggagac cgatggtttg gcagggcccc cgatctcgat cgaaccgcca gcacggcacc 3060

cacaccgtac cccatgtcga gaagcatgca gaaaccatca tcgtcttcgt gcacccctgc 3120

gaagagttcc gttgttgtgc tgtgcctgtg cgtcaccctc accctgatgt tgatgaaacc 3180

agccgagccg ggtagatcac ggtgttgaca aagcggccgg gccggataag gtagcctttg 3240

gatcatccac ggtcaccccg aaatttaata aaagccgccc tctcgccgtc tcgcgtgcat 3300

gcatgcatgg ccatgcagat gcacgagcac gacacgagga gaaaatcttg gccgaggccg 3360

ccgtaccgaa gcattcaact ttcaacatcg ctacgcctac gctagctagc tagcctgcct 3420

tgctgcgtgc cgtgccgtgg gaaaagatga acacgagaga gcatcgcatc tagaagaacg 3480

tcgatcgaga gtgcagcagc aggaggagct gaggagcgcc gtgcctggcg tctgcctagg 3540

ccctagggtt tcgagccgta gccttttagg ctgctagctc caactgcagc agcatcaatc 3600

gctaggtgta taggttgagc cgccgc 3626

<210> 1924
<211> 2218
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37808_G1, chr1:226930664..226932881, Cluster 11

<400> 1924
cacgaaaatc tactcgcgta cttacacgaa ccacatcatt acaggacaag agagacggga 60

aactaggatc aatcctaaac gtacacttca ttacggacaa aaacagtgac gcgtgggctg 120

atttgtgcgt gaaagcgaaa gaatgcgttg ccaaaaccag agattataga cagctgttag 180

ctcgcaaatc tatcgatgta aaaccgggag tatatatata tttaaaatta ggcggagcga 240

gccgtgatga ctgaagttat gtgtttgacg tagatggcga tggtttttct cccactttcg 300

tgtattgaca agtcgtatat tttaagtccg gataaaatcg gcgcaacagt cgcaagtgga 360

tttcaatgct tttcttctta aaacaacaca tgcgcttacg aatatatgca cgcgagcaca 420

tgtttagcta acttctttcc atgcatgcac aatattaaat tacagagtac ctgtaccatg 480

ccactttgta cccccagctt gtcttaatcc tttatgttta catttatatg cataccctct 540

tccacacgaa agtataatca ccttgatctt caagtcacct acagctggac ctcacgtgta 600

agtgtaatca cctccccttg tcattcggtc attccccgtc ctctcgcacg cacggaatgg 660

atacttgtat ttttaggata gtaaataaat agataaaaat gtactttaaa tagcacgtga 720

acgtgaacaa ttcgacgcgg ccattctttt acgctttatt atttggcacg gtctgtgtgg 780

aaatagcggc cgggacagcg atttctggga ctttcctgga acgagcgcaa gtaaaaaaaa 840

agcggtgaaa cggacggggc acagaaaagc gagacgggaa cgcacagacg ttactgcgaa 900

aaagtccgcc tccgccgccg gtctcgtgcg ccggccgaac cagaaccaga gaagcacgcc 960

gaggcttagc cgaggagccg agccggagcc ggagccgggg ccggggcagc gaccggctgc 1020

gcagacggcc gcggccccca ccacgtggtg gcactcgagg tgttgtctgt ggtctggctg 1080

tacgcgtggg cccgcactcg acgttcgttc ggaggccgga tcttctgcgg cggccgattg 1140

gattcgccac cggcgtgcag ggtagccggc cacccacact taataacgac gagtaaatgc 1200

atgtttggct cggatatgtg ggcaaatccc agctttttcg tctatgatgt ctgtggtgtg 1260

gcgagccgta tcattgcagg taccactagc tttagttggt catgttgacc gggggggggg 1320

gggggggggc gcagagcgta ataaatcacg gcgaccagac gacctagctt acttgtttag 1380

atttgtggag gaataatgat ttgggaggaa tcatttacct acgtcatcgc gtgcgcaatg 1440

agcgggagat cacggccata atacgtacgt acttcgttaa cgacggcgca cgtagagtac 1500

tgcctgtgca gtacctttcg gtacctttg gttgtgtgcc gcgcgctctc ggcgcaggcg 1560

cgcagcagtg aaaagacagc tagcttagct ggccagcaca gtagccatgt gacgacgatc 1620

atacgtacgg tatgtacgtg gcgcccgcgt gcgtgatcag atgggttatg ccagcatcaa 1680

aaatcaatta aagacagcgg cggcgagggg gaggccgcga cgacgtccgt tccgcacccg 1740

cgtccgcatg ctgcatgcat gcacgttgat ggcggttttg gacgggcgcg acaggacagg 1800

acaggagagc aggtgcaggt tacagccggc cgcgcgtcgc tgtccgccag gccgtcgcgg 1860

gttggcatgt cctgatcctg acggcagaat ggttggcttc gatacgatta tattacgggc 1920

tgggtcggcc cgctccacgc ctccacctca ggtgaagagc tcgggtacgt acatgttggg 1980

cggtgcgtga atcgacgaaa cactggggga gattcctcgt ctttgttggg ttttaccgta 2040

cgtcgatcca tgggtacgta ctactagtta gcccccttctg ataatgctag attgctagtg 2100

atgaagagca tatcatgccc aagcgcttat tgtatactcc tattggctac cagcctaacc 2160

atatacggca aataaatagg catcgtcgtc aaccctccgc agtcgggagt ccgtacca 2218

<210> 1925
<211> 2350
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38533_G1, chr1:230791099..230793448, Cluster 11

<400> 1925
gtagaaaatc taaaacattt tataattaaa aataaaatct aaacatttag gccatgatcc 60

aaacctctag aaataattgt tagccgtgaa taagttacta gctaggttta gctgggctag 120

agcagctatc aacaactaat aggtatttgt gaggtataac taacaattag ctggtctatt 180

aactaaaatt actgaaatgt ttacaacgga gccttagatt atctctagta gactccctat 240

tgtacaccct atcttattct atatttcaag ctctaatctg caaatattgc gatctacagt 300

gcaaaactgt actttgcatt ttacacggac cggtggagat agtcagatag cttaccttaa 360

ttttttagg ataattggag cactatacaa atagacgacc ctgcattaga aagtttatac 420

ctactactgt tgaaactact agtaggaagt gaatgccctt tcccaatttg tcgccgggtt 480

cttctctccc catccctaac cccaacggtc ggatctcaac cacctccccc gtagcagcga 540

ggagcgagaa gagagaaccg agggagcgag aagaaaaggc caagactcct ttgacccgtg 600

aacagtgtcc ggacccccac cgcgcgctga cgtcaccggc aagcaagagg gcccgtccgt 660

ccgtcgaagc gcacgtggtc ccacggcggc agccgacagc gacccctcat tcacgagcgc 720

gcgccggtgt gacaacaacc cccacgcggc cacgcctcct ccccgtcccg ttgctttccg 780

cggcgctcgc tgtcccttgc gggctggcgt ggcgcgggcg cagcgcagcg cagcggccgg 840

cacccggtgc gtggtgcgtg ccttggttgt tcttcgccgc ggcgggtgtt cgtgtcgatg 900

gccggttcgc ggtcctggga cctgggtccg ccggtcggac cggtacgtgg tggggctgga 960

gctggagcgg tatggagacc gggccggggc gtgtcgggtc tgggcggctg gccaggacca 1020

cgttcgagta cgagtagtac gagtacgacg tcgctgtcgg tcgtagcgtt gttgtctctg 1080

caaaggacgt tttcctgtcg cgagcgcgcg cggcagtgtc tcggttgtgt ttcacgtgtg 1140

ctcggctagc cgcctgtcag acgatactgt gtgtatgtat atacacagga gtaacgacgg 1200

agtcctgtac cgtgcatgat tcatcatgag cggccacaga tgtgttcgac gtacgacggc 1260

attagaaaga cgatgcgcgc gtatggagca gtcgaccatg ttggattgcg cccaatgcaa 1320

ggtactcata ccttttgttg ccgtagtggt aggtagtaca ctagtacgta cgtacgaata 1380

gtcaccagga ggtgaggaca cccggcctat ctatcattgt actcctatac ggtgtacgtc 1440

ggacatagga acactgctct caactgttga cgacactacg acagcgatct cctcctccta 1500

tccgatccgg acgatccccg gcccgcatgt ctgtctgttg ggcgtacgtt cgctccaggt 1560

gcggttgcgg cctcatgtgc agtggaaagg aagcggcgcg cgcgagacat acatgaacag 1620

gccatccgct gttgatcgga ggaggtttgg atcgcgcgtg gcgtgggtca tcttctcgtg 1680

taccactcct gcgcaggaag aaccagtggg cagggtttca aagattgcct cgggatcggc 1740

ggttttgacc gcaagcagca cgcaacgcaa cctagggagc tgaccccaat gcgtgacgtg 1800

acgtcgcccg gagctgaccc caaacctggg gagcaccgcc ctcggaactg ccgtctggaa 1860

attactagta ctggccagga ttcatgcact ctgcacggtc atcccatcca gccttcccga 1920

gcgtaaacaa cagaaaccaa ggttctccac ttgacggacg ctgtacgatc ctgctccagc 1980

cagccagcca tagtgccccc cgcttctcaa ccccacgtga agcgggcccg tgcatcgcgc 2040

gaccgaccca cccaccccag gtgaggtgcc ggcagcgcgc ctagcgatcc gttcaggtca 2100

acggcaaagt agcgatcctg tactgtatgg ccgtgtgcat gccaggcgcg cacgcttctc 2160

agactcttgg ccgagaggga tcgatccgtt agcgaccccg agggccccag cagcctaccg 2220

gcggctgaca gacgcacgta cgtagcgtgc tccaacaatg cgcggtcgcc ggcccgccag 2280

ggctgctgct gctgcggcag ttcggccatc acgtcgccgg cctcaagaac cagggcatgc 2340

catctccagc 2350

<210> 1926
<211> 4424
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3885_G1, chr1:19676800..19681223, Cluster 11

<400> 1926
cttgacgaac cagcaagacc tagctctcat atgatttctg gccctcagta aattctcgtc 60

ctgcttccgc tgctcgccga gcgtgccctg gccactttgc aggcgcgtcg gcaccctggc 120

ttgttgctaa taactgaagg aaggatcgga agaaactgtt ctaaacagaa ctatgctcgc 180

acgtgcacta tccccgaacg tcagtttatc gaaaaagact ggcacacgga ctgatgctcg 240

tgggcgaagc tgcatatata caagttattt gccacctcca acctcaatca tgcatgtgat 300

gagacgttaa cttctgaatt tgatttaacc tttgattcta gcttgttggg cgggtcgggc 360

tctcaattgc ccaaagctga aagctccggc gaaaactgtc tacctggcct tctatagatt 420

ctgcatttct gacaggaaat gtgctgcatc accaatgatc aaataactga atcttatttt 480

acccttcttt tagttctttg atgaatatat tatacccaaa aaaaaggagt atgcaagtga 540

aaaaacgacg aggttgctgg tcaatcacgt accacaccct ggcctggcgc gcgcgcggat 600

cggaagacaa aacgtagagt tgctatatga gcaaatcgca gattcaacgt tctatcactg 660

tctccaagct agactccaat ccaaacaggt ctacaccagc catctgaccg tcttgcatag 720

ctccattcct tggaaaaaaa aagaagagac ggttttattc tattctacac gttttgcctc 780

gcgcctcgcc caccacgttt agtcctggtc ttgccttgcg gtgaccaggt gggggcgacc 840

gcccgccgcc ggcacctcac ggggggacgc ggcgagaccg caacatgact cgccgtggaa 900

ccctccaatt tcgctttggc gagcgttcgc tcaatttcag tctagtgaac gatctgactg 960

gcgataaaaa caggcaggat aggcgcacgc gcgaggcagg aatgttgcgc atagatcgaa 1020

gacacttaga ctgtccgtaa tagttctctc taaattccta tctatatcct acttttgcac 1080

cacgtcatca agattttacc ttctattttt ttcatctcac acagtagttt cctctaaata 1140

ctcccttata gcccaacagg gatggatcca aggaggggtt gtcggagctt caaatcagtt 1200

caaatgtcgt attttctagc ccaccatgca tcggctacgt ctacacctaa aagaatcatt 1260

taatattttg ttacgtttaa aaaaaagatg ttgcataaaa tgctatgtta atgattctgc 1320

tgcgagtgac tagtagttta gtgtcatcta taaagatggc agaagactaa atgaacatga 1380

actcagccga tacacgtgca ccatgacact ggcctcatca tagtttgcgt cctaacccta 1440

gccgtgacgt cgtgctaccc gttggtcatc attcctaccc cactactgtc tatggttcaa 1500

ttataagtga ataaaaaaaa ctttaatctt atcaatcccc gtacattaat cacaatcgaa 1560

gaatcctaca gaaaatgcac aagcttcctg gtcaatcacg tacaactcca cagcggaagg 1620

ccgcaaagac ttggtctgag gaggagtcac ccggggaaga aggcggcagc gcaaaaggtt 1680

gaatcataga tctgctcgag cccttatcat gcacggacac gtgcagacag gatagccgca 1740

gtacgcacat gcatgggatg gggagctgga gatcatgtca tgctgctgcc tgcgtggtgc 1800

atgcattgtt catcagcctg cgcagggcat gtgacgcagc catctcgatc ggaagcgtcg 1860

tgcgccgaca ccagttcgtg ttcgtgactg catcagactc tctgcgccgg tttccgcggc 1920

caccggggtc actcttcctg atcgaggagg gccgcagtga tccatttgca gctcgatcgc 1980

agccgccttc gctcccatgc caggttcagt tcacctgggc gatcaggtaa tatttttttt 2040

tgttctatgt ctgaatctgc agacaataat aataatttga acaacaacca actagtacaa 2100

ttcacacggg acaatctgta gggttttttt tgtatagtta aacaacgtaa agaaagtaca 2160

tactgcaaat cagggcctct gaaaggtacg ggaagtgaag aatcctacag aaaaaaaaaa 2220

caaattcgca caagcttcct tccttcctgg tcaatcacgt accactccct gcggctgcgg 2280

ccgcagcgca aggcaaaacg gggacgctgc gttgagccga gcgagcgcac tgcagcttcg 2340

tagtctatct ccatgactcc gatccatcac gttctggcat ccctcccatc tgcaccacgt 2400

ttttttttcc tctctccgga tgattgcggc gaccagatcg atggaggggc ggccgccgcc 2460

ggcaccgcgc gcgcgggaaa gcgagaccag gaggccagac gacgcataag gttgaaccat 2520

acatagatct gcccaagccc ttatcaagtt gagatgcact gcagacaggg atatatagcc 2580

gcaatacgca catgcacgcg ggacaggttg ctcttatcta tcggcaagct ggagatgcta 2640

gctgctgctg ctgctgcgtg catgcgttgt tcttctttag ccgccaggca tggacctgac 2700

tggaaaccaa ccgaattcct gagtttattc tctttttcc ccccttcgcg tacgtacctg 2760

cgctgcgcag ggcatgtgac gcagccatct cgaacttaac gagagcgtcg tgcgccgaca 2820

ccacttcgtg ttcgtggctg tagactctct gcgccggcct gtgcctgttt ccacggccac 2880

cggtcaccct cttcccgagg agctagctag ctagggctgt cctgatccat ttgcagctcg 2940

cagccgcctt ggctcaaacc actgcaccat gccatgccag gtccagttca cctgcaatca 3000

cactctctat cagagcttca catcgagatc gatccgtgcg tagaaattca gctctgctta 3060

ccgccgtcca cttgcgtgaa ttgcttgctc gtaggcgcgc ggaagtccgg agagtacgtc 3120

cggataataa tctttcctct cgctgtaaag ctagtttgta cagagtgtgg acggcggtta 3180

gtccagatcg aaacgaaagt taagcaaaat gggattgcat ttttctagta aagtttacta 3240

aaaaaagtat attaatctgt attcttttaa taaaatttta gtacagaaaa gattaaatta 3300

tttgattttt tttttaaaaa aaaacaaaat aaaaactgta ttgttttatg gacgtaggag 3360

gagctagcac ctagcagcag ccaagtcgtt cacgtagttt aaaaaaaaca aaagaaaagt 3420

ctttgacgta cgttgtttga gaatctcagt cagatgtggc acagtagtgc catttcagat 3480

cccctgtgga tgcttttgcg agctttccct gtcacaccat ttccatttgg ttgcatcccg 3540

tgacgctgcc acctttgaat ataattggaa cgacaataac gtatactccc atgtgtttgg 3600

tcgttcagct ctcccgtcaa ccagtactaa ttattatgca aagggcaccc taaagctcat 3660

gtgtaactga ttttcccctt cgtttttacg cttcaagact gggactacac tttttaagta 3720

cgaaaccgac agctggataa taacgtggag acctgtggtg gtgatcatca gctgatgggc 3780

acgcacaacg tagcgatggc cgatccagcg acaaccggcg gctgcttcgt ccggcattga 3840

cgtgacttct cccggccggc ccgtacgcgc agaagcagaa gcagaagcag aagcgtcgtg 3900

tgtgcgtccc acaccgcttg taagtgctgg cttctgctct taattgcatc cgtgcttcat 3960

cacttatctg gctatcaggc tgcagccact gttatcgcat catatcgaaa gcaaatcaac 4020

cagtgctgag gcccttggtg aaggcttctc ctcactgtcc tgtcatgtgg ctgccatcag 4080

atagccagtt acccgtttgc ccagaataga catggacatc tgaactccat tcggctgtgt 4140

cagatcaacc ccggccaaga gccttctaaa cgaactccct actttagctt cgtctccacc 4200

ttatgcttct tggtgatcga gcaccattgg agagattcgt ctctctcctg aaagtattga 4260

catgtttcta actcttcttt attttaaata tttacatttg agaaattcaa ttcctgtttt 4320

tatattacta aaacttttgt cttagaatag tgttgaaact taaggtgcaa aatttttaat 4380

actatgaaca gataacactc ttagctaaaa ggagtgaagt aaaa 4424

<210> 1927
<211> 1533
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41603_G1, chr1:246414357..246415889, Cluster 11

<400> 1927
acgccggcat tgtggttgcg gatatgtggt tcagttcagt acttgagttc ccgcggagta 60

cttcacgttc cagcctccaa ctgaacacca cctagcgctt ggcttaaccg caaggctgga 120

tacggtcggt ggttattagc agacggatgc aattctttcc ccctcttttt ttgccgcata 180

gagtacgtaa gttcactgtt ctgcagtgtg cacacctgac atgcatctcc aacttgaggt 240

tttccaacgc tggtggtaca cgagtctcgt gacgcacaca tgaaacttgc gagaggagag 300

aatgtatgaa cggcacatgt gaaggtcgac ggagggacga caaggtgtac atttctccat 360

ttcggtacta ctgtatatat gcaacaaatg ctgctggctg ctgccgggtc gcatcgcatc 420

acgtcagact ctactacaag taccgtgcaa gccaaggtga agggacgtct ccaagaaaga 480

aaaaaaaaag accaaaattt gctacagctg ctgctgccgc cggcgggtcc cataaagcta 540

caacattaaa caaaaatgcc attgagttgg gtggaaaaat cgtcgatgca actatcgaga 600

aaatttttgt tggaataaat acgaaactgg tagtactaga ctggtcacat aaaccacacg 660

ggaaaaatat aaatagtgaa gcaggaaaga aaacgacata ggctgttccc tctctcttcc 720

ctcgtgtggt gggccgatat gggcctaagg ccgcatagaa gacctcattt ggagatggga 780

ggcccgaaac gtctaacagg ctccagtttc cattttgaaa aaaaaaaaga ttggccttct 840

ttttccctt cttcgtcttc cgggaggcga gcaaaagcac aacagtggga gtgtgtggga 900

tataaatact ctccggttgg tcactgctgc ctcgtcagct ccagcccagc gtctggttcg 960

tatgcttttg aaccagtgat ttccagtgcc atcgacgagg tggcgagcta gacgccacta 1020

ttcctcccag caggaagaga acaagaaggc caacacctcc acgaaaagca acagccgcag 1080

ccgcccgcac gtatgaaacg ggaagaaaac caaggcattg gccccttttt tcccccacct 1140

attttgtagc cgtcgccaga gacgagcatt ttaccattgg cagccagcac tccagcagca 1200

gcaaggcccc ggtcggtggt cgccgccgat gccggcagca ggacgtagac gtacgcagtg 1260

atgtgtcgtc cacaagccac gaatcggccg gcacaggata ggacctgtgg atcacgggcg 1320

gccaggtcgg tcgcgagtgg ttcacggaac ggttgcctcc gccaccgccg agtctcagcc 1380

gtgtggaact gtgtatcttg tacggagatg atggcagcaa ttatccctgt cccaagaggc 1440

gcctctacat ctgaacttgt tgcgctgtct attgagacat tttccatcat tttagctata 1500

tggttatcta aaacactact ttacattata tac 1533

<210> 1928
<211> 1686
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42043_G1, chr1:248416096..248417781, Cluster 11

<400> 1928
ctcaaaattg gagggataag agaggacgca agaggacgtt cccgtcctga ctgtcccgca 60

accaaacgca ccctaacaca ctgcagagag acaactgtgc taatgcgatg ctttttagg 120

gtaatgtgtg cccagggccc aggctatctg ttgggcttag cccatttagg catcgatctc 180

taccctccaa catactcatg gttgatagcc ccacgcccat acatttgttg taacagaagt 240

tttaataatt ggtggccgga ccattagcta gcaataaggc caattccatg tcgttaacgc 300

ttgtaataag gccaagtccg gccacagcaa gatcgagttc cttatttaat ttgtaagcaa 360

cctgagacag gacaagcaca tatatgcaag gacacaacac aacccaacaa caccctgcct 420

ctcactcttc caaaccctaa tgcgccatga gctacaggtc gatcgatcgg gatatacaag 480

gttgttaatt aggaccagga tatatactag ctaggcagta ttattgtttc ttttcttttc 540

ttttcttttt tggctcagag taccgaatcg tgcgtgtagc accagatgtg ggaatggtac 600

gtacgtgtcg gaaatccatc cgtatccaat tggcattgcg tgcatgcagt aacatgtgta 660

taagcaaaat ttgctaggca tgcacactat cccccaccaa ttaactagct agctagctag 720

gacatggaca catgcacatc ctcctcgagc catgaacaac aaaaccatcc atcacccttt 780

cactttcact ttcactttct ggaaagcaat aatgcatgca tgcattggct tttaggttta 840

cactttattc actagccatg ttacggcttt attttgccgt cgatcgatca gaaccacctg 900

cacaaattca cgcatcaaaa gtgaaccctg gctagctagc tagcttccag gacatgcatg 960

catgtttgct taattgatgg aatggaacga cgtataacaa tccatggaaa actccaaatg 1020

gtactggtac ggttcatgca tgcatgcatg catgcaacag taatgcatgt actcacgtca 1080

cgcattcaga attatatcca gaattatagc aataaattta aactagtaaa aatgacggat 1140

aaaaataaag aaagatgcat tcatgcatgt agaatgatgg agccatgcat cgatcagttc 1200

ttcttcctta atttgtttcc ctttggatct ctcgtcctct agcaggtgtt ggcttgcccc 1260

cccggacccg gatcggagac tgtgccgtgt gccctgccct gcccctgccc ctgccgtgaa 1320

agcaagtcga aaaagaagag gggggccggg ggcggcggtc ataggcatgc atgcactttc 1380

ttcgcaacag gggcggcgct ttagggagca ccacaccacc actgcaccac ccaacccgat 1440

cgacgacggc gccagcagct agcagaggag gcatgcatgg caggcatgct gcgagagtga 1500

ccgaccggtg gatcggagaa gagagctagc tacaccgtct cgcaacaacg acgcatgcca 1560

ctcgcgtcca ccggctccgc gacaacggag gaacgtccag cgtccgatag atgctagctg 1620

cgggcggcat gcatggaccc cggccttctt ttaaactaca tgcatacata ctgcccatgc 1680

catcat 1686

<210> 1929
<211> 3035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42519_G1, chr1:250905847..250908881, Cluster 11

<400> 1929
gcaatagact acaacaacaa cctcgccctc cgcgcgcgcc cgccacgtcc gccccgccag 60

gggcttacct gccgcgaccg catgcgcgcg cccgggcgtc ggagcgccgt gctgacacga 120

cagagacagc ccacgccgcg accacgcgcg gacccccccc gcccctctcc gccgccctcg 180

gcgagatgac atcccacatg cctgcgcgtg tgcggccggc cggctcggcg gcgcgatgtt 240

ccgccttgcc ggcgggggtg atagtacgtt ttttttagtt ttctactaca ctggatcttc 300

gtgtgttgtt caggcagtga acgcctgcga ataatggtgc tctgctcggt cggtacgcca 360

ggggcccgac acgaaaactg acgggcggtg gacttttttg gactcgtgta cgtgcgcaaa 420

caacaaagat gctaatgaag gcctcccttg gcaggggggg cgcacgcatc gcgtagactc 480

tgcgtgagct ctttgttgac tgtgcggggt gagcgagggc gtgccaattg atttttgaga 540

ccaacgacgt gcggcgaccg gtcgatcgcc atcttctcgc ccgccgacgg cagcgaaggg 600

ttccgtatgc atcagaactg aagaggacgg tcgctggccg gttagctagc tccggtccga 660

cttgacgctg ctgatttgga cggatcatgc gatccatgcg tagcgaccac gtactccttt 720

ccgttctacg cagcgacctc atcctggcca tggcgggtac tgtacacgtg tagcgcagtg 780

attggaaggc ccggcccgat ttccctccgc tgccatgaga cagctctgct ctgcgtctct 840

gcattgcggg cagggcagct cgtctcgcgc gacgcttgac gagaaatcct actcctactc 900

ctacagtcct atacatgacg gggctcattt tcgtcgcgac aaccaaaacg gcaagacgtc 960

tgacgtctct gcgtgcattc caggagcttt tcgaatgctg ttttttttt ggtgtagcgc 1020

tggctgcgcg cccgcccgcg ccatgcatga gtccgaccgg cgcggcgacg gcgacgacga 1080

ccaggacgga cgtccctggc gcgacccgac atccttttct atcctttggt tttattttat 1140

tttattttat tttattccgc tgatagtgcc agtgccgggg tacgtgtacc gcaaggattg 1200

ggcgggggtg atgaggtggc accgcgtgga ccgacgtcgc catcggcgga tgcggatggc 1260

gctggcgccc ccccccccccc ccccccccggc ccgggtccac gtgtcgcctc gcggcccggc 1320

gcccgccacc ctgcgtgctt ttcgtggcac taaaaaccgc ccggccgtcc tccggtccgg 1380

tcctcgtggc gtgggtcgct ttcgatgact ggcacgatcg gtaacggaaa acgaaggtgt 1440

ggtggcttca gtggctggga gtactacgtg ctctgcaccg agacggcgag accgggaccg 1500

tgccccccccc ccccgggggc ccaggcccag agtaacgggc cgaggcatct tttcccgttc 1560

cgtttggacc actactactt ttgattgtga atcgagcttg gacaatggac tacatacgcc 1620

agtgtgtgga atggaaccgt gtgctgctcc attcacattc accgacgtct gatagccggt 1680

gtgaccgggg ctgccgttgc cgtggaatgc gagtggtagt agtactattc cctggctcac 1740

tgtcacctgg cggagcttgg accgaaatcc agcctgttgc agtggtggtg gtggcctgtg 1800

acaagctcca ccactgctca ctcacgcact gtgctttcgg tggtctataa gcatgggtgg 1860

cacgaagtga ggctgaggca ataggcatag catagcatag catgggtccc cagggtcaac 1920

gtcgccccgg ccggttgcat tgcattgcat ggacaccgca ccacggggag ttgagttccc 1980

acggctgctg catgcaggcg cccatgcccc ggtggccgct ccctgggtgc aagtgcaaca 2040

gcgacagcgc cgccgcccac gctttctccg tccgcccacg gttagctcgg accggttcga 2100

cgacgaggtc tccatcgtgt cctcgtggaa cccatcagtc atcgactcgt cgtagcatta 2160

ttacggtatc agttttgatt attctctagt actacgtacg tactagcgaa tataatcctt 2220

tttcttgtcc taaactaata aagcaagcag tgattaacta gtatactttt gagagcgagg 2280

gtcgtcttgg tcggcgatct ccgtctccct tttgcgcgcg tagtagtagc acgatatata 2340

tatataataa gtacctgggt gggtcatttt ccatgtgtcg tctcatgtct ccgctaattc 2400

cagcggcacc agataacaag cacacgacct gattaaacta acccgagaaa gcgaaacgcg 2460

cgcggccgcg cgcgcgagac gtgcaccgac ggatgcgcat gacgatggac gtagcgtctt 2520

gcacgaactc catccaccat tccaccgtcc agaagactat cagccatttt gcattactcg 2580

ttggtagccg aatcattatt ttataaatca caagatctct atattatcaa tcacagccga 2640

aattaacaac tataaccgaa ttgaacttta atttaactaa tctataggat gcagccccgc 2700

cttttatttt tactctcccc cgcgggggct agcgctgagg tttcgtgatg cctgaaaact 2760

ctcttattcg tttactttca catcgcatct cccaaatcac gaggaaggtg aggctcccat 2820

ttaggtcttg tttggataat ctcacattca ccccaatcca tgtgtattga ggtgtaaatt 2880

attttaagtt acgctctaat ccacttcaat acacgtggat tgatacaagg gtatccaaac 2940

aaggtcttat gcctttcgcg gaatgtaggg cgcgatgaaa atttggtttc catcgttggc 3000

ctggtcatac ctcttaacac cataaaagcc ctcct 3035

<210> 1930
<211> 3338
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42525_G1, chr1:250911587..250914924, Cluster 11

<400> 1930
aacactagct catggacaat tgcaccataa aatgtggatg gcactgagat cgcaagaatg 60

catgtcgcca ttcgtcaccg tgcaaacgcc gtgcatggcg gggctagcta gcttggcata 120

tatatggctg gcactcctgg cagccggcac acatccctgt ctgtctctct ctctagcaac 180

aagttggcaa gcgggcgcga gagagtagct agtgggcgga atcacagtac gtgtgtgctc 240

accacaagcc cctgtcgtag caagcttgcc atgcatagct cgcgttcgta gggcactttt 300

gtcgccgtgg ttggaggagg aggacacagc cgaggagcga gctaccgaaa aggccgggcg 360

aaagaactca caccacccgt atacactgac gacactgctg gttttgctct tgcgcatcat 420

cgccatcgac gtctgctgtc acctgcacgc tttgctctac ttgtagcgag acagagctcg 480

ctcgctcgct agctatagct agggattagc cagcagacag cggtggatca gattcgccgg 540

taataactct cctggagccg tgggtgcacg gcgcactcgc cggccggccg gattcccct 600

tcgccgtttg ccgcggtgcg cgcgggggta gtcggcaccc cggcagacga cgactaaaaa 660

gcgcgcggga cgtggcgggc tggagcatga gattccctgt cgctagtgcg acgccggacg 720

cagctgtccg cgctttccat agcaaccaac cgcatcgcca taccttagcc acagatcgag 780

gaggactcga ctagctagct agctacctgt ccctttctca tctcactctc agcgactcat 840

cgccctcgat ctcgtgccgc tccttcattc ccatttggtg aactgcgtgt ccggtgtttc 900

gctgcatgtt atgttaggca accgatcatc atggcaaaaa aaaaaggatc caaatggcac 960

tcgccactca ttattattat tattattata tataagccaa acgggtggtc atgcacgatg 1020

agctaggccg gtatgggaga agactgaaaa agcacgatcg attagctagc agtctagcac 1080

ggcccgggca cggcttagaa ctgtgggttc agtctgcagt gtcgtaggta tagacacgat 1140

atggttactg aactgatata tgttatggtg atatcctaat tattcttatt attgggatga 1200

tttgaacagt aacaaaaaaa gtgtcagagc tggaccgttt tcgttgatgc taaataaaaa 1260

aaccatctac agatttatca accttatact cgatactcaa gtataaatag agacggtagc 1320

actcgtaccg acaatgtgct agtttttaca tccaaaacca gctagtagtc acgtgcgata 1380

accacttgcc acatacgtag gagtattggc atgcagtcat gctgcaccca tgcatgacga 1440

ccggaccgga tcggagttag gggcatgaga gtccgcgcgc gtcggggcgg cccgggccac 1500

acgaccgatc gtgccgcgcg ccgcccacag gccacagccc ccccaccgcc cacccgtcgg 1560

acgcggctaa ccggccggat cgaggcggcg gatcccaacc ttggacgggc cgaccgccac 1620

atgctgcatg cgcggcggag tgatggaggg cgactacgac gaccagaacc agattagtat 1680

aatataatgc agcgacgacg tcgacatggg caacttggca tgattaactg ctgcaggagt 1740

aaacaaagca ttaatcggga tttcggggac atgcaggcca gattcaggta tgtgcggaga 1800

gagagagaga gagatactgt gggcagggca ggcgcatgta ggccacagct gaggcaggta 1860

ggagcattaa gttagttgtt tcatgtgtga tgacagtatt acatatatgt ctgttcgttt 1920

gactgaagag tatcgttatt cagtactcct acttggctta ttaattaatc ctgtggacta 1980

agctagtgac ggttaattca tttacatagg gatcttatta gagaccacgc tgcacaaacc 2040

acaatactat agttttaaaa tcgacactga tagcgcgcgg tatccttgtt ggttcgtaag 2100

cacatactcg atacagtgat tcctttccct gcatctggat cggtaatacg actcgatagc 2160

tagtgacgat tattcttttc cttggatcaa attctttgta ttcaacaagg tgaactttta 2220

tggccatctt cttccgttgc tggtgagtac gtacgtaaac aacaacaacg taacgcactg 2280

ctagcgaaca gtgatgcgta gacacaagta tcaaccgacg cccatgtggc atgtgcccag 2340

ttaataagcc gctcgctagc tgcgcggcgg agggagcacc cacaggcggg tcctagctgc 2400

gccggtcttt cccatgcaat gcattattat ttgaacggat cggacggagg agctctcccc 2460

cacaagcaca gttgcacaat atcccaacgc cacacaacga cccgacatcc cgccgccggt 2520

atcgagattc agttcaccaa acgatctcgt ctgatcgatc tatataccta tgcgtgcaaa 2580

gcgcggaact cataatttcc ttcctttctt tctttctttc tttcatgcat gcatgcatgg 2640

atccattcac gcatctaccg tccaaagccg tgcatgcatg catgcatcaa ttcatactcc 2700

atgtgggggc agggcagtac tgtgggccgg caggcacaca gagtcacaga gacacacaat 2760

agctagctac gtaccgcgat cgatccgtgc aacaacaacc tccggccggc cggaagtcgt 2820

cggcacatgg cggcacatga ccgcgccacc catcgccatc tatcctcact cggtcaccac 2880

cacacagcag gccacttgcg cgcgtgacga taggtagcta ggtgccccca tggccccatg 2940

catgcacgag cagcaagacc ccctcctcgc ctcgatcgcg cgcgcgcgcg ctctgccgcc 3000

ccgccggagc gcgccgtcca gggaagatcc gggcggatct ccgggccagt attctatgac 3060

ctcagtccac atgctggccg cgcaaacaaa tgcgctccgc ccccatcatt aaccactcat 3120

gcatggccat ggctggtctg ttgcagatgc agttgcagtt gcaactgcca gctgcaaccg 3180

tcgtctctga ccccgatgca gattaaacaa atgggatgcc atgattgccg gtcaacgtaa 3240

cacacagccc ctagctctag ctagtaccac tcgattaact gtcagcgtgc atggatgcaa 3300

gaagattcct cggtttccat catggcttaa tttggctg 3338

<210> 1931

<211> 1935
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42939_G1, chr1:253150623..253152557, Cluster 11

<400> 1931
cagcagcacc atggctgtct tctcgtttcc catgtatctt tctcacccga cgtgtagtaa 60

ggctcttgct gggccgaacg aggagggagg ggagaggagg ggccaccgcc acaatgccca 120

cccgtcatat ctactagtgg gagtggggca ctagtgggag gctcgacggc gaccgggggt 180

ccctggtact gcacggctcc ggcgcccgcg ggcgcgcgtg tgggggggttg aagaaagagc 240

cgagatcagg ggcggaactg cagggaatca ttgtgctggc tggctgatgc gtgcccgccc 300

ctcccccggc cggtgcgtgg acggcgacac gtacgccgtg ctagtgtcgc cgtcgaccgt 360

cgcggtccgc acggtgggcc gggtcgatac gaccggttgg tggtggacgt ggacgtggac 420

gccctctcca gtccacggct gtgcgtgcct ccgccggagg gcctccatcc accacagttc 480

ggaaacaaga agggccgata gagagcggtg tggccgtccg tctgctgcag atggagacgg 540

agaatcacat catcgttggg ctgggcgctg gtttccactc gacgcggcgg ggcctgacag 600

tggaaacatg caatgaatgc actcacatgc cgcaatagct acaccacgcg cacgcagtag 660

tgaaacctcg tccgtcccta atcacatatt cacagtagta gtgaatcctt ggctgctgct 720

gctgccggtg ccggtgcact actgcgcagc atatgcactc gcagcagcag tagtagaaga 780

agaagtcgtc tgcatgcatg tcggtagcgc ccgccctcgc acctgcttag ttcctgtcct 840

gtgcacgcaa ggcgtgcgtg ctgcgacgac gaccactacc aggacggcct gcactgcact 900

gcactgcgtg tttctcccct tctatcgtgc aaagtcagca accgtgcagc acaacaacaa 960

caacaaaaaa ttaaacaagt acgcactgct ggtcactact gttgttactg acgctctgta 1020

cgtggcatgg cccccatgca tgcgtcttac aatcaatgcg tgtgcttctt cgacgtttcg 1080

atccggtccc tctgcttctt cggccttccg gcaggcaagg catgcgtacg gtccagatct 1140

actgaatgca gtgcagcagc catggtccag agagccctga tatgtcacac cttcaccatg 1200

accgtgcatc caagcagtta tactccgtcc gtcatcttca atgccttttt ttttgttttg 1260

ttttttgcc atccatctaa tctattttcg ataccagaac ttgcatggga agatgcaacc 1320

aagttgacat ttagttcaca tatttgtaac ttaaaggttc actgacaacg ttaaatcata 1380

tttgtttaaa ttcaatcgtt gttagatatc acattagaaa ttgataccga tctattgaaa 1440

cttgttgccg ccggtgtgtg aaattattat catttacgtt atatttggtg aaccaaacac 1500

cacccaaaaa gtgttgcgta cgttgccatc ggtcgcacct cttgtatatc tatctatagg 1560

cagaagaaga agaaaaatat gatttctcgt acgttacgtt gtgcatgaat tgacctctcg 1620

tatggttcca ttccgtcgat ccagtgcgcc cattttctgc cagtgagagc tagatgaccg 1680

gggcggccgg gggatggctg ttgcctgttg caagtgggag tagtagtagg taggtacact 1740

agtcaagcct gggttgacct tgatacagta gagtctcacg aacagtgtcc aagaaacgta 1800

ccccccctagt acgtacagat gaccaggctc gtcaccgtgc gcgcgcgtac aatacaatgc 1860

gtgcacacga gagatcgatc gcgcattcgc gcggcagaaa ggagacctac gctgctgctg 1920

agatgctgga aggag 1935

<210> 1932
<211> 1933
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42942_G1, chr1:253153595..253155527, Cluster 11

<400> 1932
tttaatccat ctggaaaaaa tctctcccaa ataaaaaaaa ctaaaaatta gtgagaccaa 60

agtacgtccg cctgatcgaa ctaaaaaata ttttgatgca gttttttttct ttttttgcc 120

agatgtgaac tcggtcgaaa cgtgttgaga ctgtctacag ctgctatcat atctcatatc 180

ctattttata aacagtataa tgtatagtta ttttttttatt ttatacaatc tcgtaaggtc 240

gtaaacccga gcgagaaaac aagcattgcc ggacctaagc gagagagaga gagggccggt 300

tcgagccggt ggcccagcca cacgattgaa ggattgattg gatcatgagt acacctctcg 360

tagagagagt ggctggtggt acggacgccg acgcagtgcc gcactgccgc tcgtcgatcg 420

tcgtcctcgg tggccgtggc ctgtctcgtt gggcaggcta cgatcgatgc gtggtcaccg 480

tgaacgtgtg tgctggcgta cagcgccgcg gtcacttcct acgccggacg gacgctgctg 540

cgcctgcgag gtagtacagg gcggcactgt ggcgctaccg ctgcggctgg ccgagcagtg 600

gggccgggcc gcgtgaggcg gcatcgggcg acgggaaagc tgaggcgtag cgaggacgga 660

cgctgtcttg tccggctttg aatgcgcgcg cggccgcggt tggaggcgga gccggaggcg 720

cagtggcagg ctttcaggct tgtggcttgc tcaatcccac aaccgccgtg gcaatgcatc 780

cgcacatcag gattgtggcc gaggacgacc ggtcgctagt cgatacggga ggagtacgta 840

cgcctagcca atgcagccgc attcatttcc agtcagctgc cgtatcgctt gcattgcagg 900

tctagtagta gatctgtagg gacgtacgta ctctacaagt agacggacgg gaaacagtcc 960

gcctaccggc agcaactgcg ggcggcaaga ggcagcttgc ttgtccacga cgcatcacgc 1020

atgtcgcggc gcctcgagca gcaccggccc ggccgactgt gcagcgcggc cggccgggcg 1080

ggcgagcgag cgagcgtgcc actgccatgc catgcgcgcc tgcctcgtcg atcagcgtac 1140

ccgtgcggtc taggcatctg ctgctgcgcc tgtgcgggtg cgcaacgcag gccaccggct 1200

acctggcctg gcctccaccg gactgcggac tccctaccaa gcggcagcgc aggcaggcag 1260

agatagcacc agcagccctt gtcagcttgt ctcatccgag cctccttcct agctgttgct 1320

tctgcgcgcg ccagaccgcc agtgctgctg catgctggcg gggcactgtg cggcagatct 1380

cgtgaggtca cccccgtcat atgcatgcgt agctgccgcc cgggccctag gctaggcaca 1440

gcacagcaca gtggccgtgg catggcagca gtggccgcgc agcacggcca cggcaccgcc 1500

gcatccgcct gccgcggggg atggggatca gtgtagagaa tcctatccga taagtatttc 1560

cgatcctata gctccagcat gtccgtcgcc cagggcatcc cccggagggc gcgggggtc 1620

tatagagccc tggcgtgcgg cgtccacgtt gcgcgcgtaa tacggacacg gaccgcgcgc 1680

ctacgtacga tgatgttatg gattcgattc gaatcgatgt tgtacggtgt atacgtactc 1740

tggtactcta tccactgatc catgctccta actctagcct acctgtagca acaaccccaa 1800

aaaaaatcct gccacggtac aggtacgtcc gtacctgaag cactccaggg cgaaaatggg 1860

ttgccacgtt gaaaaccgtt gctactccag gacgaggacg tggtgcgcgt ttcctaataa 1920

tattcatcgc aaa 1933

<210> 1933
<211> 2989
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44019_G1, chr1:258395977..258398965, Cluster 11

<400> 1933
gtctcgtggg ttggtacttc tcttgtcatg gtggacggcc tctgacaaca agactgactt 60

gactcgtact ggtacgtggt ttggcagcat caaaatccgt gcaccgtgca aagatacaaa 120

agcaaaacga cggcgagaag gaagaaccca tgtccgcgta aaagagaaaa gcaatgcaat 180

gcaatctgga aacatggata gtactgcact accgctcgcc cccaaaagag gaactccatg 240

gaacaacaat atatatatcg atcctctcat tgctactcct agtgaattgc attgcatggg 300

cgcacaagta ccaaccatgg cgccacttcc atttgttgct ttcgtctgtc atgcaagcaa 360

tatggaccgt actactacca ctgctgctat caagattcaa gaacacattt tttttaaagt 420

cgagttttgg atggaaaaag aaaccaatgg gatcctcttt tgttgcgcgc tttacggata 480

ccccccaggc ggccaggccc ccaccaccaa gcgcgctctc gccgcgactc gatgcagaac 540

agtggggcag tagtaaatct ttgagatccg cgcgcggctc tgcttttgtg gagatccgtt 600

cacgtagacc cgtgtcaaag aggtcggcgc tgcctctgtt gcggcatgca gcggcgtgtt 660

ttcggcgggg gtagcggtag ctatagcagc agcagcaaat gaccaacaat ctgtgggagt 720

gcgtacagaa ctggcctacg actacgagcg aggaggatct gtgcgagcgg aggagggata 780

gtgcacagag cgagcgtact gtatagggct cgtgctcctg cgtcctgcct gggaatgtga 840

tcagatgcaa agtagcctgg atgggttacc tggcctacgc gcctagcccg tgttccctcc 900

gggccacgca ccggccatcc acgcccggtg gcgtgccgag cgctcacggg acacgccggg 960

caaaaggggg tcgcaagccg ttccatcact gccccccccc ccccccccc aaacctttgg 1020

gggccctggc gccaggcggc ctacgcccgc aagcatcctg caccctgctg ggaacggaca 1080

gtcacttcgg tagctgtacg acgagcgcgg ccggcacaca gtcgcgtcgc tgatcttgat 1140

cgcacggtgg cgtgcgagcg cagtcgttgc ctgtgcttgt gtgcgtgccg cgttgctgtc 1200

gttacatgcg catcatgggc tgtgcgcgca ggcagctcag ctgggagggg agggggaccg 1260

gccggggagc tttgataata aatgggggg ggcgccggcg cggaccggct acaccttccg 1320

cgcggtcccg tacccgttga gttgattcgc cgcgcgcgcc ggccaaggac ggcgaccgcc 1380

gaactcgcca ccccccgcc gcgccgcgcg ccagaggccc gtcggtcggg acgcgcacgc 1440

ggcgcccttt ttttttccca gctccggagt ttggtgcagg gcatgattgc gcgcgcctct 1500

gctgggctgg ggcgccaccg tgaacaatga tcgccccttt cgagcggggc gcagcagctt 1560

ggggggggccg ccgcatcatc aagacgagct agctgctggt aaagcagcag cccagcgccc 1620

tgaactgatt ctttttaaat gaatcttttt tatatatata aagattcata tttatatctc 1680

tggtgaccaa atttcgtttt ggtattgtga cgcttaggtc tgttactctg ttactgtata 1740

tataggcgaa catggcattt ttgttttcct tcctacttac aattctgaaa ggtcgttggt 1800

gcagatcttg tttgaccgag gccctgagtt gcttcgagtt gggtcgccgg agggctcagg 1860

ctacagggga ctcgaccacg tgaccgctct tgagtgtcac cgtgttgatc catatgggtt 1920

gtttgtccat catcttcagg gcatgagtac tatgtatctg ggccggctgg gttgaagttg 1980

gagtcaaatt cattttggac tcgaggccga gtgtaataag ttgatgctgc gatcgatgga 2040

gtttgagttt tttttaagtc gtcgtcgtcg tcgtcgaggg atcggatcgg atcatcttgg 2100

attcgccaaa gtataggatg gattttgtaa cagctgacga cgaaggagta ctgaagttgt 2160

cagtggttgc gagatgagct cgaagatctc gcacgaacaa gcaacgtata tcgaggcatc 2220

gaaagttgac atttctccta gtgtggcaac catatatagt tgccttcagt cgttcttcta 2280

tgattaatta gcgtgttctc ctacctggct tgccaaccgt cgaggattat tctgtagtgg 2340

atttgtgggg tagatcaaga actgaaggta aatacatatg agacgtaaag atttatataa 2400

gtttgagctc tccttgcata ataatatcat atgtcctcta tggtggtggc tattgcttat 2460

aatctgccct acatatgaga cgtgaagatt tagaaaaggt tatttgatgc cgtacctgat 2520

aacaggtgct ggattgaact gatgaaaaat atagcacaat tatgtcatga tatccgataa 2580

actacagttt attataaact gtgattaaaa aaacattgtt ctgaaataat atgtacgtac 2640

ttggtgaagt ttccactcac ttgaagatgt cgccaccttt ggggtgcgcg tgtgtggggt 2700

gcactagtgt gcatagtaga aacaggttgg gaccagggga ttggacacca cattaataaa 2760

gatgcgccga tgatctgtcc ttcatgagtg cgccttcgcc tagtgctttg cctgatttgc 2820

tcatcaaccg atccgataca attttatggg ttgaagtcca tatggaagga tccaccaaca 2880

gtatatatag tgtacgtgtg gaatgcagtg ttcgtcgcta tataggttat gtgtccccca 2940

ctacatatat tcagtattcg tgcttcgagt attgcttgct ctctttgat 2989

<210> 1934
<211> 2446

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4471_G1, chr1:23230585..23233030, Cluster 11

<400> 1934
ttatgtttcg aaaaataaag gtaatgtcat tattaactta ttacacatgt ggaacacagc 60

atatcatctt tgtttatcta gtttatttaa gcggcctagc cacagctcga tcgatcagta 120

cttgaagggg atatatatga tagtgaagct agaaatttaa tttattttgt tcgccattga 180

agagcaagag aggtataggc caatgcgcgg taccattatc ataaaacact gaccagagac 240

gacgacacat gttcgtaccg acttctattg tttctaaaat atttcgtttc tatggattat 300

aggtgtagct gtctgaatag aacggacttt aatccaaagc gaacatgctt atatagccac 360

gcgcctcata gcatttacat ttcttggttt ccatccatac atgcatgaga tgagagcaaa 420

gctctctaca tatacatctt cagtctctct ctctatagat agatagacga tgagactgca 480

ccttgaacct tttgacgacg acggagcacc tgttcaacgt ggctatagat ctagctagag 540

ggtgcgcgcc aaagtcaagc ccgccaactg actggcaagt ttttttgct gccggatcgg 600

tacaacagga cgcgtagcgt aaaggcgccg gccggagcag ctaagctact acgcgggcac 660

ggcagcgcca cacacatgca tgttgtacga gcaccggatg agagatggaa gatactccgt 720

ccggagcagc cgttctcgct ggtctgacgc aaggcaacag ctccatcagg cagcaggcag 780

ggctatctct cctcctatag ccgtccatgc tcttgttctt tccgagaaat agaaagagcg 840

agcggctacg gcaaacggca tgcgtgctgt tcacccaccc aaatgtaccc ctgcctgcct 900

cgtgtgtata gcctctctct ctagctagct gtccgccgtc tctcggccac gttacgtacg 960

ccatgcatgg cgatgacagg tgagagagag cgagagaggg tggccagggt gagtgcgcca 1020

caccgttggc cagtgcgggg cgccggggcc cgggtctatc ttcgttgcta ggtcatggcc 1080

atttggcgca cttgtcgtcg gccgtacgac ggggcagtta tccatcaagg ggcgcctggc 1140

tttttgcgat gcatccgagt tgctgctgct tctgcacccc caccacgcac ccccgccctc 1200

ggtccagatg cagcgtacag tagtacgcaa cacgcgctgg atgtcggggc agtcaggcgc 1260

gagagcaccg gcaccagcga ctggccctct ggcccgcgcg cccctcggct ccggccgcac 1320

gacagcatgt cctgttcacg ccgtggcgcc caccggacac cgccggtcga gctcatctct 1380

ccccggccct tccccgtccc cggcggcgta ggggtgggtg gggcgggccc gcgcggtcgc 1440

tttcgctgga aagccagcca gccagccgcg ggcggatagg atagctctgc ccggtgttgg 1500

ctggtggtgc gctgcgcggc agcaggcttt tccatctcat cgactgttga cgacggggct 1560

ggaggagcgc acgggagagg cggcccgggg acgcgtggcg gcgcgccgag cgcacggccc 1620

cgggcgcaac gctgcccgcg ggggacgcga cacgttcgag gcgtcccatg tgcgcgcgac 1680

gagactgcgg ctgccgggac agcgataccc gggccaagcc gacgagactg gcgactggtc 1740

ctcgatccct ccgcacgacc tgcactgcct ttgcatcgtc tttctacggc cggccccaca 1800

cgccgtgcac gaccgggctg cggctgcagg gcatccttgt agcccccgcc tccgccccac 1860

tcccaatctc tctctctcta tctctctctc ccatgcatgc atcgtcgtct cgtcgcccat 1920

tccccccctcg ggtcttctct ctctgctggt cgcccattcc cccctcgggt cttctctctc 1980

gtgcccagct ggctgctaga tctgcgtcgt tgtcgtccac caccctggag gccacttcat 2040

ttcatgcacg cacgcacgca cgccacgaat gtctgctgtc tgcacgtcca aatctgtcac 2100

tcaccaaaag gaggatagca gtaaattaaa ggccgactga actttatcga tgtgcaatat 2160

tctaaacagg ataaaaatag aaatgcatat ttgaattatt tggtattttc gtatccacta 2220

aaacttgtaa atatggatat tcatatttgt gtcggtttat aatatctaat tctaaatcaa 2280

attatcactt gtgtagtaat tttttattga taaaacaaaa tggctattgg tttttctact 2340

gttttattta aatttatttc tacggtcttg ggggtgcaga gcaggtgtgg gctgaagact 2400

agttgaatac acatacgtaa gctttgatct aattgtgaca agcaga 2446

<210> 1935
<211> 1407
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46253_G1, chr1:270989008..270990414, Cluster 11

<400> 1935
aaattatcta ggcttgtctt cttcttaggc gcctgagcaa acgctcaagt ttcacactaa 60

gttattagct ccaaggaaat gggggtcaac aatatgtgaa catcgcatgc aactactacg 120

cgtttcacaa ctatgcacta gtcgtccccc ctccccggcc tagtttcttg tcctgtaccc 180

tgtagcatct cgagtccaat gatccccctt atatcaaatt atatgtacca cgctacggtg 240

cacatgaggt ggcaacaaca cagcagtacg ggcaaaagtc catcatcatc tagaagaaga 300

agcagggctg gctagcacgt acgcagctag ctcactagtc tctagctata cagccagtgt 360

agatgtagat tcaggcgcga gcctatcgtc acagctcccg ttttttttccc tcttcttcct 420

gatgactgag agcaacagcg agcagtcgtg agtgactgtc cctttctcaa ttctgcaccc 480

aagaagtttt cccatgacgg gtccatgtcc aagttgagtt ataccggccg gttacgtgac 540

agactgatga tatagatatt tagcgtgcat gccgaggcta cggagcagag agcggctgtg 600

acggtgagat ctactacata gccgaaagca gaggggaacc atcggtacgt acgaccgggt 660

ccctggccac aggttctgcg agaatcttgg aggcacgccg cacgcaccaa cccgacgccc 720

cactgatcgc ggccgatacg tcccggcggg cggagaaaat aagaatcggg gacgcggcgt 780

gcgcgcacgc gtcggctact cggcggcctg gcgcctggcg ggtgggcgta cggctgcctt 840

gaccagcggt gcggcgtggc gcacgttttt ctggctttgc ggctgcgggg agagaggccg 900

gggggcgggt tcacacttca cacgcagcac ggccctcccg gattcgtggg aggggcagtc 960

actcaggcct cccggcggcg tgtcacgtgt gcatggcagg cagctccagc tcggcgcacg 1020

cgtgtgtcgc catccgtggc tggctttaga cccagtcgta cggccggccg gggagctgga 1080

ctcgatcaaa agcgagcttt tcaccggaac tttacagggt gattgcacca gatttttgtg 1140

actttcctcg ctgctactag agtctctgtc agttcctaaa ctcacgctag tggtagtggg 1200

tcttcaaatc tgctggtttt ggtttggttg tttccagaag gtctcgaaat ctgcataggc 1260

cctcctccct cttgccgaca tgaaactcat cagatgtata taccatggcg tgcatagttt 1320

ttcgctttca gaaaatactc tactgctgct actactacag gaaaccaacg tgtttgagag 1380

agatgcccac gcaagcccta tcgtaag 1407

<210> 1936
<211> 1682
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46388_G1, chr1:271749657..271751338, Cluster 11

<400> 1936
cttaggtgta atgagggcca ggctggagtt gcattgggct gaaatgaacc accattcggc 60

ccggctcgac ccagcctcag catttagaga ctctctaaag ttgaagtttg gcaaatgctt 120

gggggcctgc tacatcggcc tagcccgccc tgcgacgggc aagcacctgg gccaggaata 180

gaagcgccta taccatctgg gctgcaagaa aagggacagt tgatcacttt ggtggtattg 240

gcccaattca acatggcgac atagcaggtg tccgaactgt cggctccagt cgcattcagg 300

caaaagctcg gggtgggcgg gtggccaagt cggcataccc atccacccat cgcaaacaga 360

gttgccatgc taaccccatg ccggccccat acagtgccta gcgctcgcat taagcccgca 420

ggtcagccga cccagtcttc cgatcgatgg gggcgttcat cggtgatcgg tacatgtaga 480

gaggcctgct gctggccggc gggtcggtgg cctctagcgc gtgtccaact cgttgcatac 540

atgcatgggc agcatggagg ccatgcgtgc atgcatgcat ctcctctccc tgttggaccc 600

aggtggcgca catttacgcg tagcagcatg catgtctcga caacgacgac gacgacgccg 660

tcgccggcgg caggcagacg tgtgacgggt tcgggagcgt cgtataaggt cggttcgcca 720

ctgctgcttg tccgcactcg atcgaccgag agaagtggtg tggtgtggtg tggcggcgac 780

caacctctcc cctccctcct cgtcaaagca gatcgagggc gacgaccaac aagcaacgcg 840

aaattaacct gtgtgtgtgc gcgcgcgcga tcgagcgccg tgcctaaagc gcgctccacg 900

gatgggtgcg cccggagcta gcggagaacg acgtgcatcc gaaagagaga gagaccgcac 960

gacatggggg gccacgcaaa gtcctcggct tgcggcggcc ggtcggccgt cccctgcccc 1020

agtgtcccgg cccggccgag ccgccgacca cgcacgcggc gcgcgagggg aaggaaaccg 1080

ataggtcgga ccgggcggcc ggagtgccgg gcggtagatt tggcgatcgt cgcatcagta 1140

cgtcacatgg aggctgcgct cgctgtcgct ggtcgttacg tactcgtcac cgtcccgtcc 1200

cgtcccgtcg cgtcgagccg agcgctgtgc caagccaatg caagtcgcgg ccaggatact 1260

cctactactg tgccaagcca atgcgaagtg cggccgacgg ccccccggat gcgtggcaag 1320

gcagcacgtg cttgtccggc gccgtgccct ctgagttctg accgcggcgt gtgtgcctgt 1380

acgtccgagg gcaagcatgc agggacagtc tgccgaatca aggctgacca ccactggggc 1440

gggcgatcct cttggggaat cccggaagat ctcggacggg ccgtgcgtaa cggcgtacac 1500

acgctgtcca cagggccgcc ggcagggcgg ggccgcctgc ggctacgctg tctgccgtgc 1560

tgtcgccgct gcatggaaga taaagacacg ctcctcagat ttttctgtgc aaaaaggatg 1620

acgacgagga gcagcagtag attttttttt taacatagta tgtgtctagt gtctaggtag 1680

gt 1682

<210> 1937
<211> 1636
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46391_G1, chr1:271759143..271760778, Cluster 11

<400> 1937
ttataaacat gggcttgcac aattgacttc acgtcaatta aagcaatcag aagtgagaaa 60

cttcctggca tgaagacttc actttgaagc tcctacaagg ttacaacaaa ggaaggacgc 120

atgaagactc atctacaaag actacacatg tgaagcttca tccacgaaga caaatattct 180

atgaagcctt aacgaaaata tttacacaaa gaccatgctt gcagatacta cgccaagttg 240

caaactccaa gaacctttgc agatgcatga acatgactgc aagggttaat taaacaaaga 300

ctaatttata gataaggatg aaggattaga aaaatgacca tacaacctta atgtaaacaa 360

actattgtaa tataatagtt gaggggtagg agagttttct tgtgtacatt atgaagatgg 420

ggatccctat aaatacctcc taacatgtat tgtacatgaa caagaaaaaa aattatgcaa 480

taaagtttaa ccattctatg aagccttaat ggaaatattt acctcagtaa gacctcaagc 540

tatgaaatcc aagaaccttt gcaaatgcat gacacatgat tgcaaatcca agaaccttcc 600

cccatccgtt gtaccatccc ttctactact atggaaacca tataagccac ccaaatccat 660

cactcccatt aagctacggc cacacatcca cataatgcaa aatgaatcca atttccaacc 720

atctcaacaa ttaatgaagt ttctacgtat tgagacattg gtcatataaa agatgctatg 780

ttttcggaca tctctaattt tttttaacag ctttcgcgtc catgtgcgcg cgcgctgttt 840

tacctgaact tcgtttgggc ctaggcgggg cgcatgcaca agtacagtgc catgcacgat 900

aaacggcgag gcagcaggac aggaacagag gtctccactc cagcagcgtt ccttcctcgc 960

gagggttgtt ctagcggcgg ggtgggggga ctgtgccgtg tgatcctggc cggctctggc 1020

cggtcgggga agtcctggac cgtggcagca cggctgcctg tcctccggag ggcacgccgg 1080

tgacagggcg gtctcgcgtg tccgttttgg aaggtggacg acaacggtcg acggaacacc 1140

tgaacaattc cgcgcgtcgt gattcatgtg cgggttttat cccatgcatg acaccgatcg 1200

cgtgtcctgg attctggaag acgacgcata tatacggccg atggaggcat tatttgtcag 1260

gatggatgtt attggcacgc acagtgcgca gacagcgcgc gcggttgctg ggtggtagtg 1320

atagatcacg agattattgg cgcgtcatgt tgtttgacct ttgttcttgt gagggaggac 1380

gaacagacca acaagtgcaa gcacagaagc agcctcctct tgtccgtccg cgggtgtgtg 1440

gtacaggcac gacccgttct cgacgctgct cctaaagccg tctgttggtt tgtccggcgc 1500

tgtttgtttg cccggccggc catgtgtgct gttatatata tagttttagc actgatttta 1560

atttcatgta gtactcagtc cgtcgccgtc ctaaaatagt tcaagttcta ggtttcgata 1620

cgtgaatgaa ttttta 1636

<210> 1938
<211> 1947
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46528_G1, chr1:272340869..272342815, Cluster 11

<400> 1938
acgtacgtgt cactggagtg ttgtttggac atatggatcg taactaatta accctagaca 60

ctccgggcta agctgccaaa ggatagtatc gcacggaagc atattattat ctataatata 120

tatcggaact acggtatgca tgcggagttg cggaccatgc atgccaaaga cagcacaggc 180

gcgcaatcgc agtacaagct agatgatcgt ggagccccat gccttgtgcc tagctagcta 240

tcaagctagc tactagggcg aattgttggt tattactgag tcgcagaaga gacacaccct 300

agcaagctag agccatttaa ctagtgatcg atgcggctgc cgggtgccgg ctttccaagc 360

gtcttcccgg agtatactac tacgtgcagc ggcggtgcat gctgcatgca tggcaatatg 420

gcatctctcg tcgtcatcct ctttccactg cccttggcag ctgataatga gctcagtcag 480

cacgttaagc ccattattcg acacttgggt gcaggagtca ttaatgccgc ggacaaatgt 540

tggtacatgc atccgccatc tttacagccc cggccgggcg gtccgatcct agctgcgact 600

gcgactacga ggagatgcat gcgagaaacg aaattaaacc cgggttccca tgcgtgcggg 660

agctaggaca tgtgtgtgca gtgcatagta tgggggcagc gccatcggaa tgatggagga 720

ggacgtacta ctacgtaggt tttggtgtcg atcggattat aagctaaccg ccgatccatc 780

caaacggcgt ggcgagccca agacgctact acatgcatgc ggacatgcta gggccgcgtg 840

ttctctgcga cttcggagcg ggggcggggg gcggcgtggt ttgcaagcca cgacgacgac 900

gacgccgggc gcgcgccaac ctcgctgcac tgcacggcct ttcacacgag ccgtacgtag 960

atagaacaga gtaagtacgt actactccag taattaagca gcggttatta ttacgagcag 1020

atcagcggca cgcttctctc ttcggtcgcg tgtaaactac tcccgcccac cagaatgttg 1080

tcgcccggcg cggaccggcc ggacgcacgt gccggccggc caacctgatc gagacgaaag 1140

gggacaaaca acgcagaggc agcggatggg gcggcggtgc catgcgcgcg cggcacactg 1200

tgtacatgta cactctcggc gtgtagtgtc gtcggcaaat gacaatgcag atttgactac 1260

gtacgtactc gtactgtacg tcgtcgtcta caccgaaacg gtcgcttcag gccgacgcca 1320

tgctggtact aggagtagta gatgcgtttg aataggaaac atcaagtcac ggcacatgca 1380

tgggcggcgt acgacgacgt tcgtgttcgt tgggaatttc tccggccggc cggggcgaat 1440

gtaccatgga ggaggatgcg tgtacttata cgacatggca ccggcgccca agcaagttgc 1500

caaccaaccg taccgcaacg cgccgcattg aacaggagaa aaggacaggc tgagggctga 1560

ggccatcggt ttccaaccca cgccacgccg acttctctct atcgcatcgg ggctcgctcc 1620

agtccccgta ccggacggcc gtgtgtgtgt gcgcgcgcgc gcgcgcatgc agagaacacg 1680

cgtcgcgcgg ccgcggacgg atctgccgga ggcacgcacc gaggccccgc cccggccacg 1740

gggcaagcca cgccaacgta tgtaaacggg tttggcggta tgggtgtggg tatgttatat 1800

atgtatatag tactgtacac ggcgtcacgt acgcacgcgg ggctgcgtct gcgttggccg 1860

tgccagcgcg tgtcgcttgc tgtctggctg gaccggcggc ggtgatgttc gctggagccg 1920

agcgggttcg cgcacgtcac acggaag 1947

<210> 1939
<211> 1506
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46530_G1, chr1:272343225..272344730, Cluster 11

<400> 1939
agccaaccac tgatcaatca gtgatcatga atccatccac ctcgcgccgg tgtcattgcg 60

tgtccgcgga tgggactgga cgtcgttgcc gagcccagac ccagaggacg cgacggctgc 120

cagaggcctc ttttattcat gtcggccacg aggaagccgg cccccgtccg tcgctatcgc 180

tatcgcatct acggggcaga tctcagcgcc acacttcaaa aaccaagact atcgtatact 240

agaatagaca atatcataaa gattattgcg tctaattaag gtagccgtcc agaaagagat 300

tgcgtctttt cagttctcaa ttctgaaaat aatgtgttca tggatattac ttctccgcta 360

gcttaatgtt aatttgggga gggatagtag tacggtttct gttcgcgtca cgaccagcgt 420

ttcgatcgga gtactccgta cgtagcgcgc acacacacac actagcactt gagcacatgc 480

atgataatgc cactgtgctg tcgatgatag atcacaacca gcagtccacc gagtcgctgc 540

aaaggagtta ttaggggcta gtagttaacg tgccggttgc cggatcgggg acagggctta 600

tgaatgtacc agtctagcta gctagctacc ggcaacaacc atatcctttt gcttgctccc 660

gcgctcgctc gccacctcta cactccacaa tgaaacgcgc catgcatgca tgcatgcgca 720

agcagcatgc aggccgggcc ggccgtggtg ggcgccccgc cggtgctcct gtgtgcgtga 780

tcccgccgga gggacgtact agttagtagt tactagtaca tacaaacaac aggcaacgac 840

gacggtgtgc ccgccggcca gcagtagtag gagtaattac caaccaccat ttgacgatct 900

aacccccggc cggccccgct ctcgatcgct ctagggacta gtagggtcta tgcctcgatc 960

tccactgctc ttgcgtgccg catgctcccc ggccggccgt tacagtgttc gtccacatga 1020

cgcgcgtacg gtgatcgagt gagccgctgg gtccagctta gcttggccat aaatggccgt 1080

gagtaagcgt ggagggaaga ggaaatggcc cggagaattt cacgagagtg gtaagaacgg 1140

ttgtcactgg cagtagtaaa cgccagtggg ataacagata gatagataga tctgcgtacg 1200

tttctctcct cacgtgcgtg catgcatgca tgcacatcgt tccgtgctgc cgactgacgg 1260

aggcgctggc tgtgacgaca tctcccgttc cgttccggtt cgctcgaccg gccggcgcat 1320

catgacgccg tacgtgggcc tacgtacctc cccgcagctc ctcatccccg cgcgcatgca 1380

cgggaacggg atcaaacgtt ctcgcattct actaccagac gcagctgcag ctccgccata 1440

tgcacgcttt gtctcgtgtc cactcatttt gccagcaagg tccaccacct gcttcttctt 1500

ttgttg 1506

<210> 1940
<211> 1746
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5007_G1, chr1:25715757..25717502, Cluster 11

<400> 1940
tttaaaaatt tctgaaaaaa tcaaatattt taagtttaat aaaatatata tatatatata 60

tataaataaa taatattaaa tcaaataaat atgctataaa aagtataatt aataagtgta 120

ctaacgatat ttatttaatg ttatatatta ttgttatttt actgtataga tttggtaaat 180

acgctttgat tttgaagaaa gttaaactaa actataattg aggatggagg gagcagtaat 240

gacccatcta attgagtttg gccaggcgac caggtcggcc agttagtgtg tagtgtagca 300

gtgctctctt gcttcaaggg acggatgagc tcaacaacta tgtagacatg tcagtcggat 360

atgtgtgtgt gtgtgtgtgt ggaggtttag agcagataat cgagaaacag acatgaaaaa 420

aaggtgaaat taatggcccg atgtgtacta tgaagctata tatatatata tatatgtgtg 480

cataatccag tgtttgcttg tcgtctgtgc aacaacgttc tagccaagat ctatcgctta 540

tcatcagctg gtacgcgcaa taaatggaaa gccgtgcagg acttgcgtgc gggcacagta 600

tttaccccta gtcaccaaga gcgcagcgat aaaccagaag agcaagcaga gcatcagctg 660

gttgatggtg aaaactaccc atggcatgac cacaaattta ccgacaacac gagccgcctg 720

ctgtgtccgc gttgctacca cccaatgcta cacacatggg atctctctct tgtttcagca 780

aacgaaattt ggattacttg gacgtctccg ttgcagtgtg tttaattagt ctggcattgt 840

ggttccatcg atcggggagc taggcagatt aattaataag attcagttag cttgttcgtg 900

ctgctagctg attgttccca caggctccat tggccataaa caaatgacca gcattccttg 960

cacggatctc cggtggagga tcaagggaca cgctactgtg gcttgctatt agctagcgag 1020

cactgctaat gacaggcagg ctactagtac tagctacttg ctattttcta gttaggactg 1080

ctgttacagt caggcacgct actacatgat taacttgcaa gctttgtcga taacgaatga 1140

accgcgcgct atataagcta gctagtggca gcatttttgc gtcgtcgtgg tcgtcggcgg 1200

cgtcggcgtc gtcgtatgga gcagaacatg ccatgtatgg acagcgaagc ggagatacga 1260

tggatcacac agtgtgaacc cgaagtgtga actgaactca cgttgctgct gcggacttca 1320

gcatactgct cgcagtcgta cgtacgttcg ttcgtcgccg cctgccttca tgagctagct 1380

gggcctgcaa gcagaaaaca atggacgtcc atgcttcggt tcagacgacg aagactcaag 1440

gaaagagagc aaaacaacaa acgcgctgcc acggtgttcc acatgcacgc gcatgcatgg 1500

aatgtaatgg gaggaagagg aagaagacag caagccagcg agatccatgg cattattctt 1560

cctgcaccga acgccggcct gctttgaccc tttgtacaca tgacgacgga cggtgacccg 1620

ctccgatccg tttccatgca tactgtctgt ctgtgcagat gacatgcttt ggcccatata 1680

ttctgcggcg tagttgtttc cactaccttc gctgacgatg aaccattacg ctcgttctaa 1740

gttcta 1746

<210> 1941
<211> 2670
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50700_G1, chr1:294625460..294628129, Cluster 11

<220>
<221> modified_base
<222> (2459)..(2459)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2459)..(2558)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2460)..(2460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2461)..(2461)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (2462)..(2462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2463)..(2463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2464)..(2464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2465)..(2465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2466)..(2466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2467)..(2467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2468)..(2468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2469)..(2469)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2470)..(2470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2471)..(2471)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2472)..(2472)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2473)..(2473)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2474)..(2474)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2475)..(2475)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2476)..(2476)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2477)..(2477)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2478)..(2478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2479)..(2479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2480)..(2480)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2481)..(2481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2482)..(2482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2483)..(2483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2484)..(2484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2485)..(2485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2486)..(2486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2487)..(2487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2488)..(2488)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2489)..(2489)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (2490)..(2490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2491)..(2491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2492)..(2492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2493)..(2493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2494)..(2494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2495)..(2495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2496)..(2496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2497)..(2497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2498)..(2498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2499)..(2499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2500)..(2500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2501)..(2501)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2502)..(2502)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (2503)..(2503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2504)..(2504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2505)..(2505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2506)..(2506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2507)..(2507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2508)..(2508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2509)..(2509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2510)..(2510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2511)..(2511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2512)..(2512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2513)..(2513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2514)..(2514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2515)..(2515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2516)..(2516)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2517)..(2517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2518)..(2518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2519)..(2519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2520)..(2520)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2521)..(2521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2522)..(2522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2523)..(2523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2524)..(2524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2525)..(2525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2526)..(2526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2527)..(2527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2528)..(2528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2529)..(2529)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (2530)..(2530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2531)..(2531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2532)..(2532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2533)..(2533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2534)..(2534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2535)..(2535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2536)..(2536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2537)..(2537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2538)..(2538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2539)..(2539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2540)..(2540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2541)..(2541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2542)..(2542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2543)..(2543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2544)..(2544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2545)..(2545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2546)..(2546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2547)..(2547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2548)..(2548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2549)..(2549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2550)..(2550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2551)..(2551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2552)..(2552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2553)..(2553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2554)..(2554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2555)..(2555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2556)..(2556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2557)..(2557)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (2558)..(2558)
<223> a, c, g, or t

<400> 1941
aattgaagag gggcatggaa cgccatttgg cccttcctgg ctccgttccg aaggtacgta 60

cgggaggggc aagatgtttt ggccgcctgt cccaggcccc tgctctcctc ggcgctcgac 120

gtgacggccg tccgtccttc ctttcgggct acggcgcgcg caccccgta gtcccgtacc 180

acgacgcgac cgcgcgcacg ggggagggag ggagtggcgc cgtccggcct ttgtgctgct 240

gccctgtccc gacaccgggg ccgggggggac ttcgtgctcg cacgcacgca cgcacgaggg 300

gcctcatcac tcgcgcgccg tggctgccaa aaggccaggc cacggagtgg acactagccg 360

ccgcagcgtt gacgtttaga acagagcagt gaggcggcag cggcagcagc agcagtacta 420

cgtgcggaca gcaggacagg cgaattgttc gcagcatcgc atcgcaggct tgtgcgtgcg 480

tgcgtgcatg agccggagta tgcccaggcc ctgccatgcc cttgggagat gttcgacgac 540

gacgacgtgg attggatgga tggagacatg aacgacgaca gggctacagg aggagtgaac 600

tgggttgccc ttgggagagg caggcaaggc agaccgcgct gtcctcctgc cggctgccca 660

gtgcccaccc cctcccgttg cccttccgat gcgtatcgac agatcatggt aaaccaacca 720

accaaccacc caaccaccca acgtggctct ccggctccgg cagctacgac acctcggggg 780

ggcaaggcat gcgctttatc atgccaaacc caatcccagg acacggaaga agaaaactag 840

aaaaaggagg ggaggcaaag gcaaaagaaa aacaagagag agatcgctgt cgttcgttcg 900

gtgcctccca gaccagaact gataccccc tcatggccat ggcctcctca tatatatttt 960

ttttctacga cggagaaaag ctgccagtat cggcgaatca gcgatcaggg ggtgacgggg 1020

aaaaggcggg cgtcgcggcc gtggggagca cggcggcggc agcgtaacgt ggcccaggcg 1080

tccgtccccg cgggccactg gggcacaacg ctgtctgtcc ctcccgtcgt gtccctcctc 1140

tcgtttccaa cctgtgtggt gtggagtcta tttttcctca agctatcttc tgtgacggac 1200

ggacagcttc acgaggccgt acgaggtagg tcatcgaaag caaagcaaac gtaccttgag 1260

aatggcactg tgcacgttgc tctatgctag cactggtact agtacgtact acccggaaac 1320

gcaaaaatag tcagggtttt agtaatcaca ctctttccac ccgacaaaag attgtgagtg 1380

tcctgtcggg agagaaaaag agatacttgc gtgggcccgt gtgcgtgcgt tcgcatgcat 1440

gtctgagtct gactccagct cgcagggctg gtgcgccagc tgggcctgag gaagtgtaga 1500

gctccgaaac tcgtgtacta gttgggttgg gtctcatctc atgacgggag agtgggcggc 1560

cactggatcg attgggagga atgtacgtag gcccagctgc agggagtagg cagcctaacg 1620

aatcacgtcg gctgccactg cctgggcgac gccgattttc ttctgctacg ttttggtgtg 1680

gtttttttt tggcgttaaa actcgtgttc caccactgcg aacgtccgtg ctctctgctt 1740

tgcttcgatc tgatacgatc agatttcctg cttgtccggc actcttctcc cttgcactgt 1800

cctcaactgc gcacatgggg aaaatatcac ccgccatgca agcggtgcgg tgcagcaccg 1860

ccgtcggcat cttatctttg ctgtcgctgc ggcccaagac ttatccagac cggccgatcg 1920

tcacaaggcc ggccacgact acaccggcgg cgatgacccg tgtcccggcc gtaacatagg 1980

ggcgtttggt gctcaagttt tttccacaat tttagaaaaa tattgcagta ctatatatag 2040

aatggtgttt ggtaatttaa ctaaaatctc tgttttcaaa acgggaatat tacaaacact 2100

gtacttgtcc tgaggtattc taaacttaga tctggacttc agtttttaaa accgtagtat 2160

tttaaaccaa tatatcatca taactaaggt atactatagt atttttttaa aaaaaactat 2220

gattttaaaa aactttattt ccaaacagct cgccgatccg gcgtcgaaga gttgtagcag 2280

tgcagcagat gacgccaaga cgtgcctgcc cataaacggt tgtcatggct gtgcgtgtgg 2340

ccattaaggc atgcggtgtt ggaggtttcc gtgtgcggcc gaacccgacc tcgacgtcag 2400

atcggcacga aatttagatg tggcaatatg cgtaaaaatc gtcgtctatc tcttgtctnn 2460

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2520

nnnnnnnnnn nnnnnnnnnn nnnnnnnncc taaagattca gcttgattcg 2580

tttggctttt ccttgaagac ttctatcata ttctctttct cttacaccaa tttattctca 2640

caatcttgtc tagtttacct atggagatac 2670

<210> 1942
<211> 1522
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52103_G1, chr2:2086831..2088352, Cluster 11

<400> 1942
aggccagcac ggatgcaaaa cggtggcaaa cgacggcaac cgtaaatcaa tctcgaaaaa 60

gaagagtagc aatgtagcat gccctggacc gagcccgaga agcggtcgtc gccctttgcg 120

actattccgt gtggcgttgg gtcgtcgccc gaagccgatc ggctggcgtc aaccacgtat 180

cccagcggat tcgatattgg gcttcccggc agacccgacc cgacccggcg accccgttgt 240

tgaaatccgg aggtttcccc aaccaccgcc gtgtgtggtg cagacgtcaa acctgcattg 300

accggcctga ccccccctac accaggacac gccactctag cctatgtcag gtggtttttt 360

ttttgcaaaa tttatttgag gtgaccagac acacctcggc ccatacataa tttatgtgac 420

ggcccactcc caattatgca ttatttagcc cgtagatatg tggaggccac gaaagacaga 480

ttgcgaactt atgggcctca tggctcgaag cctaagcttt gattgcctgg gctgcaaagg 540

cccacgctct ctctctttct ccgcggcata acactaacag catggtatat ttatgtggta 600

tatataatgc aatgcatgag cagtcgcagt agcagtaggc gtatgtatac ataggcggat 660

atagacggca accggcagga attattgcga ggagcatcag aatcagatct ccccccccatc 720

ccccttggag tcaacaagat ctccggcttt gcgtggagtg gagccccgga aaaagcagtt 780

tctcaaaact acaaaaggag aagccaagaa ctattaccga cgttgtagcg cagtagtata 840

tgtggagtcg acgttgtagc aactcgacgg gaggatgtgg ccacggccca cggggctgcc 900

acgcaccaag cagaagcgaa caagctgctg ctgcatgcgc ttctgcaagc aaagcaggag 960

caagtactgt ggtccgcctg tccgactctg tctgtgcgtg tgtgtcactg tctgtctgtc 1020

tgtcagagtg ggtcgtgttc gtgtatcact caggccggac tggacgggtg tcgcccggat 1080

ggcacgagag gtccggggtc ctccccacag ccacagctcc aggcctcgtc ggaacagaaa 1140

aaaaaaaggc gcgcatgcgg gctccaatga ttgacgccgc gggtgccagc caatgggaac 1200

ttctcgctct ccgccgttcg ccacctgcag gttgcctgca gactcgcggt gcggtgcagc 1260

ctttttttt ttttttttac tttaccccaa ccggtggtga agacgacgac gagctagagg 1320

agaagccgag aaggcagtca accttaaaac tggacggggc ggaagaggtg attgatgaga 1380

ctataattta ttcgttcgtt cgtttgttag ttaactaaag aattgatgat gctgcccttt 1440

accttcatcg cctccgcctg cactgcgtgc ttgtctcatc attaggctgg tgtggtgtgg 1500

tgggtccctg ctcctctccg gt 1522

<210> 1943
<211> 1469
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52113_G1, chr2:2095786..2097254, Cluster 11

<400> 1943
atccggaatg ctagaccata tggtcaatcc ggaatgctac atggacgctg aaacctatcc 60

tcaagtattt ttttatgata attaatgatc acgtttatct tttaatgagc agcgtagcca 120

gcagtagtag gcctagtagt actacaatgc atgtctctcc tgccaacgac tactcgtatc 180

ccagcagaca actctcacgg cgacacgtac ctacggaccc cggctgcaag tttgcgactg 240

accactgcaa aatgagatca ctggtctgga tccttggcag gcccaggcgc aagttgcccg 300

cccaagttca agttgcgtgc gtgcctgcgg ctgcgtcttt aattaattaa ttaattaatt 360

aatttaccaa aaggagaaag ccggagaggc acgcgcgcgg cacatggggc caccagagca 420

aagtgacaaa ataccggtct tgattgcacg gttcacgtag cacgagcaga agattcattt 480

ttttcttttg cttcctcata actaaaactt gtttgatttt ggtaatgatg gcgtttcctc 540

cgtccgaggc ggacggaatt ctcgctttct gaaaggaaaa tagtttagaa tgtaaccaaa 600

aaccatataa aaatgcaccg aatggctgtc cactatcacg gcccattttg agcaccggct 660

cttgcaattt catatatcaa gtccttagtt tcctttgtaa ttttcgtgat agtgtacagc 720

cctaaaataa ataaaaaaac ccgcatattc tacgatataa aagagacacc ttttctgaaa 780

agggaaaaag tgtaagattg gacgtaaaaa aaaagagaga cacatgtaaa agagaccaga 840

cgcacatgag gcatcagctt cggtggatcg agcgagtggt gtaggatttg cttcttttcc 900

acgaggtttg ggagatgcag cagccagccc tacgtgcact gcatccacgc ctccattttt 960

cctcctccag tctcttttgg aaaaagtgga gtacagtggt ggggatggcg tgcgtgcgtg 1020

ctgtgttccc cacaggagaa ttttgtgtgc gtggctgcct ttcctttggc catcagccat 1080

ttgttcactt gcttgcttcg ctagcacgct acatgccatc cctcgtcatc actacaagca 1140

acaagcagca gaaaagaaac cgcgcgtctg gctttttttct acttgtatat gtctcaactt 1200

gcgcactttt aaacataata tatataaaaa cacattcgcg gcagttagcg tctaatgatt 1260

aactataact aggtaccgta ccacatgttc caattttagt tcaacttgat agactttctc 1320

taataacaaa tcaaatcata tgcccagacc agcctgccgg gattacttgc atggaccagg 1380

gcccaagcgt tccttgggcg ttaaaccaaa ggtttagagc ctcagatgca ctcgagggga 1440

cccgatcgtg gccggggatc ccaagcgtt 1469

<210> 1944
<211> 1665
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52177_G1, chr2:2259683..2261347, Cluster 11

<400> 1944
tataatgtta gtgataatct actagtacta ggagtatagt ataaacgatc tcgtcgtgcc 60

cagggagaca gcaaggggac aggaaagcgg gaatgcaata acgggggggag cggaggacag 120

atcgatggga tgagagaagg gagagatgct agctagctaa gcctcgccga agccgaaagc 180

aaataagcat cgcgtcagct aagtataata agatgccgcc gggcgacgag gtcgatagca 240

atggcgtgga aagcgacgct gctatgtgct tactctccct ctctctttct ctgatggcga 300

ctcgcttttt ggcgatctat cgagatgagt gacgagggct ttctgagatt gcacactgat 360

gttgggctcc taacaagtaa agtagctata ggccgcgcgc cacgcaccaa taatttaacg 420

cagggtttta gtcgcgtagc tgtgctgcgc tgtgcatccc atggattggg gagcggatca 480

tgcatgcatg catgcatgtc cctttgcttc ttttgagttc gtgaagatgt ctagtagtat 540

tataataaat aaagcactca aagcacacta attaaagcag tacggacaat ggagcagcat 600

cgacaacctt ttttttcct taggacaatc aaataacaca ccaccatgga tatacgatag 660

tacagtacgt gcgtgcgcat atatgcagcc atcgcctgcg ctcgtcaacc aaacatgcat 720

gcgttctagg tatacgcgta catgtgcata gggtcaaagt aggctcactg tgctgtgacg 780

tagtaagtgc agtgcaggca ggcactgtcg caggctccca gcactagcta gctagcacca 840

gctagcccta gctgctccta accccaccgc tctggctact acccccaccc ccaccccgcc 900

gccgtgacgt cgcgcgctgc cacgcacagc ggattcctgg gagacctcga actcgaacca 960

ttggtggtta gttactatgg gaatccatag catagggagg gaggtgccgg cacttgccac 1020

tgctggtagg ttgagtactt gtaccacggc tagagaaggc aaagcaaaac tgcaaaaagg 1080

ctggcgtggc ctagcctggg cgcggacggc agatcatgga ggaatgatcg tgcctctcgc 1140

tccatcggga gccgaccatg ctggatcgtc tccaagcttt ctttctttct ttctttgcga 1200

gggctccccg tggccctgtg ctgtgggtgg ctggcgacgg ctaggcaagc gaacgagtgc 1260

gccgtggccc gtggagaggg gccgcgcgtg tgcacggtac ggtgcgatgc atgcgagatt 1320

gcgagcagcg cgcgggcgat gtttttccgg cgccaacatg gtggtgcgtg gccggccggc 1380

cgtgcgtcgt ctccgtccat tatgttcgat ccaccaccac cacggcacgt cgcaggcagg 1440

gttcggtacg tacgcacacg gggggtaaaa taaagctagc tagtagctag ccggcgccgc 1500

agctccatca tctctgtggc acagcaggcc gcagctactg gtggtcggaa ggaacagtgc 1560

ggtggcgcga gcagcaggtc acgcgtgcgt gcacccgcgg cgcgtcgccg tccgtccgtc 1620

cgtccgtcct gccttgggga cggggtcgat cgggtcccga gtccc 1665

<210> 1945
<211> 1535
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52573_G1, chr2:4291937..4293471, Cluster 11

<400> 1945
actgaaacgg agcagggcat tggttcatcg aggagtgcag tgcgtatggg aaagggaagg 60

caaaagcttc gaattatatt tcaacaggtt agctggctcc atgaattgaa acaccgcagg 120

ttattaggtc gccatatata tgtaattatg tatggcattt aacagtaagt cttatcgaac 180

gcagacgtac cccagccatg ttgctgcatg caccatgcag tacgcgcacg taccgtcgtc 240

gtcaaccagg gcctgcacgc gcacgttacg ccgtcccctc tctccccctg ccggcgggcg 300

ggatacgaca cagctagtag tgctatagcc tgcatgcatg agcgcgaggc tgtgactgtg 360

agccaccgca tctgcatagt gccgatcacc aacttggcac agctaggcgc tagcgcgcat 420

atctcgcgac gatcctcgat ctcaagccga tcgagcctgc aggggcgtgg gcactatata 480

tattatatat agcacgacac gagaaaggct aataaaacgc cgctgctgca tgcgcgcctc 540

tgaagagcaa tgttcatgta atctgtaggc tgtagctagc tgtgtgcatg catgcatgat 600

gtatggagat tggacgagct agcgccatgg cgacacgccg ccggccgcca atggaggtac 660

tgggaccgga cgtggcagtg gcgcatgtgg tgtgtctacg ccgcgcgcgc agctatctcg 720

gcccaccatg catgcacgca cggcagcgcc gggcgcacag tgtccaggag ataacatagg 780

cagatgatgc tatcctagct accatcttcc ccggcccgga aaaagaagcc ggccgccggc 840

tgtgctgagg ggccaatcga cgatggagcc tgcaggatct cagaaacggg ccatgcatgg 900

ccgccccgcc ggccggccag gatgccgcgc gccgtgtcga ggggccggcc gagcacaaga 960

atagatagat agaacgcgga cactgcgact gcagtggcgc aacagttcca tttcaccagc 1020

acccatcaat cagagataga gcgcgcgcgc ggccctgcac cgcacaggta cgaactgcta 1080

atcaatggac caccggccaa gcaatggatg gatccgccga ttgtctctgt gcttagtaat 1140

aatcgctgct gtacttgatt actggaggat cagatcatgc tgtcatgttg acccaacatg 1200

gcgtttaata ggttgttcag aaacgctgtg tatctgtgca cgcacggtct cggatagatt 1260

gggccttcgt ttggcatcat agctccaatg taacgtaagc ttctgtagct gtttggagct 1320

atcctgttcc agacgggata aaccaaaaca agttcacata aggagtccct caaaccatct 1380

tcttacggag gtttaagtga aataaatcac agctaaaaat aacaccttca ctcagcttca 1440

acgcaagcat gtaggcacca ccgtgtgaga atgccatttt tggcctgcgc gcatccggag 1500

aggaggggca tgcaaccaat gaggtggctt tttta 1535

<210> 1946
<211> 2346
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52574_G1, chr2:4293583..4295928, Cluster 11

<400> 1946
agtcggatgg tttgtgacct attaacggca tgagaggaat atcactgtaa ttcagtaatt 60

gcattaataa gtatgtgaag ttgtaattat cacacattta gacacctagt catttaacat 120

ataataccta ataattatcc aaactgttga attctaagac ctgcatctct gtcctaaaaa 180

taatacaact ctagtatgta aatgttgtct aacgccggat agttcatttt tataaaataa 240

aaaaacggag ggagtatgta attattagca agtgaacgca tgcatatttc agaccttgaa 300

aagatacttg gacggcaacc attcatcttg gactacgaca cgctaagtcc aaggtatgcg 360

atttcactgc ctctgataac aatcggtttg taaccgtaat ttgtattttt tttccctact 420

agtgattggg taagcaaaac tgctgtgctt catgcgccga caccaagcaa gaaggtaccg 480

ggccagaaga aattgagtag gccaatcttg gcacattcga acaggtaccc taagcaagaa 540

ccggcccaac tgacgtaggc ccgttagatc ccccagcaac tcgggcggat ccggcctttt 600

ggttttccaa aaaaaaaaga ctaagcccgc gtgtagacgg cagcacacaa ccaaggccgc 660

tggtggtctg tccagcccac tccgctgctt cttccttcat agcccatgtc ggtctccttt 720

aggaaacaaa taaaaagagt aaagggccca atactcgact gccgtcccaa aaaattctct 780

tctgggcagc aactgcccag gggcagagga aaagaagacg agacgagagg agaggagaaa 840

ttcctacgtg atgacagcca ggaccaggca gggttcggtc tgggcgtgtg gggcccttca 900

ttccaacttt gcaagccctc gctctcgtca gtcggaatca cacacggcca attcctcgcg 960

cgcatcattt cgctctgaaa gttggaagac gacggacgtc agtgcatgaa ggctttcagc 1020

atcgttcccc tggctccgag tcccacttgc tctcagcatt cggggatctt ggcgtgcatg 1080

tcgccgccgg cagacgatcc tgcacgacta ctggtagcag ctagcctagg agggagtaca 1140

gtacatatat attcttattc ttaataataa tgcatgcagc ttagctttat tatttgcttc 1200

gcttcgcttt gccttgcctt ggttgggcta gagtgagtga gtactagcta gcagatagat 1260

gagcatcggc tagcttttgg ttgggtggtg ggagacgaga tgccaaaatg cgtcgcctac 1320

ctccactccg actccacctc gacaaccatg cacgggctca gctccgcatg tctgctcttt 1380

taagctcctc cgtccagtcg cttcgatcgc ttctggccct gaccatacca atcagagggt 1440

gggtccgaat aatatatata attcagtaga tcgaagagag tgacggccgt gagggcagat 1500

cgtctagtct cccggttggg gactccctct ttaattaccc atattcagag cagcgacttg 1560

gagcatgcat gtagccaatg caagcgagag gatcagctag ccctatacta gtagatagcg 1620

ttgaatatat gctagtacaa gttacacgat ccaactaata gccgatcgaa tactacgtgt 1680

acgtggtagt tataccctcc taccccacac cccagcccgg ccggaaaatg atcgaacagg 1740

aacagtacga gatgccaaag ccagatccgg ccgtcaaagc tagcgtgccg gacggcggca 1800

gcaccgggaa aagtgacgcc tagctgccta ccaccagctc atgctcatcc atccaacggt 1860

agtggaggaa ggaggtgcag caggcgagca tggggcatgg gcatagggca tatggcctac 1920

tagatcgatc gaacgaccac cgatctgcct gcccgcccga gcactttgga tggtcgacga 1980

gcttgcggcc cggtcgtccg tgtagggcgg gggatcggag ggacgaacga cggggacagg 2040

acagcccagc ggcgacgcgc actaccacca gtgggtgcgc atccggaagg ggatgccgcc 2100

atgccgatgc cggggcggat gcggatcgcg accgcgcccc agcctgccct ccttgcattg 2160

ccgtcacgtt cgttcgccca gccgccgctg tgccttttgc cgtcgtacca gtctagcgga 2220

gttgtggctc aacttgtttt ggcagccaaa gatgataagg gcgatcgtac gagacgatag 2280

ggcgaatcgt acgagaccga cgttttctac ccatagattt ccggatttcc ccatgtttat 2340

gcatgc 2346

<210> 1947
<211> 1701
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52583_G1, chr2:4310024..4311724, Cluster 11

<400> 1947
aaaatgtcga caccactatt gataagcatt gtagttgtaa actcgatggg aattttagag 60

acaattggtc ccgataaaac ttttcgtggg aaagaataag atagcagata tattgaacac 120

agccacaaga caactacgca acaaccaccc tcgaaatagc aaagcttggg taaccatcac 180

ctctgatatc tgacgatatg tgagactgaa catccaaatt tgaaggagaa aaccaaaaaa 240

aaatgtctca agggtcaagg ttgaccctat catctctggc tctgctactg attactctaa 300

cacttaatgt cacgatgcaa gccgcagcaa aagcatcacc tcgcttcccc aaactgcgtt 360

tgtttagcac aatcattgct caccttaccc ctgcaaaaaa aaaaaaaaag caccagcaat 420

ggagctgtcg ccgtttcggg aattatgtcc agttcttaac tctgacagga ccgtttcgct 480

cgcataaaca acaacaacaa caacaaaaaa aaggggggag cagggtccgt ccgtcactgt 540

tgttgttaag gtcataaaaa caggtgatta caggtacttg tatccacgca aggtcaactg 600

cgctccccag ccactccttc cagtttttc gtgcatctct ctgtttctct ctctctttct 660

tttttctggt ggccaataat tgcatgcgca cacgatgcat ggaatttgca ggtcggatcg 720

ggcctcgccc aggtgaggcc gcgcggtgag ccgctccgtt gagccgttag atcggaagcc 780

tgaaagcgag gtggccgcga gctggagcca cccggctgca gcatccgccg ctcttttttg 840

ttttttttg tctcttttct tttctttcac gagcctgaag aggcaaagtg gagctgcccc 900

gctagtcctg gcctctgcac agcacggcgg agcagcttcc ccccgtttcc gtctgaatcc 960

attgaaggtc tcctctcgtg tacaggaatg ctttccaaga cggcttagac ggtgctgatg 1020

catgcatgga tacatctcgc tgtcttttct ccggggtcgc cgcctcttgg acccgggtgg 1080

gcggcaggta cgtgcgcgtg ggcagtcaag tgcagcggtc agtttcatcc tcctgggact 1140

gggaagacga acgaaaacga aagccaccat ttttgaagga cacccccctc ccctgacccc 1200

tactaccctt ggcaggtccg gggttcacgg catcttcctg cgccggcatc gcggctcggg 1260

gaaggggtc caagacatgc tctctcctct ttccctgcct tccctctgcc tattgtttcc 1320

accgaatcgc attccccgac ggcgatccag catatttttc tttttctttt ttttctggtt 1380

actggcgttt ctttcttttc ccccctcctc cctggccact cctgactgct agtactttgt 1440

tcttcgttca ctgctgctgt aaacggtgta atgaaatcgc tacgaaaatc ctagatgaat 1500

agatccacgc gtgcctgcgc aaaaaggata cgtacggctc gtcgccgccg gtcaactatg 1560

gcaggaaagc agggcggccg gttgaaccca gggtccaaat cctgcgatct ctttcaattc 1620

gtctcatctt ctttttatca tctcctcctg gtccttttcc gcccccttgga ctggcatcaa 1680

ggctgcacaa taataataaa t 1701

<210> 1948
<211> 1592
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54245_G1, chr2:13289679..13291270, Cluster 11

<400> 1948
attcggtgct tcggtatgac gatctttaaa tccttctata gctttgccgt tcatgatttt 60

tatttaccgt ttggttctac cttcagtttt agacttttcc atgttgatgt agatctccaa 120

taaaaagtta atcatgttaa tcacttttt ttaccttcat ccaagtctat tgcatcattt 180

gaactataac caagaagata tgatcgagaa gcgtatgtat aacaaggatc ttgttagaat 240

aggagatacg gtcgagatca caatagatat gtacaattca agactgactc ggaggattaa 300

ttaaactcct aacctataga ttatgcatac agataacaac cgagaattct ctgtgtggag 360

ggatatatga atcctaacct aatttccctc acgcgagaga tttggatcga cacacatcat 420

acaacaagag acgagcccag cactatgcat ggaacggtga cagatccacg aacgatccct 480

gattaccgtg tcttgattct cgtgttgctt gtttgttctt cttgctagga ttggtgcctt 540

gaagtgtact caaagatgaa tgaccggttg atcacatctg ccgactgcgc gagccatcag 600

agcaatgtag attatatgac tgacagggct gggagcaaat taagttcgga taatgaaagt 660

agtcttcggg tcagagtgaa agggccgtaa gtccgtaaca aactcggaca ccgccgccga 720

ctactggctg gcgaccgtga cggactgacg ggtatactat tacttccgct gcacacggac 780

cggaccggca caggaaagtt tcttctccga tggaggacgg ctccatcgat ctggccaatg 840

ttgtgattca atgtctcgat gaacaataaa atgcgttctt gagctggcac cgtgcatgtg 900

aggcgcgggc ctgctggggc gccgcatgag agaagaagtt gggtcgtact cgtacgttgg 960

cgggtgacga cgctggcgga cactccggag ctaggagaga gaggccgtgc agcgtgtcat 1020

ttggacacac gacacatcga tcgatcgatg atctgtgtgt ggcgaaccac acacccaggc 1080

tgctccccgt ttgaatccgt gacgcggact tcgtgcgtac acaggatgag accgcggtcc 1140

gcgcgtatgc cggtacgcgt accggcgtac gtatgcatca tgcgtgcatg ccgcctcgca 1200

tgcagcgaac gggcgccgcc gcccggcgag acctttgcc gccgaactgg aagcagcggg 1260

cggcacgtac gcacggccca tttaattcca tcaggcatac gtagtactag gcggcagcag 1320

ggtgtacggt acgtgtacgg tgccaggtct cgctcgccca ccgcccgtcg ggcgccgggg 1380

ggcacagcgc acgcatagct agagcggaat gtacacgcac gcgtgtccga ttcggcggcg 1440

cacctgcgcg ggggaggggg gccgccgtgg cgcgcctgta cgtttccgtg caccgcgggc 1500

ggctagccgg ccggccggtc ggtcaaacga atgatgcgga gggggatcag ccgcggcgga 1560

tagtctccgc tccgctcgcc gattcacacg ga 1592

<210> 1949
<211> 1794
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54437_G1, chr2:14255282..14257075, Cluster 11

<400> 1949
ctggtttttt gtgtgtttgt ggtcgaatgt catcaaattt atattagaat ttaaatgaaa 60

atatttttat gtttggatat aattctttaa aattgcaatt taaataaatc actgtatgaa 120

ttttagagct atggctcgag ctgctctgac ttgggctatt ctcaacagta gtttcgtgat 180

acatttcatg atgccgcatt attattttta gacgacatgg cacttattga gaatagcctt 240

attagggaac aaacagctgg ttttggttct tgccggttaa tgatgcggcg gcgattagtc 300

aagcccatga ggcgcaccgg ccccaccaga gaatctaggc ctctaggggt accagtatat 360

ctatcaatag ctatatgccc cgctcgtcag ttggaggaat tgtcttgccc tcgtgtctcg 420

tccggcccac ggagatgtgt caaagccagg aattattcgc tgcgctgtac tgctgtagta 480

gtagtagtac taccgtcgag cttgcttcat tgcttgggat gggagggagt caaataatag 540

agaactcatt tctgcatcac catgttgggt ggttgaggcg ctgaatccat ggttttctgg 600

tactagaatt ccagtctcgg cagttcttgt caccggtcaa aaggaaccac ccggggaaag 660

ataatgaatg gctctgagta ctattcatct gcttgctgct ggccgttaga aaatctggat 720

ggttcgtcag tctctgagta ttcccatttg ttttccttca ggtgatctgt atcggccata 780

cagcccatac tgtgtgtgat tcggttaggt gtgctattat ttatgtatta tctggctgag 840

atcgaagaca aaaaaaatca aacaaaaggt attatttttt tgtatatata aaaaaacgtc 900

tgggcattat tctggaggca agattatcta taataatgca ggtaacggtg tgttttaaat 960

agaatatatc agtgactgct ggtagtagga aacctttaca tgttccttct tctcgttctc 1020

attttctatg agatctctct ctctcactct gtctctcgtt cacacagaat ataaatgttt 1080

ttttttattt tctccgcaca ccaagaatct ttcttggtca cccatgactc agccaagccc 1140

cgcattattg cttgcgctcc tcaggaatct tacgttcagt ataatcaggg ggctgagaat 1200

tcagtcgtct cactgtgctg aacctttgtg tgcagttcaa cctgacttga caaagtgtac 1260

taaaacgcat gctgagaaag tgagaagggc ccgactgaaa aataataacg acgccgtcag 1320

ccccgactgg ttaaccgatg ctgactaggt ctgggacaaa tttttatcag cactgcacgg 1380

ggttcccgtg ccaaaaactg acggccgttc ccgtccaaga acagccgccc ccccccccc 1440

ccccccccca gcacacacac gcagctccat gtcggcatgt cgacatgctg catctggcgc 1500

atgagaggat ccagcccccc ttttttcccc ctgtggtcct tttcccttgt ggtggtggat 1560

ccagccattt gcaggcccgc gacagcagcc acgtcgaaaa agggcgcgag aaatgttgcg 1620

cgaagcaaag cagcaacagc ggaattggag agtgtcagtg actgatgccg acgggacggc 1680

tgcgtgcgct ggcccggccg ggcggccacc ggcttcgctt ccgggttcca gctgaaaaag 1740

tgacgcgccc gggccggaac aaaacatcaa agcccgtttt tttaacaacc cttt 1794

<210> 1950
<211> 2119
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54920_G1, chr2:16927363..16929481, Cluster 11

<400> 1950
aagccaacca aacagacgga tagtagtgtg agtttgtagt agtttttgca tatcttatat 60

ctataatcat atttttagta catagacaag tcttatacca agaatcatat ttaacgtagg 120

tggattttat gttgttggat actgcataaa atctaatgca tatcccatta tcaatttatg 180

ttgggattgt aagattttgg cacaaaatct aatttaaaaa ttagaatatg ttcggttaaa 240

aatgagataa tagaatgaga tgagaataag gcacaacgca aacagaattg gctggcccgt 300

gcatcctcat tcttcatttg ctcagggcgg cagcgagcac aggcccacga ggctgctccg 360

acgtaattgg cagtactact acaagcgaga gcgagggcgg ctgggagaga agcggtcact 420

tctctcgagc atccccatgc aaaagcggcg cacgggccac tgatggcttc ggcatcattg 480

tgttgtgtgt ccaccgtgct ccaccacgtc gtccggtcgt acccttttgcc tgcctgcatg 540

gcagcatgca tcgtacgtgg aggtcgagtc ggtgcgaaaa ggatgacgcc tttggggtgg 600

aaactctagc cgcactaccc tgcaggtgca gtctcgtgcg gccccgagcc atcatcattc 660

gtcggctaaa tctaagcctg tatgggtttg tagtagctag taggccgctg taccccggca 720

tgcgtcgaat tttccaccac cgtcgaaata tatgatgatg acctgctgat agcatgcatg 780

caacgccaac attgtattag cagccagatc acacgtacga gccagtatag ttggcgcaag 840

ctaagctagc gagagggaca ggaggaatca tgtcacgtcg aaaacctcgg caactactgt 900

tggttggcga ggactcactt gcatgatgca tggtgatgag agactgtcaa ataatttgta 960

cgatcgacga cacaagtgaa gtgctgatga ccgatgtgaa ccaaagtttc gttaaaagac 1020

taaaacagcc aaaaattgca cgagagacag ctagctagct agcgtaggcg cggtagctct 1080

cctatggcta gctggctgac ccagcacaag ttgcacgcgt cgggatcgat ttggacgaga 1140

cggctgctag cgcgacaccg tcctattcgg atgtcaacca tttgtttact catcatcagg 1200

gcaaaacgta cccgggacat ccatgtagac tgctcgtgcc cgatgtagat ctctctctct 1260

ctctctctct ctctctctca agtgtgaatc agtagaactg ggtcgggtct ttctagtagt 1320

ttcctgtagc cgtttccatc ttggtgtatg ttgctctatt ttatcttctc tcaatcacgg 1380

gagaaaatgg accgtcatag tattgttgtc ggaaatgacc aacagcagcg ctcatcatca 1440

gtctttttgg aactcaacaa aagcagcact catcatcagt tcgacagttc cccaaccatt 1500

ttgaaactgg gccgaagcct tccaatatcg ctttgataca tccattgata aagtcacagc 1560

ctgcatcctc ctaggcaaag cccacttgag ccagcccata ggccactctg tatagcccac 1620

atccattgat aatgtactct tgtcaccgcc gcggcaacca ccgaaagctc taacgcacgc 1680

cgcgtgcggg ggagatccgg cggtggcgaa gcagtagcag cggaaagtac cagtggggcg 1740

agctcgcgga cgatgacggc gccagcgacc tcggcctcct ccagccgccg gttgtcgtcg 1800

ggcccgacgc gagcggcctc cgaaggatga tcgatcgagt accgcttcga cgacgagggg 1860

caacaaggtc aagttcgcca ccaccacccg cacctgcagc gctcgtggac caagttcggc 1920

gacgccggct cgcttctcac cgcggtctcc acccaagatt cgtctgataa caatgttagc 1980

acagcgtctg tagaccatgc atggtttcca gttggggact tgcttggggt actatggaag 2040

gaacatgttg ctaccactcc ggctgcttgt gatgcaatta atgatactat gttaaaaata 2100

gactaaagtt agcgttttg 2119

<210> 1951
<211> 2441
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54924_G1, chr2:16932637..16935077, Cluster 11

<400> 1951
ttaccggaga caataaaacc tgacccccg ggatattgtc ttcattttac taaaaaaaca 60

gttttcgcaa caatggagta tattttctcg gaccatccta ttccgacaaa tgatgctcgg 120

aaatactgtt ccgccaaaag gaaaaaagaa aaaaaaagga aggtaacaat gacttctaaa 180

aactagatgc tcctgcaatt gctatggatg taatccaaac ataatcttgc attttatgag 240

gtgccaagtt tgcagtattt cataaataaa gaaactcaac ctctaggcca gcccagccca 300

gccatatata caacgtttct tcattggaat gtcaggcaac atcgagcaat tggtgggctg 360

gcgacaaaag cggacgagag gctccagacc atatgaaacc ataccagtcc ctttccaaca 420

gctgcaactc gcgtggacac taactaaaat cgtgtggcac ggatttattt taggtgagcg 480

atcacgtacc tgcacatcgc ttcagataac taccgcgcgt cggattactc aaacgtctga 540

ctagatcaca acttggtaaa ccagtggcct gatgagatgg ctagatgccc ccttctataa 600

aacttttgct agtgccgtct tgtttcgcta gctggggacg ctagaaagtg caaatcttgc 660

aaggcaatat atgtgctggc cgggtcattt cgacgcacca tagttggtaa atagggccag 720

tggataacct tatttagcaa aggttcctgt ggcttgacca gctttttttt taatggcgaa 780

tatgatcgag atatggtggc agccccattt ggagagaagg gggccctcca cctaacagaa 840

gataaagctc gcccatcgat cagctaatgg ctctgatggc tgactgctca tcgacaccat 900

taaggcatta gcaaggagcg agcacgagca gctagcagta gcaaaaatgg aagccgcata 960

gcacctgcac cggcgcaata ttttttttctc cgggccatcg gcaataattg ggcatatctt 1020

gaagcttaca tcaccgatat cttttgctta cgacgaggcc gaggccgagg ccaggtccag 1080

ggatgcagca gtgcagatga gcccgaaccc gagccccacc cagctcttcc tcccctagca 1140

gccagctatc gctagcttcg cacagccacc aataagcccc ccctcccccg cggcggcatc 1200

tctctccagc tcgctcgctc gctcgtgatt cacccgcagg agccacccag gcacgagggc 1260

ctatctcttc ccctcgatcg gcagacagac gacggaagtg gccgcgaccc gggtgccggc 1320

cttgtctttc ggctttcgcg cgcggcgtgg acgatgtgtg accttgacat ggcgatgcgg 1380

gtggagaaca acgggcgccc ccgtcaaggt acgcccgtgt gtcccccact ccttcctcat 1440

cttcccgctt ccagttttcg ccttttgctc gcttctgctg ctgctacggc tctatctgct 1500

gtgcatgagc atctgcctgt gtcgtcccgt cccttcagat cgcacagttt gcgttcatga 1560

ttgtgcgccg ctgggcgcta gccatggggg ggctcctttg accgcggcct ttcggcgtgg 1620

aggaatcgcg ctcgcggctc gtgcacgtcg gtcccttccc ttcatgtctg tctcggcgcg 1680

cgacctgtcg agggcgctgt tccttcgcaa tggtcgcgcc catgccggcc gatcgactgg 1740

gtttcgtcac attacactat tggcgaccta cagactacag cgactgcgct cgggccctcg 1800

atgaacaaca gttcgccgac cggatagctg ctgtgagcct agcctgttcc tagctttggg 1860

tcgcgtcgtc gttacccgtc cgtcaccagt gaagtaaagc ctgcggttag tgagatatgg 1920

gggggtagac aagcaacgtg cgggctgctg tgggtgaatg catggcaagt tcagccagca 1980

gccgagcata gagcttgacc gagagaaaca agccagcagc ttgtaaacag gcgtggagcc 2040

agtcaaacag gacgccacca gctacctcgg actctcggag gacccaatgc cagtgttagc 2100

acggcacgac tacaacacat ggattggatg gatcgtcttt ttttcacact gccgggggct 2160

gccttgacgg ccatgcatgc cacagctgct cacggtctgc tattcattca tgcatgctgt 2220

aatgtcccca cagacattag cacctcctca cctccatttg ctaagagtta ataaacctat 2280

tagcaggcgt gtttcaggac ctcatctgct aattttagct ataagggcct ctctagagca 2340

tctatagata attgttagct acaattaatt gtaagtgttt caagctggcc agctaaaatc 2400

ttaacttatt gtcagctaga ccccaattaa caattaggat a 2441

<210> 1952
<211> 1627
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55003_G1, chr2:17231680..17233306, Cluster 11

<400> 1952
actagctagg gcggagggaa ttttgactgc ggggccgaac agaaatggct catgcaaatt 60

cagattgccg cgggaaagtg tggaaccgac aacaagattg ctgcatgcag gagatcgaca 120

gagggtggcg ggccgggtga ggcggagcta caggggcatt gggcggtggc agcgaccatg 180

agggaataca tgtaggactc catgcacaca tttaggatac ctaataaaac gatcccaatt 240

acgttagcgt gagatggaag acatcgtctt taatttcgca tatatatatt agaggaagcc 300

aattatataa tggagcaaag caagaggata tacatgtata agagtcgaca ctgaaacaca 360

cataatcacg tgcgtgagcc atacctgcac tgtacagcga ggaaacgaga gggagtgggg 420

tgatatggac aagacaggtc catgacatgc aaatatatca tatcttccaa taacaaggcc 480

gccttgcggt tgcagcaaca ccaccgcacc acgcatgcat gatgccgtcg cctatactcg 540

cgctcctgtg tgcgacgaaa gagagggcgt agaggagggt tcacgggagg ttccaaggcg 600

cgcaccccaa atcatgcctc tgcctcgacc ccaccccacg cacgccccgt ggagagattc 660

ccacgacgta catggcttcg tgcccccatg gcaaagagca ctactagcca gccagtggtc 720

tcaaagcact cgtggccggg actatgatga tgagatggac gcacagtcag tggcaagtta 780

caccggtcgt gcgtgtgtgc cgccgatatg tgtacattgg tccaaaaaaa caggcatgtg 840

gtgcatgcca tcgtatgcat cgcttacatg gaccgcgaca gtcacatgtg acccgtatgt 900

gacccgtaca tttcaacctc ctctcgtcca gcaggtccac gggtgaaaca tgcattttgt 960

gaaataaagc atgcatcgtg gttgaaggtg aggtagacat cgcgtaaaga atatacgtcc 1020

gacagtatga ttggactatt cacgtgcacc accaaactat tcgaggtgta gacaaggcga 1080

cactcgatcg agcatcaata cgatattttc tgggcgtaag cttaagaggt tggaaagata 1140

acgtccgcaa gggaagattt gaacatcacg aaagagaatg tacgaagccc gtagattcag 1200

gcatcaggat gtcctgcgcc atcgttacga cagataggac gattagtcga ttactcaaaa 1260

ggagacactc tgaccgcacc cgtacaccgc taggcacacg aggctcgtgg ccgtttccgc 1320

atgtcgctta tgcacagcat cgctgaagta gtaccaaaca gaaaaggctc ggaccattcc 1380

caagacatcc agacgacggt atcagaaatt cagagagcaa gagcaacaaa gtggcccagc 1440

actgagccca taaacccagc tttacccacc agcaattaac taccaaatca cgtccctcca 1500

cgagggcagc tccatggtcg ggggacagcg ctcattccat caatgatgca tgccaatagc 1560

aacttaccca gggcgtgcta agacctttc cttcatggaa agggcaccag gacgccgcgc 1620

ctccaga 1627

<210> 1953
<211> 1751
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55650_G1, chr2:20716573..20718323, Cluster 11

<400> 1953
tgttgaggat ttattaaaaa gaaagaaaac ggaaaacaaa taaacaactg ggaacgtaga 60

gagaccaaaa gagaactgtg ggccagcaga ctgcagactc taattatcag gaacaggtcg 120

aaacggtttg ttcttgggcc gaatgcttca cggatggaaa ttgggctgta agtggactct 180

tctggtatcg tgcgcgatct aatagtgttt ctgggccttt accagccttc gtgtggttac 240

cttaaaatcc aagtctttcc tgcgaatctt cttttcttta ggaagactag taaatatgct 300

tgtgggctta tagcgcgcga gaggaagaaa aaaaaactat cgaacattca tacgacataa 360

caactatatt tgttatttta gttcgctagt ttgttctgga gtgtgttgtg tagctcgctg 420

ctgctatcct actacgttct tgagtggaat caaacttaga tacatagtaa ctaaaacaaa 480

gtttagatac atagaaactt gcttatcatg gaattttggc tcttgaatat cgagaaaagg 540

taaagttagg agccaagaga tccctgatgt tgcagaacca aaccaaaaca gagctaatta 600

cagtcgaggc cagacagtcg caaggcgaca gacgtggtag gccgtgggcg tgatctggac 660

actcatcggt gatgaacaat agcgcacggg aggggagtta cgttcatggc atgtagacag 720

ggctgaaagt ttaaagcctc gtttggttta tgaaagtgga gtggcatggg gtgtcttttt 780

ttttgtaat tatttctgtt gtgttgtgcg ttgcatgacg atgcgtcgct cgaatcgatg 840

cgggcatgcg ctggggcacc gagcatgcat gcgcgtatgt gtataatagt attggccaag 900

tggccaccac actggcgctt gttaattagt acatgtgtat gcacaactgg aaatctatag 960

agcgggaatg gaatatccta caatctataa agctgcctgt tctttttcgt ttttttttg 1020

gtaaattatt aagcgatttg tcttgtaagg agtagctgtt tgttactgtt ttgcacccta 1080

catatattga taggtagtag agaggtttcg ttctccgggc gacctgggtg cgatgaaccc 1140

aatacggcca tacgggcagc tagccaactt ggcgccacac gtccacgtcg attccgcacc 1200

caaaatgggc cggctaggtc gaagacactg atgcctgatg atgatataga cgtggagtta 1260

tcacggaaat ctcattctta tctccacgac cacgaagaaa aataaactca cgagaccgca 1320

tcgataagat aatccacgga gaacctgtgc ttgtatacta cattaattag taggaattga 1380

aggtcgtgac gcaacagaaa acacgaattt tggagcctga ataattaatt aaaaagggag 1440

cctgaaaagt ctccgcagcc agcactgaag aagcaagtgt gtagtaatgg ttccagattc 1500

agtgtatgct gggctgggca ctactagagc acgcagagcc aaacccttcc ccgtcacccc 1560

tgatttgtgg gatggtttgg tgagaaagct tggagcgctt tgtggctttc gtcgtggtgc 1620

tctcgttcat ctatagaaat aaaaaataac aaacctggtg gtggatcagc tgcatggagc 1680

gctagcagct cgctgatgcg caaggaagtc gtgcaaaagt cttgggcttc tcacgtctcg 1740

ctcgcgttcg c 1751

<210> 1954
<211> 1748
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59518_G1, chr2:43353180..43354927, Cluster 11

<400> 1954
gagtcctgac ccgtgaccgg cacgccgcga gatgcgcgcg tgcgcggtgc agtgcagtgc 60

agtgcagcgc aggcatcgat ccgttgggca cgcaggcagc tagcatcgtc acgtacgtcg 120

ggaccgtttt gaggagcctg gtcctgtcgt ctgcgcacga tggcatcgta tctagctaca 180

ggctcgctgc agcgatctgc tcgccgtatc gtatggagat ggatggcgac ccgagtgtgg 240

ccggccggcc ggcagctcgt ccagggctgc tgcactgcac ctgcactcgt ccggcacatc 300

caactgacga agcgaccaca agcacatcca tccatccgtc cgtccgtaca tgcacatagt 360

ggcgtacatg attgagacgt atccttttc agtgcggtgc gtgcaccgta cgtacatgtc 420

tacgtgcatg atatggtcca tgtctatata cactccgtca aagatgttac tggatatacg 480

ctagattgta gaaaacacag gtacgtacgc ttgcaggacg gattacataa aaaagcagat 540

tcgtcactac tcgtgtcggg gtcaccgagg acgacacaaa tctggatggt ccgtcagatg 600

tctagataca catcaatata atgcagctct ccttaaaatt ctaagtgtaa ttttttttaa 660

aaaaaactca atagacctct ggtggtgtag ctagcttaag tgcttgacac atgacacgcg 720

ccactttgga cacccggcat ccaatcggtg gaggaagcga gtttccatgc ccacatcacc 780

cggtgccccc gccgccgttc ctctaccgat cagctagcta gtcactagtc agacgacggg 840

gcgaggccag gtgcagcgta cgggccggcg cgcacggccg ccactgccaa gccgggcgac 900

acaagtgccc gaccgactgg gactgagact gatgagcgca acgcgtccga gagggacggg 960

atgaacacaa caacatggct tcacgtaatg ctttgctttg gttgacccgc ggggccgccg 1020

ggggctgggc tttcaacgac ggcatgatgg cggccggccg gccagtcgat cgacgtggga 1080

cgatggggca ccaacgatct gcggcacggc ggtggttttt actggcctgt gtgtgtgcca 1140

cgaccgatcg agcggccctg gcttttgaga gccgcggcat gtcatgtgag cggcgcctca 1200

agtgccgtgc atgcatgcac gcgcccgccc gctccacgcc tcactccacc agccaagtca 1260

gtctcacggt caccacccac catcatcggc cacaggcaca gcagccgtcg atgcactttc 1320

ttttttttta atgctaagag attacgagtc aattaacacc atcaatcaat cctccgaaaa 1380

cacataaatc tcgcgcacat gtgcatatag gctagcagtc tcctcctact atacacacga 1440

agacagatga cgccgacgta caccacgcac gcacgcatgt cgcggtcacg ccttgcccaa 1500

cccaaaacat attatagcgt gcgtgatgtg atgagcgccc ccgttcgtac gttttaactt 1560

gcggcaggca gctatacgcg tagaacgcga tagccatgag cgagccatgc cgtttccaat 1620

taatggacca ccaccggccg gtctaaagtc gtgcaaaact agaagcccaa gccactaaaa 1680

tatgattttt tttagcttct ctgtttcgaa taagcatcaa cccttcccac aaaaaaaaaa 1740

aaatccta 1748

<210> 1955
<211> 2656
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59831_G1, chr2:45202126..45204781, Cluster 11

<400> 1955
cctactgagc accactagca gtactatata ctatgctaca gtgcgctgtg tcacgtcttc 60

agagtttcgg atcagatgcc cttgtttatt ttgttaatct acctgcctac agcttattat 120

tgccctttt tttgcttacc cattggtgca atcgtgttcg tttcttaggt ccttgttaat 180

atgcttcttt tgtactacct ccatttacag atatatgaca ctgttgattt attttttttt 240

tcgaaaaact ttgaccactc atcttatttc aaattattta ttaaaaaata taaaattttt 300

aagttaagca caaactacct taacttctcc ggagatactc tcctgccggg actagctagc 360

tagacgacaa atctcgtaca gctgctgctg ctgcgatgta ccccgtactg tactgtactt 420

ttaatacgct ggtcgctttg tagtttgtac gtactcctgt agtagaacat cgatagtgtg 480

ttcggttcca tcattcacgc gggtgcttct agaaggtgtt ttaggatttt taggagaaaa 540

gtgtaggatt cccatgcaag tcagaagcat gtgggcatta aaaactgaga agcggggcct 600

gggagatatt tccctagcta gctagatcct gtccaacgtg ggcatgcatg tgggcatgtg 660

gcccggggga aaaacgctct gctgcgttct ggttggcgtg gcttgcaagt cagacattgc 720

tgcaagcggc ggcggtgcag gtgtgcaacc cgcgcggcgt ggcaggagct agcgagccag 780

cgcccgcctc agggctaccg tccatgccac gtagtacatg tgtccggcaa cggcgatcaa 840

tcgtcggcac cgccggcccg ggcttcgtac gtacgtgctc tgtggcgtgt tgcatactag 900

ctaggaaagt cctctatctg acgacggagc tgtgctgtgc cgatagcccg ccggtgggcg 960

acggcgaccg gtccgcctgt tcctcaacag cgacgcctga cgcctcgcgc cgccggccgc 1020

cgcgctgctg ggcgaaagcc agccgtggga tggatggatc atggggcgcg cgcgagagtc 1080

gagacacccc ggtttggtgg tagttccgta gttggttgcg gagcgcgtga ctagtctatg 1140

gattgggatt gctctgcttg gaaactaaac acacacaccc ggccgggtca agcgtttcgc 1200

cgtgcctgca ccggcgctct cgtagccatg agctagagca gtgtagtcaa gacagagctc 1260

ggtagttcag atcgacgccc agggtaagaa gagtagccat agtattctgc gagcattctt 1320

cgtggctaga tagacgcgcg tcggatttga tacgcaacac tgcgacgaca gtcaacatca 1380

gaatcgttcg ggcggagatc tttctggaag gaggaaaacg aacagggcag ccttaataaa 1440

gacgagggca aatacgattt ggcgtgtcgc gttgagccgt tgacacttgg agactgactg 1500

ccatccatcg atcccggcgg caaattaaac ccccggctga cttgaaaacc agatgggacc 1560

cggccggact gggactggga cgtaaacgta cggccccgag aaggacgctg tcacgctgct 1620

acatgggccc ccccgcgtgg cgtaataaat gcggaatgcc catgcacgca cacggcgacg 1680

acgcggccgc ctccggccac gcacacgcag gcacgcttcg tgcggccgcg gctgcctcca 1740

gcacgccggg tgggtgtgtc gcgtcgatcg agtcgtcctc tcgaccgggg tatatgcttt 1800

atgcttgggt tgtccgtcgc cgtcgcgaga cgagacacgg ggccgatgct ggctgcgtgg 1860

ccctcgtgga tcgcctacgt gagtgagtac tccttacttg cctactacga gagcgtgccg 1920

gcctggccgg accgcggccg ggtggttgca cgctcgcatc agaccgtggc ggccgcacga 1980

acgaggcgtt tgcgtgactg agaggccggc ggaaacgaag tgcgcacgga aggttcgacc 2040

ggctagctcc ggtcggtcgg tcggtcggtc actagaccgg tgattagcga aacgttcacg 2100

gagactgtgc cagactacaa gcagcgttcc ggtggcgtcg ggcactgacc gattagtctc 2160

ggccgcatgc atgcgtcgta cgccgatgaa gtcacggatg acaaaaccta tcgtcagagt 2220

ccacagcggt ctagcaagga acagccaaac tgccggcggt gggttgttgg tgtccggcaa 2280

gaaagtttgg cgctgactgg agtaaattgt aaatctcacc ctcgacgtac gtggactcac 2340

catgaggagc cactgtgccg aaaaggcagc ggaaccccca cgatcggtca tggatgccgc 2400

ggatctcggg caccagggag agctaccaca ctacacagat cgagcacaac ccagcaagac 2460

cgaagagaaa cgcacccatt cccatgtgtg atgcgcgaat ggtgccgaaa gggacgctgc 2520

ggctggccgg gtggcggtgg cgggtgctaa acgaccaccg tgccggccac cgtccatgct 2580

tttccatgcg agaggtggtc gcaactcgca acttgaccgg cagcggggat gcgtgcttgc 2640

ggcggcctgc ctgtag 2656

<210> 1956
<211> 1496
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60213_G1, chr2:47517875..47519370, Cluster 11

<400> 1956
tagttgggtt tgggaattgg gggtggggca aatcctggat tgcacgaaaa aaaaactatg 60

aacaaaaatg aaatgattta acatttgaaa caaaggggat gataatatta ctgagcgacg 120

tctcttgtca atgattcata aaaaaaattc acatattgac acgcgcgcgc gcgtgtgtat 180

atatagtgca catctgccaa cagtaagaca gattatctag tgccgtacgc gcctacctga 240

ctacatccct ccctcccacg cgtgtttcct agaaaatatc agggttatta gtttttaga 300

actattgatc tgaaacgcac ctgagattac acaggtgtca cactagcagc tagctagcta 360

ccacgttttg taggaaaaaa gttaatatca gtttgacaga actatttttt aggctggcta 420

gctagctagc taggcacaca tccaaagctc ttccttatct ccagattctc cggtagtcgc 480

acgacaaagg aattggatat caggatatgt atatagagtc gtcagatgct cgtccatata 540

tcggcacaat atcttgtaaa gcagaagaaa agccaagagc agatcggaga taggcgatgc 600

ttaacccgtt gccgtgcatt ttgcattgtt aattaattaa tcctcacggc agacgggcag 660

aggcaacgca cgatcagcga gtgcagatac acatctatcc ctccctctgg tcaatggcga 720

ctgcatgcag aggccggcat cgatcggtcg acaaagagaa caaccgggca ctttggcacg 780

tacgtagtaa acaagtgcgg agcataagat gctccgatcc tgtgcgcgcg cgattaatgc 840

gattaagcag atagttaagc taagcttgct ttgctcataa gctaaccata aattaaacac 900

gggggaaagg tagcgtgcgt acgttgctga ggccgctgtg cactgccaac gagccgcgtg 960

cgtggcttgt tggtcagtgg aggatatatt cagtgatctg ttgctgaagc aggacacgtc 1020

caagcacaaa aggacagcac ggtataatgc atgcatgcac gtcgtataat cacttcgcgc 1080

gtggaaaacg agagagaatg tacggtgacg tactgggagc gggcgttgca tgccgtgacg 1140

gtcctgatcg atgccgatgc tccatctcca tcgcaccgga cccgtccttc ggccctggga 1200

gagcatggaa aacgtgggga ggcgcgttgt ccttcggcta gctgtgtcgc tgggcgatct 1260

gcgagagctc tctccttttg cgcccgcctg aatacttgac gtcttttgcg ccgtcatgcc 1320

gccggcgcca tgcgcatagt actttttttt gtgtgttggt gacatgacga ttggttgccc 1380

acacggcctg gatcagccgc agtacgttgc acctttgttg cttttgcttg cttgttgggt 1440

tgcttcgtca gctcccacgg tgccgtcctc gtcatcgcgg catgctgtga tctatc 1496

<210> 1957
<211> 2394
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60228_G1, chr2:47595324..47597717, Cluster 11

<400> 1957
tcgtggtcgt cggagattta tcattttact gggatggatg gcgacggtga aaactgcgcg 60

cctggactct gtagttctcg ccatggttag cgagctactc ctacctcgtc ctcacagatc 120

ggcccggccc cggtgcgccg tattaattat tgcaaccgtt tgacctcgca attagccagg 180

aatgctatga ttattcccac gcgcaacagt aaccagcagt acgaacaacg aagaaaatgc 240

gctagagaga tgccatctca gtcgtctcct tatccgtaat gattggctaa gcagatagta 300

atcccgcggt ctgcctggtg ccctttttgct cgcggcacgt cgtgcaatgc aacggccggc 360

cgcagcgcat cccgcgtttt cgtggccgaa acctcccatc tgcctgccta gcttgtgccg 420

tctctgacat gtacaccatc catatcacgt tttcgtcccg gcgtttttgg gtaatggccg 480

acttgtagaa cgagcggaaa tccgcgacga tccaaatgat ccatggcagg cgtggaacac 540

ggtgcctttt gctatcctcg tttttgcgaa acatgttgtc aacgtgaaaa tctgtttcat 600

ggcggccgcc ggccgagggt aggatttcat gctactctag tatagtcggg ctaccaacga 660

ttcgttctta ctagttggct atgcatcaac atgcagatac ggtaggtaga gacgagtcaa 720

ggtgaaaact tgagggcact agtacgtgcc atcttcttcc ttctttttc gaacggacgg 780

caaaagccag cactagtagc tagtgccatc ttccctctct gcaactgtag cccgcaccaa 840

gtggcgatca gcaggtcgac gcacacagtg tcctgccacg cgtagtgcgc tgctgcgtta 900

tgaggtggat cgagagagag agagagagag agctgactca gtgtgaggca gcagaacccg 960

atccagcaag ctgccaatgg atggccccgc cacgccacac cccactccag actccgggtc 1020

cagaggcaga agaacccgat cgagcagttc cggttcgggg ccccgatgca caaaggcaac 1080

gatcttttcc agggaatagc cgcgcggggc cgggtgggaa gagagaattc cgccctcttt 1140

ttttttcccc tttctttgat tgatcaccca ccatgcagcc atgcacgatc ataatcaccg 1200

acggggagga gcccaccggc cggcgaggcg gcgacggccg tacgtccagt ccattggctc 1260

attcatccac cggatcatgc cgccgcggcg ccgctccctt ttcaagatct ggtcctagtt 1320

ttccggccag aacgctacag aaccagcgat ccgccgcggg gagctgtttt ggcctattga 1380

acggccggtt cctcttcctt gtttgtttga gaccctgttg tgctcacaat ccaccatgca 1440

tgcatcagtg gttgcgcgct aagaaacgcg tgttcttttt ttttcccatt gtttcttatt 1500

tgttgaggag acgactgaat attttgtgca ccacacgcat ttttttagta cctgttatgt 1560

acccactcca tgcaagtctc tggatgtcta gttcagccgt ttcaaattta agataactac 1620

cccatagcca atccgagcca gattatacaa cgtcttaact ttttttgtt atatatctag 1680

atacatgtta tgcctagatg tatagcaaaa gcaatgaaaa accaaaccat ctttataatt 1740

tagaatgtaa atactagata gtatatgtat ttatcactgc tgaaaactgt agttcttatg 1800

ttagtgcaaa accgataggg aagaaatgca aaactaaaat ttatggttta tgtttagaac 1860

catatatatc acgcgcgcgc tcacacatat atatacgatt tcccatagct attaatataa 1920

tgcatttcat attagaatat taaaatatat taataccccc ttacatataa ggctatataa 1980

ttttatttt ctttacataa gttaacttat tttaatcaag gtgtttgata tatctgtatt 2040

tataatagaa ttataagagc tttattattc ataaaaatat acatcactac acacataatt 2100

cattgataat tgggggggagg ttagtataga ccaaaggtgg ctatatatac cttggtggta 2160

tttgagattg agtaagcgat tatatagttt aaatattaat attctcgtta tcctattcta 2220

gatctcactt caaactctag cattgacctt gagggacata atctaggttt aagcaaccat 2280

gcacgtagtc tacattatta catgattttt tccatagacg aacaatttag gttaacaaaa 2340

gcggccaaat cgtccacctc tgtcaaaagt catgcattaa tgtagcttta ggcg 2394

<210> 1958
<211> 2254
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61579_G1, chr2:55028812..55031065, Cluster 11

<400> 1958
gccatggcac tggatgtggc gcctttctgt ccgcgtcagc ttttaactct tcttctccgt 60

gtagagcgtg gatggaccca aacaagactt gaggaccaac caaccaagtc ttgatgtttc 120

gactgcatta tggtcaatgc aagccgggag aagataacat cacctgcacc tgcacctgca 180

ctgtccaatc catccgtcct ggatccagcg aggatatcgt ggtcggcact agcagcaacc 240

tgcaaccgct tgtcaggctc aaggtattca agtcctgcac gcgtttcccc tgcgggctac 300

aacagcacag cagcacgcgg cggttgctcc ggccggtggc tgtggttgcg acgggagcga 360

cgcgctgggc cgcaaggcaa caaaccgggt ggcggcatcg ggaggaaaaa gctgcgagtg 420

gacgcgggcg agccgcgcgt ccgttcaggt cacggtggcg gcggggtggc gtcaccctgc 480

tccggccatc ttggacacgc caggattgcg gtgcttctga cgtcagcaat cgtcccgtac 540

aatccgaagg gaaatttgct ctttttttt tgctgatagt agtgatggtt ttcgctgtgg 600

agggtgacgg atggagcgat tcttcgctcc attgcattgg cactgtgctg gtatgcagct 660

ggatgcacta ctaggatggc cattgtccac aaatttctct ctctctctct ttctttttg 720

cgaggaggcc cattgtgcac catttggagg cgctagctgc ggcggcgtgg ataggtgatg 780

gaagatgcac cacgatggcc gcaagcattt ggacgcagtg cagctctgca ggcgtgcagt 840

taatttggtg ggcggctgag aactgttcga caagcacaac acgacggtaa cgaccaactc 900

cacagatgca gatgcggtgg gacttaaaag gcagccgccg ccagcgactg gacttggatc 960

acctcgctcg tctaattcac cacgtgcaaa ttttgaatgg acagtaacat ttttttctat 1020

ctatttacca taaactctaa agtctggttt ggtgataagt gaattaaagg aaatccataa 1080

gacaggaaat cttttaccat tcaaaattga ataacaatag attttctcat catggatctc 1140

atctagttcc cttatcacca aacgagctct caaagtgtga agtagtgttt gagactattt 1200

cacgtattct ggttcacaaa ctttaccata cagcaactcg ggaaaggctc cgtttggtag 1260

agtttctttg agggctcctg caacgattcc ttgaaaaaat ctaccaaaaa agaagctctt 1320

tgataggctc ctcctgaaaa ggagaggagc tactccaaaa aaccaagagg agccagaagc 1380

cataaaatgt ggcttctacc ggcttctctc ccctattttc ctctccatcg agcccacatt 1440

gtgatagaag atgaaggagg agctgtgttt ttaaccaaat agggtgctct tttctgggac 1500

tcttcctgaa tataagaagt gagctctttt tctagagaag ccagagccaa agctagagct 1560

gaccaaggag gagctccacc aaaggggcct taataaaaaa atctagagtt tgtaaagcac 1620

cctttagcta ctattgtaac ttcaattttt tttcctcgga gccaagttgt gtgaagctaa 1680

atccatttcg ctaaaaaaaa agcatagaac aaaactaaaa aacgtggagt aaaacagtct 1740

taaacaatcc ttgagatact tctactcttc attcaacttg tcttcaccgg gagttgcatt 1800

tggaatagga aaaaacagca acatgcaata gaaattccaa atagtgttgt accaagttcc 1860

ttcgcggtga ttgaggaggt tttgttacct tgctttctct tctttctctt aatagttgtt 1920

ttttccattt agcttaagtc atgcgtaaaa ttgttgtgta tgtcgtggaa gggattgagg 1980

ggccctattg tttgcgtacg ggtagagtct tggcaggcag tggggcagtg acccatctag 2040

aagtatatac taagggtctc tttctctttg ttttatacct tagcactttt aagttttaat 2100

aattgtaagc atataagaaa tatgtgtctt aggagttcca tatttcttac cgtgataaag 2160

gggctccgag tctccgactc cgaatactac tgtccctttg ttagatccgg cctttgaatc 2220

tcgagcctcc ttagaggagg tttgacaaac ccct 2254

<210> 1959
<211> 1675
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62708_G1, chr2:60879982..60881656, Cluster 11

<400> 1959
gtcacccgct ggtccatgca cgacgtcaat caacacagta gtaacgcgca cgacgacgga 60

ttcgcgccac agtgccgcgc gcgcagtcgc agatgtggta ctacctgtgt actgctgctg 120

cactagtgtg cagtgcaccg atcgagtgtg cttgcattgc atgcatgcat gcattgcacg 180

gtgccagtca gtacccccga caaggcgaca acggcgccgt gtcccgcacg aatcagacgc 240

cgctcgccat catggagcgg gacgggcgcg cccagcccta gcccatgcat gcatatacgc 300

cgcgcgagcg cgacacgcac gcgggtacgg ctctcggtgg cacgagcacg agcagtgcgt 360

ggatgaatgc gagcaccgta tgcctagccc atcggccatc ggccatcggc catcgcccat 420

cggatgctgt agctagctag cccgtggcct ggccggcctg tctgacctcc catccggtgc 480

acagtccgcg gggggtcaca tgtctgcatg catgcaatgc acggcgcgca gatccaacgc 540

acacaatacg atcgcctata gtacgtagtc agtagctagt cacctactat atagaaaaga 600

tgtaaagcta aattggctgt ttgcacacag tgccttgaca cgagcctatt cattcacggc 660

ctctgtttcc ttccgcacgt atgagctagc cctgtggtag gacttaggag catgcgacac 720

tgccgacgac gacatgggcc gcgacgtggg atcagaacag aacagaacag gaacagctag 780

gcagcccgag gcttgtgcgg acgcgttggc aacgcgcgat gcagtccagc ggcaaccagc 840

cgccggtggg tggaccagag cctagcgcag cctatacaca tgacatgcac ggcgtgagta 900

ggggtagggt agagaaagct agcgctatcg tccgcgcgcg cgcagcagca gcaccgcggc 960

acggcaccgc cgggtagccc gggggctcca ccactccagc agctcccaac gcctgtacat 1020

gtcgtcggcc ccgccgcccc gcgcacgtag gaccacgcgg cactgcacgg ccgcgcatcg 1080

cgcctcaccg gccgatgaag gcccagcgtc cgtccggctc ccgcgtgccc ctcgcttccc 1140

tgcctgcggc gtcgaggcgg tcccccattc tcagggccag agcagggcgt cgtgcctgcg 1200

cgaataaagg cgcgtgcagt gcacagaatg cctcgccgcc gccgcctgct gctggagcag 1260

aacgatccag actaccgagt ccgaaggctt cgaggcggta cgtcccgttc gcacagggcc 1320

aggcggccac ctaccggcat tgaaaagggt tttgtttcac gcctaggatt actgctacac 1380

aaattgtttt gactgacgct gtcctctacg ctatggggtg accgtgtctg ttcatggcag 1440

ggctggccta gaaacaagcc gcgccctcta ttaatcaaag cacacaatca tctctaccaa 1500

tagtggtata actgaggtga atgttttata cgagccgctt ccgtcaaccg attaaacgag 1560

acatgtgtta ggaattttcc gttgggtttg gacacatata cacatcccca tgaagctaca 1620

cttatttccg ttatcatcct catatggcca tactcatcgt ggtataacat tatat 1675

<210> 1960
<211> 1593
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6475_G1, chr1:33288083..33289675, Cluster 11

<400> 1960
tcgtacatgg aaacaaaact gcgctctcaa tcgattgcag ctcgtgacaa cttttgtgcg 60

ctctcaatcg attgcttttc gttttttttt tttttgacac gaagagatga cggctccctg 120

gaaaagaggg atgcctttgc catcatacta cgagggtacg gtgcagacga ttggtagttc 180

tacttttgtg gtgccgtggc ttctgtaacc tggtggctgt ggcaccgttt ccttgcgtaa 240

cagtaacctg gtggcttgcc acctttgcat tgcatggcct tgtcctataa gtatcctatt 300

gctcacccgt caccccccacc gaaataccgt agcaaacccc gccggtggag atttgcaaag 360

attttaaaat cgaagaccaa cttggggcaa agattgattt gcagccgagg agctgccaat 420

gacagtacct ccggactccc ccagccaggt cccacccaac ccatactgaa aagacagtag 480

atgaaattga atgagctctc tctctctcta gatcagcctt tgctttttca cctcgccaga 540

gtttggacct gcgcgaacag ctagcgcatc cagttgacca gattccgaac ctcacaacaa 600

caacctcaca acaacaacac cagcagcggc agcgacaggc agcagctcag cgcaagccaa 660

attgtacaac gcttcggagt ttggatgcat gctgctgtag ctttttttt cccgactttt 720

tgcagaggta tattcttact acagctgagg caatagcagc aggtgcttgc tgtgttaatt 780

ttgccgccaa ttcagacgac tctccttttt tttcttcttg tgttgttaga tttagtaaac 840

ccatgcatga atcgatgatg atcacgagct tacgaagatc gaaaatacta ggggaactag 900

ccaccagctt gagagtggcc tgtttatctt actcgttgct catctaaaac ggcgctcgat 960

cggtggaacg ccgccgccga gaccaccaac gccaagcact gccgctgcga ctaaacacgg 1020

gctcctgctc ccccgcgcat tatttccggg atgcatcatg catggtggga tgggacttgg 1080

gagttcgctt ggccaatggg gactctccac tccacccttc taaaaaatag cgcgcgttca 1140

gctctcaagg acgagaaaga tgggcggggc gggctgctga tggcctggaa ccgtgattag 1200

tagtatactc gatctgcaag tattctttct gcagtgtctg tgtgtgtgac gatgaatgca 1260

ataataggcg gagaactagg ctagcttgca gagtgtgggc gagccggccg ccggagtagc 1320

cacggagagc gaggtgataa atgaatgggc gcgggtcatg tcatgggatg aacgcgcgcg 1380

agaaccggtg ccttgaaagg caccaaaaga gcgtcgccag agcgggggac aagcaccggg 1440

ctagatgaca gaatgtcccc gcaccaggcg gccgcgaccc ctcgcccctc ggcgcgtcac 1500

accagccgcg caaaagtgca aaaaccgcac ctctccgata cctcgctgtc gctgcaacgt 1560

gggcctccct tacacagttc gaacgtgctg gga 1593

<210> 1961
<211> 2412
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_650_G1, chr1:3438490..3440901, Cluster 11

<400> 1961
aaacgaaata tcctgtgacc ttgctttcag tcatccaata gcagcgggaa gcagagtgac 60

cttgaaggtg gtgagcagaa cagaaccatt gtagcggaag gtgaccttga tcgagcatct 120

ggatcgccac gtcgcggcgt cgacgtctcg ccgtgcctgc tgtggcgcat gcatgctttc 180

gtcggcccgg gcgggcggca ttgaaatcca ccgtactgta cgtgcgtggc tgcgattccc 240

tgctgctgca actgtgtgcg atgcgaggct gctgcatgca tggtagtagt agctagtagg 300

tagcctgctt gtagcctcca gctgctgcct ggacacagag tctgtctagg gtactgtgtc 360

cagtggcgta cgttgtagcc atgcagtgca ggtaaggtag agtggtgcag gacggagacg 420

acgacgacga catgcagctt gctggagaag taaggctcca ctccagggcc agggtgcaca 480

gcacagacgc ttttttgact tttcatgcac ccacgtgggc gccgctgccc ggccagcggc 540

ggcgacatgg aatggaaatt aagcaagcta tcctagaaca ctggctgccg catgcccgcg 600

cgctccagct agctgcatcc ggcttcgaac tctggtggtg gatgggacga gacacgcaga 660

caagacgacg acgacgacga cacgggatgg agacggtgga gtactacgta ctctgtctgc 720

acccttgtct cttgtccctg cactgcactg catgcgatcc ctcctccgta ccgccgcatg 780

cattatcttg cgacgacaca cacaggcaca gcccacagcc acgtacgtac ggcaggttgt 840

ttccttgtac ggcactgtaa cttaacacac agcagcacat cgagcgaaca ccatgcacca 900

tcgtcgtcgt cgagttcgaa ggccacgagt gaattaagcc tgcggcctct ggccttttc 960

ttcttaacac tgagatcgat gagatagatg atggtgctgg gaacagccac tggtggttgg 1020

tcgggtttgc attgcagttg caggtaccac ccagctgctg ctgagcaatg actatataag 1080

tggcacgtac gccctggtgc gtgtctgatg gtgtgtggtg gtctgctgct gcctgtgaca 1140

taatcacgca ggactactac tgggtgtgtg tggtcaatgc tggctagctg ccggcgcgga 1200

cacgggcatt gaattggatt actgctgcgc tccttgggat gggggacgag tagccgtagc 1260

cgactaggga ggggcggagg aggacgacga caaccgatac agcagaggga tcggagggag 1320

gacccgaggc catagaggtc ggcggatgca gctgatgctg ctgccatggg ctagaggcta 1380

gcaggtagta cgtagctgga gtacctagac tctgtgtcta cctagcagag accctagcta 1440

ctatcatcaa cctgcagctc cattgatgcc cctgccgcgc cggccgccat gcattttact 1500

ctctttttt tacttgcatc cgccgcccgc ttcatccgaa cccggccgcc cggtgctcga 1560

tgacggaaaa gctttgtaaa atgctgtcca ggcaggcgta ctgccggtgg ttagagagcg 1620

tgatgttgtg ctgagctcat cagaacgccc gcgatcaagc tgctaaaatc accgtgcccg 1680

tgcggggact gactcgtcca tctcatcctc gccgcgcttc cttctccggt agccgtgcca 1740

ccgcgtgggg atgcggaccg agaaataaag ctcctgggtc ccgccgccga atgcacttgc 1800

agcaccagcc agcagcgacg agttccatct ggctagtatt cccttccctt tggtccgccc 1860

aagctgcagc ccggtgggtg aattgactga attccatctc gcacgctgtg ggcagtgggc 1920

gccacgagca cgccagtcga cgcacgagga cgaggacgag agagaagcca tcccgtctct 1980

tcatgttccg tgccactgct ctcgtcttct ctctctcctc ccgtcctcat cgtcctccac 2040

atgatatggc acgcttcacg aggcttgtat gctcacactg tctccacact ttttagccta 2100

tcttaacata ccgtataaat ggtcgtacaa gatactagta atgttttata ttgtaggctt 2160

catttaaaac caaagtattt gggaaccaca gttttcaaat atcatagttt atattgtcat 2220

gacacgaata ctataatttt atataccata gtcggtttgg ttactatgta tttggttgaa 2280

atagagagtc tgtcggagat agtcttagag ctcaaagttg gccgtgccgg tcaggcacgg 2340

ctctggccca tcatcattcg gactatttca tgcaagcaca acatgaaata attttgatcc 2400

cgacatatcg tg 2412

<210> 1962
<211> 2842
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6603_G1, chr1:33842296..33845137, Cluster 11

<400> 1962
ggcatattcc ttccttgcag ctaggtagtg cagtggccca agtggccaga gtatcgatct 60

ctcgaacgaa aacgtgattc aaggcaggcc agccatgcat cgtgttcgtc tcgccacagt 120

gccgcccccc cctcagtcct ctgcattgta ttctcgctcg gattcgcatc gcgtggaacg 180

cgacgaatct aataaccgcc aaacgaactt gttcgacaaa aaagtcctct ttccccccctg 240

aatctatcaa agtccgcctg gaattccagg agcaccacta ctgtatagtt ccgtgcaggt 300

gggagtggga ggaagacgct tcacccctcg gcaaacacag acaggagggc cacgacgcac 360

gcgaacaggc catgcacgag aatgcgaccg tggcgacagg cacgaactgc catgccacca 420

gcgcaagcgc aagcgacagg gacggacgac ggagcggaga cgacttggtt ggtgaacgaa 480

caaccaccag ctgcttggcc tggcgtgatc gacctggatt ctctgaccac cacgaggccc 540

cgcaaagcaa aaaaaaaaag cggttgttcg tccagctgag ctggccgaca tcaccgacgt 600

aaccgacagt aagcacggac cagccctcgc ccagtgttaa gatgttgcta aaacaaatag 660

tgcaaggacg agggtgtcgg tcgctaacct cagaatcatt agcaacccag cacgtacgca 720

tcaggttcct taatcatcag aaaaccatat actactggta taagggccgc tagtaccagt 780

agtgcaaccg agtatatata agcaatggtt ttaactgaac agaatttaca gcgaccatta 840

gtatttatga tatttttaa gacctcaagc atctaactat ccacgtgcta gacttcgata 900

cttcatgaga aagccagcct tagattacga aaaggtcatg gaaatctgaa gccggttgtt 960

aatcggtact gatgcgtctt ttttattcta gtggttggct cctgccgagt tcagatggcg 1020

gtgtggggaa acgaatttgc gtgagcgaag cacggcgata tatgatcatc ttgctctcgg 1080

tgacaaatta gtacgaacgc gatccggtga aacaagcgca tatggaaaga atttcttttt 1140

tttaaaaaaa aaggcacggg gcatggaaag aggtgagggc gggcccgagg cacgcacatg 1200

cgcgcggtgc cgcgacgtgc agcggcacga cgaccagccg cgttcggccg tggtctggta 1260

tccctcggcg tgagcgtgat acgatgtccg cggtttcggg cagcctagcg acccgtcggc 1320

ctcggactgg cgcgcggtgc gttgcacgtc tcgcgctcac ggttccctgc ccccgaccgc 1380

catcacatgc cccgtcgctg gcgctcgggc cggcacatgg cgcgccgcgc cgcgcctcgg 1440

gcgccggctc acgtgatcac gtcgtgggga catggacacg ttcgtgcgtt gcttggccct 1500

ttttccctga gccgaggccg agccgcgctg ccccaggcgc cgtcccgtat ccgcctccgg 1560

agtcagagga gaggaggcac cacgcggcca cggtgaccaa tcggggagcg ccacgccacg 1620

cacaacaatg cactggacgt ccatgcgtct cctatcggtc tgctcatgcc cttctcctcc 1680

ccggcgaagg ggatagtaat aaataacgcc gggtgcggca ctaacatagt aacatgccgt 1740

gcttttccgt ctccccggcg atcttatcag ctttttttcc cacgtccact ccactttcgg 1800

caaaaaacaa aacgggtgaa gtaattaata ataataacac gcacgccctc gcaggccggc 1860

aattaataaa aaaggatcct ctgttccggt ctgatttgtg ctggcacagg cacaggcaca 1920

ggacacaaat cgtgcccaac tgacgatcag aacaatggaa cgatgtgtgt gtgcgctgta 1980

gcagctaagc tttgccataa cggtcacgtg cgatgttcct catcatgagc cacaaagtcg 2040

cgaccaaacc tgaaacgatc cgcaaggacg ggagaaaaaa aaattgtgca agtgaagtgg 2100

ggggaaaaaa aaaagggggc catgcgcgga aaggacgtcc ggcccgtcat tacgactaga 2160

tctgcggcgg gtcacgctgc ttgatgaatt gcttcggtta tgatctctct ccagatttct 2220

cctacctgct gctgccccca tatggcaaag tgccctgtgc ttcacttgca agcaaatcca 2280

gctgggaaac tgttacccaa gagttcggct cgaatcgatc gatggaaaga ctgccggaca 2340

ggcacgggca cctggactgg acgacgcccg acggcgcatc gcaaggaaaa actccgccag 2400

ttcgctctcc gcagggttgt gccaacaaaa acgccgttgc tggatggact ggaccaccag 2460

ctaaccctcc aacgatcaac gccgacacat cctccttttt ttcccgcgaa aataacttgc 2520

gggagagccc ctgtatcctt tgaattcttt aattttccat ggtgatgacc aagggtagta 2580

gtctctttat ccttggaata cttcacctgt ttagtctttt ctaatgtgct aacgctctga 2640

cggttttatc tgaccgagtg aaatcccccc ttctttcgtt ggtctagcta tatatatatt 2700

gggtattttg tcgggtgtta gggcatttaa tattgcgtct tttaaaatgt tttaaaggtt 2760

aaataaaaaa acacaagaga catgctttta gaatagtcat ctctacacga ttcttcctat 2820

atgttatctt ttaactgtaa tt 2842

<210> 1963
<211> 3090
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7497_G1, chr1:39253318..39256407, Cluster 11

<400> 1963
taaaaataac tgatataatt ttttatttt cctgatcaga aaaatacatg aaaaagaaag 60

gagatgctct taacggtgat gggaaagccc gatttaaggt caccttgtca aagtgtttga 120

aataagcgga aattcatcgc ggccccttc gcgagcagcg tggaagaagg tcaaacatcc 180

aggccgtacg tacagcattt tgtggttcaa atcacattac ccgttgaagt agcccataag 240

ttccttggta ttggtggccc atgcaatcca ttgaaagaaa gtcagccact cagcctactc 300

aaagacatca agctagttcc ccaagatttc ctgtctcttc gccgctgtac tcgactcgac 360

atcatgtcat tactttatat atactagtat gcactagtag tataagtgat ttcttgcccc 420

agatttttt tacgaagacc tcgatcaaaa agggaatata tacgtgtcgc actacaacag 480

tgcccgtgct cttacttttt gtacctgata tttttcgctg aacctgtact catcgtcgtc 540

gtcgatacga atacacgtaa atatcaacac tttgaaatcc agctatatat acgtgacact 600

tttttagaag taccacggac cggtccttgt tccgagaggg aggaaagtca aaactcacaa 660

cgcacaatcg tgctcatatg catgaatgcg gccaaggagc aatgcaactt gcattggcca 720

cctgtatatg gagaattttt cagaacttgt ttgaagaaca agtccacgga tcagaacttc 780

accgaagaag aagaagacga cgacgaagac agcacgcatg tggataggca cgagctcggt 840

gaaatttgaa gccacatgat agagcgcgcg gccagactcg agttccggag ttgcggttcg 900

acatctcggc gtcgttggac tcgacgccgc gccagttgcg cggtcgccgt cacgcagcgt 960

aaccgctgac gcaatcgcgt gcaccctctg cagtcctcta cgcaatgcac cgcggccgta 1020

catgaaatgc gctggtgctt gtccatgtcc agtgcagtgc gttgctacga aaggccatga 1080

cggccgggcc aacagagagc aatatgcaag gcgaggaaaa aaagaaaaaa atgacttcgc 1140

agcgcgcgcg cgcacacaca cacaaagtct agtgctgtac gtgcgccgtg agccggccgc 1200

accgctatac ctccgacggc ggcgcgagca agatagactc ggccggcggc tccatcatgt 1260

gtccatccat gcatgcatgc atgccgacgt cgtcggcggg gtgcctgtcg tcaaacctcg 1320

tgtgctcctt tgcttcgatt gcaagagaag caacgaatca tatatggatt cttctatcgt 1380

gccggctcaa ccactacagc tcgaggcaga aaggtagagc tagagttcac attattatta 1440

ttcttctcag gtgcggaacg aaaaattcgg agacagacag gaatggggtg gctacaggct 1500

actagcctgg atttagtgga gagagaagat aactattttg acaattgaca tgctccatgg 1560

agacctaata ggtgacatct aaaaaagaag gggaaaaaag atacacacct acacagtgta 1620

gatgggagtg agcgtgaagc atctctctga tggcaattat agcctacttt ctgcgtaaca 1680

gcggaggcta atcgctctgc agctgttcat catcgacggg gacggccgtt gagtcaccgt 1740

cgtccggtcg agaaaacaag ggccgggcgg gcgcgagcct ccaacaatta aagttcgcga 1800

ggcgacgtcg acgacccaaa cagagcgcgc gctgctgcga gtcaagatcg accgagacgt 1860

cacgtcgaga ggggtggatt gcaggattgg gcatcgtcgt cggattaggc tggcgggacg 1920

agggaggccg cgtgcattgt acttggcgcg atcgatcgac ggcgtcgagc gaggggtgcg 1980

ggcgcgggct ctgtgctggc ctgtgctgcg ctgcagacac ggcccgcgcc ggtcgctgtc 2040

ggcgatcgca acgcgccagc ggccatcgcg tctgttttgg ccatgcgatg cgacgcagtg 2100

accggcacga aagctgcggc ggcgtacgtt gttttgtcat accaacccta gaccattagg 2160

ctgagagcca atcagtagct tgattggatt gggttggatt gctagctagg ttatttatct 2220

accctgctga gcttatagta taagacttcg gttacacatc cagcagctgg tctagaatga 2280

tcgctctggt tgattagtac tttcatcact agtatacata aaatatatgc cagtagaacg 2340

atgttaaatg gggggaatta agtggaaaac taaaggagtc gactgagttt gtcctctcac 2400

tcctcagtgt gtccggtcat ctgtaacctt catggctggt cttcgtatag taataaaaaa 2460

taacatcagg gctgtttttt cttaaaaaaa gaaagaaaca aagcgcgaca agagcgggtg 2520

gcgcgaagca tgaatgcaga ggcatgtacc ggtatgcgag tcccgaccat gctgatcatc 2580

attattatat ttgtttctgc ctcatccttt cgtcaggaag cagggaccac cggcggaccg 2640

ggagttgtaa tcgaaatgtt cgtgccattg tggtccaatt tcatgtaaaa agagattgga 2700

ctgcgaactt caatgtcgtg gtccttgtac aaatatcgca cgtggtacat gtagtttggc 2760

ggtggtagga tgagcgatta tcgactgatc tctaatttga acctccaaac cgactgttta 2820

gacattcata ataggtacag atctttaaca tattccttct tttttcttat gtcgccacat 2880

cagcactata caaccagatc gcaagggata accgataacc ttctctcgtc gtgtcgccta 2940

ggtccacttc gtggacatga tacgcgtagc tgcattgctc attagacaag gccgttgata 3000

gattaaatat ggattcgatc catgtttttt ttaactaaat caaataacat gtagatattt 3060

attgaatgct acgatgcatt atagtttaaa 3090

<210> 1964
<211> 2816
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7697_G1, chr1:40231363..40234178, Cluster 11

<400> 1964
aatggaaaag gcagatgtta gagtagattg tgcacccata gggacaagat cctccccccc 60

ccctccccga aggcaaggca gccaccaaga agaagcccct tttgatgata agcatgtgac 120

cagcccgctg gagctcacac ctgccatgtg agccctcttc acttgttaaa acctctcaag 180

aacccccctcc taccccaatg atccaatgcc tcatttccac tataaacatt caggagaaat 240

aaactaagct actagaaaag aagaagaaaa aaacagatgg gcagcatgca tgtttcctcc 300

cccagtcccc cgtctctctt gtcttagtca ggaagttggt gagagcgtgg catcagctac 360

ttctccacag ggtagacagc caatgtgatg cacgcctcat tattcccctt tcctccccca 420

tgggatgggg ccctaattag agggcgagga ggaatctctt aatgattgcc caatttgtta 480

ctaatacttt ctggcagtac catgggatct gcggtcagta ctggtgatgc tctagaggct 540

ctccgatctc ttacctccca cataaaagcg cccttgtact actaagagca gtttcaatgc 600

tctgaatttc cgatggcagt ttcagtgctc tgaatttcat cgttggagtc tgaaccaccc 660

ggacctggtt cgctataatg cggctactag agcgcagatg attttcaaca tggtcgttgc 720

attattttgg agtggccata gcattgattc tctccctttt ttatttgggg acgaagattg 780

gcaaccacca ccagccggtt ctgaccatcc atccatccaa acaggtgggc tgtcaattag 840

agctgacatt attattgttg ttgttgttgt tgttactatg caagcacaga tctggactgg 900

acctttccta ttttctgaag cgttgtattc tatgattgcg gttagacgat gaaacatact 960

cgacgcgcaa ttacatacgt ggaagagaac atactcatca caaggatgca tgcatgtggg 1020

agctactagc ttagttcccc ctcctcccta acgcgtaact ttgttcggca tctggtgcta 1080

ttgctctctt gctattgaac gtggatggag cgtcaagcat gtgatcggtt cagatttgtt 1140

atcacacatg catggtaaca tgattagcgc gcgagctcct ttctgttctc tatacaactg 1200

tccaccggat atgtggtgga gagagagaga gagagagaga gggttggcgt ggccgtggag 1260

tatgttgcga ggtccacttt gagaaggtta accaatcaca gaagcaaggg aaggtggtcc 1320

taaagcacac ttgaatacat acatggttta gagtatcgga gcaagagagg cccctgcatc 1380

tgaagaattg gtagtagcag tatgtactac gcgtcgacag tgaccgggca tttaggccca 1440

acgctttcaa agcgctgccg gttcacgcac acccctggaa ctggaatggg aatggaatgg 1500

ggtcgcattc ccggtgtggg cgttcgccgt tttccggggg ctccggcgcg tgcggaagtt 1560

gcccggtttc gcccgcgaac ggacgccttt ccggggcgct ctcgctttct ccgtccctgg 1620

ccctggccct ggcccttgcc tcgtggaaag aattttatcg tttcccgttt cctgtggatg 1680

agctcaggat gcggttggga cggtcgcagc tggctctccc ttgtgtgacc ggagggaggg 1740

aagggtagga atggtttgaa ggcatgcatg ggcgttcgtg gtcttcatgt tgttcagcta 1800

accgcgcctc tgtagcggta gtagcatcca tgcatctggc tctaccggtg ccaatgatcg 1860

atatgactag aataaaaaac gagctgatta tctatctact actaccatca agtgaagtga 1920

acctatacgt gtactacgac gtacttagca tgcagtccat cattactgtc ccccatgggc 1980

catggaccac aggtaagcgt aattctctct tcgttgggcg tcttggggaa aataaactca 2040

gattcaaacc ggccggtgag attcatcctc atccacatgc aaacttgaat ataatataat 2100

aaatggtgat ggagatacga attaagggaa acagcgctgc ctagctaggt tgggcgatgc 2160

gaacgaagga tgcggtatag taatgaaggg ggcacatggc cagcctgaaa tgtgaaatgt 2220

tgccccccca ccacagtttg gtgagggcgc gaggggaggg atccagggga aagacgaccg 2280

acggcggcga cgaatgaaac agggctgaag cctcggtgca gtgcagcacg ccagcaccga 2340

gctagcccgc agccgcaact tgcgcgcggc cggcacgcgc tccctccccc cgttcgaatc 2400

gagcccgcgc gcactgcaac aagtgcaatg caagcaggcg ccgctggctg ctacgttgct 2460

cgccttacac gtcaagcaat gaagcaagcc tcccgcgtgg tcgtcttctc ggtctccccc 2520

acgttccccc aggccactac ccctagccgg ccgcgtcggt gaaaccaaac caatgggtga 2580

acaatgcaca tgtctggatg atctgaacgg aacagttccg tgacaggacg gtaaagggct 2640

ggatatttga ccctgtgact tcaagccggc cggtggctgc cgtgaattct atcaacaagg 2700

ataaaaaagg atggtgcttg ctggatgcaa cctactactg cttgatataa ttcaaatgtt 2760

ttattagttg acatcacgtt ttagaaaacg tgtctcccca ccctaccagt acggtg 2816

<210> 1965
<211> 2022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7748_G1, chr1:40435464..40437485, Cluster 11

<400> 1965
ctattccttg tgtttaagta caatatgtgt gcacatgata ctagtaataa cacgggacga 60

ccggtgtggc atatggtata cagcactgga catgaaattt atggaagact acaaaatatt 120

tagggatatc cacgagacac caaatattcc accacatggt acttaaaagg gagctactac 180

accataggag attggagaga gcaataaggc accgggcgtg tcgtctagtg aagtatagac 240

caaaacatcg ataccgaatc tgttgataac ttttttttt ttttgcaaat aaatcgatat 300

tgaatttgtc tgattttcca acactggtgg ggcaatacgg gcgcgcctgg cgtccgccgg 360

ccgagatgag tcagtggctg ccccaccgga gttgctttca ggcaggagga ggacagggat 420

ggacgagcac cggctcgcca caagcgtaca gtacaggtac aaatccatat ggaaagcggg 480

aaattctgct actactgctg gtggtatacg tcgtttgacc cttccccgta ccgatgcaga 540

gatcaccgag ctgacgcatt ccatttgcgc gtcatgtatc tcgaggatac atattcgtgt 600

caagtacacg tactgacgta cctgatgttc taccagcagt acgcttggct gaaagcgcag 660

ggttgtcgtc gatcgaatcc atatcagatt catcttcact tcttcagaca ctagaggatt 720

ttgattttgc gcagcgtcag cgaccatgcg ttacatccat cttcagagtc atgacagtcg 780

ttggtgatga tctacgagcc tatgataaca aggatcgtcc aaaggacact taagttggtg 840

acggtatggt gtgtgtggct gtgagaatgt agcagagcgc accacaaaaa agcaggacaa 900

cgaggcagtt ttgactcgct cttggagaga gagagcgcct atggcaacga caggtgacgg 960

caacgcttct ccttaccaga gagggcatcg cccaccgttg actcgtgcac tgcccgtctg 1020

cccctgcacg gcatgcaaat gcatattcct ggataaaaca gacactacag tagagacttg 1080

gaaatcggca aggcccgtcg gaaccattgg cccaaaataa cacgctactg ggccttcaga 1140

tttcgcttcg gctttgggct aacttccagt ggaccggagc gacgcatgac gcatgggata 1200

attatcttca aattcgattt taaatattcg gcccatgcat cctcgctgtg cgtcgtgcag 1260

tgcacagccc acggtgcagg gcgtgacaga agccgataga aaagtggacg gcacggccgc 1320

agcggcttgg catggcaatt ggcaggtgcg tgcgcggacc tcgctcggac ggaggcgtca 1380

cgcggcgagg ggcgcagacg cgcaggcacc ccggccccgg gtcatttgtt ggcgacggaa 1440

tgggcagccg ccttgcgttg cgtgtgtccg gggtgcggcg cagacccgca gtcactcagg 1500

ccgtcaggcg ggactgcgcg ggagacccga cgcttgtgtc gtcactgtgg ccgatgcggc 1560

gatgcccgat ggcagcttgc cagttttcgt gggattggca cgtctcctcc ggcctgcgcg 1620

gcctcgttgg tttgacttca gttcagcccc aaggatcaca ctccgcacgc ccacatgtgc 1680

agcggtgtag atcgtcgagc acctctcgcg acctcttggc ggatttccta gccgtgttta 1740

gccaggcacc gcgtgcttag tttattaatc ttggaggaca tcgatcgctt agtttgttgc 1800

gtatgctctg cgcatttatt tgtaccctct ctcgtcgaat atttcagacg gcctgcatgc 1860

ttgaagtata tgggagtggt tccagtcctc tgctcgtgta gctgcaagtt ggtttggttg 1920

gtcatgccac caatggaatt taaaccaggc tactggtcac gtcattttgc ttcaggcaca 1980

cagcagcgga gccacatacg gaacgactgc acactactcc ag 2022

<210> 1966
<211> 1452
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83691_G1, chr2:191110176..191111627, Cluster 11

<400> 1966
cctaatcaca tgcagggctg gccccgagga tacgcagggt ccctcagagc ccgtaaatta 60

gatagggccc tatttatcca gcttatgtcc aaatacatat tgcaacgaaa gcctactaca 120

atccctcgac tctgcatttt tcacacgcag attgtggtgt gcttgataac aattgattcc 180

ttttttgtaa atttagctac ggaagaatag tagtagtagc aggaggaggg caacatgatg 240

atgcagggag ataagagttg aggagctacg caatcatcac tccgagcagg tacggacggt 300

gcaaaaggct gggcgccatg catcatctgc atgatggaag gaaggcgggt gcaagcttgt 360

tctcagagtc agcagatggc aaattgctag cggcatagcg ctgcgctgcg ctgcacagca 420

gcagccagcc agccagcccc gagcgagcac agcgcgcgtt gagcagtttt gttacagcgc 480

agcagcaccg gcaccggcac cggcatgcaa ctggaagcgg ctggggccgg tggagctaga 540

gaacgaggag gaaacaaaca actgggagtg gccttttgct gctcttctag ttctgaagat 600

ctgacgcttc catcatccgc atgcagcgcg cccccacgca caggcacagg cacagtcgtc 660

gcggcacccc atcgccactt tccccggttt gcctggggcc tgtgccgccg tggcccggtc 720

gctagtctcg ccacagtgac agcgctgtcc ctgtcctgac cattccatgg cgtttggcgc 780

tgccggctcc tgcggtcctg ctgcatatgc ttctgctctg ctgtaatata ttatttttc 840

tcttcataca tgttcgagac ttctcgtaaa cgagagtatg agacgatgac aataataata 900

aaatccccat atgcgttttt tgtttgcact atttgcatgg cgctgttttt ggttagccta 960

tacccggccg aactgcgcac agcgatggat ggagggtctg tttggtttgc gttgcaccag 1020

acctacctgg cccaggcaca actcccaggc gttcaatttc gatcgcctgg ggctagctat 1080

gatcatttgc ctggcaggta aatgcctacg tacgctcttc gatgtttgtg gttgagtaca 1140

ttggattctg taggagttgt tgttccgtcg atggacaagc caacctgttt gttgcttcaa 1200

gcaactacga catcgaacct ggtcaggctt cttctagaat ttcaacgcct gaaactgttg 1260

ctttggcgcc aaaacagatt tcttaggtaa acagctgata ttattgtgaa ccttattttg 1320

aaggatattg agaaagctta taattaagct tgttgcttca cctcaaggcg gaagagacct 1380

tatcgaagaa cgcgtggctg tccaaatttg gcctcttcga cgaggttggg ctcccattcg 1440

attccacttg ac 1452

<210> 1967
<211> 1645
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84193_G1, chr2:194490125..194491769, Cluster 11

<400> 1967
tgacagtact aggtcggctc tatcctccgg tagaggtgtt tgcatgagag ctagttgtcg 60

tcttgccagg ttgcttgaca gacaagttgg tcggtagtcc tgattcgctg ggttactctg 120

caatatttgt ttagtgggcg agttgatcga aaatcatgca tcgccgagtt actcgtcgga 180

caagttgttc agcttgatgg accatcatca agaggccttt tggaccttgt ttggataccc 240

tattctcatg tacccaacaa atagtattga cttggctcaa caatatgtta catcattgct 300

aacgtatggg tgctcagacc gtcaacgagg caacgaagca gcaagagggg gtcgtcgtcc 360

cgactgaacg gccgggcggc gtctggattg cgatgagttg actctcactt tttgtgtggc 420

ctataataat aacacgccca ttttcgatga ccacagcctc gcgagttgaa ttcaacgtaa 480

attattaata ctgtctgcca gaagaagaat aaaaaaagtc agaatcttct cggtcaggcc 540

tgtgttgcga ccatgggact ctgctgcgtg agagtgagag atgtacgggg tttagatgtc 600

aacggagaag actttggtag aatgtcaacg gtgacgactg atgaagtggg actgccgaag 660

agcctgcgtc aggcattaca tcgggcgatc gtctgcctcg acgctgacgg cagcattgcg 720

gcacggccat ggcactctcg ccgctacggg aggcatgtca ggctaggcag cgggcggcac 780

tactatgcac agtccagtcg ctgtcgccca ctgtgttatg acatcaccgt cgctttctcg 840

cttcaaaata ctactagtcg cacaacgtag agagacacac gctggcgtat cgtatttcac 900

gatcgaaaat cagagcattc ccagatgtac gagctcgttg ggccgctcat tttgctatga 960

ctacttcggg ttacctgtgc atcaaccacc cgacgccgac gatcagccca cgtttgaaaa 1020

agttattggg ctccaacgtc acggtatcgg ccatgtctgg gtggtgtagg taggggtcaa 1080

accgctaccg tcaagctgtg ttttgctatt gggccttggt agcttgaaac cgagtatagg 1140

tagtatttgg gcctacttag ggccgatttg gtacaaacgt taaaaaaggc cccaagttca 1200

ctaatgtagt cttcaattta tatttatcat attttttttc tagcatggcc gatgagagtt 1260

aacatagagg ctcattcgag tctttcaata acggtaagat aagatttttt ttcataatga 1320

tagaggcaga tagtttttat agtgaataat attagatcca actattatgg acaacggtaa 1380

ttagagtcca ctaaattaaa gactacatgt ttctaactaa gtaattatca tgagtttttt 1440

ttaacaaaaa ttataccatg tctatttgga acaaacctct gacaggtaaa aataagatga 1500

tgtcattata gcgtgtatcg tggtacctca actatacata gtagattatc attaatcaac 1560

acgattcaca agtatattct caattgtctc acccccaccc aatttataag ggatgtttcg 1620

tactctgata gcggtaatga tacct 1645

<210> 1968
<211> 2299
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84521_G1, chr2:196238000..196240298, Cluster 11

<220>
<221> modified_base
<222> (31)..(31)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (32)..(32)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (33)..(33)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (34)..(34)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (35)..(35)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (36)..(36)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (37)..(37)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (38)..(38)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (39)..(39)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (40)..(40)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (41)..(41)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (42)..(42)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (43)..(43)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (44)..(44)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (45)..(45)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (46)..(46)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (47)..(47)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(130)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<400> 1968
cctgcccccc cttcaacccc aaaccaacaa nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn gatcgacatg cacgcaggcg cagcaagctg aataaattca gcactcagcg 180

tacgtatagg gtccgagctt ccacgagcac aaacaacatc acgttacgtg ccgcagtcag 240

tcgcgccgcc gacggacaac taccggagag gtcgttttcc ggtctcgtga aggcccgggc 300

gttccatttc catgcatgta gatgtagaga gcagcaaggg ataagagcgg agtagtgatt 360

gtgcgcagcg cacgtacgcg ctgatgggtg gtcgttgcgt tcccggtccg gccggcactg 420

ccgctgccgc tctgctagtg gacactgatg tgagccgctg tgcgcaagat atctgcgatc 480

gagtggcact tgaacttctc tttctgccga gcgagcacga actggtgccg agcatgcaca 540

cgtcgctgcc cccgatgaac ttttttttc tcccttgcca aatggcaccg tggggtactt 600

ttcctctgcc gagacgcggg tagatatttt gctgatgagc cccgcgcggg tggcgttccc 660

cctggccctg gcccgccggc caccaccacc gccgtcacct tcctcccttt tcttttcttg 720

acgctgatcg atgtaccatg tgcagatctg atgcgctctc gctctctatt ccacgaccac 780

caaggatgca acgtgatatt ttatctttat gattttaaat ttaactatta caagcacacc 840

ttatagctaa tctaatagta tttattttaa tatcgtaaat ctttatagtt cttaatctat 900

aatcaactaa actttaaaag atattaaagc atgacatcgt acgtgccacg ggcaactttg 960

ctggaggttg gcaatccagc tccgccttaa catgttgctg tcgataacga cggcggcata 1020

cagcgggcga taccaactat aatgcattat taaagtatct cttgttgatt gtagatttta 1080

caaaataata attatgtcta tgagaacgtc actagatctt caggtaaagc gaaaagcagg 1140

gccaaaccgc tgtgcaatta gcttctcgta cggttatcat gcaatcgaac tactaaatat 1200

catggaaagc tatgagaaaa ctatagttgt attttattat atgctttgcc gaaatatcaa 1260

attctaattc attctacgct actgtaagag agagagagag aaaatgtact actactcctg 1320

tcctgcgtgc ggcagtagta gtagtacacg acatcccaag ttccaaggaa cagatcgagc 1380

attcaacgca tgccctgctg gatatgatcc acccggaaag atggaaatgg ttggatgacc 1440

gaatgattgg caagcaacag aacaggtcga tcttcttctt ggacgttcaa gtccacgcat 1500

gcatgcatcc cggtttctcc tgcacactgt cacgctctcg tagctcactg acaggaacag 1560

aacagaacag aacaaacagt gttgcatgcc ctgtgacaaa aagagcagtg acggtgtccc 1620

tctccgcccg ttccgatgga cgatggggga gtaaaaacta aaaagagaga tgaatgggcc 1680

cctggacttt ttgctctcgg caaccgctgc atcgatcctc caccaccata gccatggccc 1740

atggccatgg cattggcagc tgacctgccc cgcattcgat tttggacctc cctatccgct 1800

tccccgttgg acggctcacc ctgcgcattc taagcttttt ctctctcgcc acttgtcaat 1860

gttggcgtac gatcagaacc aaccaacatc gcacaatgtt attttctgct aaacttttg 1920

ctcacgtcat cagcataaat aaagcaagat ataaaactga cgaacagacc aaatttgatt 1980

acaccagagg ttatgggcaa gctagagaac caactacctc acaaccaaca ccaaatacca 2040

agcacagcaa taaaaaccga gccgtactcc agcagctggg agcttttgtt ttgcgtggca 2100

cccaccatag gattcgatct tgctcgcagg tcaggtcggc atcacactgg cacagaggga 2160

cgtttagtga gcgtactagg acattaccta cggagttcat actgatcaac taccagaaca 2220

tctttttctc tttaatgtat ccttcaatag gttcatactg atcaactacc gtagatacct 2280

accatggcgc gtgtactaa 2299

<210> 1969
<211> 1565
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85600_G1, chr2:203611005..203612569, Cluster 11

<400> 1969
ttctatcctc gacttttaaa ttctccatag gtagatcatt catatcgatg gaggaaaggg 60

ggtggaggcc cgtgaagtga actttgtaat agagtttaat ttgtaaaaag agagataaac 120

ctatcatacc attccagcca ggctcagcgg cggcccggcc gcggccggcc ggcgaggtgt 180

ccggtctccg gtgttgtgtg acgattatgg ctgggccgaa agagaccgtc taacatgcag 240

acgacgacga gacacatgtc cactccaaag atcgtccgtc atcatcatta acaaacaagc 300

ggcaaacgga tcggaggcat ccaacttcca accccactag cgccaaacaa agggcacgta 360

tgtaatgtaa tgtcgtgtac gcgtgtggcc cctgcaggcc gtgccgtgcc ttgccgtgag 420

tgcgtgcgtg cgtgcatggc cgggccgcgc gcaaccacaa accagccgcg gccggtggcc 480

cggtgcctaa cttgccgaag caagcgctca taaagctctc tggccgatga tggccggtgc 540

taaacctgca tgattggggg cagtactgtg cccgtgtcgt tattcccttg ttgcgagatt 600

gcgaatgaac agaaccaccg gttgcattgg acgcgcaggc gctggagcat cggtggtctt 660

gttgtgacca agcaagcagc tagctctccg cctagctatc ttttcatgcc gctgttgtgt 720

gaccatgcat gagtacaagt agtgatgtgc ttcaagggaa ggcaaagtgt gtccaccgat 780

cgagatcgag agagaaaagc taatccttta gtttacttga ttccacttgt cttggccgct 840

tttgatttgt gcgctttact atatatctga tgctctttcg gtagtggtat agtgctagct 900

gtcaagtaag aattagttaa cataagggta cgcacaaccc cattagttaa ggagtatcat 960

gataggcctc taagaggtca agtaaaaaaa acaagagatg tcgagtctgt ctcttcttca 1020

gaacttttta tacatattta tacatattct attaactgta tttatgatct agcggccgat 1080

gattatatca ttatatagtt tttatctatt tcttatactt aaaaaactga tccaatagcc 1140

ctagattata cacgctctga gcgtagcact tctgtaaagc gaggatgcgt gctgcactgc 1200

tgcctgccat tgttgcattc aaggctgcta agaaatcttc tgccggttgc cggctgctgg 1260

ttagtttagt ttagttggtg catgcatgcg tacgtttgtt tcgtggtggc actgtgtggc 1320

ttgagtcgtg tcggcactga accatccaag cacttgtttg tttactttcc ttgttgattg 1380

attcatggat cgtcacgttt tttttttttg ttgactagtt agttagttaa cacggtacgt 1440

acatgcatgt atgagtgtag tggatacaga gtacacatat acatggcacg tctcatatat 1500

atgctagtac taattccatc cataccatac agtctagact ctagagctag ctacatacat 1560

atata 1565

<210> 1970
<211> 2230
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_85742_G1, chr2:204258071..204260300, Cluster 11

<400> 1970
tggccttcgc ccttagcgaa caacatttgg cccgacacag ctcgacactg ttgtgtgtat 60

atcatattgt tctattgtcg ctcttactta gtctgtattt gtgtgtgtgt gttttcaaaa 120

caaatatttg acttagtctg tatttgtgtg tgtgtgtttt ttcaaaacaa atatttgact 180

atttgctaga ctagttatag atcaagtggg cccacttgat ctaggttcct ctacaaatac 240

agctatatat actatcttta taagcatcta tacgaaacca taggtgtgca gtatatactt 300

tacgtatttg gtgtggtaac ttgatgaaac ttaaaatcat ctgggtaaat tatactagaa 360

tctaggtacg tgtacgtacg agtacgacct acaaaatggc acgtgtggga taccaaatgt 420

aatcatacgt cttgcacggt gggccatgct atttgtgtaa catataacaa aggtgtagat 480

tgtttattaa actagtacta gtatggtatt gaaaaaagta catacctgat aaattaatat 540

acacgccatg atggcatcgg agaaaaaaaa cgtggcgcgg ggaagagggc ggcgcgcgat 600

ggataattgg ataggcagac gatggcgact gctacgcgag cgaggccacg atccgttcgg 660

attccatccc ccaagatatg ctcgggcggg atcggatctg aactatagta tctgacatct 720

catctgatcg gctcgatcga catgtatgca gtctgcacgt gtggacgcgc acgccaccgc 780

acgggcgacg gggcgagcga cccggctcgg tgctctccca cgatgacgca aaggaaaaaa 840

aaaggtgctg gtggaatcgg cctgcatggt tttgctgcac acgaagacga gcgcatgcat 900

gtttgttgtc tgtccctaag gcccaaggca ccaccatcgt ccagactcag gtaagtggtg 960

agctttgtgg ttaatggcaa ggagagcagt ttaaccgtgg aacaaatttg aacgttagga 1020

caccagcgaa ggcaaaacgc agcaggcgac ggctggctgg acgcgggaac aacaaacaag 1080

ttggataatc gctgacgcgg gccggccatg gggtggggat gagatgtgcg cgcacgtcat 1140

tggcctcgcc gcgtgtgtct ccgcgtaagc tatatacccc cggtgacgat atacacagtg 1200

tacgtacgca aaactatttt tttaacacta gaaaaacaaa gaggaaatgg gaccaaaagc 1260

gacagtacga ggcaacagtc gttagttgga tgatggcaaa cacactacgt atatatatat 1320

aataatatat agccgcacga ggctatgatt cggccggccc catggccatg atgcatgacc 1380

atttcaggga ccacgtaccc gtacattgat tgatccgatg aaccaggtct ccatgcaatg 1440

gcgagatagc tagccacgtg cactacttcg cgcaggcgca acacacacac atctcagctt 1500

ggctgctagt agtaccatat gagtatatga catagcgtgt gtataatccc agtggagtac 1560

tctggttctc gttcgatttc cttccttgga gtgtcagggg gggtccgcat ctgcatgcgg 1620

caggcaccag gcagcgccgc attagtttat ctgtggcatg aacagcgcgt gtttttcgtg 1680

ggcagatcag aggcaccggc cattcaacca cctcgatcga tggtcacgcc acgtatgtac 1740

gctgtcagct gtttgattat tgatagatcg agccatcagt ggattccatt cattgtgctc 1800

acccacttat tactcgtact cgatacgatg cctgctgttg gtttctatta aacaatacat 1860

gtagttaaag aatttgatcc attgtttttt ttatacgaac gagctctcgc aaacacacgc 1920

taaattaaat ctaaatcact aactctcccc atccatgcac tctcgttcac ccccagtcgt 1980

caatccagca tactatttat actcgatata gtaatgattg ctgcgcgggc cagcaacaaa 2040

aaaaaccata gttgttgaca gcaagcacta gcgaaaagcc aatgcgcgca ggtcattttc 2100

agaccgagtt ggcaaaatga ttcgcatgtt tacacattat aaatatacat cgatcctcac 2160

gtagcgagag gtacggtgct accaattctc tactactcta tatgaaggta ctgtaggcgt 2220

gcacaatacg 2230

<210> 1971
<211> 1464
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86996_G1, chr2:210661266..210662729, Cluster 11

<400> 1971
acagtctgga agagaggctt ctgaatttct ggtcagattt ctgccagcca gcgcgcgacg 60

tggctcggga gaagacaaaa aaaacgagtt tttgctgtct cgattcgaat cctgcggcag 120

caggccggcc ggtagcgata tggttaggtg caaggatcgg tcgctgtgga ttgaagggag 180

tccgccgtta gggtttcccg ccaggtacat tacatacagt acactcgccg atcgttgtca 240

ggggagggga ggcacccgat tcccttcccg ccaacgcaac cggacgcgag ttcgacgaac 300

tatgcatgca gcacgccacc ctcttgtccc tctgcgtgca gctgcaggtc caactgcagc 360

cttcctttgt tggcgtgcag cagccacccc ggccaacagc tagcgcgaca gcgacgtggt 420

ggcatgcagt gcgctgcatc tcgatcgatc ggcgtacgtt taaccgacgt acgtactgta 480

cgtacgttgc aatgaatgga agctcccggc cgtgtctccg tcttgggcgc ggggtcgcag 540

tccctgcccg aggcgcgggc aggcagggtc gctgccgtcg cagctgggct agctgcgggc 600

agacgacacg gcgcatgcat gcagctgcac ctataggcta tagcgtcgac gtccctcctc 660

tgctcgctcg cagcgcattc atgttcgcat cacgccacga tgttgcctgc actgcactgc 720

gctctcccac gtttgctggc cactggccag tcagtcactc ctctgcatat gcatgctgcg 780

tgcggcaacg tacgtggggg agtgagctga gcgctgagct gccagaggca acgtgcgcgc 840

gtgcagtgct gtgacagtga gcgcgtgagc cagtgagcga ccagagcatg catgctcatc 900

gtccattcgt cctatcctac cagcagctgt tagcctacgc ctctagatgc caaccaaccg 960

ttgagacttc cggagtaaaa acaagtgcca ccagccggta tagtagccca gtactgtact 1020

agaaaaacaa aacccagcac cagcaacaat cgttcaaatt ctttggcacg agattctctc 1080

tgattctgac agtgccgcag agattaatta attaaaacaa gggacggtta tcttgggcct 1140

gtcagtagta ggtgtgccga cacttaccga cgcgacatgt tgcaagatct tactgacgaa 1200

gtggcgccac tcttttgttt tatttttttt cgtcagaaac tagtaatgta atacgagaga 1260

gagaatctgg cctgcaggtg acaaggagct agccatagat cactcaacac ctgggggaaa 1320

aaattccact atacgtactg ttgctatgga atattcggtt aatccaacaa gtcaaggtct 1380

gtccatcgca tcaccccatc tcgcagtcgc agcagacaca tgcatggatg catcgctggg 1440

ccggcccgtg cagtgcgtgc gttc 1464

<210> 1972
<211> 1817
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86998_G1, chr2:210663278..210665094, Cluster 11

<400> 1972
gagccagggt ggttgttaaa atgattatat gggacgagaa agaaagtaca ccttgcgttg 60

cacctcgact cgaggatcag agagagagag acacgagcct tctagtacgg aaccatagaa 120

ggtttgttga aacatcggag tgggagccga agccctacac caaaatccaa tcacgtagtc 180

ttaaaaactc tctctccaac cattccgcta tatacatctt cgattccttt atatgtactt 240

tctattatct tttattacat tctctaaaag caagattccc tctacacata ctgtacgcgc 300

cttcaatcat tcgaaatata catcttccct tatactataa cttagttatc taatttttca 360

tttatcactt ttttttttg aaaatttaaa atatcatacg atatttgcat gcactatcat 420

aatacacatt atatgttatc atgttacgtg actcaaacaa aattaatatc gcaaagaaac 480

aactaagcat actgtaacac ccaaattttc aacttgagaa ttaaataaat ctctctaaag 540

tatttatttg agttagtgtt ttttatacgg attttacatt tagaagaata ttttttttt 600

aaaaaaaata aatattttga ttgtgcattg cataatgatg gtggagcagc tagcattgtt 660

tttgattgat tgagttcaaa ttcgaatttt taaatttgga tttgacttga gttggaattt 720

gacgcagcca accaaacatc ggcacaaaac agtctggccc tacagagaaa ctgcatccaa 780

acaataaggt catgtatcaa tcgaaccagg ttcagcaggt gagtctggtg ctgctcctca 840

ctccatcctg accatgttac ggtaaccaat cacaccccaa aatcagactc tgacctagct 900

aggtaggcca tagtaggcac gtaagaaggg gcgggtccct tccaagtggg gacggtgagt 960

cgacggcaag tggcaagtgc gcaaatggtt ggtggataag gatgacccgt ggcgacagca 1020

ggcagaaaga tggtggagca cgagcgcaca caccggaccg tggcaggcac cccacgtgcg 1080

cggggcggag agagaggccg gcgtggcggc gtgggcgcct gcgccaccat gtcctgcacc 1140

tgcacctgca cggctgcacc tgcacctgca ggcaggcagc agaatctccc catctatccg 1200

cttgggcgta cgcctccggc ggtccaatcc tctctggctc tcccctccgc gcacggaggc 1260

tgcctgcagg attctctgca gtttattcgt gcgaggttgc cgtgcttcgt cagagagccg 1320

ccccccgcca tccgccaagg cgcccgagtt tgcttcgagc gagaggagga gcattggcat 1380

tgccaacgcc aacctgtgat attatagata atagtaattg agcacgggaa aacctagtat 1440

gcagcgctat gcattgcacg cataggcagc gcccgccgag acaggaacag gacggcaacc 1500

aacgcaaagc tacccaacca gtgcagtgca tgtgcatgca ttgcaaggtc ccttttaaac 1560

agcatgcatg cgtacgtaca gaggccgccg gtcgcagcac atgacgtgcc gcgcccgcgc 1620

catgcacgca tcgccggtcg gcagcctagc tctagctagc tagctactcc ggccctacat 1680

gatgcgtcac tgcgtggctt caaccaacga ccggaccggc ccaccgactc ctgcgcccca 1740

cagccacagc tgagctatag cgagatcgac cgagagcgct agctcggccg gccatggacc 1800

atggcgtgat gggccgg 1817

<210> 1973
<211> 1762
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8885_G1, chr1:46846918..46848679, Cluster 11

<400> 1973
cgcatagcaa atcctcacat cacagcttca cacacactaa cagagtgttg gtctcagtaa 60

ccaaacaatt ctaaatcaga tggtacacga tgagtttgtt cccttaaaac cggcagaata 120

gttttattca ccatactgtt ataaattatg agcatacgag aaatgacgtg actaagcatc 180

agtttcataa actgcaaata aaataaagag ttagaagacg atgtactata tttttgaacc 240

aaacgtccta aaataccatg acgaatctca atacatatta cttacgacga tgctgaagga 300

agggacaaat tcaaggtata gctaaataca tttttttgt tcattctgtg gcattggtta 360

ttttggtgc cttgtgcgtg gtgagatttg ttggcatttg tggttttgtt cttgttaaac 420

aattaaggac tagaccaaat ggatctacct acctagctag accgatagtc tacggggttg 480

tctaaagttt tttttcttct ccttcctcca tgaaccctaa aagccggact ccagcggatc 540

ccgagcgcgg ccgcgaaaag caccaggccg cgtcgcagaa acaggcgtga gttccagcag 600

ctcgcgtaaa gaggggggaga agagagaaga tacagtggtt tgtgggagag aggaaggtga 660

tgcctctatt tcgcatctgc atccagtatc tgctggacgg cgctacagtg gcgctcgctg 720

cgaaaacaac gtatttgcga cacgtttcgc gtcctgctgg actcagccta agatcaacgg 780

tgatagaact catcgcatga taccacggag gttgcgcaac gataggtcta ccgatcatag 840

atccataaag tgttggcaca tgatggcttc acagttcaca ctagcagagg acgttgagaa 900

tcgattcagt gagcaagacc gaaccatcct actacaactg aggagccgtt tggatgatag 960

aaacgtttta tagattctta aatgggtctt tggaggaaaa attgcggtga taaaaaaaca 1020

acttcctcca tctgggtcta ctaatcatta aaatatgcag gagagattga gagaagcagg 1080

attctttcgc ttatagctta ccagagagag gatacgtgca tgggccttga ggtgagcgag 1140

gtgtggctgt attttctggg ccagcccata cgccggctgg cataagaacg gcccggagaa 1200

agacgacccc gacaggtcac tggtccgtct atatatgcgt gaaatgaaat ggcaacgcat 1260

ccacaccaga gaccagacac cagaacgttt agcaaagcgc cgaagccctc ctttgattgg 1320

ttgaaccgtt agccgtgccg tctagtctgt gtccgcagtc agtttcgctg gaatcgtggc 1380

ctctcgtaga cgaaaacaag tggccaggcc caccgctacg acatccgcca gatttcccga 1440

gcgacacgcc ctccctcagt cccaccacac acacgcacga gtacacgaca cacctcccta 1500

cgagacaaac aagtcgccac ctgtgtcgtg aactgcagcc ccatctgttc cggacaaact 1560

ctgcctgcgt ccctagcgct cgttttcctc ccgctttcag gcacaaaaaa catgcactct 1620

tgacgttttc cctgtgggtc gatgcaggct aacccccttg gtataaattg gggtgcaagc 1680

gcaactgcac tagtacgccg gatgatgcaa ttgagagcgg cgtgtttgtg cagggtggag 1740

aagcaggaca cgtgagcgac ca 1762

<210> 1974
<211> 1759
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9234_G1, chr1:48640824..48642582, Cluster 11

<400> 1974
ggaaacgtgt atgctacatt gctacctaca tatgtaccac atcgaactat gatagcatgc 60

gagtagagaa tcatgggtcc acgttcaacc aagatagcat gttgtaaata gagaatcgta 120

gatcattagg gctagacgcg tagcgcaggt gaaaaaaacg caccgatcgt cgttgctaca 180

caaaaacaga catgtcggaa gtcgttagta acttccgacg gcctgtccag agtttgatgg 240

ttaagtattc cctggtgcca gaaataaatc tgaacaatat ttggaggatg aacaaaaaca 300

tacttattac attaaaaaaa actgaacgtg agttttcact cgagaaacag agaaatagac 360

aggctatatc cgggatctca tcagaagaaa ccaggctacg agatggctac tagtatatat 420

ggaacgctga ggcgcacact cggcactgag ccaattttat attcgagctg aggcgactag 480

aataataggg cgtgcaaaac aaacacactg tttggaatag acgcaacatt tgacaaacac 540

tagctgcagg aatcctgttg ggctagctag gcaggcagca gcagcatcct gggggcagcg 600

ccagacaggc ggtctccctc cccggtgaga cgggggggtga agagcggcgg ccccagggtc 660

aatgcgtcgc ggaaagtttg cgcgagaaca atctgcttag ctaggcttcc gagcccgtga 720

cagccagcct actcgagctt ggttaatcaa accccaggta gcttactagc ttgtccatac 780

tactagctag ctagctagct agctccacca tgctcctgct cgtctcgact atgattaaag 840

ccgggcagca gctttcttgt gatcttgcgt gtacgtcgcc ccttttaccc acttgtcgcg 900

cggttctcgc tagcgctgtg cgggccatgc ggcctctctc tttcggggtc cctcctccac 960

ctttgccttg tcgatcgtct cagcactgaa tcactgacct ggccatacat atacatggca 1020

tggcatggat ggtcgatcta cctgaacatc gatctatgtg cagctgcgcg ccatcagtat 1080

acatatatgc catgtatgca gtgaacgacg ctatatatga tccgctgggt tctcgctacg 1140

gcatgggtac aactgtagaa gccagcacgg cacgcctttt tgtttccgtg tgtggcagtg 1200

caccgtaccc agaggccaga tagatggaag tgtgtgcgcg caccaacgaa atcaatacgc 1260

atggaggcag aagcaggtac cgtacggcaa cggcatgcgt tgcatcgggt cgggggtcag 1320

ggaggggctt ggtacgaaac accgtgcatg caatgcatgc atgggaactg ggaagaaggg 1380

gaatccatgc actgctgatc ctgcgtagta cgctcgctgc gagttttaat ggccgtgcat 1440

gccatgcaat atgcaatgca tcgatcggcc ccggtcgaca agagtggcgc ggcgcgatgt 1500

gatcggccgg tcgaattgaa ggacgtgcat gtgtgcctgc agcaggttgc agcgacgatg 1560

gtgcatgcat ggtggtcacc tgagactgac aataagatcg aatctatcaa accgagctcc 1620

aagctggtcc ggtcgcttct cgatccgacg cacgagccgg cattgaatgc cctcacgccg 1680

ccggcgctat gttgttggac acgggacggg cggtaacgta gccgtgcagt gactgactgc 1740

ataatggccc gcccgggtg 1759

<210> 1975
<211> 2366
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9235_G1, chr1:48648101..48650466, Cluster 11

<400> 1975
gcccgggtga gtgtgcatgc ggctcgtcgt ctcgtactcc tatataacga tgcaatcagc 60

cagtgtatat atagtactaa tacaagcgtc aaactacaca tgctaattaa ataaaaggta 120

aggttgcata tcgaccaccg accgaccaac atgggcgcgt gttcctgttc ccactaacac 180

gatgtctgtg tacatcatgc gcaaccactt tctaccgcaa attaacgcgc ctcgccgtgc 240

aactgtgcaa gcgaaaataa agctggacgg acgagtaacg aacgggaata agcggccaag 300

cagccggata cgagacgagc catgccagac caagcgctag cgaacaaaac aaccaggccg 360

gccgctttat tacttcggca cagcgaatct cgcacagtat ctatcgcgta tcgtcgtcag 420

cacagtaaat gttaaacatg aggggtgagc gcagtgctcg ttgcccatgc tcttcagtga 480

cgtcctttgt agctagagta catgccagca ccagcaggga ctatatatgc gttgcacgta 540

ccggccgtac ggtcttgtaa cacacggcgc gcggggtcgc acactacccg gtggcggagc 600

taagcaccgt gcgtccgtgc ctgcacgtct gacgaggccg ccggccggca tgcatgcacg 660

cagcacaggg gattagcaca agggcacagg acggcgtacg ggcacagtca cctcactgta 720

cggcgtccgc cagcggcagt acgtacgacg cgtccaatat tgaacggccc cctgtggggt 780

ggggacgatg tggcccgcct gccgggcgcg cgccgcggcg gccctggaac gagcacgaga 840

gagcacagcg cgcggcgcta gcgtacgtgc accggccgca aggcattgca attggcatgg 900

catggcatgg tgcgcgagcc cgcgacgttg taggagcacg tacaccgtac acgcgtgtct 960

ggcgctgggt tgtgccatgc atgcatggga gcaaataaac tggtcttgtg gtggcgattc 1020

attcaagcac gcaacgtgtg ctgtcgcgtg tacgccttac acgcgttctt gtcgccggca 1080

tgcatgcatg gacccatcgt cggcgtgtcc ggccgatcga tccgtcctct atatatatac 1140

gtattccgct acggctcaca cgaagtcacg accggctgat cgagattcga gagtcctcgt 1200

actcatatcg aaccagccta tatataaagt atacacgcat catggttggt gcacatggat 1260

ggacgatcgg gctctctttc gttcgttatg tggtgtatat ttcatatatg gcagagggag 1320

gaaatcaatt aaacaacaat cgtcatttac tcgtttgtcg taactatata actaaccggt 1380

ggtctgccac atgcatgcat gcacgaaatg ttggtgccct gccaccacca aaggacttct 1440

tcactttgga gcttcgatcc atgcctgaga ggctggaatg gcacatgcat catcatcgac 1500

cttttgttga cgtcgtcgcg tcgctgtctc gttgccacct tcgatctgtg aatcattcca 1560

gaaagtattt actgttaatg acctgcatcc gatctccttc tgccaaacac agagcgatgt 1620

ggatgctacc cagcaggccc ctgtacatac ggtacgcagg tacgtacgta cgcatagcaa 1680

cgactgtcag atccgagcag cgtagtagta tacgcacggc acgcagggac gacgggtggg 1740

tgctttgctt tgccaggaag cgttaattac ctagactagg ctagattctc tgcactagct 1800

agtgtcgtaa ggtgtacgcc cctgggcctt attggtcgtg gtgcacgtag tataatacaa 1860

gtgttgttgg gaattgatgc gcgcgtctcg gatcggctcc tgtctgtcat gaagcttgca 1920

gatcgagacg gcccgcagtt atttatatcc ctgtcggtcg tcttcatcac cctgcgatcc 1980

ttgttttcct gcactggttt agcagcgtct tgattattgt atcattcatt gagcctcgcc 2040

tctttccgcc gtgtcatgca tgcacattca tgtgtgcgtg catggccgag cgaggcggcg 2100

tttatttctt gtgagccgcc gatgcatgga tggatgggcg gagcgccatg acgttcgtcg 2160

gaggaggatg caatgcatgc atgcatgtaa atgcaaggcg tccgtttcgt tacagggggt 2220

catgcgcaag atgcagcgta cccgtcccgc acacatatgt agcgctgcct gcctgcctgg 2280

atcatgcgta cgtgttggtg aatggtgatg gcatgtaggc cggctcccct tgtgacgctc 2340

acgttctttt gctccgcgga gcagcg 2366

<210> 1976
<211> 1670
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93296_G1, chr3:5947182..5948851, Cluster 11

<400> 1976
agaatgaata taatgtcgca tatatatata tatcatccgg ccggatcgag agatgtgatc 60

tggacacagc tgcttcaaat caacggtcca cggatcgagc agataaaaca tcaagacatg 120

ggacgacaca accatcatca tctgactttt tattcctttg tcttttgcaa attaaacagt 180

gtggcgatta aattagggca cgtacgaacg tacgcagcct gctttctcgc cttttggaag 240

tagtggatcg gaaaagcctg cagggaggca gatggagaaa ggttggtatg atttccctgg 300

gggagatgag atgcatgcat gatgggctct cgatttattc gttccattcc atacattata 360

ttagtatcgt ctacactata cactacagtt gttaaggaga gaagaaagaa aggtgagtgt 420

gagtgcccca gctagtggta atacactact aagcgaaaag gtctggcttt tggcgcttac 480

acacatacgt gtgattggcc catgatgccc atggattatt ggtaagctcc tctcctctcc 540

ttctcctttc gaacacacac acacacacac aggaggctgc tgctttgtta ctgcacccga 600

gtacgtacgt acctgctgga tcgagaagac gttttcctgg acgatgaatg tgtgcaccgt 660

gagtcagtga caaaaggtca gctgataaca ccatgaagcc gtgcgggaga tggatggaag 720

aggaggaaga aggggagggg aaatgggcaa ataatagtac atggtacggc tgagccgcgc 780

gcgccccaag aagcggcaaa gcgatcgagc agctttggct ggccttggca atgtggcggc 840

gatgtcaatg cagcagcatg gctttagccc tggcatggca tggccagccc aagctagcta 900

cgtactactg ggacgaggtg gtgagagtga gactagcgtg agcgcctgcg tgcgtgcatg 960

catgcagcag gcgcggaaga taacaaaaca aaacaacaag gaagcaacac attttgatgc 1020

aatggcgagc gcaaagcacc cagtaattaa agcctgatcg cctgctgcct gacggaaatg 1080

gacaggcggg gccgggggcc cgctagtccg ctactagcaa cgaaagcaac catctgatgg 1140

atccctttag tttgctgcat gcagtggcga gagctagcaa cgaaagcaac catctgatgc 1200

agatgcagag gggcgagagc gagctagcta gtcaggctca ggctcaggtt gttcagcgag 1260

cgagcatgct agctagcttc tcccgtcctt gtgcagctca tgtgcagtgt agttccattc 1320

aacccatatc gcgcaatgat tttttcccct ctattccccc gttttctgtc gctgttcggg 1380

gcccctctgt gtcacttagt ggcagctaat catctgccac acgcgcatcg tctgtgtgta 1440

agcctgcatt catttgcttt atttctcccc taaattccaa aaaactgttc tgcagtgtgc 1500

aggtacgatg gacggaacgc acgatatggg gatcgttttc gaccgcccgc gtgatcatgg 1560

cccctatgct gtccggaatc cgatgttggg taatactacc gtctaatgat gagggcttgc 1620

aatggcattg aggcattttt ttctctctcg gagagaaacg cgtcccctct 1670

<210> 1977
<211> 2228
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93409_G1, chr3:6425895..6428122, Cluster 11

<400> 1977
atattatgtg tgagaccagt tactaattgt taaataaatt actattttta tcctccttcc 60

tgttcctgat ctatatcagc tagctattta agatagttat tgcggacgcg ccaaagggcc 120

catgaagcct ggttcccctc gggacctcgg gtcgaggagg cagccggcgg gacgccactg 180

ggtctccaac tggtacgaag ccagccgacg cgcggcggcc gagctgagtt gcgaacagta 240

ctgtatcatt gtagacttgt agtccaactg ggacaacggc gcacgacgac acgcgcgggc 300

cgcgcgcgtt cctttcacct cggtcgccgt tcgcgcggcg agagaatttg acgccgccgc 360

gcggcgcgcc agtcatgcat gacgcagctg gtgcggcacg ccgcatcacg acctacacgc 420

tgctttgcat tgcatggtcg cttttgccat cgttaattct gttggggaaa gaaaaggcta 480

cggctctttt ctttttgtca caaaaaggtt ttgactttgg ttacggccga gacggcgacg 540

cacagtgtat gtcgacggtg actttgctta gccgactgca gcgtttgcac tgactgtgac 600

catctatctg cagctggcgc ggcctgctga actaatctgg tttgcgctat gctagctgtg 660

gtcaaaaaga aaaggcgcac acgtgtacgt gtgcgtagct ataggctgct tgacatatgc 720

atgccctcca agctcactga ccacactagc cgacagctaa tttgactgca gatcatgtat 780

gttcagttcc ttccatgctt tgcagtccct actgatgcac gcgcgcacga cgcaaggact 840

ttgtgtcacc accaccagaa gcagccgcgc gctataagct acagctgctg caagttgtag 900

ttgtagctct cgtttttggt tggtgcagct aagctaccag taccagatct cttttgtata 960

gccgtgccaa tctcctgctg acatttatct gagcgtgaca cactgatgcc tgcttaaatt 1020

tatcgatgag cacgtataca gtgcccctac caccgtggag cgagagagca cctaaccgat 1080

ctctcgtatc tcataaaata cgaaggcgat gagattgcat atgacccaaa gggagctctc 1140

gatcgtgatt tgatgccgtg cacagttgga tgaagactct tagctaggta gctagctagc 1200

tccatcattc ggagcgagct agtagcctca cctcaccagc tcacctacca cagacgccac 1260

gcatgtttga tttgattccc gttctgaggc agggagatgt gtgtgttcta ggcagctagt 1320

agcacaaaga gaattgatgt ctgatcccgg gctaatccac gtccccatga tcctaaaccc 1380

tacacacacg gatatccgcc taaaaagctg ccctcgatct ccttcgaata aacaacgatc 1440

tcctgctgtg accgctttaa ttttaagagc acccctctga ttaattgaac gcgcgcatgc 1500

aattaatgga ctcggtcgga tgattattat gcgtgcaatt gacctgcggc ggcgtactag 1560

ctaccttgtt taatttgaga ccatatactc attgagcagc ctgctggtaa ttatgcaatt 1620

gacattttca gtcttctcta atcaaagact agagcacgca gttttagata acacaacaac 1680

agaaacgtca attaaacaat aacaagtgga cgattgttcc aaccggtatt ttttttccg 1740

gacctatagc tagcggtgtg gtatgtagta tatatgcaca tctgttcatt ccgtcgtcta 1800

tccatttta gtcaaacttt aacaaattct atggagaaat ttgcaaacat ctatgccttg 1860

aaaaaattgc tgcataaaaa atataaggac acttattccg taatataacc gttactattt 1920

tagtcatatg tattcggatt caatcatatt tgttacaaac ctttttttt ctcattctag 1980

accaataata gatggtcata attaaaccta acagtgttag tattagtgga gtcctggctc 2040

acaatgggag aatgggagag acaggctgag cctactacgt acctgtcatt ggaagggaga 2100

ctacacactg caaaatcact ttctactttc agttaattag ctacacacta ctatatacat 2160

ggatagttcg atttgtagtg gtggataaat agcatagctg ccttttaaat tgcacgtgtt 2220

ggttataa 2228

<210> 1978
<211> 2780
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96380_G1, chr3:22725907..22728686, Cluster 11

<400> 1978
atgccttgcc gttctcgact gcggctagcc taaaccctga cgaagagacg ctgacaagca 60

ccatgctccc tcggcgcgag cctgcatccc gcacagcgca agggccggcg tgaggcgcgc 120

cgaaaagcta tcgtatcgcc gcagaatccg tgcagtcctc ggccagactc tgcagctccg 180

ctagaaaaaa ggcctttgcc acagtttatt ttttaaaaaa agtcacgtcg cgtgggcagt 240

gggtcctcct tcgcaacacg agatgatcgc agtgcggagg ccaggcctgc agttgcactg 300

ggctcccgtc tgtctgtctg tctgtctccg aggcctgcag ttgcactgtg cgtcgtgggc 360

ctcgttctga cgacaccaat ccgtccacaa aaaagtgtga cgagaaaaga ggcgccgtcc 420

cgtaccgtaa tgaaatgaaa tgaaatcgag ccgcggcagc gcatgcacac cacgtcgcag 480

gcctgcttcc cctcccgcgt gccgcgcctg acctgacctg acccagcagc cttttcgtct 540

ccgcgatcga gatccggggc tgatattggt acagttcctg tcggcgacga cccatcatca 600

acgctcgctt caaaagcggt gcagctgcct gcggaaaccg atctttacag cctgggtgca 660

tcagcgtgtc ttgggcagag gctcgtactg tacttgttta ttttgtcgcc gcatgagcga 720

gcgtgtccga tagtttttca tctttttttt taccgtgggg aaaactgcta ctcctccatt 780

ggaatgaagg gtgcggggac gtactagggg ccgtgcagtt tccgtctctt ttttttctg 840

acgcacgata aatccgtgaa ccgtgaaggc gatcgatccg tcttttcgat cctggcaggg 900

ccgggctcgc atgacgccaa gcggtcggcc tgtccgtccg tccacgcacg caaccgcaac 960

cagagtccga accaatcccg agcggcgtgg cgctctgtag tctgtactgc acgggctggc 1020

actgcggccg cgcggcgttg tcccgtcccg tcgccatcac caatcccaga acccgtctcc 1080

ttcctccttg gcagcgtcgc cgagggtgac ggactggcgg cggccggcgc acgagaggat 1140

gggcggcaac ccaggtaggt ggctggtcgc gtggctcccc caccggccac gtcgcggcct 1200

tgctgccgac tgccgcgctc cctctcgtac ccgatccccg ccgcacaccc gtcacgtgac 1260

cgcggcccgt ggtccaccac cgcgccagcc gagaaagctt tggcgcgccc gaccgcgcca 1320

gccggccgcg gctgtcgtag cgcccgtggg ctgcctgcct gcctgtgcct gcccagcggc 1380

ccgcgtacct gacagtgggg gcgcgcggta cgtgccaggg atttcctttt cggcgccaga 1440

cgagacggtc gtagcagcag cgagctggac agcgccgttt gtggctgctt gcgctggcaa 1500

ggcgcgccga accgggggtc cgtacgcgac ggggcgcggg ggtgatcact cgtactagag 1560

tgactaccag ccttgccgac actgcgggtt tgtcgtcgtg cggcagacga ccttgggctg 1620

tgcctgacgt ctcgcggata tggggatggc atgatccgga tcctgggaag gatggatgcc 1680

gaccgtctcg tgcgtacggt tcgaaagatc agtttctggt gcggccccac ccccttgct 1740

tatcctctgc ctgccgcatc tcatcggaag gaacggtcct cgaaagataa gccgatgtga 1800

tgatactcct ctgccatgcc aaggaggtcg acatgctgtt ctactcgtgg ttggcttcag 1860

gatccttccg agaatgattt cctggcactg gctgtccccg caatagatta tagatgagct 1920

gtatagtcct atctattccc cgccgctacg ggcatgggaa attagctgga aaaaagggct 1980

gcgcaatctc cgccggaaca ctcccgttcg cccgctaatg attggcaaca gctcagacaa 2040

gaaccgaaca aacgaccgaa tcatcactga cccaccggcc gttcgatcac ctcccatccc 2100

accgggccac caccatggct ccagcagctg ccagtctggt agagtagtag tactagactt 2160

tgtttaatgc aatgcaagtc aaaggaccat gagccagccg gccagtcccc agccggtccg 2220

taaaagcgaa ggccggccgg gtcacgagat gtcctcatgc tcacggatcg cgcatccaag 2280

tgcggccgcc tacgcccaaa caagttgagc taccgacccg gccgacagcc caacattcga 2340

ctgcgagcta gcaagcgaga cacatcaact ggcgctgcca ctggcagggt agtagtacac 2400

gttgaggtgg accgccgtcc ttctcgtgtg ccgctcgccg caccggcgca ccctctcctc 2460

tcccgagtcc ctggttttta aaaatagcgg aaggataagc tagtcactgt gtattaaaaa 2520

aaagctataa cctggttttt tagaaaccag ggtccaacac actctcaacc agctttgttt 2580

tataaaccaa cttctagaga ccggagatat aaactgattt atacgagatg tttcataaga 2640

ttttacaaca taaaagtaaa attgaaacga acaatcttta aatggttcta gggtaaggat 2700

taatcaaaca agctacgacg tcagcgagca ccgaaatcgt agagacagcg cctgtaaaca 2760

ctgcttgccc ccaaatacga 2780

<210> 1979
<211> 3508
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_989_G1, chr1:5054533..5058040, Cluster 11

<400> 1979
tacatgacca gaattggaaa agccaaaatc atatctgacc aaaaaaaaaa caggttgaat 60

gcttgatatc cagtagttgc tcgatagtat aattttcaag gcttcattgt cggaaacagt 120

gcggatgtct tcatctcgtg aaattgccac catctctgat ctattctata ccatatcagt 180

ctgtttaatg ccatgaaact cacgtagcct taaaaaaaac tctgacgtaa acactgcaaa 240

gagttcaagg ttttggcggt taagtcctcg caaaccattt gtgtcttaaa aaaaatagaa 300

caggtggacg acgtcctgtg tgttctccaa tctccattgt atatggaaac caatcaacag 360

cgggcaatat tgcctagaag atcgttgcag aaaaccagtt ccacgcttca cacttcgttc 420

aaagcagttc cgtgggtttt tacccaacag atgtactagc tttggcctcc ttggaaattc 480

cggttcatca gcggttggtc aagcacgcgc ctgatgatta ataaaaggaa aaaggaaaaa 540

caaagcagat cttctcgatg ggtcaacagg acggagcgag ctttccggat ggccagtaat 600

cttcatgacc aaggagggaa gatggctttg acttgttcct tctagaacac cggaatttct 660

ggcatcctgc gtgtactcaa agcgagagcc tgtagaggcg cgtgctagtg acgttgtgtt 720

tcgtcagcga ttcagatgga ccgaattcgc acaaaacaag ttgtagatgg gcctggccca 780

agcacttcag actcagaagc ctagatttca ggcccagttg tacctgggcc aaattcgcac 840

aacaagatta gtgcggtagc aagcaaggag cagaactgta tttatataca gaaaaaaggt 900

tcgatttgat ttgacagtgg acatgctgga cgggcgagtg aaaacactga aagaagcatc 960

gactccatgt ccaatctgga catgcttgac gttttcagtt ccatcttgaa agatacacgt 1020

accgattgcg gttgcggttc atggcccgtc caaaatcaca tcacctgttt cgtcgtgatc 1080

ctgtctttca ccctcagaat tctgacctga ccgatgtgaa accgatgcca gcaatggaaa 1140

aaaaaagaac agggcatgca acgagctcgc cgccagctgc ctgagcgtgc gctacaacct 1200

acagtgagag tgagcacaca gctagctgca caggcactcg cgagccatgc gtcatatcgt 1260

taggtgttgt caaactagtg gcctcctgtt gacttgcgca gcttgatccg ctcaacaagt 1320

ctcgcacgca tgtgtgtgtg tgtgtgtgtg tgatgagtcc gtcaaagcag cggctccagt 1380

ctcgatcgca atcatcatgg ttcgaattga cggtgtgatg ataagcgata gctaatagta 1440

ggctaccgtc gaacaatgtc cgtgtctgat ctgcttggca tgatgcgcat gcgcatgcag 1500

cttggacgga cagagagatc agatcgtgct cgtccgtcgg caaggcctat agaagcaagc 1560

acgcaggcat gccatagaga gatcgtgtgc tggtcgcgcg cggcgcgcca acagccgctc 1620

gcgagtagtg gtgtacgtac tacgcatggc ttgatcaggc gtggatccgt ggttgtcgga 1680

gctctatagc tacctgacga ggatcctttc tttcattcgt cggcaattgc catgctgcaa 1740

atatgccacg cgcgcgtgtc gcggccgcgc ccgcgcccag ctagcagcac cgatccagct 1800

atcgggcggg tagcgaggcg gtgtcgcgcg aaaggcgcgg tgccggcgag tgtccccccg 1860

gggctcgcac atacatgatg gccgcgtgaa ccggggcatg tgaggccgct gtccgccgag 1920

ctgggcactg tgcgtgcgtc gtctccgcgc gcccgccgat ggcgacgccg cccgcgcacg 1980

cgctcgccag ggttctctca cgcacacctt gcactcctct agcctctctc caggcatgaa 2040

cagttcgcct catcgtagca ttattatttg catgcagttg caacacgtac gtagtcaagt 2100

cacgtatccg cgcatgaacg acgccgcgca gggtgggagt tgggacagca gctgcaccat 2160

gagaaattgg ttgagcccaa ttcaatctga cctgttaatt aaagcgcacg catcattctt 2220

ctattattgg taaactaact aactgctagt aaagccggca aaggggcctg cagcagcccg 2280

ccatttgtta ttttgtcact ctcgattgtt gatttctcta ttttatcatc attcgtataa 2340

attatagata taaatagtct cacaaattat tatagatata gagtgacata atagccgaaa 2400

gcccactgca agtgacagca ggtcgcggcg gctagcgtcc cgcgcgcatt cgcatccaac 2460

gacgtgtttc ctccggggac atgcgagtcg tcgtcgccgt cgtcgcgccg ccggacgacg 2520

agcactaggc cgcaccgcag gcaagttggc gcgctccgcc ggcggtcggc gtcgcgcgcg 2580

ggccctggac cgaccgggcc acgtctggac ccagcgagcg tcgtcgcgcg attagcgtta 2640

ttattgctga cccggtcggc tgctctcgct cgcccccatc ttgttgggga cggggtcggt 2700

cgtcgcgtgg aaaattcagc ggcggccgcg acgagcccgg tcagtcactg tgtttagttg 2760

tgtatatttg ctggtgatta caatgagctg gtatttggtt gttgtgagtc atggtctatg 2820

gtgaggtata tgtttgatta cctgcgtgta gatatagagc cagcctcgca tgatatttaa 2880

agcatcctgg atcaggttgt acgggttgta tctctgaagc cagactccag tcaatctggc 2940

ttatacagta aggctacaga gagaagacaa ccaaacatgc ggttaattct gttacccgcc 3000

caggcgaagc ggaactcgca tcagggcact agttcatccc ggagacaaga gcggcatgcc 3060

ccctgcagaa tccatctgcc ctgatatcaa aaggatccat ctgccgcggc gtgactgttg 3120

cttccttctc ctcggaggat cgacgacgac cctgcgacgc aaccatgacg tgcgttcatt 3180

tcatttgata tgacacagca aactagctag cgtcttttga ttcctccgat ccgcgcctga 3240

ggcgttttgg attattacgc ggtcaccgat taaattagca tttggtgaca cgaaacgggc 3300

gaaaagtttc cggagaaagt gacgtacggg gggaattgga gcatctgcag ggaagaacta 3360

gacattgaaa aagactaata gctataccta tatatatact atatacacgg agcagctaat 3420

cataacacca ccagctggct ggctgtggtg gattactcaa tttactagta cgtgccggat 3480

gctaaaacga ggaaacaaca acagagac 3508

<210> 1980
<211> 1441
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60209_G1, chr2:47513705..47515145, Cluster 12

<400> 1980
ctagggctgc ctagctgact gatcactgac taggggcgcg tcagcgtgtt cctcgccgac 60

ccggcatgca accgcgcccc ccaccaagaa gagaaagcca gcccagcagc cgtcacgttg 120

cggcaggcaa gccggcaagg caaagcgtgc ccgcctcttt tctctcccgc gtccgcggcc 180

ctgtccaaca gcaacagcca acaggcgagc caggcagcca gcccccagcc aattcccccg 240

tgtcgtggga acgggcgcgc gcgcgcgcag cgccatgcgc ccatgtggtg ccatgtggtg 300

tgtgaaagcc tgagcggtgt tgcggttcta gtacagtcca acaaagcagc cggcgctcct 360

gtttagtagc tacgttacca taccactcgt agtagtatag tatgcttttg ctccggcggc 420

accaccttta tttaaagtct atttcagtgg taaaaaaaca ggcatcggtc gacatgacgg 480

agaaaatgct ggcaaggaac gagtctcgtc tcgtctcgtc tcgtctcccc ccatcgaaat 540

ttcgcccacg atctccccca acgtacctgg tactgtacgt actgtagtgc cgaatatgca 600

gagctccttt acttactcga tcgacatgaa tgaatccacg gaaacggtct ctggcagcag 660

caattaatgt ggtcgagaaa tacgaggggt gactggggag tggggacgga cgacggagta 720

gtaggagaaa gggagaaaaa gaaaaaggag tggtggaagg gaacatgtga cagtgccata 780

gtgggcgcag gccgcaggga gcgcgtcgct gtcgactgga ccccccacag caacgccctc 840

gggctcggcc tcgcggtgct tcgcgtgcgt ttcctttcct ctaccgcccg cctgccgatc 900

gattcccggg cagaaaacga gagcgagcgc gacggcttgt tcacaggttt gtttggtttt 960

gtcggcggtc gtgggttgct gccccccccc cccccccccc ctcccctcgc ccgcctcatc 1020

atcaataata tcggcaagac aagcccgggc gcagggcgcc gcttaccaac tttcgtcatg 1080

tgtgaggact gagtttgtgt ggccctgacg tggcgtctgc tatgaggaca gtacgcatgt 1140

ggccggtaat aactgggggg ctagcaaagt tactgcagcc agccatgtat aatagtggta 1200

gtttaaccac acacaccagg caagctgccg tgacagacag ccagccagcc agccaggcga 1260

ggatacttgc agaggaacca aaagtaatcc ccaagtcgtc agagaacgtg gatcctggtc 1320

acgagtcgag tgcggagaga agctttgggc attacaatac acccgcgcca attagctggt 1380

agctttgcct ccaagccgtc gtccgtcccg cgattagttt taaactaatc cttcccgact 1440

a 1441

<210> 1981
<211> 2220
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10033_G1, chr1:53416795..53419014, Cluster 12

<400> 1981
gacatgaccg tgagtgcaca gcacgaggct ttcatctaga acatcacgag agacacggac 60

gagtgtggtg ccggtgggtc ctccaagccc gtttggcttt tggcctctgg tgctggggga 120

gatctagtat ctgttttctt gtactccaag actggaccaa ccaatcggag gagaccggtc 180

ggggccacgg cggcaacgcg acgttgccct ggcacgcgcc caagcgcgtt cgacgtcgcg 240

cccaagaggg cgacgcgggc agcagcggat tgaactggcc cgtcaggccg tcatcatgta 300

caggggcgac cagagcgagc aatgagcagg ggatttttg cagtcgtttc tgatgccacg 360

ccacttgtac taggccatca tattttatgc agtcacgcac tgagggggaa aaaacttcat 420

agtttcgtgc aaaagttata acatgaggcc gttcaaattc atgagaaaac aacaaactga 480

aaaattacaa catttgaatt tatggattat aatctgacta gattatataa tccaacaaat 540

tttgagctaa aatgatactc attccaagtg ctactagata tttatattaa acgcgcgtgt 600

ttgcatcctt gcaacagaac ttagcgcgct gctagaatat cattcttcta tctagaaaaa 660

aaaacaacaa cgtctttgga tagcataaat caagcggaca gcgacagagc gtgtgcgcgc 720

aaacacagat tgtcagcagc gagggttcca ggctttatga tcataaaggg gggttttcgc 780

tgggatccct ttccagaaaa gcatttggga tcatatcacc accggccaat atatccattt 840

ggttcgttcg tgtctctctt gcaggagtcc tactcgagga gcacacaaaa aggttgcaca 900

cacagctgtc gaaaaatgca gcagctagcg gtgtactgta acgtaaacgg ccacttgctg 960

ttgagctctg tgttttctgg aagagcacgc gtgtcgccct ctgggcggct ctggcgcgaa 1020

agaagcaaag ggcagagaag agagaaggcc gcaagcgatg gaggagacgg atcggagcac 1080

agtagcacac ctcctcccgg cgaattgtaa cgcacatgag ccgcgcatcc acgggcttgt 1140

ggagatcttc gagcgaggcg ttagaattcg catatgtcaa aactcctctt cgcctgcaga 1200

ctgcagttgg tgaccggtcg ccactgacca ggtggacctc ggcgcaccta atgataatag 1260

taataaatat cacgaacatg tcgtcctgat acgttacgaa catagcatca gtcaccgacc 1320

agtgacaagt agcctgctcg ttccgctcta gagtccatgt ccggaaccgg ccaagcattg 1380

gaagattccg ttctgatgca ggaaaagaaa aaggctctgg gagactcctg cggtgctgcc 1440

tcctatgccg ggttagctag tagccgtcac gtccgcgcga acagggccct ggcatctatt 1500

ccggtgatgc agagaagaaa gcctcgggag caagcgttta aacaacatta tctaatgcgt 1560

gctagtgggc cggccgtaga cgacgacgac gacgacgtca ataatccccg ggtaagtccc 1620

tacaaaatcc gcgccctaat caccagactt aaagcaacct gcatctggac atcacgtcca 1680

attaattaac ctagtctccc gtgaccaaga gtattgattt agcgcgggaa caagcacgcg 1740

gcgctagaaa agagatccgg tccggatcac acacgagctt tgctaacacg tccacggtcc 1800

ctatatcatc tagaacctag cgagaaatat accgccccgc ctggttggtt gggtgagtga 1860

acgtggcctg acttgtgcga acttcgtccg ctagaaacga gaaaggaaag gacgacgagc 1920

actagagtct agagtactag tataattttt tttgtagtaa taattagagc tgagtgccaa 1980

cgagcgggag cctaaagttg tgacgtcaca cgatgtaatg acttggacag ttcgatccga 2040

cccaatcgaa accacccaat ggtagcggtc aggtgaccag ctactgccgg tgccggagtc 2100

gtttttgcgt cactcccggt cccgacgccc tcgtagcctg ggcagcgaga atagagagga 2160

gaatattcgc gctagctcgt ttgtcagagg ctcagagcga actagaatga tccttatatg 2220

<210> 1982
<211> 1523
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10082_G1, chr1:53630113..53631635, Cluster 12

<400> 1982
ctaaagcacc ttaagtttac ctaaaattat aaaaaaaata catataatat taaatagata 60

tgctataaaa atataatcaa taaggagtca acttttgatt atttggtatt ttaactatta 120

tttgattatg taaatttgat ctagtttaga tacttttact cttaaaaaat agaataattt 180

attattcgaa agagtaggac acatgaaaca cacactaatc agcatgcatg tctgcggagt 240

tctctgacgg tgtggaattg aaccacgagt cctgaactga caggatgggc ttggcacggc 300

ccacgatgtc attatttcac aagaacgtgg cccaacgtgg aatatgttag gtggagattg 360

atcatgaaag catggcccga aaatgatata atatgtagcc gtttgcagaa agatttcggg 420

cccaagtgac attttgtcca catcgatctc tccctcccgc gctcctcttt tcgagtagag 480

tgtagaggcg gcggcaaggc gcagtccact gagagatcaa cagatgttcc tatggcccga 540

cagtctattt tacagagcaa atcgtccaaa gacacttgat atcatgccca tatcctttcc 600

acatgggctc gtcacagtca cgtgttcttc ttcgtatcct gccaaccgta tcctggtcaa 660

ggctactaga aagccaagtt tggaacacca cgtccgctaa taacaagtaa taaattcagc 720

atcacgaaag gcacattcag tcggccacta ctgctatacc accaccactc atgaattgaa 780

taacacactg gactgaagaa aaggtgatgc gaacaatgat gaagtagata agttcagctc 840

caaagataac atatcatatg cgctgcacca gcgtcaaaag cggctctcct ttccgtctgc 900

ttctctcagt ttctttcttt cgtctccggg gcctggatcg agtagcaccc ccctggaagg 960

acgacgaacc ttctccacgc cagccagcag cgctcctcgt cacccctgaa ggctgctcaa 1020

cagtaaaata ctcctgaact tgtagcacct ggtcttgtcc ggacgatgga aatgcttgct 1080

ttggctgcta atggagcatg agtgaattaa tacgggtgca cgtcaggtgg ccactggcca 1140

gtagattgca gatacgtgag agacgggtat ccgtctcagc tgtgggagcg cctagctagc 1200

agcctgccca aacgggaaag cagcgaggtg aggtgaggcc gcaaggaata tacgctgaat 1260

ctacggtgcc agatggttta aactactcgg cgggttcgtt gtcccttgtt cgttccatct 1320

ctcctcggga gagattcctg gggttctcta cacctgcttc taaagcttat ctgcatgggg 1380

gagataaagc acgagctgga atggctgttt ttttttaaaa aaaaaactcc ggttaataat 1440

ttggacggag actcattggt aagttaatta gtttgacgtg ctacttcggt tgcgtgcgtg 1500

caaggtaggg aaagtttttt ttt 1523

<210> 1983
<211> 1425
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10537_G1, chr1:56579049..56580473, Cluster 12

<400> 1983
attcattacc cattacgtta caaatatgta aaccaaacgg cacccgatta gttttcaaac 60

agcgcacaga catatgttca tgaactagta gtgtcatgct gcaagggtgg tccaggactc 120

caaacctagc tagtttgctt gcgtacaatg caaataatta agcccacctc attccctata 180

gcaggcagta gctggattgt tatatacttt attcacacca ctgcaccagc acgcatgcat 240

gttcattccc ccaccgctag cgatcgaaca aaaggaatgg aagcccccac ccccacgcac 300

ggcgccggca gcacatttta tcactagact agatagctag gtactactat agctagctag 360

ttaggttggc catcgagcgt acagtacgta cgcacgacgg cacgagtact acggccccgg 420

ccggccggcc tcttcatctc tagcttgggt ggcgcggcgg cggccggcgg ctcaactttt 480

ggttgcgacg agccagtgcg cgtttgcatg catgcggatg tgcgcgcacg cgtgcatgca 540

tgtgcatccg catcgagccc ggccgccgcg cgccacaccc aacactacta ccggccggcc 600

cttgcaactt ggagcctgcc tgcactgcgc ttcgatcatc tgccactgcc tgcagatgtg 660

ttctcgtcga gccgtcgacc ggccgccgcc gccgccgccg cgccctggcc gacagcgctt 720

ttgacgccgc acatgagtag tagttgtgag ttgtgactcg tgacgacgtc gccgcgcagg 780

cacgacgaca gcagagatgt taaattatga tatggacata tgtagctcaa ttttttattc 840

cattacacta aactaatttt gggcaagtat ttatatatgt ttgggatttt tacgggcctt 900

tagggtccta atttagaggc tctaaaattc tttggagagc atccgattct gagccattcg 960

aacaagcggc ggagccagag cacggccaga ctaggcacgt gtttaggctc cgccgttagc 1020

cactgctgca tgctgcctcc gcacttgtct aaagtaggga agttgagttg cctgccgctt 1080

tcgcctccac actacatgga agaggttagt gatggatata aaggatgatc aagtgctcaa 1140

catgaaaaga gaaaggagaa atgcaaaggc ttaaggcaac cgtgggcatt ttattttact 1200

catcaagatc gggtttatga tagatcatcg tactattaag aggagggtct aatcagacaa 1260

ctaggacatc tactatacca ctaggtgtcg gaatcatatg cattacttat aggcccaagt 1320

gacacgcgtg agagcaagcg aaaacgtttt ttgaaaacgc ttccaaaggt acactgctct 1380

aatatctttg gcaaaatatt ttagagttag catgcttcaa aagag 1425

<210> 1984
<211> 2722
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117894_G1, chr3:159868714..159871435, Cluster 12

<400> 1984
cagcacaggc agccgcgtct gaatcgtcgg gggaggggcc tgcgtaatcg gctttattat 60

ccagtgcttg cttgcttgct tggagacgat ggaagaggat gcatgcagcg cgacgacatg 120

cgcagtgcaa gtaatggagt ttaatgcaaa tctcgtctcg tggtggccgg ccggtggggc 180

tttttaatca tccaatggct tggctgctct cgagatgtag tagtactgct aatcatccaa 240

gtttccttt attttgaaaa aataaaaaat ttatttaaga agataaataa tagacgagtt 300

acttctagta ctgccaccat gcacagcagc tgctgcctat agcattatag ctcacagcgt 360

gcaatgcaag gcctctgcat tgttggctgt tgccttggat tcgggttccg gcaggcaggc 420

aggcaggccg accaaccaac tccgaccacc acatgcgtgg ggtggggttg gaccggccgc 480

gaactctcgc cggtggctcc ggtgtggcgc gcgcgcgcgc ggcggtggat tagagcgcac 540

ggaaccggcc ggtcgatgat gggtagtgag ggcagatcag ctgcctcttt tagcgttttg 600

tgcatgcatg cccccgacga gatcccaatc atccgtgccg cctgcgatct agtactagct 660

agctagctag ggttccggtt ggtgctacta cgcaagctgc tctccgattg cggacaagag 720

aatcgctggc atgcatgcac tggcactggc actgcacgca cacccgcccg ccgcggcttc 780

gtcatttgcc ctggacttgg aattgtgctg tgtcacgggt aggaaactgg aagccgggtt 840

aattagggtg gcgtggtgct tattctctat ctatgcagtg cagctagcta atataacgat 900

ccaatccggg gtgaaacgaa cgtcgacttt gccctaacga tcgacctgat tttgcctagc 960

ctgctggagg attcaactcg atcggtgtgg tgtatgcaat tacgcacacg tactgctgcc 1020

ctaccgccgg gaagcaaaaa attaaagccg cctgcgctgt cacagatctt aatttcaatt 1080

ctacaacaac aataagaaga ggaaaacaag cagaaatggc cttctcgtct ctgcggccgc 1140

atgcatgctg gggcatcgca tgtggtgtga ggcgggagga cacacgcaca cgccgcagcg 1200

gctagctagc tagcatcaag tccaaaagtg gcgccgaggg ttggttgggg gcggtttgtg 1260

ccacctaaca gacagggtag cctagctagt ggccggtggt gacagggaga gcagattgtt 1320

gttgttgttg ttagtgagtg agtgagtcct agctatatgg caaaggctgt acgttgttgt 1380

tcatcaggat gggccccaaa tgcaattatg caactgatga gagtagaaca caacacgcac 1440

agagagaaga acactcaagt caaggggcgc gcatgtaccc ctgttgctgt ccagttaatc 1500

atcgtccttg ctaatctcag ccaaaagcaa gccggccggc aggcagctgt acgtggaggg 1560

gaaagaagac cgcaactgaa ggaaagggga gccggccggt gccccggtcc acatgcaaca 1620

tgcatccatg atcccatgaa ccaaacgccg tcgctagctg ctgcccggcc ggccgggcca 1680

ccggcatgcc tgcctgccac ctttgcttgt tagtaaatgt taacgactct acacatgtgc 1740

ttgcattgct tgcttacaag tgcgtggctt cgcgtttcag ggaagagatc gagggaacgc 1800

gcgcgcgcgc gcacacacac acagagattg gagttaaatc attaatcatg cttgcacggc 1860

cggccgtcca aaaaggccgc ggcggcctca cctctgcatg catgcaagct tgcttgcttg 1920

cagtggcagc tgcagctggc ctgatggacg gatgggtgga tccttcacac tactgtctca 1980

ttgagtggaa cggagcgaga cgaaatgatg gcgcccctct cacatgcgct gcaactgtca 2040

tttgtgtcaa gatccacagt taataccact attgttgcct gctgcccagt gctgtgctgc 2100

tgctgctgct gctggggcct tggggagcca gggcagatgg atggatggat ggatgatgat 2160

gactgtggtg tggactactg tgtgactgtg gtgtggccgg cggtggcgtt tgtcgctgcc 2220

ctggatttga ttggtgcagc agggcaaaca acagcagtcc atagtgccat actgccatgt 2280

aggactagcg ggcatcttca ctgctatagt gtcacgttga tcggctcagc ccaccagtca 2340

ccagagctac ctagcagtca ccttcggtca cgtctcgtct ctctctctct ctcactgtgc 2400

tgaggctccc acacagacga cacatacagt agagccaacg ggaaaaaggg aaccccgcgg 2460

taacaacgta ctagcagcgc agcgtggagt cgtggagaac tctgtacgta ctctctctct 2520

ctactagcgt tggacgatgt tgcatgcaaa aggtaggcag ccttttacgt ccagctcaag 2580

cctcaaggaa ccaaccttgg cccctcgggg tcggggctcg gctggctggg agttgggact 2640

ccccctcttg gcctcttgca tgcatgcatt atagtcacgc aagagtttat ctatcccgtg 2700

ccgttaacaa acagttcagt cc 2722

<210> 1985
<211> 1611
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118122_G1, chr3:161638068..161639678, Cluster 12

<400> 1985
ctgatcataa cttttacata tgaaatcgga tgaatataac ttatttgtaa ttttaggttg 60

acgctacaat aaaccctaaa acaaaacacg tgtcgaagtg tgtgtcaaag acgtgcattg 120

ttcaccgctc tcgctatctg gaggtgctgc ctgtggttgc tggtggatcg cctgatgttg 180

cccggagggc cggcgggcgg ggcgagcgag cccgtgatcg cggcagagag ccatgggggc 240

ctagggagct ctgacgttga cggcttgacg ctgagctgag ctttctcgca tgcgcattga 300

cctgtaccca aaggtggggc cgtcgtgggc gaggagagca cgccaaggga ccgaacgggt 360

tcccgatccg tttccttcgg acgggagacg gacatggtgg tccggcgggc acggtaggag 420

taggaccaga gagaggagaa gggtgggtag cacggcacgg cggcgaccga tctcatgatg 480

tggctggcac gggatcggat tgggtcatgc tctggcaacg accatgctcg tctcatacgg 540

ctcgcttgct cagagcagct ttgttctccc ttttggagtt ttgactgcga ctggacctgc 600

ttgcttcgtc ttgatagata gtactccttt ttgttgccct gactgagcac acatgattgg 660

tcgttcctct tcatcagtcc tctcctctct gggtcccctc ccctttgtga ggcaagaact 720

ctctactaca agtgcttcca aactctaacc agctgcaagc ctgcaacttt tgggaaatta 780

ctagcatccc tctccctgtc tctgccgccg ctgccgtgcc tggctggctg gctggttttt 840

gcgtgctccg ctccacctga acgctttggc ccatacacca cgcagtcggg cgggcgggca 900

ggctgggtgc cctgcccgct gggctcacgg ctcagctcca gagcctagtc aacgcctcgc 960

ctcgcctcgc gcatgtgtag actgtagagt gcacaaagct acggcgcatg gagttggagt 1020

ggacggagta gtagctgaat tctgctggtc cgggggattg gacttgtgcc gtgccctaga 1080

tgtagctcgt ctcgtgtcat ggcgacgccg acgggactgc agagtctcgt gtgtctttat 1140

ggcgaaaagc tgctaccacc actgcggggg gccacgggag ttctgctgcg tggagtgcag 1200

tacagtgcaa gctgtgcagg gcgccggcac ggaaggaacc tgtgccctgt ggcactggca 1260

ccacccctcc tcggtcctca cgcagcgccg caggccacag cgacaggacc caggggaggg 1320

agtccggcac cggcaggccg cctgggactg ggagtgggag aatctcttta tctgccacgt 1380

ctttgtgcgg tgccgtcaca caatgtaaag gatacataat agatatgata atgctaaaat 1440

ctccgaggaa aattgctatc acataccttc atcaatccaa aaaagacaac ctcactggct 1500

atcactcgca tccaatggtg ttggatcact agtacccaca aagattaatc atcaatcaaa 1560

ataacacatt acacaaacat aacagatttt gtcctaatcc aaacacatat c 1611

<210> 1986
<211> 3181
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118157_G1, chr3:161957190..161960370, Cluster 12

<400> 1986
tgatgggctg ctcatgtcgt ctgctccatg tttctttttc cgccatgctg ggctcgtgac 60

ggtggtagca gtataacgct tgagcactgt tcgccgttgc tgcgtgctgt aacgctgcat 120

ttcaactcaa ctgtgaactg ctgctacaga gtcatcatct ataatatcag gacagcatat 180

atatataaat agctgaacga aaaaacaaaa tactacaaag cggtattgtt agtgccacag 240

cccacacgta cgtaccagaa cgctgctgac tgaaaggggc gcggttcatc ttcagctaac 300

acgctggcgc gaagcgggag gatggttggt ccatcttgaa ttcccctcgg atttgcacta 360

caatgacagc aacggttgcg cgtacgtagg atcatcacac cgagcgacgt tcctctctgg 420

ccctcgacca cagtgcaagc ccctgcgcgt tcaatgctca actgggactg tgctcctact 480

tgacgtttgt acgcagccta gtacagcatc tctgctgggc tcagcccctg ctccgcgtcg 540

tgccgctggc caggcgatca cagtcacaga gcccggacgg gagcgcgcgg tcgagcggag 600

gcggaggtgc ggtgcacagc cgagcaccag ggcagagagc ctgccttgtt gcttgcttca 660

ctgagtagta gtggcgctgg agagccgagt gctccgtgct cactgatgag gatagcggct 720

cctgatgcac ggtgctgatt tttactggga cgggactggg agtgggagaa tgtcagctgc 780

aaggacccaa ggctggctgc gagcgccgag cagacgagca gtcactgatg gggggtgggg 840

ctctgggtca cagtcacagt tactcctcct cgtcctcctc cagcggtcct gctcttcacc 900

atctaaacga ccggtccacg acagcggcca cagcgctgcc tcctgcagcg gaacaagaac 960

caatggcgcc cgtgtccaat tacagtttag gacacaggaa tcacgccatc acctcgcctc 1020

tgcgccttgt ctcgatggac cgaccgtacg gtgatcccga ccgtaatttt tttttaccct 1080

gcgttcagac gctcgcgccg tggctttacc gcaatttttt ttaatctctt tgtctgtttg 1140

tctctgcggc agttacccta ccctacccga taggtctagc tgtactggta ctgcttgcta 1200

cggctacaga tacggagcaa caggcaacga ccgcatcagc tgcagtggat actacccctc 1260

tcccgtcagc tcaatgattg gaaggccatg ttaccgagga ggagcatggc aggcagcgag 1320

ccgggtggga aaagatgcct gccacgggca gaggcaggca ccggtaaaaa aggcggcagc 1380

tttctcgtcc ccgcccgcct ccctccacat catcaccagt ggagttggag tggccgggta 1440

gtaccgtagg agaggaggga ggaggaccac gacgacgatg actgcacgta cacgcgcacg 1500

cactgcaccg caccagctac ggtgcgtgta gtactctagt agtggcactc ctagcaacaa 1560

acaaacacaa caactaggcc aacttttaat gcagccgaga tcgatgacgc ggtcgctcga 1620

aaagacagcg tcggatcatc cagctcgaac gccacggacg aactggcgcg atggaccacc 1680

accaagaagg cgtcccatag cacatactag caagtacgtc gggagattag cgggtggggt 1740

ggggccccgc gtgcataata taccctagtc gcaggcagta ttctgacgcg gggcgcgcgg 1800

ggaaggtggt ggccatggcg attagcgagc ggtggttaga tcttgaccgg ccggccgggc 1860

gccacacggc cacgatgaat ggagagagag aaagagagcc agccagccag ccagcgacca 1920

gcgattatat tagccgcatc cccacatggc ggcggggata aactaaccca gcccccgccc 1980

atgggacgac gagaagccgg gccgggggca cggttggccg accgggcgtt gtttgtttag 2040

ttaatccatc aaggaagggc tgggatgggc gcggcgcgga tgccgaggca atcattgaca 2100

gggaggggga ttagatgccc cccggccagc cagtcagagg ctcgcgctcg ctgcgcggtg 2160

attccgtccg tacgcggcct gcggttagta atttggagga gcgccgatct atctactagt 2220

gtacttacag tgtacgtacc agtaattcct atcattggca gcgctaaagt ataagtaaag 2280

ctggcacgac ttttttttct ctcatctctg ctccatggca cggaatcatt gtcgacttcg 2340

tgcgctgcgc tgcgctgcgc tgtgcctgct gccagccagg cgccagcgcg gcaatccgtc 2400

acgtcagaaa ccggaagcgg cctgctggcc tctcgtgccg atgcacagca cagtgccaca 2460

ctactcgtcg ttctggtagc agtgtctcct ctacgacgac gaaagcacgt acgtacgtac 2520

gtaccaccag ttcaaacgtc cacgctcaca cggccacgaa taacatgaag acgatagatg 2580

ctgccacata tacacataac aattgctttg aaaaaacaac tcctggattc caaacccgtc 2640

ctagctacat aggattaata aaacacgcag tatgtagacc tttttcgttt ttgttttatg 2700

tgtgtgacct gtctttgttt tcctcttcat tagcccgcga ttagtgctga tgtcgctgac 2760

acacagggca cgcacgaaga caacaaagct gcacgcacga cgcgtcatgg atcagcatca 2820

aacacctcca caagactcgt ctaattagtg taaacgctcc cagcggatca tcgcccgcct 2880

ggcctctgcg cttagatcga caaaaggccc gatcgaggga atggttgaag caagcaatat 2940

acaagctagt acattaaact tgacgtggat ctagcgcata ttttatttgt tagatcgaga 3000

acaggtcata aggctcccct atttaaatat taattgtatt accatttagt tttatatatg 3060

ggatgttatt aactgagcgc atactttaga tgtgctctgt ctacctatct ttgagaagtt 3120

gagaaaggtt gaaaccacgc caccagcgtg cccccaccgt cgcagagccg aggttgagtc 3180

g 3181

<210> 1987
<211> 1883
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118791_G1, chr3:165878143..165880025, Cluster 12

<400> 1987
tattttaatc accgaaaatg accggcggca tgcagcagca ctaatcagcc gcccatcgtc 60

tgaatccccc accgtgcaag catgagatga gaacacgacg agatagagac gaatctggca 120

ggaggcgagc ccattggcca ggaagcaaag gcaaggcgtt gtagggccgc ggcgctgcgt 180

ggcctcaccg tccgccccac taattccagc gcccataggc cggcctcgcc cccaccccca 240

ccccactccg ccgtgcgggg gggcttaaaa gccctcaggc ttttcggcag cacactcatc 300

atcagacgac gcccaagtac gtacaaccat ctgatcgcat tattgacgcc cgagcccgag 360

ccccacttcg ggtccgggga cgtacgaagc ggtcttctga ttcgctcctc ctctcccagc 420

tacgacgtac tacctacgag cgagcccggg acggacgaag cgaacgaaac caaccaagga 480

aagaacattc ccatgcccac tcgctcacat attttacgag cccggtgcgg gctttccacg 540

ttgggcgcgc accggcaccg ggctagctag ctttccagtc cttgatagct cgtgctgccc 600

ggcccggcct cgggtccccc acccacccac ccaccggcca ccgggcctgc tgccagtgcc 660

agccgcaagc gaagcgagcg ccctcctctc gctcgccggc gccggcgcgg cacgtgtgcg 720

gaggggcatc accgccctgt ctcttgtgca ttggctggcc cggcccggcc gccttttttg 780

tgcggcgcgc ggccgggcat ctggctctgc cgtcgtaaaa gccgcgcggc ctgcctcctc 840

ccgtagtatg gcccccgcaa cgcaagctcc aagctgctac cgcttgtact gtacgtgcta 900

cgtggtgcaa gggcgcgaga ttcgttcgct ggtactggta ggaggagcac gtatatacgc 960

accagcggcc gaccgtgccg gtgctcagct agtcagctca gcgcgagagt gccaccactc 1020

ccttcgcctc tccggccggc cggacggctg gcggcggaac tgaacggcga cggcgacggc 1080

cacgtcgcgt cctgtgtccg cgccgcgcgc gcctgtgaga gaccacgcag gttccggatt 1140

cctgcgcgcc tcagcgcgcg cgacagccac cgccaccagc tgtctccgac gggtacggct 1200

ccacgtaggg cgccggcgcg gaataattaa tctatctcgc gctcgcgcca ccaaaaaggt 1260

tcctcggccg gtgccagagt gacagccggg gcggcatcga ccgggcgatg cgtgccgccc 1320

ctcttccgct gcctgctgct ggccatgaac gatgtgtgca atgcaacggc gccggggtag 1380

acgctacacg ctagtacgga gtacttgttc gtccgatgtg agcgggcgcg gctttcccag 1440

gtcaggtcac caatattgca ggtgtgattc gaggcgcgcg tggcggtacc ggtgggggta 1500

tagccacggt ccgaccgcac aggtttctct tgtcgggcaa aattctcgtc tcgcctgaca 1560

agactgccag ataccgcacc agggctaggg gtgcatgatg gacatcagga catggacgca 1620

taatagagga ttcgagggga aaggaaacat gaactacaga cggaataata gcacctgttt 1680

gttgctcaaa cgtgcgtgct tcgacatgaa atatctattt atataatgca ataatttctc 1740

taatgcaata atttctctga tgcaataatt tctctgtatt gttatttttc tcgtacacct 1800

cgccctacat tatacatgtc gtcgagctta tattatgatt gttttgactc cacattcaca 1860

cccacataac gaatagaata caa 1883

<210> 1988
<211> 1612
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119035_G1, chr3:167375677..167377288, Cluster 12

<400> 1988
actactcgct tggagcaaag caggaaaccg ccgtgctaat taaacgcgag cacacggctg 60

tggtgatcac actcgagtca gctctcgaga tcgtcggcaa cctcgaggcg cgatggtgat 120

cacgcttcaa atcaaacgcc aaacgtgctt ggaaacatag tatattataa attcatggta 180

cgtgtgtagt actgttgagg acactgattt gcatatgtac accgtactct ctccggctcc 240

acgcgtgcca cgcacgtacg tatggagccg cgcccttggg agttgagacc acgtgcgtgc 300

gtacggcacg gcaccccgca tccgtcgttc ctgcaaacag gagggggggg gggggggtgt 360

gtcagcgcgt ggacgttgtg cattggccac tgggctgctt tgtctgtccg ttgtccaaat 420

cccgatgaga caaaaaaaag ttcagcttca gcatgccatg cacgcaacag gtagacccgc 480

ggtacaagtc agaattcagg aaaggaggaa tgatcccagc ccagccctgc actgcactgc 540

actacagtac agtgcacttc cgctgtgagc ccgccacgcc aacggaatct tccttgttgg 600

atgccgcact tccatatcct acagggctac tgcaggtctg ctgcagcaga cagacgcttt 660

gagaagacgg agaccgagat ggattggtag ttaaaaaata gctcacagaa atccatgcag 720

ggccgcgcct tggagtctag gtcaggcaaa ggagttcccg ttgtcagagg cgcagagcac 780

tgcaagttaa taagtgaaac ccccccctggc gcggcggtca ccgaccacgg cgtgtctcta 840

ctagctcacc gcgcgcgcct gtgcgcctgt gtctctacgg ctcaggagag agcacggtgc 900

ccgcgtgcca acatccgtcc acgtacgttt accccgatcc ggtttgcgag tggtcgtcgt 960

aagtctgatg acacataccc ccacccccccc ccccccccccc ccccacggac tgttacacca 1020

gtttaccaat atcaaggcgg tgggcgcgat tagttaatcc gctgccgacc gatggatgga 1080

tctgcatgca tgcatgttaa tgacgtcaag actaaggccc ggacaaaacc cgtagtagac 1140

gctgcctagt accagttaac tatccccgtc aggtcagtga tcgcgcgctg ctatgcagca 1200

gtacagtcat ccggcctgga atggatcaac gcgttaaaac tggctgtgga tgtgtgagcc 1260

cacaggggca gagccacgcg tgctgcaggg gagatgcatg gaacgttcgc cgaacgtcct 1320

tgctgcctct gctccaggca tgaccacgag gcatcacact gtgctgcaac gggcaaatga 1380

aaacggcctt gttcttgttc ggaacacaaa gcgcaggaga gagtagtttc actttcaccg 1440

caccgccttt atctctggcc gactggcccc cacatgtcac cgagaagcaa agcgccaacg 1500

gtcgtgacag tcctcctact caaagtaaag tgttttaata acggagaagc aacagcagca 1560

acaacgaaga aaaaaaatga ttgggacgga agccaactgt tacgctctat tg 1612

<210> 1989
<211> 1635
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119742_G1, chr3:171754468..171756102, Cluster 12

<400> 1989
ttgttcttat ccttcatccg tctttggcgc gatacatgtt caggtcaggc gggaaccact 60

gcatgcgcgc gctagctggt ccaaaccagc gactgtgctg agcacggccg cggaatggta 120

gagtagagga ggccacagtc agcattcttg atgtaccgga gcttggagcc cccactcatc 180

aaaggctaat cggaatctgg ctaccgccgt ctcagtgtgc agcgagcgct gcgcagcagg 240

atcgatcgtt ttcagctcct gtccaaaggc cgctacgcac aatcatttcg tccttcaaac 300

gcgtctgtct cgtcgattaa actcccgttc cgtttggcac ttcggcaaga ccctctcgac 360

tctcagtctc cggcttgctg cggtttctta caagcagcaa agggccctgt cgaaaggcca 420

tcaatcaaaa gacactagct acgacagtga ttttgcaagt agctgggtcg taaattacgt 480

ggcgtcttct ggtttccctc tcatagaata gacctaacac aaacctccac tccatggatg 540

agatgagacc aggaccgtac catcggccgc gcgcgaatcc agaatactaa tctactagaa 600

cgataagatg ccgcccgcca gtacatacgt gcatcgatcg cttgtgtgcc cggcccggac 660

aaaagccagg ggggggggt tcatcgatcg cggtccatct gatggcgctc tgcgttggcg 720

gcatgcagcc aaaccaggga cgggcgacga cggtgtgcgt cactgcgtca gtgcgtgcgc 780

ggcggtgggg atggctggct ggtcgctgga catgtatcgt cggatataca tcatgtgtgg 840

catcgtaatg ctgcacgcct tgccaaccca gcgattcgac gtcttatcct ccacatgcga 900

tgcacagaga ggctcgcatc gcatcgcatt gcattgcatt gcaggcccag acggatagcc 960

tttcggtttt gtttggctct ctccgtggca tatgtgcgtt tgattgatgg atgcaaaagg 1020

gtcgtgtcat gcagttcggc gtgtctttca gcgctttatt ccccccacct tgcataaaca 1080

aggctgtcgc tctgaaaagg aatggccttt tgttcggacc agatattttt tttccttcgt 1140

cggggatagc gggatcccct aattaatggt ccgtagtcct cgctgtacct ttaattcgtt 1200

ttcgttggat aacatttaac aatatgctct ccctgctgct tcgcttgtca gtatgtacta 1260

acacgggtac ttagtttgtt tagccattag gccttttatg tttacaaaaa taatgcctat 1320

ctgtttactg taactattca ttttttaac tctacgtatc atccaaatat tttgctaaaa 1380

gtccctttt attttttta atttcactgg gatttggtgg catgcagtgt attttctagt 1440

atggcaagac ggtggtatcc tttacttatt tcctgaggta gatacaatta ttgtttaaaa 1500

tgttaacaaa attttgcatt ttccttcgtc ttataaattt gtattttaaa taactgtctg 1560

ccttaactat ttagactaga tttctcgact atcatgatta tatttttaaa taatggagat 1620

gggtcctacg tctcc 1635

<210> 1990
<211> 1731
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119989_G1, chr3:173515291..173517021, Cluster 12

<400> 1990
gcaaatgctc tccccactcg atcgactggg actcgtcctc atccatacca cctctcgtgc 60

atgattggac gattttccgt gggggctgga cgggccacgc agccccagaa agaagcggcg 120

gaggcacagc tgcggcggca gcagctgtgt ggcatgttga gttggcgagc ccctgacgcc 180

gccgtgacca gcttttcggc ggcgggcgtg cgtgcgagat ggtctgcgga ggtagagaga 240

gattcattgg aagacacaac tagatagata tcgatgcgtg gcgtggcgac cggtgggaac 300

gtggaaggcg gttccgggtg ggtacacgga tcaatcgccc ggggacgtca cgggtcacga 360

ccgcggggcg taggctagct gtgcgtagct atggcatcca agcgcgcgaa agccttgagc 420

gcgagcgcga cggcggcact gtcgcagctc tgctctgctt ccgtcacgtt gtcgcccgtg 480

cccaactgac ccgcacgcgc acggatcgct gccccgtacg cgatgacggc ggcatggtag 540

acaagcgggc aggcggggaa ggaaagcctc cgccaacttg ctgtcgagct tgtggtggtg 600

gtggcgaggg gggcgaggga gataggccgc cgcacggcac aagcaacctt ccgtccagcc 660

cggaagcgtg aggtttgtgg aattgatccg cacgcacgca cgcacggacc ccgcgaccgc 720

gaacgaggag ggagaaaaaa aaaacggttt ggtaggggga cttgtccgcg aagttacagg 780

taacggaatc tgtcgctgcc acacgagtat ctgtgttccg gtgggcaagg tacggaaccc 840

agagagagcg aagccaactc cacggcgcgg cgcggctaaa atggaacccc gattggtcac 900

gcgcaattat ctactccatg tgttgcaagc aaccaagcca tgcatgtaaa cgctcctcga 960

ctaaattact ttagagacaa agaaacccaa tgattacaaa gaaaaactcg cggtgcattc 1020

cacctggaga gagggagaga gagagagaga gttcacattg tagccgtcaa gaacacgtcg 1080

aagtaccata gttcggcaga tcatctgggt ggcccggcga gctctccctc tccgctgtct 1140

agcttgtaac aacagcacgg caagactggc tggtcagaga ctcacaggat cgacggcgta 1200

cgtgcggtag gcacggcaat aatttatcct ctgacgacct cttcaaatat tcctgttcca 1260

agtatgatgg ccgatgcatc gaattctgac cttgcgcgcg tgtgcaggaa taatacggtg 1320

ggggacccgt taacccccg agcttctcac atgcttcagg tgtttcgcgg taacaaaaaa 1380

aaaaaatccc acttggacga cgttcaggta ggtaggtacg tacaggcata ccagcatgct 1440

gtaagcgcag tactgcgtga cgcggaaccg aaatgtcaag ggctttgaaa attgttggcg 1500

cacgcgctga gtaaacaaag cctgtcaggt gaaagtttaa gcctagtatt agcacatttt 1560

atccgtggtt cacgtccaac tagcctgcaa acaaaaaaaa actctctcgt tcgtggtttc 1620

tcaagaggat aagaacttac tccaatttcc aggctgacaa tgcatgtggt ggtagttgga 1680

aagcacagag gtagaagaat attctgatgg gaactaatct ccttttcgt t 1731

<210> 1991
<211> 1857
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120724_G1, chr3:178132085..178133941, Cluster 12

<400> 1991
taacatcagt ccggctaggc tagacttttg tattgggctg tatctccata aacggcccaa 60

actaatacca tggcccataa aacttattgg gtttgtcgcc tattcaggtt ttcccccgaa 120

ccacactgat gttgatgtgg gctattaagt ttgttctctg aaaagtgttc gaacctaatt 180

gtgtgttttc cctctgaata ttacctcggt gtttgattgc agtgtttact attcattcca 240

gtttattcgg cagtaagagc ttttcctatc tgagcgtgta tcttaattat aatacgttca 300

gttcgtcatc ttcctaaacc ctgcacccag tcttgcagac ccagagtggc ctcagccctc 360

aactgaagga aaagatcaga tcctttgtgg ttggtggtgg caatggcaga taccggacgc 420

cgacagcaca cgcggacatg cctctatata atatatatcg acttcaataa accgataagc 480

tttgattcat ttggcaagga gccaaggaac aagaagacgc cattcctcag tacatggtgc 540

tagctggtag tacctcacag ggttcgttag acgtagacat ggaagttggg actcttggga 600

gaactgaagc tagaatcagg cacatttcag tccttgccca tgtcagctaa aaccgccact 660

atttcagcgc agcaaattgt cgttgctagt ttcttaatta aaaaaaagat accgttcaga 720

ttctaagatc agtcaccata accacagttc tgttcaagga catgcaggca gtgcaagaga 780

tgattatgtc taaacagatt atcgtcgatc accatcagaa aaaggtatca gaacgcgaac 840

tgacagctga ccatagcttg gttggtttga aaaaaaatct acccattatg gataacagct 900

ttagctagca tcaatatgaa agttgtgaac caaacttcat cgtggatttt tcctcttgga 960

aacgaccgca agctccggat cctagttagg tcaggggaca cagcagaaca atccacagag 1020

acgggaccgc accaccgctt gatctccacg cgatcaagaa cagtcggctc cgaataagtt 1080

caggcacaag cttacacacc acaggtggcg aagccagccg ggcatgtggc acaatgcggg 1140

ctcgatcatg ccccgtagcc ttcaacacag tgcgcaacga cagaagactg agtgagtgac 1200

tggccccgta ggccgcatcc attcacagac acatcttgat cggagccgca tagattctca 1260

gcactgttcc tgatgaggtg acatgagttc gaccccaagg acttgtagtt ctcgtccgca 1320

ctgggcatgg cccttccggc tttggctgct cgtctttggc gagttcagtc ggttggtatt 1380

tggttcgtgt ccagcgtggc gcttgacagc aagtgatgaa gaccatcacg catcagaagg 1440

acgatcgacg aatagtatgt gtccgtagaa aaggacgtta ccactgaaaa ttctgttgtg 1500

tgctctggcc tctaagaggg agggacactg gcagacggga tggcttaccg gatcgccatg 1560

cagattgtta gttcttactt tattaaaact aaaagaagaa gaagaaaaag aaaggaaagg 1620

aatccggctg tcctctttct ttccctcttg tgcttacaaa aaggtttata tacacgaaat 1680

gatccatatg gaaaaggtgt ggtttttttcc tctctcctta atatatttat gcagacatat 1740

tctctgcttt tctttttttа aaacatttga aacctgttat tgggtacagg cgtacagcat 1800

tactacgtag acttaggtgc taaggaacat gaatgtttcc attaacgacc aaacgat 1857

<210> 1992
<211> 1651
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120961_G1, chr3:179261756..179263406, Cluster 12

<400> 1992
cataggatgt aactggtggt actgtgtgcg gggccatgag gcacaagtgg ggacgaggag 60

tcgcacgact cgcgaacgca ggagttgaga aggagtgtga cggcgggagg agcgggaagg 120

agaaacgact tgggaatatg aaggaatacc ggagccacaa aactgacatt gtgttacgtg 180

taaatatcga gtcggctcgg gccatctagg cgtgcctgac ttgcatcgca tatgcatagt 240

tctatgcatc aggctgaact agtctagatc catgatacac tcgttccaat aggttgcaag 300

ctccggatac atgtgaaatt gagaaccggg aaacgctgaa gaagaaaaat gtgctccgtc 360

ggggtttttt tattacagac atactttgat taataatatc tactctaaca ctgttctatt 420

tatgtggtaa tacgtaagca tatttcaatg cgaatattaa ttataccaat ttagtgcctc 480

aaaaaacaca cgaacagatt aactgtggac caaagacgga ctaattgaac gatgtaattt 540

caaagtagaa gcaacagtat tttggtgcca gctgtgctgg cggagcagct gatggcaatt 600

ggcagcggtt gaccttccgt tagtttaggt tgagtacacc tggtcgtaga ggaggaaata 660

agtacactac tccaattggc agtgacaaag taggcgcgaa ccgtccaatc gtctcgcctc 720

aattcaaaat tgcttaggta gttgtcggcg ggcagggtag ggttggtgct gggttgctct 780

gctggtcgct ggccacgtga acatgacgta cttgtatagt tgcagtagca aatcaatgat 840

agcgagaaat tccgtatatg acttttttg taaggattta atcattgtta tatactttaa 900

tatttagtag aaaacaggct agaattagac ggctgtattt ttaaagtgta caaatacgtt 960

taccagagac ggagggaata gtaatcttag ttggcttttg tcttggaaga ccgacgactg 1020

gctggggtgt atatatatgc tttcgccaac tgcaaacgat gagcgcgccg tggccatttc 1080

gaattccctg acaatcgcat cgcatgcttc tctgctggtg gctggtgggt gctgctcctc 1140

tcggacaatt ttgaacttcg tagtagtacc atatactagc atccatccac ccgctcagtt 1200

caaacaaaca aacaaaaaaa agaagcagca gcagcggaat ccacctagta cccgccagat 1260

attttagaat tgtgtgctgt acccttttgg ttttagttta tttattatgt ataccgcagt 1320

actataccag tagggcgcca cccacgtcct actccgtaga ttcagaggca ttggattcaa 1380

atactcctat gctggtacat ggtactacgt attgtggcta gtagtggcct agtgcacgca 1440

agcaggagtg gaaggatttg tgaggcaaca cgggcacgga agagcaagct actagcacag 1500

acagacagag tgcaaccggc gtgacagcga gccgagacga gacgactggt gtggcgtgcc 1560

accaccatcc gtccgctgga taggctcccg gaacatgacg gccacatggg cacaaaacaa 1620

gaacctcgcc acgccactgc cagattcatc a 1651

<210> 1993
<211> 1976
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121967_G1, chr3:184367686..184369661, Cluster 12

<400> 1993
atcccaaaaa ttagcattgc cacaaaaaaa cgcatttcag tagtttcgct ctttgtccct 60

cagaaaagga aacggcttat ctttattctg tagataaaca aaagtacaaa gaaaaaacag 120

gatggagctg tgcacgtccg ggcaccgacg acgatgtgat ggctgcacga gggagtgaga 180

ggggaagcca tgtggggagc acgccggaaa tagatcgcaa aatcgcccca cgacagcgac 240

cggagctccg aaactcgtcg ggtcgaaaag aggtttctgt aaattcgggg ccgggagaag 300

gctacgagct gccgactgtg tctgtactag agagaatccc atagcaggac actactacta 360

ccttaggatc cccttgccat tgccgaaccc ccgctctcga catgccgtga ggcagtccca 420

ttcttagcgg ttgggggggag ggcgcatgcc atgccatgcc atgccatgcc cggctgctca 480

tgaaccatga ttgcgcggga ggagggagaa tcatggtcgc ttcagcttgg ggcgttaggt 540

ttagagtaca taccacaagt gcatgcaggc gtcctgccac tcactcaaaa gccatcaagg 600

aaagagcgta ccaacggcga gccaggcaag aaaagcgcga tcaaaacgac agcgacggcg 660

cgcgcactcc cggcctggcc tgtcatgcca tgtcatgcat gtggcgcgcg gcctgggcta 720

acgaccgaac cgggccttcc gttcgttaat ggcgggagag gtcccggccc ccaaccgaac 780

cgacgtgccc gcgcgcatgg ccgcttcctg ccgctcccgc gtcgctctcc ggcgcctgcc 840

gctcgccgag gcttgtggct ctcgtcccgt cgcgcgccag ttccccgtgc cggtgggtag 900

ttgccgcctg cacgttacct atctatccat cacgcgggcg gccgcgcgcg acaagtccca 960

ttcgttcgtc ctctcccgag ggcggggtcg ccgttgcgcg gctgttgctg ccatgtgccc 1020

gcggcgcgtg ccgaagcgac accaccgtcg tcgtcgggtc aggcgtcgct gactgctgtg 1080

gaggccgctg ggaccctggg aggggaggga ggcgtggccg gtggcctgtc cgtcttggta 1140

ccgtgccggt tctgctacgc gcgatcgtgc gccgcgagcg cgcgcggggt ttctgttaca 1200

aatacggagc acatataaaa tgcactcatg tcacactctt tatctaaatt gaaatcggct 1260

gaatataata ctatgttgtg tcttaaaaca aaaaaaacga gtactcaatc ttagccaacc 1320

atctaaaact ggatttactt aaattgggtt ccgacgtggt gtgttagtgt gtataacatc 1380

tcgtgttgaa ttggatctac ggtgtgcgct aaccgacgcg caaagacttt tccactgcca 1440

gcttcaccct tgttgtgttg cgcggaataa caaaaaacat ttacacctgg tccaagaaat 1500

cttcgaaaac ggcccaacta cgtatagact aggggctttt ctgggctcgg gcgtgtacga 1560

atagaaatct ggagagcagt gggccagctg ggcagttggc aggccctagc gccataggct 1620

gcagcccaat gcgcactcgg gcccagtcgt tgtaataaaa gggccatgtg tggctgcaaa 1680

ctcaatgcgt agctcaaaat cgaagccagc aaccaacatg ttacatgtcg ctactccaga 1740

ttccagaaaa aggattttgg ttgacaactg ttaaacggaa ttgtttcttg tgagacatta 1800

tccagcacca gcatgatctc tgtcaatggt gtggtgtttt ggctctcagt cctcgacccg 1860

gcctcaattt agacctcggt caaaatccgg cgactactga tgaaaattcg ggtgatgtgg 1920

gcatggcttc ctcgcagaaa agcacacgtc ctctgtttct ggatcctgat acgcag 1976

<210> 1994
<211> 1935
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124192_G1, chr3:195967943..195969877, Cluster 12

<400> 1994
atacgtagaa aaaaacatgt ttttttgaac ggaatgaaaa ttgaaaagtt accaggtaaa 60

ccttgatgga ctggactttg ttaatctcca tggagtcaaa ccgagttcat cacaagcctg 120

cctggcggct gcttggttac tactcatgct atgatttctc ctgacgagcg gatttttcgg 180

ggttgaaacc agagatttga gcagcactag gccaccagcc acctacgcga cactcactga 240

tggcttgtgc attcgtttta gaaagccagc attggcaaga gtctaaagac tcaacactcg 300

tgcaaaggcc gtcgggatgg accacctgaa ggctgcaaaa acggccggct aaaaacgtgt 360

ggagttttca caagcaaagg catccaaaag cgcacccatt tacacgcgtg tatgttttca 420

ctgtcacagc gcgatgctgc agaaacgcag aactgcagaa gcaatggaag ggctttttgg 480

ttggtccaca cgacactaga tctgaaaaag actcgtgggt gggggcatga ttcatgaatg 540

atccagtagg ttgctcgaga aaaagacgat tagggactgt cgtcgactaa cattagctaa 600

tcatggacaa aatccatgca agatcgcgcg cagagctgct agcggtagga ggaggggtg 660

ccgtacaccg tgcagcagca tgtgtgcatg cactgcacgc gttgccttgg ctttttcccc 720

tgccacgcct gcgtcttttg ttggcactgg gtagcctcgt cgctcgtcgg ccaggcttct 780

ccctccttgt ggaagcttgc agcatgcgtc ctccgcgcac tgtggcccct cctcctccct 840

cacgctcatc gcgggaccgg gggaaaaaaa ggcgaaagcg aagcatgcag aggggtgcag 900

atcgtgcagt gcgacgcaaa gcgcgcgcag agcacagtcg ggcggcccgg cagccggcac 960

cctacttttg cccgtcgcga cgcgtgcggt ggcgcggggc cacagcggca tgtcgcttgc 1020

tgtttggcgc cctgcaggct gcagcccagg ggccccgcga acgtactacg cgcgcccgcc 1080

agcccgccat ggtcctctcg tctatcttct cgtctgatga gctcgacgac gtgtctggac 1140

tctggaccct gggggcctgg acgcgacccg tccccgcgct gttgccattg atcattgatg 1200

aggacagcat gctccggctc agggctgtcg cgtcgcatgc attgcctccc gagctcagtc 1260

cacagggtca ggctggccag ccaagcctag ccaggccata ctgccgctgc tgccgccatc 1320

ttgacctgtt cgagttcgag ttcgactgct cgttcgtcac ggtgccatgg actccggtct 1380

ctctctcatt cgcggtgcca tactgctatg atggcatcta cgggcgcgcc gcgacggcga 1440

tcaggatcga cgtggcgccg ccaagacccg ccggccggtg ggcgcgaacg cgtcactgcg 1500

tcagatgaga tgagtacggg gcgggctgga gcgaatcgtg ttggcgctag cgttttaccc 1560

tacttgcgct ttattaccgg cgtcgtggag gccggtaagc ttgcctggtg gttgcgcgct 1620

ttattggcgc cgcatgtgtc tttgtccctt catgcatgtg gtgtgcccgg cctgggatcg 1680

atgagctccg ctcccggttc cgctcttcat cgaagttccg gcgatatccg taggtaccac 1740

ggtgagctag caatctagtt tgttgatgtc ctcgtcgtcg tcccggcccc gttcatgtct 1800

gtacgaacgc cagattgtga tttcctagca cgacaggtcc acgacagcgc cacgttcatg 1860

caatgtgtgt gttgttatcg cacagatcga agatgtagta aatcacgcac gcatcaccgg 1920

gatctgaaca ttctg 1935

<210> 1995
<211> 1524
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124792_G1, chr3:199610847..199612370, Cluster 12

<400> 1995
tagaatccta ggcgcgaaga ggggactccg gaatccaata ctacttctag tatagtctac 60

agcagagcgg tggatgtgga tctgggagca gtgtacacca aagtttgcag tcagatagat 120

tgcaagttgc aacggtttta acgggccggg ggcacacgca gccggacggg ccgaggggag 180

atcgcggagc agggcaccga gatccgcagc gggatacgcc tgtctcgtca gctcgccgct 240

catgccatgc gccccgtcct cgagggcccc gcgcgtgggg gtggccgact ggcaagtgct 300

gcccgagtag gacgggggtg ggctcgctcg atcgcctcga tcggcatgtg cgggtgcgcc 360

gtgtgcgttc tggttggcgc agcgcaggta cgcgcgcgct gggcatgcat gtgccccgcg 420

ccgcttcttt gacccgcgat ggatcgggcg ggtgccgctg ccggctgccg gccggacggc 480

atcttggacc ggtggctgcg gctcggcgtg cgtgcgtggc ggttgggggg ctcaggcgga 540

tgggccggcg ggtggtggtc gaggtgccct atttacaccg gtggttcgcg gtcgatccgg 600

tgcaggattc cgggagcctt gatgcaggat gtgtggacgg cacgggcaca cggctacgct 660

ctactatacg tatcctttga tcagctgggc taagcaaacg agaagcacaa aggaggaata 720

tggcgagcga attgttgctg ccgggtttgc aattgatcgt gcctgcatgc atacatccac 780

gtactactgt ctggttaaac ttttagctcc ctaaacctat ctgctatata tttgatttga 840

acggcagacg aggatcggaa cctggattcg tttttgccct tgcgttgccc ttgctgtcac 900

cctgctgcag cctgcagagc aaacacgtgc agcaagttct agaaacccgg ctgccatttg 960

tacaaacagt cgtctgccat ttgtgcccaa caaatcggca ataatgactg taaaatgtgc 1020

catcctgcac aacttgcagg tcacgcgcag gataaacaaa caacaagttg ggttgggcca 1080

ctggaataaa aaccatcgca tcgtgggcct tctgtactgg tgcatggtgc agtgcatcac 1140

gattttaggc atatatcatc tgtcgcagaa accaagatat accatatagg ttaatgtagt 1200

ttttttcttt ttttttgaa aaaaaataaa agatctgcac ccgtgtgtct agtgtaaccg 1260

ggtacgatgc acccaacagg ccacccagaa cgcaagaaaa ctattagtac catctcagtg 1320

atctcactgc tcattaagtt tcatcccatt ctttttaaa aaaaaaagag cagcagtaac 1380

tattagtact gtctgtgcat caatgtatag tttgagttag cagcgaataa ataaagcaca 1440

catgctgctg ttcatgttcg tttctacttt cacataacta gatggtttga atgcttggaa 1500

tattagatta gaggtaatcg gtaa 1524

<210> 1996
<211> 1642
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125805_G1, chr3:204639594..204641235, Cluster 12

<400> 1996
taacaaactg acaaaattgg caaggggctc agctcagaga gagagagaga atgaatactg 60

aacagtaggt gcaacctaac acatagaaac tgcgctgccg tgggatggtg ggtgggaccg 120

gtaacggatg cttcttaatc aacgaaacca ccgcacaaag tatcgtaaca cgccgagcca 180

atccgacgcg ttacttttt ttttctctct cccttcaatt tctgcggcgg cggttctgag 240

accccgtgac tttgctcgat ctgtccggct cctgtggcgc cagcacagca caggagacga 300

acccacccac ttctgctgct gctgctgagc gctcaccggt gagaattcta tccggacact 360

tgtcgggtcg ccggagaaca gaggaagcga agcctttcga ttcgcgctac agtggttcga 420

cacacccagc gtactgtacg acacgcacgc gaacgggagc ggaccggacc cccttgaaag 480

gctgccggtt cggtttgctg gcacgtcgca tctgagggat ccatcgtccc gagtcccgac 540

gccgcctttg atgcatgatc ggcagatccc accctgacgc cggcgccggc gccgccccgg 600

ccccagtcct gcccggtcac gtcgtatcgc ctctgcccat cagccgtccg tacgcgcctg 660

tccgacgtct attcgcgcgg cgtcgcttcg ctcggaagct gccgcctgcc gctgcgacac 720

gtcctgccaa agcgtaggaa gggccgtcac gcaaaatata cacgcctgtg caatacaccc 780

ttaattaaac tggagtaccg attttctctc tctcgaaaga atagttttca gagatagtaa 840

tagactaata gtgatttcta cagtcataac ggctccggat tacacattca ataaattcta 900

gtacctccaa tgctcaataa acaactacta catgatctaa aaaaacatag ctttgacctt 960

ctttttatca taatatatat gaccatctga acaaaaatat atttttgaac aaagttcttc 1020

ttgtcaatcg ataagtataa aggattgatt tttttctcta attaaacgct ttcgtggttg 1080

gaagtaaacg aggctttaca agtttgcgct caatcttatt catggtgttg tcaactattt 1140

acatatgaga gggagtatct ctatgcatat tcatattcta tttctactct ttgagcccct 1200

ttaaatgatg gtcgacatta aggatactct caatctaaaa ccatatatgc ctttatagca 1260

ttaaaattca tgttatgtca ccgtctttat aatgtggaag ccgggtcaag agaaaaagag 1320

acgaaagtga gtgaaaaccg tttctcatct gagaagcctg aacatctcgt gcaaagaaac 1380

gagtcatttg gcgttgagga attagcggat tgggatcatc gctagtcgac tgctcttaca 1440

cgtcgacgcc gagagacccc acatgtctgc ctcccggcag tcgactgcgc gaacgcgagg 1500

atccgggtcc ggaatttgca tcgtttctat ccccaaatga gcatatagtt tctctatcat 1560

aaaatagtta tcgttcatgc tttttgaaga gtcaatcatc tttttacttt gatcaaatat 1620

gtaaaaaata ttaataattt tg 1642

<210> 1997
<211> 4830
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126218_G1, chr3:206603297..206608126, Cluster 12

<400> 1997
caccttgtcc tgttgtgttt tgtttatgtg tgtatttatt ttaatcaccg tctgctggtc 60

gcggttttgc agcacgcaca agggcgcgtc aagatgttcg ggcatgtgca acacattggc 120

ttcgaaacca aacaaaatca cattgcttgg cgagccgacg atgcgagtcc catgctgctc 180

agcgagcgag ggagggtggg catcatcgga atctatctgg tcggcgcccg cctcgatccg 240

aaacatacag cagtacaacc ttgcgttgga ggctcaagct cgccggttcg accatcagca 300

ggagagattg tcggcaactg atagagatcg atcaatggtg tagatagtgc agtcctgtcg 360

tcctaggcta gccaacggat ttgtggaaca attaaagccg ccacgtacgc cacgaggcgg 420

tttgccactc ttttagaagt atatcccatc attgcatgct ggttagctat gatgccagct 480

gccagctagt acttatacta cgtccaaaat tgatgagcac aggcaggaca ggttcgtact 540

acaactacac tcatacatcc agtatatatg cgctgcgccc atatccgacg agcgattatt 600

gggcacgcgc atgagaacaa gcagagatca cacgcacacc gtctcccggg tctgtccgcg 660

cctcgtcacc aacagatggg gtagagacgc ggcggggcac ggctcttgag agagaccagg 720

gggggcctcg ctctcggcga tcggagtact atagtacagc aataatctgc acgcagcaac 780

cgtggggaca agttgcacag gtgaagcggg tgccgtaccc ctatctcctg cgtggcctcg 840

cctaatcgcc ttggcttggc ttggcttgcc atgccggcct aaaatattgt tgctgcagac 900

tgtatgtagg ctgtagagca cacaacacaa acagagccac cggtggaccg ccggctgcat 960

gcacagcagg gcgagagcga ggaagcttgc taccgacgcc cacttcccac ttgcattgca 1020

agttttggct ggagcgtgtg acccagaggg gtccaaggac taggactagc attagctaat 1080

gtagctgcta ctagccagcc tgcgaccacg acgacggcgt ggagagttac ccttgggtga 1140

aagcttaacg agacggaaga gtaggtccag aatgtgtgtg tggtgcagtg cagtgcagtg 1200

cagtgcactg tatgcagtcg acgtgattgg ctggctgctg cgtggtttct tccgctcgtc 1260

gtcctccctc tgctcctcgc aacaagcaac cacgtggcac agcgcacagg acacgtcctg 1320

cgcatgcgct gcagtttttc cgatgggggg aaacgaccag cgtgtctgca ctgcgcatgc 1380

gcccgccatg tggtttttca cattccctta acagcaatgc agcaatgcaa gtacggcagc 1440

tgcacagcac cagtatcgtc acgctcttgc tcatctacag gtacagcact ggtcatcagc 1500

cgtcagcacc cacagtggtt gtttggaagc aaggatacgg ggagagatta gaagggctaa 1560

aatcgatttt gctatttaaa tttgaataga ataagtccag tattcttact tctaaacaag 1620

accaccgtac taagtactat tgtaaaagtc cgtaaatctg taatgatgtt ggttctacat 1680

acgaacgatc tttttaggat ggagtgagtg tataacagcc taacaggcaa gtacgtacca 1740

gtagtctagt agtatgtgtg cgtgagtgag agagtcagcc agtcaggatg ggtggcggag 1800

ggcccaagaa cgacaatgac gcaagtctag cctagccaaa acttgggcag cttttgttgc 1860

atgccacgcc atggaaaacc tgaattgatg ctgcctttcg acaagaagct agctttaccg 1920

cctgccgtcg aaacagccca ggcccaggac caggacccca cgctttaatt cgtgtctctc 1980

tcgtcacaaa gtcaagcacc ccaggcagcg ccgctcagtt cccggaagtt tctcaccgcg 2040

tcgaagcatg cacgcatgca tcgggccgga ctgaaaccct cgtgtcgtcg tgatgattcc 2100

tgaagtcgtc gcgaggtccg gcggtccgtt gccgtggccc gtggcagtgc tgccgctact 2160

gttacagact ttttacggtg tgtgggtgtg tggcggtggc gcgcgcacac agctgcactg 2220

cacagcgaaa ggatcggagg cagcaccgca ggccagcagc cgcccggccg gtctactgca 2280

tggctggggc caggttggtt aaggatagag atagacacca ccacgccagg aacaggacgc 2340

gacacccggg cagtacaaaa cagccagcca agggccaggg gggcagcgcg actttggaga 2400

cccatcggtt cctcggccgc agagccagcc agagccgccg acgtggacgc agacggagcg 2460

tgtggaccgc ttctggcaag tggcgactgg cgacggtagg ctgcgcagag tgcagcagcc 2520

gtgtttttttc tttgctccgg cagcggtgtg gctgccgggt ggccacatgc agcggagcgt 2580

gtcgcccgct gcgtgccacc ctcctctgtg tctgtgttag ggcatgtgga ggaggaggac 2640

caaatcggtg tgtggagtag gcggtcttgt atggcagtgc ttctatagcg agtcaacgct 2700

gcgctttgtt atgcatatat atatgaggag gagcagtagg tcgttttctc ccggcaggtt 2760

gcatgcgatc gagaggtccg tctagctgca cgttacgcct tttctccctc ccgcactcgt 2820

cgcattcttc tattctatct gtacctctgt gcgtggcgtg gcgtaatatg gccagctggt 2880

gtataagaca gaaacaagga ctctggaata tactgtacgt ttcgtaacag ctagctagct 2940

ggtcttcctt cctcgattag ctgtgtatct gcaagtgggt gtgtatactc gcactctcgc 3000

ggtattcgta gtcagcagac tggattcatc gttaaggaag gtacagctca tgcatacata 3060

tagatccaat tttcgcgccc ttgacggagt cgacggcgag ccacagctgg acgagcgagg 3120

cagtgaagat gaacgagtct gggaccaggc atcgaggtca cgcttttcta cggactgcgg 3180

aaatctaacg tactaattag tactgcagat ttgtcatctc gtttgcctgg tctggtcgtt 3240

ctcttcttcc ctgggcaggc taggctggcc acagatggcc aaatttcaaa cgattgacaa 3300

aacgcgaaac gaggggggga tgaagcaccg gcaccgctac tgttgtgaat ccgacaacgc 3360

aagttgggcg gacctgttgt tatttactag tcctactagt ctgttacgga gtacagcttt 3420

ccggatcaag aagcaaccga acccaacgcg gagaagatat tcattcattc gcctgcccaa 3480

atggatcgat ccatccgcgc gcgcgcgcct gcttgtgtgg cctgtgggct gtggctctcc 3540

tcggggagca cacccgcgac gccattggcg ggctggacac cggtcaaacc acccacatgt 3600

gccccgcgta gctagctagc gtgcctaatc gcggattaag taatcggcta ataatagccg 3660

gcaagttgtg ctcaggaggg tcgcgctcgc gcgagcgcat cggaagcaag ctgctaagct 3720

ttgccttgct ggtcaagtcc atcacgcgcg aatgtacttg cttgcacaca tatataatta 3780

taaaagggtt agtatatgga ttcgagtggt agtgatgcta gtttatttag tgtacgtgga 3840

tggatggctt gcactcccac ttgtgacaag caccgtttca aaagatacgg ctctgccgct 3900

gcccatctct ctccactcaa ctcaactcaa caccggtctg tctgtccgcg agcgagccgt 3960

tttccttgac cagctctagc tcctgtaggt aactcaaccc aaaagcaccg agcccatgca 4020

aatttaatca cgtcgccgcg atcgagtcgt gctcgtacgt acgtaaccca ctactctctc 4080

ttctctccgc ccgtcgtcgc cgagacgcga cgatctgcca tatatgcgca cgttgccgat 4140

cggattatta tatacgtaat tcgggggctc cccgcgcgct tctgcagaca cgcatctcga 4200

cacaggcccg ggccctagca ctcctgatta attagccaca taatacatta tgaccaactc 4260

gtactagtgt tagctgtagg agtaggacgg taggagtagg agattccttc cctcctgcat 4320

ctttctttcg ttgaacttgg ctcatcgatc gtctccgatt catctgccca ttgatcctgc 4380

tgccgcctgc cgcctgccgc cggtcctcgt gttccttgca agttgcgagc gctagcactc 4440

tgtacagaca ttgtgcacaa ttaagcccag gaatccaatg cgaccgacgc atatgaatct 4500

tgctgcccca aaagattaag cacatgttca tacacctgtc ctctagaaaa gaggtgcggg 4560

ggaaggacag acgtgtgtgt ccttgtgagg tgaaggtctg gcccggtaag actgacacca 4620

caagaagccg ataaggtcct gtcctcctgc tagtaatctg aaaaaactgg aatggaggag 4680

gacagatatg tttgtggtta gctggtgcag gtgcaggtac accacaccac tacaacttct 4740

gctgccgttt gtgccagcag ctaataagat tcatgttttg aggcagccgc ccgtgggccc 4800

gggacgtgtc cacatactac tactatcgtt 4830

<210> 1998
<211> 1991
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127644_G1, chr3:213793954..213795944, Cluster 12

<400> 1998
ctgcccgcgg ccgtcctcgc ttggaagtgt gacgtgcatg ccgccgtgaa tgcgtcgcat 60

atgcagcctg gaggaacgta acaatacatt ggtctcgtcc tgtttccgcc aactgggccg 120

tggatggtat ggtacgcgag gaacagagaa gggtgctgtg tagccttgag ccaccacaga 180

cctgagggta caacgtacac aagaggagga cacggcgtgg atgagtggaa ttcattgcgc 240

agatggtatc gacggtggta gcggtggatc agggggagac gacgaccgcg gcagctctcc 300

ccatcaatgc ggatgctgca tctcagatcc gtcaacgtgg tggcgccccc atgcatctcg 360

atcggtagac gcattgctcg cgtgcgtgcc agccccacgc aaccgtaatc ctgacctacc 420

tgaaatccgt tctggcgagg ctgacacgtc gggctcctct tccacgcgtc ccggagtgaa 480

gccctcgtcc gtccgtagca gggttcgatg agcgtggctc tgacgagtca gcaggagacg 540

agagaagcgc caaggacgac ggatcgatgc tcgtttctta tgcaactgta aggacaagtt 600

catcgctggt aaaagccgta gtatgcggaa gcggacatgc cgcgcggcta gctctggctt 660

aagaagttaa gagcccttgt attgtacaca cactactact cccagcagca ggctgcaggc 720

cagccagccg cccgggccgg ggtccgcctc agcctcatca ccattcacca tcatcaatga 780

atgcatcgcc gagcaacgcg cgcaatcgcc gggctgtccg cttgccacga ccaacgagct 840

ccaccggacg aaaccgcgct tgctgctggc agtggacggt cggcttcaca cctatgcgtc 900

tgtagataga tgaccttggt tgggtgctct gtagaccgta gtccgtatgc catgccatga 960

gagagggtca gagggagccc ccaagataat aaaagccgtg tgctgctcgt gtcgtgccat 1020

gcatggccac agcccccaag atggcgcagc atcgtacgct gtccagccca gtgggcgcgg 1080

ccgccgtcct tgggctgggc ccccggcaaa gatgctctca gcgcgctgcc aacggaccca 1140

gaaaggcgga agcagacacc aggggcaatc cgacaccacc acaccaggcg cagccgggca 1200

ccggcacgac acgaacaatc catccccaaa tggctgcata taaccgagac cgagacgccg 1260

tttgtttgtt tgtttgtttg ttagaggagg ttctacagcc ctgaacgcgc gcctgatgcc 1320

gagatcgatg gcataaataa aggagagcgg agagtttgag tttgggggcg cttggccagg 1380

ttcaatccga tacgatttgg tgcaactgat tctgaatctc tgacgtgtcc atccaccggt 1440

ttttagggtt tagggttcat tgcttgcaaa ctgtgcgtct gaacatgtgc atgcattgcc 1500

ttcttggatt gaggtccgag agtcataaga ctgtcaggta ggcgtccaaa atcggacgag 1560

gctgtccggc ccacgaatcc ttatcaggat gcgaaaggag ctgcaatgct gcatcatatg 1620

ttggtgacgt tgagataata ctacgactag ccagaaaata aaaatcaaaa cattccaagt 1680

tgttattggt ccagctcgct tcagcccaat attgttgatc aaagggtatg ctgtgggctc 1740

gagagcccaa tatattggtg ggcctttatt atcgtctagt atttcagcca aaaaatagag 1800

caataatgtg gggccatgtt tcaatgatga gatgattttg atggaaactt ttcgaatttg 1860

aaacaatctg agtcaaattg attccggact ctgctccaaa tattcaaaat attgtcattg 1920

acccttcggc gtaaaccacc taagggccta atcggggttt tttcccatgt ggattggatt 1980

agattgaggc c 1991

<210> 1999
<211> 1517
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129270_G1, chr3:221693806..221695322, Cluster 12

<400> 1999
gtacaatgat agttcaagtt gactgccagc tgataatgga taggtaatgg agatctctct 60

ctttttttca gaggcctggt gtaaaatgca gaaatgctgc cgccaatttg cagccactgt 120

ggtgaagtga ttcgcgactt aattttgtga gggaaccaag aagaaatggt tcgttgcatc 180

ttatagttgt acaagaggaa gtgtttcatt gtatcttaca attgtactgt gaacttatga 240

actttgggcc ggtttttgtt ggttcagtat attgtataac ctaatgtata ggttgtctct 300

aaacatgcta tgactcaatt tgaagaaggc caactttaat tctagccagt tcaccgactc 360

gagtacatgt gtgtttcgaa accaatccta ccctatctag tttatgctcc acacctagtt 420

agcttcccaa tcacaatgct ctacagatat ggattgaaat tcctgctaca gctgaatgca 480

ttcatcatat attggttact ggttagtgtc tcgaaccgat attaattagt tcatcatatg 540

ttgatgacac ggcaattaaa actgttattc gatatcggtt gtaaatgaat cggtattaaa 600

gtcccagaac gggagccccg tcgttcatca tatgttgtgg ttgtagcgcg cgtgatactt 660

gtggaggttg tggaggcgtg aggtgcagcc acccccagcc tggatctctg ctgtgcaaat 720

gaaccaacag aaactcacga gcgggtgctt aattttcaac gggggtacgg ggtaacattt 780

cggttcgaga acacttttta tcgtttcgtg ttcgtcctac tgctactctc tcttgacctg 840

aaaactgcat tgcaggatgt gttttgggtt gaacccgatc aagagagaga gtaccttgtt 900

tgtttggttg cagctgaatg cacaagagct gtgctgatcg atcttgtgcc cgcccgaggc 960

atggaaacgg tcgcctggct cttcattgtt agcgtgacat gtatgttcag ggcctgtcta 1020

gaagaacggt gctatgcgct gcgtgtttcc ggcgtcacat aacaacggaa acagattcag 1080

aggaatacaa tactcatgaa tgaatcagct aggccggccg gcggcagcag cagcaataga 1140

ggaacatgag aacgtggccg ccctgcaaag ccgccgcgcc gcgtgtaaaa aaagcttgga 1200

agcgcggatg aaatgtcctg gacacgcagc acgcgtgtgc gcatgtatgc tgagctgagc 1260

tgagctgagc agatacagag ttgacctccg cctatatatt cattcattat ttatatatgt 1320

acacatgcat gcaccacgtc ggcataacca accgcaagac ggcaagaggt tgaaatcccc 1380

gtggcggtga tgcatcggat atctcacttt taattttctc ttgccgcctc tcgcccccac 1440

acttttatc atgagtttaa acctaagttt tgctacgtcg tagcgccact cctccgatcc 1500

tctaaaacta aaaataa 1517

<210> 2000
<211> 2115
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130317_G1, chr3:226961658..226963772, Cluster 12

<400> 2000
tgatgtgacc aggtttttt ttttgtcaga ctagacagtt acccgttgtt aattagcgcg 60

cagttacatg tgcagcgtca aattaaatct ctacatgtat gtactaagat aatatatata 120

gacataattc tctctctctc ggcaatgcgt gtaaagctac gaaatactat acacatcata 180

tatatatacc ataccatacg tagtcattct cctcatgatc tatctgacta tctcgtgtgg 240

gaactgaatc gttcttctcc aatgcgattc aattcattcc cagatgttcc gagcagcatg 300

caagctcttg caaatcactc tcaccagaca tctccatcga tctacccatc agctagggat 360

caaggaacaa tataatgttg cagcaataat ggaggtcggg agggaccaag gcgggaggag 420

gaggacccga cccggccaag agataaggag aggtcaacaa ggacccaccg gccggcccac 480

ctcgatcgaa attccatgcc cacgcacgca cgcacattgc aagctcagct acatacacaa 540

gatgcgaagc caaattaagt gagcgccatt gttcatggcc tgcaggtgga gcgcccctga 600

tcgatcgaga gtgtgcagta cgcagttgca gctgcagctg cagtgtgtgg atttgatcgg 660

ttgattacta ctatgatctt gcttgcaatg caagtgggca tcccattcca gtccaaaaag 720

ccggcgggag gagcgctcag ctccgtcggg ccggccgggg catctcgctt tagtttccac 780

gttatattat gccattaata attacgtact acttacagta ctaacaactc ctgttcaccg 840

tcaaactaac caattgcatt gtacggtcgt cactgttcga atatgttcac gcagtctaaa 900

atatttactg tatttcgtct atatttgtcg aacggctctg aggttcttca cattttccac 960

ctcgctctag ctcagccgtc actgttcgaa tatgtttaac tttttctata tattatgaat 1020

tggggataaa catgccaaat atatagtatg ctagtctttt taagatatat aggagtatca 1080

tttatgaaac agtagtgttt cttttcatct tttgtgctct ccaagcatgc atctccgatc 1140

agccgcatca catgctctcg aaagccacac acacaccttt gaaccttaat gaataaatca 1200

aatcggagaa caatctgtct ttcatgcacc catgtatagc ccgacaggcg cgcgcgcggg 1260

aatctgcatg agtgctaatg agaatttgac aggtggtgcg cctcatcggc tgtgtgcttg 1320

tgccatctgc tactccctaa gatcttcaaa tctctcacct gtccttcatg tcatgtgtcg 1380

ttcacccaac cagaactaaa ggcacatggc taaatcggga ttgatccaat gctaagcagc 1440

aacgctaacc cttagctaac attactattg taacagttag atgcgatcag cgtccacctg 1500

cctctgaatc aatgcctttg ttaataatct agtttttaga tgtggtgtta attcggaaaa 1560

tcacataaaa gacagtccta ggtgtctaaa caaaacaggg cgctcagacc tcaaccagat 1620

cgttagggtg tcaccatgac atcaatcaga tggctaacat cgctcttatg tccctactgt 1680

cacgccaact acgtccatga cacaacgtct atgaaagaga ggagtgagag cgaggttgag 1740

aggagagaaa tataagagaa atggcaatgc caaactgtcg gctcacctca agaagcatcc 1800

ccagatccat cttactctag atctaggatc tggctaggcg cggtgaagaa atggctcctt 1860

acctcaccag atccaacttt ccacaatgaa gatctacaag aggtagagtg tgagggagtt 1920

ttggagagga tagagagata gaaagaggag ctcacctcat tggtcctacc catgcccaag 1980

atgtaatgtt tggtacaacc tactcgtcgt ggactgcaac gtcctcacac actgagacct 2040

tttagtgtgc ctccctcctt atcccggttg caccaccacc gaatcatccc actcgcgtcg 2100

tcactgcatc gcatt 2115

<210> 2001
<211> 1662
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134861_G1, chr4:16166194..16167855, Cluster 12

<400> 2001
tctcggaagt ctgtttctga gtcacgccat gagtctgtgt gccatactta acggaaacaa 60

ttgtcgctct gtcttgatct ccaagtcttc ccgccgtcct tgggcctgag atgatcaatc 120

gacccacaaa atcagtcgcc tgacccactt aggccctcca actggccttg tatagtatcc 180

gtgccatgag gacccaagag atatttatcc cccataggtt ggtcccctca ttgtatttgc 240

caatgtgggt cgacggtcaa aaccacttag tcacatgtat tgtggtctag aatgccatgg 300

atcaaagtgg ttatagctcg gaatcccctc ccattagtca tgatgtggga aacgatcacc 360

ttactcatgc gtgttgcttt gccttgatgg tgccccacat gtcctggtct tctctaatct 420

agtaacacag aagtggtcgg tctgagttgg gcttgcctca ctactcccat tagggatttc 480

ctccacttgt ccttggtgat ctcaactact tgtagaattt ttgccaccat tgctaccaca 540

tgggcatgca tatcgaagca gtccccttt ggttatattg tcatcaagga tagccttgaa 600

gtgtcattgt agcaatgata caccaggctt tctacctgct acttgagggc agtgttgaga 660

acacactgag catctcatta tttcttattt accttcagga ttagcacatg tcagagatgt 720

cgcctaggtg gcacacaaca accaccatgt tgtatgtcgc tcaaggaagg cacaacaggt 780

tgacacccct agtgtggttg ttaaattcat gttgaatggt gttctttgga gagcaccgat 840

tattcaagtg ctttgctaga actcctctat ccttctggag cttagagcac ttgacctcga 900

ggtaggccta ccaagcattg atgttcttag ccttctccta gaggtaggta gaatgactga 960

ttagacttag gtctaggtat gtgttgtcaa ggttgtcaat ggctaattgt cccgcatgga 1020

ggtaaaagca ctctcattcc ctaggataat gattagcctc gttggagtca cactttgggc 1080

caaccctaga gagtatccca aggaaggtgc acaactaatg gatgttggtc ccatggtgcc 1140

tacaagggca acattatgtg gtgcctttca tctcgtgatg tgctctagtt tgagccaaaa 1200

ataaagcaac attccatatc tcatatggga gatcttagcg aatgttctag aaatggtagt 1260

ctaatggtag ctcgcctcta gtaatgatct agtggcaaac attcaccaat gggtagaaca 1320

tctagtgaca cttcaacatg gtgggtttgt ggaccaaacc aaggaggctt tgtcatgaca 1380

acaactctag ggccgcgaga ggaggcatat ctaaggacat tgttggggtt tcactatcct 1440

ctaatgaagt ttcctcaaag agattgagtt cactgttatg gtcaacaatg ttgtccagac 1500

tcccaaagtt gagagcctag ccaggggaga agggatatca gtggatgtca tctcgctgga 1560

gaagcacatg ttgcctttgt gggtcatgac tctagcaata acaaggttgg tggatcaata 1620

caccaagagg tggtgaccac ataggacatg cccctgacta ga 1662

<210> 2002
<211> 1973
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14034_G1, chr1:77140951..77142923, Cluster 12

<400> 2002
ttccaccctg gccgcagacg aggatggaaa gttgcaggtg cggtgggggg gagagggagg 60

taggtgccag ggctgcggca tgtggacacg gcctggacat ggccggaggt gcgcgtaggc 120

acggcgagat gtgcgcgggg gacggcagga gttgtcggtg ctgcggccgt ggggggcatg 180

gtgaggctaa tgtggacgtt aatgtagagt agtagggatt tacttgtcta ctccaatgct 240

tcgtggtaaa gcaaacccgt agctgcagcg tgcggcggct gcgtgaccag acgaaaatga 300

catgccagca acgacgctga ccttgatgca cgttgtcttc ggtggacagc aacgtccccg 360

gaaggcgaag cagaaacgga aacaggtaca ggaaggcgga agccgaccca cgctgcgtgg 420

gcaccctcgt cacgtgccgg cggcacatgg cccgagatgc cgacgcgtgc acgctcccca 480

ggggcgctgg ggactggccg cagcggcgag gcgattcccg cccacgtgaa cgaaaacgtg 540

acgggctgac agggagagag agagagtgtg tgtgcctcgg tctcgctgtc gcaggtgcag 600

gtgcatgcac cgagcgcggg aggggcctcc agcatccagg ggccgaatcg gacgagacca 660

cgtcgcttcc cagccgcacg ctgacagcgg ccgccgtccc cacctcgggg cgcggaccgg 720

tcgaggtcga ggtcgaggtc gaaccatctc gcgacgcggt cagcaaattc ggcgccgaaa 780

cgcgccggcc gccgtggcct cggcacggca cggcacggca ggcacacgtg aatggccacg 840

ccagcaggtc aggtcgctag gctcgggcac agcatccgcg cgcatggtgc ggtgtttccc 900

gccccagacc ggtccaccgg acctgatgat gacgtgacga gacgagagga ggcttaggag 960

acaatcgcat gctcgatctg ctagatcgtt gccactggca agtggcaaca cacgccagca 1020

cggcctccgt tatggaaaaa acgagggctt aacagaatac ttttgctggg atggaaacct 1080

gcctccgtgt gctgcttgga caagggctct cgagtaggtg tggtccgtgt ggacgtagaa 1140

cgggcgtcag tcgtatcgta tcagggaaca gagcaccggg gggcagcagg agcggagtcg 1200

aatgcacgtc cacttgttgt tccgtgtgat gtaagtagca agcacactgg gagtgggagc 1260

tgccggccgg ccgagaggag cgggcgacaa aagccaagac cggatggcgt cccatcgcac 1320

cccacccctt ggctgcggcg gagggccgcg ccgcgcggcg ggccccgcat ctcctggacc 1380

acgggggtga ggggggacgc gacgcgacga aacttcctcc cgccgccccc tccacaccac 1440

atccacatcc gatctcgttc gttcctcggc gaaacgcttt caccggcacg cacgtggcgg 1500

agcgtacgac ggccgacccc acccctcagg ttcgcactcc cacaccgcag ctgcggaggg 1560

cggcgccccg cgcgtgcgtc cttctcgtcg agccaacttg cgcccgtgtg cgacaggaaa 1620

ctctctctag gcgccctttt ctcgccccgg ggccgcccgg ccggccgatt cgtggtggat 1680

ggaagcgaca gatgcggccg caccaggcgg tggcggtgca gctggtgatc gccgcgccgg 1740

ttcgtggtgg gtcccggcgc caggacgcaa gttgcggtgc gcgcgtctga cgacgggaca 1800

gccggccctc tcatctccgc gcgtgtactt tttgtccggc cgtgcgcctc gccgcgcacc 1860

cgagagcctt tcgctgttcc gcgcccaggc ggaccccgcc gcggcgtcgt ctcgcaacaa 1920

cttgcggatg gatcatggat ggatggggct ctcacacagt gcgcggaata tcg 1973

<210> 2003
<211> 2390
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_152337_G1, chr4:130033092..130035481, Cluster 12

<400> 2003
ttaacacacc ccttcacttt attagtgtcg gtcctcggat caatgcgtgc gcacgagaac 60

gacaagtgaa cgcacatgtt gacatgtagg agtactacta gaagctagca gcaggaggtg 120

cagcaagcaa aggacgtagg aggagtatag gacagcaaga tacgtccaaa agctcgtctc 180

cacgaacgag gagaggcatg catgtggtac tagtagtacg catgcagatt gaggttgacg 240

aacaccatat gattgatttg cgcgctcatc aacgaacaca cagttcattg caaacagctc 300

gtctactcta gatgctctcc atctcagggt caaccctagc tagctactaa gtagcaacaa 360

tgcaaagcaa caagcatgca tgcatggctg catgcgcgcg ctagctagca caggagcgcg 420

cacaggccgg ccgggagcga agaagatgat cgagcagcct ccggctagag ctaggcatgc 480

cgcagctcgc tctgctctca tcctcgacga gacgacgaga gagagagagc tttgtctctc 540

gactctctcc tcataaattg aggctagctg ctgtgctttg gcgccttccc cttgttgttt 600

tttacatgcg tgctgcagcc gtgtactcat atatgctgta gcactgcacc gttcatgcat 660

ggcgctcact ggagaacgag agaccctctc ggcgcgcggc accctcggtt tcctctcctg 720

ctctatctct ctctctgcag cgccgccgcc gtgcaccggg aagcgagacg aggggacaag 780

gagatgaagg ctttgtcccc atgcacgtcc caaaggccgg ggacggaagc cgaagccctc 840

tgccctcatg catcatggtc ggctctgcct gcctcagcct ctctgccaag caaaaggcca 900

gctttctcta gctatctcgc ctactccagc tccagtacag tacagtacca tcccggaagc 960

ttttccatat ctgtgaaccc gatcggtccg ctatccgatg atcccggccg gtcgattcgc 1020

acactcctcc gtcctctcct tgttttgtat acactcggtt tgagtgtttg acctggtggt 1080

ggcgcgccac gccacgccat gcatggttgg tttggttgtg agtagctagt agtacaacat 1140

gtcagcaaat gtcgaaaaag cctaggacta gggactacta cgcgcgcggc ctgcttggcg 1200

caaagcgtcg gcgtgcgatt cgtacgtgcg gcggccggct ctcgtttgga aggtggtggc 1260

tggtgggatg ggaggggagt gtaataaatg gcgtggtggg atcgcgagct gctaatgatg 1320

aggcgattaa tggccagaaa cagctactac gaagcatcgc gctgcattgg ccgcccggca 1380

gcggcttggc cggctacgac tgcagctcag ctctcgtctc gtctcgtctc catcgaccgt 1440

cgcgctgcat gcatgcggcg cggtattcat tcccacccat gcataaatta cactccatag 1500

tagacgtacc gcgcgcgagc gtgtaattac agtcacagaa gacgcttcct tccactaata 1560

actacccgcg cttgtattgt ggtgtggggt tcaggccgga tcgtccggat ggcagggggt 1620

ctctgtatgc cttgtttctg gaaaggagca tgtatgcatg catcaaccat gcaggtttgc 1680

atgatcgtac aatgtcccat tgctcttcaa taattcccct gtgtgctagc ttagagttgt 1740

gtcactactg tattgctccg tccgtaccgt cgagggaagg agagtgcata tggttgccgg 1800

ccggggaaga ggcacgtcgt cggcctccga aggagaaggc caggagcgca gccgtctagc 1860

tagcatgcag agctataggc atgccggccg cgtggcgcgt gcaacacttg agaagaggaa 1920

agcggaaact ggaaacagtg gtcgtggcaa atgaaagggg gcgcgtagtg agtgcaatcg 1980

gcagcgacat tagcggtagg gttttggttt agattcatag agttgtttcc agttttttt 2040

cttatcaaag ggatccaaat taaataaaga gttgctaaat tatagacgtc tggttttttt 2100

tttctcttta cttttaggcg ataaataaca gccatctaat ctaaatccaa cgattacaac 2160

ttattctcaa acttaggacg gaatcacgga acacctttac ttccaggcac ctgctgtagg 2220

gtagaaaata tgaaatttgt tttttttca gcctctctca cagccacagt tttcaggcaa 2280

aactggaaat atagtttctc tcaattctct cttatcttgt ctctacaaag ttattttaca 2340

aattgtttta taaaacaact ttatcttatt ggtgtgtata tatatatata 2390

<210> 2004
<211> 1594
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158063_G1, chr4:163399238..163400831, Cluster 12

<400> 2004
cccgccttga ctaatcatgc ctgtccatcg aaccatgcga cagttgcacc ggccacgttg 60

agcaggtaca acgtcctccc caaggggggc ggcgtgtcat tccgatcgcc gtcgtggcat 120

ttgcgatcga ggaggccgac ggccggagct agcagggagg cagcagccac acacggtgag 180

ggcgtgggac cgcccggtgt agctagcaac cagctgtcca actcccagag ctcccctcca 240

catgctcgct cggcgtcggc agcatctcgc cgcgtccgct cgctcgctcg cggtcgcggt 300

cgcggctgcc cgtgtcgacc tgccgaggca tgcaggagca gaacgcacgg tgttggccgg 360

ccttgggggg tctcgtagtc gtcttcgtct acctcggtga gcgtttagtt tcgcgcgcgg 420

ctagctacac tacactgcag caggttcacg tgtctcgtcg accgtctttt ttacaattta 480

gtccttttct acactacacg cgcgaaatca ttccttagaa ttctctgtta ttgcgttggg 540

aacgcgtctc gtgcggtctg ctgttctgaa aaacgtacac gtacgtacta gaccgagtgc 600

ttaattatta ccagctacta tcaggccgca gcagctagcg gccggcaagg cacgactgtg 660

aaccaacagc tggtctgagc tcgccgcagg tatcgtcgtc gtcgtcgtcc caggaacgtg 720

aagagcatgg caaccgttgt tttcgcgttc ataattaacc aaaaaagata tttgcgcaca 780

aggagtcaag gagatgacct ccaactgcgc tcagaaatca cggtcaagca ctcaagctac 840

caggctaagt tacattacat ggcagtggca ggacagctgg atagtttcaa acaaacagac 900

ctttatatta gttacttaca cgacacgacc gttctttttg tgttcttatg tagtacgtat 960

aaaacccctgc taatatatat atgtcaagct ttcgtacaga ctagagaaca cacacttgtg 1020

ccccgtgatt tcgttcgtct cacgatcgag ccacgaactc gaggatccgg acacattccg 1080

ggcccgtttc gtgtggctga taacaggggc tagctgactg atgaacacgt acgacgacga 1140

ttctgcgtgc tcattgattt tttttatttt attttcgggt gaaaacggtt cgctctactt 1200

ccttttcagc aatgatacag ttgttacccg tttcatcttc tcttgtgtgg agaacggtag 1260

ctagctggga gagggagccc acacgatgtg acacgtcatt actcaccttg aatgcgcgag 1320

agatgattaa acgaggagaa atcatttggt ggggcctctc gtgtgcgtga tagatggatg 1380

actctggcca tgttgatatc atcagtagaa gacattattg ggtaaaccat ctggattgtt 1440

cggacatacg ccctcgggcc tcgggtttga attacatgtt gttgttttta tttgtcctaa 1500

atcaaatttc tctagttttt gctaattttt ttaagtgaag gtactgtaga gagaacctac 1560

ggtaatttta ttgactcaaa aaagaaatag tgca 1594

<210> 2005
<211> 1945
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158723_G1, chr4:166905856..166907800, Cluster 12

<400> 2005
tgaggtactt aataatcagg agaaagctac ggagacgatg gattggccgc cgagcataaa 60

aatggagtgc tgggaattgg gatgggcagg gaggatgagg tacttaataa tcaggagaaa 120

tggagcacgg ggccgacccc cccggcagat ggatctcatc gcacctaaac ccactaccgc 180

tatgtgtacg aatggcgccg tgacccatga catgatgatg ctgcctgccg cttggctgca 240

catgataggg cgcgcacgct ttggggtctc agtctcagct gatcggctca gccacatcgt 300

cgcgcgagcg cgggcggggc cagtgccgat ggcacggtct cgcgttgcgt acgatggcgt 360

ttgcatatcg gctggggcca ttgcgtggtg cggatcgatc ggcagggttc tgctgtcaca 420

tctcgcgggc cggggcggcg ggcgcgcgct ccgctccgag actccacgcg tcggctccgg 480

tcttttttt tacgtacttt ccgcctgcgg ccaaaaaaac tccttgccga ccgtcacatc 540

cgtcgaccac agtgccggtg gttcgctcgg aaatgctgcg cgaaaaaacc gcacctgcgg 600

ctgcggtcga cccagcaccc gcgctgccgt ggacagctcg ggttgaaagc agattccatc 660

cccgggcccg cgctggcctt ggctacgccc cgcctacgcg ttcttcatcc cggtctgtgg 720

gggcaaaaat gcatatatct acctcaaaaa ggtcgaatgc acgctcgcgc tagggtcttt 780

gtcctctttt cgtagtagta gtagtgatct tcgcttggtt tcatttagct ggcactacgg 840

ccacgcgcca ggagtagaat gatagtagta cttagtgcat tggatcgtat aaaataggaa 900

tacgatactg tagacaacaa tatttaacat tatttatatc tggagattat cttttatatt 960

tagcgatgga tgatgagcgt gggggcgcgc cgcggggccg ggccaccact gcgtaacaaa 1020

gaataataag atggcggtgg cggcgccggc acctttctct gtgggcgtcg ggatggccgc 1080

ggtgcatgca acagcgcacg cttccactca atgcaaggca actaaaaccc tgtggcagca 1140

gagcaccagg cgcgagaccg agagcgcgcg cgaggccgcc tcctcgtcgc cgtcgtgtgc 1200

gtggaccgtg ggtccatgcg tccgggcacg gcgagatccg agttcgttgt cccatcattg 1260

caatccgcag cgcctgactg acacatgccc cccgcctcgc tttggcttgc gcttgccccc 1320

ggaaaaacaa aaacaaaagg caccgtcatt tcgggccatc gcggcacgat cggcccgaaa 1380

gccttttcg tcgtcccgtc gacccccgc gcgcgcgcgt ccccgtcccc gtcccagggc 1440

gggaaaaaaa aggggagaaa gcgcgacgag gtccacgcgt gcgtacgtac gtacgttcgc 1500

tcgcggccag acacttgggg ctccgccggc ctcgccacgt ctcgccagcg ccagcgccac 1560

cgccaccacc accaccggct ccgaccgatc cgtcgctagc tgcatgctgc gctgcacaac 1620

ctgcaccgca catcatgtgt cgtggccgtg gttgatgagc gacattcgta gctagctttt 1680

ccctttggccg ccatcatggg taggggtgtg gccgccctgc actttacagg tagtacgaga 1740

tttgcatgca cgctattact cgctaggcgt gtcactataa tgcaccgtat ttatacatat 1800

atacgtacgt acctacgtac gtgtcatcgg agccagttcg caaaacaagt agtagtgacg 1860

tgtcgagctc tggtacgtgc acctgcaccc caggtatttg ttggcggccg gtgaatgttc 1920

tgttgaacag agaaggggat aatcg 1945

<210> 2006
<211> 1900
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159965_G1, chr4:174958065..174959964, Cluster 12

<400> 2006
gaaaggagcc gctgctctgc acctgcacgc atggagaaaa ggaggtttgg ttgcatccgc 60

gcatcggatc gtcggttggc tggttggttc gctggctcgc ggtgacggcg acgggcatgt 120

gatgtgagcg ttgcatgccg cgcgcaccag catcagtgca ccatgggcgt gctccctcct 180

gcttgtgtgt ggaattctgg caggatggct ttctcctctt cagaagcggc aacgcaagcg 240

taggaagctt cgcttataat ttattgctga ttgaattggt aagatagagt gacaataaaa 300

agtaaaatta tgcttaaata acgaaccatc tggctctcca aaatcttcca aactgagctg 360

cttttagttg ctccatctca actcgctccg ggaccaaaca aatacactcg ctcagctctc 420

aacagagatt ctctcctctg ctattctgag tgccagtata tacattttaa caggcaaaat 480

cctgatttcc ttttcctgga tcaaatgatt caaaggtact cctagtgcaa gtagaacaca 540

cttgtgattg taagctgggc ttcatttcag gatttcaggt agtaattaat tgccttttat 600

gcgtgcgatt gaaacggggt cagtcagtca gcaggagaac tggtccagtg gctcaaccaa 660

tgacaaggtg ttctgtccct gtcatcatcc gaaccaaagt tcatggacgc tggtgagctg 720

ttttttccca tcaccaccac tagtggcaat cagaaacggt ggagtccttc aggtgatcag 780

gtcacaccgt cacagactgt tccaacggac agttaatgca cttcctactg ctgggtgaag 840

aatagataga tctcggcgtc tcgctttgtt aactattcca cttttgagca aaagcggtgg 900

ttgatgcaag cacgccaggc gcagcgaatc aagtcaaacg catctaaccc acgttttacc 960

catgattaac cccccatgct ttttgcagag cttgggcaaa aaaaaaaaaa tccttagaac 1020

tagggccagg tatttatttg ggccgggccg tgggacggga tcgcgagatg gtatttattg 1080

gtttggactg catggcaatg gaggacctca tagactgggc ctcgacatgc ctatgtgggc 1140

cctcctcaat ctaagggcct atattcattg attaggtctg tacgctgcaa atgggcctga 1200

gccccccgcc tattgctcag ctctccgttt atcgttggta ggttaatcct gagagcccat 1260

taggcagctc tgtagtagtt gccaagctgg agtgccctgg catggcacca tacccccact 1320

tgttccaact ctcaagatta taaatggtca cataccacat actaataaaa ttaaaagcat 1380

gtagtttttt tttcatgtag aaggattctt acagcacatt tacgtccatt ctaaatcata 1440

aaccgttttc tgttttttc taattaaata gttgtatgca ggaaactgca aaaggctaga 1500

acatttttt gcttccataa taataataaa acgtacaagg aacaaaaggt gtgttatagc 1560

tgttgttttt ttttatggcg aagggagaac cgcatttacg atttgcttat tagtttattt 1620

aaacctgtct ctagtccaaa taaaatgata gacgatggac tgtttacgtc cagctgcacg 1680

cttacgggtc gacgattatt agccttttg tcgcttgcca ataagcgaga aggcatcatc 1740

ttcctctcgg ggggaaaaaa aaaatagtac gcaacgcaca ccatgcaagg gtatggatat 1800

ggaagcaata agccacgcac acctttttt ttcctttctt ttggcaacga atatgctctt 1860

ccgatcgtcc actagaagag acagtacgag aggaatcaac 1900

<210> 2007
<211> 2509
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160604_G1, chr4:178655568..178658076, Cluster 12

<400> 2007
ccagcggtac tgaaatttcg gaggaccctc gtcgcctgca ttgcgtattt gcgtacgacg 60

cccgcgtccg cgtgtctaca agcaatgcat ggcccagctc accgaatttc aggacagcac 120

gattattcag tagcagtacg gtttcataat gtttagggcc gatgtcgaaa tcgctatcat 180

ggtcgtgtcc agatttcgtt tgccactacc actagtacta tgcataagat tattaatcct 240

ttatagacca tgcaataatt gtggtccgga tcaatctgcc aataatctag cggccgggtc 300

tatatacacc aataatataa tgcaagaaca agaggctaag ctagcctttt cctgcattcc 360

cagaggtggt ggagtacaaa gcttccgatc catgggaggc ctgagactga agctagggag 420

agtgattggc aaggttccaa ttccaaggcg cacgcacggt ccctttcctc gctcgcgcat 480

ggtgatccac caccaccacc atgcggcaca gaaccatgca tgccgggtga ctgtgcgaga 540

ccgtgccgga catagcgggt ttgaagaagg ctcggttcat gaaccgaata ccagccaagg 600

aacaagaagg ccgtacacgc cgacggtgca gaggtgtagg ccggtggtag ctttctacta 660

gttcttggcg tggtcgtgga tcagggacca gctgctcctc tctcctactg gctgtggctg 720

gttctgatct gagaacccga gactgacgac gaagaccaca tcagatgaga tgggcccagc 780

agagaacgaa agcgaccgtc attagaagca aacagatatg ctgttcagcg agaaagcgac 840

ccaggggta accctgccat caaaacaagc agagtacaac aaggggccaa gcaacggatc 900

atatcgggaa agcttggcag tcagtcctag atgtcaaaaa ggggagtgtg tacactccta 960

tacatgattc agaaatctgc tgaagacatc cattaagatg gatggggttt taaacacggc 1020

agggtgtcag tggcagctaa tatcaaaacg aacacaagca aacataggga cggggatcgg 1080

aggaggtttt gtgactgaat catttgattg attggcacac cttgacgacc ggtcgatctg 1140

ttatacaagc ctcctgcgtg agctggcaac gtcgacctct ctcggaatag gaccatgcat 1200

gtgatgatcc ccaagaacca ccctctcccc gtttcggttc cacctctcca tgaccatgac 1260

catgaccagg caatgataga tagatagcac agaccaacct ggtctttgtg tgccacacaa 1320

gcgacaacgg accagtcaaa gggttcttgt ttgttccctt gtaggtgcgt gctggtacga 1380

tttgcaataa aatcacaaca gcggcccctg ttggaaatac gacccagttt aagcaccaca 1440

ccaatggcct ttcaggattc tataccatgc acctcgcgcc attggaacac gtggtggtaa 1500

cttgtggagt gatctttaat tggctgctcg atcatgaggg aatattcatt ctatcaaggg 1560

actctcacaa gttagcgtgc atggagaccc gggagtacgt acgtggtcaa gtcaaaccga 1620

cacagagttt aggcgagggc attgcgatca gcacccacca tgtgagcaca tgaacatcac 1680

aattcttttc ttcttctttt ctccacatgt gagggatggt gcctcatcgt gacccccccg 1740

actccctttg atcctctaca gatctcagga gaaaaaagaa acaaacacca acaatcaatc 1800

accccacccc caccgccctc acacagttca gatctcaatg gcatggcacc ctacacaggg 1860

aaaataaaag aagaagtgcg attgtagttt tgcttttcta attcaaccga tctgaaattt 1920

gacaaaattt tttttgctaa tatatggttg aactaaatac tgttagtaaa tataaatact 1980

gatactattt tctataaact tgaatcaacg atgaaaactg actgcacttt cttttgttgg 2040

gacagagaga tggggcatat gagatgccaa aagcactccc ttcctaccgt aaaagaatgg 2100

cttcttcacc ctgaattgct gaatcgcacg ctaagaatta acggattcgt aatcgccaag 2160

gctacttgac ctgaccacgc caacagggtg cgtagagcag tgctgatttc gagcttttag 2220

gctaattaac tgaaagtgtg tggctgtcac ccacatggac agaggcttca atgaaggaca 2280

gctggagatg aaagcggatc atccaagtgg ccggtttagt tgtttgtcgg aacggcatgc 2340

ttaaatccac cagttggtct cctctccata gtgcagatct cacttttct gaacctttt 2400

tttgcgcagc ccgctacacg ccgatcgccg actgaaactt ttggacggga gagcttaaga 2460

gggtacagct acaaccccca agaccatgtg cagatgtatg cagtactac 2509

<210> 2008
<211> 1944
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160614_G1, chr4:178738236..178740179, Cluster 12

<400> 2008
ttagaggcaa actggactgc aaacaaatgc tggtgtttcg atctttagcg gacttcatgg 60

acgtctgtct ccattaagcc agactcatca ccgcatcata taaataaaat aaaataaaaa 120

taaaatacgg agcaaccaca tattttaatt aatagatata ttatataact ttacgggaaa 180

aaaagaactg gcaaatggca tgtttttttct gctacccggc cgctaaggct aattaactcc 240

aacaacgggc agctatattg cgcagccatt tcacagttta ctctatattg ctaagccatt 300

tcacagttta catgccctca ctgttatacc tggccagcga taaccttctg ttttgaacga 360

agcaggcaaa ctggttgtgg ccttggttca attcgttttg gcgtgcggag accagctact 420

ttgccggttt tatttccttg catctaattt gcctgggctc tatagctggc tctttggagc 480

cgctataaat aaattggctt tacatggcca aatacctgcc ccagcctgcg accccgactt 540

atacagtgaa ataaaaagcc tcccatggca ttgtaatgga acccataacg agtcacggag 600

gatatgtctc atcaacaaca gcgcaccgca aggcgtgcta caataatgta atgtcgtcat 660

atatgaagaa acagcaacga tccatgacaa aaaaaaaaac aataataaca agaaccgatg 720

attggttgag gactgaagac tgatgaatag cttagctcga gacaaacaca catcgcaggt 780

cctgagacga ctgtagaaga acctggagcg ttattacctc tgaatgcatt ctctttaccc 840

atgtctatct gaaacgctgg gctagggcac actgttgcca cggcggaacc acgtggaacc 900

tacgccggct atctcttggt ggaatttgca ccggagagat cttggcatgc gccccctgt 960

ctcaagcatg caatgcaaga ccaccagatc atgcaggtat gtaacaacta acaataacat 1020

atataatagc agtagtatta attactgtta accgatggtt gatagggctg taattagaag 1080

attcgaaaca tgcgatcaat ccagcgactg cacagatcgt caacgaacgc ggaacttgac 1140

caaatgagca agacgattat attttgcgta aggagtttca ctgtgtgcta ctttgcatgc 1200

gacgttcaca tcacacaatt aacttttgt tcgcttcgag agcagctctt ggctgggttc 1260

gcagctagct acctttgttt gcgatgtcag tcaacaaaat tatggagcag gccatgcgtc 1320

tcgatccaga gagagagaga gagagaccat cgtccaacat tgcgttgcgc gtagctagca 1380

ggcctgtgga catcgaccgg tggcggggca cccgcacacc ggttggtctt atcggcgacg 1440

caatgcaagg ccaacgcgac agtattacca cgtacacatg catggccgcc cggtcgcaat 1500

gatcgatgct ggccggcccc gatccatgtc ccggtgagag gccgtccgtc cgtccacggt 1560

ccgcccgacc taacgcgcca attcggtcgc gagcaatcaa cagtcccgac ccgtgccctg 1620

tgcgcgttat gttacacagc tgggactggg agccagtaaa gcgacggcgc gcgcggcggg 1680

cgggaccgta cgcgtcagcg tcagcgtcac cgccgagagg gcgcggctcg gatgagcatg 1740

agctcgggcg accgttccag tgcagccaga cgcggtgggc acgccgcaca cgaggtgacc 1800

gtgtgatcgg catcggcacc ggcagaccgc gaccccgcac gccccgtccg ctcgcctggg 1860

atctgcaaac gcaccacgca ccggccccgc gagcgccaaa cgtaaaggag ccaatttttc 1920

tttggcaggg ctgtcttctt atat 1944

<210> 2009
<211> 1692
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160710_G1, chr4:179613487..179615178, Cluster 12

<400> 2009
caggagtacg tctgcccctg tccgatcaat gcgcgtgcat acgcgtcgcc gcagaccgca 60

gtgcgcggac ggcgccgccg agcaggctag gagacggtgg cgcgaggagt tgaatgagaa 120

agatacgcta gtagcctagg atggtccggc cggacccggg gcgtggcacc gtgtgccggc 180

gccactgcgc tgcgcgcttg tatggccgga tcggaggtgg gcgtagcgta gcgtacgtgc 240

tgggtgctgg ccccatccct cccagtccca gggcggctcg gcggtgggca atgaagacag 300

acagacggcc gcggtcggcg cattgaaacc cggcttcctg atcgcctcgc cggttcgttc 360

gctgccgttg acaagggttc tcggcttgct gctcggtcaa atgaaaaaaa ggttacattt 420

actacatcgc gcggtcgtag tctattctac tttaccctgg tcagtttccc ctaacgatgc 480

atgggactcg ggagctacgg ataatctaat gtatccgcgt cgggattagc gacggagcag 540

ctagctagta gcagcctagc acacgtacgt acgaacgaca cgacgcccgc caccgctcac 600

cgcccatgga caaggacggc ggcgaagggg tcgagccgaa ccggcccagg cgagccgtgt 660

ggcggtcatc gctcgtctgc aatccaaccg tgcaggacag acaggggcg gccggagacg 720

ttagaatctg actcggccac tcgggacacc tgccgatccc tttgcgtctt ttgctttggc 780

cggccggggc accagcgaca acgcacgcac cgagaggagc cgaggccaat tttcctgcat 840

gctggccacc attcgccgtc ggtgcgatac gcatctttca cataccaata ccaccgccac 900

caccaccgag acgcgtacgc gatcgcccgg cgagctagtt ggtggagatc tgagtctgca 960

gatctttggg ggtggggtgg gggggacacc gcgcatgtgt gccgcccctg tcctcctcgc 1020

cctggcggcc ttagtttact cgagagcctt ttttgaggcc aggccatggc catggccacc 1080

acagccgcag cgtgcggtgc cggtgccgcc cgcccgcttg gatttcctcc cggtcccttt 1140

ttaatactgt gtgctgtttt cccctctcga cgcgatgtcg gttcttactt agcctagccc 1200

tatagtacga gtgagtaata cagtaggtaa acctgtgtgt ggccgatcgc agcagccact 1260

gtgcgcggca cgttcgggcg gcgacgcgac ggggagggga tcagattcga agcatccgcc 1320

gctgccatct gcctctcgcg gatgctggcg aaacgagaac aaaaacaaaa gcacgcacag 1380

cagcagcagg cagatcggtg acggcagagc ctacgtaccc gcgcgcggca tgttctgctg 1440

ccgctttgga tctgccggat ttggactgtt ttccacccgt ttcttgcgtc taggcctagc 1500

gatccgtgcg ccacgtacgg ggaacaggta gccagacgtt ccgaagcgtc tgatcaacgt 1560

aacgctaaac ccgcgatgga tcgtccatcg gtgtgcggat ccatcactga tggcccggct 1620

tgccgttgag ccgatcggtc tgccgcgccg ccgtgcgccg tgcacgcacg cgggcgagtg 1680

gtacgttaga tg 1692

<210> 2010
<211> 1471
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161065_G1, chr4:181875974..181877444, Cluster 12

<400> 2010
tagtatttcc taatagtatt tcggcccatg aatcccaaga acgctgctac cacggccagg 60

gcgaaagaaa aatgaagcag gtccgaggtc cagggtggag gtgcagcagg cctaaatcgg 120

atggacacag gccggttcag aaaagagagg agtcctgttg ggacgctggg agtgggaggg 180

cctagctatt cgccggttgc cggtccccta cggaaaacag ccacgtctgg gcaggcgtag 240

cgtaggtgcc tgctgccatc aaccactacc gcgtccaggt ccattccaaa agacagcctg 300

tcgtcgagtt catcggagac aggcaggcct aaaaggctag taagggcctg ggactaacca 360

gaccaggtcg tccaacacgc taggcagccc atcaagttgg ttctcctcca cgccgacgcc 420

gctatgattt tttcccttgc aaaacccatg ctcgctaatg atggaaccga gaaaagaacc 480

acagcgttct gactgagaca cctgggcaat gagttgagat gatttttcc agacagaaac 540

ctgctgcgcc cacttgaact cgtaggatgg tggctacggt ctctacctgt agtagcctgt 600

caacctcgac ccaatcgggt tccttaacgt acaccatctt ctcccgggct gttgtaaact 660

gtactaacta ctaatatagg caggctgtag ccatgaatga gaaggatagc tgcctggagt 720

acgtcctcca ccagattaga gactactcct gcagtcctgc tataggtcag tgcagctagc 780

ggacaccgca attatttgcg acaacgagaa cgtaacacca accgataata ttgcatggcc 840

gcccccggac ccccttttcg tcgtatggga gcaacttttt tgttgttgtt gttgttgtcg 900

tcgtcgtgca acgcactgtg gctccggctg tacgtgacag ggatgttttt ttttggatgg 960

agggagcgtg gttgctgctg caatcacgcc atggtgtgtc cccatggcaa aaactaactt 1020

gtgcctctgt gatcatgtcc cctgtcccat gcatacacga ccgggacaga caaactttca 1080

ccagctacca agcgcgtttt cagatggcgg tctcaatttt caagcgggag cagcactgat 1140

caacacagcg gccgcacagg gcaggcgatc gcggcaaagc tgggagcagg aaacaccaag 1200

cagtagtagt agtagctcac gtgccgtaac ggaagcaatt ataaaagaca cggccgggtg 1260

agcgcgaggc cggttgcgcc atctagaggt gacggccaat ggttttggat cgtcagttgg 1320

tggtgatcag ctgttactaa acagccggga aacgaccccc gcgcggggtt ggctcataac 1380

gcgggaaggt acgcgtgtaa agcaagcagc cggtttgtct ggttctggct tattacttgt 1440

cacctcagtg gagtgctcgg ggtttgtaga a 1471

<210> 2011
<211> 3499
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_161067_G1, chr4:181878859..181882357, Cluster 12

<400> 2011
aataacaatc tgtaagttgc gacctctctt caaacgtaca aataagttgt actctcacta 60

cagacaccaa gatctgacta gagtgaatac aaggccactg tcgtactcta ccagagccgc 120

catcaacata gaaaacaaac ttcgaccttc acatgacgaa ccctcaaaat tataacccta 180

aaacgtctcc gttctacttt tccggttaag attacgtggt aagatcctgt tcgttttaga 240

ttaaagtcgg ctatttaaac tgttgtagct gtaattgaga aaaggcgagc caaatagtat 300

gtattaataa tataacgaca cgcggagata caccaggagg gcgtgactcc cgtgagcagc 360

aaattaacgt gcgcttttcg taaagcgacc gagtaaagga ttcagatggt ggcgcggtga 420

gaagagaatc ttaccgtcgt tgagttgagt tgggcctact catagataag tttgcttctt 480

tcaataccct cacgtgaaag gccactgtgt gattggccga atcggtgaac ggggagtgct 540

gccactctcc cggttcgctt gtccctatcc gccgagttgg gggaggttgg cgtggagcgc 600

gggcccgcca ctttgggtaa ccatcccctt ctagtagatc gggaaaagca cgacggcaaa 660

gcggagaaag gaaggggaaa aaaaatgcac ttgtccaaaa gccaactacc agatgcgtgg 720

ccgcattggc cagcaagtaa gcccgcccag ccgcgcgaag tggatcggag aaccgccgga 780

ctgacgcgct cggcctcggc ctcggcccgt gccgccgccc gctggctggt tgatcgctgc 840

cgctagtctg tggcggcaga gcgatcgcga ggaaaacgcg ccgccgctgc cgctgccgcc 900

gcccgtgtga tttcaattcc cacgacggcg ccagcccggg cgggcgagtc cggttggcca 960

gccaggcgcc caggcatgcc cgcgacgcgt ggtccaagtc caacgagcgt gtgcgtgcgt 1020

gcgtgtcccg ctccatgccg ttgaacgggc caccggttgc cgtatcggga aagaagtgct 1080

acagcctttt cccatttgcg ccggccgcca gcagcagccc ttctcccaat ctcccgtttc 1140

aacggcggtc gtggtgcgcg tgcatgggca gcggatcgcc gtgcgggagt tcttctcccc 1200

cggccccggg cgcggagtgc gttgcgtgtt cgctactcgg tcctggttgg gcgggtgggt 1260

ggaagactgg aaggacgtcc gcgaatgact gggccggctc ggggtggtag atactgacgc 1320

gtcggaggcg tttccgcgct tgacaaatgg accgcccgag tcccgaccga ctcggcgcgc 1380

ggtgacggtg gacgcgccgc gccggcgccg cgccgcctct gtgctctcga gtctcgtctc 1440

ggtcttgctg cccactcccg tcgcggcggt tgaaccggtc gtaccccaat cccaaccgtc 1500

gtgtacgcgt gcgctcaatt caaacttgga ataatcgatc ctgtccgtat gacacaagtg 1560

gtatggtgtg ttttcgatca gatacgacat cgcgagccgt gcggcgcgta gagggatgga 1620

taatacgttc ctggcgcgta cgaacgtgag gagccagtcc ggggcgtcaa agcagccacg 1680

tcgcggatca tcgcatggcc tacttgcgct caccagctga ttgtcctgct cgggactctc 1740

tcatcattca gcgagcgaag ttgtcgcatt gagacggcaa gaacacagga cgaaatatat 1800

aatcggaggc aggaggatgg aagaatccaa gctcttcttt gggttcgccc gcatgtcaca 1860

gctatcaatc tgactgacac gctgatggta gatgccttct gctgtttcaa ccccacgtgt 1920

ttactgaaac acagacggag acggtatggc gtatgtactt tgtggtttag ggtccagtag 1980

tgcatgcgtg ggtggtcatt gcgaaaagtg gaatttgcga accaatgttc cataactaac 2040

atcataagta gattattagg atacggagat gccattaccc gctctgacat tactctcttc 2100

tagttctaag aaggtgacgt ggtattgtgt atagggagct gatgatcagt tgagatgcac 2160

cgtcacagct tgccctttgt gcatttatct gaaagcatag tagatattaa aaaatcctca 2220

ttattcacta ttactttacg acacaatttt caactgccaa ctttaactac cagtttgtgg 2280

actatcaaca acgtgcgtgc gtgtgctccg aatgaaagcg ttattcttcc ctttgacgtt 2340

tgacccgagc tatttaattt ccagttggac caatctcttg aacagactgc cgtgctgcac 2400

acatctttac acggatgaaa ttattaatcc agaattgaca attagtggca aactcaactt 2460

aaaacaacta gtatagacct gtctttttgt cagctcaccc caataatgat ctgctggtca 2520

acgaaaaaac aaaggcgcat atatacaatc tcttccgctt gctcctaaca gcatacggcc 2580

ggccttttt cttcttcttc ttttctttgt gcccgtccat gtgattgtca ccttgttcca 2640

atcagaatga gcacagccaa gcagctgccc tgttgtcgat aaagaatgag cagagccttc 2700

gctattctta catgcagttc tttgtatgat atcggatcta aaattaaggg atccgtacaa 2760

aaccaatcgt ttatcatacg gtcgaacaag tctttgctga caaatgaccc aatcagacac 2820

atatttatca tgtacttttg acaccaacac aagcgacgat ggagagagac cacggctttt 2880

tcaaaatgaa attttggttt ttggcggttg gtaagccata atctatgtgt tctagtacaa 2940

atgtccacat cacaaactgg acgacgtttc ccttttaaa aaaatggacc tcgaattatt 3000

cgtttgcctt agcaaattta taatcgggtg tagcaaagat ggatcaagac tcgtctagaa 3060

caatttttg gtgcttcgtg atcaacgtag ttatttagat taacgttatt tgctaatgct 3120

tttagatata gtttgaagaa tatacacatg taaacttaga ctaagacaga agagtgacca 3180

acgcctcaaa caagacatta gaatatatgt acgttaaaga tatataccag gttatccaag 3240

accaattcaa gaagaaggct atgagcctat gacattggca tgtggatcca tagactcaac 3300

caagatgtct aggaatccta cccgcaagga agtttcagaa agaatgaaat ataaaagatg 3360

acaatattgt ccaccttgtg ggtagagaca acttatatat agtcaacatt gttctccttt 3420

catctaattt tttaactcta ttctccatta agttcttgct ctgctgctct tggtctacag 3480

ttcgagctcc ttgcgacct 3499

<210> 2012
<211> 1426
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_163992_G1, chr4:197043013..197044438, Cluster 12

<400> 2012
ctggaaccac atccccgtg aaggcgagga ggggccagca gcagtagggt agggtggaac 60

tggaactcaa agctgatact tcttccctag tctcctcggc gggcgacacg ctcggatcga 120

tccccgccgc cgcagcctcc ctcaccctct ccaatccaat ccgcagctac ccaatggcga 180

cggagctgct ccccgtggtg gacctgcgcg tgctctcaca gcccgacctg gacgcgctcg 240

ccgccgcctc cgcgcacgcc ctggcgccgc ggacctgccc cgacgccgac ccgctcccgc 300

ctctcaagat cgaccgcgcc gtcttcaacg agagcgccgg ttcccggaag cagaccttct 360

cccgccgccg cctcgccgcc tcgccctcgt ccgcccgtca ctcctcctcc gcgcagacgt 420

ccaccgggcg gaagaacgac cccgagggcg acctcgtcgc gtaccacctc cgccgtctct 480

tcgtccccga tgacccctcg ctcccgcccc ctccagaacc gcaaacccta gccctactac 540

aagagccctc ccccctccg ccgccggccc ccgaccccga ccgggagacc accaacgcca 600

aggggtctc cgttgacctt ctcgggcttg cggcgatgcc ggagccctac gatgccgagc 660

tgcacaggcg gacggccggt atggcctccg gtaccgacct gcagggtttc atcgacagcc 720

tcgcagggga gtgggtaagc cagaagaagc ggaggaagaa tgtggacgcg tccttcttcg 780

gggatcacct ccctcgcggg tggaagctgc agctcgggct caagcgaaac agtggatcca 840

tctgggtgcg ctgcttcagc tacgtgaggt ttgcctcttt tgccctgccc tgccattctt 900

tcttcataaa cgattatatg ctagtggtag tatctggaat ggaactatgc tgtgatacct 960

tacctgatgc gatgtatact tgttcagaga tgctctggta gtgtgcctgg tagggtatat 1020

ccacactata agtggtggat tgggtttaag gatacatgtt gatagtgata cctctggcag 1080

tatatctgct ttggaaatca tctggtgtgg atgtttttgt ttgagcgaat ggatgcattt 1140

tttagatgtt aattaataat gtcattacat cactagggtg agatgtttgc taagtataac 1200

attgggtttt ctgggtttgc aaatacagtc ttggtgttcg ccatggtgta gctgcatttg 1260

atgctgttat ttaagtatct atcaacagtg tttatgcctt ttagatagtt tgtttccatg 1320

taccttcaa tgcatgcata gtatagccag cactacctgg ccatgtgtcc atggctgtat 1380

gattcttatt agaaatttat tttattttcc ttattattgt tggtgg 1426

<210> 2013
<211> 1486
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16549_G1, chr1:91872470..91873955, Cluster 12

<400> 2013
cgctggccct cctcatcagt gcaggtagca tgcgcacgtg gtttgcaact ggaccgtcct 60

caccccgtga ggccgtgacg acgtggcgca taccatcccc gcccatgccc atcccttgtt 120

ttcttcagtt ctattctagt gatgccgacc aacctccatt atatatatct ttttatcttc 180

attcagttgt tcaaacattc cgtccgtctg ccatgtcaag tactacaagg aacgaagcta 240

gcttgcttgc tgctagcacg aataaccaac gaacacctga aatccggccc cgattctctg 300

gctactaccg atccgaacgt acgctatcat attgagcgca tacgtgcggc ggcaacttgt 360

cccttatcat tatcatcgac cgtaatccgg gcacgatatc gtggcgtgcc ataaaagttt 420

ccttactgct tatagtcaat taatcacgcg atcgcggcaa aatcacacac acccatgacc 480

catgcctcaa tcatccgtcg tacgcagcaa ctagccgtgt agagctcaga acagaagccc 540

gtgcgtgcgt gcgcgcgcgc gcggccgcaa cagcttgctc gatcggtcgg gccccaaaac 600

cccaagacgt ggcaccccac gccacgagac aaacgggggа gaagagggcc gagagaggtg 660

atagctcagt tcgggagacg gcgccggcac acgggcgggt ccccccccgga gatctcctgc 720

gcgcgcggcg tctttgcgtg ccgggacagc ggccctccgg ccgccggcgc caccagagcg 780

gttgctctcg cggtgggcgc ccgcacctca catgcgcgcg acgcgagagc gagaccgcgc 840

cgtcggcgtc cggcatttcg cgctccccgc acatgcagct caaaccaagc ccaattaact 900

tgccccgtcc cgtcgcggtc cttggctcca tcacctatcg tcgcgtcgcc gctccgacaa 960

gaagagataa aaaatggtgg gggctcaaag gccgaataat gcctggtagg caagatttgc 1020

gtatctccag tttatccgtg caagcaaaag tgtgcgtgca aatactacag ctagcggata 1080

cagtttgatt ggtggatttg caaaaagcgt tatttgccta cagctacagc cagccgatgg 1140

gattttattt tccgcgacct gagcatgttt tcatggaaga attttagaaa cgtcgtttca 1200

tgctacgtga tccgttcgtt ttaatctcaa tccatgtgaa tgagatagga ttgattgcga 1260

gtttaaatct ctccctacta atcccttacc gtcctctcca accccaaatg gaacggaaat 1320

aaccccatca aattttgtct ttatggcatt gaaatagagc ctgatgtcaa gattattttg 1380

tagagataaa agttgatatg caaaatggcg actattccct ccaaacggtt ttaagtccat 1440

ccatgtcacc atgttcatgt gtattccgag aatcatggct cattaa 1486

<210> 2014
<211> 1596
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171615_G1, chr4:236402015..236403610, Cluster 12

<400> 2014
aatcgccatg cgcctgcgct ctggcactgg atcgccgcag gcgccaggcg gggcggacgt 60

cgtcggcgcc tgcgcgctga cgcgacacgc gccatgccta tgcctcgggc aggcagctga 120

tgcgcccctg cagtctgcac tgcttgcatg cgcacccccc cccccaatcc catgcccatc 180

atccaccctg tcctggtgcc ctgccatcca tccggatacg atacgacgac tgatgaaggc 240

cagaccgtcc gcacctgatc tgaaacaaac aggcctgcgc gcccatgggt tcagctgcca 300

cgttggtgct cgtccgtgtt caattctcgg ttcatcggat gtggacggcc cacagcccac 360

tggaaagtaa acataagccg ttgatacgca aagttacata atggtctcag tcaaggattc 420

actgagattc taaccatcat tttcgtacgt aaaaaaatac aagacaagca acagagtggt 480

acaactatgc tctctccccg ctgccaacgc aaagatcctg cacgcgaacg gagctagaga 540

tcgccatggc tccgcgcgct tgcatttatt actcggcagg agtggtaggc cgccaggcgg 600

ggcggcgcag gaggggcagc aaagcgtggc gacgtgacgc gtccacgcac gcacctgtcg 660

cggggtcggg cccggtctcg ccgcgccatt cagaatccag ctgcttggtc cgccatggat 720

acctacgcaa gaagcttggg ccgtgggcct cgaaccgccg cggcgacagc gtcttgggcc 780

tgatcctagt cctgggtact gaccggtgac cgcaacgtaa agcacgagcc tttttgttca 840

aggaagccaa cgcactcccg tgcacgtcgt cgtacgtcca agtaaatccc acctttgtgg 900

atcttgttgt tgatccgggc cggccggcct cctcatcgat ctgctttgct ttcaccaacc 960

acatgtctac gtacgtttgc ttgctgccgt tagtagagag atcgtttcct tcgattaacc 1020

gccgcctgtg aaaattaaac gtttctacca gttgatctgg aaaaaaaaaa aacattagta 1080

caaatagata aaaaaacact tctatattgc ttatttgcag gacttctata ttgtttcttt 1140

gcaggagagc cacaggccac gtgataccgt ttccgtgtag tctcgaccgg tgtacctgca 1200

gaaaaaacaa aactggagaa cattcccttg ttctccccac gggagaaagg ccccaagcac 1260

tacaagccat gatatgatag ccatgcacgc gttgcgccag caaggcagca accatccatc 1320

catcgccagc tacagctaca gcggcggcgg atgtgcgtat ggatcaaaac acaacagcgc 1380

aacgcaagca gggtctctaa gctaactaga tgcactcatg caccatgcac gcatgcatgc 1440

agctttaccc tgtcgcgtgc atgtaggcca gcatggccgt ttttttataa taataattca 1500

gagggtggtc ggttatcctg gccaaagctt ggttcgtgac aaaccggaat taacaattac 1560

aaacattaaa tgtagttaaa ttacaaaaga attaac 1596

<210> 2015
<211> 1631
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173389_G1, chr5:5897432..5899062, Cluster 12

<400> 2015
taagcgatcg tcgattgggg tctcgggtga atcgtgactc atactttcgt gagctcgagg 60

aatgtgtttt gcggtagttt aggggttaag tgtaattagg agtgtgacct accctagtta 120

cgataccgga caaaatctaa cgtgtagtag ctccttacta gagagaggat agtacgacgc 180

acaaaaggcg catgcagaga ggcttcaaag gctatggtta cacctcggca ctacgacaac 240

cttggctttg gcttgtactg gcagctggtg ccaagtgcca acagctcttc aggggtggaa 300

actggaaagt atctatacgt cgttctgggt ggaccttggc ctgctttcat tcgtctgctg 360

tttcgaactt gtacaggcat tggtcgtagc cgtagaactt gtggttcatc tcatcaggtt 420

gcagaaatca aaggggaat ctatgcctcg ttttaattta gcccggacgc aaaaagcaca 480

cgacaggcct tcagcttgag aaaaccctac gggcatggct tgcttcagct ttctcaaaag 540

tcgatctcaa agcattggag ctcgcgcgag aaaggttaag gtcaaggctc actcaacaag 600

aacaaaatct cgtcagaatt gttttttctc tatcatccaa atgcctgtag ctctgcacta 660

ccttcctccg ggcattatat tgatggctca gagtttgtcc tgtccgcgtg acggtgattc 720

gtgtcatctt cagaccagaa tagtccgtgc ccatcatcag cttgcaagcc acaacaagcc 780

gctatagatc tattcctttc gttcgtgtgt ttccatcgca cacgtacgca caacaaagag 840

aacgtcggaa tagatccgat gttccttgaa aaacggggaa aacaaggagg catttatgag 900

tgaaatacag tttcgacgga catcgatgag gatgctggaa atcttggcga gaggcaggac 960

atgggggcg ccaccagcaa gcagtaccta gtggcgcacc agctttgcca aacgtttgcg 1020

ggtcatttca tgcgttcctg gtccaatcct gcgctttccc ccgatcttta tgcaatgagt 1080

gtgcatgccc agctggtaca atacaactcg agtaatataa tctttgcatt gacgagatgg 1140

agttctttag atttcgcctt tatatatatg cagtttttt ttccctgtct ttgtttgcca 1200

agagttcagc tcttctcggt cctagtctga ggctctgagg cctgagctgg agcctgttca 1260

gaaatgggat tgcctccaat gaatttgaag aagtggcctg gatcgaagta ccagctaacg 1320

tactacggga gagcaaagtc ctgcaattgc agtgccgatt tgctgctcat ctgaaacatt 1380

gtactacggg agcccatcag taccggcggc ggaagaacga acacaacgac aagcatgcaa 1440

gctaggaacg aactagtctt atgccgtggg cggggcccgc cggcagagaa aaattaaggc 1500

taaacattcc gctacagaat gttacagcag taagtgtaca tcgcaaggga caaaggtggc 1560

gcgagactaa acaaattaag gcaaccacca gcaattccat caattaacaa ctctatagca 1620

tgctttcgta c 1631

<210> 2016
<211> 1500
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173455_G1, chr5:6304632..6306131, Cluster 12

<400> 2016
ccaaaatgaa atggctgcct tgcaagttgc tagtctggtc caggcttgtt gggccgaagc 60

ggaatgaaag aacatactta cttgggccaa gtttgcggtt atgacggtta tcagttagtt 120

gctttccaga gtttttccc cgtgcgagag attcgagaga aagagagcgc gttctcgtct 180

gtcttgaaaa agaagcaaaa ctttagctgc caagaacgga gaaaaagagc aaggacggac 240

tgtgctttac gatcagcggt agctggtacg gtggtactac ccttgaacta acccaaacca 300

tttcctgcca ccggtcgcgc ttatagctag ctagactaga caagcgaagc caagccgggt 360

aggcaggcgc tttctccatt aaaaactgga tcaagccaac cgcgccaacc accacgagat 420

tcccgttgag atttgccacc ggggcctcgt gggggcaccg agcgccaggc cacccggtgc 480

cgcgaccacc acctgtgatg agaaccagcg tgacgccatg tcatttctct ccgcgcgcaa 540

ccagccggcg gaaacgcacg gctgttgctg ttgcggccgc cacgccacta acgagcatag 600

tgccatagtg ggtactgtcg tactgagaag tgaccaccag ccagagctag ctcccaacga 660

ccaaacacgg ctgcaggcag gcaggcgatt aggccgccgg ccgccctctc gcaccgctgt 720

actaataact cgattaggtc cgtgtacttg cgtgcgtacg tcctcgtcga gacggcgaga 780

ggcgcaagga acacgtgggg ggcgacggag tggaacggcc ggccgggcac gcagacgcac 840

acgcaccccc ggccactggg gcagggagac ggggccggcc gacgccggga cgtgtcactt 900

gccgagttgc cccgctcagc cgcgaattgc gcggacgctg agtgacgccg gcgccggcga 960

gccgtgcacc gaagaccgaa ccgaggaccc ggccggggtg aaaccggact ggccgccaaa 1020

atagaagatt tgcaggggggc ggacggacca agggcggact ctgctcttcg cagccaatca 1080

aaccagggtg gagcggcgac gcagctcggc cgccggccga acagataaac cgtcactttg 1140

ctttgtccaa cgcatgtggc gacctgctaa tccaaatccg actttttat gcgagcagac 1200

aagcaacgtg ttaggcgtgg tatacgacgt gactgacagc agagggaacg acgcgcatgt 1260

gccatgtgtg ttagtagtat tatttaccga cggcatagag ggctgttatt cttatctatt 1320

agtgctgtgg tggtgctggt ggtagtcttt taattgacca cgtgaggttt cgcaaggatt 1380

acagtcacgt tgccatcatg cattagcacg tcttataagt tttatatata tgctcatcga 1440

aaaaggcatc gctcggagat ctttttttaaa gaaaagaaaa aaacagtata ttgttgggag 1500

<210> 2017
<211> 2227
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173533_G1, chr5:6607051..6609277, Cluster 12

<400> 2017
taatatatgg taaattatct agactattga ggaggaaaaa aatcttatgt gcttttcacc 60

atttatttat taaatgatat atcatattta taccggtata tatactcaag catacagagt 120

acctattttt ttgggccgga tctgccgctg atgggctccg atgaccatga ggcttgtgtt 180

cccaatccca acgatgatac ttctcctcat aggaaaacaa tgggctccgg tgagagtacc 240

aggcaatcgt agtagtagta gtactcctag taatgaagtg gagacgaatg atcaacgtgc 300

cgtgacatcg gatgtcatat aggccaactt tttctaatcc cggaccggac cgaaccgaac 360

gagtgcattg aactggttgg tactcaacaa tcatcggcgt taccccagtc aaaaggacga 420

gccagcgcat cggattccac atcccttcca gagggtggaa ctcgaaggtg gatatgcgtc 480

gcgtcgcgtc gcgtcgtcgc gtgccgctgg acaacgaacg ggtcaaaaaa acagcaagca 540

acaacgtcgg cgcgagatct ggacgtcccc tgggcgggcc cggggcgcac cagacgctcc 600

gcagaagatc cgcaggaccg tatcgccgtc tgcatccagc ttgctgctga gcccgcgctg 660

attttcttaa aatatctgtg agattctacg tccactcgat tcgcagacgc cgctgcggac 720

gtgaaacgga aggaaacacg ggacgggacg ggacgcgctc tcccctcgcg cctcacgtgg 780

gccgcgtcga tacggcgatc catccagccg tccggtcggc ggccacacgg ccggcgccgg 840

cgggcacccg attcgattcg aaccaaccaa ggacatgcgg agaagcgggg ccagacctca 900

cgaacgccca gaagggagaa agcaggatcg gggatctcgt gcgggaaacg acggcgtggg 960

acgtcgggga ggtgaaagtg aaacacacac agagacccag ctggttgctt tcacgtagaa 1020

aaaaaaagaa acgtcatttt ttcgtatcac cgagaaatcg caacgctcgc ttttaaagct 1080

tcttcttttt tttacgttta taagtagtag tagtcgtcgc cattaaagct cacccggcac 1140

cggcagcgag atggaatgga agcggacaag aagcgcgatc taagcaaagc agctggagct 1200

gggcctgggc cctggcccct gggcggttcg gccggcgccc ccatgctacg actacgagcc 1260

acgacacgcg tacaccggaa caagtgggca gcatctgggc gggcggggcc agcgcccagc 1320

gccaagccag gctccagacc agtccagacg agttggttgc tttcgctgag gcatctgtgc 1380

gacacgagct gacgagcgca catatacata cgtgcacaga catacgaggg cggggctgcc 1440

agtggacgtg gaccctgcgc gcagggacca tggctagagg agccgaagcc gagcgttcct 1500

gccctgcggt ggccatccct ggccatcaag gcaggacagg acagcgctgt ggttcgtctg 1560

gtctccatgt ttctttttg gttggatgag aaaaataatt aaatggctaa caaggtaggt 1620

gcacgagtcc atgactagtt tttattgtaa ataatcgaac caaactcagg tcatcgttgg 1680

aatgaagaac gagctagtta gtatatttgg caaaatctaa aatggtacat gagtacttgc 1740

gtgtacaaga ttagttgatt tcgtatccat tacttaaaca gcgatgacct ggttacttta 1800

taacatcgac ggtattcgta tccaaggggg aagaaaaatt gataaggtcg taattttaag 1860

aaagaatgaa aaaacagcgg tggcggtatg ctttaagaaa gaatgaaaaa tattattgta 1920

tcactaaatg gaactgactc gacgttggtt gttattgcga tgctattgct cagactagga 1980

aaggcaaact tggttagagg ttgaccaact gtacgtacgt ctagtcgtac tgctggtacc 2040

gccgcgtggt cctgctgcta ctgaaagcat gcacgtcgta attgtatttg tatatacagg 2100

cacatgcgtc ggagaaccaa actactacgt atctggaaaa tatggcagca tgcatcgatg 2160

cgcatattac ttttacctac tacccatcac tgcaaccggg ccgggcgacg acagcagttc 2220

ggctgtg 2227

<210> 2018
<211> 1726
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174689_G1, chr5:13737641..13739366, Cluster 12

<400> 2018
tgcaaacatt taaattttaa ctgaatatat acatgaaaat tatattttga cctgccaaca 60

gctgtcagat ctgccaagct gtgctaaaaa tgacgtatat tttgagatgg cacggaattc 120

attttaagta ccgcttaaaa aggaatatca attatgcctg cctattatag gcaaaatcca 180

tgcctctcac gcatcagatc gcaaagcaac caatcacctc cgggccccac ctcggttatg 240

aattctgatg cagcccactg cccccagtcc acccattgag ctgtgtgtct ccatcatgca 300

tctatcatcg tctgcggctc ctcggaactt cagctaggac taggaggctg ctgctataaa 360

ttttcgccag cggaaaaagg ccccccaacg aacgcccgga aggcagcagc gaagcgaagc 420

agagacgctg gcacagtgcc actggtagct cacagtcaca ggtttcgttt catggccttc 480

gtctcgcaaa agttcgctgc agggagcgct gcgctatcat ttgcaaagag ctaatggagc 540

aggctgcagt agccaactag ccgtggagcc cctccagtcc tcgtcgtccc gcgtcctgga 600

ctgcgcgtgc tgtgctgtgc tgtgctgtgc tgtgctgtgc cgtgcaagaa aaaagatgct 660

aggcggctgc tgctggctgc tgctgctagg gagccggtgc tcgtgggcac tgctgcctgt 720

gctgaagctt aactgtggga ggctgaccgt gaccgtgagc tcctccggac atgcatgccc 780

tgcgctgcgc ctgcagcaaa aagccggcag gggcgtgcat gcgagtgcag cactgttagc 840

actagtagtt tgtctgcaaa cacactgacg agcatatatg ggcctcatcc tcctcgctcg 900

aattaaactc cgggcattag aaaatgttga cctggggttt gaattcctgg acttccactg 960

cctcactcac tagacggcac ccaccaccaa aagcttgcgc ggaaccggca gtggcagccg 1020

cccatatatg cattttcgac gggcaaaaaa gcctggcgtc cggcggcgat tcactgaggg 1080

cgcccgctgc ccaagtgcca aggcagtgaa ggcacccacc cagccgagcc cagccttgcc 1140

attgccattt gccaacctgt ggctgtgcct gtgcctgtgc gcgtttcgtt ggagctaggt 1200

agggatggcg atggcgcctg tctgtcgctg gactctggcc acgtctctag gttttctgaa 1260

ttcctgatgc atcttcaggt ggcatgtaat gatccacagt tgacttcgct gcttcaggtc 1320

gaggcaggca gcgatagtaa ctgcgagact gggcgcacca agctgtagtt gcggcatcct 1380

gcttccttcc acagccaccg gtcggtttcg ttcgtatgct aacgagtttc tcctagtaaa 1440

ttgtaaaaaa aaaaaattgc accaactgtg tcttttaaaa attaaaatat tcaacatggt 1500

ctacacaccc gttgaaaata aagaattgct tttagacaga gatattcagt tgcccctccc 1560

acaccacaac tcacctgaat tttattaaca tgactggcac tcttgcttga cgaatcctgt 1620

attttgactg gcactcttgc ttgacactct tcggaatcct gtattttgta gcgacgtggt 1680

gatctagggc ttgggtgtgt tgcatcccaa tttgaaccca taaaat 1726

<210> 2019
<211> 1583
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174916_G1, chr5:14838795..14840377, Cluster 12

<400> 2019
ataaacaaat tctaaccaca caattgttca ttcacagcta catacaagtc tcattcacaa 60

aagtacacaa aacataagct gatggctggt ggcgtgtcta agagcctgtg tgactgtgtc 120

atgtgtgggc gcgtggccat gtccggtggg gtggcgggtt ggaatgtgca tgtaaacttg 180

ctaagtgcta cttctaacgt tgttttgtgg gctctaatgg gtatagtttt tgcctccttg 240

actgtcttgt gggtcttgaa aatacaggaa aataccgatt tttctcgaga aatttgaaaa 300

cagacgataa atatttcttg ccgtttaccg tatcgttttt taaacgatat atcccgtttt 360

cgcacccctt ttttcatata tcccgaaaaa tttgaaagct ctttctgctg cagggcgacc 420

ggacggacat gctgctcctg tcgattgttt tgttgggccg ggcgggcgct gggctgctgg 480

cgactgtttt gtggtcggcc ccccttgacg gcaatgtcat ccttcgccgc cgtcttggaa 540

ggggaccagc tctgctccag ctccggctgc gccgcccgca cgtacgcacg cggcaggttg 600

ttctcccctt tgtcgtccaa cacggaacac gccgtgagaa aagcccgcca cgtgccactg 660

actttaccga cctccagtca tggacgtggt cctactacta ctaccactac tcatcgccat 720

tttcatcttt tttttcgcca agaagactag tgctcctatg acgtgactgt gatgagcaca 780

gacgatggac caccgaagac acttcggaga ataaataaat gtttccatgt tctacgtaac 840

tgactactag taccaccttg ctacttgcta tgcaaaccta acacgaaagg ttttcttacc 900

ccccgaaaac tagaacattg gtccggccgg ctacctccaa atccagcggc ataccagttg 960

gtcaccgcac acagcagcag tctgcatcaa cagcctgaga aaaaacaagg gcagcagaac 1020

cggtcagggg aagcaaaaaa aaaaaaaagg gcaaatatat agggtccgat tgattatata 1080

gttttagggc acggcgaata actaacctcg attctgaaaa tgactcacag gaaagcgaca 1140

gttattcaca gttggtggct tggtgcattt ccaccgctca gacagccaga ctctgacgct 1200

gacggctcga aattagtagt aactcattac cggctaaact gggtggaaga acgcgtggtc 1260

cgtggccccg gaatggcgcc tgacgcgctg ctcgcgagga attccgagac gctaagccta 1320

ccacgtccgg ccggtgactg accgatacta cctcctcgca tgtcacgaga atagcatggc 1380

tcggctgggt catcccctcc tgaacccgcc caaacggaag tgcaagttca cacaaaatca 1440

gcgcttgagc tagcgcaaac gcatgcttcc gttcgttccg gggcccagcc caccacgcaa 1500

cgcatcccag gctcccccaa accagtgaga ctgcctccaa cggagcagct aaaagggtat 1560

gcaaagctat tatgactact cat 1583

<210> 2020
<211> 2538
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_174917_G1, chr5:14849421..14851958, Cluster 12

<400> 2020
gcaaataagc aatttgcgtt gacttagtga tgtcctcaat tttacatgcc agcaacgtaa 60

gctgtgcagt tgggcaattt tgagctatac ggtgaggggg gccgggggac ctgaaatttt 120

tagaaagaaa aatgtttggt gctaaagaag tcaacataga tttatttttt aaagcaagcc 180

gggccgccgt cacatgcttg cgcgtgaaag ccgagcaaat atctttattc ttgggcgcgg 240

ttgtggtgct ctttggtgaa agacgacggc aggttgacat gcaagtagcg ctaatcgcta 300

gtaatatact aatatgcttg gcggtcctct catagaatac tgtggatttt tggccgctaa 360

tcgatggctg atacattctc ctgctatatt atttatatta cactgttgtc atcacgagat 420

cttctggacc ggaagggccg caatcagcat agcgcgaccg acgagatgat tctcgttgaa 480

acacagtggt cgaaatagta gattagatta gactagaaag atagttatag gttgtcactt 540

gtctgattct cgtttttttc ctttcccaag gactgattta gtgagcagca ggggtcacca 600

aatccgcccc caaaagtcca ggccgtctcc gtcacgcagg gttcgtggta gcagggggag 660

acttgacact tgagccctcg cgactcgggc ttggtacagg gccatgccgt gcagcgtagg 720

tacgtgcagt ccagtttcca cgggcgctca accgactcta ccgtgggtgt cgacgccata 780

caacgtgggt ccaggccgtc tcaattaata attagtaata atataagaat aagtttattt 840

taataaattt ggagaataaa cttacgatga actatatcat ctaaaatata ttgattcttc 900

gaatcaaata cgcccacccc aagtcgaggt caagtttctc tgcgtgctat tcgtcggtca 960

cccaacaaca ggggcgaatg gaatgggatg atggtcggac cacaaagttc cacatgcttt 1020

ctttgggttt ttattttaat agccaggcac tcacgctgac aagctggacc tgtagcactg 1080

accggttcca ctctttggaa aaaacagccc acctctgacc cctgttgcgt ggggagtcta 1140

gaccccacta gccatgtgat tattcgaatc gcgctctacg ccacctccct ttgctctacg 1200

attccaaatc cctccgctcc gttccctcag cagaaaggtt ctagttctag ctgtttccaa 1260

gcgaaaacac tggtccgccc ccacccgctt gcctgcaata cagcaagagt ctctcctcct 1320

gctgctgctt cgtcttcacg cgtgtcgccc tcgcgttcca acgacctctg gccctgacgc 1380

cgtccacgtt tcagacgaac ctcgcgaaag cgatggatgg gtccccctgg ccctgcgtac 1440

accaggagct cggaagccat ctcaggttac catatatctc cctgaaactg tgaaagatat 1500

gacctaatga atcagattag aaacgccaat ggtttataac cactggaagc ttagtgattt 1560

ctaacgtcga ccttgggggg caataattat tattatggct accgcgtgta gaccagtagt 1620

gggagaacta acgagataat tgctgaacaa gtcgcattgg cacagcctaa aacaaaccca 1680

gtgtgacctg ctcagaaaac agagtcaaaa caccactagt gcatgatgga gcactaagac 1740

ccagtcgtcg tcgatcttgt tgtttgcgtt gtgccgtgac agggacactt aaacaggcaa 1800

caccttgcag ctcagcaaat ggcagcagac gcgacgcggg gccccgatta gctagcgaga 1860

cccggactgg cgccgcagga gcacacgcaa tgctgtcgtc ccttaaagct ccgcaagtct 1920

tggccactgg aagtgcagtg cagggcaggg cagagtggcg cctttcagct ctgccgatct 1980

ctccagtctc ttggacatca gatctgcgct agctgagtgc ggaagcttta cgggaatggg 2040

catgcgtggt gccatggccg ggttagctac agtttgtcac cgggaaaacc aatgcggttc 2100

gcgtgacagt gaaacagagg aaattttcag cagaagacaa ccacatcttt ctctcctggg 2160

ccctcaaacc cttcatttat atgggccttt agaccttacg acgaatggct acgatccacc 2220

actcgtccac tcatatatgg tctatgagat taccggctta gttcttaaag gttactctta 2280

gaattacgct tgatagaatc taagatatgt cctttaattt gatagaatct aagggactgt 2340

ttggtagagc tttgttccat agttctctac cccagctgat tctagtagag ttatttcgaa 2400

taattcttta gcttgagtga atctatttga ccaaaaacat ttgacaaaaa agtctgtaaa 2460

gtgattcctg aggaatttga aagtggggaa caagttggga gtgtcgggga tcatttttc 2520

tctctcccac tctctagt 2538

<210> 2021
<211> 1422
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_18450_G1, chr1:102945832..102947253, Cluster 12

<400> 2021
accatctcta gctgcagctg cagcagccag ccagacgtgt ggcgaccagt taccatgggc 60

cacaacagat ggcacacata tcatatgcac ggctgcaacc tgtcgctggc tcgctgttgc 120

tccggccctt ctggcgcctg gttgtcacga gcaacctgcc aggcagccgg cggcttgctc 180

cagtgacccg ttccaggcgg cggcccttga gaagtttgag atgacaagca gccagccatc 240

actctcatca ttccggcgcc ccactcaggc agacgagacg cacaaggctg gcacgtctca 300

agggctcaag tcttctgcaa aaacagaggc tggactgaag atatcattaa acatggatgc 360

atacagtccg tagcagagga aaacaacaaa aaaaaattat cctgtggatt cccagcaccc 420

ttttccccat cgtgatgtgc ttttctagtt cctatcgaat ccagattaaa attataatca 480

gtaaagatca cacagattag gactgacttt taagtattcg atgctaaatt ttacttgcag 540

gttccgccaa acaaagcaga gggcgtcgct gccatcgcct ctccggtctc ttttggaagt 600

gccctctgaa ttctaccgga gaacaaaggg aaaaagaaaa gaaaaaaggc gacgaggtac 660

tccgccggta aacaagtgca gtaaacgagt gatgacgcga ccatgacagg cactcaggct 720

acttttctcg gaccattagt gccagatcaa cagatagaca ggtctgctcg gtaaccagag 780

gacggtcgat ggtttcagat ttcgttgacc agtgaccaga tccagtgaca caaggagcca 840

gagcatcact gctctccagc tccgtgcaag tcaacggtct gtgggggacg acacgacacg 900

ataaaggaaa gcagaagaaa attgcattgc gtttagatgg aacatgccag atcacttcag 960

ttccttgctt ggctgtagaa acctgtacct aatttcccaa gctttcggct gacttgctgg 1020

ttctgcacgc gggcacgcca ctatgtacac aaggaaaaaa aataatcaat tgtcacactc 1080

gtttttttat cttctccgag ggcgtagctt gcattgcgag ccaaataaaa caaggaggtg 1140

acgaagggtg agagaacatt tcaagcatat ccataccatt ctcaatgctt gtaagtcatc 1200

catgataacg gggacatggg acacatgctt gccaatcacc aaatcccgtg gaagttcgga 1260

ttttgtttat acagatcaaa tcaacaaatg ccaacacacc ataaaaaaca tttcagaaaa 1320

aaatgtccag aattggtctc catccgttac caccaccaac tggaggtgag cacaaacttc 1380

aggaggagac catccagagt gcataatgtt tacgaatctt ta 1422

<210> 2022
<211> 1466
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_185181_G1, chr5:78392091..78393556, Cluster 12

<400> 2022
acctcatata ctcctgccat gcacatgcac ttgtacatac atttatcagt tatcaccggt 60

ctttgactcc ggccatgggt ctatggttga cattcttaat gtgaaaaatg agcgaaattc 120

tatatgcatt tcgcacgtgt ggaagtgact cggatcttga gtcttgtact cctgccgtgc 180

tcaccatcgc cccccacgtt cgctcgctcc gtgatccccg ggaattgatg tatgttattc 240

gtagaatccc gccggactgg catcgcccgc cgtcggctct cctccaccgg tttccctcag 300

cctctgcgct ccgccagggg tcgcagcgct gctcgtcgac gtcgagtccc ggccaggcta 360

agccaaaggt gagtcgcgca accgcctgtg gatcttttgg ttggggttgg gggccatgtc 420

ggccatggtc aacaggcggt ggttgcagtt cagaagcacg tacaggcaca gcgcgtggtg 480

ccagcatgca tgatcctcgg cccagtgcag gagacgacga tggcgccgcg ccgtccgagc 540

ccgccgccgc cgcatgggca tggccaagca ccttcggtcg cgacgactcg acgacctcta 600

ctctacgctg ggcgcggccg ggtgcaccgt gcagtcgtgc acctccccgc tctgacagga 660

cagccaaagt cggtgcccgc gactagtgcc tggccggcca cactggcgat ggcgtccagg 720

ctcgcaacgc tgccgtgccg tgccgtgcgg gcggtaccga tcgagctcgc cgcgccggcg 780

ccggcaccgg caccgaccgg ggatgcggac aacggcgcca ctctttcgtc ttcgaccaga 840

gaagcccagc agccgtgctg tacgtccacg tccacggcgg ggaccgagct ggcagcgccg 900

cgcgcggccg tccaccgagc gtgccatctg ccgacacatg actgcacgag ccgaccagca 960

gtctgctacg gcttgcacta cacaaccctc ctgccaccgg ccggccgtca ctgtccttgc 1020

agtcttatga gcacagtcga ttttactgtg catgggccag tcgtcgaaaa aaaaaattaa 1080

gctcctattg ggattagaaa agggcgattt ggcatgtgaa ttagtaggat cagcgtatga 1140

ttgcgtggtt ggttgcattg ggatgttttt aaggtatccg ttccattcca attccatccg 1200

gtggcagtgg catagcaagc aacgacgaac gagggaggaa gaggagggcc gacatgtcca 1260

gctacgtgag cctgtcatac agggacagcc cgccggaccg tcagattctc ctcggcaacc 1320

accgcaccat cgtctctcat ctctctctct ccagtctaca ccctgtcttg acacggtttg 1380

cgttataagc agaaacagag ccttttccat aaaactcaca aagaaagtac aataatccgg 1440

agatttttt taaaaaaaaa actaaa 1466

<210> 2023
<211> 1739
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_186646_G1, chr5:87107507..87109245, Cluster 12

<400> 2023
gttgatactt gatatgttct gcactcaaaa tataggagac aacaacaaca aaaaacaaac 60

ctaggcagta ctggactagc gagtggaacg ccggccgtac tgcttggttt gcttgggctg 120

atgggcttct ccgctcacaa gcgctcagtc tggcccgttt tgggtgccac atctcgtcgc 180

tcgctctgac agtctctggt ctctgccaac ctgccgactg ccggttgctc atgtcatgca 240

cgcgcatctg cctctcgcgg tctcgcctcg ccatccctgc tagccgagct gcactgcatc 300

catccggtct cctgcgccca gtcactgcca cgcacgcacg cacggccgcc gagccgtgtt 360

gcagtgcagg gcaggggcga aggaaactta accgataaac aaagcggggg ttccgcttcc 420

gttcgcgttc cggcgaggtt tggttaagtg ggggcgtgcg gcgcggccgg cgctggggga 480

cagcgcgcgc aagcggacaa cgccgccaac tctggccaag tgcgtcacct gactcggacg 540

tgcccctccc gtcgcgaacg gatcgtctgc gcccgccctc ccccaccgtc acgtcgcgcg 600

cttccccaag ccaaacagct cctccccgc gcgtggcggc gccgtagcgg tcactgcggc 660

cgcaacacgt gtgggccgca gcggctggcc ctcgcgccac agcggcgcag aggatcacgg 720

tacgatgacg cggacgggga tttccttctc cttttccgtt ccatgggtgg cagtggcagt 780

ggcaggccac gcgccggtac ccccggccca ccgacgcggc tgccccacgt cgcggggccc 840

acgagtcggt ggaacggccg gtgcgaggtc cggcagcggg aggggcgatg ttggccgctg 900

cgtcccctac gggtacggcc cgacccgaga ggtcggtgcg gatccgaatc agctgccatt 960

actagtggcc cgaaatgccc ttgcgagacg gttccttcgc gctggtgctg gttggctggt 1020

tgcctggctc tgggagcggc cgaacggagg ggacctcctc gtgcggtaag gctcggccac 1080

gtcagccgtt gggcatgggc ccttggcgac gcgaggccgc gaaatgcatg ttcccggaaa 1140

cgccccgccg tatctttgat tccctggatg gatgcttcta gagatgcctt tcgtgtctcg 1200

cgatcagtcc tgccacgagc agtcattgtt agaacgataa taataatgaa ctaagtcacg 1260

ccatttaatt tgattactag cgatactttt gttttcaagt taactcgaaa aatacgacta 1320

tccggctggc agtagtagct taaaagaatc acagttcgtt tagcggctaa atatttcttt 1380

tcagattaaa gtccttctat ggttctttta aaagtaggat tagcctcgtt aaaaataact 1440

cggcaataaa aatataagga aaaaaatgtt atgccgtcaa agctaacgta taactatact 1500

ttattatttt tttgctctaa aagtatataa aatattaaat tataatccat catgtgttta 1560

gagatataga aaaatgtcta agataggatt tttctctttt tttgtatagg acaatttaga 1620

gcttcaaatg tggtatgtta gtagaataaa caataatatg aggagaaaaa acactgcagc 1680

ctccctaagc ccgcgcgcgc gcacacacat cttgctgtag cagtgtagct gcaaccaac 1739

<210> 2024
<211> 1507
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_19073_G1, chr1:107182199..107183705, Cluster 12

<400> 2024
aaggaaaaaa aaattgcagc gagtgagccg accgcaatag ctagcacgga gggcgacggc 60

ttaccacgca gacgcaggcg tggggccggg gattttattt gaagaccagg gtgcatcaat 120

ctgtctagcc ctcttgaatg tcccctcgtg accaagggac gcagaggcca gagcgcgaga 180

tctcagatcc caggccgcgc ggccaccgac agacagatcg gtgggtttgc atgcatgcac 240

ccacgcatgc aggcgcagag gatccgttcc aggtagaagc agaggcaggc acaggcacag 300

cagcgcccca cctcactcca atggcggtgc ttgacaggca ggcacaaaag gcagctacac 360

tagagcctag aggctgcatc catccaaggc tccaagcaga gatcacgtgc ttccgttttc 420

ggcgcggcgc ggcggtgcgt gcagcgtgca tgtcgcctgt gtgcgtggcg gcggccggcg 480

tgctccctcc gccaatgcgc acatgggctg ggacgaagcc cgctcgccat gagtctcagt 540

gtcctcagtc ctcacggtga acgccttaga tacagccgag tggttttggg acggacaaac 600

gcaacgcaag acaacagcag cgatatacca aaagttacca atataattgg attgagtaca 660

atcttcatgt cctaaaccaa gtcacggatc tagcaatggt atggaactag atactcttat 720

ctttctctat gtcgtcatca tcattattat atatatccat gcatgtgcca tgtcttgtaa 780

ccacataagc aataaggacc tcctcaacca ataataattt cggttgttgt cagttgtcac 840

gtacacgcgg tacagtgtct cgtccatcgg taaaatggtc ccggtggacc gacataacca 900

tgcgttcgtt atatgcatga acacaacctg ccacagccaa attatgtcaa gtgaatagga 960

accttagact aaaacatgtg ggggggtgaa actttgagct ctcatatgat gaaattccta 1020

gagtttcatt ccctagcaaa cagggtcaga tgggttccgt ctttttcagg ggaatcaaaa 1080

cacatcttcc tctactgcat gtgatatggc attgtaataa ataagttttt ataacaaata 1140

actttacatt aaactaagaa caacggacat gaagtatgtc caaagggacc tagatacatt 1200

agagattcca ctctcccttt tctttgctag ggtgtgagct gtggaggtct gtcttcttga 1260

gatttttgta gatacggtgt gcacactctg agcggaggga tttgagctct tcctgaaatg 1320

gaaaaaaggt ctccaaggtg gcacttgagt aggctcgatc tgactgagcc atcgtttggt 1380

ttggatcact gtttggtaca gagactttac caatttacta atttagtcta tctccagcta 1440

cactaaattt catcatttaa gagaaaatgt tttatatttt ttataacaca ctttaaaaat 1500

ttttgtt 1507

<210> 2025
<211> 1636
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202266_G1, chr5:186960028..186961663, Cluster 12

<400> 2025
gggggacctg atctatctga ctttgccaat ttcactcgag ggcgaatatc ttctcttctc 60

ttgtatctct tacacgaagg agaacatatc cgcccgatca ggtagcaatc attacactaa 120

accgagctgc agaaccagat tctcgtgctt aatgatgcgc cttatctctc tgcacaacgc 180

actaacaagc agcacccccct tgtgatctga tcggtaacca ataaccaccc ccctgcaacg 240

aggatattgc tatttttttcc cccggcttat gcagtgcgca ccgaggtgct ttaccggctg 300

tgcatccaat ccggcgcgcg gccgggcaac gcctgacgac gccaccctgc gcgggacgaa 360

agcctcaccc acccacccac ccacccaccc atccactcgt gcgtgcggcc tacgtggcgc 420

gaccaccgca ccgggccacc ggccgtgcgc actcgcccgc cgacagatct cagcccaggg 480

cgctctggca accgggccgg ccgttcgccg cacccgcacg acgggcggtc actccacgct 540

cagcgtcgct tgaccaccgg cgcgccgtta ggacacactg gcaggaggag gccaggcgtc 600

gagagcgcga cgcgggggcc ccctccggcc gtcgtccgtg gccacagcgg gctagggagg 660

ccgtggtggc tttatttcgc tgtcactacc taaccaccac aaggctccgt caaaggagcc 720

catcccatcc agggcagcgt agaaagcgcg gtgcgccgtg gcttttgccc ggccggtgca 780

agaagcatcg gtcagggacg ggactagtag tagatcgggt gtaggcaaag cattaggtcg 840

ctttaattta atttgggccg ggtgctgtgg ccgatccatc tggtttgccg ttgcgtgact 900

cctcgtttcg gtggacttgt actcatgctt ggatacggcc acattaattt tgtgtgacta 960

atatatgtct gcgtgcagag tacatagctt gaacgatcag catgtagtgg agaacctatg 1020

tagacaaaag gatccggcac atgaacgccg agagacggtg aatagctagc tagctagcca 1080

attaaaaaaa aaggtaaatt gttcaagtag tactactagc tagcttgccc ttctagacac 1140

ttgtaccgca attgtctctc aagaagaaga cctggccggc cggctggggt gaagcggagg 1200

tcgacctact taaagagcta aagtgcagtc caacatggca gcttgtggac aatatataat 1260

ctactggcca aaatacacac acgagtgctg catgcaccgt ttcttcagtg gtggcggtaa 1320

ctagctggta aagaggccgg cgccactaac tagctacaac tacgacttga gtgatgctgc 1380

aactgtgaca gatcgagagc tgcatttagc gaaacgaaag ggtcggtgta gtgggggtgg 1440

catgcatgtc tgccgcccga tatttaccca gctacttgtc ccggccgcta gctgcctagc 1500

agaatcgatt ggtcggttcg cacagtccga atggcactag tattgctgtc acgtcaaaca 1560

tcgatcgtcg acctacgcat cattcagtaa cgaaaacacg tagatataat tggaaaaaat 1620

attttattta atatta 1636

<210> 2026
<211> 1425
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202513_G1, chr5:188476668..188478092, Cluster 12

<400> 2026
aatgaagtta aaacaacaat aaataagcaa ctcaaaacag ctccaccaag gcggaccata 60

tctacacgtg taataatagt gacctaaagc cacacacacc caaaaaagac cagaaaagaa 120

aacagaaatg tgaaggacca ataaggattc agagatatca tgcttcagca tttggaatgc 180

aagaattact tgacaatagc atggtcaacg tcttgaatga attgaccgtc gatattttta 240

aaaagcacgt agtaggtttt gcacggaggt cgtggtggtg gtggtgcgca acaacatgct 300

caagcctcta gagagaaaga gagggactat aacagggaat agacgacgcg tttgcaactg 360

catcctcgca atctgaaagc tggcatgcaa atgtgttccc ggattaacac agaatccaga 420

gagcgcttat agcaacataa acatgcattg acaaaagtca gtaagattaa caaaatctgc 480

agcaaccatt tttggagaaa ttccaggagc ccccgattga acaaaaccgg tcgcgcgctg 540

gagtgtctgg cccccgctag atccgcatcg aatccaagga ctgtcgctgc aaagaaagca 600

tggcatggtg acagctcgtc gacgaggcgg tgcagtggag ccctacaccg ccggtggggc 660

agcagaggca ccgtcacgag ttcggccgcc gggggccctc tcccatctcg tcggccccgt 720

cgctttatat gggcggccac ggaggaccgg cccactcgca cgcgtcgcac cggcaccgag 780

tcagacgccc gtggcaatgg catgccatgc cagccatggt ttgctgctgg agatcgagta 840

ccgagagcag agcaggccag cagggcagtg cccagtgcat gcatttggtc gctcggtggt 900

ggtgcggttg catacttgca tcgcaacaag ctgtttttt cctctccttt cgctattgct 960

tcatttttgt ccccttttgc tcttgtgttt tttttctctc tcttctttat acaagtgaca 1020

tttctttttt ttttcctccc cctgtcgtgt aaagcttgat gttggatcat gcacttacgt 1080

ggatgggatc cttttccaac aggtttgttg agcattcctt tgcaacacat gctcggaaga 1140

actgtttgtt tgtttggagt agttgagaac attcgagtaa cctacctacc taatatgtcg 1200

tagactgacc gactatattc caatttttt ataatatctc tgattgtttg gtacggtgca 1260

tgcagttgtg tttgtgtaca agactgcgct gcgcagctcc tcccggccgc tgaggctgcc 1320

agaaggtcgt cgacggcggc gaccgagaga gagacgagac ctttctttcc ttttggctag 1380

ctagctagcg tacagctggt cctaccatgc atgtcgttgg cgaat 1425

<210> 2027
<211> 1914
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202616_G1, chr5:188822901..188824814, Cluster 12

<400> 2027
aaggaattct ttactcaaca tgcgtccgca cgttggaatg ccacacaatg acacaacacc 60

acagagtgcc cgtacaacag ataagatgaa agcatacata tctaactaat gatgcatagg 120

tttattctcg tgtcctgatc ttcatcaata atctctattt taaattctaa tatatttaga 180

ttttttagat acattagttt aactgttgcg tactgcgtag tctatatcaa agtatatata 240

aaaactatat atctaaaaat ggataatgtc ttgtaattta aaaagaggaa atggtgtata 300

tatgtggagc taaacctatg cattttatta ggttatttaa aataaagtaa tcatgtaaca 360

tggaaaacac agttaattaa taaaaaataa tatggaatgc aatataccac aatactttgc 420

aaaacataac atcatattta gaccttggtt cgaacctcta gagcaaatat ttagttgcta 480

attaactaac ttagagctaa gtattagttt attagctttc caatttagag actaaattct 540

gcaaatattc ttgaagatgt tgttatttga gcattttggg tttgtgcacc acactctgta 600

ctacgaacac gagcattcct tgcgctccgt acgaacgaag ggccggtatt atcgccctgt 660

gtgtccaaag gcgtttgcag atcgggggag ctagtgctac gaaagggagg agacaccgtg 720

cctcttttga gcacagccgg ctcctgcggt gccgcaagca cgccaaaagc cgctgcaccc 780

gttcatcacc gccgcactat tttcatcttt ccgaacgaaa aaagaagaag aagaaaaaaa 840

agaagggaac cgccgcttct ctgtctcctt gacccgaccc agcaattgag gcatcccgtc 900

ggctgctgtg gaaacccgtc acaattctga attcacacga aatagtcaaa taccgtctca 960

tctcggaact cggataattt aaaagaaaaa caacgccatg gatgagtctt cgagtgtgtc 1020

caccaccagg tcgagacatc tacttttatc atgtggatgc acgcacacat caggctcaca 1080

gtcacagtca cagtcacagt cacaggcagg gccagggatc gatctcgagc tagccgcccg 1140

ttgcaggcgg tgcatccgtg ctgtggagga gaaaagaacg tgccgggcac gtacggcgcg 1200

aatggacgga ctcacgcggt gggccctcct tcgtggtgtc gtcttctcta agaaaggcaa 1260

agccctctcg ccacagttcg cagtcgaccg tctcgcgtcg tccttgcgga gtttttaatc 1320

aagggagctc agctgcctga acaacctcgc cgctgtcgca tttaactctc ccttattatt 1380

ggcgtcgaga aaccttaact taaccgtgcc tgcaatgcaa agcaacgcaa cgcaacgcaa 1440

ggaagcagag gtagcaggca agcgcagagg atccggaaac ggaggcgacg tgctggcgtt 1500

tttccagaag cttgggagtt tatgggggag ctttcacttt caggcagctc gacgatggcg 1560

ttggcgtggt cctgctgcct gtggatgcgc gcgggaggac gcagccttga gcctttggtt 1620

tgtgccgcgt tgttctgggt tctgacggta cctttgacag caagttactg acaggcagga 1680

gtagtacacg cgcaccagca ccagcaccag ctgccgtgca tcgcccgtct ggcgtagtaa 1740

ctgccgaagt tccctttgtg tcgggtcgaa tgaacggcat gcagagcggt tgcccggccc 1800

gaaaatatgt gcttttgttt ggacgtgtgg ccatctctgc ccacaaatga aacgcagtag 1860

catggtgtat tggtgtgccg ggaagaaact gcaacgcgtt cgtcagaaac cagc 1914

<210> 2028
<211> 1714
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202987_G1, chr5:190741984..190743697, Cluster 12

<400> 2028
tccccagccg ggaaaaaggc gtctcgctcg gctcggctcg ccctcgccgc gtgtggggga 60

tcaccgaatc acgggccgac accgccgccc tgggctcctg ctacccccac tttccacggc 120

agccgctccc atcgcgggag gcggaaaacg atggatcggg cgggggggcgg gggcgcccac 180

atgcggtgag cgcggatcgg atggtcggtg tcgcggcgcg gtacgcctcg tgtggcgaga 240

gcgagggcgc ccgcgcggga gggcgcagcc tttgtgtgag gtcgccgcga ccgaccggcg 300

tgtcgggccg gtgcctgggg ggcatgggac gggacgggat tgggatgtga tgatgcgtac 360

gtctgcccgg atcggagtgc cggtgcgccg gggctggcag gcaagctgct ggaacggcat 420

gttcgggtca gagggccccg tgcttcgagt agtatgggct ttgtgtgctt ggagcggcat 480

atttggatgg atcggaggac tgtagcccgt aacgacaagg aaatgtggct actttgaatc 540

tttactacta taaatctttt gcgcataaaa agtctactag ttattacata tgtgtcgctg 600

attctagcga agctgtcgtc gctgcgtcgt ggtcacgact ccaataattc ttacttcact 660

ggccacggaa ccgggtaaac gtaaatctct accgaacgga ggagctttga ttcgcaggcc 720

taggttaggt cacatatcga tgttgaccac acctacatct cgatcgatat atacattatt 780

attattatat ttcgatagag tgcgctcgct ccgcaacgtg tgttccgaaa gattctcgct 840

accggctgag tcatctaggg cacagacagc atcgcacatg caaggcagat gcgcccgcct 900

aggtgtggcc gcagtacgtg tgcaagtgca gcgcaccacg gcaccgggtc actgttctcc 960

ccgaggcgtg gccgcgtggg aagcggcgaa gcgcttcctt tttttccctc ctccatgcat 1020

gcatgccacc gacgtatcgg ttcgtgctta gcgatcagag agaaccattt caaatcccag 1080

gcaccctgga ctggagctgg tgcagtggag ataccaccgc tggatcggtg gacagtcggg 1140

atccacgaaa atggagcagc gtcagcgtgc agcgatctcc aagtcctgac tgaagctgcc 1200

cctgagcatg tctatatatt gtgcagtcac tcaggcagat gttgggccgc caactctatg 1260

gtccatgggc ctcggcaact tttttgtttt agtacaaaaa gaaccgatcc gtcaattact 1320

gggaaacaga accgaactgc cccctccatc ttctgccgtc tccctccctc cgtctttcgt 1380

tgagcttccc ctcctgtaat tccagagccc tcagccctct agttcgttcg acttcagtgc 1440

cttcttggtg ctggactact ggttactggt ggaggcagcg taaccggctg ttaacaccag 1500

atagccagag acgctatgga acagctaaga gcccgtttgg tagccttccg gctctggctt 1560

ttctattaaa gaaaagagct caccaaacat catttttaa agcggtgtac tgccaaaaaa 1620

aaactcctaa aaccagtagt gttggtgttt tgtatctcgc tccaaagtaa atttattata 1680

cgcgttttga gctccggagg gtgtgcgcgg aggg 1714

<210> 2029
<211> 1902
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203012_G1, chr5:190955237..190957138, Cluster 12

<400> 2029
gatttaatcc atatctaatc aaaattgaat aggaagagat caaatctccc ttaacccctt 60

acactcccat gtaaatgaat atggccttaa ggcttagttt ggatactata gaattgagat 120

ggattttaat ctattagaga tttaaagact ccaatccatc taaaccgttt caattcaaga 180

gtactcaaac tagatcgtaa atagctgagc tatctatccc tagtaggtaa ttaaatccgt 240

gcattgcgaa gtctagtgtg tgcatataag ctaataaaga tgagaaacat ggacacccac 300

gtgaaaatga ttaaaatctt ctcaccaaac attttttttc gtgctagtga tcaccgagca 360

attgccacga cacggacgtg ctagtaccgc actcgaagct gatggcgcag gccacgcctc 420

tggaaaaagg ggcgggatcc aggacacaag cggccgggca aacagaagag cggtgccaac 480

gtgacatgcc gggcggttgg tgggtgagag gcgcctggcg gacagcggac tacaggcagg 540

actgcaggag gggttcgcgc tcgcgccatc accgcgaggc gatggatgga cccggggacg 600

ccgggccgac gaacggaaaa gtgatgggga tgccagagta cgacgtcgct cgagtacggc 660

gccagcctca ccgccgggcc gccaccctct cgtgtcgctt cggatgcacg ccatgcggcg 720

tgggaattgg gatgggatcg tgtcatcatg ggacatgcgg ctgggactgg gagggatcct 780

gccgcgcggg cgcgcgccat tggatcgatc attggatgag tgcgctgtac gcaaggaatc 840

cgtcggagct gctctgccgg cgacggcgag gcggctcatg gtgggtcgca tgcacgcgca 900

gattcaagcg tttcacactt tcgcagcaca ggttgtgtgc caaaaaaaac agtagagtct 960

gcttcttggc cgttgagcga agggcaggtc gggtgaagcc gttggagcgg tgcgtgccat 1020

gcctgttctg ttcattatat tggggataat taagctgtcg ttttcgctga tgatgatgaa 1080

aggcgatttc agcctgattt ctcgctccgg cctggcgcat gcacataaat tggcggagca 1140

aggtgtggtt ggacgggcca tggcgccatg atgcggccgt gtggagccgt gacaacgcta 1200

agcacgactg aggtgctagg attagtgctc tgcgcgcggt ctggaccatg agcccatgag 1260

ttcaggtcta tatatatggc gctagagatt tacgctgcaa aactcaatgc tagtcttccg 1320

tgctcagggt aggggtggaa atatcttctt ttttttcat cgcttttat gcctctcagt 1380

cgcctgactg ctcaggattc gtctataata acgtgagtcc gtgactattc tgaaccctgc 1440

tagtagtgat catatccaat ccaccagtat cccggtgact atcctctaac ctctattgcc 1500

tgaaaaggaa gagagatttc agacgtctgt taaataccaa tttcattttt tttatggggt 1560

agaaattgta ttatttcgta tctaataaaa ctttaatata gatatataga taaaatacct 1620

cacaggtgaa tgcctcatct agactgacca taggagaaaa aaggcctcac cggtgaaggc 1680

aataaatctc tggatcacaa ccgagaggca gccactggct ctgtagtagg atcctccgcc 1740

aggagagagg gtggaaagga gcaaagcacc accgccggta taaggaccga ccgccaatga 1800

ccgcctgacg aacttgatga gcccacgagg aaatcaatat gttcagaatt cccgatagcc 1860

agaaaacatg cgactttcct ttttctaatt ttaatatatg at 1902

<210> 2030
<211> 3826
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203075_G1, chr5:191370802..191374627, Cluster 12

<400> 2030
taaatttgca atcttttgc gtacgtgatg tcactgtcac acaagggtcc acgtactagc 60

agcagccaga aaccggccag tgtggatgta tgtacatgtg gatttcccgc ggcgcgtact 120

gtcctatagc ggcagccggc actcaccggc ggaagccgaa gcagccatgc gaatatgcga 180

tcgatccctt tcccctgcat gcgatgccga cgacgcagct gccgcggcgg cgtgcctagc 240

cgctggcggc tggccacctg tggcgtaccc tctccgtgca ccgtacgcgc ggggacctag 300

cgagcgacgc gtgtgtacag tgtaccggtc gaggccgaaa acaggacagg tgccccccga 360

ccgcgagcga gcgggcgcgg cgcatggaat gagctggaac agcagcagct gaccagcgcg 420

gctctgctat ctctggctgt gattgccccg gcagcactgg cgcgcagcga ggcggttcct 480

agctacagcg actcgcgcgc gtcggccctc ggcacacaga tgccagatgg cctgctcgtt 540

ttctaaatgg tctcgcagag ggggcaaagt cgtcgcgcgc gtccgtgtga atcaccaccg 600

tcggatcaca ggagccggcc ggccggaacc ggcctagcta gctagcgctc caggccaggc 660

gggcgtgtgt acggggtgac ctgcgcatga aatgtgattg ccattaataa atgatctcgc 720

aagctctcgc ttgcgcagtg ctgtgcacaa tgcactgcta ttcgccgcgc gcgtcgacgg 780

agaacgattg atcgatgctt gccgaccgat ccgcatcacc ggaatggtat ccagcccccc 840

gcctctctct ggctcgccgt ccggccgccg tcgctgttcg ttctacctgc tcaagacttt 900

ggagcggctg actttttttt tgcggtgaaa ctatggttga aagcatgcgt cgacgtcgtc 960

gtcgttgtct tgcgtataga tgctcgctca tcctgtcacc gaacttcatg tgactgtctc 1020

tgttggcctg gctagctgga tttagatgga gaagacgcta tcgtcttttt gggaatttct 1080

gaatacaact atccggacac gtacgtctgc aaatctggtg gcctgagagt ttttgaaacc 1140

cacataacaa ttccgaccaa attttttttt tctgtagcag cacatactcc gtcaacagag 1200

agggtcaatt tactttgaat aaaaagtaaa cggtttactt gaatttattt gtctctttcg 1260

ggacagcggg ggtgtgtgga tagtaaacgg gcatgaagac agtgaaatat attaagtaga 1320

atgagtaaac aaatatgcta aaaacatgag ggcctcggtt tactttgaat acaaagcata 1380

aaaaggattt gctagaaacg ctgaacagca gctagctggg acaaaagctg ccatcaacgc 1440

tagctaacac ggtttcgtcc gcgtcgaaag agacaagatc gaggagctta agtcagagcc 1500

ttactagtcg ggccggggta ttagtcagct ggactagccg ggcactgttt tatggacact 1560

ggtcgtcggc cgtttacact ccaacctgca gacactacgt acgttgacag cggaccccgc 1620

gtccacgatc agccctgatg atgcaaaaaa agtcagccct tgaatcattc gtgaaaacgc 1680

agttaataat agtcccgatc gacatgcatc gtcgtcattc gttcgtcagc caccctagct 1740

gtgccgtggc tccggcctcc ggcgttcatc tgttgatctg cctgcctgct atgctaccag 1800

tcgtgcgcag cgtgcccgac aagttctctg acctttgca cagttcgaac acagaaaaga 1860

gagccgccag ctgcctggat aaggagattg gaatgcaggc ccgcattcat tgcgatgagc 1920

tacagctagc ttgcaaagcg gttagcagct ccctccggcg ccctcgtcac ttttgacctg 1980

gaccatcaat tgaagccggt tcgttcatcc tctcgtggca ttggtttgca gcacaccacc 2040

acgatatgat gtccagtttt cttcttctga tgatgatgat gatgacaaga gcgcggctta 2100

cgatggccag ccgaaacgga gaaagatggc tgtagctgca tgctgaactg agtacgtctg 2160

ggatcgttcg cactccgttg atccgttccg gtgctttttt tccccccatc cgtgtagcgg 2220

aggctgactt tgtttcgatc attcaaacca cgactgctga acatcgcatg gatgtgtcct 2280

gcacatggct gagctgacct gtccatatcg gggccacgaa acggagcccc cggcttgtgg 2340

attctaaacc cgcgcgccac taattgcctg acgcgcgaga gacacatgtg ctccgagata 2400

tatacgtact agctcctagt tttcagtgga ttgatgaagc gccatgaatg aattgaatca 2460

actgcggcat tcagctttta ctttgaatcc accattccac gagctgtcct gaccgtgtac 2520

tactacccat tccttctttt ctgctcccca agtgcataca atgcgatgct atatatgctt 2580

tgaaaaaaaa gatttaacct actggtcaaa aaaggccgta tgaaatcgcc ttgctacccc 2640

ctatccagcg ccaaccaacc aaacctctcc tctcctggtt cctgcgatgt ggctgtggtc 2700

ctttaacgaa ctgcgacgac gccagccaga gccagcctcg gtgctgctgc ctatgctacc 2760

atggagaggc tggaggtgga ccgggccgga caagacaacg tcgtcgtagc gtagcgccct 2820

gttggccacg cccagtaaca aaccgcagct tgacccgcga ccggccggct gacctcggga 2880

tgccaaactt cctcgctcgt tgacgccact tgctttgcgc tttcgtaaac ccgagacgag 2940

taagtttttg cggcttttca tttcacctgc atcgtccagc accagcagcg acctgctatg 3000

ctaggccgta tcttggccta gctggacgtg ctgcgtacgc ccgcttgttt taatttacag 3060

atgctttaaa agacgtagca tctatacagc tttctttcgt ggaatggaat ggaattgccc 3120

ctcgatcgtc gtctacgaga ctgacagggt tgtagggtag ggtttttttt gtggcgcatg 3180

tttggctgcg ctccatgata catttagagc cagagtgtct gccattttgt ggaccatgtt 3240

gctactggtg tactacgtgt agtagagttt aattagggaa gatatccgag cgccatcagc 3300

caaaaatacc gttcagaacg caattactat gacacggcaa gcattcgaag ctgaaatttt 3360

aaacgggttt tcgtcaccgc gcgcgtagac tgcgtcatga attaaccgag agattaaaaa 3420

atccctttt agtactatta gtttagactt ctcgccatct caacggtgtg actctcacgg 3480

tctctgatga cactagacat tcatttctct ccttaacgag aactgctgac gtacggaagc 3540

cgtttgtctc tccgttgaac gcagatgtct taaacccgtc ttaaaattct aaccggcgat 3600

ccaaggagag acgcattcca ttcactgcct gcctagcttt gatccattct gcgatttgag 3660

cttgcttgct gaacatgcgg cgcgacgact gatttaccgg ccggcccgaa agcgaaacca 3720

cgcacggaag gcactccttg cttagacaca aaattatata ggttcggaac tgtagaacaa 3780

acagtctatc gtacgtctag tctgatccat aaggagatcc ggacga 3826

<210> 2031
<211> 1879
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203173_G1, chr5:191898988..191900866, Cluster 12

<400> 2031
ttgattttct cctccacgac acgcagggcg ctctcatggc ctcagtctca ctcacctcac 60

tcacccatct ccgtctgctt catgagagag agagagagag gggagaacaa agtgaagtgc 120

gagcgtgtgg tgtgggtgtg tggccggccg ctagctgccg ggggtaagtg caacgggttt 180

gccacgacag tctcactgca cctaccagcg gaaggagagg cccgtgtctg tgtgagtgga 240

gtgcttgctc ggctccatcc agtactagcc aatagcaaca ggcaaggggg cgggcagcgt 300

cgtgacgcac gcataattgc gatcaggaac gaactgaact cgaacgcggc gcccctagtt 360

acgatgatat gattcatgca tgcgcgcgct accgctcggc tggacgaccg cggcggccga 420

tcgtgaccgg ccggcgtagc gtagctagcc cggccagccg atccagtgct tgccgtctta 480

gactcgatag gcccaccatg caccccacgc ggttggtagg agcgggagcg ggtccgccgg 540

cgactgttcg ccggctcgcg gcgctgctgc gtgctgctac gagacgggtt cgagggatga 600

acgtgaaagg gagagtaggg gacggggcct ttaaatgcct gtggagcatg gctagctagc 660

tggacgcgtg ctggtccgga gtagtacgcc ggagggaaac aggactgggt gccgcctcgg 720

tgcgcgcggc aatcaatact gtagctggat gctggagcaa ggaggaggac cacgtactac 780

taccgtctac cgaccagcga gtcaacccaa cctcgctccc gcacagtgct ccaagacgat 840

tctggatgga gggtttattt ccgtgggaaa gtgttttttt tgacgatttg accaacgtgg 900

aacacgaacc ggagatccaa gcgaaagagg atttttttgca gcacaattct catttagcgc 960

acgttaattc ccagcaaaac aggtggtgcg cagctggtac acgagcctga actgaatgaa 1020

tgaatgaatg ggcagacagc cgcacaccgt gtgggcagca agcaaactac tgttagaggg 1080

tcaaacaaaa ataaataaaa acgggacgtc cgtgcattcg ttcattcatt tccaatgggg 1140

catggcgaat ttgcgatgcc tgcgcctttc atgccatggc tggcccatct ggccgtcgag 1200

tcgagaccaa ccgcacccca gcaccacgcc caagttcacc gtgaatgaat ggatggcatg 1260

catgcacgat ccatcccagt ggtgagagac gctcagatgc agatcatata tccaggcgcc 1320

tccagtctgc aatcaatacc aggcagcatc actgaatgac atgactctcg agcgcgtgta 1380

ctactactct actagcagca tggcagaggc aaaaaaggag ctgcagtctt taccaacctg 1440

tctccacaga ggaacaacaa agacacacca tcaatgagct actagtatgt gccgcccgta 1500

aatgaatgga gcctgtaaaa aagggtcagg aattacaaac gggcccgtcc aaagatcccc 1560

ccatgattac tctcgatgca catggacatg gtagcgtagt acagtacacg gctgagatat 1620

ttttcagccg gcgataagcc acaaatacca ccgggtgaag atataaactt aattcaactt 1680

aaatttaatt cagtatgttc tagatctaga attgtaattt tttagagggt ctagggagta 1740

ctgtataaga aacttagctc tcgaagtttg taggccacca cgcgaacacc gagcatttta 1800

ctctaatctc actatctagc gaaccgggaa aaaactaggc tacgacgata ctggtctctc 1860

cccatggctg gtgtccaaa 1879

<210> 2032
<211> 1990
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203200_G1, chr5:192164126..192166115, Cluster 12

<400> 2032
tctggaactc tggaccaggt ttgcttgtaa ccttgggaag cagcctatac caggcaccta 60

tgccaggccc aagcttaaga aatcgctatg ttgatggatg cggcgaatac atatcaagct 120

catcagtcga gcatgacact cctccctctc ctcacacaaa caagtgatgt tctagatttg 180

tctctgaaac atgatactgt ttttttaaa aaaaaccaca acgttagtca cgattgccag 240

aaaaaaaaac tttggaacta tatcttgtgt cataataagg tgtcatttca cattatcata 300

tgaataaatg tgtgaactcc atcgcatgtg gcaatatggg aggctgactg tctgaatata 360

catttgccat ttatatagta cctgccgtgc aaacacgatt cgcatatgaa attcaggacg 420

tgattcacgc tctgccttct atttttttaa agttaccgtt ccagtactcg accgtcgttt 480

gagctctgag tctctgactg acaaaaaaaa gggagcggtg gtatgaaaga gacaaacaca 540

tgtccctgaa gcacgacgct cctccgcacc tgcactgcac tgcatggcga gggcgactga 600

cgccgatcga aggggacgct acctggtcgc cgtcgggatc gccatgtgct acagacacgg 660

gccacgagct aataatttcc cgcaacggcg ttactccaac tccagtagcc gatggacgca 720

gccacggatg agcgcatgca cgtgttctgc gccccgccct ctgtctcgga cggagaccga 780

cggacctgta aaaagccaag ccgttcggtt ggtgtgtaaa cgtcactgac cgaggcgagc 840

agctgcgcgg ccaccaccaa ccggtcgagc cgtggcccgt ggatgtagct ggggccggtg 900

tggggagcat gcatatggcg gctcggcgcg accgccgtgc caagccggcc gttccctcgc 960

cgcgcatgtg agggcagatc ccggcggatg cgaggccgaa agcgaccagc acatgcacgc 1020

gccacactcc cagtccccgg ccccgccgta cgttagctat tccggcggtc aaaacttgct 1080

taacatgtca cttggcgcca tccagtccag tctatccatg tacctgccca gcccagtaga 1140

gtagtaccac cacatcgacc gttacgtttc acaccgacgg ctgcacgctg aatattgctg 1200

gcgccaccgc gggcgcgagg gctgttggat aaataaataa attctcgaac gtgttgtaat 1260

ttgtaaactg cggcagcgtg tcggagcgat ttgcgtcgcc taatgtgcgt aacgccagac 1320

gccgacaaag attggcagca gcagatccca gacagcggca gaggttcttc cgagcaggct 1380

cacatgccgg gggcgatttt ctacggtctc tacccccttg tgctcttgga gtgtcggcgt 1440

cggcgtgtcc gcacgcgcac gtcgatggcg cgcgccaatc aatttaccgg cgggtatacc 1500

gcgccgatcc cggccgatca cgcacgccgg tatcctgtat cgctctgccg cccggcgcgg 1560

tgcccgtggg ccaacgccgg cggttggagg agctgcctgt gtggtaggcg taggcactag 1620

tacgtgttgc gcgaccgagc gacgcgggac cacccataac tgtaacaaca gtcgactttg 1680

atccttttcc ggcttttgtc ctctggcccc catcgtcccc tgccattgcg gtgcgccggt 1740

gcccctgccc ccaccatccc catgtgagtc gagtaaaaac tagcggacaa gtggcggggt 1800

ttcgtcccgg tccatgtcac gccgcgccgg cgtttggctg cgaccggcgg gggccgctct 1860

cctgccaccg gcggtgcagt ggcagtggca ccggcaccgg tagatctgta gctgtagctt 1920

tggagtttga actgccgggt tctggaagac acggcggggg ccggcgtccg agagaatata 1980

attactgcag 1990

<210> 2033
<211> 3948
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203704_G1, chr5:194836270..194840217, Cluster 12

<400> 2033
gaactacggc taagtacgat acggagtacg gatcctttac acatgccttc gcacgcgcta 60

gccgagcgac ccgtgttcac atgacaacca tcggccactc tcttgacgtt ccgttccgtc 120

ctccatcgtc gtcaaaaagg cctcgcgaaa acccgcggct actggtgcgc gcggtgccgg 180

gggtggtgag gaaggaaggc gcagggcgtg gaacggaaga aggcccacag cggcagctcc 240

ctcccaagcc aaacccccaa ccacggccac ggggccggtg gctggcctgg cctggccgca 300

cggagggaga tcgcactcac cacaccaccc atcgggccat catcgccgaa cgcctgggtc 360

cctccgcccc gacaagcgca aaagtggccg cgcacacctg cggtctgcgt ggccgcccac 420

ccgggccccg ccccattcgc tagtgcgggg gtggggtcgg tcgggggtgc ggtgcggtgc 480

gggtgggagg gagggactga ctggcaactg ctcctgctcc gtcaggctgc tgctgctccc 540

ctcgcccgct cggccgcgcg cgaggccctg ggccctggtg tggtgggggc gcctggccgc 600

ggccgccgaa cgaacgcgcc aacgccctga gtggtggtgg tggtggggcg catgatggcc 660

acgtaccatt attgtcgggg cgggcggctg ccaacggcga tccatcgaaa ttccttcgcc 720

gtgtccccat tcacctacaa ctgcgtctgg gcatctgcgt gcatcatcag gagagcccac 780

ctttggtaat gcttttgcag gcttccgccg gcgtccgttc gttgatctac catccatccg 840

catgatctgc ccgctcgctg cgaaaagcac ggccttgtgc gcttctactg tagcaggcca 900

ccaccggggg cctcaggcct cagcgctgcg agaagaaaag aaggcagtat gggtaggtag 960

gtttggaaaa gggacgatat gacactcctg gggtaaaaga caccaaaata attaaaccta 1020

gctttgccct agatcatcat ccgagctcat cagttctgct gcgccccttt cgtctctctc 1080

cctcttttcg ctgtcttttc tgcgagctag ctccatccat cacgatcgct gatcatcgtc 1140

cgctttgtca gccgcgcacg tcgtcgataa ggcgccgacg accggaacaa acgccgcgca 1200

aagccagctg tcgtcgtaat aatcaactgc gcctgcgcgc gcttctcggc cgggcaagta 1260

cgagggtggg tgatcgaggt cgcgctcgac cattaaccta gtcgtagctt ttgtcaaaag 1320

cttgagatgg cgagcagaaa ccgcgcgcgc gctagctttt ggagaagtag ccgtcgacga 1380

tcgcaggtta tcctcgctcg ctttgagacg gaacacggat ggcctgcaat gcatgcgctc 1440

agccagtgcc gctgccgcat agatagagta acataaacta aagctccgtt taaaactcct 1500

agacaactaa tagttaacca gctaataatt tatcattagc tggtctaatg aactaattgt 1560

ttgttttgag gtagatagta attagctgtg gtattaactg agggtgtttg gaatcaacaa 1620

ctaatatatt tagtagctaa ctactattag ttatagacgt tgtaaaagtg tagcagtatt 1680

taaatgggat gcatgcgtga gtttagtcgc aaaggcggtg actggtctga agggaataaa 1740

gctgccgccg attacgcggt tgctttattt gggtgacttg agacccccgg cccctcttct 1800

gttgagagga taagctacat ttaagtattt aaccgcatcg gccggccggc tctcgttcat 1860

ttccatcatg actcttgatt gtgctgtgcc gtcgtctatt tggcgcagga cggttctctt 1920

tttggagtag cttgagccta gcctagggca ctaggatatc tgttaggtca tcgattagtt 1980

aatacgtaca gtagcttttg ccgccttgaa aatttctcta cgtacgtact tgtacatacg 2040

tggcccaaac aggttctgtt ttttatctct ataaattaca accggaacaa ttcaatggct 2100

ttaatccagc cgcagcgaac atgctttgag tccgctcggg tcccaacaac tctgttgagc 2160

tcccaactga gtagtaatac tttacctggt tctcgtttcg cgtctgcaga agtcgcaccg 2220

tacagattgc gcggcgatct ttgttgtgct cgcgagtcac tcatgcgctt gttgcgctgt 2280

tgcattggga ttggattaag tggtgtggtg ggttgagcgg ggtggtgaac gcgcaccacg 2340

ttcgttccat gccgccgttc gtacgcctta ttacaagtga cgtacgccca tgcgctccct 2400

cctgatcgcg cgtggacgga cggcgcagcg caaaccaaaa aaaaaaaagg cgaatcgcag 2460

tgtgctccgc cctggagcga gcggcaacga ggtccacaca gcaaccgaca aggctggcga 2520

actttcctgc ctacccacga gacaaactac tactactata cgctaacgct acgcgagaga 2580

gtcgttgatg ccgtatatat atgatctctt gccccccttct ccccctgctt ggcagcacat 2640

gcagcaacga cgtactcgat cgatattgta ctgtagactg ctggccgccg gtttgctttc 2700

tgctgctgct actaatttat gaccgcggca tggcggggaa ggcagcacac agcgcggctg 2760

gccggcagcc agctgtgtcc cggacacact gcggccggca ggaaagccat ggcaggacag 2820

gagggaaatg gatcatgcat gcatagctcg gtggcgctgg cgctggcgcc gcgcaaaggt 2880

ccggcggcag ggcgcgtgca ctgatttcca ctatgccggg gcagaggggg atcggacgga 2940

ccatcgtcgg aacggagaga gcccaagcgc cgctgacatc tttacgaatt gaatgaagcc 3000

tgctgccacg cgagccaaaa gcttctcttc ctttttattg ttgttgtgtg gtggtagaac 3060

aagtagccaa ccctagggcg gctttctact gcaggctatc atcgcgccac gaccgaccga 3120

accgcccgcc gatagtggcc taccgggcta cttactactg ctgtggcggc tacgcgggcg 3180

ggcgcgcgca actctagtgt aggcgtgtct ctgtgcgcct gtgtctgcgg agtgcggacc 3240

tgtcgcagct ccggccgatc ctcgccgcgc ccacggccca cccggcagcg tgcatgcgtg 3300

cacgtgatgc tcatgcgcca ccgaggctca ggtcggtatc gttcatttta tgctgccgaa 3360

ggctacacga caacagtctt ctacgtgcag cagctttggc ctgctaggtt aggaccgctg 3420

tcgctagcta gagaggcgtc ggctggtcca actcgtgcac cataccaaga gtgtacccag 3480

gttaccatgg attgatgtgc cgcctggcat gattattctg atcaaatgaa ccagatcata 3540

attttttttt cataaattat atagtattct atttgaagcg ttgcagctga tgcgcttgct 3600

gttttcatcc actgttgttc gtctcccaca cttgcagtta tatatagatg agtgcagcta 3660

cacaaagctc atagagggtt gttcatttat tcacattcac caaagatgaa tctatcggtt 3720

ctctcatgtc ctctcccctg caaattaaat ccacggtttc agggtgccca ctgtatagct 3780

attgcaaaca cactgtcatg tctacactcg atattccctc gctcgatagc tattacaatg 3840

agttaaataa ctattacact tcataattca tgtagattaa taaagaaata caaagaataa 3900

tggaactcac acctgatacc aaatatttag acataaattc cattttac 3948

<210> 2034
<211> 1906
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204246_G1, chr5:197788812..197790717, Cluster 12

<400> 2034
tttgaacggg ggattatcat tagtaacaat gcaacaaaca agttacctcc ttgcattgta 60

ctactagtac taaacgtatt tgatagaaaa aaaatttgtt gttgctttcc ggtttggttc 120

tttcctatag cctgcagcaa cacacacacg cgcgcatagc ttaactgcca agtactagca 180

agcattggcg tgcgtaggac ccaaagcgga cgcaggcaga gttcattgac cagtagcacg 240

tacgttctag ttgcgagttg attgggattt ggtaaacatc attaggacaa gtagaacaag 300

cctctccctc ctccccctca cctttcagct aggagctagc atggcgattg aagcaagaag 360

tggggacata caaaggcaga ggaaaaaaag aaagaaaaaa aaaatctatc gctgcccacc 420

cccacctcca cccccactcc cagaatattt ctcgagaccg aaagatggaa tgcaaaagag 480

agacggccgg ctggctggct ggctagctag cctaagctag agaaagaatc aaatgctggc 540

catctttgtt cccaagggtg gctgtcagct gatgcagcgc tgcatctacc ttccttgcaa 600

acaacctcgc tccgattgtt ttgttttgcc gtctcattta tttgttgggc gtgctttttt 660

tctttctttc tttctttctt tcgtgtctct gcatgcgtcg tcgtcctcct cgctcctcga 720

cgatgcatcc gcacgtgact gtgactgctt ctaggttttg cacttgtacg gccatgatct 780

ggagagcgta ataaagtaat ataagcgtca tcagcggtga tgacggaaag ggcaaataat 840

actatccttg ttgggtgggc atagggttat tagctacctc tggcttaatt aggctagcta 900

ccggctgctt tactaccatc tctggagagc gcgcgcgacc gtttggcgaa ttagagagga 960

cggagaaaag gttagactag aaacagtgcc cctctctccc tcgcgcgcgc gaggcgcgat 1020

gcgtgctagc taatccgtga cctaaattac acgtatgcat ggctagctag ctagtacgta 1080

cacccgtgtc cacacgcgag cgagaggtag tagtactcga tgatggactg gaaacgcgcg 1140

cagcatggtc aaatccaatg tgtgtttggg ttgtcaatca ccacgccaaa acacctcatc 1200

tcagctcgca taggacaaag gcttgagcgt tgccatgcga tgcgcgtagt attcttcagc 1260

agctggtagt agccaattag ccatttagcc gttgcgtaca cacatgcatg catgcgcgga 1320

gacggagcag ctaggcgtgc gtgcgtgcgt gtttcctcat caacccattc ctgcgtttgc 1380

cgattattat tattgttgtt gttgttaggt ttaggcacca ggccggctcc acccgtgccg 1440

tgaacggccg gtcaaatccg gcgcgcacgc acacggttca aacgcgcgcg acgacacacc 1500

acacgggaca gtttcgccat cgggcggtga cgtgcgtacg tacggtggtg attattgagc 1560

gggccgcgcg ggagggacaa ggtcgcatga tgcaaggcac ggcagcttcg taccgtacgc 1620

ccgccccgcc cgtccccatc cccaacacgc attaagtgcg gccgaaggaa aggcgcgagc 1680

gagcgagcga ggcggagtgg tgcccggaat taattggatc gagaactcta ctctactact 1740

ggtggcagat gccatgccga tgccgtgcgt gcctgcgctg cgctcccggc cccatgatgg 1800

catcacaagt atttcccccc ggcccggcgg ttggggttgg gttgggcggg cgtggcatgt 1860

gaacctatcc tcctctcttt ttttttcttt ttttttttca aaacgc 1906

<210> 2035
<211> 4044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204612_G1, chr5:200117168..200121211, Cluster 12

<400> 2035
cgctcctggt ttagggttta tgatttagat ttggggctat aattttgtat taatgggatt 60

tacaaattgt taaccaatgt ataccaaaat ttgaattata cctattgtcc ggactgtatt 120

gtgtcctacc attttgtatt actggttcaa atgggggcac aaaaactctg cctttggcaa 180

tacggcatat ggtgcggtcg atcaagttcg atctgcatag cccctcgaga ggctttgcga 240

aaagaagcgt tggcaatggc aacgttaggc ccgagcgcag aaaaaagcta aagggcaaaa 300

actaaagcga tcgagttgcg gtggctgcat gatagtttct tgagaacaca cacacacaca 360

taaaagcagg tcgccatggc atcgagggac gggcatcggc acttgcccct gccggctgct 420

ggcgctgcat ccacgaatgg ccgaggggac agtcggacac acacagcatg gacacgatag 480

catggtcagt agacagtagt agctagacag ggaagctcgg ttcagaaaat agtaggagtg 540

cacgcagatt atctgctgcg tgccactgcc acgccacggc accctgaggt cacagaccat 600

gcatgggtag ctaggaggcg taggctgctt gaccaccgct agctagctgg ctgcttcgac 660

aaagcataaa acatcactag tacacgtacg ctcggccggt gtctgcctgc cgcgaacgac 720

acaccactct tggttagcat ggtctcgcaa tgatgccttt ccgttccacc accacatgtt 780

ttgccggcac ggcggtaatc accggcgcaa acggcaatca ttcggcgaca gctagcccgc 840

ccgcgctgtc tttaatctgc tcggttattt ttagagtact actagatgaa gcggaaaaag 900

gcagctgata gatacaaccg atctatggct gggatgcaaa cggctacgta tactacacta 960

cactgccgga gggacagaca gggagtcgat ccagcgaaga atctattcaa aaacacttgg 1020

ggggagctag ctagttatta attagcagta gtagagtagc agacggtcgc tgctgcttcg 1080

cgagtgcatg cagcgatgtc cacaggctcc catcccagca gacgttacta gttccctgat 1140

cccaaggcgc atcgcatctc tcgcaaagaa agcagattcc cgctgcaaca gggtcagggg 1200

gagagagagc agggagcaca ggccacaggg gcagcaaagg tgttggcttg gctgtcgtcc 1260

ggcgggcggg cgccaacttt gttgcaggcg acgacgaggg gggcaaccac ggtccgcagg 1320

tacaggatgc cgttttgttt atagccgtgc gcgcttcctt gcgtgcactg cacacgcatc 1380

ccacgcgggg cggtcaaaga ggcgcatcga gcgcgttgct tctgtacggg ccgcgcgcag 1440

ccttcttgtg aactgggctc tcgctcgcgc ttgcacggcc agccttccgg tcccagaacg 1500

atcatgacga ccgaactggc ttggagaaac ggagccgact gcagttcaaa tccctcggta 1560

ctgtctgtac gccttctgaa gttctgatcg acattggatt tataccgaca accatcgtcg 1620

tcttttagcc ggtggaaatt gggaggaagg aatgttcgag tgcggctgct gaaccaacca 1680

gacggttcct agtacaacgc atgctccgtc ttttgacgca tggagaagag atgtgggtag 1740

tagtcacgta gtacgatcgc gagccgttct gtctgttgcc ggccccaaag gcctcctcct 1800

actcggctga gatgagctga gctgagcgag cacaggtcag aatcagatga ctgggatcct 1860

aattccgaag ggcgttggat actgtgccag gatgccacta gcactactac cagcagtaga 1920

gtagtagcag ctgctttcgt tgcccatctc gccatgcacg gaaacggcca agcactccat 1980

tttggcccct ccgatgcgcg cgccccgggg agcggggaac ccctccgcgc gcctttacgc 2040

cggatggagt acgctgctgc ccccggtgcc tggccgttcc gacgtttagc cgagcccgcc 2100

gcgtgctcgc tggcgctggc cccgtcgaaa acgacgggac gccggctccg ccgctgcgct 2160

gcgctccctg tggcgccgcc cgcaggccgc agcggacaga tcgaggtttt ccaggaggaa 2220

taaaagcaga gcgcagggcg cgcagatctt tcacgaaagg ggggaggggc gaggcgagcg 2280

ggcaccgggc acgagagcgg atcaggtcat caggatggct agcccggcgc aaagacggcc 2340

gcgaactaaa ggcggtacgg cgccggatgc gtatgcgatc gcgtcgggtt gggttgggtt 2400

gggtccgtgg gcagcctttg gggaaaggcc actccaactc gaataagtac tccatgctac 2460

tccgtatagt ttctggccgc tgttgcttgg cgagcgcgcg gctgcctcac tgtccccact 2520

cctcagcgtc ctgtagctgt aggggctgct ttgggccaag aaagggacgg tgtgctctgt 2580

gcagctgaaa gcctagccca tcccggccca ccgaagcaga cagcacacag cagaggccta 2640

ataaaagacc cgcatcagtc accgtttttt tcggctgctc gctgttagta ccaaccaacc 2700

aagcatgtct cagaaagaaa acgtgctgtg ccttctgtgg cgcagtgctc tcacagtaga 2760

cagtagtagt acacactctg cgtcaatcga ttgcgcgacg gacatggaag tatggacgag 2820

gtgatggtcg tgtgcacaga acacgaacaa atggagcgaa cgatcatgcg atccgggcga 2880

cgcgtctctt tctcttcggt cggccgatta gacggttcgc tctcgattga tgatcccgcg 2940

cgcttgactc agccgtcacg tcggccgcgc cgtttttgag ggttctgagg agctttgaca 3000

cgaacggggc gcggcgacca cgggtggtcg cgagacgcgg ccgcgccacg cggccggccc 3060

ccccgtgaac gaaagcatct gtgtgcgcag gacacgcacg cacctgcgct cgctcctctc 3120

gctttcgctg aaatccactg cgccgcgcca tcggcattgc cgccgccgtc cctcggtgcc 3180

cactgcccac tgctttctct cgctccgagc cgatgaccag ccccatccat gccatgcacg 3240

cgtgcttcaa agggcatcgg cgtctactcc agccatctta tcatcgctct gcagtgcagt 3300

gcagtgcgtg gaccgcagcc tgtcgcgaat gctttcgatc acaaaaactc tggaggcgac 3360

agaaaaagta gctaggaggg atttagaggc gtgctatact actcaaaacg cactgggtgt 3420

gggtgttttg tgcctcgctt tcaactttcg gagccgttga tctggctctg accgagaggc 3480

aaggcaatat acactggagt gctggacaaa atggtttgcg cgtagatcgg tcatgatgca 3540

gcgctgatac gatcagacag acgctccgag ctccgcaaag acgtccgtcc tcaggtgccg 3600

agagcaaaca cctgaaaacg agatgacgtc tgtcgcctac taggtgtacc gctgtggcgc 3660

gacagttgcg tcacgctctt cacaccgaaa gagtacaggg aaagtatggc atgagcatga 3720

cactgacttg gtagcaggaa tccactactc ctattccgtc ctggaagtgg aactgtgtac 3780

ctccgtacca gaataaccac gtctttgctt ttttgatgaa ttaaaacttt taaattttga 3840

atatgtctat tgaaaaacat caacaacggt tgtgtcttcg aatatgtttg tcatgaagat 3900

atatatatat atatatatta aacaagatgt acaatcattt tgatacggag aggaggatta 3960

gaaggtgcgc cgaaggatga aggagtcgac caagccggca gagggcagcc tgctgcagca 4020

ctggcgcgag cgcggacgac cagg 4044

<210> 2036
<211> 2246
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205453_G1, chr5:205036356..205038601, Cluster 12

<400> 2036
gtgcatcaaa tttagatatg atggattgca tatcatgact agatggaaaa tacttaggcc 60

gacacgacgt aagtgagaca cgaattatag aaaactagcg tttaaatgtt taaatggtta 120

tttcattcta ttttttatat gttcacaaaa gttatacaaa agttatagaa aatattaatt 180

tctctttctc atataatttt tagtctatag taaaattatg gatattagct cgaagcatga 240

tggcttgggc cgtgcctgac ctaagttcca gctctagcca tgcgctcgtg gttccagggg 300

cgggaaggcg acaccgacac ttgtgcctgc ggtctgcgta cgatggtgca caccaggcca 360

ccagcagccg cagctgctcc atgtgaccat gtcagtgtag cgcgccttca ctactgtgct 420

agactattgg tactagcgtt acggactaca ggaccgttgc ggtaaacatg tttcgagatt 480

tctcgagcac tcccatctgt ctatccgaaa cgtaggaatt tcatatagat tattcagaaa 540

tttgcagaag tcagtctatt tttacgcaaa aaagatctac gtccgacggt tattcggttg 600

ttccacctat ctatcacact ctatatttta aatttaacat acaaacagta taatctatct 660

ataatacgaa accgaagcct aaatggccta acctgcctgt tcctgtcgcg gaagagcatg 720

tgaagcaacg cgggaagtca ccgaacgttg agtccaccgg gaccccggga gggattcggc 780

cggtctccac tcctcatcta ctcctaccgt tggcggaggt ttcctaggac ggaataatgg 840

cagtgccagt gcgcccgttt gtgctcgtgg agtcctgtgc gtggttccga ccgttggtcg 900

catccggccg gcgcgtggcg tggcaataaa acccagtcac gagagcagag aggacagagg 960

cgagagctgt cgaacgttcg gaaacgggct tcaatctact actactcgtg gtcttggaca 1020

gaacactcta caacgaacac agcagctaga gctagccagc ggttacccgt cgtcgccttt 1080

cgcgacctca ctgccccgca accgccggtc acctgaaaag cggcggagca cgcacgcaga 1140

cgcagacgca gcgaccattc ccgagcagca tgcaggtgca cacacccaca gctaaaagcc 1200

gcggctgccg tgcccgtgcc gtgcatgccg accaaagtgt gcagcccccc ctgggccgtc 1260

tttcgagtgc gagcagtcgc gcatgcagac gcagctagca ttaagcaatc gtgaatcgac 1320

cacgttttgt cgaggatcca aggctttgtt tgatgacgag gggcatgcat ggctgggcct 1380

ggctcgcgtg cataacggcc agcatgcgcg tttaacggcg taacctgctg ctggatgatg 1440

atcccttgat ttctagtcac gcaaacgcaa gcgaagcagc aggggtccgc ccgcctttg 1500

gcccttgcg agcccgtccg tcgcttcgct ttgggacgcc cggttatttt gtcccgtggg 1560

cgtgggctgg tgaatggcga ccgtacgctt taacggctcc ccccgtccca tcccctccgt 1620

gagtgagtct cggcctactg gcctagccat cgacgggacc tattcaccta tcccattccc 1680

accaggccac caccccacga cacccaacgg tctcatttaa caaaacccgg cggatctccg 1740

ggcagcaagg aaacgtcggc tggatcgccg tgccgtgatg ctgcatgcaa tgcacggggg 1800

cccgcctcgg atgtcatttt gttagtacgc cgccgaatcc tcattagtag taattgttcg 1860

ttcataacta cggtagtgtt ttttttgggt acaaacccgg ggaagtcagc gaagcaacga 1920

gctactgccg tctgtctacc agcaccggga acactgtaaa agcaaatggc ctggcctgaa 1980

tgaacagcag tggccggcgc agcacgagac gagcacaggg accactacac tacagtgttt 2040

actgctacct gtgtctgtgc ggcagcgtca tctactgtac acttaaccaa tgcaaatgcg 2100

agccgtcgtc gcgtcgcacg gaaccaaaaa aaactgcccc gaaattccat acgacgaaga 2160

aatggctctg ctattagctc gctgctgctt gttttacacc accactaatc ctggccgctc 2220

gtgccgccga aactcgtgag aaagga 2246

<210> 2037
<211> 1706
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205643_G1, chr5:205773760..205775465, Cluster 12

<400> 2037
ttggtttcga tggagcagtc gaacagcggt tgggggcggg ttgtcaaacc ccgagcctta 60

acgcgaaagg aagagaaatg tcgcgggaac atcgtatgct tgtcaactac tactagtagg 120

gaggagaata ctaataactg gccacaacta catcgagccg gatgatgggg acgggcggtc 180

tcgatcgcca gagaacacgg tgaatcttgg ggaaaaaaaa ggctttgggt ttatttcaat 240

ttcaactcgc agacatagac agacggcgac cgcgtctgaa ctctcaagga aggaaagaag 300

aactccaacg cgcctggtgg gcaggaaggg cctggccgcc acggctagct ctaccatcca 360

tgtacgtgac agcagatggc ggcggcgccg gcgatgagta gaacgttgcc gcgtagcgta 420

ggggatggga tgggatggga tgggatggga tgggatggga tggaacagga acgttcttcg 480

tttctcttcc tgttgtcgcg cgtccccttc cgctctgttt ggacgtgaaa aaaaacgaag 540

ggcggtcgtc ggggtgggct cgcgccgggg ccatgccatc caggaactcg cagtcgtggg 600

gatggtgctg gtgtcctcgt ggcagtggca ccccggttga agctattgac tgcttccaat 660

tatgcgccgc gtccgcgtgc gctgcgagtc cgcgcgcgcg cgtgtgctcg attcgtgcgt 720

ccacgatatc ctttttttt tattcgtttt gattggtgga gaatattatg ctctgcatac 780

tttttggctt ctctcctgct tctaatcagc caacgtcctt ggatttcatc aagaactggt 840

tagttgtgtt gtgcatagag agaggtctcg agactcgaga gtatgtcctg ctttgcacgt 900

aggtcctttg caccgacaca gtccgtcagc gtgcttccta gtggcaaccg ggcaggaggg 960

ccctcccgag gctcgaggcg ccacgggctc tctagagtag agtagcagtg acaccagcat 1020

ggcgtcatct ccggtccacg cgacgcgcga accaatgggc gccggacacg cgagatcggc 1080

cggctcgtca cacgtgtcgc cgaggcgccc caccatgccg gtaccacggc cgcgcgccgg 1140

gactcggtcg gcggtcggga tcgtcggggt cacggtcacg ggcgggggat cgtctctgac 1200

gtctttctcg cggactaact actgggtcaa gcagcccaag tcgcgtacag cggcggccac 1260

gtaccggcgt acgtacgcac acgacaccgc gcgctttccc ttcgcttttt tctgagcgct 1320

cccgagggcc catccgcctt cgcgtctcgt cagcttacgt gttgtgccgc tggccgcctt 1380

ctgacagtga cagaagtcac agaaccacca gcgatcagcg gggatggatg cctgtcgagt 1440

ttgaagcggt cccgcgacgc ggtgcccggc gccggcggcg gtaacgtcga gtcgatctga 1500

tttcgcgact cgctgactcg cgtgctgctt ctgacggcag cccaacggct actttctact 1560

tgcgcctcta cgcgtggcag aaggagggga tcttgggaag gtcacagttg gtactccgta 1620

tatatgattt tcagacaaga agtagttggc tagctatcta aataccccgt tacaaaagag 1680

caatgtattg gccgatgaca gagtta 1706

<210> 2038
<211> 1874
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205795_G1, chr5:206722069..206723942, Cluster 12

<400> 2038
tgtaatagag aaacatagga atattctgaa ctggagtatc caacaataat agaaaaattt 60

aagggaaaaa gagagatcga cgcggaagaa catgcacaca tgatcatcac gcccacggcc 120

tcgatctcgt gggtgatgag acgagcgagc gtgtgcaaca cgtttatcta cgtttccaac 180

ttcacaaata gtatatatag aattcaacta ataagttggt tagaatctct cttaaattta 240

actggttatc tctttcacat cacgtctttc tttataatta gataatctat tgaattaatt 300

tagactattc acatttaaat gcaacatgtg ctttcatgtt tgaaagaaaa atgcacgtat 360

gaccgtccag agatactacc tgctatgcat atttttttat atgtataaaa agcaacaact 420

aacggaaacg catggagaaa gtagaaacgt ttgcccgaca aagaaaagga gcgcgggagg 480

gggacggaga cacgaaactg agccacctag aaattctttt ggcaaacaac atgggccttc 540

atatctacgt gggctttttt taagtatctc agcctcgtat aagtgttagc ccttcggggc 600

tacgaaatga taacaggatg ggccgttcgg ggtggcagcc taaaaaaaaa aactgcttgc 660

cggatcttct ctgtttgcat ttcctagagc ttctttgtag ttgtagttgt agggacgaga 720

aaaatgtaca gtctactttc aaagaagacg acgacgtaca gttcaggtct tcaaggacta 780

catacacgtt cattggtatc actacactac aagcgtggtt tttccacacc tgaagtctga 840

actcaactca tcttgcatta ctcctgatca gcaacagtgg cgcggctgga aagcgagcgg 900

gcggcgatac ccaaggacga tcgggagacc gagttctccg atgcgaagga agctcgccgc 960

ctggtcctgg aaagaaaaag atgctcctcc gttctatcaa catgtgcctg ccgcgctagc 1020

agcgatcacc gacgatggat catgatcgtt gttagcaaat catccgcgcc gcttttggtg 1080

ccgccggacg ccttttccca ccctccccgc cacgccagga ccacaggtcc agaggcgcgc 1140

gacgagcaag tggtgtgtgt gcgtgtggtc cgctgcggcg cgacgtcgag gccgagagca 1200

ctccatcgta cacgtactgc tggagtgctg ggaccgccag aagtagaacc agaagcggat 1260

cgttcagaga agagaactcg tgcccgctgc tgctctcaag gcgcgagcgc tggtcccccc 1320

tggttagcgg cgaacaggac gaggtttgac cagtctagcc ccgtgataaa cccaggccgg 1380

tcacggtcac ggacaggagc acatgtgagg tccgttggga accacaggta ctggctgcat 1440

tggttgattc attaagcagg tcgatccaga cgagcaacga ctgctcactg ccaactacca 1500

tcgggaggga cgactggcca agcggggagg cgcaccaaca caggtgtcgc gctcgcgccc 1560

atgggccgat tccctggctg ggcctccggc gcatcgtggt ccggcccacc ctccgctttc 1620

gcagatcacg gatgcctacg ggaacggcgg gatccgtctc ctctgtcttc gcgacatggt 1680

gtttctgatc gattcgagag gtgagcgtgt cgcggctcgc gggaagccca tgccgtggat 1740

ctccctcccc cctcgccgca gagaaactgt gcccggaaag gcatggtggg tggttgagtc 1800

caccgtggac ggacgctttg cttcggtcgc atcgcatcgc atcgcatctc gcttgcatgc 1860

tccatccagt tgga 1874

<210> 2039
<211> 1537
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205831_G1, chr5:206927838..206929374, Cluster 12

<400> 2039
ctttggtacg ctccaataac ttagggacga gtttaggaag aagtcaaata tgttgcatac 60

atcagggatc caccatgctt gacgacctac atgtgggtta caagtttcaa cttcaaatgc 120

ggatagaaca agattagtac tagttcgcac gcgggtccag cgcatgaatg gaaagtgcag 180

agatagagat gcactgcact cgcattggcc cgatgactaa cagcaaggtc gtgacggtaa 240

cgacaatatg tcactgctgc ctggtacagt ttgctcgttg cgtccgagag tgctacgtta 300

cgtacctttc catggagttg gagatcgtcg tccgagacag cgagttggta gtaccaatgg 360

agcacgtacg acgacgaccc cccggcgaat ggcgagaagt tgaccgagtc atgatggcct 420

ggacgacggg caagaatcct tctgcaagtc agctagctta gctcgccgtc tttgtggata 480

atacatggaa atgtttatgt tccctgcatt aacgtcgcag aatatcaagt tgttgcagac 540

ttgaccactg cccctctgat aaatgtagga gatcgatggg acgatctgcg ctggagaaaa 600

aaagcggcaa ttgaagtcaa tgcgaggacg acagtcacga caaaaggtag taagtaacat 660

ctgctgcaac ctccgtccaa acgaatatga cagttctaga tttgggtttt aagtcaaacc 720

attctgaaat taattgaatt tataaaaaat cacccggggc gtgcgtgtgg aaaggcacgc 780

tttttgctct gcccaggtgc taccgtgtgc tagctagttc cggtgtcgtt tgaaagaatc 840

gtccgtctcc cggagccttt taaccttcct atctagtgct ttatcgatgc gatgagctgg 900

cggcacggca cctcaccggc gccgacatcc gaaagacgac gccacacccc cacctcgccc 960

gccggcgccg atggtgcacg gccgggtcgc cgtccgcttc gaccgcgcaa gcgagccgaa 1020

gacggcccac gcggacaagc gagatctccg cgagccgaaa gcagagcccg accgccgacc 1080

cgcacccgcc atgccggccg ctttccggtc gaggtgtagt caggtaacgg gcagtgtcag 1140

gctagctatc agtgagacgc gcgcgccaca tgatcgaccg gtcgctcggt ctgcatgctg 1200

gtgcctggtc tggtggtcat caccaggcgc cttttgatcc gtcaggcaac ttttttgacg 1260

gatctttgga gagaagctag cgatggcgac gtcgcgacga tgctgtgcga tcactggcgc 1320

actaccggcc ggaagtccgg ccgggtagag atccagcgtc gcttacagga tgccacacac 1380

gtatgcaaaa ggttacaggg atcttttctt cctacgaccg aggtggagga cgctcgacca 1440

gtggtggtct ggaatctgga tgggatccgg gatgatctta cacggaatga tgatctgttc 1500

actttcattg ctgaaagatc agcttttatc taagcct 1537

<210> 2040
<211> 2932
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205987_G1, chr5:207500205..207503136, Cluster 12

<400> 2040
tggaagcgag acctgtcacc aaagatgggt ccgttggtga atctggtcca tgcaacctat 60

aaggtcttgg gccggaccgc aggccgcagg gcctaaaatc acatgacgat ggagtggcgg 120

actgcagatg gccacgctat caccttgagg cctcagcgac gcatgcggat gcggctctga 180

cctctgacaa aaacttttgc tatttttgg ctggagggag ccccacagac agagaacgca 240

gaaacgcggc tgtgagttct ttttcaactg aaaccaaaat ggttgcaacc gtgtttttag 300

tcagattttt ttgcttaatt tcctaataag ggtctgaaaa cacacactcg gtctcttgct 360

tccactgttg tcagtataat ttcgtttggt gtcttggtgg tcactccctc tgtttcggtc 420

ggccaacgaa aaaaaaaaca cgcagagaag ctgcgggaca gtttggttcg tccaggccac 480

atgtcgctgc tggcggcatc tacggatgga aacgggcggg gaaaccggcc ggaagtcaaa 540

agggatcgtg cggaagcagc cgcaggacgc agcagcccgc tgcccgcggg ccgcccatga 600

ccggctgctc gctccccccc gcggcgtgct gcagcctgca gtgaagcgaa cccagggcga 660

ggcacgggaa aggggcaaga gagagcagag aagctgtggc ctgcctgcct ggcacctgct 720

cagttccaga acgagagtcc tccgagtcct ctgccgtgtg ttttccgatc gtcgggctcg 780

ggcacgagca cgacacggtc aaagatctcc ctcctcgggc cgatctcccc tggcgccgga 840

cctgacaccc ggatctcccg agaagcggtc acgccgaggc tgcggttggg cgggcagcag 900

ggcatggaac ttccagaccg ttgccgttgc agggcatggg gtgctgtgac aagcgaggca 960

caagagaacg tgacatgaca tctactacta ctactactca tcagcgtact gttgtcgacg 1020

acgagcgctt gaccgctcga ccccgccgta gcctctcgga gaagacatcg gacactgcat 1080

gtgcagggac gaattgcgcg ctttctagtt ctcgctgtac gcacgcagga catgcagcta 1140

gttttttagc agtaccgtac cggtgcggcc cgtacgtgca aatctgtacg cgttggttct 1200

cctcctgcta ctacagcaga acttttatca agtgtagcct ttcgtaccgg acggacccac 1260

taggctgcta ggtacgctcg cgatcgcgtc agcgccactg ccgcgcgcta gttttttttt 1320

ttttgtttt ccactggtcg ttcaggctct ccggttcgcg gttccgcccc tagggagtag 1380

ggagtgctag tgcggcgtac tagccttttt accgatgctg ttgccgcacc gggtaggggc 1440

ggccccgtca ttgcgcgcct caacctgtca atcaaccaaa cctgcgcgga cgcgagcctg 1500

gaggcctgga gcctcgccct acctgcagcc tttctttttt aaccgtcgcc cgctcgctgc 1560

cgtacacggc gcagggcccc ggcggtggtt tctggttggc cgcaggggct gccggccgtt 1620

agacgagtcc cctccgcccg ccggcgtggg cccgccgaaa gcgcccggtc cttctccccc 1680

acttccttcc agtcccagcc caggacgctg cgcctgcgga gcgccgggcc ggccgcttcc 1740

acgaaaccgc agccgcgggc cgggggggacg gccgcgtaca cccactgccg cggcacatgc 1800

cgctgtcctt gccctccgat ggagtactag gatatatatc gcgcctgtga cgcgcggtgc 1860

ggtggacgac gatccaccgc gcgcgccccc gcacattttc cacaggcggg cgggcacgcg 1920

acacgacaca cccatgcagc agctgcacgg ctgcgatacc acgtacatgc atgatcacca 1980

ggtacactgt acacaggtcg tcgcagtttt gtcactgcga accagggatc ggaggccgac 2040

ggattcgtgc ggcgatcgag tggctttgct agtagtgccg tgttgggtca aagaacgggc 2100

aatcatttct actagttgga aagctgcagg gggatagctg gccgccgaga cttttgggca 2160

caagtgcatg tgtcaggaat atcgttcgcg cgcggatgca agcggattcc gatccatcgg 2220

tacatgacgc acacgcaaca cgcaaacatg caacaacggg tgtctgtctc catcgagccg 2280

gccaccacca cccaccacca gtcttcgttt ctcgctatca cataaaagct gtgagcctgt 2340

gaccaagaaa ataacctctg cgggccgcct gaaatttttt tttcacggag gcacacggca 2400

actgatgcgc gcaacacatg atttatgatg gagtagagta ggctggtcca gacctaaaaa 2460

aagtgccgga cagagatttt actatgccac tttctcatgt gaaaagatgc ctctgccagt 2520

cgttagctag ctttcagtgg tcagatcttg actagggtgc agcagaggaa agagcagtgc 2580

atgtcctcgc atttttttga ccgcgcgccc gtactacgcg cgcaggaccg atatttttat 2640

tattagtagt atgttagtat tattcacacg acggttggct ggtgcagcta cctgctactg 2700

ctgcccgtgg atcagacggc cactgatgaa ttggaggatg gacctcttct ggctcctgcc 2760

tttcgcagtg ctagttactg caccgctccc tagctcgctg ctagcctctg cttagatcga 2820

ccaaacgcaa agtactccct aggtttagct tgtaccgtac ctaggttcaa ctaacactgc 2880

aataaaaaag aaatcataga atacatattt gggagagctc taaacccttt tg 2932

<210> 2041
<211> 2036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206075_G1, chr5:208168349..208170384, Cluster 12

<400> 2041
ccctagtgga taacaggaca agtcgtcctc ggcctgtgct aaactgttcg taattagatg 60

cccaggcgcc agcgtagccc caaatttata ttcttgtcag aaactatggt catcgtgcta 120

agcaacttag atggagttta ggcttaaaaa ggtgagtgtt caatctagta gtaaactagt 180

agtgatggtt gaagtggcgg cttagccctt ttttgggatg ataatgcatt ggtgatcggt 240

atattgatgt gccagtgtta ggtatattga tgtgtcggtg tctatatata tccaaattct 300

ttttacttgg cgcgtgactt tgtttgatgg tgagccacgg gaagaaaatc gacagcgcat 360

gtgggatact ttgcagagtt ggaaagcccg ggtccagaga gtcatgctgg tttactactg 420

ggtattttaa tgagactctt tggcaatttc agcatttttc agccactaga agaggggaga 480

aacaaataat ggaagctttc agggaaactt taaatttctg tgacttgcac gatattggtt 540

ttatatgctt tgccatggat ctacgacaat tgtcagcatg gggttcataa tgttagagtg 600

gtacggtgct ggatagaggt gtcgggtccg aagccagagc tggatgggtt tgtttcgtaa 660

aggtacgggt gactcagttt ggacttgccc tgaccattgg cctctattgc tgcagacatc 720

gcaggttgcg gctgctgatg ggcgccagaa aaaacgtgtc ttttacgaga tcatgtgcga 780

gaacaggagc cttccattga tgaacgagta cagggtacct ggggatggtc tcagctgtac 840

tccccgcgag taaaaagaga tggactgatg gagtaaaaag aagttcagct cagtactgtg 900

acaagtgtga tgagtgatga ccaaggggag tagtgcacgg ataatgcagg tatggcaaat 960

attcatctag aagatgaacg gagatacatg caagcctctt cggcaaaacc cagattggtt 1020

ataggccttc gcggaaggat tattggaaaa ttatattcag gtggtgggat gaccataaac 1080

aatggggtta gcgacgcaac agaataaacg tcacaggaac ctgttcatca gatgaggaac 1140

agctcctaag cgtggacagc tagcttgctt ttcttgtgca cacatgctag tcttctttac 1200

tgttctacga ctgcagcagc cgctgcgagc gagacgagaa atgcattgcg gccggtcgga 1260

ctgacctgca agctgatgcc tagatcgata tcaattcggt aactaaagtc gaactaggat 1320

cctactcacc agaccaagaa atacaaagcg catttgttct ggccgttttg tttttggggt 1380

aaaaaaaaga cgcttttcat ctgctggtgc aaactaaaga aggaaaaaaa aggcagcaac 1440

aaataaaaag caggaaagac gctgatgggt actttggtgg gggacgcgga aagcggccgc 1500

gtagtttta cacgacgatg gttttgccat ccccaagctt tttctctctc tccctctttt 1560

ccccccggcc cgccgcgcac tagcgagctc ggcccgatcg cgacgggcct gaaaaatctc 1620

tggtgccgac cgagcccacg agcagataaa aaaaattcat ttcgaacttt ccatctgaaa 1680

tacgcatggc gcgcagcaat taatgtttgc gagctgactg acatgacagc aaccgttcat 1740

caggtaatga tatttctacg cattttata gacgagcagt ctgacctacc tatcccccca 1800

tctttccgac catgaacacg acgatttaac taattatatg ctgtacgtgt cgctgcaact 1860

gcaagtacgc gcacggaaag ccggcggctc gtcgagtcca tcacgatgga aaagtatatt 1920

tggtagcagc agttgctcgg tttgttgttc cgactggctg ttgttattgt tgttgttgct 1980

gctgctgcca ccaagaacga tgatgcgggg tgtgtttttc cgtttattaa tttggc 2036

<210> 2042
<211> 2134
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206570_G1, chr5:210769007..210771140, Cluster 12

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(167)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (150)..(150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (151)..(151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (152)..(152)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (153)..(153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (154)..(154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (155)..(155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (156)..(156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (157)..(157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (158)..(158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (159)..(159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (160)..(160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (161)..(161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (162)..(162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (163)..(163)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (164)..(164)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (165)..(165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (166)..(166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (167)..(167)
<223> a, c, g, or t

<400> 2042
gagtcctgca ttgcacaggt ctcacctacg tacgtaccca caagtgtcac atggtttcat 60

gacgacgnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnagg aatcttagag 180

attcgtccat ggtttctgac gacgtgacag agactggtga tgccctagag aaaaaacagc 240

cacgcggttg cacgttccgg acgccgatga cagccgggcc cccaatcggc tcccatcatc 300

atcgcgctac ccatgccctc catccatgtg caagaaaacg gcaggggcga ttaggttaat 360

gaattgcatg cgaccaggtt gcctcgtttt cagagccctc gtgctacccc gtccctactc 420

gacataaatt caatgacaat attatttgaa tgttctcctt ccatcatctc ggtagaattg 480

tagcattatc atgagctata tactagtatc aataaggcca tcaagtttag tccatgatcg 540

gtagatcggt aagattagct atcaataagt taactgcccg ttctttcttt tgggacttga 600

tgcttaggct gctatatata ttactgttga cacgatcgag ttgagatttt ctgatttgag 660

atcagcaggt acgtcagggt tcgaaagtga cctgactccc cctccgctct ggattaaagt 720

gtagctacat aaagcgcccc tgtaaaaagc cagattaaag cgtgtgtgtg tgttccctat 780

cgccatcaac gaaacacgtc ctgttatact acttcactgc agcagctagc agcgcaagct 840

cgtgaagaga acttcgtagc caaggcgccg gctagtatag gccagtgaat ttggttctta 900

attaagatgt aagttgtagt ccacgtcaag tgcctcgctt cctttctcct tctcaggaat 960

tcttggtaga gagattcggc gaggagcaca gatgcaatta atagtttgtg cgagcaacgt 1020

atatagcatg cgtatccaag gtagcaacca gtccagccag gatacatgca tagacaatgc 1080

tgagattatt cccgcactag ttaacaagag ggggtaacat acagcacaat acagaaagac 1140

agagagagca gtgcttatcc aaatggaatg aataataaac gggagcctac cactgtacgt 1200

gtaggataaa attctgcttt aattttctgt aaagctagat ctgtcccgga aagaggccgg 1260

aaaattcgtg cctggctcgc ttacgcttag gggatgcccg aagtttaagg ttgtgcgatc 1320

cgggaaggcc aatggcaggg ctgggtgatg tactaggcta gattcccgtg tctgctgctg 1380

gtgcaagtgt tcatccaaaa gacaggtacc gcaccggaaa gcacgcacgt tccttcctcc 1440

gagatcgcac aatctgaata ctctctcacg tgtgccgatg ccgttgcctc caacggaagg 1500

cggctacagg taggatgctg gcgctggcgc tggcgcattg ctcgatcgct cactcacgtt 1560

ctgggccgac cacctgactg taaagagcac tcgccgcccc tccgcgccat cgatcgtgcg 1620

tgccgtacgt ggcagagcgc gagtgcatgc acgtacgtac tgcgctttcg cgttccggca 1680

cgagagattc tcctggtttc agatgagctc aacaagttga gcatgcacgt acgcctcttt 1740

ccagtgcgag tagtggtggc tgcatgtact gtacgactag cagccaaact gcacgtgaaa 1800

aagtgtctag gtagcgctac atttataaag tgcagcgaaa ggaagcaggc gatcgagaac 1860

gcaacgtagt tgttcatgct cgccgacaaa cacagcggct ccgtttctac tgcatgcgtg 1920

cgatttttct gtaaaataaa gcagcagcag ctagctagcg cgtcgtcgtg tcgtatgaac 1980

gatcggcgtc gtcggcacgt actgctgcta cggccagttg atcgatctct gtcgatcggg 2040

ggacggcgac ggcacggcac actctcgcgg ttccattcca tccacagaac cttctcgacg 2100

cagtgacgac tgcggaatgg gctcgggact gctc 2134

<210> 2043
<211> 1438
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207053_G1, chr5:212865158..212866595, Cluster 12

<400> 2043
tgtgtgtatg cgctactact tggtaaagta gtcgacacgt acgacaacat cgcgcctttc 60

aagtagtata tagtaggaat gatgccgagc tatcttgtca cataattcaa aaattttcca 120

tcctcgcctt ttcacactct tttttttctc tctctctctc tcttgacgaa aactaaccac 180

ggcgcccggc ctatctgtgc gtgcgtgcgt gcgcgcgtaa ttattggggg aaaaggtgaa 240

aaaaaggaga ggaaagggtg aatcgcaatc gagcgtgcat gattcctgta cgcgccagcc 300

aataatttaa agcggcagcc gggctatgtt atgtagcagc gtggtttatc gtttatgctt 360

attaggcagc atgcatgcct gtagtgtttg taacaacaca agtgtacgac gtacgtagga 420

gtaacctttt tttctccctt tttccctcca tgtccgtgcg tagtaagtag tctttcagtg 480

gacggcactt tggtggtgaa atcatgccca ttcattccat gcgccatgcc atggattctg 540

ggttgctgct taagttacct gtctgctagc tgctgcacag ctcaaagtag agcatgatga 600

tcgaggagga ataataatga gctgccctgc cctgcctgcc gcctgcccgt gtgccaatcc 660

ttagcttcaa gaaacaaagt tggtgcaaag tggtaaaaaa gagatcgatc gagaggcgca 720

aatcgcatcg ggccatcata gtccacgcac cgtacccacc acccacaacg caccgcacca 780

caccacacca ccacctaaaa ataaagctct cgcgcctttt aaccgccatc attagctcta 840

tcaagccttt ttaatcaggc agtacagtag tgctgctata tatagcttta ttgatcatta 900

tagtattagt atatatatgc cgcatgcatg cagtagagag ctagctagct agcttagtga 960

cgatgcatgc agtgcagtgc agggttatgt atgctaagca tgcaatggag cggagtgaaa 1020

aacagtgtcc agctcatgca tggccaccac accacaccag taaagctggc aagctttata 1080

attgattgcc catcgagagc ctcatctccg tgtctgtctt gcactcttgc ctttggttcc 1140

ggaaggaagg cacctggtgg agtggagtgg agtggaggtc ttgcattgac aggcgaggcg 1200

accaaagagg atgatgctct cctggtccca ctcccacacg gcatggatgg atggtgtgcg 1260

gcaaaaaaga cggcacggcc atgccccctt ttggggaaag gggaaaaaaa aaggggcgg 1320

ggccagggga gtttgagaca ccaatgaaag gaagagaaag gattagccgc tttgagggca 1380

gaaagattgc actagtagct agggcggggg gagagagaga gagagagaag aaaaaaaa 1438

<210> 2044
<211> 3935
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207078_G1, chr5:213049120..213053054, Cluster 12

<400> 2044
taagtgtttg actgtttgta ctcaacagct tctaacatag taacatcatt atataattac 60

catccgtaac gaataacaat agagggtgag tggccggatt accatgatag tacattacgt 120

gccattgata accattcatt cgatggtcga tgcacctgct ttcagtttca acgctacaca 180

cacaagttgc aacgcggcac ggcacggcct ggcctggcgg gcgagcatat atactcagat 240

taccataggc gtgaagatat ataactagac gaggtcacgc gcacgcggtc gtgcccccac 300

atccacactg gcgataaaga aaaagtggcc tgtaccaccc tggccggaga gaactacggt 360

gtacgtgttc ggtgctaagc gtttccacgc gcaaaaaaaa aaaaatctgg gaacatgagc 420

tgccgccaaa ccttctccac caggcaaagg ctgctggctg ccggcggcct gcagtgcttg 480

catgcatggt cctttgaact cccacggtcg caccatcctc gaccggatcc gatccgatcc 540

gatcctatcc actcgacgag atacgcgaat tgcttccact tgataagtac atctaagacg 600

atgggaggga cacgacacga tggtcccttt tagccgcgtg ctcaaagcca gtacgcagtg 660

gtcagtggaa gcgattagat tagcagcagg cagaacgtca agtcaaaacc cacacacaaa 720

gcaagcaatc ccggcacccg gccgaaaaat ccgaaagaaa gcaaaagcag cgcgctcgcc 780

cagcatatcc tcctcgttat cctcgagcta cagctactac taatcttgcg ccgttcagaa 840

tccgattcgg accggcgcca taatccttat cccccagcgc cggatgcgat cgatcattca 900

ttcatttgac caccgatgag gcaaccccgc cgccgccggt ccctgtagtt gcgtgcggtc 960

ataggccgga ggaaggaaac cgagacgggg acggaagccg agcattctcg agtgctggcg 1020

aaaaaaaggt tgtcggcctc gacacttgga agtggcatcc aacctcggaa atctaccgtg 1080

tcgctcgctc gctgcatccc ggttcgttgc agaggattgt tggagtcaaa gacacgtagg 1140

tggcccaaca acatgcgcat ctatcagtgc gattttggtc gctggccaag gtaggttaca 1200

cgtgggcgac cagcggttcg ccgctgggct cccgtgctgt gctccgtgca tcagtcacga 1260

tccatccatc catccattcc atgcgaccga gccaaccacg ggacgcgcgg cgggctaagg 1320

gcagggccaa cgcaacgcaa ccccgcgcgc cccaagtttc ctcgtggacc gagcgcgttc 1380

ccgcgccgct gacttgtcgg cacggcggtt tcccggcacg agggcatgca agaaagatgc 1440

accagcacca cactaggacg cgcgcgcggg gggagctagc gagtgggtcg tcgcgtcgtc 1500

aagacgggac agacaggccg ggatgtgaaa accggttcag cgtttagtca gtggctgagc 1560

gacgttaacg cctagtagta gtcgcctagt gggctgtggt ttgtacagca catcctccag 1620

ccaatatgta gctacgccta cggtcaatct ttgccggtcg cacacacaag gcaaggcaaa 1680

tccaattagt atcatccaac ccttgacgtt tcattccggg caaatccagg ccgggccctc 1740

gtggacatat tgccgttgag agacgcaaac gaccctctcg tctcgtacct aactcgatca 1800

ccgaggccaa gaccaggccc tactctccta gctactctac tctctctctc tctttccttt 1860

ctctatgtca gcagcagcat gtaggcatgg cgagttgtag attgcactaa tccccgaaag 1920

ttgttgatcc acccagtgca gccagtgcgt gcaaatcgca gcgcttatga taatgtacag 1980

tatatgttat ccgggtcgtc ctaggatttc ctttttatg ccgtacttta ttacttccag 2040

ccagaccgag gatctggatg gattggattt cgcatgcggc atagtatgcc actctggcag 2100

ccaccggact ggaccggacg gcgtcattgt cactccctgt cacctctgga tctctcacac 2160

ctcgcagcac aggagctgaa gctgaacaca gaggcgacga cgagcaagtt gcagccagta 2220

acatggggtc ggcacaggca ggcggcaaag ggaggacgat ggtatcgtcc ccgcacagga 2280

acgttagctg tttggatagg aatagtagga ggaggggtag tagggtcggc aagttgcggc 2340

atggagaatg cagtgcgtcc gtacggccgc gggcccatgc atccgggttc caatgagtgc 2400

catgctactg ctgatactcc tgtttctacg attgggaggt tggggtaggg tgggggaggg 2460

tcccacgctt tccctgggcc tcctgctgtc gttctccctc cccttcgagg ctagacaaat 2520

ggataggatc aaggagggat agcccggata tacggcccat gatgttttat acgctttcct 2580

tttagtagat acgataaact tttacgtact gttttttgt tatgacccat gaagcagctc 2640

agctacagac gcgcgggtag gagtagagta ggaccgaacg aagggatttc atttcattct 2700

cgatatctct cctgggttcc tttcggtttc ccgaaatttc agaaaggcac agattcaaag 2760

ttgggtctgg acggttggcg cagcctctat ggaccatgga catgctttgc ctgtccttct 2820

gtgcaaaaac atgctcgcta cagcttattt aggctgcggg tgcatgtgtt gctagtcata 2880

gctagtacag tacagtacag acgcgagctg cagtcagatc tgcttgtttg cccgcgtgat 2940

ttccgttcca tactccctcc ctccctcggt ccctcccctg cagctgccca gatccgatgc 3000

ccatggcctc ctgctaaata gcttgttgtg cgtgcctcac ctcacggccg tagctagatc 3060

atatggacta caactacaag catagccagt ctgccaatgc tccgtcgcgt cgtctctggc 3120

aacgtatatg ccggaatagt aataatgctc caacagacgc gtggattagt tggtaggagg 3180

atagcgtctg gagtctggtt gccatagcta ccccccttaga tattttctgt gcgcatggca 3240

tggaacgcac cagtgcacca tcgcttgcct ggaaaagtct ggcagagttg tgatacacgt 3300

gcatacacgt ctgagcgcgc ccccagccac ggccttcctg cccaagtcgg caactcgcca 3360

gcgatgacct tcctggttcc tggagcgggg tgccggctgg gctctttgca cgttgcacgc 3420

gacttcaggc ctcagctgcc tcgtggcaac cgcgggggcg acaccgcgag agaggctttg 3480

cgcgggtgac cggcagtgac cgcgggaacg tgcatccgca gtcactccgt ttacagctgt 3540

gcaaaacagg gcctcgtggc aaaacaatgc gatagacttt cacacaaaaa ataaacttca 3600

aaataaattg aatcttctca aaaaataaat ttaaaattaa agtagacata tgtcacagat 3660

atcatatatt aaactacaga ttcttcgctt catcttagcc aaaaaaaggc gagaataaac 3720

tttggaacaa cacaagtgat tcaaataagg attaatacaa gagaactttt agagaagtgt 3780

acaggaaaac aaatcgcaac caatcaattc caatgaatat caatgcaaaa taacttttag 3840

ggggtgagag gacaacaaat tgcaagcgat caaacacaaa gacacgatga tcctacgagt 3900

tgttttgtgt ccgaatctga acccaatagg ttaga 3935

<210> 2045
<211> 1692
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207293_G1, chr5:214117788..214119479, Cluster 12

<400> 2045
agtgctggag ctgatccgag tcagatcccc tcggtcgtca ggaaagacct cgctctgaac 60

tctggcttta tgcgcctgac gtgtctgtct gtcatctcca gtccggtctc caagcctgac 120

gagttgccat gcacgcaacg caattggcgg ctggatgacc agggcgcgcc ctgaaaaagc 180

tcgctcttcc tgcatctcct tcatccgccc gcgcaatcag cagtgtgggt tgcacaggct 240

gtcccgacgg ctcagtgtgc actttcttct ctcctgtctc caccacgggc cggggtcggc 300

agcattcggc aacgaacgag cctagccgca ctgaatgcgc gcacccgtcg tggggccgag 360

ccggcggcat cgccgtcgcc cggcgtccgt cagataccga tgcatgcacg aggggccggg 420

cgtcatgggc acgcctcgcc agaccacctg acctgcattc atcctccgtt cgttcatacg 480

gcgatcaatg gataccccat cgccggagat cgtatcgtat cgtatctacg tcttgatata 540

cccaccgacg gacgagggcg ccgcggaaga acggtgcgtc gataacggag gagctagcgc 600

tgcacaggag ccgtgcgctg cttgggctcc agagtccaga gaaccgctgt gtcgatcgcc 660

tcctcaccgc catgtcacag cacccggccc ggcggcttgc tgtcgccggc aggactcttc 720

tccgcattga acacatgatc cagacgctcg gtctctctct ccgattcttt tccagtgtgg 780

gccctgactt ctctggccga ctaaacatat gaacaggcta cataaaatgc tgggttttct 840

actctctcgc cttcatgcat gggctccact gaaaggcgtc gactttaata aataaaatct 900

ccagttcaga gttaggcgca atgcagttct gatcctggtc ctactcgctc gacttcacct 960

gaacagactg ctcagatgat gtatctgaat ctcttttggc ttaaccaaag ttcaataatc 1020

tgtttcgagc taacattaat taccacttct catgaacgaa gatcaaacag atcagtcgag 1080

gaggaagagg agaagcccgg taggtctttg cctgatcact actaactagc tcccgcgtag 1140

ctgcagagtt ttcttctgtc tatatctggt agcagttaat ccactgaaga ggtctgcagg 1200

gtgctcttct ctcctttctt cggattagtc ctcgttcact gcttgtttac taatgcgtat 1260

acagttggtg cggtgtgagt catttcgcag cgaacagatc gaaccctctc ctttgcctag 1320

agtccagtga tccgtgctgc tcttctatta tctaatatac tccgtatcta tcacactaga 1380

aaagctagca gagagtggcc cttggaggcc acacgggtca catcttttgc cgatgtatct 1440

aaaggcttta actctgagca aatctgactg attcttcctt cccttgtaaa tatcctctct 1500

tgatataaga caagcaaaaa aaaaaaaaga tcgtacctac tgcgatgctt ctaaccggcg 1560

agaaagctac tgatgattag tttagcattg ttatcatctt acaaaaaaaa aggctgccga 1620

tctgtgccat gatttgtgaa actgtttcca tctttcacag acgaacagtt gatatcgacc 1680

agcccacaga ta 1692

<210> 2046
<211> 2368
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207365_G1, chr5:214520648..214523015, Cluster 12

<400> 2046
agcgtatgcg acaagctccc ttcccttcat ggtctcgatg catgtcgcca cttgtcctgg 60

acccctcgac caccatgttc tctagtgtca tccaccatct taaattggtc aacacggtct 120

actcctacct atactagccc cgcgcttatc gatgtctcta gatgtcaacg ttcatgatca 180

ttccacaaat gggaagacgc ggaactagag ccactacgtc cagaagcctg gttaaacgag 240

ccctaaaatg tgcatgcatg agatcgcgcg cgggactatt tggcgaaaag gcaggtagta 300

gctgtgcgtg cgtggagaat tggagataga ctgcatgcca ctacgatcgc ctcccgatgc 360

gaatcgatca cctgacacct gtcgcgtcac tcatccgttg cgtcgatcgt gtcgtgaagt 420

caggggttct gatgcgtcgt cgttgtgcat gtgtgtacag cagcaacacg tagatacaag 480

ctagcaaccg ttttgagctg ctgctgctga tgcggcttgc atcgtggcgg cgttgtgcgc 540

tagctgctgc tgcatctagt ggactcgaaa tccaggtgag actgagcttg cagccacatg 600

catgggctat agctgcgtcg tcgtccgatc cggcgtgggg gatcatatga ctgcacatga 660

ctagcctcac cagtcaccac tgctgctgac ccatgcatca ctaccactac tatgttacag 720

aagtagctta acaattgcaa gttcacccca gcagttctag ctcatggttg gtggttgttc 780

acaattaatt acacgcagcg ccccatcgta ggcgtcgagc tgatgacccg gccggtgttt 840

actgactgct cgtgcccgga ccccggagga cgctagatat gggggttgat ccactcacca 900

ccacagtagc aatagcaacg cgtgcatgtt accggggcac gttcagcaac caccccacag 960

tactccgtcc agcgaggata gggggggggg gggggcgcta gctgccgtgt tgcgagcggt 1020

ggttgggcgg atcacggtca tggggtggtg gtgatcgccc accgccggtt caccacacac 1080

cgccaccgta ttatatgtac ggcacacaca tggcgctgtc caccatagac atatatgcta 1140

gtaagttttt gctttttttt tcactcctcc gttcacttaa taattagagg ggagaatctc 1200

cggcctgcaa ttgaatagta atgtcgcgca ggcaggcagg caggccgcat gttgagcaat 1260

catatatagt cggcacggcc tcgggatcgg cgcggcgagt tctattctac tatatggcag 1320

cgttgtcaga gatggatcgt ccgcttcatg cttttcactg ccagcggatt atatactgta 1380

aagcagcacc agcagcaagc atctcgcggc tagcctaatc tacctcggac ggactggacc 1440

cgttcacccg tgacaggggg ggcctgtggg ctgggctggc tggtgcatcc atccatctcg 1500

gcgccggtca taaagcgccg cgcgcggccg atggagctct gccgccagca atgcggaccg 1560

gacactgttc cagggtacca gcggcggctt tcgttctcag gtctctgctc cggttgggtg 1620

gttgcggtcg tgctgctttg cttgcttgct gggagtgcaa tgcaagcgac gatctgtctg 1680

tctgtcgtgt ccatctagat ggcagcggca ttttggattg gattggattg gatgcctgcg 1740

ctgcgtacgt accagtgatc cgacaccaac aaaccgagac agacacagtc atccatcggc 1800

aagcccggcc ggtcagccgg acctcctcgc tctgacagac acagtctcag cagctagtac 1860

tagctaccat tttggcacga acgaacgcta cacacgccag cgcgggtttg gtggcgcccg 1920

gctgattgat gcctctgtcg ctgctccgtc ggtggccaac atatcacgtt cacgaaacaa 1980

ggaacgccga gatgtttggc ctagctcgtc gtcaggcagc cccgatcgag cccttgttgc 2040

cttttgcctg gccacgcaaa aaaacggcag cggcaaccgc agctaccaag ggagcagaag 2100

acgacggctg ggttcgggtt caggtgttgc aaggtggatg gaattggaat ggatgcgatg 2160

gccgcgccct gcctgcctgc ctgcctgccc agctggctgg gctagctacg ggtgtcatca 2220

ctgaccagag tgtgtgtggc catgtccagc gagaggaagt gagtgaaaag gggggggggg 2280

gggagcagta aagctcaagg catggttgcg gcggcaagca aggagtgcaa cccaagtttt 2340

cgtctagtta acgctgcaaa agctccga 2368

<210> 2047
<211> 1851
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2183_G1, chr1:11472166..11474016, Cluster 12

<400> 2047
gcatgaggtg gcgaaacaaa aagaggattc atggacccga aacccaagca tgtggtcaag 60

gacccacccc aaaaggcagg aacggtcttt gtttccttgc tccgttcatg tcttttgata 120

ggttcccttg tcgtgatccc atgtcatttt ttcttttcat aaccgtaaga ctttttttatt 180

tgcaaaaaaa aaaaaaagag ggcgagcaaa tggaacaaaa gccgagaggc gaaagataaa 240

cgaaaggctg gtcagcacaa agctttggct tttcgtctgg gcgggagttt acacgggccg 300

ccaagtcatg ctctgcaaat ggccggtcct gctgtagcat cacagggcca ccagctctcc 360

agccgtccaa tccgattatg catacctcca acggccaaca attggcatgt gccgcggccc 420

ggaactaata cagtccacat cgctgacgac agcgtttcgt ttctggtgct cctctgatgc 480

gtgtttcttt cgtgcatttg gcacccgtac cgtacgtctc gccgacgata cagcagcagc 540

agcagcagca gcgaatggat aggggttatt gaaaggctac tgcattatta tacatcgatt 600

tattggttat actgtacaat atagagcata tagccggccg ggcgtttgcg attgcgaatg 660

gatatgggag ggcgggcggg cgcgtggtct cttacgttgc acgccggatt aaaaaacgct 720

tccgaaggtc tgcacgctca cgctaccccc acgtaacgtc cacgcctgaa aagccccggt 780

ccaagtccac gcattccgtc gccgtttttg ctttgttggt ttgtttactt tactattccg 840

tcgcgatgga cgagcgcgag acgggcgaac aggaggagta tccgagccac caggccccgt 900

ctgagagggc tgtctgccgt gttcgctgga catggtttgg tggtggtggt cgtgcctgag 960

cctgaaggca tgaaaaacgc gcgcgtgcga aaagcgcacg cgcgaatgca ttctccttct 1020

ccctgccatg ccagtcgtcg cttcggttgg ttcaaaacca atgttcatca ctgaccttag 1080

ctgctgctgc ttcttcttct tctacccgct agtcgcagta gtaggtagtt tttgaaggaa 1140

aaaaaaatac atatgtctcc cttcattgct ggtgggggtc atcgaacgtg aaaagggacg 1200

tgaaccacgt aaaacgacgg cacgacccaa caagccccca aggcttcgga gtgtcattat 1260

ctgccaagat tttgttttac ctgtctgcga tgatgatcta ttgctagatc accatccaga 1320

ccagagcaga gagatccaag acgacgatat cgaaaagcag tctgcatcat atctatcgtc 1380

gtccgtctcc aagagccagc ggacttcgca aggagacgca gatatatggc acgcaagcgc 1440

gcacgacgaa ttttgtaaac cctctccctc tctctgtcct tcagtccttc tcggctccac 1500

gtcggattgg agcagagacg agaccaggtg tgcacgcacg agcacgatgc gatggactat 1560

tggactccca ctcccaggca tagcatagca cacgacgccg gtagcatgac tatttaattc 1620

gttgtcaacc aagaaccgca cacgcaataa tggactttgt ctagctgtcc gattaatcgc 1680

cgatgaaacc gaacgccatg acttggattt acgatcgaaa cggcggctac tactacggcc 1740

acaaaaccag tccactcgct gacgcaatgt acgatctcgg tcaccaaacg gagggtgtct 1800

ctaacagaca agaatccaac caacgtatag acaattacaa gaagaagaag a 1851

<210> 2048
<211> 2413
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222629_G1, chr6:96564503..96566915, Cluster 12

<400> 2048
gtttggatgg gcctaacgca ggtgggttgg ctagatttgt cgacccatgc acatatataa 60

atcacgtgat cttgagtaat gttacttaga gcaagagcaa ttgggaaagt atacagcata 120

gacagaggca tagagtgttt ttggttgatt tatgactttt caaagagtag gcgttagttg 180

taggatgtgg gaaaaaattg ttgtgaagtt tcggttgtga gaaagccaaa agttgttgga 240

ttgagcagtt gtggctttct caaaaaattg ttattcttac cccacatgtc atctatagac 300

cttcccatca cttcctctct caccaaagag tgaattccac ttgttagact tttctctcat 360

ccctcttctt ctggtccatg catggggagg agcctacgac ctaggttcgt cggatgagaa 420

atccgcgaca aagctgtgaa cacttgctcg ctcgctcgcc atgatggaat cctgctcagt 480

tagcctaagt tgtctaatta aactcgcctc ttaaaagtat gactgtctat tttaaatctg 540

atcacacacc ctatttcatc ttgatcggta aaaaaacgaa aggtcctact ttatgccttt 600

gtcttgagtc attttatttc ggttttcttc ttcctgtttc aatgttgagt atttgatcat 660

cctttctagc aatcatcatc cttttctatg gttgctaacc ttgctcaaat ttttgtttgt 720

gggtttaatc atctatctta gtcaaaatac ttaagtagag gttaatgcat tacttgtctc 780

aattactaaa acacatattg agatttaagc cgcggtggag ctgctcatat gtcgagaagg 840

tcaggacaac acctctctcc cgacaccata cctttggttg gccttcgcgt cctcccccga 900

ggccccgata gggtacgtgc ctttgggcgt cgacgaggcc gcgcgccttt gggccagcat 960

tgatgggcat cgatcgacag gaccacaccg tcgaggccgc cggtgagaag atgggctccg 1020

gtggtggcag gacgataaga gagaaatagt attggaaaaa aaagaagagt gatatctttc 1080

atgaccggtg tcaaatgtgt atttttttgt ttaaaaaaaa agttgcccac cttcacgaca 1140

tgatgtgaaa gcaagggaag ggggtgtgct aggttttgca ctatagtaaa aacagtttta 1200

gcctcaaagt agatataaat tggcattccc ttatttttttg ttttgttttg gaaaaggata 1260

aaataggttg aaagtggggg tataaaaaaa gatcatgatc tgcccatgtt ctcgtcgtta 1320

cactatcact gcaggcccca tgccgagtgc cgcagaccag gtttgacctc actttggtag 1380

gtcagcgtca ggtcgccgta cgtgctgttc cacggcgagt cggcgacggc gcatccacgt 1440

aaaacgtccg agaccgaccg atcgtaagtg cctgcctttt ccttttccaa ccgcggtcga 1500

cagtacaaga atccttgcac gtttccgacg ctagctttgt tggacggccg gccggcctcg 1560

cagtcgccgt cgccgcaacc gcaaactgga gttccgttcg atggtccggc tagcagatca 1620

cgtacgtgcg taggcgccga aagcgaagca acgggcgggc cagccaggaa accaaccgtg 1680

tccgagggcc agggaggaaa gcacccgctg cggcatcgat gcgaacgcgg gcggctagct 1740

gggaaccgga tgctagctcc tccggcgaga catcatcgga cggcggaggc gaggcgggag 1800

gccagccgtg aggggatcgg gtcgacgccg ccccccgctg cttccttttg cagcagcgac 1860

tgctctggtc ggcccgggat accgtcgtct cctccatgtg cggccgacgt tgggtgggtg 1920

ggtgaggact gacgcggcat cgatcgcttt gttgtgcgtg cctgtgggct ctacagccat 1980

tgacggcgca cagcagttgt gcggaaaagc aagattatca gatagacaag gtcgatcatc 2040

gtgtgactca tgcatgcatg cattgatcaa acgataacat tccaccggat caccgagaag 2100

attatcggat atctattctc attctttatc atcatcagat agtataatat atatagagta 2160

tatatataac acggtcgaga aggtaaggat cgattcaaat tccatcccgt cgtgcctaat 2220

gaggtagcta gctagctagt gataatatag taaatggtcc atcgtcgtcg cacactcagt 2280

gctcaacgat ctttcctttc ggttttcaga catagaagcg gtactctgat tgcattgcac 2340

ttttgatgac gccccaaagg tcgtacactt caaacagaga gtaacgctcg tttgccaggc 2400

tctgactatt ctt 2413

<210> 2049
<211> 1539
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224846_G1, chr6:108062373..108063911, Cluster 12

<400> 2049
caggaaaaca cgcgctacta gaaagtctcg atcgggggg ggggggggc ggcattcttg 60

tccgtcacgt acgggtcacg gctctgcact ggcgcgtaaa cgaacgtcgt gctcgtgcat 120

gctggcaggt gacatcacgc ggaggtggcc aacgtacgag tgcgtcgagg ttgcaacgct 180

ttttttata tatattagga gttgatgttt atgagctgtc gaagaagaaa tctttttttt 240

tccaacgctt tcaaattttt tttgtgatac ttggactttg caatatcagc tgcgtggaca 300

agaaatgacg acatatatag ccgccaaaaa gcaggcgtgg tttgaatgaa taaaccgaag 360

gggaagcact tgaagcaaaa acagacgatt ggcccactca cacgcccata ttgccccgcc 420

gtcgggtgac tcggatgatt tgcttttgaa cggagcggta gcacgataca gtgtgatcat 480

aatcgtcgta gaccaagtca tgagcgaagc cttcgtgaga aaggaacgcg taatgaacga 540

ggctttttt gtgttaatgt tgtgctgtaa ctttaaaaaa agattaataa acgagggctc 600

tatctagcct gtttggttct acagaaccag ctagggcagg acgctgaccc agtcgatcga 660

gcacaaaatt aaatacaacg caacttagat ctatttactt tttttcccgt tattattata 720

tactcttacg tagtacttgt aatacttatt agatctctat ttacttatta ttttgtaacc 780

tgccaaatga ggaggcgtcc gcaaggcaag atccttttga cgtggagcga gtgcacctgg 840

gcatgagaat cgcacccgtc ccgtggttca cttctccctc acgagaacta agatgacaat 900

tattattata aaaaacgatc gatctacgtc tgctacagtg tgtttttgtg tttgtaagcg 960

gcttcgttat atgatgatga tgatcgtcac tgctgactgc atggctttat agaccatgca 1020

tgagttccat gcatgaccat ggagagtgag caaacgacga gatgacgcga cgcgatcacc 1080

aatgcatcac gctttggttg tctctgtgag tgtcggccga ggagagccgt gccacgttcg 1140

gtttttttat tatttacatc atacatatag tctgttggtc cagcagcttc cattaccatc 1200

catgacgcga gacgtgcatc catgaaacgg gacgggcgtg gtccgacgat cgacgtgtct 1260

ctcgatctca tccatcgagt ttgagggacg ggtaagtttc gaggaagcat tcctgagccc 1320

tcgcgcgcgt ctgtgtattc tagtttgggc attttggctt cttgcgaaaa ttcgtccaac 1380

ttgcgcggaa caaactgttc agtccagtgg gattgggagc ttttcgctcg agaggttccg 1440

tgtgtcgtcg tctgtgcttg gctgcttgct ttgcattgca tgtctggttc gagtgactag 1500

taccgaccag gataaggaga ttcgagtgta ctatctgat 1539

<210> 2050
<211> 1503
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229575_G1, chr6:132265957..132267459, Cluster 12

<400> 2050
gcagcgtcat ataatttcta cttcaattca ccgctccaac atgcccgagg cagagagatg 60

tcaatgtttc atggcatcaa cactcaataa ccaaagatgt ccatcgatgc tattacatac 120

agtattagat atctgtgctg gccagcaatg ggcattcgtt tgcagcaatt aaagcctaca 180

tgagctagtt tatgctacgt gtgcgtaaaa tgctaacagc tgcaagcaaa atattttgga 240

attcaccaaa aaaaaaaatc ccgaatattg ataacccgcc gcatactctc cgaagtcaca 300

atgtggggaa ttgaagctcg ctcatgaccc gggccttgac ttgttgggcc actgattggg 360

ccgtggccca gcagtgtcct tgaggcccgg tgacgtacag tgaggccttg agcgcatctt 420

cgtctccctg tcctggaggc tggatggtcc tctgtatttc gtttgtacgg tacggcggct 480

agccagagcc gcatgctgct tctgcagcgc gcagagcaaa aggttagacc gctagagaca 540

agggagcgcg aactggaact ctggaagacg ggtacagtac ctacgtagta gtagactagt 600

agtagtagta cgtacgcggc gcgaggctgt cagcccgagc acgctgctac gccgccgagc 660

gacgctgact taacgaagca cagtacgtcg tagtggtcga tcggtacggt gcacggagtg 720

agccaatgca tgcaatgcaa tgcaatgcaa gctaggctga tgaggctgca gctgctcctg 780

gccgaagcga ggaatgatgc gaccaggaag caagcgtaca aacagatccg gctgagaccg 840

cttctccgtc gtcgtcgtcg gcttgcgtgc tcccgtacct tggacgcgca cgggagactg 900

agcagctggg tagccgcgcg caggccgcag cagggcgcgc gcgttcgtac gtgcgtcacg 960

ggatcgatga tgcggctggc cgaacctggg ggctggcgca tacgcatacg tgtcattatc 1020

aagaagaatt acgtgtacgt acacagcatc cgctgccact actagtttgt agtttctctc 1080

aattatttct cccgctaggt aatttgactg ctgccgtagg gagtacggct gctgtgtttt 1140

ttatatcacg agtacggctg caggttgagt gccgggtgtc gtttggttca ctggaacgta 1200

aataacgtta aattacattt atttaactct aattataata agatattata ttaaaaattg 1260

atacttgtct atttaaaaca gagcgggtgt gaattattat tattgtcatt tatgttatat 1320

ttagtgaatc aaacagaata tctgttttgg ggatcgttca atcggcatac gaacgagttg 1380

gcgtgcactt caaataaatc gcagcctcag gtacatggac cacaactaat tcttatttct 1440

tatccggtaa atagtcctaa aaacggagct catattgatc ccgcctgtat atgcaccgtt 1500

tgg 1503

<210> 2051
<211> 2544
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231810_G1, chr6:142317325..142319868, Cluster 12

<400> 2051
cattggccta gctatacgtg tggtgtgcat gcatagtaca ggagctataa aaaaattgta 60

cccagaagtt tttggggtcg gaaggattta cattttttga tctgaaaata tataattaaa 120

catccgtagt tactcgagag gccaggcgca ttaaatatac gctgtaatta accatatctg 180

aatttttgac acatgtttta atccatcagg tactacagag agatagtttg caaatatcgt 240

cgttgtttta gaaaattaaa ctacatcaat caagttttag aaagagacca tattgcactt 300

ttattgggac gctttttatc tagccagcat agggcagtga cttaaaatcc ctagaatcgg 360

gatgcacagc aatgacgacg atatagacgg ccggccggga cctgtcaaca ataacatgta 420

tgtctctcta tatatgagca acaaggacac ccacaaggca gcaattgtgt atggtattat 480

ttgtggccgc agcaatttgg cggagttggt tatccggcgc ttttttttgcc tacgtggata 540

ccatgtgtca ccccgcttgt cctatccggt gggattgaat ggacacggga tgaggccgga 600

cggcctgcgc ggcagccgag tcggacggtc cacctggaaa gttccgctct atccacaatt 660

ctctgcctat gtggacgcgg gagagcaacg tgtcgtgcga cgacaagcgg tacgcgtcac 720

caacgtgtcc tggtcctgct cacgagtttt ttttttggct ttggcttttg cggctgcttt 780

agccgtctgg cctaatttta tttatttaaa ctccgtcccc tggctcgtgc ggtcgtgcct 840

cactttcttt aagctagctg caccttttct tttttgttta ttccctagct actagcactg 900

ttgtcgcgta tgtgttcggc tggcaggagt ctgaccagga gagaaacaaa gctacgtgtc 960

cgtcaacgac gtgtgcctgc ctctgcccgc tgtagttgtc gatgtctcaa gaaggtagag 1020

aattcgacgg aaaagagaga cctgctgtgc tgggcgggtc atccttgata agtttatctt 1080

tatcttgctt gtgtggacgc ggtgacatgt cttgtcgtgt cagcagagag cgcgggcggc 1140

cggctggtaa cgatggctaa aagccagcca gccagccttc tgggatcaga actcccctca 1200

cgcacgcacg ctttactgca tccggccggc ttggcggcgg ctccgtgatc aagtgcttat 1260

cttctttgcc gttggactgc tagctgtgac gagtctagca cacaaatatc agcaaaaata 1320

ttacgtgcac gataatacca ttgttcctgg catgccgatc tattttattc ggttcgtcag 1380

tcgtcacttc atttacttcg gaaatattaa gtacagtgcg tgtatttgga tgggcagaaa 1440

tgatgctttt ttgtagcaaa taaaaacgta ataaataaag cactgataaa agagtataaa 1500

agaagcgcat gagctagggg cgggccttat atatcggcca cgaaaaatag aaaaggaaaa 1560

tacaagaggc cccacaagct agggggggggg gggggggggg ggacagcgct cctactagct 1620

tactatacat gcgctcgggt atatacaggc agcagcaaca aaaaaaaaat ggaagaggaa 1680

aaaaagaggg gggcaaaaaa cgagggacgt cggaatcgac tctggtggtg gaggaggata 1740

aaactataag caatgcaaga agaatgatgg cgctgtgtgt tacatgatta ggcatcaggg 1800

gcccccacca cagttagctg ataagtgcag cagttaaatg gcggctaaag ctgacgaacc 1860

gcgggtcatg gaggagagga tcgactacgt actcatcatc atcatcatgg catcgatatc 1920

caagatctct caacactagc tcattagcta gtctgctagt aagtaacttg aaggatctcc 1980

tgctatgcag ccttactcct gtcctgtcac caccgtggca ccgtaccggc cggtcggtta 2040

gactcgtgga agatggaccg gtcgtaccag cactagtgca cgcacagaga gagttccagt 2100

atttcttctc ggcgtctccg tccggcgtca cggtcaccgt ctccgtctcc atcgccgtcg 2160

ctgctgttta ttccatatat atatgtaaaa tttgctggct aaggatcagt aaggagagga 2220

ggatatctgg ataacgatga tcggataagc cacagaaaca acttgctgaa gctatagccc 2280

cctgctggtc tgggtaaggt ttccacgtcg atctacacac acacacgaac tagtatatat 2340

catatatatt gatagacact cctatatatg tactacgtgc gtataccatc gtcacacttg 2400

gttcatcagt tgccttaatt tgcatgtgtg taccaatgta aaagtctggc catgcggaac 2460

tgcactaatt tcccagagct attaagttat tattattagc ttgtttttaa cgagttttag 2520

cagctggtaa ccattatata gttg 2544

<210> 2052
<211> 3470
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231867_G1, chr6:142554783..142558252, Cluster 12

<400> 2052
gtatgtttac caacgaatgt gcacagcaag cagcgtgctg cgtgcagagg aggctcgagt 60

ccacgttaac gcgcgtacgc acggacggac cgcggcacgc ccagcaccct ccgtgttccc 120

cgtcgggcta tatgctcgca ccgaaaccga gctggccaga agccgttggc gtcgtcgcca 180

gttcgccacc ggcgacctgt cggtctcggc tttaatgtgc gtgcaaatcg gggaaccacg 240

cccgcgcccg cgatggacga cgcgaatcac tgctggccct ggcggccgtg gttcgctcga 300

tcggttggtg cctggcgcgt gcactgctcg ggaagtcggg gggcgtccgc gtccaggtcc 360

agtcagccca aggacccagg gaaatgagtg cgcgcacgcg accctggcaa cgggcagggg 420

cgcaacggct agtttcatgg cgcccccggc agaaaacgcc actggactga ctcgactggc 480

atacagtcta cacagcagcg ccacggtggg ttgggccgtt ggggtgagtg cgcctggggc 540

ccttttcctg cagggaatcg gcgagcgagt actgagtgac tcctccgtgc gcaactggcc 600

ctccgtgccg gttgttgtcc ctgcctagta gtgcctaccg actcactgac ggtgatttcc 660

gcctctctgt ctgtctgtcc gctagtgctg tccgagtccc gatcatcaaa agaaaagaaa 720

aaaaaagtgt tgtctggatc caggtccaac ggctaccgtc aggagtcaac agtgaacttc 780

tgacctggac tggaccagtt catgcaccta cggattttct gacacggctg tatatcattc 840

actatcactt cacttttacc aattcgtcta ccgttctata gagatgcatt tgacttgcta 900

aacgtggaca gatgaacctt aacgcactcg ccgtaacgca ctgcacacac agcttctgaa 960

ccggaacaat atctaaggcc tttttcgcga tcgtggcttc gtgatgcagt gtagtgtgta 1020

ccctatgcca gtttcgccta ctttaattct cctcgcaagg gacggacgcc cccacgtaga 1080

cgtactagta gtagcagtcg cctttgtcaa ccgtccttac aaattccgct gacttccgag 1140

gaggccaggc caccggacgc tgtcctcgac aacaagaaca caacgcaacc tgtgcgggtg 1200

tgctcttctt tacgcaaaat gcgaccatac gtacacgcac gcacgcacgt acgtacgtac 1260

gtacggcggt acgggcattc ttacaagtga agtatccgcg ggacgggcag cggagggtag 1320

aaagagggag ggagggtaca gacagagaaa gagtggagga gaaggcgatg ccagcagcaa 1380

gtcgcgttgc ctttgccttg cctgccgctg agtcagcacg gcccggcgtg gggcgagcga 1440

tggcaataat attgctgggg gaagagaaca cgaccggttt tgtggtgtgg gcggcccacg 1500

gcctgtggtc ggcaggaaag cgagagagct gcctgcgggg ccgaaaggga cgcgtggtcc 1560

ggcccaaaaa acgaccgacc agcgtgcggc cgctccactc catcaccatc cccatcacca 1620

tccattatcc cagtccagtc cagccacgtg cagagaggca accatcaacg acggacgggg 1680

gtctgcctgc gtgcggtgcg gatgcggatg cggatgcggt gaaagttggc agttgcgccg 1740

acgacgacga agacctcgtg ctctgctgct ccgcatcttc gcgttttgtt ttggtcggtg 1800

gggtgatcac cccgtcggtg gcccgccact gccgcgtgtt cctgggaagg tcgacggcgg 1860

cgtagcaaaa aagaaagaac aaagaaagcc agccctgcgg cggggcggac catcagcggc 1920

gtacgtacct ttatggaatg gacggaccag ctttctttta cgtctcattt tcgccgtaaa 1980

aatgataaaa tgtacggacc agctttcttt tgcggctcca tgcctgaaaa gataaatgaa 2040

aaaaaatgta aagaacgtga gatcgcggct gcgattatcg tcgaccacag cccacggaac 2100

ggaaatgtag agaagggact cgcgtgaggt gcgcgatggc aatgcaagct gccaacctgg 2160

ggcagtgttc gtgaaaggag tcctgggggc tgcccggctg ggggtggcgc ctaggccagc 2220

ggtgagcatc gaaacatgag caaaagggag gaacaagtga ggtagaaggt gaacaaatcg 2280

ttatttctcc gtaacccatg atacggtgca taattcttat tgagtccact aaatctgaat 2340

ctatttttt ttcgtacgaa gcgctaacga atgtgtccaa acttcaacaa tgcaaatgca 2400

ccaccaactc gatggaaaag caacctcaca aaccggactg gaatgcccgg tactttgggc 2460

cgcccaagca ggccttttt ttgggcttct gccggttgca aaagatagct ggagatttta 2520

taagaacgac cgaaactgaa tgagagcacg cactcagcta gactagacaa aacgatttgc 2580

tctcagtttt tttttaaaaa aaaaacttta ccaaaataat cttctcttta gcaagctata 2640

tgcgaaaata tcgacggaac atggtattca aactaagcct agaaattagc tacttttta 2700

tcggcacggc ttacttatta ccggcctctg attcttgcag attaatatac gaaacaaaaa 2760

ttgttatttt ttgttgactc gcgtagtgga ttgaaattgc ccttttttaa ttaccaccaa 2820

ttattcgtga ccgacgaaaa ttagcctagt taattttcat cgcctagtca agcaatagga 2880

attagtttag ctaatttcag tcaactaatc ataaccaaca aaaattagcc ttgacaacta 2940

catgttaatt cttacatcca tcaacaacaa ttatatatag acacacacta gtatgatgac 3000

accacggttt acaaggtacg agtatgcatg acaaccttat aaggagaatt ctagctatta 3060

aagttgcatt gtatggtcca acgaccattg ccagattagt tcgacacacc ctgtaactct 3120

ctgatctgtt tgaacagacc gttagatcca tcttccattc tccaacgaac taccattcat 3180

agggttcaac gatcaagctc tcttaggcta tctacatgga ggcgtcaggc catcgttatt 3240

agtccaatga ccctaaaacg ttaggatctg attctgatgc ctctaaaacc ctcaaatatt 3300

ccaagctatg gaaatattat gagtggggtt tgatccatac gtcttttggg gtcatctgag 3360

cttagtgtgt accatactaa atttatttga catacctagg tcaagctact agttcgtacc 3420

cctttataat atagttacag taaataaagt tttaaactac tctaaagaga 3470

<210> 2053
<211> 3417
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232484_G1, chr6:146122164..146125580, Cluster 12

<400> 2053
gctgtcctac tccgttcgtc cagtgccgct gtcgccacca gcctggtgtc acttgtccct 60

ctactaggcc gtaaattgta cagaagaaaa aaaaaaaatt ggaggttgcg taccgtatca 120

aaactgtcat aattctgaac atgtgttcgg tttttggttt agggtgggac ggatcagtgg 180

gcatccttgt ttgggacagg cagattagca tcctgattga caagctgtta gatcagcatc 240

gaaacggtaa gcgacgagct ccaagcgcct atatatgggc atatggctgc gttttgttat 300

tttgcatggt tccagtttct agtaaaagtg atggttccag tttctagtaa aagccatgat 360

taacgcgctg acagggacct ttgagaatta ctagtcccta agtacctcgc ctgcaactta 420

cacagaccct aagggtccgg tcccatcatg tagattctgt cactgattga ctatgcgctg 480

ttaaatcacc ggtacgtacg atcgcaaaca atcggtaacg agcaaaggag cagctgcagt 540

tcttttcttt tctttttttt ttgttagctc ttgtcgagca tgggagtacg tagtagggat 600

gcgaaattgt gcttcttttt ttttgggggg ggggggaggg caggaggagt acgggctatc 660

cggcaccccc caaatagtgc gcaatgtgtc ccattgacgc ggcgcaatta tgtgcaagga 720

aggacccctt tcatcacgtt tcacctttcc gcgcgcggac cgtacgggac gggacgaagg 780

gaaaatccca gggccgccgt ctatcctgag ggcaaggcaa ggcaaggaaa ggaaagaggc 840

cggccggcgc aatggcatca catgtgttaa acgatgtgtc ctgtgcccgg cggacctagc 900

gcccaagctc attcattaaa actcggggcg cgcgtacact gccgaaaggc gacacacacc 960

tttgccttga ttgaacggat gacggcgacg gaggcctccc cgcccgtttg gtgcagaggc 1020

cgagaagcgg acaggcagcc ggtacggaac ctggcgagcg gtgagccaaa cgtttcgtct 1080

actaccactc ccaccaggac accaccacca cctcccgcgt tgttcgttcc ggcacggatc 1140

cgccaggttt tttttctctc ttccccttta ctaccctggt ggcctggtct gtctgtactg 1200

ttttgatagt gccatgatat cagacgtcct ggcgtggcgt ggcgtgggtg ggttgtccgt 1260

tccgttccgt cgcgacccac cggcatccgc gcgacgggat atttgcattc gtggacacgt 1320

ctttgttcac cgtccgccag acgttaaacg tgttgttgtt tactaataaa agaagcagcc 1380

aggcacagct ttgatcggtc ggtcgtgtgg cgttttgtcg agttgatcgg tcggtggcta 1440

ctactactag gggtgttgct cctccgcttg tttggtcggt cgtcacacca gacgcatcct 1500

ttctacacag tcctactagt gctggcacag cagcgcccat cgcgcgcggg cacagagacc 1560

gagccacagc agcgtggtca accttgtcaa cggattttgt tttccgtaaa aagatggcgc 1620

gagccgaagc ccagcggtcc atgacaccac cattatcctc tcggttgatc gttatctgac 1680

ccgacgacgc gcgatgaaac aaaaaaaact cttgtgttct gtccggccag ccaggcgcct 1740

tccggtcttc ggcgatacta gtaccgtagt acgtgtgcgg ccggctcggc gcggcgcggc 1800

ggacgctggt gggcaatagc aatacacgta gacgtagcga tcgaatcaag cgaccagctg 1860

gtggcgcctg gtagtgctcg cgtccacgtg acggagcgtg ggtggccagg aggggtgcgt 1920

cggcacggag gtggtgctgg cgagacgggg gttggttgtc tgcctggcta cttctacttg 1980

gcgcgccgcc ggcacgcacg cgacgcgagt gaggatggct gtctggccgc gctgggcctg 2040

gcctggcctg ccccgcctcg cctttgtttt tttcttttct tttcgggggg ttttgttggc 2100

ttgtggtggg ggaatccgcg tcgccgtagc cttcccatag gcttttggcg ccttgcgcct 2160

ggtcgctgct acgtgtttgc ttcctccgcc cgcctgcccg tacccctccc cccccccccc 2220

ccccccatcc cactcatttc acactcgttc tttgtcttcc cagcggatag gatcctttcc 2280

tttcctttcc tacatggcaa ttaatgttga gcggcacgcc ccacgcaccc acctcgttcc 2340

tttccagttc cttcctccct cccggccacc cctcgctcgc ccgcgcgttt tgacttgttg 2400

tccaccgccg ctggcgctgt tctgtccacc aattggggga gcccacacac cgggggcgc 2460

tagtcctggt cctggattta tttatggact gcttcaggcc cccccgttgg acgcatgcaa 2520

ctcggagcct ctgtactttt gtttttcttc cgtgctgtag ctcctccttc ctagcttggt 2580

gcttgcttga ctgctcgcgt cgcgccttgc ggcaggagga ctaggccagt aggccgccta 2640

ctttttcac cgcgcacgca cgcacatggc agagagaaga agattgaggg caggcgaggc 2700

gaggcaccac cgcaccgcgc accactcacg gtcacgggca gcacagcggt aaaaactcgc 2760

catcacacac ccacacagag gcacgggcgg ggagcttttc cgcgtggttc gttcgttcgt 2820

tgcggccggg taacgccggc cccgattcgg tcgtgcagcg gctccggaca aaaaacccgg 2880

gctggcgggc gggcgagaaa gtcaaagcag ctccgcatcc cggcacagtg ccagtggccg 2940

acgcaccgga cggacgtgct ggtgctggtg ctggtgctgg actggaaaag agaagaaaac 3000

ccggggcgat gggcatgtga caaaagcggt gccaatggct ggcgtgctgg tgccgccgtc 3060

ccgcccgcgt ctcttccacc tccgcgtttt atttttttta tatatatatc tttgctgtct 3120

gctgcaccgc accgtcgatt gggctgctgc tgctgcggct gggtgcttgg catcatttgg 3180

gttggacgga gtagtagtag tatcgtgtat agaaaaaggg cggccggatc tatgccttgc 3240

ctcccttccc tctccacctg ttgcgggtga taatggcgag gcgagggatg gatggatgga 3300

tgatgcgcta cgccgagggg atggatagct ttgaacaatt gaaccggtcg cgccacgccc 3360

acgttgacgt cgtgtcgctt ctggagcgct cggcataaaa acctcctacg gccttac 3417

<210> 2054
<211> 2215
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232497_G1, chr6:146215663..146217877, Cluster 12

<400> 2054
aaaaatatcc ttgtacataa gaggccaccc ttgtcctttg aaactactaa tggacaaata 60

aaatcttcta catttagata tatttagagt agttggccaa gtacaggaac ggttcgtggt 120

cgctaattgc ggtgcgtggc tttggcgctg gcctttactg tatgtttatc tgccgcgctc 180

gggctagctt agctggcgct ggctggaggg cgaccgcgac gccgacgcgg aaggggtcc 240

gtgcgcgtgg tggcgcgtgc gtacgcgacg cgccgggttg cgacaaaccg ggcgttccgc 300

gacaaaagaa aaggggggcg gggggttcgc gaggccaggc cgggccgggc ccggcgcttg 360

attactacgc gcggcgcacc gcaccgcggt tttggtcgcc ggaccggacg gcgaaacgcg 420

aaaaataaag ggtttctggc ttcagctctg cggtgctacg ctacgcgaca aggtgggggc 480

gcgtggtgct catgcttcgt agtagtagta gtattaaatt attggcgcgg tgtactagta 540

ctattacgcc tggccattag cgaagaaaaa acacatgtct aggatttttt tttttgtcat 600

tgccagcgag acaaaagacc acttccggat cgagaccggc ggccggccgg ccaggcgtgc 660

ttgacctgtg cagcgcagga gcgggatcga gcgcgcgtga gctggttgag cccagcacgt 720

ttcgcacgga ccaacgtagg tcaagcaaag caaatgccag tagcagggtc cgtgcatata 780

tataaaaaaa attatgataa taatcacgca tggatggatg gatgcagcct cgacgtcgag 840

tggctggctg gtgcgccgag tagcagcggt actagtacta ctaccacgca caggcagcgt 900

taatgcggat ccatggccac atcaaagttg ccagcgacaa gcgatcgagt accgcaccgc 960

aaacgtccaa tgccgtgcgg cgtgcgccta ccagtctacc acccagctgg agtagccagc 1020

gagccaagag cgcgcacgca cgcacgcgca cggccgggcc ggcgtcgctt cgatcgccct 1080

cctcacttcc agccagcgag catgccctgc tgccgacctc ctcgccccgg ccgaggacca 1140

cccccgctcg gctgtagcgt gcgcgcacca ctacggccgg gcccggccga ccaagtcatt 1200

tggcagccag cgacgcggct gcagcgttgc gtatgcgccg tgacaaaacg tcgcgggtca 1260

cgacaaggag gagacggaga caccccccac cgcggtggac gcgcgtacga cgccgacgct 1320

ggccgggggc caatgaacgg atagggttgg tttgggcttt ggcctccggc ggccggcgcc 1380

acgaaacaaa gccgggcgcg tgtgttgggg aattgctgct gcggccaggg cgaggcccac 1440

gcgcgccgag acgtgtctct cgctcggctc ccccggcctt gcgcttgcgc ggctcggagt 1500

caagtgtcga gcgtagagcc tgcgatccgg tggcctgaca cgagtctcag ttttttttt 1560

ttggccattc aagtccagtc cgacccgacc tgctagcctg gtcaggtcta ttttgtacct 1620

gtgtcagtca gctcagtctg tacggcatca ggctacgaat gggttgcttc cacgacacag 1680

cgagcgccac ggtttagccc gaaccagccc ggccgttaac ggtaggcaca tgactcctta 1740

gactgatcca atccaaaaaa aaaactgtgc ctgcagtagc gcgaaactga cagtggacaa 1800

acgaattcat tcaaacagaa aatgtgccag atatagttga gataggaaaa ggtaatatag 1860

aaacaccgac acacgtatac tcccccaaaa caaaaactta tcatgatacc gtcaacacac 1920

atacgtaact tcagttttat atatcttgaa actaatgaga taaaagagaa caagagtcaa 1980

tatcgcaaat ccaccgtaac tcacgcagct atccaaaaca tgtcaggcgt gtttgtcatg 2040

acatcgtagt tgcctagttg gcctggttag ggagccggct gcaagctgca accgcccccg 2100

gcccgcgctt agttttttt tctctcgtgt tcggtggctc ctcgcctgcc tacgatgatt 2160

tggagttggg gcaggcgggc cgtgggctcg agcttaacat tgtggaaaaa aacaa 2215

<210> 2055
<211> 1704
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233530_G1, chr6:150297056..150298759, Cluster 12

<400> 2055
tgcgtaatat agtgcaccga ctcttgattc tgcatttctg cccacgtgat taacacatgc 60

taattgaaca ggaaccgtgt tatgaatata tgaaaagagc cccccaacgt actaaaagaa 120

aggcgcacac agacgtcacg cggatcatat cggagctgtt atttgtttta acgaactttg 180

ttttttgat gtaggattcc ttggtgtgca agctatagta ataaagcgat ctccaaatta 240

aatataagag aatatattaa ttgcatgggc aggcagtgtg cttgctaata acctgcttcg 300

aagaagtagt ggcccggccg tgtcggtgcg gcaggcgagt agccggtgcc ggtgccgccg 360

ggcgtcgcca ttattgccgt aggcggacta ttctctggcc gggcgccggc ccacggcggc 420

tggtaccctt cgccgccgcc agcgacgacg tgggccagag cccgcaccaa cgtcgacgtc 480

tcgagagcct ggtacgacga gtcaccggac aaggcaccgc cggtcgtctc cgctgccgca 540

tcgtcaccgt cgtgctcctc cgccggccag cagcctgctg attgccggcg cgcgtccgcc 600

atctcgatct cccgctccca ccacgcacta cgtacggtcg gcacggccgc cctgggggct 660

ggggctgcaa tgccgcgcgc tagtggtggg cgcacgtacg tacgtagctc gtagcacacg 720

tacgacgacg acgacgcgtc gaggctgatt taagcagacg acgggatgtg tagatgcaat 780

gcaatgcaga tgcaaacgca actgggggtc ggtcgatcgc cggttgatcg gcatgcagga 840

aggaggaaag gacggatgat ggattgaggc ggactaacca gccgtgctgc cgaatatata 900

tagacagagc tactactact agcagggaga gatatactat atagacggac ggatatatgt 960

actgtgtgtt tgtctcgaaa tagatggaac attctactta ctgtacgcac gtaagaagag 1020

aatggtggaa agagaggggg ggacaacatg tgttgggatc gtcatacgtt tctcgctcgc 1080

cgccttgaac aactggaaaa ataatagtgc gcggttcaga tttggaccgg gtcgcccgct 1140

gaccgcgcgt tacctgctgc atgcatgcac gagagcacgc acttgccccc actgttccgt 1200

tggtacgtag gcggcgaatg gattccctct ggactagtac gtaccacgca ttgattatta 1260

ctacgtatgg attagggaaa gtgggcgatc ggaattatta gtcgcatcgc acgagagagc 1320

tttgccagtt tcgtcgtgca ttcgggctgt tattacgttt acccggatta tctattatga 1380

gtacgtacgt agtcaaagcg tgatggcagc agtctcgtct ccgccgcctc ctgtttaact 1440

tgcggccgga tttggatacg cgtgccaagc gctgacgagg ccgtttccct ccggcgggtg 1500

tggcggcggc gaccacgacg tacgagatgc gtcatgcatg gtttctgagg ggaacgcacc 1560

tggctggccg gccggtggcc gccagtaaga ttcatacgcg cgcgcgcgcg gtcgcagttg 1620

gctcgctctg gtatcacaac acaacactgc ctctggtggt gtgcatgcgt ctctggggtg 1680

cattatttca ttcgagatag agat 1704

<210> 2056
<211> 1430
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233633_G1, chr6:150839464..150840893, Cluster 12

<400> 2056
ttttgtaaat agttttaatt tttttattct cattccatct cgattctaat ccagctaaca 60

aaacaccata ttttatgatt aggtgcaatg caacacacta atggtttatt ttgttggacg 120

tacaaagaag aatgaagggg acggctatat tttatataat gtttagatga gaactacaag 180

aaaataaggt gaacacctga gaaattttta gtaacagtag tcttaaaaaa aaggtccgtg 240

tcgccccggc ttatcttatt ttgaccttaa tcaaaaccaa acacattcgt ccggcaccct 300

cgccgcccag ccacagctgt ggcgggagcc agacgcccag acatgcccaa aatcgggcag 360

aacactggct agatttgcct gacgccgagg atgtctggag gctggagcat tcattcacgt 420

ggccaagacg acgcgtgaat cctacctagc tcatcaatgc ttctctggct atttagtagc 480

ccactggaca acatcaatgg cgctgctgcc gtagcgccat ggcccatggc tgcgtgcttg 540

tccggagaga gtactacggc gtgctgtgtt gtacagtatg tagtaggctt gtagtatgta 600

ggagtaacta cggcatttag tgtagtagcc tagtataagg ttagatcttc ctgtaccact 660

gtcatcttca ttagaccaac agctgctgaa gatcgtggac gaacgcagct gggcctggtc 720

ggccgcgttt atggacgagc acggtcagct tttgagtgcc gggtcggtac aactcttact 780

actactacag ttgttggccg ttgctgccac tgccgcccac tcactgaagg caggcgccag 840

gcacagccag ccgcacacgc acacggagtg gtgggtgctc tcacgccatc gttatccaaa 900

atggcgcgct ccccccgtcc cccactaccg aaaccagtgg tagcggtgat gtttgcggcg 960

cggcgcgtgg ctccgccgca tggaagccag cggcctagcg gctagcgctc gcacggccgg 1020

aaaggcggcg gagctggacg tcgctcagca caggacgggg cgcgacggcg gcgagccgaa 1080

agacggtctg cgcctgctga tcgatctcct gggcgtgctt ggcggccgtg ggcgatcgca 1140

cgatggccga tgggtgcggc tgcggctgcg gcctatcgcc actggggaag tagggagccg 1200

ggcgtgcgtg accgcccggc gccacggcgg cacgccgaaa cggcagggca aaacgtgcgc 1260

gcgttgctgc gtaccggacg tccgtgtcgt gtcgcgtcac gagggaaagc tcgatcgggc 1320

gcgcaccgaa accatcactc cggcgaagcg acgcgaagca aagcaaagca tccaaggaga 1380

agaaggggga tttgtgtgtg gctgtcgctt ccttttcggt gagccgagcg 1430

<210> 2057
<211> 1685
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235546_G1, chr6:159828361..159830045, Cluster 12

<400> 2057
ctagacttag gtaaaaaaaa accatggaca catacatctg agctgcagca cgaacgagct 60

gtcgcgaaca tggacgacga cgacgcatgc atgctagaag tagatcatgg gcgaacgtac 120

gtaccaatgt gggaactgtc aggtcttccc gccgtgccaa agtcagacgt ggaacatggt 180

tgtgggagct aggtcaacta gaaatatttc actttattta tttccccgtc caatcttatt 240

cttatatgca tgatcatcac tagtagacta tatgggccgg cggccaatca ttttgagtta 300

attaatcgcg cttgatcatg ccactgagaa catccccccct ccgcgccgtc gtttcgtttc 360

tatctgcgtc gcatcggaag ctgcgcgcaa cccaataatg aaaagcatgc atgcgcaaat 420

aaacgaacga ggcgcgacga gttcgttatg gacttggtca cccacgcggg cacgcggcca 480

gctgagcgaa ggcgtcctcc gctagctgtc cccacgagca ttgacgtaga acgaagctca 540

ttgaccaagc tggttaatga tcactgagtg tgtcgttgct tacaggcatc ggctgcatca 600

ttgggcgcgt cacaactcga ctctcgccaa atgccacaca gtgtgtcgtc gtccgtcctg 660

caacgacaac ggaatggagt gtacgtattg accaacaaaa aagtgcggtt gacataggag 720

gagtgtgttg tgggacacac gttccctgtc ctgctgtctc gctctacgaa ctctctagct 780

tagcgtgagg tctttttaac aagttaaatg acagagagag aaaaaaatac gaaggggcga 840

tctctccacg acttgaagtg tttggctaga agaaagaaag aaagaaagaa aaaacgagag 900

agctgttttc cctgaatatt gaacacatgg cagctgtccc cggcactccg gtagtcagta 960

ctacagtagt agcgcgcaca atgtactcat ccactggcta tgccgtttgc tacagcttca 1020

gagtgacgga gcgccccctc aacaaccaat aatgctgcct ctgcctgtca ccaaggagct 1080

cgagtacgcc aggaaccaac ccccgggtgt cgtgggcagc gacgcgccgc gcctaggaaa 1140

gtgccggtgc cgtgcgcggc cacacggcac ggcacatgcg acggccggac acacagactc 1200

atgatggcgc agggcaccaa gctgcggctg cggcgaagac gcgatctcac cggtcacgtt 1260

aggtgcgccc acctcgacgg acacaacaca tcgctcgggc gcgcgcgccc cgaaccgacg 1320

aagcgaacgg ccgggtacgg tggtggtggg tggctttccg tatgggcggg gcggggcggg 1380

gcgctcggga gcctgggacg agagcacgag gcaactcacc gtgcacgtac cgacgtacgc 1440

agacgcagac gcagcgcagc cacgaggggt tgacggccaa aaggaaagac gtgagcactg 1500

tcgtaatcgt gctcgagcat cgtggcagcg cagcagctgg aggcgaccag gccggaccag 1560

gacccaggag tgcccggctt ggcgcacgca tgcccacgcg ctacagtaga ctctgctttg 1620

ccagatcgtc gcagtccctg caactggcct cgggtgtaca tgccgtcaat tccattcttc 1680

ccaat 1685

<210> 2058
<211> 2251
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235933_G1, chr6:162104927..162107177, Cluster 12

<400> 2058
ccatggaaat caacgattca gaattggtgg ataacccctt gtccattact cacttaaatc 60

caatagacaa tattatttag attatctctc atcactcccg tgccgctcct gcagcccctc 120

cctctcactc tgtgttgtcg cggtcgaccc cctctcatct ctggggtcat aacattagca 180

cgggatatat gctagtacta cctctatttt tatactcgac aatagaaacg tcaaataaaa 240

aaatagaggt agtatattat ataataatgt tttcaattct atacacacat agtcaaatgc 300

aaggaaaagt ttgattacca tatatgctag acgtacgtac tcttgtgaag aagctgtaac 360

attattttga atacagtagg tgtgtgccga caaatatata ggtacggtga catatatgca 420

tgtagtaacg ttaaggccgc gatgaattag ttccggatca tttgcaggcg cctgcgtcga 480

tctgactagt agcagtaggt cgtgcgctct agtcgtggtg aggggagtca tttatttgcc 540

catgagtaga agcactcata ccggtcagta taaccgacag cttacacgtt tgggcgagat 600

gattagcaca catgagcttt ttaattaaaa gcatccatca gtgggcagca gtagtggcaa 660

cgactgatcc cccgttgctt ctcgccgtgc gtgcatgccc tagccctttt cgtttctttt 720

tattgtttgt ttgtttggtt ggtttggaaa atggcgcaca acaataacgc actgtgtact 780

gctgcgcgta accgctactg cgtgcacagg cacagcttga tgggacaacg aaagcccgcc 840

tactaccagc tgcttggtca tgtgtggagg atcgagtagc tagagcttga ggcttcgcca 900

aaaaagcaaa acaggacgag ccgcaaacgc atgcatgcaa gcctagctct atacatatgt 960

gcatggaatg gaagtgcata tggaggaatg gaggatgaag caagtttgac aattgacagc 1020

atcgtgcatg caagcatatg acgaatattg cacgcatttt gcagttgtcc ctaagatatt 1080

gagccggatt ggcaattggc atgtagcagt aatggagtgt gcatgcatac cctaccctag 1140

ctaatatgag tcatatatat gcaaatacac atgcacgtcg gtttcgcacg aacatgcgag 1200

cgcgcgagag tagcaggaag cagggcagcg ctgtcgtacc tcgtacgcgt gtattaccag 1260

ctgatctatc catccatcgt ccgattcctg gaccgaccaa caagctggaa ggcaaagcga 1320

tcggcgtgcg tgcatgcatg ccccttgggc ctgtcgcgta cgtaccacga ccgcacgagc 1380

gagtggccgt gcccggcccg gccggacggg ggccgcgacc ggccacctaa cggcttaacg 1440

atagctccat gcatcacgca cagccgggcc gcgtgtggta cggtacgagt acgacgctcg 1500

gacggcggga gagcgtgcat atgcccctgg ctgctatagc tgctggctgg gtactggagt 1560

actggggtta cttactgcct tactactggg taggctcgct ttctccaact cacgcctcct 1620

ccgatcccca ctgtggtcgt gtcgtgggct ttgtggcgtt cgcaagtcac ctctcgggcg 1680

tgtacatgta ctctcggcta gtagtgctag tagtagctag tgctagtggc agccagtagg 1740

cggcgctatc attcgccgtt gctccgcaag ctacgtacgt acctgcactg caccatggca 1800

gatgcatcta gctacgtacg tacacactac gcgcgcgcta gttaggtccg atcggttgcg 1860

agctctctgt acatatcaac gtcctggtcc cacgcggcgt gtttttagtt tcttgacttc 1920

ttctaaaact tggatccgtg cacggccgga ccacgtacgg tctgcaacga gaaaacggtt 1980

gactgttgcc gccgccacca gaaatgtggc cggccggcgg acctactacg tacccgcaaa 2040

acgatccgtg cgtgtgcgtg ccaaaacgaa aacttcaacg ccatctttca acgtgcagca 2100

gcagcttttt gacctggtgc cgtgccgcgc cgctgccgtt ttgtgctggc cggccggaac 2160

gctggactgg acacatccat cggtgtgccg tacagtgcag gcgactcgat cgaccgtgcg 2220

cggcgtgcgg ctgatttatg tgcccgcgcg c 2251

<210> 2059
<211> 1751
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236100_G1, chr6:163001621..163003371, Cluster 12

<400> 2059

agcagcggcc ggtgacgcct ctcaatcaga cagtcgtagg atccctcttt aggccacgtg 60

aatcggtgtt tctgttcgtg tggccaccgg ccgcccccgc ccttctcttt gttggcttct 120

ctcgccgggc atattcttgc agctcgtccg ttccttgacg tggcggggtt ttcccctgca 180

cgcgtgacga ctttatttga ggccagctcg ccaatttttt tttctccagg caggtccgag 240

aggaatgtgc atgttttgct tctggcaaac gggccctcga gagtgcaggc agtagcaagt 300

caaaaagctc agtggctacc gataatagcc cgcagtttgt ttactactag tagtagttag 360

ttaccgcgca tctacgactg ccggcgccgt ttcacacccg tcgtcgtcgc cgtcgccgcg 420

caaggtgccc ggattttcgc atgcatgcac tgcagcaccc aatcccagcc tgaccgaccc 480

tgggcatgtc ccccaactga caccgagagg acttggctga cgatcccagg cgcagtccag 540

tcagggacta ctaaacatgt gactcgcgtg aacgtcactc acatcaacca accaaagtat 600

actactagta gaatttttac tgtgtctcgc gtgaacgtca cgctgggctc agcacgcaag 660

ttcgtcctgc ctggtgcgag ctagctccgc ttccgatcct tctatttctc cataggatcg 720

gagttacatg cagagccgaa gagactagct atagctcctt tcatgccttg cctggtagta 780

ctatactagc tagctagtgg tgatcaccga gtattttaaa cccaaccatc agcgccatcg 840

ttcatccaat ccacgtagtc tcgactcgat ccaacctcag gagttcggcg gcggcggcgg 900

cgacgacgtt tcttcttgtc cacaaagttt gcatgtcccg gtacggtacg gtcactgtcg 960

tcgtcgtcct cgcacaaaat taaaataaac ggccggatca tcttctatat ataaactact 1020

ctcgcgtctg ccgctttgtt tgtctaatta attgtctcat cgtcgtcgcc ttcgaattcc 1080

tcgtctcgtg gctcagcgtc aatgaccagg agggatgtgc agacacacta gctagtcgcg 1140

ataacacgcg ccgcacatga ccgccggccg gccggacaca atcattaggt gccgggggaa 1200

ttctagcgta caggtgccgg ttcacacgcc gcggtcgtcg tccttcgccg ccgcgccggc 1260

gtgtaacaga tgaaataaac gtgagcagaa acgagctagc taccggcctc tccctttaga 1320

aaatcgtggc ggcctagtag gtttgaaact ttgaatgaaa cattgaggac ggacgaacgg 1380

acgtgagctg atgtgccgtg tgaatcaaag gcagatacga ggtgtttttt agctagctag 1440

ttagtagctt ccgcctgttc tatttcgatc tagctaggct tctagtttct actactacta 1500

tactatccta tatattagta gcatgcgttt caagtggcgg tatttttcgc tgatcgatgc 1560

tgatgggtgc gcttatttgt ttcctttgtt tgacgagatg ggcaacatga tggccatctt 1620

gactcagcaa tggggctcgt acgtactagt gttgacattg cctatgatta gctctcgcac 1680

cgggagctgc aaagtctccc ttggcatgga ataaatatat aacttacgca ttatatattt 1740

attggttatt a 1751

<210> 2060
<211> 1562
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236380_G1, chr6:164508909..164510470, Cluster 12

<400> 2060
catctcccgg ggaaccaaac tctgctctgc cgcacggacg tgggagtgtg ggacgacgac 60

gacagtcgga gtagatcttt ggtgatacag gctgtggtag acagtagagt acgtagtacg 120

acatgtgttc agagtcatac tagctcacag ggcgccgcct cgtctctctc tctctctctc 180

tctctctctc gtctctgcat gccagtcagt gaagtggttg cgtgtttcta cgtgcatgtc 240

tcggccgcga aatccgtgct ctggggttcc agttccagcc gcctcgatca tgccaataat 300

ctagtactgt agggtttgtt ttataaaatc caggctcctt gtccgtgaag caagattgcc 360

gcttccatcg gtacgacaag acgctcgatc tgtgtaatta taccagttta catgcatcaa 420

tcgatcgacc agttcacatt tttctatttt tttttctaaa attggggtcg gtcattaccc 480

tttagaactg ccgcaacctc tttctccatc tatctaggca tgcacgtact gtagcaggag 540

tagatactac aagtggtctc ctagctagct aacaatacta tagccctata tatagtacag 600

tcttgcgcac taactcctag tactacgtga tgatgatcca atcgtacgta cagtactcct 660

cttccactag ctagggggtc caacactacc gatggtgtgc aggtgcaggg gcgctagctc 720

tagagtctag acgtacagct gcctgcgtgc ccgttccgtc ctcgtccgtt gcctgtcttg 780

tcctataggt ttgccgggtc tttcggccgc ccatgcacca acccaccggg cctaaaagct 840

ctgttccacg gtttgatcga accatgcagc acatctgctg cgtgcgtgcg tgcaacacac 900

acgcatgtgc ggcggtgcag cagctgtcga cctctttcct cgctacaatc tcgtatatat 960

atactcatca gctccggcgc atgcatgcac ggactgtact cgtacacgca ctgcacgtct 1020

gcaggcaccg caattacgtg acccgcagat ctttcgggca gcggtccttg gcgagccatt 1080

aaccgcctta atgatgtcat ccacccgcgg ccagccacag ccagcagcag gcctctcccg 1140

gcagaccgcc ggccgccgca gcgtgtgtga tttatggcgg ggcattcatg gcgaccaccg 1200

cgttgcatta atttacatgg ggatctgtta aaaaaaagga aagaaaaacg gaacggcgtg 1260

tcgtgtcgtg tcgtgtcgtg tcgtgtatgc ccgttagctg aactcaaagt acgtactccc 1320

tccctccgtc cctccctcct cggagtcgtg ttctttcttg ttcctgcttc tagtagcaat 1380

gaccatttac tcgcgccggc tccatgtcgg atctctggga ccacacaaat ttgcacacgc 1440

cacggactcg cgagcaaatt ctttttcacc ttggtcggta gtaggcgtct gcctgactgt 1500

ttcgcgttcc tgcccaagat tctgccgccc cccgtgcttt tgctccacag ccttgagcag 1560

cg 1562

<210> 2061
<211> 1707
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_240632_G1, chr7:18621746..18623452, Cluster 12

<400> 2061
gagatgcata gatcatagat gccatgccat gctatgtgag gagagcctcg caacggggaa 60

cctaaatgta tatttattta tttattgtat ttaatggtaa gagtggttcg gtaatttttg 120

caaggtgacg gtctaaggcc gtaagagtaa gaggaatcag ggcatgaaca gtaaacatcc 180

agccggcagg tagagagagt ccctcgctct ctggctgtgg cccctatggc gaccgacacg 240

aaaaggtgac gggcccacat ggtagagaca ctctccgcct tttctttggc tgcttgtgcc 300

ttgtgcagta ggtggcgttg gcgtgcgagg tgtgcatctc gttttcaact ttgaaggagc 360

cgtgtgtcgg cggtgtgtgt gggggcgagc ccgtggcgtg tggcgactgg cgacagagga 420

aggagagacg agctcgagct cgagtcaccg acacactccc actggccatt cccgtcactc 480

tgccacaacc gtttacgtgt agctcgaggc ttctggtgtg gtgtggtgtg cggtgtgcgg 540

tggcagcagg cacgccggcg ggcgcgcacg aggaccgccc atgcggcaat gccaaaaagg 600

gcaaaggtac tttctccgag aggctggcag gtgggtcctc tcccgggtga taaacagctt 660

ctgcgaactg cttcttctgt gctggctcac tctcgtcggc cgtcggggct tgccgctttc 720

tttaattatt ttttttaccg gagagacaac ctactccttc tgaacctttt ttttttggga 780

aacaaggtca accttatctt cgtccgactt ccggttgcga ccgtactagt acttggcatt 840

tcggacatct tcaacgcttg ttgttgatgg gtattattta gtttgaaaag atagaattca 900

tttaaccgcc aacaaaaaaa ggtattataa agttcagtaa tttgatgagg ctagtaggta 960

tttgttgcgc cctcacaaag ccataattca gattcctccc cctcccctcc tccccccttt 1020

ttttctttat accatgtagg taataggtat tttaaaaagt ttcttcaaaa cttaagcatg 1080

tgcattcact acctaccttg atatattcgt tgcaaatgcg gtttccatgc tagcagtgac 1140

ggacccacgg cccgacgacc atgggtgcct gctcggactg ctgccgctac gtgcatagat 1200

ttatattgca gaacatgatc taaactacac gatttagtta gcccaatgag atttgcccgg 1260

gctacgatca aactgcgtgc tagtcagctt ccaatgtatg aaaatattag taatatttat 1320

atacctaagt gtatcataaa attatattca atggttaatt tagcgatgtt tattgacaga 1380

ggcggatctc gcatcagagc gtgataggct tgatctttgc ttcccacctt ccacctaaca 1440

acgacatttg aaaaggaacg gaggagtacg taaatagctg ctacaaaatc aatctcacaa 1500

agatagattt gtaaaacaca caacctttat tagaccacta aattaaacgc acatgttctt 1560

aggtaacgac aaattccagc ctcagtcctc ttagagaaga tgcaatatat aggttaaata 1620

aataggtcca ctttaaaacg cttgtagcag ctccacatta gtggatatgc atgtgtggtt 1680

tggctttggc taaccactca gcaaaat 1707

<210> 2062
<211> 2505
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_244502_G1, chr7:41425984..41428488, Cluster 12

<400> 2062
ctcctttggt cccaaaacag atgcgtcgct acatgtcaaa ctcttttaaa atttaacaaa 60

tagcggtaat atttacattt aatcatgatt aaaacggttg acttacaaaa aatgacgaac 120

gatgattatt ttgggacgaa cgggaggagc agtgaacaag aaccacagca accccgcaga 180

ggccaacctc cactccatcg tggcggtagc agcgacgact catcatcatc gcatcgcaat 240

cagtgagccg gcccctcctg ctgtacaaca agccatgcat tcgtgttggc tggcgttggt 300

tggcgtggcc accacaccac cggcctcgga gccgtgcgtt ggacttgcgc ggagcatgca 360

tggcgtagta gtacggggaa acaaaattcg ggcagattgg gcggccgcgg ggcggcgtag 420

atgacgcatg cgctctggct ctgcaccgcg cgcacaacgc cgactgccag gctgccatca 480

gagaaagaaa gctgctgctt gcggcttgcc aatgctctcg tgcggcgcag tgctcctttc 540

ttaatatctt atcggcgcct cccgccaatc atggtgctgg tgccccccgc atgcaggctg 600

gccgcgctgc ggcgagggcg ggccacggcc agcgcctagc ggcgggctgc tgcaagtgca 660

agcggagccg agcgccgcgg ccgaccggcc agcctggttg agctgggcgt ggccgcgagt 720

gcatgctgca tgtgcctgtg cggctgggtg gaggacaaat cagcagctgg ccccgctgga 780

gccgtcgttg gcgcgagcga gcgaggagga gctggcacgg gggcggagac gggccagggt 840

ttccactgcc caggcggcgg atgagattga gatgagatca tggccccgcc tgtggctgct 900

gcgatgcggg ttgcgcactc catcagccgg ccggcccggg cgtggcgcaa gtggacggac 960

gcgcggtccc gcccgtgcca tcatctcgtc tcgtctcgtc tcccttctgc ccccagtcgc 1020

ccagctcagc tgtgctcggg cggcttgcgt tgcgactact gagctgcacg gtaaaaaagg 1080

tctggcgctc agggaaagcg aaggcgaatc taccacgctg acattggagc agggcgcgac 1140

ggcgcaagag acaaacgtgg tacgggcacg gggtacggct ggcctggaag aaggcagcga 1200

caagaacaag cagagcgatg gatggatacg gttgcagtct attttcaccg ctatatctac 1260

gtccctgctg aggtaaatct gcaggcacat gcgtgtgcgc gtcactacgg tcggcgatgg 1320

acgtgtacgg tcgtggtcct ggtcctggcc agattagtga ggtgtcgcgg gcacgcgcgc 1380

ccggctcttc gaacgaacgc aaagcgaacc caatcagcgc cgcggatctg ccggacggac 1440

ggacggccgg ccggagagtc gttctggcgg accgctcaaa cgttcagctc gtaccatcta 1500

gcagctcagt taggcacgcc cgggtactcc gaccggaggg gtgctctggc ggtctggctc 1560

tggccccgcc tggatgcggc ggttgccgcc agcgctgctg ctgcgtggtc tcgctcttgc 1620

cttgccttgc cttgccttgg actcttgggc ccggccccgc ccgtcgttcc agacccttct 1680

cctgcccacc accgccttcc agcaggtccg aacccgaatt ctctccatcc ctatccacca 1740

ccagccagcc aagaccggga ccagggccag ggccagggcc agggccaggg ccgcccgagc 1800

tcgatcgctg ttccaacggc gacgtcgacg acagccgctg gggtctgggc gggccgccac 1860

gccgcgcgca gccacacatc catggacccg gtggctacgt gtcgcgcctc ggctggcgcg 1920

ccgcaattct ttaccatata tgtctctggc tatacggttc ggttcctcga gatgctcgca 1980

cattcatctc gttgtcgttg ctcgcacatt cacgaagagc gtggctggcc gcgtcagcct 2040

ctctggctcg cctggttcgt ttcatattcc atcctctctc tcttctcctc tgggcggttc 2100

tggcgaggga ggcgcccacc tgtccatggg agcccgacat gcccgatccc gtatctccac 2160

tgcgggcgtg gatgatgaga gtgagagtca gtaagtcaca aagattaatg caatccggcc 2220

attcaatgaa gcgtccaaaa caggaaagca catgcacagg cagcgggagc tccgagaaaa 2280

cgggggccct gcagagccac atttctcatt gggaaaaaaa cctttgtttg tttattcctc 2340

ccctcttccc gattaccact gtcacaggca cggtcaacag ggcggcggca gcagcagcaa 2400

acctgtggat gaggatggat cagcccagtc acgttgcatc acgcaccgcc agtccggcac 2460

cgctgcagcg gagattctgg catggctcgg cttcttcagt tcttc 2505

<210> 2063
<211> 1513
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_251640_G1, chr7:94019106..94020618, Cluster 12

<400> 2063
aaccaagcaa gatactgaac gaaagggttc ccctcccttt tttttacgat cgacggaaaa 60

gattatcggt ggccacgaaa gaatccgacg cgagtcctag tcatcagagc aagacaagaa 120

cttgtatgtc cctacgtaca tgtgctacac gcctacaccc ccacagattc agaacagtca 180

tcctcgtaca acacatgctg gcatggcatg aaccctgtac gctgtctctc tgtcgatcgc 240

gttgtggcct tgtggggggt cagcgacggc gtgtgatccg gaccgtctac caacccaaag 300

atccgtcacc gtgcatgtga tggctggaga cgcaagttgg agctgccgag ttgcttgctt 360

tcacagcgta atgtaatgtt gcccttgccc ggcccgggcg ggcgggcggg cgtgggagat 420

cccattattc cccatggacc agcgcgatcc tgcccctact gcttttggtg cctggctatt 480

cgctgagaga tcttgccagc atcctgcttg cacttctgct atgctatgta tgagaggggg 540

atgaacggag cgagtacaat aatgggcgaa ataaaccgtc gtgcgtttct ctagcttgca 600

cgctttttcc ttggaaccaa aacacactag cgggcatgca gtgtgtgtac tgctttggtg 660

cctaagcttg ttgtcctgct gttgttgctg atagcatttt ccaacccgga aggaagggaa 720

gggtggaacg aacgaacggg gaaaaaaaag tgggagcttt tgtgtgtacc cgtacctgct 780

gtcgtcgcac tcaaagaagg ctaagcacta agcagatgac ggagctttgc tgcttccggg 840

tttccggaga taaggacgac gacagggcgt gaccagaaag aaagaaagaa aagaaaaaca 900

tggcttcctt tttgctttgc agaggtcaga tagtcggata cgacgcacaa ctcttggtcc 960

ttatctgatc tgcagattca tttttattgg ttcatttatt ttcaagtttt cgtttattat 1020

ttttgtccac actccagcat acgtttatta ttcagtttta ttgattcatt tattttcaac 1080

cttcccttcc actgccactg ccactgccac ctgccagggc aacgtcctca ctcgctcccg 1140

tgtcctggtc cactggcgcg gccgctgcgc ctgcgcgaga ccaaaggcgt cgtcgtcttc 1200

tcttgcgtct actactcttt ctttcttttc atctgtttat ttttccaaag ttgtggcatg 1260

gcgcgcgcgc gtacctctgc gcgtgtgccg gatgaccttc tctgcatgcg tgaagcacgt 1320

gttaccgacg ccgcgacaac gatggatata gagagagcac gcactcagat tgattggtac 1380

ggtgttgtgt tgtgcccaca atgtccacga tgcccagtac tcagtcctag agctatgcat 1440

gtgttatgtg tatagctttt ttacatattg ctgtgttgtg cccacaatgt ccacgatgcc 1500

cagtactcag tcc 1513

<210> 2064
<211> 1415
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260274_G1, chr7:141573866..141575280, Cluster 12

<400> 2064
gaagattcca aaagtcggct acaccctcgt catcgcccac atttgccaac tcatcgacgt 60

ccccctctct ttccgtgcca acagaccgtg ggacccacat ggcccttcat ctaatcgact 120

cttctgtact agtataagta gtgcagaggt tccacacact ggcacggaca cacccaaacc 180

caacccaatg ggtcgtgggc aatggctctc tagtagtaat ctccatctat ctataggata 240

ggactacagt ctacagagaa ggatgatcag cgaacggcag atgatcgatg ggctttcttt 300

tgctggcctg gcgtgtcgct tgcatcgcaa cggctcctag caattggcat ttctcgattg 360

ggccctggaa agtgcgctct aggaaccgct ttaggtctgg acacgactgg tcgtggtcct 420

tcaacgtgca cgtggtcgtc tcttctccag tccagactct agagcttcct tgttccatcg 480

ggggctcggg gctactacaa acaaactgat tttgctcagc tgtgagcctg tgacttccac 540

ctacagatct actagtagta ggggtatcat acataggcgg tccacggctg ctaggtggct 600

tctactgtca gacttgttga gaaacgcgag ctgggaggca aactggcacc cttttatatt 660

gtcgagcttg ttcgatgcat gatgctgcct ggaaacgctc atcaaccatt tatttgatca 720

gagttttaca aacagcttgg accgagacac gcggtacact gctgaaaacg ccactcgagt 780

gtgttaaagg gctcttaagc ccttgctttt gttagccatc taattttgtg agttatgcct 840

cactcctagg tttaaaccag cttctctgcg ggtttttttt tttttgcttc cacatgtggc 900

atgtcccatg tatttttgag acttagacat gtcccatgtt agagcaactt aaaaaaaaaa 960

gttatattcc cccgtggttc ttccatacta tgtccggaat gtcccgtctt agatcaacta 1020

gtctctttat attcctcccc tatcgacaga aataaagatg ttggtaaaaa aacatgtttt 1080

ctttaacggc ttcactaatt agatctttaa actgttgggc gatgaaaata cagagacggc 1140

aatgtttatt caaacaacga ctctttaaat gagaatttag agagcaagcc taggaaagac 1200

atttaagata ctcctaggtg gtatgattca aacttttgac ctataaactg actgtatcat 1260

caggacaagt ggtcggacta tccaatttat ttcctccata acggccttgc ttatttgtct 1320

gtaactaagt tgcatagagc ctccttattt agctaaatgc taccattatc taagcgtaaa 1380

tgtagatgat taatcaagcg acatgttctt tttat 1415

<210> 2065
<211> 1502
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261037_G1, chr7:145760575..145762076, Cluster 12

<400> 2065
aacgggaaag caatcgccgt ctttgaaaga aggcagcgcg tgcatgggca gcacgagttc 60

tgtgcatagt gtaccctggc cccactttca tgtacagtag tttaacggca acttgtacgc 120

gcacgcgcgc cggaaagaaa tattttcagc cctccgccgt ttatgaacaa gcccacgttc 180

cggcatcgtc tgggagatct ctggccctgg gagtgggtct gtgggcactg cctagctaac 240

ccaccactga ccactagtgg actataatga tgtgtttgat ttgatgtcga attaggataa 300

gtcagagatg acaatatttt ctcgattttt tttatcgtgc tgccaccaaa aattactctg 360

gtgttcatct cgtcatcgct tgactctcat acagacacta taaaaaatat gaccgcctca 420

tttcatttct cactgtacat tcaactaaat gcaccttaaa ttaatcagcg cgccaccggc 480

gcgagttacc agatttggta aggcaaatcc agcgaaatcc ggagcagcgt gggctcggcc 540

agcatagcca gtagccagcg atactgaccc gagccgatga cagctcgcgt gtcgtggggc 600

acctttttt tattaaagaa aaaaagctcg acaagcaggt cggcagccgg cactcggtgg 660

caggcaacag cgtcgtgtcg gtcgtgaggt gcgtgatggc agtggcagca catcagcgca 720

gcctgcgcac agggacaggg taatcttcga cgtggagtgg cgcacacgtg ccaagccgct 780

ggcggagacg gcaacgagtc cccaggatca agatctggag gagacggatc ggaggtgccg 840

acgccggtgc tgtcaaagat tctctctgtg cactcacttg tatggctatg gcggccaagg 900

tggagtctag acaaggatac taatccaata ccactgcacc agcaacatca gcgagcaccc 960

ccccccccc ccccccaca cacatccccc gccaagaaaa aacagataga gagagagacg 1020

ttggtgggat cctaatccca ggcttatctc attccccacg ttgcgccata cgcggcacca 1080

gattttgttg atacgatgcc aggaacagtt tgctagttca acacgtaatg tatatttata 1140

catttactaa tataatagta ctcttggggg attagctgac gtgcccccac cctcaacacc 1200

ccccgatctt taaagcgagt taagtacacc tggtgtcgtc tttgtggccg tcaccggagc 1260

gccactctga caggtgttga tttgatcgcg ctgtctgtgt ccaccaaact gcgtacgcct 1320

agtccactcc gctctccctc tccttcatac tgcctgccgc agatggacac ttgtcggctg 1380

cgtggcctcg tgaaaaggcg tcgcggtcga aaagggtgtc ccgtactccg gttcggtcac 1440

ggacgttgat ctccggtctc ggtgtgcagt aggaagtctt gtatctagat ggataacagg 1500

ta 1502

<210> 2066
<211> 2562
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261498_G1, chr7:148458185..148460746, Cluster 12

<400> 2066
aaaaaagaga gagaaagggc agtgcgcgtg cagacgcatt aaatgttcag acgggtcgga 60

tgccgacgac ggcgcgagcc aagacaaagg gcaacgctcc cccgaaaagc ggcggcacat 120

gcctgccggg tgccggggct ggacgcctgg acgtgcccag tggccgcgca tgtgaagggc 180

cgcgtcgcgt atccgtgcac ggtgcacgcg gcctcgcgct caccggcaca gtaggccgct 240

cggacacatg tgccgtgcgg gcgttggttg catcgttggc cacagcgctt cccagtaggc 300

ctcgcgacca ccgcccacga ggcagcgcgc cggccggaca cgagcccggc aaaagtttca 360

actgccggca catgcgcagc gtgtcgacgc gcgacgtgcc aacggcctcc cgcgcccgct 420

tgtctactgt ccagtcacca gtcaccacgc cccacgcaac ttggtctgtg aaaacaaaaa 480

tgcttgtcta cccgtatgca tcaagtcgca actacacacg ctaccgcata tatatctagc 540

gttcagcagc gtgccggccc ggataggctg cccctgcccc tgtctctggt cagacacgac 600

atgacctgga tagctggact ctataaattg tgagtacgtg tcgacccatt tgctccatat 660

atatgtcgga gtacagtact agtagtagta gacctagacc ggcatgcatt actacctgcc 720

accgacactg cggtttcaca gtgtagccgc aatagcagcg tcacatgcac tcaccaaccg 780

caccagcgac aaagcgcacc attatattca cgcaacaagc ctcctcctcc cctcacacaa 840

agcaaagcaa agcaaagccg gccggctagc agagctagca ctcgatctgt agctagctta 900

ggtaggcacg cgttatgtag cagatgagag cggaacaagc acgcatgacg tagctagtac 960

gtaggaagca tgattagaga gagacgggcg gcgaagttgc aactcgccat cgatcgatcg 1020

gaatctggaa cgacggaaac gcaaagcgtc aacaagagcg aaactcgttg ccccgccggc 1080

cggtagatcc atgatccaag caacgccact gcagcggacg aacgagagaa gagaagagca 1140

gagcgagtgt cggtgcccgg gtccggccga gacgcgcagc agaagcaaag cgagcacgcc 1200

agcgtgaccg tccatgacca tgtccatgag cgcacgcaca ccggcacacg acgcctgcgt 1260

cccgtcccgt ccgcacgcat gcacgatcgc accgtcggtg gcggtggcgg tggccggtgg 1320

gcggcacgtg gtcctcccgc ccacacgcgc atcattgcgc gattgacccc gcccggcgcc 1380

tggcgcggcc gcgacaaggg gaatgtttgt ttgtttgttt tcccgtcccc tctctctcac 1440

gcgacgcaag ggcaaggcat gcatagagcg gccgggcggg tccgtaccgc ccaggtccgg 1500

caccagcaga gcagccaccc gcgcgccggc cgggagcggg atcgatcgat tgccaaggtg 1560

ggcaccgctc agcgcatgga gatgatggag agatccagcc gcccaggcct aactaaccgt 1620

tcatccagcg gcgattacgc gtacggacgt tttaggtgca catatttgga aatgatggag 1680

aggtaaggta gccgcatgtt acggagcccc agaccaaccg aacaggggaa catggccgtg 1740

ccttccggag gatcttttca tcagacatgt acatacatta gtggacgacc tccttttccc 1800

gtccagtcca gctgggtacg tactactcga tcaggaggag gagggtcaac ctccactcca 1860

cccaccaacg gccgtcccgt cccgtcccgt cccgtctcgt cttttgcgcc gctagctcca 1920

tctggctgag aaggtttcag tttcgtttca aacacacaca cacgcagaca cgcggagggc 1980

cggagaggaa aacctgagga cggtgcaagc tcatactaaa acaagtactg tagctaatcc 2040

ccgggacatc aggggtgtgg caggcaccag gttgccgtag tagttcagtt gtgtatgcat 2100

tgcaccagcg cgtctgatcc tatctaggta tagccgtata gcacactact ccagacagga 2160

tccgtgttga tccgcgtcgg aattaaagat atacgctcga tgccacctac tactacgtag 2220

tatgctcgtc cagtccagtc gcgaatcgcg attcagagac aaggctgtgg tgccggtggc 2280

cggtgggtgc gctctgcggt tctgtctacg ccaatctcta ccgccatcat tgccttctcg 2340

accaacaaca gagacgtatt gccacgacga tggccaccac cgacgcggac acctcacatg 2400

ccgagcaccg gcccgccgcc cgcccggccg gtgcctcgat tccgggcggc gatctctcga 2460

cgacctccgg ccggcggtcc acgcacgtaa agccattgct aacttattag atagcgactc 2520

ggagcgcgca ttttctggac cctctttccg ctcttgtcta at 2562

<210> 2067
<211> 1909
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261784_G1, chr7:150028455..150030363, Cluster 12

<400> 2067
cactcacgcg acgcgaggac tgtgaggcgc gaaggagctg cagtctgcag gtgaacagct 60

agaagaacag gaaaagtctt gaggttttca tgagctggcg gcggtggtgg tgaattgagg 120

gggggcagtc cgagaggcgg cgcatgcagt tgcagagcgt ggccggagtt tgcatctgag 180

ctgcaatgcg agcaggaagg agcacgtccc ctgacggagt gtcggcgtcc atctaatctg 240

cgccctagct tgtcaccttg ctcggcgagt caaaagggcg ctcacgtcgc gacgccgtgt 300

cgcgcgctca cgggatctgc cacgatcccc gcgtcccttg ccgcgcgctc gtgacagtga 360

gagcgacccg gacactgaca aaccggggcc ggtggagtgg acggaggccg cgcgcagacc 420

gccggacatt ggcgatctgg cagcggtcgt cgatcgtcga tcggtgcggg ctagctggtc 480

gccgcgcgca accgcgctcg ggggccatgg cttggcggga caggcagatc gagctcttcc 540

gcgtgttggc gatgcgtctc cggtctctct actctacgcg tgtccagtgt ccacacacca 600

cgctagagtt attactgaag cggcggcggc acaggccagc tgaagcaaga tgcagacaac 660

accgccgagg cgccgactgc acctgcacgg cgcaggcgct gacctttgtt gcaaataaaa 720

ctctactcgc ccgcgcccgc cggtcctcgc tcctcgcagt gcttgtctcg tgccgcgtcc 780

gcacgctgtg tttatttctt cccttccgtg gcggcgtcgt cgtcgtcgtc gtatccggca 840

tcctattcct atttcctacc tgccgctgcc ggactcggcc gccggatacg cctgcgttat 900

ctacccaacc caacccatga caagccgctc acgacctcac gtatattatc accacccacc 960

agaccagaga gactccgatc catgtgaagg caaaggcatg acaagtttc gcggcaggag 1020

caggagacaa ctgatccgtc caggtgtaaa gtgcgctagc tgccgtcaga tacgtgtgct 1080

ggttttcagt cacgggtctc agctctgacc tggttcgcat ctttgtactg aaaaaataaa 1140

aactggttct catggtccag cggccagccg gactggtgac tctgattgat ggatttcatt 1200

tacctgcagt gcagttgctg ttcaagtgtt caaattgggc cagcgtttgg cgctctacat 1260

tctcccttgt acacacacgc acaccatccc aacgcgcaaa aaagacgcag tcagtactag 1320

taaaacgcaa cagactactg tacagagaga gctgaccagc tgcctgattg ttaatgttat 1380

ctgtccgaaa aaacggacct aaacaatcgt tctgtgccag aatccaggag ttaatatgag 1440

ctgcaaagtc acatctctgc ccttgttctc aaggtgttcc ctttccccat ctgtaaaaca 1500

gccgtagagc taacagatta tgatgtgaag ttttgagttt ttttttttt tttttgtaga 1560

aagattgtca gtctcgcctg cttcgaccat caagccgtca tttgatttta tttatttttt 1620

tttttgaaag aaggaaaccc tgcaggcagg ccagtttcac caaaaagtgg gtaagaaaac 1680

acataagcgt tcagtttacg aaatggcggg gccgcggccg cttccaacag agccacgtac 1740

aataggactg actccctttt gtttggttcg acgacagcaa aaagctttat ggaagtacca 1800

aagcctgctg ataattctct ttttttttc catctgactg ctgctgcact gtgcatcacc 1860

accagaggcg tggactgatg gaccaagacc aacacccacc cttagctaa 1909

<210> 2068
<211> 2124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261982_G1, chr7:151237930..151240053, Cluster 12

<400> 2068
gattatagtt caaacaccta gtctaaaacc atcctaaatg ttataaaagc ccccaccccc 60

acccccaccc cccaaaaaaa atcttgtttt cttggcatcg ccttgcttat tgataattca 120

acatattttg aatttcattc aagtttcttt ttcgtttctc catatatata agttaaattt 180

cacgatcgta tatttttta gacgtacgat tgaggacatc ataatgaaga ctcaaattag 240

ccgactaacc ttagccaagt tatggcggag ttagccaaga accaagcata gtcgtaatcc 300

taattaagcc acataacatg gtaataacgt gcactacgaa tattcaaggg ttatttaaaa 360

tttgaaagaa aaacgataaa tacatgctaa ttaactgagt ttataatgta cacacaggag 420

ctacgtatgg gaactgtgga acattgaggg aggttgttac tggttagatg gagtatgcat 480

acctttacgt gtataacacg ctgacgcata ggatcgaaga ggtagttgtt tcatttttgt 540

ttgatttttt ttttcctccg aagcatgttt atcgattgta acaaagtctg tacaccctga 600

ccgggcggtt gatggtccta tattagcgcg catgtaaacg gcggggcctc tactgagggg 660

agtaacaatg gtggcgtccg attgagaacc gagaggtcgg cacgcactga ttgggctgtg 720

ctgtggcctg tgggatggtt gacggacgtg cggacagcag ccgcaccgcc gcacgcgtat 780

caggcgaggc gaggcgaagc agaatccatt cgatcgatag gtataggcgt agtatagccg 840

ttggtagcat cagtgttgac gacgcttcca aagcatgcgc tgcgccacca ccaccaccgg 900

gtggtccggg tcggttcgga atatttgatg cagcggctcg ggtggcctcc ggggccgggg 960

gcgcgttggt tattacccgc accagacagg cacccgagtg gggattggct ctcgctcatt 1020

ggctgctggt gctgctcgcg tgcacgtgat ccgaggcgtc tttttcggcc actactacgc 1080

tactactact gtgactcgtg acgacggacg gactgagcgc gccatgaaag caagctgatg 1140

catgcccaag aggcgaagaa aagtcagtct caccttctct ctctctctct ctctctgctc 1200

cacacgttgt cagtcagtct gtctgtcaca ctcgacccgt tccctcgctc ccgttcacat 1260

gctgtctctc tacgtactga cgactcctat gtatatctag gagtagctcc ccccccctcc 1320

tgatcatcag tgaccgatca ctgaccatga ctgccgttct cctcccgtgc gcctttgaag 1380

tttttcattc acggaccggt cgctgatcaa tatatacagc aggcagaagg cagacgcgga 1440

cgaagcaagc aatgatggtc gctgagcgag cggtggctgc actgcgctgc gctggtcggt 1500

cgcccgcgga cggacgtcaa gacaaaagga ttccgatcag ctgctgccgt ccgcagcggg 1560

gaggggccg atgctaccac cccgtacgag tacgatctgc cgcctgccgt gcccactgct 1620

gtgcccagcc tctctatggg gtggggtctg ccgctgtagt gccatgccca cagtgcgcgc 1680

ggcaacgacg agaccggtgg tggtgtcgct agccacccac ccacctcgcc tcgtctttac 1740

tgttgctgcc acgtctcctc gacacatttc ccacaagatc tgctgttcct ctcgcacaac 1800

gccgaaccac gcgtgcgtgg tatcgatata cagtgtacca gtactacgct cctttcgccg 1860

cttctgtata cttatatata tacgacccgc cccggcccca ccagcaagca agcaggcagg 1920

ctcgctcgag ctcgacttcg ttttctgctc taccctaacc aacatcacaa ttcacatgag 1980

ggataccccg accgacgcgc agtgcagaac aatgcacaag aggaggagga taagacgtct 2040

ctgccccccc ccctccttga ttaaagccac agtgggctgg ccgggccccc tgatcaaagc 2100

tttacgagca aaagcagacg cgag 2124

<210> 2069
<211> 2209
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262900_G1, chr7:156219087..156221295, Cluster 12

<400> 2069
agtagccccc cggtacttcg tttgaaaact gacggttatt tgttaatact ttgttttaga 60

agtatattcg tctatactat acacaaaggg gagaaaacga agatgattgg agtccacttg 120

gtggctcaag tgcgaagaca aaagcgaggg agatgaagaa gtcacggtgt taataacagc 180

tcggaagacg aggccactaa tagataatac acttcacttc tgtgcgaata aggtcgaggg 240

aaggcaatat acgacatgtg ttcataacgc gaggcctcat cgagttatga ataataaatc 300

ttacccgcat agggagaggg agtactacga ctacgacata cacacacgca cacaacacat 360

gaaactgtgt cgatgtagtt tttttttat ttattatgaa agcgtagatg caggtagcta 420

attttaataa gacggctcac tgaccctaca cgattatatt ttggaaatgt gatgtgatag 480

gcactcaatt cagcagcatc aattggatcc acacgtaatg caggtagtcc accacctgta 540

gctgtagtgt gtgggcgcct tggcatattg aagaaacgcg cgcgcggcac ctttagaatc 600

caccatgtag agtagaggca cgcgcattaa ttttgtttgg ataagctaag aaataaaacg 660

cttaggcttt ccgataaact attaccatgg cccgattata tatagcgtga cttagtgagc 720

accttagaaa ttagactcgg tcagtctgtt cggagggtca ttgtggtatt cattaagtac 780

tgaggccatc atgcatgtgg ccggttctgt agctagacgt ggtgttcagc agctagtttg 840

tttgttatgt atatacaaaa gtacggggga accgccactg tctgcaaccg tagcaaagca 900

gcttcgaaac tcagagccaa actaaactga ggataaactg tgctgtgaga gaactgagaa 960

ccaaatcgtc gatcatccat agctagcaga atagttgtct gtgtgcgtgc ctgcctgcct 1020

cgtacaggac tcctcctctt cgtccatcgt cgtcccccca ctctgatccc taacagcatg 1080

tgacggacag gcagcacatc cgcatcgacc cctcggcgca cgacgacgga tcggtcggat 1140

tgcccatctg cgtcacgcct ctgctggcac ggcgtcgggt acgctccaaa ttccctgccc 1200

ggccggatcg gtcggagcag acggtccgtc cacatctgat ggcaatgtat gcttgcattc 1260

acgcactggg ggggccccc gcgcgcgcgg gggctgagtg acaccagatt cccacgatcc 1320

aaacgagcca tcgtacgtcg tgcgctgggt gccgagggca ctatctatct atccggtgcg 1380

tggtcagctt tgctcgcgtg cgcgccgctc gggacgatcc catcccacgc gtccgccagg 1440

tgaggtgcgt acgtggtcgc ctcacttgga cgacggtcat gcatgcggtc gtcggtcgct 1500

gcctcatcga tcgacccaac tcaactccaa gcggcttgtc caccacggca ccgcgcgtcg 1560

tgctgcgtca ttattctctt gctttttttt tttgttttcg ttcacagtca ggcccataga 1620

ttcctctttt ttatttgtgc gagcgagaca ggcggcgcac aggttgcaag agtgtcggcg 1680

acggcgatcg gggatggagg agattataaa gcgaatgggc cgtgacaaat ctgcatgtgt 1740

tcctcgattc cctttccctt ctctacagcg gcggttattt cggggttttg gaagcagggc 1800

gtttgcttcc gttccgtcag aatgcctgcg ttttcctacc catctgggct gtacgattcg 1860

gcggcccagg cccggtgagg tagcgccatt tctcgtcaat gttctaaaaa accataaaaa 1920

tgtatgtatc cttctgaaaa ttatcaaaat aatcataata ataatagagc tagattggga 1980

tatggataat ccaagtaaaa tatttagtgc tcgtgaaatt tatctaggag cttgaaaaaa 2040

tgatctagcc ctggaaaata ggggaaaaaa gaaatatcct aatcgacgtc caaacatgtt 2100

ttttttaaaa aaaaaacttt gcgctatgaa acagtagtat gcagctaaca tagattcaac 2160

ataaattaat tgaatgcatt cgtgctattc atttgtgttg gctgcacct 2209

<210> 2070
<211> 1650
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266330_G1, chr7:173741691..173743340, Cluster 12

<400> 2070
cttggaatgc atggaacatc tagctacctg catcatgcat atacagcgcc cgtctcatgt 60

gtttttttt cctccccgtg ttgttttgtc cgtgcatccc cgaacaagca agcttagcca 120

gcgtgcatgc gatggagagt ggagtcgtcg tcgtccatgt ccgtatggat ttcaaggacc 180

ccgctagctt gtcctgtccc agtcggaatg gcgcgcaagc acaagcagca aagatggcgt 240

aatcacccaa tcatgcatac aataatcagc agctagtgat catgatgatg attacacaca 300

cagcagtacg taacctgatt gtcattacat acctatctcc ttcgatcggg tgtaaataaa 360

taaataaata aaaccgccag caggggccag gaatcttttt ttttcttttt ggtggctcat 420

cgtatatgca ttgatgcatc caggggacga tgtcgtggtc gtctctctct gctgctggct 480

tgttgccacg ttgagtgtgc caccggggca ctcctgacgg tgacctctcg tcgtagcgcc 540

ctagctagta tgtagcaggc cttctaattc cttggctctt tggtgatgaa caagtggcgc 600

gcgagcacat atggacataa gcgtgcagct gatgtgtcta tgcaaatcct tggatttcga 660

gagttttaga agcaacaagc aagggccttg cttggggggc acgatggatt aggatatgca 720

ctggctggag acgagacgac tcacgactgg tgtgagtgaa tagtgatcct cggttgatgc 780

atgtctgtct gcatggatat gccagaaggg atggagagag aggcactcaa gagaactgga 840

ctggaagctt gcagaaacgg acagcagcaa cctttgctgg gcctcggttc ccatttgggc 900

aggccgaaag cgggcgggct agcctgctgg cagttcgtta cccgtctttt cgaggggcat 960

gcacgcatct cggacccgat gccatctctt ttacagttca ccgccgtcgc cgcatcgcag 1020

gcggcggtgg tggtggtggt ggccggactg ctgctagtgc gtgtttggta ctatctagtg 1080

ctctactgct acaaggaggt ggcgacaacg cggagcggag cggaggaggt ggggccacgg 1140

ccagggcggt ggggaggagg gaggcgtcct gatccggccg cgccggagaa ttgggagtca 1200

aaagggctat cgatgacgac gatgatggat ggatggatgg atggatcgca gtcgcaggtg 1260

tacatgtgtg catggtggtg gccaaccaca acccgtattc gcggaatact tgcttgctaa 1320

tgctagctag ctaggccata tacaacaggg gatcaggtga gcgtaaagcg tgtgtttttt 1380

ctccccacca tcgtcagctc atgagatgag atatgattac caggtcaggc actgcaccgc 1440

gcgacgacgg cgagcgagct ctgttcactc aatgtagggc agctatagct tagcttgttc 1500

attctagcta gctagctagc actggtaggc ggcagaatgc ccgcaccgcg tggcgcgtgc 1560

gcctcgcact gcttgtgtgc acgcatgcgc atggcgactc acgcaagcgt gtgtggtggt 1620

gtgaccccgt gcgtgagtgc cagcgctcgc 1650

<210> 2071
<211> 2105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266332_G1, chr7:173749035..173751139, Cluster 12

<400> 2071
atgaaatatc ttttactcgc ctgcgggctg cggcccagat gcgaacgctt tgggggggaag 60

aagcgcgctc ttccgacgaa caaaattacg tattttcaag cgcaacgggc cggcccaaat 120

caacatgtaa ccaggaggaa aagttagttg gatgcggccc agttggtgtg gcagtgggcg 180

gtccaagatt cccttccggc gtgcaggcag gcaggcaggc cgcagtccag aaggaagaaa 240

tggtccggca tgcatgcacc cggacctgga ggagaagcgt tcggcaccgt tggatgcacg 300

cacggcacat ccatccctcg ttagtcgtta cccaccgttt attttatcac atttcgtatt 360

ctccatgtga ttggaagcaa aggtgcacta aaaataagct caagatatat tttaatcgtt 420

agatttagat cagataaata ttatttatca cctaaaaata gagcaagtgt ttattaacta 480

aaaaacaaag caaaaatcag actgttatgg tttagtaact ttctttttt agatcgtgtc 540

gaataattta tctatatagt tatctaaata atgttttaca ctgttttata ttttagacta 600

tagactgtac tgttcgatag ttcgtagagt aaaattttat tttgaagata ggatggctaa 660

ctggttggag tctactacct cgctcgccca gtcaattccg tcccgtccag ctccacgcaa 720

gagcacgtag tacgtccaaa acccgagcac agtagtgcac tgcactggaa aaaggcagag 780

gaggcgtctg acatgcatga ttgtggtgca ggcaggcact gaatgactgg tggcggcgtg 840

gacctgggcg tgttcctcgg cgaggagaca cggcgagagc ctagctagcg agatggccaa 900

caatgctacc tgtgcagcag gaagaggagg ccggtcctaa tagtcggcta gctagtctcc 960

tatccatgtc gtccagcctg cctgagcgac cgagcccata cccctgagca tcgcaccggc 1020

ggcagtagca gacgagcgcc gtcctatcct tggcagtgcc tctgccaacc ccagccggag 1080

ccgctctttc atgcgtgcgc ggcggcggcg gcggcgagtg agcgagcgat cgaacgcgca 1140

cgggcacggc gaccgggcga cgtgcggaga cagacacatg cagtacgtac gagtacgacg 1200

atgcgatgtt tgtactccgt ccgctgtgtc tgcagttcct gctctctgca cgcacactga 1260

cgctagctcg gctcggcgcc ccggccattt ccctgtcgcg atcaccggcg cagctccaga 1320

gcactctcgt ctcctcctcc ggctccgtcg tcgtcgtcgc taatactaat aaattccacc 1380

ccggcggccg acatggcacg cggctgccgg tcacgctttt ggggcgcagc cggccgggtg 1440

ccccgcccac accccacctg ccccttaatt gtgcacatgc tccgccgtgg ccgtgctccg 1500

cgtccggcgt ccgatcgcaa gcgccaagcg ccacgccacg cggggatcgg aagcagctgt 1560

acgtcccaac ggccgacgcg acgcctcgtg ccgtgtccgc ggtttttttt ctctcttgcc 1620

attgccctat atactatagc cctagctagc ttcatcgacc ctctccactt ccaccagctg 1680

ccgatcgatg gctcatcaag tgaatgtgac gggtctccgt ctgtgtgtcc ctgtcctgtc 1740

ctcttccgcg acgtcgtccc ggcccctcgc gctcctctcg atcgtggttg ctttcacgtt 1800

ccaggttcct tcgaccctgc tgcagcaaca acatgaagca tgcatatctg ttgacgcctc 1860

cgattttgtc gtctcaaaac cgattattcg tacctcgcga aactactgct ccctccatcc 1920

cattccagca gattgtaaat gagactggaa ttttgttaat aacagacagg ggtactgggg 1980

tatctgctgt ccgtcctagc taatcaaagg tatcattagc tagccaaaat taaggtcacc 2040

gaattgtcct gaattggcat cattgtgcac ccccctccgg ccgggtgggg catcatcaca 2100

tcagg 2105

<210> 2072
<211> 1652
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2664_G1, chr1:13678481..13680132, Cluster 12

<400> 2072
gcagcatctg aatagcataa catgtacaca gctgagctca tgcatagcta gctattaagc 60

tgccaattca acctaaaaat ttaagttgat gggaagggag cggacaattt aattatatta 120

tattatattc taacaataac aaccgatgat gatgatgtcc cttcatccgt tgttcaatta 180

gcggcgacca gtgcagtcga gaagacaaga aaagaaaaga aaaagaaatt gctagttggg 240

atcgcgttct gaaaatttaa aaaatcggcg gctctaccaa acgaggacaa aagaagaatt 300

tttcttgtca ggtcacgtga aacgcgcgca ggaagggaaa gggatatggt gatgccatgg 360

atcggcggct catggatggg cagcacagca gcccagccag cacagcaggc acattgtcac 420

tgtcaccaaa cccgtctcaa cgcccgcgtc acacctcacc atttgattga ttaattcccc 480

ccttttcccc attatcccag aaaccattat tgttttctct tgcgtgtacc aaaaaaaaaa 540

agatggtggt ggtgatgatg aagcttcaag catctagatc gagtatcgtt gattcatccg 600

ttcatcggtg gctaccaatg agcgaggcaa tgattggttt ggttccattc cattccattc 660

caaattggtc aggtcagctg ctctgactga acccaaagtc tgaaaaccgc attcaccgcc 720

cgcctcaggt acggttaggt tcggttcgga taaaacattg accctagcag gcctcagacc 780

tgcggagtac gcagctacca ttcactgatg ctgtgtgggt gtggcagtgc cgggttcatg 840

cgccatatat acatccattt cgagtgaacc gtcacagagt ttcagacaaa gtaaaaaaaa 900

aaaaaatcag ctggccttac acagcagcag gagagagaca atattaatat agtagtaagc 960

catgcatgca ccgcgctagc tcgccctctc tgtgcaccgg ccggcgaacg tgccgtgacc 1020

gggaccggga gggatgggtc cccagtccag acgctaggcc cagaaccgaa accaaaacaa 1080

agagtataca tctcacgcgg ctagcagcgt cggcgtcgct ctttcggtag tcgtgcagag 1140

ggaatggacg atgcaggagg caaggggagg agcaccgcaa atgcaacgaa acatggggac 1200

ggacggacac ggacagccca tgtgaggagc tgtcggcgtg gggggtacgg tgcaggggag 1260

gggaggcgga ttgccgtgca ttcgtcggcg gggacctcgt ccggccgcgg atgctggggg 1320

cgtagtgggc ggcagcggcg gccagggttt aggctggaat ttcctctttt aacaaaatga 1380

aataacattt tttgaaatga aatttgtatt tgtttgcaag aaattctaaa ttttaaaatg 1440

tgtcccctga aaacataaat aacttatatg cccttccaag aaagaaaagg ggaaataagg 1500

aaagacggca aatacataaa tcttatgata tcatgcatgt tactaaaaaa aaagctaaaa 1560

aaattttgtg gtcagtattt gatcggatgg actagcaaac gttgcagtca aatataagac 1620

tacttttacg agataccttt ttctcaagag ga 1652

<210> 2073
<211> 1617
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268882_G1, chr8:10866065..10867681, Cluster 12

<400> 2073
gcactgttat ttccaccacc aggcctggac ggctgtatgg tcctggacgg ctggagcctg 60

gaggagtgga gggggaggta gaggacaaag cctgcggctg tgggcagcaa acaagccaaa 120

tctggatcaa cgcccagttt cctttccgtc agggatggat gtagccaggg ctacgagtcc 180

cttgccgtat cgatacccaa cacacacaca caagctttgt ggaaaagaga gggtttttcc 240

tagcagcagc agcagaaaag aaaagaaaag aaaagaaaag aaaaagctga gagacactaa 300

agcagagcca gtagtgctac atcatgcatg ctagtgtaga tgctagtgta gctgaagcga 360

tgctttctcc attacagaat ttcagtcaag aacacatgcc tattgcgtgt gcgtgtgtgt 420

atcaggctac gagggggggag aagtactcca acagccatgt gagaggccca cccacgtaca 480

gcggacctct cacttctcag catgccatcg ccatggccag gcagcgagga ccagagctca 540

gggaacagtg gacaaaagct ggaacccagc tgctgagtgt gcgtggaaag ccatgcacag 600

cgaacaatgg acgacacaac acaaacgatc gtctttagac tttataccac caccaggcag 660

cttgctttgg catgtcactg caacaaaact gacgcttggt ttcagcagaa gggcgggggc 720

ttataatgag cctgggctag tttgggaagc agataaaagg gcaaaaacaa acaccttcag 780

cagagagcat cagagcaggg ggcgccacgc tcgctttttg acctgcagtt gtgcgaagca 840

cggtgcaatg ccacttgcga ctaccaagaa aaccctggcc ccctgcgaga tgaacaagca 900

agccggcaga gaacccattg gggaggggga ggcgatgaga ttctctctgc aaatgcgacg 960

ttcgcctcaa cagacatgcc agccttttga tccggagctt tggtatttgg gtggtgtttc 1020

gtgtattgtt atatttatgg tgcttcgaaa tgagggggg agctctagtt ggtcattatc 1080

acaactcaaa atattaactg gaattctaaa taagctcaat taaaactaag aacgaaacat 1140

taaaaaagat acctacctag cagtttcagt ggttcttaga cggtctctaa tagagtgtgg 1200

gaaatagggg atacagaact gtagatgata ctgtttaaat gtaattagag gtggttccat 1260

tgggagaggg gattactccc tatggatccc ctctaattca ctatccacca aatcagccgt 1320

aatagcgaag aaaacaattt ttatcctagg tttcaaacta ataaacatgt cttccaaggc 1380

tcaaagtaac ctgccttttt gtcaattaac aaaaacgtag atgaatcatt ggtgtacgct 1440

acatgctcac cgtcttactg tagtactccg gtttaacttt atgcgagtaa aaagtggagg 1500

atgaaatgaa actttcagtt ccccgatgga acaagtccgg aagcctacag taagacggtg 1560

tggaaacagc cgacttaggg ggtgtttgtt tgagattata atccacctag attatat 1617

<210> 2074
<211> 1466
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269118_G1, chr8:11922628..11924093, Cluster 12

<400> 2074
ttcctcttgc tttgccgtgg atctaaacaa agaatagaac gattttgttc ctctaattta 60

atctggatta caaccatact ctcgtgggtc tcccaccaaa caggccgtac taaaacctag 120

aaaaaactat gttcaaattg gaaaaaaaag gtatgatagc cgcattaaca aaggcttgta 180

catagataag gtctagaaaa acgaatggac caaaacaaat gatctcctac gaatacgaag 240

agcgtacttg gatttcatcc ttgtgccccc caccaaacac gtctataaag acgtggcttc 300

ttcgtcgtct tcctataaag acgtgtatgg taacttttta tgatgtcgtg acgtcatcat 360

gcatttatat ttatattcgc gtttgcaaag acgccaggag ttcctccacc cgcaagacgc 420

gcgggggggg gggggggggt ttcttgcccg ttacacgaaa cgaaggaagg aagcatcggc 480

accaaccgac gacgaaagaa accaggcaaa ggcacatgcc atgccgcgcg ccggcgtgga 540

ggcactccga gcccgtacgg aaggtaggca cgccgcgcgc caccgaacga acgactggag 600

ccggggcctg catggggcat gccgtcgact tctctctctc tctctctttt tcccccttgcc 660

gagacgaaac ggatccagtc cagtccagtc cagtccagca cacaccacag caccgaaccg 720

gccggccggc gctggcgcat gtgtggtccg cttggcgggc caagcgaggt tgccgccgcg 780

tgcacggccg atcacaacgg gcggtaggcg ctggcacggc tcgcccaggc cctggccccg 840

gcccctcctc ccggcaccaa ccatcccgct ggaacgcatg atacatacat ccatcctcaa 900

ctgacctgct gtttctcccg gctcccttgg cgttgattgt gccgtgcctg ccgctgtggc 960

cgatcacgcc cagatcatct attcgattcc cttgcactgg cgccgttcgc ctgggctcgt 1020

gctccccccg tcggttggac tcggagagtc gccgtcgccg tcgccgccgc agtagctgag 1080

ggagcttacg cgcacgcacc ggccggcagc gtcggttgac ggttgggatg aaaaggtggt 1140

tggattggaa tttggattgg atcgcatcgg ggcaggaagc gggcgaggcg agcacatgcc 1200

tgcgtggccg ggacctgcaa cgcctgcact gcacgctagc agcagaaggg agttggcaat 1260

caattcgtgg ggaaaaaaaa gaagtggtgt ggtgtggtgg ttgagctggg atcttggggc 1320

acctgcacga ctgcctgtcc gcgagatctc gagggctgat gaggagacca tgccgcatga 1380

gcatggccgg ccggcaggca ggctggactt cctcaacgca tagtataact taacatttat 1440

ttatgttgtt acatacatgg actttt 1466

<210> 2075
<211> 1669
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285555_G1, chr8:118074604..118076272, Cluster 12

<400> 2075
agcagggtgg ggaggggaca aagagagaag aggagacacc agtgggaggt cgcggagaag 60

ccgctttgtt cgacagccac cgctggccgc cgccgccgcc ggcagcggcc gtcaagggca 120

agtttggagt ggaccggcgg tggcgcagcc tggtcgcccc caagacgccc ccagcggagc 180

gacgcgaggg aattgaaagg caaaaactat tctagcatga atcctaagtt ttataaatta 240

gagatacatt tatcattggg taaggaagaa attgaaattg cagaccatgc atttgacata 300

cctgtcgatg ggatagttgg agtcaaagac gagcatggtg atcctctgta atcaaccatc 360

gtcttgttct ccaatggtat atccaaatta cgtattgcaa cccgcttcat tgctttcaac 420

accatagagg tgcctgtccc attggtgttt ctttgacctg tccgtctaca caaagtatat 480

gggaatcatt acataactca ttgcacatat cattagttaa tgattgcaag gaatctcgca 540

aaccaacaac catcatggga accatacctg gtactgtttt gttgacagga gttgcatata 600

tgaaaggaga atgcaaagtt atagtcccac tgccaccatt ccaggacccc gttggggaga 660

tactcctcac cgattgctgc ccagcctcca accgggaagg tggcgatcca gtagcagaaa 720

catcaatggg gaacatactg caagactttc tattgagtag ctgatttctt tccaggaccc 780

aaactactga catgacatga ctcatttgtc cctaagttgg gacttgaagg ttgtgcaacc 840

tttccatgag gagatggaga ccttactggt aagctgctgc ccatccttgg agaagaaaca 900

actagctttg actgcgtcct actatgtgta gatgtaagat gttaacacat cggtcactgc 960

ttgctgccca acctccaaca gggaaggatg agatccagta gcagaaacat caatgggtac 1020

atactgcaag gctttctgtt gtgtaactga tttcttttct agacccatac tgtcggcatg 1080

acgtgaatca tttgtcgctg ggttgggact tgaaggtttt gcaacctttc catgagtaga 1140

tggagacctt attggtaaag cgctgcccat ccttggagaa ttgcaggctc aaagtcattt 1200

ccttccagag taaaaagcaa tgtgataacc ttctctatca aagacaatgt cagcagtgag 1260

tgacaattga tccctgttca ttatcccaac cgaaattctt atgacacctt tttcctatat 1320

gtccacatat ctacctcgag actggttcca attactaatc ccagtgccca aaagccaagg 1380

taatgtctca aagcatgagg aactttagaa acatgcaccc acacttcatc cagatggtat 1440

gatggtgtga tatctttagc atcctgccac tttgatatcg tcagtgtcac tccataattt 1500

ttaaggcgaa aatcgatatc aactaaccgc ttgagttcct catcagatgg acagtggcgt 1560

agacaagggg aggctagtgg gggcctcggt cccctctaac aaaaagaaaa tttgttttgt 1620

agctatatat tatatatatc tatggctaaa ataaaataat tagcttata 1669

<210> 2076
<211> 1482
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290466_G1, chr8:145193370..145194851, Cluster 12

<400> 2076
cggcgaatcc gaggcggggc ttttgcccgc gctcgcccac acccagcccc agccccagcg 60

tgcatctcag gcagaggcag ctgaggagga agctagctga cagctgatgg cctgagacag 120

cggagctagc gtccagcatc atgcccgtgg gaaaactttt tctgcctctc tctctctctc 180

tctctgatgc cgtgcgaaaa atattctgga gttgaaggaa aggaagggaa aaaaaagagg 240

ttgttgcggt gcggtgcatt gtgctgatga caaaactgca gagggcctgc gggtgcaatg 300

atggagcgag cgacgcgtag gattttcgcg gatcctgatt ctcggacggg agggaaattt 360

ctttttgggt tcgtttcggt ggggtggggt ggggtactgg ggtggagggg tcggtgtgta 420

tgtagcagaa cgaagctgta gaagaactga gagaagtggc ctctgctcgg gcaatcgagt 480

ccgtcttttg atcgagaacg ccactcattg tggctgcgca aaggaggcaa gctatgatgc 540

gcgcgggggg gggggggggg aagaagctga aaactctgat gggactgact gactcatcac 600

aagccactgt ttctgaaacc ggcgttgcgc ttgcgcggat cgtgaggaca gttgattgac 660

cagttaaaat cctcgccgga attggtgggc tcgagtccta atcaggcaaa gcactgttct 720

tttaagacta tattaactat aacaatgctt gttcaagatt cggaatctat agcctgtgag 780

accacatact atatttttt cattagcaag gccctagagg gaccacagtc cacaccaatc 840

ccgtccgtgt ctgcagggga tcgaaattca gacaacaagc tcgcgggtgc tgtcccgtcc 900

gtgtacgtgg actagtccgg ctacagtgca tggcgcacgt tgtcgaccgg ggagccggga 960

gacacggctc gactcgactg ctgcagtctc cgactccgac ggtgagctga cctgaacatg 1020

cccgctttct gcacaaacag caggcaggcc tccttggatg cgtgtattcc tgcaacgaac 1080

ttctttgccc cgggcttcag aggtgcaacg aacacatgcc acatcggggc tggaggcgtt 1140

tcgttggtca cgtcgtccta ggcccctccc ccccaaacgt gcctctgaat cacggacagg 1200

ggacgactcc agagacgata tgaggatcta aagtcttccc agggcccgac aaattcttcc 1260

gtgaccgtga cacctgcgct gtatggcttg caacggcagc aaccgcgatc tctgccctcc 1320

gcttgtatag tgccagtggc tggagctgga cctccatctc gggcccgacc agacacttat 1380

attttttttt agattactga catacacata tacattatca attctacaca taacacaaat 1440

gtagttgagt cctcttggtt agaagggcgc ggttaagcct tt 1482

<210> 2077
<211> 3619
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2922_G1, chr1:15077585..15081203, Cluster 12

<400> 2077
tatataagac aaccacaaat gtcgtgggga tttgctcaat ggtcgtcaca accactgcca 60

tagccaggag cggtaagtta agaccaattt gagtatcttg agctctagag ttggaaaatg 120

cagtaattca agctgtatga caatctgaca tatgtattgt atctctttta gtgttcgggt 180

tcacgttgaa ctctataaca caatatgatt tttgtgaacc agctatttta acccaagtgg 240

tgaagcttac gacgaccaac ctttagagtg aagaatgttt ggactatgtt tggattacgg 300

atggacttat tgaccagtat gtttggactt ggccaatata tgtgatatac tttgttaact 360

gttgtatgtg atactctgtt ttttttttt gttgtatacc tgttcactgt tctggaggct 420

tccatcctgg gaggaagcca aaacatattt tatatatttt tatttttttt taagaatgtc 480

agttaaccga catacttaat gccacatggg ctaattacgt cggttcgaca tacacgtggc 540

gtctctgcgt gcctgtgatg gccgaagtaa gaacatcggt ccgcgctggc ggacagatat 600

gtactatgtg attaacaccc acgttcttac atcttttctc actgagcatg caggctctct 660

gtacatcttt taatacggat gtctcatgag aacactagtt attaaacgga tgtatttaat 720

ggcgacgatc ccgaaaaaaa aagatggata aaaatatctt gaaaaatgct aactcagtcc 780

ggatccagaa aagttgatag gggcgcttga tcagtggagg aataatctga cgcagacagc 840

acgcaatggt ccgaactctg aagcctctgg cagcgcgcgg ttgcatcgtc gtcatcactt 900

gcatgtatat ggaccagccg gcgagaaaac gacgggtgca aatggcggat tcgtttggtt 960

tttacccggc ccggaccccg gaagtcggcc aatgcaaagg gctacttttt tttttctttc 1020

tttttaatta acccggagcc ggaagatcca tggacatagg tagggagatg catgagagga 1080

gagagaggac acgatcgatc gacatccgcc tcgaaaagac gaagaaaaac gaggcttgat 1140

gaagcgtgtt gttgttgttg ttggcaattg ccatcgcgca gggccccatt agtgacatgc 1200

gaagactttg gtctaaattc ctgtgccgtc aacgcgccgc tgggggcccc agcccccaag 1260

gaccacagcc ctgtgacgca acgcgtacgt ggccttcctg ttgtctgtac actcctgtag 1320

agtcgatcag ctaggcggcg tgtccaggta tactaggtgg gtcgtcgaac ggtattatga 1380

cggtattcca ttgcagtcga attcgaactc acctcgcaat tcatatactc ccatatatat 1440

agtttgaaaa aaaaggatgg tcagctctac ttcattcacc cttgttctcc tggctgaaat 1500

ttaatgatcg cttggggtac ggtcttccag ctgtccactc cagcctcagt ggatatctga 1560

tatagaacta tcttaatcta atatccgaat gataatgctg ttcttatata tatatatcga 1620

tctactagag agaagaagga aaaaaagaaa aactatatgt atatatccat gtctatattg 1680

aatatccgat aaaatgtacg tttagctagg tgcgtgccca acaaataata agatacctaa 1740

atcacagcaa aacatcgtcg tccctactcg atctttacac acacccctag cctaggccca 1800

agtcaatgca aatgggatgc atcatccggt agtgatggga caggaacgga tatgagctgt 1860

gtcgtgggtg atttaactca cttacttgca gctagtagct tgggaccaaa acagtaccat 1920

tctgttggtt tgtatgtagc atctaagctc ctgagtggca ctacagtata cggcactcaa 1980

ggaagatgcg ccagttcatc gtacgcgcgt agtcgtatcc actaacgacg acgacgacga 2040

cgactatagc gcgcggtccc gtacggtacg tgggtgccag tagtgccaaa tgccaaaaat 2100

ccaatggtgc caagcatcta tccccaacag agacgcatca cgcgcccaat cgattgcgtt 2160

tctctctagc tgcagtttac agtcgacaca gccgcctgta tgtgtcgtag ccgtacgttc 2220

ttgatatact cgtacgtatg ctgtctatag tacagtacac ccagtagaat accaaagttt 2280

agttttctga ctctgagaac accggcgtct agtagcatca gaaaggcgat gctctttttt 2340

tctgctcgga gattaattgg gagtcggagg tcgatatatt cgtagatagc atatataaca 2400

aagcggtggt ggtgcgtggc aacgacgacg acgacaagct agagatatat agatatgcgc 2460

atgggctgct tggggtaccc gcgcgcatct gctagctcaa agtggatatc aatcaatcat 2520

gcactccttg ctgagactga tgagagggag agcgaatgag tgtggaataa tgagcagtcg 2580

gcggcatgca tgcatgcatg ggctttattc gaaacgccgg ccggcgggcg gaggcggagg 2640

cgatgacgga tcgatttcga aaagcagctg gagagcaccg gatccatacc ggcgagattt 2700

gacgcgggga ggatcggcat gctggcttat tattacgaag agaaacctga tgccgtgtct 2760

gtgtgtgttg ttccctgccc gaattattct tcctccgcaa cgctaacagc cggaggaaat 2820

atctgatgat cgacagaaat gccatccggc cggtcccccc gtcgcgcagc gccggccggg 2880

gggggggggg gggggggggg ggcagtaccc ggctatagct tccagtgcct agcttatggg 2940

catggtttga tcggcttctg gtcagatttt agccgtcagc agagttggct tctagccgcc 3000

aaacagttta ctatcagttt gttttttctt cttttcgaaa acctctttta ttttaaacat 3060

cgtgtaaatc aatgtgagtg gagtcgttgt ggcggaagaa atctacccct tacaccataa 3120

aaccgcacgg atcagttcgt ctttctccgc acgaaaagcc ccacgatatt catatcagaa 3180

aagctctttg ggacaaacaa acaaaaattt gtaccaaaca ggccagcttg cttccacgaa 3240

cggaggagcc ggtagctcag gagcacagcg caatgccgcc gccgccgcca cgcaacaagt 3300

ttttgctccc accaaacgaa gtcaaaccag actgaaagta ctgctcatgc atggacatgg 3360

cggcggacca ccggtgatgt gtgcgctcgc tcgggcgcgg atcatgtatg gacgtcctcc 3420

agtcaaccac ctcatccatc catccatccg tgcctgtttc gtgctccgac acacagtgag 3480

gatctgagcc ctaacgtgca ggtgcagggc ttttatttcg cttcccgagg ctatccggcg 3540

gccggtttcc agtaccgagg cgggagttaa atccgacccg gcggacggga taaggaagaa 3600

gaagagcgtg acgtggccg 3619

<210> 2078
<211> 1560
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293444_G1, chr8:160096082..160097641, Cluster 12

<400> 2078
gtcatgttct ttggttcctt ttcctttcct agagtttatg accaatatta agcatgatta 60

aaattgcatg gagcatgaga aaggattgac aatgggtcgc caattgccag actaacgacg 120

acgatagtga cggtggagaa gcgtttgcag aattctaatt ctgactgttt atttctctgc 180

gtccaatgaa agcgacgtga tactaaaccc acaacagagg agttgcattg cattgcatca 240

aagctgacaa ttggcgagtg aacgcgcaag tctgctggtc actctctttg cacttggaag 300

actgaaacct gcgacgccac gaattagtcg taggtagtag gcgcgtgacg gagggaggag 360

gaccgatcga tggcgcgtcc taggatgcac gcatgaggcc cacagccaca gcccgtcaac 420

ggcgacgccg gcaggcatgg atgcagcagc atgtaacacg ccgtcccccc cgggggtgtc 480

gacgtcgtgc tgttttgttt cttcttcccg acagccaaca accggccgcc ggcccggtct 540

gctcctgtgt ctgcgtgcgc gcggcgcaac cacgtcagag atgcggtgcc gtgccgacgc 600

gtgtttcgtc ttcctctccc tggacgtttc tcagtctgtc cgtacgtacg tttccgtcgc 660

cggtctcccc acgcggcggg cgtccggccg gagctggagc ggactccttc acgcttcaca 720

ctttttctgc tgccctgcta gactgctaca gcgaatactc gtacgaacac tcactcgtac 780

gcctgtcgct ggtcgtcgac gtcgccacga ggaaaacgag gcagagacgg tggtctgggc 840

gtgtggcagt cgtagcctgt gaggcagagg caggggccac ccccaacagc agcagtgccc 900

gtgctgctac tgcgagggcg agcagagagg gacggcagca gcggccttgt cgcgacgcgc 960

ttggactggc gcggcgcctg cctagatgcc gtttcgactg atgtgggtgg ctggcggccc 1020

cgcctgcctg cctccccctc tccgtggtgg tgggccgtgg gctgcttgct gctgggctcg 1080

acgctgccta cagcagcagt gagtgtctag cgagcgcagc accgggccgg gccaccaccc 1140

cgcacagcaa ttactagtgc tgcacctact acactgcgac tccaggacag gacagcatgc 1200

atcggtgtgc ctcggatgga gtgggagggt cccgagcgcg tggcgggggc cagggtcgtg 1260

gagggtccac gtgccagcgc catcatcgcc tgctcgacta gggcgctact actctggatt 1320

cagtgtcaca tactgccaaa tgatctactg ctgctgctac gctacacgtc ggtagcccgt 1380

ggtagtgccc agttgcccac tgcccagtgc aacagaagac acactaggca gggtcagggt 1440

cagggtcagg cgcaggcagc agcggcagag gtatccccag ggtacgtgct ctgtgcaaag 1500

ccatgatgat gcttcccgtg gaaccgcgcg gagccgtaca agcatcggcc gccacgtccg 1560

<210> 2079
<211> 1434
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29352_G1, chr1:179570141..179571574, Cluster 12

<400> 2079
gttctggcgc agatagatct attaattatt tttgtcaata attgggacaa gcacgggcca 60

cacagtattt tatttatttt tcccacgcga tagctagcta ggaagctaat tgtaaacgca 120

cgcagtcctg attacctcct agaggttttg gaaattatct tggttttcta gcaggtcgct 180

gtgattgggg ctagcaattt tctcacgatt ccttttttt tagctagaca acagacaaac 240

actgtgtgta ctctgtcgtc ctagaaaagg cacaatccat cgtcttttg tgtgtgtgtg 300

tgtgtggccc atgccttttg gtgatcgtac accagatctt cagatcatat atatgtagga 360

cggcaaccat ggttacgcat tcaaagttgt agacttggat ttttttata aaaaaaaagc 420

cctggaagct gtacccttg ctttgatatg ttaagacgac gcacgggctg ggctggcaac 480

tgttccaata accaaagggc ggtcttatgc aagctaattc gcacgcactt gattatatat 540

agttccttgc agaaaagaaa gagagagaga gagaaacaac aacattagct agcagagacg 600

cgtcatcgac aaacggctcc agaccaatgg agtataataa taaaacgtct tagctagctg 660

gctaattaat gtgcaaacaa atgagctgag actgagagag aaggggggta gcaagcatga 720

ccatagcctt tgcaggccag cagatgcctg ctccatctgg ttgtagttgt agcaccgtac 780

ctgacagttt agctatagcg gttgcctagc taatcattgc aaggggatga ttaactaatc 840

gcacaaaaac aatccatggc cggctttggt agggtagcta gtagctcttc tctgcctacg 900

catgcagtat tattgcagtg aactgtgaac ctgcctatct tccttggcat tgtgctgaag 960

gctgaaccta tacacatatg gcgcgatacg gcatgcctgg ccgcctctgc gtgctgccta 1020

ctccccccat gtcaaaagat gagacaggca cagacgacta ctccggagtc cggacgggcc 1080

cattgaatga accaaccagt caggatctct gtatcaatgc actgtctgcc agtagagtac 1140

caggtcttgg agccagccac acaggctgca gctttagctt tagctgcggc taacagaatg 1200

ttgccatgaa cagagcgacg aaagctggtg ccattagtgc gcctctgcat gctcgtctcc 1260

gcgcgctcag ctaaacagct gactggctac ttctgcaaaa gctcacatgt gatcgaatac 1320

taccgcccaa ggttttctgt taccctgcac ttggacagcc ctgcagtttc tgctctcttc 1380

ttcacaacaa tcttcttgtt tctttgtttt ttttttttt gccctgatga actg 1434

<210> 2080
<211> 1964
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293717_G1, chr8:161538503..161540466, Cluster 12

<400> 2080
agtaacactt cgagaactag atattggtgc tgtagtatcg cagcaacacg gaggaagtat 60

tattgaagaa accgaaaaaa gaacagacca aaaaaaaaaa actttgtgag gacttcgtta 120

attttgaaaa aaaaaacaga caagaaactg tcatcgggtt gacctaaatt taaaaccatg 180

atgaggaatt cgtttcacga ttctccatac aataaaactg tcagcaggtt gacctaaatt 240

taacaaacca cgatcgatga ggactttgtt gtgcaaaaaa aaaaatttcc acttttaaat 300

cctgacaaca gagtgctgcc agcaggttga cctcaattta aaaaaaaaaa cacgatatga 360

cgagaagtat gttagcttgt ctactagtaa taacagtctt taacactgaa agcttttag 420

cgttccaatt aactaggagt tttaatttgg acgaaaagtg gagaggagga aattgagttt 480

gggttttttt tttctctctc gtcaagcact ggttgcacgg agaaaaaaaa tgcgcacaac 540

acattgcagt tccgttgcag tccttgttcc agtgatgagt ggtgacggaa ctaactgctc 600

ggcgaagaag tagactttgt agtagtgcgg tagattgatc gaaatagata taaagtatct 660

acggcgcgtg cacgaaccgg cagctagctg ccttctgttc cgtgtcagtg cgttacagat 720

cggacttgtg ctagtagagc gggaaaggga acccggtgcg ataacccatc gtcgatcgtg 780

gtggtggtgg tggatacgat acggttcggg gttcagctgt gcgcgcggcc tgttccgtct 840

tgtccggcca ccatcccgtc cggaggaggc tttggctccg gtagtagagg gagctcagcc 900

ttctccgcgt tcccctgatg agatggatct ttcttcttca atagattggc ggtttgcatc 960

caccacatgg acggatggca tgtaggtcac gttggcagca catgcagtgc agcccaagtg 1020

cgtgtgacat ggaaagaaaa cggggccggg cagatggagc caccgttccg tgtgcgttgc 1080

ccgctctgct gactgtgctc tgcttccgcg ccaccgcagt accggaccct cactcgtgac 1140

tcgtgagtcg tgagtcgtgt gcgatgctct ccttggccgt agcgactagc gagacaatgc 1200

gggcagagag agacagacag agagtgagta aagaaaggcc gagtgagtga gggtgagagg 1260

gcggcaatgc aagcgggcca cgcgagacgg ccggggaggg acccgaggcg cgacacatgg 1320

agcgcaccgc atcggcaggc ggcggccgcg tcgcgccaca cgcaggccaa ggaggatccg 1380

gttctggtcg acccacccca cccccacccc cagccggcga gacgcagacc caaccacccg 1440

acccaaccac atgcaccaac tgacgatctg caccaccgcc tgcgctgcgg ccggccgggc 1500

tgagctcact ccgggtccgg gttagggtcc ggggttcagg tcggtcaggc cggccggggg 1560

tctcccgcca gccaacgccc acctgcctca ccgacgctgt ctcctcctgc ctccactctc 1620

cactccactg catcatgtgg ctgttcgccg ggcaccaacc actcctcacg tgccggtgcc 1680

tcggctgccc caaataaagt gcggtgccgt tccctgtccg ggagatgtgg cagtaggccg 1740

cagttctgct gcccgatccg cgcagttttt gcttccgcgg ggaacgtttc tactgccgca 1800

cttgcattgc atgtgcatgc attgccacct gcttgtgctt gattgtgcag gagaggcaat 1860

ccaactcacc tgtactacta ctgccgaccg ataatcaaca cgcgccgtga ttttttataa 1920

aatcgtccac taaatttaag tcccacacat tacctcgacg ccgt 1964

<210> 2081
<211> 3010
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294489_G1, chr8:165550287..165553296, Cluster 12

<400> 2081
gcctcttact ccatggtccc tattatgcct aaattaatgt gctctacgta ctgttgtagt 60

tatctagaca tgtagggcaa gcacacccgc tcttcttgtc tgttcatttt agacatcagt 120

gttgatcctt agaaatctga gccattgctt tctatgtatc aaaatactta tgaaccacga 180

tccagaaagc atggccatcc ccatcccacg ttttgattgt gtttttaaca cctgattttg 240

tggcgtccta attaaatttg tgtttgtttg attcctcggg aaatgacatt ttcgtttttt 300

ttttgtgagc gacggattac aatactccca tatgctgata tgccccttca caccttccac 360

acggcaaata taggggggaaa aaagaatggc ggcaatgaag ccgaccggcc ggtgtgaaaa 420

aaggtcgtcg gctggtgcct aactgcgcat aatttcagat tctaccaccc cgccccccag 480

tttccaatct cttcttgcag ggcgacgttt gggcggtgcc aaacctgacg ttgcaaaaag 540

ggcttagctt gcctttcctt tgcaagaaag aaaaaatgtt gcccgaaagg aaaccaccac 600

ccattttcta atggtggagc gttgaattct gccgcgataa aatgttcgcg tgttgctttc 660

gcagcctttt gatttgcttg tgacaagaaa accgcgaaat ttccactccc gtagttgcgc 720

tccatcttgc ttacaactgt acccaagctc gagatccaat gtctttttt ttgtccccgt 780

ttcgtgcagg tggcttgcgc aaaatatgtt gaagcaacgg ggagtatcat ggaaacacgc 840

tcgacagaag ttaccgcaag agcaaggaca agattcccgt cgcgggcatg actactgatg 900

cgtactgtgt cggttttatc caaatcccat cctcagcaaa gcagccgaga tgcagtagta 960

cgtgtacgtg gacagacgag aacgacaccc gggcctagct agaaaccagt cgccgtctgg 1020

tccacgcgac ctcgacctct tgccggtttc acctgcatta ttatgcacac tagtagttcc 1080

gagagggggg aggagggatt taccacttac cagcggtttg ggtggctgat tgagtggaac 1140

gaacaatgga ataaggcccg ggtacctcat atgaaagcca tcgcacgtcc gttcagtgtg 1200

acgtgcctag gctgcgccgt aaacgtaaca gaaagcagca gcatcttccc gccgttgttt 1260

tacccatgaa tgcatcggcg gctgcaggtg ggccaggagc cgtttgggcg caataataaa 1320

atctggaaac agctggcgcg acgcacaccc acggagtgaa cagacagagt gtgcccccca 1380

cccccacgcg aggaaggaac gagaccagct gtaaagcggg cccggcctac tggggcggcc 1440

atcgaaggtc tgccccactt gcgcccaaaa agccaccgac cactgtcccc cctgccccgg 1500

gctcggcggc acgtgcggtc caggtaccgc ccgcgtggcg tggcccgtgc tcacagtcag 1560

tcagtcacag actgctgaag tggatgtgga ggcggaacgg aactgtggat ccccgacctc 1620

cttcctctcc cttgtggtgc aacaggaaat ttacccctgc acgcccttcc tctggtaaag 1680

gacacggcag ccgtggtggt accttgttct ttggatacca caacttttt ctgcacgcat 1740

tgtactgccc taatggctaa tggcctagtc tagtagtacc accgttgtgg cgttgtccag 1800

ggaaaaaaat acagttctaa gttcggctaa agtgaatact atattttaag ttcaactaaa 1860

aatagccgat tccaataaaa agaaggagaa agaacagcag ttttgcaagg atgacgaggg 1920

agtaaaaccc ccggttcgct gttcgccctg gaaggctgga gcctgtcgcg cgcgtgattg 1980

tacgtagaca gtttgcgcag tgcagtgggc gagtggcgag agctgagagc aagtggcaag 2040

tgcacgctgg cgggtgacgc tgacgccgtg ggcggtgcct cgcactcgca gcaatataca 2100

attcgtgaca cggcgccagt gcgttgcggg gaggggcccc gtggcggtca agtcattgca 2160

gcgggggtgt ggatctcgag gcatgcatgt gggcgtggtc caagcatcgc agattctgtc 2220

cggctggtgc agcagccagc agggcacagc taggcgggca tcgtctccct cgtatcgtcg 2280

acggtccacc gcaaacgacg aagattgctg ttttgttccc gtccgctccc agtcccagac 2340

aaaggccgcc ggggtatcgc tggcgcgtta cgcattccac cttcgtcctc cggggagggg 2400

gcgcagactg cagcgtgcag cgcagcctac ggtggccgac gaccagaaaa gacgagaccg 2460

acggtcaagg caattcatag ctaggttaaa gggtgcttgc ccttgtcccc ccccccccc 2520

ccccctctgc gtggcgagaa atgctagttt aatcctaatt aagataagat gctcaaacag 2580

aactgcagta acatggcacg gaggcgtggg cacaagcccc aagcactgtg gcgcggctat 2640

aggacttgga gtggagacag acagtgagtg aggaaaagag aggctcgttt gaccaggcga 2700

ccaagcgctg ctgagacgat ggcagcacat cgctgcacac tcgtcaccag caagcaagct 2760

caccggtccg gggcagcagc aggaggaacg gacggacatg cagagcgtca gcagtacacc 2820

actcggcacc aaagaggcaa agacttccag ctgcggacgt cgatcagcat tcaggaggcg 2880

gccgtcatcc tgtcctgcct gcctgcctac catgtggcca aggaggagga gcaccatgag 2940

tcgatcccca tgacttcgct gccggcgccg gcattgaagg gggaggcagc cgcgcgctgc 3000

ccgctggatc 3010

<210> 2082
<211> 3415
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294554_G1, chr8:165871201..165874615, Cluster 12

<400> 2082
gacggcccaa aatccccgtg ccattctgcc gggctggccc aatgtcacat tcctttcggg 60

cggccatccg cctttcctca tctatttctc cctctttctc tctctctctc tcttgattga 120

gggctccgcg tcatttctga aaggtgatca aagcatcgcg ttgccatgcc gtgtgggtct 180

gtgcgatgac ttgcatggac ccgttacgta acgcatgcat gaatgcatga tgcatccgca 240

ccagagaacc gcagcggcac gggagtcaat gcgggccatt tgacttgacg aaagcgccgg 300

actgagctct cgacgctgca gtagtagtac gacgcatggg cctgcgctca cacacagctc 360

gtcaagcatg aagctataga taggctcaag cgatggcctc gtcccgggcc gagcgatagc 420

ctcgtccgtc ccggacagca agtcagaaac gagcgcgaac atccccagaa acccaaggac 480

ggagctgggg tacgtgtaca gacatggaaa acgaccgtgt gctcgatcga tcactcaacc 540

aggccggcaa caagctagag agccaaggag cacacacttg tgtcctctaa accaaacctg 600

cgccgcgcaa agcccgacct aacgcggttt acggaaacca cacggcgatc gagctggcga 660

gcgccggtga ctttctgcaa cagcgctttc atttttgcag ccgctgcggt tcactgccgc 720

gcgaacaacc tcgaggagga ggacgactgt ccgagagcga gggccgtcgc tgtgccgtgg 780

attcctttcc tgggacggca aggactcgtc gcacggacta gcatggcagc agaacgagtt 840

cccctcctcg taaaagtcag taacagttct aggcgtcagc agtcgttcca tgggtcgacg 900

atggaagcag aaggccgagg cttccgtcac ttatcgtcac tttgtcaggg ccagatattg 960

tagttcttcc agatggcact gcctagactg ggccaatagg attcatttac aaattatttt 1020

atacctagta gctagccagc taggattcat ttacaaaagt ctttgtcact ttttgatacg 1080

tgtgtctata cgacatatga catgacaagc tgctgctgca gtgccgtcat gtggtataga 1140

cagaacgcca cgactccgct ctctgtttgg ataacatggt aggtaagacc accggcggcc 1200

aaccagcaca gcggtttaat ctgttcgacc gctctacgtc atcttgtttt tgtttttcca 1260

agccccgaac ccttgttttc cactgaatgg ttctatcacg acagagatag tccctgaacc 1320

atcacagaaa gaaaatgctg ttaacccgcc cgaccagctt ggaaaataac gggaacaggt 1380

tggttgaagc agccgccagc caatgcttta ggtttcctgt tgtgcatgtt tatccgggcg 1440

ttgtcaattc gtatatcgcc gccgtttgac agacagacag acagaacaat gccatcagcg 1500

ccaaatccac ggcaaagagc tctacggaat cgcactctcc atgattagcc tgaacgttgt 1560

tcgcgcactt ctcgctccgc gctcgcttcc gcggcttgcc aaatgtcttg ttcgtctccc 1620

cacactccac ttgtcctcgt ccagagctct cggaggaggg gatctccggg cccccagcag 1680

gccagcacga cggaacagaa cgatttttct tcgttgtggt gggacgggcc acgcggccca 1740

aaagcacgcc tcggacccgc gcgggatggc gtcgtgctcg tgccgtgccg tcacgcctgg 1800

ttgatgtgtc gcttctgcgc cgtcgccgca taccgttgca ggataagtcc tgtgaacctg 1860

tggtgcggtc gttcacggct tcgcggcggc ggcggcgcgc gctccctgct cgcaggagat 1920

gtgacgggag gcgaagcgtt ttttttttt ttttttgtaa cgtgtcgagt tggtgagcgg 1980

tgagccgtcc cgtcacgccg ccgtggcaag cttttcggcg gcgcgtgcta tggtctatgg 2040

aagattggaa gcggagaatc atggtgtcac cggtggggaa gtggaggcag ttccgggtgg 2100

gtgggtacac ggaccaatcc cgcctacgcc acgtcacgtc acggcgtagc tactgggata 2160

gatatggaag tgcgtgaaag cctcgatcca actgaccagc tcgcgctgtc cccccgatcc 2220

aactgtccag ctcgcgcgtg tccgcacgga tgagactgaa ttgacattga cggcatggtg 2280

gtggacacga cacaagtggg cggggcggag cggaacggaa agcctgcgcc aacttgctgt 2340

agagctcgtg gcggcggcaa ggacgcaagg tgatcatcgg aggacataga gtttggaact 2400

tggaagcgtg agcttcgtgc gtgccaatca atgatccgca agccgcgacc gcgaacgagg 2460

gaaaaggcgg tttggtaggt ttaggtaggg ggacttgtcc gcgaagttac aggtaacgag 2520

aactgtcgtt gccacaagta tctcgccacg ccacggggac gggcgtggaa aaaacgtagt 2580

acctggcaag atgaaatcgg cgactgacaa gcaacctgtg tggtccggta actatcgttg 2640

ctgcaacaag tcatacatgt aaatcggcga tcgactgaca catgcgcgga actccacggc 2700

aactatcgtt gctgcgacaa gtcatacatg taaacgcctg tctttctaag ttccaaccaa 2760

caaaaaaaac ccgaatgaca cagatgtaaa tgctcgtctt cggctaaatt actttgcaaa 2820

cagagaaacc ggatgattag aaagaaagtt cgtggtacgt tccacctgga gagtttacat 2880

tcgtggtacg tacgtggcat gaacacacat atatagacta tactagagtc tgggaaaatc 2940

atctacctga ctggtgggtg agctccgccc gctgtcagca cgcagcagcg aggtacgaca 3000

aaacacgatg gccggtgcac cggattctga ataacaagat gggcgggga cccgttaacc 3060

aaccctctct ttttttcag gtgccgcgat gaaagagaaa accctcacat ggacatggac 3120

cttcggggta catacataaa tacccagcat tctctagtct gtaagcactg tgcggtacta 3180

ctacgtgaca cggaccaaaa tgtcaaagac tttgaaaaat cgctggcgcg agcgttgatt 3240

aggccaaaaa aaaaagtttt aagccctggt acccatcgat gtgcacgtcg gacacttacc 3300

cgcaaccgca agaaactctg ctcgtccacg gtctgacgag aggataaaga acttttatac 3360

tccggcggtt tccaggctga caggtgacaa gtggtacatg gaaagctcca aagta 3415

<210> 2083
<211> 2764

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295856_G1, chr8:171612604..171615367, Cluster 12

<400> 2083
tcactagtat atatatactg tagcagaccg attcggttct ctgaattggc acctccaacg 60

gggaccggat aaagaaggcc acgttctcgg tagtcagcca ccacgggtat ccaaatccaa 120

tagaacaggg cgggcacaat gcatggccat gcaccttatg gaacggcagg gtggccatgc 180

gctgccctgc cctaccacga taaggcatcg tctgctggaa cggattcgtt cgtgtatgta 240

ttcatatccg atccatcgca gcgatggacg gacggccggc cctaactccc cgtacgtgtc 300

tgctcgtcgg tagcacgaac ctggtccgac ccgaatgtag ggaccatcgc cccccgacgg 360

cgaggtccgg accgaccgcc gacggatctg tacagatcag actacgagac acccatccat 420

gctgcttgta ttgtatgatt tggacttcaa agccgaccca gaggtttcct cggccacttg 480

ccgggaacat ggagaggatc attcatgtca tgcgtacatc atgggtggga gccagtcaag 540

gtcgagccgc atctcctcca gcaacagttc tgaagaatgg cttgcactgg tcatcaagta 600

tgtatttgtc agagtcacca ggtatgcatg taaacacagg cagcatgcat actagtagta 660

ggcaacccgc cgcgcttggc aacggcagat gtcgtagcag cgacagcgag caggggacac 720

gggtcgattg gccgttatat accgatcatt aattacgtca gtacttagtc ggtaccacac 780

aaggatcatc gctggccgcg ctgcaacaag ccaacagcgg cagtgagcaa gagctttggc 840

gccgtgcacg gctgctgggg ctgggctcac cccatcatgc atcggatcgg agcaacttcc 900

atccatctcc actggaccac cgccggggtc cagaagaaac accggcacga ccgttttctt 960

tccgggacgg ctacaccacg aggccggggt ggcgcgcgca taaatctccg caaccaactc 1020

gattcgcccg gggcgatgga ggtgaccgta tccggtggga gagacatggc atgtgcagcc 1080

gccccagcag caccagtacg tccattattt gtgatgccaa tctcgcagga aaggaaggaa 1140

agcaccggga gcccacatac atgtctgccg tcgctgccgc gtgaaagagc cgtgggggcc 1200

ggccgggccg ggcacatgcc atccatgaag cgtcccggcc gggctggggt tgggcgggtc 1260

gatggcttgc gctgccggtt ggatgttggg ttggagaggg gggatgatgc gttgcggtgt 1320

caatttgggc agaggttggg acggatggtc cggccggccg gcgtgccacg cgggtggatg 1380

gaccgatggg tgccctgcca ggttggtgga tcgcacagca cccgggtgga tggatgatgc 1440

ggtgtcaatt tgttcaacca gcatcctacg tactgtacct agcctggtcc atgtctgccg 1500

cttcctatgc atcgtggagg tttatgaaaa tggttccgtt ctgcaatttg gattcaccgc 1560

agtatgccac tgcgaagatt ggacacgctg agcaggtgca accatcgtgt ttggttgttt 1620

tcatttccgc agagcctagc tgctcactgc agtagcccgt atttgttttt ggatgcatca 1680

gctacaagtc accttctaac atcacaaggg tgtttttttg tccaaaagag accatgtagc 1740

catataagta cgtgacgcat tcaattaatc aaatctggag cgagttccag tttggagaaa 1800

atggacagga caaccctggg cctggaatgt actacgtttg cacctgtctg tcctgaccaa 1860

tccattcagg cgaacagaac gcagcgcagt agaaatcgca gtataccgca attttttttat 1920

cctgtgtgga agaaagatat agcggggtaa atgagcaatc gctaaacctt gttcagttat 1980

tggcatgctg ggccaaacgc agttttgctt tgtgttgttc acagacttca gtcaggtacc 2040

accacacagc acactttccc cacgaggtca atccagaaaa ttgtactagc tagccgtgta 2100

ccaaccacga gtgcaagaca tatatcggga gttcaaaccc aaaaaaaaaa tgttcgtttg 2160

agaaaccgac tgataaatgc tgcaaaaaca catggagact tcttcagttc atccttcagt 2220

tgcagtatga ggtagcaagg gcctccagtc tctgaacaac aaccaaccgt tgatggtttc 2280

gtcatcccat atcaaactgt ctcaccacaa actgttctcc gatagtagtt acagatgggc 2340

tatttccctt cccgccaact gggattcccc gcagttttgc acagcacctc acggcctcac 2400

cttgaggttc ttcagagatg acaagactcc gctacagacc gaggctagct caggaagctc 2460

ccacaggtgc agcgactgca acctagcaag agtatcctct cccaaggtcc gagatgtcaa 2520

actcactctc caaagtatca caaaatcgta catgcaaaat gtttcaaagg tttggacagc 2580

agcccaagag caggtgcttc agacaaccga aaccgttcac gtcttccact cctttgcaga 2640

aggatgacaa acttgccatg ttcgagtcga gacccacaaa ctgtgcaagt tgcccaccgc 2700

aaactacttt tgctgacaga aaactatcta ggtggtgaca attttccacc cagagttctc 2760

gtac 2764

<210> 2084
<211> 3077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_297653_G1, chr9:3655864..3658940, Cluster 12

<400> 2084
caacaagcag cagctgtgcc aaacaaggta taagaataaa gagtagcaca tagttttgaa 60

tacacaagtg tacaagagca aggttttgaa tacacaagtg tacaagagca agaatgaaaa 120

gcatcttgat ttaccaatgg tttgttttgc ggaattattg gggatggtgt gggagaggag 180

ccggtatcta ccaggagcac ttcgtatgca gcacattagg aaacgtacag ccgtggggcc 240

caggtcttgc ggaacaggtg cccggccggc cactacacgc acgcgtagta cgtacgtact 300

cctatatcct atgggattcg acgtggatcg gtgagggcgt atccaacgac atgccgggcc 360

ctcggcgtcg tctcgctagc gaatcgactg cccttgttgt cggactttga gagggcggtt 420

ggtacaacaa agtgatgcgg gatcagtaca ctgcagtact aacaaatacg attccgctgc 480

atctataagt tatggcctaa atatttttt caggtaatgg tcttcctgct agcactacac 540

gtcgttttgg ggcatatata aaacctaaaa actacgttgt ggttctccaa gcatatctaa 600

caaattcaat tcattcatac aacccaaatg taactaagtc ctgtatctta aacatctcaa 660

gatccaccac atttattcga gttgtatgta taaaacgtat ctagacttag agatccgtgt 720

taaaaatatt cctttatcaa gatattgtct cttatatttt tgtgcactta ctcttgatat 780

tccttaaaac acataacatt tatgtgagtt gtacatcact taacaaccca tctcgcgggg 840

gttcgttcct agtttttagg tagtacgcac tacgcagcaa ttcatggaac gctgtctgcc 900

ggtacgcatg taccgatggc tgatgggggc gagagaggag acatgtatgt acgcgacgca 960

ctttattatt atttatttat ttatcaacta ctagtagtac tactataacc ggacgtatga 1020

tgatgagttc tcccagaaag ataattaaaa agcgggtaac gcgcaatgat tcctcataag 1080

aacgggggag gggtgcggga aaaagcttgg cacgtctgag caaaaaagtg tgcgcgcccg 1140

cagatccacg gggtttgcat tgcgcagaga gaggggggct ccttcctgcg tcatttgttg 1200

agcgctataa attttgtttc cagatcagac ttcacaggga tgatgccaat ggcatggggt 1260

actcctttct ataccggttc agcagaaaag agagagaggg aggctactac agtctagtga 1320

tctagttacg gagcaaactt aaggaatatg acagtagggt ttgcgtttta gcaatcatgg 1380

acacgttaag tgtaggtcgc atgtgttttt ttatttttgt gactaattgt tgaaagtaca 1440

tgagacctga cctgctggct caaacctccc tcccctccta ataatttatg tgtttgccgc 1500

ctctctccgg actccggccg gcagcaggcc cccatgacag gtctagtcga ccgactgatc 1560

gatcggggcg ccagcgatga tggctttgga ggtcgcggcg ggcatggaaa ggcagcgggc 1620

gcgcatgatg gtgcgcccga gcggaggggc agcgcgggat ggccggccac gggggccact 1680

catcaccccc acccccaccc cagaaaccac gggagccaat aaacaatcca acaaaaggcg 1740

ggcacccttc gtgcgactcc cggagccgcg cgtggcgctt gccagttgtt gccaccgtcc 1800

tggcgcctgg cggtcgagca ctagccgcgg ttgggttggg ctcggcagtt cgcgcccttc 1860

gccgcccagg cagcgcgcgc agctaagctt agctttcggt cggcacccac cagcctttgc 1920

ctttgccgcg cccgcgctgc tgggaggagg aggggtcacg tcgcgtggtc caggcccggc 1980

cggcgcccaa agccgcctac acgccggccc gccacctcag tttggcgcgg gatggctggc 2040

ccggccgggc gctgccatgg cacgtcgcag atgctgcgcc agagctctgg tggctggact 2100

ggaccgccgg ggctaatagc tactagtact cattcatggt catggctgaa ctgaagatct 2160

ttttttgggg gggctaccct tccttgtctc gtcgtgtttc ctttgcatcg tctcacggct 2220

actcgaagat agggccgtgc tagctccact atcgctgctt tatctctctc tcgctcgttc 2280

ttatctcgac gccttgattg agatcgactc tgaacgagga agatctctga gcctgacgca 2340

tcaacggctt gctgtcgtgc gtggcgtggc gtggcgtgcg gatcgaccga tctttctgcg 2400

ggcaactcaa gtcgagcttg gaggaaccgg agcctggcgg tggcgggggt gcagtgcagg 2460

gtcgtacacg tcctatggag atggagatgg agacgtcgac gtctgctaaa gatgctatag 2520

ctagctagta caaactacaa cgcacaagac ccgtccgtcc gtccgtcgct ttgttccaag 2580

agggggggagg aggagttggg ttggcgagcc aatggcaagg gcggtacgtg cacggcgcca 2640

ccctttgtgta ttgtagtagt agtatcgctt tggcagcaga tgagatcaga cggcgaaagt 2700

gagcccgctt tagcagcgtc gtcaccgcat ctttcacatg ccgccgcctg tgctgtgctg 2760

tgacctgacc tgaccgtcgt ccagcaatcg agcacctgac tgaatctttt cttgctccac 2820

ttgcccagcg gcagagagag tgcgagcagt atatgcaaat cgaatcagga cgaccgaccg 2880

gtgcgtgcga gacctgcctg gcctgctagc ttttctctcc ccggccggct aaagcacgca 2940

cgcacgtacg ggaaaaagct agcgcgcggc gtggcggcaa cctggcgcga ggccagcgag 3000

ccctttgtct tctcctctct tgtggatgcc aggtgccggt tggcgtgttc tcaggctctt 3060

ggatccgtcg ccatcgc 3077

<210> 2085
<211> 3112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299952_G1, chr9:13159363..13162474, Cluster 12

<400> 2085
gctgctttgc tcctgcatgc atgcgtaacg ccacgtattt ataggagagg aaggagaaga 60

tcgagggcga ggaagaagaa agaagctctc ccggcctctt ccggaaaggc gcgcggcaac 120

tttggaggga agttcggcaa gtttaaaaaa agcggcgggg ggagtgttaa atgccggtac 180

taatctaggc gatgaatgat cttggaagct tgcttgggtt gcgctaatgg cgcgctggcc 240

ccaccgtcgt cccaggccag gcatgcaatt ggaggcgcag gggagggagg aattaactgc 300

gggggggcgag caacccatgt tgatgctgct gcagcctgcg ggggaaggga agctgccgct 360

gccggtacca gtaactgcgc tgcgggctct gccgtgctgc catttttaac cctctgcacg 420

caaacaatct ctcggaatgg aactgtgaat tcctgggtgt tactgacggc cgaaccgagc 480

agagcagagg tcgggcagtg ccagggccag ggaattttcc ttctggagac tggagggtgt 540

gtcctcatgt cagcgtcgtc cagtgcagtg cagcgctgtg cctgcctgtg cctgtgctac 600

tgctgctggg aggagacgga gctgcagcct tgcagggtgc gcctaggtct aggctaggta 660

gggcgtaggc atttttcgtt aggccggaac taggtggcgg ggagacgtcg gatgaagcat 720

ccgacggctg gtattgagcc cggcaaaacg agtcgtagta gggtagaagc tccgtgcaac 780

tgtgcaagtg cgtcaccagc agcaatacgg gtggtgtagc tgtagcagca agcagcagca 840

ttttcaccac acaggataat tttttttga aatgcgtccg tctctgactc tctgatctat 900

tataaaaaaa cactccacta atcatggatg gcgtggccta ggcacctata tagctcaacc 960

tgatccaaag acacgcacga tcatggcctg gcctagttgg cgagcagcga gttactccta 1020

atttgtccag ccgaccagtc cattacatat ggccacgtca tgcatgacac catgcatggc 1080

gattagagtc ccgtaccata tacacaaacg ctacctcgta ctaacttgcg tgttaactgc 1140

ggattcgaat tgaaacgatg aggaattaaa tgggagagcc acggggtttt ttttaactcc 1200

cagcagctgg ttaaaccgcc cgcgctccga tccggataga actgaaggct ttgggcattg 1260

accgttgatg atgaggagtt caaattcaat tcgtccgtga acagtacgtg tagctaggca 1320

ccgtattcca gtcatcgatc agctgcaggt aacaacgccg ccaaaccgaa ccatgcagca 1380

gcaactggtt ctcgtacact gttattaggg cgataaatac ttgttgtctg actgacgagg 1440

acagacctta gggcatgtac tacaaacttg tacaacccag aggcttatta ggatcgattt 1500

gtaaagtata agagacggtt aagaaattgc ataatacaac tcagagccta taaatcataa 1560

atacagttaa gacataatat gtatagagag tggtgtagag acgggctctc cacgaagaga 1620

ctgtctcttg atttatttat ttatttattg cacttactac accctagaga ctgtttaaaa 1680

gatgtctaat ttgagcgtac tgtgagctca aaaaaaaagt tacggttaca cacagctcgt 1740

tcgtacactt ctccgtaaca ttcttgattt atagcactaa taaaacaggg aaaagtgaag 1800

ttattaactg aagagtggct tgttgggaga ctagtctaca aactacgtac ttaattgcat 1860

tattaattgc tgacagacga tagctttatt tgtttaaatt actacgcact ccagcagcca 1920

tgcatgcaag ggccggccgg ctagcgacga agtcgttatt agctagggga ttaattagag 1980

ctatagactg cttgcggagt actgtataaa attacttcta tacttccaag caatcgtcat 2040

tctaattact tttacttta cttttacttt tacttccaag caatcgtcat tctaagcaag 2100

acgcattacg tgtgggagtt aaaattttga ataaagaaat agacacgtac gcggtggtat 2160

taccgtgtat ttctttttt tttccttttt acagtatgca tatatgcctt gcctgccaaa 2220

tgcatggcac gccattcatt cctaggcgac ggtacagaac agaacccaca tctcggcgca 2280

gaacctacgg tacgcgcgcg cgcgagtccg gcggccgtat ggcgcgccgt tcaaaatttt 2340

ccaaaactcc gatccgggat ctatccatga tccatgcatg catgagatat gcatgagccg 2400

ccggcccggg ggctggacgg agccagtcag ccagcagata gatactagat actactactc 2460

atgaatgctc agctcgctac gtacgtacta cagtatacgt gctgacgatg attgcaattg 2520

ctgcaggctc gcgggatctt gtcggccggc cggccggcca gccacacgaa gaaagggagg 2580

gagggattcg tgtgcgtggc tccaccactt ccaacgtgct tccttccttc tcgtgtgtgc 2640

atgcgtgcgt acgtacgtaa acccctcagc gtacgtacgt ggagctagta gctagcgcgg 2700

gcagcaacga acgaacaccg cgcgcgtcac gtgcatagca tgcacttcaa tcgcgcgcga 2760

tcgagaattt taatttccgc gcgctatacg aaggattttg aaacccccct ccggccgggc 2820

cggggatctc tccgatcgat ccggcatatc aatgctgcgc gcgcgcacca ccctgcatca 2880

ttgatcatcg tccatcgtcg agccggccgg caggcaatca tggatgacga cgatgatcac 2940

ttccatcaat gcgcgcggga gtcgggggcc gggggcgggt acgtagcttt ggaaatgaca 3000

tcaagttgta cagatggaca tggacgtacg gactacggcg gagggggggag agaagaatca 3060

tttgcagtaa cgacgacgac cacgtctcgg caagctagcg cgtgcgtgcg tg 3112

<210> 2086

<211> 1489
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300336_G1, chr9:15362696..15364184, Cluster 12

<400> 2086
tctgatcatc cttcgtttct cctcgcgtgt cctggtcctg gcatgcgtgc catgcgatgc 60

gcgtgtcctc cgggttcgag gccggccggc cggtggcaga acggtgtcag agagcccgcc 120

cgggaaggcg gcgcgcggac cgcggctgcc ctcgctcgcg ctcgcgcgcc cgggtcaggc 180

gccggcctgc gcgctgacgc cgcctctggc cgcaagccgg tgtagtactc ctacgtcgtc 240

tatggcagag cgcgcgcgcg agagatagag agagagagag aggcactgag gcaggcaggc 300

cggctggctg gccttctttt cgtcgtcggt caggtggcct gtctctcttg tcagctttga 360

cgttgtttgg aagcaagtta agctgtcaga gaagcaggac catgtcgatc cacgggaccg 420

cagcggctgc caccgctcgt gcgtgcatgg ccactgacac agcgtgtact tcaataatgc 480

agcggcgtac gtactcttgc ttattaatcc aatcagtgga cggagcttca gtctcacccc 540

ccacgcttaa ttagctgaaa taaagtaccg tggtttgacc ctgttttgac ccgctatacg 600

gatctctgtt cttgtatatt atagctgaca gctgttttaa accttagcag tatttgttta 660

aaatatttag ccaaacaaaa tacaagaata tgttattaca tctgttatta aaaaaatcag 720

gtcttcaaaa tgcaaaaaag gttcatgtat ctctcccccc ccccccttttt ttgcttgctc 780

tgacgtgtca cttgtgtcta tttgcaatgc gcaaaattcg aacacctagt ggcattgtag 840

ataatattgt ttcacacttt agggatgaga tatgggagcc gttggatact agcctaagag 900

acttgcactt agaactaaaa aatgcatggc tagttattgt acaaaatgaa gaatatatat 960

aaatactaaa aatctaatag gaaatagtgt tattcctcaa cctttcacgt ttcaacttcc 1020

atttcatcct accaaacgga gccttgttct tttctaatac gctgggtctt gtactcttgt 1080

gagtttgatc ggagcttcga agtacagccc tgggccacgt tttggtcaca tagcgctgcg 1140

gcggcccctg ccttgcgacc aggaggcagc tcaaccatga ccacgcgtgg agtacgagcg 1200

ccaggtccac atccacgcac acgagatggc cgcgcgatga cccgcgccgg tgaagctggg 1260

cacggcgcgc aatcatccaa gggctctccc cggcaacgtg atccggcagc agaacgggga 1320

tttcgtccgc gtccggcgcg aggggaggca gcaggtcagc gggggagatg gacgagaaga 1380

cgcgcgtgga gcaggggatc atctgggtgg ggtgggtggg ggagcaggcc gacgctgacc 1440

cgccccgccc gtgcacccaa tcttggacgc ttgcgcggtc ggatcccac 1489

<210> 2087
<211> 1521
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300888_G1, chr9:18619817..18621337, Cluster 12

<400> 2087
actactacta acaaatcagg ggattcttct gaactatcat ctaggtagga caccaacagt 60

atatgcatgt tattaacaaa aacaccatac aaaaagcacc aaaccaaaca cacacacaca 120

cacgacgaga ggcggttgct tccggcacac tcctccgctc agcccaaat ccgggcgtta 180

gaaaagcgag gcgaatcaaa tcgggggcta gccgggccgg gctggaggca ggttgtggct 240

tgcaagaaga cacagcacga cgcacgtcgc cggccgacag cgacggctcg ctctctttgg 300

ctttggcatc gcgttatata gtccacaccg agagaccgta ctggagtccg cttgcattgc 360

agccgatgat ggaatgcctc cgggtacgcg tacctgctcc ccggcggcgt cttcctaaag 420

ctagcggcgg ctcgggttgt tgggggttcc tcatcgtttg gtggcttcct aactggtgct 480

cgtattcgtt cgtatgcata tgcatgcatg cattatcgac gccggaggtt gtaaccgatt 540

aaacaagtac agtagcatag cagcgcgatt gttttaggag tagatgtcga tcctctatga 600

tgatgatgat cgatgatgcg tactactact acgcaattag gggctttctt ggaatgtggg 660

acaggggcac atgcatgatg atgaacagat gagtgacttg aaggaggagc acggcggaac 720

ctgcaggggt cgatcgtcaa aagatgagct tttttttaa attatgtttg tttgacgtcg 780

gtctcagtct cagatatatt actatactct actccctcga tcacgcggcc aacgactggg 840

ccatggacga cgacgatgag ctagcggcta gccatcaagc catgcatgca gataatcttg 900

ttaaaatgta cttccttccg tcccttccct tccttccttc ccaaagttgg tgattttatt 960

ctgttttatt tgctagaaat atctaatcta gctagctgca cagctgaaat ctctgagtac 1020

actgatgctc ttcatttacc taccttatta attattcttt gtggttgatc catccatcca 1080

tccaagattc cgaaacaaac agtctgatct gcagatgact aattagattc tgaatcaaac 1140

agtcgtctga cgcgatcgat atgtgcttga tatgacaatc cgttaatctg gtttacagtt 1200

aaaacgcact tctcttcctc tctctctcct ctggataaca gtagcaacgg actgcactgc 1260

acgcaactac acgggtgccg agttcgctga agaattgaca cgccatccgc ccggccgcct 1320

gccgcgaata gtagtagcac tagcagctag tagtagtgcg tgttctcctt cccccgcacc 1380

acgttattgg agttgttgag ccctagcttt tattggcgtg ttcaggtacg gcgtaggtgt 1440

catggggatg ggaatccatc gagcactgcc gctacaaatg taacgacgac gaaccgccgt 1500

tttttgtttc ttcttctctt a 1521

<210> 2088
<211> 2001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_301417_G1, chr9:21722128..21724128, Cluster 12

<400> 2088
agaaaagtgc ctacagaaac atcagttgag tttcagctat tgtcattaga tggataaaat 60

gtggaaggta ctgaatggct ctccagtaag gactgatttg gtgaccaggg aattggatgg 120

atccatgggc atggatccca tataattccc tggtcacaaa accagcccta agtgtgcacc 180

caacactgca ctttgttggg aaaaaagccc aaagggttta ctcaagccaa ttcaagaagg 240

taaccactgg aatactggat atcctacatt taatgttttg atgagaacaa tatcagctga 300

gctcatttct gcagagtaag catgtaagcc tgaagaaatc aatgaagatg ataaaacttt 360

aaactcgtcc agaatgatga gcttgttact gttaacaaag ggaagactcg agctcaacta 420

accacccagg atcaaactgc tttgtcttaa ctcaatacta agagcccttt tggcagcttg 480

gaacagttcc gatgctcacg tgaaactcca gaatcgctgc caaacgggta ggtagtacag 540

aaacgtttca ctgaaccgat tcatcttttt ctgcctgtac tgggagagcc agaaatggac 600

gagtagtttc acctgattcc gtttcttggc tcccctctct actagcaacc ataatttcag 660

ttaatcattt taagtgcaac gagctaattg ctctcccccc attaaaaatg ttatgcattt 720

ttaagcatgt tttatttata tgatttttta atgaaaacat ttttttacca gaatccagcc 780

acagttgcct agtgccctag tcatttctgt agtctgcagt gcatgacaca tcagtcatga 840

tgaaaaggac aaaaaatgaa gtagttaaaa ggaaaggagg ataagccata agcatcaaag 900

gtcaagcaag tagtctcaaa ggtgccgctg tcaccgagat ctcgaacagt gcaagacaaa 960

gcaggaaaac tgataaaagt tggcatgaga tgaaacggtt gtcttagtat cttttagtag 1020

gaattgtact aatgcctgca ttgcgctttc ccacgataaa gccataggta ctcttcatcg 1080

tcgaaactgt atttttcttc ttccaaaacg taggttgctt aacctttttt ttttgcatct 1140

tctttttgca gatggcaccg acagttggag ctatcagcta gctctgcagt taaattaggt 1200

cagaaaacac cctgcatttc tgcatatgat gagcttggga actagtagta gtgtagtaca 1260

tgatgaatcc acgatggttg tctgaactga actctgacga caggtggtcc gcctgcaact 1320

gcaagtgcca caccgataga ggatatggtt cttttccgag actgcggcac cgacgttctc 1380

gcggatcgag ccttcgacat gggacgtgcc tggagaacga cggcagtagg gcactgcgac 1440

tctgctagtc tgccctctgc actgccccct ttcacttttc gtgcaacata cctttgcttg 1500

ctttgagcct atgacatggc acgtgccaga gcaacgcatc tgtccttggg tcgcttgcag 1560

ctgcagctcg tcctgtatgt gtttctgcaa ccgagcgttc cggagctctt ggatcctgtg 1620

ctctgcgtca tatactcgtg gtatattgtt aaaactgtcg gcagatctga tcgacccatt 1680

tggatctgta caagtcgcgt tctctgcaac ccgtggactc gtgcctcggt ttgggggaat 1740

ctatatgggg tgtggattgg aattccgtgg cagatacgaa aagggcacca actggcaact 1800

gggcaccagg tcagtgcatg gggatcatgg aacggaacgg aaaccaagtc cggtctccgg 1860

tgctcccggc ggccggtcaa ccgtgctcgt gcctgcctct cccccagtcc agctcgcaca 1920

tcgcaccctt gcttttgcca tctcaagcaa agctacggat ctgactaaag gtagcctacg 1980

cgagctggtt gacacttcag c 2001

<210> 2089
<211> 1917
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301789_G1, chr9:23521476..23523392, Cluster 12

<400> 2089
tccctagtcc taaaaacaca atcagaaaga aagaaaaagt gcaagggcgc gcgatctcaa 60

tcgtctcttc ggtcagacag cgacctggca ctccgccgtc ttgaacaaag attcggtcag 120

gtcccaattc caacggaaca cacctcatca catcgccgca ctagtgcctg tctaaaaata 180

ttaataatct gtccgcagcg catacgctct actctactgc ttgcttgctt tggtacatca 240

cagacattgt gttggtgtga gtgtctgact atttgctaca ccgggcaggg cgcggcgtta 300

ctggccaccc tggtcattct acatgtagtc taatacatgc caggattgca ccatccactt 360

cctctgtgtc gtgcgctgcc taaatttacc tgacagtata gcgaaaccag ccatctcctg 420

cctaaatttg acggaaagaa catcgccgct ttaatggttg gcgtctcttc tactaatata 480

caatgtttct gcttgttgta tgggctgcag ttctcttaga gagagagaga gagagagaaa 540

agaacggcta gtgcgcggcg cgggtgcgat cgcacgcagc ttggccgggc cggcgcacac 600

tctccggctc gaagcgaagc gataacgtta cgagacatcc atcgtgcggt ccgcgcgcgt 660

gcggagcttt gttggcagag cccggtgccg ggccccgcgc ggcgctctgc aggcgtttgg 720

ccgcgcccag atcgcatctg cgcgcgcgcg cgtggtggcg acatggagcc ccgggccgca 780

tgttcctgcc ccgggttacg gcctccccag gccccgccgc cgcccacgac gacaagcggg 840

aaccaaaagc gacgggcagg ctccattgtc actgctcact cacgcgacta cgcgaggtgt 900

atggctccat atgcttcccc cgcgccaggc cggtagtccg tccacctgtc cagtagaggg 960

ctcgtccgac gaccgacatt tgagttgagc cacttcacgc gtccgtcctc ttggatccac 1020

cacgttcgac ggagacgtgg cgtgaatatc gcggtagcta cctggagtaa gtagctagct 1080

aggccgcacg tgcgcagcct agagtcgcag ccgtgtatcc tggctgctgg tgccatgcgg 1140

atgccgccgc ggcctagttt tggccggtcc gagcgccgtg cctcgtcggt cgccgccggg 1200

atagatatcc gatatacgac atcgtctcga tatttccgga cgcgttcgcc gctgtatcaa 1260

aaagggcaaa gttttcagtt ttccgcccgg gcgtgacgtc agggcggacg cggtacagta 1320

cagtacttgc gcacgcccct tccctttggc gttgctctgg cctcgcctcg cctcgtcggc 1380

acgtcacgtc gaccaacaaa gtggagcgga tttcattcga gaggcgggcc acggacgcca 1440

gcgcgagagc gagagcgaga gagcgggggg agggccggag gggtggccgt ggccgtggct 1500

gcggccacgc ggcgtcccga cgcggtcctg ccgcggatct ccgtgcggat tccgtgacgt 1560

agacgagacg agacgagaat gcgggattcg ctgccagcct tccagaagcg gacgagacga 1620

gacgagacga cggcgcggtc gctttttttt ctcgatcgga gaaagacgta ggagcggctt 1680

tgtcactgcg ccaccggacc cgtgaggttg gcagggcccc tcacctaggc tagtacgaag 1740

gacgagaggc ctgccttgca agtggaccct cgccaggccg tccaatcacg gacggacggg 1800

atggaccggg gtactagtac tgcaccgggc tggcgttagt tgctgactgg tgctgcgctt 1860

ttcagtcctt tgccttgtac gggtaatttt gttatttagg gactatttta gttttct 1917

<210> 2090
<211> 2867
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3142_G1, chr1:15998560..16001426, Cluster 12

<400> 2090
tcctctcacc tgcttgttta attgcatggg ccttgggctg tcgcctcgcc tcccgtcagg 60

agccttattc tgctgctact gcacccgtgc atcgtccgtc ctcccagcag acccccctgc 120

agctcgtgat ggcgaactgg atgtcaggcc tgtgggcttc tccatcaatg ccgccgtggc 180

tatagcctgc gctgcgcata aaaaaaaaaa caaaaaaaaa acctcactta ttcacaaccg 240

agccccgagc cgctcgtgag ctgtacaggc cgggggagaa gaacgagagc agagcagcgc 300

cgcgttcccc ggaaatctca cgcgccgccc gttgttgcct gccgagcccc gctacgacga 360

tggcctgcac tagtgcgcct gccttcctgc agcctgcatc accgcctcat ggtcagagct 420

gctgatcgat gtgcgtacgt gctggcgtgc tcccaggcac caggcatacg tacattatac 480

gtacgtaccc ttgggccatg gcacggacgg gcggcagatc tagcagaata tgtacgggtt 540

tgccgggcgg ccgttcacat gtacgtacgc tcgctcgctc gcgaaatgcg tagagcacga 600

gagaggcata cagtgagcag tagtagtgta gtcctgcctg cctcgttgcg atcgttgcga 660

cccagggcca ggctggcgga cgccgccgtg ggatggatgt cccctccccg tgcagcggtg 720

cggaacggtg tcagcagcgc tgttcatgca atagctgagt agcagtagct ggacagatat 780

acctatcgta cgtactccct agtctagtat ttttagagca ctcggcacat acacatacac 840

cactgcacgg ccggaactgt cgtaacgtga cgggctgaca atcgacgccg agtgatcgag 900

atccgaagtg gtgcgtaact gggcgcatcg gtcggcactg cagcccatca tgccagcatg 960

agcagatcaa cgagcagggg agtgagttgc tcctgccatg catgcactcc cagtacggtc 1020

gtggtagcag tagcacgcac tgcactactg cagcaaccca gcgctgcctg cagtgacaaa 1080

agtggcggtg cagtggtgct cctgccaaaa gaagataaag gcggtggtag gggggtacac 1140

gtagcatcgt aggcccgcac gtggggaatc agatcacgcg tgccaggcag ggcggcagcc 1200

catcatggga gccggagccc cgtcgtccgc ccgccggcct ccaaaactct cgccatcgcc 1260

gccggccacc cacccatcag gcttttaatt gaggcgcgcg gcctagcagc taaccgtagg 1320

ctactagcct gtgtcaggat cgcgcgcacg ggacgggacg ggacgggaac gggaccgtaa 1380

cttttggttg ccctgcactg cactgcacgc ggtaaagacc aaagcagcaa gctagcacgg 1440

ccacgtacta tgcgcggcaa gcgatccggc ggcacgccgg gcccgcgtgc catcgggagc 1500

ccatcggcgc tggttgcttt tctctctctt ttctcggcgc ctctgtcacg gtcatgtcgc 1560

gccgcggctt ccgagaaggc agatgagagc aaagcagaga gcattcagcg tcagggagag 1620

ggagccagta gtactgtact cctactggac gagacgacga cagacgaaga cgatgatgat 1680

ggcggggacg ggatccgatc ccgcgagatc ggtcggtcgg tcgggcccgg gcggggatgc 1740

attcccaccc cacccggcca cccccacgca ggcagagctt ttgtggcgcc gcggtgcaag 1800

tgcaaagcac aaagccaaag cgcgcggcgt ggcggcacgt acggggccac ggccatcggc 1860

atcggcttcc gatcctccgc gccccctggc atcgcgcgcg tgatctaccg atgatctcca 1920

gggggctacc gtgttgtgcc tcgggatcgg cggccggcga ccacgaccac gctcgatcgc 1980

gcgctcttct tttcatcgct cgtactgtac gccgttgccg ctgggaccgg acaacactgt 2040

tgttggcgcc caaggtttca actttgaacg cacgcgcgaa ccttaccttc gtgccagccc 2100

aaattggaag cgctgtttac agtactagac tgccaagctt tgacaaagag tgtggctgtg 2160

ttagtgagta acaaagtacc aataatagcc gcccggtgct cgtaaacgtc atgtggctcc 2220

gtctgcgtgc acgtgcctac ctagctagct agctcgccca ctggccgatc gatttgcctc 2280

ctagctctgc ctccaaaacg acgctgccga tcgattaatt tctcttgcgc accacccaat 2340

tattgcccaa acaaatgcat atttagctct tcttcatatc cgtgataaag ttgattgctt 2400

tcgtgacaaa tgtccaaaaa aatgtataca tgtcaatatt tatatttttt agctattatc 2460

tcctccctca aagtaggtgc tgaatgcaag gccatgcaaa cgctgctcca tcatgtccta 2520

ataagaaatc tcatagctag gttcgtaggc cttgcacctt atatatgctc tagatcccaa 2580

ttcccaacta tacctacctc tcacaagtca caaccgaacc acaacttata atgtattccc 2640

ttctttttaa attatagagt attttaatat tttctaaaaa cggtccagat taaaagatat 2700

tatagttttt ctaaacatat aatttttact atatatatat aacttataaa taaatgcaca 2760

gtaaaacata tgaatctaaa aattcaaaaa ttcttataat ttataacaga ggaagtaatt 2820

atacaggagc accgcaatat ttgaaagacg ttgcactgca atatttg 2867

<210> 2091
<211> 1799
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315713_G1, chr9:110244685..110246483, Cluster 12

<400> 2091
caaatttgga actaagtgtt agttcaaaat ttgttggatt atatataatc ttattagatt 60

ataatcatcc caaacaaaca ccccttttaca cttacgagta cttgtcttcc gagtctcggt 120

tcaattgcaa acaacatcct gatccaaatt aagaacactc acaccccaca ggcaaaacta 180

gctaggtgtg cgacaaactg ccaaaacagt gtctctggac agctcgaagt ctagaaagcc 240

agatcttaaa cattggatcc accatggagt agctttaact tggatataga atgtaacaac 300

tgctgaattt ttttttttt tgggggggg gggggggag cgctctagga tgaatctgct 360

aggtcggccc aacaaccatc catctgcatc ccattagtga gagctctaga aaattcatgt 420

gtctggtctt caggtctaac tcttttacgg atctaaattt tacagaggag agatgtttag 480

gttcaaaaaa atcatattta gaagttagaa ctgatttttt aggaaattct agaatactta 540

gaggccggtg tctcagactc agagacgccc ttgctgtctg atgatagaat aattgaagct 600

ttccagtcgc gaaagcttga ggagatagac agggcccagc cacccagatg gacaagatac 660

atgcatgcat gcatgcaaca atgaaatcac tcggctcatc tcgcgtcctg gacctggaaa 720

ctgtagcact ccactagggt actagtactg tacaaaccgg ccggaggcag tgctctatcg 780

atcatcattg cccgccaccg tcgtccggag cggcgcggaa acggcgattg gcaacggccg 840

cctccttctt cgtcgtcctc ccccgtcacc tgagacggcc agcagctgcc agaaacgacg 900

aaggcatccc cgtcccggac ctagctagca tagcatagca tgcatgcaac cagccatgca 960

tccggccggt gatcgaacgc tccgtcgacg tcgtgtggac catgacacac accacatgcc 1020

aaatgcaaaa acattgaacg gtcatggtac aaaacttaca acgatcgtcg agaccagcag 1080

gcgatcgaat cgaatcgaca cacacgcacc tgatgaagga aaaagcaatg aacattgaac 1140

gtacgctttg caggatgggt cgatcggtcg gtacgccaca cggtcgatac gatcggcgat 1200

aattatgtcc acgaacgaac gaaccaatta gcaagagctg gccatttggg ttgggatatg 1260

catgcatgga tgcttctgtg caagtgctct atatcaggcc gtaacacgca tgcactcatg 1320

actcatgcag catgttgctt cggcatggcc gcggccgcgc gtacgtggct ccaccgaccg 1380

atggccagcc agatcggtcc agactacact tagccgcgag agctagcgag tacaagggca 1440

tggggacggc gagggcgacg ggcgatgacc aataataata aagctagcgc tagcgcgagc 1500

gcgcgcgatc gatggatgga tgcaatggcc agccggctgg ccgggcgggc ggcgttatgg 1560

aggcttgtca cgacgcccgc tttcggcaat cggcacgccc agcggccagc cgactgacca 1620

ccgcgcatgt gcctggcctg gcctcccccc cagttcgctt gcccagaccc agctaacccc 1680

atatccacac tttgggggggg cgtccctgct ggtcaaaaca gaaacttccc tgcaagttcc 1740

tgcatgcgtt cctccgcggc tctgcttccc aatcgcgtgg atagctagac cgggcatca 1799

<210> 2092
<211> 1681
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_319724_G1, chr9:132005098..132006778, Cluster 12

<400> 2092
catgtacatc tccatctctt atctgtttct ttttttcttc tacttcaatt aagcatgtga 60

gttgttgttt gaaacgaact ctcaatcaat caaatatgca ataatactga tcacacacgt 120

tatgtttttt tgtctttata ctttgtaaat taaagtgtat ctaaaatccg tgctaagttc 180

aacatctccg atcacatgga gagctggatt ggtggtttcg ataaaaattg tccatcgtgt 240

gtacaaatac atcgtacttg gaagcgtgtt caagtttcca aaaacgtgga caacctttg 300

ctcacgtgca cattgccgta cgtgttgcac ttattaatgg acatgctgat gtgcaggcaa 360

tgatgccgat taagcttgga attaggggga aagcagcacg cgcctacctc tcgcactgaa 420

aagtggccta ccattcgctg tgttctgatt agccgcgctc tcgttttttt ttccctcccc 480

tcaaagctta cctctgtctg tccttcaaag cggcctaccc tacgtacagt ttctactact 540

actagggagg acgatgaccg catctgctat catcaatttg cgcaaagaaa agacgcgccg 600

ctttaaagaa ccaaagagcg cacaaagctg ttgccggccg ctgcactgca tgccaagttc 660

tgttctgtgt ataaaagagg tggtgaggcg gcggggtcgt ggaggtacgg tcctgatgaa 720

acaacaggat cagattttgg cagttggcgt agacaagcag gaccgcgtag gctgctatag 780

aacatgtgtc ggtcggtcgg tactacggcg atctcgggcc attggcgctc tgcactgtgc 840

agtctgtgcc gccatgattg ttgacctgtg agcatgcatg catgctgctg ctgctgctgc 900

cctagatcga caacaggaac aggcaatgtc aatctggaga tgacctagct atttcaaatc 960

caacttccaa agatgaccgg gatcagatca gacaacccat ccttaaacta cccgaatagc 1020

ggtgcacgag cacgagcacg atcattgggt ccacacacac tcttggggat tttttcgcaa 1080

agcggcgacg aggcgactgc cctgcccgcc gagctcgctc gctcgctcgc cgaaagggtt 1140

ggagagtgga gcggtcgcca gcaacacctc gccgctgctt ccgcctttac atcacgtcga 1200

gactgcagac tgcaaaggca aggggcacgc cgcacggtgt ggggcgcacg tacgtgctgc 1260

gtctgcgtgc cggtgccgag gctgctttta aaggagagct ggccgcagag aaattcatcc 1320

gagctacagc taggccgaga gatgcagagg gccgggcctc cgcaccggcg acccgggccc 1380

cctgctcagc tccgatcgag ctgctgctgc tccactctgc cgaacggcag cgcgcgccct 1440

ctggctctgc gtctgcggtc tgcccctcgg cacggcacgg cacggcagtc gtcatcgtca 1500

gtgtgattca gctcccatgt gcccgcgccc agtcgctgcc tgtcctcgcg acgcgcgcat 1560

ccggggtggc atggcaatca tgaaagtgag atagaaatgg gtggataccg gaggatatta 1620

ctactgctgc cgctctgagc cacggtcacg gggcacggga gctgtcaagg aaaggcagag 1680

a 1681

<210> 2093
<211> 2864
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320866_G1, chr9:137496267..137499130, Cluster 12

<400> 2093
gattagtagg agtgtttctt tcgcgtccgg ccggtacgga cgctggcctg gccatcgtcg 60

ttgcattggt ggacttgcaa cgtccgatcc cacactaaaa cgaacgaaca ataatcagaa 120

tatcagatcg ctcgtcgtcg tcgtcgtcgg tggcaatgat taggaaggaa cacatgattc 180

gatctctctg cgtcgatccg agggacacgc aaacggggca gcttgcatta attagacgga 240

ctcgttgcgc gcgcggatcc acgcacagcg tcggtgtgca gtgcacacat ttgcacgata 300

tcggggcaac atacgtatac tcctgctcca tccgtttcgc tatctcagtg tcacgaagtt 360

tatgtttcga aactttggcc aacagcatct acaaaataat tatttttta aaactaaaga 420

aattatatat tatactttac gttttaatcg taaatataat agtttatttt tatttagtca 480

atgtttataa atatcttgtt attaatggtc aaagttcaaa ataaatcttc gtcatcttac 540

gatagggaat ggaggggagt ccgttggtgc atatcgcctt tatctacgga tctccaagat 600

tcgagacgta gtgctaggca acggttgaag gcatatccaa tttggagcca gagcagatgc 660

ctagagggga gtgatgggta ggcattcatt cattcgcggg tcgcggtgta tatcttttcc 720

gcgctagttg tagttgatgc gtgagtgaga tcgacctccc cattcatgct cgccgtgtgg 780

gacaggatcc gcgcgcgcgc gcttctttat tcgctgttgc tggcgtcaaa gcgaaggcaa 840

caaccccaac gctagatcgc cgatcgctca aggccctcgc cgtttctggc ttttacgctc 900

acaaatgtct gcaaaatcta aatcttgtaa taggatagtt actgatttca gtactaaaag 960

cagaggttct tcttcttctt attctgtttt tttaaataac gtcgcctgtt acagattccg 1020

ttcactcggt ctctcaacgt tgaagtcctt gtacgccatc gcgagaccta ttcgcagagc 1080

ttgttgtcgg gctagatacc gtcctataat gtggggtgtg tgtgctctac tactgtacta 1140

atctattact caatcttgct agaatctggg aaaagcggcc ccaccacaag ttgcaaaaag 1200

gcacttccct gctggtcaaa atcccttctt tttcctggca tagctttctg gaggagctgt 1260

ctccgtccca cgacaagccg gagtcgcatt agctaacaag tactactaat actttattca 1320

actggctaac ccagggcagg cacagctgtt ctgattaaac aaacatccct ttcccttgtg 1380

tgcgggcaaa agcgaggcgc atcgcatggg atgcacgacc ccgcgtccca gtcccaggtt 1440

ctcagcacga tccattcatt catcccagtc ccagccagga ccaggatacg gtgcactgga 1500

ccaggcaaga cgacaggccg ggactgcacg agcacgacga ctcgcagtgc tagctagcaa 1560

gccagtcctt cccacgacgg agacatggac caaatcaaaa tccatcccgg agagtcggca 1620

cgacgcggac atccaccgca ccccgcacac gcatgccgcc gccggcgccg acccgctggg 1680

gctcttcctg ccggcacggc acggtgccgc agccgacgga cgggtcaagc aagagaggcc 1740

ggaaagcatg aggaccccgc ggttctgtcc ccgtgaatcg cggaaaaacg ttgtgcgcgc 1800

ggcggagact gtgggctgtg gagtgtcgtg ggattgcgcg acaccggcgg gcagcgcaac 1860

gtggggcggg acgggaggcc agtaaccggc ggcccgacag cacggggccc aggtgccggc 1920

gaacgcgaga tcacgcgtcc ccggcccccg ctgtggtggt gccgtagcag tgtagtgtgc 1980

tgccgtccgg ccttttggct cgtcgttgcc gtgccagttt tggcgccggc gcgacggtgc 2040

tgactgaccg acgccgagac ggcacggctg ggggtccgcc gcaacccgcg cgccgtgccg 2100

aatcggggcg tcacgccgac cacggaacta ttttcctttc cttcggtgac ctgtttttt 2160

ttttttttg acttgtgact tccctacacc acacacaggt tatagcgtga tgcaaaaaag 2220

gtagatgctg ctgccatcac gtgggaagct caaatgaagc tgaaagcaaa ggtatccctc 2280

cctctcacgc cgttgttgtt gttgttgttg ttgttgttgt tgttgttgtt gtttggggcc 2340

gtggcggtgg cgcggctgtc tgtctgcacc catgctccga cgcaacgatg cgcacagact 2400

gtcaccatcg gcgccgcacc aaaacacacc tgcttgtcgg tcgcttaacc gagtgtggct 2460

ggctgacggc tcttgggtcc ttgtggcctg ttctgttcca tctcttccac tcggcagtac 2520

gtaaagaaag gttacatggt ggtggctgca caagttttac cagagggccg tggcctcttc 2580

atctcttccc ctcagcgggc tccgacactg gctgttgaac aatctttggg tttcttatac 2640

gctgatggta tgatttttt tccaagagat atttttacgg tgaaaagcaa aaaaaaaccc 2700

ccgaggattt tcgctccgga gatttgctca agctgtcagt accaactgat cctggattcc 2760

taagcatctg ggattgcccg attgggatgg gacacagaca gtcagacaca cacacacaca 2820

tccaagcatt aggtccagag caacatggca agatcttgta ggca 2864

<210> 2094
<211> 1627
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321306_G1, chr9:139758530..139760156, Cluster 12

<400> 2094
ggttgggaaa tcacatggac cgagatacga ttagtgtgca tacacacaca cacagagaga 60

gagagagaga gagagagaga gctgtaatcg gatcacatgc atgcaaggta agagagacaa 120

attattacta cttctccaga aagtgatgga aaatgcattc tgtggactac gctgcgtgtg 180

ctgggtcttt attgtctgga cgcatgcata atgtccatgc acgcatggtt gctgttttgt 240

tttcggcaga aaaagaggca tgattttgct aaacaatacg attggattgg atgtgtattt 300

taattaaata aagggtggcg ctcgatccag atctgatact atcgctagct agatctcttg 360

agcgcgcgga aggcgaacat acaaagatca ggatgccaat aattgaggga cacgcatgca 420

tgattgcaat taattaaaaa gaacagggga aaaaaaggta cgtaatgaat aaatccataa 480

atatttgaag gagtacgtac gtacgtgcta gaggttataa gtgtagcgcg tgctccctgg 540

cttcgcaggc aggcgcctgt ttcgctcttt tgtacttagt tagttcaaac ggacattaca 600

aggatattca ggaaggggcg aggacgaatt tactacagct tagtaaattg aatttactca 660

cgagctggca tggagtgatg caggtgtgac ttttagtgag agtgcaagtg gggtgtggtg 720

gttccagcag gaactaatta accagctgca gaatgctaga gaaaagtgtc cgctgttgca 780

tctggattaa gctaagctgc taataataag ctaggcgtga tgttagatta ctactagttt 840

actagctagc gaggctgtcc gacggctgat gatgtgtcca tgcaaagatt ccgtcatgca 900

atgcaatgcg gtctgcatgc aggccccaca tcgtctaacg gcacgcaatg agagaggcga 960

cagatccgat aaagaaacga ctgtgcattg tctatttgta cagcaaaccc atggacagta 1020

agagagagag agagagagag cctcgccggc ttgatgattt ctcatccaaa tgtccatcca 1080

tctatccatc catccatgat ccatccaagt tggaggaggt aataattcgt cgcacccaag 1140

tacacatgga cgcatgtggc attcagaaca tttctctctc tctctccatt tcctttgaaa 1200

ctaggagctg gcgtggtccc cttcccctcc ctgacgccgt gagagctccg cgcgtggcgc 1260

taaaatgttg cggacactgc tcttcgttaa atttcaggcg cctggatcaa ctgccaagtc 1320

tgtcccgaaa gatgatgtcc aaggcaaggt gccaaggtag ctactagcta gctagggaaa 1380

ggggtcatca gtacgagtgg tccatctctc tctctcgagc tagagaatgg agacctgaca 1440

caagtggttc cggccggctg ggttggcgat agtggccgcc gtccagctct ctagagcggg 1500

agtggcgagt gggacagtcg ttacgcgttg ggttaggtta ggcgcccaag ctccgatcct 1560

ccatgcacct tgcatccaac cacaaaccac gccttattca ggtaaactaa aaacttgacg 1620

cacagca 1627

<210> 2095
<211> 2162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32133_G1, chr1:197389260..197391421, Cluster 12

<400> 2095
ggactgcccg tttgaacatg agtacggacg accccgacgc caaaaggtga ctacaaaggc 60

gagtggagcc tcgtgcatgc gcgcgggtga ccttggccag ctgggcctga gccccaccgt 120

acccactacc cagccgtccg tgccattgtg tggcagtagt gccgtaggtc ggtcgacgca 180

cggaccacgc acagcacgcg ttcgatggtc gagcgcccgt gtagaagcta caaactatag 240

ctgcggcgca ccagacgatg aagcagctgg acgcgagtcg agtcgagacc acgatctgct 300

tgtgttgtgc acgccagcag agcatgtgtt agacgatggg tcgctctccg agctagctcg 360

gcaacgcgca tatatagcta gctagatagg tcgccaccgt gcatggcggc gcgcctttac 420

gctcgctagc tcgctgccgg tcggtggtgg cgtgcgtgcg ttgcgtaccc gcgcatgtgc 480

atgcgtgtgc gatcgaggac ctccgatcgt cggcatctag ctaggtcaca agtcgcagcc 540

agtcaccgat tagatagatc cccgcctccc ctggcattca tcggcctgcc ggccggccgt 600

ccgcagtcca tgcatggcgc ggcgcgggga tggtcctggt cctgcggtcc tgccgcccgc 660

gctgcgctcc ggcggtgcct tgcgcgtgcg cgtctccgcc gcatgtgggt ttggtggact 720

cgtgtgcacg ggcgctcgct catcgagtag acgagtacga tcggagacga cgtcgagaca 780

ctgtgcggct cgtgtgctcg acagggacgt gccatccgac gagcacgtac gtctgagatt 840

atattggtcc ggcaggtttc caagttgcat gtatatatgc atgtggacgc gcatgcagtg 900

caggaaagga aaacgaaaag ggcgcgccca cacacaccta ctgggctagc tagctagccg 960

cgccaataac tcttggctgg tggatcacag acagacagcg tacgtacgta cgtgtacgta 1020

tatgatccac gtattgtgct gtgctgtgcc cccacatatt gtgctagcta gctcacgtat 1080

tgtgctgtgc tgtgccccca catgatgcac atatatgtgt agcccataat gcttatgtac 1140

gagtatatat atgggtatat atatgaactg aagcccctac cgtacgtgta catgagtgac 1200

tggtgccaca cccggacaat cgcggatcga gaacacacac aaacacacac gcttcgtgtc 1260

tacagtacgt atacgtatag tacgaccaca ggccggccgg gtccacagca tgcatgcagg 1320

atcctcctcg acctcggcga tcgatcgacg cccggccggg gaccaggggc acacagcaca 1380

gtaagacgca cgttgcatca gttaagccac atgcgcgtgt gcgtgcgagg ctggctggcc 1440

aatgaaatcc tccgtgcgcg ctctcacctc gcacagatcg agctctaggc tagctagcta 1500

gcgtcagtgc agtacagcca gtgtgctgcc cgcacaggca cagcctagct cgctctcgtc 1560

gctgattggc atcatttgcg agcacgaaaa gctagctaac ttaaaaaaac ccctttgcc 1620

ctttccaaaa agctcatctg aatatagatc gcgctacacg cagctcatca tcgccccatg 1680

catcagcagg gggcctggct agcagttgag tactaccagg ccgtagcaaa ggggtgcgtg 1740

ctctgcccat tttaagtacg ctcagcagct ttcctaaaaa aaaaactcgt aagtaagcag 1800

cagcagacag ttcattcagt cgtccggccg tggccgtccc cctggatgca tgcagtgccc 1860

tgcttgagat gcatgcatgc cctgctagct agctgcccat gtgggtgatg ccgtatgccc 1920

atgcatgcct gcaccgtaca ttcttccggg ccgtccgatg aatgaaatta actattttgc 1980

gcccgtttcc agtttctctt tacagccgtt tagtatccga ctccgtccgt gcgcaccgca 2040

cgattccagc aggaatattt ttactgcctt tatatactat actatactat ttcccgccct 2100

atttgcatgg cccttggata tcctcagggg actgctactg aattctttaa cgtgtactgt 2160

at 2162

<210> 2096
<211> 1955
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321645_G1, chr9:141534683..141536637, Cluster 12

<400> 2096
cataatctat tctttaaatg taactttacc tccaatccgc acactggtat ccaaagaatc 60

aagaaacaat tttcaaagcc ctagacgatg aaagtcatcg taacaatgac atgatgtata 120

tggaaatgca ggaatcgatg gactttcgat aatatcccac caatgcagct aagctacgtc 180

gagcccttcg agaaagaaat ggtcatggtt tggtacagaa cgaagaatac gttagcaggc 240

cttgttgata atatcacacc agtagcgact atattcgccg aaagtcaaag gtgtcgtgct 300

gcgaatcagc tagcgaacga aatatacttg aggatttcct aaaaaaaaag agggagagag 360

agagagagaa ttgaggactt cctcatctgt tacctcaagc catctttccg tggaaaagca 420

gtatccgttt ttttcccccc ttcgttctga ccattcaaaa gctccttttt actgcttcga 480

cggacggatc tccagtgctc cagttgaaat ggacacttcc ttttgcagat tagattcccc 540

cgcgcccgaa gacgcatggg aaaccatgcc gtacagtacg atcgcgttcg ttgtggataa 600

aattattatt gttccagggc tccaggcacc actccagtcc agggtgtcat ggagacgaga 660

caaaactaca gtacgtacag tctccagacc gctgcagggg tcagtacaca gttttttttt 720

tctttttgc attccaaaga taataaggcc agtacatgca cagtactgct tcatttccat 780

gtgatgtgtg gtctagttca tcatacctag cttaagtttc catcggaagt gtaccgcagt 840

acttaaaccc atcacgcatg atcctttgcg ttgattggaa gcaccaatcg aaccgaagaa 900

aattggttgc ttccattcca ttcacctaaa cgtgtgtgtg gtggtcagag ctagtgtcca 960

catattcttc accccaaatt aaagcggtta ctctcattca ctgacctaaa tcataaaatc 1020

aggctcatca cgaatggact agagaccgtg cgagtccact tagctagaac agcacgcact 1080

cgtcagctcc tctcctctgt gatataggga tatgatactg aaactttggg agcccaaaat 1140

acacttgctt cctttcacct cctctcccac ttgaagcgct cgacgacctt gcggtgcgtg 1200

tgtcgacctg catgaactga agtcctcgaa gacgaaggct atatgcgcat cagcagtcat 1260

cagcacaacg caacgcgaat atccaggcat ccatccaatg ggcagcgcga actcctttag 1320

aataacgtaa cgcttctctt ctagtagtag taccaccaat cagtggcctc caaatcccaa 1380

aagcgaggct cctacttatt gttacgtgcc cacaacggag ctagccaatg ccgcaatgcg 1440

tcgtctacgc gtagatggtc ggagaaagat cgtcgagggc atggcatggc ggcgttctca 1500

tagtcatatg ccggccgtgc ccgtggtcaa agcctcagat gtcagacaga gaggccttcc 1560

gtgggctgtc aatgcaagaa gctagcatcc ggccggccgg cgagcgagcg cgagattctc 1620

aagcaccggg ctggctggag ctggatcgat gccaatgcca tctagaccgg ccggccgctt 1680

ttgcccgtgc agtgtgcgtg cccctggctt taccacgcat ctgtgcatgt gtccccgagc 1740

gaggacgact tgcttcctgt tcctgatgcg gggccgtgac gtctttttt gtcacccgtc 1800

tttaatttct aagctctgta cctttagttt gttcctcgcc gccggcacta gctttgttct 1860

cctcgatcca atgatcttca gttttacaca tgaccctatc ggatgagtgc tgttgagcgg 1920

tcattctcgg ctaaaaccag ctctcttttt ggacg 1955

<210> 2097
<211> 2210

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321649_G1, chr9:141543794..141546003, Cluster 12

<400> 2097
attgttgggt catgtctacc ggatcgggtc cgacactatt aaataggttg tagctgtcgg 60

gatagatcga acatgactat atatatatac taataatttg ataatacaaa aatataatcg 120

tgtcaagcta gatcgacacc gtagatcgag aaggaggtct aagcaagaca gttattaggt 180

cgggtgcact atcgtattgt ctagctttgt attggtttag ttcagtattg tataatcatg 240

tttaaataaa tatttcattt atgtaatatc tgtctatata atatatagaa accatagtaa 300

ggtatgagca actaaccagt aaaaaataat gtgtgaaatg cccacgttgc aaaggacgca 360

caaaatattt gacacccgag tgctggtaag tcaacaaagt aaaggcgaaa atatggccct 420

agcaaaagga gggctcccaa ccacaattcc acaagtagcc aatttagata gggtacggcc 480

agacccacaa tggacttgct aggactagca tctacctcta tattaagcta cctaggccga 540

ggcccacttg cagattgaca ggggaaggaa tcattggcgg aattctgtgc gcgtacgtga 600

ggggaggggg aggcaacggc aggcaccccc gtcctggcgg agctgagctg cgcctgccgg 660

tggtgttttg ttcccagcaa caagtcagcg acacgccgac accgcggcga gctaacgtct 720

cggtgattgc catcgaggaa ttcgttgccg gccatcgaag ctagctagtg attccatccc 780

agtggcgcgg ggtcgggggc atgcagctag cgcggcgttg ccctgcccgg tccaaaaggc 840

ggcgagccgg ctggatgtgg agtagtggac aggacacagg ccagcggtga ggtctcgatg 900

cagctccctt tgttttgccc gggacgatag gcgcctaggg ccaatatctc cggcgaaccc 960

atctcgcgtc cggcggtaga tggcagcgtt aagctggcac tgggcaggtc aaaaaggccc 1020

acgagggttg cttgcttgct tgctgatttc gcaagtcagc tcagtggtag gagcagagca 1080

ttagcccgtt taggatggac ctatagccta ggaggagacc agctatacct ccactcaccc 1140

catctccacg aaggatcaac cggcacaaca caaggatatt tatatattta cagtgaaaat 1200

cttggaaaag ggcaagacgg gggggggggg gggggggggg ggtgctggta gtgccttgcc 1260

tccaattcca ttgcgtggtc gtggctcgtg cgtgcagggg gagagaaaaa ggtaatttga 1320

tgctagagat ggtacgtacg tactagtgtt ccaaagcaaa atatactcct tgaagtaaaa 1380

ttgcgagact tgggccggac tcattattat tgggcgtagt atgaatcttt tatggccctc 1440

gactaacgac tcgagcagtt ctgggcctaa agaactcact tccttatcag gttttgtttg 1500

gatactctat tattcactct aattcatctc tatggattag agtgaatcca aacaaatgtc 1560

gcctctaagt ccacgaatca gagtttctgt tccgtagacc aagcatttgt atttttagt 1620

actatgtacc aactgctact ggtgcacaat gggatggttt tatggttgaa aatggaccgt 1680

atcgtaatgc ctggcagttg caaatcgcat taacataatc ttttcttttc ctattttcta 1740

acaaaagagg aaagagcacg gtttgcggtc ctgtttggaa catagagttt tttccctgtt 1800

acgataaaaa tcctgcgaaa tctttgcgtc ccacacggcc acacatgcct acatatgcag 1860

tcaatcagtc ggccatctct agtacatgtc tgaatcaacg agtccagccg gtcatgacaa 1920

gaggaatgcc atcggcgact tgtttttacg ccctcgcttc cagtttccaa acagagcaga 1980

cggaatttaa cttcatgctg catctgcagt gcctactgcc tagtcactaa ccccgaccat 2040

cgtccaaacc atcaccaacc gtgagaaaca aaccgttgat gacgtggttg gcacttggac 2100

ttggcaggca ggacacgatt ttcacgagac tgccagagat atggctctac attctatcgc 2160

actgaagaat tgccggcttc tgtcatattt tgttgagtca aacgcagcaa 2210

<210> 2098
<211> 2485
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321831_G1, chr9:142647802..142650286, Cluster 12

<400> 2098
ggcgtttcaa gtactactac tagctagcat gatcgacctg cagatctata tcgttttgac 60

aaatgccgtc cttttccgca catgcccttt tgattccgct tgcgcgattt tctcccgtcc 120

ccggcccgca gaatcctctc agggttagtt ctacaaggtc gcgacttttt tgttttttgg 180

atcgtgatgg gagaacatca cacgtgaccg ttcttgcaaa gttacagtac agtagtagta 240

cacgcatcgt ccgttttcga cgccgatcgt cagttttcgt cacggtctgt cttgtacact 300

acctgtacgt acagatcatc agggcgaaca cagaggatcc ttttttttt ttgttgattc 360

tcattcgttt aatttccttg gccgacgata gattacctag tgccgcacct ggcgttattc 420

aagcagtttc gcttggcttt aatccgaatc taaccgccag atttttatta tcccaaataa 480

atgcaacaca taccacagta cggtacgggc tagggaaaga atgtgacccg tgcgtgcgtg 540

cgtacatcac tgtggctgct aggctaggct actggatcac gttgtcgaga ccaccctata 600

tatactacgt aatccattcg caacttgcgg atcgggacca catggccacg tacaggcggc 660

acacacgaga aaacgaccgg tgtcccgccc cacggcacgt cgtcggcacc gtgaaacgcg 720

ccccattgga tggcgcccgc cggccagcag atctgtgcgt cgttgcgtgc gacggcaaca 780

cggccctacc ggctgcggtc cgacgcgaac actcgcgcgg cggcggcggc ggcggcactg 840

gcaccaggcg ctccgttggt cacaacacac acaggtcacg tctcgccggc ccaatggaac 900

gccggtgctt tgctgtcgaa acgcgacgcg ctcgatcggc ttggtcctcg ccctgtcctc 960

ctccgtgaac aggacaacaa ttctgtgtgt attgttgtgc ggggcgccac ccgattggcc 1020

gttgcggcga cgtggctagg gtcgggcggc aggcatgtgc cgagcgccag cggcggtcga 1080

gccatgtgac ggcggtcggg accggggagc cgggagagtg tgacggatcg cgtcgttccg 1140

tggattaatt tgacaccgag agcgtcgccg tgactcgctc ccgcaagact cgtttccccg 1200

catcatcatc tcatctggat gcggcaggat cgagcgaaag cgacagtgcc cggtactgat 1260

gcgcggcgct ggctgggtta ctaatgattc tctgaggtga gcgcgaacat gatcctcctc 1320

atcctccaca atcttggaag acagcgatac ccttgccctt ccgttctttg tttattacta 1380

acaagattgt tcgtaaggta aggtacctta cgttgcggtt tagcacgagg ccgggccgtg 1440

cttattactt tcggttgcgt cggtgatgcc ggccagctgg acgagcaaaa ccgcttttgt 1500

ttactttacc cggcccgccc tcgtggtcag agaatccagg tcgatcgctg tgtgcaccta 1560

ctactatact cgtcagtcac accaggcgaa agttggtggc tgttcgttca ccaaccggtc 1620

gtctcctccg tccctgtcgc ttgcggcagc ggcggcggcg gtctcgttct cgtgcatggc 1680

ctggttctcg tgctcgctcc gtcgctcgca tgcgttctgg cactgtttgc ttgagggggc 1740

tgcttggtta ggcgtcttcc tgcatgcgca aaaactacta ctactacgca gttctttgct 1800

tctgcgattc gggtgtgggt aatagattca gggggaaagt gaaattttgt cgaacaagtt 1860

cttcggcggt tagattcgca ttgattacgc acgacacgaa tccgataggt tagcggccgc 1920

tggtggagca acagtgacaa cagtatattc ttatcactgt agtaagctgc tcaaaattgt 1980

ctactgaata gctatgcctc tacaacccac acgtaacatg tcaaatgaca acaacaacaa 2040

cgggatcaat tttattgcta tcatttagga tacatttgat ttgataagag acctacattc 2100

tcgtacaatt gtttcagttc cacttccttt cagaaaacgt tttaggtgct ggataaaaat 2160

cacttcatga aaacgtttag tttgtttcac tggattctgt acccccaaat aagtgttttt 2220

tcctgacaaa aaatatacaa atttcaaaaa atatatatat ttgtggacaa ataacaacct 2280

aaatgaaact cattttaaca tgttgcacta aaaaggataa ttaggggga aaaacaaatc 2340

accgttgcat aggataaacc aaaatcagaa ctacgcaaaa ctactttgga ggtgattctt 2400

gtctatagta aaaagaaaag aaatattgga aatgtttcta cctaaatcag tactccctcg 2460

gtcctcatat ataatttgtt tgcct 2485

<210> 2099
<211> 1571
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322305_G1, chr9:145060052..145061622, Cluster 12

<400> 2099
gcacttgctc agtcaacgca tgacacggag tctgaacgcg tacatctgga caaccaaaca 60

cacggtgatt gaattcagat gagcaggccc ggcagccatg ccccatgggt gacaactcgc 120

atcaaccaac gacgaaacga ggttgacgac agtaggagga gcccaggaaa tgattcggcg 180

gctctccctg gacacggaag tccacgggca cgggagtgca tgaatctgtt ggaagttgga 240

gttctaaaat tttaatacgt aaccgtcact aaaacgtagt ataaaacggt ctcaccctct 300

gcatagccgc taacctgctg cctgctggcg ccctcgcccg acgagccgtc gacggaccga 360

tcgatcgatc ggcctgccgc agtgccgctg ccgctgtact gtgcactgtg atctggcgcg 420

cgccgggcgt ctgtatgcag ctgagctggc ccctcggccc gtggaagcac gaggctcaag 480

cactacgcaa atgatacacg cgcgaaagag ggtcaaaaat ttcgaaacac catctctttt 540

tatttcttct ccaggcagtc cacagagatt ttgctctgaa cactccagca ttgattgcac 600

atggagcatc cgccgttagt gacgcagcag caggagccgg tgcaggggg tgtggggacg 660

agagggtgag acagatcacg caacagctaa cacgtcctca agtggctcgc gcagtatgta 720

ctgtatcatg tactagcata tactcggatc gagatcgata ccatcctgcc ggccctccaa 780

attcctaatt ccaccgagac gcgattgacc aaacactttg ttgtttcagt tcgtcgacga 840

cgtcagagcc accggggctc cgctatacag tgtagtgcgt gtgctctgca agtgtaaagg 900

cacgcgtcca gattgtttgt acacgcgctc ctgcctcggc acaccgagag tccggcaccc 960

cccacgaacg cgccagcccg atcggcgcgc gtacgctcgt ggtcctgctc cagcggtgcc 1020

agtctccatc catcgacagt gtgtgcactc acctccctgc tcccagtccc acatggttgg 1080

gcttggccgc ttgggcggcc gcccggcccc tcatctccag tgcttgcttt gcgttgcttc 1140

acccgcgcac gtcctagctg gccgcgtacg cgtacgtgtg cgcgagaaaa gggacagctt 1200

gtacgtgcgc gcgagaggcc gcaaggcggc aaggggggaca cggagacgtc gcgtcgtgga 1260

ttttggacgc gaccgcgacc gcgaccgcga cggcgacggc gactgcttcg ttcgttcgtc 1320

gttcgatccc accaaggtca acgtgaccat caccattcac tcaccaccag ctccggagat 1380

agggctagta ctgtactaca ccggtggcgc tactgctagt catcaccact agctagatag 1440

ctagccggtc cgcctagagg ctagttaggc tacagctgcg ccagtgatga ctgatgagac 1500

agcagcgcct ccggcctcta taatgcgacc ggctcctcta ccttaacgtt cagtcaccgc 1560

cagacaaggc t 1571

<210> 2100
<211> 2032
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32717_G1, chr1:200631155..200633186, Cluster 12

<400> 2100
gggcttagga tttacaagta agaagcagca ttctgcgaca gacggacgac gatgatgccg 60

gcgttgcatt gcgatcctcc cgcgcgccat cgagttctct gcgcgcgtgt cggtgaaaga 120

tacacagtgg gggcgggggg cagaagcgag actgcgagag agagagagag agaaaaaaaa 180

gaggcttcga gtccactgca cgtgcgcgac tagtagttgt cggttggtca ttcggtaaac 240

ttggcgcggc agatcgtgcg tagccatggc atggcaaatg gcaatggcat gaacgtggac 300

agacagccca gacaaaggtc ccgaagtcca cgaaccggta ctacttcagc tattttgaat 360

attctttctc ttctcccacc acacggagca gtattcgaca ctctctctct acaaaaaaaa 420

aaccataccg tcaaaaggca tacttttttgt tagcttgtgg cgtggtttag gtcccaactt 480

gtccacctgg taaaagtatc cagcagaata tttggccaga cagacacctc acgctgttgt 540

cttgtgtgtc ttcttctata gcgcaccacc gatttccccc ccccccccccc ccccaccttt 600

ttcccctgtc agtgtcgtac tcgtctggcg tatcgtctaa gctcttcgat tcgcaaccga 660

tccggcgctc tccgactttt agattagatg catccgacga cgaccacaag aacccccgta 720

gggtcccacc ccgtttccgt aaagtggagc tgctagtcaa atatttccga ttccctgacg 780

aagcctggtt ataattgaca aaatactaaa aatactttcg taaaaaaata gagatagaca 840

tgtattacga aaaaagaaaa gaatgtttgg gaagaagaag aagaagaaca aaaaaggtgc 900

atcgcgaagt aacacaacct taatgcaacc tgtcctcgtg gtaagctgaa aaactgggcc 960

ggccaactgg gccaagccta ataggccgac agagtgttta ctcatagaat ctgtccgagt 1020

gacaattgcc agctgaaaaa cacacaagtg ggccggccaa gtacagcatg ccgacgagtg 1080

ttacccatga aacatgtcct cgttggtgcg aagccgagaa acacgtgtca agtccaatag 1140

gccggcatga gtaccgccca attcagccca ccggatgatc ctattcctat ccctacgagt 1200

gtcgtctgtc aactaaaggt ttcttggatc ttggttcact tcaaccctga acctgaagag 1260

agaacttccg tgttcagtgt tctcatggaa ctttctgacc catctgcagt gcagtccttt 1320

ttcttgtggc ttgcttcact tttcacccat gttcctgctc aagatatatt actaaaacat 1380

gtcagttctt ttttgtgtgt gtgtgtgtgt gaaaaagaga accggtggtg tggacttctt 1440

gtttttctta aaccctgtgg ctgtacacgt tgcaggctaa gcctgttgtg caggcaacaa 1500

tggcattgtt tgcactgtat cgcttttggt tggatcaatg caacttcacg gtaaagattg 1560

catgctaaga agctaggtgg aatgcacaaa tggggaactt tatcaggtga ttagcgtgtt 1620

aacatgcccg ttgcccacta acgtcctgca caaagcatca gaaagcagca gctctgagtg 1680

aacctggata ataggcaaag cacctgtact gtattgtacg cctgagaact tgaggaagtg 1740

gtgaagacag ctgaaggggg attcagaagt accaggcatc tgaatttttt ttttctctac 1800

aagccggcta aggtcccccg gctagggagg gtggccacga tagcatgtta ctctatccgt 1860

tatttttat ttatctgaca aatattggag aacaaaggta accgtttgat tattgatcca 1920

ttaccacgtg catccatggt gtatccgtgg gtcgtagacc ggtggaaata tgttcctcaa 1980

ctcctgaccc cagcatgtat ctttagccat tgactacata gtgtaagata aa 2032

<210> 2101
<211> 1552
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33549_G1, chr1:205370920..205372471, Cluster 12

<400> 2101
gacaggttgg ataacccagt cagtcacaag accatggtcc cctgtgtcct aggagggcga 60

accgccaccc taggaaaggc tgaggaagac caagagggat aaggggaatg ggtaggacct 120

tgcaaaaagg gaagaacgcc cataccatcg ccttggatga ccaaccctaa ggaatccgcc 180

ccggtccata gatgtgaagc aactagtgga gggagggcaa gggccgctga ggaagcccac 240

gaggcataag agccaacatg attgcccacc tgttagggtg ttctctttaa aaggcgacgc 300

ccaaaggaac ttatggaaac aaacctatga ccctgaaaac gggagcagat cagtggagaa 360

aaggccttga ggccccatga catggtcgca tggagtcaaa gggcagcaca agcaaaagga 420

aaatagaaac cattcttata tcctccctca ggaaacgaca ttaggacgta atacactagg 480

gggacatcga gcgctacgaa cgatatcgtc tttagacaac ctatctacaa catgattggt 540

cgccttctcg tagtcctcca gtacatcctc tagctcctct tccgatagag atgaaggaag 600

gccaacgatg tcacgaagac cacatccgga ccaaagctcc tcgatgaaca ccaaagtcaa 660

tgatatctcg gacacgacac gagatgttgt ccaagcgctt actaaggagg agccatgagc 720

cccgacgtac ttctcaactt tccccaaaca gtggcacatt ttctccaatt cgtcttctag 780

aactaaaagg aaaagggagg gaggtaagaa aggagttaaa acagccaata aggaacgatg 840

aacgagcgac ctaccagcta cacggatgtt agactcggca agctaggccc ggagcagtcc 900

agcctcagcc tcggccgcct ttagcgccgc gcgaaaagcc tcatggctct cccgggactc 960

ctaggggaga gggataggct ccaatgggcc cgaccacaac gaccggacag aaggtgatgc 1020

ctcccacccg aatgtttcag gggtcgtcct gcgacaagaa aggcaggcgt cagaatcacc 1080

cacagaaggg gaaaggaagt gctcggagga ggaggaatca tacccagacc cgatccagca 1140

cggcttcctc ctgacccgag atctatcaac tgacccgttg gcggaaccca acttgggtgt 1200

gagttaaaaa acgaatacta tgggacgact acaagcaggc gctcacccga gcttataaag 1260

ggggacataa catctggttc cccctccccg aacaagggag gactgcgtta gggatgttcc 1320

acctccctaa ggtgtgaata ttgttactaa acagatatgc acaacccaaa tatcgaggcg 1380

aacaatgccc aacccggggg aagccaccaa ggggagatac tcttcgctca ggggctcggg 1440

ggctactatc taggaaaata tccctggccc ctggggccca caagtcagcg ggaggatgag 1500

ggaagagtct gccttggaag gacccacccc cggatagtct caaggcaccg ag 1552

<210> 2102
<211> 1663
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347614_G1, chr10:136009176..136010838, Cluster 12

<400> 2102
ttcaagtggt ccgaagagac ggaaaactga ggcgtgctcc tagacgcgag ctcaggtttg 60

gccgacggcc ggcctcccct ccccctacaa cgaccaaacg ccgaagcaaa gtgcacctcc 120

caaccatgac gtgtgcgtgt gtgttttgat ataataaaac aaggaagaac catggtctgt 180

gacataacct gcaggcagca gaaaaggata gcagaaaaga ttaaacgagt aatccttggt 240

atacaaggcc cccctaaggc cctaacagaa gactgttata tcatcaaaag agtgcgtacg 300

ttaagcaacg gcgcttcttg gttaggaacg ctttaccttt tgtgctttcc actactttgt 360

gctgctgtga tgcgaatcta acccactgct tttatctcct agctagtttt tgcttgcaag 420

taaaacaagg caacaaaaac cgtaacacca agacacgaaa gtgagaaatg tggggtcatt 480

cagcgtccaa agaaaagaaa agaaaagaaa agaaaagaaa aggagagtgg ggtcatttag 540

gctcggatcc atgcactgag tggaaccaga accgaactgg acgctaatcc atgggggaat 600

aatgacacat caaggcctcg ggaccacggg ttcacccgtt accgtccgta cacgatgggg 660

cccggccggc cagctctcga cgtcccgtcg catataacgg ctgtggcagc tgcccgccgc 720

cgcatcgtca cgatcccagg caccgatgtg aattgatgga cacgtctgcc tggctgcgat 780

tcgacctcga acgcctagca gtgcaacagc agcggctcta aaccgtggcg ctcccatgcc 840

cacatcacat ccgacccacg ggtggtacaa gaacccattg ttgccagtcg atttcgcaac 900

caaagcgata aaaacgataa cgactgggca aaagcttgtg ttatcttggg acgtggctag 960

tttcagagaa agggtgcgcc gcgttgatct ctgcttgatg ggaaggggaa tcagacgcaa 1020

caggcttggg tctcaactct caactctcaa tctctcatcc accatctcgc ggtcgcagct 1080

ccactgctat tgtggcgtga aaatggaatc tactgctctg ttgcccatgt ttcaagagtg 1140

tggtcaaaaa agttttgcct gtcttgttat attacttgta cttgggtttt tttttataga 1200

ataaccagct ccttgttatt tatcttttga gggaacaata tgttttttt ttttgttagc 1260

aaggccgtgg tttctttgag gccgttagtt atttgggccg agtgtgtatg tatggaccaa 1320

ccgagggaca atgcgggcgg cttcacacca cggtttgtgg ctcacgaaag cagctcggct 1380

gcaaacggac tcgaggagat gaaatccatc agaaaacaat tgaagcccat cgtgtagcag 1440

ctgggctcca aactggctgc actcaagtat caacgcaagg cgacttatta tcgacaggcg 1500

tgaggcctca tgggccgcgt catctctgtg gtcgaaggtt ccgcaatgac gtgatcacgt 1560

gagctaaaca taaagctgat ctcatgggac gctttggtct aatggacgag accgtacacc 1620

gagcgagaaa aaaaaggtct aggcactaaa ctattatcag aga 1663

<210> 2103
<211> 2262
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349349_G1, chr10:144931456..144933717, Cluster 12

<400> 2103

gggaattgaa agttgattcc ggttggaaat aaataatcca aatagtccac atggtgtaca 60

cattaaattg tgctcaagat aaaggccgcc tgcatcaact tatccatgtt attttctatt 120

ttaaactcta ctctgtaaat gatacaatcc acaacgcaaa acaacgtgat catataaatg 180

atccgctcga gacagcctaa caataggttt cgtagggaga aatctttgag cacgtcaaga 240

taacagtcga agggatgttt ttccccctg agtgctgaca atatggatgt aaaaaaatat 300

ctagattttt tcttatagaa gaagatgcag taaccaaaag cagtagctgt tgtgagctgc 360

aaccaaaccg aggagcaagt cggtagacga taagcgcccc tggtgtttca gcagcatgtt 420

gcccgtccta gcagaatgta gattgcagaa atgattggag aagccagcac agcatcagat 480

gattcaaaaa aaaagtatta caacaactct ctcatccatc catggtgtac acagtatctt 540

tctgggcgct ttcagtttca gtgccccgca tgttggcgat ctgttcgtga gcacgcttta 600

cagggaggaa cagacacgct agctgctaaa gccggcttgc tttccttccc tttctttctt 660

tctttctttc aagctcacca ccggaaccgg cgccgatgac aatggcgatg aagagagtat 720

agtagtaaaa aaaaaaaaag gctgtgggct gtggctggcg ctcccgtgtt gtgcgtcctg 780

gacgacaccc gacaccctgt ctgctgccac caaaagcagc cgatgcgata gttgtcgtgc 840

cggcgcggca caccaattcc tttccgaaaa ggactcgggc atctggctgg cgtgcctctg 900

ccccgtgggc cctgcgagtg cgattcctct ccgaaatgaa catcctcctc gtcgtctgcc 960

tggctgcctt gcaggagatg atacttctcg gaacccacta cccacccggt cgatcgatct 1020

ctcgtcgtgc gcatctgctt ggaaggtagc agcagcaaag cacacgacac tatactccta 1080

ctcctactac tcgtacaatc agtgcagcgc aacaggagat tattcttgat tggaatgcga 1140

aaaaggaggt tcgtttcggg gatgagctag tacggaatgc atggccgcat gatgcacatg 1200

agagcgctag ctggttttgt tgggtaacta ccagtcctgc cacaagtggc agaatgcttt 1260

aggccatatt tctattcgtc catccagggt accaccgcgt gcgcacgccc tcttcatcac 1320

aacgagactc gctagaggca caaggatgga gaggacgaat ggccagcctt gcttagcatt 1380

acagtatgtg tgtgtagcta gctttaaggt aagcaccccg tgcatgatta gggtttgtgg 1440

gaggcatgat ccttccttcc ttccttcctt cccgccgccg gaatagagta cttacagtac 1500

gcgcccctgt gcttcgtggc tgttcctggt cccctgcgat tacgaggatt aagctggaat 1560

ggaatggatg ccatctccct cccgccccac ccacgccttc caggcaaggc aacgtcccaa 1620

ccactgctcg tcgcacactc gcatatgctt ggcgggcaga aaaggtacca tgcacaccgc 1680

tctagctata gctaattaat cgcctgatag catgctaggc atcgcagtta aacactatcc 1740

atacatttgc atgcatgctg gactgcggat tgagaaagat atacatcggg gattcgacag 1800

cttttgcacg gtaaccacga agtctctggt tgcctgccgg tcactgtgcc agagactgtt 1860

cggatgaggc agatgcgttg cgtgcgtcca atctgctagg gcgagagctc agctgcccgg 1920

atgctcgcct ggcgattgtt gtgctctgtt ctactgttcc tgttccgtgc tcgcgagagc 1980

cagagcctgc ctgcctgcct gccggtgtgc acggtgctcg ctgtgctgtg cgagtggacg 2040

tgtgcccagg agggcaggag gctgcacaag tggattgatt gatgccgcgc cccccgtttg 2100

ttcgacgcaa cgcaacggca tgttgatcct tgtccgggct cgccgtcctc ggatccactc 2160

acgaccgccg atcaggtagc gccggaacgg aatcctgtga cggtgtgacc catgcatgaa 2220

ttgcagcgag tgctgtgctg gtttggaatc gttcccacgt gt 2262

<210> 2104
<211> 2870
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349407_G1, chr10:145261230..145264099, Cluster 12

<400> 2104
attagatttg gtgtagctct ggccctgttt actcgctttc aaaaaaaaac agaggtttta 60

tacttttaaa aaacaaaacg tctacacgca agaagcccat aggccatata gcccagacgt 120

gtaatgagcc atcgggaagc agacgtgggc acgtagccca tgggccatgg ctcgtgcgtg 180

gatgctggag cctggaggca agcaacggcc gagtcgggcc gcaacggaag cgccggcagc 240

gacagtctgc agtctgcggg cgccgccttg agtgtgcacg ctagcctgca atcactgcat 300

gaccttcccg cttcgactgg catgctacta gcagaccggg ctcgtgatgc aactttaacg 360

tcggcccaat aagcggcttt cgggagcaga gcagagcagc ggcacggggc cgtggaccgg 420

gggagcaagc tgcagctcga accgcccgcc gtccgcagac tgttactgtt acatcgtcgg 480

tcaccgtctg gactgtacgg gacggcacgg gtccgccgcg aatccactcc acggcagtgg 540

ctgagtgcga cggggttggt ggccagagca gcagagcgag gctgctggtc caaaggggcc 600

tgcaggtgct gtgacatgct cggtgggcgc gtggccgaaa gctgaacggc tgggtcgtcg 660

aacgacccgc ggtggtcagt tgcagcagta attgctcagt tgacccgttg tgtatgcatg 720

catgcatatg cgtgggatca cgcaccgcgg aaatgagcgg gcccacccac agccacaggt 780

aaagcgagat tcccgtgaca ggcgctttca gattagtaga ttacagtgtg cttgccatcg 840

cctgcattgc ttggtccaaa aggctcacgg gaggggcgga gggagcagca acataccaaa 900

ttttttttta aaaaaaaaac ataccaattt tgtatgaagt catgtgaaca caaactttgt 960

accaaagttt ttctttgaaa aaacatacca acttaataat gcctaaccat tattcacgct 1020

aaacagtcgc ttagtagggt gaaacgatta ttttaatggg atgaacggtt gattaaaaga 1080

acccgggtgt agtaccgtgt accgccgtgt gcaaacggtg tgttaaatag actaaaacta 1140

aacgatgttt tagacaaaca gtgagtataa gaaatatcag tatcttttaa tatataaatc 1200

tgattaactt tttaccctgc tgctccatgc gccggcagag gcgctgtgtt acagtgtgtg 1260

aagttctctc ttttgacaag ggttgggtac ggttcgaagt ttgaaactgg ggtcggtggg 1320

tcccagcagt caggcactca ggctacttgt gtaataactg ctgacacatg acttttgcag 1380

acaatgctac agtgctacta aaatagtcta ctccgtagaa gaaattgcca tgcggctcgg 1440

gagtcgggag tcaatgggtg aaccagaaac tgtccaacgg cgagacgcca aaatgcacgc 1500

cctacactgt cctgtccgtc cgtccacgcc tcacacggta cgcagctttt acgcaggcag 1560

cgcgcgtcca tgtctgatgc agagcctgac gtctcctctc gccggccttc ctgtgtcact 1620

atttgtatga gcggagggag aagtagccgg ctacctcgac ggaaaacccc agcaggattt 1680

ctggatgatg cttggtggat gaaaggcaag gcacgtaaag ccatgcatca tgcaccacct 1740

aaagtcttag cagtacgaag cagacgagac gaccggtaag ccaaagcaga agaagaagat 1800

aagcatgcgt gccctgtttt atacacttgt tgtgttgatg ctgagaggat tcttgccttt 1860

caatggtatt ggtggcacac caacacaaca ctgcgctctt gcatcgcatt ctagccagcc 1920

agtgcccgct cgcctactgc tctcaccttc tttacgttcc cgctagggaa gggaatggca 1980

gatgggcgca gcagcagcag cccatagcta gcgcgtatcc accagctagc aatttttctt 2040

ttgaaagaaa aaaaaacaat ctttttttacc aggcaggtta cagcgtgcat ctgtcagaat 2100

atgttggctc gttgagacgg attaataata agagagtgag tttgttgtcg acgtgtgtgt 2160

gtgtgtgtgt ggggccaaat cacagtggac gcaggaggaa tgatccggtg catatgcttt 2220

tacagtaatc actagccagc accaacaaca attatagaga caaatccaaa ccctcagcca 2280

gctctctgaa gaactggtca aaaggtaatt aatatgcaca ggcagcacac tagcacagca 2340

cagagcggca gaggataaca cagtggtgga gggcgctact acacactatt ctggataata 2400

tgggagagca ggaaaccctt tcgtctgaac ttactgaaac aagaaaatca agaagaaaaa 2460

aaaggcatcc attcagtgat tggtgagcga gcagagcagg tgacgatcga ggtgaggtga 2520

aagaaaaaag ctggcaccgc atttaggcga ggttctttac gtaatttagc ccaaagtggc 2580

aacaacgggg aaaaaaggta aagaccatgg cggatcgccg gcgcatcctt ccaccggccg 2640

tatattcgcc ccggcccccg gggtggaggg aggacggacg gacgaggagc acgagtcccg 2700

gtcagaaaag cagcgaagca cgcgccagat cgacagcgca gcgcagcgca ggcatccgca 2760

tcaacgggag cggagtaggc ctcgggctcg ggacgtttta cccgaaaacc gcgcgaaaaa 2820

aacagcctct ttgcttcatg agcggcgtgg ctgacgagca gcgtctttcc 2870

<210> 2105
<211> 2531
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349408_G1, chr10:145283276..145285806, Cluster 12

<400> 2105
gtggtttcgc cgtttgaaac ttttggtttg gattgaagct acgcagtccg cagccaagac 60

tacttttttt tttatgctgc gtggtttttt taagtaaata acgtggtcgc agcatgacga 120

cgctcctgat aattgccttg ccgccatgct gtgctttttt aggtgggcag ggcagatagg 180

tgccgccacc gacccgggcg cgccgctcgc gtgcataatt tgctgcgggg ggaatagctg 240

gcccggcttt cctcctctcc tgcccgcgac tccaaaccca aaaaatcatg caaatctaaa 300

gccgagagct gtcggtttcc tacgagagac ctgctgctct gctctcgaga cgccagggca 360

tcgccagtag tacccaatca tcagcgccag caagcaagca agcaagcgcg cggctcgtcg 420

tcgtcggcgg caggtcgtac gtacaccggg cagtggggtt ttggatccag cggcggcagg 480

gcagcacggg ggacggacaa acacgacgtg tcgctggggc gcggtcggcc ggcggggcct 540

tcacctcgcc ctacctggac cacatgcacg aggctcgagc tcgataggtg gacaataacg 600

ttgtagtcct atagtacgag cggtgtatgt agctgtaggc tagctagcgg ctagggcgcc 660

ggtagtggtg cctcaacgtc gatcgcgccc ccgagctata gcctgtgtgg tgcggcggtg 720

ccggccagtg caaataggat tgtccaactc atcttcttct tccttgctcg tttcatctct 780

ccttcgcact cggcgatgcc ggccactact gtagtcgcca cgtcctagct aatgttcctc 840

aagacatcaa cgcgcctagc tagctagcta attccctatt tttctgtccc acgcagagtt 900

ttttttact tggcacaaca gtggcatctg gcacgtatgg gcagcatgtc aacgatattg 960

atttcatcgc agtcaacagt accacccact gtgcagccgt gcaggacaaa gaaacgtcac 1020

tgtatccgca gacgaaagta gtacgggccg gtagtacttc tctgttggag attacacgag 1080

tggacaggga aagagaaaaa aaaaaccccg tcactctgat caactggtac ggcgcaggtc 1140

agcagcgatg gtgtagtgga tggtggatgc cgggattgga ggtggtcatc ggctcaccgg 1200

gtgctttggc cgtcgtttgt taggttcagc cggcggagga ggagagcgag acaaacaggg 1260

cacgggcaca tgtccaggcg ccgtacgttt ggtgcacgta ccgatttggc caacccccca 1320

caaccaaccg ccgttgcgtt gcgtccatcg gcctcgctcg caccggcacc gccgacatga 1380

ggtgggcggg cgggcggctc caggtccagg tggcgtcgtc ggggtgatgc gcgccgacgt 1440

ggagacgtgg ccccttcctt cttctacgca aaatccccca cccacccacc cacccccatc 1500

catccacacc tcctcttcct aatccggacg cgggacgtca atttgcttgc cagcagcgac 1560

ggcatcggcc gcccgccttg tatctaatct aaccccgtaa tcattcacgc taacgacgcc 1620

cgtggcgggg ttagcgtagg cagcggcccg gctggctgtg gctgtctctg tctgcttgga 1680

agttggacca cggtgcggcg cgtaggggcc cggccagctg gtgctgtcgt ctgcccgctc 1740

gcgtggtcgc gtttatttct cggtcggcgc gggcaagcgc tcctctaccg ggtccggatc 1800

cggacggtag ctagagggcg cagttgctgc aggtcggtgg ccgagggcgg gcgagtcgta 1860

tacgtcgcgg agagctggat cggagttggg tgtgcaggta ggtaggtgtg cgcccgcccc 1920

agcagacttc agatatctgg gatgacgtgg ggagttctgt tgggtccgtc cggcccgccg 1980

tacgtagtac gccagctcgc tgcttgtctg tactagagtg accagccgag ctcgcgacgg 2040

gtactggatg ccggtccgta ccgtaccggt ggtaaacagc gcatgcagtg catttcagct 2100

agctagatcc agtactagta gttttaacta tatattcgtc gtaccagatc agaggcatag 2160

ctggtccccg cctccccgga caggtaaact gcttccatct gtttccatcg gaggcggccc 2220

tggcgtggca gtggcactgg cactggctct ggctgcctcg ccatgcaacg caacgattat 2280

acgtgtgcgc gtcgagctgc atattctagt tgtaccggca ggcagttcaa gtgtcgaacg 2340

atctcagaca ccaaaccgag atccaagtga cggcgaacgg agctgccccc gcctgcccag 2400

cccagacggc ctgcatagct gccgccaggc ccaggcgcga ccggccgcag cgcgccgaca 2460

aggaaccatg ctggctgact agctcgatcg agcggagcat gcggaccata aatggccaaa 2520

tagactgtgc c 2531

<210> 2106
<211> 1492
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349573_G1, chr10:146175970..146177461, Cluster 12

<400> 2106
aagaggtgcg tgtgtgtgtg tgtgtacgcg ttgcattgat gattcgccag cgatgatgca 60

tggcggcgtc tctcttaggg ttagggaccg tggcatgtta ccgtaacatg tcccgggctg 120

tattgatcag gccaggcaga ggagagctag ggcatgcagc aggacgatgc atggtctgcc 180

gtgccggccg tccttcttct ccattcgatc ggttccttcc aggcgatgga tgggatggac 240

gtatacatat cgatcattat cagtcacaag ttcagaacca tgatacgtac atcctcttgc 300

aggaaaacta gcatatggtg atactgacac ggcatgcatg atgacggccg atcgagttca 360

gaatccctaa tccgctgaca ttgcttgtgc cctgctcatg gcccgaagca ctgcatgata 420

cggttgaata ataatcacgg gtcgcaaatg gcaagaaact gaccgttacg acgaagggga 480

tcggatcatt gttaataccg ataggttgac ttgagaagcg gccggcgccg gtcagccacc 540

gccacgctga cagtccgcta caacaggtct ggcagctgtg gtaataatgt cgcgcgtgat 600

gatatcggca ggagtaattt ttttttcgag taattattat tggatcagtt acgtaggcgg 660

agcgtgactc tgactctcgt ctgggcatgc atagagaaga agaatcggtt ggaataatta 720

ggggtcgttt gaacgtaacg acgaccctcc ctaattcacg tgccgcccta ccgccaccat 780

gctgcttcac gttgtctctc catttagcag tatatatact agtactatat aagcattctt 840

gaattccggg aaggaatcga tttggctaga aaccaccgct gctgatgaac ccatcattct 900

ttaacacttt ctcctgctcg agagagcgac ggtgtgacga ctagttcatg ttccaggaaa 960

gtgtcgtccg gccggtctac caaaacctac tttctatatt ttacggaaag cgacgatcgt 1020

gaaacatgtt gacgacaatt attagccgcc gggatggatc aacgacgggc ctgtcgtcgt 1080

tactgagcat gcctagtgcc gagagactcc atccaatatg agactagtgc ctgcatatgc 1140

atgatgcgca caacgttaca agagggaatg gaatctaatg ggcgatatga aatatggttt 1200

tgtcacgagg gtgattacag aaataataat agtaatggtg ggtgtctgac ttgtggtcag 1260

caaaacaaca acaacaaaaa aagttacgct gcctccctcg aggccagcca gtccaagggg 1320

ccgggaaaca aaaaaaaaaa ggtcaggaga tgatacgaag gcctgggctg ggtgagacga 1380

aagagatcgc aggatttgga cagggttcaa ccgcttcccc gcccgccaga attgaccggc 1440

cgcccgagag ccgtacgtac gtctccgaga gccttttttt tttcctctgc at 1492

<210> 2107
<211> 1770
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349709_G1, chr10:147003876..147005645, Cluster 12

<400> 2107
aggatcccaa caacaaaccc taacctaaac gctctctccc gtcaagctag cagtgacccg 60

gtggccggtg cagtgcagga gatgcgccgt ccctgtgacc cccagtctct gttacgtgct 120

tctgaaacaa gcaagcaacc caccgctagg ccatggcttt tgttatccac ttgagatacg 180

catacgcttt ggtgagcgct ctcttcaatt ccttttgctt ttcttgtgct aaacaagtgc 240

tgaagaacga gaaccccaca tagtcagaga accgtaacca tttgtttatc tggcagtttc 300

ctgcatgcgt tagctggcct aaactaaacc ccacgagcgt tcagatcctt aataaaccaa 360

cttcaacaac ctgacaagag agctttttt cagcatgtat aattcaccgc gtctctctct 420

agtctctgcc caggccttgc aggctcactc actgtcctgc actgcaagtg caagctctct 480

gcgattccaa gcatcgtcgt ttgcatagga atttattagt gttttttttt cgatttttcg 540

tatgcctggt tccaggagcc caggaccaga cgctttgacc gctgttagcg aggagattag 600

gaggatactc ctaataataa acgttttttt gtagtagtag caccttttt cttttggcct 660

agttaattgc catggttatc agagcttccg aggagagaga cctgagagaa gggtgcacca 720

ctgcacgtgg cggcaacgtg catcggcgtt ggcgagcagg tggtggccgg cgacgtgtgc 780

ccatgtccat gtccatgtgc gaaaggctgg cgcgtgcctg ctggatggtg gtgtcgcggg 840

cccactcgca gcgcgggtcc tctctcgctg aggtgttgaa tccatcttct gttgttctgt 900

tttttgtttt ttgttttttt ttttaaaaaa actaaggttc attgaaacca tattgaggta 960

agcaggagag cgccgtcaaa aagacagaga gaggagctgc cgcctgcgtg cctctcacga 1020

aagctcccaa gcctccagcg atcttccacg gccggcccag caacggcaac ggcaacggca 1080

acggcaacgg ctggaggtgc gtgcgggcgc gcgttttccc cggtcggatc ggcggcaagg 1140

tcacgtgaac tcgcccagta gccgcagcag caggggcgga ggcggagcgg gaccgaccaa 1200

ccagcccgcc catgccttgc ggaacgcatg ttctcgtgct cgccccacgg tctcctcgtg 1260

tcctgccgct gccggagacg gctttctttt cgggggtgcg cgttctccgt ctccccagtg 1320

gtttggcttg ggtgcgcacg aacgagatgt ccacgtcgat cacggtggct gctcggcggt 1380

gatggctctc tccttcggtc gtggaggcgg ctcggttcgg ttacgatggc cagctccctc 1440

gttcggtctc tgccctctca tgcagtcatg ctccactatt tatgtttgct acagggataa 1500

agacacacac atctgacact gttcgtagac gtttcctaac aaaaaataca gaggtttaaa 1560

cggataaaca cacatggaaa aatagctaag ccgtctgttc taatctacac gtggaccgtt 1620

cgcgtctaga ggcggaccgt ccaacctctt taggtggcac aaacaatatg ctacttcgtt 1680

aatcagccac acatatttca tttggttggt gcacttattc acgatagacc attgcattgc 1740

ccaacaacaa tatcaactga gatcatttag 1770

<210> 2108
<211> 1796
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37229_G1, chr1:224249059..224250854, Cluster 12

<400> 2108
cgagaagccc atgatgatct tgcgcatgat tacgctcggc atgaagagcc ctagctagag 60

gtctagataa ttaaccaagt caagtccatt aattattagt gcggcgatca tacgatggta 120

catatatacg tacgtacgaa ttcttgtttt caaagcgaac gaagctagca acgtcgattc 180

ggcacggccg gcctcgtacg tccacccacc gcacagggac aacgccgcag ccggagggca 240

aagtggaaaa ccttttggac acctttttgcc gcttggttgg gcggacgaag atgaagcgtg 300

gtgtggtcgt attttctttc tcgtccatag acccagtgga gctggagact gactgagcca 360

cggcaccgca ccaacgcatc gtcgaaccga atccattatc catgcagctc tcccggcaaa 420

tggcaaccgt gcacggccaa tccacggact gccacttgac atgcatgctg ctgcagctcg 480

atctgccgct gagtcgtcgt ctggttcggc cgtttgggct gggtccccgg acctttttt 540

ttagggcacc atctgacggt gtagggttct tctgttctcg gcagaacgca acaacgcacg 600

agctcacaat ctcactgaga tcgctgggtc tatattctat acgcgagtat tatacgttat 660

atatactggc gcagcgtgga gttgagcatt actttaaatt atatatatgc gggcgagatg 720

cgtcgcgcat gcatctagat gcatgcatgg gcgcggcagg aggtcaaaga cgcgagcggt 780

ggttggtgaa ctagaagatg cattctcttg gtcgtcggtt gagatctctg caaagcaagt 840

atacggaagc cagtttgcta cctactatct atatctatct atgaattctc tgtctcctgc 900

aatactagtc cattgcgcgc gcgcacacat atacaatttt ttttcctatc taaaacagca 960

atgtgggatg acagttcagt caaaatcggc aattggtctt cagagctggc cggttttata 1020

tagttagtta ggaacaggca gccgatctag caagcagagc agctgcggcc atctcatctc 1080

ctctgcgcga cacacacaca cacaccgatg cgaagcgtag aacggcgtca cgtactggaa 1140

caactggaag gcattggcac cacggaaggg aagacttgca agagacgcta gcactactgc 1200

agcgaggaga ggaccaccgc cacgccacgc cacgcctgtc tctgaagacg gtttcgagca 1260

aatgatcgat caatgcgcgg aacgaaattg cccaagtccc accaaaatca caggcagcat 1320

gcaaaatata aatgagagca taaattcttc ctttttttcat atatatataa aaagaatatc 1380

gatcatcgat atctcgatac cgtgtacaat cggacgggat gacttttttt ttcttctgat 1440

tactgaatta atgcccactc cctggagatc gatacgcaga gagatatgca gggctaggta 1500

ccgagcttgc aagattttcg attatattaa ttaattatac tatgtcacaa atggcattcc 1560

gtgtaaggag gatgcactcg tagtgcagcg gccggcaaat gggtccatgc accgatgtgg 1620

acctcttttt acgccgccag cgccaagttt tcaaggaggt gcgtgctgca aggagccgat 1680

tattcctccg ccataaatac cccatggcca tcaatcttgc tttatgaccc agctggtttt 1740

cgcggtgatg ttatggtatg tagcaccact aggtcgttct gtaaataatt accgtt 1796

<210> 2109
<211> 1624
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4166_G1, chr1:21713213..21714836, Cluster 12

<400> 2109
tgtggaagac ggctcccaaa tggtttatcc gttgtttaaa acccagtgtt gaaggaattt 60

tggacctgca aaaggacacg cagcgtcgca tccagacacg catggttctg atatatggta 120

atccacgtca gcttttacac ctgtaattcc ttacgtttct atctctctct ccaataaaat 180

gttggctgtt tcctgcgttt acacgcatgg acctacgctt aaacaactca ctcaacctag 240

tcaaagaaaa gcactgccga acaagcctgc gtcagtccac tccctcctgc attctccaag 300

cctttctcac agtcacagtc cgtcgccccg cgtgcaacaa gtcgcggctt caatgatgac 360

gagccatctc ctcgtcggcc catagcagcg gactttggtc agcccacttg ctgagagggc 420

cgagtcactg ccatgcccca cttgtgaaaa catggaaaag ctagggcgca aacgttctga 480

acagcccaga aacgtgggga cggccacttg ggcctcgcac gctttgttga ctcggagtcg 540

gagctttgtc aacgcggcgc cgtccaagat ttttgctttt gtacttgatt ggtctgctgc 600

caagcataat aataatgcaa cgaataatgg gccaggtagt ctgcgagtgt gcatggtacg 660

aacggaacgg tcatgtactg ttgtatacct caatacctgt actcatgttc ccctatggtc 720

tgagctgcgc tgcggacgca ttgactcgcg gactgcatgc ggcagagcag gtagactggg 780

aaatggcatc ccggtcccac acactgggaa gtgggcacga tgcacgattt ggcgtcgccc 840

acgcagacgc aggttttgcc gttggagatc tcaggcctca actgagttga atcatcccag 900

atttttctaa cgtctgagat acgcttctag accccaccca gatagtaact cgatctgaac 960

tgatagcaag cactaaaagg cgagtgctcg gtcggtctgt tgggcttgcc gccttcgtca 1020

gctcatcagc tgttgctgca acggacgggt gggtgacgcg gacgacgatc tggaaagcgt 1080

cggagcggtt gcatggtcgg caggccctac tctgctttgc tcacgacgga catgcatatg 1140

gtgcatttgc tgcccggtga agccgaagat gaggagaagc gtcgtgtcct ctggcggtct 1200

ggcctgtggc aggcacagga cggtgtctgc tggcctcgtc tcgtcttcgt cttgtctcgt 1260

gggaaacagg caattaagca gcagcgcatg tcgcgtgaat cgtggacgag agaggcgagg 1320

tccatcatca ttcatcggct tgggaagatc cccagcgcgc tgaacttccc aactcatgat 1380

tcacggtcac gcgcggcgtg cagcaggtgg acttcacacg aggaacacgt cctcatttct 1440

gactgcacac aggccacttt actacggcct tcgtctccgt ttgttaggtc ccgggcgaca 1500

ttttagtcgg ttcatgcctg tactactagc tgcggtagcg cgtggggctg catatatagc 1560

gtggtgctcg ttttggggcc gttgtgcatg cgcgctcatg gactgaatat gtacatgtac 1620

tcac 1624

<210> 2110
<211> 2190
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42257_G1, chr1:249306758..249308947, Cluster 12

<220>
<221> modified_base
<222> (1553)..(1553)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1553)..(1652)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1554)..(1554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1555)..(1555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1556)..(1556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1557)..(1557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1558)..(1558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1559)..(1559)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1560)..(1560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1561)..(1561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1562)..(1562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1563)..(1563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1564)..(1564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1565)..(1565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1566)..(1566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1567)..(1567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1568)..(1568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1569)..(1569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1570)..(1570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1571)..(1571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1572)..(1572)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1573)..(1573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1574)..(1574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1575)..(1575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1576)..(1576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1577)..(1577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1578)..(1578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1579)..(1579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1580)..(1580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1581)..(1581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1582)..(1582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1583)..(1583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1584)..(1584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1585)..(1585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1586)..(1586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1587)..(1587)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1588)..(1588)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1589)..(1589)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1590)..(1590)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1591)..(1591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1592)..(1592)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1593)..(1593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1594)..(1594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1595)..(1595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1596)..(1596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1597)..(1597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1598)..(1598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1599)..(1599)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1600)..(1600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1601)..(1601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1602)..(1602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1603)..(1603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1604)..(1604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1605)..(1605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1606)..(1606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1607)..(1607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1608)..(1608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1609)..(1609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1610)..(1610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1611)..(1611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1612)..(1612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1613)..(1613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1614)..(1614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1615)..(1615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1616)..(1616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1617)..(1617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1618)..(1618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1619)..(1619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1620)..(1620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1621)..(1621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1622)..(1622)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1623)..(1623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1624)..(1624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1625)..(1625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1626)..(1626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1627)..(1627)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1628)..(1628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1629)..(1629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1630)..(1630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1631)..(1631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1632)..(1632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1633)..(1633)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1634)..(1634)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1635)..(1635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1636)..(1636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1637)..(1637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1638)..(1638)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1639)..(1639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1640)..(1640)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1641)..(1641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1642)..(1642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1643)..(1643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1644)..(1644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1645)..(1645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1646)..(1646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1647)..(1647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1648)..(1648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1649)..(1649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1650)..(1650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1651)..(1651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1652)..(1652)
<223> a, c, g, or t

<400> 2110
gtctgcactt gtgagtgtgg gcgtgctctg cagtctgctc acctcctccg tcctctccac 60

tctctctctc tcttgctgtt gctggcgagg agggagacta cagtcagcat gtgccgccgc 120

acgtgtggcg gcaggcaagc agaggcgaga cgagaggcgg atccccggcc gacccgaacc 180

cggggcggcg acaaggccct gcggtcgccg tcctccgcga tctccatcgg gtcaaaaaga 240

tggcttcggc cctctcccat cgacccccca tgttggattt gatggatgtg ccgcaacaac 300

agcacagcac agaggcgagc ttttgcaccc cctcctacca cagatcatgc cagagctccc 360

taccactagc tagctagctc catggatgga tccatccatg catgccacgg accggcaggc 420

gccggcggca acccatcgcg tatccggggg ctgctgtgct gggtgaagaa tgggcaccgc 480

catgtcctac gaatccatcg aaatctctcc tacagtcccc gtaatcacat ccacacagtc 540

ctcccatccc ccccttcgca gtcgcagcta gcacacacaa gacaagacac acaacgcaac 600

gaggatacga caaaaggaat aaataatgac accagctttg atggagtgtt tagcagcagc 660

agtatacaac tagctagcta gtcactcagt aaacttgagt gtcagtaaaa gagtaaaaag 720

tgaaagctgg ggtggggtgg ggatgcggga acagagcagg agcagaggtg tgcacgagtg 780

ggcagaggac agaggagggg ggatccagtg gaatcagacc agcccggccg tgagggtagg 840

gccaaggatt tatttatgtg ctgccgccaa cactcacatg cacccagtag gtgaggtcag 900

gaaggaggag ccactcactc attcttgggg tcttggccag ccagccagca ggggcaggag 960

gggcctggcc tgggtcactc acttctctct ctccctccct gctgctgcag cctgcacctc 1020

tttgtaggat taataatcat catctcatct caccctcacc taataaacac aggtgtagtg 1080

cagcgtagct tgttaaatca cagatctaac taaccttact cctagcatct agctactact 1140

tgatatccat ccatccatgc atgcatgtga ggaggtgatt gcccggtgta ctgattcgct 1200

accaccagtt ccatctgcct ccctctttgt aattgcctct caagtactgt acctttttgtg 1260

ctatgctcat caatcaacgc ccccctccc ccgcaccccg atggtccaat ggaaaccacc 1320

ccacatgtgc cacctcaaac tgcatctgct tccttgttgc aaccatctct caccccccac 1380

tgtatgtgct cttaatttta atctcttctg atcagtttac ttgctttgga gtactgctag 1440

ctaggcatgc atggattcat tattctactg cccggcctag ctagctagct agctagtact 1500

ggtacccagt aactaaaatc aaatctatcc atccatgcat gccatctact aannnnnnnn 1560

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1620

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnattctact ccgccccccc tcgtttccca 1680

ttttagggtg tttttttttct cctggccccg tctcatgcat gattgatgga tcagctagct 1740

agctatcgcc cccttccccc ggcggcccac tcacaaaaca aatctccctc cgttccggga 1800

ttattgatga ggatgcagca tcgatcgatc tccttgcaaa cgagagagag agagagagaa 1860

aaaaagtata cgtgcacccc agatgatcat cactcacgta acattcatga tgtttcggcc 1920

gcgccggcgt cgatcaatcg agcttgcatt gcaaattatt attagtacgt gactacgtgt 1980

gtctggcggc tcggcacgca agcccctagc tacccaccca gttgaactga tggagaatct 2040

tgggatcgag cacgcacatc tccgctgacg atactataat gatgcacaat aatcctccga 2100

tccggcctac tagcttggtg tgcacagcaa actaaaacac tcatcgtata tattagttct 2160

aacttgaagc ccggccggtc tgtgtacgaa 2190

<210> 2111

<211> 2019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42715_G1, chr1:251733356..251735374, Cluster 12

<400> 2111
agcacgcgcc gctacgcgtg cgcgcgcata gtagggcgca tagctgagcg gctgtccggt 60

ttgtacgcgg cagctgcagc gcaggcagcc aggcaccagt cgtccagtct acggagcctc 120

ggcgtggcac gcgaggcggc agaggatgcg ggcagcggca ggggcgcagc gcactgggca 180

tgcgcagaca tgccgcgtct tgtcgatggc agatcttcct ccgttttgtc tgccgtgccg 240

agccagcttt cactgttcaa tcgcattgag tggtgtctct atcctgtgtt aaatatttaa 300

gacatgtttg gtacatgctc taagcagcca cagcctgcca catttcaacc accgcaagtc 360

aggcgcggtg tggcggctct tagatctcaa ttaaagcaaa cattagttag ttattatata 420

ctttaatatg taagggcatc tataactagt gtttggatca attttcaaag aacaagatat 480

acttgataaa ttacatgata cagcaataat tctttagata ataaatagtc aaaacatagt 540

aggtatagtg tggtataaat atggactctt tgctaagaat ttgtctcttg ttttttttaa 600

aaaaatagcg ttcaaatata tgatgtgaca cgagtgaagt ttattaaact tgcacctcca 660

ttgtccctgc tccctctctc tctcatcttt acttgccatg ttccccttgg gtagttgggt 720

gggcacgcca gcgggcaacc gggctctggc cctctgggca tgcatcacga ggttgcacgc 780

ggtgccgcag agaccaggac cggtgctagg atccgccggt cgatccgccg gtcgggaata 840

aatccgggag cggcgccggc tcttggcagc gcgcggggca cgcggcggag ctgggcaacc 900

tggtggcccg ggccagcggc gcaacaacgc gcgccgctcg cttctttcac catttgggag 960

tctgcggcgc gggcggcgat gataggcggc atcacgcggc ggattcgacg tgcacgcggg 1020

acgccgctga cgagggagcc tgtcactgca cgacgtctgt accttattat aactaagatt 1080

gtgtgttccc gtttttctcg tactgtgact gtccagtgca tgcatgcact gggcgttccg 1140

atatagtcct acaaggctac aagatgcagg gcgcggcggg ataggataag atagcccgca 1200

gcacgtactg tcaaagtaga tgctgggacg gtctgaccat gacggcacat tcgcggcgtg 1260

cctctgcaat gtctgcatgc cctctactgc acacgtacgt actactactc tacgctagtg 1320

gtacatgctc cttgctgcag cgagcagtgc catgcatgcc tagcacgact ggacgagttg 1380

ccgtagtact gtacgtacgt gcagcgctgc tgtgccgctg ccgcaagggt gcgtgctgcg 1440

gtgccggtgc tgtctgctgc tgctgtgcca tcaatatgct ttttgcactt tttcgcagtt 1500

tgacctatga tgtgatgtga ccagcgcgcg gccacgcccg tgaggccgta aaaatccgcc 1560

gctgcgaacc aaacgcttga tatgtatgtc cctgtggggc cggctgtgcg tggcgagtgg 1620

cgacctcgct gccactcact cagctgctgc taaagtttgg atcaaaaatc aatgttaatg 1680

agaagctata tttatgcttt tataaaaaaa atataattac catatacata taaaaagaga 1740

aagtaaaaaa taactagagt tagatgatat accattccta aatacaggct tccaaattat 1800

gaacccgaaa tgttggcaag ccatgatttt tagctgctat ctgttttcct accaaatttt 1860

gtgaacctcg catatttaac ctgttcaatt cacggtaatt aatttttttt tggccttatc 1920

aaatcttcga catgacaaaa tttctgatcc tcttggcttg agttaaccgt ggagccgtgg 1980

cgttgatacg ctaatgtact tttgcttcat gatgttatg 2019

<210> 2112
<211> 1508
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44307_G1, chr1:260132439..260133946, Cluster 12

<400> 2112
atccataagg atgtcaaata gttaaatttc cctttaaaaa catattatca tttattttgg 60

aaaggtgcct tcattggtgc aaaggtgtcg agtgtcgacc gaggatgttc atctagttag 120

tctctcaccg ctttcaacct ttcatgtgta ctcaacatct tctaaaacga ttggcggcta 180

tattcttttc acggtgaagc tatgagaaat atgtgtatac ttgaatgact ttagggatga 240

gctctactct aacttaagtt agaggaaatt gagtcgctga ctttagagag atcatagtga 300

gacatattta ccgtctgcaa aaagtttgaa tcatccaaag catttctagt ctgaaattag 360

caatgcacta tggcatgtgt gcattggttc cccacttaaa agtacatata ctaagaaatt 420

gtctaaacca gagcattcag cagagaggct acatcgtctt gtcgaatttc agtagagagg 480

ctataccatt aagggctagt tcgaaatctc cgttattttt taggtagcca tccctaagaa 540

atgttatttt aataaaatgt ttaattattt atgtgagatt ttttctattt aagtttgtct 600

cttgctggcg gaggccggag agtatggccg gcgtcgctcg ctggtcccag cttccctaaa 660

gtcaccgatg cagcctcatc gtctcatccc atctcatcgg tttgcgtggt gtggcccggc 720

ccactcaaat cgtccactgc ccagagctga gagcccggcc ggcctcgtcg gtttgggcct 780

ctccggcact tttcccggcg tttcgcggcc gagctcggtg ctcactgtcc gtgacttcct 840

cctatgtcgt gttggtgctc cgtgactttt tatgtccatc acatgcacac tgaggctgga 900

aaaagctctg ccgtttttt ttgtctttct tttacgaggg caaagctctg ccgctaataa 960

tgctagtctg gcgaataatc ctagcaccaa aagcatgcgc cgtccatcca ttccgtttca 1020

tcgatggacg ctggactggc tcctgccctg ctaatgatga tggcgcccgt gtcgtcgctg 1080

gcccgccgct aatgacctgt ttgaccacca tggccaggtg aaagcacacc atcggcccgc 1140

tgtccgcaga caggtggacc cagggcgccc cttacccgtc cagagtgaaa gaaagcctgc 1200

ctacgccacg ctatgctaca cctacacctg gcctgggcgg gtgctccacg gcggctgcca 1260

ctggatatac gcgcacggca cacggaagaa ttcttttgtt tgcaagagga ggtggaacag 1320

gccaagacca acacatctac cacccagttt cacttgcggt tgggcccggt gcagacgacc 1380

ttgcggcttg tggggcccgt ccaaggtgga gaaaaaggca acccgtggcg tcccctaccc 1440

acccacccac ccaccccttt taattgcttc gcaagccgca acggaacgga accaagagaa 1500

ggcggcca 1508

<210> 2113
<211> 2017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44445_G1, chr1:260931346..260933362, Cluster 12

<400> 2113
ctccatccgt atgcattaat taattgtgac gtttttcaca tgaagtatag cccccgtgtg 60

ttttaataga tatatgcgca ctttacacag agacagagga cgtaagccag gcgaggtgtg 120

cgcccaacgc gtgaacggaa tcgttgaaca ctagtgcgcc caatttaaga gctccttttg 180

cgcagcaatc atctcctctc cgcgggtatt tgctagccag tatacgcttt tttatattat 240

atcttagtgc cacacgctag tgcgtagtat actttttttt tgatgtgatg tggcatgcaa 300

gagctgaagc acgatgtgaa cagagaaccg tatttgccgc atcagcacat gtcagttcat 360

ggatccacca ctgtttactt gaacgtaagc ctcgcacaaa accttgagcc aggctcagcc 420

agtccgcagc aggcgccgcc gacggagctc cgaagagagg atacagatac ccgcaaccgg 480

acaccggagc tcgtgcaact tatcatgatg gacacatggt gggtggatct gccgccttgg 540

gcgaccgggc cggccggctg ctccaagaac tcgcatgatg gactcatata ttgtaccgca 600

ctgtagcgcg cgcggcccat gcatatgcat tgaagtcaac tcgagtcgga aggaagacgg 660

gcacgcacgg acgcgctgcg catatccaac gaccaacgcg accgacgcct ccgcagtcca 720

cagtccgcac caaacacgct aaagcccgca ttccccggga tgggatccac atccatgaag 780

ggaacaaccg gccaagggct cgcgacggcg acggctggcc tgcccatcca ctagctctcc 840

cagcaggcaa ggccgtacat gtacacacta cactacaata cacctgctcg ccaccaacag 900

ctagcacaac acaagtagta cttccttctc ccgcttttcc tcgtggcctc gtgggcatgc 960

ctagctatgt ttggttcgca aaggacagag gctggcagcg tggagggaaa aaaacgggtc 1020

cgccaacgac agcagcaacg aacgtatgcg tgtgtgcgtg cgggcgggcg gcctggcttg 1080

cagggtcttg aagcaaccta ctggtcgctg cctgcggtcc agcggtagtc tccaactcgg 1140

ctcaaccgaa cggataggcg agagggagag gtcgatcggg cccgggccca ggcccagccg 1200

ccgcaaggac ccgggtccaa acgtccaaca ctgtcaacaa cccgcagcac atgatcacaa 1260

gtagcgtgct ttgctttgct gctgctgctg ctagcatgac aggactggag tgcggaacag 1320

cggaagtgct ccacaggcca ggttgccgtg tttccacaag tcagagtggg taggtagcta 1380

gtagaggact ggttcgaatt cggactgatc gcaacagcca gcgagcctaa cttaactgca 1440

agtctgaacg aaagagggct accgcactag ttgagttaca gttggaatgg cgtgctgaca 1500

ggttcgcaga ataaccaaac catcgcgcgg aattcactca cttgtcgaga cccaataact 1560

aaaaaagtgg gtcccccatc tagtaaacgc tttcttgagc taattaagat ccaattcgta 1620

ctgagtacta tactgccctg acctgtttca gcaaacttgc acttgacctg tctcggcaga 1680

acgaatcttc agaagtcttc cttttaaccc tgccccgatt ggtccgtttc ccgttacagt 1740

atagaaggtt cccaccaaga gccagaaaga gagagagaga gtgtcacaaa gtcagaagag 1800

aggcagtgac agaaaccgtc ctgccaatgc ttcttccgtt cttctccaat ctccagccac 1860

tgtgcgcgca tgacatgtca gatatacgtg ctgctacagc agcatgacag gattccatct 1920

atacatcctc cgccctccaa ttcacaccac cctatgtcca gcacacacat ctccggtcca 1980

ctaatctact tcatcataac agactggtgt tgacaat 2017

<210> 2114
<211> 2202
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4470_G1, chr1:23228225..23230426, Cluster 12

<400> 2114
catgcatcgg tattagcagc tctctggcat gccaccctcc ccggccggcc gtcctcttcc 60

tctctatttt ttagcaggtc gtccgagccc ctgattagtt gagagaattc gatatggaga 120

tgcatggatc ggagccgatc acgcacgcaa aggagaaggg agcgagatcg acgagcgaat 180

ccgccgtgtg cgcacttcga ggcggcgtac gtacgttcct tgctcgctgc gacctgcatg 240

cgcgcgatgc gtgctcgatc ttaattctcc ctcccgttta ctaccagcta cagctagcgt 300

gcagcatgag cgctctccct ggcgtccggc cgagcgccgg ctcggcgtcg gggcagtcgc 360

tgtcgtctcg tccgtcgtcc tcccaggcgc cccacgcgcg acaccgcgcc gagctgccgc 420

ccaatccggg cgcgcgcggc cgcggatcgt cggaggatct ccccccccggc cattaaacta 480

agagccatgc tgattacgct gctggtaccg tcgtcaaagc tgagaggcgc cctaggcccc 540

tagagctagc tagacgacga cgcggcctac cagcagcagc acggatcgga ttagctagct 600

agctagccag ccagcagagg gccgctaaac tagctaatca aagggaggcg tgtagcctgt 660

gccccgagga gattaggtgt ggttgtcaca ccctcgctct ctgcacggcg cgcgggatta 720

gttaataaat ggcgtctggg attccacaag ttggagatgg ggaaacaggg ccgggaggtg 780

tctgagataa ggatggcact cccctagttt atgtgcccaa agcgcgccaa cgccggcgcg 840

ctagctagct ctcgtatcgt agtactaatt aatcaacgcc caccactcgc tgctctctct 900

ctttttctt tcttgttggt ttgttggatt aacaaaaaaa aatagtagag actactctaa 960

tcaattgcca agtgccaact ggtggtgctt gtgtgtgtgt gtggtgctgc gtgcgctgcc 1020

actgcctgcc atgccaaaag ggccctctcg tagtcgtcgt agctagctag gctaggcagc 1080

atgtgacagg gaatcactca tgcactcagc ccggggtaat atgtgctcta catactgctg 1140

ttacacttgg catctcttta ttccatcccc cctccccttt gtttcactac tgccaaagct 1200

ttgtttagcg ctacatgttg catcggcggt agccccccct gctcaaaccc tagaatttcg 1260

cgtagtatat atataacggt gcgcaaagac tccaggccag aaaaggacag gggcacagag 1320

ccaaggaggc aaaattgaaa tcaaaagctg ggtacttaag ctgggtactt aagctgggta 1380

cttagatgta gagcgaagtt taaaatagga gatgagaatt taggttagaa tagctgccgg 1440

agacagcagt cttattaaga gcctaacaag ctctgtggac tgtcggtctc tagagtctgt 1500

aaacaaatta aaaaatagat aataatgccg catgtggtcg ttgttgggaa ctaaccacgc 1560

agtttaccgt gcagctccct aaacacgtca cgtacattgg caaacaaaca attaacgcgt 1620

cgacgatgtt aatatatgat cgtccttatc cggtctccaa ggctcggggg cgccccattg 1680

gctgggccgg cgagggaggt tggtgacaac agggggcttg gttggatcat ggatgcacgt 1740

gaaaggccgg ccagtcgtac gctccgctgg tcaggtccaa acctagtcgt atactgtaag 1800

caattgttta tcactgatta gtaccttaac ctggtgtggt gggttaaagc gaggaggtct 1860

agatttgcgc tagtttgcct ccgatctact acgtacgttt ctttcttgcg ttgctgtgcc 1920

gctgctgccg tgtcgtcgtc ctatagcagg aaggaaagaa gacaaaggcc ggttaagctc 1980

acgatgataa tataattatt atattatcat caacggagtt aacacgcccg caggtgcagc 2040

agatggattg atcgataggt tttcgttgtc ttacgttgtg tgtgtgtgta cacatcaatt 2100

cgaccagccc agcaattgtc tcaacacata aagaatgtcc acttcattca taaaggatgt 2160

ccacttcatt ttctacatgt acggtgccat aacaacacgt ac 2202

<210> 2115
<211> 2241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47037_G1, chr1:275037504..275039744, Cluster 12

<400> 2115
gaatccagtc aactaaacta taacgagttc gtggttaaaa tgacgtcccc tgggtagatg 60

gatagaaagc cttgaacaca caccacaccg gccggctagc ataataatag cggccatatg 120

atcacgcaca gtaaagcgag cagcagcgca aagacgcggc ggcggcggat gcccggacct 180

ggatgggccc tcacacgagt atatactatt ggcagcgacg gccgggcatt ggctcgtaca 240

aaaaaacgca cggtacgtta cgttcgtcgg ggccggggtg cttggtgggc cgggggaaga 300

atggaaggga agccgaaggg gaaagagggg caggcatgtg ggcggtgtct cgccggaggc 360

gccggcgcgg agagacccag ggccatgtgc cccccggccg ggccggtgcg ccccaccgcc 420

cctgaaagcc cctctcccga gcttgcgtat gctaggtcta gagcctatag tgctgctgct 480

gcatctgtag cgagcgcacc agctcaatcc atactagagg aaataaaaat aaaaataaaa 540

ataaaaaagc atctaataat cataataata gtatggtcta gaaatatgct gcgatccgtc 600

cgtccattcg cacgtgcccg attcttcctg cccgagacct acctagctgc tctaccccac 660

accgatcgat gatcagcagc acgatccagg aaatgtcaag ggacgtagac gtacgacgga 720

ggaagcacag gagaccctac tactactact ggcatgcagc cgggcgggcc ggccagcaag 780

tttctcgtat atcggcagcc ggcaggacac tcgctcgatc gcgcggcctg gtcggcaatc 840

ggcatgcagc ttcaacttct ctgctgcatg catgtcctgg cacgcggcag tagccggccg 900

gcgcggcgcg cgctggggaa cgtgtcgccg tttcagattg actagtagtc tagtacaaac 960

ggggacgccg gcaggctgta cgacgtcgct ttttattttt tgaggcaccg tctcatgacc 1020

tggcctctag ctaactggtt tagggttcag aagcttaatt aacctggcca cactccaaat 1080

aagaacagta tcctacttcc atttttaatc cgtatgtgcc accagtacta ctgtacgcta 1140

catagtgtca tgagagatgg agcacttcaa ctgatcgatg cgatgcgatc gagagaagca 1200

tggcgcgtgg accatagtat ggagcgagtg gagacgtgga atggagcaag catggccgac 1260

tcgcccagcc ctgctttcct tgcctgccaa tagcgtgggc gtggccccaa aaagcactcg 1320

tacgtcctcc gcactcgcac gccgcccaca agcgactcca tgtcgtcggc catcgcgcat 1380

tcccggtgcg catgcctgcc gcctgcgcga tctcgagcgc gcgtgatcgg cgtctcgcta 1440

tctccccccg catgcacagc atgatccgga gaccggggcg tacggccggg gaaccaccga 1500

tccatcgacg tgacgcgcgc gtaggtgcgg tgcggtgcgg gcactcgagc cggccaacgg 1560

ccaaagcgcc taaagctccc agcgccgcgc cacgagatct cttgtcgccg tcgagggtgt 1620

gtgtgtgtgt ggctttccac cgtcattgcg gtatggcaag ccgacacttc ggtgcggtga 1680

tccggctact acagtggtgc cggatctttt gcacgcaaca aaatccaatc acctgcccaa 1740

ctttccgtgg gaaataggtc catatggggg tgatgggtat gggagcaagc ggcgtagact 1800

ttgtagtttt gaataaagag acaagacaca agaggatgtc catattatgt ttagatatgc 1860

atgccccgta atgaggtcca ttttgtgtgt tgttggagat gtttacgtac gttagcttat 1920

ttcaatttgc tatgaaacat aggtttgtgt ttttttgttt acgcatgaca gcgagttcgg 1980

taaggtacaa gtttcatacc catacatgta tttgcaggga aaaaactaca catctacatg 2040

actacatgtc acatgtcagg tatactgata cactcgtggc cacgaactag attattgcta 2100

gaacagggga gaggatattg gggcctataa tttccaatag aagtccaatc agtacacgct 2160

tcggcttgca ccaaacaccc cgaaccccac cgggaacact gatgcgtgat ttcaattcag 2220

tcgggtggga atcagcccaa t 2241

<210> 2116
<211> 2643
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47122_G1, chr1:275703970..275706612, Cluster 12

<400> 2116
acccacttcc caatgcacct tttccttttc ccaatacatc tccataccca tttctcattc 60

tctctctcct tgatttctgg gtaccaaacc tcacttttcc ttaattcccg tgtacaaacc 120

taaaacacct actagtacta atttgggtca gatggagtat ttagtatcat aaattttagt 180

actgtagtaa aaatttggtc gaacagagat ttgacttctt agcaagtgag aattgcatta 240

ttttggagac agaagggata tggactttta acaaatcaag ccacataatc aaggattgtc 300

gaacaacaag atttcaataa cgagcaagag cgtttaagga ttcacatttt agctttgctt 360

aacttattgg atgaattact cataccctgt accatctagc ttatcttcat agtatgctac 420

atcatgacga gcaagagcgg ttaaggtttc ttgttgcttt gttggaagta acaccagatc 480

caatttctgg tattccagcc caaaccaaat caacctatta ggttcaggtt ttttttcctt 540

atttttgtt gccaaactaa atttaaatga ttctacattc gttgggtctc tctttagcta 600

ggtaacgatt tgcaccaccc cccaccccgc ttcttcagtt cttcttgtgc tttagcttct 660

cgagctctgc cgacaaacta aaggcctttg ccttttgggc tgcactgcaa ggcctgcaac 720

tatactacta gtacggtagt gtcaacagcc gtaaagagta atagattcgc cagcggtttt 780

tgtcagcaca agcatattat aacagaacag taactcatgc tgatgggtcc agtagaagtg 840

ctgcagctct gcgtctcgtc gacctcatct catctgttgt acgtgatcgg ctttaaacgt 900

tactatacga cgaccgtgtg actgacccca gggaagagat agagatcgtt cctgcacgga 960

atcaatttgc ggctgcttga actctgcact gcgccgaatg aagtgacttg agattgatcg 1020

cgtcgagatt attgcggtcc cggggtgtgt cgtctcttcc ccggagtgcc acgacatggt 1080

cgccgatcga cgacgtgact gccggcgcgg tgaggacgac aagggtgatc ttttgccttg 1140

cgacagcttc cgtgacgtgt ccgatggtcg tctcgccgag ctggtactac gcagacgcag 1200

tatatatatg taccgcctac acgcctagat agcaggctct cctctatctg atgagcacag 1260

acgacaggtc ttccatgtta ctgtgaattt aggaacatat tcttgaccta aaaaccctat 1320

ccactcaagg caaagcaaaa ggcgcggctg gtgagagaag agatagatag aggttagagt 1380

acgtcctcct ccgcaaaaaa aaaaaaagtt aagttccggc gcccggtcaa cagcatgcat 1440

gatggctgcc cccacccccc cagctctttc gccttctacg accaatccat gcaataaaca 1500

atgtcatctt atctctgttc gttcggtcga tggccgccgt tgccgtcgtg cgtggagcca 1560

gccagccact gcccgagatc gagatcgagt gtgccgtggt gatcacagaa gcggcaacgt 1620

acgtgccagt gttttcccat ggctgctgcc agccttctga ccattggctc cttcaaaccg 1680

tatggcaaac ctgcagcttg gcttggatgt ggagccgccc ccctgcatga tcggtgatcg 1740

gtgttggtgg gtggatgacg agggaagctt cagcccaaag cggatcagaa aatatatccg 1800

gtgaacgaca gtggctgcac tgcccaagat ctgcgacgtc cgtacataca tggcaaggcc 1860

aagttggatt caccgtcata cgttttgacg atccagcgac ccgcggttga acgctttgta 1920

caggcgccgg attggctttt tttcttgttg ttgttcaccc gacagctgac agctccacat 1980

gaagcttcca attccatggc catggtctct tccccgcttt ttatctggtg ctttctcttt 2040

tccgttgttt tctccgcatt tgggccgtgg cttctcgctc gcagaaggcg aaagggaggc 2100

aaagacgaca gcaaatgagc aaactgcctg ttctttttac cttctaggct tctattgccg 2160

caggagtgga acacgatgcc ggggagagtt tatcctcttt ttttttttt ttttttttg 2220

cctagctggt tgctttcttc acggctatgt gtgtgcacaa ggaggccagg cctgctgtcc 2280

ggtcactgca ctgcactgtt gcaggttgca gcatgcgcag tcattggctc attgcagcgg 2340

caagctgcgt tgagagatca gaaatgcaca tctgtttttt tagaggaaaa aaatagcaaa 2400

cggtttcgaa atgcaagtca ggatcaggac tcaggagggg catgcgcggg ttagctggtt 2460

aggtatcgct ccctttcact caccctccgt gcaatgtcaa tggagaagaa ataaaggcac 2520

acgtctggat tgccctccga aatcctacgg aagagagaga gaaagaaaaa ctcttaatct 2580

tagactcaga gagagatgtt taactgtttc tacaatgacg aaggagcttc atctgcgttc 2640

tgc 2643

<210> 2117
<211> 1586
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48009_G1, chr1:280715108..280716693, Cluster 12

<400> 2117
aacttatttt agccaatgca aaatatttgt gtgtgtgctg tgtgcacacg ggcagcacat 60

gctctaccac acacgtactg gcagtactat gctatgtagg taccccatta tagatacaac 120

catcccacga tggacatgta ctagtaatat acacgagcag caagaaggcc ggcagacatg 180

gctaccgact cgcaacaccg tttaaacaaa ggcggacgtc gtaccgcgcg gcgcccctga 240

cgaagaagac gcacgcacgc acgcaggcgc atgcacgcgg gcgggcggca cagcacaggc 300

acagccagcc aaggcagcat taacgcgccg ggctcgaggc cagaccagcg ttggcatggc 360

caccgaaaag ccgcgcgagg aacacggcgc gttaggcgct gacccgggcg ctaaacaacg 420

cggatcaaaa ttcccttgcc tgcccccgtt tggtttttgt atatatagcc gcctcgagaa 480

gttcctcccg cttgttggca tctccacggc cgtagcgccg cggtgagcgc ggcgcgggcg 540

cgcgcgggcg gtcggccggg gtcgccgtac cgtccgtcgc cgcggggcgc ggccaccttt 600

ttccctttgt gccgcgagga ctcatagacg cgttcaacaa tcgtcatgta catgtccgta 660

ttcgttctca acaaatgttg cagatgcatg tttcgcgcaa tgcgtgttcc accatccagt 720

aaccaaacac atcgaacgaa tcatcactgt acattccccc atcacatcta atcctctgca 780

tatgaatcct ctgcatatgc caggccgggc atgcatggac agctactcct catcatcccg 840

ctacagcttg ccatctagct agcatcgcac cagcggcggt gcagtgcagc cgcgcgcgcg 900

gcagtgcaca ttcattgtca cgccggcggc cctgctgcac gcagctcgtc gcagcggcct 960

caccacgacg acgggcgcgc gagaattcca ttccctccgt tctcgaatat ggaaagtcgt 1020

tccccagcgc cctctcgccc tctgctttgc tgaaaaagag cccggtagtt ttacaccttt 1080

tcttgcattg cagttgcagc acaagcacaa tgggtagccc ttggtagctg gcttggattc 1140

atgtcagacc ctaccatgtt tattcactgc ccctgcatgc attggctccc tcccgggaca 1200

gttctcagca gaagagaccg agaccggtga ccggacatct caacccaagt gctgaacatt 1260

ctctaaaata gctcgtatat tcatagccac gcactatgtt gggcttcagg cttcagctaa 1320

tatatactca ataagcatgt cctgaacccc ataagctagc taggatcacc aaacccacta 1380

attaaataac agtacgcacc tctatatatt gtgtgtttta ttgtcctagc tagcacctaa 1440

aatacatacc tatgccatgc agccggcagc cctgaacaac cctgtgcgag gcatgtttgg 1500

ctggggctgg tgagcatccg aacgtgctta gtatggagaa accattcctc tgatctaatt 1560

agtctgatga tgttttgaaa ctaata 1586

<210> 2118
<211> 2018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4819_G1, chr1:24670466..24672483, Cluster 12

<400> 2118
cggtaaccga atgggaggat tattaactac aagctctaac taaggtataa agtatgttta 60

taattggtcc tccggtatat aaacgaaggt ggtaagctag gaagccaacc cttctgtcaa 120

cccatatatc tatacatgca agttcttgga aatgtgtgcg aatatttagg ctgcatgcac 180

actagtagta gcttcctggc aataatggac ggacgtgtac gctcggcaat tggtggacta 240

gctggtggcc caagatatat gaacgaataa gcaccatcca ctccagagat gcatgcatgt 300

ttgcagctat atattggcat atgcgacgag tacgtgtgtt gtgctgctgg cgctgtcgtc 360

catgcatcta tctaacccga cgtcaagacg atgataccag cgggttgatt acgtctgcac 420

gcatgcatgc atgtgcaatg taacccggcc gactacccga gagagaccag cagggccagt 480

gggttttatt tttacaaagg ccccacgcgc cattctttta ctactactac accaaaaaat 540

gcgatcacga cctcacctgt ctttttttta ccgagactaa agttggaaaa ggtagaacaa 600

ctggcagcta gctagctaag ctggggaaca cacatgcatg cgtcccagat tccatacatc 660

ttccaaagga aactgtagtg gtagctacag acgacagcag agcgagtgca acagagagaa 720

gcagccgata acgaggcggc agaggcatgc agtaggttac tactactcga tgcatgggct 780

tagtgcacac atcatactcc gtagtagtag tacatcgacg gtgagcactg agcagaagca 840

agttcggcga cgagggtttg gaatcgcgcg cggcgtccta gttgttggag ccgtggagat 900

atccgctgga cgaccagaga gccgtggcga aagtttccat ccatgcatgc acaaggccag 960

tgagctaata ggagtacagc cactgctgcg cgcgcattta tttcctccga atttccaggc 1020

cttccctttc gttcccgatc cgtcgtcgat cggccgccgg gtctccgtct ccgatccgtg 1080

cgtgttcgaa caatagtggc aatgccgccg cccatgcccc gtacgtgcac gcatcggcac 1140

tctcgctcgt gtggcggtgc cacgtgccgc gctccggccg ccggaccacc tgtactagta 1200

ctacgacgtc caaagccagc ggtggtggcc cgcgcatctc gtgtcgtgtg catgcacata 1260

cgcgtgaaat aaccacgtgc gtccatcgat cgcccgcctg cgctgcgccc ggtgaccaga 1320

aatctctcgc gcgtttcctc ccttccttcc cgcttccgat cccggcccgt acgtcgtcca 1380

tctatctaga ttgcagaatg aggcagcctt tgacggccat gcatggtcct cctagctgct 1440

cagagcctac gatcttcagt aaaagtgaga ccagcagcac gtacgtacga cgacatcacg 1500

cgcaaagcta gcagcagcag cagcagctac ataccaccga tcggacctgc atgcgaaacg 1560

gtccgcgata taatgatact attatgatca accaacgcgt gttgctatat gcacaaccaa 1620

cgcgagtagt ggccatgagg cacttgttct tattcggaga agtgagcgag aaaaccgtcc 1680

gaaattttct cgcttcgtcg cgacgacggt gggcttgaat tcttcaacgt gcgtgctaat 1740

gctttccgat tagaatagaa ttcatctact gtcgtgccgt cttcatggga gttagctgaa 1800

tttcgacctg gtccgttctt taaccttacg ccgccatggg ttcagagcgt ggttagtagc 1860

tagttaatta cttagagtta gttagagacc atgctagacc tgaaagtgtg ggtcgggtca 1920

tttagggcca tcgatacatt agtagtcatg tttgacccaa cttatttta gcttcctaag 1980

cagaagttat atcaaatagg tagcttctcc aacaggtt 2018

<210> 2119
<211> 1544
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4825_G1, chr1:24680833..24682376, Cluster 12

<400> 2119
cgaaaggata agtatgtcgg ttagccgaca tacttaacgt ccatgtgacg tatccaacct 60

acccggagta tctaccacat ggccgataag taagtatgtc ggtttctcct gacgtattta 120

ctgaccacgt gcttattaaa tacgtcagtg tggggaaacc gacatatagt taacattaag 180

tatgtcggtt ccgatgtact tattcgatta agatcgtcaa aattagtact catcataagt 240

acaccggtct gttagagtaa gaatgatgat tcatggccga ctttttctaa tcgtttttcg 300

gaagtggtgt tggtcctcat aattttacgc agtgcggaga gggactctaa acaaagtttt 360

ttttgttta ccttattttg cgtgtgctct tctctatcaa atagcaatat ataatgatgt 420

ataaaacagt attcataatt agtcatatct atatatgaat aacagtatgt aacttttaga 480

tatgaaaata caccgtctat tagaagacgt gtcgttttta gttgtctata tatatatata 540

tatatatatc agatttcagg cttctataaa cagtcccaag tagtatgtgc gttgtacctg 600

ccctaatcat tcaaaaatat ttagcacgta tctacgtaat ttgattggct gacgtagcga 660

tgccttttgc tgcgtccatg aaagcacgcg gcatgccggc aaggcggcgt ggacggattc 720

gtcccccgaa tgcccgaatc tacgcgcagg gcttctccat cattcccgct gttcatctac 780

ctcaggcgcg tggcatgcgg aggccgggca cgcgttcctc tgatcaccaa gcccaggctt 840

tgcatgccac ttgacggcac cactggatga cttgttcatc gcatagagta gtcttttact 900

ctttagctcc aacgtcgcgc tcctgttaat ggcttcgtct tcaggcaatc tacaccaatg 960

tgtatctatc tatccttgtc tgatcttccg cgtgtgtgta ttttctttgt tgccttccct 1020

gatccatggt cgactttgac tagtattgtt tgcagtacaa gactgtatat aggtaggtag 1080

ctgcaggaga aaagagagag agaggacagt agactctacg acgaagtaca gtgacttggt 1140

cgtacatttt gacggcccaa tacctaacct ctagcccttt atatttgggg attatattgc 1200

atctcgtctt cgtggcttca tggacctccc aggatactgc cgaatttgac tagattgaac 1260

aacctgaaaa cgttcagaga tgtcgtgaga atccaaacat ttactcaccg tgacgacaaa 1320

cctgaagact tttgagggtg tgttgcgaag aaggacgaac cagacctcac ccgaccttct 1380

cgagcgcgct tctaagctaa aactaatcct ttataaatat aagaccaggt gcgaccggac 1440

acttcgacag gttcgcccta ccggtgaagc ctttgccccc gatggttgat gccgaccgtg 1500

caaaaaggca gtttctatgg gggctcgccg agagcgatga ccct 1544

<210> 2120
<211> 1587
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51101_G1, chr1:297012932..297014518, Cluster 12

<400> 2120
tggaaaggaa gttaccggct gctgacattg atggagctcg agtgtgtcgc cattttcaag 60

cctatggcga gggtggcgtg gtggactgat acaggtggcg ttggctggtg gagtgatgga 120

tgaccactgg cggtgtcgtg gcgtcggcgc tacctatttg gagcggacga gcgacgagca 180

gtggagcctg ctacctgcga gcagaccgcg acatgcatgc ccgagcggtc gccgagcctc 240

actgcgacta ggttttaggg cgactagcgt cgccggccac ttcaggtgtg agtgtacaag 300

tggcgtgcac ccgtatggct tggagttggt gttgaacgct tggtgcttcg gcttcgaggc 360

ttggattcct agtcgatcgg acgtttggac ccaggcaaat tctatatata caaagcggga 420

cgaaaaagtc ttcaatcata gcatccacgt cgccttttc aatcctcacc gttccatcaa 480

ttatcagcgg ccgacgccag cactcgactc cttccgcacg cgtttccttc atgaacccgc 540

ttctagaaac gtggacctgc tcccagaaac atcggggtta tggtctcgct ccggcatcac 600

gcctttcttt attcgtcgct acccgtcttc caggctcctc ccgcggcgcg cctgagtttc 660

gccctcgcag cgcaccccgc acgtacttcc tcctcatctt cggacccggc ggcatgcgct 720

ccttcagttg cgctgccata ggtacgcggc ggcgtggaaa tactgtgctg caccacgcgc 780

catgcgcgag ctcctccttc aaccagggcg gcgcatggaa aaggatgtgg ccacagtcga 840

ggccgcagtc gcggtaccgg ggcggcaact ggacgtgcgg gtggccacgc tcgtcaggat 900

gctcatttcc aagggcaggg ccgcgatgct tgccgaggcc ctggacgagt tcgacgccat 960

ctgcatccgc ctgctgccac tgcgtgtgcc cttatattag tttgtgtttg ctacaaatag 1020

ttcctagtgt cttgttcgtg tattctctcc tgcgaatcgt gctgactaca gctacagaaa 1080

ggcacttttc ccaatccaga gtttcaattt ttgactatct tctgaaagca attttcccgt 1140

ttcgcctgat gtagactaat tgctgaatat gttaccgacg atcattaggc ttaataatat 1200

tgattaatta attttaagct tttccgtaaa acatcatatc tagaaaaaat gaatcttctc 1260

cacgaagcaa catatctgaa aaatgaaata ataaattaag ttgtcatgtg atctgatatt 1320

atatctttaa ttatcttata ctactaaatc tttgtgcagg aagatactcg gagcggtgcc 1380

aaattcatca cacatcaatg agatggactc agactgattc tctcctcatg ctcttccatc 1440

tcagatgaga gctcccacca ctttgtgtaa tgagcgtctg ttttttttctg tctctgtatg 1500

ctcctacaag caaagggtca aatttccagc aatattttgg cattacaata ggtgggtcat 1560

tgtgacaatt atgcatgaag ggaattt 1587

<210> 2121
<211> 2820
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51379_G1, chr1:298971863..298974682, Cluster 12

<400> 2121
tcactacacc ttcgcaagct ctttaacaac ataggagtgg caacaagcgt gaactcagca 60

aatggccaac ccacgatttg accgcattat tcacctattt atagggttga atatttatgt 120

aactctgtac gaaattatat tttttggtcc catttctcac acgataacgc ttcgcattcg 180

aggagtacgt tcatgtcatt ttgaagtttg atatatcttt tgtttgtcga agacttttt 240

gtgtctcttc ttcagtctaa ggccatatct ttgtcgtcgc cgaagcttta ctttcgatag 300

attcggctcc aatgcacttt ggacctaacc acgtgtttag aaggcagtct gatgagggtt 360

tcaatgaatc aatggtagga ggtggatttc cttctagtca tgttaacatc cctgacgaga 420

aacaccatct aaacaccggt tttgttaatt tggaacttgg atcggagacc ttttccccga 480

aagaaaatat aaaataaagg atttacgtat ctttgttttt tttttgaaaa tttttatttg 540

gcttgagaaa ataactcccc gcagttaaaa tagcacgagg gggcaagagc cggcaaatac 600

tttcgtaaaa taactccact aacatacgct tcgacatcat caatatatat actttcgtaa 660

gctctttgac aacacaagag tggcaacaag cgtgaactca gcaaatggcc aacccatgat 720

ttgatcgcat tactcaccta cgtgtttggc tcttcttcgg cccaaggcca tctctttgtc 780

gtcgccgaag ctttactttc gatagattcg gattcatgca ctttggacct cacccacgtg 840

tttcgaagca gtacgacgag ggattcaatg aatcaatggt ccgaggtgga tttccttcta 900

gtcatgttaa cttcactaac caggaacacc gtcaaaacac cgattttgtt agtttggaac 960

ttcgatcgga gacctttcct aaaccaccag caccaccaaa agttcctcat ttcatatagc 1020

tggggatgag gtgcaaacac actttctata aagaaaatat aaaataaagg atttatgtat 1080

ctctgttttt ttaaacattt tatttggctt aagaaaaaaa aaactccccg cagttaaaat 1140

agcaggggag ggggcaagag cctgccagca acatacggtg agtcggagca tgcagagtct 1200

gtaaaggaag agaggcaagc atgcatgcac agggtcctgg ctgttgtgaa caagacagac 1260

gacgagacac agatcctgca tgcggcggtg gacgacgcgg aacacgaaga ctgcgatacc 1320

ctagcaacga ccagctagga ggacggttgg aatcttggcc tctcttcttc cctgactact 1380

accagaccag acaccagtac agtacagtat tccattccat tccatcagca agcaaagtca 1440

gcatacaaat gcatggcaat tggcaatggc atgcagatag agagagtcac agacaccacc 1500

aggccggggg gtagacgtac gtactcgatc gatcgattcg atcatcttgc tggcactagg 1560

ctagatagat agatgggcaa gcaatccgat cgagacgacc ttgcactgca tgcgttggtg 1620

ctcctttcca gcagcgtgca ccttgcactg cgttggtgtt gtttctttct tcttcccccc 1680

ggccggtgca tgcagtgtgc agcagagcag acgacacggg atatctgcac acggctggct 1740

cagtcgtcga cgatggccag cccatgccca cgcgcgtata tagatagata gctcttgcac 1800

gcttgcatgc actgccgact accgtacgtc tgccggccag cctgcagcga gtggtggctg 1860

ctccaaagcg aaccgcgcgc atggcgactc gcggtcgatc gatcgtggtc gtggggaatc 1920

ggatcatcgc agagcagcag aagctattgc cacgcacgca gcctgcaaag gcgcggcaaa 1980

gggaaaggga aagggaaaga cgaagacgaa gacgaaggca agcaaaagcc aactcgatcg 2040

gccgggcccg gccgggggcc aatatgcaaa ttaaagccac cacaccacac tgtccatcgt 2100

cgtccacctt ccgccgggcg gccggctatt agctgttacg tactagtgcg actgctctat 2160

acgtacgtag tactcgtgcc tactagtagc tactgacggc tgtgtgtggg ctggctggcc 2220

gccgacatac tactgtctac tgatcgatgg atatgcctgg tcccgtcccg agccatgacg 2280

acgatagagc atgcatgcat gcatggtggg tggtccacgg ccacggatgg catggcgatg 2340

ccgcgttcca ttcgcggggg gtgggaggat cacgatcatc ccccccccatg cgcgcctgcg 2400

tgcgccggcc ctcatcatgc gtgtcgtggg cgttcgtgcg tgtgcagcca gcgcccagcg 2460

gcgaggcgac agtgtgcgct gccatcattg cgcctcctgt gccggccagc cggagagcca 2520

gccagcgacc gcccgggccg cctgttaaga ttccccacca ttattatgtc ggacgcagag 2580

gctgcgggcc gctgcggccg aagggccccg ccggcgtcca tcgggcgccg cgccgcgccg 2640

cgcgcccggc cgatgtacag ttctgccggc cggagattgg ccggccgcgc gccggtcccg 2700

tcgaccacat acccgtccgt acggggcatg ccctgcgtgc ctgcgtcacg tcacctggtg 2760

tcctcctgct cctgcttcca tctctcctct caacgtgcat gctgcatgct tgctccaccg 2820

<210> 2122
<211> 1459
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51482_G1, chr1:299472453..299473911, Cluster 12

<400> 2122
ccttttagaa aagaagatga attttgcata gccaaattga ccaatatata tatagtggtg 60

gtcgcgccta acaggaaaat gggcttcaac accatactac atactagtca gtccctccta 120

gctataggaa tggtggtgga gtggcgatgg gatagggagg gagggtgatg gatcgatgat 180

ctgcaaatgc aatgcatcgc cgtacgtacg tgtgtggtgt cgtgatgcgc gcgcagggtc 240

gacgacaatt tcattgtgct agttggaact aagcgtgtgt gcatgctgat gcgaattgtt 300

ttggctcgta gctagctaga gcttcctttg gctgtttccg gagcgcaaag caatggaggg 360

aggcatggat cggatcggag agagagacac atgagtgacg acgacgacga cgcatgcatg 420

cgggcattgc cgatcgacga acgaacgatg gctctatatc tcggacggac caggaccacc 480

acacatgcat gcaaataatc tctccggtcg atccgccgtg cggtgcggca ccatgcatat 540

gcatgcatcc atatcgatca cctttactat aatttgtccg ccatatgctt acatacaaca 600

atcacttgct taattcttgg caaaattgaa ggcagctttg tactagtacg tacgtacgtg 660

catgttgtgc aacttgcttg cttaattaga gctgagacat gcacgattgg acacgtgcca 720

agattccttc tggcgcaaca tatgcatcga tctatagaga tattggtgtg tcttgagatc 780

aatgcaagtt gcctcaagag catagcatag ccttctgtaa aaagaggcga tggccggaaa 840

acgacaacac tagcagctag cgagtgcatt caggtacctc tgcggcattc tgcgagtgcg 900

tgctagctag ctgctatagg acgacgatgc tatagctagt acgtacacca tcaccatgca 960

tgcatcatat gcaatgcaag atactactgc atgtgcacga tcgacgacaa gcgaatgaca 1020

accacgtacg tacgtactag ctgcccaaag caaaaaaagc ctcgctctct catctcctag 1080

gtgtcgagtt ctcatacgcg cgtacgtact gctactctgc tagagagaga tagagagacg 1140

acgaagctaa ggaacgacga cggagagctg gctaggttgc cgtagtgttt ctttgagcta 1200

cgatccatcg acgacccatc catatcatca cctgccagca cgtacatacg tacttgcgtt 1260

tttttgtcag cttgcacgca caacattatt tttttatata ttactccagc tagctagcta 1320

gtactgatcg atcgatgaca atgtatatat gtgtaatgtt agtttccaac aaagcacatg 1380

cacacctgtc gacctgtgag tgcatgccgc cggccggtta gggttgttgc cttaaaccgc 1440

gcgtatgttt aacacacgt 1459

<210> 2123
<211> 3135
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52178_G1, chr2:2261381..2264515, Cluster 12

<400> 2123
cagcctgagc cacgagctag ctagtctcgc tcgcgcagtc gccgtcgcag gcgtgcagcg 60

tcactgcacg gcgacgcagc ccctgctcca ccaggggtcg ccgggccctg cggtggtgca 120

tggtcgtcgg cagagagcga tggacacggg ccgggggccg acagcaggcc gcggggccag 180

cagacagctg ggggccggcc ggagccccac gccatggccc cctccagctt ttggcgcatc 240

gctcgctgtt cctgttccct cccaagctct cccttccgcc ctgcccccag ctgctagcta 300

gctcgctcga cccccgtcga aaagccaaag gaggcgctgt tgtgttctcg tgtagcgctc 360

cccgtacccg ccccgccccc gcaccaccca ggagcgccgc cgccggcctc cacctgatgc 420

acccaccacc actccatgtc catggccagc cccacccggc cggatctcgg agcagcaccg 480

cgcgcgcgcc ctttatttcc ttggcgcgcg tagtacggcc aggcgccatg cccatgtgtt 540

gcgcgtacga gccaatgtca cgatcacgag gcaccagagt aataagctgt ggctacgtac 600

ttactgacgc gctggtacgt tcatggttgc tcagctggta ttaaaaaaac agagagagag 660

agagagggca gtaccgaaca agtgctgatt actgcaggaa acaaacagtg cttgcagtac 720

tgcgttttgc acagtacgta cgagtacgac gcaagcgccg gcggcccata cctcggacac 780

cacgatcgga cgggacgggc acgcatgcgg cggtcgtcaa tgcaaacatc tagtcatggg 840

catgcatgca tgcatagggc gcacgcagca gctgctggtc cactacgatc cagagcgggg 900

ggggatctat ctatcggagg gggtacgtgc atggtttgaa gacgactgct gtttcgcgta 960

acgtaacgta ctacactaca ccgctgtttg acgtacgcgt gcatccaaac agcggcacac 1020

gcgcacgtag cctcttcttg tgtataaata aatgaaagga actgccgggc gtgacgactg 1080

gccgggacac aggactgctg catgccgact agatagaacg acgatgcaac agcgaagaac 1140

tcgtaaagct gttccagaca tgtctcggca cattatatcg tgggcctaag cttttggcaa 1200

gctgctcctg gagctagcta gctggctagc tcaccaaacg gacgcgacgc gaccaaaggc 1260

ggctcgaccg gtctttcgag tcctctcaac aagtctgcag atgagcacac ggcatgcatg 1320

gaccctggtc cgccgtgtcc acgcggcggg gggccatgca tggcgtggag ggaagggaac 1380

aggcgcaaac acgtcgcggt gcgtggtgac ctggtcatga gtcatgagag caagggccaa 1440

gggggggtata tacgtatatc ggtatatggt ttaaaaaaga cgctagataa agcctaatac 1500

tcctacataa agtaatagtt taattaaacc catgcatggt aaaaatggaa agtgccgccg 1560

tgacccctgg gcgccagaga ggggcagtcg tacgtgcacg caccaaagcc cctcccccta 1620

cagctacagg gacagtacag gtacagggtg tgggcgcggt caaaagcacg agtacggacg 1680

ccgcgaccac cgctcgtttt gggcttggga gcacatgagc gccccttcc ccctccctat 1740

ggattctttc ccggtgtgtg tgccctcggc tttttaccgc tttggagctt ccatgcaatt 1800

acgcgagccc ccacctgtct ggccagggcc attgggatgt gttggtgggg ggtttagctt 1860

gcaagggaga tagataatca tgacggtcgt aggcttactt aaactatgac tgacctcacg 1920

ctacagcgac agagacggtg acacaacaga cgcgtacgtg acaagggaag ccactagtcg 1980

gcactgtttt ggcacagtga gcttccaaac acgagtatct cgtaccacga tgactaagta 2040

gatatttata ctccttcata agtagcgcgt tatatccata gaaaacgttt ttttcccctc 2100

taagttctag ccacttctgt ttttccaaaa ttttaatatg acaaattttt ggtagacaaa 2160

taagtaggtt tatctcatct tttatgattt tataccactg tcggtgttgc ttcaccatct 2220

gcatacgtac tacgtagaag tagcacgtgg ggtgggggaa gccggagtag tagacacgcg 2280

gtcgcgcgcg tcgaacatct acgctgcagt agcagtacat gtgcgcgggc agtcttggga 2340

ttcaccgcat ggcgaccggc ggttggaagt aaaaggtgag aaagcgtggc ggagaatatc 2400

cctgctcctc tgctacgtcc tgtcatgtag tacgtacgag tcaaacatgt ttttcgtgtc 2460

acaggaatgc ccatggcctg tcactccgtc tccccttttc ccccttttg ttttttgttt 2520

aaattgtgaa gtggtcgata aataatacta catctatttt aaaatatttg ttagtttttt 2580

ttaaattaaa gcgtaataaa ttaaaaaaga aacgaggaaa tagctcagac gacgggggac 2640

cacacgtaac cgagagaagg gggggacgcg aggaacagaa aaccgatgaa ctggtatgtg 2700

tgccccttcc tggcacgaaa agcgataaat caaatactat atatataaac aaatatttgt 2760

aaacagtata atatattttt ataataaatc tatgtggagg atattatttt ttatgttaga 2820

ataaatttag ctacacttga gaccagtggg tttggattgg actcctcggc cgggcattcc 2880

gaagatggag tccgtaaatt agtcctcaaa ttgaatagga ggaaattatt ctccatagat 2940

ctattcattc gtgatccgtg gtcactaaat cagtccataa agtgctcaga aaacacgggt 3000

gacactctgc caattccaac gttaacttac actcattttc tcctatgact ttggggtaag 3060

gttacaaaac ggagtcttaa cgacccgtag cggcctagtc ctacacgtac tactatactc 3120

caacctagta ggcta 3135

<210> 2124
<211> 3116
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52226_G1, chr2:2481701..2484816, Cluster 12

<220>
<221> modified_base
<222> (2218)..(2218)

<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2218)..(2317)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2219)..(2219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2220)..(2220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2221)..(2221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2222)..(2222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2223)..(2223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2224)..(2224)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2225)..(2225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2226)..(2226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2227)..(2227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2228)..(2228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2229)..(2229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2230)..(2230)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (2231)..(2231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2232)..(2232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2233)..(2233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2234)..(2234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2235)..(2235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2236)..(2236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2237)..(2237)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2238)..(2238)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2239)..(2239)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2240)..(2240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2241)..(2241)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2242)..(2242)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2243)..(2243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2244)..(2244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2245)..(2245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2246)..(2246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2247)..(2247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2248)..(2248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2249)..(2249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2250)..(2250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2251)..(2251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2252)..(2252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2253)..(2253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2254)..(2254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2255)..(2255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2256)..(2256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2257)..(2257)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (2258)..(2258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2259)..(2259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2260)..(2260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2261)..(2261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2262)..(2262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2263)..(2263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2264)..(2264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2265)..(2265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2266)..(2266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2267)..(2267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2268)..(2268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2269)..(2269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2270)..(2270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2271)..(2271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2272)..(2272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2273)..(2273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2274)..(2274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2275)..(2275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2276)..(2276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2277)..(2277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2278)..(2278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2279)..(2279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2280)..(2280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2281)..(2281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2282)..(2282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2283)..(2283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2284)..(2284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2285)..(2285)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (2286)..(2286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2287)..(2287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2288)..(2288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2289)..(2289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2290)..(2290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2291)..(2291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2292)..(2292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2293)..(2293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2294)..(2294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2295)..(2295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2296)..(2296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2297)..(2297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2298)..(2298)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (2299)..(2299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2300)..(2300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2301)..(2301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2302)..(2302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2303)..(2303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2304)..(2304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2305)..(2305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2306)..(2306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2307)..(2307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2308)..(2308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2309)..(2309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2310)..(2310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2311)..(2311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2312)..(2312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2313)..(2313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2314)..(2314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2315)..(2315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2316)..(2316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2317)..(2317)
<223> a, c, g, or t

<400> 2124
gattgctatc agtcgagatt gaaagccttt tgacgcctat aaaacttgga ctagtgtgtt 60

gaccgcagat ctattctcta catgtacgtg cgtgtactcg tacaatacaa catcattagt 120

atcggtgacc catgcatgca ggcgcgcggc actgcataat actccaacgt cgtaatgcat 180

gcgaaaactt ctggtgccca agtgcatggc gacccggccg ggtgcattga tagagaagag 240

atcgaccgac caagaaggta agacggtcgt cgacatggcg gcaagctggc gggccggccg 300

gcgacgcact tgagcggcct tggcgccggc acgtaggaga catgaccgca tgcaccagcc 360

accagctgcc tgcatgccgc gcgtgtttaa ttctggatcg tcggggttcg ttgcaaacca 420

agcgaagcta gcatttacgt aggtggaagc gtatgtatac atggtaagta tgcctaaaca 480

tacacatggc ctgtcatcag catctccgga tggctactac ctgtcgtgta ctaggggtag 540

ggtcagatca cacatagatg atagcatatc gctgatcgcg gctgatgaga gacgggcaac 600

agatagagtg agaaagaggt ggtgtgcatg ctcatcgaac tccatggctg cgatgcgcgc 660

gaatgaagga gctagttgaa gctagctttg agagcaagat gcatgcatga gcatgacagt 720

ccagctttgc cgcggcgtct ggctgaagtt gtgggcttgt ggcggatgta gtgatgcatg 780

caggatattt caggtcttcg ttgacctggt gcggcacgta cgatggatcc gggcatccgg 840

gatggcgcct accagcgcta gccgctaggt gctgctgcta ctacgtctac gtgactacgt 900

cggtgtcgac gagatgcaat tttatgtctg ataaaagtca gatcttttta attacatcca 960

acatatataa ctactacaaa taaataaatg ataaaaatat agccggggac aaatttaaat 1020

atttatccgc ccgtctcgga cgatttaatt tgtggctgca ttttcatata gtgaagaata 1080

ctacaggctc ttacgtacaa ggcaacgatt aatcaaatcg tataaagagt ttatctggac 1140

acgaaggatt tctatctatt tcagatagct tctcagagat aaattaatat tgaatcttta 1200

gttaatggtc aaaatgtgct ctgatcactt tggtttgacc ccaatcaaaa catacttacc 1260

atttcgaaac gaggagagtg gtgatagata taattatcat ttccattttc caaacacaca 1320

ttcggccagt tggcttggct ctgccagagg atcacgctcg cagcgggccc ctctggttcg 1380

ctgagactgg ctgcatgcat gagatgagct cctcatcttc tcccaggcca gctaggcgct 1440

aggccttggg cgtagcgtag ataatcgcgg cagtgtggaa ggaatacacg tacgcaggcg 1500

agcaaaagtt ttaccgcatc cgggcgcgcg gcgcaatgac gagactgccc tcggcgggca 1560

ctggcagcag gggatctagc ggggctacgt gggccgtagc gtggtcaatg gactctgctg 1620

ctactgtact gcgactgcga acgagtatac atggccatgg gggaggtgag agaaggggc 1680

ttggctcggg tggaccgctg ccttgtcggc ttgcggccat catctcgctg gactggacca 1740

gagacccgac ccggtgggca ctttgtcccg atccggcctc tcgcactacc cttccttgct 1800

ctctctgcgc tctctgtctc gtgtcgtgtc tagggacaga cttgtctttc cgcgcccgct 1860

gactggatag ttaattggat ttcaaagacc agtgaccggt gtcgactctc gatgagatga 1920

gagttacagg agagaaggtt gatagtatca agtagataac aaaaggcact cggtccgtaa 1980

atataatagt gcctatgttt acaggagatc ggtgagcttg ttttgatata atagtgccta 2040

tttttacttt ggtcgcttat tacgtcccca aaaaaattag caagattcat aaaaggtatt 2100

atcaatactc acatcagtaa atataatcat cattatgaaa gtacatattt cagtgtgata 2160

ttaaagatat tcgttaccta tcatactgat actgttagta cgtacaataa aaatttgnnn 2220

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2280

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnncgt atggatctgt cctcttggtg 2340

tcagaaaaga ctgacacccc cctctctctc tgcctctcgg ctgccaccgc tctcaggtcc 2400

gtccgtagtc aaaagtggct tgaccggatt ggagagagag agagagacag caatgcgata 2460

tcagatcaga tcagatgcta acgctatact acatacttcc tcccagccag gcagccacca 2520

ccattccatt ctttacctcc atctctaccc aaaatacccc tgccgtctcc gtcaccccca 2580

gtccctgtac ggctgtacga cacaccacgc cacatcttga agccttgaaa caaccaacca 2640

acccttcact cgctgcgtcg agcgtgaact cctactgcag cttgtatgta gcattgtggc 2700

acagcagcgg cagatatata gtagcatgca tggaccgtgt cactctcgat cgctagttca 2760

tcagtagttc agggcaggct ttgagaagga gtcaagagat tgttgccgcc ccgtagtcgt 2820

tgctggtagc ttttttttt tctctgtcgg catgcatgca gtgccccttc ttagctcagc 2880

tggaagaaga agaagaaaac tggtagtata ccactactgt cgtctactgc tgccaatcat 2940

ttctatatat atggtcttga ggcaggcagc agagtattta ccccactagc tatcgtatgc 3000

aaactcatag tatacacgca cgcgcgcgta cgtgtgcaca caaaactttg tactcgatcc 3060

tgctgagctc aatatcatca tcgtatgtca tcacagcgga atcggggaaa aatcta 3116

<210> 2125
<211> 1725
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52424_G1, chr2:3561019..3562743, Cluster 12

<400> 2125
tcatgttttt tatatttttc tcccacttga gacactggtg gtcacaggaa caacgtgcac 60

ctgcagccac accactccgg ctccagccgg gtaagatggc ctcgatcttt ctgagagcaa 120

gccatgcggc cacgggccac gggagatgga aacgtgaaag cgaaaagaga tcagagaccc 180

gtttcgtgcc ccgtgcacac accgaaaccg gcagacaggc gcggccggca cacaggttcc 240

gccgcctgca tgcccggctg gccggggcgt gcacggtgca cgagctcggc acagaccatc 300

gaaagcgacg cgcgccagcc cggctcgggt cggcgacggg cgagagagag agtctgggag 360

cgctggctga gcagctgtcg cggtcgtctg tctcgtcgct agggcgcgtg catgtgctgt 420

gccgtcgcgc gcaggctagg cgctagctag ggatttgcac ggagggcgta cgcgcgggag 480

ctgtcacacc cgggcagtgc cgcgacatct atcggtctca gcagcgttgg cgttgtgttg 540

cgttgcaccc gtcacggccg gccgcgcgcg atggctggct gccagcgtca gcgagcccgt 600

gagggaggcc gcggctccca tgccgcatcg ctgttcccgg catttcggtc catggcgccc 660

ggcaggcaac tcctgtgtct gtgtgcgctg cgcgcgcgcg ccgaaaccgg gcaacgcttt 720

ccgtagtccg ggccgctcag gtcacgtgcg cgcgcccacg caacgccaat cgccaaccag 780

accgatcctc cgaggccatt gaattgttag caagtgagac ccgcgcgctg ccgctgaggg 840

gtcgatcact ggcactgttt gcggcttggg tggctccgaa ggagtgggcg atcatgcctg 900

tgcccggcgt cctacggaaa accgcgagcg gaacggcctg gtttttcttt gcaaatctgt 960

tggctctcaa gtctcagccg acggcggaat attttgggca tgtgggtcga cttggagtcg 1020

gccgagacat gtgttgctga tggcgaggtc ccaacggtcc gagatggatg agaatatgag 1080

atgaaagcca ttcatcctgt atctagaggg ctagagctag tatgatggag tatgaacaaa 1140

gcctagggct agggtcacat gcgcctgact gcctgacccg ggagtatgaa caaatctgtt 1200

gtgccttcca cggtccacta gccctcgacg taccgtacgt actacatgta tacgagattc 1260

acgcacctag ctactgccac gactttctcc tggtgaataa acctgaccct ttttgcttcc 1320

cgtggatgga tatgacacga attgtacgtg caggcagcct gggccctggt cctgggaggc 1380

tgggcatgca gcgcccactg ctgctgctgc tggccagctt atcgcaggag agaaaacacg 1440

tatgcctgcc acgtaatgct gtgaatgctg gagacgcacg caccacatca tgatgtggtc 1500

cgttgggtca gttcacaagt atcttcgcgc gcaaccaaaa acaacagcaa caacagaaaa 1560

gttcacaggt aaatcgttcc gaaaattccg gttgcatatg cttcagagta tgttcctgtg 1620

aagatctgga tgccgttctg tactgattga aaatagcaac acatggcgtc aggcccgatc 1680

tagcgagcga gacatgcatg gtcctcccct ggcgacacgg ccggt 1725

<210> 2126

<211> 2598
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52429_G1, chr2:3593195..3595792, Cluster 12

<400> 2126
ttagttcagc tgggcattca aacgagcgtt taagggcata agggcttgtt ttggatctaa 60

ccagttaaaa atagcattat gtttaaataa taactagaag catcaaatcg tggattattt 120

ttttaaaaaa aaagctacat aaattgtgac taattgatta ggtgaatttc ttaatccaag 180

ttaggccatg ggtagctcat atattgctac agtgagcatg gttaatcaaa gactagttag 240

gattcatata tagattgtct cgctaattat tagtcactgc ttatagaact tgttttaaag 300

ttagttcacg ctatagtggt gattttcagt agttggaatc cagacatgtc gtagtagtat 360

actaattatt atacattcac agaaattaca tgtgtatatt atttttaatg aggtacacta 420

taaagataaa attttagaac ttacccttgg aagcacaaaa aatatgccat tatgccaata 480

aaaatattta atgagttact aaccataatg ctacttttgt agacaggtcg ttgttggatc 540

gtggtttcaa aataatataa aataaccaca ttaaatttca atcaatgtta cctacacatg 600

ctacttttt tttaaaaaaa agtacatttc aaaattttag attcatttag ggttttataa 660

cactcgtgcc ccttaacatt actgagctgg acagaagcaa gcacgcattg gtcattgatg 720

ccggcgcaga ctcaccatgc attcatgtac cggcacgtgc aggatcggag ctgaagtcga 780

tcgtttcctt gtttcagaaa cgagaaagaa aaacgtttcc gatcggcaca ttttactaat 840

caaggatgct ccccgttgca aaacgtttat tcgtgtagca ggaaattaat acaacatgca 900

tgcagcgagt aaacaaacaa gtcgagtcaa acacttctgc gatcgccgcc gccgccgccg 960

ccgtatgggc atgtggctgg ctgcatatgg cccgacgcag gccgactgct acggatacga 1020

gcgcctcgct ggctggctgc tgagccgtgc ccgtgcccgt ggaatcaggc ctgtcgcctg 1080

ccgcctgatt acttattgga atcaggcctg ccgcctgatt accgcgtggc gtccctgtta 1140

cttattggaa tcaggcctgc cgcctgccgg tgcggcggta cggtgcctgg cggctccggt 1200

gggccgacga cgaccgtggg gctcgttctg ctcccgcttt gcacgcccgt ccacggcggt 1260

gtcggtgtcc gagacccatc tatcagaacg ggcgcgatcg aagtatggat gctgtccgtt 1320

ctgatcatat ccgatccacg cgcgtgcgtc ctggcctacg cgcacacggc aacatgccaa 1380

gatgcagagt taacggacgg tgcatgtacg tgttgcgccg tacgttgcca cacgtactgc 1440

actgctgccg cgctgccggt gccgcgcccg tattaattgt ctatctgcct cgtggtggct 1500

ggacgaagct aagctaatta agcatcttct tctcatctcc atgcgatagc ggccggcgag 1560

ctggcatatc cgcgcgtgag atccagtagt ccatgggcgt acgattatcg cgtgtacaca 1620

gtacaccacg cacgtggaac aaacaggcta ctacgcaaca cacaggcgcg acgcgatgca 1680

ccgcacggca gcgtaagcag acgccaggtc gcgaacagac ccgccggcca ggcccgatcg 1740

atcaggcgcg gattcgcccg tatcgcgccc cggcgccgcg ctcgcgcatt aatttagccg 1800

cgaggatata atagccacgg ccacggccac gcacgctcgc tcgcacggcg gcacatgggt 1860

gatgggtgga ggccggccgt tcgctcgcct gtctgccgcg cggggccgtg cagagacgac 1920

cgcggcgcat cgcatcgtat cttccgagcc gcagcgcggc gtttggctcg gagcgaaccc 1980

aacagcaccc atcgccagcg gcacggcgac ggctcaaccg ctctcccgct gccgtcgtcg 2040

cgccgcggcg gcacacgtgc ccgtgcccgc cgcgcgatat tcgtatcgag gctttgtacg 2100

cacacgccac acccctgccc ctgcccctgc cccgccgcgc gaatcgtgga gtatgcaggc 2160

gggcgtgctg ttctccgaat ccgctccact gctctggcac attggatatt tgtttggcct 2220

gcactgttgt cttctctccc gccaaagcga cgaatagcta gcttcatgtt ttgacgcacg 2280

gacacggacc tgtttccatc gctatagcgt gtaggggcgg agagcatcga gcatgtgtgc 2340

tcctgctcca tgacagttag ccgagaacat gtgtgatcaa ggacagttag ccgatatcat 2400

ggcattgaca gggggggggg tctcgtttga ctctctgcca tggtgcatga accagttcac 2460

agtccgtgat tctgcagttt tcagcttgga cgctactccg tcctactcca cgcggaaaga 2520

gagtttgaca taagtgttca gccagggaaa catgctagta cgaagcctct ctctgctgca 2580

cagcacccgg cgccagca 2598

<210> 2127
<211> 1975
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52709_G1, chr2:5077727..5079701, Cluster 12

<400> 2127
tgtgaaggtc tgctttttt tttctatacc gtgtttagag aaaaatgcat cgaaaaaaac 60

actagtctaa ttttaccttg ccatcacaag tcaatcaata gtcttctggg acgtggtctc 120

gctttcatgt catcatatga taccgattat ctcgtaaaat gacatgcacg gaaaacgcac 180

cgatgccttg tcactgttac taatattggt gaagccagaa agaaactaag aaaaggaacg 240

ttgaatattt cagagaaaag aaaacaagaa caggacgcta atttgagatg tatttgaatc 300

actttatata tatagtctgc tatatatata tttttaaaca tataaaataa aattcgttgg 360

agccttttct tataagctaa tccctatatt ttaaaacaat tcactaattt aaggcactct 420

tatcatagga gtcagtacga cctgcaatca gtcatggttc caaaaatatc acacgtacgt 480

tgtggctgta ctaatcagga ttgccatata tacacatcaa atgaacggtg gctcatggcg 540

tcttccctct caattgtaca gtcactgtca ttttcttgtg aatcgaaggc gctggacatc 600

gccgcactcg atccaggacc aaccacctgt ttcgagcctt tacccaatca atacaccgcc 660

agcttgtcag cgataagaac agcgacaaaa caaaacccac cgcgcatcag gcattcagcc 720

cccaggtcgc ttttttttctg aaatactaaa atcatttacg acaaacaaaa cggcatttat 780

ttgaaaccat acgtataaaa tcttttacag aaaaagttaa gatgaagata atttgcttta 840

tctatttttt tttctagaac cgtgaactga gagagcaagg ccgtgtttgg gatggctttg 900

gcgtcacaat tgagcgaaga gaggccgtgt ttttaggaat tgcggaccgt agtccatata 960

ttttttttctc tctcctggga ttgggaacat acaggcccta cgtgccgcat cttggaatct 1020

cgtgtcccag gcactagcga cgagctggga gaaatggccg cgtcgggggc ccccggagat 1080

tcgaatctcc gggtggcgac cacgagcaag attgtctgcc ccgctgcctt ggaccttggt 1140

tcattggttg ggtgcgcgca cgtgacgtga gtggagagag cacacgacga gctgggtggc 1200

gtggagcggg ggggctgggc agtggacact gaagtgtggg ccgaggcgag ttcgcggttt 1260

gggggggctga cctgtggggc cgcgccgcaa gaggaaacga gccgccacgc gcagctcaat 1320

gcctgccccc tagcgtcgcg caacggacca cgcttcgacg gggggcacgg gcagtagcag 1380

tgacacagtg gggtatggcg acagacagca gcccttgagc aactcaggag ccagagatta 1440

caaccaaact aaatactagg ggtttgtaaa gtatatttta cttgtacgag ttggttgtta 1500

gatagatatt tgctcgcgtt ggaagcatat gcatgcagct tgatttttgt gtgtgtgtgt 1560

tccaaaccaa aagtacagag tttttggctt gtgatgatac cacttgcgaa gatcggaacg 1620

aagctaaagc ctaacaaaaa gtactcggtc gtgcgcgcgg ctgtaatgta agcatctatc 1680

gtgcctaatg gagatcctac ttctccggag ctgaatcatg ggagcggagc ggctgtcagc 1740

aatcaggaaa agggacagga caaacagccg ccagtcggcc agtgcaggcg tgacaaatcc 1800

gagcggttat ttaatctgat ctcgtcgaat taaaatgggg ggcaggctga gttggcgccg 1860

ctgaagaaag tacgtactcc cactacaggc cggctgctag cagtggtgcg tttcgtttct 1920

agtttcagag gactgctgta cctggtggcg ggtgcattga acaccgacga ctcat 1975

<210> 2128
<211> 2197
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52751_G1, chr2:5219312..5221508, Cluster 12

<400> 2128
aatgaaagtt catgcaggaa gagcaagtgt catgctcacc aaaccatttg aaggcggcct 60

actcagctcc ctctccccag atgcctactg ggctgggctg gcttctgtgt gaggccgcaa 120

gtgagaaagc aaacacagcc agaggagccg ccaatccgat gaagacgaga aacatgtggt 180

gttcgattcc caaatgccga cgtttgactc gacctacccg gcccaacgcc atgccgcgcc 240

attatctgat gaggaaaatt agcgaggcag caacccatgt gcatccgctg ccggctttcc 300

tggggcgagc tggtggaggt ggagaggaat ctttgcgtcc tcccctgctt ttaagcgtct 360

gctcctgcat cagcatcgat ctctcaggag gaccttccaa gtccaatcac tggttctggt 420

tgtacccctt ttctccccat tgtttcaacc caaagcaaag gcaagaacca cctccctggc 480

gccttcctca cctgaaaaca cgtttcgccg ctcagctgga gccaagttgt gaaccatgtg 540

ggcgaattcg ctggaagcac cacgggccat taattaggtc acctgagagc tggcagctac 600

actaatcgtg tagtatattg cactagaatc gatttatcta ctgtcttcgt tggaaagttg 660

cacgggtaaa ctagtagcgc tgctcacgag ccaagtcatt cccactgctt ttaccactgt 720

tccctgaccg acaaaatctg ttacgcagca tgacgtccga taattaggcc tccccaagtc 780

aaggttattc attgtcgaat ggtccaatcc atgcaacaca aacatgatcc ccaacagaaa 840

tgaaatggtc cggaaaagag gagcacgtaa cgtcagacga aagcttaggt ctttttggc 900

ctaatgctag ggccgtgcat gcatgcatgt ctctgcatat gtagctctga agagatgtgg 960

cctgcgagcc acacgttagg tcaaatatta ataagttggt ttatgggctc agtgggaggc 1020

gtactattat gacctcatat gattgctgtc ctgtcctcta gtgttgtgct gttggattgt 1080

ccaaaagcaa gttaattagt gcggttccca tgcagtggag gtaaaaagtt tgatgtgccc 1140

tgtgactaga ctaaaaatgg agtctacctg cctctaattg cgcgcggttt atcagtgtac 1200

tctgtcctga gtcaaagttc tacttgaacc atggcttaat cgtgagggtt tcattctgtc 1260

ctgcaaatgg actgaatttg gagttgtttt actcctgcaa actggaaggg ttttgccgcg 1320

gaactctcaa atagccgttg aacagttgaa tgtctattgc tatttgctac gtattactac 1380

ctcctcctag tacgagataa tagaaataga tatatgtttg tgtattttta ttttggaaag 1440

tagacagaaa cagtaggcag catatcttct aattggacca gttggctctt atgagttttg 1500

ccagtactgt ccttgttttt tttacatcat tttgctactg aattaatgga cgccccccgg 1560

ccgtttcttc tcccaagcgt ccttgtattc ttctgtagag tgcacaccac acaccgccac 1620

agtctcagac atgtgcagag atcagccaga gcagagcatg tgatcggcac agagcaatag 1680

ttaatggtag ttagagagca tcggcagctc gtttcctgga cgcagcagat accgggaaga 1740

agcgaaaaca gccgcctttc tgccggagaa acaacgcgct ccatcgtcgg cctggccccc 1800

gtcggctcct accgccgccg gcgaaccaaa caggccatag tttttactcc caccctgacc 1860

tgctgctcta actacacacg cagcaaaagg atttcctggt ctgcactgga cataacctga 1920

gcccccaccc cactgtttcc cttgagctgc aagcgttgcc atcccctggc actggcacgg 1980

cacggacggc gtttagcgta agagagagga cgccacaact actgctccaa ccagctggtg 2040

cctaaacaag gcaattgcaa cccagacgtc gctttttgt cccccgtggc cgtcagggaa 2100

tgattagttt agttcttcca cgagctatag ctagctgtta gcaagtgact attgccgacc 2160

acttgagcag catatggcac cttaaacaat tgcaaag 2197

<210> 2129
<211> 2415
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52815_G1, chr2:5542582..5544996, Cluster 12

<400> 2129
acggctatat atcatcctac tacaaaaaaa aaaacatggt ccaatgtagg agcggaccca 60

ggtgtaggca tccagactcc tctatttatt ttaatgaata cgtaaacata catcaagcag 120

taaaatatag ttaaatacga gtgaaaacta ggcaaggcat atgattatta tctttattca 180

ggccgtcgaa gatttctggg tccgccagtt gtccattgca ttgcaccact gtctatgccc 240

ttcttccctg tcgtggtcgt cgcagctgct ggtgttgctc cgcggcccct ctccctcctt 300

gcaaatttcg tgtggtctta agcttgggca atcaagctgt aaactgtaat ctgatatact 360

agtgttggcg gactggcggt aaacaggagt gctggcggag gagggctcga gacatgggta 420

ctcgtgagtc gtcgtcaccc aaccagctag tactccgcct ctgcggcacg gcaagcggct 480

atggatgcac atgctgactc tccaacaagg cctagctcta gctcccgtcc ggttccaagt 540

gtcagatggc cagcagatta gctagcctgg gacgggctcg gcgtgcgtgt tgacgctgtt 600

catcgcgtac tagtaaccga gtatatattt cttctcggta cgaatattct ctcctatcca 660

agttttaaaa gcggcgctgc atgagcctgc aatggcctag tggggaccgg ccaaccaagg 720

caaggcaaca gtgcccatca cctttctttt gttgaccatc atctgtggct aaacaaatta 780

agggcgatct ccatcgcaaa tcttcatgcc ctcggacttt gccagtacag cacgtactcc 840

cctcaggccg tctcagcaat aatgcagttt ttttagcatc gtactatatg ttagtatcct 900

ataagtttga ctaactatag ttaaaagatg ttaatgttta taatatcaat taaataccat 960

tagataaatc gtgagatata tttttatgat aaattgatct agatcgataa atataaatag 1020

tatgcgttag aaattaaatc aaacatagac ttaattgagg ggtatgaatg tcttcatata 1080

tccatatgtt aaactttagc atttgcatcg tccaaccatt acccatatgc tgctaataaa 1140

ctttagctct ttatttgaaa gggctaaact ttagcatatt gaaacatgcc ctaatactac 1200

acacagcctc ttgttctagc caattgtgtc cttctgctgc tcctagacta attaagctat 1260

aggacggcca cttgttggtg cagctcgctt tgcccattaa tgaagcaaac aacggactaa 1320

tcgcagcact tagcttatag acatacaaag tcacgtaggc aattaattat tgtagtacta 1380

aaactaggag tactagtata ctaggtgacg aaaggaactc gtgttagacc gacaaaactc 1440

tgttacccta aagccgagac gtacggaccg tctcgtctcg tcgtccacca atgcaaggca 1500

ggcacgtgca tgctgcaaat ggcaggacgg acggaggcaa tagcaagtct accgcaggtc 1560

atgagggcca gggtacgtac gacgtcccct gcccaatcgc gcgcccgcgc atgtgcgtcg 1620

tcgtccaatg gcacggcagt cgcggaaacg gaaagggaaa gccggaaagg cactcatgca 1680

tgcaaatgca aatgcaatgc cagagcgggc cgcctgggcc tggcccgtcg ggaattgtgg 1740

gaggctacag cgacgtctcc gtgcagtggg gggccccgtc tggaattgtg gggccgggcg 1800

ggactgcaac gaggagatgg acatggagcc atggaggggg tcaagcaaaa ggcagaggga 1860

ggtggcttca tacacggtca cgacggcact ttgcttgccg gccgcagttg ctacgactgt 1920

tcccgtccta tcgtctaggt acccatatcc tatgatccta gcttttaggc atggaacaat 1980

tttagctata tatatatata tatatatttt cgggggatgc atggaacaat tttgtgttgg 2040

tgggaaggag gacgaagtaa agatgagatg ggcgcagtgc atggcaggat caagtttaac 2100

cgtcatgtac ggtccaacct gcttatcttc cctgggcttc tgaggtccgt acgcacacac 2160

tgctggagtg gacacgggta tagatggatt ccttcctagc tcgtcctcca tccgaatgct 2220

agctatcatg gacgggatca gtctagtcca tctctagcca tctctgggac caaaacacgt 2280

acaacccact tcctggtgtg ctgacgccaa ggtggatgac caactgaata ctagctagct 2340

cgtgatgcaa caagcctcgg cagatctgca tccgtatagg gtttggcttg gttcagctta 2400

atccggcact aaatt 2415

<210> 2130
<211> 2133
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52817_G1, chr2:5553297..5555429, Cluster 12

<400> 2130
cgcaagccca cttgcacgcg gtcggggtgc gggcgttgtt tatttattaa tattaattaa 60

taatccagcc ggcacgctgg agccagaacg aaccgtccaa ctgccggcgg agtcggcagt 120

ggaattccag agcacgagca ttatccactc tgtccgtgcg tccggccgcc cctcgcagcc 180

cgcaccaggt cgtcgtcgcc tggttttctc ttcgttttta ttgctgctac cagcagtgtt 240

gatgatactc tgccgcgcac tgggccaggc caatgaatga tgatgatgat tccgttccat 300

ggttttgttt tgatttttct tttaataata cagcaagtga gcgacgaacg gaacgcctcg 360

ttgtattcct ggttactcca tccaccagca ccccggctgc tggctggctg gctttgttta 420

ttgggggccg tcgcggacag ataagatagc aacccggctc caccacctcc ccacccccac 480

tgcgcggccc gggccgtcgt cgctgtcgcg gccctgcgct gctgtcttcg tctccatcac 540

acctctccat cctcatactg cacacgtaac gtacagacga taaaacagcc aagccaatgc 600

ctagatcatc cagatagacg catgattgcc gttctcgatc tggcttgtat atatttggac 660

ggagcaccgt acgtactccg gccccgtcgg ccgtcgctct cgccgtgtct gctcgaccac 720

ctttgctgct gcctgccggc catccgtcag ggcaggtggt acgtacaatt agaatgtaca 780

gctcgacgcc accacacgta tatatattca tggccgcacc gaccggcgtt gttgcatggg 840

catggcgcgc ctgccactca ctgccagggc cccgcggcgc ctccgaccgc cgcattcatt 900

tgaattcaac acgggcgagg cagagccgcg tgcagcgcgc actcggggtc agatgcttac 960

aaacagatgg atgcagttca ccagggaggc agggaccagg tcataacctg gtaccacgag 1020

taaatactgg atctagatag ccgcatgcgc tgtgttccag tacggcgtct cgtactggtc 1080

tggagctcgg ttggtctaca ggcagcaagc tggtggtgtg cgtacggctc ccgcgcggac 1140

ccaggcccag agagtgcgtg acgccagccg agaacgcggg gcgtgtgaat gcggacgcca 1200

ccgacatcat tgatgttgta ctgcgcgagt cgttgcgtcc accgcgcgat tttcataaca 1260

gaactccctc ccacccaccc acccacccac ccaagtcttt gaaatcggtt ggggcacaca 1320

cctacctgca cacggccgcg gcacccaaca cctgctccag ctccgctggg tcccgtcccg 1380

tcccgtcctg ttcccgtgag gaggcgacga gccgacgact ggaccgcccg tccgcacccc 1440

acctcacctc acctacgccg cggatcggat cgtggacggg attcctccac acccacccac 1500

ccacccaccc tatgccggcg gccctcttct cgtctgtagc cctagccgcc gcaccgacct 1560

gcactgcccc cgccccgccc cctagcattt gcctgcaccg accgagctat aaaagcgacc 1620

acgcagacac ctggccccta cgccgcgccg tggtccacgc gtcagcgccc cgccgtgccg 1680

tcgcggcagg gtgcaaccgt gcaagtgtaa cgggggacgt ggacaggatg tggacgcggt 1740

tagcccgccg cggacgtcat taacgtgaat gattgggggg gtgggggtta gataatgggc 1800

ggccgatgcc gtcgctggca agcaatttga cgtcccgtgt ccggattatt cggccggccg 1860

aggaggatgg atggggtgag gttccgtgga cgagggggcc acgtccacgt cgacgcgcat 1920

cacccccga cgccacatgg acatgtcggc ggtgcgcgca ctctcgcccc tatccgaaga 1980

ccgaagccgg cggcggttgg ttgggggttg gacaaattag tacgcgcacc aaacgtacgg 2040

gcgcctgggc aggcagaggc aggtgcccgc gccctgtttg ttggtattgg tacctcttgc 2100

tctcctcctc cagccaacgc gtgcgatgat aga 2133

<210> 2131
<211> 1757
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52963_G1, chr2:6192629..6194385, Cluster 12

<400> 2131
aatcggcggc caaattaagc cctgctttgc cgcctgatta gtgccatgcg gcagatcggt 60

tgcagaacaa cagggacatc acatcactca ccgtccatct tttctcctcc cctttggccc 120

atgatgtcgt cggggatgca aatgtcgctg cagccaacga gctagctctc cttgctaatc 180

tccatggatc catggattcc atgcccttcc tcctctcacc gttgttgcct tccctcaaaa 240

tcgaaaacct acgttcgcat caaacagctg catatttgga ttattcagag gaaaatgagg 300

cgaaagtata gtaaatttgg ctctatttaa aacttaaaac aaatacaaat ccatatttat 360

aaaaccatac tttttttcc caaagcacta ctaagcctaa aacgatccaa ttaatagatt 420

atttggtta tatagacact ctagatattt tagttaaaat agattattct agcattacaa 480

aggaagtgct ttttcccccc ctctgaactc gccggcacat gggctctccg ctcttcgact 540

gggcagcaga gaggcgaggc tcgtcctggg cgaactgaac tgtggctggg aatctgcctc 600

ctcacctcga tgacgcacgc acccaagctt ttcggaccac agcactaacc gactaaccgc 660

tgctagtgct agctaagtag ctaagatggt agtactagtc aatatacagg agcacatata 720

tcttatcaca aacgtataaa taggatgaaa taaaatatca aatgtgagac ctgtcgatca 780

agatatcgga tattaagtta gcaacggttt actagagctg attgtcacaa ccaccacatg 840

gtctagatct gtaaacctgg taatgggccc atataaaata ggttcattta aacttcattt 900

cctcctgtat attgactatc acgcctttta ctatcacgtt agcaacggtt tactaaacct 960

attttataaa ataggttttt tttgcatata tatatataaa ataggttttt gtgctatacg 1020

gtctagatct gtaaacctgg taatgaagct tgcccaggat cgagctacct tcaaatataa 1080

cggcaaggag gctacgaaag agggcatgat aaatatcctg ttcctaatta agtgctggat 1140

taattagttt gagcaacgga actctgttga ctgagaaatg aaaggaggaa ggtagactct 1200

gcgcttttgg tgacatgata gaagagaaga atagacaggc agacaagagc ttggtttggt 1260

gggggggagaa gagagaccgc ggacagagac gacacgaatt ccgtgtgcgg acaagcatgt 1320

gtaccgtgtt gggccacgcg atccctcctc ctggggcctg gtgctgggcc tgggccttct 1380

cgatatcgcg gtctccctgg acttgttccg attcggtcca cacgttgcaa tgatcagctc 1440

gcgcccggcc gacgacgtac ggccgccgat ccatccggag ttccggactc cacggcagac 1500

cggccggcac ccacgacgca gctcgagacc gcaactcaat ggctgacttg gctgcagctg 1560

ccctagctgc tacctgcagt ataccaccgc tagctcctta gtaggccggc cggcgccggc 1620

tgggacacgt acgaggcgct tactacgtac gtacgtacca tgcatcaggg tttgtagggg 1680

ctagctacat gtgatgatga ggtcgacgta cgtacgacga ccaaatgtac gtacgcgaac 1740

gacaggccac caaacgc 1757

<210> 2132
<211> 1627
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53484_G1, chr2:9276814..9278440, Cluster 12

<400> 2132
atattataaa agatgacaca agatatatcc ctgaggtttc ggttgctttt tggcacccta 60

cgctctcgtt acgacgagtc taatctagat gattcaagcg ctaattaaga ttcaacctac 120

gctctcatta gtccacaagg cgccacagga tcctcccctt cctcttgact tctgaaagct 180

taagacctat tataaagttg tgtgtgtttt tttactgttt tttaagccta cagccaacag 240

tctagttttt agcgtcattt tgcgactcac gtccgtccaa caattcgagc aatcgagcgt 300

cgaagtatcg attttgtgat cacatcgtta acccagcagg tcattctaag gcttcgtcag 360

ataggtccct caaccatggg cctgaataca caagcgttag ctagaaggct gatgaatcat 420

tggcaatgtc ggacgcgcga tcttcgacgc ctgtccagtt gtgctctgtc tgtctgaatg 480

aatgaatgaa tgattgccaa tattttaaca tatagccata aacgcatcgc caccgtctgt 540

tttgtttatg cgttgcgcgc gctaaactaa tgttttcatc tgacactgac aggccgtgca 600

gtggccacat gctgcagcag gtttgtatca ggaactaagc ggtaaactaa gggaggttct 660

tttttttttct cttccttctt ctcgcgcagg aagcttcctg ggtgcttctc tcgcaatctg 720

acctaggttt tccattcccc tttgctcgct tctgccgacc gtttgaggca gcagtgcgac 780

gatgatcggg aagggaaccc gggcggttgg ttggaagtga ttgatgcggc cagttgttta 840

ctactttatt ttttttttctt gcgcctttct ttgaagacga aagtgcagcg ctgatgtgag 900

aggttggcaa atcctgctcc ctgcgcgtcg gcggactctt tgaaacgcat atcggcatat 960

gcatatgcga ctgtcaggtg tcgcgcccag cgattggcac cgcggcctgc cttcggagtc 1020

aaactttcag gcagtggttg ccgcagctga cagcaggtgt gctagtgtta agttgctttg 1080

gccattcaga atcggagctt cccatgcatg gaggtcacgg ggaagcccca gccagtgatg 1140

cggcagctgt tcatgcgaac gtgattgctc caagagccac taggaggagc agtgtcatca 1200

tctgcactgc actgcactgc acctgcggct gcgtgcatgc acgggacggc aggagaggaa 1260

ggaacagggc catgtgttgc tgcaccatcc atccatccat gtgacctgac cgcccaacca 1320

atggaatgtg attggattct cacacacgac acgccccaac ctatgcgcct ccaccgccgc 1380

tctctccgtt ctccaactcc acagtcccca ctttccagga ggccaacagt ttaacagaaa 1440

tcatggagga cccactctcc agcaagcaga cgaggaggag gactgacact gttattttct 1500

ttataatcac tggaaacctg aacttgtaat aatacaaacc taagatggcc cttcggcctt 1560

tcggtgtcac gagccatgac aaattcgtca cactaaaaaa aagtcagaaa cactacaata 1620

aacacct 1627

<210> 2133
<211> 1551
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53783_G1, chr2:10789077..10790627, Cluster 12

<400> 2133
taaaaatatg tttatctggc accgtaacat aatttttcta atacaataaa tacttgtacg 60

agattattaa gatggtaaaa ttgtacattg ttttttagct tcttaaagat cttaattttt 120

ttttaaaaaa aactgaaaac tataatgttt tagttcgtgt cgagagctac aacttttac 180

atagaaaata tttcgatttg acaccatata aaaataatac agcttcttat attacggaaa 240

gtttatttaa tttgttgaca tatattaata tgaacattat aaaaacaagg aagctgtacg 300

tctcatgaaa atctacaact ctcatacaaa gttatcttca tctaaaccca tgcaaaagag 360

aatacatatt ttgtaaagct agtagtatgt ctcagtgtct caccgcacca gtccgattaa 420

cattatgcta tagtatgaca ggctttttt cttctgccgg aacccgttgc ggtgcggcag 480

catgttttga ccgcccaata aatatgccac ggccaaaccg gtttcgaatg ggaataaaaa 540

agcaagtgat atttttaaaa taaaaaagca gccgtatggg tacggcccgc aggggcggcg 600

gcaggcggat gggccccgcg gggaggtttc tgcgttccac acgcacagct cagtggatcg 660

gccgcggcca tatatattct tttgtttttt ttttctttct cccccgcctg gactcgctcc 720

cgaccgctcg ccgactgcac ggcgttgtcc gtttcagacc ttccttttt tttcctgtcc 780

cgaattccac cgacgatttc ttttggtttt cgtctttgcg tgaggtctgg tcagtctgct 840

aggttccaac agttggccct gcaacaaatt ggccggttaa ttcgatataa accggaacaa 900

caaagacgac gagcttagtt tttagtaact gcagtagaaa gccggcaacg caggcttgcg 960

atggttggga tggaaccaag tgttgggcgc tccgtcctcc caacccgcgc agcaacgctg 1020

gttgacgatg catagcataa cggcagcacc gcgccgcagg caaaggcgtc gtgtgggggt 1080

ggggtgcgtg cgaggaaacc ggggggcgcg cgaaccagac aggcggtggt agagtcacgt 1140

tgcgcacgcg gggggggggac gcgtacccag gtgcgtgcag gtggcgtgcc gcgggcgctt 1200

tcagcctttc actcgacagc tctcgcgtgg ccggcggcga agcggtgctc ctgggtcctg 1260

gcgctcgcgg cttctacgct gccacgcgaa gctgtactag tccgaatcag gtcaggtacg 1320

agctgaggtg catgctgttg catggagaca ctactgcctc cgtccaagtc catgcatcat 1380

gcatgccgac aatatgctgg cgccgtcctg cgcagcaaac tcggttgcct cggcgcgcgc 1440

catcgctcct cgtctcctgc acagcatagc atagcatagc atagctcagc ggcggcatcc 1500

ttttcggcat gcatgaacag gctgtgtccc gcgtgcttta cattcgagga g 1551

<210> 2134
<211> 1486
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53949_G1, chr2:11546173..11547658, Cluster 12

<400> 2134
taaaaaaata gaaaaataat cgacagaaaa tagaaaaaac aagttatctt tgagttcttt 60

tacaaggtgt tcttttggtt aacatgacac ggcatgatag tccggcacga ctcgttttaa 120

actaatcgaa ccatatttgg ctcggcctgc ggtccatgag cgagcacggc acgtgacggg 180

ctcgagccgt atcggcatgg caaggcccat tggccacgta ttgggggggag gggcttgtta 240

actgcaaagc aaggtgttgc ttaaatctgg aaatgtaatc gtcgctctcc gtgctgcatg 300

taatcgtggc agtgtcactt gagtaggtgg cactggccaa tggccattaa cgagatgatt 360

gcgatggagc gtgccgcggt ttcctattcg ctgtgtccgt cttgttgttg ttctgctgcg 420

atcgcgctgg ccagtggagt ggagacgggc tgccatcctt ttctactacc ggatcgcttt 480

caacgtctcc ctacgccatc gcgataagca gccacgtact actacagaag tagtactgct 540

acacagcgag tcgaacagca accggtttag aatgcagtca gttgggttgc gacggcagca 600

gcagcagcaa ttaatcggtg atcccttgca aggaaccgtc tgagggttcc tcgatggcgg 660

cggattacgc tctctgtgcc ggccggccct tgagtaggtt gcaatcgaag catggcatgg 720

gatgggcggc ctctctcgca gagtcgcagg cggcgtacgc gcgtggtgct ctgctgtctc 780

tttcggcccg cgccgcgccg cgcggcggcg cggccggtcg ctcgatccat ctccatctat 840

ctactacacg cgtgatctga tgaggccagt gccgcgctgc gaactgaacg tctgaacggg 900

ggccaccacc tccagcaggc aagttgcatg attagcgagg gaattatgcg tgcgtgcgtg 960

cgttgctggt agccaacggt cggctcgatc cggatccggc tgggccggcg ccggcgcctc 1020

aggcgcgggc gcgggctgtc tctgtggtac ccctgtaatc cggccgtttg gcgatcgaca 1080

ccgtgcgtga ttggagccgc acgctgacgt agtacgccgc agagctgcga cgaatcgatc 1140

tccagcgacg aatccatccc ggcccaaacc agctgcacaa attctagcca gccaggtccg 1200

gcgagcgtac gcgtgacaac acacgggcat ggcaggcagt acgtcatgca tgtatattgt 1260

cctctggcca agtaagggtc cgactctgat cgtgtgttcc ttgagatcgt tctgtcgatc 1320

tccgctgatc tctagctagt ctccgcaccg tcgttgcttt gttcgcttct tctctgccac 1380

gaagaatggg ggttctctgc ttgtttggtt accagctaga gatggccaaa tagttgtatt 1440

ggtctggtcc ggcatgtagg gatggcaatg taaaattttc atcgca 1486

<210> 2135
<211> 1938
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54138_G1, chr2:12689395..12691332, Cluster 12

<400> 2135
gaccgatcag agatgcaagg atctgggact cacatagcct cgcctcacag gtggtgcacg 60

ttttgatgat gctgttcatc cttgcccggc cgctacttgt aaagattcct cgtgcatgca 120

tgtgtggttt ggtttgaaat cgctgtctta ggcaggcatt cgagtttgat gaggacggca 180

tgtgaggggg gaaaaagatc acatggctga ataggagaac gtgtggttgg tttctgtgct 240

aaccgcgcca cgcctacaac gtggtctgtg gctcgtgact gaatcgaagc tgctggtttt 300

ctgcttgatt tggatagcct gtgcgctgtg ggatgtggct tattattatt agctcccatg 360

tggattcaat tcaagaatat atagtgattg tgacacggtg acagcaaagg gttttgagcg 420

cgcgatacaa ggtagtagta gtatcatata aatcctaact tgctgatgtt tgtttgatgg 480

aggggatgaa tttggtgctg ctagattgaa cagattgggc gctggatttg ggtgcccgct 540

tataatgaat cataagagag aattccatct accattgtct tatgtctctt tgtgttcgtg 600

ttgtcacgtg aaggaaacag aaaataggtc ttcgtctaca tctttctcac ttctacattg 660

ctaacggaat ggtttatatt tcgaatatga gatccacaac gatgctgata cttaacacat 720

aggtcttcag cagatcatgt atatggcaga gcaaaatatt gttcaacaca attgtgtcgt 780

ttctcgctag tgttgtgggc gtgccgcttg ggtgggttag catgaggttc tattttaaat 840

gggccgcttg aagtcctgac ttatcgtcgc cttcccacaa agtaaaccag ctatctatac 900

ccgaaacatc ttggcccaac attttcacgg acatttcgag gcccaaaaag acttgtgaac 960

ttgttcgtgc tctcctggct ttcctctcga agactcaaca agtcaacaga accagcgagt 1020

cgtcgtgaaa cgagaagcag caagcagtca ctgcactttt gtttctgatg gacaataaca 1080

tgtggccatg tatgtccctg tcgcacatcc aggtttcagc ttatatactg gcaaaaatga 1140

aaaagaaaag gaacaaaaaa aaaatcaagg acctctgtcg gtaacacgac aacaccatgg 1200

agcacacgaa ataactcctg tatttgtgtg agttattatg gatattttat actgtagaaa 1260

ttgtgagaag agggtatagg cagtggagat tatgcatggc tgaaccttta tctcaattaa 1320

tcacttgttg gtataaatgg gtggacagga taattattag cacagcgtta ctgtaggaat 1380

gggcagtggc ggacctaggg cccggcgacc ctgggcgcca gtccgggctg caatggccat 1440

atatatcctt gaatttctat gtatttctat gacaccatat gctctagaac gtactatcta 1500

actagattaa cgagacttgc tcaggctatg atttagcgct gggtctgtca ctggaaatgg 1560

ggagaagagg gtatatgcag caactctatc tcacgtagtt acattataga taatacgaaa 1620

acgcaagttt ttgctgttca tcctattttg atataaaaaa atgtatcata cagttagcac 1680

agcgcgctct tgtatacagt aacttgggtc gaactggctt gccaatagtt cacaaaagta 1740

aaatgagtaa actgatacag aaaaaacgaa tgaagaaggc gaagatccaa cggctgggat 1800

aacgcccagc tgctctcgtc cgacggtcca agagctcctc tgaagccgag ggtcgagcag 1860

tgccgcgtga cgacgctaag gattacactt ggctaagggc acgtcagccc ctgtgtaaca 1920

gggagctgct taagtgga 1938

<210> 2136
<211> 1619
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54427_G1, chr2:14224010..14225628, Cluster 12

<400> 2136
ccccccccca ctcagcgccc aacaactgtg cgatggaatg cgaacgcttc ccatcgtttt 60

gtctttttt ttatctctat ctctttcttt ctttgacagt gaaactgtga aagaggatca 120

ggcgagctgt ccacgttgcc acatcccgca ggtgttcgtc cgtccgtcag tccaccgtgc 180

gtctcttctc tcgccggccg ccgaacaagc agctcgcgtg ctacgcacgg gacgggatac 240

agtcgcaagc atccgtaaac aaagctgggc gcgtatctcc agagatgctg ctccccgggg 300

cgaaacctgc ctgcctgccg gaccgatgga atctcgagcg cttcgtgcgg ccgcaacgca 360

acgcaagcat gcgcccacgg cccacccccg aaagcgtgct cgcacggccg cccaagttga 420

aacctggcga cacagagtgg tggtctactc taaacaacgg agttttcttc cttccataca 480

cagagccagc tagcgtaccg tataggattc tgtccaaagt tgtcaagttc aatgccggcg 540

ggcgcaagca caacagatcg cgtgcatgtg cgttctcggc cagtgcgtgc ccacctcgta 600

gcagacgcgc cacctgccat gcattggttc cagccgccga tgctcacacg cacggtgctg 660

ctgcatcgtg gcgtgcatgc accaactcgg actggtccgg agagaatctc tgatctctcg 720

tcaggaagga aggagaccta gtagtagtag tagacaaagc agtgtccatg caggaaaagc 780

ctgaaatcgt gtgagtgagc gtgacacgta ctgtgactgt gagggaggga gcaaggctgt 840

tccaaaaact ctgcaacttg cgagggcgag tgccttcaat catactgaca cacatgttga 900

tgttggcatg gatggccgcg cgcctggcca tgcgggggcg cgcccgcatc ggcgtgtttt 960

cgggggata aaaggatggc gcaccaatta tcacccatga atatacagga ggaggagtag 1020

gtaactaggt ttagtttaat aataaagcca tagtttggga gttggggacc agcatcgtag 1080

tgttaatctg atgatgcaga ccaatactct aatacgattc tgatcgatca cgatgcgcca 1140

ggatatctgc ctcgagattt ttgctgcaca aagcggagca agtagcagcg tttgtgtttt 1200

tgtaacagtc cacggaagcg gagcaggttc acttgctcag tccgtgagag cgtcctctct 1260

cccctgcgca cagctactac cgtcggcgct ctctcgctcc cctagctgga ccatatgcct 1320

cgtcgcctcc ctgctcggct gctcgagctt atccgtggct ggagcccgct ggccccccct 1380

gcagcggcga cgcggccttg cggcggctgg gctcggcccc tcagcctctg gcgtctggcc 1440

aacgtcgact gcgcactgcg ctgcgcacga gtctgccctc cgccgaaacg gaaaagcgcg 1500

ggaacaggaa catcggtgga ttgggagctc ggtggcggcg aacttatttt ttccttttt 1560

tttttctaaa atgaggattg ggattgaggt tttgaggagt tattagagat gctaagtct 1619

<210> 2137
<211> 2768
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54861_G1, chr2:16643329..16646096, Cluster 12

<400> 2137
attctattcc acaaacaaaa caaaaaagtg aggaaacacc ccctataaat aaattatcca 60

tctttttatc agcttaagtt ttttttattg agctggttga ttctcacaac tcaatacttt 120

agacttttt atgaactcat tttatagggt gtcagctacg ggttgacaac tttcgttgca 180

ggccatcaac gagaaaagaa aaggaatgaa ccgctggtct gttgtattct aaatgtgtac 240

aataacatag gtgtagaagg tcaactaacc tattcgtttg aacattattt ttttaaaaaa 300

agataatact agctgtgacg atattgcaac aattgtcgcg acggcatcac accatcgtcg 360

atgtctcgtt gttttttga agctcatcta cggggactgc aatatctctt ttctggtaaa 420

taatgagatc tccttctttt tatgcactat tatgttcgtt gtctggactc ttgtgcacaa 480

aagtttacac ctttgtcaat gcaaaaaaaa aaaaaacggg gaagccggca atccatcctc 540

gctctgactc agattgacaa gagcatgctg gctcccttag accaatgcta gaattctatg 600

taagaaacag tagtgtcata cgcggggcgg gacgggtttt ggtcggcaaa taacgctagc 660

catattcgtt ttggtcactt atatacaagc tagctactag tatattaagc taacaacgcc 720

tagctagcta gcagcggaat catgacactt gggatctttg cttgctatgg ctctctagga 780

attgcggcac ttgtagagaa agcaagcttg gatagccgct tgcaccacca aggtgctctg 840

catgtgccgg cctagtagag cagcctgcag ttaaaaaaaa gcgcaagcat tagtactaac 900

ttgggagcaa tcgtggtgag atgcgctgaa aaccaggtag tatatgcaaa actagggtct 960

ctcgttcctg aatcaggcaa cagcttgatg ttgtggtcgt agtaggttca tgcttcaccc 1020

agtagtctac taatactatc ccctttttag aggatctgcc gttaacaata atagcagcac 1080

acttgcagaa atggatcgat ggcgccattg ctcatcacgg agacgagacg acgaccatag 1140

gccaccaaca tgccatgtta atggttgagg aaatataggt ctctgcctcg caagttgcat 1200

ccgtgcgccg gttgcagtat gtgcgcgcat cggctaggca tattatgaca tgacatgcca 1260

tgccaatgcc atgccatggg ggggaatgca tctcggcaac aagtggccgt attataaccg 1320

agcgcccaga ggtttcggcc gcgggggtcc atgactagtg cagtagagca gtgcagcagc 1380

ggcaggcagc aagcattggc cttgtctcgc tcgggcagtg accaaccaag cgtcatggtc 1440

catgggtgtg gtggtggtgg tgccactgtg cgctagcctg aggcctgaga gggctgaggg 1500

cgttattgga caaaaggagc tccaaggctc tggcattgtt ttgccttggc ttggctgcat 1560

gtgtgtggga gatggtccaa gccatgtatg ccgtgtggcc tttcttgttg tatctgcagg 1620

ggccaggggg cgtggggcgg ctgctgccgg cgcggaggcg ccattggctc gccccgccga 1680

gtgtaaaacc aaggaggcag gtactggtac gcgcataacc tccgcttgtc gcgagagagg 1740

cgcgcgctgt actcttttgt tgcgttgctc ctggccgaag ccaatatcca tgccccatgg 1800

cgatggcagt tgatgagaga ggcagttgtt gttgctgctc caagacttgg ttttttagc 1860

ccacgtatat gtcgtgagag agcatagcta gagcttagtt ttcggctcac gtacaacgca 1920

cggctggcga aacccgcggt cgtgagcaac ggagccgggc ccgtgcgtgt tttatttcgc 1980

cgcatatgtc ttgtcgacgg cctagcctac gctgcgcggg acaatcaagc aaagcagctg 2040

ctgtatttag cttgcggcga cgtggacaaa aaaaaacaaa aagaaaaacg cttcgctttg 2100

gcgcgtctcc ccgtcggcgg tggagccgcg gagaaactac gggcgcgttg gtcctgagcg 2160

aaggtgacaa aaatctttgg actcagcgct gcgcgatcca catggggtac ttcaccggca 2220

tgcagcgtac gattctctgg cccaggtgct gcctgacatg cgggaccctg ccatacggat 2280

gcaggtagca ggagctaccg tgtccggcgt gctgataatt ttctgacatg tgggctccgt 2340

acacgaatat agataggtac acgaacaggc tactagctcc aaaattgctc cctccataat 2400

actaataagg gcatgtttag atctatgggc taaagcagac ttattaaaat ttagtcactt 2460

tagctgctaa agtttttaaa ataatgtacc aaaagggact aaaatgtttt agcttcttca 2520

gcttgctagg aggagctaaa ctacactaaa acaacttatc accacaccca cacatgcaac 2580

ttgcgcttgc tggcttgctg ctgcccccgt gctagctgcc tgctccacct tccaccatca 2640

caacgctagc tgcttggtcc ccactccccg cactagcatt tatgatttaa tgtatgcttt 2700

agtcacatgt tccgaacagg agtaactaaa ttttagtcac tttagtttag ctccatagat 2760

ccaaacat 2768

<210> 2138
<211> 2345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54949_G1, chr2:17089878..17092222, Cluster 12

<400> 2138
ccacgctgtc aatctgtgta ttacaattct atatataaca tacaccctag taacaacaaa 60

tagaagtaag aggaggtggt ctgccgcctc tccactacag gtccctctgc gtacttgtat 120

gtgaaaaaaa tataaaaagt ataattagat acctgctgtt ctggggagaa acgatagaca 180

catatagttt tagctatggg agatcgtttt gaaattttaa atatcttaaa atgtaaaaat 240

tgaaaaggat acaacggacg aggcggttga ggccccatga agtgggcgtt gttagccaga 300

ccagcaagaa cgcttagaaa acctcgagca gaagtgggcc gcagcccacg ggcatggagg 360

ttgcctgctg cgacgcaacc aagaaaaggc cccccgcatc caccgagccg gtttggaaga 420

ggagggatga cggatggcac agccaaggcg tgggatctct ccgcggaaac gtcagatttg 480

gcagtgaata gaattactca cgcgagtggt cgccgcgttg aaactccggt cccgctgctg 540

tcacggggag gccacgtacg tactgtcgat gttgtgcatg cacgaaccgg ctacagaaag 600

ggcaggcact ggcagccgtg tagattgctg cgcgtatagc aaatctatgt acccggcggc 660

cagcccctct actcacgaga ttgaaccaca agcacgttgc gtaccagctg caaacacgga 720

accgtgtgtc cgtgcctgtg cttgttgtga cgacttttga acctcagcat acatgcatct 780

accatagcag gccgcctccg ctccgaatct accacggggt aaaaaggcgg gcacgcgaaa 840

cagcaggcca cgccacgtcc cccctctaca ggaggccgca gggcaacagg tagggtacgt 900

acacatgatt gcgaccgaaa agctgtaggc aggctccaaa tgcactgcac gcatcaagag 960

gcgtgcaatc agcatcacat tagcaatcgc atcgcatagg attctcggcg cgcggggcct 1020

gcagcacgcc cgtgaccgcg cgcgggcgaa ggttcttcac cggacatgcc aaacgcgccg 1080

cgacgacgct acaaacaaac cggcatcgcg tcccaactaa cccttgcatt gccgcctaaa 1140

ctaatgaaaa tcgcgcgccc cgattcgctg ctactctccc ccctactagt ctagtctagg 1200

ttaccgcagc ggcgtgtcgg tcatgacgac gattagtaaa taaattatct agtacgtact 1260

actatacact cgctcccagc aggcaccaca cgggcacacg caccgtacgt ttacgtgtca 1320

gctcaactgt cctgtcctgg ccaggagacc gcttagccct taaaaccttt gcaggaattc 1380

ccgaggacga tgcttaaaac ctttgcagca acagcacagc tagcataccc tcctccccac 1440

gtacgtttcg cggcagtcgg aggctcggag cgaagcagag attctctccg ggtctcggct 1500

cggaggccgg aaaacgaccg agatcttaat taactggtta ttagctctcc aacctctccg 1560

acgttaaccc tgctggtcca cctcacgatg aaaccttcct tgactaggca ggcattcaca 1620

acaacaaagc catgccatgc aagcgatctc tgtgtcccaa caaccacggc atgcagcagc 1680

ttccttcctc caataattct cgccttttcg cgctttgcct ttccagggaa caattgtact 1740

tgcgatcaat ccatcttttt tccttgacgc ccgccatgca tctcatcatc atctttcgtc 1800

agatcacgga cagcacacga gacaaaagtg gaggctagct gctgatcgga tcgcgcggcc 1860

ggccggcggg gcagtggtag tggtagtgcg catcattccg gccctgctgc cttttcccgg 1920

ccctttcctt ccaagaatca ttggacaaga tcgtgagagc tagctagctt ttacgcccgg 1980

caagcagctg tctctgtcgg ccggccacgc ctgttagcct cgccgccgtc gccgttgctg 2040

tcaataacta acgcaacgct gctgcagcag cagcaggcca ggtacggacg gcttccgaca 2100

ataattctct ctcgatcggt gaccaccgcg gccgccacaa cagaaggcgt ccacgaggaa 2160

agccaaatct tccacaaatg cgtgcctgcc gcgcgcgcac aggaaatcta gcagttaggc 2220

ccaaacattc cgttgctgac tgactggtgc tgacaggcgt atgtaccacc aactaccaat 2280

ggagagtagt atgaatataa cgaagaatat atatccacag ctttgaccct tattttactt 2340

gtttt 2345

<210> 2139
<211> 1629
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55920_G1, chr2:22073805..22075433, Cluster 12

<400> 2139
acatagtctc ctggaccaca ccaaaactta ctcatcgggt tgctatggat gcacgagaag 60

tagacaacaa taaccatttc caggtgttga tggattcgcc gtgtcaaaac cacggctttt 120

ctacttcaat tcgaactttt taacgggtgc accaattagt aaattggtat cctttcaaat 180

atattgatgt aggttctgtg cagcactgtt tttcatccgt cattcttaat tttgaacatg 240

ccaatatcat atttctcatc aaagccaaat catactagta gtacgtcagg tgatgtgcac 300

cgcttatttg cgaaataata atgtcttgat tgctttatag ttttatatta aaaaaattaa 360

tataactgat ggaacaattc atatatatat agctctttgc tgtctatata cgtaccgata 420

attgttgcta ctataagctt ctaattttat gcttatgcgt atgatttaga cacgtgaaca 480

ttaaccttag tacattggca tattgccatg tctttgtcac acgtagaact taagaccctc 540

ctaattccta aacttcggtc attgatccta agtcagttac aatttgagcc ggcttgacag 600

tggttagatg tcaggcattt cgtctctctc tttctgccat cccgcttctt ggagattgca 660

agagacgacg ccctctcgga accggatgac tgcaggatct atgtctactc tcagctgtgg 720

atccctgtga ggtgctgccg cccgtatggg atcatctatg cctgctcggc tcgcgctccg 780

tcgctttcta aagttgtggt cgacgactgt tcgtcggatc cgatactctc ccattcccaa 840

ggctgtgaac aatcgttttt tggtgttgtc tccttccaag aatccacgca acagcttgat 900

tccggttctg atacagtcgc ccaaaagatc ttcgttccac tgtaccaggt tacagcctca 960

acgagatatg ggacgtgggt tacattacgt tacatagtag ggggggaaaa cttgcagata 1020

aattggtgat tttacgatgt atagtatagt atagtacagt gctcgcgaac gtagggcttg 1080

aggagttgag ctgtgttttc agcaatacct gaacctgacg tctcgagcct gtttgttgcc 1140

attaatcgat agttccagtt catgttcatc ggcgtgatgt gtcgcgcaat agctcggctg 1200

cgttatctca tctttggacc aaagctaact ggtgggtgag cgtgataatc cactcagccc 1260

gcgagatacg acgaaatgct caaatgcggc aacaaagcta gaagaggacg cccccaaagg 1320

ccaccgagct ttttttcgcc cctccccacc gtttgccgga aacgtctatc ttcttcctag 1380

tggaggatgg ggtcaaaagc ctcgcgcggt gacagttcat ggtgcgcgcg gcctttcgct 1440

ctgtcctcaa cggatcaacg gaggtgtgct gcacctgcac ttgcgcggag ggaattgacg 1500

gcggtgggcg attggttcta ctttaaggct aacttgggag ttataaaccc ggagcgaatt 1560

ggatgagaat aggaatttag tctctctgaa ctcttcggtt ttgtggctta caaactaacc 1620

ccttagatg 1629

<210> 2140
<211> 1726
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56005_G1, chr2:22709293..22711018, Cluster 12

<400> 2140
taagttttga gctagaagct taatgctgtt agagacacca gatctgcatc agatggatta 60

caaaaactgt agcaaggcaa tatgcgagca tccaaaacca cactatagag gctactagct 120

agggcgctag gcgtggtcct ctcagtgtga catgcacgcc cttccctcgc acgcaagaat 180

gagagctgtg gcttttgtcg tcagctcata ctcatacata cagagtgcat gatgttgcaa 240

caagaccaat ccgccgatcg acgatgcttg cacatatttc accacgtgcg tgtgcaacag 300

ctagacgtac gacgatctgg cagagatgaa gaacccaata gctaggtctg tggatctgtc 360

gtccccggcc caccggctac agtacaaaag ctgcgtgctt tgctctcttt gttgccttga 420

gctcgaggtc attagctagg agccttagct ttccatccga aaaaaagggg gttgtttggt 480

agtcgacacg tacactacta ccttggcaca aacataaaca taaactagca ggggggggtta 540

cgttgtgggc gtacgtgtgg gacagagatg gcgatgtccg gagcaagcta gcgcgcggcg 600

gcatcggcgc cggggcgatc ggacatcgga gctagctcgc atgctttggg aatacacaaa 660

gagagctata gctggtcgaa caagtggacg ggataggaga tgctggtgcc tttttatcgg 720

ccggccccga tagcgacgca ttctaggatg tttatttggg tggacagcag ttgtgtgctt 780

aattgcgcta ggggtggtgc ggtgcatctt cttgggggag aagtgaagca aaaggactgt 840

gcgacacgcc gcatcatctt ggccgtctgc cgacgtcatt ctctgggccc acattttctc 900

tcgacgataa tggggtctct tgatcagtca ggtgaatata tgtagtagct tctgattaac 960

tatagacatt tgctgttaaa caaaaggtgc aacgacggct gtgagcaggc atatatatac 1020

agtgagccag tgtgtcagtc tctgtaaatt aacaaaaggc ggcggcgaag aattgaacaa 1080

gcaagcgtga ggcagtattg gtcaaaaaag tttgagggcg cgtgctgatt tctgtgcgcg 1140

cgcgtctcct gcacactcga gtatactact ggtactcctg tagcaaggca tgcatgcata 1200

tgcagcatgt gcctgacctt gttggtacgg tccatcagtt gtcgcccggc ccgcgccgtt 1260

tgcagcaaca acaaaggtgc acgtaaagaa cacactcgac aagtcgacag ttagagtgct 1320

gaggctcatc aagacacgca gcactttaat tttacgggac cagggccagg accagaaaca 1380

ataatgtgtc gtgtcgcgcg acaaaccgtt tgtactacac gaaggatcga tccatactgc 1440

atgtgagtaa ccctgctaga cttgtcagat tcgaacccgg ccccggctcg agtgtgtgga 1500

cgtgcatgca gcactgcgcc ttcggtgtac acatgcataa tatcagtgca gcacacatgg 1560

acaagacaca cggcatcata tcagtgtctc ccagtctagc accatcgtca tcgagacgcc 1620

gtgccggcca ggctgccgga actccttgca tatccacttg catgcagaac tgaacatcat 1680

gcgatggatc gcctcctgca cgcatttta accgaccaac cggact 1726

<210> 2141
<211> 1741
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56068_G1, chr2:22985347..22987087, Cluster 12

<400> 2141
gtttttagta gctaactatt agtcgtggag gttccaaaca tggccttagt taattgtaaa 60

gcacagatag catttctccg atttttgcga tacccgaatc catcatcatg gcattgtggt 120

tgtttgccat tatcttattt aaagggaagg aaccatcggg gccctattaa aactataaat 180

tcagtttctt gattcttgac agtgtcacct tatgagaatc atggccctgt ctacctcgcg 240

tcctaggccg accagttctt tccagtgtgg ccaattgtgc tgaaccaacg aataaagcat 300

gacacataat gcacatgctt tcggtttcgc agtgatgaaa gaactctgat gggccatcaa 360

gcccttctct atctctctct ctctctctct ttctcagctg ctttggacta acgggacagc 420

cgttatttgg gggttcttct gaacctgtcc gtgtattgtc atttgcaagc tttccagcaa 480

acaatatccg attaacttgc acaaggaaac cttgccgcta cgacgcagaa cctcgtcgcc 540

ctttccatac aatcttccgc cacatcgacc ggcggaagcc gcacagattt tgcatgcatc 600

gaacactttc tcgactagga tttttggtgt aaaacgtgaa cgtgacgatt gtcaaccccc 660

ctttttgact ggaaagacct tacataatct cgtgaggaaa gaggaggcaa aaaataaatg 720

aagctgagaa aaaaggggtc ttcgcctgat cgccgtaaga aatctcagga acgcgcacga 780

gagggcaccg actcagtcag tcgtttcaca actgcaaatg aggcggagat cacttggcgc 840

aagtgaagct gaaagcactg gctggttgcg tgaccaagat gtcaacctga aagcactgac 900

ctatccatga atcgtatgcc tgtgttcaat tcaatgaacc accgtctcgt gaactattgc 960

agtccggcat gtcgatcgag gaactcttgt ctgtggagag agaatccgcc gctccaacct 1020

gtgaaccact ggattctgag gacctgtcct tttttcagac aacatatagc gtgttcagta 1080

ctatatatat gaatacacag aagtctgttt tttcagacaa cacataacag ttttttagca 1140

cgcgcatttc aggaacgtag gtagctgaga caatgttagc cacagctaaa aaagattccg 1200

tttatgttgc tttgctgtcg acagaatctc cagcagcaat gcatgcgtag tcatgcataa 1260

agacccggct gtaccgggaa taatgcaagc ccacccgggc agccgtgtac tccaggtggc 1320

ttggctcata ctactgatat aaacatcacc ctccagatca tagcgcccat ccctccatct 1380

gtaaaaccct agcctgaaga taaagaatgc acacatcttt ctttatcaag gaaaagcaaa 1440

atgcaacccc cctcaggcac acggaaactg cgcagattat aaacatcgtg ctgtcaccac 1500

cacccaccag gacggcagaa agagctgggt aacgagaaga aaatcgccgc aaggcacccg 1560

gggacgaagt tgggggcaag gtggtggtga tggcacgcag gtagtcgaaa aattccaagt 1620

ggctgcaacg tctgcagcgt atcggcacgg atcgttggcc gaagctaacc gattaaaagc 1680

atgcatgtga gtactaggag tgctagttta gaaggcataa aatcggagta gattgaatag 1740

g 1741

<210> 2142
<211> 5187
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56176_G1, chr2:23715362..23720548, Cluster 12

<400> 2142
tagccaaaca aatccctgag agttgatctc cagcatccaa gaacacacat gcttgagtct 60

cgtgctgatc gacaaagtca gcaccagcta catatatggc ttttgctaat actgccagcg 120

tgtccactac ttatgaaatc ccctctcgcg cacatgacag aggaggggaa tacaatattc 180

gaaaagcaaa agctccaacg tgctatagct acatacaact aactatacag tgtgctgctt 240

tttagctctt agccacggaa tctctcgcac gtaaatttat gcgcacatga gttttgacta 300

actaaaaggt ggtggacgat agatgtgaca tcgccgtact aactgttagt gcgcatcaga 360

tgtaaatgcc taatcttttc cagtctaatc ccactggcac acggtgcccc cgtgaacaag 420

agttgtggcg caagggacga agactggata agatagagga ctccgtggtt gattaattaa 480

ctaaccgacg aagcaagcta actctatcaa tgctgctgct gctgctgcta acagctactg 540

catgttgacg aaaggccgct gtactggagg aggaggagga ggaggaggag gagtggccct 600

gcttgctagc ggtggcaggc tgcgggggaa agcctagagc cgtagccgca taggtggagg 660

gtggtaccgg ctggaaaagc ctgaaaaagc cgtcgccgaa aacatgtgtc cccatcaatg 720

catacgctgt ccaagtgccg acggggtggt ggatggatgt gtggtgtggt gtggccacgc 780

gcgcgcgtat atggaacgac gcgagcacac ccacacacaa acctactact gctagtacaa 840

aggcatgcca aggtggctgc cgcatgacct gttgccatct ccaaacagtc ccagcagagc 900

agagccctga gatgatgaga gtgcctgcct gccttctcca aacgacacat gagccctgag 960

agtgcatgcc gggcgagcgg gccgccccgt gccttcttgt atgaacgccg ggaaatccaa 1020

gctgcgtgcg gtgcagtgca gcagggtgta cggtgctgtt caccggacga cgagcgatcc 1080

gcgattagcc gacagatctc tcagtaacgc ctctgctgcg gcaccgacga cgaatgcatg 1140

catgggcgac aaatccccaa agtgcaaagc ctgaacagaa cgccacagtg cgcccgcact 1200

gttcgaccgc gctgtgatgc atgaacgcac gcaggcagcc cacagaccac agtgtcgctc 1260

tcgaggggtg cttgctttgt ttgtctgata aaaaaaggct atactactcg tcctacgatc 1320

gttttcagag ctagctctct ctctctttgt aagcagccgt tagtgagtga ggctcgtggg 1380

cggcgctccg gccgcagctg caggggcgtg cctctgcctg cctgtgcctt cggaagaacc 1440

ggccggggcg attcgattgt cccgggacgg ggaggcacat gcaacgcccc cgccgatccg 1500

atccccacag caccaccctc tcggccactc cccagcgtca ctgtcagggc ggcacgcagg 1560

cacaccgccg caccggtttt gctgttgcgt gccagtgcgc gcgctgtgct agctcgtgtc 1620

gtgacgccta tggtcgtgtc gtgtagaaaa gcctgccgcc gtcgacggcg atgcttctgt 1680

cgtcgcgcgc ctgcaagtgt gtgcgtcctt ttgacaattt atttactgcg agcctatttt 1740

gtttctgccc ttttgacgaa gtgggagcgt gaagcctagc ttccgccgta tgtgacacgg 1800

acagttcgtc gctagttttc ttttcttttc tttttacaca agaccagaag cgcgtattta 1860

acgacgcgaa tctcgctcgc tcgctcgctc gggaccatgc acgcaccatg ctctactgta 1920

ggcaggcata ttgcaccatg cagttctggc acaccctagc tccactgcag gggcccggcc 1980

gggacgggat agacatgccg ctctcaccac cctcgcttgg tatggtaata taattaatgg 2040

atgtcctcgt cgtttgtgcc cccgaccaaa tcatgggcct cacaccaccc ctccccggc 2100

agaacgttgg ttaggcaccc gcgcgacgcg tgccggcgct gttcgctctt tgtccagact 2160

ccacagacac cacgaacgtg ccgcctgctg ccgccgccgc cgccgcgagc gcggtttcct 2220

ggtcgctgcc gatccgatcc catccgtgca ctgcactcgc tcgcgcgcgc gcgcgcggcg 2280

tggccactcg atggacaaca agggctacta catcgatcat gttagggcgt gcggccttcc 2340

ggctatgcac gttggcatgc acgttgctgc tggccaagaa cgcgctcgta gtaccccgct 2400

atgcttttat caatctctcg acgtacgtcc tgcgctcggt tcctagctag cttagccctt 2460

agctatcgag ctaggccacc cgcgcaccag ctgcctgcca gccggcggtt tcaccaaccg 2520

tgtgcatgtg tgtatagacc aaagggagag atcaacgggc atcggacagg gctttagttt 2580

agggtttata tatatgtgat agggacagta gggcacgcgt tggctataag ttagggatta 2640

gttggaccat gcatgaggca agccggccgg ccacacacgc gtacgtacga aaggaatctg 2700

ggaagaacat ggcgcgcgcc cggtcggtgc gcgtgacgga gctagtagct cgaatgctcg 2760

atcgatatgc atcgaccttt agcatctcca atagtattca aaaaataatt atttccaaag 2820

ctttttaagt catcaaaaat attaaaagaa ccaaacgagg gttatttgtt cactggtttt 2880

caaaagggaa aaaaacttct gacaaaaata tcattgactt gaatcttgtc acgccacact 2940

ctcgtttgca cggttaaaaa atgttgtcac gccaacgaga gtagcatgac cagattattc 3000

tgcacgtcaa aaacactgtc caagcttagg tggtagatgt ttgccgtgtc atcgatcgca 3060

tctggcacga taatgtgatt tttttctcgc gctagctgca ctagcgcgac caaaaagttc 3120

gaatccacaa aaaggatgca ggagctacta ctatattaca atattaaata aaaataatta 3180

aagtaaaata gttacgggaa caaactaggt tataaacata ataaagaaac attttcagaa 3240

tagtgtctaa taactatata aaaaactatt acaatattag atttgttctg tagaatgcta 3300

gctatacaca gaggtctcgt gtatactttt gtaattttct aagaaactat agtgataagt 3360

tttgttttaa taaaaggtgt gcgcatagcc tgttgtaact ttctaagaaa ttggtggaaa 3420

agtcttgtcc cgcaaaatat tatatataaa agttatgcgg gtaacttttc aactttctaa 3480

aaaaaactat gatgataaat tttattccgc aaaaatatta tacataaaag ttatgtgcgt 3540

aactttgcaa ctttcttcta aaagattatg gtgacaagtt ttgattcata aaatatattt 3600

ttctgaccaa aatcagcgta agatggaccg ctgcctaacc tttgtaactt tagaagaaaa 3660

aaagttgtgg aaatatatta tttaaatttt tttgaggaat tggaagtaag gcagaaccga 3720

tcgccggttt tagaaccact cagtgatcat tcgctgatta taagcactgt tcaaaaggct 3780

ccgagcctct gacttccgcc cggaagacct gtcgtttcgc cgtcaagtgc ttcttcctgc 3840

tgggcgctgg ctctgctctg gcttttccgc ggctatctgg tcgatccaca gattccacac 3900

tcaccggtga tcgactagcg ctggcactcg gctactactc cgtgacactg tgctacccag 3960

tttgatcggc gtcaggaaag aaccgggtac agtacgtcct cgagggaggg agggaggaag 4020

gacagaagga gcaccgtcac tgtggcacat catatggaac gcagagggca gagagaggca 4080

cagcccacag acactactgg ctaccgctag gcaggccgtg gtggaccgga gcgcctccac 4140

cgcattattg tacccatcag ggatcacgta ccgcgctcat aaaaggtaac aacggacgga 4200

cggacggacg gatccatcgg ccggccattc agtcgatcgg ccacaccagt tctgccaata 4260

gaattccaga tccgcggacg cccgaggccc caacgcacgc cgctgcgcga ccagatcatc 4320

cggcatgaca tattgccgtg ggctcgcgcc gtacgcgtac cacggccggc gcccacagcg 4380

gcggtacggc ggcgcgctgc cgctgccacc ccgaacaatc gtgcgcgcgt cggcggcatg 4440

gtgtgcactc cgcagccgca ctcgcacggc atggagaggc acgcctgacg gcccagccgc 4500

gcgcgccgag atgcgcctct gcaattctgc atgcgtggtg gaagagcgag ccatcgagac 4560

cgaatgctgg gagcgctgcg gcctgcgtgc accgagcgcg tcccgcgtcc cgtggaccgg 4620

gcatacgcgt aggtgctaca ctgctacccc cacgccggcg gcagggcagt gtgcgcatcg 4680

atcgcattaa cgccggcggc cggggcggcc acggccagaa gtggtcgctc taaaacgttg 4740

cctttaactc ggatcctagg cgtagactct acacgagagc ggacccagaa ttttggcacg 4800

tctttaagct tctgtactgc tgctctgttc tggtgctgca tgaccatgca tgagctacgt 4860

atatagtact agtatgtaca ggctttagct cgcccgtgaa tcagacgaaa aaaagagaac 4920

ggcgcgtgag tacggtacta gcaagtgtat atacggtccg ctgtccgctc catgcacgga 4980

tggatgtcca ttattgagaa aaatcggtgc tgcagagtcg gatcgtcgtc acatgcgcca 5040

ggtccaggtg tgtcacacag tgcacgtact tcgtacaaga tgatttgcac atacgtacgt 5100

gtacatcacg agcacgagac agcgttaacg ttatgtcggt tgtgacactt tggataattg 5160

agctccgtaa aagtctgaac cactaat 5187

<210> 2143
<211> 1833
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59397_G1, chr2:42630147..42631979, Cluster 12

<400> 2143
aaaaaaaaaa aaaaaaaact cgcttgctcg gctgtcaagt ctattcggca gggatctctc 60

tcgattcgaa aataattgca ctttagaaac ttaaatccta tcgcataata atgagaacat 120

gaagattatg gcctacctgt agctgtatgc tactagtaat acttcatagt ctctgttttt 180

ttttcagaa cgtaatcgtc gtatgttggt tatttttta taattttaca gcagcattgc 240

tcttttcatc acacatggtc gaccattatt tatgtcggaa cattgtgagt actcgatttc 300

tcacctttt tcagcataaa aaaaatcgtc gagctccaag ctcctatagt aatgtacagt 360

cctacggaca tcccagatac gacaaagtgg tatgcggttg cgagaacggc agatctgaga 420

tctgctcggc gggtaaattt tttttttcta ttaggctgcc tgtgtttgtc agtggcccca 480

tcctgagctc ccccccccatc gctttcgccc aaaagctagt gtcgggctca gtggcagggc 540

ggggaccacc ctccgccgtg gcgacatggc caacctacgg tcctccggct ccggtcgtac 600

acaggctgat cactcgcggg gcccccgacc gagtcgttgt gttgcgcggc tgccgcagtc 660

cgtatgccgt gcacatgccg cgcgcccgag ctggctgcct tgccttgcct tgccttgcct 720

ctcgccgcgc gcgggctggg ctgggcatgc atgggatgga tgagcgcctg agccgcgctc 780

gcgagtcgtc agctcgtttt gagccgcaca cctggacgcg ttggggttgg ggcgtcgttc 840

gccagtctcc ttctacaccg tccgttcgga tttcaggatt tgcccacttg cggtgggcgg 900

gccgaggcac acttgtcgcc gtcccacggg tgacggggcc gcgcacctcc gatttttatt 960

ttttttacgc tgccgttggc gcgccccgcg ccctcccggc atccctccca gaccggcagc 1020

ggcaggcatg gccgacaggt ctttcggccc cagccgtcat ccacctccgt gcgtcgtatt 1080

cgaggtagcc agcctcgggt gtcccgagga cctcacgtcc gccgggcctc tacgaggacg 1140

acacgtagcg cgccgccatt cgctggccgg tgggctgcgc gcgcaggaac cggagcccac 1200

ccgcgcgggt aggtgatacg agacgagaga ccgtgacagt ctgttcactg gtggccgcgg 1260

gaaggtgacg tcggcggccg tagggcgggc gtgtggcgcg gcagcttgct ggcgcgagcg 1320

accacggggc cgcgccgacg cagcgcagaa ccacaggtcc acagccacag acaggcacag 1380

gcccccacta tttgccctag tattggctac tgctggcaag ttgccgaaaa ccgtggagcc 1440

gcggagttag gtggtacagt acctacgcaa gcaacaggcc agcgaaagca cgacgtcgac 1500

gtttttttttt tggagctttg ccgtagcgag cttgcgttgg caaccgttaa cggttactgt 1560

agaccagtag ttcagtacta ccacctcgga ctctcgtttt gctgatatgg gggacggaga 1620

tgacaagggt cggtactcga tggcttcgtg cggccgtgcg ggacaatcgc gcggcgcgtt 1680

ttgccccaca tcgtgtcgac gttgcgttcg tcacgcgggg aaggccgttc tgtgcatatc 1740

ttgggcgttt tggtccccgc gatacatgct tgcgtctcgg atgagaactc tactacacca 1800

cacacacaca caaggaaacc tctgctcacc aac 1833

<210> 2144
<211> 3070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59704_G1, chr2:44373552..44376621, Cluster 12

<400> 2144
gttgttgcag atgttgctct atttctagac agcagcgttg atgaagccgt gatctcgttg 60

gagcccgtct cgcagaacca aggcccatgg gctagaagga tggagagaga gacccaggcc 120

ttggctggct cgtgggtttg ctactccgtt ctttcgtggg cgcatgtggg tcagtttggg 180

ttcgtctccg aagttccttt tcgtgcagca tgaccgtccg agacatgggt ttcgctcggt 240

tgctcctgct accactacca ggtgtccagg tgaggtggca ttctctccgc tgcaccgaca 300

actgttggtg gtgctggtgc gccgcgccgt gccgtgccgc atcaagatcg aagaaattca 360

gcccacctgc aggctgcacc agctggcttt tccccgaggt cctgggcact ggcatccgat 420

cgtgatcgag ccgctgagtg ctggccgggc gtgcgcgagt tgtttgctta catagttatc 480

cttatccctg tctcgtgtga cggaagccgt gacactaggc aggtcgtcag ggtcgatcgc 540

cgtagcagcc cccggcggcc ggcggtgacg gagggccctc tcccggccct acctttttcgg 600

cagcgacatg cggccaaatc agctactgct agcaccaaca cacggtgcca cgtcagcagc 660

gagactcgcg ttaaggaata aataatcgtg tgggctgacg aagagaccga cggcccgtga 720

cccgtgttcc accagccgcc accaccaccc gtggcctcaa actcgtgcca tttccccccct 780

gtgctgattc tctcctcctg tgtcaagggc cggggcatct gttggttatt attaatgttc 840

tgctggcaat aatttgttga gctccaatcc aactgctgct tggatggacg ccaatggatc 900

ttgggataac gacgccccgc cccgccccgc cccgccctct ggaattcttt aacgcctgga 960

ggatcgaggc gtgtagagtg cgcagcaagg caacctcgtc aaaatcatcc gaggcgcgca 1020

gcccacgact gcctgcctgg ctgccgtctc catggtctca gcttctgact cgcgtacgcg 1080

cgtcaaacag agggattttt tttaaaaaaa aataagggtg ggggtgggat cgtatccgac 1140

gggggggcgaa tcatcagcag atgtttccct actgcgtgga agcttctccg ttcttccccc 1200

tgcctggccg tgagctgtga caggagcaac gagcgaagcg tttatcggcc ggggctcatt 1260

atcctctgtg atgtcgatgc cggcagttta ttatttttta tccggagcta gctgactgat 1320

ctggttaggc ttacgcttac gcatcgttag ttttccttcg tctagaagac tagaacgggt 1380

gcggtgacgc cgttggatct tgacttcaac ggagagagtt gggacaaaaa aagggaggag 1440

gatgtcgccg gtaggtaata tagcgcatgt gagtatctga gatgtgacga tcacataatt 1500

tgatgtctca gactctcagt agcgggcttt tctttgatga tgaatgaggt gttgttactt 1560

gccgtcgaac aattattaca cgtctagaac aaaataatct atacacaccg aggctccaac 1620

tggcattggt tcctctagta aaatctatgc aacctcgtga ctcctacgtg agcaaaagta 1680

taataacagg ctgtaaacat gctaaatact gagatagaca agatagaaga aaaaagagga 1740

aagaatcgga ctgtatacga ctatacgtac agtcgattta gacagcagaa ccaagaaact 1800

ttgtcactga gagaagacta tatacattag ctaagtgata gactgcaaaa aaaatccttg 1860

ctgtcagcga gagtcggctg tgctatgaac catgctgtca ggagtcagat ttctcgactg 1920

cgctacaccc tctgttttaa aagaaatgta cttttacaaa tcgagagaga attctcataa 1980

gaatatcaat actaccggta aaaaaaaatt tatgcacaca tctgtaatgc aatacaacta 2040

ttctatctta aaaaggagag aaagtagaaa aaggacgact aggtttacgc tgtcgaaaat 2100

ttttgaactc gccacggatg gagagcccgg caggtggaat gcaggtacag ccggacggtc 2160

agtcacgcag catgttccaa gccagccgca gtggtcggag ccaagagtgg ccacgcacgt 2220

gtcggccgcc tgtggttgtg gggggaaagg ccgtagcagg acgcctggtc tgcacgagca 2280

ccactggatg tctggataca gccagcagca cctgggagcg gaagcggagc agcggaggct 2340

gaccacaacc atgatgagag gccaggccag gaaccaaggg aagcggacaa ggacgcgggg 2400

tggcgagccg gacgggccgc cgtcgccgcc agtgcgcagc ggggtccggg ctgcgcgcgg 2460

aaatgacaag gcaaccactc cctattatat actactattc aataggtcgt catctcacga 2520

ttatgcagag tattatttta catagtatag attgaaatag agagtaagat aataaacctg 2580

ccgaagataa tctaacgaga cagggcgcta ttggttgatg aaatggtgag ggcattctgc 2640

tagcagcgcc tagcgactgc gcagggtagt tcgggcgatg tatttgaata tttgacgggt 2700

tgacggttga tctaagggca tgtttggttt cttgaccaac tatatattta agaattaatc 2760

ttacataaaa aaagattaca caaaataaaa ctacacgaag tatggcaaaa atatagaaga 2820

aaaagaatgt acgaatcgca aaggtcccac tagtattggg tactgggcaa ttttggcgac 2880

atcgcgcgcc agagctgccg caacagctgg cataaaacga ctagctagag aagtgatggt 2940

gtgtggtact ctagactttg acagcacacg ggacgaagta gcttcttcgt accacattct 3000

acgtatattt aagtttatgt atagtcaagg tatcagttca ttattagtgg taaatatacg 3060

cgcattgatt 3070

<210> 2145
<211> 2157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6095_G1, chr1:30682442..30684598, Cluster 12

<400> 2145
cgcaacgcaa gggaacttgg acccttttct ccatgcggat cgctgctcct ctgcacgcgg 60

cagccgcgcg cgtgcaggtg tagaggaggc aggcaggcgc tgcactggag cgtggtgcat 120

ggtgtacagt tgtttgttct gatcggcttt ggctcggtct gagcatgatg gaaacgcgtt 180

tccaatgata aggtgttgga agtcaacagc acaaccagag agttccatgc taaacgagtt 240

agttctcttt cctcggtcac tcgcccccat gacgcgtgca tccatcctct ctggtggtgc 300

tgtagctgta gcacgagcat gagcacgagg ccgcctaacc aaccattact gctccacgac 360

ctgacgggtt gatcccatcc gcagatctag ctgacggaca ggcccggatg gaacctaacg 420

agatgaccga ccgaccgatg gatgcatgga ggagaagctg acacaggccg cggtgcgggc 480

aaagcaagtt gcgcgcgagg tggccgcgga gcactagtta acaaagttgc cgctatgcgt 540

cggtcgcatg gctccccata tccgcgtcgc tctctccggg tccgggccgg gcgcgtcgcc 600

gtcacgcgcg cacgcactcg gtgacgcacg cacgtgagct aggtgagacc ggaccggacc 660

ggacacgccg gcgcgtcgcg cgcatttctt tttccctccc tgtccctgcc caaccgtgcg 720

cgcgagcacg cgccgagcca gatcctccct cccgcgccgc gcgggagggg ggtccagtcc 780

aggccagcag gacgagtgcg cggcgtgcca gcgaatgaac aggcgcggcg accccgacgt 840

gtgcgccggc gaaagcgacg cggcagcagc ccctccctcc gtctccacgg agggggtcag 900

ggagggaggg cgcttggcca cgccacgcca cgccggccgt acggctcggg gctcacgacg 960

tccctgtccc gggccagatc gggggggtat caaatcgagg aggctgcaga tcttgcggag 1020

gcatggcagc gcctttagcc ccgtatgagc cagccgagag ctacgtaccg gacctgcgaa 1080

tcattgggct ctctgggggg ccctctcgtg gtgtccaagt ccaagctccg tccacaatta 1140

aggccgggcg ctgtgcatag ctgtagcata cggtggagat cacccaacga cggcggacgg 1200

gtcggattgg ctgcaactta actggtaagt acgtacagtg gcacagtgga cgcgtacgtg 1260

attgagcgat cgcgcgcgct gggccggggg cctgggcctc tgtgtccact ggtacgttgg 1320

gagcttgggg aggagcggtc tcttcgatct cgtcgaacct ctctcgatcc acctacaggc 1380

agggactgtg ccggtcctcg cgccagtttt gttccttgca ttggcacact gtccactgtt 1440

ccatcggagg ggcgatcgtg aacctccact aatcatggta cttgcacaga aattttgcgg 1500

acaaaatgcc agaaatctgc cgacatggac tcaggctcga tcggacgacc tcggacccaa 1560

attctgtacc ttttaattct tctccagcaa gctaaggttt aagagtaacg ataacgtaga 1620

gaaaacacag tgctaataat acttggtttt ccttaaattg tagaccgcaa ggtccatgct 1680

gattgctcac tagctagttc tgttccaagg ctccaaacag ctggtggaac tttgttgtcg 1740

ctctttttt ttgttcttgc ttcggttatc tagtctcgag tctccacgac gggctttaat 1800

ttcctcgcct gcactgttcg cctttgcttc tccgcgtctc cctccctaga tacatgcatg 1860

catattctat actccgtgca gcatgcatga ttacacagtg cctgtactat tgcactaaaa 1920

attgcgcatg gacatcgaga aaaaagctcg cacagtgcca tgcgtaggga ggacgatggc 1980

cgacgaacgg aaagcctttg agtggaaaag ggaggcatgc atgcatatgg atggcacaca 2040

tctttattcg catcatttcc tatgaccgga ccccatgcac ggtcgtacgt ccttggccct 2100

tgcgacgatg cttacctccc accctacata catacgatcg tataggctgc acaattc 2157

<210> 2146
<211> 1743
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62346_G1, chr2:58759048..58760790, Cluster 12

<400> 2146
agtagctgca gcacttcatc aagaagaccg accgaaggat gacaaagcaa aaacgggcaa 60

cggcgggcac agaggagttt gggtttggtt ccacttccac ctccatccag ctgctgtctg 120

acgcctggtc tgctgtgtgt ctgctgccac tctcggccgt gcgggggcat ctctcccgcc 180

tgctctcgga ccgacgctcc atctctcatt cgtcaatcca ttccggtgcc gactggctct 240

gaagggttca attagctagc ttctgattct gagcagttcc ttccaccggc acgagcacat 300

ttcatggagt ttgctgctag gcttggcatt tctagattag atcccaagct gagagattaa 360

tgcgagccat aatccggccg tggtcccgca tttgccggtg agtcggtgac cgtaccaggg 420

gggacgggac ttggattcgc aacacacacg acacaacggt ttttgaagcg cctcccattc 480

gcaagaccta gctctttcgg cttacctcat tggcagcagg tgcggctgca aaggagtcac 540

agccaacaga acccgaaatt agcttggtga cacaattgct atgcggcctt catttatggc 600

tttgtctatc tatgaatata atcatggtag ctcatgctcg ctgcctgctt catcggtcgt 660

cgtcagcaag gcaggagctt gatggagtag cagacgagag ttgctgctat aatagtggtt 720

ctgtgagtac gttctgtact gcactggcat tcaattacca tgtcagttgc cgcaagcttc 780

tggtacataa catacggcgg cagattggtc gtccttgccg agaggtagac gatgggactg 840

actactgaca gacatgatac gagttaccgg gcgggcagag aggtccgagc catgagccca 900

tgagaccatg cttccgtgct tgcatgccat gagtagtgcc gggtcatggt cctgcagcta 960

gctagctagg caagatcgct gtgcatgctt caaggtggac gacggggatg gaaatgcagg 1020

agagccggcg aggcgctaca gcaaaagaat tgcatgacat acacagtata cgagttttgg 1080

gcgcactgta cgaaggtttt acagaagtgc agtatcagcg aatagcgtac gcacgcacat 1140

gcatgcagca gcatatagag cgtaaaaata aaagattgca atttgcgaat gccataatta 1200

aactgatgtc gcacaggaca cagtcataaa ctgatgttat aaagccagtt ataactgatg 1260

ttgcagagga cacaaggtac attagcacta cggcgtagca gtttacggct gaaacgccgt 1320

accagtacca aagagactgt aacaatcacc aagcaattgt acagaaatga aactaggatc 1380

taggatggga tagcaatatt tgggaggaat gttcagagtt ggaggaaaaa catgagacac 1440

ggctgacccc gtggggaaga acagttcatt agaaggggaa tccgaagttt cgttctactg 1500

tctcctcata caaccgatag gtctgtatca gggttaaaaa aaccgggaac agttttacac 1560

cagtttttt tctgcaaatt tcgttgggaa ttcaaaaaca atgaaaacac atttataaaa 1620

atcgggaaaa ggtatgataa aagactaaat atttttctag catatctttt tttagaaaaa 1680

gtaatcaaca ttttttggtt aaaaacaata aaaaccagtg aaaagcgaaa accaccgaaa 1740

aat 1743

<210> 2147
<211> 1758
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6803_G1, chr1:34933362..34935119, Cluster 12

<400> 2147
gacaatgggt ctagccaact gaataaggtc aagccagaca atatgtagcc ttaatcctac 60

ctttcaactc tagaccgacc tttgagagtt attttccacc atccttttc ctcctcctct 120

catttctcct atggttccac acacctcccc agttggaccg tgaagtataa taaattgcgt 180

agttacaaga gcatcaccat ttttccttaa aaaacagaaa cttgcctcag aatttcacag 240

aactatgcat ctcttttgat atgcccgaat atggttttag agtatagacg tagtgccgtt 300

tagaacgctg gttcgtcagg accacagatt catgcaaaaa gagccaccct agtactaaca 360

gaagtcacac attttaaaaa cgaatttcca tcgattggtg aatggcgaat acctggcatt 420

ccctggcctt cagcgtttcc gaaaagccaa agccagattc atagccgaca aataaacaag 480

ctggcctccg aaaagccata gatcttccgg atttcctcac ccaaattaag cccaaagcga 540

gccctatcca agctaggata agaacaagca tgccgactct aacatagaca tgctgaactg 600

ttttggtaca gtttcagata cccaccgtgt gcagtgcaga taatgctgaa ctgacgttta 660

acgataaaat atgatcttgt cacataaaaa ctggagggtc cgaccttaaa ctaaacatga 720

tcagtaacaa ttatgtaagt ggggaaagct aattaagtag atgagctagc agaccagagc 780

tcgaggatgc tgaaagtgtc aacttagctt gtagcaaaga tcggtatgta gatgtagcat 840

atgagttccc tccaccgatt gagcccaaga ggctcctcgt tgataaatag ccgaataggc 900

aatcgtgctg ttgagccaac cccgcccatg gattaagtgg atttgagcta caacaatcgg 960

gtcacgcatt acccacaatt ttttttgtt gcttaaaatc tgaccccaat atggaaaacc 1020

cataagaaac ttgacctgac ccgtccaatg ggtagggtct ttttccgcgt atgccatttt 1080

tctccattac cgggtagcag atggcaagac atgtcactag ctaggtcgcg agcacgagag 1140

tgtgctttgg taccctcgac ttcatcacca ccatcgaggg gatgttggcg taggtggaga 1200

ctttcttgca gccatgtcac caactttgac accatcactg aggcgcttgg gtaactacag 1260

ctccacacct cggagaccca agcttccggg agcaagtggc tcctggacct gaacagtgag 1320

tgcatgtggc gccaagttca cgcttttatg ggaccccgac tgtcctagga ggacatgtgc 1380

ctcatccaag tctcgctcgc caatgcgtga gcacaactct ccgactgagc accgctctcc 1440

tcgaaggtcc ttacgggaag cgtcccagcg ctaccgcacg gtatgccaac tcccacgaac 1500

atcgagttcg tgtcagcggc caactatgtg tcggagtcga tcctcaacct tcttatggaa 1560

gaattgggat cctctaacac gaactcaagt gaaaggatcc atcactcctc acgcgaatgc 1620

tttatgaccg aatcacgaga tggcaatgtc actcccacgg acggatccta gctgcagctg 1680

aaccggatgc aggagcgaca aagggagctc gatgacgcgc gctgccaaat tgagcaatag 1740

cgcgtgaaac tcgagcgt 1758

<210> 2148
<211> 1860
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6806_G1, chr1:34951540..34953399, Cluster 12

<400> 2148
ctacttccac agagtatact aatagtccgt ctgtcacttc acgcttcggc gccagcttgt 60

ctggctatac gatcgatgct ctgtaacagt agcagccagt ctgatcgaga gatttcctgt 120

ggacatgccc ccccccccc ccccctcccc gggatgttgt acttgcgcag ggtttttctt 180

tcaccgcctc gcatgcggga agcggaataa aaatcaggga atcttgccgt ccaaacccaa 240

cagaaaatgg agggagcaag ctgcgcgtgc gccatgcaag ctgcaggcag ggtggcgatc 300

acggaacgga atctcgaggg ctggacggcg ccgggagata ctactaccat gcattgtcca 360

ggcatcatcc attattcgtc catgcatgtc cgagcgtaaa ttgggatgtg tgtttccaac 420

gcgcggtaaa tttggtgtgt ctttttttagt cttatttgga tatagtcaaa tccgcatcat 480

tccacatata tgttattaca gtggaacgta aactaaattc tatctcaatt caaccgcaac 540

acatatggat tcaggtacat ttgacagtca cgacacgaaa cacatacact tacgttggct 600

acagtaattc tcgtcggctt gcacaaaaac aataatttat gctcgttaaa acaataccaa 660

agtaagttaa tttaactttc gtcggtttcc gacctagacg gcggaattta gccatctttg 720

atccgcattc gtgttgtcgt cgtcgtcgtt gcctcgcggt ctatgcaccg ctgtgactgc 780

agttgcacgt gcctcaaatg agctgtcaca ggctcacagc cctagatcgc caaactcaac 840

actatgaaca attaacagtt cagacataca attcattcta gcggcaaatg acgtcattaa 900

aactaaactt tgtgatgatt ataacataac aaattttgta gcttgttaat agtaagttct 960

gccattgtgc cgtcgcatcc ccgctacagg tgccgctctg ccctcgcctc ttcttctgac 1020

aagaaggtaa cacgtgatct taactattta aattatgtgc atatagatat tcaattccag 1080

tgtttcaccc aacatagttt atgtatgagt gctgatggaa gttatgcatg aataactctt 1140

gcttatggtt acagcataat tacaaacaaa cagggcctaa aaggtttttg agctccttag 1200

agcttcggaa caccacataa caacaatgtc tataagagcc ctataagggc tactagttgg 1260

gactggtagg ttgcaccagc tctggcgcag cacaatttcc gtcctcgagt tgtttagtcc 1320

cgactcaaag ctaggaagat gtaactgcca gcaggtctaa gttattagaa gggaaaggac 1380

aagcgaacga gttcatgcat ccaccacgcc ccttgaaaga tgtcgtgttt ggctttggta 1440

gacgggggc atcatttact agaattgggg ctttttacct gcttatccct gaagcctcac 1500

gttaggcggg gaataaaaga attattagat tgttcatgag tcttgacacg tacgcaccgc 1560

agtcagagcg aacgacgacc gaccaggcga gcattgtgat gcattgcacc attgtatatt 1620

tttctataca catgcatgcc gcctctaacc tagctataca actcgatgca tctgcgttat 1680

gatcgatgat gcaccatcgt atatattccg cgcgcgtacc ggaagaagtt gacttcatca 1740

gagtcagact cagagttaga acgatactaa cgcagagagt gtggtgtggt acacgtaggc 1800

cggcattacc atgcaccata catttatgct gcagagaatg aaatagacct cccaaagtaa 1860

<210> 2149
<211> 2047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6808_G1, chr1:34959480..34961526, Cluster 12

<400> 2149

tagatccagg tgggtgagcg tggcttccaa ggacggaatt gaaacgaggg cgtcgtcact 60

tggcggccgc gcgcctcgac ggctcggtat gggacgacgg tccaccagcg caagaaagct 120

acgaactcag tccaaaaggc aaaaagcaca gaaaaccaca ctactagctt tgttgaattc 180

catcgcgacg cccaaataag caaatcattg gcgacgggct cgtgcatgaa cgcagtgggg 240

cgcggggcac tgcactgcac tgaaccaccc accccattaa tatgcatgtc cgatggatcc 300

catcccatcc agcgagaagg caggcacggc gcgtctgccg ttcacgttta catgtcgtcc 360

ggtcgctgca ggcgcgctgt atagcgagtg aggggaggcg gcgcatggct aggaggacta 420

ggcgcacgaa tcgcagcgcc tgcggggcgc cacgtcgccg cgaggtccca gcggccagcg 480

gcatggcatc ggtcggtcgg ccggccgacg cgggagttgg gcgagaatgc gagatgcgat 540

gcgaatagaa cttgggacgg gagaaaaaaa aggtggcttg gcttgccatg accgggagga 600

atgcggaatg ccattgccat gccaggggga gcatgcatgc ggacattaca agggaaaaaa 660

aaaggctcga aaaggggacg ggggcgcgca cttttgctcg cttctatgcg agggaatgca 720

tgcagtggag tggccgtatc tatctactac tactagtatc ctctacttat taccaccttt 780

gtcttcgcct gctggctccc tttttcgtct tcacagccgc ccctaacgaa gcacgcgcgg 840

cctcagattc gtgcgagtca gtgaaggaat atatgacgcg gttccactcc tgttacatta 900

cattactcgg gagaggctga ggcgcgagcg agaggggggt gctgccaaac tcacaatcgt 960

tgccacatga atgctagctt gtaggatggc ttgctatatg ctgtatcgga gatggggagc 1020

agcagggttg ggttgggttg ggtcagcccg cccgcccgcc ggaattgaca gtcacccggt 1080

gccagagacg acgacagttg gaatctgaac gtaccgttgg aaaaacaaaa aaaaacttac 1140

agtacgtacc ggttctagct gctcccagcc actagactgt gagtaggagg agtgagaaac 1200

aaacaataaa tcgcgccctc gactcacaaa gtccagttcg gatgcatggt ttctgtccat 1260

cgacttccta aaatacagat tttcggattt tcttatcaca cggacgtaca ggcgccgcgc 1320

agatgaggcg aggcctgtcg aaatccaggt gcatgcattg atgcatgtat gcatgcgccc 1380

tatggatcgt cggatggagt caaatagatc gtcggatggg gcgggccggc accgcgcttt 1440

attccgggcg aagcgaaaga gagcaagctc gcgctcgcgc gtgacgtgca ctccgtttaa 1500

caacaaacgc ggcacggaat ggacgtctgc ctcctgccct ttctctctct ctctatctct 1560

tttttctttc ttctcagccc ggaatgtcgt cgtcttttac cggcaccaca ttccgccgcc 1620

ttttggacca atgcagtgca ggccgggctg cctttatata cctccgtctc ggtcggtcct 1680

catgctttac cacgtactac tacgtcgtat gctattactc acctgtcatc atcacaaagt 1740

aatttcacaa ggcccggcgg cggcagcggg gtgagggagg gagtccgcgg cggctcaggc 1800

aactggcgcc ggcatggtct gcgcgcccac atgggcttgc atagcaacta gcccaagccg 1860

ttttgaagga aactggttaa caaattcagc accgttaagc acgaggcatg cagcagcgcc 1920

acgatctacc aataattcag cgcgcaatta tgataagccg atcgacgacg acgactaatg 1980

catccattct atattctatc tagtactctc tctctctctc tggctgggat gcgctagctg 2040

ctacctg 2047

<210> 2150
<211> 3017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7456_G1, chr1:38864112..38867128, Cluster 12

<400> 2150
aacacacatt gttgctggta agcgaggaca tagtgttagt atttttatgg gcttgaccca 60

tataagtatt tgattaaact ttaaaggctc gtattaaata agatatgtat tatgatttag 120

accttgtttg tcggttgttg aaaatagaat gaaagtgtgc cacccacatg tgtgttgtcg 180

ttgccgccga gctgagccaa gacgcagtga ggagtggcac ggcacaatgc gatcacagtc 240

acggagcgat gtagcatgca gttgttttgt cacttaggaa ggcaaacaat cagagagtta 300

gagtgcgtag agagttatca aaagtttcta atcctaccta cgggtgttaa atgtttgcta 360

atgggactgt attttgctat catgagtctg cttggttctc tgtcttctta tctccagcgc 420

ccgctcggtt ctcgcatttg tgatctattg tgttcgctcg gttcctctgg ctcacctata 480

taagctatat cttgtatttg tttcactttt ctactattgt ttcagctatt agctaaccac 540

tctgtttcag gtattgcatg tacgagcact aggagagcat acctccaaaa tgagtgtcat 600

ctaagaggtg acataatcgg gtgaagggcg acaatcacat ttcttgagag tgtttgtaag 660

tggtactgac tactcacttt ctcctccttt tcctggtacg attgatgctc catcctctcc 720

ttcccggcgc ggtgatttgg tggtgatatg cacaactgca tatctacact gcactagact 780

aaaccaatcg gacactatgt ctatcactag gtatgttcta accaataaga ttttagatta 840

aagtcatgtt agtcactatt ttttttatat gttctttatg tatagatcac acatgcactt 900

ttctaatacc accaaactat tgtttttttct tctttttttct aagttaaatt gctactgaaa 960

atatctaaat gtctaacacg tattactatt tttactatat catcgtactc tatttgtata 1020

gtattgtttt agttaaacat aatagatata ttagtacaca tcgtatctag agcatcatag 1080

gtctttttt aagaaaccgg aggggcttac gtcgtcccta gcgttgtagg ctctgttgtt 1140

catagtgttt ctcattttaa cccaatggcc gatggtttag gaaccaacgt agtcttgctg 1200

tcactttgtg cgtcatccta ggaaatttcg tgccgtatag gtcaatgcag aaaaaaaaac 1260

aaacaaatca gtgtgaatcc agagagagag agagagagag agagagagag agatttcggt 1320

gactagtgga agaaaaagaa gaagaaacca gtgccaaatc agtcaactgc aaggcctact 1380

tcgcatacct gttgttaggt tcagggaaga ccaaagagcc tataccattc taccagcaga 1440

gacgtagacc tccaactgct atttctccac cagtcaccag ctgaggtagt acacggtaaa 1500

ctacttcatc agaagcttcg ccacgcggtt ggcggttgct ctctttctcc gtctccccag 1560

cagcatcggg ctgaccagaa ctcagtaaaa ctaaaccggg gaatggtcgc ctttttttt 1620

ccttggcaac caaggaccga tacccttttt gccgaaactg gtaccgtcgc aaagtcgcac 1680

ggcggatttt cctaacgcgg ccgtgattat aattataatg gcatcgcagt gaccggcccg 1740

ccttttctc tctataaacg accgaccgac cggccgacca tttccaataa tttcggtgga 1800

gtcaggagcc tcgccactcg atggcagatg ggagcacgaa gaaatgaatc gccgtctccc 1860

cccacgacgt tcctttattt ccttcctttc cagcacgcgt cgccctcggc acaaatttcc 1920

gccgcagact gtgcaggtgc agctagtatg gttcacaaat tcacctggtt aacgaaatat 1980

ccagctgggt ataggacgcc ggacgggaca ccccggtttg gacttattgg aagcctccct 2040

cggcatccca atgtcacgcg catcctctct gtcgctgctg gctgctgcta gactccgtag 2100

ccatcttcct ccttccgagc tcgcaccggc gcggcgcatt agagttagag aaggggtcga 2160

cgcggacggc ctcgctttac agctcgaaag cgccgggcac gcccacgcgt gttttctacc 2220

gccgcagtga cagttaggcg gcgcgcttta ttctgcgcac ccaccgagcc aagcgaccag 2280

acccgccgga cccgatgatt gggccgccga gccgatccgg ttggttgtgc cgtgtgcgcg 2340

ccaggacagt gctccgcgcc tccgctacgc tgacatctct tcggcacccg atgtggacgg 2400

acacctgacc tccctcgctg gagctccagc ccaacgcatc ttgtgcgtgc gtgcgtcgtt 2460

aggtggccct gtgccgctgt gtcgagctga gctactcgct cgccgttgca gtcgcgatgg 2520

taacatgcca aacaggaaac gccgtcgccg acactcacct cacgggcagg gcacgccccc 2580

tgtcctcttt ttttcggcca gaacgattct gtccaggcgt agagactaga gacgtgctag 2640

agtcgctcca gaattcaact ttgtttccgt tttgtttgtt tggttttttt ttatttttat 2700

ttcgtttgac ctgtgtacgc cggctggatc atacccgttc tgtcatcatc tgccaaactc 2760

cctgtacccc ttccttcgta ccagttgctt ttgactttgc atttcgctgg gctgggccac 2820

aaatgaaaaa aaaaacctag agtctcgtct gtacgtctat tggtcctcgg cgcctttgaa 2880

tcaatcaatg aatggattgt cggtaacgtg cgaagctgcc aacatttcca cgccgatgtg 2940

accaccggaa ccaccaccac tcctcctcga acttgttcgg ctgcgtccag attgatgaga 3000

ttaaatttta ttctact 3017

<210> 2151
<211> 1477
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_75644_G1, chr2:144797343..144798819, Cluster 12

<400> 2151
cagcctgcta atgcttgaca gatgacagga cgagcatcag ctgaaacccc ggccggcggc 60

cgggcgatgg tgtgggtgct tgcagcggcg atggcggcgg cctgtcgcgc gcgtgggccg 120

tgcccgtgcg gtgtgcttgt gcgcgcccca cgacgacgat ggtcgatgga tgattggatc 180

gcgatcgggg gcggtgaact tctcactgga ggctgatagt gaccggcgac gtgccaccac 240

cagatcgcgg gcggcgccgc gccacagaga gacggtggcc catggccgat cgcgcgacgc 300

ggatgatgat gatggtggcc tgcagtgccc gccggtgggc tcatcacatg tatccgccgc 360

ccagccaaac aggcgagtcg acgaatgcga tgcgctaacg gtcaccaaaa tttacttgta 420

gaagaataca atgggcagtc ctcgtgctcc cgagagaaaa atggttctgc aaaatctcac 480

tatatgaatt atccatttct acagtcgtcg tgctccctca ccgcatttaa atagtaaaaa 540

aaaattaaag ttatacataa atgaaaattt gagccattgg taataattta tttattttat 600

tattagccaa aaaaaagatg agagagaact gtgggcctct ttgggtggct cttgccctct 660

agctatggct catcataaag ccctaccaaa ctgtcaaaaa acgatttctc atcaagagcc 720

cttaaaaagc tgaagctgtt tcaatgttcg tagctagagc atctaaaccc taacttgtac 780

ggactcctcc tacattttcc tcctacatca ttataaagaa acatatgaga agctgttgtg 840

ccaaacgaaa tgcaaagacg gctcgataag ccaaagagac agaggagcca agctgttttt 900

aaaggagcca caacccccta ttcaaaggga gactaggtag ctttagaatt tgctcggtta 960

tatcgggatt aaacgagatt agagaggatt taattatttt gtgttcaaaa tcaaatagaa 1020

agaaattatt aaatcctctc aatccccttc catttctcat gcaaagggac gtggcctaag 1080

acaggctaga gtcctgctca tgtgacgctc taccgtacta gtaggtgcgt agcctacaca 1140

tacagaaggg cagaaggccg tcctctactt ctcacggttc aagaaattcc ttgaccaggc 1200

cagggtcgac gacgctgaca tgtgcactgc actggggtcc ccgggcgggc ccgggggaa 1260

tctcttgctg tgcctgtggc ctactatcct atagcagcac gttgttaccc gtcgccgccg 1320

cattagtgcg tcaactcgcg tgacgtgacg tcacgtcgga ggtgtacgtg tgtgcacgag 1380

gccgacggcg caccgatcca tcatcggatc ggaggcccac ccaggcccaa atatcattca 1440

agcgatggct tggacgcaag caatcatcgg gcgtaca 1477

<210> 2152
<211> 2098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7606_G1, chr1:39900868..39902965, Cluster 12

<400> 2152
gtagatacgt agaacttgaa aaactagtcg tccttcggcg tgtaaacgtg gttggttaca 60

ttttgatagt tttctcgtaa atctcttcta tgtaaatgtt ttactatgta aatatgatat 120

tatgaatgta ttgtttggta cgtgaagatg taagggcttg tttggttgat gaggattaaa 180

gaggattgag agacatataa tccttataat ttcttccaat cctcataaaa ccgaacaagc 240

cttaagggct tgttcggttt tgcgtcgtgt ggatcgtggg cttccccgga ggagcatgga 300

ccgcgttcgt tcgttcgttc tgtgacctga tcgctgctgt gctacaacct tcgttgtggt 360

ctgcacgtac gtagacacgc acgccttgat aatcttggta cattcaccct cgtgctattt 420

ccttgtcgtc ttgtcagtgt tactgcttac tgcgcctaga ggagctatct attctgccct 480

cggtgacctg gttgccatgc caccagcctg ctagagtggt tatcacgcat tgcgacagct 540

acccttgtat agtactgggg gctggggcgt acgtggagct gaagaccgaa agcaaaatta 600

atgggaagtt gctaacagta caagcctctt ccccaaaagg aactttacta attccaaaac 660

aacccggaat aagtgtcaga gcatgcttag attattacca ccagtccact actcattaat 720

aacgaggtca aatggacgtg ggatacgtga agttaggggg ggggggggggg gggggcgcgc 780

gcgctggagc tgttgcttat agaaaattat ctgtcagaaa gattctgacg ccaggggcgg 840

cgggcgcgcg gggcaaccgt tcatgttagg cgaaagcaat gggcgccatt tccacacacc 900

tactaatatt accttaatta gttaaccttc gatatttcga tgtggcattc aaaatatgga 960

ccaaacaggt tcgacaagtg tggtcaagga ggaccgtgcg tgcacgcgag aagaatactc 1020

atacaaagca agtgtatagt aatattccgc ccgttttcgt accagctcgt gcttgtaagc 1080

atcagccaaa aatgcgtgct caaacgtgtc tgcaggccca gcgagcttta tacgcctgcc 1140

cccacaaatg ttcggccggc gagcggccac gaacaacagc gccactttgc tcccagtgag 1200

cagcacgagc ggcgggcaaa accgtagggc cggccccaaa agagcagaca cgagtacacg 1260

gcacgataca tcagccaaaa accctgtaat aaaagcggtg ggaggagagt ttgcatgcat 1320

gcgcagcaag ttgcgcgggg ggtcgaggcg cgagttcgac ggccgacgaa gggaggattc 1380

cgcgcgtggt caggagctga ttggcactgt gctccccccc ccggtgtcgc tcgttgcgaa 1440

ctcgcgagat gacactgtca gcgctgtaat tggtcggata acctgggctc tgcgtgccgt 1500

gccgtctcgt gatggaccat ccagccgtaa cgccaagccg acccgaccct ttggcacgac 1560

acgagcgggg agatgggcat gcacatcaca tcagtgttcg gcgagggcac atggactgtc 1620

tctttagcca gtactagtag gccgggtacg ggcacgggca cgagacgagg aggaggggca 1680

gcgcagatgg gttcaatcac ttgagccctt ttggtatggt ccttgtgcct ggctttcttg 1740

cgacgcgccg tacgtgattc tcgaccgacc gtcctctctg cacccgcgcc gtgcctagaa 1800

gcgcacgtcc gcaagacgat tcggcctttt ctcttgggaa aaatcaggca gggctccggc 1860

ctccagcgtg gggaagtttt gcgttcagga aacgagctct ccgcgtgcgt gacaccccaa 1920

gaagggtgga ggtggagcgc gtgccggacg gacctttgag cctgcctgcc tggctgccac 1980

gactcgacag ctgctgccaa gagtccaaga cccaagcccg cccaccaaac ccgattgctg 2040

gatttgcttt gctgcatggg agccccggat ttgggcctac atgctcactg ttaggtca 2098

<210> 2153
<211> 1513
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_7610_G1, chr1:39923343..39924855, Cluster 12

<400> 2153
catgagcggg gccccctcg aggtcgaccg aaagaaacgc aaccgtgcga gacatcatga 60

cctgtactgc ctgcacggct ggtccacctc tcgcgtcgaa gcagatgacc gattgaccgg 120

cgacaggatc ttgaataacc ataaccatgg cactgtgcta ccaagcgccc tgttcatgga 180

ttagaacggt gccttggcag cgacggcggc atgcccagat tgatttccag aaccccggta 240

gctcatcgat cgtcgctggc ccaggcgcga caatgccgcc atcaacaaca aggagctcga 300

cagtgtggcc gctgttcact cgcggtaaca ggggttggca cgcgggtcgt gccacacgcg 360

cgcatagtcg atcagatccc gtgcacaagg tgaccacgag gtggcacgtg gggggcgata 420

gggcgatgac atggacggac tcgtggttgg tcccgatccc gatcgacggg ccatctagca 480

gccgaccggc aagtctgcgg atcggagagg gacgccgcgc catgcctgtc ctgatcacct 540

tatcctttcg atgttggcaa tgagttttgc ccgcacaagc aaattggttt aagcaagtgt 600

tagtcttgca tgggttggga ttaattgcat gtcgcgaggt gcagtagcac acgaacggtg 660

gtgcctgcct gcgttagtca tatctctgtc tgtcttcggt ccatgactaa aattgggttg 720

cgtctgcttc atctacatgg agagattctc gctcgcagca gttgattaga ccaagcctac 780

cgcctacgtt acaagtgcca tgtgatgatc ggcataatgc agttgctatg gagtgtcttg 840

gttgagttgg aacagcgttc gacttccatc tactgtttgc tttggaaagt aaatgatcct 900

tcatgctatc cacagaaacc atcggcacct gtttttcaag ataatattgt tcagataact 960

agcgcaatag tcttcagagg tctactgttg aaatgcgtca tgtgacggtt catcggctta 1020

ctgctgaaac cgtaaagcat cctgtaactt cgactgccat ttccgccagt gtcatgttca 1080

aattcggaac tgtaaatcta gcgggggggg gggggggggg gggggggggt cttatagtgt 1140

gatttttaat tgcatattgt ttttaaaaaa tatttataca atattttaaa gaaactttag 1200

tcttatttat cctctgaact atcacctgag ttcgatttac ttccttttaa cacagacgcg 1260

acgcccgcaa acaccgatat taaatcgtcc aaagtgtaaa actaaacggt tttttccatg 1320

cttaaatttg cgttgccgat tctatggtct atatgatttc tgcaggaatg aaattatttt 1380

cgataaaaaa gattctattc ttatttgcag ttcatcttta aggcaactta ttggataaga 1440

ctatggagtg ctctgcaaaa caaggaaaaa aaggggggca aattctcaaa taggcctgcc 1500

gtattttaga gac 1513

<210> 2154
<211> 1614
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82804_G1, chr2:186163915..186165528, Cluster 12

<400> 2154
cacggcagcc tctgattaat ctttgcgcca cggaggcccc catcagaaag aaccaggtcg 60

atccgcccaa aaagctcgga catatccacg ctgtgactcc aaccaaatca caccagctcc 120

gaccagccgt ctcggcgtct cgctacgacg ctacctctgt cgtgcggtgc gggctgtgct 180

ccgcttccca gagcgatctg gatggaccag ccagtaaccc cgcgcgcacc cacgacgctg 240

ttcattattg gccagtgtcc atgggcgatg gcggccaccc ggccggtcga aagcatgtct 300

gctccagcac gtggtgcacg gacacgaaac agacaagcaa ggcatcgcca cggcgcaccg 360

cgcagagaag aaagcatagg cggtctcttg gctttctggt gtgagcagtg agcgcggcaa 420

ggcagggcag gcaggctagc ggttacagag gccagatcgc ggcagccgtg tcgagctggg 480

cgttgctgcg tcgtcgtcga gcctgtgctg gattggatcc atcagcgccg cgccagatcc 540

tgtctcgcag tctcggtttg gtggtggctt ccctctgatg gcaatgaaac tacggagaaa 600

accagcatca gcaacagcca acagcaaagc taacccccgc acgaggcccc caacaaagaa 660

accagatgga ggcgccccca aaagctggga cagagccacg ctgtgaccga ataatatcac 720

acctgccgac cgtcgccatg cgtcctcgac tcctcctctc ctccttggtg tgtgcttcgc 780

tttccactgg ccccagacag gacgcctggc atgtcctgga gcacgtgcat ggacaagggg 840

cgcgggcgaa agcgccagca cggccgagcg agccgtggtg gcgtggcgca cggtgcacag 900

cgcggcagga gcgcgcatgc tgatgcagac ggggtcggcc tctcaggctc tcagctgcct 960

ttctggtacg agcggcaggc tatagcggtt gccaaaggtg gcggcagccg tgggctggcg 1020

ccgtgtcgtg gagccgccgt gcggggtgga tccgatcgcc tggccggcag cggcagggcg 1080

tacggtggcc gtgtggtcgt tcgacgttta taccctccgt accgcaagtg tatcacatcg 1140

ttaggaaggc ggccggcagt gcgaatattc ggccagcacg ggcgatctgt cactcactgg 1200

tcgcactcgc accgcagcgc acggtccttc gcgcgcgccg ctcgtttcct cggccaataa 1260

tcgccatccg atggcgatta gctgcagtag ccaaatggtc tagttatcca ccaaatgtat 1320

cttgctactg catttttttt ttgaacttaa ggtgttgatg ttagaattat gggtcctagg 1380

attactatat ggtctagtag aggttttaat aaatcttaaa ggtaatatac ctatattact 1440

cgtggacttt actgtttaat ttcatgagta gaggtaaaaa aatgtataat accaattagt 1500

gttgtagtgc tagttgatgt gcatcgtagt gctaatgtca gggtataaaa ccctgggccc 1560

ttgggcccac tggtcacgag gatagaagat ggtcctaaac gattgccatg atca 1614

<210> 2155
<211> 1683
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82808_G1, chr2:186178492..186180174, Cluster 12

<400> 2155

attactgtgc ctgctgacac tgtcacactg agagtctcag acgatgagcc ccatgttgtt 60

tgtacacagg aaaaagctgc agccttccgc agtaaaaaag tcggcgacgg cagctgccat 120

cttctgagca actgcaagtg tgttaacact cccaacggcg aatgaacagc gaaggctgat 180

ccatccacac cgccgaacgc tttgctgggt ccgtccgtgt gcagtggtag gaatgggcag 240

gtgagatcgc agaggagact agggttttgg gatccctctc gctcgcatgt gcggacgacc 300

gactcctgcg gcctcgtgct cgtgcgggtg aagtttgtca accagagcag gtggggccgt 360

gcacgtgcga ccatgtgcat cagggccggg aggaccgcgt ttcaccgttt cggacgtgcc 420

tatagggtat aaattaataa taactgcaca cgggcgtatg aacttcatcc aagttttctt 480

cttgggcctg agatctcgcg ttcggaagag gaatgtaacg tagttttaga aaggcttgct 540

tcatcgattt ttcttgggcc tttctacctc attaggttgg gccatggccc tagggtatgg 600

cagcattcgg ccctgggtca tcgttactct tggtccgtta gccctgttat atacagaaaa 660

aaaaaagcac tctgcgggcc cgccacaata ggttttctgt tctttttttc cctgacacat 720

actgccagta catacacagc tgtaacacac gatatacact aagcagtagt actgagcgac 780

ggagggattc tattcagcag cttgctcatg tgatctttga ctatgtctgt tttatttcga 840

aagtctgtaa caagtagcag ggagagatca gagggaacaa agaatcggcg agacggcaag 900

ttcggactcc ctacctgcag ccaaattccg gtcctggacc ttcacaaagt cacactagtt 960

tgaaccgctc ggcggaaagc cgcaccaaga aaaaaaaaga agacatgcac ccccacccca 1020

tatttccagc ttagaagtga aacggaacac ctagcagggc cagaaccctt ctccagcagc 1080

accactatcc gctatccata gatcccattc tcgtcccttc tcgcgtgaga tgagcaagag 1140

aggaggccag cttgcattct ggcttgcttg gcagccttcg gtttggaccg atcagcaccg 1200

gccggcctgc aaccaagctg agatggatgc gcgtgggggt ggctccaaaa gtcagcaacc 1260

tgtcgcgtgg catcggtcag ctagaccacc ttcccccggc ccgccgctag cctcattttc 1320

tccacccagc ttctgtatca gttggtgagg cgtttacttg gcgatcaccg agttggacaa 1380

gcaaagcaaa gcaaccaacc aacccccccc ccccccccccc ccttcgtcta gactacttcc 1440

gttccgagac aaaaacgcgt cgcctgtttc gagcttagcc atggcggggc cgggagacga 1500

tcgacgtgga tgtggatagt acctgctggc tgctgctgtg tttgtggggg ggtcggtgca 1560

tacctgctgt actctagagt ggcgtccggg gagcactact ttttggttgc cgcgtgtttc 1620

ggcttcgagt acgtgttctc cgtgcacaca gagacacgat cctgatggat gctgctgtcc 1680

caa 1683

<210> 2156
<211> 2713
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_83708_G1, chr2:191149939..191152651, Cluster 12

<400> 2156
aatccaagcc atagagatgc ttctaaacca cactggtgat ccccaaccat ttgcctactg 60

tatatgctac aacagcagta tgactttgcg tgtctagaag aagacgatga gaaaaggctg 120

cgtctgcgac tgcgatggtg tccctcagcc cctgacctcc ctggggaagt tgggagagag 180

acacagggga agctgggagc tgaaaaggct ccctcacatc acatgggttg tttgttactt 240

tcagtgccct tgcctcagga acaggatccc ctcgggcagt cgggcactcc atcccaggat 300

gacgcgaggg atcaggatca gggctcggga aactgttcca tctctactcc actcctgcgt 360

gcctgcactg catctccagt tttttcactt cacctgcagc agtagtagaa cctgcaacct 420

gtggccagca gcacaagagg agaatgtctc caacaaataa acctgctctc tctttttttt 480

tatccgagtg taaaaatttg tccgggctag tctgtctagg agctgacact aaccccgaca 540

cagataccat ttgtcttagt attttttttt tgctgatttg attgatggtt atcctggtca 600

cttgactctg tcactaggac gtgggtccag acaattgcaa gtggaaaaaa aatgataccg 660

acacggagta gtacttgcta ctactagtag tgtgcggagc gcggtaaatg ttttcttctg 720

tctttttttt cccgcctccg catgcatggc acggttggct tgccaaccaa ccaaccgttg 780

gcgctccaca tttctatcgt caggtaacag tagaatccaa ggctacatgc tgtaatgtga 840

tgtgcgtaca ctggccactg ggcagcgagg taaatacgtg aaggactcgg tctttctttc 900

tttctttttt tccacggccc cctcattgat ttaccctccc gtcttcgcgc caattacagt 960

ctccgtgact tgttcaattc cgtttcgtgc aacatgtaaa taaataaatg aaaaggatct 1020

gtaccatcat atctgtttca aaccattcta gttctggtcc cggcagaaat gcgcgagctg 1080

tcacagcctc acctgcaaca tgtcaactag tccaatttta ttaagcctgc aacctcctca 1140

ccttctttgt tctgttggga tccagatcaa tctcgctcgg ggctagctgc cggctgccgt 1200

tttgggatcg acacgcattt atttgcttca gttcgcagca ataatctgtt gtcatttcaa 1260

aagagaaatg gaagagagaa aaaggaagaa gaaaaaaaaa aggaaggtaa aagaggggat 1320

cgtccaacac cagttataat ttggacgctc gtagctccga gcagcaattt gcaggagcac 1380

tgcagcagct gcacgcgcgc gtgtagtagc tgcacatgac tgtctgtcag tccacccgaa 1440

acaaagattt gggctgctaa ttcgcggatc caaacggcca cattaaaccc agccaccacc 1500

aaccagtcct ctgcaacggt acggcttcca ccacctagct gccgaccctt taattaatat 1560

acacacacat ataagcaatt tattgccaat ccataaaaaa acacacacac acaagctttg 1620

atttttttt aaaaaaaaaa gaaaaagaag tggtggtggg gttggttggt attggtagca 1680

gtaggtagca ccagagacaa gatttgaggt ggaaaaaaaa gggttcaaat ttattctctg 1740

gtggcaccgt gcatctttca agttaaagag ggagctctgc atattaattt gtgatgtgta 1800

ctgaactact gacgcgtagt ttcgctgcct caacaactgc agagagtgcc aaatggcgcg 1860

cagccaccac ctacgggccc gtgtacgtac gtgtgctctc tctgctcacc agccagccag 1920

ccaccaccta cgctacgggc ccggagtgac gagcgccacc acggacaccg gcaaagatcc 1980

agcaggcaag cagcagccgc cgaccgctgg tccccgcgac cccgcccggc tcgtcaggct 2040

tcttccattc ctttcttcag agaaggaaca tgatgctgtg tgttgtgttc agtctggttt 2100

cccgtcgttg cgatctttag aggagaaaga actctctctc tctttttttc ccctgacgat 2160

ctcacctcac caggaaaacg tatacgtaaa gctagcacag aagagatgat ggtcgagtgg 2220

caagcacatc atatcatcgc cggggaccgg tcgtcgtcga ccggattgga tccgtttctc 2280

agaggtaacg aggacgcatg atgatggtgc cgatcgagcg agccttgcca tgcaagcaac 2340

gtgatggatg ctgctgctcc agcccagccc ttctttaggc tcagcttttg accgctaaac 2400

ggaagccttt tgcctcgcag cttaggattc cggtgtggcg tacggtaggt cggtagccat 2460

gcatcgtccg tcggcggccc aaagcagctg gatgggtatg tagaagagac aggtcaggga 2520

ttgcgttctc gaagacgact gttctattct gcatgcatgc atgctcgctt tccactccac 2580

aacataacat ataagcatag cacgggtggt gtagtactgt agtgtagcac ggttagttgg 2640

cggatctata gagcactaga ctgatttcaa tacatcaaaa gtacaattac aaaacataat 2700

gagtcaaata aaa 2713

<210> 2157
<211> 3245
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83889_G1, chr2:192437773..192441017, Cluster 12

<400> 2157
cgcgtaggtt gttaccggat tcatagaata ttttatgtat atgttttata tatgtatata 60

gattcattat tattcattta tagaacataa acggagggag tagttaatag ctttaacctc 120

tgcagagagc cagtgtatat atcttataat agcgacagct ataacacgtt ggattataat 180

gttgggcttt gccactcggc tcggcgatcg agatgctact atatatattg cacgcatggc 240

aatgacctcg ccgacgccga cggccacctc ggcaggtcct cacgtcgaca tccgcgtcca 300

gtctagcctc gcctcgcctc gcccggatgt tggttccacc acacttgctg ctcgcgcgtg 360

catgcaatgt actagatgga gttgatcggc ttttccattc catcacggtc acggctcctc 420

ctccactctc cacgtccatc cggcctggaa actgtagact caccgtgggc cgtggccact 480

gccgcactag tagagcagag cactaccccc atcccgccgc cgcacccgct cgcgttggca 540

cgggaacaag aacaagcacg ccgcccgtct cccgtagtag atagagcacg gtaggcgatg 600

ccccgatcaa cgagcgtcag ccggatacga atgaatcccg cacgcacgca cgctcgcgcg 660

cccgtcgatc ggtccacgct tcggcagccg ggatgagagc gccggccatt taaaactccc 720

ctgcccttct cggtttcggc tgccctgttg gtggcgatcc gcgccggcgc gattcgattt 780

atgccacatc tgagtttgac ccgtctacgc gtgcgtggat ggatcggcca gttgccaggt 840

tggtcccagt gtcccacgcg gaccaacgac tcggggacgc gaacgggacc ccggatcctc 900

agcagtcgcg cagtcgacta ctgggaggct gacaggtggg gtctcttcgt gtcgacgcgt 960

gcgagcagtc gtctatcgag gatcccaatc cgacgcgaac ggctataaga attggcatca 1020

tccaattgga actctgagtc tgagaagagc aaagcaatcc cctcccgtgc ctcgtcttct 1080

ctgccggcct cgcaatccac tccgcaactg cacatctttg accttgaccc cggtggtcgc 1140

tgttcataaa agcagtgggt cgctgttcat aaaagcagtg ggtcgctgtt cataaaagct 1200

cacgtacgtg gacgcattac ccgcgctgcc gctcctcctc cgcgtcaaat ttctctcgct 1260

caccggcacc ggcaccggta ccgtcgcctc atagctgctc tgatctgagt gacggcctgc 1320

ccttctcatt ttggaaaaca cacacaggcc caatcaaagg ccgtagtaat ggacgcggga 1380

cgcctgaacc ttccgccgca gctgcagcct tcaggcgtac tactatatat ataacttttc 1440

tgcttcaaag accggggcca tgactgcgat tctgcgaaga agagaaacag ctcaagaagt 1500

agccacctgg catggcaaca gaatcgctca cggttccagg gcaggccatt tggattttgc 1560

caccttctcc agaccgatcg acgcggtggc tggcgcagcg cacgcaggcg atcccgccgg 1620

ccgccggcgg ccggctccaa tcgatggtga tccctcgcgg tcgcggctgg ctgacagcac 1680

tagagtttcg tctgcagaag catttacctg ccactgccac gcgtgggaac tgcgtactgt 1740

acgtcagaag aaaggggctg tacaaaatct tcaagcctgg cctgcccacc tggagcaggg 1800

agtacgttat tccaaggatc caacgagacg acgaccagag cgagcagaga ggtgaatgag 1860

agagccatta tatttttaac tttagctaac cttggctttc tccctatttc aaacccatca 1920

atttcgaaag ggcttcgtgc agcagtaggc aaagcacggc atgtcttctg tcagttaatc 1980

agccggccaa cagatgttaa aataatcaag gtgaaacacg tctatggtaa ccggccaaca 2040

gatggtgaaa tcaagagtat ggtagcaata ccgactggca ttgctaactg ttgttgggag 2100

gtagccagat aggcaatgct aactgtacca cctatcaaga ctgttatcaa tactgtacac 2160

cgaaagctca ggcctcatgc aatgcaatgc aaaatattgt agaaaaaagg ttcccctgca 2220

atgcaaaaga caatactgtt cccgcaaagc agcacagcaa gctctcgtcg ccctacctat 2280

gctgctggct gccagttatg ggaacggcga aatggaatcg ctctccctag gaaagcttct 2340

gcttacatgc aaggccgagc tcgcgaggct gccgagccgg tcgctgataa atggtgcagg 2400

ctttttttta agctacaatt gaaattaagc gcaatgtgta tagtaattaa actatatgct 2460

gttttcgaat gaaaattagg ggtccaagtc ccgcacgttt gggtctgaag taactgtgcg 2520

caagaacgac ccaaagaaaa ttaaagaaac accaactaga gctgaccatg agagatgccg 2580

aaatcacgat gctaagttac atgacgaagc gccattgaga tcttgtaatg ttccatcatt 2640

cttatcccat atagatcaga taagattaga aaaaaaaata acttatctga aatttaaagc 2700

cacttaatct cactcaatca atatggatta aaaacaaaac aaacaataag tcctcaaatt 2760

gtgccaccat cccattatgg gtaaggtttt acttttacac acaaaatgca accaccagta 2820

gattagggct gggagcctcc aaactagaat gagacacgtc actggagtct agatgaatcc 2880

agaaatgacc ggccgcacac ttcaaattca aaacggtacg tagcaaaagc agaagaacta 2940

gcaaggatcg gtatgcaaat gtgatatcac aaatgaaatg gccactgcta cggtaccact 3000

tcagattggc tggcagtaag tcccatacat gatttggttg gagggtgtat ggtttgccga 3060

atgatctaaa gaaatcgtca tcatcatctc actctaatat atatttttc atttggtgtg 3120

tagaagtaga atggagagtt gatcgatcac tcgtcttatt cctcgtgagc taataattag 3180

tactagttta aagaataaac gacatgttta gctcaaggaa tcatcttatt ctcgaggtgg 3240

tgcat 3245

<210> 2158
<211> 1653
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84201_G1, chr2:194498232..194499884, Cluster 12

<400> 2158
ggctgtcgaa gcaggattgg cccaaaacgc cgcgaccgca cgagctcatc gggatggtcc 60

tgcagcctgc ctgctttgag ctgttcgcgt cgcgcgcgtg ccccagcagg tgaaccaatc 120

aaggcaggta ggcgggcggg cgggagggag ttgcgcgcac gcgcgactga cgatcctgtg 180

gtcgtcgttg cgttgcgctc gctgcaactg caagcccggc cggcacgggc tccccgcgcc 240

cgcctgcaat gctggcttgg ctttcggcgc cggccatgca acagcaccgc tagctagcag 300

ctgctggtcc atgccatgca tatgctgcga cgccctgcaa gacctgaacg gtgtagacgt 360

gtagtacgtg gcctgggcct ggctctgcga cccaatgcat gcccccactc ccccagcgcg 420

cggggacgac ggccggccgg gaagatatat atacacacac acacgtacga cagggacggg 480

gtagcgaacc tagctagcca gctagcttca gcctcaccat catcgagagt tgcatttttt 540

ggtttccagc tcgtaaattg atcatcaggc aggcgcatgc atgagctgta gcctggactg 600

gagtaggtta gcaggcacgg cggcgctgcc aggcttagct aatcattatg acgctaatcc 660

atggcgcatc caggtccatc cgaaccgaac cgtgcgcgca tgtcgtccta tccgaccgtc 720

cttgaccaca tgggctgcgc ctacgcgcga cggtcgtgtt cctttcggtg ttcgccggaa 780

ctaacgtgac gtgcttcgag gcaaaagaat aggacgcgat ggctcactca cctagctatc 840

gatcgacgat cgtcacctct ccaactcctt ggggttccac gaaaacgacg agccggccgg 900

gaacagcttt tggttgctcc attccatcac gtcacgtcag gctcgatctc cctcggcgag 960

cggagacggc ggcgggcgac cgcgtaggga gaacggcgtc gtcactgcgt gcgtggcagc 1020

ccgcagcccg acgagctgtc gccggaggcg ggggaaagtc aagtgtccgc gaaggaggag 1080

taccgagtac ctgacctgtc gcccgcacgt gggggagaca cgtgcgtgcg cgcggaagcg 1140

gaaccagcaa tgatgatggg gaagtgcgga accagccgta gagcagtctg ctctgctggc 1200

gacagagtga agagaatgca cggggacatg ttacttttca cctcggaaat ggcgttccag 1260

agctgcaacg gtacggagta gtagcactgg cgcagacaag acggcgatgc gggtatgatg 1320

agctgacagt ctgacacaca cactctcaca cgcgcgcgcg gccaggcctg gccagcgccg 1380

agtgcggggc atgtgggcgc cggagggcga gatgagatcg atcctgcagt tccagctcca 1440

caccgacaaa agtttggagg cgggactcgt acaagtgcga gctgtgtgtc agcctttgg 1500

cccacacggc agtctcgtac tgttaccttt ggattaacgt tggttgtttt aactgctgca 1560

agctgctaat ccatatagac aaaaacacca gtaagagtcc atacagatta aagtcaagca 1620

aacgtacttc ttcgtccaaa gaacagatac cct 1653

<210> 2159
<211> 1903
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86505_G1, chr2:208541596..208543498, Cluster 12

<400> 2159
caatggagac aacatggttg acccccttgac gctgacaagc ttctctagtc tctacgcata 60

tgcagtatgc tgccatctcc gtcaagcctc tgcacgttca ctgtgaatga ttgcgtgtct 120

ttgttgcgga ttgctgcata gatccgcatg cgagatggaa agaggctgta cacgcacacg 180

tcccatgtgg cctgtgggag ggagggagca ggcagccatg ggctcgtaga agctgctgca 240

tgagctgcga ctcgccgatg attgaccggg cacacagcgt agataatttc gaatatttga 300

ccccgagcac aaccgcatag tcaacggtgc accgctcggt agaaacttca acgggacgac 360

tttggaattt cggaatcgtc ctcttagtat cccgtccgtc gtcgtcgcgt tccaaaactg 420

cgcgcggaca gtggcgtaga caaacaaggg acggaggcct tcgattggag tactcctcgt 480

actgttttgt gcacatagtg ttgctatgaa tttgtatgca gatacgactc ccagggaact 540

gtctggaaca agaaaccgag tcaaatccag gaagattcct gctgtcgcat actgccgccg 600

cctcctcgac gacgacgatg gacgttttct tgctctcacg cttgtaaaaa actaaacaac 660

aacatttctg ggctgtcgct ggcgtgcatg tctctgcgca gacctacagg tgtagctgtc 720

ctgtcagtca gtcaccactc accactcacc atatatatac tagtactagt agtagcgcgg 780

gcaaaggaga tctgggcagg ggtgcagtgc agatccccgc gaggttaagt ttgtcttgaa 840

catattataa agattacact atctatagag tgagatttaa aatataagaa aagataagat 900

aacatggaga agatgcaaac tgctagagat aggacgacat gtctgtgtca gtgtgtcacc 960

actgacacta tgccgcgcgc cccggaggtc ccctgctgca aagcaaaggt gccgcaatac 1020

caagggttag actacgagtc tacgacagca ggtaatgtga tcccaaatcc aaataatgta 1080

aaaagaaatt aaacgacgac aggtattgtg atcgtgggta agctatactt ttaaagcgac 1140

aagggaaaac taacaacgcg aaaaggacat atgaatatga ttccctcgta gtatatatgt 1200

ccacagaaac ggcccgggtg ttgggaattc tcgtcaccaa accccgagtg tgcatgaaca 1260

ccaccgatcg ccgatattcc aaaataaaca cgggtcgttc ttttgggaag gggaaacaaa 1320

cataacattt tcgctccaag ttcggtcgtt agctctccct acatctgtct ctgtctcgaa 1380

gttgttgggc cctgcagttg atgtgatgcg tcgtgcgtca cgaagacgat ccctcttctt 1440

tgaaaggatt tcttgccatc gtcgtcgcct ctacttgttc cctcttcttt caaaggattt 1500

ctggtcgttc tgtgtcacct ctgctgtgtg ccgactgacg ggtgtgaggc tagggcgttg 1560

gagtactaca gttctttttt ccccaacccc ctagatatgc atgtaaagca acaaccatag 1620

cctctgctcc tccggataat tccaacaacg gacagtcatt caaggcaggc agtggatgtg 1680

gtggcgtaat ggatatatat ggtttggttt cggttgaggg agtgatggat ggcgcctacc 1740

tgacgcatcg gaaccactgg cggtgacctc tctctctctc tctctctctt ctctcgtttt 1800

cgatcgcgac gtgcgatccc gcgcccatat catcctgccg ctcgtcgcac gggccaggac 1860

actggatgat gtgaggaaca gcaggcaggt cgccgaagct ctt 1903

<210> 2160
<211> 3205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_877_G1, chr1:4596911..4600115, Cluster 12

<400> 2160
tgcgcacgct aaattttatc ggacgtttta ccggttgttg ctggaggcat agaggagtat 60

agcatcgcta tatttagcgg acagtgcgtt ttagcgggtc ttgctggagc cagccttatt 120

cttcccatct ttgctcgatt tctaatgacc cccaatcaat tttgggccac aaaacaatta 180

ttttgtgtta tgtaaaccct tgctatgtgt ctgctaaatg caacaacaca tgtaagaact 240

aacacaagaa actaaaaaat catatatgta aatgttctac acattaaaca aataatggaa 300

tagaactaat ctctattcca ctactagacg caggatctga aaatcgcatg tttagacttg 360

aaggagagca atccgcaaca gaaacatcat ccattccata tgaatgagca ccagcaacaa 420

tttccgcgcc aactggtagt ccaggagaaa tcggagggag agatattagt ggttgctcac 480

aatcaaagaa agccgctaac gacgctggct gggcgccctc ctccatggcg gcatcgcgag 540

acggctatca gtagcttcgc acgcaccctc ctccgatctg cgtcctcggt ggcgacaccg 600

acgatcggcg gcgatggagg agtacctcgg ctgcgcccat gacgaataga tgggcaaatt 660

agtcgcaggc tcggtggtct gggcaccccg cgcaattagc gaattctaat gtcccgctca 720

ttcggaaatc atccttttct gtccaatgct tcttttcaat tataccaaaa gggcggagcc 780

atcatgtaga gtagtatagt ggcgaaggca gacaacgagg ctgttacaat cccaattaac 840

tcagggtcct ctcatcagcc acaagggttc ccaactattc caaggtacaa ggggctcacg 900

tccagagagc cgtgggcacc aaaacgtatt taatatgcac atagatttaa tttgaattaa 960

ttaaataaaa tgagtcgttt gtatattgaa tttatcaaaa ttatggccct atcctcttat 1020

tagcgaggtg aaagacggag atagttctat ccattatcta aaaacacaaa attattataa 1080

aaccgacacg aagcagtttt tgcaaacgtt tgtagaatag cttcagctat atttagagaa 1140

attattttac aaggggagtc gaagcccttt cacaaggatc cggagcctga caagagaaaa 1200

tgtcctagtg agttgtagat ctagctagtt tgtttttttag atcatgaagc tgtcgcgaga 1260

ctcataatta attgtttggg acataacata gatggctttt gtgtgtatat atatagcata 1320

actgcatatg tacttatata acttatagta tagattattg ctgcacgacg gccataaaag 1380

attggcgtgc cgcaacacat acatgaccgc ggcacgagca cgggctacgg ggctagctag 1440

tagtactcct agctacaagg ctactagtag cagtactcct agaagcagta cagtacagtg 1500

gcaagtgcag acacgtcacc tggatggatg ggactgacgg ctaccgtctt ttggcgcagg 1560

cgggccgggt gatgaatccg ccgacgccgg accttcctgc tgccctgtcc ggctgtccct 1620

ctacagctag cgacgtctcg tcgaaaagac aaggaccggg agaaagagat caacaacgag 1680

aggctagcta gggcaggctg ctgcaagtag tcaaggacgg cggcgacttt tgccatggcg 1740

cggacgcgcg gtggcggcat gcagcaaagc gagtgccgcc gctgctggca accaccacgt 1800

acctcagaag ctcagagctc tctgcaaagc gagtgcagca gatgcagacc ggcagacgac 1860

acacacgcct gcaaaaaagc cagaaggcgt ctttcgccag cgaacgaaca tatcgacccc 1920

cccatgttgg tttgcacgta ctgttcccaa gcgcgcgcag ccgcgcaccc gtcttcgatc 1980

aaactcatca gaagctgctg ctgctggtgg tggtcactgg aaagatcgcg cgagtaggta 2040

gcagctacat cggccccgcc gccgtccgtc catgtgatgt gggaaaggaa tggaagcccc 2100

gcccagtcca gtcgagtcca cactccacaa cgacagacgc atgatttgat ccccatgacc 2160

gagcacatgc gttcatcgct gtgtgaattg gtcgtcactg ctcgttaggt caggccaaac 2220

tgcagactgt atgtatgtct cgctcgacgg agacgccgcg gacggggtgg gtgggtggca 2280

tctggaagga ttcggcgggg agctagacgg accgatcttt ttaatgcacg cacgcacgca 2340

cgctaatggt ctcttcggta aacatgggcc gccggccggg gcagtacgtg gtcgtcgtcg 2400

tcgtcgttcc tgcacgcacg cggcacggtt tccttccaca catgcagctt tcagggtttc 2460

caaccacgca cattatagag tacgtaagtc catgcatctg ctatcttcag ggaggtgtct 2520

ccgtggaagc agcaaaaccc ggccggaaca tcgatcgatc agacgacttg agagagagag 2580

agagtcagtc ccggctccgg cggggcggca cttttgtgcg cgtggtggat atatgattgc 2640

cttggtaggt acgtactgac tactgaccag cagcgagagc gagcagtaga cgcaacctct 2700

ctgtgtcgta caaggcaaca tacacagcta tgtacagtgg tgtgtacgcg cgcgcgcggg 2760

gctggagaga tggaccctag cctacctagc tgttgtagct gatgatggct agggccgcgc 2820

gcgcgtacgt tctcggctcg acgcatcggt gtcgactgct gctgctgctt tcagtttccg 2880

agtccaaaag caccggcgac agtagcagac gcagacaacg tacagcggtg gcggataacg 2940

caggcaggac gaattcaagt cgcgtctgaa caacaacgac cagcagaagc tagccaaggg 3000

acgtactgcg actgtatcga tctctgtatg cggccatgca ggcaggcagc catcgatccc 3060

caccgcaccg caggcgagca ccaatcgccc gcgcgatccg atccatggct ggcacactgc 3120

cagccaccgc accgcactgc actgcactgc actgtgtatc atgcatgcat gctgcgcgcg 3180

ggtgtggctg ccggcgacgg catgc 3205

<210> 2161
<211> 3271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8870_G1, chr1:46682894..46686164, Cluster 12

<400> 2161
ttcgaaaact gaagcattat aaactatagt aatgtcataa ctaaagtata ctttagtatt 60

taaaaaactg cagtttggaa aaactgtgtt cctaaacagg gctgtagtaa gtagaagtag 120

gattgaagaa ttgaggagtg ttttatggta caaatagaac ggtgattttt gtctggttcc 180

tatcaaaacc atgtggattt ttagagagat agccattttt aggagaaatt gcttcaagtg 240

acgctgacaa atctagcagt gtgtttgtgt gtgtgttggg gggggggggg gggggggagg 300

tgttggattg ttttattctt ggactttgaa ccactagaca aagatatggt tgcggtaacg 360

gaaagggagt ggattggatc ctgtcgtcgt tgagagcaga ataggacgtc tacatgagca 420

tgcaaaacat atgaaagtat gaaacgaaat cgaaatgcgg tggtggggaa tatatgctcc 480

cattggtggg aggaagcaag agcgcagaaa taacggtcca cgtgtgccgg gagtaatccg 540

aatgaatcgc tacactttgg gggaaaacaa tttggggaaa aaaattctac acaacctaga 600

tgcaaacgtg gcctttaaca gccccgcaca tccaccactc catgcagcgc cacgatttta 660

ctacgatgga gcagcgtatc attcatagcg ctagttttct ccacgcatcg aatgccactt 720

ggattttcta tgtccccgtg catgcatact ggatgccatg ggacatcata gctttcgtca 780

gcattgaaga aggccttttt tttagttgcg aaaggccatg tctgccccgt tcgccgcggc 840

ttcatcgcct gcttcctttt ctctagaaaa gagaccaaag cttcgctccg ctcatcctcc 900

acgccgcatg tgtcctaggt ctaggaatat atcctccact agcacatttt tgttcggagc 960

caggggagga aaaaaaacca ggcttccagg aggacaagaa gtacactcca cgagaataca 1020

cgaaacccgc gagttggaat ttggcatttc ggaatcccta accgcagccg cgcgtgcaac 1080

gcgtgcgcgc ggctcgcgca gaaaaaggaa accccacccg taagtcgccg gcagaccggc 1140

gggggaacag aagcaacggc ggtctcaagc tactaagcat ggcactcaac cggaaccgga 1200

caggccagga tcgctgtcgc ctggtctgag ggggcgccaa cacggaaccg ccggagcgag 1260

accggcctgg aatgcaccgg tgggagaacc ggccggctac ttgctctggt tgggactggg 1320

cgtacgtgta tttgctctgt ctaccacccg tcgtccggtc gttccggcgt ttaggatgtt 1380

gttgctgttg tcgaggggat cctactcgga tgccgtgacg gcgacacact ttacagctgc 1440

ttaactgcag gaccaggaga attttcttga gacccccag accccaggtt ctgtccctcc 1500

gtgaaatctg ccctggcggg cgccgccgcc ctgatgaagc gaacggcggc agtgcagtgc 1560

agtgcaggtg catgctgggc agtgctcgtc caacaggcga gtgtctctca ggattggcgc 1620

tcggtggaga gacctcggag cgataaaatt cgattcgctg ccgtcgctgc cgccgcccgc 1680

ccccagacaa acggggcgcc ggaggccgtt gcgcttgtcc gcttgccggc gcaggaatcc 1740

gaccaggctt ctcgtttctg gttctggcga cgggactgcg acggcgacct ggttttcggc 1800

tggcgccact tgcacgaacc catgccgccg gggcatctgt caccttggtt ttcttggttt 1860

gtctaccgga cgacgtggta ctacgactgc actgcacgag tgttccggtg atccctcaat 1920

taaaccaccc gaattcgtca catgtttccc tttgaaatta atggaccggt gggcaaaagc 1980

cgcaaaggct agtcgtatcc catactagct ttttcttctt tttgattcca actttattac 2040

tggagccttg gacaagtgca actgctgtgt agtacccagt ggccgatggt acctgacgcc 2100

cgacccgaca cagcacacag gacacgggtc gcgtcgcgtc cttcaggcgc gcgggccacg 2160

gacgccatgg cgggcggata gaatcagaca cagccggacc cctacccttc gtcctggccc 2220

taccgctctg ctactggcta gcggctaccg ccggccgccg ccgtgtcaaa ttgaaactgt 2280

caatggagca gacgaacagt gcacgccaac gatccccccc ctgcgctccc taggccgccc 2340

ctactcttcc tctctgccgg tctgtccttg tagcacgggg ggaaaacgct gcgatatcgt 2400

gttcactgtt caccaagagc ggcgcggcac ggcgggccgg cggcaaccag gatgggtcga 2460

tggagtggga caacggggag gctgggagca gagtacgatg ctgccccata ggctagcatg 2520

ggctctcctt atgttcccca tgttgtccct gctgtctatc aatcagtcag cgacttgcct 2580

gagcgagacc gagacggaca cggaccagac aacagcagca gaggggagaa ctgatgcatc 2640

tatagggatt cctagcagct acgacttttt cctatagccg ccaatatcag ataagacaaa 2700

aaaaatttag ataataggac agctaaacca agaaggaaaa aaatagcagc aaaagaacta 2760

aggcatgaca attagcaatt atggattctt ttcatagccg ccaataccac atagaaggtg 2820

caattaagca ggacaaccga acggagataa aggtaatata gggattcttt tcatagcagt 2880

tgatgcattc attgtccaga tactcgatct cctgtcgcta cagtatgtgc cttgtcagcc 2940

tgtaatccat cttggctcca gaatctcgtg gaaggatgta ctgcaaatga tcctggtggc 3000

tcagaaactg ttgattgagt tagccttaac tgctgaaaat gacaagggcc tataccttag 3060

cttagttgat ggagcgagca gatataaaag gtaggatttt ggtgggatct aatcagctgg 3120

ctcaacacca tgctattcat ttcaatcttt tggcgtagca gtgccactgg aggtcgttct 3180

ggatttcatg ccactcatca tcgtattcaa agcctatttg ctatggcgca agacgaaaga 3240

gactgtcata acatacgttc aagctcacgt c 3271

<210> 2162
<211> 2097
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92769_G1, chr3:3471818..3473914, Cluster 12

<400> 2162
aatatgggga ctaaaaggaa atcaatctga tttctactcc tctttttagt cctatctttg 60

ataattttga gactaaacaa gaggaactaa agtttagtct catgtaagta tgtaagcaaa 120

catgccctaa aggcctgttt gatggactaa taaactagta aactctagtg catgtttagg 180

acgacgccaa acagaaggtc taattattac taactgatta cgatccttaa aaaaacaaat 240

actaatactg tagagttaat ttgatgcggt acagcagcat ggtcttacta ctactacatt 300

tccttggcgt tttgcggttg gagtggagtg gagtggagtg gagtgtgtcg gggttgtcgc 360

gtcgatggcg cctgcggacc gtggcgcgtg tagcctagct gtgccgctgc cgccagggcc 420

aggccagcat gcaggcgtca gtgatgagct agctagtcct agtagcagta gtgcatgcaa 480

cgccgacctg gctgtagcgc gcatgcatgc catccgtcag tcacccgtat ggccctggcc 540

gcatgcccgc ccggggcccg gccggccgtg ggctactggg ctgtggctga acgctagctg 600

atcattagtg gcagctagct agctatggtt ggcgcgcatg cagatctgga gatgcgtgtg 660

tggttggtgt gcgtgcgtat ggaatgcaat gcaatgcata tgcatatgca tgcgcgtcga 720

agaaaagtgg ggagcgcgcg cgcagccgca gcgaagtgag tgcattgcag gggcacacgc 780

cgcaacacta cactacacat gcgtcgtagg ccagccgccg ccgccgccgc cgcgctgccc 840

ctgcgcatgc atccgacgga cggtggcacg ctgacacaac tggcgctgtc cgtgcctacc 900

ttgtgcctac tatggccacc tatagtagcc ctatacctag ctcctgacga gcgccatgcc 960

atgcgacatc atttggctcg gctttcgcag gagcgcgcag catgcctgcg tgcatgcagc 1020

ggcctgccaa tgccatgcat gccgatcgat gcccccatcg cctgcctagc taggctagga 1080

gtgttggctc gtcatgagtc aatcatggat cctcttgcct agagtaggac tgaggaggag 1140

acgaggagct agcccagctc aaaatccgac ggcggaaggc cggaagcaag cagggactgt 1200

gagctctagc tagcagcgga gcaggatgcc gatcatgctg gtttcgcccg cccatctctc 1260

gctcccagcc gagattccag gaagggacgc gcgcgcctcg ctttttcatt ccctttccca 1320

ccacacgggc cgctcgcgcg cggacgtgtc tgggtgcggg ccgtgcgtca ccacgacgga 1380

ccaggaaccg gaccgcgtct ctttcggcaa agcagttcaa agcgtggcgt ggcgggcgtc 1440

gcgcagacgc gcaaaaggca atccaagtag gccggccggc ggcgggcggg ggactggact 1500

tgggattgga tcacgcacac tgcagagcct cctcggctcc tccttcccca gtccagtcct 1560

ctcccgccgc caccgcaacg caagctagta cgcccagcaa agcgtacgga acgcggatcg 1620

gagcagcggc ttcagccttc ttctcccggc tgcaatgcaa tgtatgcgct cgatcagggc 1680

ccccccttgtg cggcggctgc tgctgcgcgg gagccagcag gcaccgctgg gaatcagccg 1740

aactcgcagt acagtcacgc acaccgcccg gccgtcccgc cggcggcacg gcgtgctctt 1800

tggctcatcc gcgttgttgc gccaccgccg gggctgtggc agatttatct tccagtcact 1860

cggggagcgt accctgcccg tcgtcgtcta ttttccactg gcctgtgctc cttgtctgta 1920

ctagtcattt tgctacagcg aactgcggtt gtttcgaaag ccgtggtgca agcattcata 1980

tcgaattttc acccttccat tggccaaaac ttaccgcaac cacttttag ccaggtggag 2040

ctactgcgaa cagaacgcat gcaggcacta tatgatttcg tgaaaggtaa ggccatt 2097

<210> 2163
<211> 2043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92773_G1, chr3:3499492..3501534, Cluster 12

<400> 2163
gaactaaaag gctatattgt tattggtggt ggtagaattt tgcgcgaacc agatcccttg 60

cgctttccat gaggaaaaag aagggcttcg aggcaagcca agaaagtgtc ctggacatgt 120

ggcggtgtgg atcgtgtcct gtggactgtg gtgtgctact agtagggtgc tgtagcatca 180

gagccggcaa ccaccaggcc tgccgcctgc actgcaccac cgcgtgcatg agcctgccgg 240

gcaacggatc acatgcgttt gcggcaaggc catgctcgca tgcgcgtgca tgctaccaaa 300

acaaacctga cgggagcccc cagcccagcc gctggccggt gtgcgatcga gacgactgga 360

gccggaaacg aacaggtcgt cagattcgcc gtggatcgga gctccacatg catgcatgca 420

tgcagccacc tcgcggtgaa cagcgcacga cgacgacgga gcgggccggc cggcgggcgg 480

gcggacacgg acggaccccg ggcgaccgac gcggcagcca gcagtaccag tacttcacgg 540

ctgctagcta cgcctacgac catggggcgg gcccgtggat gcagtggaca ggacacagga 600

cagcgatgca tcatgcatgc atggcacagt ggtgttcgcg gctgccggtg tatcacggca 660

actccgacac aatgatggcc ggcagggggt acgtacggtg tctgcacacg agaacgagag 720

gcgggcgggg cgctgggtca ggcagggtca tcagaccacg ttcccatatg cgcagcgcag 780

gcaggcagga cagcggcgtc agggtgcaca ggcggccccg gccggcgatt tgattgatgt 840

gatccgatcc gcgcccccca ccccccctggc ctggccccgg accgccgctg taccctggcc 900

gcagaacgga gcatgagcgc cgtaaatgcg gccggccgtc gtccaggtcc agtcacgtcc 960

cgttctctct cgctctggtg agtgatgatt gatgcagagg ctctgacgct gacggatccg 1020

gcgggagggc gggcacgtac gtactaccac cagtgaagta gtagtacgtt gtacgtacgc 1080

cgccgcgctg gagccgatga atgagatgcc aatgccatgc catgcatggc gtacggtacg 1140

tccgtgcatt cgcgtacgcg gcgctgattg ctgccgtgcg ttcgcgcatc gtcaacgcat 1200

gcacgcatgc atcggcggcc ggacacagcc gcccggaccc ggtcgcgcac cctccgaccg 1260

gccagcagcg gcggcggcgg gggcggcggg cgggagccgg cgcgcggccg gggtcgggat 1320

cgccggggag ggagcagaga gagctcctac gacgctagct gacagggtga aagtgaagtg 1380

tgatggtctg gaccaggacc gatcagttcg ctcatgtgcg agactgcgcg agtggtggtg 1440

gtgatcactg atgtgatgag tagtgatggc gcgtcggatc ggagtactgt acacgtacga 1500

aggtggcgat gcatcgatgc ccaggacaga gggggcatgg cgctgctgac ctgctgtagt 1560

agacgggcac tctactgtgc tacagctctc agagacaacg gtgggggcgg ggctgggggc 1620

tgggtggctg gctgatcatc gatctgggcc gcagggcctg tcctgtctta cctgcagtcc 1680

gtatgcccgc agcgaccagt agtggcctca aaacgagaac tgtcacgacg cacatgcgcg 1740

gatagcacca caccactgtt cccggttgtt cactcacata cggaccatta ctactgccac 1800

cacctcccga tctgattgta ttttttttct tcaaaaacaa aaaaaaaaca gaactgtgaa 1860

tgcatgaatg aaacacgaca ttaccgcgct cccatgcatg tatgcatatt aattaccgaa 1920

gcaataatgt cgctgatgac gttattcttc agacgtttca caaaatgctg gtttcagatc 1980

gaggctgcgt cgtcttcgtc tctgtcaatc tcaggcacct ggagtaatca atgaggcagc 2040

gcc 2043

<210> 2164
<211> 1508
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94134_G1, chr3:10269592..10271099, Cluster 12

<400> 2164
ctatatttgg accaacacga catgaagtga ggcacgaatt agaaaactaa cgttttaaat 60

gctccagtaa atttatctct tcacaaaact tgaatcaacg tgtcttttga tagcgacgag 120

aggagatagg tcaagacata ttgagctttg ccttcccaat cttcgttact ccggattgtt 180

catcttgttc tcttttacat cgacaccctt ttggaagatt ttgaccaccg atgtcttgat 240

ctcatcgact agctaggaag ccgagcagct ttgcttgcgg atagtagctc taacttgtgc 300

atgccatagc gcacggttgg acttccacag attcgataga ccgaggacaa aagattcatg 360

gaggtaaatg atggaggtaa atgatgatga actcttcgtt gctctaatta ccatgccaat 420

tgtatagaga cgttttaaaa taatatagcc cacaatccga atccagatct ttatactttg 480

catgttaatg tattaggtga ggaataacct cttagaatga tgaacatata taggagcata 540

ttttaaaaat cgtagataca tacaatacga acttataatc ctatacaaca atatgtaatc 600

cacccggccc ggcctgcagg ttctcttctc tttccttcct gctgtcagtc tgtcaccagg 660

cagttaaagc cgcaccggtc ccggacaggt ataattggat tctagtttcg tgcgagatga 720

tgcgcctctt ggggcgttcc aaacggagct attgacgatg acgtacggcg acggcgacga 780

cgtgggggcg ggggtaatta actgcagctc gcaattgcgg ttggcgggag ctagccatgg 840

cccaacgcca cccatcggga agaagccaga cccgcagtta ttggggcgag cgagagctgt 900

gccggggcca ccggccatgt tccaagacaa gcgaagcaga gctagctgta ctggcggccc 960

ctctgctgcc tgtctccagc cctgatctat ctccatctct tccccccttcc cttaattcct 1020

tccaaccctc accatcagca agtctccggg ttgtttgatt tgctcactag tcactacgca 1080

tggtactacc gtactactca cggcttgaag attgaaggag tacatactgc gagcgactgg 1140

agacagcagt gtcaacagtg caggctagca taggtatact gttggtaagg aggagtgaat 1200

agcagcaggg cagcactgtt attcatcaca tgagctgagc tggaaataaa atcgcacggg 1260

ccggccgggt gcttcttcac gtgcgacggg ggtgcattat ccatggcgcc aacctgttgc 1320

cgctggcaac cagctcgggc ttgtcgcgca actgtacaca aacgtctacg atgtggtgcc 1380

atgctgccat gacatacaac aaacgcttgc gggcacatca aaacgactca tcatcatcac 1440

acgtcggcca atgcatcatt tgaactctag acttccatcg tagagaaatt tgtcaatagc 1500

tcagtgtg 1508

<210> 2165
<211> 1421
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95783_G1, chr3:19463210..19464630, Cluster 12

<400> 2165
gaatattaca taatttttt tatttggagc tattaatcga tcgtatgcat gcatctttcg 60

aagccccagt ttggcagcac gtacggtgtg ggggtggttt tatataaaac ctgacaagtg 120

gcgaagtcgg gactcgggag tcagctcctc ctggaagacg tgtatactta aacactctct 180

ttcgccgtcg tgcggatttc gtaaacgtgt caaaattagg cttcagccgc caagctagca 240

gcaaatgtca tcctccacta atattattac tagtgtataa ataaactact catcagatca 300

caaaactcac ccccacacgc agatagagac gtatgcatgc atgggcacac aatatttgag 360

tattggctgg tatggtatcc ataccgtaca tgcgtcgatg gggacccaat caatggtagt 420

accgagaccg tagtagtagt cggccatcga cgacgacgac gaggacggca gaaatgacat 480

gcatgctgcc ctgcacaaca ccatgaatca gacaggtcct ttgaaccttg caaagcaaca 540

actctaccac actcctccag ctgccatgca cgtcagacga aaggaaaccc aaaaaaaaaa 600

catgttgcgc aagtggcatc tatatcatgc gttatttgaa ccaatgcaat gcatatgcac 660

acgcacgcag ctttaacaat tatcaagagg cgcatacaga cagacagaca gacacaggga 720

gcggcagcag cagcagccag cagctagggg aggggagggg gacagagcta tagctagctg 780

gctcaggcta cgctgcccag cagtccactc cactctcgtt tgcaacagca acagcgactg 840

caagtgcaaa ccgcaggccg ggagccggag ccagggaaga ggaaacctgg gcaggccggg 900

cggcattggc cccggctagc tagctgcaag ctgccgcctc tctctggtcg gaaaccgtgt 960

gcccagcagg cagcagcctc gtgcgtgagt gtcctggcgg gcggctcttg gtcttggatg 1020

gaaagctgca ggtctagcta gctagctagc ttctgctttc ttttctcccc cttccctctt 1080

ggccctcttg gatggaaaag gcacacgcac aagttgctgc tgcctgcctg cctgcatcaa 1140

cacaaccacg gccaccacca ccagccacag actacgtacg tgcagtggtt atcctccatt 1200

gcctttgaat ctcatgagcc gtgcacatgc atctctggtt acttacttac ctatagtcca 1260

agtcaagtct ccgatccatt aattgacaat caaccgtgtt gaatcgccga gtgattaagc 1320

taacctaagc acccttttcta acactgtacg tatgcaagtt tattttactg atgatttaga 1380

gactgaaagt ttgaaaatgc ctatatatac cgtcgtcgat c 1421

<210> 2166
<211> 1750
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95846_G1, chr3:19757952..19759701, Cluster 12

<400> 2166
acggagagag agagggtagg tcggcgtcgc taggtggaac acgcgcgcag ttactctctg 60

acggcgagat aaataaaccg gcttcagggc aaaaaaataa caaatataat cctcacaaac 120

ggatgttaaa tatgtaaccg aaaaacgacg ctccgttgtg ggaccgacga tgcaattaca 180

gaagggtggt gctgcatcat gacgcggccg ccacggccat atatggccgc cgcttggtta 240

cgtttgcagc acgccgtgta tctagcgaag gacgatggag caggagaaag cgagaagcac 300

agcggcggca cgccggcact ccccccccccg ccactggcca cactgcatgc acgcacccag 360

ctggcctggc caggtcccca tcgtgctcga tgtccttgtt ctcgagtcca ccacacgccg 420

ggggtcggaa gtcggaacgg ctctctggaa ggtccgtcga cagtccaccg acacacacca 480

ccaaacagca tgtccggtcc ccaccccgtc cggtccgtcg aggggcaggc cagctttgct 540

tgctcagttg ctcgctcctg ccttttctga ttttcttccc ctcccctccg cccgttgctt 600

tcgggtgggg aaaaaaaaaa gagaaacctt tcgactctcg tgtccagggc tgagcacgag 660

ctccgaggcc ccaagtccgg cggccgaaga cgcgggcgcc ggcggggtgg aggaaaagga 720

ggaaggggtc gcgcacgccc ccagcttggt gttcctcgct cgcacagctg cgtctgcgtt 780

gcatcgcgct ggtgtggtgg ctggacgctt ctcgagtctc gatgcttcac tgctactgct 840

ggttgtgcag gcaccatttc gccatagagg ggccggggcc ggactccccc gcccagccca 900

acagggaaca ggcccaggcg gatgtttctt cacgggccga ctggcctgat ttgctgagtg 960

gtatggtagc aactagagac atgatgacta tatcatgctt tgtggcccag gctagtaata 1020

actcccgtgc tcgataaacc gagcagaatt tcgttcggca acggcagtct atttgaaggg 1080

ccagtttttt ccctcaaaaa aaaaacgaga caacgtgtgc aggaattatt agacgatctt 1140

tttggtaagc gaaagagagt gggaaccgaa attgtgttct ggataatatg gatggctgtg 1200

agtcgttttt ctctccctgc ctgcgagtcc cgggcttcat ctcatacggg aagttgatgt 1260

ggtattcata aatcataagg cccgtctgct ctgatgagtc cttggatcga catggcaatg 1320

cggccagtcc tgttgtggaa ggcagccagc ctggaacaag tgcgaaacgg aggagttact 1380

actgtactgt acttggtagt actgtacaca cgagtgcata cccggcaggt catggcagac 1440

actttccgcg tcttcgccgc ccgtgactgt acggcgcgcc aaggattgct gttagtgtta 1500

gatccttcgc tatttttat ttgctgctca tttctcaaac ctgtctcgtt gtctgctact 1560

aatctaagtt tatttatttt ggtcctcact cgatggcacg cacgtaggag aagctctttc 1620

ccttttttt tcccaacatt tcaatcgaac atggtccatc acgtgattaa tggtaatata 1680

tgacgtggtt gcaaaatcca tgtccatgtc cgcgtagcta cactgtcatc tctaaaccac 1740

gggttgctcc 1750

<210> 2167
<211> 1833
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95872_G1, chr3:19929850..19931682, Cluster 12

<400> 2167
agggaatgaa aaaaaaatat cctgtaaccc aaaagagcta taaacatgag taagcatgaa 60

ggtctaagtt gtgctgcgtt caggggctgt cccggctcac ctgcgccacc gcccctgcat 120

ctgcctcggg atacgagggt taagttgtgc tgaagtgaat ggtgagacgg ggaaacaggc 180

gacgccgaat ggtggcacca ccaactccgc tggatgcaga aaagggcggg aagcagcagc 240

ggagccgggg ggcagaggag acagcaacga gctcctgtcc cccctcccac ctcgtcatct 300

ttactagtag ctactagagt gcagaggaca gcaacgagcc aatcgacgcc ccctttgtgc 360

agtacgtgct gccggctgcc gcttccatcg ggccgagcca aagcgttcag cgcacgacgt 420

gatggtgatg ccgcaaagcg ggggggccgt accggacgtg cgtgctgaca ttataagact 480

tttaacttgt gtttgtaatt cctgacatta agacaacacc atgtatctat ggatggacgc 540

tcggactgat gaccggcgga ggatgatgta tacatactga aaacaagctt gtgtttgtgc 600

atcagtcatc acggagggag ccacgtcagg cccacccacc accatgtcca tgtgttgctg 660

gccttcggtt ccatgcggcg acggtttggg cgaccaaccc cacttggtgc ctaccagcgg 720

tggtggcgac ctcaatgata ggaagcagac ggtcgtcgta cgtcgatctt catctcgtct 780

gtggccgatg tcacggtggg tgacgtgtcg cctttacagc gaccgagaga ggtaggtcag 840

gtagagaaat gagactgtac aagccgtgac tctggctggt tacctgatgc gcacgcgcac 900

ggaacgccat gcttttacc cggttcgcca ccgagagcgt gtggaccccg atcgtgtgtt 960

ctgctgtcgg tgtcggccag caataccatc tgtatctgtc ccctcccagc gcactctctc 1020

cagtccacgg cgatcagaag cagtctgcga tcagcgagat caccgtcttt gaacaaacgg 1080

gccggcaggt tggtcagact cagacggagg aggttggggt cagttgttag tggcgcacca 1140

ggatgaacca acatcatcta tgttctttgc ctccgacagg agagtatcat atcagggaat 1200

tacgtgggaa ccggcctgca tccattccac gacacgtcgc tgttgtcgtc agcgttcatt 1260

tctctcctcc caccccaccc catctaggcc cgttttgaga tttattagcg ggcttaatct 1320

cggcctctta gcatggaagg cagaggaaag gagacgttca gtaataggag agctccttcc 1380

gttgacacag agttcaactt ttgcagctga tctaccaatc aaagctagat cttccggact 1440

ttcaactaac catatattat ccggaggttg tctacaatgt caacaacttg atttttttta 1500

aggaccaagc aaagaattgg aggaggttaa ataggatcaa gtatttttc aggtaagggg 1560

gagtagatcg aggggatttc atccctctca atccattcct aaccgactta cttctacata 1620

tttccttcac tagtctatca ctatacctgc cacatgagta gttatggtaa gtcgcatctt 1680

cgaacgtcga ggcccgcatc gtttagtact atatagttag tagtcattag ccagtgtagc 1740

cttttatatt ggatggtttt ttcataatgc actttgtgtg tgcatgtaca acctaagtca 1800

tggcaacatg tttgttagac caataatgtt aca 1833

<210> 2168
<211> 2060
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96348_G1, chr3:22562366..22564425, Cluster 12

<400> 2168
atttctttcg atattcccat tgcatccacc ccacgcaaac tccatatagt ggcttcaacg 60

tgtttctttc tctatcttat tttcttttgc tcacaattaa gtagtatcta catatacaaa 120

gttcaagatg ggtttcaatt tcagctctat tcttaataaa aatataagtc aagtcaccaa 180

ctatccttaa agctctgtag agatgtcatc agactatgta aagtttgaaa ataaatattt 240

ggccctctaa ggtcgcggct gttttcgtct agattcaaat gaacgtttac ccaaccagtt 300

atacctacat tcctacatgg catatagatc cattcgatac ttttattaat atgataaaag 360

ggatccatgt gtcagcggca aggcatcacc gtagaaatat ggtaattttt tttcatataa 420

ccttagatga agataatttt tgtatataaa agttgtgtgc tcaaagagtc gtacaaattt 480

ctaattttga ttttttttt tgagattgtt aagatgctca aaaaataatg tagagttcca 540

tcagacaaac aaaagcccac gtaaaaattg gaggcaagga aataacgccc cacctttggc 600

atttcgaggt tagttgggcc acggtctatc caatggaaca aacaaaagcc cacataagat 660

tggcttttta caaaaaagaa gttgttgcgg tttttagatt tggcgtcctg cgtcctctac 720

ccgatccctc ctggtccggc tggaccggac acagccaggc aaacaaacac gatcgtgcgc 780

cacacaccca ccgtccttcc gttccgagcg cgaggagcat gcatgcaaat tgctgctcca 840

cctgcccggg ccggccacgc gtgtcatcga gatctcgcag gctggcagtg gcaggccgtg 900

cagcggtgcg ggtgcccact ccaactccac caccttcttt taaaatgcct ttcgccacga 960

attaattgcc acctctggtc tgctgttgca gcgcctctct gtctccgcta ctagcgtgca 1020

gaggccccgg gcagtcgtgc gccgccgccg cggcgcatgt gatcacctcc cctaccccct 1080

gccccgatgg gcgatggcaa ctacctttcc aatccaaccg acgggcgacg gtgccggtgc 1140

atgctgctca gctactgcgc tgcgccgact caccgagtac agctccaatc caagctaacg 1200

gcaccagtgc agcgaatcga atgatttggg tggcgtgatc gtccacgacg gcaaggccga 1260

aaccagcttt ggcgatgacg aaaatagaat ccccgtcagc tacttgagca gcgcagtcgc 1320

ataccaccgc ccgccgcccg ttgcggggtg gagatggatc ggccgtgcac gccgcggcaa 1380

cttgggtggg tccggcaagc agaccacatg cgccggtcgg ttcggtccgg ttcgatccga 1440

tccggtgcgc tggactggat ggactggatc cgtttcgtct gagcgagagg aaaggaaaag 1500

gggtggacgg gtggtagtgg tagatcgtag accgacgggc tgccccggct ccagtcgttc 1560

gttccctggc gtgcccacct tttgtacggg ctcggaatga ctccacggcc cgcggcatgt 1620

gtctttgcct ggtttcgtcg gacccgacct atcgggttgg tgacgatgct tcggtttcag 1680

atcgactcct tttcctctct gaaaaaatct gaatcaggtg cagcagcata tatatcgggg 1740

aggaaatacc gaacgtgaga ttcctggcgt ctttacaaaa acattcacaa agattaacaa 1800

gactagaaga cccgtagttg ccatacattt tcccaacgcg tcgtccgcca cgagtgaaga 1860

caaaaaggcc acgtcttata gacgtgttcg acgcgcataa tatatcgata tgtgtatatg 1920

tagaaaaggc agtcaatatc acgtaaatca gatgtcccgt ttgcgtcgtg cactgaccga 1980

tctccggaac gaaccctatt tgttcagtta tataactttt gactaaaact tagtccatca 2040

tcatgatcat gataatacac 2060

<210> 2169
<211> 1448
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_978_G1, chr1:4977853..4979300, Cluster 12

<400> 2169
catggtaagg tacggtttcg attacaataa aaaaggcaag gttttgacgg cccaaataaa 60

actaaaccaa acatggccta aaaggtacga aattgcatta gtgggatcat aagcacagta 120

ccctagctag ttagggtatt gttttctgtg aaataagaaa ctatgttgaa aagtccatat 180

ttaaaccttt tttatctaaa agatagcagt atcacttggt ggcctatcta gtatgtttcc 240

acggtggagt ttcgtcgtgg gttgttaaat tcctgcgcgc aagtgatgcg cgtgcatcga 300

accagagaac atgtggcctg tagtaaacag cggagcaaaa actagctata ccttgaagag 360

gccaagagac attgatacta gccttttttcg tcgtggacct cgattcaatc ttaggaattt 420

cttcatattt cacatgccta aacatacaaa gaagcatgca gttgttttta gtccagaagt 480

catataaaca catgctagct agtgtctata aacagggctg ctgccaaata aaaacatcag 540

gcgcttcatg gcatttatac attggagact tggattttgt gttgtattgt cccatctatc 600

tatattcgtc atggtcgcgg acgcacgcta tagccttgta tggtggttcc agttccacac 660

ttccactgga gacatcgccg cgcgcacttt gtttggcaag gaatgggtgg caaggcaata 720

taatgaacca aaataggcga cgacatacta cacctatgag gcgggttggt gttgtttttg 780

tttatcgttt tgggaagtta ttattcatca tctatacaat ttgtcaaacc tacgattagc 840

acagtgaacg aaatgaactg caatagagat agtaggttag gagctcgatc gatatggaaa 900

gggacgacaa gaacagcagc accaaagccc agtcaaaaag atgcccagcc aagcaatcaa 960

tctttcccgt caagggtttg cagaagatca tcacgaggga aagagaatcg cacagatgcc 1020

caatatcagc agcttagtag tacgtcgcaa atgtgctggt acgtacacgc tttagttctt 1080

tcttccgtga agatttttt tccccttca cctttcgcgt ttaatgactg agggtccgag 1140

agcatggcaa gctgactagc tgaaaaaaaa agaaaagaaa agaaaaggtg aggatgtgca 1200

aaatagagaa accgcgaggg ggcaacggga aacatcacgt ggcagggcgg gctggggcta 1260

gggctaggga cggagtggcc aactggccat gagacggagt gaccttcccc gtcagattgt 1320

cgccccgtcg gcccagcgtc aactacgaga cctccgtcat tggccacgac agtcaatgac 1380

gtgtggggcc agagacagga gcaacccaca tgtcatccag ggtaaacagt gagcagcccg 1440

tgccgtgt 1448

<210> 2170
<211> 2168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9940_G1, chr1:52923359..52925526, Cluster 12

<400> 2170
gtgagagacg gacggagaag gggggtgcat gcgacgcact cggcttcagc agtccggatc 60

ttggcttatt cattgacttg cgtatacaaa aaaaggtgtt tattttatgc acgccactct 120

aaatgcagta gtcgtttact ccggagtagt actacataaa ctatggcgcc gcggtccctg 180

ataacacggg agaagaaaaa agaagtatag aagtgtggcc acagttaacc ggtacacgtt 240

taacaaccga gggccaagag acccagggat agaaaaaaac gtgcagttgg gtctgtctac 300

gtgtcttccc atccgcttac atttcgtgac atgttgacat atacatgcat gcattcagct 360

gatgccgccc cttcgcaaag gcaaagcttt tctcaccacc agtttttcg taaccggatt 420

gttttattaa ggataatcga ctcggtacgc gttgatattt tcgtgaacta aaggtaatat 480

atggtcagta aagatatatt atataacaat aggtggcatg aaaggtaaag ccaagtatgg 540

atttctcttt ttttttaag aaaaaaaatc gcgctggcat gagaagcact gaaacctaac 600

cctggaatca cttattaaag aacgctcgaa atagcatgac aatgccattt actgtgtgct 660

agcttatcgc ccatatctta agaaactata tatatataat agtataatgt cgagaagacg 720

acgatgacac caataagttt ggtgcattgt atgcattgta ctcgtggaca aataccacac 780

acactgtgcc tgccgtgccg gcagtgtcaa ggccaaacgt caaaccacga agcggacggc 840

caaggccaag ccaaactcat tcaacgaata gcctctggaa attaaaaatt ttaaatggac 900

tctctgtctc ttttttttat gcgtgtgtgt gttagagacg tggccgaagt tttgtgccat 960

atatatacta gtatatcgcg tcggtatcgg tctcctttat ttggtcgatg gagtctttgc 1020

ttatctgaaa agcacctttt gattcattag tctttgttaa aactgggccg cctcgctcgc 1080

ctgcctgcct gtacgctaca cggtcagaat aaacgacagt aggtatcgag gtggcgcggt 1140

cacgtcgagc gcttataaga aattgaccat gcttaggcgc ggtcttagct tagcactcgc 1200

cggttaatat ataggacaaa aaccgctgcc atagaagata gagtacgcga gagagcagac 1260

tgcggcagaa gatggcataa aactaagacg gcgcgcgtgt ttctcttcca tctttgaacg 1320

agagaaaaga tgtgcagtgc tcctagctgg tccagagttg ggccggtcgt cttgttaggt 1380

tttctgcgta gggcgttgag gcaagaacca ggtccaaaac atgaacatcg ttggccagac 1440

tgaaattggg cagcagcagc agccagcatc aaccttgaat gtttcctgga acagcctctg 1500

atgaagttgg gcacttggga cacggagata ccgctgttcc gttcctgttc ccacagatgc 1560

catagatgcc agtttgccac gtgtgcggaa atagatagac tgatgagagg aagaggaatg 1620

ccttttacgc agattagtta cccataatta cgtacgactg gattgcaaat caagccgggg 1680

tcgaaggagg atttgccacg ctatggggct agggcagcgt gatccttttt cacctatgct 1740

attcaccgtc gccatgcttg gatgtcctca ttgtattggt ggccgaggag taggcgcatg 1800

cagtcatcag ctctcgtcaa gttcagagct tccctgtacg cggacaccct tgtcatcttc 1860

ggtgagatat aatcgcgcgt tcagtgagac agtggaccac atgttgcggg ctgccgggcc 1920

gtgtattcac cagggaagct tattggagca ggcgactcag cccactgggc ttttattgtc 1980

gccagtgaac gtcgacgctg gctttcttgt gcagtggtgg atgtggatcg cttgcagtgg 2040

gaagggacag agcaaggggg ttcgacttcg acggcctttt tttgctagtt cttgcaggcg 2100

cgtgttcgac gtgttacaaa acattgtaca gtgatcaaat cccatatatc catttgtaac 2160

agttattc 2168

<210> 2171
<211> 1195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282323_G1, chr8:100763204..100764398, Cluster 13

<400> 2171
tagcaataga tatttgtctt cgtttgcaaa ttcatttgca gttcttgccc tcctccaaat 60

gggctcctga ctcctgtgaa tccgaggtta aatccacagg cgtaaaaatg tcaccacggc 120

gtcacagttc acaggtacga cagcagccga cgaggtaggg gaaacttcaa gctttgaacc 180

gagcatacat tgcattgcat attttgtgtg caagaaactc ctcacattta ttggactgaa 240

agacgaacat aatacaaatc atcgtggctg ttgaaggacc caaaaacata tactacatca 300

tcgttttcgg ttgaagagct tgtcgcgaac gtgtcgccgg agcctgtcga gagcatcctg 360

cgcattcagg aagatgagct cgcctgtcct ccagcagaag acgtaggcgc acacgtagag 420

gcccgcgaag atctggtacg ccatgctgcg ctccccggcc ggcttgcgct ctggcgcggc 480

ctccttctcc tcctcgcctt gcttcgccat catcgccggc ggcggcgcct ggggctcacg 540

ctctgtctcg tcgcgagcct tcgccatcgg cgccgggcac tggcggcgcc ccgttcctcg 600

cacgctacga cgacaggagg gcgcgggcag cggagacgaa tggctggtgc ggggaaggag 660

gaggggccgg aggagcccgt agcacgccct gttcggaacc gtgcccttcg ctgcggctgc 720

gatggggttc agcggtttca gggcaaggcc ccgagcgacg ggcctcatca gctgcatata 780

tatctttcag ttcagcgggg accggagcgg tggtgtgagt gacggagaac tgagcagggg 840

acgagtgacg ttttgtaggc caaggccgtg ctcgaaggga agcgcgaaac cggcgtcggc 900

gatcgccggc tcggtggctt gacgtgcaat gcaacctggc gaagcattgg tgtctacgac 960

gggcaacttt gtttgttggc atgtatacca ccatgtgtct tgtccatgaa ctggtcgttg 1020

gcgtgtggat gtttgggggt tattcctaga tcacgcatgc tctcgtagtt tttggccaag 1080

gtgaagaaag ttttggaaat ggctcttttg gtggcaacgt acctttttt tctttgataa 1140

ggcgtacctt tttttatttg agggcaagga aatgcgcctt aattccacac gcatg 1195

<210> 2172
<211> 1203
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10513_G1, chr1:56320845..56322047, Cluster 13

<400> 2172
tggcaagttt gggaaccaaa atgacatatt ttttgcgtat gagtacaaga atcgaatggg 60

gtcagtttgg tatagttttt ttaaaaatct tttctgtgaa tctaaattct ggataattac 120

atagcacatt tagctataag cataacctat caaatgtgta tatgatattt taaaattatt 180

atctaaatta ttagttaaat acttgggagg aaaatcacgt gcgcgtgtta aaaaaaagaa 240

ttagaaggta tatccattgc cacctccgtt tgtcgccata cacaatagat aaaatagttc 300

cctcgtcatt gataaacttg gtagtaagaa ataaaatcta tgacacatat gaccgaagag 360

gaacacgctc gcaagaaggt gcggtgcgcg acaagagtga actgtgcaag acgcctatcc 420

atcgagtcgt cggctcgtgg cgcgcgcccc cgccgcacac gtgcctaact cgtcacgtcg 480

gccggccgta tgcgccgacg cgatccaatc cccggaattc aggtgaaact ctgcacgcgg 540

cggcggcagc tggagccgca cccgcacctc catcagcggc ggtcgtgtca acgcagcgcg 600

gggggcagc agatccaccc gcgcaggcgc agcagtgccc gaaaagattt gcctgctcgt 660

gctcggccgg atcgggtggc ggccgccgcg cgtggggtcc tgatcgactt tctctcgccg 720

ttcatgccgc tgtcgcgtct caccgtctag cggtcgggcg gctggggtcg cctcggtcag 780

ccgagcgaga acgacgacaa actgcttgct agctagtagt gcagtataca ggtacagatt 840

cactgcagta gacccatttt tgttgtcttg ccgctcttgc gcacgcccca cgtgcgaccg 900

cccagcagcc acacgtgcgt cgccgtgtct atactgatta ctgaaacgaa gccagacgac 960

gcgtacaagg tatcggcaag tagcatgctg cctcacctcg cgtttggggc tttgggctcg 1020

tggtcgtggg ctgcgttgct ggttttgcaa cggtgatggc gctgggccct acagacagac 1080

agatagatcg gtgccggagc agtgtgaccc atcacccatg catgaatcgc gcttaatcag 1140

ggtcagggca ccgcatgggc gcacggccca cgcctactgg cgactggctg acagcccggc 1200

cac 1203

<210> 2173
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114514_G1, chr3:139244599..139245643, Cluster 13

<400> 2173
tatgtggaga ttccctactc ctaatgcatg cccttgctcc aagcttaatg cgtcgttatc 60

actcttagag tcgactcaag gtttcacggg tttttctgtc atagccagtt gttcggcaac 120

acccaactaa ttcaaataac agtcatcgtc tagaaacaac tcaaaatgtg aaagtgagtt 180

atgcaatcct taaggacttc ctctgtaata tcgaaggcat ccactcggct cctggtctga 240

acaaaggagc aaatcttctc ccatgcccta gacatcgggc acacaaccaa tgaggacctc 300

gatggcacca atgcaaggtc atctgaatac atcgaagcat gaacgaaacg tattagcacg 360

acaaaaacat acttagaata ccaatctacc tcagacgcag tctctgctcc attccttgcc 420

ttgagctcaa tgtcagactt tgtagtccat aacagacaga tttgcagcac gactagtcat 480

taggcatggc cccccataga tgccataatt ggagaaccta aggggctact gtagccactt 540

atgttgccat cgcgaccgca gcctctatca tcgtcattgt ggtagcgggc tgcaccacct 600

taactggtgc gacaaacctc accacacctt tagggtccta ggcccttcgc ttcctcgacc 660

accccatcac attcatgaca tcgtatactg gtattggtgc cttcccttag acaattccat 720

agtggatgcc atgacatgct caatgttatg cgagtatgga tatatgttaa tgacctcgct 780

attttggcta gcgcaacgtc ttcacaccca cagactagag gtgtgtctct aaccacctac 840

cactttacac tctatgaacc aaccctccta cacactaaat ctttcccaaa cttaccctgg 900

tcaacttctc catgaaggtg tcgttgtcaa catcaagatc atgtggtgag ctcgtaggtg 960

atccgcacat gctgcccaaa tcagtgggaa ggaactagaa attgtctctg catcaacatc 1020

acttatgccc ttggttgagg tccct 1045

<210> 2174
<211> 1127
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116937_G1, chr3:154556657..154557783, Cluster 13

<400> 2174
catatatttg tgaataatag agggagtagg cagctctata taccattgca tcgtcactga 60

tcactgtttg ctggctgtgg ttagatggat agactgatct cgacaggaac gaaccgggag 120

gaaaaactca ggttggttca gtgcacttcc acttccatat cgcttaattc gctttgctta 180

tgatttcaag acattgatga gacctgtagg tcgacagcgg cggtaagatt gggacgtctc 240

ctgtcgcgtc ttgccgtgcc ccggatcgga ggtacgagtg atttgagagg gaaataaaag 300

aaatatatac cctgactccc cgagaggatt atatattgag atctcttata tatttcgcct 360

ggagactttt cttctagagc gagcgagcca gcgagctaga ctaggctagg gttaataggt 420

agggttacgc tagacctagc taacggctga ctattgatga gtacccatgt cctctctcga 480

tggtgattag gataacgaat ctaatgaatg atgactaatc aatcgcctag ttagctgctt 540

attagtttag tttcgtccgt acgggctcat tagctcgccg cacatatatg agcatattac 600

cattgttgtt gtcatatatt tatatatata gttgcgcata gtctgtgcta gcactgatgt 660

tttgtcgcct ctgcctctgc cttgtccggt tttgttttca tcgcagctgt gtggcaacgg 720

ctggcagatc gatctggtca gcacttaatt gggagctcaa ttattattgt cgtcttatta 780

ctggccatct gtaccaccag ctcgttcttg ccgcgcgcgc gcgcggaggc tcgagacctc 840

ctcagctcct cctgatcgac gactccgtct tgtaatcttc ctcgaactgg aaaatggttg 900

tttaaactag cagcggaaag ccacactgac tgatgctgaa cagtgcgtac gatgggcacc 960

ttgttttgca gacaatacat atatgactcc ctgccgccgc tgggttcgtt cagaatttca 1020

tatttgaaac aagttcatat tgtaaaactg tagaagtacg gatgcgctta gctggtctgt 1080

gtgtgttgtg tgttggtcta ctccctcagt accaaaatag atgtgtc 1127

<210> 2175
<211> 1085
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117872_G1, chr3:159807768..159808852, Cluster 13

<400> 2175
cctaaaaatt tccagatcat tcttgcttgc atttgcatct gcaactgcat aactgcattg 60

catataccgg ccatgctgcc gtgcatgcat gacagttata aataaatctt tcctccctgt 120

taaacgcctc cgttaggtaa ccttggctag ccatataaat ggccgcccaa aacctaatct 180

ggctcgtcat cagggtcgag ttcgaaggat tggtctttgc agattatggt aggttggctc 240

acatatgtag ccttctcctg ctttgtttgt gtgtggctgg ccgcctggcc cctcgtgtaa 300

tgaaagcata gcttgccatg gatttcaggg ccttttcgca agacatgaaa gcgacattct 360

tggacatgtc caccattcca actcctgcaa gttaccctga tgatccggcg tatgtgtgtc 420

actagattat tcgcaataga atacaatgat gtgcaacgat ggattagctt caaatttaat 480

gggaagataa aatggaaatg ggcccgatcg agcgacaaat taataaaaac ctactctttt 540

ccccgcgaac gacgtgctta agcacataat taaaagccat cgtcactgcc actttttttc 600

tcccctacag gttcgttttt ggcaatgata ggggtttaac ccggcaataa aggtttggtc 660

tgagataatg agagattaat gaccgcacat gtacatagta agctatacta actcagtcag 720

cagcaagcac aacatgcatg gtttattaca cttaactaaa tataacccac gacaagaaac 780

aaaactattt attatctcct gtctttagga gctgccttct gtagcccagg aacactagca 840

cagagctcgg acaggcactt gtctgcagct gcaacgactg tcaactgttc tggcgcagaa 900

acgtcttctg ttttctcttc tccttttata ttatgtgctt cgctcgaacg ctggattcct 960

gcacgctgga tcggagaacc gaagaaggga tggtcttgtc gatctggagt cgtaatccat 1020

cacgtctgct cgaacggtgt tgtgtggaag caaagttcgt ccagctagct ctgttgctgc 1080

tcagt 1085

<210> 2176
<211> 1073
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117875_G1, chr3:159809864..159810936, Cluster 13

<400> 2176
tgcagtgtga tctaaccacg ttgcctgctg cacccagcca gtaaactcca gctgaaactc 60

gcatgcgcga acgctgatgc atgttcttgt gacgatcctt tgtcggtttg tatccaaggc 120

ctaaccagtg gatctggagt agtagcgatc gggttgttgt tggtgctgta accagtcgat 180

cgccggccgc catgcaccga cggtgtccga cgccgccggt ttagcgtcgt tgggtcatca 240

cgtggcatgt acgcgcatcg ggcaggagga ggggcggggg ccgtacgtta aacccctttt 300

cgttgcaagc aagtcaagcc agtggagcga gcggtcgagg aggctgtagg gctttgctgc 360

attggcgcgc gcgagcaacg taacgcagga tgcatgatcg ccgccgaccg gcctcttccg 420

tgcgtgaaca gtgtgagcat aaataaacca cacgattagg ttaaagctgg actgctaacc 480

cggacccttt acccttttagg cctttgcact ttatggctcc agcgtgcacg ttcttttgtg 540

agttagtgtt agtgttaggc tgttagcgca tatgattgca tgcatgtgtg cgtgctttga 600

gaggcagctc aagtcccggc cctgctggac gtgacagtgg ctccactgac gtgtcaagta 660

cgtgtagata cgtactagtg tagtacctat gtctacggcg cacgaaccgg cagctttatt 720

tcgtgccgta gtgggggtac agatcggacg gtgcgcgcgc caccactacc atgcactagc 780

gcgggcgggc cgggaacccg gtgcgatgcc gagtggggtg gggggctacg ggcggcggcg 840

caaacgatgc cgagtagtgg atgcgcatgg atcgtggtgg tggatacggc aacatcagca 900

gccaaccgct aacctggatg gataaagata ggctgtctgc atggcagcag atgcatgccc 960

cggtgcagcg cacatgcgca tccacgcgtg ccaggtcgcc gccgtagatc gtagacggaa 1020

ggaacagaaa gaaccaaaaa gcccggccac gcacggacgc acacacgggt gga 1073

<210> 2177
<211> 1080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117876_G1, chr3:159810970..159812049, Cluster 13

<400> 2177
tggacgcgcg ggggagcggt ctgcccgcgc ccgtccgcgc gtgggggggat tgggttgggt 60

tatccgctgc gcctgcgcgc aatccggcgc ggggtccggg ttggctgggg gcggcgcccc 120

gagcgtctcc caccggtcgc ctccgcggtg cgggctcatc gcgacgccag ccacacgacc 180

tacgcgcgcc gccggtggtc ctcaggtgcg gtgcggtagt tttgcgtcgg ggcggtggat 240

ggggtttcgt caattcccgt gctgccgcgt ggtgtaacgg gagcagcaaa ccaatataat 300

ccaaccgcaa aaagaaaata aaagaaaaaa acgcaggggg agggggaggc ttgcggttgc 360

ggcttgggaa atatcgcgcg cgtttcggtg gcgcctgtcg actccgtggc tcattcgccg 420

tctcgtcttt gatgtgacgg tcggtgctcc cgtggaggtg gagagaacat tcccgtccct 480

ccatccgtcc gtcccgatcg caaccttgag ttattggtcg gggctgccgt ggggttcctg 540

tccggccaac gagatcgtcc agtcgagagt gaaagggagg tgtcgtccaa gacatgtatg 600

ggcttccgtc tcgtctcgtc ccattcccca tccatccttc caaggctgcc taaccaacgt 660

cctctcctcc ctgctctcgg ttctttgatg aacgcaacac catactgtat tcgtccctta 720

cagaaacgtc gagtttctaa tccggctcca gtcgatacca ttgttatgta acactgggca 780

ggcacggagg cacccacgga ttgtttattc acaggccaca tgcaatgcgg ccaagtgtgt 840

cagctaaagg aaacgggggc agacggagcc accagctact cccactcctc cgcgcacgac 900

gacgcacttc cgtgtgtgtt gcccacttgc ccccgctgct ggctgtccta tggctatgcg 960

gcgcatgggg ggaatcaagc ctagtctcgt gaaggccgcg gcgccacccc gctcctgtga 1020

tgcgctcctt ggccgtagcc cgtagccagc catgaggggg gaacggacga tggaaacggg 1080

<210> 2178
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118265_G1, chr3:162587116..162588362, Cluster 13

<400> 2178
catagagtgg ctgtgtagcg tgatttttct ggcaaatatg catgttgtcc tgtgtcctgt 60

gacccattac cacacaaacc agtaaaatac catcaacgaa gaaaccaagt tctgtgaact 120

gattaataga accgactgag tttaatcttt tgcataggat ccttgcgctt gccatttcgt 180

tttatgtagc cctatatgct aaaggtgaca gctgattatc cattccaatt tgtgatgaag 240

agcaggtgaa atgagcatgc acacagggca tggacctatc aggattcagg agggtcgttg 300

cgaagcaccc atataggcta gggtttgaag tcttgctgca agtttggaat cggagacgaa 360

ggcgtctagt cgtgtcgtct cggagatagg caaatagcag cagaagacca tgaaagtgaa 420

cctgagccag ataggcacat agacagagcg tagtgtcctt cgcgtggacg ttttcagtca 480

tgtcacacgc taaacgtggt cctgacctcc gccggcatgt cgcgtgtgat tgtgagcgtg 540

tctggtctcg gtcggaaaca atctgcaaag ttgtgccccc gaaggtgcat gcgcacaagg 600

agttgagaga tagacaagtt tcgccacaag ggatctagcg aggctgtgta tatctgtcga 660

tttcagatgg acaaaccatg catatatcac tgaatttata gtgttatttc ttgctgccca 720

ggaaaaaaaa ttgtggcgat tccactagct aggaaattaa accacaaccg tcgtcgtcac 780

tttaccctaa agccatgttc catgaatgcg tggagtgctc cttgctaata aaagaatccg 840

gccggcaagc cattattaga gatctttcgg aaacaacgcg atgcatcatg tcccatggca 900

cggacaaagc taggttaaag gcgccggtcg tacgtctaaa ccgcatgcta acagcgaaca 960

aaatcagtgt catcaagcga gatatataat gcctgctagc tcgtagcttg gtgtgtgcct 1020

ccgctgcatg catccatcat gacgcgtgta tgcatgacag ccgacgccta gtacatgtag 1080

agtctgttta ttttgtttga aatacatttt tttggtttga aagctagcct tctaattgtt 1140

gaatttttat tattaacttt ttttaaaaaa atatcttctc agcgtaacaa aacgaaaaac 1200

tcctctcaat atatttttg cctttgaagt ctaatcttct taaaagg 1247

<210> 2179
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119728_G1, chr3:171702821..171704104, Cluster 13

<400> 2179
cctttcggtg acgtgcaagg caacggtcgc cctgccactt ttaagaggct actaaagagg 60

tggaggacga agggagtgcg aagcactgga cccacgaacg atgttacctt ttttatctat 120

gcaaattgat agcttttgga gttggtgttt tataagtcat ggtatatagg ctagataatt 180

tataaacgag acaacacatg caccagctcg ttaacgatgt ataaaactat atgagaaaga 240

ttcgagttag actcgaccgc acagatccat gtcaatcaga agaaacacaa ttttttagt 300

tgtttggaac tgattgtttc tgcgggttaa gcaagtaagc agcagatgga aatgggccat 360

ttgcttgcta gttaactagc ttgaaactca gggttttcta gagaagaaaa ggagagaccg 420

cagccatctg tgcatgtgta ctgttgggca gcgccagggc gtgcccgtgt gttgtgtcat 480

ctcgcatgaa aagatgtcat gtaaatttgg tccactataa ctagggctga gccttagcac 540

cacgttgcct ttgtccttgc ttgtcgagct ttttgagagc tcttgttgag cagtactgta 600

gttgagtgcc aatttgggct ggatccgcgg ccaggttcat gagttcatgg ccagtgcagg 660

agacaacaag tgagttggcg acaagatgca ttccctcatc tcactccggc tgcatttcga 720

tcggcaggta gcaatgcaat gtactagtat tgtcggattg cactgacata gctttgttta 780

atgttctctc ttaacactgc ttttatcagt acgggcaaag cagaccatat atgtgctttt 840

gcaagctgca agatcagaac gacgagcatt tgcaagttaa acaaaaccaa gaacacatga 900

taaataggtt ctgattgtca aggacagcta gccgaggctg tgaccaatga gtggtaagtt 960

gacactggcc actaggaagc aggatagagc tgctggtgtc gtttggctct agccatcaat 1020

caatcaagcc atgagtggtc ttcatgcatt ctctgtctca agttcactga atgtggacgg 1080

ctcttcggat ggcctcagct tttaggttac gtcgaccttt ttttggctgt agaattacag 1140

cacaggtgcg tgtttggaag aattacggaa cggtgataag atggtaccga ggttgatcga 1200

gataagggac tgggtgtgaa atgtcagacg gaacgtttcg cggagcgact catgtatacg 1260

tgtcgaggtt ctataagccc aaat 1284

<210> 2180
<211> 1262
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119875_G1, chr3:172669905..172671166, Cluster 13

<400> 2180
tagactagga ccaccgttgt ccagaaaaga taacgattgt aggtccgggt aaagctaatc 60

tattttaagt ctaccctaaa tttatttata cagcagtttg tgcttgctgg tgaagtaaga 120

tgtctggtac tacaccgcac actgttgtgc gagattgtac gtacattaga gagtagaaga 180

ttggcagcgg cgagagcaaa gtgcagcgag cagcaacagg ctggtggtgg gtggcaccgg 240

cggtgcccgt gccccgcagc aattcgtgat acagcggcac ggcgccagtg cgggcgcggg 300

gccccccgcg gcggtcaaat cattgcgggg gtgcggatct cgaggcatgt gggagtgggc 360

caagcctccg cagattctga ggctgggctg ctgcggctgg ggtgggagtg gacagtggag 420

tccgctggtg cagtgcagca ggcacgggca gaggcaggcg catcgcctcg tcgtcttccg 480

tctcgtccac ggtccaccac caacgaagac tgctgctttg ttcccgtccg cgcgctccgt 540

acagcggcag cccataccag cggttcgtta cctaacgaga tcctccagcc agagctcagc 600

cagaggtgta tcgctggcgc gcgcggcacg cgctctggaa cgccacgtcc gtcctccggg 660

gccgggccgc cgtcgtccgc gcgcagaccg cagcatacgg tggcggagag acaaagaccg 720

acggtcaaga ctggcctact cggctgccgg agaataaaac cgtacacaga acacaccagc 780

atgcaattcc gcaagctttc cgcgacttag gctacagacg cagactatag cctgacggca 840

ggacacggta actagcaata gtccagtagt agtactgtac gcgtcgtctc tagcggtcta 900

gccacatgga caaacacatg caatgcacgc atggctcccg gttcccaact cccggcccag 960

agtagtctcc agcctgacct gatctcgatc cgtcagctgc aggtccggat cagagataaa 1020

caaacaaagg agacgagacg acgggccagc cgccagcagg gagagtatcg aatcgaacgc 1080

gacagctcag agacccatcc cccccgtcgt ggcagcgcgt gagcgcatca tcgccgccgg 1140

gggccatcat gcatgctcgc ttgggcgtca cctgctccgg ctcggggcat cttgcgtccc 1200

aaatgggcaa ccgcgaaaga tcaacaaaca actgccacca ccgccttttt tctctccggc 1260

gc 1262

<210> 2181
<211> 1132
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121921_G1, chr3:184138673..184139804, Cluster 13

<400> 2181
aactttgtgg ggcatgggat gccctgagga ctagtgtcat aggtgtccta ggccaggggg 60

acttagcctc tagtcaacat cctatgacac aaggtgcctt ggggtcttag agtattttat 120

ccctaggggt ccctaggcac caagtgcctt gggccccata acgtgtaata ggactcatat 180

cacctagatg tggtcaccat gctttttaac gagagtcatc ccacccatat atttccatgt 240

aatgccattt agtaccatgt tcctctcttg gtcatggcca agggatgccc taggtcttag 300

atcccccgag agtagtggtc ccatcataga cgacctcaaa gctagtgtcc caagtcatga 360

ttcttgagca tgttttacta aaatcttctt cagatgccga catagacctt atgctctcta 420

acttcctaga aatcggattc aagattacat gtagtggagc tgcctagatt gtgtatattg 480

cgttagtgat agtggaagac cacttctcat ttttcattgt ggtggtattg cttgacatca 540

tgttggttgt agacttcacg gtgaagttgg gcacaaatac atcgttgcat atatttccta 600

ttattgtgtt gtcaactagc cttcttggca tctgtctcta tgactatgtt gtttttgtcg 660

cctagacacc tcatagtgta tgatcttccc ttctaatatg gcagtaagga ctaggcattt 720

ttgaacgcct attagtggga attcttatta gtctccctcc tcttttgtca caagagtaga 780

tgagataagt cttgagacca ccatctagta agcaacaata gtattcttga gcctaaatga 840

tagttggact aggcttggac cataattgtc cgatggctta gaagttgtct ttggaaactt 900

ggtcttgccc gagtctgact tgagtggttc aagttgtttc cctatcatgg caggactaga 960

ttgaaaattc attgaaatcc tagacgaggt cctataatgt attttgatgt aaagctagag 1020

aagcttgatc catggtagtc ttcatgagaa aataatgaaa tatgctagag tttactatcc 1080

tcagcaaaca gtcgatcgca tcctcagtca cagagatagg caacttacaa tg 1132

<210> 2182
<211> 1261
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122317_G1, chr3:186126673..186127933, Cluster 13

<400> 2182
ttaatactac tgtactagta ttaatcagac gcatgcacca gccaattaat cgttgccaca 60

tgagctagct agcatgttga cgacctgttt gtctccttcc ccgacccctc cgatgggtgg 120

ctctgcaact gccagacaac acggccaagg cgaacatttt tctcttcgta ccgcatgttc 180

tcgttgccgt tctggcctgg acagcatttt catgtctatg gagctgccgt ctggattcct 240

ggctactgct tgaagcgaag tcaagcaagc ggctttacgg cagccacgag cccacatgcc 300

gtccaaccgg gcggaaagca gagcagaggg atggcgcctt caacctgtcc gatccgggtt 360

atgtgcatca tatctgtccg atcctcgatg gaaaagagca gacaaacgag cacggcagtc 420

cgccctcaga tctcaactcg caagtcaaat tgcattttcg tgtgcgacca taaattagat 480

cgaccaacgg gggggcaaag caaagtgcag acactctcac cagcagccgt cagaatggga 540

cgttactgtt ctttttccgc tttcttcctg atggcggcat ggcgcacgtt cccgatcgcg 600

gagtggcggg aaccgatgcc gagacgtgat ctggtgcttg ctggtgccgc gtagttttcg 660

gcgaaaccga ccggagagaa acggcagtgt gcaacagcga cacaagaacc aactcggcaa 720

cagtcggatg tggactgacg gatccgcgga ggcaggcaga cgacaccgta ccggatcgaa 780

agttcaggtt cagggcgtcg ctgtctgtct catggttcag aaaactgacg attaacggcg 840

gtccagaacc acatcctcca cgaacagaac acacacacac agagacagaa gagccctgtt 900

tccacgcacc ttcaaaagcg gttggtccga tggatcgagg caacagcaaa agcaatgcaa 960

aaggcttcct tccgcgcgtg tgtggtggtg atggtcggtg aacggtgggg gacatcagaa 1020

gactggttac ctcatccagc aatacgtacg ggttgtcctc tccttcaagt tacgcaacga 1080

cgtgggtgcc caggatcgga tccagcacag cttcgccatg gaatggaatg gagctgacag 1140

gaccaccact tgcgtaatgc cgcagcggaa caggcgcgtc atgactgtga ccgtagtttg 1200

ggaagcaggc tactacagca caggaatctg gatggcgttg gtgtccacct cgctaactag 1260

g 1261

<210> 2183
<211> 1121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123095_G1, chr3:190151090..190152210, Cluster 13

<400> 2183
ttttatatta gaatatgttt atacgcatgg aagtttttt ttcacggcaa ggagtctatg 60

cgcacgtacg atgtattaat ttctatgcca gatactttga aagttttgaa aatctgactc 120

aaatcctgtc gaaaatgtca aacttttgca aaccggagga gagctagtga gcatcgtttt 180

tatgcatata attgtttaac atcgatcggt acggtgcatc cttcgtgatt cacaccgaac 240

ttcgctcaaa agtagctttt tttttgcagc tcgatccagc cggaatacct tgtggatcgg 300

agaaaacttt atatataggg taggaacata gcaaagaaga agcagaagaa agtatatgtg 360

tacactttgc tcgtagagag ctgctgccta ctagtttgct cgctgctaca cgagcttcac 420

gcatggcttc ttccagtaat taaagacggg gtggagagag ataaggctcc ggccggtatg 480

tgtaatgtca aaatgtcggt ctccgtctaa atcacttcgg cagaaaggtt gacgctttaa 540

ttgacagctt gtccgtgtgt agtagagtgt gagtcagtgg ctctcccaat atgtaggagg 600

acaacatcgg caggtcaagc tctagcggca tgagcacgaa ctaaccggct ggcaagtgac 660

gttttcagta tgctaatgtg aacgacgaga gccaacaaaa ggcagcgcat gcgtgtgcct 720

aattcttagt ttcgttgctg ggtaagaaaa gcatctctca taagggaacg acgacggctt 780

ttattactgt agttctagtt taactgcgag gagatatatg cctatgcctg cctgcttttg 840

aaatgcagac tcgggtgttt tgtcgcggag atggcctgaa atattccccg gccggcgggg 900

cattgcattg cttcaccgct gcggctggag ctggaccacg ggcagggaaa agcggggacc 960

ttctacccat catggcatct tgcctccgaa acgaagatct ggatcgcgag tttgttttgt 1020

ccattatgtt ctcgtcctgt gcaagcaggg ttcaatctag ctgcatgcat gccgattttc 1080

caacaaacat tctggagaag agaaatcgag cgggcaggtg t 1121

<210> 2184
<211> 1325
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123264_G1, chr3:190960284..190961608, Cluster 13

<400> 2184
ccgctgtact actcacaaag cagcatggaa tgtaggccgc ttagtttatg taggatacct 60

aaaacggctg gtaatcggta actttattct ggagaacgag tccgccgttg cagtccacaa 120

ctgagaacaa taagccaatg atacaacgcg tccccatccg cggttgttta atttggtgct 180

taatgccaac atgggcgctt aatctgagcc gatgcccgta cggccaccac ggcaccacga 240

cctgtgacgg cgacggcgac ggcaacggca acgaaatagt aaagcgtcaa ggcatcggcg 300

gtaatggctg gctggcgggt gtgtgattat gaccggacac tgaagtggac gtgcattttt 360

tggctttcaa tcttgcggca cgggcaggcg ctttcccgca cgcgcgggcg acgcgctatg 420

catgcgcagc cacgctgccc tgcactgcac atcgagctgg cgtcggacca gcggatggtg 480

cggatcggcg ccgaactttt cctgcaccgc ggcgcgggcg cttctggtct ggtgggtggg 540

cgccggccgc cgggtggtgt caaagggtgc gtgtgcgtct ggcgcgcacg tccgaatcac 600

ccggccggcc ccgcaatcgc ggctgccggc ccgcgttggg ttttccactg gatgttgtgc 660

ggtcgcttta cgctattgac cgcgccgcgc gcggccgtta ctgatcggct ggtgggtacg 720

ctgcgccttg ccgccgacac ggcgtttctg tgacggctcg acgcgtagcg tagcgctcgg 780

ggtcgacctc tcgctcgccc tcagtcccaa ccatacggca tggcaggttt aagtcgtgct 840

cgatcgacca acgccaatta tttgggcgct ccggcgacat tcacattcca cgccaattat 900

tgggtttagg cgctcagacg atgaagccac cgtaccacgt ggtatacccc ttccctgcac 960

gcatcgtcgt agcttgctga attcagccga gctcttctca tcaccctctc caacggtgaa 1020

cggtccaatc cctcacatct actcgctgac acagtgcgga ccccctcctc ccgtctcatg 1080

aaatatgtgg atgccgtttt gccgtgtgca accgaaatgc attgcatgcg gccggctgaa 1140

tcgtactggc tgctgcaagc tcatgtccag ggtggcctcg ctaatgcaaa ttagctacgg 1200

agtacaaggc aactcgctcc catacataga agaacatgcg gtatcatctc caagaagaat 1260

cgtctagccg gaccggacgt gcgtgcttgc tgtttttact ataatgcacg aggactagga 1320

gtgta 1325

<210> 2185
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123265_G1, chr3:190961687..190963063, Cluster 13

<400> 2185
acactcctcc gtcgtactga taaaaatatt tcatttgcac tgactgactc acgtacaagt 60

gtacggggcg gctagattcc tgaacctgag gacctttta gacctgtttt gttaactcac 120

cacctccacg gcccggcgtg cgggcgtttg tctgtatgtc taaaataatt gtctcgagag 180

catatacgac caagcccaag cgtagtatga gttatgggac tgcagccata gtggtgacac 240

ggtatagctg cctatagaca gtagcggatt ttacgttggc tcatagggcc ggagctagtg 300

ctctactgct gctacgaact gtagcgcttg ggccagttcc ctgcccacga cactgccgtg 360

catcgaacag acagagagaa cgctcggaga tcacgggatt tgatttttt tttttctata 420

aaacaccgcg cgtgtccggt gggtgacgac gcgacggccg ggccgaccca gcaaaaccat 480

cacgaaacgg cagccggagc cggctggact catcttgtca cgcacccggc actcgacgac 540

gagacgagac gaggtgacgg acagaggtcc attatttccg ctagccaacc aaccgaccct 600

ggcctcactc ccctcgtcat catccctcgg aagttgggac cggctcggcg ccgcggggcc 660

ccccggggtt ctccctttc ccgaaacggc ctccgccacc cgtatcacgg tcacggtatc 720

agcgccctgc cccaggacag ggccccacaa gcggcccggg aggagcgccg cagcggggag 780

aggtcatgcc gtctcactgg cctggcgggg ccagcggcgc ggtggcctgt cacggggaga 840

tcggcgagga gcccacccgg cgggggcagc ggaatccagt cgccacgcct cgtccccctc 900

gatatgatgc ggcggaatac gagagcagac gcgaggtttg atttgaagcg acctgcccaa 960

caggaagacg gcgtcggatt ttgcacttta ctccctgtgt gtgtgtgttg caaaacacac 1020

gctccgtgtc tcgtactctc gtgtcccttt tttttcccga cggtagcact gcctgaaatc 1080

aatgtacagc catttcctaa ttcctcattc acccaaactg tttaaagcta caaacaaaaa 1140

tacatcgggt gcaatcatat atatcgatgc aaccgtcaac cacaacacaa gaatgaggtg 1200

aaatactttt taaaaaaaat ccaagaagga tagaacgatt gctttaataa agatattttt 1260

aaaaattctt ttcaccttta tgattgtgtc ttaattgtgt gattgcacca atatatatgt 1320

ttgtacctga tatgctcctt tagaaaaata tcaatacttt taacgacaaa taaatat 1377

<210> 2186
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124148_G1, chr3:195745579..195746731, Cluster 13

<400> 2186
ctcgatcgat cgagatggtt catgtaaagc agcttgggcg ctctcagcct cccgtccctt 60

ttgctgcatg cctaatggca attgaccgcg acagcggagc actatagagt ccgctgctgt 120

aaagttagtc ccggcgttgt tcagccattt gacttttgcc gcgatggatg gtggatttcg 180

atcaatcggg ccctgcccgc ccaggcccag gcccagggcc gccggtcccc atccacgcac 240

gctcactctc gccgcgtatc ttgctctttc taggacgcta ccatggctca cgtcggataa 300

gaccctgtct cggagaagta acgaaaggaa gaattctcat ctctgtgtcg atcgcccatt 360

cctttcatgt agtgtttttt tttttgaaat ttgatccctt cgaattgtat gttgtaagct 420

gaccttgctg tatattctgt ctacagcacc aaataaatca ggtcttcccc tgtaccatcc 480

aagtccactt gagccgactc tattgctctc tatgatttga agtaatcatc ctgcagcatc 540

cgcgcgccgg gtttaattag gtcgaaagaa gcggcaaagt aacatccagg gtgtgggaag 600

atttataagt tcagcagtgt ccacggccaa agagagacga cgatccacca ccacgcactc 660

aaagcttcag cgagaatttg ggcgtatcca taggcaggtg ccccaaggaa tttgaacgga 720

cccaaactga tgcggggtga aggaacgtac cgatggagat ggatggatat atttatggat 780

gcaaccaatc tgtcattagc tacaagtcgg gtctccttag cctctcctgt gaccacagag 840

acctgagtcc ggtccccttc ccatggcaga gacgggcgac cacggcactg tgcgcgacga 900

ctccagcaca gcatgcacgt actggtttcg gatgcgtaca tacgtgcacg cattgacgca 960

cgcacgccaa tcgacagaca ggtgtggtcc ggctcttatt gtgccatgca cacctgtgat 1020

tcttggcagt tcgcattagg tgcgactaat aaaggtcccg tttggatagt tttaccgtcg 1080

tagaaactga tttcttaagg aacaaaatta tttctcgacg aatcagaccc gcggttttgt 1140

gaaaaatgat tga 1153

<210> 2187
<211> 1095
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127359_G1, chr3:212253893..212254987, Cluster 13

<400> 2187
gcaggaaacg aaacaagaag tttggatcac ttgatggcga ccggtcgcaa gcccttgcac 60

agttgcacta gcaattgatg cgaggtgaac gattacatcg acacatgcat gtttgacgac 120

tgtggttata gggttcaatg gtggagcgat gtcagcattg ttttgttgcc aatccaatgg 180

ttgcctgtcg cgacaacctc tgcgcacacc gcagacgata accttgagcg ctcgtcgaac 240

acccttacac ccgcatgttc ctcttccttc cggtgcagtg gtgcacgatg atgcgagcag 300

aagaagagca ttgaagccct tttgatgcat ggccgggatc tccagcctgc atcggatcca 360

ccagcaccag tccgccaaag acgtcatcgg gatcgcgagc aggtgtggcc gaggcccaag 420

ggtgaaagca gccgatgtca ggtctccacc gtgaactgtg cacactgcac agacagagag 480

tcgaggagaa gatgcatcac tgtctctctg ccttggccag tccacaaagc gcacaactgt 540

cgtcgtcctg tagatggtgc tacaaccttc gctagctcgg ctgtccatac gccactcgtg 600

aatgtccaac tagtagaaaa acgcgaggcg gccctcagct cgcgcgcgcc acaattctct 660

agcgcccaca agctttgaca tgccaaggag aaggtggagg agtttgcact ctccgtccat 720

ctcgattatc tagctggtag tcctcctgcg tgtgtcactg tcctccccgc gcgcacgcga 780

aggaatgacc atgaaaagag caggcacgat tatttcatcg gccctacatg aactcctgca 840

cttgttgatc tccttgatgg ctcgcccata gagaaagata gcaatcgaaa tatggattgg 900

cttggccgat gggctgacct tggtcagcat catccttccc acttctggga gaaggtctga 960

tttctagttc caggttggaa tcttgcttgc caatgctgaa agtgtcatac gtgaactaaa 1020

atttactcca gtgttatcca cactcgcgtt gtcatagtag acgagagaga taaggtgtgc 1080

gctggagtga gtgta 1095

<210> 2188
<211> 1341
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129622_G1, chr3:223538095..223539435, Cluster 13

<400> 2188
cgaactggtg agagcgccct cgcgttaagg ggctatttac gggagtgcca ctttgccgtt 60

gcgcttgcgc tctgctctcc tgcggtcctg cctggcgcgc tgcgcgggaa ggtgacaagg 120

cgaggagcag gcctgcaggg gagtcatctg ggtacgcacg cacggtttgc caatggtttc 180

tgcccagttt ccaactagtg ctgctatact tttttatttt gaaatgaatg attttataat 240

cggtggtaag tacgtagtag gtgtttcgct ccactcactg cagttttaa ttgctccgag 300

cctcggcctg cactgcaccg cgggcggggt ggcgggtgca cgcgtcaaga tcgtatgcag 360

agctatcgtt cgtcacccct gacgattgac gaaccacgaa gaggactcgg ccaaacacct 420

ccaaataata tcctcctgga ccccgaagcg caaacgtttt aactggtggg aaaattcgac 480

ctgttttttg aagcgagtcg aaccgaacca cgacaagcta ggactctgcc acactagcta 540

cggctacggg gtccaaatcc gtagtagtag aaccaaccaa aagggtaatc cggatcggga 600

gaggcgtcgc gacactgtgt ctccgtgccg tgccggtcac gagccagcgg ggacgcgcga 660

gcggcatgca cgccggccgg ccggcacggc agcgggaaaa gggagctgcg ctgcgcccat 720

ggcccatgca tgccatgcac cctggtccct gtgcagtctc aatcccagcc aaaaaggagg 780

cgggcgggcg gacagcaccc gcaggccgcc gcagttgtaa aaaggggggtg actgtgactg 840

actgccaagc aaaagtcagg ccgcagccct gtgctctttc ggacagtttc tagctcatgt 900

tcttgtccct tgttattatc accatggatg gcttttcgtt cccatgcaca tccacactct 960

ctcgtacgtg ctctcttcaa tcttgttgca gccaggagcc ggccggccgg gcacgtgtgc 1020

cggagagcag cacggatttt agccagcgtc cggagcgcgt cgtagttgct ggtactcacc 1080

cgtgtacatg tacgggcggt gttgcaatga tgagcagcaa atgcttcgtg cctgcatgac 1140

atatttaacg ctttctctag cagcttccat attcttattt tttatatcta aaacatcgct 1200

ctacgacaag tgtaatttat attgcggaac aatgtaaagt aatagtgttt taggtgacca 1260

aacggggtgt agatacggtt gggtacgttc gccgtaaatg aaacgctagg gtttttaatt 1320

ttctcatgtg tgtttggccc g 1341

<210> 2189
<211> 1010
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129894_G1, chr3:224932173..224933182, Cluster 13

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(194)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (150)..(150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (151)..(151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (152)..(152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (153)..(153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (154)..(154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (155)..(155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (156)..(156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (157)..(157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (158)..(158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (159)..(159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (160)..(160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (161)..(161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (162)..(162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (163)..(163)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (164)..(164)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (165)..(165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (166)..(166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (167)..(167)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (168)..(168)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (169)..(169)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (170)..(170)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (171)..(171)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (172)..(172)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (173)..(173)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (174)..(174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (175)..(175)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (176)..(176)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (177)..(177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (178)..(178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (179)..(179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (180)..(180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (181)..(181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (182)..(182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (183)..(183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (184)..(184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (185)..(185)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (186)..(186)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (187)..(187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (188)..(188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (189)..(189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (190)..(190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (191)..(191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (192)..(192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (193)..(193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (194)..(194)
<223> a, c, g, or t

<400> 2189
ctatgacgtg cgacggagta cgtatcccgt cggctggacg tgcgacgcgt aaagtatcgc 60

gtcgctggat acgcgacgga gtacatactt cgtcnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 180

nnnnnnnnnn nnnnaaaacg ggcgtccgaa gaatcaagct tgattcgttt gcatggttct 240

tgcttctcca ccgtacgtca tccctagctc ctctctctct atgctgcctg atcaccgagc 300

tttaatttcc tgtgatgatg tagcttatga aaccaacatc ttgtgctata aggatacgcg 360

agctgttgat aaaaaaagga aacgaacgag gggggggggg gggttctccc ccctactcca 420

tcaccatcag cttccagcta gtgctgctat ggcggttcac aataacagtg gcaaaagagg 480

agcgaaaaga tcgaagggcg ccaagaggaa aattccccgc gcgctaggcg gcggtgctga 540

atcagactac gatggtgaca gtgccgccac atcgccatcc ctgtctctcg tttcatgccg 600

cgcgcgttgc tttcaggcat ttgttcgcgc gcggagatga ggcatgggtt ttctggtacg 660

ttgtcactgc tgtcttcctg ttttcacctc gatcgagagg ccttaataca gaatgtgaaa 720

gaataagaag aagaaaaaaa cctccccgat cggccactga caaaacttca tacagaatgc 780

atgcatggtt gcattgcaca cgcgtaccct agtgacggaa taatgaaatt cttttaatat 840

atatattgtg ctcatgtgaa gaaaaaagct ggattattcc atgacataaa attctttcaa 900

tctttcgacg acgacgtctt cttttctcct ccacacacac gcgcaattaa agagctgcat 960

ttatcgcgca gctcagaaga aacttttgct cgacgcgagg gctagctagc 1010

<210> 2190
<211> 1370
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133813_G1, chr4:11275665..11277034, Cluster 13

<400> 2190
agcaaaggat tttgtgaatc aactccaaga tgactcgagc cctaggtttg tatggatggt 60

acgcacaaga tatgaagata aagaagcgag atatagtcac atctgccacg agctggatac 120

catccgtcac accaaaggtg gtggcgccat agggccagct ccaggaacca ccgaagccaa 180

aaccctaggg gcataaacac catgataaat ccattgatgg tcgctgaaca cgagacacct 240

aacccgagca tgaagccatt ggatatggcc gccatctcat agggcgtgtt gtctcgccac 300

ggtcaaatga gcaccacaat aggggcaggg tgggagggat gattacaata tgtggggcac 360

caaatccagc caccgaatat aaatgtagcc acaataccga gtcaccatgc cgcacaaggt 420

gagaggggg acactggacc acaggccacg tgacgaggca ccaccgtcaa cggcaatagg 480

atgagccccc accattgcca gtgacgagat gagcccctcc tcacccccgc cgccatagta 540

cgcaggacaa accacctcat tcacaggcta cacgatgagc acccgctgtc gccacatgcc 600

acagatcgag ttgttgccct cgccgttgac taagccgatg aagacatgtc gagttgttcc 660

tagtgggctg atggcagcct tgagctcgtc tagagtgcaa acgagcagcg ccatagactc 720

tagcatccgg gagaggtcct gagtcaacaa cgactgcaag aacgccgtgc gcaaacgcct 780

caacgatgac aacccggcgc agccgtctgc tggccgacca cgtcgccatg gactcgcgcc 840

ccagcacctg gaacatcgcc actcctgaag cattcaacaa ccaccctcac aacaccctag 900

cagccaaaag aggaagaagc cccttgctgc tgtctttctt ggggtctgca cagtgtctag 960

cagcctccta tggcgacagt gaggggggaga aggaagatgt agaggtggtg gcaggtaggg 1020

tttgagggag gagggagatg gagaggcggc ctgatttata ttgattcata attattatat 1080

cgagtcgata tagtgaccgt gaacgcattt caacctcata gaagcacata gcctaaatag 1140

agataaatga gagcctggta ctctagtgac tttaaaattg atgctgtcac aacatatgcg 1200

ctcaagtgca ctgacacctt tgaccctgag atgatgatga ctggcctatg cgtttggtcc 1260

acggatagta agttcatcgg gcatcggttg ctcccgcacg caagcagaat gggtttgcag 1320

gccatttttc tcgtaatggg acctttcacg atcgtctggc gccacatgaa 1370

<210> 2191
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_139322_G1, chr4:41850689..41851693, Cluster 13

<400> 2191
gctgtactga tgctgttgca ctagacacag cagccgcaag tgccaagtgc aagatgggat 60

gtactgtatc tgggacacac agctcactca ctgtcactat acgcaccact cactgctcga 120

tcgcactggc aacagatccc agcgctagct aggtttattt atctacgtgt tctgttgcac 180

ggcctgcatc tgcatctgta cgcagtgaac acgtttgcag gatgcagggg ggggtacatg 240

atgacctaac caccaccctc ttaaaccaaa tggcctacct gtttgtctgc actggaataa 300

aaacggtggt tctttctgca gctactcgta atcaaagggc tcacttcgat gcggattcag 360

atccctacgt actcttccat ctagctaggc ttgcattgga cgaaccataa tgcatgcagg 420

atgcagctgc atgcggcctt ccagtccacc gccacctcac acacatggtg tgctctgcca 480

ccgaggcatt ccctcactgc cctgcccctc ctgcatcctg ttccaatgga tggcgagagc 540

caagagccca ccacccccctt ttttttctgt tcgtttgttc gagtgcaaaa tggcaaagcc 600

ttgttcgcag catcacaatc ggttactctg cacagccacc tgctgcaccc cttccctgaa 660

gaaaataaaa tgtcgggcgc agcgccagcg caggaggaag ggaagggcaa ggaataggga 720

ttccagtgga tagataggtc gtcggacgtt ggcagatgct atcgcccgtc agcgtgtcgt 780

ggatctcgag acgcgggagg atgaggaaaa gtctctcgtt tccagtcctg caggctgcag 840

ctagaagaag cagtatcccc ctagtgctgc tctgctccag catagatgct actacacacg 900

gcgtgctggt gcagcagcct ggacatgtcg tatggaagtg gtattgccag actcatcgtc 960

gtcagaaact gcttccttct tctgcaattt cctctaataa atttc 1005

<210> 2192
<211> 1372
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_141963_G1, chr4:57570389..57571760, Cluster 13

<400> 2192
aaccaagatg gcggcggcac aacgattaaa attgcagaca tagttttagt aagttaaata 60

attgaaaaac acatcgttgt aattttagca ggccagatcc atcacataag actatatata 120

catgtataca tacttgaagg gtccttccaa acttgggggc ccggtgcggc cgctccagtt 180

ggccccctcc gtctggccct ggtcgtgcca ccatcgccgt gccacctgta ccaattttgc 240

ccttccgtac gtttcacttc actctttgct gcaggatttg cagtaggctg gagcacccaa 300

ttgcgaaatt agacccacct gaacacagaa cctgactgac ccggcccggc cacaggagag 360

gaggcgagag aatgtaatca accactcgtc cgtccctgca ggctctcgcg ggccgtatgt 420

aaaaagctcg cgtttgttgt gtgtatcgtt ttgggccttg aggtcctggt cctggtcctg 480

gacgccttgt tgtatcttga ttgcttcgac accatctcac gtccggtccg tggttaagcc 540

gtcactttgg cccatccctc tctccgctcc gaagtcccaa ttgccaccac tctgacgatg 600

tgatgattat tttcagtccg tcgtatactc agatcgctac agaaattgat tgccacccat 660

gggcgtacgc gtagcaatgc atggcaagtc gttctgccta cggtcgacct ccggctatat 720

gtaatgttcg atcttccgtg acatagccac atagggcact gtagcattaa taggagcggc 780

gaaccggcag cggtggcgga cggccggtct acgcctctag ctagctggct agtgcgcatc 840

acgatttcaa tggagacgtg tacgtacgac ctgactgaat accacacgcg cccgcctgtg 900

atcgtgctga gtagagagta gcatagtaca ctttacccgc cgccgagggc atgaggccgt 960

gaaccgccgc gcgacggcac ggcacgggtc cccggtgcgg cggcggcggc ggctgccccg 1020

tgtggccttc cgttgcctgc ctgacctgcc ctgaccaacc cgaacgccct gtggcggtgt 1080

ggcctgtggc ttcgtggtat tgaagcgccc ttcactggtc accaactctc cagtggcatc 1140

gttcgattca tcgctgcaca ctgcagtctc ttgacggttc catggcatct tctcgttggt 1200

cctgcctttt ttaaaatttt tgggtcaacc tccgggcaaa gatcctctct ctcttctgtt 1260

acgatctgtt tgattccctc ggctcttaaa tctggtgttt tcgacactgg atacgagttt 1320

ttatcagttt cttatatcag tgtttgtcgg acctgggcgc agtcgcgagc tg 1372

<210> 2193
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_142025_G1, chr4:57928548..57929709, Cluster 13

<400> 2193
tcgccaacaa ctgatactaa tctcttagta cattttacta ataaatggct ctaatcgatt 60

actaaaacta agattttagt actaaataga gctatcgacc tatactaatt agaatggtat 120

acctatgtta gcataatcat taattagaaa tgctgtgctc gtcccgtact gtctggcatg 180

ctcaccgctc acgcatggag aaaggggatg caacccaaag tgctcattgg cagccactgg 240

tccggttcgg ttactgcttt atcgatcggg tgagttggca tccagttctt caggggcgg 300

tgttcttcac acagaagtcc tttcgtgggg ttcagctcaa gacagaagag ttggagtcca 360

gctaacgagc aagtactccc tgaccaggca cgggaagccg ctgtcgcgac aagccgacaa 420

gccgcatgcc gccacgcgtg tcgcagaggc attggctcga cttgcccttt cggatccgtt 480

aaggtcttga tcacctcccg accaaagtac acaaatcgtg cccctcaccc cacccccaaa 540

ctttcagtga ttctccgctg aatcaacact tgtttttagg ccatcgatgg agattctaca 600

aaagatttca aacttgcaaa gtcaaacgag acgtcccaag agaagagatg ggtttgatca 660

ggtatacagt atttccaaat ctaccaaagc gtattgagac tgacaatgaa agttgaagtg 720

tttcttctca attaatgaag agatggacca tcacaactaa acgctatgaa tagtttatca 780

aatcgtgaaa tgaagcaacg cactgtaaac cttaatagta gttccaacct gtttaaatga 840

tttgatagtg ttgaaaaccg tgaaataaac catggcactg agaatatagc cttaaagaac 900

ctgatcaaga ttgatgggag atgattcttc ttcttccgtg agtcaagtcg cccctccttc 960

gaagtcactc ttagctctat cggcgttggc atcagtgttc ccgtcttatt ttcattcctc 1020

ttctatgatg gttcaattcc tatccatcac cacctatcac ctcgttaatc tgttgatgtc 1080

atgatatcgt cgctctagct ctgtcctccg ctttctactg gctcttgcca ccaatatttt 1140

taataatcac caaatgttat tt 1162

<210> 2194
<211> 1298
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_142752_G1, chr4:62353090..62354387, Cluster 13

<400> 2194
atatatatat atatatggat ggatcgcgtg actgctgcgt gacgaaggtc acattcaggc 60

gggccgacca cagctaccat ccacgaatca tgcaatcagg cgcatcccca aacagaagaa 120

aaaaaagtcg tctgtttttc ctggaccgca gcttgcggcg ccgaagcgtt ctgcttctgc 180

ccggcgctat gccccggccc ggcctaccac acacacacgt gcagctgatg caggcgccca 240

gacgacacaa atgacgggcg gtggtagact ggtagtggta gtaggacgta cgtaggaggt 300

gtgtttcata tatatttgag agtgcatgga acgttctcga ttcagtacat gcatgataga 360

cccatgtctt tttctttcag gaacgtgtat atatagagag agagagagtt atagacccat 420

atggatatga gctaggcagc aagttataga taaattcttt cggtgtaatt aaaacgcagc 480

actgtactga tgtttccctt gcagcagcct ctgctcttgt gctttgccat ctctttcgcg 540

cggtagctat cgtattaatt tgatacccat gtgtctcatg tgggtggccg tgacgacacg 600

gaggacaacc aaccgagctg gacaacaagt tttatcacgg tttcagaaac gatgatcatg 660

gagttttatc atggagattt gcttgggttg tggcatatcc gcagaccgca ggttagggcg 720

gtcttccgtt ggagtcttga tcatgtccac ctctcgtcat tcaacaacgc gcttccgcag 780

agacctggct atgctagcag ataacacaca tgtaaatgca agtgtcgata taccaaacca 840

atgtgaggga aagggacaaa ctgaattttt tttctctctc taaggtttgg ttgcttgttg 900

gcaacctaca cctctattga ggtggatcct aagattcacc actccacata gaagatggta 960

gacctctcta aacatgaact gattcaactt gagctacttt ttttttgaa tctcccatgg 1020

gaatgagccc acagcccctc ataatagcca gcacatgatg tatatgtgac ccgatttttt 1080

gataagcttc aaaccatgtc taatttttg atagtttttt tttaaatatg taagtttgat 1140

tgttggtgac aggtcaagct tgctattacc acttaccaca tgtcggaggt aataattagg 1200

gatacctaaa ttattccccg agcaaacgca cccagagaaa taaggacgaa actcccgaag 1260

gtgacaaccg agctacctat agaaaccgag acatctcc 1298

<210> 2195
<211> 1217
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155931_G1, chr4:152086901..152088117, Cluster 13

<400> 2195
agcaaataat aattgacgcg gaaagcaaat ccagtttgta accacagcac ggaacgggga 60

aaactaaaat tgtataggtg actagagatt gaatccgatc gacatcggtc tcaggtacaa 120

atcgccagag gtgtgcgcat gcaagattgg tgccgcatag aatactgccg agtggtctaa 180

tcatgcgtag attgcgcatt ttgttaattc agagtgctat atcggcgaca aaaaatgccc 240

ccccccccc ccccccccc cgcattttga aaaggaagat tgcaagaccg cttgcttcta 300

aacaaaacct gcgggcggcc gggactattc aatagcgaat cgtcctacgc tacgagttgc 360

cggaccccgc caagaacgac agatcaccaa agccggccct ttcaaagctc tggtaccagc 420

agcacattaa tctgctgtat gtcgatctaa tgcccattcc tagtcgcccg aatcaatggc 480

cgatcgtcca tggttaagcc ctcatggccc tgctcctctt tatgttacct aacagacctt 540

ttcacccccg gaatcatctt agcttgtcgt ccaaagcatg cagcagcctt cttccggggc 600

tggggcgggc tcgacagaga ataggattct agcgagaaag aagaagcatg gcttgacttc 660

ctggcccatt gcataataag ctagctcaca atcacgcacg gatcagacag agatcaggct 720

ttaagaaatg ctatctagct agacagattc gtgcctgcgt gatgaatcat gagcgaccag 780

tataggcaca gcatggcaga tgttctcagc tggtttggaa aggcttgcta ttcgttaaat 840

aaccatgctt cgatcgatcc tcggctgttg agacagcact gattcttctt gtaattgcta 900

gtgcctgtag tactagctag tagtactact tgaaaataca aaattaggca atcatgcagg 960

gcctaatgga acgttgaagg catgcatgat tataattatg attactatag ggtggcggtt 1020

acggcagtca catctcgcat cgatgttgag aagagagtgc tgactgctgg gagcttccga 1080

aagatgcagg ctacgatagg gaaccactga atgtgattgc tacgaccaaa atgattctag 1140

taacgctagc tccttggtta gcttttgtgc cagctgagtt gctaccgcta gactgaatat 1200

tatctatggt gtgagag 1217

<210> 2196
<211> 1328
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156064_G1, chr4:152694736..152696063, Cluster 13

<400> 2196
gagtacagga ccctttagaa gtctttgttg gagctagttt aagaatgaaa ggcagtctcc 60

agcagctatc ttattgtatt cccatctcat cctctattta aaactccgct ctacaaatat 120

tgtaacctac acttcaaatc tcctattgta cacgatcgat tgcggacaac ttaaatgtaa 180

ttttatacga agttgtatgt cgcatcacca caataaataa cgacacggtg tccatgcatg 240

ggacaatttt tgacattacc ggatcacttg gcgtctgaag ttataatatt tgcacgctat 300

tgattcacct tcaaactctc caaaggtatt tttataatca tttagttgtg gggctaaata 360

ggtgtggctt gacggcacgc taagactgtc ttcagcgacc tctctatcat cacatcttct 420

attccaaact ctacactcta taagtaaatt gtacagtcta gtataaaata atagttcata 480

ccatatacac gttcttgtaa gcacgcggat gtaagagtgg tacttgcagt tttggcttag 540

gacctattcg tttggcccga aattcatccc agaattattt tagctaatca aatgttatat 600

aaattagcta actaatccgg ctagaaatag tttcgggtgg ctaatcccag gaaccgaacg 660

ggcccttcgc gagcgcgagg cgatccaggt gcagccagtc ggccagccgt tcatctgtcc 720

acgcacgacg taagcgagga cgacgcacgc gtgtgacgcg tcccgtttgg gcgtttgcgg 780

tttgcccaca accacctacc tactcctgcg tagccgacgg gacgggaaca ccaccacctg 840

cgctgcgctg tgcagtactc gatcggcctg cctcgcttcg cttcccagtt cagctgccat 900

gccacggacg gacggaccca cctaggccgg cgttgcggtg taccgctgcc atcctgtcat 960

tctgcgcgcc ggagtagtac gagtacctgt agagtatggc tgctgcaggg ctgtgctggc 1020

atggcaggca ggtactcact ggagggactg gcaggaaaaa gagcaccgaa ctcgtgctct 1080

atcaatcccg tcgtccgcac tcggcagtcg gcacccaacc ccccaccccc aggccccagc 1140

tatagctccc tccgcagccg cagcacaggc caatgcaggc aggttgacgc tttgactgag 1200

ctgagcaaag caaagcgaaa ctgaaactga aaccgaaacg aatggagttc cgcccacagt 1260

actactaagc gaccggccgt agtgccacga cagccgaatc aattatttac tacccaactg 1320

ttgtattt 1328

<210> 2197
<211> 1267
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156124_G1, chr4:153047570..153048836, Cluster 13

<400> 2197
caacgttgac taggatcacc cttcagttct tcaaaatttg gtcactactg gaaagtggcc 60

agattggagc cgacatgcct gctgttgtag cttcttgtct gcctgaggac gagagccgcc 120

gctacctgtt gtggacagcc ggtgccgggc gtgcatctag gtagtccatg gctactaggg 180

tttcggcggt ggccgtgtta ctccctactt gctctccgtt ggaaccatca gctcctgcag 240

gcactccagt acccgacgac ctcacctaca tatacatcaa gaaagaaaag gccgcttccc 300

tgtttcactt cgtccttgca aatgctgtgc aatgcaatcg atatacatat atgctgcaca 360

tattactgtg ttggaaacgc atttaccttg atcctttcga atgcttttct caaagaagca 420

cggcaagaat cacctgcgga tcagacaact gtgtctatga atgaatgctc aaacatgcat 480

atacacgtac gccacggatg aaggtcataa tgtatagctg cactaggatc atatataggg 540

atacatgata ttctctctca tcggttgagc gtaatccaga tggattccct gatcaccacc 600

ctcatgccca tgacgctgaa gctgctgcgg cgcacatgca aaaccctaac gacatgccca 660

gcatttctaa ctaccacacc tggtgaagtc gtcacgtcct tcttcttcgc cgccaccgct 720

tcgttggccg tcgatgcacc cattttgctt ccaaccggaa tctccgacga cgacgacgaa 780

gatctcatat ccccccttgtt ggcagcacca ccatctacca caccctatgg aaaacagaga 840

gaaaatggaa acaaaacgat tgggagttaa ttagaagtag ctaaagaact tatatattgg 900

cctagatatg atacaactgt tttagttaga gtgtgaatta gcttacatac cttaggtggt 960

gaggaagtga gcttgcttga gcagtgctta ccatggacgc ggagatggcg agccttgcag 1020

ttggtaacgt agagagtaag gatgaacaca actaggaggt cggtagcagt gagccttagc 1080

ttccccttga gagtgagagc taggagagag cttacgctaa acatggagtg gtgtggttgc 1140

ttcttgtggt ctcttacaag acatatgcat gggcagggac gagaatgata tgatgaagta 1200

ccatagagtg gcaatgggct atgctttgtc ttgcctccaa gctgcgtgct tttgtatcat 1260

cgttcag 1267

<210> 2198
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156176_G1, chr4:153255444..153256478, Cluster 13

<400> 2198
tcggatctga cggtcctact cgtgcttact acgctccgga ctcctgagca cgcgcacggc 60

aggccggctg gcaacgaaac agttggactg gaagaaacgg gcgggcgggg cagctgccaa 120

aaccgcgcgg caacaacgac gagggacgga cgccgacgcg cttgttatct ataattctct 180

tgagccgtcc agcgcggctg cgccttggtt ggggttgggg cgagtgacgc aaatgcgaaa 240

agcgaggggt ggtagtttcg cactttggcc ggcgacgcga tatcaaggtt cgttgcgttt 300

ggggaatcgg gaccaagaga cgattgggtt gggggggggg gggggggacc cggctggctt 360

tggccagaaa ccaaaagagg cgccccccttc gcttttgacc tttgtttgga tggacgttct 420

aaaagcacgg cgatatcaaa tccggaaagg gaaagggaaa aaaaaaggaa aggttattta 480

ttttagatta aagtcagcta aaccctcaac ggctgtagag tgagaccgag ggaaagcgcc 540

cccagatcgt ttccttgtag ctgtaggcaa atgagctagc cgcttgcagc ggatgcaatc 600

tttcctttat aagtacaagt gtttcctgca agtagcagca tgagtcagta aataaaatca 660

cagcactgta tttgcgcgcc agccctctga cctgagtacc tgacttggcg ctgcacccat 720

gcacgagcag cgactttggc acacagctgc gtcggccggc gtttcatata tatttttact 780

tacatgcatg catgcatgca tacgaggaag atgaaaacgc tgattttact tttacgtgac 840

acgacaaatg cgaatgcgag gacgtttctg cgctctggag agagagagag agagagagtc 900

gccggcgcgc gagaggttct ccgtccggat cgcgtccacg gcgacggcga cggcgacacc 960

atccaggcac tgctgtgttt ctagttatgc atgctctccg cacgcggcgt ttggtgtgaa 1020

ctaattccac gacgg 1035

<210> 2199
<211> 1139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156179_G1, chr4:153257684..153258822, Cluster 13

<400> 2199
ggacagaacg atttaaagta gtcatccagg cgcaagcggt tcagccggcg gcgttcagct 60

ccaccgccgg gcacatggcg tgatggcccg ccgccgacac gcacgcctgc cgccggccgc 120

ctcaactgag ccagcgctgc gcgctcgatc gtgctcgccc tacccagctg ctggaaagct 180

acgactactg cggcgcgccc gcccgctgtg tgtggtgtcc atttaaagcg tatccctggc 240

ttcagcctag ctgtttattt agccgtgaca aaggtgcacg atcacgtgca tggggctgct 300

gcagcactgc agcggcagcc ataacttgtg cctgccatta cacacatcgt cagatagaga 360

gagagaaagg cacatgcacg ttccagctca tcgaccgacc cagctggggg cgcggaggga 420

cgatagggaa tcggaaggag gaggagaggg acacgcgatc gatgaagccg gccggctaat 480

ggctgtcctt gacacggaac ggaaagccgg gcacagggat catgctcaag cagaagcaaa 540

ggcaaagcaa agcagccagc gaaaggcctc ccttgtcctt atcaaccaag gctgcaagct 600

ttttcccgct cgcatcgcat gccaagctag cgggggaaaa gcggccggcg gccggaagag 660

taaagcgtag cagcaggcgg cacggcagaa agggaccggc cccggccccg gcccggccgt 720

gtgccagtgc ctgccagccg agcgcatgca tgcatgccgc ggcgtctctg catcgcaggg 780

caagggcagc gcgctgtatt gcatgcactg cgccatgacg cgtcgctggg aggaggagca 840

tgggccgcga ctgcgagagg ggacgtgtat gtgttgtgtg tgtagggctc gaccatcgtc 900

accatgcatg tccgtctctg cctctccacc catgcatgcg cccactgcgc gtacgtccac 960

caaagtgccg gagtaataat ggagacggga gaggccaggt cgtgtacaac ttggataagt 1020

actacccgct agccttgccg atttactatt ctagtcttat tttttaaaaa aaatcaaata 1080

caagtctatt tattctagag atcaacgctt cgacatatga catcgaactt aggacacgt 1139

<210> 2200
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157055_G1, chr4:157474256..157475489, Cluster 13

<400> 2200
ttgatctcac tttattcact cacgtacgta gatgaagaca cataaactgg tacgatggtc 60

ggcacacatc ctgcttcaga tcagtcgcct ctgctcattt ttgtccaatt aacgccgaga 120

gtactgcaag cttgtcttgt aggcagtgag caagacggca ccagcttttg ctgccagcac 180

cacagctagc atgttcatgc atgtaagggt agccgggtag tagcagggcg ccttcaaacc 240

acgggcagtg tgcagcggcg tctccgtacg gcgatctgtt gccggccgag gggcgggcaa 300

tgcaccatgc aatccgtccg gcagatcagt atgcatggct ggcgcagtgg caaatactag 360

acgacgcccg cgtatgtgca caaggtttca accggggata tgatgatggc gccgcgacac 420

acctgcgcgc gtgtccttcc aacgtatgaa atgcatgcat gggccagcgc cggccggcag 480

acggcagacc atatgcgttt tgtggttgca actccaactg tacgcataga tcgatcgatg 540

caatctgttg gttgtctgct tatcgtttca gagacgcaca cgtactgttg gcggtttgat 600

gctgttcgtc ccatcacgga cacggtggac gcatacggat gctgcaataa aataatgact 660

cgataattga cgctgtgttg cttctgtggc tcatgcgtta ttgatgatgg aagcatatac 720

tgacgccgac ctgtgcaggc aacactgtca cgtctgtttg ctactagtgt atgacctcat 780

gaatgaatag ttgtagctag tagtaccggc ccctcctttt gcagacttgt tgatttgctt 840

tcaaagagaa accatgttta ttgaagtgct ttttataggc tttctttgtt gatgtgcttg 900

tgttgaaaat ccccttgatc atactcatac gtcatacgtg gtatcaatat attagaaact 960

aaacatccag aaaattggaa tggaaccatt ttattctttc tcactcaaca accaaacttc 1020

atctggcttg gagctagcta gcaccaaaga ggggctcgga tcagatacac gctgaaatga 1080

gggcagcaaa atgaaggcac agcgctacac gctcagacaa atgcgcatgc gatttattac 1140

ttctatctca tcaaatcgag tatattacta caaaagagca tctttcgccc acgtacggtt 1200

gttagcctca tcttggcgcc ggtccaactt ctag 1234

<210> 2201
<211> 1213
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157478_G1, chr4:159657859..159659071, Cluster 13

<400> 2201
ggatcccgca aacgatcatt gatcagatat atatatatat ccacgcacgt cgtacggccg 60

gccagccgct gcgcgcacgg cggccggcca cgtcgcgagc gccgagccgc cggccggctg 120

atatatcagg cggagagacg ccattgccgc gcgctggcag tcggctccgc cgtcggccgt 180

cggggttacc tgggtgctgc cacgcatggc gatattcctg attgtgggct agtagtttat 240

tgctgggcgg ctggacacgc gcgacgtcgc gacgggctgg ttccatgcgc gtacttttg 300

gtactccgtc cctcgatgat tgcttgccca aactggcaac cgagcaaatc cgttgagcac 360

cggcccgata tgatcgagca ttaattcgag ctagctgcag caaattaaag catgctccag 420

atcatcgtct gctgactgct gggacgccat gcaatgcaga gagagagaga gagagagatg 480

ctgtggaccg gaggtccgga gcggatgaac cacgcccgac caagcgtaga tgggtgcacg 540

tacctgccgt atgcggatcg accatccgag ccatctgggt caattcaaag gcgcacgttt 600

gacagacatg tgagagacgg atcggaggcg ggcgggcgta cgcaaaggct cgcaatcatt 660

caggacacgt atgcatgtcc tgcggccgct gtagtagacg tggcccgcgc tagctcgtcc 720

cggccggcgc cgcaaccagc aacgtgcgcc gacccctccg cggcgcgatc gagcgccggc 780

ggcggccggg tacgtacgta gttgggctat attcttctat tcctcggata tttctcggtc 840

ggtccctggt gacggccggc caacacatgc cctctgcccc taccctacgg ccgtgggaca 900

cagccgatga gagggagagc acgtatacga cgcaatggcc acaacacgcg gcaggtgaac 960

gactgcggct ccggaggaga ggggaccgat gcagtccgcg ccggtccaaa ctcgaccgtc 1020

agtcgctcgg tcgagatggc gggcaagtac catgcatgtg ggattccagg acaagcacac 1080

cgcagcgcat gcggcgccat ccatcttcca ttctttctcc tagttgtgtc cctagctcct 1140

ccatcgacta cgacagacag cgcgcgcgcg cgcacacaca taggtgtccg tacgtggcag 1200

ccaggagccc gag 1213

<210> 2202
<211> 1323
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157594_G1, chr4:160249873..160251195, Cluster 13

<400> 2202

ttgaagagag gccctactag atgcttttga tgacgactga ttgaactgta gcaagctggc 60

tgatatatgg catttggagg tgtgtgttaa ttacatggga gagatgaagt tagcattata 120

ctaatttata tgggttcatg gaatggaaca gtgagacagc ctaattgaga tccattggtt 180

ccattctagt agcaacgttt tcattttcct cttcggagaa tcttcatctt agcatgcagt 240

ttgggaaagg aggtgtcctc tctggtcttg ccaaaaggcg agctactact tgagtagttg 300

agtgtctcgc actctcggcc tctcgctctc ccacccacca acagccaatc gcacacaatg 360

acacgcacga cccagcagca gcagcagcag acaaagcgcg catcggcgaa atagttgagc 420

cagcgaggtg tacatacaga cccagccctg tacgagcccg ttttggacgg caagctgcca 480

tttgcatttg ttaagtacca tgcttttgtt gacagcgcgc cctagctaac aggtgtacat 540

cagccatggt atatgagaca caaattaaac tggcatgtgg ctagtctacc ttttttttgtc 600

tatctcttcc ggatccaccc caaatggtag cagagaggaa ccaagcaatc cgtgtgtaat 660

ttaggtacgt agtagcctga tagccctgtc caatgacttc atgacgatct tcaatgcatg 720

cgccattgcg catgcatgaa tctcgtacca gacaagtagc cgctggaaca gacgtacata 780

tgcatgcagg aggccgccgg gcagcgctgg ctggagtgca gatgatcctt gtggccgcgc 840

ccagcgccaa gaaccggcta tctcgcggtc gcggccgcgg ccggcgcgag acgcgtcgat 900

ggcgtgccgc cgaccgacca ataaccagcg tgcgggcgcg cggccctccg atccgcccca 960

gtcggccggc cagtcttcct gacgactcct caagcgccgg ccggctagct ggtcgtgaag 1020

gcacggcaga gacatcagac atgtacagag gccagaccgc ccgagaggcc agtagtacac 1080

gtggccaggc cgcgccacac ggtagccagt aatcacagcg gctgacctga ccagcatgag 1140

gagatagcac gtacgtacct ccagcacgca ggcgacgcgc caacatgatg gcgcgctgcg 1200

gaccgggcct gctgcgtgca tgcgccatgc ggtggtccat ccagtacgac gtccaccgtc 1260

cacgcacgca aagcaactac atacgcaggc gccgagcgac ggtagtcaaa caaacgatca 1320

gcc 1323

<210> 2203
<211> 1238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160411_G1, chr4:177596946..177598183, Cluster 13

<400> 2203
ggtaacatcg tctatatata atataataat atgtcacggc caatgcaaag acccaaggac 60

gtccacgact gattgcatta tgattcgttt cgctgttcca attcatttcc aggctccgat 120

ccccccccccc ccccccccccc ccccacacac acacacacac acacacacac actcccgtac 180

cgcaggaaat aaaggaaccc agcacagcaa ggcataaata aatggcgaaa cccatccatt 240

ggcctgacgt cctctccatc ggcggtggta cgcgccagcg ccacaccaag tcaccaacaa 300

caacaacaca cggcgggact gatgtagggt acggtacgga cggcaggtgc ctccgcctcc 360

gcctccccgt caccagccac cacgccgtac gcccgcccgg cgccgctgag ggacaggagc 420

aggacagccg ccgccggcca agagggtgcc gtagctagcg gtagaaaact ctcgctgggt 480

cgtcggcact ggggcgccgg gctcgatcgt acagtcgtac ttggccccgc ccccgcgccg 540

tggtgcaatg caatgcaaca caggctctct ctctccctct cggcttggga cggccatggg 600

cctgggatga gcgatacgga gatcggacag ctgccgtcct ccgctacgcg tgtacggcgc 660

gtgtccgggg gagagaaggg acgagacgag atgcggctgc tgccgcacgc gcacggtcct 720

gtggtgtgga ctgcgggtgt tgacccgtca gaggatgcga tgcgccaacg catggtacgg 780

tcgccggatg gcatggcatg gcaccgtgct ccactggcaa cccgacgcgg gggacgcgct 840

cgcccgctgt tggtagggct gcagaacaac aatgtatggt cgggtgggac gggcttgagc 900

tccgaacaga ccttggagcc ttgttgcctc atgggccgga ggtatggctt gggcttcttt 960

ctttaacttt acgttgggct tactttcttg agacgaccgg ttgggattgt ggactgtgcc 1020

tctgtgctca ccactagact ctagttcctt ttttttgcct aacaatctct gtctgccata 1080

tctcatccaa catcttattt ttactacatt tatttttact acatattatc ctacacaata 1140

aaccatttta gatatacagt acaaatcaga tctgtcccaa accctagcct cttaactaaa 1200

gctatctagg cctggttgtg gggacagcct agccggct 1238

<210> 2204
<211> 1233
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160559_G1, chr4:178379724..178380956, Cluster 13

<400> 2204
agatagctat aaaaaaccta atgacacttg attaggtccc gttgaaggta catcttcggc 60

aatatgatca aatcgaacag gacaaagagg ttcactttcg ttgccatatg tctgaagaaa 120

actctacata aaagaaaaca aaatcaaaat taaaaaaaaa ctagattgaa tagtttattg 180

tttgttatta gttctgtgtg cctataggga tgtatgtagc cactagccag aagcacatga 240

ggagtggatg acgatggcct cgccgtcatt aggtgttggt agcctaaact aatgtctaag 300

gaaaacattg taattatggt acgatgtgta atggtaaaat gaaaatcgtt ttatgatgtc 360

ttgccaatat acacgcccat gggttgtagt tctgtggccc atatatcaca aaagccagat 420

catactgatg tgataactgc aagcaccaat tctaggtagt gtcgctgtaa aagcagttag 480

cagctggaat aacttttcg taaagaagtt tttgcgtgat agctgtcgct attcctgagt 540

ttttgcagca cgtattcttc atcatctgtt ttaaacaaat tcttctcgag acagcctttt 600

tttgattgcc tacaggacct tttgaaacgg tcttgaatac tgttggctga tgtggacata 660

ttatgctcat gagcagaaaa gataagctgc aaatcttttc ctggcgtaac tcattttctg 720

aacaagtaaa tagaagacag tagcaagtag ggacgcatag atatctgaaa acagtagctg 780

catagagttg ggcatgggat ctgaacccta gctaaactat gctacagaga cgcaacgcct 840

gccttgccct gcccttgctc caaggatccc aactgttagg caagcaaagc aagtaggtaa 900

cggataccct gcaagtcctc cagcccgcaa gacagaattc tcagcccgca agaaacaccc 960

tccctcctca catacacatg cgcaatagaa aacccggtcc ggcaacaggc agcaagacgc 1020

gaatcatctc gcacgtagcc ggaagcttcc ccgctgcccg ttgctgtccc ctgctcctaa 1080

tgcagtccag ctcctcgccg cgaggcctga aagagccctc ctgcaagcgt taaccactcc 1140

cgctgtccat ttccctcctc atctttgaca atccaatcca tccatggagg gggatggctg 1200

tggctcgtaa agcgatcgat cgcggggatc ttt 1233

<210> 2205
<211> 1298
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164911_G1, chr4:201877596..201878893, Cluster 13

<400> 2205
tcacacaatg tccctttga aactcacgat agaagaacac atctaacaat gtcatcagta 60

gagtaaacat tattagccaa agcctctata cacgtctaac ttaaaatata gaggggggga 120

gggggatctg gcaaaaaaag atcttttgg ttgcacttgc acttgcgcct ccgaggtttt 180

ccacctaaac ctttatttta ttcccccaaa acagaccatg ccctctgaat cgtatcgact 240

tcgattattt ttattgactc cccccgatca ggcgtgcgct tttggactac ccctccttta 300

atttcttcat ctcgagcgac taagcttagt tagattgtga tgtcttagat agaaaacaaa 360

acaggctaca tgttgccaaa aagatgctat tgctttgcat cattatgtca tcatgtgctg 420

taagtttagg attcttgtga ataaatcagt gcaaccaaaa gagaaagcaa cgaggataca 480

tgattagcat ccgatgtgac ggaggccatc gaaggaaacg gagatcatgc aaacgatagc 540

acagattcca tcccagcccc accatcaagg aaaaagctag ctagaacatg cttggacatc 600

aaggaataat tttactggcc actgttcctt tgtggaggac tgactatagt gtgaagcggg 660

cagagagcca gagaagagag acgagacgac acatcaacat cagtcagcct ccctgcctgc 720

gtgacgctga cgctgacgcg gccagcaaat taaaagaagc aaattaataa atcacctgag 780

ccagcgacga ctggttctag tagaaagtat gaagcactcc aatgatcaaa agctagcaag 840

cagcctggga gctgggaggc gaagtcctcg tacctactct gaaattacaa tgctgatgaa 900

aactctccaa ttcaagcgct tctggggtgg agccagtagg tttctggtct tcccttggcc 960

attggctgac gcgactgccg gtcctcgcac tggcagcgag cgacgcgccc ctttgctcct 1020

gcccgtcgta gccgtgggtc cgcgagcaga tcaagagatg gcctcgacga cctacctctc 1080

ctccttcctg tcgatgctgc catcgtgcgt ccgcctgcgg cgacgggcgt ttgagccacc 1140

gcaccacgtc ggtccgtccg cgcgtagtgg ttctttttcc ttgaccaccg acaagatctc 1200

tgcgattggg tgcttcttgg cctccgtcgc cgactcgttg ccctccggcc acccagaccg 1260

ctacgccgac cccctatgtc caaggttcgg gtggtcga 1298

<210> 2206
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164987_G1, chr4:202218852..202219894, Cluster 13

<400> 2206
atcacatgta aacaatggcc cgcttttatt tcactagaag ttaattaggt attacagtat 60

atgaactatg tgaaataatg tattggattt ttttcgataa ttcatgaaaa taaagtagca 120

gtttgaacgc tagtatgatc ttaatttttc gagggaccaa atatgttagc catctaaaat 180

tagtggccat gcataatttg ttatagtcgt cgggaagtta gatgtgtccg gcagcaacac 240

gagcccagca cagcagacaa cgatcagaat tgcgttgggc caagcaccat ctggccgccg 300

ttactcccaa ggtccattgg cccacctagc catccttcca ctccgatccg ggagttcctc 360

ggttcagttc acgcaacagt gaagtgaaca gtgcggagac gacgagccct cggattcgga 420

cggaggctcc gggggtccac gtgcgcgggg gtacgtggac tggacagctg acactgggca 480

gaggcactgc ggcagctagc agagggttca tagttcagaa acgcacgcac gggtcgcgct 540

gccgacgcaa aggctgcact gcagcacacg gatgctgaag ggtgctgggg acatgcagag 600

acagagcccg cagcgcgcaa ggacaggagg ccaggagggg gcattgcaag gcctgcgtct 660

gctgcatgca tctacagtac aggcatgacg aatgtacacg gtgcagaata caggtgctac 720

aaaacaaaca gtggacgttt gagtcatcct ctcccgaggg aaggaaggag gagtacttac 780

tttaccttgg ggtgggggac atgagtgatg gacatgctga gtgctgactg acaatcttgt 840

gggaatgggg ggcaacaata tggcacacgt ccgctaaata gctttcactt tgattaaagt 900

cagttattta aaccgctaca attaattata aaaatattag aagccgatac ggattaaact 960

caaacaaaca gataggatga taataatgag ggtggtacca tatgatggtg tatcgagcgc 1020

ggatcctacg ctctgtgtgt cgg 1043

<210> 2207
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_167587_G1, chr4:215996137..215997173, Cluster 13

<400> 2207
acaagaaagt aggagtggca aagtactata agctaccgcg cgctgacctg ctctgtaggt 60

ccccaactaa agaaccggaa gtagggatcg acgtccatcc aatatcgtca tatacaactg 120

caccccctgca aaggtgaatc gatgctagct aaaatgggga tccaaatccg atatgatgat 180

attgcgcgtc ctggaaggcg aacgaaagcg cacgaaccga tgctctcaat atatatctcc 240

atctcatcgt cgatctgcca caagatctcg agtacacacg tcgatcaggc tatcaaatta 300

attggcagtt aatatctctc tctctctctc gaccagtcga tcgtcctaca agtactgacg 360

atttagtact ggttgttatg gcgcacttgg ccgccatgaa gaacagttac tactgagcta 420

ggctgtgtga gggaacaggc aagcaatgga atggaccggt ctatatatat agatcctgga 480

ccagaggcat ctatctcggc actgatgatg aacacgatcc ggttgcagga gaggagggaa 540

caacgatctg accaggagct ctgggcccga gcccaagcgg atggatcggg gggacgagtg 600

aaagcgaaag gtccatgcat ccctgcagct gcaagcacat aaacgacgac gagactctgt 660

aaaatcctgg atttttgatc ccgtcgatcg gcggcagcgg ctgggcgagc gagcgagcgc 720

tcggcacgtg actcgtctac gccgcgccgg ccgccaactc gataaacgtc ctttttttggg 780

accatgcatg ccggcagggc gcggcgacaa tggccattcc ttcactctcc cgtctctcct 840

ccttctcccc accctagcta ccctctatct actacgctaa ggattcccca tcatgaagaa 900

ccccctacta agcggctggg ctagtactag agctctagct cgtaggagta gatatagctg 960

cagcgctcat gcctgcatct gcatctgcac ctgcaccatc accctatctc tctctctcta 1020

gagagctaga ctctagg 1037

<210> 2208
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_169812_G1, chr4:227553593..227554674, Cluster 13

<400> 2208
cacgcactct ctctctctct ctccatccag ccatggccca tgggttttta aagggtttca 60

aattcttggt tctcgaccgc atgatgctct attgattcat caagtttcca atctccaagc 120

ctgtcaacat atctaccatc tctcagctac ccatcatcaa cgccgctcct cgaaaatccc 180

ttgagcgaaa gaggcgcttt cgactatcgg attctttgga ccggcggtag atgcaggggt 240

gacggcaagg acgggcagta agaggtaaaa ccccccttgca aacaccttcg cactttccag 300

attcataact acaattgttt ttttttgtt gttttttgtt tttttgtaga cgaacagagt 360

gtgcattatt tttgtgacga gaagagcatg cgacaatcct gtgttgcttc ggaaataaaa 420

aagaagttgc gtcaccgaag gtaccaagct ctcggcctga tctgatgtcc atgttgtttc 480

atctttggtg gccgccgcgg cgcagcagcc gaccaactgc caaccacgca ctagtttaac 540

cgatggcaag agtacggcag aacactccca gtttcatcct ggctggctca gcaaaagctg 600

actctctcaa atccatgcct gcgagcacta ttttgcacgc acggattcac agataccagc 660

acaagaatag cgttccaatg cgagccaaac tgtcgctgta taaaaacaaa aggcaagcca 720

aactgtcaat gcagaactaa attaaaacat atatatatat caaaagagac ctgatcccct 780

ataatttacg accagaaatg ctgctaatgc tctgcccgtt ttacttcgtc caaaagggct 840

aatacataca cgacgcatag gcgcatagtt cttatcttcg agcaggccgt ccacgaagat 900

gctcatgtcg atgccggcga cgaactcggt gtggtcataa caaagttctg tcagctacat 960

ccaggaaact aagtaaagtt ctaccaactc cggaagcatg tcacgaggtc atcagcctga 1020

ttacatagac tgagagaggc ccaaaggacc atcgacaagg aacacagttt aagtgtttac 1080

ag 1082

<210> 2209
<211> 1329
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171965_G1, chr4:238385662..238386990, Cluster 13

<400> 2209
aaacataaat aacttgtcac ttgtcagtac acaaagggaa atggatgcct acctcttaga 60

gaatctactg ggatgggaac tttcagtctt gtgacatttt tcatgatctg acacctctgg 120

atcaatggca tgagtcctct tcgcagatga agatgtggaa cttggtcggt cagactctga 180

gtacatcttg tccaccgata taggtttcct tttttccgca cacccttgcc ttttgagatt 240

attcaaaggt aactgcatcc agaattccct cataatagtt ttcaagagat atattcctac 300

agatcaacaa gacataaaaa gggggaaatg aaaaaaaaaa tgagtagtac ctggcagtat 360

ttattttcct gaatgggagt taacctcgaa cagaatctgt tgcccacacg ttccgcctgc 420

tcatcttctg gacctacaaa taaatgacac ataacaaatc aataacagtt tgtaccagtg 480

aatgactgta acagattcaa cggaagcttc attctgatta ttgatattcc acatggatat 540

catgcatttc ccgtgattaa tccactaacc catggcatct gactaaagtc tcccaaagtc 600

ccaatccacc ttttgcggct gacagaaggt tagaaatgat agcatcggga agagtggaaa 660

tcttactgaa atcatacaca tccttagaaa cggaatgagc atcctgtacc cgaccatctg 720

cagcctgcaa accaatggta cccggaatca ccgatgcaac gtagctcaga cctcagaaaa 780

gggacaaaga cctacgcgcg cgcacgagga acagtatgcg aagctacgac ggggttttat 840

catccatccg taaatcaaac accccagttg gacacagcca caggagagcg ggcttacgcg 900

cgtaccttgg cggccccgcg ggtccgtggt cggcgcgccc cgtcatcccc atgcacggcg 960

gtgtggcgct gcccgccgac ggaccagtca tcgtcgatgc gcagcttccc gagcctcttc 1020

cgttggtgtc tgtctgggga cccccgccgc cgctcgtcgc ccggtaacac cttcgcggcg 1080

cccaacgccc gcgcccgcgt ccgcggtgct gccgacgccg acgaggggga ggcgaagcag 1140

acgtcggcct cgcggtcggg ggaggatgac ttgccaaaca cctcagtcca attgatatcg 1200

attctctgcc ccatcgccgc cgtcgatcgg cctgcgatcg gggaggagag ggatttaatg 1260

ggggttttgc tgctgccttt tgggggggag gaggcggagc ggaggttgcc gcttaatatg 1320

ggaaggttg 1329

<210> 2210
<211> 1025
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173187_G1, chr5:4631733..4632757, Cluster 13

<400> 2210
tctgacacgt actgtgggta ttcttatgca tgccttcttt tttaaacgga gaggaaaagt 60

agcgacggga tcggatgact tgacttttac gaggttcaca tctgggcacg cagtgacaag 120

tagtacgtct taccggcctt ctgtgaccga tggtcgtcgc ctgttgtctc cgtctccgtg 180

gacgacgact gcagagctca ggactgctgc tagtcaaata atgtatttaa gacgaactcg 240

agggggaaaa gagagagaga gagagagaag aagaagagta gcagcagcta tagtagtgta 300

aacttggaag acacaacaca gcacaggaag accgggcgta cgtcgttctg aacaaggaag 360

tcaacccgcc gtctactgaa agaaaacagc gttctatctc tcaggcaatc acctgttctt 420

cagagtgttg cggctgcatc acattgatta aaaaacggcc aagacggcac cggctaaccc 480

acgacatact acctgtgtac acggaatgcg atcgcatgtt caaagctgct gaatttggac 540

cctcattaaa taacgtgtgc actggaagct ttcagagagc tgtatgtatt cgatgtgtac 600

agcccaattc cacaacatcc ggtcataaaa gagagtaatt aaaacacgac acaaacttga 660

cacatgagtg tcattgttag gctatctccc cactagaccg tagaccgtga acggccatgt 720

aaagtatcgt ttttcattgt atggtgcact gtttatagag taaagtttaa aatagaaagt 780

gagctagaaa gtgaaataag gagtctgttg aagatagcct tagagtccgt gaggtcatat 840

ttctacacca agacgtattc taaaaaatgt ctcgaaagaa gaaactatcc ctggttcagt 900

tatccatttt ctaaaaatat ggctagcccc tgtcccctag agtaggatgg ccctcaaagt 960

tacaacatta cattcaaccc ttcttctgat agtcttatgt ctggataaga ctcctatcta 1020

tcata 1025

<210> 2211
<211> 1191
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174706_G1, chr5:13815668..13816858, Cluster 13

<400> 2211
agcatcgtct tgctcttgcg tcgctgccgg actacaggtg cgcatcatta gtgtatggat 60

atacatattt agatgggttg gacctaatgg acggcccatg gtctggcacg gcccaccgtc 120

aatcatgctc gggatggccg atctgatcat ggtgacgtgc ctgagcctta gggtagcgtt 180

actgcacgct gccagggaaa agagaccgca catcaaaaca agtattctcc atgccctggt 240

aggtaccgcg taggtagggg tatagcaaat ccaagtggct ggaggcccat gtccatgtgc 300

ggcgcgcggg ggtgcacgtc acgcatgccg cggaccactc ctgtgctgtg cccggccggg 360

gagcaaggtg cccgagacga gacgacgtca agcgccggat cgcgcgccgc tggacaggag 420

gacaagcagt cagcagcgaa gaagccgggc accgtagtct actgttcaca tggtggtgtc 480

acggccgcac acggcgtgct gacctgccgg cgccggggac acaccgactc accgagcgcg 540

cgcggccgcg ttttctttgc agctgtggtc ggtttgcgtg ctcagcagtc agcaccgtcc 600

gtctcgtccc gtccaccctg cgtcacgcgg cgaggctctg cttgcttctt gcctgcgtcg 660

tgctgcatgc cgagcgcgcc gcgcaggcag gcaggcagag gcagtccaca gcacggcggc 720

aaggagatcg cggctattcc gtggctgtgt tacggtatat cagtagctgg tggaggaaac 780

gaacaaatat cttatatacc ggggtttctt ctggacccag ctacacagac gcgtcaatgc 840

ctcttctgtt tctttcctgg gtgcccagta ggcagtacgt tttccggacc accgttctgg 900

acgaggacga cgcactccaa acagtcaata ctcgagacag ccagacaacc tgtagtgcta 960

cggctaaaat taaatatccc tcattgtatc tatatacata aaagtttagc gtcattgctc 1020

ctcgtgtacg tctgtctcct cgtatatctc gctcctcctg cgtacgtcaa caaaaccgaa 1080

aaagataaga atcattgtac aataaatgtt gcaaacgata ccttgttgta ggagaagata 1140

ccttgttcta ggagaagacc gtctccgaca attactctta taaagaacct a 1191

<210> 2212
<211> 1213
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175022_G1, chr5:15454494..15455706, Cluster 13

<400> 2212
gtgcacggac atgacgtggc catcccgggc actcgcggag acgcttacac gtagtggagt 60

gcgtgtgaca ccagcgcaca gcaaaaaaaa aaaaaaaaaa aaaggacggc cagtccagtt 120

cagtttcgtc tctaaaaatg caatactgcc acgaaacggt gactgctgac gccgtgggtt 180

gaactgggaa gggctcgtgg ccatgcggac cgcccacccg caatgattcg tagagaaacg 240

ttgcaaatca aaaaccaaat cgtcctactt agggcgtagt aggctctcta gtagtaaagg 300

cttgatctcg tcgcagagac ctcctactca aggaaagcgt ctccgatacg gaacaaaggc 360

tgcggttaaa agtggggact tgcacagaat tgttcgcaag aagccaaacc cggcaaaaaa 420

aatctgattc ttgtaacgac cccaacggcc agcatatctg tgaaaccgaa tgcccgacct 480

gcgcgaactg tgaagccgca agccagacct catcttgggc gccacccaac ccaccaggtg 540

ccgggcccaa accgggatgg acgccgaacc gcgcgcgcca taggagtgga ctgacagcag 600

gaggacggcc gacgcgactg tcaaggtcgg tgagaaagga catcaggtcg ttcgatcggg 660

gacctccgct gaaacgacgc gctgatcagg caacaccgcg taccagttga cacgacgtgg 720

ccgtcgcgtc gatctccgtc gtctcgtctc ccgtatccgt cgcgccagga gcgcagcgat 780

ccgtgacgtt gcgatggcct aaacctctgt gcacgtgaag aagacagaca cagaggcggg 840

gaagagggcg acttctaaaa cacacctacc tacaagtata catagaattt tcgaacacat 900

gcaactatcc ctaaaacata cagccgcatc tttaaaacgt gttaaaatcc aataagtaca 960

gatacgtgta ttgctgcgaa gtcatgatcg taccatacgt acaggaccga cggagaggtg 1020

gtccacaacg aaaatgttgg acgtctcttg ggctgtagtc aaattcccaa gatggacacc 1080

ggcccactta acaaccaacc gctgccgccc taagctcttc ttagcccata aagacagccc 1140

agcacgcagt attgttcact ccattcttga cgggccagag gagactacag ccttgtttgt 1200

ttcggattat aat 1213

<210> 2213
<211> 1192
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_184929_G1, chr5:76393011..76394202, Cluster 13

<400> 2213
tagtaagaac gaaacctatt ttacaagttg tttaaagcat tcgaatattg gaatacaaga 60

caatctccac aagacgacca catcttctgg tcgggacgag gaagacaccg gccgcgcgct 120

gggggaaacg gacgcccggc cggacggacc tggtctgcgg ccgtgagggt gtgaggccca 180

cgcggcggac gccgacgccg caccggaatt ctcgtaagcg tgtgggtgtt ttctttttc 240

ttttttcttt ttcctttctg cttgtcaaac gtgtagtagg caggcgtatg gacgtacgct 300

gtggctgtgc acagtttggg acgcgcatac ggacagcgat cgacgcattt gtctaaaagc 360

tggcaacaac cggatggcag cagctacttg cagccacacg gtagcgatag cggtagcacc 420

atgcattcag taggttgtag gtacagatag cactagcagc agtacacgca ggaacgtggt 480

cggagccatc tgacgagtta gaaacttaaa aacattttaa ctttttaaat aagttactga 540

atggattaag tatggaaaca gagggaggag acccggcggc gatcggcgcc cgtgccatgc 600

ctccctccct gggccctggc aagcttggac ctctcacgtc acgcacacgc acgagccgtc 660

acatgccccg gggcgcaacg tgcgcgagtg gtgctcgaca cgacggcaac gtggcagtgc 720

cagacggcgg aggcgagtgc gtgccagttc ggcggggctc cagcggaccg gaggcccgaa 780

ccgatcgacc gtacgtggcg agtccggcca acgcacgcac acggtagcac tgggtcggtc 840

gtcacatggt gtacgcgtcg taccggaatg tcgtgcagtg ggtgtcccgg ccgtcgtcgc 900

attgccgtcg aggacggtgt gctgcactgt gcgtagttgc gccgtaccgg agggaactcg 960

tgttcgtttt agtttgaggt ggaagcaaag cccctggttt ttcaggggca ctgctccgca 1020

attgtccaga accattacgg tacaaaaaaa aagatgaaca acaggtgacg atggtctgca 1080

acagtgcaac taccttctta tctaatcaat gcagataaga aacgagacct aaaaataagt 1140

gcctaaaaat agaaaacatg aaaacagcta aactactgag atctaaattt ac 1192

<210> 2214
<211> 1192
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196357_G1, chr5:152834001..152835192, Cluster 13

<400> 2214
cactatataa cgttgcaaac tctgccgtca cttttgtttg tcagcgagtc cggcgcgcgc 60

ggccggcggt gggcctacga tcggcattat tattgtaaac tactgttata cacgcacggc 120

catccaccgc cgccgcctgc ggcctcgctc tagcctctct gggtgggtct ggggttgggc 180

gaggagttga tggcggcaaa ggacatggcc aaagcctgtt cttgaggtgg gcgcgcggcg 240

gcgaccagga cgactgtgga cgcgatcgcg gtcgcggcgg agggtgggtt gcggctgcca 300

tgcatcgcct ggccgcctgc gaaatgacga cgacaggtgc tgttactgct gtctgcgtgt 360

aaaatgtgat ttgcttgtca tcgccgtcga cgacgacgca agctagctgc ctagctggtg 420

acgatccatc tcaaagcttt tctctctctt gcgcgcgtaa aatgactact ttaatttgtt 480

ctttccacgt acgtacgtac gtagttctcc ccatgcatcc atgaaccatc cattcttttc 540

tttgtagcca actcatgcat gcatggtcgt gtgtcgtcgt tccctttgc tttgctttta 600

tttggataaa aaacccatat gagctgcaaa taattggggc cgggtacggt gtatagatac 660

caaagacgat aatgaggcag aagatcgagg ccacccgtac gtagaccttc tctttattat 720

atttttttt tgccctttta cttttctgtt tctctcatgc tgcttttagg tgaggcaatc 780

tctttcatta gtcgttactg tcacgctttc ttttagaaag ggcctggggg gaaaccaaat 840

gttgctttca tgcatcttgt gtagtaggcc gccccatgca tatgatggtg catatatgta 900

gcgcaaacat gtggcagagt ctagaaaatc ggtcagaccg cgcagtggga aaatcaattt 960

aagtgatgtg gctgtccttg ttagttggct gatttaatta attacagcag agttgattag 1020

ctagatggag atgatgttat atatgttctc gcagtcggac ttaagccaca cgccttattc 1080

agaggcgtaa attattcttt ctatgcatgg ttgtggtcct cgatcgcaag cgctatataa 1140

gcgaagctca tagcgccacc acaccagttc cgatcaacct ctagcgaccg ac 1192

<210> 2215
<211> 1201
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198591_G1, chr5:165859608..165860808, Cluster 13

<400> 2215
caacatatat gtttagagca aaaagaaaaa aaaaggggga aacaagattg gtttcgggat 60

gcaaacatgt ggctagttaa ttcgttctgc tagcgaaatt gagcttggag gctcgtcatg 120

gatcgtatga tgatcgtttt cagctacccc tcatcaccag ttaatatata gtagtagttg 180

ctagaggaaa ggctgggcct cacctacgca aatctacatc agttatatag agctccagct 240

ccagactcca gtattggttt agctgtccgt ggtctggccc ttaaatatat ataaatattt 300

tttgggatgt ccatttcaat catatatggg ggctgaattt aattgactcc acttgatgcc 360

aatttccttt caacatggcc caccatatgt ggtttggttg gcaccagcat catatatgcg 420

cgatattaag cagcagcacc gggatgattt tgtgctgaag ctgttccatg catgtttgat 480

ttcccggtct tcagagtgtg gtttcgagta cttggctgaa tcgaaggttg ttcttcagtc 540

agtcaggcat aattcaacca tagtagtatc tggatcttca gttcaatttc tgtgtgcttg 600

caatgcaagg gatacacacc taacacctac ttgacggacg gtggctgcca gtttctgtag 660

caccatggcc agagtcagaa aaaggggaga gctaaatgca atgcaatgca aggaccaaga 720

agatacggag agacggccga cgggggcagg catgatccta aaaggacacg acggccacag 780

agatagacag gtcacaatgg gaggtgtgag tgtgtgacct gagcgatcgg cctcctcaca 840

ttggctgtct gcctgttgac acaatccttg ctttgctttc agtgtcagtg tcaacttctg 900

ctttttccg tgcctttgcc ctttcagcca ctagtagaga gaggctcgct gctgcacagg 960

gacagggtcc cccttcgtat ggacgcacgt aggcgtagag gttgagatca tggcctggac 1020

gccgatattc cctgcgcggg gagggtgcgt gcaccgtgca gtgcggaatt gcctacatga 1080

ttcggtcagg actgggagac ctccccttt cttttctgtt acagataaac tgctaaaaga 1140

tgtgcagatt ataaacgctc ggttggtata cggatttcgc atttctaaga agttcatacg 1200

g 1201

<210> 2216
<211> 1058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_198620_G1, chr5:166045080..166046137, Cluster 13

<400> 2216
tattcagagg gagtagaggt tacaagagta gatatattta attaataata tagaataatc 60

cagaataaag attaaaaaaa cagaggaagt agtactacag agcgtggtct ttggaacaaa 120

cgccggagag caacagttgc gtacggttgc ataccaacgc catttcggag gcatatactc 180

cggtatgggt aaagagatat gggtagacag taggctaggt gggtaggggt agtactatct 240

ttgagcacaa aaacacgcag ctggccgccc cgcccggctg gacgacacga gacgcaaagg 300

atttcccgca gctgcacctg caccgtaccc aggcttttga tccctccgaa tcttccgtgt 360

gagccctgct ttcctttccc cactcgcggc atccctatcc acttctctgt ggggcggggc 420

ccatagaggc ggggccatca ggaacaggag aggggcgggg acagagtcgg gccctgcaac 480

aggcgacagg ttcgggtttg tgcccttcgg ccattcgaaa gtcgaaacga gaggcgcggt 540

taatgggcgg gtcccacaaa ggatcccctg tggccagtcg ctctctgtga cctcgagcgt 600

tactttgtga tttactagtg cactctgtct ccgtttcaga gataaaacag ctacgttagc 660

cgtctacgtg cttaaccttt agccctaaca tccatgatgc cgaaaccata cgttacatgt 720

agatatatcg catgctatgt atatagcata tctagatagc gcatgttgtt ttatacatca 780

tttggagcaa gaaaattgta ccaagaagat attttatctc gtttttatcc tgtacttgtg 840

gcataagtga accagcgcat atgacaacgc ctaaatttca caaaacatag caactattat 900

agggacacgt acaattcatc gtcacaaaat gtttgtcatg caaagcttcc acaccaaggt 960

acctacttca tctcatactc aaggacattg tagctagata gatatttcca tatcaacaag 1020

tcacaacaac agggaaaaag atgcatactg ctccacgg 1058

<210> 2217
<211> 1154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199109_G1, chr5:168845116..168846269, Cluster 13

<400> 2217
taaaatgaaa atgtctaaat tcctaacaat accttgatgg atccaatgcc acgccggaga 60

agcagatcgc tgcatcaacg gctccgggtg ctgttgaagt caccaatcta gcgtaggctc 120

gctgaccaat aattattgcg tggtcttctc ttttatcgat gaccgctcag cccgtaacca 180

ctagctgcgg caatggcaat atggcattgc atttgcacgg acacggagac ggagacaaga 240

aatgcttgcg cgcgagagcc caccggctgt gtgttgggct agtgctgctg catgggccgg 300

ccagcattca gtatagccga agtgatggcc caaacaagat cgcgccaatc gtgctaacgt 360

ggctatggag gtagctgcgt cgcgccaaca ctgacaagca gtgacgaccg acctgacccc 420

gtaccgtggc tagcatacaa cgaatccact cctagcttct ggtcggttcg tgcaggctga 480

aacagttgat gatttgagac gtgtgcgcaa tgggtcgtcg tctcggttcg tgttctctgc 540

ccgtgcgtat acatgtgcag gggtatatat gatgatacat tatacccaca agtacgagat 600

cgatcgatcg gtcgtcccgt ccgtacgttc ccggctgcca tgcatgatga ttcgcttgca 660

gaatcctctt gaatgcaagg cgaatgcatc attcgtttgc tagctagcta gctagctata 720

catagggctt gtattgtagc gacggttgca ttgattacat ttttggcacc cccctctctg 780

tttcaaaaat aaaatacata ctggttaatc ggttatggtc aggataataa ctgactagta 840

ggtgaaaaca tacttgcttc gtcgcgcgtt tgaagttatc tgatgtttta atatttgtag 900

gtacgtagct ttttttctat atcttatagt ttagaacgga taaagtagtc atcaactagc 960

ttgtattaat ttaaataatg tcatgtttaa aacagtgcgc gtacaagatt attatagcct 1020

catggccatt acatgtttaa atgagaatga cgaatcaagg ggacagaaag aagagatgtg 1080

agcgcaagaa ggggccaaat gactggtaag atttgtgtga gttagggttt gtcttgccga 1140

ttttcatact ctac 1154

<210> 2218
<211> 1245
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200531_G1, chr5:176984055..176985299, Cluster 13

<400> 2218
gttttggtgg agctcgagcc atgagtccgc tttgctctcc ctacccctttt gtcccatgtc 60

ccatgcccta tagtgatcgg aaagtgcatg catgcagcga ggggagaaag tacccaaaaa 120

aaaggaagaa gaaaagggac gagcggagat cgatcgagta cgcgctcacg gcactgttgc 180

tggaggcgtc accaccgcgg aagcgtccag cacgctgctt gtctgccgcc ttccacttgg 240

ccaacgcggg gatccgatcc ccacccatgt caccccgttt tgtccgtgcc tcggcatcgg 300

catcggtggc gccacgccac gccagcaccc gcacagaaaa aggctcacgt tgttttcagg 360

tccagccacc ggacccgcgc gcgggctcat catgagcaat cagcacgcaa ggaggctggc 420

tgggggagtt agttggttca cctgacctgc ttacatatta aaaaaaaaga tcgtgtgccg 480

ccacgcccga gtcacgcgag gacacgtgag ctagcttccg gccccgtttc tttcagtcgg 540

gaacagagag gccctctaga tcctcccgtc cgtatcatga gcaatcagca cgcaagtaga 600

tcctcacgtt attttagcat tatctcctcg cctttgtttt actaatctgt ctcgtacctt 660

tggactttta tctgctcttc ctccagcctt ccactgcaag gtctttttcc agtcccacac 720

ctttggatat ctcagataaa gacgcatgca tgcgcaactg attcaaatta aattaacacc 780

ttcctttctc taacaacctt ttttttgca gtgaagtgta tgcccagtga tttgtactgc 840

caggtcgttt gattggatca cgtgaacgac tgttcatctc gtgattcaca aggctgtata 900

tatggagagt ccaggctgac gtgatccggt atcggtataa gtggcggctc aaagcggggc 960

tgaacaatgc tagtgtgtgt gtgttcgctt acagccgcag ccacaccgca caccggtgat 1020

cgaggcaaaa cttacggctc ggccgggcca gtaattaatt cttctccaac ctaatctatt 1080

ctggtgtttc ggatttaatc tcgcacaact tggtcgatcg tctgccaaaa caatccgatc 1140

gaagccagca gtagtaaaca agtccttcaa aacacacact ctctctcttt taccccgaca 1200

aatgcacatg atttctctat gaagtcttct tttgaatgga aacga 1245

<210> 2219
<211> 1004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201748_G1, chr5:184159848..184160851, Cluster 13

<400> 2219
gcattgcgcg gcacggctgg attgcagtgc agctcagggc aagatcaaga tggccggccg 60

ttgaagattc ggtgacgggt gacagaacga acgtggcgtc actgaaagag gaacgtccag 120

tccagtccag tccaatccag ctcgcgacgc gagcccgatc tcgtgtccaa tccaatcgcg 180

gtgcgtgtgc gtgtgcttgt gcgtgcggcg aagcatgcat gggatgccgg ccggggtcct 240

ttgtgcggct ggatcttgct gccctgttgc agatcgttat ccccgcccga taagtacgtc 300

cactatctcg cccgatattg tctaggggct tgcttcatct tgagcccaga gcatgagatt 360

cacatgctcc caaattaaca agggccggga ctcatctcct gcactactgc gaacgttcga 420

gaaggaccgc ccccctccaa gatgaactgg gttccagatc ggctgcgatg ctacttgcct 480

ccactgagaa ccccgagggc gacacctcgt tctgtctctc ggcgatagac aaatgatgcc 540

ggcttttgac ggacggacgc gaggcatgtt gtcacacaaa caaatcttag cgttttccgt 600

gccagaatcg ctggaaagga ccgctcgcgt acgtcaaggt ggccgtggaa gaacactatg 660

gaccacatca cctgacagcg ccatcgtcgt ggatcccggc catccggatc tcggagtaga 720

cgagaacgag accgcgcgcg gcgagagcga gggcactccg cagtggggag ctaactgcac 780

gatggcgcaa tttgtctgct ggcggggcgg gtaagatcgc gagaagattg acgccgacga 840

tatcgcttct tttgaccgtg cggcgccggc ggcagagcta ggctaggcta gctgacggtg 900

gaaaaaagct tgtccgctgg gtagccaagc cagccgcaca cgtccggttc tgcgattttt 960

ttctgccatc gatcggttac tagaagaagg agaagaagat acac 1004

<210> 2220
<211> 1196
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_201750_G1, chr5:184161942..184163137, Cluster 13

<400> 2220
ttccgctagc taggatctat ggatcgcggg tcaaaagttg catccatggt agtactagta 60

caaaaagttg gcaatgatgt ccacttggga tcagagctag ccagtagcca ttaggagtca 120

ccacactcac cagccagcag ggccgcctcc tgtgaatgac acggtcacac acatacggtg 180

atccagtatc gcggaagaga gagactctac tctcaaagga aaggaaataa aagcagacgc 240

cgcctgatga gaaacccttt ctttctttct ttattatttt cttctcaggt ggtcacagtc 300

gctgttgctt gtgcgactgt gtgtggcgcc cattgtcgtt ggagctgaaa acgaacgcct 360

tttgcacgca tcgtcgtcta gttgtcgcgt ggccacgctg gcgagactcg tcgaaaggga 420

tatcggcggg gcggtgccgc ctttccggtc tcggtgctta cgtacaccat ggccgagatc 480

ggcgatccgg cgggtctaga cggcttcgtg ctcgattggg ggcggcggtt ccctagctag 540

actttgtgta caccatcttg ttggcacggt tatcacagag gcgtaagact aatctttcat 600

ctgattttga ttggtgttcg catatcgtga cacgtcagca aactgaatga atgtcatccg 660

cgattagcta ggttgggacg gacgagacct cattctcttc cggtgcggcg cagttttgag 720

tctaaaggca cactcatgtc atctagatgc atgcccccac cccactccac ccaaccgggc 780

cgggatcgat agaagaagat tcgttgcgac ccaaacaaag caggcgtgta tcgcattgct 840

tgcctgcatg caaccagcta tagctagtag gccgccgcct cggcgtagtt tttacgacta 900

ttcggtgcaa aaaaaaaaag ggactacgac ttcaatctgt acttgccacg ataagttgga 960

actgatccca cacgactttt tttttgtgtg tgcatgcatt tcttcttgga aaaactacag 1020

agctatgcgt tggggtgcat gcatgcgtat gcatgcatga gcagacacgc ccacatgctt 1080

gattgcccgt caacccatac atgggcattt attgacgatg aatacctcat agatcgtatt 1140

taaacacaac tttattagac cattgatttg actgtactgc cttcatgtat aacctt 1196

<210> 2221
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202854_G1, chr5:190033072..190034098, Cluster 13

<400> 2221
aataaaatct agtaggagac ccttccctca tgtttaccta aaaaagctag cttggtaaga 60

catcgtagat gattacgacg caagcagaaa tgatgacatt ttgtcctaac cacttttgta 120

ttccgttttc tatggtgtcg catggtgcaa tggtgatagt ggtattgtgc gtgtggggtg 180

acaaactagt gatgtttagg atgtgcttga cttagttgtg gactatcgaa aagcggcccg 240

gggttatgag ccaatagaaa gccaaaattt tgtcatatat atctcatcat ctatattttt 300

tctaaccata ttatcagaat tagtttccac caatttttc ctaatactct atttttcaa 360

taaaatctag tatgagaccc ttccctcatg ttttcctaga aaaagatagc ttggtgcaag 420

acatcgtaga tgactatggc acaagtagag atgatgacat tttgtcctaa ccgcttttgt 480

attcggtttt ctatggtgtt gcatggtaca ctgctaacag tggtattctg cgtgtgggtg 540

acaaactatt tgtgtttagg atgtgcttga ctcagattgt gggctgtcta aaattagctc 600

gaggttatgg gatggtagaa agccaaaagc catttagctc aacatttttg acttttaaaa 660

aattgccagc tcctctcggt aataagtgaa cctcccccca tcagctttgt cttctttctc 720

cagatggatc ctcgaccgag gttgtgctcg tccatggcga tcgagtcgag ctcgcctaca 780

acaactgagg tcgcgctcac ccgcagcgac gaaggcgtgc ttgcctgtgg cggccgaggt 840

catgctcgcc tgtgacttct gaggtcacgc tcacccatga cgacggacct gagcttgcct 900

atggcggtcg aggcgacgct cgcccgcaac gactatctaa ggtggtgggg catctgcata 960

gaagagaacc tagcttgtgt gaaaaaaaat cagatacgcg gacgaggaaa gaagagaaaa 1020

aaatgaa 1027

<210> 2222
<211> 1354
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203149_G1, chr5:191859499..191860852, Cluster 13

<400> 2222
gaaagaaaag aaataggcaa tcatgcaggg ccgggcccgg ctaatggaac gttgaacgca 60

tgcatgatta tgattactgg gggtggcggc ggttacggcg gccacatctc gcatcggtct 120

ctctctcaaa tgcgtgctga cggctgggag cttccgaaag ctcgctgcag gctgttgaca 180

gtgaaccact cgctgatcgt gactgctatg acccaaattg tgagtctcta ctctctagct 240

agtaacgcta caccctcctc ctcgttcgtt ggcgttttgt gcctgcagag ttttggcacc 300

acgcgctagc taggctgaat actatctgta cggtgcaaga atttttagca gtccacttcg 360

tccaagttta gatgccaaag tatttttttt attgtttatc tgatactgtc aaggtccacg 420

atgaaattca gtgatgggcg tgcttaaact gccgaagatc gatatatcta cctgctggcc 480

cgtgttggac tggtttgcat gcgtggatta ttggtggata gatttcattc acgtcagtaa 540

attttgctgg atcgattcgg accattcgga tgattctgtt ggcgatcaga gttcagagca 600

tcaggcgcta cacggccaaa ttaaggacgg tcggcgaggg cagaactcat gatgatgccc 660

gtggacgatt gcctcctccg tcagaaacac gatcacccgg acgattatgt tggaccaaac 720

ggctattgtg aattcgccac tgaaagcggg atatgtccac ataattttcc actacaaatt 780

gctgcgaacc cttgatcctg ccattggtga ctgggttatc aacctctcct actaacacgt 840

tcatcttaca caaatactct actctttcct gcaccgtata gaaagatcca gtaaagacag 900

gttcgaaatt gttcgaaaaa tgtgaaacca aaaggcaagg ttctggctaa gtttgggtaa 960

aaaaaatacc agaaggcttc accagtagaa ttggaatcca tgattcgtct tcctggtttt 1020

ttttttaatt tttgtagtac aagaaaagtc ggaacaattc aagcaagtcc ccgcgaactg 1080

tttgaagttt tgtcgaaaaa ggcagaaagt ttgcagctga aattggctgt gatttcaggg 1140

attgtcaaac aaatggattt tcacggtcaa actcaattat ttaaatatca tgcaaagtac 1200

atctttggtg aaattggagg aatcccttta aaaaatatag ttgttgaata acttggactc 1260

gttacgacga ggacgtagat tgttggcaag caatcaaaac ctcaaagata tatcttatat 1320

catttttatc taatatgatc tacgctcctt aaac 1354

<210> 2223
<211> 1398
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204053_G1, chr5:196751412..196752809, Cluster 13

<400> 2223
cggattgtat ggcctatctc tttagttgcc tttatgtcgg attctagtat gttggcccct 60

gtctctggtt gtacgacgcg ccctaaccat cacatcatat aactcatgct ggtaaggatg 120

tcagggctag ggcaatcact gcttggtaat actcctatta attgctgctc atctgctgca 180

aatcgcagcg acgaaaaaaa caataactgt cggactacgt acagttcgct ggctgctctc 240

actgatgacc ccttagcatt gaattggcat gtggaactgt actcgccgca cgagatcact 300

ataacaaaca gttttgtaca acagcctgat tattactact gctatattat tcgtcaggga 360

gagtgtgtag tgtaccagca aaaagatcga cgcacaccat aatgtgatcg cgtaggctcg 420

gcgacaagca cacagtcctg cacagcagat taaatgcatg ctgcacgcga tatcacttcg 480

cgctgcaaca ccagcagcag gaagcaacaa aacggagtgt tcttgtgttc gttaatgtga 540

tcgagcgtac actagcgaca cgcatcatca actcgtacgt acgttgtacc acgagggcgt 600

tctgtaccgc ggccgggtgc atggcgggta gttgttcaca aacccggcct gaaattacgt 660

ctatctgtac ctatcgccat cgacgtgcga cagatgaatt ttcggcttgc accacgccag 720

ccgtgcgccc acggcatgca tgcatgcatg ctatgcggcc ggctctgact ctctgagggg 780

catacgcata cgctggtggc aggcctgcct gcatgcatgc gtccacgcgc gcgcaccggc 840

cggatcggag ctttttttg atccatgcat gatagtcctc ggcgtcaggt tctcgcgcgc 900

gcagcagctg ccgatccgca gctctggact gctctctagt ctagctagag agaagaagtg 960

cggcgcgtgg ccgtcggatg catccagcag aaaaaggagt cgtacacggc cggaaagcat 1020

gcatgcatgc atggccgcag gcatgcagta agcagggttg cgcatggcat ggcgtctgat 1080

gctgcatgcg ggtgcgtggg aaggacggag gcccacttct cggtgccaga gctaaccaca 1140

ccgagtaaga cacgcacatg acatgctgcc tgcctgtctc tgtctgaatt ctctactcta 1200

cgcaccctct tgcatgaggc catggtcctg cgcccatgcc cccagatcag gccggccagc 1260

aggcctgatt gggtgctgga gcttgctccc gagccagcca tattgttgat gcgagggctc 1320

ataaggacct ttgtcagccc ataattggaa cccgtacatg gtccaacctc gtcaccatta 1380

tcaacacccc tttacatc 1398

<210> 2224
<211> 1374
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204729_G1, chr5:200673021..200674394, Cluster 13

<400> 2224
taccattatt ccactgtaca aatcctcaaa attgtacatt tataaaccat aaaaatgtgg 60

tatactagta atgaaaggtg cacactcatt tagataaact actatataaa ctttcttctt 120

tctatacata tccaaattat caggtgagtt taagttcaac agggtgtata aatcaaatta 180

aaatacttct agttcaacaa tcagatgtac attattttaa tatcagttgg taacgtcgtc 240

cgaaattaaa ggtgtccgta cagtgggggc agtgcaggac acacaggtgt ccggattgga 300

gctggaggtt ggtcggagcg cggcgcggtt gattggtttc ctagctggga cgtacggtac 360

ggctacctcc gcagggcaag agccagggcg accgcgccgc ggtctgggac tgggattgac 420

acgccagatt tggatcgtac atttttcgcg ctcgcgcggt ccggtccgca gggcggcgcg 480

ccaccgaccg gtgcttgcat gtgccgacgc cgtctcagct ctcaggggct actctacgtg 540

cccggccgct agctggcctg ccaacatctc ggtaacccgg catggatgta ggcactagga 600

aggtagcgct gctgtggttc ggcccacggc cctgacaaaa ccttctagca ccatctgctt 660

gtgcttggtg catagcatag taatatcctc ctcctcgagt gcgtgcatgt aaagccaaat 720

gcacatgcaa ctagcaggat actactagga cacccatgca cggcttctcg atcggcggca 780

gcagaatcta tccgaatcaa actttccatg ctatatatat gcttctagca ccttttccct 840

gttgacgaga catagcgcta gctgcatgca ccaacaacaa gtacgggacg ggagctgtat 900

atatcacaga tattcctgac acgtaacact gtcgtcgatc tttatcgaac acgcacgcac 960

gcatgcactt ccgttttgcg ctgtggcaga ataatgtcgt atcttaccag atctctcgcc 1020

gagataaaaa aaagaaacgc atatcaaatc aaactcttac gtgaagcatg catgatacgt 1080

agctccgagg tgtagaaaga taggtatagt actgcatata tacttgtacc ccctgcagct 1140

gctagtagct taattgtgca atgcaaacga acttgttccc atgcatgcaa cgtctctaga 1200

gtctagaagg tgaatgccct cagcgatgac ataagaggag aaaaaacgag ttgggtatac 1260

gtctagggaa cttggataca catacacgta cacatacacc cctcgcaaaa ttcctgaaat 1320

ggtaaaaaaa aaagcgggca tgtacgctgg ctcgctgcca cttgtacgtc actt 1374

<210> 2225
<211> 1212
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205343_G1, chr5:204538959..204540170, Cluster 13

<400> 2225
cggaactgca ctatgatttc accagacgaa atctgaggca tgactgcttc tgttagagga 60

ggtaaggacg cgacggcatc agtggttgca gcttctttcg ttgcaggtgc ctcttttgtt 120

ttctttttag ccatctttaa cgattcgtcg tctttgatcc tcgtttttgt aggcttcctt 180

gggagttggg accatcaaat gcgagaagcc tggagtggga ggtgcagtcg actgccgagc 240

catacatcct ctctgttgcc gaaacactca aaacataggg aagacagaac aatgtttgcg 300

caagtgcact gccagacttg tctttttta gaatgtgtag gcaatacaaa tattactttg 360

gtattctaat tcgttcataa agcgattatt tgacaaatcg gcaatgtgag gaaaatttga 420

aaggcattta tcgcggggga actaccagaa atgtatgcta agttgctaac tcatctgcta 480

gtcaatgcgc acaaggaatg gtcagtagta ctagtaccta attaacctaa ctgaatggga 540

tatcgcttca tatttccgct gtgttggcct tgaaattatg atgaatttac ttatggtttt 600

gatgtaccaa atcctccaag ttatggctga gggatcttgc ctatatgaac ccctggacag 660

atctaccatt gcaaatgcag tattaggcat ttggacttga atttcgaagt aggcagagtt 720

aagaatacaa tagggttgtg tgtgttgctg cggccggttc ggggttgctt ggttcttttg 780

ccagcccaag ctagcgaccc cagaattgcc cagccaccct atgcaagcaa cggaagggca 840

gcaagaatcc tcgcaagttt ccgtagcttg aaagcaggag gtacgcacag tacgccgaaa 900

acgagagcga ggtacacaca gtatgacagt acgaacaaag gatgaaagga ggaaccgatt 960

ctctcctcac aatctgctta tcccctgctg cattttggc gttgagcaca gacgccagaa 1020

ggtaaagact gctgatatct ctctctactt ggtgattcgt ttcctggttc gtcgattcct 1080

tgggttggcg ctccttccgt cttgtttttt tttttaaatg atgatgtgat ggcgctcaag 1140

acctccgaaa gaatgggagg gaggtataga agggagtact agaagaagaa gaaaaaaaat 1200

gaatgcagta gg 1212

<210> 2226
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205657_G1, chr5:205824255..205825270, Cluster 13

<400> 2226

atatataatc tggaaaaagg aagtgaaacg aaacaaaagg aagtgtagga gtaaaggctc 60

ggtgcctgaa tttagttagg cacgggagac acggcagcga gcgaaagtgg tgccgggtca 120

gtgatcaggt gatgggttct gagttctgac cgcggacgct tgtttggtgc cgatcgctag 180

cattcccaca gtcttcctgc tcctcgcgcg cagagtctct ctctcagcgc agtgcagcag 240

ccccgaggca ggccggtggc atgttggccg gtggcatggt gtcccctgac atcggaagcg 300

gaatgccacg ccatgtcgca ggcgagtgag gggggggggg gggggggcg ttgagagcgg 360

aaggacgcag ggagaaaaag gcagcgttgc gttggccatt gagtacttta cttgggcccc 420

tcctccccgt tttgttacta agtagctagc tactagtgta gtttcaccac atgggcggca 480

ccgcggcact atcatttgcc tgctgcttcc cgtccgccac gccggcgcgc cggccatggc 540

catgtccccg ccttcctttc ttggaccccg ggaagaaaag aaaaaaaaat ccctagcgat 600

catcaccccc cctgccacag cgtccccacc aatgcgctac gcctgctaca cgcctacacg 660

tacaccgagg tttgctgggg gcactgcgat tgatgtgacg gccttttgt ttttgctgta 720

cacttcaaga gagaaaaaaa cgcatctcaa gagatcatcg aatttctgcg gatgctcgat 780

cggcgacgag gcgcagcagg ttggtccggg aattaataaa ttctcgtttt gtcgctgttc 840

tcgtggacgg cgtcgatact gctactgctg ctagcactag catccacagt gcacgctgga 900

gcgttggaaa catccattca ccgacgtccg tgatcccgta gcactgtgtg ctcagcagct 960

caggtgttgt tggcgtcatc tgtacaccaa tcactagggt tactgacctc tattgc 1016

<210> 2227
<211> 1175
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_209732_G1, chr6:13190096..13191270, Cluster 13

<400> 2227
gaattggctc gaagtgcttc ctatctgaag aaaagggatg gcgtgggtcc ggcgcccact 60

gcggtgagga gactggcagg ctgactccgg tcgcctggct tgtcgcaacg cggcccggac 120

agctgcgcgg cactcgtgca gtgtccgact gcgcggttga gctccccagc gcacgacaag 180

gccgcagcgc cataaacagc aagcggagtt ccacagcggc cacaacgtcg tggcgcggga 240

ggaacagcgg acccgacgcg atgactccaa cgcccgcaac gtcgcgacgc gcatcgcgtg 300

tctaacagct gcatcggaga agcgaggcag gagcagcacg caggcgggca cagcggcgcc 360

cacgcacgac ggtcggtgac gtgacgcgtg cggtgaccgc gaacacagag ccaaaaaccg 420

acacgggtgc tgtgcatgct ttttaaagca tcgttttcgc ccaaaccagg tcacttcgcg 480

ttcatccaac tggacaacgc tgaacttggt acattaagct actcaatgga gcatcgtact 540

cgagccatga tcaaccagag aaggagacag aggcacgtca agttggcact gccaactgcc 600

ggctgagagc gcgcactagc tgatccaaca gcgttttctc gagctcttga ggaatttatt 660

aagcgaccaa aacccgagct aacccaggca acatctatac cattgcgaag cactcactgc 720

gacgcaagcg tttaaataaa aatacagcac tagtgtttag ctaggttttt cgcaaataat 780

tcatcaatat agcattgtcg ctgaaatcca acacttaggc aaactccgcg ttcggagccg 840

aaaccagcaa taaattccat tttcaagcta ttaaaaatgc taactagcaa aaatattttt 900

caaaataaaa agttgcatcg tcatctataa actttatatt tcaactttta ttcacatatc 960

atacatatgt cttatattat ttttgcttga taaaaattaa cttgaagcac tatgtattat 1020

aacaaaagct atagaaattg tttttattta acatttcttt tatcttttca agccacaata 1080

aattatttat acacattatc acaaatgtta acatataaac atgatgcgca tgccatgatt 1140

tgatgaattg ttaacgtggt aacaccgagg gtgtt 1175

<210> 2228
<211> 1117
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_220850_G1, chr6:85193335..85194451, Cluster 13

<400> 2228
tgatctggca ccatccacca ccgtcgtctc atgtgccctg ctgcaacgcg cgcgacccca 60

ttcattcaat tcggaaggtt caggtccagg tccaggcagc aggcaccggc agccgagatg 120

gctggctctg gctctgggcg tctggagcct gctcatccat gcatcgtgcc tgttgcctcg 180

ccgccgccgt ctccggtaaa ctagccggcc gggtagtaag cgcgtgagag cacggcgtgc 240

agagagacag acactgcttg ccggccgtcc ggcacagtat ctcctgtgca ctcactgttc 300

catgtaaacc agcacgcgct tgcaacagtg aacgcacgca tcatctccat ccatgcatga 360

gggatgaggc aatgagctgc tgatgcaagc aagcaaggga atcggagcgg ggcgctgaaa 420

gagaaagaaa agccatgcag ccgcgcgcgc actgcccgag gccggctgct tgcgaccacg 480

cccgcgccta cctacctacc taccacctct agggtagggt agcctctgct gtgtcaaggg 540

cagcatacaa ctccaatcaa ctagtacctg ttagagcagc gaagtttcta acgtagtagt 600

gctgaatttg tagaaaccat caaagaaact ggcatgtttc aataaactaa tctgagctcc 660

cgcgcaaggg aatccttgtt gttgcatcaa ttgcgggatt gatgactgct gagacttgaa 720

tatgatggaa ataaacataa caagaggcaa cgaattaatc taaaaaattt ggagacagtt 780

atgaaaccgt agactaaaat tattgtcatt ctttctctct ctctacatga atccaacgga 840

attacgccgc gcgctacatg aatcatactg ctgcctaggc acctagctgc tactatatac 900

ctaccctata tattaattgt agctgtggac caattaatat aactaaacct catcctcatg 960

ctctcgccga ttcgtgacaa attaagctgc taataagtag aacagccggc atgcattgca 1020

tgtgagaagc aggcatcacc catagatcat cctttatact actacaaatt aaagttgtct 1080

ccccccccttc ttgcattgca ctgggaccat ccatcca 1117

<210> 2229
<211> 1217
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222471_G1, chr6:95701261..95702477, Cluster 13

<400> 2229
tgtttctcgt atgtacacac tgttctattc aggtgggcta attgtataag agagcgacga 60

catggactta gactaattgt gggataatag aacacaactc ccactggcaa gcatgggtgc 120

caattagaga caaaaccatg aaacatttaa caaacaaggg tcttccttta gtaggtatga 180

ggaactatat atatacatac acactaggaa gatatacctt tagaggttgg taaagtgttt 240

tataagacta tcattaaaag gcaggcttgg tgggtccagt tgaggtctgc ctagcattcc 300

taggcccttc accctagagg ctaagattcg aaccaaccag gttccaggat cttgtaaaga 360

tctcacagac actcttatga tgcccctggg atggcacgat gctggtgcca tatgatcccc 420

taaccaagcc aacatgcagc gcttggcagg tgagataaag ctctcgtcca tcatatttat 480

tgcgtagagc gatgttatgg tcaaaagcgt gtcactattg tcacacctaa agatgaaacc 540

acactagcta aggttgcact cgtacccaca agcttaataa atggtatgtg actacaccga 600

ataccaaata tgtcatgctt gacgacatgg actctcatac ttgtcactat gcacaacatg 660

ctcgatagtg tggagtccct cttccatatt cacatggtgt ctgacacccg cgaggaagct 720

aaagaacaac aacaacaaga agaagaagac atcgctatgt tcatataatt gtgatctaga 780

tcgacacgac atctatctca agccatgtag tctcattcca cattgcctgc aacaaggtat 840

gacatgtcat ttgtgtgctt tcgtgcacca tccatgatct gacgggacct ggttcttgag 900

gacttatcct aggctctaga gctacaacac aatgctccac ttcctcctta gtcacaacct 960

aaagatctat gatgctattt gcactagcaa catgatccat agggcatgca ggttactatt 1020

gggccccgag tgcaagcatc attgcaacaa aagggcgata ttctgccact ccctcatgaa 1080

atgtctctac atgcatgctc gactgcatat agctatccca ccccataacg gctaggtgca 1140

ttgcgatcac atctacactt caccatgcta tgtggccaca caagttcctc gcacacctct 1200

tggattaatt ccaccat 1217

<210> 2230
<211> 1232
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225454_G1, chr6:110800379..110801610, Cluster 13

<400> 2230
aattcgtgaa ttcatagcat gagtatataa gcatgccata aaatatttaa ctgattttac 60

caaaaacaat actctagatt ttttttttca caaatagata tatctctagc ttggtcgcat 120

tggaggcagg aagaataatg gaacaatctc cgtgcataaa ttttagcgca caaagactgt 180

gggtcgagtt aaacaaagcg aggaagaagg agaggacacg ggcgcatgca gacacggacc 240

cgtatatact ccagtccagt agaagggcga gccgacacgc gggcagcccc cgcatgatta 300

cgttgcgtca aacaaacaga acggaaaagc ccacgaagaa tccaagattc atcatctttt 360

cgcgcccgcc cccgcttttt tttttttgt tttctaatga gcgtttgtct cctcgcggag 420

ggggaggggg aggaggagaa gatctgggac ggcggttgtg ggggcgggcg aggcgaggcg 480

aggtagtacg ccgaggtacg gcgaggccgg catcatggct gccgtgcgcc ggggctcatg 540

atacgccgcc tcggggctgg tggcgggaac cctcgcaggc agacaagccc tcctggcctc 600

gccagggacg atcggcccgg atcgggggca aaaagcgcac gcatcatttg cctagggaga 660

atgtgccatg ccactcactc actcacccat gtttctggca gtggcagtgg cagtggcagc 720

gtcgtcttgt tctttcttgt gtgtgtggcc gttccccgcc acggccaaat gtttctcaac 780

ctggaattgt ttgattaggc tcacacggct tgacacgtac gaggggtaca agcaatatgc 840

ttttgtttgt ggctgtgcaa gtgcggagga cgacggcgtg cgcagaccaa gttgaccttg 900

cgaccaaatc taataaaatg ttaaatcgaa ttgttccatg atcacaaaaa ctcagatgcg 960

aagaggtgga tagattatta ccgataggct ttgtcacttg agaagacgtg gtaaatgact 1020

gaaccttggc gaattgccag gaccagcgga gcaatttatt acttgtttca ttcttagaac 1080

accaaatctg gaagcaccgg tactctctga cggtccgatc catggatagt ccggcctgtt 1140

agcctggacc gtctgagatt agatcaattt cctggaagac tgatttgtcg cgagatcttt 1200

tttatttttt gtgatatttt attacactcc gt 1232

<210> 2231
<211> 1071
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226475_G1, chr6:116772410..116773480, Cluster 13

<400> 2231
ctcgtgctga ccgctgttta aacatctata atcatgcaac gagttaattt aaaatagttg 60

ttaggggtta tttaaaaaaa attactcggg ccgttgtctg ctatgtctat ttttccgcct 120

cctactagtt gagaagccaa ggcaatcctt gagagagaga gctgggattc atccctagct 180

gcagctggca gagtggagag agggggagcc ccttttttctc gtgacgcgat ggcctgatga 240

gagccacaat aagtgcaatg gaaatgacga gtggagagag agatagaaac gaactggcct 300

ggccggagta gcaagagctg cagtaacagg cagccagctg ccttgcgtgt ttgtgtgcgc 360

cgggcgaggg aggagcggca ggcagcagca gaattgcaga cgcagcagct cagcatccgg 420

agcctgtccg tgcccggata aacagggaga taggacaaaa tctaaacgaa ggtcgcttcg 480

ccttgccccc gctggcccgg cccactccga gcccaatccg gcgctgaacg gaacggagaa 540

ttctccctcg cttctgcact gctggccctg gccgctgacg ctgagtgagt gagtgaggaa 600

agaccagacc ccgtctggca gcgtgccgca gatgctagtg cagcagccgt gcagtgcggt 660

tccactccca cacactcacg gctgccagct gccagccgta gcgtagcggc aggccgcagc 720

tcagctgggc actcgatcga tgcgcgtcac ggcattgtaa acttttacgt gcacgatcgc 780

ccacggcggg atacagagcc atccaggttg cagtgcaggc ccgccatcaa tggctctgcg 840

ctgcctgcat gcatatgtgc gcgtgcatcg gcgtgcgtgc taggcccgcc ggactcgatg 900

ccgggagctc ggtgccgctg gctggctgga tatcatgatg gtccactact gcctgcctcc 960

tgcacgttta tgttgccaag gcggagggcc gacgcttctg tgtctgcgac tgcgtccgcg 1020

accgctggtc cagtgctctt tgtcgttgag gctggccctc ttaatcactg t 1071

<210> 2232
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226609_G1, chr6:117585901..117586941, Cluster 13

<400> 2232
tttcttgtag taaccgagtt ttagaggcaa caacctcatt ttcgagaaaa aaaaaatgaa 60

attgatgcat cggtgcctct tccggttccg ggcaccatgc atttttagg tcctaaccaa 120

atacgccctt gactcgctgt gtctcctgtg attctcacgg ttggcgacac tcgcatagtc 180

gcatgcgttg aattcgtcgt tcttcgtctt tgcgaacaaa atcgacgttg gacattgcag 240

gaggcattca cacacaggac actaccaaac ctggagctcg atcgtgcgtc atacgtggac 300

tgcacagttt gacccccacc aaccgtgctg ccaagcatcc atgcgcccac acctgtcacg 360

ccggcagggt tcagggcttt tcaggcgctt caactttgcc gggccgcaga tgagatgcga 420

gaaccctcct ccgccgcgcc atgtggcacg aggcgtctcg ccgtccggcc ggcacagcgc 480

ggaactccgc cggcaaaaaa ccatcaaggc ctcgagaggc acacatgatg ggtgtggaaa 540

agaagaggaa aacggccgga cgacgatgga tgacatgcat ggtgcccctg ctggccgctg 600

ctgccgccag ccgccacgac aggagagcca gcagccgtct ctgcaagtgc agccggcgaa 660

aacgacgagg gaaaggaaca tccgggcagc agcacagcag taggcaacgg cgcctttgct 720

tgcattgcat gtttgattgg gaaacggtta cagattcccc tggcaaacgg accgatgcgg 780

agccgacgac cagccggcat aagcactacg tcatctgcag ccagggtcag ttacgttggg 840

ggtcccgaaa gaggtcacat ccgtgtgtcc ggtaggtcat acggctagct gtgagtgtga 900

cgattgcggc agggtttggt agagcggagg aacgtgcggc cgttaccgcc gaaattacaa 960

gattccgttt acaagaaatt agacgattcc ctttacaacg agtgacaggc gagtagctag 1020

agtgccgagg tgaggaacta c 1041

<210> 2233
<211> 1375
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229111_G1, chr6:130149524..130150898, Cluster 13

<400> 2233
caagggtacc ctctaggaaa tatggaaagt ttggaatagg aaaatctttg aaggcactga 60

agcttctgtc aaccttcgaa cctagtgttt aaaaaaagaa gctcgtcagc aaagcctgca 120

ttttagagat atcgatgtcc tgctattctt ttgatggttc gacaacatgt agcctttgtt 180

gttttgtttg tgtttaacta aaatttctat ttttggttat aaataaaaga actaaataaa 240

atgaatgttt taatggccaa atattaaaaa taggttgctt gtaatttaaa caatagaaaa 300

ttatgagttt ctaaaaaata tctatagtta attatattta attgtttgca tccactactt 360

taaataaatt ttattaagtg aaagtaaatt tataaaattc gtgaaaggct cgaataggtt 420

ttatcctatt tctaaaataa agtattaagt cttgtttgaa aaataaatct aaatctaaat 480

ttggaactat gtttaaaatc acgcagtttt aaaattttag atggttgaga taactttaaa 540

aacttacttg actcaaaata tttgtattta agtttcaaac tgagttacag tatttgaaaa 600

tgatagaaac cctcctctct ctctatttag gccgtatctg gcccgcacag cctcccactg 660

ctgtgatctc tctaggcccg catctgtcag tcgtgcggga agataaccca gcaggctggc 720

ccaattcccg tgcagaagcc agcatgcacc tctctctctc attcactgac agctaggtcc 780

ggcgctcctc ctgctgacgg atggacccta ccgtcaggga cacacccttc ctttggctcc 840

ctccccttttt cgcctgccat cgccgcgcgc cggagccgcg cggcgcgagt gcgcgaccaa 900

gcacctgcgt ggaccaagcc cccatgctcc cgctgcgccg atcccatcag agcacgccag 960

atcttctctc tcttcatgct ccccaaccga cgcgatcgca acgtggtccg ctctatcgtg 1020

cgcgctaggt catggccacc atggccgagc tccacggccc tccttttctc cctcgtctcc 1080

gcccctacat tcctacaaga gccccctatc cggtgcctag agtgcccagg cgcccagcgt 1140

cctcccatac agcatattcc actccagagc tccaatcacc gccgctgcca ccattgatag 1200

ctcctacttc tccctattcc gcttccggcc atctccgttg cccctgttgg actctacaat 1260

tttgtaggaa cacggagaac cagcccacaa cttctcctca ttgattcgtg gatgcaaccc 1320

caccttcccg agcctccacc gctgttgtgc ttgtgcacgt gctccacccc tcaca 1375

<210> 2234
<211> 1331

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229482_G1, chr6:131980285..131981615, Cluster 13

<400> 2234
ttttgtacac cgtttttcta gattaaaatg caactaaaaa tacctgtttt tctaacattt 60

ctcgcctccc aagttcccgt ttcaaaaaaa aatcgtttca tcttgatagt gatgtttgaa 120

acactgaaga cgactctcta gagagtgaca acttgccatt ttcctccacc aatggcacag 180

cggtggatca tgcaatgcaa cccagcattt tactttacca gacgtacccg gacggggaag 240

tttaaagcgt ccctccaact aagctcactg agctggatga gaggcatcag cttttgctca 300

cttttccaaa gcgctcgcca ccttcgccgc tttccattgg cgcaccgaaa tcgctcaaat 360

cattaggccc gacctcgtct actacgcatc tcccagctcc cgtacgtacc tttctagcca 420

ccagcagccg gtggccagag ctccatccat ggctgccgtc gtctggtcct tatcctcgtg 480

acctagcttc ctctctctct ctctcccatc agctttcttt ccttttccct tgccacggat 540

gaatcccgcc tctctacaga gcccagacat gatcgaaccc atgacagcca agtgtcacca 600

agatatataa attcatgccc ttttcgccac acgatcggcg acttcttgaa acactaacaa 660

gattgtttct tttttagcta gctagatgat tcttcattat atactaagct atatatctct 720

taactgttga tcaaatagca agtgagaggt ttgaagttgg tagtagacat cagtttcttc 780

ccaaccatga acacctttta tttcccagag tcacacaggg gtacagccgg gatagacgat 840

tggtctagcc ctgggggaaa aaaggcagaa agagatgagg gtgctgctgg gctgcttccc 900

tgtttggtcc tccgatcctc catgtattcg cccggcttct tttgcaattt aatccccttt 960

atcttctggc cagtactgca taccaacgag aaaggtcgat ccgtggacca actcatttac 1020

gtacgatgga ccaatatatg cctctttctt ggtatgtatg tagtgcgtag tgctgacaat 1080

gatacaagca gaagagaaca tcatgcatgc aaactacact gaagcataat cgatccatat 1140

gagtgagaaa ctgagaatga acgcgcacca gactcaagct aaaaccagca aaatagttaa 1200

caagtatact taatttttt gggtgcaaac accaaaacat aagaaagaac taccacacta 1260

ctactaaccg aaaataagta cttgaggtgt tcgtctattc acgcgcgtat ctgcaagtgc 1320

gcactatcat t 1331

<210> 2235
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230824_G1, chr6:138306407..138307488, Cluster 13

<400> 2235
atctttagga ggagaaggaa aggaaaggaa agcttttgaa tgaaagtgaa agtggtcagc 60

ttgagaagct tgataacttg atgtcttcca aaacgacaga atagagggtc cattacatta 120

ttgatcacgg caagggcggt ccgccgccgc cgccgccggg ggaggagggt ggtgagaagg 180

ccgtggtgga gaaggggagc acgtgcagga ggagctaaca acatcgaagc aacaacgaca 240

gctatcgctt ccaccgacga cctccacccc cacaccataa ggcaggtttg ggaggtcggt 300

agatcggcgg cggccgtgct ccggcgtgtc tctgcacgtg ccctgcttct ccaacaggga 360

ccttctcacc aaacacacaa gcaaaagcag atcggtccac cggatcgacg tacgcatgca 420

tcaagtgctc taacggcggt ccttctctac tctttttttt ttaatatgtg tgtagcttga 480

gagatggatg agagtggagt gggagtgagc ggagaacata caaggagcaa cgtctgttgc 540

tgggtttata tataggcgta cgtggagcgg ggacgccggc ctggacactg gcacactgca 600

ggacgtacgc ctaggggaag tggtagaccg gtggagtctg aagtgagttt gcgcgagaaa 660

gctttgtgtc catggagcgc tgctgctgct gctgcaatgc agtgcccgga aaaaaaagtg 720

aagccgttta tgacatcatg gttccactgt gtacttctcc tctccctcca ttttagattt 780

aaaattgtag ccaactctac ccattcttaa aactaagata ttttaggttt ttttctacgt 840

gtattgtttt gaccaggata tacttttgaa ctacgtataa aggcatagtg tatatctgta 900

gcaaaaccta tatatatcta gaagatctcg agaagtctta taatctgtca cgaagcgtgt 960

ttttcttttt tcaaaagccc tttttaaaaa agagcgcaaa aataagcggc tactaattta 1020

ttcatgatta tctaaagatt gtctatagct ccaagcttct aattggttat gtgaggggtt 1080

tt 1082

<210> 2236
<211> 1220
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230874_G1, chr6:138576935..138578154, Cluster 13

<400> 2236
ttgctaactc taactcagct ccgatgacag gatgttacga ttcccggcga gctcaatcac 60

tgcacgcgaa ctgaacaact ccgaaacgca cactctcaag tctcaaccga atggccgatt 120

ggagacgaac acagctgcgc tgcaaaatct cggcagcatt ttctggtgtg cgttgcttaa 180

tatataaaga cacaaaacac agtatgttgc actatagttg ccttccctaa tcgccaacgg 240

ccggccacgc catgccatga ccacacgaac gtacgtgttg cgcttgcttg aattctagga 300

cgcgccctgc acgatcagca tgcgacaggc tcgctctcaa agagtgggcc agcataacaa 360

cccggtcgga tcgacgttat tttggctagc aaactaacca agtgacagga ttacaagtat 420

gcctgcatta gttaattgca tcacatatgt ttaattcggt gcttgattga gaaatgtaca 480

atatgcatgc gttaactatt gtgccgcctc tgtatggctg tatcttggtt atcggttgat 540

gaacatcacg tgttgataaa gcggaggtgc ttgatcgtcc gccaccgggc cctttgcatg 600

cacctgatcg tccgtgtgct gtcctgcagc acgcactctg attgtgagtg gcgaaggctg 660

acagtggtgc agtgcagcgc cgcaaagagc tgcttagtag cttctgcttc tctcgagcta 720

ccggaatgtt catcgactac cgtaagagca gagcactctt gttccggagc agcaggaagc 780

tagctactgg agcaccatgt tagcatcctt tgctgcacgg aaggggcctt cccgcagacg 840

tacttgggtc gtcttcttcc tctctccaat ggaaaactaa atctcagtgc cttctctccg 900

gttatctcga aagcagacaa gtgtctttca ggatggtggg ctagctttac tcgatcacca 960

tgggcggccc gcgcctcgtg ctcgccaatg cagttcttga tagcctcccg gtatggggcg 1020

ctccacctcc agcgtcccct gggagtgatt gttgacgtgt tggacgaccc acgaccgtac 1080

gacggcaccg cgcacctttc tttgggctgg agaggaaatg ctgggacaaa acatgcttac 1140

ccaaaaaaag gcctgatggt gtgtccttgg cgttcgtgac cttcagctcc aaaacaccta 1200

tctgctgatg atgaacgaag 1220

<210> 2237
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232707_G1, chr6:147034948..147036030, Cluster 13

<400> 2237
tctgtaaacc aagtctccga gggtgaaaaa agaagaagag aaaaatcatc tgaaggaagc 60

ttcacaggat ctgatgggca tcaccccacc ggctaggtac cacgccagat cctacagatc 120

gtgggagagt atatctgcaa taagcggagg agacaataga tgcttcttgc ctaggagtac 180

atctaccaga atatatttta gttagttacc gaaagatgct ggcattagat atcttattat 240

tgtaacccca gcatatgcca ctaagtgata ttaaacggtt gagctcagct cgatcgagat 300

ggatctcgcg cacactccgc acccgcgacc gcgcgccgcc attagtttat gcgcccccgt 360

ctatccacgc gataagatat gatagtgtac tggcaatcat ggcaacgaga atctgattgc 420

gttttataat aataatgcgc acccacgcca cgccaacgcc acttggtgcg tggcactcag 480

ctgatggcac agcaagtggt gttactctaa cctaatctcg tctaatccag ggataggata 540

tgggctcaac atttatgtat agatcccaca acaaagtgta aagaatgtgc tgggcacgtt 600

gtctcgtggc atgtttgatc gcagggccaa cgaatttgga ggcaccagga atctacgagt 660

aataatttat taaaggtgcc cattgtttgg atctccaaga acaactgtca tgacattatt 720

ttgcaggcct gctgggctgt ctaggcgacg agactggccc ttgcaggcct ccacgaggat 780

tgagagttgg gaaagcgagc tgatggtctt ggtgccgtgc gtgcagcgtg cgggcctggg 840

cgcgtctgga tttgggccga gggtgcggct gttctgactg agccgttgag gcaagataag 900

aagccagccc agcctcgcac ggtggaccgt gcacccaggt gacgcgcgct aggcctcagt 960

gtttgtgttt cttctcccgt gggctaatga tgcaccgagc agccgacgac aacttccgtt 1020

ttacattctc cacggcccag tgttatgttt tggcccaggc aacagccata tcgccatgcc 1080

ccg 1083

<210> 2238
<211> 1000
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232717_G1, chr6:147051586..147052585, Cluster 13

<400> 2238
tatactacga ggcaactttg cggcattaag ggcccaggtg acaggcagat atattcggag 60

gcgcacatgt ccacggcgac gaagggactg gatgtgacgc ggcggcgtcc atccatcatc 120

gacgttacgt tgccgcgtgt gtgcgcgcgc gcgcacatag gattccgtat gtggccgtgc 180

ggcggagagg agccatcgag aagtcgggag cccgccaggc gagtggcgaa gcatgcggta 240

ccactacttg tgcagagcaa ccagatgtac tactgactcc tgaatcctga tcccatgcat 300

gggcacaaga accgtgtgag tgcgtgcgtg ttgtgtttgg gaccagcgtc atctactgta 360

ctgtagtagc ttctagcttc cctcctgtgg cacggatgtg aagccccttg tccttttttt 420

ggcctatata tacctaccta cctatgggag gaaccgtgac cgtgagattg gggatagcga 480

tgcgggcgtc agtgagacag atgcctgtgt ggctgtgtgt gcgcgcagca ggtcagtact 540

gtacgtagac gggagtaggg ttgggcgccc ggtgccgtga cgtgacaggg cagatagaca 600

taaggcatgg tagcgcctcg ggtacctacg gctacggagt ttgggacgta cggtcaggcg 660

tggtggcaag aggacagcga cgctctgcac aggcacagca cacacacaac tgtagggcca 720

gtgggccacg tacgtgcgat cgagtacgta cgtacgtaca cgaacgaaag aatcgccatg 780

tctttccaag aagctactac tactagtacg tactactccg ccagtagtca cgactcacga 840

gctgaaaata tataggaccg gcacaggcgc cacacggcgt ggggtggcgt ggcgtggcga 900

aaaggaattg ccgatcgggt gattattgcc tctctctcct agcgaacagg tactgcacgg 960

gggtgacaag aagatattgc tattcatttc tctatggtat 1000

<210> 2239
<211> 1168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234050_G1, chr6:153206397..153207564, Cluster 13

<400> 2239
ttgcaccgta ctatatagat agcagacaaa aaaaaggcaa tgtaaactat gtataaggga 60

atgcttttag acacattgtt ggtgccctaa tggcggtgac cagatattcg gagtctatat 120

atattgttcg tgaatcttca acgaaacact gcacagcaag aagcaaagta ttgaggacca 180

tgaatcgtcc gctcctgcag gagtgatgaa actggtggtc ctctctgcac tgcagttgtg 240

gcctgcggcc gtgagaccac cagacgcgag acgaaacgcg tctctctgct cagaagaggg 300

cagagcctgg aagtcgaagc cgaagtcgaa acgtggacgt acgatggatc ggcgctggcg 360

tgggccaccg ggcggcggac gggcctgccg accgaactga cacgagctgc tcctcgagcc 420

gacgagccct cgcgcgtttt ctctcgttcg acggggacgt cccggctacc gtacgtgccg 480

tcccaggtgg gcagtgctag ctacaggcta gctactgagc tgctcacgtc ccgtacgtgt 540

cgttgttcgt gcatgcgatt gcgatcgacc tcaccgccgg cgccgggtgc tggcagtgga 600

aggttttcag ttctctgctc ggctcgcgcc gcgtgcgttc gatgtagaga caggcgttcc 660

tgatgatcag agttgttggt gtaaggcggc gtgtagtcgt gcgaggtttc gcgcgctttt 720

catggcaatg cgtaggcgtt gtatacctat atatatcgtc gtacagctag atatatagcg 780

gggatgcgtc atcatgcgtg ctgtcggtgc acgctgatgg tacacctaga gacatgcact 840

tgtgtgacga accaaaacat gctgatggag tgatggtgcg cgtccgtaca gccacaagct 900

gtgcgtagtg ttgtctctcg tctctatgta gagacagaat acgacaggct atctgaaatc 960

tgatggcggg cgcgtgacat attctgctcc acttgacata gttattgcag cgattatgct 1020

aagctatatt cctagattcc cggtgcatgc agcttgtgtt tggtcgctgt cctactacat 1080

ccattgttgg ccgtctccag gcatatagcc gtgccccgtg caaaatatta tgttgactgt 1140

gctgtttgca gcgtgtgtag ctagcatg 1168

<210> 2240
<211> 1215
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234265_G1, chr6:153836278..153837492, Cluster 13

<400> 2240
ggatgaccct tccctcgccc tcttctagca tcttttcttt ctttgcgctc gcctaaaaaa 60

agaacatcct tcaatagtac ggggtgttgg gtttaactga gggagaattg ccaatactta 120

gtctgccctt tgaagactac acacaaatct tggcatagac attagttcta tatcaggaac 180

catgccctaa agttgcctga gttctttggc tagtgtccaa cccctcgcct agagaggatg 240

ggtgacataa cattcgctca ctctgagacc actctgagcg tgatgactag gattcaagag 300

ttgaaggatc ttggtctcaa tgttgtacat gtggtgggga attcaattga gtgtcgtgtt 360

ctctcatttt gtcagaagga aacctacact tgggagcatg ttgggatgat tgatccgtcc 420

tagccctcaa atgaggcaat tctgatgccg aaggtgaagg cctagcttca ccaactcttc 480

tctttgatta gtgattggct aaaatggtgt tagattgagg ctttctccct gaccgagcct 540

cgttgtgagt taagctatgc aacttggcta ttttacaaaa aaaagtctga tcttgttgat 600

tttgacctaa ccattctaga cctcaatgtt ggaattgcac tgacttttgc ataacatggc 660

ttgggtagtg aaggacagcg acaggccaga ccgagttatt tcccagtgct acttgccaaa 720

caagcaccca aggagtatgt cccctcttgg cctctaaaca ctccctatcc actaaagaag 780

cagaggtgga ggatggcctg agttagcaac ttagatgaag acgaagatgt gtctcctcat 840

ccatctcaaa gtcccaggcg ctccaaatgc ccccaatcca tcttgcgaat caagactcct 900

ctcattctct aggagacaag gtagaggtgt caaaaaagtg aagaccatcc cccattaatc 960

tctctcacta agcctaaggg ttgggatgaa ttggcttcta gggctaaatc ccaaaggagc 1020

tctcttgttt ggttgaagaa gtttagaaaa tctataaagt gggaccttaa aatatagcca 1080

ttattttgaa ataacaaaaa tgttatgttt atattggtca tgatatggat tcaactgagc 1140

tacccaagga tgggactaga tccattatgc ctgaaaatga ctcgagcgtt ggcactccta 1200

ataggctaag tcttc 1215

<210> 2241
<211> 1194
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234817_G1, chr6:156392617..156393810, Cluster 13

<400> 2241
atctagttct cacgagaata tagatataac gtggcttgca tgcacgataa cttatattgt 60

tcatgaacct agattcttag aaaaaaactc ttcggtaaaa agttgacaca aataagttta 120

tagactaata aatggtgaac gatggctgat gtgataatat atatagtctt tttttctaaa 180

gagatttttt taaatctaat tcccggataa tacagttctc acgagaatct ggatatcatg 240

tgacgtgcgg aaaatacgaa ggtgtctata cgggttagga ttttaaaatc ggtcgatttc 300

ttgacgactc agtaaattct atatattttt taaaaaaact attgttacca taggttttgg 360

gaaaacgaaa cgtttctcga tcaattacct acaaaatctt ggaaaaaaag gcacatagtc 420

tgttagctct gtaaccagcc taaaggcttc ctacacacgt taccatggac agctttcaaa 480

ccgtctcgcc cgtgctacgt ccacggcagc cgcacacaac cacggatggc cggcttttac 540

agctcccggt accggaaacc ctcgccgcgg gggtacagta ccgcacgcct gccaaccaac 600

gtactgcacg gggcggcact ccccccccccc ccccccccccc ccgacctgtc ccgtccgatg 660

acgcccgcca cacgtagcac gggcgcagcg cagtacgcgc cacccgccgc cggccgctgc 720

cactgaccgc acgggcagcg gcgcgcgcgg cgggatcaat cgatccgatt cccgcccgcc 780

gtccggtact catgctgcta cagtaccccc ggccgcgcgc cgtaacttcc ccgccgctgg 840

ccacttctga ctcgcggcgc cccggccgct gccgagagaa aaacgcagac gcagcagtgc 900

caggcccagg cgccgtgccg tgcccgtgcc gggtggcccg cccgtggtcc ttcaggtcgc 960

cgctacgcta cctcacgtga tcctggattc ctgttcctgg gcagggctcc agtgcagtgc 1020

agtgcagtgc agtgcaggct gatgtcacgc tattgtttag gcttgctgca cgctactcga 1080

atagcccgga tcgggccgcg ttcgccgcaa tcaaggcacc aaagccgctt tgccgtattc 1140

cgcgccgagc gccgccatgc gactcctttg ggctttggag cagcagcgtg cagc 1194

<210> 2242
<211> 1344
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235397_G1, chr6:159223573..159224916, Cluster 13

<400> 2242
ccagcagcat atcagctgga gacgcagact ctgctaccac tctagctaag agatggatgg 60

cacgcacaag tggatcgatc actcgatcag ctgcagatct ctttggcctt tgggcatgca 120

gagagaggca ctattttgag ttttgacagg ggggcgttat ttttttgcag tgacgaggta 180

aaagataaaa taaaaaggcg ctgcaaatct ggggagagat acatgtgtcg ggttgaaacc 240

ccagaaatgg cagacccagc aaccgatcca tcacctcact gagatgccag tgtgggtgca 300

aaggatcatg tgataaagcg tgctggctgc ctgcctgcct gcttgcagtc tcgtcgttcg 360

tcgtagccag ctcgcagtgc atggcgatgt ggtaaaaaaa gggccccgtg aaatcttgct 420

ctccttttcg gtgaagattc atgtatacag tgctgcatgc atggttcctt tcacagggtg 480

tatatatgtg tattacacct ggatattaat tagttacacc agtagttaaa ctgtagtagt 540

atgtagacac caccacaccg gtgcttatcg ctgttgttgt tcatgtaatt aatccctcca 600

gtcctgtgta agtgcatgca agctgttcag atgcttccac tagctagcaa gctacctgca 660

gtacagctct atataccatc aaaaataatt ttaaaaatat atatcaagaa aggcatgcca 720

ttacacggtt gatgcgctag tagtagtact acttgaccct gatcgagtct tgaattaatt 780

agcaatcgat gaaatataat atatgggcta gctaggatca tcatgcatat atgaactcga 840

tcgtttgctt gcattcattc acggaaagag ggtttatatt attaatatat gcaatttgtt 900

tagtaaaccc gccagtccag cgatcgtgca cgttacgttg acaatgccgc cgctgattag 960

agaggccagt gggggtgagg cgcctttcat ttagcttagc ttagcttagg gcaaaaacaa 1020

ttgctttaaa aaacatggcc tctgaatgtg actaaagcct aggggcggca tccaatcgcg 1080

tcgtagccct cttcgtcgtc gtcgtcgtct ccatcttttg gtcgatgcgc gcccgcccgc 1140

gcccggtcgt cgatgtgtgc gtgcgtggat gcttccaaag ctggcaagca gcagctagtg 1200

tgtgtgcaat tcctcatcgc ctttccccgc aataataatc ctatcgaaaa catcgaaagc 1260

gggggcaacg catttggaaa aagacgatcg tcgtcacctc taattccttg ggagctaagg 1320

tttttgctgg aacacatgat acgt 1344

<210> 2243
<211> 1273
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235409_G1, chr6:159232083..159233355, Cluster 13

<400> 2243
aggttatata aaattgaggg ccccccggcc tcagccagcg gcggtgtgtg tatctgctgt 60

agccgttagc taagctgctg gggcctgggg ggaatggaac ccgattccgc gcgcgcatcc 120

gggccgtccc tttcctcctg ctgcgcgctg atacgaatcg cccccacgcg atccgataag 180

catacgagac ggtgcggtgc ggtgacggga cggggaatat acggggcctg gcgcgaaccc 240

tcgcgcgcac agcagcccgg cagctttgct ctctgcctct gcgggggtgg ggtggggtgg 300

gcatggccgc tgaacgctga gcgtccaggt tgcctccacg tacgccatct atctatctat 360

ccttcgtgct cctggataaa caaacaggag gccaagggtc catggacgac taactgcaat 420

attctccggc cggccaactt gagcttgagc agtgctgtcg aacaaaagct cggcgccgcg 480

cgcgccggtg agcgacagcg accacctgag gtcggcacgg aattccaagc tcggaagcta 540

gcgagggcct tcgactgtgg aagaaagggc tccgagctaa caaaagcatg agctacttag 600

tgcacagcat ctacaattct actgatagaa gagaatgaag ctactagtgc cgaaacatcg 660

tttctatcat cggctcggcg gccggcagag cagctgggct ggaactggaa gcagagagag 720

agagagagaa agaagagaga gagagagaga ggtgttggct tctctcccga gaactgcatg 780

cctccgtgga ccatcccagc ccgataaccc gccacctcat cactgctacc tcaggacgga 840

cgacatgcgc ggcggcgtcg cgcacggcga tatctatctt ggccttttt tttaaaaaaa 900

aaagtcgatc aataatgtcc agctagctag cgcccagctg tctcgagaga aagctgcaat 960

gcaaatacga gcttgcttgt gtcccggcct gcatgctagc agcgtacgtg actatcatat 1020

catttcgtat atcgtgcgac acattatgtg cgtgcatgta cttcctttct ttccgatgat 1080

tccctattcc gccctaacgc tgcttgcctg agaacaagcc aagccctgcg ttgtactact 1140

tcagtacttg tgccgctgtg caacaagcct gcgtgcgtga gcatccttcg atacttggat 1200

gccatcatat atgcactctc acgtctcatg cacctactcg agtcctttga cacccaagtc 1260

gttctattcc ttc 1273

<210> 2244
<211> 1302
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235589_G1, chr6:160176741..160178042, Cluster 13

<400> 2244
aaagaataat tgcgcactaa aaattgtgaa gtcatagaga aactcgagac ccaccagaac 60

aagggactct aaacgcccag gacacgcagt gccctgagac aatccagaaa aaataaaata 120

tgtcccaaaa aaaccttata cctcgagtaa gccatcagga cacctcgcac ccagggtatt 180

cacgagggta attctctagg gccctcatgt cctatggaga tgtgaagtat aggtggtcga 240

ggtagtttag gcaccgaggc attcaacgac aattaggcac taggggcact ctagccctta 300

agggctggtt ttttaaattg gagaaaacat cttcctattc aattttgaat agcaagaaat 360

tttcttctag gaatcccctt caattatgtg gtcaccaaac tagtcctaag aatgtcctta 420

tggattatgt aaattaggag acacagtcac accgcccgag gtatccggtt ggcactccac 480

ttccactgtt ccacacaaat aggagtaaaa tagctgacgg gctagcggtt tgagcctgcg 540

caaccggcca ccctccacta ccgtgctctg ctgactggac ccaggcctgc ggccggttgg 600

ccgggcacaa atgggaaatg ggccgtgcat aattctttat ttattgagat gggcaaacgg 660

agtaacggac agacgggcca aatagtactt tcctggcttt caaaaaacag ctcccaagac 720

aatgtaattt tctacctaga aaataacaag atttataatt taaaatggag gaagtagtat 780

tgattatgtg agaattaata tggctttaaa cgagtggctc acctctggtc gcaaatcgca 840

gtctgatgag tggctcacct cagtcagaca gtgagtcaca cacttctttt tgaccaccat 900

ttgggagacc gaacgaagaa cagagaaccg gacgccgccg gtggagagct gagcacctgc 960

gcccgcacgt gcagcagtcc agaagggaag tttcttccgc cgaagcagat tgcacgtgca 1020

agtgaaagca gctgcgagaa gtcatctcga atgatggaaa cacatgccac gatatagata 1080

tagatatatc acaatttaat gtatatcctc ctcattgtcc ttctgtagtg agtacagtat 1140

gtattaacat cgataaagac aaacatgtcc acggttgcga tcaatcctaa gcacagcgag 1200

aacacgctgt agccgacgct aatcccggtc tgcacacgat aaactattga gcatttcctg 1260

atcggctgat ttcctggtga attggccttt tagcttaggt ta 1302

<210> 2245
<211> 1129
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236364_G1, chr6:164315753..164316881, Cluster 13

<400> 2245
tatgtacggg cactttggtc atataattga aagtttgatt ttaatacaac ttagtgtcct 60

atccattttg gactctctgt tacaagaaga tacgactcta gctggtactt gggtacttgg 120

tgtgttggac cgatgaacgt ggatgcattg agccgagcca gaccagagcc cttattgtct 180

actcctgctc atgtcaagat ttctccagag cttcaataac aacgatagat agccatgcat 240

gcatgggcaa tggagataga accttatcta tcaccaagat acatcgtact gtactattaa 300

ttatctccat cgtgagttag ttggtgacga tgcacacgct agctccacac acacatgacc 360

gttgttggtg atgactgatg actccgccgg ttgccgcgag agtacatacg tgccagccgc 420

gctcgcagct agctacctag taggaacata tatgcatggc cggccttctc cctagctagc 480

tagaccgtga ccgtcgcgct ggctggctca gcgcctcagc ctcgtcaagg ccacgtgcgc 540

ggggcagccg gccggactag tcagctccgc cgttctcgct gccgatgcac tgcactggcg 600

ggccggcggc gtacacacac gacgaccggc cggacggtgt atgtgtaaac gctagctaac 660

gcaccacgta tgtatgcaca cgcatgacga tgcatgcatg tcagggccta cacgtcgatc 720

catcgtccct accacataac tataggagag ggaagacgca gctgcatgca tacatgcata 780

tatgcgactg cgccctgcgt gctacgaacg agctagaaga gctagtccag gccgccggcc 840

gacacgtacg ccgtctttag ctaccttgtt gcagtgaacg cgaccggccg ccgtgcgcgt 900

cagactgtgc atgcgcgtcc acgtgagcct cacgcgggga ccagattgcc cagtcccggc 960

gggtggagcg gatcacgaca gtgacacgtc gacggcgcca cgtacgtacg tcatctacta 1020

gtataagtgc acacgtcgtt ttagtatcga cctattacta cttgtttttt tttttaattt 1080

ctgtctagaa aatcaaaaca attttacaga cgcctcattt atagaaccg 1129

<210> 2246
<211> 1061
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236597_G1, chr6:165554695..165555755, Cluster 13

<400> 2246
ggctcagcca ggtgcccagg tgacctgcac tgcagatcgt gctgctgctg gctgctgcct 60

gctgctgctg catttgccca gacaggcaga gaggtccacg gcgatgcagg gaggggctgc 120

atgcttgcat gcatgcatgt tcttccttct gcatgcatgc atgcacggcc gggccggggg 180

cggaatgggt atggaattaa cgccggcgcc gcacacaggg aaagtaaacc aaaacaaaaa 240

aatatataaa taatagtttc ctttctgacg cgctgtataa atgctgtgcc gggccaataa 300

ttctgggagc agcgaaacac agcacatgcc gggtctgtgg gcgtacactc gaccgaacgc 360

aaccgtattc atttctgcat gcctgccacc agacaaaggc acgtacgtac gtacctgcac 420

gactgacaag gcagcgtggg catcaaccag cgcaacgcat ttttcctcga gccatcgtgt 480

ggtatcggca ggagagcgag gcagtaccag ctgctggccg agtcttttgc ttgctttgca 540

ctgtggaact gtggctagat tgtggtcgtc cctctcgact ctcgaggcag gcacttttcg 600

tatcgctcct cggcgcaaag tgagcagcgc caagatctgg catgatggca atggcattct 660

gctgggactg ggatgcgcgc ggccgcggat cctcggatcc agccgtgggt ccggtccgcc 720

cgcggcaccg tcgcgaggtg ccacggaggt gtggaggttg ggccggcccg gtcacagcag 780

catcagcagt caggtgggtg tgatccggcc cccaccacgt tgccgatacc ctcccgacag 840

gaccccgtgg gccatcgccc cacgtggccc gaccctggcg ccccagggcc caccacgacc 900

gttggtagtt acagggccgt cgtggtccca tcccatccca tcctgtgcgg ccttcgcagt 960

gcgagcccaa ctccatccat cccaacctcc cccaatcagg ccaggcaatg tagtctgtaa 1020

ggctgcggca gcttaaatac acggcacgct taccagattg g 1061

<210> 2247
<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237323_G1, chr7:718462..719552, Cluster 13

<400> 2247
caaccggagc tgaggaattg tatgcaatac tactagtaga ctagtagtgc aacgcttgca 60

gtagggtttg tgtgtgtgtg tgtgtgttgg gtaggaggaa gcatgcagtc ttgacagaga 120

tgacgtgcat tggcaattgg catggatgca gagcctgctg caagaggagc cagcagcgag 180

gtggcagtga taggtagagt agtctggtgt gcttgcgtcg cgtgcctgct tgatgagcag 240

cacgcatgta ataatgctgc agggagaaga gaagagaaga gaggagtagg agcgagttga 300

aagagatgga cggcaggcgg ccttggttgg ttgctggttg ctgactgctc gctcgatcga 360

tgaggccgta gcttgaaagg aaacgagagc caactgcccg cccggcggac ggcaccctgt 420

tcctttgctt tcctttcctt tcctgcacgg atcggacgga actggccctt caatccagcc 480

ggccagccgg ctctgtaaga ttaatgttca agctagctag gatcatatgt atgttctgtt 540

tatagaggag ttacttccaa ggcaacttaa caaacaggcg gcagttctga tagatagata 600

caatatgcat atacatacag catgcatgca gctatatata tatctgctcc ataatacgta 660

tctacgcgta cgtactaata acatacatac atgcagctag gcaggtacgc ggtcgctgtg 720

atgaggttgc tggccgcccc atcatatcca atatccatcg tcgatgctga ttggccgctc 780

agagagttcc gagaattcag gcagctagca ggcgaccaac tggagcagta gtaagtgtta 840

ctgcaagtca cccaatatct agagcttgct tagtacatac cacgcctcga cacatgtatt 900

cccaatatat ctagtttgct taccactact gtctatcttg aaccaacctg ctagatctag 960

taactagctt ttcacacccg gcccattaag actagctagt ttggtgtaca tgaaaataga 1020

ggattgaata gcaaggggat tcttcctcta tcgacccatt ccatttccct agtcaccaaa 1080

tcagctttaa c 1091

<210> 2248
<211> 1017

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237959_G1, chr7:4066398..4067414, Cluster 13

<400> 2248
gcagtgctgc agcagcggcg ctgtgcagga tggaaagaga aggagatgca aggatccaaa 60

aaaagcgcaa gatgctgcct ggaggattca gtttcctgac tccgcattca gttccccgcc 120

agtctcgtgt tttattttac ctaccaaaca ttttgactgg cattcagttt cgcccactgt 180

ggatcagtgt ctgaatgtcc ctccctgtac agtctcagaa cccgaagcaa agatcctcct 240

tgacgttctt gcgaagccag tccgagcaaa tcttctttct ttctttcttt ctttctttct 300

ttctttcttt caaaattctg aatggggtct cgtataacaa acaggaacag tacactggta 360

atctccttga gagttttagc atcagacgcg gccgagccaa tgattagggt ttggtggcgc 420

gtctccatta tattggatcg atgaactgct tgttgctccc ttccatcatt ccttgcttcc 480

ttccccgaca gtgacagccc tcgatcggtg gcccttgaca aagcaagccc agacgctctg 540

ctgcctgcct gtggagcttc tggaaaggag tgcgcatgtc ttcactgcca tccgtcggaa 600

gctaagtgac tccacgctcg acgaccatcc atgctcctgc tccatggctt ggaactgaaa 660

ctgctccaga gcaagagaca cgcggacgga atgagtggcc ggttcagcca ttcaggcacg 720

cacgctccag ctgtgcctgt gccgtggaaa gcgagcgagc agtacctgac agtccaataa 780

tgctagcgag tagcgacgca tgcttttgtc tgagaaaaca tgattgggaa aggccggtac 840

cggtacattg ccgacacatg cgatgcttcc ttttccttgc gaccgaggcg aggatctgat 900

tctgatgcat cacgatgtgc acgagggcca tggactgact actcatgggt gctgcagaca 960

tcttctagct tttgttgtga aaccaaatta tataactgta gagcccagaa aatgatc 1017

<210> 2249
<211> 1307
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2451_G1, chr1:12862207..12863513, Cluster 13

<400> 2249
caaggagcgg gggcagtcta cagacgagtc ttaatagttg tagagattta tttatttatt 60

tttgtcattc atgatgccca gccctatccc ctcctcgcac cggacctgac agtacgtgtg 120

ggaggctttt tgaaaccgca ggggcggggt gcgaaacagc cccgtccgcg gaaagggcag 180

ggccgcaggg gacgcccatc cgtgcatcgc acaatcaatg gctgtggctc ccattccgcc 240

tccctctctc tctctctctc gcgcgcgcgg tgcacttgca atgcagaagt gggcagccgg 300

cgagcctgcc tgcctttcct tgtttccggc gacacggggt ggtcgccatc atctcatctc 360

gtctgcccgt tcctctctcc tctctacgtg attctttgtg tcgctgccag ccacagcgga 420

tcaggccccg cagttcctga catctgagaa agaggaagag aaggagccta ttctctgaac 480

cccgtccaat acaaaattcc tacgagtggt tatgtgctca ctgctcaggt ttaaaaaaaa 540

cgaagctact cctggtacag tactactttt gattactttt ctccaactat aaaatactcg 600

ttcgctcgac gaagtcgcct ccaggcttcg gttggcaggt tttttttat atatagtata 660

ttcgttgctt gtcctttcag ttggacgcaa gacggacctg ccgcccccct gctgccagct 720

tttgggtgag cggagcatct gatgcatgac aatcctgttc atgtgcgcga aacggggaca 780

ggcagtgatg gtacgcttat ccggatcatg tactggtagt actagtacat gttactactc 840

actcctacga gtaataagtg tttcgtacgg actactcact cctacgtagc tttctctggg 900

tagggtcggg tagggtaggg cactgtcctc tgaactatga gagtgtttct ccccgcctcc 960

ttttcagtaa gatgctgttg ataaagtgtt cccaatatca cgaaaagaaa agaaaaaggc 1020

acaagagaaa tcattcatgg caacaaaaaa aatataaagc acgtcacggc gtgggggggg 1080

ggggttcgta gattctacgc cgcgcgtggc aaaataaaga aacctcgcat tgcccctgct 1140

gcacgcgaaa ccacttgact tgagaacatg cccgtgcctg gccggcctgt gtacagtggc 1200

ctaagaaagt tgatgcagtc caagagtatg tgtgtgagtg atggaacaaa tattaaatat 1260

ataacttata taattagacg ttatatatat atatatatat atatata 1307

<210> 2250
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2453_G1, chr1:12863947..12864989, Cluster 13

<400> 2250
cagctactta catcatcatc acacgcgcat atgcctgcct gcctgccttc tatagctgac 60

tatgctagct atagtatacc tttgattaga ttagtcccac agctgctgtg ctatatacta 120

ctagtactta ctattgtata gcacaactac taatcacatg ctcgatacat gtgctcatca 180

tctgttaatc cttgtttgtt tttttattgc gaaaggaaaa atccatctgt caacatgcct 240

gcctacactg tcgttagtac tgaagcaaaa cggcaaaagg tagcatttgc cggtttgccg 300

cgcgccgggg taaatctcat cccttaattc ccgtttggtt ttgtttggat cgctctctcc 360

atccgccgca tctgcgtcat cgaccacgcc gacaggttac ttgtagcagc aacagtcagt 420

gggggggtttt ccgtgccata aataaattaa ccagaagaga ggaccgtacg ggtttcagct 480

cgttgtgcgc gtggctcgag gcatcatatc gtgccaagct ttgcaccttt cccttcgctt 540

ttcaccactc cttgacggag gctctgtcca cgtaaacagt ctgtgtatac gtcccttata 600

cccttccctg aatctagatg ttgtttgttt gttattataa taatatatat tcagattaca 660

ttatctaact tatattaaac caacactaag tttgaaaatc atataattta gatagatatc 720

ccaaacaaac ggctccaatc catccagtac gccgtttcag ttccttccca agtttcgttt 780

cgtttggtgg tccttaaacc caacaccaga aaatacatta cccagcggca gcggacagcc 840

catcatatac aaggcccatt caagaatgtg cctcgttgac ccacggtcag gtcgactggg 900

gccgagccca tcctatccga gaatcgcacg actggggccc aactcaccac cggcgcgcct 960

tcttgcacgc gcgtttcttc ttgtttccgg gccgcatcca gacccaggcg caaggaccaa 1020

ggagggcttg gcgttcggta gtt 1043

<210> 2251
<211> 1106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_24777_G1, chr1:150187317..150188422, Cluster 13

<400> 2251
cgattcctaa gagaagtcgg tctttagaaa tcgttaacct taggcccaga caaaagtgag 60

gagagtggtt gccaagaggg catgtaaaga gacatgatca ttgtcctcag tccgcgaagc 120

ctcctcaagt acatattttc ccgcatcgct ttctcgatgt ttgtacacca ttgttgactg 180

catttcatgc attcctcaag tcgttgccat tgaaacatct agtggagaag aacaagcatc 240

ctgaggatgt tcgtccctgg aaaatgtcga tgttttgacc aagacctttg gtactctggt 300

tgttctttag gatctgtgtg ggccggtcat ttctatgcta gccatcgacc ctgtgctagg 360

atgggtaggt tgatctacac cgcacgatac aggatcgacg gtcatccatt atccccccat 420

tacgacggcc acccaggcgg cgacggcact tggccccaca gtggaggcca tcaccggagt 480

tccggatctg gtgctccaga acacccatca tggtcccgac acgagcaaca cgatgcgaac 540

gacaaagcga agattcaggg agggttcgta cgacgcgtaa tgaagggaga gggagccagc 600

cacggtgaat ggtggtccca cagcgagcac cccactccga caaggaattc caacgaccac 660

cacccaaacc acagcttgac gataagccag acaggttcgc aagaccccga caatcacatc 720

catttcccct gcgaggtcta tgctccgctt ctccttgact tcaatcgtgt cggatctatg 780

gtggcagtga cactctccct cgacctccta tctctcaccc tctgcgcatg aatagaccct 840

aacacccacg gattttgacg gaggaagctc ccgacccgag ctggttatat accccgagga 900

ggcacgtgcc agacaacctc cagtctgaca cccctggcga gaaccgcgga gtttgttacg 960

atcggtaggg aagaagatga ccagctggac ccacgtgtag gtgacgcgaa agagtgagtg 1020

tggctgaccg gagggcccca gcagcagtga aaccgaacat gcgcacaacg tttctggctg 1080

agtggcccgc cggtcaggca ccggac 1106

<210> 2252
<211> 1390

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_251259_G1, chr7:91704090..91705479, Cluster 13

<400> 2252
cagtaagcat ctgctctaat cttattcgtt cgtttttgat cgagcgaccc tatctcctcc 60

tccctcaccc atcagcaacg gaggcaactg cggtggcgtt catgagctct atggcggagg 120

cctcacccgt gcgccctgtt taagtgattt ggagtcccta tgcggatgcg tcgaggtgct 180

aaacggaggg gggaatgcgg ggaatcttac catgtattag ggcgcctgat tgtgttgttc 240

acggcgagca gcggcttgat gacggaggta aaacaccggc aagcaatcac cagttcccgg 300

attgccccac gtgcgtggag accccacgct catgtaccct ggactcttgt aaatctccta 360

ggccttatat cggaagctga gcgacgacga gaaggtgtaa tggcggtggc agctcccggt 420

gtgctcggtg gtgatgtcct cggggacggc tgcttcgaca ccgcaccagg gcgccgatga 480

gatgggcgag agagagtcgc gttcggtatt tacgcctcct gctgattcga gcgcacgagg 540

ttgttgcgtt gctgctgtat tttcacgcat cgggtaacct gaggaagaag ctactggcca 600

ctggggcccg cgtgacagcg agacgactcc gcgcgtgcga ggcaaccgcc gcccgggccc 660

gcttgtcggt gcaagaaggc agggtgggcc atacggttgg tattgcgaac tgagccaaaa 720

ttgtgggtgc aagcctagtt gggtttcttt ccttttcatt ttttcttttc cttcttattg 780

tatttttggt ttttatccca aattttctct ttttttaatc ccaaacttgt attacaactt 840

aaatacacat gcaacaacat aaaaacccaa catgtgatgc acacttattt taatcattgg 900

ttgttttaat caagcttaat attgtaatat gcataaagag ggaaaataaa taatcacata 960

tatttttata atttccaaga cttatatatt tttttatgct ccccgaaatt tgggtattac 1020

atgcaatcca cgtatacttg agacaacatc aatgtaaata tgattctaga acatcaatct 1080

tgaaagagat taagctaaca ctagccactt caaactccta gtaacaccag cagagttgtg 1140

tgcctacatt atgcaataac tcaacaattt gtcctattat tgttgcaatt gctctattga 1200

aggagaagaa gcaagattaa ataagaagaa gcaatctgtc ctgttgttac tacaataaca 1260

acaatgagtt gaacgagaag aaatattact ggctagagga atgggggaac catatctgcc 1320

agcaatgtct tggttggtca gagctatcga gatggccgcg acgacaagca catgccatcc 1380

acggaggttt 1390

<210> 2253
<211> 1358
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_254422_G1, chr7:109543286..109544643, Cluster 13

<400> 2253
gcgtgacgtg agtgcgacac acacacatac cgacgcacgg cgtcggtgaa aattgcggga 60

cagcgtgaaa ggctccgaac gaaagagcta gcgacgctct gtcggcaatt catcaacatc 120

aaggctagaa aatggcttgg cctgagtgac cggtgtggtc agctggtggt ctcacccgca 180

cgcacgcacg cggtttcctt cgagagtcct gacgtgcagt ctcgacgcat tttccggcct 240

caccgtcgtc cggcgaccgg tggagagtcc ccttttacac tctctctttt tttcccgtcg 300

gtcagcactg ttcggcgatc gccgtggtcc ggaagaaacg cgcgccgtct agcgtgtgcc 360

gttgttgccg tcacacgtgt gcaggcacag ctgccgcgcc atagactcgt acgtgcgcgt 420

cgtcgacccc accacctggc agcaggatac gtatatagaa tttccaacgg aacacgaaaa 480

acaacgatcc tgaataatcc tgatacacac acggacgaac atgacagaca gaaagaaaga 540

tcccacgcgc gatcccaaag aaatcctcgc gtgccagggt tttccaaatt cttgccccgt 600

tttcaaacta aggtcctgtt ttggccggct cctgcaaaaa tgactctggt tttttcttct 660

cttcaagagc agcacctaga tttgcctacg ctggaaacag ccatcatcgt cactggccac 720

tgggacctca gtcagttaac aaattaaaat ggcatgtata atccgctgct ctccacctgg 780

tgcgcagtga ggaaccacaa gagtgtatac agatggcaca tcagatggat ttcgagaatc 840

tctcgatcga cagcaggccg aagaaccaaa ggggctctga cctgcgggcg gcgcaagaga 900

tttgatttct cttctcgtct tgccttgaaa gctaccagcc gccagtcttt gtccgcgtaa 960

tcatcgagag agaaaaaact agcgagtagg ctgtatcaac atatgattct ctcccgggac 1020

ttttaaaaga tgcgcaaaag taaggagaga gagagagaga gagctcgtga aaaagcgcgc 1080

gagctttggt atgaaattct ttgggcaagt tgcgccatat ctccgaaacc ctgtccgcca 1140

ttaagtcctc ggcaattagg cctggatcat tagctaggtc tccgcacttg cttactcgtg 1200

cggtcgtgcc acgcatcgtt gctcgtttcg gacaagaaca aaatctcgtg aaaacctttt 1260

tatgcggaac aggaaactga atcgcagtag gaacctgagg gccgggaccg ggacgacagc 1320

cgccgaaggg aagatggcga cgtgctttct tttctcgt 1358

<210> 2254
<211> 1139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255827_G1, chr7:117529855..117530993, Cluster 13

<400> 2254
tttttgctag ctctttcagc tatgatggct ctaggctgct ccgagtactt ccttgtcagg 60

tgttacgaat atataggata tatatagtta gccatggaaa aacgctgcaa atgcaaatat 120

aaagtctatc agaactagtt tcacattttt agtattttta tgcaagttta tatgaaattt 180

acaaaatcac tggttttaaa gaaaaagaga aaacgattaa aaaggtaaaa ggtatccagg 240

gtcgagggat tggctctgcc tagaccctaa ataggccggc ccacgtgagg ccgctgcggc 300

ctaggcgggg agggcggccg gtccagtggc aaaacggccc aattgtggct cagccagggg 360

gcgtggcaag cgagatggca actgcagccc gcaagcgcaa ggtgccatgt ctgaaccatg 420

cgtcctcgtg tgtcaccgtg atcggctggc cactgctagt gctagcctca caccgcgacc 480

caccaaggat cctctccgtc acaggctcac agcctcacag gcacagccac accactctct 540

tgccgaggga agtggagccc accacctgct cgtgcaaatg cgcaagacga cggccaaaat 600

acggcagcgc ccctcatcgt gcgccagatt actagggaac cacagtgtgt aataacgggg 660

tccgaggaga ggattggtat taactattag gggaaccgaa ttccagcagc cagcactcag 720

ctacacttct gctttactca tgctctgacc taggcaattc gacaagaacc agggacatgt 780

agctccttgc tgacgatggg cgcgcaggga cagaaatttt cgcatgtgca gatatgctgt 840

gccattgcga ccataccatg gaacaacagg ttgacgtctc cgtagtctgt tgtcatggat 900

ccagggatct tttccgttct tttactacct gtgaatgacc cttctatgac cacttgtatt 960

ccttatgacc ttaccagaag aaagaaatgg agatcttcac tcattaaagt ggatggcaca 1020

gaactggcac gcggttacgc gccgacggct atggcctacc gcctatggct cacttcgatt 1080

gtaaaggtca taactatcaa ctgccagttc gtcttgtaca tgtttcactg attatatca 1139

<210> 2255
<211> 1116
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260241_G1, chr7:141451953..141453068, Cluster 13

<400> 2255
acctcgccat taactccaaa tcggaggacc agtcccttaa tcaaccaccg ccattatatg 60

gtccctggct agaggagccg gccggtccat gaccacgacg accgcgacca cgaccacgga 120

tggagacgag cccaaatttg aagccgctcg ctgctggttg gtgttagtgg agagtggcgc 180

tggcgccgcg ccgaccgtag acgatctgca ctcgtgcggg tgcaatgaaa aaggtggggg 240

actggggagc cccgttcgtg cggcagcgtg tgcgcgcctc cctgcagaga gactgcggtg 300

cagggcgctg ccggcaccca ccggcccata tgcagaggtc gcgcgacagg cccgtgcgtg 360

cacagctgcc gcattgcatg acgctgtcgc gtcgcacgta cggtgcttac atgatcatgg 420

gcaaaattat atgcaccgat cggtacgtct ggagttaggg cactgcttgg caactacact 480

cgcagtactg gacttggaga tcgaagtcga tagatcgaga agcaagacaa cattattgta 540

tggactggct atccagtctg accgtctgtc tagctagtac aggttgaaca gttggagagg 600

tactgttcca gggtatcgag acaagccgaa agaccactgc acgcacacca gcatacgata 660

cgcgagccca gggggggcc gcgcacgcat gtgttagatg ccatgtccct ctctcattcc 720

agtagactgg ggaagccctg ccttgggtgg gtagatcgat ccagttgagt gagcccctac 780

gccactgaca ccatgaagcc tttcctcggc gcatgtgcta gctgcagcgg atccctcgcc 840

tggcctggct ctcaccgaat ctcgacaggc caaggaccga ccgctttctt tctcgttcgc 900

gcgtgcattt atcgaccagc ccatcgacat cgacatccac cagtcgtcgg gtacacgccg 960

gcggcacagt cgagcaggat tggattggac caaagagcac cgcaaccgca cgcgcgctca 1020

tcagctcatt cataggcatg cacgcagacg aacacgcaca cgctcggggt tgcgaatcca 1080

tggtcctgat gagcgcccct actcccgtcc gcccgc 1116

<210> 2256
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262782_G1, chr7:155759080..155760097, Cluster 13

<400> 2256
acggaacgaa gcagattcca aagacaaaat tgctcttctg ctccaaggcc cgaggaccac 60

gaccacgctt gcgtcaggga cagggaggcc agcaggctac tgtggtcagg ggacggaggg 120

agggagcatc tcagggcggg caggttttga aggaccccaa aagggaccaa aatttgcttg 180

cttgcttggg aagggagcaa gatcaaaaca gacagtggaa cattgcttgc ctgggcctgg 240

ggttctggag caggagcaga aaggcacaac accaaagcat ggggcatggg cacaggttgc 300

aagctgcagt ctgcagcaag cagctagcat tggtccactg gagaagcagt gccggtacgg 360

cgtgggtggc tagctttgag gttctcaaaa agcttgcagg tgacgtaaac ggtggaccat 420

caccatcttg tgcgtgccca tgtatgtatg tagtagtcta ctgctgtacg cccggaattc 480

gcgccacgaa gcacacactg tcagagagat tgtcaatgga tcttaattag attatatgct 540

cattatttaa acggtagaga tttctactgt acaatgtagc agcagtgtca cctcgctatt 600

catcactaga gtcatggacc aaatgtctat cacctggatc aaactaaacg aaccttgacg 660

tgttaaccat ccgccgcacc cgatcgaacc acgccctaga ccacccaccg cgcgtcacac 720

gcttcaacta gaacatgaga cctcaactag aacatggatg ccaatatata taactcagat 780

ctcagtggtg tttctttttc tacttctcga gaatgagctt ttagttaatc agtagtagag 840

tgcctgattc cgctcaccct tcactgcatt gctcgtatgc agtcaatgac ctgctactaa 900

tcttgccttt gaagcaacat aacatgctta tgaagcaatc acctgacaat taatcagatg 960

gatgaatgaa cgtcatcgtc acctggcacc tgctgtatgc aatcgattat gtatacac 1018

<210> 2257
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263252_G1, chr7:157632206..157633218, Cluster 13

<400> 2257
atcaagtagt ccttattagc ctaagctcat gctggtcgat ttttacaaga cgatgaacta 60

atttttagcc ccataatcca aacatgccta tgctcaatcg gttaacaact ctgttatggg 120

cgcactttaa tttgcatgca tgcgggtaat tagtattttg acacagcgta tttgacggcc 180

gtttgataaa tgaaacaaga tctgcggtgc attgaagcac tagctatctt ttgtatcaaa 240

tgctatctta caaaaaaaaa aagatgtaaa aggtaataac tgcaccactt ccgaaaactg 300

gatacattga agcactagct atctcttctt ttttttatc aaattgtatc ttacaaaaca 360

ctagctaggc agaacattgc atacatatcc cacaacaacg aaatcgaaac gacacgccaa 420

gcaccgggac ccagacaatc aaccactacg gaaaaggacc tggccggatc tggcgttttg 480

tgttatcgcc tgcttgtact gcaggagaga gcatatgcac acgtacacgt acgtacgggg 540

ccgttccgcg tgcagtgcaa tcgcatgctc gtccccacaa gtacgtggaa ttggcacggt 600

gagacgtaac tgcacacgta cagggtacgc cgttttggat gatcgatctg gacgcgcgcg 660

cgcaccacca ccaccattga tccgtctaat cggtcggtcg gcgattcggc atgcggcgtg 720

tgcgcgctct cggacaggtg gtgcacacag gctccctagc caactttgct ccctcgctcc 780

ctttcgtgcg cgtgcgcgta cacccggcgc gtcgacgctg tgctgtgctg tgctgtgcgc 840

cttgcggcgg acacgatctt ggcgtacacg cagtttcgct agccccgcgc gcggtcccgc 900

cactaagcac tagtactagc tagctccagc ggatgctgca ggcggaagga aataaacaag 960

ggttgcgtcg cgaaccacca cggcaccatg cttggtttgg ttcccttggg agt 1013

<210> 2258
<211> 1101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263359_G1, chr7:158103200..158104300, Cluster 13

<400> 2258
catgtaatca attgtacgac atgtaatttt tatgtataaa aacagtgtct cgaagcactt 60

ttaaggagct ttaaaaattc ataaaaactg gtctctagct ttagtttttt ttttaaaaaa 120

aaactgagct tatgagttag ttctatttag ataaaagaag ctaaaataaa tttaaaattt 180

ttgaagtgaa gctattttcc atgccggttc cgatggcccg gcgttgggct ttcggtttct 240

ggcaaacgtc gatggctttg gcacatgcca acggaccaaa tggattggga ccacggactg 300

atcgcgtacg cgcgccctcc tacctcgtga gcatctcgtc ccgtctttcc atcccgattc 360

ccagcgtcaa attacccggg gagcaattcc agctccgtca cgtcatctcc gaacctacac 420

tgcacatcgg attggcatgt cactggcatc ccctccaacc gagcacatgg tgtcgtcgcg 480

cgtgcacgcg atcgggcgag cagcacgtgg aattttgtcc ctctgctttc ttcgtccgtg 540

ccatgcagaa taagcagcag ttcctttcct accagcattg ccagcaagac aggcatagaa 600

gacgaagacg aagaacaagg gaaaggacac tcgaattcct accggcgaag agcatcgcac 660

tcgaaccaga accaacaatg cagcaaggcg cacgacgcta caccgtcgga tccacgccag 720

aaggggatgg ggatccgtgg agcttttgag ctcttggcgt gcatccgctg ggcgatgtac 780

ggtacggccg gtgtagtgtg actggctatc atcgtcaagt gaccgtgttt gttatttaag 840

taggagtaat atttttggtc gcggccaggg gtggtggata gccgtcggtt tccggttgta 900

acggctacta aacggccctg catgtgtttt ttttaaaaaa taagtaaaca atggccagcg 960

gccagccgcc agtgctaggc ctaggcgtcg gtctagtagc cgtgtcagtc ccggacgccg 1020

gcgatccgcc tcgagtcgaa cccgtgctgg cacgacaggg accgcatgtt ccaaatccag 1080

gaatcctgac cgaatccaaa c 1101

<210> 2259
<211> 1075
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264584_G1, chr7:164752249..164753323, Cluster 13

<400> 2259
cgcatggatc ggatgtcagg ccgtgatttt tctaggattt ttttggcggc tgcgtcagcg 60

gcctagctta gctggataat tgccaaatgc caacccaacc tttaccttct cgcgccgctg 120

tcgaatggga aaaataaggg aaaccaccga tgcgagcatg gcgacctcac tgcagtctgc 180

atgcatggct tttcttagtc aaatccagac ctctctctct ctctctctaa attgtagatc 240

tcgattcgta cggtgcttga tatgatcgat gagcgtggtc tctcgtttcc taccattcct 300

gtcgcgtcat ccgatgatgt cccgtccatg gtgcaccgcg ccggccggtg ggtagattag 360

atggatggat cgatcgatcg agcggcggag cccagcaggc actcgatcgg atcgaccgac 420

gaccgaccaa aatagcgacg cacgattgcg ctccacacca tcatggattc atgatgttca 480

gcagtactgc atgaattgta cccacacaca cactgcttgc tgctgctcct gctgcatcgt 540

ctccatgcaa caaatatctc tcatctttgc tgactgctgc tacggattcg cgcgcgtagt 600

actgtcacta ccggaggggg gacgtctcac atgtgtgtat cagtgtgtgt gtgtgtgtgt 660

gtgtgtgtga catttcatgg accgaacgag acgagcagat ccatgcatgc atgggcttta 720

tttggtcact tgaattccat ttccattcca ccaccaagca gaaaatatgg caataatatg 780

tggatactac gtttggcgtg gctagtactg cttcaggtgg cgcgcggtcg gctgcctgcc 840

agtgccatgc atgcccaaaa gaacggttga ctctcgcgtg acttgacaga tcctttgcgc 900

attcctcatt gagagatcat tagtggaagt tgcacgacga cgacgctcaa cgctctcaag 960

ggtcagctag ctaccaaagt gctagagcat ccggaatttt aatttcccct gcttttcaat 1020

tccctctttc ccctgctttt caattccctt tagaaatgtc gtcactgctt gctcg 1075

<210> 2260
<211> 1068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264911_G1, chr7:166737712..166738779, Cluster 13

<400> 2260
aacttctttc tagatttaat aactaaaacc aattttaatt taggacggac gaagtaacct 60

tctagacatc tacggtgtca ggactcatca ctttcttatc aatctttata atcgaatatg 120

tttggtaccc tgatttcttt gctacgacaa tatataagtg atccatcata caaacccccc 180

tcgaccggct tgaatgcttg atctagctta gctagcatac atgggcatag ttttagttta 240

tcccttgccg tggaagcagc agaaacgagc cgaggcagat cagaactcat cagaacgctt 300

tgcttggatg ccctgcaacg tccgtgcgtg cctgtcagtg tccagctcac gcgcactggc 360

cgccggtgcc ctcgccccag ctccaccatc ggcgccgacg tctagcgggc gaaacgaacg 420

gggaagaagc ctccagaaaa gcttctcctc gttggcacag ccacaggcag acaggccacc 480

gcgatcgatc ggtgagggaa aaaaaaggcg tggcgcttca cttcacgtgc cccgcttttt 540

ctttccccac gccgggcggc ggggcccggc ccgggtcgtc atcgacgacg gagatggagc 600

cacgaccggt ggtgcggagc acatgcatgg ggctcgcaga tcaggctcag cagctagctc 660

tcccttgtcg gccggagtgg acggatcttt ggatgcggtg ccgctggctc agctggggcg 720

gctgctgctg ccggagacgc agacgcccag acagcgccag ccagcagcct gcaggtcggt 780

ctggactttt gatcggctct gatctgtctg ctcagagctt tcagctgctc gcattgggtc 840

tgcacatgca ccatctcttc gcatgattgc aagtcatcgg aatccaacct ctcatggacc 900

aagccaagcc agagcccaga ggaaagcggt tgggaccttg ttgacccata caggcccaaa 960

gtttctattg ggcaaacaag ctcagacttc aatcagtcca gagaggcggc gcctgcaggg 1020

aacaaacggg taaggatgaa aacgatgggt aatggtgtta aaaaatct 1068

<210> 2261
<211> 1226
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265963_G1, chr7:172371849..172373074, Cluster 13

<400> 2261
ttcaggagca gagaacctaa tgttgctcag tattgtttga gcaatacctt aatttaacca 60

ataaaatact attagtaaaa aaaaatctct atccctaatc atatcattcc cagccgagta 120

gccgactagg agtccaggac cacctccgct cagcttccac gcttccgctc catgcgccca 180

gctccgcgcg tgcctctgta gcctgaccag ctccatgcgc ccagctctgt gctccgccat 240

ccgccctagc ttctcctacg cccaactcca cttgtgtagc gtgcctccgc ccaacgccca 300

tcttcgcgca cacaccttca tccagtctag cttcgcattc cacccttgac cttggttccg 360

cccagtgccc agctctggtc tcgttggttt ccactgtatt gcagcctatg tggttgtccg 420

cccgtctctg tccacattca tcgcttattt tattttatag atatgaattg ctttagattt 480

tattgtaatt ttttgccgtt gtgttagcaa taccttagtg gcttagttca tccttgtcac 540

tgggtctttt gacaattatg ttcatagaat ttcaatccag tttaaatttt agtcctctac 600

taccatatcg accgcgggtg attgttgagt gtactgtata cggattgcat gacctcttcg 660

tatggtggcc gatagacaac tatcgacaac acataccaag aaaccatgca atatgtctag 720

taacttgcgt ccaagccgag acctcgaaag atctcaatta aaaagagaga ccacttagat 780

tgttctttgc actccaatgc cacattcaaa ggcgcagcga taaagcagct aggagtggta 840

cacatccaac actcgcacca tatatatctt ccatcgacaa caaaaaggcg aataaaccat 900

agagaaagag gggttagctt cgcccgacaa agatatgggc tcgtacatgt gctgatcaag 960

ctgagaacgg catcatcaaa gatctcctgt ttggtgacaa atatcgccac atagaatagg 1020

gcaaagcttt gaacgaccat gattgcacgc cacatgagaa ttgatcccct caagctattt 1080

agcataagat gccaccataa cctattattg cctcctgacg aaacctagca taaataatga 1140

tctgcgcctg caacctattt tattcccaag gcaggagatg atggtatgca ttcttgtgtg 1200

gctttgtcga ttctccactt gatggc 1226

<210> 2262
<211> 1063
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_271952_G1, chr8:29913007..29914069, Cluster 13

<400> 2262
tttatgtttt atttgtgaga catgttccct atttgataaa tattaaataa aattatattt 60

ttgcatccat tttggaattt tggttgtgca tttagcttaa gttgagattt taaaaaactg 120

gatttgcaat tcggatttga aattagaaac aaaaataaaa atgaaaatag aaaaaaacaa 180

ataggagaaa accttacttt ggaccatgaa ccattccagt cggcccaagc cctctcgcat 240

cggcccagcc agcttcctgg tgacagctaa cttgtcctcc tccacgcgct gacagctgcg 300

agccacgatg tcagtcaccc ctgcgtgcca acgtgcgggg ccattgtcca gtccgctcgg 360

cccagcgtca ccccgcgtgc tcacggccgt gccccacgac ccccactgac gggtggaccg 420

tctttcggta tctccccacg cccaggcagt gtgccgcaga cctacaggcc tgtgttggca 480

gggggcttct cccacatcgt gtccgagaca gaaacgaact ccgagacccc caatgatctc 540

acgcccatgg cactagatct tgcaccgccc cacacgtata tatatatgca gccgccaact 600

ccccatggcc gcatcaatcc atagatcatc aggacccagg aaaccatgag ctaccagtag 660

gcaaagctag aagggagaga aaagagaagc cgtcgccgct ggggattcat tttttgcctg 720

cgttcggggc tagaatgtag ttagggaggt tcgtggttgc acatactatg cctttgcatg 780

tgcgcagtgg atggagggtc aaggcgcgtg gcgatttcct caccggagtg agtccaccac 840

catgccgcca ctctccacag atctgttgtc cacgtgaacc tcgtacccta atgccctaat 900

ctgagataag aagctctgga tcaattcgcg gcgttaccct cttcgagtag gacctagaag 960

tattggggat aagtgactag agcgtcagac gcctgcttgc cggcgtagtc gccaccgtgg 1020

ggagcccggc agccgctgtc agatggttgg acgaagaaga agg 1063

<210> 2263
<211> 1084
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_283898_G1, chr8:109262964..109264047, Cluster 13

<400> 2263
gagatggaat ggtagaggtt ttgatgcttg tatgatgtgg aggcgttgga acgtatagag 60

atgccatcat tgtttctagg cgaattgggc tgcaaccgat tcattaggat tttgctattt 120

tctttggtgg tactatgctg ttttggttta aatttcatga tccttctgac accgttggct 180

aagattttgc tattttgttt cttgtaaaac tgctcgtgct gagatctggt gggccgaaat 240

ccaataccgg agggtccagt attgcaccct tggcgatccg tgtgaggctt tctctggttc 300

tcgtctccgg ccgtgttctc agaacattct tcaaactact agttggcatg cgtgtattcg 360

tcatggtaac ttttgatgct ttctagcggt caggatcaaa gccaaacatc tctttgagag 420

aaaaaaaaat ttattgaatt ccactcgcac ccatcggctg cccatctgat ggcatgttcg 480

gtgcttgacc atggtctgac ctgctttccc accgatattg acttgttgaa tcttaatcac 540

taatgaagga aatactgaac gtgacggtgt gcaatttcag tttccctcga cgaatctttt 600

gttccccagc atctggattc gttctggaat gaacatgcat gggcatgggg catggaggag 660

gcccagcgcc ggtggcaagc ccacggaaac tgaacgtcta gattcactgt gacaaaacgg 720

gaattaaaaa ccaaccaacg cagtgcactc acatgctcgt cttcctctcg cggtgtcgca 780

acgtacgttt ctggactctg accgcccgcc gtgacgtcgt ctcgtgtgac aggagaagag 840

gcacgcggtc catgcatgcc tggctctttt ttttttaaa tttcaggaag cagcatggaa 900

ggtcggacga cagttgcgtg cggaagacac ggagacgaag acgaacgcga ggcttggtgg 960

tctcgatgga cggctgcctt gttgttgttg gtttggtccc cgggtcaaga aagaaacagc 1020

ggttccggtt ggtgggcagg cgccggcggt tctcggcggc gccaggcgag gccaagtgcg 1080

gagc 1084

<210> 2264
<211> 1066
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284638_G1, chr8:112759468..112760533, Cluster 13

<400> 2264
gtggagactt tatatcctat cttgtttgta gtatttgttt tgcacatcat aatagtttat 60

tatgcatgcg cgagccagtt aatgaatgtt gctcatgaac aacactgggc atgcatgatg 120

gagctatcga atgcaaaagg agcaaccact cgtacaaatc agcctccttg aaccccaaaa 180

gggaaaccca gtttacacac acataatgct tgcgtgtccc cagtccgtgt ctccatagtc 240

cacgctaggg atgacaatgt gtcctccatt tctgattctc cacgaggatg tgaaagtttt 300

taccctacgg aaatgtaaac gaggataggg acgaataagc atttctaatc ttcgttcccg 360

acgaataagc atttctaatc ttcgttcctg cggggacatg ttaaacctat acgtagcgat 420

gtttttgcgc gaacatgtat gtgaagctat ttaccgccgg caattcccta ttgccattgc 480

tagtccacac cactagctat cctcatgggg acaatacctt atttctgccg catgacacgg 540

aggagtgtgc atcaccgaaa aaaaaaagtt ggtggcgcag acaggaccag gaactgctgc 600

atgctgctgc tacacgaatc atggcttgat tatctgaggc cggccggcgg cccccaacca 660

aagtcaaaag gcgcaaacaa aaacacacgg ctcggcgcat gcatgcatca aacgacgcga 720

aaaaagagca gaaaaaaaac ggactctctg catgtgctta tgtgcatcat cattgttcgg 780

ctgctgccca gtgcccacca tgaatcgcgc caagcattcc ggacgatttt ccattcaaac 840

ctcagcttcg gaaaacgcac cggtcagtgt tcacgtcatg agattaagtt tagttagatt 900

agagtctccg taaaacacaa attgatacta gaaaaaaaaa tatttaaact cagagatgtt 960

actaatatgt acgtattttc ctacaccatt atgcaaaatc agagaggttt ggtttataag 1020

taagtatgtg ttatcgaatg aactacgttt gtacttgtac tccatg 1066

<210> 2265
<211> 1320
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285972_G1, chr8:120156012..120157331, Cluster 13

<400> 2265
tagagattaa gatacataga gagaaaaatc attttatacg tggaaaagct agaatgactt 60

agagtttgga atggagaaaa atagaaaact tcacatttta tatttatttt taaactatga 120

aatctgaact gtttgctaag gtgagcgaga gagagagaga tgtacggttg tgagagtgtg 180

tctagcaaat tgaggctctg ttgggaagat cttccttcct aaatcattgg ctctactatt 240

tgattatcta gttatatagt tgcattagac ttttttagg agaaatcatg gtaaaaattg 300

attcgccact aattgttttg tttttatcta actcttcatt attccgtttt taattaatat 360

aaagaaacaa gtaacctctc gagacgtgcg tgcgtgcgag ggggaatctg atgtagaggg 420

cagcgaatcg ggggggaccg aagcatgccg aagctgccct acacccatcg caatgaaagc 480

gctgtgcgtc cccgggcacg tggagccacc ccgataggcc ggcagctgct cgtgtcagcc 540

gcggggcccg cgctgacgct ggactgcaac caatccgcac ccgccctttt ctcaccgccc 600

gccatcgctt acccgcggag ccgtactcgc cctcccctcc gcctgggagg cggggccggc 660

ctcccgcgtg gcgcgcggaa aaggccagtg gagccgtgga gggggcgacg agcgaattgc 720

caaaaggagc agaccggatt tgcccgggcc cgcgcaggcg caagtggtgg gacgctgggc 780

gacaagacag cggactcgtt gttatctgtg gtacacacac atcggaagcg cgcaccacga 840

gcctactgta tgctactact gtacacggag aacgttcagt gatacagtat gatgatacgt 900

atacagtgct tttcgtattt tgactaggta tactttccaa aagtttttt cctaaatgaa 960

ttgaaaatca tgtttttta tattatatat attaggagtg cggcaactct atgatatcta 1020

tgggtttacg acaaaacaaa cgtacgaccg aaatggaaat atcggcgctt cctcctgctg 1080

gcgatgctct ttctgacagt gtttgctttt cacggccagc ggcggtggcc cgtggcctaa 1140

aggtgtggat actagctatt tgtgattggc attcggtatt aattcgatca agcgaagaga 1200

atcatgtcct cagagggaga cacatgaata attaattgtc aattagttta tgtttctttt 1260

ccaaaaaaaa tgatctaccc ctttttttcgt gtgtgttgct gatcgatgta ctactgcacg 1320

<210> 2266
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286229_G1, chr8:121790279..121791324, Cluster 13

<400> 2266
atccctgcga tcggtagatt tggcgaacta gaaaattatg gctctggctg aattttcgtc 60

gtgcgtcggg acgaccgtcg gcgagcgact acttttgcct tctcaaaaga tgccgggatc 120

gtagccattg ctagactatc gatcgcctca tttgacccga acacgtcatc tccacggtcg 180

tataggagga agaggacgct ggtgtatgtg tgcacgcacc cgaggcgagg aacgcccccg 240

gcggggctgg cgcgctagct gtcgatctca ccgggaaccg ctactgttgc cgacctgtgg 300

cccggcagcg cacgcaaagg tcaggccctc cccttcccag tcccccgccg tttctgcggg 360

ccgcgctgcc ggccggcatc catttatttc agctcatct gctcgcctgc ctcatcagct 420

aatctgctcc gataatccct cccttcgctt ctgcagccgg atcttctgct ctgatttcaa 480

ccaccatgaa tctacgtgct gcggagtgta cgtagacgat gcatggctac gacctcgttg 540

tcgccaggag atcgatcgag atcaacagct gcttctcttt gctttcccaa gttatccgag 600

aggatgaggc tggctagtcc caaaaccggc cgtcgcgttg aacgcaacac aaaatcctcc 660

cgctgttagg gcagccggag gcaggctgaa agcgctgaat ttgtagcgtc tacagactac 720

ggtatcctca ctccactcca ctccactcca ctcccatccc aggcaataca ggaacggcga 780

ctaccgctgt gctgtgcaag cggtgagcct ttttttttat aaagctactc gagcgagtgg 840

ccccgcaacc ttggcttagc aagatcatta gtggccaaac caagaatggc ggcaaaacaa 900

ggacgagaaa ctaaataatt gtggccctta atccaaaatg cacaatctca aactgccgct 960

tcaaacagtg gcgtaccagc tgctatgatt agagtgtgcc agtaaaatta tcaaaaaaaa 1020

aaggaaacat ctgccttgtt tttgtg 1046

<210> 2267
<211> 1229
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286536_G1, chr8:123531111..123532339, Cluster 13

<400> 2267
tcagctgcca atgccagtcc ggtcgatctc ctccctgccc ctgccacagc tagccccagt 60

cacagtaagt ccgtggatca gctgccaatg ccactagttc tcaagcttct catcgccagt 120

aagctagggg gaacggcctg tgctgaatgt tccttgatta gttgcttgta actttctgaa 180

tcagctaagc tatatgtatg tttcccacta acaaagtgtt gtgaaactgg caatggcacg 240

cacacacaag gcgatcagct gcagatcttt gggtgtcgag ctagctagct agcgcgccag 300

cgggcagggc atcattttga taaaaaggcg ctcgatgtag atctggtggg gagagataca 360

tatgtcgggt tggaagaccc cactgagatg gcaacaacgt aacgtgtggg tgcaaaggat 420

cattgtgtgt atgtaataaa gcctgctgca gcctcgtagt agctagctag gcaaggcaag 480

gcaaggcaag gcgcgatgtg gtgaaaaaga agggccggtg aaataatatt tgccccttc 540

cggtgaagat cgaaaatttt ctcctttccg gtgaaggttc atgcaccgtg cttaattgaa 600

tgtgtactag ccgcagtaca aaagatctgc tgtgttcaga tgctgattgc ccactgctag 660

ctattctcta atatatatat cgtcatccat atgcttcaac tatagtaagc taccttgcaa 720

taaattaaag ctagctccct ctatatattg gccaccaaaa ggatattttt aaacattcct 780

aagaaaagaa gaagacgttt ttcaaacatc actagctagt acgtgcaaag cctgccaagc 840

tagctaccac tacggccggc agccgatgcc cagtagcact cgaccctgat cgagccatga 900

attaacaatc ggtgataata tatgctatga ggtcatcata tatatgcatg cacgaatccg 960

tcgctgctag ctcttgcatc cacagaagct aaaagagagt atatgcagtt tgtttagtaa 1020

accagtccag cgagattatc gtgcatgcta cattgacaat aatgccacta cttagatagg 1080

gagagggtgc attttttttt tgaaagttcg atcggagagg gtgcctttag ctatagctta 1140

attagggcaa attaaaacaa tcgctttgct ttaaaaaaca tacatggact ctgaacgtga 1200

ctactaaaga gcctaaggca tccaatata 1229

<210> 2268
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286781_G1, chr8:124362916..124364026, Cluster 13

<400> 2268
cagtacctcc tgacaacaaa ttcttttaaa aaaaacttcg aacaattaac tattggatgc 60

acctgtctgt ccttgcttgc tacccacttc ctcgatggct ccaagtgaca cgacgtgctt 120

cgacgcctgc ctctgtctgc acggagcggc caccggtaaa tgtaacgtca catgacaagg 180

gccgcccacc tttgcgatcc aggacaggac acgcatgtcc tgacgccgag gcaagtcggc 240

agcgcccagc acgcaaggcg gtcgcgtact cgcgttccgt tgttttcgcc tcgagtacgt 300

cctctcctcc ttcctggtcg ctcgctacag ctacacgttg ctcacctcac ctcatcacct 360

gcaagagtag ccaaggcgcg cgcgcggcgc cggcgccggc gttcgtgtga gctagtgtga 420

ctctgcttct gggcacctgc ggacacgtga cgacgttagc agtgggacca ccacccgcgc 480

tgctaagcat cgagtgaccc atgagctacg ctacgcacgc caccagcgcc gcctagcagc 540

taagccccat agcgccaggc ggccagggtg aggagggagt tacaggcaag caggggcagg 600

gcagggttcc tcgccgtcgc ggcagctttc ccgtgccgcg cgtccgtgac tgacgcgctt 660

taaccgtccc agagcgccct acgtgatctg cctctgaatc cttactaaag attccttcag 720

tccagtagtg ccaccacgaa acgaagctga gcaacgctag aaatgccact cagtcactac 780

acaacatgaa attctctcga gagtttcgtc gcaccaaccg ttcgtgaatt gtgatccagc 840

ggggggggatc ggttcccacg gttttccata gagaaagggg gagcagaaaa acaaactgtt 900

cctatcgaaa atccgagaac gtgcgaaaaa aaaactgggc acatgtttcg gcttcggaac 960

cttctcaagt aagagactga aagcccacgt aaagattcta ctcgttcgta gtatagtacg 1020

gctgcccgct actttcggcc cacccgcgga aggcctgcta ttgaattagg agtatcttga 1080

cggtaccgta cggtattatg attttatttt t 1111

<210> 2269
<211> 1309
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_289908_G1, chr8:142354356..142355664, Cluster 13

<400> 2269
tacctcactg gtattacctt agagataaat ttggtagaat gattataacc tatacatatt 60

tatattatga tctgatatag taatcttcta atgcttatct ttagcacctt attcattttc 120

atacctatat taaaacgtaa ctctacgaac agtgtaatct acggtgtaaa acaacgtttt 180

tttttacaat aatcatattt tttacggcgg gcagccataa agcgattgaa tctcgggggt 240

cagagcgcga acgcccttgg ctcgtccgtt gcttttcgag acgccatcca aagtcccgag 300

ctcggtccag ttgcgtcctt ggaaccaatc aaccaaacgc tgctgggtag cgtagcggtg 360

aatggaggag gttccgccag cacagctcat gtcactttcc tcaccctcgc agcgaaaacc 420

ataatacccc cgggcgggcc accatgcatg attcacgcgc ggcggtgggc gatgtgaacg 480

aagcccgtag cggaggtgac agccgctatc gatcggtaag cacgagcacc acgtgccgcc 540

agcgggtttt catgctgaac acctcttctg tgtccgtcgc cgcgctgatg cttaaggcaa 600

ggcgcgcgac gcatgttgtt ggggaggacg acgccgacgc cgacgccgac gctgccgccg 660

cgccggcacg ggcagtaatt gttgcggcgg ccgaaccgaa cgggtaaggg gcgggcgggc 720

ggtcctgccg ctgggctaag tgacgccttg gcttgtagag gagttgacaa cccgccccga 780

ggtccaacgt gccgagccat atgcaaaacg ctatctagat tctagcatta gaaaagtctg 840

ctgcattgcg gagagctgtt gtttctccgg tagtttccag ttggacaatg agaattgatt 900

gaataaaggg ttctgcatta gtattttatg acataaaagc tctctctctc aatgaagagt 960

ttttatatga cttctttata taatttgtac tagtaaagtt gtcttaggct tataaaatcg 1020

tgctagatat gtgtttttat aaagacatgg tctctttgtt tttttaacat gtacaaccca 1080

attaaataag aagtgtcttg aagtgtctct agaagtgaaa aaaaaccaag agatgagctc 1140

ttcgcaaaga gcctgtctct atacacaact ctctatacat gttgtgtctt gactgcattt 1200

attatttaga ggctcagagt tgtatcattc catctcttag ctatctgaaa accgagtcag 1260

agtctcaggg ttgtacatgc cctcacttac tctttaaacc gagtcggag 1309

<210> 2270
<211> 1243
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291733_G1, chr8:151231239..151232481, Cluster 13

<400> 2270
attctatata ttctaggttg cattgtacat gtcctaatgt ctcttacatg tatttatggt 60

ctagagcctc agaattatat catgcaatct cttaactgtc tcttgtactt agaaaattga 120

gtcaccgtct tagagttgta tatgcccgca acagtcacct atattataag ccttgctcta 180

aactaagtta attgtcgtc tccagcgggg tagccgagaa gatggttgct gcgccattgt 240

agactcgtcg tcgtcctcgt atatgaaaga tgacgttgtt gtctgcatgc aataatgttg 300

tctaattttc tggcgcagag agtgtgagcg gtcatcatcc cttggaggca accaaaggtg 360

cagccagcag caaggtacta cggcgcagag ggcgcaggca gaggacgaat aatcttttca 420

caaaagcagg atccccttgg cggcttcggc ttgccccgtc cgtctaaaag cgcaagagct 480

gacaccaccg gagacaactc gaagcaaaac ggcaactccc tcagggcacg ggacgcgacg 540

atccggtggg tctcgctcgc agccggtttt agttttgccg ggccccacgc ggacgaggac 600

gactcccgtg gatgcatgtg ggctctctgc ggcgtcccgt ggaaatcggt gttggctagc 660

taaagctagt actgctatat tgttttatcc gtcgcccgcc tcatataaca acaatcaaac 720

acgtagggat ggagactgga tcgtcgacgc gcggcataaa aattagctcc cgagcggcga 780

cgttgcgccc gcggcggcgg gtacgtagcc gtcgtctcgt cggggtgtac gtacgtagcc 840

agcgcggcct ttttgccttt ggactttgtt cccgtgtcgc gtcgcgtgca tgggcacgca 900

cgcacgaggg cgccgcggtt tctccgtgtg cccaaaacag aggcaccaac gcacgggttc 960

ggagagaaaa aaaccacaaa gcatcgtttc catccagcca catggctcat gctaatgatg 1020

aaaaaggcag ccagcagaat taaaattttc caaccttgca ttgtgacctg cgcgccctcg 1080

catggcatgg ccaagccagt tttcgtttcg cctcgtcgat cgtctcccgg ggtgaccaac 1140

gactaccgaa taacgatcga cacattcgtg cgtgcgtgtg tacactgcag acagacaaaa 1200

tactagtagt aaaggccagg ctgaaaggca ggcagcacgc agc 1243

<210> 2271
<211> 1004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292222_G1, chr8:153702619..153703622, Cluster 13

<400> 2271
tttgttttcc ttcttatttc ttttttctca taattattag gctcacgctc taccatcacg 60

tagctcatta aaactaggag acgaaggaca tgacgaccac ccaacacttc aacttaggtt 120

gaattgtgac tggtaactgc cccttgtgct aagaatggca atggtgttgg aagtagcata 180

ctaagagtgg ataagttatg gtatgcacta gctctatcat agtgtgccac cactcttgtc 240

ctggttcgtc ctctccttcc cctttgctta gcttgagcct gctacttgtc acatcaactc 300

acctctcatg gttagccatt gaagcacaaa gtaaacccct agggtgtgac agatctgctt 360

cgttaggtgt attatgagaa ggttggcctc acctgtaggc ttccctaggc ctaggatggg 420

accgagggcc tctatcattg tttaaggaag gtcatacccc tagatagtgg caatatgtat 480

tataaagatc atgtcaccag aaaaaaccta aagtggtcct cactaatgat ggttatgtac 540

cctcgaggcc tcctcccccc aagggacatg cttagctttg gctaaatcta ggaccctcta 600

cgccatggac cagatcccaa ggttctcatg ccccagaagc tctcccaatc tatggcacca 660

cttgggtcga gactagataa tgagccttgt ccctatgtct ttctaagtta ggactaagcc 720

cccattcgtt aagatctagg tccactatag actaggacat atagctagat gcctcaaaca 780

ttcttcaaga tagcctcaag gccggacaac ctcaaaagaa gatgcctcta ggatagaacg 840

acctcagata gtacgaccct agggcaagat agccctaagc atatgggtcc gatggcacgt 900

gcgcctctgc tcaagataac cttgtggaat aacaaggttg tcaagataag gtttatattc 960

atcctattaa atgtgatgga tgatgttggg gataaggaca catt 1004

<210> 2272
<211> 1034
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293709_G1, chr8:161532728..161533761, Cluster 13

<400> 2272
agccctatag aagaaaagaa aaaaaaaaca ttgttgcgcc catcacccat ccatttatcc 60

atgtatatta tactctgtat gatacaaatt aagcaggcac aaggaaggac gcagcgacga 120

ttattttggc tatgaagaag caggtggtct tgctccgcta attgccagat tagcggctgc 180

tctggccatc ttgtcttggc ttatatatgc tttccctctc gctcacgcta acccacgcac 240

ccggcagcag cgttgaccgg gcgcgcgcct tagctaatca gtaatcatgc atcccacgcg 300

gggcacccct atcactgctg ctttgcgagt gcaaaaaagc ctctaaaaca ttaaaacatt 360

cgacaaagta tttttcgagt gatatctggt gctcgacaaa taaaaaataa aaaaaaaatc 420

acggtgacgg cgacaagtaa tggtgacaga tactttatca gagtgtaaat aattgtactc 480

ggcaaaacga cagcctttgt tgagtgcgtg ctcgctcgat aatccgcatt atcctacacc 540

gacgtgacac catggcggtg cctgccggga tcggtttcgg ggtggtggct cgtcgccgtg 600

gtcgctgatg gatgtggcag caggagcagc tgccggccgt ccgcgctgac tagcggtaga 660

ctagctcggc ggagggaggg acaggttaga tggatgctga accggccggc cccagccgtc 720

cggctgaaaa aaaaaataca aatagctagg ttgctatcgg cctggagctg caaagtgccc 780

tgtgcgcagt cagcctgatt gtcgggaacg taacgacgtc ttttttttct caatcgtctc 840

ctcctcctcg tgtcttggac gtaacgtatc tcgctcgctt gttgcatttg caccgcctgc 900

aatccgctgc gctgttaaca acttgttgta acctagccgg cgcctagccc tgcagtacgt 960

gttgttgctt catgcagagt tgcagagtgc agtgagcgtt tctcatcaga gaacacgtac 1020

gaggggggaa cgaa 1034

<210> 2273

<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294928_G1, chr8:167422481..167423633, Cluster 13

<400> 2273
cgtacccaca attaagagaa caccatcata tatatatatc gtctacgaaa tctagatcga 60

caagcgggcc tgccaaaggt tccaggtaaa ttttgtactg atgtagcgag gggcaccaca 120

caagtgcgtt ggctgaatgg atcaggcaca tttccaagtc taggtcaccc atgcacatct 180

cgaattcgcg acgtgtgttg ccgatggatt ggcggaggtg actccaaatt ctaccccggc 240

cggtcgtccg ttccgtatcc tgataagatc gtggcgaggc cgggggaatg aattcaatta 300

attataaatt gacgcaagtt gtggaagtgg cgtcgccggt cgctgtcgct cgccatgacc 360

cacatatgca tgcaggcaac gacgcaagga attcactcat atatagcgcc agccacctga 420

cgtggtagca gcaagggcat gcgttgttcg cgatcatgca tggccacgct acggatgggg 480

ccaggcgtac gcgtaccaca gcgtttgcga ctgttcctct gcggcctcaa agattcagga 540

accttcaacc ctgcgtcgtg cgtgcagtgt ccttggacac agcagtagcg tgcataccat 600

gcatggtgtt ttgttttatt tgttcggggt aacagagaca gcaggaaaag aaattaaaaa 660

ggagggccgc accgccgctg cgttcgacga caacgaagaa caatgctcaa ccggccaacg 720

acgacgtgct ggccggtgtg gatgcgagca gcagggccag ccgtgcgtgc agtgcagttg 780

ctgttcgagc gtccacacgc ctctggctct ggctaccgca tgcatgcatg agcccatccg 840

gtcatcgccc cgagcacctg acggcggggg cgcgcgccgc aaaggcaaac gccacgacaa 900

aagcaaagca ccccgcccgg agggggatca ccattcacca gccgcggcta gctagtgctc 960

ctctcgtgac gttttttta ttgacctcat caccggacgc tagcgtccca cttgatgatg 1020

actccacact gatgacgaca gggactccgc ggttgtcagg acctgtaatt tccatactac 1080

cgaaaacgat gagcacttcc cggcccgtta cgatcacaaa ctagtgtatt gccgcacgcc 1140

ctgcgcggtg tta 1153

<210> 2274
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295553_G1, chr8:170177803..170178898, Cluster 13

<400> 2274
gtttctaatg gttaggaata agaatcttaa taaaaacaac tttgaacatc tttataaaat 60

ggttattcag atatagtatt ttttttact ttaaacaact ttgaacaact ttgaacatct 120

ttatttaaaa aaagactcct gtagatactc ttgttagctt tatttatagt ggacggcgat 180

gaatgaacgc gacacccttt tacggtaccg gtcattcagc tgctgagcgt gcagcagccc 240

cgtggtgacc atcggtttag gagtatcccc gcgctccttt gaaaactgca cgcacgcgaa 300

tgcacatagc cgcatcctag cctagcctag gcttttacgt acatgtatgt gcatgtaaag 360

cgacgaacgg gcaagatcat atcgtatggt cgggacggac ggagccggcg ctgcgttgcg 420

ttgcgtgcgc tttatatgtt taccggacac ggtgaagaga tagtccggcc ggtcgggcaa 480

gaataacgag ccggcaaaac tagctagcta gggaaagtgg agctcgtccg gtgacgtcgg 540

ttagtggtgg aaatccgttc atggaaatgc cggaccgtcg tgcgtgcatg agtagtagta 600

gtagtacaag caaagcaaag caaaggaaag gaaaggcgcc ggtctgaact cggtccactg 660

gatcgggccg tgcgtaaagc gaaaagggta ggaaagggcg cgcaggaaat caacggagag 720

ggctagaccg cactcagcca gccggaccgg gtgcgcgcga cagcccgtaa tgcgcgagcg 780

gggaaaggaa agcaactgcc gcggcgcgag cgcgagggca caccgcccgg ccggctcgac 840

acgggcagag cgcagcgtta ttgttgcggg tgttcgttcc taccttggtc gtccgagagg 900

gcacgggtag cttttcgtcc ggcagatcgc acaggccgta acgagctagc cgcgcccgcc 960

cgtgccgtcc atggcaaagc gctgcccggt ggaggcggtg ccgtacgtcg atcctggcgt 1020

gttggcgggt cacgtcgcat cgcaccacca gtccaccaca atcgagcgtg cgccggctac 1080

ggatatattc ggggga 1096

<210> 2275
<211> 1300
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295998_G1, chr8:172359163..172360462, Cluster 13

<400> 2275
cacggtaagc acggacccaa gcaggagtag gtacgatttc ctctcatcac gcttttgcca 60

aaaatgccag tgacgcgatt atatttttt tcagacgagc tgagctttcc ctatcgagag 120

agccccgatc gagcatatca tatgcaatgc agcacatgcc tcacgccaat tcgttcgttc 180

gttcgcgtgc gtgcgtgcgt gcgtggacac ccccgccccc cggccatcgc ttagtctccc 240

atcgatatcg tctcgctgac tcgcatggca cggccccggc ggcttcacgc gcgcctctct 300

ttcacaaacg aaaaaaccat gtcctgctag gctgatacca cctcgaaacc gtggcatgta 360

cggtggtttc gcaagctact ctagcgacga cagcgcagaa agcaagagag agagagagag 420

aagatcttgg cgcgatcctg tgcctgctgc accctggagt ggagagagac gacgacactt 480

gcgatttcct tcgaatgctc ggtcgtgctt ctctgcggtt ctgcgatctg cctggtcgct 540

ctgccctact cctactccta ctcctactcc tactcctacg tttggatctt gcctattctg 600

gcagatcgac ccgtaggctg tagctagggc ctaggggaa gaaatcgata aagcgcagcg 660

gggattggtg aagacggaga gaatcaacgg taataaaccc gagacgctgt tgaccaccga 720

tccaaatcat atcactgctt gcaacgagtg cctatagcta gctaggagag ctagtactgt 780

atatactata tattattgca cggttttcac acaagatttg tttcctagca atgcactccg 840

gagtactact ctatgaatga atagaataga ataggtttct aaaatcaaaa gtttgtctac 900

tcatacttta taaaaacggg cgacccgtca gccttttcca aagcctactt atatatttac 960

cgtatctctt ctttatctcc taatccaatt ttaagcttcc tagttgaata tatgtacaac 1020

taggacggat ttggcgctgt aggttctccc cgtgatctgc atgccttgcc tccggtggga 1080

tgagctagct aggacgcggt cctaaaaggt tggtcaagat acggaagccg gacaggaagg 1140

atctctcttt ttctcgagtc agctagtgct cgtctcgacc gtcgtctccc agctagctgt 1200

gtgctgagaa tttcctcgga aatgtaacat taaaaaccac tgcgctctaa ttcaaaagct 1260

ccacagcttg cacgtggccg caggaaggcg gataagtagc 1300

<210> 2276
<211> 1126
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300077_G1, chr9:13931001..13932126, Cluster 13

<400> 2276
aacgtgatgc taatgtagga tcttgttccc ccatgaccac gcaggatatt ttttttgttc 60

tgttaaaatt cccgcagtgt tctcgcggaa catatgcttc cccgaaggat gctacatgat 120

catgatgccc atacatgtgg tcgtcgtgga tccgcattac catatactcg gggtgtacgg 180

acccaacggt ttctccagcc ctcccacagg ccacagactg ctgccctagt aggcggcgtc 240

cccgggctcc ggcgactctg ctgcagtagc tagctgcagc ctcctgcagg aggaccagaa 300

gcgcagaagc cagccccaac tcccagagtc ccagttccgc tttccggtga gatcgcggct 360

ggtccttctc cagttctcct ccctgtcctg ccactgccac cgcaccgcac gactctgaac 420

gctggcaatg caataggcaa cggcaaagcc cggagacacg cttggttttg gctctgtccg 480

tgtccgtgca atcatccatt tgctgccttg gccccctcc ggcctccctg ctgggccctg 540

ggcgcgcgta cgtcatcacg tgtcctgcct gcgcccccgg agcgagcggc agttcttgtc 600

gccacgcctc taatggcgcg catgcatcgc gtcagtttcg atggcgatgg caccatggcg 660

ccgccctctt taccagttac cacccgcctc cacacacaca cacacacaca cctctaatgg 720

cggtgagaac ggctggtagt ggtgcgcgcg ttcgcaagtg gtgaggatct ctctggtttc 780

tgtgcttatc atctggagaa gacctatacc ctcgtgtccc gaaacctgca ggtgtgcttg 840

tcgctgccgt tggcgagttt tatccgaaag gcgattccat tattgtgcga taatggagga 900

gagttgctta gtgcttgctt actactactc tggatgtctg aatcacgtcc aaccagatca 960

gcttccattc tcattgtttg ttcctccaaa agataagaga gctagccagt tgttactggc 1020

ccattggccc gggaaccaac atggcaatgg gccgtccacg tctggctaca tgctggctgc 1080

cgcccccatc gagcccgtta gatggccgct gctgatatag atgtat 1126

<210> 2277
<211> 1143
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300092_G1, chr9:13987260..13988402, Cluster 13

<400> 2277
caatcaccta aatacctact acctactagc cagcctgctt agctccaaaa tccagatcgg 60

tttcggcagt tcggcggtcg acaccctcgc aagtcgcaac gcatcgatcg atcccaatcc 120

ggtcggcaag tacattaacc ggccaaagct agctgacgag actcccagtc ccgtctgaga 180

cgcttccaag ttccaagcgc taacgcgcgt caatctctca gacagccggc tcacgacgcc 240

ctggccagct ctggtcgcca tgagtcgcag caggttcttt gcttggacgc tcgcggtcgc 300

cgtcgccgtc ctcctgtggt cttattgcgc cgccagagca gtctgctcct cctcctcgcg 360

tcctctcggt acatacattc cggcgactaa gttaagtttg gttttgggtt tctagctagg 420

cgacgacgtc gagtcgtcaa ctaacgtatg agatgtagct gctgcggacg atgggggcgg 480

cgcgagggac gacgagccag agccatgcgc cgcgggcggt gccgcctccc gtggccagag 540

ggagatctgg aacagcaggc ggtctttggg tggcaggtcg tggtggtccc cgccgtcgcc 600

gctgtggaac tcgcccagga cgatgcccgt gcccccgccg ccgcaggtgt gatgtcgagc 660

tgccgagctg gccggctgga ctctgctgct gcgacctgcg actgcgagga gtttcccgtc 720

gagtgtgttg ttgtgcctga atgcctggcc tcttctttct ggagaggtat gccgtatgca 780

tgcttcagga ttgcatacgt acgctgcttc agctgtccgt ctacgaacgt actaccgacg 840

tgtgtgatcg aagtatttgt gtgcctcgaa gatttgttcg acgatcctca ttgattccaa 900

taggtcaaga gctttatacg acatctcttg gaggaaatag attttgtatg gttattagat 960

acatattatt ctaacatcta actcgtatat gaacacaaat tatgagttta aatcacatat 1020

aaattaaata tgaataaaaa acattatcag atgtaaaaaa agacaagaaa tcaattctct 1080

ctttaaaact agatataatt aaaattgttg tcgcccatga cgcagagcgt tgtattcttc 1140

gaa 1143

<210> 2278
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_300327_G1, chr9:15330938..15331973, Cluster 13

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (523)..(622)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (552)..(552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (553)..(553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (554)..(554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (555)..(555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (556)..(556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (557)..(557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (558)..(558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (559)..(559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (561)..(561)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (562)..(562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (563)..(563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (564)..(564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (565)..(565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (566)..(566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (567)..(567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (568)..(568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (569)..(569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (570)..(570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (571)..(571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (572)..(572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (573)..(573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (574)..(574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (577)..(577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (578)..(578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (579)..(579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (580)..(580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (581)..(581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (582)..(582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (583)..(583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (584)..(584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (585)..(585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (586)..(586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (587)..(587)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (588)..(588)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (589)..(589)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (590)..(590)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (591)..(591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (592)..(592)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (593)..(593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (594)..(594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (595)..(595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (596)..(596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (597)..(597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (598)..(598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (599)..(599)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (600)..(600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (601)..(601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (602)..(602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (603)..(603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (604)..(604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (605)..(605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (606)..(606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (607)..(607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (608)..(608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (609)..(609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (610)..(610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (611)..(611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (612)..(612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (613)..(613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (614)..(614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (615)..(615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (616)..(616)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (617)..(617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (618)..(618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (619)..(619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (620)..(620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (621)..(621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (622)..(622)
<223> a, c, g, or t

<400> 2278
acgacgcggc cggacgaggc cgagcgcgcg gacggccggc cgagccgggg cacggggtcg 60

gttgaaccgt gtgggcgtca agctcgccgg caggcgaacg cgcgtgcccc cctcgccgct 120

ccggtcgcga gcggggttcc gagcgttact gaacgctttc tcttcacccg gatgaaggcg 180

atgcaccacc gacgcgtgcg cggttcttac catccgcgat gcttaggaat gactctcgac 240

tgggtaacgg aaacatcaat cgccgtagat tgcgcttcca cataagtgcg tcgtgagagc 300

gactcctgca ctgtgtcacc taggaatggc ttggcagctc gaattcgtgt cttctgtctc 360

tccagtttct acgactgaat tctggtcagt ataactatat agtgttctcc tatgacgccg 420

ttccacgtca tagagcctgc taatgtcgtc ctgattctat agagcgagac ctatggggta 480

ggatttcata ctatattttt atatactttt ctgtgcgctg agnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 600

nnnnnnnnnn nnnnnnnnnn nntcatcaga aaaactgcgt ctctggttct gatgatcgat 660

cgcaatgtcg tgcctggtct tctctgacct acgcagggcg agggaagcct agtcggtcta 720

ggtcgctgca cctgcttttc ggaggggggg aaggggcagt gtatctatcg gcgagggtat 780

gaggagatgg tattctagta tatcgtctat tgagcagagg gcgggcgtgg tgtgaattca 840

agtttgacgc tcggtcagcc ttcttcgcag ggctcgaaac gtgcattagc tcgcgcgtta 900

ggaagtagta gctcgctatc aacctgcaga taggcggctc agtatctgtt gagccgggga 960

aattggacaa gggctatcaa attcctcatc agctcaccga ggcctcacgg agtcagggag 1020

ttggagggct cttcgt 1036

<210> 2279
<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300342_G1, chr9:15401098..15402116, Cluster 13

<400> 2279
ctaaatgaga tgaactagta actaaggccg tgtttgatta tcgactaaac tggccacacc 60

cgagtcccga caacatgagg cgacgccgca ccccgcgtgt gcagcgagca aaagctgcgc 120

aaaacttctg cgttcgcgag aagaggagag gaaaaacacg acgttgctgt cttggtggat 180

gctgcacgcc acatgttgcc gcagccaggc tctcggtcgc gaagcaaacg gaggctgctg 240

atctgatctc agcttgtgtg gcgagttgtg gcatgctgtg gagtctgggc tgaagacata 300

aagcaagcat gccctaacta aaggtgtacg tgatttttcg cgtgcgggtc ggagtcgcag 360

ggagcagatg ctgggccaga ggggcggccg ggccagccgg agctgcttgt gggaacgggg 420

acctggacgt ggaggtggct gagtaggcgc cgccgccggt gctgctttga actatgagga 480

cggtccgtgc cgccggccgt tctgtttgtt gtgctcaggg tctgtggcgg aggcggccat 540

ggccatgaga agttctcggg cttttgagca ggggcagagc gagagacgaa ggctgctgct 600

gctgcttgat cgaaggctgc tgcttgatcg agagtgggat ctccggcatg tgcacgtgct 660

atgatatcct tccgatcccc ggcctggtga ccgttccatg cataactccg gttctcagcc 720

atactactac acctttgcgt cttctgttat ctagatacgt taggaaatct agagcatatg 780

atgaggccat atgcaccgga cgtggataga cacataccgg ctgattggtc taaaccctag 840

acgagtgcac ccacactcgc cctatccccg aaaacggtat ttttttggcg tgtgagtgga 900

tgtatcaaaa gggtttttaa atgatttgtt tttgcatcca ctcgttagat atataggcaa 960

tcaaacaaat gttagataaa tttaatgtat gcagtgacgt atgacgagac gatgtaacc 1019

<210> 2280
<211> 1286
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301440_G1, chr9:21817675..21818960, Cluster 13

<400> 2280
cgagagacag caagtcgcat ctatcacatc gcagggcggg ccggcggggc gtacgcgtac 60

ccccacgcgc gctcgtgcgc gcgccgcacg ccgagtcggt cgccgccacc tcgcaagtac 120

acgcgtatcg tatatgcatg gcgcgcgcgt cctgacctct acatacattc atccatcatt 180

atccaccacg aactgattag ataaatgaag ccatccccaa gaccccaact aatcgcgcga 240

ctaatcatgc gtctctctgc tcgtttctgt cctcaagctt ggaggagttg agccatggac 300

gtacggcgga agcaagcaga gggagacgca tcgcgcgggt cacatggttg attggagttt 360

ggagctaggg aggcgggggc agggcaacct gtccttgtga aggttcctct tgtcgttgca 420

ggcgaccagg ctggaacgaa caggaccatg catggattca tccatccatg gcgagagcgg 480

gcgaactata tacgatccat cctaggctcc taggctaggc cggtggttgg cgcatcttca 540

gggagacacc gttgatccac ttgtttcctg accctcttta tgcagggttg ttcagtctca 600

ctattaatcc atatatgtgg atcgaatgtt attgagtagg tttaaatcta tcacatttca 660

aaattcatcg caatccattc cattacactt caattgacat agaattagac aatttgattg 720

gttacccgca ccattccata ctgaatcatc acgtgcattg actttggcta aacgtctatt 780

tgtttgtctg tatgtgaaaa actgtggttg catgagtgga tacaaaataa gtcgttctga 840

tgctatttac ctgcatgtgc acataagcta gaaatggtcc ggcgcagaat aaccgaacgg 900

gttaatctga agaaacgtag caataatgtc tcctcgtcaa agggtagtat tattgcgggg 960

gtttcccgtt cttacgtcac cttgaatgat ttctcccgtc tatatgcaag gcaaaagtgc 1020

cgccttaatt aatttcgaaa aaagggagta aaaggtaggt tacgccgagt aataaatgtg 1080

tgtggggaaa aaatgtcggc agctcaaaaa ctttgcagta gtgacgaaac gagtgaccct 1140

tgtcactcac atgggcatgc agttgcgata gccagaggac atacacagtc atggatgggc 1200

atgatcatac acagtgcaca accactcacg aagacgccta gctagaggac acagtccagg 1260

actatatatc tacagggcag tggaac 1286

<210> 2281
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301442_G1, chr9:21820027..21821061, Cluster 13

<400> 2281
agtggaaaaa aaacgggttt catggttgat ctttgaccgg taaaaacaat tgacggataa 60

atgcaacgga cggaacaagg acaaagaagc ggcttgcgcg ggctgtaaag tttgcggtgg 120

ttgcaattaa ctggaatggg gctcaggtgg gtgcagccca taaataaagc aggaggtggc 180

ctcgtgttgg ttctattagg cccattagtt tctccccccg cagatttggg ctgcggttgg 240

agttgttctg ccacgatagc cagtttgaaa gaagaaaagg gctatttaaa ttggtatacc 300

tttagatttg tactgtactc gtgatttttt taaactcagt tttgtctttc tgctgccatt 360

gggaaaaaaa attaaaaaaa aactactgtt gttgtggccg ttctttactt ctttgctctc 420

ctgaaaatca agacgaaaga aacgacacac aaggcaacga aaaaggagtt atgtacatgg 480

aagccgcatc cgtgtccacc ggatccgccg ggacgaaccg tccccgtcgc ccacgacacg 540

aaccgtcgtc gtcgcggctg ccggccggcc cgcgccctcc ccgacatgtc acgcgccgcg 600

caacctgcag ctgaatcgga gactgcgctg ccgctgcatg cgcctgatga agaatctggg 660

atagatgcga tgcatgcaca agtggagtag agatggttat caggtagcga cgatgggtct 720

ccgtggctct tgattacggc ttgcactgtg tacagtacag gttgggatac cataccatgt 780

agcagcagat gcaagtcagc cagagaatgt catgccccat gctggccgta gctttttacc 840

tgtcccatct gcactgccca ctgcatatag acgcccgcac acgatctctg cgggccagca 900

gcagcagcag cagcacgagc acgtaccgca gcagcgcagc ttcacgcacc tgccactggt 960

tctctggtag aactgtcttt cacgggctcg acatgaccgc gtctgtatct ccagttgcac 1020

actgcgatgc tagct 1035

<210> 2282
<211> 1138
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301874_G1, chr9:24366706..24367843, Cluster 13

<400> 2282
tatgctttcg agcagcttca aaactcctcc cagaagtggt gaatatttgg aatcgtggag 60

cttaaaccct gtcaaaatga taggatgagc tcgtggagaa agaaggtgcg ggggttgacg 120

actacattta tatatagcta ggtattaata gaataataat agctgcgtca ttgcagattg 180

ttagcaatga cacggaggat tatcacacta cttgcattgg ctgccctcaa caaaaggcta 240

caagttccag tagcggacgt gcactttgca aaaactgaag gtacttgtac gtgttgtacg 300

taatactctc acctgatgac aacgtacgcc caacattcct gtccgggccg gtcgatcttg 360

ttcgagctga agacagtcgc agggcaactc tcctttggca ggacgtacgc gcgtgcatgc 420

acgcatgtta cactgcaatg catgcacggc tagctagcac accatggacg aacgaacaca 480

gcatagcaga gccaagcaac cgtcgtcgat ggcgacgatg accgcgcgcc tgcctgccag 540

aggagagctg cctacaactg tcttcagcta gctgcatcat gctagtcccg cggtcgtcgt 600

catcgtcgtt agaaaaccag ctagatatat aggtagctgc tgctctcagt tccatggacg 660

atggatctag ctagcttagc cagcaccgta cctcttccta gctagctcct ctgcttagac 720

ctcgcgaagt gttggcgctc ctcttataga gtcagtccac gacgacgacc gaggaacgga 780

gtagcccgtc gatcagcagg ggcgcgtgtg gcagcctggc aggcgggcgg cggtggcata 840

tgccgtgctg ctgctgctgc tgctgcagga tgcatgggcc taccgatgga tgcatgcgca 900

tgatgcgctg cgacttttta ggcccatggt tgtaccatgg atatccctcc tccgggattc 960

ctccgcgccc atcaacttta tcctattccc cggccacgat gaggcttccg tcgacatgga 1020

gaatcccggg gccggccgat cgctggtctg tgtccagcca ctgtcgtcca ccgggccggg 1080

cgccgatcgg atggctttgc tacctgctac gtgccgtgag tcgctcgtcg cttgtcaa 1138

<210> 2283
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30421_G1, chr1:187259719..187260871, Cluster 13

<400> 2283
atttttagag cctgccccta gctggagtag atggtatttt accgtaacca aaacgagtaa 60

gtggaggttt acccgacact ttgactcgga gagcaggacc actgctccta atcccaagga 120

agcccgatgc aaagcaagca agcaagcgca cgggcggcac cgcttccaac gcagcattcc 180

ttcccaccac cacctcccga acgaacgaac aagcaccgcc gcggacgatg agagcctgct 240

ggtgtgaaaa gcgggccgcc cgccttttag cagcaaacta cgaggcacgc gggcaggcaa 300

attcctagaa cgaaccagag gaaggagcgg aagccccttg cctgccggct gccgcgcgcg 360

acggggcaga gcagaacagg cgtcgtctcc gcgcacgcgc gtgcgccggc catgttgttc 420

gccgtctcgt cgctgcatct gcgtgcgcgc gcgtaccgta cgtccccgcg acacgatcga 480

gcctcgctgc cttcgggatg gggggggagac cccggcgggc ggccgggggа gcagggcccg 540

accgggcgcc gctcgtcccg aggcgggtgc cggcgcaagc cccggcctgc gcctccggct 600

tgtcgccgcg cgcggcgcac gaagcagatc gcacacacga aacaaacgcg gcgcgcatgc 660

gggggggtatt ggggtaagat acggattccg gagcaggtcg atggatcaac catgtaatct 720

ctggatggca aaaggctgtg gattttgtca tttgtttagt gctgcatgcg tgcgtgcgtg 780

tgttgccttg gctcggcagc aggcagtcgg cagctccgtt cccgttttgc atgcgcgctt 840

gccgcctgtt gtcacttgct ttcagccgtt tctgggctgc ttcgcggccc gtggcctcgg 900

caaccaagca cgtgtgggca cgcgcatgca gccatgcatg caggggagtt actcttgttt 960

ggcaccagct agctagctag tactagccaa cgcccacaag ggattgccgg aatactttcc 1020

aggtctctaa tatataggtc aacttatgaa gttgtcttaa gttacctttt tttctaacgt 1080

ttaattgact ttttatacat ataaaaaata atatttacta tgtcacaaga ttaacatagt 1140

tagatataac atg 1153

<210> 2284
<211> 1183
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313135_G1, chr9:96693645..96694827, Cluster 13

<400> 2284
tgcatgatca tcttttacag cagtacaact ccataaatca ttgttagaac ctatattcaa 60

gtagctagct atatgtccag tacataaata tactagttag atctcggtca attacttttg 120

aattagccgt gatagttagt aattaaatca tgtgtgaata gtggaagcca gccagcaaga 180

gcgagcttcc cacgtagatg atgattacga tatacggttc cgagtcacgc agacaaagcg 240

caaaagggga tctatcgatg gaggagaaag gaatagctac tagctagcta gacactgtgg 300

ttgccgtgat gatacgaggt ggcgtgccac gccctcacta atcagattcc cacgcgctaa 360

cccaacaaaa tcatcccccg cctccccggc ccgcaccttt tttttaccgc tccggccggg 420

tgaaacagcc aatccatcat cagggtcgtc cggccgatcc tgttagttac cagatagtag 480

tacgcactag ctacgcacgc cgccgtatat atacatataa ctgcagactc tgaatgggac 540

ggacgtatag tatgagcttt gcttgcttgc tagcctagtc gctgtaatca tggcgacgac 600

gtgcaggcag ggcacacgca gcagaaagga gacacccctc gcatgtttcg ctcctgcccg 660

gcaagagcgg ccggccgccg cggccttgtg tagcccgccc gccccgtgcg tgttcggcgg 720

ccaggttcca gcccctgcac atgcgtgcag acagttatta gtatacggca caagagtacg 780

cgtagctttc tcccacgccg aaatacgcgg aatcatggcc acacccgtcc ccgcccgcgc 840

gacgccatca tggatcccag tccttcccct ccccggcagg cgcgcgtcaa ggccctccgt 900

gttcttttta ctatcaaaaa aataaaaaca ttcctgcgca ttattgtaaa aagaggttaa 960

aaaacaatat cgaacgtcaa tgaggacaca attgagaatg ttatacatct atcatgtttt 1020

gcattttcta taaaaaactt taaaagttga gtcatgacag ctgccatact aaccactact 1080

tgagatggag aatgaaacta gcctttgcca ttttggcaaa gtacgtcaga cgactctaga 1140

tcaatgtgaa agaatcgagt tgtccaaaaa gacagtgaat tat 1183

<210> 2285
<211> 1120
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315868_G1, chr9:111083686..111084805, Cluster 13

<400> 2285
tattattata catctttaag acatttatac acttctctaa tttgctctag gttcaagtac 60

gacgcgctgc agcccgcccg gcccagcgtt gcagcgacga cgacgccccg ctgcggacct 120

gcggtcccgg ccgtccgtcc gtcggtatgc gccagcgcca cacgcacctc acctcagcac 180

agcaacgtca gtccgatccg tcctgcggcg gtctccgggc cggcctaact ttgacacggc 240

tagctagccg gctgaatgct gattgttgcc taccaccaca cacagccgct aaatatctct 300

actctctgga gcttcgtcgt gcgtcctttg cgcgtacgta catacgtacg tcgacccccc 360

gtccgtacga tcgagtcacc gcacccgccg ccgccgtcga ccggcgattt ttatccacta 420

ctacatgcca agccaaggtt tcgtccttga gtcagtacaa ggctaggatc taccgccagc 480

tgcgcgcgcc ctctagcttc ttccctcccc acggccatcg gtttcagtca cgctcgcgct 540

cgcatgcagt ccaagcaacg ctacatctcg acccggccgg tctgctctgc ggaagcttca 600

catgagcttc cgaggaggca cgccgcacgc cgttcctccc gccgtgtttt ctctctttct 660

tcttctccgt cgagcatccg agacagacag gcatatgcag gcggatggat acgttatttc 720

tcggcgcgcg tataaatttt tccgtgcgtg gttaatgtat catatatata tatagcacgt 780

gccatatcgg tcgatagaaa ctcgtcgcgt cgtatcgatc gctgccgtga cgacccgtgt 840

acgttgttca agtgttcaaa gtggtcctac taaaccctac cctgcttgtt gctcaagctt 900

caaagatctc tatagccgtt taattagttc ctttcgttcg tcgtcaggtg atgctactag 960

ctgccaccag ctagttcttg gaaatgtcct ccacaccccc tcttcgccgc atataccgat 1020

cgacgagtct ggaagttcca gctctcgacg acgaagtcac ctcgctagct cggcagatca 1080

tcatcagttc taaatgcatg ttccagggga cgacgacgag 1120

<210> 2286
<211> 1058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315871_G1, chr9:111086372..111087429, Cluster 13

<400> 2286
atagacatat atggatacac gcacgcatcc catgcattcg cgtttcacgc tcatctgcta 60

gtagactagc agttgactgc cggggccggc gcggcggtga aaaatccaag ggtctcctcc 120

ctctcctacc tacggcacag gcacagcatt ccccatcgag gcaaacccat atctatatcc 180

atggtcggtc atgtagtagc ttcgtggaaa atgggcgacg gtcccgatgg ccgcaagcag 240

tctacgtaca cgccggcccg ttggtctagc tgccgcaagc aagcgcggtc ggtcaggaaa 300

atcggtcgcg caattgtgtg gctttctttc aaacttcact ggccgctttg aaaaggaggc 360

gcgcgcgcgc gcggaactag tggcaagact ttggagctgc acgtcgtcaa cttgtttggt 420

ttgtttagtt ggggccggag aggattattt ccgtttcctc catctcagat catctcatct 480

cacatgcatg catgtaggag tgccatgcat caactgactg attagctagc taaacaatat 540

ttatacaacg agagagtact caattaagta ggacatgagt ccatcgtcac atcacgagag 600

ccttttcgtt tcggacggcg acaggacttt ctacgtacgc acgtactagc tggagctgga 660

gtagtggctc gtgatagagc gagcactcga gtataccact agacgaaccg gccgccgcac 720

gtttctcttc ttcgccgtac gtgtgtcttc gaatccaagg cacggagtaa tatatatata 780

tatattacag tggcatgtgg gtgcatgcgg tgtgtgacac tgcctctact agcctggtgc 840

tcggtagggc agggcttgag agcgaaattc gtttgctcat catccctgcc tgcagtcatg 900

gaatagctcg cacacttcgt atttgacatt tgcaacgccg aactcgtgca aattcactgg 960

ctccgtacct tgtatctggt accatctttt gcacggttcc agataagcag ccttctttcc 1020

agattcgcag caatccccac tttgtagttt tttgttct 1058

<210> 2287
<211> 1324
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315880_G1, chr9:111097991..111099314, Cluster 13

<400> 2287
ttaattcaag ggccgccgga gctagcaacc gtcctcgctc tggctactac tcctctccat 60

cctatccctc cccgtacatg gcaatctgca tcgccatatg catgcaatgc aatacatgca 120

agcggaccac cggcagatga caagattggt ctcgtttgcg tgcatgcata tgcatgcatg 180

atgcaccggt cggtcgacac ggtactggaa gtcaggaacc gggcatgcca tgcgggaggc 240

aagcatggtt ggccgcggcg cgcccgagag atctgtttgt tcagtctctc tgagtgagag 300

acgacagttt ccaacttgcc gttctcggac acgcaaacac agaacggttg cgtgcccgtg 360

ccggcgccca gtccggccgg gaagaccaat aagctagggc ggccaccggc gccatcagaa 420

tcacatcagt tccaggcttc cagcgacctg ctgcctactg gctactgcac agtgcgcact 480

ccagcagtac ttccgtatgg cacggcctcg tcgtccatgt ggatgcatgc cgcgacggtg 540

cagcgccatt gccggcacga aacgtgctca ggcgcgcgcc cagccggtgg tggggctggg 600

gcgtttgcgc gggaccaaag ggccatccac cagcgccggc cggagtcgtg gtgggggcg 660

catcccacat ggcccggtca ctcatgttgt catgggctca tctcatgcat gcatggacgc 720

agcacgcgac aggcctctga cacggaggcg ctcgcgcggc cgctctttgc ggcgtttggc 780

gaggctgaag ggggaaaggc ctgcgctgcg aggatcgtcg accacccccg tactacgtcc 840

tgagtcctga ctccttttt ttttggtggt cacgtcgggc atagtgcacg gttggcagcg 900

acactggtac ggtggtgtgg cagtaggcgg acggtagcct tctccagcgc gcaggctcgg 960

cagaaatgac ctcaggagga tcgggttcgg tccatggatc gacggcaggg tcatacaact 1020

acgtacgtgc agaggaccgt atttgtttgt cattggttca cacgtcggca ggagcccggc 1080

acatgaaggc ctgctgcaca cggcaccaca ccacctctgc gggcgtatcc cagttccccg 1140

agagagaaaa atctttggac gtactaccaa agaaacggac agccgacggg gcattggggc 1200

acgcgccggt tgcgcgcctt ttgcccgtgc acgtcctagc tatcgtgtct cctgtcccgg 1260

accgggaggg ggagagcagc acaccacgtg gtgccatcat acgcctgcct agatcccacg 1320

atcc 1324

<210> 2288
<211> 1186
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320417_G1, chr9:135379623..135380808, Cluster 13

<400> 2288
tatataaata taataagttt aacatgttgt acattagttg tctttagctt tagatggctt 60

aggagaggcc caaaataagt atggattaaa agtcattttc aaaatttgaa tttggataag 120

tttgagaggt tttcaagaca tcggacacct atgtttcagg gtcgtcggag gatagttgat 180

ttgtccaatg gctccacata gatagcccga gagagcttaa tcatcgaacc ctttgaataa 240

tagagcgttg gaccagtgag gtgggttcaa cattctgtga gttccagagc atgtcagact 300

attcctacaa cgagcatcga gaccatatgg cacaactatt taagttagag ttccttttat 360

aggatcgtcg gaccttatga acgatggcca tgtcaggcca acaagttgga tctgacaacc 420

tccatttagt gacaagagag ggttttgcgg gtgtcggatt ggcctgatgg tgttcagacc 480

atacactcat gataataatt gaaacaacta gctagtcctg acacagtggt accacaattg 540

tcgtagtgtc ttatcggatc ggcaatatgg tatgatgtgt gagcgtcggc cgtcggatgg 600

tttggtccag agttctataa caactagtta gccagttagg gtctataagt atcacaccgg 660

ccagataaat taagtcattt ccattaatct aaagtgcacc acttagagct cctttggtga 720

caagaaaatt gaggggttga aggagaaata aactaatcgt tttcgttttc gtagcttttg 780

tttacggttt cggttcacat cgttttcgtt ttacgtggcc catgaacacc tgaccagtcg 840

tacgatagct ccgtggcgtg cgaggggaaa gaaccaacga aaccgtgtcc aaacaaagtc 900

gccagcaacg cgtctttctt ttgtccaact gcaactcagc cagcaggtcg acgtcgattt 960

gaaatgcccg atcgagagga tgatcgccgt catgtacgta cacgccaaaa actaagtagt 1020

gtggcagctg gcggcccccg gtctcggtct cgctctctct gctgtcagac ctagctttca 1080

tgcatggaat tgttagagcg acgaggacgg catgcatgga agaatgtcgg tccgattcga 1140

cgtctagtca tatctcgcgc tcgtagctgt tgtccagttt aacgcg 1186

<210> 2289
<211> 1292
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320538_G1, chr9:135860439..135861730, Cluster 13

<400> 2289
tttgaatacc tttccctttt ccgcgtctcc cctacccagc tttaccccca tcgccattga 60

atgccttatc acgtgggcgc cgccgggcgc cgaggagacg tcaccgtcgt ccccggccgc 120

tttattatta cagccgagcc gagccgagcc ccggccgcgc gcgccagcct ttccccagtt 180

cccacccccc ggccccgccg agcccacgtt cgcgtcgccg tcgtccgctt ccgttgctct 240

gctgcctttt ccttttacgc cgtcgtcgcg ttccgttccg tcgcccatcg ctgcatattt 300

gttcgcttcc cgcgtctccc gtttcccagg ccagctggtg catggatgtg tacgacacga 360

cgatccgtgg ccgctacagg agatcgatgg gggcgacgag tggccggaca catacgaacg 420

gagatgtacg tatgtgtgtg tggtcgtacg tgcagtgcaa ggtgcaacgt acgcacgacg 480

gcgcagcata cgttatttgc atcagtggta ctcctccgtc cgggggtgcc gggcacagga 540

tcaggcaggg caatatatat gcacgcatca cagggcatcc agtagctcga tggatccatc 600

tgttctgtgt acgcgcaaag gcccgctgaa agcacggttc gctcgttggt aggtaggtac 660

tactggtaag gcaccgaacg gcgtgctata tatcgggcca cgttaaactg agcttcatgt 720

gtcttgcaga cagcagatta gacatggctt tacgagatgc atggcagcca cccagacagc 780

catcaggcta cgttgagctg gtcttcatgt ctagccgatc gacggtctaa acatgcatga 840

tattacgggg ggtcgttttt tgtgccaagt ctcagcctca aaagtacgag cccgaatcag 900

cctagaatct gcaaacttta taacccctca cctcattaat aaatcacaca taaaaaaaat 960

aaaatggttc gctcgtctat taatcaggtt acttgctcgg aaagcatgca tgcatgcctg 1020

cctgcacctt aattttgggg ctctggatca agttgtcatt tctccgacca cggatcggac 1080

ggagccacac ggaccacgtg acgtaacgta accttggggc cagctagttg tagctgtagc 1140

tcggcggcag ttccatatca atcaaccagc gcgtggttag ttaatttact cgttcagcga 1200

gcgtgcgcaa caagcaaaat ccattcgcgt gaaaaaaaaa tcgtaggtgg ctgtcgcgcc 1260

cgtgttgttg ctgtttggat ggggggtcac cc 1292

<210> 2290
<211> 1300
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320540_G1, chr9:135865618..135866917, Cluster 13

<400> 2290
ctcgctagtc acgcggatgg atgcgttgca tcagcgtgga gggtcatcat ggcaatgcag 60

ctgctgagat gaggttggtg ggcgacaggc gacgcgacac cgtgcatggg aaggggaagc 120

cgctgctgat cgaattcgta cgtaccgtag tacgctgaga aattaatggc cgcgcatgcg 180

atgcgatgcg attgcgtgtc cagcggccgc agaccgcggc tgggtcgtcg gcgcggcccc 240

gattgacttg tgccgcgggc gggccgggac atgcatgcca gcaggcgcct gcctgcagcc 300

atgatggtgc tcacctcacc tgagactctg agactgagac agacgagagg gaatcgaacc 360

gagctgctgg tctgatcgat cgcttctctc tcgatccggg ctagcatcga atgccctcac 420

gccgtcgctg tgttgttgct agcttgcgtt ggttggacac aagcggggcg atgcagccgt 480

ggacagtgga ctgaatgcaa gcgccgtgcg tgcagtgcgt gtccgattcc gatgaggccg 540

gcccgccgcc ggcaccgtgg taaagccggc acagggtacc agcacaaggg cacaggaaaa 600

ggcgtactac gtacgggctg tgggcgtaca gtcacctcac tgtacgcact acggcgtccg 660

ccaggcgcca gcggcagtac ggccggcgcg tccaatgaac ggccccctgg cccgcctgcc 720

gggtgccggc cgcgccggcg gcccctgtat tacgtgcacc ggccgcatgg catgccaatg 780

caaggcttac atttcgatcc atcttatctt attctatatg ttccacgcat gcaaatgcaa 840

ggcttacatt tcgttgcact cccttgtgac gctcacgtac gttcttttgt tccgtgaagc 900

gcagcgaccg gccgggaaag caacagctac ccaagctagc aaagcttttg cgacgacgta 960

cgtacccgac acccatcggc gcacctgcat ccatatccat ggatgcaaat atgatgccca 1020

ctggccactg gtggcagtgc actagataga gtacagctcg ccgagcacac atcacggtac 1080

gtgcctgcgc gcggtcactg gcgagatgca tgcatgcgaa cggcggcagt gcatgttctc 1140

gcccgggcct ccattggtct agaatagatg acatagacct ttggatggat cgcatgtgtt 1200

ggaagcacgc tggttagtgt ttttttttc tatcgggcgg ctcgtcctgc tagtagtgct 1260

gccgcgaaag ccaagttcca tcgccccacc accagtagat 1300

<210> 2291
<211> 1206
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326362_G1, chr10:9892721..9893926, Cluster 13

<400> 2291
agaacctaaa aaaaaaagac acaaacacaa aaacccactg tcagctcagc tctcttctca 60

ttagaacgtc tgcttggtgt tgagaatagc agcatcgtct cttccacaaa tcgattatgt 120

gattagaaga aagtcatgga ggcgacggcg ctgagcttgg gcaaggcagt gctgggcgga 180

gcgctcagct atgccaagtc caaggccgca gaggaggtcg cactgcagct cggcgtcgag 240

gacgacgtga ccttcatcac ggacgagctg cagatgatgc agtccttcct gatgacagcc 300

gatgaggagc gaagccagac caaggtggtc acgacctggg tgacgcaggt ccgcgacctg 360

gcctacaacg tggaggacag tctcatggat ttcggcatcg acgttgggaa gaagccgatt 420

tgggggtgca tcccccgtag ctcgtgcgat cgacgtcgca tagccaagga ggtgaagaag 480

ctaaggtcca aggtcgagga tgtgagcaac aggaacctgc gctaccgcct catcaaggat 540

ggctcaagat ccaagcctgc cggtgcggcg gagcaaacta ctgcctctga tggtgtagag 600

cgtcaaaaac caaaggcaga cctgctgcag ctggtcacta gcaaggaggt cgacctgagg 660

gtcgtggctg tgtgtggaac aaccggtgat cgtgggaaga cggccgccat ccatgaggtc 720

tatgatcacc caagtgtggc atcaaagtat ggactcaggg catgggttag gctgatccac 780

cctttcaatc cagaagagtt tcttcgtagc atggtacggc aattcttgga gaatttccat 840

gataagcctc aaggtggaga agaagcaaca aatgttgggg ctactgtcct tctgaagatg 900

gacaagatga accaaagtga tttagtgcac acgtttacta cacagttgag tagcaatagc 960

tatctaattg taatagatga cctatgcaca gtagaagagt ggcaacgcat cagaaggttc 1020

ttccctgaca acaagaaaga gagcagaatc atagtgtcca ctcagcaagt tgaggttgca 1080

ggcttatgta cagagcaacc ataccaaatg tccgagttta agcagctccc gtatgaccaa 1140

acactttatc tgttccatag gaaggtaagt ctccatctaa caattccttc cggttattgt 1200

tctgtt 1206

<210> 2292
<211> 1329
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_336589_G1, chr10:75061468..75062796, Cluster 13

<400> 2292
tcttgcttac cgccgctgga acccgtgcct aacatgatca tgtcttttt ctaaaagttg 60

taattgcttg atcctatgga gacttcgagt gtggtgtggt tggatgagag cacgagagga 120

catgacgcac gccacatgct ttcctaattc gcctttggag tttattagta gctactagct 180

gggttaatta gccgtacgtt agcccatggc gcctcctccc ttgctctctt gtagccaagc 240

tagctgtggg aacaagtgcc actgccttcc aatggcactt gggattggga gtcggaacca 300

gtgatggacg atggtgtgat gtgctacaac gacgcaacac aacaacacaa tagaaaaaac 360

acactgtcgt ccagaacttg atttggccgc ataatgagtg tatctataaa acgttttaa 420

aacatgtact tgctgttgac aagacagcac tgtcacacga tcgagaacgc attatatgta 480

tacatgggtg acgaaatcat ttgcaggaag caaggagctt attagttctg ggaatagttt 540

gaatggtgat caaggcccaa tatatgccaa ctaggcaagt tgcatcgcac tcctacgctg 600

atgtctaaac cgcggcagct agcagcggct ttgcctttac tcatcgagct atatatatat 660

agtgaagatc accatccgat ctgctcattc ccacgagctg atttatata tatacgcatg 720

tacatatgac atgacatatg agcaaaagat gccattcaaa agttggcgat gagcctccag 780

aagaaggaga tcgatgtgat gtcaatttaa ggggagctac taggcgaatt cgcgcgcttt 840

tcgccatgtt gcctaccaga tcactttaat ttttggttgt tcacttcagt taaagaagac 900

catgactagc tagctactgg tccggccggc tctcctatag tatagaaaga agggcaaaga 960

gaactctgag atgtgttcga tggatgatgc aacagctagc atgcagcagc tagtttacaa 1020

tattatccaa gcgatgcatg cacgccgaat gatcgatcca gcggcaggaa aggggaagag 1080

gaagggaagt aattaacaag ctacgtacgt acagcggcca tgtatgtgtc ctgctcctgc 1140

agcacgcagc tgggtggtga actcagcaag caacgcaaaa agccagcaca tgatgcagaa 1200

gctctaggga ggtttaattt gttaaagaaa cccaggcagg caggcatggg gggggttttg 1260

cttgcccccc ccccccccccc ccccccccccg cgcgacggcc aatggcgggg cagccaagtg 1320

ctctatcgg 1329

<210> 2293
<211> 1320
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34010_G1, chr1:207370709..207372028, Cluster 13

<400> 2293
gcagtgatat cttccctaga ttattatggt tgtgtccagg gatcctatat ggtgtggatt 60

ttatcttcgg attaattatt catggttacc aaattagctc ttaagttttc gagacttaga 120

gagaaaaatt caagcattgg aaaaataaaa acaaaaatag aacgtcttac gaaaactcta 180

gacggcacca tcgcaagctt gacatgtcac gtcacagtag acatgtcacg gacgtcacgg 240

tccgcatgtt tcaggtgcac accctcaagc gaccatattc gcaggactcc gcttagcctc 300

tctcggcgcg tcgcggttcc gccttgggct tctcgaacgg cgcacacccc tggcactcgg 360

agtggcagat ggaagcgaag caccgatgga gtggaatgga gccggtggcc ggtgggagag 420

aaggagaagg acccccgtga ccgtgaggcc gtgagctagc cggtgaccac agaccgacct 480

cggccgcgtg ggcggtccgt taggcgttgg gatccgggcc ggcggccgga tttggaaaag 540

acaaattccc ctgcgcctcg cggggccggc cgcctgctgc tggctgccgg cgcctgcgcc 600

tgcgcctgcg cgcggccccg ccccagtctc gtattcctcg ccccagcccc tcctagtcct 660

agcgtgcaga ggctctctgg atgccactgg caggcgcagg cagccggcgt gctggcggcc 720

tccggctggg ctgggctggg actgcgagcg cacatcgcat catcgcagtc gcccgtgccg 780

tgctcgtcgt accgggggtt cgcggttggc ctgtggcctg tgcctgcgac agcggacagc 840

gactcagcga gtcagtcgcc gtcgcccttc cctttcgggc tgaagagaga gagaggggga 900

agctccgtac agcgcgcacg gctcgagacg gacacccata ggtagaggac gcgccatcat 960

tattggggcc aggactttct ctgcaccctc cttaaaatcg ctttaaacgc cttcccagat 1020

gggacgacga cgaggaccag atgcagatgc gtcgtccatc ggtcacgaca tgatgcgcgt 1080

ccggtccggc cggcgtctca ctgctgcttg cctgcgttgc gtgcacagga acgttacgta 1140

catgaaggta actacgctgg ttgttacacg tcctgaattc tcctcccttg gaagaaggct 1200

gcacgcctgc acagggacat gatgcatgtc gctcacatgc atgcagccgc aaccaaacgc 1260

tcctcctctc catggaccag accatgcata gtacgttaca cgtagcagta ctagtaccat 1320

<210> 2294
<211> 1372
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_343315_G1, chr10:112317855..112319226, Cluster 13

<400> 2294
gaatgacatg atttcataca tatgagttcg atcttcgctt ggagtcttca tgctcaggta 60

agtcaaatca tctgtcttct tctcctttgc cattatcttt ttttcaataa aagaaaaggt 120

gatttcgaac caattcgaaa acattggtga cgcgttatat ttgtccgaga tcaaatcgcg 180

tcaacaggac aaattcgtat tcgaacgtac ttctttggct agtaaaaaat ggctgaccgg 240

cggtacgacg acgtcttcat atgcatgcat gcatggccgg tttgtcgatc gtgggcggcg 300

cgcatgtgaa ccggccggcc gttgggtcgt cgatgcggcc atgcaggtgc aggcggggcg 360

gccggcagta cgtccgacca ggcaccaggg ccacacgacg tccgcccggc cgcccgcctg 420

tcgtcgtcac aggccggcat gcatgccatg catcgtcgac cgtcgtcaac gaggccgcac 480

agagcaagga aggcgcgaac gaatgcgtga cgcgctacac cgaccacggc aacgacgacg 540

acgtaggacg catgcagctc gaggcacatt aaacaagccg ccacacaagg aacgtgcgtg 600

cgtgctcgca tgcatgcatg catgcttgtt gggcaccgtc aagggcgtac ccgccataac 660

gaacctcgct cggccacggc caaatgggca gcagcgtgca gtgggtgggt gcttgcttcg 720

tcgtgggctc gtggcgggtc cagcagcagc tgcaggtgca agcaaccgcc gccattacta 780

gctatgacta cgagtctacg atgacgatcg cgagcaaggg tgcatgcatg caggggccgg 840

ggatgctcat gtctgctggg actgctggga gcagcgtcca gacacggatc gttttccggt 900

acgccagggg ctttaaattc ccccggccgg aggagtagtt gcgtggatcg atctgccggc 960

acatgacgag aggatcatac gatatcgtcc accggtatat atacggtgtg gatcagcagc 1020

catgcatgcc agagatgcag catgcaggct tgtgcccttg tccggtcggc ggctgggcct 1080

ggccggccgc gagatcttcg ccatcacaca cacgcatctc acgatccact acaggctcgt 1140

gtcacttgtc agtgaaagaa atcgtcgatc gacaatccgt cgtcgtctca atcgccgccg 1200

tcgtctcaat cgccgccgtc gtcgtcgttc cgtctgatat gtacgtatcc aacctgatgc 1260

aactgccaaa actgtttcgt gatccgccgg ttgctcagct ctccatgtat atatcgatgt 1320

attcatgata tatttggttt actgtctaac ttgacacact ttgtataatt tt 1372

<210> 2295
<211> 1136
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344386_G1, chr10:117466174..117467309, Cluster 13

<400> 2295
gctagattcc tgcagcggag caacaggctc tgtcccgtcg agaaagaaca ggacggccgc 60

gcgcatgtcg gtccacgcca cgcatgtgtt gtttcctcac tggtcaaaat acatgcatgc 120

ttgttttttt tttcttgccc ccggacgcga caagcgctgc ttcctcgccc tgccgatgcc 180

cttcttggcg tccatccagc gtgtaacgct actgttgcct agctagaatc cagcaaaagt 240

gtcaccgcgc gcgcgcaaaa aaaaaagcag ctttgcgcac tactatagct agcactcgta 300

acgatcatta ctggtgtcca acaagacacc tgctgaacgg aacgccgacg tgcaggtgca 360

gtgcgcccgg gagaggtcag aggacggagc atgacctccc gtcgccgtcc agccctcctc 420

cgggttggtt tggggaataa tcatcatagc gcggcgacgg cgacaggggg ggcaggcgcc 480

gcaccaccga cgcctttctc ctcgcgaagc taactagacg acgacggcgg atccgcggag 540

ccggcgccgg ccgaagcagc caaccgccgg cggagaatga tgatgagttg atgacacgaa 600

ccgtctcgac gccgacgcac gccatgcatc catccagcgt ccagccagcc agcgttccag 660

cttccagcga tgggctcccc ttccggcggg gccagccagg gtcccctccc tgagaccctg 720

acgaggaatg ggcggcggat gcgtgaacgg agtgactgcc tgacggggtg agggcgagcg 780

cggccgtcac caacaggcaa cagtacttga cgcccgagtg cctggcgggc gggtcggtcg 840

acgacgccgc acctactagc ctaccactac tgctactact actcgagtac tgctggtggc 900

tcgtagcggt agtgcggcga caccgctttc gagtcggcca ttgcttcccc cttctgctgt 960

tttttgctgt acaacgagag agatgggtaa cagccggagg atggaggagt cattggcgtg 1020

tcttgacgtt ccagccgctc tcatctcatc tcatttccct ctgcaaagtc ggctgaagca 1080

aaaaaaaaaa ggtttatata aaaaaatata tagttagata aatatataca agttta 1136

<210> 2296
<211> 1099
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345445_G1, chr10:123874579..123875677, Cluster 13

<400> 2296
gtccatggcg aggaggcgcg cagacgcgac aaggaggggt ttagcgtgtg ggttggttgg 60

ggcattgggt ggtggcggtg gcaatgcaaa agtaggtcgg caacactagt atttaaataa 120

ctaaaaacct ctatggtatt taaataacac ttgtattttg ataactctac ctttctctag 180

tgaaaatata cttacgccac acacatatct tttgttagaa aaatgtggct gttgaagagg 240

aggtggccag gtggaggggc aaaacaaaaa ttttgttgtt atggttaaat taacaaagga 300

ggactcagat ttaaagtgca cacgtgctca cccaaggaac gtgagcacat gaatatgata 360

tgttctcttt aagagatcgt cgcaggctct acttcttcgg caccaaggtg gcaatcacca 420

cgatgtgtgg gttggtttgg ttggttggga cgttaggtgg tgacggtggt aaccaaaagt 480

cgggtatcaa gcaccgcatc cggcaacatt ggtaattaca taactcggtc tctatggtat 540

ataaataaca ctggtattta taactcgacc tttctctagc atctaatatt ataatgcaac 600

aatttctatg gtcatcagtc gtacgtctcc tcctaacctt tctctactat tataatgcaa 660

caatttcgac gattaacaat cgtgtgtcgt gcgtctgctc ccgcattgaa acctttcgta 720

cgttgttaaa accaccctgc atcatccagc tccagagctc caccaaaatt ggcaaccaac 780

gcccgctccg catgccacga gcacgccata cacatcaaag ccacagcctc taaggccaag 840

cccttcttct ccctcctccc ctccgcacgt cgtttgctct gcatgcgtcc tcgctgcccc 900

ctaccgcttt ctcccccacc agtggttcat taacatccgc ccactccctc gtgcgctctc 960

tctctctctc tctctcttcc tgtcgtaaac ctgctagggc aaagacgtgg gtggtattgg 1020

cagggttcac gattgggctg tcagatgggc cttgagcctt ggcctggcca agcattactt 1080

gaacctctgg acatctttg 1099

<210> 2297
<211> 1267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3460_G1, chr1:17890202..17891468, Cluster 13

<400> 2297
gtcagtgagt agtctgcttt tagctagata ttagtgagcc ctgttggtgt tggcagtagt 60

acgtgtacgt gtactgcctc ttggttctat ctaattaatt aattaaccct gtgcattttg 120

gctgttgtgg tcactgggga tggcgtacag atatggcaaa gccgccctcg ctctcaattg 180

gatcggtact agtattatta tgtttgttca gctcgcaacg agtgtactct ctacttgcat 240

tgcatgcagt gccgtacgtg tgcctgtcaa ccctaccctg cgtgtgagtg ataagcacgg 300

gcgtttcgtt cgtaaatgct acgctggttg gtgactgata acgcctctct ctcggtggtc 360

aaaaaggtcg ttcgaccgaa gaaacacgcg cctcttttgg tgatgccagc aaacttgatg 420

ccgcgctaaa agtctagcac acgtttcaaa ctttcttgtc agatatcgtc atttatttat 480

taccatcatt atatatacgt gtgaccgtgt gtgtacaatt tcacttcacc gatctgatac 540

tttcaatcag ttggcagggc tccccccgag tccctggaaa ccaatggcaa accggtgatt 600

cggcatcgtt tccaagccct gtttatacgg gagaccctcg gacccagacc gaaagcgaca 660

cggcaccgcc gcagccgcag gaggacacgt ccgtgcggcc cgccgtcaga ttccgcgggc 720

ccgaccgagc gggcccacga cacgcatcgc ggggcagcgg gcacttgcgc ccgcgggccc 780

accgagggac ggagggaggc acagcacagg caccccgcgg aggcgggtag ggatcggacc 840

ggctgggtgc ggaatccgcc gggacggcga cagcgccgcc gcgcccgcgc ccgcgcgggg 900

agattcccgc cgttagatcg gccgttaggt ggacgcgtgt cgacccgtcg gctcaggggg 960

gctgagacct gccgcggcag acgcgcaact gcagttgctt tctccccctc ccaagtccca 1020

ttccctgtct cggggtggcg gggtgcagtg catttgtgaa tcggcacgat tgctacttgt 1080

tttgggactc gaggtagcat cgcgcagatt gtgggagact gcaattccgt tccctccctc 1140

cgaagcttgg tggtggtaat catgagcaat gttggggaga gagagataaa aaaatcagca 1200

atggtcacgt tattactagt actgctaaaa gagcaacgcc gttaggtttt taaagagcaa 1260

cgccaca 1267

<210> 2298
<211> 1290
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346091_G1, chr10:127594958..127596247, Cluster 13

<400> 2298
cagcatggca ctggcactgg caggccatgg cggcgacctt ttgaccggac cgatgccaac 60

gccttgctga agcggcggtc tcctctctct gcacgatctc acggcacggg ttctgagcac 120

agcagcagga cggcgacctg aatccttcag tctctgaaac tgtacacttc agcctctgaa 180

actgtaccct gtccccggtc gagcacccgt tcacttgcag aagacagagg cgacttcttc 240

aagtgcgtgg aggaatcggt tgagagagct cctccaccga aactgaaaac caggcaaatg 300

caaacccaaa ctgtccggct gtctgtctgt ccagcctgca gagaatacca cgggatcgct 360

gggccctcag cgcgcgcgcg gcggcggccg gccggtggtc cagttccatc tatccggccg 420

cgtcaaggat ggaaagggta gatgcacaga tcggtcggcg gcatccatcg attccacgct 480

gtgtgccgcc tgctttcgcg acatgcttgc ttagttagag gccacaggcc tgtatggtta 540

gcgtgacagt gcagcgcggc aggggtcgat cgtcggtcgt ctaaagctaa agcccatgca 600

acggcatgat gagcctttct ttactagctc gctactagag gcgtaaacaa agcacactcg 660

cggcatgcat gcattcatct caataagcgt ccgagctagc tagcaagcca tcatggcccc 720

tttttcctcc tcttccttcc acgcctccat tcgatccacc atgcatggcc ctcgctaatg 780

gtggctgtca tcatgagtgc ctctgcccgc tgccgattat caaattcctg cacgcatgca 840

tgcatgtagc ttaattaact gccactaatt cattctcata acctccccgg acataacaaa 900

aaaaaacact cggcccgtgt atgtgtacgt gtcccaatgt acagctagct acaagcatct 960

ctctctctct ctctctctct ctcttaaaaa agttatgatt aataatcaga acgaaatcat 1020

agtcgatttg agtaaatgtg actgctatga atacgtggat atatatgctt tgagcatgtt 1080

gagttcaaaa tgaatttgtg aatgagactc ggtcacatgt ttctagtaat taggcaagtt 1140

gctactaatt ggatgggttg attgtagatg gggatctacc tgtcgccgtt agtgactatg 1200

tgctgatcca ttccgttagc tatgctttgg ttgggaaaaa gaatgcgtat cgccgttagt 1260

gttgtgttag caagctgtta gatgggatct 1290

<210> 2299
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346825_G1, chr10:132167929..132169011, Cluster 13

<400> 2299
gttttttttt cttggcgtca tacttttata tttatgtcag gaattcgttc tgtgtcaccc 60

tcaagctccg tttctttatg gctcgctaca tctacagcgt ggcggggtgt agccgcagca 120

gaccaaagag cccccgccgc cgcccaccag caagcaaata ccgacgccgt ttaccgaaca 180

cacgagttca ccgaaaccgg aaggtctgta aaggaacata ctatcgtgcc ttggccgctg 240

tttcatacca ttgcgttcgt atagcggtaa cagaagtggg acctccctat cctgagctgt 300

tgtgcttctc caccttcttc tctctttcac tttccggcag acagagcgtg acgcgaaagg 360

aggagaaagg aaaaaggatg aaagtaaaaa aaaaaaactt cgacagaaga tttcgcccaa 420

caatggaaac gtactctgtg gtgtacataa gaccatcttg gtgcattcat acatgcacga 480

actcaatcta agtttttcgc ccaacaatct tcgacagaag cccataagta ttggtcaaaa 540

ctgggcctgc ttcgctactt tgagcgaccg tgttgcccac gcctcccgtt ctcccggccc 600

aggagggatc tttcgtcccc gcgtctatcg gttggatccg acaggcacag gcacagccgc 660

acagcactgc attcctgaaa ctgaaactag agcgtcctta cgatcgagtt gccgctccgc 720

cctccaatcc cacagtcttt ctcggtggct gtatctctcc tcctcaagag ccaataaaca 780

acggggatac gtcacgagcg acaacgatgg acatgccata gaagaaaaaa aagctgcatc 840

acagctgaca aatgcgattg acgatggtac atcatgaggt catgaggaag agcccaacaa 900

acgacttttc gtattaattc caccatagct agaacagtac tgtaatcttg cggagggtct 960

tcgagtacga gttcagtatc cgtcaaacta catttttttt tgtatccgtg tcctttaact 1020

cgaatatacc taagtcggca tcgtttcctt agtccttaca tccttttctc aaaatttctt 1080

cat 1083

<210> 2300
<211> 1384
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346854_G1, chr10:132350854..132352237, Cluster 13

<400> 2300
ctaactgttt tatacataaa tgttaccaat acaagcactt aatatacttt taaaaaacat 60

atcgaacaac aagtaaataa taaaatacat atcttctacc gctcggctgc cattggagcc 120

acacttaccc gtttgcaatt agccaactct gctttaattc ggtccaaccc accaccacgc 180

cgacccgcac catcccagct tccgcaattt ctcaccgtcg cgcctctacc cattcgctgc 240

atcagttgcc tctcgtcctc aactcatcac cttgaattgc tagatgtcta ttcctagatg 300

ctctgtaaac cttaaattac cgaatgtttc ttccctataa gaaaagaaat ggcaaaaatt 360

ttagacgatg tgacctagct ttgaactctt ggaatatgga cacacttaat taagctgaat 420

ttatttagat cgaaccaagt tacttgttgc acattcttgg cttcctagtc tctagcctgc 480

ttgtatcata tgtagtattc ttcttccccc tcgcctgttt cgcacatctc atctcattta 540

tttggtgggt aaaattaata tatttttact gtaggtggtt cctccactgt tccccgtaaa 600

aaaaaagtaa aaaaaaaacg atgaataact gaagtgaacc tcgaatagtt gaatattttt 660

tgtgttgtat gttaaattaa attttgaata gctgaagtaa acagtgaatg actgaatttg 720

ttattgcgcg gcggacaaat cgggccgtta atcgtcgtgc gggcttgttt ttaactctgg 780

gtcggctggt gcattttgat ataggtgatt ggccatgcaa tccatcctga atagtatttg 840

agttgtgggc gaattttgca agccgctctt tacctttacg agcagcaccg aacgtgtaaa 900

ctactgtatg cagtttggac ttttgcacgg gcggagcggc tcgatcggca ctcaggagtc 960

aggactcagg agggattctc tcatgccatc actgagtcca gccccagccc ccaggtgtcg 1020

ttttgagcag tcagagtctt aaaccgcaac gtccagcgct tggcgttggg ctgggctctg 1080

cttctgcctc tgctctgctg ggacgacgac cgacgcgaca ctgtttggag atggcaacag 1140

caggtcatgt ggcagcaacc acctcttggc attgcgtttg tggtttgtgg gtgcgcttgc 1200

gttccacacg gccaccgcgc cgcggtagat ccatccatcc attccattcc atcggcactc 1260

gggcagcata tgcattgatg gggacacatg tttccggcga cggcttttc aggcttttct 1320

cagccggtac caccctccac ctgtgcggct atggcactag gctttccccc agcctgcctt 1380

ctct 1384

<210> 2301
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347363_G1, chr10:134590663..134591832, Cluster 13

<400> 2301
agggctacaa ctgtctccta ttttccgtag tagccttggt agttttaagt cggttaatat 60

tatttttag taaatttatt taaaatgttt atttttatat taagttaaaa tttaaaagag 120

tttgcctttt agctatcgct cacgcatcgg tcactctcac tgaccataat tgcagcccca 180

tgatccatgg tggcccatgg gccagcctga gtccggagca gtaacaacat ctaacatgca 240

tgcactgggc cgggggggagg cagcaaggaa taaaagaatg gcgaagacgt ggatcagcag 300

ttgcaggccc aagcctctca atttgataaa catgggtgat ggggttagag atatcatcag 360

tcgaaggttt acgtggagca tcgttttggc cctaacacta aatcctaatt aagaggcggc 420

tctcctgcat gtacctgaca ccttgtcttt cacaagactt cgactcaact tgtgggcctc 480

gtctagctcg tgggaagggt tgccagtttt tttcctcaaa ggctgcaaaa agatgtttac 540

tctagtggca aatggcgaca ataacattgt aacgaggata agtgtcccta atagtttgaa 600

gccacctttg gtcaccacac gtacagtctc acgcttcagg ctggccatct cctaacacag 660

agcattgcct ccactttgtt gtgtcatttt ttgtggaaca gttcggtccc catgcattgt 720

tcaactcctg atgctctgtg atatagttta aggtggggag cttgtgaaaa aagttttggc 780

ctgtgaaaaa atcgtgtggg atgtacttca caaggtatta gaccctagta cttgacatcc 840

aaaacatgtc cttagatata tagtgcctta tcttcgtcgt cttgtgagtt agtcctgcac 900

gattactgtg gtcgtcatag aattggagta ggtgtgtgat agcctcaagg caatggcgcg 960

cccaattcca ctgcttctgt cgtttcgatg ccgtctgtga gctcctggag agacggttaa 1020

aacggcggag acacggtaaa ctgactagtt cttcatcact gggcagtgcc acctcatccc 1080

actaccggat aactaggact aatcaacttt atattaattc ggaagaaaat aggtttggtt 1140

ggcttttaaa aactcacagc aacaaaatct 1170

<210> 2302
<211> 1283
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348260_G1, chr10:139300951..139302233, Cluster 13

<400> 2302
cccaaacgaa ctacaaatca ccagctccgg aactgttccc cgggccgcac aggatgggct 60

acatgtgaac agcgagctcg agtgcaacga gcaggccagg acgagcgatc aactaatacc 120

gtggcccgca tggaaggagg cagctccgca cgcaaggcaa caaaagaggc ggccaccaac 180

cagcagcgcg acgaggacac ggcgtacgtg tttaaaaact tatgcgtatg cgcgccgagc 240

cggcgcgacg cacggctcgt cgtatttaac cgattgatgg atcgcggcac ggcgtacgta 300

cgcgcgtaca aattgcttat atatatatat atatatatat gctttggctc tcagtatcaa 360

ctcgacggat cgcgtgtggc ctgcccctga catagagatt aaggccacga accagatgcg 420

cgtcagacta atgcgttaat aacactcgac agtcacagta cactagtggc tactacatat 480

catacagtac actatagagc tacacagccg tgaacatcat cctagtatac gtcacgtacg 540

tacagagacg ccggtgtaca gtgcttgtac tgttgcccca taacggcaac ttgttcccta 600

ccgccggcta ccggtatggg gacggggtgc ggaaagggcg aaagatccag gcggtggacg 660

ggccttggat ttggaaaaga aacatcgtgg tcgatcgcgc caccgctccg catgattagg 720

ccctttcgcg tcctgataat ggacggacgc gcgacgacgc ttcctctttt tctctctctc 780

tctctctctc tctcccgtct cgctgtcgct ctcgcctctc gctacgggag tcgggtgccc 840

atcacggtga tggccgagta ccttcgcctt gtccgcgtcc gtgttgtcgg ccgtacggtg 900

tttgccagca ccgctggccc acgtgatcca tcgcaaccac aggccctaat catttatcac 960

atcggctcct agtcctttcc actccccccg atttttttta cacgtacgtt tggtttggtc 1020

tgaaccaaat attgctatct ctgatcattc attggacaat ttttttagtt tcttccacgt 1080

atgacttata tgttataaaa gagatgttgt ttttagtgaa tctaaaagca tggatctgat 1140

attacaaaat ctatttttt taaaaaaaaa caaatgatca aagtcacata cgtttaatgt 1200

taggaaaaac tttaacatga atgacgtgta aataaaaagt gagcaagacg acaacgcagg 1260

caaagcatta atcacctctt gtg 1283

<210> 2303
<211> 1011
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348595_G1, chr10:140843105..140844115, Cluster 13

<400> 2303
agctcttata tgcggttcgg tttgtttagg agacgctagt ccatgacggt aaatatagtt 60

aattttcatg tgtttttttg tatggagaga gtagaccatt tatttgagac atcagtaaga 120

acaaatttag gtgatccaaa tatgttttca gtgatgattg atcatgcaat tttgcttgtg 180

cggttcctgg ctttgtgggc acatcgctgc agaatacctg aacactctgt gcgacttgca 240

cgtggtcaaa gattcccggc cggcgaggaa agagcattgt gtggaagcga tttcacgtgc 300

agcttcggca ggctcccgtg cttaatttct ggtaaaagcc tggagcaaaa gtatctatag 360

tgtagtagaa gcatcagata gggagacgaa aaatgcatcg cgatgtcaaa gaggcaaatt 420

gctgaagcct tcgttgctga cattcctgaa ggaaatgctt cgaggggaga cccagacaga 480

ctggttggtt ggtagtaacg tgaagtctac cgttcctagc tttctattct attctatata 540

acgaactcag gatctctccg atccatctcc ctgcaacgta ctcacaggat ctctctccca 600

actgattccc atgcgcgcta ggataggaga gtgagtgacc ggtgacggcg gccaggtgaa 660

caacctctcc tgtccattta ttctaacgtg tacgccttgc ccggatgttc cacgtccacg 720

tcatcgatcc gtctcgagag tatgaacgag atttggggcc gtgcaagtgc actgctgctc 780

gctttcggtc agtgaaacac aggtgcttga aaacggctca tcacgttgga gacaacgtca 840

acatgaagct taggtttggt ctgagcgttg ctgagaacta gcataccgat ttctttttga 900

ttgaacatat aatccaacat tttctttaat aaaaaaatgg tgggaaccag tcaaattgga 960

cttgtactgg cctcctgggg gctcctgaca ggccgaagcg tagtgggagt a 1011

<210> 2304
<211> 1392
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35347_G1, chr1:214324096..214325487, Cluster 13

<400> 2304
tataataaac gttattatat atatgctctc ctatataaac aacggtgccg tgatctctag 60

aggacaggtt aggcccatcc acctggttgg ccgcccatgc atgcattatg gtatgcgtct 120

atgcgatcga cagacaggcc agtgcaagaa tagaaagaca tggcttcgct tatgattctg 180

cttctgcatt tggcacaatc tatatggtga tgtttgattc acatatttac aacataacgg 240

ataaccgata atgttaaatc atacttgttt aagtctaacc gtataataat aagatatatt 300

acatatcgac ctactcaaac tttcgagaac caaacggagc cgcgaatgaa catcccatgc 360

ctcctaataa tcacgttggt ctgcaaaatc atgtctcctg ttggaatcgg attcgaaacg 420

gccggtagct atatatgttg tggaccaata atactcgcgt ttcccacgga actgtacttt 480

tggaacaaga gccagcagca gcaagccttc ggtctggaac catcggtctc cgagaggaaa 540

agctattatt ggccggccta gccagcgcgc ggcgtcgcgt caccgccggc gcgctcagga 600

atgaaaccga cgagcaggat gctgtggtca tcgagtgacg acgatgagta cgtacaaata 660

taatgtgaca gggcgaccgc tgcgaacgag tgagtgctgc agcagcagca gagacgacca 720

cgacgagcag agacgaccat atggcacgga cgaccatgga ccatgatgat cggtgtcgtc 780

gctacgtctc gtcgtccttc cgccatgcat gctgaacaca tgcgcgtata tatgcgcgcg 840

gagttgcggt ggtcccctcg ctagctggtg tgaccgtgtg agtgatccat gcatgggtgg 900

ggtagtagcc agggaggacg acgacgcaac gcaacgacac ggcggcacgc atgtcatgta 960

tgggaaagct gaaaggaaac agagagagag agagagaggg ggggaggtag cagctagaaa 1020

agagcacgcg cgcattttgt gagtggctgt gtggcgactc cggcaaccaa acggggttat 1080

ctcgtattat tgcagatctg ctggtttttt ttcacagtag aattttgcca acacttgtca 1140

gtggcagtgt actgtcgcaa cgtacgggat tctcacatca gccgacaata ttgctgatac 1200

ccatacgtac gtacgtcggc cggcccgaaa ttctatttga ataaacattt caaatcgttt 1260

taaattaagt gcaacttgat gtctgccgca catctctcta gctagcgtct ctttctctcc 1320

ccctttcttt ttctgcttcg gcaaatccac cttctccctt ctctcccacc acccgccatg 1380

ctctcctggc ct 1392

<210> 2305
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35492_G1, chr1:214979415..214980455, Cluster 13

<400> 2305
gtaaacatag catcacatca ataaagagaa taaagcttcc attcttgtca tttgtctctc 60

gctttcgctc tatactcaaa cagttgccga aggcccggag cgccgatttg cccgcggacg 120

tttcggttca cgagtcacga cctcatcggc aatcggcaat tggcacggtc acctgtccgc 180

aattactccc cgtgcagacg cgcgcggaga cggcagcggc cgcaaagcaa accatcggat 240

tcagaaaacc tgtctctaat cggccggccg ctgatggaac accgctagct gatactccta 300

atcagcgctg cgctgatgat accggcccgg cttgtgccca agcatctgct ctcgggtgcg 360

tacgtggctc ctagagcatc atcacccagc tgcacaccgc tcgctggatc cctgacgcga 420

cgtgcccggc caaccggcca ccggtacggc ggagtacccg ccttgccgac tacgtccacg 480

acacgatgct gcctgccggc cggagccggg ccgcaccaag gttaggacca acatttgtat 540

ataataatag ttctctttcc ggctgagaac tggactgccg gccgtcggtc ggtggatgag 600

tggcctaccg cgcacgcagg cgccgaatcg tctggtgcgg tgctcgctcg tcgccgcaga 660

ccccagcacg ccctgaccgt gccacggcag gaggcggact cgactggcct gtcacgacag 720

gtcacaggtg gcgcagtcgg atcggacagg aaggaaccgt tcgggcaagg ccgaaaagaa 780

tcagagcgga ggaggtgcca acgatttcct gcccccaccc cgatctgatg tggccccact 840

ttgttgcttc tttgctcgcc cagcggctgt cacgggctag tagatgccgc gtgtccgcat 900

caatccagtc accacggacc acgccacctc atctcatcct cgtcgtcact cgcttcaggc 960

tgcccgcagt cgcgcgctcc acgtagagct gtatagctgt atcgagatag cgtaggaaaa 1020

gttgctgcag tggagtactg t 1041

<210> 2306
<211> 1044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3595_G1, chr1:18622860..18623903, Cluster 13

<400> 2306
tgtatagtca tgtcatgatt cttcagaatc caatcctaac gttcagtact tgacgacctt 60

tagaagaaga aaaaaatata ataataaacg ttcagcgctc taccagtttt cctaaagcaa 120

gatgccgtat cccctaattg ggtgaattac gtgtgactct aggacgacgc tttttgacaa 180

atggaggatc atcttgcccg ttgcagttgt ttaagctcct cgcacttgtc aacctttgcg 240

tggattctgc actgaaccgt ggaatcactt ctttttttt acgaaggtga actggtgggt 300

ggcatgcaac gaaccagagc agcagacgaa ccttatcctg gcttacaggc aggcaggcag 360

ccttgattct gttatcctct tacttctgaa agcatatacc tgcgtgtcag gatttcacaa 420

aggatggggt tggatgtggt gccttttgtg gatagattca ccctgtcagc tcacgcatga 480

tcatcatgtt ctacaaagat aagatccggt gactgcattg gtttggtcga tacattacaa 540

caacacaaaa ggtgccagag acagggcgtt caaaactgca caaatatctc gtcgcttaaa 600

cgtgaacata tgagctacag ctacatcatg tgcccaccaa acaaccggcg ggagagtgat 660

gagttgcaga tgtgttataa aagacgggcc tgaaaccaaa gctgtttttt ttagtgcccg 720

tcctagatgg tccacccaaa gttaattgac tgcacagcct gcagcagtga taaaaagaaa 780

tacagcggta aattccaggt aattgcatcc agcgtgtaga atacctcccg cacctgttca 840

tataactacg cacagacttc gctgattgag agagaaagcc gtggacgcca aaagattgca 900

gtgatagaag agaggacccc agcaagcagc attgtgcatg catatcctgc agcagcagca 960

gcagcagcac aggcacaggt ggtgttggtg tgtgtaacat atgcagaact gaatccaact 1020

cattcttttg aggcatgcct ccgc 1044

<210> 2307
<211> 1140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3877_G1, chr1:19661767..19662906, Cluster 13

<400> 2307
agtcctcttc aataaattta aaacaacaaa ttatacaata tatatatagt ctataaaata 60

ttttgtttga taaaaaaata taaaatattt gtacagacaa gttgaagttg aaggatgaag 120

tgtcgtatct gtgggtcctg agatgccatg gaagacaatt aatcctgtcg ttgctacctg 180

tggaaaactg cagagcatcc attcccctgt atgtagaaga agtcgcgtgc tttgctttcc 240

gcgcgagtgc ggtcgagggt gactgagcac gcgcagcttt gttctactac tgtctattat 300

tacagtaagt actacgctac gtagtagaag aaaggaacgg tgtgggagtg agacgcgcag 360

tgcgagagtc agacgacgcg gatggaaatg caaatgggcg tgcacctgcc atgccatgcc 420

gggaagctgt gcacctgcta gcgggcagag tgacaacgta cccgtactga taaagatgct 480

gaaagatctt gggcaccttg attccgggaa catgtggacg gacggagcac gcacgtacaa 540

gatgtgtgct ggagtcttcc ggcgccgggg cggggagatc gatgctctat agctagttcc 600

gtggtatcgg aggaaggcac atcagccgtg agccattctt ttgcgacgcc ggggtcggag 660

gacgctactg gcaactaagc cgggacgacg atcgttccgt tgcgtgctgt gctgtgctgc 720

ctcgaagcaa catcaacatg tgctgcgcct gccgggcgaa ctgaggcgag ccgttccttt 780

gagcatgtga cgcgaggcgt ctgcgcgccc agatccttgc ttgtctaatc taggagaaag 840

atatggatcg agcggcgcat gctgccatta ttaagcgcca aaaatcgcca aaattgtcga 900

gcgtgtttcc tacttctcca gcgataatga aattcctaat atcaaacgaa acctattttt 960

ttatcataaa tactgaatca tagtgtaatt ttattgaaat agaaaatgca tactttaaag 1020

tatagtttgg aaagggagtt ttctattttt ttcaaggaaa attagtttat tttcttaagt 1080

gtttgagctt caccgtccac accacaccac tggctccatc catgattggt gagtattgag 1140

<210> 2308

<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4177_G1, chr1:21735619..21736687, Cluster 13

<400> 2308
ataattaatg tgatttaatt tatagctaga tgttccatca acaattatct gatttatcat 60

ctgtttagat tcatcgttca tctggctgac aattatcgat ctaggtgcat gaaggagagt 120

cttagaacaa ggtttttgtg accacgcgct atgagaaaga atgtgtgttt aacaaattaa 180

aacctagaca cctgtgcaac acggccgtgg actgcactga ttcgttggac ccgccaaggc 240

tagatcgcgc gcaagtacaa aattggccaa actacgcttt tgtgaaacct gggactggcc 300

aagtggcaag accttgtacc tggctgctgg tcgtacgaaa catgatgcgg ccgtccgaac 360

ccaggcaggc tatcgacgac gagctgcatg agcgtgaccg acccaacact actttctggt 420

cgtgaagtat cggtagtttt cgtctcgatc tcgatcgtcg ggatggagcc caagctgcca 480

ttgtgtcgtg gtgcgccggc cccgcggtga ccacgcgcgt agtagtgtgg actgtggagc 540

ccaaaaaaac acgcgtcgcg gacgggcaga cgacgacagt ttatctccga gcaccgtgca 600

tgcatgggca tggtggcgat cacagtcaca acaggtaaga ggtttgccac gatgagggtc 660

aatgaatcag atatcgctgg tcaaaagcaa aaaaactcag tcgtgctcgt ccatggtctc 720

gcacccatta gccacgccga cgaaccggcc ggggcctaac ccgatcactt tggacgcgtc 780

ggatcaggtt tggtttgtag gccacgatga cctgacggct ggacgcgctg actggtacac 840

ctaactccaa actgatccca tatggtagac aacctgaccg gcgggcatgg attgacatgt 900

cgtgtgacca ggcattctca ccggtcggca ctcatcagca gcccttgatg aattgacacc 960

tggcttgcac tacgtactcc atggtttcag tgacatgctt gagatattta tgcattacca 1020

tgcatttcta ataattccac acgaaaatat atgcgagtta gatttatca 1069

<210> 2309
<211> 1144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42565_G1, chr1:251169550..251170693, Cluster 13

<400> 2309
ctgatacaca aagttttcaa taccggaaga gccaccacac atttttcccc ccttttacga 60

aatgcgtggc tttgtgaggt cgctctcacg ctggcctcat ctttgttctc tgctgaccgg 120

ctaattaagc ggcatacata tattcgcgcg cctagctagt gcaccttatc tgagtgatta 180

tgtccaccat catgcaatgc atgcatgcat gcgttccaga ttgtaatatc cgctgctgtc 240

aagttgcaag cctgggcccg gccccccctgc agtattcacc cccttacaca ttctgaaatt 300

acagttacta ttgataatat tattacgtgc gtatgcctgg gagatagtgg gtgctgcata 360

tatatatttt ttccaagata tctatcttga cacacatagc gccaacaatg cgcgcgatct 420

cgttaattat agggggtttt aaggtttggc ggagtgcagc atgcagttgt gatatctacg 480

tagtattctt gggccggggc acgcgagaaa ttaagatact attatatgca aaagaggaac 540

taaagtgcgt gcgttgaagg caaagtggcc cgctttgcgt atctcttctc cactagtaga 600

aacttgctag aaaccaagta accaaccaac aggccgggag gatggtgacg aggtgacaag 660

agctcatatt attagcctct aacatgcata acactctaat aactccctgt gtcgatctag 720

ctaggcactg atcattttta tatacagaac gtcaagagag accgagaggg attcacttgt 780

tttgttcatc aataatcttt aattgcaggg cagctagcgc tacgacgtgt acctgcagta 840

gctataggcc acatgtcaca tatatatagc tagaggcctc cctagattaa acaaacgctt 900

gcagctgcag ccctacaacc aatagagggc gcattatgtt aacggcacca gtacacactc 960

ggctccagtt tgtctgcctg aacgccaacc aaaagtacgc cccaaagtaa tggtgagttg 1020

ggcaactact tcagatgaag cttgcttcgc gccaaagata tggtctacta tatacgaccc 1080

catctagcgt ggcacgcgcg cgtgggcata tatggcggcc ttctatagcc gatgtccttg 1140

tctc 1144

<210> 2310
<211> 1104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44515_G1, chr1:261596014..261597117, Cluster 13

<400> 2310
gctgcgtgcc gctgactcgt cggccatcat cgactgatcg acgacgacga cacaccggtg 60

gcggccggat cgacgggcta ctactacata aacacacgta cgcatcacct ttgcgtgcgt 120

tgaagagagc aatgtcatca ccgtcaccct gcaaccaccc cgctggaacg gaaccgaccc 180

gtctctaacc atcagctaaa gccgctcctc gtttcgtttc cgtcaatccg ccacgcacac 240

gcagcatgcg ttccagctca cgtgcactaa caaccctgat gctttgcatt gcgttgcgtt 300

tgcgtttgcg tctcgtctcg gcctctacat ccatgagtgc atgacactaa cagctgttgg 360

ctgccaaact agctcgtggt gggctggctc ttcgatcgat ccaccgtcac tccaagctaa 420

ttaggaggcc ggaacactcc atggatagat atagatagcg gtgtgtgtag tgcgttattg 480

ccaggcagga ggggctagct cgatctgtca actactacta gtagcgaagg gatgaaccgt 540

gacgcttaat ccgtccgcat tgttgcctgt gctctggttc attgaacctg cccgcggttt 600

gggccggcac cgttgcgtaa cgcgccggga tcggaaatta aagacgtcgt gcgtgtctac 660

ttcggtggca ctggcactgg cactggcacg tagcgtgtgt gctcactttg gtgtctgggc 720

tctggagcaa gtcaggtcat cagctgggag agaggatatg ccaacggctt tcaaaagcgt 780

gctgctgcaa tgccctgcat tggccggccg atgcccggtg cgcgttgctt ggaagaaaga 840

tcctacgtac cgtaccttcg ggtcggcgaa ccagccagga cgatgcatat catgcatgct 900

taagactttg ttaacgttct tgttgagaag catgtgatga gttaatttgc acttgcacac 960

acacgaccac acgatagatg aaacaaacag ggtgccggcg gaaagggtcc ttgtgatgtt 1020

agatacacat ttgtatttgc atgaacttga catgatcgat catttgattc tttccttcta 1080

gataattgct ttcaacttga tttg 1104

<210> 2311
<211> 1313
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45306_G1, chr1:265756095..265757407, Cluster 13

<400> 2311
catttttttc tatctcagta ttttccaata aaataacgca ctataaaaga aaaggtccaa 60

caatttaacc aagttctgat gaaagctaga atactagttc catctgcatg cagggtggga 120

tctttatgtc ttatactata tagcaatagc aaaatgaaac gtaggaaatt atactactag 180

ataccaaatc ccaattaata tggtcctttt gaagtacaga gagctttact gcatgcatct 240

gctgtttctt caggatttta tacggaatga gaaaaacgag aagagaagta ctaatcctgt 300

atagtaggcg gtactagtct actagagcag aagtaaaata atccattgtt tttgcttata 360

taaataaaaa acgtggaagc aatcatacta tagaactctg gaatggctgg acgggggtg 420

ggggtggggg aaggagccta gaacttaaat tgatgctagt atgcgacctg gcgaggacga 480

ccgcggagga gaggatgtta ccaatgggtt ggatgtagag gagggaattt gacggtaacc 540

tcaccagcgt ccttgagatc gaggagcgtt gcgggattgg cctcgctgcg ttggccgggg 600

agctaatcgc gtcccaagcg agctgttccc agtgcatttc atggcgagaa ggcgcacccg 660

ccggcggtgg ggagctccgc ctccccgtag tccgtagtcg taccccagcg cggtcacccc 720

tcaccatatc gcctcacccg gccggtacat taagcatcgc ccagatcaac gtcggcacgg 780

tctagaactc gacgccgctg tagcacgcag cctccaactg cccggaggct tggagaagat 840

tgacattgat ctccttccca ccaccactgc actctcgacg gactgatgct tcctgctttc 900

tcgacgaaat gattcagagt tgctgtagcg aaaggctgca aaatattcct ttcttctcca 960

tggaagaaaa taaaggaaga ccaaaccaaa tgcattccct ccacaacgcg cgttcgcttg 1020

gctttggata aaaagaggac gactggatga ggacaacttt tactgttatc ccaaagaatg 1080

taaagcagcg cagtttgcta ggagatgtca tttccatggc gtactggcca tcgaatcaac 1140

aaaaagcact attataagta tacggaggca aatattgcga taatgttatt tatcagaatt 1200

tattgtcaat atatttaata tttatcacat tggagggtaa actcatctgt ccatcacccg 1260

cacttaatta ggttgtctca agcattacac ttagttgtct caagcattac cac 1313

<210> 2312
<211> 1272
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46065_G1, chr1:269915980..269917251, Cluster 13

<400> 2312
ctaattcaac tagcaaattt gcagccatta gctctaatgc atttaaaaac ccgtataatt 60

accatcactc catgttttca aactacgccc acctttttt ttatttttaa gacaatagag 120

agaaagtttc taatctatgt gaccgtacac cgccaaattc ttataagatt tttcagctaa 180

ttaactggga aaaagaaatg agaacacaag tagatgaaaa tgattataag caaagtctaa 240

tattggttct ctatccttac ttgttgattc aatgcaacaa ctttaattgt ttgcctcaca 300

agttggatgg tcctctttgc attggcacgc tataacaaaa cttctattgc gatttttatc 360

caatttttt attgctaaat caagtagggt aaattttgat cgagcagtcc cttgaacccc 420

agtcaacctg gcactggcag ccctccccaa ccttgcccgc gtctgcacag tccttggccg 480

ccgcagcaca caccgcactc gcacacctgc aagcctgcaa ctcatcgccc ccccgccgcc 540

acgcaagtgc gcccaggcct cagcgaaatg ggcgcgcagg aggcggcagt ggaggatgtg 600

ctgcgcgccg ccgccgccga ggtgtcaacc tcctcggcga agcgccgctt ccgcctcttc 660

cgccacaccc tacctcttat catcgcgaag gtcataggta ctcaccctat catcgtctcc 720

gccctcgttt ctcgggctcg ctcgctcgcc gtcgtctgcg tgttttggtc tccctcccgt 780

gcgccgcgct cgtgccgcgc gcatcgcccc accttgtttg cggacctcga cagcggaagc 840

cgctcggcct gccccgatct ggacgcgcct gaagcgacag cggagagttt acagcacgcc 900

cctgcctcaa gtgcctgaag ctgcagtggc tccatcgcgc cgttcgcgaa gatgtcgatt 960

tgcgccgagc ggagccagct cccgacaccg tggctgccgt tgtcgctttt gctggtgctc 1020

gctggtgggc tgaatgctag ctctggcacc ctattgaaac gacgacaaga tctctcatac 1080

tttattgatt tatcaaatat tttttctcac ggggttcggg gagatttggg ctttgggaat 1140

acacgtagtg gccagggaac ctgtcaggag acctgatgct ggttgctgaa gcaaggtttg 1200

gtttgcatcg tctatgctta gcgtcgagat tttctactgc ttgcaagttg tgtcgtccaa 1260

gaaagggtcc gt 1272

<210> 2313
<211> 1201
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46437_G1, chr1:271902681..271903881, Cluster 13

<400> 2313
catgggcact aacggttgtc ttaacttcca caaccgacca cgaccatgcg ctcccatgaa 60

tggctaacac tgcctcgaac cggggcatgc agtcacataa aagatgtcgg actcgatcca 120

aatcggatcg ccccccggcc ggtcctgtgc ctgtgctctc caatctctga gactatcgaa 180

gcgttgtcct cgtccattac tgtcctgtgc gagtgggcac tcggatcctc tctactcttg 240

cagattccca cggcgagaga ccgggccaag tcgtggcgac ccatgtgggc tccgtgtgca 300

tgggatgggc gggcttgcat tgtaacccgt acgtagggcc cgtcgccgtc cggggtcgat 360

ggcgcagcga agcacagtgt catgtcgtgc acgagcacga ccagagagcg gctggacggc 420

catttcctcc tccggtgggc actagcagta tagttagtat ataaccagtg ggccggccag 480

tcacgggtca cggctaccgc gcgaacgaac gagccggagc cggagcggca gtcggctagt 540

ctacacgtac gatcgacgac atgcatgggg gaccggggca gaggtagcac gtagggccgg 600

tggtgccgcg cgcgatgcat ggccctccgt atggcgctgc cgcgggacgg caggcgccaa 660

tgatggatgg ccgggggcgc ggcagcgcgt gacaccccaa cgtggtgctg cgtccacgga 720

ggcaggccat aaacccaacc ctggcctgcc ccggctcccc ggccggctgc ctccgcggcg 780

gccagggctc ggggatgtgg accgtgcgcg cggcgccggg gacacggggg ttttgccgtg 840

tccggacggg atcggagacg ggtagggacg tcgcgcggcg ctagctgctc gacagcctca 900

ggtgcaggtc ccccccctgtg ctgcctgcat gctgtaccgg gtcgcatgca cggcggatcc 960

tctgacgacg tgttgggtgg cgctgctcca tcatatgcta tttcttctcc cgctgcggaa 1020

aggtcaacta gtacgtgctc cgacttgttc gcgtcgttcg tacgttgtca cgagggttcg 1080

gatcagccat ccacggcccg gcgcgttgtc ctgaacacga ggatagcctt tgcggttctg 1140

ctagttgagc ttcttgcatg aacttttaca gcaagattaa taattgtttc attccccggt 1200

g 1201

<210> 2314
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4741_G1, chr1:24300118..24301143, Cluster 13

<400> 2314
caccccgac tggtacctac cgtgaaaagg gcaggcaaac aggacgcctt gaatgagcga 60

gccccggtcc ggcgcgttcc cgtcgcgttt ccagcaaagg tgagagcagt ttcctcacgc 120

agctagaccg ttgctccctg cagttttccg ctgcctcggc caacgatgcc cgtgctgcgt 180

tgcatccacg gccacggcga cgactgctct gctctgctct gccctgcccg tttcgctccg 240

acggagggga aagtggggcg aggcgctcgc tggttgcttt cgatcggtcg ccggtcgggc 300

agcggacgag gcgccgggcc tttctattct agttgcggga ttcattgctc ctgggggccc 360

aggcgaccca tgggcaacat cgcttcccca cccgtgatgg atactgtccg gcccggtata 420

tatcctagtc tagattgcag cgctgagttg ggatggatca cgctccgacc acccccccctg 480

ccgttggact gttttctctc ccttttgggc tggcccttat tttgctattg aaatgcttca 540

caaagtgcta gttagtgctg ggaatttttt tagggaaatg gttttttta ttattatccc 600

agcaagagtt aacggagatg gtcacattat tgtccgccca ggataggata ggttcaagct 660

gaaggttccg aatccaagct gttgaatgtt ttggtacaga gggaggagaa ggtgcccatg 720

agctagctag ctcatcagcc gctcagttgt ggctggcgct gatgggaggg aggggccgag 780

ggcgagggga cagccgatcg accggcgtac ggcgtggccg ggcgagctct cgccggtgac 840

gacgtgttgc aacagcagag gctgtgcgga ctgcctgcgg agcccagggc aaggctacgg 900

tacccccagc atgtccgccc atgctgctca ctcgtcagtc aagctggcat aacaacgtgc 960

ccgcaaactc cggcaaagaa aggacggcgt acaaccggtc tactgcaagt attgacatgt 1020

aaaaat 1026

<210> 2315
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47494_G1, chr1:278451215..278452244, Cluster 13

<400> 2315
cctgaaaagc ctgcgacggg agctcaagct agcagcagtt gtggtgaact ggtggcgctg 60

tatgccgaag ccttgcaggt ggtggactgg tggcgtcgac agctgcatcg caatttttt 120

ttattcggaa gcagggaccg caggaacatg agtaccggcc taggcctacc gggataggga 180

cacatggtac tagtgacatt atactggaag caccggtttg tgttcctcat ttatctatct 240

atgacatctg tttcaaacta catttggtct aaaaatactg aaacaaaagt atagttttag 300

tttcggtgtt tatcaattta gagactaata aattggctaa ttgttagtca tttaaacttg 360

ctaataaggt actagctaat tatctgccag gagaatctaa aacaaggcct aactaataat 420

atatatgaaa agcatgatag tttctattag tagcaaaagt gccctgtctt ataaattcgc 480

taagcagagg atatcgagct gcctgcttag tacgaccaaa actgcaaaat catcagggcg 540

acgcagcttt ggcccttggg caggcggcag cacaggactt gggctgtccg gtccggtact 600

gcgcccctgt ctgtcagcct gaatcgatca gctctttgac ccggagggga gaggtcgcca 660

gcgcccagcg ggcaccgcgc cgcacggcag tctgtcaggt tctgggacca agcgaccgga 720

cagggacagc agctgagggg aatttaatac gtaacctaaa ttcgccagtt cctatcaggc 780

aggcgggccc caccgcgagc tacgtgaagt ctacactttt ttaattttat ttattatatt 840

attatttgtc gatctcgtgg tccatggcgt cagcggatta ttagtagagg agatgagata 900

gacacgcttt cctcgtcgtg gcctacttgc atatatttga caagcgtcaa ggactcgagt 960

gtgactggct gaacagaggc gtgtgatcca tctgtgtttt agtagcacta aggggccgtt 1020

cggttactac 1030

<210> 2316
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47612_G1, chr1:278890404..278891440, Cluster 13

<400> 2316
taaatcacct tcaagatctt gcacttcatc gccatggagg atggcaactt gcagctcatc 60

accgtgacta cctctcaagc gttagcaagc caaagcatcc ctgaaggcac cctcgatagt 120

caagctctaa gtagttccac caacaagagc ctagagccat ggcctaagat tgcccaatag 180

gccaacccac gaggtcatct aaggcaataa atatctatca tctcccccaa aagccatgcc 240

aaggcaacaa gaaccatgag ggcaacatta ttatagggcc tcgggcaacc ttaaaccatg 300

tcaagactac taggggccaa tgggatgatg caggtccaca ttcacaatta ctggggaagc 360

catcatcagc cttgcacctc taaaaggtgc attagacgcg tgagtcctag ctgatcgcca 420

tgatgagtca ccaccccttg tccttccacg atctcataga gacatcttgt agcgactatt 480

cctctttgga acttgagaac acctctagtg tgccatctct ctatgccact tcatggccga 540

cggacatggc acatcgaccc cagtacgggc atgcctcatg gggtaataac actctcccta 600

tcaggaggtg gaatacctat gggctcacat cgattagctc cttaagcgtc gtgaggaggc 660

catgaagggg ctaatcccgc tgatgcagcc tgcctcttta cctccaatag gatgtcgaac 720

accatcaata gtgccacacc aacaagacag gtgatcaccg tcatccctcc tacaatgaca 780

ttgacatatg gggagtctgg gagagcagca agccacaaca ttttccacac gctagccaaa 840

atgtcactac cgcaacagtg atgttatagg tgatcttgga gccaaagggc ccccaagcta 900

gggccacata cctcgagctt gaggggttga ttaagcatgt gacccaacaa tgccagttat 960

catgcacccg ggtgcatcaa cacaacactt aggtagagtc tatgacatgt acataatcct 1020

taacacacgt cactttg 1037

<210> 2317
<211> 1222
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_47808_G1, chr1:279764171..279765392, Cluster 13

<400> 2317
aacgacgtgg tggcgcggat gaagaccttc ctggttacat agaagattgt ggcatatgtt 60

aagttttata cgataaattg atggtataat atagatgtaa ttgggccgta accaggactg 120

tagcccgagt gcccgacagc ctcagatccg cccttcagag gagaaaaaac gtcgtacatg 180

tatagtgtac gtgcagactc cggtgcgagt gcgatctcgg cttgcacagc gcccaccaaa 240

cacggccatc tcgacatggg ccggtgggtg gtcagccggt gcccctccag gcgctgtgcc 300

tggaggcaac accacgcgcg gtgagatcca cgcgtcctgc cagcacccgt ggtcccgcgg 360

cgctccctcc acaccctcca cggacgctcc tcatcagtgc tcacatgttg gtcttgggcg 420

gcgcatgacc gatcggcgac gggaaggacg acgactgact gcgctggcac gttgaccgac 480

tggcatctgc tgctgctcgc ggtacttgcc tagctaatgg ctgagcagtg agcacacagc 540

tggaaacacc cccggccagc gcctctccta gtctccttcc tggcatggta aagcgccggc 600

atcgtgccgg catgtggccc ccgccacctg gatagacgca gcgcagtacg ttgtggttgt 660

gcatggggtg tgtacgtgaa tgcatgcttg ctagccgcca aaccagtccc gccggcgtgg 720

ttcaattcat agagcatcgg cggacggcgg tgtagctagg tagctgcagt gcaagcctgc 780

aacgataaag gataggactt ttcagtccat gcatgccgtg caatctgcca attcaagtac 840

gcggcgtcga aatctttggt ccttttttctc tgcgaagcga ccagtagtac ttggctagct 900

ctgaactttt gtgcaatgga aaaaggccaa acgcatgccc agatcagctt tcctcgtgct 960

gtactcgtac gtgagattct acagtgtagg gcatgcatgc atgcatgcgg catgccactg 1020

ccccgcgcgg cggtgtctgg tctgcggtct gcccagctct atctgtcgtc ggcttaatta 1080

gacctgacca tgcaagctcc ttcccaagta ctactggcta gaccgctaga gtgagtgtcc 1140

gtttcaaggc tggataagaa agttgtctgg ttaccgacgg gtactgagcc agaaaaatta 1200

ataaatcggt gagctctttc tt 1222

<210> 2318
<211> 1280
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48236_G1, chr1:281708657..281709936, Cluster 13

<400> 2318
gaattcaggt catggctagc taggctctag cacacaccca tgtgcgtgtg tgcctgacac 60

gaatatgcag ttggtttgca gcaaattcta cagtgtggat ttgatcgaag aaaaggccaa 120

gatgacctac tgaattaata actttacctg ctgcctatgc tgatgtagag gctaaggatt 180

atcctgtcct cctcctccga gaacccgccg tgcctgatgt ttggccggag gtagttgagc 240

caccggaggc ggcagctctt gccgcacctc ttcagacctg cgcaggccca aatacatatg 300

attagcctcc tctttttcta ctgctatctg ttggagtaga ttaaactttt gagttgagct 360

gcatacatat gcaacctttt ctaacacaat cactgaatat ctactgcatg gcgaattggc 420

gattgccatg agcacataca tacctatctt ctgcggcagg gctatccagt taccgccggt 480

gccgttctcc tcgatgtagg acttgagcgt ggcgtcctcc tccggtgacc acgggccctt 540

cttcacagta gccttgtcgc agcacggagc tctccccatg gcctgcgcct tcttctttct 600

cccctctgag gctctgacga ctcggagctg ctctatagct tgggctctct tgtgagcgag 660

tgtggtggat cgaacaaaag cgccgattag ggcctaagct tggttagtga taataacgat 720

ctgggcggtg tgtttatgcc ctgaaaaggg aaaggtgcat gtgcattatt ggcatggaaa 780

aagtggctgc tctgatagta ataaaatact gtttgagcgg tggtggtgat ctgggtttct 840

ctctttctaa gtgttgtttc ttctcttgga ttagaatctc ccatcagcag tcagccgacc 900

ttttcctgaa catggtcttt gtgcaccata gacacttgtt gcttccatta ctcgtgtggt 960

ttgtttatgt catccggtct gatctctgct tacatgatga ctaaacacga tatatatata 1020

tagtaccggg atctcatgca taggatatat tgcaccggcc tgtttattat tctatcgttt 1080

gagctctacg tgcactaatc ttgtacatat acacgtaacc acagtggcca atatgacagt 1140

ctgtaagaaa aaaaaacaca agtttatttc tcacaaacca cacggtcctc atgcatgctc 1200

tctaccccgt atgtgcatca tgtgcattga aatatatgtg tctttatgtg actaaggata 1260

gccggtgcgg gtgaatattg 1280

<210> 2319
<211> 1248
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48702_G1, chr1:283237537..283238784, Cluster 13

<400> 2319
tataagcaac acccgtagtt gatatcagct ccatatagcg tagcccatcc tagattccta 60

ggaccaattc atgacatgtt tgacacaatc atattggcat tgcatcatcc caagaaacag 120

agcttccata tactacgtat cataatctga aaggcttcaa cttgaaatca tcttctctag 180

gaagtccaaa atcgacaaca cgaagtccct atctcctatg atgcaagtgc aagcattcaa 240

ctgtactcat gccaattctc cagtcaaagg tcgaactatt ttaaagtcag ctgcaattaa 300

ttgcggatcc caagtactag caaccatcct atccatggac cttggaccag cagcggggaa 360

aatccaacag agcggtcctt cctcttggac tgcatcatct cttccaccta ctgtactgta 420

cttgggatgg ctgcgcagtc ttgtgagaaa caaggacgcc acattcgtgc acgcacaagc 480

ccgtaccaat caatcatacg cagaaactga gctgaagcgg accagaaaac agtcaatgga 540

gtaatgcgat gcgttcccat ggcttctgac gttttttttt ttttttgca agaactggaa 600

gactgaaagg tacagcaggc caacttgaaa ggaacaaccc gtctctgaac catcggcaga 660

acagctctct tcctctgcac tgctgcgaac tatgtctgct tgacttcaac atgaaaatgt 720

ggccgagata gattttcctg tacactatta agcatttgtt tctgctgacc tagtaccaag 780

actctagaac tctggtttag actctatgac tgaaatgtct tgaaccattc caagtccatt 840

cggtagcgct cgtcaatgtt cgtcgtcttg acaatgttaa gaggagtact gtttgttgca 900

cgggctggca tcttccagga attgtatacg aggtagtaga aaaaaaaaag gcgacacttg 960

ttgccgtctg tgttctgaaa atttcgagtg tcaatttcag cttgtttgtt gtatggtggt 1020

tgcacgggaa ggttttaaag atcgatacag tacgtggtgg taagactgac tctcaagaac 1080

cgcgcgtacc atttgattcg gagctcgaac gttggctgat aatgacaggc tgcgtggaat 1140

tccacaggaa gtagaatatt tgccatgcct aatggcactg ggggggaaaa atgtcaggta 1200

tattcatctg gtgattctgc tttctcttga gacgaagcag gagccccc 1248

<210> 2320
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49842_G1, chr1:289500186..289501186, Cluster 13

<400> 2320
tggttgccac acatgaacgg atctgaaggg tggctcggag ggctccaatc ccctacttcc 60

ataaaactcc attaaatata gaggtcaagc ctggacgagc ccatgtgccg ccagtgcata 120

agaacaaggc ccgtcctaca agggcctata aaaaactagt caacactact ttagccagtg 180

catagtttag tatcaagtaa aaaatcaagt taagttacat taactaggca agtagaacaa 240

ggtgtgtgtt tattgtggca gtccggtgtc aatctctcat acaactcgtt ttggttatat 300

gacgaagtgg aaccaacgca tgctagttta gtatcaagta aaaaaatcta gttatgttag 360

ctcggcaagt agaacatgat gtttattgtt gagccctggt agaggtggag agtgaaagag 420

gaggaagaag agagaaaaat gagccatcaa tttattggag aaagaggtgg aagataaaag 480

agaagggacg aggaagaaga atagagaaaa atgagtctcc ctgctagcgc tgcctccgct 540

gttgatcatg agaaaatcaa ctccgccttt aatctatttt tagatccgcc acgggatttc 600

tggcccaact gactttagtc acttgcttga tcagcttagg aaagatgacc agaccgactt 660

tcttatgctt catcctaaat attttcctgt gtcaacaatt acgctaatca atccatcgcc 720

tgtccgaaac atgacacaga attcatgcat gctgcagctc tatcgtcggt ggttgcctgc 780

gcaggcgcaa tgcactgcgg tatgcactgc ggtgctaccg tcgctcgcag aaaagcctcg 840

agctcttcat catcatcaat actcctactg cagcaggtgc agcctgccgc ctgcacgaag 900

cagctgagcc tcagcacatg gcggcaagcg gtttgtagca gtaggccagt agccggatct 960

caagccctgg tccgatgtac taccgagcga acagggacgg a 1001

<210> 2321
<211> 1056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52791_G1, chr2:5499153..5500208, Cluster 13

<400> 2321
cggagccgac agtgctcagc acctccgctg cctgtgtcga agtctcactc gccgccgccc 60

tccctgtctg cactacctgc cctctcaccc gctcttgtcg ccgctgcgcc taccgccatt 120

ccttccgtct ccctgcgcca tcgtgcctcg ccccactcct ctgcttgctc ccgcctatcg 180

ttgcccctgc ctccccctcc ccctcacgac cttcccccgc ctgcccccct gcccaccctc 240

accacctcat caaccccgcc ccccgacccc tcccctgtca gtgctccctc ggagtctgct 300

ggctcgggtt ccctgggcgg cccttgccga caaggctccc tcgatgtgtt cctgcccccc 360

ggccggcatg ctgctgctgc tgtgttcgcg tttgcttctc ttacatctca gtcggccatt 420

caagctccta cgcccttcat ctgggaagcg atccgcgctg ccctcccgga catcaatctt 480

gaagtgctcc cctactcgct tggctccttg cttgttcgct ttcagtcggc gggcgaatgt 540

gctgctgctg tgggtcgctc ccccttgttg cacaaagacg ctgtgatcac tctggtacct 600

cacgacgggt tcagctccaa gcgccgggtg ggggtgcaag cggccctatc cgtcctcggg 660

tttcccctgg cctactggca tgaggacctc cttcgcctgg ccttcctgtc cttcggctcc 720

gtcgtggagg tggactggcg ctgcacctcg ggctatgact actcctccgt ccgggtggta 780

gtccaggtgg acgacgtctc tcgcattcct gctgaactgc gacttcgcga tgcttctact 840

ggcgactgct atatctgcca gctgcagctg attacctctt ggccgattcc agatgcttgt 900

gccccctcg aaactccccg tccctttttt gtcttgccga cttcgcaacc tctggtaacc 960

ccaccagctt accacgttgc gcagccctgc ctgctccccc tgtccgcata cccatctgca 1020

caccaagccc actcccgccc tcaccactgc ctctct 1056

<210> 2322
<211> 1119
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52810_G1, chr2:5537812..5538930, Cluster 13

<400> 2322
agatcattcc aacaggtctc tctcccggca ggtctaaagc acaacatctc acgaaatact 60

tagatcatat cctgtttaag atttcagcta ctatatggtt cgatacactt tacgggtcat 120

gcttattgct tgggtgagca cggcaacaaa atagcacata atgatatgta gtacagtata 180

cctttctag tattcactaa cactataata tatttttctg gtatttattg tattatatat 240

ctctcgtcta attctcgagg gattttaaaa aactagtgaa aattttcgtt gaaatagtac 300

atatagaaca gtagataaaa agctgtctac tgtagttttc aggttatctc tcagcagttt 360

gtgaggcgtg gtgacccgtg agcggtcaag atagcttaac gccctgtggc gatctggtct 420

tccagagcca acaatgactc gggcagccac gcgcacatca cacatgacgc cctccccatc 480

ccccctgcct gccaaagccg gcaagtcaaa gcggccagca gacgttttgt gcaggggagt 540

accttgcgta ccggcgcaaa gtttccgact cgtctgggta cgccatgcat gcatgcatgc 600

atatggtact tgagctccca gtttcctggc ctctccacta atcggagcag gacgactgca 660

tccagcttcc agcagctgaa gttcgtagcc gtagtcgtgc ccgtgtgaca gcgacgcgta 720

cgtgcttcat tggaggggtg tactgtgtac atgccgccat cccattggta cgctggccgt 780

ggaaggaaga ttcaagaggc aaacctttc gcacggccag cacctgccta cccaagcaaa 840

tcgatcgagt atttgtagct caatgtctgc ctgtctccct ttcatttttc gttgcactgt 900

tgttgtggac aagcgagtta cagcgacagg ggcgtgttaa tgacttggat taattgtatt 960

atatgcctcc ggcagagttg ttttcactca actcaaactc aaatgggtcc cttgtgatac 1020

tctcaccatt attaccccgt tgtggtggtg gtggggtttg caagcaaact aagcttgcat 1080

agttgtcgac gtacaggcta ggctaggcaa atcaaacgg 1119

<210> 2323
<211> 1295
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5301_G1, chr1:27137703..27138997, Cluster 13

<400> 2323
aaggttatat gtacttgttg atgctagatg atttatagaa aaaaataaaa tatacatttt 60

tatgattgaa ttaagtcatt ttattatagt tacagtctaa aataataaaa ccgttttgtg 120

ggagaaatat gggaaacgcg tttcttggtt acctctgttt ttttatttaa tatcgataat 180

gtaaaccctg gttcgaggtc gcttggatta ctgctgggac tgggagaggg tgaagccgga 240

ggaggaggat cgaggacggc cgctgaggct gtggcatctg gcctagtagc cgcctggcct 300

ggggccttgc tgcccatgaa agtatccgta gcgagaccta ggctgtctga gcctagcgcg 360

cagtaggtgt cgcagatcgg tctgctatac tactggtggt ggcctggtac ttatatgggc 420

tctgccgttg gagatgatgg gcaaggcctt ccgaggagcc gagatgagga tttaggcctt 480

ccattgagtt gcgctcgggc cgtcctcggt ggcacgaacc agtgggccaa cggggccaac 540

gggcctaact aatcgtgtct gatggatggt cctccgttcc agagaaatca gacctgctgg 600

ctgtgggcct gtggctgagg agccggcagt gatccatcga gtgctactgt tttcttttt 660

cagaacagcg tgcagcaaag gctcactgtg cagtttaaac acctaaaaga cccgacaagt 720

cggtgttggt actgaggacg aacccagacc gaatgattgc ctcgccctca ccacctattt 780

cttcccatct gaggtctgca ctctcaccgg tagtacagca caaacaacac actcccaaag 840

tagacaagtt gtgttcaaac cgcggatcag aaacaaataa agcgaccccg catgcacgtc 900

aggtaccaac ccaaatcggg accctccccc cggctccggc cggtgtctcc caagttaaac 960

ggccgcccgc gccaataatt accaccacac cccggtagag agatggagta gaagaagaaa 1020

aaaaatcatc cgccaagccg cgatccgcga ccgcagcgca tcgacggcgc acccccctcc 1080

cctccggtcg tcggtccaca gcagacaggc cgcgtcattg cagattactg caccaccgca 1140

tcgcatcatc gcagcggccc gcatgaacga acacgagccc ccattttccg cgcgggttgc 1200

cgagccggca gcccagcgcg gacacgggga gctagcggcg gtcagttcag tacgtcagtc 1260

acactggtcg cgccgagagc gggacgacgg cacgc 1295

<210> 2324
<211> 1316
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54151_G1, chr2:12810690..12812005, Cluster 13

<400> 2324
agttctaagc atagacgagt aagtatccat aagttctaag catagacgag taagtatgag 60

ataagggaaa gaatatcgga tcgatcgtac gttgaactcg ttcaactgag cccgacacca 120

cctcacatcc tgatccgggg tgtaacaacc ttttgattgt gactgacacc tcttcacacc 180

atgtataata aaagtggaca agacgagtac gcgaaccaac tttcgctggt attttctcgt 240

ccctacacat atatctgatc tagttctatg cgaccaccgc tacaccgact caatgccggc 300

cgtcagagca tgcgtgtaac tcaacgatag ctgcacacct atgacgtcat ccttcaatcc 360

agaagatata acccccattt ttatcgtgct agtgcctaag gttccaagct taagctccat 420

agagagataa cacgtttgtt gaagtaaaga ttaagattgt tgttagtgac ctgtgatttg 480

ttcagccaag agagaaattt aacagtcata gttgtcacta taagcatgtg taagtttgct 540

aaaaaaagtt gaaatcagat gctaatgtaa ccctaatttg cactacccta atttgcctga 600

cactacgtgg ccccaattat attctaattt gcctgacact acgtggccga cgattgagaa 660

acttgtgtat tttattcaaa acaagaagca ggccaggggg acaaaattga tgcagcattc 720

actcgccaat cccatattct agtattcccc ggtgcggtag tcgatggtgc cataatttca 780

atggtgttcg ttactagtac tccagaaagt ggagtgatcc ccaccaacct tcacatcgtc 840

atatgatttt ggattttgtc catctcaggc catcaattcg ttgcctcccc gcgtgagctg 900

ggatttatat ataaaaaatg gcgaccatgc accatcaaat cgatctgagc atctctctcg 960

ttctggggca caaaaggagg gctccctagc tagctagcag gtctgccccc acacaccctc 1020

tgcaagactg catgcgtcac atatctcgac cggcctctct gatagtctga tgcatgctgg 1080

gattctctgc tgctagtagc tagccatgct tgcgcatgca tgcatagcat atgcatgagc 1140

tagtgcaaga gggaatgaga agcatccggc catgtgaacg tgtgacgtgc agtgacacac 1200

tgacacccga gcacatatat aaaaaaagtg caatgagcca atatgtatca agttttttt 1260

tcaaaaaaga gaagagtatc aagaacctct atgtatcact ctctcactcc atcccc 1316

<210> 2325
<211> 1004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54903_G1, chr2:16878026..16879029, Cluster 13

<400> 2325
tgtatgatct attaattaga tgagtgtaaa tatagagcca acgaccaatg ttcaatccat 60

cattgtatat aatatgagta ggctttattt taattaaaaa caaaaatatg tgtgttctat 120

aggttagaaa tgtgtaaatg taaaggcaat aattaagatt caggctctaa tttgtgtaca 180

acctgtttag tttcggtatt tgaccacggt acactgaaac tgatgaatca tctaatctcc 240

gctatccaaa taggaagatc gaagcggcgg cagcagttct tctgggactg ggagtggtgg 300

aattcaaagg gaaacagcgc ggccacagct cgctcacaag tgaacaaatg gaaaggggac 360

aaaaaggatg cactggtcca accacatccc ggaggtccaa agtaaagcca agccgttgcc 420

atgccacatg gagctgaaag cctgaaacac aatccacgac actacgagtc caccattttt 480

aaaacacctg agaacaaaac gttactctta tcctcccccg gccggcactc ggcagcctcc 540

ggtcagactc agacataccg tgctcgcgcc cctacgcaaa ttgcagtccc tctgtgaaat 600

gcccctgctc cagctggtcg atcagctagc cctacgcggc tatacgcctc tacccagccc 660

agccacgctc ggcccacgcc agcctttgac tccgtcatgc cgaccggccg gccggcgaca 720

gcgacatgga catcgggggc accgcatgga cggaacggaa actcgtacaa gcgacggcga 780

gaggccggcc ggggatggag atggaggcga tgaagctagt gatctgatct gaagtcgtat 840

caagacagtg caggcgtatg cgtacgtctc tctatgcgat gcatgcatga tgcgtacggt 900

actacgcgca agaagcgacc acagaatctc taggcgctgg atttgccaat gccaaatcgt 960

gtcacaccac ttgctttgca tcgctagctc tagccctagc ttgg 1004

<210> 2326
<211> 1179
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_55493_G1, chr2:20003156..20004334, Cluster 13

<400> 2326
ttactgttgt ttcataagcc gatcgggctg tgttttgttt tagttaacag gaatcggccg 60

gcatctgccc tctccagata acacacttgt attatggcga cctgcagact agaacacctg 120

tcgtttttac ctacccgtcc ctgcactgca tacgtactgt acgtctaaac aaagacaggg 180

gcatgctagt acatcaggcc gggccgtgcc caatggacgg cgtccagcaa taaaaaaacc 240

tcatcttttt tctactgaaa gatacatacg attgagaaag acttcatctg ctgctacaac 300

taacaaaggg tgcaaaccta atacccatcg ccatctgcca attaaacgat tgagctatat 360

ggatgcaatt aaagtggcgt gcatgtgtga ccggtccggg attgtacatg atctcattct 420

caggaggtac tcaggtccga gtgtttcacc taaccggcta acccggcgtg tatgagccta 480

gctagccaat cgagtattat tctaacctcg tcaatctgtg aatgtgcagc aggtaaagga 540

tctttaattt ggcatagcca aacacaataa tctgtaccct tattagagct agctagctgt 600

ataccggcgg ccgctgtact actactacta cccatgcatg cttatcaatc aatcagttca 660

ttaggatatg acgtgcccgc aatgatgcgg ttgacttggg aggagctggc ggccgatgca 720

aattttataa ccagcgtcag aaaaatgatc acgtcgaatc agagaacagc gctatatatg 780

cgcacacgca gcgacgacga cgacgacgtc gcctttgcat tgcatgagag gctgctttca 840

cgtagaattc cgcggcccct aaaatatgaa atcgacggct gcatcgacgc ccacgcctag 900

gaatttgccc ggtggcgaca tggactattg aattggcggt tggttggcga gggacatcag 960

agtgacaatg cacccggcga aaactcctcc gcttgcgggt gcggcgtgac gatggcgagt 1020

gcggagtagt acgtcgacat ggcaacggca cgggccggcc acttgtaatt tgtaaagcgc 1080

cctcgctttt tgaacaagtc aggtcggtta aagtcagggt aaaaaggtga aacaagttat 1140

aaattggaat ggagggagta taactcatca agtagccag 1179

<210> 2327
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55528_G1, chr2:20107483..20108509, Cluster 13

<400> 2327
tgatatattt gtaatacagc ctatagctag ctagcattca ttctaggcat tgacattcac 60

ccagtgttac tgacacagtc tgacactcaa ctgggttaac gagtagtagt gggcactacc 120

taaactaacc atgcatctct agctgaagca ctgccactag gctagaagaa gtgtgctgtg 180

ctgaccgtgt gtggtgaagg ctgaacggta agcttctgat ccgtggatct cattcgtgtt 240

cagttggttt taactagtgg agcatgtggc ctgcagtaag acgcggcagc atgcgagtcg 300

gtcttcttcg tattcttggt ggaaaatagt tagtcagact ccgtcccgga aaaaaactat 360

cagtgaaccg atcaacaata aacgtgcagt gatactatta gcataatcat gcaacgggag 420

aaagagcgca ggcaagtggc ggcgatgcca gcatacaaaa atgcgatggc agatcgatca 480

aggggcggat ccaggaggca agtggcggtg gcgcttgcgt acaggatgcg tatatatgca 540

ggcgggcggg ggtgcaaata ttatgctcgg cgcgatcgtg ggcgcgagtc tgccggccgg 600

cccaggtggc caggcgcgcg cccgacctaa cgacaaacac ggaggcgtcg gagctggaca 660

aaccaaatct cggccagcag catttcgccg gagtccgtcc gtccccgacc tgcgcagcat 720

atttcgcata tactgcacag tagtgtagta gcactagtag tatagtatat gtttagaagc 780

atcggtgaga gtacttcttt tctttctcgg tacagatccg taacgagaga gagagagaga 840

aaaaaaaaat gtaccccacc agtggccctt gagtaaacac tagagacaca tcatatcggt 900

ggcacacgtg cacggctggc tggaatcaac cagccattgt taacacgcat tttcaacaac 960

gcctctccaa accgagtccg agccgtgcga ttaccgcatt ccacgggcgt ggacgcacag 1020

ttcccgg 1027

<210> 2328
<211> 1097
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56086_G1, chr2:23117723..23118819, Cluster 13

<400> 2328
ggtcacgatc ctctgacggt ttaaaaaaaa aaagcgaaac cgagatgagg gaataatatt 60

gccatttgct gccaacgcca gcacagagaa agagcacgca cgcgcatcat cggtagctcc 120

tcaattcctc gtctgaacga acctgggcta ggcagctgcc agctagctgc agtagttagt 180

ttgcttactg gtcgtcatca catcagctag cgcctatagc cctagcagca gcagctcatg 240

gagttgttgg cgccggagcg agatcagcga ggccattaac aactgagcaa gcgcgcgcct 300

tcgcacgagc tagctttaac tggctgcata ccagtgcatg acgcagacgc ttgcgccatg 360

catggcctag ctactatggc ttaggagagc aaaagaattc tcgtaattag ccaggccagc 420

cgccagtcga gaagaatgct gcacaactgg ctggccttag cagtagttaa taccagtagc 480

agctagggca actgggcaag ctagcatcgt cttctcggtc ctgcaccaca caattattga 540

caagttgttc gatccgtgga aaaaaaatta aacactgaac caaaacaggc cgggtgcagg 600

ctgcggcagg attattatgg ttatctgatg cacagacagt ggcagctaat aaaacagggg 660

gtgcaggctg cggaactggt atattttagg cgctaatagt ctgtgtcaac gatcaaggag 720

caggatcgat tgctgtcaat gtcatccttt tcccggcctg agttgcgtgc gcgacatctt 780

tattcctgac ggacacgaac tattaacgac ggaaggttcg ccaaagctag taggccgccc 840

cagttcctgt tcgcacagca gggaacagag acatgctgga tggatcggcc gtgtggagaa 900

agggacaggg acgacgacgg tggaaaatgt tactgggttt aatctacgtg catgcatgcc 960

gaaacgcatc gatcagcacg catatatgct ggcaagcggc ggtggagaca ccatcgtacg 1020

tcagctctcc aaagaaaaac aaccggcctc actacttctc taggtcactt cagggaaagc 1080

gcgggagttt tctactc 1097

<210> 2329
<211> 1270
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56846_G1, chr2:27573149..27574418, Cluster 13

<400> 2329
caatacttgc ttttacaccc gttgccaaac gaggccgtaa tgggattgag taggaggtat 60

ggattcactc aattcatacc tatattaaat ttatgatgga atttttatcc catgtaaccg 120

aacaagttct gtcggagcaa cggaatcgga atcgatctca gagggcctcc tttacgcgaa 180

tatatggaat cgcgcggccc cccgcctggg cggatcggat ccatgtccag agtcgcaggg 240

gcaagcgcag gctgggagcg agcgagcgag tgacagctgc ggcgagcaag ttgcaggcgg 300

cgaggaaagg cggccaccca tagttgcggg agcaccagcg cactctgccg gggaaagact 360

gggagggaac agtgcctggg tggcctctgg aatctccgtg ccccaagtgg attctgtcag 420

cgtggctgcc actcgctcgc gcccagcagc ctttttctcc tctctccctt tctctcctgc 480

aaggcctgca accaaggaac ctgatgtgct cgtggagtgg agggatctgg aatactagaa 540

gcaaactata ggcgttagat tctgcgccaa gttggtgttg gtttcatcgc ctctatattt 600

tgcgctgcat cttttggccg gaccgaataa agcgatccga tcgtggctcc tgctcccaca 660

cgcacactct ctactcttct ctgccctggt tggaatggat aaagccagcg cagcgtgcct 720

ccaagtagtc caagcatcat actacatata cccttcaccc cgccccccta tttgttctac 780

tggtgctttg ctttgcgcgt acgaataaat aaggccatag tgtgcgtccc atcgtcgctt 840

cggacttcac tgtggttcgc tcggtggatc gaccggtcgc cgtctcctac ctacgcggct 900

cgggtgccac agggtggtga gcgatgacgc cggctacagc ttccaggcgc gcgaatcaat 960

acgtagatag aaacgtcgtc gttgctgact gctgagccat gttgtctgag ctgagcgtga 1020

cggtgccccc aggaaaacgg acgtggcgct gcagcgggaa aggaagaacg cgtgcccggt 1080

ggtgtgatgg gctgatgggc cgcgtcgcgg ttttcggtgg gcccgggctc ccacttccga 1140

gggagggaag gaaggagggg gtcgagggac cacccgaaag gccgaaacgg gcaacgctgg 1200

gccactgcta ctgtagtcta cagccggctg gctctcagtc actcactggc gacttgtcga 1260

gtgttgtaaa 1270

<210> 2330
<211> 1111
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56925_G1, chr2:27959842..27960952, Cluster 13

<400> 2330
accgtatagt ctttacttaa aacacgtcag gttagaattg ttctatgctg acgcggaacg 60

gcggaacttg gtacgcggaa cggcggaact tggtggaggt tgcggctctc cgtcgctctc 120

gcccgggccc cagtcaccac ggcccactgg tccgttattt ctagatagat agaggtttct 180

tggatccgcc aaaaccgggg tgtccggtcc tgaaacggca acaatttctt gacgctgaca 240

cgacgggtaa ccgccgtccc taccacccgg ggtgtcagaa ctgcatccat ctgcatacac 300

tccaatgact cccatgccaa aaaaacaaag cgctatccaa taatcggcat tgctgatgtg 360

tccgtactgt aggagtagta cgcatcattt gttccacgat ggcgaccgat caaccaaagg 420

aaaaaaaaag tttgcggaaa cagttccatc tattctcccg gcggcacgca cgggcagcgt 480

ggttggttac catctaaaaa cagtagtgga ggtcaaactg tacccgagcc aacagtgtcc 540

agctggtcac actaataacg ctgtcgctgc aagaattgag atgatcttgt cccatgcaga 600

actgctcgga atcggtggcc atcacctctc tgttcagagc tattttccgt cgtcgtcaca 660

catatatagg tactgttcaa atgcgacaag tggctagtgg aatccgcaca ttgtaaccgt 720

cgatcgatgc aacaggacaa gcaggcagga acgctcttcc aggtcaacac atagctgcag 780

tccctgcaag ctgagaagcg agctcactgt ctcaaactct gaaattttcg tctccgacgt 840

cgcgcggtga caggttcaca atcacagctc gggaagtctc tggctctggc atcaaaccag 900

acatatctaa tggccgatcg cgtcggatga cgatggctcc agcgaggccc tcctgactgg 960

tttcgccaac cggacgaggg ttagacaacg catgtgcagt tgtgcggtgt gccgaattgc 1020

caatcgatga cggattcacg gtctcaagtt cttgagagcc cagacaaaat ttccggtggc 1080

tatcgttatc tcgtatgatg cactgcttcc t 1111

<210> 2331
<211> 1127
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57176_G1, chr2:29283897..29285023, Cluster 13

<400> 2331
ctctctgtct atatataaaa gaactttata caagatgcaa ataacaatca agtgccacgt 60

acagctcaca gggctcgaaa agaatgcttt gaccgacgaa ctgacaaaca gggctacgtc 120

atttggaagt ttccaagatg ctcatgaaga gctaattaaa caaatcactc gctcgctatt 180

accagcatgc atgcatgagg gcaaaaagca actcggttgc caagtccaaa tccgccagac 240

catttgtttg caagcgtgga agataagagc acggcgtact accgtatgct aatcgctgat 300

aagagcacgg cgtactaccg tatgctaatc gctcacggtg tgttgtcaga tgcgtacaag 360

tgtacaatgc catgttctgc agccgatcac gacgacgacg cagcgtgcag ctttgcttcg 420

ctggtgctga gtagctgcac ggctggcgga tagggtggtg gacctgacct gcactgcacg 480

ccgtgtgccg ccttcctttg cccgtgcaag tgcgcccgcg atgcataagg accgaggata 540

gcgcacggcg gcacagcaaa cacagcatgc aacacgcttt ttgactcagg gaaattgttc 600

ttttgggctg tgtttggttt caagcatgct tctctctgca tttactcatt aatttagttt 660

tagtgactaa tgataacata aaattgttat gactaacatg tgcttttaa gttaggttgc 720

agtaaacttc ggatgagtgt gcccttgtac tgcatgagag ttacactgtg tcgggtgtgt 780

aacatatgag gtgcaccgaa cagggcactc ggagagcttg caaaagtggt ctcacacatt 840

ttataccacc aaatagtgat ctgtatttga gaggcctaat actcaccgaa tgtttcaggt 900

gtgccaccga catggcacta gacaagatac tcagagagat gtacaaacta tatatctccg 960

gattatattc accagatgtg tacgatttga cacatgtatc agatgccacg tacaataatg 1020

gctagtttca taatctagct gttgcgaaag cactgacatt gtatgctata gtgggttagg 1080

aaaatcacat atcttttctg ccttttagat ctttgcacta tctacgt 1127

<210> 2332
<211> 1363
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57183_G1, chr2:29333012..29334374, Cluster 13

<400> 2332
caaacggttt agatggataa taatttatcc ttactcactc aaattcaata acaatattgt 60

ttagatcatc cccatctctc cccacgaccc gccgccccaa cctacctctc ccccgcgtcc 120

tctctctctc actcgtgttg tcatcgccac ggctatcaac cccttctctc gtgccacacg 180

tgtccctgtc atcctctccc tcttactcgt gttgccggcg ccgtggctgt taacccttct 240

ctcgcgtcaa cgctatcacc gtcgacccct cttcggcatt taacacgtgc tatatgctag 300

tataggcact gttcagcggc catgcaacaa gcccactaaa tagtatggtg tccagcacag 360

cagccatggc agcaacatcc ttctaccagc cacccagggg tcaagcatag caacctccgc 420

aggaccaact ggctcctcag tgatcatcac acgtctatgt agatctacgt taattagcct 480

cggtagtaaa ttgttcactt tagatgccta atctagaaag attaaagaaa gcaatagatg 540

atataaggac tatctaatag atgacgattt tgtaaaatac aacaaaaatg ctaagtttat 600

gaagtttaac gataatagtg ataaatttcg aattttatct gaagtcatat gtttttcaca 660

gacgtttgtt cttgtgtttc tcttgacaac tgagaatacg gctatccacg atggcagtgc 720

gttttcagtt gagcggccaa ggcccatggg tgagcagcag gccgtgaact ttttcgtgga 780

gaccgagcat ggagagcgat gtggaacgac accaacgata cgaattgcga accaaatgac 840

gcagcgagga ctgagtaccc aaactagagg atgggagctg aagccatcct gcatattcaa 900

acttccctac cccttcattt attctattaa tttatatatg gccatcaaat ttgaaaactg 960

ttgcagtttc ttaaggccat cctgcacatg tttgggctgg gcgggcggtg cctccaccac 1020

tgtcctgatc ctacccccct tatataacaa aggtgacgtt ctgtctcaaa gacacgatca 1080

cttctgtctc aaagacacga tcacacgaga aacaatcaat ctactgcata ttagagtttt 1140

agacatgaga gtcctcgact cctcggtgct gcacaatctc agacttctct attcctaaac 1200

cagcgtgatg actatgacaa agaggatagt gtcttcgaaa ccaacctgca cggattgtgg 1260

caaattgggg ttttagcagc gatcacgtga ctactcgtcg aattgacctg cactaccaca 1320

tctatgcact tcaacatcac tgtgattctg tgaactccat aga 1363

<210> 2333
<211> 1329
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61934_G1, chr2:56790074..56791402, Cluster 13

<400> 2333
gccaggtctc gcggctagtg ggcgtgcggc ggtgcgtgcg tgcgtgctac ttgggattca 60

gcgtagtgga ggagcgggac cggatctgga acgacgcaag gagtacgcct ggatgcttcc 120

gatgtgcctt cgctctgaat ttctgaatct gttcctccat ggtgccttgg acacgggcgg 180

attggcggcc tctcatcggc tggaaccaga accacccccct ttcaaacggg gctgctgcca 240

tgagcatgcc tgcatggctg catatgtcga gccgatcaga ccaataaacc ctacgtacgt 300

gcgggtttgg taactaaaaa taactagtaa actaaccttc acgtacggct tcaccttaat 360

gttgcgaatg agctagatta tcgatatcca aattggagca agatcgacga ttataaaaaa 420

taattgttag ggcagggcaa cagaggacga tcgaatgctc accatgaaaa ggagaaaaag 480

agaaaagcaa gtatatatat atatatatat ataaaggatt caagaggagt caagacaaag 540

ctaggcatag ctatggcatt tcatttttgt caatcaagac ataatagcgc gcgtgatcgg 600

atttaggaca aatatagttg taccgctaaa aagaagagct agataattca gtatgcgtgt 660

cggaatcata cacattacgt acagacctaa gcggcacaca cataagagca accgattgct 720

ttcataagat acatgtgcac gcttggtaaa atattttgag aattagaatg cttgacaaga 780

catgggaaaa tattttcata agatacatgt gcaccggcta caaagtcaac tcatacatat 840

tgcacagatt tcaaccgagc acagtgcatg cagtccgatg tttgtacgtg gtgcattata 900

catggttgtt gcatctcgtg atactagctg agcagattag actagttcta ctcttattac 960

tcttagtgat tactgtcacc tagacgatcc cggatttatg ggaccattga atgactattt 1020

tgtagcggag aaggataagc cagtatagag catttggtct atgtgtgtgg atcaaggagg 1080

caactagcta gacccttgca tgtgtgcttc aatatgagac aacttgggag tcttgaccct 1140

tcgatatctc acaaaacatc aaagttttca taaccctctt tatattacgc atttatttt 1200

atgcatttta cattcctaga gttatcatgt tagtgtaggg ttggtaccta aggtgcaaag 1260

cttatgtata agcaatagaa caccggttag gaacaacagg tcaatttagc taagcgatac 1320

atcccatga 1329

<210> 2334
<211> 1217
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62922_G1, chr2:61892650..61893866, Cluster 13

<400> 2334
gatgaatgaa agctaattaa agaaaaaaaa caagattaga atatctgcta cctgcacata 60

ccaataatat ccgtattatt tacatcccta cctgcacatc aacctagtta agagactcgt 120

tgtctcagac tccagtccag catcgcttgg tctactgtga gtctgcgacc gtggcgtgtt 180

actgttatcc aaaggacgag gatcactggt cacgcttcac tggccaatca gcaacgcatg 240

ccccagttgc aagttgcaaa gatattcacg ggacgggaca cgggaggcgg ttaaattatt 300

ggcagccgag gggaggagac cacgcgcaca cgtcttttcc gcatgtgagc gtctgtgatc 360

aggttttgcc cggcgagcca gggcggcggc ggcggaaacg gcaacggaac gagaggaggc 420

cgggcttgcg cacgtctttc ccagatggag cggcttcttt aatgacggcg acaaaaggga 480

ggtaaagggg ttggtcaact cgtcgccggc ggggccgggc tcaaccgtcc tgcacacgca 540

cgtccgccgg cggctccttt gtctcgatga gccggtgcaa gccgcttgca tgcagccagt 600

tgccatgcca aagctgccgc tatagtagac tactagtagt gctctgctag ctcgagtgag 660

cgtgacgggc aacggtaacg cacgaggcag agaggagggc ggggccaggc cacacacggt 720

gacacgggtc ctgctttggt ttttttttt ttttgccttc gcccaccaaa attaaattat 780

aaaaggtaaa aaatatcacc aaaagttatc tttcatctca gcgtctgacg accaactccg 840

atccttcgca ggcgtaacct cacttggccc accaggtagg ggattccatg aatatatata 900

taccctatgc tagtttgtca acgacgactg ttttggcaat tattgctaag tttatcagcc 960

caaattaccc cgaccgtgtt attttatttt gaaacgcaat aatttcattt tttttctacg 1020

gccgccagtt gcattgtgtg tatcgtcatt tgtgctccat aattgcgagg ggcaaattaa 1080

atttccttat ctttctaatt ttgctccgta ctccgtctgt gtctgatgaa tcagtcaatt 1140

cttagagctg ttgtcacatt tttcttagaa acctgacaga atctaaaaaa tgatttattc 1200

agggagtact ttcatat 1217

<210> 2335
<211> 1154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7054_G1, chr1:36354474..36355627, Cluster 13

<400> 2335
tttaacttta gttctcaatc tcgcgatgta ccccacaaat tcactgttga aaattcctat 60

acatttgcca cactgcatag gggatatcac gctgatcata gtagatatga tggtagcatg 120

agctttccac aaggagagga gatattattt ggaaccttta ggttcatcgc tgagaacctt 180

tagaatctca agctttccct agaaacccca gcgactttga cattcttcat ccaagatttt 240

atagatcgaa tttgcacttc atcttaaact ccatgtcgac accaacctga attcgggcta 300

atctctgact cgaactctga caccaactca aattgcttgg gagaccagat tattttcatg 360

gtagacttca ggaattagga cggttagtct tatgaccatg acaacactga cgacaaccca 420

atgatgagat gacagagaca ccaagaagag ttgtggtcaa cttccaaggt caataggtct 480

atgccacgct gacactgaac atcatgacaa tgaagctcct attagacagg attactccac 540

tgccccgtgg acgagggttc aggggtagga gtctccacga tcatgcccac catcgttgtt 600

gcagcttctg tctaggtcgg actcttaggt gatggcacta atgacacctg aagaatggcc 660

aggcttcctt gacatggggc ctctggatgt gaagcttggc ctagtgatga cagggagacc 720

tggacccctt gctcccctcg ttgggttgag caggagtggg gatggccacc tctgctttct 780

ttggacatgt ttgggtctca ctgaccaagg gctcgaacaa atatcacttg atgacctcct 840

catcgctgaa gtcgtcgtca agatccttat cgtcattatc agtatcctca tcctcatcat 900

cgttgatcac tagcctccat tagtgagaat catcccttcg aatcttttga tccctttccc 960

tcttcttctc atccttatgc ttcttcacct tggcggtgga gcggttcaca gcatgcacaa 1020

ccacatcttc agggagcgac acgtagaaaa ggtggatgca gaaatcagac tacaagcaaa 1080

gaattgtaaa gattcaaaaa ataaagacac caaaacaaag aggtaagaaa ctcacaacat 1140

ccaccatgcc atgt 1154

<210> 2336
<211> 1341
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80795_G1, chr2:175707614..175708954, Cluster 13

<400> 2336
aaggtagtga tttgacagag gaaaagagaa gcaggagaaa cgcgcgttgg cgacgaaatg 60

aaagcgctgc tttattgcac cccaaaaaaa acattttatt atttgtcctt tacttgttct 120

ggtggtagtt gctctccacc caccccaaag gccaaaggct accactgtct ccctgtgctt 180

gtcttcccgg ccattgattg gccccacatg gaatgtgatg gacagcagca caagtttggc 240

ctcatcagca caagtttttt cccctcatca gtctccaccc ggccggcccc tgccgtctcc 300

atctccatcg ggctatacat tgcagtagtc agtagtgacc ttctttctgc ttcttaccaa 360

gatatggact atatacatta gcagcagcag cagcttcctg cagattcttt tttgtttatt 420

ttgctccgca ataaaaatga atcaaatcaa agtcaaacac acatagcata tacagtgcta 480

tggtgattgt aaacttgatg aagaataccc ggagaaaagg acacccatcc agaagctagc 540

tacaggtatg caggaaacat aaccaactat taagcacatg ttctcgtcaa tctgaagatt 600

ctccaacgat tgctctgtca aaacacgcat gctctattaa ctgtgtatag gcacggaaac 660

tggagtaccc aaccgaacgc tattccctat tcgtcgtgtg atgtgatgcg atgagatggt 720

atgtgatggc tcagtttcca cgagtaggaa caaacaatgg gccgcaaaag atgttggttc 780

tatatataag ttgtcatata tttttatgct aaacttatct aatgtgtcta atcatttata 840

gcggttcaaa ttctgtggta tagtttgaca cgtctaagag aattctacca caattttata 900

tgtaagcagg gagaaaaaaa tcttatcgga actatgactc aaacacattt ctagcttgat 960

taaacttgca ttagacgtgt caaattatgg caagtaacgt aacaaattaa attacccgta 1020

ctactcacaa cagtatatac gcaggcaggt gcagcactgt ttccgaccac aacactttgc 1080

aggcggccag gcgtgcgccc gacttctccc tcacgtcagg gcggtcgtca ctcgctggcg 1140

tcatcaccta tcaactctct ctccctttca tcaacgtgta gcggtcccag tgattagctt 1200

ccacgttacc tggccaatgg ggagaaagag agctctgact tcaccgcgcc tccaaaaatc 1260

aaagtttcca ccactcattc tttatccctc tctactagga acgcctactc gcaagcactc 1320

aagctcacct cgccacagat a 1341

<210> 2337
<211> 1365
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82562_G1, chr2:184911014..184912378, Cluster 13

<400> 2337
aaataaatat atcaataact attatttgat atatataata gcggtagcta agtatggaca 60

actggttatt aaaaaaataa ggctcgagca ttcagattga ccaggccctc gtccctccaa 120

aaccgatagc cggccctgct gctcctccgt ctacatcgct ctctctctct ctctcgcgtc 180

cacgatgcac gatgaggcgg tcgccatggt cagaaggcca cgggtcatgg ctagcggctc 240

cgtatccggc cccgggcctg cgcgaagctc gccaactgcc gcctccgtga ctgtcgctgt 300

cctcgtccgg aacggccacc accggctgcc cgctcggtgt gctctgttct gagagagaaa 360

ggaccgctgc gaggcgagaa tagaacgagg gcccacagct gtgcgtgggc cggcctccac 420

ctggttaagc ctctgcgccc gccatggcac tgggccggcc aggcccagat gttctcgtta 480

cataattctg caatttgaat cagtctagaa aagcttaggg gccatggatt gaatctagtc 540

tctattttat agtctagtct ctattttata atagaaagtg gaagaaaaaa catgtctccc 600

actctctaac ccctcaaaaa ttacttcata acctatttgc caaactgttt tcgtcaaata 660

tatttaattc tgctagagaa tcactctatt aaagaatcga ctctcgcaaa gagaatcatg 720

gaacggagct ctatcaaacg agtccttaat agcatgtgaa tctagaaaac tgaggactat 780

agtttgatag aggttcatct gaacctgatt ctctattgga gtcaattctt tgagccaagt 840

gaaattacag ttcacattaa ttctctttga ttatctagca ttaactctaa aatcatggta 900

gatgatcact tcacggaatc ggaaaaaggc tgcttctttt tagttgtcag ctcttggttc 960

attttagaaa atcattccat agaatcaacg gataatcact ttatctctaa aatgctgaat 1020

tcgttaatga atcagctacc ctaccaaagc gggcctgaaa ctccacggac gacgaatttt 1080

ggtcgcttgc atttgtatcc gtgcgagaat ctgacgactt gagcagcgca agtgctagtc 1140

tgcgcgatct ggtggcctag cttcccgtgg gatctaccag gccaggaatg caggaccaaa 1200

ccgccgccca tgcatgtgtc tgacccttcg cttggtcggg cagcaagcca gcctgctgtc 1260

cggcttggtt gtacttttac tgagcagcaa agacattata tttgaataat aaaaagttgt 1320

agtgctatat atacgtatat aatctgcaca ttatctacct tggtt 1365

<210> 2338
<211> 1010
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82628_G1, chr2:185244719..185245728, Cluster 13

<400> 2338
tttaatatga agtgaacagg gtggatatat atccactgaa ccctccagcg caacggtcaa 60

taccaaatag ttttacatgg gtcgatactg accagcggag cgggcccgct gtaccaatcg 120

acgttgaagc aggactgatc gataccggcc acgagttgaa ccatgtcaca tgtcgttatc 180

tcgttggaac gaggccaagg gcggcaagct cgacatggaa agcatcgcct cgcctcgcct 240

ggcttgtagc tttcgcctgt cgcgagcgtc tttggacgca accacttcgt acgtaggagt 300

cggtgcacag cacttttgcc ggctttccta gcaggaagga agaacacatc aagcgtacga 360

catttccatt ttttatattt catcctcgtg tatcacagtc agtcactttg acgcaccgaa 420

ggaaagaaaa aatgaaaaac aaaaagaaca cgaaggaaag cttgtccatg gagtaggtgc 480

ggtgcgaggg tctctgctgc tggtgccccg tgacccagac gattctcgtc gaattcgtgt 540

gggaaacaaa ccatcgtgca tggatttggt cggttagccg ttcgtgggtt tggaatctaa 600

agccgatgaa cgaacgtttt ttttttggc ccatgtcaag gtggtgacgc gccgcaggtt 660

ggacttggac ctgcggttcc gtttccggtt tgttggtggt gcatcggttg ttcagggcct 720

cgatcggtct gcgtctgcat cctcgcgccg ggtagttgga cggccgacgt gtgcgctgtt 780

ggtgggtggg tgaaccatgg agcctgccag gctggtggca acacggccat catcatcttc 840

atgccgcttt ggtgcattgt gcatttgtgc gttgaaagga gatgagagct gccgtttcga 900

tttttgaaac ctgaattctt gggtggccga ctgttgcctc gcgccctcgc ccatatgtag 960

acacgccaac acatccagtt tacaagtggg cggcattgtc tgatggacgg 1010

<210> 2339
<211> 1307
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82742_G1, chr2:185783684..185784990, Cluster 13

<220>
<221> modified_base
<222> (1178)..(1178)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1178)..(1277)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1179)..(1179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1180)..(1180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1181)..(1181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1182)..(1182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1183)..(1183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1184)..(1184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1185)..(1185)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1186)..(1186)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1187)..(1187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1188)..(1188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1189)..(1189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1190)..(1190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1191)..(1191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1192)..(1192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1193)..(1193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1194)..(1194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1195)..(1195)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1196)..(1196)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1197)..(1197)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1198)..(1198)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1199)..(1199)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1200)..(1200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1201)..(1201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1202)..(1202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1203)..(1203)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1204)..(1204)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1205)..(1205)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1206)..(1206)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1207)..(1207)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1208)..(1208)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1209)..(1209)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1210)..(1210)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1211)..(1211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1212)..(1212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1213)..(1213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1214)..(1214)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1215)..(1215)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1216)..(1216)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1217)..(1217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1218)..(1218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1219)..(1219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1220)..(1220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1221)..(1221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1222)..(1222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1223)..(1223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1224)..(1224)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1225)..(1225)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1226)..(1226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1227)..(1227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1228)..(1228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1229)..(1229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1230)..(1230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1231)..(1231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1232)..(1232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1233)..(1233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1234)..(1234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1235)..(1235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1236)..(1236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1237)..(1237)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1238)..(1238)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1239)..(1239)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1240)..(1240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1241)..(1241)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1242)..(1242)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1243)..(1243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1244)..(1244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1245)..(1245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1246)..(1246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1247)..(1247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1248)..(1248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1249)..(1249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1250)..(1250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1251)..(1251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1252)..(1252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1253)..(1253)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1254)..(1254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1255)..(1255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1256)..(1256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1257)..(1257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1258)..(1258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1259)..(1259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1260)..(1260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1261)..(1261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1262)..(1262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1263)..(1263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1264)..(1264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1265)..(1265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1266)..(1266)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1267)..(1267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1268)..(1268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1269)..(1269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1270)..(1270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1271)..(1271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1272)..(1272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1273)..(1273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1274)..(1274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1275)..(1275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1276)..(1276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1277)..(1277)
<223> a, c, g, or t

<400> 2339
atggaggtgg gcccctagga tcttggggcc cagggcggcc gccctgacag ccctgtagtc 60

agcgccggcc ctgtggctgt catatgtgtg gacgtacgta cgtacgggcg tatcgtgtca 120

gaaacctttc gacaacacaa tctgcgtcac attcccgaaa ggcaaaggtg gtgtgcacac 180

gctcctgtcc tgtgtattac ttatctgaga cgtgtaataa tataaccacc gcccgccggt 240

agcggtagct gatctacctc ttgtcacaaa caaacaaaca aacaaacaaa caaacaaaca 300

aacagtgcgg tgcacctatt tttttgcctg taatgtacag ggaggaagca gttatctgta 360

aaaagcacac gcacagtata gcagtagcac agtagtaagg caggcgcacg cagttgtccc 420

tgttcttgct gatgcaaaga acggtcgagc aatttatttg tagtcctggc ctggcatgcg 480

tgtgtagccc tagctaccga actagtacgt accagttgtg tacacagaat ctgacgagga 540

cccgcatgca ttattgctcc taaagttcct gatgggcacc gcattcacat gcgactttgg 600

ttgcgagatc acgagtcccc tgaataatca tgtcccccga atccatatcg ctactcgaac 660

gttgtcctgc tcctgcatgg tccgggcgtg ctcctgttaa aacgaacgag cgggggcagc 720

cgttgggggc tttaattgaa gtcatgcctc tgccctaaaa ctttggcgac acggcacttg 780

tgcctacctc cacacgcata tttacgaggc accaaccaac ccctccgggc gccgggcacc 840

ccaccccggg ttttgatgta acgaatttaa cgaccgctgc cgcgaaactg ccttcaccgc 900

cgtcccgggc ggcgaagttc tgtattcccc gtccggacag acggacacac accgccgtag 960

tacgtcgcat gcaccatcat tgcagctcct cgttgggagg agtacggata gatgtcacat 1020

gggaccgggt cagacgggcg gttcgaggaa ctggctctgc tagtcgctgc taagcctgta 1080

cccgaccgat gcgaacatgc caatgctacg cacgcgatat ctacgcgtct ggcatcggag 1140

ctggtatcaa gtcacccctt gcctgtccgg caggcccnnn nnnnnnnnnn nnnnnnnnnn 1200

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1260

nnnnnnnnnn nnnnnnnaga tctagagatt cgtcactcct ggtattt 1307

<210> 2340
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82821_G1, chr2:186260823..186261931, Cluster 13

<400> 2340
cgtggcgtgg catatctcct tttcgcacgg acgtcgtcgt ccatcggaac ctcgcggcgt 60

ggtttttccc acggcggacg acaaaagatt caccctagag agagctagct cctgctcgtt 120

atgggagctc ggcactcggc agctcgctct gtcgctcgtg gccactagct gctgctacac 180

agccaccatc gcacagcaaa ggcgctgctg catcgtaagc tcgtactaga acattacttt 240

acttgccagg tgccgatggg ccagtgagga acaaatggag ccacccctgc gatgcgaacg 300

aaaagtggtt cttggtttgg cacgcagaat aaaacacgcc atagcccccg tagccttcac 360

cgcggtggat tatagttgtt gggtatcaag tggggatctg tttttggaac agactcatgg 420

cgtgcgcagc accggccaag tggtaggtac caaagagcgc atgcatggaa cctgtgcact 480

ataaactgac aggctacaca ctgttcttcg atctataaag ataaacactg ttgtaaaagc 540

cggtacaaat gaaagccaaa ctaacaagct gtgaagctta ataacctgca ggtatactag 600

cggcaattaa ctgtatcgtg cacgcgaggg acattatctc tatgtaaatg agtgaaggtt 660

tgatactcta gaacgatggg tctacctgac tgccagttag caaaatagag acaggcagtc 720

aaaaagacat gagcaattca ttcggctcat caaagtaagg ttacagtcgg gggtttctga 780

aattgagctt caggttgtac tgcagcagtg caggcggagc gaggaagata acagtctcag 840

atcgggccaa caaatttagt tttagggtct ggtgaatcca ctcaccaaga cgggccggaa 900

cagaggtttc tggcccatgt gaaatggggc cgaacaggtt ttcctgccgt aggcccgact 960

atagcaggac acggtgctgt tttaagccca accgagcctg tacagattaa aaattggcct 1020

aaatttttta gcgagcaatg gtgtatgata aggccaaatg gtgtttttat acaacactct 1080

tgggatgaag ggttttagcg agcaatggt 1109

<210> 2341
<211> 1288
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83471_G1, chr2:189738096..189739383, Cluster 13

<400> 2341
ctgatcatca gtgttgctgg ctgcagtagc acctctaacg gctaagcaag aagtttttt 60

tgttaccttc aaaaaaagca agggttttac cggtgtataa ttattatata tacggagtat 120

gggtatggca cacggaagcg ggcatcgtat agatcacaca caggcacaca gcagtcagtc 180

atcacacgga aggatcggtc gtcggggcag tggtgcggtg ccgcgccgtg cagtaggcgg 240

cagtggtccc cgcctccccg gctccccgca cgcagcttct tttccgtggc gcctttcgcg 300

cagctagctt aggcaaaaga atttgacgta gatgcccgtc ttttagcagt actaggctag 360

gctaggcttt tctcggatag ttggatacaa caacatttgc tttgcttgga tttggtcgct 420

cgacgccacg cactactctc tcgcgtccgc tttcccttcg catgcagtgg ttgtgcgtct 480

caaggacgaa ggttcagtgc tttattgaaa accgtgaggc gatgcaggtg ttgactgctg 540

ctgctgctgc ccagtgccca atgccccagt ctatgaggtc accgcatctg aatgactgtt 600

gtttgttgct tcccagtttt tttttgagct caccaacatc cggaggaaac tggcatcatc 660

taccctagct ccaacgtgct cgtgctcctc tttggtaggc ttttttaggc tactgtatgc 720

agtgcttttt atcaatccat ttagtagaat tagttaagaa acttagaaag accggtaaaa 780

cgtagctcca cctactcacc aagacatttg tttaacctca ccgatcaatt caatagttac 840

tctcgttaca tagtgccgga caaggtgttg gagtgtacga taaactagta tccaactcct 900

tcactaaaag aagaatgtaa actcgatatt ttaaactaaa aacacctgtt aagtttaact 960

aagtacataa aaccgttaat atatataact ctaaataggt aattatttta caaccagttt 1020

aatgatactt atttaatact ataaacatta tcaatttttt atagattttt attaaactgg 1080

aaagttagaa ttgttcgtta ctacatacaa atggaatatc atcgacacat cgccccaacc 1140

catgtcctta attagtcctt agatgcacaa gcttgtcgct acatagccct tagatgcttc 1200

acttctcgca cgggtgtcaa cctcgacact gtgcctttgg agttacaagc aatcggaaat 1260

ccatcgacat agttcacctt cgtctgga 1288

<210> 2342
<211> 1387
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_861_G1, chr1:4556443..4557829, Cluster 13

<400> 2342
tttgtctata tagattatag ttgcagcatt tgcggtcgta ggacagccga acacgcgtga 60

atcaccaatg tacttataat atgctaatta ctcacatatc tacatgtata taaagaaata 120

tatgtatttc tacaattcta ccttttccgt ctgtatatat atacaaacat taaaacataa 180

atatacacgt atgtacgcat gtacattaat aaagtatatt ttaataatgt ccaataatat 240

agtgtctggt cgctttcggt atggtctcca tcgcacaccc tgatcgatat gatgatgagg 300

tcattttgcc gcccgtgtaa cctgagcctt ccctgaggaa tccatacacg tgctccagta 360

ctgttggcgc catttttttt cctagagcgc catgcatgtg ctggtttaca tgcctaatta 420

aaactacact cgtggtccag tttatttata cacgccgcat cgacgtaact atatgctcgc 480

agactagtat agactagtca aacaaagctg ctgtctgagt aagcatcgaa gctagccttg 540

tcgtgtgtgt gtgtgtagca ctgtcaaact agcacacatc gcttgaggtc aacatgtata 600

ctttgcgtgc gtgcgtgcgt gcgtggatcg ggcgacgtgt caccacccgt tccagacaca 660

cacgtccagg atgaagacgg ttagccggcc ggtagccgcc actgcaacaa aggattacat 720

gaggaagaaa gcattaggca tgtatcagga acatgcaagg ctggcacatg cagcagccca 780

cagcgtaagc tacagtctac acaggagctg aaaacggctg gctagctact acgcacagcc 840

gatcagctgg aactgtgttg ctaacgtcca gacactgtgc actggtacgt acgtgtgaag 900

cggacgtgtg tggtgccctg atgcgtgccc cttccacaaa agcacgtagc tgcacgcgtg 960

tggctaacag agacatctgt gtgtgtacag tagtaacact gtaccgccgt ggcactggta 1020

tactgtgctg ggtaaggagt gtagatccca gcaggcagct gatcgagcag acgatcctat 1080

tattaaaaag gccagctcgg attcgacacg cctggaaatt attattgagt aagttaagac 1140

cggatccagt gtggtggtct ttatcaacca ccacgttagt tatctaccgc actattaatc 1200

gtgggtagag cctttatcgt cagcctacaa ttaccacaac gtcacattag ttattctttt 1260

acagattttt atttataata aaacacgacg ttttattagg aaaaaaacat caagcacata 1320

atttataaaa ctaattcaaa aagttacatt acttgaaaat ttttaaataa tacaaataaa 1380

aagtaca 1387

<210> 2343
<211> 1012
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86764_G1, chr2:209627468..209628479, Cluster 13

<400> 2343
tagtagaagt ttatttttctt tttttatctt tgttcgtcca tagactagaa gccgacaaag 60

aaatcggtga aaacactttt tttgattcta tggtgctcca gtttgtctac tatatatata 120

gcaaggattc cacgaaacat tattgccaaa tgagccctta acgccgacag tcagcgacta 180

gaaaccattg tgaagtacgt gcatgctatg tacaagttag atgatagatg taccgatcga 240

aatggtgtcg cgtctcgtca tagatccagt agagtcctct tcagttggtg gccggtcttt 300

gccacgggca gcgtcatgtc ggtggttctg ctctctctgc agggcatggc cgccagggtg 360

ccacgtctct actgccactt cttggcttcg acctgcgcct gcccatggag atcggggcat 420

ggccggcagg cggctatcta gctaataagc actgcacgac acgagatggt ggtactggtg 480

gccgccggcg taggccccta gcacacgcgc catcgccatc gttaggtgct agccagctag 540

atttttggat cggagccatg cgatgcaatg catgcgtcgg cacggcggtc gcgcaccgca 600

cgtcttgacg cccaacgtga gaaaggatag tagtcctatg atgacgagac gagagtgacg 660

gggaaacgct ggtggttgcg gtaggatcac gatgtgcacc tcgattgatg ggtgacgcct 720

gcatgctatt gagctgagct cccatatgat gctatagcct ctgtcctgaa tgcattgcgg 780

ttagacaagt acactgtaca catgctggtc cctgtgtgcg tgcgcgtgta tagtttgtca 840

ctgtccacgc cgtgtgcccc gcatcgggat cccagccgga ttctccggac cagggcgatg 900

atcggtgaac aatgaacatt atatattgca gcttgtgtcg ctgcgtctgc actgcaccac 960

ggatacatct cgatccaagg ttggagcatg ctttgcaatc cgtatgattg ga 1012

<210> 2344
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87354_G1, chr2:212462380..212463385, Cluster 13

<400> 2344
ttaattagct tgagagtatg ctttataaaa ctgcccaagt cttgtcctgt tcatgtgcgg 60

gcgtatcgtc cagtcaaaag aaacaaaagc tagctagcta gctagtaatt aactaggcat 120

gcatatgaat atatgattca aaatatgtgt gccggagcaa tcaaatcact ctctgcatgt 180

tgttttaggc tacctactac aaacaaagag ttctcgatga gtacacacaa ataatccaaa 240

tctaacctac gattgtatta cattagctta caagagagag agagaaaagg ttcacttcgt 300

atgatgcatg ccaccaacca ctactatagc tagctctagc tgccatatgt tcgctgatat 360

atatatatat atctgcttgt ccaagttaaa atgaaaatat aacccacaaa atctacagta 420

catcgacctg acttttccgt tgcgcactta attaaaagct tagattaatt aaatgtttat 480

atacagagag agcgcgcttt gtgattgcaa gagacaaggc aggtaaagct agggagagcc 540

catgccaacc cgaagaaatg tcaacaaaag caccgtgtga tctttccggc catatcatcc 600

aatgatatga taaaatccag tcagcttcca ttacactagg ccggccggcc accagctagc 660

tttcgtcggc gtacttgggc gcagcattcc tgctgctagc tagatactag cttaatttct 720

gcatctgcat gcatgccccc cggccggcca ctccaaacca aaacaacaca acacgtgcat 780

gtgtctccat caatctgcat ctaattaact aagctagcta gctctgatga aaaggcgacc 840

gacccgagca aagagcctgc ttgcttgtag taattgtcag ttctgattgt aacagcggcc 900

accagagcac atcttcgcca agacagtttc aaccccgaag aaacgtcgac ctttttttcga 960

gaggccgacg tggcaaatct tcgccaagac atcgatggcg tgcata 1006

<210> 2345
<211> 1103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_908_G1, chr1:4738983..4740085, Cluster 13

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (790)..(889)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<400> 2345
aatgcttcag attaatcagc ttgattcgtt cgtgcatgca cgttcaagga ctcctgctac 60

ctcgccctct atgaggtggg tgagaggtga ttttttcgc ttctttgatc tatacaccgt 120

acccgctgga cgttctggcg tgtacagtgc cgtattccgg ccatccccgc gagccctgcc 180

cgggacggcc ggtacggagc tctctcgttg ctctctctct ctgcgtgggg aaacgttcca 240

taccggacac tttagccgtc tgtacgatga caacctcctc ttatcgtgac aagggacgaa 300

atgccactta attttaagtt tctctatatt tccggacagc ttagacctgc agtaatatac 360

cactgctgaa tgccttttgc tgcttcttct tttttacttt ggccggtgaa atgatcttca 420

ctgattattt cgttattact gggctaaaac tgccctttt caaataactt gatcttcgtt 480

gctccagata tctgcgcact tgcgcattgc acagaaagat taggaatgaa tattttctca 540

attattcgaa ttgcatgaag gcgactagct agtgagtccc gcgtcagctt acgtaagtaa 600

ctgactgggg tgagcgaacg cacacgcagg gacatggcaa cttgaagatt gatgatctat 660

ttcctgcttg ttccaaccaa atcgcagatt ccacctccac agccgaaagt gatatgcgcc 720

aaccatgtga gtaatggtgg ggtacgcccc gaccttcacg atggattgta aaatctgttt 780

accaacgtgn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnng aggttgaaaa 900

tgtagcatga atggagaggg caatggctaa ggctgcggac cggaccgact ttctgatgta 960

actatttgga ggagcggagc ccgcgaggcg gtatatattg taatgctcca cccagggcgg 1020

gccggtacgg cagatggaac ggaaggaggt gtttaagcgg tggtgctgga gggccgtaca 1080

gtttttccca atacaaaaaa aaa 1103

<210> 2346
<211> 1224
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_913_G1, chr1:4743114..4744337, Cluster 13

<400> 2346
cacgctccca gagtcgtccc cagactctct cagtgcaaga aggggaaaaa aaaaggaaaa 60

gaaaagctgt gtagcccttt tccctttttgg catggcagac ctcgcatcgg ctcgagcttc 120

tttcacctac ggttcggcac gcaggaacca gcgggagacc ggagacgcac gcacgggcac 180

ggaccgtata cctaccgagg ccacagcatg tagcgcagcg cgcagtgaaa acaagttacc 240

gctgcatgca gcgctgacgt cgtgcgggca agctaaaagc tgtgacgcgc ggggagccga 300

gccccgaggg agagatggtc actcagtcac ccctgctcag actcagatgg agacgccggg 360

aagaggccgg gaggagggaa agggccgcct tggtcgcctc ggagtcggtg cagatccaga 420

gaccacgcac acgcaggcag gcagagacgg cccaagattt tggcttcgtc tccgatgcga 480

aaacgcgatc caccgccacc aataatgcga gacctgtcgc cgatgaggcc gagcacgccg 540

cccgccccca cagtacgtac cgctgccgac gcgcgcggat ttgcaccccg taatcgtgtg 600

taagtactgt gcatgctcac cgcatcggtc ggtggccttg cattgctttg cttcgtccat 660

ccatgcatct cggcgagtgg attatattcc aggccttcca gccttccagg cttcctccat 720

tccggccggc cgggtgccac cgtcgtagct gtagacgacg agatcgctgt atcgatcgcc 780

ggcccaaatg catgatacag cttggacgac cgtaccgctc ccaggctgca ggcaccgtcg 840

cacatcgcgg gattcacagt ttcaacacag acccgtttca gatacagatt ccagctggtg 900

actggtgagc acatcacatg catggcgtgc gccgcagtac gtccaacgtc cgtacatcat 960

atcatatctc tatctgaacg ttgcccttcc tcgaatggat gagtacgtac ccgtctatat 1020

cttttgtcaa ccaccatacc ctgcctgcgc caccggagcg gccggcggtc agctgtcgcc 1080

tccaggccgc ggaaaccacc aagcggaccg cgcgcgacgc cggcgccaca tgccgcaccc 1140

ccccccccccc ccccccccccg gccgttcctt tgtttcgttt ccatttccgg cttccgggtg 1200

gctgctagct gggcaccatc gcga 1224

<210> 2347
<211> 1134
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93469_G1, chr3:6662503..6663636, Cluster 13

<400> 2347
cacataaata agagcttaaa atgatagagg ctctggtttt aggggcaacg gaaaatcaag 60

agcatacatc ggagcctatt ggacatgagt tttgatgata ttgtcctaaa ataaagtttt 120

agaattactg attcgaaact gtagaagatg ctcagcctac ttattctcct tcggtgcaac 180

catattttgg aatcaaacgc accctaatac tccgatacta aagccgtcgc cttctttcac 240

ttttttcgga ggggaacagt tttatttatt ttgtttgttt aaaatttcga aggcaactcc 300

aacacggcgg cgagagagtt gtttggtagt cgcactagct gcgccgtgcg tacatttgcc 360

accgcaaaaa aaaaaatgtt ccaggattag attatcgggg tcgggggcca ttggaagcgt 420

atcgttggat tggataaacg aagtctgcgg gatatttctt atccgaattt ccatccgatg 480

atctttctga ggaagaatcc atccatcccc tgctctgctc tgctccagcc tccagctcct 540

gtggtgtggc acggcacgtg gtggttggtg gcgagtggcg accaccggac acgcccgcgc 600

gcgcaggtgt ccaggtcgag caaaaggccc gggccacggg tgcggttggg ggaggacggc 660

gacccgcgcg ccgcggcgcg gccaaccacg tcgccgaggg cggcgtcaag tcagaccagg 720

gggcgcccaa taatggtacg ggcatggcag cgatggatgg cgcgaggcag gaacgatgct 780

gccaaggaga ccaatcaggc aaactgacag gattggtttc tgcccccatt ctgtggctgc 840

tcagctccgc gcttgtccgt ttgccaaccc agatcttttc gtatgctgct cctcacagaa 900

caagccgttg gcatggacgg agcgctggat ccagctgaaa atcctcgtcc ggagacgtgg 960

acagagacct aacttgggcg aggaagacag atggcgacga catagacgac cattcagcgc 1020

gtgtgcgact cattccctct gcgtacaacg tacgtactca cagtttgatt tttttttgt 1080

tttgattttt tttgttagag tcgacgtggt ggccagcaat ttagcagata ctac 1134

<210> 2348
<211> 1077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96647_G1, chr3:23791773..23792849, Cluster 13

<400> 2348
tctaggttat ttaaattaca tttcacaatg atatatgcgg acttagatgc acatttatgg 60

tgttttatgt tgttttcata ataagaatta tgtgtgtaat ttttttaga aaactgaaca 120

gactaatgac tagtattacc tgttgtgatt tttaagttca ccgggttgat ggctagatcc 180

ttacgtttat ttaagaattt taacattttg ttagcaaaca tgaatatagt ctctttcgaa 240

ggccttcaaa taatggttat ataaaaaaat aaaaaatatc atcctggaat aattatgatc 300

gttccaaact atggctcacg aggtggatat gtggtaggtt ttacccattg ttcctccgta 360

tatatttata aggtgtcttt catttatata acataaacaa acatgagcca tgtggtagga 420

gccaaagtgc tttataaatg ttcaaatcct ttacctctat tttttgatat tctttattca 480

gagtagacaa ctcatcaaga aagtcacgtt taaatataat agtgacagag aattgcggtc 540

aaatcccaaa tagttttgga ctgggagtgg tacattaaat cttagatagg tggtggggct 600

ttcatgcact gcactgtaga ccgtagtaca ggaaaacggt tgccgccacc gctggagaat 660

caacacgacc cacgctgcac tgcactgcac gcatgaagga gcgggaaacc gccgtgccat 720

ctgccatact actccgtatc ttgtatccgt cacacactca cagtcacact ggggatgcga 780

tgccgagatg aaacggaaac gcgtcgtgga ttcgtgtcgc gcgcctatcg gctcctgctg 840

acggcgacgg cgggttcgaa cgaacgaggc cccacggcac gggcgcacac accgtcacga 900

cgtgacgcta accgacacac atagcacagc accgaaacca ccgccgccgg gcccggcacg 960

tggtgcgcgc tcgccgggcc ggcgtggcac cgctggcgct tcctcgcctc ccgtctccca 1020

agcgcgctgt gtcgcagact cgctgcagcc acagcccaaa gtgacacaca gacagtc 1077

<210> 2349
<211> 1330
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_64542_G1, chr2:72203716..72205045, Cluster 14

<400> 2349
tatatatatc cggttggcgc ttaaaaaaaa tccaagctac gcggtgtgtg tcatcgatcg 60

gttgttgctt ggagagcatg gaaaggctgg gcatcactgg gactggtaga gcattgcatg 120

ggtgccctac tcgactagcc gactccttcc ttgattgctc gccggtcgcg cgcgcggcgc 180

gcgggcccat gcaacatgca tgcatgatga atgggggccg ccgggacagg gcgcccatgc 240

tggggtgctt gacctattga tcggtcggct cctcggccgc ggcgcgcgcg attccaccac 300

caccgtcgcc ggtcacccgc cgaagctaac tagcggacac ccggcgcgcg gctccggcgc 360

ttttccccca tggccccatc cctctcccaa agtggaaaag gggggaaaag ggataagaag 420

ggacaaaacc acggaaggta cgtggaacgt gggtgagggt ctggaagcca agatagggtc 480

acgacgcatg gcctaaaaag tgtcgcgagg cagggagcag ccgcgtgtcc gcctgctgct 540

gctggaatgg cgcggtggcc gcgcgcggtg acggtgatcc atgcatcctc ctgtcctatg 600

tacaacctca aagctactac gactactact gtggttttta tactccgtat atatgagaac 660

tacaagtcgg caaggctggt ctcgcctgct cttgccaagc aaagtgagta gttacacggc 720

gctggctgat gcatgcgtga cacggtggct agctagctgt tgatcccggc cggcccgtgg 780

acgaacccgt acgcgtacgt gtgtttgcgt tgcatcccaa acaagtgctc ggttgctgtt 840

gccgtggacg atcgatcgat cggcccacgc atcacatcat cattcattcc ggccggatcg 900

atcgggcact gtggaagcaa cgaaaccgcg cgcagccgcc actgtggctt ggccttggtg 960

gcagcaggag gacgcagctg cggccggtgg ggcaggggcg gaggcggagg cggaggcgcg 1020

gagcaagcag cacagctgct actccatgca tgcatccctg agattcaagg catcaagcaa 1080

gcgtctgcgt ctctgagact ctgactctct gtagcgacta gtggtgggcg agggtcgagt 1140

ggtcgacgca gtaagctcag gtcagggcca ctgggccagc atcgatttta tggcaagaca 1200

tgggcgcgcg cgagatgggc acccacagtc gactgcccct ctgcatgtgg ccctggcacc 1260

ccgcctgcag gcctacacaa cacaacagcg ggagcagtcg gctgcagagg atcccgtccc 1320

cagaaggcca 1330

<210> 2350
<211> 1106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10181_G1, chr1:54131186..54132291, Cluster 14

<400> 2350
gggtggctgg gccccgcgat cacatcctcg cttgtcgccc cccggccagc cagccagcca 60

gagccagtcg gtcacccacg gttgtgctcg tctgccactg ccaggcacgc cgctgtgcct 120

gtgcgctcaa cgaggcgggc gctgctctcg tgctgctgct ctcttctgct ctcccggggc 180

cggggccgag gtcgaggggg cgcgcgtgcg aacgacggag gaggaggcgg tggccgtgcc 240

cctcgactcg gtccggctgc cgtgcggcgg ggctagctct ctgtgcgtgc gcatgtgccg 300

gcatgtgcgg cggccccgc ggtgctgtgc tgcgcccatc gcccgtttgt ccctcgcgct 360

ctctcgattc ggacacccca gtggcgcggg gaggcacctg acctgcatgt gggttaagat 420

tagagatctc ttggttctca tcttgctagc tgcgctgctt cgtctttgtc actgcttgca 480

cagatagata tccgttcgtc catctaggtt ggtgtggtgc cgggactcga ctcgactgcc 540

ccttcgccgc acgtacgaag tggcacgggc acatgctgca tatggggctg atccgcgcgc 600

cacggacata cgctgttcgc tgtacagccc atgacgatcc aaactgtagg cggccaagcg 660

tacgtatgcg accaacagga gcaacagcta acgccgtcgt gcattatgca gctctagtgt 720

agggtacacc gctgtgctgt gctctcgagg tgacccccc acgcatccat gtcgcgccgt 780

gtgccgcgtg accttcaatg ggtttggttc tggctgtcga tcgaaagcga tcagacgagc 840

tcgttcgtag aattgtaagt aggcacacgg cgtacttacg ctgcgaatga gcatggttcg 900

atgccccggt ccacccatcc atcctccatg catggagacc gcgctacagg gatccgccgg 960

accggaacac aaacgaaggc atgcgttcct tttgttttcg atcaagttct attgttattt 1020

atttttaag taaaattaat ttagtgtcac aataaatcac gatccattat caattctact 1080

aagcccatgt tcactccgta cctcct 1106

<210> 2351
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_108229_G1, chr3:98438501..98439530, Cluster 14

<400> 2351
tgtgtggcag ttggatcttt gccgttttac tgttgtggta gattcattac tcgtttggtc 60

agaaactagc cgttctttcg taagcatata tatgattagt aatcctttgg tattttactt 120

ttaaatcctt ctgactttct cggcaaaaac gtgttagtta ctcataagat gtagccctaa 180

ctggtgtgcg acagatttta ataaaaaaga aacagcaata ggagctctgg atcaaaacgt 240

gcacggtaat taagatggca ctccgcgcaa gaactcgtcg gcgccacaac ggcaacagca 300

ggcagtggac acccgcgaat caacggcaag cagagaagct tcgtggacag aggagccaca 360

tgcggacgta ccatcaccat caccacccat ccatccaatc cattcactct tcacttcatt 420

cattgccgtc caggtcggcc ggaatggggc cgcgctcctg tcctgtgctc cagcaacacc 480

gaagggctag ctctttgaat cgcgcagcaa acacgcacgc tcgtactcct catcacatca 540

cacacagaca cagcagcagg gaccatgcat gcattcgatg cgagcttgca aacaacacaa 600

caaagcacat cttcagaggt tgcctccgaa ccataaggac aacggcagct tggttttaat 660

cgtggagttg ctgttgttga taaggatgtg acaagtctcg ctcgtgcctg gcgggacatg 720

ctgcccaacg cgacgccacg ctacgcgacg agaagtggag cattattacc gcgtacaata 780

ggaattaata ccgtctacgg agtgtcctta gtcgtctcat gaacgtttgt ggtcgatttg 840

caggatttta aatcataatc gttcatctac cagcagatgg ctaagattag atgggagcat 900

aacgtttcga tagggtgatc cgggctgccg accgtggatt ggacggtcca tacgcgcccg 960

gggttataac aaccgatgcg atccgagcct tcagattaaa accggacgac ttcggttatg 1020

taccttcgt 1030

<210> 2352
<211> 1346
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_111607_G1, chr3:122068092..122069437, Cluster 14

<400> 2352
ggaggagctt tcggaggaga ggagccacgg ccgcgctcac tcgctgctgc tgggtgctat 60

gggttaggtc ggtagtggct tttgataatg atcatgtgtg ttgtacaccc tacccgttgg 120

tgaggtgact tgactggcag aggaatctcc gaatctggca gtggagactg cacacgggag 180

acgggactac tccctcccat gtgttggtca attccagaag accggccggt cctgtctgga 240

cacgggacct ctgtttttt tttgcttttt acagtgtggt ttacttgttt gtgcaatata 300

ttttttaaa acaaaaacaa atattatttc ttcttcgaag cctggaactt tcgttttgtc 360

gacagggctg attgcgaccg cgctttgctt tgtcgcgacg cgagcctgcg cgttgcgttc 420

gtggcgtcgg ggaggggggg ggatggcaag cgccggtttg ctgtattggt cacgtgatgc 480

ggctgcgcaa cggccggggc cagggcggtg ccgccgcggc gacgggatcg cgcgtggttg 540

gtgtgacgga cgggtggggg cgcaccgagc gcatgccgcc tccatgagga ttgaggaggc 600

cctcccgtcc ggatgcatca cacatgccac tggcttggct ggctgggacg tgatcccctg 660

caccggctac gtgttcttcc ttctcacaga gaagatgctg acaaggaaaa cggcggcctc 720

gtcacggctc cgacgcgatc cgtgggtggg cgggcgggcg cgtccctcgc cggagctggt 780

gccgcgtgtc gccttctctg caacgccacg tgcctgcgtg tgtgtgtgcg cgcgcgagag 840

gtcctagtcg tcctagtccc cagtgatttc gcttggaatt ttttttatcc gaatcttgag 900

ggtctggagg agcttcatgg ctaccaccct cagcccgtgc gtgctgcagt gtagtggtag 960

gtgtgaacgg agcccggttc tcgtccgatc gccagcttta ataagcacaa ggtagtagta 1020

ggtgcgaaga ggagaacggc cttaactaac tgctctcctc acgctgccag gaatgagctt 1080

gacgacggtg ccagctggca cgaccttatt atttttttat tactagatta caagggaaac 1140

gattgatcac ggcgcaaatt aagcactcgc ctcatgaccc gatcctccga agccccttcg 1200

catcacggcg ctttgcggtg cttgtctttg actttttttt ttcaaaactc gcaatgggta 1260

cacacagtag ccgcagtctt taaaagttga ttagtcttct caatctgacc tgaattttgg 1320

ataagtcgaa ctcgagccgg ggaaaa 1346

<210> 2353
<211> 1129
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120574_G1, chr3:177119944..177121072, Cluster 14

<400> 2353
ctagtaaagt atataaattt gtccgcctct tgagtgcatg gtgatgggcc atagatcagt 60

tctatttctc ctcacaatcc gccccatatc ataaagccca accccacttc ccgtttttca 120

tgcgcgtgag ggggtgtggt gttcttccgt tcggttagct cgtagccgcc gccgtccgta 180

gttccctctc cgcgcgtggc cgccggtccc gcggcttcct cctcccgtgc gtggctgtgg 240

cgccggtccc gcggcttcct cctgagcggg cctgctcttc ccgtcaggcc tccgcaccca 300

cggccggatc tcttcctctc gtctccacgg ccgccttcct aggacagccg ttgcccgcgc 360

ggtgcccgca gccgcctcgt cggcgcaacg ctctcttcct ccccagtccc tccatcggaa 420

ccaccctaag cttccttagc ccattcggtt ctaccgaaag aatccccatc ctctgtcgcg 480

tccgccacct cctctgcggc ttaccagccg gactcctcaa gcctcccgct tagccccctc 540

gccggtgatg gccgcggccc cgccggtagc cggagaagat attaaagacg gcgttgaggt 600

gtgcctgttc gatgaatcag cagatgggtt ctcgagaact gtgcgcgcca tctcggagct 660

cgtcgacata gagcccgaaa cagacttccc tgaggcggaa gttgagcggc tctcctcctc 720

aataacgttc ctcaggtgaa atcctttctc ctggcttcct ctgctctcgc actcagtcac 780

cacaatggaa tcgacaaatt tcctgtgtca gcctaatagg tgatcgtaga cgtgatccta 840

tactatagag acgtgcccga ttttgatgga gtgtattaca tggaatattt catacatatg 900

tgggagaatt tgtttaactc atagcttcgg aatatatgtt gtccacaaga gtgactagtt 960

atcaaattgc gttattattc atgatttatt tgcttggtta aaggtctacc tgttccttcc 1020

tcgaatatcc acaagctctg caaaaatgtg aaaagatgca ggagttacat acctgcattt 1080

gatttctcct ttctttctaa atgccctgtt tttcagatat atgtttttg 1129

<210> 2354
<211> 1218
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122842_G1, chr3:188803917..188805134, Cluster 14

<400> 2354
cctatactca tataataaaa cacattatta cacaagattt cagtttttcc cagccatcca 60

aaaattactg aaactcaaga aattttgaaa cgtgcaagaa taccaacata gcagaaatcc 120

gcgacgccaa agaccttcca aatcctcaga tgccagcttc tcgaaaagtg aaaactactt 180

tctcacgtga ttaatcacgg ccgcagaccg ccgcgccgaa cggatccgcg aacgcggcgc 240

tgagtttaac agtccagcgg caggaacgac ggcagttcag gcctcaggcg gccgccgggc 300

gccggcctgc actgcacgtc cctcgcttcc ttgtcctccc ctggccgtct gtcgggtcgg 360

gcgctcgtcg aatctggtca gaccgcaagc gagcgccccc acacaaacac gcacgcacac 420

acagcacgac tcgaacgcgt cgcgtctctt ctctcttttc tcccgtcctt tgtccctctg 480

ccctgcaggc ctctctgcct ccgccccgca gttccgcacc caccctacgc tctcctccct 540

ctccacggaa cgcctcgcga gggaacgccc acgcagctgc cgggaggatt cggcgggcgt 600

ccgcctggac gcgaaatgcc cgcccagaag ggcccgctcc cgtcgcccac ccccgatgat 660

tccgaaggcc gcgtcgcagt gcggcacacc gccgccagcg gtgatggagg caggagcgga 720

gcctcacatg agatggatgg ggaggcctcc gcgcgtcagg agagcccacc gcatcgggga 780

cctcgcgacg gtggtgagat gaacgacgcc gcggcacaca cgtcgtcttc gatgccctcg 840

gtcgtggatg tgtctgaggt ttcgtttctg tttgggcggt ttcgcagatc ccgacgataa 900

ggaagagggt ggctgcggcg gaggcgacgg agtcgacacc accagcgaat cgtctctgac 960

tccgagcgcc ggaagcatgg acgagtaagc caaataacgc ccgctctatt gtcatctctc 1020

accctctgac ctctcccagg ttgcctaggc tatccagtca cccaacgacc tcgtcgtagc 1080

ctcgtgtcta gtgcgctagc ggctagctgc tagctccagt tcgtagtcgt ccactcgtcc 1140

tgcacgctgg catccggcaa ggcacgtgct gacccggtga actgagcgga gagtgttaga 1200

atagaacaat gtgctaga 1218

<210> 2355
<211> 1280
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124151_G1, chr3:195752552..195753831, Cluster 14

<400> 2355
ttaataacga tttcatttca ttcccgcaag ggattttcag ggtttttctg tactccggag 60

gagggagagt agatatatag atatagctag ctctcatgct cttttcagtt ttcgtttggg 120

gggaaaaagc gcggcaaagt ataaaggttc ctcattgcag gagcaatgga tttgacgtaa 180

agatgggcac gtacaatgtg tttcgtctcc gtctctctct ctctctcaat caaacgtctc 240

cagaccactc aacaacgcac tgccttatct gaaactccga gggacgcttg gttagtttat 300

tcccccacga acgaatcagc gaggtacacg tacgtagacg actggagaga ggtacgtact 360

gcgtatacat accatggacc acactggtat gatatatata tatatcaagc agctaagtac 420

atagtatata ggaatatgat atgacatgct agctagctat tagagatggg atacacatgc 480

atgctagaat aatggagata tattgctttt gctgcggggt gcatgattat cgatcgatga 540

tctcgcaact caaccatccc ccaccacccc cacacacacg cactcgccta gtttattaat 600

ccttcaattt tccccaggag agtgctggct atctacttga cggatttact aatggatttg 660

gaagctccct ttgttgccct aatggggtgc ataatcacta gtttcgcgcc gcttagcttc 720

gaaaagaaac ccgccccggc cctaggcacg acgccgtcgc ccggcgggcg ccgcgctgcc 780

tcgggctcaa tcgcgccccc cgggccaact cataaaccaa ttagattaga tgcaggaaaa 840

gaagaagaaa aaatctttgc atgatcattg ctctggaatg gaattttcgt gtggaatata 900

atgatagtcc aataaacatt tggccaccgg ccagtaatca cacaaagcta cgatcgagag 960

cccacctttt aatcaatcag tctgctgtag aaagaaaggg gagttcagtg catctcgtcc 1020

gtttcttctt ctccctttca gtgcgctgat gactgatgga gatcgaacaa tggctgctct 1080

agccaaattt acaacgacca aacaactggt gggcggtggc taacaagcta ggactaggag 1140

tactacatgt tgtactcctc cacacgcccg taaatcaaat cctggagtaa ctaattggca 1200

agttctgatg ggactaataa tgagccgcgc cctagcttga tgtgatgaag ctgcgctgtc 1260

tagttttgta atgccaagtg 1280

<210> 2356
<211> 1010
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125085_G1, chr3:201296140..201297149, Cluster 14

<400> 2356
aacacagctc gcgccttctc gttcgcatat aaaaatctgc tgcatcgtgc acagggcaaa 60

ggatagcgca ccgaataaat gcactgaatc aaaagactga cactcctaga gggaagagag 120

tccggccgag gtagctgggg tgaacaccgc gcagttcacc gaaatggaaa tgggccgtaa 180

cgccacgtct tgatgggccg gcaccatcgt accatccttt cactatcgcg tgacccagtt 240

ccgacttgca cgcaccgacg cgccacgaac gaacgccatg catgcactgc tgcggaactc 300

tgccgcccgc tgcgccagcg ccagtatgca ccgtggtcga cggccatgtg caggcggtgc 360

cgtcgtgtcg tcgtcgccgc gccgagcgcg tgcacgcggc gcgacgaggg ttagttctcg 420

aacagcactt cagcaagcta agggggcacg gtgatggggc gtacgtcgtc cgcgcatcac 480

gtacatgcat ggctgcatgc atgcgtgcct tgcaggtgtg gcgttaatgg ccggtgtccg 540

gtccattttc atcagtctcc tccctccaat agttcaagaa tttactctca gctagctacc 600

atcgctgtgg ctccataagt tccatgcgtg gggcaggcag tgcgcgtcgg cgtggcagag 660

cgacacggat gtggcacctg tacgagctgg actgtggctt cagagggaga aatcaatggc 720

gcgggcagag gttgtttctc gaactgtttg tgtttggact tcaagttttc aaccatccac 780

ctagcaccga gacaccgagt acagaggcac agtacgtatt tggagccagc tttgtgacca 840

tgtggtggca gcagtgccaa tgtatgtgta tcagttatca aaatgccttc gggtgatcgt 900

ctgccttgga ttggattgga ttggatgcaa gatatgaata tgatgcatgt gaggatgaaa 960

acaaacgagt aacaaaccga gtataaaaat aaagtagcat gtttaggagt 1010

<210> 2357
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125374_G1, chr3:202558003..202559008, Cluster 14

<400> 2357
agcgacctgc ggccagccgt gtccgctgga cgcacgcgga tcgggtcaga tgggtggtca 60

ggccagtacg tgaggtgacc ggacggaata gacgacgatg ggtacgtacg tacgtacgta 120

tgccgctggg ctgcgcgact gctaacgcta ctactatacg cgatgatgcc cttcttgtcc 180

ggcccatgga tttatcaggt ggatggatgg atgccccttg cgagctgcga cgagcgcgag 240

tgggcaacgg cgccgtcaag cgcatgcatc ccccctctcc cccgcggttg tatgagactt 300

ggaggaaggc gcggcatgat ggagatgcaa atggggtcgt ttgtcttgtt tgcctgttcg 360

ccgaggaacc gtggtggact ccgtgattga gctgtgtctc tctgtgtgtg tgcatgcgca 420

tactgcacgg ggtcgatatg atgcgcatgc atatatatgc acgacagaga tggcagacga 480

actcatcacg ctggtggtgg tctgatagat acatggacgc agactccccg cctcccgtac 540

gtcccgttcc caatcaatca ggattcagga caagatagcc gatggcgctg ggtcattgga 600

tgccatgcca tccgatgcct aaaagcggca gtactgtgct ggatcgatca gggtcacatc 660

tcatgactga ctgcgttccc tcctcctgac tgtggagaca tatacgagca gacgacggta 720

gagatagcgc tatcaccact attgcgcagc gcgcggttga cgatgcagca ggattacaac 780

attctcacgt atcagcagca ccatcatcag attcactcgt actagtcaca ttggttgttg 840

atcaacacgc cgctacaaga acaatgtctc tacgtgttat ccacacgtac gtgtagagat 900

aaaaaaaaca ccgtgcacat agagagagag agagagagaa acagcgacct gcagccctag 960

gaagagaggc agccgctagg atgagtctca ctactatagt acacgt 1006

<210> 2358
<211> 1304
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127240_G1, chr3:211684567..211685870, Cluster 14

<220>
<221> modified_base
<222> (912)..(912)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (912)..(1011)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (921)..(921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (922)..(922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (923)..(923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (924)..(924)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (925)..(925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (926)..(926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (928)..(928)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (929)..(929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (930)..(930)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (931)..(931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (932)..(932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (933)..(933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (934)..(934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (935)..(935)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (936)..(936)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (937)..(937)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (938)..(938)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (939)..(939)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (940)..(940)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (941)..(941)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (942)..(942)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (943)..(943)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (944)..(944)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (945)..(945)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (946)..(946)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (947)..(947)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (948)..(948)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (949)..(949)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (950)..(950)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (951)..(951)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (952)..(952)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (953)..(953)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (954)..(954)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (955)..(955)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (956)..(956)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (957)..(957)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (958)..(958)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (959)..(959)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (960)..(960)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (961)..(961)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (962)..(962)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (963)..(963)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (964)..(964)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (965)..(965)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (966)..(966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (967)..(967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (968)..(968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (969)..(969)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (970)..(970)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (971)..(971)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (972)..(972)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (973)..(973)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (974)..(974)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (975)..(975)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (976)..(976)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (977)..(977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (978)..(978)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (979)..(979)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (980)..(980)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (981)..(981)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (982)..(982)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (983)..(983)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (984)..(984)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (985)..(985)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (986)..(986)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (987)..(987)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (988)..(988)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (989)..(989)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (990)..(990)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (991)..(991)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (992)..(992)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (993)..(993)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (994)..(994)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (995)..(995)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (996)..(996)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (997)..(997)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (998)..(998)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (999)..(999)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1000)..(1000)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1001)..(1001)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1002)..(1002)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1003)..(1003)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1004)..(1004)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1005)..(1005)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1006)..(1006)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1007)..(1007)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1008)..(1008)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1009)..(1009)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1010)..(1010)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1011)..(1011)
<223> a, c, g, or t

<400> 2358
ccaacctcca cgcacgcaaa cccaggatcg cccctggacc gccagctacg gggatccgat 60

acggatccca gggctgtagc tagctaggcg cccgcccgcc cgtcccgatc attcgcaaat 120

ctgcgttgct gcactgtagg gcacgcatgc catgccatgc cagttgccac cctcttctcc 180

tgcagcagct gccgctagtc gtggtcgtag gactagtagg gagggcgctt cttttatttt 240

ccccttttct tttctttttt tcttgttcgg gttttcctct cctttgtgtt tgctgtgtac 300

gaatgttttt tcctttcccc tatatcgatg aggcgacact gctggaactg cgccaacgct 360

gcgttaagct gctggtaatt ccccctgcca agtcaaagga ggcagccgtg ccagagaaag 420

aaagcgaaag ccatatgcat gcatgtggac ccctccggcg gcattccgta tgcttgctgc 480

cttgcttggt agtaacggcc aaagcgccgg cacgaccgcc tccaaagcaa tgctgcggcc 540

agtggccgtg tttggtgtgt ttccgttcct ttcctttcct tgctaatatc atgtccggca 600

aactttggag ttggattaat ctatctatct gtctgtctct gtctatgcta cggatgcaaa 660

gtatttgtag tagtgctaca tgatgactat actatatagg tggatacgta ctacgtagta 720

agcagtgcag catactacgt acgtggatac tgtcgctgga tgaacgctta tccaagcagt 780

ccatgcatga tttggcagca gcccgattct ggaatcccga cagggtctgt gacgccttgt 840

gcttcccttt tttcccctcg ctcattgcgt ggggccagag aggagttaaa cgaatcaagc 900

tgatcatcaa tnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 960

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ntaatcaaca 1020

aatttcgttc tgtgatgtct taagagaggg agagttgaaa caagaatgaa ccaaaggcga 1080

acatcctaca tgattgtgtc atgggctaga acttggtgtc actgtcattt tttgttaggg 1140

tgtccatggt agcgtgttgt ggcaaagggt gtcaacatcg gctaggtagc caaagcgatc 1200

aaagttacca tagaaggagg ccacgaggga gaatgtggtg gagctggtta gtgattagtt 1260

gagagggaaa catacattgt gaaagaggag aggaggaggt agag 1304

<210> 2359
<211> 1281
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128140_G1, chr3:215847208..215848488, Cluster 14

<400> 2359
actaattata ttataaatta gaacagagag tatattgtaa ttcagaacag tagtatgctc 60

ggtgagtatg cgagatgaaa ttgagctcag tcctctaact aaggcgatca acctaacagg 120

atataaataa ctatgcactg atgcacaata aactcgctac ttgcttgacc tcgctcgtcc 180

atttgaccat ttcccgtcgc ctgctatatg cttcctagcc taaatcccaa ttcctctcca 240

tccgatagct aacacaacat ctccactagt gtgtactgtt gcttctatat accacgagaa 300

ctcgtagata ctagattctt ggctgtggcc ttatgcttcc gcctattctt ttgaggccct 360

gattcgtctg aatacgtagg tctctgacga actgaactga accccgatgg tacgtgagaa 420

agagagctcc ccatggcgag agaaaggaaa ctgatgagta cgcgaacgcc cacctccact 480

cgttgcatca ttcgcagccg cctccgtctg cttttcctgc acgcggccgg tctagggcag 540

acgcatgtgc gtgcactagc tcgtttgctc ttggagacgg acaggtcgat cgcgcgcgca 600

caacctatac aatcacggag acggagctag ctcctcagcc actcgtcgcg cgctcctctc 660

tctctagcta gttcaccctc gtgcctagtt tcccgtttca agcatcgctc ccgaaatgcc 720

cggatgccca cttctacatc tggctagatg tgccttccat caccaactgg gaaacttggg 780

atagaaaaag actgggctag ctaggcacgt ggcattggca ttgacacatt gagctcgctg 840

ctcgcctaac aatcgaaact gaagcatcgg ccgccataga ttcttagcta gctaggggca 900

gctggctggc agctctatct tgatccaaca cggtatgatc tagacagtgg gcacgaggtc 960

catctgtcga tctctactgc tgccgatttt cagagtggtc aggaattaaa aggtagctag 1020

tgtccacgta cgtgcatgtg ttgattgtta gaaaccatgt tcggtttttt cactcaacaa 1080

attgatacta gcaacaagcc aataagaaca tgattttatc gtcgttccac gaatcgttgg 1140

ccatggatat atgatatgga gttattattc gactagtact gaataataat actcctataa 1200

gatagtataa gtgtactata tatactacat acacagatga aacacatgcc tctagtggta 1260

cacgtatgaa acacttgcta c 1281

<210> 2360
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_128209_G1, chr3:216260479..216261762, Cluster 14

<400> 2360
tgaaagctgg aatgtgagtg tgaaagtttg cactaataaa agaaaatgaa gtgtttacct 60

tcacggcttc acctaacaaa aaaccaggcg ttccattaca tgcgtgcgtg cgtgcgtacg 120

tgtccaccgg cagaagaata tccgtgaagc cagcgccgca tcttggtcct gacccctcac 180

tatccacccg tgtcatttgg agagcactac tagttttgta gcgcatcacg acaaggagta 240

gtgggccgcc tgttgggatc tcggcctttc ggtggatcca aagtatccaa cgcaaaagcg 300

ctgtggatgc agagcaaaca aacgaaggaa cacgagagga agcattggat cggtgatgcg 360

atgcgagcga acatctcgca gcagcacagc acagcagctt gtacaccggg agaaacaggc 420

tttcgatttg gccccaggag aaacctacct gcttgagtgg cgagtgcagt acatgaacgg 480

cggccggcac ggcaacacga cgagcgttgc acacacctga ctacctgccc agcgggtggt 540

tcgcccagca atgtggtttt ggtgtctggg gagcaccgca tccaggtttt tttttggtgg 600

tactattatt tggtgatgat tgtgacggat tggagtgcca catgcaaaaa aaaaaaaaaa 660

cagctgtggc gtgtgggttg catactgcat ctgtaccagc agcacaccaa acacgttagt 720

tctgttctga cagtgaggag gagttggacc attatttacc cgttacgtta catatgactt 780

gttgctttgg taaaagaaac aagttgcgtt ggaagagcag gactgatggg ccttttatat 840

attggtggtg atgtcgaaga ccgataatca tttgtgtcca aaatgggaaa acatatacgt 900

atacacaccc actgagatgt gagatcaccc acacgacatc tgtttagctt tctgccctca 960

gacgatcgcg actcgcgacg caaaaataaa aataaaaaaa ataatgatat gataattgag 1020

ctggctggct ggagacttgt ctcgacggat atattaagag agatcaaata atacagtcac 1080

agtggtctac aataataagc tcatggttaa acaacatgtg aatgctccac acttatgcat 1140

agtttactag gccacgaagc cacagcacat cactaatagg agaataattc ggtcattcac 1200

gctcgtataa ataaaaaaca aaataacttg cacaagaact aaaacaacaa gccagtaaca 1260

gctcacacaa ttattttact gagc 1284

<210> 2361
<211> 1100
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134377_G1, chr4:14032126..14033225, Cluster 14

<400> 2361
cttcattgtt catccgcatc gatctccaaa ttaacgatgc cagtacttct ccctttgttt 60

tacactgatc gactctttga caggaaccga agctgtgaag ctgctaattg aactgaattg 120

atagcaatag tgcaaacaga aggacaggac agtcaaattt aacccgacct gtgtttgagt 180

gccgccaaag gcggcgacag tgcgacacta ccaatggagc cagccgccgt cacgtcacat 240

cacgtcctgg gcgtaacgcc tgccgcgatt tcacgcgtgc gacggcgaca ggatccgatc 300

gacgccgagc cggagcgaac ccggagcgga aatggcggct gttaatggcg gacggcgaca 360

ccgcatgtgg ccgcgccgct gtcggccaca ccgaccgcgc gcgtacggta caccatgggc 420

ccatcaccct gcgtgcagcg cggtggcgtg tgctggtcgc cgccgcacat cgcgcccgcg 480

gctgctgcgg cacggcggcg gcccgcggct gcctgtttag ggagggtaca tgtggacgtg 540

tagttgtggt agcttttgct tctaaaagca acctacctct ggccggcctg aaggtctcac 600

ggagacgaca aggatgtagt tcctgtgcaa gtacacttct agtatcaagt aatgtgcatg 660

ccgcggcgcc atgacactac tgggattacg gctggctaac gacctttcaa aaattcggta 720

tgctttctat tcgatcagca gcggaaatat tgagtactgt ttggtatatc ttatattgtt 780

ccattaataa aattctatca ttttttctaa agtataaaga tacacagttg ttgtacgtgt 840

gttcgaagaa aaaatcttta atttaattgt tttgtaatat atatttcaga tatttttcga 900

agtatagagt ttggcccaat aatcctactc cgcatacctc ggtattggca gtagcttaag 960

ccggaactat catgttttgt gccgttttta ttcacctgat ctaattccac aataacccgc 1020

tagtgcgttg aatcaatgtt aacctatagc tggaaaattg aaacaggaaa aaataatttg 1080

acttgctaat acatggtcac 1100

<210> 2362
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137076_G1, chr4:27980731..27982014, Cluster 14

<400> 2362
tgcgggtgac ggcctgacgg gcaccccgac gccgacgacg cgcacagcga tggcggatcc 60

ggctggctgc ggcctgtggt gaacggcgca tgctgaggtg gttcccgcgc gcgcgctcgg 120

cgatgcccgc tcgctcggct gcccgtggcg acggtgaccg gcccccagca gcacccgcgc 180

gtcggaggca cagcggcgcc gcgcgcgtgt ccgcatcctg cctctgcctg ccgacgacga 240

cgctcacggc tcacgtgccc gcccgcgccc tgcccccccgc cagctcgtgt agatttttt 300

tccccacaca cgcgtgcagg tgcagcgtgc tggtgctgcc gttttcgcaa cagggcgtag 360

ctgcaagatg cgagcatcgt gcaacccttg ttgttcacgt ccgccccggc caggggcgtg 420

ccggtgccgc ggcggggaag caagtgcggt ggggtgccaa gcccaagcgt gtgataaaag 480

ctcgcgcgga tgtggaggca agaggcgagg cgacctttt cctcttgtcg tctggtctcc 540

atggcgggtc ggacgcgcgc ctttctcccg ctcccgccat atttatttct cttggcgcgc 600

ccaccctccg tttgactttt ctctttttct ttttttgtgc gcatgtgatg agatctcacc 660

ggttccacga gggagttgcg ggatgatttt tttttaaaaa aaaaatagta actgatagcc 720

aatctaaaat cggccagcat cccagtttaa gctattaatt aaagggccag caaaagcctt 780

ttcacgagtc ttgtcacatg accgtagatg tctacggggc gcactaacgg gaacaggaat 840

gtatccaagc gtagcgttgc gttgcgttgc tttgcgtcgc aaggacaagg aggacgggcg 900

atcatgacac ggcaaggaca agaacacgtg cctgctcaat gctaccgctg ggccgtagcc 960

cataggcctc cctcacagtc acagcccatc cacaaaaaaa gcagtcgtgc tcccacactc 1020

gaggcctacc cattttcttt atttaatagg cacttcatca aaaactgacc cggttgcgct 1080

gctgagggat ccagtgaggc tgcaatcaat cagaaacaca tggtagtagt agtagtcgta 1140

cgcggtatgc cacacctgat aaactgtcga cgccacacag atccactatt gtccttctgc 1200

ctcaaatttg ctttccttcg aaagacaagg ctaacacagg gacaccgttc aaggttcgag 1260

ccagactccc ttcaacattt tgag 1284

<210> 2363
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137604_G1, chr4:30427232..30428376, Cluster 14

<400> 2363
tggccctttt atttgaagct cgattcgtcg tgcaatggga tctcagcagc cgcgcgcgta 60

tggaaaaggg aagtgaagac acgcatgcat ccatctgctt cgtcctctct tatatatcct 120

cttggaaata aagaaatgcc gtaggcctgg catcgtcttc ttcttctaaa ttcttctaac 180

gacggtaaac acttaaaaaa gcatgctagc tatttcggct gcactagaac ctgacaaatg 240

gcacaatctc agttcaaaca gcagcaacaa taattttctg taactaaaac tactaaacca 300

tagacctgtt taccattcaa agctagctag ctcgagctag gtccagatcg accaaaagca 360

tcatcgcgtc accttcttgc atttcatata taatgcggag cagcctgcat gcatggacgg 420

ctaatataat aaattaaact aatccccgat cacgtcgatt aattaacccc gctagctagc 480

tagctcctgc aacccggcca atatgcaagt tgcccggccc tcacagtacg tatgtctcga 540

acacactata tatatattcg tcgatctatt attgcgcgag atgcgacggc acgaataaat 600

gaataatccg tggcgccttt gaacctggga aagggaagaa aagagaggca tccgtccgtc 660

ctcgctcccc ctttaatttg gccgccggcc tttaacttgc attgcattcc attgcattgc 720

atgccccccc ggcccggccg gctggctttt ctgaaataac aacaaagaga tgccatatat 780

attcgaccac tgcaaggagc tgtagttcgt acagtagata ttttggactc catccctagc 840

taagtttttt taaaaaaaat atattttata aggaaattga tataatacga catacatttg 900

tggatatata tatataacat cgtctttggt tatggagcta gctagctagt agtccccttt 960

taaaattttt ggtaaaaatg gggggtgatg tgcatctgtt ccgctagtag tgtgatgccc 1020

ttgccgccat tggtctagga acctcaaaga ccatcttggt gagatgtctt tgcatcgctt 1080

gaggtgacac gggcagtggc tggccaggct gtggagtatg ccgtgccatt gcatgctatc 1140

acaag 1145

<210> 2364
<211> 1102
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137731_G1, chr4:31348761..31349862, Cluster 14

<400> 2364
ccgggctggg gctgcgactt gtttaccgca ggcacgatga gtagctgctg ctccccctctc 60

tcctcgtctt ttctttgaaa ccctcgctga caccgcaact tcagggtcga tctgccagtg 120

ctcctcgtaa actaaaaggc atgcacgccg tccaaaccct agctttccta gtaaattacc 180

tgccatatgc tggcgcggag aacccatata tgggcatata tacgcagggc acgtgaggcg 240

ctcagatgat tcgaaatgct tatgctattc tctctgtcct ccgcctgcaa ctgtacttta 300

ttatcagtag atggtgacag tcaactgatg cagcactagc tagggcttgg tggatgtgtg 360

ttttattatt attattatta ttattattat tatttttgtc cctggctagt taacttgctc 420

caaggtatac gtacttactt ctccggctgt gtagctctcg ttcccctgct ggcgcgtggt 480

ttgtggtgcc agcagctagg tctagaacaa gctagggcat attcttgcac ttgtcacatt 540

ttgacttctc gcttctgaag gctacagtac agctactcca gtgagtacta agataatgcg 600

gatcgagtga ttagcaataa tactactagt actggttcca ccccctttct gtcctcttgt 660

ctgtcctgaa atatacaatg gacaagggca catagacatt tgagcctagc agaagcaagg 720

aaggtctggt agggctgcac acgctgaccg ctctgcacag ccagtggatg gagagactcc 780

actcatcgat cgctacagct cctactgtac gcgcatgcat ggtgtgtgag aaagaaacga 840

gagcattggc agcctcgaga ggaatctata tatctaggtt aaggggacgt taattattat 900

atgacatcat gcgaagttaa gatatccatt cacataaaaa aaaatgcatc gctaggtttt 960

gctttgacca tatggatcta tatgcatgca cgagcactga tcagagctca cgtgatgtcg 1020

ttatttaata atatagcggg ctacctctgg atctttgtct ctcgctcgtc gtcaacttgc 1080

aatgtcatgt caccaacaac aa 1102

<210> 2365
<211> 1267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13800_G1, chr1:75955224..75956490, Cluster 14

<400> 2365
tacgccatct gagagcagat tttcaatagt ttttttgtt gaaggaaact ccaacagctt 60

tgtggaggct tggcgagctg tttctccgta tcatctctct ggccagcaca gaaggctagc 120

ccaggtgagc aggtgtaggt gaggtgctac tccaaggtag cattatatat cgatcagtat 180

atcacccttt ccaggttcca gcgagtggtg agttcacgga catgatacgt ctaattcatg 240

tcatggataa gggaaccaat tggtgcgcgt ggtgggaatg tgcactgcat ctaatataaa 300

tatatatata tagcttccat tattgtctag attcagattg ttttttgctg gacggtattg 360

ataaggccag ggaaaaacat cagaaaatac gattattgga cgtacggata atacatacta 420

taccaattcg caggaaaaca tatctcgtgt aaataaaatt tggcaacaat taacggaatt 480

gaactcacct ccacatgccg gtatattgaa tgtgagggcg agagaagcgg caaacggcca 540

cggagtcgac aggtatgcac tcaagctagg aggggccgtc cacggatcca tctgtacgta 600

cgtgtgcgtc acattcatga accggccgga cgggatctcg cagacacgcg caggggtagc 660

tcagtagctg cttgtaacaa caactggtca ccatttatag tgcatgcatg catgccgcca 720

tgccccccc ccccccccc ccaacacccc ccagaactat atattctgta ctgcatgcat 780

gtaaactgac gatgagccac agcggcatta ttcataatta agctgacgat gcaaccaaac 840

agcaggagca cgatgcgtgc tgcgtgcatg cacgcaggcc acgtagcggc cggccggccg 900

gccggcctcc attaaatgtt tgcatgcagt gtgcttgtgt gtgcgctgct gccgctgctg 960

ggcgcgcgcg tggggcggtg caccggatcg atcggagcta gtattcccta caacgtgcag 1020

ggatcccggt ctccgatccc atgcgtacgc ccccaccaca ggagtcggcg caggagtcgc 1080

cggccggtgc tgcgtcgtgc gtgcgtgtgg caatgcaagc aaagtcccag cccaggggcc 1140

agcggccggg ttgaaaaccc tcctccggcc tgcctgcatg ttgcaatata caaggcgcgc 1200

ggccgggtga ttcgaagctt cattcctgct tccgggcgct gccatgggaa tctctctggc 1260

gatcgag 1267

<210> 2366
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13860_G1, chr1:76239127..76240131, Cluster 14

<400> 2366
cttcatattt gaagttcgga tgccccttat gggaggtctt gtttcccctt atatagttga 60

gggagcatat agtcgtagtt acatagaaaa atcgacgggg tgcacctttc tatgcctaca 120

gatcataggc catctcctat gctttcaaga gcatgttgtt actggctcgt ttggccccca 180

aggtcctgtc acttaaaacc tgatcgaacc agggcgtgtt gggtcttgta gagggttgtt 240

tggagccttc ttgtgaggag gcatctctaa ggaagccata tgggtgattg gccataaagt 300

tccttcccta tcctcatgtc ttattcgagg gtgcctgacc gccttacgca tgtgataagg 360

cccatcatgg cctttcttca atgtggttgg tctttgttat cctctgaaca gttaggtgat 420

tggacataga tgtcttcagc atcctgcata ttgtacctat ctcattcgat gcacacttaa 480

tcgagcatgt gcgccaaacg gtcagtgagc ataaatgtgt tagcgctgca tagaatccat 540

gggacctcta gatcacggtg ctagagtctt attgagttag tatgatctag actagtttag 600

ctcagagcga ctcgagttag ggttggtctg gtctatgtga ccaggttgat tcttgctttg 660

gcctaagatt ggaggctggc ctagtttgaa taactaggta ggggtcgact agggtgattg 720

aggtccaacc cgacatggtt agtgtgacca ggttgggttt ctatgatagg ggccaacctg 780

gttggagtaa ctaagtcagg atcacttggg gatcgaccaa cgttgaggtc gatctgatca 840

gtgtgaccaa gtcaggatca ctcaaagtga ccgagattga ggtgaccagg tcgaagtcac 900

tcagaacgat tgagattgtg tttgtcctgg ttagggtgat gaggtcgggg ttgatatggt 960

cgaggctgac ctgatcgtat tgaccaggtc aaagctgact aggct 1005

<210> 2367
<211> 1022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_139764_G1, chr4:44505213..44506234, Cluster 14

<400> 2367
caattgcaca gaggaccact aaaaagggca gaatagtcct gtgtagatga tgccgctgga 60

tcgatggatt cacatataat gcctgcaggc cgcagctcag tcgtcagggc cgggccggcg 120

tcgacgtacg tacgagtagt actatactat atactatata ctccgtggtc cgtgtggagg 180

ccggattcgc attccgatct tgcatggaat cttggtacat actacgtcgt agcgcttctc 240

cttcttcgtc gtcccagagg cgtaggtacg tacgtacgta cgttcttgca ttgcattgca 300

ttgcattgcg ttgcatggca aaaggtggtc gatctcgatc gtcattatgt tatgggtgtg 360

ttccccggac tgtcctcgtc gtcgtccttg ccaacagaac ggcactgtgc ttgtctctgc 420

attgcattga ttgcgtcggc cggccggccg ggacgatgag tttaagttcg atgttcatgg 480

ttggttgttc gacgccctgc agcggtagga gtatacatct cgtttgttgt ctcgaagaca 540

cacacaggca ctcgcaaatc ccaagcttga gcactccttc ttcctgcctc gatcgtccct 600

ctcgtgtaga ttggcgcgcg taacacgttg actcttcgcc agtgacgtca cgcacggccg 660

catgcactcg ggtcgtacgg cctttctgcc cgcttggacg tacgtacgtg catgcgtgat 720

acggccggcc ggagacccca tcgatgatcg atcccaggcc cactggcctg tacgtcctcc 780

tcgtcagtcg tagccccgcc cggaccggcc ccactggcca ctactggacc ccatgcctgt 840

gaccgtcagg ccgtaaagaa gtcgtcacgc cggccggcgg cccacctgat gatgacacac 900

atatacatgg tggagtggtc atgatgatga gctgcatgca tggcgcgcgt cgtacgtaca 960

caccaacaca acgacgacgc aacgcaacgc aacgcaacgc aaagccgcat agcatgcagc 1020

gc 1022

<210> 2368
<211> 1276
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14015_G1, chr1:77021647..77022922, Cluster 14

<400> 2368
cagttaaact aggactatag aggcgccctt tgtatatgta caagtatggt tagttaaggt 60

aagggatgaa gtcggcacgt tagattttta ggcgcccttt ttgcgcgtgg ggtaatggcc 120

gtcagcccgg cggctgcgac gagctccacg cggcggtctc gtcatcaggg ccactgcatg 180

catgcatgca tgtcatgttc tggtggcggt gggctttggg ccgacttgac atgaccagat 240

cactagatca ggaacagcga ctcggaagcc gcatcgcagt cgccgtccga gtttgctggt 300

ggtcgctggg cttggaacca ggctgctgag gattgaggaa agctgcagat gcagagcccg 360

gactggcagt gcagagcgcg ctgccgatgc cgtgtgcctg cctctggcag tctgcctgat 420

gctcccctcc ctccgctttg gagtttggat acgcctggtc cgtccgctcg tcgtacagta 480

acagtacgac gctcttttat atgttgaatg aatctgatct gaagaggcag ggcgctccac 540

cactagctgg accatggctg catattttcc gctgctgcaa caatatgacg atgcctgccg 600

aaagtttgat gggccgggag ggatgaggga agagcgtttc agagactgga gctgcaacaa 660

tgatacgtca cttgtcaatt cggagctgca gcctgcaggc aacacagaga gtaaagacac 720

agacagacag acagatagag atagagaggg aacatggtgc ctgaggccct gaaaactcac 780

taagaaagtc gctgtgcagg ttgggctagt ttgcgtagta tgttctacct tggtacagaa 840

aagctagcta ctagtagatg attagcagca taagcatcaa ctaccccaat catccaaaaa 900

gggcgatgag tagatgtaca tctcccggtg gttcacgctg tctcattttt tttgggtaca 960

tagatcatag atgtacagca ccaccgctcc ttttccgagg gcaggcaagc aggcatgcat 1020

gcatgcatgc agattaattc cagtggagca gcaagtacag gacagtgtcc cccaaaagga 1080

agatcacctc ccctctatcc ccggtggccg tcgagtatcc tagggataaa aaaaatctcg 1140

cgcgcggccg gggggcaaag cagagcagag cagagcagac agcagagccc tggatccgat 1200

ccgatccaca tccacgcatg tgtctgtgtg gttcagttta atctcgcatc atgcccaact 1260

taggtagttg gatccg 1276

<210> 2369
<211> 1317
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_144167_G1, chr4:71207629..71208945, Cluster 14

<400> 2369
gaagaatcac tagatcatgt atcactcgct ttgtacccca taccctcctc aataggggag 60

gtatggttct tatagaaagg gaggacaaac acaaaggctc aatcaattgg ttctccaata 120

attttagaat agcactgtgt gatttcctac caaacatttc atcatggatg atgtaagaaa 180

ctcccaaatt ggttattcta cacaaagaac accatactgc tagaactagt ggtaagaggc 240

ctaaactagg ataaatatct tgtgtttata tgtgttttaa gtgtttgagc caccaaagat 300

acgcacatca acttctaatg aacaatatga tgcttgtcgt ggtgataaac ccaagatagc 360

tagcatgcca ggcaggagtg cgtcatgtgt gaccacttgg tgacagaacc accaacccca 420

ccatcatagc tagaggcgat gcaccaaagg gtggcacatg cttctctaag aagatcctct 480

ctgtcgatag actctttagt cccaactagg ttttgagatt tgggaatcta gactacatcg 540

ccaaccattg cagcgagctc tacctctttg aggcaacttt gttggatcag gatagtgagt 600

ccccaatggt gtactcgcca ctaggcatct tgtgttttga ctcgaaggtg ctaacacgat 660

agattcaact gagttgggga ttaaacctca ccatgtcata gcaccatcag atgctctatg 720

tgccaacgag tgtccatata tagcttgtga caaggggggaa gattcattac ctcattgtgt 780

gtaacctatc ccccatgacc tccctgacaa ggcccatggc actgcacccg agaacaatgc 840

tggcttatgg atgtcgctag gtaggactca agaagtacac ctgagaacaa tgctagcttg 900

tggatgtcgc cagctaggac tcaagaagta acaccacccg cctagctatt gtggccctcc 960

ttatactggt gatagtgtaa gcttgtcgag tgggagataa gtgttgtcaa gctcgtagtg 1020

cctaattgcc taaaatagtc taaggtgtga atcaccttta actgagatga gtaccacaac 1080

gacatgtcaa gcccgagttg cttcaatctc attgatagct caatcatcga gcacacaagc 1140

ctcttaagca tgatcatgga cgacgacaac atggtgaaca tcccatacac caacatcctc 1200

gattggatgg ggattccaaa gcaatctttg cccaagtgag gctcccttat acaagatcat 1260

tcctagtttg caagtcatac cccttgagag caatcaattt cccattatgg tcggggg 1317

<210> 2370
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14629_G1, chr1:80679067..80680118, Cluster 14

<400> 2370
aagagaccct actgtgactc actgtcctct gtgcgctgcc acctttgtgc ataattgtta 60

acgacacagt aggtcgcaca caacaaagca aaccccaccc caaagctcta gcagcaactt 120

gaaatgtttt ttgagggctc taccggccaa tttgcgattt gctttcgagg caaggctcgc 180

tttcacaccc tgtagctagc taggggcaaa agcaaaaaag ttttggggtc atgttgtata 240

tatataaaaa aatgatgaaa cgtgcatacg gtgggtggat gaaaatacac atgaataatg 300

gatcaatcaa tcagtgaacg aaaagaggta aagtgcaagc ggctagctag ccctttctta 360

attttaacct tgtacacctc gtgtggtttg gatttccttc ccctgcctgc cagctgctag 420

cctgctactg ctagcataca gactgcaacg ctcgagcgac ggagcgaggc aagatcacga 480

ataattcgcg aacaattagt ggtacgtaac gtggtcgcga aggcaggttg gccgacgtta 540

accaagcgcg ggcaagcaca gctttcattg ctgagattcc ggagtccaat cacagcttcg 600

tcgttctctc caggtttcac gtcgagttgt accgcgcacg gcgcacagct gctcgggcta 660

gccggacgct tgttcacgcg catccatgcc actggcactg gcactggcag tgcccctgga 720

cggaaggggc accaacagcg cgagcccttt cgttcgccgg cgccgcggct tttatttcgt 780

cggtggacga ggacacgaaa ctcaccgccg ctcgggcagc atgtgccctc cggcaaccgg 840

tcgagctagc tcgggatgtt gcgtgcggcc acagcgagtt cccgacgggc gcttagccgg 900

tgaagagata gagcgaggga tacggcagtg gggtcccggg acctgaacta acgaacgcgc 960

cctcgtccct tccttgacat ctgagatgat tagcacttga aaattcggtg tttttgacga 1020

agcagcaaag tcagttgtca gacatgagag ct 1052

<210> 2371
<211> 1361
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156071_G1, chr4:152717769..152719129, Cluster 14

<400> 2371
gtatcaatca tatttgatgg tacagtgtaa caattatacc atacgcgagg tccagtgcca 60

aacgagtgtg atggaccctc tccgcaaaaa aaatatattt aaaattaaag tggatcttcc 120

ccataaaaaa ccaaaattaa aatggacctt cctcacaaaa taaattcaaa attaatgtgg 180

gcatatagcc taaatattag atattaaact atagatacta cattttatct tagccgaaaa 240

aaccgagaaa tgtatgagtt gaaaataaga cttacccttt tttatagcta gctggaccac 300

ttgtccttca gctagcgagt tggtactatc tgggaacgtg cgctgtgtgt ggcttcatat 360

cgtgttgaat ttgtgtgttt ttttttacaa cccatccgtg gaccgttaga taacgaccta 420

gttagattcg aaagaaatat aagtttttt ttggaaaagg tacgacgatg aaaactagaa 480

aatcgatgct tatatgagta gagattttgg taagaccaat tttgatgagg tctagactac 540

tcggctaact tttcattcga ttgaaaccgt ctctgataaa cctacagccg atgaaactat 600

ctcaaataag ctctataaat aatatgtaat tctgctagaa gtaatattcg tgtacgacca 660

cggccatttg tggccatggt tttgcgtcga acggcacacg gttttgtagg actcgcccta 720

cacgtttgga agctttccat tcccccactt tgtattgtac tcctgcgggc ggaatttggc 780

aggtcgggag ggtcattatc tcgctggatt tattactcct attcctcatc acaactcaca 840

agagagtggt ttaccgggcg cgcagcatgc tgacgctcgc tcgtgggccc gccgcgcctg 900

ccttcctgtt cctctgggga ttctggggaa gctggagggg cgcgcgcccc gaggcggatc 960

gagcgggcgg aacggttggt tgtgcacgac tgcacgacca gttcgtgggg atgggcggat 1020

gacgaccggg cccggtccgc gccaggtgga ccactggcca gtgggcacgg ccgtcgtaac 1080

gccgagacgg atgggaggga cgtggtgggg ccgcagtaaa gtgcggtagt ggggccgcgg 1140

gagtgcggtg gggcgcgcgt gacgtggagg caccgccgtg gccgtcagat cctgattgga 1200

cgaaccctga tggcgacgcg agtcctggac tcctgggctt ttgaggccgc gtccctgtca 1260

accgtcaagt caccgtcatc atcgacgatc tgtgtactcg tactgccgcg gttgctcttc 1320

gacagcattg ccgcacgttc taccagagga ggctaagagc c 1361

<210> 2372
<211> 1139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1564_G1, chr1:8034572..8035710, Cluster 14

<400> 2372
ctgttaacaa aggcttggct actagtagta gtataatgcg acggggcgat ctggatctca 60

gtcgtccagg catatgcata tgcatccgta ccaggtcggg ggtacaggga tgtacgtgac 120

gtgaggcacg gctagctagc tcctgcggtg gcgcgcatcg tcagacggcg agggcatcag 180

tcagatcaca tctgatgttt agtgaagcac tcgaacatcc tctatacaat tagtatgctc 240

cggctgcctg cctgtcgaaa gctggtgttt ttttttttt tttttgcgtg cactgactga 300

ctgcagactg gagaggccgg gggggaaggg acatctgtgt ttcgtttgcc tgtatgtggt 360

ggaatatgat cgatcttccc ggtttggatt tgcagctcag gtcggaccgc gcatcggatg 420

cagttgcaga tggctgatgg atggtcctcc agcctgctgc tctgcactgg atctattctc 480

gcccgcccgc ctgccttgcc ttttcttttc ttttcattca ttcatttagt agtactagta 540

cctcgtcctt ctcccgtcct gcgctgcctc tctctcctcc gatttaataa gtgctgccaa 600

tgggtggctt cgactagctg gcgcccaacc atcgtcgtgc cagcttccgt ttgatgccat 660

gccatgcatc ggcttacaac tggagttcca gacatggcat gcgtaaaact tggctcatca 720

cttccgtctc cactcctatc cacaccgccc aaatacatct aacgtatctg aacacccatt 780

tcacatacga tcgaaatctc cagcaaacgt accgatccca actgggattt caaatatcgc 840

ttaccacagg atgcatccgt gcatgccttc gtctctcgtg gacgtggact cgtggtggtg 900

gtccggtccc actcccacag tgctcccggc tttttctttt cttcgtgtgc ctcatcaacc 960

ggccgccggt gctcgaccgg tcgacgacgt agacagtcgt cgttgataca gctgaagcct 1020

caagtatgtc tgctatgcag ttttgctccg tcggtctccg tcacccgcgg aaaccgtagt 1080

gtgatttgga cgagacttgc catcgaaaga tataacactt gattcaatgc accaaaact 1139

<210> 2373
<211> 1085
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158724_G1, chr4:166907834..166908918, Cluster 14

<400> 2373
gagcgaaaat tgtgacgcag ccctgacgca acgctgaggt cattccaggt gggggggaaaa 60

aacattcccg cgacgactac acacaatgca tattgtggtg gccggccagc agcagcagca 120

gcagctaatg gctggcgggc cgggaagtta gctttggctt ttgcagacgc cgatggaacg 180

ggcgccggcg tcgctttcgg caaagctccc tgtcgtctcg ctcgccgccc gggcgatcgc 240

ggcttcgggc acgcacatca ctcctcctgc aacagccttc aggcacggtg tagctgtagc 300

gtgcccagtg gaagccggcg agcccaatcg gagtgggacg acgccggcga tcgaccggcc 360

accaaccgcg actgacctga cagctagcta gctcatcgat gtaaatgcag tttctgttgt 420

atatagagat cgagctatag tagcctagta tactacgtac tcactactca ggcagtagga 480

tttggatata tatgcaggtc gtttttcgga tgtaggagta aaaatggttt caactttgaa 540

ggagtgatcg ccgtatcttg gtcacatgtt ttatgacgct agtactctct ccgacctagt 600

ttacgactta taagacacct tatagcatgt cacaaccttc taaattatat tttaactatt 660

gaccttatag gaatgtttta aaacttgtta gctaaattat cgatcaaatg ctataaaatt 720

tgactctctt gacgttcacg aaatgccttt acaaattggt gtgtacgtag agggagcact 780

actattatag attgtactgg agaggcttgt ttgttttggt tcttaatcgg ccctgagaat 840

tgaagtctcg tgtgcagaca catttttttg tagctagcct tcatccaaag aagctcttgc 900

tacctgctcg attttgtaac ctcacctgtc gatcgttaaa tcgtttatta ttccttgttt 960

tcatgcatca tcatcataag ctagccaagc gcacgctgac cttgtaatct ccggccttcc 1020

tttacactaa cactatatat aaacacagat tcacggctgg ctagggcggt agtacgtgcc 1080

atgat 1085

<210> 2374
<211> 1193
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158825_G1, chr4:167398659..167399851, Cluster 14

<400> 2374
aacgcaacga gacggcgcgg gcagccaaca cccaacaaca gattcgaaca aaacggcaca 60

tcgccgccgc cgccgccgtc ctttgttttt ctccccccct aaacacgctt tgaaccaacg 120

ggggtgttcc tttaaacctg acagtgatta cgaaaccgag tggtaacttt tactggagta 180

ttattactta tcttcctccg ctaaagaaat tagagtagtg ctaaaacttc tcatgcgtga 240

tacatacata catacctgac tgtgagccgt gtatcttata ataactggat ggttgaaaaa 300

tcaagtgtcg acagccttaa aaaactcagg tgtgggggta tcttggtttc cagaaaggtt 360

tgcctcgtga agaagtacca gtgcgtatat taatttgcgc aacaagaaga tactagaaca 420

acaacgctcg ccattatcag gccaacttga acaacgagag cggtagttca cttgttcaat 480

caaacctctc gagactccac aaaaaaaaag gaagaaagaa aagccttttg cccgaaaaga 540

aacaaatttc cgtgagtagt agctatatat acctcgctaa agatatataa cccgactaaa 600

ctaaggaggc atgcacgcgg tggaagatcc gtgccgccga cgcgtcgacg tcggcgatca 660

tcacagaaag aaaacgagat taattaagtg cttggatcac gtacacaaaa gcaaaagggc 720

gatcgatgag gtggtgcttt ccatttaatt tccccccctt gcttcacaga acagtttacg 780

aggagaggag ggacgtgcca acagcacgct ctatatatag agagccgggg acaaaaacga 840

atgaaaacga gcgccatgaa acgtctggtt gttagcgtta ttaaactagt agtactgtac 900

aataaagcat ctggcgctaa cagcaaatca caggaataaa gagggacgac ggagactagc 960

agcatgcatg actagcgtcg accaattaat taagcgacgg agatgcatgc atgcgagcaa 1020

gaagcttcca aattccgacg acgtccgtgt ccgagggaca cgtacaaatc gcatatattt 1080

ggtgcgaaat agaaaatctg gatggactgg tgaataatat gcgtgttcta cagttgacgt 1140

acggtgcctg gttcgtccaa tggacgatgg atggagacaa gcgacgacgg agg 1193

<210> 2375
<211> 1157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159308_G1, chr4:171695853..171697009, Cluster 14

<400> 2375
tcgttcgttc atggttttca gtcgggacac tgaaacaaat gagaaaagca attactagga 60

tttaaacata ctaatgccaa agacgtcgtc atgtaattcg atggcatgta acaaatgaga 120

aaatcttcgt tttattaatt gcaaactagt ccgatttttt tggaagatgg aagagaagat 180

agtacgtttg gttttataat taagggagag aaagaaaaaa aactgagagt ctggtgatgg 240

attgagcctg ccttttcga tagcagacga ctctgtgcat catcgttact gcctgcatgc 300

agatgcagta gccgccgatt atgaccactc gagagcacgt actgctccac ctccacggcg 360

tctgggccgc cggcatttac tacacgcctg cgacgactgt aaaaacctag ctagtagtct 420

agtacctaca gcagctcagc ggcagacgac aggggccgtg cacgaagcca tagccacgcc 480

aagaccatca cggctctggc tgcgtcgtgt cttcttcccc atcgtcctca ttcctgccag 540

atgacaagct agtaggctga gaacaatggt agcactctag gagcctgatc gcgagccgcc 600

ccttgattag atacagcagt agcacttaat ggctccatct ctaccaccca acagagtcaa 660

taatcaaacg catgaagaag aagaagcatg tagacgtact agatcctaag ccaatcgcgt 720

gccttcacca aagactcaat aatcaaacgc gtgaagctag agccctaccg ccgtccgccg 780

gcctcccagc agagcaccgg tccttgcaag caattggcta ggcgaacacg aactcgtgta 840

aacagaagaa aaaaaaaaca tgatctttgc tttggtaccg cgaaactgga cagttgtttt 900

tccatcgtct ccttaatata gaaggacgca ctaaaaatat cagctaaccg atctttgtca 960

tgatgaactt cacattgacc aggccattat ctcatttatc tgtagaataa tattgagtgt 1020

accaccgtac cgtgattcat ttccgtgcaa gaaagtactg ctgccctgta tattagcaac 1080

aaacattgcg tctagctttt tttaaatatg aaatgaagca ctcctaaaca aaaaaaaaaa 1140

cgttttttg tcggtga 1157

<210> 2376
<211> 1157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159350_G1, chr4:171912340..171913496, Cluster 14

<400> 2376
cttccacttt tttcatcgtt ggctggcatg catgatgcat cgatcgctca ggagttcagc 60

agagttactg tgcgaaaaaa gaaatccatc gactgacaat ggggtacaca gtacatgtac 120

tactgagctg gtgcctgtag tgtatagtcg gatgggggca gtgcagcctt gcaggaatgc 180

acagcacagc acagtaggtg gcggatgatg gatcttggat ggtcaaggga acaactccac 240

tcggactcgc gtacgagtac tgcgtgcgcc cccccaaaca aaacagcttt gcctcccttt 300

gcaggcagga gaaaaagctg ctcgcccgcc gccgctgcca cctccccgcc tccacgtcgt 360

cgctgaactg aagaaatcat caccgtcgtc gcttctctgc catacgagtg tcagtgtctt 420

tattcaatcc ttctccgttc gttcgttctc gtcgaacaca agttaagaat tcacaagagg 480

tttcgtagcg acctagattt ggggggatag attattgttt ttgggtgata atggatacta 540

aacgatcgat ttaactaacg gtgttatgtt ttttgattaa cattgttgcc aaacaggcag 600

gctctgagcc tcctgcgacg agattagagc ccaactgcgc aagctagcga caactcttgg 660

gctgtagtcg taacccaccc cgaacgcccc gggccgctat atttcaccaa ggaaggaaac 720

gagcgaagca tccagaatgt agcccaactg agaggtattg ttgggcctcc actagtctgg 780

ccatgttagg tagcagagaa aggtagtacg tacgtttttg ccatcgccat cctcaccatc 840

aatcaagtat gtgtgaagat gtttccctat cctaacaatg catgaagccc aacttccgcc 900

ttatctgatc tgatgctaca ctgttctgaa tttttactgc cagttcatgg gagcatggtt 960

gcagggtgaa ccacttcttg gcgctcagga aaggagaagc tgacatctgg tcgatgacag 1020

aggattcgag ttggctgatt cctaggaggt ttttgggctg ggcaccaccc agctgagtgt 1080

gtgcgtgtgt aacctctgga tcaatgttgt tcagggacgc gccattgctt tttcttctca 1140

aaccgcgttc tcgtcat 1157

<210> 2377
<211> 1359
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159954_G1, chr4:174842676..174844034, Cluster 14

<400> 2377
cggatacctt ggcaataaac tcgagggaaa cttgtgatgg accagctttg gtacggagct 60

agtagaacat gcacacataa gcacatgtat gtatacgcta ctcatgcatt tgtacgtgca 120

catacgtacg tatgcgcacc acacacgctg ggcctgcagg tcgggccggg cgactctgat 180

gtgcacggct ccaatccctg caggatcggc cggccggttc aggtacgtac ttttggtgtt 240

ggcgcaccga cgccggcgcc cgcggcccgc cgtcatatcg tttccggtgc cgagcacgag 300

cagcggcgca tggctgggtg cgggtgcggc gggcctacca ccgtttgttg ggtacttgca 360

ttgggttggt gcggtgcgga gaggatcgcc ggaggaggac ggcagcacct catgaaaata 420

tcggcgggcc tggacacttt tggttgggag caagggtaga atgcaatcga tggactcatg 480

tacgctagct agggagagga ccacatctag ccagcgtcgt caccaaacct ggttcacatg 540

ccatgacacg ctgtgtctgc gctggaaatg tatatatggc cgttgtgggt ggctgcatct 600

gcatgcgtgc aatgtcaagt ctctctagca atagcatccg tcccgtccgg tttaagtttg 660

gaagacggat tagcacaacg gcaggtcggt tgactcgatc gtacggggtc gctttttgc 720

cttttccgta ccttcgtatt ttaatatttg acgctaaata gtacaataat aatataatac 780

taaacgtcaa ataataaaaa ataaaggaag tatataataa acggaacggg tggcgtaagc 840

gtactacagg agaacggcaa acgggcgtac ggcgccgcgc acattaataa ctgcaacgca 900

acacacggga acgggactca tctgcttgcc cgccttttcc tttttcctcg ctttcgtacg 960

ttgtgtgtgt gagagagaga gaccagtaca cacgttgttc cgcaggagga caacgagaga 1020

ccgccagcca gcgcgcaacg gcaagcagct ggtagccacg accacgacat gtggcagcta 1080

gccagccgtg gcggcgcagc tggtgtatcg tttgtcgccg gccgggaagg gacgaacgac 1140

acctgctgcc tctggtgcaa cggcacggca cggcacggca cgacaccggc ccgtacgtac 1200

gtacgtggtc gtgcacaact tctcgacgtg cgtacgtagg taggatagga tacgtggtgt 1260

ggttggttaa tggtcgacga aatcatgtgt gcggctcgcg acctgtgagt gaccgcatcc 1320

ttttctggg aaaacacacg aagccaccgc gtgcgcgac 1359

<210> 2378
<211> 1384
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160026_G1, chr4:175371967..175373350, Cluster 14

<400> 2378
cagcaaaagt tcgctagtga cgactgacga cgacgctaat tgcttcggcc tcaagctcgc 60

tcgcgcgctc gccgtcattc tgatttgacc gagttgcatg catggtatag cacgccggcg 120

acgacgacag accaaaaata aaaggagccg tccctgttac tgttccagct gccctctagc 180

tatagctccc tctgtattgc gcggaatcag aaatttccgt tggaaaaaaa acccctagaa 240

tctggattgc gcagtacgtg cacttgcctg tggtttcgag ctacatgtgc tgtgctgtgc 300

tgcgcacacc tgttcattgg tgctggggtg gtggcgtcag ggtttgcaag agagcctgaa 360

tacttcttct acttctccgg aggtgccctg tgtgcacctg caccgtgacg actgggagat 420

gcatggcgag ctaggtgcat gcatgcgtac gtgtccgccg catggtccgt tggtacatct 480

atgctgccga acggggttgg agattcctct ggctctacgg ctgttgcgtg catcaccata 540

ggagctaagc tagccagcgc agagacgagg acaaagaaaa gcttggcagg gctctctcta 600

gctagctggc tcgatcgcca ctgtgtcgaa ttctgtcttt tcagaagcga ccaaacgaac 660

ggatccaacc tgtgcctcac tatacaattc cgggttttct gaatctcatc aagctagcct 720

ccatccctga accacgagcc agactttgtt ttctgaatct catcaagcta gcctccctga 780

accggagtta ctgagcagac aaggggaagt gaggaaatct acaggatcag ctagcgtccc 840

ccaaaatccc tgctctgaat cgtgagttac tgagcagaca cagtggtatt aatcagcagc 900

acaggacaga ttagttgaag gagagtgacc atgaatgtag gatgcatgaa taatttgaca 960

gtagtatctg ctacgtaccc agacaaatca gccatccatt tttttattgt cgtacatact 1020

cctgcacgaa ccctaactag ctactagctg gtatggtagc tcccctgtcg tcccggcctc 1080

cctggggagc ttttgacttg tcacctacgc gcacaaacca accatgcatg gcaggcagca 1140

aagatgcata catatcctca tcgaagaaca attaaattaa tcatcaataa tcctgtactg 1200

tacatcgatc gattcagcag cagcggaacg caacgcaaca cggggaagac aacgaagggg 1260

gcaggccatt tgttaacgcg tttgactttt gagagtgcag tttggcgctg agataattta 1320

agtgttagca gtagcagcag ctaataatcg tgaggttcgg tggacaagtt ggggggttct 1380

tttg 1384

<210> 2379
<211> 1334
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160318_G1, chr4:177125550..177126883, Cluster 14

<400> 2379
gtacaagaac tgaactggcg cgtgcacgag ccgtctggcg atccgcacgt gagtgggcgc 60

atcgatcgag ctcgagcccc gccaggcccc ttctcgctgc tggctgcgat tgctctggcc 120

tggcgtttcc attgctgcgg tgcggcatgt gtgggctgtg ccagcgagtg aggtgccgcc 180

gtgcagggca aggcattatt gcggcggatg aaggaaagga aaggaaagga aaggcgtggt 240

cgccccgctc agacagcagc ctgtagtgca gctccggcaa caatgcaggt ggccggagtg 300

aagcagtcaa gcagggcgcc actggtcctc gatcgatctg tcagcgtacg tcccccatcc 360

ctgaccaaac ctgggcaact gcgtctgcat gtggcgcctg cagccgtcta gtctcgtggc 420

acgttggttg cgggagtgat ggtccagtcc agtccacccg ccgtcacgct ctagcactaa 480

actaaaaagc tcatcagctc gggcagattg ttaaaaccct accactgaga gaagtcctaa 540

aacctcagaa tccacttctc ctgcaggcac ggcattactg caatggctaa gcagctgcta 600

ctacttagta ggtggcgacc aaaaagaaaa ggcatgtctg gctccggtag ttaattacct 660

cgaccatgca agctttgttt ttacttgtcg atgggcaacc cctacataca atacaatata 720

catgcaggac actgaacatg gcggtgatga ctggtgagac acaggcacac agcccagaga 780

cagagagaga gcccatccat cgtcacgtgc gctcacggag tggcacacgt gcacaaccta 840

ggaatccgat attttcgcag agcgcatacg cataaactac tgtcacgcgc aggcgcagcg 900

caggcagtga cgatcctgag agacacgtta attgcccccc gattgttcgc ggggggcgga 960

ccagtggttt gacgatgaga ggcatgcatc gcctcgcctg acagacgcct cgggataggt 1020

ggccgtgggc gtaccagcgc tgctaaacaa accgggggag gctggtcggc gtgttatgtg 1080

tagtagagag attcttgcct gcggccgtgg gttagtttat cacaaaccgc catttgtgag 1140

gttgtgcgca gtggtgttct tcttgttgtc aaggggatcc gatgtatgac gctgtcagag 1200

ctcgcgacag catttctcgt gtcaggtgct taactaacct ctcgatctag ggggggggag 1260

ggggggggag tcgtacgtac cagcaggctc gcgacagatc tggatggagg cttgtatcta 1320

cgtctacgag ctct 1334

<210> 2380
<211> 1391
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160772_G1, chr4:179798691..179800081, Cluster 14

<400> 2380

ttcaatccac atgtgttaaa gtggattgat gcgtagatta gtttagctta cactgacatg 60

tgggtggata ctcaaactag acttgacatg gcgcggcaca cccgcgccgt ccagtccaac 120

tattcccatc catccggccg cttcaatgga caacagtcgc acgtctcttt acgagctgaa 180

tttgctctca ctttctcgta gcctactagg ctactactgt tgcacgagcc tgacgatcca 240

ccaagtcaga cctttctttc cagccagcca cagcagtccg tccccattgt cgcttctcaa 300

tttctgcaat gatttttcac aagatggggc gacgcagtgc agcacaggaa ccgattgacg 360

ggggccaggc cgggccgggt agctttaccg ccgcgcgggg gaagggtatc gatcccctga 420

caggtcttaa tttgatgccg cgcgcagcgg ggcagcagca gcaggaggag gaggtgacct 480

gtttcccctg cctgcttgtc gctcgatgca tatgcatcac acagatagaa ttttgagcga 540

aaataatagc gtctgtatgt attatagctg gatgatccaa agagacaaga gggtggaggg 600

gtatcgggtg gtaggtaaga cgtattgcct gaatggtgct tatttgtctg gattcagctg 660

gtctttgtct cgattcagaa gagttcagag cacccgcatc cgatgtctgc aaacatttag 720

ttccaatttt caccttcgtc tagctatcag gagctgagcc tacgttcttc tgatacttga 780

ccccccccccc ccccccccccc tttctttttt tacacggtga ctgcacgtac tgcagcccct 840

ccatcgatga tctgatgccg ggaatccttc tgacggtggc gccattggca tgctcctcga 900

ctggaagctc gatggaccac tggagatcaa cggttccttt cagacacccc aagtgttcta 960

ctccggctgt ctgatctaat ctgtggtgtt gcgtggtagt acactggtac tggtagcagt 1020

agttcagtgc ttctgttgct cttcccataa tttgtgtgca cagccgcatg tgcgtgctcc 1080

ttgtagcttg cggcttgcct ctggacgagg gaatgtataa tggcgttgcc agttcaggac 1140

aagatccaga ggcacagacc ttgtcttgct ctgcaacttc tacttcattc aggctcatcc 1200

atacagttaa gtttattaag gcaagttgga gtatttctcc aacagttagg caaccttagg 1260

agggccgctt tacgattttt tttttcaatt ttttgctccg aaggcgacgc atcttgttgt 1320

cggattttag aagtaagcag gaaaatgtgc cttgattgag accgactcca attgaatatt 1380

cactcccctc t 1391

<210> 2381
<211> 1165
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_163696_G1, chr4:195542744..195543908, Cluster 14

<400> 2381
cctattagac ttctctctcc ctcccctcat acacgatcca tttttttca taattaaaac 60

acaatttgtt tttctctccc tacctaccac aggcacaggc acagcccacc cacgggaggg 120

aaggtctctc cctctttctc ttcgtcttct tcctcctcct tttggtttcc ttttgattga 180

ttgatctagt agaacacaga aaggagagag aaagagagga gaggcaacac agaaacaaga 240

gaagaagaag aagaagggga gatcgagatc gatcacgcac cgggggagca gatccttcgc 300

ctcgccatca gggtgcgtgc gcttgttgct cctaagagag ataggatttt gctttcgaaa 360

ttcccaccgc cgccgccctg ccctccttct gactccgctt cccaaacttc ccaaacctaa 420

tcgtttcgtc gtgtaggtgg tggtggtgga gatcgattgc tgctgctcat ttttcaatta 480

atcattaggg tcacatgagg attggattta tcgggggggac ttgtgatttc tgtgatccat 540

actccatccg ttcgtttctg gatttcgatt tcatcgcaga aatccagcaa tacccccatg 600

gcacaccaca tgagccgagc agccccaatc catccgcgaa gctgcctggg ccaggcagct 660

ccccaggccg ttggttttga gcgcctgctc gccggatcga cctgcctgcc cgagcactct 720

tcccccactc ccaggccaca tcgccaacca aacaggccct acggttgcga attggcgatg 780

cgatctccaa cttccaatgc tgccctccta gtcggttcca agtccacttg cagtcaccag 840

ttccgatcag gctctaatct gtctcgtcaa ctcggcttca acccccccttc ctttgctttc 900

ccaaaattaa ctactgctgc tccataggtt cacgttcaac tctacctact tcaaattcaa 960

aattactagt accattcttg tgctgcaact tgcacttcaa acatttctct gggagtggga 1020

gtggaaatca acccatccga caccgacccg ttccgtgtag cagtaactgc aggccaacat 1080

gcaggatcga ctgatttcct tgtcactgga gtgcccaaaa gctgccacgc ttcagcatgc 1140

acttgctcat gtgcattttt tcttc 1165

<210> 2382
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164326_G1, chr4:198782503..198783666, Cluster 14

<400> 2382
agattctcta gccttcacat tctagataat atctccaaaa tacattatcc aatagcttaa 60

cttatataag gatcttccca tatttcttat cttctttata agtgcacaaa aaaaactcaa 120

actttaagtt tgatccattt tggagagtag ctttgaaaag aaagggaatt cttgttagca 180

atttttttat cagtatagta tgacaatccc aaactaaaat tttgagtgtt acatccagat 240

ccgttctaag aacggcgcac atgaagtttg gaggcctggt cggcccatgg gaacgttctg 300

ggacgcggag ctgctgttgc agtgcttgca ctaataaagc cattggaggc ttgacggttg 360

ccaatgccaa tgcaatgttt ggttccttcc ttccttcctt cctttctttc tttctttctt 420

tcgtggaact tctatcagaa atgtctttgc cctgagcctg aggactgcct aattgtgtgt 480

ctctgtttgt tgacaacgcc aggggacagg aggacataca ctcgtgtgga ccacgcagag 540

agtgtcacac gtcagccgcc acgcgctccc cgtagcgtac gcaatctccc ggccacgccg 600

ccgcctgggc aggcaacggt gccctttttc tctctcggca tgtgactgag tggtgcagaa 660

tgagcgcacg cgacggcctg gtggcgccag ccagtccgtc tgcgtcgccg gcgcgcgcac 720

gacacaagct tttcgccttt ctcttgacgc tgcctgccgc cggtacggtg acggtgactg 780

ggccggcggc ggccggcggt ccgacgacga tccgtgacgg ttttttgaac gccgacgagt 840

gcagcaggac cgttcgatct cctcgcagta atgcatgcgc tactggtcaa cgtatattct 900

actaaagtca gtcaggcagc acatcagtaa tgaatccggc acggaaaaga aaaaaaaact 960

tgtatacgta cacacggaca cagaagcgag tgagacccga cacgacggct agagcaactt 1020

gtttggtgag gggaccaacc aaacctttg gccataaact tctccaatgt caaacaacaa 1080

gagggtgctc tagatattgg gtaacggaga cgattggacg ggatattgtg tggccaagga 1140

tgcaacagtc tgcttttat gtat 1164

<210> 2383
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164808_G1, chr4:201125910..201127005, Cluster 14

<400> 2383
ggatatcacg acaccgggat cgtctcttcc gctgcacctt cttgatcgcc ggcgccctct 60

gccgtcactc tcctgcctgg cacgcccacc tgcgccctct tccgctgcac cttcttgatc 120

gccaccttct tgtatttttc tttataattt tagttacatt taacataatt tgactctata 180

aaaagttaaa atccttatga tggttgccct tgctactctc ttctgcagtc tacatgatag 240

atacataatt cgcctgattg gatgattgcc cacgggcgtg caggctcacg cgagcccggc 300

cagcctcatt cggccattgc gcgtatgtgt acctccgatg ctccatgggt cccattattt 360

acaaacttta atctatattg ttatatgtgt gcattgttct tgagcaactt tagaatttag 420

atctagagga gtattatttt ctgattacaa agaaccaaat gttacaatgg aaaaaaacta 480

gatacatcgt tgttgtcgtc accagctccg acagctgata caggtgaact tgggacggtc 540

gggtcgatgg cttgtgcttg cgtaggcaag acagatcctc ggtcgccggc gccggtgggc 600

gacgctggta cagccgatct tgggacggtc gttgtgccag tgctagcccc agcctcgtgt 660

cttccttggt ccaccatgtc cgtcctctgc atcttctccg ccaatgtctc catgcccatg 720

taagacaaga ggagccacac gtaggacagg tactgcccgc cgctccccat gctcttggcg 780

tgcaggtagc ccctgcaccc tgccggcaga gaagcaaagc atctccaccc acacgccctg 840

gaccaccctc caaacctttt ccatgtcttc cccaacctgt aaaccaatga gcacctgggt 900

gacagcccaa gcgtcatgag ccacacctga tcctgaattc cccgtctccc ttagcctacg 960

gattatacta ctactactag caggctcgtt cggtggaatg atgccctcca gttcctcgta 1020

ggcgtctttg aacaggctgc gcctagcacc ggcgatcaac atctctgggt tgacgaacag 1080

taggtacgcc atgtag 1096

<210> 2384
<211> 1194
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164988_G1, chr4:202220077..202221270, Cluster 14

<400> 2384
gtcggatcat cgctgtcgac gacgtcggtc tgcttgaccg gccactgttg gaagggagaa 60

ttagaaaggg acggcggcgg agggaggagg aggaggggac aaggaataaa gcccggtgtg 120

gactctctcg tactccgatg catctcgatc gcggcccggt gtcgtcgttg atcggatgaa 180

tgagctagct agagaagagt cgggaaaagc catgcatgca ggcacgcgcg cggcctgtgc 240

tgtgcgccgc acgtccagtc gtcgctggct agctgcccgg agaagattgc gcgcttgctt 300

ggagccaaac ttctccatca tgacggggta cagaggaccg ctacagcacc tacggttttt 360

cttccttgct gtagcttctt tcattcatgg acgcggccgg gtacggtgca gccagtcagt 420

gtactgcatg tgggggaccc ttcctagctc tccacacaca cacggcacat gcatggtatg 480

catttattta tttatttatt tatttattta ttgtcataga caatacattt ggacgacaaa 540

ccatacgtac gtacgtggta ccgcctattt gcactggtca aatcacgacg tatggaaagt 600

tgagagcaca actaatgcac gacttccatg catatgcata atacagcata tgttttaaaa 660

ttataagaaa caaaatcagg cagatactaa gccaggcgat caactgaatg atcgactgat 720

tttgtcttca ttagctacct gttcatgcat gcatatgccc ctgcctgtta aatggtacat 780

tatgcacagc gctgcctgct acatctgtta tcgtgtcgac gacgctaaaa ctttttttt 840

ttttggtttg gttgcctgtc gtacgtgtct gtgtttgcgg ccggccggta caaaatgcag 900

agatggaaaa gacagtaaaa gagggtctca aaaatagggt gtcagcaaga gtacatataa 960

gagttcccct tatacataca tgcatgtcgt taattactaa tctgcctcat cttcctagcc 1020

tcccatttta cagtgcaaaa taaagaagaa gagacagcaa gcaggctgag taggagatta 1080

tattaggcgc ttagcatggt gggaggtaaa gtagagaggg gtcgcgtggt attttgggtc 1140

tatagtaccc acgcaatgca atgcaatggt tgatgacggt ctcgagctga tgag 1194

<210> 2385
<211> 1201
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_165002_G1, chr4:202274701..202275901, Cluster 14

<400> 2385
catcggcctg caggccttca gacatgagaa ccccggctgc aaacacactg cagtctgcac 60

gcgtgcaagc aaggaacagt cactgaccca cacggtgtgg ttgcacagct atgtcagctg 120

gcctggcatg gagacggagc caggtgaggt cgggttgggt cggacggtgg tgggcagtgc 180

gtcagtcaat aatggcgctg gacgtggacg aaacgacgag agggaaggaa gcggccaacg 240

gacgagagca gagcagtccg gatccgggcc agtggtggtc gcggtggcaa taatattaag 300

tgcggcgcag tgagttggta cgacgctggt ccacccgctc gtgcgccgag ggcgacggag 360

cctgcctgca gcacctgcgc ccatgaggag gggaggccat ggccatggct ggtcggtggt 420

cggtcagact gctcttctgt gatagcatga atctgccacc ccgcccactg ctcatcagcc 480

aaggtcatgt gcgctgtgct gctgcactgc tgagccaaaa gcggcgacga gcagcgcagg 540

tgcggccggc caggtgtgcg tgcgtctgcg cggcacttgc acgcgcgggg gcggcggata 600

accaacccca cttcaatgat tgtgtggtac ggacacggtg gcggtgcaaa tggggacggt 660

cggacgatga ccctcgtcag gaggaggcgg tagcaggaat cggccggaat ttggcccatt 720

cctgcttatc caccgccaat ctttcggcct atacacacgg ggacgaaagt agcccaccaa 780

ctagtccctc tctctcccac ctttttttccc ctaaaaaaat tgctttcttt ttttttatat 840

ccaaaaggaa ttgttgggct gttacttatt cggccacgca caattgccgt gtccacggcg 900

gcggcagctt tgtcggccct tgcgtgctag tccggcccac acacgctacg tttcagccca 960

aaacaaaaga catgtttggg ggttctgtta gcttcatcat catccttttt gtctttcgtg 1020

ttcttcgaat atttccttaa cgcccagtgg tgcttgtagc atttttattg ttccatgcta 1080

tatttttacg tgctcgtaat caaccgaacc gtagaccctt ccagcgcgtc tgcactcatc 1140

ctaccgtacc ctagctaaat caactgattg gtctcctcca cggggcggta gagatagact 1200

t 1201

<210> 2386
<211> 1128
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174696_G1, chr5:13800973..13802100, Cluster 14

<400> 2386
aatgcaacgg ctctgcgatg ttttttttt gtaagatctg gatgtttgcg taactataag 60

catgtatgct gattgtttat tagttatatc taattaagtt ccaaacttcc ttcagcgata 120

ttgataatct gaaaacgggt agtaaattcg tcgttgtagt aattagctgt agcttcgcgc 180

cctgagtgct aggcagctag tagtagatac atacattatc accatctcct gcaggacaac 240

atagatgctg aagtttcaca gatagtgcca aaactccgaa caataacccg aaaacaggga 300

ttatgtacgg tcgctgttcc tctcgtgcag ccccatgcat gtgtaataac aacgagctcc 360

ctcccaccag gccaccaccc cccatgggcc atgccccccc cccacacgct gatgcgaaaa 420

tgcaaagcgg cggttagacg gggacaagag ggcccttcat tttcatttgg cgtcaggcca 480

tgggcacgta cgcgcgggac tgttcgggga tcctcccctg tctgtctgtg ctgatccatc 540

ttgttcgcgc agcactgttc cttccggcac gtctcgggca tctcgtctca tactctcttc 600

cgttgcggct tgcgggccgg gggcggagcc gccggggcgc acgctccggc tccagcgtcg 660

tcacagaaca cgggcgcggc gcagccgtgt gtgtagccat gtgccccaca ttaatttcgc 720

ggcggcggtg atcgcgcgta cggcgcaggt acaccgcgcg cctccatgtt cgttccatcc 780

gggtgggtgt gcgctctgct cgccgtcccg tccgtccgtc cgtccgtcca tccccgccca 840

ggcccagcac acgtacgccg cacggcacca ttatttcgtc ttcacttttt tttttgttac 900

atatcaacag gccctgtccc tgagcgcgca ctggtttggc acgacacgac gcgcgtacgt 960

gtgtccgtcc gtactgggcc tgcacgcacg cacgcacgca cagaggtgat ccgcagcggg 1020

atttttttt gccccttat tcgagctagg ccaacacgta ctccctccag tacaggttta 1080

caggtcgttc tggccacgaa gcgttctaca ccaaaagaag tcgtggca 1128

<210> 2387
<211> 1185
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174697_G1, chr5:13802500..13803684, Cluster 14

<400> 2387
catacgtagt aatgcatggg agctccgggc caacaacacg tgataataat gcatatatag 60

tacacgcatg gctgctttgt cgtcaccggt ggcgggatat atatgcataa tcattggtta 120

atcatcactt ccaggctcca gcagcagcat gtgctcccac agttgcgagc tgcggctggt 180

agcacggcga tatgcatgcc ggcgcacctt ctggcgggct tccgtgctag ctgccggtaa 240

cggtacggca cactgcccgc gtttactacg tacgtgctcg tccattctcc aactcatcta 300

ccagttcgta cccattactt gccgctgttc catccttgta cactgttcgc gcgcagctac 360

gttgccttgg ccagtttggg tcgtgtcgtg tggcggccga ggtgcagttt gttaatggaa 420

ttgctaagat gcaaattaac cctgcaccaa gcaagcgtta atcatcatac atggatggac 480

atggactatg cacatgcagg tcaccactca ccactgcggg cgcaaattaa acacaggaga 540

cgcgccgccg cagccggcag tctgtctctg catccactcc tgctggcgta cgtgttgcgt 600

gcagccagag gtatagacag cctcggatgc ccttccacac acagcctcca aggctcgaca 660

cgacatgcct atcggaggag caggctggta cggacacggt acgaagccaa gctgatatcg 720

gaccaaaagt gcaaaacaat accgggcggg cctcgaaccg cctggtctgc tcgtatcgtt 780

tcgttcggac atttcccgtt cctgcagatc tctctcgatc cgcgctcgtc gtggcgacct 840

ctctcctcca gttcccgttc ctgttcctga aatcaatccc tactttcgcc atttgtgtgt 900

tttctcgagg ttttcgcccc tcgtttggac gttcccagat ctcgactgag gttttagagc 960

aagtctaata acagagttaa atgctagctg caagtattct tgtagcctgc tattgagccc 1020

acttatctct cttacagaga tcttgacaga attcgtgtca taatatcata tcatactcga 1080

tgaagaactt tagctgctag gattattggg ccgtgtgttt tagcagtcca aattccagat 1140

cagaaagccc agcaaaaacg acatagggtt cctagttcct tccag 1185

<210> 2388
<211> 1165
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175271_G1, chr5:16848007..16849171, Cluster 14

<400> 2388
tctgttccta attagcgcgg ctgccacgac gagccggcaa cgcccagacg ccgtcgatgg 60

cgcgcaccac caacggcccg gcgcggtgtc ggcggcgcga cgacaaggac gtacgacggc 120

cggccccggg cggcaggtca ccggcgcttc ggttgcagcc gcgcgcgcgc gagcgtgtac 180

gcgtggcggc ctggcggacg cacgcacgcc gtcgccgggt ggcagttccc tgccgtgcat 240

gccagccgga gggatgcgcg ctcgtccctg tctggcggcc ggccggttgc cgatatgatg 300

ccgatggctg gatcgacggc gaaaggctta ttatgttcag cactctctcc ctcccctggc 360

cgcggccggt ctgactgcac acgcggagcc gggcatgcac aaagcgcact ccaagcaaaa 420

gcaagggaaa tatgtccgtg cccggctcgc gcgggaggcc caggccggcg tcgcggtcgc 480

acgcacacgc actgggaaag cggaacagcg tgatcggggt gcgcgtggcc ggcgcgatct 540

gtgccgcgac gtcttcgcgt tcgtgccggg cgcgcgcggc aaaagcagcg cactccaagc 600

agcggagcaa caatgtatag tataaccccc gacccgagag ggacccggtt gccgcaccag 660

agcgggtgtg gaacacgacg gcaaagcaca gcaaggggga ctaggcgaat ccgtcacatt 720

tattgttcat gcctcatgcg gcctgccgct aactcttggc ctataggcgt tcggcggcag 780

cagcagcagc gacggcaagc gcatccacgc actcgtcgca cgaaaagaac gcgacgcacg 840

cggcaaaaat ttaaaacggg tgctgcaaga agtagaccat gtccagcgtc gcctgcctct 900

tgcctcttgg catgcaagct gacagaaagg actcgccgcg ccttttttt ccccggccct 960

cttcctgtac cccgtttatg atgtgcgatc gagcagaatc aagagcctgc gttcattcag 1020

aattcaagat ccagttgagt tgggcgaaca gaagaagagt tgcccagcag cgagccgccc 1080

gactcggaat caagttctct ctgaagcttg ctccacacga tcgcaatgcc cgtcgacgct 1140

ggacagcatc ttggaagttg gaagc 1165

<210> 2389
<211> 1230
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_180081_G1, chr5:42231397..42232626, Cluster 14

<400> 2389
cgatcgagtt tctgtgcatc tgtatgtgaa ggggaatctg acaaatggag cagtacagta 60

cagacaagta ggctacggat cggagtagca acagcttgcc gagctcgatc gatcggaagc 120

cacctaccat ttcggaggtg ttgttggcca tggcaccacc acgccggccg tactaccgct 180

tgcaaagtgt gtttgtggta gtactagcaa actgtaaccc ttgggtaaca atacatgcgt 240

ctgtctctct ctctcccttt caccattgcc gacgcgggga aggggaaaag gggcgccgtg 300

tttgaccctg agctagctcc atcggccgct cgcagggcag taaagccacc gtccttttc 360

cccacggccg gcgtggtgga cacaccggct gagagagacc tagcttgagg gagaggggta 420

gagagtgatg atggatcgga cgtcggtgga ccatccatcg gcaaggtggg gagacccaga 480

gggccggggg cgggggtcc caggggagg gcgcgatgag gacgagcgag ggcaatggcc 540

catgcccatg ccggcccatg catggtcctg tcctgcctgc gtcagggctc tgtgccccga 600

tctctgcgcc ggacctccgg tccgcgtggg tgcagcttgc cggccggcga cccgatcgga 660

gcagcaggcg tggcgcacgc gcgcgcaggg ccatggtgga acccttcac tgttgttgca 720

gtgttgccaa gcaaagctcc ccccggctgg ccggcccctg cagcagctgt atccggatcg 780

gacctcacct caggaggcca cgacgtacgg gtccgtccat gcaccatcat gagacgcacg 840

aaccagcagg agaaagccat caaccatgca tgcatatgga tggatccagg tgcttgcgat 900

atttaggcca ccatgtgtgc acactggctg ccaggtgggc ctaggtccct ggtgggtttt 960

aatggccctc gtttgtttgg tggcgtgaac aaacgcaaac cgtcggcccc ttgcttgttg 1020

gagtggaggt aaacacaggc tgcgcaacac catgaccgac aagcgacagt gcctgtagct 1080

tccttttttt ttctctcttt tccgcagacc ccgaacatgg gcatccgatg aagtatttct 1140

tacaggatcc acccgaaaaa tcacaccagt tatcgacctc ttctccccgc atgcatccga 1200

ggccaaggca tggtataatt taatactcca 1230

<210> 2390
<211> 1288
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1811_G1, chr1:9220443..9221730, Cluster 14

<400> 2390
gtgaggagca acctctgatc catgagcaaa acacatgcaa tgatgaattt tgcctaattt 60

ttctcttttg atagcgatag tgttgagttc aacttaaaaa aattatcctc tatagcacgt 120

tcgtatatca cgaccttgat atatatactt tttttctggt tttattcttt tgacatcatg 180

acatacacaa atagatgtct aattaataca aagagaaaag ctatcgcggt tgcacaacac 240

caaaaaagtt tcaagtatcc atcatgttcc tcagagttca ttgtgatcga tcagttcatt 300

ttcatagaaa ctctgatcat caccgaagaa gagttatagc tgatatatat atgggattag 360

agccatacgc gagctaggga tggatcgccc ctcttcgtcg aatagtagtc atgaaaggca 420

acaaggtcac catgccttgc cctggtcatc atatatcgtg cagagagggc actgcgaagt 480

tatgattcac ttatattata tttcgtgaac caaacaatac ctaataataa gctaatacct 540

aataataagc tagctgattc agtggcaagt atatatatgc atgctagcca gctgaggtgc 600

cacgtagcgc aggttacggc taggttctct ggaacatcat gtgcagaaga tatgcgagcg 660

atcagcacgt acagcacagc tagcacatca accaatcctt gcgatccgga ccaaatctat 720

cgtacatgca tgcatgcacc ccattgtgct ggctgctggc ggctcgctgc tccatgcgca 780

tcaggccggc cacgacagcg tcaagatgat cagatagacg tccgtagcgc gaaaaagggc 840

ctctccccag acagtggaat atggcctcga aaaaggaccc gattaataaa caaacaaatt 900

aaagagagag ctaaagctag cgatggtgtc cgtgacgaat atggaggcgg cgaccggccg 960

gtagctagtg gttgcagctc taggtccatc gtcgcagtgt gtttattagg catctgctgg 1020

cgctggcgat ggtggtgtcg tccagcaaaa cacggcatcc gctcgcttta gcggaataag 1080

aaatggcgcg ctggtacagg ctactgctcg ttgtgcgcgt ccgcatcccc ccgaaagcat 1140

gcgggaggcg ggcgaggtgg agcactgcag gacgcgaacg cgaagatgaa aggggccgga 1200

tcggagcagc gacgtctgaa ctggacgacg aactctggac cgatcgggtg gtcggtcgaa 1260

actggactaa aaagcgtgtt caactcct 1288

<210> 2391
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_186270_G1, chr5:85073867..85075003, Cluster 14

<400> 2391
tgtgtagtga atatggaggc taactaggtg tgccggccat catttggatc gatgccaggt 60

cacccaaatg attcttggac aagaaaaaaa gaaaggaaaa aaatgttcat tcctgccaaa 120

attattctaa ctagctagga aatttcctca ctgccaaaac aggagcagtg ctggccaacc 180

ccaccacccg cccatatgca tctgatggaa caaagcaaat gtgccatgga gtctccatca 240

agccaagcaa gcaagcagtt caatccggta tgtagagcag ctagggtttt ctcggtgtca 300

gcttgccaca agcgggaagc gtcgccgtgt ctgcctcctc gtggtggctc ccggccagcc 360

cgtgagaacc tgccgagatc ggcaacgcgg aggggaccgg gcggggccac gccgtcagag 420

ggtggttacc agtccacatg cccgcgcgca tggacgacgg cgacgtcgac gtcgactgag 480

aggcgggcga gagctcgcgc tggctagtag ctagctcgac gacgttgctt tccatggcgc 540

ctttgccttg ccttgtgtgg gccatgcaga tcgatgcttg ccgcgcgcga gagctcacgc 600

gcacgcacct cagctagccc cggcctctcg ctgcacgtac agcaggctgc tgcaagaggc 660

ctgtgtgtat atgcatgatt aattgtgcag tgcaggtgtg catgcatcca tcagtactaa 720

tccggtccta tcccatgcat gcacatgagc catccatgac cgttccatga gctagcctcg 780

atctgaagaa ttagctagcc cctgcttgca tcgtatgttc tgtatgcgcc acagggcccg 840

gcgctcgtgc atctgtgcag gaacgaatca tggcttcaag actgaagaca cctatatata 900

catgctgcag tctgcagaga tgtgagagaa gcatatacat acgatacatg catgcatatg 960

ccctgaggta gcctggactg gtggaggtgg tcatgccgtc atcgatcata tcattctggt 1020

gttttcctta cgcgctttga ctcgctgctt gttggtgcct caaaactcac aactccctcc 1080

agattgttaa cacacatgca ttgcaagctg cactggtagt ttcaaggaaa agattag 1137

<210> 2392
<211> 1000
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196158_G1, chr5:151709271..151710270, Cluster 14

<400> 2392
taaccgttgc ggatagccta agttaagctg accacactcc ccgcaactga gaccaaaaaa 60

aaaaaaaaga gagcagcttt cttgagccaa gcacccaacc gtttccatga ccgtccgtcg 120

gcactcggca cggcagggaa cgaacgaacg aaagaaagca agggcatgtt ttgtttcttg 180

tcacctttgc cctgcccaca ctgtgacctt ttcagtcctg ctcctgctcc tgcagccccc 240

agggaaacag cgacagcaat gcgcgctcgc accccaacgc aatgcttgct gccctcctat 300

gctactgcta ctgctgtgct tgctagtact agtacctcct ctcctcctca actggggagg 360

aggagccgag gaggagagga gagtagctag gagacagaga cagacaagag atgggagagg 420

tcaggggtga gcacgaaaag atgccaaggg tgcgtgtgtg cgtctctctc tctctcgtag 480

gagtatagta ctaccatgca gccatgcacg ggagctgcga gaggccggcc aaaagctggg 540

atcgaccaaa tcttggccgc ctgcacgcct aattatcccc cttgcatgcc ttgacccaca 600

ccattgtcgt ctcccatcgc cgtcactgac tgactcatca atcatcatct cagctgttaa 660

ccgacactgc tttcttctgc tccgctgcta aacaggggg acgacggccg gggttagtaa 720

ctagagaccg gcaagccttc tgctgcttgc tacccccgta aaccttcagt atcccaactt 780

tgttcagtag tactactgaa gctcttatat atgtttaagg aacgacaaac atgaccgaat 840

atctttgtgt ggttgggtta ttattattat atattggagc aggcatggcg agctatatgc 900

gttgtgcttg tgtcacgaga gccaaatcct tctcttgtag tacatgtata ctgcaagaga 960

aggtcagctg cctctgagca tcatggttta cctttccgtt 1000

<210> 2393
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201813_G1, chr5:184448567..184449572, Cluster 14

<400> 2393
ttgctttgct ggctctggct gttccatgca ttatggtacg aagccggagt caatgctaaa 60

caagccttcg tatattctag taccactttg ggccccttg gcagagcttc aaagccggct 120

ttagtacctc cggcttctac aaatctacag gccctaccaa atggctacca aaaaaacaac 180

tttgcacgag aagcagccat gaagcttaag ccgtttttgt tctacacatc tggaggggg 240

ggggggggg gggaaccggc tcctcttctg tcgccagatt gtggcagctg ttctgtcaaa 300

cattaacttt tgtatgtgtt gcttcatcgg agaagctgtt caaagacagc atatgcatcc 360

tagtggtacg taaatgttca aagacacatt gaagcgtaca ggaaactgaa gaactacagt 420

ctacagagca cgaaattatt gccaaatggt acgtaaatga gtcaaaaaca gcatatgcag 480

gtctgaactt ttatgtgttg cttcttttgg aaaatgatgg agtgcatata gaggtgacat 540

aataatgaca caacaggcgt catatgcgtg ggcactgcat ttcagtcact gaatactaac 600

ttgttttatt ttcttatttc tccaaacaag tactgaatca taaaacttca aaaactatct 660

tttcaatcaa gcactgaatc atagaaatgt ttttacccaa tttaacttcc cagaaccaag 720

cgccgactca taacttagcc tgaaattact acatgtatac ataccatacc acgaaagcac 780

gaatacacag caaaaggaaa tgctcggact ctacaagaga caactcgaat tgaatcggga 840

ggtggcatgt cgacatcaaa ctcgattgtc gtaccccgcg gaagtcacag caagagagcg 900

gctcaaccac ccccaagcaa ccaagcaccg tctccgcgtc gcggcgagag agcaagagat 960

gaggggggag gagggagtct atggatgata ggagccggat gctaac 1006

<210> 2394
<211> 1361
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201983_G1, chr5:185501127..185502487, Cluster 14

<400> 2394
tccgggagag agcccgggac gcgctttgcg ggaagaaaag aaaagaaaag cgcgcctccc 60

ctcgctgatc cgctagcgcc gcccgtcgcc atcggcaaaa aagcccacgg ggggtgctcc 120

gggcggtgca cgagcacgac cacccttttg accgcgccac gtcgtgcccc ggcgcccgct 180

cggcggtcgc cacgtccgtt cctccacgcg cccggcagcg gccgcggtgg tgccccctgt 240

gcggcgactc gggcgggcgg gtcgtcaaca cgggaggccg atcggcctaa ccccaccccg 300

cgcgcgcgcc gcaatagcgc aagacgagct ctgacccgcg gtcagaccag acggtggtgg 360

tgagtccgcg ctccgccacg ccgctgcgcg ggcacgcacg agcacgacgc gctagcccgc 420

tggaccgaga ccgagaccga gcagcagttc ggttcgggcc cacagccaaa cgggagcgag 480

aggggaagaa agcgagagcg cgcgtgccgt tcgtgcggtg tggccggccg tgagtggcgg 540

ctgctgtcac catgtgcgct ttactctatg atcgttcgtt cgtcggactg aggaggatta 600

gcacgggagg gaggcggacg acggacgaat gggagcggtt gcggttccct cgaggcgcac 660

acggctggga gcacagccgt acccgtacgt gtgtgtgtga ggttcctggg ggacatgatg 720

ccagaggaga aactagctca ctcgatcgtg tccgggtcat gtgagtgaga gcgatctcag 780

cgtttgctag ttgcgcatga tgggctactg acgtctgaaa acacccgacc tagctaagca 840

ccatggagca acgtgttgca cgttgcaagt gccgatccac agtactgctt cctgttgtat 900

ctttttttt ctacggttaa ttagatgctc caagcccttc aacccgtgct tcctaataat 960

gttcctagga ttgaccaaac ttccgaaata atatccagta gtcgctcatg gtaacagcag 1020

ccagtataaa atggtgataa cagacggacg acactaattc tacctcatca aatcaagcgg 1080

aaaaagatca cacggtggcg atggacggcc aggacggggc agttttttt tctttttcaa 1140

atcgaacatt cggcagctac tctcatactg tatttcatat ttccaccaaa ccgtttcacg 1200

aaaatacaaa taggtgctcc cccagccggt caacccaaat acgagtacat cctaacgtta 1260

gagaggtact tttagtagca gtttataatc cagaggcaaa attagaatca gtttggtgat 1320

atcataaagt acacgcgtga ttagctacta gtgaagatgg a 1361

<210> 2395
<211> 1321
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202830_G1, chr5:189911597..189912917, Cluster 14

<400> 2395
tgacgtggtc cgaagtttcc ccgtcatgca tcatgagaca atagatacct atatcatgat 60

aaatcggcag gaaacatcgg cagcgacatt aacgaaggaa acatcggcag tttaagctga 120

ttaaagcgac atacagaaaa cgtgagctac atcaagttct tcgatgtagt tagtccctgt 180

tccaattctc ctccgaggac tactttccaa caactggaga cagtcgccaa aaaaaaaatt 240

gttcagcgac cttgagtgac ggcggaaata ggatgtaagc aaggattgtg gcgaggttct 300

ccgagcatga cgaccttgca cggacaatgg taaaattggc tgtgctggtg ggcattcggc 360

ccagcaaaac tagttcgcgg ctccaggttt cagtagcgga agcgacgaag gaattgctgg 420

gtcgttcaag tgattgagct gggccaatcg ggctgggctc gcggccactg gcaggcatcg 480

tactatactc tttggcgggg gaaaaaaaaa ctcttcggtg cagccgagcc ggcatgactg 540

atttgttgct gacagaaggc gacgtgaacc ccgcgcggga cacgagctgg acaaaaggca 600

aagctgagcc tgagcggcgt ttttttccgg ttctatcaaa aaagaaaagc tgctgatttg 660

atgaaaaaag aagaaaataa agaaaagcgg ttttcgctcg tgcacgcatg cttcttcaca 720

cacaccaccg atctccgtct cgtatctgtt ttgcatgtct ctttcttgtg aaacggaagc 780

gcacaggcac atcacatagc tagggtagcc tccctccttg tccttggcac agcgttgaag 840

ctatgttata tgactgacca tgctaatgct actgtatcga ttgacgcatc ctttcactac 900

tagtttttcg tttgattccg tttccatttt tgcgcatgtg aagatcgacc ttgtccgtag 960

agcgtctgcc tggggagggc tgcttagttt cgtgcctcga atgtttcaca agttaaagcg 1020

aagaccaacg ctcactttct ctttggaaaa tggattatta tctttacctt ttgcttttta 1080

ggcagtcttt actttcggcg acgacagaga agtagatttg acgatgaaac cacaggcacg 1140

ctttccatgt tggcatctaa agaactgtgc cttctttagc tagtagtgtt caaagtttcc 1200

aaggatggct acgaggacga aattgttttc agaccaatct tttgtctaat gggctcaact 1260

cctgtggcgg tctggccaat gcgactacgg tatagtgttc cactcgtaga attcagttta 1320

g 1321

<210> 2396
<211> 1160
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204267_G1, chr5:197960699..197961858, Cluster 14

<400> 2396
ggaccagtgc agtgcatagc tagctttgtg agacaacaga cacccgggcc gcctcatcat 60

cgctcaaagt gtatgaacac tcgcctccat cgatgggtcc atacgtacct gaagaagaaa 120

caaacggctt tggcagccac caaacgcact gcgtgtctgc gtcggcgcga caccgcagag 180

tatccggcga tcagtagtca gtaaacgagg gcggcaaggc tcggcacggc aggcatggcg 240

acgcattgat gaattcgagt ctatgggcca tggtcgtctg gactctggag ctgtggagca 300

gcgaccgtag tggtaggcac cacgcacagg cggaggagtg tagtagtagc agcggcggca 360

gcgcccaacc gcgcgctcac cccgaacgga aatgaatgcc cgcccggcca ttaaaccccg 420

cctcctaccg cggcaaggtg accccgcgtc tgccgctgta gctggcttgc tctgctctgc 480

ctcggcgtcc tagcgtacgt acgctgtgcg cctctgcctg tgcgtgtgtg cagggatgtg 540

atttctcgca ggggcagggc gtccttcgct ttgcggcttt gcccaagccc aatggaggaa 600

gtatacgtaa acagcacgag cgccatgtag ctgaacatga ccgggtgggt gaagaggttc 660

attcaatacc gcgacgtgat cgagcgtcgg cttgaccgtg cgcccatgcc tgcgtgtacc 720

tgtatctgta tgtatgtatg tatgtatgca gtgcaagtgt ttgccattgt attgtgtgct 780

ccctatgatc gaggacgttg cataggccag gccatctcac catcatggcc actgtaccac 840

acgtacgtga gcacgttcca cactcatatc ccccgccttc tatttcaaac tcaaccgtat 900

aatggtatca tggtatgtct accttgtagt gtttttgtta gtccatatgt gtgctagcta 960

accttagcct aactgtgagc ggtcgtagaa taactgtttc attgatgcat ttctctctcc 1020

acggcaaatg tgaggtcagt ctcctcaact atgtggagga aaaggaagca agaaaagaac 1080

agatatcatg agtgcacaca cgtacaccta acttgtcagc attttagtag tttgtcaact 1140

ctgttttaaa ggaattctca 1160

<210> 2397
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205044_G1, chr5:202392294..202393332, Cluster 14

<400> 2397
gttccaaagc tgttggaggt ctaggcagcg cattggcatc tctccaatga caagttttga 60

aagccatgaa caagttccaa agctgttgga ggccttcgcg cgcgctccac aaatcatgca 120

aaagccagag ctttactccc tttttccatt taaggggctg cagcaaacag acccgtgttt 180

gcagaattgt gcatttgtac ttgtaactcg gacgatgcaa gatgcacgga atcgtacggt 240

gcatattgtt tgctactcct gctagagttc tgccctccag cgtcatcttt ggtcttcgcg 300

tgtcccccac tgcagctgca ggtttgtgat acagtagtgc tgcaagcctg caacggcaag 360

cggcatcact gagtcactgc cacttcttgg cacctgccga caatgagtgc tgcagtgtgg 420

atggcaagcc ttgagacaca agtatttttt ttactgtaat ctggtgcacc tgctagccta 480

ggctcatatc tatatagctt attttctgag gtaaaattta aattttaaaa tcttaaactc 540

ccacatgcca tttccatgcc acagctagct ggctactaat aaccaccgtc ctctctggct 600

ctactcctac gtgtaatctc agacaaatgc ctccagacgc cattaaaaaa tacagcaggt 660

taaacaaata gggacagacc aggcttttgg tatctctcct ggacctcatc cgtcctgcgg 720

tcctgccaag caagtacaaa aaccagcacc catactaccc gtgctcttca cgcagtaaag 780

gggaaaggaa ggaagaactt aaaatggacg cagatctctt tcttgaatct tgagaaaaac 840

acactgtaca tgtccagcta ccaaaaaaaa aaacaaccgt ccaaagtaca gagtccagac 900

tccagacaaa tgcacaagat atctgtagtc tagaccagtt gcctacgttt cagatagtgg 960

aataggctaa cattttgacc taagtaacgc taactcgaaa cgtgcatgaa aatcaactag 1020

gttgaacctt tcaatgttt 1039

<210> 2398
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205683_G1, chr5:206046910..206048079, Cluster 14

<400> 2398
gtgatgccga tgtgtgaggc cagatgagat cagtatcatg tttttcatca aggtgagcaa 60

accctaataa cgtacgtgaa cgtaccacca agaatttcac aggcttcaga gttcattgtt 120

atatatataa aaaaccctca gactcagagt tcgggcagcc tgctaggtag gtatatactg 180

tagcatactg caccgaaaaa aatagggaaa acgaaaggac agagacgtgg tggattattt 240

ctgattaatc tgatgcttca cacgaggagc agttactgct gttgatacga tgagttcagc 300

ttcagcaatc agcattgtgc aagtgggtga gggtgattgc actgttatag tgtaggccat 360

gcaacgccgt tcgatgggcc aaatcccaga aaccaggccc actcgaacca ttttccccca 420

atcattcgaa cctcagcagc agacacgtac ctgcccaact gcatctacca tctatagcat 480

agcaaggctg gttcccctgg ctgaaccgga gcgaaatgtg gctgagaacg cactactcgt 540

cttaaaggct tcttcatgga ccatacgcaa attgcaacgc gatttacgta cgcaggcgtg 600

cctgcctgat tgcttgagaa tacgtgtgtg aagcagatcg caatcgcaac gtgggtgcta 660

accctacctg tggccttatc atcgctgtcg cctttcatgt ctgtctctga tgtccattgc 720

cgatgatgcg tgtgccacac ccacacccgt gctcgtacag tgacgcttgg cactggcagc 780

atccgccggc cgtgcccttg tttgtcagga ggtatcaggc tacgagatga gagcgtcgcc 840

accctagctg tcgatcggtg gacgcaaacg aatgatcatg cccgtggtgg ccctcggcca 900

gggccatatg ggccaatcag acagaccccc ccagtttagc ccgttctgca cgttgcttct 960

tcctctttgg ttggttccac ctacgagtcg gaaacgacga gcgtaagttt gaatggacca 1020

ggatcttgtt tctccagacg ttcagaattc agacggcgta ggtgcatgtt gagcatctaa 1080

ttgagctgcc atcatggacc attttttta tgaagaaaaa tctcgcctgc acttggttca 1140

ccaaaccatg atggactgat aataaactca 1170

<210> 2399
<211> 1360
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205745_G1, chr5:206486761..206488120, Cluster 14

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1054)..(1153)

<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1074)..(1074)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1076)..(1076)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1077)..(1077)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1078)..(1078)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1079)..(1079)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1080)..(1080)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1081)..(1081)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1082)..(1082)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1083)..(1083)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1084)..(1084)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1085)..(1085)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1086)..(1086)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1087)..(1087)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1088)..(1088)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1089)..(1089)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1090)..(1090)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1091)..(1091)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1092)..(1092)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1093)..(1093)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1094)..(1094)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1095)..(1095)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1102)..(1102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1103)..(1103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1104)..(1104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1105)..(1105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1106)..(1106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1107)..(1107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1108)..(1108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1109)..(1109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1110)..(1110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1111)..(1111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1112)..(1112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1113)..(1113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1114)..(1114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1115)..(1115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1116)..(1116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1117)..(1117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1118)..(1118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1119)..(1119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1120)..(1120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1121)..(1121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1122)..(1122)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1123)..(1123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1124)..(1124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1125)..(1125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1126)..(1126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1127)..(1127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1128)..(1128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1129)..(1129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1130)..(1130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1131)..(1131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1132)..(1132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1133)..(1133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1134)..(1134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1135)..(1135)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1136)..(1136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1137)..(1137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1138)..(1138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1139)..(1139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1140)..(1140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1141)..(1141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1142)..(1142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1143)..(1143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1144)..(1144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1145)..(1145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1146)..(1146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1147)..(1147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1148)..(1148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1149)..(1149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1150)..(1150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1151)..(1151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1152)..(1152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1153)..(1153)
<223> a, c, g, or t

<400> 2399
aaaaagtggt atgcaaacaa ccgatctgtc gcgtttttca aaaaaatatg cacaactacc 60

aggaacttat caggttgata tctggctgaa taaaaagaag gtttcacaga aaaaaattac 120

atttaccgcc aatgcagagc aacttctgca gccacagttt acggtagaac aactacgtga 180

gctgggtatt aaggtggatg aaatcccggc gctggctgaa aaagatgacg atagcgtgat 240

caactcgctt gaacaaatca ttcccggtac agctgctgaa tttgatttca atcatcagca 300

acttaatttg agcattcccc aaattgcact gtaccgtgat gcaagaggtt acgtctcccc 360

ttctcgttgg gacgatggta taccaacgct gtttaccaac tactcgttta caggttctga 420

taaccgttac cgccagggca atcgtagcca acgacagtac ctgaatatgc aaaatggtgc 480

taattttggc ccctggcgat tacgcaacta ttccacatgg acacgcaacg atcagacatc 540

aagctggaat accatcagta gttatttaca acgtgatatc aaggcgttga agtctcagtt 600

gcttctggga gaaagcgcca ccagcggcag tatttttcc agctacacct ttactggcgt 660

gcaactcgct tccgacgata atatgttgcc aaacagccag cgcggatttg ccccaacggt 720

acgcggtatc gcaaacagta gtgcaatcgt gactatcagg caaaatgttt atgtgatcta 780

tcaaagcaac gtgtcagcgg gtgcctttga aattaacgat ctctacccct cttccacagc 840

ggcgatttag aagtcacgat tgagaaagtg acggtacaca acgtcgcttt atccagcctt 900

attcttcatt accatgatgc agcgacctgg catctaaagt atagcgcgac cgctgacgct 960

atcgcgctga tgcaacagtg atagcaagaa cccgaatttg ctgagccacc gcaaatatat 1020

ggttcggatt atacctttac gcctggtatg ccgnnnnnnn nnnnnnnnnn nnnnnnnnnn 1080

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1140

nnnnnnnnnn nnntggccgt tgacagtggt gggggtgtac cagcgcggaa ggtgcctcgg 1200

ttagttcatg tggggtcgtc tagcaggttg tggtcatccc agttccagtc gggctggcgg 1260

agtgttctcg gttatggtct cgtgaacaaa agatgagtgc tgagcaatct ggtctgggaa 1320

tctaccacgt cctgggacag acgcggtgcg gcctcgtctg 1360

<210> 2400
<211> 1337
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206337_G1, chr5:209467430..209468766, Cluster 14

<400> 2400
aatctgctca aagcctgttc agtccactcc accgaagatg cactcaacag gcgaacatcg 60

tctggcgacc ggcgaccgca cgcaaacgtc cccgtcgtcc cgtccacaca ctttttgcac 120

ggcagagggc caactactac agattagtcc ctggcgcgac gcagcctttc tctcagctct 180

tcttcttctt ctagcactga tccggctaaa acttatatta tctcccatag aattgttttg 240

tctggaagca tggggatccc cactgttcac gaagtacacc cagcatgtaa cgtagggcta 300

ccacaagtag aaacgctagg cctcggcagg ctgaaaggct acgagaacca cccttcggcg 360

gcctaccagt accagtacgt tccgcgacac cgacactgac acgggcgcag taattacggc 420

cggaacgggg caccgacgag acgaccgatc agtccgtaga agaaggctgc ggacccgtcg 480

ggtcggggcg cagctagctg tcgcgatcaa cgcacacgtt tctctggcgg gtaaccgagt 540

acaagaagac aactgtacaa cgtagagcac tgtgcagctg ggctgagcag acggctaggc 600

gaactcacgg gcagagcagt gatcctgagc cggatccacg gagcagggac agcgcgggcg 660

acgagtgacc ctcgtactgt acgtgccaaa ccgcagcagt cgtcactccg ctcgtcaggc 720

gggcagcgac cagcgagcca ctggccgggg gaagacgacg acgctgtggg cggctttgtg 780

ggtccggaga ccagcagcca gcagggaagc tgggaaggca aggggcgctc ggatctcctg 840

tgctctacgt atctgactgc gttcgatcag ttggactgtt ggagttatct ccctctcgga 900

tctccagcag ggaagggaac cagggtttgg gttgggcaac gtttgtgcgg gggtacgtca 960

ggccgacacg catgctcgct ccataaagga ggccttaaat cccggagact acgtaccaaa 1020

gaacagttcc gttgtgagat cgacctcatt ttgcacctcg ggatttgctc caaccacctc 1080

tcgtgacagt gatggaacca cgactcgaaa ggtggtggtg ggggaggcgc acagcacagg 1140

agcgaagcag taccactgaa ctgcgtatcg tacacagtaa cacagcaact aacatctgtg 1200

cccttgggga tgggagaggc acgggctgat gagactgggt gtgggacgac gacgtgggtg 1260

ggcgatgggg cggcgcggtt cacggcgact gagaatcgct ttgccaggac agcaggagtg 1320

tcaatagcaa ccaacag 1337

<210> 2401
<211> 1130
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_206994_G1, chr5:212522456..212523585, Cluster 14

<400> 2401
ggctgcaggc cgcatgtggc cgtgtggtgg tgcggtgtgc ggccaatcgg tcccgtgctg 60

cccctgcctc tgctctctcc gtcgcgcacg atctccgtga cctggtgcgc gtgcggtgcc 120

gttggcgcct gccttccctg cctagcaaca gcttgcggct ccgcgaaggc aaccgggggc 180

cacacgcaga tgctgccgcc gcgcggggag agccacacca cacgcacgca cgggcacggt 240

tggcttggct cggatcggat ttcggatggc ggcgggactg gaccggaccg gaccggacgg 300

ccgttgggga tggaggagtg atctgattgg gagacgcaat gcaacccccg gccgggtttg 360

gctttttcgt tctttgtcgc gtgctgtgct gcctgtttgt gtgctcggga ggccggcggc 420

aacggctgcg tggcattggt gcgtcgcatc cgtttcttct tctcatccct tcgttcctcc 480

actccttgat tgccgaaggg cggctgatgc tgatacaggc agccatacgg tacagcaatc 540

ctgatggcca ccttgatgta cgtgccataa atcctggtac cgtgtgacga cgaccggtga 600

acatacacgg aacgatattt ccccccccctc cccctctttt gcggaaaaaa acatactaca 660

cggaatgatt gggggtgtgt gtgtgtaggg tgtagtgcgt gcgtgtcgag tgtcgacggt 720

aggcgtacaa ggcgggagtg tgtctatgtg tgtgcgcgca tgaagttcag tacactgttc 780

acgtattctt tgctaaaaaa aaattacggg cgacgattat ccccactact ccctaacgat 840

ggataacgtg agtagatagt atagtctgag gggagtgtga cggagcatca tgatcttcta 900

gtgcgcctat gcatgtgtcg tgcatgacag agcgtcatct tctgcgagcc gtgatatata 960

taaacatgta cgctgccgca aagtgccaaa caagaaaaac gtagcccatc ttatccggcg 1020

tacgacaaaa ggagccgagc agagcacgcc ccgcattagt ccacgagatt agattagtcc 1080

ttgttaactc ccatccccta tcgccgtgtc gatcgttaag ggagtagaga 1130

<210> 2402
<211> 1010
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207048_G1, chr5:212788209..212789218, Cluster 14

<400> 2402
gtcttatatt aaaacatcga tgtacgataa aaatcataaa atacatataa gaagtacatg 60

ttgcaatttt aagggaggct ctaggaaggc tctatgtgct ctaccattgg gcaagagctc 120

ccactatagc catgaggtga gggaagagct atattctgat ttttttttca gatacgaaat 180

aacttttatt atataactaa atttatttta taacttgaaa aaacaaaaat aacttagaat 240

ttaaaacgga tggagtagtt tagaatttag gggtcgcgta gtcgcagatg gcgaaagaca 300

cgcacgccgc cagccccccct actccgggcc tccactgctc agcacagcat ttgaaagcat 360

tttactattt ttgtccaaaa atgtcatggt tctgcgcgtt tgcacagttc gtcatttggg 420

agaaactaca tatgtttgag actggagaga gtgggcaggg acacgtacga agctgcatgc 480

ccccagctta agcactactg tagtagagag cacaacacaa agtggagcct gcatgcagta 540

gcagcttgct gtgcatgggc tgcatgagca tctgcatgca tcggccactt cctgttcttg 600

ccactgtcgc cgtaggcaca tctctgcctg ccgccgcgct gcaaaatggt accaccgtcc 660

aactccaccc acctacccac ccacccaccg tctgtctaca ggcggcatgg ggcttgcagg 720

tgtggatgtt gttctgttta ccgatggcat ggcagaggca ggccaggcgc tgaaagcggt 780

gaggaccgga ggagtagggg agggtggtgg taaattcaga aagctgccga gtggcgtcag 840

tggcggcgcg gactttcacg cgcggactcg catccgcatc catccatccc tgaccctgac 900

ccccccccccc ccccacccaa actctgaaac gaaatgaaag aatgggggcg gatgcagaag 960

caggaggcag gagcagcttc tttctcctcc atcgtcgatt ccaacggctc 1010

<210> 2403
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208583_G1, chr6:4311944..4313025, Cluster 14

<400> 2403
atgactgcta cgagctacca tgccaatgca tgcagctcta gctgcgtacg tacagcgtgt 60

agagtcgtag tagtacacta cagttgtcgt cgttgtacga ctgtacagct cagcaccgac 120

accgatgcat gcgtacgtgt gctgcatgcc agcgtacgta cgtcgtcgtt cgagtaggtc 180

ctccatcgtc tcgcagctag ctagctagct acctggtgtg tcgattcgat ctagagtgca 240

aacaacctct tgcttgtctt ttgtgctgct aactgcgctg ctagctgtag agagtagtcg 300

tctagctagc tagtttatgg gtatacgcga cgacggggcc atccacaaca cagatcgagg 360

tcatagctag ttagtaagta cgcgcaggag tacagccaga tcgagccaca ggtccaggtg 420

acattttaga catgagagat gcatgagacg aattggtggt acctgccctg ccctctcttg 480

tattcatgca tgcggttgct ccgttgtagt ggacgtacga tgcatggccg gccgtagttt 540

ggcacgttgc tagctaggct tcgccgtcgc cgggacgggg tcaagggcgg aaccgaaccg 600

cgcaaggcaa tccggcggcc acgaccacga gctacctagt gtacctagcc atgtgaagag 660

gccggacgac agaactgcag tctgcatgca gcgcgggggc agatccagga cgtcggggac 720

gacaggatgg ggtacggtgc ctggcaaaat aaccccaaca cccaagttcc ttcctaaacc 780

ctccctttg tagctttccc ttcaacaaat gagcacttca aatctttgat tttgagtttc 840

ttgtcagaat ccttgtttga gagcgtggga aaataaaatt aaaaactcgg tagagccaag 900

atctccttat tacaaatatc tcttgataat accttcactg ctggggtaga caaggtatgt 960

gcaaaatttc gcaaagtttg acgcggtgct atatatttgg gttttgccat tgtcttcaaa 1020

agctcctatg ttgaaacttg ctaaaactaa cttaactgtg tttggattta ggccgccttg 1080

ga 1082

<210> 2404
<211> 1189
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2089_G1, chr1:10904590..10905778, Cluster 14

<400> 2404
acttgctcta agagactgta ttatacaatc ttgagtctct agaccatata taaaattaag 60

acacgacata tatagagagt tgtgttgaga cgatctcctc acaaagagag ggtctcttat 120

ttttttttc atttagccct ctaaaaaacc ctacaaaatc tctctaatta ttgtggttgt 180

acgtgccctt aaaaagaaag caaaacgcga aagccaaaac actagcgcgg acgaaagaca 240

aatgcttttc cgctcgactg ctcaatttgt ttaaagcctg agctccgtta agctagctag 300

ctatcctttt catatcgcta ttaatctgca acgcctagct aggtttctat ggagcatcca 360

cttagttaac ttaatccacg cctctccttt gtttattaca cctcttccaa gcaataaact 420

accgcagatt aacttgtggt cgctaagcgc tcgcgagtcg ggtaaatctc agcgtgcggc 480

caggaactaa catgacggaa gcttcgttct gcacgcagag acggaagctt gtttatttga 540

tctgcattag tgcaacagcg agacgctggc cgctcagaag gccgcggcgt gcgcacgcat 600

cccaccaaac cggatcgccg gatttccttt cgcgcaatac aacggtgcaa gaatctccgg 660

gcggacgccg gaagccgcta gcttttgtgc aaaagctagt cggggtcagg tacgacgacg 720

acgacgacga gtgagtggcg aacatctcta gtgggctgcg aggctagtgt gtggccgtgt 780

gggtggcctc caggtaggcg tagtgtgtca tcgaacaatt ggcgtttctg aatgtcttct 840

gtgttcttct cctcgctgtg gactgtggtt gcatcatcgc cgccgtagtg ccggtctctg 900

cgagactgcg tggaatggaa tccgtcgccg tctggccagg cgatcaactg aatcgatctg 960

ttccctgacg gcagagagaa tttcggagtg cgccccattt gtgctcggcc agtcagacga 1020

cgtgtgtact gggttcagaa tcagatgatg cattttttta ataggaaaac tttattaatt 1080

tcaaacacat cgtatcaaat taatacaagt ttttaaaaaa ttcttccagc ctctgctcat 1140

caagacgcac acagcctaaa attaaagaac cacaaataat ctagtggca 1189

<210> 2405
<211> 1370
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_213849_G1, chr6:36949596..36950965, Cluster 14

<400> 2405
ctgcagtcag cactgcacac atctaggtag agagagagaa aagaggaatg agacagagat 60

cctcatgcat ctgactagac atagccttgt agcagctgtt cttacttgca aataattaca 120

tatatatgca caaaatgctg acaataataa atgaatctat acacatacga tatatagcta 180

ggcatgtaga attaagctag cagagtagac atatgcacac agcagcgcat atataagtag 240

tgtcatgaac tagtataatt actctaatcg ccacgcatat aattagcatc ttatactata 300

tagcttatgc atgtaaggac aagatagatg ctcatgatgc atggcactgc tggcatagaa 360

taaagcaaaa gggaaggtgg gtactgaaaa gaaggagaat tgttcatgag tttgggatgg 420

atctggtagc agataccata tgatatgata tgacacgtaa gccacagcca ggtagctagg 480

ggcgcgcatg tatcgatgcg tgtggatgat cttggaatga ttcgagggca tatatctatt 540

cctatatcta tatatggagg agcgagaagg acgaggatgg atgccgacga cggccggccg 600

gtgatgaact gagaatgctt gcatgctgca tgcccagcag gatagatcga tcatgcatga 660

tagatgatct cagtgtgtgt gtcgtttaca agttgcatag aagtttgaga tggaacaaac 720

acagagatag cagtagcagg atgattgtgc ttagagcgaa gcaatatatg cagagtgtgc 780

aaacggtgtt cccgagagca cgaggccggc cgtccggcag aggtgcaggt acggacgtag 840

aggaaagcga aaggaagcga ggcagcaaag cagcaagcag ggtacggctt agaggggaga 900

gagagacgca tgacgagaga gagagagacg gccgggacta gctaggagca tcatcagcta 960

ttcagctgat aggtaggtat ctagctacta ggacgaagga aggagaaggg tcattcatgg 1020

tggtcgaccg tcgtcatggg agggagggac tggactggga gttagctaga aggtcgaaag 1080

aaagagaagc tgcatggtag tgctggtgca tgcatgagat caatcggtaa tggcgcgggt 1140

acgaattgga tttggagttg gaatcgtcgg aagcgaatgg tccaaggtct cgatgggatt 1200

ctttgatcga tcttggtacg cgcatgttac tcagctcgga gggaatcaga ttctctctgc 1260

tttgcgctgc ttgcctttgg gggttgcttt gctttgcctt cgctttctcg aaggccaagg 1320

gagccctact aacccacgac gaccctctcc tcttcttccc tggccctccc 1370

<210> 2406
<211> 1398
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_221720_G1, chr6:91307666..91309063, Cluster 14

<400> 2406
aggatagatc taacccacaa gctcacaaat catgatagag agacagagag aggtgaatag 60

aggcccggtc catggtatta atgggccgta atccgtgcgt gttggggatt ggtcggcatg 120

atccggcttc actgcggtgg gctcctctac ccaaaaaaaa attccagagc taaaacttcc 180

ctcagtaact ccatctaggc aaaaacagta aggccgaagc agctaagccc aatttacgtg 240

cctaaattaa atgaggctcg ctatatacaa aggcccgcgc gcgttatggc ccatatgtga 300

atggaagcac tgcagtctcc cctcgcccct gcaccctgca gtttttcgtt gggagggaga 360

gagatgaaga cgaaagcaaa aggagactat tgttgtggaa cgaaacgagc gctggtttcg 420

tcgtgttgtg agcaggcgaa agctagcttg ccgcatcggt ctcatctcaa tgctggattt 480

ggtaacgtac ggcgtggatg gcagtgccgt tcgagactac catctcatct agtccgctac 540

tagagtagac tagtagagca ggtattatat tcccctcccc tcaaaaaatc atgatactac 600

cggccggcca ggcctaatct gtcgctcgaa atataatctc ctctcttcgt ttattattat 660

tcgatcgcat tgggggggag tctggctggg atcattggat gcctttcttt cttgacccca 720

cttttgagcg ctgttacgtt cctccccatc taatctacct atctttcttt ctttttttc 780

agcccatttt ccatcgctga aaaaatggtc atgtcatgtc gtggtttttt ttttctccca 840

ccaccaccac caccgtacgt accacatgca cgcacggcgc tgcacatccc ttccactgct 900

ctctcaggtc taggattttg attgctgaca tggacagcag cacccgtggg acccttgccc 960

actgatcagc agcagcagga acaggagcac actgctgttc tttgttgcca ctgcatgttt 1020

tgtttgtgtg tgtgtgtgtg gcatactact agtataatgt tttgtttgtg tgtgtgtgtg 1080

tggcatacta ctagtatact tggtacaacg tttagtttct ccagcggacc tcctactacg 1140

tctttgacaa agatgcgtgg acaaaaaaaa acggtctttt aattactttg gtgcctgctg 1200

gtcagtgttc aaatcctctc tgattccttg ggtcggtaat gatcgaacac tcttgccggc 1260

agtcgggtac aaggttgaca ggagtaactc tctgcgcatg ctgtctcgtg cgtacagtcg 1320

acagccgtcc atatccagat ccaggtggcc tctctctgca ggtcaggctc gttcatactg 1380

tatgacgatg ctgacggt 1398

<210> 2407
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222397_G1, chr6:95316505..95317522, Cluster 14

<400> 2407
aagcctcaca ggcacagagg tatcgcgcgc acgcgcatgc ccaagcggcc cgccagcgaa 60

cgctagctcg cggccggtgc atgcgtacag cagctggccg tggccgatcg cacttggcac 120

acctcagggt cggagctagg aggaggagat cgcggaactg tgcggcgaga tccggcgccg 180

ggcgtacgct ggttggatcc ggccggcagc cgtccgtccc agtggatcgg agtgaggtgt 240

ccccggagca ttgatggagc cttccattta ctgcggcttg attctcacta ttgatgatcc 300

cacgtggccg ggattcggag acggggacaa aggaagcgaa gggaagtccc cgcgtcacgt 360

gctcgtgctc ggtcgtcgga ttcttacttt ttttttttac ttttactttt acttttactt 420

ttacttcatt caccattcac cagttcatca tcacatcgct ccggcggcca aaactcagaa 480

cggccagttc tcgaccagac ggctcctcca accaggaccg gacgacgagt cgtgtctctc 540

tgcgtgctgc gccgctgccc ggtattagga tgtacgtacg taaagagaac cagcattttc 600

tttggcgcgg caggcaggca ggcgatacga ccagatgcga aaaacggcgc tgccacggca 660

ggcgtctccg agtgagtgcc caaattcggc tttagtagca ttcagcgagg caatccggat 720

ctctgacagt cgatctcttt cgacggacgc cagttgagga acggaccgtc agtccatgac 780

gcgcgcagga acatacgccc aactagtcaa ggcgctagct ggtggacgta cgcgcacgct 840

agacggctag ctgtcgctgc tgtgcgagct ctcgactcat cagccggcca agttttaaat 900

tcaggcatac gggctacata cagctcacct ggtccggtac gacgggcgtt ggagctctcg 960

gcagagacgg tcaggtagcc gtactcgacg gaacggaagc agaagcagaa gcacagtg 1018

<210> 2408
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_223728_G1, chr6:102463275..102464314, Cluster 14

<400> 2408
catatatcag ggaatatagc ttgttgggtc tattacattt tatttactat aggtgtagtg 60

tgatgtttcc cctttctctc gtgcccatga agaaggtgat tgtgtcacat ccttctttct 120

ttctttcact cttgttatag agagttactg cctcacaagc cttggagcac cttgtcttga 180

tgcttgatgg tttactcgtt actccatgtg cacttagcta ttcttgtctc ctcacatgcc 240

gcttttgcaa atgctattct agtaactcac aagcctatga gtcatattga caaagtattg 300

gcctttgttt tcccaatcca accattcgat aaacttgcaa ggctgtgtgt ttaatagtag 360

atctgtagta gatatatata ctacggacgg cttcagctgc cgatcgatcg agttccgtgc 420

ttgcgcttgc ggctgatgat tgcaacccgc acagtaattt tctgaagata gaggggcaca 480

cgcaggatcc tgcagtacgt ctcttctgaa gatgacgccg ttggttggaa attaagaaat 540

tccgtcctga aattgccttg agaacatgac gccgttggtt ggaaattaag gcattaatta 600

gccatgcatg tcatgccgtc gcctgcccga cttcttgcat gcttccgcgg cgcgctggtg 660

gggcggggcc agtcatggaa gacgacgacg acgacgcgcg ctccgaatcg gctcgctcgt 720

cgtccgtcgg cgtcaggcca tgcgcgcgcg gctggtcggt ccgtaattgt caactcctcg 780

gaggaaagcg atggcgtctg gaacgagcta gctactcaca tccctcacct gctgctgtcg 840

attaatcagt ggtggcggtg gtatcggatg agagaaatgt tccggccggc ggctgtgact 900

tgttgttgtc tacgccggac gtacgcgtgc tggattgcac ctttttttac aaacgacctg 960

gccttcgtcg tatgggcgta tttatataat ctgtctatat tctataattt agataattta 1020

gtagagagtg tttgaatgca 1040

<210> 2409
<211> 1350
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224169_G1, chr6:104449938..104451287, Cluster 14

<400> 2409
aactcccccct aatggcccta atgcagatag cggcatgtaa ccatctgcac aattttagtt 60

gcggaggcga tgcaatggga ccaccaaaat caagaaaaga gctagttttt atccatattt 120

ttaattaatt attagaacct tttccctttt atcttgaatc taactctacc tatttttaaa 180

atctttttt cttcaaaaaa aaaacaatta ctgtttttaa tctggtttca ttctccttga 240

tggattctat cttaaaacac acactgctaa cactaaaaaa aaaccttccc tcttctttct 300

gttttatgga gatgacaaag aagaaagaaa aaaaaagtat attttcagtc acaggctgca 360

gaatccagaa catattagaa ccattaactg taatacagta atgtaattaa ctctttcatc 420

cttagagcag cagcaagagc agagcgtggc ctactactct tccttcagtg ctatttttct 480

cccccgtttg cggtttgctt cgtcttacca acttaggact tgtaggcacg gcgaattatt 540

gttaattact ccatagcaac tgaatagtag caaccatggt ggttgtgact tggtggacat 600

gcctgtaatg gaagaatccg ttctcttcct taacgtgccg tcacgtgact ttttttttt 660

ttttgaagtt cacaacccaa agccctgtgg ccggtaaaag tatactgcta cggctaccaa 720

gcgaagacaa gcttaagcaa gagcgctcgt gagccgagca tattttcctt cttctacggg 780

gccgaccgta tcgcgagcta tacttttcag cgatcccgtg tacgtaaaag ctgtcacacg 840

cgcccacagt cacacactac tcaactcacc tgaccctgct actgctacgt gccaatttca 900

atttgcccgg cccgactgga actgggtctg agtgtgcaac gcagcaacgg catggctttg 960

ctactgcggg ctgcggcagg gggattagtt ggcgtgctgc ttgtggtgtg gtggccgccg 1020

gtgccgagga aagctggaag ctgcagcaaa acgcactcgc gtcctccgac ctcttcaaca 1080

tgccctacct gggcgccgac agttcaacga gattggctta gatccgctga aataatcggt 1140

cgagcttcca gcagaatcac cagtctccgt gggccaatta ctagtagagc gtaaacccac 1200

actggaagcg gaggcccaat ttagctaaaa cccccaaggc cttattttcc tcctctcgta 1260

cgttccacga gcccatagcc ctggatacaa gcctaggcac atgtttgaat atatactgca 1320

gagagcttgc tcagatgttt gaggtacttt 1350

<210> 2410
<211> 1127
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225066_G1, chr6:108985454..108986580, Cluster 14

<400> 2410
catatattat attacattag ctacagctat acagatcgat ctgacaacga cgtacacacg 60

cacctgcgtg cttcactatt tcgttccaca gatctggcta gctagctata tagctgggct 120

atctataaag gacgacgtca taagcagtga ccaccgcact accacgatcg acagtggctg 180

gactggaggc gacgacgacg gcgacggcag cagcgctgct gccatgctct gccgatgatc 240

catgcactca gcagcgtcct gtacgactgc acgcacgaac cggccgatgg cttgcgtgca 300

gacgtgttca gcgccttctc tctagcgcca tacatgcgcg gcggcagccg gttgctggta 360

ccgtcgtccc tagctaggct acagctctgg ctcttgaggt acatgcacac gcatatgctg 420

catgaaagag gcgggtcgtc gtcccgatgt catgatcccc ggccgtccac ccttcctgct 480

ggcggcgcga tgctgtgctt gcgttgcgtg tagagctcgg acatgggcgg ctgtcatttg 540

agggcgggcc acgtacgtac ggcacatctt ttggcgtgtc ttggcacaac acgaacgcga 600

gtgtcttagc ttggaacgaa gaaaagattt attatatatc atgccactgc cacacccgat 660

cgatatggct cgatgtgcgt catgtgtgtc taaagggcgc gaagcacgag agaggcagag 720

agagctgtgc cgtacgtgag ccccacctct acttgcgtgc gtacgtacat gcatgcacgg 780

gggcgtctac agtacttgcg tacgtgtgta ctgccgtact ggggcgtacg tgcacgacga 840

cgatatatat gtgcacggcc ggcagcatat gccgccgcag tacgtggaga cacgctagct 900

agctcgagga cagatttcag tcgatgacat gagtgtgcgt tgcatgcatg gaccacgcac 960

gggccgaccg gctggcgcgc cgccgtgcat cagcgccgtg gatggtgcgc ggtagtatac 1020

ccatgtttgt gtgtacgctt ggagcgagag tcgtagtctc gggtggtcgg gtccatgtgg 1080

gacgcatgtg cgggccttgg gtacacgtac gcgcgtacgt acgagcg 1127

<210> 2411
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226144_G1, chr6:114936540..114937601, Cluster 14

<400> 2411
aaatttagga gcaaataaag gagctgctgc aagcagcaac tatggcacgg ctggctaggc 60

ttgcacaaag cgagaagagg cagcaaggac gcgacgcgca cgaccggcgc gacagactgc 120

ccacgccgac cactggcact ccagactcca ctcctactcg ctctgtttct cacggccgcc 180

gtccgcgcga gacgaggccc cgtgggttca gttcaggcag taccagtacg tacgccacat 240

gcaggtggca actgctcgcc tagcttattt ttcaacttgt tcatgttttc aacaaaatct 300

tagcttggcc tctgacgtct ggcctagttt atttttgtgg cgggcaaaaa accggcgaga 360

tccccaactg catgcggcgg cgcaaacgaa gtcacgagag cacaagggcc tgccaacttt 420

ggccctgtgc aagtaaaacc tatggatcaa ctccggaagc gtacacacgg acggcctttt 480

gtccagaccg atttcgcacg acgacccccc ggcccccggt ggctgcctag tgcctaccac 540

gcgttcacgg gcgcggacct cgctcgctgg atttggcgag gcaaacgcga cagaaaggct 600

acagtggttt caccgcgctg gatttggcga ggagatcgcg gatgcatgag gattgaggaa 660

ccgtggtttc tccgttttgg ctggttgggt ggccaggcgg cacggcagcg agcggatggt 720

catgggggag gtggcatttc aagccgccgt cttacacgcg gctgcgcagg tggcagcggc 780

agcgcgcgca catgcttgac ggcggttggc cggggaggga gccctatgtc tgtcggataa 840

tcatcatccc attatagctt gctgcttgcc tgtctcggcc acggacttta gccatacgca 900

cgtacggtga taccatcctc ctctgctgca tgattaattt gaacattggt tagttacatg 960

tatattgcta cgatttcaat acattatatt cgtagaactt gtttaaacga catagctatt 1020

cgaacatgta catttttatt tttagggtta gtttaggaat ca 1062

<210> 2412
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226704_G1, chr6:117994949..117996010, Cluster 14

<400> 2412
ggtgctcact gctcaacaac tggctgccta gccacggttg tcttcttggg aacatggata 60

tacgaggatt ccccgccttc agagatcaga atacggaaga gcgtcgacgc ccgccaagtg 120

atgagcagac gcgaggcgga cgggccggtc gccctctgac gcgaggctgg acgcgcgcaa 180

cggcttttgc tctctccttc gtcggcgtga cacgtaggcg atcacgtatc cagcagccag 240

ctagcccgca cgaacgcagg ccaaagatct cgcacgatcc gggccggttc ggttcccaca 300

caagcaaagc agaggtcgtg gtggtgtggt ggtgcgaatg cgatcgctcg gacagtgtgg 360

gtacctacct agctgctagc ttctggacgt ttcgcccggc tgcacgcgaa atgacctctt 420

gtttactcca ccggcgtcgg agtcgcgcgc gtcgcgtgca gcccggcccg cgtcgctgca 480

agcccgtgcg attgggggct ggtttacggg gtaaacggga cagcgacagc ataatgaaaa 540

cgggtgtaca tgttggtgcc aggcgtgacc cgtcgacgtc ggcaagcgga atgttcaaga 600

cgaaacgcaa gtgccagtag ggctgaaaac gagcgctgac attgtgtagg cgtcagcgcg 660

gtgggttatc gtctccgttc tttaaattaa atactatact aggtatgtat catgtacgct 720

gcaaaggacc atcaagattg taaaagggta aaaaatggcg cagtactaaa tccaaattag 780

tgaaaaagta tgtaatcgct tcattatata agagtgagca gcatgtgcgt tgtaacgaca 840

tacaatgtat tcgataaaat attagttatg catatatcat cgaccttaaa taaaagatcc 900

caagaagttc aatagacaac tttgtctggt atgccaatta acaataggaa gaagcaagaa 960

atacaaatat gtggagcctg ctcccacgaa ttgatcaggg gaaaaaatgt tcggtaaaga 1020

ctgagaagtg tttgttcaat ggagcatgtt aaagtaactt aa 1062

<210> 2413
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2288_G1, chr1:12330970..12331974, Cluster 14

<400> 2413
agtgaggtca agagagatgt acaacgtccg aggctttagt cttgagcaaa tctagaagta 60

gtaaccccaa atgaattttg actactcgat tattggagga tgaagaagtt tcagaatatt 120

gtcatgtagg gcctcatctc tatggacact ttgcatagat aatcaaaggt cgatatgaca 180

aggatggagt tagggtgatg tgactgatcc ggaggccata aaactctaag atatgtagga 240

agaatcgcga caaagtgaaa ttcaacccca ccatggtaat ggagtaaaat aagatgtact 300

ccccacacta ccttgaggtg tccaaggtgg aatcatcatt gcatgcacat tgtttaaggc 360

tagcgatgtg gtccactcta ggagttgaca tgtcttcccc aacccctcct agtttaggat 420

ttgtgctctc agtagcgagt ccaagggaga ggtatctacc atggtgccac aaaggatcac 480

gggatgagtc aactatggtt ggttggcggt ggcttcgaaa gcgagaagag cacttgaggg 540

caagtgaagc agattgcgca gagagtgatg aaaaaggaag atggatctgc acacctaaga 600

tttagcacgc ccttgtcttc gtttttacaa tcactggaca acatacaaag cgtcacatga 660

cccttatgat ttgagagtca ttcagtatga ctactgcctt atgcaatgac tgttgattag 720

ggcggtcaaa gctaacaata ttattagcac acatgataga cttattttat cttgcatttg 780

cgagaacgat ggtcctacat gcaggcctcc ttgggtctat tgagggtctg ggagccacta 840

tcaataatat ccaggaaaag gcatattcct tcgtgctagc aaaatgccat ctagtactac 900

aacaatagaa aacagaccta tagaggactc aactcgatgg ggagagccca tgttgactag 960

acctcgaggc attgaactag gggccttatg caggagccct ttggc 1005

<210> 2414
<211> 1367
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228883_G1, chr6:129465402..129466768, Cluster 14

<400> 2414
ctttttctta tactcttgag acaatcacat gatataacta gtcaaaggac cttcggcaac 60

actggcccca ttgataatat tacttttttt tactatgaat actgttattt ttttatagac 120

atagccaact ttaaaaaaaa ttaacttgtc aaaactgata acattttacc aatcaaaaca 180

tggttgcagc agcgtccaag atgatcggcc gcaaagttaa aatcagtgag tgagctgagc 240

tcattgccaa ggcctggaat ccagggagca agcagaagaa agcaactgcc gatggccctg 300

atgatgctcg atcatcagaa cttacgtcca tctgcagact ggaaagagag agagaaaaaa 360

ctgtagcccc atgacctgac gagagccgat cgagaaattg atggcggtga aaaaaagcga 420

gtaggcagga gtgaatgcag tgagagatgc ttttggggcg tcctggtacg ttgcatttgc 480

acctggcgct gttgaacacg ctgtgtgtgt atgtgcctcc ttcatatcgc cacagactga 540

gcagacaccg gattgaatgc tccgtgcgag tgcttccgct agattgaaat tcacaacaca 600

gttgatctat tatctcctca gacagcaccg tgtccgctta ttctattgta taagttgagt 660

ttaacagctt tatggagcag tagatttttt tgatattatt atggaatagc tacaccgtgc 720

aacgtaacag acgtgtaaca gtgtctacag gtgcagtgga atagctacac cgtgcaacag 780

ctgtgtgcca aatcgcaaga acagccgtgc aatggtggtg ttaagaggag gcacgagagt 840

gaatgagtga tgatgatgat ggcgagtgct ctttttaaac ctctgtcgga agctcgagtg 900

tgcgaccaac acatgatggc ctgacctgcc aggtacacgg aagcagcagc acctggtcag 960

tggctcatgc tcagggactg gcgaggttga agagcgtagc acacccccac acagaaacgc 1020

cctatactat acataatttg tagcataaat taagaatcaa acatgctaag tatatcgctc 1080

aaaattgcta gtggtagact acgataaaca gtgttaagta cctacacagt gtcaaaccgt 1140

gtatactgtt ctttttttt ctttgacaga ttctgaatgt tatattacat agtatctttt 1200

gttggaaata atagcaactt agtgatgagc aaattgattc cggcgataat aaaagaacaa 1260

caacgtgttt aacatatgta tagcttacta gcagttcata aactagtgct atggatcgaa 1320

ggaataaaac aatacacatg cttacatcgg ggttgttggc gctagaa 1367

<210> 2415
<211> 1000
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228889_G1, chr6:129477502..129478501, Cluster 14

<400> 2415
ctaggataac atggccgaac aagttggagg accgctagta ggctctactc tgaaattaaa 60

atgaaaaggt gaatcggtgg tagctgaact aatggcggac agtaaaagaa ctgaaccagg 120

gctatatatg atcgaatgac tccaaaccac aacctacccg tcagttcggc tacatgagga 180

caatgacttc cagctggtgc aatggttgca ttattggtcc acgattgact ttttttctg 240

acgtccgaac aatttagtac cggttcccga agcctgattg atctgggttt gacttgcgcc 300

tccttcacac tgtgatcatt cttgcttgct tgtccatttc tcgcctgctc acccacaaga 360

ttcagagttg gattggacac gagtcagagg gcaagtgtgc agtgggtgtg tgtaaagcgt 420

gccatgttct aagcttatct ccaaacatta gtacttaatt cagtgctaga agcagcaata 480

tgtcttaata agagatgtcg aaagaaggat agtctaaact aaaatcgtgg cccaaacatt 540

gttggactaa tgaatagtcc agtccattta gcatgtgtta aaatactaat gtggaagtta 600

agactgagca cccgctgcgc taataacttg ctggctgtga taataatagc tactgtagga 660

agcaacatag gtggttctag tttgcaaatc taagtatcag cattcagcac gcacgcatga 720

gccaaatcct tttcccatgc agtagtataa agccacaccc agcagtcacc cacacacaca 780

cacaagcctc gtctgcctgc aatcagctgc tgaggctaaa ctttccggtt gggagatgtt 840

agaaaagccc atctcccttt cagcgggcgg aatgaattga gcctgatggt gaaacgttgc 900

ggtcattgac ccaaagcata ctaggtagta caagtagaag taggctagca gattactagc 960

gactagcatc ttgatggaac gaacgagaac gagacagcac 1000

<210> 2416
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229450_G1, chr6:131834876..131835971, Cluster 14

<400> 2416
tgacaaacgt gtattattgt ttgagtggtg actgctggtg atgaaacgag aacaaagcaa 60

ggcacatcac attcacggac ggccggatga atgggccctt cccatcccat gtgagccctg 120

tgtcgtgtcc tggctctggc tgggcacaca cgcgcgcaga tgtcaacagc acgcgtacca 180

tcagtcttta ccccatctct tcgcctttgc gtctggcgcc gtcgctgggc ccgttgggtc 240

tcgccgtctc cgtgcatgca ttgcatgccc ttcaccctcc tccgtggggc cggccggccg 300

ggggctgctg cgctagctcg atcgaccgta ccgcccggca cgcgtacggc ggctttgctg 360

cgtgcgtacg tacacgtacg tacgtctggc aagcacatgt actcgcacag cggtctcgat 420

ggacgatcgg cgaatcgggg gctacaccta gctgtcgagc gaggtcaggg tgggcggttt 480

gcttgcgatc gaggccggga cgcgcgccgt tccgggctgg ctggcctgca gctgcaggga 540

cgacagggtg acggtgccgc gcgcgcatga gcggcgcacc cggccggccg gccggtgaaa 600

cggagcaatc agagctcatg gtgtggacgt gtgtgtggtg gtgcctgtgt cacatgcaca 660

tgcacacatc gttattatat actggcatgg aggagttagt gacatataca ggtacctccc 720

ggcccgtgca aggctagctg caactagcta gctgcctagc tagtgtatcg tagtagcggc 780

gtacgagtag cgcgtaccag ctcgcatgta ctagtattga attggagaga aaactagttt 840

catactatgc tggaagagta atgagatcta ctaatgcatg gcatggtgca tgatttggtg 900

aaatatttac ctggtgtgct cgatcggtgt gtgaaggaac cgtgtgtgcc atttttttat 960

gatcggtttt cttctccttg tgcaagaagg ctacatagat tatcttgatt gctttgtttc 1020

cttttttactt gttcctcctg ccatgtattt cagattgttt ttttttttcta tgtataggac 1080

acacttttgg ggactc 1096

<210> 2417
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231899_G1, chr6:142755571..142756740, Cluster 14

<400> 2417
cctggcctga tgagcctaat cacgctggtg ttccccgtga cgtcgggtcg tcctcccagc 60

aatgcaagaa gaccgattat gccggtgttc caggatgctt gtaaataccc aaaatgttct 120

catgatgctt gtaaattcac aagattttcc taggatgttt gtaaacaaaa aatgagatgt 180

atttaaattc ccaggatgtt tgtaaacaaa aattccaagg atgcttgtaa acaaaaattc 240

tcataattca gatatcccac gattcagatg atccagatat cagaattcag aatttttttc 300

cagatgtccc agaattcata attcatctaa actgttgact gttgtccggc ttgtgtatta 360

gaattcatgt gcactaaact gctaacaggt gcacttacat tggtacatta gaattcaact 420

gccgaattca actgccttct cagcttgtgt atgtgagcac acctggagta agaaaaataa 480

tccaaggaga gcaacataca aactggcact gaagctgcat caacacagat tcattaattt 540

gcaagtgcta aatctcaaaa caaataggat tatacggtag aataaaacat caaaaaattc 600

tgctacctac ttatatttat ttattggttc aatatgaaag tagtatgcct agaatatata 660

tgcacatcag agaaagcaag tgtcacctgt tgtcgtgctg tagcaagtgt cacctcggtg 720

gtgggttggt ggcggtgatc tggtggcatt ggtggcggtg tttttcttct ctgttctttg 780

gcgtcgcaga ctcgcagtcg tctccaccac ggcgcctctg aaaccttccc cgcagactca 840

gtttatactg gagcagatga cggatcatca ggcgcgggtc gtcgatcggt tggatcgtat 900

cctctccaag gtggatgctc tgtcgaccca cgttgatcag ctgcaggtac aggttcatct 960

caacaccgat gcagtggatc atgtggttcg tgatcaacag acgctggttg ctcaagtgga 1020

tgctacgggt aaagcagtgg ctaagcttac cttggaacgc atggctcggg atttggagga 1080

ttctgcttca gtcatttcgg tgagccctct cttcaccgtg ttcctgttga tatgactcgt 1140

atgccagaaa acataggaga tgaagggcac 1170

<210> 2418
<211> 1338
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_232111_G1, chr6:143980014..143981351, Cluster 14

<400> 2418
gctagctaag attataggaa acgataataa agtttgtgtg tcaaatatgt ttaataatga 60

tagttaattt aacagagggg tctagggttt gtaggggtg gagatgggtt cagtacttga 120

gaggatgaga gggggtggga ggagattagc aggatacgac gtggagcggt tgctgaggat 180

ggggaagacg aagatagagg tcaggtgttc atagagagtg actcgagaac ctgacctcat 240

aaacatagag aaaaccaagc aattgcgtcg gagtgtatac tcttataaga tagggttcag 300

aggagagcta actcgactca agccggacat gcgttctcca tcacacaccc ttgtgcagcc 360

actggatcga attgtatgct gtgccaaaag aaaggacaag ttcaaggtcg attgcgagta 420

gcaatcatgc attccatgca tcagcatggg cgaagcttct atactctgac caactacgag 480

attcgatttt ttttccttct tttttgtgtg cagttggtgg tgtagtgctg gagtagttgg 540

tctctgcacc tttttttaa ttatttgagg caacaaacta tataagatac ctggcctcta 600

gcctagctgt tcaaagataa gttggacgac gcgaatagtt gcacatgcaa atgaccacag 660

aagtaggaat aacagggaca cgcatgtcga cctcaatcag aaaccagcaa tgacgttttt 720

tttatttttt gaccatttaa cattttata ccttcacgat tcgtgtttag gccactttta 780

attgggcact ggaacccaga ttatctgcag aagttggtag ccaaacatta gggagccgga 840

cagaagcagc ctgggaactt ctgcacatgc cagcccgttc caaccgcagg cgtacgtcaa 900

acctgaaaac cccatatata ttagatatat atagcgcgct agacgacgct ccaccagttc 960

cagagcattt ggttggtgtg caaggtaagg tactcctcta tcatccgctt gggcgtgcat 1020

gtgcgcaggc catctgtttg cattagcgca acagaaaggg gggggggggg gggggggggg 1080

ggggtaaaat aacagtatta cgcaccaaaa ggacgaaaga aaagatcaaa ggtcgtccca 1140

gaacagatca gagcctcaag taaagcgagg gcctgtttcg gatgcatggc cagcccaggt 1200

tgcttgggat ggctaatcag gctgtgatca ttcttttggc tgcaaaagta acggaacgca 1260

acgcagtctg tgctgtgttc attgtcttcc aaccggccag cgtgctgctc cactctgctt 1320

tcatgtttgc ctccatta 1338

<210> 2419
<211> 1266
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232698_G1, chr6:147021907..147023172, Cluster 14

<400> 2419
gcattgctat gcagattgta aacccttgct attattgctc atgatgtgat ttatctattt 60

agaacaaaaa aaaatatgtg aaccgaatag taggaagaga gcgatttgca aatggcaggt 120

gaggttgtca gcgcgcaggg ggcagagttt tctgttttca atcacaaagc ggcataaagg 180

cttgaacaac tttgggagga tccgcaacct ggtctggttc gtcatgccat ttgcaaagca 240

ttagcttgat tgcgtcatta ccgaaccagg cccatctagt gtcactacgt taggtgctcc 300

aataatcgtc cggacggggg gagatctcgc ccgttttaga tgcacatggt tcgctaacaa 360

aaaaaaaccg gggggatggc tccacaagtg gctgctgccc cgctaagcta acgctactgg 420

tagattgtgg ccgcagcttc cctgtccgcg cgctgatgct acctactaca acgctagtag 480

atgagcaaaa atgtaaacgc atgatgcttt taaatagtcc gtgtaggctc ggggtgggaa 540

tgattggccg cgactgccaa ggcaagccgc tagtatgtag tatggtttag gctagcagag 600

cggatctgag gggcgtcagc gtcaggcgca ccagatgctt gtgggggtcc gggtccgtcc 660

actgccgcgc cgagatgccg ggtcgtagct ctcgtcgcca cccccacctg acgcgatgac 720

gggggccgga cgggtaatat agcttttggc ggcacattcc cctggcctgg atggatcagc 780

gagctgagct gagctgagct gggcacggcg cagcagactg agcagctcag ctgcctgcgc 840

gttgctagat cctagctttt gtcctggctg ctgcgctgcg cctgcctttc cctgattccc 900

cctccaccag aactgggcag cagcagcaag caaaaccggg ctgggctttt ccgcagagca 960

cacatgagcg cgagcagagg cagaggcaga gcagcagccg tgcgcgagga aagctgcgaa 1020

agttggattg ggtggataga aataaccaaa gtaccaagtg gccttttttt gctgctgctg 1080

ttgttgttta cccccgcggc aataatgcag cgctcattca ttccttcggt gctctaccac 1140

tctattctat tctattccat tctattctat tctattctat cgtggatgga tggatctccc 1200

agggtgccac cgtgcagcag cagcacagcg taggtggcgg tgccgcctct ttttaccgtt 1260

tgcctt 1266

<210> 2420
<211> 1305
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233219_G1, chr6:149126789..149128093, Cluster 14

<400> 2420
atattggact tgtgacaact cgatcaatga aatttgacca ttacgatgtt tttctctaag 60

caacgaacaa gttgatacat gttgaaattg tgtcacttga gtttttgtgg ggtcaatgcc 120

cccaaaaaaa gcctgcccgg cttcagtgcc gtattgggcc ttgtttttag ccgtttggcc 180

cagcgcggcc cggtacagaa atatttcgta ttggcccggc tcgcactgat tcggatgaag 240

cccaatggcc ggtacagccc tggcccaact ttgagcacta gaccgagatc cagcagctga 300

ggaattcccg ttttgtaaaa agattttgat tggccaatgc agcagcagtg gttgctgact 360

ccaagcgtct gcggtctctg aagcagtgaa ctagtgaagc gggcaggctc gcgtgcaggc 420

aacgtgccgc tgctccctca catcacagtc accggattgg catcttctcc gtggccaacg 480

ctgacgcacg tggacgccac cacaagtccc ctacagcagt acaccctcgc tctcgccgat 540

cgtcggatcc aggtcgcggg acgccgggag caggaagcag gcagcttcgt cgccaaatta 600

tttcctgttg cggggttcag gtcaggttcg cgcgcgcggg cgcgtcctgg ggcacaccac 660

cgagattctg ccaaagtgcc aaccctgtga ctgtgatggc tcactttgcc gtcttcacca 720

gacgtcctgg cccaaatggc tcgctcattc tgcccggtct aatcggcttc caaatctagg 780

tgagctgttc agtcgattga tgagggactt tcagatgaac ataatttggg tttaagtccc 840

tccaatgata aaccggtaac acgtccagtg ctcagtgctg aaagcctaga agcatattaa 900

cttaaaacat atacaaaata agacacggta ttagccaaga ggtaaaagaa aaaaatggat 960

aaaagcgctt agttactgta ctctggttca gactaccagt agcggcacca aatactagag 1020

gggatcggta gaaaactgcc taattttatt aaaaaatgtt aacttttttg aaattttaat 1080

taaaatatag aattcttaag aaacttatat gaacgtcaaa acaaaagtgc cggtgcacat 1140

acaaatttat gaaggtcaag gataaaaacg gaaatcgcga aatttaggcc gaaaaccgtg 1200

cactgcacca cccggagcgt tagacaccac cttttaaaac gctgttaaac tgctaacgac 1260

cttctaattt tggttctaaa ataatttta catttcaacc tccta 1305

<210> 2421
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233357_G1, chr6:149597885..149599131, Cluster 14

<400> 2421
gtgtagggat agatagatca tagatagcgt attttactct ttatctttat ttattatgac 60

gtgtgtgaca ggcgtgagca aacaagacaa gcaataacag caggaatatg tgctgccgta 120

ggagctgcgc gcgaggggtc tgaacgtact ccctcgacaa ggacggcgac ggatcgacga 180

gagaagggaa tgtcaaaaag gcggcggcgg ggggatcaga ctcaggcgcc gccgagagcg 240

agaggtagca tgcatgcaca ccccgagtgc gggtgcggcc gcgggccggg gaatatatct 300

gcacgcgtca ttgccacctg catgcgtttg tcggccgcgc gccattttcc tcagcccgtc 360

agttgagttc agttcagttc catctcgcaa tcgcagaatt gtgctgccag cctgtgcgcc 420

gcgactgcga ggtcacaggc cgacctgcat gcagcatttt ccacgtgtac tcgcgtcgtc 480

tcgatcttat atgtaatcac tgcttttatc agtacataat atgttagata aactcctata 540

tatataatca atcagatcga taaacatgag cttaagctac accgaaatta acgcatcaag 600

gacattaaga cagtgagtga aagcaacaag tcaccgagtc agacgcaacg actacacacc 660

accgtgtgtg caactcgttt tgcgctcaca ctaccagcag cataatggac ggacggacct 720

caaagtccgt cagattccac cgagtctgtt tctaccactt tgcccccgat gcaaaggaaa 780

gcatctacta catatcatca accaacccta cactacatgg agtaccatgc atgcatgcat 840

atgctgtccg gccggcggcc acgcgacgcg agcgagcgag cggcacgcac gtctcgctgt 900

ctcttccctt ccgtctcttc cgtgtgcctc tcgctatcgg tcatgagtcg gctagcttct 960

ccttccttcg tcgctcgtcc cttgcattgc ttggcctcat gcatggcctg tccatatgcg 1020

ctcgagttcc gtgccaatgc tagcgtcccc atccatcgga cgcaaacgta cgtgattacg 1080

gcagtggact ttactccaca aattaataac tcccgttcac ggaccacggg cgtgggaaca 1140

acagaacaaa cgagagcaca ccaacattat atataccgag cggaaaaaga agctcagtgc 1200

tagctacctg atatggtcac ggcccctacg tcatcacaac atcgacg 1247

<210> 2422
<211> 1076
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233536_G1, chr6:150302156..150303231, Cluster 14

<400> 2422
cgacagagga ggtcaaccca actcgcagcg ccgcctccgg tacagtacag ggctagagct 60

agcgacaggt cgaccgtgta tcacgttcaa cgccaggcca gctcatcgtt caaaccacat 120

cagctacgat gtcaggtctc agatggacca cagacggacg gcatcgacac gttcgttcgt 180

cgatgcacga tgcggaacgc aagaaacaaa agagccgtca ggtcaggtcg gtcaacacgt 240

cagagccgca tgttttcctg cttttgcatc gcattctccg acgtggcaag attggacaac 300

gaagtggcac gagcaaggta gtagctgtca tggaatgaat gatccgcagt accaaataaa 360

gtctctcgct ccagtcagca tgaacgacga agaaaacgcg tcaggaatgg tgaaaattaa 420

aggagtgtgg tgtggctggc atgtggcggc cgcgcgcaag gatcttacgt acggtaacct 480

ggaaagtaca tatacaccct cacagtcggg aacccagcgt ttgcttagca ctgcaattag 540

tagagcctgc gtttttgttt gtctattgat taacggaagg caaggtgaat ggttcacgta 600

cgtataataa taaaccgctc gagtgattcc aaccaattcc gttctactcc cactttgcca 660

tgcagtcaac gaacaagagc aaagcaacag atctgcccgc ccgactatac ttactgcccc 720

cgccggtgga cttggtcact tggccgacga cgtacgtgct tcaggtcagc aagtggtagt 780

cactttcaga acatgctgca gctttgcttg ccagaatgat taaaagcgca agctttccag 840

ctgcacatga atccaatgaa aacaaccaac caaccattca ttgcaagggc caaggatcct 900

tttgctggcg tgatcgccga gtcggaggca ttatcgacag gtttgccaac atcagcgcag 960

caggcttcaa gctccagtcc cttcgcagta gtcagaatcc acaagaccag cagaacacca 1020

ctaagctaga aacaagagcc aattctagaa gcaaacaaac agttcttcgt acgtgc 1076

<210> 2423
<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234042_G1, chr6:153193653..153194743, Cluster 14

<400> 2423
ctcgtactat ggtttgatgg tatctataaa tctatcttat aataaggtct tgtcttatat 60

gtattataat aagcgtaata tagctacgca cccacctgca tggctgcatc tatgtccaat 120

gcaagcaaca gcgcagaatg aataaactaa caaaaaagca ataatctagc taccaacaat 180

atccattcag ctaagggatc aagctaacgg atgcaatatt accatagggc ttcaaatcac 240

agttcctaat actgcctgat atgtagcaaa ctatttcaac tgatctcaac tcatttactg 300

acgaataagc atcatatgca tgcatatgac gatataaagg atcagcagac tgctgtcagc 360

ctcgaattcg tgaagacccc ccagtcatct agcatgcacg tactacagtg gttggggtat 420

accttcgtct accatatgca tgtcatgcta gctccaatac acagtacctc gatctgtact 480

gtttgaacca caagctgccc gcaggttctg gaaaagaaga cggctcgaag ctttgcgcag 540

ttcccaaccc attcactatt gcaacgctca aacccaaacc ccgcaagaga cggtgcgcag 600

cagtttggaa cccaacccat tcaccgtcgc cgcgccggta cgttgcacaa gcgctcaagg 660

gggaaaagaa gatggagggc aagagagaga tgaagccggc gcggcgcaca acatcgaact 720

tggattggag cataggatca gtccactccc ggccgggttg ctgcgcgtcg atggaggccg 780

aatgcaaagc gattcgtggc acttctccca ctacgccaca atcgcctgcg gccggtcggc 840

cgcggacgcc gcgacaggac gacctcgcgt cgcggcaaga ggtaaaatgc aggctccccg 900

gcggcggcct ctcacctttc ttggtctgca ctgcagtagg cttcagagaa gcggatgcat 960

gttcggcgga gaacgatgaa gatggttgga ttgggttcca accagaccat gtacattgta 1020

cagtacaggg ccgctgaccg tagtagtctc ccctctcccg ccgcccgtcg cacaagagga 1080

atgaagaaac c 1091

<210> 2424
<211> 1095
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234047_G1, chr6:153202319..153203413, Cluster 14

<400> 2424
tggcagccaa caaaccatgg ttttaaacag ggggggatga gaatttgttg gcggcagatc 60

tggacacagt gtgctgttct ctccctcctt tctcatagga tgaaagtgac gactgcgttg 120

gattattagt ggaacactgc caactcgatc ggtggcgtcc tttcttcctg cgtaaagtag 180

tcaaacagtt gaaatattag gtgagacgtc catatctgca tgcattttaa ttcagtccgt 240

gacattctcg atccgtgcac ttccatgagc ttcagttccc caggcgcaca cgtacggacg 300

tgtctcgcta ctgaaacctc ttgcttcgtc acctttttggg gctagttaga cgagggacgg 360

acaagagcgt agatgttgct cattcatcac tacgtactcc aattaagagc agatcgatcg 420

attgatcaca tgaaagctca cgatatcgcg cgcaagatcc catcagcagc atatgggtgc 480

gtatgcatgt acatgcatgc atctcgatcc taggccaata tataagtgcc cttttacttt 540

gcggcgcgcc aacaaattaa gcgcttctgt gttcgacgaa acgtgaacca tgcgtcgtcg 600

tgcgtggtcc taaggaacag tactcagtgc ttttgcttgg cggagccgtc aaatacctac 660

gacgattccc cctagctagc tagctaggtt aacctcacct taatttttt ccatcctgag 720

gcgacgaggc ggcggcgcga ccagcgagga cgtacgacga cgacgagtcg tcgacggcga 780

tggaaatgga aaaggctaat atgctggctg gctagtgcag tccggattgc gatttccgcg 840

tacgtcatat atagatcctc cgagatcagt agctagcttt aataatctgc tttcgctgag 900

cactagcagc agcttgattt gtgcttattt tacttggcaa aatcgatgcg gcttcttaac 960

ccatctggac aagtgagggg cggcgaaaaa ccgggcaacg caacgccgat gggcaggttt 1020

gctttctctc ccccaccccc tgattgcgac cgcgcgcgcg tggcaggagt gcccgttttt 1080

gttcaggtgc cgttc 1095

<210> 2425
<211> 1080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234536_G1, chr6:155062715..155063794, Cluster 14

<400> 2425
tcctaagctt tgaggtcatt tttgtgtttt gcaccggggg ctagaaaacc caggcccaca 60

tttgaggagt tctcatacat tttactccat attatttctg taaacctgat ctttcttttt 120

cccgtcaggg gtaagtaata ccaccatgcc gtcgacgaga tcggatcggg aggccaggtc 180

ggcgaccggt cgtgttgccc tgccggatcc tgcgtctaga tgggaattag aaatacccac 240

ggtgtgacgg tggtgccgtg tagtggagac gattttggtg ctagtgtccg ttttttttt 300

aactacaggg ttttctgatc agataacgaa cgccgtcgac cgtgacagta ccagagctcg 360

agagagtgag agacacgaca gagcagcgtg cagtcctttt ggtcaatggg gggccgtccc 420

gctcagaaaa cgatacggcc gtctgctgcg aaattcgttg atgggctgat ggcgatccta 480

ggctttcttt cactctcgcg accagccggc ttctattacg accaaaactg tactactata 540

ccagtgacta gtccaatccg atcacaggaa caggaggtcc ggagcatcca tctgaaaacc 600

ccaagcgaag ccgaagcgta gaaactagaa gacacaaggc ctcccccggt tttgccctgc 660

cgacctgcgg ttgcgggctt gcccagtttg cgcggaatgc cggagtgacg tcagctcttc 720

ttccgccgcg cagaccggtt ctgcaactga aacgcccgca aggagtacag ggccgcacgg 780

tgcacgcccc gtgaagaagc tacccgtagg ctacgtcagc cattgccgca gccgttttac 840

ccggcggccg gcgcgcgcct tgctcttgct cttgctccgg tgaaaaaatt tcctcggtta 900

ggttgggtat tgacggcttc cacgtcacgt ggcgccaccg cgtttcgccc gtctgccttc 960

ctttttcccc cacaagaaaa acacgtactg ccgtggatgg acaagcagct cggcgacgga 1020

ataaagaaaa aaaggatttg acaaattcga ctgctcctcc aagtgcgatg caccgcgagt 1080

<210> 2426
<211> 1198
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235941_G1, chr6:162152630..162153827, Cluster 14

<400> 2426
ccacctgcac ggcgccacta cggcaggcca ggccaccaga cccctccgct ccgttccgtt 60

catgtgtcga tcgtcgagca gtccagctta aatgaacacg atgccgagat caagcttagg 120

accgacacag caggcaacga ccagagaaac aacgcgtaaa ggaaaacgtg catccacaca 180

gagagagagt ggtgacgcat cacgcacttt gttggatcgc cgaacccagt actagctagt 240

acgtatacgt ggaatatatc tgcaactttc caaagcggtg ttgaacaacc gacgtcggcg 300

tgatctcctc tgcgtgtcaa tttggtgcgg cggcaaggcg ctacgactac gacgacgacg 360

acaccaggcg ctcgatcgct gatggcgtga agtcagccgc ctgctgcgtc ggtcgttgtt 420

tatccccgta cggcaggcgg tccagcccga acggcgcaac atgtgttgtg ggtgaacgaa 480

agagagaaca ccacatgtgg gcagcgcgag gcgcggccat gtggccggag agcgagggtg 540

aacgagctac acgacccagc tggcagtttg gcacggcgct ggcgtcacgg atatcatatc 600

gatcgggcgg tcgatccagg agatactacg gcacggcaca cggcaggcca aaccccaaac 660

aaaaatgaaa aacacacaag tgcgagttcg gtgggctgca cgctagctgc caccacatgc 720

cggctcgatc tcggccgcag ccgcagcccg caggcgtatc atccttcctt gtatcgacgc 780

caattagcga tgatgatggg gctgcgctga gctggtcaat ctcgccgcac cgcgcaggat 840

ccaaagcctc cgtccgtcgg agcaggggca cgcaacggtt agctgcggct gcggctttgt 900

ttactagcag agctcatcat tagctctcgg tttgcgtccg tcctaatgat tgtttgtttg 960

ttctgcgttt tggacgacga cgtagtctgc ttttaatatt ggctctgcat atacatttgc 1020

atccgtcagg gtcaactgct gctgctgctg ctctccggcc catgtttatg ttcttcacga 1080

acacgtaata ttaataaccg agagttaact atcttgagcg gcagcagcag cgagctgtac 1140

gtacctgact gacggcagca tccgtcgcgg aattattatt attattatta ttattaat 1198

<210> 2427
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236220_G1, chr6:163666644..163667739, Cluster 14

<400> 2427
ctggggagga gaacgaaaag agcatggcga tggcggctcg acgagcgttc acgtgctgtg 60

ttttgcaagc tagacgacgc cacgtacgag tacgacgggc ggggtggtgt atggtaagca 120

tgcatgtgcc gagaccgaga tgcgtgatgg cgtggtctga ggaaaccgtg tgtggcgtcg 180

atcgtctcag atggagagag ttttgcatgg cttattacac agacctagct agccacctag 240

gtaacgtagt agctagagat cgaaaacgta cggaaggccg agacaacgaa ggagctagta 300

cgtacggtac gatgcctgca gagaaagctc caaacttggg tagcaagaag aagtatgggt 360

ttttcaatga attcaggtaa taataacgat aacgacgact gtgcatggcg aggtttgacg 420

tctgagctga acggccgggc agtgcgtgcg tcgcttcgcc cggggtcggg gggggccgg 480

cctggccgcg aggcgcgagc gcgcggccgt ggtcatccgg cccggacgcg ttgtcccggc 540

ctggtgcatg cacgccgtac gtacatcaca gcggcgaccc tcgcccagct ggctagggtc 600

gtcggccggc ccgggccacg cgcggctcca cgtcgacgct gtgcgcgcgt cagccagagg 660

ctcaggcgag ccgtcacatc gaacggatag atacgcgctg cggcagtgca caccacacct 720

ccgtacgtcc tcctcctgat agctcgctcc gtgtggtcca aatcggacgt ctgggattcg 780

tagtctgctt tgcttgtcta gttgtcgatc tgggtcctaa ccaaaagctg tttcgctgtg 840

cacgcgtttg ccgtgagata gatcctccat cggcacgtac agcgtcagct agctagctgc 900

gcgacaggga gggagctgag aattaagtgg tgtgcgtcgt taagactctc ttcaatgcaa 960

cggttgttat ttgaagatcc tccacaggag gcgacgacga acgtgagacg atgtcatggc 1020

accggtccgg cactgtgatt tgtttcatgt ggttgacgat gacacgtcat cgcctcttat 1080

ttatacttac agacga 1096

<210> 2428
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236455_G1, chr6:164795991..164797027, Cluster 14

<400> 2428
ctactattac tagctagcca gttagcgtat caagtaaata ttgttcatcc atctctctgc 60

aagtgagaac gaaacccgtc aagcatgcag aaaggcttct aaaaagaatg gagcaaaaaa 120

aaagacacgc tagtatatat gcttttcggt gccaaaaaag ttgagcaagc agtactagta 180

cttcgctgtc cttttggcct tgggctttgg caggctactc attccgatgg agtctaacct 240

acccgtgctg catgcgtaga gctgcagatc gcattatact acgagtgtaa atgcagctcg 300

tagatccggt agtggcagtt ccggcctgcc agtttgattt gtacgtactg ctaccactgc 360

acagtggtcg gccgaccgac ggggcgcggc gggcggcacg tcggccggcg tggatcgatc 420

gatgtgagcg gccggcgcgc gagagggacg gcgcggcggt ggactggtgg ttcccaaaag 480

caggagccgt gtctcgccgt tcaatcttca aaggcgagag agctggacga gtcgctctct 540

tctctctttt ggaaccttcc catggccgaa attagcggcc aaaaagcatg tacgattctg 600

tgtaccatca gcggctccag ctatcgagtg atacttggtc cggtcagaat cctcgtgctc 660

cagcagtctc catgcgtctt tttccccccg tcttatcgcc tgctcaaaac tcagttgcta 720

ataattcctt ttccagcgct atcgagtttt tgatttgctc gttggtttta atctcgtctt 780

actacgagtg cgtacaccct gatgtgaaat cagagcagca tgtccgaaga gggcatcctt 840

gcgagttgga gtagaaacac acagatgcat gggaactcac ggcggagttg atgggatgaa 900

atggttttct tctggatcat caccagacag gcagacagga cgacgggtgc ctctggttgc 960

cgtacacggt gcggattagg ggaggacacg gtctttgcgc ctcgccgttt gatcgacgtg 1020

attgtttgcc tgtgtac 1037

<210> 2429
<211> 1084
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236586_G1, chr6:165525840..165526923, Cluster 14

<400> 2429
ggtccaccga tgggtccatg gcccctagct acttgtcgtg tcgacttgca gaagtaaaga 60

tcatgttctc agtgctgtgg ttatttttt aaaaaaaatc actagataca tctctcaaat 120

gatcgacaaa ttgtgatagg caaaaaaaaa attgcgtgtc gaaattttag acgccactta 180

gtttacacca aaatccatca atattttata tcctagcacg tacgtgtctc gggttaaaga 240

agaatcttca ggatatgtgg acaaattctt cagcaggcca gacgtactcc agttagatac 300

agtcatgcca tggcgttttg tttggcgttc cacgtacagg ttgccgctct ccgtctccgg 360

ccgaagcacg cagctgcctc tgcctgtagg tagcgcctgt gtcgcgcgcg caggacacgg 420

agatcccaga cgctgggcaa tctcgtgcgg ccgcgagccc gcgacgggca gggccgacac 480

tgccaggcac aggcatccgc cacgaccacg accacgacta gcagacaact agcgctcacg 540

gtgtcgaccg gtccaccgct tccgtagggc gccacgccac gcatctatcg tgctgacagc 600

accagagcaa tgcgaaggga caggccgatc cagcagcctg aagccatctg cagctctcaa 660

cgacccttcc gctcactcgg ttgccttgcc gcaatcagga acgcatttac tggcgtgctc 720

tccggcaaaa cttcttccct ggacctgctg aatgccagga accaaacagg ccacaatgaa 780

gaaaaaaaaa agatggtcag ctcataacaa aaacttgctg gacgacctgt actggatata 840

gaggtttatc catagttcta gtaatgcgtc ctctcggatt cagtttcttc agggtggaaa 900

aaactgagaa atgctacaag aggggaccaa tttatcccgg cccctgtgat tattatgtgt 960

gctcgagcag gcctggttct ttcaagtgtc aagcccaccg ctcatccctt aattagaaca 1020

tcatgaaatg tctaggaggg caacagagaa atggaattgc cacccctaat ggtttgtttt 1080

ggga 1084

<210> 2430
<211> 1061
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238186_G1, chr7:5324345..5325405, Cluster 14

<400> 2430
ccgcgcgtgc acatgcacgc atgtcgttgg aaagtggaga gaactccctt cgatcgatca 60

ggtgctagtt gcttcttgag gcccagatgt aggaggcccg gcctgtcggc cgtacgtaac 120

gtgacatgat gcgctgatgt gcatcatgca atgttatatt tatcatataa tactccagca 180

tgtcgatcgg cgaccatgca cactttgctt caggacttgt gtcgtccctc agctcgactc 240

gctccgacaa cgacgacgac actctctccc ccgtcccttg tcgctcgtcc aacaacagca 300

gtcctagtag caagaaagcc aaacgtgtta atcataaatt gttggtcaaa aggctaccta 360

ccgtgtgtcc gtgtcctaac aagaccaaaa atacgtgtgt caatgttaac tagtagaaga 420

agcagtagcc ctttccactt ttaactggtt cactgcacac tgaagaaaca tgtatatact 480

ctcagatttt tgaacgaaca gtacagctga ccgggcacta gctagtgtta ttagccgcac 540

gcgcagacga cgtcagtgca atgaatagca ctgtacctca tgcatggaac atgtagccaa 600

cagtgtaggg tatgcactgt acagcgcatg ttgcttcttg ctgttgactt gctgtgtgga 660

ggctggagaa tatggagatg gatcggagaa gctagctagc cctctagcta tactatacta 720

ctacactccg cagatgttga cagatggact gtacagctac gcatgcatgc ctgcatgcgc 780

gcgcgcgaat ccacatgcac atgcatgcac cacgagtcca cgaccacgac gacggacgac 840

gagagtcgac gacgcgcggc agccggccgg tcggcagcag gcacagttca aagagcaaca 900

cagctgtggc gtgaacaagc caaggggaag cgaccaagcg tgctggagcc aaggggaagc 960

gcctatagtg tacgtagtac gtatatctag ctagctgcag catgctggcg tgcatgcatg 1020

cacggtctgg ttgacactgc ccgaacactg cccgaacaat g 1061

<210> 2431
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_241171_G1, chr7:21516121..21517121, Cluster 14

<400> 2431
tgcaaccacc agctagcggc ggcatgcagt ttaaccagtg caccgggcgt gtccagcaag 60

gtctaccatc atcactatgg tcggtgctgt tgtggagcag cctgacgggt gcagtgcccc 120

ggtggaacgt tgtatgtatg taggaacgag ccagggcatc gacgtcttct agctagggtg 180

tgtcgagctt agcttggtgt tggtcttcag agggtcaccc aaaatctggt cgtgcagatt 240

gcaatttgct gttgctcata cagacacata tacaaacact gcacgacgaa ggaaggcctc 300

tagggagatc taactcactc ttacaaaagc agatgcaccc ttaaagtgag aaacaagatc 360

cttaacattc cctgccacct gcagcggagg aagcgagtgt tgctcaagta ttctacgatt 420

tcgctctttc aagatgccct cacccctttcc caccattccc ctaggctagg ctagctagcg 480

atattagaga gggctacgtg ctgaggcaga gaaaaatatt caactctggt tccaaacctc 540

ttgggcaaat aagtacttac tccatggccc ctccttcctc catagcattt tactcaaatt 600

agcatgttat gagcgtgttt cgtaggactt ctccacaaca tattgtagcg gcaatacata 660

tagaagcggt ttttttcttt cttttatcag aataaagtgg aagccaagca cacaataagt 720

acttgtttgg aatttggata gatatggatt aaagagaaga tcaaatctct ttttattcaa 780

tttctattta attttaaata gaaaaaattt aatccctctc aataccctct aatctccata 840

catctacctc taatccccat gcaaccgaac aggcgaagta acccaaccaa acggggccta 900

tatctgtgtt gtattctcgg acgcatggct gcttcaactg caagcatgca agctcatcca 960

caactcacag atgctgcagt tccatttagc aattatatag g 1001

<210> 2432
<211> 1308
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253556_G1, chr7:105058062..105059369, Cluster 14

<400> 2432
tcccaagccc ccaccccaca aaaaagaaac taaaaaaaac tttgcagttg caggccttta 60

atttggacga tcgatgcggc tagatcttta ataatcctgc gaagcgcagg ccggagagca 120

aagaggtgga agcactgggc ctgggcgtat ggtaattagt actatacggg cagattctca 180

tcatagttta atcaaaccaa ggcggccgtg cgtggatcgt tttttagggt gggcggagcg 240

ctattattac accttctcgc gcttgctcca tgtccatgtt gctggtgtgc tgcatcatgg 300

accctggcgc gcatgagcta cccagtccta ctcatgagtc aaagaaaaaa aagggctcca 360

atttcgcaac ccctttgta gctttatcgt agaccaccca atccgactgc tgctttaatt 420

ttaatcattg gcaattctat agataattta gcttccgaat aaaaagaaaa taaacataga 480

gaacaaattg gaggtattat tatagacatg aatcgatcga gctcgagcga gcaatgcgtg 540

ccgcatgccc tctgcagcgc gccagaaagt ggctgctacg tctacgtgta ctctcatcct 600

ctctctgcca gtcggcctgc ctgtacgcaa agtcgtttct tacacgcttc aacttaagaa 660

aaggagaaag ggagatgcat cctacatttt atcccgggtt cggataaaaa aatgaaataa 720

aggctatctc gctatactat acgcctacgc atgcaaatgc gatgcaaacg caagatcgaa 780

aaaaaaagtg tggtgtgaca cagcacgcgg tcggtcagtc agtcagtcag atcacagtca 840

ccgctcgctc ctctcgtatg cccgcagccc atgccgcggg gcccggctgc cgagagcctg 900

agactgactg cagggcccgt cggtaggtca cgtcacggag gtcactccct tccttccttg 960

gtcatgcttt gtgcatgtgc tacagccatc aatgccatgc aatacgacgg agatggatgg 1020

cgcgtgtaga gccggccggc caccagatta tacggatatt atttttgttt tcttattttg 1080

gtactcggcc tcggactctc agccggttag tctatctccg acggtttttt agatatcgta 1140

tatcccgttc tatattttaa actaaaatct actatgtaaa taatatcata ataattctgt 1200

gtccctattt tatgctacat actggagaca atcttacgaa gttatattca ctcgtacctt 1260

ttctgtagaa catagacaag gaaagaccat acttcacact gcttgtta 1308

<210> 2433
<211> 1316
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254418_G1, chr7:109538624..109539939, Cluster 14

<400> 2433
ttcgacgtta gttcaaggaa atttatttaa tcccaattgt taacagcgcg ctttaagttt 60

ttttttact gattcagttt gctcagtgga caatcagtaa aacccttgaa ataatgaaag 120

aaggggggga cggtgtgatg agctgcgttg caatggaagc ccggttggac tagagagcca 180

ccaaagctgc actcattctt gaggatttgt ctagcagagg catcgtagtc attgcagacc 240

ctaaaacttt cctgcgcatc cagagattct ccacaggatg atggatatca cggttgacta 300

aacatttcta ggtgctgcag tgcagcctcg atctaaggtc caagtctccc ccgtaggtct 360

tcaactcggc gcgcgcggtc gatcaagtgc agcaacattc ttggttgttg gtattctctg 420

tcaggagaag aggagaaaag gtgtgtgctt ggtggtgttg ttggtaggca gccacatttt 480

ttgttggagt cctctgtcga cgagcaagcg taaaggtgtg tgcctatata agcccgataa 540

tgacccagtt tactcttggt ttttaagact ttaaagatgt tccaatccaa atgctacctc 600

tctgatgtat atctatactt gtaaacatac agcgtacgtg aaccgaatag cagccatggc 660

tggcataata tataatgcgc aatcgtactc attaattcag tgctaaccgt tgataaatgc 720

attttaccga tgccgccgtg tgcacggcag acattatttt gcaattcaga tgtatactag 780

tagccactat atggttgact gctactattc catcctgtaa agaaagtaca gagagagata 840

aattaaacaa aacaaataaa agaggcttcc ctgtacgcat tgcctcctgc attgcagaag 900

ggacaagtat gcggtactac atacacggac aaagggatgg acaaagttcc aaaaccggag 960

cactaaagga cagcgcatcg caaaaaatgt tctaatcgta aggcttaggc agcagcatgc 1020

aggattgcag gctagcttag tttactttat tagagtatca tcattattca ttatattagc 1080

gtctccatat atatggactg gtcaatcggt cccttgagca gcaggtccca tcacccaggg 1140

gggggggggg gggggggggg ctttattctg tatcgatctc ctgcttcgct ttttcaccac 1200

ggacggagga tgatcctgaa gcaaaaaaag gcttcccttc tgaattcaga ttagcagcat 1260

atatagagta gtattgcagt cgtggcgaga aaaggtactt aggctatctt caacag 1316

<210> 2434
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255824_G1, chr7:117528038..117529053, Cluster 14

<400> 2434
ctatgagctc tagtgcctaa atatctgcgt gctcttggca aataatcccg gagcagacag 60

acagcagtac agtactcgct caaggctgaa gcagtgaagc ccaacaaccg cattcaaatt 120

tgcgcacgct cgcctcggac gtcgtctggc cgttctctcc cgccaccacc accaccgtac 180

catctaccat acgtgccccg cacccgcaac cgaaaagcgg gaccccgtgg aggcgtccac 240

gttcgtcggg ggcccccccag cgcgcggtcg ccaaccgcca cgttgccccg cggcgcggcg 300

tcccccagcc ccatcaccag cacagcagcg cgggcaccgc cgtggtccgt aggagggacg 360

gccgacggcg gcccccacac cgcgcggtcc cgccgtttgc cgggcgcttc cgtgtcccgc 420

ctccgcgacc gcgagcggcc gagcgcacat ggggcgtggc gtggcgtggc gtctggggcg 480

cacccaccga cgcagacgca gacgcagccg ggagccggcc tcggggcacg ttctcgaacg 540

gttcgcggtc gcggccttct ggcctcccga gccccgccgc gcgcgcaacg atgtcgttct 600

ttttttttt ttttgaggac aagcgccctg cgactcttgt gacggaacgg gacagcgacg 660

acgacatgcg aggtgcgtgc ggcgggaggg gagcaaatct ggcatgtggc ctgtatcagg 720

ggggctgatt cgactcggag tcatcatcaa ccggggagct ccaagtgacc aagtagcagg 780

gcaaattgcc cactggcgtg attgcttttt ttttgttttg cagtggaggg gtcgaggaac 840

gaacgcgcga cagaggtcac gaatcacgaa gatcatcgat ttgtccagga tctaggagga 900

ttatccgtga tgcaatgcaa ccatgcatga tcgcaccagt ggtggctcct ttttttattt 960

ttttgccttt ttttattatt taagctgaat gcttatgacc aactcctcct catcca 1016

<210> 2435
<211> 1101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256641_G1, chr7:121373263..121374363, Cluster 14

<400> 2435
actaggggg atttgataac tgtggatatt atattagacg ttatccaaga tgggaaatca 60

tcgatgtttg gatagccgtg tgaattctgc gagcaggatt aagtaagtag tcgtcgatcg 120

gagaggcttt tggaagagat gagaacgaag cctgcacact cgctctgcaa ctaactccac 180

tgcatgcaga cagtagggct agacgcagac ccatctgctg caccgatctg tatctttctg 240

ctggcatcgg cggcacactt cactgtcgat ttgcagtgct aagcatctgg atcagtagtg 300

gtggtggctc tgacgaagcg acatgacagg tgatgatggg catagcacgt agccggcctg 360

ctggcatttc acgagctaac acgagagggc ggtgctgcca atagaattac aagcaagcct 420

ccatgtcaca agtacgcgca atgatgcact ccaaaatgtg cgtcgatatt tggtctgcac 480

atgaacattt atatggctgg ataatgtagg aaactaatgg actttacggc gtgcggcctc 540

gggccacttt tcctgggatg agatcgtgct agggacggac gacgaacgaa gggtaggcag 600

gcaggcaccg ccgcagctgg ctgcttagct ttctccccat gtggtgcgtg ccgggcttgg 660

cgacgagaag atgataacca tcgattcgat cggcgtcgtt gtcccacgtc gtcgcgctgc 720

tggcctcgag atgcatgagc cacgccacgg cagatcaccc tgcacttttc tccgctctcg 780

ctctcgatcg atcggcggca acggcgatgc atgcggtgcg tgcgccaaac acgaggagat 840

tttagatgga attgagttgg aatccccgcg cgcgtctctc cctcgcctga agtggaaacc 900

atccgtcgag cagtatcggg aaactttgcg accgacgacc tggctggctg agctgccacc 960

tgcgaggcgt tcgtcgtagg agaataatgg tcaagctaat gcgtcgtggt cccttagcta 1020

tagaggacta gggccgctaa ttatagacat aagcccacaa gttagcaacc tcgtactagt 1080

agtaaaaact tgggtgctgt t 1101

<210> 2436
<211> 1256
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262771_G1, chr7:155737927..155739182, Cluster 14

<400> 2436
ttggcagtac agtgttccgg acagagtaaa ggcaattagc tgtatcagaa tggcaacatg 60

atgcaaatgg agcgagcacg tacgggcacg gccgccctcc ggactccgtt ggcgcgcgcg 120

cgcccacgtc ggaccacaca tcttcccccc gccggcccgc tgtctggtac gcacacggat 180

gcacgccacg tgacgattgg actcccatgg gcgatgcgct gggcctggac ctggacctgg 240

caggggcagc gcgaccgacc atgactctga ctgagggccg cgcagcgcat gtccggcgtc 300

ggagtccgcg cgacagttga gaatgtggcg tccacgagga attaaatgct aatactccgt 360

agtaccggac gggcggcgcc gagcgagcaa cgcacggcac gcatcagaga cagggaggag 420

cctgctggag ctgctatctc cttcgtttcc ggcttccggc cccgagtacg tacaccgacg 480

gccaacgcct cgtttaggca tgcggtgcag cacaccacca gcaccaagcg tggcctgacc 540

agctggttgt ttgccaccgc tcgctgcagc ctggctgcct ggtccctccc tccctgcatg 600

catgcacagc acagcacagt ccagtccaca ctccacagag aggtgtttgt ggagaccagc 660

acgcagcagc agcagcagct atccctttc tacacttttc aacatgaatg atggtttgcg 720

cctcgtggtg gcctttgcag acaaaggaga ttgggaggag aaaaggccag agtctgtttg 780

tcacggacta ggtgacgagc atattcttct ccatcctgct ggctgctgcg gtgcgctgct 840

gccactcctc gcctgttgat tcaattcacc ggtgaacgca cacacacaca gagagagaga 900

gaacaccagc agttcgttcg gtttcattca aacgcacaag agcccttaat ttgccaccac 960

tccgcgtctc atctatagta gggggggggg ttaggaataa gactgggtta gatacaatca 1020

aacagacgtg gactagtgcc ctgcgtttta agatgaactt aacaccatgc tacgccatga 1080

gagagagaga agcatttgca agtaagcggc gtgggtagat cgatcacccg tgtggtgtgg 1140

gccggatgag gcgcggccga cggtgggagg gacactctgc actgcgctgg acagtggaca 1200

ctgtgctcag catcctttat ttaatctttg ttttagcttc tcggagagca tccaaa 1256

<210> 2437
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_26311_G1, chr1:160122583..160123609, Cluster 14

<400> 2437
ttctgatttt attttcacct tcttctgctc tagttcggca aaatagtaag gaatagggtc 60

gttgtcgaga tcgcaggaga tctcggcact ggggactgag cagagcagac tgtcccaagg 120

atgcttcgac catagtgtgc tcgggcgacg gcaggcgagg aaccggcgat gttgtggctg 180

tacatgaaca tgtctccggt gaggtgggtt ggacggcatc gacgacgagc ggtaggcggt 240

tccgaggaag cagagaaaga agcaccggtg gcgaagggcg atgctctggc aaggggcaac 300

agggactcgt tgtcacgctg ttcatgggaa gcagagctct ggcaagacga cgaccgacgg 360

gcagggagca gcaggcacgg tgttgcaatt tcagtggtgg ggacgacggc aagcatcgag 420

cagcagcagc agcaggcacg gaggcgagtg tgatctcggc gttgcgaacg gcgacgtagt 480

gcgtgcaagg cgcaggtggg cagaaaagtc agagcgagcg ggagagaaag gagaacgagg 540

ctgtagggac aaagagcgcc attgatgggc gcccctccgc tacccatgtg tacgccgctg 600

ccccaccatt gatcgcatct ttgcctgctg cagtggagca gccgccgcct ccttttctcc 660

ccttccccac tgagtcgtcc tcctccatcg cgccattaat ggcgtcgacg cttgccgctt 720

ccttccctgg caccgttact ctttccctgg cttataaatc gtgctgtcgc gacctcgtcg 780

atccatttct ctaattctcg atcctgctac atgcccttgc cgtgctatcc aacgcggcca 840

cagttccgta ctcacgtcgt tcaccaccgc gcgccagtcc tcatcgtcaa tggacgagcc 900

cgcgacgctc tccgcctgct gcttttataa atttatagct aggggaaata aaccatataa 960

gcataatata acaatgcatc taatttggct tgtaatctta tctggtccca actggactcc 1020

tagagac 1027

<210> 2438
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263796_G1, chr7:160595219..160596261, Cluster 14

<400> 2438
aactgattac tagaaaatta accctcctct agttagacta tttctagatc cgccggcgct 60

gtggaccgtc caaacattca cccagccatc tacagctaca gttcccgctt ccccgtccca 120

cggccgcgcg cactccgcgt cgtaaacggc acattggcat tgccaaatgc agcacgcgac 180

acaggggtc ggcagtgcag gagacctttt tttctgtggg agtggtgggc ggcggaccac 240

aagcagaatg agtagggagg agtacctgtg tgtgctgtgt gtccgctgcc gcgctcatca 300

ctcatcaggc ctggcatgta ctataatgag tagggaggag tatcagtgtt gttgtgagag 360

ctgtaacgga ggaaggaaaa aaaaagacag cacctggtgg gtggagaagg agtggccttc 420

aaagttttac agctggtctg cttgttttta tcggttatta tcacaggcaa ttcgcgatgc 480

ccagtgctac cggtgctgca tattcctagt aaagaaagaa agaaagaaag aaagctcgcg 540

aatggaatcc tcctccgcgg cggtggttgt gatttgaaag ccatgccaag ccaatggggt 600

aggaaagcca agctagcgag agggaaacgg aagaaaggcg accttcgtac tgtagcgtag 660

ccgttggttt gtaaaaaaaa aaaaaaaaga ggagcatagt aggtaacggg aatatacgat 720

tttattgaac aagacatgtg taccgcctcc gtctaaaagc acaaagcaat tctaagtcaa 780

actactaaat ttatataaaa atattattaa tatctaggac tgcaaatgca cataaatatt 840

atttaaatat atgcttcgta caaaaaaaac taatgacatt ttgtttagta cgatatgcat 900

taatattttg ttaatataga tttagctaaa ctataaatca tgcgacttag cactatttta 960

gatttgtaac tgtacgaaga gtttgtaact ataaatctct cggtctttgg ctcccgtatc 1020

ggcgccaaga gtttgcacat atg 1043

<210> 2439
<211> 1246
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263832_G1, chr7:160749348..160750593, Cluster 14

<400> 2439
aagataccct gacactggaa tggagtagct agtagataag agataagaca tggaaagcag 60

ttagaaatac gtgtacaacc aagtgcacat acgacacatg tctctttcta ttattagcat 120

gccagccaat gtcgttttct ccaaaccaca cgagacgata agaatgtact cgccgttcca 180

aaaaaaatta atccttgttt tttattagtc aaataatttt aaagttaact agacttacat 240

ataaaagtat tgagtgtaaa tgttaaattt aaatttaact aaccttacat atacaacaaa 300

tattttctaa tgggtatcaa accagagtat tctcaaatta tgatatcaaa taagcattat 360

tagtagattt atcatgacat atatttttac aatctattta cttcgcatta taaatatcaa 420

tatttgctct atatatttgt ttacaattta tgcacgtttt caagaatgca atcaagtttt 480

tgtttggttg ttgccatttg ccaagtgtaa atgttgttaa tgaaatcgaa ttacattata 540

ttgtggccgt agataatact aaatcagatc gtgcatggtc tttgtttgga tttgaaaggt 600

agaggaaatc agttgagtgc gataggctgc agtgacgaat ctttacggag tgacgaacgc 660

acgacgacgg agtccacatc cactccccca gcgacgaacc tgcagtgcta gagccgctcc 720

ccaagcgacg agaaagcgtg cgcaggtcca ccactttcct cgcgttgcgt cggctcttgg 780

ccttgccatt cccggcgacc gccgcccgcg gggccgcctc tacatggcga cctgcagttt 840

ctgcatctgc tcggtgcaca ttgcgcggag gtgcgtgatg atgtacttct agcgcgcatt 900

gcttgctgct ctaggtcttt atcgtcaccg ctcgtcaaag ccgttcttct gaccatggct 960

cctgaggacc accgccttct tcttaatgac cacaaccact gctttaggat taggaacgac 1020

ggcggcggtg ttgaatccgg gaacctcctg gggtcgctaa ttttgtggga gagggacgtg 1080

acttctctgt tggtcgaagc gcgtagctcg tcgaccacgg atgcatctag ctacgaaggc 1140

gtgctgtgtg aggaagaagg gctcaaggtc tatagtggcg gcagcagtat cacggcggat 1200

aaggcttggg acgaccgcga acggatttga atgattggat tacaag 1246

<210> 2440
<211> 1157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264299_G1, chr7:162978958..162980114, Cluster 14

<400> 2440
cacgcacatc tccagcgtga ggtgagaaaa tgagaccacc aagcaggtaa ccagcacagg 60

gaagccaaca cgtgcaaggc aacgggaaag cgagcccggt gctgcacgtc cgggcgtgga 120

aaaagcaagc gcgcgatttg attggtttta ctttttttta cgttgcgttg tggctgtgcc 180

gtttgctgcc cacaggccac acaggtgacg gacgggcagg ggcaggggca ggggcaggca 240

gccttgtttt ggacgggagc cggtgtaggg accaggcgcg aggcggcgac ggctgccttg 300

gacgggagcc tgccctgaat cctgatggcg agacggcacc cgatgcagac gtccacggcg 360

ccatggcggc gtccggaagc ggtcacgtca cggtagatga tatagctttc gttcggttat 420

ggtcattcgg atgaaagaag gaaaaaaaag tacggtgaat ggttgaaatc ccctcctcca 480

caaaaacgac gggaaaacga ttttcgcaca aaactggagg tgtgagtaga ctgcaacagt 540

tccaaagact cgagagaggg gttttgctca agaacggttc caagagcatc cgctgaaatc 600

tcttttgatc taaaacttct ggtaaggttc aataaaaaaa gagagcatct ataatattta 660

ttggatacgt tttgagatgc tccgctaatc agatccggtt gtcgtttcca ccgctggtcc 720

gctgtcgctg tagagcctgg gaacgtaacg ttcgcaggag attgcacgga ggaggatggc 780

aggcactcag gcagcaggca gccacgtctc acgtctgggg caagctgcag gcctgcagct 840

ccgcggaccg accggtatga tgtcgcgcac acccccccaca ctggtctctc tcacgctctc 900

gcatctctcg tcagtccccg actccccgtg tgcatgggag agcgtcggca cgcgcgggta 960

ccccatccca tcacgcacat cacatcgcac gcgtctccca aaagcagcgc gctcgtcgcc 1020

gtgcgctgaa tccagtgtcc ctcggccctc gctaatcagc tgccaattga tcaccgaaga 1080

aattattcgc ttcacatcaa gttttgcggc actcctcctg ccttcttctt gaccggtcac 1140

attagggccc ggtcaca 1157

<210> 2441
<211> 1339
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_26476_G1, chr1:161035313..161036651, Cluster 14

<400> 2441
tcgctttagc aggaacagga cgcggccgct atcgggcttc accggatgct acagtggtag 60

ggaacgtggg caagctcaga cgcaagaaga gaccctgaat tctttctcgg aaaagttctc 120

ttttttctct cggaaagcaa gaggccccga attcttgact tgatgggcac agcaccatcg 180

atttttccac gcggaggtct cgtcacatga atctcgatcc agcaaagatc cggcagcttt 240

ccgcggccgg tttcgctgcg tctgcaatgg ccggcaagca gagggctcga atcaatcagc 300

tacgccgcgc gcaaggagta ctggacgaac acagcagcaa tcggatggat cagaccgccg 360

ccacttgggc tgcaccagct agctagccgg gcggcagagt ggagcggtag ggcggcactg 420

cgtttgactt gcggccgggt tggcgccaca gcccacaggc atcggcatgg gcatggtgct 480

ggtgcatatg caaagccttg ctcgtaaagt tgcaaccttt acttgtgcta tagtgcagct 540

gtagggcgct gcatgctttg gtcagagctg atattccatt tccattccat tcccatggcg 600

gcgtgtcggt ctggctctgg tcgtgcatgg cgagaacaga aagaaattac ctgggggcag 660

ctgtggacac atacagctga cagtgagtga gctgtgtgtg tgagcagcag agtggccttt 720

ctgaccgacc gaggtcactc acaaacatca aagtggcccg gtccggaggg acagttggtc 780

ggagatctga tgatcggtcc aaagacgcac gcacgcacgc actctcggct gtaaagcgcc 840

attacaggac tgggatgcaa tgcaatgcag gcaaagcgac gcagctagct aggcggggtt 900

taaagatgca gcggaatctc atcgtgcatg cggtgcctgc ctttttttc ccatggcggc 960

tttactgcat gcaagtctgt cgtcggcggt ttagctagcg agaggagaga gctagcgcgc 1020

ggccgggttg gtcgcggtcg gtgcagtggt gaatggaaat ggaaatggag gcagggccac 1080

tctcgctact ccgtaagcac gcacgcacca ctggcagcag tgggaaggcg aaggacccag 1140

cggagaagag cttctccggc aactggacag cactaccacc gtcgtcgagc agctagctag 1200

cttctagcga tgacagcttc cgcgtacgct gtctgggaat tggatcccgt ttcagtccat 1260

atctgtctgt ccagtgttcg ttcagacgag cgtttttttt ttcctgttcg cggcagcaca 1320

cactgcactg cgggcgtgg 1339

<210> 2442
<211> 1152
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264994_G1, chr7:167142005..167143156, Cluster 14

<400> 2442
cgatcaaggt ctaacgcagc cgccacacat actaataatt agtctctaga aatcaaacac 60

cacataaatc aaccaataaa tactaaaaag gtagtcaacg caaactggat cctccgcttt 120

aatttggcat ttcctaaaag cgtgtttttt ttctaggggg tgtatttaag gcaaggacga 180

tcgatgagcg gaagaaatag cgagatcagg cgatgaacca tgaccgcgtg tccccgtatc 240

catcgacgcc cgggggggagc tgtcgtgaca aggacacgag tgagcgggtg ccgagcggtg 300

cgcaggcagc agcactgcga acggggacgg cgagaaagaa atcattagca gggagggacg 360

acgcggaaaa ggaacatgga gcctaatcag caggacgatc ggttggaggt caaacactcc 420

tcctaatttt cctcccttga ttccgcggtt gtagaatagt agtaagtact aggattgaga 480

agaacgagag ataagagaga cctgagctgg acgaccgacg cagggcaggg cagggcaggg 540

cctgccgccc tggtttaatt ctagtagtag tagtggtggt gctttgttta gcagttagca 600

cagagagccc actcaaacca atccccacgt cacgcgcacg aactgccgag gaagtttctg 660

gaacgcttga ttggcgttca gccgatttgg ccgggaacgg gggagtcggc aatcgcgtga 720

cgttttcacg cggtgccgaa atccagtgtg cgatgtagta cgtagccccc aaccaaactc 780

aaaacgaccg gcaaataaat atcctgggca aggtggtcgg tgagttaggg ttagggaatt 840

ggattgaatt aaagcccaga gaatggtgat cattgtgtct agtactactc caccagaccc 900

agagggcgcg gattaagcgg cggggcaatc agcaaaagct gctgccgcca caccgagggg 960

cggtccggtc ggagtgagct ttgcttcggt ccgaatcatc tgataaaaag gtaattcgtc 1020

gtacgtgtcg cagctaaact taaacctgtg atgaaccagg caaagcgtgc gcatcatatt 1080

catacctgca ggtttgtttg atcttctctt tactcgatcg gcaggaacac cgatgaccag 1140

gcaacgcttc cc 1152

<210> 2443
<211> 1322
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269389_G1, chr8:13293775..13295096, Cluster 14

<400> 2443
tcctcttggg aaatgaggat ttttttttcg acagagaaga gtacatgcat atgcatgata 60

gtggcttttg tagttagcaa aaatcatcgg cgtatctccg cgtgtatcat gcacaaaagg 120

tgaggtagat gagcgccaga tctttgcggt acctcttgga atctccaagg accgtttgag 180

aaatctcttt ctttaatgaa tatgtatgcc ccagctcatc tctcttcttt tttatcatat 240

atgtgtccga aaagaagcca tggatgagtg caagggttgg aaggaagaat gggggtggag 300

tatgagtatg atccgcatcc gaagtgcggc cataggacta ggaggggacc tcccctagat 360

ggcaacgggc caacgcgcag cggggaagca gcaggccaga taccacctcc tccacgccga 420

caaacagggc tagctactac gtgcaggcag cgagtcccca tgtccaccgc tttcttggag 480

gtaatggagg gacccctatg cttgacggca cgcggcaggc tgcctcagtg cctcagtatg 540

gcctgggaac cctgtcggaa acggagccaa tggacgatgc ctctcagctc actcgtcgat 600

cgcgcggccg cggccgacag gtcgacagcc gaaggtgcgg gtgcggccca cggacatgcc 660

gtgcgtccgc catgcacgcg cagatgtgcg cacagctggc cgtgtggtgt ggaggctccc 720

agagctctcg accggcatgg gaaacatgca gcgtcaagcc cccaaactgt cgtcgagctc 780

aaggaagatg ctgcaggcag gtcgtgtcga cttcagttac gcatgcacta gctagtgcta 840

cacatgaatc atctctggaa gctgtgtgta gggtcatgta attggatgga gatcgtgtcg 900

tccatccata attattgcat ggcgacatta gttagctgga cggtctcgtt ctaaatcaca 960

tgcattggtc tgtcgcgtgt tacatgcttt catatatata agtatataca tatgcatatg 1020

cgcgtgaaag tacttttggc aaacaataaa ctaaccttaa ctcatgctca gcagagcgtg 1080

cacatagact accaaaatat tattttgtac ggtagactgt attgtttata tggtgtagtt 1140

tgagataaga catgatatag tgatagggac ggacccagga taaaatgaga gtgagcgcac 1200

atttgtaagg acgaacaccg aaataccaga gcagtgacat ttaataagat gggctgagca 1260

gaaaacttta aaatgaaaat ctggattcta ctacttacaa cagagaaatg aacgggagcc 1320

ta 1322

<210> 2444
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2697_G1, chr1:14036589..14037697, Cluster 14

<400> 2444
aattaagtaa attttatcta ggtaattatg taatcattta tatttatatt tcattaaaac 60

gacaaaagaa tacgtaagaa aaataatgtg gcggtcaagg atagatccac attctaggcc 120

acccggtgag tagaaagtgt ggttcatata agttgctcca ttgtaaaata atcaagacga 180

gaggagaaaa gaaataaaaa ttcagcagac ttagcccagg gcgtacaaca gaacgataga 240

ctcctccctt tgggggcacg ggactcgtca ggcaggtagg ggatcctgct cgtgcccaat 300

agctgcgggt ggttggcccg tgccacgcgc gcgtactgcc gccggcgcga gagtacgtcc 360

tggcactcca gacaacacgc caggtctggt agcatcagga aacagagaag gagaaacagc 420

gatacgagct cgagtgtccc aggtccaaac acagctccag aaaccacgag tgcgctagct 480

agctaggcga tctggtgtgt gtggctgcct gccttttcac cacccacaag caacaaccgt 540

gccggctgct gtcgctttcg agcaacaatc tactcgatct atgcatgcat gctgcattgg 600

ccattgtggg gactggggag ccaggggcac tgccggcccg ggcctcgcgc tggttcctcc 660

cccgcggtcg gtgttggggg caagtaggct gggctatcag aaaagcgccg gcctgaatac 720

gcgatcgcct catggaccta aacacagagc acgtctgcag ggatggacca gctggatata 780

tagggtgtgt tcattgcagg aggttgcgcg tccctctcgt agatatgatc cttccttaag 840

cttaagccta tttgtccgtc tctgctagct atagcacttc attccgcgag tattgcatgg 900

accaccacgc cacgtcgcca cacacgccat gcccgcttgg gcgccagcag cagccgtgga 960

cgaggagcgg tcgccggtgc ccggttggtc gaggtcggct gtctcattta ttagtggcag 1020

ggcaggagtg atcggcacag cgaggacccc tacgaggtca cgacagctcc aatgggtagg 1080

ctgggaaagg ctaccaagca cattggact 1109

<210> 2445
<211> 1338
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_271142_G1, chr8:23992850..23994187, Cluster 14

<400> 2445
agccggccca gctgcagatc gaggaggaaa aggaaggcgg ccatgcatgg tctccccgcc 60

ggtggatcca aatccaaacg gacggccaca tgcatcatca ggtgtctgtg tctctgggta 120

gagctgcggg gtgcgcacag gggctagaga tagtcagcac gtacagacac ctcacctgca 180

gctgcatgcc cgaccgaatc cagcagtgtc tgagtgtgca tgatagagac gaggtcgtcg 240

tgtagccagc cccctcccgg cccggccctc tgcaaggctg gctgtgtgac atgcacctga 300

aatgatgaat gcgtgagttg ttcatgcgtg ttcatccaac agggccgcca cactatttca 360

cccctcgtgc ttaaaaacca caccaatttt ccccctcttg tattccttat tatatataga 420

cggtttgact catcagaatg tatactgagg tggaaaggac agatcgagga gtaaagcatg 480

catgcagtag ccagggcact agggcagcgg tgcgtacgat acgagtcgtt gacgctcggt 540

gactcaaaac agccgcttgt actttagcct gcgtggccat gggccgcttg gtccaggtcc 600

aggtgcacat gcatacacag cagcaacttg catggcgctg gatcggagga cgacgacgca 660

cgtgtctgca tgcagccgga ggatatggac ggatcgcgca cttgtagtaa tcctcatcag 720

cacgatagct aactacccct cgcatccacc agacagcatg caagaggctc gcgggtcctt 780

cgctaattac ctgctggcgg gttcccggcg agtttattta gaccttccct tcccggtgat 840

ggggacatgt gccatatata gtactgtact ccgtccgtac ggccaggtca atccacagtg 900

ttagggtagc ccatccatcg acgacgacgt acgcctgcta gctgtcgccg tccgtccgtc 960

tgtccatcat ttcatcagac ccggtacgcc cagtccagtc agccttttct gctgccccaa 1020

accagcggat ccccgtcgtg cggacaccac acctgtaaac ctatgatacg tgccgtacct 1080

gccagtgcca gtgccgttgg attatattga tctcgaccct agactctatc tagatcagaa 1140

gacagcctga tttcatacgc catggaagaa ggcgtaagct agacaatttt gttgctcatt 1200

ttccacgtat atatgcgacc ccgcatccgc gacctactac tatactagaa gcagccttac 1260

tagtaagggg aaggtcgtcg tcgtcgcctc tactgcaccc ttatcgtcgc caccgctgat 1320

ctcgcttcgg catattgt 1338

<210> 2446
<211> 1337
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_271427_G1, chr8:26100850..26102186, Cluster 14

<400> 2446
cacgattaat ggtggctggt tgaatgcctc cgttctcgaa tatttgtcgc cccccgcccc 60

gttaggaaaa gaaaatgttt atgccattgt tgaagggacc gtacgtggtt ggtagccctg 120

ttgcagtgcc agctttgctg agagttagaa acatatgaat tgtccgagga ggagaagggg 180

agatgtgagt agtagctagc atgggatcct gctgcttgcc cttttaataa ttgatgattg 240

atctggtggt catggcatgg caactttgcc gtcggtcgac gtaaagctac caacaacgta 300

gagcaagcaa gcaagcagcg ccaaagagat tcagacattt ggcaacacca ccagtcatcg 360

tatagaaaca gtcagtcagt cccctgacga gtgatgagct tgcattgcat tgcaggtggt 420

cacagccggg ttcagaaaac caaccatagg aattaatcag atcgtctcca tctggcacca 480

ggcagtgcaa gaacactgct cctccacagc acggacgctg acacagccgc cgggctcctc 540

ctcctctggc tctggctctg tgtctgtgac caccgtccct gcctcgccgt ttgggacact 600

gttccacttc cacgacggat gctgacacag cccaacaaac aaaccgcaca gtaccagtgc 660

atctcgttct cggggcgccc actggactga agaggagatc tcatcgccaa taaagaaaaa 720

acgccaccga gtggctgcag cgagggccac gacagccagc ctgtttctga caatgaacct 780

aaggcttgct aaagcaaagg attcagccag atcgagcaat agtgtcacgt cttcttaata 840

acgactactc ctctctgttc taaattagaa aaaaatttaa aacttttat atacattagt 900

ttcgctatat atctataatg agtagtaagt gataacaaac ctaggatatt ttacgtatga 960

ttttaaaata gatggagcag caaataattc ggcaacgaaa cctagtaccg acagggaaat 1020

taaatgtact acagcaacag cacgcctggc ctggcactgg cagcaccgtc tggtccggtg 1080

tccggtgagc atgatcgagc tcagcagagt tgatgagcta gtagtggtcc tgctacacaa 1140

tcacatgacc ttcccctctc cgactccaat tattggacaa gtacgagcca ctccactgca 1200

caggttgtga accgagacag ttttattttg taccatttcc tccttcagga aaataatgca 1260

tttctagcat gatactctgc gtctctgtca aatcattttg tgcttgatca aagttattga 1320

aaaagatcaa gagacat 1337

<210> 2447
<211> 1068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_277850_G1, chr8:72421446..72422513, Cluster 14

<400> 2447
tatatatata cacacaacgt gatgaatcta ttttttccta aaaaagaact atagtcaaag 60

gtattaatga atatttgatt tagggccaaa ctaataggac acgtattttt tgggcaaaat 120

cgggtccgac gcgttcattt gatccaaggt ggaaaatggt tagctcgtct ggtagtacta 180

ggagattccc agcgcgatct ggctcgatta taaacatggc agacactaat cgtcgtcagg 240

cttcccgcgg cactggcacg agatggaccg ggccgaggag gcgggggagc acgataagcc 300

ggcggcgcaa ccgccgccgt cgccgtggga ctgcgggagc ccgctgtagg ctgtacgacg 360

cgctttgagg tcgtgtcggt gcaccgcgtc ctggacaccc tcctgatggc gctgccgttc 420

gcgcggccgc ggcgcccggg cgagtgcgac gcctccgcgg cggccgcgcg gaaccgccgg 480

cacaggaggg ccgcggcgcg gacgggctag gcggtgctgc gctccatcgt ctgcggccgg 540

aggctgtgag cgactccgcg cgcagcccgc aggtagagcg tcgcacgtag tacgtgtcac 600

ggctgcgcca tccgtgtcgc gctcctgtga gccaaaaatg ttactgtcca tcgatcggcc 660

agcgagttgg atttccgtcg ccatcggttc cttttccttc cggactcgtt tcgttttcgg 720

ctcgtcgtca tgtggacagc gtccgcgatt gttatttgca cgtagttgtc agcgagcagt 780

gctgctagat ccgtaggtcc gtccgtctgt ccccgcatgt ttgcctgctg gggcttgatc 840

gcgaaggaat ggcaacctag acgagacgct aattaaaaaa aagtagagga aaagcaagaa 900

atagtcgttg agatgggctc gtgatgtgcg aacagtgtcc agtccaggtt ctttgttcat 960

tctattccat cgttcgttcg ttcagtagcg tttcaggcat tatgtgtgtg agagagatag 1020

agagacacag agagagagag agggagggag ggaggagtcg catcgcaa 1068

<210> 2448
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286381_G1, chr8:122908634..122909639, Cluster 14

<400> 2448
taatttagtg gagtgagtgt gccgacaccc ctttgacccg taaaaagtac tccgtataat 60

aatgcattgt ggggctagct taaaggtaag ttagcatctc cggctgcgct gcatgcatat 120

aggctactac tgttagctag ctagctaggg tttgcatgca gtatggcagt acgctgacgc 180

tgctgagcag tgctgtgtcg ctgtgccgtc gtcgactttg gccagtgcac tgcacgcaca 240

gcaacatgat tattatgcac acgctgctgg tccccgccgc cgtcgtccta tctacgtacc 300

ctacccattg gcgacgctgc aatgccaacg cttcctccct gcatcctgct agctgcaata 360

gcataataac catgtgaaat tcatgctgct tcagctagat aggtacatat atagaatgac 420

gcccaaatta gcctacctga aattccatat ggttccgcac gcgcgctcgc catccgaagc 480

ggcgcctgtg atttgctttg cgccgcaacg gcgtggccgg ccggggcgca catctctaat 540

ggattatctc tgattcactc cagagactcc agcagcagta gaagccaaat taaattttct 600

gctggtcaaa attgaaaatt taaacccctc ctctctcaat cgctacgcaa ccaaccgaac 660

aaggccagcc cgcatactac tcctccctag caatgcaagg ccaccgtctg tacaatgaca 720

ttcaccgccg ctaatgcatg tgataacttc attcagcttg gaatgcgctg agcagagaaa 780

acccactcca cctagctcgc cgccaattag aatctctgat taattagttt tgtaattaaa 840

ctgcatattt caaacaaccg atcgattatg tcacacggac aaaactctag tcggagaaac 900

caaacatccc ctagctaggt aataactcct tccaaaaaaa taagaaagac atgttaaaat 960

gcccatagta tatttaaaag acgaccgacg acgttacgtt gtagct 1006

<210> 2449
<211> 1136
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286631_G1, chr8:123913676..123914811, Cluster 14

<400> 2449
gatttggttt ttatgccggt caaaagttaa agcgagcatt agtgggcgat acgaggctgg 60

ttgaagagac cctctcccgg tcccggacgg atcggacacc gaccacgcca tcgtgaccac 120

gagcggcaga ccggcgcgag tggttggttc cagcggcccg cactgtcggt cggctccaag 180

tctccacagc accgggcgga aggaaggaca aggacaagga cgagacgcac ggcacggctt 240

ggttcggctg ccggccgcgg attccgtccc ccttcccgtg ccaggccggt tggagcgtgc 300

aagacccggc cggtggcgac cgagagcgcc acgacacgct gccatgtgcc cagccgcgtg 360

cgcgactcgg cacggcaggg gcaaccaagc attgaccaaa ccgaaccaaa ggacggggag 420

tcgacacgac cacaaccaca gccacacacg ccgctcgtgc ctctcaacca gacacacacg 480

cgccacgggt ggccagcgca gcagcgtcgt tttccttctc tccccccccgc tttctctcct 540

ccctttgggg ccgcacgcaa ccggcccgtg ccgtggcctg tggaccggag atggtcactg 600

tccagagtga gcacgggcag tttgggcgcc ggtccggcca actttgttgc aatttcatag 660

aagaagagtg tctcacttgt cctacagtta cagtctcaca cagatccatg ggaccccgtg 720

ccgttgccac agcacgaaac gttgctatta cagctacgta cgtaggagta gtactactac 780

ttgcatacta attgcatttg cgctgcggat acggagcagt aatactagta tgtcctcact 840

agcgcactac taatactgga atttaagacg cgcataagaa gggggatgtc ctaggcaggc 900

catgaatagg accgttgcca ggatcgcctt ctcccgtgac gagacgagag tgtccgtgaa 960

ctggcgttac tgctccgcac gccacagtcc tcgatctacc aaaccaaagc tcgctacggc 1020

ggcgcagaaa aaattctccg acagtaaaaa taatagatca tgcatgcaaa agaatttgac 1080

tccacgcggt cacttttgct ttggtcaact acggtctcta tataaataga ttatta 1136

<210> 2450
<211> 1366
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286886_G1, chr8:125194159..125195524, Cluster 14

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1039)..(1138)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1074)..(1074)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1076)..(1076)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1077)..(1077)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1078)..(1078)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1079)..(1079)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1080)..(1080)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1081)..(1081)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1082)..(1082)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1083)..(1083)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1084)..(1084)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1085)..(1085)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1086)..(1086)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1087)..(1087)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1088)..(1088)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1089)..(1089)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1090)..(1090)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1091)..(1091)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1092)..(1092)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1093)..(1093)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1094)..(1094)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1095)..(1095)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1102)..(1102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1103)..(1103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1104)..(1104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1105)..(1105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1106)..(1106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1107)..(1107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1108)..(1108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1109)..(1109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1110)..(1110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1111)..(1111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1112)..(1112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1113)..(1113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1114)..(1114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1115)..(1115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1116)..(1116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1117)..(1117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1118)..(1118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1119)..(1119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1120)..(1120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1121)..(1121)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1122)..(1122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1123)..(1123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1124)..(1124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1125)..(1125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1126)..(1126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1127)..(1127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1128)..(1128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1129)..(1129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1130)..(1130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1131)..(1131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1132)..(1132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1133)..(1133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1134)..(1134)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1135)..(1135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1136)..(1136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1137)..(1137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1138)..(1138)
<223> a, c, g, or t

<400> 2450
gggagttgcg aaccagaatg ccgttaccaa aatcctcaag ctatctttca gaatctatcc 60

gcacccggtt ggccttgggc tgtagaaaac gaagctgaag ctgaagctga agcgccccga 120

ccccaaatcc ccaacccctg cacagccgaa ccgctaagcg cgctatccca cgacgcgagg 180

cctcggatct ggcggagcta gccggagcca cgaaatccct ctccgctagc aacgggacac 240

gagccacaga ccgcagcttc ttcacagcgc aaagacccag acatgcgcgc atcccaattg 300

gtacgctggg aggacaaaga gacaggcaga gacgcagagg caggcgcgga gggatgaggc 360

gatgggggg ggggggggg ggggggcgt ccccccccc agcgaaaatc cggggagggg 420

ggggcggccc gcccaaccgg ggggagccgg agggactttt ccgggaagac tagcccaacc 480

aggggtagtt tgtcgccccg gatccggaaa aaatcccatt tgccaacaaa gaaatggaga 540

aagcgaatgg ccctaaaatt tgaacactga atgaccccag aaaaaaaaaa atgggggggg 600

aaaaaaaagg gcaccccccc gtggggcccc ccccccgcga ggggtaccgg ggccccctgt 660

ttaaaaaacc cccaaaaaaa aaccttaaag gggtctcgga cccctaaata taagaaataa 720

aagggccttt tccccccctc aaaaggctcc tcaaagggtc cttaatttaa ggggaccctc 780

ctggattctc cttataaggt tccccaaaaa aaactttctc ccttttaaaa tttaaaaaaa 840

ccggttaaca aaattaaata ttggccatac cttttgggat atgacacata ctctttgccc 900

aaatatataa aaatgtgtcc taatataaat ttttgggatt aaggaggctg ttttttataa 960

cacttgttgt ttgggggga gggggattt ggaggggggg gaactctttt taaagaagaa 1020

atggcaaaga cgggcggtnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1080

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnac 1140

gcactccaat gtttttagaa atgaagagat ggaaataata agtgtttcaa acgggcataa 1200

gccttatttt ttctcctgtc ccggagaagg ccaaccaatc tatttcacga tgtccgatcg 1260

catcttattg gtgtgtgttt ttttcatcca tcaaaaaaaa gcaaggaaaa actagcttgc 1320

ctgttgtgtt tcgctgagtg gtcagtggta ctgttctctg acaaga 1366

<210> 2451

<211> 1328
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290841_G1, chr8:147090179..147091506, Cluster 14

<400> 2451
atggctgaga ggagagagtt aaaaataaat aatagaatat gggataataa ttggtatagg 60

atagagattt aaagtaaaga ttactgtata agatcgtggg atagagtagg gaatctaaat 120

attcttttta gggtaaaaat ttagagttct atgagtgtag ccttacaata gtacacatta 180

gaatccgaac gtactacgac gtgcattttg aacataaaaa aatgagtaga caagagcggc 240

aagcgagaca atcctatgtg tgacagcccc tcctagatcc gcccctgcgc ctacgcacag 300

tcgccttgcg cacccggcta tgcgctcggt gtgatcgcct ctcggctgga agggcgcaga 360

gattcctgtg tgtccgtccc cgtccgtgcc cggccccagt gcttatatat acatctggtc 420

tcgcctgcgg ccggaggaga gaggacacgc cgaacgtgcg cgagagatcg tgcggcggag 480

tagacggatc gaccataaat gcaatggggg aagaatggaa gtgtcgtcct ggcatccggc 540

agacgagacg acgacgacga cgcaggacgc tggagaaacg tgggccgatg gagccgattt 600

attggatgcc gactcgattg gatgtcggag gacgctgtgt gtggtgtgga gtatatatgt 660

atgggcgggc gagcgacggt cgatcgatcg atcgatagaa ccaccaccaa ccaacccatc 720

tcgatctgtc tgtcgatccg catctcctcg tggaaaaacc aggcttgccg accggaaacc 780

tcggaacgtg ctgcgtagtg gcctgcgcgg ctgcgccatc gcagcgtgat ggcgatatat 840

acaaccaggg atgcatggct gtggcaggct agccgggacc caccagcttc ttctgaacgt 900

agagcaaagc actaccggcc ggcggcctac cagatgtcca gtccagatga gcgagcgagc 960

cgcatgttct gttgttggtg gtgccgtact attacactgc gacttgccga cttggctcag 1020

agacttcttc gtaggcctct cctagctagt ctattcgagt cgacgggtag cctagcctag 1080

cctatgttca ttagctagct gtttgggatt ccggtcccgt tgcacgtcac gcatcacgtg 1140

ggacaaattc gggcgaaggc catcgtcagc tcactgttcc ggaggctccg atcgaatagc 1200

agcatcgtca gctcgctgta tatatatata tataggcg agtagctagg cggggcctga 1260

gctccactgt acgtcaggcg tacgtgctcg accgtccatg catgatgcat ggtcgttgac 1320

atccatcc 1328

<210> 2452
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291738_G1, chr8:151265151..151266177, Cluster 14

<400> 2452
tccagaggtg ctggacatgg actgctggct ggcatgcata tagacatagg caagaaggtg 60

gcctgcttcg gaaaggcgca accaccacgc atttaaagtc gttgggctgt acaagtcaac 120

gtcgcaaata tatatttgga tgatgcatga tcagcgtagt gccgctgccg ctgggcaggt 180

ggcagtcgtg cttgcgtgcc cagccgggaa accagaacat gcacgactca gttttccttt 240

gacagaacgc gcctgaactc agggatatct cacgaaacct gaacacgatt cagcgtttct 300

tcagccagtc caccggcggc atctcgcaag caagcctctc ttttttttctt ctcaagccag 360

aacatgtata tatacgtcca agtaataacc ccccaacaac gcagacctcg aaccgtcgtc 420

ggacagtatg tctatagctg ccttttttttt ttgcatctca tcttcagaag gtgtggatca 480

agtaattaac ttggcgatcg agcgtggcat ccgacaccga cagtacgtct atagctgcct 540

tttgcatctt gtgcacagtg gacgcaaagc cttccaccag cttcctgctt gtagtagtgc 600

aggtctgcta ctatcaactc tggtgtacag aagagggttc ctgcaggcgt atatatgtgc 660

ctgagatggt cgacgactgc tgaagctaag gtgatcttga cgctcggttt gcatcgatcc 720

tttttctgca tcgtcgaggt tagagatgat tcccatcggg gttgtattag gctcgtccgt 780

atgaacgact gcgacagggt ctatatcacc gagaagacaa tcctaagaat cttaggacga 840

caagttaagg ataagtgtaa aattaaatta aattaaatta taccaccaag atcactctag 900

tacgaagcta gtacgtacta gtggttttgg cggaggagat tggcgctacg tcagggatca 960

cagctgagaa ggcgacgtgt ggtccaagtg gcagctgacc aaattttctg aaagtaattg 1020

cggttat 1027

<210> 2453
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291758_G1, chr8:151341862..151342894, Cluster 14

<400> 2453
ctatacaccg gctagcagga aacgagcgcc tttctgcatc tcttctcttc tctgctgtca 60

tggatcggtc gcaatgcaag aaacaagcag acacatgcac ctttcacgcg aacgacgctg 120

acggcacgcg tatgctgcta attaatatgc tggcaataga aaaatagacg ctatcgtcgg 180

atggagcagg aggaacatac tcatacttgt atgtatatga catccttcgt gacacacgcc 240

acaccaatca tcgtcccatt atacccatgc atacctttta ctgctgcatc ggaactcgga 300

aggccagaaa cgagacggat gttttctttt ccttctcctg gacagattct gcatgcagcg 360

aggtccgagt caaagtgcgc cggtcagcgg cggagactga gaggtctgat cgcggacgac 420

gctgcaccga gctggctgaa cgagcatgct gaaaggctga agggaaggtt gttcgaactg 480

atggcctgcc ttgcccggtc tccgccctga cgcacgcagc agcgccatgc tggttacaac 540

catctcatcg attagtcttt catatgggtg tgggatgcat tggagcccct cgcaacgtca 600

cgggcaacgg agattggatc tacaagcacg tagctaggac gacggctgtt atggataaag 660

gagtgtacta tttattattt agtacgatat ctaccctgtg tctcgatagg aaatcgtccg 720

tgatccttat ctgccggccg catcgtcatg catgatcatc ttgccctttt tgcgtgttgg 780

aaacgccgaa acgtacgtac gctatatggc tgtgtacact gtctgtgtgt aagcgccttt 840

tctgccgtac gtacttgtag aaacaaactt ggccgggctt tgcttgcttt ttacttatta 900

gtgtctagct tcagtcaaag cagtgtctgt acgtgtcgcc gttgggtcgt cgaggcacag 960

gcatgggaaa cttgtgccgg ttgtgctctt aattctaata actatctatg tgctatacct 1020

actcattcat gtc 1033

<210> 2454
<211> 1209
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294122_G1, chr8:163523205..163524413, Cluster 14

<400> 2454
tgtactaatt aacccttgcc ccagaaatgt tcgtaggaac attggtctgt cgatatgatg 60

cttggcccca tacagcaaca atctgatgca tgggcaatgg accagaccaa agaaggaata 120

taaaagcacc agtgctgcac cgcaggccag ggcctcacac tctaacccaa attagtatcc 180

gtctggaaac cttaagcgcc aagtatatta ttctcacggg cgtgtttggt atcttagggt 240

gtgtttgctc tgggtggtcc atcttcttct cacttctaac ttatgatgca tcagctcatg 300

agatgactct acaaaccaaa cacactggtt aggtcttaga gctcaccctc gcctcgccta 360

gcctagctca gcatgagatt gaaacgctag atgacgatgg tatttggttc tctcaagtct 420

caacagagtc ggctgcctct cgtcgtcgtc tgcgaaagca agcaaggatt ttcgtcgtta 480

atttgctgca ggcacgaggc cgattcggct agccttgccc agggatgcta gcagggtgag 540

cggttaggct tttagtgcga aatttgggtg agtgtcttgt cgtgtggtcg tcgagaagag 600

aagagagcgg gcatccccac gtacagccgg agcagcagtg cttatctatt aatgcatgca 660

tgcatgcctc ggtgaccagc tgctagctag cttagctgcc tgcctctgcc tgcctgccct 720

actactgatg gatggcgatc catggatgat gctcgtggcg accacatggt acggtggtga 780

gctgacgagt ccatcgcccg cgcgcgcgca actgtgctgt cccctccct cccctacgcc 840

acctttgct gtggccacgg cgtgatgatg gccgctgtta ggtacgtacc acgaaaacaa 900

ccttcttcaa acagcaaggc ctacagaccc ctgcattttc aatagctttt gctgcccggc 960

ctgctgtcgt ggagatcgcg tcgtagaaca aggcatgcat ggcatggcgg cattgtccat 1020

atcaaggaca aggagaaggc tatttagcaa ggggaggtaa taaaggcacg ccactcgctg 1080

tcactgtgcc ctttgcctgc ttttcttcga gcattatcag gcgcgctttg atccatgcca 1140

cgacgcgcgc ccgggtcttt tccacgtaga gtctcgcacg acgacctgtc ggacgacgag 1200

accttctcg 1209

<210> 2455
<211> 1161
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29415_G1, chr1:179925221..179926381, Cluster 14

<400> 2455
caaaacgtac tacgatcgat cgagggctag actggagagc tcacagcacc tcatgtcctc 60

acacgtagag ccgactgtcc atcctcgtgc ataaaggatg catgcagcaa ccggccggtt 120

gggctacagg ctactactga tcgactgctg ctgctactac tgtaggagta ctagggaatt 180

gcacctccat gcaaacattg gccattgcag tactagctgc acggctgcag gctgcagcat 240

acccgcactg ctcatgcatg catggtgcgg caccaggaga gagacgagcc tgcaccaaaa 300

aaaaaacgca gcacgtacaa cacgcaaaaa aaggctgctg gaaagctgcg gacggccgga 360

ccgaaccaca tgtagaatgg ggtgtagcac tggatcgatc gaatgcagct ggccgatgcc 420

tctaaacggg gacgacgacg acgacgaaca acaacaaaca acagtgcacc agtcaagcaa 480

ctgcacgctg tgctgactgc tgaccgttga gcgcgagcct gctactgatc gagcacagag 540

aagagggcgg ggggcggcga cattgtatca atgcactatg catgtatatg tatgcgccag 600

ttgcccagtt ccacgggtgt accgtgtacg tgcatactgc tgtgctggac gtgtggcagt 660

cgttccgtcg tgttgttgca tgcatgcatg cgtgagctca aaagcaagtg cactgcccag 720

ccagcaggga gctagagcta gcagtgactg agtgactgtc ctcagctagc cacgccacct 780

gaacagaact gaaccgaggt agtgattcaa agaatcgaga tggaaaaaaa aactgacgtg 840

tttcattata ttctgtgtat gttttttgtg gtaaagttta ctaaagaatc tatagagaga 900

gagagaccgt ttggaaaggg aatactatat atccctgcgt atggattaca ggagtcgtca 960

tgcagacatg cagttcatcc ctgctacact caacttctga actcacctgt tgaatgaaaa 1020

acttgaaatg tgctcgatcg tgtctgcctg cctggcgtgt gcagtgtctt aggattggcg 1080

agcaatgcaa acaggaaacg gacgaccatg gccaggcggc ccaggccagc catggcggct 1140

cggcttccgg tccggccgga c 1161

<210> 2456
<211> 1235
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_294620_G1, chr8:166187994..166189228, Cluster 14

<400> 2456
atcgattgat ttccgattca tattcgccac ccatcatcca tggaccaatc ataagctgca 60

catgaaggtc caagagccta gatatgatct tatattgctc gctctctgtt ctttttattt 120

aacatagttt tgtctcctaa attattgaac aaccatttat tccatatcat ttttttatat 180

ttataaatct ataataatgg atagtatgtt tgattacaaa tctaactata ccaattttat 240

attgtattaa ctataaatac tagtcaaatt attgataaca aattcaaaaa ctaattttcg 300

gtagtcgtgt gcgctttata aaagaggaat agtacgctga gaaaaagggg catcgattgc 360

tgctgctgct gccaccacct acagcctctc tctttcccgt ctgttccctt ccctggaaaa 420

cacggcgggg cgccgccaaa tcatggagcc ggcgctatcg ttcgacgcca tgccgccacc 480

atgtgagagc gtgtacgtcc gcggcggcgg accaccgtta ttaaccggac actcaaggta 540

taattggtag taattgctac actgtatcgc aatcaaaaaa atcggtacac tgtattaggg 600

cggcgacacg caggttctgt gcatatcttg ctcacagata acgggcataa cttagtcctt 660

agccgtttgc gtgtcgcgcg gcgcgtagta gcccgtgtgt gggtgtggcc gtgccaaatg 720

gtggcatggg ctggtacgta cgccgcgcaa ctgcacgtct ccttcgatcg gccagtcaat 780

tcaggcgggg tggggaggga cggccggacc atgacgtgcg cgcgcgcggc aagtccaggt 840

gacctgccga gtgccgactc cttccgggga ggttgatgtg cgcataaagc ctgcgcttga 900

cggtggcagg cgtgaccgtc cggtccagaa tccagtctcc ttccctgctt gccgagccct 960

cgagatcggc tgactgagtt gtacctgtac gtgcgtgcgt gtggccaatt gaccttcagc 1020

ggggtgcgtc agggggcagt gatgtggact tcgcagtctt cgcttgtgta gtatagtcgt 1080

agttttattc ctgtatattt gcttgcatgc agggggtggg gtgggtggtg gctggcggtg 1140

agccggtgag aggcgtggcc gcgtgtggcg tgtgccagcg aatgaagatc ttttgcaacc 1200

gtgaattaga ccgatgctaa ctaacgccgt aacaa 1235

<210> 2457
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294750_G1, chr8:166897032..166898048, Cluster 14

<400> 2457
gctagcgaag ggcgaaggcc atcatcatgc ttgcgttact ctgctccatt ccgcttacgc 60

tgatgctgac agaggatcaa caaggattgg aaaagaaacc taaccagata cgtgagatct 120

aggcaactgt ggagcgccag ttgaaggcaa gagagaaaag gataaaaacg agaggtagta 180

atcatgaggc gaactgatca tcatctggga ctgggacggc cgctgcggta gtaagagcgg 240

ttgttgggtc agtagtaatg ccgtagtagt agtaggcggc gggcctcacc actgaatcat 300

tgggcgcgag agaaaacgcg cgcacaggct ggaggacaag gacgttgttc atttccgccg 360

ctgtccggct gtccctccga gtccgagtcc tccagcggcg ctactagtat agtagtatat 420

agtagccggc cgggccgtgg agacgacaac agaaagcaac gtcgcgggcg acaggagatg 480

tgtagtagta cgtagtagtc cactccatgt tctggacggg ccgtgtgggc gtatgtgctg 540

tagtagtagt cctgtagtgt actagtgtgc gttggttcct acaagtgggt tggcgacgac 600

gtgtactgtt tggcccaccg cgctgactga tgtacagtag tacttgtccc gcgtgctgct 660

gctgctgctg ctgcctgctg ggtgggcctg ggagggatgc ctggaccctg gatgcagtgg 720

tggtggtggt ggaccattca gactttggac ctaccgcgta gcctggcctc tgtctgcttc 780

gtcgtcgtcc cctttcgtca cgtgctgatt tatttatata tatatagtcc gggcggcgcg 840

gcgcggcgtg agcccttcac acacgtgtac tgtccacaac aactctacca cgccgggggt 900

atcaattctc agcagcgtgc cttgccttgg tccctcgttt tcctaccacg tgccgccgct 960

tttctccgcc cgcgccgagg ccaagagcgg cgcccgggag gttttggccg acgtgcc 1017

<210> 2458
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295307_G1, chr8:168929590..168930873, Cluster 14

<400> 2458
atttgaaagg taccaaatat gatgttttat aatatactaa aatatattta cgacaaggct 60

tacatctatt ataaagcatt gctctccata cctcatagag acgattggct cgaggagcac 120

tcgcatagta gagaaacaca aacacgtcac ttgatccaca gtctagtatc cattcggtgt 180

ttttttatt gaacgtaaag taagggctag cgttctgata cttaataagg actcctttga 240

aaaacaggaa tttcacaaga atagtataaa atttcacatg aaattgattc gaaaatacaa 300

aaaaaagaac gtaggattca tgaagttata atcgtaccaa atattttctc gatataattt 360

tagatatacg tgtagagctg aacctttaaa aaaaagctat attaataaag caaaaatgta 420

ctggactgca tctaagattt aaaaaatgtc cattctgata ttaggcaaag cagagagcga 480

gctcggtagt agagtagagt agttgcttgg tgcgatggta cccaacaccg tccatgggcc 540

tcgcaccgcc gacgccgagc atcgccagtg ctcatgagtc atgcccgtgc cggcaactga 600

cacgaatcag caaccgtaac gaactgaact aaacgctccg aaatgataat gccgaaccga 660

acggacttgt tggtaagctg acgatctacg agccgtcacg agacacaagt gattcggtgg 720

agataggcgc atcagcagca gttcagcact tctgctaact acacaacctg gttgtgtaac 780

aaggtgcagg taaaggtaaa ggtgcaggtg caacactaga tcagctcgat ctctcctgct 840

tgcacagctg gctgtcactc tcgcgactcg cgaggccatg gaccatgtcc atgggtgatc 900

ggtagggata gctgccgcgc atgctgcacg gtgcgggggg agatcatgcg ggccagaagt 960

tttcgatcat gcggttgcgc gtagctgtcg agtgtcgacg caggatcaga agcagcagcg 1020

gctgctaccg ggaccgggcg ctcgcggctg cctgcgtgca cgagcgcaac aggtcgcctc 1080

tgtactgtac cgcactgcac gctgcacggg gcttaatttg gtgccagctg agggacattt 1140

cgccgtcatg atgacggtgc gacgtggccg gaacggcagc gatcatggtg gtttcgagag 1200

agaagcgcaa ggaatatggg ccgggttttt ttcaccacaa gcacagacgg ccacgatcat 1260

ggtggtttcg agagagaagc ccaa 1284

<210> 2459
<211> 1219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295994_G1, chr8:172353721..172354939, Cluster 14

<400> 2459
ctggatggat cagacacgag tagtggggcg gacgaccgac cgactgactg acgtgccgcg 60

cccccgcccc aactgtgtgt gtgtgtgtgt gtgcatgtgc tgtgctcccg tgtctctcat 120

tctgtcgcag gccaggccac attgactggg gactgaggta catttgacag gcaaactgca 180

gcagccctat tactattctg tatcctgtac tatccaccgc caacttgcac agaaccacgg 240

cggcgccgat gatctgtttg taggctgggg ccatctcagc gacagcgagt gatagtagta 300

cgtactactt actactcaca tgcgcgcatg cagagtgacg cagcagctga ccagctgggt 360

atggctttgc aacaccggcc cgggtagcaa taccaagcac agcacatgca tgtgtggaga 420

gatccctgcc gcccagatct ttggtccgaa agctcttttc ggggatttgg ttcgtttcga 480

tcgacgacgt gcagaggtaa tggacatgac ggcctgtagc ggcgggtgat cggaaaccgc 540

gctcgcggac ggcgacggcg ggtggggtca gatgcatgca gaccaggccg tggactcttt 600

gaccgcaggc gtggaccctt tgaatttgat gaccgcgtgt ggactcggtc gtgatcgtga 660

cagcgaccta ctactaatta aggcagcagt aactaaggta gccaaagcac attctttgcg 720

tgggtgatga cgacttttta gctacttact ttgtccattg cccgtagcaa aatcccggtg 780

cgcgcgcgcg ctagcagcta gctttccacc accttcccgt gtggagccgg ccgggcagtt 840

tggccgtgtc aaactgagcc tttttgaccg tgtttttgtc cggctcgggc tgctgtatgt 900

tatgtactgc tccacaagct ggtactagca aagtttgttt aggcttggcg gtttgtttgc 960

ttctagcggt ccagaacaca cacagtatag ctcatgtgaa agctaactac tacctactag 1020

tatagctcat gtgaaagctg agttaataaa taacgacgac ctactagtac tgcctatgca 1080

agtggagcgt tagaaaacac aagtcttctt ctggaacgat ttgtttttg cacgtgctgt 1140

tgcggcgggc attaatagtg ggcggcccga cccacacgta cgcacatccg gtggttgggt 1200

tgctctgctg ctactggaa 1219

<210> 2460
<211> 1135
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_297010_G1, chr9:1449376..1450510, Cluster 14

<400> 2460
ctcaaaagta aactgctatg gtaattataa ttgagattga ctcgtattgc gattctctat 60

tataaatact taataacata cttaatttat atgcagtata ctgcggcggg gcatcgaccg 120

aattgttatg atgatttgat ctggttgtcg acatggtatc aaaacattat ataggtagaa 180

aatttgacag aaactattgg cctgtgataa aactccgact aggatgcctg tcaggccata 240

gcccagttgt ggtgcatgcg caccgggccg tgacatgttc tgggctgggt tcggtcgctt 300

ctaaaatgca gggccgggcc gggcagtcga tcactcgatc ttgtttgtac tttgtagtat 360

taaaataacg gggttgaaaa gacaggaaat cgagatcgga gcaacgtgcg gtcccgcacc 420

gcagtctctg caatttaatt ccgtggcgac caccacctga cctgacctga cctgcccaca 480

ttgggacacg cagggaagta gccgttggcg ggcagcatcc gccccccgcc gcccagatcg 540

gcctccgtcc gtcctgctga tcgatcgtcc acggcggcgg cggcggcggc ggccgtgcag 600

tcagtccagt tcaaactcta ctctactcta ctctagggcc tagtggcttc cagtttcagc 660

cgtgacgaaa cgacaaagga gttaaccaac agcggcagcg gtccagcacg aacatgcccg 720

tgtcgctgtc aggacagctc acaggacacg gccagacaga cagtacagga cgccgtggcg 780

cgccgcccag gcgtaattga ccgtgcggct gctcaattgt gcgtagtcgc cgcgtctccg 840

cctcggtcgg ttttctccaa gctgctgcga ccgagggtcc gagctggaaa taccatgccg 900

cgaccgcgac cgcgaccgcg accgcgagca tctagtccga acttccggtg ccgagcgagc 960

gagaccgcca agaacacggt ccgtccacgg ccggcctgcc tctgttcctg attcttcgtg 1020

gaccacagat cgaaattaga cacggtccgg tccctgccgc cggccaagac ccggtgcacg 1080

actggataga ctccaccgga cgacagcctg ggtacactac cagaacagaa caagg 1135

<210> 2461
<211> 1347
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29871_G1, chr1:182868143..182869489, Cluster 14

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1061)..(1160)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1074)..(1074)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1076)..(1076)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1077)..(1077)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1078)..(1078)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1079)..(1079)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1080)..(1080)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1081)..(1081)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1082)..(1082)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1083)..(1083)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1084)..(1084)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1085)..(1085)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1086)..(1086)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1087)..(1087)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1088)..(1088)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1089)..(1089)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1090)..(1090)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1091)..(1091)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1092)..(1092)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1093)..(1093)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1094)..(1094)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1095)..(1095)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1102)..(1102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1103)..(1103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1104)..(1104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1105)..(1105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1106)..(1106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1107)..(1107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1108)..(1108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1109)..(1109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1110)..(1110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1111)..(1111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1112)..(1112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1113)..(1113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1114)..(1114)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1115)..(1115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1116)..(1116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1117)..(1117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1118)..(1118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1119)..(1119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1120)..(1120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1121)..(1121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1122)..(1122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1123)..(1123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1124)..(1124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1125)..(1125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1126)..(1126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1127)..(1127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1128)..(1128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1129)..(1129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1130)..(1130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1131)..(1131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1132)..(1132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1133)..(1133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1134)..(1134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1135)..(1135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1136)..(1136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1137)..(1137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1138)..(1138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1139)..(1139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1140)..(1140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1141)..(1141)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1142)..(1142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1143)..(1143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1144)..(1144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1145)..(1145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1146)..(1146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1147)..(1147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1148)..(1148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1149)..(1149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1150)..(1150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1151)..(1151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1152)..(1152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1153)..(1153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1154)..(1154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1155)..(1155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1156)..(1156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1157)..(1157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1158)..(1158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1159)..(1159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1160)..(1160)
<223> a, c, g, or t

<400> 2461
tacgtccccg ttcgccgaac cactgccgcc cctccgccgg catgcagacg gccagacgca 60

cggagcgact ggcagcagcc gctgatgctg ctggcgccga cagctcgcga gcgggacgtc 120

gtacacccgc cacgacccgt gccgacgcct cgggctcacc gacgatccac catagatgtg 180

gatggcggac gtcgacgtgc aaccggaaca ccaggccgcg cggccactgg gcgtgtgggc 240

gtaggtgtac ttgttcccgg cccgtcgaag atcatcgaag attcgcagtg gttgagccgc 300

ctagcaatgg gttcctttct gggaccgcag tcgcactcgg cgccggcggg cgggcgggca 360

ggcttcggcg ggcgaaaatg atggcgtcgg gaaccggatg ccccccccgcc gcgtggcgtt 420

gcccgctggc ctggacgccg gacggtctac actgctcggc tcgtaatcat gacaaaccca 480

cctgcactgg attggttgga tgcgaatccg aatgcgatgc gagcgtcacg acgacaggca 540

ggaccgcagg agtggagcac gaccaccgcc gccgggcatc gacggacgct gacaatgttc 600

ttccgacgcc tggaactgga acggaaccga gcgccccgcc cggcgaatcg tcttgccgcg 660

acaaagtcgc agcagacgtg cctgccatgc catgccatgc caaccgatca gcaccacgat 720

cgccgtcgcc ggccggcgga tcgattatgg cggcgagtgc taactacagc tttcagcatc 780

catgctcccc tgcgactctg gctctgggac acacagcacg cgcgcgcgcg cgcgcaccat 840

gagattgaga gccgaggaag acgaatttag aatgtttttt ccccatgatc ttttcttcac 900

agaaaagaag aaaacaagca tgacagcaca acagaacttt atcataagaa caaggaagaa 960

tcccagacca acaagagctc agtctaattt ataggcagcc ggtagaaaca cttgaggtag 1020

tgccgccagc cacagccata gccagcaaat gggatgagtc nnnnnnnnnn nnnnnnnnnn 1080

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1140

nnnnnnnnnn nnnnnnnnnn ctgtttgttg ggataaagag tgagataaga agtatgttgt 1200

agatagtctt attgtatgcc ttggtgccta ctgcgcagtg gggcccaacg accagcttgt 1260

atgaccaagt acgctgtgct aaaatatgct ggtagacact attcgtaatg cttagtattc 1320

atacggacat gatgggttta gtgttgt 1347

<210> 2462
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30074_G1, chr1:184626558..184627587, Cluster 14

<400> 2462
gtcgaggtgt tggagcatgg agtacgacag tacgtacacc agccaacctg cagccgtgca 60

gcgagccgtg gcaggcctac agcggggcaa cgacccagca atccaaggtg tccaaggccc 120

aagtcactgt ggccagcagc agcagcatgg catggccgca atggcccagc aggccagcag 180

cattgctgag gcagggtagc tatctcctac tcctacgtgc cgttgttact gtcgtagaaa 240

tagatagatt tatttattta ttacgtggag ccttgtttga acaatgaaga acaaacgagt 300

ggtcctctgt ggagcttgtg cactctacat gctctcgaga gcggtttaga aatcgtggca 360

cgccaacaaa attcttctct ctcccataat ttcgtcagga tgtgtttctc cggtttgttt 420

gaacggtgac cactaaccca gccgacacgc tggctgcacg cactgccgga gcatatttcc 480

tgcgccgaga gctcggcaat caatcaatca accgaatggt cctctctctc tctctctctc 540

tctctttcct gcaagaccaa gaccagtcag gccaccaggg tgccgggccc aggagcagag 600

caggcaggtc ctggactcct ggtcgccact gatcgccagc ggccaggagc ccagccgcat 660

gctgccggtg gcctgtggcg gtgcggcccc aagcgcacgg cgggcggacg gcgccacgcc 720

ctcggcggcc tcgccgcgcg cgccgggaca aaactcaagg cactacgtgt gtaatcatgc 780

catcgatggg tcacatcgac tgccactgcc actactacca tcgccattgc tgatgccagc 840

agccccctg gctcgtgagg ccagccgcag gccgctgctc ctccgaggga caccgcgcct 900

tttactgcag acgctggcgg gcaggacagg acaggacatc cggaccgcat ctcgtcgtcc 960

atccgtccat ggttggttgg ttctagccgg ctgatccaat tccaaacaag gttaggctaa 1020

ttcattcatc 1030

<210> 2463
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30076_G1, chr1:184628609..184629641, Cluster 14

<400> 2463
gacggacgac aagcgtgagc agcccggagt cggagtgcgt agggatctct ctccggtatc 60

cggtcgatct ccagcctcca ctccagttca gtcccagcag gcttctcgat cccaggccga 120

tcgcgcgaga tcgatcgggt gtagtagcca cagtactttc tgttcctagc tttccaaggc 180

atattgcatt gcggttgcat gattcgagag tcaaatgttt ggcaggacca gtggaccacg 240

taccggcgta cccatcaatc atatcgagtc tcgactggag attctgtgct gtgccactta 300

ggtacagtat ccgtgtgatt aattgttcta acttttagat actatatatg cacctaaaaa 360

cccttgagac aactcctcct ttacaaatga aaagcgtaga atctacttgt ttaatctttc 420

tgaaagctct acagcttagg ttcgtcgtat tttactttgc tgctaattaa tgcatgtaga 480

cgtcttatat atgcatgtgt gggtttgcac tgtcggctgc tcttatcttt cattcattcg 540

ttcagtcagt caaatgactg ttacctggcc gcttgcgaaa gcagcagctc tctgtaaaag 600

acgacctttt cccgcgcttg ccttgcctgc tctcaaggct tttttcagca gcatcgatct 660

gcactggcgc gaaagcgagg tcgcttgtca cgctcactca cggccagcga cagcatgcat 720

gacgcggatg atgaatgaat caatgaacgg aaaaagaaca agtgctacta cctaccacca 780

cgcaccaaag ccggatgcat gttggtgtgg tcggcaggaa gtcaatgtgc gtgctctctg 840

ctcaaaccca tcgatcatca acttttgatc agctacagtg ttgacatgca gatctctctt 900

ccaaccaaat taagtttctt cacagaaaag gaatagtcta gttcggtcta atccttgcaa 960

ttaaggttaa ccaccaaaaa ggatggacat atataaattg ggtagtacct cgtacggtag 1020

aagacattat ttt 1033

<210> 2464
<211> 1025
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_309257_G1, chr9:73014026..73015050, Cluster 14

<400> 2464
ggaaatgaca ggtgtggcta cgcttttcgc tcgaggaaat tagtcacctg gcagtgacaa 60

tggagctctc tagatgtctt ggcgtggcgg cctttgaacg gcatgacctt agattgcacc 120

aggtggacct agtggccgct gccctactcg gacgctaccg cattgtatac actcagcatc 180

ccagtcccag ctgcaaggaa cgaaacaaaa gcggcaggaa gctaaggtca agtagctagt 240

agagcccctg atgcatgggc aatgattctc cgttctcccg tcttttcttc atcgggaaac 300

ccacggaaag ctgttcgtat acgtacaaac aagcggcaag tgaagcagta ggtggagcta 360

cgctaacagc aagcctttat gccaaactgt gaatcaaata catatataga gtacgtactc 420

ctatgactga acaagcgagg aggaggagga gaatgcgcgt cacatctttg tctcggaaaa 480

cctcacgacg ttagcttagc cggccacctc gctcagagtc agagggcctt ccctagtgag 540

ctgctgttag taggatggac acctcagctg agacagcatc gtcgtacgct tccagggtct 600

tgcagcaccc aatgcgctag ctaaatgccg ccgcatgcag cttaaggtcc cctgttttca 660

gagcttctac tctagaccta aaaaaaaaaa ttctaaaagc tgttccaaac acccaatgca 720

ccgcatgcag ttttcactta cagcttgtta gtttggttag aagggaattg gagaaaatta 780

gcgtgagaac atagaaaagt taccttggtt cactttctta ttaccaaaga aacccttaaa 840

ctgaccttgg tttactttcc ggttcaattt ttatgcgcac gagacgggta caaactaatt 900

gatggctaga tcgaatgtac tccaaaagtt aagagaacat agaaaaaaac tataattgat 960

aaggacaaga accaaagaac aactcataaa acacgagtaa aatggatctc taccgggtat 1020

aatac 1025

<210> 2465
<211> 1328
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313141_G1, chr9:96707675..96709002, Cluster 14

<400> 2465
ccattcgtta caatgggttc attctgcttc tttaggttta tgactcctaa tcctctaaac 60

tttgtaggaa ccattaccaa ttatcatgtt gctttatgca tattcctcta gcattatttt 120

cagatccttt ataggaagtt aggcactcca ttcgttacaa aagggaatgc tttatgtact 180

tatcaatttg ctggatcact gaagcgggca acgcagaagt acccatgtat aagttaggca 240

ttgaggagag cacagtgtat gtaggttcta gtcctccagc ttgtgggaca gcaaaatatg 300

aagctctatg acagtgagta gaactggcca agaaactctg gtttggtaat ctgggcacca 360

aaacagctcc tgaagcatgc agttcaaaaa tctatatcaa atagactctt accaaactgt 420

atctatgatt ttgagcagct agatttcttc ttcatgccct atggctctct gttgaaaaca 480

ggggcagatg atcagagtct ggacattcaa tcctactcga cgctatttat taggtcttct 540

cttgtattgc ttctaggctc tagctagatc cggcacagct ggtcgaggaa gaagatcgcc 600

agctagctag ctttctccag tcatgaaatt ttgcaccaaa gacgaaacga aactaccgac 660

taccaaatgt ttggatggat gaacagacag ctgccatgcg gcaggcatgg gcactgacta 720

tgcgtgaagt acatgcccag cacggttgcc cgtccgatcg tgcatccggc caggcgcttt 780

gactccatga aaaaggaatt tacacgagca cgtacgatct ctctgcctgc cttttggcgg 840

tccaccatgc aacgcacacg cattctacag cttgatttgc acgtacgtac gcggcaccgt 900

cgtatcgaca cgacatccag gccaggccag gccattgacg acgccggccg tgtgcagcgg 960

tcgatcagtg gacacacaaa tcctgcttgg ttgcttctgt cgtttgggtc ctggctatag 1020

ctagtaactg ctagctgcac acagcacaat caaagccgtg gcggccgggg ctgacggcga 1080

tgcggaacgg acaccaccca ccgccgtgtc tcctgctcac gcagttggtg gcacgcacac 1140

gcacacgctg catgcatcat cgatgtcgtt gttgttcggt tccgtgttcc tggaggcttt 1200

gttgctcaat gctcatgctc tccttactag agcttggagt ggactagttg gtgggggctc 1260

tggccggctc tcatagtctc attcagtccc atgctggatg gtgtggttgc cgcgcgcctt 1320

gccggttt 1328

<210> 2466
<211> 1399
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31474_G1, chr1:193451842..193453240, Cluster 14

<400> 2466
cacgtaatca atcagtgcgc atacatgatg catgtccgct ggcatatggc agcagacctt 60

cctgcagctt tgataagtga tcccaacgag atctcatcga tcggtcttcg acggctgtgg 120

catggaagta gaaagcaagc aatttgcgtg tactactacg tcgtaggcgg taggccagtg 180

cacggagagg cctgaggtcg ccggctgcgt ggtcagcacg tgcaggctgc ggcgccgccg 240

cgcctgccgc tctcatcgtg cgcaacctta tcgctacttc gccagtagct ctcgagtctg 300

gacgcacgac gacgcgctgg aaagccagat gagcactagc taccctctct ctactagacc 360

cggtccacta gctgcgcagc atctgcagat cgacgacccg atcgacgact gccggaccgg 420

cgaggctgct gcaggtggcc agcaacaccg gtctgctaga cggctactcg tctagcgatc 480

gagaactagt gcgtctcgat gatttctccg cggaatcctt tggaacggct tgtggtgttc 540

ggctgcgaag ccgtaaagga cgacggcggc ggcgaccgta cgaatatttt tttctttgtt 600

gtcccgtacg aaaatcatga aaacgtagct ttgatgtagg aagataaaaa aagcaaatat 660

aaaacacttc tctaatcttt tttagtgctt gtttggaagc cttcagtttt taagagaact 720

tatttacaga aactaggatg cttctcaaca tgctatagtt tatgctccgg tatctaaaaa 780

ctagattctc agtttctaaa aaaccaaaga agatgccttt tttccagcta aaaccagttt 840

tgcacgataa actaggcact aggcactgca ttcccttggt gattgtcacc gctctctggc 900

ctatacacac gactcccttg gtgcacgctc tgcattcatg atttgaatgt ttagttctta 960

tttgaaaata tttaaattta tgagttcaag ctatatttaa aattggcagc aacgaaaaat 1020

gagtagtaag gatatatttg tcttgtgtat cgaaaatgct agaagctggt ttacaagaaa 1080

ccgagtttca aacacgcaca ttatttttc tccataaact agtttttaga aacagaaagt 1140

tccttagaaa atgtggtgct cctaaatagt ccattaggtt tgagagcaag gggtaataaa 1200

ggtgattaag gggccgagct agaaccccca ctattcaatt ttaaatacta aaagattcta 1260

gcctactcaa tcctctccat tccacttgct tgtgtatggt tgcatttgga caaatattcc 1320

cctatatata aacattatca atcaatcaat caactcatga aagactcact attacaaaga 1380

agctctataa tgggagcaa 1399

<210> 2467
<211> 1335
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_314815_G1, chr9:105080183..105081517, Cluster 14

<400> 2467
catccgggga tgcaagcaaa taatgtgctg catgggaagg cgcccccggg agctcgtgcc 60

tcgtgcgacc tactcgtcag tttttactct cagttttggc atgcatgcac gtcccctcct 120

gaacgtgatg gcgcattgat ggatacgttg accccagagc cattagagac ttgggttggg 180

tgggtggggg cggtgttggg atgggcggag aggtggcggc tctatgacta cgactatgac 240

tatgactgag gagtccatgg cacgcccagc cggtttcccg tgtgcagcgg cgcggccgac 300

gtcgcgtcac cccggccccg atcgccggcc ggccgatggc agcgggacac ggcggcagca 360

tggtcacttg tactcggcac ggagacattg accgagacgc gattgctccc gtagtcccgt 420

gtccagcgtg caatgtaata gcgtcgtctg ccaagctcga tccgtcgtgt ttgtactctc 480

tcggtctctc tctctattat tgcaacgtac tgttctagct aggggtcttc taatatagcg 540

cgttcgagaa ttttattttt tttacgacag attgatagaa aaaccacaaa gatacatttg 600

tgccttctct atgtttctta attagtccaa cgctactacc aacacatgca atcaatagta 660

cgtgtttcgt taataaaata aaatactaca ccgccgtgta cgaaatcatg caactatcca 720

acgcgcgccc atattactct acggttttgg catatcgatc gatcttttgg ccttgtcgaa 780

aggtactgca cttgcggatt ggcggctcgc aagcatgatt attgctagga ataataggaa 840

tgccaaactt gcaggcacca tcgatcaatc tgaatcgttg acgactttgc ccacgcggcc 900

gggagacctg tgtgaccggc cggcggcatt attcgggcag acccaattac cagcgtcaag 960

gggggaggt gcggtgcggc gatcagttat tattagttgg ggagtggcag ttcaggtgcg 1020

gccgtcgctg atcgggctag ccgcccacac tccagctcca gctccagcgc agcgaattca 1080

agtttcaggc ggcgtttgtg ccgcctccga tcgagctcat catcagctgt gaccaggtct 1140

cccgaccacc cgcgcagacc ccatgcatcc cggccggccc aacgctgctt cctgcttcgt 1200

tcgcgcataa cctcctgcca acggttccgg tcgacccagt ccactgcctc aagtgatttc 1260

tacatgtttt tagtaaacgt cttcaaatcc cttgctgttg ttgtctgaac acatgtgaca 1320

tactcgatct ctgta 1335

<210> 2468
<211> 1406
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_315952_G1, chr9:111464240..111465645, Cluster 14

<400> 2468
atgctaatag taccgaattc cactagattc acatttgtgc ttaattggag tctcgaacta 60

atgtgttgat aattgacaaa ctttttgtca gacatgcacc acaccaatac cgggcaacaa 120

gccatgtaat gaccgccaac cggccggcca cgctgctcgg agcacgctgc cggatcggag 180

gttgccgcgt gaaagaaggc aggtcgagct cacgtaggtc agtagaatga caaatttctg 240

tcttccttcc cgcgtggaaa ctggttggat ctctcactta ctcccgtgcg taatccacga 300

gctgtttgca gcatctacta gcggagatgc tctagttgcg tgccggactg ccagttcaaa 360

cgtcaaacaa acaaaaaaaa aacttgaaga taaaacaggt tgccagtaaa aaaaaactag 420

aaagggtaga gaaaattttg catgttgcat ggccgtctat tcttatgcac ggagcgaaaa 480

aggatgaagg aaaacggatc gaacccagct ctacggcctg cggtgcaccc aaagaagagg 540

agaacgaagg gggctagagc agtagagctc gaccttgaat cagcggatgt gcggcttcgc 600

gtgtcgtcgt cgatccacat ccacagcgcg aaggcgacca ggaaccacgc gggcgagacg 660

ggcggcgcgg cgagaatctc ggcgaagagg aggtagacgg cggccgagat catcacggcg 720

acagctacga cacgcgacgg agacgggagg acggcgaccc ggtcgcggtc cggcaccgtt 780

cctgccttcc atcgcagatg agatcgctat cttctcttct ttccttgtct cgaaggggac 840

tggtgtgtgc gtgctgcaag cctcaggctc taaactgcag tcaccggctc acggcagcga 900

cgagccctta cataaaatgt cctaatatac tttttatgga gggttagggc aaccgtacag 960

tactttatac agtacagtac tttatataaa atgttctaat attttgggct ataccttaaa 1020

aaaacgtact ttgggccttt ttttttgtca cttagatata gtttttttta tccttgtatg 1080

gtagcatggg agtgcaaaag gttacattag aaattattac agggatatat agaaagtttt 1140

ctctatagat aagtaggtca catcacagat ggcgggaacg aaggttcctg gaaagcacag 1200

ggaagctctc tacacttgat ccacaattta atttctcaca gatgaacgaa ataaagagtt 1260

tcgatctccc agattcgtaa ttttgcatca agcatcatga tttcactgca aattacgtga 1320

tgggccgttt ggaactcgga acgtaggcag ctgacttggt caatgacgca agcatcatat 1380

caccgagacc ggccggtagt atatgg 1406

<210> 2469
<211> 1054
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_316080_G1, chr9:112256801..112257854, Cluster 14

<400> 2469
ggcgacacga aactcttcca atttcaaaaa ctaaccaggt tcgtctcctt gccagtgatg 60

aaccccagag agaaaggttg cggggcagtt aagagaaccg aacccgcaac ggtgaagcta 120

ggcgctcgca aaacacacat cgaaagagcc caaaacccca gcgatcgcac aagagaaatt 180

tgaacataag catttgatcg gagggctcct cacggattca gaggagaaag gttgaggaat 240

cgccaccatt tgctccggcg gtggaggaag cagaacgacc aacatagccg cgacggcggc 300

ctccgtgtcg tcatcggaaa cgggcggcag agtggcgacg gtctctgccg ccaccggcgg 360

aggcactgcg gcgtccggca taaccagcgg cggcgggacc gtcatgtacg cggcgccgac 420

ggtctcggcg gcatcctcgt ctgccatcga ccgactaatg aggggttttg aggacagggc 480

ggggcgcgag ggtttagacg aggggaagaa gattgctgtg gtggatcatg caatccagct 540

acaagtgcag cgcgacgcga cgcgacgcga cgcgcactgg agtctggagc ggcggcggag 600

gaggagagcg agaagtcgag gcggcggcgg agggcgtcct cgcttataca cgctggacgc 660

gatgtggcat ggcgcatgac ttatgaacct caggcctcag cccggacgcg gcagccggga 720

tgctggatgg gttgggtcgg ttctccttcc ttcgcaaatc ggtcaggggc gcgtctcggc 780

ggcccgcctc gccgtaccgc tggtgcatgc aaagggttca cgttcacatg ccgtcagaac 840

agcacgatcc acacgcagtg acgcagccta catcgccggc ctgtctgtcc ctgtccagca 900

gatcgtagat cgtctatacg agtgtctaaa acaatatttt ttaagacatc actatttacg 960

agagggctac tagagataaa ctcatactca aatacagcga taagaagcgt ccgaacggct 1020

gagttcgtca tgtcacacca atgctctatg gtca 1054

<210> 2470
<211> 1204
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320035_G1, chr9:133700371..133701574, Cluster 14

<400> 2470
agtaagtagt agctagagac aagctagcta gtggctgatg agcgtgtcag tcccgtgaca 60

cttgaagccg caagcgccag tgtttgtgga acccagccga actgagacac ctcagctctt 120

cgtggccctc gccctcgatc ggaagctgcc tggaagcagc gtgtgctgcc ctagctctac 180

ctagcttatt tggtacaagt ggcacccatg acatacatgg ctagctggat atggataact 240

cgataataat cccaaaaagg caattttaag ataagagacc ccgcgagtat aacgtgcggg 300

attgacctca gcgcagccac tcgcgatcga tctctgcgga gccgcaaggg aaaagttcga 360

gatccgcgcg caacctgcaa cttgctccga tcccatgaat gaatgaattg tcggtttcac 420

aacctcgcag cgacttgtcg ccgacgagcg gtggactttc ctcctcgccc cggcccgcgc 480

ccttttttt ttctctctct ctctctcctg cgcttttctt gactctttct gtttgaaggg 540

gagaggaggg cagaccgcag acctcgatct gtccgttgac gaagccggcg gcggcgcatg 600

cgcgctttta atttctctgc tctctgctgg tggggaggca ccgatggatg cccgatggcc 660

aagggccaca gctagccgcg cgcgctatga aactggccag aaagaaacga acctgaatgg 720

gagatctggt ctagctagat gactgcgaaa tgtatggcgc acagacacta ctggctagcc 780

ctgctgacgc ggagcgaggt tgttcacaca ctcgttcgta tacatgacgg ccggccgtct 840

ggtctcagtt taatgaacca gcggatttcg cgcccatcgc caagcggccg gtagcgatta 900

cagtactaga cagatataaa gatcatgcgc gcgttcgccc ccttcgtaat ctatccgcgg 960

cgctttctgc cttctgatgt caccgccatt cacaattcat taccaccagt atgctgtcta 1020

tactactgac taataattaa agcgcgatta ccactggatg ccacccaatc aaatttctct 1080

tgtgtgcttt ggaagagggg actttcactt acctgctcgg ctagctcttt cggtcaccct 1140

aagattcgat acatatgtaa tagtgattat gttttagata gaaacttaga ggatgaatat 1200

ccct 1204

<210> 2471
<211> 1249
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320090_G1, chr9:133902957..133904205, Cluster 14

<400> 2471
aagtccatag aacctcatta gagttcatcc taaattttga aatgtatatt gtggataact 60

tagtaagatt atacaattgc tttaatttag tcctttctaa attatttttg tctccgtcca 120

gtcctaatcc actaggtggc cccagagagc ttgagtagcc aaaacagtct cagcttaaaa 180

agcctttgcc agcttgatcc agtaaacatc caagaatatt tttctccaat aaatgacgct 240

acagcacgtg cagttaacta actgtaagaa atccagctat gtatggacct aaaccacctg 300

aactgctaac ttgggagaag aaattttgga cttgtatata catgttcatt tactttagaa 360

tggcaacaaa aataattctg atgcgacatt aagattcagt cagcttctat tttgatcgtt 420

atctttgtag tcatctcaat tgtaccagtc tgtagtggct gcaatcgacg tcactggaga 480

tcaaataagc acatcgcacg tgtatatcca cactccggcc ggttccctgg caacttggta 540

aaccgatccc tcggtcaaac gtcacttaat tcaaatcgag tgtctataat gcaccaccgg 600

ccggtgtacg tgcagtgtac cagtgtcgtg gcgctcgtgc tgtcaggtcg tcgtttgtct 660

ccttcccctg tgctgccgcg tacgcgtccg gcaggcaaag acaagccccg tatattcaaa 720

atcgagcagc cagtgcagca cacaaccccc gtcgccatac agaaacaagg acagtgactt 780

tttctggtgc cttggtggaa cgggaagatc gattcatcaa tagcacaggc acgtacgtaa 840

gcaaacgcaa agcagaagat gacaagagta gtagtagcag taggcagcag aggcgctagc 900

tgcccgctcg gagtggggga gcaactgagt cactgtgacc gtccatgtat gtcaggccgt 960

gtctaagatt tcagggacta aagcttatct agagacccgt ttaacccatc tatataataa 1020

ctatatatgc attgtataat tatacataca catttcgagg gctcaaatga caattacaat 1080

tggctagcta tagtatgcgc gtacatgcga agatcgatca tccacgacgt gtttcgttgt 1140

ttgtagtctt gtccggtcct ttaacgacgt aggttgtaga ggccgaactg ctcacttagt 1200

atgggacagc tgggcaacca aacgaacact gattggctaa attaaataa 1249

<210> 2472
<211> 1347
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321348_G1, chr9:139924897..139926243, Cluster 14

<400> 2472
aaatgaagac tagatttatt tcgctcctac tatgaacccg tgtaattttt tctatttggc 60

tgtgcagaac tgattctcgc tagaagcgca actgtgagag ctctaccaaa cactcctata 120

aagatgtgag acaactgtaa aaccgatatt tatccacgta acctttgtt aaggttttga 180

aggtactggc cggcaagcgg cgaatggtac ctgctccagc tcatcaacgc cctccaccct 240

cgccgtcgac gctgcctatt tgaagccgtt ccagacggac atcgtcctca tcacgccggg 300

ccaaaccacc aacgtactcc tgcacgccga gacccaagtc gaactatggt ctatgctgat 360

ggtttaggat tgtttgtttc ctacatcttg ggtggtttta actgccccat cagctaagac 420

agggtaaatc ggattatcgg actatgccga tagtttaggg gttaaatcat actatgattt 480

ttttcaaaaa aatgtctaaa tgtttttttt gaagaaatat gcaattaaaa aaaggctaaa 540

aaggtcccca cccactgcta gtttttggag tttcaaacct caacatgaca ccgtcggaag 600

ccgcattcca tgttactgaa tgctgtacag ttcagcatac tgctgaagaa ccgccacgaa 660

acgcatttca caagcagacc tctgaagaat attgtgctag gtgtctgaaa atattatctt 720

tcaagaacag gtgccgatgg tttctgtggg tgacgtcaag aactgctttt actttccaaa 780

gcgaacagtg aatagatatt gcattatgcc gatatatcac gtggcacttg tacttgagag 840

cggtaacata ggctcggtct aatcaactgc tgaggggaga gcggtaacat aggctcggtc 900

taatcaacta ctgagggaat ctctccatgt agacgaagca gacgctaccc aatttagggc 960

ctcttttggt ttgccccttg tagcccccgt ctattctgtt tcagcataac agttctcgag 1020

ttctggttaa aaaaagaaag ggttatgata gatttaacaa gacaacgtta aatccagatg 1080

ttttaataa gagttaagtg gctaaactag tcgagagata ctttagattc acgaacttta 1140

aaaaaacaat ttgtaggtcc tcgttggact cgttgactaa atctcaggca ctgttcgtgt 1200

gctagtgtac ctcgcgacct gcaatttaat cccaacccgt gcaagcacac gcgcgcacgc 1260

actcatttgc ggattaacac ttgcttaaac cagttgcctg cgctggccac cgaaacccat 1320

tgcctgccct gaacagtgac caactac 1347

<210> 2473
<211> 1173

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321607_G1, chr9:141315106..141316278, Cluster 14

<400> 2473
ggattgtctt gaaactctga aaatactacg ttgccaaatg gcaacaggcc cggctgctag 60

tagcctgcta cacagctctc caaggcaagt tcggcggcta accacagcac agcccattag 120

tggtccaagg accaagccca tcttttaccc gacgattatg caggggccca tagctaatct 180

gatccgcaga gaccattaac caaagaatcc cttcgtcccg gagacccgga cctccctggt 240

tgcgggttgc ggcgcctgcc tcctccgccc atgcgacgcg cgcccgcgca aactacccgc 300

cttcgcagtc gtccgcgcgg gaaacgtgaa gctaatccaa ctccaacatt tcctcccgat 360

gcgctgtgct gtgctgtact ccttcgcagg gagctctcga aacccaaacc ctagctctga 420

cccaccgcga ttccccattt gatttctcgt acccatgggt ggatccgctg atcccgaggc 480

gccgtcgccg tctccgacga agccatcgcc ctcgtcggct gacgggaagc cgccgaggcg 540

gtgcgtgcag tcgaaactct cgtgggggct tgtcaaacca gccggcggcg gccgcgaagg 600

tggaggaaaa ggaggcggcg gtgaagcagg aagaggagat gccgaggctg ttcctcctgt 660

gcctgcggcc ggggaggcgg cggcgacgga agttagagag gggctggaga aggggaagaa 720

gaagagaaag ccgcggaaat cagaggatgg caagaaggta cattgcccat tttagccgct 780

gttttgtgtc ttctcgttga attgcgcagg tggaggattc aattcctttt tggtagaatg 840

tcgatagata ggcatcttgc ctttttcctg ctgttccatt tacttagagc aactccaacc 900

gaactcttaa ctgaagccct atcctatttt gagaggccaa aacacgaaag tttgtctggg 960

gggataccat gccatgccat ggttttcgtg ttatgtacat tatttttctg tttattgctg 1020

atgcccgata actgtgcact tcaacctgga taaggagtca aatctgcaac caagtgaacc 1080

aacaactacg tagctgaaat cctacctgga tagcagtcca cacgccaaac tcagtctttc 1140

ctgacttaaa ttgaactaca tctgtttctt ttc 1173

<210> 2474
<211> 1088
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321638_G1, chr9:141454078..141455165, Cluster 14

<400> 2474
aattgaaatc acactgtcac taattaactc gctatatatc ctctcggcag tacatgacgt 60

atagtatagc catcccggcc ggtgcgcacg tggacgttcg tcgcgtcatg ttttactcaa 120

gatgactcgt atactcgcag gtatacctgt agtacatacc atgtcggtgc cgtatactgt 180

ggttagttag attgatgact aagtatacta gtgtcaataa cagtattttt gtacactaac 240

ggtggaagtt tcatcgcacg gttacggttt ctaaaactga cacatagtct ataaaatcat 300

gtatcctaag ttttatccat catctttcct tccattaaac tctctctata tcttttatta 360

taaataccgt gtcatgtcat caaatatgtt gacgtgtgat cccatttaat aaatatgtac 420

cgtactaact tatgataaaa cttttactag gaatggcatg ataataggtg agccgtgaga 480

cctgagaaat aaataaatag catcgaagtg cggccctccg gtccatggaa aggttgcggc 540

cacgcagccc aagagattcc agcttgtcca cggcggcgag cgggcgccgg gccgaccgct 600

gcctgggtcg ccacggtttc cgggcgttgt ttatcgcttc gaaggcgttg aatgtctgcc 660

gctccccatt aatgatcacg tgagctggaa gccaactcgc cgcgggctcc cgcactagtc 720

gttatcgttt ctccctgctc ctgtcctgcc cgatccatcc atgggtcagg gtcagctgcg 780

accgcggcat gtcagtcacg ccacgtcgcc accggtcgga gcgttgacgt taaagctacc 840

caaatgtggc cctgcccgat gtactgcaag cccagcacga gacaaatttg gcccaactac 900

agcccaaggg tggcccggac actcttcttg ctgagaaaag tagtggagta ccaccggcaa 960

ttacatccct cccacatgat tcctcccccc ccccccccccc catctcattt cgtcgaacac 1020

tttcgatgcg gcagccacaa caagcaacct ataataaaag gaggagagcg tagaagagag 1080

acatattc 1088

<210> 2475
<211> 1194
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322081_G1, chr9:143964880..143966073, Cluster 14

<400> 2475
acagactggt ggtgccgggg tgagacaggt ctgctgcaca taagtcgagg caaaaattct 60

acatctgaac aaatctgcac cttagcaaag actctgaata ggtgaatgac ctgctggaag 120

gctagcggtg aactggcgat gaaggtaaaa gcctggtttg caactcatat tgcgtgcgga 180

ttggctcatg catgagctgt ttttttcttc ttttccctac tgaaacaagc agatgaaatc 240

agtatttgta gttacattag agccgacgga aaccagctga gccgtgctaa acgaggttga 300

attccgaggt caaggattag acactagagg gccacggcca cctgaatttt gccatcctct 360

agcagaaaat agacgacgta cggtgttcgg ctgcgtttga gtagtattta ccagcatcac 420

gatcgttcaa catacatgac gaccatacac aaatgccaat taattccacg cacatgcatg 480

gtgtgtgcct gcatagtatt cgcacatgaa gggtttgcaa attgcaagcg gcccggccgg 540

gggtgttcta ttctattatt cctctgttga gctccagggc ggctcaatga tttgggttac 600

ccatgcccgg ggattggaag gcaaggataa ggcgatggca cctggcacag gtacgtacgg 660

ctccccgaag gcgctctgag actgagtttg tttgtcccta tcacgccatg catgtggcta 720

ctagctagct atagctgaca agccccagca tccaaaatct tctctgcagg ttgggtgtga 780

ctagtgtgct gttggcctcc gtcgatcgac gctttttgtt tgcacacctt tggtctgtct 840

ctcgtgcgca ataatgatgc gtcgtcccgg ccccctgtgt gccgtcgtga gcccgtacgt 900

gtggcaacac gatccgtccc catcgttcct tctgcagggt atacggtacg tgttttgtag 960

ctagggcaag tgtgcaactt gctgatcgat cgacgatcga ttgagcgagg ccgagactgt 1020

taacggcatt gattatatac cacatggcca tatgctggtc tccatcgctc gctcgtacga 1080

cgccgatcga tcgatcgagg tgggaatggg atgcggcaat gccatggtgg tcgaactgca 1140

ctgtgtgcat gcatgcatgc gaggctgaca cttgcatgcg ttgctatcgc gccc 1194

<210> 2476
<211> 1321
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322861_G1, chr9:147796726..147798046, Cluster 14

<400> 2476
agtgggagct gcccagtctc tgcaaataga ttggcagggt ttaggggccc ggctaataag 60

gctgcaatat aatgatacag tacactcgaa cttcgattgg ttccgggctg tccgcgggtg 120

ggcatggcca acacttacag atggagtcct caacgccagg cccagcccaa ccgaagcaag 180

ggacaaacat gggccgcggg aggaagacta cgatcttagc ccgcatgtcc cgatccgtga 240

accgaacatt aagcctggta gtatagtact actacctcgc acgtacacac aagtcaatga 300

cagataaaat gacagataag ctgtgtgtgg tgtggtagac cgtagacgac ggtcggcact 360

gccttcctgc atgtgcttcg acttcgatcg actgcgtact cctcctgcac tgcactgcac 420

atgcaaggta gacaagccgc cagatctgac ggcgcgtacg ggacgctacg tatccttcct 480

tgccaactca tacacgcgcg actgcatacc gtcgtctaca ttgactgact tgcgagacct 540

cccgcgcggc tggggctgta cctgattcgg ctttttttg tttgttgagg gccactcaca 600

gtcacagtac acggtccctt catgcacacc gcattggatt cgcgtggtca aagctcagga 660

cgacgttctc gttttcaatt ttcatcaaac acagtggttc gtcctttggg actgctggct 720

gctgcaacta gcactagtac actactgaag cactgagcta cactgctcat acaacaacac 780

ggtttctttt tattattatc agcgaagaat agtacactgc catcgacgat ccattcttgc 840

ccagacagcc cgctcgaatt ctcacccgca agaccccaaa ccacgccact gctgacacgt 900

ctggtcggtt gtgttcgttc gcacgcgtgc atgcacggga tcggcggaag acgccgcatc 960

gggatcgagc gaggctgcgg ccgccccgcg ctccaagcca cgcgcgcgcg tcgatcccac 1020

cccacaggcc gaacgtgaag cccttcttcg gcgtcgtcgc agctcacagc cggcccgcga 1080

caaggagacc gggtccaggg cgcgtcgcgt cgcgtcaagt ccgccgcccg atcggacgac 1140

cgcttgtgag tctgggatcc gcccccaaac ccaaagccgt acgtattacg tcgcgcggct 1200

tgcgcatgcg gccagcggac ccccgccagc tccgccagcc cgccgccgcg cgtccagtga 1260

tctcgtgatg gagagcccgc ccggccctct ggacgcgctc gctcggcccc cagccccaac 1320

t 1321

<210> 2477
<211> 1059
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32346_G1, chr1:198478690..198479748, Cluster 14

<400> 2477
atatatatat atatatttat acatttaaac attaaatcta tatgtcactt ccacacacac 60

ccctcccctc ccctccccta cacttctctc tccctccggt acggttgtct gtgtgtgtct 120

ggcgccgtac cgtctaatag cactgaaaga taggcagaaa gtattactgc ccttgtctgt 180

gcccgcagcg tgtgtggggg cggcggtact gggtggcact gcagcgccac tactctccaa 240

cggaccggcc ggccgcggca ggcattgacg gcgacggacg gcggccctca gctcctgaaa 300

tttcgtcagc ggcgatctga aatgaatcaa tcgcccatga tttgtgatgc atgcatgcca 360

aaatgttctg cagaaagatc aaagctagct gtggctggct gctgcgctag gtagtagcag 420

catgcagcgg gctagctagc gagctctgaa ccggttgatg aacgaggatg caaaataaat 480

taaagctctg tatattcatt tcgcggacgg atcgatggat cattgctagc ttcgttgcac 540

gtgatgggca ctgaagaata tatgcgtcgt gcaggtgacg acgtccggcg cctatgcgtt 600

actatattgc tgctacgatg taaagggaga tcgtcgtcca tctcttgctg tcgatcatga 660

gatgctcgcc acttaggttt gcgtttatat aataatgatg ataaggatct gccaatgcaa 720

actaatttct ggtgtttggc gcttctcttc gtcagccttg ccgcttccgc ttgaagcttg 780

ctgctgccta tggcagtgga gaagccagaa gaaaactata gcttactgcg ctgcatgcca 840

tttaatttgt actaggctgt tacgatgctt aaaactcggt aaaacgtata ttttgtttgt 900

catttcaagg tgtcagcaga tttcgccaga tatatatgta aggcagatca gatacagtac 960

catcagtgct tcctttcatc ctttgtaagt tccggtggtc ctagtttaag gtcatatgat 1020

tttggtgatg tactgcaccc gttataactt ataagatag 1059

<210> 2478
<211> 1322
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_323651_G1, chr9:151568146..151569467, Cluster 14

<400> 2478
gtaggtgacc accgccaatc attaggccgg ccgcgacatg gccttccgtg ctggtcatga 60

actggcccta ccgcgctggt cccgatcgag ttccggtgca gccatggcag aagaggtaga 120

aggaggcgga ctattgcgtc ggcgactttt catggagcag cagatcgaca ctgcgctaca 180

cttcctctga cctccccctc catcatgccc ccccacccct tcacgcttca cctcgcctgc 240

ctgccaggat tcggcggagg cgatgctggg catttgatga ggattaggat gacctcgctc 300

tcactgcagc caaatgatgc atccacgttg cagccatcac ttaatgcagt gcagtggtgt 360

ggtgtcgact gtccactcca ccttctcgtt tttactcact cattctcact ctcgtcatcg 420

tctcgccttc acgcagagca gaagagcagg acatgcatgc atggtgtacg tacagtacag 480

gtgtcactct tgacctgtcc atcagctcta catggtccag attaaaggcc aaaggggct 540

ataggcctct cgcaaccggc gatttgaagc ggccgttctt ctcttcgtta ggttattaag 600

ggtggtgttg atgggcaaca aaattaagaa gctagcacgt gtgaacatgt taggggtgaa 660

tatattgctg ttgctggtga tggcacatga gtacaaacga ctacttctat tacacacgta 720

aagcatttcc tgctaatcaa ccggatatat tattagcctt gctctaatca gatctgaata 780

tctgatcact gaccagcaca cggtttttc tgtagagtac gtacgtacct atgatgccat 840

gtgatgtcag aggctaataa cagctgacgg ctgctgactc catgaccatg caggcatgca 900

tgatcatgca tgatgcgtgt agcggctgta gtggtcagca gcttgtagac ccgagctaca 960

ttatgtgatt attattatta tcatttttgt tttgttccat caatggaaaa cagcgaggga 1020

tgcatgcatg catttccagg gagcactttt cgcgacgagg gccagcacca gctactagct 1080

agagagtgga gaccacacct cacacacaca cacacttgat tgcctgagca caggccacag 1140

gcacagccaa aagctgccct gtactggagg aaaaaaaaag gattagagtg ggcactggga 1200

ttggatggca ccgacacttt ctctttcccc taccactcca tgcacgctgc cactgttaac 1260

cacgcatgtc gtttcttgtt ttgcttcagc aggaagcatc cagctccagg aacatgcaat 1320

at 1322

<210> 2479
<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323732_G1, chr9:151978950..151980018, Cluster 14

<400> 2479
gttttggcgg gagggcttgg gatttggcgg ggtctttttt tgttgttgtt tttgagttga 60

gacttgagtg gggccaaatc tgcggcggaa aaggttcctc ctctttccat ttctctggtt 120

ttcttttcac catggctgct gccttttttct ttttcttttt ctttttcttt tgcaccggca 180

acaaacgtgc gcaccggtag attcgtagcg tagcgagtat gcttgctgtc tgtgacacca 240

actggtgtac cgtccatctc atttttttcac acctcgaaac aacaatgtaa caagagggta 300

tgtatgtagc taggtacact ttgcgtgtac acacgcgcaa cgtaccatgc gcttgtccat 360

gaatgtcatg taccgctgct agtacgtagt acttgagatc gagcgggggt ttggaggtag 420

gcaggcaggc atcggatgcc atgccataca caaaagcttg ctgctgctgc tacaccacct 480

ggcacattta ccatcacagg caggcatcca tcctgactcg ctgccaaggc tcaaactcaa 540

gcccaaagtc gcatggatgc caagccaagc catgcggaaa ggcggctttt ttttttttt 600

gtgcacgggc tggactagtc tgctcctaaa acgtggaaag accgcagctt ttgaaacacg 660

gcaacggaca aaacccagca aaggctcgtc agagagtcct cagatagggc cccggctggc 720

ccgctgccca gcatgggcag cgaaaaaaag agagagtgag agagaaaaat tccccgtcag 780

gtcaacagca ccatcgatca gatcagccat cggcagcaat ccatcagtcc agcagatttg 840

catgcggcta tgcaccaccc gatcctcggg cttttcgttt tgagtggatt gtgtgagatt 900

tgagggatta aatcgtcccc taggatttgt ttgagtactc taacattgat cttaatctac 960

gtgggttgag ttgaatttag atgcaaatta aactaaactt aacatatgtg tattgagatc 1020

aatattagag taatacccaa actagtcgtt aatgaacaag cttggggct 1069

<210> 2480
<211> 1181
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324094_G1, chr9:153522219..153523399, Cluster 14

<400> 2480
aaaatggcca gatttgctgt taataagtta gatttgcatt cattttaga ccgagcgagg 60

gaaatacact ggatgggagt agcgatccac ttgtcagcca ataggcccaa acatgcagca 120

gctatagctg caggccgcgg gacgaagaac aactcaactc ccggcccact cgacgatgag 180

cagccatgtc catgccagtc gtcgtgtact ttttctgcgc cgtacctatc atttcgtctc 240

tctttagcta gtgatctgtt cgtcgtcacg ggcgacggcg cgtggtgtgg atggaggacc 300

gatcattccg ccggtcatta gtccacgaga tacatcgatg gcacacgaac gcgcatcgac 360

accgacgacg acagaggaga agaaacaagc taggtgttgt tcagggtcat caagaagctg 420

ctgatcgacg acgaataatg atgatatcac gctccacctt ctgttttcta tctgtttgtt 480

cttttacagt atacatatta tgtcgttcgt ccaatagttt ttcgatgtgg ctagctatac 540

acacacgcat gcatgtctgc catggcaatg gtcgtccggc aactgattgc catgctcgag 600

cgagctttgg gttcgaggcg aggcatgcac gcgcagccac gaagtgatgc gctccatgcc 660

ctgcaacgac ggaatggagt gcgtgcgtac gtggaggcga tcgagcaatg atgccctgga 720

agcatcgatc gatcgaggcc atacgcacgt cgcagggaca cacagcatgt atgtacagct 780

ccaaggagca gaaacgcatg agagggagga ggaaaggaag cgacgacggt ggaatggaac 840

gcgcgcgcgg ggagaagaag cttgatgctc acattatcac atgtatggct tttgctatca 900

aaagcgcggt aagagtgtgc cacaagggtc tctctgtcca tccatccatc catccatccc 960

tgcgtgttgt gcggtcccct tcgcttcacc aaacgccatc gccgccgccg gccttattcc 1020

ggccactgca cgtaggacca aaacaatagt agcaacccct atatatgtgt ggtcgctggg 1080

atcccggcct gacggcttgt ttgtgaccag ctaggcacgc attcttctgg cccttctatt 1140

atgtgcacac gaaggatgca catcacaatc acactagtac a 1181

<210> 2481
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324096_G1, chr9:153524089..153525210, Cluster 14

<400> 2481
tatcactgaa gtgcagtagt ataacaatga cggctgcagc aagagctttt catccatcca 60

atccgtggat gggtactgat ggatccatct tccatgcacg cacacatctc cctgcaggcc 120

cgacctcaac gacgacacac tgaataagaa gaagaagaag aagcgactat agctgtgtgt 180

ctgcatgcag tctgcaccat ccaccaccac cacccacaca tgtccatggc agtccccggc 240

cgtcgcttaa ctctctagag acgaccgaat aaacccctca attaataggg atatccatgc 300

cctaaaccta tcctgttatt gttaataata taagtgccct ttttttaagg gggagatgct 360

gctacatgct tgctgcttgg tggacgtacg ggaggacggc aagagtcatc agctgccgcg 420

gcggcctcgg cacacaaagg atgagcatgg cgtgccgttg cagctttccg accgatcggg 480

ccggcgatct gcgcgcgctg ttcctgttat tccgccacag gctggcccgc cgatgatggg 540

gcggaagcta acagctagta gagagaagaa gggagggaga ggatgaagaa ctactgacgc 600

cggccggcca ccatgcatgt gtgcagctag cagcgacaga tggaaaagcg cagcgcttta 660

ggaaatgtgt ggcgatcggc tgctgcatgc gttcggtgac tggcactact ctcctcacat 720

gcatcgaccg tggcccaaac aaattaaagc agagacgatg tgggtcggtg gtggtctacc 780

acagacaccg gtttaattag cgagccagcc gcgcgcgccg ctgctgaatg aaggctccat 840

ctctctgaaa acgtgtcgcc cagggagcta gcaaaaccgc atgatcattc tccatcctca 900

tcagggaaga atgtcgccgc gcgcgcagcc gagccgacag tggcgagctc tcgcatgcgg 960

cagtttcttc cccctcggga tcagcgcgcg tgatgagaga gatcgctctt cagcctgcat 1020

gatcattagc agctccctct ccctgccccg cgggccggct tcttgcattg tggctaccct 1080

agctagctta tataggcg gtcatatata gctcatctct cg 1122

<210> 2482

<211> 1002
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325392_G1, chr10:4773500..4774501, Cluster 14

<400> 2482
gttgctacgt actcgctcgg cagcagtcat cagctgctga agaatccgtt gagctgacat 60

ccggagagat ggctggctgt aaagataaga tgtgaaaaaa agaacttgat tgaatcaagc 120

tgtgtctttg acatcgcgat tgacgacgca cctttttttt aaaggtcccg agatctacca 180

gtgtagtgta gtgtagcgta ggcatctttt cagcttgcct ttcgacaaaa ggaagccgga 240

gggggctaa agggaggtca gatcaggtcc ctgatgactg acatggctcc tttgacaaaa 300

ttcacacaaa aaattattat tattattaat aatagaggtc gccgtcctat gaacatgcgg 360

cacttcagag ttctcccaag aaaagggaat cgagggacgc attcacgttt ttttctttcc 420

cacaatgtac ttatatgaga tagagctcca gagttcttct cacggtgttc tattaaactg 480

acaggctcgt tccagttcgc gtgcagagac tggaaactgg aaggtttcgc taatagatcg 540

gctgcaggtt ctgttcagtc tgcatgcaga gatcgactgg gaattgtaga agaaagaaag 600

aaagaaagaa aaaactgcaa tgctgttacc aaaaccgttt ccctttttgat ccctctacaa 660

gttttatgtc tgggaaattt caagtttctg cagaaatact ggagatagag ggtgtcaaaa 720

ctgggtggtt ttggagggct actaaactct gaaccctaac acagattaga ctgcggggga 780

aactgcggca tggctcctct gtccatcgac gacgagctcg cacttgcacg ccggcgccgg 840

cgctccacca cgtgtcgcgc tcctctgtgc tgcactgcca cacgtccttt gcgcgtgtcc 900

tggtggccat ttggcgtgca agttaactgt cgtgtccgcc ctcaacgcca cgacggcctc 960

acgttctccg ctcccctcgc cgccgagact cgcctctgtc cg 1002

<210> 2483
<211> 1189
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_327214_G1, chr10:14495819..14497007, Cluster 14

<400> 2483
agatgtgatc attcccatca agtcatggac ccacctggcg ctgcccgcgg ccagccgtca 60

gcgtaacagt agtgaagcag gaggaggtgg ggcaaggcat gcatcgacgt gtacgtcatg 120

caaaggcctc atgcggaaaa aaagaaaact agcggctggc ggggatttgt caaagcgccc 180

gccccccgc ggcacacgca acgttcgatg atggccaggc caggccactc ttgactcgct 240

cgccgccttg ccttgccaca cacacagcgt tgaccgcgag cccgggggag gggggtgagt 300

ggaaaaggac agcgattaat taactacgct acacaacaaa cagaggtccg gtcggagacg 360

gaaccaaact gtttttgttc atgagaatca tcaggacggc atgagcttca gcgacccttg 420

ccgtacgtcg cccgtcatcg atgttgcaga cccggcctcg actcctcacc acgaatggtc 480

ttgcacgtgg caaagccctc gtggatcaca cttgtccaat taggtgtgtt tggttatagg 540

acagtcaaac aaaacaacct tatttaaatg atcgtcttat cccgtatcat tgcaaccaaa 600

cgctcctgtg gcccagctaa agagcaccgt acgtgcatcg gggaccggga gggccagcag 660

gggcaagcaa aacatgagta ggtcaggcca ggccagcctg cgagcgactg cgtacggttg 720

cttgcagttg cagcgcaggg caacaagcgg ccgctgcaac gtacgtcctc gcgccgcgct 780

tgcatgcgca cggccggccg ggcggttgcg tgcggccatg ggccaagacg tcgccgtccg 840

catcgtgcgt cgccgtcgcc gtcgccgacc ggccggccgg gaccagcaac tgtgtgtcaa 900

ttgatgaatg caccacgaat agaaaacctg cctgctgccg gccagcggcg gggccccttg 960

gagatgcagg cagcagcgca cggcacggca cggcaccgca gtccgcaggc gccgcacgca 1020

acgtctctgc tctgctatgc tggatgggat cggacgtcga ttgttcaaat gtttcaacga 1080

aagccaactt gtctccggtc tcgcctcccc gctttgcccg ccagcccgac acagaaacag 1140

gatggatgtc cgtttccgtt tcggcataaa cgttactccc tccatccca 1189

<210> 2484
<211> 1394
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32753_G1, chr1:200859213..200860606, Cluster 14

<400> 2484
atctatacat aagccagttc ttctggtatt acccccaggg cacttctatg catctataga 60

agccagttct tctagtgtat acccccggag gggcggctct agtcaaatga taatctatct 120

taacctgtat tattaatttg cgcaagagaa taatagatat cctacacaca cacaccatgc 180

atatatacat aaaaaatgtg gataactagg agtaaccata agcttttgga ttcgtaagaa 240

aatcggcatc cgaattcaag ctgagacaaa aaaaaaaata aacccgggca catcgtccaa 300

ctaataagct aagctcgcta ggttcacctc cctgcctaca ccatgcacac gtccaataaa 360

atttcgaact gagcatgcgg tcgggcaaat ttccaagttg gtgggagcaa ataggcgagc 420

acaacaaact cccgccattc cccaggcgtc cagaggtccg gcattcagca cggcggcatg 480

gaccacggac gtaggcacgc gtcggaaccg gccagtacgt actactccac cgcgcaacgg 540

gagctcagct cagctcagcg aatccctccg gctcccgtgc cggcccccca cggccacggc 600

aggcgtacgc cccctcgacc atcctgtggc ggccaggcca tcgccggccg ctcggcctag 660

ccagtaccca gtaggcggac agccagccgg cccaggcccc gtctgtctcc gtgacggagt 720

gccgcgccgc gccgagggac ccccggcccc gtgcgcgcac ggcacggatc ggtgccgtgg 780

tccacgccgg tctacagagc ccactagccc gccgccagct caggctcagg ctcagcggtg 840

cccggtcgac cactcctgcc accttcactc ctctcttctc ccaagctagt ccccagccgc 900

gcagtagtag agaacaaaag cttgcactat ccatcagaat tcagatcctg catgcgcgcc 960

caccggccaa ccgcccacag cacagcatgc acggcacggc gcacttgccc cgctccgcgc 1020

tgacgcgggc cgtgcgcgcg cgtgcgtgct tccccggatt ggccattaag gaaggggcg 1080

ggcgggggga ttcagtaatg gcgggacgcg ccaaagtaca gcacggtcga ggaggcgacg 1140

ggagaggaaa ccatatgcac ctccgtccgc attgcgttgc gttgcgttgc gactgccgca 1200

tgcgcgcgct tttcactcca caccgtccgt ccccagccta gcgtgcgtga gcgtgcagac 1260

gatcgaatgc cgaggaagaa ggccgcgacg gcgggtaccg gaccgggtac gttcgtgtgg 1320

aaagcctgcg tgcgcagcgc agggccgggg gagggagcgt ccgccgcatg cgacgcccgg 1380

agcaacaaag gcag 1394

<210> 2485
<211> 1290
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348058_G1, chr10:138029858..138031147, Cluster 14

<400> 2485
tggcatcatc gtgtgtggct acatagtcga tgcacataca taatagtggt ctcgagtacc 60

ctacagccta agtcgtggca acaacacgtc tctcaagctt aacatcacac atttcacatt 120

taatatgttg tacccaaaat ttatctgata aactatagac ttgttaatag gcctttagat 180

atgggccccg gcccctaccc taaggacgta actccctcag tgggcctaga cacatattca 240

tgtcttattg ataggattac atttagtcac aacaagcctc atcttttcta taggaggctt 300

tgggtcttaa agggttcaag acctaggtat cggaccaata gagggcccca aatgactaag 360

cattgttgat tgtcctaggg cccctgacca cctaaatcct ttattagtgt cccaggtcac 420

gagtggccct agagacttag attcttcacg agtgccctag ggcacaacat gtcctagagg 480

cctagattgt gtgcgcctcg gggaacaagg ggccttatgg acttagattg ttttagctag 540

ggcatcctag ggccccaggg gcgagcccgg catcataagt gcgaaaattc cttgttcctt 600

agagcaccct aggtgcaaag aggccttgga tcccatattg gcccttagca agatggtggt 660

gtatatatta ttttggagtg cctcgatttc aagttgtctg gagggccagg cccttgcact 720

agtaagggtt aggggaggtc ctagggctct ataagcagtg gtcctagtaa ctaggccacg 780

taatagcttc atgtatcacg gtccttaaat gtgtcttggc aacaactagg ggtgtggcct 840

ttctctgact ctatcaaagg ccaataagtc cattgccaaa ccagtccatt aattggaccc 900

atctttcttg ctatgtgcct aatgaaatag attccacgta tgcatgactg aaaaattaca 960

catctcatca ggcatcatga caactaggtc cctaaggtga ccaagcacaa ttgaaggatt 1020

cataccatga tttagttgtt cttgggatct gtctctagac ctctgtcggg gttagttgtc 1080

ggtcattttt gtttttagct cgaagcactg ttatcagtgg cgttttatgt ctacaccatt 1140

cctgttatga tatgacatat attggaccta gagcccaata attatgcaaa aggaagtgaa 1200

ttgccagtaa tatttagtgg ggagtctcat atggtaatca cacatggttt tcgagcgagg 1260

gctcaggtcc ggagtgtgca tgatggatat 1290

<210> 2486
<211> 1334
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348059_G1, chr10:138040770..138042103, Cluster 14

<400> 2486
taatgaggga ggcgtggaca atgttcgaga tctccttgga tagatctcgt cactagcttt 60

caatcatatt cgtatgagga tctttccaac atgaaaccct tagaaggaat cgagcgagta 120

cctcattttt tctatatatt ctctcgtcat agtggtgggc ataaactcct cccttctttc 180

ttgtttttt tcccatcaca tccttgacta cttttagcct caaggatggg cacctcacgc 240

gctcaccctg ttgaccttcg cgtatctacg tggagtgttc gtcgaggtga gaggtctatg 300

cgtagaccat ttccgtcatt tctagttctt cgggtctaaa tattattctc accaaaaaca 360

ctgagcacct agatgttttc agaattctct accctcggtg ccctgatctt ttcttctttc 420

tccggacgag gggtgcgttt ttttcccctc agccacgaaa caaccgcctc atttcacctt 480

ggctggaact tggaagacgg tgaccggcca tgcataggcc tgcagctgat gatgctgtgt 540

ctacttcctc tatagaagaa cagtgattgc agcgtactat atatgctgca agctcttccg 600

agcagagcag gccgaatgtc agaaccatgc atggccaaat atacagagag agggttggtt 660

agggtttagc agtcccccta gcttggtccc gatgtcgtat tgtctgtatc attcatgcga 720

gttgacgcgg cgtggtgagg cgacagagga tttggtacag tatccacgtc cacggaccac 780

ggtgcatggt ggtacacaaa cacaatgcag aacggtgcca tgcccatgca tgattgttgt 840

tggcgaggga ggcatatata attaatcacg ttcccgaccc cggccctaac tggccggtgc 900

tcaattgcca atacacgctt caagatgtgg caacgtcgtc tttgaacctt gtttatggac 960

agctagcgga gtgagagcgc cattgctttc tgcttgacag tgccttccac acgtacgcct 1020

tgatgatgct catctgaccg ttcttaatca ctacgtaatt aataacgacc taaacggtaa 1080

cacacaaaat cctatatatc catgggtgaa ggagaagccc atcgatcgac acacgtgatt 1140

atattactct atgcaagcag ggtgagtttt gtatcatgtg gcctaagacc ctagtaccag 1200

ttttatatat ggaggttttt tttttgtttt ttgttttgtt ttgtatcatc tactattcga 1260

gaacacatgg gggccgaatg gccaatgcga gctgtcagtc cgtattgccc ttggcaccaa 1320

catcaggaga atga 1334

<210> 2487
<211> 1144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348161_G1, chr10:138732239..138733382, Cluster 14

<400> 2487
ttatgagatt tgcgaggacg agactactag taccactcta tcatctgcgt ttccggcggt 60

ctcaggagct agggggacgc ttcaggccgg taccaggact tggacgtgtt ggggagaaaa 120

tacctgtgtt tggtttaagg ccgaaattgg tcatcccaaa ttttggccac ggtttgacca 180

cacttgactt catattcaaa tcgcattgta caacaaaatt ttcatctata tggtttattt 240

gactacactt aagctatata gatgagtaat ttattgttta cctaaatttt aatttaaagt 300

aaaaatattc aaatattgac cgaattttgg cttggccacc taaggcctta aaccaaacag 360

aaaatgcaag cgcacgctgt cttggacatc catcgtcaga tgtgatatat agcgcgcgca 420

ggacttagcc agatgacctt gattagtagg cgcgacactg ggcaatgtcc ctctgacctc 480

gatgcccggt gacattcaga aaggctaggc tagtgatagt gacacgcgtc acacgcccgt 540

tgcaacggtg ttcagtctgc tcaggcttca cgttaaaatc aagcacggcg acgctttgcc 600

agcgtgtaga aatcatctga cgatagccac cgtagccggt tatgccccgg gccacatgcg 660

acatatatga aacctcgaaa cagggatgcc ctagctccaa aaaaatgtga atccgtgtga 720

tctcgattac ttctgagaat gtttgcatgt gcttgtatac atatacacat cattcgaaac 780

tagcgaaggt ccactgatgc agtcacacgc gtcgagagga ggcactgagg caggcagtca 840

ggccggcacg gctcgaggtc gaggaggtct acgtactagt atgtatgact tgacgcgaca 900

cgactcgttg tcctgctttt agagacagga tgtacattac cgtaattagt tgggtgcaca 960

tctgtcatct gcacggaccc aagtattttg aataaaaatt ctaggaactg aagtttatag 1020

ttcctaaaat ttagaagtat accctagtgt attcagatta aagtctatat ttaggtgttg 1080

tttggttcac atatcagtaa cgtaatggat aaccaataac gctgaatcat gtttgtttaa 1140

gtct 1144

<210> 2488
<211> 1231
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348273_G1, chr10:139321284..139322514, Cluster 14

<400> 2488
ggatttgtcc gtgggggctc cgccgggggc atgagcatgt ttgttgtcag tcatatcata 60

tggcaactgt cttgtgctgt agcagcagtg ggagacatgc gggtacagcc gcatccaccg 120

ccgctgcggg gctcagattc agagcggcgg tggtgggacg agagcgagcg aggcaccaca 180

gtcgcatcgc ccgcccccgc cttgcctgct gcctgctgcc ggcctccgat cgccgctcgc 240

ctcgctcatg cgcgatgcga tctcggaggg aaggtggtgg tggtgccgtg gtggcgtggg 300

ggagaaacgg gaattatcag gcgacctaca gggacagcgc acgacgcgga atcattcgtt 360

gggtttgtca tgggccccca acatctcgtc tttgtacccg ccaaaggcag ttaggcaggc 420

caaggttatt aaaaaataaa aataaaataa aagacagcat ctgtgcttgg acatccaaga 480

ccaagaagtg gaaatattcg ttcaaaaatc aaataacaaa attaacgtct aaaattgaac 540

cccatattgt ttatgcaaca caagcttcga ttccccgagt accggaatta caggccgagc 600

gggatgcaac cggaaacgat cgagcatttg ctccaggaac gtcatgtcag agcgggacgc 660

cgacggcgaa ctttgtcctg aagccacgaa actgccgaca ggcttcagag aacgccaggc 720

gagtataaaa aagtactagt agcagcgcag aggagaaaca ctgtgcatga gatgagtgtg 780

ccgcactgcc gcctgctctg ccggtgcctc ttgtccaacc cctgtccttt ttttttctga 840

cgacgcacgg gcggcaggat gggaaggcag cccaacggga aaccggtctc ccttcctctc 900

tctctacgcg gtcacggcca tcacacgcca tccagaggga tacttactgc attgacacac 960

atcgatcgga tgtaggcatg gatggtgctg tagcggcgtg gggagaccgg ggacaacggc 1020

gggcatgatc cttggatctg ccggtccctc cctgctcgtc tcggcctctc gtcccgggac 1080

gggaccagac agctaattcg atcgggatcg agtcgcgctg cgcgtgggtc gtggcccgtg 1140

tacgtacgta cgatggagcg cccatgggca aaggggagcc tgccctcgcg cttgctgctc 1200

cagttggtgg attgccaggc tctgaaacaa a 1231

<210> 2489
<211> 1152
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348638_G1, chr10:141230387..141231538, Cluster 14

<400> 2489
gttgacagaa tgtcaggctg ccgagctggc tgagagtacg gaaaccttgt ttgtgcagtg 60

gatccatctc atcgagagcc tacaagctag cacacttgaa ctgagctcgt ctccgatact 120

gtacaagcat aacggctccc ggtcgtcaca tcgtgcacat gcatgcatga ggcggggcaa 180

gtacttcgtt cggtgcagcc tagataacgg tgagatgcct caaataaacc gtgtagattt 240

ttgctccatg tcaaagcaag aaaatcgacc aagccttagt ctgggctgtc tagatctcgt 300

taaaccagta tcttggggac tatacgtatt ttcgaccgta ggtgccgcca cgcccacgag 360

ggcctatcgt ggccgtgaaa aggttccaga cgtacgtcaa gattcgtgtg aactaattga 420

gagagagagt ttattcacca tcatgtcagt caccactcga agtctcgaac ctgcagaagt 480

ggtcagatcg actcaaggaa gaagggacag cactgctgga gatccagggc gcggcgcggg 540

gccgcaccaa ccacaccagt gccgcttctt ctccgggaag tgtctgcgcc tgcgggcggg 600

atgactggag aggagcatat cacctccgcc gctgcaggct gcagcgacag aaatcgaggc 660

cgccctagct tctccgtcag agcagaggac acaaggtcag atgtcccgag ggccgagaat 720

cgacaggtat agccgtatag tgaagagttt gaggatccag taagtatcca tgtaaatttc 780

gtttttttt ctttcttttt ggtttggagc ttctgtccca acacccgtga ctgggtttct 840

gaagatcgca aactaaacac aagttcagtt cactcgtcgt acgtcctgag gacgactatg 900

ctgaccctgc aagcgtgtac gcacctcaac tcgatcagat ctgtttcccg ccaatgaaat 960

ttattagtga agccaaatgg atttattcga actctgcttg ggtgcccgct ggctccatgc 1020

tcagctgtca gctgtctctc attgtggctg tttagttggt agtgatagtg agagagtcag 1080

cggtttgact ttggtgacgg atctcatcga acggtgacta agcagatctg attaacttga 1140

gaacggtggc tg 1152

<210> 2490
<211> 1119
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348650_G1, chr10:141273274..141274392, Cluster 14

<400> 2490
ctggactctt cctatcttac ggtaactaaa tcaaccgggt gagttaatta cagttctgca 60

aaaaaaaaaa aaaaaaattc cctcccgcgt agttgtcacg gtcggtccta gtgctccgcc 120

agcatctacc aataagttcg caggtcgttt tgggcagcct tctggtagta gcaactacgt 180

atatatctaa tccactcaca tgcccgattg gtatacgtct ccttcccccc gccattttct 240

actacttttt tctctctctc tctctctctc ttcacggtgg gcactgggca gtagtcaata 300

gacctgcata tataatatat atatatatat catcaaatga tgaccaccca ctccccaacg 360

cacaggtcaa tggagccacc gagccagagt taaagtactc tatcgagata gagagagagt 420

gtgtgtgtgt gccaactttg cctgcctggc tacaagctag ctagtagata gctaggctgt 480

gaaagtaaaa aaaataaagc gccgttactt ttgtttgatg tagcggtcgt gggcggtgca 540

cgcagcaggg gagagggaga ctttgggttc agagtccgcc gaagcgacta gcgagagctg 600

gacacctccc tccaactcca acattctttg catcttcctg ctcccatatg ctttccgcct 660

aacccaccgc tgatccgctg aagctgaagc tgaagcctcc ccccacgatt tgtttattcc 720

ctgcaaatct cacggtggga cacaacaacc ccgcccccgc cttgatcgga tcaaccgatg 780

cgaggtttcc tccgggcgag ctgagctgag ctgtccaact ggacttccac tgcgttccgt 840

tccatcatgg ggcgactgac actgacctaa agctactcac gagactgcga gtgcctgtct 900

ttaaacaatt ctgtccgttt gcttgcttgc ttgcttcccg attgctgcct gtgtctcgct 960

ctggcactgt gtggcagtac cagtacgtgc agagagcgac cgtcactgtg tggtggagca 1020

gagctgcaga gccagagagc tgacatgtga cagtggcgcc gctggcccat cttgtggtcc 1080

ggcccttggt cgcatcagca gggagtagca gtgtcttgc 1119

<210> 2491
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348745_G1, chr10:141819586..141820749, Cluster 14

<400> 2491
ccgagagccc catcttggcc gtcgcatgtt tgtactatat tttgctgctt atgaaatctg 60

caaattatga gtgtcttact aggatactgc agaaagggta caacgcaagt ggtcgcctgg 120

ccatgaagag atcgaagtgt caacagatat ttgactgaaa agcagttaga cagccaataa 180

atctcttctg ctacgagaag caaagggtta gacacaggtc ctagcagcaa agaaagtctc 240

catcggtgaa cagcaaggag atgcgtcagc gatggtactt gagcatgaag atccgctgaa 300

atggaagcca tttccccccc gtatggatga agccaaaatg gcggggaaat cctctttgtt 360

ttttgagaaa taatggcggg aaatgttgtg tgatcaaatc aaactgggcc aaagacgaga 420

acatcaacat gtcttaccaa caaaaggaag aacaggtgtt caggaaaacg acgtcccctg 480

taactgtaat gcttgcatgg caatgggcag gttgtggaac gagcgcagaa ttcagatcct 540

gctttctgaa atttatttcg tcaggatttg gtgattctgt tgtgactaga taggacttgg 600

gacaatggtg gaaacctggg gtttggcgtt gattcaccca ctaaatatat ttagggagtc 660

tggtgtggtt taatgtactg tctgaattaa cgattctgaa gactaaagct attaagtgat 720

gttgtcttga tatgccaacc aggcaaccag atgaattgtt ttggcatgcc ttttttatta 780

tttttgaggg taccgtacga gggatcgagc taatcgggag gcaggcaggc aggcacagag 840

cattcagcta ggttcccatt ccgtgcagag acaggcaggg agtggggagc aaggggaggc 900

gcactgtgat gccataagtg tcagcaagaa ggcccaaatg cgacgcgagc cattgtctaa 960

accctcccca gttcgtgtga gcaaacgagg acagcagcta atgttcacag aaacaacagg 1020

tgcaaccgtg caagagatca aacgattact cgggccctgc aagctattgt gagacaagga 1080

cgagggggggg gagcattcga gctggagcca gacgtgagct tgctgtgggc tgtgtggctc 1140

agcagatctc atgtctttct ggcg 1164

<210> 2492
<211> 1121
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34971_G1, chr1:212535842..212536962, Cluster 14

<400> 2492
acaagtgaca gattacaacc ctgctctccc aggtgcagtg acatggcgct ttcaccgatc 60

agcatgcacg ctgatcgaca ggttctccct acatatcttt cttcctattc tgaggcatta 120

cgggttaggt taagtttcca aaaggcatta tcaggtaatc gttggatctg tttgatgttg 180

tcatacttgg aaatggtttt attcatgcac tcactccgat actaaagtta taagaaaaga 240

tattaatttt taccacagtt ataaaatagt tattctataa tgtctctaat ggagcataca 300

ccatgtttat tttaataaat ttagttaagt ttaaaataga ttaccataca acaaatataa 360

aagacactat attttaggac gtgagtattg gctctaggtg gatttaacaa gtatatatgt 420

aatcattgtc ccaaattgtc ttaacatggt gacaacaaaa aaacaggtgt gttttattgt 480

aattatagaa aaaaaacagt tgtcttaaca cgcaaaggat tacttacccg gaccatgcag 540

agtagctccg gtaaggaatt cctttcccgt agtccatcaa tcgtgaccgc cggggacacc 600

cttttctcca gcgtgctccg aagaagatat ccgaccacca cacgtgacct gaacgaccat 660

gcagccgagc ttcccatggc gaattggcga cggcctgttt tcgatctccc tccgccttct 720

cttctctcag cttggtggtg aacgatggtg ctctcggtgg attttgcgaa cgcgcgtgct 780

ggtcatagga tctcgggagc cgagatttta tactccccag ggaagagtcc ggccgggcca 840

caatcggtgg agagctcacc cggacggccg gaattgcgct aactgtcttc cgtccgtacc 900

gactcgaggt ggatgaccat ccgacgcact ggtcccacgt ggaagcgaat gcgggcgcac 960

ggtgtggctg tcctgtggga ccccgtcggt gtaagggcga ggcgcgggca cgcggtgcac 1020

gcagtcaggc gggccgcggg cgtgaaaaga ctggatgggc tggctaggga aatgtagttg 1080

ggctgtgggt ggactggcca tgggccgatt tgctaggccg a 1121

<210> 2493
<211> 1095
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35503_G1, chr1:214990459..214991553, Cluster 14

<400> 2493
agcttcttct catgttcccc ggccggcctg acgcttaatt tactcacacc catctggcca 60

tctcttttgc gcgcacgcac gcatcatgct gcagctagca tatatatcgg ccggcgaacc 120

ggattcagaa gccgatgatc tcgtccggca ccgtcacgaa cctcgcccgt ttctgtgaaa 180

aggagccaag agggaaacgg aaaacgcagg ttgttagttg cttacattgt caacaaataa 240

tagccgcgac ggtttcatat caccttaga tccgtaagct tttggaaaat agaaggccag 300

aggaaaaagg tatatatata tatatatata tatatcagca gttcagcaca caccaatggc 360

cctgacaaaa aggttgcggc gctgtcgttg caaacttgca ccgtactatg tgcgtgcggt 420

gtttccacac tactgtgtgc gtgcggctgc tgcagcagca ggtcttgccg cgcgagtcgc 480

ttcaagtgga aagccgctag actagggtag tagctagcag ttctcggtgc tgtttcccac 540

ttccgcaccg aaagaggaat gctttcttgc ttgcttgcat gcatgattgt ccgtcctgcc 600

gctaccgggc tggctggctc actgagcatt aggctgactc cagcagtaat cctatctcat 660

cctctatctt aaacttacca taatttacag gatatctact atgctaccag cattattttc 720

atcgaccgat caacgcacgg cctaaccgac accggcagcc ggcagacggc tgttgaattt 780

gctacaagca ccgttcactc acatgttaca aggtgccttg cctttagtaa gctacgtgga 840

ttattccatc atgtcatgtg tagtgggcgg cttttgaggt gtcgtgtcag atctcgacag 900

ggcacatgac cagtcgctgc caaggtctct agaaatatca ttaggatact tgccaagttt 960

tagacttctg aattttagct tcattttaca ctataattat atatatatat atatataatt 1020

acaattacgg tttatgtgtt atagtttatg taactataat atgtgattct gagttctcaa 1080

agcaaaaaat atata 1095

<210> 2494
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38439_G1, chr1:230223563..230224604, Cluster 14

<400> 2494
cacaatgaaa attatttttc tgaataaact attttcaggt gtatgagttg tctatttaag 60

ggcatttgca tgcataaaaa cataaataaa taattaatat aaaagttaca tcacatgctg 120

gagttctata tgtgcattta gtttgaacca aattgaatta gttgaatcta aaaaaactga 180

aaataggaaa aaaggaaaat ggaattgata aaagaaaagt aaaagaaaac aaacccatgg 240

gtcatctttc cttgtccctc tcagccttgt tgggctctac ccctccgcgc cggtccactt 300

acccacagcc gcgctggagc gcatggttcc actgatgcgt ggcccctcga gtcagccagc 360

cctcctccaa accacgtgtg cttgccgtca cggccgcggg cgcatggtcc ccactgttag 420

agcctcccac actcgcgcgc gcaccagagt ccttcgacac cgtggctctg tttcgctgca 480

atgcgggacc cacccatcag ctaaggtatc ttccccgtga caaacaccac caccgaggga 540

agagagaagg ggtagctgcc ctccgccagc accaacgctc tagtccggtg tagtggtcgg 600

ggaggtttgt tggtgggtgc tgatggttcc tgcgacacgt tcacacgaga taaccagttg 660

gagtatgcgc gatttctcac catacttcca ggagatcgcc gtgctgccca tccacgtcgc 720

caggtctcat tgctgctaga ttcgaggtga gagtttcccc atgctgttag ccgtcgtccc 780

ttcttcgtgt attgtccttc gaactgaagt attgcacact gaaacgctag ggcgttgtgc 840

gctggcaggg cctccgtcgg gggggggggg gggggggtcg ccaccatggt tggcagcggg 900

tgaggatagt ggagctgtgt accgttcgat cgatcgtcga tggctgagat tagatctctt 960

aataccactt cacacgtatc atccgaagcg ttggatcatg tccggatgct ccagattaga 1020

agttggagtg gagcccccta gc 1042

<210> 2495
<211> 1165
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38698_G1, chr1:231384987..231386151, Cluster 14

<400> 2495
aggtttattt ttatacctaa tattcaattt tcggattaac ttatgattaa accaggaggc 60

tgggctgtag tcactatttc catgaattcc agagcctaaa atgcgaattt cgggggctta 120

aattagatgt cctattacgg ctctaggact gcgggttgat tagtgaaggt cacatgggct 180

atttcaaaaa gttgctcggc tgacttaacg gggtgagttt gagccattga attaccgaac 240

cttggccatg atcgaattcc ccaagcggta ccccacgatc taagcaccgc cacccgatct 300

agatccttcg atctggggtc atcctgttgc tcctgaccag aacagggccc tgacgcctgc 360

ccacccgacg gtgagctagc tgggccgagg gtcaatcccc tccctggctc cctagagcac 420

catctcacgg accgagaggt gctacccaac cagaaggata cagtgattcg agttacgaag 480

ttgttaccaa cgatggcgta gccttgcatc cgatccacag tgaagatcgc cactgcgaca 540

gaagaacaac cccggtgtat cctgtcgttt gcgaagacct cgaggaccct cctaaagact 600

cggggagact cggcgaagcg cccaaaccga tctccatgga ttcagctatg ccgatggccc 660

aatcaccacg acggtcggtt ccctccactt ctctctgctc acgacgacgc tcagttcctc 720

cctgcgctca ccccagctct cccttggcga cgtcgaggct cgtatattcg atgacaaaag 780

aacaaaggtg tgggggtggg caagtcagct tttacgcccc aggatcccat ggcgcccatg 840

gaaatccgcc ctggtagaac agcaagcaac aatctgaatc cgcgatttca gtggggtttg 900

ttacaggtat gaagccagct tgtggggccc aacggctgac gtcagcgcgc aaggtggaga 960

ggctacagcc ggggcccacc tgttggcaag tgcgaccaat taggcaatgg gtggggcggt 1020

gtgcgaggaa gtggagttgg gtgggcgagg taagttggac cgagcgtggg aaattcttga 1080

accgggccga gagggtgagg tgaggagctg ggctggctga ggggaaaaca ggaccagatc 1140

aggtttgtgt tttctttgtg ttttc 1165

<210> 2496
<211> 1078
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40348_G1, chr1:240465078..240466155, Cluster 14

<400> 2496
gtcaagggac agcgcgagcc ttgttgtaca gacaaccgaa catccgctgt gtgcagtcca 60

cgggatagcg cgagcctggg cgcagctgtt caatgaacca atcatgtaga ctgagtgcgg 120

cgcagataat cccatttctc ggatcaaata tggccacaac ccctttcttc taccttgaaa 180

ctgcacatgc atgcaaggag ctaggaactg tcatgggttt cggccaggga ggttagcgtg 240

gggggagggt gctcggctgc gccaggcgtg cgtgtagggg ggcggctagg ctgggcacac 300

gggagggctg ggcggctgtc agccacgccg cgccataggg cgagcgcaca ctcctgtaca 360

ggggctgtgc agtgtgcaca ggggcaaggg gcgcaggggg ctaggggcta cgcatagggt 420

tggggcgagg gagcgtgcac catggctggg gagtggggag ggggcttggc caagtgacgg 480

ccatggttgc gccatgcagt gaaggggaat aaagaaaagg gaaggggaag aaagggagtg 540

gcaaatccag ggcacgacga gatctgacca tgacgaagtt gattagagtg tcggtcttat 600

gatccgacaa ggggggacag aaattggtcc catggctacg ctactgaaca gagggcatca 660

cagagaaact ctcgacgcca gggacgacca aacgtagaga atacaaagga gcgggtgggg 720

atttctcacc gaggaaggaa ggggcggtcc aagaagcgct cataggcggc gaggtcactg 780

cagcgatggc gctctggaca gggacgatgg tgctcctctt tggttgttgc ataggcgaag 840

gagcatcatt tggggaaagc gtcgtacgaa cgaagggtgt gaaggggagg agggttttgt 900

ggagcgatcg agaaactata gtggacgtgc gtgtggagag agcgagggtg gggtttattc 960

ttccccaaca tgcacacgta caggtgagga tttgaggggg ttagtctgac aggtggattc 1020

cgtattttaa agattgattt ttaatgcata aaaatgtttt aaagagccca aacttttt 1078

<210> 2497
<211> 1151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43048_G1, chr1:253607122..253608272, Cluster 14

<400> 2497
acaaccacca acgaggcaac gagtgctggg aacacagcag aatcagaact gttaattatt 60

aagtgcacgc aacaacggtc agaaccagcg cacacagtac tgaccagcag agtgggggct 120

aataacacca gcaacaacaa gtgaccaaca actccaatgc ggcggccaac actcctatcc 180

tatcaataca gatcgaccgg agggaatgct tgcttcaagt gcgtggatat gtgcatgcaa 240

caatgctcac gtgcgcgttg actcctagct tagcagccta cgtactacgc gaattgcggc 300

tgtatagtat aattcactaa ggcacgacga tgcaagaaca cacgagcgac cacacataac 360

aataacataa tgggccggga gcattatatt gcctaagtat tctccagcaa caccaaaaaa 420

aaaagcatac gtccacgcgc gcacgattga tcgaccgccg gcgccatgcc cgtgggccgt 480

cggcctgatc agttagtcgt ctgattgctc gggttggtgc tggatatcgt ctggcggtga 540

gggcaccggg cgccaccgtt gctggggctg ttgctgcacc ccgacggccc ggccgatgat 600

tcggtcgccg tctgatcagg tttcatggcg gcagcggcag cagcagccgt cgtcatcgtc 660

ggcggcggcg ccgcgcgcat acgacgaccg ggcctcccgg cgccgacggc tggcacggcc 720

gaagaaataa ccacggcgat gagcatgagg acggccacag caatcgtcgc cgccgtgcca 780

gcagaacgcc gcctcagcac tttggccata tatatatgat actgtctgct tccaggtagc 840

gatcgagatt attactgtgg aataaacaat ccctaccaat cgatgaagct agctagggca 900

gagaggggta gcgagagggt ccggtgcaca ggaaatgtga tgctggtggt gttgcggttt 960

agggagctat gctatgcatg tgtctcccct tctctctccc tctctatata tacacatgga 1020

tggccgtacg taaaggggat ctgcacatat aattatgtat actgatcaca aggattagta 1080

atgcatgcat cagatgcgtg cctaatttgg tggccagcag tcagcacagc tagcagaggt 1140

agaaacggcc g 1151

<210> 2498
<211> 1210
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43694_G1, chr1:257191093..257192302, Cluster 14

<400> 2498
aacttgctct tcctgtgttc ccatcttaat gactctggtt tttttggagg ttttctgttg 60

atgcgtaggt gcattattgc acgttgggaa agaaccacac ttgaagacaa aatccattgg 120

ttcaaatcaa gcggccagag ccagcatttc ctcctcacgc cggtactgcg tagcaggggg 180

tggctggagg cccatgtgcg cggcgcggac ggatggcggt gctgcgactg cgaagtcacg 240

cgcgcgcgac gcggaccacg cctgtgcccc gccggggagc aggacgcaaa ggtgcccgag 300

accgagacga cgtcacgcca cgcgtcgtat ccccgttgga caggacagca gcgaagaatc 360

cgggcaccgt agtgcacatg gtagggtagt gtcacggccg gccgcatgca cggcgtactg 420

acctgccggc gccagggaca caccgagcgg cgagcgcggc cgcgtttttc tttgcaggtg 480

tgggtgtcgc tgcgtgctca ggcccccgcc acccgcccgt ccaccctgcg tcacgcgcgc 540

ggcgaggctc tgcttcctgc ctgctggcgc cgcttgcact gcccagctcg cggcgcaggc 600

agcccacagt cccacactcc cagatgatga gatcatgagg ttcgtaaaat taatcgtagg 660

tatacaacca tttgttgact cgtagaagca ttatttagtt ggatagaaat taaaggtgcc 720

gaggcccata tacgacttgc taaacagaga acgctaatca agggccgcta aacaaggcaa 780

cagtgccatg cagccctagc tagatggcta gcaacggaca gcgacgcgac tcgcgaggct 840

gtgtgcaagt gtacagcagt ggctggcggc tagcactgtt cggatgatcg gatcatcgtc 900

acggatccct tcagatactc tgcggccgaa gtgcggactg ccgtgccgcg gtgggctatt 960

tttctcatga aacaggagtc gtagataagt actgtacgca cgtggtagta cgagttcctc 1020

tgccccgtag aatttttacg tcgatgcatg taccaatcaa agtatcaaag aagctgatat 1080

cgatgattaa aggcgagaca accagcattc atctgctcta aattcatatt gctgtcagta 1140

catcttcact ctcagacacc gatcgaatat gagagctggg ttgggtcgaa aagtatagga 1200

ccgacttgga 1210

<210> 2499
<211> 1251
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44065_G1, chr1:258651321..258652571, Cluster 14

<400> 2499
cccacccagc agtgatctga cctcagcagc agcgcgtcta gatagccgcg ccgcgcatga 60

ttgctttgag gagacgcaag tgcctccggc cggcgtcccg gaggccggac ccagcccaat 120

tgatggcgag cctggcccgc tcggtcgggc ccccccatgg ccgcattaac gccgctgttg 180

gctttggctg cgccggcttc aattcccgtt tggccgcgct tccgttccgt ggcatgccca 240

ccccacctgc tgcactgcat gagcccccgt gtctccgtca ccatccggtc tcgtccacgc 300

catcgctgcc ggcggccacg tacaccggcc ggccggcact cgctcacctt ttatgagttg 360

ccgctgcgcc cagtgcgtgc gtgcgtgtgc gaccgccgat acgatccgtt gatggcaaca 420

gcaacacgcc cggcccgccg cacccgcgcg cgctcgactc gtcgccagca gcaggggcgg 480

cgccgactgt ttaaaaattc cagaactaat taagacatag cctttagttt gcgtccaatt 540

actgtgagga gcagggtact agttcaaagc tatgcagtgg tatgtacgtt ggaacgtggt 600

tcacatcaac ttgcttcgtc ttcgtagatc cgtgtcaatc atttctgtta gttggaacgt 660

ggtttcaagt atacgttgag tctgaggttc tagattcttt atgttgtact atttcgttgc 720

tttcttgggg ctgcactgta taacctgtgt gagtgtgtgt aagaactaaa aatatatata 780

aggacgaaac cagcacctcg aatatagtta cggttgtatt gtttatgcgt catttaaaac 840

ccgcaactat tcaattgttg gtttcatatt tgtatctttt ttgcgcaggt ttttttgtt 900

gcacctcaga ttttacatga acacagaagt ttgcatcatc cattgatttt tgtttttgtt 960

ggaatttttt tgacacgttt gggcgtgctt tttatataaa aaaatgggag cagagaagca 1020

tgtgagggag cagtgtagtg gtatgtaata tagatatacg tgatttgtgt tgaatatatg 1080

agattttgta atatagaact gtgaaacaaa cttctttatt tagtgagtgt gacggaaact 1140

tccgcatgca ttcgatatta tgacgataac gtcatgtgac acaagtttga ttttctaaag 1200

gcgtctccaa tgattagcta ttcctacatg gatagaaaat atggggaaaa c 1251

<210> 2500
<211> 1106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45176_G1, chr1:265318544..265319649, Cluster 14

<400> 2500
cagtactctc tcccgtccgc gcaacaaact ttttggttgt gatccccctt tatatagaga 60

acatgttggc atgagaatca acgtccgctg tatctccttg cccgtacaga aattaacgag 120

atccgatcta tctcctctac cagagaccac cgtaccctcg tagatattga agcccagact 180

tgaacctgca actccctaat tccaaaagta cactgatggg ttcttagtct tctagtagat 240

agggtaacac ctaacacaaa agttggattc atcgaccccg tcgaccactc ctcatccaat 300

ccagtgcaag ttgtagaaca cgaggcaatt agcccgtggc gttcgacgca gtggcagcca 360

gccaatcatc ttgtcccggc aaaagtaacc ttaacacact tctcctcctc acccttcttg 420

atggagagcg ccctgccgcg agttgctttc agtacaagca tcgtagctcc aatcaggcag 480

gcctgctgtc tgctgctgct acgccgtcat cttggaaggt gcctcgccga gagcacattg 540

tggacgaatt gaagatattt tgtctcgacc tgaaaagtga cggactccgc agagtcttct 600

tgctaaccaa atcgacatcc agccagcgtc acgtgaagct ggtccatcca aattttaatc 660

tctgccctag ctaccctact acacaataga agtgtgctac ctccaataga agtgcgctac 720

ctccaactcc caggtaaacc ctaaacccta ctacacaaca gaagtgcgct accaccaact 780

ccatcaagtc agctgttaca aattgaatat ttcattcaaa agttgaatac tagtatacgt 840

gtgactagtt cgcatcgcac gttttagaga agggtatata cgtatatctc ttgatcagaa 900

ccttgagcca tgcgattagg cggtccaaaa cacatcggat ctcggtgcgg gatgctgaat 960

ggtgtgaata tttatattta tagcattcgt cgtctcgatc aaactgtgct gcctgcctcg 1020

cgatcgcgat ctcctagtag ccctcgtcgc ctctgttttt ccgattgcgt ctagtgggcc 1080

gcctttgctt aacagcgcga agttcc 1106

<210> 2501
<211> 1378
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45895_G1, chr1:268943994..268945371, Cluster 14

<400> 2501

acccaccgcg gtcgtgcgag agcggcggac tcgatggata gacgtggtcc acatggacct 60

cgcgatttgt tgttgcgctg cttcccggtc atacacacag actggtcgtg cgtgagaacg 120

gatcggatcg gaggcgatgg ccgggggtgc ctctgtcgtc tgtcccacgg ctgccagcca 180

tctctccagc actccaagtt gtctccaact gcgtgaacgc ccatgcgcct ccgagcgccc 240

gtgctagcta tccgcgacaa cggtccgttc tgcctggccc gtcctagcgg cacacgttcg 300

gtccctatag tcgcggaccg gattggtcgc tgtggatttc cacagagata aattgcgagt 360

taggcgttcc tgtcttgtat catgtgtgtc acagtgtgtg gccaggagat tgcacgggcc 420

atttccgctt atgtttttt tttttgacaa ttcttgggta caagtcgccg cagtcctcgt 480

gtacatgtat gtatgcgcaa aaaacccaag attttacagc ttcaatctac ctgtcgctac 540

tgctacacct tctgcctatt tgcacacgtc gcgctccgtg aagatttgcc cccctcgccg 600

aagaagtctc acagttaccg ctatccattc gggtggccat ggaacaaagt cgctccggat 660

actaggtgcg gaaacgttac tgcgatcgac ttgccgatcg agtccaattg cgaccacgtc 720

taaccaagcc gttgcttatg agggcgcagc tgcaacaact ggagatgaca cagcatttgt 780

tgtcgttttt tttgggtggt ggtcgcatag gcttgtggcc taagacaaag tagacaagca 840

cgtcgggtcg gatcaaaaca aacattactc tacactattg gagatgctcc gttctttaaa 900

aatatgaagc cacacacaag ggtggttcgc ataaacaata ggcactgcgc tagcgcttgg 960

tctcccgaac cctgccgtgc cttttggact ccttgccact gcagctgatg gcgttccaac 1020

ttctaaccaa cgggcatcat gtttgcagtt ggggtttgca tgtaaatttg gaacttacta 1080

aatagtagga gcatataatg tatttctaac acagtgtcac ggtttttgtt atatagagta 1140

tacatatgtg gttcggtccc ttctcttatg cctctgccga tgccgttggg gcactgcaac 1200

agcctacggg tactaggtgc acctgttctg cgttagcttc agaaaatatt gggcgttttc 1260

tatgtcgttg ggcatcaaac acacctgatc attgatcgta agctgtgtcg ctcgccaatg 1320

atttttaggg attcagtgga gtgagaagca tatcctaacg gccgatcgct tttagtat 1378

<210> 2502
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46021_G1, chr1:269638798..269639906, Cluster 14

<400> 2502
cgttgcggta cacgtcgcct tttttaatta catgcaccgt tacttcttcc gtccgtgcct 60

ccgtgacaac cgatgagtcg gggtgggaaa aaaatagcac tgcacggcac gtccagaaga 120

tttccacacg cgagaaagaa gagggcctgg atgatgtgcg catatgcaag catacatgcc 180

cgttgtcttt gtctccatcg gtcaaggctg cacagcactg cacacgtgag aagcaagaat 240

gtgtgccagg tatgtcaaaa ataaccctgg cgtctgatcg gtccgaagtt tatgcgtacg 300

gcgagagaaa aatatatata tatcctgcga cacacacaaa gactcccctg aaagtgttcc 360

tgcaaaaggt gtacggcctt gaagattcaa atgcagtcta gaaacacaat ttttttcggg 420

tataaaaaag agactaatgt acgtgtatct cattattagg taaaacatga ttctgagcta 480

gaccactggt cgtagtttat gttgctagtt ccctaaggtt taagcttaat taggtgctta 540

ttgcttcatg tccaagaact tttatctgcc atcatgtata cggaacagag agttaggcca 600

gcggtcgagg caggcattca gctcagctgc actgcacccc cgaaacgatc ttgtggcgca 660

tgtaacctgc aacggaagca ggcaacaggc agaagctccc gggaaggaaa cgagagcaat 720

attgaaataa attaacttct gacggtatgc gctcgccggt caccagaatg tctcctctat 780

atatagttgg catggcccca tcagatgatt ttttttaaa aaaaaagtga tgtatggtta 840

ggttctctac cgtatctatg gagaagcgga caggaaccaa atcgtcacca cactactaca 900

atttggccat ctcaaagtgc agagagatgc agctagccat caacaagcta gctagcacta 960

gatcttgttt cattctctaa cgatttttt cagggaaaaa atatatatga aaaggttctc 1020

tatatggttt ggttagttag tacttcctag ggtcttaatt acaagtttac aaggacacac 1080

gcacggatat caaaatttaa actttgtat 1109

<210> 2503
<211> 1355
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46721_G1, chr1:273369406..273370760, Cluster 14

<400> 2503
cttccacatt atcaggtgtg atgacgaagc atcagtttcg ctgattatta tacttgcttt 60

aaggatgtgg ccaatagatt gtgaatatat gttatgcaaa tattgttttg caccgtattt 120

tttataaagt ggagttttaa acggaagacg tgaataagta agggcaccta caacgagagt 180

ttattacggc cgggcgtctc ttagctgcca cgttagcaag aaacaaatga agaaaactta 240

cgtggaagtg gaaggtaatt actgaggagt gagcagattc gtcgtctcgt cagtcgccgg 300

cttcagctcg tgctctcgta caacaccacg gggcacagtc agcagccgtc tgctggagat 360

agacaagggt gttcaagcag gcaagcacgc tgttcgtgcg tgcgtgtgct cgcacacaag 420

tcccgagaaa ttcttctcga agttgtgcaa catgcatgca tgcatgacac gagatactag 480

ctgatagcgt caccaccgat ccatcacatc tcgaggttgc aggcaaagag ccaagcaagt 540

tataaaaaaa gatggaaatt tccatctgca aatcagcaga acccctcagt attatacaga 600

tacagcaaga gacaaaccgg tttaaggacg tgatgacatc gagaaaggat cttcacgtca 660

caggccgcta ctaccgttgg acaggccatc ttgctgatcc ctgaagcaaa aaaaatcacc 720

aggggcccca catattctgc gtgaagtgaa ctccagctcc gagtatcatc aggacgcgga 780

tcagtcacgt tgccctacca tacatgccga tatgcgcgca tttatactcg tcctcgtagt 840

gaaagatctc tctaaaaatg cagtgcagtg ctcccacggc gccatctttt ggcgtggggt 900

ggcataaaaa aacaagtggt tttattaagc gtttcctctg gcacacatga gctagccgtc 960

gccttccatt ccatggcttg tcaatgtcac gagcccaacc aaagcttgct gctggtgcct 1020

ggtgctggcc cagtgagtag tccgtcagag catcaccgcc catgatcatc catcctgagc 1080

tggggtccaa gggatctagc gtattttaac cacttcaggg gcacagctcc atgcgtgcca 1140

ggtccgtgag cggcggtcgg tgggcacagc acagcacagc acacacacac gcacagtaca 1200

gctcagcgtc agctgctgtt taggtatggc gcccgtcgtc cctgtgttct cgttttggga 1260

gcattctggg accgaacccg tgacagtttt gagcgccgag acgtctctgt tccttctgac 1320

caggaacttg atagagacca tggtgcattt tatta 1355

<210> 2504
<211> 1241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4745_G1, chr1:24305149..24306389, Cluster 14

<400> 2504
gcattcataa ttgcccacgc cacggaggtg acgcggtgcc attccctgct ctctggctct 60

ctgctcggcc gggagcgcta gctagctcat cggcgtcact ttttttttct ctctctatcg 120

gttgtgagac agtgttttgg atgaaatttg aggctggccg ggccactctc tgcatgcgtc 180

gacgagctag agtcgtctgt gagtgactga caaaggaacg aagcgaatgg gggacgacac 240

aaggcactgt tacgcatcag cgatcatcat ctcatgccgt atgcatgggc atcaacgatc 300

atgtccctct tatcgttagc aattagcaac gcacatatgg tatcctaaga gagcacgtaa 360

catcaaagga gtacgcaaat gggatcctaa ttcatttgca acattatcaa tcgtacgatg 420

gcatcagaat ccatgcatta tttcctgcac aacttcacga tcccaacaga cacacagaca 480

gaggtagtct tgtttttcag gtattttcgt ttcaatcaat cagccaggta gggtggtatg 540

atcaatgata atgtcgacga aaccaaacga cctgaccatc tcttactgtc aggatttatt 600

aaacccgatc gctcgacaca tacatgctac gcacgcaaca accaaacaag cagtgaccat 660

gcacgcacgc aaggatcctt tgcgctagct agcttgcatt gatctgacta tggatcaaac 720

gcgatatcaa atctgattta tttaccccta cctagctaag cttaattaag atagttaggt 780

actagcaaaa gctagctagc taggtagtag gtaggtacac aagctagtga ctgaagcgcg 840

actgaactga tacaccagcc acatgtatat tttaaaatta tatgattgaa tttgcccccc 900

ccccccccccc ccccccaccc ccgggctacg tgggattcgg tcagtcaatg tacatagtca 960

gctgagccat ccattacgac cttgacacag caattgtatt ttgtgtggtt atatgcaaac 1020

aaagggaata ccgattgaac ggtggtgcat ggagccacca cactagcagc catgcatgac 1080

aggatatata tacacataca taattgagaa ttgagatgca tggatcagca agttatgact 1140

tgacacgtcg ctttctgacg agcagtgtgt gacgcaaaca ttcatttgac gacggaaagg 1200

agcgagccag cgtgcagtgc ataaacatcc acacatgcgc a 1241

<210> 2505
<211> 1177
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47941_G1, chr1:280210359..280211535, Cluster 14

<400> 2505
gtggagactt ggtggcgttc tccccagtcc tctatcttgc ttggatggca aaagtcaaac 60

acttttatt ctgggaaagt aataataaga aatgagttca atggctggga attggcaact 120

ggcccaagca acacttttta tcgccacctc tatcggtcct cgtcccactc ccaagtgcag 180

tacagatgta caggacctgt acttgcttcc ttcctcttcc tctgttctgt tctccatgtg 240

aagaagtatc gaggtcagcc ttttctttta tgctcagtga ctgggaggga gatgccggaa 300

tggtgtgata ttcagaagct agtcactgta gaactaggtc gggtgaaaag ggtaatgtaa 360

aactatttgt attgtttgta gagtagagtt taaaatatgg agtctagatt ggtgttgttg 420

taacgacacc atctacgcta cctacgcctt ttaatagccg tgagatatga tttcaactgc 480

tttgctccta ttccatttcc ctgtgttgta tagtatagtt agacatcaac aaagaccagg 540

aaagaaaaaa aagtatgcgt acacaccgct cctactgcgt caaaggacca ggctttctat 600

acgttatcag gcatgctatc ctccattgtt attagctggc gaatcttgcg gatatgttca 660

caagattctg agtgcctgtt gataatataa aagttataat aaacgctagt tgctgtcaca 720

aagaacggca cgttggaaac taagctgctc ccccgcgtcc gccgagccaa tcacgcaggc 780

ccgaccgaac gcagcgacta gtagagtagt agtggtggca gtggcactaa aaaatggttt 840

gagaagtgcg tccgtgtgca tctctctctc ggacacctgg atgcgtgcgt ggagagagag 900

ggagagagag gatggattgg gatcgaaggg gacatgttgg catgttgttc tagtagattc 960

ctttggtggc ctctcgacgc agccatgggc cgttttaggt tcgccccccg ttttaggtac 1020

ggcagaggtt agaatgcgac ttgtcctttg caacctccgt ctcatctgct cttgacttct 1080

ggaagctgga ccctatctga atcggggtga caaatttcca cacggcgtat ggatccatgt 1140

tactccagcc ttggggacag ggcatggtgt cattttt 1177

<210> 2506
<211> 1146
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47945_G1, chr1:280221787..280222932, Cluster 14

<400> 2506
tacacgccat gggtttcttt gttgaggcgg aaccgcttgt cctagcctgg tctgttgcat 60

gtttgctcgg tctttcacgt cgagacggat acgcgtagat ctccgataag ttgcaagtcg 120

ttgtctcgtg catgccaatg ccctcttgca gcatttggag tcaacaatgg ttaacaaccc 180

tatctctgtc cgaccatgct tatccggcgc gtttaataat agtaaatata aatataatct 240

ggcgcggtca ggaatcagaa gcacgcacgt tgacgggggg acggctggct ttgcacaatt 300

ttctggcgtt cgaccgcatc aacggggcac atgagcgaac ggacgagaga gagaaaaaaa 360

tagaaaggaa aaggggggca agagccgaga gggactattc cgattcggat cgccgaatca 420

gggtcgcttg gttcgcaagg cgctttcaga gtgcgaatat tcttgcggtt gcttgcagca 480

tgccagcatc tgcatctgct gcccgcgcgc gtccatcctt ttatttccgt ggcaagacgg 540

gtgtgttctg tgctgtgcct gtaagtagtt aattcagcgc gtgggttagc tgccattggt 600

cagtcagctg ttttctgaca gcaaaacgca tggccggcgg cggcggaacg ggtgtgttct 660

agtcttttgt tgttgctggc tgcagagaga gaaagagaca gctaacgatc gaccaatctt 720

ggcgtcaagc agtcgcgagc tggcgaattc gaattggctg acatttttct gctggtgctg 780

actcgataca gataacaggc cacaacaaaa tctctaaaaa aaaacggcca agaacacagg 840

gaactgggtc tttcataaag gaggtttctc tctctctcac acactctgtt cctgggtgta 900

taggccagat cgcgagaatc cgaaggatca tctctgagcg gtaatcaatc atcgatgaaa 960

acagtcgttt cggcaagtgt gacgtgcgta cggtttctcc tgttccgttt tcaccgccat 1020

tggaagttga tttgcaagtt aaaaagggag taagagcaac tccaacaaat agtgttaaac 1080

aatcccaata acgtttacgg gcaaaaaaaa aactcgtttt gccccctcca acggacccct 1140

tcttct 1146

<210> 2507
<211> 1338
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50479_G1, chr1:293325337..293326674, Cluster 14

<400> 2507
atcgagtaat acatacacga tcgaaagacc cacggccaca gccatgaaga aatgtcagta 60

ttgtttgcac atgcgatgtt gcgcccgcgc gactgcagca gaggaaagaa ggaagaaagc 120

taggtcattc catgtattca ttccgatttc ctactacgaa tctacgggaa agcgatcgat 180

gtactaacaa gcatgcaatc aatccaatga gatctgactg ggcactactg acgtgcatgt 240

aataacttgc tgaaaaggta aaaaaaacag aagaagttga tcttgtttta cttaaaaact 300

gtcgccagct taaacatgag ttattagttt attacttggg ttgtgatttg aatcaaatcc 360

atacaaataa ttaagtcaaa aagatggggt cagagatcag atttaggcct ttattccctc 420

tccgccgaga gggacgagcg agactgcatc ggactgcgcg aaagcagacg aaaacttgat 480

tccctgtccc atgcgccgac ttagcttgtg ggccatctcc accccgcact cgttcacgta 540

cgccggcgcc ggcgccgccg ttcctcgcgg cggactcgaa tcggggcgtc acgacgggtg 600

cttgcggctc ctatctcggc gccgaacgtc tctcgcttcg ccccatgcat gtccccacag 660

gtgcgagagc gaggagttct ttttttccg gcggcgccaa gtgaataccg agctcgccgg 720

tgccggccaa taatgctagg tttctgtgga ccgcgggcgc gggctcggat agcctagccg 780

gcggcggtgg cggcacacgg gaactgaatg ctatgctgct gccttcgggt cactctctcc 840

ctccctcctg tgtaagcctc cctcgatttc ttctgtcatg tcgttcacgc gcgcgaggtc 900

agttgatcgc tgggctctcc ggtgttgtat gttgaccatg gtttggtttt gagtaaaata 960

tatttcatgt ccttaaattt gtcatgtggt gccatttgga cccataaact gtcatatgaa 1020

ctcccatcgt tagatgagag agaatagaga aaagagataa acgagatata tagactagct 1080

agcatgtgga gttcatatgc catgttatag aacgcatttt gaaaccacaa tacgtttgga 1140

cctaataaag actcgaacaa tgaataagga tctaagggcc atactttaaa agattatggg 1200

ccgagatgac cctgcacgac aagtttaaga accgaaaaag tattttgtgt tagctgcatc 1260

aacaagattg gatctgtatt gtatcccgtg atgtacatgt aggcttcgga tgtccagttt 1320

gtttgttcca gtttatgc 1338

<210> 2508
<211> 1298
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5179_G1, chr1:26572680..26573977, Cluster 14

<400> 2508
atgcgtttgt gcgtcaaaca catgggccca tagcagcagg atgcgcgcag ggcttgtact 60

gactgactga gtgactgcta ctgatgagcg gggagcagcc gcgcggtggc cgtcgtcgcg 120

cactgggtgt cgccacccgg ccggctcaag ctttcgcggc ataaatggca gctatggcac 180

ccagcgatca cagagcagat tctttcgcta ataacgccgg gcgcccaggc ccttgcttgc 240

gttgcgcatc agatcacgcg cggatgcgcg cgcagaccct ctccccccgc tagctagctc 300

tgcccatcag tcaagctgca tatgctgtgt gctgaccgcg cctgcctgcg catgcatgca 360

ttaccgtatg gcccggccct ccgtggctgg ctccctccct ctatgatgtg ctagtagcga 420

gcgagtcctg tcctgtacac tcaattaatc aacctgccgg gcctggttca gttcaaagta 480

gcgatcgatc tgggcgggcg agcgagagag ctcgacgacg acggactgct gggcacctcg 540

ctgcgccgcg ggccggccgg ccagaccctg ccggccgcat gcatgtgaga gccccgcccg 600

catccccgag tgatcatcag tccacccatc catccatcca tccatccatc ggctatgata 660

tgattgacgg gacgaggaga gcgcgcgcgc ggcggccccc attttgtgct ggcatgatac 720

gagatttata gctgcgagca gcatggttaa gttcatgcaa cacgatccgc gcccatgcat 780

gcgcgccccg gcttccatat caaatcgatc gatccgtccg tcgtcgtcca tcatgcatcc 840

tatgcatggc aacagaaaaa aaaacgctgc aaggatgcat ggatatatgc ctaccggccg 900

gccgccgccg gcgaacgacg acagcctact ttccttatca tatgtcacat ataggttcaa 960

ggaatgaacc ccgcttccgc cgtatcaaat agatatgcat gctgcatgtc ggcagaaata 1020

agttggtgat atataccctt gtgttatatg cagtcactgt cttggaacaa taacggctga 1080

cggcctcaca gccgctgcta gctgcctgga atcatggaaa cagtacaagg tttgtcccgt 1140

gactgtatat atatatataa acaatgcatc cgtgcattaa ttaatggtaa tgaccatgaa 1200

tgtctgtgaa gatctggcat taatttaatt aattagggaa aacttcagaa aattgcaacc 1260

ctgcattttt atttttacta atttatttgt ttgtgttc 1298

<210> 2509
<211> 1217
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52798_G1, chr2:5510093..5511309, Cluster 14

<400> 2509
catttcactt gcatccgtaa gacgtgacct atatgaacag atgtaatata agtcatttca 60

cttgcatctg cagaaacgtc taaaactggc gtatccacac agccaggctc gcgagagcct 120

acgcgcttgt gtgcaggtat ccaatcagat tgtatatgtg taaaacttga tcattgtata 180

catgtgagat gcatcttaat ttgttcttaa atctgtgtga caatcgtggt gttggctcac 240

aggtttccga agattttgtg gcattcgaga acacgctaca agcctgtccc gtccgtcacc 300

ccagcgccgt gattttgccg gccgcgatcg cgggctagcg gcacggtggg ctggccctga 360

atcgcaaatg accctatccg aaatggccgg cgggcagatc aacggcccac gcgcgaggct 420

ggacatatcc gccgcgccgc catcactacg tctcaccggc ccacctgatg cgtcattgtt 480

tacgtcgcgg ccggccagct ggccagcggt gctatgcaca agtgggtcaa accacgtgga 540

cgcatcacat acatcatact aaactggcgt cgaccggcga gccaaatttc ctgatctttg 600

catcagcacc caagacgtac agctcgcttg atggcctcgg tcgtacctcg tacgtacagc 660

ggatcacatg cagattcaca gtagatatcc ctttggcatc gatcgccgtc gccaaaagcg 720

catgcttgca cggccggcaa ttcctcctgc tgatccaagt ccaggaaatg gggatgctag 780

cttacacaga tcgatcccac cagcaggccg gccaagtcga aacgtgcagg agtcctcagt 840

gatgtgtgca tggtagatgc ccgcgctgaa tgcattcata tgcatggaac tgtcgcaaca 900

caggcaaata caaaacttgg aagagcagac aggtactact gggcagtgga ctggaatact 960

ggatcgatcg gttgccgcag gcgaaaagcc ccggccgcgc accggcctgt ggcactgcgc 1020

tcctgccatg ctgtggcacg catgattcag accgggccgg aaactcctac tgtactcgta 1080

gatccaccac gtacggtcgc tagcttgccc aaactactag catctcggaa ctctggatcc 1140

aacactcggg gacaccaact taacctgtcg atcgatctgt tggggagctg tcgaccgatc 1200

aatttagttc ttcgata 1217

<210> 2510
<211> 1302
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53026_G1, chr2:6566356..6567657, Cluster 14

<400> 2510
gatcgatagt ggatgggtag caatagcata catagcaagg gagtgaggga cgggccagcg 60

cggccacagg actagctaca tagcttgggg catgggcatg gggcgctgcc atgcccctga 120

gctctgggtc gactgactct ttgggatcat gctgcgcctt gctcctgctg cgcataggga 180

gtggcagggc tggcagtgga gtgactgagc gttgtgttgc atgcaaaggg cttgtccttg 240

gacgcctgtc gactggcgcg aaaagactgg agaatctccc tgcacgcgcc atgtcgtagt 300

agctagagca tgtagtagtt ccgtgcaagc ctcaatttca gtgctaggtg cgtaacatgc 360

atagagctgg agctgctggc tagtgtggct acaatcatgc atcgatcgag gcgagctgga 420

tcatcgcttg ccattttaca gaactactag ctactttacc caagttatta agcgctgcga 480

ctgcgattat atatatgggc ggccatctga actttgaagg tgacaggagc aggagtagga 540

gcagtgctga tgtgcctagg cggacggacc caacactgca gagcagcggc agtcacaatt 600

cacgaaccaa acacacggtg tcagcctgac gagcctcatc atcagttcat cacaggacgc 660

acgtgaaaac gttcgacgac aagagcccct gctgcctgcg actgcgagag cacccatgtg 720

ctcgtaaatg gacgtgtgca gtgcatgtcc agtagtgcgg cgagcgatgc cgacgtccat 780

ccgtgtggcg ccctgtgtgc tgcattgcat gccatgccac gcggcacggg caacgggcag 840

cattaccatc gtttcatatc tggagaatct ctgcacctgg ctgctgataa cgccccatgc 900

atgcaccatg gcggaaaacg tacgtgagcg tcgcggccgg cggcgacggt agatttgaga 960

gatctcgcta gctttaccgt gcagcgtgtc ccccacccca ccccgccatg catgcatgca 1020

cttgcacgca cgcgctgacg acgtcctcgc agtcgcagtc gcaagcaggg cacacgggcg 1080

ggcgcaccgc gtacggcgac aaccgtaccg agcaggagca gccggggcac gggcagcggc 1140

agcggcagcg gcggcgtctg agccgagcgc ctctgcaatc tggacagcgc gccgcacgtg 1200

tcgatgtcgt cgtcccggcc ggccccaggc ccctcaagcc cagcatggct ccatccacga 1260

gacgagacga acagggctaa actgcctgtc catcaatgcc ct 1302

<210> 2511
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53955_G1, chr2:11563576..11564859, Cluster 14

<400> 2511
tacgagaaag agagaaagca accaagagat tatcactacc acgcacgcaa gtacgcaacg 60

caaagcatgg tgcagtcacg cgcgaggacg agcccacaga atttctccca ccgcaccagg 120

ccaccaacgg cattggcccg tgtcccgtat aacccacggc gccgccgaat actttctgcc 180

accggccacc gccgccagcc cgccatgcac acgcgaagcc aagaaacgac aggatccatc 240

cttgcgcgtg ttttttttt ctccaaaatg ccatcagtta tccgttcctc acacagccac 300

acgtacgtac aggaggagat ggtcaacaag accacgtagt atttttagtg tcatcacggt 360

gggtgaatct accgtgctgg agtctgttac atttggttgc ttgcttgacg tttggcacgt 420

gccgccacag ccacgtacgc tacgcacatc aacagcggaa aagttcactg gcgtctctct 480

ccgtcagtac acgtcggtat catcagtagg caaatacagt catacaggca acggaaaaat 540

aagaccggcg aaaacggcgt gtgccgcagc catagggata agtataaaaa gtatatattt 600

ttttccctc gcgagcagtc gttaccgagt caccgtcacc actccaaact ctccaagcgc 660

gcggtgcact ttttttaca tggcctggct ggcgctggtg tcgccggtcg gtcagaggcg 720

tagcagggca gcccgagacg ccatgcctga ccgccggcgg tacatgtacg attcgccgtg 780

tcagtgtcac gtacgtacgt acgtgctgct tcatttgtac cgtgccacat ggaacaggaa 840

ccacacatac acacacccac gctaaccgtc tggcgtagta ttggtacagc cttgaacgta 900

cgatcggccg acggtccccg ggtacggtcg ccgttattac tcgcacaagg acatcacagc 960

tgtggaggac gtcgtcactg cattggttcg ttcgttcgtt cggagaagat agtcaccata 1020

ggcatgcacg tgcccatact ttactcgtca catctgataa agtccaaaaa acgctcgcaa 1080

aaaaaatgtt ttttttatta gaaagtctct ccacggcaag agtgagcacg ctgctgattg 1140

ttcaaggatt ttggttgctg gagcgccaat ataaaaatgg cggctgcttc cactcgcgcg 1200

cttgatttgc acatagaatt attaggttcg aaacatagaa tagtaaggca gttgaatata 1260

aataaaatat ggtcatatat atgg 1284

<210> 2512
<211> 1310
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_53964_G1, chr2:11592414..11593723, Cluster 14

<400> 2512
accactgggg aaaaaatgtc gatatctcaa ggcaggtttg gagatttgtg tattagcctc 60

tgaaaggttt gttttttag ttaggatggt gtttctttac tgttctctca gacagtcaga 120

cataggagct gtgattgttg ttcggtactt cggcttcggc ttgtcgtcga aatgcaggtg 180

tgtgtgtgcg cgcttgtttt aaaacggact gttagaagct caacagtcag actcaggacc 240

atgaaccagc agctttttac ccacagtccc tgaagaaaag acgtttcagc ggggagtgga 300

aagagaagcc actagacact agtactactt tgagatcaga gtggataaga ccagacgttt 360

gactgcacaa cacaattgac gaaagctcac ttgtctaata ttgtgctaat tgcatagcta 420

tagtatagcc aacatagtat tttgtattta ggctatttaa tccaaaatac ggtagttgcc 480

ctagctagta ctacttgcga gttgcgactg cgaatttgat gcgcaaaagt caaagagatg 540

gcagagaagc agcgtcaggt atcttgaccg tggtcaagac gtcggcaacg cggcgagcac 600

ggagcaccta gtgaaccttt tggaccggcg tgcagggcac ggtgccagag gcggtgcgcc 660

ccgcccccaa gttcgtcgtc cgtctccgtt cgcgccagtc gccactcggc agagcagcgg 720

acaatacagc gagaaccgcg ccggtcttcc gcaccgcagt cggcagctcc gtgttcccac 780

gccgagacca cgtgcctccg cgcttccttc cagcaagcgg cagggcggtc cgtgcgtcga 840

cacgcggcgc ctgcgccggc aagccaaaag aaaaaataaa gctgggcggt gtgcacccat 900

ctgcacgcca cgtgatctct cgctctctcg gtctcgtgcc agacttccat ctccatcttg 960

acgcgacaag cctcccgcgg tcctcctccc gccccgctcg ccgttccgcc gctcccaaca 1020

ccggactcct gtcctgccga tctttttttcg ctggttccga gtggaccagg gtccagggcc 1080

atggccgtgc aggtgctcag tacggccgtc agactgacgc gttcactcgt ttattcaacc 1140

agcgccactt caaattcaga gcatcgcaat atcggagttt ttcttcggat tcacgccacc 1200

acgtatgatc gaacctttt tttaaggaaa ctggtctagg cttttagctc agggtaagaa 1260

acatttgttt ctctttttg agaaacattt attagattcg gccagtgacc 1310

<210> 2513
<211> 1387
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53972_G1, chr2:11624799..11626185, Cluster 14

<400> 2513
tacttggacg ctttttctg tatgttatac accgtaacaa caatgctctt gaatgcgcgc 60

tttggtgtta tctgtaagtt ttggctatgc ttttctcacc tctccgcttt tgcactcaaa 120

agctctcctg ttgcggcttt ccagactagt tttaaccttt ggcccaggct ccgattcttt 180

cacccgctgg gcacggtaga agcgagaaat taacgacgga acggccgccg aaagggaagg 240

gaacatgact tcgttcgatg ccaaagcatg gacggatcaa atcagaacaa aagcgatcga 300

gcatggcatc gggcaaacga aggatcaaaa tcggaaggga ggcatcgcta gattactcta 360

cttcattcgt ttttttggt gagaggacat tgcgtgcttc tacgagtcgg acgatcgatc 420

tatctactcc ctgaaagttc atctactgcc gtcggctcta aaatatatag ctgtacactt 480

acctctcgat cgcgactcgt ttttttatta ataaaaaaag acaatcaaat ttacgcaaaa 540

ctggtaaaat tgctgcacac ttaactctcg atcgttgagt tgttaatcac taaccgtggt 600

cgatgatttt tttttaaaaa aactctatca gctttgatct ggtagacaac cccaaattaa 660

tgaatatagc tagagacgga ttcatgaagt tggtggagca gatcgtattg aagctaaaaa 720

tatttgagta aaaaagttag atctaaatct aatattaata aacatatagc tagggaaaac 780

tgccataaat agacgtttga gtgaccactg taccaaaaca gctaccattg ttgttctttc 840

acttatggct gtggattccg cgtgaggact taagaaccca tccaccctcg caaaaaagaa 900

agtcaagcgg ttccggaaga agaagaagaa aaaaaaaagg caagacagcg aacaggtcgc 960

caccccgtag cttcagtttc aagctattag cgagttcaat cgaaggagct agctgcacgc 1020

tttcgagcgt gtaaaaagtt gaaagacttg cgtaattccg atctgcagga cgtgcctggt 1080

gagacccaca tcatccccag cgccagctcc gatttgccga gctggaaaag accccgtcgt 1140

cgtccgagta cggaccaccg accacccatc gaatcctcgc tggatccaac gatcatctgg 1200

atgcaaaggc atatatggcc atctttcttt cgaatcgaaa ttcgaaactg tacctaatat 1260

gctgcgtatg ctgatatgca tgtgttgaga gacttgggag gtcaagccat gcatgtagag 1320

agtagagaca aggtatatgt tcttgcatgt gtcgccttgc tttccatgcg atgcgagcag 1380

gcgaagg 1387

<210> 2514
<211> 1214
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54002_G1, chr2:11758209..11759422, Cluster 14

<400> 2514
ctactcaaga aagggtggag tagtaacccc tccgtggtgg gccacgaagt caccatatat 60

gagtcgggat ccttgaacat gtttttgcag cagagcggaa ggcatgagta tgaccttcct 120

cagacgcagg catcggtgtt ttagagttga tgaacaacta ttttcctctt tacccactac 180

atgtttttag gagcatattc gttagaattg aaacaaaaag atatgtcaaa gataaacaat 240

ggttcctttc gagacgatgg aacgaagcca ccagacagca cgagtgcgag ggctcggttt 300

aggcatcggg ttcccgttga ctttgtgacg cggcctccac ttgttcctgc cactctgcca 360

gcgcccagcg gcatccgtgt tcctgtcgtc ttcggtcccc tgtacgtgtg ctgcggactg 420

cggtgttgca cgtacatgtt cgcgctgggc gcgcaccgcg tgtgcattct cccagtttac 480

tcgcgtacga cgagtcgacg acagacaggg acgggtcgtt cgtcgcgcgc tcctactttt 540

ctgcgtggtt gacacacacg cgcgcgcaca cggcacaccc gtgaatgacc agccccgtat 600

ggccgtatca atgcgttctg tctaggaaga agatttgttg gactgtatgc agttgatatc 660

ggccacaaaa gaaaagcatg gtactacgtg ttcccttacc ttttcgtaag aagacatttt 720

atgtgtacca caaatttact acaatttaat ttacttattt tataccatat atattagttt 780

ttaaaatgca tcagaattta atgtgtttga ccttttcaac cgtgcgtatt taaatacgga 840

atgttttttt agacgggagg ctggagtatg ccatgtaaac catacgaccc caatgttcgg 900

ttgacctgct atcggggggc ggtggacttt ggcggttttt ttagagacca cagattaatc 960

actctatttt agtattattt agtttttaaa ttaccaaaaa ttggaattaa aatagtcact 1020

aaactgtttt agtctctagt cctatttagt ttttaaaatt tatcaaaatt taatatgatt 1080

gacctttca agcgtgcgta tttaaatacg gaatattttt ttagacggga ggctggagta 1140

tgccatgtaa acagtaaacc atacgaccca aatgttcggc tgacctgcta ttatgggcgg 1200

tggactttgg ttcc 1214

<210> 2515
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54326_G1, chr2:13619162..13620243, Cluster 14

<400> 2515
ggttgctgcg gcagagttag cacagcggac cacaggcctc tgttttacgt tacattatat 60

gcaagaacgc cgttggtgga ggaaacagga aagcgcgccg caggagcagg ggtgagggcg 120

gccatggccc atggctggcc gtcgtcccct ccttttctc ctccgctttc cgcctttgtt 180

tccaaggact agctagggag cgtgaagcat actgcatact agcaaagcaa gtcaaaacaa 240

aaggccgtgg gctcgctctc gccgacagct gactctctct ctctctctct tggtgtccac 300

tacaccaaac aagagccagc cccgcattat tttttcccct gtttttgtgt gcgcattccg 360

aggctatata atgtatcaga cttggatact tgctcggagt tgttatgctc ttcggccaag 420

accagcgagg agcaggagcg tggtgatcta gcagggtacg gtggaccagt ttaaaatcta 480

agtgggagcc taacaattga gtggaggtct aaatagagac atattaacca ataacctttt 540

ataactacat taaataagat aggaggtcca ctaaaactaa aaaaaatgag tgggagccta 600

aaaatagaga catatatata ctcctactga ctagtgtcat tttatatcta cattacataa 660

gatagtcgat ccactaaaac tataaaaaat gagtggagga ctaaatagag acatactcac 720

tgtagttcga tcggaccgtg gtgcataaga taataagatc taatgcagac taatgtaagc 780

tactaaatca ccaccgtcgg catgcaatgc catgcacgaa acgtgaccac gagtccagaa 840

aggaacctgc gcgttaacgc cactgggctc tccctctcct gctggccagg tccagccacg 900

cacgacactg cacttttcaa gaagccaaag cagacacccc agctccccgg ccggccggtt 960

cgcctgcatt gcgttgcgcc ggcagacctc gtcggcggtg gctctgtggg ggtatttttc 1020

ctgaccacct agatgaggcc cggctgcctc tgcgccgccg cctcagcgtc gatgatgcag 1080

ag 1082

<210> 2516
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54664_G1, chr2:15474658..15475755, Cluster 14

<400> 2516
gaactcgccc tgggttgcgg gggcatctcc tcgcgcatct cgatccgtgt caggccgccg 60

tttcggctat aaataggacg cacagttccg aatacatgct taggaattaa ttaatcatga 120

tctgatgagc gtacacgctc ggatcaaagt tgtcgcggtc ccgtggccaa gctttgcaat 180

gcatcggcca cgcacttggc aaaaggcaca ccaaccaaca aacttggtcc ctttctcgcg 240

gtgcatgaac ttggcagcgt cgtcggtccg gtgctgtgac gcaccggggc gggggcgggc 300

gcgcgggagc gggaggagca agccgcgggc gaggcgatgg cgaccgcgga gcgaatggag 360

ggcgagggca cacgtgacgt gagtcggtga gtggggcaag gcggggcgcg cgccgggcca 420

cacccgccac gcccggccgg ccggccgctg ctgctgtcct gtcctgtggc tgggccggcc 480

ccggcgttgg tgataactgg atgcgagcgc gttgcgttgt tggtgcgctg cacgaatcgg 540

aggggcacac cctctgattt gtttgtttgg atgcctggct gccacatgca tgcgcacata 600

gtggcgagtt gcgcggccgt ctgacggggg gttgtggcgt catggcgctg cactagtggt 660

gtggtgccct gcgacactgt ccatgtgagc gtatctcgat acacgatctg tcggtgtcct 720

ttgcacgaag ggtgtgacga ctagcctgtt atagttcatg gttttctagt atttacgaag 780

gtacggacag ccgcgctgtg ctgtaaaaat gcccccatat agtataatgt acaaacagta 840

atgcccccat aaagtttgag ccaattgttt ttatttataa taatgtacaa acagtaatgc 900

ccccatatag tatataataa gtaatatata gatagatttt cgaatctgtt tttataattc 960

atttatttaa caatatgaag attactaata tttgtccggt acgtacgatt actatatcct 1020

tagctatttt gaataattca gaacgctcac gtgtttttca cctcttttat ttggacgccg 1080

atcgagcccg ttgtttta 1098

<210> 2517
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55495_G1, chr2:20006456..20007479, Cluster 14

<400> 2517
cgtggtcttg ctccgctcct ggccgccctt ttgggttttg gcgacggcat gtgaccgacg 60

cctcatctca tctcatcgcc ttggtggcaa caggtgattc cagagttgcg actatttctt 120

ttacaaaaag gaaaaaaaaa aggattagct tgtacagtag agcaacatgg aggaggcagt 180

gagcccatgt tgcgggctgt ccgccgttac cgtacttttt acgttgcaag tgcaaatgat 240

acttggttca gcacgcaatt aatttgtgca ggcaagccag gcaacttgcg actccgacag 300

ctgcctgaac gccgattttt ttttcttttt taaaaagcac gtcctcggaa accaccgacc 360

ttttaagtgc acacgtactc ccaccgattc gtgtgggcaa tcccaatccc aatcccatgg 420

ggatcctgga tccatgaagc aaagcagcaa tcacgcggtc gcccgccggt taaacacagc 480

tcttaattcc cccacgctgt cctcgcctcg ggcagcgacg gctccctctg ctcggacggc 540

ccgaaaccaa aagggtcacg caatgaacaa agaaacccgc tttctcttta ctatgtgatg 600

aagtaaaccc tggaccaagt atagcaattc cttgctaggc tactggtaac agctgtttag 660

gctcactgtt gtactgctac taccagcagt taagcagaga ccaaaacccg cggtctaatc 720

ctaatccaga ccaggctctg tcaggtcgct tgcacgagag acgacaaccc ggcagcgccc 780

actgctcacg caccgccgcg gcggcaactg ctgccagccc ccatggagct agctaccgcc 840

cacgttggcg tttgcacagc tgatcacatg tagtagtgcc acgatcgagt acgagcagcc 900

tcgcccaagc tcactcacat ttctgtgcgc atgcgaacgt gccgccatgg agcgcgtcgt 960

cttgcgccgg ggcccgggtg gggtggtggg tggtggcagc agcaggggag ggggcgcgtg 1020

cggc 1024

<210> 2518
<211> 1029
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55574_G1, chr2:20413695..20414723, Cluster 14

<400> 2518
ttaagcttca ctactggcta ttgttcactc tacctataag tttgtctcga acatttgact 60

tgaccatgca tgtcactaaa atctaaacag catatcgtac cgtatcttgt cgactacgtg 120

gtgaaacata tttttgaatg aatatgcgca cttgttgtcc acggaacgag gaaactttag 180

tgcgtagtac tgctgacttg ttgactaaga agtgtttggt tttaacatgc cgtaagtgta 240

ctgtctcacg tgttttaagt cacgctgcag aggtgattac tgaggcaagg atgctagact 300

aacgagcatg acgcttgaac acggtcaagg ctcaagggtc tgcaacagtg tgtgattaca 360

ttacctacca gctgacgaca cccaacgccc acgcacgcac caaagatgga gatgcccaga 420

aaacgggtgc ggttcgtttc ttcgtcagcg gccggcagaa aaaacggcgc accgggtgcc 480

ctctcggata atcgtccgcc ggcgctgccc cggcgacgag tacgtgagga ctgaggacct 540

tctcgcgtgc tgggacaagc agctttgagg tctccccgac attgaggtta ctgcaatcgt 600

tagcaaatta agcacgtata ccaatggaca cagtaccagc gaagagaagg catacagcta 660

gatccgtagc catgagctaa atcttaaatc catacctgtg tattcataac cttctacata 720

acaaatgata tccacaacgc tcgtcacccg tgaaattacc cacaaacctt atatgaattt 780

aaacatgcat ataatatgtt tttttcaaaa aaaaactttc tcccgtgtaa gtataaatca 840

ctagaactca acatcacgca tggcattatt cacatcataa aataacaaat gtgatgcgat 900

agaggataaa tgagagcata aaaccttatg attcataggg ctgtttttt cttatacata 960

gcggaataat ggtactattt ggtaaagcag ccatgagtat ggtttttat acccgtgaat 1020

ttttattta 1029

<210> 2519
<211> 1117
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55788_G1, chr2:21511940..21513056, Cluster 14

<400> 2519
ctgcaaacag ggagccaccg ttagttcaca tgctcctgtc ctttcacgga ctaggatgca 60

ccaagtaatt catgaagaga acgttgaagc gccaggaaca caagctgcta gtgctatgta 120

ttgtatcatg agccattcga atgcctccaa atcgcctttc caggttcctc caccgctcgt 180

ttattcaccg ctcgacctgc tgcctagcta aggtcagact atgatgacgc gccccatctc 240

tctctcctat gatggtgatt tggccctgcc cttttctccc gaagggagct ctgatgagcg 300

aagagaccga tcgagcacga gcatgcatgc tcaggaggca tcgcgcgccg ttggcaagag 360

agtaagagac caaggttaaa tccaaacaat ctatatagct aaccgcacag cctcgatctc 420

cttgtccttg gaacgggaac gcgaccaccg taccagcccg ttgtgccgcc gtgcgtgcgt 480

gcgtgcaggc ggtggccttt cgtgctactg ctatactata ccgttggtag atgtgggcgc 540

cgcgcgcgcg cggtcgtcgc aggctttcgg cgccgccgcc accggtcgct gccgcggcag 600

gaaccgcatc attcggccgg gggacacaag tagacgcaat taaagcgggc aaccaaccaa 660

ccccgccgca tcggcaccgc acgcacggca cggcgtttgc cgcctccccc acggccacgg 720

gccacggcac gcgcggccct cacgctcgcg ccctctcttc cggccggccg gcccccatcg 780

gcaccgcgcg cagctctttt attcgtggcc gcgcgccggg gacgtcgagt ccaatccagt 840

cctctgctcc tccagtccaa cccgaatcgt ttggcgtttt gtcggctgtc tctgtccatc 900

catcggtgct agctgtagcc tgtagctagt cgggtaggcc tacgtttatt ccatttgtga 960

cacgatcgca ggaaggtctc gccgtagcct cgtagctagg tgacagatcc ccttcgcctc 1020

actgctgccg gcgtcgtgta tatccgcccc gccccggaca agttgcccga gcccctacct 1080

gcggcacttt gcgaaagaga gaaaggaggg tacctac 1117

<210> 2520
<211> 1104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56043_G1, chr2:22891258..22892361, Cluster 14

<400> 2520
gtccaaatac ttgaacccac ttgataatct cgcctgtagt tattaacatt tgacaatttt 60

gcctatgctg tttttaattt cttggtccta cactagtact acgttttata tattttctta 120

tagaaatgtc tgggtccgat atatattttt aaaagtagtt cagtattatc agtggtgtcc 180

ttcagttggc aagcttgcat acaacgtgct tcctactacc atcgtcgagt ttgagagata 240

gagatgtagt ttatatgtgg cctgtttggc taatgggtgc agatcatccg tttacgattt 300

gttagggcta tacgtacgtg tattgtgctt aattggcaaa tggctgctac gtacaatttg 360

ctgacaattt gaacgtacga aacacttgct tggcgtagaa gcttgcagcc attcaattga 420

tttgagccat atgcggtcgt cgtgtcgtgg gatggagcta caattctgcg agtgttcatt 480

gtttatcgga agttttgtga gctatagcta gagagttctt cgtcgtcatc agcttacgtg 540

atcgatcgat caagccgcga gtggatcagt ctagctggag agccaaatac caagtgtatt 600

tcttgctacg tggagagctt cccggctgca agctcaacga accgtacgtg gccgtctctg 660

cgaatactat ccccagccaa ccgcgccgcc catggcgacg cgtggacgtc tgcaaccttg 720

gtcaagtctc tgcaggttat gagttgcacg atgaggcaga aaggcaacaa ggtcgtggac 780

atgtcataaa gttcacggat aggcactgga caatagaaaa ttcagataaa ttaaaccttg 840

atccagcgtg ggcaaccgta aaacgaaaag ttgcgaagcc aagcaaacga gggtaatccg 900

tttctggcgt gccgtcattt cctccatgca tgtgtggttg agctgccgta tggactatca 960

agtatggacc ggcaaaggag ccgtgtagac tgtagtgtat agacagtata gtacagacct 1020

cctcacgttc aaacctgccg gtcttgtcaa gttcttgata actcccgcgc catggaatgg 1080

aaccgtacct tggtacggct aagt 1104

<210> 2521
<211> 1299
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56745_G1, chr2:26981857..26983155, Cluster 14

<400> 2521
atatcatatt tggcgcagca aataaaattt aaatttagtt taatacataa aaaataatat 60

tatttgtaat atcaaatata caccattaat taaatcatat catgtaattt tataataaaa 120

ctatttaaat atgtacatgt tgatatttaa aaaaagaaac gctagacata ttttaagatg 180

gagagtaaca ctttgttaca gctgaggaag gaagcgccgt caagtacatg catgcatgta 240

acaatgatgt aaacatagga ggcacgggcg ataagtacat gaagagaaaa acaaaagcaa 300

gtgtcggcag cagccaccac gcaagtgacg gcactgtccg tctccgtcgt cgctgaacac 360

gagccaagcc aaggcaaact ctccgttcgc ttcccccaac gccgcacggg attcccgcaa 420

cgtgcgcgtc gccgtcgtcg cgccgtcgcc gcaacagggt ttacatgcgt gcatgcaccc 480

aacccaaccc aagcacatct ccccgacggg cgacagcaac ttggtccgcc atggtcggaa 540

gaaggtgcat ctccactctc ccgcgcaccg caccaacaag gctggcagaa ccggccgcgg 600

aaagcacagt gcgcgcagga taggaccgca gcagcagcca gcaggcgtcc caattccaac 660

gtgggtggat tattggaagg gaaccgggcg tggcgtcgca gcgtgtctcc gtctctccgc 720

acgcgcgttt tcgttcctgc acggttggca gacgatggcc tgagcggctg gctcaccaag 780

gccggaaagt gaaagggaag gcacttgcac ttctccagtc ctgagaattt ctgtcgacga 840

gcacccgccc gggcgccgaa acagcgacgg ctgctggtgg tactagtgca ggccgcaggc 900

tagctaggac ggcgatgcga ccggcggcgc tgacacagtg acgcgacgcg ctgccgggtg 960

ccgtgcggcc gagctgctac ccggccggcc gggcgttttc catgtgctcg cactcgcatc 1020

gaagctcgcc cgctgccaga gacagccaca ggccaaatct gcccagcagg tcgtcaggat 1080

cggggccgta tatttttct gccgacgaac acgggggcg gtcaggaatc cgaatctaga 1140

cggatcatgc cccgggccgt gcgatctggc ttcgaccgtt tgagtgacgc gacttggctg 1200

ccgtgattgc tgctccacat tagacaagtg gagatgaagg cgccggcgcc ccgcatgctc 1260

tgttcctgtt gggatgttag gctgggccat ccggtaccg 1299

<210> 2522
<211> 1372
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56841_G1, chr2:27560156..27561527, Cluster 14

<400> 2522
aaaattagct ttgcgtggcc aaatactctt ggcctgttag agctagcttc ggacacactt 60

aagtaggata ttaaatgagg ttgtataccc cggtctttga acggacaaga agcgatcaac 120

ttcgatgtgt acagtgtgcc tgctgccata cgcctcatgt ccccatcgta ttgttctctt 180

ctgtagtttt ccaggatgtg tgcagtgcag acgaaaacaa aatgctggat gcgctgccgc 240

tggaaatcag tggcagtggt atatatggtg gtgcttgcat ggaattggaa cctgtgtgag 300

gcagtcagtc gtgtccgtgt ccgatccgca gctgggcatc agcgcatcac aactcgaagg 360

ctgagatcgc agtgtttact gacgcactgt gtggctggct ctgctattat tgtctgcagc 420

gtctcgggaa ctcttttttt tttttggctg acactgttct cacgagcaaa cagcagcaaa 480

atcttgtcgc ctatcctgtg tacaagcccg aggtagctag atcagcaatg cacggatcaa 540

tagtcagcaa catcccggca cagtgagact tgagagtgcc gcccggccac cgtccgtccg 600

tgcccgtgcc cctgcttcgt ccgtgcaagc actggcatgg cacgcgcggc gagccggcga 660

agcgacggca gagagagaga aagcgtctac agctatggtg actcctctgg cgtcgaatca 720

ggcgcccagt ttaggcagac acatctgccc ctgcggctgc ggtgtagatc cgccatgatc 780

agagcaaatc tacccgtaag gcgcaggatc ctcgcggctg gacgtgccgt gcacgcatgc 840

cggggatctc cacgaacgag tcgcgcgcgt agtcagtcac atgcaaatgc aaggaccaaa 900

ccaaggagga tacgcgggca gttgcatgca cagtagatgt ggacatcaca catgcccaac 960

ggagcgtcca gaaacacaac tgttctagcc gctcacatga ccacagccgc atgcccgcat 1020

aaacactact accacacggg ccggccggtc gtccactcca gcaacagcag ttcatctact 1080

acctggtgtc ccggtcaaca gagcacccag cacggccaca gcccacagca tatatacagc 1140

tagcctagta tcgatccacc acactcgtgt cagtacttgc gtcgtctggt tttcactact 1200

actactacta cgcgacaggc actacgaaag caggaagaca aaggagtatg gctggtagct 1260

agatttgagg ccggccggac cagacgacgg ccgcgtccga tccgcttgcg atttcagtcg 1320

tcgtcgtcgc aggctgtcat ctcgcttgct cgatcgcccg ctggacaagc gc 1372

<210> 2523
<211> 1081
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5828_G1, chr1:29678894..29679974, Cluster 14

<400> 2523
agctaaggct aagctttcag ttcatcttct tgcaacacct gtgtgagtcc tccctttttc 60

tgaatttctt tacggtgtaa aacacacgcc gccggggtgc gaacaaacct acctagcaga 120

ctagctagca gattgtttta ttgtccacag gttcttggtg tctcgcggga ggtaagcacg 180

caaatgattg ataatagcaa cctgggatca cgtcgagatc ttttgtttgc tttctgtccc 240

gttgaattgg cctcttacgt tcgtggggct gggataaatt aaaccacacg gaggaagttc 300

catgggcgca acaactcaat gataagaaaa taaaccggcc aatcatttgg tcatgcatgc 360

aatgcaaagc gccggtaact aacatacaca tataattgtg ccgcccatat ggccccctc 420

tcgagaggga cttagggata tgtatacccg gccctcttgt gtttgtttgg gctggatttg 480

ttaggccaga accaataata tagccagtaa aagaattcgt ctcgcaaatt aaagcagcga 540

ccgacgacgc atgcatgagc cgggaacaag atctcgcaat atattattgg ggcattatcc 600

ggtgaaccga tccataagtc aaatggggcc ggggtgttca tcgcaatgag cagggctctc 660

tctagctgct agtcgccctt ttaattagaa aggctatgcg tttgactcga gctagcctag 720

cttagctatg acgaggtgga tggacatcat taggcgtagc taagctagag ggacaggaca 780

ggcttctcgt tcgtccagtg gttaattggc atcagcctgc tgggtttatt gtatagaaaa 840

tcagaagggc gtgagatata tataggat aagtaatctg gatatgcgtt tagtgtcgcg 900

tggctaagtg gctagctact tgggagggtt tcgcgttcct gacgtgcaat agcaatccga 960

aaccaaggac gacaaagaca tggcggccaa caacaataca actggaatag catacgcttc 1020

cacatcgcag tgtgttgggt tgcctgatct tatgaaagtt agtttcaaag aacactcgac 1080

g 1081

<210> 2524
<211> 1324
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58630_G1, chr2:38105872..38107195, Cluster 14

<400> 2524
tataataaac gtagcagaga gaaattgaat ctctctatat agaagatata agagtatcct 60

ctatatacgc tttaccggat atcgtgggac ggtagaaaag agaatcttct acaaattctt 120

tagacggtgc ggtcgagtca gccttaggtg ataaaaaatg acgccatgct agcttcaggc 180

cggccaaagc ataaacgctg atgggaggag agtgatatat acattgactt ttatgatctg 240

ggatatagag tgagttgacg catccccgct gtacatcacg agcgcagtgc tggcgctact 300

tatgagcatc aggattggcg cacgccgtga ccacgacttg gcaaatgaca gccctaacct 360

taatggtcgg tttaattagc cgcagctacg tactagcgca ccaggcacca gcagcgcttt 420

ttctgctgat cagtgcttgc cccggccgat gggcgacggg acaacactca ctagtcacta 480

cactagtaga aattgtggat ggacggacga cggagcgcag gcgcaggcgc aggcgcagcg 540

catagaaatg catgcatggc cctgatgaca gacgacgacg aagcgcacta gcagctgagc 600

ttttagattg gaaaaaggga ctcaacgcct ctgctacctt ggtccttggc tccttgccat 660

tgttggtgac ggcggcgggg gggcattgga ttccgacgtg acatgcgttg cgtgcgtgcg 720

tgcgtgcgtg ggatcaatca tgcggtcaag tggaccgtgc gtgtcgtcct catccagagc 780

atgagcattg agctagtagg actccattct gaacataata ttaatactat tagttagcct 840

ctcaaaaggt tataagccag ctgcaatgca aacatgattg aactcttttt tatttttgga 900

ggacgtcgct ttggtctttc caggaatgga atgcgatttg acgtcggtcg catcagcttg 960

cacgaccatc cactaggaga tccagcacgt tcctcgctcg ccatgcttct tttttctctt 1020

ctctacccac atttaaagca ctaggtcgtg cgtcattcaa gaagctcata ggtcatcccc 1080

gctcatcatt gctattaata gaccgttacg tcctatataa accgtaataa atcacctaaa 1140

tccaacatgg caccaagccc cactcactca ggtatcgctt ccaaatatta ccaccgttgg 1200

gtctagactt atgggcccaa gcattcagga ataggtaagt gagagaaagg gtgtatgaca 1260

aaataagaag ttgagttgct agatattttg tcaagcatgt ctcgtctagg attcagacgg 1320

gtca 1324

<210> 2525
<211> 1348
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59255_G1, chr2:41775445..41776792, Cluster 14

<400> 2525
gacttgattg cgatcccggc cgcggcgtgt ttagggaaac ccttttgttt tactcattga 60

tttcggtgcc gagagaacgc tccgaggtgc cgccgtcggt tttcgagctc ttcccatgat 120

cttctcgcgg tgtcggctcc tggtttgcat tgcatgccga tcggtgcagt gctgcagcac 180

ctgccgtttc ccagagagcg agcgagcgtc ttggctgtgt cctgcctgcg tggcggattt 240

tatcgcattc gcttgcgttg cgtgccctgg tcaaaacgac actgcttcaa attgaatttg 300

ctccgtcgag cccatgctag tacgtactgg cgtgtcccga gtaaatgctc tgtgccagtc 360

tgttgctctc tctctctctc tctctctctc tctctctgct tgcaggttta ctctttccag 420

taaactgtgt ccacgaggaa atttgtcggt gctaacctcg tcccctgtcc tttttgccat 480

ccatccatcc atgattaatt acgcggttac tacggtgtac gtcgccatca agctggcgag 540

acgaattatc gtaagcctga ttcattcacc acaggcctgg tggtgagacg aattaggacg 600

ctgtgacgaa gggagagaga gagagagaga gggccgactg atgctgtctg taccggcact 660

gaactgaaca ccctgtaaaa ttccgccaac ctgcaatcgc gaggccgggc gcgcccggtc 720

tggtctggac tggacctgga ccctggtgtg gcggtacgcc gggtggcttt tgccatttac 780

tccgctgttt cccatggcca cggcgaggac caccgcttgc agcgggggac ggaatcattc 840

accggggcat gtgcgccttc tccaggaatt tacgacgacc gcctcgcctc gcctcaatct 900

cactctcacc ctctgtaagc aaacctgtaa tttccgtacg gagccgccag ctctctgcgc 960

gtgaccagtg caactggcgt atcggagcca gcaagcagct cggcacctct ctgcctgccg 1020

gcatagcgcc cccacgccag ccacgtacgt tatcctcgat ggcctgcacg caagacggca 1080

ggggagtcac atcacggcgt aggctcgtgt tgcgacgctt caggagtcaa catcctggcg 1140

atcgcgcgcc gcgccactcc ggagtccgga ctccggacac gcaagaaggc aacacatgtg 1200

catgttgcta gagatagagc tagacggccg tcctgggcgg ccgtcgtaga tgtcctattt 1260

tgacggccga cgtgtgtacg tatgacgtgc atccggccgc ggcagcggat catccaccgg 1320

cgcggcgatt tggctggcga gtagcgcc 1348

<210> 2526
<211> 1075
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59835_G1, chr2:45217630..45218704, Cluster 14

<400> 2526
tttaatttat tgatgccgtt aaacacggta aaaataatgt ttgctcatga ttacagttta 60

tatatcgtac acgtagatgg aggagcactg atggagtaat cgcgggtcaa attcttgtcc 120

cactgtggtt ttataaaaaa aaaattcggt ttctgacctg gtcggtcggt tttagtttcg 180

tgcggcactg caccgcagga gcatgtgcct gtcagcctgt ggtggtagtg gcacatcgcg 240

gtccatggtc agcagccggc cagaagcccg agtctgaaca gccgggttaa gaatcaacga 300

gcaaaccatg tatgtcgatc cctagaccag caaagccacg aattagacca aaaggaccgg 360

aaggtggtgt acagtgtact gttatgatac gctggcccaa acctttcagg ctttcacaat 420

catgtcggcg gtggtggtta gccagctttt accgacaacc ggaagcaccg acgggaaaag 480

ggaaatctcc ccaattatct tgtcctgggg gcatggactg taagtacaat cgactttaca 540

tgatgctggt ggctagctaa acatgagttt acttacttac ctcacgaaca gaagctcata 600

gggtcttcag gcccagggac agggactcgc tatgaactgg tactggtagc acacaggaca 660

ggagctccgt agaggtaaac tgcaaaggca acataagctc agggaaaaaa aatatttggt 720

gttcttcagc ctacctttgt tttttgaact tagacaaccg ctgcacacgg aagatgatct 780

aaccagcgtt gtcgaaagga acttcagcgg agtagcttac aaggactatc ccccccctcaa 840

tcaactaaaa ggtgtggact atacacacac acacacacac acacaaatgg tcaaaggaag 900

ataatcatcc agacaatgaa caacatgtcg ataagtaaaa ggcgaccatg aagaccagga 960

tttcagtctt ccaagatatc caggctggag agctttctgt aggctgtagc tgtccaagac 1020

tgcactgcac agttcaggaa attacaccac agcgaaacaa tattcaaatg agacg 1075

<210> 2527
<211> 1222
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_628_G1, chr1:3372357..3373578, Cluster 14

<400> 2527
ccctagagta tagctatagc tcgtattttt gaacctaaac tctttaacat aaaataagct 60

aaagtctaga actgacttta tatactgtat gtcacatatt taaagcttta gctgtaaaga 120

gtatgggggg gggggtctа actaattaga ctttaatttg tagagcttat atacatggta 180

gtatgtagct aatggaagat attctgggca aataattttt tacgcatgca cgcatgacaa 240

caacatgcat gagagttgat cacatggagt caaagtatac aaatttgtct cttcccgctg 300

gacgtctgag agtgagagag ataataattg atcaaacaag ctactagagg aaattaaagc 360

tgatagaaat tggggttagt ttggttggat atgcatggca cacgcgtgga agctaggacc 420

tcggcgcgcg cgaccatgtg gtggcacgca aggagctagc agcgacgtct tgtacccgcc 480

gactcgcgtg cgttgccgaa gaccatcgta gcgctgacgg gtagggtgat atggtgtggt 540

gggtgcgcgc gccacgccct cgtccgcgtg gtggtcgtgg tcatcgctct cgccgcagag 600

tcgttctgcc ggtcgccggt cagccgaacg cgcgcgccct agtagctagc tcgtcgtgcc 660

taggagggtt aggttacggt agcccaccaa tcatcgtcta ggactccgta cgtacgagac 720

acgagcgagt tcgtccgggc gcgcgaggct acagacagac gtcgtcgccg gcatcacgtt 780

aaggtgctag ctggagattc ttctttctcg agatcactcg gcggcctttc tatggcgatc 840

caccgcgacc gtaccatgcg tgctgctggt cgagcgaaag tagctagctg gagcaggacg 900

agctagctag ctagtgccgg ccgggtcaaa tgcgcggaga catggcactg atcttctttg 960

tttggaagca gtgcactcag ggccggcaga ggtggtggtt agctacctgt tcgctagctt 1020

cctgtttgct cgtcagactt tgaatgtcga tcgtaggagt atcatgtatg agcgcaagac 1080

gacaaggaca gcacccagga ttagagggat ctcgatccaa tggatcaggg atgatgtgat 1140

ttgacctccc aatatgacca gattgtttta ttgattcatt cataaatgaa taatgatagt 1200

agcacgcagg aagctatata ca 1222

<210> 2528
<211> 1056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6804_G1, chr1:34948017..34949072, Cluster 14

<400> 2528
gttttttttt tctgcttgat gaaataaagc cacattgaag ccatgatggg aaacctgctg 60

ggatctgcga gtgtgagtgt gcctgggcat gatggtgtgg gcaatgatgg tttgatcttt 120

gatttatcac tgcgctaggt tactagcgaa tcctagacac cgttgatcga tcgatcgatc 180

gatcggtgac ggtcggtcgg caacagctgc ttgtgttgag gccgtggatg ccggctttgt 240

taataaccaa atccactgaa ttgcgtggag catcagcttg tactacgcct tcccatcgag 300

ctcaggcggc cggccggcct gccgatccca tgctcttcat gctatagcgc ggccgcgtac 360

gtacaggccg gccggggcgc gggggagtgg aggcaggcac acgcctgcac agacgtacgc 420

gccgcggtcg ccggccggcc gatcgatcac atgttcatgc tcatgctgta gcgtggccgc 480

gtatgtacat gccggggcgc gagggagtgt ggaggcaggc acacgcctgc acagacgcgc 540

cgcggtcgcc ggacggccgg cgcgcgcggc gccgcgcgga ggacaggcgt gcgtggccgc 600

gcgcgcttcg gtgtcgacgc gcgcggctgg ccggccggcc aacgtgctcg tacgatacat 660

cccggatgac cagctagtca gctaccacaa catgcatgca ccgatgcaca cgagcgcgcc 720

gagtggctag ctggactact ggacgaggtc gaatacgtgc gctacacgac gtcgtcgtag 780

tcggcccgcg gcttgccgga gacgcacgca tacgcgttcg tcgcgtcgca ttcatagaaa 840

gcgccacgta cgcagcaacg catgtggtgt gcacgcggca gagtctggca gacgcgagga 900

aggcaggcag cgtccgatga tcgagctggg tgcactggtg caggtcgtcg cctggtgtat 960

gaatgagtga tctatcgtct cgagctgatc ctgagagaag ttcttactag taaaactcca 1020

agcggtctag agagagagag tggctcaagt gttcag 1056

<210> 2529
<211> 1003
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_74607_G1, chr2:139640239..139641241, Cluster 14

<400> 2529
actatggtca tctatttgta tattatctag gttaatcgta atagatagtc gtgcctagcg 60

gctacgtttt ctggagagca cagaggagca cgaagaagag catcaggcca acacagtgcg 120

ttccatggag aagcttccaa aggaccaaac gctacaggtc gcggtagccg cgtgccgcca 180

cggcatcaac tttcctcgta gcgtggttgc gtacagacac cgatgaaaag tcgtgttgat 240

gacgatgaaa atggcgagtt gactacggag atgtccatgc atcatgccca ggcaaaaaaa 300

aaaacgaaag tcagaaaccg gccctgcctc ttgtgaacaa gctcatgtgt ggcaggtgaa 360

cctctcagct gagcagcagg gcggaccttc gttatacggc cccactcaat ttttaagttt 420

cagtagatct tttatcttat ttactagcag aaaaaaaaca agaggacagg ttagtgaggt 480

tacaggggggc acatgacaga gctgatgatg catcacgcgt ataatgacga tggaacctca 540

ccgtgctgca tttttccaga tgtggtcatg agtaaaacat tttcctcgac tattatttca 600

tctgttttgc gaaaaggctt ctaccataat gattaatact tccgagtaac atattcaagt 660

cttgaatccg atctctctgg aaacgaattt cttgtttagt taaaaaaaat ctcctcgagt 720

agaacggtta cagagaagac ggtagcacaa aaggcggtaa cagcccgttc gtaacagggg 780

ccagcagtgg cagagacagg gaggggccag gggccgtggc cctgccaacg aaaattaaaa 840

aaaacatata tggattaatg agcctaatta aacttaaccc gccaaagcat aaacaaagcc 900

acgtacaaac gaaaaccaac gagtagattg cgacctgccg ttgtcgactt tgctagtgcc 960

ggacgcccgc atcgcgcctc gtcctcgatc gtcactctac gct 1003

<210> 2530

<211> 1220
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8131_G1, chr1:42478962..42480181, Cluster 14

<400> 2530
atccacaacc ccccccccc ccccctccct ctcgcatgat tcaatacagt tgaacctccc 60

atctggtaat atctggaaag cgatttcaga ttcaacagta aaaaaatggc ccatccacac 120

ccccccccc cctccctctc gcatgattca atacagttga acctcccatc tggtaatatc 180

tggaaaaact aaatcaaaca tgagtttagc aactaaccct cctcaaacca gcaaaaggga 240

cagtagagca tccacaagaa cagcatgcct gtgagtcttc ctcctcaacc caggaaactc 300

tgaatctaaa taacaggaat ccaccaatct gtgcttatgg cgccctttgc ctagcaggta 360

gagtggcatt cctgttattg gcgaactatc tcactggtaa tctgtcattg gcgaacttct 420

gtaactcaag ataatgtctc caattcctca cattggaata tcttaagact tccacttcag 480

gatttctgga ggcattaaaa caaaaaaaga ccgccacagt taaccattat acctcgccat 540

ctgaatatca cagcccgtgc cttggctgca aacgtctacc tttcctttgc tcttgtaccg 600

atcatagtag tagcctctcc tgctcaggct tttcagaacg catttcgatt tcgggagcct 660

tttccagctc ctgttgtttg tacgtcgcac tcgactttct ttaatgaagt ttgtttcttc 720

tatttaaaca aagaaagata caaacttgat taaagtgatc caccaaaaag cgtgcgttct 780

tgattgaagt gatccacgta aaatccggcg gagagggaaa acggaagaag cagcgaagaa 840

gatttcgtct cgtgccaggt gactcgcggt cgcgggagat gagggcagat ggtcagtgat 900

ccaccgaaat cttgacacga cacacgacaa ccggcaccca tgtgcgggac gtcacgatcc 960

cgcgaccttc cggacagcga cgcaggacct gcacaaaatc atgagccgtg ttaacacgcc 1020

acgcaagcaa atcctcaact acggcgaact atgtatgagc gtgcttcttg ttaggtagag 1080

acgaaaaaga tggtgagaac tgagaaagac tacaatgcaa tcagaccctg cttgtaatcg 1140

tgtcccttcg atgccttcct tgccgtgtcc agaagaggac acctcacacc tgagtccccg 1200

cctgaactgg tcgtcttctt 1220

<210> 2531
<211> 1276
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82576_G1, chr2:184963042..184964317, Cluster 14

<400> 2531
gcataccact gaagtgatcg atttttcgct atggtctcta atatagtaaa cgtaaaaacg 60

tgtcgccata atgcaatttt aaagttccga actctttctt atgtacgggt ttctatggtt 120

tatttttttg aaaatatcct atagatcatt ttgctaaata caaagtgttg agctctgttc 180

caccaaacaa acaaatcgaa ggccagagca acgttaggat gagcttgagc tagctagcgc 240

tggctaaaca cgattttcaa tcgacacgtg gtgatgatcg accgaacttg gggaaattaa 300

ggcatggata tattagagat ctgtagcatc attaattgag atgacgatcg aagagtattc 360

agcgagccac tgttcattgt atgtggaata tccacacccc gggggggggg gggggggggg 420

gggggagga tctgccctcc gttacaatga caagggctgt gtgtaataat gtatcatctg 480

aactggtcct agtagtgtac agtactagtg tactaacctc ccctgattca ccgtcacctc 540

ttaactgggc atttaataaa cacagtgcat ttctcggatt agctttcgtg tcacatatat 600

aaagaagcaa tgcaaaattt cagcatcgat cgatcagtcg gttgtctcca gtcttggctc 660

cgttttgcat gcccatacgt cgtcataact cgtaactgga tcgatgcgcg tggacgtggt 720

ccacagtgcc atgccgctgc caaccgtcct taatctcaag cggatgaaag acgaaactac 780

agcatgtgtc gtgaaaaaga tagatataga tggatacaca taacgggcta attggatagc 840

tggacgtgcc aaaccaggct cgcgcgagca tgggcgctca tgtacgcgcg ttttggccgt 900

atggccgggt gcagtcaaat gtccttaaaa atggttggtt ttgcatcgtt acatggagta 960

tgtagtccat attttctgtg tgcatacaac caaacaaata ctcatatata gtcaacgcat 1020

atggtgactt aggataatca ctgacatacc atccaacggc gaccggtcag ggaaatctcc 1080

ggcggagatc gggacgtatc gtggtcctgg tccaggagca ggatggtcca gcatgccttg 1140

ctgtttactc aatgtgttgg accggtgagg aacctacacg gtcacggagg ctgagttaat 1200

ttctgtgtgt ccttgcttct gatccatgca ttcgtgcgat catccaacga cacgtggcta 1260

tctgacggcg aattaa 1276

<210> 2532
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82596_G1, chr2:185020721..185021727, Cluster 14

<400> 2532
agtatactaa taaaatttat ttggctaaca ttttttgttt gtttataaaa ctatttaaaa 60

cagcgctaac gacaaaactt tagaaagaaa agccgccatc cgttcggttt tatcttgata 120

ctttagaaag aaagccatct ctgttcactg ttcggcgtag ccgggttgct tgctggtgtg 180

acttgttgtg agtaggagga ggagcacgat agcagggtca gcgatctttg accggccagc 240

cagggtgtaa ccggaggctg gagactggag cggggctaca gtgcctgaca gccgctgagt 300

gcatagtagc agcaggcgta gccgttcccg cgcggggcca aaaagatgga tggatccgat 360

caggatttct gaacaggtgg ccataccgta ggcaatgctg tggcctgtgg gtagctcgtg 420

gtagacgttt gatctaccca tctaggggcc tggcgcaggc tcgcagacct gcatcacctg 480

tgcgtctccc aatcgatgat acaggtagag aaggaggcct atccgagacc gcgacgctgc 540

cggccgtccc gtgcagccgt gcagggagca tcgttacggc ttttgctgtt gttagtacga 600

gtgaagtaca ctggttctgg tctcgatcta ccgctcgatc ttcaggtggt gcgcccagat 660

gccgatttga tcgctgctac taccccggcc gatggccacg atccattgcc ccgtctctct 720

catgcacaat gttctcgtgg tgagcgggtc cgggtctgtg cgctagtcta gtcgcctgca 780

ccaggttgat gagagaacat gcatgctcga cgagaccgcc aatagcaccg tctaccaggg 840

gcggcccctc atgtcagggt ctgtccgagg gactgctatt agcagcgagc aaaagaatct 900

ttttctttcg gccaatccca atcccatccg cagaaccgtt ctgcctgacc gcgcacacgg 960

tgtcactcaa aagcgcggtc cgggttcatt tacgcttatc tgaccgc 1007

<210> 2533
<211> 1303
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83082_G1, chr2:187789134..187790436, Cluster 14

<400> 2533
atgtcgcttt acagcaaagt aggaagtagc tggcgaatgt tcggagatcc cgcttgccta 60

tagcagagac aattctgtgc agggtaggcg gcggagaatc tgatgggcgt cccgtcccct 120

tgctcagcgg aatgcgatca gcgaaggatc gccggagatg cgtggcggca cgtgagtttt 180

ttttaatcat tattattatt agcttgtgcg tttggcctct tcaggccggg cctgtcttcg 240

cgttccattt cctggagcta cccacccgct cagcaaaatt gactagagcg ggtgctcatt 300

gcggaccact gaccggctgc atgatctgtt tcatttattt atcctaatcc tctggtagtc 360

aaatggctag aagcagaaga aggttctttg agtgtttgac aaggaaatct gtgcaagact 420

tgagacatca tgcatgacca gaccagggag cagtgttgat tgggataaag gaagtttctt 480

cgttgctttc ttgttttctg ggggggggaaa taattaaaaa aaaaacggag cacgcagcag 540

tttctgatgt ggatcatgtg ctatatatat atactcgttt tgcttaatgg agtacgtgcg 600

cgcgcgctca ctcggcccga attaaaccgc gtgtattgta ttcagagtaa ctgatagtat 660

cactatgtga tttcttcctt tctttacaaa accactgtcc gctgctagat acatttgaac 720

ttgtcaagct cgcctcacgc cctcactgga ccggacatct cgaggcgata atgcttggac 780

attggaggca gctgacgacg gggcatgcta tggaaggagc tggtccgttc tggaagactg 840

gagcggttgc cggcggttgt ggcgaaaaca acgccagaat cttccgccgt cctcggtcct 900

acgctccagg ctccagccgc catacgggta cggggtgatg cgtgcagata tgtgcaaatg 960

cgcttcgtca cgctacgcag tacgcacgca cacgggtatg tatcggtatc tctttgttag 1020

tatgttcgtt aatataccca attaccttag accctgtctg gtttcagcag agtacgagaa 1080

tctccatcac acacttaatt cgagaaaatt cagccgaaac ttgataaccg tggatagtct 1140

cctgtagcgt attatccaag accggaaatc agcgatgttt ggttcagtgt gaattctgta 1200

aacaggattt ctaagtaacc ttggaatcaa acatcctctt aggactagtt gggggagcca 1260

cataaacgaa ggagattgga ggggctaaaa aaaatatatc aga 1303

<210> 2534
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8324_G1, chr1:43769545..43770581, Cluster 14

<400> 2534
gtactacaca tgcatgtgga tgtgaatctc tctctctctc tctctctggc ctgctagtgc 60

tagactctcg tctagtctag ctcatcagcg cgtgccgtct gtttaattac gtcttccaat 120

gcatcggtca gtgccattat tttgaccgag tagtatagta gcgtagacat gcaatatata 180

tatcctatca gcaatccaaa gcgatggatg caaatcggcg gcaagcaaga gcccagacag 240

acagcctcct aaaaatagca agcgcctgcc ccgcagaccg cagcactata ccctgggttc 300

tggttcgtta gccatgtgtc tcatgcctac gacgtacctt ggtcacgtcc gtccgatgca 360

tgtggtgctg gcgcccgacc gacagcagcg cagcatcgat cgcattcatg aacagagctg 420

cagatccacg agcgtactgc gtacgtacgt ggcactcgat atcgtcttcc aacggtgcaa 480

tacaacggcc cctctccgcc gcggtggaac ggtgcctggc gcacgcagca agtggggcgc 540

cggggcacat gcatgctttc ccttccctag cttggttcgc gagaataatc tcctccctac 600

cacgccaccg gccaccggcg ccatctccct gtcgtcctcg atcggctctc tcttgcctcc 660

gccgcgcgcc agcccggcca tgcatgcagc agcgcccacc cgcactgcat gctgtgccct 720

ctccgcctcg cgtggccgca acgtgggaca actgtaactc ctgtctacat gcctgcctgc 780

ctgcctagac cggatcatca tcagctagct gcctggcagg gcattaccgc tggactagtg 840

gactgcactg cacacacact ggatgagaga cggaccgacc gatcgaccga tcacggtggt 900

aggtttgact ggaccggccg gccagccggg atcgatcacg gtgtggtagg gacaagggcg 960

ggctgggagc tagctgtaag acgagagccg tgagctggcg gcgaaagaag ggcaaagggg 1020

aagaaagaga acattag 1037

<210> 2535
<211> 1378
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_8326_G1, chr1:43770853..43772230, Cluster 14

<400> 2535
cccatgcatg tatgttggca catttggatc tcatgtgcta aactttagta tggtgctaat 60

aaagtttagc acactttgag gagctaaatt aattactgtt aggtgctaag catcatcgat 120

ccaaacaagc cgtgcaccgt gatgtaactt ttgtgcatgg tctctctcgc tgatagactg 180

gtgcggtgca gcggtggtgc cagtgtgtgc cacccttccc ccccccccccc catatcagca 240

tagttcgttg ccctcggcta gttgcgctgc tgaaagtttt ctgaccggtg tctgaaactt 300

ctcagctgct ttaacgtgca tgtaatcatg taggtaacta cgtgcgtaac tgttctgcca 360

gtctgtcgcg aatagattat agcgaaataa aaagggtcaa cttgcatgta gtatgtatat 420

gttgtaataa taagatcgaa cacacagaag cttgacgagg aagagagggg gtatcatgga 480

tgatgcaatt aaattaatcc atatggtgat gatcccatgg ccatggccac acgtcgtcgt 540

cgtcgtcgag gcgggcgctc tcggcgtgcg tgccgtacgt acgtctggac ttttagctcc 600

atcgatcagg taccagatgg tgctgcgcat gtgtgagcaa gctggccggc aggcatagtg 660

gacgtgggaa ggcatcatca atctgatgta cgcaatcgca tgtctgcgcc ggccggccgg 720

ttctggccac cacgttggaa tgcacatgca tgtatatgcg atgcaaatat gggtgccgct 780

ttgaggcctg ctgccacgtt cggtcatcgg tccaccagta cgcatacgca ttggtatagt 840

gcatgtacgt ggtgtgggtg cacgactgca cgcttctgct tcacggccgg ccggtacgag 900

aaaaagaaga agaataaaca agtggagaga gagctcagtg catcgcgtgt ggagggagcc 960

tgcatgcatg ctgctgcaag catcggccgg tttatgtggt agacaaacaa gtgccagtta 1020

agccaatggt tggtgtcgat cagttcgctc atcgcggtca cttgcagttg tttgcccgcc 1080

ggctcctgtg tggcctgtgg gctacatgat gaactggtgg atcagcgtga gttttattca 1140

tttttcaatt atgtttataa caattattta agaatatatc atttaatttg tttaaaagaa 1200

ttatcagcgt caggaatgcc gatagagtag gcttacaaca aaactaatga tatagaatag 1260

gatttatgac gttgtcattt cacgtatagc caattaataa tagatcacca ctttttctc 1320

ataaactatt ttgaagtctg tgagcatccc gttttgcctc ctttcgctct cttcatat 1378

<210> 2536
<211> 1343
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84227_G1, chr2:194618871..194620213, Cluster 14

<400> 2536
tccagcctat caaaaaaaaa ttattccagt cgaaccaaat ccagaagaac caaaaaaggg 60

gtctaattaa ggaatcgtcc atcgagcggc gcacaaaaac tcattctatt tccgtgggat 120

aaaatatttc ttcagtgcct cctccacaca cacacagcgg cacgttagct gctgctggga 180

tcggaggcgc cgcaaccgca agcactggaa caaaatagga tagactcgtg cgttatccaa 240

acctgagaaa agatcatttg gaatttaatt aagattcggg cggcggatag catgatccac 300

gtatctttcg ttcgttcact cattcctgga tcgatctgct gcatggtacg ttgccagaag 360

gacgtcctgt tcgcgcctcc ggttgtgttg ctgcggctac cagagagact tggcggccgc 420

tgcgccacga cacaaaaaga tctttggcgg ccgctacgcc gccgcatgtg gcgtggtctc 480

gctctcgccg ccgcccaagc tagccgcaat atactccagc atgcacatct atccggatgg 540

atcagcgaat tcggcgcctg cccatactac tagctactgc tgttccgagg cctgtctgtc 600

tgtcgtgcac gcttgtatac attcatcgta ccatacagat acactaagct aggccgtatt 660

aggttgcatc catataatca ttatcatcgt cggttttaat acaaccgggc gccgatcgaa 720

gaaaataata taatgtacgc aggaggaaac tatttacgta ctagtagcag gattatcaac 780

tgacctttga acatggcttg cttaattttg tgcaactagt acaaattaat ggtcgcgcgc 840

ggacgtaaaa ttcatgcatg catttgcgcg tcctgctgtc cgcgggtaca ggtaagcatc 900

gttctacagt tggtcgtcag tgaagtcttc tggcatgcat gcatcttgaa ctctagcgag 960

ttgtgtacgt ggacttatat acacccactt ttcatgtata tgaaatgcaa agctaattcc 1020

ctttttaatc actcatcatc gatctgtctc tgtactgcag taccagctag tagcagcgct 1080

cgtgcatgga cgcgcattca gatgacgtgt ctaggcgcag caatatggag agtatctctg 1140

agaaataaag tcaacgttta ccacattatt ggcagcccaa accgatcgag ctgacgcaat 1200

gcaagctaga acacatataa ccggtccgtc aattttactg tgtccaagtt ccatatcaat 1260

taattatagc ctatctatcg atctcttgac aatctgctgt atgcatcatg ttcatgtttg 1320

cgcgcgccta accacattag gtc 1343

<210> 2537
<211> 1407
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84708_G1, chr2:197141867..197143273, Cluster 14

<400> 2537
gatatgttca ctttaatccg ttcgaggcag caaagacagc gcaacgtttg gcgcgagaca 60

tcgtcgatag gagggcggtc gttggatagc ggcaggccat tctgctctat gacggctaat 120

ggcgttggcg attggctatt ggcgtagagg ttcaatttac cctatttttt ttacctcttg 180

atccattatt gtggacgccg gtcatcagtg ggctctcagt tcactaacga agcacatgca 240

tgctaagcac acgttctgaa taaagttcac tttagttcat ttatatccat caactaatta 300

atggactaat tggccaagga accgtagccg cgcgccgtac gtagttcggc atgccatatg 360

attccacgca tccggtctct gccaaaagcg gcagagggcg agcacagatg cacgtgacat 420

gattggaaca tcaccatgga ttcctgcaag caaagcaagc agcagctagc tacggtcgta 480

ctagtagtag taatcggggc gaaaagagga catcctgcgt ggcatcgcat gccccgcccc 540

ccacgcatgc atgaatgata cattgccgca gcgcagaccc gttaaaacga gatctggtgg 600

tcacgcacgc cgaggaagca gattgccgcg cgcggcccgg acacgacaga cgacacacac 660

cgggtccggc ctgcatgcgg aagagacggc gacgtgagtt ttccatgtca cctcacccag 720

actagcccat taatctctcg agcagcgcca aggaccgatc caggccagtc cagggcacgc 780

gcgcgcaaag tctcatgcat gcatgctgct cgcctgtagg acgtacagta ctgtacgtgc 840

tgctgcgtga tcgactgatc gtacccaaac ccatgccatg ttggatgttc accgagatcc 900

agaactgcga ggatatgaga gagatcccta gccagatacc aagagctgct gcggcgatcg 960

gtcgagatat tgtcttgtaa aatgtgggag tgggacgtgt gcttacaaga atcgaagctg 1020

tacgcgcttc tctcgagtat gcagaatgga ctgggctggg ctggggcgct gggcaggcca 1080

ggccaggcca tttcgcgctt tacgctccta ttctaggccg tcgtacgtcg acccacagaa 1140

aacatgctac aatgaacttg tcgaaacttt ggagaacgac gccgcgtgtt ttcttcccct 1200

cgcagtcgca gcctttcccg cctttaattt ccacgccggc gaaaagcctc gttggccgac 1260

cgacccaaaa ccaaaagcca gtcaaggcca gctgctacaa gtctagaact cggcaaggaa 1320

aggacgtgga gctgctggcc gatcgaccgg cctcctgctg atgctgaaac gagaacacaa 1380

ggctggggaa gcccaaacca accgtgt 1407

<210> 2538
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_856_G1, chr1:4544544..4545610, Cluster 14

<400> 2538
aagaaaagtt gatcttctcc aaaccacgct agctgcaaac attgaccaca gaaaggagct 60

ttcttgaccc taactaacag gccagccaac taacccccgg tataggctgc ttgcctcccc 120

gttctccctc agaatcaaag aaaacacaaa aatatatata gccactggcc aaatgggcaa 180

atggccatat acattactcc ccagctgcct cctttgccca gtttacaccc aacaacgtgt 240

gtgcgtgctc catacacaca tataccatat acaatttttt tttataaaaa aaaaatcaac 300

atgtggcgcc taccggtaag tagccgcatc gcatcctatt gtatgtgtca gcgtgcgcac 360

ataaaatagg cgccatccgc tcctggggcc ggccgaatca gagaccggca gccatgtcga 420

cgacgctgac ctgagctgct gccctcctgt taggcttgtc ctggcccagt gacaacacca 480

gctggccttg cagttgcaag ctcagctact gccaatggcc gagattttct agccatataa 540

tgcccagcag ataaccctga aacctgctca ggggccagtc gatccatgcc gattaaaaaa 600

ctgtcacttc agattcacat cgcaatagca cgcattatta ttctttcagc tgcgttgtag 660

acacactagc tacgtggatc agttttcatt cgctgaactg ggtttttttt atatatttag 720

gagaacagca agaacacaca gagtacgttc atctgattcg catccaatta atctatgggg 780

ggaaggaaat gaacggaacg gacggacgat gcgtggtttt cagaggcagg cggaactgtg 840

cagggatgct tcgagagctg ttcttgccga gcaggccgga gcaggaacag gcggtgtgat 900

aagagcggcc tgcagcaggc atgcatgcat atgcagcaaa ttaaaatcga gttaagcatg 960

cgccatcctc cgcctcctcc tgaaatgggc ctgcacgatt tattaaatat ggcgacgctg 1020

cctgcctata attaaagcaa caatatatgc gtgcgccatt gctttcc 1067

<210> 2539
<211> 1227
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85833_G1, chr2:204774091..204775317, Cluster 14

<400> 2539
gtactaatat ttagctgaat tttgcactga ctaggagagt gggcgactgg gcgtgacttc 60

ctctctcgat ggtcaccgtc ggccagcctt cccaagacaa caaacttaat gtagtagttg 120

tcggtgtagg tcgctgcctc actatcactg atggcggctt ttaaccatgg tcgattgttc 180

tctgtgtgga tgagcttcaa ctagttttgt ttcagagttt tttgtttgtt tgttttagag 240

ttatgattgt actacgtagg tacctcggaa cataggaaag tttgctgaca cccccatgac 300

cgaggaggag cgagggtagt gagcgacgaa aagaaaggaa gcagactccg gttgcacttc 360

cttttgttgt gacttgtgac ggtgaaaagg gaggcggaat cgagtttaca cgcgttcctt 420

tcgctctctc ctccggtcct ccctacgttt ttgtttcttc tctctttctt cctctctctc 480

ccgtacggtt tcgtttcccg atcgagtcct gctcatactg tcacgcatca ctgcgctccg 540

gcctccggcc acgtagtcct atcccggatc gggcccgaca caacggatct actaccagga 600

gtgtgtacac cgtctgtgta cgatagcagg cggcgccaag tttcgttgga ttgcatcagc 660

catcattgtc agcagcaggc ggtgttgccg gccgactcgt gagggcaagg ccctccagat 720

tacctcctcg ctctttccaa ccagtcctga aggctacgac tttttgtgag aggtcgtacc 780

cccaattgaa agggtttcat cgttacaaaa gaaatatcca agtcaaccga tgcgatttgt 840

caacccgtta aaaaataccg gtaccagtac cacagctcag ctcagccggc caagtcaacg 900

ccgtcggcaa gggcgcacca cgcacgacgc aaaaaccagc gatggtggac gtctctgcct 960

cagtcggcac gcgtcccccc tgtttccctg cgtctccggt ttactgtccg agagagatga 1020

gccaaaatgc ttcaaaagag agagagagag atgagccgaa tgggcgctgg cggctgtcag 1080

cagcctctgg gctgattcgc cgtgcaggtc ccgtcgtcgc ggcgagcaca ccgagaggaa 1140

tatatgatcc gtttcgacac gaggaccaga ccacacgtcg gttccgatta gggatgatgc 1200

aaacgttgga taggaaaaaa aaaagta 1227

<210> 2540
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86203_G1, chr2:207229723..207230834, Cluster 14

<400> 2540
gtggaccgtg tgccgcgcgg gatccggcat gccgttccag tttgaccgcc agattacacg 60

gggccgtgga aggcagactg cccagtgcat gtggttcccg ggcagcttaa gctacgcata 120

ttttatcccg ggccacgggt aggtgttgtt ggtgtccaag agccaaggcc catctttgtg 180

tgacctacgg gttgctactg cacacgatgc ttctcggccc atgtttattt cctggcccgt 240

ctttagcttg ggcagtttcg tagtcggcat caggaattca ggaatgccag cgttcacaga 300

aatttagccc tttgctgcgt ctgcagggtg ggcctttgtg ggctgccact actgcctcgc 360

ccgttgccct gtcgaaccga aaacgatttt cgacatacta ttctctcgct gacaattcat 420

catttgacat ttcgcttcac ctttgtctcc agcgtcttgt tgacttgttg tcacgtcttc 480

cgaagtcgaa gctgttgctc caattctcag gttcacacac aggcacaggt gactcgttgg 540

agtcttggag ggagagtgtt ggagtcttgg agggacaggt cagggacaga ttagtagcca 600

aactcacaca aatacccggg caaattcatc tgatttttt ggattgatac accgcacgca 660

cgcattttgg atgctaatga cgctcggctt gcatgcccac gcccagttcg ttttttgcg 720

gaggcgacga ccaaaacaaa atcgagcgtc aaacgttggc cagccgtcac gtctggcggc 780

atccaaacgc accatttgaa ttggaactca ctaacatctt ctcatcgctg aggaccaccc 840

acacacacaa aacttaggct gctaccacgt gcttggttta aacaaatatt cgtacggtct 900

tcgcatgagt ttccatgaat attcatacaa gtcgccgtgt tatcccttat caccacacac 960

acacactaaa aaaaaaaaca caaattgaac aagtgttcgc tacagttctt tctaactgat 1020

agagttcatg ttcgcacaat ttgaccatat atatactagc tatttcctag atgcttctaa 1080

cgacgccagt ggcagatatg gatagagatg tt 1112

<210> 2541
<211> 1204
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86389_G1, chr2:207970682..207971885, Cluster 14

<400> 2541
gtctgtttgg taggaatgct tttaacactg tagtttttag aatactatgg cttataactg 60

cacatgaaat aaatactatg gtttcacaat tttttcagtt aaaccatagt attttctaat 120

actgcaagcc gtttgcttgc actccacaaa aaaaaaaaac tgcagctttg aggctatagt 180

attgaaaatt ttagtttgca aaaatcaaac caaacacctc gtggtttaca tacctcagtt 240

ttcttagata ccacattatt ttattaaaac tgcaaaatta ctttggtgcc aaacaggccc 300

aagtggcagg tggattaatg tcaatcatcg aatcacatgg cttgaaatcc cgcattccgc 360

agtttcactg ccacatcctc ttcgaactcc ttcgcgatgt aaaaccatca ttcgtgcgtg 420

tgatcagcgc gttacctgac gcactcatgg taggcatggc atcgctgcac acccccctctt 480

ttactgttga gagcacgaga caggccgccc gccgccgcac ctcatctttt gctgttcccg 540

gctccattct tcagtcccag gatttcatca ttacccccac gtgcacacgc ctacggcgca 600

cctgattgcc ctgatcgcct tttgttgccg ccccgtccca tcccatcctt tcgcttggat 660

ggacgcgcga ccgacgccga cgccgacgcc gacgccgcgt gagtaatccc cttccgccct 720

tcgattcgga gagcacgcgc ggacacgagt cgcgcaaagc gtccagcgct ctaccccacg 780

gcccatgccg tgcctgctaa aatctgccaa gtgccgctct ccgtttcccg ttggaaggaa 840

aaggggagc gcagatctcc actacgtacc gagcgcacgg ccatcccaat cagccgtcgg 900

attcgtctcc tttccccacc aaactcccgg ctccggagcc cgagccacga aagacgacga 960

acgctaccgc cggagccgcg cgcggtggca gcctggcagg atcgtcgctc gtcggattgt 1020

tgttggcccg gcgcgcgacg gaacgggaca aggaacaaaa cggaaagcgt tattccttgc 1080

ttgctccgtt gctcgcttca cggaaagtgt tttactgtcc tcgctcctag cccgcagtcc 1140

cgcacacaaa gccagccaaa agcatagcaa agccacgcct ggtggtggcg ctctctcagg 1200

ctga 1204

<210> 2542
<211> 1094
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87230_G1, chr2:211741190..211742283, Cluster 14

<400> 2542
tatggattac tcggactcaa gatacggatg ctctcttgca cagatcgaat tcgtaatatc 60

catatcattt acaacaacct agtaaccagc atctcgtaaa aggaagctac gggtgcagca 120

attgtgagca tcagacagta ttcaaaacag cacgaacggg aaggaacgtg agcaagcaca 180

aaccaagggc cagcaggacg tcaaccacgt cgaacccaag attagaagca agaacgaccg 240

tgggtagaaa agataaaaag gcgtctgcag cagggccggc aaaggatcta gcgctggcat 300

gcagtctgga tgaggagtga agacaaagca agctagcagg catgggctct gctcatcacg 360

tccgtgctgt gcggcgcagg cagccaggca gggcagcgca gttcgctcgt tccgtgcttc 420

agcgtccgtc aacggaagtg tcagattctt gaagcacttg tgcctccaaa gacgcggacc 480

cgcagagctg ggcgcgggct cggcgaaggc acggcagcgc catctgcgcg gggcccaggc 540

gcccccggac cgatgcgtcg gtgaaggaca gccgacagcg tgcggtccgg tcaaacggca 600

gcgcccgcgg aggaatgttt actcgcaagc ttcctgtttc aactagagga cgactgtgaa 660

acaggtcgtt tttcgatgga tggatttttg tttatgagat gggactctgg ttcgggagga 720

ccggaggaga agatagaaca cgtactgtgc tctgtactac ctacgtagta gcagcataca 780

gtgaagcaga gagaggccag aggaggagga gtactggtgg cggaccacga tctacagaag 840

ctgctagtag aagctagcag tgcattgcag ctctcacagg atggggtcat ggcggcggaa 900

gcaagacagc agccagcagc tgtcacttta tggtggcttt cattgcagct gcatcggttg 960

cctcccgagg ccatgcaggc cccagcggca ttaacgcgag ccgctggatc gtcgctgccg 1020

cggcagttca tcagagctgc cccggctcca actgctcgtg cgtccagagt ccagactgaa 1080

gaaagctgca ggca 1094

<210> 2543
<211> 1203
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87433_G1, chr2:213171525..213172727, Cluster 14

<400> 2543
ccgtcgacgg cctctcgctg ctgctgctgc tcgccgtcga ggtcgccttg tcaaattgct 60

ctgtagaata tttttgcgta tctacgtaga tggggtgacc tcttttgggc ttattcagtt 120

gctacgtgat gtgagatcga gctcatttaa gttaatatcg tgtctgccat caagaggttt 180

tcgacttact aaattatcgc gaaagatcat ttgtgttatg ttcttgacca aaaggggtgt 240

tttagtgtca acttataatg tgtgtttatg aattattaag tcattagtga ttttttttt 300

ttgaagtcat tccacgaact tgagtcggag agagtggtac tagttgattc ctccaactta 360

aattgtagca aactatgacc tttaatagat gtaaaaaaat atagttagta aggttaatta 420

acattttgtg atggtaacca ctagtctctg ttatgcgagg aaacctacca ctcaatgcat 480

gagcagcagc cagatccatt ttatttttatt aaagtagcgt ttggttcccg agcctacggc 540

tttttaggtt ccgtccgaaa gattttagta aatcaaataa tgattcagca gttaagtata 600

actttttttt taatttttag aatcactgtg ttctatatgg aatcaatcta ccgcctacct 660

acaggtcgtg agttgtgacg atcgaccgca cgcacgcgcg gcgcgacaca gcccgtgctc 720

ttcgtgcctc gctcatcatg cacgtgcggg tagcgcgcgt cccggcccaa cgtttaaaag 780

acggggcggc cgatgtagat ggctaaacgg cacgcggggt tcattcattc atatgcatgg 840

tggcatggca cgcatcaagc atacgacacg ccactgaccg accaaacgag tcaggccgga 900

ggagacaggg accaggcagc cgcagccgcc ccggcacatg gtcacgtaca tggcctggac 960

actggagggg atgggatggg tccgttgctg caattcaatt atgcgataac atcatcatcg 1020

cattaccatt gtctaaaaaa gccggcgctc gtcagaaagg aaatggcgtg acagcagcgg 1080

gtgacagggt agatctggca gcgcagcgag cgacctcgat ccgcccgtgc ttcccatcta 1140

cgacaactgc ttcatcgacc gcgggctagc ttcgatccaa gcctgttgtt gcttcacctt 1200

cac 1203

<210> 2544
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89114_G1, chr2:222643904..222644910, Cluster 14

<400> 2544
tagtaatgta ttggcattgg catggagctc tgctttgtta tacttttgtt caggtacttt 60

cttcttgctg agtagtacaa acatttaaaa gtgaaggcag gtaaaaaaag ggaaaattga 120

atctagaaac tgaaaaggta attgctccaa atttcttctg ttacgagacg cgacgagaag 180

acgagacgcc gcagtcactc acatgcagtg gacggcaatg tgaccgcgcc gaggtaaccc 240

tgtccctgcc accagtccac cacccattgc aacaacgctg agacctatag agagagagat 300

cgcgtggacc tgaacctagc aggctagcac gagacatgca cgtggctccg aagggcggca 360

gtcgacgacg acccgtcgct ctgcttgggt tctaaatata tacttccact acttaattag 420

attaagaaga gaaaaatatc cctactttag aaacttaaat tgtattggag attggaataa 480

ttgaaagaga aatgaactaa ttaaaggatt tgagtttcca agctaaacta aacggcgcca 540

cgtatagttt gtatatgaaa gcactttccg gatcttaatt atgattcttt gatatttggt 600

tcagaaaaaa aaacatctta gaagaaactt cctgtcagaa gagcagcttt ttttaaccat 660

ccaactgtta ctgtaaagaa atgagcgagc aaagacccaa taatatcaat aatatatagc 720

cgataggcaa gctagtcgga gtcagatctc gtgaagtcaa caatgaacta ccttacctgt 780

acgttacctt ggagtataga attgtggacg cacactactt gattggcgtg caccatacac 840

gacgaacatt ccataaggga gctgagctga gactgagact gacaggcatt taagactcac 900

tgtccctcga cgagctgcac cgtggaccga tatgatgatg gcgggtgaag gagaccccga 960

tcggcacgtg acaccagtgt agtttcgcgg cgtcatttcc aagatgg 1007

<210> 2545
<211> 1244
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_90575_G1, chr2:229011473..229012716, Cluster 14

<400> 2545
agtagcgtcc tcggccttct tgcgcctgtg gacttccatg gcaagagtcg tcttgcccat 60

gcccggaggt ccgacaatgg acatgactct caggctcttg tccgtctcct cccggggtgt 120

gagccacctg aggagctttt tcgccgggcg gtcgatgcca acaagaggga gggcggcact 180

cgccgttaag ttggtgccag tgccactgcc accaccaagt tggggtggtg caagcccgat 240

gtcggcctca ggacgactat tagcttgaag aagatgctta aacctgcagg gatgttcgct 300

gcgatagtaa agctgtttta tgttaggaga gaacggatac gatctattgt tgcggcttag 360

gatgcactgc gtggcacttc tcaatcgcgt tcgtagcagc gtgcggcgtg agggatcaac 420

ttcttggatg acgctgtcga gtttactgaa gacaagctca tagtgctcca tccatctcct 480

cgtgtcggca tccagatgtt gctggctaag tgtcttgaga aactccgcaa tgatgctcag 540

ctccgtctcc atgaaggcca agcagcgccg tctagtgtaa cctgcagcga cgacgcagcg 600

acggccggca gcaccagcac ccagctgttg agagatactc gcccgaacgg gctccaacac 660

gcttagtacc tccgcgatct ttgccaccct cgtgtcctcc tgatcctgct tgttggaagg 720

agaaggctgc tgcttccggg aaccatgtgg atgtgggtgc gccgccatga caccagtagc 780

tgcagaataa gagagggaga atatatatat atatatataa tgtcgatcgg catttattta 840

gtttattttc ccaagcaaaa ggagagaggg acacacgtac acacacttac ttgatccagc 900

tgcaggataa ttaatgtccg agctctcgat caaatctcag cctctagctt gcattggatg 960

catgcatgca agagatcgag caatgcaagc cactcagcca tgcagcctcg ccatcatata 1020

gagctagcaa gcaaagggcc atgggggacg tgtgtcggtg caggtttgat tcggttccaa 1080

acccccgaac gcacggcggc acatcgatat cattcatgga cgccacccag tccaaccaat 1140

tcctttcttc ttacatgcac aagcttttgt gtcagtatgg gcttccttta ttctcatgcg 1200

gtcatgacat gcacccccat tcacgccatc ctcccccaga tcgg 1244

<210> 2546
<211> 1176
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9082_G1, chr1:48110273..48111448, Cluster 14

<400> 2546
ctgacgaaaa agcgatggtg gaagactcca cgctggtcgt ggtgcaggtt aacggtaaag 60

tccgtgccaa aatcaccgtt ccggtggacg caacggaaga acaggttcgc gaacgtgctg 120

gccaggaaca tctggtagca aaatatcttg atggcgttac tgtacgtaaa gtgatttacg 180

taccaggtaa actcctcaat ctggtcgttg gctaagcgcg ggaggaagcg tgcgatatct 240

ggcaacattg ttgttatctc tggcggtgtt aatcaccgcc gggtgtggct ggcatctgcg 300

tgataccacg caggttcctt ccactatgaa ggtcatgatc ctggactcag gcgatccgaa 360

cgggccatta agccgtgcgg tgcgtaacca gttacgtctg aatggtgtcg agttgcttga 420

taaagaaacc acgcgtaagg acgttccatc cttgcgtttg ggtaaagtga gcatcgcgaa 480

agataccgca tcggtattcc gtaacggtca aacagcagag tatcagatga tcatgacggt 540

taatgcgacc gtgttgatcc ccggccgtga tatctacccg attagcgcca aagtcttccg 600

ttcgttcttc gataacccgc aaatggcgtt agcgaaagat aacgaacaag acatgatcgt 660

aaaagagatg tacgaccgtg ctgccgaaca gctgattcgt aagctgccaa gcatccgtgc 720

tgcggatatt cgttccgacg aagaacagac gtcgaccaca acggatactc cggcaacgcc 780

tgcacgcgtc tccaccacgc tgggtaactg atgattcggt tgtacccgga acaactccgc 840

gcgcagctca atgaagggct gcgcgcggcg tatcttttac ttggtaacga tcctctgtta 900

ttgcaggaaa gccaggacgc tgttcgtcag gtagctgcgg cacaaggatt cgaagaacac 960

cacacttttt ccattgatcc caacactgac tggaatgcga tcttttcgtt atgccaggct 1020

atgagtctgt ttgccagtcg acaaacgcta ttgctgttgt taccagaaaa cggaccgaat 1080

gcggcgatca atgagcaact tctcacactc accgggactt ctgcatgacg acctgctgtt 1140

gatcgtccgc ggtaataaat taagcaaagc cgcaag 1176

<210> 2547
<211> 1349
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_91432_G1, chr2:232995362..232996710, Cluster 14

<400> 2547
atgcatactc atgtttccta gcaatcgaaa caaaacaaag caaccgtttt tgcagccaca 60

gtgcacgagg caaattcggc ggtgagccgg tgacccgacc cacgagcgcg cgcgcagtgc 120

acgaggcaaa cggggcccac ttacctcagc ccgcgctttg aataatcgcg acgacggggc 180

gggagcggga gcggacggct gagatgggat gcaccggggt acctacctac ctaggacgag 240

gataaggtcg gtcggtggct cggtgcccaa gggtttgttg gcgcgggtgc ggtgggtcgc 300

ggatcctttg cggcttgccg ggctggctgg gcggccgtca acgtcctggt cctggcctcc 360

tgggcgctgg aaagtcaaaa agggccggac ccggacaccc gctagccccc gaccgatcgg 420

atcctctcag cctcaagtca ggacgtcagg tagcctttg cgtagtagta cgtagctctc 480

gcgtatcgac gttttcgttg gacagtacta gttgcgtagt acgtacgtag ctctcgcgtc 540

aggtctgctt cttttaattc tagaactaga atgatgtgtc taggatgatg tgtgggggc 600

aacgatattt aatctctgaa tggtaatcac tcctgcttag atgatgatga tgagtagcat 660

agacggtata aggacgtgcg gtgccgaaat gaatcacgtc ggtctcgtcc ttaaagatgg 720

cactgttgta tatatatctc acttgttggg ggtcataaca agttagcgat gtgaccccat 780

ggtttagtaa accctagctc cgtgcttgcg gtatccatga ccaccatgtg agtcgtcgtc 840

ggtttcagcg aggtgtacgg cacggacgga cagaacctca gaaacctgct gccacgcagc 900

ctcgccgtca gagcacaatc accggagatg gagacgaagg ggttgccaca ctccagcaat 960

gatggatgta cgggactgat cggcgtccag tcccatccgc cgccggcgac taatccgcat 1020

gggccgatta ttagtacgca cgaccactgt cactttagcc agaaatcaaa atggagtaca 1080

gatgcttcca tgcaaagcaa aagcatgaaa gaaatcaaaa tggcaattct attctctttg 1140

agagtcacgt gtataaatag atagatggta aagttatacc tcaggatgca gcttcgtctt 1200

caagcttttt agcgtttaat attatgatct agtgcaatac aaaccacatg cactattgat 1260

gaatactaca accatttggt ctgcttgcca agccccccct ctttttttcg cgtaaaatag 1320

gcttaggcct cttttgaaac aaacgaaaa 1349

<210> 2548
<211> 1077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_91512_G1, chr2:233585512..233586588, Cluster 14

<400> 2548
atcctagggt gtatgcactc cctgtagaga ggcacggtgg tggacgccga cccaactgcg 60

acgcctcgga agtactccga cgtgaacatg tccctgatct tgtcgtcccc cttgaacccg 120

gtggcgaaga tgacgacgtc gctcttcacc accgccgccg ccgccggcgc cgacgccgac 180

gacgacggct cgccctccac gaccaccacg ccgtccttgc agaagctgaa cgtcttggac 240

ttcttcagca ctatgctccc ttcgtccagc cgcttgtagt ggtccttggg cgtgatggcg 300

atggtggcgg cggccagcgc ctggaacagg ctgtggtcgg gcaccatgtc gtgcttcctc 360

atcgggatgg agtagtagct ctcggcgaac ttggagaaag cccacctctg cacacacatg 420

acacaacaca acaccaaggg gttcttactt cttttcaagg ggttcttttc aattcagatc 480

atgcatgaga tggatggatg gatggatgga aattaccaag ggagacagaa gggtggccaa 540

ggcggacagg agaaggcctt cgccaggctt gtggatgagg agttcagaaa agcggttgag 600

gtagagcctt gagatgtgga agccccaggc gaagtagtcc ggcaagaccc agtgcttggt 660

ccggaccacc attgtgcaag ggtgagcggt gccattcact tgcgcgcatt cggcggcgat 720

gtcgagcgcc gacttcaggt agccaacgac ggtgacacgc ttgcccctta tcgtctcctt 780

ggccttgctc gagcccatct tggcgtagtc catggagtgc atcacctgcc cgtcaaacac 840

ctctggacct tcgccctctg ggaacgtcgt gggtacgttg ggcacaccac tgaacctccc 900

cacgcaaaga accacaaagt ctgctgcgtg tgtctgcaga aatcaagaac gtcgtgggta 960

cgttgggcac accactgatc tcgctccatc caaatgcatg ctagatatag cctaggcagc 1020

tctgctcacc tcaacgtggc cgccgccgtc ggcgtcggcc acagacagaa gccactc 1077

<210> 2549
<211> 1008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9208_G1, chr1:48536360..48537367, Cluster 14

<400> 2549
atccctcgtg catgtcgtgt gaagaagtgc agtactgcct gctattatgg ccgtttcatc 60

tactatatat atgctcggcg ccacctgaaa atggatactt ccacggttct gtattatcat 120

tgccgagtct cgaatatttg agcagctagc tagccagcct ccctgacgat acgtttgcta 180

catggcgtgc acgcgcgcgg tcaccataat taacctcatg catatggatc tcatttctgt 240

aagttaaaag aagatgaggc cggccggccg ggggacaaag cgagcgttgg agtcacgtat 300

gctctcgatc tgtgtgtgat gagccagcca gtgcaagaat gcgtgtgcat gcgtaatgcg 360

ttgttcagat catcagatgc caattcacat gagttccatc ataccattgg ttgacacaac 420

aacgctcctt cacatgcatc gtctccaaga cacttcacgg ctgtcctgcc cgtccccggc 480

ccgccactct ttcatgccca tgctttccat caatgcacgc ggctctgcag gactgcagat 540

tcttcttgcc aaactaatac tgttagtacg aactcgatct gctcacaaac tgcaaaacaa 600

gagtactaga tgatcgagag ggagcccttt tcccgtcaca tgcatgctca agatctggtg 660

cctctcgctc gcgcgtaccg tacgtatcct tttcgagcgt ctgggcaaca cgttacacac 720

gtatgggtgg agagaaatta acaccgctgc tttacgatta cgacgccttt gccttttttt 780

ttcctctgaa tcaatgacac agcgtggtcc ttggcatgct agctagattt tatgtgcgcc 840

tctgcccttc cttgtgcagc tacatacgac cggttactag ctagctgtac gttgttggac 900

agccttattc ataaataaat tcatgatgta ggggcgaggg aaacaaaacc cagaaatgtt 960

tatctttatg ttaggatatc tcgagagcta taaatacttg gaacaaaa 1008

<210> 2550
<211> 1203
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92959_G1, chr3:4703633..4704835, Cluster 14

<400> 2550
gtcaccaact ctgaactgaa cgatcattca cggggcagtc cgaggcctta caggtcaagc 60

tgcacgcccg tcctgtgccg tcctgccgtg cacaagccgg acgcgtctgt acgcactcga 120

tctacgctat ggtggaagaa gcttccagct acctgagcta cggcgaccgt gcacgagccg 180

gacagccggt ggactcgtct cgtctgtacg cacgttacgc tatggctgga ggctgaagct 240

ttccggctcc gacgaccacg ctgcggcgcc tgtccgcagc ctccgcctcg gcgtcgcatg 300

agttgcgtca accagcgcgt cggacggcga ccaagcgacg ccggccacgg taaggtacac 360

gtacgtatcg tcacagttcc aattcgtgtc tggattctgg acccgcccgg ccggtccacg 420

aaccggcgga cgccatgcag acgtccctgc ttagcgcgca agggggccgg ggctgcaagg 480

cttagcgtgc aagggtcata ggagacgaag acgcgcgtgg aaggagccgt gtagtgcaga 540

ggtcagcatg ctcgtttttt cttcactccc cacagtacga ggggctattc agtcacgtgc 600

tatatgccac tactacaagg atctatattt tagcatgtct tcagtagatc gtgcacatag 660

tcatacaaaa cattgtttta tacttgcaga gtacaattta aaatatgaga cgagattgtt 720

ggagaccata ttcttccaaa ggttcttaaa acactatttt aacaagttac tttttagccc 780

gtttcaagtg caacataaaa aatgccgaag agcacattcg gttggggcca tcacaattgc 840

ggagacgaag gcaccgactt cggattgacg gcgtgcatgt gaggaacaat gccatgtatt 900

gtttacgttt ttttttggct tgaaagaatt tatttactct gtctatgaag ttgtatttct 960

ttctatcttc accttgtacc ttcaagaaac cgaagacatt cttgtaatta agtaaaatta 1020

atgggattaa atcatatgat tcatcttagt attttattgt gttcactttg tcatctgtta 1080

atctctaaac atcttcgtcc ttcatcttat ctctctttgg ggataaataa agtgaagaac 1140

atatatgaag ctttatataa ctacgttgcc ttgtttttgg tctctcgaag gaatcgaaaa 1200

cag 1203

<210> 2551
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93017_G1, chr3:4878926..4880302, Cluster 14

<400> 2551
tgaaccaagc tttattggtt ggaaagcgag aggggccggg gtagtacatg cgatcgatcg 60

atgcatcact catccaaagg cgaagcaaac gaagagagat aataacaacc ttggccgaaa 120

tgcgcaggct atggaggaga tgccatggca gccggactga ttgttttcca caagcgagca 180

tggatgctcc caccacatga catgaaggaa aaagatctct actctacctg catcgcggtc 240

ccatcccaat tcccatcact actgaagcaa cagtgatgca tgcatgcatg ctgctcgatc 300

gaaagggacc gccatcatcg atcctagtgc tactgctaag taactgacga catgtgacac 360

gtacgtatct gctcgtccgg cctctcacat gtagaagctg tactgcagat cggctttcag 420

ggtttgggta tatatatata ttgattgacc tcctgcctgc atgaatgcct gaattttcac 480

aggaatgtat atttacccag gtcccaggcc aggccagttc gtgagacctg tgtgcccccc 540

gggcctggcc cctgccctat actagaaaat tttcaggctg ttgcattgca ttggattggc 600

cggagtgctc agagatgcta tctgtctgtc tgtctgccct gctgatatat caaaggcacc 660

agcgtgtacg gcgcggccgg cgatgcccgg cgcggccggc caaaagccat gcgcgcacgt 720

acggtgacct gacctgacct tttcaaagct catgcagcca gccaagtagt gtcgatctcc 780

ctcctttgtg cttcatgact catggcagta aaatgcatgc atgcatgcat gaggaatcct 840

ggacgtacgg cagttggatc gtccttgatc tcgctcgttg catgcgcggc ggggaccggc 900

cgcgggccgc ggcgccagcc tttccggctc cggccgggaa ggaaatcttg ggggatccgg 960

cgctgacatg agcgtgtacc ggaagggatc gatcgagcag gcgcaaggcg tgagctagct 1020

ggtggctgtg gtggccgccc gttccaaggg ttctacacgg atcgagcttt aatgcatgct 1080

cttcacctgc gtacgacgat cttcggatta ttgtagaggc tggcaccctg ttccattcat 1140

ttaatgaatt ttctctttgt tctaaaatga taccaaccct gtcaatcgac gtatccggtc 1200

gcagaaattt aaagaatgat ataatacaaa tgtgtttggt tgcctcgcta gcttttacag 1260

tctagctcta caaattaatg tatagctttc ctctagactt ggctctcgag ttagaaaatg 1320

gatgtttctt tagagccatg ctctgctgat gtaaccatta gtctttctta atgatag 1377

<210> 2552
<211> 1149
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93576_G1, chr3:7208572..7209720, Cluster 14

<400> 2552
agaattgaag agagtttagg gaaatgaact aattttcact aaatcggctt aaatccctaa 60

tgggaggtta gcaaactagc cttacctggc aatgagcagg gaacagggaa gcaaacgcga 120

cagtcggcag cgtaccgtcc aagcggcggg cggcggccgc atgtgcggcg tgttggtagg 180

ggtacccagg gaaggcctca actccggctc gctcaaaacc ctcgcctggc tgcactgcac 240

aatccactga catgtgggga acaccaccgc gtgcctgagg gagcgtgtag cggctcggaa 300

aaccgcgcgc cgtggggcgg ggaggtggtg cgaggaatgg gcccggcgcc ccgcgctcgt 360

cgccagccgt cacgtgctgt ctgttctgtg cctgcgtgcg ctgtgcaggc atcacttctt 420

ccagcagtcc cgtccggtcc ggcaaggcgg caacaggagg gtgcctggtt ttggacacaa 480

cacagccgcg tactgtaggc agatcggcgt tggcgttggc ctctctctct cccgcagacc 540

gcagtgatcg gtgaggaaag aaacaggatg atcctttcaa tctcctctgc gcgggagttg 600

attattagtg gcctgcacca gggccacgga atcaggcggg ctgacaggtg aacgatcatc 660

cgttgatgga cgccggcgtg ccgcgctggt ccacgaacgc aagcgaattt taatgagcaa 720

ttgagcataa catggactca tcagtcatag taaatggact tgattgagat gggaaacaac 780

atgctagtga ccacaatcac gtcccagcac ataatgtgga tcacacacca gcaaggacta 840

ttacgctcga ggtcacacac gacctgtgtc atacgcatca aacaactcca ggatcagtga 900

gataggtcac aggattgatt cagccgattt ggtatcctac tttcaccgca aaagctcgag 960

aacacctcct tgggtgtgca gaaagttgtt cagtctgtct gtctgtgcgc taacgtcggt 1020

aaggccatca taataaaaaa aatccaaatc gtacgagaca cgagtagtta gagaaataaa 1080

aattcacaat aaaatattgt ctatctatca ttttctcata tttttaaact tttatagata 1140

atttagaag 1149

<210> 2553
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93741_G1, chr3:8215654..8216900, Cluster 14

<400> 2553
atcaatctcc ttcaaccctc ttctcccaaa caaggcctaa gaagaaaacg tggtactgaa 60

ttgaacaaaa acacaccaaa acggactcct agatagccaa agtaagtcgg tctgctccag 120

gttcgagggc cggcctggct gggtttgggc catagccagg tttaatctgg cctggccggg 180

atcaaagtca tcctggttta gacagaaacc tagtacgagt atttttcaga aactgaagaa 240

gacatgaaca aagccctgtt ccagaagctg aagaaatgga cagcactcag cgcacgtcaa 300

gactgaagag ctagcggatc gttcgtaagt ctcctacgat atatatttag tcaactttga 360

tcggttcgcc tgtccacgtc ttctccgacg agcagcagag caatcgcggc ccagctgcat 420

gcgtctctgg ctaatctcca actattatta cggtagttgt ttgacttggt tcagatcagc 480

gtccaaagtc ttgatccaga cctcgtttct ggtgaccgtg cgctgcttcg tatacgcgcc 540

tgctcggtct ctagcttaga gacgtacaat gtacgccgac gggcaccgtg cgcggctcgc 600

tcgccctccg cctggggacg cccggcgacg acgcgcgcgt gcgccccgcc ggacccgtca 660

gctgagccgt tcatggcgtc tgaggtggta atccgtcgga gtagtcatgg cccgccgcac 720

gacgacgtgg acgacgccag ttagcatggt gcccgtgtcg atcccggccc gcggctcgcc 780

gggcacgccg acgtcgtgca acgagaaggc caaggtccac gtcttcttgt cgccactggg 840

ggacatgcag gcggagaaaa tccgatgcag aacatgcaga tgatcacggg gatgtgcatg 900

aagagcatgc ggcagttcaa cgagtcgctg gccaagatga aaatgtacat gaggaagagc 960

gcagcagttc agcaagtcgt cgctgggcaa atttatttat tattatgatc tacaagtata 1020

ttcctctgtc aatattattt gctaattaag acataagtta acatgcagtt tcagatttta 1080

gtcaccccta tagacaacca tattgcagtt tggtcacaaa tattagacga ttaaacataa 1140

tagtactatt aagattcagc atcatcgtcc ttctctaaca taattacctt aaaattatat 1200

ttctcacagc tacatattta tattatcatg actcttaatt tattgta 1247

<210> 2554

<211> 1342
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94313_G1, chr3:11208658..11209999, Cluster 14

<400> 2554
gtaatgcatg gacgatgcaa gtcaactttg gcatgggttg cactcacatc catgtctcat 60

gacatgtgga gtggtaaaag gttgcagtac taacttgtgt gcagatcaag gaagacgatg 120

ctcccggtgg ggtttttttt tgggcgcttg acttccataa agaaatggag tatatagcgt 180

atactctttc cctagagggg gtgtatatgt tcggaagcac atctgttggc acgttacaac 240

agaacacaac atgcgtcgta cactcctctg cacgcacgtt acaacagaaa tgtagggacg 300

ccactctaac aaaaataaca agacgacgac gacgggagaa aggcgctagc ggcgcgcggt 360

agcagataag gcagccaccc caccaattcc ggggtcttca taatgtgtag tactagtaac 420

aaacaaaaac gaaccggaac agcatcgcaa aagagtcgtc atcgtccact gggcttggct 480

acgagccaag attggctcgg aaacggagct gtgttcccgg gtcgcaacag tccacatggg 540

aaaagcaaaa ggaggaagtg acccatgctg cacaacaagc ggagttcgtt gcagcaatac 600

ggagccatac ggggctcatg ctcatcgctc atgaacctga ccggcaccgg ccccttaggt 660

ttcgtcacca accgacgacg tgcttatctt cttcagctag ctcggccgta ctatgaacct 720

gtgtagctaa gctagctacg tacagcgaga atgcgagatg catgtctcca gtcagatact 780

gtagtacaag ccaagcctga ctttctttgc tgaaggctgc agagcgtagg gcgtagcgta 840

gctccaattc ccctgcaatc aatcaccttt cctcccgccc gactctgctc tgctcaaacc 900

aaatcatcct gcaccaaaag caaagatcta gcctaggcgg cgcttgtctc ttctgtaagc 960

gcgaaccagg atcggagggg agggcgggct gggccgggcc ccacacgcca cgcagctagc 1020

accagtggca gtgcacctgc ccacctttt cttcctcctc cggcccgtcc ccgaaaggca 1080

gacgaagagc cacctaagcc aaggtgaaag tgaaagcagc aatgcaagaa gacgcatata 1140

cgggagagct ctcatcaatc ttgtcaacca gcagcaaagc aaagcacaca cacccggcca 1200

ggccagccga acaaaagccg cggtaaaaaa agggaggggg ccactcgccg ttactctact 1260

tctgtgtcta ctcttctgca tcggctggct gacctgactg acacacacaa agcccgtaac 1320

tgtcaaagca tacaagggga ta 1342

<210> 2555
<211> 1295
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96164_G1, chr3:21556820..21558114, Cluster 14

<400> 2555
cacaccttaa gctgctccag gctccagctg agtgttttag ggcttaagtg cagacatcta 60

actgcattga gcatagttca ttactttaaa cagcatatga tgtcaactat tcgtgtaaat 120

agagtaccgg tgccttaagt ataggtctct ctccaccagc cggatacact ctcattactg 180

aacttataag ttttagtttg atttttttgtt acaaccagta cggtatttat gtttatatct 240

gaagaatagc aatattatta tataatgcac acaggtttgt accgttaaaa tttagcaatg 300

ttattttgaa taaaattgaa catgaaaaac aaaatccagc tgcaccgtcc tgcatccgcc 360

agccgcctcc tgttccagcg ccagatcgcc cggcctcttt cgcgcgcttg tgcgcccatg 420

cgaggccagg gaagtggtag ccctaaaacc ggccggccag ccgcagccac gctgccgaga 480

gagagtacag cggagagggg gaccaaacag cggggaggga gggaggaggg atcaggacat 540

caggtcgacg ggatggatcg agacgagggc ggaaagcgat ccgagcaaag gcaagcaaga 600

ggcacacagg cactgcacga gcgatctgcc cggcgctcat gtgcggcaac agggggggcg 660

tcgtcaatca gtcagtactc gacagtgctc gccgcgtttc gcgctgtgga ggagtgtgga 720

gtctggatca gtacagtttg tagccgtgga gagtactcct acacatgctt ttgttttgga 780

tgcaagtacg tacgtactat tcgcattttg gtagtgcaga ttttggagtt cagctcttgg 840

tttagcacag ttactcgcag gttgtgtagc atgtgtgacc tgatgagcag agcttttgtg 900

acgaacatgt ttttagttgc gtagggcttg acagcgtgtg tgtgctagac gctttgtgct 960

gcctgcgtgc gtgcgtgcgt gcgtatggcg tatgcaggct aggcggcgct acaaacattt 1020

tagtagcgta ggtaggcagt tgactgatga ctactacgca acacggggat ggatgaagcc 1080

ggttggagtc tttttctggc agaaggtggg tctcaggagt cagaggagcg gatggataaa 1140

ggcccaaagg ctccacgcca actgcactcc agctccagga ctgtggactg ggatcattgg 1200

ctgcgcttgg ctaaccactt cactgtgtcg atccaaggca ttgttgcata gcacagcatg 1260

tgccgcatgc tctcggttgc gtgtgccata gcttt 1295

<210> 2556
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9852_G1, chr1:52351562..52352607, Cluster 14

<400> 2556
tatctcgtac ctacacacgg ccgattcgtc gtcccatgac gaggaaatta accaaacaaa 60

aaaaaagaaa tctcgtacac accataccag acatatgcat gctgcatgca tatgcctaac 120

gccgccatat aaaaacagct agcgaaggat gcattgaact gaatggacat tttgcttgca 180

tcgcagcaaa taaagcagtg caaagaacga tgattattct cgcgctcgtg cagaggttcc 240

tggacacggc ttgcctagct gtacccgagc ggacgtgtca agcgctgctg acgccggcgt 300

gctccggcgc cggcaggcgg cacctgcccc tcgatccacc gccccatgta gcctatccgc 360

gaggaaagca cgtcgatcga tccctcgcca ttttgcatcg aggcttgcct tggagagcct 420

tggatcctgt acaaacgtac aatctgcatg ctgccggtcc agcgtatgta tgtatgtacc 480

cttgttggta tttcgtttca tcagggctgc aggctcttca cgtacgctgg agtattcgga 540

agtctctcga tctgggcgcg agagagcaag gcagagggtg cgtggtggtg atccagttgt 600

ccgtgcgtga caacgcggcg ggtaaagaaa catgtcggtc gggcggtgtc ctgtcccggc 660

acgtcccccc cctccggcgc tccgcgcgtt gattccttcg ccaccgcctc gccgaaccga 720

gtttggcgtc gctcgtcgag ggcctcgagg caaaggaatc cgctagctgc acagcacacc 780

gggtcaaatt gtttaagact acatatatat tcttcacccg gcctgccgcg ttgaactgaa 840

gaccagcagt gagagtgagt gcgttcttct tgggctcttg gccgaagtgt ccatgcacat 900

tgcacagcct ccatcgccag ctgtcgtcgc aagttcttcc ttcgaccctg cctaatcaac 960

gtggagaaca gctagtggcc aacgcacaat ttgcgcatcc agcggcgata ctcgcgtact 1020

cgagtaattc ttcctcaact attgac 1046

<210> 2557
<211> 2349
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162531_G1, chr4:189896984..189899332, Cluster 15

<400> 2557
gtgtggcggc ttaggcgcca caccaaacac gcccctaatc catcgtccgc gcagcttatt 60

gtatccgtag tattggcaat aatagcatat ttgcacattg accaagaccg ctactataca 120

gttgaatgca aatttaattg ttaaacatgt ggcaggatgg atgtatacta ctatactagt 180

tctagatata tctataaact acacgggcgg tcgttcgttg gcagcacggt acatgcactc 240

gcgcgcggcc atgaattttg accaaaataa gtgcgtgata tttaaaagat gaccactacc 300

atgcatgcat gcgagagtac tagtaccagt agggaaccga tcgaaccacg cagcaggtcc 360

ttttgcaagc tcaatcatgc agctcacctg cattgctaat gtgggtttgg gtttctctcc 420

acgcacgcac atgaatgatt tggtatcttg tgggaggaat tgaatacagg ataactcaaa 480

gataaggggg acacatgcta ttgctcctgg ttttgtttat tgctgtggtc tcggcttctc 540

ccctttgcc gtacggccat gcctgtttgg ccggagctct cctcattcat gcatgcatgc 600

atatgcgcgc gggttgggct gaaaaccaac gaacccttga gctagctaat aagcgccatg 660

catgttactc ccccctcccc cccctgttcc ttctcccgaa tgcatgcata tgctgcccct 720

ggaaatgtgc aatcaagcct tgcccatttc gacctttgat tattgaatca tgacattcat 780

tttattatta gcgtctggac aagggacaag gctaacgcag cagtactctt tctcatttta 840

aattgcaagt tgttttagtc ttacatgctt gtttgatgca gcttgctacg ggctttaatc 900

cagctgcggc tacggctgtg acttctacaa tattttgtct ttatggatta cagttgcaag 960

gctttaatcc agctgcgact gtggcttcta gagtatttat tttgtttata tgaattgcag 1020

ccgtaacagc ctgactagct gaatcagcat gacagccgaa ctgcatacca aaagctatat 1080

atctgacact cataaacttg aagtgtggag acagcatacc agcagatctg ccatcgaaaa 1140

atgcttacta cgcagttctt gctttgaaaa ctctgcgcgc gtctgctagc aggatggatg 1200

gatggacgat gcatgcatca gtgtcatcag ctgcacgaga gtgaaagcgt ttatatatat 1260

acacacacat acgcgcgcgg gtgccatatg tatgtggttc ctgcatggct ttggcaccaa 1320

taatggctgg cgggcggcca tcacatcatg tgtctatcat tcatggccaa atgctcgcgc 1380

acatcacatc acatgcccgg gaaacctatg aacggcgaca gtatctcgca gtcatattgg 1440

gcgtgtggcc gtgtggggca ggtagctagg agaagaagcc aagaaggagg gtagttgcct 1500

gcctatgcat gcgcatgcca tccgttgcta gctgcttgct gcctttcgta cgtacgtgag 1560

gaggcaacaa gctatagcag catcctggag ctaatagcac atcttgcgaa gatctcggtc 1620

ctttgggtgg cagggaccat cacttcactt gcttgccgcc gctgtaggct gcgggctgcg 1680

ctacacgcga ggctgctgcc tgcgtccttt tccggccctt ttcactttgt accacgttga 1740

tttgtgaaga ctgcgagaga gtgcgcggct gcgcgcacag tgactttctg tcatctctct 1800

ggagctactt actaggcggc ggctatagct aggcgtatct cttcttcgtg cgcgatggtg 1860

gtcgtggacg gatgaactgt ggtacgtttc gcacttggaa ctggcaggcg ccttttttt 1920

tctcaatctc gtcttggtgg tggtgtggtg ccggctccgt cgtctcattc ttttcgcttc 1980

gtgtgtcaga gcgagcattg gagaggggcg aaggcgaagg cctcggtgcc cggtggtggt 2040

ggtgcagcag agcggaagca ggcggttgtg gcgaggcgtg gacatgcaca gtgctggaat 2100

ctgtacgtgc gtgtttgttt gtgtgtgcat gacactgtgg tggctcgtgg atgcatggtg 2160

ggcagccccg tggccatgta tgggctcatg cctgcctgct gagaacaaaa gcggtgattg 2220

cccttgttat acacttatgc aggcttagcg gatcttattt catcctctat tttaaattac 2280

actcttcaaa taatgactta tatagttcca cgtctcctat tttatcctat ctctactgta 2340

gatagcctt 2349

<210> 2558
<211> 2962
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1122_G1, chr1:5646473..5649434, Cluster 15

<400> 2558
ttgcttcttc atatctatca gccagatatt ttctgcgctt cgtcgcgtca ggcgcgcggc 60

ctctagcttc ctcctccatg actgaattca tgctccatgc atgcatggac catccattta 120

ctagctagct cgctcgccga tcaaatgaag tacacactag caactcattc atgttcgtcc 180

aaaatgaagt acatcatgcg ccgcgctttt ccacctgtca tgtcacacac tgcacactcc 240

gtggccggcc ggccggcgtt gcgctgttag cttcgtcccc gtcggcgtgc cgcccggtgg 300

tgtgggataa caggaacagc agaccggccg gccgggaagg ctgtaacggc acgccatgtt 360

ctttgttttt gtgtgcacac cgtccaccaa gcatgcatgt aacagcattt ctccccctct 420

aaactaaaaa aaggggggca cgtaacgtaa cgaataacag gataagctag cttatcaggc 480

agctgttata cgtacgctag cttgtggcca ccgattggtc ctccgggtat ctatatcatc 540

tgttgctaat catgcatggc cccaccaccc gccggtagcc agcgaggccg cctctacaaa 600

ctagctaggt ggctgtagag ctatagctag ccagctgctt ctatcttact actcgtactt 660

gtattttaag ctatctctgg aaatctagcg ttattctata gctacaggtg tcgtagcgag 720

tgcagtacag tagtatactg ctaggcgaca gcaacatata tacagcaccg tcaccgtaaa 780

gcagatcgat gcaggcgtac gtgttcgtcc gagaagagaa aagggtagcc aagttgcagc 840

actgaatctg gcgctgtctg atggggcgcc ggccggccgg ccgccaggac cctaccatgc 900

agtacctctc atcctctgaa actggacacg tacgtagcgg cagctgatcg tcgctgtctc 960

ggtcttcatc agggcaagta aaaggagggc cgggctttac gtacaagata cagcagctgg 1020

tagctagagc tagtatgcgg cacgcacgca cacatcttcg cgtcgtcctt gcttgtagta 1080

ctcgacggcg ctttattagg gctacgagga tctccacttc gcaatgtgtg cgatcgcgca 1140

tgagctcctt ctgacagccg gttggtcatg ctagctgttg cttctgtacg tacgtgtggc 1200

atgcaggcat ggccgcatat ggctgcaagc ttgcaggcac atgtacagct agcgatcgat 1260

cgcgaataat gatggggtat tggggtgcac agcaggtgca ctacagatcg acgtcgtacg 1320

tacagggact gccatgggca tgatatgtgg tgcatggtgt attggtgtgc acaggtgcag 1380

cgcagagcca cacacagcta tggcttcttc ttctgcgcgt cgtcgttgac gcgttctatg 1440

catgatcacg cagggattca gaaagcaagg ctgtaaatat ctagctgggc catgcttttc 1500

cggcgatgcg cgacgggggc accgcaatgc atggatgctg atgctgtttt ctctttcctg 1560

ctgcagctgc accagcagtg actgagagct ccatgcaccg gtggtggtac ttgatcgcag 1620

ctgcagcgga agggatggac cagaggagat atgcgtgcgt gaaagatgga tgcacggccg 1680

atgaaaagct cctgcctgcc gccgtgaccc ggccgtgaag gaagaacatt ttcacgttat 1740

ggcatgcgtt tcggcaacaa tactactcga gtgttgtggt gtggtgtgtg tgtgccatgc 1800

atgtattggg ctatgctacg ctacgctagt agtagcagct aatcgttgct ttgtggttcg 1860

ctttcattgg tgggccggca cggcgcgcgg cggcggcgcc gtgcgtatct atgcacgtgg 1920

ttattattat ggtcaccgca cactacacac accaagatat ttgtgtagta gtactataca 1980

tactccagtg tgcatgagcc cagaaacttt ggagtcacga gtcactgatc ggtcggacca 2040

ttttgcgtac acgtgcatgc aagtgccata tcctgccaga aacaagaaga tggcataaaa 2100

atgcaggaga acaggaacca gagatgcatg gatcgagtat gtgtgtagcg tgccgccata 2160

catacttatc cggccggtgc ggtgcggggc ggtgcgccgg tgcggatggg gacgggcgca 2220

tcgatcggct ggccgccgcc catgcactcc tcctacctct cctcccatcc catgcgcgca 2280

cgcccggcgg cccgggtcgg accgaaagac caaccgggcg gccggccccc atacgcgccc 2340

gcccaatcat acgcagcgcg ctcgctcacg gtcacggcat gattagcccc ggcccgaacg 2400

gatcgatcga tcggacggag tgtgcgcaac gcgcaatgcc agcgcgcagg ccccgccgcc 2460

gccgtgcgtg cgatgcccgc gcgcgcccta cgtgttgcgc cctccgcgtc tcggcggctt 2520

gccgcgccgc gcgcagtcca caatccagcc acctggcggg ccggcccgcc cgcccgcgca 2580

caatcatgca aaactgaatc cacagcgctc gctccgccgg ctcggttaaa ctacgagcga 2640

tctgcagtag tattgatcgg gcacctttag cgttggtcca tcagtatcgg tttctttgca 2700

tccggcagtg attaagattc ttaaaaaccg acagttaatg gtcacgaatt cacgaaacat 2760

gaccacaaag caactatcct ccgtgacttc tacgcgaatc tctttggcaa ctcctctccc 2820

accaattggc ttttcgacct tgttgctctt tatcctaaaa aggccctaat taataccgcc 2880

ctcgatcgcc cgccttgatg cttctttcac caacaccgaa atggacgacg ctatcaagct 2940

tatgaaaaaa aatggacgac gc 2962

<210> 2559
<211> 1902
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117865_G1, chr3:159800094..159801995, Cluster 15

<400> 2559
gtatcgctgt tctctgtcag gcaactatcg ctgccatgca acccgatatg cttatccgtt 60

tgatagcagt agtttctcta ctctacacca cacccatcta tctatcttga aagagttccc 120

gtgtgttccg gatcattctt ctgtcgcttg ccttttttt tctgctccaa tgatgatttg 180

tctccaaacc agcataacac ctgcgtgcgt gcgtgcgtgc ctctaacctg aaaccatgcg 240

gcagtcgggc tcatctcttt cttcatcatc catctccgag aggccgatgt gcatgcgact 300

gacgacgctg ttctttgtgc ttttaaaagg gtctggggct tccataatag cgttgacact 360

gcccctgagt agagaagagt tgcgtgcata agctaagagg agcttattgt agctagtagt 420

gtttctttta ttggggtgga ccttcagctt tcagattaat taaccactat attccaaaca 480

tcaaggttca gtgcagcaag ctatatagat atttttctcc aataatccat atgtgcctgc 540

cctctccgat aattaagtcg aagaatgatt ggaaagcatg cctcgatgac tcgtagaaat 600

aggacgctct aaatccacaa gcaaggcaac atcagacgca caactgtccc cgactcacaa 660

atagtacgtc acatgacatc ctccctacct gcaactgcaa atacacgcca ccggaagaag 720

cagcgagcga gcgagcagca tgcatccatc catccatatg atcgtctata tatctacgga 780

gtataattaa tacaatacac aaggacacga agctaagagc gattaggcta ctagcaggtc 840

ttgctccgct aatcgccagg ttataatcag cagctagcta gcaggccggc catgccatct 900

tggcttttcc ctctccctca cgctaaccca cccgacaaca gtgttgaccc gagcgcccta 960

atcatgcagc caacccacgc gcgccgcctt aaaccggtcc cgacaacgct gatccgcatt 1020

actattattt ttacgccggc cgtgacacca cggcggtgcc tgccgggctc gcggcagctg 1080

ccggccgttg atgagttgac tagcggtaga ctcgccgggt actcaaccgg ggctaaagag 1140

taccggtaag gtcgctgtcg gcgaactgcg aatcgcccgc cctcatcttc tctgcgcagt 1200

cagcgttgtc ggaaacagcg tcttttacat cgtccggccc ccttgtcttg gacggatgtc 1260

gcttgttgcg ttgcatatgc gacgttaacg tctgacctag agctagctgt gtgtgtttta 1320

ttatcgaggc agggaaagtg ttcctctttt cctgccctcc aatattaaca cacttttaat 1380

cggtaacaat actaatgccg gacccggacc gtacgtgtgc actaattgtt agagataaag 1440

atggaatagg atagaaacca acctcttttc tgtagaagta ttttttttg tcttgtcttt 1500

tgaaacggtt tctgtaaaaa agtatttgtt cctatatact acttatattt tacaatagat 1560

atagacatat gcatatgcta gttgattact gctgccgagc tggggatttg cggagacatg 1620

tgtggcgcgc gggacacatg agcgtacgtg tgcatatgtt cttcagtagt agagagcatc 1680

tgtggcccga tatgatgatc tgcacctaat aatcgatcct agctaggttg ctttcagaat 1740

ttatacctcc gggccacccc ttccacggct gcgagggaga agggatcggc acccggttcc 1800

gtgctgtgac ttgagaaaat ggcatgttct gggcaaagat ttcaacgtgt gcgatctacg 1860

attaaccctg tcgccgattt aatgattact tggaacgaca ag 1902

<210> 2560
<211> 2178
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118682_G1, chr3:165167284..165169461, Cluster 15

<400> 2560
ttagcatagt atgtgtattc acttttgtgt tcgcatagta tgtgtataca cttgctctga 60

aaatttacac agccatgtct ccgcgggaac ttttatggta taattattgt caagaacatt 120

agtgtcaaac acagtcaggt ccttgctttc tttagcatag tatgtgtata cacttgctct 180

aaaaatttat aagacctgac tgtgtttgac aaagtttcaa taaagctacc attccagtcc 240

cccagatgct cgtcaagcaa gcaggaaaag tgttgataat tacttgccgt acaaccaggg 300

tgtggccgag cactagtgct tttgaggaga caaaaggtcc actccatgaa cgaacaaaaa 360

aaaaaccacg agaaaggctt cttctcgttg gtcgacggta ctagtaccgc tgctcctgct 420

ctttgttcta gcagtaacct ggccacaaat attgtgcaca caaacaaata cacaaagccc 480

attgttgacg agacgaccga tcgaaagcgg cgaaggagag agcctattgt tttatggaac 540

caaggaagga aggaaggaaa gcgaggtagc tagctagcaa agatgatgga tggtttttgc 600

atcgtgttgt cgtgtgctcg tgcaaggtct cctcggttgc atgcatgcga ctgtctgccc 660

ccactgtttc gagtcacaac aacacagggg agggggggttg cctcggaatt cgcgggaggg 720

ccagaccaaa cgccaccgcg cgcgcgcgcg cgcctcggtg accccgaaag cgcccgcaaa 780

tcgcaccgct tcccccggga actgcaccgg ccgtgcaata acacttgctc cgatccatcc 840

ggccggcggg ccaccatttt ttctgggtgg ttggctttgt ctcacggcgc acacagacag 900

acagcatgca tgtccaaaaa tcctactcat ccggaaacgc tcggcctcga caggcgacac 960

tcaccaataa actacatact cggtcgatgg gtggtcgtcg tcgtcgagag tgtcacactg 1020

cgtacgtgca atgaacatgg gtatatataa tatttacttc cccctcctcc atagacgact 1080

actactgtgc tcatgctgtg tgctgcattg atctatctgc tatatgcacg cgtgtagtac 1140

gtacttacgt agtagtacta cgtacgtacg cacgcatggg tagctttgca ttgttgcagc 1200

tgcagcatgc agtggccagt ggcagtgttt cgagacgtgt ctcctccact ccactccacc 1260

tgcctccggc ggccgtggac gatctgtgtc gcatcgttca tcaaaatcat tgcatgtgat 1320

cgatcgatca gctgggtaat ccactggcct gacccatcaa ggatgtaaaa tgccgtacga 1380

cacacacaca caccgtattc tatggtagct ttgttgtact tgcattgcat gcatgcccag 1440

cattgctcct agctttatat tgctaggact aagagtagta gtttagccta tatagtaaga 1500

gtagtatagt atttcattag cacgaacgtg tactatgtgt cgcttagtct actagtctaa 1560

taagcgagag gtcggtcaaa cggagcccta cgaccgacgc gcacccacac acagctcggt 1620

acccgtttct atcgtgctgc gaccgatatg caatgtgcac cctcctacca gtactactac 1680

ccaaagcggc caacgcatgc atgctgtcag ggtctgtggc gtgggcccac caaggccacg 1740

ccagactggc tcatggcccc gcacacagcg cgtcctgctg cagcgggaac acatgaaata 1800

tagacaagta catcacccgc agattgctat tgatacgtgc atctaccaag cgcaaacagt 1860

agcggcgggg aggcgcgaag cataattgga gccgcaggtc agcacagagg tagccgccca 1920

caaaaagtgt gtacaggctg cttcacaata ctacatgcat ggtttctttt gtatttaagg 1980

tagtacagta cctattatta gaggtgtttt cctgattgct tgttgatctc ctgtttgtgt 2040

gccgagtatt ctttattctg tggtttttta tttgaaagtg tacaagaaaa acttatactc 2100

tatgcaagaa agatcatgga ccgttacagc tagctgtatg caaataaaag gaccaaagta 2160

aaataattca ataatgta 2178

<210> 2561
<211> 1524
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118788_G1, chr3:165870097..165871620, Cluster 15

<400> 2561
tgaagtttta ggatctccag tatgtgtcga tctttttcta gtgctgaaca gaagcaattc 60

gtgtcctctg tattttactg ctactcactc agctgggcat gcattatttt aatacttcgt 120

tgctgcgatt tgggcagcga tgatatatat atatagtcac tagcccactt gccgctgcaa 180

ggatttagtg gaattgtaca ttaaaaaaaa ccccggaggc caatctgctg caaaaggcaa 240

cgagcaagct ggagaaagga attatcagaa acattatccc gagagctagc cagtgcttgc 300

tgtttgcaaa ggcagggttt ttttttttct cttcttccaa aacaacataa gtgcggcaag 360

acaagcgcca ttgactgctc atttcttggg catgcaatgc agtcgtcggc agtcctggct 420

gcttgcccca attatacttg acctttagat cgcaggaagt aaagccctac aagcactaaa 480

ggagccagct gatggcttag accaatctgg caagttctgg agcaggatgg atatatacgt 540

atttctttac atcttcttcc ttgttccttc agggttacac tacacacacc agactgcgac 600

tcacacagtt gcctacccta ccaccagggc tcaaagcgtt gcataattta aacaatcatt 660

tcagcgccac ttcaaaaggc agggagtgca gcccatgtga aagtgaaggc accagcaagt 720

attccctact aaaatgcagc tattggctgt gggaaaatgc ctttcagata agacacgcgc 780

acacacacac acaaaatttc ccccatagcc ctagaaatgc tttacagaat gctagcaaag 840

gcacacacac acaaaatttc ccccatagcc ctagaaatgc tttacagaat gctagcaaag 900

gcacacacaa cacaaaattt acccctagcc gcccctagaa tgaactgctt tgcagaatgc 960

tagtgaaggc tttcaagggc actgtaattg gggtgtgtgt tggtattctg ctgccttttc 1020

ctatagttcc ccccacacag gcatgagaac tgttcccctg tcatgagaac tctcgttcgg 1080

catatctgaa cagaaacctt caatgattaa gctcctcatt ggcctcacgc cttgtggcct 1140

cgctttgcgc atctactgct gacagacgac agacaattca gcgtagcatc gagttttgg 1200

agtggtagtg ttccaatcag gggccttttg agtcactact ctagcaaagt atagtcacta 1260

ccagcacaca aaacacaccc cgcgtgaaat tcggtctgtt gagctgctcc tgaggccgac 1320

caaacacttg ctgcttcttt atctgatcta agctactagt gtctttcagt tacaggcaca 1380

cttcactggc ctgtggcagg gtcaaggtca actctgccgc cggtaagctc acaaagaccg 1440

gcgtcgccaa ccagcagata gatctccgct tcggaaaaaa aaatagatgg gtcatctacc 1500

tgccgcagca aaagcaggca tcaa 1524

<210> 2562
<211> 1688
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119626_G1, chr3:171020826..171022513, Cluster 15

<400> 2562
ttgaggtaac accttggaaa cgtattgccc tcttagttgt tttgtgcttg aaacttgtgt 60

agcaactagc taggaccgag ccggtcattc atggctgtag cgacagacgc agggaaaact 120

ccatctggct tggtgccctc gctcgctgtc aagagcatcg tctcgacatc tctgctaggg 180

cgtgtacaac atggcgcctt gctcccggtc ccgacggttg gtcgcgagcg tacccggccg 240

gtagtagggc tgcaatgtgt gctgtacgtt gcccgggacg cgggtcaagc caaatcagcc 300

ggcgagaact ttgccgaccg tgccccaccg cggcgtccat cgatcgggaa gactgtgtat 360

agtacgacaa cgacgacgac gacggcattc agtggcaaac cctgcgcgca cgtcccggga 420

aatggccggg cgggccgacg ggacgccgcg agatcgatgg atggatggga atggcgcgct 480

ctggccggca cggcacccga tcgctcggcg ccgcggcacc tatcgatcga gcgcgggagt 540

ggcaccgtcg ccgtcgctcc agactctggg gtacacgagt ccagcggaca tgatggcgct 600

gctgctgctg ctgttgtcgg actgagtgct gagtgccacc cctctctggg gtacgctttg 660

ttgtgacaag ggaccgagag ctcctcgtac tggcaacaag gtaccatggc atgtgttgct 720

tcctcatagg atgcctccat gtccttaccg tcaaatggac gcagactcga cttctccaat 780

gaaagtttta gggaatatat ggccttccca agctgtcgaa aacgcagtgg ctagctaggc 840

taagccatgc gcatcggata acctctatgc atgcaagaca gtgaggacga ccgtcgcggc 900

gtaatgaaga gggtcacggg aacgcttcgc cagggcgcga aaatggtcgc cgaagatgct 960

gacgatgagc gcgttggacg acgacggcca gtcaagcacg aactagtcga ggggattgca 1020

gtgcagccgg aggtggtcac gccgtctgtg cactgtatcc ttgcgcacgt tgaagcccac 1080

ctcgtcgtcg gagtacatct tggcctttgt ggggcccacc gcgtcaacta atctaaatca 1140

ggtgttaatc aacattgacc atccctttcc aagatcttat tgctagatcc accacaaatc 1200

aattatcaat tattgatata attccttatc acgtacagta tttagaaaga aatgatatat 1260

aagttacaac actattacta ctactagtac tacaataaat aaattttatt gacataaatt 1320

aaaaattgac atataaccca cattataaaa caaaatcgtc accacttgtg gcacatatat 1380

aatgagatta ctagcacata actttttat tatataaatt agtaagacaa ccattatcat 1440

gtaataaaaa ggtaaaccaa gagaaggttc taatgtagca ttagtgacaa atccaacata 1500

tcaagagagc ttttaccgag actattacat gacttttttt caatcatact atccccttta 1560

ttatgtacat attgtaaagt actagttcca actagagtca aacaacattt tgtcaaaatt 1620

tagatttaga tgaaggcatt cgttggggaa atcccgataa tgaatttgta cggtgtggat 1680

cgcgagat 1688

<210> 2563
<211> 2903
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120710_G1, chr3:178039535..178042437, Cluster 15

<400> 2563
aattatactc ggctttttct ctggtactac tagtaggtat acaaaaggcc caccacaggt 60

tgggtagggt agggcagtaa tatctgagaa ctagctttgc cttcactagc aagtactact 120

tagcaaccag accaggctgc tgtatccttc ctaccaacca cccacgaacc agaggaggat 180

tttgttctca agacgtggac tcgcttggaa aaaaacttct cggcggtttc tacctttcg 240

cccccgcgta gtgacggtac accaacctct ggaaaaccga ttggacttga agttgatcca 300

acatcagacc aaaccattcg ggggttcctt tcaaaaccgc gacgtgctta cacgatctgt 360

caaggcaagc aacgacgaga gggggaaaag aaaaccccat atgctaattg acaagacgag 420

aagcatcgat ggatcgcgat gaatgaattc ggagcattat tgccgtgtat caacggagag 480

gtggctaacc attttattgc tcccggggtc ctatctccaa actcctatgg ctggcactgg 540

gcactggcac caagcaatcc tgcaagagat ttgctctgtt ttttttctct cttctttctc 600

ctttcccttt ccgctacgcg ctccaacaga caaaagagac ttgtggagag gagaggcgcc 660

cagatttgcg ccacacctgg ggccgaatcc agcgcacgca cgggacggga gaaggggcca 720

gggcgcaatt cctgcgctgc acgcacggtg caaccactgg gtggcgcgca ccactgacaa 780

gacacaagcg catttaaaca acggcgatat atggccatgc atgcctgccc gtgctcgatt 840

atgatctgca gagcacaaag cgcagcacta cagcagggtg cagctagcta cggctacgag 900

tgaccgagac gccactccac ttgcgagcga gctcccggcg gcaatgccaa tgccaatgcc 960

gacgggccgg cgacgggcag caagcaacac agcccactgc ccaccacagg ggggaggggg 1020

gacacaatac ggcacccgcc gcgctccact accgtcgcct gtccccctct tgtctgcccc 1080

tggggcgtcc caatgcttcc acggtttaga ccacggatca ttgcctgcac tagcctcacc 1140

ggacaggaac atgtcacctc cactgcgcct gccctggccg gccgccaccc accatctacg 1200

ctgcactatc cgtccatcca tccatccggt tccctgttcc gtagtgcgcg cgcggcctgg 1260

acctgggtag ggttcacggt gccgctagtg taaataaagc gacgcgggcc aaaggaaagg 1320

atcggtacgt gcgcggttgt ggtgtcatag cactacacga agaacaccgg tcaccggagg 1380

cttcctcctt tccttgtcgc ggctccacag ggctgggggt tgggggtgtc gacggggcca 1440

gccaggttgc atcggtttcc ggtggctgta cgggcaccag ggcgcagcga aacggggcag 1500

gcaaaggctg gccagtagta ataagtgcgc gattcgatcg gtgtgtgttt ttgctcgttg 1560

cgccggcgag ttatccggcg gccatcatca acgcctgggt ctgggggcac gcatgcatgc 1620

agccaccacc agcgccaagt ggtgcatcgg aaagccttaa tatttttatt ataagaagaa 1680

aaatgcatct ctggcataat atcgaggcac gagtaaatat acaaagatat caatatttat 1740

acaccaaaag aatatcgtaa gtattggcat cattttctaa aatgtttgac tagctagcaa 1800

taatagagct gtagttgcat tttctttttc tgcacggcag taaggaattt gagttggact 1860

aacgatgtgc cgaatgtttg tatgtcatca tcttgaaaaa aaaaacaccc ttccatatat 1920

tcggaaaagg gaatttctcc gatcacggtg actcgctcgc tcgatgtgga agaacatggc 1980

tgttagcctt gagccacgcc gcgctacact acacaatagt agtgcttatc atataccgcc 2040

gtcccgaatc ctccaaggta gcggatgcag gatcgcataa tagctgctga cggcgaccaa 2100

aaattatgcc caccactcac aaataaaaca aattaaactg atgaaacgac cgcgcgcggt 2160

cgcatcgcat cgcatgtgat ctgcgcggat gtcaaaaggg gctgagcgca cgccatcgcc 2220

gtgcgcgcgt ctgcacggta acaggatttg actgaggcga ggcgatgcga tgcgagaatc 2280

ctgccatgga aaccatcccc cgggaagcaa gcgctagggg gtgaagtgac agtgactggg 2340

tggcgtgttt ctttagaggc tgcttggctt tgggatttgg atttggttgt cacaacaacc 2400

aaacgtggga tgcgtatgct cccgccatcc cacggagaaa agtgttacta cgtgcataag 2460

atttgtagcc cacattaaat ttcagttaca taactcgcat gtcccttgga aaacactagt 2520

tgatcatgat aaacagacag ccaataattt tatggtgtct tttttaagga caaaagcaag 2580

taagtcttct tgtctaacag cgtctccacc agattaaaga acctcctttc taaaaaaaat 2640

acaatagtat atgtgatttt aaaataaaag tggagaggat aggggagatg ctgccctttc 2700

catcgacgtt gtgcgtgcgc atgtcaatag ctcccctctt tctgtgtcgc ggacgagcgg 2760

ccatcccatg cggctggcac ggtggcgact ggcgtggtgg actggtggtg cggccagccc 2820

gcgcgcctac catatgatca gacaccatgt cagacttaca aactcgagga cagtgtgcga 2880

gagaggtgga tcgattatta aat 2903

<210> 2564
<211> 2469
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120777_G1, chr3:178292366..178294834, Cluster 15

<220>
<221> modified_base
<222> (36)..(36)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (37)..(37)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (38)..(38)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (39)..(39)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (40)..(40)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (41)..(41)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (42)..(42)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (43)..(43)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (44)..(44)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (45)..(45)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (46)..(46)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (47)..(47)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(135)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<400> 2564
aacgagaaaa cgaatcaagc tggttcttca gaagannnnn nnnnnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnncggga tgattcagct tgattcgtat gtgcctggaa catggcgggc 180

cgggtcggac gccgtgcgtc agatcctgcg ccagcaagcc ggtgtcgata ttggaaacac 240

cattattgcc gatggttcag ggctttcgcg gcataacctg attgcccccg ccaccatgat 300

gcaggtgctg caatacattg cccaacacga caatgaactt aactttatct ccatgctgcc 360

gctggcgggc tatgacggct ctttgcagta ccgtgcaggt ctgcatcagg cgggcgtgga 420

tggaaaagtc tcagcgaaaa ccggttcgtt gcaggggtga tataacctgg cgggattcat 480

taccacagcg agcgggcaac gaatggcgtt tgtgcaatat ctttctggct atgcagtaga 540

acctgcggat cagcgtaatc gccgtattcc gttagtgcgt tttgaaagcc gtttgtataa 600

agatatttat cagaacaatt agtcaaaaag aaaccccggc acatggccgg ggcttcagat 660

tattgacaaa gtgcgctttg tttatgccgg atgcggcgta aacgccttat ccggcctaca 720

aaatcgtgca aattcaacat attgcaattc tcttgtaggc ctgataagcg tagcgcatca 780

ggctgatttg gcgtttatca tcagtgatta acgcttgtaa atgaactcaa cgccttcttc 840

gtcgtcttcg tcccagtcgt catcccagtc ttcatcatcc tcttcagcaa tctcttcaag 900

ctgctggcga tgataatcat cccacatgaa ttcgactttc tctggctgtt tcgcttcttc 960

agcctgcacg accgggtttt caatgataaa ggtcatcaca tcccagcaga gatctttcac 1020

gcccagtcca ctcgccgcag agatcagata atatttatct tcccagccca gcgcctcagc 1080

gatcgctttc gctttctctt cggcttctac cttatccagc agatcgatct tgttgaacac 1140

taaccaacgc ggtttcgtcg ccagatcctg gctgtatttt tccagctcgc tgataataat 1200

acgcgcgttt tcaaccggat cggtgccgtc aatcggatcg atatcgatga ggtgcaacag 1260

gacgcggcaa cgttccaggt gcttcaggaa gcgaatgccc agacctgcgc cttccgcagc 1320

gccttcaatc agtcctggaa tatcggcaac aacgaagctc ttttcgttgt ccattcgtac 1380

cacacccaga cttggcacca gagtggtaaa cggataatcc gccactttcg gtttagccgc 1440

cgataccgca cgaataaagg tcgatttacc cgcgtttggc atccccaaca taccgacgtc 1500

agccagcagc atcagctcca gcagcagctc gcgcttatcg cccggcgtgc cgttggtttt 1560

ctgccgcggt gtacggttaa cggacgattt gaaacgggta ttgcccagac cgtgccagcc 1620

gcccttagca accagcagac gctgaccgtg tttggtcata tcgcccatgg tttcaccagt 1680

accctggtcg attacacgcg tacctaccgg cactttaatc gtcacgtctt taccgcgctt 1740

accggtacag tcgcggcttg cgccattctg accgcgctct gcacggaaag atttttcaaa 1800

acgataatcg ataagcgtgt tcaggttctc gtcggcttcc atccatacgt caccaccatc 1860

accgccgtcg ccgccatccg ggccgccttg cggaatatac ttttcgcggc ggaagctcac 1920

gcaaccatta ccgccatcac ctgcaacgac cagaatcgat gcttcatcaa caaacttcat 1980

tttatgctcc gtaaatcatt cgcctgcgcg gggttgcgat accaccgttg tatgcttacg 2040

taatccgccc caaatacgat gaccaatggc ggaatacatc gcgcccgcaa ccacgacaaa 2100

cgcaccgaga taacctaaaa ggtttaacat cggtctggcg aagaaatcgg gccaggccag 2160

tgataaaaga tctgaaaaaa acagcgtaaa cagtggggtg agcgtgatga tcgcgctcac 2220

ctgcgctgcc tgccagcgag ccatcgcttc cgccagggcg ccatatccta ccaaggtatt 2280

cagtccgcaa aaaattaaac atgcgagctg ccagtggcta agctgcgcta tcactccagg 2340

ctttgccaga gggaagagcg caattgtaca taaagtgtac agtaaaaaca ggatctccgt 2400

tggggccagc cgacgcaata aaacctttgc gccacgccat aactcaccga cgaatctcta 2460

gatcggtcc 2469

<210> 2565
<211> 1639
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121239_G1, chr3:180583581..180585219, Cluster 15

<400> 2565
aaagtatgcg tcggactgtc ccccattccc caaagaaacg tgaatgaagg aaacatcttc 60

cttccctctc tataaaaaaa gacatactgt gcatggtttt ggtttcagga atgacacgca 120

aagttcgaac ctattattgt taatcctttc ggtctaacca aacgatcatg ttcatgtatg 180

ctcgaccatg gtaattcatc ttatatatcg tctggtaatg tcatgccgtg gtccttcaac 240

tgcgaaaacg atgtaacatg tgctactcag tttcagtaca aggtgagatc ttgctagtag 300

acaaggatac gaggtgggag atcctccata tcctgaaaga attgaaagta tgcggactct 360

gcgtggacac gagcccggac aaaactcaaa agggaaaagg aacgtcaatc tcaggtcctg 420

ccggcctccg tcgatccgtc caatgccttg aatgttcttt aatttgtgaa ccaaacctta 480

gtaaaacgag aaggcgacaa gacatattta tcctgtattc tatggatcgt ggaagggcca 540

acacaacaca agcagttcaa gttggaaaca tattacatgg acgcgcctgt caacggcgta 600

atgtcgccga cgggacggac cggaagcagc cgctctgcct gtccatgtcg cggctcggcg 660

gttgacccgt tcgcgcgctc gcgcctgatc tcgacccggt ggagagtgtg gatcaggcat 720

ccgccggtgt caactccaga gaggcctgaa cccctgaacg gcgggcggcg acttccggcc 780

acacgtgaga acaccgtgac gaaaacaagg agctggcagc taatgaacgt ccgagactgt 840

gcgctgcgtg ctgccctgac cgtggcatta gctcaagatg aaatgcacgg cggctctgtc 900

aaatcggtat gggcatcggc cggagatgca ggtcgcgatg cgcacccgtg cagcacggtc 960

aacaactagt ggcgacgaaa aatcggcccc tgggaggacg acccgtcggc cggctgagga 1020

atccacactg ttgccggaca aggttaaatg cccaaaattc gaaagtgaaa tgggggtgtc 1080

ctgtctctcc ccgatccgtc ggtgtccgta ccggttcctg gtacgtactg agtgctccag 1140

cggtccaggg ttagccgtgc aaatccggag caaagtacat ttatgcagag ctttttgttt 1200

agggccagtg gtccagaaga ctgtattcgc agttcctgct ggctgtttcg aacacgtttg 1260

tttgtttgat cagcaaaatc gtcgctgttc actgatacag ggtttccatg atactgtatc 1320

atatgttcgg gccttctctt agcactgtac aacaacgaca gggactaatt gcgcgcactc 1380

ctcagccaaa ttgttcatat gatgatgtgc acttatcact tgtgtatcga tcctttcggc 1440

ggttgggccg atgggtagag ttattagggc acaaagacct cacgatcgtc cttgctcacg 1500

ttccactgct atagaatggg tcttgctgtc gtattttaat ctgggacttt ttagtcctga 1560

tgattgcatg ttttgatatt ggttgttgtc tctaatatcg gtttatagtt cgaaacagat 1620

actacaagag ttagatagt 1639

<210> 2566
<211> 2043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122515_G1, chr3:187010746..187012788, Cluster 15

<400> 2566
ggagagagga cggtaggacg cgaaagtaga aactaggaac gtatgctagt tcagtaattt 60

attagtttat tacacgcaat gcatggggaa cctgcgtgca tatgctgtaa aagaaactga 120

gttccggttc cggtcaaaag aattgagttc aacagaaatg ccaaaggtac gtaggcggta 180

gaattgtgtg tgtgtgtgtg tgttttatac aagcggcaaa atattgcttg atttaaacac 240

tttgaggcac cgtcgtgtgg ctttgcttgc gtcgtgtatt gtttattatg tgcgctataa 300

tgataaaaaa atagtaatga ctcagggtca ctaatttacc ttttttttcca cagggagtga 360

ggaatttatc ccccgtcgaa cgctctcttg ctcaacaaag tgggggaaga aaataaaggg 420

atttcgcgta cgtgcgatgc gatcgtggtc gtaaaagctg cagcattaga tccctgactg 480

actgacaaag aaagttaccg gcgcagcagg tacaattgca aagcagtaca gtataccaga 540

gcggcagcac aacaggcacg tactgactag acagcgttgt gtcgggcggg tagtttagtt 600

tgtttctgct ttgcacagca ccagcacagc aatgaagggt aaaaactcga aaagggacta 660

ggcaagacag tgtaacgata cgctacgtac gtacgtagag agagtgagtg actgctgatg 720

cgtagcttgt gctcacttgg agagtacact tgtactgcct acagtacaat ggttggtcag 780

tggtgtgagt gtgactcggg agtaatttat agtacgaccg gcctagtagg ttgattaggt 840

agctagtagt acacgcgaga gccacttttg cggccaggac caggaggacg tgagcgattc 900

agagccgtag gccccagatc ttcgcgctaa tctacaagta cactagtgca ccgcctgccg 960

tcaaatacat gcattcgcct gctcgatcat cagtcactac cgtatgaggt ccatcaagca 1020

tgaaacatcg ggttaggtta ggtcccgtcc atgcggccga ccatcatcat catgcaatgc 1080

acgggggca ccgtaggcaa cagacagagc catgcatgca gaacggatta tcgctgctga 1140

gctagctccc tgcctgcctt cccgagccag acgcgcacgc aacaggcacg ggagggaaaa 1200

tggtccggcc gtgcaggatt gaccctcagg tccccgactc cggaccaagc tggcaagctt 1260

tagcttacgg tgcaccccca acgcggcacg gcgaggagtc tggatggatg gtgtctgcca 1320

tcgtctgctc attcatttct gcctcgccgc cactcgccag tgcgtcaggg tgaaccgctc 1380

agcccgatcc gatctgatct tcggcgggcg ggcgggcggc aaccagagcc cctggtatgc 1440

tcaccttctg cttggcttgc gcgcgcttgg gccgtcgcac gcacacgacg cggcgacggc 1500

gaggaaagaa agcgcgcggc gcggatgccg gatggacaag gctaggggct agggcctagg 1560

gccccacgag cgtgtcgccc gcccccttcc tttttcccgg cagcccagcg tggcgcctac 1620

cacaaaccga gggtccgccc ccggatggcg tggggccccg tgccgttccg aaaaccagtc 1680

actggttcgc tccctccgtc aggtaggcag aggcagaggc agaggcagag gcgggacagg 1740

gaaggcgagg cgggcaagca agcaaccggg gcgaacatgc aggcctcgtg ggaggcgcgc 1800

gcggggccca tatgcccctg cctggagctg gtggtcccac cgcgcccatg ttgcgctggg 1860

caacggtggc cctcagctag tactgtactg tactactgta caccgcccac gccctggcgg 1920

cccggaaccg gaagcctctc tctgcctctg cgggtcatgg agacagaggc atcttcacag 1980

cagtcgcccc cccggccggc cgtcgaccga cgcgtgcctc cccgcttgct tgcttgcttg 2040

ggg 2043

<210> 2567
<211> 1544
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123080_G1, chr3:190091558..190093101, Cluster 15

<400> 2567
tccgacttcc atcttacatg cactcgaaag tagttacttg agaaactagc gtagaatcga 60

gatacagtct cggttttcca gcctcaatct tatattcagg attacaatgt tccacccttt 120

gatcttggat tagttaactt ctaaccgggg cttaggtgat ctccaacgga gaccctaata 180

aatggatgtg gatgtgcaaa atacgcgctc acaagcaaca cggatgaaga cgagaaaaaa 240

aatgcgatga tcttcctcct acactaaatt catggattct ctcttctaac agtatctatt 300

tgtgggtttg tatatgtgcg ctcggctgca gaaaggctaa gactatctcc agcagatctt 360

atatcttatc cctattttaa atttatctct ataaacagtg tcatgtacaa ttatgcgtca 420

tctattttac acaatctaag ggaagtatgt tttaggagca acagtgtaat ctgttggtat 480

tatgcatggt tgtgaaccag cacgtcgatc aaacacgtcc ggacgccgaa tgtatatcgg 540

tatagggacg ggcactgtgc cttatttgcg ccggttgttg ctgtgttagc atgtcaagac 600

tcaagaccgg gggccgcctc cgcctatgtt aacggcccga tcatgatcga tactgtgaca 660

agcttaaaac gtctattttc agtggatggc agtatggcac ttgctttta tctcatagaa 720

tcttgcgaga tcttatgctc tcttgtcgtg actcgcgagg cgacagtacg gacctacact 780

gatatgggcg gataaaaatg gcctgttcgg atcataagat taattgatga actaataagc 840

gcgaccgggt gatcacgcca acacaatcca tcaagcgtgc gtcacgatcg agcgagcgcg 900

catatatata ccacccatac gtatcagtac gtcgcggtac gcgccacgca ccccccgcag 960

cgataataat aatccgggcc ggctggccgg acaaaccccg cgaaggacgc gcgcacggct 1020

ggccgtcggc ggggcgggcg ctgtcgtcgc acgcgacgtg ccgggcgccg atcgaccggg 1080

cccccgtcgc gcgcgcgcca agctccccgc ggccgcggct gagaaccccg agcgcggccg 1140

ccgccgtccc cgctccccgt cacgggctcc acacggctcc ccgaggcccc gtcacgggaa 1200

taactccgcg acccgcccag tcccatcccg tgccggccta tgccgcccgc cccgcggtcc 1260

acggcctaca gagggctaca agaagaatgt cggggcgtgt ggtacgggcg tgcggtccct 1320

ttcgcggccg cgcgctgcga cttctggcct ccggccggcg acacgacacg tccagcgcag 1380

ggaagtacgt gcgcgcacgg cgcggaggtt ttttttttt ttttggcttg gttcgctctc 1440

tcacaccgtc gcgcgtttcg tcgacagaca ctgccgcccg cgaccgctgg cgctgggccg 1500

gctctccgtg tcgtgtcccg tcgctgccgc ggtcccgtca gtca 1544

<210> 2568
<211> 1426
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124182_G1, chr3:195918694..195920119, Cluster 15

<400> 2568
ccggccgcgc agcctacccg acgaggacga ggcagaccgg ccggcgagcg gaacggaatg 60

gaccgtagcg cgtgtcatcg tgattcgtgt agcgacgacg ggccgcgatc gcgaccggat 120

tccggagcag cgcactgtat cgtatccgcg gcagcctgag atcagatgtt gactaggtgt 180

ccccttccg ggccggcctt ccctcctgtc ctgcctgcgg ttcattgatt cactacatcc 240

cgtcgccacc ccccctgcgg cgagcctggc gggcggctgc cctgccactg gcgcgcacgg 300

caaaaagagg cagccggacg ggccagagcg tggtggcagg ggggaccggc tgctctccgc 360

cccgacgccg tacccgcggc ggagatctcc atttattggc cggtgacgcg cccacgttct 420

cttgcccgca ccgcgtcatt ggatccgatc cgaaaaccac ccgcacccga ggcgacgcgc 480

cccggccgcc acgccccgcc gcccccagtt ggtttttgt ttggagccac ccacagaaaa 540

caccgcggga gatggagatt ggagcatgaa atgcccaccg cgcacggact tcactaccct 600

gtctctactc tctcaagtct aatcaatgtc actgcctatg cggtagtaca aaggagtagt 660

acaggcgtcc aaagctaaac cttttatgtt atgtctattc tcatggaccg taagcgttat 720

gtgtggtgtg ggtttgatcc atcaaccggt ggagggttga aagaagggga caaaaaaagg 780

atggaaaggt ttaagcgttg gggacggccc gccggacggg ttgttccggc atagtagtag 840

tcgctgtttt aattattcta ctcgatccat aaacaaagtc caaagtgcaa aatcctaaag 900

cgtcgctttt tgccttttgg acttgctagc aagaaaaagg gcatcatggg tcttttctgg 960

ctttaatttt ccaaccagca acaccttctt ttgtcctcgc cagaaactac actgccattt 1020

tttttatagg tccaaaggtg caaaaaaaaa tgcacggcaa aagcttctct ttccacttta 1080

aagcaaaggg tatatatata tacatataga tagatagata tattcttgtt ttggatcatt 1140

tcatgccgca aaagcagcca tccaattgga tagcgtggaa ggtgcctttg cgtttcctta 1200

gcaggttggt ttcttagtaa acaagtcacg ttagttcgtg tagaattttg aagccaacgt 1260

tctggccaaa acggaatata taggctttac attttagtta gaagaaagca tatatctaaa 1320

ccagacaaag tagtattctt tttttgctgg actttatgga aatggaactg attatgtttg 1380

gatacttgca aaagcaacct cgtgagccca tgtattaggg tgtgta 1426

<210> 2569
<211> 1699
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126203_G1, chr3:206557537..206559235, Cluster 15

<400> 2569
taataaaaat tttcctacct acctaccatc agcctacggc tcgctatggc atcttcttcg 60

actgggtagc tctaaaattt aaaagggcca cgccaattta acccgttacc attagcgtca 120

actgggccac caaatgcatg tatcgccgca acttcgcttg tcttgtcatg ttcgtgggcc 180

gtggctgatg cctccgccat acatgcaatg caatctttcg cacgggtgcc tgtttggatc 240

cgcttttcag tgggtaaata aatttgcctt tggacactta aatttacccc aagtcaatac 300

gtgtgcataa gtttgaatgt cgcacgggca cctgaagcag ctgctgtgct ggcatcttcc 360

tttgtttcca cttgctgcct ttaagtgcct tcgctggcgt cccaccctct ccccctcggt 420

agggactgcc gggactgtgg acgtgcgagc gtgagctctg tttccactcg cactactgtt 480

catgtagggg taccgggtcc ccgcacaggc acacgcatgc acagtgcaac gacgactgac 540

cttgtcaaag gtgcgtttcg ggtctcgctc cttcgatcac gtactgactg ctccgatcct 600

tcgagcggta gtagcagtat acctgtatag ctagcagcag gtcgacgcgc ttttgctgct 660

gctgcgtcgt cgtcgtcttc tcactattac cgccccctc tccaactcca agtacccgcg 720

cgtctactag atattgaacc gctagctgag cccaactgaa cgtgcctcgt atcaatttgg 780

ttgcttacga tcgatgacat tatggtgtat ccaaactgtt ctggaaatgg aacgtctgct 840

acggtaccca gcagccgtct atttctacag ctataaacag aagccttcat acggactacg 900

gactatttgg taattaaata ggagtccagt gatatatata aatactccaa ggacgagggg 960

cgctgtttcc tcgtcgtcgt caattctgag cagtgccaac tagctagtac caattaattg 1020

taataattcg ctggtcaatg aatgccgcgg aaattgcatg caggcggaca gatctgcatg 1080

catgatgccg ccatcacgta caggtacagc atatgcagcc acccagtcgg cagtcgcgcc 1140

ggacgctgta catgcgcata ttcctggaag gtgtaaaaca ggagtagcga gacgattggg 1200

gagtacaaga gtggcatgtc ccaactccca ttccaggaat gctacgctac atcctagcta 1260

catgcatgta ccgtcgtgca gtctctattg ctacatgcat ctgtatagat ttcgcagctt 1320

cagctctaac acatggcgcg ctacagatac cgcctgtttg gttgtctgca cgcagagtgt 1380

acagccttgc cgaactggcc ctgtaggtgg agaaatccaa cttccaatcg tcaaattaaa 1440

ggaacacatc tacttctctt ttgccctatc tatctttcta tgtaccttgt cgtccatccc 1500

gtcttcaagc gttattgttc gtcacatctg cgagcgagat ttgtcaacgc ttaagatggc 1560

gatcatacga taacctctac atgctcctcc tctaacgtgt actatcaaga ggcattcaga 1620

agcctaggta tcaaacgaat cacgagcttc aattcatttt agattcacag gcgatttcgt 1680

tgattcaata attgcattt 1699

<210> 2570
<211> 2489
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126239_G1, chr3:206682648..206685136, Cluster 15

<400> 2570
acagctagtc aaaatcgtcg ttatgcggga attagtctgg caatataaag gcttgtttga 60

caagaaggat aatgaagaga attaaatgct cttactattt aattttaaat atcaagaaat 120

tttagttcca tcaatctcct atgttactct cattcccaaa caaaccctaa aattgaactt 180

acctctggac ttggcagcct gccggctagg ggctggaggc gtgcatccga aaatttctcc 240

gtgcgggggg gctctctagg ccttccattc caagccgacc gaacacaccg atcgaaacgg 300

gctgaatagt gaatgccttg atccatcagc atctcctcgg catcgcgggc cgccctacac 360

gacgagcact cgaaagaaaa aatcgaaaaa ggctgcggcg tgaaccagaa cggcgggggt 420

aaggtgatat gctacttgcc agcctgcaac ggcccaacac gccgggcgca cacaccggca 480

caacaactca atcggtgctc aagcaatgtg gcctgtcacc tgtggccggc ttggccgccg 540

cgcgctgccg cggctcaggc ggcagcatgg gttttcgagc cgtgcgccag tcgcggctgc 600

ctcccacggc tggcatgcac cgtttttttt tcttggcagg aagtgaacaa gtagatgcgg 660

acacggacag agcggccgtt cctgctttct ccagtcacag agcgcaaaca gtggcaagtt 720

tctccccttt ttttgattga aagtacacat ggggtgcttt cgtgctgctc gagctcgact 780

cgaccatagg ctgcctgcaa catgcatgcg catgaatgca tggatgtttg gtcgctacct 840

ctgtaaaagg acatgctagg agtagcaagg cagatgggtt tatatacata gagacagaga 900

aaataaacaa ttttccattt gaacccgaaa cctagtgccg atgccaccag cactgtactg 960

tgcctacact tcacacggaa taatacatgt tttcttttgg gcatggcata tcacaattgc 1020

tgaaaaaagc agacagtatg cgcgaaaagg gtttcggagg ctctcaaaga tgtcttgcaa 1080

gcagaggagg catgtaaacg cataattacg aacccccatc attttgtcaa ggagcacggc 1140

gcatgatgaa cgatagcgaa gctagatcaa acttaagtat tggtgtggat atatctgcac 1200

tatctaaggg cttgttcggt taagttaatc tggaatagcg taaccgaaca agatctaagg 1260

gtacttttat attaaagtgg tttagaggga ttgtaactta tacaactcaa accggagttt 1320

tggacttgca ggttgaaaaa ataatggact ttctatttaa tataggttga caacttccgt 1380

cggatgtcag atatctcgtc gcagcgtcgc gggttggcgc cacagcggac acgccagtat 1440

acctgccacg tcactagatc agcgtgcagc tgaccagcca tggtggcacg gttgttctgt 1500

caggcaggat gacatgtcgt cgcagttttg ccgtgccaga gaaattagtg cggcggacga 1560

agtagtcgag aaaattcata ttatttttag aaatattatt aaaaaataaa attaagaaaa 1620

aaaaatgtgt ggagcacctc gaccgtcttt aatcattccg tgtgttatgc ctcatctttg 1680

gaagtcatga ctaggcccat gcagtaaaag tttggcaagc actgtccacc ttttgtccag 1740

tagtaagtaa agatatcaat aagctcatca catgggaaaa aaaagaggaa cgaagcaacg 1800

ccgtggcctg acggagcttt atttggtgta cacctacaca cgtcttcagt cactgttcta 1860

atgcaaattt gtacgacaaa aacatctgtg gatcggagag agcaaagcgg cattcgtcgc 1920

tgtcgacctc tcttgtcgtg acccaataat atacgcgtat tattatatat gtaaacatgc 1980

gtgatcgcaa cgggtttgag atagatagag ttttttttccc tctccttcag tcgcatgctc 2040

ttcctaatat ttatgttcct ttctttccct ccctgcgtgc agtgcctgct gtacgtttga 2100

tgataatccg atatggatgt tgcaggcaag gtatcatgtt gcgctggact ggcttgtatt 2160

tttatgacta tttttttttgg gagatgattt atttcgctgt cgccaatcga tcggcctctc 2220

tgatctgatc atttaaacgt gcccgatcac agccttttt ttgtcgttta cttaagtaaa 2280

acgaaatatc tccggctccg tactctcgtc caccagcatc atcatcatca cgattgtttc 2340

aatccggtgc ggatgtgatg atacgctagc taggtcgcta gcaaattatt tttagcagat 2400

ccgccgatgc tacaaaccaa cgacaaatgc ttccaaataa tatgtcgctg cgaattcgaa 2460

atttcgaagc gcacataatt aagcagcta 2489

<210> 2571
<211> 3024
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126484_G1, chr3:207763285..207766308, Cluster 15

<400> 2571
agcgtgttgt gcctggatta tatatatttt ttcgaagcat gcatgtcata cacaaacaaa 60

ataaaataaa aatcggcgct agtagtccta gctactagct tgctcgcatc agcatccatg 120

tgatattttt atactattac atgtggtgta tatgtcatga taaaagtccc atactctttt 180

ttttttcgaa tccaagcaag gtgacaagtc ggtcataccc tttttgaagg aatcgacctg 240

tgacgacgcg cgaatgatgc cacgatgcga cacggtacat acacaagagt tccaagctag 300

ctagggctag ctaggtacta gcgtactcta ggcgaagaac aggtctagta cgttaacgtt 360

acctacctgg ctacctagct atacagagtc taacacaagg ctctacaccg ctaatctagc 420

cgctgacctg gtctacaacc tcagtttggc gatgaacgta cagagaagct ggcgcactcc 480

ccccggcccc ttccggtcgc taggaaagaa gaagaagaag aaaagttgat acgataggca 540

gcagcagcag gtcgtcgtcc ggcctggatg gtgtggctgg cgttccttga aacggctctt 600

ccatctccag tctccatccg ccatcatctt ccaggcagca cacacagcaa ataaaagcaa 660

agcaaagcaa atgcttggat agatcggcca agccagccag ccagccaggc aggcagggga 720

tttgtcaacc cgttcctttt aatcaagcaa gcctgcagat ataaagggcc gggcaaataa 780

agctggctga cagccccaga tcggccgggt ctctcttatc tcagtcagca gctgcccgca 840

ggcaggcact agctgcatgc ctttccgcaa tacgtcctgt ggccttttgg tgataaagca 900

aggccaaggc ccaggccggc cacctttctt ccttccttta atctctcgcg cgtcgggcga 960

gcgtgagcat gcagtgatga acgatgagtg gtcgtattgg atcggagtag ccaatagcca 1020

tcatagccca gggtagctgt tgttcatggt tcccgatgaa agaaaacctt tgggaagcat 1080

cgatcagttg cctgctcgat cttgcccgga actctgaccg cacgcacgca cttcagaatc 1140

tgcacacgtt cgcgagatca gcggccacga cgagttgctt cagccacaag atcgatcggt 1200

cgatcgatct ttcctatccg tcctctcatt gggggtatgg aagatctgtc cctcccgatc 1260

gactgggctt ttgcagcatc cgtgtggaaa gcttgcagct ccttgcccgt tgccgtcttg 1320

taaaaccgtc ctcgcggtag ccactgcagg gtttacttgg aaggaatata tgctccctac 1380

cctctggagt ctggacagtg gacaccagac gagagagaga gatggaccgg accagaccag 1440

accagatcat cagacgcacg cgcgaatagc aaagtacgac gtgcgtgatt gtacagcaga 1500

ggtcaccggg gagggggaag gaaggaagaa agaatcgctg cctggaccag ggggcagggc 1560

catgccgctt gccgtcccag gcaggcagag gcaggcaggg ctgaaagctg aataccagtc 1620

gattgatgtg cgggcagagc agaagcgttg accttgcccc tttggagggg cctaccgcct 1680

acgtcgttag gtgaggccga cggttagcag tggcacatca acacacacca caccacaaac 1740

gctactactg tacatggcat gcattgcagc cgcacacaag ctgacaaacg ctaggggctg 1800

gccgggagat gtactctcgt ctattctata cctcatcagg aagagatgtc actgcatgca 1860

tgcctgttga cactaactaa cgcaggtgga tcgttaatta cctagctata gtacagcagc 1920

tagcagatga gttgagtagt tccattccaa agtgcttgag aactgagacg cagtagctag 1980

caggcctgac gctgacgctg acgctgtcct ggccgctagt tctctctcct tcaggataag 2040

aggaggggc tggcctgggc cctggggcct cctccctcct tccctccatc ctctttcttt 2100

ctcgtcggag ccagccagcc agatgcccca aagcggcgcg ggaatattca cggccggcta 2160

gaagacaagc gcaagcggcg cgacgaggga ttattgtttt cggtgctcgg cgggggcac 2220

ctggttgacg ccgcgagagc gacgccgcag cggacagggg atgatcgtcg ccactaccgc 2280

ccgctagctt tctcatatcg atctccgctg tttacacacg tacgttcctg tgctgccatg 2340

cctgccaacg ggtttggctc gtttctggcc taataagtca gattccaaga gtgttagaag 2400

agtatatcgc cgagataacc taataaaaat catgacgatt tcacagcctc agtggtttct 2460

cgctatagct aggcacacct gagccctgcc tgtgtgaggt tggtttgcac aggaggaggc 2520

cgggcggtgt tggctgccca tgcgtcgtcc tcctcttgcg agaaagcgca ggtccttttc 2580

atacagcttc gtaacacttg ggggtgcagc taagttgtta gccttttgtt ccctttttat 2640

cctctttttt tttgttaggt tggtagggaa agcgcgcgta tagtctgctg cacggatgat 2700

tttatttgca ctttcgtcag tgagcctgcc tagtagtagc tagcagcact tcgccgtgga 2760

gaggcacccc accaccacca ggccaccacg aaccggtgtg ctgctcgtgt tctcgcatgc 2820

acattgcttg gaaccgccgc catgcagcaa agtaaccagt cagtggacac tggatggggg 2880

caggcacaca cgtgtcgtga gtcgtgactc gtttgcccgg ttttctaggg atcaactgtg 2940

gaggcagagc cctgaatgaa agctatagcg caccgttaca acggtgatct gatctcagct 3000

aacagggtgt gcacacggct ttag 3024

<210> 2572
<211> 1492
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127990_G1, chr3:215046235..215047726, Cluster 15

<400> 2572
tgaacatggt atacagatga gctaaccatc taatttcaaa aaaacagagt ggtatgtata 60

taattaatcc taatattaaa cgtgatctaa gccttctggt ccgttggcta tgcaagacaa 120

ggcaagacat tccacgctga ccaggttatc tccaagttaa ctaaacacgc cagcgatgat 180

tgatgatgac ctgagccgtg agaagctcgt gctatgtatc attggacgtg gccatgcagg 240

acagcatgcg gcgtttttgc ccataacgcg atgccccgcc cggctcgaca gcatctcacc 300

ccactgggaa agaacgcaga tagcacgcgg gtgaacgggc gatcaccgtt ctcctatgga 360

ataaagcatg gggccggccg taaaacggcg gccgtaatca tgccgagagc ggcacgccgc 420

tggtactcag tgctcctgcc tgccaaccat gtgccttact agagctaaat tgccggcacc 480

tggttcagaa cgagaactag gcgtggtgct gtcgcttcgc ttttaccact catcctactt 540

gctgtcatgc tgtgcgcctg tgctggtgcc ttgtgcagcc aacctcctcc aaaagtcaac 600

cgatagactg ctcgcccgag caagctgggc tgtggagcgc cagagacctg caccaagcgg 660

cagctggcag tcgactgaat cgccacagcg cttgggaagc cacaactgga ggcagggcta 720

ggcaactgca gtacgtgacg attgatggct tggcgtgtgg agatgcacaa tggagtagag 780

atatcccaaa ctttagtgcc atctaaacat ataaactaaa actttactaa attttgattt 840

acacattaac taaaatttag tagcaggtga tacagatagg attttctctt ctactactgc 900

tcctggccct gcacttactc tactcctcct cctgactgac ggacccgtca tgattatagt 960

attattgtcg ctgccacttt gtcgtgtgag cgacacgatt ggtggtgcct gatgtgtgat 1020

gtggtgtggt acagcactac tactgcggct gcttcttttt ctttcgtctc tttcggccat 1080

gttctcgagc acggtcatcg ataaagggag caactgtaac atcgctcatt gtccgatact 1140

ctgatcggcc acgagtttcc aattgtaagg gtcgatttgg tgataaaaaa aatggaaaga 1200

atttatgaga agaaatttct tgttattctt gctattttga atatcaaata atttcttctc 1260

gtatagatta cttctaattt acttgtcatc aaatcagtcc ttaacggatc cggctagcac 1320

gacgcaactg ctaagagcct aaccagtgac atctgacaaa tgcacacggt ctgttgtatg 1380

gagccacgag agcgatgaca ggagttcact gtgtgttttt cacctgcgga caagaactga 1440

tgtgcaacaa aaattctagt acaatcaaac tactactcgt ctgtcccaca aa 1492

<210> 2573
<211> 3429
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128404_G1, chr3:217223790..217227218, Cluster 15

<400> 2573
acaaatgtta ccttcgccga aggtcctcga gatattgtgc taacaattaa agattttcca 60

agtattggta acacgtagcg aaggttacct gcgtcagcac ccgcgtatag gcaagtgaca 120

aagccaggga acttcagcct cgtcgagttg atcggtggac atgaacgaag gggaggacgt 180

acgaagcatg agaggaaccc ggcgagcacg acggataata gaaaagacat ccttaccctc 240

acaaatgtta tagatcatgt aaataagact tgtgggtatg tttgcgattt catacgaagt 300

tgtacgtcac cattataaat agaggaacaa taccatacat tactacggac atgttgtgga 360

acagagtata gagaaattgc tctgccttcg aatgtgtttc tcgctacctt cgagctctcg 420

tttgtaaagt cgaaggtatc tttgtaatca cttatatatg agctggatag attcccttaa 480

atattttgtt atgtggagtt attcttttgt catgattcgt tattcgttgt gtcattcaca 540

tatatttatt tcacttaaat acttcaatcc caccttgcct tctcctttta gtcaacccct 600

tcgaacaagg gtacttacta taaaaagaga aatgagagtt tttttatttg tgttgcctta 660

ttcttgattt gtctcaagag ccaaaaggaa gtgagcaaca gatgttgatt catgatacct 720

acgatggcgt gacaccaaga ccgtaagagt ctttttcttt actaatctaa agtatataca 780

gagctattgt agttgaaatg accaaatatt tttcatagaa atacacatgt ataaaacaca 840

aagcactgtg ccctggttca actgaaaata gattgtgcaa gtaagtacta cttgctaaaa 900

ctcacatccg cgagttttct ggtgatgtag aacgcaccaa agctgtgtgt aaaaagtgca 960

aacccccctt ttcgttcaaa atccagaaaa aaaaaaggat acggaaagat ctcggcgaag 1020

gcaaccataa gaagcaaccc gcttggacgg acggcgggcg ggcgcggcgc gggccaggac 1080

gccacgccgg gtacgaagct ggaggagcgg ccacggctcc tcacaggtca cgatgcccgg 1140

ccggccggtc ggtcggtcct aggccctgcg cacgaaaggt gaatggtcga atggaaccgg 1200

agaacgggag aaggcaacgg cgtaggctgg cgtcgcgtca cgcgcgccac gtccgtccac 1260

gagcgagcga gcgagaagta taggacggtg gtccccgcca tgtacgcacg gcgcacggta 1320

cagtggtagt agaatactcg gtacaggagc aggtacgctg gcctggcctg gcctggccgc 1380

acgggccgtc ccgtcacgta cgtgccctgc agtggtcagg acggcacggg cccgggcagt 1440

cagcctcaga gggccctcgc gcggtcaagc tttacggcgc ggccgtgggg cccacccgcc 1500

ctcacgtgtg cgattgtgta tcggccgttc gcccacgcaa ggtcgcaacg ccgcgccccg 1560

acgtgccgcc cactcgaaag tcgaaacccg gctcgcgcgt tcgcgcccga cggagggaaa 1620

tcgctgtccg caggcgtcgc cgacgcgcgg gccagcctgg gatcgggtac cgtgcgtgcg 1680

tgtgaatggg cggccgccgc gatagcagga tgcgcggcgt ggacggatca gcggcgggcg 1740

tacggggcgg atgcgtgcgc gccaggggat tttgggtttg gcgatgcggg actgcggatg 1800

cggacggctc gcgtcgcgtc gcgtcgcgtg ctgcggctat ttgcgcatgc ggggcggtgg 1860

gggtgcgcgg caccggggcg gcgcggcgtc ggcaggcgga tatcgacgcc gatgtgcgcg 1920

cgaggacctt gtgcgtgcaa ctgcggcgtg gcgtcctgcg cgccaggtgc aaaccgcgcg 1980

cgcgcagtgg tgcggagctg cccttcggcg gcggcggcgg tctggtgcgc gttcccgacg 2040

tgtcgacgcc ttgtcggttc cgccgtagac agcggggctg gcctgtgaca cggacggttt 2100

acaaacctgc gatcgaaatc gctcacgatt cgatcgctcc gttccgaaag ggaggcacga 2160

tccactgtcg acgagtgaat atatgcgtgt tcgtgcgcgc cccactcatg aggaggaagc 2220

ttgctgcacg tggttcaatg ccttctctgt actagtacac aggcacagct ccggtgcatg 2280

catgtggtca gccccccgtc ccgtcggttg cacgcacgag tgctgtatat tggattcttc 2340

ttttttata gtagctttc cttttcgctt cagcctgaat atcatcgaca ccatccatat 2400

tacgtgcatg acgcctgtgg tcagctagct tgctatactg agcactaact gacaagtcct 2460

tttaccgtgt gtcgttataa aagtttgtat aattattggt aaggcattaa gaaatttgaa 2520

ttgtcagttt aagctctctg ttttgccttc atgtgactca cgtcaccttg cgtcggagaa 2580

attgaaaata ctctattggc taattcagaa actcaaatcc tctttgcatc gtgttatttt 2640

tatagggtgc catttaagta agacatttag ttcttcgtga gagatttttt ctccatatgt 2700

ttggcctcca ttgcctccaa attagttata aacatgttaa tttttagctt ttaatggtct 2760

taactgaaaa aacttttaa tgaagttaaa taaatatata tttttaataa agagatcaat 2820

aagtttctat tattgagttt ttttttattt aagatcattt agacctgagg ctattttaaa 2880

tatttatcac cgtaatttaa cactgttaga gccaaatctg atgaaaagtg gcattgatag 2940

aaacaaaaaa tttggactac tcaacaccga tggtgaccac tcaacttttt ttagtaataa 3000

cttgtgagca attataaact tccataaggg catgtataac cgtgctcatt atatatgggg 3060

tcctacgggg tttctagagg gtcgtctttc tctatacata ttgtctttta ctatatttat 3120

gatctaagga tcagaatagt ataatgttgt atttagctat tacttgtacg tggaaaacca 3180

tcgaggggct catcagggct gtacatgtca taaggttatt tttcattgca ctgttttcga 3240

gaatgacaca tcatcattta tctacgaaat catgtatgct aagtttcatc tagatgaaac 3300

tctctcacct ctcgttaaac tctcactatt tctcttatta aattcttgtc atgtcaccat 3360

ccttgcttat atggcgatat atttaatgaa aatgaaacta aaataaaatt tccactaaaa 3420

atagtctaa 3429

<210> 2574
<211> 1791
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132647_G1, chr4:5841928..5843718, Cluster 15

<400> 2574
cgccgaccgg ttcaccagcg gccagcgcca acacggccgc gatgacgtac gatcctacca 60

acatggcgct gtcgccctac ggcgagcgct ggcgacagct gcgcaagatc tgcgtgctgg 120

agctgctgag cgccgcccga gtgcagtcgt tccggcgcat acggcaggag gaggtggcgc 180

ggctcgtggc gacggtggcg gcggcagccg ccgtgcgttc ctccgtggac atgtccgcgc 240

gggtcaagac gttcgtctac gacaccatca tgagggagtg cgtcggcagc cggagcaggc 300

accaggacgg gtaccttgac gccttccaca tggcggtgcg gcagacgtcg ggcggggcta 360

tccatcgccg acctgttccc gtcgtctagg atcatgcaga tgctcgccac cgggcctcgc 420

aaggggtcg cgtgccgtga caggatgcag cgcgtactgg agcagatcct gagcgagaag 480

aaggaatcca tgggcacgga gcgcggcggc ggcgacgaga cagcgcagga gacattcgtt 540

ggtgtcctgc tcaggctcca gaaggaagga cgcgcaccca ttgaaatcac cgacggcacg 600

atcggctcac tcatgtttgt aagcatctcc tagcgagcta tccgacgaag acgatcaatc 660

gatcgatcat ttgccatttg tcttgtttgt acaggacatg tttagcgccg gaaacgacac 720

ctcggcgagc gtactgatct ggtgcatgag tgcatgaccg agctgatccg gtccccgacg 780

gcgatggcca gggtccaggc cgaggtgcga gaagccttca aatccaagag cacaatcacc 840

gaggaagaca tttctcgggc cgacgccgac gccgacgccg atgtctacct caagctcgtg 900

atcaaggaga ccctaaggat gcacacgcag ctgccattgc tgatcccgcg ccgatgccgc 960

cggacatgcc ggatcatggg gtacgacatc ccggagggca cgacggtgat ggtcgatgtg 1020

tgggcgatct gtagggaccc tgtgcactgg gacgatcctg agcagttcat gccagaacgg 1080

tttgagaacc gcagcctgga cctggattac aagggcacaa acaagctacg agtacctccc 1140

gttcggctcc ggccgtcgta tgtgccccgg cgtaaacctt gggctggcaa atatcaacct 1200

cgcgctggtc agccttctgt accacttcga ctggaagctg tgcgatggag atggactgga 1260

gcctgaggac gtcgacgtaa gggaggatgt gggattagtc acaaacaaga aaaccagcct 1320

cattctgtgt cccgttactc gcgttgctcc agctcatgcg taaattaaat tagtggaaga 1380

agtatgtgta atgcagtaat tccttgtcga gaaggaaagt tattccttat ccaagttata 1440

ctacggccct gctttgttcc caccacccta aactgccaaa cagggtgact aaaagtgacc 1500

ttctaaactt ccacttttac agggtgttct acccctccta aaacttcact agctgtatta 1560

attatatagt tcgatgacct agctgctttg ggtctgatgc ttttgtttac cgtcgattaa 1620

ggtttgcctt tgacaacatg ttctaatggc cctcaggatg gtctgatgat acattggtct 1680

aacaccttat aaacattttc ttgcctcttt tctttgtgat ctgtatgtct aatttggctc 1740

catcttgtat cttagacttt tgcatgttgt tatagatctt taatgagtat a 1791

<210> 2575
<211> 1484
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133490_G1, chr4:10004981..10006464, Cluster 15

<400> 2575
tgagagaaca accgcaagag agtggctggc tccacctgga atcccccttt acccaacacc 60

ctcgtcctgc ctgttggcca ttttcccgcc atgactcgtg gggcctcagc ctcatgcatg 120

tcggattctt cccacataat atatactgta tataatcagc acaatcagcg ttaatggcaa 180

gaataccgga gtactactac gactatctga cggaataatc ctagctagac tgagagagta 240

ttgcgtccgg aattctaagg tcgatcgatg agcgcatgta agtttatgcc agacacgatt 300

agcacgctcc acagcactac tactagctag cttgatgacg acacgagcta tagtatctca 360

acaactgttt ggtgtgtaag caaagctggc cgcttttatt ttggagttgg aaaaaaatcc 420

gaaaccagca tgtgccgtcc atcgtcctat tctattgcac ggagaaagat cattgaggga 480

ataatccgtc ccctttaaaa atccctcact tgatgacgaa aaacgaatgc cagcagacta 540

ctctttattc ttctacctat acatcatcca aagggatcga acagtagtgg atgatgatgg 600

caaatcgatc cccaaatcgc gttcagggat atatatagca aatccatctg tcagtaatat 660

aatggccctt tgggtcggaa acagtcgagc gagagggaga tcgcttgaaa ggatctccat 720

cccactacgt acctgctcat catatgcaat gcagtcgatg atctcgcgcc acactaatca 780

tatcgatcga tcgtctcctc ccatagtata tattcatgtg cgatcaaatg agtccatcat 840

atatagcgca tgcatgcaag attgtggagc tcaacaacta atgcacaacg gaacggagcg 900

acgacatgta tatatatgta gttattagtg ccggggtgat gaattcggaa ttttatactt 960

gtgcacgagc aagcatgcat gcatagatag gaataggatc gtcgtcgtac gtggctgcgg 1020

cattcatcaa ttagttaggt gcctacctaa ctactttgac gacagtacca tactccatac 1080

atagggctgc tttccatttc gccaagtcat tctcaaaaat taggcaggag gagatagagc 1140

atataaagtt ttcaaaaatt agcactagcg tggttgttgg ttagcaattc gatcggccgg 1200

ggtctcagat ttctagcttg catgcccaac aagccactct ctctgatcta tctgttggca 1260

gagttgaaag tggcctaacc caagtgctgc attttgacca cacggggtac ggtgtgccac 1320

ttttagttat atatttgtat tagctatgca tgtgtacctt cgtgtgcctt gccgaccgtg 1380

cagtgaggcg ccgttgcaga ccccaatgtc aacatgttcg attcaacatg gatgctagat 1440

cgaccatatc taatgccact agcatagagt catgcgcggt gaaa 1484

<210> 2576
<211> 1433
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133662_G1, chr4:10645572..10647004, Cluster 15

<400> 2576
agactcataa agtcataata caccgtctca tttagaatgc ccaagcaatt tatttgctct 60

ggagggtagt catttaaatc tgacgatcgt agagtttgag cagctagatg tgttgagaga 120

agctcggtga cgacaatggc aaagaaacaa aacagacagg aacgaaccat atatgattgt 180

ggccacattc cctggtcatc atgcggccct cttaacattc tttaacacca tcgatcacgg 240

ttgcgctcac aaatgtgacg cgctgagacc gcgcagataa aataaaccgg ccccccgcac 300

agctgggact gggagggaca catcgacatc ggtgcgcgca ctgcccttgc cctgccctgc 360

agctgcaaca gttgacgcgc gtatgattgg cgccccgtct cccggtgcac ccgtggtggc 420

ctcccattgc aacaggcgac gcacaggctg tactggacgc acgcccctcg atgcatgcct 480

tccacatata cgtccggcgg cctaccctct gtgtctcgtt tcgctccaat ccatgtgtgt 540

tctcgactat agggtagggc tatggcgtag gagcagcagt gtagcacgac cacgatcctg 600

atgagctcag atcccgaggt ggtgcagggg gtggaaaaag ggtatggcca cacctcattg 660

ttgtggttgt ggaggcacgg aaacaaactt cgtaaagtac tatctagagt tgagttgtcc 720

atggagtacc aacgtatgac accgtactat agttatcctg aggtacagct ttcaaatgca 780

tcatgtgatt ctaataacta ttttacaaac catgtaaatt cttatgttgg tattgctagt 840

tataccaata atagatttat tgcatcggct aattattacg gtgacaatgg tcttcatcgt 900

aaatgtcata atgatggata gtatgtttaa gagccgttat cgactatgag gatggcttta 960

atgctactgg caacctacaa cgtgcatatc tttattcatc agctataagt ttacaatatg 1020

catgtgttcc catcgtaaga cacgccgatg aacgagagaa ctggtttttt ttggtaatgc 1080

tagctattta gccaattact cccaatttgt cagtatcata tgcaactatt catgcccgta 1140

ctttggctta ttatgctacc tctaatttga gccaaaccca tgaaaaaagc tcactagagc 1200

agggccattg ggacagtagc ccacgaaatc accctctcac ctatttactt gttgtgggaa 1260

caaaaccagg acacctttgt acaacaaata ggacttttaa ggcatataca tgttgtgatg 1320

tgtttgattc taatatgaga caatattttt tgccaaaaat tttcttgcaa tggctagcta 1380

gggagaacct tgcaaacaaa gacgaggtaa tgagaaaaca tatatcacaa cac 1433

<210> 2577
<211> 1629
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_144_G1, chr1:662339..663967, Cluster 15

<400> 2577
tcggatctag agattcgtcg catcatccgg ctggtaggat tgttggcgcg gctgtgaata 60

tccggcaggc ttttccagcc gtgtttgcca tctaactccc agacactgag cttttcaatc 120

gtgggcgtga ccgccacgga ccacaccagc acgtcttccg cgtcgcataa cgcttctaca 180

tgatttacat gagcacattt caggcgtccg gcaatgggca gcagctgcag atcgcgcgga 240

tcgtcattca aaacatcacc ggttagtttt agcacgcttc ggcgcagcgt gatgagctgc 300

gcccgcgctt cgttaggatc gttttgttta ctgatccata gcgattcatt gctggaaaag 360

gtgtggttat cgggcgcgtg tgggctatga aacccgcgcg tcgcacgctg tagttccata 420

tcgaggccac attcaccttc ggttgttaac gccacgccaa ccatattccc ggcataggaa 480

atggaaaacg aaggcaaatt tttatcactg aaaaccggtt tacctttcgg cagggtgacg 540

atttccggca attcgccaat gccatacagc atgaacatca gttctgcgag taaacctctg 600

gacgccagaa aacggctttg acgatgaggg ggaatgtttc gggcttcttg atgacactgg 660

gaggggagac gaacagaaat cagatgtcct tccgttaaaa tccctcgggc aaagtgagtc 720

gccatttttc gctccatgct taatggtcca ttatgaatac aagagtaatc atttactgga 780

atgatggaca gactaaagcg gctaaaagtt cgattcagac aagcttatta caacttttt 840

acattttatt gtgaaattgg gtcgcgtttc atacgattcg gttatgccat cgacgcgtaa 900

aggtttttaa tggtttcccg taaccagacg atcttcggat tatggctgtt ccgtttatgc 960

cacagcaggg taaaaggaac ttccagcttt ttttgctggc tttcgtcaaa cgggagagga 1020

agagcaacca acggcagttg atggagttga ttgtagtact gacagtagcg cggcgcggtc 1080

gccagtagca gattgtcggg ttgcgctgcc ataaacagtg actgctcgaa ttccggcagg 1140

ctcatagcaa tcgtgcgttc gcgtcccagc tcctgtaaca cattgtccag cgcccaggtt 1200

atcgctctgt tcccagcaaa tgctgatatg cggataacgt aagaaggtgt ccagattcca 1260

cgtttgatgc agtgccggat gatctttgcg taaccagacg caggggcaca tcactaaaac 1320

agcacttcat tatcaaatgg ctaaacggta gcgagcttaa cagctccccg cgagcgaggg 1380

atggctttcg cgaccgggaa aaacccgata tccacttcac cacgagtaat ggcatctaaa 1440

ggaatcgtaa tcccagttac gtaatttgat ggtcgcctgc gggtaacgtt ggtagatctg 1500

tttccgacag cgcattaagc atgatcatca tcagcggtga ttccgccgcc agctcaaact 1560

tcaggccgcg cggtgtctgg tggtgcggtt tatccagcag caggttgctc atttgcatcc 1620

actccgcca 1629

<210> 2578
<211> 1642
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156894_G1, chr4:156510342..156511983, Cluster 15

<400> 2578
cagtttatga ttgagttgag tcaagacttt ttggagtctg gcgtgttttt gtcagtttag 60

atgaactaga ttgtgtttaa ctctttttt tggcaggtgt ggaagttaat gtttcgtttg 120

aaggatagta gtctgggacc tgtcctgtca gtgtggcctc gcaatcgcat cgcttattcg 180

cttgcaagtc aatgggcagt ttgccttgaa attatgctca gggggcaatc gatatgcaat 240

aaagcaagca ttagtttttt ttttgatact tcccaaacca tcgtgaaatc atccaccttt 300

cttctttgtt tttgcttttt tttttctccc gaatcaatac tcgtcttcgt ctttcactgg 360

gggtctgatt gggtagtcgc attagtataa tacttgcatt gcattactgt ctatgcatca 420

tacccttagc ctgaacaacc cgtcaataga tcgactgggc ttgcttttga ggacagtcct 480

agactgcaaa tgagtctgcg caggtaacca atccgtgacg tacgtaactg cactgcgaaa 540

gtctgtagta tatgtcctaa atgaataacc tcaatggcag caaggaaaaa aatagtaagc 600

taaacttgtg gctggttagt gtaacgagct agctgaacca aagccagttt ttgttaacga 660

gatactaagc tgtgaggaac cgaggtggcc cgatctgcag agggtcggtc gcagccaata 720

caaagccatg catggcccat ggacagtgac aatccagtat aggcccaagg cccagccgac 780

ccacctcgac actgagcatg gccgtttgtt ctgttctgcc atgtccggca cgcgaccgcc 840

gtgccaatca tccatgtctc tccctccttt agcctttacc aacctttttc accgcatgtg 900

tcctcccctt gcgtgcgcga gacacaggga gagtacgttg aaagattcgg tggagtggag 960

ttcttttcac ttgggggggg gggggggggg ggggaggcgg ccttgcactg cagggcacac 1020

agcacgctgc tcttcactgt gcgcaaagcg tggctgcctg cctacagttt ctgaatcggt 1080

cgtcgtcgta gtacgtgttc ttcttttgga caccgagtta tcacggccgc gtgggtaagg 1140

acgacgcgtg agctggaagg ggtcctacga acaaatagct gggtaatata tatgcagtgg 1200

ttaaaaaagg accaccgcgg agagacggag gagtttgacg gcggcctggc cccaagcccc 1260

caaccaagat cagccagtgc tactggggtt ggggctttcg tatacaacgg agttcatgag 1320

actgaacgac gacggccaac gaaacgaacg aaccaacggg agacaagagc acgcatggtt 1380

cagacgccta actctttcct ctttggcttt cgactttgga ctttggtggt ggagcagagc 1440

agagcaggcg gcaacgagaa ggggaagagc tttcatgttg tcatggtgcc cctaaagagg 1500

aggcagccag gcgcgaggag cagcagcaat cgatggctgc cttttgaccc ttctgtgcca 1560

aacccaaacg catgctcgcc tcgcacgaat tgctgggctg cctggagaca tgctctgacg 1620

ctctgtcgct gtaggactgt ac 1642

<210> 2579
<211> 1460
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159391_G1, chr4:172121863..172123322, Cluster 15

<400> 2579
agcgagggca gcgtcgtttc agacatattt cgccacatcc acacaccact gacgtacggc 60

agtgaagcga gcaccaaaac tgcatgtttc cggacatgcc tagcttgttc ttcccccacc 120

cccatcgttt ctactctctc taatctctat agctagattc tagctaccat tgggctggaa 180

acacacaacg ttgcatatat agttctcatg ggtactccga ctcgtcgtac gtgtatccgg 240

actgcaccaa tcagagatca tgtcctccgt ctccgtgtca gcagcagtag ctagcagtgc 300

ttcggtacct tgctcccaga agcaacacaa ctgcaagtac aacagctagc tagcatagcg 360

ttggccgcta ctacacgcca acagtaaccg ccggcaatgc acgttgctgc cgcgatccgc 420

tgctaccggc cgtggaagca acatactgca agcaggagtc aagcgcccgt acagtacatg 480

gcgcgtcgat cggatggatg gcgtacgcgc gcgatacgta tacgtatacg tactacatgc 540

ccgtacgtgt ctcgccgggg gtgagctgag gacgtattgc ggaggaggcc gcgcgtcgcg 600

tcagtgtgca gccccgccaa gccaccggag cttttacttg caggcaaggc aaccgtttct 660

ccactcgccc aagccacctc ccccgagcca cgcccacgcg cacgtcgtcc ccccttggcc 720

acccgcagat ggatgagctg cggctgcctg tagatcgccc ggggcgagcg ggggtcgctg 780

tcgacgcccc gccctccccg cccggggccc cgtcgacgag tccatcaatg atcaatcatt 840

ggcgctgcgg ctgcactgca tgcgtggcat gccccggccg gccggagcag gtactagcta 900

gctagcctcg ccggcgccac gccgcccgcg cccttccgca tgcgtgcaga ccccggctag 960

gtagctgcca cgcactatgt acagcacaga acagtggaca cgatcgagaa ggtcgtcttc 1020

tttcccacac agacacaggg aagggaatga ttaacaacag atcaagtata gtagccatct 1080

agttctactt ctacctaggg aatgctagtg tggacgggtg cttaacttta gctaccttca 1140

attcatcacc aacggtaacg gatctattca cacagcagcc ttcctttgca aatacaccgt 1200

ctaattaaga tcaaaatgga aatgttttat gtaggtaaac ggtgtgaggg acaaaatgca 1260

gctagtacgt agcttgctcc tgcatgcgtg catttcgctt tactggcgcc tggttacaac 1320

ttacaaacaa acaacaacac tatcctaact catacatgct agctagctgt tgtataattg 1380

gagacatcgt tttttagatc agtcggtact ctgaccatct gattggttag tcgcaccgtc 1440

tcatcctgca tcagtgcgtg 1460

<210> 2580
<211> 1702
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160006_G1, chr4:175264651..175266352, Cluster 15

<400> 2580
taggggagaa taattatctt cagttcaccc ggatataaat tgcagtggca tacatatctt 60

aaaaagaatt gtcatgagaa aaaaaattaa aaaacatatt attgattatg agatgattga 120

gctggctttt actgatccag tttagatttt aagaccgaat catataaccc agctgagttt 180

tgcttttata tactgtatgt gagatcaaca actggacgat ctcatacata tctgcggtag 240

cacctgtgag ctgtgaggtg tgtgactgtg tgagcaactg agcatgtggt cgaggccatg 300

acgtacaaat gatgacagga cagccgccgg gccttcatca ccccccgcgg tccacgtcgg 360

cgcgtacgtt tacttttcca tgccggctgg aaatcgacgt tgctttcctc tcgtcttctc 420

cagtgtcaaa cgtgaagctg caacttaatc gctgcgcgtg cgacgtcgca tgcatggcat 480

ggcatggcac gactgacgac acgacacgac acgaccgtca cagggctcgc tcgcccggcg 540

ttgaagcgtt cgccctgtca cgcccagcga gctgcgcacg tccgaccgac cgaccgaccg 600

cgtgcccgtg ccgcacccgg tcgcgggcgc cgtgaggctt cctgactcct tccgcgtagc 660

acgaccaacc aaaacccccg cgaagccggt acgcgcccgc cggtgtggaa caggtcgtcc 720

gccacggccg gaacgacgtg gcggcaggtc ggaatcgact cctgcgctag ctgcggcgaa 780

ggctggcgtg gcgggtccgg gcgcgaatcg ctgtccaggc ggccggccgg ccgcgttcgt 840

catttccgtt cctcccggtt actactagtt gctcagggaa gcgttgacac ttctggtgcg 900

aggcgttgac atggacgacc tgtcctatcc tttgtgctat cgcgaggcct acgcttgggg 960

cagggtcgat ccgaaaaaaa gggccgggac gcgaccagat ccatgggccg gaaccggaag 1020

gggtcagcag tttgatctct tctctgtctc tcccgtggtg ctctcggtcc tatctgattc 1080

tgccttccgg tcaccgagca agaaacacgt ctatggaaaa gccaacgaac attacacggt 1140

acggcacctg tctggcgaaa agccgaaaac gctatagctc cactcctagc aatagctagc 1200

tagatggatg ctatagtacc cgaggcgatg aacaatcggc aggaacgggg cgacgcatgt 1260

cagggacggg cccacaggaa gaagtagaag cagggttgta gatttgtagt gtacggaata 1320

ggagtagtag gtgatagtgt ggtccgcatg aacaagtata tagcatttgg ttgtaccgtc 1380

gcctagctgg ctagctcgcc cattcttttt tttttccatg gccacgtccc gtcaccggct 1440

gtctgtccag tgtcctcttt ccttgtccct gtccttgtcg atggggccct cgactccgag 1500

aatcccagat tccaagtagg tacgtactcc tgcaaaagcg cgcactttct tgctcatcgc 1560

ctcgagtact gtgtactcgc tccgcgccgc acacggcatc gcgctctcca ctgctcattc 1620

gccttaaaaa aaacttttaa tctatttttg tattatttgt gaacgagtgg tataaaaaaa 1680

actgaccatg taagtggttt tc 1702

<210> 2581
<211> 1783
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160436_G1, chr4:177636753..177638535, Cluster 15

<400> 2581
cttctttttt tttacacaaa gcataatctt gtcctacagt agtggtaggt ttgggtttat 60

tctccatttt tactacgttt attttaggtg tctgaccttt ttttttttact acgtttattt 120

caaaatccta ggggcagtag tagtagctgg cgtcggcaac actgcatgat gtctgcatgg 180

tgtctcgcca agagcaagtg acgaccactg actactgact gatactgagt cagtggagct 240

gcatctggaa ccaattatac gcttcgagca ttgtgttgtt ccaaataatt gtttccatag 300

cgcgtgcatt ttcatatata tgcgtaggta cccgtacacg tatagatatt attactacag 360

ggcacaggca tgatacgcat atacatagtg ctcacgtacg catacgactc ttgtatggtc 420

ttggtctgca actcacagca ccggccaccg gatcgatcag agaggaaagg ccgaattatt 480

ggtgcttgtc gcgagctagt agctagcaac ctacagtaca caccgagtgg actagtgcca 540

accaacaagc tccataagcc gcggggactg gacgatgact ggccggacag atagaccctg 600

tcgttgttgt tgggacgtga cggcgtgacg tacgtggtgc gggaccgatc gagccatcca 660

cggtggaact ggaagtgagg gatgagtgac gtgcgcgacc gcgaccacga gctgacgaga 720

cgcgcagcgt gaacggtgcg gtgccgtcgg gtcgcgtcgc gggccggaaa atgttgacga 780

actgggcggg cgggcgggga ggctacggat agcgacagac gcaccgggga ttacgcgatc 840

cgcgagacgg gccctgacct tgggctgcac tacggcgttc gcggtggccc gcggtggagc 900

gggccgtgtc cgtggccccg gatctgattt ttttttccat atggccctca ccgatgaaaa 960

aaaaaatgtc accgtcggcc tgcctgtctt caggtcattg tactgtcatg tccacgatcc 1020

gtttccgcgt ctggggaaaa aaatgctagc cctttgcact gtcatgtgtc gccgtcggcc 1080

tgcctgtctt caggtcattg tacgagtttt ccgccacgca tattccgcgc gcctttcgtc 1140

gcgttgctat gctactaccc caaaaaaagg acagaggcca tataataata atagtagaaa 1200

gcagccatac acctccgttt atagcagggc agggcaggcc gcgtgctact tccccattgg 1260

aaccaacgga agtttattgt agcggcagcg aatagaggag aagcagggac cggagaagag 1320

gttggtttcg tgcgtgcacc cgtggacgga taacataaag atacggtcac tgtccggtgg 1380

tgatgtacgg atcgaggagc atacagggcg cctccttctc ttctcttctt ctagtttccc 1440

ggcttagatc atggcgttcg cgtttgttgt ggctcccgag ccccgaccga gtgtctcagc 1500

tctggccgac agctacttgc acgctgtatc ggatcatcac gtgtgccaac accgcagcag 1560

caatgatcaa tctcgaggtg cgacgtctcc gtcccatccg cccgcattgg gcacactgcc 1620

tgtcttgttg ccccccattc ggcggcgtgc tcaaacgcga ctgaaatgct tcgtcaggaa 1680

tcaatcagga actggtagca agttttacta gcaactgctt ttaggtaaag actgtactac 1740

gtaccaaaga gcgatcgaca gcgcagtaca aatgcatgga tcc 1783

<210> 2582
<211> 1437
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164350_G1, chr4:198986131..198987567, Cluster 15

<400> 2582
acacattcaa atagtatatg gacaatcgat tcatctttcg tacaaaacag acaagagaga 60

tcatctagct ccctgcgttt tgcaagatta tcccgagtaa gaattttgtt tcgagatact 120

aaccaaagaa aaaactgaac acttggggga acttttaagt cccaaaccac aggactatga 180

accatagtga cccctctaga atgaatcacc ctatataaat attgtgagga ataagtgcca 240

ttggagctga attgccaaat caatgaatcc tcctccaagg aaaaagtcaa atagtagaag 300

ctaactcaat aattttgtca cataggttca tcagagagga atcaaaagtt cttctaaaag 360

tgcatcttaa cgacacacca tttcaaagat cagcaacgac atcatttttt cattgaccaa 420

cacacaaaga gcctccaata ttgaatggca agactagaag accccaacca attgtcttcc 480

cagaacttaa cctttcgacc attagtaata atatagttat aggtataata gttttgtgat 540

tactggatca tattggatga attttgagct taaaatccac tggattggga attgatcatt 600

gccgcctcta ccactgctcc tagttccaac gaatgcaagc gcacgggtgg tttggagccc 660

ccgaaatccc gcttccaacg cagcagcatt ccaccacctc ccgaacacgc acgtgcgacg 720

ggacacgcgt gcgccccgcc ggccggctgg ctcgtcactg catctgcatg agcgtcccgg 780

cccgcgacac gatcgagcgg gcctcgctgc ctttaaaatt tgggacgggg cggagagccc 840

ggcggccggt tgcggtggcg agggggagct gagcccgacc gggcgccacg cgtcccaagg 900

ctggtgccga cggaagccac ggcctacgcc tccctccccg agcagatcac gcgggctgcc 960

ggcctggcgc cgcgcgcggg gcacgaagca gatcgcgcac accatgagca ggcaggccat 1020

accaccgcgc gtcgtgccgt aggccgtaaa caaacgcccg ccgtgtcgat gtaatgtaat 1080

gtaatgtcta gatgggaaag gcgtggattt gtttagtgct gctgcaagcg tgcgttgttg 1140

gcttggcttg gctccatcta tcggcagttc gtcgttcact tctgcatgcg cgccactacc 1200

gcctattgag cggagccgtt tcaggcagct ggtcgtagtc ctggactgcc tcggaaacca 1260

agcacgtgtg gacacgcatg aaggagagtg tgaaaataaa cttgtaaagt tgtcctaggt 1320

acattgttac caagccgttt cagtgcgaag agacctttac acgaccaagg ccaagccctg 1380

cgcagcaaag tgcgttgtta tcctgatgtc atttctgaac aatgtgtgta aaatttt 1437

<210> 2583
<211> 1595
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173048_G1, chr5:3980959..3982553, Cluster 15

<400> 2583
gcccatcgac tggctgatcg taacaattac ggtcacccaa aaataaaatg gtgccgaatc 60

ttttcgagtt tgaccgggcc ggacgtcacg tacccaatat acacctataa cgcactgccc 120

ctgttcccct tcccactcac cggctccacg gccacgcccc accttccacg gccacggcgg 180

cgaggacgaa cgggagtgcg gcggcgaggc tccggtttga ggtgattgct ctgtcgatct 240

ttctctctct ctctctctgg gtgcttgcct ggtagggtgc taaatcacag cggtcgtggt 300

tttgggaggg ttttgttgct tctgtgactg aggacgaata ccggcgacac gggaggtggg 360

ggcgcgacgg cggcgacttg ctgccggtcg agcacggggc tggcctcctg taggcgaacc 420

ttctagtgtt tccgtattct agccgttgag tgacgatgcc cgaggtggtc gcccaaccgg 480

cggcatgcgg ccggcggcgg cgtggcggtg ccgtgaggtc aaggtggcgg ccgcggagga 540

gacaggacgg cgcgatcggc ggtgctagtg catttagcgt tttcagggtc ggggatatgg 600

ggccgatcga cggtgagcgt ggaaggggaa tacagcagcc agacgtagca gcagccatct 660

gtggagggtg cgccgtggta gcaggtagtg gtggcagagg ccggaggcca gtcatcggct 720

gcagtgtcgg agcgtgacgt gaaatcaaga gggggcgacg aacgatttgg cttctggatg 780

tagaatcgga gatagatcga agcgcgtggc ggcgtgtttc cgtttgtgaa aatataggag 840

tgctgtatgg tcgatggcgt gcgcgacggt ggagcagcac ggcgtagtgg cgggaggagg 900

ccgtggccgc gccaaccatt cacttgggac tgtcgtgcaa gctgcccatc cctgcgctct 960

tgctgaagtc ctgtgttgca gctgctcagc tgtatgcttg tgacgagcat gtggtgctgg 1020

gggccggcgg ggcacataat ttcaagcaag cagatgagga tctacaacca ggagggtgta 1080

tccatccatg aattctagtc caacacccga gcatttaacc aaactagcac ctttgatttc 1140

atcctgtgtc tggcacgatt cgtgctctgg atcgtgttcg tcttccctaa caacagctgg 1200

gtccggtgag ctgaggtttg ggtttggggg ttttcaccag aggttgcaca ggattagagt 1260

ggtggtagaa gacaaccaac cgataggaaa ggtcggggcg cgtggaggtg ttacaccaag 1320

acgagtagca tggtcaggcc tgggccggca taaactgaga ccctgttcaa aattctaaaa 1380

tggggcctat cactataatc actcgtcaaa tacataattt tatatagagc aatttgttta 1440

caattttacg gacatagaaa agatgaatag gaaaaatata aaattaatga actttataaa 1500

agagcattaa gattctttcc gaataataga attaaattaa aaattttata ttatgttctg 1560

acaggcaaca acctattgac gttggcgact agagt 1595

<210> 2584
<211> 1725
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174826_G1, chr5:14513326..14515050, Cluster 15

<400> 2584
atattttatg attgatctaa tgatacttat ctagtgcgac aaatctaaag tatttttgt 60

atagatttga tcaaatttaa gttattttag gcggagagta tctccaagta tttttcaggc 120

tgtaaattag ctctgatata agatggtgag agaccaatca gatcagatgg ttgggctggt 180

gaaatgtgtc ccgtggatgg gtgatgatgg atcgatggcc catatatggt cccaaaaggg 240

caggtcccgc tagattgtgc aggctgcagt taagggacta cgtacgtacg aagactaggc 300

tgggcccaaa cagtctctga ataaattgaa gcccagcaga ggcagcacag cgaaagcctg 360

acatgtggca ccggcccgtt acaaaagttt gaggagatag atgattgatt gcctgcgact 420

gcctcatcat catcatggta tcgaaatgaa ctagagtttg cttcccataa gaaagatatc 480

ataaaattca gcagaatcgg tacactttca aatccatttc ctagagtttc cctttccttg 540

aagtgcaaaa acatacagag ggaaataatg ggcacgagct gtacgtgcag gcaagcgagg 600

ttcagaatct tcccatgagc aattccacaa aggaaagggc tggcaatggc atgcccttcc 660

gttgctgctt tggtccaata aaaaggtcac gagaaccttt actggtgctt gctgctaata 720

ctgctagaga gtccatgacc atgcatgatg agctgagagc tcagtgctac tgctgctgcc 780

tctatggaca gtacagcaga catggtttgg cacagagacg atggaggaag agacatgcat 840

gcgagtagtg ctgtggatgg atcgatccac aaatcccaat aaaagcgtag cagttggagt 900

gaggtcatgt aaaagtgacc aatccttgtc ctcttcgacg aaccgcacat gccagcctca 960

tcatgccatt catctgtttg tttacagtgg ttttttttta caaaaaaaaa gaggaggagg 1020

aaagagataa gaagctcatg acagttgtga gttggtatta aagattgtga tgaactgatg 1080

aacagtgata tatgccggca acttgcatcc ataacagttc cgttcgagtc ctatatatca 1140

tgcatatgag aaaataaaac gcagatatta ttctcagaca tgagttactg cagatcgtct 1200

ctctcactct cacacataag agcagcaaca aggactgtga aatttctgtg cgaaaggacc 1260

ctttattctt ttgggtggga gtgggactga gactgagact gagactgaga ctgtgcctgt 1320

gacctgtgcc ctgtgccctg ggcgagaagg gaatcttccc atgcatttct cgacgacggg 1380

catcgtcagt gctttctgtg ctgatgggtg gcattctccg gcccggtgat gtgatacagt 1440

gatatccaat ccaaggcttg ttcacatcag gcactcactt tttgctcggc gtgacgacgc 1500

ctgacggtgt ccctgtgcgg ttgcccttgc ccatcaggat caggcgtgag gtatcgatgc 1560

ctcggcctcg gttcgatggc ttcgcgcacc tgcccggctg ccgggtgggt gcgtcttccg 1620

tatacgagcc ggagctggaa ccgccggagg agctccatta attattcatt gtaccgggtc 1680

tctcagactg caaagccggc cggcaaccat tgcgatgctt gtccc 1725

<210> 2585
<211> 1586
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175546_G1, chr5:18571315..18572900, Cluster 15

<400> 2585
ttattagttg actaacaatt agttttagag gtttggaaca ggggccgaag tactatttat 60

tgggatatat agtaagttag gagtgagtgt gtaataagtt aggactgcag gccaaaacaa 120

aagttgcgta tgtttctgat tggccattcc gaagtaacac tgcatgcatg catgcatgca 180

tgcatgcata tggttaatag tactagtagc catctaatca cgttgaaaat ttgcccggcg 240

cgcgtacgat gtgttgcctg ccgtctccat tacgaaactg aaggatcttc cattatgacc 300

gtgttgagat tactggaccc cccgcccaca aagctggtca aataaacgcg acgcagctga 360

tcagttggac cacggcggaa cggattcagg ggctcacgat ttgacaagta tactccatac 420

ctaaataaac atgatggcag caagcaccga aaccgaactg cggctgtcga tggaccctgt 480

tcctgctgaa gccaggcggg acgaagcggc ttcctcgtca gcgattgaaa gagaaacgat 540

ggaccggccg gggtgggtgc tttttgctgg agaagacaga gaaatgcatt ccagatcctc 600

aaatctcgcc gaaagcgacg catgttggag ctgccccccc ggcccggccg gccctgcgca 660

gatacgctga aatgcctctt cttttctatc gtctatcctc aactcaactc aagccccctg 720

catgcagcct ctgatcaagt tgactctcag aagtcaggtt tcacaagaag aactggctag 780

cgatacctga gagaagagaa gagaagagaa gtagaccacc ccaaaagcaa agtacatgca 840

gctggtggcc gtcctcctcc gttattagac caatacctgc agtgcacttg tgacccttgt 900

ggtcctgtgg acacagctag ctagcagcag cagtcgtctc cgtccgatcc cactaggcca 960

ctaccaaaag gaaatgaatg gattgaaacc cttgtggtgg gggaaggggg aggcatcatt 1020

gtacaaatcc cattacgact agagcttaac aagctataca aattgcatgc acacgcatgc 1080

atggagcgcc atagtgggtt tagtctcaac tctcaactgt ttgttagtgt tgttcagaat 1140

tcagatcagt cagccctagt gatgctacca tcatttgtcg tgagagagac cagatttgag 1200

tgcagtacgt atacaagctc acgtgaggct gggtgcgaat ctctccggac aaattaaagg 1260

tttgcccacc atcacatatt aatggcgtga ttgctgcgcc aatctgcagg gacaggatta 1320

aactttcgtg catggctttt ctgactgtga cacgaacccg cttctttaac taactggatg 1380

agcctggctg tggacaactc aattatccag aacaacttaa ttgttgcctt gtgttcattc 1440

ttgcgtgctt gtctctctct ttttctttgt caaaattaga gcacagtaga tcactttcaa 1500

cgcaccctgc gccattgtta aaacgacgcg tgtccattga tcggtttggt ggatggttaa 1560

gttgtactcc cctctgtcct aaaata 1586

<210> 2586
<211> 1451
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181259_G1, chr5:49835565..49837015, Cluster 15

<400> 2586
gacttgagct ggcgacttcc ggtccggagc agggcgtgct cgtggtcgtg gtcccaccgg 60

tcagtgagca cgcaccgtcc gtcaaagcat gcgtggcttc gtcgtgggat ccccgaacag 120

gtcccctcgg tgctagatct tttggtgtat agagcaagtg atggcgctgg atccatggac 180

ggatggatga tggatcggtc tgtccgtgta tgcgccggcc agtggtggtg ctcgatcgac 240

gcatctccca ctctaacccg tcgtgttgtg tttgcctcga ccaaacccat cagtccccgt 300

cgcctaatac ttggccttct cggttggttg gtatctccgc cgtcgttttc cgatgccgga 360

ccaaggaaag ccacgtccgc acccccgaga cgtgccaggc cgggcgtacc ccgcgagtga 420

gatgccgggc gtaccccggc tcttgggact gcgatccggc cgctgttgcc tgcgtcggtc 480

ggcgtgggga tgggagcttc gccgttgctg ttgccgctgg cgctgggctt tccacctcac 540

gacgacacga accaccacca ctgtgtcctg cactgcatcc gcatcgcaat ggaccaacgg 600

tgatgcaaca acacatcccc ggacggtctt atattatacg agtagacgtg attggtgtgt 660

ttttcattct aagccgtgaa agtgttcatt tcttctgtcg accgacagag gaacgttctg 720

cactggagtt ttctcgcggc gttcaagtag tacgactagc gacactagcc ggtaacgcct 780

acacgttcag tcagtcagtc agttggctgg gtctgcctgc cgctgcgtgc gtgcgtacgg 840

agtctggggg catggatggt ctatccgtgc acgatccatc caccggaaga tccgatctgg 900

ggatagcata tatagcagtg gatgctgcga agctccgggc tgtcgcctgg aaagccgagg 960

cgcggcagga tccatgtccc ccgagtcgcc gtcagcggcg gcatcgcggg agtccactgg 1020

cctgccactg gatggtgctc cacgctccag ggcaagcaac tagtacgcaa aggctccaag 1080

gccaagctcg tcacgacagc cacccaattc tgtccccctc tcgctcctcc ggatccccac 1140

accgctttcc gtcgttgcaa ggactcctcc gatccgctat ctgtcgaccg acgccagatc 1200

tttcgcgaag actagttttg gaagggatcg gagttgctaa aatctaattc ttatttaatt 1260

ttaaataaaa agtaaatttt agtccattca caatcccttt cgattttctc actcttaaac 1320

tagctcgaaa gcaagaaatt gtgcagcaga aacttcacgc gaattttcga cataagcagt 1380

ggcggaacca gattcaggca agccccgggc ccaattatga ctcaagtgcg caaaaataca 1440

ttattagaaa g 1451

<210> 2587
<211> 2361
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_187078_G1, chr5:89708177..89710537, Cluster 15

<400> 2587
ctgcatgcat cacagaccgc cgtatctcat ctcatcatac ggtgatggat ccgcgacttt 60

tttttctctc ttcttcttct tcgcatccgg cgatcgagtg gcttcgcatc cacggcacgg 120

cagactgcag atgcaacccc aaccccaacc ccaagtcggc aacggcaagt ccccaacccg 180

acctaccgag aatctcctcg cgggcacggt cggccggctt gcttggattg gacaggatgc 240

gtgatatcac gggagcttgg gcgaggtggc ggctgaggtg ggtccaccgc cgcctacgcc 300

tagggaggca ctagtaggca ggtaggatta caagttgggt ggggatggcg gggcggcacg 360

ggccaatcgt agcgcgcgcg tcaacctgcc cgctccggcc gggcccaccc acgccaccag 420

ccaccacggc ccatgatcca actggatcgg cgttacgcgc gccggcacag acaccgccac 480

cggcaccgcc gtgcgcccct gcccttctg atcggttcac gcgcgacgcg caggcagcct 540

ccgtggcatc ctgagtgaga cgaccctgtc gagcacgggc agggcagcgc ccatgatgcc 600

accacgacca gtgaccgatc ataacttgga aaagatgcac agcttgggag ctgaactccg 660

tccagttgaa ggggacatgc atcgtctgct actggtactc tactacgctt caattatttg 720

ggcactgcat gcaccaagga actggcacat gctgcgcgtt gcatcgcccc cgtgcatgca 780

tgcagccatg ctgtgcaaaa ctaaaaccca tgttttcttt ctttctttct ttcttcaaag 840

taaaccctac aacgatccag gattacatat aaaaatgcct cgctccagaa gcgtcggcga 900

ccaccgcgcc agcgaattaa cggcgcgcgc gcgcgcgatc tccagcgggg atgctggcag 960

aagcggcgac caaaaccagc cgaagcagca gcggactggg ccgggtacag agcacgctgg 1020

ctggattcgg cgcaaagcgc gcggcacggc gcgggggcac tcacatgcat gccgtgccgt 1080

gccgtgccgt gccgcaccgg atcgcggccg cgctgtccct gtccgcccgc gggatatgac 1140

ggcatccagt tcgtcaccac ccccgcgcgg gaaatgaccc gcctgccctc cctcctgtgc 1200

acgtccccgt ccgcccccgc gcgactttgc cctcggcggc agggcaggtc acgcgactcg 1260

cgagcgtcgc ccccaccagc agaggcccac ggggggggcgc cccgcgcggc gagacgcgac 1320

gggccggcgt caaggtcgtc gtcgacttgc gtgcctgctc gcgctcggcc gcgcgtcaac 1380

gtacgcgggc cgcgcgaaac gccgccgccg gccgccgatc gaatcgagcg gtggagcacg 1440

cgcgcggggg ccgatggtgg agcgcggccc tgtcgagcac gggcagcgtg cgcgcgccaa 1500

agttttggac tgtggatttg tgcaacaccg aaacagtttt agactgttct agaaatttcg 1560

cgagggtgga tacttgttcc attacgacat gagagcgaaa cggtctgcaa aatactacta 1620

gctcgagagc gaccgctatc ccctcccccc tccccggtac gtataacgta tgtcgtcgtc 1680

ggcagcagtt tttatacggc gttgaaacaa tctacgcgcg gtagatatac gtcggggcaa 1740

ttaaacacga gcgatctgcg tggactcctc gagaagatga attagcccgg tgaaccagcc 1800

aagtgccaac catgggtcaa tgagagttcc gtgtgaggcc tcctttggat caaagaataa 1860

ttttactaaa tcctgtgttt ttaccgtgtt tttgaactaa tttctatata ttattgctgt 1920

gaaattccta tatgttccaa aggaggcgtg gtgagtttca tctctattaa ataggttgtt 1980

agcatattta tgatatagca gtgtatttta aaaaaaaata agataaactc ttgtcttgac 2040

atgattatta tattaactct ctaaagttaa cgccaacaaa aataatcatt gaaactggcc 2100

ataggctaat gtcatgcacc gaggccattt gcgacatttc atacgcgcat ggcacgtcgt 2160

cgcagcctcc cagatcccag ctagagccta gagctagtgc cgatgccgac tggtctccgg 2220

agtgggaagg caaagccagc taaacggacg tggacgtgca gcgatggtgt cgatcacacg 2280

ttaatgatga agataagtgg tctttaatta gtcacaagca cgtccattaa tactactttc 2340

aaactatact tacgagtata c 2361

<210> 2588
<211> 2054
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_192637_G1, chr5:131560958..131563011, Cluster 15

<400> 2588
cggctatatg gggatgggag agaatcactg gaggattaaa ttctatttta tttaattttg 60

actagcaaga aatttttgta accctcttca atccacttct aaccaccgaa caatccccta 120

acgagatcat taaaatcctc tcttacatgc catgcgataa ggaaatcaat gtgttccttg 180

tacgggactg cgagattaag cccccgcttt taactgaaaa tgcaagcatg attctatcta 240

tcgatagaga tccgaccata tcgtaccacc cggcggcaga tgtacgacga tggattttag 300

ctactaaggc atcgtttgcc ttggtcgtct aagaagcctg gtcctttgtt tcctactgta 360

gctaggagga gaataacttt tgtgtagact cagcaagccc ggacgatgtc cttgctaacc 420

caaagggaag ggaagcagac ggtgaaatag cagtgacgcg agtacacgac ggctggaaca 480

gcacccgctg tgctccgtcc ttccacctgt gactgtgagc acggacacgg acggggtccc 540

acaggcagag cacgcgcgcg ggtggcggag ggtccccagt gagtgaccag agcgacgtta 600

aattggcgcc atcgtgtcgc ctccattcac tcgttagttt cctcgccgct cccagatcgg 660

cagattttac ctgctctgct cctcgccagc cggccggccg ggccatcgca cgtcgcccgt 720

cgcgcgcgcg ggcaggcagg catgggaaag aagcacgcgg caggtggcgg ctggttcgcc 780

gccgtcagga aggtgttccg gccgtcgggc tccggcggct catccgcgac caccaccacc 840

tcctcctcct cgtccaagga caaggataag gacgccgtgc agcacgggaa acaggtaggc 900

gccccggacc cgccactccg atctccgttc tgccgacatc gatccgcact tgtcgacgag 960

ctagctctag catctgcatt tccatcggct ggcgtgcgcg tgctatgcca tgccatgcca 1020

tggtacggtg ccgcgagcgg tcgttattgt acaaattgac ggcgatgatg gcgagcaagt 1080

cgtcgacgcc gtaccgtgtg cgtaagtgac gcattattca tcgcatggtg tgtgtgtgcc 1140

aggccaccgc cgccgccgcc gccgaagagc cagaggtgct gctgctggag cacttcccgg 1200

cgtccgagac gtcggcggag gcgagcaacg agggcggcga cgcggaggcg gagctggcgg 1260

cggttgcggc gacgacgaag ggtcgtcgtc gtcgagacga cgaggtcggc gacgaggatg 1320

gggagatgga ggaggagctg gccgacgaca tggagcgcgc gagggcgctg gcggccgcgg 1380

ccgaggctgc cgtggccgcg gccgaggcgg ctgccagagt ggtgcggctt gcggcgctcc 1440

ggcgcctgtc gcgcgaggag cgcgccgccg tgcgcatcca ggcctactac cgcggatacc 1500

tggtacgtac gcgtgctgtg ccccccaagc tactattgcc taaacagaac agcttgcgtt 1560

acatttttac tatagtacgt ataatatatt gttgcctaaa ttaaaccatg agaactacta 1620

gatcgctgat ggatcataga tagaatggaa aaaagcatac attcaggacg atggggagag 1680

agacattggt gagtggtgag tgagcagtag taagtaggtg gggagcccct gtttaatctt 1740

tgacacaaca acagcgctaa ttaagatggg gcgttaaaat caggcggtga ctttttaagg 1800

tggccggtcc aaggaacgga tggatgattc aagcagatct cttgcttaca gctcaagcat 1860

ggaggggaga tctggcgaga ggaggatgac gaggggtgga tgacttggcg ttgaatcatg 1920

catcaattct ccaccgcgct taccagttgc agcagtagct agtgcctgcg tgcatgccgg 1980

acctgacctg ttggcgtggc aacgggcaat ggcgtccacc taccggacca gccctgccga 2040

gctcagttaa agtg 2054

<210> 2589
<211> 1950
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199111_G1, chr5:168852200..168854149, Cluster 15

<400> 2589
acgtactacg gtgctgccaa tgcatatgca ctgcactgca ctgcattgca gccatgcagg 60

gagtgaagac gatcgatcca tcgaaaaaag ttttccgcgg gacaaatcga tgcttcgcat 120

tgaccgcgcc atcttgcatt gagaaggcgc gcgggcagca gggtactact tatatatggc 180

agcagctagc ggcagcttct tcttcttctc cgatccttcc ttttgcaggc cggctggctg 240

gctggaccat tagactttct gcccatgcac ttcattgcac cacccctgc tgcgcgcgtt 300

ccatcatgcc tctcgagaaa caattgcgtt tgcatgcagc tcattagtgt tctgttctgt 360

tctgctctgc tctgcatgcg tgccctaata tttgcaggcc cggccggccg gcgctgcctt 420

ctgaaaaggg ggattatata ttattccttt tgccggaccg gagctcctta cacagtaata 480

cgtagccagc catacagtta cagtgcacga aaaatattag accaccaagc acttgccttg 540

tgcactgtag ttagtctgtt gcgtcatagc cgcatcgacc atagctatac atgtatcgct 600

tctgcttttc tgccgctcgc tcacccagtc accctcaatg caaaaaaaaa aaagccttcc 660

ggtttccgct gctagctgct cgcgatcgag tgccctcccc tctgccgtac gtgtgtgcac 720

gccagctatc ccagcagtat attctctcat cagcagcctc gctcgatctc tctcactagc 780

cattgatgcc agctagcgtc accgtcaccg agaaagctcc gctccggccg gatcgacgac 840

gactccggcc ggtagtacgt gatggctacc acctgctgct gcactgtcac tgcagccaag 900

cgatagatgg cgcgcgcgca tcatcggccg gccgaccggc gccggccggg gttcggatct 960

gcaaaaaggc agggatgggc cgcgcgcgat ggcgaggaag caaagcaatc aatcactgcg 1020

cactggagcg ctgctactaa cagcgtacaa tgatggccta gcttttgatc cgtaatcatg 1080

tttgcgctcc cggcctttgg agacggatcg cgttcatttg cagctagcta gctagtccgt 1140

ctactgtagc actatgtcca cggctctagt ggtctatcat gctcatgctc atgcatgcag 1200

cggctagtag ctcttgcctg cagacctgca gtagtaatag gagcctacag accagacgcg 1260

ccatgcatga tgcacggcgt cggcggcctg tctgccggtc gtcgcagcca cacgctagtg 1320

cgtttgtttg gccgggggg gtcaacattg cagcgcgttc tgttctctga cagggccttt 1380

tctagctagc taggaggata gaagaaaaaa aacaggggaa gggcgactgt caggtagtgg 1440

cgaaatatgg tcatggagag gctggtcagg aattcagacc aagaggccag aggtttatgc 1500

ctcttcatta ctacgtacgt acgtacgtcg tactagtagc aactaaaaca accatactgt 1560

cagagaaatt aacacacata atggtttcca gcttttcatt gcctaccaaa atagtaataa 1620

atacaagtgc aaaaaaaaaa gttctgagta gaagttcgct cggattttga cggcgttgtt 1680

ggtcatcgtt cgttactgat gtagtatgaa gagaggatgc taaagcagcc atgactgtca 1740

gaaaaaagat gagaagaggg atcatgatca tcaggattca ggggtggcat gaaagaagca 1800

ggggcacacc acaaggcagc acagggatat gcgatgacga gcgatgagcc atcattacgg 1860

atcttgggcc ggctaaggcc catatatcat catcatcgtc atcatttgga gtcctctcta 1920

ttccgctata cctcctcctt tttcttttat 1950

<210> 2590
<211> 2084

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203009_G1, chr5:190933033..190935116, Cluster 15

<220>
<221> modified_base
<222> (1641)..(1641)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1641)..(1740)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1642)..(1642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1643)..(1643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1644)..(1644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1645)..(1645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1646)..(1646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1647)..(1647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1648)..(1648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1649)..(1649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1650)..(1650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1651)..(1651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1652)..(1652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1653)..(1653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1654)..(1654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1655)..(1655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1656)..(1656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1657)..(1657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1658)..(1658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1659)..(1659)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1660)..(1660)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1661)..(1661)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1662)..(1662)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1663)..(1663)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1664)..(1664)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1665)..(1665)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1666)..(1666)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1667)..(1667)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1668)..(1668)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1669)..(1669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1670)..(1670)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1671)..(1671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1672)..(1672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1673)..(1673)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1674)..(1674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1675)..(1675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1676)..(1676)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1677)..(1677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1678)..(1678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1679)..(1679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1680)..(1680)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1681)..(1681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1682)..(1682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1683)..(1683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1684)..(1684)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1685)..(1685)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1686)..(1686)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1687)..(1687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1688)..(1688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1689)..(1689)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1690)..(1690)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1691)..(1691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1692)..(1692)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1693)..(1693)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1694)..(1694)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1695)..(1695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1696)..(1696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1697)..(1697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1698)..(1698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1699)..(1699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1700)..(1700)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1701)..(1701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1702)..(1702)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1703)..(1703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1704)..(1704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1705)..(1705)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1706)..(1706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1707)..(1707)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1708)..(1708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1709)..(1709)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1710)..(1710)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1711)..(1711)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1712)..(1712)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1713)..(1713)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1714)..(1714)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1715)..(1715)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1716)..(1716)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1717)..(1717)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1718)..(1718)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1719)..(1719)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1720)..(1720)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1721)..(1721)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1722)..(1722)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1723)..(1723)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1724)..(1724)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1725)..(1725)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1726)..(1726)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1727)..(1727)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1728)..(1728)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1729)..(1729)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1730)..(1730)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1731)..(1731)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1732)..(1732)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1733)..(1733)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1734)..(1734)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1735)..(1735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1736)..(1736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1737)..(1737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1738)..(1738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1739)..(1739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1740)..(1740)
<223> a, c, g, or t

<400> 2590
agcataacat cgctgtacca tctgcacagg tcgggccggc cagcgacatc tgttgcctcg 60

ccgtgcaaga acgtacagat cgagaggcgg cttttgattc agccgttcgg tcagtcagta 120

gtaggcgaga aaagtaacta ttgcccggac ggactccagt tttccggccg ccaagttcca 180

taacgctacg gaaaaggagc cggcggccgg agaaagcttt ccatgcacca ccctctcctc 240

tttctcttgt gtctttgcag ttgcagtaca gaaacgcgtc gtcgtactcg ttcgtctggt 300

ctcaccgcac ctcctgcgcg cacgtacgtc cgtcgtagta aacctaaccc agccagctga 360

gctgtgctgt gctgtgcggt gaataatggc cacgcacgca acgcaacagt agcggtggtt 420

gagaggatcg gaggaagacg aagactaggg gggccgggaa ggatcgaaaa ggcggtgacg 480

gatggatggt cgctttgctt tgcttccctt gcaatgcacc ccacccaccc aaccttgtca 540

tcactctcgc cacgctactg tctcacgtca ctgggataaa tcaaatgcta gtagtgtttt 600

tcgaccgacc gaccgatcgg ccggccggct cgctcgtcgt gcctcgtttt ttttttcttt 660

tccttttcct ttgagcatgc aatgcaatgg ttcgtgcctg gtggaggagg tgcagtgcag 720

ctaggtagcc agagccagag ccaggccact aatgcgcggc tcataataat cattgtactg 780

cccggactcg agaccgtgat attgatcgag ggagggaggg gtcgtcgtcc aggctgtggt 840

tggtgcagta ggcctcgtgg tcatgggcca ggatctgtat gatccagttg gtttgcgagt 900

cgctgtcagc tgcatatatt tatatatata atttccagta ctgatcgagc tgagctgcag 960

cagcggccag cgatcgagta gtgactgacc gcccaaggga gaagggacgg cagctgcatg 1020

cctgcatgcg cctggttgtg gttggtaggg cgatcggatc tctgtgaaaa ctatgtgcgt 1080

gtgtggcggt gtgtgggcgt accaatagcc cattatctgc ggatgacaca cctctgcctg 1140

cctctgcctg tatggtgttg tggagcttca gatgtgcatc agtgcatggc cgggcgcctc 1200

tctcatctgc agtagtacaa tgctacgcgc ctacaacgtt tggtggacgt ctggtctctg 1260

ctcgatctct caaagctaca taacctctac ctaccgcatt gtctgtagcc aattagccat 1320

acttgccttt tctgcgcgaa ctgaacctct ggtgcctaca gaactggaca ccttcacacc 1380

tatagctttt agccaagacc acctgtttgt tctgtttacg atgagctcca atgtactaca 1440

acgctagcta gtactatact caagttctga aagggtctta tcgaacgtac gatgagattt 1500

gcacgtacag attcgagctg ctggcggtgg cgccaagtgg ctggacttgc ttcagacgtg 1560

cacaagatcg ctgtcatcct tgaccagtac gtcggccatc agagactact gcgggggtg 1620

ggggggggg ggggggggg nnnnnnnnnn nnnnnnnnn nnnnnnnnn nnnnnnnnn 1680

nnnnnnnnn nnnnnnnnn nnnnnnnnn nnnnnnnnn nnnnnnnnn nnnnnnnnn 1740

ccccccccc actcacacca ttaccggctc atccccctcc ccgaaatcgt agcgttagca 1800

cgggcatgta gacctttatg gccctttgat caagtttcat gggggaatat tatcttttgt 1860

ttcagttggt cgagcacatc accggccacc gagcatcctc tccgcgtggt tatctagcct 1920

tgtctcgcct tctccatttc taaggcctca ctctatttga tccatcacta tctttgtttg 1980

tcatggcgaa ctctctgcct actatgtttt cccctcacct tcttcttcat ctatggtgac 2040

cccctattgt caaatctgcc accatctccc atcatcgtct aacc 2084

<210> 2591
<211> 2702
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203081_G1, chr5:191385052..191387753, Cluster 15

<400> 2591
actaatattt tgttgaacaa tttatatacc gttgcaacac acaggtattg taatatctat 60

gttttatact atttttact ctcgtggcaa cgcacgggca cagacctagt aaactaaata 120

tgtacaatat acgctcggcg cgccacgcca aacccgcgag cgcggaccgc ccaccccgac 180

gcgacccgag caagcggcgc cgcgcccaac accgtcactg gatttgcgct ttggaccccg 240

tcctccgggc gaggtcagcc cgttttcgtc gcggccgagc ggctgagggc atgcaattcc 300

tctgcccacg ttggacgctt gctgaatttt taggcgatcc gggtgccggc cggccgagcg 360

gcgtcgggac acgtacgcac gcacgcacgg gacgtccagg tccgcttgat gtcaggggg 420

atcatggatg cacgcgtgca cccacgcggt tttgcgttac ccactccctt atcctcttct 480

tcttcttttt ttttatctct gagaatatcc tcattgttgt tagctaggct gtataccatg 540

gcacagcact gtgctgtcct gcattgtgcg gacggattag aacagctagc tacccctttt 600

aggtctggga tacatcacgg ttgatcaggc ctctcgacgc gtttgcttag caaagcgctg 660

cactagctta gtacgtgtac tgttttctct catccgtatt ttcaatcgtc gtactagtaa 720

gaaaccgaac tgtgtcacct tgctttggtc ttctagtagc tggattagtt taacggggtc 780

tagtcatcac tatacgagat cttgctatca cagcccggta aaaatggtta cattcactag 840

gcagcggtat gaatggacag gcagggacag acagggatgg tgaccggaat gtgcagggta 900

aatgaagtag accctgcatg cgcacacact ctcgccaatc accagcgtcg tggcctgcta 960

ggagaggaag gcagcatcca catcgcccct gtcacattgc ctcctgctcc tgggttgtaa 1020

cgagcggatc agctagaata atacccgacg atcgccccaa tcactgctgc tcagctaaga 1080

ctatactctt acccccgtgt gtttcatccg gaaaacaccg tgcgtgtgcc tgtcgagcta 1140

gctgatcgcg attagaaaac ggctgcattg ctttgaacgc ataataaata aatctatcgc 1200

gtatcttcgg agctcaaacc gatgcaggaa tctgagtccc tgacgactcc tccgagctct 1260

caatacccaa ggctacacct acacgtatct tctagacgga agcagcaaaa ccaatgcagg 1320

gtgactttgc ttacccaaac acctgcacac gccgttggta acgcaaggca ccattccggc 1380

acttcaagat cagatcagat cagatcagat cgttcaggtc ttggtctgtg tcagagtgat 1440

agtggtaata cacaatgagt gatctctctg actgctagct gaccgtttca aaggggggggc 1500

ggtccgagca atcaggcctc ccccaaaaaa gcgttttttt ggactcaaat tggcatcggc 1560

ctgcggttga tttgatccgt tcctgcggtt gatttgtcgt gcagcgcgca gggagcgcgg 1620

aacgaccccg cttcgagcag cattaagcgc ggctgggacg gcgcgccagt ccaagagcat 1680

gggcagcaac cgtctcatcg cgtgcgtcca agccccgtga tccggtcgcg accgtctttt 1740

acacgcctgc agattgttgc cgatgggaca cacgcggtat ataaagatct agttcctctc 1800

atttttccc acgcaacaaa aattgccttc tcgtggaact gcaggttcgg atctggacgt 1860

tctccagcct gattcgtcca cggataggat tgaaaggcct cgtgctagaa caaactgtat 1920

agcaacttgt ttgaaacagc aagcgcactg tcgtttgact ggttcaggcg tcctctaggg 1980

agcgagacgc gagaatgcag ctggaatcga catccagttt tgtatcatat gtgagtgtgt 2040

gtgtgttcgt atgccactac tagccacttt aaattacgag cagaacccac tgctggcgtt 2100

acagcctcgt ctttatgcgt gcgtctcgtg gaccacgaga tccttctgtt tgacgaagaa 2160

ttactcaaca ttccttcgca tctatcgcga gttcgcaaca ggccaacagt aaactgactg 2220

agaacagcaa ctatgcgcgt ccatccaatc agagggattc agtactcgcg ggaaaacgtc 2280

actgctcgga aggaaaaagg aaccgtggtc gcgctgccgc tcgctatatc ccatccgaca 2340

aatttttgca gccagcacag cagatgccag gagcttaccg gagacctgtt cacagcggat 2400

ggcctgaaat gaaaatcgca ggccggcaga gccatgcatc agcaaaagag acaacaggtt 2460

gcactaacag cgacattaca gaatttgttt agatcctgct tttgcagctt atcgaagttc 2520

gtcatattaa taaacaaaca caataaattg aaactaaaat atgattaaaa taagtaagta 2580

acacacatgt gaaataagtt tttaattaga aatattgatt aggagatata tttaaacaga 2640

gtgtatataa aacaatatac agtttatttg cagctgacaa ctcacaacgg tttgaaccaa 2700

at 2702

<210> 2592
<211> 1900
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203147_G1, chr5:191856892..191858791, Cluster 15

<400> 2592
actaaatagc acgtaccaac gtatgctaga gagcataaac tacattacat tcgagaaacg 60

attgggacgt ccctgttctc tatggaaaga gagagagaga gagaggagct aaccaccact 120

ctacattgtt ttgtctgtct ttagttcctt ccttttgtag gccaaaagct cgtggccgaa 180

tatgacgcac gcagcatcat gcatcattgt ttccgcaaaa ccatatccta atggccattg 240

ccaaaaggga gagattgtgt gctcgatcct aactgcccat gcaggagtca ataatgaaga 300

gatccagatt agtagcaaaa acagcttcca ctgatttttc ttttgtttat cggtgagata 360

aggtgtggtg gagttcgggc ggcgagtcca tgtggagtgc caactccgat ccggcgaacg 420

gacggcgacc gtacgtgcat acaggccaga ggtacgtgca tacggcggtt gtggtctcgc 480

tcgcagctcg cggtcgacga acgaaacaaa gcactattca ggttccatag ggccgggttt 540

accggataat ggaatttcag gaatgtatag ccacgctcga tttgggtgct agcatttgtc 600

tcacgagcca gaatttgggt gctagcattt ttttttttt ttacaaaata tatagtggaa 660

tgaaagaccg atctcgaatg tcaattctag cacgatcggc taggatcgac agcgcaggga 720

aaccgatcag atagatctaa tataaggagg gcagacgact gcatatagct tattatacta 780

ctatattgga gagacaacaa tgggccggcc gggactctga tcttgtgctg cattaaggta 840

tgggttttaa tttcgcagca aaagaagaag aaaaggagag gagtgtgtat agctggcact 900

ggcaccagtg gccgggggct catgtagtca tgtcacagtt acgcaatagc gcgcccagga 960

cgatcgtgtg tgtggtggct ttgctctgat taattaacaa agcttttta tatatgctat 1020

gcatgtgcag ggctcgctgt ggcattaact cacggtacag tttgacactg ttgtttagtg 1080

atgatgatgc acatatactc atattcgtat cttccttgtc taatatatat gctgtttgga 1140

gactagcata tgcatatgct tactttccgt tgtcatgaga ctttaaatac atttatttgt 1200

ttgtttggac gttgtaacaa tactttagtt tagttcctac tcccatttgc attggcttta 1260

atcatgcgtg ttcatgggaa cggctgcggc cggggagcta gctgtttttt agtgcctcat 1320

gctagcagga atcgtcagcc agcagcaagt gccgggtagc tttcttttct gggggtctaa 1380

ttggtgctaa aagcgaataa taattgatgc gaaaagcaaa tcctgtctgt aaccacagga 1440

cgcaacgtgg aaactaaaat agttgatcag ggattcaatc cgagatatcg atgatggtgc 1500

ggatcgatcg tctcgatcag tagtagtctc aggtacaaac caccagaggg ttggcgcact 1560

gtgcccctaa actaggcgtc tccgatcttg agtcgcatgc atgcaagata ttattagtgc 1620

cgcatagaat actgccgagt ggtctaatca tgcacagtgc atatagttgg ttgatattat 1680

aaaaaaaata ccgtacaatt ctctcataat taatttgcag aaaaaaaaat accgtacaat 1740

tctctcaacg tggacatttg ttaattcaga gagtgctcga tcggcgacaa aaatccccgc 1800

gcattttgta gagaaatatt ggtgtagatc gcttgcgccg gtgggcgggg gctattcaat 1860

ataatataat aataatggca aattgtccct acccgccaag 1900

<210> 2593
<211> 2561
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203521_G1, chr5:193929542..193932102, Cluster 15

<400> 2593
ggcggaatag ttgacgcacc agcacagttg aatagttgac ggcactagca tatatcattt 60

gagctggacc aggtgtgtgt cctcctggct ggcagctaca tgctgctttg ttttggtctg 120

aaagaaccaa agaatccggc ctgccgaagg ctctggtctg gtcagccgcc aaccgctcca 180

ccatcatgca tggtactacg cagatgaatc aggcatggct gcgcggcgga gtctcatgtg 240

cttatccttg cttctggaca tggcgcagga ccacacctag tagtgcacag tgaaatggcc 300

ccggagttgg ccacacatga ctgagcaaaa agagctacta cttaattacc tggatgttca 360

gtgaacaata atgttttcac actgacgaat gcttttgttt tccccccttg cagcagcaag 420

gacacacagg cacacagcac acacatatgg ctccatgtct gttttgtttc agcctttgag 480

gcactgttag tgagtggtgg agtgagtgat tttgcctgtg tccttgtgca ttggctgccg 540

tgcacaaatc ttgaccgtaa aaagctactg cgtgatccaa ccactaaccc ccgcgccagt 600

tagtttttaa cggtttcaag catccctacc ccagtggcag agtcagtgta ccgcactccc 660

tttttttcc aagctgtttg ttcagtccag tgctgcaaaa agtaaccgtg cgagtgcttg 720

cgtcgcgcat gcgtacgtgc ttccttattt aattgagggt gtttggttga agaatcaatt 780

cattctagat gacatgagat gatgtatcat gagtctatta atgtggatat tatcactaat 840

tgttaaccta tgagagataa aatggtgatg gataaaatca ttttattccc aaaaccaaac 900

aagacaatga ggatgaataa gaaaatgatg tatgggctac tttatttttc aaaccaaacc 960

tgctttaagt gtggtcattg taaaaaaaaa acaccacatg ggcagcgagt gagctcaaat 1020

gcgctttgaa atcgacggtg cagagaggag tttcctgcct gggagtggga ccgacagacc 1080

ggccaccccc accccacaca cacccgtatc cactgctact actacgcagc aggcagcgat 1140

ctttggcaga cctttgcggt ctgaaaagat aaaaagaaaa aaaaagaaac gccaaggaaa 1200

aaggaaaaga agaggggaga agcaagaaca gcagcagacg atagagaggc gaaacgaaaa 1260

gcagtaaagc ggggtgaaag aaagaaatcc atggcgaacg aaagctgggc tacaaagatt 1320

caagggggag atgcacgcaa aagcggcggg gcaaagcgag cgaaagggat atgcgaatca 1380

gttcgtggcc tgcacgaggc ggagagccgg ttgttgtggt tgtggctggc tttcactcga 1440

ggcaggattt gaccgaccaa ccgcaactgc actacttcac tcatccattc actgcgatcg 1500

agcttggggg aggacgacgt gaaaaagaaa aggtgcatct ttaccggtgt gtgattgtgt 1560

gaaacgcagt aaagaaatgg agatggcatg gccgcgtatg gactccttta tatccggccg 1620

ggggcggtga ctgatcagtg atcaggatgt ggcccgccaa atctccaatg caagattatt 1680

ttaccctact gaagagcaga tggatactgt actccagttc ggtctaggaa tatcctacga 1740

catggtagtt tactaggcca catgtccaca ttgagtacta agcaatggcc tggggaagtg 1800

aaggcacagg gtaaagaatt ggctagccct tgctcagagt ttcgcgcctc ggttagctga 1860

cgagttccaa ctgtacgtgt gctggatgat ccgtggagta taatacgtac tactcgatgc 1920

tccaataaat aactgttgcc tcctactgag cgcagagagc gatgagcgag agtttctcta 1980

gagacagtac tgctcaaact ggagctagat tcatgcatac gtacccatat aagaagggcc 2040

agccgccgcg gatttgggaa gagctgcgtc ctttctctct gacaaaaacc gattctataa 2100

tatacacata ctacctgcct tgtagatagg aatatttatt aggagttgag gatgaataga 2160

agcttcgggc actgaactga caggtgcaga aaaattattg cattccctat atatgctctt 2220

aattggtgtc agttcagtct tcagtgtagt cgcatgccga gagcgctggg ggtttcgctt 2280

tcatgttcag gtcttcgttg ttaagaaaca gatctatcta ccttagatgc ttctctcatt 2340

ctcacaggag tagtgatgta ctactgtact agtggtatgg ctgtgcagct gcagcgagct 2400

tttatttggg ggttgcagtt gctgctgctg ctgctcattc gaggactagt tagttattag 2460

gcactaataa tagctagtag ctagggttaa atcttccagc tgctctgcaa ctaacggaaa 2520

gtgaaagagc tccatcagta ctcgagtgat cgatctacta t 2561

<210> 2594
<211> 1935
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203550_G1, chr5:194121504..194123438, Cluster 15

<400> 2594
cttggatatt gggtccaagg cacaaggata tcttgcaaga gttggcaaga gctgagcacc 60

gagcagagca gtggcgtgca tccctccctg ggatgacccc acgcacggca cgagcgacca 120

tatatatata tagaacgagt aggccggtag cccatacggt gttacgcatg catgcatcat 180

gcatggcttc cacttgaagc tccctgagaa aggggaacta gtgattgtta ttcccttccg 240

gattcgtcgt ccggtatatg aaccaagaca agaaaacgcg agagcagagc ggagcagaca 300

catgatcgcg atgccgtcat cctcgggtgg tcggacacgg aatgacaggg cggcaggctt 360

gtagtattgt gaggcaggtc acacacttcc agaaatgcat gtatatatat gattgcttgt 420

ataccccatt ttctctcgcc ctttcactcc ccagatacta cttgctagtt tggccatgca 480

cacacgcatc acctcgtact atgtatacag gaggtcgagt actagctcac tgctgcaggc 540

ggaccggaca cacacgcttt gcttgacacg tggatggatc agcctaataa tatacaatta 600

gccctcgcta tttctagcta catacagctg tttgcaaggt taaagctgtg gcctatatac 660

aattagccac tatttaccgc tatatatagt gcaatataat acgctgttag cggtttgaaa 720

agagcgatcg cgcccgctat ttagaactgc ggtgtaattg ggtaaaccct agctagctag 780

tgtgacatgc aagcacgcac ggcacagtac ttcacggaga taagtctcac aattttccat 840

cagaaggaag cgaccagaga atctcagcgt ggactgggag agggaccagc tagtcgcacg 900

gcagccggcc ccggcgagat attcccatgc gaccgctcgc cgcccggtag agtccaaagc 960

cagccggcat gatgctgcca tatacaacct ggcgagcgaa ctcacacgcg cgaacacagc 1020

gcgctcgctc gcgtcgcgtc gcagtgaaac tcacgcgtgc ctgcttggtc gggattgcta 1080

gaatgttcag gtcaggctgt gcctgtgacg ccatacatat gcaagcacgc agcagagaga 1140

ggctagggct gcatgcatgt cacctttgca cgctgttcgc tcacctaata ctaatgtttt 1200

ttttttcagc tatatatgta ttatatatag gtataggttg tcgggttgct taggctatag 1260

cggcgccaag ttgtgtttga tctcatcagg agcgtttgtt tatagttcgg atgccgaaag 1320

gccacggctt gataaggttt ccttggcgta cggcctcact tggactggcc atctgactcg 1380

aaaatactcc tattttccgg ttgatagctg ggacgacgta cgtctctctc gtgcgcgcta 1440

gtaacggtac gttactatga tttcatttat gcttcagtat agatatgact atgagtgtgt 1500

cgattgtgcg accctacagg ctacagggcc caagaatttc tagcaatccg tatatattac 1560

agataaaaaa atattagctt ggatacaata ttgactaaaa tgtggttcag gatcgtaagt 1620

tcgatctgtt ctttaatttc cgttgttaat caagtaattt ctccgcttat aagaaaagat 1680

ttaaacggta ttaaggttat caaaaaaaaa tagcttaaat gcattcgttg tgatagcaat 1740

tgttagtaaa atgccagaga agattattga gtatggaata tcatcgaaaa aaaatacttt 1800

gaagaacact aaaataataa tgcatttcaa atgaagatta tataacgaca caatgtttag 1860

tcattattat attacgtgca catttttttg ctacattttg caaaaggtct tcaaaaatgt 1920

cgataaaatc ctgag 1935

<210> 2595
<211> 1571
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205496_G1, chr5:205291262..205292832, Cluster 15

<400> 2595
cttatgttta agttaaaggt gtttgtttag gattataatc cgtcgaaagc aaacgtccgc 60

acgtttttg agttgcgtgt agaagtcgat ccgtccctca ctcagttgga cagatgcggg 120

cgtgcaccgg cgcatacgcc atcagcggca accggcaagc gagcgagcgc ttgccgaggg 180

gcgccgcccc gtgtagtgca cagtcacagg acagcaggcg ggcacgcggg tgggcggagg 240

gattccgacg ctggagtttg gtggggcggc agcaagtcaa gatcgcatca cggcgggggc 300

ggtctgtgga tggatctcac cgaggattgc tgtggtaccg cgcgcgggtc acatgcgccg 360

gatagataga accagccccg agtacacata cgactaagat gggccgggtt cagtgggcac 420

ggcgagggcc acgggctgcg tacttgaatg gcccaccggt cccagatcgt ccatggaagt 480

ttgaggaccc tcacctactc gcacaacaaa cggttcaacg tgagcagtca cggtgtgaca 540

aagaacggta ccgataggtt ctctcatctc tccgtttgtg cacaggaatt aagaacacca 600

ccggagcacc gcggtgtcac agttcgccac ttttgaaccg gccatcgccc accggaactg 660

agctgctact actgacggcc accagataca gagacgccac ttttgctcac gtgcccgtgg 720

cctagctttt ccattcttgg gcagcgggga tctggcaggt acggttgcct gatctgctcg 780

atagcggggt cctggctggc tctggactga agaccgcact cgagtcatga gcgcacgccg 840

atgcactgtg ctgtgcacag cctgagcctg tgcgccgagc cgatgcaggc ggcacgggcc 900

cgccgagcat ccaatgatcg tgggtgtcgt gtaccgccgc ggctgcatcg tgcagcatca 960

ttcccgcgtc gaacgaaacg tggtaccacg cacgaatcct tccatgagca aaagcatgca 1020

gatgcagcca tgcatcgtta cgctacccat atactattgc tagctgcatg gcactcgaaa 1080

tttgacctac cgtgtcccgt ctcgtacgtg ccgtgccgtc cggagcacac aatctccatt 1140

tcgtggctga actgaacaga cgacagcact agagatggaa aacgtacata tatatatatc 1200

acagactcac agcgcacacc aggacgacga tcacacgctt ctgttgcaca ctagctatag 1260

cctctcccgt tcctttcgaa gtcatcgatc gacaacaacg tgtcaacgtg tgtcctttcc 1320

atccgcgtcg gcgaggcgag ttccagtggg tgttctctca agagtacagt ctcgactctc 1380

gcgtgtgcca catcgcgctc cacgtatagc tgcagcgcaa aggaaggcca aaaggatgcc 1440

gcgcgcggtt gccaccaaaa aaacggagag cgagagctgg tgcttcattt ccttttccca 1500

ggagaagatg acgatccaga gcacacgagg ttgtggctcg acaagacgtg cgaggggaa 1560

ctattgtgtt c 1571

<210> 2596
<211> 1747
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206719_G1, chr5:211554690..211556436, Cluster 15

<400> 2596
ctacaatcta ctacctctac actagtagct agctaggacc acctcgatca gcggctcgat 60

cggtcctgaa tcctgatcga gctcaccagc ctgtgtagcc ggggcaggga ctcctgttcg 120

acttgaagcg agtagtccat cgatctcctc aacagctcag ccgctcagct tgaacgcagc 180

aggccccgcc atgtttcaga gttggagata tttatgggta tgtgtggatt ggcccggaag 240

agccagtttg tggggaggta caaggttgct ttcgtccagt gttatgtttg tgcctgccca 300

tatatatgca tggatgggaa tatgtataat tgcgtgccca actatttccg ggggcatcag 360

ggcgtattca ggtatgatgc ttgcttgccc agaattagat ggaaataatg gacatgtagt 420

ccagaactga cgaaacatgg ataccggccg gcgggaactg gtgtctagct ggtcacgtcg 480

tcgttgagat ggacaaacgg atctagctag aaacaaccct gctcatcgtg tcttcttttg 540

cttaaattaa tatccttgca tgcatattca tcatatatat gttttgcact atctaacggg 600

cggcacgctc tgccgtgccc gtggcggacg tgacatgtcg gcatcatcgg cgcgcgaact 660

ggcgccaccg ctgcaccaac caaccgcatc cgtacgtcgt ctcggcgccg gcagccgcga 720

gagtacagcg ctctgccgcg ccgggcgctg gcgcggctcc agcctgctgg tggtactccg 780

gccgtacgta cgaacgcgcg ccgtggtggg cgccggccgg ccggccggcc agcgcgagct 840

cgtagcacgt acgtacgcgt agcaggcagc ggcagtccac ggatcggaga tgtggagctg 900

atgggggcgg gctgtaactg taaataataa tcccgtcgat ctaccacgta ctgcggcaga 960

tgcacatgcg gaggcctcgc tcggctcgtc gatcggctca gctagctagc cagcgagcca 1020

agtgcccaag tcctgacctt gctagcatgc atgcatcatg cattgatggc tgatcgtgac 1080

gactgacgac gagggacatg tatgttccaa ggattaccta ctgcacggta ctactggaat 1140

actacacaca cagacacaat gcacatcctt ggcttggctt cagcgcaatt ctcaattcct 1200

cggccgggcc ggggtccact gatccacaag ccgttgtgtg cggcccgtgc atgctgctgt 1260

ccagtccagg cagcgccagc cggtatgtac tggggccatg atgagtccat gtccatgacg 1320

cgccctcccc ctcccgccct gcgtgtcagc atgtctgcct ctccttttta atgctgacag 1380

acgacgcaca gaaagaaacg tgatggtcct caagtacgca aagcatagca ctgcacatct 1440

gacatctgca ctgcacatct gcgcgtagca tgcaatgcat gacacagcac acaaaacatg 1500

gagcgaacgg ccaagtacat gggcccctcc cggttcctgg ctagctggcc cctttgtttc 1560

tacccgtacg gaatgtagga gtacattctt atgctgcagt gccgtgtatt catagtttca 1620

taccatgtac tcccccgccg atttatagtt ccaatcttat tattcgaaaa aatcgtaact 1680

attatatttt ttatctaata ttatttaaca tattgttcag caccgtttgt gacattggac 1740

acggcaa 1747

<210> 2597
<211> 1602

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206771_G1, chr5:211730852..211732453, Cluster 15

<400> 2597
ggtttaaggc ctaggggtca agggtagggc gggcaggtaa aggcacgcac gcattgagac 60

ttgcagggca ctctttcgga ccttgcagta ataatgacaa gtcctttata tatctgctgc 120

tttgaccatg tctatgccga cgaaatctac atcgaggctg gctcagtact actgaacttt 180

gacccttttt tgttttcaaa tactagtaca gctggtaagg aagaaagcac cgtgagcgtg 240

tgtggttgcc gttggccagg gctcagcaca gagacaggct accttagtac ctttgttctt 300

ggaagcacac gttcttttcc cccagatgaa acttggaagc gcatgttctg ctgccagctg 360

ccaccgtgtg atatgattca tcaggcatgc gcgagtgcat catgcatgct gccaaaaagg 420

gccactacta gtagttgccc atccgaagaa aaccatcttc ctgccgtcaa tgccaaaaaa 480

aaaaaagacc agccagccgg ccggccggca tgaaccagat ccaccatgag tacctgtcgt 540

ccgaaccctg cacttccctc tcactgtgac ctaggtttcc cttcacccgg gcgctgcttg 600

ctgcgtctgc gtctacgaaa tggaaacgag caacggaagg aagtgggaaa aaagccgcat 660

cacaatccta ggcaggccac gcagaagcac acatcactcg ctggtaactc cacccactca 720

ctcacagtca cagacagagc acatgttttg tcccctccca tcacgcagcg acgcgagcag 780

ggaaggagtc tctgtgcgcg tgtcagggga gagtgaaggc tggctggatg gaggcccccc 840

ttgcctgttg cctgcttgcc tgcctcactg gcgggtcacg gcgtttcctc tggttctctc 900

ccttccatga tgatgagtca aagaagcggc cagtcagatc agatcagaac cagatggggc 960

gacgcaggcc tttccatctg gttgtttcgc agaccagatg catggcatac gttcagtgat 1020

gactgactgc acgcctgcgc ctcccatgtc gccgttcgta cgtgtgctcc cctctccagc 1080

tctcacctcc agccttcagc ctcccagccg gccagcagca gcagcgatcg cctcgctgac 1140

gcttgcagca ggccagcaga gcagccaccc ctctcgcctc cctgcctgcg tgtgcgacag 1200

gcacggagca gacatcagga ccggtcacta gctgccgctg ccgctgccgc ctccgcctga 1260

gcgcgcgcgc atgcatgcat acatacgtat gcatggcatg cactggcact gcactctgca 1320

cgcttccggg ctccggccgg tctggtcagg tcagccgtcc gccagtgggc atgccgcttg 1380

tcatgcacgg atgcttggac ggacgctggc atgcagcgcg tcagagacgc agacgctccc 1440

attccccgtc cgcttttgct gccgcggcca gtactgcggc gccagagcct gtggccagtt 1500

gtaaatggag atgccacggt tggtggtgcg ggtctagtgg ggagagtttt tgaacccact 1560

agagctagag caagatttta gcctatgtat ataaacatga aa 1602

<210> 2598
<211> 1518
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225125_G1, chr6:109249122..109250639, Cluster 15

<400> 2598
atgtataact aactagttta cttatacgtt gcatggtcta ggcgtcaaat cgacagtgat 60

ctgaactgac tagtattaac tcgaaacgtt aaattctagt caactttaac gacgtggcgt 120

gttatgattg gtccacacga gcgtcacatc agctcatgtt tttatttctg actaactaag 180

gtataagaaa ttcttaaaaa aaattgaaag caattgtgga attcgacata tgaaattctt 240

tggctccaag aattatgtga atttttttat ttatacttta tgacatttgt aatttttatt 300

tatgttttaa acgtttgtag tcataaatgt ttggttattt tttaagatta aaccaaacat 360

aaatccataa cagttgagag gtggccacca accactaagg acagagcgtg tacaatacag 420

tctgcagttc ctagtacccc tttccagttt gcacctacgg cccggcgacg cggtgggcgc 480

ccatgtgcgc gcgtcgtggc ctgggccagc acggcatgtt attcttcttc gggcccggtt 540

ccgcacggcc gggcaaggca tgattcatgc ggggttttta ggctgacgcc tgccggtggt 600

agagtacgtg gtgccagtgg gccgctcggg cacgcgcgcg tccttgcgaa gcgggcccag 660

atggacagcg acggcctttg gtcgtagcct cgtactcaat gttcgtacta gtagtagaat 720

tttcggtagg acacactaca caggacaagg cttccttcct tcctggtcgg ggtctcggtc 780

tcgaccacaa gtcaagggcg gttctgtagc gagggccatg caactggacc acttgagtca 840

gagtcagcag cgcatcagca gatggaatgg aacggaatcc gaggtgcagt agtgcataag 900

agagtagggt ttagggcaga gcatatgttg tggcgagcga aatcgatgca ggcccggaag 960

ttgacgacgg tcccattgga tagcctacag aatggccagc ccagcccagc agccgaggga 1020

agaaaggtgt gtgtgccagt cacgcaaaaa agcacgcgac ctcagccgat tgtgcagctg 1080

gatgcgcagg agtactcctc tccgtccgta gcgggagccg ggaggagacg ggagacccag 1140

tcactcaagt gctgacgagg ccagccactc catgattagc cgccggcatg catgacaacc 1200

cccacatggc cacatgcgca tgatgccctg cagtcctgca gcacccagca ccgggggtcc 1260

ggcgccagcg ccagcgactc gggggccgaa acgtatccag cgcgcggcgc ggtgtctgct 1320

gcgtcggccc cccgcgagcg agcgagcgag cggctggcgc gcgcggacca agcgcagccg 1380

cacgctcccg gcgaggacgg cacgcactcg ccatccctgt tgcttttaac gcgacgtcga 1440

cgtcgacgtc cgtggccaac actgccaaat tgctgtacgc ctgtacctgt acctgtacta 1500

taccaccacg tatttaga 1518

<210> 2599
<211> 1952
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228893_G1, chr6:129481578..129483529, Cluster 15

<400> 2599
tgagcactgt aacagcggtc caccgagaga aaaaaaaact gtcggcaaaa ttatggagaa 60

acgttttcta cttttctcat actactgttc atattcattt cactgttcat atccatagat 120

cgcatgttca gaattctgtt acgccagaaa gatggtcggg acctttttcct tgaccttgat 180

gatctcagga gaggtcgttt agccaattta atgctttggc agaggtaatc aaatttggct 240

gttcattaaa aaatcattag gctaacacac taggttctaa attcgctgtt cattacggaa 300

ggggaatggt ggtccgaaac aatttctagt aagattgatt ctataattta tataagtttc 360

ggtcagctgt aacgatttct agtctatttt tgaacaaacg aataagtctt taacacgtgt 420

ccagtcatat tcgcccggcg ttgcaattcc accagcctgc tactgatgtt ttgtttctcg 480

catagcccat atgtgatccc tggtcggctg gtcccaccat atcgtgtcga caagcaattt 540

tctttttctt cttcttcttt cgacacggtt ttctgaatgg atgttgcgcg agacttgtgg 600

atcctgtggt acgtaccaat accatacaat agaagaaaaa gaatgatggc gaatgagaac 660

gcggcacgca tgccggttgt tacctgttag ccaatagcca ggagactctt ttttttttt 720

tttgagggct gctgctctga accttgggaa ttgcagaact ttacgagcac gggcaggccg 780

tcaaagctgc aatgtactac tagtactgcc actggtacca gtactgacga tctacgcaga 840

aaagcctttt caacttttt ttttgtctag tggtatttct gacatggaag tgaaagaacc 900

tgggcgtgga ggatctgccc cagttcttta ccggcgtgat tcgcaagcat cgtctcaact 960

gacggaggaa ggaaacaacg ataggtaatg tagacatgta caatgtttca tcgagagtag 1020

acagtaggta atgtaggcat gggctagact ctcacacaca catatcccac aggccacgtc 1080

gccacactgg atcggagcac tcggcatggg cgctaaccat tgctccgaca aagacatcta 1140

gaaaggtagt acgtagctca gcactgcatc atatcatatg caatgcaatg caatgcatgc 1200

actgccatgg cagctgttcc gcgggcctct ctgccttcag cagcgacgca tcactgtccc 1260

cgctgtcttg tggcccatca gcatctgtct gtgtaagatg agatgagagc agccaaaaga 1320

gcgcgggatg cgctgcagca gtggtggcaa tgggatcgtg gtcaacactg gacgaagact 1380

agagagcgcc acgggctagc cgcggctgcc tgcctcatgc agtcatgctg gctgcttgct 1440

ttgcttgcaa tggtcctagc tctctctctc tctctctccg tttccctttt tgcagttgca 1500

gcgaagattg tcgaatcagg atttcgaggg gctgtgatat acttagctcc tcacaaggcg 1560

ctaatgattg cggccttgaa cgtttccctc aaacacaaga agagtctagc tcccaagtca 1620

ataactgata ggacgccctc taatatgatc agagaacata agagagccct cgagtctgac 1680

agaaaaactc aagagcacaa gcaaaatcaa acttcggaca acaaaactat cgctcccatc 1740

ctcaaccaaa ccgaaaagca agagcgcgcg cacacatgac acctaaaacc gatcggcggt 1800

tggtggttta taaaaagttt tctggataac ttataaagct accgaaataa acggatcaca 1860

aaaacagaca aaatcacctc caaaaggtgt caagaacacg cgaaagttgg tctggaccat 1920

gtcaagggtc agcctgaccg attttcaaga gc 1952

<210> 2600
<211> 2124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232108_G1, chr6:143976151..143978274, Cluster 15

<400> 2600
ctaatgataa gctatgtgtg tcatatattc gtcaaacttc accccaactg ataagtgttg 60

aactatcttc aaattgccca ccactaattg cgaaaacctc gttcaggaaa aaaaaagaat 120

cttcaaaatc cttcgatata taggacgatg gaatttggta cccaggggcg gagctaaggt 180

tggttgttag tgtcagctgg cactggtaac ttttttttg taaaatcaat gaaattttct 240

ttttggtata actgttcatg tatgtatata tagctgacat cggtgtctag tgaaactgag 300

gccggtggct tcttgatgag ctggcttgga cccggcctgt tggtaccgaa ggtgccgcgt 360

ggagggagag ggacagacaa aagttggaat gggaattcca aatcagcacg catttcttcg 420

tcgccagttc cgaaaccggc gacagtgaca ggaaaacctg cagcgtggaa gaagcagaca 480

tcagcggaga cacggacgcc caaagaaagg aatgtggtga ggaaagcggc tttgcaaccc 540

cccctaggcc caaagcgccg atgctctcgc gacgttcttg cattgctatt gcttgttggg 600

tgccgtgcta ggcggcgtcg tacgtgctcg cttgctgctc gccgaacgag tgtatagctc 660

gcatgcggtt caccgacacc tccgtacgct cgctcactgg cataaataag agcgggttgg 720

tggccgccgc ctaccgccta cgtacgcccc aaaattcaat ttttcgtttc accgtaccgc 780

agtggagtga agtgaactga cacgcacact accgcttcct tccagctgcg tacagtgcat 840

gcaggcccgc ccggtcattc agcaaagggt cacgcgctgc ctgtgctgtg ctgtgctgtg 900

cacgctagag aggcagtact gtactctagc tagctcaatc atcggggtac ggcgcgcgtg 960

gttccggccg ggcgagcgaa cgagcgagac agcgagcgac gttgagcgtc tgcgcgtgcc 1020

ggaatgccgg taggtatatg ccaggtgctc tgcttaagta cggtgtttga ggggtcgcgc 1080

ggtggcagag gagctggctg tggaactgct ggagcgtacg tgtgcgtctg gccattgctt 1140

ggcgccatgc atgcttggag tccggtggtt gcgtgccgac aggacgtacg gccgggtagg 1200

ggtacataca tgtacatgat tttcgcttcg agtgcacacc accatctata ccgacgcggc 1260

gccaggtggt gtgggttcgt gggcgccacg ccacgcgcac ctggtcgggg tttggcgctt 1320

ggctggcgcg gttggcgccg cgcgcggacg ggtatgtgtg agatccatcg tccagcgctt 1380

gcagcaagca gctaggccgc ccacgtctct cactggagca tggttttgac aatccggaac 1440

ttgttactgc catgccaatt ccacgtcatc ttcaccactt tgaagcccac acccgtctgc 1500

tgatgctgct cgatccacac atgcgccgcg ccttttggtg tcaggctgct gctgctgcgg 1560

ctgcgatcta catctactct acagtataag tgtataacgg taaaatattc tgtcgcgcgc 1620

gcggcgtccc gttcccctgc tactgctagc tagcttgtcg gctgcagcta gcacccatgc 1680

acgtgccacg ctggcatggc cacccgtacg tcgccgtcgc atgcaggaca cgatcgcaca 1740

ggcacaggac atactcctat atgtactaca cctaccacag taactactac acgacaaggc 1800

aggcaggcag cagctagcta gctagcacga ggccgagcag tgcgtcgctg gctggctctg 1860

tggcatgcat accgggggcg caggcaggca ggcatgggga tctgcgtgca gcggcagccg 1920

tcatgcatgc acgcacggcc aagtgtgagc ggctagcgcg cacccaggcc agctagagct 1980

agctccttgg gaacaggtcg tcgtactacc tcactgtcac tttatgctcg cgctgttggc 2040

ttaacgtgat cagttggtga ttataacgat ttcattacgc aacgcaacgg gttgctgttg 2100

ggccagccaa tgcagttcac taat 2124

<210> 2601
<211> 1955
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234070_G1, chr6:153272396..153274350, Cluster 15

<400> 2601
tctcatctcg cgcgcgtgcg tgctttgcct ttatcttctt gtacgtacgt actcttcttc 60

tctaggttgc ctacatccga agaaaccagc gagacagctg cgtgcgagtc gatcgaactg 120

atcacgtacc tagctagcta tccctccgtc cgccagccac cgagaaaggg aagtggcgaa 180

catgatttga aggcacacga tcagtagtca tgaagggaag aagtagcttg tccatgcatg 240

catctacccc tctcgctcgc tcgctacgat tgcgaagggg cagtgcaggc ggctgcagaa 300

tcaccgcgac cgatccatag agataaccac acagaagcgg agaagccttg agtggtcctg 360

agccgcccgt cgcgtcacgg tcgccataaa aatggagctc cacgatggag agcaggagag 420

ggcgcgcata aactacagta gtgctatata tgctatacta gcagatctgc tgcgtcgccg 480

tggttccggc ggccggccgc cggtgatcga tccatcagac tatacaccag cagatctgag 540

ttggctccgt cctcctgtag cccaccggtc acatgcattc aactacagta cgtatacatg 600

cttcatatat atatgtcttc tgggggggcc ggccaattgc ctactacact accactacac 660

cacctccgtc cagcaaaccg gtgcatctcc tggacatcat tgggcggcgt ggccaccggg 720

catggcgtct ctattctcta agagatgtgt ggctctgggg gtgtcgtacg tcggagatgg 780

ccggccggcc gggatggagt acgtagagac gacaagtcga acaagggtat tttcgtctat 840

acagctagct agaaataggg tcggcattag gcagtgctta tatatatagg tcgtccaaag 900

gcgcgcgtgt tggacgtata caatggcaaa tggactgaag gaaagcagag attattacga 960

tgatcgatag atttattaat aaataccatg agtagtaacg atatataggt cttttgttca 1020

aagtcactgg tgctattttt tttttacaaa taaaaaaaga aaagtcggtg ttggtgttgt 1080

tgttattaga ggcatgacac caatggttga gctttggatc cgtgcgtcct gtggtagtgc 1140

tgagtctaac cgagccgtgt agagtttaat caagtctata tgacaacttt ttaaattcga 1200

ccgatcggga aaacatgttt ttttgatgta tctattcagt ttgttagaga ttacttcttt 1260

tatatactcg gtcgaacttt gtgtaattcg gtttaattta aaatcaaaat agggaatcgc 1320

atcctcttta caatgattgg tatatatata tggttcagaa ttatccagac acactgctag 1380

tacttttctt ctttatttct tctacgaaga cctcgagaac tttgaaaagt ataaaccact 1440

aatatatata tgatagaaat cgttgctcca tccatctttt ttcatacttg ccaactgtat 1500

cagtatcacc accatatata cacacaggga cagggaggcg ggagcatctc tgtccttgat 1560

cgactagcta gccagtaccc ctactcctcc actgggtaaa aaggtggccg tgcgtgtcgg 1620

tgtcggtgtg gccgtgcgta cgtgcgtctg tatggccata caatggaggt gtggctagcg 1680

aattgaacgc gcgcgcagta ggcatggagt cgtccgaaca tccggaaggt tagccggcag 1740

gcacgtccct tgcggaaaag cgaacgtgga caccccatcc cgtccgtcct gccagtgcct 1800

gccggtggtc gacccggacg tcatcccacc agaagattat taccgcacgt acagttggta 1860

tggtgtttgt gccgctaaac tataccgtag gctacaaact cgggttgcat gcttgcggac 1920

gggtgactag ataactaatc tcaggtaatt tagta 1955

<210> 2602
<211> 1918
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234188_G1, chr6:153656779..153658696, Cluster 15

<400> 2602
gctatatatt aacggggaaa aggtgtgacg gtgacagtgc cattgagtgg catggcatgc 60

agtggacggc gacttgcatg ctcggcaagt ttccccggcc cgagctagcg cgtcacggtg 120

acgcgaccgt gatgccataa accgcggggg gatccccaac gagtttttgt gcctagttcg 180

actgttgcca tgcatattta ttctggctgc tgctccgccg tggtccaagc atacgtgtac 240

gtacgagtgc aaatatggca gagctggaac aaaatcgtgc atgagcatca ttactcatta 300

gagcatctca tgaacggaac acgtctctgg aggtatacgt aataattaat ttggcatata 360

tttggggccg acgtgctgca tgtgcacgca tcacgctgat gcaggccgtg catctgcaga 420

gcccctgaaa tgaatgatga ttatattccg aacaggtaat taaagtgctg actaggctgt 480

gcgaattgtg atggatatta tgaactaatg aactatgatg gtgtcacttt tactggacgc 540

cagctttctt cggcaaccgg gtacgtgcgt gtccaggtga gatatgctgt tgttaatgtt 600

gtctgcccgc tgcccaggtt ttaacagcat cgatctggtg gctgcgctgc gctgcgcgct 660

gcagcgccca agggggcag gagcaagagg gcatgtctgc atgaatggat gatgtgacgg 720

cgggacacac gcaggccgaa acgtgtcggc gatcctctgc tagttcagtc ggatacgcct 780

gcacaagaag gcatgcacga tggtcggtcg ctatagattt tttgcatcct cttcccccac 840

aggccacaaa aggccagagc atgcattgct gttttcgcat gggacaccgg agtgtgcctt 900

actcgtgctg tgtgtacgtg tgccactctg ccagtgtgtg cagcaggagg cttggtggtg 960

atgccttccc ttgtgtaggc ttgcaagcct tcgtggggtt gagatattaa ggtgcgcgcg 1020

atatggatgc ttgtggagcc aggtttggga cttgggagtg caacgtggag tgtaggatgc 1080

accatgcgca tgtgcacgcc cgcagggtgc ctgcgggcat gcggcatgcg tcaatcgccc 1140

gtggacacgt caagtgaagc ttggcataaa acctattaga cacccgagga agatgtgaca 1200

acagtgtagt gcccaattca ggcgggcctg gtgtggcttc gctatatatg agtttcatca 1260

tgactacaac ctctatatat gagtcatgca aaaaaactag gtataaaact atacaacaac 1320

acttttcatt aaaagcgagg gtttcatcta tattttattt tattctatat gatatgacag 1380

tgatataaaa ctctttagac tttaggacat gtttgtttcc ctcctaggct atataagttg 1440

aattgtgatg gagggttagg aggttaagta tcactctgga attacaaata agctgaaata 1500

agctatctaa tgctaactta tttgtagttc taaagcgata ttttattact ctcctactct 1560

ttcaccttag tccaacttat acaatctagg atagaaacaa ataggcccta acccaatcga 1620

aaaggagaag tgaagctaat taaggagccc gcaaaaatag tcaaatctac aaaacatata 1680

tgaaacgaag ggagacttga acagatctga aacctgtgaa aggacagaca tcaagcaatg 1740

gaggaaaaaa aacagcggaa gcacggaaaa aacaagagcc catgggacta gcccatatgg 1800

acacgggata caagcccata tgcgtgttcc tattcttccg cccaaaataa ttggagccgc 1860

attcatggag cggtgtcctg gcaatggatt ccttcctcct atgggccact cattagcc 1918

<210> 2603
<211> 1466
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235393_G1, chr6:159218904..159220369, Cluster 15

<400> 2603
gagcgtgagc gtacagcttt tgtgctagtt tctgttagcc cgggggggcat gcatgcatag 60

cctatttcat ccgaatccgc cgcacgctgc actcacactt tggcgtgtcg cgcacgtacg 120

gtcccactcg cgcacgcttt tgtagcgggc caaggacgac gagcggaagc gagaaaccct 180

aggaattccc gacagaacga tcgatctaat attccgccaa gatctagcta cgtacgtacg 240

gagacgaccc aatcgtcgat cctcggccat ctccggcacg tcaatcactg tctagctata 300

gctagcatag atcgtgcagt ggacgggcac gcacgcgcgt cgtccctgca gagtgcagag 360

ggatgtgtgt cgtacgcgcg gcgccgcacc attggccgcc cggcccaggc tccgaacaac 420

ttggccgggc tgaccacacc accaccacaa cacactcgtg cagacagcac acacacgtcc 480

actgctgtat gcctgtgtgc gtacgtgcgc tgtccgagat cacacgtccg atcctttaca 540

acgaccgacg acgcgtcctc cagagaacaa atctgggcaa tcgatccgaa ccttttcttt 600

tttggcagcc gatgtgaggg ggcgcgggtg aaaaaaacac gaagcctcct cgcatgcacg 660

cgcggaaaag atggctagca gaagatcaca tgatctatct aaagagtcgc ctagtacgtg 720

cgcgcgaaag aagggctacg cgccacacca caccacacca cgcggtcgat gacacacaca 780

ccctccctcg cagcaccctt ttgcaagttg cgccgaggcc cggagaaaag ggaggggcc 840

cccaatccag tcctctagat tcgatcgcga tctcgccgct gtgacaaccg gccgcaggct 900

cgctcgctcg ctggggcctg ggggccaagg gcatggcgcg gcgcggcttg ttgtgtgcat 960

gctagcgtac gggcgggcgc cggggcagca gcagggagaa agccgtgcgg cccggcccgt 1020

cctgcccggg taagatctcg cgcgagatcg gacggagaaa gcgcgcaggt gcagcgcatg 1080

ccagtggtgt agggcccggc ccaatagccg ggtgggggcc gtgcgcgatt ttcccgagga 1140

agatttgttc ctccgtgtcc gtgtccgtgt ccgtgtccgt gtccttggat tgcagggcac 1200

atgcgtgcgt gctgctcaag tgcctgatgc gtcttctttt tccccgtgtg gcgccgcgcg 1260

tgacgtcacc cacagaggag agaacggaat cggcggcatc acgcaccgtg gggctcaggt 1320

cggtccaccc gacgttccta aagcatccag ctcatacaat aaatctaata ttttcaagta 1380

taataataaa atcttgtata gtttttttgt gtgcattatt ttctttccac aataaaacaa 1440

ataaaaaagc atctgaatcc gtattc 1466

<210> 2604
<211> 1472
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236258_G1, chr6:163926527..163927998, Cluster 15

<400> 2604
cacacgcgag gaccatgcct agatgcatgc cgtggcacag ttcatgtgtt cgtgtaaact 60

ctctgaaggg tcgcccccac ttggcgcagc agtacatgcg tgcccgagtg tccattcaat 120

ggcatggcat ggcatgtacg cgcgcgtgac atccataact gcaaagcaac tcatctactg 180

atgtacgtac tgcaaacgcg tgcagacggg cggataccca tgctccaacg ggcaacggca 240

tggcgaaacg gggacggcgt ccgtaggcgt aggcagagag gggagggggc gggcccgcgg 300

ccatgtgacc agccactggg gcttgtccgt ccgtgcccgc gggcgctgcg ccgctgcgac 360

tgcgactgcg agtcaaggcg cgcaagcaac tggccgtgtt ccgtcgcggt cgcccgccga 420

acaccgatgg catatcggca tcgcgcgctg ggctgactgc cgaggcaatg ctggttgctc 480

tggctggtcc cgctcccgct ctcgtgcgcc gcgggacgct gggtctggtc gtcgagcccg 540

caaccccaag tccccaaccc gagccgtgca tgtggcgtcg agatcgcagt ggtcctcgtc 600

acccactgcc actggccacc gtgccgttgg gtccccctcg gcctgactgg acgcctggtg 660

atccggtcgc cgccaccagc accagcacca gcaccaggct gtagctgcca gggtcggccc 720

ccgtccgcgc taaacgaatg aacaatcacg gaggcagcgc gccaggacgg ggcacggcgg 780

ccggagccgg acgcacagga cccgtgacag acgtgcaatt ctgcgtgacg atgtttttaa 840

tactgcaggg gcacaagagg gacggggcag ggtgccagtt ttgtgctgga gacctttcac 900

tgtcccgatc gatcgctgct gctacctagt agtagtagta accaggcgtg ttctctcgca 960

gtcgcaggca gctaataaag cagtttcgct agcttcggat ccgggtccgg gtccgggtcc 1020

tacagggccc cacgaggtgc gcactgcgca gcgcagcgca gcggcagacg tgtcgggttg 1080

cgagaatggc agcggcagcg aactggtctg gggccgcggg atctggagtt gttgcgatgg 1140

ttggcaacgc tcatccgccc gaccagatct caccgagcgc cagcccgggc acacctcctt 1200

gtcgtccgat gctccagtac tattactact ttccttcacg gtcattcagc ctccctttt 1260

ttcttcttct ttttgctctc ccaccaacta cgcctaccaa aggtgtaggt ggtacacttg 1320

tttggatagg gtgttattga aaaaataaaa acaatcagcc tgtatgctta acgactgttt 1380

ctaaagtggt tttgtctaga tagatttcag ctacaacggt ctaaacaacg gagctctata 1440

ggagtatcca tcatcaggta aaacaacaga gc 1472

<210> 2605
<211> 2732
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236448_G1, chr6:164788470..164791201, Cluster 15

<400> 2605
aacattatat tattgttacc ccaaattagt ttaaggtgaa catgcgaatc acgagtccaa 60

attaagcccc cgacagtcca gtctgcatcc gaactgatct atcaggaacc agtgccaagg 120

agttacatgt gttatagtat acaattatta cagtatcagc tcgtatgtta acagctctcc 180

aatcgtcatc cctatctatc ctatgcgtag ctggcttagc ctgtgagctt ctcaaatgtt 240

ctcgctttcc tttgcaatag actatagttt cgtctttcac gatttcggta aacagagaga 300

gagagaagtt tctgcatata taaactacgg aatttgaaag tggcttttca gcaacaagcg 360

gaaaagaatt ttcgaaagtc gttcaaaaaa aaagggagca aaccctaaaa gcggcgaaga 420

gacaagacgg cacagcaggt tgcggcattg gggagggatc gcggcgcgcg gtttgaggcg 480

cactccctct gtctttgtta agtggaagga atatgttctg ctaatctttc tcaaatcgtc 540

tgggcctgcc tgggctgggc ggacggaaca ggggggcggc aggaataacg cgtgccagat 600

ttctgcttct gtctccatgc acggtgcacc tgctttcaac agcttcacgg actgaaagaa 660

agacaggaca aaagcaaaag atcattattc cttttgttcg acagaaataa agaagaaaaa 720

aaaatggtct gagtgcgtgt ggtctctcag caaactgcgt tgctgggcaa gcgaagggcc 780

gggacttgga gcgacaacaa cccgtaccgc ggactcgtcg cctccatctc ctccgctgtc 840

tcatccgggt cgccatgtct ctagattcct ctagaaaaat tgccggacca cctttgtttc 900

ccttcatccg ggccggctcg cgaaattgca gcgcgccgcg cggcatgcgt aggataggat 960

ggcgcgaaag gggggagcgg tggtggtggt ggagcgacgc agggtgcccc gttttttttt 1020

acaaaaagtt ttcttcgttt cttttctgcc tgcgtatttg gagtcagttg agagtggaca 1080

ccgggagcac ggagttcgga gccgcctgcg cacagctggg ccactcggcg cgctcgacca 1140

tggctgccct ttgctgctat gcttgcacgc acgggcaacg aacacctcct ccctttttgc 1200

agcgcattca gaatcccagg tggtgtgaga tcagctctcg tcggagaacg atacggatgg 1260

accgggtagg tacacatgtg aaactcagct gccacagacg ggcaccgcac cgaggggcca 1320

ggacagagac agaacagcct gaagaaaaac gggggggggg gggggggggg gggggatttg 1380

gcctgttaga agcaaaaccg tcggaattta ttgtttcaac agaagacggg gcccaattcg 1440

aagcaacaag atactgtgcc gtggctccct tgtaaaagcc cgctcaattc cgtggacgat 1500

gggagcacct gcgggtcctc gtacttttt ttaaaaaaaa cagttggaac agttaaaccg 1560

gcccaatacg tcggtaaacg aaggcgtctc agcccattaa ggcgttcgcc atacattacg 1620

cgccgccact cttgtcattt cagtcgtggg ccttagccgc ggactgcctg ggctgctacg 1680

ggacaccact cgccttctat gagagcgatc ttttttttc tttcgtccga atcataacag 1740

tagcactgca gcagcacgcc atggtcgagt ccgcctcgac aacgtggtgg gcacagcgag 1800

atggtcggta cacgcgtgcc gtgacgccag ccagacgatc tcccccgacc tctggacgga 1860

caggcagcac ggctgcacgg cggcagcaag gcaactcggt aggcgccctg ccgacgtgcc 1920

gttgccgtgc ggccacggcc cacgaagcga gggcaccggt tttttccccc accctacgcc 1980

ttcgggctcc gctgcgccgg ggactcctcg cttgtcgcag tccagcgtca tcggtggcgc 2040

tcgcgcaccg acacggcgaa aaagtctgtg cgcgagctga tctgtcaatc gctctgactc 2100

catggccttc gtccatccac tgcctggtct cccagcccaa caccgtgcgc ccatgcttca 2160

ttcttctcca cctcttcttc cgccctgtcg gctgtcgcca ccgtggctgc acccgcgttt 2220

gacaccggcg ctgcatctgt cctcccccgt tcaccatatt atcaatcact ttatcagtga 2280

tcaatcacaa ttgcagaagc cacctctttc accatggatc aatgaaattg aacagttttt 2340

tattctcgtc ggtgtcctta agtttttaaa aatactatac tatgaagtct gaacacgtta 2400

ataacagttt aacacggaga attgctgtct ccgtgttgtc tccacagtga agaatcggat 2460

ccggattgca acccaccgtt tttttctctg acctactcgt taatgtcaca gccaccaggc 2520

accttgttct tcatgctcgt tcagctgtgg ccgccttggc ttgctgcccc atgatgtcgc 2580

aatcgatctg cttcttagac acagacgcgc gtccgcctcc agctctcagg tgtcagccgg 2640

tgcacttgct acaaacgcca gcgggaacaa tcctgcacct gcatggctcc cgcctgttca 2700

aagccattag ttttcctcac gtagatttct ta 2732

<210> 2606
<211> 1505
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236451_G1, chr6:164792203..164793707, Cluster 15

<400> 2606
gtgccgctaa gcaaacgtca aggcgcacga atcacggcga cgcatgccgg tggcgcaaac 60

acacactgta catgtagtag tgagggaggg agggacagac atctctctcg cgcggctcgt 120

cgtgtactcg tgtgtcatta ttcttctcgt gtgcatgcat tgtttaactg tcaccgcgct 180

gacaggcgaa cagttcgcgg gcgagagttg acctcggcaa tcgatccgtc agtactagca 240

tgcgacatgg gtagcctagc ccgtagccgc agccgcagcc gggccggacg tgagaagaat 300

ccaacgcggc ggcggagcgt gcaggcaggg cagggcaggg caggccgccg cctgccccgt 360

cgtgcgcatg tgctcgtgca ccgtgccgcg cgcgcgcttg tccccccggc ccatcctcgc 420

gccgcgcgcc tgagaatgaa cgcgtctttg cgcgcgccat gcggatgcgg ccgggctgtg 480

atctgaatcg gctgacgctc cgcgtgctgc ccgcgtgcac aggccgcgag cacgagacct 540

gctcgatcgg cctcggcgct gttgctccgt tctctggagt ctggaaaccg gttcgcgagt 600

gtgaatctga ccgcctgcgg tagactcgga tatgtttggg ggtccgttgg tgcacgcgtg 660

cacagtatgc agcagcatgc ttgttcagtt actcatatat ccttttttg ttttttaaa 720

aaaactaacg gtcgaatttt tcccagccgt acgtttcgtc caaagctgtt cttgttctct 780

tgtttgaaca gaaactttca atgctgctct ttgccaaaaa aaaacgacaa gaacaaaaaa 840

aaaactttca acgttattct ccagactcca gatatgtcaa accggagaga gatgaccagc 900

cacttccttt tcctgactga atcttacagc ttaatccgtt tcgttttac ccacggggat 960

aagaaaaaaa aagagaggct atacagtaca gttttcgtca acattctggt gaactgaaag 1020

aaacacagcc gatcgagaga caaacgcctg catacacacg cagaaacaag ccgcatcatc 1080

aaacttcaaa aagaagtgtt tgcatcatac atcctacgtg tacgtagagg caaaaaatca 1140

tttgaagcca cccaggccag gccaggccag gccccagcat tgcgatgtga acctgcaagg 1200

agatggggat gggggctcct gcacaaagat tccctgcaaa aggcctagct gcagccccag 1260

aaaaggagtc agacaaatga caaaagatac ataataataa taataatgaa cacgaacacg 1320

acatgaacca agtcaaaagg gccaagcatc tgcataaacc accacaactc tattctggaa 1380

taaaaagtaa aaaccactca ctcatcacct gcccagcctt gcctggagct ggagtcaggg 1440

aggttcctgg tccgcccttt aacaacaaga ataaacaccc ttttccacca gtgagtggat 1500

ggatc 1505

<210> 2607
<211> 1551

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2459_G1, chr1:12874218..12875768, Cluster 15

<400> 2607
gcttatcttg tcagaaccta acattaccag ctagcagcac cagctcatca ggatcgtcga 60

ttagtctgtc tgctcatcac acattcttct gaatcgacag ctgcatgcat gcatcattaa 120

gacatactcc tgtctctaga cggaaccatc taagttttta attgcaccac agacgagagt 180

cgatgctaaa ttatcaccat gacttttgta aaaaaataat aatatcacca tggcagttga 240

caaagcaagt tactatatat gtgaccccaa gcagagtagc agatcgacgt tcctgtgcag 300

ggacgacggc aggccatttt ctcagaaacg cgccatcgac gacaggccat tttcagggcg 360

cagggagtcg gcgcgcccat gatcgcccat ccggtccagg aggagcggca aacaccgtgc 420

tgccgcgcgg cgcgctaccc acaccataca gccggcggca tggcaccgcg ctgaccacca 480

tgtatgtact cgagcgaact cactcgccat ttgccgtgcc gtgccgtgca tgcaccccgg 540

aaacggtcag cgcgcgcgcg cgcccgtgcg tccgtctcaa cgcaacggct gaggcggaac 600

actccgcgtg cggccgcctg gcgcgtcgca gtctcgcaga caccgaacat gctcggcatt 660

ggcatctccg tgtgggcacc gggctagcgg gcgggcgggc cggccggcat aactccgtag 720

ggagggccgg agggggggcct cgatctgcct ggagactgga ggctggagtt cgtgcgtgca 780

gcgtgcggtc tgaccgtctg aggctgagct gggtagcgag taacgacggc cgggggggcgg 840

gcgccaccgc cacgcgtcgt gcggcggcgt gccctggccg cgcgcgcgtt atgggcagag 900

ctcttgggag gcatggatcg gatcggagct cgtggacgga ggcgcgcgtc tttgttcctc 960

ccatgatggc cggaggacgg tagctactag ctgccggttg catttatgta tgtacgtggc 1020

gaccgagatg cgtgcatgtg catgcacctg ttgccggcgg cccggcgccg gcgtcgtccc 1080

aagtgtaatc cagagcagag ccccggcatc gcggattcgc tccatccgtc gctgcgggta 1140

ccggggtact acgtgctgac acaaagcggg ccaaggagga gatgtgtgca ttgtgcacgc 1200

tagctcgcta gaatcgcatt cgatcgatcg agtaggcagc cgagcatggg ctctgaaaag 1260

gatcggacgg gcgtcgtagc tgatcgcacg atacaacccg gctaccatac gtgtagacgt 1320

tctctacatt tcatctccta atgcttagtt tgggaaccaa aatcgccttg aaatctccct 1380

cttttcgcag gatgaggaat acctcccaat aacatttaaa taaggtatgt agttatatac 1440

gggagggttt tttctgcata ggtttgcctc tgccctaaaa tattattctc cgtcctttgt 1500

atcaccctct aaaaaaaatc cattatctat atccaaactc tcataagtaa g 1551

<210> 2608
<211> 1656
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_250167_G1, chr7:84710605..84712260, Cluster 15

<400> 2608
aatatatggt atgcatgcgt cgaccagatg gtagcgtcgt cgtcactgta catgcatgat 60

ggatggatgc gtcgcttggc atacatgcgt gtcttattcc aacgatctag aaacggattt 120

gaagggacag acggacagac atccctctac gtgcacagta gaggctgtac tacgtgcgta 180

tgcacgagcc agtgtgcatg catacgcttt ccagcaagca ggtcgcacgc agtcccccta 240

gctagtgcat gcatgcagca gtggccgcgc tactgttggg ttcagctcca tgcaccccca 300

actgatgaaa ggccacagcc atcgggtcag tcagttgtca cagcacaggg gcatgatgta 360

catgtacata cactgatgtg ctggctgcca cacaggccca ccgctacagt acctgttgga 420

gactagacta cattgcgttg catgcaatgc accgcaacgt cgtcgtcata ttcgatggat 480

cacggtgcac gtacatacgt acgtacatac tagctatagc tagtacgacg acaatggtta 540

cttaacgtgt gcatgcgtgg gtatgcccgg tatggaccac actgtgctgt gcgcctcagt 600

cgctgctgtt gctgttgctc tgaggaagga gagagagaga gtgatgtgag ctacgagtag 660

tagtactagc ttgagtgtgt ggtactgtgt ggtgtgggag tgagtgtgtg tgtgcgtgtg 720

cgagcgtgag agcgagagac gcagatgcct gagcgcgctg ctgctcgctg tgtgtgtggt 780

agcgtggtca tgtcactggc agagccgcgg gcccgcgagg catgcatttg gaaactgaga 840

tgtcagcgtg gcacgacaag gccactgttg cccgcagccg cttcctctgt tgatgtcgcg 900

cgcacatgca ttctcctatg tgcatgcacc gtgacaacga atggatcaca gtcgcaatcg 960

ctcgctcgct ctctctctct ctctctatga tgcagcagta gcagtactgc cgacgacggt 1020

ctcttctcat cgatctagtc acatcttctt tcgtcagact agctcatcag gacctctcag 1080

gtacactata gcccatcaca tcacatcact cgatccatcc tgagacgatc tttgctttct 1140

gctagctagc ttccaatttg ttagcagcgc aattaataaa cgcgacacag cagctagctt 1200

aaatatatat agtacgtgct tagcttgtat tatcatcagt tgaatagatt atttatgtat 1260

tatcatttct tgttgttgac gtgactgaat caacggatga cacgtactac acggcctcca 1320

ttattgccaa gctactactt cgcggctgca tgccctcctt tgtttggacc gccgggccca 1380

ccggtcactg acatgggctg caccggtgct ccatttttgg tgaacaacaa gcgcaagcgc 1440

ggctcgctct cgctgcgtgc atggatgcta gcaccaggct ccatctgcat gcatgggcac 1500

caacagtacg cctcctttaa accctgcggt cgtccctacc agcagctagt gctattactg 1560

aacctgtcga catatataca aggctagtac aactatacat acatatacat gccacggatc 1620

tagctagaac gtcttttata tgaggtgttt tttatt 1656

<210> 2609
<211> 1919
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257098_G1, chr7:123696583..123698501, Cluster 15

<400> 2609
tcgtgctacg acgagtctat tcattcattt ccatatgcat gcatgggaat gggccatttg 60

gatcgccttg tcaggatagc ctttttattt gcgtgatgag tgcagcaggg aacaaaacta 120

ttcaatggac tcgtgatctc gcaactaagt agtcgtagtc gtagtagcat gtgaataatg 180

cgatgccgag gaatataatg atgcggccct tcctcatcag aatcagtctg gaagtagtcc 240

gatcgggtac gtaggagtag ggctacgcgc gcacctgaaa attggccatt ttaattttgc 300

atgagggaga aaaaaaaaac caaaaagagg agcgagtacg tgcttcagtt ctttcaagca 360

aagctgctaa cagcatagcg tactgtatta ctaattgatc atcgtgcgtg tggttctgtg 420

cttacagcag ctaactgttt tctgactatg aaagggaaaa gctgtcggta ttacctataa 480

tttgttgtcc gtttatttat gaaaagagtt agaacactgc cggtacaacg aactacacat 540

ctgaaacaac aatataacac acacagctgg agcatcgcca tgcataggta gctttgcctt 600

ttgagaaatg tgatctactc cagattttgt tttccgaaag gtcctgacat gatggcatgc 660

gcatccatgc atgcatgtca tcaagccaga gggcggccag agaaagttgg agctgaaaac 720

cgctgcatcc acacgcacac gtacggctgg caagcttaat gatgcgcgca aatgaggctg 780

ccccagctag ctaggatcgt cgtgtttaga gatatctaag ggtacagtaa tagtaagagc 840

aatgactgac gacaacctgt tgacacatca gtcactgagt gagtgagtga gtggctactg 900

ctacatatct gtgtccgctc atgcatctgt ccatcatcat cagtgccccg gttcccctct 960

ttggcgcaga agtcaaaaca cagcttttt ttttcttccc ctcccccggt aatccggtgg 1020

ccacacagct ttgaaatggc ccgtgtcaat cattgcctgc ctgcctgccc gccgcggcgc 1080

tggttattat cagtaaattt cccctcttcc cataatccta ctagagggga agccgacaag 1140

gacgacaacg ggcttgcagg cacagacgag cagtggtggg tggcagtgtg gcacaggcat 1200

cgcaagtcaa acagttgcac gaggttgtca cagccagcca gtcacgcaca agcacaattg 1260

cacaaaggaa cggaacggag gacaacggtg gcgccgcatg catgggttgg gtcgggccgg 1320

tttcggtggg tgtggctcat gcgggtgatc aatgcggcgc gtcgtgcaga tagctctagc 1380

tggtaggcgg atttggatgg acctcttcca ttcaaccgta cgggccgcct gcccggctgg 1440

cggctggccc agtcgatttg ggtggacgcc gccgccgcgt gtattcactc cccctcgtga 1500

ttgcatttgc ggctcgttcc tactcagcct ggccgcggcg ttaaccgtcg gcaggtgggc 1560

gaggaggcaa caacccgtct tgcttacgta cgcgcgcatg caatgtgcac gtttcccctt 1620

caaactagtt tgtcgtctcg gacagcagca gcagcagccg tgcagtgtcc ccgtgttctc 1680

cccgcatgtg tccatgcatg tacaacgtca actagtttgc atttcagcaa cagtacacat 1740

cggtgtgctc ggtgcaacgt ggaatgtagg gtgaattcgc atcagttcta tatattgttc 1800

tccaacctct cctaaggccc gttcgtttcg gccggatcgg cccattcccg accttgtgct 1860

ggtggaacaa attggtccgg tttgaaattg ggtgtgattt attgcaggtg ttcgttttg 1919

<210> 2610
<211> 2318
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260260_G1, chr7:141519603..141521920, Cluster 15

<220>
<221> modified_base
<222> (480)..(480)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (480)..(579)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (481)..(481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (482)..(482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (489)..(489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (490)..(490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (491)..(491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (492)..(492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (493)..(493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (494)..(494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (495)..(495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (503)..(503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (552)..(552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (553)..(553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (554)..(554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (555)..(555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (556)..(556)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (557)..(557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (558)..(558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (559)..(559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (561)..(561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (562)..(562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (563)..(563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (564)..(564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (565)..(565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (566)..(566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (567)..(567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (568)..(568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (569)..(569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (570)..(570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (571)..(571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (572)..(572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (573)..(573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (574)..(574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (577)..(577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (578)..(578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (579)..(579)
<223> a, c, g, or t

<400> 2610
caagaaggtg acgctggcga tgatcaggtg gccatgtgga aggccctgag ctcaagattg 60

cagacgcgat acgatcaggt ggtctgattc atccaagcac tcatttcacc tcgtactgcc 120

gatggagatc tccccccacg acgacttttt ttttctgcac ccctttttt tcctcttcat 180

ttaaatagca atggttcggt tgacacacac atatatattt cgttcaataa gaaagggttg 240

tcagaaattt gaagatcgat gatgacgatc tggccatgct ctttccctga cgacgagacg 300

tcgtaggatt caatggtgaa accctgcgtg cctcttaaag aaagctctct gtgtctctct 360

gtgcgtgcgt ttcggccatg cttgtcttct tcccagtcta gcctagctta ggcttgcttc 420

tttagtttct accaccgtac ctagaaagga tgaagtagtc agacgaatct ctagaatcgn 480

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnna ccaatccttt ggtatatagt 600

attcctactg attatactat caggtcgcag atgaataggg ttttgcagga ctgaatgaat 660

gacaactaca gatccagcga ctaatcgtcc ataatacagt actaataacc ggtgaagtga 720

cagtcagatt cattcaccca gctgaaacaa cggaggggag gggagggaaa gagacgatgt 780

gcctccagga cgggtgcagg cttaattggc aggaggtggt ttcccccatg cgagcgtgcg 840

tgcgtgtaaa gaatctggct ggacatggac tgaggctggg gaggggactg ccactgcatg 900

gccccttttt aaccggacag cggcgcagcg gttgttgata aggatatact gtactcgtag 960

ctagcatgac gattgacatg caggtggagc aaaagcagca gcggctgcta tgcgagcttg 1020

tcagttgtca tggtcaggtc aggaggagga ggaggcctgg cgcccacaga acatgggcgc 1080

ggattgaatg cccaaatgct tccaagcaga gcagaggcgc aaaaatgaat gaattcctca 1140

gggctccagg aggcccgggg cgagcagtgc acacatgtgg atcctgcaat catcgtcgtc 1200

ggcacactgt ccgtttctcc tcccacccga ttcgagttac aggttccaag tacatgtgtg 1260

cgccagtaac aaagcataca cggtatgcat cataagtggc cagtgggtgt gcatcaagtg 1320

gatggatata catatagcag caagggagat ttattatttg tggacactat agcttcaatc 1380

gttgtgcgtg tcgaattgca tgtgtctgga atcctgaatt ctgtctggct accttgtgcg 1440

agcaagagga taggatttgt gtgtgtgtgt gtgtgtgtgc aggcagcagg cttcatcacg 1500

cacgcatgtg cgcgcccagg ggactggata agcaagtgtg catgcgcgcg tgctgcgcca 1560

cacaacggaa cggatgagga cacagctcgc ctcccgggac cttggaaggc cggacgggac 1620

atgggacgtt catttcacac accgttacct ctaaaaacat tgcaggacgt tacagccaag 1680

aaggaactac acagcgtgaa aacaatacgc tgctgctact actactactg gctgatcagc 1740

agcacacgcg ccaaacgccg ttccactgtt ccagtttcgt cagcggttaa ccaacttaag 1800

ccccatcact tgtttgtatt tgtccatcat tctgatcgtc ttcatttttc ttcagagctc 1860

cagcagcagc ttgctttctc ttggacgcca cagtatccat gaccacatgt ccgatatcta 1920

actaatgcat atatatgcat ggcaaattat ctccaaaaga tttttgtcaa atttccttgt 1980

caaagcatgc atgctttact ctgagctttc cagatataca acaaattgca gctaccacct 2040

gcatgtgcaa tccttgcgaa ccaacggact ctagctagag atcggctagc gatcgatctc 2100

tgctgttata tgcccccagg tctgcacgaa atactggtgg cagatcggcc tgtgcaacgc 2160

accgcactct tatgttcctg gcaacagcaa cgtttagatc tactactact acccctctga 2220

tgccggtgtt tatgtggcac cccgcaccca cggctgccgc cgctcccctt atctgacgcg 2280

tgcgagagca cagcagactg gtaggggaga ggacagaa 2318

<210> 2611
<211> 2705
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260484_G1, chr7:142880138..142882842, Cluster 15

<400> 2611

cctctgattt taaactaaat aactttattt aagtaatcgt cacagttcgt cattgtatcc 60

aaacatgccc ttatatacga ggagaggagc ttggaagagg agaacacatt ggtcggcaat 120

ttgtaagggt ctggtggttt taaatttaaa ccatatggat tgcagagatt taatgatcta 180

aattcatagc aagttaaagt cttctctaat tttttctaaa ctcaacaaaa acaagaatga 240

tcgaacaagg tctaactttg gtatgttcga ccgtcgacaa atctgacttt ttttttaca 300

agaagtaaac aaaatctggt ggacagcagg agcaacacat ctggttttgc ctcggacccc 360

caaaacggaa taaataacca tgttgggccc gttcacgcca gactcatctt ttcgcactac 420

atggcctcgc gccatatgat aggcatgggc cgcaaagccc agctctgcac ctagcccagt 480

aagccagcaa tgatgcagcg ggaggggcaa aagctggcat cctggggccg acacaatgag 540

tagcgtgttt ccctttcctt tagctccaag cttttgcact cactcgcgag aaggcatatt 600

tgccggcacc cagcagcggc gcgcggcgcc catatcatgt catgatccgt gatgtcacga 660

gacggcatgc atgccgatcg gcgagagaac gtggcgccat gattccttgg agatggatgg 720

cgatgaatcc ttcctcgctt cggatcctct ttttacagca acaggtgcag cgccccatca 780

gttaaaaggg cgcaagtggc ctgcagaaag aaagctcatt ggaaacgtgt gtgggccgtg 840

gggcggtata tatgtataaa gatatatgat ataaaagaaa cgtcacccaa atttgcgtgc 900

caataccatc gtgaaagatt atctaaagtg accacaacat taatttgcat ctaatttatt 960

aatcttattt attattatta caaataacta aaagcgtccc atagaattta cttctaaatt 1020

actaacataa aatgttatag taaaaaatca ataaccataa atatgtctat atgtgtttcc 1080

cttttgaata tccactcgta tcgctgttaa caaaatatta aaagcaaagg tcaaggtaaa 1140

cacacttgtg tgccacgatg aaaaccaaat gtagtacctg gatgcatgaa tgagtggtaa 1200

aatagatttt gatagagtat ttctcgacat ctagattgca caaaaggagc attttaaata 1260

aaatatataa taagcattat attagagttt ttacttgaat atatggatta aacaaaaaat 1320

tacaacaact aatgacatca acacttgaaa gctgaaatct agactgttga actcacgaca 1380

catgtgcttg aacaattgtt tatataactt aagctaagct ttcacctagc taaacacatg 1440

gtgaagacac acatatatat gctagaggag aaaactatga atatgtaaaa aaaaacatat 1500

cgaataatta gtaaatctac aagaggcata tattacttgc aaccattaaa ttcatccaca 1560

aacttctaac tcatatgctt atctcatata ggattgtagc gtgtgcataa acacaggttg 1620

tcaacctaat taagaaggag cgcgcgccct agggaggaat atataagtgt taagcagaag 1680

agatgtgcat gggaaaaggc gcagaaggaa tcctgctact taaatatgtg cagaacaaag 1740

ggcgtttgga acaaattctt atcgtacacg atttggcacg gggaaagcta gggggagaga 1800

tccaaagcat gccaaccagc atacatacat atataggcat agcccaatac tcatctctat 1860

ctatcccaaa tgtgtctggt caactccttg cctagctacg agagagatcg atggactgca 1920

tgcagattcg tgttctttcg atgtttgtat ctttatttgg ggctcagaga ggctggctga 1980

tcgctgaaca cctgctgctg tctgtacagt cgacttgaga gggtttcaga ggaggcgcac 2040

agtagccgac tgcagttgtg tggcaacgga cagacacgca cctttctatc ctcttctttg 2100

gccatgacaa ctgacaaggt gaactggtct ctctgcagaa accaaagcaa aggtgacgtg 2160

gacttgaaag agctgcctgt actacacgtc ctctggaacg aaagcgccgg ctatgcatgg 2220

attcccaagg agcagagcgc tgcagcagcc ctgcaggtgc atgggcaaag ccgggttcgg 2280

aacgacgaag cataagagtc agacggtggt gcgtcgtctt tgttcctttc tgtcaaacca 2340

aagtcaccgc gcgcggcaaa gaaagcgcat gcaggagaac tcgggggct ggtggtgctt 2400

ttctcctgaa aaatataatg aagcgatcca tgagcgtgcg tgcgtgcatg gagatggagg 2460

agcaatggag tggagcccca cctgaggcct agagatacgg gcgatcgtgc cctagctagc 2520

tccgggtcgc atataaatgg gaagaaaagt tgcacagggc gcgcgacgag ggggctaaac 2580

catggaagca aagaacaaat taaaggcgac ctaaggcccg cctaacccag gtaacttttg 2640

cttgctctcc cagtcaggca gtcgcagagg aaagcgtagt cggaaagcgg atgcccctag 2700

ctcat 2705

<210> 2612
<211> 1777
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262979_G1, chr7:156657611..156659387, Cluster 15

<400> 2612
ccattacacg cgcattttga ctatggaatt tctgaacaga attaaatgca gaaatgacta 60

aattcctaac cgtactctag tactctccag tagtatatac tactttacgt actgccttga 120

gttagttgaa cctaaacccc cgacagcacg tcggtacagt acagtacagt acagaacgac 180

gcttcattcg atcgctacgt agtacgtacg aggtaattat ggcgggcggg ccggcctggg 240

ctgtcaatct atcgcctccg atggatcgat cgatcagaac ggattgatgg atggagactt 300

gaatgaatgg agacggagcc gtggccatgc atggcccatt gaggctggag ctaggactag 360

ctagggcgga gagagtgatg atctggaggg cgtggaagtt gggcgaccga ccgaccgacc 420

gaaaagccaa aagatatacg gcgcgcgcgg cccgggcggg gagaggaaag cctcagccga 480

tgctggtggc ccgccggggg cagagcagag accggcgcag cgcgaaacag ggcatgcaac 540

tgctgctgct gctgccgccc gcgctctggt cctgctgctg cctgaagcta tgagagctat 600

ggctctcctg ccattgcctt cttccgcgcc acactccgcc tgcgcgggcg gcacgcggca 660

gcagcaggct tggccgacga cacatgcgcg agccgtttcc cccgtcgtcg tcgtcgtcgg 720

ccgcgtgcac tgactgtagc aagctgtgaa taggccaggc gctgtgcgtg cgccgggcca 780

cggtgtgtgc acatggaccg cgccaggagc gaccacgccg gcgacgaaac acacaaacac 840

agagaagcca ggcaccagga ctccaggaga cgagacggac caagatcaag aggcatgcat 900

gcggctacta gccagagccc agagccagac ttgttggtcc cttcccttac ccctggttgc 960

ttacaattaa tggcgacacg ccacattgat gattcattgc attgataatc tgtacgtgac 1020

ggtggctcta aaggctcccc ggccgccagg acccccttt aggtaagccc aggcttttgc 1080

ttttagcaga cacgattcaa cgacgatcgg ttttctttct ttttttacta tatcgatcaa 1140

acttgaccca tctcttggtt gtggttcagt actccaatcc agtgcaaact gctcaccgcg 1200

cgtcaccggg ccccgggacc aaaacttgga cgtaaaactg aagaagggca aaacttctcc 1260

tttttgcaat ccttgcacac cactatagct cgtcatacac tcaaacaggc ggttatgtca 1320

cagttccgac cagcggccac atacataggt cataggtgtc gagaccagca gagaggagaa 1380

ggcgagcaac aagcaggcat gcctctgcta cgacgtttct gccggcaggc aagctaggca 1440

aagcgcacgc aatggattgc actcaagtga ccatgtcccc gcacacgtca acaacaacat 1500

tgctacgacg tttcgggcgg gaaaggggc atgctagaaa gctacgtacg cagcaatgcg 1560

tgcagctagt ggcacgtact catggtgtca cgcgcacgag ggtacgtacg ctcagatcat 1620

cagctcaagg agccgtcagt tcgtcgctcg taaagccaag ccaaggaaca aagacgcgtc 1680

gtacgctcaa cgaagcttta gggtctgtat actgtatact ggtacattaa taattcgccg 1740

cgcgctacaa tctatacctc cgttcacaaa tatgctg 1777

<210> 2613
<211> 1449
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264190_G1, chr7:162336834..162338282, Cluster 15

<400> 2613
atctagcgcc tccaccacac gtccacgccc cgcgatgcct actggcggta taatatgttt 60

tgtgctttaa aatctagtgg ttagggcaca ctcgaattac ctaaacgaac aacgatcaat 120

caaaatcgtg gtactatagt ttcttgttat aatgcacggg tatttcacga ttcatgaaca 180

ctattctaaa cgagagagag agttgggaat tgggagggta atgcttactg aattgggctg 240

ctccaaaatg catttcaagt tcagtctagt tggaaacttc ctccataaac aggcctaacc 300

attcctgacc ccgcggtaag cgatctgaaa acctattggg ccaaagccca tgagctctac 360

gagcttggaa aaagtgaagt gaagcactag gccacagagg gcgacggatg ggacaacaaa 420

cgtgacagaa aacttgagca ctcgcatctc gggcggagga cagcttggca gcacccgtca 480

aaattttcag ctccacctga ctgtattcga gggcttttgc gagagcctgg agaagagaac 540

gcaaacgcat ggctgcaaag ctagcaagcg cctggagaag tggagactgg agagcatcgg 600

aaaatgtagc cgtgcttggc atcaaaagct gactgaatcc aaggccggga aatgtagccc 660

ctggaggagt agcagctagc agtagtgtag tagtactatg cagtctctga aaaaaagtga 720

gccagacttc cgtactgttt gaacaccagc ttgtgcttgt cctaggaatc gtagctttgg 780

aaaatggtcg cactgctcgt accgtgctcg tgttgtgttg ctccgcctca gctgaaaaaa 840

agctactagg tacaaaaaaa aacttgtgtg cactgttcta aaagccgcgt tggatcagcc 900

atcctgaaat ccggctttgc cctaatggga atcggagctg tagcaacaga gaaggtaacg 960

aaagacgagc gagctgcagc tgtctcctga tcgagtgaag cttctgctgc ttttttcttc 1020

ttttttttttc gactcgaaga tatggcatgt tattgcttcc aacaggacag acattgggct 1080

agtccgtgaa gcaacctctc tctctccggt tcagatctaa taaacacaag ggagcctaaa 1140

gatgcttgtt cagcgttgca gatgccctca tgattatttt taataaagcg tctcgagatc 1200

gatcgaattt gttaaaagtg tcggtattca ccaaagattc agcgtcaagt gcttttattt 1260

aatccgagac atttttggtg cctgacatcg atacaaaagt cggctacaaa cttgtctgcc 1320

gcgaaaccaa gcaggcgaac ggcgtatgtt gtcgacaaaa tgtttttgta gacataagca 1380

cggaggaaat agacaaattg ctatctaacg ggatctctgg tggcatggca tggcatggca 1440

tgaacgatg 1449

<210> 2614
<211> 1475
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264766_G1, chr7:165798273..165799747, Cluster 15

<400> 2614
acccgacgcg gccaatggca gcttaaccct gcatgacata attgcatgct ttgcttcttc 60

gttgcagaag aaacataccg tttactaata gaatttcagc agggggccac acacttcttg 120

ttcgctcgaa aaaagagaga gagagaagaa gaagaagaag atagttgagt tagcagcaag 180

catgggcggg ccgggcaggt ggccgaacaa gcgacggcaa cggcagcacc agcggactgg 240

gccaaccggg gacggtgtgg atgagccgat atccgcgccc aatcgccctg cattatctat 300

catactagac gattgttgga aaaacaaatg cgcgccgtga cgccacacga gcgacgtcga 360

tgggtgcagc aggaagggaa cttgggtttg ctcaaccgga accgcccacc cccgaaaacg 420

gataggctcg caccagcgtg tcgtcctcgc gtcgtgggcc agccatgccc acaggcagcc 480

gccaccacag ctcgccgtca tggcgattcc tcctcttctt catcttctcc ctcttttcgc 540

cgtcagggca caggcgagga caaatgcgcc tgcatcagca ccgataccga cccaaggctc 600

cgtgtccatg tactactact actactactg gagtatataa attcgcgtca tccggtgcgt 660

tttcttgcgt tccggtctct ttctttctgc ttcgcttgtt cgtctcgtga tggacgctct 720

tgcggtcgtc gacctactac tcttcctgcc attctcgcaa cacgtcgaat gatgtggcgt 780

tgcgttgctg cccacgattt tctccttgta cgtatagtag taatctgatg ctgctgccgc 840

tgccctatcc tacggaagat aaaaggattc tgaagatgtg acgggggca agattagctt 900

gagattccgg gcgtgccagg catttttttt aaggatctct atccgaaaag gatttgacaa 960

ttgcgatcag tacgcttaat ccacggtcac gattacgatc gcgtcgcttt cctaagttgg 1020

gcatgcttgc acgcgggaac gctgcaacca ttgtttgagc ctggcaaagg ggtgactcgg 1080

agacactagt accggtcaaa ctgctgcggc gggcggcgtc tcaggttcct gtggatttcc 1140

tcctcctcct gagcttccaa cggtgttgtg ttgacctttt cgttattgcg acgtggcaag 1200

ggcggctacg gcataggcat ggcatgactg ggcctgaatt tgactcgcga atctgtcagc 1260

catgacatga gctccgtccc tgaccggttt gtttcgttcc caacaaaagg gaggggggct 1320

cgcctcaaga atagaatata tggtgtgccg atactaaaga ttcagggttt tggaagttga 1380

agctctagca gttattcact tattcgtgcg tttgaacttt gaaggaacgg aggccagacc 1440

ttgtttacgc tttcatcttt cgtcatgatt catgg 1475

<210> 2615
<211> 1741
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264767_G1, chr7:165799781..165801521, Cluster 15

<400> 2615
aggcccctcg aaagcaggac gcagtcgcag gcatgtgcgg cagagccggg aaacaacaaa 60

cgaacgcacg ggcgcagagc agcaggcagg caggctctga attttctgaa acgacggtca 120

gcacgtggcc gtcatcagat acctcagatg agatggcagg cacgctgatt acagggatgc 180

cttcttttgc gggcgcccgg cgccggcgcc gcggcagcct tcctttcctt tttttttct 240

ttttctttt ctccaatgcc gccattagaa tgatggggtc aaagtcccaa agcctgctga 300

ttagggcggc ttttgtattt gacaacacat tagtcattag attaggttca cacactatga 360

tggatcaagg ggacacagaa cgcctgcctg cattaagtcc tggaatctgt ttgccgctcg 420

ggaggacaag tgctccgtat agtactacgt actacttgcg gaggtcttgc agaataactg 480

ctcttctgaa ctgagaattc tggctggctg cgctttggaa gcttcctctc gctgcgtcag 540

cgcggagcta gcgctgtgcc gccggggccg ggcgccggcg ggatctttc ctgcatgtgc 600

gacgcgaagg gcaaatagag ccgaccacgt ggacggggtt cgtggtcggc atgcagatgc 660

acagcgaggc accgaagcgt gcagccacgg accgaccacc caacgtcgcg ccaggtgcga 720

ggcgggcggg gagtggaacg ctggaatccg tcctgcgtcc cgatacaggt ggcaccggcg 780

accgcgacgc gcagccaccg gtggagcact cgtgttgccg aggcgtatat acgtgggcat 840

gggcatggct ttgcgccgtg tcggtgatag gcgccgccgc gctgccgtag cgccgccagg 900

tcggcagcaa ctagacaatc ggtgggcacg tcgtggcgcg agcggattag cgggtggaca 960

tgagacggcg gctgaggccg atggcgggct ttggtcatcg ctgctagtag ctgttgtttc 1020

ttggttattg gcccatgttg cttcactagc ggttgtactc ggtcaaagta ggccaccgta 1080

atctctactt ctgcgacatc tagctagttc ttgggagcag ttattagagg aatatttttt 1140

ttaaagtgtg ttgaacacta attttgcccc tgaacggtag ttccgaccta attgcccgga 1200

cagtcctcct gaatgatctg tgattaaatt aattcaagct caaatcctca tttcgtacct 1260

gtatatcatg acaaactcat gagaagcttt gggtgatcta ctgatctcga agcaaccata 1320

cgatctctcc cttggtctgt gttacttttt accggtgtta cctgatatga taactgtgtt 1380

acctttctgt gtgttaccgg attcttgaac tctgttacct tacctccccc ttggtctgtg 1440

ttacctctta ccggtgttac gtgattcttg atggctatta gctattctta gtgttatcgg 1500

attctttgaa caggctcgga tttcatatct atttgtaaat tattacaaaa tactagcctg 1560

ggtttctaga ttttacccgc ctgtaacata gattttacca gtgggtttct agattttacc 1620

atcacagatt ttaccagcct gtaacctaga tttaccagcc tggaacacag attttaccag 1680

cacagatttt accagtaaag attttactgc attgcctctt tattgactct ggtttttgaa 1740

g 1741

<210> 2616
<211> 1714
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2648_G1, chr1:13559242..13560955, Cluster 15

<400> 2616
aatcatctcg ctccgagaca tgtgtgtggt tgtcaagttt gataggaaga gcgagaaaac 60

aagatggcag tgcactccct ggcagtactg acacctcggt gcatctgaaa gccacacaaa 120

aaaaaatgag catctcctac cacctgtttt tgccctctcc gtcctggaca gcccccacaa 180

ggagaaaagc tctctttgct gcgcaggcga gagtttcttc agcgctaagc ttggaatcaa 240

aacaactggg gcgcgcgcgc gcgttaggcc atgcagcagc ccgcccagct agctgcgcgt 300

ggatgcagta cgtgcaaagc aaaagaaaat cctttgcttg ggaataaaat cacctctgcc 360

ttgcgttgca tgcgtcgccg ctgcagagct agctagcacg gccggccggc cttcgtttca 420

tctcaaacaa ataaagttca ggacctgata tatatgcttc ttagtcgatc agtctgcgtg 480

caaaacgacg ttcttggtac catatatatg tacactacta cgtcttaatt aggagatgtg 540

tagattgttt gtcctagcta gtggcggtac atacatgcat agtcatgtcg ggttggacgg 600

ttgtgggagg ttgagctaga gctacgtact agcttgtttg actgaactag ctagatcgat 660

cgtggatcag catgcaagct aatgaacttc ttaggatgca tgcggtctcg ctgtgctgtt 720

ggtgcaagat gtggtgtgaa agcgacgaca gcgaaagagg gggaggcatc ttgtgtgtcc 780

atcaccatct gctgcgcgcc ataaggctgc gcgcggaaag cacgcaccga ccttgcctgg 840

ccggtaacaa gctagcttcc ctgcggccgc cggcccgcct atagctagct agctacttct 900

ccctcacact cgctcttatc ttaatctctc tccttcgttc atataagtaa ctccctctcc 960

atgaactctc tctttatctc tctctctctc tctctccact acaaacaatc aagcttgttc 1020

tttgatcatc gatcgctcat gtacggcagt tgaggggaat gttgtctggt tggagaccta 1080

acaccgcgaa ttaatcatcc atgccatgga agcagcatat gcccgcctgc atctatccat 1140

gcatgatggt ggaaggtttc ggaccaggct tcattccccc caactcaaca ctcagctgcg 1200

tcgctcttcc gtctccgatc cgaatacacc ggccggcgga cgacgatgac gaccacgacg 1260

gcggcggcgc ttcctcaagg ctcgctctgt tggcctgtcc tagctaggaa ccgttccgtc 1320

ccatgcatat gatcgaacga caactctttc tccaggtacg actaatcgcc accggaatat 1380

acttctcctc tcgatcggta taatatataa caccgcatct cgctccttga tactgtcata 1440

aattagatcg tctttccatg catcatgatc tagccaagtc tcagactgtc actgaataac 1500

attgaaaatg cttcggttct ttaatttggt ccgcacagct tttacactgt tactgatata 1560

tagcttcact ggcggtcttc ttctcgatcg gtcggtcgtt atttaacctc tggtttggta 1620

ggtcatttgc tttcaaatat tgaatttatt tgtaattttg tatctatgcc taatgcatgc 1680

gtacgtcatg cctgaagttt ctttcttttc tgct 1714

<210> 2617
<211> 2096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264922_G1, chr7:166752460..166754555, Cluster 15

<400> 2617
tacgcccaaa acgaacgtac gcggtcggcc aggctcacac gagattgtac acgtgggtgt 60

gtgtacgtcc tacttttaac ttcgagtctt tgactatata aaaattccat aatcgataca 120

ttattttatt acaatagtac taaaagaagc cagtatcttt cgctagctga gaagatctag 180

aaatagccac cacaattatg aagaaaagaa aaaggggaaa gacggggaaa aaaacgttgg 240

aatttacgat gattagacga cttaggttaa acaaaagagc ctatgagtaa cacaattgat 300

aaacagaaaa tttggaacaa taaattaaga aaacaaactc atacaagttg tgaaaaaatg 360

tttaaattaa gaatccatat aaaaatgata aaaagtaaaa attaaaaatt gtaacatcga 420

tctaagaatt catgccacaa atacggtttt ttaatacaga taggtgtttt agtcagcgaa 480

tgttgactaa cgtaaacaat actaaagatt tgtttttta tccgttgctt gattgaatga 540

actgagacca cgtacggcga ggaaattaaa ggttattgag agcttaattc tttttgacta 600

atattcacat cgtcattagc tgttctcact tgataatata aaattctaca caggttgttg 660

gttaaaatgt cgtatttgac tattggagat tgcgtcaata acttatatat atctgtggcc 720

agagaaagta catacgtgaa aaagaaaaaa gcaaaggcgc ggcactcttc cttaatcaaa 780

tagatgctct atctgtcccc cttcttatat atatagttgc acacagatcc attagaggcc 840

tgcatgccta ctatattttc gctgtggtta atttggtcta tctttatcag tttcgtgcta 900

gactgtcgac caaattattt aaagtgtgct agccgcttta tttaaaccag cctcctgagc 960

cgattcaggt caactgttca gacctcgctc caaccacaac ttcctggcct gatcagtcta 1020

tccatattcc ctgaaaaaat gtcaagggaa gggattggac cggtggttca accatgtatg 1080

ggttagctgc acctaagtat gagtgatcat cacttgtcga tcggttgtgc gcgcatgacg 1140

ggatgctgaa acgacctgga acctgcgagc atgctcatgc atgcatgcat gcaatgggct 1200

ttagcacatg actgccgtag tgggcacagc aagaagacat gggatgggat gaagggactc 1260

gcggccgcag catgcatggc tacccatttt cagcatgttt catcagcgac ctaggattcc 1320

gttcctatac ggtctcattc gtgaattctt cagtagtgga tcagcagaaa gatgtgcacg 1380

cagacgcagg gcagcttggt tagctggggt agggtagcag agagacacta gacagcccag 1440

cagccagcat gactatgagc agcaggaggg tatggtggtt tcagctgcag caaccaaaaa 1500

gctcacacat cccacaggct tgtcttgtcc aacggttcat ccgccaaatg gcggcaggcc 1560

gcaggttgcg atcgacacga cacttgaaaa gatgccattt gcagaccaaa aaaaacacga 1620

gataaagggc tgggtccagc caatctaaac acgggccaaa gaatcatccc agcccgcctg 1680

caatctagtc tttaagcgta agcccatttc aacaaggaaa cagtagtact tgcctcgtga 1740

tgcgctgcat tgggcccttt cagccgccga gcccaccaaa aggagaaaag cgggtcgaat 1800

ggtcgctggc aggccggact gggccaccgt gtcaattttg ccggttgccg ctgctagatt 1860

gtttatgcat agcaaactac tactccgaca cacggcgagc tgcagcctgc agaccttgga 1920

actggcaacc tgcacgagta gcactggttc ttctgcaccg acttgcacgg gcacgagaag 1980

cgggaaaagc ctgcagccgg aaaggcggcg ccttttccc cattaacagc taggcagcag 2040

ctagcagtgt cttactaaaa taagtaaaat ttaaaatggt ttgatttaga ttaagg 2096

<210> 2618
<211> 1465
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265072_G1, chr7:167589137..167590601, Cluster 15

<400> 2618
agagtgtctc ctgtccaaaa cctagcaaca gtgcacatac atggctacag tgcgctatag 60

tgcacaccca atcctaatgg gttaggccca tgtgtcactg taacaattta taaattcagt 120

ttttacgtct tttgcgaatt caatattatt tgcatcgtgc cccctggctc acgggtaatt 180

aaagaaaatt acacaaatta attatattat agaagctaga gctcctgtgc aagataaaca 240

ctcatcggac acattttaat aatttggtga aaatgtttca tgatgaagct aaaaaaccaa 300

agttaaaatt ttaaagtaaa actcttccaa tcagacggat gccttgagcg gatatattgt 360

cttatctctt atcttatcat ttatttcaaa cttcacttta caatataaat tccttatttt 420

acataatctg ctgtgccggt gacatcctta cttaccatgt tgtctaccgg agtggcgtgc 480

cggggacatc cttaattacc atgttgtcta ccggagtggc cgagtggcaa gctggcaacc 540

aacggagcgg cgtgcaccgg ttgacgcgga cgcccgagca ctgcaaagga aagagacgcg 600

cctgaggatt tgacaggaga gatgcggcgc gccaaaggac tagcgtgttt accctggcac 660

gcacggagac gagccgcgcc atttgccgac tcctgcgacg ccacgacacg catcgatggc 720

cgcggccggc cgggccacga ccacgagcaa caaacagctg ggccaggcag acacctagta 780

cacagtacgg tacgaggcgc accgtggttg ctgctctgct gcgcgaattc aaccagccat 840

ttggctcacg ggaaagcccc gttcggcggg gcatcgcgca cgggcgggcg cacgacgagg 900

agggtcggac gatggcaccg caggcgcagg agccgcacgg agaccgcgcg cggtgcggcg 960

cccgccagat gcagcaaccc cagtacccca cgccgcgcgt gccttccgcg cgcggcaggg 1020

cggggcggcg cggcggctgc gtccccaccg cggagacgcc acgccgatca gacgtcgcca 1080

cggagacggg cagttcggct cgtcgcgttc gtgctgccgt ggcgcgccag gacctagcgc 1140

gtgaccgcga cgatcgaccg aggtaacgcc ccgtcgacgg cattagcctc tcccggaggg 1200

aaccgccccc cgcccagcgc ccactgctcc tgctggtccg tccctggcag tggcacgaag 1260

cctggctggt tcggccgtcg cgtcgcgtgg ccgggtcgcc atcgcctcgg actaaaattc 1320

cgtttgacct ggcgcgtacg tacgtatcag acgatgacac gtactgccga cggcctcatt 1380

gcgccggcga gtcgcgagtc gcgagtgcat gattgcgccg cccgttcctc cacagcacag 1440

tagcgcgctg ctgcatgcag tagcc 1465

<210> 2619
<211> 1701
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269395_G1, chr8:13307939..13309639, Cluster 15

<220>
<221> modified_base
<222> (40)..(40)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (41)..(41)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (42)..(42)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (43)..(43)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (44)..(44)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (45)..(45)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (46)..(46)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (47)..(47)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(139)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (590)..(590)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (590)..(689)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (591)..(591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (592)..(592)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (593)..(593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (594)..(594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (595)..(595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (596)..(596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (597)..(597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (598)..(598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (599)..(599)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (600)..(600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (601)..(601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (602)..(602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (603)..(603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (604)..(604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (605)..(605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (606)..(606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (607)..(607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (608)..(608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (609)..(609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (610)..(610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (611)..(611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (612)..(612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (613)..(613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (614)..(614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (615)..(615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (616)..(616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (617)..(617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (618)..(618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (619)..(619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (620)..(620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (621)..(621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (622)..(622)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (623)..(623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (624)..(624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (625)..(625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (626)..(626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (627)..(627)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (628)..(628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (629)..(629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (630)..(630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (631)..(631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (632)..(632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (633)..(633)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (634)..(634)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (635)..(635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (636)..(636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (637)..(637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (638)..(638)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (639)..(639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (640)..(640)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (641)..(641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (642)..(642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (643)..(643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (644)..(644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (646)..(646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (650)..(650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (653)..(653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (660)..(660)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (661)..(661)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (662)..(662)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (663)..(663)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (664)..(664)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (665)..(665)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (666)..(666)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (667)..(667)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (668)..(668)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (669)..(669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (670)..(670)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (675)..(675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (676)..(676)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (677)..(677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (678)..(678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (679)..(679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (680)..(680)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (681)..(681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (682)..(682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (683)..(683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (684)..(684)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (685)..(685)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (686)..(686)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (689)..(689)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1172)..(1172)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1172)..(1271)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1173)..(1173)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1174)..(1174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1175)..(1175)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1176)..(1176)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1177)..(1177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1178)..(1178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1179)..(1179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1180)..(1180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1181)..(1181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1182)..(1182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1183)..(1183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1184)..(1184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1185)..(1185)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1186)..(1186)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1187)..(1187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1188)..(1188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1189)..(1189)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1190)..(1190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1191)..(1191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1192)..(1192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1193)..(1193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1194)..(1194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1195)..(1195)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1196)..(1196)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1197)..(1197)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1198)..(1198)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1199)..(1199)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1200)..(1200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1201)..(1201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1202)..(1202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1203)..(1203)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1204)..(1204)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1205)..(1205)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1206)..(1206)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1207)..(1207)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1208)..(1208)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1209)..(1209)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1210)..(1210)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1211)..(1211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1212)..(1212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1213)..(1213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1214)..(1214)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1215)..(1215)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1216)..(1216)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1217)..(1217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1218)..(1218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1219)..(1219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1220)..(1220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1221)..(1221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1222)..(1222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1223)..(1223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1224)..(1224)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1225)..(1225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1226)..(1226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1227)..(1227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1228)..(1228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1229)..(1229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1230)..(1230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1231)..(1231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1232)..(1232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1233)..(1233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1234)..(1234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1235)..(1235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1236)..(1236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1237)..(1237)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1238)..(1238)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1239)..(1239)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1240)..(1240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1241)..(1241)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1242)..(1242)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1243)..(1243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1244)..(1244)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1245)..(1245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1246)..(1246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1247)..(1247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1248)..(1248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1249)..(1249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1250)..(1250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1251)..(1251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1252)..(1252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1253)..(1253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1254)..(1254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1255)..(1255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1256)..(1256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1257)..(1257)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1258)..(1258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1259)..(1259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1260)..(1260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1261)..(1261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1262)..(1262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1263)..(1263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1264)..(1264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1265)..(1265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1266)..(1266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1267)..(1267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1268)..(1268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1269)..(1269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1270)..(1270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1271)..(1271)
<223> a, c, g, or t

<400> 2619
cggggccgag gccacgaatc aagctgaaca tcagagtaan nnnnnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnng ctgatacgcg cggcccagcg ctttaacgac cgcatggcaa 180

atcagtttgg cgcggcgatt accaatttct cgttcctgtc gatgatcccc atcctgatga 240

cgttatttga ggccgccggt tttgtgctga cgtccctgcc acgacgtgca gcaattgtgc 300

gattcgtata aaaaagaagt tgctcgtggc gctcgatgtt gatgaagtta gaccgaggtc 360

ctgaacaaat tcgagcctgg cacacctagc acagcatatt ctgaaaaaac tgccgttgtc 420

acagcgagac atccatttat atgatgataa tctcttacac agccgaaatc agattttaat 480

ttattatata ttatacgata tttcttaatt aaatggtgga aagagaacta gacacataca 540

aattacactc aactcgtcta cgcaacacac atattcttat ctgtggcatn nnnnnnnnnn 600

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 660

nnnnnnnnnn nnnnnnnnnn nnnnnnnnna aaaatagtcg cctccccccc acgcgccagg 720

gcccccacaa cagccaacag ccccccccac cacgccccga ggagagacag aaaggagaga 780

agaaaggaat aagttagggc tcggagctcg aatgcgcgca atgctgtttt tgactatttt 840

attcgtaggg tctggacccg cgtgtttggc agagggagga ggaggccacc acctcctctc 900

ctcgcgatcg aaaagtgctg ctgaaaaaaa acgttattgc tcccctcctc catcgaggaa 960

taacggaaac aaagactcgc atgacgtctc tgaggccacg agagatgttg atggaacgtc 1020

acgctagaga cgtgctctcc ctcctctcct cggaatggca aaaaggctgg gacgcaggaa 1080

gtgcgcacac gtccgcccag gaagcgaatc agtccccccc tactccattt gaatattttt 1140

agtttttcg tgtcccggga ttttgagaat annnnnnnnn nnnnnnnnnn nnnnnnnnnn 1200

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1260

nnnnnnnnnn ntggttttgg tttctttgtc aaattccttc cctccccctg gcagaacgtg 1320

gacatattat tttgagcctc aacccttccc caagcaaaga cgggggggttg tgttttcccc 1380

cgggggggggg ggagccccaa tccccccccc aaaaaccaaa ttgggggccc taggggccat 1440

ttgtccccgg gccccccccc cccaaaagcc cccaagaaga aggggagggg ggtttggggg 1500

aaccccccccc ccccccaaac ccagattcct ttttcccttg cccagcccca aaagccgggc 1560

cgggcaaccc cgggggggggc ccaagcccgg gaacccccccc cgggaggggg ccccctccgg 1620

gcccccgggc aggccggttc tttaaagggg cggggacggg cgcgggaccc catgccgggg 1680

ggggggggtc gggcacgccg c 1701

<210> 2620
<211> 1515
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_271429_G1, chr8:26102652..26104166, Cluster 15

<400> 2620
ccaaaaatat aaatatcgct gggtaattgt gttagtcaaa ctttcttaag tttaattata 60

tttgtagaaa ataattggcg atttttgtat cattagatga atttatatga caaaagttca 120

atgatctatt taataatgct aattatatat atgtgtgtag atatatggtc aaagttaaaa 180

tcgtttgact catcacaaag taagactttt tttaggatgg aggccgtata tatgaaagcg 240

gaatagtctg agatttctta gagcgatatt ttgaaaacta ttgaagaaac tcaacaaata 300

tacttctaat ttttttaggc gttaaaaaaa ccgttggttt tttttaagta ttcttttggg 360

aactattaga gatgttctac aacatcaaaa ctatttcgag acaaacttaa attgaataat 420

cctaaatcgc cgagtattat atgctaccac agcacagatt caatctatgg atggatggtc 480

ccattctccc cttgcggcca caattcagat aagatctagc actatttcct gttcctatcc 540

tgaaatcatc ttttattcct ttggtaacaa gttcgtttaa ccacacagca catacttttt 600

gaaacgaaag cagccaaaag ctgtggcgtc gctgaataat acgcacaaag attttatttt 660

ggaagcggag aaggggggggc aatcgtgcgt ggtggacagg gctaggacca gagggagagg 720

gatgcagagc gccctcgaaa aaagtcaacc ggcgtcgtcg tcacgccacg gtcaccggcc 780

ggctagggta tagcgttgtt agcatgcgcc gtgccatgca cgcatgattt cccggcatgc 840

atggtccaag ccgcccagga ctgggaggga tcaacatggt gcacgcgcag cgcagaccgg 900

ccggagagac caggcgatct acacgcgccg gtcgggccat ggtggcgaga gcgatggcgg 960

tgaggctgtt agctagggat tgttcgtttt cgtccccccct ccgccccggc ggcggtcgtc 1020

ggctcgagga gatattctgg tggctggtcg tcccgtgggt actgcccact gcgcgtgcgg 1080

ccgggatccc aaatccgatc cccggcggag ggttggttac gtgacgtgag agagagcgca 1140

gggaagattt ggcaggagac gctagagcta gctgctcgcc tgctgcgaac gggcacagta 1200

ataataaggc gacaagacga ggcggcgaat tgaaggcaag gcaggcggca cagcaacgta 1260

cactacacgc ggccgtggcg cggcgacgga gcgtggccac cacgggcgcc actcgtccgg 1320

ggaccggacg gatccggcgg gtgggggtcg cgcgttggaa agagagagcc cagagaaaga 1380

gatggttttt tgtcgggatc gctttagatt ctagcatcag catcacccgt caattcagat 1440

cttcagctcc ctacgtggaa gaacaggcac acacacacca gcccacttag gcccatcaac 1500

gccccaaggc ccaac 1515

<210> 2621
<211> 1527
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_283035_G1, chr8:104811440..104812966, Cluster 15

<400> 2621
tgccactcca actccgttgc ggcatccatt aatcatcaag atgggcagat cttgcctgtt 60

ttgcacgcac atggttctct aaaaaaaggg gggggctggg gaagtgcctc ctgctaacac 120

atggttcgcc agccgtcgga taaaaattcc ccctggcgcg gcgaggagcg aaaggcgccg 180

ggccggatgg atgggtagct agctaagcta gctagctagc tatacattcc ccacctggcg 240

cccggaccag cgagctgagc acggcgcgca gaccaactgt tgatccaggg ctccaggccc 300

agccgcccag ctcgctcgcc agagaggtgc gtgctgctca ggaaaggcag gctcagctag 360

ctgctgcggc gttgctagat cctagctttt gtcctagctg ttgcgtctgc ccttttcct 420

gattcctcca ccagatctgg gcggcaggcg aaagcatcag cgtactacga gcgaaccggc 480

tggggttttt tcccctctcc cgcagagcac gtgagcagca gcgtgtgcgt gcaagagaac 540

caggggaagt agaatggtgg ctggatcggc gacgaaatgt gcccctccgg tgccgcgttc 600

cgtgcccgcc atcattgatc atgccgcatg cctactctcc ggccggtctt tgttcatcga 660

cggcgcgaca agtaacagtg actccggcgg ccgggtcatc gaacaccacg tccgacgacc 720

tcagatcggc cgtgccgtga gcccgtggag cagctagctc gtgcaagctg gtgatgtgga 780

tcgtgccctc cggtggcgaa ggtgaaccga accaaggcaa gcccgtgctg ctccatctcc 840

atgccatggc ggcacgtccc cgaggcgacg ggacagggag gccgctggct cgctcacctg 900

aacaacaaaa cccacacacc tcgctcgcgc gcctggtcct ggtcgctctc gtggtcacgt 960

cgtataaaag cctagtcata cctgccgcct ggcctgtcca atgagacaca caaatgcaag 1020

tacagtacta gtagtatgca acaccttggt ttcttctcca tccgattctc tctctctctc 1080

ttcccaagca aagcattctg tgcttctgtc ctccagccta gggttggtag gcaagtgttg 1140

gaaaccgcta aaaaagcaat tgcgccgcac caaagaccac accactggcg ataaactaat 1200

ccagatttag atgcacccgt cacacatcag ggtatccaat cagagggagt aggaggaagg 1260

gatgagctcc tctctttctt aacagcgaca tctgttaggg agagaagaag gggaaaaaaa 1320

accagagacg cgatgcagag cattaagacc acatacaacg gttgtctata gtatgtgaat 1380

tatccgttta cacatacaat ataaataaca actaaaacag tgagttatcc gtctacacat 1440

accgtctaca catctgtttt agactggctc caacaggcca gctatttggc aaggcaaagc 1500

taatttagct ccaatagccc agctatc 1527

<210> 2622
<211> 1705
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_28560_G1, chr1:174513023..174514727, Cluster 15

<400> 2622
taagccaccg atgactgaaa gtagggacgt tccatccgaa tcagtataaa ccttacaatc 60

tcaatttact tgtcggagca aggtatgaaa caacgacaat gttattttag cttttctaga 120

taaataactt ttactatgca cctagatata catatgttta gatatatata ataaagattg 180

tttacctagc tagaaattgc aacgatggag ggagcaaatc tctagaagat ttgagcagcg 240

tgcatgcatg gttaccataa cctcgaacat ttttttttg cattggttat tgctaatgat 300

ctccaacatc atcacactct ctgattagta taatgacctc tcgagctcgt tctccaaaga 360

atgcttcgtc agctcattgt taggctggtt agattcacca gcgtcagtca ctaacaattt 420

ttagctttga ttaattatct tccagatcga tctacaggcg ggaaaggaca ctgatcggac 480

gcgtgtcccg gcagaaagga gccacttgga acgtaagaga aaccagcatc gaatcggtgc 540

cgtacacgtg ccctttttgtt ccttcaggag aagttactta ggtggcggtc cacgtcattc 600

tccacgcttt gtactttaat cgccgtgttg tgcatgcatg cactatatgt atttcattat 660

aatcaaggga aggatctatg atctatctaa gctcgtgtgt taaattatgg acactcataa 720

cctacgtacg tagcacggat ataaacacac gtacctcagg atacagtcat acagatacgt 780

ggatataaca attttaaaaa aacgatatgt gaatatgttt gagcattttt aatacaaata 840

aacaataata catactcatt ccatctcaat gtataattcg tttaactttt ttttatcaat 900

tttgaccggc ccgaccgttc tcccccaccg atcgccgcgg agccacaacc atgagagccg 960

ccaagagggg tcgcgacaca ttccacccac gggctgcagt ggtgtccacc tgcctccccc 1020

gccatttctc tcttccatag ttctgtgaag gtcacacccg ctggcgtgca ggtgcctgct 1080

gcagcgctgc tgcagtacga gcatgaggtg tccacagtgt ctaggaggat gagggaatta 1140

tggtttggtg gatttttgtc caaagatttg gaggttcaca tgcttggatt ctctgccgca 1200

acatacgcgt acacgagtaa gtggttacct aagcataagg tatttttca ctttcgtcgt 1260

ttttagctat gaattgcttt agatcgtgtt ataactattt tcttagttac ctcagtaata 1320

ccttaatttt ggtgcgtcct ccgctaccat gtggtgtggt gtggtggggt ggggtgtggc 1380

tccttcgatc attatagtcc tcatatgcgt taggtgtcgg gtcggtgcat acatgcagtg 1440

ctgacgtgcg gggcggtgat ggtggtcaag cgtacatacg tcgtcgttgc tgattcgtct 1500

atcatgagct acggttggca gtggcatgca actcccgatc gtcgttcatt tcaggcatgc 1560

aggaaggcga tccaccggcg cgctcatctt ctcgccgtgc agtaggctag gcgagaggcc 1620

ctccatcatc tccctctgat atccctagct agttagctag ctcgccaccc aggcccagcc 1680

ggcctgtata gtagagtggt agaga 1705

<210> 2623
<211> 1859
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_28998_G1, chr1:177595771..177597629, Cluster 15

<400> 2623
ctgacagtgt tggaggaatg cctcgcctca aacacgtgca aagtgcagag gtcaagcatg 60

ggtttccggc tactgggaag tcattaagtt cagggattat ggcaacggct gagtcggggg 120

agactttagt acaccaggct gaggtggcga aagataaagg caaatggtgc tccagatgtc 180

gaagtaaagg acatgtttca gcagaatgct ctacggttct tttctgcgac atatgtgaag 240

gttctgatca tgttgcagct tcatgaccga ctaagaggaa gctggaagcc taaacctatg 300

gcgtactcag tcggatgcca tggacggtct ggtgttttat cacattccac atgctccttt 360

tccgtcggca aaaaaaagaa ggaaatttgg ctctgatttc agttgaaggg ggtgtgctca 420

ctgaagcgga actagtctcc catcttgaac ggttggtgcc cggaaaacat ttttgggatg 480

ctcaaatgaa atcatcgact atgtgggtga ctgcttttcc ttctaaaaat gagctgaagc 540

gcacggtaaa ttttggagtg gctgatctga aggatgggag acacctcaaa tttgatttgt 600

ttgaagagga ggagacgagg agtacttgca ttgtgggaag aactgcctcg tgtcagcatg 660

cgggtgctta gtttgccggc tgttcttcgg gcgtatgagg tgttgtgggc tattggcact 720

atgttcgggg gaacgaccaa gatggacatg gtgacaacta gaagaaacaa ctttgggcgt 780

tttgacgtgg ccgtgcttaa tccggttatc atcccgagtg agatggatgt tgttattggg 840

acccgctggt ttgaactaaa attcagtgtt gaaaatgaac cccgcggcga ggctgctgct 900

actcaggaac aacagttctc tgtagcgggt ggccttggtg atggctctgt tcattttatg 960

aagcaatacg attctagttc aagcaaggtg gctgaggttt tctccggaat tccttcttgt 1020

aatgcttcta gcttgcaagg agagaagatg gcttgtgata tggtggagga tgaagacctt 1080

ctaggagggc gccaggaggc tgattgtgcc ctgttgctgc caacagttca gtatgacatc 1140

caggggaggc gcgtgtggtg gtccatgtgc aacagccgaa tgctatgggg gttgacactt 1200

ttggtaactc ctcttctatc atgccgaata atacagagaa aagagcaatg gtcccaggtg 1260

atggtggatc tgattctgga aagaatggac atcaagggct tgatcactcg ggttatgggt 1320

ctcagcagct actaggaagc aaccttaata aaaaaccgaa tgatgctgct aacactccaa 1380

gtaagaggag caagcggcgt gaggaatcaa ttgatgagaa tgctttggag cgggctaaga 1440

gactaactgc gattaagaac ctagatggaa aaggtatttt tcctgttttt ttcagtgctc 1500

tccgtgtcta atgattttgt ttctaataga tgttatagtc tgggcatctc tttaggtaat 1560

agggatatgg atgtccttaa ttcagttcat tctattatgg cttcggaaag ggatagattt 1620

ttagagcaaa gtttcaaacc gggtcacgat agccgtcacg ggttagtgga agacaagtca 1680

gatgatgagg atatggtgtt aaatactctg agagacctta gtggaacctt aatggaggac 1740

accttagaag tgttagggga agatgacctt aacactaaat aaagttttta atactaggaa 1800

agtgaaaaag aaaattagtg ggaaagttaa gaaagtaaga aagtagtaaa gatatcagc 1859

<210> 2624
<211> 1514
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291731_G1, chr8:151229201..151230714, Cluster 15

<400> 2624
ggaagttatt tcctgaaagt cttctcaaat taatattgtt ttatggattc tcctcctctg 60

gtgggggca atgctaggaa acgaaaggga cacgatagga gcaagaccat ctcgtggagc 120

atgtggtcct ggcgcgccac gttgctccgg ttggacaccc gattacccta tcggtacgtg 180

caaagaaagc aacgcaacga gaaaacgcct ccctcgatcg tacgcagata gcccccacaa 240

aaagccaaaa gcgatgcccc gccctccatt agctcggccg gccggtcgct gataaggagc 300

tgcatcgatg ccctctcttc ctcctcatcc tccaactcca tccaactttg gtcgatggac 360

gcgcacggaa tcgctcctct ctttggactc atgtgtttca ggcccggtgg aaaagaaccc 420

cgagcgattc ccgacaccat cacaggagga gaaaaaaaaa gaggcttcag ccaccaaagc 480

gacctggcgc tcccgcccgg ccggccggcc atctaatgat gcggaattaa aattaaagta 540

gtcgtcgcgt cattgtaatg ggcacagaat cgggcgtgac agaggcagca agatctcgta 600

ccgggtactt taatctgctc tcgctcagcc tggccggtcc tttttggctt gctgcgagtc 660

tctcggatct tctttcgatc ttggaaaaaa aaagaaactg ttattagtga taagagcaag 720

gttaataaat aatacaagct gtatatttaa tattggattt atctctcctc tcacaacatg 780

tcttgaagtg tgtgagaagt ctgcttcttt tttcttctct atttctcttc cttccacgcc 840

accttaaatc tgttgtggca tccttgcacg tcacttatta tactcgctct aagttgacct 900

gccgacagta acaccgcgag tttggaaatg gagggtgatc ggtcgaggga tttttacata 960

tcaagcgcga tcgatgcgtg agcgagagtg atggctcgtg tgcctgccaa ccacgagcga 1020

ggaaaacaaa atagagcagc agaaaactta cgtggaaaga aggttgagct gatgagtgag 1080

agcacccgtt cgcactccat gctgttgctt ccgttcgtac tttctttttt ttccctttcc 1140

aagacggaga ggaaataaaa tgaatgatgc gggggcgagt cgggttcaga gttgtgttca 1200

actgtcgtgc ttctttttcc ataccttggt cacctcgatc tacgcgaatt cgatcacacg 1260

gtgaccctga tgaatgaaat gaagaggaaa gctccgaatc cgaatgcgat cacagacgac 1320

gagatcttca agctaagtat agtaacaaga tatggctaaa tgctgagata gagaagagaa 1380

gaagagagaa aggagaaaca gatgataaac ttatagccgt attagatacg acaaccaata 1440

ataaaacttt ttataaaaga taagtgcatc aaacatatta tacaggtaga ctaaaaggtt 1500

gacggtacaa aatt 1514

<210> 2625
<211> 1802
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291764_G1, chr8:151345744..151347545, Cluster 15

<400> 2625
tagaaatcta aaaacctaat tgatcgtttc tgtgttcaac gatccgcctg cgttttcgag 60

ctgctagcta gccggctttt ggcatgcata catggacaac cctacgatga gcgatgagtt 120

cttgtacgtt ctccggccac cagggagatg ggtggcggta agcgacagca ggaagcagcg 180

ctatcttcct gaccaccagc tcaaggagca gtagagtaca ccattccatc gatctcgctc 240

gccccctagc gtctgtcagt ttgtgcgcgc gcggctgccg tgtaacgcat gcatgcatat 300

gcgtattata ttctccggcg gtgtttgatg atgtgctaac catcggccta cctaacgcag 360

gcctcgggcc tccatcccaa gggcaaggtc agcgcttcat gctgctcgca catcaatcga 420

ctcagcccta tctgggacgg tacggcaagg cgcatcacgg ccctgcccct ggtccagcga 480

ttcttcctcc ttttccccca tggcctctgc tctctgaaac cacgcacgtc tcgcactttg 540

ctattcccgt gtgcgttgtc tggtctcgtc ttggtgcccg cagggccaga tcgagagcgt 600

aatgttccaa atattcctgc agtgcgagga cagggacggc aaggagagag atgccaactt 660

tccagggacg caatctcgca aattaaaggc cagtcggaac agatcttctc tcgagcgccg 720

tggatcgacg attcgtccat ctatcgtcga gttcttcaca gcatcgtcgt gcagcatagc 780

tattgccagc ggggcagggc agggcaggga cggaactgaa tagaccggcc gcgcgcgact 840

gactactcat cgtacatcac atcactaccc acgcccgccc gacgctcgcg cgcgcgcgag 900

aaagaaaggt ggcggcaacg aaagctgtgt ggcctgcttt aatttactag caagtcacac 960

agtgtacgtg ttgcggaaag gcagctccat gattgtcagc catcacagca gggagaacaa 1020

cgggcgcgac gacgacggcg aaacgaggcg tgcggatcga tcggcgatct cggacggggc 1080

aacgacgcag cgcgggccac gccggccgag ccgccgccgg ggcggggtcg cacacgcaga 1140

cgacaccggc tagtgcgtgc ggggctgctg agatagagac ccggccggcc agtccgtccg 1200

gccgagggcc gatgccgatc gatctggggc tgtcagcttt gcggggccta gctagctaga 1260

gctttatccg cagcagcagg ccggcttaaa aggaacgggt tgacaattcc ctggctgtga 1320

tcatgccgcc gcctgactgg ctggctggct tctgcccgat ctcgaagcgt tgctttgctg 1380

tgctggactg ctagctggtg ctggaagatg gaggatgggg actggagatg gagagagagg 1440

cgtgtcaatg aagtccaccc agtctatagc tagctaggcc cggccggaag atggcctgac 1500

tgctgtcgtg tcgacctttt tttttgcccc aagcgatcat cggagagggt acggtggagg 1560

aggagtgtac gtagcagctt ctgttcgttg ccaaacctgg gggcgtagac cagatcagcg 1620

gctaaacggt gggctctgtg taccagagat gagaacgaga gatggtcgtc gtcctgaagc 1680

ccttttccag ggaaggagtc ggagaggtct aatttaagcg tcctattcgc tcgctcgtac 1740

ctagtcctag ctagcttgga actccatcgt gtgtgcatgt acgaccgtgt cacactgcgg 1800

ca 1802

<210> 2626
<211> 1960
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292060_G1, chr8:152952335..152954294, Cluster 15

<400> 2626
aatagggaac aacaacgtct gtcgtaagat ccctggaaaa ctatttgacc cagcaggcac 60

ttagcgagga aaaggaaact aatgatccag ctagacatgg ttggcatctt attctgatat 120

tgcctcggtc cagacggaat cagaactgaa gtttcggagg aacaataaaa tggcagatag 180

ttttattcta agcttttcta tttagatgat tacaagatcc taaagcctgt gaaatggaac 240

aaatacattt agaatccggt ccaagcttgc gtgggcatat tcaagcttta tgccatggtg 300

aatggatgac ctgctccaac tgctgatccg tattccatac atatctcgtc ttagcctcgg 360

ggtaaaaaat agcgtactac atttcatcga cataggtagc ttttcgactt tcaaaagcca 420

ccacgggtga gcctctggct ggatgcaggc tcaatgcctt gttgactcag gcggcaatac 480

ctgccgcgcg cagccccgta gctccaacca aaagcgggct ggctgctgaa ctgccgcatc 540

ctcaagggct cagcgacccg atcgagcttc ggtcgccccc ggcaggtaat aaatgagccg 600

tgatccagtt gcgtttaatt atactattat gcacgctagt ggatagtgat ggtgtttcaa 660

ttgcaatcag gatggtacca tggaaagcca tagcaagaac ttcatctccc aagctgtcca 720

ctcctgtggc gagaggtcgg agaaaaagta gctcgctgcc gtcacgtcgc gcgtcgccgg 780

cctatcgata gaacgtgtgt ttgtttaagg attaaggaat gagatagtcc atcataattt 840

gacttggcat gcgacggttc tctctttcct ttgctccttg gaagtttatt ctagtcccgc 900

gaggttgact ccgcgcagca aagctcggcc aatccggtgt caacgacaac gccaggctcg 960

acgtttcaat tcaagcagtt caaggccatc tttgagtctc gcaaggaatc tagaatattt 1020

ttttattggc gagtgatggg gttgcttttt tcttcttctt cttttgacac gcccccggcc 1080

gggtgaaagt gttcgatatg cctttatata gccggagcta aagcgaaaac acacagtagt 1140

tttcagcgcc tgaggataag aaagcaaact aaactagttt ttttttatta tggtactagt 1200

ggtttgtagt tggaccgtta tgtgttgtcg tgttgaagct cagaaagaac caaaaaaaaa 1260

ctagctcgtt ggttgaggac cagaactgga ctgaaactgt cccggacgat tcagcacgga 1320

cagagaatta gaggttgctc ataactcgct gctaagctgg taaagataaa cgtcaacgcc 1380

tgaggggagt aacaaggaaa aacaccggca cacactcctg tttcgtcgga gttagtttac 1440

tgtcgtgctt gcgcgcgcgc tgcctcttca cacatcgtct gcagcggagc actgggagtt 1500

gatagatggt ggtgggtggg tgcgatgtca ttccaattcc acacaaacac ggacgctttt 1560

ccaagcatgg aactagctac ttgtcactgg agatgcgccg tcaacgtgac gtgtgcttca 1620

cagcgtaagt ttcctgctcg gaattaatca aatcaaaaac catgccgatc gacctgactg 1680

actgaccgat gcgtcggcaa tgcatctccc ctgcatcgtt tcgttcgttc gttcgtcagc 1740

caccatttgt cctatcgttc gttgacattg ctcacaagtc aacgtgccta atatatacag 1800

taaacccgcg gcaggaaaag accaagcatt cacggagatg tcggaacggt tgacctgctc 1860

caaaatttgt atactactcc gtaccgaacc agtggactcg ccctcgcccc agctgcttgc 1920

acatcggcgt gtgagctgtt gaattcacag tcgggcgtgt 1960

<210> 2627
<211> 1987
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294226_G1, chr8:164018705..164020691, Cluster 15

<400> 2627
attaatgcaa cttgtcaggg agctttattt ttgcgcgcac tctcgatagg taggtaggtt 60

gccgttgatc gggggctagc ggctacctgg taaaccgcag ccggcgaccg gattgtggta 120

cggttctgca tggactggac tagccggtga tcgtcgtccg ctcgctccac tagtccatgc 180

cggtcgccgg attgcggtac ggttctgcat gcggcaccag cgagtcgacg cgcgcgtggc 240

agcataagcg gcggcggcgg aggatcggat gttcggctga caccgatacc gatcggccgg 300

tgccggacgg ttggcgcgca cgcatcgtcg atcgtcgtgt cccgctcgat cgcgtattcg 360

cgtcgcgtgc cgcttcccag aaacttggaa gcagtgcgcg cgtacgtata tggaatgccc 420

ctgcgtggaa gttggaacca ttgtgatata tacatacaaa tactgtacta cgtgtacatg 480

tctgcgtacc tacgtacgta tgtacgcaag tccagccagc tagcgaagac aagaacgtga 540

ccgagtagat gatccgtaat ctgttttgac tgcacgcacg agcacgacgc acgcacgtcg 600

tcgtcccgta cacgtaacag tcgctggtcg gcacagcggc gtctgtcgtc gtggtcgtca 660

tcgtggtgaa acccttttcc tttggaattt tggatattta ctttttcagg cgctgcgcgc 720

aacagcgcag gtgtacgacg atggattaat tagcgaatta tcaacggctt gtataaccag 780

ttttattact actttaaatt taatgctttg aattaaacgc aacataatta ctgtaaaaat 840

aatgatacta acatgctact cagttttcgg atctgatatc tacggcggct atatgtaata 900

ttcttacgta ttgtgcttgc ttgtcatcaa cttcatgcat tgcaggtggt tggtttccgg 960

tggaccccac acagtatgtg tgtgcgtggt gcgggcgcca cacactgcac gttactacga 1020

caggtcaatc ttagttgaga gttttattag atgtctattc atatctaata agttgctaca 1080

taaatacttc aaatcacatg atagtatttt aacgagtaga aaataagaat tatgtttcat 1140

tggagatata ttaaaaactt tctttggcat ggttaataac tctttatgaa aattgaagat 1200

aaatattcta taaaattata gaatcgctac tatttaaata attatatgag aaaggagcaa 1260

acagtaacag atgcgggcac aaatggtgac cacatcagct aatggtcagg agagcatcag 1320

aaacaaaggt gtcgaggtga tcgcctttag tacgtcctat aaagaaaata gatcttaacc 1380

catttacagg ttggtgtaat tctggttgtt gattgtcaat aatatgatca tttgaactag 1440

cattatttgc taatattttt atgtataatc cgaagtgtgt aaagtagact ttggcatagg 1500

cgaagtggta atttgaatga gcaacatctc aaataagacc atagatggca tgttgaagat 1560

ctataaatac atacaaggag tatatgaaac gagatggaac caaaacggtt gcaaagagca 1620

cgaagaaata agtctacaag gcattggacc aaggtgccag accaacccta agggcatcga 1680

accatacgcc agagcaaacc ctaattgggg tattcacaat ggtgtcacac caagaaaaga 1740

acaaggagtc ggaccatacg ttgacacacc tgtaggtttg aacatggcat cgaatcataa 1800

ggtggcatta ttcatgctta atatatagaa acatcggacc aaggagagac acatgagcgt 1860

aggaccattg gttaagtctt atggcccatc gaaacaaagg ttctagtgag gaaataggga 1920

cgtaagactg gtccaacaaa gggcatcaga ctagtgcacg ccaacggtcg gtaaaggata 1980

gttctaa 1987

<210> 2628
<211> 2059
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2993_G1, chr1:15274517..15276575, Cluster 15

<400> 2628
aatattacga aaacgaagcc ccctcgtgcg ggcgcgcctg tttgctgcgc acacgaggaa 60

gtggttccag cagctgggtc gatgcagctg ctagctagct agcggacggc cggtctggga 120

gagaacgacg aagccatgta ccggtagtgt gtgtataaaa aaagttgcga cgtcgtttag 180

gagttcgaaa acaggccggg gcgacacgct cagatttttt ttttgttcaa acgccagggc 240

tggccccagt acctagaggg tcaaactttt tggcttttac ctggcccagg ctttctgtca 300

tcattatgca tgggggacac cggcctcaag aagactgata aactaaacta tcgatgatgg 360

atccatccac tggattactg gagagcaagg agaggagtcg atggcttcat ggctacaagt 420

agtgtcttgg gcggacaggc agtctcattg tctcaagaca cggggtcccc acaggtgtcg 480

accgcgctaa taagtctgca tgcaaagcaa gaaacttctt ttctagacac atggtggcgt 540

cgcgtcggat cgccgctccc tagctagcgg agactactag tactagcggc cattgccatc 600

accgggccgg caggaatcaa ggctcgtgtt ggagatacag ggacagcaag tacttggccc 660

ttaactagcg aaggcgaggc ggccatggaa aaccggccag gtcttgatgg attcgattgg 720

acatctgaag ctaagccatg catgcatggc cggaagtgtg gctgccgggt tcgtcagggt 780

tgaagctagc tagggcggct cactcttctt ggactgtgac gtatttctct gcttcttctt 840

ctttctccta tttcttttct ttccttcccc tttcctcctt caggggcatg caaatgcagt 900

ccggtgcgcg tgcgtacagt gcagcgatcg atgatctgca gtccattcca ccactctcga 960

tcgcgtgcgt gccaaaccaa accaacgtac agtgcccccc tttgtcccta ctagctatat 1020

atatactgac cgaggcgctc aactagctgc gtgcactgca gtgtgatagc gctgagccgc 1080

tgacgatgta tagatacatg cacagagatt aaattaataa agcagggatt tatatattga 1140

tgcaacagca cctgctgtgc tgaaatctca gggactgtgc aggagtatcc gggccttgct 1200

ctggggcctc ggcatctagc tagctagcta gtcgatcaga tctgtatcag cgggctgtgc 1260

acgcagatgc gtccaaaacc ttccgtccaa cacgagacgg attatcctag ctacctagcg 1320

tttactacta gcgacctccc ctcccgttta ctatttcaag acgctggcgg atactatata 1380

gtatgagcat agtttattga gccacatgca tgcacacgct taggaaacgc atggtggctc 1440

acgcgcccgc tcgcggttca aagagaggag agatcagcgt gcagcgagat gcgcatagac 1500

aagccattcc tggtggacca gcacgatgtg tttgtttatg gagtgagttc cgaaaccctg 1560

gagcggcggc ggatgggacg gcgacggcgt tcagccggag cctggagctg gccgggcggg 1620

ccatgcagcg tggaaagccg agctccgaac ccacacccaa ggtgccgtgc cgtgccgtgc 1680

gtacgtgtgt cgtcgagact ggccggcgcc gggcggtata ctggatggtt tccggagcga 1740

tttgaggagc tttttgtctg cgatgtgaag ggcgggtagc tagccaggca ggccggtgcc 1800

cacataagca ggagctgtgt cctggaaatg tgcttcactt catcacttgt cttgtcagtc 1860

gtcaagcgac gagctccgat ccgccactac acgtacgtac ttcaccagga caggcgcaca 1920

cacgcacgta cgcgcgcgaa tgaatacact acgtacgtac taataatgat aataacacaa 1980

ggggttgggt tcgtcattcg tctcctattc tgctactagc tagggcgtgc tcgatccatc 2040

gatacattta tgtagtacg 2059

<210> 2629
<211> 2289
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299898_G1, chr9:12801764..12804052, Cluster 15

<400> 2629
ccggcctgcc tctcgctcgc atcggtcgac ggtcgtcggc gacgatgaaa atgttcttgt 60

gcccgataat attcgcgcga cggaatcaca tgcgcgagcc cggccggccg gccggccgcc 120

agggactcct ggccgctgcc gccttccccc gcacctcttt tgaggccggc caggtctctc 180

tctcagatga gatgctcgct ggccgcgcac gctttcgctg cccgtctcct gctgccggtg 240

ccggtgccgt agcccgtagt ggcgtggcgt ggcgtgccat ggcctcgcaa ctcacaaagc 300

ctgccgcggc gcccgtggcc gtgcatgcat gcacgcagac gcagacgcag acgcagcagt 360

ggatgcctcg gcctcgctcg cgcgctgcgc tgcctttgtg cactactgca ctagtagtac 420

ctgcgctggc gcaggcgggc agccaaacta ttcgtcgcct cgccagtcgc cagtcgccag 480

tcgcccccgt cttctttttc ccgcccaccc tccagcggct ccacctgcgc cagccaggca 540

ggcaggacgg caggcgacca ccatggcctg cccctgctgc gtgccgctgg atcgagcgag 600

cgctgacgct gctggcgcgt gatctttgac gtcgccatcg gcggtccacg tccggctttt 660

tgctctggcc gttcgtcact cgctgcgcgc gctgtcgatc tttgcttggt gcgctcctgc 720

cggcactggc tcggagacgc gtgcaggaga agacgtgcgt acgcgtgcgt gcgaccacac 780

ccacgtactt atacgtaccg gctccggata ccgtaaatgc acggtacagt agtataccga 840

gagcgggacg tgccctgtca gaaataaagg cggcaagggc gtgggcgctc tgtgtactgt 900

actctacacg tactgtacgt actggacacg aatctctgca tgcagcttgt cttgtgttgc 960

gttgcgccac cacctttgcc tagtattcag tgtcaccccc cctcgccgta tttatgttgt 1020

ggtgcttgga ccaaattccg gccaagcccc tttgcacacc gttattttta ttcgaggtct 1080

ctgcgtattt gggcacaggc acagtggcac actagcctca acggaacgca tgtttctctt 1140

ggaggtttag gtatacacaa tatgcgaaac aatctggttg ctagagacca acatatttca 1200

ccgccgcagt gctagtatat gtataatccg gacggcaaaa gtaagtttgg gtggtcataa 1260

accaaaccca acagccaaca ctcttcagcc cctgctggat tgcagtagtg ggatgttctt 1320

aacactgtgt ttgattttag gccatgttta tttgcttaca agactataat ccagcgtata 1380

tactatataa gcatatatta acttgtttat gtattattat agtctaggta tctagattac 1440

ataatttacc cgataatctg tgttgtttgt ttaacttcca acttatttaa gctaaattat 1500

ggcgacgttt ggaacaagca gaattttcgg aatctggata gtgcacactg cacactatcc 1560

aagcaagaaa atgcaattca taaggttgat aattggagat tctgtgatgc agcacattat 1620

ccaaggcata gaatacaaaa atgtttggtt tctagccgat aaaatctatc tcaccgtaag 1680

aatgagtaac aaaacatgga ctataatcta aaaggtaaat aaacatcagc cttattaata 1740

gagaacagta aaaccgaaga gctgtccagt ggcagtggtg cgcttcaatg ccggctactg 1800

ctccgtagta ctagtacagc actaggcctg cctttgtttc tccctttttg ggagtgcagt 1860

gcagggggggc tgccgctcct gcaagagaca aaaagagcac cctagtaacc ttggtaacct 1920

agcgtcctag caggcagggc tggctccaaa gccaaagcat caccatcagt aatgttgtgc 1980

tgatgcagca atctcaagct tttatcactc gcaaggaatt cgccagaaac tgccaaacag 2040

ctttcgatga aagctttgtt ggtagagtct gtgtgtggtt tgagaagatt ctccaaatcc 2100

atgacaaaat atatctctta attaggctgt ttgcgctgag gcaccttaca aaatactcta 2160

tcctaatcct attggagtgt attatacagt accaaaagag ctgcagtgga gaacggcata 2220

gcctacggta agtaggggcg tgcaacaaaa acgttattta catagtgtgc atgtgtgccc 2280

gtgaagaag 2289

<210> 2630
<211> 1638
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301438_G1, chr9:21815512..21817149, Cluster 15

<400> 2630
agccaatttg aaatcctatg aattcctccc actctcccga acgggcctgc aggtggtggg 60

actaaccatg gataactcat aacctacata atgcaagtga cagtatcaga ttttacggag 120

tccatgtaaa cacaacaaaa cacaaatacc caaaaaaaaa cagcatgaat atgcagtatc 180

gcggtagaac tgctgctgct gtagctgaac cggaaaccaa gccatgcatg catggatggt 240

tcagctagca atcagcaccg accatcgccc aacaaatatc ttagcagccc atactctctc 300

gatttcaggt gattatctgg gtatttctca gatatatatg caatggcttc tccttttttt 360

tatgactaaa aaggtgtgtg tggctcagtg ctggtacagc aggtcagcac tcgcgcactg 420

cgcaggcgct ggccagcatg cctgtatggg cacaaccaac acaatgttgg cttgcgctcc 480

ccacgaattt ggcaggccct actatagaat aatgaatgaa taacaacatt aaaaacttta 540

tcgtttgact aattgctggc tgaccaacta accactcacc gatcaccgtt cctgagacac 600

tagaacgaat ctctccactc tacttttttt cttcaatccc cctgatggtg accaagaaac 660

caatgcaagc ctggaggaac cagctccctt tgcgtgatgc cgatgttgct ggagtatgct 720

ccgatcctac acgctgccac tgacaacagc cggcatggcc gtgttcagaa accagctaga 780

ggcggtaaac ctgattagat ggatataata tcgcaagcat gcatgcatga agagatgggc 840

agatggcctt gggacccttt tgcttcaccc accaaaccag caagtgccgg gcaaacagat 900

gcgagcgtgc agggaggggc agcaaggtac gtgcacacgg cacagtcgta ggaggaggtc 960

ccgccattcc cagatcagga ccaacagtgg ccgcgagatt ttcaggaaga tcgcatatgc 1020

cctgctacct gtccttcact ccttcagtac cgcgcagtac accggcgcgg ccggtagtag 1080

tgatagacag gcgacaagca gacagacgac aggcatgcac actgcttcaa taatcccctt 1140

gctcccaaaa aagcccgagt gagatattga tcaagttgca tgcgtccctc ccatcctgca 1200

ttggcagcca gacagctagg catgcgctct tcagagttgc atgcagttca gtgccctgct 1260

cctgcagacc atcactgatc gatgggcaag ctagctactt ttgctagatc gatgaatcag 1320

ttaattaatt agagaaatgc attatacggt tttcagattc attcgcgcag atgcaaaaga 1380

cgtagtacgg ccggtaggag ctgcaggcac gcggctggtt gggacgtaca aatcagggta 1440

gacatctaga acactggtgt ctggggtcga tagcgagtgc ggtggactcg tcgccgtcgc 1500

caggaaaggc ggcactcgcg gccgcgcgca ggcgagagtg acaccccgcg tgcatgcagg 1560

cgcctgtcca ttccgtggat gcgtttggtt tgcactttgc acacaccaaa ccagccgacg 1620

ggtaagaggg aaagtacc 1638

<210> 2631
<211> 1422
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301467_G1, chr9:21972196..21973617, Cluster 15

<400> 2631
tgagtacgta cgtacacgcg tagaccgaga gacgtactac tgtcagatcg gagatagata 60

gtttgtactt tgtacagtgt gtagtaaacg tcacagggat gtacacgtag agcccgtcct 120

tcgctgacga gagaggggcg ccgcgcgcgt tccaatctcc ccctcgtttt cagcagcaca 180

cgaacatgca tgcatgtgca tgtatgtata tgtacgtatg acgtacgtat acacacgatg 240

gcggtgacaa cgacggagta ccagcagagt cgtacgtacg tacagctgac agcaacattc 300

tttttatagt tttttcttct tcttccttct tccctgctct gcagctgcag ctgctgatgc 360

catcggtcag gacagtgaca cacgcacgac gatctctgac acttgatcac ctgtcagtgc 420

cggggcgggg ggcatgcagt agtcatcggt cgtgtgcctg ctcctgctcc tgctccggct 480

gccaccacgc ccgtgccggc gcattgttga ccaccgatcg acgacgacga ccggccggcg 540

tgagggaaac gaacgcacgc acgcacgcac gtacgtatcc cggccctatc gctgtcagag 600

tgcctgaaat gtggagtact gtgctaccac caacaggcag gagtgcgtac gctgaatgaa 660

agagaccacc ccggaaaatg tatactgtaa cagtcggtct tgtcggacat gtgtgcgtgc 720

cacgaccacg gccacaacac cctagatgga cgaccggccc cggccggcga cgacgtggtg 780

aagcaacccg gcgggcggcg gcatcgggta cggtggctct cctagctagg tgtcgccgtc 840

gacgccactc gcgcgcgcgg ccatggccat ggcccatggc ggcatggcgt ggtggcagtc 900

atcggtcgtc ccggccgtac gccctccgcc ggccggcctc agcgctgcgc actactgagc 960

agttgagcac tcgcatgcat gaagagacga gacgagacga gacggcgaca gagaatcaga 1020

gatccatctc gccccggccg gatcgaatct cctttggggc ctgcctcaca cagcttacct 1080

ctgaccgtga ccgaatccat cgcctacact tttgtttcgg ctattcacat tgctttttgg 1140

cattttgggg acaagtatat atatatgtag tccttttgtt cagctcgtca tggataattt 1200

ttttttctct gtaaaatcct tgcattccaa aagagtgagt attttattgg catcagcatg 1260

catagattat taattgtgtg ggggtgaaac accaagattc ctcagcctgg tttgttttag 1320

tataaagaag ggaaaaggac cgatcattat gctggcgaaa gccacgcgtc atcgccacgt 1380

gtaaccatgt ggttgcgcga acatgcaacc tatctcgcta ac 1422

<210> 2632
<211> 2194
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301774_G1, chr9:23468085..23470278, Cluster 15

<400> 2632

ttctgttgga tgcctcaagt tgtaaaggtg ttccaggatc caaagagccc cgaaagctta 60

tcccgctatg tgtctcaggg cgcgagagag agggacctca tggccttatt tggtgatgga 120

tgtcttaatt aaggactaga tcatcagtaa tgaaccaggg tgacaaataa atactagttt 180

tgtataagca aaaaaaggac gagctaggcc tgatgtggtg cgtaaccacc cgtgtctccc 240

ggacgaatga ccagtagcct atcaaccctc ctcgccctcg tcgtctgtct catttgccca 300

tgctattgct tacacaccgc acacctagct tctctcccat ttaagtgacc gaaattgcag 360

atgcacttgc ctcttctgtc ttgtcttctg atgtgtgtgt gtgagagaga gagaaaagat 420

cgaggggtg tgcaaatgcg aatgcggtgc cgcgcgcaac tgcatgcatc agagttagtt 480

ctataaatta tgcccatgta tatttggagc agaaaatgta tgcatatatg agaaaacgat 540

ggctggttgg gcctgtcgcc ctgtctctgt cttctccgcg gcgctagcag gggagtacga 600

cacgcggcga gtcgcaggaa cacagctatc atgcatgcca ctttcgaaga gaggacgacg 660

aagaacagaa tagaatccaa gggaaacaga ttcgtcagct tgctaggaag aaaagagggt 720

cctatcctat cattcctccc taactccttt caagtccatt atgtcctgat ttgcaagaga 780

gaggctccgc ttcatgcatg cttcgagtag cgatagccgc tccaagcctc caacccattc 840

gtccgtcctg tcctggtgct agactacata ctctgatact cctgcactct acaaataata 900

tgcgtgggag taaatcagtt ctagatttag tgacattaat aatttatacg gtgaaaatat 960

atgtcatgta actagataca tatatacggt gcatcgactg acactaagga tggacgcagt 1020

ggcggattta ggattaaagc aaaggagggg ctatggcaac taagataaag cacatttagt 1080

gggccactgt atgcgatggt cgtattaggg gcagcaggct gaggatgagc tccacaggaa 1140

cgtcctcaca ggccttgtac gctgcaactg ctagctacta gaggtgtgtt gatcgtgcgc 1200

gttgctaatt gctggagatg tgttggtcat gtgcgctcgc tcgtggctgc gtgtgtgcgc 1260

agtgcaatgc acggtatata tacaccatgc cctatgcagt agtgctggca ctgcagcagt 1320

gctgaagcac aaatgaggtc taatgtggat gcatgtgctt ccacctagtg gcactggcgg 1380

aggctgaaag catttgctaa atgttacgat aaaaaaaagg aggttgtggt ctattttgtt 1440

actggaacgc gatataatat aggtgttatt aggggcaatc ggagatgtag ccccctcgtg 1500

tatccgccac tggataggcg tagtgtggtt cggtagcgac tctaaactac taggtggtgc 1560

cgatgacgtt ggagatgacg aactggtctg caccgatcac tctagtgaac caaccgagcg 1620

gtaccgacca actttatgta attttattta taaattgagt tcttttaatt attttacctg 1680

agttatgtaa tttttagttg tagtttggtg gactattttt taccggtttg tccggctcac 1740

gaaaaaacta aaaattcaaa gtcatactta agacatatta tacggtaaac gatatcacag 1800

taaaaaataa atattaacta tggatttttt tggataagag gaatcgatca aatttatggt 1860

aagaacggag gaagtatgta attccatccg cttaactaca taacgggatg tatttaaaat 1920

taaataaaac gcaatgttcc aagtcaacta aaagcctgtt atagaaaacc tgatgtggcg 1980

ataaggtagc tataccctat atatagaagt gcattagagc gtcaccataa gtaactcaac 2040

tgacaatcat cgatatagac ccggttgata gctgatgcaa cagtaggtat ataccgtcag 2100

gctgcaacca gcctaattcg tacgtcctac tcctaccatg catgatgccc agctagctga 2160

ttttcggttc taattgcacc catcacattt aatg 2194

<210> 2633
<211> 1444
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30432_G1, chr1:187330246..187331689, Cluster 15

<400> 2633
ctacgctcta gctacccacc tgcatagtac tggtatttca tgcactcagg tcagtctaag 60

ccatgcatga cgatcgatga tatcctttaa tttgggccgg catatataca cgcatggatc 120

gaagctagct gccctcttgc atgcgtgcgt gtggtataga ttatcggcga tcgatgttaa 180

ttactcttcg tctgggagct gctgggaggg agcctgggac tggccgggaa gggaggagac 240

caggaggagc agatcgagag gcgatgagga ggaataaaca aaagacgcgc tgttccgtcg 300

cgtcgcagga acagctagct tgtctcgccg gccggcccaa tcagctggtc cacatgcacg 360

aggcgctttt cagtagacac ctacccagat ctagctagct agctaaacgg ccggcggcca 420

tgcagctcga tcgcattgca tatatgcgaa cgctaaaaac cctagtagat aattaaacgg 480

atcgagtagg ttgctgtgtg cttgcggtcg tctcgtggtc ctgctccgat caatggcgcg 540

cggatggtcg acacatgatg ggcatgggtc gaaatgcatg catgggcgga gcacagtaga 600

cgccgactcc gatcgacgac ggaacacgcc gcccgtacac gtcggttcac cggccgacat 660

gcatcggcat aatagtaggc taggctagcc catgcatatg ggctcgatcg gtcggtatca 720

tgcacgcacg cacgcggtat ggggggggagg cagatgaggt ggagtaaatg cccgtacgtc 780

tcggcaaaga gggtggtagc agtagtgcac agcgcgcgta cgtgctgtgt gggtgtagtg 840

gaacagtggc agtccagtag ctgccgcagg ccgcagctag ctatcaggaa agaagaaggg 900

aggaggagaa gtcgagggag cacagggagg gcactgcgca gccgcatgca gcgcagggcc 960

gggccggaag cagctaggga cggacgacgg atatgcatga tagatggagg aaaaagacgg 1020

atcgatcgga ggagtaaatg ctgtacaacg tctccgctcg gccagcacca gcagacggag 1080

atgaggtcgt cgtcgatccg tggtggcact ggtcgtcact cgtcaggtca ggtacacgtc 1140

gccgctgtag cgacgacaag aaggaagcaa ggaaactact ccagctgcgg catgcgaatt 1200

aatggccact ggccggccag acggcgaata gacgatccat ccggccatgt ggtgcagcag 1260

atcgacgacg agggataggt agcacacagg attcgctcga gcgagcaggt ccgccgggcg 1320

atggaataga aaaggcggta gcttcgtgct ggcactggca gcaaccagct cagctccatc 1380

ggagtcggag tggcgtacgt gctagctaga tagagctgcg caagctagga agcgtgcact 1440

gcag 1444

<210> 2634
<211> 2722
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30715_G1, chr1:188932999..188935720, Cluster 15

<400> 2634
tcggctactg ttctatggac cccagcgccc gtgcagtcag ctactgcgct cacacgttta 60

gaaataaaca ataaatattt aaataaatat cttaatacat atttatattt atatgatata 120

taaaaaccat aacacagcgc gggcaaccgg ttactactac gactcgcatt cgtaattaat 180

ctcgtacagt ggttctacag tagtaccagt actttccaaa ataaaagtct tgagtgcacg 240

ttttgcctga cgcacgcatg catgcgagca gaaacttcaa acttgcagtt tctgacaagg 300

cgtagcaggc accatgcaga gcaaggtgca gggggcaggt ctccggcctc ctctccttcc 360

cttccctgca gctcctcgca atccacctga acggccagcc aggcgcagac acggctgcct 420

ctgcctgcgc tccgctccct cccggctcca aaagcttcct cctcgcaacc tagcttgaat 480

gcccaacaag acaggacctg cgctgcgctg cgccgcgcca cgcacgcaga caccaccccg 540

tctctctgcc tctgccccgg atggtctgct ctgcgctgct gcatcccagt tcgcctctcc 600

tgccgttggc ttctcgctct cgaacggtag gccatgcatg attgctggga gcaggataga 660

tgatcacttc acctgatcag gcagtaaacc tagctagtga ccctcatctt acacggagct 720

ctagcaatat aatggcagca tgcatgcaca acattagttt tttgttttgt tttgttttgg 780

aagtcatcaa agagataaag agaacggatg gaagaagcta gctgcagaag aatggcaggg 840

ttgcttgctg gccactcgtg gccggccggc cggggttcgg cgctgctgca ctgcacggcg 900

ctgcgtttgg gcggcgggcg gggccagaaa gcatgcagca ggaaaccggc agtgggctga 960

gcggtgccac acgaacacgg aactgccgcg cgcgcgcgct aaggcatgca cacggagtac 1020

acagggtact actgtgacgg ggccgggtca ctagcagtca gagatcttgc ttgccgtcca 1080

ccccctggct ggccctggcg gcctcatctc tctctactag gccatgcgac aggcaggcgc 1140

gagcaagtgt gcgtggacgt gggtggatgc agagaggagc acaagaaggc actgtagcag 1200

gctagcagca agagaggatg ggctgccggc tgcggcgcag cgcatagcaa agaaagctgc 1260

tgcagcgtgg attggacgat cgcgtgcgcg cgcgcacgag cgttcgtccc ctcgcctgcg 1320

ctgcgccccc cacactcacc cgagtcgtca cctccgcccg ccgctctcgc acgtggccat 1380

gcctgctgca ggcgtcgtag cagctagcct gcgacgtgcg acgacctccc tccctccctc 1440

ccagggctcc cacacagagg actgctgcat ctgcatgtgg gccatggccc tggtgagcgt 1500

ggtgtgccag tagtacgttt ggtgcctgcg acgccgcggc ggattaaagg ctgtcccgca 1560

ctgcgcccaa caaactccgc gcgcgtgtgc cccatggacc cctgcttcct ccccttctta 1620

tctagcgtct agcccttctc cgcccgggcc agcgccaaca acagtgcgcg cctgatttgc 1680

actgcacaca cgctctgcct catcctgcga tctttgcatg gtcgctcgtg tgcccacccc 1740

acacccgtgt gtgccccatg gttttcttcg cgaactgttc gggcgctgcg ctttacccgg 1800

ccggtcgata tcggctgtac agtacagtac gtgcaggaag agaattaagc caccgtgccg 1860

tcctcgtcta tatcacatta cattacatgt ccggtttggc taataaggac gcttttcaaa 1920

ccgaagcctg ccatgccgct ggtgtttggc taccacgtac tgcacctcta gcctttaatt 1980

atatatatat atatatatat atatatatat attctttgct atctccattc accatatgca 2040

tgctgctgct gctactccag ttcgtgacga cgccaatgat tggggcaaac attagcaaat 2100

tattgccacc tcctacacat cagtgcgtac tacgtagcta gccactaggt catttcattt 2160

gtttttctca cctactagct agctaatata tactaaggca ggcattaaaa taccttcacc 2220

attcaggaac gcacgcatgt cgtcctggtt aaccaggccg gcctcgctct cccgcggccg 2280

gccggtctcg gaagtagcgc cgtgggcggc cgcagctgca gccaacgcca ggggccctga 2340

atggtgccaa agacatctgg gcctgccctg ccccgccttt cttttcccct ctgcttcttc 2400

caacctctct cgctctcatc agtatcaggg tcgtcctctc gtcttcttcc ttcctcgggg 2460

gcgccaagcc tttgtggact ggcacacggc cgcccgcccc gggcaagaca gagtcgttgc 2520

agtgcctcac cccagccagt tccccttgtg ctggagctag cgtacccggc ctccaccgta 2580

cgtaccctag ctctctcgca tgcaaaaccg ggcatgcgtc caatgatccc gagttttcct 2640

aatatatata caagtagata gcatgcctgc atgaagtgtc gtcgtcatcg tcgtggatct 2700

acatgcatag atagaacaca cg 2722

<210> 2635
<211> 1709
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_309862_G1, chr9:76469941..76471649, Cluster 15

<400> 2635
agcgcgaaag ttaagacgct ggagccggta ccggttcaaa agcaaccggt attgatgttc 60

ttggttggaa gcccggttca atacaagtgg ctcagttgga tctgaatgtt gatggactat 120

attgattcta tcacgctagg tgatggatag ttggcttgat gccatgcatg gaccggagtt 180

tggtgagcga cgacgcgagg tataattgcc gaagcatgtt catagcacca ggtcgtgagc 240

tcgacgattg actgccctgt ctgcgcatgg aaacatcgtt ttcgtgccgt ggtccagtgc 300

tctcgctccg atcccttgag acgcgccaag ccatggaaca atgaacatgg catgcaatgc 360

cgttcgtctc tctatctcag ggtcagccgg tcagggcaca ccaggggccg gccggtggtg 420

ggtcgtcttg tgaggatgtg ccgtgaccat tcctcttttt tttttctctg ttgctgactg 480

ctgccgtcgg cttcatctgg taggtgaggt cgtcgcacac agcaggcagc aggtgaggaa 540

cagatcacga ggggggatgg agcgaaaggg agggaggagg gaggacaggg cgtgcctctc 600

tctacgtacg gtatcgacct gctgggtgtg gcagcacact actcgtgagt acagtcgtca 660

ctgtcacact gttgccttta tatattccta gccggtagct catcacgctt gaaagacgca 720

tgcatgcatg catggcacag ttagtttgct ctctgtgttc gtaattaatt tgcatttgct 780

cttgcctgat caaatcaaaa gcgatcgata acctatacac atcaaatggt tccgaatgta 840

cgtacgtgct atgcccaaag tattttacga tgatatacgg tgcatgcatc gcatactgta 900

tgcattatac ggatggatgg caatggcatc gaccacacaa tagcatatcc atggatcttt 960

tatagctagg tacccgcccg cccccaatca atcatgaccc tgagatagta gtggtggcta 1020

ccgcaacgca acaaggccag caggcataga tggagcgagc atgcatgcag cacatcatca 1080

tttgcactcc acatgttggg ctactaccta gagcgcacat gcagggcggt agcaccagca 1140

gccagaggca gccacaaaag gatctggtgc cggtcaaaca tacgggccag caactgaaac 1200

acaagacata tatggcaact gataataata tactagtgag cttgcaaaat ggtgcgtcga 1260

catgacagtg catagcctgc aataagtaat taaggtgtgc gttgctggtg ccggcgcggc 1320

cagccaccaa aacttgcccg actaccccgg ccacttgtgc tgagccagga agaagccgat 1380

cgacttgttg ttcgtggctg ccacgcgttc tggtcgatcg accacacatg ccagcatctt 1440

cttaattgtc ctgtctcttc ttgtttggac acaccataac acacagctta atctagcgtt 1500

cgtggttgcc caaagggcgt tggtcgatgg tcgctagttt aagacgacac tggacaagca 1560

gaaatagttt tctgaagagc attttgttcc ctcacacccg actgcatgcg ctgctacaga 1620

cgacggccta gagataacct ccgttccatg agagccccac cacgtactag aatgcacttc 1680

ctcctcctcc ggccgggtac tgtgcacag 1709

<210> 2636
<211> 2169
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315881_G1, chr9:111099348..111101516, Cluster 15

<400> 2636
cgtgaccaga ccacctttcc ttggtcaagt caagctactg cttctggtgg agtggtggaa 60

cgacgagtgc ctacaaacga cattcaccgc actcgtgccg tccctctgaa ctcggctcgg 120

ctctcgtact ttttttactg ctctctgctc acttgccgac acacagtcac acagcgacac 180

tgactgcact cgccgtgacc gacgttagga ggacgccccc cccacgccgg tatatgatag 240

taggtctata tcgatatttg aatagcgcca acggtttcat aacgactagt attcaaatat 300

cgaaataacc gatagcgtta tatatatctg acagttttca tacagataaa tcaaagaata 360

tatatatcaa gaaactcagt caatgtgcac caaacgcccg gccacggccc acgggcgaag 420

ggtgggtggg ggacctgtgt gctacgtgct gccacagtgc ccagtctagg acactaggtc 480

cagtgcctac gtaaaaaaat atacgagcac tgccgctgca ggctgcagcc tgtagactgt 540

agcagtagta gtaggtgcgc accgccctcg atgggtgccg agaccggacc tgcccgtcgt 600

cgtcggtgtc gcgtactgtg tagtacgtat agccgtccgg catatgtacg gacaagggcg 660

ccctacacag ccaaaaggga ggtggcttgt cagtgtcacc ctgcagttat aacaggtacc 720

actacactac acctgcagtg ttgatagcaa aaaaaaaaaa acacgagcac caacttttgt 780

ttaatattcg aaagaatact gaattccacg agcgagctcc ttgaacttat tggcatatat 840

atactagtac tgtcttgttg ttttcggatt atacagaatt ggatttacgg tgtatctaag 900

tcatccccaa ctaaaaattc caatttttct ttagaacgag ttcgttggta tgtgtttttg 960

ttaaacagag gcaaaacagt tacattttac gactcgcata cgccagtacg tgcaatgatg 1020

caggagacgt ggacgctggt cagcgcagac ctccacggag gactagccag ggccccgggt 1080

cccccgagtc tcggctcacc tcaaacacgc actattgagc tacgttgttg tactagcaag 1140

ctactcgtag ctactacaag acatgtggtg attgcatgca ccgtgaggtt tggccatcca 1200

tggtatatgc tccaactccg cgcgcgcgac atggcatggc atgccaggca tgtggtgcac 1260

gaccaccatg catgtacgta cgcaactcat gcttgagaat gaactagggg cgggcacaat 1320

gcaaacaata tgtccacaca ggtttatatc tcctagatag agaagagatg gagagatttt 1380

cctaatttcc tttatgtatg ccaatttccg catcttaaca aataaacact tggtatcgct 1440

tggtggacac ccgtagtccc gtaccaacaa caccatcgcg cacacgcgaa cgtaggacgc 1500

cgctgcccgc tagcaaagca gataccagcc taccaggtag tgttggtacg caacgcaagg 1560

agggggggct cgaatctccc ggggggccct cttgtacgtc tggcttcgcc atttccggaa 1620

caaggaggga cgccgccggc cggccgaaac gtggacagac acgtccggtg cggtatctat 1680

actcctacct cgcgcacgtt acgtactgtc gctttggtga cgtcctgtgc tgctgggcag 1740

cacctctgca tagatttttt tgctggtact acatgttggt cttgcttctc agttctcaca 1800

acaatttggc acatgaagca ccgtgcacag cgcgtactac gtacgtgatg tttgcgtttg 1860

agaacccgca ggccacagcc acgatatcgg aggatgtttc tcgtgcaatt agcggagaga 1920

caaacaagaa aaaagagagg aaagaaacag ccggcgccag cctgcccttc tttcttcggt 1980

ccaacacaca ctagagtagc cagcgcgcgt atccgtttgg tgccacttct tcaaacccga 2040

caagcagcca gactgccaga gtgacgatat atctcctctc gcttctatgt gtagacaaca 2100

tcatggcaat gggaaacaac gttcaactac tagcgtgagt tcctggagaa agaactacta 2160

caaggagac 2169

<210> 2637
<211> 2884
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31669_G1, chr1:194685000..194687883, Cluster 15

<400> 2637
ggccggttca cgacaaagac ggccgcgccg gcgcgcgctc accggcaccg ctcacaagga 60

atcaaagcat ggcgatgcga tcggctgcat gcgtcgtcgc gcgccagacg cagacggccc 120

cgatcggctc ctgcgaattc ctcgcctcgg cccgccgtcg tctctcggga aggacggcgt 180

acggcgctgc caacgccacc acaccggccc ggtcgcgcgc ccccatgcac gcgcgggcgc 240

ggccctgtgc tgccgggacc gagatgtgcg atgcatgtgg gcgcgtacgt acgttggtcg 300

ttggtccctc cttccgtcgt ccgtggtttc gtttagttaa ttagcgcccg cgggatctat 360

ctagctatcc cgccggccgc catgcatgca tgcatgcatg tgacttgcta tgagccgccg 420

acgacagcca cgcttggttc tatcaccgaa agctgcgtgt cccgcagggt agttacggtg 480

caagttgatt agtggttaag gtgcaagttg acgcgtggtt ttctctctct ctctctatgc 540

accagccaat cagccatcgg ccatcactga gctgagacat gcactgtcta gtctaactag 600

ccatgctgcg cgctgctgct gcggcgcgct ggccgggtcg gttaattttt cttttgcttg 660

cccaaggcct ggacggacgc gattagccag ggcctctccg tttactgctg gacctttaat 720

ttaatctacc agagcgcttt gtagctatag gtgtagatag gcacgtacgt acacgttttt 780

tattttggtt acaggatgga acaaaccggt cagaaataca gttaagcacg tgcgcgcgcg 840

ggggttatag accggccggc ccctgacgtg gtgcactacc tgcctctgcc tgtcagatcg 900

atggatggtg cgctgggcat gggcgcatgg ctggcttcag caagcacaca aaggacatga 960

ggcatgcaga gacagggtcg gctagggcgc tagtctgctg gggcaataaa atgaggggag 1020

gcgggagccg tggctctctc acttttgggc caacacacac gggccagact gtagaggaga 1080

gacacagatc acgtcctcga gttgggtggc gcgacctgct gcggctggcc cacttggccc 1140

atcgcccgga ccaaactggg gggctccatc ccggatctcc acgggcctac actgcccagc 1200

cccgctgtcc ggattccgtc ccaactccca acacgcgaaa cgtacggttg cttcaagtgg 1260

ggaaaaaaat gctactgctt acaaatgtat cgctttccct ccctactact ccaattcatt 1320

agcagcgcag cagcagcatg cacagacagg gtactgccaa gttgtatgag agagagagag 1380

agagagagag agaaacccct ttggttagct aggtgacagg cgacgaagat cttctcttgg 1440

tcacggaagg cgtcgccaag attttgccaa ttatgggcgc gggattcgac gccccccccac 1500

tcgcaagagc tcctacatgc agatcgaaac aaacgaacga atcatcatct attgccaaac 1560

cgagcgcggc ttgtattcgg ctttgccaat taattttggt gaaacgtgtc aagctattag 1620

attcatgttt tagaatccga cggtgactgt atattctttt ttaacagtag acgatgtgca 1680

cgcccaaaac gagacgtcgt ctacggtgag gctttttgtc gcttttggag attttaatct 1740

gtgcgtatat atagacaaca caatgcgaca cgtgcagtac actctattga ttaggagtgt 1800

gagattttct aggtaccgct cactctttca gcaggctggg agtgcttata tggatgagta 1860

ggggtatgag tgcgtgtgtg tgtgtaccta gaaaacaaat taatggattt atgttactgt 1920

acaaggctat acttgctgca tgtaccggcc ggttttggac attcggtgga tgagactcca 1980

attcgtcgtg ggcttggatt ccagcccgtc tagagctaca cgatctacat gactacatat 2040

gcttttattt ttgttttcgc gcgatgtaca cagaagttgg cccttggacc ttggtcactt 2100

cgcttttcgt tctgccttta ggccggtaca cttgcaaagt tccttttgtt tatgttagcg 2160

tcgcgaccag gctagctagc tagctaccta cctctgcgtc ggtctcgtgc gtgtgtgccg 2220

agtgcacgag gaccagccat cggccgcgcg acggcgtgcg gtgtgctgct gctgcgacga 2280

acccgcggcg accacaccac acgtggaatt tggcacgcac catgagggcc tcgcctcggt 2340

acctttgctg ctggctctac agggagcact cgaccgttgc catgctgcca cgcggccgag 2400

attctgtgac ctcagctcgt gacgacggcg acgacgacac agcagagcag acacgatctg 2460

attctgatct gggggacttt gggcaccggc ggccggccgg cctatgcaaa atatatcgtc 2520

gtcccgtcta gtgcatgtca cattcgcgca ctctacgtac ctgcatgcac tgacaaaaaa 2580

gtcgcctttt tgttacctat tactactact aggctagata tggaagattg taaatcttcc 2640

cagccaggtg gtggttgttt atttgttcgc cttcgccttc gccttcgcgt ggtgaatgtg 2700

gttcggcgcg cgcattgccc aggaatcgga gtcgaatcct gaacgtggag ctggcggaaa 2760

tgggatagcg cgttgccgac tcgccgttgg cgctgcctcc gcctgcctgc ctgccgtatc 2820

ggttctgtat ttttttcct gtctttcaat gatcgaccat acagcagagc aggctgagcg 2880

cagc 2884

<210> 2638
<211> 1470
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31712_G1, chr1:194944003..194945472, Cluster 15

<400> 2638
aactggattc agttcagaca aagacgacga tgatgtgcat ccacctccac ctacacgtac 60

ggccagtagt cgagttcctc tgggctgccc cagctgcttg cactgcactg cacgcgttgc 120

agttcgcagg catggcatgg gttccagtcg acgacaggag gacgaggagc cggccgccat 180

gtggccacca gacccgaacg gtcgaggcaa cagctagccg gcccagctgc cactgcgcca 240

ttcctccccg gaactggagc cgcgcgcgcg ccctaacaga tcattaagcc cccaaaggat 300

cagatcgcat cttatcggat cggatcggat cggcagcgag ccagcgacga cggaacggcg 360

gccagggcgc tagctagctt tcgcggtgca ccaactctgc catctccccc aatcgatcca 420

gctagctacg taccgagctg gcggtgggct ggtgcatgcc gacgcacggc tgatgtggcc 480

tgcaactggc cattgccctc ttccccccctc ccagaggtgg cgtcgtggtg cgcgtgcatg 540

catgcagcta actagatagc tagctactag ctgtgtgtgt gcgtgcgtgc gcgcgtgcgt 600

ccacggctcc acgccggctg gctctggatc ggaatcggag gcagagatga acgaaccagc 660

tgctagcagg ggagggcggc tccgatccat tagttccact atacgcagtg caggcttcct 720

gccactgcca ttccagctag ctcgtgaccg atcttatcct gcaaagccga cggcgacgac 780

gtgctggtgc tgctgccgat gtggccactg cttgtatgga tgctctctct ggtcttgttt 840

atatatatgg actcttgtgt gcattattaa agacgagcgc agcgagatcc ggggcaatgc 900

gtccaacaag caacactgtc gtctcgtccg tcgcgcgcgt gtacgaggtt tcagagctag 960

cactgcagta gtagtagtgg ctagtagctg ttgcctgttg gtgcctgtgg ctgtggcgtg 1020

tgtgtgtggg gacgacgtcg acagcgtagt tgcgtctact cgtcgtctag acagcagctg 1080

ctgctacgcg cgagcgccga gctagcctac caatcgtgga gagcccaatc atgcgggaac 1140

aggatcccac tacttccaca gttccactaa caaagttttg gaagaaattc ttaccggccg 1200

gccgaatcac cgaccgtatc catgcataag agtggagcag gattacactt tcattcacta 1260

cccgttcaga aatcctatca ctgtagattt tctgaaccgg taaaacaaaa gtgccaacaa 1320

tgaacctact catcactgtc ggttctagat agtggtgttc aaacgcgcca cccgacccgg 1380

tcccactaca agaatactta ggactcccgt cggctaatat aatccccatc agttttgtcg 1440

taagccgacg ggagttacaa atgttaggac 1470

<210> 2639
<211> 1758
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3203_G1, chr1:16449269..16451026, Cluster 15

<400> 2639
caaagaaaaa aactagtata tatccagatt atcttgtacg gtgttggttg cacttgacga 60

catggatgtg gcttctagaa actagttgac gaccttgtac atgcctttgg ttggcgtgtg 120

gatgtacagg ctagcgagcg agcgagctga aatcgtactg cgcagtacgg tcaatgcgta 180

cgttgcaggt agggaggacg caactcccct ggcacgcatg aaattaataa gcagcttcct 240

tgcccccggc cggccgggct cccttgctgc attgtagagt gtaggcacag acgtacggac 300

gtcgtacgtg catgttttct gtgtacgggg agtttgttta caaggcaaag attcagctca 360

tcaaggaaca cacacacacc gcttaatttg attcgaccga caacagctat tatatacagt 420

gccattcgaa ttcgtcgtag ttgtttaaaa caaaactact ctttattgca gctagctgtg 480

tttaattctt catcccatat atgtcgcgta gatattcaaa ccgttgttgc attgcattgt 540

tggccggcct agtgcgtgca gtctgcagtg tcgccatgca atgcaagttg attgacctaa 600

cgcaaagcac gcgcgaactg aaacagaaac atcgtccaat cttcggaaaa tcccagcgcg 660

gtattgatcg accactatta acgaccagaa tacatattac agtggccaaa agattagata 720

gagttgcagg ttaatttcta ccacacctgc tgacgtggca tggatggtct tgtcttgccg 780

agttgcgccg gcccggccag gcattcgtga ggaggtcgat agatcgtcgc cgaccggccg 840

gggactcttt accgcgcggc ctcgagctgt ctgtgtgcgc gcgcgaaaag ccagcgctgg 900

actcgatccg tccggaagcg gacacgcggt ttcgtgggca gctcgtcccg gtggcccccg 960

ccggtccctc tctcccaaag acgaccccac cagaggcctt agcattggcc acgtctgtgc 1020

cactgtcact gtgtgagtgc tgccgggtac cggacctgca gcgcagcgcg cataggtgtg 1080

atgagtacgc aagggaagag ccggggaagc catcgttact tggcgcgtca tcggcggcga 1140

tcgactgacc gtctgagtct gatggcctgg gagtagccag gtcgtcgtca ggcgcgcggc 1200

gacaccgctg ccagctgact agtgatgtga tgcccgtgca aaccacaagg aacatgccac 1260

gcgtgctagc tagtttacca attaagccga cgaatcacag ttcggcagtt cgccgataca 1320

tgattgtaca gggacagcaa gcagccagtt cagaactatg tgtgatgacg ttgtaaccta 1380

tggacgtcga tctctctatc tcacacccta tatatgaata atagacacac acacacacac 1440

caccgtacgt gtgccaggga tttcaaaata acagcccggc tgcggaaatg ggggtttggt 1500

gagctgacga cgtgaaaacg tttaactttt ccccccctccc tcggtccctc ttgaacgaat 1560

gaacgtgatg tcacgaaatg ttggttggcc tgcccgcccg cccgcttgcc aagcgcaacg 1620

cagggtcgtt ccatgcacat ggcatgaacc acgccaattt atccctagtt tcgcctaacc 1680

aacgcatata tgtatctgta attataaatc atcatcacta gtgtcccact atgagcacag 1740

ctgttaaaag ttaacacg 1758

<210> 2640
<211> 2337
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320529_G1, chr9:135834671..135837007, Cluster 15

<400> 2640
gaacaacgtg agatggcgga gtgcgtgact tgtgaaggag tggccggccc gtgcagtgat 60

acgatacggc agcggatctg tcacggtgtg tcgtgcacgt acacgtaagg ggtgggcagc 120

agccagccag aaacccgggc aacgtgcatg tgagccgcac agtttccttc ctaaccaaac 180

gctgctcgac aaaaaagaga gaaccaaaat gatgatcacc caggccggcg gcgggtgaag 240

cagatctact gaaggctgcg gcgcgcggcg atcaccaccc tgtagtagcc ggcgatctac 300

tgaagcagat ctactgaaag gcagttgccc tgtcgtctga tctccgatga gatgacgacc 360

tgactgacta ccagaacttg ggttgtagta gtagatgagc aagccgtcgt cgcatctgct 420

cggtccggcc gttgccggtt gggcgcgacc ggcgtggagt ggatcccgca gccccgcagc 480

ccctgtactt ggagtacagt gccgcaccat acgcgcctgc cggccgtcgg cctgctcatg 540

tcatgtgccg cagtgccggt gcccaaccca actggcggga ggctgggtgt atatgccctc 600

gacatggcat tttcgaacca aacaaagtcc gcaacgtgct ttctattatt ataccgaaca 660

aaacgttaga gccagccact acctcttgac ccggtccagc gttttctttc ttcttttcaa 720

accttgctgc tggtgttgct ccctcgtgtc agccagccca gccgatcgcg cggcctcctg 780

acagctaatt ttttgtccct cgttttttt tattgttatt acgccattat cacgcaacca 840

tcatctatcc gtcgtccatc acttcaaccc cccgtgcatc tcgacatctt gtcacggccg 900

aacagcgcgc cagacagggg ccaggcgtag catacgtcag ggccacgtcg tgccatctct 960

gcctagctaa gctagctgta tcctgcgagt ctgcggctgc ggtgcgctgc tcgtatagta 1020

gtaaaacaaa aacaaaacaa aacaaaacaa aaaaacgtcg ccagaaacaa tccacgtact 1080

accgccatgt gctttccttt gctttgccgg tcactgtagc gtaaccatat ataataactc 1140

agtacggtac ataccacatg tgattatatt accaaaaatg agctcgacga cgaccacgtc 1200

gcggctagag ctaccgtaac ggtccggtaa tgcaggcagc agaaacgcat gggagcattt 1260

cgtgatgttg atgagcatga ggcagcaagt ggccggtgcg tgatccgatc ggccgatcac 1320

gtacccgtgc cggaaagctg gatttaaatt ccggggcgga tcgcccgcgc tctagtttaa 1380

cccccgcgcc agagtcgagt gtgtgtgtgg ccggtgcgtc ggagctgtac gtattcgaac 1440

gcgaaaccac acaaacggac ccccaacccc acgccacccc acacacaaca acaacggcgg 1500

actaagtaca aatcgaaaga cgaaagtgcc ccgcgtcctg cccacagtac aaatccgttg 1560

tacgatgcat cgtcatgagg tcagggtcgg ttaattagtt agtcgatcgg ttaacttaat 1620

ccccccccgga ccgtagcgga tagcaagtcg gcacagaccg tcaccagtta aactgcaggt 1680

aaagtaaagg agacacacac actcacggca ggcagtactg cagtagcgaa cacgttccct 1740

ggactccaag cagcagccta cgcgggtgcg acacctgtgc tgtgccgccg acgctgtgaa 1800

aaagcatata ctactaggcg tcgcacgttt ctactcgctc ggttagcgaa aaaagctcct 1860

cctcctccta atcatcattc aaattaaacg ctgctcccga agcgggcgag gtgacggtcg 1920

ctcgctggct cgtggtcgtg ggccggccag ctcacgtgcc ccgcgcacat gttaggttgg 1980

tttgccttgg attcgtcacg ctcgcaaccg tcagctcggt cagtcttatc gcctcccggt 2040

ggcgattttc tgagctccca ggtcgggatt aaaaaaaaaa ctacgggtgt ccgggttcag 2100

gaaccctgcc ccgtgcgtca ccattaccac cacccgacg ggcgatgagc cgatcgctga 2160

tggcacggcc ttgccgtcga atcagctgtt ggcgacaacg aatctcctag cggatatcag 2220

ctcatttaaa aaaaaaagtt tgacttctta acaagcgaaa tccgcactta ttcctattta 2280

ataaactaat ttcctgttca tataaattct acagcagttc tacttaatcg tcgtcgg 2337

<210> 2641
<211> 2434
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_320539_G1, chr9:135862432..135864865, Cluster 15

<400> 2641
accacgacta ctacgtacgt gcatgcttcg aactggataa aactgtttgt atagtagtcg 60

tcgcgcaccc tcctctattt ctacacatca cgcagtattg ttgttctact ccagcatatg 120

tctccatcca gcatgtgtgc ttcactttgc tccacagcct gtccacgtcg tcgtgccgtg 180

ccatgccagt tggcagtaca cgctgctacc actgcctttc gttctgctaa gaccctaaac 240

tattgctaga ttagatgagg agggggcact gcatgcgacc agcccagcca gcttgcctac 300

tacgtctacg tgtaacgtgt gcctgccatg atggcccagc acgtccgcgc cagttgtcga 360

cctactactg gggctctact gttcccattg gccagtagtg tgctttagct ttaggacagg 420

taagcctacc cctgaactct gaacagcttg tagactagat atatacgctt tccattggtc 480

tacgtgtacc attgggccat atacagacca agacaccctg tcacttccga caagctaagc 540

tagctcacgc gtgggcctca ccacggagta tgaaagcttg ctctccaagg tccaagctct 600

ccacacactc cacagtacag tcgtatccat agttccatac cgaactgcat tcatattttt 660

tttatgcatt ctactctctc ctttttacgc atgtgtgtgt gatttctctg acagggcgca 720

atctattaga ggctactgat tcataacgta acaaactatc gtcaagtaag ctaagcttgc 780

catgtgatta tttgtagcgg cagtattttc acatgcatga gcatgagatc gatcgagcgc 840

gtttcttttt cacgcatgcc agttctcgaa aagcttgaag gatttttaat gtgcatgtga 900

cgtgtttgct gtagttaaaa tctctactat gtaagtattt tattggatta ttctcgtgtc 960

ctagctagta gctactcgat cccctgtcgt cgtcttggac agcaagaatc tgactagcaa 1020

atcttatgga gacgatttaa tagatatttc ggcaaaacaa atgattaatt gtgcatgcat 1080

gattaatttc gttccgaagg actagctagc tataggcagt gtatacgtac cccgaaatga 1140

agttggtgta ccgaacatat atatcatgca catgcatgcg cgcccataat agtctacttt 1200

ctagaacagt ttttggtgta ccaaatgtat ggggggcaca ataagatcga tcgaaagtca 1260

tccaaagcga gcaacaaatg tattggttct atggattgct ctcttgcttg cttgtattgg 1320

agcgatgatc gaggtacggt ggtgtatatg gtccatgacg accatgcatc caagccaagc 1380

cattgcacgg agcatgccgc tcgcgcgctg ccagatctaa tcttagcggt cgtaacgtct 1440

ttgagacaac agtaagcact cacgcactga gctcaaaaaa taaatgtgga gtagcaattc 1500

taaaatagat aaggttcgca gaacagatac tactgtttgg aataaatgcg acatttgaca 1560

gacactagga gggaatcttg ttgcgctagg caggcaggca ggcagcattg gccaggcagg 1620

cggtgccggt acggtagtgg gtgaagagcc ccccaggccc agggtcaatg cgtcgcggaa 1680

agttgcgcaa gaagccaaga acaatctctg catagccttc cgagccgcgc gcagctagtt 1740

cgtagtacct cctacgatca tgtttttaag ctccaccatc accgttgctt tgctcgtacg 1800

tctggatgat gtactgtagg agtacgtagt actagtaggc cacccttacc gccgtacgtg 1860

tacgtgcgtg cagcttttct tgtgatcttg cgtcggtcgc ccctttcac cgcttcctcg 1920

ctagcgctag ctgcggcctc gatctctttc ggtccctcgt cttttgtttg cctcgtctca 1980

gtatcagccc tgaatcactg accatgcatc atgcatgcat acctcgacga tcgttctaca 2040

gctgccataa taagtgtagt gtgtacatat atgctatgtt ctagtagtag acagtatgta 2100

ccagtacaca ctacgatccg ctggtgcgtt cacctagagt atgagcctta tgttttttat 2160

gagaactgat ttggtggaca gtgaattatg aaatctccgt tatacacaat gtatgtataa 2220

tctacaaaaa aaattcttcg taaaaaacaa gacgtaaaat cttcataaac aaacatataa 2280

ggtgagaggt ccaagttcct aacaattttt tccatactgt tagatgaatc ttcaataatc 2340

tgttggattt ttttttggct ggcgtctccc ttataaaatc actgtgcatg gaagcaggta 2400

gcagcaggta tgacaggcac gcaggcaggc acgc 2434

<210> 2642
<211> 1438
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321636_G1, chr9:141442264..141443701, Cluster 15

<400> 2642
aatcagatta caacccgtac cacgacttct gaggtaaata ataaacaac aaaaactgtt 60

tcatggtcat gccgtagaat agaatagatg catgtacctt ccttttctcg ggccgtggaa 120

tgatagagcg cttccaggcg tacatgagag aaacgaaacg gacgtgcact aagcctttag 180

cccgaggccc tgtaagcacc ttttgggcca gtgtagtagg aaggggcccg gtcgtggtct 240

cggcaacatt aagcaaaaga aaaaaaaaac tttttagacg tgcccttctt ctcttaaaaa 300

aacaacctag tttttaaaaa aatagttttt atcttttagc tagaagagac taacttctta 360

ttttttaaa aaaccccggg aatctaattt ctataaatat gtagaaccaa atcaattttt 420

ataaatagtt tcctaaaaca cagggtgctt gcaaacaggg tctaactaaa tcgcagtacc 480

agaagaaaac atctgccatt agcacttgca ctgtagcaga aaggtccccg gatttcttag 540

ctacttgcgg agtctggact gtgcaagtcc ggagcataga aacaccatgg cgtagagttc 600

gtagtcgtga cgttctgctg cgtttgaccg tcgcaagcag acaaccgagg aggaacaatt 660

taaaaaaacg gtgtcgcaag atgctgccat gccaagccgc gctggcctca cgtgatctcc 720

ccgcatgacc cgccggcagc agaaacttct cttctccatt ggatccaccg gcgtgtctcg 780

tctcgtctcc agtgggatga gaccggcgaa ggacattggt ccgtcagaaa atttgtaatg 840

gcaagctgtc ttcagaagct acgatcccac atactaggcc gtggaaaata gacctacgta 900

cggacctgaa tggctgagca aagtaaagga gagagaagat gagagagaga gagaggggaa 960

aaacatgcta taaattagag ctcgtttaga cgcaacaacc aaaaagcttt gaacttcctt 1020

tggattcaaa ttataattta gactgaaggg agtaaaggag ataatgaggt catgtactaa 1080

ttgactacta tatggatgag ctaattaagt agactgcaaa gatttttaca gctgccagtt 1140

tgcgtaaact atatggatga actaattgac tactataata attgactact agttgattaa 1200

gtaggctctt ctgtttattt ccggtttgcg tggtagctca aacgtcacgt gcgatgaccg 1260

gtggagggat acagtcgtag gctggctgga atacatttta ccaaacctcc cctggcattc 1320

atcatatttc tgcgaagggt cggagagact ttcacgcatc cagcggtaat acagccgtac 1380

ctgctggcgc ggcgacctga tttgtccaca cggcgttaga tctgttgcaa tctcttgc 1438

<210> 2643
<211> 2140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322257_G1, chr9:144848591..144850730, Cluster 15

<400> 2643
cggtaaccca cttcgatcaa tatggcggcc taaaaaatta attaattctc atgggtcatt 60

gtgttttctt acacctttc aggcttttcc tgactctgac attgtctgtc cgattgcaaa 120

accagtcgaa gataccaaat aaacctgacc taattgagcc gatgtttgcc atgcgcggac 180

agccacgcta ggagccactt ttatttcgtg ggagcagcca cgagcattgg cttgcgtcat 240

aagcagcaga gctcaccgca aacaccccgc gttgcatccg ggggcgcagc cagatcgctg 300

ggcaaggtcg caaatgcgcc cctagtacat acatgattga acgcgccact ggaagcggcc 360

cccccaggag gccaggacgt tgcccctgtg caatgcggct gccgtgctgg agcattgatg 420

cgcccatcgg ccagtgattt gccggcacag gaaaccggaa gcgacggttt gaccctcaac 480

attggcggca tacgccaagg gttatgcatg cacattgcac agtgctgcag ccgccggccg 540

gggcgcctag ccgcctgcca ccgcgcggga gcgagccctt gccccttcgc tgttgcctct 600

ctcctctcca gattcgacaa cacgtgccgc gggaccgctg ttccagctag agctagcgag 660

cgtagcgaag caagctaatt ccccataggc catagagtcg ccgctttgct cgactgcccg 720

tgctcggtgc tggctcagtc ccatgtgccc gccggaactg gcccgccgga ggcagagccc 780

gtcaggcggg cgcgttgaat gaagccgtaa gccgaggtgg cgcgcacggc atgcaagcgg 840

taggtccgca gggatctcat tccccgtgtc acccaccgtg tgtggcatct caggctcagg 900

cgctcagcta gtggggactg acgtgcatgt ggatggtgag cgagccgcga ctccgcgtgc 960

gtcagtgcgc cggcgtctga ggacagcgtg cgtgagcctg tgtgacgcgc cgtggggaac 1020

gtgctgcgct cgtttctgcc gtctgccgcc cgcgcgctcg gcgacgcgcg ggaagcgaca 1080

agggcggcat gggctgctgc atgcggaacg gggtggcagg gggaagcctg ctccgccatc 1140

ggcagcagac aggcggtcga tcggcagcgc gtgctgtgtc gtcttgtgcc ttccgcctgc 1200

gtttccgccg gccgctgcgc accacctgcc cctgcctgcg tctcttgttt tcttttggaa 1260

agaaaaaccg tagcgctgtc gtcgtgtctc agtctgctgc gtgctctgta gtctgtagta 1320

cccatgcatg cattctacta ctacgtcgta cagttcacac atgcatcgtc actactttgc 1380

gcgacaccgt acctcgaccg cggtccgccg cagaggctag ctgctgccga cgcaaccgtc 1440

cgacggccga gaccgatgag tgctagtaga tgagatgaat tgaagaagct gagggacaag 1500

atcgatccag acgtagagta ttcttaagct tcatcatcga aagaagctag tgctagacga 1560

tcacgtacgc tgtttcgtac tcaatcaagt tcgcatatat tacgcgcgca cgcagccggc 1620

agcccactgc tgttttgcag gatcactgtt cactggagga ggcaccgatc aggaacgagt 1680

acatagcact gcaatctaag ctaccggtac tgctatttgc agtcgcaggc ttggagcccg 1740

gtcggccggt cggtcggtct cggtcaactg gactgcttgc tttgatcgga cctgctcggc 1800

tcgggaaaac cgaggttcat gttcgccgta tgcccgtatc cctcactctc actgtgctgt 1860

gcctcgcatc agttatcacc atacgtcacg tcacgtctgt caatgctctc ctcacgcctc 1920

tgggctccgc tccggacaag caccagttcg gtgacaagca tctgtcgttc tcattcaggt 1980

acttgaactc tctttgtgcc tgctcggcca gcaagtttgt tccctccaca gtttctgctc 2040

gtgcaaccgt agccaccgtg ccaatagtcc aatagtaagt gcgaaaattt gagaggaatt 2100

aggctgcgtt tggttccgta tggattcttg ttatcaaata 2140

<210> 2644
<211> 1528
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323067_G1, chr9:148776884..148778411, Cluster 15

<400> 2644
acagtagtgg tagtatcaaa ggagctagga atgattgcgg ccatgacatg catgagcgcc 60

aggaccttgt gcatgccttt tcaccggcac aaggcgatcg acccagccgc cagcgcatgg 120

agctgcccag ggtttccgac acatgcaact cccacggaac aggagaaaag cagcctgtga 180

ccatgcatat acgatacgaa gagggagaga gggacagaga cgaccggacg tgcagcgcag 240

ccgagcatgg aaacaaaagg aagattccat gtggcgaggt ctttctatcc cgctcgtgac 300

ttgtcgcgct cgatcgcgcc acccgtgaac cgccatgtgc atgcggccgc gcgcgagcgg 360

gggcggcagg ccgcggcagc aggcacggcg tgccgcacag tgagacgccg ctgcgcacag 420

gaagatgcat gatggcggcc acgtctcccg ccgtccgaac gcgctgaagc cagggaagca 480

ggcaacagca caggacaaga gctcgcgtcc tgcgtccatg catgcatgca tggcccggga 540

ttgagaaggc gtgcgggagc ccacgcgcac aatagccatg catgcatgat cgctttttgt 600

gcgggggcgg gtccgatcag ccgagcagtg gtgactggtg agccggccgg ccggtcgctt 660

ccatgcacgt tcgctcacag gccggccgat cattttccgg ccggcggggc gtggcgtggg 720

gcgcgcgctt tttaccccca atcattttac tcagctcatt ttacccccaa tcgaacaaaa 780

tgattaggtg ttcgatcccg agtgctctgc aagaatttct cagctccatt gtcaacagta 840

attcaaaggc cctcctccat cgatgcatgg atgcgtgttt gtcgtagccg tagtagggcg 900

tcaaatcaga tgaggcggca gatcgtcgtc gtcgtcgctc tagctagcta ggcgcgccat 960

ggacaagaca acgacgatcg atggcggagg agacgaatcc atgcatgcat gccgtgtggt 1020

gggttgtacg tagtaacagg ctagcgctca tcatgcacac agtcacagcg tctcggatcg 1080

ggcacatgca atgcctcgtt tccaggaatc ctgtccgaga gagtagcgtc caagccagga 1140

attaatggca agggccccgg cccggccggc catcgccccg ctcatgcagg gggcagggcg 1200

cacgactgtg caggctggag ctgttagcta cagtgacggg cagtgcggtg cggagcggca 1260

cagggtggtt gtcgccggag cagagcagct gcgttgcctg cgcaggcgat cagaagctca 1320

tcatggcgcg ctgctacctg ctggacccgt gggggtttgt tttctccgtt gcggctagac 1380

tagagcgagc ctctatggct ctatgtcagg gttcctacct ccaagcacca agctgctgca 1440

gatcggcctg cagtatgcat gcagaccgcc ggtggcgcta gctttgggct ttggcgtgca 1500

ttgacgccat acatgttagc tacgcttc 1528

<210> 2645
<211> 2150
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323226_G1, chr9:149723968..149726117, Cluster 15

<400> 2645
accgaaatat ctgatgatcc atcaaattcc gggcaggtga ggtctatgga catccataaa 60

tgtacatgct acagttagtt tatccatata tacttggtac agttttttt ctttcttcta 120

gctatctagc ttagctaggc agagacatat atacagtgtg gcatgcatgc ttctacttgg 180

tagaactgcg aagtgcatgc cagctaacga atcgaaaccc tgtttctggt taataagtca 240

tgcaacggac aaactcgatc gatcgatcgt tcacttcctc tgaatgtttc aataacaaac 300

tgcatccagg caaaaccgat ccagccatat aggatggttt ttgttaacta gtaggagtac 360

tacgtactag atcgaaccta tatatgtcgg cacgggaatc ctgtccctcg ctgcgtgtag 420

acatgcaaaa tcaaagggga attttgtcat tattattaat gtccatattg atcgtaccta 480

ggcgcctaat gcgtcgaaaa cctacactgt cgtacgtgct tgtgtacgcg ccgcatatat 540

gtccccccc ctgcctgcct cccaggccgg acattaattc tctaggtcat gtgtggatgg 600

tgttaaatta cgtgcatgat tccgtttcga cagcgttggt tcatgtacac actccggcct 660

agctagctag catagcccta gctagctact gctaggtcaa tatatagtac gtagttcgga 720

attgctagct ccatgggcat aagtaagaaa ggcatttttt gttgtgtgat tttagtttgt 780

ttttttgttt taaaggaaat tattttatca tacaaaatct aattaattaa tgcgtgcatt 840

ttatacctag aaactgccta gttttaatta gtgtccagtt atgctggatg taaactcagc 900

ttgtactaga gttatagtaa tattgtagta ttattttcag ataaagattt atgtaactaa 960

aagagacagg tgtatgaaaa aaaaaactag agtcacactg agttgtgaca agcagccagc 1020

gcgctaaccc ccctcacagt cacaggctcc cacccacccc caccctcaca aaaaaaaaaa 1080

aagaactaaa aacaagaagc gacaaaaggt tatcttcctg ctgtaacagc agtagcttag 1140

tactagcgat caacagcatg cagggtagcc taacgtgaca aatagcaccg cagtgtctgg 1200

ccacgccgtg cacggagcag ttccgggcca catacgcgag gcgagctcgt gcacgctggc 1260

cctaccgcgc cagcaatcat ctgtgctggc tggctggcta gcgcgccccc ctttttcgcg 1320

caactgcgac gtgaagtcgc gtcgcgtcgt gcctgccgca gcactactgg gcgctggccg 1380

gggttcctgt tgccgcagct agcggcggca ggcagtgccc ccgcccgtca ctgaccctat 1440

gcctgtgcgg cgcacaaccc cgaggattta tcccacgggg cacggccgga taggacactc 1500

cgtccgtgcg agcggcagtc cactggcccc gtccctggtt acgctacgcg acgacgacga 1560

cgatgtcacg cgcccggccg acgagcaggt tcggacggca cgtgcagtac tatggccatg 1620

tcatcgcgtc aggcggcacg cggcgcgtac atgcatgccc ccggctcggc tcggctggct 1680

ctggcgtccg aggtcgtccg tctcatccgt ccgccgcaga aaccacactc gttgcggccg 1740

cctggtttcg tcgcagcgca gcagcaggcg gcaacggggc aaggcaagca agcgcgacgt 1800

ggaggagggg aggggaccct gagccctggc cggagacagg aagcgacggc cgatggatcc 1860

tgccctgccg cagcgcgcgg ctacaatttc cgaggtcccg tcacggcagg ggtgtccgcc 1920

cggcccgtca aatgattccg ggcctccgaa tcatgaggcc gcggatccac gacgatccat 1980

ccatctgcgg ccggcccgga ccagcgcaat catgtatgtg cctgtcatcg ttgcgttgcg 2040

tagctcggta gcccctaccg cccggcctca cgttcctctt gcccatggcc atggccatgg 2100

acgagcgatc acgtcctctc cggccagctc ggtgaactcc aaacagtctg 2150

<210> 2646
<211> 1583
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325839_G1, chr10:7111631..7113213, Cluster 15

<400> 2646
aaatgactat cataatgtaa aaaaagatcg actttggggc gctgttacgc atggcctgaa 60

gcacggtctg atgaagcaaa cggtccatta ctcgtagcta atggtgtagt tggaccaatg 120

agacatgtgt ggttaactcg accgggttcg cgtgatagac tttcagtgta tatatcactc 180

tatgtgacaa ataacattgc gctgtatata tataacctaa aaaagaacgt gaaatgcttc 240

attgcaacag ggcttcgtgc acgcatacct gctgtcctgt ctcacttggc aatttgacgt 300

gctgacaagg tggaccaggt gtacgacagg taccctggcg ccgagatcac ctcaaccggt 360

agagaagaag gccctgaccg accggagtct tcctcgacga gctccgcatg caagccgccg 420

ttcatccgac cgtcggagaa acgattctac tttctaagag cccaatcggt ttagtgagcc 480

catgcaactc atgggccagt tgatacatag atagtagtgg aaggcctgct gatcctccgt 540

tcggccgact ttttttatc cagacagcgc tgctatccaa cgtgggctgg gctcagcgtg 600

ggcctcgcgg ccccgtccac cagcgctgtg ctggagagaa gtgcaggcag gcagttggta 660

acttggtata tactggatgg ataacgagag agggagggag ggaccatatg cagctgcagc 720

tgcaggtagg ctactgcggc caagcccatt gatggagttg caggagctac ggacgggacg 780

gacaggggat cacaggagac ataaaccaaa cgcgaaatca tttctcctcc tccttccatc 840

accagaaaaa agaacagcat tcgcagcagc agcagcagca ggaggcagta tgttctttga 900

cttactgtag catttcattt aaaaaactcg atttgtggcc ggtgaagtag gctgcacgcc 960

ggccgctgtg cgcctgtgcc tgcgagtggg agtgacgcat cagcgatggc cgcagaagtg 1020

aagtgacggc acctcccagt cccagtccca ggcggcccgc cgcccgccgc ggtagaatag 1080

gggcgggcgg gaacgaccaa tggcaacgga cattcctgcg gaatcgcgtc gcactggcca 1140

tttccttttc ttttttctt ttcttttcag ctgccctgcc acctacctac gaccggctgg 1200

ctggctggct ggctacggcc tacgggagga ctgaggagta ctagtaccgc ttgtttactg 1260

ctgcaacgac cgacaaatgg gctgccgagc gatctggctt tccaggcgcg agatctgtcc 1320

agtccagacg ccgccgccgc actttaatcc actgctcgtc agtacgtacg ctgccggctt 1380

gatctcgttc tcggctctcg ccactgctca tcgatcgacc tgtcatgtat ctgtgttttt 1440

ccgcctcacc cttttcgccc tttataactg tgctgttaga gtgtctccaa caacaacaag 1500

gaccgatata tggtcttgtc cgctaaactt agagcatgtt gagagttcct ttatctacgc 1560

gtccagcaac agacgtaaaa ata 1583

<210> 2647
<211> 1496
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3278_G1, chr1:17001197..17002692, Cluster 15

<400> 2647
taacggttgc ggatagccta atagcacggc agcacgtagc atcatcacac gcacgaacac 60

aagcacaagc aggaaagagc ttggaggttg cagcaagtca gcaacggcgc cgcaaagcgc 120

aatggaggca tggagccagc gacacgagta gagcaagccg ccgtctcagc cgggaccccg 180

gccggtggct agctgggtca tcagtcatca catggtcgaa cgcgtacacg cgtgccggaa 240

atcctagaaa atcttctgcg tggcgctagc cggaaaacga aatccagccg ccgccggtca 300

aggttggact cagcgccggt gttgtatgta ctactagagc aaatctgtga ccggccgtag 360

tcaccggacc accgccgaga tgatattcct tcaccgtcgt cccagggcaa gtcgtctgac 420

ctcattctta cttactgatc gatgacacgg aaacatctgt atctcaggct gatgatatcc 480

catccgcggc atgcatgtgt gcgtggtccg ccgccccccg cgcgcgcgct ggtcgccgcc 540

gagcagttgc cgtgcgcctg ccccgaagcc ggatttggcg acgacgacga agcagctaga 600

cgcctgtcgc gtctagctag gatccagggt gacgcatcct gcgccatgcg cgcgcagtcg 660

gtgcgtgcat gatgatggaa ttagtggaag agaaccaaga acccaagatg tacgcgcgat 720

cgactggaaa ttgttggaaa gagacaaaga ttgaatttgt tcggtgagct gctgaggggc 780

gtcgcgtcgt ctcgtcgctg ttccagtgtt aacgaccaaa tcggcaggca ttgggcaacg 840

actgtttcgt gcctttcgcc aaaagaaagg aacgcatcga gatagaacgt aggcgaaaac 900

aaaaggggcg gtcatacaga cctgttacac catacatgat acgtgtacgt acaaccaagt 960

gtgagtgtat atatacagta tatgtacgtt tccttctgaa cacgtagtcg cagcaccgat 1020

ctgtttttt tttatttcag catcttttta tcgaaatctt tcgtttacac ctctagcggt 1080

acacggatcg gcgctatagg ttacgacaca aatgtattat gtcgtaagtg gcatgaatat 1140

caccgtagct ctgatacggc agtatctctg tcaagatcta tgacaccaag atccaattta 1200

aacggtattt gccagttcta tggtcgatgc taacctcatt tgtttctcat ctatttctct 1260

ctccccaatc cttccaacct tctctaattt gttgatttaa acttggaagc ttgaatttga 1320

cttgtagatc tttgagagca aggcaccttc cattccctca attacacaca ttcatttgat 1380

ctaagttaga tgtattttgc aatcctagtt ttcttggtag tgtggtagcg ggaaacctac 1440

ggtcgatcgt ctcggtagcc agcacacaag aagccgagag gtttgtaatt gttgtg 1496

<210> 2648
<211> 1425
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_342211_G1, chr10:105903497..105904921, Cluster 15

<400> 2648
ttatttgacc ggtaaaattg gatctgaatt tatttttcat gtaaatatga aattgctacg 60

cccacgaagc ggccaggtgt cctggtcgat tgccacgccc gtggccgtgt cgacagccgc 120

catgttcagg ttcgtccacg aagcggccat gtcgccgcga gccgccaccg tcctgccgct 180

gccgctgccg ctgcgtccgc tgtccgtcct tggattcgcg ctgcatgcac atcccatgga 240

aggcgcatgc acgcggtatt acctggccac tggagctaat taaacgcctt gcactatctt 300

cactgcagca ccaaggcagc aggttggata aaggcgtgct atagtcctct cctacacgca 360

cgcgtgcgcg catgtgcagc agaggcgaga cggatcagcg gcacaggcag gagcccgggg 420

aatgaggcgc aggccgacca actagctggc gccgacgtgc gcgctcggtg ctcgcgcgtc 480

ggggcgctcg agcgcggcga ctgtgggcag tgagcacagt gggcagcagg cgcgcgtgca 540

tgtgacccgc gccgcgccac ggccggccag atcgtgcgca cgcgcactgg ttcaccacgt 600

gatcgagccg gccggcgacg ctccggcctc cgatccccgc agcgggccgg gggtggcatg 660

ccgtgccacc atgtgcccca tgcgtggagc tgcgccgtgg cgtgggcgtg ggcgtggctc 720

gccgtcaccg ttgccgatgt ccgcggcgtg ggcgcgcaca tggcgccacg cgcgtgcgag 780

cctgcagcca gcagcgaggg cgtgcgaccc ggtcaagcat agctgcgcgg cacgaggaaa 840

ggccgagaag aagcaggaag catccttgct gcttccgttg tgcacgcgtc cttacgtcag 900

tgatacagca tgtgctcatg ctcatcagtt aaccgtgaca ctgcttgctt aatgaccagt 960

ttagctagtg gtgcacagca tgaattccga tgcaggcatt acgattctag tactggtatt 1020

attgccattc aatgttgcat gcatgtacct atctctgtcg ggtgtcggca gtgtcgacca 1080

tttcaccgtc gatgtatctc caatgttaac tcggtcgctt gctcgatgtg gaatacttcg 1140

ccatctgctg cataatacga aaatatcgta agaacgcttg attcgaataa aacgagtatg 1200

agaggagaac gaagaggtgg tagagaaatt tgaagtgagg attatatata taaatgagct 1260

caagcacttc tctttttata gatcaggttg ttggtttttt ctatttttt ctaaaaataa 1320

attaaaaaaa tagaacaaac caatcaaatt acgtcgtgtg tggcaataga cggctgctac 1380

cgaatgtggg ggcaacgagc cgatcgtggt ccaaacaatg tcaat 1425

<210> 2649
<211> 1629
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344663_G1, chr10:119143167..119144795, Cluster 15

<400> 2649
acccacatgg agatgcctac gagggagcca atatgcaaga acaactagtg ggggagctac 60

tagagacgga agcaacatgg gagcccatcc atgggaagat catccaactc atttgtgcta 120

ggatgacatt aaccattgtg cttgcacact tcatggtgtg atagattgcc ttgtcatgga 180

tctactccag cactaaggac ctattgtgcg tccatcagtg tccccactaa aatctcagtt 240

cctaggttgt gggcggggtc atgaaggctc acattgaata ttttgatgat agtatgttgt 300

cgacattggt gggatgttca catcattaaa ggatggggca aggctctaac acatggtgag 360

gcatatgtcg agctgtacca tcactaggat gagggagcca atggggaaca tgttattccc 420

tgtcagtcga atgacccccc aggactaacc ttggggccat catagggat gggaggcctc 480

tactagtgag ggagctaacg aggaaggaaa gaagacaact tatgtgaagg atgtgaaccc 540

ctaaaccacc aaagcttcca tagcctccag tgtcaacaaa ggtggagtgc agtgaaagag 600

taggccaagc aaaagcggcg atagttccac ccccaaacta gggatggcaa tagggcgagt 660

gggggtgggg accgtcgttc cctgaaactc attccccatc cctgccccat ttagcttaat 720

ggggacaaac tcatccccat ccctatcccc gctgatcccc gttccccatt tagggaccca 780

tgggaaatac tatagcacgt aaaaacattc attacatgat atctattaca tatatatcaa 840

ttatcaaaag acatcaacaa taatatctaa aacaactaac aactttataa agattcataa 900

ctcacaaatc acaattattt caacctaaca atagcctcac actcacaaat cacagaatac 960

ataaatacac attatgattt cttatcgagt ctccaatgga gccatgtggg gtagtttatt 1020

ccctgtatcc atcccattaa tttttgttgc cctgtcccat tagccccacg gggggggagaa 1080

accaccctca tacttatttt gaacaggtcg gatccctgcg gggtcccgcc cccatactaa 1140

attttaccat ccctacctca aacacaaaag actatgcatg ggtgcaaatt aggtgttgtt 1200

catgggggca tggcatcata atgatgacat gcctaggtag gcatctatat gtggatgttt 1260

ttgttcttct agcacttttg atatttctct ttcaagtcga tggtgggagg catctccata 1320

gggccctata cttgggggggc tacaactagg accatgattg gtggccctaa attagctcct 1380

acaagctatg actagtagac cacaacaacc acaatcagag gtggtgagcc cctagttatg 1440

aacatctcta gtgatgcacc cagcgcaaag gaaggcttag gcttggggac cacttgcact 1500

gaggtgcacc ctgagggtat gttagtggag gtcctagatg ctagcatcga gggaacctta 1560

tgaagactga aaatccctag gatggggatc ttcccttatt agacgtgtcg gtgcccacga 1620

gagatgagg 1629

<210> 2650
<211> 1665
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347658_G1, chr10:136131942..136133606, Cluster 15

<400> 2650
gaactttctc tgacagtgat aaacactagg aaacatccgg cgggacagat gttgagtggg 60

ctcgccgtag gttgggctcc ctgaacacgg gcgctactct ttgcctgcct gcctgcctaa 120

tgttgcatcg ccgtccattg ctgtaatcca tggaccatcg tcgttagcta gtagtactac 180

gcctacatct acatgacagg atgatggttg ctatagtgca tagaaatcat tgtccgggac 240

ttcttttgaa tcagaatctc ttgccaaatc ttggtgatgg cccgacacgg ttacacggag 300

gtctctatcc gcaggccgga gagactggtt tcactgggac tggattaatt caccggccat 360

gactgaacct tttgatctca ccccagaaaa gaaaaggtga agtgtcggac gatttaacag 420

cacaacgcaa cagagagaga gagggcagac gtgaaatgtc gaagtttgaa tcgtgcgaag 480

acaacaatgg gagtacagta tacacagaaa attgaatgaa actgtaccag ttgccctggg 540

tcatccaggc cttgtcacag acaacccccg tagcagtaca gcaatgggca ggttgccaca 600

tgccaaccat gcatctgcgc cgttcgccta gcatgctcct gcagtcctcc gtccattatt 660

gccaacttca ggtctagtcc ttagtcctgg cgctggaaat ggtggttcca tggcatttag 720

gtttggagag ttcaggcaac gcaaccacta gatccaaaaa tgcacaccca gcaccagaat 780

ggacaaggcc gaccactact cgaccagttt ggtatctgtt cgactgttcc tcccactgga 840

tccggagcgc gcgagcatat aaatcatcat gaagttgatg agtactctac tagtttctct 900

cattcagtga cggtgtcaaa tcagtcgcca tcgtgcctta agattcgatc ccctttttc 960

tccgagcgaa cgtgaacggc agcaaaatgg aatggcgtgc tctacttgtt ggttgttgca 1020

ggtactgccg tcgaccgtcg tacgctccaa aatctcccag ctgggacccc atctgactgc 1080

atcagctgag ccaggctaga gccatggccc cagtgatgca gtgctgtgct gcacaggggc 1140

agtagaatac gagcagccaa ttcactgctt aatgagtgtg cagcgataca gactagactg 1200

gagctcagaa gcttaactgc ctcctaatca gcacatgtgc agggcggcag gcaacgtctt 1260

gcaaatctgt cctcctttcc tttgccccgg tctctgtaca gagattctgt aaaagcaccc 1320

aagttgatat caagacttca tttggctacc ctacacattc actaatcacg gcctagggcg 1380

taatggccaa gttgattttt ccacccccga tgcattgact cgcatttttc aaacccaggt 1440

caaaactcat ggtgaatctt gggtacctcc acgccaccac acagagcggg caggacgcct 1500

gctgaaacga gactgtttcc tggtccgtac tgccacacac cacagtggca cagtgctcca 1560

ataattcatc aaacggccat atggacgcga tctgccactg ttcactgggg gacgagcaac 1620

agcaaagccg tgtcagcttt actggcccgt tcgtttctac ataaa 1665

<210> 2651
<211> 2868
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348267_G1, chr10:139309547..139312414, Cluster 15

<400> 2651
catcgcgtcg tcgttggtat tggcgtattg gcgattgtgc ttgtgccgct gcggtggaat 60

cggctttcgg gacccggacc cggtccgggg taccttgcgc cggccgcgcg tcccatgcat 120

ggcacgaaga ggcggggcgc gaccgcgcga gcgtgctgct agctgcgacg aacgggagct 180

gaccgtctgc gtatgggcct agtcggtctg ttttgtccgg ttgccggtac aatggttttg 240

ctggcagtta attccgcgct tgaactacct agctagctag gagtagtagt agaaagcgaa 300

ccagcaaagc gagagcgatc gagacaggtc tttttcgacg cgtatcgtgc cgtgggggcg 360

ccaaatcgta gcgaagagag atcctatcaa gtccatggac acgactctga ctagctagca 420

cgggccggat gactcgcgcg cgcagacaag aacggtctag tcacgtttgc gctgactcgg 480

aaaccgctgg cccaattaat tgtaccacag agatccattg agtcgtggcc agcatggagt 540

ggagatttat ataacataac tataaatata atactacgaa ggagattaac tatagtaatg 600

aataatgtaa ttttcaccta acaccactag agaggtgcat atatattata tatagttaga 660

tacatatgta tagaactagc acgcaaacaa gggtgtgtgt ctgtacgtac gtacaggact 720

agtgcacaca ctgatagaca cacgtacgaa caattccatg ccctacacta cattcgatcg 780

gtgcgtgctc gtgccttttg cccccagaga gcagtaccag tacggcctct ttaccgcacg 840

cgtcctacta tcctgcttca cccgtacgtc ctttcacgca accattgcgt tcggtcggct 900

cgtacagcgt acatcttcaa ctttaaagtc gttgcatcta gatcgatcga tttattattt 960

cacgcttgca accatgcaaa gagcgaccat tttgtacgtg tgcggtggta ccactactag 1020

tctactacca gcaaaatcga cgataataca tcccttgtta aaagcgtcgt cggcgtgtgg 1080

agtggaggtc tatctcgccc ctcgatcgcc cagctttatc tgcactgcac gtaccaattg 1140

ttcttgcctt gccggccatg catgcacatg catcgatctg catgcatgaa tgagccaaac 1200

catgcatgca gccctgactt ctcgttttca tgttatgcaa cttgacacgt gaccgacgcg 1260

cgtcgatcat tgctgtgcat cgtaattacc ggaggaaatg ccatccaaat cttgccgata 1320

cggtgaacac agtgacagat tcgaccgtct aacggaagcg tcctagtgtc ctaccgtgcc 1380

ttcgttcctc cccttaatct gttttacgag acgacaacct ggctggattc tctgcatgca 1440

tgcagtgcag tgcaggggtt gttacacttc ctccgttgac atagagagag tttcatcagc 1500

cacacagaac agtttagata tatgtcaacc gtatgcatac atacactgta ctgtacgtgt 1560

agagtggcag cagtgtgtgt ctgtgggcta ccttggacgg caccttaatt attatcttat 1620

ttgtgtggtg tcatttattt tgactaccat accatcagct ccattgttat tttgatctca 1680

cggcacaatg cgacaaaggc aagtagcttc ttctatagct actcctacta ccttttttct 1740

cgaccgtcac atggcgccac cgccatgctg tggtctagtt tatctgttgg aaccctagct 1800

agacagggat cgtccttcca tgaacgtgac acccgatttg tgtctttgct tacgttaatg 1860

tgccaacaac aacggccaaa caagtctact gatccatcaa ggacaaggca tgcgatggct 1920

tattatatgg tctcactcac accctcatct ttttggtaaa taacgccaaa aaagcagcac 1980

actgtgcagg ggtccgtacc tcatacacag tgctgacaag gacatggact ttgaaagctt 2040

gttgttgcac attaggaacg caacatagta gcagacacac agatgatgta gaccatttag 2100

attagccagc agcagcggca tacaatcatc aggtgttaca tcgctctaac ctcttttttt 2160

ttgggggggcg aatcgtttac atcattctaa ctgtgcagac gagggctgca gtagtggtcc 2220

tgatgatcca tcttcctttc gagctagctt tgcttcggtt gtttggttct tgctacttct 2280

gtaaacatag tgcttaatcc tcttccagcc cttatcctct tcgatcttag ccataataca 2340

catttgccaa tcaatatgtt ggccaataat ggggagcaac gtacacaaac aagtagctag 2400

cagaacatgg agaatatttt cctctttctc acatttgtgc gcgcatgaat ttgacaaaca 2460

attggcagtc cgtacgtgtg agtagtatta ttttgtgtgc tgagattagt tcatggaata 2520

atcatccacg tgtcgccgtg gtcatcatta tcgtcattca acaaattgga gtggacgggc 2580

atacgatata attttctaac tataccaaga taattatcag cggcagcaag tatgcatgca 2640

tgagaatatt gatacagcca ataatgccgg attcgagcag aaataatatt aattaggtta 2700

cccagagagc ttaattttgg acgattgttt tttaaagttt ttttttaaaa atatataaat 2760

gatttttag gttgagtgtc atgctccaaa ttaaaagcta gcacatgatt attaattgtt 2820

tctggccata tatacgcaca tgcttgtgcg gttgtgcccc agaatagg 2868

<210> 2652
<211> 1417
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348681_G1, chr10:141529253..141530669, Cluster 15

<400> 2652
tagccgggca gaaatgacag aaacataaaa gatcggagtt atgagaagac acgagctgct 60

ggaccggggc tgccgaggct gcagcaccgg cagcctcggt cctggttccg cccctgatcc 120

agacaactaa tttttaaggg aatggatcga tagaaaaaaa aaactaaaaa ggccattcat 180

cgtgcccgcg tctttttcat gtacaaccac ccaacaaaca gcgcgggaaa gcggggccgc 240

aagcacaggc gcggcagtgc cgtcggccca ccaaacgcac cgttggcccg accattccgc 300

atctcctcct aggcggaagg cagcccacgg cccatattac ccagagtaga cgaacgaccg 360

gctcggctcg cgtattatcc attgcgtccc agggttgaac acgcgcggag acctggggct 420

ggctgatgtc gacgacggac gacatttcca aaaggtccga gaagatgatg agcttgcatg 480

ctaaaggtag ctagccatgg acgaatctgt ggtctgctgc attccatgct catttaacca 540

ttgtactact agtaaacata ctgtaacagc tactactaat catactgcat tccatgttca 600

tgccgctttc ttcgtagcgt tccatgacag atgagcccgg tcttaaacat actactgctt 660

tcctcggccg caattgctgt ggtggactgt cactactcat acaagtcttg aggcctggca 720

gctcaagtta ctgcagtgca gtgaaagctg aaaaaggcga gggagggtcg gtcaatgcaa 780

gcgcagacat gacaggtgag gttagtggcg gccatcgctt ttgcgctcca ccagctcttg 840

cgctttttcc tgtgcaatgc aagtagagcg aacagaacac tactgacgtc tgacggagag 900

acgcagcatg cgcatgcccg cggaccagcc acacgcacgc gcttgcaagt cgtcggctcc 960

tcgcattcag ctgtaggaaa actgcatgca ttttcgacta gggagaaaga tcaaacgcac 1020

atgctgggca atgcactttg acgagcgact caactgaata aagcatgcat gttggcctct 1080

agcatggttg cctgcgtggt tgcagcattc tccaaagcca gtgcatagtt ggcctctagc 1140

atctgctggc caccaatttc tattgcgttt caaaaaaaaa gtagagttgt aagtgttacc 1200

attatatcta tcgatcaacc ttctcaggca cacgcaacat ttcccgtgca actctcatgt 1260

gtgcggtact gtggttggaa agagacttaa gtcacatgtt ttctgctgaa aattcagtag 1320

cgaaaacgaa cgcacacatc agccggagaa acttgctaca acgccatatc gaaaccgccc 1380

ctgcatattc agctttcagt tttgacccat catttgc 1417

<210> 2653
<211> 1679

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349462_G1, chr10:145520710..145522388, Cluster 15

<400> 2653
cacatgaaac tgtgtgtgcg ataaaagtgt tgcattatag tagtataaat atagatttat 60

atttatattc gcggaacaca aaaaaaaaaa aactcatttg acgtccctgt cgacttgaga 120

aacaagatag cgctaccact gccgtagaca attgaaacag gcttggtaac gtgaatgaag 180

cgtgaaaggc agcgccgcag ctggagtgcc tgtcacggca gtcggaggca gtagtagcta 240

gctctcactg gtagggcgca ccccgccgcc tgtgtgaggc agcagccaca gcctcagcga 300

gcgaccacac gctccatctc ctgccgcgat ggcgcgaccg gctagttatt aacaccacta 360

gacgatgcag acacgcagtg cagccgtact ggctgtgcta gtctgcttct aacacggtgg 420

cagatacgga atgagtttcc atcatgttag tgttcggtta ggagattgga agcgtgcgaa 480

tgacatagag agttaccatc gattacggca agaacttcgc agttggaatg gatgaccaat 540

aactaacagg ttgacccgca agatctagtt tttaatctaa gctcgttact aatccggaat 600

cagcggagat caccttccag cgtcaacagg ctgctgctcc tgactgatct cgctcgctcg 660

gtgatctgat ctgacccggt tgctgaatct ggaattctgg atgcacttgg aggagcaaac 720

ggatcggcac tagaagattt ttcttcttca cagtactata cagaaagcta tacgcctata 780

tatatactag ctacggcatg catgtggcgt ccaaatgatc gatatgatat gtattattgt 840

cgtgagagac cgatgtgccg tagatccggg cgtgaccggt ggatcggatc gaaaccatgc 900

tgctgtagcg gaggtcaaag ccagccgcgc gcacgcaacg cagcgctgct cgagctcgat 960

cggccggcca cgctcctggt cctggcatcc tgtccatgtc cagtccagca atagctgctg 1020

agcatagcta ttacggtagc gtacaagcat agcctggcct gcagtgagca gtgtgaagtt 1080

gaactgtgtc aatcgtgaac acgtgtgagc ttgaaagatg cccctatcag tgaaagtcta 1140

tctcatcgtt tgcattactg taacagcttt ttttttttcc tgtcgctttc tcctgtcatt 1200

tctcatttgg gctctacctt cccgaccagg ctttttaatt agcctttcag ggctgattcg 1260

atgataagaa attcatcaat gagatccatg ggagagaaat taccatgata tgctatttaa 1320

aattgaatat aaaaggattt ctttttttatg gatcatctct atttttctga tcaccaaatc 1380

agttctgaat aggaagggaa ttccttcctt atagatcctc tccaaatcac ttgccaccaa 1440

attagccctc aacgttcgtg aactctgaac ctgatgcgct ccggttagcc agtcacattt 1500

ccgggctatt tcgtctctgt ctctctgccc ctccctccct atcgtgtcct tcctgttttg 1560

gtgacgtgac tcatgtgaat gtgatcgctg cacatttaca agagatcatc acgactcatg 1620

aaaaatagaa aaggatctgg ctcattctcg ttaatatgtc ctacacctcg atcaccagt 1679

<210> 2654

<211> 1599
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3606_G1, chr1:18642407..18644005, Cluster 15

<400> 2654
aattgctctg cactgaatca tctctgatta aagtcaatta cgaccttgct gaaagatggt 60

gatacaatac aattaaggca ccgctagcta tagcccagac tgcccacttt gctgcaccct 120

ggctggcctg gcctctcgcg gtgttgcaaa ataaaaatgt aaaagaaatc attgatgtca 180

aatctcgatt tttttattca atggtttttc tgctctccac gttcgtagct gattgacttg 240

tgcagcaaaa cctacaccga ctctgcagaa cactttttt taagaaaaaa aaggcactgc 300

acggtgccat gtgactccat atcagcctct gtacatgcat gaaagcatat aattttctcg 360

agtatttgcg acgataaact attttattcc gtggtggggg ggaataaatc tgtcccatgt 420

taatttctac taatatatag tgctgaccat acgctgtact ttctacgatt tgtttacaag 480

ctggaatcaa aaccaacagt ctagagatcc ctaacgctaa gcattcacat gtagcatggc 540

actaatccca tgcattattg tataagtgta tctaaactat caacctaaaa ccagccaatt 600

gtgcatatga ttaagtgtgt atggcttaaa agaactgttt ttttttggc gcggaaaagc 660

gattattttc ttcttctcat attctagctt tattactgta tcctcatgtt atgtagggaa 720

aggccaccct tttccccagt tttcctgcag ccgtggctgt atccccgtct cgaaaggaaa 780

gtgcgttgcc tttttgcagc ctacgtgctc tcagtctcag cctggttgct tcaattgaag 840

tccaatgcaa gcaaacgaag atggtggcga atataatagt aaactagtaa tgggcattca 900

gagcagaggg atcgatcagg ctaaagcgac agtactacta accgtttggt gcgtgcgaag 960

cgttggtggc cagtgaccaa tctgcgccaa acttttgctg tcagctgtgc ctcttctgct 1020

gcatcatgtc cattgtccaa aggtggttct gatctttagt tggtggtagg ccgcacgcac 1080

gggctctgca tctgagctgc gcaaggccga cgccacggcc gtgtgtcggg tcgggccggt 1140

cggaagcgcg tggccgtggg caaaagacgt gcaggagagg acaggagctg cggccggcca 1200

ccggcgtgga tcagaggcga ggctgcaatg catacggcat acctgctcct ccctcctcct 1260

ccccagcggc cccgcctggt tggttccttc ccgcacgggc gcacgcctgc agcctgcaag 1320

catgactgga cgaggtcgga ggtcctccag tcttctgtcg cgcgcacggc tcgagagggc 1380

ggtggcaccg gctttctggg ccctgatgtg taagtgggta gcctgtgccc tttgatacat 1440

acaaaaactg gacgccgctg gatcgcttgc ggatgcgagc tgggccgttt gcctagctgc 1500

aaggccgggc acgagaggcc ctggcctggc tgggtgctcg ggtaaaggaa ggaagaaggc 1560

ctgactatgt ggtctacatg tttgaaagac tgaaactct 1599

<210> 2655
<211> 1433

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43377_G1, chr1:255330358..255331790, Cluster 15

<400> 2655
gtgtgtacac aataatcagg tacccatcaa acggccagcg ggccaggtct aacatgagca 60

attgccttta ctgatataaa tcatgcctca taaagaaaag accacacgtg gataaaatgg 120

ccgatggtgt cttttgttgg gaaaaaaata cctatcacga aaagcaaaga aaaaaaatta 180

cactagtttt tgcatagcac cggggaaata gaattgaggt gcgcgtaatc tttgcatgtg 240

atgggagcgc gagctagctg aaaccagcta gctctaagcg acgccgaaga gacgggggcg 300

cagttgagtt tcgaggacgg tgcggcatgc cacgccacac cacctacaac ctgcaattcc 360

attcagtcaa ccaacttttg cactgccaag tgccaaccat cgacgacagc tagcgccaga 420

tcgatcggag gtctactcta gagacacagt tgcatgtttg caagtgcttt ctgctctgca 480

tgcatcgcca ccagcgtttc agcaaaactg gtagcatcag tcaccgtcat cggccacccg 540

ctgcactgca cactatcgtc tccaacatat gctaatataa gaggtcaggt aaaatagagg 600

agcacttgat cggcagctaa atctagagaa tccttattca tccggtatct gtctttcttg 660

tcgctgtgga tgcagccgtg cgacacacgt actgcggcgt catggccatg gggccgagct 720

cggacgacgt gtggcgacga tggggaccac gaccacatca tccccctcac cgccgcgcat 780

tcctacgcga gtggtgcatc ggtcggcgct ccgctacccc gtatcgtggc ggccatctag 840

cgaggctgct tgcaccagct cacgcgccgg ggaggagaga ggaccgacat tggagaggac 900

gagagacgac cgacgtcgag acggacgagg agagagtatc tacgacgggg aggagaagca 960

cctcactgcg cttcgtgata ttctctcgag agcgcgtggc agacgctaat ggaggaggat 1020

ctccatggat tcgtcgagac gaaccaggga agaacaaggc gtttgggcct ttgagggatg 1080

ggttgggaaa aaatggtatg tgcatactgt gaaaatacga tgaccactgc agttctaaaa 1140

tatattaatt aatctgaatg caaaaaccat tttgcaatct atatttcagt taaatttttg 1200

tcgaaaaggt atggggtcaa aatttctgtt gatatcgctg gttaaactat ggacgatatg 1260

atatagagaa tgaaatttag aggacatcat agataatgaa atcttttaaa gtgtgttata 1320

aatgacataa tattatttta aaggataaaa ttcagagaat gttaaggaga agttgatctg 1380

atgctacgca catccagatt gtgtagaaat taacaacaga aaatttgcca tta 1433

<210> 2656
<211> 2211
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_43690_G1, chr1:257179673..257181883, Cluster 15

<400> 2656
cacctccaat tgggcccgcc ccatggagct cgcctttgag gagacctgat caccatcctg 60

tggtcttgac tagtcttgcg tacatgggtt ccatggtgtc aaagcagcca gcttggatgt 120

cacgtacgca aaaccgggta ccaaaaccac tataaggttg tttgtgttgt ttaataaagc 180

gtaatgtcta caatatattt ggtcttatat atatatccct atatagtcta ttggattata 240

taaacttttt tcctcttgta aaaggatatc ttgcaggcca ccgaaataac gatggaggtg 300

ttccacaaca aacgagtcgt gggagacagg ctgtgaaagc ggatgagagg tgcattgagg 360

tctagaggaa catttattgg tagaaggatg acaaaatatt gaaacctgtt gagagtcaga 420

gagaaataga gagagagaga gagagagagc tcacctagta gttccagagg atggcccagt 480

tccatacaag gttcgcaatc acgtttcatc tcatgtttac cgctccttca cgagatcagg 540

aaaaatagcc aaagccgacc gaaaaccgct cttcctggac ggtttaggca ttcatatttg 600

aaaatcaagt tttcgttaga aaaccgctga gaaactagct ataccgagca gttttcggtg 660

gattaacatc gagaaaccca atttattttt ttgacacgaa atcatatttt tttaatacaa 720

aatatatttt aaactcttgg gaaacctcta gtttttatac attcttgacg tttttatgct 780

ttttcgaaat tctaaaattt caagtgaaaa attcaaaatt attcgacggg gaacccgatt 840

ccacaatgca ccgagaaaaa gtggtggtta ccaccgaatc tagagcgaga ttttcgacct 900

tggtaccata cgtaacatgg atgtgtatgc catttttgt caactcaatt ggcaacgtga 960

aatccgcatg ggtgagaggg ttgtgctcac ttttacccag gattcttgac tccacattga 1020

caaacgaatc atgcattttt gtctgatctg ttttcagaac atgttaatgc taacatccta 1080

tacacggaat atattattgt cgtcctccac gactgatgtt gtagtgttgt acttgtacga 1140

tgtgtaccta acctaaggag aaggaagccc aggtcgctac ctctttttt tccaggtctt 1200

cccgacacgt gtcctcgtgc aacacctgtg ccaactgggg tggttatgtt ttagttgttt 1260

attagtatgt tgtttattat tgctggtaga tcagtttttt tgatacagga gagaacagat 1320

cagatggtac atatggtttg gggctctggg ctttcttcac gagaccgagt gaatcgtgca 1380

tgcatgatgc atgacgacct tttcgtggtc ctctctcgcc tcgcagcaaa gtgacctcgg 1440

gcctcgttga gcccaagaaa cctccggctt ggcccaccag ttcagtgatg cggacccggg 1500

ccagattgca tcagaaacaa tctaaacgat accgcatgat gatgacgtca cgatcccgtt 1560

ccctcgcgct gccaggtgta acggctgcct ctatatagga ggaggaagac tggaagagga 1620

caggcagtag gtcccacgac ccttccaggg aagagagtgt tcgtgacgcg ggcggccccc 1680

aaatccgcat aacaatctct gttgcccccc cgccaaaatc ctcagatccc cttgctgcag 1740

tgcagatctc tctataatcc gcgctcgtgg cgacctctcc tccagcttcc gttcctgaaa 1800

tccatctcta gtttcgccat ttgggttttt tctcgagggt ttcgctcctc actcatctga 1860

tttaacgaag ggagctgggt cacacccaca ggccgcggct tctgaaattc gatggccgtg 1920

gctgcagcgc gcctgacgct cccagatcga ttcgacgagg tttacatagc ctctgcccgg 1980

tgaaaagatg ggctcgtggg ttatacgcgc ctcgcacatg cacgagctga atttcttctc 2040

gccttttcga tcatgacgtc tttcgttttt ttgacgtata tgattttccc tggtgctagc 2100

gccgagcgca actgtggttg agatccaatg ctcctcgtta ctccgtccac ctttacctat 2160

ggaccagttt gcatgtagtt gcagtctttt tctaatgtcg ataatctgat g 2211

<210> 2657
<211> 1762
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4472_G1, chr1:23234042..23235803, Cluster 15

<400> 2657
gaacattatc catgttctat tcggggctac acattaatgt ctatggcggc ctaggttcgt 60

ctcagctgcg ccatgctccg gcatgctttc taattaacga ccgtgcaata ttgaccacgg 120

aagcgtgacg aacaactcct tgtggtacca aaaaatggtg tgcggatggg gggtgcacgg 180

gaagagcagt tgcacgtacg tgcgtgtgga cgcagcactg atccggggac tcgttggcgg 240

ccatgcatgc ttgaaaggaa aggaccggtg aggccgactc ttttatctgt aacactttgt 300

actgtaatct gtactgttcg tagagtgagg tttaaatata ggtataaata tgtgcgtgaa 360

tataggtata agtaagtgct ctgagaagtt tctccctcga acagtagctg tgtgatgcaa 420

gaaaaacagt acacgtctct ctctctggca gggccgtgtt gcaaaagaca cgacggtacg 480

tgagcgagcc ctcaaatgat gagccgtata ctagctagta ggtagcctaa gctaggtgca 540

caggaggagg catacatgtt atgctcttgt acctaacaat ctagacgctt ttgaggaccg 600

cgaagctgct gctctatata tctaaagtcg ctcagcaggt cgttgaagct gactgactga 660

cccggcggga ccgaggctcc tgccgcagtt agccggccgg tccctcgctc ctctcgatcg 720

gtcggtcctc catgtactgg cgccctcttc agctcgacca ctaccagaga gtggttgtgt 780

tgtgtagccc gcccgcataa atatagtatt tgaccacatc cacatgcacg cacagatgca 840

ctcacgcatg gataaggaac agtgcacgta cgacgacgac cggcgatacg tgctcggtct 900

caactctcaa ctgcttctgc atgatgagat gcaggggccc ggcgggggg caccacggat 960

acaggagcag tactagtgcc tagctatgct agctagtgac tactgactac tcgatcctag 1020

tgttggtagt gcacgacgta cgtacgagac ttgctggtga gtttcttctt ccaacaggag 1080

aacacatatg acatatcctg agcgccaaac catgtacggt tgccgatttg gcagcacatg 1140

cgcttttgat acaatacaca cacacatcta gtatatatag tctacgacat ggaagcgcac 1200

gcaaacgttg ccaggtttcc aaaaggcgtg ggcgtggccg gccgtcatcc gatcccatcg 1260

tcggtcgatc cgtcggctcg cccgcccgcc atcgatcgcg tactcgcggg aaagcagcac 1320

tgttcagacg atatctctct ctagtaagcg agccgtgcgt gcacccaact caatgagagc 1380

gaaagggaca gaccagctgc ttcgtcgtcg acgacgacga cgccgagaga gacagaagac 1440

accacaagaa acctcctctc gtcgtccaca ccccacatga tccatccatc taaacttgca 1500

ttgagttggg tccgacgatc cgtccggccg agagaacacg tcgcggtcaa atatttacac 1560

gcgacagatc tacacacaga ccagaaaacg cttcgccctt cacgtgctcg atcgttcgcc 1620

cgcccggtcg agctgatata taattccaca tgtacttatt taattattcc cgtgtacttt 1680

tccttgcgcg cgcgacgtaa gcttatagta tatagtagcg tgtgttatat aaataatcag 1740

cttggaaatg gaaaacttat ag 1762

<210> 2658
<211> 4012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46676_G1, chr1:273228748..273232759, Cluster 15

<400> 2658
cgtatatagt agtgtgtgta tactaaatgt taatcatcac ctgaactaaa aggtccaatc 60

aaaccagccc accagggtac taattatatt atccacatca ggcaaacaaa aagcaccagt 120

cgcgtgtgat taacaggacc gatctacatg tcgttcgcaa caccaaatat tcagccattc 180

aagttcttag ctcagccgtt caaggtttag ttctttatca tacaacaaca acaaatatac 240

aaccattcaa gattctttag ccattcaagg tatacttaca ttcaaggttt acttcaatgt 300

atatcataaa caaatattca gtcattcgag aattactatt caatgttaac tttagtcatt 360

ctagatcgag gacgggaggc ggttgttgtt ggtgggggca ggggtcggta tatatgccga 420

ggggttaatc atcgggggtg gtgggaggca ctgacgtggg tgggaaacga cagagaggga 480

ttaatggggg tgtggctaag aaaggagaat tcgagacatc atggacgggg tgagagtatc 540

cgttggggat gtatcggttg ctaactctaa atcaaagtga cttacaaatt aaaacgaaga 600

gtattacact ctccctataa aaaaaattgc cattctagct ttttactaag tcaatgaact 660

atatcaacta cataaagtgt acgtgtgtta cactaaataa ttataagtaa agtacttaac 720

aagaaatata tttctcgtga catatctatt tggaatcata ggtgttcaaa gcattttcta 780

caaactaagt taagtttaag cgaagtttga tttgaatcca aacccaaccc aaaagcagtg 840

acttatatta tattcagttg acggccgatc gaccgggcgg cgggccgggg cgcgcgtgag 900

tgactagtag ctaggtccac ctccacgcag aatctaggcc acagaatggt tccacacacc 960

gatccccact gtttttgttc ccacccccat gcaagcagca agatattatt ctccacccga 1020

cgactgagcc gttagccgta gagtaccgcc aagctggtat gcaagccttt cgtgtgtagt 1080

tctattcatc ggcgtaatcg atggataggt gactactgtg tctctctatg ccattcccat 1140

gcgaaatata tgaatatagg catgcaagag catgttacgt ggaaatcaac taaactgatt 1200

ggtctaaacc atacagatca acaccgagat atatggaagg gtctttttt taaaaaaaaa 1260

atatctagaa taataggtga aattgttatt ttgaaatacg atatattgtt ttaaaaaaac 1320

atttccatgt tcattcatgt attgatgtgt attaataaat tagtttacac gtgatataac 1380

tctaggacta ctctagacgt cgtctgacgt ctgtgagaaa ataaaacatt tccagtagta 1440

tatatataca gtatctatga cgtggacgcc cacactgatg tcgtttacat tgctgccgaa 1500

cttttaacgg cgacgacgac atctgacgtc tgtgagaaaa taaacacagt gcaatcgagt 1560

gagtagcaga aggcaggtgg ccaggtcctg attcctgaac gggtgccgca gctcgcaggc 1620

acaatcatga atccataatg acacagggga ggggtcatca tatcatgcgg ggaaagaata 1680

ttattacact gctgctgctg ccgccgctat actctactat actaggtttt tttgaaaaag 1740

ggagtacaag tagctagtat gaccttagcc agcccatcat gcgaggctgg gagagggaac 1800

tgtagcgtgt aaagcagagc tgtgagtagt caattcaatt ccatgggcga tggatggatc 1860

gagtatatat gcatggtatt ggtagggcag cggccggagc gtataggagg gaggcatgca 1920

tgccgccacc gcaagagggg tgtgtgtgtg tgtggtgggg gagggccggc gggcgggacg 1980

acgctggcag tgtgggcaac agtgtgtgcg gcgctgatcg atacgacgaa caacctgtgc 2040

acatctggag ctggtggcct ggacctggag caggcagacg acaggcggta ccagatccca 2100

tgccatgcat cccgcccggc ccaatcactg tggtgattat ttgcaactgg cggccatgca 2160

tggcacctgc atgcccaaca tctttctcca gttagtcact ttctccgcgc gcccttagag 2220

tcagtggcga gtccttttaa ggcactatac tatactacac gacccacgcc acgctgctag 2280

tactagtagg gcttgttgct gaatggtacg acgccgcggc cggccctcct ggccatcatg 2340

catatatttc ctcttctggg ttctctctct aactgcgcat ggcacgataa tatctactat 2400

cctaacctac tagtaataat attacacgta caggagaaaa caattaaggc tctctctctc 2460

tctctgtgtg ttatctccct gtcagctggc tgtccctttc cctctctcct gcgccacagg 2520

ggaaaaacgg agaatactaa agataagaaa gcgacgtgtg tagagagcga gcgagaaagg 2580

ggggaagaag atgggcgttg ggagatgccc acaacaacga cacccacact ctcgcgcaag 2640

ccccaaccaa gcggaggagg ctaggagggg gaagaatcgc cggtgcaaca acttgccgcc 2700

cgtggtaggc catgcccggc aggcccataa ccacactgca gctggtcata ataaatcaat 2760

aaagccgaca gcatttcgct agctgccgtt ggcatccgcc gctacccgcg cccacgtacg 2820

tggcccgctc tgccgccata tatataccta gtgttgcgtg ttaatttgtg ttcactgcgt 2880

ttgaataatt tcatcaggag aactctagct agcttgctag tgtgtatcat gttgattatt 2940

cgatcgtgta tatatatcct agtgtcgtgt attaagctgt gtcagcacca gcatgcggca 3000

ggccagtggt atgtaagaga gaatcgagaa gctagctaga tggagttatt atataaggag 3060

gagaagtgga tggaagcaga agcagaagca caaccacaag ctccgctggg cgtggccggc 3120

cagaggggct tgtcacagga gatcttctgg ttgttggtgt gattctggtt ggttcattta 3180

ccgggggga ccaggggcgg gcgggcgggc gcgtagctag cttggagttg agggcatctg 3240

gtcccaaaga gatgacggac aactgctttg agctgtgctt gcagctaaaa cccaccacaa 3300

tactcttcct ccaccattgc acggggaccg cgcgcgcccc gcccggcccg gcccgtcccc 3360

tacgtacacc atcacgcgta cagcagccgc cgaccgaccg ggtccactca cgagtacata 3420

catatataca cacgcaccgc acgcacggta tatatacgct tattgctcgt cgtatatata 3480

attatatatg catgtcttac cggtgtctta tcagcgtgaa tacacatacg tatgtaaaat 3540

aacgctggct ctgtaggaac gacctacgtg cgtacgtggc atgtgacaag cccagctggt 3600

gttccatatg ttagtttctc atcgccggcc gatcagccgc tgtgtgggct cttgggtata 3660

gtgggcctgg attgtagtag tagcatgggg gccctagcct ggcggctttt gtgcagtgca 3720

gcggccagca gcatccatca tagagatccc acgcaggccc atccatctgc tagtagctct 3780

gtgccccccc atggccatga gtgagagata acaagctaag ctatcacgat tattcacacc 3840

tcggccactg ctactgtgca cgcgagcgac acgttagtat ccggtggtgt ggtaaagaaa 3900

ttaaatagta ggagcggcac accatctgct gagaataagt aggccggatt caaagcccgc 3960

atatataatg gtgcatgcgt ggatcgggtg gccgttaagg ggttaaatca tt 4012

<210> 2659
<211> 2428
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46677_G1, chr1:273232793..273235220, Cluster 15

<400> 2659
gaaacgagcc tctggtaacg gcggtaggtg aattcgttct ctcagtatat agtcacacgc 60

agaggaggtg agagctcgtc gctcttcaca gttggagtac tgtgtactag caagcagaga 120

atctgcccgc cccgcctgcc gccgctacgt acgtagtata gagtgacaaa acggatgcag 180

cagtgggcgc atacgtacag gtacatacag ttgccttgcc tgacagacag tggcagcagc 240

agcagcaggg ggctactggg ttacgttctc gtggtctagt aggtatccct gctgtgcctg 300

tgctgtcctt cagttccggc cgcgtacgag tagatggatc acatgcgcgc cacgacagaa 360

gccccgctgc atcgcatgcc gattgccgat ggatgaatca cgaaccgatg atgatccctg 420

acccagccag gacggccgcc aagcgcccaa gatgctcaca gctaggctag gccactgcca 480

atgcgcccac ggcaccgggc gtcggcttcc gccccggccg ccgcgcgcgc tgccgccgtc 540

tgtctgagga gaggtctgag tctgactgac tccctgcgag ttttttgaaa taaaggcgcg 600

cagcgcaggt cccaggaaca caggaggcat gcagcagcag gcagccaggc tagccagccg 660

ccagtctcgg ccgggccccg cgccgcgctg cgcagccgcc gagtgatcca aggcgcctgc 720

ctctgctgcc cttctgcctg ccactgacgc gcgctgcgcc tgtacatgca cgtcgtcgtc 780

gatctcggct ggggcctatc tagctccgat cctgcgatcc attcatcagc caccgcgggc 840

cacgtaccta ctgctgctgt acgtactgca tatgctagct ggggcatgca cgcgaaggga 900

atgcgccctt cccgagggtg cagagtgcag acacgacgag ctgtcgacga cggacggacg 960

ccagcagtgg cctatctctg ccgcgcgcgg cgacgacgac gactgaccgc gggccgcccc 1020

gtcccgcagc ccgtcgtcgc ggcgcgggta gagagctttt gttcggatgt gctgtcccat 1080

tcgatcaggc tgcgcggcct gcgtcctgct gctgcgtgtt cagttgctct gatctttcac 1140

gtacgtacgt acgcactgct ggagacttgt gcttgtgcag agatcgatgg tgatgttgat 1200

ttgctacggg aaggggatat gacaggggga gacgaaacgg gatggagatc ggtcgttcaa 1260

gggccggagt ggcccggccg gtcgaacggt cactgtcgtg cgctagctgc tcatgcgtgg 1320

tcgagggagt aaccgcatat gtatggcttg tgaggaacgc gtgctgcttg ctgatcatgt 1380

acattgcttt ccccattgat cacctcatcg gcgtgttaat cactccaagt aaaaacacgg 1440

tataattgtc agaataattg tcttgggcgc atgcatgtca acgtcttcag gaaactagaa 1500

tggaccagca cggttagctt cttgggcaat cctctcctgg catctgggga tccaaggctg 1560

ctggcttgga taagtacttt tacagtttta cctatggata gatcaaccta tggaaaaaac 1620

tgaaacaact aacattttag aataggaagc agaaatctaa ttatactcca tctatttgta 1680

cgcatcgtat taattaggct tgtcctaagt taaacatttc tatctttaac tattaatttc 1740

aaataatatg tatgtgttaa caacataaaa ttaacgaatc tatgagaaac acttccataa 1800

tggataattt gaaatcgata tcaaagttaa gagcggttga cttagaacaa acatactacg 1860

ctatgtaaaa aaagtgggag tatcaatttt gtgtcataaa aatatgcatt tatagactaa 1920

ttgtaggtca tagtttgccc aaataaatat tctatatcta tatgtacacc taataaggag 1980

tcaatttttt tgttctaatt ttctcaccca cgcctcaaac tactacgacg gtggagagtt 2040

ttttttctg tctcactttt tgtatttgat cgggactcat aacgcatata agtctgaaca 2100

actaatgatg gagatactaa taattaagag aaaatagtct tgttcaaatc agggaggttg 2160

aagtgcggtc tttcaccttc ggccaattca atctgtgggc ctcatggcat tccaaacggc 2220

ccaataccaa gacttgaacc tgatcacgaa acctaggtgg cccattgtga tttgactggg 2280

atggattgtg tgcacgaacg accgtgcggc ggcattgcaa cttgcaagct aagcccctgg 2340

gcctgtgcag ggcagctggg ctaagccgag cgagttgtga cagcaccgtc acgtgaaatg 2400

gagcccgggc gttcgtcacg gtcgcagc 2428

<210> 2660
<211> 1731
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46695_G1, chr1:273292548..273294278, Cluster 15

<400> 2660
gccggccaac gcgagtccag actgagaaaa tcgccgcggg aggcatgcag cgcgatcccg 60

cagaaaaaac tggcggttcc ggtgcgcgct ccggtcaggc ggcaggcagg tggaacgcgt 120

ggacacagag gccggcaggg cggctagacg gacggagtca tcaatcacta cctgatcgag 180

caaagacgca tcgcggcgcg cgccgaggca ggtcattggc tggtcgatct ggcagatgat 240

gcccaccccc tctcctccgc ctctttctcc ttgcgtcttg ccttgtcctg ctgtgcctgc 300

gatttgtgtc tgcattattt tgcccccgtc gtgcgctgtg cctggtttct tgatgaggcg 360

gcttcggcga gacgccgacg tctcaaccat tcctcttaat ctttgcgatt attattttct 420

ttctcggctt acgtacctgc gtccattcgt attgtatcgt cgttgccgcg cgcgcgccta 480

ttaattcagc tgctgcttgc ctcgcccgcc cgcccgcccg cccgctcgct ccattgccag 540

ccaagttaat tacgtgatga gctgggagct cgggtgtcta gtcgtccatg gcgccgatcg 600

gtgcagaagg cttgcgagat tgagaggtgg tggcgttgaa ctggttggct gagagagtgc 660

gatgttggca cggttcaatc aaatcgccgg ccgggttgac ttgttgattg agccgtgcca 720

atatcacaac cttctctagc ctaggcggcc gggctacagt tttggatgct actatgcttc 780

ctcaaggtat acatggtttt ctgtgttgtt cttgtcttcc tgctataaaa aaagcctttg 840

aaatttactt acgctttagt ttttcatcgc gtgatgtatt tcctttgttt gaaattataa 900

ctttttttg ggtacatgtg tgtccagata tgcgttagat tatatctaga tacatatagc 960

aaaatagata caccaaaaat gtaaaacgaa tttataatgt ttagattgga tagagcacta 1020

tatattcttt atttctagat atatattgta aaatagatat aaaaaataat tcaactgttc 1080

tctatttctt ggaaacaaat acagtaccag cgggctacca ggccgcatac ccatccacat 1140

ccacatccag gcatccagca tccagtcgtc gtatagtggc ccgcaggccg cagccaagcc 1200

tgcggcggct caggtttggt caagtggccg ctaggaggaa gccaagggta gtctagctag 1260

cgttggtcaa aacttgtttt cattgttcta ctattgttga gcattccgaa ttcgcttgtc 1320

aaaagactac aagagaatag ctgatatatt aattattatc atggctaata taatcgtcta 1380

tgttgctcta gccctgcata gttgtaggaa atcaaggtgc ttctatccct ggccggacat 1440

ataataatag tatagtagca tactatatat atcgagatag acaaggacaa catatatcga 1500

ggtaggcaag gacagcatga gagcatgttt cacatgtgct attttataat gttactgtat 1560

taatatcatt tatgtatgtg cgggcactgg caatagttta agtatatcac ttttaactat 1620

atcaagcttt cgtattagtt ggcatcttta atctatacta acgtgaatgt tttaatacaa 1680

ccggtactaa atgcattagt acttcaatag gtactacaac cttcgcgtta t 1731

<210> 2661
<211> 1675
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5303_G1, chr1:27139838..27141512, Cluster 15

<400> 2661

acgccaaccg ccttgtccgg ccctcgatca cgtccgtccg tcgtcgactg tgtggctaca 60

cctacaggct acagccgggg gcaccgggac ccttgggccg tgtggtgtgg ctacagtgct 120

agtacatgcg tacagctcat ctgactgagc gctgagggga gacgtggacg acggacaaga 180

agcgcgcgcg cgcgcgggca aagattagtg gcatgattgg tttcgtcgtc gtcgcactcg 240

ctcgtccacg cagcgagccg gcggcccgcc gtaatcatgc tgttgggcta gtggagtggc 300

acagatcgtc gtgtctgatg aagtgatggg actcggagtg acttgtgtca ccactactag 360

tgactgagaa cccaataacg aaaaagaaca ccacacgtac gttcgtacgc caaaagtccg 420

catctatgtc ttgttgtgta cgtgctgtgc ctgtgcgcgt cactggtgga ctatagtagt 480

gtttgaattc ggatgagcct gcatgaaaaa ggtgcaagta aacaggtgtc gatccaacgg 540

ccagggcgac caaccatgca ttatgcatgt ttggtgccgg tcgtcggcgc tcatcgcttg 600

caccgtggac tttcacgcac gtacgtacga cgagcacttg taggtaggta cctgcagaca 660

gcacatgctg ttttttttg tttcaaaatt ttgaatctga cctactacta cgtactagcg 720

gctagtccca gcagagatac tactgcggtg cttgctcctc ctgcacatgg tgaggttggc 780

cgcgcttggc ggctctcaac tctcatcata gtgaactcga ccctgccggc ggttgaggac 840

caatggacgc ctctgcatgc atgcatggga gcgcgctata gccggggcga gaaggaacaa 900

cgaacaagac aagcaagggc cagaggtgtt ccacgcgcgc tagctactac tacgtgtacg 960

cacacttggg cgtcgtgcag ctggtcgtgt cgtcatgact ttgggctttg tggaggggag 1020

ctgcactact gcaggttccc acgcccaccc acacgcatat ggggccgaga gagggcgaga 1080

tgccgccatt tttggcaatc gtaaaaaaga gcagagccca ggcataattg tcaatgatgc 1140

ccgaatcctt gcatgccccg gcccgcatgt atgttggagt tggagcacgt acgtccacgc 1200

agcgattcaa acacggttga ccccgcgtta gaatccacaa gtatataaat actcgaactt 1260

ttgggacgac tttgtctagt gcttacatta cactgcgcat ctttgatgct tgatgacagc 1320

ggttaagcag atatattata cggttacagt acgcagcagc aggcaggcta gctacttagc 1380

tttgcattat gacaagctaa gtcgagaact tggctacacc ctattagtcg acgctcccat 1440

ggaatagtag gcagggctgc tggtgagggg aggtacgtag tagggggtgc ggacatgtgg 1500

gcccccacgc ccgacattcc gcggtggtcc gccccggtaa attatactaa tgctgtgcgg 1560

tgccccagtg gtcctcgtga aaaaagatag agagagcaag ggcgctagct gcaactgcac 1620

tactgcagcc tgcatgcgat gcaggaacct aattcagttt catggttttt gtttc 1675

<210> 2662
<211> 3200
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53276_G1, chr2:7950349..7953548, Cluster 15

<400> 2662

ttgtttttcg gtttcacgat gagcagtatc tgacgctcgc agccgcatgc gtgcgtgtcc 60

tccggtcctc ccgcaccatt tttttttatt ctctggggtc ggcatgtgtt gtcgtgtacg 120

tacgtatacg agcgtgcggt atcgatgtgc tgtaggtgta tatatcacac acagactgga 180

ttgtggatta ttatgtatgg gttgactagc tagtagtaaa accgcgcgta gagctgtacc 240

gtgaagccaa ggccaatctg cttggtgctc ttcttgttcc caagtgttag tctaagcaag 300

agtggtgtgt tattaagtaa acggcacaca cgcgacgcat gtgagtagac tctggaatta 360

tgtggggttg acctctcggc tgctggaccg gaggacggaa cacgcacgca cctaacctgc 420

ccccctggat cactctggat ttcatgttag gccggctgca cactcacaca cacacacaca 480

atccgacagt ccgacgggca cactcgttcg ctctcgtcgc actgtcatga ttcgccgaat 540

catctgttta attaattaaa aatctatgcg ctgacaagag gacactacgg caatgggtgc 600

aaccaaccac cgctagggtc caggccgggc ggaggaggct ggccaagcta gcctggcagc 660

tgtcgggggc ggtggaggag caaaagtcag agcaagcttt gacgcatggc gaccccggta 720

cagcagccag acaactgtta gaaaaatgct agatggcggc cacaaccaca ctgcatcagg 780

tcgtcgcgcc cgtgccatgt caacgcgcag ctagccgcct aaccgcggca tcgcatcgca 840

tcgcgtcgtc cgtgtccggc ccgtcgcgta gctatgctac cacctagcac gattggtctc 900

gggattccgg tgccccgcca gagccagccg atacgtcaaa cactgccgtc cgatccgccc 960

gcccgttcct ttccgcaacc cctgagaaac acgacgcgat cgggcgggcg cgggtcggcg 1020

tcgccgcccc cgcttcggtc ggcatggctc ttgggcgcgc gtagtacgtc gccgccgacc 1080

cacatcctct cggtgcgtcg tgcgtgcacg tgttacacag cacgggcgga actctcgcgc 1140

gcgccggtac ggtgatgacg acccgtcgtc gtgtggcccg cccgccgctg cattcttcct 1200

gcgaagtggc gcgcgcacta gctagctagc gaggtgcacg tacggtgcac ctagctatag 1260

cgcacacagc tccatcaccg cgggcgcgcc gccggccgtg cgtacgtgta cgtgttccgc 1320

acaggtacct agcagagcac cacccaccgc aaaccgcaac cgcagccagc aggccaggcc 1380

tggattgttc tcccgcgcgc acgcaccgcg cgtcgagtcg gatcggatat ccggatgagt 1440

cgtcgttgcg tcgatccatg tgccctcggc ggcacggcac ggcacggaac ggcgcggcgg 1500

acgtgtggcc gtccacggcg acgactccac cacctccacc aacaacaaca agttttaact 1560

ttttttcgt gaccgcaccg tgggttgatt ctgagtacga ccgccggcgc cgattaaatt 1620

gtatgtttgt gtgtgtgtgt agaagtacac tatatgtgag tgagtggctg agatgatgac 1680

aggcgtggag agaaattaca gcccaagtga ttatgataac actttgtttc ttctgctcga 1740

tccgtcggta tatcgagaga gaggtagtaa ttgattttac gtacgggaaa cggtcgtcgt 1800

cccaatccat ccagaggtgc gtgctattta gtactagtat aatataatcc acgaccagct 1860

agctacccca ctgcggactg cggtgctact agcccaatca atcccgtgag gccgtgacga 1920

aaggtcgtcg tcccccaggt tctcgttctc tctctgtcac tcacgacgag tcatgacaag 1980

aagaagaatt gttttcatgt gaaccttatt cattattcta ttagtgcaac tagcagctcg 2040

tcgctgtgtc tccctgatta ttacaatcaa tcaggatatt cgattcaggc gtgtgcgtgt 2100

gtacgtattc tgcgtgctca gcaaatgagt acgggtttga cccagcgacg attaatctct 2160

ctctctctcg ctggatctga atggtcaaag ctttgtcgag acgtggcagc gacgtacggg 2220

acagagcgtg agataggatc ataggagcaa cgctatgcaa tgagtgagaa gcgcagagac 2280

gagagagaga gcacagcacg gtgtccctgt cccggccggc ttttaattag ctcggcctcc 2340

taccacacgc acacggcctg ccggatggag agtggagtgg tgcgtgtgtg gtgtggaacc 2400

aaggccacca gggacgcgag tgggcggccg ccttttcca ggcacgcgtg ccaggacccg 2460

gccgcccccg tcccccagcc ttttgacgtg acgcccccta gccgctacta gtactagctc 2520

ttctcgtccg ccgtcgctct ccgtcctttt ttttttcgtc gtcgtcgtcg tcgtctccgc 2580

gccctgctgc tcataagcat gacgtcaacg ggtcttctcc ccttgccgta cgtcttgccg 2640

ttgccgagcg agcttcctcc gtctcttcgc gccgccgccg ccgcagtagt agtcgagggt 2700

cacgggtcgc accgcctagt cgtaccgcgt acgtaggccg gccgccgtct cggtctcgcg 2760

atccacagca gatcgatcat ctcttgccag gtacgtacgc tgccgtcgcc agccgcccag 2820

gccagccaat gcgaagggaa cggttatgtg ccgaccgaaa ggtaacagca gcaaacccgc 2880

gatcgacacg acacgtacga cacaaaaccg gcaacagctt ctgctacccg ctgcgacggt 2940

acgtactttg ctcgcgtaca ctacatacag ttacgttgta ttttcgtcga attatcgtcc 3000

gtacggtaca tgcaggcagc tgctggaagg cgaaagaaaa cgagaggaat accgaataca 3060

caatacgcag tggggctgct cgcgattaca ttacatacag gtagacggag gaaaaacatc 3120

caaaagaaaa agaaaagggc acatcgaatc gtaacagcca tgccaaaatc acgggggtgc 3180

cggcctaacg cgattttccg 3200

<210> 2663
<211> 1560
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53577_G1, chr2:9601105..9602664, Cluster 15

<400> 2663
cttgttgatt gcccccgtac gtacgtggag gggtgccagg gatggctgga gctagcagct 60

atggctagct gcaccggcaa cggcatttat ttgcagcgga gtccgccgga tcgcggcccg 120

aattattatt gcgcgcgcgc acctacacga tctacatctc ccatatcagc atgatatcgt 180

cgtcttgctt gcattggatg ggtcgtctcg tccgccggcg gtccagtcca cgccgtggcc 240

tgtgtgcgtg tgatgcatgg ctcggcctcg gctcgtacta cgtacgtctt cttgtacgct 300

tgcgtcgcgt gtgggtccgc cagtgagctg tctatctatc tagtatctcc gttctccatg 360

cacgcacacg tacgcccgca cgcggagatc agagaggcag agctagcgac cacctctgac 420

gacgtcgtct caaagaagcc tggacagcgg cagcaggcaa cgagagtgag cgagagaccg 480

ccctgacggg ctggtgtttc gtctggaact gggataggga ggagaaagag aaggagaagg 540

agaagaagaa agaaccgacg gtcgcgcgga gcagcaaaac cggtcgctct cgcgcgcgct 600

gcagcgggct cgatcgcgta gtatagtcgt cggcgcgcgc ccgcctactc ccccgatacg 660

acgcgagcat ttaagcgcgc gctctccgtc cgagtcgcgc gacgacgacg cgatcgatcg 720

agcctgcttc cagcttcctg cttctccttc ccgacctcat tgatgagggt gatgtgcggg 780

ggacggcgac gggagttaat gacgagagca gagggcgcat gcagaaagaa gaagctctca 840

acgcgagcca tggcaataaa tgggcgccgg tgaccgtccg tcgggcgcgc gaaccatgca 900

cgtcgctgtc gggtttaggt gccaacgccc gccactcgtg gcttcggtct gccggccgtc 960

tcctcaatcc tccacacagg cacagcgagt ggccgctgta cggagcacgt gaataacaac 1020

aaaacaaaac aaacaggttt ggggtggatt ggatgggaca agcaggacga tcagcagata 1080

gtatagcctg aaatccacgc cggcgggcgt ggagcccatg cacatgcacc gcgccggaat 1140

cggtcgtttg ccctgccgtg cggccggggc ggatgcctcg aggcatcagc aggggccggc 1200

aacatttcac atcatgcagc aatgcagctg cagctgcagc ctgcaggtat tcttttcttc 1260

gagttggagg gacagtaccg agaagcggca cgtgaagaaa gggcaagcgc acagcaatca 1320

cgcgttgcgt gtgcttgttg gactgccatc cacttactga tgggcctcgt caagtatggg 1380

gatggacaat acttgggctg ggccgaaggc aatcccacaa tagtctacag caccacctct 1440

cgctcccaaa aaaaaaacag agagtaaaca ttggcgtggg tatggcccat gtggtctctg 1500

cctccacttc tgatcatgct gtggtcttct ggttttgcat atatggtgct aacaccgtct 1560

<210> 2664
<211> 1792
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53976_G1, chr2:11651259..11653050, Cluster 15

<400> 2664
tagattgggt tgagtttttt tgtctttagg tcggattttt tcaggttagt ttggttttgg 60

atcaaaagtc atggcacgta tccgacccat gaattattag aggtcaaatt gcgtgcggtt 120

cgtatccgtc cattacattg gtcgaatgaa ggtatgaaac caggtttttt tagacagatc 180

aggtcggatt ggtcgtgtca gttagcccat gatcaggtct actcggctgc tgtttggcgg 240

cgcggactgc tgttatgaat cacattatca ataatgaaag agtcgtctgt cttttgctct 300

ctggttcaca tcagtactct attctaagca cgtacactat tctaatgatg tggaactaac 360

acgaatcatg agcccatgac ccaaacgagc acactggctc tgcggcacgc cggaggctct 420

gcagcccagc accattatcg tcctgagttc catgcaagta atgatcactt gacgtccggt 480

ccggagaaga cgggtgtgct tctgcttctg catgcacatg cggtaatgcg ccgcctaata 540

attcagagag cacagactcg cacgcgtaca gtgcgacgtg acagcggccc ccgcgcccag 600

gaaattccac gggcattgaa ggcgcggcgc tcacacacac atatacacca ccccgcctca 660

ccaccacggc cggcggcaac gcggctccgc cgagcgcgac acgtcgcgag ccgcgcgcgg 720

gggcgccgat cgacggcgac gtcgtactgg cgacacgaca gcgccgcagg ctggcgcgtc 780

ccatcgcgtg gccaccagca ccacgcctcg cgcgctttgc tttttctgcc gttcacaccc 840

acggcccgtt cccggatgag agtagcgcgc tcatgcatgc accaacaaag caaaaacacg 900

tccgtccaag ctaatccggc ccgtgctttt cttaccacaa gaagaaccaa gagagagaga 960

atagaagccc cgtacgcgcg cgttggtggt tccgccgcgt aatgatcgcg cgaaccagag 1020

ggacggagag gagctggtgg ccggccgtcg tgtgctgcgt gtgagtgctg cggcgcgcgc 1080

ggtcgtcgtc ggtcgttttc ggccccttcc cgcggatgcg cggctctctt cagacgtcaa 1140

ggatattcga gaggtggcaa tggcagctct gaatgatccg cgcgcgggag aggcgcatcc 1200

aacagggacg acgatggatg gtgatgtgac cgagtcgtgc tgcgtgcgcg cgggttcgct 1260

gccgtgtgtg gagtggatcg gagggtttag gtttgcggtc gcgtcacccg gcctactacc 1320

cgcgtggatc ggcctgtgcg ctgcgaccca cgtacggact agccctgtgg cctcttaagc 1380

aatcccggcc gacagccggc cgtcaccgta ccaactaccg taaggaacaa tttgttcctc 1440

cctccgggtc acatgcatgc atgcaagtat tattcaaccg aacggggagc atgcatgtcc 1500

ttggcatgat cccgcgccac atgcatccgc tgcatatata cggtggacgg aataggtcga 1560

aagggctcgc aatcgaccgc aactccgctt ttgcagacgt acgtacctgc acggcagcgt 1620

gtgccggccg ggtcaacttc tggctggcca cgaggcggcg gcggcttgac ctgcgccgtg 1680

ggccgtggct gctgaccatg tctagctacg catttgtaaa cgcctcgtac gtaatagcag 1740

gacgaacttg ctggcgacac ttttgacttt aatttgtatt acaagcggtg ca 1792

<210> 2665
<211> 1620
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54490_G1, chr2:14674194..14675813, Cluster 15

<400> 2665
atatgccaac ttagcaaact ctaggaagta ggatttgtac gcaacgtgac cacctctgcc 60

tggataaaac ttttggacag aagtgtcacg ttcatttttt ataatggaaa taaaaaattc 120

ccagcccttt atattttcct acatacgggc ttgcaattta aaaattaaca aaacacgtca 180

ttaaaaaaga acatttttaa aaagaacttt tctttgaatc aaacgtcctt taacctggta 240

ttagacctcc atctatattt tacaaaaatc tctattgtca ccctctctaa gaattaacat 300

accacaaaaa tctcttgatg agtttttat ttctgaaata atctccagag tctaagccaa 360

tacgtcttcc taaaaagaat ctataaaaac tgatgatatt tatttaaaat taaaagccac 420

ggtactggga ggaaactccg taccacacgc acatggtata gaatggaact tggaaactac 480

cacatgcaca tgaacatgat gagtacatct gcactgcaca tgagctacga gccgtagctg 540

tgctgtgcaa ggtatgtaca ggacacatac aggagaaagc gtccaaaaac ctccatcccg 600

cggccacggc cacggcccac gggccaccaa ccctgtatgg ctgtattgta attgtaacta 660

accgtacacg agcggccgcg ctcgagtagg aagcaacagg gaacagggaa cagtagcaga 720

ctgccatcca tcagtcgcgg gtgtctgagg ttcgattcaa ctgatgagtg ggatgcgagc 780

acttgcggct tcgggagtcc tccatcccac ggattcacgc ctgattgcct gtgcggcggc 840

gaataatcag ctgccgcggc agatggatgg caggagccgc cgggccggcg aaccatggtt 900

gtcgcacact accgcgggga gcgctgactt ctctagccca ttgcctgcct gtcaaggact 960

ggcagaacca aaaccaataa aacccagacg acatcaatca cctcagccag aaacgaactc 1020

gcaacagcct ctcatcgagt acatgtacta ttaaaaccat tgtacctagc caatataata 1080

tcgaaataat ttctagaaaa atctcagaga cacgttttct gaagaggcat atgacgacat 1140

ttagacgagt gtgataatat ttagtcccac tttgctgatt aaagcggagg aaacataaac 1200

taaataattg tccgctcttc gtagtctcgc acgtgttgag caataggtac aaggtagaac 1260

acactcgcct cgtcctcgcc gggtgaagag agcggacaca cgacatatat gtgaacggct 1320

gatcgaaatt agagtccaag ccttgcgcgc tcagttcttt ttttggttct gttttatcgt 1380

ttattctata atccttatca acgagagatc gtcagcattc tttatccggt gtgtatcctt 1440

atctgatgca gatcattgaa ttcttatcgc gtacgtattt tttggaaaaa acattataaa 1500

gttatggtga ctacatcgtt taccaaacat gtcgtgctta acaatgtgga ctccagtatc 1560

tatcaccaga acaagacata tctgccgcta cagcaaaaca tgctcgacac tgttgtatga 1620

<210> 2666
<211> 1466
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54629_G1, chr2:15280875..15282340, Cluster 15

<400> 2666
atcgctggca acattaaacc agggctaaat gtctcaaaag aaacactagg aagtacgtag 60

gaacctagcg aacgaaacag cccaggtttt ttttttctcg gataccataa taccaggcgc 120

gttagaaaaa gaaaagaaaa aacgagcagg aaccttggaa ccattgccga gcacgggacg 180

gccgatcggg aattgtccgt ccatgcgttt gtcctgtctt tcgaatagga aatgcttttg 240

ccgcccggaa taaaactaca tatatctttt gacgctgttt cagacggagc tcagctcatg 300

tagctagcgt gctggaatga ggcacaccgc acatgtaact ggtgagtgga tctcttgttg 360

agactcactc ttgtggacat ttttgttgtt gttccggcct atacgaacac ttgcgcagct 420

cgttgcagag ggtactgctc cggccggctg tcaaatagat ccgagttagg ccggagcagc 480

agtgtggctc ctcctccatc catcattggc tatgcaatgc aagagacttt ctggaagccg 540

aaacgcggct caaaccatgt cttaaaacgc acagaacagg aatcttgaca ggctcctcgc 600

tcccgtcggt ccatcctgcg ctgctctgca ctccacgtct ccaccccacc tcgcaaatta 660

gttgggggcc gaaaggagcg cggggccgcg ggataaaggg taacatacaa tacaatacaa 720

tacaacaaca attcggcgag gtttactggc gcggaaagcg agagcgatat ggtcctacta 780

cgcccctgtc ctgccgggaa gatcttttgc tatcgcgttc actgagactg aagactgagg 840

aggcgcgcgg gtggcaatgg cttggctggt cacgcaaatt ctccagcgac ttttttgtgc 900

ccgccgctac cactactgat gatggtactt aacctgaatg ccgatctacc ctcagttacg 960

cccgccatcc gtgcagctcc ctcttgttac cgccgtaccc tcctagtacc atcgtggtca 1020

aatttttaa ttgctccaac caccatatag atccttctcc cctgcattgc ttcgccctgg 1080

atagtggata cagcgtagag attcaccgtc cagcgtgtaa aaaaagaggc gttcgttcag 1140

tgtcgagagg cagagagaga gagagagaga gagcggcggg tgggaatgcg cagagaaaag 1200

ctgccagaga agtcacggag atacgttacg tacgtactag aacgtgagga ggggtgtgtt 1260

gtgtggggag cacgcgcgca agttgcatgc atgcgactct ttcttcccaa agcatatcgg 1320

ccgcccccca gacccagaga tatattaaga attcgacccg ctccctactt gtacgatttg 1380

gtggtgctgg gttaggtaga cgccgtcgac ggagctaata tttagggctg atttggtgat 1440

cggggatccc caagggaaga aatcct 1466

<210> 2667
<211> 1704
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54662_G1, chr2:15470772..15472475, Cluster 15

<400> 2667
gggaaaacac ccgatcttgg cgtgcttact agactaagcc gcggggttgg gatgctccca 60

tgagaccagg ccctataccc tggccaaggg acgaaacaaa gcccaataca ttatcgcatc 120

ctacctctgg gggagagcaa gctaccaaat agatctatga cctctctaag taccctacta 180

tgttaggtat ccgatggcac aacaaacacg tctgatgcct agtgactcct agccgctaga 240

atcaatggtt cgactattgg atcccctccc tcttccctta actgtaaaag gtgagcacaa 300

tagcatttag caagtcaatt ctaagttgtt aagtttatcc tacatagagg cagaaataaa 360

gggtggatga ttgagaccat tatgctagaa cccttaccag aatcaagagg tgagagagag 420

ttgggtggac ttgatgcatg ttgtgtttga gcgtcttcat ttttatattc atcaattaat 480

gggtagtaag aggatgtaat gtattataca tactgtggct tgtccctctt ttaaccgccc 540

tcacattcaa aagaataaat gtggcatttg atgattggac ctcgcaatat ctactactag 600

aagctgatgc gacgacgttg aggtgacatg ttccaatcca aatcaagtgt tgagttttgt 660

taagacatag gcagagaatt taagtcatat tcacttaata aagtggcaat acttgtagcg 720

agcgaagtcg acgtacaagt attgtctgga acggcattca tcagtgggca aaacagaatg 780

attattcttt aatatccagt gactgtgaag atatttattt actcatgcaa ttgtacataa 840

cccatggtgc atcgcagaag tcggtaccgc ttgacgaatg cacgttagag tacatctttt 900

ttttttgta tatataagaa ggctcttcca tgattcgtac tggttaattt gagatcaatg 960

gggcatgtaa cacgacacgc cacctgtaag gttgtaagca atcattcagc acatccgttt 1020

gatgctgtaa tcattcgtga acgtcgcatt gcattgcagc aataaacacg tggagagaat 1080

gccaagctcc agcttcggtt cggtcccttg ttggaactgc atgcatttcc atggacgtag 1140

cagtgcatgc atcctcgtgc ccggagtgca cgattccggg tcgagaccgc cgcaagtatc 1200

gtggcgcgcg agttgccgag ttctagcaga tgtgtttatt atctataatg gcgggcagac 1260

ggacttgcag ggcaaattaa gcgtcagcac acatcttgac ttggcatcct tcaggctcga 1320

accccgtctc gcccagcttt tggttggtcc ctctcatcgg ctaacgtcct ggccattgcc 1380

ctctgctact tgtgccgtaa ccttccagaa aacgtccaag tgtcaactac tgtactgtac 1440

ccgaggtagg gtcacatcct ttgtgccccc cccacacaca cacacacaca tacatatggc 1500

cgatgcattc tgaaatctga agtagtagca gccactagga aagcgttcgg agtggggaca 1560

gaacagagcc agtctcacca gcagcagcat tctgttgggg acaggacagc gaaaacttgc 1620

gaaacaaaac ccaagcgagc aggagcagct agcgaggtac cgtactacta ctactgcccg 1680

tcacctccat tgatccgctc ctgg 1704

<210> 2668
<211> 2038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54663_G1, chr2:15472509..15474546, Cluster 15

<400> 2668
ccgagccgtt ctggcccggc cgcccgtgct cggtcgcctt cacgaaagcc accggggcag 60

gcaggagcca acaaactgca ccgaatctct ctcgtcatct cactcacacc cccaactgaa 120

tagatacata ccctgaccgc gcctgactga ccggcgcagc gtcgatccgt agcgggcgac 180

gcagtaaaaa aaaaaaactc attgctcaag gaacacgcac cagcggccgg ccgggccggg 240

acccccccccc ccccccccgtt tctctgcgtt ttcactgtca aggccaagta cgcgtgcagt 300

gaatcgatcc cctattgcta acgtgatgac gtgtttgtcg aacactcctg actctatgag 360

ccactcccgt cggttcttaa atccgatcca cccgcgccgc gccctattga tctctggaat 420

ccggcgcata tgaaacgtgt actgctggtg cgtggaaacg caagttgtca ccgtgcatga 480

acaagacatg tctggtatct aggtgaggcg atccgaggcc agcgccacga ccacaggcaa 540

attttcacta ttttttttta attgacagac aagtcacggg ccaaattaaa ggaatgtccc 600

agctcgttcc acgttacggc ctgccggttt tcacgcgcgg gcgcccacgt tatcgcttca 660

tcccggcccc ctcgtaccgt gcgccacggg attaggagcg cgacgacacg ggacaggagg 720

gaaccagaga gggggagagc gagacgccgc gcgccaagtc gggtcgacgc cgagtggagc 780

cctcgcggtc gcagagagag aggagagggg agcgcgcgcg ccgtggccgt ggtcgtcttg 840

aaggcgaggc agggtaagct agcaggttgc aattgcatgc aatcaatgag atgatggtgg 900

cgtggttaac cacgtcgccg cgcgaggcaa taataaaacg ctggtgtggg cgtgtggcag 960

cggcagcctt tcacttcgct ccggccaagc gacgtcacgg tggaaggccc aacagttgtt 1020

ctcccggccg cctgaccgtc tgaccttggc gctgagtcta gctaccccgg tggccggtgc 1080

agagtagcag tatcattgac cgcatgactc gtcgtaacta ctttctgttg cgcagaaaac 1140

aaaaaagcac tgcgcagtcg tcttctagta gtatgttgga gggataaaca agacatgaaa 1200

aagatattaa aataaaacaa gtccttcaac agcgttaaga caaagcccac acattctcca 1260

attgtccatc atgagactgg cccgatgtag gttacatggc ccaagcgacg gtttatgata 1320

catgtacatg gtactacatg gtagcatggt acccagcgga ataatttggc ccgaaaagac 1380

ggctattggg ccttctttat ttagacaccg aaggcccaac tagacatgga atacacaagg 1440

tcagaacgaa cgaacttctg gtttatgatt tttatgaaga gcgtcccatg gtgcatcccc 1500

tgtccactga caggtgactt ctgcaacgtt gcggagtcgg aaagcgtatg gaaccagaac 1560

cttcttctcc tgatgattat gtcagcttat cattagctat gtggaggtaa accaaagtgc 1620

gcactgtcac gacactggat aagtgctgac aagcatgcat gccagctcca catgcatgca 1680

tgtatgcgct actcctattc cttggtaact gggcaactgg caagctcttg tccgcacggc 1740

aacccaactg ttgttcggca gccatggccc cccatggctg aatggctcat ggctggtgtc 1800

tcgacagagt gcgcgtcaat ccggaaccga cagctagctt tctccgaata ggggtgcatt 1860

catgtgttca tgcatcgtga tctatccgcg tactggtagt atacagttct aagtaccggc 1920

cgtactacac tgaggactgg tcatgtgcga ggacacgacg cacacggcac aatgtcaggc 1980

gtcagggctg tcggtacgta actgctagta ttaggctcgt catgcggcca tgggacaa 2038

<210> 2669
<211> 2219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55502_G1, chr2:20017381..20019599, Cluster 15

<400> 2669
ttcggtgctc actgctcaac atttactcga cgctgcagtg gtatgaattg agcacggcac 60

ggtaggggc atagcggcca cgcaccacgt cgagccctcg atcggtgaga acatggcgat 120

cgatttcggg cggcagcaca gcgcaggggc tagctaggct ataggggatc cggcgagacg 180

agcagcagga agcccaggaa cctaggtagc cgatggcgaa caagagataa ggccaccatc 240

agcaataacg aatggcgttt ctcacagaac gaaagcactc gcggctggca atagcagtaa 300

taagcgtgtc caggcagtca tgcacataca acagcgccac ttgcgcacag tctgctactg 360

atcggacacc ggagtagcgt agccaacaaa cccagctgcc ctgccctgcc ctctctacga 420

cggccatgca tggagtggac cggccccaat catgctgcac ctacggcggc gctgtggccg 480

taccatatga ttgccgagtt cacaaactgt taagcgctag cggcgactac tataagtacc 540

agtgcaggta cgggtgctag tgacgagaac gcaacacgat gataatgcga tcattcagag 600

ccgcgtgatg cctcctgcgc tcggccagca ctgctgccgt ccccgttccg tgatggggat 660

taaacccggc ctgtgttctg tactgtagct gtgcatcgtg cttctgtgaa tgtagctgca 720

agctactgac cacgccgaat ttaatgatct tcggtcggtc ttctgtaccg gcctaatata 780

cagttcttca ataccatcct aatttgtcgc gtgcccaata aagtttgcct agtagtgcaa 840

ttatttgctc ccagctagga tccttgcaag caacattgct tgaatcgccc aaatgatcaa 900

ggagaccgta cctgtgcgcg cttcagtgtt ctagcttaat tactgacagt ttgatctgtt 960

tggtgcttga ggtaacacag atatatagga tgctgcttgc gagaggcagc atttttatta 1020

ggacaaacag tgatgacgac gaacaaatgg cctgtttgga actttagttc gttctagtgc 1080

atccaaacaa gatggctact agtatataga ctcatccaac agaccgtaag actgcatggt 1140

acgatggagg aagcaggaag ctctagctaa ttgacttgtt ttatctcgtg gccttttct 1200

ctaccttgga ctaacaattg gcttatatgg tgctgttttc aatcgcaatt gtttgttctg 1260

tagctaattg gctcaaaaga atgaaaaaaa atcttttgaa tggatactga cgcggcaact 1320

actgcccatg catatataaa cctttcaatt acaaggtaag tgtgttccca tgatttgcta 1380

attttgctct tgacgacgac tatactcgct gtcacttttc cttggacaac aagtcaacaa 1440

gcttgtgaac attgaagaca cttacccgtt aattactcca tgcctgaaag gcacttgccc 1500

cactacgtac acgccccccc cccaacttgc acgcttttaa tagctaacta ctactacagg 1560

tcttcaattc gtcctggttg atctgaacca caaattacgg ttacaagttc tgaatttata 1620

cgttgaaaca gtacactaat atatatcaga gcatgttttc aatagagccg aacacatgct 1680

ttggtttgtt ttctcaagtg tggtcggttg acatgtccca tcagatcaat aatagatcat 1740

cacaatctgt aaaaaatggg gttgcaaggt cagtttcgcc caagtaatct accgaattaa 1800

gatgtaagca cagcaataag caagtcgagc caatgatata cgcccacatg acgcagcaca 1860

gaagacgcca ctgccatggc gtatgcgctc tacaggccgg tcagtacaag acggcacttc 1920

gattgacagg ctcatgaaca ctaaacaaca gttccaaccc tcacctagca agtagcaaag 1980

catgcatatg agcgatgggc cccaggcttg ttgcaggcac gcattagaaa acttgatcct 2040

ccctccggga gctcacatgc atgctcccgg actattgcac aagacgccat tggccatgtc 2100

atgctcatgc cgagccgttc attctttaat cgacgtaacc gcattagacc gaaattaaca 2160

aacccgaaat gcatgcgcta gcttttggac acgacttaac acgcattctt taatctata 2219

<210> 2670
<211> 1895
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55529_G1, chr2:20108543..20110437, Cluster 15

<400> 2670
cacgtacgcg gacactccca tcgcatccat catgcatgga cgcgacgcga gcgtggagcc 60

tgggtctggc agctgcagcc cgcgcgcgta cccgagtcct gcaaccctaa agcgagcgat 120

atgatcgatg cagtcgcggg tcgtcggatc ctgcctgccg tacctgcggc ttgtccgacg 180

catgcatgga tggatgctcc gatccgatcc atccggcgtc tacgtatcgc acagctcgct 240

cgcagtagta cgtgcacgcc gctagtcgtc gtccgacggt tacgctggta gatgggatgg 300

ccactcgcct acttgcaagt aacaattcgc cgtcaaagtt ggcccgtgcg tgcatccaat 360

ccaatccaaa cccaacccaa ccaacgcctc cgtaccatca gcccaagctt cgagtcagag 420

atctagagca ttagtagcag ttaataaata gttggactag ctagcttgca actaatgtac 480

aatgtacgga attgcactta gctagctagc ttgtggggta tatattcgca gcatcactac 540

aattctatag ctagcacagc acaatttaaa aggtagtggt acgtgtacgt acgtgtatta 600

tacactcctt ctctacgtgt cttcctcccg agtgcaagta atagttggcg ggtgcgtcta 660

cccgattcca accaatttcc gtaccgtacg taccagagct agatcaggcc cgtgctcgat 720

ccggcttcaa acttaacgta ctgttggcga atttgagcta gtttttagct caaccagtaa 780

ctagctctaa cctatccaaa cagtcctaat aagtatatat atacggtgta ttatactgca 840

ggtatggtac tactacttgt attaattggt taaacacact ctgacgacgc cggaacatgt 900

gtagtatata gtctttccag tctactacaa tataactgcg gtgcgggctc tcagcctctc 960

agggacagag tgtcgactgt cgagagagca aataaatata caatcccagc tagctcgcac 1020

tgttaccgac gacatgagtt aatactcgcg gttacggcga gctaaccata aagatcactc 1080

agctcgcaac aagtgcccag atgccgacgg cagggctacc gatgcaaatt tgctaacagc 1140

agagcaaagc gaaacacacg gtaacatact aaaccactgt gctgcagtgc agagggagtc 1200

aaacgcgctg gacaacagca gccggctccc gagatgccac tctgctttat tactcgatcc 1260

tacctccgat agtccgatcg atgatgtaag ctgcaagtct gggacgggat cagtgcactg 1320

tcaacgcaac aggctgtaat tcggctctag tttaaggggc cgatgcgatg gccgatgccg 1380

tcatcggtca tccttcttta tcgctagctg ccggcaagca taggggggaa aacgcagagc 1440

ttgacatgag caatgaagcc ttcaaacccc aaccagcttc ttccctattg aaattaggaa 1500

cactaactaa taacttctgg cgccccagct acagtagtag tttgtccaca cgcaacaaca 1560

gcaagagatt tccgttcagc tcttgatgcg ctatcagtcc ggcgcgcagt cttcagtcca 1620

gcaactgatg cgtacgtggc tggcgctgtt cttgcttgca tgcttctccc tccaacaaat 1680

cggctcagac cccatcccca atggccaatg atacgtaacg taacacggcc acataccgta 1740

gctaccgcac gaaacctgct agattggcag tcaaatctgg ggaggttttc aagaaaacgt 1800

gcctagcaac aacgtggcat ggcatggcat ggcaagagag gagtaaatgg tgacggaagc 1860

caacggcgga cctccgttgg gggagatgca cagac 1895

<210> 2671
<211> 2081
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56839_G1, chr2:27557144..27559224, Cluster 15

<400> 2671
gtgtttgctc tcgtctcgtg catacccgcg cctgctgtca tgtgcacatg catggccggc 60

cctacgccgg ccgtcgcgct gcttgcggca tggcccgtcg gttcaaggta tagataccta 120

cggatacgaa agccaagtgc ttttgtagct tgcgcgcgct agggatcgga ttgtcgcgac 180

atggcccaag ccccaaggac gctagggatg gaaacggccg gcgcaacgct gctgctagct 240

gctctgcggc attgtctgtg gtcggcagac gatcgagagg cgcacaaaat tcgcatgtga 300

ctgattagta cagctcagat caaggcgcgt ggctacaagg agacgcacgt accccatggc 360

gtccaggatc gcggaggctg gcggagcaga gacgctggcc gtcgttgctt ggctccatgc 420

gggggcgcgc gctagcgtct gaatcccaca agatcccggt gattgtacct tctcctgcgc 480

gaaaaaggca ttgtgctcca acgacagact gtgcggcctg tctgtgacag atatttgacg 540

gggagctttg accgtttatt tacgccatgc tcaactgctc atccttccca aacacaagcc 600

aagaagcaac tggagtagca tttaattcga attttctata ctctatttca ttgccgtgat 660

cgtcgtggaa catacagtat ggttagctag caacccctcg aaggatgttt gccaatgctc 720

agtgcaccat gcatactgct gcatttccac agtcctcatc tcgttcgtta tagttgtgca 780

ttgcattgct cacgtggata aatggatccg tccaattcat aagagctgtg ccatcactct 840

tatgttttga catggaggcg acaacaagag gagtcatcga ggtaactttg atggcctaat 900

cgtatattcg acaagaaggc gacctcaagg gcttagatga ggtgaaagaa tctcaccgtt 960

gatggttgga gacgagcaac aacgacgact gacatatttg ttctctaact agggtaggca 1020

cacggagata gagactgaat caaatgatat agtggagaga gctcacagag agcactatat 1080

ttatatatgg tagtcggtag gcggatacag ggtcaagcct acgggggcta tataccaagt 1140

cgagctacga tcgagccccc gcatgtcgac cgttgctttg gttcgagtcg gcatgtgcca 1200

tgttgtgcct aagttgggct atcagacctc ataccttcg gcaactatat tttgagtaga 1260

tattgcacgt ttatagctag atatccaagt agaagacaaa attagttgga ggtagaaccc 1320

aatggcatat acaccgccca tagtggctac ctcatacttt catgggatac aaacaattga 1380

gggtaaatcc gatttggagt gcaagcaggc caagcctaaa cctcgattat tattattttg 1440

catggatata catttctaca tagaaagatc ctaattatgg acaagttact aaacggcagt 1500

cactcatctg ctcaaacatt gtcctttcag gttgcaaagc gtgtaaaaat aaatttcgtt 1560

gtggggaaac atgcacggtg tcctttcgaa attctagatc agatggttcc atcttccatc 1620

tacagattgg ggagaagaag tagagcaaaa gctgataaac atttcataag ggattttaat 1680

gagataacaa tttactcctt atgaaacata tggaacaaga agactttctt gaaaatttca 1740

agagatttat ccgatattgc tgtcttaacc gaaggggcag tggatcaaca tcatttagcc 1800

aagtcacact atactcaaaa tgcgtaactt gttttttgg ggtcttattt ccccccttctc 1860

ttgtgggtcc aggttgatcg gctagatgta agtagtctgt tgttgccgtc attattcctt 1920

tttctactat taaaaataaa aaaactcttg tcgtactttt taaatatagc tcatggtatc 1980

taactactaa ctagccattg atacaaaatt ttagccatgg tatggtcctg tattccctaa 2040

gttgtagttt ataattagct ataatgagtt cgctggtcct a 2081

<210> 2672
<211> 1570
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59167_G1, chr2:41231186..41232755, Cluster 15

<400> 2672
acctttgtt gttctttttt ttatatatat actcgtacta cctacagcta ttggatttca 60

acgctatagt ctgattgcaa gaatcatagc gcaccctact ggatcccaag cttgattaga 120

ctggaccggc tgggcgctct cgtctcacaa aatactccta catggcatac gttagaaaag 180

tgtaggcaag tgttctctgt tatactcaga ggtcagagcc cacacaacca attttttttt 240

atgaagaccg cacttgtata cgcggaaccc ttgcttgtac aacaagcaaa acaaacgtag 300

ttgagcacac acgcagtcac gtccgtccag tcacacgtct gaggggtact gtacgcgcgt 360

acagccgagc tgctgacgcc caaaccgcgt gttcggttgg cgctggcggt ggcatcagcg 420

gaaccttctg cttggcgtca aaaaaaaaaa aaaaaacgag gccgttggct taggttggag 480

agggccccgc cagcgccaac cgaacacgca aaaagtcagt gtattcggga atcgggacca 540

aagtccacga aggcgtagcg ttgccggggg tctattttaa agtcccctcc ccgggctccc 600

cctcctcgct ggcatgcact ccgcactctc tccggatgct ctgcgatcct gcaccgctca 660

tggcgtgctg tgcacaccgc atacgcgtcg aggacgggcc agcccggcag cagagacaga 720

gagggctact gctgccgctt cagctgaaag tgggacggcg tcgggcacgg caagtttcca 780

cttgaactgt gcggtcgtcg tctctttccg ctccagattt tcaattcgcc tgttgcgttg 840

tgcgtgccta ggctacgctt cagctcgctt ctgaactccg ataggcgata gcaaggaccc 900

gacctacgca agatgacact cgacgtcgag tcgtcgacga cagtgccaca caaacggtgc 960

gggcatgcag agtgcaggag gctagtgatg aaaagggaag ccggctgccc ctgggcgcta 1020

ccgcgttccg tcagtggctg actgcctgac tgcactgcac ggcacggctt agcagaatga 1080

gaggcggttt tacgttagct tgagagagag cgcaccactg catatatcta tggtgacagc 1140

gattactgcc tgagaagctt aaccgatgat tacgccatca tgacatttac tggtcagcac 1200

tcagcactca ccagtcacca acgcggacgg ttacgccttc cagagacact ccttgtcgcg 1260

ccgtggcgat aagaactctg tatgtgcacc tcgccgcaat gcacgtccgt gtatcaagcg 1320

agctggatca cgaccgttgc agtaaacata acaacatacc caacactgcc taaacaagta 1380

aacataacaa catttgttga tcaataatac gattgcagtc tagattgaca tttgtttcct 1440

cgttcagcac agctccattt ttctggcgac ctcccttaca tgacctactt ctctacaatt 1500

gcgtatgtta tctttcacat ttccccccctt attcatcggg tcttcttctt cctcacgagt 1560

ctcaatctat 1570

<210> 2673
<211> 2058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61743_G1, chr2:55800051..55802108, Cluster 15

<400> 2673
gtcaggcggt gacgttgacg cgtcatgcca tgcgtggatt ggatgaacgc acgcacgtcg 60

atctcgccat ctcggacgtc tctgaagaag tgtaaacgga gacccggccg agagcgagag 120

gtccatgcct gacgctgacg ggcaatcaca gacacagggt ttggttgttt ggttggttgg 180

gcaatgtgac aaaatttgaa acgccccata tatagtccat agaaaaatct ctcccttggc 240

ctcttcccac agtggccgtc gccatgcctg cagctgtctc gaggcgagct taagacagac 300

ctccacacgc gcgagcgtgt cgtcgttctc aagggcgagg aaaaaaggcc gcgctcgatc 360

gcttaactat tattattatt attatgcgta gtagtccgcc attgctgctt ttcaggagga 420

ggggaaaaaa aagaagcttt gtgtcactgt cgtggttaaa aggtacacta ctgtttgcca 480

ctagtgttct tttcaagtcg gtgtcgagtg ggagttgtgc ttgtgcacgt acgtacgtgt 540

cacacagagc gaggccgcag ccagccacct agccagtcgg ggccgtcgga tcaaccgaac 600

cgacggtgca ccggagatgt attgtctccc tgcgaggctt taatttcccg gttcctggag 660

cacacaagga caggcttcat taggttggga cggaatatac aaacaaccgg ccacttgcac 720

gtactggatt ggtttggttc cacagggaaa agctgcagca tgatggctct ttccaaccag 780

ggcctaatat aacggcctgc agttcccttg gcgagagaga atgacaagga gggttttaga 840

ggagcttagc tagcgctcca tgtttttttg gccgtgtttg gcgttgccac cttcttgttt 900

gttctcttgt agtggtgttc ttccttgccg aaagctttgt tgttgttcag agaagctaaa 960

ttatatgtgg gtggagcaaa agccggccgg ccggggtgtc tgttgttgcc ggcgtttaaa 1020

aatgagatga aacgaaggag ctactaggag agaatttgaa gcaggcaagt gatgtacagt 1080

gtggtatttt ttgagccgcc gtgtatagca gatgtttagt gtgctgcagc gagctgatat 1140

atgtggatcc agctagcctg ctcagcttct gtcgtatgct aaaatcctcc tgtgagaaat 1200

cctgggccga agatcagtga gtgcgcgaac actatgatgt atatacagca gatcttcata 1260

gagaacagct tccacttgca gaccagaaag ttaatgacgg gggacggaat cagcaacgct 1320

acacgtacgt acgtacgtgc agcaaggaat tcacaaggtc aatgatgctc cgtcatctgg 1380

aatcgacatg caaagttgac tagctagagt cccttgtctc tagcacatca agctggtaat 1440

aatactatac aagtagctag caaccacgct gtcgcccgcc ccctgggact cccaccgatc 1500

accagcttcg acgcacgctg gaactgagag cctgctgccg gccaggccat gtccatccat 1560

ggcacgcacg cacggtcgaa acgagcagca ccaagcgtgc tcattatagt ttttccacta 1620

tatatcggtg cttggcgagt cgaagtggca atggaagtgg tgaaaatggc aaaatgcaca 1680

tgatcctttg agccgacaag agtggcctaa aaaaatcaga ggttgctgct ggtagtagta 1740

gttgttgttg ttgtaggcca ggtaggcctg ttttgttttg ttgtggcatg ccaattatag 1800

ggagctagca tgtaggctgt gttttctact gtatctatgt ctcgtcggac cagcaagatt 1860

cactggcatg gcattggtcg tttgcctaac gttatagctt atcctcccca gattccacga 1920

tcgtttcgtt tgtttataac catgcgattc ctttttttct ctctccattg ttttgtttat 1980

ccctaggtaa tttcttctcg tgtctggtgg aggaacgtaa cgcaccgaga atcatacaga 2040

ccccctccct cgctccct 2058

<210> 2674
<211> 1454
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6211_G1, chr1:31773683..31775136, Cluster 15

<400> 2674
tacgcggcaa cgtggcccgc ccaaccccat catcatgtcc tgcgactaat catggcatgg 60

cgcctcctcc tcctcctctt tcactgcctg cgctgcactg caatctgtgt tactgtgcgc 120

gctccacagt gcgaccgttt cccatcagtt ttgtacctgt acttgtgttt ctaaccaata 180

gatcatagtg catatatgga ctgtggaaat ggagtggtca acatttgata tgccttatta 240

tatacgttgg cactcacatg caataatgtt aacacgtaat ggtgtgtatg aaatgttttg 300

agccagaaca aaacttctag gacttaaaga gcttgtttga gagcaaacgt aatggaggag 360

attgactatt taattttaat tagtgaggta ttctaagtcc tcaattccct tcattccact 420

tgtttattat acggctgcca aagaattaat ggaactacta tacgcctcgc ggtatgtaca 480

tcgctgaagg acctacagtc gaagggatgt tgttcgtctc tcccgaagcg ctggaatgcc 540

cctagtcctg tgagagacca gaggcaagga cttcaccacc ctggcttgct ccgcaatccc 600

cacaaccatc ggacccagca gggcaggtac ccataccatc gccatagcga gggcagctct 660

ttttccaggg gttggtgaga cagcaggctc caaggcccca ctccgtggag gaagaggggg 720

caactgaaga gttttggggg caactctggc tcctcccgtc ttcagccgaa ccacccccaa 780

gatactaaga tactctaggg ttcgtcgggg cgaatcggac tctgctaccc tggtatggat 840

tcgtcgagat ctttgggctt ctaaggagtt tggtatagag gattgcttcc cggttggtgc 900

caatgatcgc tggtctgatc cacctcataa actcaagtgg tgaagagcgt gaaactttct 960

ctcaagtggt gaaggagatg gcgtctcgtg gtagaggaaa taggggttc aggcctcgtc 1020

cttcatatgg agattggagt agctggggtt cgtggaatca ctaccaattc caaacgccac 1080

aaaatttgtt tcatcatcct cccccacctc ctcctccata tggattttac cctcaacctc 1140

ttccaaatat ttttcaccca agaccacatc aacagcagta tccaagagac ttcagatctg 1200

atctgcgacc tcgtgagcag aactctggga gttcgagggg gtaaagattc attctactca 1260

gaatacttaa gggcatgttt gagagtaagg gtaatggaag agatcgaggt gatattcaat 1320

tttaaatagt aagagattat agccttctca gtcttcttta ttcgacttgt ttccaaacaa 1380

gctctaattg tatttgcggt tggaagaaga aatcgataac aaaattatat atgttggttt 1440

attatacatc gtag 1454

<210> 2675
<211> 2038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_638_G1, chr1:3398052..3400089, Cluster 15

<400> 2675
agctagctca tcgagggcat ccatgcatca tgctattttg catgcgcgcg gcatgcatgc 60

atgcattggc tataggtaca aggtactaca cgacgacggc acagttagcg cacgcgcggc 120

tcctagctag ctagctaggt aaactgatgc acgccagccg cgtgcttgct acccgggttt 180

tcaggccctg gttgcagcga gacagccagg catatagaga tgagcgagct agccagtagg 240

agtaggagga ttcgggagat ccatcttgat ctgtgtgtgc gacgccccgc cccctgtgct 300

gtactgctgt gcacaagcat gcaatgcaag ccctatcaaa tcgttcttcc cttcatttct 360

cgttcacctt tttttttgg acatagacat cacataattt taccattatt cggtacgtat 420

tttatcttga taaaaaaaat tcaagattct gaaatataac atctctctat tattcccttc 480

atctctattt ggctcggagt agctaggctc catcgtcttt cagtttcaag cttcctgcga 540

gagttccatc gatcggtcgg cgcctataca cagacctaca aaacaatcac tataactact 600

aaactgttag atacaatatt tattctgtag ggtgaatgaa aaatatcgat tcatgaggag 660

atggtttttt ttttttttg aagaaacgtg aagaggagat gtctggtctg aaggagccct 720

aaagactggg tttagcttgg ttcgagttca acctcttgaa tctcgcccag agcctgccga 780

gctgtaaggc ccggaacaag aacacgtgtg ggccttactg accgagggca agtaacctgg 840

gccggacggg ctctcgtttc gacctcctgc acgcaccgac gcacggtgca tcgcgatggc 900

cgatggcgtc acgttcacgt cgcgcccccg ctcacagtca cagcacaatc cccagcgacc 960

gaccgctaac tgcctctgcc cctagggtat tttttaccgc acgcgggcca ttcgcgttcg 1020

cttccgagtt ccgacccgtc ggcgtcgctg gaggttggtg ctcatcgccc tttcaaaccc 1080

gacgccttcc cggtgctctc catacgtccc cagtggagtt attagtcctc tcgagtctcg 1140

accgatcgat tacccggggg ggagggcgcc cccattgttt ttttcgcagc gctagcgtcg 1200

ccttgctccg aggggacaac aaggtttttt tttttgttgg gacgggcggg gggaggttca 1260

aagttctgcc gcggaggagg cagcggagag acggatacca tgaggccggt cttctgcggc 1320

aacttcgacc acgtcaccca ccagtatagc ccccatcagt cggatcgaca tgaagttagg 1380

tactcgcctg gcgcttacac taattctgca tgtcctgagt ctaatccaaa atgcagtatc 1440

tggtggagtc tggagcgata gtttgtaatg tatttgtgtt ttcattgcgc catggatatt 1500

tgtaccagac catcagtgca aatgcttatt taataatgaa atgctagttc tgtttgtcct 1560

gaatctaatc ctaaatgtgg aacctagagt caggagcact ggcttgtatt tgtgttaatg 1620

agtgtgccat gaacattcct atgcttatag aatcaatccc cccagcagtc ttaacggatc 1680

ttgcgctaga tcttgcttgt cctgtatcta atcataagtg cagaacctgg agtcaggagc 1740

actggtttgt atctgtgtaa atgagtgtgc ggtcaacatt cgtatcctag tggaaccccc 1800

aaccagtctc aaccgatctt gcgctagacc ttgtatggta tatgttcata gtgcacttat 1860

ctccttggtc cttgctatgt cgcaagttcg ctacacctaa tcgtccagca catatgtttt 1920

catgggacat gtgcatgttt gcaaatttgt tgtgttttta ctttttgcgt tgtattatat 1980

actagtcaat gttttcaagt cggatgactt gttggtcgtt ctggctgact gacttgga 2038

<210> 2676
<211> 1589
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6388_G1, chr1:32764132..32765720, Cluster 15

<400> 2676
acacgatcga cttgccagta taaataaaac acgaaggtgg tttggcacta gctagctaac 60

ttgaacgtgt gtgtgtgtgt gtgagctacg ataaatatcg cccggccatg gcgtggtcgc 120

attcagcccg tcacagctct tggtccggca cagacggcgg cgggccatcc agagccataa 180

gttggatttt ttttctgccg tacgtgacct gcaccggcac cgcgtcagct accatttggt 240

ttggtggctc cggagaaagc tgtggaattg tcgggtggtt ttctgcgtgg acggggcctt 300

ttcgctcgcc gccatcggcc atccatctgg gcctgggccc tggggtgagc gagcgaggaa 360

aggaaccgca tgtgactgat cgccatgccg tgctgctgct ccaggtttct aggcgtgcga 420

acgtgcgaga tgtgatatca ttggcattgg cggcaaaatg tacaggccac ggtcgtctgg 480

ccaggcctcc tgtccatgta attaaaaaaa aaaatctcat ggttgtagca cgcacgcacg 540

cactgtatcg tccgtgcttt gacttgtgga aggcccacgc acgcccatca gcatgtgcac 600

caccagaacg cttatactgg attactggct actcgctcgc tccttcggtg gttctccttc 660

caatacgcgc gcatccagct ctttgcagcc gtagaacttg cacgtgaaat ttctttaatc 720

agtactccta ttgcagtcaa caatggaacg caatcgtgac ctctgaattt caacctagtt 780

tagtcagaag tcggcggacc tctcccgtct ccggctaaaa aagcgtatgc gcgtcagcta 840

acttgcattt ttgacatttc gtgtcgccaa tagtatacca cacaggcgtt tacttcagag 900

atactagttg gatgggcctt ctgctgagcc tgatgagcgc cgaccattgc atcacgtcca 960

cagcatcttg gccaagttgc gcgatgagct acgtaacaaa cagctcgcgc cggttcatag 1020

atcacaagcc aaaaaggacc tcgcgggccg tggcggcagc tttttttttat gccgcccccg 1080

ctgccccacc gtcccggtcc ggcctttgac ggtggcgctg tgtggctgct cctcctctgc 1140

tcgtgccgcg ccgtccgacg aaatactggc gctgccctgt gcccctcgtc ggacgcggtc 1200

ggcaggtttt aattagcagt cggccggcgc cgggggatcg ttcacttctt aatggaaaat 1260

gcagttggtt aagttcggcc caagggaaat gaatatatac tttcaccgat aaacttgctg 1320

ccgctcactg cttcctgcca agatggacgc gccaacgacg gcacgaacgc gggcgatgct 1380

cgcgccaacc agcacgttcc gtcggcccac caacattaaa agacaataaa tctttttcat 1440

atgtgccatt acatgaattt gtaattattt ataatctatt aaatatgtcg agtggctgta 1500

gatggtattt tttatgaatt attttgacat ttatcccact tcccgtaatt atttataatc 1560

tattaaattt gtaattattt ataatctgg 1589

<210> 2677
<211> 1497
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6775_G1, chr1:34809925..34811421, Cluster 15

<400> 2677
agggttccaa acatggtctt atttaatttt aactgaatta aaacaagttg ttacgtccat 60

ttaaagtcca accgctacca gcaactaaac gacggcttgt ctcttggaga ttgattctct 120

atttttggtt gcatcgtgcg aatgaacctg tggcgagata gtagaagtga acgattttgc 180

gttgcatcgt gccattgaac ctggctagat agttagcagt gcacggaact tgcggtcgtg 240

ttcgcgtgca ctcacggcga aaatcacgag ccacacacgc cgcgcgcagc agcagaggaa 300

caccctacca aaaacgaggc tgacaatgtg cgcgtaccac gagcaggagc agcggaggac 360

acccgagcgg agcgtgctcc acgccgccga cacggaatta tggcgagtgg tcctccagca 420

ccatgctgcg ccagcgccgg ggatctcgtg tcttcctgga ccaggagtaa aacaacaacc 480

atacctgctc gagcattccg ctgcccgcag atcagctttt tagatgtaaa gaaagatcaa 540

aaaaggaccc aagtccccaa cccggccacc cgggcggcgc cagccattgc aagaacgaac 600

gaattggtgg aagggagaaa gcagaagaaa aaaaaataga gagaaagaac tgacacgtgg 660

gagttagttg gtagtgagag tgagagtgag agtgagagag gtggagttat accaaacact 720

atatgacaaa tttatggatc tactctatga ttagttcaaa taaatcctag attcagattc 780

atttttctac gctgacaaag agctagcgaa cggacctccc tgtttctcat ctgtggcgtg 840

ctgccgttac tgtcacccac ctaataaatg cactgctgct gctacctaat ccggtgatta 900

tctatttatc tttccggttg atgcgtcatt caccgatccg atttcttcgt aaattatact 960

tttccacgaa gcttcatcaa tggtttcgga cctactacta gtacacaaac ttaattaatt 1020

gttttgtagc gcaactgtgc tgtgccagtg gtacccccac tgcaggacct gcatcgatta 1080

ctttgcaact ttattgcaac cgatccaact gtatgggaag gaagccaact ttttttttc 1140

tcacgctcgc atcagaactg gctgtaatat tttctatttt tctttttctg aatggcgaag 1200

ttaactccga aagcctgtca aaggtatgaa gcgtgccaag ttctcaatca agtacacagg 1260

cagaatatga attatgaagt gctttcagtt attcagaagt tgaaagcaat ctctatcagc 1320

tacacgtata cgtaaaatca tctgccttgc tctacagggt agtaaacacc tgtgggagcc 1380

tggagccttg tcatcttcct gtacctgcgg tggtcgcaac cacgcacaaa taacaaattc 1440

acggcagctc cacacgctgt taaataaaaa aaaaggacga cgaatctcta gaatcgt 1497

<210> 2678
<211> 1417
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_73221_G1, chr2:131336210..131337626, Cluster 15

<400> 2678
accttaccac ttctattgtt gatccttttc tttttaagat cgtagtatta gcacaatcta 60

tatatgctag tgctttggaa ggtatcacaa tcgccaaaga cgactcgtgg gtttgagata 120

ggaagcagcc agagctgctc gtgcttgagt tttacaacga taaactataa ctatagctat 180

accggtcaca tgtttctctt gttaattgct gctggccgtg atgcgatgac gacaagaatt 240

tgacttttt tggcacctgc tggcctgcct cattctagaa ggggtcattg cactcactcg 300

ttataaccat ctttcagttg ccgaaacggt gatgtgtgtt aggtgaagct gtcctgcagg 360

cctgccatca tgaccgcatg catgcgtcca cattttattt gttcccattc gttcctttct 420

ttcttttatt atgttttgtt ttatgggggg tccttgtcat agccatatat gcagaacatt 480

tcagtacacg cctaactcat cgtaagtata tagtatgatt ggcgcgcaaa acatcttcgc 540

ttctctttat ttttcctttg gaaatcacag catatatatt tatccaaagg catcatgcat 600

gtgtgacttc ccatttccat cagtgatcac atgtagtcgt gctgccacgc gtgtcggaaa 660

agattgagtg agaagcgatt tggcatgcag tgaagccagc cgcgcgttgc attttgacat 720

gtagaagaaa acaaccctgc tgctgcgtgc acatgcatgt gctcaatgtg ctctgccttc 780

tcttggttta tctacatgct ctactgcttt tggccgcaga actagctcgt tgaagctacc 840

ttctgtcgcg cgactatgtc aacacacaaa tggaggtcgc ttgaaccgtt ggaaaatgat 900

gctcggaaag ggacggttga ggtcggaaga tgagacggtg ggagcaattg gcaaccgagg 960

gtgcacgcag cagagccctt tgccttggaa accgtggcgc tccggccctc tccctgtccg 1020

gtccatccat cgccacaaag ccatctctga ccaagttggc gcctggtgct ggctcgggcc 1080

ctttttttt atctcttttg caagtgagct gattgtgatc attctgagtg gtggacaagg 1140

caggtcgatg caaattcaga aggatcgtct catctagtgc ataagggcat tgtataaccc 1200

tattaattga tgtgtttctt gagatgtctc taaggtgtta cgtgcaaaaa aatcaagata 1260

cgagctcttc atgaaaaatt cgtcttttca cgactttcta tacatattgt tacttaatta 1320

cattaatgtt ctaatgggct tagagttgta tgacgtattt tcttagctgt cccatctctt 1380

ctactttgga aaaccgagca aggtgcttta ggttgta 1417

<210> 2679
<211> 1587
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7783_G1, chr1:40560830..40562416, Cluster 15

<400> 2679
aaatatcatt ggattgatat tgtcgtgcac tttttatgat atactatata aatatcaaga 60

atagtttctg ttgtgggatg agtttgtatc tgatatggag agatttttt tttccttttc 120

ccaagggacg gaatactaca taggagtata gtctagtaca gtacgagtaa acagcaggca 180

caattgggag tacagtacag gcggcaagta ttccttgccg gcttgtgctt ggacacaaga 240

cggcagcagt gaggtgactc tgctcccatc acgtcaattc aaacgttgca cgtctgttca 300

gttcaggtct ccttctctgc tggtcacgtt atctacagta ccgtggtatc ccgtacacgc 360

ctctctgcac gccgtgtctc ctggatgttc tcccaggatt tgtagctcaa gtgaagtgac 420

agatcaatct attcatctgc cagtgccacc gcggcaaatc cttgtggcgg ttgcaagtaa 480

ccactctgca aacagcctcg caggtcacgg ccagcaggga cagccgctgc aaattattgt 540

gatagttggt ctcatcactt gtagcactat cagggaagaa cgcgcgcgat aatctttctg 600

atgatttctt ttttagctta ccatttggct ccctttctat gtgccgtgct gacactgaca 660

ggacagagag agctggtgac gaaatagtac actagtttgg tgcatagcgc agcagctgct 720

ctttccatgt cgattataca tcaatccctt tgtccgttgc atatcatggt gtccaccgcg 780

aggcgcatta catctccttt gctgcctgcc tgcatgctca tctaagacga tggcagtaac 840

aaacaaacag caggtatttg ctgccagttt ttatattgct gtagaaaaga aaaccctgcc 900

gttttctttc gatgcgtcgt ccgttgcttt gctccggtct ggcgtctgcc catggtgcag 960

caggtatttg ctgatggatg tgtcggtcca tcttgcaaca gctccgagca gtacgtcggt 1020

cgaactgagc tctctggtgc cagccagtag cagagtagcg gcctgcttgg tatgctaccg 1080

cctagcggca atgccagtgc cgcgcgcgct tgcacgccct accatacggg tttggacctc 1140

atcttctgta ctgtacgtga tccgccatgt ccgactcctt gcgcaattcc tcaataatcc 1200

ttcaccctgg atggatgcat atgcatatgc atcatcggtt attcggttca tgcctgtgta 1260

cacggtccag ccagcctcgc gttcagaaca tcctcgcgaa atgagagaat ctgtcgtctg 1320

tgtacacgat cagccagcct tactttctgc agcgcctttc tttcctttct acggacacca 1380

gctccggctg gcaagggcta gcattcatgg ccaagtgatg tcacgtcggc tctcctagtt 1440

ttctgggaaa ggtcgtctcg cccactgtca gcgtcagcgc atggactccg tcctaacagc 1500

tacgtacagg tttgtttacc cacttttct tccggatgct cttctgatac aggttcagca 1560

ctcagtacgc ctctccaaat gtttcgt 1587

<210> 2680
<211> 1964
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80591_G1, chr2:174601684..174603647, Cluster 15

<400> 2680
tagccaccta ttgccccaac gaaaatgggt agggagagat gggatttgtg ggggcaacaa 60

atacagtggt agtttggtaa gcgtcagttt gggagaaaaa aaagaattgg gggagactga 120

gggagctaaa acccttttcc tgaactagta caattgtctc cattcaagaa gagaaaagaa 180

atagaataat tataatgctc agcactcaac gaagtctcga gaatgactgt tgcagattag 240

cacttgatca gatagtgaca acgactcgtt ctgtgtttat cttcatttca tgagtaaaga 300

aactaaagtt tttccagcag caacgattat ctgtgttcgg gaaaataaat taaataaaaa 360

gaatggcact gtagtgtggt cgaatcttca tggaatgaac aatgaagtgt agcggcaggt 420

gggcctcagc agcagcttgc aaggcaaaac gttcccatcg cagagatgtg tatatatgct 480

tgcttaggct tttgaagaaa ctaataaagc gccgacttaa cagaactgat gtagcacccg 540

ccatcccaac cttgccgtgt cagtgcaaaa gggttgggca cctgaaaaat caaaaaaaaa 600

atctacatat gtgatacctg aatttgtagt cgatgaatgt aattaaacag cagcgtaata 660

acctattcgg gagtagtata tttgtttcgt tcttgggggt ttagggttga gcaaagcttt 720

tgtcatggct acaagaaaac agaaacctag cttttgggca tcgatctact gtattttcgc 780

tttatcgatg cacctctcgt cgcagtcgta cgtgttcaat cacaaagcta tatatcatcg 840

tatcgctttc aattccgacg cggaataaca ctctcctcgc tttcttttct ttctctttct 900

ctctcgtacg tcccttccat tgtgtttgtg gcgcatcgca ttcgatcatg ttgcttgtgc 960

caacgattgt tttgtttttg ttggcggata tagtatgcac acacagttct gttcaaactg 1020

tacttccatg tgtttctgtt ttccaggcgt gcactctgca cagcttctgc agatggccat 1080

gcatgtttgc cagcccaaac gttaatttca tgctttcagc gaatatagct tgctaacgtc 1140

cgcgtcttga agaggtcgta gatacttcgc caccggacgc cgatgatgat gctctgacag 1200

tgcacgccga acagacggcc ggccgtatat ggtcaattca tggtcacaag gcgatcggaa 1260

tcgcgcgcgc agccaaaccg actgcaccgt cgacgattct cccagctctc gtagcccaat 1320

ctttgcgaag cccaaagatc tggttgcgtc acctttcaa tcaaccatta gcaaagcgca 1380

cacgaaacga aactgacaca gccaacttgg caaacaagat cgggatgtat cggagaccag 1440

aaaaagagag agagaggaag aaggaaagca ggacctacaa ggctcctaca gcgccaattc 1500

agctgcagaa tgaccccaag caataatcca ccagttcatc aataagatgt aatctcgact 1560

cctggtggtg gggcgtgcgc ctgatgccag ctagatgcag aggtcggtag ccatggcagc 1620

gggtgctagc tagagctggt gacggctaca actacaatgc atgtgcggca gtgttaggtg 1680

tgcggtatgg ttggcgcccc ggtcgaaaga gtttgagggc gacgcaacaa ggtttatgga 1740

ctctccaagg cttctgtgga gcggcaagac agcgacgacg acaatggtgc ttggtaaggg 1800

gttcggtatc atggctcgac gttgtgctgg ggagacgtag acacccaggg tgaaagccac 1860

atgcgacggt gacatctata tggactatgc actggatgtc tctttgcatg tgggtgacat 1920

ctatggacgg ttgacgcaac aaggtttatg gacgcaacaa ggtt 1964

<210> 2681
<211> 1479
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82477_G1, chr2:184400449..184401927, Cluster 15

<400> 2681
taaatagggt tcccaatttt atgcattacc aggcatgaaa aaaataaaac aagacctcag 60

gcactaccac ctccccaaa aaatactaaa agattgtcct gattattctc ggataataaa 120

attcaagtgc caaacgagcc catgaaacat cttcttgaac attcatcaag cctcttgttt 180

gtttatacac cttaatgcag cattagaaac ctagagccac atgatgaaat aaattgtgct 240

tgttgtatgg atctcatatt atgtataccc ttggttgggc ttgggtcgaa ttgataacga 300

tcatttgggt cagatcatca aatgaagata ttcaaattag actattttaa taataataat 360

agtcgttgct cgtgaggcat agatttacca atatgagtta ctactcataa tattgctata 420

aattatgata ggaatatggt gaaacctagg gtggaagctg atttctcgtt gaactaccaa 480

aatctgttga ttatttagaa tatgttctac aggaatgaca aaatacagtg gagctgaaca 540

aactggaaca ttttttttc aaggagagag ccagaacttt tttagggcca aaatagagaa 600

ttctctcaga tttcaatgcg ttctcgagga gcgcgcttca tcctgcgctg caggcaggac 660

tcgcagggct gctgccagcc accggccacc ctgtgtgctg cagtgtggag aagggcggcg 720

tgcgtgacgc ggcgcagtat agctgcggtt gcagctgcac acctgcggcg ccccgcttga 780

atgctcgtca cgcgccggga tcagctgccc ctggttcgtg cggtgtgagg cactgaggcc 840

atgggaatgg aacggtgcac acgaccgtgc aagaaccgag agcttgccgt gttcagtgtg 900

ctcggttggt tggataatct tttcctttgg agaaggggg agaaaatgac ataccagtgg 960

cgttttgtca agacccgacc caacggctcg cacagcatta caaacaggct ctctgcacac 1020

tggtcctgcc tgctgcacgc cgtaacgttg cctctggctg tttaggccga ccgacagcga 1080

ccccactcgc agcgctgtgg ccatggggac gccgacggcg acgtggacag gagcgtgcgg 1140

gcgcagcggg gcccggctcg cacgcccatc cacggccgag aacggctcgc tgacgtgcgg 1200

cgctcaggct ggcagcagga gcaggcagcc agcagctgcg cccgcgctgc ttgcaggatc 1260

cgcggcagcg ctttgtcccc cctcacgcac ggtatccgcc gcggatacac agatgggatc 1320

ggagctgcaa gcctgcaacc ttctcgcggc gccaatggtg aacggcgaat ggctactgtg 1380

ctactagtgc agagtgtggg ctaggagtag catatacgaa gtcaaaacca ctgagcctgt 1440

ttggtacggc caacacggag gtggctagag ctgtacaaa 1479

<210> 2682
<211> 1530
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82591_G1, chr2:185010324..185011853, Cluster 15

<400> 2682
cgtttgatgt gacccgagct aagctttagt ccacagaacc aaacaccccc taaatagtac 60

cgtctcctcg agatctgcgc tgtgctaagt aataaacagg cagcgatcca gcggcggcat 120

gcttcattcc ttccttcctt tacagtaaaa atgtcaatgt caagtaccca gctttggctg 180

gtcattactc attagtacca caccaccggt ggtggcagcg ctagaacccg tgtgcattgc 240

gatgccacgc aggaatcttt ctgtcagatc gatgacgctg tttcccagtg acgagtgagt 300

gaaagagtct aggactgtgt cttcgtggtg attggcggtc ctgcagattt cgctcggtcg 360

ctaggagcag cagctctgag aagaaataat tcacagcttg ggtagatttg ttccccccac 420

gcagcggttg ggcctcatta ttgatttgtt cattcaatgt gcacgtatac gatgatgtct 480

cagggccggc tgagggaccg caggagggag ggaggcagag ctcgatcggg cggaactaca 540

acctgggtaa ttaaaaaaac gaagtgcaac attgcatggt acacaacaca gaactagcta 600

caagtagata gcgtatgcat gcagtggagt tgaactcgct cgctcagtgg cggggctggg 660

cttgttggtt gtactagcta gctaggctgc tgaactgatg atcaggcaga ggcaggcatt 720

catcgtcgta ggacgtacta ctccgcatcg tagtaacacg tccctgcatg ctcccgggcc 780

ccggccgact atggactgca ctgcactgac cccgtgggca cagtataccc tatatactct 840

cgtacgcttc ctcctgtgtc ccgaaataag tgttcgtcgg tactgatttt ttttcaaact 900

taattaaatt tgtaaagagt attagtaata tttatattat atctctcaat aagtatataa 960

ggctctatct aactatatta attatatgct ataatttata aatattgtat atatatagtt 1020

aaagttaaaa gtacttcagt ttcttgagaa acaagaacat actcggtttc gatacggagg 1080

gacaagtaca ggtacagata cggcccatac ggatccagtg gatgtataag aatatactcc 1140

tatgtagtag tagtacgtac taacgcactc gtggtgtgct tttgtacctc ccccttttcgt 1200

gcttttactt ccggatccat tcttgggaat tgtgagcaag ggtgggggct gcacatgatg 1260

tggacaaggg aggcaacttt tcaagaatcg gaagatgcag ctgggaacgc aagcacgtac 1320

aaaggaatta acatccctta ctaccgagcg taagtgtaat tttagcttcc tcaccatcta 1380

gctctgcact ctaagtattg acctcaattc aattcatatg tatttaggta cattaaggta 1440

tattaaatta gtttaattta cacttcaatc cacctcaata catgtgtatt aagatcaata 1500

atagagcatc caaactatgt ctaactggaa 1530

<210> 2683
<211> 2368
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_827_G1, chr1:4451642..4454009, Cluster 15

<400> 2683
cagttgagac aaagaaaaga cataataggt gaaggttgct cctggactgg ttaatcggat 60

gatcacctgc caaggaaaag gaaggtagtg gagcaatggt agaaccatcc tgcaatttgt 120

gatgggagca agcaagtatt ctctgtgtgg taaagaccga acaacaatcc tgctgcaggt 180

ttttttagt tctcgggata gtgataaagc tactactttc ttgatagaag ttttctccca 240

cgtcctcctc ctaatattct ctgctctgct ccgtgcgtga gccgtgagcc gtgagcttcc 300

cgaaagaaag aacatggaaa aaatgcttta ctttcccagt aagtaaactc tatcaaatgg 360

ctgaagcaaa ccacgggcac tctgaagtct gaagccggag ctagcaagga gtgcaaccgg 420

gcagcgcatc gcaggaatca gatctgaacg ggaggccagg cttcggagat ggaaaaagct 480

agctgatgat gcctttggag gaacacgagt gtttggtcgt gtcgtgtgcc agggctcatc 540

cggccgaagc actggaactc cggaaggaag agctgtaata catccgggaa taaagtcggc 600

attattgtat cgtgaaggct gagaaagaat ggctgggaat atcggaaagc aggaaatact 660

ctgcctctgc ttgcatgctt gctgctgaag ttgcttgccc cctcgcgaaa cagctgcggt 720

ctgcagtctg cgaaagacag gggggtgaat caagaggagc tgccactgcc tctgccagag 780

tctgtatctg tctcttaaac aagcggtcgt catatttctt ccttgccatg tcccatgtat 840

tttggcgagg tagaaatgta gaattccgat ctcagaagag cacggcatgt tcttcagtgt 900

ctgcgtttcg ttctgtgccg aaccgatgca cttgcatttt cagagaccag agttttcaag 960

tggatgatgt ttcagacttt cagttgccac ctgcccaagc cccgaactgg cattctgcct 1020

gttgccagta ttagggcaca atatatgcca ttttttcccc ttcctttctt caggcgatgc 1080

ggtgtgcaaa tatatgctgc gaatattatt acttcttttg ctagaattcc ttgtgctggg 1140

actgggaata ttagcaaggt gtatggtaat aatgctcatt cttatatctt gagacgtcgt 1200

ggaaaccatg catgcatgag gactggctaa cacttgcacg accagctgat tcgacgtaat 1260

aataaaccgg ataagaagat gcagagcaga gcagacagac agtagacaga tcaccaccac 1320

cgcaccgcat cgcatcgcac ccgatctcaa gttgctcgaa tcgtctgtgg caacaaggcg 1380

tacgatcggg aggtggcgga cgatcaagtt tccactagta aagcaagcgt tgcagatgca 1440

gcgcggcatg gcgtcacgtc catgacccat gcacgcgcat ctgtgctgca atgcaacatg 1500

gtcgtccccc ctatggcgga gctagcttgg taggcgagta ggtagctagg cgagaacgga 1560

atccattcct tatccagaac gccgcctcgt tcttcacacg gccgggtcga tggccgccac 1620

ggcggatcgt ctagcagtcg gcgtgccggg ctgccgatgc agccagaggc cggctgtccg 1680

tcgatcgatg gatcggagca gcagcctgcc tgcaccgcaa cgtacgtaac ttgtgtcgtc 1740

tcgtccggat agcttcgaat ttatctctcg tattttacag gatgccggca gcggcaggca 1800

tgggggcggc gggcgtggga ttcgcggcgc actgggcgcg gccgcgacgc gagcgaacct 1860

ccacgcagca gcgcacgcag gacccggcat ttttgttttt ttatgcccgt acgtctcagt 1920

ccgcgggtgc gattccttgg ctactcgctc gcggtcgcgg ccgccggagg ggaggaagcg 1980

ggttcggtgg tcgaggaatt ggttcagaga gatcgcggag gtggactgga cggggcgagt 2040

gatgtgatgt ggccatgtgg gcaagcaaaa gctacaagga agaagaagac gatcctttgt 2100

gcccgcccac gtcatctcca ttctcatcta cggtgcccgt ccgtcgctct cagcggccgt 2160

agcaactcgt ttgtcaacaa ataagaatca gatacaaatt aagttagatt ttccctaaag 2220

tagataaatg gtaatattaa aatttagata gttcaaaagt tagatttaaa ctttgagact 2280

agaatttgag ttaaaaggga aaatataaga taaaacagaa agatcctcac ttgtttaatt 2340

gatggattat gtgtttaaaa aacattct 2368

<210> 2684
<211> 1461
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82708_G1, chr2:185698902..185700362, Cluster 15

<400> 2684
caccgcaagc gaccaatacc gtcaaacccg ccttatatta caacaccatg cacccttct 60

ctgtcgatct ccgtagctcc aagcagatgc tggacagtat ttactcgagt gactgcacgt 120

acggtcgata gatgcatgca ttctcgttga acacgcaacg cagacgcagc cactactact 180

gtgccaaatc gcgtggcgcg cagacagttt gcaagctgtc agtacgtcgt acatgtacat 240

gcacgggaat atatatactc gactcgtggt tctgaatacg tgcagttgct agaatcgaag 300

atcgtaaata gtttcattta tatatcactg ctttgtcgag acacacgtac gtacacgtag 360

atgcatgcat gctctgcttg tacacgtcga gcgatcagcg cggacgccgg gcaaatagga 420

gagcagccgt cgcgttgcgt tgcgtatgca cttgatgatg agacaaccgc tgtgggtctc 480

acgtcacatg cctgtttgca agcatgcaac cgagccagga gtagctagtg ctgcgcgcgg 540

cttgcttgca ccagcacgac gccacgcact cctgcagtgc gttagctacc gggcctcttg 600

cttgcagaca agcaatgtac agcatatacg ctcggatgca tggcagcgtg cacgcagtcc 660

gtgtacatgc atgctagctt catcagttca ggccgacgca attaggcctt caataaagcc 720

agccgagctg catgtccctt ttttctccca tcacacacgt acgcatatat catacatata 780

tctaatgtaa aaaagaatta gagtgctaat aactcctcta ttagaatatt ttctaaagaa 840

aaccatacgt ttgtgcagaa taatgcgtca atgatggtgg gattcaccta gccatagatg 900

gtaaattcgg tggacaggat ttaatgttaa caacctaatc ctttttactc tatgtaaaag 960

caagtagcgt acgtgcatgc atgtgtgcga atcatgggca gtttgattat ttgcgatcgc 1020

cgtcgccgag acgccgaagc aaacctgacg cccacatcgt cgtgacagat agatctcctt 1080

ttttttagta cgaaaagggg cggcggcagc agcagtggac cgactgatgg atgcatggac 1140

gaaaggagaa ggatatatgc acaaacacac aaaaaagcag cgtcgtttcc tactagcact 1200

gttccatgta gacacagcga gaagctttgg ccggccggac ctgtcaccaa tcaccatgta 1260

gtagagaacg tgccttcagt tttagatttc agtgccggtt agtctatgac tccgtccagg 1320

gatgaatatt acttgttcta tatttatttt catatttttt ctattcggat tcagattaga 1380

tatgtatatt cactacatca taaccagact attagtgacg acttttaagt taattagtga 1440

tacgtgtaaa acccatttca g 1461

<210> 2685
<211> 1477
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_82773_G1, chr2:185869253..185870729, Cluster 15

<400> 2685
agagagtagt tgttatgctg gttggctggc tgcccacagc cagcctgcac tacacctgat 60

atgaatcttt ctgttggcta gatgggtgag aggggatctg gtaggcccta aagcgttgga 120

atgaaattgt cagaggaatc tagtttcacc atattgtgtt tttctaaatc tcttataatc 180

ggcttctata tatgtatgct accgtgagag attgttcctt atctagctag caaggtaaca 240

cgtatagacc cagagtttaa tgagtatctg ccaacctagt ctccctgtaa ccattcagcc 300

tctccaatcc cctagctatc aacaaggtac gagtggcatg tgtacatgtg gtacttgtgc 360

agggaacaga gtctcaacct agctagagaa aatttagcac ggagccatcg caccatgcac 420

atatacatat accatgccaa agactttcac acggagcaaa aaggaagaaa ttttcagctc 480

ggcaccaata atcggtgccc aggaaaaggc acgagagaca agacaagacc ctgctcggtc 540

ccggccccgc tcggcgctcg tcgccgcctc cttctgcctg gtggctgggt gctggccggc 600

ggccggcctg cctgcagctt ctcccggctg gtgtgagtgg ctcatgccac gaaatttcat 660

acacatgctg acatgcacta tcttagagta caattctttt gtcgcctcaa ctttctgtcg 720

tctcaccgct cacgtgccgt gaacttgaga agaaacatac tcgtgcttgt gcaagcatgg 780

ggagactaga ctactagaag aaaacacggg caggcagtac cgtataaata aagggacgcg 840

caatcaagcc tccacgcacg taaacaacat gagctatata cgacctgatg gctacctcga 900

tctgtcgcag actcgcagca cgtactatac ttttccattt ctccttcttc ttctgtgccc 960

tagttcctct ggacctttt gcacttttct ttttgggttt cacttgactt gtttttttt 1020

cgccgttcaa atggaacgtt ctgatggaaa atgtgctctc catgaccatg catgcatccg 1080

gccagcatga tcgtcatgcg aatggaatag acacggccca tcatacggcc atacactgaa 1140

agatgaaaac gactcaaacc taataatggc acacaagcgc gcgtgtgcaa atttctacga 1200

atgaaccagt aatcatgtgt gtgactgccc attcgttgca ggcgcttaac atagaattag 1260

gatgacctga ttggaagttg gtttgctacg ttgaattgct gaattaaaaa aaactcgtgt 1320

agcacacagt ccgtgaaaat tgctgaagct gtagtattct ctgacgtcca tgcaagcact 1380

gcttacagat tttctaataa taacatcact ccaaatcgtg cagattttag gccgtgtcca 1440

acaatttacc tatagaatta tacaaaacaa tattttg 1477

<210> 2686
<211> 2437
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87345_G1, chr2:212412367..212414803, Cluster 15

<220>
<221> modified_base

<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (862)..(961)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (891)..(891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (892)..(892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (893)..(893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (894)..(894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (911)..(911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (912)..(912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (921)..(921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (922)..(922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (923)..(923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (924)..(924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (925)..(925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (926)..(926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (928)..(928)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (929)..(929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (930)..(930)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (931)..(931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (932)..(932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (933)..(933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (934)..(934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (935)..(935)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (936)..(936)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (937)..(937)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (938)..(938)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (939)..(939)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (940)..(940)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (941)..(941)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (942)..(942)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (943)..(943)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (944)..(944)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (945)..(945)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (946)..(946)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (947)..(947)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (948)..(948)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (949)..(949)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (950)..(950)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (951)..(951)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (952)..(952)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (953)..(953)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (954)..(954)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (955)..(955)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (956)..(956)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (957)..(957)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (958)..(958)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (959)..(959)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (960)..(960)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (961)..(961)
<223> a, c, g, or t

<400> 2686
ccatttttaa cccgtttgaa ctgtgcatga acagtatgtg ctagcttttt taggtgaacg 60

aaagcggatg gagggggccc ctaccttacg ataaatgcac gtagaagcat attatatata 120

tatagtataa ctcatgagtt atactatata tcatgagtta ttctatgcgt gtgcgtgttg 180

ctttgacttc acgtagaagc attattgcta gcttgctgct tgcgttgtgg cgtggccgca 240

tgggcatggc acagtatggg gataatggga gtacgtgtgt gtgtgtgcgt gtgctgttac 300

aatcctccac attgcatgca cgtcactgtc tgtctgtctc tcgagcaaga catgattacc 360

tttgttgaat cttttctcgc gcgtacgtac taacgttgtt ggattggatc gacctctttt 420

gttcgtcgtt tccaaagcta ggcttgaaag atagagatct atacttatat ataataagta 480

tgtgtatatg atataaaatg ttatccaaag acactgcaca gagggaagtg gctgatcgac 540

actggtacag ctgcatatta tatacgcctt tcttcatttc accacgtacg tacgcatgga 600

aacaatgctg ccgtgttttt tgtcgaccgt agatatataa tacgtagctg ccgtgagacg 660

aaagccgttc gatgcccttc tcctccttga tctccagctt agctagcatg catgcatggg 720

cggccggcaa cggcaaggca agctagctag ctagctatag ttgatccctt gccgtggaag 780

cagagcagca gcggaaacaa gcccaagctc acaagtcaca aggctttgct tggatcccct 840

gcaacgtcgt gtcagtggcc cnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 900

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 960

nccccccccc ccccgccacc aatggcgacg gacgacgtct ggcggggcgg gcctagaaac 1020

gaacgaatgc aggaagcctc cagaaaagcg tctcctcccc tcgcgggggg gctggctcga 1080

ttccgttgaa aaaaaaggcg cttcacgtgc cccgctttta ctttccccgc tgccccccac 1140

gcgccggggc ccgggtgatc gacgacggac ggacggagat gcatggagcc acggccggtg 1200

gtggtgccga ccacatgggc cggcctcgca gtcgcagatc aggctcgggg agactccctc 1260

gacgtcgccg gccgaagtgg atacggtgcc ggtgcctcag ccagcagcct ccccgcctgt 1320

gcaggtgcag ctcggtctgg accttggcct cggcttcaga aatcagaatg ctgatctgtc 1380

tgctcagagc tttcagctgc tcgcgtcgtg tatctcgtcg tatggtcgcg agtgagatac 1440

gtggacgtac tggaaaaagg aatcgatctg gcatctcatg actggtgtca gatattcgtt 1500

cagggcagca gacgacaggc tacgtgcacg tggccacgga tactacgcat gaacgtggtc 1560

ggagttgtca ctcactgaca cacaaataat gccttgcttg ataccgcacc ggaaacatat 1620

ggcgtgcgta ccataccaac aacttggaaa cagccgtttc ctgctcaaaa gtcgtcgtcg 1680

tcggcctgcc actgccagcc tgatcgagcg agagtgccac aacgtgacat ggcattattc 1740

aaggggaaaa atcatgctcc tcttttaaac acatatttcc caacattatc gaaattacag 1800

aaaatttacc gacatcaaat atatttttga tggtatatat agcttttcat ttacacggat 1860

catgcagggg ctgatcgact gtcgttgctc ctgctttgcg aattgcgata ctactgccta 1920

cgtacgcgca gtatgggagc ggcaacgaag agacccgtag aggcccaact tcgtattggg 1980

cttgctgacg tgaacgcggc taatacaaaa cccgttgccc tccctttcta ctccctttct 2040

aatacaaaac aaaagttcag gcttcattca ggctaataca aaactcattg ctggacttca 2100

ttcagtcttg taactgaaac aaaccacggt tcaaacttac tagtccctac ctgctctata 2160

aaagaaaaac aacgtacaag ctatgcatgt atgtaaattt tataacaaag aagtacacga 2220

gtctgagtcc aaaaaaagag agagaaaaga atccctcgta gtctttcaga agtcctctaa 2280

tctaaggtaa caacgaggct taagtggatg ctttttccca tgcatggttt tatgtgaaat 2340

caaataaaaa ggaaagtgaa gtcgtctata ttttcgagca agtggttcct gtaaaacaaa 2400

gacaactact ccctccattc caatctacaa ttcattt 2437

<210> 2687
<211> 3365
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92568_G1, chr3:2607966..2611330, Cluster 15

<400> 2687
cgacaccgct gagctcgcac tcgccgtcgg ctacatgaac ctcgtgcgtg tcgacatgtg 60

tcatggcgac gacaattggc acgcggggtc atcttcgtcg tccggaggct caacgatgag 120

aagggcttca cggtcgccgt gaagatgaac acccagagta gcgagatgca catggacgac 180

cttggctgcg cgtcctgcac gaagggcgag gtcagcacgc aacagctcta tctcaattct 240

caattgaagt gaagtactta ttgttagtaa ttgaaatgaa gtgcttattt ttagtgtttg 300

acagcaaaaa ttgtatcgac tcttattcac tcccactccc tctgtcgtct cactagtcct 360

tcaaatttct tcacttccat gtggttccat gtataccata ccctctttca gctgcagcaa 420

catcaccaaa attgtataag gattactctc ttttttctga actgagacga tgatgttcac 480

atgttgatat ttgatgaaca gtcagggttc tctgaataaa cacctcatat tattcaggtt 540

ctcaacttat gttaccatat aagattaatg tgcatttgag cctccttcaa agattgttac 600

tctccttcgt cacagcttca tcctcatgta tctccttgtc actattgatt caggtgatta 660

ctgtatgagt tttaagtcaa gattattaga gttatgtatg aaattaggaa atgcagcgcc 720

atgtttttta taatctaaaa aaagcgcctt tggtagccct cattactgtg gcatcctggt 780

gcagcggaat ctgctcagac tgtcacactg gcccgacgga tgcagtgtgt gtcatgtggt 840

ttcatcacgt atcaggctat ctgctcaggt ttggtataca gtattcgttt acgaaggcaa 900

ccaaacaaca tctgggcttt tttttcatac cataacgtcc acataaaatt tctggatttt 960

caatgggatt tttagttgtc aaaattcttt ctttctttct cacatcttca aaaaaatact 1020

atagtcatct tccaaaaaaa attagtatta gtttcttctc ttccatgtgc ttctctcttt 1080

gagctgcagc aacattacca aaaatttgtc aaaattctgg agtttcttct ctttttgatc 1140

tgcagcaaca tcaccaaagc tgtagaagaa ttactctctc tctttttctg aactgagacc 1200

ataatattcg caggttggtg tttgatgaac agacagggtt ctctgaagaa acacctcgta 1260

ttattcaggt ccccacctga tggtagcata taagattgat gcgcatatga tcctccttct 1320

tgaagccttg cattttctg atcttttaca agtgttgagc tgtctaaact ctaccgtacc 1380

ataacataca cagaaaaaat ctggattgtg aataggatct ttagctgtca ataagtttat 1440

ttcattctca catctaccac acgactgaag gctaccattc tataaatcta cctaacggta 1500

cgtaaacttg cctatttcca gtttccaaac aagctggtct ttaccctgtt ccaaacaaat 1560

tagcaaggtc atccgacttt cgcgatatca cccacgctga aacctgttat aaacttgggt 1620

taataaataa attaaataca gacacatgta gtcaatccat aggaattgct tgttaagctc 1680

gggtcaattg atattgatcc accttcgtgt gagagctgaa gacatttcca agcctctaac 1740

ctcttgtcga tctgcttgtt accaggaccg ctcatcttaa ctagtttgac atcagtggtt 1800

ggaattcaaa atgtatttct taggtagatg ggctaatatg cgatgcaact ggaagcagct 1860

ggccacttgg ttgcttccaa ttccaagtca ctcacgcacg gtccctgtga ataccctctg 1920

gcttgttact acagtttgtt tgccggcccg acgtctcaaa ggagcacgaa aaggccgaaa 1980

tgacggccca tctagaagcg gcctgaggcg aagaatgagg atactatgac gcttcatatt 2040

ttaccacatg ctgttactgt tactgttact gttagtggat ggcagagaag gctgtgtcta 2100

tcctctgaaa cgggaccaat tgtagcggag cagcagagca gatcctgcac gtagcagcaa 2160

ccataccatg ccgttcctgg ccgtggccgc cggacatcgc tgggtctcgt gctcagctcg 2220

ggcaccattc acttgccaaa aaaaaactag cattggtggt ccggcgctgt gcgtgcgtgc 2280

gtgggtgcat ggtcatggtt gctcgctggg gtgggggagg gcgaccacgg cgtgctggcg 2340

ccgcgctgct ggggtttgtg gcttttgcga catgtagcag tagcactgtg gcctgtgggc 2400

tgtggcaagg gccgatgagt cggcggcaaa agcaccgtgg tcctgtatgc ctgccgctgc 2460

ccctgctcct gctccggtgt gctttctcag gccagcatgc agcaccggat gagggtggcc 2520

tggcagtggc tgtggcagtg gcagggtcca agctccatca tttcgtttcg gcgttgagac 2580

gccgggccaa accaatgccg tgcatgcata tagagctgcg cgttgtgttg caccaccagc 2640

gcatatagat acatacatac atattcggag cacgcttttg caggctgcta tctatctata 2700

tatataagta atctggccat gccggccggc gattgatccg gccaccagca tcaccagcca 2760

gagtctccca tcccctggcc gccgcgcgca gctcgatcgt gccgtcgctg tcgccacctg 2820

ctgcatcgat ccacgcatgc caacgggaat ccggggacac gtaacttttt gccttctcct 2880

tcctgtcgcg cctgccgacg tacaagcaag gatgcaacgc aacggcacac acagcctcat 2940

tcctggctcc ccggcgacgc cgacgtacgt gacggcggca gcttcctctt ccggttccgg 3000

cacgacgaca cagtgctctc gcatgcagcg ctgtaaccaa aggaaactgc agcctcggca 3060

ctgctgatca cttgccctgc tctcctgctc gctcgttgtt gggttggttc ttcgtacccg 3120

tgtctgtgcc gtacgacttc actgctcagt ggcggtagta cgatctcgag ctggagctgg 3180

gtgggctcaa aacaagaaca acagctgctg catcctgcct gcactgcagt cctactcctt 3240

tacaacctgt aacaggatat tcacagagtg gcccaaaaga tcttctcatc aacagctagt 3300

acgtaccgct agggccgccg aaatctacta cagtaaagcc gtagtactat gtatgatacg 3360

aggag 3365

<210> 2688
<211> 1631
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92850_G1, chr3:3986741..3988371, Cluster 15

<400> 2688
cttgcgactg gcgaggcagg caagagaacc gagacgacgt caaaggtagc acgtactagc 60

agctggggca ggtaccgtag gtttgcactt tgcaggtggt ccgcgcgacg gggatccagc 120

agaccggttt gggcacgtac cgtaccgggg ctgatgaacg gacggacggc aacatctagc 180

aggcgtagcg tacgtcgtcg acgtccatgt cgatggatgg gctcagggct gtggattggc 240

ctggccgcgc gtccaggttc atggcacgct gtcgctgcca acgatccagc cacgcacgcc 300

cctctcgttg cctctctcat gaatcacgag cagcaagctc tgcaccatcg cacgcgcgcg 360

accgagagag catgcagtcg cggtcaggtc agcgagacgg agacggcgta catcggcgag 420

cagtggccag tggaggaggc ggccacgcgt cccagccctg gcgcctggac caccatggcc 480

ggggcgggct cgttgccgtg gacccgtagg ggtctcctcc tgagtcctga ccagtgacag 540

ctgaccggtg cagtgcagtg cagtgcagtg ggtgggaaca gcgccgccga ccgcgcgggc 600

cagcctcctc catcggcggc ccatcccatc ccatgcgccc gtgccgctcg ctcgctcgac 660

cggctcgggt gagtgggtga ccacggcggc cgctggacgc tgagggcacg cggaccgtac 720

tacatgcatt gatgcatggc agagcacgac ggacgacgtc cctagctctc gccatggctc 780

tcaggagcta ccgtacgtaa acgtaacgtg tccgtcgcac ccgcttccat tccatccatc 840

cgtccatttt cctctggtcg ccgtcgccgt ccgatccagc gccaggcaag ttgctgccgt 900

gcgtccgtgc atgcatcatg catgtgcacc tggagcaagc cgccgatgag ctcgcaggct 960

agaatacaac aacaacgacg tcgacaagcg gccggacaac gagagcgcag gctaaagtac 1020

aagcggctgt tcactcacca agtgtcaact cgtaggcacg gccaccactg gcctactacc 1080

gtgcgttctc cctttctaaa agcaaggcta cgatgttcat aacggttaaa cttttcaaaa 1140

tattttaatt agttttacaa acaaaatagt aatgtttata tatctaaata tattttattt 1200

taaaacagaa ttaacaatgc tacattaata ttctatgaac aattgaacag tcatgcgttg 1260

gcacatgaaa aaagcgaacc accactcccg cgggctgcct tgtatcattg tatggtcctg 1320

gtttttaagc acacgaggga gggagggaga aaaggaaacc gtcgtccctt agatgaacat 1380

gaccattcat gcatgcattc atcatctcag gtgtcccatg catgtcacat agccagtcct 1440

gtaggctaca gtacgacctc agaccatctc caaacaggaa tcatatagga gagaatctct 1500

taaagaatac gataaaaaat agatacgggg gatgaattga atatacaaga tattgttaga 1560

gacagtctta tcatactcag ctactgcaat ctttgcaggc tacattgctg ctggttcggt 1620

caggtaggtg a 1631

<210> 2689
<211> 1553
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93279_G1, chr3:5878975..5880527, Cluster 15

<400> 2689
cgataaattg gtggtgatcc tcggcactgc ttctttttg cgctacacaa agcgaagtga 60

tataacactg acagacattg tgccgagtgt atctgattct gtgtctctag gtggtatagt 120

tttgttgctt actgttcaat aagttttttt atagcaaact gatcttgtat gccagtattt 180

tctatatact catcatcatg ctatatatat gtgaagtcat aaatgtgttg ttttcttttt 240

ctagattaaa ttgatgtgcc caaatatcta ctaacatgag agagtatcat ttctacaatt 300

aaggacgtac ctttgttaaa gtctaatata aattaatcca aaaaaaatac aaaaactcgc 360

gctcgtgaac agaatttaga caccgcaata aatctaacca gctgagatgc gctcaattca 420

tgatccgtgc tgtttttgg tgcatgcatg tgtttgcacc tgcacctccc atgtatttta 480

gaattttata attcgagcta caaaaccaag aagacgtcgt atgtccgtat cactgcaggg 540

gagctgtaat taaggcaacc ataaaactga acggcagtat actgtcaaag cttttatttc 600

gtgtgtgatc ctcactgaac cacgactaaa agaagtgatc caacaaccaa gaaataacgc 660

tgctgattga tgctcgtggg cgctatgcat gtatcgaggc gaccagtagt gcaaagcgca 720

gccagtcaac gctgatccga cacacgggcg gtacaaaacc accattgggc attgggaaaa 780

agaagaagaa caaggagaag caagctggga ggactccaac agggcaacac tgtcaacgat 840

cgacaaaggc agcccctcaa cgatcgacca gcgtgtgcat gcacatgtgc actgcttttc 900

attcaccccg gcccggcccg gccgcccccg gaaagctcga agcatccgag agacgatgac 960

agcggaatgg cgcgcgcgcg ggtcgtcgac ctagctagca gctagcagag acggctcgag 1020

ctcccatgca tgcatgtata tgcatgtcaa cggctacaaa agtttgggct ttctatgcgt 1080

cgtccttggc cttgaccggc ctgccccgct cgaccgatct ccatcgacgc tctagctgcc 1140

tctagctgga ctacttagtt atgagagaga cgatcgatgg atgtccggtg tgcgtgctgt 1200

agctacagac gctagagact agcgaccgag ggtgaacagc tagcgtgcgt ggcatggcat 1260

agcatggcat gcggccatgc ccattccaca gtgtgcgggc gtgggccggg gacgctagat 1320

ggagagcaca gctaggcaaa agggggtgtc gtcgcagccg cgtagtggat aggagccccc 1380

acggaaacaa gcagagagag agagagagag agcttgcatt gcatgcctcg cggatggacg 1440

tacgccacca ccagaccaga gcaaagctag ctttttgctt gccgcgtcca ctgcaaagaa 1500

gagagagcgt gcgaggggaa agcagccgag ggttattagg ctttcgtccg aaa 1553

<210> 2690
<211> 1759
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94184_G1, chr3:10462255..10464013, Cluster 15

<400> 2690
tctctgggga agtgtatctc cccgctatgt ctctcggacc aaatgtcatc ttgccttggt 60

caatatacag atacatggta tacccgatct tccgcatgta ttagccttga tcgatctaag 120

cctagcctct accatcgtca ttcttagtcc attggtacgt catgtatttt tcttaaccat 180

cttaattggt ggtcgtcaac cgtctctata ctccacatgt atgtacttac acaaccaaaa 240

cacatgctat ttacgcactc gcatttaaat cagcctcaaa ttaaactgga caaaaatata 300

attgtatcac gacaattgat cactcatctc atcgtacgta agtcaacgag tccgtcaaaa 360

aaaaacaaga ggatggagct acagcgagcg agtgaatgga tgacgagcca agttttacta 420

gtaggacgta gtactacgct acagcgccgg ccgggtaagt aaatggggag caattaattc 480

atcatcatca cctggactgc tggagggacg cgggtacaga attggccctg tcattctctc 540

aattcctcct cgctgtcagc gtcagctgca gacgagtagc cattcaacac agcacaggtg 600

gtggcgtaaa ggcctttgca gggccagacg gcagaggaca ggcagtaagc aacctgctag 660

tgctagctag gactaggagt ggtagtattt gtttgcatgg atcgcgcgca tgcagtctcc 720

gtctggccgg cgaatagatt cttcgtcccc gatcgatcaa gctcaattcc atgcgtgcat 780

agccgcttgc gttgttgcct ctgagtctct gactgactgg tatacccaat cctcttcatc 840

ccgtggaatg cgcgcaaggg aaaaaaaatg gatcgtcgga gctggaagcc ctggactcac 900

tggagttgct ataggagcga tcgaggcgag cgtcggacgc tgtaggagct gataaggatg 960

ggcgctggcg gcggcccctc ccctgtctgg cgcctgccgg gcggtggcga cccaccgcac 1020

cgcagcagca gcagcagcgc gccggcacgg tggggccgcc aggcgcccgc cacttccccc 1080

ggtgcccgct gcccccgttg cgacggacga cgcgatcgac aggcgcggca caagcgcgac 1140

caagaatgga ccggatccgt cgtcgtgctc gtgcctcccg gttcggcgct cgatcggcgg 1200

caggagcagg acgtgtggaa cggggagcgc cagccccgcg cgagaatcct gctagcgcta 1260

gcgattgccg tccgcaatta cgccaccgcg aaaaggccgg ggaaaaaaag gtcccggtcg 1320

cggtctcgtc cgatctgaac ccgatctccg accggtggtt atccggatgc ctgcctgcct 1380

gcctgcctga gcgtgtggct ttcgcctccg acaccgcgca acatgaagga aagcgacgcc 1440

gtccggccga cctgcgtgtg cgcagccgct gccgctaatc tctatatatc ccgtggccta 1500

ataacgggat gcctggcaag ggggggcacc gtgccgtgcc gtcgccgtcg tgggccgtgt 1560

ggctgtcgcg gcgccggtgc cacctgtacg gtgcagtgcc gcgggcgggc aggggcaggc 1620

agcctggtgg tggattcatt tcgtttcatt taacctttct gcccgcaaat acgcgtcccc 1680

ccccccctcc ccactgccgg tacccgctgt gttcgtccgg acacaagtta ctgctgccag 1740

gcgggcgagc agagcagca 1759

<210> 2691
<211> 2024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94189_G1, chr3:10465320..10467343, Cluster 15

<400> 2691
cacaagttgg cgccggccgg ccaccaatca tttcctccca gatgacaatc acagaggagg 60

ctactttact ttactttacg accactactg ctacacatga atgactggat ggatgctgaa 120

ttatgcatac tcctacatta ctattattgc tagacccagc ctggtccagt ccagctagcc 180

agccttgtgg agattctcca agatggcaga gagagagaga gagatgtgat gaaaagattt 240

ggtcacgttc gcctagggaa cagcactgca gcagctcagc tgtacgcgct ccattccacg 300

gtgctggccc tggcgtgctg cggcgcggcc agggccacca gctcgagcga gctgagctcg 360

aacggatcac agagacacag agaacagagg cagaggggcc accaggcagc cagccacgcc 420

acgtacgcgt acggacggga tcaagtgctc gcgtcgcgcg cgccccctcc gtccgtccct 480

ccgtccccat ccctgtcccc tgcaatgatc cggcgcggcg gctagcccag caggtagggg 540

cagcccgcag ccgccgcgag aaacgagagc cagagccagc caaacaacgt gggagctctg 600

ccacctttc acccccccgg cccggcgcgc gtggtcgtgg atggatcggt cggtcgagcg 660

ccaatgtagt agccgcttcg tcctgtcccg accggcgccg cggcgcggac tgacagcagg 720

catggcggct gcctgactga gtgcctggct gggaagtggg agcgggcggc tgtcgtctcg 780

tctaggcatg catgcagatg cagatcggat cgagctttgc ggttgctcgt gtccggattc 840

tgatgtcaac agcgccaaca gtgggaagtg gttagcgagc gaggggaaat tgtcgatctg 900

acgtcgttgg gacatcgaac atgcgtgccg catggcggga aagcagggga gaaaagtcgg 960

cggtcactcc ttgacactgc gctgctctct gtgtctgtct ctgctctggt ggtgagctcc 1020

tttaaggaaa acagcagatg cagctgttct gctgcagcgc ccagctgagt gtttatccag 1080

ttggagacga gactctagct actgaattgt tcgcctcgcc tcaggaatcc tgttcccttt 1140

gcatttcctg ttccctttgc attttccatt accatttcag caaccaaaag ccaccttcga 1200

gtctcggcct atcactggtt tcatttggta tggtttgaaa atcagcataa tgaatgtgct 1260

ctacatataa aaacgtaaaa aaggaacagt ctagataaca ctcaggaatc taagatctaa 1320

ctaactatcg ctattctctg actgttatac catgatccaa tattctactc tctctctctc 1380

cccgtttaca ataaatctac ttctaatgtt caagattttt atcccacagt aagtgcactt 1440

atggttcttg tcccagacat aaccagtaga ggtttagtta ttttttttagt tttaaaagta 1500

catacactac atgtcatgac acctttttgta ggggcacatg cgccattttt ttctatcact 1560

aatttgtgca aagacgctca tagaatatat tacgcttatt tttaggacgg atgaagtagt 1620

tttctctgtt atatgtctag taaatatttt cttgattgtt tttcaaaacg aaaaaaaata 1680

ctacaccata tttgtccatg tacatcctcc atgagggagt ataatgcaat cttataatca 1740

tcaattttgt gcgcttccgc tttctcctaa ttaactggtc gtgcccctgc tgtatatcgc 1800

caccatcgcc ctttcccctg ccgatgcata tcccacttcc atattgtctt tgtttccttc 1860

ctcttgaacc cttgttcgtt agcaagagga ttgtagaaga ttaaagtcct ttctatttaa 1920

tttttaacag aaagatattt aatcctttga gtctacttct aactaaacaa gtcttgattg 1980

tttttactat ttagggttgg ttgaaaagga gcgcaacaag taag 2024

<210> 2692
<211> 2442
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96446_G1, chr3:23018790..23021231, Cluster 15

<400> 2692
gacaagtctg gtttccctgg aaaatgtctc ggtttctttt ggccaacgcc gcgtcctctc 60

tgatgtgtcg ctggaactta aacctggaaa aattttgact ttacttgggc caaatggcgc 120

aggtaagtcg acactggtac gggtagtgct cgggctggta acacccgatg aaggggttat 180

caagcgcaac ggaaaactgc gcatcggcta tgtaccgcag aagctgtatc tcgacaccac 240

gttgccactg accgtaaacc gttttttacg cttacgccct ggtacacata aagaagatat 300

tttgcctgca ctgaaacgtg tccaggccgg gcacctgatt aacgcaccga tgcaaaagct 360

ctctggtggc gaaacgcagc gtgtactatt agcgcgagca ttgttaaatc gcccgcaatt 420

attagtgctg gatgaaccca ctcaaggcgt ggatgtaaat ggccaggtgg cgttatatga 480

ccttattgac caactgcgtc gtgaactgga ttgtggcgtt ttaatggttt ctcacgatct 540

gcatctggtg atggcaaaaa ccgatgaagt gctgtgcctg aatcaccaca tttgttgttc 600

cggcacaccg gaagttgttt ccctgcatcc ggagtttatt tcaatgtttg gtcctcgtgg 660

tgctgaacaa ctgggtatct atcgccatca tcataaccat cgtcacgatt tacagggacg 720

aattgttttg cgtcggggaa atgatcgctc atgattgaat tattatttcc cggttggtta 780

gccgggatca tgctcgcctg tgccgcgggt ccgctgggtt cgtttgtagt ctggcgtcgt 840

atgtcttatt tcggtgatac gctggctcat gcctcattac ttggcgtcgc gtttggtttg 900

ttgctggacg tgaatccatt ctatgcggtg attgccgtta cgctgctgct ggcgggcggt 960

ctggtatggc tggagaagcg tccacagctg gcgatcgaca cgttattagg gattatggcg 1020

cacagtgccc tgtcgctggg cctggtggtc gtgagtctga tgtctaatat tcgtgttgat 1080

ttgatggctt acctgttcgg tgatttgctg gcagtgacgc cagaagatct catctctatt 1140

gcgattggcg tggtcatcgt ggtggctatt ttgttctggc aatggcgcaa tttgctgtca 1200

atgacgataa gcccggatct ggcgtttgtt gatggtgtga aattacagcg agtgaaattg 1260

ttgttgatgc tggtgacggc attgacgatt ggtgtagcga tgaaatttgt cggtgcgttg 1320

attattactt cgttgctgat tattcctgct gctactgcgc gtcgctttgc ccgcacgccg 1380

gaacagatgg ctggtgtcgc tgttttggtg gggatggtgg cagtgactgg cggtttaacc 1440

ttttccgcgg tttacgatac gccggcgggt ccgtcggtgg tgctatgtgc ggcactgtta 1500

tttattctca gtatgatgaa aaagcaggcc agctaatcta tcgctgaaca catttgtcgg 1560

atgcggcgcg agcgccttat ccgacctacg gttcggtatc tctggtagtc ctggtaagac 1620

gcgaacagcg tcgcatcagg catattgcca gtgccggatg cggcgcgagc gaccaatccg 1680

acttacggca tttctggcgg cgttatgcca aagtgattcc acgcccgcgt cgtcgccata 1740

cgcccacgcg gtgtacgctg caaaaagcct tgctgaatca aataaggttc cagcacatcc 1800

tcaatggttt cacgttcttc gccaatggct gccgccaggt tatccagacc tacaggtcca 1860

ccaaagaact tatcgattac cgccagcaac aatttgcggt ccatataatc gaaaccttca 1920

gcatcgacat tcaacatatc cagcgcctga gcagcgatat ctgccgagat ggtgccatcg 1980

tgcttcactt cggcgaaatc acgcactcga cgcagcagac ggttggcaat gcgcggcgta 2040

ccgcgagcgc gacgagcaac ttccagcgcg ccgtcatcac tcatctcaag ccccataaag 2100

cgtgcgctgc gactgacgat atattgcaga tccggcacct gataaaactc cagacgttgc 2160

acaataccaa aacggtcgcg caacggtgat gtcagcgaac ctgcgcgcgt ggttgcacca 2220

atcagggtaa acggcggcaa atcaatttta atggagcgtg ccgccggacc ttcaccaatc 2280

atgatatcca gttggtagtc ttccattgcc gggtacagca cttcttcaac aactggcgat 2340

agacggtgga tctcatcaat aaacagcacg tcatgcggtt caaggttagt gagcatcgca 2400

gccaaatcgc ccgccttttc cagcaccgga ccagaagtcg tg 2442

<210> 2693
<211> 1689
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337001_G1, chr10:77188319..77190007, Cluster 16

<400> 2693
atagtatatg gctgtgctgc caacgctctg cgcttcacta actggctact actcgtacct 60

gatttgtatt tgtatttcct cctgcttaat tgcccggttg ccagtagctt gtgtgcatta 120

ttgaggcgcg gatcttctag ctaggtagct agggcatctg tccggtgcac tgcatagagc 180

tagagagttg gtagctggcc gtggggagtc atcctgatgt gcggtggctg tcatgtagta 240

gtagcactaa cattactagc tagcatcacc ggccgcgccg gtagtgatac caatatcaac 300

aagcaacaaa gcgagtatag cagaatgatc gatgcggaat gaatataatg cctctcgctc 360

atcactagct actagctaca gctgctcttc tgcctactgc tgcccagcta attacgaaga 420

agaagaagag ctcggcatcg gagatgtgtt ttttcaatca aggccggccg gctggctaga 480

gcgaccttgt tcgtcacgaa gaagagctgc gagactcgat cgtgagaaaa aataaagctt 540

ttgagtgcca tggcatatgc agcgcgcgtg aagggaggag ggcccgcggt caccggcggt 600

ggatgggatg cttgggttga ttcgatgcca tgccatgttc cgcacatgcg cggcgcatgt 660

cgtggcgtcg ggcgagagcg agatgccatg cttggaagct tcccttgtcc atcctggcag 720

cagagtggct ggcggcaccc aacccaacac cagacaaagc aacaacccgg ccgacccgag 780

aggcgcacca tcgcgcgcac cgcgccgaat ccatcccggc ccattccgtg cgcacaccag 840

acctgcagaa ggcagcagcg gcacgagcac gacggaccgt caccgccacc gccaacggta 900

atcggttagc tcggccgtcg cgccagccag ccgcaccgac accgcgacac gctcccgcgg 960

ccttcgagaa gggagacgcg cgagccgatc gtgcgggcgg gtcgggtcag gggcggcgct 1020

ttccgttagt ggttggcaac gtgttatcaa gagtatgtag gcctgccacc tttctctctc 1080

tttctctctc tctctcactg tgtgtttatt tttggcgcga gagggcagcc gggcagcaga 1140

ggtggactgc tcgtccgtga tcttcctcgt ccaagctact cctacatacc actgccctgc 1200

tggccacaat gtggtaaccg tgtgtgtgtg ctgtggccta ttgcaatcca cccacagcag 1260

cagcaagcta ggtgataagg tgaaacacat cgcatcgcgt cgtggtcgtg ggtaggctaa 1320

gctaacgggc aacatgtact tggcaacggt cggtgtggat gcctgatctc gacggaggtg 1380

acgtgttggc ggctgtatgt actcgtgccg cacacagttc gttttgggag agagagagag 1440

agggtgcatc gtctagagct actgcgcagc acaccgtctt cttcttcgtc tcttttgagc 1500

atgacgagtc atacataata agcttaatta tagcccggac cctccccccc ccccccccc 1560

ccctctctct gctcctagct agaagccacg tgtgattgga cagatagatt gcacgaggtg 1620

acgcacaaac ggtggttact gtgtcctcca tggtcgtgtc gtgtgtgtct agctgcaggg 1680

tcgttgcag 1689

<210> 2694
<211> 1704
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1125_G1, chr1:5652779..5654482, Cluster 16

<400> 2694
cacaatctat tatagttcaa cagagattgt ttgtccgtca ccggccccgc gatctctctt 60

taatttggag ccttttcttt ggcaatctcg aactgaactg acagcacaaa ggttatgtgt 120

gcgttgcaag tcgttttcgt ttggtggagg aaaggcggcg cacggcgaga gagatcgatc 180

ctgcagcatc ctacattcct actagcttgg cgtaagcggc aaaaaggaag ctgccttatg 240

tagctagcta ggcgaccaac agtgaagcct agctagcagc tttcgtctct ctatgtatat 300

ccatatatct cgaaagagta cacgtgagcg tgtgtgtgtg ttacagtaat taacagtaca 360

tgtgcatgtg taactagcta gatagcttac cggcagcggc agcactgtca tcagctcccc 420

ttgaaggaaa aggctgtttt gcctttcctt gtaaaagcta ccgcccaagt gtgtagcttg 480

agctatagcg acgccgcgtg agtgcttatg gttgttatat atgacagtac ttgtgagttg 540

tgacatgctc aaaaaataaa tgtcacacgc agtggctgcc gggggcacca gtgtggtgaa 600

tttggcttgg cggcaggcta gctagcttaa aacgaactag ctacactccg ctagtgtgat 660

gtcatgtgct tgtatataag agccagaaat gcatgcatgc atgcatgact gcctgattat 720

ctctactagc tttggctagc tagctagtgg atggaggggt gaacggcaag ggatggaaat 780

gaaatggcga atatgcatgg atgcaagtta actatcccaa agtaataaac aagccgtcag 840

tgagccgcga tcatagtatt gttttgtctg gtcgtcctac gtggcggaat aaggccggcg 900

cggcgatggc gtttggtgaa gcgaaaggga ccgcccgctg gcagcctggc tactggtcac 960

cccaaaaaaa aaaggagcgc caaaaaaggg taggtgatgt atataggata gggaagagat 1020

agataggtag agatacttgt ggcacactct taccactttt gatagtacac atgtgatgtg 1080

agtgagctgt gagcatcaag cttcttgtgt cgcgcgcgtt ccatctcttc ttccttcact 1140

cctcccctct ctcatgcaca ctcctgcctg ctcctcctcg cgctgtacat gcatgcatgc 1200

atggcctctc gatgattcca ggccatcatt cattgcccga tcacctccgc gcacttcact 1260

cctcccaccc tgccgttcca gggcatggag cgccatggtg ctgtgtgcgt ggctgcatgc 1320

atgcatgcct cacctcgaac ggggaagatc gatcgatcga gcatggcaat cagttgctag 1380

acgaccattg tgccgccatg ccaatgcttc attcatgcac gcacgcatgc gcgggtagct 1440

gactagctgg tcacatcgac gactgcagaa atatttattg taaaaaatga aaagttgctg 1500

cagtgctgct ggatatatat tgtaaaaaag ggaaaataaa aaacagaagg tagtgcgtga 1560

tattaatctt cttcatcttc gtcggcggcg gcggcagctt tagagaaaca agcttcgctg 1620

ctttggggct ttagtttcgt atagaagtgg catccgggtt taatgtccct ttagttttag 1680

gtctaacgtc taacactgct gact 1704

<210> 2695
<211> 1461
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118782_G1, chr3:165863059..165864519, Cluster 16

<400> 2695
aaggacggaa cgttcggcga cacgagcctg gcgagagaca cgacaccagc tggttggttc 60

gcacctcttt ccctgctgcg catgcgcatc attgagccac gctgcctttg gtttggaact 120

ccatgcacgc ccggtggcat gcatcgtcct attattcgga cgaacgaaaa atctttgaag 180

taactttgtt gtttaaacag ttacattaca tataaccaca accaccacgt gcgcgcgcgt 240

atatatgcat ggtcactggt tagcttcttt atcattttcc aatttccagt ccatcatgac 300

ctaaagatat atatacttgc gtgccgggct tccggcgcac gcacgtctcg atgcctctga 360

tgggcaaccg gccgccaagg ggaatttcca cgcggctggg cggtgcagaa aaagggcatc 420

taattaaaaa cagcagaagc agcagtgcac tgcataaaac attcagattc cctcactcta 480

gacttccgac tgacgcgtcg tgtggaggcc gcaggaaatt ctggccatcg gaatctgcat 540

gcctgcatct agagagagat agagggagag ggagagttgg gaagagcctg ccaggaaaca 600

ggcaggtggc ttcatgcatg caggttctcg cacgagcttg tagtgcacaa taatcggacg 660

atctattcct ggtcctgtac actctaggct ctagctgctt ccttgttgca gcggatggct 720

tgacaaattt tcctgccctg tccgctggat gaacaagaac agctccggcc ctccaacctt 780

ccatgactcc atgttgacca gacatgcatg tctcacgctc ggttaatgtt ccacggccca 840

ggagaataaa taaagcatgt ctcagcacag ggtatataat atactaccag tgtttgtccc 900

ggaaaggaat aaaggcgcaa ttcccatcag cccatgtagg aacaaagctt ggccccatcg 960

agcaacatcg accgggtgca tgtgtgcaat ggatcaaacg aggaatagaa agaatgaaac 1020

acggcattat attgcatgcc tcacaagtca caacgacgtc gcagccctat gccactgtgg 1080

tagtaataaa aagtatacag tataaaaatg tcgttacagg ccctggacac tgtccagcac 1140

tgccgacatg attgcaggca gatctttaat tagggcgcgt gtgaaattaa gcacaactcg 1200

tcccgtttgg aagcttaagc gcgaagtata ttcccaactt tgagtacaaa gtggacagtg 1260

tctttgttgt atggttgaga acggagaggg actcgatgcg atgagcacgt acgacgatag 1320

atagggcatc cccacagccg cctctcgagc caccactact actccatatc ttatttttac 1380

cgtcagttca caatcgccgt acttgacggc cgccgacgct tgagctcgat agctgagcgc 1440

tcacgctatt actcacttct a 1461

<210> 2696
<211> 3455
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119309_G1, chr3:169213181..169216635, Cluster 16

<400> 2696
tttgcaccta tttatatgcc ctgagagcta ttcatatgaa ctattaaatc tactaaggac 60

actgttgtct tttcctttcg tagtcttgtt gaccaagtca tgaggatttc cccttgctct 120

tgctaacttc gtcgtcatgc atcaactcca atgaaactaa gtttatagct tcgtctttac 180

aattgtgaag gctacacacc atttcgaaac gaaggtgttc ttaggtaatt accttattat 240

acctgaaaca gacttaggaa taaccggtaa gttagtgttt taatgacttt ggccaaagag 300

gaccccaata ggggcgacga ggcacgctgc agtgtgtgtg gcctacacat ccggccatgg 360

acggtcgtga ccgagtggga cggtggtcgc caaacccaac aagaaagatg gagggcggag 420

tcaccgaggg gaaatgagag gaatccggta gaccaaagga tccggaaaat aagagtcgta 480

ctttacgagt acacacacga tcgccgaatg gtttttaccc taacgtgcca cttattgtgt 540

agggctggcc aagagacacg gccggcgtgc caggccatgt ggcatgatgg gccaaaagtt 600

ggagaacgac ctagcctgcc aaacgctctc gtgctttttt gtttcggacc gtgctcagct 660

tggcccctac ggcacgaccc aaacttacag taccgtcccc tccctgcatc acgattgtct 720

tcgtccggtc ctgccgtccc atggcaaccg atactactcc cgaggagtga cgatcgatca 780

gcacgactgc tgacggttga tgtggaacta ggcaggttaa aaaaatgcca ggacgaggaa 840

acacgcaatg atccaacgac aggacagtgg acaggaagca tggtacagta gactagtaca 900

tgtcctgccc cggacacacg cgctcccatc atctccctcc cattcagctc caagattagc 960

aaacggccgg gttgatgtgg atagcaacct ggctgtgtgt gtacgagatt tgtttcctta 1020

ctactgctgc tgatgataac aacagtacca tgattagcgc gagcgatggc gcacccagcg 1080

gcagcctctc cacgaccacg acggcgacgg cgaccgaccg gccccgcggg acaccggagt 1140

tgtctctttg caggtacccg tacccagtag cggtactcat cacgctccta tctgatgttt 1200

ttaacccccc caggttttca cttcaccgct cgaaagcgtt gggtacttcc tatttctttc 1260

tttctttctt ctatcaccgc tccacgccac agggtaagta ctgctcacag cgccagcagg 1320

gtggcaggtg tgtgcagtcc atcctcgctg acactagcat tgatctttgt tttggaacgg 1380

agagagagag agagtcgtgg gtgatcccct gaccgatccg cagccggccg cacgtttgtg 1440

agtgcctgac gagacgcgtc gacggtgggt atggggtaca ccctttgcg taggcattgg 1500

tagccgtagc ccggtagtgt cccttggacg gagcgccgca ggcattagcc gatcccatcc 1560

atggtccatg gagagacaat ggatgatccg tcaccgaggt gtgtgtacag tggtcggtcg 1620

ccagccgacg accgcaaaga caacgggtga agcgacgggc gagcgtgcgt ggcaacagtg 1680

gcacgaagcg agtgaaactc cggtgggttg gagtttggac gacggcacgg cacgaggggc 1740

ggcaaaaggg atgttggcgc cgcgcggtgg gtgcgtgcgt ggccgtgggt cagctctgct 1800

ctgctcagca ggcagcagct agcagaaagc tgatggatgg agcagcccag ccggggcccg 1860

gcggccggct gcgcgagcga gcgagcgaga cgtgtgaggg cggccgcgcg caggcacagg 1920

cacaggcaca ggcgcgtggc cagaccaggc ctcgtgggcg acgccgcgcg cggcaggagc 1980

agaggcaggc aggccggcca aagcattcgc atttaacgcg cgaccaccac cgggcacagg 2040

gccgtcgtcg accgcccgcc gatgctcggt accttctccc ctcctctgtc gctgtgcctg 2100

caccctgacc ctgaccctga ccctgcagct gcttgtatac gtacgtacgc ccgcactgtg 2160

ctgcgcgctg gtcgctgcca ccgtcgatcg atcgtcatca ttgccgccgg ccggccggcc 2220

gatcgcgagc catcattgcg cccgtctcgg cgcgtccccc tcaccctccc tggtgctggt 2280

gcttctcgca gcaacaacaa caatctgcct gctgttccgt ccattccgtc tctctgcccg 2340

cgcccgcgcg cgtcgatcca tcccaattga attcaactga atgaatgcga gtaggaagcg 2400

gagagggagg aggagtactt gtacagccac ggccccagcc cctagctagc caacagtgcg 2460

cttccctgtg cccctcgggc tctgcatcat tcccgtgtgt gcttgtctct gtccgtgcga 2520

gagaaaaaaa acatgccagc gtacgtctcc atctgaccat ctcccgcctg cctctctctc 2580

atcacgccac ttcaacttat tattagtagc atctctagga ggagtactat ttaatacaca 2640

agcactgtcg aaaatatcgc tgtgctggtt tctcttacgc attatataag gagaatggat 2700

ttggcaaatg tttattgcag tatcagccaa gaagcaaaac cagagagaga gagagacagg 2760

agggagagag acagaggggc agggcttgtg cactgcgcgc gcgtctgcta ctgcgactgg 2820

actgcgagag agagagagag agagagagta gggggctggg ctgggctggc tagacaatgc 2880

gcctgcgcag cgcgactgtg ctggggcatt gcccgtatgc tgctgtgcta tgaatgcagg 2940

gatgtatgtg cattgaatcc cccctgcagg acacgacaat tttgggcggt atgctgcccc 3000

tgcctgcccc ggccttctca cattcactgg atgatgggtg gcgttgccat tgccagtagc 3060

tggcgtctcg cctcccatgt tccccctttgc tgtcgttgtg tcatggcaca gtgtcactgc 3120

ctggaaaatg ccttgtgcct tgtcaaacag ctccccggtg ggtcagccga ccttggtcaa 3180

cgacagaatg cgcgtacaga gggagagaga gagagagaga gagacgcccg gccggccgga 3240

aactaaccag tggttccgca cagcaacagc tagctacccc gctgccgtga tacatgtgcc 3300

gtgccatgcc tcgatcgatg ctatctctat acctcgtgca acgcatcatc gcgcctgaac 3360

taggcaactg gaatattata tatatatata ttcgtgcatc gagcaagcaa gcgggggggc 3420

gcgcatgctt gcttggctac aattataagc tagta 3455

<210> 2697
<211> 1926
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119632_G1, chr3:171029040..171030965, Cluster 16

<400> 2697
gtaaatatac atgctcaatc atatctcaca ccgaaaactc tcgagatatg catcgcccaa 60

gaccaagaat agtgctcatg actttagcgt ggtctaaaat tgggtcgcta aattttgcga 120

gaacaacaca gatgttgtcg tagaattgac ttttctctta accatggata ccacccggac 180

ctcaatttct aggtttgacc tctctctctt ttttttcctc gtctgagtca tcccccatct 240

atcgtattcg tatctctcta gctccaccca aactagtgga ggggtcatac tgctgactta 300

tcacctacta gctagcagta gcaggtgctg acaactatgg tagtgctatt tgaatgggca 360

aattaggcgg cggatccaca cgtatatttt ctttcccgat aagaggacga tgtatcctac 420

tagtagtact aggggccggt actatggagt ggacgtagca gccaatccac gactgggagt 480

tgatggcaat cgcatgagcc gaatcaatta ctaaatcggg agatcgtggg caggaggcgg 540

cgtatgactt ttccaagaac tttttttttc ctgatttctg atgatccaag acatgattaa 600

aggttgcttg tactacatcc catcggtgtg cagagggcaa atagacagag agggagagag 660

gaaagcggac gagtgatggt tgtcactgtc tgtgtctata ggcaacaaca aaacaacaag 720

gacgaaactg agctgccgct cgctcagtca gaatggtgcg agtgcaagtg gaaggcagcc 780

ccgtctctgt tgcaacttgg gtcatggtgg tgggggcctg ggctgcggcc cagccgagtc 840

catttctgtt tgtccttgtt gcgcaccacg acacgtgcct tcacgtgggc ttaaagtgga 900

ggctgggctc tgtgacagtg acggccgaag gagttagtag ccctcaacta ctgcttagtg 960

tttgtttctc accactctct ctctatctct tccaaagtac aacgccacac gtactgttga 1020

cagattagaa gggctgcaat cgcaggtcaa tcatgtctgc ttaggccagg caccatcttt 1080

taatttcacg tctgacgaag gacggggtcc cttgcactgc tgttcatggt ctgtccttgg 1140

atcccaaaac acatttgacg cccggaattt cgggtgacca tctcaattta actcctgttg 1200

ttcgcctgta ggacataccc agcgcaccaa acggtggctg gctaggctag ctacctaggt 1260

gactgttgaa ggcttctgca ccagattgcc tcatgacaac ccctgcttac tttactaatg 1320

ggtaagatca gcgagtgtgt gtggcattag cagtctttgt cgtcgtgcag gtgcagttga 1380

tgcttatttt ggtttggcct gtgagccatc atgcttcgac ggggaagagt gccgcgccgg 1440

tgtctccgct tgctaatgat gttgcaaacg atattcgttg atgattcgtt gagtaattct 1500

tagagcagct gcagtccatg ttgaggacgc tcgctcagca aaactcggtc aacgggtcaa 1560

acctttggc ttttctaaaa tctcccagat tatataacag tataacacta gttcaaaatt 1620

ttctagatta tataatccga acatattata atcctaaaca aacaccctac atatgtatac 1680

ccataataca ttatatattt gaacattaag cagagtaatg atctatcctt tttatagact 1740

tctcaatgaa gtataaaaga tttctttatc tactctgaac cagttcatta agaagaccaa 1800

agaagcagaa actaatatac cattaagacc ttggcgacga ctagttatgt gtattcacag 1860

atgaatgatg gaaaattgta tgctgttaga tccttacact aaccatttta tcgtcattca 1920

gattgt 1926

<210> 2698
<211> 2480
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119847_G1, chr3:172380449..172382928, Cluster 16

<400> 2698
gagcaaaaaa aaaaaaaatc ccagccgacg atattcgagt caaagatccg ctgatccagc 60

agcccccgtg acagagtggc cccctattcc aatgtcctct tcgacgcagc aaacgaacaa 120

accgaaagct gccggaccca gcagcaggcc caagcgccca ccatggaacg aaacttgtct 180

tgtctcgctc gcccacgtga cgtgagcact ccgcgcgctg cagaacgatg atttgatgat 240

gatcctgtct gatcacataa gctcttcttc ctcttttgta cacggccaga gaatgctgat 300

ctgtgcctgc atgtctgatt ggattggatc ggatcgcgac gtgatgaagt ggtagtagga 360

gcggccgcta gagggttcca ttcgcaggac cagccgacca ggctatgaac aaatgcttca 420

gccaccctgc tgccttggaa tgcaagtgca ttgcactgct gcgctattat tctgttaaac 480

aacaaggatc actcattaca tcagctcacg ccgtgcacag tgcgacgaca catacaaagt 540

gcctcatctg tcgtcctttc agagttgatc aaacagaacc taaaataata ttgtggtccg 600

gccgtgcgtc aaatgactag gcacagaatg attgtcaagt ggtcgggctg gctgttgatg 660

attagtatag cagctttgca gagggatctg tccatccatc tcaacagtaa cactgaccag 720

aaaaacaaaa atttccctct aattctgcga aacctatata ttattacggc actgctccat 780

gcatgattat tgcactagtg tcgtcgtgac tcgcgagaac ttttggctcg tgctggagct 840

cgacatgaac tgacgcctga cggccggggg ggaatctaat agtgtattat gtagcctcac 900

cgcaccgtgt ctgggctatc atcacctgtc gctgcagccg ctagaatcgt gtggagccca 960

agggctagga ggctaggaca acgatggtgt ccgctcagaa atctgctcgg tttcttcttt 1020

tcttttagaa caccggcaag cgctgcaaga cgaggtgcgc gcgcgcgcgc gtgtggacac 1080

cgatcgagtg caggcgtggt cggatggcga gcgtacagtg tgcgctccag aaatctgcag 1140

gctcggagaa ataaatgtgc ctcgcccagt agacggtctt tatcatttgc cgtgcagtcg 1200

gcgtctcagc atctaaccgg aatatcgatc ggatcattcg ttagttgtgg ccatccttag 1260

aagtcccaca agaggagttg agttgcccaa cgggctccgc agctccgctt cgattcagcg 1320

cttcttttag ttactaaatt atcaaataca aaaactttat atttaataat ttaaagacta 1380

aaataaacct actaaaatat agtgcctaca aaccgaacat cgtctaacac tacggttggc 1440

tcgtcgggca ccatgcatgt cgaagatgtg ggctataggt agcttagcta caacatcaac 1500

ttttttttc gatcaaagat acgtctagct tgactgtgac ttgcatttct ttgacagtat 1560

acatatgagt atatgaccga gtgtttttgt cactgcacgg cagatcgtag gaatactcct 1620

aacttttttt acatacgaac aaaaggagag tctgcactct gcagaagggg agccaaacgg 1680

acaaaacgag cgtctttggg cggcaagcga caatgaattg tttagaataa aaaaaaacca 1740

gatgtgagaa ttcgtgattg aaacaagtta acggccggtc tccatgtcca tgatggccac 1800

tccttaaaat tattgctcct ggtccgtgca tgcattattg tcgtggacgg tcgatgagtc 1860

acattcagat tccagtaatg acacattatt ttgacgtcaa tgatttggtc tctgccatgc 1920

catgcactct cacccaatgc aaagtggcgt cgggtcgatg gattggcgat acacttcctg 1980

ccgtgtgtag gacgatatat agccggatcc ctcacaagtc acaaagcaaa aagtgcgcta 2040

gccccacgtg gccaacgggc aatggcgtca gatactcaga tgagactgca cacctgcagc 2100

gcagacaggg aaatgaatga ggaagggagg accaggactc aagaggccac gagagcacac 2160

gacggcccgc ggaagaaagc atcggcgctt ggtcctccac tagaccacta gactagagca 2220

ctaccagcag acatgtgctt tgaagtctcg atcagcggcc gccttcctcc ccttgccgtt 2280

gtttgccctt gcgcggcggc gatccacttc tcgtggctat tgatgccctt tttttcacgg 2340

ggcaaggtgt cgatctctcg gccgacgctc ttcttccggt gcaggtggta tcctcctccg 2400

tatcattggc ggaagacgag ctgtatccga tgagtcgacg tcatcaatca gtgtgcaatg 2460

tactatctcc tgcaccacat 2480

<210> 2699
<211> 1571
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120459_G1, chr3:176326049..176327619, Cluster 16

<400> 2699
ggcttcgtcg ggccagggag ccatatggaa agaagcgaaa gggtgacctc aatgtgcgca 60

gcgggcggac gctgcaatgc aatttttcat caggcaacaa tgcgagattg cagattcgca 120

cttgcaagcc tagccggggt aggcagtcag agccaggcag gaaggcaaag gcgtggtagc 180

tagagcctgc ggttaattcc aatgcagggg cacaggccgc aggcacataa ttcccctcga 240

agcgcacacg cgcgagacgt gcacttcatc aataatgtcg tagatcgtgt cgcagatcca 300

tctcctcctt cctttcgctt acattacatt tatgcatgca tggccgtgcc tcccctaacc 360

tgacgtcgat cgacaatact cccacatgca tgaaacatac aggttcggtg ttctcctgcc 420

ggggcacttg atggcattcg gttgagcact gttccagctt tctctggaga tacgcccacg 480

aacaggtcag tgagggacgg gggaaagcga gagcgagcgg acgagacacg cagaaagcta 540

gctacagaag ccaccacgga cagacagggc aggtactata gttagcagcg cgccgatggc 600

ttcatggcgc cgaggggcaa gggcccgtgg ccgtgactgc aggtgcactt cttccaccac 660

gtacggtcct gtgatggcgt acgtcttggt gccggactgc cggccggcgg atcaaacgcg 720

tggctcgtct gcccggaaat gacgtatcag ccggcccggc cggacctggg aggatcttgg 780

acgcagttcg tttgctcctc cctcgtttca ttcgtctatg ttcctctgca ctatctctgg 840

tcttttttt gctatggtac atttactggt cgtaccgcat atctatggaa atctacctga 900

taaatactgt tagaatctac agtacctcca gcttggtttt gtctgcttgt gtgctaaaac 960

aaaaaaaaac gaactgcata taataacata tcactagact agctagtgca ctactttcat 1020

tcaaaaagaa aaaagtagac tagtgcacta cctgttatta gtataatcat catggaccgc 1080

ttctcaaagc catttttcgt tcatctggta catccatata agaacgtact acaagaacta 1140

ttaagaaatc tacttactgc ctataaacac tgcacatagc tacatgcaat tagcgagtag 1200

cagccagtcg cctcaacaga gaagctatgc acgagctgga tcagctcttg tcctcacatg 1260

accagttagt caactccaac agctagccct gcagacgatc ctgccgtgtg tgcccagaat 1320

ttactgcgca cgtacgtaag gtttaaccac tgtccagtca caccagccat atatgcaaat 1380

gcttacatct gttgcccctc tctgacatga tcctccacag gatccaatct ggacgtgctg 1440

cacacatcat cacaatacac atgtagaggt actgtatctc tctgcactct ctctctctct 1500

ctagtccttt ttacgctgtg tgtgtatcta tctcagcctc agctcgtttt accagcatgc 1560

tgcgtgcacg c 1571

<210> 2700
<211> 2865
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120463_G1, chr3:176358281..176361145, Cluster 16

<400> 2700
taaagctatt ttcagcaatt tatccatttt tatattcata tttaaacttt actctatata 60

tagtatattg tatagtataa acagtgtttt aaatgatcat acgagttttt ttgataagca 120

catcgtaagc atccgcagaa tccttaccta ctttttttccc gctactagtg tcgacctttt 180

cttaaaaaaa aaggaagata gcctgttagc gttagataac gatggctacg taattgcgtc 240

gtcagcatta ttgatggtcc agcaggtcgt aggggcggta gggctcgtag gatgcacgga 300

cgagagctaa taggggaaca tgtatgtatc aaggatttaa gacaagttcg tttgtcttgt 360

ttccttgtgg aggacgctca ggcggagcaa tcagatcggg ctcgggcgcg accgcggtga 420

aagctacaac tcgtctctct tccgtagtac tacttcagtt tgtgcaagaa atgctgcttg 480

aaaactgttt ccggaaagtt gttgggctaa cagtaaaaac tcggtaaaac gagcttatgc 540

aagcgtggct gttgctcgat cagggacgaa gaaaggagac gttttttttt taccgacaga 600

gcacagggca caaaaaaagg cagcagcggc atcacagacg cccaaatcta ccgaaaagat 660

tggcacacag tccatatgaa agctagcctt gtcttgctca ctagcagtag tagcagagtc 720

ggccagggac ggcaacccgc caagctttct tgtaccttcg ttgcacctcc ccagcctatt 780

cgccatcatt gcttcttgca tggtttgcga gcagtgcctg ctgtgctgtg ctggtagccc 840

ccacgccatc agagcaccac tgtccatgac agtgggagac cacagtggac ggagcaaagc 900

aactgtttga atttttctct cttgattcca aatattatct atgcatgcca agagatttac 960

cgaagaaagc gacgtatggg ggtatctcgg ggggggggggg ggggggggtg cagagtagca 1020

aggtctactc gtaccaagct ttgctccttg gctccttgca gagggtgtcg agatcaatcc 1080

gtatccatgt cgtaattttc aaaaaaaaaa aggtctgctc cctgcacccc ttattactat 1140

ataaaacgat atgatagtag cactatatta gttttttttc aatggaataa gaccatccct 1200

ctcgctctat tacaaaaata gggattacat gactggggtg tcgaacatcc aatcagtcaa 1260

aaatatatta tttatcttat tgttgtttgt catgttttcc tatcaaaatt tgatggtgtt 1320

ttacgtacaa ccttcacatg ctctttctct cgatagttct taacaggtat tattcagaag 1380

gtctatatac gatgaagaat aatgtcagct tcgattcaaa cggtctgtag ctagctaggt 1440

aagcttcgtt ggtccgctaa tgtttttgct gttttagcct ttgtcattca aatccccttg 1500

cagtgtcaat acgaacggag ggagtatact ataccgggcc aaaagaaaat aacccggaag 1560

tgtggcagtg attactgctg cagctcgaga tatacagcat actcgatcgt acagtagtag 1620

gcactagcac tagacagagt gcagaagagt tccatgtgaa ccagagtgct gtggccactg 1680

ggccagctag cccacttgta ctgttcggct tgcacggtgc gagcacagta gatatataca 1740

tatatacctg cgcgctgtgc cgctccggcg ctgcacccgc cgcctgagac ctcagcggct 1800

gatgagccga gcgcgcagtc tagagtaggg acggcacggc tcatgatgac ggtgcccttg 1860

gcttggctcc aggctccgct tccccccgcc gagtcgtcga ccctttgccg agcggactgc 1920

ggcaggccgt gagcctcgca ggctctcgcc cgccccgccc cgcccagcca tgccttttc 1980

gacgcttcgg ccatctgtac ctgcgtgcct ggtcctgatc cgggcagacc actgcggcgg 2040

tgcatggatg tggatgcccg ctcgatctct attcttggtt ttgggagcag atcatgatca 2100

aaacgaaagg tcagtctttc ttttttttc ccctttgcc tcggggcaag tgtggaggta 2160

cgtcttaaat ttcaggtggc ggagaggtaa tggcggccgg tatagtgcag tgtaaaaagc 2220

catgcacgag tgacaggttg tagtagtgtg gggactgggg atgaggatgc agaatagttt 2280

cagcatttca ggtgatgatg atggactcag gactggcgac tgcagcagcc tgcagggagt 2340

tcaaggaccg atatgggctg ggtggtggac tggtggtggt ggtccgtggg ctacgagctc 2400

ggtccaagtt ggcccatcca tggtcgtctc ctctaggctg gcggttcgct atgctgtagc 2460

ctgtagtatg ggcatggatg gaggaaggaa ggtttcaggt gatccatgac agccacacgg 2520

cgactccata gtccagtcca gacaggcagg gcgcacgagc cgaagcggac cggagcgcac 2580

acggccagta gtataagcgt actacgctac aaaggccttt cgatttttcg tatatacatt 2640

gcatggtaca aacaggccca acccacggtc gcttcgatct gccctctatt ccagagcctt 2700

gccgtttgtc gatctcttct catcttctgc cgtagcacat cagcttcttg gtcagctcgc 2760

cactcgtggt cctctagcct gttgctctat tcattcgctt caatcggcgg ctagcggttt 2820

ggaagatcca acttgtaaaa gccactcttt ccaacaggct aaaaa 2865

<210> 2701
<211> 1700
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120464_G1, chr3:176361222..176362921, Cluster 16

<400> 2701
taaatcacac acacacacac acagaggaac gaactacggg catttgtgca ctttcagccg 60

atatactgtg tgtgctacgt agtcccattc tgtttcctag tcctagaact aggacaatca 120

tctgttcgat ttcatttttc agatagatac agtcggcgag tgtgacacac gaggcgacca 180

gagtggcggt ggtggactag caggcgacct aatgtggagt acgcgcgcac cgtaccggcg 240

gcagcgtgca cctccgtcac catacgacga cattgactgc cgggggtgag gtgaccggcc 300

gagcccgaga acaccaccag acctggaaca gctcaccgcc gtattcatat gggcctgcga 360

cgccatggca acaaccgcca ttcatggaca cttaaaactc gatttctctc taggcactat 420

acggcattga agcccttcct ttaatcacca ggcgctcagc agctggaatt ttaggaggcg 480

gatttaaagg acgagccgag tagtggttgt ggttggttgg cgctccgtcc ggtccgtcgt 540

cgctggactg cacttcactt cgcttcacgc gcctgcctag ctaaatgctt caaccatgac 600

catgcacgca gtagtactac tacgcggggc tgagctgagc ttggactgga tcactggatc 660

catccatcca cgctactcct agctcgctgc agctgcacgg agtacagagc ctggccatgg 720

cccatggacg acaaagcggc gggagcgagt ggtcgcctgc tcgtcgggtc attttcagac 780

gggcggggga gtgagccgat accactggac cgctcgctct ctgaaatcaa acactacgta 840

ctagtagtta ggaaggagtg ccatgaatcc caatgcgaca attcgtgctg ctgctacggt 900

cgtccagctg tgccgtgtct ttggacgcaa gtgatttcga cgggtctcgg ccatcccatg 960

ggtgatgggc cggcaggagc ccggagagtg tctctgtgtc ggtaagtaca gcgggtacgt 1020

tccagtgcca aattgtttgg cgaaggacgg ccggccttaa tatttccgcg tggtgtggtg 1080

caggtgcagg cgctggacat ggccattaga gggagaagcc agcggaagct gatctgccga 1140

gcagaggaga ggagagccaa gcggggcgga gggagagcag ctgtgctgtg cctgtgcgtt 1200

ggcgcgctcg gaattgcaac agcaggggg gggcattgaa gcgaagattt aaatcgcccg 1260

gctgacaccg cccccgcccc atccccctcg cggcagcaaa actgtctcca attactcggg 1320

catttatacg gattaaaagc caattaatcg gcaataggcc tccctttcaa tgaccctaac 1380

cacccagcat ctccccttct cggcacttgt gattcgaggg cttcgttctc gctgtcgcag 1440

acgaatcact ttccggggca caagggagcc agctggacag ctgcacccgg gggctgctgc 1500

tttgtaaaaa aactgttttg ataatagtta tgatgatatt ttttagacta tttaaaccgc 1560

gatctaacat aacttttttg gtttataatt agtgttttgc atttgtatac taaataatat 1620

agtttaagat actttgtctc caaacaaaat attgcttgga gtgatttaaa aaaattatgc 1680

ttatgccatg atatttttaa 1700

<210> 2702
<211> 2609
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120714_G1, chr3:178044816..178047424, Cluster 16

<400> 2702
cgcgcgacca accgaggtcc agcttccatc tttctggatg gcgtgcgatg cgatgcgaat 60

aatgcgatgc aaactgcgca aggaaatcaa acgagcgcgc ctccttgatg aagagtgagc 120

tggtacagtg gtgtacttac tattcgacag tggccaagcg cgtgtggaca aacattcgtg 180

tggcgccgac gccgacgccg acccctcgcg ccattcacgt gcgggcgccg ccgctcgagc 240

gcgtgcagca gcgacgcgac ggggccggcg cgccatgatg attgggcaac atggacgcgc 300

gccgatccgc ccgggcgagc ccatccggtt ccccgccacg ataccggaag tgctatcgcg 360

cgcggattcg gtgcccgatg gtcatggatg cgtgaggtgg acggatagac tcgcgtcgcg 420

gcccgcccgc ccgcgctggt cccgatcggg cgaaacagag acgctctgcc tggccaccgg 480

cccaccgcat gggctccgtc tccgtctccg tgcggtgatc ccgccgtgta gccccccgcc 540

cgctcctgcg acgcgtgcgg tgccagccac cctgccgact actatcgcag gtcgcagccc 600

actggtggta ctggtaccag tagcatggac acggaacctt ggacccatac cactgttgct 660

cgcgaaagcg agcgtacggg cgaggtgagc cagccaagcg gcccataata atcatgtcat 720

gtggcgctga taattagggc agggggggggg ggatcgagtt cggccatgca tgatggccat 780

ggattctgcc gctcagccat cccattctcg atgggttgct tgcttgcttg cccgatctcc 840

ttcttcttct tcttcaagct gggtggggtt gggtcgagaa caaaaaaaaa tatatgcttt 900

ttgattgagt tttcaccgtg cttttcggtt ggaaaagaga gcgcgcgagg gaggaggata 960

tcatcatctt ttgccaaaag cagcggcgtt aaggtttttt ttgcaaacat ggaatggaaa 1020

agtggggtgt gggggttcaa aagcacgcgc ttgtcctttt ggagaaagca agcgcccatg 1080

agtccgcttt gttgaagttt tcgattgcat gtagttcctt ccttcggttt gctttcctca 1140

gtgagtagta gtactctact cgctccgttc acgtcagaat gtagttaggg ttacgtgggg 1200

ttgaagtcta gtggcacagt ggaaggtgta ctagctctac ctggacatga tcagggtaac 1260

agtgccccgt catttccaat tggaggcgcc gtaccacgtt gagcccgact aggcgggcat 1320

cgaatgaaga gggatctgag ctgtgaagag tgatcacgac ggcgatgctg atcatgatgg 1380

ttggcctcgg ccaatccgac tccaaccccg gggaggtgcg tgcgtggtgg ctggcggtgg 1440

ggcctcgttg gaacttgcga tgctgcgtcc tgacgtggac cagcgcagca tcggttccct 1500

cgcgtccacg ccaaacacag tgttcccgtc tcgcgatgga tggatgatgg tcttccttcc 1560

tagctatagc gactaccgga tccagaaaac acatcccgtt atctaccttg cacaaagaaa 1620

atttagacaa aagagatagc ttcaatagat atagttttct aattcttagt taagaaaaaa 1680

aatcaattca tccctcaatt ccataaacaa atggaagagc aactcatccc cgctcgtgta 1740

gctagcagcg gagctagcaa agcaaccata ccatatccat atggtaggtg ctgggagggg 1800

tccaatgatg tgagcatagg cactgtatgt aatctcagtg ttgtcgagcg ccgagaaaca 1860

gggtgaaaga taaaaaggcc atatgctcgt ttaatcatta ttacatatct taaaagatta 1920

taatgttata tttataatta aatgattatg taatcaattc ttcacatata agaggttgta 1980

tttatttttt ctaatcgttt actgattcgt atggatattg tctgtccgta ttcaaatttg 2040

atctgcctaa taggggtaag atgtgatcta tatctaagtt cgggtactta atgttcgatt 2100

catatccgta ttcttaaagt tgtatattta agatatcgat ttctattata ttcaaatttt 2160

atccaatgca acttgataat atctgtatcg gatcaaatcc aaagagaaaa cgtgaaaaca 2220

aataatattc aattcgatta cacccctact gactcgccgt cagaccaaca ccccacaaaa 2280

gatatcatgt caatctcatc ttttagacca tctacaacca ttttctccat atttctctct 2340

ctatctatac tttctattat attttactac atcttaaaag atactcctcc acatacaagg 2400

cgtctccaac cattttacct atctagttct ttctatatac attatagctc aatcatctaa 2460

caattttcac ctgtttttga aagttacgga actttaaaaa gttaatatca caaagaaata 2520

aattaattga agaatgaggt gattaaagcc ccaatgcatt agggaaggtg cctctctcat 2580

ctaaaatagg gagcatcatg gagagaacc 2609

<210> 2703
<211> 1757
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120789_G1, chr3:178317381..178319137, Cluster 16

<220>
<221> modified_base
<222> (1138)..(1138)
<223> a, c, g, or t

<220>

<221> misc_feature
<222> (1138)..(1237)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1139)..(1139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1140)..(1140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1141)..(1141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1142)..(1142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1143)..(1143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1144)..(1144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1145)..(1145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1146)..(1146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1147)..(1147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1148)..(1148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1149)..(1149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1150)..(1150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1151)..(1151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1152)..(1152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1153)..(1153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1154)..(1154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1155)..(1155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1156)..(1156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1157)..(1157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1158)..(1158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1159)..(1159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1160)..(1160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1161)..(1161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1162)..(1162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1163)..(1163)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1164)..(1164)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1165)..(1165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1166)..(1166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1167)..(1167)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1168)..(1168)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1169)..(1169)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1170)..(1170)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1171)..(1171)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1172)..(1172)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1173)..(1173)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1174)..(1174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1175)..(1175)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1176)..(1176)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1177)..(1177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1178)..(1178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1179)..(1179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1180)..(1180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1181)..(1181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1182)..(1182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1183)..(1183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1184)..(1184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1185)..(1185)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1186)..(1186)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1187)..(1187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1188)..(1188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1189)..(1189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1190)..(1190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1191)..(1191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1192)..(1192)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1193)..(1193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1194)..(1194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1195)..(1195)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1196)..(1196)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1197)..(1197)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1198)..(1198)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1199)..(1199)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1200)..(1200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1201)..(1201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1202)..(1202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1203)..(1203)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1204)..(1204)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1205)..(1205)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1206)..(1206)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1207)..(1207)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1208)..(1208)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1209)..(1209)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1210)..(1210)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1211)..(1211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1212)..(1212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1213)..(1213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1214)..(1214)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1215)..(1215)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1216)..(1216)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1217)..(1217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1218)..(1218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1219)..(1219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1220)..(1220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1221)..(1221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1222)..(1222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1223)..(1223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1224)..(1224)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1225)..(1225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1226)..(1226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1227)..(1227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1228)..(1228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1229)..(1229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1230)..(1230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1231)..(1231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1232)..(1232)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1233)..(1233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1234)..(1234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1235)..(1235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1236)..(1236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1237)..(1237)
<223> a, c, g, or t

<400> 2703
gaaatgacat agtagcttat tagttgggag cggcgccgag catatcgcta tccgtctggc 60

caccctgcat tgggaattac cggcgctcac ggtcagagag aacagtccat accagccgtg 120

ccaagccata ttctgaagtc aaagggcgtc gccgtatcgg tcgtcgaact gcatcgccgt 180

gccgcccaac tagctatagc tcctgattta ttggtcagcc aaacccaaat cgttggtcac 240

tggagctcag aaaattaggg cgtccagttg atcgatcgga gctgggcgcg cgtgcagagt 300

atagatggcc cggtggcgtg gtgcgtccat cacttcgtcg tgatcgagaa tcgttggtgg 360

gttttgtgga ggacaaggga gaacggacat ggggacgcag tgcaagacct ctctcagaat 420

gcttagacca gatcccaggt tgttgtgcgc gcggggataa aagaatcgcg agtgatcgaa 480

gtgaggaggc cgaatctgtt tttggacgaa cacgtcggga caacaggcct tccgccatgc 540

gcattgtcta ggccactact tgttgtttac tactcatttt catttgcatt gaccatattc 600

atctgactgt attgactgta catatttttt tgaaagattt gactgtacat attgacccag 660

aactgattgt cctgaccagg ttaacgcagg cgtacgtata tattccagga cttccttacg 720

cttgcgaaat ctactggggc tgtggggcag gaattgagaa gtaattatta ttgccaccgg 780

atgcatgcat ggatcttatt attatgatct ctcagggtat atatatccca cccacatgag 840

gcagccataa tgatccatac ttactactat aagcccgtgc atttaagctc cacaaattcc 900

aatctgcttt actttttgat gatgccctgt cggagacaaa gtagtcgtag ctaatcaagc 960

aactaacaca catctgtctc gggcactctc tcctgtgttg aaaatggtac acacataaag 1020

ttccgtcgtc gtcataaaac atagtatatt tcatcgatga agctttttat attatctgtc 1080

tttactgata cttatatcac accagcttaa taaaacgaat caagctgatt catcaaannn 1140

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1200

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnttt gtataaactg atatttattt 1260

cacaccagct taatttacga tcataaaatt tgtatggaaa gtgaaattaa actagcctga 1320

caaatcattc aaaaccatgg ccatgatagt tgtttatccc ccccccccccc ccccccccccc 1380

ccaaattaaa acagctttac ccggatgagc cggttcgtca tgcccgcatg cacgggcacg 1440

agccttgaac acacgcacac ctgtgcatga taaaaagggt ctctccatgc atgcacgtca 1500

atcacttttg ccacgaaaag acgcacacgt aaacgattcg gcgagcccga tccagaccgg 1560

aggagaaacc aatcatggcc cccgtcgcgt ccacacccaa tcgaaatccg ttcgtcacgc 1620

gagacaggat tgcgcgcgat cgagttagta tgtaatataa tcctcggctc gccggcacat 1680

tagcaacaat cacgacgacg acgacgtctt tggagctgga ccacacgctg aggcctgagg 1740

ccggccgggg cgatcga 1757

<210> 2704
<211> 3426
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123895_G1, chr3:194467933..194471358, Cluster 16

<400> 2704
tatatatact acgtacgtgc agtggtattt tattagctgg acacctgctg attcaacggc 60

ggcgtgctta gtagatgagt agatggctac cattgattag gttatcccgt ctgatcagac 120

cctaatgcac gcgtagcttg acttggtggg gagggctgtc ggcgacattc attcttccct 180

tgtggggcgc gcggatcggt cgagtacgtc tggttttgac cctgatcgag cattattttc 240

agcgacatgc agtgagagtt gatttcgggg cagttgagcg agacgggcgc tgcaaatagt 300

aaataaataa ataaatgctc atgcatgcat gtgtgtgtga gtgatttcga tgagctcgaa 360

gcccgggaac gaagtcgccg tagaatcgta gtagtacgta cgtactgtag ttgacagggt 420

gtattactat cttgtttttg gtagcagatc caagggcttg cttcatctct ttctctacga 480

cgacgacgac gacgacgact gatcagctag ctggcgttgc ttctattaag ctgtactcaa 540

ttaaccaggt cgattaccat gcattatact atatatgtat gatgctagct gcctagtttt 600

tcaccacaaa ggtcatggct gggtccgaca cagccctagt gggattagtt attggagcca 660

gtgttacatg aaacagcgac atgcatgatg gtaatgttgt caggcgtgac tctgcatatg 720

ttatgtatat gtacgctttt gtttgcacag acaaggaaag accccatagt atgtatgttt 780

tacttgtcga caggggagga tcaattcaaa acgcgtatat aatcgtctct tttggaactt 840

agtggtgggt tgtttctaag aggtagcaga cagatcgagc tagctctgct tggttagttg 900

ctggactttc agtaaactgg agcagcgcac ggctagctcc atttgattat atttgtagca 960

tagcacgcac catctcagct tatagagaga gatgccggtg gactattatg ccccccggtc 1020

gacactactc ctgattctcg agcgggagag cgcatgcatg catgtgtagc ctagcctcct 1080

ctctagtaaa gtagatgaag tccgcgcgac gcgacgcaac ccgacccgta gacgggcata 1140

gctacttgct acttgtgtag gccatgttgg ggctgcatgc ggaccgaacc caacaggccc 1200

acgagaaagg aggccgaccg aacgaccgaa cccgcgtcgc tcactccatc ccatgcatgc 1260

ccggccggcc tctgctccgc cgagctgtat atgtaggtag gtagccacgc gcgacgcgac 1320

gatgcccggc cgcgcgctac actacacggc tacgctagct agctcgtcga tccagcacac 1380

cgaccgaccg gttcatcgat cacggcgtca cccgttgttg ttcatatcca cccgtgcatc 1440

cccccacccc ccccccccccc ccggccgtgc gcaacgtacc gacggatcga tggccgcgcg 1500

tggacgcatg gcgtgggtcg ccggcatccc cggcctggag agcgacgccg acgcggtcga 1560

ccagccgctt ccttgggcac acgcttttcg gcgcgcggcc ggcgagatct cgacacgcac 1620

gcgaggctcc aacggaacac ggtcgtgtac gtgttaggtg taacagtggg ttggtgaccg 1680

tgatccttcc ttcctgctgc ccgattgacc gcgcactcga gatctcatct aatgcgccgt 1740

caaatcctga gacttttcga gctccggctg atgaagctac ggcggcctac tacgagccga 1800

aaagcctgag acggagcgtg gagcgggagg ggacagcacg gctctgtgtc catccgaccc 1860

gatcgaccga gggacaccag ctgccagcgg gatggcacgc gaacgaccat ctcgtcctgt 1920

accagtacca ctccgcttct agttgtatgc ctacttattg gctctgtgct ccgcgtgtca 1980

tctgacgaca agattggtcc aacacgagtc aatggactgt tcccaggagt cgaagctgtc 2040

ctggtgtggg tggtgacaat gacttggccc tgactcccga gcgagcgagc gagtgatcgg 2100

ccacacgaca ccgccggctg catcggtcgg tgtcatctcg gttgttttcg ccatcacacg 2160

agagacacat gctccggtag agaaacctaa tcaaaagtta tatccaccag gaaatcgcac 2220

acgacgacgt acatgcatat ctttctttcg tctgctattc ataaaacctt tttttcttcc 2280

ttttttttta acgacaggac ttcacgaggt cgtctcacat gccctgagac gcgacggtct 2340

ccagcttcat tcaggtcagg tccgggccat cgtttctgtt cgcacaaact ccgttctcgt 2400

actgccagcc gatcagggaa ccgtgccttg accatccggg attgactcga aactctgctc 2460

caatttgcgc cctggacacg cgacatcgaa gcccggaaac accaatcagc acgaacgatc 2520

tgtcgacgac tcggagatgg acggcctatc tgttcgccgg aacaaaatat atactagtag 2580

taaacagacg gctctttcat ttggtccaaa accgccggct gctcttcgat tccgtgagcc 2640

ggcggccggc ttcttcgtgt gggaaggcaa agctgcgttt cttgccttcc gttcattgat 2700

tcattccatg ctgaatcctg attgtctgcg agctctgctg catcggccga cttcttcggc 2760

ttcaagctgt acctccagcg cagcgtggcg tggcctacct ccaatctact gatgggacgt 2820

catcatgtgc tcctgacctg cccttccttg gtcgccaatt ctcttccgct caaagccacg 2880

gcgaggcgtg cccgtcagct gtgttgactt cgcacggagg aggaacggca gccagttggc 2940

attggcatct tttatcgcta cccggcgagg cgatgccgtg ctgcgctcac cactgtttct 3000

ggcctcacaa ccaagagttg cgtgctgtgt gctctgctca ccactgtttc tgcgctgctg 3060

gttgctgtga ttgtgttttg ccatcacaaa cttcccctcc tcttcctctc aaacgggaag 3120

cctggcaact gcagttagct atcttcacag gattctctcc gtcacgtaat ttcctcacgc 3180

gctacctctc gtggaacaca ggtaccagaa cgggcgccag aacagcaatg cgcatccgtt 3240

acggtgcatg gcccagagag atgagtccta acacggagca accgttccga actgaccaag 3300

ccacctcagg tcagctgtta acaacacgac gagcatacca ggacatgcat acgcgaccac 3360

aaagggcgag cccggtcttg ccgagagagg agctacataa tactaggctc tgttcgttta 3420

gtccag 3426

<210> 2705
<211> 2348
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123995_G1, chr3:194889859..194892206, Cluster 16

<400> 2705
tcctgcaaag agaggccgca gaaaccttcc aaacaattgc ccccccctgtc gccatggaca 60

agacagtcag gcacacagca catctggtct ctgcaaagaa caaagcaagc gcgcgcgtat 120

acgcatgctg gagagagcca agctgcaagc ccggccggcc accacatgga ggaggacaga 180

gcgcttggac tgctggtgga tgtggaccac tgcctcgaaa ttaaccacgg ccagcaccca 240

gcagggccag ccaaacagga gatatggatg gacggagatc cgaggctccc gtcccgtggc 300

tggacgaccg acgacggacg tgtggggccg gctgacgatg agtagtagta gaccagctcg 360

accggtcggg ccggacggcg gcggtggagg tggggcgcct gggctggcgg gaagccttta 420

tttgcccttg cccggtgaaa attaaaagcg accccatatg catatgcata gccctgtagc 480

tagctagcta gctagggttt gcatgcatgc gacggatcgg tcggtcttat gtacccgccc 540

atatctttcg ctcgctttgg tatggaccaa tatatactac ccttgttcac atgatcaaaa 600

atggtccccc cctgcacacg catacacata cactgagaac tagagaaggg ggagagagaa 660

gatatataga tgctacgcta gctaacttgc tgctgctgct gcataccctg ccccgtcaat 720

caagctatat atttggtccg tgcatcacca tcattccgtg cgtgatcgtc cctttaatta 780

cttttggtta agttaacagc tcttggagtt tggagtagta gaggctacta ctagctgcta 840

gtgctagcga gagtagtagc aagcaacaag ttgccatcag gcaggccccg cgcggccggc 900

gacccccttgc tagcttgccc gtgctgcaaa aagctgggcc tagctaagcc atgctgattg 960

ctgcgtgaga tcgcgctata tatgctttga tcagctgttg catgcagagc cgagcagctc 1020

gataattgca gtgcatgctg ctcctacggt cctactacta tatagatggt tttagtatac 1080

gacgatgagg cattgttgtc agctatagta ccatctacta ggagcctagg ctgtttacga 1140

cgctgcaggt cgtacacagt cgatggaaca gtgtgtcgtc gtttggcagt gtcgtctttg 1200

agcggctagt agcctgtcca catgctatct tatttcaaac tggatttgtt ttgagagggg 1260

atcagtgtag ggaagtggcc taccctcctg caggtgcata gttaggtggc ttgcacagtt 1320

gtcagttgca ctgcactgtt tcggcatgga ataggttttt tctttagctt cttcgcatcg 1380

ctgaaatcat tccttctaca tttaatttcg tgtgccccta atagtactag tgtgtaggag 1440

tagtataccg tacgtacatg acaacttcta gctaggcggc tgtctgtata tgtacgctag 1500

ctcgggccaa tcgcctaccg acgactgtac gcagtacagt agtagaaaac tagaaatagt 1560

ggccctggga tggcaaaagc atgaaggtaa gcggcagggt agctactact ggcctactgg 1620

cgacgtgcta tgcaacgtca ttctgcacgc acgcacattc gcttcgccga aacgccggaa 1680

gccgttggcg gccgttttcg ccccgactac cgtgctcttg tctccatgta tacatacata 1740

tgcacgtcgc acgtcacaac gtcaggtcgc tctctaactt tgtgctactc tctctctctc 1800

tctctctctg catgcgagac aaagactggt cctcatcatc gtgtgagctg acctttgcac 1860

tgtaacgtca cgtgcctata tatacaaacc cggcaaacat ggcagtcaaa actccaaacg 1920

tctgcaacca ccagaagcca cgtttgttac gcacgttgca cggtcagcgc ggtactatcc 1980

ccaccaacgc acgatatacc cgtgagcatc caccttggat ctataccata tgttcggtgc 2040

atacggactc ggtctggtgc accagaccgc caaagagcct cggtttggga atttcacaaa 2100

catgtttcgg tgtgccagta gaccgatcca gtgatgccag agaggtccaa gttagactct 2160

tttgagctta actccttcca tatgattttg gcatttctgg taattaagct tccctacgac 2220

tcaaaacaaa catagttagt actggattaa ctaagtctgg gaaacttaca tctttcacat 2280

attttcagta tagttcatgt tttggcccaa accaagtcta gaaaacactt ttttctacaa 2340

aaggagtt 2348

<210> 2706
<211> 1858
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125375_G1, chr3:202559415..202561272, Cluster 16

<400> 2706
gtttccgcgt gctgatcaca aggactatag caataaatat acattcagca ttcggttctt 60

aacccgtgct gatcacagca aacctgtacg cccagcgttt ggccatcccg gcgcgcgcca 120

cacattccaa tcccaccacc acgttacagc agcagcatgg tggcaggcag gtgactgcag 180

tgcaccagca tcatctgcag tgctaggtca gctgcctgtg gtcacgaaga gcagtgcact 240

gcatacaccg aatggagcct aggtaggtag ctcctgtagg acagagtgag gaggctagca 300

ccaccgacga cggacaagaa aaaaaaaaaa cagaacaaaa ctactgcccc tccctactaa 360

atgcaatctg actgaacaac tcacatgtcg cgcgcatacc cttgcttgct ttcccatgca 420

acagcccagt caggtaacgc ctggacctgg actgggcgtt agaaaccggc ccgtccacgc 480

cgtcacatga cctgtctcca tcggcgacct cagatgtccg cagaccgcag gtcgctcaag 540

ctgcactgca tgcgccccag gtccagctgt gttcgtgcgc tggcattgac ttcgatctgc 600

caagtattgg ggcaagtagt ataccaagga tctatgagaa ctgaaaagaa aatactaggc 660

aaaagaattc tcaaatgaca tcctaacaag atgatgacag agtgtcgtcc agaatctgga 720

agcccaccgg tcggcacagt cctgtacacg cgcacgtaat catcgagcta cagctaccgt 780

atagcgtgga aagaaacgtc tctttggtcg ctgagactaa ttataaagtg aagttaaaaa 840

taagagttgt gatagaaaat gagatgagag agctcttaat aaaaacagcc caacgacgcg 900

ccacgtgcgc aagggtagta gtactgcgta gtactccgtg atgcccatcc gtcgcgtacc 960

cgttcccatc cattagtcca acgacccacg gtcgggccga aagagatgcg tcgaacgact 1020

cggcacgcta cgcatcgatg cccttcagac ttttctccac gcaaataaat accgagcacg 1080

tgtcgagact cctcgcatga ggcggttgtc catgtcgact ttttacgacg cgcaagtgca 1140

attgaaacgg ccacccgcgt attccttttc ctgacgtgca ggtgcaggta ccagccacta 1200

gcttgaagaa atgcagcact gtactgtaca ccagctggtc accagcgccc tcctccgcga 1260

gaaatcgagg gcaacgagta ttaagggcct gttggtttag ggtgattaaa ctttaataat 1320

ggttaaacta tagtttactt ttagttccta aaaatacaaa ccgggtaact gaaaacccca 1380

actaaagtct actcctccac tcaccaagga ctatagtagc gttttttgc tgcatttggt 1440

atcatgtttt cccccgtgcg ccctattaaa tagggggtcg tgcggtcttg atgcatggta 1500

aataatgtta tttagtcaga tttagttact gaaactaaat agagtaattt agtgactaaa 1560

ttttaatcaa taaagtttaa tcaggtgact gaaaaaatta aacagggcct taattcgacc 1620

gcgctgtgcc gctaatagca gcataagaag tagatctatc cattgataat ggtcttagga 1680

catatttgat tcctttagtc caaaaactaa agtttagtct ctatccggtt tgatttcagg 1740

actacaaata ttcagaatgt attaaatgac tcataacaag ggccaaaata ttaattagca 1800

ttctcatacc attaatgcaa ctgaaataaa tgaagatcaa aagttggaat taatataa 1858

<210> 2707
<211> 2212
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126368_G1, chr3:207245509..207247720, Cluster 16

<400> 2707
tcgaaaatgt gaacccccc ccgtgttcga tgtttacaac cacgggccac gaagaaaccg 60

cgccacaccc tcgcgcgtgc cttctgctgc cctggccggg cacccaccag taccaccgac 120

caatattgcc atgctcccca ggtcgcatcg ttctggaacc cgggctccct cgacgtctcg 180

tggttaaccg ctcgtgtggt ctattcactg gccttgcaag gtagtaagaa tacagggatg 240

gatgtggacg tgattttggt cggcacgcag agtaactgtc ggcgtggcta tagttagctc 300

gcagcaatgt gagaccgcac gggagaaatg tagcgatgct cattggccat tattggcgcc 360

gctaacgacg gcaccgtcac cagcagggag tgggatttag ctagatctag cgcggccgta 420

acgggggagg agagaatcag ctggagttcg aatccgtcca ggcagagcga cggggaacca 480

gaacgagctg ggctggcttt ggcaagtggg tagggccact gtttcgtttt gagagagagc 540

aactgagcaa cactagctag gcgtaggacg attagcgcct gtagtagtag cagtagtaac 600

ggctgctctg gatgtgccac tggggcctag agaccagacc agcaaccgca acaactgcca 660

aggccgccct ggatgcaacg gctgctgctg cgcgccggcg gcatgcccat cacccccctcg 720

ggttccccgt acatgccctg catccttttg cgtgcctccc ggttcgacaa ccgtgcgtgc 780

gtgcattcgc gcgctgcgtt gaagactagc ctaggagggt gttctggtcc gtgcaggtca 840

taccgtcgtc tcggcccccc aacaggaagc ttcttttcag aagccttgtt gtttggaacg 900

ccatttggat agtctagtaa taggctacaa gagcatagca ctcctactct cctagccact 960

agagttgcgg cctctttccg agtcccagtc tcccagatga cgggggggag accacgacgc 1020

acgaccaggc caccagggag catagcgaga ccaatgagca atgctcgctg cccggcgtgc 1080

cgtgtctgca cgccgaggac tggagcaggg tatagctcag taggcatctg aggtggcatc 1140

ctatcctggc catatatttt acaagctatt acacgcacag tgttagttgc tgcattagtt 1200

taaaatacta tatgagatag gcacagcttg gctctgctcc gctccaggga atatagttct 1260

ggacgaatat ggtggcacat ccaaatcaag cagcgcaggc ggcgacatca tcaggcaaga 1320

gcacatgacc gaagaacgca actacagtct acagctcaca aaccgcccgc tcggaccttg 1380

tttggtaaag agataaaatc ccaccatgca tataatgaat gtatttaatg agtcttgatt 1440

agatgaatct atatctcaca ctcaatccta tagtgagata aaatccatac ctttttttta 1500

aaaaaaatcc aaacccttag attataatct atgataacaa aaatatttga gtaggcttga 1560

attattttga gacatgagtt gtgcatggat ttaattccaa tttattagag ttggattggt 1620

gtaaaccaac aaggtctcgt tgacgcagcc actgaaggat taaccgaata acccatggtg 1680

atgcaacaga aaagaataag atgtttgaaa accctatcgt tttattgcaa gtggtggagc 1740

catgtgacag acatcgatct atgctatgaa tgatgtcggc gagcgcgagg ctcccttcct 1800

actacctctg ttgtaccacc tgacgtatgt agggtttcta cggttaaatt taatatggct 1860

ttgacccatg atttatttaa ttataaatca aataaatatc gccatattaa atactataat 1920

acattacagt tttaatcccg tataggaatt taatttctta ttaattttac ttaaatagat 1980

gggctgtgcg tgccatatta aatactataa tacattaagt tagtaagtgg ctggttgatg 2040

gaggtgtaca gaacaaacct ataacgtacg tggtaatatg aatttattat ggcgattact 2100

ccatcttcca gaaacaccca ctgttacctc cttgtccttc gaaggcgcct caccgatgaa 2160

aagaaactct cttctctgtt gagttgcata tccgttgagt tgcatatgag tc 2212

<210> 2708
<211> 1801
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127259_G1, chr3:211753229..211755029, Cluster 16

<400> 2708
gaagtatttt caacaaattt tatgcgttca gaacaaattg cggggtgata tggagtttga 60

agtatccaca aaggaaagtc aagatctaac atcgtcgtca tctcagactt cggattcgtt 120

ttgtttatga ttataatctg ttcagattat ataatctaac ttattttgaa ttaagtgtta 180

gtttaaaata aattagatta tataattcag tcagatctaa acatacaccc atggtttatg 240

cctaatttat agctctgcat ctgtatatgg ttcggctcgg ttacacaaac cggcacagcc 300

cgtgaaacca gtccacggac caaccgtttt gaaggcatca ccaccagcaa aagcctcgta 360

tatgcggttg cctccacggc aaatcaggac aaggaaacat tatccctagt tagctataca 420

cattataaca tcgctatatc ccaacatcat aaacttaaaa taatccaccg accgtgtata 480

ctctagacac agatgtggcg tgacaggtct gctcccccgc atcttccgat gcaaaccttg 540

cacaggtccg ccgcgtataa aaaaagtccc gagcaaacag agccgtgctc gctcgcctcg 600

cctgccagca cagcagagcg cgcagacgca taccggcgga ccggccggcc gtgccgctcg 660

cgttgccgaa gcccggcctc ggacgacgac gccgcgctcc gtgtctcggg cacaagacct 720

tcgcctgtga ctccgagtaa gctctctcgt ctcgtcaccc ccacctttca gatatgcatg 780

cttgtgcttt tgagcagaga aaagaaactt gcttcgcatg ggggccgtag acctttttcc 840

cgcgcccgcg cttactttcg ctcgctccgc aaaacgccaa agctggcccg gcagcacagc 900

agccagcagc cagcaggcat cctccgctcg gcggtcgctg atgatgaaac tgcaaaactg 960

ttgctttttt ttttgcattg atgatggacg acgtgaaatc aggttcggct aggccgcagt 1020

tggcgcgttg ctagacgaca aaaaatgtca cgtactactc agtcacaggt agtactagta 1080

gtgaacgata gagagcagaa atacagcacg agtattgtgt gctggcctgg cagtagtaca 1140

tacagcactc acaggactga ctgtaagtag gagctcgcag ctgcagctgc agtttcactt 1200

ttttcagaaa ggaaggcggc cctctccaaa cactacgcta cgcacgctag acgcgccacc 1260

gatttctgtg tacaccagtg gaaggagacg gcctcggcaa gcgtggcgtc cctactagga 1320

gatctagccg ctgcctgcag tctgcagcga gacccgcgcc gcaacgctgg caggtgccgt 1380

ccctgccgcc gaggattcct caagcaagaa ggtctttagc cgcattgctg attcactctc 1440

tgttcgttca ggtcgagcgc aacgaaccga caagatgtgt gcagctgcaa cctctccctt 1500

tttcttcagc catcgaacag ctcatcacgt agtactagtg ctccgttgcg ggggcagggc 1560

agtggacctc tacgtacgct agcttcgtta ttacaaatac gaataatggg gcctgctttg 1620

cttaaccgcc ggacgcgcgc acttgcacat cgagggagcg tgcggctttg gtcgccatct 1680

atagcccgca gtcgccatca tcgtgtcttc cccccgaggt tgttgtggtc atctaaacct 1740

gctgcaatga tttggggacg gagacggcac ggcaggttca ggttggcgct tgagcagtac 1800

t 1801

<210> 2709
<211> 2149
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127268_G1, chr3:211767898..211770046, Cluster 16

<400> 2709
tatagtcgtt ctgatagaag gttagatcta gaaaagcggt ctgaccgact ttacagttta 60

tactataaaa ttggcgtggt cggatctaaa gggcagcttg ccgatcttgc taggttaatg 120

tgtcagcctg gcttactcca ggctgggtgt caagcttctc gtctctttca attttacatg 180

tcaacattaa tagaacttgc tagatagtca tcaactaagc ggttccctta gtttcaaatt 240

ataagatatt ctaacctttt ttaaagttaa agcatctaaa atttaatcaa aatatgaaaa 300

aaccatcaaa cggttatagt acaaaatata attaataaag aatctaatga cacctaaatt 360

tagttaaact tgagatgctt tgactctttg ataaagttac actcacaata gtttacaaca 420

gagaaagtat aacctagcta ctagcgtctg caatgcacat tatcatgttt gcgttctagc 480

tagatcgcac aagtgccgcc tccagtgggg acagtagcca gcgcacgccg gcgcgcgtct 540

agtgcggtgg gctcatgtgc gcgtcgcctg ctagcaacgg gtgccgagtg atctccatcg 600

gtcgctcggg gaggggggaca aaggggggcgc gcgcgtccca ctcggtgttc ctcgccaccg 660

cctggcaccg cgcgcgacgc cgacgcgcgc gctgtgcggc gcgcacggtg gcacagcaca 720

gcacagcaca ggacacgggt ggttttaggt ggttggagcg agcgccagtg gtcaccagtg 780

cgcggggcgt cgacagacga taggcggagt gggctccgcg ctggcggtgc catgccgtgc 840

gcgcgcgggc aaacgcggcc gcggccgtgc caccacttgg ttcggcggat cgtgacggcg 900

gaaggtgtcg ggccagcttt cggtcccggc cggccgccga accgaatgct ggatttcgat 960

gtcaaatagt actggggacg ttcaccgtgt gagagactga aattggcgca ggaaatctca 1020

tccatttgta ctgcagagag ctgaaactga tcgcggttcc aaaatccaaa ggtgctctaa 1080

gcttccgctt acagttcgta ctccatccgt agccatcgcg cgcgtgcctc gagccttcga 1140

agccatcatg ctttgctcct gttctatccc cttccaaaac agatagatgg cgcacggttc 1200

aaccgacagg tggtcctgga tgatcgtgat tcagttcctt ctgtctgctg tgtgtttttt 1260

ctctctctcc gcctttcggc catttttatc atttaggctt cgtttggctc caaggaagga 1320

caaaccaacc aagaaacaaa ctgatttacg aaacatgatt gacaaagcca agatcacaaa 1380

gttctaaagg ccgcaattaa aagaattgtt tgaataacaa caacatcaca agtaatgtgg 1440

atctgaataa agcactgatg ctaaaatgac tgctccatat attgacgcat ttttgtagat 1500

gcacgtctaa cctttcaact catcttggtc taagagtacc atgcaggagc ctacactttc 1560

tgtaaggaca aaatactcat atgagatggc acaaagaaga gataaatgaa actgacaagc 1620

tagaatgcgc tcgattgtag cagtaaattg gtcttagtac tgatttgcat aacaaggctg 1680

cacatggata aagaaaatga tattgatctt ctcaccaagt taatattacc atccgatttt 1740

actttcccag gctcattgtt gcatggctgg gagaactatt agtttgtcta cattcagatt 1800

ccctgtccaa tgaatttgcc tttcccaggc tcattattga attggaccga accaaactct 1860

cacaacttgc acaggcaacc aaaataaaat gctagtgatg agtcagggat agaggccgcc 1920

gtgtgggtct agttccatgg gtagcaggga tcggactctg tctccgtcgg cccctctcta 1980

tccaaacgca tgtaccgggt tcttgtcgac accacttttg caagacagaa ccatctctcc 2040

tgcatctttg ccaacatcta ctagttcctt gctgtgcaat tcaccttctc ttcttccctt 2100

tatggctagt ttgcatccat gatttctaat gacgaatgga ggagagtga 2149

<210> 2710
<211> 3282
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127930_G1, chr3:214833350..214836631, Cluster 16

<400> 2710
taactctaat aagttgacac aatgacacgt gggcctgaag agctatgatc attggcttgg 60

tcccatgtaa tccagacaag gttgcacacg ttcagcaacc attatttcag cgatttaccg 120

ggactcgggt cggggctgtc tcgagcacat gctactacgc tagctagacc ctgatacaat 180

gatgaactgt gttcctgtga gtagttttgc tagctacgtg ctcgctgacg ggcaagaggc 240

aatgatttgt ggaggtacat ctaggcacct agccattccg ctgtgcctat catatactag 300

cttgaaggcg tgcacgtcct caaattcagt agcatgttga aaaacacgtt aaaagtaggg 360

gccacacaca caccatgcat gccacaccca gctgcatgtg acatcgatcg gcatgcagtg 420

cggcatgcac gttggcacga tcttgcttgc catgtgttcc cttgcccctc tctctctctg 480

tctgtctttg accggaaaca gtgtggcaaa agaacccgcg gatcagagaa tcagatttaa 540

gtaccgcgtg cacattgaac agtagtactt acgagagtgt gctgcaaacg caaaaaggat 600

atatatgcac ctccttttgc caacatttcc tcttccatag tatgtggtct atgggtagag 660

tgtagacaac gttaaaaggt cctggaagag acatccggca aggttcattt ccttcccttt 720

ttcgttcaaa aaggctaccc atgcgagtat acacctggat aataccatgc ggcggcatgc 780

tttccatcct caccagcagg cgtcccccca cgacccgtcc agccgtcagc agggtctttc 840

agagagagag agagagagag agagagagac cggcggtcat gccggacgcc cggaccgaac 900

tccttaattg tcgacaggat gggagaggag agacgatggt ccgtacgtga ccggttacat 960

ccatccatgc atgggatggg aggatgatgt gtaggtagga gactaggagt actcctctcc 1020

tcctacaccg gccgtttgcg agagagagag tcgtccggcc ggcgggggca ttcactcgag 1080

tgggggcaag cgcacgcata tgcatgcaga cgcggtggtg gtgcaccggc tcgtcgccgc 1140

atgcctcagg gccagcagct ggcagaagca gcagtgagtg tgagggtagc acttcatgaa 1200

agcaaacagg cagcacggaa gcgaggtcgc caccacacca gcactggcgg gcgcggcata 1260

cacatgcagg gtgcatgcaa aggaagagga gaagcacgca ggccgcgcat gcaggacggt 1320

aattgcagag agagcagcga gcagagcaaa gcaagccgag atgatggtac gtacggtacg 1380

ggaaccgtgg gctgggggg gcacgtacag aaaccgcaaa cagacagcgg gtagcgcgac 1440

aacacatgca gcagcatgga ctgacggacg gggcgttgct tcgctgcacc tgcacctgcc 1500

tgtgcgcccg cagcattgcg ttgcgtcgct gcaggcggcg gagcgcgaca gcgcctgacc 1560

ggtcggtgga gtcgtcgtga gagccgacca cggccagagg cacctgcact actacttgtg 1620

catgctagcg tcattggtag ccgcctttcc gctccaatat ttgccgcgtg caaggcggtg 1680

ccgcgcgcgt gggatgcaat ccaaaccctg caggcgcgcg cgggagggtc actagctcgt 1740

cacctgatag tagcgctaag aacattgccc atgcactgat gagtgatgag tgctgctcgc 1800

tgccgggtgc cggccggcta tacaatgccc tactatttac gtgcgtcgta ccatgtcctt 1860

ccttttcgag ggcaggagtc tacgagagtc caacttttac gaatttttcg ggacatttgc 1920

attgggcccg taagattctt cttctctgca tcctgaacgc aatgctgata tatatgtatg 1980

gtcatggaca gaatgctgtc ttccaggaaa tacacaaata cggctgtctc tgaaagatgg 2040

catatgtctc gtacgtcaaa gttttgtagg gagagttgag ttgcacgctg ctgcatgtct 2100

aacagtctaa gacgatgcgc tcagctccta ctgctacaaa cacatacagc gacaagctag 2160

caaacaatgg cgctagctat ttggcaaatg gccgccgccc attattgact gcagtagata 2220

aatcattgcc atatgcgtga ttcgtgtatg gctccatcat ttctctagct gggacgacta 2280

gttctttcaa aaatttcagc tgggactagt agttagctat atatatatat agcttgctct 2340

tgtcaagttt ttagtaagta cttgaggtac tcgcgcacca ctgtttaaag atgcttaaag 2400

aagctataag ctgcagatgc aaacagagac agaatcttag actgcgcgcg catgcaaaag 2460

ccttgctcct ttctagggga tcagacggct ggacacgatg tggattctga gccaccgctc 2520

ccggcccagc agctgcaggc tagcctagcc cgggggcaac gaaaaaaaag ggccccggcc 2580

ggccgcgcgg tgtgcagtgc atggccacca ccacaccagg gggaggggga gccgggaggg 2640

gccagccaga gccaggggca ggggcagcag caaaagaaga caagcgacat gattcgctgc 2700

gtacgccagc cgcgacaaag cgcgcctctc atctgtcccc tccgtccgcc gctgccggct 2760

gccccggcgc gcgcgtgacg atcgtgaact ccaccacgcc cgcgcgcgct ccctcgctcg 2820

ggtcgtccgt ccagtccagc ccagcgcgca ggggcagggt acgtgcctgt actcatctct 2880

agcctctctc tctctctctc ctctccacac ggcatactcc tcctttccgt aaactttaca 2940

ctgtgctgcg cctgcgctta ttatgcacgc cacacaagag agagacgagc tagagctaga 3000

gagcgccata ccagtaccac taccaccaca tgacacggca gaacagaacc gcgggggaat 3060

gccgggatgg gatgatgatg cgacgacgga tagacagacc cgaccaccgc ccacggtgtg 3120

atgtgatgct aatggtaatg gacgatggcg cggggcaggc agcagctagc gcctagcgga 3180

agatctcacg gcccggggaa tccgctcgct cgctgttgag ttgagtggct cgcaccgcta 3240

tcatttcttg cagggtcctc cggttcgtac gtacttgacg ca 3282

<210> 2711
<211> 1863
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155217_G1, chr4:147910023..147911885, Cluster 16

<400> 2711
gcaaacgtgc tccaaatgaa caacaaaact atgctttgcc aattgcgcac agggagtgag 60

ccgctgtatg cgtttagccg cgaacacagg aaagagctcc catgcaagga acccatgaca 120

gctagttctc gagttccatt aataagaata tatatcatcg ggaaagcagt aaagtttctt 180

gcatgcatga gctagaaaac ctggcagcgc ttctggttct cctggaccag agagaaggaa 240

attaccacta ctgcattatc cacgcaggct acagagcctg cacacgtacg tacaagcacc 300

ccgtacaaag cagtagctag ggctaccacc gtacgtatac gtactgtatg cgtccaccag 360

gtaaactggt aaagtttagc cgctaggaaa tccagacggt tctaaacttc gattgaatgc 420

caaaaaatat atatacattt ttaggtgtgt ttcagcttag ctgaaatcag ctggaacatg 480

ttctagaatc taaatatata gttccgctaa acttttaggt tttgttggtt tgtgccggat 540

tggtgagtaa agttcagtta aaaagtggat tcaaaccggg ccatggtact agtgccttac 600

agtaataaga gtatatatat taggagaaaa agaaagcgag ggcaggagcg gagcggtcct 660

gctgtctgct gaggccccga tcgatgtccg gccgggctcc ggctgtatca tcatgatgat 720

ggcgatgccc cctcgccacg ctgcgactgc gactgccact gcagctagca ggcagcaaca 780

acagcggccg cagcgagaca ggaactcctc tctgaacttg gcatttactt cctgcccctt 840

gctcaaaatc cgagctacac tcagtaggcc aggctgccag gctgctcatt gaaggcccct 900

ccgtccgtgc ccttcatcat ctccctcctc gtcgcactcc ctcagcctcg gcggcgccgt 960

cgatcagtgc tgccggccgg tacccccagc tcaattcatc actgttcctg cggcgatcat 1020

atgctattcc tattcctatg ccaactcagg gtccacattg tttttattag tttatgttta 1080

tgtataataa gtcaaacgag agggcttcta gttgacttcc ttgagttaca ccctttgttg 1140

agttgacact caaaagtgtc ttgtcgacca ggccaggcgt ataaagctag ccaacgttaa 1200

gaggtccgac atgactacta ctttgcctag attccaaacc gttctatttt tcaaattggc 1260

ttctgacatg agaaacatta agttgttttc tactaagaga ccactctctt tagatacgta 1320

ttcaacatcc aatcgaacaa aaatctatgt actgtctacg tctcaaccgc acattgctat 1380

tgcatgctgt tcaattggct ttaacccgaa aagatttcta ctgtttttat gtttttatag 1440

tgttttgtct caataaattg catctacaac agtacgaaca attaacttta atctgaagta 1500

aacaacctat ttatcacttg atctaatgac caagaaagat actctaggct tccggaccta 1560

cgacctcgag aaacctaaca atatccttgc cccggcgggg gtcccttccg tgcgagagtt 1620

tcgacggtta atttgcaaga aactaatcgt tctaaagtga ctagttatcc tttgatagtt 1680

tggtcatgaa cctttatatt cttcaccata taagtgtgat atactcacta cgctctcctg 1740

tttagggtag ctggacgatc tagctctaga tgtcgtgtgc tccaatacaa cgtacgtcat 1800

cctaaagatt ttggactttt acgttgaatt aatcttctcg agttggttgt gtaggcaaaa 1860

tat 1863

<210> 2712
<211> 1507
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156188_G1, chr4:153264833..153266339, Cluster 16

<400> 2712
ataaaaataa taacaaatat acaaataggc gaatgaacgc tccttggcaa ctctgcacat 60

ggagtgttct gtttagatga catgaaacac ggtgtacatt gttcgtcaac ccatatttaa 120

gggtggtaca ctataaaatt taatgatcga aacggattag gatcgagcta taatatttct 180

actcattttt tttaaactaa taaaattaat taaggaccat aacttactgt gaagaaacat 240

tttggtcgcg gtctattgcc acctctaccg acgcattccc ttaattaact aacaatacaa 300

aagagtcagg tcaactcaga acaacacaag ctaataacga caaagctcga gcggagtagc 360

tttcaactac gggccaacca tcgcgatcga gcggctttgg cacccgaatt taattgtggg 420

tgggtggctg gtgcaccaaa cggcagggca gcaacaaaca aaaaccagag acgggcgagc 480

gacggagcga cggagcgagt gcctgtcttc gtcccccgct cgctctcgct cccactgtag 540

ctgcactgct cgttgccttt tttttttgc tgctgccatc cgctctgccc cgcatttctt 600

tcccaggtca aacttgaaag cagtagccga tggccggctg ggtttcgtct actcgtacgt 660

acgaacgccc atccatcagt aaagtataaa acatcgatcg gtggcagccg gcagcccccg 720

gctagcttct tctcatcgtc ctccggcaga aagacgactc gtgtgtttcg gcctctccag 780

ttcgttctca gccgaatctc cattcaccac cccattagag agggggaaaa atgagagaca 840

gtgatggaga atttcgggaa ctgtcacgtt tggaataatg tgctacatct acatgtacac 900

tccttttttct aaaagcgcag accgtgtacg cgatcgatac agcaggcggg aatatattct 960

tcgtttcctt cggtacgaag cctactgctt ctacgtcgtc gttacttggg tatagtacac 1020

tgcattgctg tagcgaactt gctttctcct ttttttttttc ttccctgtca aagagagaga 1080

gagagaggaa aactgtcacc cttctcttgg atgtttcgaa attaaaaaaa aaaaaacagg 1140

agaaccaacc gtagtaaaca cactgtggga aatccgtcta gttccggaga attttgtccg 1200

tccatttcgg cccatctacc gttccacaag cgaggacggc ctgcaagcct agcagctcca 1260

actccctttt ctccatgggc cgtctgacgg gcctggatct tgcgtccaga tccgagtttt 1320

ttgtttgttt gtttgtttat aaaatccgtg cacttttaaa aaattttacc cggcaggaag 1380

aatttgccgc cggttcagtt agcggaatta cctttctatg tttaaattta tcttagaaaa 1440

ataataaatt ctacaaattt aagaaagttg tagtgacaga tctataactc tgtagttcat 1500

agccttt 1507

<210> 2713
<211> 2853
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159795_G1, chr4:173795104..173797956, Cluster 16

<400> 2713
tgcacttcac aaaaggtaca tatggacaaa atagcttaga actgtgagag tactacgtag 60

ctgtggtagt aggagacaga tattcaccac tcaccaggca tcctaccatt gggtcgtcaa 120

gctaagatca ggattttaat taacttttgg tgcacgattc cattcccatc gatcggtttg 180

ttggcgccag ccctttctgc caatttggca gttaaataac aaccgtcatg gcatagatcc 240

tccgtgctac aaaggctcca agtcgtagcc gcaattcccg gggccgtcca agtccagatc 300

tctctgtctc gccagcatac ggctacgcaa caaccaaagc cggtcacgca cggctcgaca 360

ctaaacaaca agaaggaaac agaaacgtcc ctctcaagca cagccccaga catctctctc 420

tctccgaccc aatccagccc ccaaagagag caagcaaacc gcgtcgtgga gactggagac 480

tgaagacccc cggccggatg agctagatgc atgcatcagg caggcacaga gaaagctgca 540

cctgatgatg cagggtgcca ggatcctacg ggacatggtc ggcatcctac acacgaacgt 600

cgccgtcacg gacatgcagc ttattatccc gtggccgcca catgggggtt ccggacgctg 660

tcccgcgcgc gcgctctcgc cggtcgtcgt cgccgccgga agtccagccg ttcggacacc 720

acagagccgc tggacgatgc cgacgacgac caccaccacc accaggcggg atggagctcc 780

tccgttgatg aaccgaccgg gattcggcga atacgtaccg acatgcatgc cacacatgcg 840

tacgtggcag cagcgctagc ggcttcgtcg tccgctgagc atttcgcagg agtgatcccc 900

atgattgaca tctcgttcgc gcgcgttcta attaagctgc atgcatcatg catgctgccc 960

ggccagtgcc cagatacact acacatgaga taacaggtcg cgatcgatca cccgatcacg 1020

gccacatggg cgttctacgt gctgtctgcc atgatccatg gcgcctagct gccacctgcc 1080

atgcttgctt tgcactttaa tttcatctca tctcatctcg tcagcaagct agccgtcggc 1140

gctggataag gcaaggcaag ccgcaaggca tatgcatgca ggtttcatcg cgaattaatt 1200

gcaccaggat ctagatatag ggccccccctg tgatcttcat ggctgattgt ttgcctgtac 1260

atgttaacaa tagcaaagac tctattagca catactagca aggtcaatta actgatggac 1320

aaatgatttg ctaactctct tgttaacaat tagctaattt attagtcacc tcgtttgcaa 1380

cctaatatat gctaaagccg gcaaattatt taccggatgg acggtagcag tttctcttgc 1440

attggttggg tgcgccgatc agctgggatg agcttcttca gctcgctcgt taagtcgcct 1500

ctggaatgga atacagcggg aaaaaagcac caccgcggaa gaaaacaaaa gcaacaatat 1560

acggcaggga gggtttgact ggcatatcat tttttctctc ctgaaaatat aaatccaagt 1620

gctggccacg tacagtacgg ggttgctgtc gagttgaacg agctcatggc atcctaagac 1680

gatcttgtcc caatcattgc gtgtcaccct gtgtcaaaat acgatcccac gaaatgcgga 1740

tcgcgggcga gggctaatga ctgcgtttgg ccggccgcgc aaaaaaacat cgcaaatccg 1800

gctcctgcaa actactagta cgtgctagta cttagcaaca actgctaggc aatgatgtgc 1860

aaaactatct tgaaaaccgt ccttgtaccg agctcacgct tggacaaaca ttgcatgaga 1920

gctagtttga tggcatggaa atggagggta tctttgaaaa gaattctctt gctattaaaa 1980

attgaatagt aagaggttat tacctcatta tctctttcac ctatatgatc atcaaatcag 2040

ctctaaaggc ttgtttgaaa gcaagggtaa tagaggagat tgagagggct caaatcattt 2100

actattcaat ttcgaataat aagtgattta gacatctcaa tcccttacat tacccttggt 2160

cccaaacgag gggtaacgag acaaaaatcc catcaagaat ggtctcatca caccgttttc 2220

aatgctgcag cttcaacaag agtaaaataa aattaaggac ctgtttagga acatagtatt 2280

tccttagttc caaggcaata ctgtgttatt tgaattttga gcataccatt gtattttaga 2340

ccaaaaagtg tttgagagcg cacctaaaaa attgtatttt taaatcatga ttttaccaat 2400

accatagtat ttttggggtc aatttttttt ggtgtggaca aagttttttt attcttgcac 2460

acaactaatg tcttttcttc tcgtacaccg caactaaaat aataagatat tgtgtcttca 2520

aacaggtgtt gaattgaatt gatgtaaaat ataccataat tatgtcatga catacaataa 2580

agtatggtat tataaatcgt ggttttgaga aacatagctc ccaaacaagg gcttgtttgg 2640

atctcatgag ctaaaaccaa aaaaatgact caagtttagt tatttggcag aaagagctaa 2700

aagcgacaaa atagcaaaaa aagtaataat ttagtcactt tcagttgttc ttgtttggat 2760

ctttatctcc taaatgatag aacttcattc acttttgctt tagtaactag aatttaaaca 2820

ggccctttat tttagtcctg tggtctaaat agt 2853

<210> 2714
<211> 1436
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160011_G1, chr4:175274411..175275846, Cluster 16

<400> 2714
acatgaggaa cattgccacg aagtaacctc cttggtcatt cggttttagt catcacgatt 60

cacgggagag gaggggcat gtggacgtat gggaatggcg tgacgcgtga cgtgagccac 120

acattccagc actgccaggt gggtccagga ggcattgtct gactggtgcg gcggctgcgc 180

ctgcctatgg aggccctggc ccgccgggga tagtgtatga atagcatgaa cagcgcgtgc 240

ttcttttgct cgcagtgaat gcagacacac agagagagag agaagacaca cacacacccc 300

ctcctcgtgc cgtgtcctcg cgtgacgtgt gcgccggccg acatgcggcg cgatgatgtg 360

tgctgcgcca gggctcgaca gtttccattg caggagtgca ggacggagag atgcctctgc 420

ggcttcgctt cagcccgttc gctgaacttt ttattcacac ttgtttctac tacttgtaaa 480

atgtagcagt ccgtccgctg gctggtaaat gcgtggcgcg gttctccgat acgaatctcg 540

aatccaagca atggtgccac aaacacaaac ggttggatct actgccagta gatagctgct 600

gtggtgtggt ctgatccgcg ccgtgcgctg ccgtcgcgtc actggatgga ttttttgtac 660

tgccagaggt ggcgcgagaa aagtccacaa caagtccgtg aaaggtggcg ctggcgcgta 720

catacgctac gcctagtgta tccagatcca tatctgcagg ccggatccag catggtcttt 780

ttttgccgtt ccgttccatg gttacgccgc cgccgcgcac gccggccaca cgggctgcct 840

cgccgctgaa tggagggacc gagggaggga gagagaaggg ggaccggagg aagaaaggaa 900

acggggcaac tcgaagcagc ggcggcgcag cgcagcaaaa ggtgcctcct ctcacatggc 960

ccggtggcag cgcatccatc atgtccaagg agcagaaggc ctagcctgcc tgtcgcgctg 1020

ccctgccact gtttggaagt ttcgccccgg cgacgcatcg tccgtgtcag cgtatctaca 1080

gtgagccccc attggtgcgt gttggctgcg tcatgggaat cgcgaattgg cgcggggccc 1140

agacacagcc gcaggagggg cgcaggcatg attccttctg tgctgcagta tggccaggac 1200

cgaataggga tggggcgagc cggcactttt gcagggctag tagtatatag catcttcaaa 1260

agctctttac taaaaaaaac agtactaatc gttaaacaaa ggatcacgct aaacgaggga 1320

aaacaatgca aactctctct ctttttttaca ttttatatca actatatcat atagtccaaa 1380

tatttatgtt ttttatcatc attttttttaa aatgcggagt tagctttgat ctgagc 1436

<210> 2715
<211> 2881
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160371_G1, chr4:177322858..177325738, Cluster 16

<400> 2715
gcctggtaga ctaattggtg caaccgagca accaagacac gtgaataaag gtgcaattag 60

tctggttaca tagatacgtt ctcaacaagg ataacaagag atagagagtg aaactttatt 120

ggtgtgtaca ataagtacat gcatgatata tgtacaaacg caagttaggt gcaatttgaa 180

tacaagctat gaatacatga cgctcgatcg atctgcaaga atgtagctac ctctggtact 240

gccagaaaaa caaaggagcc aggaaccggc gggagggccc atgtccttgc ccgtttgctc 300

ctttaatttg tgtgtgtctc ctgccatgca tagtgtggtt agcggcgaca tccactgatc 360

cacatcatgt gcatctgccg ccgtacgtgc cgtgccgtgc cgacgctcct ccgtacgcgt 420

ccacggccca gccagcgcgc gcggtagctc gacgtcgacg ggattattta ccgccagagc 480

gtggcatgta ccgctgcttg ctatgcgtac gtacgtgcta catatatacg aactcgccct 540

ggcctcgccc ggcgcccacg gcgcgcgtga gtacgtacgc cgtaccacgc gctggagccg 600

ccagcagcag gcgtcgtcat ggcgctgtgc tcgcggcggc cggcacggag gaccgtgcgc 660

tctgacatgc atcgcctgga tattttgtcc atcgggccgg gggcgggcga gagcgcgacc 720

gaacggatgg ttggtgcagg tgcagcggtg ccgacatgac acgaccgcca tgggcacggc 780

aacggcagtg cgcgcgcgtg ccgccggacg gcgaggcgcg cacgttctag ctcactactc 840

agtactcact agtcgcggcg ccgacaggtc gggcgggaga tggagcggtc gacagattgg 900

ccgggaaccg tgggcgtacg agacgtacgg ccgcaggggc gcagggatgt acatgtactg 960

ctcggaaggt ggaatttacg aggccgtgac catgcatgca tgggcatctc tgtcaccgtt 1020

tccgtgcgtg ctgctgcggc ccgggatggg cagaagaggc acggaccttg gtggagagta 1080

ctggaggagg tcgagtgaag tcggaacaga gcatgttcag aaggacggtc cgtgcacctg 1140

tttctgcacc ggccacagag ggtaatttac ttgtgtctca gctcattcat cttctctctc 1200

ttttttttc ttaagagaca gagagaggga ctatggcagg cggtccctgc tctgaacctt 1260

ttataccccg tctctctttt tcgtcaaaac atttgaaatt ttaactgcga acaaaggaca 1320

gaatgagtct ttgatgaatg tgtgcaagga tactgggcac agcaaaagtg aatcgaagga 1380

aagagagagg ggagagatgc actcagccca attattatag acatacaaga tattctatac 1440

taaattcccg gtaggcgcgg tagccaatgt ttggccagtt ttgtgcttgt ccatttcgtc 1500

taattctggg caagcctgcc ggcctgaatc ccggaataat tgggcatagc aattcccatc 1560

cacgggcagg caaaaacaca acacccctcg atcgctgaag gcaaccttgt actactacta 1620

ccccccccaca gcaaccgtgt ctcgtatggc tcttccgttc cgggccaatc aatcgacgca 1680

cacaggctcg ccaataaaat atctccaact cttcgctcca ccggatcatg tgagcacaca 1740

ccaccaccca ccatgcacgg tccggtccct ttcttgaatc cctgcttgtc ttgatgagca 1800

gagcagggcg gggccggctc agctgcgcct gaagctgaag aggattcgag gtgcggtggc 1860

tggctggctg gtggctggcg agctcgacca ggacagagcg aggcgctagc gccagtggcc 1920

cagcgctgag gtggtcctag gtttagatag cagcagggtt ggagtggaga tctcccgccc 1980

gacaacaaga tcagacccgt atttatgctt tgagaggaac accaccgaaa agcctacccc 2040

ctccatccct atctgcatta acatcttcac accggccgcc cctcccttcg ttcagttgtc 2100

agcatgcaaa cctcagctcc tcctcctccg cccggacccc tctctcagtc tcagcaagtg 2160

cagtggccgg tgttgtgtgt tttccagcag acgatggaat aatccctcgc tcggcagcac 2220

ctgtcgtctg tcagtcgcga tggtgtgtgt ttatcatctg aggaaactag tttgtattat 2280

tgagagaggg tgttctgagc gatagtgtcg tacatcccac gacacgtctc tctcatggtt 2340

ttctactacg acagtctctt ttctccatgc atatatatct actaccagct aaaagttagt 2400

gctatagcca tatgagaaac aagttctagt ctgggttggg gaagggattt cgtcctggtt 2460

ttctcaccag ctagcaggac tatggatctg agactagtag agagcatagt cctttggtcc 2520

cggttggctt aatttgggat taaaaggtat gctaggctaa aaaaaaataa ttagcacaaa 2580

tcaatcacgc ccccagagct agtcttttgt atatggatgg atcgaaaggg attaaaagaa 2640

attttgactt gctatagatt taaagccact ccatcccctt caattcatat gcatggtttg 2700

agatgaaaat gcttaattgt ttgtctgatg gtgtgtgctg catgcatgct aacgtcgatg 2760

actcacggca gtacgtacgt acctgtggaa attggggcac acagaagaag aagaagaaat 2820

aaaaaaggaa ggacgcggac aagttctggt cgcagagtcc aaggatgaac tggccggccg 2880

c 2881

<210> 2716
<211> 1510
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160563_G1, chr4:178382775..178384284, Cluster 16

<400> 2716
taattataaa aggaactcct gcaggcatgc cctacctaca ccctgtacca acagaacacc 60

aggcaccagc cggcccaatg aatgcgttgc acataaacat cgccgccgca aggtaccgga 120

ttctcttggt tcacttgtca ccgctcaata aacaagctcg ctctgagcat gtcatggtca 180

tggcgcaacc atgcatatat tatgcatatt gtttcagtaa gcagtgcaga ggtagcttcc 240

ttagaccaat cacatgacat aggcacaacg gagaccagct aatagctaag aaagagattt 300

tttttctgtg tgctctgtgg ctgctgtgtg cattcagttc aacggcggca ggcagcagca 360

tgcacggccg catgggcatg gcagccggag tcggatcaaa cagggacgcg cgcatggcat 420

gcgcggtgtg tacggaggga gggaagggga aggggaaggg ccgaggccat ggagaggacg 480

aggacgcccc caagtcaaga tcgtgcacgc ggtggggttg gggatcggga gggcggcaac 540

ggcatgcagc tggccaggaa ctggaactgg gcggctgctg ctgcagcgtg ctttgccggg 600

gcgggggcgg gcgggcccgg agttggacta accgaccaat taaccacgct tttcgatctg 660

gactagatga cccatttgtt tatgcttacc gtacgggtta cttactgtag gaccactgac 720

taaatgcctg ctggctggca ccgcgtgtgt ggtgtggtgt ggaatggaac gatgcaggct 780

aagatgacca tttgttcatg tgcctacatt ggtaatctgg ggcgtcgtcc gggcctagca 840

gttagctaga gacatctgat tgcgatgcag cagctgatga tatggccacg gactggatca 900

ctcgaccgct gatctgcagc tgaggttcat tcagtacgcg gctgcgagct cattcattgt 960

ctgttgcgtt gcatcggtac gtacgtacgt acgtacgtac gtgaagtgtg aatcgcaccg 1020

cgaaagctag gcgtctgtgt tcatctatca acagccggag gccaaggtaa acgaacctgc 1080

gtgtttgaat cctgaaccaa caaggaagct tgacgacggc aaagacacac gccgcactca 1140

ctgcacgccc accgtcggct cgctctcggc tgtgtacgaa ccgttattgc tatatgcagc 1200

ggcacattct tgtccttcat tccgtggatg cagtgcatga gtgttgtccc catggtacgg 1260

aaaaaacatg tgcttcagtc tcgctccgta caggtcgtcg atcccacggc tgccagaggc 1320

cgtgccagtg ccagccgatc acgtagtact ggacgatgcc atgcatgccc ccccacaggc 1380

ccagacgatg gtccgtgtcc gtcctacgca gagcaacgtc agcgagaacc aaagcatgga 1440

agcgtcgtcg ctatcctgga atcccaccag ccgcagcagg ccaccacacc gccgcatggg 1500

gctggctagc 1510

<210> 2717
<211> 1849
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162532_G1, chr4:189899798..189901646, Cluster 16

<400> 2717
atttgatttg gcaacacggc cgatatctat atcgtacctt ttagcgaata agggatacgg 60

agaattcgaa attcctgaca tgcatagcgc gctagcccta tacatttcat ttaccaccgg 120

ccgtctatgg acacgcgagt gctcaaaaag atggagcagg gaaacatgca atgatccatc 180

gcacacactg cacgcgctct tccggacagt cagcgtgcaa gaggagtact ctcctaggta 240

gtagtagtag tagtgctcac ttgcagatgt gatgactgat gagtgtgcaa ggctggcgtc 300

agccgtcagg ggaggggagg ggtaacgtgc cgcaggtgcc tgcagtgcca gccctgcggc 360

ggtgcggaac gctgatacgc acgcacgctg cgcgccgtgc caattatcag ctactagcat 420

gcatccacac acgtacacgt agtacaggta caggagctgc acctacatgc atggtccaca 480

gtcagtacgt gtaagttagt agtatgtact agcctagtaa taggtcggtc ccttcccttc 540

ctcctggccg gctcgcccac tcaggccacc gggacgggac gggacgcgac gcgacgggac 600

cccaaccgta cgcctgggcg cccagggcgt acgtggctgg tagccgccgc tgcccgctgc 660

tgctgctgct gcatgcatga tgccattgtt aggcgccgcg ccgttgttcg gccggggacc 720

gtcggtggaa cgtacgcacg cacacagctc tcccctgtct cgatcccccc ccccccctcc 780

tctcctctcc tgcgtcgtcg tcctcccctc cggcatgcat ctcgtcctgt gctgcgtgat 840

gcagcaccag catgcatgca tgcctcagct tgggcgcggg tacagcgtac tacgacagca 900

gtagaggtac tagcgtgcat gcatgtgtga ctgactggcc ccggagcgtg tgacgcgcgg 960

aggaaggagg aaggagcgag ggcctggcgt ggcgtctggc ggacgcgact gttggtggcc 1020

gacgacgacg cgactagcta gtactgtagc tattggctct gctgctagtc tgctgtgccc 1080

ctgctcctgc tcctgctggc cagctgctcc tggtcctggt gggccgcagg cagaggcaga 1140

cggtgtgtgg cacatgcgag gccgagccgc tcatgcacat gcatcatgca tgagcatgaa 1200

tgatctcccc ggcccacttg cttgtgtatg gcatggctgt ggctccaact aaccgaagca 1260

atcaggtgtg actgtgaggt ggctgcacca cgcgcggtac cgtacccgcc ggccctgacc 1320

tgaacgaacc aaaccacaag tgaacgcagc agatgacata gacatcgtcg tcagccatgc 1380

atgcccaaat aaatggtggt gccgtggtgg taggtgggtg ggtggcaacg cggtgacaag 1440

tgacgtcgcc gccgtcgtcg tccctcaaac ttgtctctta tatatatact atcgaaatct 1500

caaaaatgta ttttcagata tcggaactta ccttcgagtg ccgccatata catagctagg 1560

taggtccaga tcgctcaata aatttgccca tagcgcgtcg tgcaggtcca gcagcgtatt 1620

gtttttatac agttgcggag atatataaac gcgaggattt gcatggacaa ctggcctgga 1680

tcgacatgca tgatggacgc atgcagtgca attgggcgca cgaaaagtag ggggcattct 1740

tcaaactgct attctggtag tggtagatcc agaatccgct agttattgtg ctgccgcgcc 1800

aacccacccc tccctcttgt cagtcagtcg ggcagaaaag cagcatatg 1849

<210> 2718
<211> 1482
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164809_G1, chr4:201127039..201128520, Cluster 16

<400> 2718
cgttgctgag tagaagaagg cgtggcgagg tggaagcaaa acaagtcggt ggcgaggtgc 60

cataggagaa gactctcatc gaatggcctg tttaggctcc agccaagggc gtcgagcaaa 120

ccctcacggt cgagagtcca ctggccccgg ctgtcgttga acctgtggta ggaggcgatg 180

ccatgtatct gccaccaccc agccgtgacg tggttggcca cgagttgggt gatgccactg 240

gacgacttgt acggctccat acaccagagc tggtcgatca agtccttgac gaacgtaggc 300

agcttcctca ggatccagtg cttcctattg cgggccatgg cggcaaccag aaaacaaact 360

tagcggctct gaatgtattg gtcgaaggaa cttatttcgc cgctctctac tgaaccagaa 420

gagcccgcaa gactactgaa gctaaccttc ttcaagtccc atggcttcag taagcatttg 480

ccagatccaa aatggaacag cgaaatcgct gcttgcaata tgaagccatc tccggaccag 540

gatttgcaaa acacatacac agcaacagtg acctgccaat accagcgaag aggaagacat 600

tttgtggatt caacaaaaga caggtagcta gttgagttga gacaggtgca gcaccaacct 660

gagagactgc tgttaggacg acatgccttg tccacagctc attgtcttcg atgttgtagg 720

ctgtgatgcc gtcttggcca ccaagatgtt gtagcacctg caggctgtag ctgctgcgat 780

gcgtggatac ccactcctga cggttctggc gattgaagag cacggccaac gcgtatatcg 840

ccacagcgtc gctgcctaga taggccagcc agattgtcaa cctgaaccag gcagggatac 900

tgcgtttacg caagccggct gcgaaaaaga ggaagatctg gatgaagaga cagcacaagg 960

acgcgcagct gccactcctc ccaccattgc actgccgctg tgaaacccat gctctcagtc 1020

tcagctacca cccatgctat atctacgtac ccaggccttc ctgcgcttaa atactacgag 1080

cctctcagct actactatag ttaactgctt gctttgctca ggtacgtacg cactttctct 1140

actcgatcgt gatgtgttca tacgttgata attgacaagc ctttgttgca ttaccacaga 1200

ctatatatac ggatcagtaa ttcactatta ttatatatac atccatctgc cggccggatt 1260

gcatcaggca ccttcatcgc atattccttt aattgtcgca tcgaagctgt tggccgctaa 1320

gtccctacgt tgttgcttta ggccgacgtt actgaaatgc ccaggaaaat gcaacatgat 1380

tacttggacc agtaacaagc ttctcagatg tgattctcag tcgtctagct agattctaga 1440

ttctagggta gcaacgaaag tggtgcaaat taaatccaga ac 1482

<210> 2719
<211> 1579
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174363_G1, chr5:11877391..11878969, Cluster 16

<400> 2719
cattggcaac tgcagcgtcg atttccatgc agttaaggca tgtaagtgga cggaggggcc 60

cactgctttt cacaagtagg cggcagtgga atttggcgtc gatgcgaggt gttgggccag 120

tatatatgtt agctcccccc gccgatggcc ggtgcttaac gtgagccatg caatgtcgtg 180

agggcgcaat attagtttta tgtccccgct gaaacaaata aataaaaggg cgaagccgga 240

gaaagatgaa agggggggaat atgtttgctg cggcggattg tggagataag atcgcatctc 300

tcatgcggtc atcgaacatc cgccgccctg caactgcaag ctaggacgac gacgatgcgt 360

taattgtgac atcagttgag cgtatattct tatatatggt taattaatgg atgctaacaa 420

aaaaaaatat atagtctatc ttgggagagg gacagcattt tcttttcatc gcagactgca 480

ggttaattaa ttcgttttct gaacgttgtt cggaccggac tgaatatata atgcctggtt 540

tatttctcta tagtttcagg tggccattgt taggttacac atacgtgagc ttctttttt 600

cagattccgg tgtccggtcg gcattgatta gtttgtcgac ttgcgactat gagccgacgc 660

aacgagtaca tatatagagt aatggtagac aaagcctaaa gtgactttag ctaaggagag 720

gaaaagtgta ttaggttatt cttttccacg tcgtggtgca ctatactccg cgcggccata 780

tattgtcgta gtagcgttga gatgggtttt agtcttggtt tattattgga gattaaagag 840

ttttactctc gatttttaa ccgggactgg atctgaaact gaaccctaaa cgcgaggacg 900

aggggagtca gagacaatgg cgaatgccgc gcaccagaga tgaccgtggg ccggcctgtt 960

tggtattgcc acgatcggag ccatggctgg ctggctgtca cgggcacctc tcatccacgg 1020

gctctcctgt tcctactgcc ggcaaggatt acctcgagcc cttcatccgc cacgccacca 1080

tctcgttgtc aggtggcaac gtagacacaa agagggagct ttccatccat gcgttactaa 1140

aataattata atggtatgca tcaatcaacc caatttgtta ctgctatata tactgctgct 1200

gtgtgataca gttggctgac cctttccatg cgttactaaa atttcatact actacgttgc 1260

ttcaaaaaaa aaaaaaaggt attgattcgt gcgtactact aatggggtcg actcttggtc 1320

cccttgaaga accctacgcc aggcacccgt ataaaacatc tatactttcc aatgtgggca 1380

ggtcaacatg acaacatcat cacgaaccca caacccagca tatatatgta cactgtttta 1440

ggacatgtac agtccacgaa caactgatgt ctataggtat atattgatat taaaaaacat 1500

gtgcaaacaa tataaataat aagttatatg gtgattgtct atttacaatg cctacaaaat 1560

tttaccgtct cttggcctt 1579

<210> 2720
<211> 2947
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174389_G1, chr5:11920522..11923468, Cluster 16

<400> 2720
ggctacgacc tcgatcgaca ccggcgatga cggcgcccat gactccgccc tcaacaccaa 60

ttaagccctg cagctgagga tgctccctag tccctcccct accatatccg gcgacgtacg 120

cccgccccgc catcgacaac ccatgcatca gcacatgatc gagcccaaac aggctgttat 180

tagcagtcat acgtagctca aatcattttt actgcagtgc tcctcagacc tgaccggctg 240

tccaggcaca tcagccacat gatcgagctc ggatcggcct ggctgggggc tggctggctt 300

tagctagccg cctgcatggg ccaaagttac tgctgctagc tagttaacaa caacctaaac 360

cagcaatcta ttgcgttgcg cgtcgagcag tcgtggcatc cgacccttg ctctttttg 420

accagcgaga atagaatctg cggcacgccc cttgttgctt ggacacaaca caacacaacg 480

caacgcaagg cgcctgcttc gaccgatcca cccacctcga gacgtgacgc gcaggggggg 540

gctccaaata aaggccgccc tgaggctggt atagtattag tgtggtagct ttgcaggcgt 600

gtacgcacgt ctttggtttt ttatctctgc ccgcctggtt tgtggtttct ttttggacgg 660

tggatggagc ctttatccgt gcctagcttt tttaaaaaaa aacgtacaca gtacgtattc 720

cgttctctgg ctgtttgcat gcatacgcct agtctactag tctagtgcgt gcaggaccgc 780

agccagctag ctgctgctgt accactacta gtctactaca gtctacaaca gtgttgctac 840

tagcctgcgc ccgactgtgg tcgagctcga ctgctcgagc aacgagcata gttgttgtac 900

aggctgtgtc acatacgtgt gctcgcttct acgtactcgt acggtcgtac gtatacgagg 960

aggaggctgc tgcggtgggc aagtccgtcc gtccgtccgt ccctacacgc cacacgtaca 1020

acggtctgcg tcagtgacgt gtctggcgcc cgaagctctg cagggccggg actgcaactt 1080

ttgtctccgg ccaagacatg gactctgctt cgaacactat acagctggta gtagtagagc 1140

cgtacgtata ggtgtgatgt tattttacag gtcccgaacg gatcggaggt tgattgatat 1200

tcctggagtg cgaggaggga ccacgtacgc ctttacgtcg gacctcgccc ctcctttgtt 1260

ccccccccc ccccctcctc gcactctttt ctcgcctcta gcgcctcaga cattccttta 1320

ggttacgtag ccgttagcct aatgcaatgc gatggaacgc aacgcaacgc aaaacgcagc 1380

gacgtatctt gggatgggag acagtgcccc atttgacgaa agggacgtat cttcggagct 1440

ttaaaagagt gtctgcgagg ccacagctcc aagaggacgg gcgggtccgc acggtcctga 1500

tgcgtgccca ccgtcagtac agctccctcc taagggcagg actgcaggag gccgacggca 1560

cgatcacaag tccgggacca gggcagggca ggcacacgcc acttccttcg tccgttcccg 1620

tgctgacgga cgacgcgcgc cacgtacagg cgcctgctac tgctactgtg tctgtgcgcg 1680

catgcatcac cgcacgagct ttggccgcct cacgtcgcgc aggccgtgcg ttcatcttcg 1740

ttagcgctaa cagtgggtcg tcatgaaccg aggcgcgcag gcatcatgcg cccacgtttc 1800

tgcgcgcaca cgcgcagcgc agcgcagggt gccatcatta ctgcggccgg aggtacgtac 1860

tacgtgggtg ggcggcggtg gcccggccgg tggtggcatg gcatgccgct gtgtccgtgt 1920

gctaagcttc ctccctccct tggacgattc gattccgcag ggccaccaac gtctctgatg 1980

agtgtctact acatactcct aaactctgca aaacgtcccc gtcctggcgg tccaaatatt 2040

tccattcccg ccgctgcatt gcccgctgcc tgtctggcgt ctgaggcaac aggggatgac 2100

acgcatggat cgcaggtcgc ggccgcagtc gatcgaccga cggatcgact cagcaaacca 2160

gaaacaggtc aggcaaggca gctacgcgcg cacggcgagg gcggaaggct ggcaacaggc 2220

agcagcccgg tccaagaaac aaagcccttt cacatcggcg tgcacgccgc cgatccactg 2280

ttggagcgcc ctgcatctat ccgtctcagg acgcaggcgt cgcggccggc tgctttctcg 2340

ctctcgggtt gccttgcctc ccagtcccac ctgccttgcc cttccccgtt gccttgcgcc 2400

tgcagtgcag aacttgcact gtttgggttt gccggtgcgt ttctccattc ctgagagccg 2460

ttccggttca ccttctccag cgcatgcatg tgcatgcaaa ccaagcaagc agaggcagca 2520

ggttccattg ccaggtagct acagaagctt cctgttcctt ggcggtgcag gtgctgtctg 2580

aaccgaaccg ccttctctct ctctctctct cttggacacc taaacaaaca ttagcttctt 2640

ctcaattttt ttcagagtgg aacggaaata agctccgttt gagcatctct agcagctttg 2700

taaacaaaaa aaaaagctcc gtaaaaacag atgtagggag ttgttacatg ataatagata 2760

gtaaaaaatt tgtaaacggc ccatgggctc tcttcgccga acactacagt acacaggctc 2820

ccgccgagac gtacggtacg tgcgtgttgt cgctgcgcgg tcacgtacag ccagcacgtg 2880

catcctcacc tgtcctgtct actaccacgg ccaagccgta cggcgtacct ccagagggaa 2940

tgaatca 2947

<210> 2721
<211> 2292
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181147_G1, chr5:49156276..49158567, Cluster 16

<400> 2721
gtatctacgg ttttgtacct cgaaatagtg ctgtcacata gccggctggg cttgatgatg 60

accttgtcat gcattcgcgt acgacactac gactgcttgg tattttgtca ggccgtataa 120

ttccagagta gcaggcaaca ggcgtatatt ggcagtctag gacacggctg cccgatggat 180

acccagtcct acgtacagta gtaccagggt actcctagtc ctcgctctgt catgcgcgca 240

ggctttacga aatcaaggct cggatccccc agaagatctc gctgctggtg ctgggggcgc 300

gcgcagaatt aattgcaggg agaatatttt actgcgtgca gaattacaca atcggccaga 360

cccgtcaaga cagaaagtag cagcagtact accgtctacc agtaccagac acacacagca 420

gctgaccagc tgtttaagat agataccta tatattattg actctctctc aaaaaaaggg 480

aaaaaaatag aacatgcaat tgtcaaattg aagggacagg cttcatggct atatacaata 540

ttgggatgta tttggttcac tgactaaagt ttactttcgt gtcacataaa ataaaatggc 600

tagcctagta catgtcgcat agctaatgtc atcctgtcct cttcatgcgt gtgctacctc 660

aggctagctt gattgtcttg tctgtagtct gtctgtctgt accgccacga gaaggaaaag 720

ctgtgacgca tactacgctg aatacatgga tccgtgtggc cggacggtcc atgtacctgc 780

gtgggtgtgc gcgcactcgt atagtagctg gacgaagaag aagatgtgtg agcgtgtgta 840

tagtggctgg atggatgaag agcacaaagg cactgtagtc tggttgagcg tcgcgtttcc 900

agctagggcc gcatgcactg cctgcgtcct tgcgaacgca tgtgagttaa gtgtcccgcc 960

gctttacgat catcctgctg tttcaattca gaagcgcgta ctatgtgccg tgactaccac 1020

gcgcgcgtgg gcggagccgg cggcggcggc acgctgtgcc ctgccctgtg actgggacgc 1080

gagtgcatct gcatccgcac ggggacgccg cgcttgccgg tctcaacggc aatcctcgcc 1140

tcgggatcca acccaaacag aattcagcaa aattaaaggt ctccctgtct ccagagggga 1200

actgctacgt ccacgcaacc aacaaggccc aacttgggga tcgatgccat tgattaataa 1260

ttatgccgaa atcggctagc ggccgagaac agcagtttaa gctagctagc tacagatctt 1320

gtcgaaaata cgagggaaaa aaaggcagat cagaaaacag attattattc tgatgcagtg 1380

atgctcgagc tagctacact aacatacgcg ttcttcgcag catgcagtca cgatatctgt 1440

ttggtgttta gtacctgtac tactactagg attgtcgtgt tgattgatga taatctgtcc 1500

ggactccgtc gatccggagg aggagccggc cggtgaacga agaagcccgg cctctctcgc 1560

tcacgccgat ccatgtataa tcgcgcgcgc gcgcgtctag ggatcggcgc gtcagcaggg 1620

ggccatcatc gtcggtgcgt ggacgcgtga aacaaggccg gccggcttct cgtgtcgtct 1680

cgtgtcagca gtgggctttt gactagctag tgctactaga aacgaagaac ctgcatggct 1740

ggcgcgtgag gccggccggc agaaacgtag gagaccgcgg ccgttgttcc tgggtctgga 1800

gtaacgtagt acgttggaac gaagcgaaac gcgagggacg cctgctccat cagcggtgac 1860

gacgacggtc ggtcatcagt ccggccatgt ggacgtggtg ccccgacgac aggccggcac 1920

tcactcaaat cgcgtccatc agtcacgcgc tcacgccgag ctccggacac catgggccgg 1980

gcccggtccc ttgtgtcttt tccagcgggc cacaataagc gcgcggttta cgacatggtt 2040

gcgtgctacg tgggtgggcc gaatcgtttc gtcattgaaa aaaaaggccc cgttttgcct 2100

ctctaaacga ccaagttcag agtactttac gatttattag tttggtggtt ttcatgttaa 2160

actcaatgcg gttttcatat ggcttgaaat aattttcgtc ttagattttc atgtttaact 2220

caatgatgtg gtggtgcccc gacgacgaca gacactcaaa ctgcgtccgt cgctcacgcc 2280

gagctccgga ca 2292

<210> 2722
<211> 1576
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_197574_G1, chr5:160075645..160077220, Cluster 16

<400> 2722
ttgactttgg gataactgtc gaggtaattg atttcggagg acaaaaaaag tatttggact 60

tggatgtcgt gtggcctctt ttgaaatcga tctggtgctg actacggtag ctagctagct 120

atatgaaaaa ggcatgacca ttcataattg tctgatagag gttacaacca aagccggcca 180

gccagacgtt tgtatattat aataaaagct atgggaacat gtcatgatat tgacggccgg 240

gggagagatc atatcacagg acacagtagc atgctaggct ggcgtgcgag cgtgatcgcg 300

tgtccggccg gcgtgcgttt acgttacgag cgcgggagcc ggaaatgatg gagacaggaa 360

ccgagggacg agggggcgtg caccacgagt gctgtgcgcc cgccaccggc ggacaagcgc 420

gagcgcgacg acatgatggg attgggggca ggcttcacct cctgaaatgc atctgccccc 480

atgacaagaa agaagttttg cgcttttta tcagtccata aataaataat tatatatata 540

tatatggcct catcgataag aaaaacacac acagaacaaa aaaaaccaag tcatccacgt 600

gcggaaacgt ggtaccgtga ctcagatcca tcggcagctg gctcgtctag tcagccaggt 660

gtgatgtgat caccccgggg ggcaccctgc agatcgatct catccaccac cgacgagacg 720

tacgtctcag ctcttccggt caataataag accgtgttca gtaggctcca tacactgatc 780

tacattcttt ttttctcgga caaagatagt actataattt tagacttccc tatttcacgt 840

tagttttttt taaaacctac gagcaaataa atgccactgc tgcaccccgc ctcctcctct 900

tcctcctgag attccaactt ctcctttctc ggccacaaac aaatctggtg tgtttatgta 960

tttcccaacc atatctttat cccttatctc ctttcatcgt gccaggcatg gctagacgat 1020

atgagtgaac tataaacaaa aaatataaat acatatgatg taaataagta tgattaggtt 1080

taccattaca tgtattttta taatatattt aatttgatgt tataaatatt agtatttatt 1140

tttatccaca tatttgaaga aactcaagac acaacactaa aaaaatttgc tcctagtaga 1200

attgtattct tcggtggact aatatagtac agttttggac ttccctagtc taagttaaat 1260

ttttttgggg acccagtagt agcaaataaa tatcactcga ccgcctcctc tcttccgcat 1320

ggcggaccgg tgagtcggtg actcctattg catattggca tattgcagta ccgaatggag 1380

gagccagagg gctcgccgga gcagctgacg acgcgcagcg agcaccaccc ggctttcttg 1440

ctccctgcaa ggtgacttcc acgtacgtga ggaggcgcct ggtgggcaac ctcaaggtag 1500

gataggaggt gcagtgagtg gacgatcgat agggtaggcc ttcgcgcgcg gtgaagcgcc 1560

cgcactgtag aaatcg 1576

<210> 2723
<211> 1507
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198569_G1, chr5:165651919..165653425, Cluster 16

<400> 2723
ccttggtagc gcgtagaaga ctttggacta tggagtttgg acgtaccaag tatcggatat 60

cagaagtcga atcctaagcg tgaagagtta atttgtaacc atcgatcgga attacacaat 120

tgggtggtta aaaaaataac gacgtggtga accgaagacg gaggccacgc acggtggggc 180

ggccgtcgca gcttttggag acgaaggcac tttttttttg ttgcttcggc accacctctc 240

aacgtgcttt ctttgtggct gagaaaaccg gcgcttggac ttcgctggaa gcctctcggg 300

ttgttgtggc gttgcaaggg tctttttttat gcagaggcag aggcactttc gatggtcaag 360

aaggctcatg catgaccaac agatctgtat cctatggttg agaataatac gactgacctg 420

gccatcgtct ctctctctca gcgctgcaaa cggaatgtgc gtgtgacgga cggacaggca 480

gaggcagtac gtacgacgaa acataggaca tataataaca gcttgcatgg aagggacgta 540

acgtaacgta acctaaccta agcttgtttg tctcatgaga gacgtccttc tgtgagtttg 600

cgatggagac tggctggccg gggaagaaac gggcctctca tacatgccca tgcccttctc 660

agtccctcgg cccggccttg ccactgccgt cacagatcat gtgtgggccc agagcatgca 720

gtggtggccc ccacaaactt ttggagagtg ctccgccact agctagctag ggccggcgta 780

catgctgttg cctgttggtg gcctggttgg agagagccag agctcacgca ggctacaggg 840

aggaaggaac agtgcttctg cgcctgcatg catgcatgag cagttgcata ggaactgtac 900

ttaagcgcag gcaatgacga ccaagggaag tttattatgt atgtattgta tatagcttaa 960

gtagagcagt agtttgtact ccaataatga gcctaaaagt tacctaagca caaaatctgc 1020

aacttgtctg ttcttgttgc gtcgagcatt cagcggtaga agctagctaa agagagagga 1080

acacagtcaa tcaaccggct agtagtagta ctcagcatgc atgcaaggct gtaataatga 1140

tagaatcacg tggccggggg attagttgcg gccgcgggca gctttcaaca agctaggggc 1200

cgggcgcgcg cgagattggg gatatatgca tgatggcctt atgattcgcg agccccttc 1260

atcactgttt gcccatcttc tctcactgtc ctgtcttttg tctctcgcaa ctactgtagg 1320

aaggaatcca tagctctcgt tgtgtcgtgc attgcatgca tggaccatgc atcatgcatg 1380

gcatggccca gagagtgcgc atctgccagc tcctatgcat gagctctacc tctcctttct 1440

ttctctctct cacacacaca cactagaagg ccctgttttg acccgagatt tgtagcgtca 1500

gttggac 1507

<210> 2724
<211> 2072
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200536_G1, chr5:176987754..176989825, Cluster 16

<400> 2724
caccggcatc gtgttgggtg ggtcttagct tagctctggt ggtactacta cttaattaag 60

ccaaagtacg tggcggtggt acctaggacg acgtacagta cgtgctacta cgtctcatgc 120

ccaaggttta ttatagcgac gcgcgatcaa cttaacgatc gagtaggccg ctaggctagc 180

aaatgctgca cgctcatgaa tgcacgcccg gtccggtccg atccgatcca atccatctcg 240

agtcgacatg tactacgaga caccccgcat cgacggctat aactacgggt tgtcccggcc 300

ggcggcgatc ggaaccgtac cggcgtttgt cacggcgtaa tcacgctggc gggcggtacc 360

gccatccgat ctaacctgcc tgccggctgg ctagcggcta aacacgaccc cgcccgtcca 420

atcgcgcgcc gcgacacggt agctcgccca acctagctac tccgtagcta tagccgcgcg 480

acgcgctccc ggcccgggcg gcgccttcat tgcacacgcg acgcgggccg gagcaaccag 540

cccgggccgg gggcgggcgg tggccgccgg cgccgggcga gccagccgcg ccgcgcgagg 600

atcagggtca ggaccaggat caggatcgca cgctggcggc tgcggacacg gcacgggcgg 660

gctttttcag ggaataatcc taatccgcgt cccctattga aggaaccacg tgtccctgtc 720

gccgcccggt ggttgcgccg tctattcggc ccgttcgcgc gccctaacga cggcgaggcg 780

accaacagct gcctgatctg catgcgtcgg cccacccata catgcggcct ggaacctctg 840

cgttccggaa ttgggtgcag cggaaaatcg ctttcatcgt gcagtttcac tgcttcatgg 900

ttcgacccag ccttagttag agctgccggg caacccaagc ttcgtcaggt tgagctgctg 960

tgtcctcacg ttctgttgtt gtggcagatg gctgccctag aaacaggatt tttcgcaaac 1020

gaggccagtc acccagcgtg ttgttgtggc agatggctgc cctagaaaca ggatttttcg 1080

caaacgaggc cagtcaccca actgacacca cgacagactg tgcgttgcgc ttcgatctgg 1140

tgacgacacg ctcattattg cagtaaaagg agtaactaag aggggttctg agacttgagc 1200

agatctcttt gctgatgcaa cgggactgac cataagctac aacaagagcg ctagctatgg 1260

tggcggccat cgacatggag gaaaacatga tttcagcaac gacgcgtcga aatcttaggc 1320

tgcaggcata agaagaaggg cgttcctgcg atcctgaggc tatggcctct gcaaaaacgt 1380

tcagttgcat ggcagaatgt ctgcaccaaa agggacctga ggacacgcgc ggcgcgcccc 1440

acgctttctt gctcgctagc tctttacagc cactgcactc tcatcagaaa gaagcccacg 1500

gttcgtcaga ctctctcagc aaatcatttc atgaaaaaac cgctggcaac ccctattatg 1560

tgcaaccgat tgtgtggtcg aggaagaaac cccggagcag aagaactctc atctctcata 1620

aggcttccta taatgcaata gtaataataa taataaagcc actgatgagc gatgcaggat 1680

tttttcaagc ctccgatccg tcgatcaaat ggcttagtcc aatgcatcgt ttctatcgaa 1740

gtaactatat atatctggtc gatatatatg cagctaacct aagccgccaa gccaaagaca 1800

tttcagttaa tgagttcatg ctcatttctt taccagagca gcagcacggc cgtgcatgtg 1860

ccgtgctcat gtcttaccag acccacaaaa atgctctgct tcttctccca tgtactacac 1920

agtacacggt acaacacaac cacagtagcg ccattccagt tcgatcttta cgggccataa 1980

attcactcgt gtcggtccac gctgctccta cgagcgagca ttgaccgtgc cagtggcagt 2040

gggtcactaa taaccaccag tcaccactca cc 2072

<210> 2725
<211> 2216
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201784_G1, chr5:184281910..184284125, Cluster 16

<400> 2725
gatctgatgg ctatggacat ttagttgcaa taattggtga tgttgtctga gactaaaagt 60

caacttcttt tttgggttag agccacacac caacaacgat taaagacgcc gcaccattta 120

gttctggttt atgactccaa ccaagactaa atgcccttcc tacaaaagtc tgtcgtgtgg 180

cgctagctgt tggactgaag atttcagtct tgcttggtgg ttctaatcag gagtaataat 240

gctttcatta gtttcaggta cggtataatt tcggcagctg ggactgaagg gaaaaaaccc 300

ccccgaagat ctgacctagt gttgatgaaa ttgatatata tgtggaaagc atgtttggcg 360

caggtgttgc gtgtagatgt agacactgct catgcatgag gcttgcggaa aataaaaaga 420

gtgtactagt tgatctgtac gcacgtttaa cgacggcaaa ttgcatgcag aatgcatact 480

ctcaggcagt ctggcacaaa ttgatgggca tatctgtcga tgatggctgg aataggcgat 540

cttattataa taataggtta caagcagcag gtcatctatc atgcatgata catccactac 600

atgcatgcat acatgtacat gtgctcgcgt ttgtttcacc ctagttaact caaaggcttg 660

tagcgcgcgg atgttcaatt cagtactaat atttacccta gcaagctgct tatctagcta 720

ataccagccg acctccactg aactgactag tatccggcct atagcagtag gcagtagcta 780

ggcgacctgc tacctaatcg ccttgccaat gaattaatat ttcttcttgt atcctgtctg 840

gtcctggaat actgcacatg catgggccgg ccgtgaggga tctgcaggat cggaggggac 900

ggtcctgagc gaggcattag gcatgttcgc gcgcggagac gtttagggca ctcctccggc 960

gcgtgcagca gcagtacgat ccctccccgg cggccctagt gtgcccggaa gacaagggtg 1020

tgtgtcctcg tagagggcac agctagcttg caaccccagc tcccctactt tattcggagt 1080

cgagtcaccg tgacctttct ttagggttaa cctttctcgc tctttggggc tggatgggcg 1140

cttctcgata catttgatag gagagagaga gagaggactc ccgggtcccg gctgatgcgg 1200

ggaacaccgt gcatgggtcg tctggatcat ttgattgtgg taccaaggaa tgatcaagaa 1260

aagataactg tagaacgtac gctttataat taatatctgt gaccagcgag agagctagct 1320

tcacacactg tatatactga cacttcttgc agcttcagtc ctgcgtttta gtttcagagt 1380

atagcaacta gtagctagct agctagctag gtaggtgatt tatattgacg tatctactac 1440

actggctcaa ttcataaaaa aaacccgacg aaatctgtct ctctatctat atcactgagc 1500

tcagctgttt atatataata atttcttgca gaacaactct ctggaactgg acggcctccg 1560

tccacttctc aagaacatga accttagcag cagaccctac aacgaaccag tccctcacac 1620

aggtcatgat tcatgaaact gcaggccgag aacattcacc tacactggcg ccattggctg 1680

gctccaggca cgcccgctgc taaaactaaa accagcagga gctagctgat gcatgccgag 1740

atgtggggtt aacggatcag tttcggtcag tccaagcagg aggtcatacc ataccagtcc 1800

aatccagcgc gattcacctc gaaagcacgg ccccgccgaa tattgtagag cgggcagtcc 1860

taggctgctg cccgcgtagc cgtgtgccct attagtggcg gggagggttg gaactcggag 1920

gcgcgcgcac gcgcgggccg gccgccgggc gggcgggcgg gcgcgcatgc cgcggctcgc 1980

gtcgccacga catgtcagag atcgatcggc tactactagc ttccgccttc cacaggtgtg 2040

cgtgcgcgcg gccagggcgg gccggggcgg gggtttgacc gcgccgcggc gagcgccagc 2100

ccttccctct ccttttttctt ttttacggga atctttcgct ggattcgccg tcgttggacg 2160

ggacgaaccg tccgcacagt agccgccccg cgcgcacagg tgtgcatgca cttgta 2216

<210> 2726
<211> 1807
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201819_G1, chr5:184470152..184471958, Cluster 16

<400> 2726
cgattcacac gttgaagacc atccatcgag tcaattttag tagctccgag taaaagagat 60

atgagtcaat gagtgtactt gtctttatgc ttataacaaa ataacagtgt acgtttgata 120

ccatgaaacg tcgatgttat cacttatttt tagctaaagg gctccattat tcattgctag 180

tcatgaacca aatcatgaaa cataggcata ccctccttcc tcattgagac gaaggtgacg 240

cggcggagct aacatccagt ctgcaaaaag tggtgggacg gggacgcaac ggcactgggt 300

tcgcattttt acatttttag ttggctgtaa aatcagagtg taccaaaaaa gatggaagga 360

agatgaaacg aggcgggtcc actggttgag cagtacgaac tgcacggtgg tggagtggga 420

tcgatccgcc cgtagccgta ggccaggtgg taccccgcac tcccatctcc gtctgcccag 480

ctgccagctc gctacaccga ccgggtccat ccacccgctg gcagttgtga gagagagaga 540

gagagacgcc actgtttcgt gcgcagcgca gacgcctccg gcccgcgcgc cccgacgcgc 600

ggcccgcggg cggtcccgcc gtcccagcag accagtaacg acggtggcgc gcggcaggcg 660

ggcacggcaa ttcgacaggc acaagcgagt gcagtagcgc acacagcagc gcctgcgacc 720

caccggcccc gccctgaccc gtcgccaggt ccggcaccgg caggcggcac gcgagtgcca 780

cagttttacg ccccgcgcta cgcgacgtgc tgcactccgc ccgcccgccg gtcggccccc 840

ggtgcgtgcc tgcctgccgc tttgccggcc cgatcgaccg ggtcagtcag gccagtcaca 900

tgctgatgcg ctgttgcacc gtacgcgtct ctgtgttgct cgccgagcgg caacagcaga 960

gggcagagtc cggccggccg gcacgactgg gcgcctttcg ggattaaatg acgagcggtc 1020

aaatcgtgtg gtttcttttg gccgctgtcg ttgcggcttg cgtgacaaga gatgcgtgca 1080

tgcagccaag acgtgtgcag ctgcagccgt gaggaccgtg atgagtgagg gactgaggag 1140

gaggatgggc tccgggctcg cgtgtcttgt tcatacttca ctgtcgcttt gacggtcgtt 1200

ggaccagtct actggtctct acgcacgagt acgtttgttc cgtccgtctt gagaggagga 1260

gggacccaca tgaacgtact cgtccttttt tttttctctc ttctctccta acgtgtggaa 1320

atagccgtcc tcttgagctg gtggctggtg ctcgccgcag tcgcagcctt gcaggaatct 1380

ggatcattac aagaagagat gagcagcagt gcatcacgga gttcaagagc atggaatttt 1440

gtctctaggt ttcttgaagg agcacgggcg gtccgcccga gatccctcct aggcctagca 1500

cggaaaaact cgagcgcatc ttctcgggcg cggacgacac agctgtttta tttcattaca 1560

tattcctcca tcaccatgac acgacacgtt cctcgttctc gacaagaaag aaaaaaaaaa 1620

ggcgtcatgg ttccatccac ctccacgatt gacagatttc tctcatatat tttacgacga 1680

cttgctgtgc ttttcacctg tcatgatgat tatgcagatg atcaccggct cactgtcagt 1740

caccctgccg tggattttgg aatatctctg ccataccaga gctagctgca tgggcgaatt 1800

gaggatc 1807

<210> 2727
<211> 1879
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202017_G1, chr5:185648585..185650463, Cluster 16

<400> 2727
agctctaagt ttcaaacggc cttcagctaa tagttagccc gttaataatt agctgaccta 60

ttttagttaa taatcagcta attcgacggt tagattatga tctaactgat cagaagttac 120

atttgcatgc ttacacacgt aaggactgat gcatggtaga gtaattgttg ccattaacta 180

ttagctttag tggttccaaa catgtcctaa ttttatttgt cccgcatgga atcatgtgaa 240

atgcttacaa gcaatttggt aatcaatttc atcggtatgc atatagtagg gttcgcatta 300

ttcgtgatga aatccgcgag gatatatgcg accgtacgga agagcatctg catggcgaga 360

tctttggccg gtagctagcc gtgtttttag cttctagtgc tagctaggta ggtggttgag 420

ctcggaatta atgggcagat gccgtccgac gtgcgtgcac tagcgctgcc cctggcctct 480

cggcctcggg gtgaccagtg actagctctg cactttggtt ctgagtggca gtgggcagtt 540

accagtggcg gaccggccgg tggtgctgga tagagtggag cagcttccct gcctttgatt 600

tggccggtcc ggtcgccttg cattgcattg catggctgga ctggaaggga aggtggtggt 660

cctgtcctgt gcactcactc actcactcac acatgtgcaa ccgctcggcg actcgatccg 720

gccaccgaaa gtgccgctgc tccggctgcc tatatgtcgt cttgtttgtc gccgtgtgtg 780

tcctttgact gaacgagctg catagtatga gcacatcgac gacggctacc atacatacca 840

gttctgcacg cagctgtcaa cgaagcaccc acaggtgaca ggccacagtg ttcgggagca 900

gattcgagag cttttgcaag gattttgcca tgcatatgat gccagctcga gtttttttt 960

atggtctcgc tagttttaaa gccttagaaa caagtgttct gttgtactat gtggagttcc 1020

ctcgtgtact ccaaacggat ccgcctaaat tccgttaggg ccggccaccc agaccagtgg 1080

ccgaccaaaa ttctcctgca tttacagtcc aacaactaca cacaccgctc ccgcgctccg 1140

agcagctgct ctgctgcagc gagcgataac tgcatgtcga ggtgcggcgt ttccgggcta 1200

ctagctcgct gcagccaggc caggccaggc atccatcctg ttacggctcg ttgcttgtac 1260

tactacgcaa gcaggcgtgc ttcggctcgc ctggcgacct ccgtagctcg tcgtgactcg 1320

tgagcgaagt ttctcgatca gaactcagaa cagaagacga aagcgttggg ggccggatga 1380

ctccattccc tttcctgaaa ttcttcacgg cgtcatcgag cttggcaaac ttgcagaatg 1440

ccccagcaac acaactgtgg ccaaacagct tgatggggcc gtcgtccttg catagcctgt 1500

cgagcatggc cactgggcgc gacgtttggg atcaacccaa cttgttctca ctcaggctgc 1560

cgccgctcat caaagctagc tgctctagcc gcgcctccct gacatccttc tatacgcttc 1620

gctcggcctg ctgctgctgc ccagcgtcgg cgtcgcagag gaacggtcag gcccggcctg 1680

ccccggccag gcctacccaa cacgtcagac cgtgtgcttt gccgcgtcgc ggcccaatac 1740

gcgctcggcc ctcccacgga cggcccacgt gctcgctccc gcagtccccg cgttcggaaa 1800

tcggaaccga acacaggtcc gtggcgccgc cacgccatta tgccaggcta taaagccaga 1860

gttgctgagc gacgacgtc 1879

<210> 2728
<211> 1417
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203328_G1, chr5:192861391..192862807, Cluster 16

<400> 2728
atgcagtccc cggaggctct catttttttc tctattagtt agaattattt gaatcttaaa 60

cgaggttcta aacctttta aactgcctaa atatgagatg aaggagatac cgataaatcc 120

ttggtgatgg cagtgttggg aacgtgcacg tacgacgacg tggtggcggg tggccatgtt 180

ccaccaaact gacagtcgtt gaggacacga cccatgcatc catcgttcaa tacccccagc 240

aacagcaagg actggtcgca tatatattgt caaatccgtt tcaaccagtg tgatgacgac 300

cgacgcgcac tgtgcagtgc gcaaccggtt tttcttcacc aatcagtagc gtaaaacaca 360

atagagggag gtataaataa gcattagcaa tgggtaataa cacggatgta gatggtcttg 420

agactcgtgc aggaggcgat gcccttgatc atgaagctga cagctccgtt tgttatgtta 480

ttttaaaaac cccgacccgg ccagccccta tcaacctgta cccctatggc tatcctctcc 540

tcgccgcgtt gcatgcatgc acacgccgcg cgccagccag ctgccaccaa gagaaccgac 600

cttttgataa tccaaggcta gctagctagc gagacgacga cgtcgatcca ttccattctt 660

ttcaagcaag tgtactttat atgcatcgcc gtctggtctg gtacgctagg cttagcttct 720

ggtctggtgg tgtgtccgtc tggtctggta ccgtaggcac gcagtggatt taagtgggtg 780

caacgtccgc acagatgcga acgctgtacc taacgtattg gcatgcatat gcatgatgat 840

tggcgatgac agcaacatta catgctatcc cggaccggag ccggaggcgt agaaaaacct 900

cagagcaccc aggaggtgcg gtggactcca ggtccaggac acggcctcgt acgtgatgcg 960

tggccgtcga ttggaccgag ggctgaggtc atcgtcgggc cacttgcaag gcgaaagggt 1020

cgtgccgtgg gggtccatgt ccatacaaca ccatacagta ctccagggcc cagaccggac 1080

ccctgcctcc atcgcagaca gaggctggca tccggtccac aaccaccaat aagcgcccat 1140

ccagccccac gtacggcgca gtctcactgc cactgcggag tccaatcgat tgatgcacac 1200

gtacgttata cagagtgaca cggacggacc gcaaggacca cgcccacatt acctatggcc 1260

aggcagtccg gcacgatgtg atctctccct cacgcccgga ctccggcctt gtcctccacc 1320

gctgtaaaag taaaacagtt gaacggtcgc gagcgagggg tccggtggtt cctccacgcg 1380

tcccggtctt ccggaccagg caacagagcc gaatttg 1417

<210> 2729
<211> 2621
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204061_G1, chr5:196756610..196759230, Cluster 16

<400> 2729

gctgaccagc gatccttgta tcccgcatga actgttgtcg ttcggctact ctggtgtctg 60

gtctatatcg aagtcataga tcggatctcg aacttgtgct ttaggtagtc ttcgtcaaca 120

cggccggcca ggggcggggg cgggtctggc gacggcggcg ggggcatggg cggcgcaaca 180

aggaaggagc ggcgcggcga gaaaagagaa aagagattag cgccggcgtg gcgagaagaa 240

agactgcctc tgtttaaatc ctaaatccgt ttattttcga ctgctagagt cattggcgga 300

catcaaccac cgaaaataaa gactttattt ttggctgtcg tcgtgaccac caaaaataat 360

cctagtcata gaaaatcgtc cgcagtgctg ttctgtacac gccaataact tcactagttt 420

cctaattcta cggccctcgg agattaattg ttggtgcata catgtaggat gaaagcgtgc 480

atccaaccag aacccaacaa gtgcattaag gcacgcccag tgcaactcct gcggcgaggc 540

ggtagtggcg gccggggttc tctctgtcac tgagacacaa agggagattc atatggcctt 600

ggctttgtat agcattacaa caggcgggag agaaagaggg agaagcataa agcaaacgaa 660

tcgaatcatt caatctggcg ccggcaaggg gctccgttcc tcccgctctg ccggccggcc 720

cgctcgtatt attgcatgag acgcgtggga tggcatggaa gcgagaggag ctagcagggc 780

cggagagcag aggcagaaca aattcctccg cgcctccgat cgatccccta cttcgccgct 840

agctgcacgg ccggcctcgg cctgatgccg agatcttgaa ctcccctcgt cgtcacgtcg 900

ctttccaggc ctgccatctc tgtcgcggca gccacctcga cgcatgtgct accgtgggtg 960

ggcggcgtgc gctggcgcgg cggaggatat atccccgtcc atgataacga cactccctaa 1020

tcttctcacc agacagatga tccatggccc tcgcccggcc acctcttgcc gtggaagcat 1080

attatccaca tacatactgc cggttccgca cgcgcgggta gaaggtgcag tacgtatcgt 1140

ctggagacgg ccgggagtat ctccctttgg cggcggcggc gacgtatata aataggcatg 1200

atgggagcat gcttgcttgt tcgatcttgt gcgcttctgt cccgcccctc ctagcccctc 1260

ctccttcttc ttttcgtttt ggcaatcttc agattatgca tgacatgcat gcaccatgga 1320

ctgtttggtg gtattgccag acgacgactt ctgttttcgt tgcgcaatgt ttgtttgtat 1380

tgtaccgtga tgcgaacgac tgagaaggat tttggatatt gcgttgtgat attattgtac 1440

gtcatgcata tgatggtgct ctttagtttc tgcctgtgtg ctaggacttt ctgacgtttg 1500

tggttgacga tccctacagc tagcagtgtg cttgggatga ctctcagcta catgcatgtg 1560

tcagaaattg tgatagaact agcatggaat gcacccaata actccaagtt taagcgattc 1620

cgagtccact aataacgacg atatatctgc tgctgtccct ttgccataca ctaaattagt 1680

acccacttta cctcaaatca taagcatgca gttttgattt tttttagaga taaaacatgt 1740

taagtttggt aaattttaaa taataaaaca ataacactta tgattctaat tagagtatcg 1800

ttaaattctt tattaattct attttatagt gtatctattt gatgccacaa atgtttacaa 1860

ttttatctat agttttagtt aaatttaaga tgttttaact ctaagaattt tacattgttg 1920

ctgatttcga atgtaaagga ctgtttgtca tattaccccg ctctctggtc ctgtttgctg 1980

caacgcaata gttcgccgag ttatgaagcc tatgccctgg gcgggcccag caatatttgt 2040

catatgcgca cggcaattaa tccaattgta gagcgcagct gtctacgtgt gactggatct 2100

gctggagtcc tgtaaaccga gcagttgtgc ttgcttcgag ttcatgcacc gaatattgtc 2160

gcggttggta gcacgttacg atgggctgtt gtgttgaaca gacatggtcc agatattatg 2220

gcacaagtag atactgggcc gaatataggc tcaactatct agaaataaaa tgtaacgcat 2280

gccataggcc tcttctgccg ctggcaattg gcatggttag ttcgtcaaat ctccatcgga 2340

cagatttttg gcccaccgtg gtcctacccg agaagcctca gcgactcagt tcgtagtttc 2400

gtttttagtt cgatgccgct acaggcatag gtaggattgc atgagtctcg tatgtgtaaa 2460

agatataaat aaatcacatt aatcataaat aattaagact aaaacacgta attcaacttg 2520

attcctttga aatcaaagaa agcacaaatt cagaaacaaa agcgaacaaa ggttaaatat 2580

ttacctttct atctcaaagc agataactta ttattcatga g 2621

<210> 2730
<211> 2119
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204293_G1, chr5:198203100..198205218, Cluster 16

<400> 2730
ccaaccaatt ggacaaggaa gacaactatg gaactatgaa gcataatcgg caccaaatgt 60

tcaaacctaa ctaataagcg agtaagcgac caatcacatg tgcattaatt gtggcctagt 120

ctaccacatc ttctacgtgc taggacccgt gaggaacatg tctaccaacc agattcaagc 180

tgatgggtat gtgctaggac ctctgaagaa catgtctacc aaccattttt tggtaattaa 240

ttttttcat gatcataaag tttggagatt ttggtggaag ttgagaaaac catgatctta 300

gagatagttt tttttatcta tagagttgct ttgatatttg gagttagttt taaataactt 360

taggaacata ttcataaaat ttgaactcaa ccagactccg tttcagtgga tttcactttt 420

tcgtagttca gtttcaaggt gtagattcta ccaaagtagg ctaggttaga tttgcatctt 480

ggctaggtcg gtttgcatca cggatgggca ggcttatgtt ttgaggtcta ggtgtcagtt 540

attcgattcg tctctttggt aggatttttg agttgcccat gaagatagca aagtgtcaag 600

tcatcggtgg gttaagtgtt ttggcttcaa gctcttgctt caattaggtt gaagttgaga 660

gcctcgcttt aaggtttttg tgtgttttgg tcatactctt ggtttttcac ttttgtgggt 720

gtccctgcta tgttctctag gtatactgaa ggacatccgg ccacttgttg actcgagtac 780

atcttacttg tgagttttaa tattctagga gggttattta ggacaattaa tggtcatttt 840

agaaaagagt tttaaagtac ttctcatctg tctccttgtc ttcttggatc cttcacttaa 900

actattttct cccgatgaaa ttcagaaaaa ggccatttta tggcgccgct gaagttactg 960

taactagaga aaaatatcta tatgtactgt atctccttaa tttactttca atacatgtgt 1020

cgatttcacg aaagtaactg cagtgcagac atcactagtg accctgcaac agaaaagagc 1080

aaggaggacg acgcttttgc cactgcccaa tggtgggaaa cgacatttgc ttttaaggga 1140

cacacctctg acgaactgca cattctggac ttctcatccg gacatacgat tgtagcacgt 1200

tggcaaaaaa acagacagcg tgactattgg gaagcctaaa ggacagcgtg agtgtacatc 1260

aagcaaatga gattactggg cgaacacgaa cactctctca gtgtcatcct ttattaccac 1320

ctttaacgca ttttggaacc aaatctgcag atcatccaat gcagacgtac cctagtactg 1380

ccttctcaca catgcaagcg cgccggtgca tattggcgat gatgatgaaa caccaactga 1440

gccaaacatt tgtgcctttt cagcgacggt gtcctgtcct gctgttaggc gaaaagcaac 1500

agacgcatcc ccaatcccgt cgtcgtccag tccatctctg cacgccgaga cgccatgcac 1560

aggagcgccg tggcgaacgc cggcggccca cgtcggcacc cgaatccccc ccgcgatttc 1620

cccctgccgg ctgccggagc ttgcggccgg acaggggcgt ttttgcccaa ccccccctct 1680

ttttcaccgg tgctacgcgc gcgtataagt ggaggggaat atcaggacgt acgcgcgcgc 1740

cctgtggttg gcttatcgtt tggcacgcgt gcccgccatc cgccccgtca ggctccactt 1800

ccgcgcgcgc gcgcgcggcc ctgcaggctg cagccgggcg gggcggcccc atcgacggcg 1860

accgttccga ccacgacatc ggggtcgagt cgaccacccg atcgacgtct cgactcgacc 1920

ggtcatgcca agagaccatc cccagtcccc accactcggc cgcaaattcg cggacgggac 1980

gcgcgcgggc gagcagtcaa tcagcgtgca cgctgcatgc aaacagctgc tggttagctg 2040

ggctgggcaa ctgctggcga cccgcgccgt gcgctcgggc gcggctgtga gtgaggaccg 2100

gttaggctat ccgcaacca 2119

<210> 2731
<211> 3213
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204637_G1, chr5:200298202..200301414, Cluster 16

<400> 2731
ggaaacgaga gtgggataaa caagcgtaaa aaatgaacgg gaacgagagt attaagcgga 60

aacttataat ttaatacaaa acacacgtga tattgatggc gagctagcag tacaacaaca 120

tggaacaaac agatacagag agacaattaa tactacattg ttatttgctt gtttgtggtg 180

tatatatata gctacgacca gcgttgttta agtctttagg acatttgtca ttaaggggag 240

gcaattaata ctacattgtt atttgcttgt ttgtggtgta catatagcta ggtagaataa 300

ccttttatgc tataatttgc atatataatg ctttagctaa tgcattaatg catcttgggc 360

cgatcccggg tttctaaaat atataataaa taccggttca acctggctaa aaacgagtgg 420

gatagaccct atcatgtttt agaatttttt cacaaataca aaaacagacg gatcaaatat 480

agaaaaatga tattggtcgg gacgtcctct ttcaacctta catgcgggtc ggtcgtcgag 540

ccaattttca gctttgcggg tgaagtaaaa gaagcgaagc caagtagcaa gcacgcatgg 600

gcatggccgc atgggccgtg cgggcgtgca tggcacatgg cagcgcgcag cacatcgatg 660

gatcctcggc tccagccggc gtcaggcgac acagatgtct tccgtgcaaa cggccgctga 720

aagagacgag acgaccgcgt tcttgtggaa gaaaagaagc gagatcgagg ctcggcgggg 780

cgcccccttg ggcagcaggc aaggcatcgg tacggatcca attccatgcg tgggaatctc 840

ccggagctag gccggaggga agggagcctg gggagagccg aaggggaaac agtgcggtcg 900

gcagcggtcc gcggtaggaa gggtgatgac aggagcggga gtaaatgcct gtagcccgta 960

ggggcacggt cgtctcccgt caaccggctg gccgccgcgc ccgcctcggt cgccatgcca 1020

cctgcagcag cagcagcatc gagcccctgc atgcattgca tgccatgcat gcagcagcag 1080

cagcaggcca ggtcaggcca ggtagcgtag cgcccgtagc gcgggctccg tccgtccatg 1140

tccctgtccc tggccgcagc tactaggagt actatagtgt gtagtactgc tcagcagccg 1200

tgcagtgcgg tgcgcggcgg aggggcgggc gagctggcaa agtggcaact ggcttggcta 1260

ggctagcttt ccgttggcgt ggttgggctt tgcaggacag ctggtgcacg tgacggggcg 1320

ggaggggca tgcttcccta tatcagccac agctaccgcc gtactagccc cccgcaccta 1380

gctttagcta gggccagccg gccgcccgtc tcccggctgc gttgtggttg tggtggagtg 1440

gatgggagat gagatggatg atgccattgt cacatcacgc acctgccgct gccgcgcgcg 1500

caaggcgcac ttgcctgccc tgggccctcc tcccaccggg ggtctcgtct ggcaccgtca 1560

cttcatgggg aggggaagca tgggcatggc tgcatggtgc gtgcaccacg cttcattcgt 1620

atatacagct gttagccggg atggatcggc tgatgctctc aactgaagtg atcgataaaa 1680

agcggtgcgt tggtattagc tggcctcgtg ccgtccggcg ggacgcgttg gaagcttttt 1740

cgactccggg gagacttttt ttttagactt gcaatccact ctcactgatc cactgctttt 1800

ctgctcgtgt gctaaactgc taactcggca atatagcatc actcatttgc ggtgcaactg 1860

cagtgcgcag cctacagatc caaagctacg tactgtactc taaattcctt gctgtagtac 1920

gtgaaacgtc atgcgtatcc ggccggctcc cgcgagacag gaagagacag cgactcgcag 1980

acttgcagct gcccagcagg cagtagcttg ccctttttaa tcgcagcact tggggttgac 2040

agtcacacac acactggtcg cggcgcggca gatgaggcgc cacaaatctg aaccagcata 2100

cagttagggc ccatgatttc ccccctttct ctatggtttt tatatataaa aaaactgatt 2160

tatatgaaac ttttgtatga ttcctcctaa attcctgcat ttcaaataag acatcgagct 2220

agtgtaagcg taggcctgca aagctgcagc tgcctgttcc ctgtactact tggcactaat 2280

ctcaccggct acgtgccttc gcatacggag tagtttattc gcggtgggac acttgataga 2340

aaggctacgg tagcgtactt ctaagactat ggtcatttaa aacactattt tatactatag 2400

tctatactgt tactacacta gagttaaaat ataaagatga atatagataa attactgaag 2460

atagtctaaa catcttttcc atttttaag aggacacgcc taaacagttg tgaatacata 2520

catacacacc gatacacaga tgctaaagca ctaaagcccc taaaaagttg gtgatacatg 2580

aaccaacacg aaatcgatca cctttgaacc cgccagtcct actaccactc tccttcgttt 2640

gacctagctg gctggttaag aaaaaaagtt cgttttccgt aaaagcgatc caagtgacaa 2700

cgacgagacg tgattttccg tacctgactg atgttgatac cagccactac tccgagctag 2760

tagtaaaaga tttttacagc caggggagag acggcgttcg tctgctagtg gctagaccgc 2820

gcgtgttgcg cgacgccggg ccggggcgcg cggtcggcca cggactggca gccggtgcga 2880

ggcacgccgc gtggtccagc tagatcgccg accgggcacg gcagacgacg gccggtccag 2940

cggctggaca cgggcacacg agagtacgag actgcgcgcg tttaggttgg taccactacc 3000

accatgcatg tcgcgactcg ctcgtccgat tatggagcaa aaacacctgt cgtcatgcga 3060

atcattgtac ggcatagcga taagaaaaaa aaacttaccg cttctagcat gcccgtcgta 3120

tgcgacgacg aagttgagaa atcatgccca agcaagcttc ccgcatgctg agttttcgct 3180

gaccctgttg gcctgatatg tcgctgaccc tga 3213

<210> 2732
<211> 1907
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205744_G1, chr5:206481032..206482938, Cluster 16

<400> 2732
tcagccagtg caggattacc tcaccggaat tgcgtcacgt gcatcgccgt ctggcaccgc 60

gctgccgtgt cttccatcct tggcctgatg agcgcgaact gtgccgtgtg attaacagcc 120

gtcgccgctg atgacgctgc gcgcatacga aatgtctcgc atgctgtcgt gtcgcgtcga 180

ctcgacccgt tcgctggcgt gctggcgtgc tgcgctgttt tatcacccca ccggcgtgct 240

ctcaagctgc ttccgaagcg gtggaagcga ttgagcccgg cccggtgaaa ggcattcgcg 300

ccaccggtgc caacaagctc gaagagatcc tctacggcgt gctgccacag gtgatgccac 360

tgctgatctc ctactccctc tatcgcttcg aatccaacgt ccgctcggcg accgtcgtcg 420

gcatggtcgg cgcaggcggg atcggcgtca ccctgtggga agcgattcgc ggtttccagt 480

tccaacaaac ctgcgccctg atggtgctta tcatcgtcac ggtcagcctg ctggatttcc 540

tctctcaacg gttgcgtaag cactttatct gataagcgag gcattgatat ctatgcactt 600

gtctacacat ccgaccagct acccaacacg ctatcaagag atagccgcaa aacttgagca 660

ggagcttcgt caacactacc cgctgcgggc gactatcttc ccgccgagca gcaactggca 720

gcgcgctttg aggtgaatcg ccacaccctg cgccgcgcca tcgaccaact ggtggaaaaa 780

ggctgggtac agcgccgtca gggcgtcggc gtgctggtgc tgatgcgccc gttcgattac 840

ccgctcaacg cccaggcgcg ttttagccag aatctgctgg atcagggcag ccatcccacc 900

agcgaaaaac tgctttcggt attgcgcccc gcgtccggcc acgtcgctga cgcactgggg 960

attaccgagg gggagaacgt catccacctg cgcaccctgc gtcgtgtcaa cggcgtcgcg 1020

ctctgtttaa tcgaccacta cttcgcggac ctcaccctct ggccgacgct gcaacgcttc 1080

gacagcggct cgctgcacga ttttctgcgc gagcaaaccg gaattgcgct gcgccgcagc 1140

cagacgcgga tcagcgcccg ccgcgcccag gccaaagagt gccagcgtct tgaaatcccg 1200

aatatgtcgc cgctgctgtg cgtgcgcacc cttaaccacc gtgacggtga aagcagcccg 1260

gcggagtact ccgtcagcct gacgcgcgcc gacatgattg aattcactat ggagcactga 1320

atgcacgcag ataccgcgac ccgccagcac tggatgtccg tgctggcgca cagccaaccg 1380

gctgaactgg cagcacgcct gaacgcgcta aacatcaccg ccgactatga ggtgatccgc 1440

gccgctgaaa ctggcctggt acagattcag gcgcggatgg gcggcaccgg cgaacgtttt 1500

tttgccggcg acgccacgct gacccgcgcc gccgtgcgcc tgactgacgg cacgctcggc 1560

tacagctggg tgcaggggcg tgataaacag cacgccgaac gctgcgcgct gattgacgcg 1620

ctgatgcagc aatctcgcca ctttcaaaac ttatcagaaa cccttattgc cccgctggac 1680

gctgaccgta tggcacgcat tgccgcacgc caggccgaag tgaacgccag ccgggtcgac 1740

ttctttacga tggttcgcgg agacaacgca tgaccctgga aaccgctttt atgcttcccg 1800

tgcaggatgc ccagcacagt tttcgtcgcc tgttaaaggc catgagcgag ccgggcgtga 1860

ttgtcgccct gcatcagctc aaacgcggct ggcaaccgct gaatatc 1907

<210> 2733
<211> 2087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206062_G1, chr5:208097190..208099276, Cluster 16

<400> 2733
ctattggtta attaggcccg gactgacgac tgtcgatttg ggggcaaaac cacaaacacc 60

accttcggtt ccactgcata catgcgccgg gctattttga cgccacgact tgtggtcgtg 120

gcaactagac ttggtcacat tttctaccct acagatgtct gaaaaataaa gattttgatc 180

gcatcgcgcg cgtacggcaa aatggttctt tttttctgga ccagttgacc cgtggctcac 240

ttttttggcg tgccagaatt taccactgga aaactgcact ggtatactcg catcccatgt 300

tcatcagcgc accgtccgag cgagtcctcg ctcaccaact atttttgtga agttcctggt 360

gacctgttat gagacacgac gagcgcacag ctgtttttca ctgtacgatt gtactgtgca 420

tatggattat ggatacttac aaatttagac actttggcga gagccgcctg acaggtaaaa 480

agggaccggg acggactcta acctctacgt ctgtctggtc caccgtccgc tagcggcacc 540

ggcatgcatg catgcagatg gcgcagtgcg ctagtcgatc ggtccaccgt ccgcgccgcg 600

cggtctatta ttcgtggatc tagaaactgt gcgtccacaa cgcgctccga gaatgaggac 660

agcgtccaac taggcaaaac tagcagcagc acatgcatgc gtgcttgcat tgcatgcacg 720

cgccactgcc gatcgatcgc catgcacgca cgcgcactcg acgcccggcc gtccgtcgcc 780

catgatcgct cgcgctgtcg tccctcggcg tgcacatcgt tttcgtgtgt ctacttatat 840

atacggtctt caaaactcaa agcggcatta atgtagcgtt ttgttccaga gccatttaag 900

atggaacggc tccgtccgtc agttctatat agaatcaatc taaataatcg caaattagga 960

gtggagttgc tccgcctagc ttatgcaaca ttgaataaat gaaagatact aaataaatgc 1020

tctagccaat gctctataaa aacattttgt tctttgatct atagataacc agagagaccc 1080

tttttcttaa aaaaaaagag atcagggcca aagggtttgg tgaggatgtt ggggggcagt 1140

gtccccaaac caattccacg agaaagcaat aatcgcgcac acatggacga tggtgtagcc 1200

ctgcccgggt cgatcactta aaatagtttt tgtgccattc tttctcccga tgctagctct 1260

cacaacatga tactcgcggg gggggggggg gggggggga ggcagatctc tcctgctact 1320

tttactacgc actatctccg aaagaacatg ttgcttgttg acctggcaaa taacactagc 1380

tactcttgca ttgcttctgg acatcaatta tgccaagcta gatcatcatt ggcacttgag 1440

atagactgat agaggcatat atagcgtgcg cagcatgggc acacagcact cagtctcagt 1500

ctcagagaca cctcttgtgg gcttcagctt cactgatatg cagccgcaag tgcgggttgg 1560

gcatgataga gatttgctaa tccggtctcg atctgggccc attaattcgt gctgcattgg 1620

catggataac ttgacatgaa cgccaccaag gaccactagc tgcaagatgt caatgcgcca 1680

catcgcaaaa ggggagagaa gaaggatatg ctccatttcg gcagtggtcg ggagaattgt 1740

atgatcattc attcaatgag ttgtttagtt aggctacacg cgtaaggtaa aatcttctcc 1800

gcacggtttg cttgatgcag atatgaagtg tttatggggt gcttggacgt ttgaggtgga 1860

tagtgagaaa ttcctcaaaa ttagtgaaat acctgtagat acagatgtcg taaaaatcat 1920

ttcattgata aaagggagaa gtgataagat ggtagactag cgagtaccat atccctcgaa 1980

ctaataaaca acccattagc aatgcccaaa cataccagaa ataaaatggt tgctcagtgt 2040

tcaccgatcg aagtggccca gatgaacagt agcacgacat ggccgcc 2087

<210> 2734
<211> 1761
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206130_G1, chr5:208431530..208433290, Cluster 16

<400> 2734
ctttgttcgg ctcattctta cgtctcctgg atctgctaat cttcgatgtg tgaacctgtg 60

tatctttggg aaaatggaac tggccactgg cgagtgcttt tgtagcagct aagagattta 120

gggcatgttt gataaccatg gatgaggttt ggttcactgt caaagagaga atatctcctc 180

ttatctctac tctatatgtt ggatgaacgg actttttttt ttgaaaaaaa aagaccggat 240

aggctcgtcc agcttttctg aatcccgtgc gtttggccca aaattagcaa tcgattgcac 300

gctgtactaa ccactatgga attattgggc gggtggtgcg atcttggccg catcccacac 360

cacacggata atatggagtg gccatgtacc aacctgcagt attgagtatg acatcgacga 420

ggaccgtgtc aaaattccta gctgatttat tttgtctcgc cggcgggtcc cgtccggcgc 480

tcgtcgtcgc tccgctttcc gatccgtgac cactcgccgc cgcggctctc gatctcaaac 540

cgcgtctcga cccaaaaatg aagcggagat ctgtaagtac aggcagtaca atgggggtac 600

taccgttgtg catgcattcg ctacttcatg cgcaaataca ttttgtacct gtcatgtggt 660

atgcctgctc ctcgacggcg aattggccgg gaaacggacg tttccgcacc attggctact 720

ttttgtgtgt gtgtgtgttt tgttttagaa agggaggagt cgatcgccat tgaccgcgtc 780

gagctttact ggcatggagc catagagaag tataaaacaa gcaccgaaat gcacaggacg 840

atagatggac atcatcggtg gtataggcac tgtgtaggca gccagccaga gaagatttat 900

ggctggctgt accggcgaaa agggtcgaac tgtgcatgta gagctggcaa ttgtcgcgac 960

cgacacttga tggtccagca ttggcatatg gcctacaggc tacacagcac atcccctcgc 1020

cgttgcatgt ccagatcgcc ccggttgacg gtcccaccat cggaggcatt ctgtaaccag 1080

ttttttcacc cgaaatatct cattctgtaa taagtagtag taataataga agaaaaagtc 1140

tcctcttgga cagcaagcat gcacgcgtgg tagtggtggc tgcttggcgc atccaaccaa 1200

atcaccaacg tgctagccca cctcgcattc atgcagtgac ggacgaccta acagtctctg 1260

gtgatctggc tacccatggc ctcacagtgc tcactcacac actcagacgt gggttcatca 1320

ctggcgaggt tagtttaggc agcagatggc gacggcagca caagttgggg ggcaactaac 1380

accgtggcct agctttatta tggaagcatc actgacccac tttcacagag ccgcacgacg 1440

tctaatcacg cggccaacca aatctgccag tggcagtgaa tgctagtgat gagtagtgac 1500

cagcgagtgc agcagttcat gagtagcagt ggttggtaat gtccgccgct gtatagcgtg 1560

tctcgatgag gccatgccac ttttttcacc gggagaagag catcccaacg tgaattttat 1620

tgaatctgac aatgagaagt catgccacaa tacaatgacc tttttttaa aggaaaacga 1680

gccaaaaccc ctacataacg tcgtggaaga ccacatatta caaacagctg ctagaacaat 1740

gcagtggact tcatcaatac a 1761

<210> 2735
<211> 1904
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206231_G1, chr5:208989878..208991781, Cluster 16

<400> 2735
ctgtccgctc ctttcaaaag cttgttggta ccgttaacta gcgtggtatg tagctaggct 60

ctggttggtg gcactggcac cgttactcta ctccatctgt ggtcgtgatc gaatagcata 120

tagcacgtat tgatatacga atgtgtgtgt tttattcaga gagagctgca tgctaaatga 180

cagacgcaca atttttgct ttattttcag gcttcattca tctatgaatc caaacttact 240

tatgactgaa catatttttc tttattacta gttcgtcttc agactatagt agaaaatgtg 300

aacaataatc tgccagattc acaatccaca tgggcggtag acttgtaaca tgctggttgc 360

cagcagagcg aggggcagct gccttttgga aaggcaagtt agtcatcact ggccggcgcg 420

cgcgagccgg cagttggacg cgtcgaaacg ccgcgaccct gcgtccacga gtcggcgagt 480

ggaggccgcg gggatccggc ggcggcgacc gagcgaccgc cgaatccggg cgcgatcttt 540

ggacgtgccc ggcgcacgta cgcggccgct ggttcgtgtg ccggtttttc acacgccctt 600

ctttattttc tgcctgcttg accctccccc gtggatcgtc gctcagatct tctttgggtc 660

cgtccatgat acgcgcctct tgacaatcga tgatggcaaa ggacggatac gggtcacgac 720

aaaatctgcc tgcactgcgt agcggaatcg ttcctgtgtg gcgccgacga ggggggcgca 780

tgcagtggcg tcctcgtgat agatatatat cggaggcgag attgtgagca tccgaatcac 840

agcgacatgg acggcgcagg gattcgagcc aaggaaaact gggctgggtg ggcgaaggac 900

aacccccag ggcgccgagg agacggttct gtggtcgcgc tgcgctaaac cttggaggcc 960

tggacgacta cgaccccgaa ccaacttgtg ttcatggatg ctacgctata gcgcgaaacg 1020

aaatattctt cggtttcttt tgggtggtgg ccacgagtga aacgtcacac tcgcttcact 1080

ggagaccgct agatatctat atatatcctg tgcaagaagc acaaccaagt tgccagggaa 1140

aagccacacg ggcctgatag tccttttctt tcttgaaggc gatttgatag cccatatcag 1200

atgagcacat ggccgcatat cgtacggtta gacctgttca aactcaaact cgggttaagc 1260

cgttaaggcc ttaagggtat tacccgtgtg ttgggtcagg tcaagttggt ctataccatt 1320

ttattcgata tgttgggtta gaatttttt agattggatc gagtattttt agggttagat 1380

aaagttttag ataaaaaaaa tcatggttca tacatattcc atgggttgta gaggctaaaa 1440

gacaatagta tatatctttc tgttgcatgg gtcagattgg gccggctttt tttagagggg 1500

gacgggtcag gctatagaga aaggattttg tgataccata atcgggaata ttgttttaaa 1560

actattcaac aaataaattt ataacccaat tatagatgat ctaatggtaa taaaaaattt 1620

attacagctc aagaatgtaa tggtacgtct gtcatatttt tttactacaa ttgaaccata 1680

aaactacaac tttgaattaa tgcttatgga tacgtccgca gctccagatg tggctataat 1740

gaatatattc acacgttgca tacaatgttc agagggacac ctatggtctc agatttagca 1800

atagtgatat cttttattgt aatgttgtcc ctcataataa acacgataag cgcgagtatt 1860

acctgaattg gctagtgtta cgtgccaact tggtttgaga agca 1904

<210> 2736
<211> 1837
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206718_G1, chr5:211552820..211554656, Cluster 16

<400> 2736
ctgcccctga cacgagttcg cgtgcgcgcg gctccttcct gtagctgatg gtacggctat 60

actacgtaaa tctccaactc cagccagctg tgtacatgta cagcgcgggc gtcgacgacg 120

acggcgagcg accggccgga cggctccgtg tcgtccctcc cttgcaggcg gccggcggcg 180

gcgggtgcag tgcgtgccgc tgtcgcgcgc gcgggcgacg acgtcgcggc cgcgctgcca 240

ctcgatggat gatggatcga tgcatcgatc tcagctcccc ctttgccggc cccacgcccg 300

agatcttgca ggcgacgtca aatattctgg accgggacgg aggctcgctc catatatatg 360

tgtttgtgtt ttgttctagt gattagggtt ctcgcgagat ccaaagatct atcaatatga 420

tatcttcctc ttgctactca ttgccacggc gaccgagttc acttggcgcc agcaggggcc 480

gatgagagca gcgagacacc gccgtccgtc gaggttaaag ttaaaacggt gacacgccag 540

agagcaggcc actggtgggt gcaaggcgcg ggcagcgcga ccgcacgatc gttagcggcc 600

gtaccgaact gcgtgtgatg cagagagtag ggtgctggag ccggtagatc gctcgctagt 660

tctctgctcc atgttgacca tcccgatcca tccaccatgt cgtccgggtt gcaattattc 720

cgtgcggcgt ggatgactgg tccgaaaacc taccacccgt ctcttttgtt cttgtgttgt 780

gtgtggggtg ggttacttgt gcagtggcag cattgactca gtaatggcca taattcccgg 840

ggacaaagac ttgacgcgca tgttgttttc ggtagcaacg cgaaaaccga ccgacgcgat 900

gacgccgctt caattcttgc tagttactgc attacatgac gacccgctgt agcatagtag 960

ctttgtgaga acgcttgcta gtagctagct gaatatatat gcatggtcat gcatgtatat 1020

acatgtttca tttggttgga tttacacgta cgccatgcta tatatagctt tctaagcact 1080

tggctgcttg tcaccgtcac atcacggaac cacttcacat gcccaagtcc tccccccaat 1140

taaaagcgag caagagagac agtacgtgct ccagagaata gccatccgaa attccagctc 1200

tattgatgga ggcatggagc tccccttgtc ccccttaat ttactatact agctagcttt 1260

cagatgggaa ccttggatgc tgcctctgcc gcgcgcgtgc ttgggaccaa catatgcatg 1320

cagctagagc cggccaagcc aaggcgcaat cgatccttgg acactcagga acttgtcccc 1380

gtcctcctct tttgttttgc gtgccccaat ttgctcttgc attgtacggc ggccgtgtga 1440

gccgtcaacg tcaacgttag cggctcatcg tcatgcatcg gccaagccag caatgcaact 1500

gccaggcaaa gcgtttttc tcgggagaaa ttggaaaggt ccaatactga cgggcaaact 1560

acctggccct ggccgagcct tattagggcg tacgtcttca acaacacgag ctgtagtgta 1620

gcactagttg cttgtaaaag ttggtggata tatggaggga aaacggccac tttgctgaga 1680

ggatctgaag gagtaggtca ggaggagggt gcatgttgac aactgaaggg ggtagctagt 1740

gtcaatgcag acagggatgg agatggaggg taggcttttg ccaaaggcat ttttggcggt 1800

gttcgtcctc tcagtctcag agcgtaaata tggtcct 1837

<210> 2737
<211> 1668
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207281_G1, chr5:214083830..214085497, Cluster 16

<400> 2737
accagagcga cacctggagt cagggaactg ctgcttggtg aatcagaatc caccaccatt 60

atatcaggga ttggggatca agaaagctac tccttatttt ataggaaaga gagagtaagc 120

tactctccta gctaagaaca aaatatcagc tacgcacatt ctagctagta tactagtact 180

atacttcccc ctcttaaaat tgcaagccat tttaattttg ctgaagagct aaatcatctt 240

aagtttaacc aaatttatat tacaaaaaat aatatatatg tatatatatg gtactaaata 300

aacactatta tattctttgt aatttactac acaaagggaa tatattacat tatatacata 360

tgtgcttttg atctttcttc tcactttccc ggcgttgatt tcatgccgtc cctatcctat 420

ccgttgccat caccagcttt tggaaggaga ggagatgaga cgagaaaaag aggagaggac 480

aaaggacgag agcggtgaga ggcctttagt tgatccggac ccacacggca ctccgccgcg 540

atctccatag gccccagcgt cgtctgcgta agcgctacga gagagcaccc aacaacaccc 600

atcaagatcc tttgcatcca gaaaagaaaa aggaggatga tatatatatg acaccgtatg 660

tcattcagtc agcgatgatt agctagtgga agtttcagca gttattggtg attgttgttc 720

tagcggtcag gattgaaaga aaggaagaaa gaaagaaaga aagaaagaaa gaaagaaaga 780

aagaaagaaa ggaaatcata gaatgtgtat gcagcatgct gaattaaacc aacactgaat 840

gctggacagc acaaacagta aggcggcagc cgtcggaatt tgcttcgttt gctgttgtgt 900

gcagactgac tcgcaggtgt tatttctcta gtcactatat aatatgatat ttagtctttg 960

ttgatggttt taatcgggat taaagcacga ggatttacga agtactgtat ttggtatggc 1020

cctgctgcaa acgagacccg tactcgaaaa ttttatatgg tataggtcct caaactctat 1080

aaagtttgca gttttgttag ggtgtttgat tgatttgatc aactaccctt aaagatttac 1140

agcttcaacc gtagttttct ttctacgtac actagtatgt gtgtgtgtga ctgtagccta 1200

tatatcctgg gtcagatgtg gtgagaatcc tgctgcaatc gtcatggtct tttgggagga 1260

tcgatcgatt acgacgacgc cgaatacgtc cggtccggca gcaggtgtga accgggggca 1320

gcttaaagaa tctgttgaaa agccgagcgt gcggctccgg gcaatgtgat cccacatgca 1380

tgcatgcatg cgctttcatt cgctggactg gaaaggaaac ggcctcccct ccgctccact 1440

tgtgcatagg ataggaggta gtagatgagg aagttagcta tagatgatgc gcatgctagt 1500

gcgtggtgca ctgctaagat gtcgcgatcc ggcctagtgg tgcccccatt tggttctcaa 1560

ggcaaaaggc aacgatagag agagagacat gaaaagacag actatatata tggatagcac 1620

cggccggagt ggaccagcgg tagtgcctta taagaacatg caaactag 1668

<210> 2738
<211> 2167
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207595_G1, chr5:215518341..215520507, Cluster 16

<400> 2738
ggccgcggcg gcgacgagga ggagattggt agcaagagcg ctcttgtctc tctgtcaatc 60

tacagagtag ctagagaggg atggggagag gaggggaacg cattaaattg cctcggctgc 120

tctctcgttg ggtttggtgg tcttgctgct gctgctggcg gtgatgcaat ggcacgccga 180

tctgctactg ccaattcaga tcgggggtgg agttaatgag cagctaatca ggggttagtg 240

agtggcctcc ccttccgctc cgcttgtgtg ggtttcgaat cgagggcggg gagggagagt 300

gacgcacgct ggcgagctgc tttctggcgt cccggacctg cgtagtacgt gtagattgtt 360

ttggacttgg tggctccaga gtcaaacaag tgttcccttc ttttcctcga cttcgtttcg 420

ttttttttg tggttttctt gctaggttgg gttagagaga gagagaaccg tgtgacgata 480

tgccaaacgc atgttgttag tgaaagtatt caactacgac aagccatgca tcactcactc 540

atttgtgttc taaagcaagc tctcaataac agcaggattt cagtgtttaa gccttcatgc 600

acccaggtta agagtaggtt agctagattt ttaaagctgc cagaatgaat gagtgttttc 660

ttagaaattg tgagctcaca ccgtatactg taaaatccaa ggatttattt ctatttaatt 720

ttctactttt ttacacttta aagtttggag gaaaaaggat gaataaagtc gcgccatcat 780

caaattccag gtccaatcat actccatatg tgctcttgca cggctaactg gctaaccagc 840

atcaactgaa aacattcttt atttctcact cgattttctt cgatctctag tggatttgag 900

tttctaaaat aacttaggtt ggatcttacc tctacgagac tacgaccagg gacgaatcca 960

aatgatgttt tcgttaggcc tccgactacc ctaaaatttg attaaaaaca aagtatccct 1020

cggggttagg tctaaagaaa caaatcttac gacttgcaat ctaataatta attagatgta 1080

ttatgtgaca ttttggttat tttctagcca tgatggaact gattgaaact agatatatgt 1140

ggtaccgaat tatacacggt attattacga tgtcttaaaa taaaggaaca gagaaaatca 1200

cgatatatct tataagattc tagattttct attatattta agcttgcatt tattgacaac 1260

atttttttc tctgtaggga cagggaaagg atgaggtcgt gtcttattag caagcgtgta 1320

ttttgaacat gataaaaatt caatatgacg tagactgcca ggtgggcagg tgctagtgca 1380

tactagacta gtagtgctac agccacagcc acaggccacg gcgggacggt ctgaggaggg 1440

aaggctgggt ggccgccggc gtgtgtgtgg ctgcccgctg cacggcgcat ggctagctga 1500

atcggcgaat ggatcccctt ccttcttccc ctgttccctg tatggctgta tgcatgcagt 1560

gcagcagcat tggacgcgtc cgtgacttcg atggcgcctg ccatgcagct cgcgtcgcct 1620

gtcttccagt gtctccctgc ctgccgccta caggtgtgct gtgcacttgt gccatgctca 1680

tcacgtcagt ccaatcccgt gaacgaagga gaagtctcca tcgaccaaga tggcggaggt 1740

gggccggaag agcttccacc gaagcgatcg atgggtacga gtgcttcttt cctgggccgg 1800

gccgggccgg cgctctgtgc tggcagctgc ctttgccctg ctgtacgtgg accgtttgtg 1860

cctgcgtcgc catcagcaac aggacagcgg acgcgaggaa gaggccgggc cacccgtcgt 1920

ctcgtgcccc gtgctgcctg cctctgccct tgttcttccc ctacgccccg ccgaccctgc 1980

aggctgcagc ctgcactagt ggctgcaact ggcatcctgc cagtgccagt ggccccacct 2040

agcacagaga tgatttatcc gtccacattt ctgcgcatgc gattcggcaa tgcacggcca 2100

accgagcgag cgtggtctgc tgtctgctcg acgacctgac ctgcccggcc ggccggccga 2160

cgacgac 2167

<210> 2739
<211> 1602
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207613_G1, chr5:215627794..215629395, Cluster 16

<400> 2739
ccaaatggcc agttgcagga gaagaagatt agtgcagtac gtagtatacg taacgtaatc 60

gaggagaaca acaccggtat agaaagaaag aggagaagcg ggtgcctgcc taccgcggcc 120

cattaatggt gcttcacgtg acctgccacg cccccacctc cggccccccc taccctactg 180

tgcacggtgg ctacaccact actactacta ggcagccgag ctcctcgcct cgctctcgct 240

ctcgctcctc caccttccct cccttgggtc cgtccgtttg ccgtgcgcca ttgcccattg 300

cccattgcgc cctgcgcccc ctcccttggc caagttgcca tttgccttcc ctttccctcc 360

gcatcggccc atcccagtat cctaccctcc ccctcccact cacggcagct gccattgtcg 420

ccctgtctgc ccccctccac gctctcccta tccaccacag cacagcacag cacagcgcca 480

cgcacgatct cgccggtgcc accgtgctcc cccaccttca aatgtcgggc ctccttccac 540

cggcgccccg cggcacggag cactgagcgc agtccggtcc ggcgctgccc cactgcgaca 600

aggaggacgg gcaagcgccg ccagccgcgc ggggcctccg ctctgctcac cctcgccgcg 660

ggggagacac acggggtagg tgcggagagg acgctagatc cgcgcgcccg accgtccccg 720

ccgcctccca ccggccaccg caccgccgcc gccggcggtt ccctcgtcgt cgcgcgccag 780

cgcagctgct gcagtgcagg tccggcaccc catcctatgc ttttctatct gcttggtgga 840

cggaggtggg tcttgccgtt tttgggttgg gttgggttgg ccggttgggt gagctgctca 900

cccggcttcg ggtggtgctg gtggtgaccg ttcgccgtcg ctgtctctcc caaaagcggc 960

gccctttca gccgcacgga gctcctccag cccagtcctc ctttttttt tattaatcac 1020

ctctctaatc cgatctaatc gcagtcacct gctcgcctcc cactctatcc tgaagacctg 1080

aactagtaat taatgcccgg gattgtttgt tctctcctaa cctccgcctt gccgcatcca 1140

tggggaccag cgccaccgcc acctttccct ccgccacgcc cattggcttc gctgccgctg 1200

ccgttgccat tgctgcgccc cgcccccgtc ctcctcctcc tctgtggtgg tataacgacg 1260

gctgcgtcct ccccccgatt cggctgttgc cgttccgttc cgccgaccag ggaaaatgct 1320

ctgcgcctct gctcaagtcc gcgtcgcccg ttctcaatca cgccattccc gccgtccggt 1380

tcctcgcccc ctgcatgaaa tgtaatttta ttatttcgct tcaccggctg cgcctcgtct 1440

gataaggaca aaatcgggtc ggaatctttt tctggcgccc ggtaccggcc cgttgggggg 1500

ggctacaaaa gaaaaaggga agggcgggcc tcctttcctt cgcccgccgc ctcttggggc 1560

gggttggaaa aatttcgtaa tttctgccat agtgaaggaa at 1602

<210> 2740
<211> 1421
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208210_G1, chr6:1532094..1533514, Cluster 16

<400> 2740
cagggccctg tggcttgggg aattgccttg gccctggtcc aaaaaaggat acaactcttc 60

gggcaactta atcttgagat ggtccgaaga aatgacatct acaccaacat gtatccttga 120

gaacgaccaa gcatctcagg gccctcgtgt cctcgaagca ctctgagttt aggggcactc 180

tcacatttat gggaactact ttgtaagaac agtttgagat ctagacatct aaaccaacat 240

gtctctttga ttagagtaga actcctaaca tccttaaatg tggtttaagg atcaatagag 300

tagaactcct aacatggagg atatatgaga tcatgatgat tagtagtttt tttgagcttg 360

taatgatctt ttgcactttt gtgttcatca actgacaagt gataagagaa ctcatggtat 420

tatgttgtgg cctgaacctc tctaaattgt ccgtgtgctg gtttttggtg gtgtggtgtc 480

taggttcaac ctatcactta cctgctacac ctccgatcca ctctctctaa tgagtttata 540

ttttattttt gtgtacttgt ttacatactc cggtgtctaa ggataattag cgggaatgta 600

ggtttccaag agcaccgaga aagaaacagc ggagtttgaa aggcgggcgg gcagtgggca 660

gggagtacga gagatttgtc tttggggaca gaggccactg ggctgggtat accccgtatg 720

catgtgcata gccatagggg ggcaaaggca aggaatgatg gcctggaaat gggcatcagt 780

ttgaggcatg gcgtcgacgc ttggttggct gcagcaaccg ccttttgagg cggcggcaca 840

gtcagaccag agtgacgacc cccatgcagc aatcatgcat gcctccctcc cagtcccata 900

gaatagaaga tcattattgt tgttattaca agtttctatg atatcttgtc taggcgctca 960

gctcgtaccg tacgtggggt ttaggaggac gagaggggtg attatatatc ttagtaggat 1020

ttgcattgat tggggacatg agcggcacgg tcttccatcg acgatgatgc acgcgtcgtt 1080

ggaacagcta tagtagtaat actcgtgtgc gtggccgtac gtggttgacc ggtggtgggg 1140

tccacgctac tcatcctgtg ctgtgcccgg accccggtgg ttttatatgc aatgaattcc 1200

attgcattgc attgcagtga tctcgtctag ctcatcacca acagtcgccg tcgtatgcgt 1260

tagctgttcc atcgatctgg aacagcttgg gggcattgat tattcgtgca gtggaatata 1320

tatgatgctg tcacacggcg gtttgttccg tcttctccca acattttggc cgcggcgtgg 1380

cttccatgtc tctccatcga cgatatctct ctctctctgc t 1421

<210> 2741
<211> 1623
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208582_G1, chr6:4310288..4311910, Cluster 16

<400> 2741
cctatgtcta ttaacttcat gtggttacaa ttgatcaatt ctctacttct agtgtttgag 60

aaaaaacgtg tcatttcttc ttcaagtaga ctaacttggt aatcgaggtt tttgtaatat 120

ggaaatcatg ctaatctttc atgagccatt tttatataat taaaccaaaa aaattgtatc 180

caatttaatt taacagtttg ttgtaccatt gtgaatccat agtggctagt ttgcaccttc 240

tgatggtggc actatcatat ttgacccccc ctccatccca tttgtgtggg aaaataatta 300

aataaactta tgtgaatcct ttttgtgcca acttgggtta ctctctagtc tctacttcaa 360

ccatggtttg cattgtctgg catgttggtc taatcacttc tacaaaattt attttaggag 420

acatctagtt ttattagcag atattggtgg gtcgatatca tccggctcgg tcaagaaacc 480

aaatcagaca ccggcctctc gtgccctaac caggagcgca acaatctttt ggttgtggcc 540

tcatttcata ctacatatat aaacaaaaga atagggtcga cacatgaact tgtcaacccc 600

tctttcccaa acacacatat acacacacac acataagatc gtattgtcac agtaccctct 660

tcttgaacac acacatatga gatcgtatct atctctatgc gataagtgaa ggaaatgccg 720

atgtcgtcat catcaccatc ctaatggcct tgtcctagaa cccaaaaggt ataccgattc 780

taacttcttc agcatagcta ttggttaagg agtttttat ccgaaatttg atccaagcca 840

aaaatatccc gaaccaaagc caaaaaacct aacccgaact gacacgtctt atagggaggc 900

atgcatggac aaacccgatc cgattttata gtagtcacgt acgggtcaga tgcataaccc 960

ggtccaattc acaacactag caatgaccag caaaagtaac agatactagc agtagctaga 1020

gtggactcag gtagtcaggt agccgtagta ccaaactata taccaatgta aaaaagcaca 1080

acgtgtatgg gtgtctctct ctatcggtct taagctgagc tcggccctca tcgggagtct 1140

gggaccatga ctacactttg tcgtgtgcgt aacataattg tgcctgactg tgtggacccc 1200

ggcggccggc cgatgagggc gacccttcta tatgcatatg catgcatgca tgcatggctg 1260

ctgatgcagc cctgcagcac acagtggccg gccagtcgct tttggccgtg gggatgcatg 1320

tgtgcgcgtg ttgcgtgcgc cgtgccggcc gggggctccc ctgggctggc ctccgtctcc 1380

gtcccgtcca tctcagacga cccacccagc cacaaaggta ggcgcgcgcg cgggtgcggc 1440

tccgatcgat cggccggccc acatccatgc atgcatccgc cggcgcccgg cctgccggac 1500

gacggacacc accaccacag gccggaagaa gtcggggacc cagccagcac ccccctgctg 1560

gcctccagcc tgcggctagc taccgatgta catgcgcatc actcctgtgt ctgtaccctc 1620

cac 1623

<210> 2742
<211> 2008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_220414_G1, chr6:82767125..82769132, Cluster 16

<400> 2742
ttaagtggtg caatcttagg tccatgatgt cagttgcatg tgtgttccat gctaacatgg 60

aattactaac ttggtatgtc ttttatattt aacccctcaa ctttatttgt gtcccatgaa 120

taggaccttg cttccatctt ctctcttgct aaagctagcc tgttggatac cgcgattccc 180

ttcaattcgc tattgcttat gtttgtcaca tagttccttt tctctactcc tataaagcac 240

cagtttccat tgtttccacc attgtgtgtg tcacgcgtgc gaaatgtgtg caacccgtca 300

atctcgctgg aactgtggct atgatcccat ccggttgatt tgttggctcg atgaggcgca 360

tctctgcttg gcccgcctcg gggactgctt ccacgccatc tacggtgccc ctccctatgt 420

caattcgtct ccatccctgg cctgcgcgtg tgcgtttgag ctaagactga ggctgactgt 480

agtgatgcgc aggctggttg ttgctgcagg gagggtgaat ctgatcaggg agcacatcga 540

ctatgagggc tactcggtgc tgcccatggc catcggccaa gacatgatca tcgccatccg 600

gagggccaat gaccgctatg tgtgggccac cgacgtcgac gacaagtacc tcctctgcat 660

ctaccccgct gactcgaaca aggtgctcca tgctctaccc ctatccatat acatagattg 720

gtattacaac atggtctacc acgacacgct cttcaaatat ggctgcaccg ttgccatcaa 780

gtgcttcggt cgcttcgcct gtccaaactc acgccagttc ctggtccgtt taccttgctc 840

catgtgatgg atggatcgtt tcttatgttt gtgttgcctc tgcggcatct ggttgaacgg 900

ttgtgtgtcc atgggtgcac gatgagtcga gggttgttcg gtagctctac tacgagagcg 960

gcgagcttct cctcgccgca gagttcatgt cgcacgagac cttggcaaag catctcttcc 1020

actgtatggg tgtgttcgga tgcaagtcca ggaatgttag gccaaatatt ggccttgcca 1080

agccaatttg cagtgtttgg ttggaggcca aattttggcc atgcccatga aatttcgtcc 1140

atgctagtgc caatacttgg taaaaccagg gcacccaaat cagctgccca aatttggctg 1200

ggccacattg cattttggtc tcaaaccaaa cactaaaatt tgagcctaat tttggtttag 1260

cctagctttg gtcacttacc taattttggt caggcttttt tggtccacaa ccaaacaggc 1320

cctatgtttg gtttctcctt ccttactctt ctcttacatt agctgcaact agcacacctg 1380

agtttgttag agttgatttc gatttttggt agcaaccata caactcttcg tctaaataga 1440

ttgtcagagt aacccataaa atataattat gtgtcgtcgc aacacacgga cattgtacta 1500

gtactatcta atggctgaca gcctcgatgg atccacatgc atacgttgac atgcatgcat 1560

gttgttgcaa gtgtgatcgc aacctatggt gtggtgatct tgagggtcat ttttagggac 1620

gaacacatta ggagatcgac tcctaattat ggatcttttg agtcattttt caagaatgag 1680

tcaatcacat aaaagtgtga ttagagtagg gggaggttcc ttcgaggctt ggcactaggc 1740

ggtagcagag tcgtgtaggt gattctatct ccctaccttt gagggaggga ccctagctct 1800

acctaagcca agtcatccag atatttctaa caatgggggc caacatatag tacccttaaa 1860

gtgatgaccg aattcgacag agttaaggtt cttagccata ttttatcctt caagaaatta 1920

ttagtaatcg atagaaagtc tatgaaatat agcgaaatga aatggcagaa ggcacaatac 1980

agacacttag atgtgtaaag aatcttgt 2008

<210> 2743
<211> 1511
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225058_G1, chr6:108966731..108968241, Cluster 16

<400> 2743
atcagctaca tgcgtgcgcc cataccctgc cctccgccga aaccgaggcg gacggtctga 60

accagtcggg agctcgagag aggaagcacg cgcggcgcgg cgcgactgat cgattcccca 120

ttcccgcacg tatttccatg cgcgggcggg catccccttg cttgcttcac gtacggacgc 180

aacgcgcact gtgtgtccag ctccagcatg cagctagcgg ccgtgggcgc ggcgcgatgg 240

cggccggccg gccctcctct cgccgtatcc cgcccggccc ggcagggaag aagctagcag 300

atcgtgcagt gtgctggccg atcaaccggc cggcgctcta atctccaggc cacctgctcc 360

atccgccagc tagagcgatg caatgcaagt actgacgacc aagttacact gcttgcttgc 420

tagcacgttc ttgctggcga gcatgcctgc aggcaatgca gcagcctctc actactcgat 480

agtcaggatg actacgtact gtcgcagaaa gacgggaaac agaggagtag gttggaaata 540

taagtctgca cttcaccggt gccagcttga ccaccatgca tcacctagct agtagaagct 600

ggtataaacc catactacac tactacacct ctagaggtca ccgaggtaat tggcgcgcgc 660

gcgctggtac accaccgtag accgtagtac gtgctgatcg atgacgacgc tgccgcaggg 720

ccaaatcaag acgttcgtcc ggatgctgct ggctgccgcc gtacgtgctg atcgatgacg 780

acgcttgaaa gtccacagca ggcaggatgt ttcagtacta ccactgcttc aaaggccggg 840

aaaaaaaatc attggaggac cctttaagcg agcatgcatg cagcaaaagg cgaaagagac 900

aagacaattc cattccagca atgcaatgca atgcaaagca agcatgcatc gatgatcgat 960

cgaccgacga cgaaagtttg catgcaacga cacacatacg tagagatccc acaaaaagct 1020

tcccgtccca tcgatcgaag acagcaccaa gaatgatcaa ataccggaac aaagggaact 1080

atcaagcaac agagttcaga tgccgtcaga ggctcagagc aatgtaaagg cgcgcggcgc 1140

gggaccttca attcaacagt agccatgcac gcatgatgca tgcatcctgc taccaagaga 1200

taaatcattg aatcatggga caagcaagct gctgcaatac tatatagcat gcagcaggca 1260

agctagcaga caatgaagca cacgtccccg ccaccggccg accccatgca tgcatggcaa 1320

gagaggacca cctggttatg gtagtgtagc cagtcagtca gactcagaca gtgtctctca 1380

catcacacac ataccgttcc ctgaaaacca tgcatgcatg ccaggtttcc tatactgcct 1440

ccttcaagaa cccagaaaca gtgacataca tatgcagaga gacatactgg cccgcctaag 1500

aaataccccg c 1511

<210> 2744
<211> 3784
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233121_G1, chr6:148782326..148786109, Cluster 16

<400> 2744
tcagtgccga tagcctgagg tctttagtac tagcgctgac ctggaatcca ggcccatgaa 60

tatgatttgg tggcgtgggg tttggaagat gaacgtgagt gacgaagtgt tcttcggctg 120

agcagatcag gttggtgttg ccagcgtttg gaatcgtagg aaggaggaag gacgggagca 180

ttatgactcc aagacaagtg acgctgtggt tgcgagttgc gcaggagtac ttttacagtc 240

tgacacaaat cggccagatc gacgatctcc ttaccaaatg ctagattttt ttctcttctt 300

ttttttgaaa cttaatggga cgcagcttgc tggtgacgaa aagaatagct cgggggctcc 360

cattggagtt ggaggatggg agctggcgtc gtcgcaacgc aaaaccaggt tcagccacca 420

tcgatggctc tcgcggcgcc cagcaacgca agagcggggg agcgtgagaa gagcaagacc 480

acattggcac aaaggccccg actcggttgt tcctataatt tgtaccaatc cgtttgcatg 540

ggaatcaaca acttgttgct cggatctccg gctccgggcc ggccactcgg gttcaagttc 600

aatttgaatt tcaattcaaa ggcgacgcag agtggggtag tagaaagcaa agtaacaccg 660

agtgcaccag cttttaatca cctcctctct ctctttttc cccagccatg gcaccgcaca 720

cacgccgttc gtgccacaga ccacacaggt cacaggggt ggcagtggta ggtagcctgg 780

cgctagccta taggacacgc gcagtcacgc agaacagcag cagtgtacag gtactgctac 840

gcgtacagta cagtgtcagt ccaggtccag taggagtgca gtagtagctt gcaagctagc 900

agagcaacat ggcgagcata caaaccagac tccgacagtc cgacggtctc gtctcgccgt 960

cttggacgtg caccaccacc gtggcaccgt ccaccaccac accaccggcg agcagcatga 1020

tggagggcca tctcccgggg gcgcgcatct cgatgcgccc aatattacct ttcatgatgg 1080

cgggttacca cgatcgtgat ggctttcacg cgtcgaacca cgcacgcaaa gtgccctccc 1140

tccctctctt tgcctcaagt tttctttgcc taaatcattg ccgagcgccg gtccacgacg 1200

tacgtacgta tttgtcaacc tacggtgtgt gatcatggcg gctgataaat tgatgggggc 1260

gaacgtgagg tagggagggg ccagggagga gcatcggatg cctagttcgg tagcctgtcg 1320

agcgagctgt tcgtgcgtgc agagcgcggc atcgagaacg ccggaggcca ccggccggat 1380

gccgggtttg gcatgcatgc atgcatgttc agagttctag tactctacac tgtgatgagt 1440

ttgtcaccat ccatccatac ttgccctttt tttccccatt gagatttgag agtctgagag 1500

ctactatctt ggtcttggac cacgaaatga tatgctgaac gtcgcttctt gtgcggtgct 1560

gaccgcatcg cctcgccaag cgaaggggaa ctgttgtcaa cggttgcctt ccggtactag 1620

caggtacatt acccacaagc tagatgactg tgcactttaa agaatataaa ttgatttcta 1680

taacaactgc taagcaaatt acagatatat atgatatacg acggagaaac accatattca 1740

tgcaaataga ctagatctac gtcaaatacg acagaaaatt tttaccgttt cttaccaaac 1800

cagaaacccc ttgctgctaa tgagtgtctc agcagcagtg aacatgttgc gaaacggagc 1860

cgcgcaggca ggagaggatg tcacagctac ggcgcagcgg agccggagca ggtcagcgcg 1920

ttcgtgtgcc ttctcctccg cccgcccgtc cgtccgacca ccggcaaact gagaacgtgt 1980

gtgcacgtac tgccgtgcct ttgccttgcc acgcgatttc acgggatcgg cagggaaacg 2040

attttcacag ggcttctagt gaggtcaggc ccagctaaaa atacacggga cacatgagga 2100

cgactcgggc aacggggctg ttacatgcca tttgcgttgg tgggcttgac tcgggcaacg 2160

gggctgttac atgccatttg cattggtggg cttgactcgg gaaaactgca caggcttact 2220

gggcgttgtg ccgacaggga tacgggcctt aggcagggac ctctctatgt gggctttaac 2280

ttcgtataca agtgtgttaa aggggctgct gtttgtactg tctaagcggg ccggatgctg 2340

atcaagccca aaacaaaaca ccgagaacat cttcacggct caactgctac caccaccaca 2400

agttcactga cgaaccaatg aacactatca cgtccacaca tatacacagc ccgtcctgtt 2460

gtcgccaccg gcatcggatg ctttgcttgc gccatgcacg cttgcccttc ctctcttttc 2520

ctcaagtaga agacgaggga ggatggaagc tagcttagct acgccatgct tttgcgcccc 2580

acaaccgcgt caactgtcgc cgatgccgat gagccaacca ccaccagggc tttgtttctt 2640

ctcgcgggga aaaaaaaaag gagaagcgag acgagccgct tttgcgaaga gagagagaga 2700

acactgtggg aaaaaagctg cctttttttc aatcaaacgg aacagtattg atacccgtca 2760

gtttgggaat ctttcttccc tccccgtccc tgtccctgtc cccggcttgc tttgctcttg 2820

cttgtcagcg tttgctgtgc ctttttgttc ctggcgacgg atcggcccat agcgtgcgtc 2880

caagattgtc aatttggtgg gctttgtgag gtcgtcgtgt gatggaggcc aaagccagga 2940

cgggaatagt ttatttcgtg gcatcccttc gttaccccaa agagcaacct cgccgctctt 3000

ggatccatac ccaaaggagg cgagctaggg ctaggagaaa aaaaggttcc aaaactgttc 3060

gcaaatcatt tgtttatgaa tatgtggtga caaagtggca tcggtaggct ctagctggat 3120

tggaggtact ggtgtcccca cgccatgggg cctcgttcaa actcgaacga aaacacgcag 3180

tacaattgtg tggaacgcag agaatcatgg gcgtgcgctt gattagcgag ccggccggag 3240

cggcgaaggt tagccagccc taggaggctg tgattggacg attggggatt tggtagcgcg 3300

ggcggaaccg aacgctgcat ggcgctctgc cgctctgtga ttcggcgcgg ggctggaggg 3360

agggccccac gtgacttgct aaccactcga tttgtcgtta acggtttcgg tcatgcgatg 3420

agtcgtttag ctgcgcgggg gggcgttgtc attggctggc aacgggagta gtatacatcg 3480

agagcttaga tttagtccga aagggaacat catttcaagc agggatcttc tacggcgcgg 3540

cactaaccat atggacccaa tgacgaatcc aggaacgagg ctgcctgcac ccctgatcca 3600

gcagacccaa ttagtaccgt atgctaattg gatctcaagg gtatccatgg gaaagaaatc 3660

ttctttcaat tcaattttga ataacgagag gattcctccc caggatcccc tcgggatgtc 3720

tgatcactaa atcagccctc acggttatga gatgcatgcg cacgcataac agcagcaggc 3780

cgca 3784

<210> 2745
<211> 1600
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233217_G1, chr6:149120036..149121635, Cluster 16

<400> 2745
agcatgacta ctctccttat ttcatagttg atataatgtc gtttcgtcgt tcgcttgatt 60

tttaagcagt ttctatgctt ctacaatgta ttcatctcta taaattagag ctgcagtaat 120

taaaacagct gtctttattt tgaagggaac aaaacccact gtaagtgtgg cactggctga 180

cccagccgaa gaatggaggt tgggcaaact tggactgcaa aatttggacg aaacaacgac 240

aacaagcacc gaacgcagac tacacgggct agctatgcgg taaaaccaaa tttgctaact 300

gatcaggagc cgctggccat gcaggcgcca ggtgcagagc ggctgaggca agtgcagcga 360

ggcgagaggc cggagatggg agggccggag ggggatccgg cgagccgtcg acgccgacca 420

ccgccgccgc ctgcgtacgt gccaaatacc aagtgagtga gtggaggata tccatgtccc 480

tgtggtccct tgccgtaagg ccatcgcggc ccagtcagga gtccccaaag gcccaccact 540

caacgtctcc actctccacc agaaggcaga actagaagct ctcgtcaaga cgtcttcttc 600

atcaacctcg ctcgcgctca gccgctcgcc ggtccgccgt ccgcgctcgg cgctccgagg 660

ctggagattc tgctgcacta ggggaggtag ggcggccggc cgccctcacc ttgcgctatg 720

gcccgtctac tatacctctc gtttgtgcat gtattcttct agttttaaac tgtaattaag 780

ctgtttttct atgtatatat ctccaacttt aaatattcag gcagatatgg atatgttatc 840

gatatggaat atctgcattc atatatacac agtactatag tatattagtt ctttgaacgg 900

taagttggga aatactatcg gtattataga cactgccgta tgcagtaacc tctagagcta 960

gccttgggat atacacgtat attggtaata acatactatc atgagcaaac caaccgattt 1020

tttgtaagct ttctaaatcc agcaaaagac aaccataata atggattggt tgagtacttg 1080

agtaaaaagt ttctatagag gcagacacaa aaatttatat ctaaaatagc tttcgccaaa 1140

atcgtaagca aaatatatgt gccaggacag tcgaataaat ggaacagcta gcagtccagt 1200

cccgcactgc ctgaacagtc acagggtaag gccgggtcca tctcttttta tatcaagcac 1260

taccatgcac gtggtcgcgg cacggctcct tggtgccccg gaccacgtcg caacggttga 1320

gcagtgcgca acacagcctc gtcccggtct cccgagtccg tgggatggaa gagggtcggg 1380

tctccatggc gtggctagat ccgatccaag ccgatccaat ccatttctac caatattatc 1440

actgacgcag tgacgtgacg ctgatgcagc ctagatccac gtcgctctcg ctcctgtata 1500

cacacgtatg cccgagatat attaggccat gttcgtttac atgggcaagg gagtggattg 1560

agcaggattt gttctcttcc accataaccg aacaagtttt 1600

<210> 2746
<211> 2035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233220_G1, chr6:149128179..149130213, Cluster 16

<400> 2746
ttatgtttta tgtttttact caagtataag taaataatat ataaattaaa aaaaccttag 60

cagcgtacgt agttgtttta gtactgaggc agtacataaa aaaactatta ataaaaacgt 120

cgcaccatgc tgatgttaac gtaggaacgc tctaaaaccc accaccgcgg ccccacattc 180

cttccgttcc gtgagtaggc gtaggtagga gtaggtgtag gtaggccgcg actccactac 240

cactaggcag acaaaacgat ctcttcagaa tccccaaatg aaacgagcag cttatgcatg 300

gttggttgga cgacagcctg attacgttgg acaatacaat actagactag agtgattaaa 360

aatactatgc aattaatttt tttatgtaat caccgtacag ctaaaactat tgaaaatcac 420

aatattttta tatccaagtg ctaatttatt ttatattttt aaaaagcaac agattctttc 480

tttcggtatc tcttaacgta aggtaaatta taatataata tactagcgga ttaaatgatt 540

aagtatatct gttatctctt ttaagatttg tctatgtctt ttggtagttt gattacactg 600

aaagcttgat tggaggctat ttttttttte tccactaaaa agtacggtac tttaaaaaag 660

gcaaagcagg tgtcaaatga ctcgcgcaag agagacgtcg ccatcggcag atcaggcggg 720

cctcgcttcc ggcccgagcc cgaccccgac ccctcgtgca cgcctggacc cgaaggcatc 780

ttgccttctt cctgatgcag tcgctggcgg gtagccgggg aggataagcg agtcctaacc 840

cctcttcctt tcttcaatta ggtcgccccg ctttctctag acgctggagc gtgtcatgtg 900

gccccctcta cgcctgcctg tagctttcgt tgttggcttg tccggtgtcc tctcctcctc 960

gtcctccagc gcgatcgcgg tggttgcggc gtcctcctcc tccctctgct ccggtcgccg 1020

gccggccggg acaacgtcat cgtggggctg cgcggcgacg agagcggcgg ccgcgccgtc 1080

ggtcggacgc caacggggca ccaacctgag atggggttcg tacagctttt tccggccggc 1140

tcgaaatcct cgaactggat tttcattgga accggaaggt tggcaaagaa aatacatgta 1200

cggtggtggt tatactgcag aggttttggc ctcggcggga ccgggaacat ggagaatcac 1260

cggcacgccg ccactgggtt gtgtgacctg caacagtact tctgacaaga ggacaggtca 1320

atgctttggg aggaggccaa ccggcaagcg ccccagccat gaatgaatcc catgacctgg 1380

cctcggggct ggagctcgcc ccggaacagc acgagcggcc agcacgggag cctcacgtgc 1440

ccgactgcgt gcctgcgcgc ctctttcttt ctgatgaatt tcgccttatc cgatcgttgg 1500

ttgcccatgc ccggtttgaa catttgctgt acccccacgt cgtctacctg ggtcctgggt 1560

tcattcacag catgcatgct gctccattgc tctggtgctt agagacaccc acatgtcagt 1620

gatgaagaaa ataagcgggc ctgtttttgc cggatctgac gttgctgaag cagtcgactc 1680

gatgtttatt ttgtgcagtt ccgtactttc ctgttaatca tgacgcacgg acggcgcagc 1740

tcttcagtca agcctagtgt accagtcaca ccgtcccatt ctccgcgaat ttttactact 1800

gctcccaatc ccaaaaatct tccacttcta caaatcttcc acttctacac gcggttcaag 1860

tcaacttatt taaatctacc taatttatca aaaaagaaat ataattttag ataggtatat 1920

catgaaaata gatttcacaa taaacctaat aacatttatt tgataccata aatatttata 1980

ttttttataa aaaactaaac gaaaattgtt tcactctttt ttttaaggga tcaac 2035

<210> 2747
<211> 1860
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233867_G1, chr6:152306796..152308655, Cluster 16

<400> 2747
tacaaaactt gtcaattttt agtggggcca gctgacccct ataaaacttg tcaatttctt 60

tacaaatata ttgttaatat atttagataa tgactaataa agttgacctt aatgactttg 120

ttgtctgtgg cttcgctcct ggtacgtacg tgcgtggtga cggctttgac aatgacaaca 180

aaaggggccg gaaaacgttc ggtacaactc ggtcactact acatgatgag tcgtatctat 240

accatgtact gctcacgtga aagcagtttg accacgccca ccatctcttt gtggagtact 300

gaacattggg gcggggaaaa aaaaaaagag agaactcatt cccacccgag gctggctgga 360

tacatttttc atatgcatat aagagatgag gatctcgaga aagtccgcat cgtttaccat 420

ttcatttcct cggtggctca gtgggcgccc ggccccccct tttgcgtatg tatgctgtca 480

tggggcaaga ttttacttaa atttgcaacg ctggtgaata ttccggccac tttcgccgca 540

cggtctcccc cactcgtggg tgcaatttct gtaagaactt cctctgagcg aggcgagccg 600

attgaaatgg aactggggcc acacgaacga atggaattcc cgtgcaggca ggcacaggca 660

ggcccctcgg gtgcgcaaag atcgcggttc cgtacgcccg atcaggaacc aacaattgta 720

tttgtaattg gcgacgggtt tatagtgggc gaaatctcgt ttttctattc tattcggggg 780

tcaaaacgag catccgggac acagcgccct ttttaattcg cccctgccac gtgtccgata 840

ccgcgcgaaa aggccgtccg gagtccgggc catcattttt gatggaataa tgtgtgagcg 900

aaacgcttca ttcacatgat tccagctttc ttctcgctcc tccacccgac acaaaagcta 960

tcgggtccct ccgatcttaa aacgccttgt tgaccatgct gttcgctgga ctactacatg 1020

catcttcctg aaggctgagc ttttgaccgg ggcatgtcac agccagtagt tttctgcact 1080

aggttcactg acccacaaag cgcgcccgca aactgctcgc agcgcgaagt tgagctacac 1140

aaagggagcc tgcagctagc agtaccaaac agtagtttga cttgttgtaa tcatagtgag 1200

attaacaaaa gttatcttcg ccccggtacc tggcattagc ggccgacaga gaatcaggcc 1260

gccacactcc ccccacctcc agggggaggt gatccggacg gaggcggtca gtgcaagtgc 1320

tcgtgctccc cttcgatcgc tctctctctc tctcgcgcgc gcgctacaac gcatgcctac 1380

tagccttttg gctaaagctg gaaatcccgg agacgcagca aagagaagcg taacgcaggt 1440

ttgttcagcc ctccaaacag acagctagct actagcaaca gcaagtccta ctttaccaga 1500

ttgaatttta gaggatccac atcgcggtgt cttcttcagg tactattcgt gtacaaatga 1560

aatccgctgc gcagcaattg ccagactgca gcatgctaat aagtactgct ctctctgcat 1620

cgaattgtgg aattcaacca aatttctttt gggtgataca tatataacac aaagcaggtg 1680

tgtaagcact acaaggaatc acttagccag ctagtagtga caataagcaa atgcatagag 1740

gactgcagga gaggcaggcg gcagaataag gtctcgtttg gttgctttag cactctcttg 1800

ttattagtgt aactgaaata aataataggc aaaaagtaga atttatatgg tttagtcctt 1860

<210> 2748
<211> 2057
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234483_G1, chr6:154767067..154769123, Cluster 16

<400> 2748
agggcgacac tagatgtttg gactttggat agctggtcgt cgatggcgca ggggatgtgc 60

gatagcgcgc ggtaggcgca ataggccaca gggaagggca ggggtacgct tgccgccggg 120

ggcagtgcga gcgaggagac gacgctagcc cgggggggcgg cgttgggtgg aacgacgcaa 180

gagcgcgcaa ggtgggtaat gcgggagaaa gaaaaaaaaa tagaacaaat tgttgtattg 240

tttaatcgac actcttgatt caaaataaaa tagagcttca aaaactctat ggagttgggt 300

tgctcaaaaa aataaagttg aggtgtttcg ctgacttcgc ttaactccat cctaaaattt 360

ggagttggag tggtctcaat tatttgaatg agatccttta ggatatgtgt aattttgaga 420

aagagtagta ctgaagctgt ttactaaatg agaacatgtg aaaccacggt aaaaaaatgt 480

caacaaaaag tatagatttt acttggctag aggcgtggtt atatagacgg tgagatggtt 540

ctaaattata aaatgtcttg cgctttgaaa cggaacgggg gaagcactta ctacgtcact 600

tgggcgacca tcgcgagact agacgagcga cactccaatt cttcaaccat atccctttgc 660

aggcgcaatc caccgagatc ccggcaaaac ctgctcagcc tccggctggt cgacgaactt 720

ctccatccac gccacagcgg caacaggatc ggagaaggcg acggcctgac gggacgcggc 780

ccaaatggtg cgcgcgactg atttcagctg ggctggtcac tccgcagccg cagccaccag 840

cttcatcaat tcctccggcg gcttttgact actccatctc cgcgtcacac gtctccttcc 900

tccggtcgat caagacaaga ggccgtctca tcagcagctc cgcgtacgta gacacgcgac 960

gtgatgcggt ggcgtcctta gctccagcgg acggatgggc caggagccgc gggaggaaga 1020

aaaggcctgt acgagtagga ccatatcgcc gtcgtctcgg cgaaacaccg ctgcggctat 1080

aggtcggtcc acctcatcgg cagctccatc ggtccacctc atgctgatcg agccatttcc 1140

tttctgctgg gcaaaccgta ctcgttgacg ctgtaagcac atcggcccct catggtggtc 1200

cactgcaccc ttggatgttc ctgtcgcctg gcgctggatc catcaaccag acgtcacgtc 1260

gttgaaaggc tatggcttct atacgcaaaa gtctctccat taatttgacg gcctcctgct 1320

actgaaactt tgtattgtac ccatcggagg aagcttcgtt attagcggaa acaattggac 1380

ggaagatttc actatcggaa aaggctagct tgggttctgt tgcttaggct agctagagat 1440

gtgatggaat tttccatcct catgttacaa cgcagtcaca ttttcaaacc ccgctatcca 1500

atcatacaat tacacaagtc atcatatata tcttcatgct agagatcatg tccatagcaa 1560

caagctacac atcatctact aacattgtca taatctaata tctcttcatg caagctaaat 1620

ttccacatca ggataggaac atcacacact aacatataca tttacctttt aatataatct 1680

ccctccatac actcatatac gaatgagtaa tgacctatat tatatatata agccaattat 1740

tatataggcc gtccaatttc cgttcaggcc attgtcatcc acagtgcccg cagcaatctg 1800

gaccatccct tctagttttc atcaaataat tgcacgaaaa cgcgcacgac agaaaccttt 1860

gctcaaaggt actgcaggta caagacatcc acatgcactc tgcagaagca gagctactgt 1920

tcagtactag tttatttatt gagaaaacaa aaatatgagc ggggcattcc gactaatgaa 1980

aatcaagtgt ctgctgtctg ctccaccttc agaccatggc atattatcgg attcaaattc 2040

agtgaagttg gcgaagc 2057

<210> 2749
<211> 2082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236118_G1, chr6:163100571..163102652, Cluster 16

<400> 2749
tcctgacgca tgtcgagacg tggacgacag gagcatgcaa ggcaccacca gtaagtccgg 60

acccccagag caccgcatgc tcgcatggca gtggcacgca cgcgcgcagc tgctgaccgc 120

tcgttcgtcg cggcgcgtag gcgtagcgta gcgtagagtg gtcgacgtac acgccggcgg 180

tccacccacg taccgccgat ctagaaaaag ctagcgatgg agggaggggc ggttccgaac 240

gttggcttca cgtttgcgtc gcttttagct atcgcatgca gaagcggccg ggatcggacg 300

agagataagc tgcctacgta ccagcagctc gctctgcatc agctgagaca gcaccggaaa 360

aggcgatggc cgaggccgag ggcgtggcag acaggtatga tgagcacctt tcggtacaca 420

gatttcgccg atcatgagtt gagcgcaagc gcaaattaaa aaaggtagtc ctcaataatc 480

tatggacaca caccgctacg gcgctacctg ccatctcgct cgctggctgc atgccttatc 540

tgactgctag acctcggact ggaagcaaca tgcgttggac agcacatcac agcactagcg 600

cagcaccact tcgcgagcac agtcacacac acatttccag caccgagcgg atcgagaggg 660

gggaaaagag gggggctgtt ggacaaagga agctagccaa gccttttttgt tttctctgct 720

gggtggcact ggctagtagc tgaaaaacca tgcatctttt ccttttttttt ccagccttct 780

cattaggagc agccatgctc atgcatacaa agccgatcga tcacctacca agaatgacaa 840

gaggggagta caagccaaca cgttcccggc ctcgatcagt acgtggccag catcactagc 900

accagcccct tcagagtcgt ctgagaagac tgtgtgagag agagaatcta tcaaacttga 960

ccaccaccag ctgaagctga agcctagctc tcttgtttat gcacactgct cgatcgcaat 1020

gcaatgcgtg ctaaatcttc aactcgatcg cgcgcaaaga ggcagcatat atgtgtcggg 1080

ccggccggga ttatcattgg acttgtatgt tgatttgatc tgtggagaaa aaaaaacgtg 1140

tagttacgtt acgtgcgcgg tctgcctagc ttttcgtcgt ctttaagcta gcgatgaacg 1200

aatgaaacgt ccgtgtttgc ttcactttaa tttgtcgtgg gtcgctgcta aagcatctat 1260

catgcatgca tgcatgcatg ctcgattttc ctctccacgc tgaaagccga aagggatagc 1320

ccacgtacag tacaggtaca gcacagtcgt gtgtcgtgac acaggcggcc tgcttcagtt 1380

tcctgtgtct tcttctttct gaagcaagca gctgccactg cccactatga gcaccgcgcg 1440

ccgcgcagca gcgcattgtt ttcgcgcctc tcgaggcctg caaagaagcc cctccgcact 1500

agctagctag tacactacgc acaccgatgc aatacatact cccatgcatc catcgtccat 1560

tgtttgtttg aggcgcgcgt agtacgtctg tcttctcgtc ctcccctcgg ctcgatgcgc 1620

acgacgacaa tggcgtcccg cgcccccatt gcatggaagt catcaaagct gcccggcctg 1680

taaacaaggc ctccctccct tctctcctct cctgcatcat gcatgcatgg cgagaatcct 1740

attctactac tacaccgcac cagccatgcc cgccgctttt ctggggaaaa tcattaacaa 1800

atgcatgcaa aaaaggaagg ttgcaaagtt gcataattaa gcaccgggac cgggactgtt 1860

gttcccctct gacagcgtta gcacgcatgt tacctctact ttgcacgctc ggaatgggca 1920

ggcaggcaga cagtcacaga gagggagaga ggaatgtgtg gactctggct gaagcttcca 1980

tggaccatga ccgacggacg actaattagc gagctgctgt taagtggcat gcacatggaa 2040

actaattaag tgcggttaag ggttaacttg gtgtctagcc tc 2082

<210> 2750
<211> 1441
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236523_G1, chr6:165202685..165204125, Cluster 16

<400> 2750
ataatctatt gctagatatg gagtaagtga agtggcggtt catggaaaac agatatcttc 60

acttggtctt cgtgtagatc tcctgtttga ctgaccgcga gatgtcaccc catctaagtt 120

acgagtcaga cacggagatt tcgattttca tacctacaca aaaacaatgg aaatagcagc 180

acattttatc gcatttttt tctctttacg tacctgtaca tggtcagctg gggaaagcgg 240

gagacaggga cgggatgcca aacagaaacc aagtccgttg tctcgtcggg acgcggccgg 300

aaaagcaggc cggccctgca aggaaagcga gaaagattct cgaggcagag agacggcggg 360

gagcccggcg tccggttccg cgcccagcgg cctagtagcc cgccggtcag cacagcagct 420

cacccgtgcc gtgctggtgt tgttctgtcg ccgcgaccgc gaggcgtcgg gtccagccag 480

agccagcgca ccggggccgg ggcgcgggtg ccgctgccgc tgccgctgcc gctgccgccg 540

aagtgaccgc gcgcgacgac aagcagaagc agggaggcgc ggatgcggac gaacgtgacc 600

tacccccgcc cgcggcctcg gcctcggagt ttttttatat tattattatt tttggcgagc 660

aaagccaaac tggactcgcc aacctggaga gccacgtacg tacggcgggt ggcgacaacc 720

ggacgaccgc ccgctcggag gagaaacgag gcgcgagcct gctcggtcga ccggcggcgg 780

cggcggcgca gggcgttcca tttctttccg gcgtgctgtt cgtttgcctt gcgtgccgga 840

cctttgttag gtttggttcg tcgtccccgc gcgcgcgcgc gcgccgcccc cacgtgttca 900

acgcggctcg ccgttggttg actgcctgtt ttgcgacggc aatcaattat gtatacgtac 960

ttcgtttctg gtcctggttt ttcgaatctt aattacgttt caactttcaa atatgaaaag 1020

gaaaatggaa gtttcggaga ggcgggcagg aagaacttcg gcccggttca tggacctgga 1080

ggccggtggc acgcaggtgg acggatcatg gatttggtag gggccgggac cgcgagatcc 1140

ggcaggaaac gccaccgcaa ccgctcgtac gggagaaccg cgcgctcgct cgctagatct 1200

gccgtccctt ccggtgcccg gtactccggt cccgaaatac agcaggtcgc tgtcagtaac 1260

tggcaaccgg ctaatttgat tgctaatttt tagtcttgtg aatattcttt aaaaagaaga 1320

agatatggtt gttattttac ccttagcaac cgggaaccga aaacatgacc gtgttgctgg 1380

ttccgaaaac gtgaaaacaa tctcattctc accgtgttaa aatctagatt tagtaacgta 1440

c 1441

<210> 2751
<211> 2203
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236777_G1, chr6:166630956..166633158, Cluster 16

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (443)..(542)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (459)..(459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (460)..(460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (461)..(461)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (462)..(462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (463)..(463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (464)..(464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (465)..(465)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (466)..(466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (467)..(467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (468)..(468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (469)..(469)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (470)..(470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (471)..(471)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (472)..(472)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (473)..(473)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (474)..(474)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (475)..(475)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (476)..(476)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (477)..(477)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (478)..(478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (479)..(479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (480)..(480)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (481)..(481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (482)..(482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (490)..(490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (491)..(491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (492)..(492)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (493)..(493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (494)..(494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (495)..(495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (503)..(503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<400> 2751
aaaactattg aagtttgatt ttttttttac gacaggcggc aggtcacatg cgcatgaata 60

gttgaatacg acctccggcc gctctctgca gcgcacaggg atgaataatc aatcagcagg 120

acggcctact catgtctatc agtctattgt gaactagcta gctagtcgtc ctcttcttta 180

cccctgcctg ctgcttttat gcgcgcgaaa tcaaagaaaa aaaatgttcg gtgatgatcg 240

atcgcgcttt ctttcttttt ctttttttt ttggtgtggg tgtgttgtgc cgggagaaac 300

ggcgggaaaa gatgggcctt ctttttttcct gcgaaatcat gcgggccttt tatactcgcg 360

cactcgttta attccatttt ttattttgtg cgcaaacggc gctaatgatg cgcatgtgct 420

gggggggttgg acgggcggcg gtnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 480

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnagaaaacg cccccgcgcg cctctttggg gcggcggggg ggtatatatc tctcgcgcgg 600

gcgcccctca tttttatgtt tttgaaaaga gagatttttt tcttcttttt ccccccccgt 660

gtgttttttg cgggggaaaa gggggaaaaa ttttggtgga tagggccccc ccctcctttt 720

tttctttttt tttggggggg gtttttcccc cggggaaaac ccgggggaaa aaagggccct 780

ttttttttc cggaaaaaac aggggccttt ttttcccggc cgccccgggg ttttcccttt 840

ttttttttg cgcccccccc cgccccttt tggccccctt ttgggggggg gggcccgggc 900

gcgtttttgg ggggggtaaa aattctcccc ccaaaaggtc tccccccat ttgggggcg 960

ccccctttt ttttttttaa aaaaaaaaaa aaaaaaaagg gccccccccc ccgggggcc 1020

ccccaaattt ttatggggaa aaaaaggggc ccccctccc ccccccgggg gtgtggtttt 1080

tgggggggg gggggaaaa atttcccccc ccgttttttt tttgggggg gggccgcccc 1140

ccccccccc cccttctttt tgggggggg gggggggaa atataggggc ccccccgggg 1200

gggcccccca ggaaaaaaaa aaggagggga gggggctttt tttttgtttt aaaggggccc 1260

tctttttctt ttttctccaa aacccccaa ggggacccgg gggggggggg gggggggggg 1320

ggggaggagt gagttgttac gacgcgtccc gtcgaaaggc gcgcgccaaa accaaaaggc 1380

accgcacgtg tgcacagcag ctcctgctcc gtcgtcgtgt cccgtactag tactactact 1440

actcccgtcc cgtcctcgga caggggacg tctccgcacg gccgaaagcg gcccagcagt 1500

agcaaatgct gctgcagcta ggctgctgca ctgcacgcac acggtactac tagtacgtag 1560

tcctcctgca cagcaagcaa ttcgcagatc ggccggccct ccctccctgg tggtggcggg 1620

gaaaggaaag gaaaggaaag gacggctcac gctcgcggcc gtgcacgcac acgcacgtgt 1680

cagctgctgc acctgcactg cgctgcgctg cgctgcgcac ggttggtttg atttgattgg 1740

gagaccagac cagaccggac caccagggac agggaggaag tgaacgacac tgaccggacc 1800

tgccaatctg gtttgcatgc atgcatggaa aaaaaaggag gaggaggaac gaacagtggt 1860

ggttgcactt tttcccgcct cgaaacatag cggccgggtt cgagacttgg ggggtccggg 1920

ttccaaactc tgctccgtcg ccgtcgccgg ggtcacggga attttttta attttttta 1980

cttttattac gacgagttgc cgtcgaataa attcggagta atccactcgc aagaagaacc 2040

ggggagaaaa aaattgaacg gaagattttg cagacgctac cgtacgcgac cgatgttctc 2100

aacacccaac acgtgcacgt ccacgggcga tttttcggag tatgaacagt acacgactgt 2160

acgaagatta aaaaaaaacg aatcaagctg aatctcggga ccc 2203

<210> 2752
<211> 1477
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238024_G1, chr7:4585328..4586804, Cluster 16

<400> 2752
ttcgccgagt acttcaacac taggaaaagc agctgtttcc ggcagtggtt acactggcct 60

gatttgttcc caacataata acacaaagaa cacatcaacc cgttacactg gccgcccagc 120

tgcagggatc ggagggccta tgtcaaattg aagaaacttt ctttatttca ctacgtacaa 180

cttgtaacca tatatatagc aggccaccag ggcgtatgta agggcgacac gcacgtaacg 240

tcgttcagct agctatagcc agcaagacgg ctatatctag gtagaggaaa ctaaatcaga 300

ttagcgtgct tgctgattcg ccggaggctg cagagaagat gagcacaaga tgcatatatg 360

tatgagcttt gtctaattga tatactttaa tatatgccgg ctggacgaat agaattaagg 420

gtcaccatcc gatgatcgag acagatatga ttcagcgcac agctacttgc gtacggtttg 480

aacaaattaa aggagaaagc gaaaacgtca gcatcgacgg atgtttcgag ctccagactc 540

ctcgtcccgg ttgtcgcttt catatagcca gccagaggtt aggtgagcat cctatgtcct 600

gctgcctggc tgctgcaagt gtcaatgtct gtgtcagcta gcaaagtcca gtctcttaga 660

cagctagcta gtccctgact tgcgtgcagt gcagtcgtcc aagcccgggc cccgatcatc 720

catggacata cacccagcta gctagctcgt gcgtggaact atgatgaatc ctgtttgtac 780

agcaaagcac acaatcaaca caaggacatc gccgtcgccg tcgccgtcga acgaagaatc 840

gtcgatccga tccggccggc cggtgggcgc tggaccgtca agtcaagggc ttcgatcatc 900

tgatccagca gaaaactact ctaggcaaca ggactactaa tagtaattgc tggctgtaat 960

gctgccgtct gactacacat tgcatgcaat atcccgaggc gacaaaccat gcgttaattc 1020

tgcacgatgg ttgatcgatc agtatttcag agagagacgg aacgtgcgtg agtgcgatgg 1080

tttggtcgcc gtggattcag taaaggatat gctcacatgc acgcgtggaa acgaaggtcg 1140

ttttgggggt agtaggtccc aaaacgatgg cggttagcaa ctctccacta ctttcttcca 1200

tggaaatacc tcggttgaac tctgggcttt cccatttaaa cggctagctt tttcaactgg 1260

gcttcgtctc ctacctacta agctagtcga cttcttgttg cgctcttgag gaccgagcgt 1320

gcataacctc ggttggcctg cttcccaggt gtccgtgtgt gggtagtgtc ttcgtcctcg 1380

tgccattttt aaccttattt tatatttgga catcctaaca taagaaaaat agagagaaaa 1440

acttaacgct agagagatgg ttggttgtgc aaccctt 1477

<210> 2753
<211> 1482
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238100_G1, chr7:4899227..4900708, Cluster 16

<400> 2753
ccgccccagc catccaagat ccaattatcc caacgttaca tctctcggtg tcttgctcac 60

ccccacttag gcactactac aggtcgtctt gcactttagt ccccacatgc tgacatgcac 120

actgctattg cttattatct agctagctag ctagccacac gagaggagga acacaactcc 180

tgcttgttca tgtggcgatc gatatatcca cctcccaaga cctaacagta ttatagccac 240

aagagcaact ttcattatct tcgttcataa tcggttcgat tatagagtat acgtcgtaga 300

gatttttttt ttattatcga ttgtgatagt tcaaagttcc aaagcgcgcg gtagccaaaa 360

gccaaaagaa tcagaaatag ccaaagtatt tggtgggatt ctcgcttttt cccaccaaga 420

atcgcttttt tctctgttca aagatatttg ttgacacacc acgaaaacaa ccatatgcat 480

atggggtgtc tcaaatggga gactgtttta caaattctag tcctctctct agatctctcg 540

gatttgaatt caaaatgaaa ccctcagatc cgatcccata catataccaa agctatacca 600

tagcatatat agaacaacaa cagagaatat atcgcataca caggccacgt gtgtacgtac 660

gcacttgcgt gcgcgcagtg cacgacgagg gttagcttag ctgtggtgga ctggacggcg 720

acggcgaccg cgacctgcat gccgaggttg agctgggacg gagaagattc ggcgtgggcg 780

ctacccaaca agccacgcaa agcaaaaaaa acgcagagac gatgctagct gcagaaccac 840

cgctgctgca tgccgattaa ctgcatgcgt ccacgcggag tgggtgatct ctcgggctgg 900

ccggcaccgg caccctagct actagcctac tatacgtacg ccgcggcggc ttgcgcttgt 960

cgtcgtcctc cgctcgcctt ctgccaccgc ctgcgacgct gctggccggc cggccggtgc 1020

gcggtggcgc gtgatagatg accactgtgt gagctgaact gtatgcacat gcatgcatgg 1080

ggcatggcca tgggggggccg gccggatcca tgttgctggc cggcgccccg tgctgcccgc 1140

cggccgcacg catccatgag accgtgagca tgatggctgc tgcctgacga tgatctgcag 1200

cagccagcag cacgagctgg atcgatgtac gtggatgata gatggagcat gggcttaaat 1260

agttcccgcc aggcccggcc cgcctcctcc tggcgctttt cacttgttgc agcccggcct 1320

ggcccagcct ggccacaaac acaaagcaat agctacatca tacacaactc ttctttgtgc 1380

gattgtaatc acagactagt atatagccta tgttaacgtt gtgatccaca gaagggatag 1440

aatgggttgg cggcggcatg agtgagagag gctgagggcg gt 1482

<210> 2754
<211> 3203
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260261_G1, chr7:141522643..141525845, Cluster 16

<400> 2754
aacgtcgatt acgacctcct cctcatcagt aaaagctcga gaggacggac gtcaatcatg 60

gcgctcgtgc agcctagcgc ggcgtcgcgg tacaggacat tcacacatag ctagcctcgc 120

tggtctggtc tccccacaca cagcctcctt tgcatgctgc cccggccggc cggtcctgca 180

cgcacgcgcg ccaacctagc taccgcgcaa catgacaaca ctgtagcgct ctaatatctt 240

catgcggaat aacgtacgtg agaacgccac aagcaaattt tctttattct ctctgctgtg 300

acagtagttt gtctgttttt ttattatttt gcatgctaga gctgaaggaa cagtggaata 360

gggccaggcg tgggggagag gaacgaatga gaggtcaaat gtgtgtgtgc tcatccatcc 420

tatcctatta tacgaagaca ggaggaccag agatccggct gtcgtgccca ggcgcagcag 480

cccacttgaa gtgagacagt acaagataga tgcagtcatg catgcatgcg ggcgggcgcg 540

cggctggtct caactcgcaa gcaagctagt gtgcaatgtg cagcatggaa tggaaatcga 600

tcgagccagc tggtggggag agagcgaaaa gacctagtag atcagcagct ggctcgatat 660

ctacgtcgat tgtcgggccc gtgcgtggtc ctccaccgtc gcaaccaccg tgcatgacgc 720

caacacggtg ccgcatgcat ggttgcgcct cgatggctcg cgatggatcg gccttagctg 780

cctgtgtgac gcgcttggtg gcgctcaggc ttctccgcac agctacaact acaagcggta 840

gcacgctgca gatcgagcca atcatgcgtg tgtagatcga tatcgatcag atcggatcgg 900

ccaaccagca ccttgatttg gcacggagaa aaaggaggga cgaagcagag agaaaaaagg 960

cttctttttc ctcccggttc cgggcggcca ggccagcagc ccaggtgcag gcatgtgggc 1020

gcgtcacttc aattcacagt cccgcggcct cggcggctcg gcctctcgct cgctcgctct 1080

cgtcgtccgt ctctgcacct aacgtcagga atgggcgcac cgcacccagc gcccagagag 1140

ctggcttgct ttcggtcgtt gatttgacga cgacgagcaa cgcatgcatg atgcgagatg 1200

ggggcggcga tcggcctcgg tcgccggtcg gtcggtcagg cacaggttgg ccgaggcggc 1260

cggcgcacca tcgtccatcc gctgccgcct gccaacatac gaggtgtgtg tgtctgatcg 1320

atctcatctg acatacccac ccaaccagca cacacggacg gaacaacaac cgagtgtggc 1380

gcatatataa tgatttattt ccatttcccg acggataata tttcttctct acacacaagg 1440

cacgttagct gctgggggggc gccgcgagca ctgcaaataa gatagtcaaa ttttgacgtc 1500

tcatatagta tatataatag tagtatgcgt tatccaaacc tgacaaataa tcatttggaa 1560

ttaaagaatc ggatatacat atacacgatc tttcattcat tcctctgcat ggaccgtgcc 1620

attcgattcg gatcttgtcc gggcgtgctt gtacttgtac gcacacgcac tggctgccgc 1680

tcagctgccg gcgccgcacc cggccgatcg aaatgccagc tgcactgcac tgcatgcgat 1740

gcgaggaggt gccacaaggc cggcggtgat cgcctccgct ccgccggttg ttgctgaagg 1800

cggaaacttg gaggccgctg cgccacgaca caggcgatct ttaatttgtc cctggccatg 1860

cataactgcg cgcggcatgc ggcgtgcatg ccgccgcagg gaattgaatc gccggcaaag 1920

ctgcaacgtg cctgatacac acatccggat ggatcagcga attcggcgcc cgaccacatg 1980

ctgctgcttt cccaggagct gtcgtacacg ctattgcctt cgtcccatgc tgccagtgcc 2040

atgcatatag gagcacaagt acagaacgat tgaacgatac tactacaatg caagtctaca 2100

acacacacag acgatatata tagctgcgtg tatatataag accatgaagc cacatggatc 2160

ttcagtactg tctctgtcct aaacgcatgc gattctagct ttctaataag gtaaaactag 2220

accagaggag aaatggctaa tatattctgc gaatcaacca caccccgtct caataatgat 2280

tgcacctaat atgccagcct ttgtaggtct atagttccat tcagcattca ggggggtccg 2340

agatgaaaac acaacaggga tctgccaaag tctgattttc accgttaagt tatgagttga 2400

atcggtggca gactcctgcc cgggctctga agccactgtc tccgtagatt tctattgtag 2460

aataacattg tacaaactac atgctttaat tagctcaacg aaattatccc aggctataat 2520

caaacgctgg gtccgccact gagttgaatc aagcgtggtt gaaaactgtc taaaatcacc 2580

ggtgatagag aagtccggca tgttgaactc tcctcttgca gtggacttgt caaagacttt 2640

tgtatcattc acatccactt ttggtttaaa tgcagatccc ttttcattat tcctcctctg 2700

tctgagtatg tgtactgcac caccagctag ctggatcgtg catgcgcatt cagatcacgt 2760

attaattctt tttctgacct aataagcgca gtatatatag acgctctcga ttgagaaagt 2820

caaggttgat cacatcattc gcaacccaat ccgagacgca agagcgtaac tgacttttta 2880

ctgtccaatg caagtagttc cgtaacaata gtatatacca cgcacactgc acgccaacct 2940

tagcttttct cttcagtttg gactgccttg cactcaacaa atatctgacg cacatatata 3000

caaaaacctt gtgaagtctg aacacataca ctcatctagc agcatccatg catcgagctg 3060

cacgcaacgc gcgcggtcga gagggcggca cgtccggaca agatacgtac ggcccaaacc 3120

cgatcaaggg ccggccagca gcggaggggc tccatccaca catgcacaca ctattcatgc 3180

acgaaggggt acgtgcgcgc ggc 3203

<210> 2755
<211> 2675
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260499_G1, chr7:142906213..142908887, Cluster 16

<400> 2755
cagtggtgcc cttgcaattg cttgcatgcg tcgaacgaca agcagcgcgc gcattcaagg 60

ccgaaccggg gagcgcgtac tcctctctac tgctacgtac tgctactact gcgctcctcc 120

gtgggccgcc gcccggccgg acggctccat ttattgtgag ctctgatggc gatcagatcc 180

acctcattct cgatcgatcg gggtcagagg ggaagaaggc cccccccgt acggcgcgcc 240

cccgcccttg tgcagtctgc gactggcgcg actcttctgc ggcctccgcg agttaaaaac 300

aaacgcaaag ggacaaagga gcccaaccgg tttcaggctc ctgaagcttg tgcgaggtca 360

gggttttgtc tttggctttt gccgtgcgat gctgcttcgc aggctctcag cattgtcgtc 420

tccgtctgcc cccccggccg cggcgtcttg gcgccagcca acaccgcctg gctgcggtct 480

caccggccgt gaagccaagc ctgccacgtt atgtctctcc acatgtcggg tgcattatta 540

taaaaaaacg atgatggccg ctacgaatgc tactataaaa tgacttctcc aaacaagaaa 600

atcgcatgga gcgatttgcg agctttgggg gtgccaggtg ctgttgatcg atcgatcatc 660

ctcctactgc tgtactactg ctactgctgc ggtgaacttt caaggtcaag atgctctgct 720

ggttgctggt ggcgtgtcac tcccatctcc tcgatccgtc cagcgcagcg gcagcatgca 780

cgaccaggat ttttactcgg gcgcggccgg gaccgtctgc tcgacaaagc tccaccggca 840

ggcacgcagc ggtttttact gccacccaca ggccacaggt actgcagcga gaaaagggca 900

aggggttcg ggaccggggg cgaggaaaaa gttgggaaca ggatcccaag gccgccgcgc 960

tgcagtgcct gctgtgctga gaaagtccgg gccccaataa tgaagcgaag ccggaagcgg 1020

ccggccctgg ctggctgctg gctgcagcaa gcagccccgc gcctcgagcc gtgcgccgct 1080

gttactcgtt gtacccgctc gcccgagttg acccccgcgg ccgcggcgga agccttcccg 1140

tccgcttctc ctcctggctt ggctcccccc ttgctttgcc ctttcttttt attttgattt 1200

tttttaaact gtgcctgcca gccacgtccg cccgtgcctc ccgcggcccg ggccccgcgc 1260

gcgcgtggtc ccgccgcact cccgtgcgac gcgatgcgat gcgatgggcg gctctgcgca 1320

tgcgcctgcg cccgccgctc cgctgattgc ccgcgcgcgc ccacgtcccg tccgtccgcc 1380

gagcggggca cgcggggatg cgcgcgcgcg cgcgcggaca cggagggaac agtgcgcagc 1440

ggcgggggcg gggtcgccgg gcgctgcgcg ctggctgcag gacgaatgga cgatgcgatc 1500

cttttggctc gtccgtgtgt ccgttgctga tgatcccaaa gcgtaacgaa ccggccaagc 1560

tgcgcaactt gcacgctccg cgtccgcgcg cgaggcggga gacacggccg cgaggcggac 1620

tgcggaccgc ggcgcggcgt gcggctgcgc actgcatctg catctgcatg ccccctcggg 1680

gcgcgtggct ggatctgcgg ggtaagctgt cgtcgcactg tgactctgtg actggctttg 1740

agctgtcctg ggttcgcacg cggacagcgc cgggcggctg ggttcaggga ccggacattt 1800

ctgatctctg acgcagctca caggcagtct gaagaataga acgtttcaaa caagtttcat 1860

tcattttacg taccgtaacg tatcagcgag tttgttgaac ccacaaaaag aagagaaaaa 1920

aaccccaata caactcaacg caaaaatata tcatgtcaaa tttaaacaat gcgccataaa 1980

acttttgtt aacagtgccc ttacactttc aatcgtagtt ctggcagact gatttcaacg 2040

taccagggaa tctaaaacct ggttacaaaa cagtaataag agtaacgtaa aaaaatgaaa 2100

ttctgagtag ttagtatatt cagagaagaa tggccgacac gaatacgcac tcgcactcgc 2160

cgaagctgct acattaaaaa cctgttgcgc actgtacacc aaccaatcgc agtaaaaacc 2220

taacgcgctg taccgcgaac agttcgtctg gcctggtaca ccttttatga aagcggcagg 2280

aagtacgtat gtactggtac gattgcatat cgggttaatc gtggagcaag gatcctgtat 2340

gtttgtctcg gagaattggg tacatgtact gttaatcctg gagctgctcc gctacgtacg 2400

tgtccactgt cccgaaagta gcgttcctac aacaaattct cctgttccac catttccgtt 2460

ctcctatcat ggacgaaggc ggccctcctg tttccacaga agtggtacgt gtcatcatta 2520

ctctggacac agttaggccc tgtttcgttc ctttcttaaa taattagaca ttagatcaaa 2580

tcccaaatat aaatcatgac taacaataaa taaactagcg gactgttccc gaccaggcta 2640

gtaagcagta cgcagaacac atctataacg acagg 2675

<210> 2756
<211> 2164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261781_G1, chr7:150014783..150016946, Cluster 16

<400> 2756
gtaccctgct aactgctaag ttccagaatt tctggatcga gtggttcact ggtcaaaact 60

tcacctaaaa cgtacgtata ccctgaccgg ctgaccctac cctctgcgaa tactactact 120

tctgtctggt cagctttctt gcccaccaca ccacctgacc cacccccac actctaacaa 180

gtgaaatagg aaggggtggc atggagagac tgctggagcc agcgtgtata aatccttact 240

tgtagtagta cggtgctggc tacgtactcc gacgatccaa cgactctaca taaatgaata 300

cactccgtac gtgtgtacag ttcctctggc acctgccttc aaccaccatt ctgtactgta 360

cgcacgtagc agtgtgtgac caccttgtgc tggtgtccgt ctgtgctgtg cctgtgcatg 420

catgcctccc gcgcgcccaa acccaagaaa gaaggtgcct aagctattgg agccaaggaa 480

attccgattt ccaaaccgaa caaagagccg caccgcatcg catcgcatcg catcgcgtgc 540

acgtcgtttc aaaatcgatt caaaaatggg cgagcccgaa cgtagcaggt ttgcatggac 600

gcgcgcgggg gccggggccg ggcggcgtta ataaattcgt ttggtgtgca tggcgctcac 660

aacacgacca tatctcgtga cgcaaattaa ttttgcatcg gcttcttgtt gctgtatgct 720

ttttaatttg gatgctttta attaggtttg catagcaacg ctagtactcc gtgtttatgc 780

tgtcctactc ctaccccgcg gacgacatct gctaagagac gaccgatcga cgaccctacc 840

ctggcaggag accgggatcc acagaaccgt gcgccgatcc agccagccta ccccgcggcg 900

cgcggttgcc gatgcatgtg tatacgcatg caatcttcgt agtagccttt tccgcgtacg 960

gccaacgggg tccgtccgtt ccgctccgtt cgtcccgcaa atagacaggc tgcagaggtt 1020

tccagctgct tgttggcgct tttaatcggg ctgtgactat tgccgtggct tttacaatat 1080

taagctttat agattaagct tgctgaagtg cagctccggc catccccaat ccccggcctg 1140

tatgcgaact gtgtctgtgg cgggcgcggc gccggcgggc ttgctgccta ccctagccga 1200

ttcgatggat cgggcgccgg tcagtagccc tccagcccag cttggacgca ctagcactct 1260

agctgcagct agtctcctct gtgctgtgcg tgcttgaaaa gacgatggtc gatgggagta 1320

gaatctagga ctaaatttcc tagcctgctt aattagctag ctgaacggcc aactaatctg 1380

tcttttcctc gggcccatat tcagcgtgca ctttctagtc aagaagattg acaaaaccac 1440

aagcaccatg atctcgtccc aatcctgcct gccccatctt ttgcgcacag cgttctgttt 1500

atttatgtag ccctatatct atacggatgt agcgccaaaa gggcagatgt ttatacatat 1560

acctatagta cactgtagtg attctattta aagtgcagga gcctttcaga actagtattg 1620

aaggtaccta ataaagagcg gcgcgctgtg tatgtgtggc cactggccag cctcatcatt 1680

agcacgtccg gcccttaaca aataaaattt gccatcaagc tgtttttttt ctcctccctc 1740

aacgatcccg ggccgctaaa tgtattttag tttgcgtgga atagggagac atgagattaa 1800

ggatcaacaa gcgtatgata tactatgttc tgtttttttt tctccttctg acagttgaaa 1860

tttgtcgagc gttgttgtgt aaaatattta atatttgcag cgcgcgcgcg gcccagctag 1920

atagccattt tcgtttcctt tcatctttcc gcttcagcag tccgctgacg cgcgtgattt 1980

tacattattt agtttattac gttgggatag cctcacttca ataatattag atttattttt 2040

agtttttct gtccaaacag ctccagctcc acgagctata tctttaaaaa taaactgaaa 2100

caaaagacca gtttcgtgga atttttaat ctcctcgaag ggtgccttaa aaacactatt 2160

ttca 2164

<210> 2757
<211> 2232
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262987_G1, chr7:156671890..156674121, Cluster 16

<400> 2757
ggatcttgaa ggaacgcacg aaatgggagg ctagaaggag atcctttgta cctgcggcaa 60

tcaggacaca atgaggacga cggggagaag ggcgtcgaga gggctgttgc cgccgacgga 120

gtcgacgacg cggctcctgt ctccctttt ggaccgacct cctctcccct ttgaccaggt 180

gcctcttgga tttgcatctg tactagcaga tgaaaatgaa ttagggttta agggtatagt 240

ttgttcctgt gaccacgtcg ctgtgtacac gtctgccggc gatacgcatg cggaatggat 300

ggcactgcac tggcgttgaa gaagggctaa aaaagactga tgtgatcgtg gagaggacgg 360

gtctcaccct gcaccacctc aaccaagggt ccaaaagtcg gtcaataacc cactggtcta 420

tcgggtgcgg cgcctctgac aattggcaat cgacgaagac gacgaggagg agattgcgcc 480

acgccacggt cagccgacga gggaaaaaaa aaagagtgag gatatctttg cattgcatcg 540

ggcacgggaa ctgcacttgt tgtcctcgat cgttttgctg tagcgcggcg gcagcgcttc 600

gtcgtcgtgg gtctcgtcaa aaagaccccg tcgacgcccg acgattcttt cgttcgccgg 660

ccgagcgggt ttccgggggc gagggcgaga cgccgggccg gtgtctcttt gttctctccg 720

gaatccggag gcagcaggac gctgctcgcc catgcagagc gtgctgtgct gatccgcgct 780

ggcgctagtc ctcctggacc acggaccggc ccggcgagct gtcaggacag gaggagatgt 840

atccgccgct atcgatccat gcgtcgtcta ctactacagg ctagtactac cgatgttgca 900

gtctgaactc tgcactgcgc atgccagggt atctctggcc gacgggagcg agctgcgtcg 960

atccgttgct acacggtctg gctgaaagat ctcctcgatc ttctgcttct tactgtcttt 1020

tgctacgttt cattctcttt ttttttcct ttttttacaa aaaaaaaaac actgtcttta 1080

ctggtacgtt tctacataca gatgccaaat acaaatgcgt gtggtaggct tgactgcttg 1140

aggcggtaga gtggtgaatg gtgatgatgg gcaaaaggac ttgcatgaac aactcacaag 1200

agggttcaga gctgaaacag cacacttgcg tgcaagcgga gtaggacaag agacaaatcc 1260

gcagcgcaca ttggcccttg cgctcatgtt tttagcatcg gccatgcatg gcatggaatg 1320

gaatggatgc atgcatcaat aggaatagga catcgacaat ctggagacac cagccagcca 1380

gccttggcaa cgcaattctg ctcccctctc gtctctctct cccattcact catccactcc 1440

cttcccttct tgcatgattg cacactgcgt acgcagagca ttccatcatg caccgtgcat 1500

agaccgcgct gtggcaagga gacagatgaa tgggcaaagg agtataaatt ccagcaggag 1560

agcaactact gattcggcgc gcacatcaca tgggcggctg cggctccatg aaaagccccg 1620

ccccgccccg acccagccat gatctcgtcg gaccggcgcg cgcggtggcg ccaaagcgcc 1680

agcaggcaga gaacattcca agccgccttt cgttgccccc cttctctttt gattcctcac 1740

tccagtcccc atgtctccat ccatggcggc catgtccgtc tcgagcccca gctgtgcctg 1800

tgtgtgagag gtactagact actgtttctc tcgaggactg acgaccaaag cgagcacgtt 1860

cggcgatctt tccacgccat tagaggacgg acggccggtc tctggtcgtg gtcgagttgc 1920

gacggcatgg cattggcatg gcaggcagag gcgggtgcgg ggacagaaag gctgcctcat 1980

cattcgtact actgtcctgc cttggctttg cctttgctcg ctcgcttttg gcagctaaat 2040

ttgtgctggg ttggattgga tattggatat atacatgcag ccaacagcaa cagcaacggc 2100

aacggcaggc agctgactgg tccatggggg tgtgtgtgtg tctgtgtgta aacttacagt 2160

actgaccagc cacgcatgcg tgatgcatcc atctggttgg gttccaccac ccaccacatg 2220

catgccttgc cg 2232

<210> 2758
<211> 1643
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262994_G1, chr7:156711755..156713397, Cluster 16

<400> 2758
tgcacaatgt tgttgtgtag aacctatcaa gccgagtctt aaaccggtca agccggcttg 60

gcctatgtgc aacacgtaga attcattagt tatctactct cttggctagc tattgttcta 120

aggaacattt ctcgactctt tagtcaatca ctggctcgag agttttgagt ctggctcttg 180

cttccgtcgt gatacaagta gagaataccg tttctgggct ttctgtgttg tgtcggtttt 240

ccggtatctg tggtcttatt agtaaacata tggccttcaa ttaattcgag ggcatcatgg 300

ttgcgtgttt ggtgctttta ctgggtgatt ttgggacatt tgaaaaaaat gaattagctc 360

tcattcatct cttctgtagt cactttactt gggtttttat ttgcatatta aaaaacaatg 420

aactgaaaac atataattta tagtgcaaac ataatgttag tataaactta ggctcaaaat 480

gttgactatg tttgagaata ttctggtata tcataatcag ctataagacg gtctcaggta 540

gtataaaata gggaacgtga aagtgcagat gaccttgttt aataccttt acatagtgaa 600

atttgaaata taggatgaga ttgctggaga taacaaccat tatcgacagc tctttataca 660

aacagtaacc tgctgctacg aggcgacaat tatattagct taataccgat ggaatggatc 720

gatctgtccg tctgaagatg aagcaaagct agagaagcga cagttagttc ttaccgatcg 780

agcttcaagt ggccggttgg atcgatgttg tacctgtact gtacgtgcgc gcatgatggt 840

gctcactgtg ctgtgaacat gatgcggcta gtggctgtga gggacgtgaa gaaggcgagc 900

tcgcgtccat cgatggatca ccgtccgacc ggtcgggccg cgtgcacggc acagctgaga 960

ggtcaggcgt atgcacagca cagtggtgtg ctgtgggtgc ggtggtgggc gccgccgcgg 1020

cctcctttgc gtgctccctc ccttgcatct ccgcgcggca gcgccttttc tccccatgca 1080

gacggcacga tcattgggcg gtacggtgtc gctgccgcaa aacctttccc cggaccgggg 1140

gggccgactg gccgaggcaa ctccttggga gcctgggagg tcgagatcgt ggtgccactg 1200

ctcggccgct cccttgcgcc cccgccgaca ccgaaccgat cgccggccgg ccggcccatg 1260

gtttgggatt cgggaataaa ggcctgcgag cctcaaccaa accattttgt tacaggcgca 1320

ccgcttgggg ccttccccaa tccccatgat gaccaccatt gcagatgcgc tgcgtggaac 1380

gctaatgggc ctgttctgcg agtgcgaata acggatcggc ccattgcagc gctaatgggc 1440

ctgttttacg agtgcgagta gagcggatcg atctaagact cacccaggcc tgtccgcaca 1500

tctgcgatgg tccctaggcc acaatagagg gcccaaaggc tgagatactg aagcctgcgg 1560

acgcccagac aatgacaccg aagacttgtt ctcttataaa atttagacag tagtgtatcc 1620

atagtttaac taaaaacact gtt 1643

<210> 2759
<211> 1532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263621_G1, chr7:159748131..159749662, Cluster 16

<400> 2759
cacgcatggc agcacgccta gtactctttt ttttttttt tgccgcttat caatgacgag 60

cagcagtcga caagccgcgc cgaggggggac gacggccgag cacaacggcc aaaccggacc 120

ccgggtacgg tggcgcgagc aagcacggaa gggccgtacg gatgggcgaa gctgatcccg 180

acccgcatgg cccacgccag cgtgtgggcg gcccacccat cccacgcgca cccgctgcgc 240

tgggatgggg tgggacgcag atagagctgc cgaatcctcc gtgacgagcg ggtcccacgt 300

cgacgcggtg gcgcacgcga cacgtcgtac gcgacgggga ccggacgcct gcctggctgc 360

ctgccttttt cctgccttgt ggagccgtcc tcacgtcggg gaggcctgat tattttatgc 420

ataggctagg cgcgcgggtg ccgtcgccgt acaatcttag gggggttccg tacgggacgg 480

cgtgtaccgt ccgtccagcc cacggtcggg tccaccacgc tccggggccc gcgggcagcg 540

tagcgtcact ggcacggcca cgaggggggcc atgtgtgcgt gcgctgccct gccctgccct 600

gccatgctcc gggctaccgc agcgaacacc gcgcgtggcc tgtggttttc tgccgcctgg 660

acggtcgggc tcgaatcggt gtgctggctt ggcttgtcct ctctctctct ctctctgttt 720

caccaggcca ctggtagagt ggtaggttga gctacaactg ctggtgttta tcactcacag 780

tcacaggtta ccgacgacga gtacatcctc ttttgccgtc aattaatctc gaaaaccagt 840

acaagtcacg ttccaacagt aatctaccgc taccggtaac aaagaaaagg ctgcaggacc 900

ctctctctct ctctcacttc cacagataaa acttggacga gatcgtgtgg ttaccctccc 960

tccctggaag cctgggcgtt acgttcgatg gcaggaaata aggcttgcag cgactccagt 1020

ctccaggcgt gctgaaactg cctatcatca ttttatttta taacaggaaa aaaggcagca 1080

ccgtagctgt atttatgtat ttatacgtgc acgcgaaagt gttttcagga ttgatttatt 1140

atatacactg tttacaggtt tctaaatgat gcagcatgcc acgtgaagag ggtgcgaggg 1200

taggggacac catgccattg ccaagttggc tcagtcgtca aagtgatacg tcagaccaga 1260

agaaactact cgccgattta ttttttttc tagtatatgt acatggcttt ttttatgcac 1320

ttggatctac actagatata tatctagaca tataataaca tatatttta aaaaagataa 1380

aaatacctta taacttaaaa tagatagcgt atttgttttt gtacagtctc caatggataa 1440

cagtttgcac tcccaaaata aaagacaagg aggaaaaaaa atctagtaag tgtgtcgtca 1500

tgtgttgcca tatagcattt ttttgtggtg gg 1532

<210> 2760
<211> 1578
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263795_G1, chr7:160593568..160595145, Cluster 16

<400> 2760
cgccatggcc cgacgcggag agctagcagc tgctcccgtc ccggacggac ccagggcgga 60

cggggagcct tttgtttgtt aataatctac gttatccccg ggggcgcgcc gtcgccgtcg 120

cccatccacc cggcccgcga ccgcgacgac ggtttccctc cccaaacatg tccgtcccgg 180

tccgattaat atcttctcgt ccactatatt atgaccatgt gaaacgaggg gggaggggag 240

aggaggagaa agaacacgcg aacgctcgcg tggatcgagg tcgttgtcac gggttccaca 300

gaagccatcc ctgctggaga gcgagagtga gtgagggaag caggtgtagg tgtcgttacc 360

tatttgttgt caccgttacg ttccaagaag aagataaaaa aaaggctggc agaacaatcc 420

tcctgtctgg cgtctctgcc cttggggtaa agaaagaaag aaagatcttt tccattccat 480

gccgcgagat ttttcatcca gctgtgtggg tggtgctgtt gggcaagttg cgttccgaca 540

gaccaaagcg ttgcattgtt gaaggggtgt ggggttgctg atttgtgagg cagagaaaac 600

tgactgagtg agtgagtagt agtagtagac cggaaatctg gagctgattt gggtgaggat 660

cgatcagaga gcgagtgcag gccatgggcc attctctgga gtctggactc tgatcgcctg 720

atctcatcca tccgtacccg tgctcctccc tgaccgtcgt agctcacaag tgctggagtg 780

cagtgcagtg cagtgcagcg cgcagtacgc cagtaccccg tgctgtgctc cggttgctct 840

cgtcgtcgtc gtctgcggtt agccagttac tgtgcggtgg gccgggctct cggtcaaatc 900

ggttgcccga cctgacgtgg agagcctgcc tgctgagagc ttcagttctc acagctgcaa 960

gaatctcgcg tcacccccct cccgctggcg cgcctgctag cctggaaccg gaaagaataa 1020

aatcgtagca gtccacgaaa tccggggcgc agcttgcatt gcattactgt gtgtgtgtga 1080

cactgacacc cacacacatc agcacacaca cgcacgcaca catcagtgca tagcttagct 1140

tagcttaacg aacagccacg gctatcggct ttgccagaaa acgaccctcc ctcctcacgc 1200

cgccggcctc tctcgttcac ggtcacgggg gcgggcgggc gggcgcacgg cgatcgattc 1260

ccgctgaatc attggagcgg cggcgcgtaa tgctccaccc ctttttttgtt ttgtctcgtc 1320

ctgcttggac gcaagcattt atccgctccc ttttgttgcg gagctcagaa acctttttt 1380

tttctcttct tctccggcgg gcgaatacgg tcgattatat tactcgcctg ttagatcagc 1440

agatcggcac ggcgaggccg gttgctgcgg ttaacgctgc cgtttatgcg attgcttcga 1500

tggtgattgg tcactctgat ggacatgggc ggatctaaag ggctccagcg cccttacgtg 1560

tatgaaacta cgatggga 1578

<210> 2761
<211> 1809
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264075_G1, chr7:161906288..161908096, Cluster 16

<400> 2761
ctgattaact aacatcatca tcaacgtcaa cgacacaatt gcggaaaaaa atataaacaa 60

aagcatgcag gaacgagacg tcatggcgtc catattaaca gaaacacacg gcaatattta 120

cttaggatat gttggctttg aagtggattg agagagggat tagaggaaat taaatctaat 180

ccgttccaat cccctcaatc catacacttc taaccgattg tttgaatatt ctagtattca 240

ccaatctaca tgtgttgaga tggatcgagt aaattagtta aagccttagg gggccagggt 300

ggatgattgg ttgcgcatat atgccaagtt tcagtccggc cttcgaggtt tgggggcata 360

tttctgcttt ctagctagag acccaggttt ggtgctgctg atattagtag catgttttaa 420

agaagcttaa gacatgataa tataaaataa gaactttaag agtgtatttg tataaaacta 480

taattacggt catagcctgt ttggctggaa cttggaagtc tcacaggaac gtacttgtct 540

gacagggcaa ggcaactatc gcggggagca aaccagacga gcccatatta ttatatgatt 600

cagacgataa taattaagct caaactggcc tctcggtcag tgctgcggcg cgcggtggtg 660

gcctctgaca acatcacagc atgcatgcac ctgcgagttt atcgacccca accacatgta 720

cggtgcacgc ctgccaacag ctgagagaga tcagtgagat ttcatgtgca gcgcgtcatc 780

tatgcacagc tgcaggggcg accgcgcgca gaagccgtag ctaggaaacg ccggcccggc 840

cggaccagct agcgcgcagg cgcaagcact agggggcggc agcggcacgg ggaaaatacg 900

cggggtagga cgagaacggc cgacggaacg tcgcgcggcg gccgggtcgt tatcgcgtgg 960

gcgggcgggc gggcgggaga agtggctccg gggccggcct ggctcgatcg ctctcgctcg 1020

cggttggggt cggggagcgg acgcggggac gggggaggga atctcgcgac gagagggtgg 1080

cggaatctaa caaaagaagg tgggcttgga ccgatccgct ggccggccag ccgcccggcc 1140

ggctggctag tggacgccct gctgcgcgcg gcctacgcac ggacgggccc cccacgatcc 1200

atgcccccct tttcgcaccg tttctcccgc gacatcatta cgcgcgccga cccgatcgac 1260

gagacgcctg ttcggcgctg ttggcttcag attaaaaagc acctcccccc ccttcctcct 1320

tcccgcgcgc tcccccacga ccagtcgacc acgtacccgt cgttggcatc gtcaatgtct 1380

gccgcgaggg ccgaaggggg cgtcgcactc ccaggccagg tcctctcccg gccggtcccg 1440

gccgagctag ctccgtctcc ggccggccgg agacatcccc agttacccca ctacaattct 1500

cagatggtga tccgcacgtg tgtagagaat tcgagatacg ttgtatacca gcctgctaac 1560

acaaccacca acgacaacag ttgcagcatt acgtacgtgt ttttcactcg ataatattag 1620

ctactattat gagcgtattt ggtacagcta tggctcttaa aaaaactatt gtaggtcata 1680

tagcttatgg aaaaactaca cacgttcaaa aagtagcaaa caactatata aaataactct 1740

ctattttcat cagttcaaaa ggtagcaaga cataagccaa aagcaggatt caatatactt 1800

ttaaaatag 1809

<210> 2762
<211> 1614
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264103_G1, chr7:162031061..162032674, Cluster 16

<400> 2762
tcgtacagaa agaagaaaaa aagaaaaaag aaactccgtg acgcagttcg gttgtccctg 60

ctgctgctgc ttgtccctat cctccgtccg tctctctgtc gcgtcgcagt tgttgggctg 120

taggcgccgg cctgtagatg acgcgtgcgt cgtgaagacg acgcttggag cgaataatcc 180

tgacgggagc gaggtgatcg gtgaggaaga agcaggtctt gcattgtgct ggcgccaagc 240

gagctcgtcg tcgtcgtcgt cgtcggcagg gagctaggtc ccgcctcgct cgtccgtccg 300

tccgcccgcc cctgggcctg gctgcagcct gctgctgcgg tgcgtgaacc gtgtgttgtg 360

gctgcagcca cacagagagc ccgtggtttt gcttcactgt cagtgactcc ggatgggaaa 420

tgttagtgct ggccgcgcgc ggccgtcacc gtcccatccg tcaccgtcat gcgagccgcc 480

gcgcgtagaa tgaacgggag gattgcaacc atttttgac gaagccgtac actctagtag 540

tgtactggta ctgttctgca gcccgtctgt cttgtcgtcg tcgcctagct agctccctcg 600

cctttcgatg gattttctgg ttctgtgtca cttgtgccga cttcctacgt tttgaggaca 660

gatccaactg tagtgtcggc tggataattc ttggattgca agcaaaccgt gcggcagtcc 720

tgtgttacga acttactagt agtaaagttg cgtccatcct tccgagtcat acggaggtgt 780

gacatgcttg ctgcttttat ccatgccaga ccacactagc ctctgttcct ccggataatt 840

ccaactccac caacggacgt tccatgctcc agattatata taaatatata tccagtgtca 900

gggtcagggt gggtatggta gcgtaataat gatttaaatt tcgcggtgaa ctttttgacc 960

ggcttcggtt tggttccttc cgaccagtcg agggagggag ggagcgatgg atggcgccta 1020

cctgatgatg aaacttgacg aatctcgcag cacagcatca ttcagaacag ctggcggtgc 1080

gagtcctggg cgtgcgtagc gtagcgtgac ctctctcgct cgctttcgag cgcgacgtgc 1140

gatcccgcgc ccataccctc ctgcgcccgt cgtcacggca cggaccaact cgatgcacca 1200

tgtctcgtcg atgatcgcgg tggcacaggg cacggcacag cgggcaggtg gtggcaggtc 1260

ctctggtgtc caggagcagc ggcctagagc cgccgcgcgc gtcggcgtcg ccgctgcgcg 1320

cgcgcgagcg cgaagccagc agaaactgca gagattccaa ggcggcctct gtgggctgtg 1380

gcctcagacg tgaaggcctt cctgttcctg gtccagaatg cagtccagtg aaggcccatg 1440

tacgtgacgg gccagtacca tttcttctca ggctcggaaa gtgaagccac ggcctgggct 1500

gcattggtct ttccgatttt cagacaactg tgggcaaact ctttctttct ttctttttac 1560

tagcggaatg cggatgtgca gtgcagtcca tcactatgac agacaagctc acac 1614

<210> 2763
<211> 2072
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264298_G1, chr7:162961557..162963628, Cluster 16

<400> 2763
tcgttcaaat gagaatgagc tagagtcatc ataaggaaac agggccccca aaaaaaacaa 60

tactagtagt agtgagtagt gaccaacttt gcaaaagctg caatgagtcc gtggccatgc 120

atatggatcg cctcatttca cgcactcatt ttgctgcctg ccctttgga cagtgctacc 180

tctgcttagg tttctcgtga tgccgtcacc aggaacagca gttgacctct gccttacgca 240

aggaatcaca gtcaccatag cttatccagt ttatttccat gtgttgacga attcgcaggg 300

ttgcgtgtgc aattggggaa aaacacacac acacatacac agcttcttcc tgcaacgtgt 360

ggtcatggtg gggcatccca cgcgcagcac gacgcggaga gcaatgcgag tctggcctcc 420

ggcgcggcca tggctgacct tcggtgcggc ggacggcgac gcacgcagcc cgcacagcac 480

gcaattggac gcggagctgg ctgcgagtcc aaggctgaac ggcggcgggt cgcaggctac 540

gatggtgggg cggccgggtg ggcgttgagg cgggtttggc tagcggcggg gcgcagcgca 600

cgttgggttg cggggtgagc cgcgaggaag gaaggggtgg cgcatgcgag tccacgagaa 660

ttgaagacag ggagagaaac aataaaaatc gaaccggtat gcgatgcgac agtagttggt 720

aattttcacc gattatatga aagaacagta ttttttgtt cagattaccc tttgaggtac 780

tctataaatc taatagattc gagagctaga tccatatttt gacggatcta gagtggatgg 840

agtagaaagt gtttagcaga caaaactgac aatgggactg ttttgatgga tctaaagttg 900

ttgagagtaa tttggattta caatttttg ccggggtccc tggaccctga tgacaaaccc 960

tgttggaatc gtcctgctag tatactagct ctaagatgtt tttttaaatg gtgttagctt 1020

ttagaagtag ctcacaatat gtttagaatt acatgacaat ctcacataat tgaaaatgta 1080

tgtataaaac tagttcttgg ttaagagcta gtagtttttt ctttctcttc cattaaaata 1140

taaaataaaa tatttagagc taactcctaa atcattgttg aggccaccct tagagtgtac 1200

tccaataaat tatgaatagt tatagataga ccccatgatt atcaattgca gccatactct 1260

atctatgttg ctggtgcatg tggcatttaa ggtacttctc cattggaaca tgcagaacac 1320

tactcctgct tgacttgttt gtacttggta ccatgctcgt actgtcaaca gtgtcactag 1380

gcttttcaat gaaccagccc aatcagacgg gtaccatttc catgtaccac gccggcacat 1440

gcgcttgtaa cctcacgtcc gtgttctcta ctgctgcctg gcatctcccc gtgtcctgta 1500

ctaggtgttg ttggcattcg gcaagatgcc ccctagcctg tgtgactttg agtcgagcga 1560

ctgatgatgg gtgtgctgtg aaagtctcaa atccagtttc tttaaaaaaa agctgatttc 1620

tgacttttg tggcgagcaa caagttcttg gctagggcta gagcctagta gtagattcta 1680

atcgctttgg ggtttggatg atacgagtaa ttgattgata agagcggcac ctcaagtatc 1740

aacaggatat gatatccatc ccaagaagag aagaatcaac aggatgtcgc tggagttagc 1800

cagcatgcga tctggagttt ttgacctttt ggtttggcgc agcgcaacgc atgggacgac 1860

aacagcacag tggagtggag tggacgagtg gtggccttgg cccttgggct aggactgaga 1920

cacaggcgtc agtgttagcc gtgctgcaca ccatagcttg ggcccatggt ccatggacac 1980

ggacaagaga ccttctgatg agtctctggc acagcgctgt acgttcatct cctgagctga 2040

gaccaccggg ctaggcgcgc gcgcggcact tt 2072

<210> 2764
<211> 1634
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264423_G1, chr7:163793625..163795258, Cluster 16

<400> 2764
ccttttttaa aagccgcagc gggcccagcg tggggacaag gaggaggtac gtgtgtgcgc 60

aggccgccgc atcgctcgcc acgtgcagcg ccgcggccag cctcgtgtgg ccccacgaca 120

gctcactgcc ccagaggcca acttgccggg tcgccgggca ggccctcgcg cgcgacgccg 180

aacccgcgcc cggtgcgcat gacgcgtggg gcacggacgg ccgggacccg caggtgcggc 240

tggatggtgt ggcgtgcgaa ctgcgaaggt tgctgcggat ggatccctcg tctacacgcc 300

tagttcgcgt tggatgacac gcgggtccag ggcaccaccg ggcccgcagg ccggtggttg 360

gcatgtatga atgacggtga cggctgggtg ttggcgcgct gggctgccgg agatggagtt 420

cacatccacg gttgctcctc cgcgttgcat gacacgcggg cccgaggcgt gctggccccg 480

caagtcggtg gacggctgcg cggcgcggcg cgtgttggtg attgggtacg gtatagtgct 540

agggtctgca aggggcaagc ggtgctgtcg cgacgtctgc ggttggagga cgacacgtca 600

ctccgggtgg ggttgacggc gacgtactgg cgcgccgtgt ccaggtgtcg ggctgcggcg 660

gcgcggggca gaacggacgg cagctatgga gcccggctgt cccccgagtg tggaccccgc 720

gcaacaagtg gatggcggat agcctatgcc tgtggaccca cggccgtgga gtctcgcatc 780

gcctgcggac atgacgaaac ggtttcaact ttcaaggtcc acgcccatta ttacccagag 840

acgatggagc tataatctcc attttctctt tgttatatga tgacaggtaa acagcagtaa 900

gtttgccgaa ttttgcactt gcaaatctat cctacacagt actaccttcg tccatatgag 960

tctgcaaccc tagattcatt caccatcaga ctatctagaa tctaactaaa gttatacaaa 1020

aatattctac aaataatctg ttgataaata tttggcacga tcgattttaa tatatatttt 1080

ttgtgtaaat ttggtcgaac taaatatggt ttaatccagc tcgtgctata gaattgctgt 1140

tacccggacc aaggggtact tgtgttgtgt gaaaatgttg tttctcaagc actggtcagt 1200

ttctgccaac gttgagacag agggttagtt ctcgctttct tcgagggcta gactactaga 1260

gtctaatgcg cataggagaa aaatccaggg gtaaaaaggt cgtcttgcaa attgtgcata 1320

catcaacaat acatagtttc catcatacac acattcgctc aaaattttat gtgctgttct 1380

aaatttaagt ttttcctgaa caatgttgat cagtttttt cggaaatatg tagcatctaa 1440

aaaaccaaat atggttacct ctgaaatatt tgttagtaaa attggttgga tgctatgttt 1500

tagcaaaact cgtttgatgt tatttaaggt atagtaacca cacatcggtg ttgtctgatc 1560

tcctgtttag attttaaggt atagtagtta gctgttaata attactcgta gtttattata 1620

tcgaaacaga tttg 1634

<210> 2765
<211> 1686
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264454_G1, chr7:163959564..163961249, Cluster 16

<400> 2765
acggtgaata agtttgtatc ttccgaattt ggagtgacag ctcaccattt taacttcttc 60

ggtgccttaa caaactttga aatgaatgag gctgtcggtt gatgggagtc gactcagctg 120

agctgagctg ctgcgccccc aacgacccac ttgtcacatg catgtgtgcg attttccgcc 180

cttaaaagag cttgattgat gcgaatcgcc ggcggcaacc ggaagctagc attttacagt 240

gcaaaagtct cctgatcgat tgatccgtcc gatccatcgg gtgccttttc tgcgcacatg 300

attgtgtatg gatgctgcac gcacgcttgc agatgcaagt gcagtgcagt gcagtgcagt 360

tcatcgatcc aagcgtcgca cacacgcatc catgtatgga ccaccaactg ctctcgttca 420

ggtggctggg gacctcgagc ttgaggtcgt acttgtttta tttggtgggg atgggggtc 480

atgtgaagta gacgcacgtc tgttgtaggg ttttcaacct gatcgactca gccagctgct 540

cgtcttgttt gttttactct gaagaagaac gcaaggacag ttagaatcag aagcttcggg 600

caggtatagg atcaattact gcctgtgtgt ttgcattgca tgcatatgca caggtgtata 660

tataccgctc ccgctggtta gcagttcaac caccacacag tcttcagcga gtttggtttc 720

agtttgacga agaaccagat gccgcctggc tgtggatccg atccgcctgc tagctccaaa 780

ctcatcacac acagtacttt gagtcggtga tgaactggcc cggccagtcc tggtcccaac 840

ctgcttatgt gctttacgta taactagcat atctcttaag gttcttcttt atggcaagaa 900

tcaaccagcc gttgctttct gcagccagtt tcagacagct taggtgactc gctctcctgc 960

ttcagctttg aacatgtaac ggcatcttca tgcatgggcc catggtcaca ccacgtacgc 1020

gtctttctga cgagccacag gaagccaatg ctcgttgaac gtacaatcaa gttcgagtaa 1080

tcttaccatt aacacatgat atgctgctat ataggagtat ttgctgcttg cagctggctt 1140

gaggcagcta gcagaatctc ctggagccgc gtagccagca ctccacaagt tccactcgat 1200

cgccagtcga agcacgcgcc ccggcctcac ggtgttcaga gacgatggtg ttctaagatt 1260

ggccttggcc atgaggggggc cgtatccctg cagcttcttt tgcgacgaat gaagctagaa 1320

aaagggcagg gagaaagaca tatataagcc gcgagcctca tgtgtgattc atgatatttg 1380

tgggtggccc tgaaatcctg atgccatggg atcggaattg aacaatgatg ccccccgccc 1440

ctcatcacaa ggccccgcct gaacaatgat gccattggat cggcttttct ttatcctcac 1500

gatccaaaag gacggtcccg atgaagaaac ttccagttca gctttttggt gggtgacatg 1560

catgtgagcg agagcaagct gctcgagatc gggtgtgaac cgatctgtcc caaaatcaga 1620

tgagaaccca cctttagccc tgtttggtta catcacatat aacgagtccc acttcctata 1680

tgttcg 1686

<210> 2766
<211> 1920
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264775_G1, chr7:165806858..165808777, Cluster 16

<400> 2766

cggaaaggcc tggccttgga ctggacctgg cgcgcgccgt tggacctccc tcccacggcc 60

gtcgccgtct aatccccccg cgtgatggcg tcgccggcgt cccggctcgc gccggtgcac 120

ggttgcacca gatgcaacca gacggggctg gtgagccgcg accaccgacc ggcgcgcgcg 180

ggctcggcag ccgtgtcaaa actcaaaagt ccctcggctc tgtaccatgc gtaccgtgcg 240

ccgtgtggtc tagcgtggtc ggtacaccac tgtactagta ctactagcat gccatttgga 300

catatgcgcg ttgcgcatag aagtgaagta agtagtaagc cacagtgaaa ctgtaatact 360

gctacttgtc atctcgggat gacgtggcat gatgcaatcg atcagccctg ctttgcctcc 420

atagttgagt tcgcgtgcca ctgccattgc cagattgtga ggggaaaggg aaacgctccc 480

agcgggctcc aggaaacgcg gaccgtgtgc tgtgagcgtg tcgcggggcc tccggtctgg 540

aaggaatgtg catgtgcatg agctgcaggc aaaggcaacg agggtggccc ggggcctggt 600

ggaccaccgt ggctggttgg ccgggccggc cggcctgcct gcctgccgtg cctggggagg 660

ttcggtatag cggtttgtgc tcgactgcat cctgtccctt ccggttatgc tgagtatgcg 720

ttttggggga gaaagcaaca gactctccga ttccgtgtct gccttcaaaa aaaaaaatta 780

gaccatgtaa atattcgtac ttagcagcca aaatatataa taccacgata acacatgtta 840

taatgctaat taacaaagat attataatgt aaactctttc tcatgttttc tttatacatc 900

tcattggcac tctaacccat gcgagccctt ttacttattc cacatgacta caaagagaga 960

cgctggacat tgggtggccg tcgaaattct aaaaggaacg atgacagaac aacatcatca 1020

gattaaggat cattcttctc tccaaatgag gggtgaaggg gcgaacattg gtttcaaatt 1080

ccatggctag tatgttcgat ggaactgatg ctcgagattc caaggccatt agattgatgg 1140

ttagttatga aggacacaac ttttaactca cagaaatgca tgactgctta agcaatgttg 1200

ttcgttcatt ctccccttgg aagggactga gtggatggct attatgtcta gcatgtccga 1260

agaacatgta aatcatgcat tagggatggc attaaatgct ccaacaaaac atcacctaag 1320

gcacttgata ctagtgaatc ggtcttgtaa ttataataac taggatcatg aacaagatag 1380

ctctcttgag gagagatgtt caaataagct ttgacatcat aatatctttg gaggctctct 1440

tgaggagaag atatgctacg ggtgcaagat tacaaatgag cctatcccgg tcacagttgt 1500

acacttgtac tagcacgccg atatacatct ttataggtaa ttactagtct atccttgctg 1560

ttacaccgca acctttcgtg tttgactccg tgtaagctca tagtagaagt gcatttggtc 1620

gtgtttgttt atttttttca acttgtgtgg ttctttaatg gttcaactag agtatatgaa 1680

gactatagtt gtaaccacag aacaggtttc ttctatctca tcccataaaa caggattgtt 1740

gtactaagca aatattttct accgttcaaa acaaaaacaa atcaaatcaa tctaaaacat 1800

ccatcacatc aggtgtcgtg tcgtgtctgt catttcttcc caataatcag actacgttag 1860

tattttattg aatgaactgc cactacttca gtgtttgtcg ccttgtatta ttattagttt 1920

<210> 2767
<211> 2446
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264944_G1, chr7:166852833..166855278, Cluster 16

<400> 2767
ggcagagccc cgacctaaac taccacacat actgcctact ggtagaaaat tattcatagc 60

atctacctac actacactat tgcaaattaa aggactctag aattctacat acagtgtgtg 120

gaatgtggaa actgcatgca tgctgtcaag caaaattaaa ccctagagaa tagaatagaa 180

atatactcgt actacaaaaa ggtgaatggt caaacaaaat aggatcaaat ctgggcgtgc 240

agatacgatc cccggccgtg tcgtctttaa cctagcttaa caagtagcac agcgcgcgca 300

gatcacggct cccaataatc caacaccacg caccgaaagg aacaatgcag agctagctag 360

cgagatctca gctcgcgtga cgcctacgcg ggccgacgcc gaccgatatt acagaaaacc 420

atacagagta caaaaccata gtagagtatt ggtgcaagca acagaattga aggaccacag 480

cactgaataa tgctgtgact gtgagctcta ctaggagcta aagaagccac ggtattacct 540

ttgagagaga gagagagaga gagagaccat gcatgtgcca ggccttgcat gatgccactg 600

cattggccag cctaacgcgc tcttttaatt tggcacttgt tgcatgcttt ataccaggat 660

ctcggccgcc aaagctagct ttacaatgcg tggcgatctt cttgcttgcg tggggcggcc 720

ctgactggcg cgcatgtgat ctctctcctt gtagcctcca agtgtgacag gcttaaaaat 780

atcagggttc atcagccgag agaggtaaat taaagagaga gagatattgg ttgcgaattt 840

gttattgttc aattcgcaag ggctggtagt gctagctagc tgtgcccggc ccccacccgc 900

cttgctagct agatcacacg ccaatgattt gttattatgt atgaaaacct gcaaaagcgg 960

ccgtgctttc cctgctgcat gcagggttta ttcgaggtta agtggttggc cgggaagccg 1020

tcttttggca tcgtcgacgt cgccggccaa ttattccaac gccgccgacg gccggtagtg 1080

tgtcatgtgc cggtggcgcc ggccggtgcc agattctttt gcgcacaaag caacttagct 1140

tgcaccacca cctgcatctt tccacgcgtg cgccggtaaa aagatggagc aaagccatcg 1200

gcattattag ccaggtcccc gccatgcatg taattaaacg actagtatat ataccagtcc 1260

acatgtgtaa tagtacatat atgtagtatg atcatgcaat gcatacatga cccagcagag 1320

aatctttagg gctgctgcgt gcataaggaa ttggtaaaac cgcgtacggg tcgatctgct 1380

gctacgtggc cttgcttggc ttttccaagt tgagtccggc cggtttctat gtatgtggct 1440

gctgctggga cactcaagac cgatctcgct tgactaactg tggtcctgtg ctattaattg 1500

ttccttcttt aaactacaaa atatatacta tagctgtggt gtggcttaac ttgcctcgtt 1560

gtgcgctagc tagctagact tgagcacaca cactactgat gatgagcttt ccgggctaag 1620

ggcatctacg agtacactgc agcaagcata tatatatttc tatgctacca gttcgagggc 1680

cgcatcaaaa gtaccttgcg tgcgtgatgt tatattagct gtcgcgccgc gatgctcctg 1740

gtccagaggc acgggtgcca gtggttgccc atcccgccca cacacaccgt cattgtcggg 1800

cacgccacac gcatatgcat gcatgtgtat gttgagggcg ggaaagatat atgcatgcat 1860

gtgtttataa ccccttggtt tcaaaatacg tataataaaa agattgaaaa ctatttatgg 1920

tacacgtact gtgtatatat attccatgaa aattttaaaa actactgatg gtatctattt 1980

tgcatagtct gtattatatt aattggtacg agtggggtgg ggtggtcagc agatcgagtt 2040

aaagagattt tattttgagc agcagagatc gttaatgaac caaataaatt ttcagaaacg 2100

ttcttgtagt tccatttgca tggagtatat atatatatgg acgtgtagcc acacacagtc 2160

gttgcattct tcgttccgag cgagcgagac tactgtgccg aatgggtgat ggatgcatgc 2220

atggcccaca tgttgtgtgg tcatcacctc caacggccgg cctgcaccgc accgcagtga 2280

gcagcctgta gccagtaagc agcagggttc cagcagctcc ggcggctgat acgccgaatc 2340

gctgcacgca gcggcaggga aacgggagag gcccgaccga gcgagggccg gcggcagcgc 2400

ctggtcagag agggcatgtg gcctggcgct ccctccgtcc gcgcgc 2446

<210> 2768
<211> 1655
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265149_G1, chr7:167975559..167977213, Cluster 16

<400> 2768
catgacttcg aatcagtcaa caagaattta ggggcgtgtt tgctttttt ctcatatact 60

tttcttcaga cttgtgtcat gtattgatac gaaacttgaa tcctattcaa cattagtttt 120

ttattatctt atttgttttc atcacgttgt cttcttggcc tcctatgaat tttcgtcatg 180

cgtcggtatt gattacattc tcttgtttgt ttgagaccta ccttcgattt gagtttaaca 240

agatgcatgg cgccgggttt ggtagaggta aacatgctcc acactaacgt ctacgccatg 300

cattttgct gttgatcaag caggcgtttt ttttttttt tgcgaagacg gagagggagg 360

gatgggcata gagcgcacat ggttctctgc agcgaaccac acggcggtac gtgcaagtac 420

taccatctgt ccttgctcct ctggactgcc agcatgtctc ggatctgcat ctcgatcgcc 480

ccctgtcgtc tccggcgcgt cagggactct tacgctagct agcttgcatc cacacgtgga 540

acgtacagta ggggcatgca tgtactgttc ggcatggaat taaacaacaa actgaatgcg 600

aacgagtaga tactccgtag ccctaggtgc ccatctgttt acgcgcttct agaacctgtg 660

tttagcgagc tactagtact agtagtcaaa gccagtaagc cacgcatgcg cccgcgtaca 720

ggcaggcagg caggcaggct ggccaacgag aagaaagcat gcaggacaga ctcgcgcgcg 780

cgtgggcgca cagcgaagac gtacccgtac cggagatccg ccgcccgtcc tggtcatcct 840

gcgcgcgcac aggcacagct gctccggtcc cccgggcccc ggccgcgccc gtcgtcggcg 900

cacgcatgca gcggccaact gcgacgtgtc ctggagcgga tctgctgcgt ctgcccccac 960

agtcacacac agctagccgt agccagcacg gcggccgctg ctccgtcgag cgcccaaact 1020

ctgccacgta ctagacgcac ggatacgcat gcacacaccg cacacgcacc ttctacagca 1080

cacgatcgat ccatgcatcg actgcactta atactgatgg atcgctttct ttttagcata 1140

cgtactgtga ttaattacga cgatatgatg catgacccga ccagctaagc tgacagtcat 1200

caatcattgc tcgatcgatc gggcctagcc agctgctcca atccacttcc agtgccagtg 1260

tgattcattg ttcttcaatg ctagccctgc tgaatgcgta cgtagcacat gcatcgtata 1320

tagtagcagt agcaagcatt cgcgcgagca tgtctctact ctctactacg ttcatactgt 1380

acagcgctta taaatttgta tatgctttgc tatggtcccc aaataaaaaa ataacatatt 1440

aaaaaacaaa agaaaagcct tatatatata tatatatcca tatctctgtg gacgaagaag 1500

atacgcatgc atgtctcccg atccgatcat ttatttgcaa gcttatacaa atgccgggtg 1560

tgtgcaccgc ccggtgcccg ctgacatata cacattccta atgggtgggt actaagagta 1620

tagtatagca tatttagata gataaaaaaa ctcga 1655

<210> 2769
<211> 3366
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265388_G1, chr7:169168295..169171660, Cluster 16

<400> 2769
ctatagctaa ctttctctct ctcttgtcct aatcaatcac cctaattatg tccctaacta 60

gctagtgtca gttcagtgca cgaatacaca tatgttcttt aacatacaga caacagtatc 120

acatcaaaca gtttgtgcgt acataatata tagacgacta tatatataat aaaacactgc 180

tgcccgcagt atctttctcg cgtgcatgca tgcatgcatg caatgatatg ataaaaaatg 240

gattgatatt tcagaggaat ctcgagatgc gagaaacgtt gttgtgattt gcgcggcacg 300

atacatgtct agaaaactgg tttttaacgg catctgggca tggtgtgtgt catctgcaga 360

taatgtggcc cgatgcctga cgatctagct tcgggggtga gaggccggaa gatgacaaca 420

ttctttgcat gatctctctc tctctctctc tctctctctc tctcttacta gccagtagtc 480

gctctcatca catctatcac aaatatatct aaagcatata tatattgaag cagtatacta 540

ttcatatata tttatatgga tggtctctct ttctctagct ctctcctcac cacagcagca 600

ctcgagcagc aggcagcagt gttcttttgt gcccttatta ttctatgcat atttccccag 660

tcaaagatag atctagacct ggcaacacac agatgcagta ctactgggcc acatgtgggc 720

atggggatag gtcatgtgat gtactcacaa tatgtctacc acacaaacat atgattaaag 780

caaccttgtc atatgtggaa cagaatcttc cataatattc aaactccaca cccaatccac 840

actgcatgcg cgctgaagca aatagttgtg ttgtgtcaca cacatgccct gctgcttgcc 900

tcagtaatgt actaccattg catctactac tactccatct ctgcaccccc ggccctccag 960

cttgaaattg aactatctgc tgccttcttg tcttgctagc tagcaggatc gtcggagtag 1020

tttcttcgaa tgaactcgtc cttctggttt tcttttgttt atttgttttt gttcatcgtc 1080

ctttagagag gaggatagta catgcaatat aatagctttt gcacaagcag taggctgcca 1140

tatgggcagt gtgtaccaaa ttgtactgaa atatataggt catgcagaca cagtagctgg 1200

cggagctgca gcctcctgaa ttgcatttga tgcatgcttg tggcatgcaa ctgatgacga 1260

gtacttgcat gccaaaaacc tagctgcatc tattgatcac ctgcaggcag gcaggcaggg 1320

gggtctagct agaatggatc tctcatcttt cattgggtgt gtgtatctag tttgactctt 1380

tggttccata acatctgtgc ttgcttgaat gttgaatgga tatctttcat gttttgaaga 1440

ctttgcaagc tagccagcag tacacagggt ctctgcttca aactttgaag tagtaacgac 1500

tcactcgctt tcactctggg cagctggctg gctggctagg tagctagcta gctagaagtg 1560

actgtgcaac tctcatcagt tcatgatggt atgtgcatgc atgctgtgac caaagagaga 1620

ggggaaaaaa ggaagagaaa ctagctttgt tttgtttggt tcaatgctgg ttgaaaagtt 1680

ggggggagag gggggggggg gtatcaggaa tgtttgtttt cttgcacatt gatacgatga 1740

tattaatgga agcagcagcc ttgcatcacc atcacacaca cacacacaca tgcatcatgc 1800

agatgcagct atagcagggc agcaggcagg cctgcctggg actctgggag gaggctgggc 1860

tgggaaaggg gcaatagaaa aatgcagctg cagctgcatt gcattgcatg cactgccctc 1920

ctcgaaagtg gatccctccc ctccccctgc ctagctagct ttgcattgca cttgcacccc 1980

tctctggagt ctggatagat ggtcataact ctctccattt actactagta tccactgtac 2040

tactatactg ctctctctct ctctctctct ctctctctcc tctctctcga cctgtgagat 2100

cgatcgagtg ccagagttgg gtgtgtgtga gtgaggtctc agcaggtctg gtgtgttgct 2160

gttccatgga agtcacgggg ctgccttgaa acttgcaagc aggcagtctc agccggccgg 2220

cagcagcagg cagcagcacg aaacaaaagt atctctcgtt gtgtacaacc atacagaggc 2280

agctatagct agagccagca gcccaccaga cccggagaga gaattaagca tgcgcgtgtg 2340

tgcgcactgc cgcagcatgc agtgcagcag ccgcatgcag gcggtggcgg gtagaacaat 2400

ttggtcacta aataccatga ggatacgggc cgtgcggtgc agtgcagtgc agtgcatgct 2460

cgcgcgcaat tatctagaga gctagctagc gcgccaccac caccagctcc tccgatccct 2520

ctgcgtgcgt ggtgtgtaac cgtgcacgga cgggacagcg ccaccagctc ctctgaccat 2580

ctctttttt ttttctttt ctatgcattc ctatgcctta tatatagata tattatttat 2640

ttattaaatg atccatcagc aagcccgtgc ctgctgccac ggacgcatcg gaccacgggt 2700

cgttgcattg ccaagtgttc tgctgttcca tcacgcacgt caaatccatt cacccatcca 2760

tcgaccgatc gttatcgtcg tcgacccggc cgtccggccg gcgacgtact agtactccct 2820

cctacgtgac gctgctgcag cggccagaga gctgggagag ggagggaggg tggcagaggc 2880

agaggacgca cgacaacggg cgttcacgca cggagactcg cttttggagg cacacacatg 2940

catgttgaac gcccggctcc atctagtcct ccgaccctgt tcaccagtct cgtctcaaaa 3000

ggacccagca gctacctagc tagctatata gcttgcattg caggcggccg gaacttaacg 3060

gcagccgaac gctacagagc aaacagttgt gtccctctgg tcctgttgaa ccatatatgt 3120

tgttactact agctggctag agctagctag atcctagtca tatttatact aatgccatag 3180

cagtgcccag ttatattaaa ggaggggatg atataactga ttagttatag cttgttggca 3240

aatcggagca aattaaagtt agcattacgg caaaaaagag gtataaacta gttgtattcc 3300

cttgtctagc taccgagcat gtatatagtt acaggtttct tcatgggaaa aatgatatgc 3360

atatgt 3366

<210> 2770
<211> 2160
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269371_G1, chr8:13213844..13216003, Cluster 16

<400> 2770
tgtcctcaaa ttgtaaagca ccccaaacaa tttcttttga tggttcacta gttagttgct 60

tatcttgcga atcctgcaac gatatttttt tctttcttaa acaaagaatt accaacacag 120

aatttctaat gctgttgtat tagtcaaagg aattataacc tttgatcctc caggttcttc 180

gctgtggcag acaaccggac aagccgagcc gtggcacacc ggcgtagcag cagtgtcctc 240

catcccgacc atgccggaga actcggcggc ggcgatgtcg ttctccatcc cgaccacgcc 300

gaagatctcg gcggcggtga tgtcgttctc catcccggca ccgcgggcag gagatatctg 360

cggcggcggt gggagggagt ggtgtggccg aggtgctcga agctctgtac ggcggcggcg 420

gcggcggggg agatggaggg gcggtacaac acgccgacgg cggcgtgggg gagaggagca 480

cgtaagctct ctgcggcgag gcacgccgtt tgctgtgaag aacagcaagg ctgttaaagg 540

gacgcgcgaa accaaactcc atacctttgg atgttgttcc agcgaaccag tgttgcggtt 600

gtgataatcg caaatatatc tcgaaataaa attgcatttg cgaacctggc tgaacaggag 660

acaaccagcc gtcccgccag aacgaggcgg cagctcgtgc gacgccaccg ccgcggcggg 720

ttatcgccgc ctcgcgcgct gtcagactag cgcgcaggca ggttgccgcc ggtctctcct 780

ggcctcctag gatgtggtcg aatggaatcg ccctcctctc gacctaggcc gtctgcggac 840

tgcggttgcg gccttgcggg gcggggagcc gtaggactcg gcgctgcggc ggcgttaacg 900

ccgaaatgac cacggggcgc gggccggagg gacgccgtgc cccatatcta cagttccacg 960

ggctactttg gtagataaac accaccgggc caggttgtcg cgcaaaatct agaaaaagcc 1020

caatgtaaac ttttgggcct tttttccagg cgcatccatg aatgccacct ccaaccaaac 1080

ccacctacga cagaattccg tgggagaaat tccgtcgggc gctcccacac gcacgcgaaa 1140

gagggaacaa ctgccgagat ttcgtccgca gattccgctc caaatcaccc gggtctaggc 1200

cgccaacgcg gcaacgccgc cgctgccacc tcgagggcgc ggaacctggc cgcagcacca 1260

gccaccatcc ggcaaggcag agctcggtgg tgcgagtgcg ccgcgggatg cctggccgcc 1320

gccgccccga ccactctggc gagaacgacg ccggagcgag cgcaggcaag acccgcgctg 1380

ggccggccgc cgccgcctcg ggcgcgcacg ctgctacatc acccagtgca caagtctggg 1440

acttggacct cttgcgccat tcgccgcccc agccccctcc actgcctctc tcccgctgac 1500

gacaacgctc ctgcaacgca acgcaccgcc cctgccctcg ccgacgctga cgtcctgctg 1560

cgccgcccgg tccagctcta tgcgacggac tgcggcgctg gcaggcccac ggccgccagg 1620

aggaggtggt cgtctccagc agtctcggca ggaggaggct cctcctcaac gccagaattg 1680

aagcacagtc gtggcgtggc agcagtcgcg ggatgttctg ctgggagtgc acgaggagat 1740

ccagagcatg atgcctgcga aagcaggctt cccttgcggc tcagaatccc gcatcagaac 1800

cttactatag ttgtaaaatt ttactgatat ctaaagatga cttttgcgtt ttagttatac 1860

attcttggct ccaggaaata tggttctgta gttggtcaac gttagcatcg cagcctttgt 1920

gtgcattatt tactggactt ggtcgggtcg ggtggaccaa gtttttgtgt gtgtgtggaa 1980

tacaatacaa tacatcacac gagcatcctc aattacctct gctgaaaata tttgcttctt 2040

ttagcttgaa ctactcattt aaatttctgc caactgatct ttaaacaggt gttcagaata 2100

caccagattc acagacctaa gttgatgaac gccaactgat ctgtaaacaa gtgatgagaa 2160

<210> 2771
<211> 1532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269424_G1, chr8:13432092..13433623, Cluster 16

<400> 2771
ctgttcgcac agtaattccg tgtttgcgca gatgaccaag caaatagtct ctcttttcaa 60

agctaaataa actacgtgca gacagagagc caaattaaac atacagttgt agtcgtcgta 120

gtaaacaacc caaacccccc gtgccatgca tgcatccagg tcatcagacg acgcaacagt 180

tcgctgctgc atgcctgcat ttgccgccga gcacgagctg cctgccaggc tttctccccc 240

ctccctgctg tcgtttgttc ggttgttccc cgtcaccggg ccaatggaaa ccccaaccca 300

aacccacccg cccacagaac gccgggggcg agaaaaagaa aatacagtac agacgcaaga 360

tccaaggcct gcgactgcga gtcgactgga cgcctttcac ctcctcctcg ggaatctgaa 420

accgctgggg gctcgcagag tgatcggatc agatccgtct gtccatcggt cggtgacgtc 480

caactgtagc gtattgtacc gtccttgtag cagtagtatt acaggagtag tagagtgatc 540

aactgatagc tgatcagaga agaaggcttg aagcgaaggg agggaaccag agttttttt 600

tcacccttc tctctctctc tgcagctggt tgggggaagc cgcaccgccg tgtagtgcag 660

tgcaggccag ctttttatt ggtttgggct agttgtgcaa cagtatttgt actagtactg 720

ccgcgggcag aataatgtgc cgctagcgac cagaaggcgg cgagtcactc ttgcgtggca 780

aaagcgtacg gcgatggact atagtcctcg gcgatgagac ttgagacggg tacgcttcgt 840

tattagttta ttaggtcttg ggttggtagc tagagaggag gaaggggat atagtatata 900

tataatatct gtttagtttt ttatgaacat aatatctgtt tagttttta tgaactcatc 960

agaatatata tatgttcgct gaacctaaac gttgctaact gctggtgcta agtgattggt 1020

cgatcaactt ggggtgatgc tggacagcag aaacccagga aaagaaaaag aacaatatcg 1080

tctgctggcg tgtcccggcc ggtacgacca aaaaaaaacc aatcggaatc atcacctagg 1140

gtcgaaggca agaaagaagc ggccacgccg ggagaacaag cagcgccgcc gccgccgccg 1200

cgggcacgta cgaacggcgc gcgccgggcc gggcagggga gcgccgagcg cgccactcca 1260

ggccaaagtc gctgcaccgg ctcatcttat cactccctcg cacgtagtag gcacataccc 1320

aaatattgac ccatcccgtc tccgtgacac aggcgcacga aaccgacgag gcgaggacgc 1380

acgcacggtg tccacccagg aacaggaagt atgtgcctgt gatacgtaca tatatcgaac 1440

tggacctttt tatatatata tatatatata tccaggtgga ggtgacacga ccttttagt 1500

ttcctacagc attgttcaat caccaagcta ta 1532

<210> 2772
<211> 2605
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270453_G1, chr8:19828438..19831042, Cluster 16

<400> 2772
aggagtagag attattagag cgcagtcaaa cgaggcgagg gctggtgaag ctggcggggt 60

gagacggtga gtcggtgact ggggcatgga attggccgga tgcttcgttg gacagttgat 120

tggcgccgtg gttgagtaac gcaggaggag gatcacgacg ccataatggg ccacgagtcc 180

aggaatgaaa actgggccct aaaatgaata cttacccata tggccaagag aatgaggaaa 240

gcccattggc cgacacgctc ctaccagttc gtcctcacag ccgaccccgc tcgatctggc 300

gcctgcggct tgcaaaacaa aaaaagagaa gagaaaaaga aactcataac ctttttcgtt 360

ccaaggcaat attggccttg gtggtactcc agtgtctagt tgagtctgtt tattttgtag 420

aaaacctgcg ttcctgtggg cacatgtatg ccagtgcaca gtgcagtagt gtcactggtg 480

ccatcgtcgg tccagatcga gctggctgtt catgcttgta cacaacagtg cagtagcagg 540

ttcgttcgcg cactactggg tgctgcaaat caggagagaa tttctttcca ttttatttct 600

gttaggaatg tgtatgacta cgacggcatt atttggaggc tacgttgtgg tcgcgcgtac 660

ccggcccgtc tgaaaatgac ttgttgcccc tcttgcatct gtatctgtat atgttggaca 720

atgacagcct aatcctatca tctctctaaa ctcttgtgtc cgatacactg gcacgggcca 780

ccagtccacc cccggcgcgc agcctctgca accgtattca tacgtacgtg aaggggttc 840

gggggtggtg ggggtagggg gtagctcacc acatcactgt caacgactga cacgtgctga 900

ctactgctaa cggaagcagt taggccaagc taatccccca tgccacctct tagcttagct 960

agctctcgct tcagatcgat gcttcgtatg aaacgagagg ctctagactc tcgagatgag 1020

gacgagatgc tatgacaacg taacggcgtg caagcacgca cgccaccgat ggcagagcag 1080

agccgtcggc cgacgagcga gctagctagc tgccgcgaac tcaccgagcg gacgcacgag 1140

cgagaaacag cgaacagcct ctcggcgcgg cgccgtctgt gtcgtcgcgt gcgtccgtcc 1200

ggcgatcgag ccgtgccgga tttgatgtga gccgttggga gatgacagat gatatagaat 1260

aacctactac gggctacggc ctcggcctac ggctgatgag gacctcccga caaaatggtg 1320

gtagatggcc aggcacacgc tacctgtcca actgaaacta gccagcgcgc gcgcgcgccc 1380

ctgccgccgg ggaagcaaac agtccgcccc ttgtcctgca cgcgcccagc aatctctgcc 1440

ggcgaagcaa cggcacgcat gcgacgtgac cgcgacatcc gccgggccgg cgtgtacaag 1500

ccgcgcgccg atcgatatag gcaccggctg gctgagcctg acctcggtcc gttgatcgac 1560

cagccgtcgt cagggtcagg cccaggcagg ccggtcggcc gacggcgacg ggacgaagga 1620

gcccggaaaa cggccagcta gccggccggc cggcagcgtg attggcgccg ccagttggcg 1680

cgtcgcgtac ggccgcagcg cgccgccgcg gccgcctagc taggactggg agtctatccg 1740

ggacgtcgta cgtggcgggc tcggtgtcgc tgctgcctgc ccctgtggcg ccgccgcctt 1800

gagcacgccg ccaggatagg cctcgcggcc acacatatgc aaagctcaaa agctgtccct 1860

gttcagcgtg tacttacgag ctagttgcgt gcttcgagct catgtcctcc catctgtgta 1920

gtacaacaca ctagtactag tacacccgat gtatcgtcgt cggtccagca aggcagcaac 1980

tgtatatatc gcacgtgcct tttttcgtac cttttctcga tctcttttcc cagttcctgt 2040

gagatgggtc gaaggcacgc actgaccaaa acgagaccaa gtgcctgccc ccggccacgc 2100

actagctttg acgtgctggc gcgtggcgca gagcgggcgg cgctggctaa cgatgcataa 2160

tactgtacct cgacggcgac gtcgtcgtcg tcgatctctc acgttttctt tgcgccttct 2220

gcctcgccgg tgcgcggcat tcagttcgcc atacatggaa aaggtggcta cgcaactttg 2280

ctctctctct ctctctaggg atcctagaag ataccaagta actaccaagt ggacaggtcg 2340

atcgatcgga acatgcactg catccaatga actcgggtcg ccatctcaag gatagttaag 2400

attgatcggt tcattacaag gtgacgaaga tcgatcgata tcatcactgc gagcgcatta 2460

aattgctaga taaattgcca ctcaacccga aagccgacgg agacggatgc ttttgccagg 2520

tgctctgcct tcttcagcag cgccactgtc gcggtaatta attaacacca actatcagta 2580

cacaaaaaac aatttggtgc tacta 2605

<210> 2773
<211> 1413
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_271470_G1, chr8:26351587..26352999, Cluster 16

<400> 2773
ctgcttgtgg cgtgtcgtcg ttgccgggag cagcgtcccg gtggatgacg ggcgctgcag 60

caggctctcc ctcagcgcct tcgatcgacg ccgggactag gcgtcggcgt gatcgacgcg 120

acatacatta gatgtaccac ctccaatccg cgcccgtcgg ttttgttcgt gtcagagatc 180

gtggcaatgc gaatacaagc tttcctaaac ctgagctcgg attacctcgt taattaccag 240

caaaccgact agaaatcggc tggttctctc ggactagcaa ggagtagagt tcttcacgct 300

gatttttgtt ttctatttgc tgatgatagt aatgtttatt ttttacttac ctgatgttgt 360

aattgtgaag caaagtaaac ctgtcttttt tataaggagc aaaactattt gttctggggt 420

tcggccgaat ttaaacgaaa tccatgacag ctttgttttt actctgttgt aaccagttga 480

ccgtaaaaaa gaaaatatag gatatatccg gcccatctag aacgtgggtt gcatgatcgg 540

cccatctgtg tgggattccc gggcacctcc tctccacaac aacaaattag ccaccaccat 600

tatctcaaga gcagcactga ttaatgttaa gcacatcggc cagcaaggat ttccactcga 660

ttcaacaggg cacagctgct gcgagatcca tcaatgatgc aaaaaagaga ttgatcacaa 720

atcagctaga gctagttcaa tcggagctag catcacgtac cgaagaacgc aacgaaaaat 780

accacacatt acatggtaca aaacatagag gaatatggat aaaccactaa aagatagaca 840

tcgtgtttat gtgatggaat acgtctagtt ttgcgaacaa attagcaaag acattcctct 900

tttctgaaac gcgaaatcga aatgtctgga atcaaaaatc acctgtgact tttctttacc 960

accctctgcg gcccagccca actggacctc ctttacctcc atctgctcgc ctcatgggcc 1020

tattgggacc acatagcagc gagcctacac gccgtgatgt tacagatcct taacggggcc 1080

gtgcgtaggc cgtacaaggc ctactttgcg agggctgagg aggcccgtac tgcttgtgtt 1140

ttcgctgatt ccgaaagccc caccccaccc aactggtggt gctggtccgg gccatctcca 1200

acagattaac agaacctctc acctcacaaa agaaaattgc atataaaaag ctgattccct 1260

gccatctgca ctctgcagtg catcctttca tttccattga tcacatcctc tgaataaaca 1320

gactaccaat gccatacctt tcataaaaaa acgaaaacaa tatcaaaact ttcgtatcct 1380

attcttactg tgccatacct aatatatata tat 1413

<210> 2774
<211> 1446
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282498_G1, chr8:101769862..101771307, Cluster 16

<400> 2774

tagatcatgc aggcttggtc gctcccatta cgagaatcca gataaaaatg atcccagtgg 60

gggttttttt gaatcaaatt tcaagatttg aagaagttta tgagttgggg tctggaccgt 120

ccgaactaga gtcatgtccg aattccagat ggatcaatga aaacgggacc tctgttcttc 180

gtgtagtaga cggccgtggt agcggacacg tcacaaccat ggctggcagg accgcaggag 240

tatacatcat gcatgaatgc gccgcgggcg cgatgagtag tggtcgcgcg gacgtagacc 300

acacgtgtca ccagagcagc tgcggcatcc agggcgtgcg tgtgtgtaaa ctgtaaacaa 360

ttcggccgcc ctgtctcgca ccacgccacc ggattgtccg gatccaaccc atattcacat 420

ccacgaaacc tccgacgtga atatccagaa accttctgcg cgcgcaccag aaaatctggt 480

tgcgatggcg cccgccggca agccttctgc gcgggccggc cgacagcacc agaaacctca 540

gctgggcctt gatggactgt tgttggttcg acgtgacccg tggcccagag cagtggttta 600

ttgtgggcga cgaggttgag attggcccag tactctctcc ctcagttctg aggccccgag 660

tggatggagt tgttaatgtt agtagtccgc cccgcaaaga caaaaaaaaa aaaaaaaaaa 720

aaaacgaagc atgcgcattt ggagcagagt ctcaagatta cggtgagaag aacgatcaaa 780

gattcagtct gcaaccgggc atgcagtcaa agtcatacag atatgtgcat tcatgtggtc 840

tccagcggtc caggcttgtg cctgcaacca gaaatctggt tgcacctacc taacccttgc 900

tacatcccgc caacgcagct ctggtatatt cctatcgcag ctctgcacca ccgaccgatc 960

cggttggcca taaataatgc ctatcacaaa caaacagcac acacacacac cacgtacgag 1020

cgctgctggc tgctgtaggt aggtaggtag gaggggctgt ggccaaccaa acggcattga 1080

acatcccgtc ccgagatatc atgcgtgttt atccagaaca gcaacccaac cacctttccc 1140

ctgaaatcct tctaagacgc cttcccaaca gtttcatggc ttaatttgtg gcacaaaaca 1200

agacgcagag gaggaggaac agaacagcac gtaactctcg gctaaaccac ctttttttc 1260

ctttccagcg aggcaaattc tgtgagctga ggcaacgaca cacgacctcc gcgccgccat 1320

cccgtcatca accaactcac catatatata cgacacgatg cacctaccta ccagccgttt 1380

tccaacagca tttcggctcc cccgccgctg tggcgccacg ccacctcaga gaaaagcagg 1440

ctagcg 1446

<210> 2775
<211> 1619
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_288074_G1, chr8:131778419..131780037, Cluster 16

<400> 2775
gttcatgttt gctttttctg acgtcgatga ttgaacacta atttttttaa aaaaaaaaat 60

ctatcctagc tagcatgctt taggccggtt catgcagtag ttcgtccata ccatgtctgt 120

gttcacctgg agatttaaga ccactaatat gttatttttt cttcttctgt tcttctggct 180

tgggaggaca cattcagcct ttgggccatg tctgtcttca cagctcggcc gacactacta 240

gctaggccca agaacttgtt gggccagaat cactgtttct atcttctaat cttaatacat 300

cacacctgta ttggtcttat tagcctgccc agctcaccct ctgcatcctt ttcccttcct 360

tcttctgttt ctttttttt tctttttttc ttttttttgt gaaacaactc ttcatagtct 420

cgtttcttac ggaaagtgaa atgcatccgt tttccttgat atacatgtac ttatgtagta 480

ggctattgca ttgcatacat gtatgtagta cagctagtga gcaccatgaa taatggatgg 540

aggaatcaag catgcaggtg cagcacgtca gctcagctag tgctagtgct ctgaattatt 600

attactgacg cccgcaaaca aagaagcaag cgacgcaatc caatccagaa tcaacagatg 660

tcgtgccgtc atgcacaaac gcaccgtatg aacaagaagc tagctagcag gaggagcagc 720

agcagcagct gaagaagaag aagaagaaga agagatgatt ctccaattca tcaatccaat 780

caaatccagc gcgaggagga gtcaatcgcc taataattcc tgtgcaggaa cagaccgatc 840

gatcatcaaa catagtgcac ctccatctca agtgctgaca cctcctcctt ttccagagaa 900

ttcagaggag ctatataccc gtgtgtgtgc agatgaattc catcatcagt ttccgcgtct 960

gcgccggatc ttgcattcat cgtggagttc ggtacgctgc cactattttt cttcagtagc 1020

ccagtgaaat taaaggcagg cagcagtcca gacaaacatg catgcatgca caagcacaat 1080

acagaacagt gtcaggagat agatctcagt gtgtagctag tggcattgtg cactacatgg 1140

aacatgtatg tatcaacggc gcggatagat gaactggtgc agggctgcag gccacaatgc 1200

ctacttctcc tactcgcacg ttgcatgcac ctaccacaca cagacagcag cctccttctc 1260

cttgtgtttt tgctgacata catgctgagc tgcatgacgt acatgtagct tagttcacac 1320

ataaactagc tagctatttc aagtgtactt cgctgtggag agcgagcaag caagtcttta 1380

gcgctgtgct gtactggcct gatcaccata cctaattgtc gtcatagcta gtagcagcta 1440

agcgctccag gttgggctca actcgggctt cacaaagtgc gctccagcgc ctccatatct 1500

cgttcgtctg aatttctgaa agcgcgttgc agacatgcat gtactgtgta tgtctgaatt 1560

ttgatcgaga gtacgccatt gcccgttacg gatgtaaggt tatccaaaat attgttttg 1619

<210> 2776
<211> 2560
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291818_G1, chr8:151589561..151592120, Cluster 16

<400> 2776
ctgcgtggga gagtcatcta ccttgataat agtttggggc ttctggagtg atttcttagt 60

ggttttatct ctcttcctct tcttggaagc ctctaaagcc ttgtcctgag tagacggagg 120

gggactcgtg gaggctctct catccaattg ctctagaaag tggatggatc ctgactcttc 180

atagttcttg aggacccact ctagttcatg cggaggccaa ttatacacca acaactatat 240

caaaatacca caaattaccg agttgagtaa ctcaaacatt gtctagtggt cgagaggttg 300

tacaaaccaa tggaagtgac atagtgaggg agtaggcgac aatgtagtat ccctcgagat 360

agtcaccgat attaagaaag atttgccaaa gatagacctt cgtctttgga ctcgggatct 420

ctgcccccaa tggaccgaga agggtcgatc ggcccactgt tctcgtaggc atagcctgac 480

ttctcttaga ggagggactt ggcaccgaat ctagtcggac gccatgtgca tgctcgagag 540

cctcaagttc ttcaactcag taaacgttgt gtagtcacaa ttaacctact gatcagttgc 600

aaattaatgg ttcttcacac cgctgaatta agatacattt ttgtggcgat gtagtggttc 660

gccgttatta aacgatgtaa tagtgatgga aatttgcttt ctcactgaca acacacgaga 720

attagcgaca gaacaaagtg tttgttgtcc gtcccgatca aacccagaac gcccccgacg 780

acacacgctc tctctgatac gaactcaaac gcttgggacg cagagaggtg tgggtgcgga 840

cagagctttg ctggctcgct gaactctcca gccctttttc tgtgacgaac tctccggcag 900

ccccttttc tcgttgtact aaactgaata tatagttttt ggcagcatat atattttatc 960

gccgatgcta ggttttctag gcctgtagtg aaaaaagaga gagagagaga gagagagaga 1020

aacagcaaga tatatgtgtt gtattgtatg tattatttgt ctataatcta gtacaacgca 1080

ttcgtagttg atgagttccg aaacgtactg catggcagta ctatatatat ggagtacgta 1140

cttatatact atgaacatac tcttacaaaa gaccaggctg gatccaagtt gtttactgcc 1200

tgccaatact gaaaagggca gcacgtactc gcgcatcatt tgatctccgt gggagaagaa 1260

gcatctacta gctaggttgt actagtaaag tacgctagct agctagttgc tagtggagta 1320

gtagtagtag tagttaaccg catctgctgc tgtctgaatg cgtacgcaac acacatggcc 1380

atgggggagg caaagctgaa ttcctgtcga gccgagacgg ggcgcggggg gagcaagacg 1440

aggaggagca gcagccaggg ctgacatgac acacaccagg tgaagcaggc gccagatttt 1500

aaaactcgtc ggctgttccc ggttcgtcta gctaggtccg tgcatgcatg cacctcaccg 1560

cggcgctgca tgcagagctc aagtgggatt aaaatctaga tcatgcgccc gaggagggga 1620

ggcggcattt cggcgctgaa taaatacttg ccagttggag tggaccttcg gccggggggc 1680

taaatccagg atgaactatt ggaatcggag attattcgtt ttgactttga ccgtgcataa 1740

acataacgca ggtacggtgt ggtggcggag acagtgccaa ctgccaactg agttcgaatc 1800

tagccagagc gacgaacggg ggttctgaca gaaggagaac gcgctgggct ttggcagctg 1860

gttcgttagt gagggacaag tagacaggta tggctgcgtc tagagagagc agcggaacgg 1920

cgcaggacgg ttggcggctg tagtagtagt agtatattgt tacgctgcct ccggcggtcc 1980

ggcccctagt acatgcacgc acggagcggc gggacacgcg cagctggaga agcacccccct 2040

cgagcgccaa aaacaagcga ggggggggggg ggggggggggg gggggaagc aggcagcctt 2100

tgccttggcc ccctcgaatg atgatggcct ttgccgcggg ccgcgggcct agagaccagc 2160

aaccgcaaca actaccaagg ccgggtgcgt gcgggccgtc cggctcctcc tctcctcagt 2220

cctcagcatg agcgcccgcc gcccgcagcc gccccggggg gggaatggga tgcagcgcaa 2280

cggctgctgc gcctgcacgc gcgccggcac catgtggccg gataaacaat gctgctgccc 2340

ctgccctgcc ctgccctgcc ctgcccatca ttgttcatgc ttttgccttt cgggttcctc 2400

tctgaacacg cccgcctcct ccccgcttca tccttttgcg tgcctccctc ccagttcgcc 2460

aacctctggt caaccgtgcg tgcgtgcgtt cgcagatgca tgccatgccg tcgtttcgcc 2520

gcaaaaggaa gaagcttcta cctttttttt taccaccatt 2560

<210> 2777
<211> 1449
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29395_G1, chr1:179828884..179830332, Cluster 16

<400> 2777
atatatcatc tggttagata gctatagact agcttttgcg aagaagaacc aatgggaacc 60

cggctacatg acccccaccc cacacacggt ccaattaata taaccaacga actaaaaaaa 120

aaatcaaagc tgcttgcatt gttcgttacc caagaatcta gctagctagc ttgtctgcga 180

ttctgtctgc actacagtct ttaaaaaagg gaattagttg gctaattaca agagaggcta 240

ctactgaatt atattcagta tgaatattat acatgcaaag tacactagct agtctaatta 300

atccccagac agtagtagta tatcaatgag tactgtacta ggtttaaata agctgctaca 360

tactgtatgc aagtgcagga gctgctgctg tgtgtggaca gtggacacct ggccaggcag 420

tctcgatcat cgatctcgac cggtcagtcc atcctcccgc gccctgtcta acctaaacga 480

gttactaagg atcagctggc aggatttcat cagatcagat ctcctactag attcccaagc 540

atgcagctca aaaaaaaact actctactgt acaactgcac gctatcttta tcccccaatc 600

gtcctgaggc gcaccatgca tgtggcgatc gagagagctc gcgaatgcat gagctagcta 660

gctagctgca ccattcagat acagacacac acggcgacaa gctagcaagc tgagctctgt 720

gcagctgcct ttgcgtttgc cttgcctgct accactagct agctagtctc gactctcgac 780

gagcgccgtt cagttttgt ccaaggatcg atcgattgac gacctctctc tctctctctc 840

gctcgtgtcg tcgtcgaccg tacgtcgtgc tccccactcg ctgccggccg gagctttatt 900

atctcatgcc cagcagacag cagatctagc cgctgctgct acataaacat actacaccta 960

cctaccagca ggcagcaggc agcaggcagt acgtgtgtgg cgaacagtgg ttcgtcgtcg 1020

gccagtacgt gtcgtgtcgg tcgctttggc gcgcggccgg gacggacgac gaccgcatgc 1080

tatatatata cgtagacagc acagcagtgt agaagaagtg taggctgcta gctgacctac 1140

tgcttgttgt tttggttgcc gaatgcagcg caggcatggc cgtttccttc tccctgaagg 1200

ctccgttctg ctgcatccat attcatatgc agtgcagtgc aaccacacag gctgacaggc 1260

ccacaaccga accaaccagc agctttgctt tgtctgcttg gccgcctctc tatctctctc 1320

tatatataat agatcattct cttctctctg ctgccgtcta cgattaaaac taacgcagta 1380

atgctagtaa actaaactaa agctaggtac attagattac ttgcaaattg cgactttata 1440

tattttatt 1449

<210> 2778
<211> 2194
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293955_G1, chr8:162562476..162564669, Cluster 16

<400> 2778
taaccttgag ccgcaaactc gagatttcca tcattgcctt gcacactatg agtaaagacc 60

gaagcgatga ttagtggccc acgagacaag acggaggcat gtcatgtttc aggtttagct 120

catcgatcat cagaggcgag agagggccct gcaaccgcaa ccgcaaccgc aaccgaggcg 180

taggcatgcc agcagcactg gctcgcagtt ggcatgatgg agatccccct cctaatccgc 240

gccacctcac tccgcgccca cacccacacc ccgacagaag caagcgcgcg aggcgggggc 300

gcacaggcac agtcgccctc gccctcgcct ctgcgtgcat tgcatgccaa tggctggtga 360

cccgtcggcg ttgtcgcgta tccccatcat cggtagacgg caggtataga agatagactc 420

tcggtgtctc tcgtccatca aagctcgcct cgctgctctt catcggaccc agtccacacc 480

gtcgtacgta acgtaacgaa acgaatgcgg tccagcgtga ccttgtgtta gtagcgaagc 540

gtagcgtgtg tgtcttttga gaggggattt gggattccct gtgcaggttc tatggtgcag 600

gaggcatgaa gggggggagcg gtaggtcgac aagtgggtga gggaagatga gatgaggagc 660

aggagtgggc cgtacgtctt gcagcctcct tcctgtttcc aggggcctgc gtgcgttggt 720

atgtgcctat catatcagac cggctgctct ccccgcccgt ggacccccac ggcagacggc 780

acacagccgg ccccgcacaa gattaagatc ttctggatct aaattcagtc ctgccccgta 840

gggcttgcga tcatcggtca gccagcaccc ttcgcgcgta ggctcctcgc gcaccgcttg 900

ggttgggttg tgcggcctgc tgcctgcggt cccgccggcc cccccagcct ctagaaatct 960

tcacggccgc gtccggaaac gaaacgggtg cggtggcgat ggcgatggac tccgcggggt 1020

ggggtccgtt ggttcggctc gcgacgggga gcgaggaccg acgtgacagg gttccggcct 1080

ccgggacgga cacacacgaa cgacgcatca gatcggtcgg attggcggac gggacagatg 1140

gatgatggga ggcgtccctg cgcccgtcac gtgctgtgag gctcgacgag tcggccggcg 1200

tgcagggcca gcactggtct acgtgactct cgctcgcttc cggtcctggt gcgggcgggg 1260

tgagccggct gacgtgcacg tacaggtaca gtacaggacc gcgccttgtg ttgttgttgt 1320

tgtagcagct gtactgtgct tgcatagagt tcagttcagc atctgggtta gcctacaaag 1380

gctaggcagg ctacacacag ctattagctg tcgtttcggg ttcggtttcg gttcggttca 1440

cgtggcctaa actgtaatcg agcatctagc caggtccagt ccagaacgag actttattgt 1500

gcatagccga gatcgacttt attgtgcaca acagtaaata aagcagtcaa cattttcgat 1560

ccattttgat cgtacaagtt taatatgaac aataccaaaa caatcatacg aaccagttaa 1620

ttttaacagg gaaatcacgt aggtacggta aacaaagaag aagaaaaaaa ccgcactcca 1680

acggggccta actgttgggg aaaaaagaga ggcatgcaga gacactgcaa tcaataacca 1740

gctttggcat taatctgaaa taaacccaac acaaagtgta cttgcgctac aaaccgtagc 1800

gcgttgatgg aacgaggcac gcacttcaac tataaagacg gtcgatagat gcagctaggc 1860

atctcatgcg ctggtgcacg atctcccatt ctccctcgtc aaaacgggga gaagaaggtg 1920

aatcatatat ccattaatat tctacaaata cttatttaca gggtacacgt cgtgtagtat 1980

tgcacctccg tttctcgcgt tatttgggcc attgtatttt cggcccaaat ttatcctcgg 2040

ccaaatgctg ccagcccaaa caaacaacgg caaaacaggc ccatcaagta acccagctcg 2100

taagttacca catcccctcc ggcctccgtc cgaaaacacc aaagtaactt tttctttttt 2160

atatatattt aaaaatcgaa atttaaattt tata 2194

<210> 2779
<211> 1583
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294861_G1, chr8:167189058..167190640, Cluster 16

<400> 2779
taaaaacgaa acggaagcgg tgtatcctaa taataaggac gatgaattcc gtcatctttc 60

ttaaaccggg agacctagag tgacctcaac ggaagggaaa agatcagatc ctttctggtt 120

ggtggtagaa atggcagatg ccgcaccggc agcacgtgcc tctatatatc gactccaata 180

atccgatagg ctttgttgat tcatttagca atgcgccaag gagcaaggac acgcacacgc 240

cagtacattg tgctagctgc tgctagtacc tcacaggatt cgttgaacgt ggacatggcg 300

cagttgggag ttgggactcg atcgggagaa gctagaccag cccgatttcg atccttgccc 360

atgtcagctg ctgtttcaga ctttcagcgc agcaaattct cggcgctagt tcttacttag 420

gaaaaagata cccttcagac tctgggatta gtgatcataa ttgcagttgc aggttctgtt 480

ggaggacatg caggcagtgc aagcaaaaga gagagagaga gagaaatcga gagaaggtat 540

cagaatgccc ggagctaggg tagggtacat gctacctcca atctcgaaat tattcatcgt 600

ggatttttcc ttttggaaac gaccgcaaac tccggatcct agctcgatta aggaacacga 660

cagagacagg accacatcgc agcttgatct ctacgcgacc aagaacagtt tgttcagaat 720

aagttcatgc atgcatgcac aaccttacat atcacagatg gcgaagccgg gccgggcatg 780

tcccgtagcc tccaacgcca gtgcgcaatg tcgatcaggg taagtgactg accccgttgg 840

tcgcatccat cgcgcgcaga gacgcagaca catctcgatc ggaaccgtac caactttcag 900

cactgtttct gatgaggacg actgtaacat gagttcgact gaaggccaga cttgtagttt 960

tcgtccgaac tgggcatggc cctgctcggc tttggctgct cgcccttggc ggattagtcg 1020

gctggtccgt gtgtccagca tggcgctggc tggacaggaa gtgaggacga ccatcacgca 1080

cgcatcagaa gggcaccgag tagacgggac agcacaccag aggttggatt cagacttcga 1140

agctgttgct ggcgatgatc gtgataccta cgtcgtattg tgcccgtaac acgctgttcc 1200

ccttggaaaa atgtatttgc ttcttccatg gatcatgcat gattgaaccg tggctactca 1260

ttactgatga atgttagcac tcaagaactt cgcaaaattt aagtttgttc gtacggggtt 1320

gatgaagaac tgcaatgcta ctacatatat acaaccgaaa gcgagaaaga aacattgctt 1380

tacaaggcaa ctgggcatat atttctgatg agagcgcaaa cgacttcgcg aagaagtgca 1440

cgctgctgta tcggccacca ttccattcca tgtgcgctgt caaaccaagg cctgactata 1500

gtggcagcag tctgatgcag tcttggctct ctccggccta cttgacctct ggaaggaaca 1560

gaacagcacg gtgtatctgg aag 1583

<210> 2780
<211> 3153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294872_G1, chr8:167221159..167224311, Cluster 16

<400> 2780
attttttttt ttgaggggcg ttgctgctgt gctgacagta cctacccccc ataggatcgt 60

gcttcggccg ggcttcgcct ggtgtggaaa gttctggaaa tgaccttgaa atggagtgaa 120

aaaaggagag aaataaacag aaaaaaagga gtagtgtggc cccatgcatg taacaagtta 180

attaccgccg gttctctcca tgacacacac gtcacggtgt taacttcgtg tcgtcgtcag 240

acgaaaggcc atggaataat aatggacggc ttcagaatca tgccgcacac catgcatggc 300

ataaacatcc aacaaatcgt ttccgtgaat tctgtgccac aatgtctgga ttctggcccg 360

taacgccgcc gagtctggga tctatgggag tacatagctg cattcgcgtc tacatgcatg 420

cattgacgtt ctcttctgta catgtacata caggcttttt tgcgcagctg gtgttttcaa 480

gtaaagccag caacagcaag cgacttcagc cgttagtttt tttccggagt tttacaggca 540

gcaaacggcg gttggaggtg atgaatggaa aaaagaagat tgttcgttcc accatgtgtg 600

gtcagccgtt aacggcgtag atctcagcat ctgtgggcgt aaagattttt gatacgccag 660

acaagtgaga cacagcatca tcgacgcggt agataccaat accagttaaa tctccaacga 720

cgacgtccac atgttgttca gaaccaaact ggtcctgcgc tcagtggtct caaactgcaa 780

ggcatacctg gctagtctct ctcgacttgt cagtctctag ctagtctagc agctactgcg 840

tcaaaaggtt ctgaagttta ctactgagcc tagctgccag tctgccacgc tcgatcgcta 900

attagtgctg tactggcttg atggccgccc tcaggcatgc atgtactcaa gtcgagatcg 960

aacgaagctg ctaaacaggt gacaacacca gcgtgtctca gctcctctcg cccgcgcgat 1020

gtggacgcga gttccttttc actcatctct cgcagttccc tttttccggc acggcatgcc 1080

gacgcgacgc ggtgacagcg gcatgaccgg ctagcgtgag agctcgctct gcgcttgctc 1140

ccctacaaac ctggcggcac caccacatga cactgacact gacactggct taattggaac 1200

tggacacacg cacgcgcgcg cgccggcttt atatgtagca gtagcagctg ctgttcccat 1260

cgcgccccgg gccaagaata atcttctcca ccggttaaag ttacatactt taatcccaaa 1320

aaagtataca ttaatcttct attaccaaat gaatactgtt aaattaataa agttacatac 1380

ttttaactaa tatattcgta gatctatatg ttttttact ataaatgtcg tcaagcttaa 1440

aattaattaa tttctcagga ttcgagaagg cactactgac agtttgctgc ctcggctcag 1500

ctcagatatt ttcggtctgg gcctctctcg ttctcgagca gggaacggtc actactcaat 1560

caggggtacc gtcccgcctt tgtctttgct tgcaattttt ttccacgcag cggccccacc 1620

gacattcagt cggaacactg tgtctgcttc cagctcaagg caaaccaacg cacaggttga 1680

gattgttagc tttggtgagc aaatcataaa ggcgctgtta acatgacccg gaacccgtaa 1740

tgtaattgac cagaacacca ctggacaccg tcgatgccag gatcctctga gtggcgtcag 1800

ctattcagct ggatagctcc ttggccgaca gagacgccgt tgatgagcaa cagccgacga 1860

tccgccgcca cccctcagtt atctcctcct cgccggatct ccgaagctcg gatgaccgta 1920

cactgttaca tccgccacct atccctctct ccgttgttca cacaccaata tccgcagaag 1980

cttgccttcc atgcatgatc aagacgcgcg gatgactatt gactactggt gagccagcag 2040

ttctagaacc ttcctttctt tccgaggaaa ctattgctct agttgagcaa gatggaagta 2100

gtgcattact tttgcgctcg ttgagcaaga tggaagtatg ttggcaacct gacgagacac 2160

gaatgctgct gagaggcaag catctgcaga caacctgcac caacttggca tatataatgg 2220

catgtacatg ttctataagc gtttgtgtgg actgaaccct cgttctccag acccaaagag 2280

accggagaac tgccaagctt ttctttctat cccaagcatg cagtttcagt agcttcattt 2340

gctgatcgat cttctatgtc agcgcaagtc tggcaagtgg cttggtttcc aagcaggtcg 2400

gggggaaaaa aacattcaag caatcggacg atctagcttc ctgtacgtaa aaatatgtca 2460

cctgagtgag gcctgagggc tgaggaggat gaaatccaaa cgagaggtgc atatttcata 2520

tgcccaagga atatgccgag gaacatgcgg atatttggaa tagcccatgg aaaaggttgc 2580

tgaacgccag gctgtacaag gatcagggat ggcaggtgcc aagaaatact acagtgactc 2640

agtgagtctg caggaaatac tggggaattg ggtgcgagtg cgacacaata caggtgcaga 2700

acgtgcgcgc tgcgcgcaag ttgccgaatc gctagtgcga tccggggccg gatctcacga 2760

cccggcagcc ggatgggcca cgcgtggccc actcaccaac cttcctgggc tttatttcga 2820

tacgcgggtc caggacggtg ggcctgctcc gggggaaaat gtgtggcgca gatggcggca 2880

tggcgcatgg tcccgcgagc cgtggtaggc gccacctgct gctgtggtga cgtcacgccg 2940

cttacatcct cgtgatttgt ccggttaccc accttcctat gcactgtgcg ctcgtggttg 3000

agcttggatg ttcttactga aatttcagtg catgcttttt ttttacctct catggatgtt 3060

tagtgcacat ttatgtgcaa gacttctgga agcggccgag caatagagag caacttgaag 3120

gtggaccgat ctttttcact gtactatggg gtg 3153

<210> 2781
<211> 1415
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298791_G1, chr9:8428404..8429818, Cluster 16

<400> 2781
aatcagctcc cgggttgcgt tgcgttgcgt ggcgtggcgg cctggcccat gcacgctcac 60

gcggtttcac agcctagcta gcccgcagaa atcaacctcg gcagatgcat gctatcatga 120

tgcgatgcga gtcatgagtc atgacatgac tgaccaatca taggtactat ctctctctct 180

ctctctgctc gcgcccggtg gtttcgtcaa agacaagcga gccgcgcgcg ggaagtcgac 240

ggcagcagca gcccgtgaaa tcgcgtgcgt gcgggagggg aggggaggca tcgcgccgcg 300

gcaggggagg ggatgggcag gaggatgcgc ggaagcttcg tgccaccagc ccacgacacg 360

agctagcgct agcgcagggg cactactctc ttcttctcca gatttccaga aggacccaaa 420

aaaaaaacag agatagaagt ttttgttttt catttctttc aggattttcc ctttgacaaa 480

ttaaagtttt ccttgcacat gcggtcaggg tacaacatgt gtcgttcgtc gtataatata 540

atcccccact tttatccttt ttcagcgagg gcctttggtt ctcctccgta caaaagaagt 600

ctcgattaat tggccttgca actgcacgca cgagccttgt ctcacctttc aggcgccgga 660

gtgtcacgcg ctgcgctggt ccgacgacgc gctcgtgagt cgtgcgctag ccgagaacga 720

gacaagctgg cgcggcctcc gcgcgccgcg gtgtgaatga acccctgagc acgcaaggaa 780

ggaaggaagg gacgaatctc tgttcatcat cgacgttgag tcagtcagca ggccttttgg 840

accctccgtt ctgctgctac gcgcgcagtc tcatgcacct tgtatagtag tatattaatt 900

gcaaacgccg ctgcagtgtg gaagtggaac gcagccgtcc tgaccatctc tctctctctt 960

gttcacaaga catggacagt acgagagata cgatctgggg cgacagccga caaggccata 1020

taactatgag tcgagttctc catctactgt tgccaggcgt acccccctgt aatacgcctt 1080

ctcgacgtcc caagaacact accccgactc ttttcttcag gcgttggcaa ctgatgttgg 1140

ggatcactct catgtcagga ctcgtgcagg gagcagcagc atgggatcgt ccaggcccac 1200

gacgagccca cggcctcggc cgagaatcag ccagtgcgtg gcccagaccg agttctgtaa 1260

caacacatgg gcgcggtagt atagtttatc gccagtgtgt aactctgtcc cggcgtctct 1320

tctcagtcta tggatagttt tgtcttaaca tgtgactccg aaccaaacaa acaaactaga 1380

aatcgtccca tcgccacgat tacaaccaaa cacat 1415

<210> 2782
<211> 2197
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298809_G1, chr9:8456164..8458360, Cluster 16

<400> 2782
ggtgattata tgtagatgta tgccagcgtc actatttgtg ctatgtttta tatatatata 60

tatatatatt gataaatgtc gtcccgtttt cagctctaac tgtgagcgtg tgcaaacctg 120

gattcaccct tgaaatcact ctttttgcg cacctgtcgc cggccgccca ttcctattgc 180

caaaaggtgg gaaagaggga gagtttgcgc aactcttcct tcccaaagat ggcgaggaat 240

agcccaaggc agaacgcaac ccaaaagaag caatgaatct cgtatgcaaa gctgctgatt 300

acaatgcaag gaagaagaaa aagtagtagg agaggttgag gggaagatgg cctagctggg 360

aagtactagt acgtgtagat gaaaaaggtt aagaaatgtt aattttgcca actagttctg 420

ttcctgtacg acgtactaac tgcaagtgta gtagtacaaa gttgcattgc attggtcgaa 480

aaggttaaag ggacacgggg cactagctag ctagtagtaa caaagcgtgg ttttgttttt 540

gtcataactg cggttgcgtg caaacaaatg ccagctggtg tctgaaaaac taagaacatt 600

actactatgt tgatattatt atataaaccg ttgcaactgc aactctctga tctatagtta 660

aaggtgcaca tgttttgact ttaaataaag ttgatacact acacacacac acatgtagat 720

tcttccggac cagtgcaaga aacatagaac gcgccattgc tgtcctcggt tgcatccaca 780

gattagaata ccaattaccc ctccagagac ctttcccggt gttgcaacaa acgcgcatgc 840

accgcagagg agtccatctg cccaaagcag acgaacgaaa agctagctag ctagctagca 900

tatctctcca cgtcttcctt tcttcttctt ctttttttct ccttccgatc cagctagcta 960

gctttaagta ggcatcacat cgaaccaaag agacgagacg agacgggacg ggacacgatc 1020

gagcagtgtt ggatcggcgg ggcaaagaca acctagcttt aatctcctgg caagcaagac 1080

caggcgagca aggcattcat tcattcacct aacaattatg caatcaaccg gccggccggg 1140

ctgcctagta gtgcttgctg atgagtcctc tcctctcggc gggggcgtgg tgcgctcctg 1200

cgaggatttg caacggtagc tggagcctgc tcgatcgcct tcatgcatgc agtcgtccgt 1260

ggacctctcc cctccctggc tagcttcctg cacgcgctgc attttcatgg ggccggggtc 1320

tgaaacctag ctagctatac gcggtgccga tgcggatctc cttattactg tttgacctcc 1380

ggaaagctcc ggccctgatt ggcgcgcgca aagggagggg gggggggggg gggggggggg 1440

ggagagctcc atccacgacg tgcgtgcgcg tagattggcg atgacgtgcc ggcaaccacg 1500

tacggcgcgc catttgctca cgagaaacag cgtggaaaat tgaataatcc atgcatgcat 1560

ggggatccaa ataaatcaaa atcagaatca gaatcatgat caaaatcaga gggtgggcca 1620

gccggggcct actacatacc ctgtcgacca ccaccctcta gatcatccgc cactgcttcg 1680

gtcgtttaac ataataaaac ataatatgac aatttgctga tcgatgattg gtttcagctt 1740

ggcgacagag caacagattc agatacaagg gtaatgcaat ctgtgtcctg acatctggga 1800

gctaggtcgt cgtcgtcgtc ggtctaacta acctccctgt gtccaatttg gtaagtccta 1860

ggattccctg atgaaggttt gtgtccttgc ttaccaccga tgcaaattgg acggtggtaa 1920

agccgtgtgg gtaaactaaa ctaaactaat caccaggcca caagcccatg cactagcttt 1980

tttaagctag tggcacggtg actagcacta gctagtctgt cgtgattatt ttttcaggag 2040

gcatagacga cgacagtgta aacacgctgt ccaatgcgcc atgatcttgc cgtgcaagct 2100

gcaagaccat atggaccgga tcgatccacc tggctttgcc cagcgttctc gcgaaaaaga 2160

aatcgtagca gaggggggcag ccaaagatct cagacag 2197

<210> 2783
<211> 1749
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301273_G1, chr9:20863938..20865686, Cluster 16

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (488)..(587)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (490)..(490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (491)..(491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (492)..(492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (493)..(493)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (494)..(494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (495)..(495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (503)..(503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (552)..(552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (553)..(553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (554)..(554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (555)..(555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (556)..(556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (557)..(557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (558)..(558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (559)..(559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (561)..(561)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (562)..(562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (563)..(563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (564)..(564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (565)..(565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (566)..(566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (567)..(567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (568)..(568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (569)..(569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (570)..(570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (571)..(571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (572)..(572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (573)..(573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (574)..(574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (577)..(577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (578)..(578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (579)..(579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (580)..(580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (581)..(581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (582)..(582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (583)..(583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (584)..(584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (585)..(585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (586)..(586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (587)..(587)
<223> a, c, g, or t

<400> 2783
attcctccac tcattgcacc ctctcggggc ccccagcgct ttctccatgc atgatgcgct 60

cggcgattgc actcgcgtac cagctttgaa tttcctcctc tgatttaagt tcaattcccc 120

ccccccccct cccaataata aactattggt tcgttctcgt ctcggtcgcc tctagcagct 180

ttaatctctc gcggacattt gtttagtctc tcgatcagaa tatcgtcagg gtgcgcaaga 240

gaggaaagtt agggaattta atcatggatg aatcaggaat ttaattatga agcagggtta 300

gtgttttttt ttgcagagtg aaagtgaagt tgtgcgagca ggttagctgt ttttttttc 360

atttagtggc gcatgatgat ggcatatcta tcatttgcag agtgatactg gtcccgtgtt 420

ttatgtagta tcttgacatg acagggatga tagataggaa cgaatcaaag cctgaaaacc 480

ttccaggnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnngcg aattcaaaga 600

ggattcatta ttattcatat gtaaaattag aaggcaaaaa aaaaactgca cggagaaaaa 660

ccagccaggc taactctcta attcggctag acccagcctc taaaactggc ttagtcgccc 720

ccaaaatcta actacacggc cttcccgctg caaagtcggt caaaccatct tttgggcctt 780

ggcatgccgg cggcttttta tcaccagggt cactgcaagt ctgcaatgat cgggcctccc 840

cttgaaaccc tgcattgccg actttgatga ccagggttta tggccaatgg ttaacaaacc 900

ttatggggta gaagattgcg gcattagctg tgggtcatac aagcatatgt ctagtctggc 960

tcactaatcc acataatgta acagtacaga gttaagactg gagacctcac acgttctagg 1020

gcgatcacac taatccctta ggacccttg cgacataggt cccacataac gggataagcc 1080

ttggggccct catgttcgga gacatctagc tagataagcc atcgaggcga tgaggtccct 1140

aatgagataa gtcccgagga cccttgtgtc ggggacacct aatggtataa gcttccgagg 1200

ccctcatgcc atggggccta atggaataag ccccccaagg cccttatgtc ttgatgcacc 1260

taaagggata gcccccaagg ccctgacacg gttctaagcc tggcacacga taatcctata 1320

actcggcaat acgtgtgcat tgtaccagta tatatacaat aagccagaaa aaaaaaaaca 1380

acaccgatat catatcgtcg gtgtggacaa cgtggctata cgacacaaag gttcatgaca 1440

tgccagttgc tagcttggca tgactagacc tacgtactag gctactatac atgctcctaa 1500

ctataggtag ctagctagtg cgtggccggt ggtggtggca ctggcatgcc tgtatatatg 1560

cggactgcgg agacgatggc agcagcagga ggggccggca gtaccggcag cgcaacgtga 1620

gggccagctt ggcgtccgtt agctttcggt tgccaccatg aatgagtcac gagtcgtgac 1680

cgaccggccg gtccaggcat atccatccgg ccatatgcag aattgcagat gcagcagtaa 1740

cctaacggg 1749

<210> 2784
<211> 1458
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301275_G1, chr9:20866253..20867710, Cluster 16

<400> 2784
ataggcgtga tgtgaaaacc actgctgcat gcaatgcagg gcatgggcgg ccgccggccg 60

gtgagcgaga tcaagttgat gatgatgatg atgggttaat aataattgca gagcgtgtaa 120

ttaggcagct ggatcgatgg atcggtcggt aacagctgcc gctctgaata attgcatgtt 180

ccaggcgggg cacatgcatg catgcatggc cacccccggt ggtggtgcct ctggcggtaa 240

tcatttcgtc gcgctcggtc tcggccgtcc ctgacccccct gatggatcat catccatcat 300

cgatgatgat gagtgcagta tgtatcatgt atgctggcct ggcgtagcgt agcgtatgca 360

acgcggtggt atatatgcgt atcccgacaa taattgtgta cgtgggaggt tacatgatgc 420

ctgattaatc atttgttccg tctgtgtacg tactgctgct ctgcctctct tgcatgttgg 480

acccaataat ttgcttgcta attaaggtca tgcactagct agctagcaac ttggccttaa 540

gcatattatt acactgtgat cgatggtgat ataccaaagc aatgtaatta atgcgtaata 600

atggtgcttg cactagtaat attggagagt tttgtgcgtg attcatcaga tgtggttacc 660

attagagacg acggcgctgt attattataa ttcatggcaa tgtgcacgta tacgacgctc 720

cggccggacc gttccgttcc tgccgcgcgc gcgcacgttg ccattgccaa gcagccactg 780

ctgctgcaca ctactactac tccctagcta gcaccgtagc agctagagag ccacacaaca 840

acaaggcatc cgagatctct ccgacaggcg cgcgcggcaa atccgccggg tcgtcacacg 900

gtgcacgagt cacgaggcca atatggcgca tggcgtatgc gatgctgggg tcctatctac 960

tcgtacgtgc ctcgtcgcta cgaaacggaa acaggcacac gccggccggg cgcgggaagc 1020

aagctactcc tagtcctact ctatagtgcc gcataggcaa gctagccagc cagccagcta 1080

gggcggccta gcggcaaagt atgcgtaggc ggccaggcca aggccaatgc atgcatgcat 1140

ggacgacgga aaacatggcc ggccgtgatc aaatactaaa gccctagctc tagtttattc 1200

tgatctacta ctagtcattg tagtgttaaa ctaacacgcc aacacgtacg tacggcggca 1260

acgcaatata tatccgtcca tggactggac cgtcggacgg gccaagagac gacgacgagg 1320

agacgagcga gagatcgagg aggagggtgg tggcgtacca cgtgggcgtt gccgttgcgt 1380

cgtggaatcc caaggcgcca gccaggcccg gcgtacgggc atgtcgccca cacgtgcaag 1440

cgccggtcag cggcggca 1458

<210> 2785
<211> 1804
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301466_G1, chr9:21970281..21972084, Cluster 16

<400> 2785
gtatagagaa ttagagaaat gccgaccaga gctagctagc taggggggca gctgatccta 60

gctactatcc tgtgtcgact gctttaattt aatttggtac tgagtcacac ccggtggtcg 120

tcgatgcgca acatgcccat gctgccgctc tgctccccgg cccgtgcgtg catacggtat 180

gacacatgca tgggcggtca tcagaggact gggacgatgt gatgtgagag tctcaactct 240

atggctggtg agcgcgcaaa cggcggtcgg cgggcgtggc gtggcctgag cgcaggtgag 300

cgatcgaggg tgcggccgag cgaggcggcg ggcgacgtac ggcgtgggcg cctgccgcct 360

cttgggcggg agctttgggc ggcagcgcgc gagtcagatt agatgaagga tagattctca 420

gattagatgg atcacggcag ctatagctag ccttcgatct ctcttttagc tttattaggc 480

aaccaaatat atcatggcta attaaacgat cgacatggca ctgtgtgtac acacacgccc 540

cctgtcatct gtcaattaaa cgatctctga tcatgccagc ctcgtgcatc gagaagacct 600

gcatatatgc tgcctgctat cgatccggcg agtatacttt gcgacagcgg ccccgtcgtc 660

gtccggccgc cggtcccagc gcggcgctct ctggaagaag cacgaagcac tgtgtgactg 720

tggcgtgcat gcatggctcg gactaggtca cagtgagagc ctgccctgcc cctgcctggt 780

gcctgctcgt tcgttgcatc gcgcggcagc atttacctgc atgcatgcgg agggatcatg 840

gaaggatgct gctgcagagc gacgacgacg acgacgacgg atgggtgcgt gcagccgtgc 900

aggtgcgcgc agcagcagta gcagcagtaa aagaagaggg cgcgcgcggg gggcaaatga 960

ttccggtgac cgcatgcatg cattgcatgg acgctgcatg ggggggcatc aggcatggca 1020

tgctctgcgc ccgcaggctg cttgctgcct ttttactgca gctgcaacga cgggccggga 1080

ggagagggag caccccttgcc ttgagccact cctgcctgca gtagtcctgc actgcagcac 1140

tcccggcctg gttacatgca cttgcagaca gtctctctct cactctctca ataaagacac 1200

gagagagaga gagaggtgca tggatatatg catggcagta acctaattct ctctcttggc 1260

cttcttcctt gcacagtgca aagtggtgcc ctcgctctct ttctctctca atcctaggat 1320

gtactgcttg cctactagcc agctaggcta ggctatcatc tcttgcttgc tactgtatgt 1380

ctgtatgtag ctgcagccag gcaggccttc ttaattcatc tttggatttc tcctcgtcca 1440

tcatcggtcg tcagagatcg agtgatgatg aggaagagaa caatcgtcct gctcccaaat 1500

attcttaacg ctcccccctc caagcgaact taccgagggg ttaatggtaa ccatccaatc 1560

ctatccctgc agctgtcgac cccccggcgg cctgtggagt aagaagatgc cacagaacta 1620

cacatgcaat gcagtttact tcacagatct gcacgggtga cacttgcaga caagtgacaa 1680

ggagctagta cttgagatat atatatagaa gagagctgag aggccggccg gccggctttg 1740

ttctttgttc attattcatc agtaacagtc tgcaggacaa gctagcgcgc gctgttgttt 1800

ggaa 1804

<210> 2786
<211> 1631
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3051_G1, chr1:15518461..15520091, Cluster 16

<400> 2786
gcagcaacag cgaggagttt ctcttcctgc acaaaggaaa accgacccgg tccctctgtc 60

tgtggggtcc caaggaaccc caggcagtgc gtgccggtct ctcaacggtg cgagaagtac 120

gcttgcggtg cacgcaaggt aaggaggagg cccgggcccc agcgatgggt ccctcctcgc 180

aggcgtgacg cttggggtcc ccttttccca cggcaaggcc tggtcccacc cggcagccgg 240

ggccgtggac ggacgagacc cgcgggcgcg gagtggagta gaggggagca tgacatgcgg 300

acccagcccc aggccggagg cgggcgggcc ttctgatcga gcactgtttc tccgtcgctt 360

ttgcctcact ccggctccgc ccccctggcc cctgctgctt ttttttcccc gctttcgcgc 420

tgaaaagaag agggggcgg ggggcggcac gggatggggc ccgtcgggat aagatgacga 480

ggcaggcaat gacccgtggc acgtgcaccc ggtccatagg cgccgcagat gtcctcatca 540

ctcttgaatc ctgctgctgc catacttgtt ggctcaaaac tgtccacaga tttcttctgg 600

cgcgtaaaaa agcatcagat ctccgagatg cagatcatgc agctcatcgt ccgtcctcgt 660

gacctcgacc acggagcata taatgcaaag ggtgtcggct tgccgatgga gtgacggtgg 720

cctatggaac gggtccagct ggtcctcgga gcggggcggg agccgagtag ccgacaggga 780

tagggcgtcg gcgttggagg gatttgatca gacggcgagg gccggccgtg ccgtctctgt 840

ctgcgttcct gctgcagcgg cagtgctgct tgctgccttg tggttctgga aggtacttgc 900

ccgtccggcg ccaatgcgca tgcaacgcat caatctttct ttcttctgcc aggtgggcca 960

cttgcgcggc gcgctcgctc gctcgctcgc tcgatcaggg acgcgacgcg acgacggggc 1020

tagcatagca acctggcaca ctggcaagtg gcaaggcagt cggcgactcg ggcgtgcatg 1080

gcaaaagggg agccgtatca aagcctctcc catcggcgaa gcaagggcgc ggccgactac 1140

tcgtgatcga gtaccgtagc tttgtcctca agcgagactg caggtaggct cgtgagagct 1200

acgacgtgat cgagtagcag gccaggaagg aatatatact cctactcggt tgcattgcat 1260

tcccagacag tacactccat agaacccatt ggtcactagc cgatgctgcg ccgtgttgcg 1320

gccactggcc gggccggatc acgccatctc ccgtgcgccg cgcgtcgcat gtgaatgtga 1380

tgcgttctcc gttgggcgcg tgtcgtcacg cggccgggaa agcgggccta actattggag 1440

tagtgacggg cgtgcgagaa cgtgagcaag tgtggcatgt agtgggttac tggcaacatg 1500

atactactct actacgtgcc cgtttgagag agatcccgat cggttcccgc tctttaccgg 1560

agccctccta aacaatgccc gaaaaacagc tctggatgaa gagttggaga cgatttggac 1620

aagaggagtc a 1631

<210> 2787
<211> 2466
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30711_G1, chr1:188902630..188905095, Cluster 16

<400> 2787
gttggactaa aatttatcaa ttttattatt agcaatgaat ttgatgtttc aaaaacacac 60

acaaaaaaat acttggatag ataaatttgg tttgaccaac gaaaaatcta tattttatat 120

tgtatgtatt tgaggattaa gggcggcaag gcccttgtcg gcctccgttg gcgtgattga 180

cgctgcccag attggcagca acacatatca ctttaagatt agcacatgtt aatcttggaa 240

tgcatgccat ttatcaattt gaggccgtgt agatgaggga actttgttgt tgatttgata 300

gtcgcggatg tttcttccct gtggtttctc tgtaagtaca cctgcctgcc aggcccctac 360

agctagctag acgatgtaaa taactagtga acgtttgtaa atgctagaag catctttgtt 420

gaatgtaaca aaccagagaa gcttagcttg tgggctagct agcttttgca atgaatctga 480

ggtacgttaa aacttaacac actgcgactt tttattttat tttatttta caggtgttgt 540

ttgagttcga catggcttgg aagttggaag aaggccaccc gaaaacaagc agtagtcatg 600

ttgagcggtg ccatgcacgt tgcattgcat gcgacagctg aacaatcctt ggtacggtac 660

ggtcccaatg ctaccgagtt tttgtacagt ggacggcgct ggtttaccct gtactgtacg 720

tactactact actccatagc atagcatagc ataggcatag ctaggtgcag gcggcggcga 780

tggagcgaca ggtcagtggc cggccggggt taatggacag gaccgacagt tggtataaca 840

agctgacgtg ggcatccaag cctccgccgc agtgccgaac tgccgacagc aatttgacaa 900

gaaggcgagg gatcgccgat cgcgacgcga ccatcgcatt caattcgatc gccatgcatg 960

catgttccaa acaactgggc ctttttcaca ggccaagacc agcccaaagt tcgaaggaag 1020

cgcgggccat ttgtgggttt gggttttcag gcttggtcgg gttcgccggg ctgggctact 1080

gcgacaaggc tgatactgat ggccaggcgg ctgacaccca ccacaacaca agccgcagca 1140

actggtagac ttcacttggg tggcaaactg gcaaaacgcg cgcggcggac gcagaagaag 1200

aagaagaaac aagagatgct gccgctgctt cagaaagcac ttgggtactt ttctctctca 1260

atcccgggat gcccgattag gggtcacgtc ggggccgtcc catcgcctcg cagagcagcg 1320

caccacgtca tgatgcgtct cctgcgcctc gcagcatccc caccggccgg atccgctcct 1380

acgaaaagct gttgcagcag ctggctggcc tgcatctgca tgcccggcag cgcggcagcc 1440

tctccctagt gctagtgcgg gtggtaatag aagcagcaag cattattgca acccgtcaaa 1500

tcatcctctc ctccatggcc tgccgccgcc tgctgcatgc cctggacgct ggctcgacga 1560

tgtcccggcg tggcgtcctc gtccaacgac tagccggccg gccccggcca cggccatgca 1620

cgcagcggcg cgcctgcgtg ctctcccccg tcccgtcgtc tctcctagta gctcgctcgc 1680

cctgacggcc tgacctgacc caaatcacgt cgtcgtctcc attccatcca tcactcactc 1740

actcatcacc acactcctgc tgctctgctg ctgctcgttt ctaaccttgg ctttccttct 1800

tttctaatac ctctttccac gacctgctgc cgcatgcatg catgaaagaa cgaatcaata 1860

tataatggat ttctgcatgc ccatactcca cagaccgtag cagatgtata cgcagatcga 1920

tctgcatgcg agtgccggag caacagccag tagcgctgct gctgctgcgt gtcaacacca 1980

caccacgcgc gccctgctgg ccttgagatc tcgcgccagc gagaccaaat cctcaccgca 2040

ctatgccaac agtggctctt ggtacatgca ctgttcatgt catatgctga tgagtgtacc 2100

gccactgtgc tgctgaatga ctgaagaaac aagtgcacca aatacacagt ggactatatg 2160

ggggttttga cgtacgtaca catgcatggg ctgggctggg ctggctagag gagtcaataa 2220

atgtttttga agcatctgca atgcacacat gcatgacatg agtgcacata gctagagatt 2280

gaaagatcga caacagccga cgagtgcagt ctacagtttg tagtaccata cagaacttcc 2340

caaattcacc gcctcagcct tcgtgcatgg acctctcacc tctttctttc tatctataga 2400

tataagcatt tcgagagcca aagtcagaac ccatgtaagg gcttattcgt ttcgccgtta 2460

atctca 2466

<210> 2788
<211> 1551
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313593_G1, chr9:99033228..99034778, Cluster 16

<400> 2788
gtccatctct ttctgccgct ctgcgaccaa ctgtgcgccg cgcgtgcgtc atgtcgttgt 60

gttccgtgcg cagccggatg gatcggccgg tctagacgcc ctcttgcccc ggcggcggcg 120

cgtagaataa tcggcgcggc ggcgagatac gacacgacgt caagggccgg cgtggccatg 180

agttgcaaga aagccttgtc gcctgagcgg tgcagaaacg ggacgggacg ggacggaaag 240

gaccgagcct gttgcccggc cctgttctgt tcatcgacag gcacgtaccg gccgcggggc 300

gggcggagaa agcgatgaac agtcagaagt gtgaagaggc cctgaacgac gacgacgacg 360

aagcatcggg agggtgatcg gcgacggtga cgcggccccg ccttttaatc cagagggcac 420

tcgcactcgc acttgcactt gcacttgcgc ccgtttaact cccggaaagt aacgcgtgtc 480

cgccgtgctc ggacatgtcg tgagcgccaa gttgaatcgc tcgatgcttt ttgccctgat 540

ggggcggtgg acggaagaag gctggctctg gctgggcttc gtgaaagaga ccggcagcga 600

cggcgatggg ccaggccggt aatgtgctgc ggcctgcggc gcaggcccaa cggaacggaa 660

cggaacgccc ccgtcgtcaa ctgtcgcagg ccgcgaaacg cttaatcgag aaagaagctt 720

ttgctgctgg attttttttt tctgctgtca attcatcatg gaaggaagcg tgagcccggc 780

acctcgccct gccctcacag tcacaggtcg tatacatgga cacgcatctg cctaccccca 840

gccggccgga cggcgatagt ccaaactgtg atcaagtatc gtgtgctgtc tgcaaacaaa 900

atggaaacgc gtgtcaagtc ctctcgacgc cgttttcata tcatttgtgg gttcgttgtg 960

tcgcctgagg agccgtctta gccgaacccg gaagggtacg gactcacagg acatgctccc 1020

tacggagagg ctatccatgg caccacttcc catactcgca actcatatta tgttgtaaca 1080

cttccactca cacaatcatg ttgtaacact ttcactcaca ccgagcctct tttttatctc 1140

tgacatggaa tataagagcg aacaataatt tttttaaatt gtgctaacta ggattcgaat 1200

tcaagacatt tgctatctct gatactatat taagttgcat aaatcaataa attaaactaa 1260

aaagcttgat cagatgaaaa gagatgtaca aaactgtcat cactcccgag ttggatgctg 1320

cagccgcgtg cttcaggtgc caccacgttt ctaaacgaga tgcagatgag atgaccggca 1380

ggcaaccgtg cagctcccga gtcccgggac agttctgacg agctctgcct ctctgaaact 1440

gaaaagtctg tggactctgg tctggagtgc tcctggccac tcgtacgcaa ccgttcaaag 1500

gcgtccacac tccacaacgg ctcccgtgga tccccccatc ccccacggcc c 1551

<210> 2789
<211> 1944
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313660_G1, chr9:99361628..99363571, Cluster 16

<400> 2789
ccgacaagta tctcgtttgt caactccatc gcgagctcac aacagcagtg tcgtgtcgtg 60

tcgtgtcgtg ctctacggcc tccctcgtgt ctcacagcaa tgacagcata gggagtgacc 120

tgcggtccgt gaccgtgaga ccgaggcaca ccagaatacc agatgagcag cgagcagggg 180

agggggcagc acagggccac gggagtacga tggcatggca ggcacctgca cgcaaccgat 240

cctcccgctc tagaaagacg aaagaagcca tgcaatgcaa tgcaagcaaa ggaggaaccg 300

aggcaactgt gaggatgggc ccacgcgcac agtacataga actcagcgaa aaccagggat 360

cgataaagct gcagaatctt gcggtcaatc tggtgtccct ggtgcaccaa atctttgggc 420

cgttctttct cctccagacc tgcccctgcc cctgcctggc aatcttctcg tctctctctg 480

ccccagaccc cagtgccagt gccccagcgg cgcaggcgca ggcgcagcag cggacggagc 540

ctgccctccc tctccctccc agaccccagt gaaggctggc tggctgatgg cgagagtggc 600

atggcagcct gacaagaaaa caaattcaga cacaccatta ctgctgccgc tgctaccttt 660

cgtgtccgac gagcacactc cattccctcc ctctccctgc accgtaccgt ggttcggttc 720

ggttcgtttg acccagcgat ggcatctttg atttggcatc attttgccct gcccgtcctc 780

atcaaagctc caaactcgag cggaactttt gggctttttc gtgagtggat ccatcatcaa 840

cagtgacagt aagtagatcg tgctgccgtc tttgctcttt ctttggcaca gttcaactac 900

tctcccgctg ctttgagacc ctgtactgta cttcaaagtt gcagcagggc caggggcgca 960

gcgtccgagg taaagagttc cggcactgac agcgtgcgta gagctgctgg tggtgatctt 1020

ttctttccct gctgtggtgt gtcaaggact tcagaaggcg aggaaacgga tggagtgcct 1080

tggctaggag cagtgtgcaa gcacatacaa catggctcgc tttggaagct tcaatggcag 1140

gctgtatctg ctttacaaaa catcgattcc atggtgcttt ctcaacacca tctactcagg 1200

actgttaagg agaaatcatg cgccaatttt ataaacttta atttaatttt atgtatatac 1260

atgaaatcaa tatttttttc ccttgttcca accagactat acttcgccac agcacatctc 1320

gggatgaaag tatgtaagac tgttttggat ggatcctata aaatagagaa gagaacacgt 1380

aactacaaag tcaaatttaa aataaagaga gtaagatagg agataaaata agacagctga 1440

tggagtcgag aaatgggtga ttgggtggtg tggctatgtg ggttgcttgc tgtgggtaat 1500

actatctaat atggactggg tcgttgtgct gcactcgtgc tgttgtttga ctgtgtgaca 1560

ataattgtga aaggtaggac gaatactctc ctagcatatg tctacggctt aagtgaattt 1620

atttttttaa aagccgttct aaggttacat actaatacaa taatctaaaa tcatatgctc 1680

aactgaagga cacaaaaaag gatcaactaa tttctgtcca agtaagataa actacattgt 1740

aggctccgct ggggagaaaa gacattgttt ttttttatgt ttgttagcca agactatcag 1800

aatatgttca gcagtgacct gaaaaaaaaa gattaaaccc tttgaatagt agaattgata 1860

ggatttgaat ttttatggca gatctggaat aaaagtttgg ccaaatgaat ggcatataga 1920

aagaattctc attgtttgta attc 1944

<210> 2790
<211> 1801
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315232_G1, chr9:107337261..107339061, Cluster 16

<400> 2790
tgaagaaggg ataaccgaat aataaagagg ccggatcgta acaggctacc agccttgaat 60

tgatgaatta tggcatgtca gaacttaaac gcgggtggcc tatacggata cagtatacat 120

tacggccggc cccgagcaac gcaggatatg tccccggacc aggcaggacg accccgcccg 180

gatcccgtcc cggcggccag ccgatcgatc gagagatata tgcatggcga tggcagctag 240

ctagctagcg tggccaccac tcgtgccgtc gcatttgcat gcatgcaggc aggcacgtag 300

gttgctggac gccgtacgga ccggccgggc accaagcatc tgctgcgtta tcgcggacgg 360

cctttccttc tctgttctgc aagaaatatt aatggcgtag agccgtagat gcatgccacg 420

acgacatgtt tggtcgttgg cgagacgacg ggcggaccat gcatgcatgc tgcatgcata 480

gcacgccgcg cgcacgcgca cgtatcgtta cggcgagcct ttttaaatgc atatatgtgt 540

gaggaatcgt ttctgcagcc gcaggcacaa gcgagcgatc tagggctcca ggcccggcca 600

gacgacgaat tacttctagg tttcagtgcc gctccagctt cattcaccta cctacctacc 660

atgatgcatg gcatcattct tccaccgcct gccctgccct acccgcggcc ccatggtaac 720

ttcgacgacg ccctcgtcga gagcatcact gagcatgcag tacgtgcagg ccccgtttgc 780

cgtggtgtaa cttcgacgtc atctcgacct ctcggatcat cactgaggcc tgctccgttg 840

ggaaattttc tctctactat aacagtgtaa ctattggtgc cggcatgcgt tatactaaca 900

caaacagcgg acgagtttgg cacgagtacg tggtcgttag ctagctttaa ctactcttca 960

cgtaattact gcttctgcta acatgcatgc acgatgcatg gcggcatgtg gaacgggcag 1020

cgctggtctg tccccggctg gctggctggc tccctgtagc caataaaaaa cacccgggga 1080

caggaaaagg acggcaggaa cgacgacagc gcgagtggag ggccacatca atcgccaaca 1140

gcttcagtgc atgtagatgt aggctccagt gtgccagcac gtacgctgct tcgttgggtt 1200

cattcacaaa gtacgttctt cctccggtcg atctcttgac tcgatctgcc tttggatccg 1260

tcgtcgatca tccatctctt gcctttgttc aagcaacgag aacggcgcgc ggtcgatcaa 1320

tataatgtag gtcgaaattt cacagaaaca cttggaattt ctacgaccgt atccaattta 1380

gattcaactt caaatctctc tctctctctc taaacgaagg gaggcggaaa aagcgagcag 1440

agaagtttag acacggccgc ctgtgcttga ctgtacaacc agcttggcca actgtgtgct 1500

atgaatgaat ggtactgatt gcgatgcttc ttctgtgggt ctagcgagcc ccctccataa 1560

atttctcgtg gccatctttg ctgggaggga ccaaatcaat tcgatcgctg ccatggacgt 1620

acagtacagc cgcagcatgc tgcagggttc gccaactaat ccgtcgaccc atgcatcatc 1680

catgcgtgaa gctgaaggac acccatgctt gcatttcatt taattatcgg gacctgcaga 1740

gcagtggacc tagtagtttg ttgcatgcaa tgcgatcgag actgtctgtt gattcagatt 1800

t 1801

<210> 2791
<211> 1834
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3155_G1, chr1:16061338..16063171, Cluster 16

<400> 2791
gctacaggat acatctgttc atcttctttc ccccccctacg attcgatgga ttactgctcg 60

gggtatatat agacagatag acggtctagc tactatacgc gtgtgcagca gctacctgaa 120

aactcgatca gccagcatca cgactgttcc cagaaagaaa ccaaaccaga gtgcacacaa 180

acattctacc ttgggtttct atcagtacgt agccaaacca agtcagtaca gtggatttcc 240

catgaacatg aacatgatgg accagcgcac agcatccccc gcggaataat tcaccctaca 300

tgcattcccg cgtgcttttt gtccgcaaag gttgtcgatc cacaaagctt cgtcgtggtc 360

tagacacgaa tccccccccc cccgctctgc tctgctctgc tggcgcgctc taatccggtc 420

gggatgaagc tgtgtgtcag cagcagcagc agtacgtatg tagtagaatg aagccacggc 480

agggaaaaag ccgttctgct cggattaatc tatttgcacc accaaatggt ccctgctgga 540

acaaacacga taggtcatcg accagacaag acagtataca gttagctgta aaatgtgacc 600

gcgtgtacga gcttttggtg aacaggcaac gtgaaatgga gaatatactg ttacgaccgt 660

gccacccaca tgcaatgcat ggctcctcct ccgtggttaa cgggtttgcg ttgcatgcat 720

gtgacccctc tgttgtgtaa atctcgcaag agagagtaga aaaacgcacg gcttgtacta 780

ggaggtagag gggatagtga ggtcacacag atcaccgcca catttgggca tcgttcgttc 840

ctgtcgtcgg attctaaatc aagattgttt ttcctgtaac tacagcagag ctgcatcact 900

cgacatcgtc gacagatgct gtcttcagga gcgaccacaa aacatattgt gctactagaa 960

agaaaaaaaa ctgaaccatg gtcaggtgct caggtgggtg ggggaggcag catggaaaat 1020

tcgcagctga tccacgcaca gttttcagac acagacaggg tcgatcctat ccgaccgcct 1080

ctaattttgg cgaaaccatg cagcgttttg tcgtcgtccg tccctctctc agtctcagga 1140

agcacgagca gggctggctt cgtcccaact cccaacggca gtcggctgcg gatactgatt 1200

ccttccaccc atggtgggtc accaccgccc cggccggcca cacggttcgg tttcgagatc 1260

agagaaagcg aaaagactgg caggccatga gcgaggcatg cattgcacag cctaaagaaa 1320

gagcggggcg tgcacgccgg aggcagcggc ggaggcgaca gaaatgggaa cggagagcag 1380

caggtacagc cagcggtgga gcggatggtg tggccgctgt ggatcgggta gggtagggta 1440

ggacgcttag gagcaggacc accggcgccg agggcagcga tcccgagacg aggagaagca 1500

ggcgaactcg catggcgggc gcacacacga gcgagactgc gagagagctc ggtcggccat 1560

cgatccatcg tctgaaatgg atcgaaaaag gggggccggg cgggcacgcc agtcgttacc 1620

agcgcctctt ttgcttcttt cggtcgatgc atgcccccgc ctccgcctcg gcgtccggtg 1680

agatccttgc tttcttcctc gccgcccttt tcctcttttt tttttctgct ttccgccctt 1740

cccgacagac tatcctgtgt gtgccatgtt ctgacgaggt tcacaagtcc atctgcctcc 1800

ggaacagcac gaggagagac gctgctgcct gctg 1834

<210> 2792
<211> 2148
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315885_G1, chr9:111118401..111120548, Cluster 16

<400> 2792
ttccagctat aagcgccgga cgcggacatt cgcttggctt taatccacaa atgtttttat 60

ctctttatat tgcagtggca gcagtctaat ccacaaatgt ttttatctct ttatattgca 120

ggtgtatcag tctaaatagc cagctctaat ccgaagcgcg aattactgac tgaaaacgat 180

cacaatgaag tgcgaattcc tctctaggaa tatactctcc agccgaaacc agcactgatt 240

ttttgttttg ggggtggctc taaaatactg tctgtccctc gcccgtcgag tttcgctatc 300

aggtcttttc tcctttgctc caatggccac gccaaaaagg aagaaacgaa taggggagaa 360

aaaaaaggag aggagattat gtgcgcttct aaagctaata ataattgcct tgccccccat 420

cctctgaaat ctacatccga gggtgcaata atgccagcac aaagtgggga gttttttttg 480

tggcccggac gcaggcgtca aacgatcgac ggggaaggaa gcagcggcat gtgcatcaga 540

aatctctcgg ccaggccagt gcggctgcct gctgcaactg cgcctcactg tggctgatct 600

cacggggacg acgacggacg ggtgcgggcg cgcgcgcgcg ctcctgatgc ctcgcgctcc 660

aatcagagcg gccactaatc ctggccggca tcaccagctt accaccacat tctaatcgcg 720

ttcgtcgtgc cagaaggata accggccgta tctctgcgtg atgtgggggа aagattacgc 780

gcagatatat gatcatcgta cacgcgtaat agtccatata tgcatgtgct ggaacgtttg 840

aaagcccctg gcgacagtct cgcaactcgc aacggtgacc tagctgatga agtgtcatgt 900

tgcatatatg cctgaacgcg tacacccagc gttagtgcat gtataattaa gaaggaaata 960

tccagtgtag ggtcactggc ccacgaaaac aaattgggag gggggcagaa attctctgcg 1020

acgacgtaca cccagctagc agcgtccaca ggccacggca catgccgtgc tgagacgaca 1080

ccagcgcatt tcttcgtccc tgtgctctga ccgaaaccca gttcagctac gcaagccagc 1140

agcccggcgt atcccccagc aggagcttga atgcagcgtc acatgctgcc ttttttttcc 1200

acattattat cagaggaaaa cccagctcag agaaaaatgt gcgcgccggc gatgtagagg 1260

ccccgaacgc cacagaaaac gcagcgagat gatggacgca gctggcgggc ggcggcgata 1320

aggacctgcg tcgctcgcat tcgcatgcac gcctggagct cggaggaact tgacttgaag 1380

ccaagagcga gcgagcgagc gggcgggcag aagcatgtgc ggcacgcgtg tcggggtgcc 1440

caaacgccgg ccgggaagca aaggcgccat gccgtgttgc tgtcgtcgct gatcggctgc 1500

gcctcctggc agggcacgtt gcagccggcg ccaccacatg gctcgtgaca tgtcgacgcg 1560

cggtggccgt ggccgtggcc gtggcgcggc gtctgcctgc actgcactgc acagcagcag 1620

gccctggcca tgtatggtgc cggaactggc gcgggcgggg gaggactcgt gtcgtcctgt 1680

gctgggcggg cgacaggtgc gaggcgggca ctgttgcggc gtgtgtgtgg tggatagcct 1740

tgcatgatcc ctgaagcgtt gagattttgc gggtgggata ggatcatagg aggatggcag 1800

caggcagtgg cagcgacagt ggtgaacagt tgcgcagctt ctccgaggca ggacttttgg 1860

aggtacagta cggagaggcg gaggcccgta cctttctcgc tttttcggga ctcacggtgc 1920

tttcttgggc ttttgtggcc tgtcagcctg tcaccaagca acaatgcata aacctatgct 1980

atgcacgaaa tcgtagccca tgggtccgac ccatctttcc acagcccaaa gggcaaacgg 2040

gccatcaaaa cagtgccaca ccaccacaac ccaaaagcat caagcacgac gacattggga 2100

ttttagggtt ggtgattcct cagcgatctg tcgtcacggg aggatctg 2148

<210> 2793
<211> 1432
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320730_G1, chr9:136794206..136795637, Cluster 16

<400> 2793
ttccatcgtg gttttgagtg cttatgctaa aaagaaaaga ggataatttt taattataaa 60

atcacttctc ctgaagaatc aactttcata gggaattaga attaggcaga gttctacaaa 120

gctggcctta cgaaagacgt tcatgaattc cattgtattg gtagcattgg aaagctcgac 180

tcgtgtatgg ttgccgaccc aaagcgctgg gaaaatcaca tgtccttttt tgttgaacta 240

gatatgggta cccctggcat atatttttga cgaaaagaaa tggaggaggc aagaatatgt 300

cattcaagaa gaaaaaagaa agaacatgct tcttgcgtgg agtgggattt ccgatgtttc 360

atcaagcgaa agtgaatatg attatcatga ggaaaccaac ttcgagagtt ttcgaaaaag 420

atcgctacgc cggctgaagg agtgaagatt cggaggaccc agcgggcact cgtgcgacgg 480

gcggccactc tccacgccgg ctgccgcgag gagcgaggcc gaggcacggc ggcagtgacg 540

actccatcaa ccacgcgcgg tgactgcagc gctccagcca aggcgtttta cggcggcgac 600

cgcttcgagt tcggccagtt gtggccgttc tacctgaacg gcaggtcacg gtcgcgttcg 660

gcggctcgac ggtgggacgg cgacggtgcg aggtacatct tgtaggaatg atactggaat 720

ttcttctcgt ctgaatcaga gaatggataa attggggaat cttcctatta ttgattggat 780

tgggggagtt ggtaacaagg tttcacgtat ccaggagcgt ggtttttccc caacttataa 840

catggaaagg agtagcatgc atgggtgcgg gactgaggtg attaacaagc gagctccacc 900

caagcttgca aaggaatcca tggaggattt tctagatgct agtttggtca gggagacgat 960

gatggaaggg acaaaggagg aagtctggga gcgggaatcc atgagcgggt taccgacgaa 1020

aaaaggcatg tcatcggccc aagtgtttgg gcactcctgg aggcccatca accccacgtg 1080

gtgctgggtt ccaagaagcg gaatccacac taagtcatgc taccctgctc gaccggacga 1140

agtgcgtagg cttcggctct ctgccaagtc cgtgtctagg gttagacatc aatccttgga 1200

ggctcgttcc tatgcccaag tagtgaggga aggcagaatg gcttggagga gggatcatgg 1260

agggagcaat tggaaacggc gccaagatga atggatggag gaagatgacc ttctggaagg 1320

ggatccctgc agagaacaag atctgcgcgc taaacttcag aggggatcag gagattctac 1380

tgacaggatc ccagcagagc aggtacgtgc catgccaaac attagacctg cg 1432

<210> 2794
<211> 1429
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322172_G1, chr9:144523791..144525219, Cluster 16

<400> 2794
gctctcaaag ccatccacat tgattgagta acttatagca agaaaaactc tttttcgcac 60

tccgatttcg ttattactga aagtccgaat attaggtttg taaaaaaatt acaagttgtt 120

tatgtttggc acggaaacaa tatttccgga tggaaaaata tatattacca aatacaacac 180

ttggaacaaa taatttctaa tactagaaca atataaccat gaatttttaa caagttttgt 240

tttttgattt tggtgtaatt ctgacatcgc cctgttcagc tgttcctctg tcgtgtatca 300

aactagcaat tacgtaatgg aaatggaatg gagcatcaat cgatcaaatt aaaaaagaaa 360

aagaaataaa gctagcctgt gcattcttga cagtctgtgt ggcctttccg agtccactga 420

aactgaaata cccaggtcgt agcaccagca aagacaggga cgcaacagaa atcgacgacg 480

aagttgcagg ttctctgcgt tgtcatttaa tctgaaacag acgtcaagaa ttcacaaacg 540

ccaggttttc tagagcgagt cctctggggt ctagcaacga gacgaatacg cggagtcacg 600

gcttaacatc tgcgagagcg tcttttccct ccttgccgga atgcaatcgt ggaatgcgtt 660

cttgtgggga cgaagatcga gagttgcaat ccccctaata aatcaggctc tctaaccata 720

acgttaacaa cgacggtgcc ctcacgcagc tttcgggccg gtgatgatta aggaggcagg 780

cttaaattcg tcgacagtgt tctgccttta tcatgattgc gaggactgta ctgtatggag 840

tcttagtttt tttgcgtttg gttgtttact tcctgcagat atctaaatac acagtgcacg 900

gtatatgtac gtatgtattg gggcattaga atctatgtgc ctgtagcaac atttggatta 960

ccaaagcaac tgtctgaaga ctgaactagt agagtctgag ctctcggtgt tgctctgcag 1020

ggtttaataa acgaaaaaaa aaaaatcaaa ttgggaactg ctaactgaat tctgcatcga 1080

ccggccagcg cattagcatc gttgcccccc atcaacgcga tcgttggtga tctgaccccg 1140

aacggcgcga ctaattgcgc gattagggag aggtccagtg agcagtcacg tctgagcaaa 1200

aggcgcacag gcacagggcg agttcgcaac gctaataaac agcccccggg gcgccgccgc 1260

ccgccggcca ttaatatatc ccagacgcca cgcccgcatg cgtcgggcgg gccgagtgat 1320

ggtggacacc tgtggcatct attcgtgcgc atgtcgccga cgtacgtgtc cctccggcct 1380

ccggatcgga gccgccatta ttgttgctac atcttggtta ggttcacat 1429

<210> 2795
<211> 1410
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32299_G1, chr1:198198031..198199440, Cluster 16

<400> 2795
gttggctacg aggagaggag tgtctgtacg tgtagtacgc atatgaagga gtgtacgtgc 60

cttgttaagc tgttgttgcc acgccgaaaa gagacgacac ctcgtgtatt aaaaaaatga 120

gacgaatgta caggtaaaac cagtgtcaga gaagaagcac gccgacgacc gacctaccga 180

ccggccgccg ctacggcagg cccctatccg ttgcccacgc ctcacagtta cgcaggccac 240

gggggaaggc atggatgtgg tgtgtttaca acgtctccgc cctccagccc gcgcgcggtc 300

cacggctgct acgtgacggg atcacgcgcg gggggcaagg gcaacccgcg ttaatgcccg 360

gcggccggcg gcggggtcgc catccgctcg ccacgcacgg gacctgacgt gtagttcgcc 420

cgccgttcac cgatggagta cgggccgagg ccccaccgcc cgatcgaccc cggaccaggc 480

taggaccacc accacgcgcg gcgcctgttg cgacccctgc gcaagcccgt ctgtcgccgc 540

gcgcgcgcat tgaacgcggc gccaggcggc acgtacgtct ccgcgcctgc tgtatggtct 600

ctggctggcc tgcgccgcgc atgcaccatg caccatgcgc tgggccctcg cccctcgctc 660

gctcgctgct tgtctcagct cgtcgcctcc tgcgcgctca gctcagctca gctcgctggt 720

ccatggcctg gtggggtcgc gcgcgcatgc aaacaccaat ctgtagccgc gccgtgccac 780

gcttccttct gctttgcccc cggccccgtc gtgctgcagc gcagcagggt gcagtgcagc 840

gcaggcagcc atggcatggc atggcatgtg cggcaggcag cgtgtagtgc acagtggtgt 900

gtacctgtgc gttgcatgcc aggctgcctg cccgggcagt aggagagtag tagaggggta 960

gttcctcctc ttccaccatg ttcagctact gctatatgcc tcagccctca gctgccgtgc 1020

ggccgggcgg ggtggtgcat ggtaacacgg gcgggcagac ggacggacgg acgcgcgcgc 1080

tgctgcacgc tgcatgcagt tactcggccg tgtcagtctg gccttatctc cttggacgtg 1140

atttccgttg cgtcggccgt tggggacggc tacgcgacgc gcctgcctgc ctacgccttc 1200

gcttcttcgt tccagcctgc ctatagctag tgcagggcta ccaccgtctg cacgctctgc 1260

tcctatcgtc ggttggggcc tgggggggtgg tgtcaggctc actgtgttgt ctgatgggag 1320

ctagcacatc agtggtcctg tgcatgtgct accactctcg actcggccaa tgcgtgttgc 1380

gtgtacctac tgctctcccc ccccccccc 1410

<210> 2796
<211> 3313
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32446_G1, chr1:199073564..199076876, Cluster 16

<400> 2796
ttttattctt agttttataa cactatttgg tgcagttgga aaaagatggt acgaaattat 60

cgttgacaac agcctaataa gaggacaaat tttagaaccg atagcgtctc ttgctcttct 120

gcttgaagat aagctaacta ccggtgctgt gtatacatca accgtggata tatagctgta 180

aaaacggggt ctaaacttta cgctataaaa tttaaagatc gagttggatt aggttcgagt 240

tcaattatat tcattttaaa ctggaaatga tttagagcct taataaattg taaagaaaca 300

tttggatgat gtacatgaaa aattggatgt acatttggat ggagttcata ttttttaaat 360

tggatcgagt cggattaaga tggatcgaca tctggataga tatatgcacc gtatagtaca 420

tcggtctgta ctgttcaagc aaagcacact ggttcaggat ttcaatcacc gttttttagg 480

ccccctaagc gcacgcggca cgtcagtcgg tctggaaatc cacagagatc aaattcaatt 540

tctatttatt tttaaactgg agataattta gagccttaat aaattgtaaa gaaatatttg 600

gagggtgtga tcagttgtca ccctgaccgt ggatgattca ttacggccga tcgatcgaca 660

tctggatagg tatatgctcc gtatacatcg gtctgtactg ttgaagcaaa gcacactggt 720

tcaggatttc aatcaccgtt ctttagaccc ctaagcgcgc gcacgtcagt cggtctggaa 780

atccacagag atccaattct tccattcttc ctatatagct aggagtacat gcgccgcccc 840

gtccgcgcgc agccatgcat gtgcggagaa ttcgctccgc ggtccgccgg ccgaccggcc 900

cgcccggccc cattcgacaa actgacctgt cgaggccgac gtgatccacg tgcccagctc 960

cgtcccctcc accgcgcaag accggccggc gcccgagccg ccgacggatc gtctgatgct 1020

ggtatcttct ctgaactctc ctggtgggtg ggcttggcac cgtaccctgc ctgtcggcaa 1080

ccaaccacag tccgcagcga cgcttggtcg tcactctcct gttgactgtt ggtctggcct 1140

ggacgcgccg atacgtgcct taagatgaga aacgctggct aggctagggg ggccgggaaa 1200

acaacgcgtg ctctgaaccg aaccttccca ccccggccgc gtcctccgat caatctagct 1260

accacactag tgcatgggat tcgcgtctcg cgagacacga ctttcccgtc actgagaaag 1320

ctgggaagag gtcgggtccc gttgccctcg ccggcgtcga agtcgaaaca acgtttcgcg 1380

gcgggcacgt gtcgagcgat gggagatgga cctagcgagg ctcggccggc cccacggcac 1440

cgtggcctgc tccgtccggt ccagcgagag acagcggctg agatcaggtg cgtgcagcgt 1500

gcgcctctcc tggtcgtcac gcgcgcgctt gcagcagccg atcagccgtc caactccgat 1560

cctaccaaaa cctcgctctc catcaaagct ggcatcgtct tccgctccgt ctcatcgacc 1620

agcccaagcg gccggcgcct cctttgatta gttacgtttc ttatctcctc ctcccgcgac 1680

gttgttttcg gccgcggatt tggttccggc atccgcaaac atgctccgca tactgtgtgg 1740

gacagtcgga aagggaaact gtcgtcgccg ccgagagggt gcgtgaacct acctacctac 1800

tataccccgc ttgcttagcc atcatgcatg agcatgatcc tgtattcctg tgtgtgtgcg 1860

cgcgtgctcg ttgcgaccaa caagctactg gcatctatat ggatccgcgc gcgtgggagc 1920

cacacactga ccgatgcttt tgttttgcca acagcgacag gtgtggtgtg gatgtatcga 1980

tccacagtac tcctccgaca tctgcgggag ctggggattg agacaggtgt gtgctggaag 2040

cctggaatgc aatggaaggc tgccgctgga gaggactata gtacgcaccc tgctgaaagc 2100

gcatgccttt tatgtttgat cttaatttcg tgacaagcta gggctaggag gccctgtcaa 2160

ccaaccaaat caggactcaa ctccactcgc cagaacatgc cgggggggagg gcgatgtctc 2220

gcgcccagcc ccaccggacg ccggcctcca gacggggaca gcggctcgga cgacgggtcc 2280

tgctgctcgc catacagcac acacatgcat gcatgcgcgc ctagctcgcg gcgagagagc 2340

cagcagcggc gacgacgacg acgacgacac aagggcatcg gtatcacagt atcactgcac 2400

acagatatgg ccgcgcggag cctgggtcac gcacgtgtac gtacagccaa atccccgcga 2460

gatacgcaca gggcgaagct accacgtaac gtgacgacgt cgcgtcggaa cgtgcccggc 2520

cggccggcgc ccgcgccatc ctcggctcct cgcgcacagg gcccggcaag cgacacctga 2580

gcgggagata cggaggaaga caccaaataa agcttcctat ctcctcgcgt tatcgtcgct 2640

tctcgagcgg cgccgatcgt acgcgcgaga gaccgaccga cctgggggct gggcggccgt 2700

catctggcca gccagagcca gacacgcgcg cgttgacgag acggggtacc gaaccgatcg 2760

atcgcccgcg gccggccgtt gctgcatcgc ctcgccgtgt acgtggacgc tagcgcgcga 2820

tcaggttaac gttgaggcgg cggcggcacg cgcaggggtg ccgtgccgtc tgccgacacg 2880

gccatcacat ggccatgcat gggtgccgcg gccgggtggg ccggcggtag cactgggcgt 2940

ttgcccggcc ccggctacgt cgttggagcc tggagggcgg gcggcggcgg gccgcggatg 3000

gccggccccg gccccctcca aactgaacac gacgatcaga gggatcgaga agcaggtcat 3060

cagaacgatt ggacggaagg atctgtgcgg gtcatgctcg ccagcttggg ccgtttgagg 3120

tgactgcatt gaataggaat ggaacgtgcg tggccgcgct cttggcggtt gctgcttcag 3180

agttcagacc aacggcaacg gtataccaac cactaaactc taaaacttaa acctactttt 3240

ggtcttcaca ccttcatgct aacttttttt tttcaacgta atatatagtg gaacaaagtt 3300

ccggcttcat ccc 3313

<210> 2797
<211> 1455
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32522_G1, chr1:199498926..199500380, Cluster 16

<220>
<221> modified_base
<222> (696)..(696)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (696)..(795)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (697)..(697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (698)..(698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (699)..(699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (700)..(700)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (701)..(701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (702)..(702)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (703)..(703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (704)..(704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (705)..(705)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (706)..(706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (707)..(707)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (708)..(708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (709)..(709)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (710)..(710)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (711)..(711)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (712)..(712)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (713)..(713)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (714)..(714)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (715)..(715)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (716)..(716)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (717)..(717)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (718)..(718)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (719)..(719)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (720)..(720)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (721)..(721)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (722)..(722)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (723)..(723)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (724)..(724)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (725)..(725)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (726)..(726)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (727)..(727)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (728)..(728)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (729)..(729)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (730)..(730)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (731)..(731)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (732)..(732)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (733)..(733)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (734)..(734)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (735)..(735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (736)..(736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (737)..(737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (738)..(738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (739)..(739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (740)..(740)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (741)..(741)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (742)..(742)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (743)..(743)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (744)..(744)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (745)..(745)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (746)..(746)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (747)..(747)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (748)..(748)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (749)..(749)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (750)..(750)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (751)..(751)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (752)..(752)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (753)..(753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (754)..(754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (755)..(755)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (756)..(756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (757)..(757)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (758)..(758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (759)..(759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (760)..(760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (761)..(761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (762)..(762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (763)..(763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (764)..(764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (765)..(765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (766)..(766)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (767)..(767)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (768)..(768)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (769)..(769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (770)..(770)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (771)..(771)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (772)..(772)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (773)..(773)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (774)..(774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (775)..(775)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (776)..(776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (777)..(777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (778)..(778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (779)..(779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (780)..(780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (781)..(781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (782)..(782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (783)..(783)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (784)..(784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (785)..(785)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (786)..(786)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (787)..(787)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (788)..(788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (789)..(789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<400> 2797
attacaaaca gggcccttca atataccatc taccttaggc tcttctttga gccaccgtat 60

catttagcgg ttattgttat ttttctgaag aatctacaac ggtggttttg agagggtaga 120

gatttggttg cctttgcctc catatgacac ccctggcttg cgacgatgac gtgtctgttt 180

cccttggctc ttgttgtgta attaaccaca aaacccgagc aaacgtgtat atatatagcc 240

ccgtgctata tataacaaac tcttttgttt gttcttcctc actttcgctt tcaaaaacaa 300

aaaggcttta gcactctctg tctctcgtgg actggtcaat tgatcttatc aacggtgaag 360

gaagttgggt aacccaataa aaaaataaat tactcggaaa tttgccgcgc cattcgcaga 420

actaagaaac tcccgcgcgt tgtggcggac attaggaagt ggaatgccgg acacgatgtt 480

gaagctacaa cattacctgt aatatgcttg tcgaccttgt tacgccaaaa aaaaacaaca 540

gatcaaaaga ttagcacccc gctccctact ttttttatcc caagctgcgg tataaaccca 600

ggcccgtctt aacctttagt gcctttgttt gggttcacgt taatttcccg gtgggattag 660

ggtgggtcag tattatggtt agtccaaatt cctatnnnnn nnnnnnnnnn nnnnnnnnnn 720

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 780

nnnnnnnnnn nnnnnctccc aggccccccga ccaatgctca cagcgaagta cagtactggg 840

agcccccagc gtgctgccgg tgcatgtcac cgtcgaccgc ccgccccacc ccaccccacc 900

cctgcttcca tcaaagttgg cagcaagcag tgacagcttt ggaggagaag tctgccgctg 960

cgctcagcca tttcaaatcc aaccaacggt cgcgatacga cgacgagcag ccacgaccag 1020

agccgcccgc ccggcgcccg cacgcaaggg cgccaggacc accgccaccg gcacgcaagg 1080

gctcggtgac gcgtcgctgt tccgccacag gccgtggctc cgctttccgc gacgccgccg 1140

cattgaatcg agagggcgcg cccggtcggt cgcagtcccc tccccgacgc acaaggcaca 1200

gcccaaacct gtctctctca gcgctcacat gacatggagg ccagcgcagg gcgagttcca 1260

gtgagaaacg cgctgcgccc tggcggccct gcacgcgcgc agccgccagc cgcacaggcg 1320

gcagcggcag tggaggagca gggcgggcac cgggcaagga cacgaccgcg tggcgtggct 1380

cacgaggcca gccagcccgg ccgccggcag ccggcagcgc gcgcgtgcgt gcgtgcgcgc 1440

gctcgctttg cctca 1455

<210> 2798
<211> 2166
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325682_G1, chr10:6375124..6377289, Cluster 16

<400> 2798
aaaccctact ttagacgatt ttaaatgatc cgacaaagtt cgagaacatg tttttctggt 60

tttatgagtt cgatgtatgt cgatcgacgg tacagcctga cacacggtta tggttgctct 120

aattttcgtg ctagctagct gctgaacact ctaagcaata ctactcctaa tctaatgttt 180

ggtcagagtg gatcgggtcg agccgcatga atgcatgcag ttgggagacg gagagagacg 240

agagagagag aggcgagagc cccgcccgca tgcaggcagc gagtagagta atggcgtgcg 300

gcgcgagcgc gacgcaatgc gttgcgttgc gcggtgcagc ccagcccagc ccaggccgac 360

gatcggtggt tgcgtgctgc ggcgtcacat gaatttagta gcggcagcta gctagcggac 420

gtacggattc atttcggcag ccggccgctc gccgatcgtc tctctgcgtt tcgggcggca 480

tgcatctgcc atgatcctcc tgtgcctgta catgcagcta gcgcgccata atgccaacta 540

gctagcagta tgcctccagg cttcagcttc tgccctgcgc ctgcgcgcgc ggtttaaaag 600

ccacctgctg acttgctcag tacactccag tctcactcac cactcagcag ctgtgcggga 660

tggatgcgaa gatatggatg gatgggaaga tagatgccaa acgggccgag cccaacctgg 720

tacagcacca gcccaaaaga gcctcccgtt gctccaaatg tgttgtgtgt gtgttttttt 780

atagcgcaat caatttagac acacagaaaa aaatactctc agctctacga tcgagatcac 840

catgagatgc agtttctaac tccttgagca cttctcttga ttcccaacat cattcatcca 900

cctgggaatc acaggaccac cgcctcatct cgccgccctc tcgcccttat tgacctccga 960

aatcgtttcc ttcagcaaaa ccatttttt ggaagggtcc ctccgagcac acaaaactgt 1020

ccaattctac gccaaaatca ctacccttgt gtacaagtat gtacatacgt acgcttgcag 1080

ccaactctcc gaaacggccg aagaccattt ctaattaagc tctcttccac aaacttttca 1140

aagttccatt catgaaagca taatatccaa tggtattcac tcctacacaa atgattttat 1200

atccgtttct attgaagttt ttgtaagtga ttccacatag caactctgga accccatggt 1260

gctcgtggtg ggttccattc caaattctaa atctaatacg ttagctgcag agtgctgccc 1320

acgcacacac gtcgccgtcg tttcgaagat ctatggatgg gaataataat ggatatagcg 1380

gccggcgagt gcgtgcgtgc gtgattgcaa atgaaactgc tcacactcac accgccgatg 1440

gcgcacgtac gtgcgtgcat gcgtagacga gagtggcaca cgtaccaatg gcggcgcgtc 1500

gtcacgacct ctctctgcca cccacggccc acgggcagct cgctcgcatt gacgccaaat 1560

tgcccacgct ctaaccgtaa ccgtctaacg taataatgcg tgtggacgtg tggtcagtta 1620

gcgtttgagg cccattggag aagcccagca ggccagaacc gcgcaaggcc ccggccgcgg 1680

taattaaacc tggttggcac cgttatagtt ggccgaaagg ttggaggtcc ggcagaacgg 1740

cccacggacg aggctttttt gctcggcccg tttgtgtggt gtaggaccgt gcctgagctg 1800

catcctcgat atatatggcc ccataaacag aaagcccact tcatatatag agagagtgag 1860

cttttcgaaa catctttaaa atcaaccgaa tgacagatat atagtaacaa tgttaaaatt 1920

tattgtattg aataaatata agtaaataaa ttatagaaaa aaattttcat gataaaaaaa 1980

cgagagactt gtttcctaga aaatctactc gaaattaggg catatgcgag cgaccgtgac 2040

tggctgcctg ctacaggttg cgtcgtatac atgagggtga ccggagcacc gttgcacatg 2100

atcctacaga gccgcaccgt gcatatcata caggatggtt acagatacag cgcgcgggtg 2160

tgctgc 2166

<210> 2799
<211> 1471
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_340077_G1, chr10:93819543..93821013, Cluster 16

<400> 2799
gacggtgaca gtacgcatcg aatatatgcg tgcattattc ttgatggact tttatccatt 60

gtcgtttctg ctgcaatgca atgcaatgca agctgctgca cacacgcaga gaacgacctt 120

gcctacactc ctgcttcgtt cctgctgccc atgcatgcat gcatttcgct cagcttcctc 180

tcccgacccg aggcatatgc aatgcaatgc aggctggccg ccgcgccatc ttttgaggcg 240

tacggagtac gtccatattc catgcagaga gaggcttcgc tttccattgc tgggatcgag 300

gcttcctgca tgacctccag acgacagcag ctgcatcggc tcgggggcg ggggacgggc 360

cgggggcca tgccatgcat gcagcatgca tgaagcatga tggatggacg acgggccata 420

aattcaattg tggttttttt ttccgctgtc gagatcgaat taatttttc tactgttttt 480

attcgttttc ttttcttttc ttttcttttt gtttgttcgt ggaaaacctc atcatgtatc 540

ttcagtgcgc tccctatcag cagcgacaga ttatctcagc agtcagcaca gcacagcacc 600

gtacagaacc atcaccacct aataactgag atgggctcaa ttatttaaag ttcaacgcaa 660

ggcccattaa taactaggta ctagcatggg gaaccaaatt accagggcat gcatgtgaca 720

ctgacattcg tggggccgcc atgtcgctaa ctagctttgc actactgtcg cccggcgggc 780

cgttagttac tagctagcta gctcttttca aaattcaaat acatctatct acatttttt 840

tttgaaaatc ctctaccacg tgcagtgcac gtacacgtac ccaacggcgg cacgaaataa 900

aaaaaaggag ctttattacg tgtcacacat cccatcatcg acccatcgtc ccggcccggc 960

ccggccgatc cccatgcact gcacggtaca tgaaacatgc atgagccagg aataaaagcg 1020

ttgacacgga tggatggggg cttcacatgc atgcatgcac gtacgtttgc atttattgca 1080

ttattactcg ctttaggcaa aagcaaagca tgcacatgtt ctcgtacacg cgtacgcatc 1140

gtcatcgtcg tcacgagtct agtttgctag ctagctactt gcctgctggc cggtccgtcc 1200

cagttccgat ccaaacttga attcacatac tctctctctc tcctaataaa ttagtacgta 1260

tataccaatc tgttcacgtc atcatcacgt acgaagatag tcttctgctg cgtgcgcacg 1320

catattatgc acgtgtgtaa cacgacaagc gatggaggaa tcatcactcg tgtgcatgca 1380

tgcatgtgac gcatcgttcg ctctgcccac gtaacaacca catgtaaagt cgtcggatgc 1440

aggcatgtct agcttacatg atgataacta c 1471

<210> 2800
<211> 1900
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345130_G1, chr10:121749070..121750969, Cluster 16

<400> 2800
ttacgaagtc ttgtgagttg tctggtactt gcagtaatca agtgtttggt tttgaaaaga 60

atgttgtacg tgcaacaaac ttgcagtagt actagtagtg aaccccgtat tccttttcac 120

ataacaggta gttaatcaaa tgaagaaaga gaatacgaga gagaatttat ctattgttca 180

aatgaagcat actatatgac tatatatatc ttgcagattt gttaaaacat gaagagggga 240

gttaagatat cgcctttatt tttcaaaata cccataaaaa agaaggcttt cttcttctat 300

atatatatct ccttccggga ctactacagt taataagcaa tctggagtct ggactcgtat 360

agttttatga tgtccacata tgtcctactt aacttaattt gacagtaagt aagctatatt 420

atagtagcgt tttttgtttg tttgtttaac aatggacctc cacccctgt caacgaattc 480

tgggtacgcg ccggcctgct agctgaggcg tgcggccacg ggagagagag agaggaagcg 540

ccatgcatca tgcatgcatg catgcgctgc tgcaccgaga aaaaacactc cgagtccgag 600

atgacgacga cgacgcgcgc ggcgcgccct agtaagtagt aactgcgagg cccgggcggc 660

gcttctgaga gtgagagcca agctacccac ccagccagct gccagccata aatatgcaac 720

gagccacgcc ccgccgcgcc attgctttcc ctcgcgcaca ggcgtgcgtg cgatcgagct 780

agcacggcct tcatacgccc acatctactg ctatctatct tccgtcgcgc cctcgtcatt 840

gtcgcgcgcg tgtcggcatc gtcttggtgc atgcccagcc gatttcctgc ccgggccggc 900

cggccggccc gagggttgtt catccatgtg aatccaaccg gggatcctgt gatctatcga 960

tcgcccgccc ggcgcatgca tccatccagt tatttatggc cacctggacc aagctctgat 1020

gcgcctgcgc atgcctgtgt cctattaagg ctattatata cccgcatgca agcacaagcg 1080

tcccctccca agtcccaact cccaactccc aactctgatc gctgggtagc tttgctagca 1140

gctgtgtttg gtctctctct ttcattctcc tcggcatatt gtgtttcttg ccgttctact 1200

agctcgtcga accaccacag agcacctact accaggaaag cgaggaataa tgagaatgcg 1260

cgagtcctct gctagttgcg ggatatggcg ggctccaact ccgtcagccc cagcagcagc 1320

agcagcggtc gtgttggtgt tcctgctgct catcgtcagt tcgtcgtcgt cgcacgtcgt 1380

tgccgacgac ggcgccagaa cgacgacacc acgtgagttg atgcatgatt atatctgagc 1440

tgtaggctgt agctacttaa tttatttttt tgattcctct gtcggttcac cttccatgca 1500

tgttccagaa cttggaaaag cttgcacaaa cttcacttgc agcagtgtcg atcggtccga 1560

cgtactgtag cgtgtagagt acatgcgcag cgcagtaagt actgacgtgt caggtcgacg 1620

tggcgcgcct cccgttacca tcagagatgg catgacacag cacatgtgcc atccgaacga 1680

cgacacacgc tgacgacgtt cttttcttgt tgttgttcct atgtatgtat attgcataca 1740

gctgcctgtg taactgaaaa caaccacacg caggtgacca cgccgccctg ctccacgcgg 1800

aggcatcggc tgctgctggt gctcacgcga gcagcggcag cagcagggca acctactaca 1860

gaccagcggg ccggagtgag gacgggtcgc cgtcggtggt 1900

<210> 2801
<211> 2127
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3455_G1, chr1:17886383..17888509, Cluster 16

<400> 2801
ggccccggca cccacccact ctagaaaacc tgcagtgctg cgaatatgcg tgcgcctatg 60

gcgaaatttt ggcctttgtt ctttcggcct tgggcgatgg gcagcttatt cccgccgact 120

ttatacctca cctcgatcgc aaaaaaggaa agaggcgccg tctacttact gggtaccacg 180

aagagtagtg cagtggttga ttaattaaga acggtagatt ctactgaaat taccagtggt 240

aaaataaaag tacgttctac cgaaattacc actctgcaaa ttaaccaccg cgctcgttct 300

ctcttactct attattttag ctcgacggag acgcgtcaag ctagggcgag gctgaggaga 360

ttccctacat agactagtga ggaatcactc ttcctccctc ctgttggtgg ttcacacgtc 420

gcgtacggtg gagacaagac atccaggccc agccgccgct acctgacgtc ggttggaatt 480

cggtgtcaag gtcggagttg gagttggagt tgggaacatc gatcagctgc gtgttagttg 540

ttgctgctgg cttgcatttt cggccctcgg caacaaggat tcggaggatt cggagcggga 600

gcagtacgag ctgttgctgc gagctgttgt cggcaacaag gattcggagc ggcagcgatg 660

gaatcgatcg agtccggaaa ggctggccca agcacgagtt gagttgtgca cagtatggct 720

ggcacagcta tcaggccgct acagtagcag ggggttgtag tgcagtgtag gtgccgtgtc 780

gccgtggcgg gacgctggag atcgatggag atggacggac ggcagacgat ccatcctaaa 840

aagtgtagga gtagcaaaga ttccaagtct accgtgacca ccacttgcac ttgcacgttc 900

tcgttcacta ccccattcgt gaattcgtcg tatgcatgca tatggctggc tccgtcccat 960

ttatctccag cgagaggtac cctccctgat ttggctttgg gggtgtgcca ttgcccattg 1020

ccatatgctg ctccccgtcg gccggtttaa ttaccttctc cattgctatc atatcgctac 1080

acagtcacac acactctcgt gctatatact ctatatatgc accaacttct gtttgtgtat 1140

acatgcatgc agtgacgact gacgaataat ctagctacaa acgttgcaag aagaggctac 1200

aataatagag aaggattcca tagtcaccaa ctcgatcaat aaaactgact agagtagtag 1260

cgaggacacg gcgatcgcgg cggttcatac actacgcgat gtcgacagca atggtggggt 1320

ggtgcatgcc tttggaatta ataactacca cagaagaaga aggatccatc caaaaggcgc 1380

aaccccgaac accttcacta caaaagcgtc catgcatgca tggtaacaac acagagcatc 1440

cattcctcca aacccagctc agcctaacaa attaaaccgc gtgcagtttg tgctcaggtt 1500

cccaacaaaa gcatcccgac agcatgcatg gtacgccgct agcttcatct tcacacggtg 1560

tggccaccac atgggcacct ccgtccatcc gctctcactg atgaaagtga agcgtcgtct 1620

ccccttgagg cgcctttctg tgccatgcta gctgctccat gcatctctgt ggcgagataa 1680

catcccatcc ttttgcaatc tgcatgccca atacatcggc atggaacaga acatgcagat 1740

gattccagta gatgcattca ctattaattt tctcttcaaa tcacacacat tattgtctct 1800

tgtctttccg tattccaaaa ctggatgaaa agagtttggt cgatcttgca caaacttggt 1860

ttatacgaca ctcgaagaac aagtggttaa attaaagccc tgtttgtaag ctcagggtct 1920

gtttggttat ttatttttc aatacaatac tatagtattt gagaatactg tagtgttcta 1980

gaacaagatg tggttattaa ttagttgaac tttgtaaaac actgttctga ataccttagt 2040

atagccaaaa ctgtgttatt actatttatt attttgttgt cacgtacaaa agtgtgatgt 2100

gtgaagtgta gaccattgta ttctaaa 2127

<210> 2802
<211> 1690
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345796_G1, chr10:125947702..125949391, Cluster 16

<400> 2802
cgccgtgagg acctctactc ctactgctat gggggcaagg atcagcatcg gcgcgcgagg 60

aggtgctcgt gcaggatgga ctggcaaaca acccaaggcc caggtgcagg cgacccaacg 120

ccacagcatt cgggcctgag tggatccatc gtgtgagcaa ctagcgagtc gcctgcgtgc 180

ggctatttag gcgaaaacgc tggcccaacg atcggagtac taagaaaaat gggccggtgt 240

ggagcagagt agcttcgggg gccggagttc actgaacggt tacggagcct gaaacgtccg 300

cgagccgaac gttctgccag ctccgcaaag ccacgcaccg gtgctgtact gtgcactgaa 360

cgtgtgtacg aaggaacaga acgactagga gcaaagcaac agcggctggc gggaaggaca 420

ggcgggcatc tcttggggtg tgggggact cgggagtgtg tgagagtgcc gtcagtgcat 480

cgacgggcgc ggcgcaccag gcctcgtgtc gagggctctg cccgccatcg tccggctccg 540

tggtctggac gaccccggcc ccgatctcga tgaagccgcg cccgtgcgcc acctcggtct 600

cctccacggc acgtaccacg cgcggcgcga ccgaccgcac acgtcggtcc ctggctccct 660

tcctccgcga ggctgccacc gtgccacggc atccaccacc acgtctcgct ctcgtctgtg 720

ccagcctcgg caaggccgcc accgccaacg tccggttccc gggttcggtg catttcggct 780

gtggctcatc tcgccgggac cgagaccggg accaggagca cgaccgcgtc tcggttgcgt 840

ttctttaacc gcttgctgta cggccgctcg tggaggcctt cgggcctcgg gtgccgcgcg 900

tgccgggggc gacgcaagtc ttcggttttt cacttgcccg ggcgtcgtcc tccgagtccg 960

accgagttgt ttgaggcttg gagttcgagc acacaaatca cagtctggta cgggtcgaca 1020

tccatatcta ccagcgggat gctgatggct ggacggcgaa ggggaacgaa cggatccggc 1080

cgaccacggc tcacccggag acgtacacgc tttacagatg gacgttcaac gccgtacgag 1140

tacgacgacg acacgtctaa aactggaacg gctccggaaa ggcaacgttt ccgttacgaa 1200

gccgcggccg cgccatgcca tgccattgcc acgcgcccac gccggcgcga ggtggggcag 1260

aggcgcagag cgcggcgaaa ccggtggggg cagtcaaaag cctaatcgcc gttctgcccg 1320

gagcctccgc ggcgccccag gcgatccatg tgatgtgatc gctgctgttg agcaccaaaa 1380

gtggcagctg cccgcttgct ttccgctctc tgcaagggcg cggataggag caacctttt 1440

gtctggtgac tggtggtacg ggcgtacggc tgggctgccg cgcccgccga tgtgaacagg 1500

aggaggagcg ccggtaacaa cgacgacgcg gtatgtgtat tttttgtgcg gcgatttcgc 1560

ggcgcgttca gcttcagcaa atcctgctaa aaacggagat gatcaccatt cgccctggct 1620

gaacctctga atatgggaga agtatatgtt gccccttcct acaaataaat tgggttaaat 1680

gtaggatagt 1690

<210> 2803
<211> 1580
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348274_G1, chr10:139322829..139324408, Cluster 16

<400> 2803
aaaagttggt gtcgatccct gctttcgcaa cgtacagtgt actaacaaaa taaagaaaga 60

aagaaggacg aaaggctaga tcattaagcg tgtgtttctg caaatcagag cgttttactc 120

gcgccgttat tacaaagtaa catgcatggc tatacatgtt gaacacacga agcgtaagct 180

gagcgacaat aaggtgcaca aacgcatcgg cgcagcatgt gcggtgcgca atccttcctc 240

gtcttctaga acgaaggctg cccgcgtggc atatatatgg cataagcgat tctgtttcac 300

agtgatgagg ccgtctggcc gtgcccgtgc ttgcatcatc gacgatgtga cagcaggagc 360

gttcagctcg gccttttgtt tacaaaaaaa aaaaaaaggt aagcataaca tgtcccttgt 420

tgccgcggcc gaatcattgt gctagcctca cgcatatcat tggacatgtt ggccttttaa 480

caacgctggg ggttaccagc acagcaccta gcagtagcag caagatccgc gatctgtcac 540

agagcttttt atatggctta tccccccatc ccatggcaat tggcatcaca gccccgcgct 600

ccatgacctc cttgctcgcc ggccaaccat catcgctgct cactacgggg gtacggggtg 660

ggtgcatcca tgcatgcatg ctttgttaat ataaacgctt tccgtttttc tgcactgcac 720

gtctgcagtc tgcacacaca cgcacacaca caaacaccgt ggcattggcg tcgaaagcgg 780

cgaccgcgtc ctccttccta gattcagtgc actggcatgg cgccaccgtg catgccggct 840

gcccttgccc gtcgccgttg tttaatcggc gcgatctttt gcgtggatcc cgtcgcggat 900

cctgccgagc cgtgcttgga acttggaaga cagcgcgaga tgatcgggcc aaggcgcacg 960

ggtttggtcc ggtgggggga gccgggagcg ggcaggcgca tcgtcgtcgt gtccatgata 1020

cgttggacct accatttcgg agccggcgta cgtggtggtg ccccggccgc cggcggtccc 1080

gtcaccgccg agggccacgg tacggtcgga tctggccgcc cagtttcttt ctagtcccag 1140

ctgagctgcg tttaatttgc tgcccatggg cggggcctcc atgggacgcg gcacgatggc 1200

cggatggggg ggcacgggct gacattggga cagctcattt ggggtgcggc cgtgcgtgcg 1260

gaagtctgag acgtcgtcag acgtgggcgc agggcgcgtg agttgtgtga cgcgtgtacg 1320

acgacgcgac ggtggttgat ggaatgaaac gctcatgggc cccgacgccc tggcatcatc 1380

acacatccgt taggtctctg ctctgctccg gagtatgctt ttgtcggggg aatcggagat 1440

tacactttaa acatttgcca tgccagatta gtttctctat gatggaggca attggctctt 1500

tttaagcaac gcctacctaa catacttact atagttaaca ttttaccaat gattcgttta 1560

aaaaagatca ttgttttaaa 1580

<210> 2804
<211> 2074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348351_G1, chr10:139741755..139743828, Cluster 16

<400> 2804
ctccagcgaa caaagccaga tcggcggggc aaagcatttc cgaaacggtc cacgacgacg 60

acagtgaaga ccatatcagc aacagggaaa gtccggccta tgtgacgcct tctctgactg 120

actcggttgg ttggttttgg tttgttcttc ttccctttgg gctcgggcgc tctcgccttt 180

ccgtctgcct gcccacggga ccacgcctgt tggattggat ccaaggcgaa cgtctcgctg 240

cgtcgccacg cgtcctctcg tcctctgtcg cctgccgaga gagactgtag cgactctgac 300

gacgtgacgg gagctgtgcc agcctttgcc ccggaaacag cacaagccta ccttgcctgg 360

gcaggcaggc ctatcggttc cttgtagcct gtcgtatcgt ggagagaggg agggcgtggc 420

tggcgtgagc gcgcgaaagg ctagaagaag aaggggcagg taggggtggg cattaggttg 480

tcggttccgt ttttagatta tggatggaat ttggttgacg gaaaatagaa ttaattaatt 540

ccaaaaaaaa tttagcaacc gaatatttcg attttcagtt aatataaaaa atttaatatg 600

tacattttaa ccgaattaat tgaattttcc agctgaagtt aatataataa aaaaaacatc 660

gatggaggtg caggaatgga tggtcacgca gactggagac tggacatgcc aggcaggatt 720

cctgcttggc tggctcgtgg gggtcctgaa tcaggatgct gccagtagac ggctccgttg 780

ccgcgacggc gtcacatacg tgggagtggg atctgccatt ggctccggca gaccgctccg 840

cttctccgga ggacgcgacg attcggacgg gctgcagcct gcctgcctgc ttggcccaac 900

aaatctccac atgtttttaa gtactactag ccatcatcat cgataataaa gggaaaaggg 960

tggggcctgg ttaatcacgc tcggctcgaa ctaggaccgt gcccgtgcgg ctcgctgctg 1020

cctgcgacgc aatgatcgtg agttggtgat ggcgccacga ttaaaggccg ctttggctta 1080

cgatacgatg gacagtttcc gtcgtggaag acgggagcca tcattcctga tgacacccat 1140

ttgatgagcg atcctcactg gcctgcctcg gtgcgtccca aaggcgtcgt tgcgcctggc 1200

gcaagcgaca ggcaaatcga ggccagctcg cgcgctaatg agtgtagtag ccagagcacc 1260

acccactgcc gagtattctg ctccccggac ctgaaaccat gcgtgagagg agcgcccacc 1320

tcgtttggtc ccacgggctt tgcctgatcc atcaccatgc gttgtagtag caatatgtta 1380

ccctttcagc aaagccgccg agctattagt acagctaatc ttggaactgc tttgctgcag 1440

gatcctacta tgctcgcttc gagttggcca gagacttgta tttggactct cccttccctg 1500

aaccctgaat cgtacatgtt ccccggcttg agaggcgccc cagacaagtg ccatcttttt 1560

tttcaatttt ttttttgttg cgacaatcag ctactctgca caaagcggta agaagacagg 1620

ggacaggagc tagccatggc atccaccgat ccaccgaaat gcggtgcggt ggctcatgca 1680

aggctgacga cgaccctgac gacgcaaaat ctgtcctagt atagcatctc ggtctctcgg 1740

ttttgttttg gtgtcatgca aggctgacct ccacctccct catcgctttg tggcgacgtc 1800

aaaaggcaac aaggggacat gaacatggcc gctgatccga ctgtatactg tatccgtccc 1860

aaactcccaa ccacccccaa tacgtctcat acaccgccgc cgcgcaccgc caaacttccg 1920

ttcgtgtttc ttacgagcta aaaggaccgt ttcgacgttt cgtggccttg ttcagcctgg 1980

cccaagcgct cagtgcttct tttgtggaaa gggcaagccc tcttcggcca ccttttctac 2040

gtgcccagta agcccagtct aacttcagtt cgac 2074

<210> 2805
<211> 1671
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348413_G1, chr10:140044939..140046609, Cluster 16

<400> 2805
gcgtctccga ctgtcaccgt cgatggcgtg ccttgcccct gagagagaac ctttcccttc 60

ggcagttagc ggttgttaga ttccgcaggt tattacacag caaaagaggc cggctcgccg 120

acgaacaaaa agtcgtcgtg gagtgagacg gcagacgcat gcatgcgttc catacttcca 180

ttccgtcctg cgtttgttaa acattctctg gtgtggcaac cgagatggta acatcctctc 240

gcagctagta gtggtttggt tcgcacgtcg gcgtcgagcg agcggcttag ataaacgcgg 300

attgagagct gtgagacatg tcacatgtct cgccggtgca gtgcgttgcg tcaggcacga 360

gcgtttttca gctgcgttgg gcgtcagcga cgacgacgga cggacggacg gacggcgagc 420

acgatccacc actcgccttt gcgctaacga cccagcagca gcgacggtca aatcacggtt 480

actgtttgtg cctgcttgat tttgctagct agcttctcgt acacgaatct cctccccgcc 540

gctcgcgttc ataagcattt atccgttcat acacggtctt cgcgggtaac caagcaacgt 600

cagcattcag cagcatgcag tgtggaaaaa aaagaattca gggtaatcgt cgacagacga 660

caatgccggc cgccttcgtg ccatcattgc atgctgaaac tgaaatacaa atccatgcat 720

gtacggcact gagaagtacg tgtacgtggc catacgtagt acgcgcgtgc agaggtatta 780

ttagttctct tgatctcgga gacaacgggg cggggaaatg tatttcggga tgaaattata 840

tgtatacata tatatttttt ttagaaaagg gaaacattat ttatatattc cagcggtaga 900

tgcatgcatg tggctgttca aacttacaaa acagctggtt cgcctcgatc tgaaacgaaa 960

aatctcacat acagaaaaaa aaaggtttat aaatttaagc attcaataca gagggaggtc 1020

tttaaaaatt tatatattat ttacatacag ataaaggttt atatagaggc cttaatcata 1080

acatggttca cttttcgacg gatcattcac acgagacgag acatccggaa aaaaaaacac 1140

ctttcagttg aactccccgt ttcctctctg gaaagtaaaa ataaatactg taacactgaa 1200

aagcaagtgc ataggcaacg agacgacgtg tctagcttgg agctacaagc aacctaaaaa 1260

aaaggtcaag cgagttcgtt ttaccttccg cataaaaaaa tggttccgtc gtcatagcct 1320

ctgaaacggc cgcgcgagct gagatcaggc aggtttttgg gagagtctcg aatcagaaga 1380

atgactcaaa tgataagttg atgatccgct catacccttt tggacagtca atggcttcaa 1440

acctcgggca acccttttac tgacggacct aactactact tacaggcaag agtggtgagt 1500

ggtggtgaca tggctgctaa tgtgtgaggg atcatcactc atcagggccg ggacgccaga 1560

agtcatggat gggtgaggtc atggggtttg tttggtctgc aggagttgta atcgatgccg 1620

ttacatgctc gccggtgatt gtactctgta gactgtactc ctgcagtctg c 1671

<210> 2806
<211> 1428
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41089_G1, chr1:243653252..243654679, Cluster 16

<400> 2806
actgacacgt acttgagcta gtatcggttc taaatcaacc ggtgaaaaaa acctctttct 60

acagtagtga acctagcttg actgattcta ccaaattcta attgcacttg ctcaatgtca 120

cttgttgcat caactgcaga tatatataca agctcatgtt taattccttc atttacatgc 180

gattatcata tattgttatt agctgttatt agaatttagc gtttgctgta tatagcatta 240

atcgctgtct atgatctact aacttgacat taatccgcta tttacagcgt gtctataaga 300

gaagatgaaa gtcttatcgg aaggaggtat agtacgtaca cgagattttg catgtcgtgg 360

gtttattaat tagctgacac tgacctgaac atatagatgc gtgctagata acacagacag 420

tacaacgtac gcagcgctgg ctgctagcta gtgtacctga cgtgcagggt actcgacctg 480

ggtacgtaca gcacgcagcg gactgactag cgtcgtagca cgtacgcaca gaaaaccagc 540

tagctaggac gtggttgctg tgcgcgcttg gcccttgcta gcttcaaggc tcacgtaacg 600

aggagtacgt gctgggtgag tgtgcgtgtg cgtgcgtgca aattactacc tatatacgcc 660

ggcccgtgcg gccgtcgccg tcgccgtcgt ctatccattt gtgcacgtac cacgcgtact 720

tgtactctct tggggcgcca cttgcaacca tgcattgcgc tgtagtaccc caccggggcc 780

ggacagccac gacgtgacgt ggccggggac agccctggcc atgcccatac ctctgcaata 840

caaccctcgc tctcgttgca gctttagccg tcctatggct acgtacgggc gcgctatgag 900

aacttgggaa ggtgtacctt gctattgcta gtgtgctacg caacgacgca agcctgtgca 960

gcctgtcgtc gtatgggtac tctactgcca gaacctttgg tcgattctcg tagtgcccgg 1020

cgggtagggg cagcgcattg ctatactata ctgggtgcgc catgccatga gctgcggcca 1080

tggaagcggg ccccggcagg cggtttcttt tgagctgtat gtacgggtcg ccacgtacgt 1140

gtagcggcgc gcaggctata gtttaccgac gaacaggatt gatgcagtgt gtagcaccgc 1200

cgccttagct tgtagtgcat ggccgagatg atgagcacac ccgctaccca gacagtagtc 1260

tctctctacc tagctaccga tcgagacgag tatttcagta gttgcccaat gctcacacag 1320

aacgaaacat ctatttcaag ggcaaaaaga aaagaagctt ccattcatcc ttgtatgtac 1380

aaaattgctg tctttacctc ctcctcctcc tcctcctcct cctcatca 1428

<210> 2807
<211> 3421
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4447_G1, chr1:23114556..23117976, Cluster 16

<400> 2807
ccgatcgagc tggcagaggc gatcgaggct aaggtggtgt gtggtactgg tagctagcga 60

aagcaatggc gaccgacctg gcgaaggggg ggagtacccg tgtctgtgtg tgtgtgtgtg 120

gtggctccgg ccaccggggg gacgtactgc tccagcacaa gatctctctg gccaattctt 180

taaagcgtcg ggggagcggc atgtgcgcgg cgagtacttg tgtccgcgcg aggccccatg 240

gctccggtgc acggttgcgg taagatacaa agcggcgaca ggcgccgtgc tgcgtaactg 300

cgacccgctg cctgcctgcc tgccagccag cgcgccctgc gctccaccgc gccgcgcggc 360

atgctcgccc gcctgcccgg ccctcccgcg ctccattggc cgtcgccagc ggccaaagtg 420

ctcggccctc ggcccggcag cggcagctcg atccgtgcgc cgccacctgc cgcgacgccc 480

ggcgccgagg ccgatccgtc ccagtctctc cagcgagccc cgtcagctgc cagagctccg 540

tcctgttttc tttggcgaaa ccagcactca cattcaaaga ccgatgatcg atatttttac 600

accgaatacc gatgtaccac ccctcgcggc ctcacctcac ctcacgcccc ccacatctca 660

cgggtagcgc ccgacttcaa aattgcatgt tgcgtttgca gccttgcagg aagtggtaag 720

catctttcgt tatgcccgct actacagctg agaacatact cctgcagccg ctccgctgct 780

gtacctgtac tatgcccata cccatctatc tgacatcttg ttggtgaggg gaatatatac 840

atactatggt gatgtgtgca tatttatata tggtgacctg atgatccctt ttttttgtt 900

gtggttgttg tgttcctcgc acgcacacgc actgcccttt tatcctcctc tctttctgga 960

ttgcccccca aaaggacggt cgggtgcatg catgcacgca ggagttcgta aaagtaaatt 1020

cggagcgcag gagtcaacgg gaaacaagag cagagctgta gggcgcactg catagtctgc 1080

atgcactagt gccgttcgcg tgatgtgctc gcacctcgca ggcatggtca ctctcagaac 1140

cagggtgggc taacgctaat gagcgcgatc gacgagacta gacgggagta caagacggga 1200

cgacggagcg gtgggcggtt tccgcaagaa cgcaacagct atccaacggc cccgtggcgt 1260

cagaatggac ggggggcgcg ggattgttcg catcgcgcgc atgctacgtg caccagctag 1320

gcgccccggc tgtactgccg gccggcctcg ccgcgctggc gatgacggtg cgcgcgcgcc 1380

tgcagtcatc gtcgatcgat ccatccatcc ctctccgccg taccgcgtcg cgcaccggga 1440

tctgtgcgcc gtctgctcgg atgcgattcc cccctgcttg gtgcttgcta cactagacgt 1500

ctagaccgct agtactgact gcacgtctgc gtccggattt tgctgatagg gctgcgtggc 1560

tactcaagcc tacttggatg aaacaatgaa gcgtggcgta cggcagtagc tgaaactaac 1620

gctgacgagg cgcgtacagt acaggcacgt actactgtat atgaggcggc agtcactgtg 1680

ctttttggta atcctgctac ctcttccgga gcagtaatca ctagtagtca ctaacccctc 1740

ccacgcccac ggtgacttga ctggtcgttg ctgacctgtc atctcggagg attgagtccc 1800

cgaatggggg cggggcacgg taaataaggc cgggctgcgc ggctgccgct gcccccgtct 1860

ttatcgcaga tggcgccgga ggcagccagc ggcgctgtcc gtgaatctga ggacacggtt 1920

gttactcggc ttcatttact ccgccagcgc gctggccgcg tgtgtgcgtg cccgcgctca 1980

agcggcagga ggaggcgccg gacggacgga cggagggcag ccagccagac cctgagcgca 2040

tgtgccacta gtgccgccgc tgctgcagag gctgctgtct gtgtgtgttg cctgcacgcg 2100

tcgtaccact agcgagcagg agtatttata cgaccagctc acacatactg ctgctgggcc 2160

tgggcgttga atcgccctgt tgatatgatg cgatacgatc cagcgcggcg tagtgtgtgt 2220

gtgtgtgcag tgtattcaag tgaaggtcgt gcctggccat acacccaccc aggccagccg 2280

ccgcggctat agctagctag ctctcgctgc cgccgccgat ctcggcagca cggcatcagc 2340

ctatgatatg atgatggggg cggggcgtgt atgccgtatc cggcagcgat cgttaaatgc 2400

gcggacggat ggagccgttc ttgcacagcg cgacaagatt cccgccaacg cttcgagttc 2460

acggcgcgta cgttggcact tggcacacgc gtcccttgga tccgtcctgc aggtccagtg 2520

gtagtaatat aggcaggctg catccatagt aggccgccga gcactaaaat atgacagaca 2580

gagtcaatcc ctgtccccta caagcggaaa aaccagcccg gttgcgcaac gcgtgcatgt 2640

acgacaggat tggatcagca tcatcatcag ctgctgcgga tggatgcaga gtgacagtgt 2700

gtcactcggg ccgtcagata tatagcaggg aggcgctaac tttgcatacg cttgtgtaaa 2760

ctctgtctga agctgacgat aatgtcactg ggaatctggg atggtaagcg aagaagcaag 2820

gtccagttgg agcgctcgct cagtcccgcc caattttctc gaggaccaaa acgcccgacc 2880

aactgaatct gaaagtttcg gagacagttt tgcaaagcct tctggggaag ggacattata 2940

gtttgatcca gccagcgata cctttcgtga tagcgatacg tcgtttcccc tgcggtgcgt 3000

gcggcctatc caaaccgcgg acagaatcat ctcaggcgca ctgaagaggc acagacgcat 3060

cccaatcgcg gagatgagca atctgtctgc tcggcacaga gcgagcatgg aagacgcatg 3120

accggtgccc tcgctctcct ccaggcggcg gccaggccag gccagcccat catgccgagt 3180

ggcatggcaa ggcgtcgcct tcttcttctt ctttttttta tctgcgggcc tggggcgtgg 3240

tggtgtgtat ggacatggaa tcaaaagcgt ccctgcttgc ttgcgaaccc atcatccggt 3300

tctgatgtcc acatgggcgt atccatctat ccaaggaaaa tcgtcctgtc tgtctgtcat 3360

cactacaccc ggcactgtga acgcagtgct cacctagtcc ccctacaata cctgaattgg 3420

c 3421

<210> 2808
<211> 1539
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44933_G1, chr1:263608055..263609593, Cluster 16

<400> 2808
ttgtacaacc atcattgtcg gcataaggca aaacctgata atggtaaact atatttatcg 60

cactgtctgc tcaagccaca attaaagccg cagtgaaatg tcactatcga ctgaaacaag 120

cagcagacag tgatagtttc agtgtcactg cagtcgatcg gttcatggct taaactatta 180

ttagtgatat ttcactgccg atttatggac tgagccggcg cgcgacgatg acatgaacct 240

tcactgctgg tttgtaagaa ctgctaatca ttttttaga tttttaatct aagaatcggc 300

gcggcgaagt ttattcatgg cggttccaaa cacagctgac gaggcaacag tataacagta 360

gcgtagcagt tactcgcatg agaactagga caaggctacc cgaggcaggc atctggtttt 420

accataaacg gggccagcaa agcggcacga gcgagaagag aatccaggcc ggccggggaa 480

gaccccgcag cgcagcaccc cttggatttt ccgcggtgac tgaggatgag gaggaggggg 540

cgtctaccgc cgtgccccac ccccatctca accgcgctgg tgcacagatt aaccgtgcca 600

cggcggcgac ggtacgttcg tgccgcctgc cggcgtgtct ttctggacac ttgcctgccg 660

cccggcccac cgcgggcgcg gggaccggca gaagcgctgc ccccgccggc tggcctcggt 720

ccgctgcggc ctcgccccgg ccctccgcgc tgcagtggcc ccgcacgtac gcccgccccg 780

gctccgctcg actggctggc agccgagtca aaaagcctcg gtctggccgg cgtagtggac 840

ggaccaatta ttggggccgg ccgtgctaca caggcacagg cgcacaggcg ctacgacgac 900

gaggtactaa ctacaccggg tacgtgtgct cataccgagc cacccaccca cactggcccg 960

gccgccagcc ttgccgcgag ttgccgcctg ccttgctgct gctgctgctg cctccgtcgc 1020

tagccgctag tactacaagg aagtcctttg ttggcttggc tggctcggtg cctttcttct 1080

ctcctggcga gtacggccgg cggggcagtg gcttggcttg cctttggccc ccagctctgc 1140

tgctagctcc tgcgcctgcg cgacacagca gaggcaccga gggagggagc gggtggactg 1200

cagaagcgag aggggacggc gtgcatgcat tgcatgcgct ggtgcgcgca caccgcctgc 1260

cgtgtgcact gcatcagcgc ggcggggaca gggccgcgct tgtcttcttg cgctggcgtc 1320

cgattatttg tgcgggacgg atcaggggg ggacagggtt tgctactgct ttgtcatctg 1380

tcatgtccta ctactacata ctcactcgcc atgcatgtat atctgctgct acaattactg 1440

agtccttcaa gaggggatag ttcggttaaa atctctaata atccgggagg atccaagttg 1500

taggagacta gaagaggttt tgacttgtat agagggtaa 1539

<210> 2809
<211> 2454
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47509_G1, chr1:278503565..278506018, Cluster 16

<400> 2809
taacaacaga gttgtagtta gtagagtaga gcagttccaa acacagtcta atactcacag 60

agtttgtagc tcacccgaag cgcaatgcaa catgacaaag agcatgacct agacggtggc 120

gctccgtctg ccacccatac taggagccac gtgcgccagt gcgcattggt tcaacatatt 180

tgttctaact agtagtcttc atgactattg taagcatttg tctttttta aaaaaacttt 240

gaagggtctt ttctatcggt cagtaacgta aacacagact aaatagccta cattaatttt 300

ggttggtact atgaactcgg actaagtagt ctagattttc agtctaccaa acgatattag 360

agatcctctg atgagttaat tagtttttaa aaatatctta cctaacgata tgtattagga 420

taaaaaaact ataggcaaca taatatatta aatatatgag atcttgagtt caagtccatg 480

aaccatactg gcaggaaagt ttttaacttt tttttagcct tgccgaaatt aaacccgtta 540

tcagaccggc actaaagctt gtttcccgcg tacaggagat ctgatgtcca ccgggaaggc 600

cggaacaaga acaagtgggc agcatctggg cgggccagcg ccaagcaagg ctccagacga 660

gagagttggt tgctttcact gacagagggg cgacactgcg acagtgccgc tgccagcaac 720

cggacgccag tagagagacg gacgtgtcct gcgaggctgc gacacgagcg cacacggaga 780

tacgagacac tgcccgtggg ccccgcgcgc agggaccatg ggctggagct tcctgtcctg 840

cggttgccat ccctggccat caatgcgagc gtgagctcct cgtcctcgtc ctcctcgcgc 900

caggcggaca ggccgttctg ggtagctggt cgctgctgca gtgtgtttgt agtttacgcg 960

cagcgcaggc atgggctggg cgcagggcca gggcgagacg aagcataacg tagtgcagga 1020

gcctactaca ggccaagaca tggacgcccg gtctcttgca cagtaaagca cgaggctgca 1080

cgctgcacta gtttggactt tggagactcc tgccgtcctg cgtgcggcag tgcacatctg 1140

aggatggttt ttctttctcg ttttccagca ccttatttat ttttatctcc tactttaaat 1200

ctgctggcca gttgtctgtg aattgctata tattatacga atagatttta ttttaataag 1260

acaaaaaata tatatgtaca ttctattgta taggtggtgt aaatgttaag ctaacaacta 1320

aggttcaaac tcttatttgt gcatatattt tttttgtaat aggcagaaaa ggtgccgcgt 1380

gatgatgtgc tctatatata atagagacta tgtgaatagt gctctctaca cataaatgtt 1440

tcaaatagta tgttgcgcga tctagatcta ctattcatag ccttacaagt aacaatgtag 1500

ccgctgctgt ctctcctccc tttattattt accattacca ttcctagtta cttagcatcg 1560

ttttttttgct ataaaaatat actgcatgca caaaaataaa cactgacgtg tgtgcacaca 1620

tacacagtga cacactcacc catacgaaca aaagcacaaa tatatctatc atatgttcac 1680

ttttgaagca ttaaaagagt taccatatac atcttgttat ccacggacat gtatgacata 1740

tcgtctaata cttaaaaaaa tagcaccact aatttaaacg caaacataga acatacggac 1800

ctttttatat caaaccgatt gcttgaatcc gagtagtcat aataatgact gctaccgaca 1860

gttactactc ccagcagaaa atcagtaatt taagttcaaa aggctcacac aaatccccct 1920

cccgtgccgc cgtgtggccc cccactttcc agtcagcgtg gttaagctaa gcccagatga 1980

tgatgtagta gtagtagtac gtgcggccgc ctttattcgt tcccgcaatt tgctcctggg 2040

cgagcctatg aatgcgagtg acgtcccttg ggctcgaagc atacgtaccg ctgtccgctg 2100

ggacccctgc cattagtgcg acggaacgca accgaaagga tctctagtag tagtaggagt 2160

attttgtact agagtattcc gaagttccaa ccgagccgat cgcttgggga ttgggattgg 2220

gagtggactg actgcagggc cagccgccat cccacgaccg tcggatactc ggacagggca 2280

cgcaaacaga cgggacggcg gagccgcgga gggagggttt gggtttggaa cttggatcct 2340

ccacttccac tcccctcccc tgtcctggtc gcgaatcccg cgcccggatg gacgacccag 2400

atcacactgg aatattctgc cagttgatta gcgtgtggtg gccgtgcagc agca 2454

<210> 2810
<211> 3787
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47812_G1, chr1:279772070..279775856, Cluster 16

<400> 2810
ttagcttcgt ttttgttttt gacagcggtg gaagtgaaat cgactcccgc tattttaccc 60

ggctctgccg tctatacgtg gcgaggtgtc ggggcggcga ttggcatctt ggaactccca 120

agttgcactg gcccactgct ggcagcgtac ctcgcgcgat ctgccggccc atctatatac 180

ggctcgtccg atccagaggt catctgcgcg cgcgcgctga tcgtcttttt taggacgaca 240

atgcatggtg atcgtcattt acaagcaaat gtatgtactc caactttgat aaagtcagga 300

tacccaagtc gtcggaaaag tacactccac tagctagcta ctacatatat gtaacagatt 360

ttccatacga tacgcacggt aggtctagtt gaaaggtgtc gacgtccgat cggttccgcg 420

gcaaatgcgc cgtatatcat cgtgacccga aattaagctc aaccttaatt agcggcccga 480

ccaagccgcg tgccgcacgt tcccatcttc acaccgagag atcgatggag cgaaagcgag 540

cgtccgtcca gccgcccgcg gcccgccggg agggaattga attgaacgca cacgacgtag 600

tgcacggcac gccccaccgg ccggggcgac gacgtcgtcc gaccacatac gaccgacccc 660

agcgcggcgg ccgctagctt tgacggcgac gcggcccgcg ccgaccgcgc acagcccatg 720

cccggcagca accaccggcc ggtcggcgct cgtaccactg tcgcggtgtc gtcgctcgct 780

ggccgatcgc attgcactcc gttaattgtt ggacgacgcg cgcgcgcata cagcatgcat 840

gttgttccgc cgtactgtgc atcacgacgc gcgactgcgc cacccgcgga cacgcacgca 900

cgcatattgg caggcgcggc ggtatacaag ttccgggacc ataacagatc gatggagccc 960

ggccgtacgt ggtgccggtt ggccggccgg cgggccggga cggcgtacgg tacgcgcgcg 1020

cgagaggtgc gccggccggt atggaggcca cgcgcgccaa aattaagggc cgtttgcgtt 1080

tggtcgccgt ccggccgtgt gtacctgtcc tccgtagcga gcgaactccg tcaacgcgga 1140

gcacgcgcgc cacttcgcat tgtcctccat atgcatcttg catgacagta gctaggacgt 1200

ggatatatgc atgcatatgc atgggcttcc ttgttccttc ctctattcta aacgtgcccc 1260

caataacaca attatgttac tgcccgctgc ttcgaccttt cgagtccatt gtccatctga 1320

tctttcttct tcgtgctaga tggcggaccg gaggtgtgag tttactaggg gttaggtgta 1380

gtagcaattt ggcagcttgc cacgccatgc agcctagtat atctagctta ttatctctag 1440

ctaggctata cgtctacata tctagctatg gctagcttgc gattactttg actaaacacc 1500

caaatggaat cgttcgtttc gacgcacgct gctagcctct tcgattccca tgcagcagac 1560

gcaacgtgat aaaattcgat ctcatctcat ctcgtcgtcg tcgtcagcac tgcatatagt 1620

gtcattattc gacgagagag aaaccaaacc gagagaggtg gcaccggcac gcatacccaa 1680

tcccaccaag aacacagaaa atactcgcga cgggttcgtg tcccccacga tcaccgccca 1740

tctgccgact ggcgccgcgc cccctgatac tgtattgctc ctgtccaagg atcgaccggc 1800

acgcccgtga cagccctgtc cgagacgccg ggacaaatcg gatcggatca cttgccaggc 1860

ctggtacagt gcgatggttc atgcatttgc cctagttccc cgtagcctag ggttcaggaa 1920

tcaaaggagc acacaataca gtgagctagt actatactag gagcatgccg cagtagtact 1980

ccctgctggc gtcgtctgac cgtccccagc actcagtccc agcttaattt gctaaaagaa 2040

acgtgcaacc gaaaactgac cgacatgtgt tactggcgtg tatctgttcc gaccgaccga 2100

gccccacaag acgtgggtgt catctactgt cattaactcc cgatgccatc ctcgtcggag 2160

ttaatgtgta aaggcattag cggcaaaccg gcagatcgat cgatgatgga cgataatcac 2220

ggttctgaaa ttagtgtctc ctcgctattt tgaccttgga tcactacagt ttctatatat 2280

aatatacagt ttctttgtac aacagaaaca aatatgaatt gtagtggtta aagacgactg 2340

catattagtg caaatcgaca taatacatgg ggtagaaggc gcatattcat tttgttattg 2400

tggaagcaga catgatcaat gatgaagagt ggacaatatt ggcgatgaga ttatgttatt 2460

gaacgaatcg aggagattga tttagatggt ttagcataaa gccaacacta tggatgcatg 2520

atgaccatgt tcaaagtaca tgggggaacc atgcaaatag attgacaaat accatgcatg 2580

ttgacgacac aatgacatag ttgaggacac cgttggcagt gatgaaaatg caacagtacg 2640

cggagaaggc tatgagtgac aatgttgctg tgtgtaaagt tatgtagtag aaattattag 2700

cgcctcacaa gtatcctcat ttttacttaa ggtattaagt aagcaacatg gtgatgcgat 2760

attcaagcta aggactagag gagggagaat gaaatggatt tttatacgag aaactatgtt 2820

gacatgggaa ccaaaataga agtgtgatcc taccaccttt gtctacaaag gaatgcaatt 2880

tctagatgca ttctcggttg aaatgtccaa agtttaagca aatatatagg taaaaatatt 2940

aatatttatg gtgcttacat tataaaaaca tatctcataa caaaactaac aatacttatt 3000

tgatactata atatgtatat agtcagttag ttaaacttga gatacgtaac ttggtattta 3060

tagaaactat caactataat acaaacatta tacttgctct tagcttctaa ctcaccatat 3120

tttggcaagt ataagtaccc caaaataaca taattcaatc atgcgggcag ctaccccaaa 3180

ataacataat tcaagcatga tagtttctat aaaatggagc aagtataatg ataagcaagt 3240

ataagtataa tttgatacta tactatgtat atagtcagtt agttagttaa acttgagata 3300

cgtaagcttg cacattggca gtaccacccc aaaataacat aattcaagca tgcctcgagc 3360

cacttaaaag ggtaatcttt tgcgcgcttc tccatgccaa ctgtggagtc aaacctaaac 3420

ttgcccggaa cacatctctc cactggacca gacgatccac tggcagtcca ttaacgcgga 3480

tttggtctgg gctaaacccc tctgccgcga gattagctgt acattaatcc tagattaacg 3540

caagcctgct tccctgcctg cctatactgt cacccggtgc ttacatgtga cttggtattt 3600

gcgcccttcc ttgggggtca tatggcccat gtgatgtttt gaagcttgag agcagctact 3660

agctagtagg gccctgcaca tttccggcac gacagcagtg gccgtacgtc cctctcgtgt 3720

ctggtaactc cataacggtt tttctggtga gcctgctgac aaaacaaacg agcaggacca 3780

aacgatt 3787

<210> 2811
<211> 1967
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49369_G1, chr1:286403537..286405503, Cluster 16

<220>
<221> modified_base

<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (870)..(969)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (891)..(891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (892)..(892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (893)..(893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (894)..(894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (911)..(911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (912)..(912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (921)..(921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (922)..(922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (923)..(923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (924)..(924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (925)..(925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (926)..(926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (928)..(928)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (929)..(929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (930)..(930)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (931)..(931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (932)..(932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (933)..(933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (934)..(934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (935)..(935)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (936)..(936)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (937)..(937)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (938)..(938)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (939)..(939)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (940)..(940)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (941)..(941)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (942)..(942)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (943)..(943)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (944)..(944)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (945)..(945)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (946)..(946)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (947)..(947)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (948)..(948)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (949)..(949)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (950)..(950)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (951)..(951)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (952)..(952)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (953)..(953)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (954)..(954)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (955)..(955)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (956)..(956)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (957)..(957)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (958)..(958)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (959)..(959)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (960)..(960)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (961)..(961)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (962)..(962)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (963)..(963)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (964)..(964)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (965)..(965)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (966)..(966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (967)..(967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (968)..(968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (969)..(969)
<223> a, c, g, or t

<400> 2811
aaggcgggcg tgtggtacct tctcgtacag tacggtgaat tgcgcaggcc cattattgat 60

tatttttact acagagctcg ctgtaacaca gcagtctgcc ccgagtataa ctggggtggg 120

gtaggcagct ttttgccggc tcgctgcagc ctgcaggtcg aaaagaaagc ttccacgcat 180

acataccact catgtagtac gtgccagtgc cgcgacaaag cccgacaccg gacatgtttt 240

gacacatggg cgcgtctgac acacgcgcgc gcgcggaata ttgatgcgtg agctgtacat 300

gtcgttaagt aagccacaca ccacacagga tctgctcaga ttttttttct cacacgaata 360

aaataaaaag tagctggaat taagatggtt aaaagagcct ggtgcgtgtt aaaacttttt 420

aacctactag ctagtactct agctacctct gccagtgtgg ggtatatata cgtgcccatg 480

taaatacagc gagagcccaa caaataccac ccgtaacgca gggcggcagt acaactcgtg 540

tagtgctgga aggagcaaga tggtgcagtg cagtgtttca agtgagctag ctgtctcgac 600

ttgactacag ctagcttaac tgacactctt tgggtccggt cagaaggcag gcatgcatgc 660

ttagctggcg aacctatatc cggcacgctt cctcaatagg aaaaggtcgt cagagttagt 720

gaccactgtg agcaacgagc tagctactct cggttagctg gctgcctccg ttttttttatt 780

ccatggcata agaggtaatt atgttatatg aatcagtcat ctaacaatta gctattatta 840

gctgggatta acgcgcgaga tagtaaaatn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 900

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 960

nnnnnnnnna ctttctcgat cgagaggaga ggaggcatac acgatgcgtt tgtgtttgtt 1020

atagctgcac tgcatgctgg gcgccgatca gcagccgggc acagccacag cggggtccag 1080

tatacggtcg agcgacgccg cagcaagagc caaacagcga gcgagggagg agcatgctgc 1140

gtgcatgcga gtgcgtgccc gtgtcccgtg gtgcggcacg gcaagggcat cggcatcgaa 1200

tcacgtgagg gtgacgagga tcctgagcgc cggtgccggg tgggcgatcc cagaatcccc 1260

gcgcggcacg tgcccaccca cccacccacc cacccgtgct tacgcagttc cgtcccacgt 1320

gacgcccgcg cccccaacta gtagagctta gccagaaccc acgagcgcat aattagtttg 1380

tagttaacta atcccgcggc caacccggct ctccgtccgg cgccacctcg gcaacggcat 1440

agccaaggta aagtcattcg ctggcagctg gcgcccctaa taatccttca cttccctgca 1500

aaattaaacc agtgtagtag tactgcagga aaactgacac tggcacggcg ccgcgcgcgc 1560

ggcggggaga ggggagccgc atacgctggc tgtgaatgtg atgcatggcg ctgttgctcg 1620

atcgaggctg cggcccgggc cccgggatca ggcgcgggtg cctactctgc aatgtgtcgg 1680

ttggaaactt cgcaaggctg attaaccttg tgatctaaac attactagtt catttatgga 1740

tcaaacgtgc aattttgtag ggaaaatccc ccaccccaaa atcggggatc tggctggtcg 1800

ggcgctcaca gcctcacacg tacgtacgta agcgcgccaa atataaacga cgaaaaacgt 1860

agacgactat gcatggcacg cgcgaaacgt aagtacgtac gtgcgtgccg tgcgcacagc 1920

atgttgatcg gatgcacggg gcatgcgcag cggcgtgcat gcatgcg 1967

<210> 2812
<211> 1582
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49478_G1, chr1:286993021..286994602, Cluster 16

<400> 2812
tgcgtggcgt gggtggatag atctgaaatg accatggcca gacgaaaaac tcacgtacag 60

aaatgaaata aattaaaggc gtccgtggag ttggaccgta ccgatgcttt ggatgtgaag 120

ctccacatgg atggatgcat ggacggacga ccgggatgag tagacggccg gccggcagag 180

gccggtgcgg tactagtggc cagtgggctg caccggccac cggcctgcgc tctgctgcag 240

catgcgtttc tgcaggctgc tagctgcttt tgatttgcag ctgcaggggt actctctagc 300

catttgcatt gccttgttta agacctcgga cggcgactgc atgtggacgt acgcagctgt 360

ttttgatcca catcgctgtc gcgctcgccc ttgtgcgtac catgcatata tacgtacgta 420

cgcggggttt tataacgagg aggttggcag ttttgcagct agcggagtgt acgtgcatgg 480

acgttactat attatttatt agtagagggt agagcgaatc gtatacgtat gtgtatatac 540

tgtggcacgt acgtactacg ctgctaggtg ctgcatgccg gcatggcgtt gcaatccgtg 600

ccagtgccac cagagcacgg ggaggacgtc cagaaactat taactgcaga tgccccgcct 660

gcccagtctc ctgctcgtcc ctgccactgc actctcagct acagtatgta gtagtaggag 720

tacgtgcgag cgagcagccc agagacggat cggcagcatt cccgtggccg tggacggcat 780

gcatggtgtg tccagtaatg gagcccggtg acggcacgtg tattacgtac gcgtgcgtgt 840

gtttacgtgc tgcatggaac tgtgcgtgcg gtactagtgc agtcgtgcac gcgtacgcac 900

ggttatatac gtatgttcag cgcacgcgtg catggcagcg cgatcaatgc atggtttgct 960

tcatgtatgt atatatgtac gtacgtacac gtcaccgttc acgtgccctt gcccctgccc 1020

ctgcccctgc ccgatacgac ggcggcgggc aggccagatg ccctacgccg tgccgccgat 1080

cggatccgtg tccctgcctc atccctggcc tcgagtcacg cgtcgtcccg gagggcggag 1140

gcacgcacgc agggcatctg catgctacgg tacgggtgtg tatatatata tgcatggccg 1200

tacgttgtgc cgcgcgcggt gaaggcgtcc gcgtgcgcgg caccatgcac gcgctgcgct 1260

actacagtgt gcaaggccgt tgcttgctgc agcacacagt actctccgat cgatctggcc 1320

atgcgtgcat gcatgtcggg gcgagcatta ttcaaggcac acgcgtctgc cccatattca 1380

aggcacaccg caccatcgta tgctcacaag tcttgtacat tgaacttcgt cttccgtttg 1440

ttcctcgcag agtctttttt ttttctttgc ggactggaaa gtgcactgtt ggagacatca 1500

gacatggcac gagatataca cgtactatac agggagttgc tcgatcgccc tgtttgtact 1560

actccgttta ctaggccctc tc 1582

<210> 2813
<211> 1460
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50941_G1, chr1:295883584..295885043, Cluster 16

<400> 2813
ggtcaacaac cccgtgtcta gggaaattat gaaggaaagt gattagggcc tttcgtcccc 60

tcgaggcaca atggcactta gttgatcggt tccctttgct ggcctgggtc tctaatgccc 120

ctggcttcac gtgatatgaa cagctggttg caatttgtaa gtttgtagaa gatatatata 180

gattattcaa tccctgttgc aatttgatgc aggtcctctt attaacagcg tggcgtgccc 240

ccgtgtgatc ctgcatgcat tgccgtcgtc gtactacgtc ggtcgaacac cacgtcaagg 300

catccacggc gcagcccaca cacgcgcacg ccgcccatgc ggttgacacg acggcgtagt 360

agtctcgcat gtagaagaag tcgccgccgc cgtcgtaaag cggtccaggt tcagctccgt 420

ggcggtacat cacgcgatcc tcaactggcc gccaatttct gtggacaaca acacgtacca 480

cgaccatgct gggggccggt cggcaacgac acgggcattc actgtcgcct tgccgccgtc 540

gaagacgaag taggaactaa gaagagaatc caaaccacag cacgcctgca gaggctgcca 600

gaatcccacg tatgtaatgt acgtctgagg ctggcttgga cttggacgga gcacgatgct 660

gccgtagaag aagcactacg gtatcgccga agtgtgcgcg cgaacctcct ctcctctcct 720

ctccagcagt ggcggcggcg gggcacctgc tgcagtgcag atccggtgga tgcacgccac 780

gcctcgcaca tgccgcgctg tcggccccga acgtgtgctg cactgcactg ctctgctgcg 840

tcgtggctcg tgcggtacca taccacacac gactttacct gtctggcaga cgacatgcca 900

ccatgcacga tgcaccacac acgcctttgc tttgctttgc tttgcttcga ttcccaccca 960

cggccacggg caaaggaagg agccgcagca ggcattgcag cacgtgtacc aacacccacc 1020

tctacatgtg ccctagctag cttgcgttcg ttgttcattg tcttgttgac tgccagtgcc 1080

aggcgccata tatcagcggc aagagcaagg aacgaaccag ctagcttaat tcggtgtgtc 1140

ccacccaaat ggagatgatg gatacggtgg agagagcgct gcagtgtagt acgtagtagt 1200

gtgtggcagt agcagcagct agctagctag ctacggtagg tgagacgttc agtcaggtcc 1260

aagcatacga ctgtctgtct gtctgtctgt ctgtcttgcc atccaccacg catccggtcg 1320

tctccgctct ccgtctccgg tgcgctagct gctgcgagcc tgctctacct gcttgctgtt 1380

gctggtggta tcacgacgtg gacgcacgta ccactctcct cacagcacag gtccgcctga 1440

ctactatact agcgacgacc 1460

<210> 2814
<211> 2038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51281_G1, chr1:298275220..298277257, Cluster 16

<400> 2814
gatgattgac ggtgaagaag atgaagactg ggcgcaagct tcagatggcg tcgatgatct 60

agagaagcag agaaaaggat ggcacgagag aaacgtttga gtacagagta gtattatggg 120

ccccaacggg ctatgtaaaa gagtcatgag ttggcccatg taatcggttc tcaaatgctt 180

ataagcgcgc gatgctgaaa gagacaacaa gaaatagaat gagaaaccaa ttccccccttg 240

tgttgtgtgc tagcagcttc tcctaattct tctattcgtc tggccttctc ttcccaccac 300

gataaccgat gcaaacactc tccccgacga ggacggggcc ttgatccaag cgaactcgtc 360

aggcaagtta catgtgcaca tcgtccacat caatggagcc ggagctcccc aatccaacaa 420

ggccagccag ggtacccatg aatgaagtcc acgtcggctc ggtcaacagc taaccaaccg 480

ggattggcct gaagattgcc aagtctgacc acagacacga accctaattt gtaatttgtt 540

atgtcttcca tctatttctc ttcttcttct tcttcagctc gccagaacga agtcagcagt 600

ctgtctgtct gtcactttcg tttctttcac gttccctttt gagtttgaac tttgaagcca 660

cgccaatcca cataatagga tctgggcaag ctagcaccaa taatccacat aaattaatag 720

gatcttggca acgcacaaaa aatataatga tagaagtgcc ggctatattt tggtcattat 780

ggttttaccg aaatggtgtt gttttaacaa taaacaaata ccgtttatta tgcaggttaa 840

cctagtatat agtagttcag attttggaga ttgatgcaaa taataaacga tgtttgtctc 900

tttggagatg gtggctatgg ctatggagat tttggaaatt gatagaagca cactagtgag 960

tgtgacccca aaccaattat ctaaaatctc atcttaatta gtcccaatag gtctggcacc 1020

gtctcttaat ttggcttata tatctcaaca atccatgacg cgagaaacac gagtctctcc 1080

tctaatataa ttacgagcag gctcactgtt tgccagtaac agcagtggca tgcacgagga 1140

aggaaaagga gcgacgacga cgagtagtcg tggctaggat tcgtagctac agcaggggg 1200

ggggggggg gcattggctc tccaggctcc aaagcgttgt ttttgctccg tctagctgct 1260

agtgctgtct tctcttttgt tatccagcga gtccgatccg attcgtgcag tgtgcggact 1320

gagacgcaac ggccgtggaa gccagcacag atagctagcc ttatcttgga aggaatcccc 1380

atggccatgg gtgttcaacc tgatgaccct tatcgcctac caatacgacc atatgctgct 1440

ggctgctatc ttcttcttct tcttcacatg cacacatata tatattcgat atgcctgcca 1500

ccagttgtgc atgcatgcac gagtcaacca atgtgaacaa gtgcatgcaa ataaattccc 1560

tgatgctgtc tacaaagcaa agcaaagcaa atgatctgct agctgttgtc aaaggccaat 1620

attcctttga cgatatggcg aagtcgtctc gtcgcccagg caggggggga gatagatcga 1680

tcgaggggcc tggcctgtac gtgatggctc tccctcctta taaatacata catgcccagg 1740

cgataataat gcagcgcaga tcgatcgatc gatcgcatgg aagtaagagg ccatctttgg 1800

tagccaggga tgatttgcct gtggttcctg tcgttgccat gccaatgcct gtactgttcg 1860

atctacgggc aaatcatccc tgctaccgga gtgtctctta ctcttctctc tagctagcat 1920

gcatggccat caaacaccca aattactgct gctagtggct atgatctagc attatattaa 1980

ttgttggttc agtactgctg cacagacaga ctgtgtctgt gttcataaaa atcaagga 2038

<210> 2815
<211> 1493
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5241_G1, chr1:26915485..26916977, Cluster 16

<400> 2815
taagtgcggc ctcatgcatg tgtgtaatta ataactgtat atatataaac acataatcct 60

tgattccttg ttcgtgtgga aaattttaaa actgttcatc acacaagcga gtctaaacca 120

gcgtacctgt gcgtgtagaa gctagctagc tctccagatc cacagccagc aagcaggggg 180

gggtcgttat atccaggagt ctatggacca aatcatgcta actgcattgt gctagtactt 240

ctgtactagc ttattaacaa gttgtacgta taataaatgg tccgggcaga aagaataata 300

tagttgctaa ttgattcatc aaggctcact tgaccggagg cgcagaagca tacaaatcgt 360

cgtggttggt tacctgtcta gatctcacca ccaccagcac ttgatcatca acaggaggct 420

agccactttc acttgtgcta atcggaaagg gacgtcgttc ctagtcccag ggaaaatgcc 480

accacgcacc cttgggactt gctcttccac ctggtggtgg cggggccata cggaaatgag 540

agagagagag aaacgaacct tgtcagattt tgtccgcaca gtccaattaa ttaatggcgc 600

aaggttcctg cttgtgcaat ttgctcattt catgagggca tgagtagtca tcaccatgca 660

tatgggctgc tgcctattca gtatgcgtag gtactgactc tctttttttt taactgtggg 720

ttacatgcat gtacatgttc ctagggccgg atcgaaacag caacttgcat tgctgatcat 780

taagacaggc atggggccgg ccacgaacat tgctgtgatt tgcattacgt gcccaccgcc 840

tcagcaaaag agagagtgct gcgcccgtga ttggatcgtt ttgtgcatta ttctggcagt 900

ttctcttgta cctatatagc atcgacgata tatgatcggg tcgctagcat atactatcaa 960

atgtttccaa aaaagaaaaa tacacagagc ctggatattg tgctgctagc tagctacggc 1020

cagatgctag ctagcttgca tcatgaaacc tatatatgtt actgaccact gcaggccaag 1080

tgccccccaa gctagctttt gtgtgcaggg aattcatgat cgtacgtgta aactgtgaac 1140

ggtgtgcagt ggctgctttt gcatgcttgc ttgcttgcat gcaacgcctg actcgtatac 1200

gcaattattc ctcccatcat agtaaagcct aacactctcg ctagtagctc tttgcgttct 1260

gcagttccca tccgccatct cgtggcctgt gagtctgtga cacttgttgt gagacatgga 1320

cagacaccat ccgctcagca cacccagacc cagcaggtgc tagctagacg gtggaacaag 1380

gtacttgtct gcagacttca ggcttgcatc aatagactgc ctaatcgtgg gcccacctgc 1440

tttgctagct tacatggcat gtcgtctgtt cattcttcat tttttccctt ttc 1493

<210> 2816
<211> 2031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52564_G1, chr2:4265690..4267720, Cluster 16

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (390)..(489)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (459)..(459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (460)..(460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (461)..(461)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (462)..(462)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (463)..(463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (464)..(464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (465)..(465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (466)..(466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (467)..(467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (468)..(468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (469)..(469)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (470)..(470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (471)..(471)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (472)..(472)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (473)..(473)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (474)..(474)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (475)..(475)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (476)..(476)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (477)..(477)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (478)..(478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (479)..(479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (480)..(480)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (481)..(481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (482)..(482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<400> 2816
gctgactgcc ccttggtctt ggtatcgtat atatagcctt attggtggcg cccggccggc 60

ggcatgcatg ggatggaata gctacgcacg caacgcgctg tgccgtgtcc ctgttgaccg 120

gccggccaac tcccaacagt gttcagtact gcgcggccga tagattgcat gcgattcacc 180

gtgtacgcgt acaccgtaca gcggggaaga aggaaggggg cgaaaaaaaa taaaggaacc 240

agcaggcggt tgggggggag acgcacgcac gcacgcatga aggaaccagc gggcagcctg 300

cagccaggta ccggccgggc gcgcgggcag ggaggcaggc agcaagcgtg cgtgcggtag 360

atttttcatc agcatgcaga ggcagggccn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 480

nnnnnnnnnc ccacgtacaa ttcaagtaat cagattccag ataagtttat cctagactac 540

gcttggagag aaacgtccgt gccttgcaaa tgcgtagacc aagaccaagg gctgtagcga 600

acaggcaact ggagttgccc tctgaacttt aactatattc cgacagtact ctagaagagc 660

cttagcaagt taagtggacc gtcgtacgat cttcgtttac tgtaatggct gacgcgtcgc 720

ctgagtgtag tatagttaat aatagcctta ctgtcagcac ccgcacccct ccccatctgg 780

tattggataa caacgcatac aaagccctct gtcggatccc gtttagcgcg cggcactctc 840

acacacattc aagatatgcg cgggcgatta gtagcatgag attaaccatc gatcgaacca 900

cgtaaagtcg gggaaaaaag aagggggcaa aaaaaaatta aagaaccagc aaggggttgg 960

ggggggacg cctgcacgca agcatgaagg aacccatggg caatcctcac ccccgtgccc 1020

gccgggcgcg cgggcaggga ggcaaaccgc caacgttcct tgcggagatt ttttgtcacg 1080

caacattaac caggaccggt tccggggtcg ggttccggtt gcctttttt tatgagacaa 1140

acggcaaccg ggggggtgtt gtgggtttag caaaaagttt ccccccccc ccccccccc 1200

ctgcggctgc cacctgaaac cgttgtttcg gcggatccgg acgaccgcgc gggccgccgg 1260

catgcatatg catcggaagc agaagcaggc gacgtcgccc ttcgcccctg ccttttgcag 1320

cggcacgaca cgagcgaggg cgcagcgcgt acccaccgcc cgcccgtgcg cctctgcgcg 1380

cctgcccgtg gccggcctac ctgtgggggc caacagtcgc ggctcgctcg agacgtgcca 1440

cggcgcgcgg gccgcgcgcc tcgcttgcgt gctttggatc cgcccgctcg tcgtttcgcc 1500

cgccgtgcct gcgcctgcgc ctgcgcctgc cagcgcgcac gcacgcgtgt acgtacctgc 1560

cggcggcctg cggcgatgcc cgccccggcc gggtgggggc tctgcctgcg gcctgccttt 1620

catggccgct ggcgctggcc gtgtgcgggt acggcgtcgc gcaccgggcc accaccgccc 1680

acccaagcaa agcgcgcgcg attcatcgat cgactgatgg gtgcgggcga ccttcgtggg 1740

ggccacaggc ctacgtttac ctgcctgtac tccgccgggt tgtcgggcag ctagcgcaag 1800

cgcaggccgc tgatcgcgag ccgcgcgcgc ccgccctcct cgccagctta ctaccaccca 1860

tcaacgaaca acgatacccg gcccgccggc ctccaggaca cgtcagtcgt cgcctggtag 1920

tggtagttgg cagagccaaa ttaaattgtt cttggcagat tctctctctc gacaatactt 1980

gagtacggag tagcatacag aatattttaa atatgtttat tataaaatat c 2031

<210> 2817
<211> 1704
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52598_G1, chr2:4343533..4345236, Cluster 16

<400> 2817
gcagctagcc tagctgcgaa ttgaagaaag catttgccat cttctctgct ctatctctga 60

tcctactcgc cacaagtggc accacagcga cgtgtttgtt tcttttctcc attatattgc 120

aacgttgttg cgtgattaga tcagcagcgc cactggacaa tctcgacctg ggtttgtttg 180

ttaatcggcg aatggcctta tgtgtcgcta gcacagtgag cgcttcttcc tttttctttt 240

ctttctttca gtgtttgtgt ttgttaacgc agcaggagga gccccacccc aaccgaagga 300

ttttaaaact tctgttacgg tgcatgcact tggctgacat cttagagctc gctcgctcgc 360

tttcagattt ggtactgtgc attacccagc cagaggcgtc tatgatatcg acgcagatct 420

cgcgactcgc gtgtcatgtt catgtctcat ggctgtacgt actgtcgccg gccggttcct 480

tctcgccatt tttctcacag gccgcagaat atgcagcgca cggacgcacg ggccgcgaaa 540

cttgagaggc agaggagaga aaaccgggca ccgggcgctg ctacgtgccg tgcgcggctg 600

ctaccgcaag gcgcaaggcc gccgggcgcc cggccaagtc gtcgtcggcg ttgcggcggg 660

cgacgtttca atgattggtc gctgctcgtg gatccgctga tgctgtccct ggcgactgcc 720

gtggagactc gcggtcgatg ccggcgactt ctcccgcgct cgtggggcga aatttcccaa 780

atgcgtcgcc gagacgcctc tgcgccctgc cgggtgctgc tgtctgctgt ctctgctgca 840

ccgtcgtgtc gtgtgtcggg acacggatcg gcagctcgtt ttcgattcac aatcattgcc 900

gtgcccatcc gtgcaaactg tcgtcgccgt tgactgaccg accggccggc cgccgacccc 960

atctgagtgg ctgcctgact gactgactgc tctgcacctg cacggtgcaa aagcagcgca 1020

agcctatttt gaccaccaca ccacgcgacc tgacagatga ggaattgcta cactggcgaa 1080

atttcaaaac caaagcccac gttctcaaca tttgctgggt tgggccacca gcacgcttgt 1140

tgtaccttca cgaccccagt tcttctcggg taacatgggc cgcatgtatc ccattagtta 1200

ggcttagctg agtagcaggc cttcttggcc cgttggaccg ttgatgcaga atgcaagcaa 1260

tagcgtatac gagagagaga gacaatctca aatcacactc ctaatagcgg acaaaccaca 1320

ctcctaatcc ggctttgatg gcggtttcac ggcaatataa agagacaatc tcaaagaccc 1380

atctgagcta gcgtgtgtgt gaaaacagcg tgcaactttg gatgtaatct gaaaacgccc 1440

ccacggctgc tacactcgat aagaaaaggg aaacaatgat tgttaggttc ttttgcttat 1500

ctcttctagt aacctcgtac tgcctgagtg tgtgcttacc tcagctacgt gtactcgact 1560

agtaaccagc cgtcgtaggt gagacgatgc atcctgtgca tggcaatgat agattaactt 1620

attctgtttc acgaatgatt ttttttttcca acaaaaatgt gcggagatgc atggtaaagt 1680

actgtatctg tcaaagtgta aaca 1704

<210> 2818
<211> 3646
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52843_G1, chr2:5681146..5684791, Cluster 16

<400> 2818
attgttatcc cgctctcgct cccatttccg gtgaaagaat atggtaacaa aaacggttga 60

gtgtttctcg tccgttcctg ttcgtttata tccctaataa gaagtcgatt aagcttaaga 120

taatttagct ttggctagat ttcagaggca gaaacatgca agaagatggg gtggagaagc 180

cacaactgtt ttgacgagaa gaggcgagca tctagcctag agcacaccac atgactcaag 240

tcgttgctgc actgcaccac cctcggtccc tccctcccgt gaccaaccaa cgcaggcgat 300

ggcaaacgca cagtaacatg aaagcgcttg tcacggaatc tcactttacc cgtgtcccct 360

cccctgtgtc tgtgtgggct cgctcgtttc cgcggtgcgt tgcgctgcgg tgcgtgatcc 420

cattcccacg catatgcgct gcgctgcatc cacgacgggt caaccgagca attactactg 480

ctgaccagtc ccgtgccagt gctgccgagc cgtccagctt tcggccaacg cacgaccagg 540

atcactagag gtccgtagtg ccccctggac tggacacgcg agtcgagtcg agtcgagtcc 600

caggcccagc gtagtcgtag taggggccca gccggccgcc gcagctagcg gcacaggctg 660

aggcgtacgg cgtgcgcacg caggtgacaa ccatccagcc tcgctctgcc cgctgcactg 720

gcttcctggc ttgggttccg cacatcgcac gcacagtgcg cgcacgatcc cggccaggcc 780

accaactccg ccgcactcag ccactggcga acgaacgccg aacggtcgac ggagacgggt 840

cgtgtggatt cgcggcggcc tcccgccggt ttcgggctcg tttttccatc taggccccgt 900

gccgtcccgt ccaggcgtcg cccatcgtgg gggtggtacg gtggtgcttc ttcgtcagtc 960

accgcctgta cggtactacc tacgcctggc ctgggtggaa atgcgcgcga tcgtggtggg 1020

ggccgtcggt gactgtgcga tttgctgctc tgccaatcgc caggtcggaa cggtgagcgg 1080

gcgctcggca taatttgcgg cctgtggcga ccgacgtgtc gtctgcgtac tgcgggagcg 1140

ggcgggcggg cgggcggctc gagctgcggc ttgctccccg ctcccgatgc gcggcgccgg 1200

atggggcaac gcctaaacta ctctcactga cgcgacgtgc cactgccaga atgagcgatc 1260

accgctggcc gtggccggga cgggaacacg gcgctttctt tagggtttca cccgggtccc 1320

gggggccgtg ctgctgctct gctctgctat gctctgctct gctcccgtgc cgtcccgaag 1380

ccgcttgtcg cttgcgttgt tccttgggat gacagcactc tcgtgttaca tttacacacc 1440

catggaccgc ggcacggcac cccgaccgcg gcccgacgtc gtaaaagttg catcacgagg 1500

ccagcgccgt gacgcagcaa ccggcgatga caccactgcc accttgctcg ttaacaccgg 1560

ccggcttgct tgccacttga ttgcggtgga gacgcatgcc tgccttgccg cggcacctcg 1620

agcagccacg ctgcataatc atacatgcac agcccagagg cgagaggcca gagcgcaccg 1680

ccggctgcac ggtttccacc ggcgactgcc cgaccccggc tgcttcctac gccaactgcc 1740

aacagcctga cggcacggtg ctggagcact gcttgccttt ccgagggccc ccgtaccacg 1800

ctacctacga gcctagctgt aactgcacag ctgcctaaca cagtgcagcg gcaactaatc 1860

acacgccggg ccggggcctc aagctaggag cctagctaat ctattctggc tgcctatgcg 1920

tgacatggtc acgaccttca cctgcctgcg tgtcgactat acgatcaatt aacactctaa 1980

aaaaataata ttttatgatg gatggagtat tattttggcc gaacatgata gatacactag 2040

tgtgcactgt attcgttttc ctacgctgcc tctgccctgc ttcccctgtc agcggttgtg 2100

gttgtgacgt gaggtcggac gatggcaact gattcataca tgctaaaatc tatctttaca 2160

tcattgtagc caatagccat gccgtaacag cgaccgggaa gatattggca agccaagttg 2220

cgtctcactt cacttgcagg ttaattgaga ttaggcaggc cggccaaaca gatactgctg 2280

ctgccatcac aaccaggagg actacgggcg aaacgaaacc cgcggcaagc agatgcagat 2340

cagcacttgt gaaccttaga acattcaacg ttcaaatgtg acagtttgct tacaacaggt 2400

ccaggtgcag ccgcatttaa accagtcaag aatctatata gtgccaacga acacctaatg 2460

cgctactggt agccttttt ttttttgaag gtctggtagc cttgttgaaa cgacccctg 2520

gttctaccat ccaatccaag ctactactcc tatagaaaca ggatgatgac gtggaggttt 2580

gggactgctc taataaacta attgttaatt gtgagttagc taacaattag ctagctacgg 2640

tatcagttgg tagtgtttag aacccaacaa gtaattttta gtacctaact attaatttta 2700

gaagttataa agagagcttt agtcctcctc ttgggtcttc acctccactc cactgactac 2760

tgactgacag gtgacaagga gagaaggcta tcacatggag tcaaaagttg agggctaacg 2820

ccgtaggctc gtttatttgc aactgttgac aaatccctga ctgagtccct gaccttgtgg 2880

cgtccgtgca tacatatact cgccgacgcc gtgccctgtt gaagtgctgt gtgtgtgtat 2940

ttgaaggtgg tatacggttc ctcgtggagg catgtgaagt gaaggtgaca acaactcacg 3000

agtgactggc tcttcctcgt gagagggatt actggtacac acatggcatg tggagcgtgg 3060

aggcggccat gccgatgccg atgccgatgc cgtggggaga gagagataga gagagatcga 3120

ttcctcctcg atctctttgg gacggcgacc cggctcgtac aaaaatcgca gagggctcgt 3180

aaaatgaaat gttctctcac agtcacacac actaccgtct gcttccgccc tgctgccgtg 3240

aaagtatgca caactgcaaa gtgaggcttt tcgatcattt ctttcgccag aatttttcgg 3300

tgttctatca acagaggaaa ggaaaggaaa ggaaaagctt gagcacgcag cccgccaatg 3360

gagaagcaac acgaatccgc gcccaggagg ttactcgatt gcctgtgtgt cctatcaacc 3420

ttatatttat aatataatcc agcatggacc atcgggcggg catctatcgc aggggagaac 3480

gaacggacag gccaaggaaa gctacacgca ggtagctggg gataacgtaa acttctctct 3540

ctccccccgt cccccgcctc gtgaaatctg catcatgacg acctcatcat ggcgaccaac 3600

gaaaaccgag tggctccggg gccgactctg cttgcccgag gttcta 3646

<210> 2819
<211> 2458
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52875_G1, chr2:6001189..6003646, Cluster 16

<400> 2819
aacaatttta cacgagtcga tcgagagggg aaccaagggg aaagcatgag cacgtggagc 60

acatggtggc gcgcctagcc tggaaacgga gacggagcat ggtcatgacc tgctgccgcg 120

cctggcgcct ccaatccaaa acaaccatgc caaaagtagc aacaggaaac acgattcagc 180

gatcggggat tcgggaatcg ggggtgcacg tgcacggtgc acctccaaaa atagcaccgg 240

cctattcggt tgcgcatttg catttgcatt tgcatctcga ggcttgctcg gcccagtcct 300

tcgaaccatt gggcccaatc tagagtcaca gggaaaacgg cccttgtttg tctcagctac 360

cggcccttgt ttgcaggtgc ctttggtttg gcatgaaatg gaaatatgca tgggtctccc 420

atctaaagtc taaactgctc cctccgttct cgtttttctt tataaaaaaa aagctaaaat 480

actttgaagt ataaataact aaatatataa aaatagaaca cctattatat cgaataaatc 540

catagtaaac ttgtttaaaa gcacaaaata tctataagtc tggcttcgtt aaatatagat 600

ttattaattt gagacgatgg agtatttagt atttactgaa aaaaacgaaa catagaacag 660

actcagtcaa ctgatctggt ctgtttttt gcccatccgg ctctgaggct ctctgtgctg 720

tgcctccccc gttgcagtca ggcaaggcaa catataataa tgtcacgtat tcagtgagac 780

agtttgattt tccagtttgt cccgagtatt ttaaaccttg aaaaaaaaaa gcaacagcag 840

gttctcaagc cttctctgct cgagaaggat atgtgtgtgt actcgagcag catatatgca 900

ggatgggcgc gcgctgaagg aaaccctttc catccttctt gttccgcgat gcccgggccg 960

ccgctgccac tgccagcctg cgacttgttt ttatataata cattgctcgc ttccgatccg 1020

tcagaacggc gcagtcaggg gcagctagct gggcaatcaa atcatcaaca tcgtcaggtg 1080

gttgtcagcg ttgagccata caaaaaacgc gagcacggac tagtggacta cagtaaagca 1140

ctaaacaaag ccccctcgtg actggccctg gtctggtgac tgtactactg tagatacgcg 1200

tcccaaagca acgcatcatg catgatgcat acatgacgag tcaagatcga ctcaagaccc 1260

ggtcgaaaag ctgtagcggt acgtcacgtc agtaacaatc tctttccgtt acagtggcag 1320

tggaaacgca gctgcatgca tcccattcca ccggcatctc accgtcgtca tgcactcatg 1380

ctcccgtatg ggtatggcgc agtatttttc tacggggccg ccggccttgc gcggtggcgt 1440

agcgtacgcg cggatggcgg tcgacaggca ggtcagcaga cggcacggta cgcccgcccg 1500

cccggactgc cgcccccccgc gcggaccgcg tcgccatcgc cggggtggcg cgcgcgtacc 1560

tcctgcccgt gcgctgtgcc cccctcccgt ccaccagctg gccttgccct aaagatggcc 1620

atttatgaca tggcacggac gtccgtccgt ccgtccgtgg tagggtagac acgatttgag 1680

ggtggtcgat aggtctggta tgatctgtgg aggaaacata catctatcaa cgacccaggc 1740

acggtcctaa agattcccgt gctagctaga cctaaggctc aacactcctt aggctcaaaa 1800

catgttcgat tttagttttt aagaatatat tacaacacat cacacttgtt tattacatca 1860

gagcccaata cattcgcaca tccatatttc agtctcacga tatcacaagg tgatcagtgg 1920

cggctgacga gagaagctta tttgtgatgg tcgaaggtgg gtggcggtgt cagttggcat 1980

cgctctccct gaggatcgcc ggccgaacgg ccgcgcctca ccaacccgtc cgctgatctg 2040

attggaactt tagctactga gaaatgatta gtacgtagtg tgcatgtgca cattacaaag 2100

tcgatggatg aagacgagta agtaactaga tcgagcgggg gcggatcgga gttatcacga 2160

ataaagaaat aataatcata ataaaggcat catgcatgca tgcatgcatg cagtgagagg 2220

cagtcgtcgg cccccgtcgt ccgcggggga ctcgagatga gaaacgccaa ggaaggcttt 2280

tgtaatagta tctcgtcgtc acaaaaggcg cagcatttcc tgcgatgctg tccagtatcg 2340

atgggtcact agactgtacg cgcggctatt ctatgtattc aggatcagct tgactgaccg 2400

gaccgggtcg agagctgagc tcgagcactc gctagctagc tatactacgg ctagcaac 2458

<210> 2820
<211> 1443
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53574_G1, chr2:9591520..9592962, Cluster 16

<400> 2820
tactatggcc agtaaaattt gcgtaaaata gaggacataa aactgttgat gacaagtact 60

gattgataat gtatataaag taaagtttaa aatagagagg tagattatta ggggccggcc 120

ggccggaggt gcaatgaaga agcgcattgg cgagtgcaat tgaagtaaag ccacacatca 180

cgcacgccca tgcatccatc tggttagttg ccgctctccc gcaatgaatg ccccccatta 240

atccatgccg attgagacgc gcataggagt agtgtacgta ctatatttgc atccacggag 300

gttttcgctg gtcaattaat caattaatcg ccgcgataat gacgattagg aagcgaccag 360

aggaattaaa tgcgtggtta atcagctacg gccgaggcgc cagctgattg gtccttgaac 420

cgtagtaagt actacaataa aagccgttgg cgcggttcat tgctgcgtgc acctatgtag 480

attgtggaat gtggagtacc cgtagtattt ctttgttccc tcttcattaa attgggttgg 540

acttgcaacc gtgggcgcta atcaggtgac gttgtgtcac ggagacgccg ttgattccgt 600

ccgcgtgtcg ccctcccgcg cgctgacggt agtattaatt gccctgctat gctattgcta 660

ctacagtact ccactttgct agctagctcc cgtcggtagg cgagcggttt ttggggtaat 720

ttggccgtgc cacgtggagt agcgcctggt cttggataat gattactact gttgctgcag 780

ctggcatcat ttttttcccc cagtgcaaaa accgcgacca gctagaaagt ctcgagcctt 840

gatgggctct agcaagtagt aacagagggt tactactcga tcggttttta gatgaagcac 900

cactgttgtc tcattaacgt gtcgactgcg atatgcgcat gcttcatcgg tacgttcagg 960

tagcgcagcc accacccacc agcatccacc acggcataaa tcgttgcaat tgcaacccaa 1020

atcatgtgac cacggttgtt ttgacgcctc taaacatcct taaaatgtgc ctttagttat 1080

tagcggtgga cattaaggtg acccaatact tttttttgg gggggtcatc ccagtcttga 1140

agatagccaa ttttcagcca tggtcacagc caatccaaaa gaccactaga gagtaacaac 1200

ctaacgcgcg tatttttta gtaagagagg ggctttatat attatcggta gaaagaagaa 1260

ttatattgtt gaccactagt aatttgtttc agataaaatt ggcactacat ggcgccagag 1320

acggtttcga tcttagccca tacttgatgt actaccctcc acgtatggtg gagacgttga 1380

accgctcgct atataatcca agtgtttatg tggcgttgga tgcatgcaag cagattcatt 1440

tag 1443

<210> 2821
<211> 1757
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54453_G1, chr2:14326473..14328229, Cluster 16

<400> 2821
tcgggatcac cggtcatgtc gacgcagaga aacacaacgt cacgttacac cagctctgca 60

cggtgagaga gagagtgacg gcggcacggg tgaattgaga agcgctatgc tccaaaccat 120

gcattttcac ctccacggta tacaacagac actcgtcggt cgtggccgtg tacgtaccac 180

cgctcgatcg ccgcccagtc gtcacgaccg ggacaacacc acaggccaca gcactgtagc 240

gatagtgcca ccgttaatct ttgtcaaagg gaagttactg ctgcctgctg ctagagtgac 300

gtgacgaacg cgagctctag actttacgtt cactcgcgca tcaaatgatt tcagcgtcag 360

tcggaaccgg tcggtaccac cgctcaccga ggcaggcatg cccggagttg aaggaggtag 420

tagtgaaact ccatgtcact ccaccatctg gtggcatcac ttgtagtaag tagttaaccc 480

cgcggtaata ataacttggc ttctagtaag tagttaatca ctatccccat tgcggtggcg 540

tgcgcgcgcc gggtcgtcga cggccgggcc gggccaacca cgccgtggct tagtggcgaa 600

acaaatggat ggaacccgcg cacgaaccac cccaacccca ccgggcgtcg ctttttcgcc 660

cggtcgagct ccagcggcag cgagcatata gaacccgata ctaattcgct accgaggcta 720

ctagctacta gctacgtact agcctgaccc atcgtcccaa cgcgcgcgtc tagagatcga 780

gttctcttcg tctcatcatc catccggtcc ccgaaacgcg aaacaggagc cctactccgc 840

cggaaaagat gacgcacgcg gagtacgtac tgtatgatcg aggaacgtac ggggggcggg 900

cccggccgtt cgccggcgcc gttgaagagt cgtctgatcg cggattcgtc gtggtgacgt 960

caaagacggg ttcagacttt ggctggcccc tagggtggct aggtgcttgg gcttggacca 1020

gagctagcgg cagcacgcag ttggttggtt ggttggtgac tggtgagggc ggcgcggccg 1080

gttgactggg ggagtcaagt caagctgtcc agcttgtagt ggatgggatg atcaagcggt 1140

ctactagcca cgccagacta gagacgccgg ccggcggtgg gtagtggatt cactgcattg 1200

gatggctgca ccataggaga gagagcactc tgcattgtgc attcatcgag tgccaggttg 1260

atcagctggc ctcgctctct ctgcggaccc agtgactgcc gacttgccga tcgagtcgag 1320

ccagccggcc ggcgcgcgcg gtcgaccaga cttcatttac agtccggatc aatccgcggc 1380

gagcgagtgc gagtcggtgc gcactgcgcg cgttcgccgt gaactggtcc cacactggcc 1440

ggcggcccgc agcccaccga ccgcgagagg acgttccatg cccatgcgtg gattgaatgc 1500

catttgctgc ttgcaggccc ggagggagca actgcgcggc gctctgctcc cttcataaaa 1560

atccccgtga acgcttcgag tcgaggtgca aagagcccaa ggtacaaagg cgttcgcaca 1620

gtaaaaccgg atccaagagc tgaaaacctc tggtctcgct gctgtcgatg aacgtgaggt 1680

ttctcaccgt acgtgatggg actcttctat cacacgtatt tggaaaatgc gctacacttg 1740

taaatctaca caaactt 1757

<210> 2822
<211> 2392
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54574_G1, chr2:15003970..15006361, Cluster 16

<400> 2822
taaacaaata ggaaacatac aatataatgt aaatattttt gtattagtca tatataccga 60

gtaatactta tatttattta aaaaatggag cctgtgtgag cacggattga aagactagct 120

agtgaatgct attaatccct gtacatggat tcagttgttt ctaaaaccac gcacgccgta 180

tatgtggtta cacatacaaa gtacagtgcc ttctgctggc gccgtctgtt ctctgctgga 240

cgtgggttga tctggccagg ataccccggc ctgctacgaa atgcatcggt gggtgtgtct 300

gccatattgt gctggacttg aatgatctgt ggcatgcatg ccacccgact actatctgac 360

acaccttgct gggcttgctc tggacaccgt ctctactctc tctcacacac acctcccact 420

ctggctggcc tctgttcagc aaaaatgtgc atggcggagg cggatgacat gcgtccctgc 480

agtacgcaac gcatcaaagt gttatagcag caaaaatgtg ctgtgtaaaa agtcatgtgt 540

tcccttcccg gctgctggaa aaggcgcgcg taattaagct acacactagc atagctgctg 600

tgctgcatgc cttctgggtt tctcttctct tctcttctct ttctccgggg aagcatgcat 660

gcatggcggc agcagcacgt atgtacccct acactcctag gactgcagga gtactattaa 720

ttactattgg tcgggagtat gcgcgagcgc cgcccgtcgc tcatctgatg cgattgttcc 780

atcgccccgt gtctaggtga gtatatgcat gcacgcacgc gcatgcgtcg gtcgaatcga 840

tggctttcct gacactctac tactccgtcc ctagtgcatg ctgtgacctg ccgagaaatc 900

ggtaaccgtg tatggcttcg acgacgacct gatgctatgc tattgctacc cccacttgct 960

tgcttgcagt cctatttgat ccacgagcta gagggcggac atataatagt gctcccgccg 1020

gcggcagatc tgcggtgcgt acacgcgtgc tggacatgca tggacgcatc ctgcagggtc 1080

cttcgtcctg acacaaccaa accatcaggc aaaaacacca gcggcgcggt caaagccaat 1140

caacaaaggc atcgatcgtt atatatctgt tctgtactct gttggccagc agtcatcgtg 1200

ctgatatatt agtgaactaa agagttcagt aattttcagg ttacaccgcg actcactgtt 1260

ggttattaag taggtggcaa agaagctaaa gttatgtata gatgctcaaa tggtgcctga 1320

ccataaaagg tcttattaca ctagctagta gcatggtccg agcactgaac ctatatatag 1380

tgccatactg ccattgtcca tatacggcgt gcgaaggcca caagtctggt ccacagtaca 1440

cgaggagtat ggcacggcta atgactgaca cgatgtggtc tgcttaattt tcaccgttgt 1500

ggataaagac ctaatagcac aacagcatgt ctggatcaat gcaagggtta gaaatggtgg 1560

cccgacatga catacgttcc ctagctgccg aatagtacgt ggcagagcta gactgtccgc 1620

ccgtttagac atctatatat aacaaaagtt gactcataaa ctttagtgac ctaatgtagc 1680

tctagttcga gcaactcatg gagtaacaca cctagttcca aatatgtcct tattagcttc 1740

cgatgcttgt tgatagggaa gcctgctcca tcagcagaga ccagtagtgt agcagctagc 1800

gcaaatcata ccgtctagct tgtttcaaat ttgagaaccc cggccctcaa ctgactttca 1860

tatatacaca cacacatgct agctagcaca tcacttcagt tcagctaacc atgcatatca 1920

gaaaaacttg ccgcttcaaa cagaagtgct tctaatatac tcaaacgaac ccatatatat 1980

attgctgccg gtttttattt cgggtcattt ctcgtattat tattgatttg gttttgcaag 2040

ctaggaaaac caccaaaaac aactagctag cactactagc agtggtcctt caattttccg 2100

cactagctcc tgatggtcta tcccatctgc atgccatctc tatctctatg gcattttacg 2160

ggagctgtgt ttgccatttt tctttaggca gctgctcagg cttttcattg gcacaggagt 2220

acgacctaaa ctcaaaaagg aagcctagcc tgtaccgtgt gtgtgtgtgc aggtgacgag 2280

cgaatagaga agaatctgcc cgtgcatgca ttgtgcttaa cgagccctac atcctcgggt 2340

tccgcaccta taaacgatag atcttcactt tcatgagctt tgttttcccc ac 2392

<210> 2823
<211> 1412
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54665_G1, chr2:15475857..15477268, Cluster 16

<400> 2823
tcgtgcatgg ctgcctgcct catcgccggc cgtgaactgg tgcagatagg gagagaggag 60

agcacgcacg cacgtacggg cgccactata ttaaacaatt gccccacacc cgtatgctga 120

gtcgctggca tatgtttgag ttgaaacgtc gtgccagatc gcttttatat atacggacag 180

aaatgtataa agccacaagc cagatttacg tcgctaatca atcaacgcat aaacttttgt 240

agctcggact aggagtagga gggggccggg agagctctac gtactctggt tgtcgtttat 300

gcaggcgccg aacaagaaca agtcttctgc tgtccattat attagaagaa gaagaaaaaa 360

caatattcat atcatatcgc gaagcttatg tcgtcaggga ggggcggggg agatttattg 420

gtggtgacct ttggatcccc gaaagcatgt ggaatcaagg tcagtatata ataatgccgc 480

gcatgcagta catgcaagca ggggcatata tatagttgtt gaggcggttg gtttgctaac 540

tgatctctat acaagaagat ctccgtaatc tctggtttca tgtgctatgg aaacaattct 600

tttgtcggtt gcgcgcaagg gtctaggaga atctccaaca ctgaattcca caagcttggg 660

atccgttagc catccagctg gagccggctg aaaattactc gattggagaa gctcgttatc 720

accggtccgt ctcgatccgt gggtgaggcc agggggggaaa agaaaacccc tctttctgtc 780

cccactcccg actggaaaag cctttggatc cttgtaaaat aggaccgtta cttcgacaca 840

atatcttcaa tccttataac tcgtgtagct taagcgccta atattttata cattgccttg 900

cacgtaacgt tccactatac caacacagca catgcaactt tatgtgagac gctttccctt 960

taagctaatc cgagatcaag gctctcatgc atagtatgca tagtgaaggt ttctcaagtc 1020

atcattggtg gctttggcct tcccctcatg acctcatcca tcgttggtag aggattgagg 1080

gaggtggatt ccaccactat tgtaagtgct tgtgtggcca tcgtgctctc taccactcgt 1140

tgaaaaggaa tatcttatat gattatatca aatgtattag aactattgat ccgtcaaaag 1200

aaaaaaaaac actatcggtc ttaaacaagt cgattccaca catttatcgg taacaagatg 1260

acacatatct aagaaaaaaa taaaataaga tattcataaa agaattactt acattacatt 1320

aaaactaccg catgtacaaa ggtcagctgc gtttggatgc ctcaattaaa acatatggac 1380

tgactcggta tagccacagt tagacaccag ta 1412

<210> 2824
<211> 2402
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54666_G1, chr2:15483962..15486363, Cluster 16

<400> 2824
aaaaaaaaga gaggatgtgg ggtcatttat ccatgcactg aatggaacca aaaccgaact 60

cgacgtttgt aatcgatggg gaataatggc acatcaagcc ccgccgggag ggccgggacc 120

acgggctcac tcattatcgt acacgcacac gctgggggcc gggcctgggg ctgggcctgg 180

gccccggcca gccagccagc cagctctcgt cgcggccgcc gcgtaaacgg ctggccgtcg 240

cggccgccgc cgcatcatca cgactcaggc accgctggac acgtctgcct gtctgtctgt 300

ggctgccttc gattgcaaac gcctagcaga gtagcagtac gcagcgcagc taaacaatgg 360

ctccggtccg actccgacct acggtggtgg aaagtttctt acgctagctc gatcgtaccc 420

ccattattgc ctgtcggttt cgcgcctaaa gcgaaaacga taacgacgtc ggcgaaagct 480

agtattatcc tggaatgtgg caactggcta gtttgagaga aaggcaagca taattctgac 540

ccttttttt tttgcgctaa tgatacgaac aaggatcgta ttctggaaaa cggtagtggg 600

ggaaaaagga gagaggctag cactcatcag taaagcaata cccgtacctg tagtagcttc 660

acttcactgg acgatccgtc gttttcgccg tctgttcgcc cgttcattga cggccccgcg 720

atgccaaaag gccaagccaa cgctccaggc tacagcggat aagaatgagc cgagccgatg 780

ccgcagatcg atccacctcg cccagcctca cacaccaccg tccgcatcgg tctcactatg 840

ggacactccg gcattaaaaa aaagtggaat cagacgtaaa atttactgta caacagtttt 900

actattggat ccgaaattca gtatacttct atcgaacaac tgtttaagta cacagtagct 960

ctatataaaa aaacatttca attgtaatgg tcagatttgc tcctcatctt cctccgtaaa 1020

agttaaaaaa aaaacatgtg gatgaacggc agggtcgtcg gtgctcctcg acgcgaaggc 1080

accgagtcat gtggacaaac aacggtcatg gaggacggca atttcgtagg tgtggtggat 1140

ggccctgcgg gcgaccaggc cacatgcacg agccacgacc gatcgtgcgg cctcgtcgga 1200

gccggctagc cgctagcccc agcccatggt ggacgcgggc tgtgtggccg ttccatggca 1260

agagccaaca agtttgggac ttggggagct atcttggggc acgaactgga aggtgaacta 1320

aagaaaacca aaaacgaact ggtacttgtg taaccggcgg tggtattggt gcgtaatatt 1380

tttttaacta tattaaacct gagttgatag gtgccctttc aatagcttca ctaaagtagt 1440

gaattcgacc gctagggatc tactgcaaat tcatcaaaaa aacagtttta ctctgtaaaa 1500

agttagtcaa aacggtttag attaaataga cttatgaatc tggtggtcag attcattgtt 1560

ttttggtga agcttcttaa acagtggtgc gcggactcag atttggtgtg aagttggtga 1620

aatttagaac gttctgatga ctctaaacgg gtcctgaatc tattgttttg atgaatccaa 1680

attctataga atcagaacca gaacgtccgg ttattttctt tataaactaa aataatatcg 1740

ttaaatccaa agctcgccag ctgtcccaat gagaaacctg gttctgtggt ggatgcacac 1800

gaaagcggaa agccgcactg ccgcgagcac acatacgaac gtgccgcggc ccatccacgc 1860

cgcgtcccgt ggtccggatc gaggggtgtc cacctcacct cgtgtcctcg tcgccgtgcg 1920

gccggtgcgt tgccgccatc tcgcattggc cgtacgggag tgctcgctcg cagtccagcc 1980

gtttcgcaac gctccaccaa agcgtcgctt gtagacagac agggacaggg ggaggatgta 2040

caaagaaaac gccgaagccc gtgagctgca catgtgaaaa aagtcggtaa agcctgaaac 2100

ccttgcccac acacacacac atcgtctgaa atttaattat ccgcgaagaa aaaaatgtac 2160

acagtatctc gtgccaaaca aaccgttcag caggtagatt aaaaaaaagt tcacgtctcc 2220

atgagggctc gggacgccct gctctacgtg catgtgcttc cacactgttt ggacttcaca 2280

gacgtcctca atctcaagcg tagcctgaac tagtgaactg aaatacatga accttccgtt 2340

tcgtttcgtt taagcaagtc acagcccaca gttgatttga cacttggttt ctgttccatg 2400

at 2402

<210> 2825
<211> 2098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55098_G1, chr2:17684973..17687070, Cluster 16

<400> 2825
aagtacgttg cgcgttaggt cgacgaccgc atctcgtgaa cggcagctga aagagagcgg 60

cgtttagaaa atcctcctca cctgtacaaa acagtggcca aaaaaataaa aaaaatatac 120

gagcagcacg agcatttgac ccatctctgt ccaacatatt gtgtgacggt atgatttggt 180

agtacctgta tgtaatacta agagataaaa agcacgagca gtgaaagatt ttatttttta 240

ttagtttgtc ttcttgaaaa ttaaaatacg ccaagaaatt atttagggat tggatggcgt 300

gaagaatttt gtgcgtgagc tgcctatatg acgatcccgg ctccgcccct cgtgtttagc 360

aaagtcgcat ggcgtcgttt cttttaacga gaaagatcag acaaacatgt cagcttcatt 420

tgactcgatc acccaaacga atctgaagag cgaagtttag taagagaaac ttaagaagaa 480

gaagaaaaaa cagaacggcg gaaggctaca tatgcatata tatacagtat attatagctc 540

acaagtcaca agttttgata aacgacggac aacgaaaaaa acacggtatg attaatatac 600

accaagaata accatatcag tttgatttga ttggaaggga caaagcaaat gtgatgatat 660

atttcgtttg gcggcactgc ttatatattt gtattttggg cttggacaaa tagcacgcga 720

aacaaacccg ctgccgctgt agacaaaaag aaggcccatg catagctagc taacatacac 780

ggagtagtag taagctgcat gaaacactag aggactaaag cgcacaatag tatatgcagg 840

catgcatcta ataaaatgga ggagcatgat gattagattg agatgtgaaa ggcgaacgct 900

tcggccgaac ggaataatcg gccctgcagc tgcagccctc ctgcgcgcaa aggcgcgggt 960

taggccgtcg gccgtggagg caaagaaagc aacgcgccaa agaccgttct gtgtttttt 1020

tttgttttct ttttttttcc cgccagacaa ccattcagca tcggtgctct tcgacagcaa 1080

cttcgtatca gaaatctcgt gtttgcctca ggagcaacgc ctacgcaagg taaacaacca 1140

aaatggctaa agcgcatcag atgcgcgtac attcttctga cagcaagaag agggtgcgtt 1200

gttgtcgaca ccgatcgtct cttgttgctg cattggatgc cattcagctg tggttccaag 1260

taaatagtat ccactgatgt tgacccaaaa aaggattgtt ccttcgtgtg tgtttttaca 1320

ggaaaataga gggaggggggg gggggggggg gggtccttgg tgaatgcaaa gggttgtacc 1380

gcgtagtgca cagatagaac cagaaacaga gatgggccct ctgctaggat gatccaccgt 1440

atctgggctt tctacggtgg ccttttttcag gtctcactgc aaacacctgg tcaaggcctg 1500

gcccattcag cccatcgtgt acttctgtcc gtgcctaggc tccggagctg ccttcatgcc 1560

gcctgctcgc ctagtcccgt gcgacgtggt tgaaccacgc ggagcgggtc agcccagccc 1620

agcccaggcc ccgcacaggc gcggctgcct gttgacgtga ccacgcccac gctcgctttc 1680

tacccgtctc gtagtagagg atagcgcatc ggtcggcctt tttattagaa ccactcctat 1740

ctcctacagg aacgaagaaa ctgacctcca aacaaagttc tgcttttcgg cttttgatca 1800

cccccaccac ccagtttttc tatgctcgat gttcgttttc attgtgccag ttttccacgc 1860

ctcgccacgc cttttgacaa gtccacacac gggacgggga ttggtgggat gccgatgggc 1920

tggctcgact tggcttgccc ccatgcatgc agatgcttga cctattgagt cctgagtgct 1980

actactacgg tgtagtacgg ttggtgtgct taagcattgt caaacgctcg taacaaccca 2040

gcgccggcgg ttgattggtc accaaccatc aaagatggcg gcagctaacc tttgatta 2098

<210> 2826
<211> 1545
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55413_G1, chr2:19327120..19328664, Cluster 16

<400> 2826
agatttcatc caagttcaaa cgtacattta cacgagtcat tagcaagtta acgtggcatg 60

ttaactcaac catatacata gatgtaacag atgggatcca tatgtcagcg gcaaggctta 120

atctttttt tttcatgcaa cctttaatga agattcagat gaagatgatt ctgatataaa 180

aatagtatct ctcgatgata taaatataaa aaaaaatcta aagggctcga aagttacaaa 240

ccactgactg agagttattg ttttgtgaga agctaagcat gtatttcaaa tgagggctat 300

gtgcatctgc tttggctttg ctaggtacaa catacaattc agtgctgaca tgcttcttat 360

gacaacagga gactataatg agatcatcca gggcgattta tttttcaagc aaaaggtctc 420

ccaaatacga atttagctct cctgatttac acaaccggaa gtttatcgcg tcccacaaat 480

cgtcatcccc ctgtcgtggg tgtgactgtg atggcgacaa aaaatacgcc cccgctgatc 540

atgatataag ggagggtgaa ggacaaggaa ccatctttgg ctgcagaagc aagcaagaat 600

cctggcatcg ggttggaccg ttggagcgtg ccatcgagtc ctactaacag tagccccctc 660

aacagaccag aggcctcctg cgccaactaa attctcgtga ccggcacact tatgatgttg 720

tggcacagca tacatgaact ggtgggtgat gagcatgagc aacaacgtat cgaggaagca 780

cgcagctagc gtctgcggca tcatatgata taacaataat acataatgct cctctctctt 840

ttttttcct gacgaagaaa ggcagtttcg gttgcattat tgttggtgag atgcatggta 900

tcttcaaatg tctcctcgca aagcgacagc agcctccctg gaccctggcg caggccagaa 960

cttaacaaac ttgcagcgct tgttattctg gaagagacac gtcatagaaa atgttacagg 1020

caaaaatacc atgtcattgt cgtggtaaac aaatcaatct ctgatttgct ttgcttgctt 1080

gcttgctcgc tccgtgtcaa ggatcagcat tggctccatc gaatgagaga gagagagaga 1140

gaagatgagc gagagagcag gggagaggaa aggtgctgtt ggtgcggcgt gccaatacgc 1200

tacgccgatt gccgacgccg ttctaactgc gagacagcaa acgcatgaca gggtaccatg 1260

cgccccttc actcgacgcg cgaggacgcc gccggggtgg tcacctacca tgtgagcgct 1320

gagcggcgcg cgccccctgt gtgctgtgct ccacggagga accccatcaa tgtactcatc 1380

tcgtatacat gtgtgcgcaa cgcataccct gctcctgcat acgcctatac gctaccgcca 1440

ttcaattcgg aacacctcgg cttttcagaa gacaagattc atgattggtc atgccgtcat 1500

gcgatagtgg ctatacagtg cagaggctaa ctagctccaa caaag 1545

<210> 2827
<211> 1804
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55494_G1, chr2:20004551..20006354, Cluster 16

<400> 2827
ggtggaacta taggagtaag tgagtaacta atggaatatc acttgtataa ctaatacagt 60

ctactactga aacctattcg agtaacactt gtataactat tggagtgtga ctgtgtccag 120

tgcttcgatg ttaagcagtt acgttacctt cagtgatgtt gtcataggag ttctattatg 180

acccgaatat cttgatagac ccgtggtgaa gtccatatat tgcatgacaa ttgacaagta 240

cctcatcacg tcacttggaa gcaaatactc aggagagagg ctctgaatcg ccaggcctac 300

ttcctctgta acgggagcat cagcagcttg gtaagtagcg acggcttggg aggctggcaa 360

attatattag cggaaaattg aacgtgtctt gttagcggtt gggatataag tacccttatc 420

gaaaattagg taagttttaa tttctccaaa ataaatggat ccaaacggtc ccgtaaaatg 480

aaatgtgacg tggtggtaag aaggctatag actgtgatta aaattgagta agattggaga 540

tatgacttcc aattaatcac tctccttgat atgcggattc atgtaaaaac gactagtatt 600

tcaaaacggg agggagtact taaaatgctg ctttgaatac tcgccggacc tcccagtcaa 660

tcaaaccaga gacggcccga gtccgggcat gtaaacaggc tcggctttga aagttcaacg 720

cgtgcaacgt ctgtccaacc cgacgcggac gcatagcagg cggcaggcaa gacgcgggac 780

gcgcaggcgg caggctttat tttggctgcg agcacacggt ggacgctggc cggtgcatgc 840

tatgaatccc ttggccctct gacccccctct ctcctcagac gactagccgc cgaaggatag 900

tccacggcat cgccggcccg gccgatggtc ggcgcagcag cagaatcact gcgccactag 960

tagtacttgc cacggcgcag cggctatagc tggacgcctc tttggtttgg cgtcttgcgg 1020

tgcggtggat ttgacgagtt tttgctgcac aggttctcgc tgagcgcgcg gtccactact 1080

actgactgtg gaacattgtt ttgtttcgta caggcagcgc tgcatgcgta cataccgcgt 1140

agtcaagcca atggtccatg agtttctggt tttcggtggg taatggccat atacggcgcc 1200

ctcctcttgc gttgcgtccg atgctctgct ggctggctgc ctgatggatg cgatgcctgc 1260

ctggatgggc agctctggtc aaaacctctg ctcccaacca tgggaaaagc cgaaaagggg 1320

taagatgatg aagccagcag cagcctggcc ctggcggctg ttcacggcag gcagggacat 1380

gcgtagctgt gccccagagc cgcgtggtga ctccgtacgt cgcgagaagt gtgctgccgt 1440

acgccgtacc gccaggtcga gggcgtcgca cactctcgcc agcctggaag catcttgtat 1500

ctgtctgcct gcgctgctct tgccggttgg acgaccgaga gcgacgaacg agccgggaca 1560

cctggcgccg ctgcacgcaa ggaggcagca gcagcattca gagaactgtg ctgtgctttg 1620

acgtcgtctc gtcgtacggc cccctgcctg agtgcctgca aggagctccg ccttgacagg 1680

tgaaccttgc tagctggaaa taacgggcat ggaaatgctt tgctgccctc gcaatacata 1740

aaaggaaacg gatgaaatac gtagccgctc ccctccaaaa aaaagactct tttgtacaat 1800

gggt 1804

<210> 2828
<211> 2763
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56193_G1, chr2:23731976..23734738, Cluster 16

<400> 2828
acttgattga gatatctctc atcccccaat cgatttgcac tgctaaaagt taaatgagaa 60

gtcaaagcct agacgcaaaa ggtcgtttgt tcgaacttgt cagctgcata tgaatatata 120

tgatatgatc gtgcgcgcgg caactatata tacgtcaaag ctgttgtcaa tcaataacaa 180

gaaaaggaca tgcaagcgcc aagtcgttac cgcaaacctc cagtcgaact tcaattaaaa 240

accatgtgag actgattatc aagattgtcg ttttactgtc tctacatgca ggcactaata 300

accgtgtgcg gacatcatcc tgccaccccc ctctaagcag taacgacggc taccggcggc 360

aaagacacgc acgcaaataa gctagctaat tactgtgatt atatattact taagaactca 420

cttgacaaag atcgacgcat agtttaaagg tcgcttgtgc taatccactt cttcgtccga 480

ctattcaacc gcgagtatat atatgtatcg tttttatttc tcgatgattc caaatacgaa 540

ttgtatatgg ggtctcgaac cctagccagc tagctgctag ctagattcta ccggctccag 600

ctacgactat acatatacgt atacgaggcc tagagcccta gaccatggtt aattattaga 660

gctgggacgt ataaaaacac atacgctacg cagttatatc attaattaac cgccatgaca 720

ttaacatttt attgggcgta gatctatcaa gtaccgcgcg tgatgctctc ttatactaaa 780

ctactacggt gtttacgctt tttattttat aatcgaattg ttcctttcgt tttggccggg 840

ttgctttcgt cgtcccgcca atccagtttt tttgatggtc ccgttccgat ccgttcgcaa 900

tcatgtttcg aaaataaaag taaaaaatga aaccccggaa gagggttatg ccgaccgatc 960

tcgttcgttg ttgtcatctc tgctctctat ctatatttcg tagcactaat cattttttta 1020

acatttgact acgtagttga gggatattag gtaagcatca tcaataacac ggaggtagac 1080

gtatatgcat ggatgtctat cggcactgca cacctttgg tcaccatcgc gcgcacaggt 1140

agagttagat tttgacagat caatatacta ttgttatata cagtcacaag ccgaccactt 1200

acaccgtcaa acttggcttt gtccgaccga actgcgtaaa atcgacacgc aagctttagg 1260

acggtgggta gctacgatcg tccggcgcaa gtggcgccac gtttcgacgc gcacttgggc 1320

cgatgattcc cccatcgata ccgcctttgc agccggtggc ggcagtcgtg cggggtggca 1380

gacgtgcatc ggccagaagg acaaaagtct ccgcgattcg catgcatggt cagcgggctg 1440

gccggttggg ttgggttggg tgccgccgcg gcacgcacaa aacaaaccgt gtccgggtca 1500

aacccacgcc accggccggc gggcggccgg ggtgggtggg tgggcggctg cggcctccgg 1560

gcgcacaccg tccgtcacgt acggcggtcg tgcgtggccg cgagccggcg gccggttcga 1620

tggcggggcc ctcgtgacct cgtcccgtcc gcgccgcggg catatataca gtagctaagc 1680

taagcagtag attttcgttg gacgtgctac ctacgcaacg cgttcgcggg ggcgaggcgt 1740

ggacttcttt ttttcgttgg tgccgaaagc gggccgatgc cacgcgagct agagcaggcg 1800

gcggcagggg ttggtacgtc ctcccagcac gcgtgccccc cgatcccaat atgcgcccaa 1860

aaagagagcg ccaatccgct gcccacgccg cttcgatctc ttccttttg tcatattttc 1920

cggaagaatc tggcgccgag acatggcttg gacatgattg tatgcaatca gaccatattc 1980

gtgctcagcc actaacctaa actgagcaga ggagagctag ctcactgaac aaggcattag 2040

cgttaatact accattacat acttgcatcc accacaccgg cgggtaccaa tgaaaataca 2100

acggcacaga aataatataa aactgcctct gctgatgaag cgcaacgaca tgcatgcacg 2160

cttactccac acagttttag gttaccatgc cgatccccag gacagatcac gtggagagag 2220

agagagagcg gggggcctaa actgagcagg acacacacac tgcccttatt acaacaacaa 2280

aagcagatga gctttaggtt tgccatgcta gtttattcag caaacgtacg cccccgccca 2340

ccactagcct aactaattcg gagggataag ctataatacg gttctaataa caaggagata 2400

tggcctagtt aattccttct cctcctgccg cttcgtacga acgatcgagc caatgggccg 2460

ggggaaccac gcacgcatgg acaaaatccc attggacacc ttctggcgtg cgattaagaa 2520

acctaatctt tccataaaaa gcaattaaca aagctaagca cttccatagc ttctcctacc 2580

tactgcataa tgaggggggg agccacagtc tgctagtcct cgtcattatt tgcgctagct 2640

acctggagga cagttattga catgtgaaga cgaggcgggg gagagaagat cgctagcttc 2700

caactatata ctcctatgcg ttagccatta ggtctatata atactccttc cgtcccaaca 2760

tat 2763

<210> 2829

<211> 1706
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56847_G1, chr2:27580707..27582412, Cluster 16

<400> 2829
agtatagttt aaaatgcggt caggatggta atccgtcact cactgtagaa gagttgagtg 60

tacgtttcac acgatcgccg aataaacgga acaagggtgt cacttcaggg gagcgggttt 120

ttattttcct ctggtgtttg tgccggtcca atttccggta caccaaactg caaagtttaa 180

aaaggaaata aaactgcacg tcgcgagtgg cgtcctctca cacaaggaag gaaggaaaaa 240

aagatatggg gacaaaaaaa agagcaaagg cagatcggta acaaaaagtc gcccaggccc 300

cttcagccaa aaagcctaca acgagattct gcgaggaaag tcagctggca ccggctgcag 360

gttattagcg gaaactagta ctataaaata tgtatgttac atggaaatac tcctggaaca 420

acaaacaaca cttgttccac cgcctcgcac cgttttattt tatttttttt caaaaaaaaa 480

aaaaggaaag gcaccgaagc ttggcgacac gtgacaggct gcctgacacc aggctgcctg 540

cgtgacagtg tgccgtggac cacgcaccaa cgtttaacac gttggctggc ctgatgccct 600

gatcggatcg tcgcagccgc ccaggttgct ggcagtacag ttttttttaa gagagacagc 660

gtgcagtacg tggcaggagg tcctgccgag cgtgtccttc cagatccgtg tgatgcacag 720

cgatagtgcg cgacaacagg ccacggacga acggcagcgc cacgattgtt gttggtagca 780

gtaccattcc acactgtagc agcactaccg taccagatgg ggccggtctg cacacaataa 840

tgcgcgcggg gtcgagcgac gcgatgcgat gcaccgaacc gaacctctct cacacacaca 900

gacgcccgcc cgcccgcccg cccgcgctcc gtgctcgcgc cggggttggt gatttcctgc 960

caccgccccg ccccggagtg ggccgttccc gctgggtgcc gtctgcccgc gggcgccgcc 1020

ggcccatgcc tttttattta gcgtttatta ggctaggcac gcgcaggtgg acaagcggcc 1080

gagccacgga acattattgc catggatgta tgtatgtgta cgaccaaatg caaattgcac 1140

ggtggcgatt cgcgttgcgg ggaacgagtg gccatgccca gattctctgg tctttaccag 1200

tagtggccgg gcttgacacg tgccgacgga atgtgaacct ggtcctggtc ctcccagcag 1260

cagaaatctc tgaggcaggc tgctgtgatt cgtattcaaa acaacattat accctactac 1320

tactaatgct agccaataac acccgccacc cactttactc tggtaaactc gatcgctcct 1380

ccaccgaact gattcctcct gcaacggtca catgtggcgc tctcggcttt tgtttgcgtg 1440

atcctgtccg cgaacgccaa tttgtctcaa cttgcagacg agagatcgat gcccctgtcc 1500

gtcagatctt tgctcttaac ggccaggatc gcccctggtg gtggtggtgg tgaatctatt 1560

gtgcttgtgc gcagccgacg ggccccccag ggcagatata taataatatt ccgcctgctg 1620

ctagagctag acggtaactg gagtagctga tgagtcacgc tcaaatagcg tgctgccttt 1680

acatgcgatc ttgattaagt tttggt 1706

<210> 2830
<211> 3497
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56988_G1, chr2:28312988..28316484, Cluster 16

<400> 2830
taacattaat aggacacatc ttctagaata aaaccttata ggaaactcaa ctccataaat 60

aggtcacttg cataaattag attgttcgtc tcgtttaggt gcgaccttaa aatagtgaca 120

acaggtattg aagctctttt tatctaactg actccaatac gctataggta aataagaaac 180

caaatttttt tataacggtg atactgttaa atcttcttat aagcgataaa tagtttgatt 240

aacaaacata ccattttaac attcttgtga taaggaatca ttattgtagt actactcttt 300

tttcttcttc taaaagtctt ggacgctccg ggcacggaaa aggacagtga agatgcattt 360

cctccatggc agctggagcc cttagaaagg ctcgagcggc gagcgccgtg cctgcttttc 420

ccacaactga ggccgaaaaa gcagccgccg ccaatcggcg cgcacgcccg tggtgcgcgc 480

cgtttcattc tcgggggcgg gggcgggggc gggtcgggta gcaggaaagc ccgggcggcc 540

tggcattttc gttgagagat gcaccgcgcc agcgccacca ccgcgtggga tcatatggat 600

aacggtgggt tcacgaggat cccgttccgg cgcggcgccc gtccaaaacc caacccaaag 660

agagctgcaa ccggccatac ggcaaggcac gacatcacag cgaaggctcg tacgtgtcga 720

caaaaaaaaa actcgatacc gacctctggt ttctattgat cggatgagcc tacacacggc 780

tgcgtctcga atctcgatcg cctcggtatt ctgatagcct agtatctgct ttgcgctcgc 840

gcgcgctgca gttatcagtg attggacggc tgccgtcaaa agtcaaaaac tacctacccc 900

tcgcgctgca atgatcgaat gaatgatgtt tggattggaa tctggaaacc atcgcctttg 960

ctttgcttgt gtggtgtcgc gacacccaag ccggcctttt gatcaaaggc cctaattaac 1020

gtgctacgcg cttatctccc tgaataaaaa catcggtcag gatatctact tttaaactac 1080

tcggatgatc ccactacctg gggggggggg gggggggggag ttcttttcct tcatcctttc 1140

ctttgtttta ccgccgtcgt tttctctaga cgactcgtgc aataagaatc tactacggcg 1200

aaacatcata ctgcatgctt tagttttgat cactacgcac tctactactc tagggtgcaa 1260

ggctgcaagc accgtcttcc tttcttaacc ttttttcctt ttccttcgat tttgggatgc 1320

cgaatgaagc catggtctgg tgctcgcaac ttcacatgca tgcaacttgg acagaacaac 1380

caaccgtgcc tgcagaagag ttgccgccta gctctcccaa gatcgcatcg acgacagtgg 1440

tcgggctaca gcaagctagg gatgccagcg aaagtgcaat ctaatctaca gggtaggata 1500

ggatagccga aattctctaa gttccaattc catgctcttg gtcttggatg cccagccaac 1560

ggaccttaac aagctccatg cttaacattc ttatatatat catggctgat ggtccaactc 1620

cagccccgac tgcacgcgtg actactgcaa catgcaaata atgcaacttt tgcttcgata 1680

tatatggtct gctgcactac atgcatgcag catgcatgtc gttcctgcaa atctcgatcg 1740

cgtttgtaat ttgttcgttc atggttcaag gcaacacacc cgatacgctg ttaaacgcat 1800

agctggtggc tatgagcgag ctgcaaatgg aatcgccaaa cactgctgcc tgtgagcgat 1860

gaggcttcct gatcaaacca aatacggaaa tacccccttt ggatgtaata ttggagtatc 1920

gaattgggaa ttggaatcag ctttcctaaa ttattttgtt tgactgcaca tggaattgag 1980

atttagaatc agagacctca ttcctggaat tgaactataa ctagaaactc tctctcaatc 2040

cagagtcaga ccgtacaatt acaaactcta atttggtgac atccaaacaa tagaattgaa 2100

attgtatatc atggttgatt tagtattcaa cacaacacaa ttcaatacca tacccttcaa 2160

tatggacatc caaatggagc ataactcaat tgcagcaaga aaagaagaaa aaataatgaa 2220

cacacgctag tacactaacg catggcaagg tcaggccaaa atcgaagcct caccaccgcc 2280

attgcctgtc tgagactttc agagacgacg gcgtgggtgg cttccgccgt ggcagtatgc 2340

gcgcgagaca ctattgtatt gtacgtacga ttcaaaagca gccgagagat tcataattca 2400

gccagtgatc gtcaactagt tttgccaaac tcttgaggct agttctagct gagcaaggcg 2460

gcgtcgagaa gggtaccgga gtgcgagcgg cttcgtcctc ttcctccgca ttgaacccca 2520

cagcttccag ggcggcttcc tccgccttga tctcccgcat gaaggcatcc gcgagttcga 2580

agaggaagtt gttctccaat gcttcggtgt ccgccgcgtc gtccgtgtcc tggaggatgg 2640

attccatcgc ttcgcgtgcc aaggcagcct catcggcgtc cgcagccgcc atctccgcga 2700

gctcgcgagc gaaggtgttg aagccaaggg cttccaagac agcctcgtcg gcgtcagcag 2760

ccaccatctc ctgggctgtt tccgcgagct cgcgagcaaa ggtgttgaag ccaagggctt 2820

ctaagacagc ctcgtcgtcg tccgctgccg ccatctcctg ggctatttcc gcgagctcgc 2880

gagcaaaggc gttgaagcca agggcttccg agacagcctc gtcggcgtca gcagccacca 2940

tctcctgtgc tgtttccgcg agctcacgag caaaggtgtt gaagccaagg gcttccaaga 3000

cagcctcgtc atcgtccgct gccgccattc gtggatgatt tccgcaagtt cccgggccaa 3060

ggtgttgaag ccaagggctt ctagggcagc ctcgtcgcca gcgtccgccg cgacgatcac 3120

atccatgaga acaaacagat cgaggcacgc aacgcaagcg ctagcagagc agcgatggat 3180

cgatcgacgt tcatgggtag gcaggcacct ggacggctgg accgccatct gggagatata 3240

tatatatata tagtggtgcg tgtaggaatc agtttttgtc cacgccgatc ggaatcggat 3300

cagaatcaga ttagatcccg tgagcgccaa actgaactgt ctggagagaa aattgctatc 3360

tcaaaactgt cgtgcgcttc ggacttcgct tggactttcc aagtaattcg tggctggcga 3420

actgccgaga gattggtggg cttcgccaat ttttggcccg attagatgga tggctggacc 3480

aaaaatgaat agaaaca 3497

<210> 2831
<211> 1769
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5829_G1, chr1:29680228..29681996, Cluster 16

<400> 2831
aaaagcgacc tggcatttct gtcaccagcc gttgatttga aaccctctct tgtgtacgta 60

caaggacagc tgaccgaaac atcccggaac gataatgatt gcagcaagtc acaggattag 120

cactgatgga tcatcgtatc gttactagga gggggtagag agagagagag ctgttgcgtg 180

cgtgacgacc caatcttaac catcccctga ctgaaaccac aggcctctgt ctctgactct 240

ctctctctct cgtgcgcgag tcgtctcgtc acgtatacac tgatgaaact tgccgtgccg 300

gaacagtttg cgtacttgcc gaacgaaaca tcatctgcct gctgctgggg ctgggctggt 360

gcagatcaag tgaatgcata ataatagctt tgcctagctt gaagcggaag ccgagaaaga 420

gagcgagctg agcaagcgat ttgttgtcga ttggtcgggc gggcggaaaa gggcagcgtg 480

gtcagccagc gacatcacca tggcagctga gaaagttcgt gagcggcctc gctcgcgcgc 540

ggcgccatct tccggaagga aacaagaaag gcaggcggag gcacccgcag cgccagcgcc 600

accggccggc ctgaagagtg accaccccac accgattcgg ccgggacatg attgaaaatt 660

ccgaccaagc cacggaacca acgcgtcatg tctgtcactc gtaccccggc ctggatgatg 720

atgatgatga tgagcgatcg gtgttcgatt agttgggtta ttatccgcgc ggcaggtgac 780

gctgtcatgg ccgggacgtg tcggctcggg agagaggggg aggcgaaggg atatgcaaaa 840

caatgagcag tatttccttt gatattggaa gggatgagca gagcaggcgg aggggacgac 900

gtcatctgcg cctacctaaa cactactagt aaattggccg gagggacgag cgtggccgaa 960

tccatcgcct cgccctcgcc ctcgtgcgcg tcgccgcctg attgattgcc tacggccaaa 1020

tggttgctgt gtggtggcgc ttgcttcccc ttttgtgttc ggttcgggtg cagagttcgg 1080

tcagcactca gcacctttgt tagtttttag ccggcaggtt tcgagaggcc ttttgaccag 1140

acgatggcat atagcttgct agagcctaat acagcccgcg ccgctatggc ctactatggt 1200

aagtacaaag tgagtcggca tcagcggccg cggaaccctc cacatctgtg tatgccagcc 1260

cagcccagac cagcccaagc cggcgctggg ctccccgtgg cacacgacgt gtggctcctg 1320

gcccgtgagg aactgaagat gtactttgct gggttaatcc tctcagcgag attgaaaatg 1380

ataaacggcc tcgttcggca ggcaaaaccc ggttctagac cagaaatcct tggatccggc 1440

cctttcactc atccagggtg tgtaactaat ccagctacac tgcttttaag cagacaattt 1500

ttatttgtcc ggtagcaaac ttcagttcaa atcaatttca gccgtacaca gtgtcacaaa 1560

caaatctcgg aaattggtac accgaaaaag aaaaaactat ttcatgcatc aatctgagct 1620

tgtaataccc atgtccagct ctaagcataa acccattccg tctctgtatc acgtacatca 1680

tacatagagt taaacataat ttaaataact tgtttaaaag cagtttttag gtcgtcagag 1740

cgctagctga gtggaagata aaggcagaa 1769

<210> 2832
<211> 1835
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5863_G1, chr1:29790338..29792172, Cluster 16

<400> 2832
gtgccccggc ccggcccctc tcttaatctt aaaataacaa gggcgtgtaa aggcacccct 60

cctcattacc aaccttccac attccttttc caaatggtac catttccccc ttttttttct 120

caaacagcaa aggtagacac cagacaccac caatccacca tgcatatctc gctcgcgcga 180

ggccttttcc cgggagaaaa tagaaataat cactgcagtg ccagtgcttc tactcaagtg 240

cgccacggat tttcggtacc ggccagggga tcaaatcgac gacgacagga ccgactacca 300

gcaggcagca gcgcatgcag caggctatgt ctatgtgcgt gtgccggcga cgacgggcgg 360

caatgcatgc atggttcctg agatcggatc acagctcaca caagctcatg catggcatgg 420

atatgctacc accagcgggc agtactgtat agtagcgccc gtgcatggcg tgccgccgaa 480

gccgacgacg acctcgccga tccggcctgt gccgtgatgt cacggcacac atatcgtcct 540

acaattagct atatatatcc aggcgattgc attatactca tatatattat actccatagc 600

atgagcttgc ccattataga ttacattgct gtcctaacaa gctagctaag ctaaggcatg 660

tatggccgag cacaagcaca agcacaagca caagcacagc acagagctag ctagtggctt 720

ttcgttcttt gccggccggt ttcaaagcta ggaaacgaaa cttagtacag gatcagaaag 780

cacctccact tgcttgcgtt tttttggcta cgtatcttag ccacgcccat ttatgaaatc 840

gagcgcacta gcgagagcac acattgccac aacaagagtg agctctgcaa tctgcatctc 900

gcttgcgatt cccccggatg gtccaacgat cgcgcactca cgcttaccgc tggacgagcg 960

agtatcctac cgcgcgcata tagatgaagg ggccggaaga aaagagagag cacgcgtcgg 1020

ctcccactac cactaccaaa cacttttttt tcaatagtgt aagttgacta tataccagtg 1080

ttctctggtt ccttggtcta attaactagc gttcggtcct ccaatttaca aataggctat 1140

caacgtcaag tgttccaagt tttaaaaaaa ctaattatag aaagtgctcg atagtagtat 1200

acatgccaac gcataaatgc ctacattata ttcaagcagg agtgaacaac aatattacga 1260

atataatatt gacttttca aagtgggtgc tcgtggacct ttgtttccat gaactgagtc 1320

atttttcatg gtttgggaaa acatcattag atggcatata aaatcttttt cgtgtttttt 1380

ttctcaaaat ttttttgcac acttcttttc tcgtacagag cctgtttaaa cagaagcacg 1440

taccagtata gacatctggt taggtcaacg agttgtggtg ttaattctct atgcattata 1500

tattgttgat catctaaact gacaaatttt acaagtcgtg ttaacttttt ttaagcctat 1560

tgcaatctct ggtaaaaaaa gggcatcaaa atgagatctt tttggcacaa acacgaaaat 1620

gccccgaaga cactgcctaa tatctatttc tttaaaacac aagtttcatg catcatgcat 1680

agattcatat gtcttgcgca tacatgaagc acgtagagaa gatttgtttt tcttcttcac 1740

atctcgtcca ataattagaa cgttacaccc cgatgggccg tgagaaaata attaggctca 1800

acatgatatg aagccaaaca cactgcaacg ctccc 1835

<210> 2833
<211> 2735
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6209_G1, chr1:31770067..31772801, Cluster 16

<400> 2833
aatgtttgcc ttgatctgat gcatgagagt gtttttttg gggcaaaata tccagtgtaa 60

acccctcttt ggtgttcatg tgaaagagcc cctctcgaaa aaaaaaatat ctgtgtttta 120

aagatttgga aatgatatac acttacatag taataaatct attgacgtat ttgttgtaaa 180

agtattgaga tgcaaactca gtttagtatt cgtatggaat tgataaattt catacgcata 240

tataatagta ctccttattt gtattggttg gtacgtacgt aattggtagt tgtaggtact 300

tagctttatt tatttatata ggatctattc gccgaaaaga ggaccatttt tggtcaacgc 360

taagatgttt attcttttgt tccgaagcag atatatggtt tgtaatgtgt tggtcatgat 420

atttagtctt atttactgtc atattctccc ctgctggtgc aatgcaaaca aacaaagtta 480

tcgattagaa gaaaaaggga aggctatata acttcatgaa ttatatatgt ggttgtgcct 540

tattaatatg tgatgatttc attatttctt ttgcgacgag cacatgaaca aataaaacaa 600

ctgagcatga tgattaatga tgcatggcgt gtatagcttg cccctgtcaa tggtcaagca 660

gaagtatatg tgttatcaag catcatcatc gtcgattatt aatgcttagc gacgtcatat 720

atatatatat acttcttcac gccgtacagg ggcgaaggtg cggcacactt cgccatctct 780

tccaacaata tataaacgta tatatatagc taaatactga cacagtagta ccatatatat 840

tttggggagc agccgctttc ccccctcctc gttcgcctgt ttcatcattc ggggtctatg 900

caaacgcaca ccacgtacgc acgccagcca aacaccaaaa gtatgcaaag gcaaggaagt 960

acttttatct ctgggtacgt tgctcgcgcc atcatcatgc catggaggtt gttgttgcaa 1020

taagtttgta cgcgccagca tgcatgcaga cgtatgcaga cgacccatgg atgtatatgt 1080

acacgcctcg ctcgaatccc aagcagccaa catgaactag tgcctacggc catgtgtgtc 1140

gacctattat tactctcgct ctcgtcgtgc gctagcttta ccgtacgccc ggcccattgg 1200

cagggatcta aagatggatg gattatttcg ctgtaaactg atgggatcgg agtcgttgct 1260

tgcattaatt attgcgcgat acaacgacgg caaagctagt atatacgacg tgtacgtgtg 1320

tttgtgacgg gtctgttaac aattcgttcc gtatcataat taagcgagtc tagctattat 1380

tttccgtcga gcaatcatca tcatttcggc caagacgaag acgccgccgc ctacgtggaa 1440

agccgggaga caagcttact aattgaggaa ggctctctac gacgtcgttt catacacaac 1500

cgagtgactt gtgttgtctg aatgacaaca acacaacact ccatccataa ccggccggcc 1560

gtcttaacaa cccgacgttc ctgacgacgg tgtatgcttt tggaaaggga tctcttttt 1620

tttctgagag aaaaccagaa agaaagagat tatactagtt gttttttcc tcttggctac 1680

aacaaactag tagtacgtac tgattgtagg aacattttgg ttacgaattg ggagtgctgt 1740

ttattagcgg gcggtcagcg gcaaaatcat ttggccgaac tccaatcagg agaaacgaaa 1800

gcccgcggcc tccatcgaga tcgagcacga ttctgaacct ccaacgcact ccatggcatg 1860

gcatgccagc agtctgacct tttttttat ctgacgccgg ccgcgcgctg taacttttct 1920

ctcctgtaca cggtattcag acggagcagc ggcagtacag acgtctttct cccggcgatg 1980

tgcagcacat ttcactcaag agtcaagtct gccacacaca ctcgcctttc gctctggccg 2040

atgcaatcat ccagctcccc tgaagtgacc catcagcccg tgcccggcgc gcgacgctcc 2100

acaacgcatt tctcgggcgc cggagacgat tgaaaccccc tgagatcgac accgatcgag 2160

aggcggccgg agccaattga aaaaggaaaa cccggccggg ggaaggacgc attgcaatgc 2220

ggttttaatc aggcggggcc tgcgaggcta cgtacaccgc cacctctgtg acctctgcgc 2280

cgagcaaggc ccctgactct ttgtgcctct ctctctgcgg gacggagcgg cgggagaaag 2340

aagaaaaggt gcgtgtcatg catgcgtgct cagttgccag tgagtccaag gtaatggcta 2400

atgaatgtat cgccgctgcc ggatgcggag acgagacgaa gaccagcttt tgatcaggaa 2460

aggagggcga ggctgccttg ccacgctcgt gatgattata ccacctagcc tggtgcaggg 2520

gcagacggcc agtgctcagt gcagtgctca ccggagaaga gagagagaga gagggaggag 2580

ctgctggcgc cagcgagctc cacctccact ccacgcactg actttacgtt acgtttcgtt 2640

gctgcggcac acgtagtata ctctccatga ttctggcttt cggatctttt cccccattgt 2700

agtagtggtc tgttcattct acgccgttgc ttctt 2735

<210> 2834
<211> 1765
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62519_G1, chr2:59713786..59715550, Cluster 16

<400> 2834
accacaagga acaaactagc gcctcctaac cactacacca cttgttagtt tatgttatat 60

aaaagatatg tactataaat atatatacta gtaattttaa aataagaaaa aaccatgccg 120

ttgtcattta cattatattt catgaactag acaataccta actagttact gtacccttaa 180

agcaatggat gtaaaaaata atggtagctt tgtggcagca caggagcagc aggtgcaggc 240

cgtactccag caacgtgcag tacggcacca tatggctgcc actgccaact gccagtctgc 300

catagcctgc gctgcgctgc gctgctgggg acggagggag gagtgtgacc agagcctttt 360

ttttcctctg cctactgcgg cggcattgct ggttgcatgc atgcatctgc acacatccca 420

cgctctcgtg ctaccccgcg accagagcag agcctctaga ccccgtgccg tcgtctcgta 480

cgctatcgcc cacgggcctg cccagtgctg gcagaagccg gcagccgacg gtgcgcccgt 540

gccgtcaccg cgctgccgta gttgcggtat gctgtatgcg ggttcacggc cggccgggcg 600

ggcggggcct cggcagtcgg cacgtacgaa ccggcctaga tctagaggag tcgtgaatcg 660

tgatcgtgct agcaggcctg ctggagattg ccgctcccgt tttgttgttg ttgccttctt 720

ctaaaacagc cgggccgggc ggcacggttt gctagcttgg gcggaagcgg aagcggtaca 780

tgtgctgatg tgcacgtgta cacatgcgca cgctggtccg tctgcatctc agatgcgtgt 840

gctgtgaacc gtggtaccac cagttaccga tggtccgccg gccgtgtaca tgtatgctgg 900

tcaccagacg gtgctggctg gtgcgtgatc gtgacaggcc gcgcggcgat tatgagcaaa 960

ccgtcgtggc gtcgtccggg tgtgctagct agctcgatcg cctcgttgct tcgattgact 1020

gcagcgcggc cgtgctgtgc ccgagattcc tcgctcccga ataatgaaat gagagacgcg 1080

cgcctcctca tatgggcacc gccgcgctgc ctgcccacgt gatgcgcgca cggcgcaccc 1140

catctggccg ggctccatcc atgcatgact gcatgtgcac gtccaatcaa tgctgccatg 1200

gcggatgcgc gtgcttgatc agtgtctagt gtctacgcag cgcagggtgt tcagtcgatc 1260

gtaattccta atttgttttt tgtttgttta tttgtttgca tcggtatcgg taaactgatg 1320

agcaagggca agggttcgtt gcagatatat atgtgtcgcg tttcacgtca acgtcagaac 1380

gtgcagtgtg catgtgcgtc aacagtataa caatgtacca ctaacaccgc acacggcgac 1440

cacgccagct caaggtaggt acggtagcag ctaggtgcgt atatatacgt attggtattg 1500

cctgtggaaa ctggagtgta caagagtaca cacacagtac gcgtcagtac gtaggcgctc 1560

aagggtcgcc agattaatac aactatacaa gcaggggagg gagggacaca gcaggtagca 1620

atcagcaatc aagcatcgtc tgccatgcat gatgctgcta taaccagcta gctagaggcg 1680

cgtcgaatac gggccagggc ccaggagagg ctccgttctc cgttttgttg attgattcat 1740

cagccgaggc gagctgctgg ggtgt 1765

<210> 2835
<211> 1663
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6381_G1, chr1:32753297..32754959, Cluster 16

<400> 2835
tattatgtag gagtatagat ggagcagtcc cactgctccc agcgcagagg aacctcacat 60

cgccaccgac ttcgaaccag cagctacatg tgtcactcgt ccttggataa ctacatatat 120

caccaattct cctcctcgtc acttccggtc gcgagtagca atggaacatc ccgagaatat 180

tattattaat gtatgatatg gtgtgcctac aaaatgtgag aagcatacgg tgcctaggaa 240

ttgagttcct ctcttggcat cttggagcag cttaatgcct ttgcttgcag catttgtatg 300

ctgccagggt gatcttttgt tttgttttga attccttcct atcgttatca gatcaccagg 360

aagtgattct ttctcctttt cgtctccttt ttttatcttc catctgcagt catccagatt 420

ccagaataca cgttgactgc tgggagcaaa tgtaggtttt ttacttgatc tggtcaagct 480

cagcaagctt aactaacctg gtgaattatg ttgagaagta caccttcaaa atcacagcaa 540

gggtaagccc ctctagccat gagggtgagc ctttggttct tcaagtcctc aaggatcaga 600

tcattaccat tatggccgcc tctggtcggt ggcgacctca tcgctctact ttacctttcc 660

ggcaaacggc gatagcatcg ttgcgcctta gctccacccg tgacagcgtc agtgcgtcac 720

cgccgatgga tggagcttgc tgaaatccaa cagaccaaaa cgacaagtgg cacaggccct 780

gtagaagcag ccggtcggct cggtgaatgc cacgtgaaga cgtccgtgtg tttacccccc 840

ccccccccccc ccccccccccg ttagcctccc atagtcccat ggtgctcgtc gcgtctggag 900

tctgaaccat tgtacgggcc cgcccgcgct ccaatttcaa ttcatgacca tccatcccac 960

ccgtcgagcc gcatcacgca ctgccgcacg tctcgactct cgagtgtcgc ccacgcggcg 1020

ctccagcagc cccagccggt attcagctgt catacgtcag ttgtgccaac cagaagtcca 1080

gaacggactc cagaagaagc tggcaacgaa ccggccatac tgcctgcttg attggggttt 1140

agggcgtgtt tgggatcaag actgacgata gaaagagatt aagggctcgt tgtattttga 1200

atagcaagaa atttaatccc tctcaacttc gtctcataca tgtgcaacct aataaggcct 1260

aagggactaa gatactctcg ttattcaatt gaatagtaat agaattttag cccttaaatc 1320

cctctaattc tcttgctccc aaataaaccc ttgatgttta ttagttggtt attaaagttt 1380

taggtcattt ttagctggtc taaattttag gcatgtttta gatctagttg ttggaaataa 1440

cagtaattta gtgatgaaca aaatgatttc gacaataata aaataagcag caacatgttt 1500

cataaacgca taactcacta tcatttcaca atctagtgct attgattgaa agaatacgag 1560

aataaccgac agggaaagat agccattatc atagtggggt tggtggcgct agaacaacac 1620

aaaagtaggg aaagcagaac aatgagaacg acaacatcgg cgt 1663

<210> 2836
<211> 1987
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_64364_G1, chr2:71308912..71310898, Cluster 16

<400> 2836
atatatataa agctaactcg agacagtgta aggtcagcgt ctctcccct tttcaaatga 60

gctgaccaaa tgtgtagcct gcaaatgttg acaacacacc gccgcaccct atacatggaa 120

ctcacagtca cacaggaact tgtactgtgc agtcttgtga tgtgcccaaa gcagtggctt 180

ttttttttg gagcggcggt ttccttggaa gtgcaaaagc agcaagggat agaccgagct 240

aggtctcgta tatatatgaa aagtgaaaga acagtccaag atggaacggg caaaaaccat 300

agaccggaga gtctggttca tgctatatgc atgcatgcct aataatataa ataatggcca 360

aaggctctcc tctctctttc acctggtcaa aaaccataga ccggagtctt tcactgctgc 420

tggccgcctc tctgggcaac gttgatggac catgatgcat aaatcattgt ccaaaaggag 480

aggctctttg ttgccgtcaa gtttaccagt gtgtatatat aaccaataac agctcatgag 540

tagcagacta ctagcagtgg cacgaatata ttggtgcagc attgtattgc agcagccagc 600

agcagtatag cagaggcgag aattaagtta gtggagagca cgtacgtaca caagggcccc 660

caaaaccaaa aaaaaagctg gccgtgctag agtttacatg catgcatgta tacaaatatt 720

catggtggcc tgacatgctc catgtcccct ttgatcccag ctttttccc ccccacataa 780

agcaaaaccc acgcactcgg atgcacttgt tggatcttgt gcagtctttt cctatccctt 840

ttaatttttt ttcgccctgc gctgctctgc ccggcctgcc ttctttttac catgctctcc 900

agcaaaagct actgcgtgca cccaaaagtg ggatttggca tgctatatat tctctgtaac 960

ctgctgataa ttaaccaacg acatcacttt atttgctcag tagtaagctc tcttgacgac 1020

aggacctcgg acctcctaaa tgcagtacat ttcttccaca cacagagaga gagagaatat 1080

atgtacattt cagttcactg tactctctcc aaccgtagtt caaacagagt acgtattttg 1140

tgtaatctgc tataaacagt aaatcgattt catatttagt ttctctcacc ttcagcaatt 1200

aagataacca tatgtatgta tatatgggca tgaatctatc atagttgacg aacagcctct 1260

ccaaaatcag ctgagctaat aaggtctgta acaccagctg caggatgcag gatctctccc 1320

aaaatcgcat ggcagacaag gcctacacat ggtgatgtca tctcccgggc aaaaagagag 1380

agagggcagc cgcgctttta ccccatgcag acgcgcgccg tgcgatgatt tcatgcaggt 1440

gtctggcccc tggcgccagc agcagcagcc agtcggggcc gttagccagt gactgatttg 1500

gagtcaccct caccccctcc catcttttc tcgccactaa ggtctgttct ctgggagaac 1560

gcgcgaccac cctctgcagg ctgcagctgc aggtagcagg tagcaggagc acacagcaca 1620

cactcacacg gccggtgtat gtagcatgca gcagagatcc ccagggaaga tagaatcatg 1680

catcttttta tggccctgca gcagggaggg ctagctcttg ttgatttttt ttttttgact 1740

agtatgtatc gatcgatcac tttgattgat gcaatgcaag ggtgagttaa cagctggggg 1800

cattgcagtc tctaccactt tgggcaacaa gcacacagca gtttttatct atctatctat 1860

cttctccata tatacgttcc ataaacaaaa acaaaaacaa aaatgcttcg agccaatgca 1920

agagatcgat cgatcgagcg acaaattctt tacaagcatg catgcatgtg tgtgtacata 1980

acttgtg 1987

<210> 2837
<211> 1634
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6841_G1, chr1:35210711..35212344, Cluster 16

<400> 2837
aactccgatg cctgcagaac cgacacaagg cacctcaaag ccaaatttcg atgctgctgc 60

tattattatt tcggtggtct tcttcgcatt gctcactctg tagtctgtac aaagcgtgaa 120

atccaggtac ccgctctctt gtcatcgcca ctggcgtttg tttccaccgt ccgccgatgg 180

gctcatcagg agtcagggca cggccgcacc gcatggcctt ttttttgta tgaataaatt 240

agttgtcgct aaagcgggca tgatggccgc gggacccctc gtcgtttgtc tctgcttcgt 300

tctcgtgcat cgtcggtgct gcagacggac gtgtgacact ttgctgttaa acttctcaag 360

gagcgtgtct cgctttctcg gtgactaaat catcttgtcg gctattcaaa aaaaaaatgt 420

atttgccttg ctctgttgat ctcgacaacg accttacggc cacgcaccac ccggcatgta 480

taaaactaag ggaggtgtcc attgtgtgtt tctcagcttt tgttccagtg ccacgatacg 540

gaggttttct gtagcttgct ctagaccagc aagttaatta atcatgcatt ccccgaaggc 600

gatactcatt ctttggtcat gagacgatgc gaggctgctg ccatgtatgt taggttaggt 660

cacaccgaaa ccgagcccct gcctgccctg aatggagttt gaactggaca tgtgtacgtg 720

tacgtgcggg gtgagtggaa ctctgtctct agcctaagaa gtagcgtcaa cggagtccta 780

tcatcactta aactctgctt gcttttccaa tcttttaatt tctgcgtcta ctatacacta 840

gtgatacgct tacaccgcat atataaatta aacattataa acaatcgtga ggtatcatcg 900

caagctgtta gtgctaccag ttctttatga aatgggaata gtgaaggcca ggaccatccg 960

cgccacttgt gatgtgagta cgcggcggaa tacgatgtac ggcctaccga tggacgacgc 1020

gggcgacgta ggaacaggag accggacatg acgcgaaacc cgccgtgtat gcgtgcgtgc 1080

gtagccatgc cttcatcact catcagtgag tgctgcgtgt gggagtggaa gatacggata 1140

cgatcactgt tcatctcgtc gtcagagtcc ctgctgcaca cactggtgca cgtgcacccc 1200

tagcttgttg ttgccaaact ggattagctc tcctgtgacg gcaaggaatt tccttgccgg 1260

cataataagc tccaagacac ggcataatgg aacggaaccc gttgcaaccg tgtcgtgtcg 1320

actagggagt agagagggag taatgtacct gctgaacgga acccattgcg tccggtcgct 1380

tgctgatgtc attcctcttc cggctgaaaa tccggacctc ccaccgtttg gcactgttcg 1440

tggaaggcat gggcagctac gcgattgtag ggaagaaagg tatctgtcca acttgacatc 1500

taacctaatc ggctaatcaa cacctccccc tatccaaaac aaagagggct gctttacttg 1560

caaaatatag gagtatattg cgcacgtacg tgcgcgagca gacacgtcag ccagccaggc 1620

cgcgccaacc aaac 1634

<210> 2838
<211> 2239

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7267_G1, chr1:37709851..37712089, Cluster 16

<400> 2838
atctcccaac cctggttagg gtttcactct ctaacagtaa ttgctttata aattaattcg 60

attttagaaa tgcgtttttt tataccaaac tgtatcttgg cggaggacac ctggtccctc 120

agtgacacaa cagttttcaa atgtgagttt gttaatcacg ggcagtagta gaaccccgct 180

ggcaaacatg tttgtattga cctcgaaggc aaacgcagcg tacgtaacat caatacacta 240

cagcacaagg gacagggcag aaactacact tggagacgtg aagtgttaaa aaaaaggggg 300

gggggggggg tgagagaagg aaagattctt gtgaaggatg ttttgattaa gggtagttta 360

gagcccccag acaagcatgt gagtcagttg ggtggctcca atggcctgtg gcctgcgatg 420

ttttttagg ccactatata tttctcagtg ctggtgatgc tccatgtccc gtggcaaggg 480

accatacatt tcctaatgca aaaaaaaacg ttattaagta gtatgatagt atcgctggac 540

gacatgccaa caacccgtgc cccgcttcct ccaaccatcg tctacataca tggatggttt 600

tctgaggact ggaatactgc ccatttgcct gcctgccgtt tgcaacttgc ggatttaaat 660

aaatctccct gcttgatcac tcgcaacagg tcacgagtac ggatgccaaa ctcgcctctt 720

cctggctgcg tccattctga ctctctgagg gcacagacca ggccagcatg cttgtccagt 780

tggttgacgg gagtaactag gcgatcatgt gagagtcgat cagtttgttt ttgtttcgac 840

aatccacaga aaaactcgct ctgtagtctg tactgcacgc acttgagaac acgtacggtt 900

tcaatatcgt gtatttttg tgtacggctt gtggtcagaa accagattgc ggtctgaata 960

taccaaatgg ctaagctaaa cgcgggaata acctttaaa cgtggatggg accggacgct 1020

cacgcagtcc gcgcgcagat tatgttgctc gtccagaaca caggtgacac tactgtcctg 1080

cggcacaccg catatgttac gacgagatga gacgaagacg agaccactag ttatgcttga 1140

gacaactggc tgttgtgggg aatcagatga gacgatcgat gacggcctgt aataatcaat 1200

gagatgggct acgctaacac taacaccacg caaatcgcaa agaccttgta aacgtgcacg 1260

aggaagaaga acaacaaaat ccctgccata gagatcgagt gcagtgttgg atcggggcgg 1320

gcccgtgggc cttcgtgggc ttaaagtgcg ctccgtatgt tcctaaaggc caacacaccg 1380

ttaaggcgga aagcccgcgc caagcccacc atgcggcagc agcgcggcgt cggcgtagcc 1440

taagcacatg gccggccggg tcacgactca cgactccgga gcaagcaagc agggttcctg 1500

cgttgcgacg gatcatcgga gaaaggcaaa aggcgagctc ggaagagatg aactcaacaa 1560

ccagaagtac tcctactagt agccttagca ctgcagcgcc cttccttccg tggcaaggca 1620

tgcatggagc caaagtgcgc ggctagctac catagcagcc tagcctaccc aacgtacgcg 1680

atcttgatct cgctccttga tctttttctt cttttcttcc tctacagggt gtgtgcattg 1740

catactgacc ccctacatat atacacaggc tcggccgtct gtttcggtgg ttctcgatcc 1800

tgcaactgca ctgatgggtg gtcggaaaca aatcgactgc actcactgcc gcccactgct 1860

tctggtctgg tcactgatga cggagaagaa gggcggcgtg ccttttcgct gcatgcagat 1920

gccgccatgc gttgtgcgtc aagcggccgt gacgcgctgg cacatgcagc ggccgcggtg 1980

cggcgcgcaa cggtgggatc tgcatgcgaa actgcaagag tagatgctgc gctgcagctt 2040

ggtgttttat ctctttttgt ctcactgcgt caataatggt actagcatat caatatatca 2100

tgctgtttta tctcttaccc tgtgaatacc gtaaaaaagt tggcgttgtt gctacggtgt 2160

tgatcgtttg agagacacat gtaaatatgc tgttgcgcat ctagtaatag cgatctatga 2220

tcatctacat atatgttat 2239

<210> 2839
<211> 2059
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81630_G1, chr2:179985424..179987482, Cluster 16

<400> 2839
ggacgtgaat ggcaaaacaa tacttgtaat ttgaagtcaa gatctaatgt tttgaacata 60

atgtcatcac cactaagcta ttaaagcatc tttgtttata agaaaacaat atcgtctgac 120

cctataaaaa tacatttact aaggtatacc gccataacaa gtccttaatt tgcccctaag 180

tatgacctgt cgttctatcc ggaccctgcc gaagaagggc cctcttttg aactgagtca 240

gtccgagtag cctaatcatt tagcgtgtta gaccttattt ttatttattc agttttatca 300

aataaaccaa attcaataat ctagaatcga gaaacaaatt agatagggag acggtagaaa 360

tagatctaag gagtcaacaa gtccatacat gatccattat tgtcgatgcc ctcgccggtg 420

atggcggata gctaggtggg ctagagtcag cgctgactac gagcaccttc ccccatcaag 480

ttggcttctt tgttggtgtc gtcaggtgct cgaccttctc ttacaaggtc tgatgcaatg 540

gctcgagagc tataaccagt ggttggggat gactagggag cgggcagcat gcacgagtat 600

tgagtgcggc gcagcgaggg agggaaccaa ggcacgactc gtgagtgtgg acatgtggcg 660

tgaggaggga ggggacgagc aagagtagtg tgtgtgtgtg gcacggagag gatgatgttt 720

gggttagagt cattgtagtt gcacaagatc tcagatgagc atttgaccta tttgtgatga 780

tcgggtcaaa ccatccaaat agatcagtgt cgacgtttga ctctagaatt ccatgtcacc 840

aagaacgcta gtttcacaag ttgtcgctag atccagcgcg tgacgatata aaccgcttgt 900

gtagcatttt cgatggtcga tatcgaccac cactgctccc tcaatcataa catatatata 960

tatatatata tatatatggt ctattctaga tatcctccct cacatctatc ggtttggcct 1020

cattcttgtc gacatccccg agacctgatc cgccccgatg ctcgttcccg acaccgcttg 1080

ctgccgccac tttctcaatg cgtgatgcaa cccaaccctg ccccactcgt tgttgataag 1140

acgtcgaccc gcctggcagg ctctatcttg ctcgccgtga cgatgcaacc ggaccccagc 1200

gatcggcgag cttggcaaac caaagagcac taactcccgg agacgccaca tgacctatag 1260

gactaggcat ttttcacata aaccaaaaaa tcaaaccaaa ctttcggtgt ttaggtgttc 1320

atttatacgt gatgtagtgc cagtgcgtgc tggatcgcct ttgggtaagg gaaaagcctg 1380

gtctccagcc gacgcgctgg cgctgctata ggcgcggccg ccatggctga ggcctgaggg 1440

ggagaggatg tggtcgtgct gtcctgtgtg tcgtgtcagg cgcacggcct acataacagc 1500

tgcgggatcg gagcgaccgc tagctataag gcggtggcgg gcaccgggac gatggaccca 1560

acatggcgac gtgcgtagcg taggctaagc cccgtgtctt cagcagctag ccaggcaggt 1620

caaacaaaat gttgaccaca cgataagaaa agactagctg tcagcttttt ttcgaacaag 1680

tgtcatactt atatgtctaa atcatgcaag attgcggtgt gtgtcacggc agcggcggcg 1740

tcgttcgttg aaccctagcg gcttctcccc tggcgtcgac ggggagaggg agaaggcggc 1800

cattgcggcg ccggcggcgc accggatgta tgagcgactc ctggatgcgc atgtctcctg 1860

cctccgtgtc tagggcggag caaagcacgc ggcccactgt tgtcctattg acttgcctgg 1920

cttgggcctg gctcctctaa acgggcctta ggccacagtt agattgcagg caggccaggg 1980

tttccctctc tcgctcgatg ggccggacat cgcctctgct cgatgtcgcg taaaaacctt 2040

ggcagcgacc gccttagcc 2059

<210> 2840
<211> 1951
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82593_G1, chr2:185012964..185014914, Cluster 16

<400> 2840
cctaagtcgc ttggcagacg gctggttggt tagcgagctg tctttgtgag gccttctaga 60

ccctctccgc ccggtttcta agtacaaaac tataactata tatatatata tatttattat 120

gtgtttgttt ggtgttacaa atattgatat ctttttttata taaaaaatga ccaaagataa 180

ataaggcagc agcagaattg atgtagtttt tctactgtaa cttccggcgg gagcgtgtgt 240

gctatttttt ttttaaacgc tgctattgca cttcagccaa atagagtaat tgatacccac 300

ctgttcgcca ttactaacat ctttcaggac gtccacgcag cacagcgatc tgcaggcggg 360

ggcggaggca ggtgaacgcg aaatcctagg tggcgtgatc gcttataaaa ccgtctcagg 420

cgtcactaac gtggagtgtg tcagtgtcct cgtcgttgtc gcgcgctgcg agctgcggcg 480

acgcattgcg ccccgtccgt ccgttgtagg gaaaggccgg aaagacgatg gagttggacg 540

agcatcattc atcagtcatc acactgtcca gctgataaat gccccgccga gtcctgctcc 600

tacacgggct ggactacagg aacaggatca gggacgctgc gggatgttca attcaaatgc 660

gtgcatgatt ctgccatgcc acgagagcac gccgcggcgc ccacagcaga ggtagagtag 720

agatctgttt cgaaacccgt cgcagcggac gaaatgacat ccgttgcttg ctgcgctcct 780

gaatcccacg cggagaagaa gggccgcgcg cggcagtccc ggtcgtcgtt gcaggcgtgc 840

acatgaacgg cgcgcccggt accagtgcca cctcctcctg cctggcgctg cctcgttgac 900

catccgcacg cgggcaacga acgcgtcgcc gtggtcgcgt cgaggcgcat catgcggcat 960

gctgcggcgg cgaggatgcg aggcaggcgg ctgcatgtta agcctgaatc aaagcgccgt 1020

ggccaggagc cccgctgccc cggatggcaa acccgtattt tgatgatcag gctgctgcgc 1080

cgccggcgtg ccgcgctcca ggcattggta cacccgtttc agcttcaaac acgtcgcgta 1140

cacggatgtg ccgtgcaccc tcgtgtgacc tctaacagga gctctagagg ctcggtattt 1200

ggtgggacaa cggagacgtc gtttctaacg agtgactctg tgaccgtaaa acaacacgtt 1260

cctggttact cgtacggttt catcctaagc caccacgtat attgattttg tgcgaacatc 1320

ttttcagttg cctacacgtg taagacatga gtcgttgcat gagtgaacat aaaacaaatc 1380

attttaagct atttggttgc atccacaaat aggaccaaaa ttaacatacc tagccgacca 1440

ggctcgcgct tgcctgattt gatgtgctta gtcatccaat cagccggatt atggaattag 1500

attcaccaaa acagttgtac tctataaaaa ttttgtcaaa aactacgtct ccaccaaatt 1560

caggtccatc gaaaggatca atgagggcta gtttatccgg ttttatcgtg gagatcctca 1620

aaagatgcta cacatgactt tcacacgagg agtgaaagtt ggttgaaaat tacccaacac 1680

aaccactaaa ttgagttggt tgaaaattac ccaacacaac cactaaattg tggagatcct 1740

caaaagatgc tacacagaat ccactttcac acgaggagtg aaagttggtt gaaaattacc 1800

caacacaacc actaaattac gcagcatacc gtttcattgt caggatatca taagaacaaa 1860

aagggttata tatcgttacc attagacatc gtgcagcaca tcggaataag aacacattga 1920

cgtagtggaa ttagtcaaac gtccttgcat a 1951

<210> 2841
<211> 1757
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82665_G1, chr2:185430453..185432209, Cluster 16

<400> 2841
gttaccacca aaggtttcct gccctttgcg ccagaggctg atttctgggt gggtaaacac 60

ggtgcgccga aaattgaaat ccagatgctt gactggaaaa cgcagcgtac tgatgccgca 120

gcgggtgtag gtctggaaaa ctggaaagtc ggtccgggta aaattgatat cgcgctggtt 180

cgcgaagatg tcgatgatta cgatcgcagc ctgcaaaaca aacagcagat taataccaat 240

accattgatt tacgctataa agatatcccg ttatgggata aagccacctt aatggtaagt 300

ggtcgttatg tcacggcaaa cgaaagcgca tcggaaaaag ataatcagga taataacggg 360

tattatgact ggaaagatac ctggatgttt ggcacatctt taacgcagaa atttgataaa 420

ggtggcttca acgaattctc cttcctggtc gcgaataact ctatcgccag taactttggg 480

ccgttatgct ggcgcaagtc catttaccac ctttaatggt cgttattatg gtgatcacac 540

cggcggaaca gcggtacgtc tgacttcgca gggcgaagcc tatattgggc gatcatttca 600

tttgtagcta acgcgattgt ttactccttc ggtaacgata tatatagcta cgaaacaggc 660

gcccactctg atttcgaatc tattcgtgcg gttgttcgcc cggcctatat ttgggaccaa 720

tataaccaga caggtgttga actggggcta tttcacccag caaaacaaag atgcgaatag 780

taataaattt aatgagtctg gttataaaac cacgctcttc catacctta aagtcaatac 840

cagtatgttg acctcgcgtc cggaaattcg tttctacgcc acgtatatca aagccctgga 900

aaacgaactg gatggcttca cctttgaaga caataaagac gaccagtttg ctgtcggtgc 960

cccaggctga aatctggtgg taatggaact taatgaaagg aatattacga tgaatataaa 1020

aattgctgct ttaacgctgg ctattgccag cgggtatttc tgctcagtgg gccatagcag 1080

cggatatgcc agccagcccg gcacccacta tcccggtgaa acagtatgtg actcaggtca 1140

atgccgataa cagcgtgacc tttcgctact ttgcccctgg ggcaaaaaat gtctctgtag 1200

tggtgggtgt tccggttccg gacaatattc acccgatgac caaagacgaa gcaggagtct 1260

ggtcgtggcg cacacctatc ctgaaaggca acctgtacga gtatttttc aatgttgatg 1320

gtgtacgcag cattgataca ggcaccgcaa tgactaatcc tcagcgccag gttaactcca 1380

gtatgattct ggtgccaggc agttatctgg atacgcgttc tgttgcgcat ggtgatttga 1440

tcgccataac ttaccactcc aacgcattgc aatctgaacg tcagatgtat gtctggaccc 1500

cgccaggata caccggcatg ggcgagcctt tgccagtgct ctatttctat cacggctttg 1560

gtgataccgg acgttccgct atcgatcagg gcgtatcccg caaatcatga taacctgctt 1620

gctgaaggga aattaaacga tgctggtggt gatccgataa gaaaccgatg cgagggcatt 1680

attcccgaga ttcgtgctca gaaagacgta agtctttttt atccgctgat gctaagcggc 1740

agaatccgcg aactgat 1757

<210> 2842
<211> 1648
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86657_G1, chr2:208940291..208941938, Cluster 16

<400> 2842
cccgcaacca aacacactct tagtgtctct aaagaacaga gacgtctcaa cgttgcatcc 60

acatagagcc aacgtttatt ttttatataa tattcaatct tttatttgat gaaaatatta 120

caactaagac tcttaaaatg atatatagaa taatataaaa gtagtatata atcaaatgta 180

ctaaaaagtc ggttgcatga gaaaaaaaat agcctacccc tgtcttgaac attatagtta 240

tggacattat agttagttgc acatgcgcgg ctacgaatca tatatacatt atatggtggt 300

tttatttgta caacataaac aaatatgagt tgtagtggtt agatttgagt gctcactttg 360

taaagaccat gtttcggaat cctagaaact cctggtagcc agccacctac actacacggt 420

gtgcttacga ctacaggggt ttaggccatt gcattgttta cacatgctgg gtttcctcca 480

tcacgttgtc gcgttggtca agcacacaag ggcaaccctc ctccgcctct ccggcgatcg 540

ggcgggggggg gggggggggg gggggggggc atttgtctca ctgggtcgcg agtcgtggat 600

ctggccggcc cggcccccac gcgaggacaa cggtgatggc atgggcgcat ggccctggtc 660

ctggtcctgg tcgtggtgtc tctgaacaaa acaacccaca actttaccaa ccatcaggct 720

gctagtgcta gctgaaggac aggcacgctg tgcggctcca cttgtgcagt gcatcgatcg 780

gaggaccccc catcttttgt ccttggtggc gcccctccgg gccctccctg tacgtgttcc 840

ttcctgtggc tgtggcaggg aaagtgaaac gctgctcgcg aaaatcttgg cggcagctct 900

agttagacgg ttccacgcaa cgctctgcgt ctgggtagag cagtacaagc tgggcagggc 960

cggtttcctt gcaagcatca cctccccctg tgcagtagtg ccagtgtact tttggtgcct 1020

tgccaagatc cacccattac attacatttt tcctgggagc ggcatgggca atgggctcca 1080

tttcgtaggg agggacacat ggacatggcg tcatgctgcc gtcctcccgg cccacagcga 1140

catgtgcttg attagactgg gtccgctttg attagggcta gacagactgc tgtactccat 1200

acaataagca ctcttaggcg cctcgggaat tggaaccaag cggctggctg caaacaaaac 1260

cgtcgcagcc ttttctgcgt agcggcgtga ggcgccatga tgacctcgtt cgttcgttcg 1320

tttagagtta tgccgccttc tgcactcaca attgcacact ccaagcacgc acgccatgac 1380

tcaccgcttt gctctctgtt caccagctca ctactggcag tcgtagtact ggccagtggt 1440

agtgcatagt gtttccttcc ctcacacact ccagtagtga gtgccctaca gatctcgcta 1500

cgttttaccc cttttgcaat cggagcacca aagcgcggca cgatcgacta ggcctacgag 1560

ctacggcccc ctacgaggta gtacgcgttt tcaccatcag tcgtttcctt ggccttgggc 1620

gacacgagac gagaccccgg cggcagag 1648

<210> 2843
<211> 1493
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89320_G1, chr2:223395433..223396925, Cluster 16

<400> 2843
atgattaaca tgtgtattct aaagtgaaat tgagatcaca aggatgaaga ttgattggcc 60

tatacaatat tcatgctcta ttgatagaag tcacttctcg atttgtaaaa caacgagcaa 120

aaagttaagg atgaactaat tttaaatgtc acacatagat tagcgatgtt ttttttaat 180

ctttcttta agagtactaa aatagaaata ggcatcttga tctaagtaag tttagtggtg 240

agcagcgatg catatttatg aaaatctagt gctaggtaag cctacaaaag tccataagaa 300

gtttgatatt aatcataact caaaaatcgt ttaaaacaag tgagttggtg ttgcaacaga 360

gataccaaat atgtttgatg gacactggat atgtgccatt ggggtcaacc ttgtttagat 420

cggagttaac tctacgcatc ggtatgatgt acatgtacta tatatgacac ctatagagct 480

atgtagacga tcgtttgagg tcatacattt atcagacgtg tttgatgtgg cactgtatat 540

gataatgtac ataatttcta gagagattgc aaactgagta cgagacgagt atgagaggag 600

agagattgca aacagagtgt gagaggatga gtattcattg aacccgcttc tcgaggaccc 660

agagcggcgc gcacggagtc gaagtgaccg gtttcgggac gggcctgcac cacgtccggt 720

acctcgtccg gtcgtccccg tccccgtcgc cgccgacgac ccagcgacct cgttggcgcc 780

tcgctgacgg ctgacctcta cccgtaccat tactacttac agctccaggc gctagctgtg 840

gtcgagactc ttcgcggtgc tcccggcgcg ggccacgcgc gtcgtggtca ccgtcgacgt 900

gggcgtgctc cagaacgagg accgtacgcc ggagcgcgtg gcacgcatgc gcgcggcgct 960

tgaggtgctg gcgcgagaga cggacgcgtc gcccatggcc tgcgttcaag agagcagcgc 1020

ctgccggtgc cggtgtgctg cgatgagtac tcaggtgggg gcgatcggcc agcgaagcgg 1080

gtgaagaggt tcgctgttgc agtcgcagtc gcagggaagt tgtgcgccat ctgccacgag 1140

acgctggagc gtagactcgc agcgtggccc cgctgctccc acgtcttcca cggcaagtgc 1200

ctggagcagc tcgtcgtcac ggggcagcgt cgctgcccta tgtgtaggag actaggagta 1260

cgctgtcaat caatgcatgt tcgattgatc tgaagcatga atttgctggt tgtatgtagc 1320

agtaacattt tcttctactt ctatgaacct ttaatttcac gggaacagag agattcggga 1380

acaaccagat gttctaattg ctactttcaa accatgttcg attgatccgc tggtttcgaa 1440

tagcctgact gcgtgatcat tgaaccgctc aacggaccta acggttgggt tga 1493

<210> 2844
<211> 1647
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92455_G1, chr3:2150008..2151654, Cluster 16

<400> 2844
agcggatgca ttgcattgca tgctctagta gtggcgtagc tggccgatcg tcatccagct 60

agctgaggac gtacgtacga cttgcagaaa agaaaggaaa catgcaaaag tatgcaacta 120

ctacgggatg caattgtagc tctgttaatt accctgctgt atatatatcc agtatgctta 180

tatattgctt aattcttgaa agagttgaat tacatatgta ggaataaggt tttgtgcggg 240

tgcatagatc tctccattgt ccaaaaccaa gcgtagtagg tcaatgagca cacagcaggc 300

taggcacagc gcggcatcag ccaacagggc cttcaaactc tcaacagtac gtgcagagtg 360

atcgagcggg ggagcgggca gacaggaagc agagctcgga gaccgcccgt gcatgtccgt 420

aactacacag cgcacatgca tggtgacgac tgatgagcgt cacatatgca tggcggaatt 480

cctcgacgaa cctctgtgtc gtctcgtcgt ctttggccgt aggaccatgc atgcattgaa 540

ttcaaacgag aaggagtagg gccggcggca cccgttttga aaatgaaagc tgatgggttc 600

cccgatccac aacatcaaac cacctgcgtg cgtgcgtgca ctatgcagcg agctagcgcc 660

tagcgaacag cctagcatcg tccctgttca gcagcagcgt gtccccctct atatcatgtc 720

cgagacccca acagcagctg ctgccgccgc cgactgtagc gtggtacgcg ccgcatctac 780

atgcatgcat cacagaaggc cagccggccg gccggcggtg cttgtagtac gtcacagcta 840

gcgatacgta cacatgcgca tgcatgcatg catgcatgca tgatacacgt atccgtcctg 900

ccccccccctg ctgcacacgc gttacagcta gcgatacgta cacgtacgct agctcttgtg 960

tgtctgatcg ctggagatga tgtggcactt cactagccag cccagtctgc ccagagcccg 1020

tctgtatgga tggattcttt cagctctagc ttcttaattt gacatgcgcg cgcagcgcac 1080

catatgcatg cgtagcgacg cgcgcgcgct gtttcaacac tgtttaattt gcaggagttg 1140

ttcaagttcc ggccggctag ctcctcaaac gttaccgtag cggctgaaca gtacgtacta 1200

gaagaaggca atgagttgga gttgacgtga gctgcttgca ttggactccc tcccggacgt 1260

gacgccactc tgactctatt agctctctgc tctcgtgtct tcgtactagt gtgcatgtgc 1320

agcgtgggac aggaggagga tgcatgacag tcatttgatg cccagcagaa agctatggac 1380

aaaaaaaaaa tgccaggtat tttagactgt aaaaagctcc gatccgttcg ttctcatcag 1440

agatagtgga acctgcgctt cgccttttg attgttattg taaaagctgt gtgtgcatag 1500

cctgctctgg gcacgtttgg atccctagct agctggattc tggacgaagc tagctttcac 1560

ggaaacggaa tcttggtatc cggaacaggg ctaggctggc tggcatatgt aactgcgatg 1620

caaagctgaa ctggcgatgc gtgcatg 1647

<210> 2845
<211> 2002
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92573_G1, chr3:2626286..2628287, Cluster 16

<400> 2845
tgtacttgct tggctatatg cgtaagttaa gtatgtcggt ctattaaagt aataacgtcg 60

gtttatgacc taaaccgacg ttctttaata gtatatcaga gagataaaaa agataaagaa 120

aaagaaagtc ttttacaagt gtctgtccag agacgaggct cacgggacag gaccaccgcg 180

agcacggaaa tatatagtca aacgaaatgt ccctccctcg ctcccctgga gattatgact 240

cggaatcatg aggtcgcctg ctatttggtg ttatccctgc acaaagggat atgctagaga 300

gtgagtgaga gagacagagc aaaaaagaca caagtctagt gcatgcatgc ctgattatac 360

agcacctccg tccgtccatg gatgtccgcc tttaaatttt attttgcagg gatttcagag 420

ctttgtgttt ggaatgcatg attgggtttc aagtgcctga gagcgcaatc gattgcaacc 480

cagatgccca caaggctaaa ctatcaactc aagtggagtg ctgccttgaa tttgaaatgg 540

cgtcacgcac ccagatggcc atcagcgtga gtgcgtgcgt gttacagatt gcgcgtgtcg 600

ccgctacagt agcgaacgct ctctagtact aggcaattca tggagggtgg tggtgctgct 660

ggcctgctgc tgcaccggcg gtacggatgc atgcgaccag cacgaggctt ggtcactcat 720

gtaggaagca ctggagcagc gggaggggga ggaggacgag gacgaggacc gaccgggcgg 780

cccgccgcgg cgtcagccac cagcagcagc gcggcagcac agcgttccgc ggctcgggaa 840

ggcttagctt gttgcgcact caaagcctgg cggccccggc cccggccccg agcacggaca 900

ggcacgcggc cccgggagcg ggcagccggc agcgtacggc gcacgtgcgc cgcgtgtgcg 960

cgcccccgcc taggaaacag tggtcggcac gcctggccac cacacacggc cgggcccggg 1020

gccggggccg cgacggcgac gccacttgac ctcacgctcg ctcggtcggc ctggctcgcc 1080

ggcgtgcagc ctactcctcc gtctgcccag cgagtcgggt cgagagtgtg aaacgcggcc 1140

cgcactcctc ccgtgttgtt ttgtttggcg tcgcgcgcgt gtttttgctg ctgctgctgc 1200

ggcggcggcc gtcggcgtcg tgggtggcga gtgcacacgg cgtggtgtgg ggcggcgggg 1260

ccgtgtaccc gtgccgtgcc gtcgcgtcgc gtcgtttggc aagccacggg tcaggctgac 1320

ggtgacggcc gacgctgacg aatccataga catagccata gctctaggtt gccgcggtgt 1380

gtgctcgctc tgtagttgtc tgctcccgtt aaaatttcgg acgagacttg aggcgacgcc 1440

gccctcctcc cgtcctccgt cgccctgtcc ctgtgcggac tgacgcgcag gcaggcattc 1500

cgggccttgg gaggcacaca cctcgctcgc accgctagct agtactgtag agagagagag 1560

agagggcagt ggcagcagcg caggcaagca ggcaagcagg cctaggcggc taggctgcta 1620

tggcagggcg aacgcggcca acgggggcga gacacgaggg cgtgcaggtc ccgatggagg 1680

ggacgtgaac gtgacagacg gggcttccct tcttccacaa tgacccaaaa aatcctcaca 1740

atctcaacgc cagaagccgt cgtcctttcg cacagtgagc ctagccgcgt agctaggacg 1800

gtccacgaag gacaaataca gtttgctcgt cttctttgcc ccccatacca ccggcttcgc 1860

ctcgccgggc tggctaaagt tggtttcgta aagttgtctt cgttctcggt gggtcgaccc 1920

ctcgcgcgcg cgtggtgggg ccgccccgtc ggccggcgac gtccccgtcc gccgctcgtc 1980

tcccccgtcg agagattccg ac 2002

<210> 2846
<211> 1626
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_92613_G1, chr3:2758527..2760152, Cluster 16

<400> 2846
ttggctagga atgtgaagat accatgcatg aatctgctac gaaaatctag tgattcacag 60

gacacaatag atcatacatg atgtcacata gtttggccct agtggcaact ttgccagggt 120

taattatatg attgaaagaa gtgacggtac gtgcagccgt aaggtatcac tgattgaaag 180

agggtttgtc aaaccctaga agcacaccta gaaagttaaa ggtagggcta ttttttagga 240

gcatgtatgg agaaactgtg catgaatctg ctattcagac ctagtaattg gaatgacata 300

gtacgtagat catacatgat gctgcacagc ttggcaatga ccttgccaat gattatgata 360

ggattagaag aaatgacgtc gttgggtacg tgagagatct gtcactgatt gaagagtgcc 420

atcaaactcc gaggccatgt ttctttgagc tgcaattttt agagctattc tgaaaagctg 480

ctgctgaatt ttgatcccca agaagctaat gatagctttt cgatgatgtt attaacttcc 540

taaactcaag aaatctataa aatcaggctt ctcagctttc cacataaacc cagcttttct 600

gagctccggg tttcaagaag ataaaccaaa aagctagcta tttgtttcaa cttctgtctt 660

ttcacactaa gaagatgccg agaagctcaa acaaataggg tctaagactg tctccaacac 720

aaacattatc aaacagcttc atctatagtg tggcgtctga tttacactat ccacgtaaga 780

cagcctaagg ctaagagaac acctagaaaa tgaaagttag agctaagaac taccaaccgt 840

ttgattgcat gaggagggcg agtcctcttt aaatattttt tttttcagaa tcgtctatct 900

atcccaaact atgaggtttt gtggtgtact ctctctaaca tgaaaatgta acaaaaaatt 960

atccaaatta tgagggaacg tatgtgagtt acctgtcatt tgtgtattat caactcaagc 1020

accaaagcta ttaagcgata gtcacatgct caaatcataa tctgctctaa aaatccatag 1080

tctgaattca ggacatatcc atgcttcaaa gaaaactgct gttggtaaaa tggtatcacc 1140

acccatgcta ttcatgggct cgtaccgggc cagcaggcag ccatgcatgg gctctgctgg 1200

caatggcagt ggcacgcagg cgcgggggcc gcccgccggg aggcacggcc gggcgcaggc 1260

tcgctcacgt acacggtaca cggtacagca accaaccgcg gcgccgctgc atgcggagcc 1320

ccggcccggc cggcgggaag actgcgcgac gcgcggcgcc gctggcctct gcctctgccg 1380

ttcacgagtc tgccgtcgta cgcggccgca ctgttacccg atgcggcctg cgcgcggcta 1440

ctacagccat agctagccag tacggcgcca cggcgaccgt cgcctgctcc gagctctcac 1500

gtcgccccgt cattccagcc gtctcctcag ctccctaaga cctgcacagc ctgacggcca 1560

ggtcgccggc cagacctgca gccgtggcca tgttctggtt ctggcaaagt ggcaacgcaa 1620

aggccg 1626

<210> 2847
<211> 1753
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92791_G1, chr3:3554339..3556091, Cluster 16

<400> 2847
gggacataaa aaccgggcag agcaacttga agggcgtctc gtatgggtga cggattcgca 60

tcctctcttt ctctttgtgt gtgtgtgtga cgctgcctag gtttaattgt atgttccaac 120

agtgtgggcc tgtttcttcc gagactgaaa cttttatcta cacagcattt atatacaact 180

tgcttgtgtg ggcctgcgcg ctgtaacaaa caaaggagaa tgtttcgttt aaggccaaaa 240

gaaaaaaaaa gttcgtgacc cgtatatata tggcggtata tatatggttt cctaaccccg 300

tgcacctggt gtgatgacca cacctttgc gtacgcaagt tgatgccctg gttaattaat 360

aatatgcatg catggagatg attgtgcagc gtagcaatat acagtagcat atatatagcc 420

gtagcatctt ggaaagctca actttggctc gccgagctgc tctttcttgt tgctgttgtg 480

aaaccgtggt ggtgcagatg ataagacgca cgtagacgta gggttgcgat cctatgtata 540

tctcccccat cgaatgcagt gatggatcac gaactcgaga cgtcgtcggc gccatgccgt 600

agccgtagcc gtagcttggg ccacgtagta agtatgttat gtagggcta ccatacagcc 660

gttccgttcc ccagtagaac cctacgtacg ggtcgggtgt cgcgtggcgt atctcctcac 720

gaactcgaga tgcgcggcta gcggtggatg gatggagacg cagacgcaga cgctgttccc 780

ttagaggtgg cgctcgcaat cgcaaccgcc ttttatcttt tctttttctt tccccggtcg 840

cttagcttgc ttgctgcagc gggagattat tccacttggc agcgcccggt tcggtcgtcc 900

gtgcgtgcct tgtggatcgt gctctgcttt gtacttggca cactcttctt tccttttcag 960

tcgaaacggg gaacgcctct tgggcttggc tcttgcttct cccccgacgc gagcctcttt 1020

gatttggcgt ctcttttcc ttctcccccg acgaaacggg aaccctgaag tgagccggtc 1080

gggccacggg aatccgcgcg accggacgcg gcgagcgcac gctacatgat tccaccacac 1140

tcacacttcg tcttcatccc ccggccgtgg ccgatatgcg ctctgattgg ctgcgatggc 1200

gagctatgtt aagttgttgt gaaccgatcg gtctctctcg ttagtctacg cttgcattgc 1260

attgcattgc atgctttggg cgtgggccgg tatctggcac tctacccgat cagattagcg 1320

gcgcccgacc cgaatcagat gccgtcacga ccacgctatc cgacctgatc ccacaccagt 1380

acaccacacc gcacgggacc tcggcctcct tccggggaag cgacggggcg ggcggctgcg 1440

ggccgttgct tgggctcaat tagcctggca gaccgatgcc cgtctgctcg agcttagcga 1500

cgctgcacgg acgatacggg ccggcctcag tacagcacag tacagtgaca gtaataatgg 1560

gctgggccgg ccatgcgaag tcattgctgg agagagaaga accgaacgga acggaacgga 1620

acggaggaag ggccgagcgg gtggggtggc gtaccgggaa cggagaggaa ggacagcatc 1680

gcaacaataa gctacgcgcg gaggaggagt cagcggatcc tggtgaatct ttctggaagc 1740

tccaaccgcg cgg 1753

<210> 2848
<211> 2248

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92958_G1, chr3:4670333..4672580, Cluster 16

<400> 2848
atcggactat tcaaacttgt tacagacagt aatcaagtgt aaaccgttac cgttaccctt 60

tacgttacat ttcatgaacc aaacaacacc tatatgtcta tacatctaaa caaaggctta 120

gcctaccgga ctgttttcca aacaaacccg ggactgatga aggattgaag gtcaatggag 180

ttgcagcaac gtgcaagaga actcgagagg ccagtgttgg atggagttat tagtgcagac 240

ctgtatgagc tttgagctgg aagctgcgtc ctgcgtgtat atttcacggg aggaccggga 300

gcgttgcaca tgcatgctgc atgcaacctc gctgctgctg cctgctctct gcaccgcgtg 360

acaatgcaag aacgagcagg cgagtagcta ctacgactgc actgcacact gcagtgcact 420

agtgctgctg ctgctgcatg cggcgcctgc tcgctcgcgc gcggccggat cggaagggat 480

cgggcatcgg acgagagcgc gcgtccttag ctagccaaac ttgattcgct cggtctcggt 540

ctcatgtcgt ctctctctca cgtgcatgca tatatgtcgt ctctctctct ctcgtgcatg 600

catggacgag gacgaggacg atggcatggt cgtctcgtgg acgacgacgg atcccagcag 660

acactgacga gcgatggcac acagtctctc tgactctctc tcatcacatg catgcttctc 720

ttcgtctgat acctccggcc tctagccctc tactcgtaca gtcgtactcg tacgtaggag 780

gacgacttgg acttcaaagt aacgtaccgt tcgctgtgtg tgtgcatgcc gccgcgcgcg 840

ggcgagtctg gagcaacaaa gttgtttgtc tcttgttctg ccaccttgtt ttgcttgtct 900

tcttcttcgt ctggcctcct cgatcgacag tttgttagaa ctgaggttaa taccctacga 960

tcgacgagac tacgactacg taaccataat atgcaataat catctacgta tatatcgtcc 1020

gaagccgaag cagacatgca tgtgctccgt gctcgagctt gagggccgcc tactaggcga 1080

ggggggccag tactggctgg cctggtcgct ctgcaatgcg aatgcagcta gccaattcca 1140

tagatccaat ccaatccggc cggcctgcag gctccaggct ccaggctcca gcgctgctcc 1200

attcatatat ccatccatct ccatgtgctc caaggtaagc cacccctggc ctagctacat 1260

gcttgttggt acacgacaag ccacacacat gggccaaata tatgatctca tgtcgtgtgg 1320

aagcaattac gtacgcaagt gatgattcat tcggctgttg cggctctaat taatctcgca 1380

gcagcagcag ccgcagccgc tggtgatgtt ggacgtacgg acccatgtta tcctgtttta 1440

tcctatcgat cgatccatcc acaacggtat cagattttgc tgcatataca tgacctgtct 1500

ctgatgctct gatgatgctg gctctctctc ctagctagac taatgtcgtt ggcctttcgt 1560

ttgatcctac tactaccagc cagtcgcatg catccaaatc caagtaagct agtaataagg 1620

cactgctaat aaaggaaggc tttgcagtac aataagcgat ggatgccatc aaatagataa 1680

cgccaccttc ttctttttt attttttgc tttgcttttt aaacaaacat aaaaagtcca 1740

tcgaggtgcg cgccggcgcc gcggtggagg cgggaacgag cctgccgtta cccgccaaat 1800

tttcttttta accgggcagg gagggtgagg cggccggccc cgcggcgtca gcaagcttgc 1860

tccagctgcg cctgcgcagc gagagagatg gtagttggta gcctgcgcga agggccccca 1920

ggcgcaggga cactgcagcg aacaacagca cagcttccgt gtttaattct gtacgtgtat 1980

gtctgcagtg cagatgcact tgacttgacc gccccccgcc ccccccccccc cccccccccc 2040

ctctaccgca ggcaggattc aggaggatcg gtcaaccaag tttaagaaag attaataata 2100

acacacgccg tagtagtcgt agcatggacc aaaaacatat gtctaagcaa acagtggcac 2160

gtctagctag gtttatgatg tggcgagtta tgatcatgaa tcaaacattg ttctaatccc 2220

gtacaatgaa gttcgaagta atatacca 2248

<210> 2849
<211> 2475
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93314_G1, chr3:6000208..6002682, Cluster 16

<400> 2849
caaaatcact atgggagcat acacgagtca aagatgatgt gagtacatgg atgacgtgac 60

gtgttaccca cgtacttaac tgtcactagg tgttatgtat tgatgtcaac gaggaatttc 120

ctaccaggga acgactctcc atccctgccc caacgaggag aaaaaatcca tgtcctgtcc 180

cttcgaaggc tcacatacat cgctttctcc tatctccgtc ctcgtgagga ttccatctct 240

tttaggaaat gcaatgttta aagacaactc catgatttgg ttgccaaaca attaaactcc 300

atgaactttg ttgtcctaaa aaaacgtaga gttagggtaa actccaccat ttttagtgga 360

gcagcaaaag aggtattcca taaagcttat tttctgatat aaacacgaag tttgggttaa 420

ttacccacaa atgctactag gagaaaataa tgttttgtct ctctttattt tccttccctg 480

tgcacacaag tttctccctg aactcatctt cttcctcgca tggacaccct agcgcccacc 540

atggatgcac ctccggagtc caaatctatg ggatgggatt gacaacacga attaatcctc 600

cccttcttca tgctcctaat ctccaagtta ttcgagccga tttgaccacg gaaactcagg 660

attttgtcac gccatcgttc ttggttcctt cgacgactgc tgctcggcac ccaaggccaa 720

gggcctgcag ctcctcctgc tgagcgtggc attcttggtt ccttcgacga ctgctgctcg 780

gctcgacgcc caggggactg cagctcctcc tgctgagcgt ggcatgggca ggagcgaagc 840

cagctcaaaa ggaacaccgg tgtatactct attaaacata aagaaaatta tacattttga 900

aaaaagaata catgatacat ttaggatggt tattaataaa attttatctt acatgataca 960

tttaagatgt agaagatgag ccaaatcagc accagaaaga aaatgacgat caaggagtaa 1020

ctgaaacata aagatcactg ctgcaagtgt cggtcgagtg gcccatagcc gcgattccca 1080

cccatgggct ccgcgcgaga gaggaggagg ccggcccatg gttctcgttc gtcgccgcgg 1140

cgagcggcag ctttccttct agagaaggaa tcacgacgcg tcatccatct ctggaaacac 1200

aagaaaaaaa ggaggccgac ggcgaccgac gcatcaacaa aatcgtggcc gccgtgacgt 1260

gatcgtcact gacggaccga ttaggatcag ctacctttc ctcaagtttc tcttttccac 1320

ggatgtatta ggatcaatca cggtcctttt tcagattctc tcctctcttc ttcttcttct 1380

cgataatgca gatcacgacg gatcggtgag acggtgactt gttagctagc tttgatttgt 1440

cgtcgtgcgc gtgcgcgtgc gcgtgcatgc gcgtgcacgt gtgcgttgcg tggttgcttt 1500

gcttgctcgg tttcgccgcc ggccggccgt cggtggcctc ggccgcgctc ccggaagcca 1560

gccagctgcc agcacgcagc ggcgaaccac cgacgacgag acggttactt gtccggcaac 1620

tgctattcgt acgtacttcc tgtcccaaca cgtcaaggca atcgatgaga agtttgtatg 1680

gcgcagcggc tgaaaagcac gtgtggccgg cggcgcgcgc tcatccacgg ccacgagacc 1740

agatcgccag actcacaaac ggcggcgtgc cgtggcgtcg cagacgagac aacagacaac 1800

atgtgattga ttttctaggt ggagtacctg atgtgttttt gctacggctg gctggctggc 1860

tggcgaagaa tggaaaagcc ctggaatggc gcagcgcggc gtgacgtgac gtgacatgat 1920

gccgagcaca gcacaggcac ggcaagtttc cgctgctggt gctggccgat ctgaccgaga 1980

cgaagtcgcc agtcgcgtac gtatgggcgg cgtatatgcc tcgcccgtcg tcggggaaaa 2040

gaaactccac tgcatctgcc tgccccgccc ccgtgcagga tggtgcgagg tggtggtctg 2100

gtccgatgat ggagccgcat gcgttgcgtt gcttgacgac gaaggagctc ccgtcgtaag 2160

ttacgtgcgt cagcaccagc cgccaggccg ggcgcatgcg tacctccgta cacgacctcg 2220

cagcatatgc cgttctggaa ctcggtccgc tgtcgtccta cgtttgcagt gtacgacatc 2280

aattcctggc acacaatcaa tcagctatat ataaaaatat tactaatgtt gtatacgatt 2340

acgatgtaaa ccaagaccgt ctgcagactg cagcggctcc cgcggagcgc ccctgcgcct 2400

agcggctaca ggtacccgcg atatgccgca gcggcgcacc ctaccgcccc cctctaaact 2460

gcagtaatgt taaca 2475

<210> 2850
<211> 1866
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93549_G1, chr3:6976075..6977940, Cluster 16

<400> 2850
acttgtgcat gtcgtacagc actcatagtc atacatacat caggcgtgca tggcgcatgg 60

gttggaactt ggaaagtgct acgtagctgc atgtactgtg gcagtggcct cggcaagggt 120

gggggctggg ctgggctggc tcctgtgggc agccactgcc cactgtcccg tgcaaagcaa 180

agcaaaagcg gccgcgatga gtcacccacc gcgcgcgacg gtggcgcaaa aggatctttt 240

gcgatgaagg cgcgggggcc gtatacagca caggtggatg catgcacggc acggggagct 300

gacagctgag atcccacagc atctcttctt gagcatgaca aggatgtatg catgccgcgc 360

cacgcaacgc aactcgtcgc gatcgatcga tcatgttggc gttgtgctgt gcctgatttg 420

aacatgacat gcggcagagt tccaggcaag tgctgtagct agcgtccgtc atggtagtgg 480

tagtgcacct gttgcgggca caggagcttc gccgtacccg tacatacgga cctaccagtg 540

tctttgggct cttggcgacc tgggcgatct atcgccagga aggacgcgta ctcgctcggt 600

ctctgtgtca cagcaggcga gtggtgatca cggccggccc gccgctgggt gcatgcagct 660

agctagtcaa gtcaactcag ccggccgatc gagctcgatc attgctcgct cgctgttgcc 720

cctgtgatgt gcaagtgcat actgtacgta ctacgcgtgt ggcagctggc tgctgactcc 780

gaggaggcgg gcgtcgctga tgacgtgagc accacgggca tgcagctggg cgcggcagtg 840

ggcgtttgac cgccccagct ccagctcctc ctggaaaaca taaagcaagg tccatactat 900

gtgcggccat gcatctcagc ttcagagtgc cgtacgtatg catgtgtgga gcggtagtag 960

tagcagtaaa agccactggt ttttttttt ttttttttgc atggatggac cccggagcta 1020

gcagcagcct agcaaggtag cggtgcatcg tgagttcgtg acacgcatag acacagtgga 1080

cagtgtgctt ccatacctgc cggacgcagt gtttccgacc gagctcgttg tggaggcggt 1140

agcggacgca ctggtgacaa tactctgagt agtttacatt gcattattgt atagtattgt 1200

ataatgggca aaacctttt tggcgcctat cgggtgtcac gtagctgtac gaatcctggg 1260

tccaaacaaa aaagaaagca gcaaggaagc gccaaagggc ccagcccaat catgccaatt 1320

tgaacccgca gccatccatc ccctcccccc cggggcagca agcagcagca cgcaaccggg 1380

tccggtccgg tccacggagg gaaatccatg ggattccgca ccgcaccgca ccgcctcttt 1440

ctttcgcccc gccccgcttt tcggatgggt tgggttcccc gtgcgggcgg gtgcgcggtg 1500

cgccagcaag cacgtgccag ccatacgccg aggaggagga gcagcagcag ggcctgaatg 1560

cccgcgccac caatcagcgc tccggtcaac ctggctgctg cccgcgtgtg gaggtgcgtg 1620

cgcgcaggga gggagccaac ccacccaggt cccgctcccg cctcgtctcg tgtgcgccgc 1680

ccagatccac cggagaaagc tatcctatcc tacccctcgt cacgggcctc acggcccaca 1740

gcgaggatca gcggacccat cagcgaacca tggattggat cgggtcaccg tctaccgcgc 1800

gtgggctccc atggcggacc gaaatctctc tgcgccagtt attataagtg ttctccgggc 1860

gattcc 1866

<210> 2851
<211> 2365
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93690_G1, chr3:7942560..7944924, Cluster 16

<400> 2851

acgggggggca ttataggcga gtcatcactc atcagccgcc gggctctccc gaagcgcgcc 60

aatccggaag caaagcatgt gtgtcgtagc agagctggcg cgtgtttaac gacgggaggg 120

gaagagtccg cggggtggtc acgtcgggtg agcagcagca gctcggagct tcagacggcc 180

gcgggcggga gcgggaccag gcggacaggc tcaggccgca ggcgggacaa gctctcgcct 240

cgctcccccc acccccccgcc cgccccgcgt gcgtgacgca ccgagtgggg tcaggcggtg 300

acgcgctaca cgctttcctg gccctggagt gcacgcgtct actctgccag cctatgcggc 360

cgtcgctctc gcgtccgtgt ccgttggctc gttccgagtc cgtggcgacc ctgtccctgt 420

ccggctcctc ccgccgctcg tcgtctatct actgctcgct ccgcagagtt gcggtgcctt 480

gccttgcctt cttcctgctc ttttcagcct ttttttcttt tctcgacgca ccaaagggcc 540

acgggttcgg tatcggtctc ctgctgctgc tgccctgtcc tgtgtgtgtc ctatactgct 600

tgtctcttca ggttcagggt cgcggctgtg gcaagtggcc acgccgtttt ctttttcttt 660

ttctttttgt tctctccgac caaatgggtc ccgtcggatt ggattggatc cagatcgaag 720

cgggcaagcg gccaccattt tcctgcggtt ggcgctacga tttcccgtgc tcccacgggg 780

acgacagaca gacgccgcca acgtcagcgc gcgctgtcac cgttccgttc cgttccgttc 840

ctgcacaata acccggtccg tccgggatgc attttgaagc cgttttcggc gaactgaagg 900

cgacggctcg tccagtcgcc ccccggcccc cgcgcacggt ggcactgctc atccgcacgc 960

gtgcaactcg gtcggtcgcc acgtttacag gtggacaacc agtgcgtgtt gtgtgtgtgc 1020

acagcacaac agcgaccgcg aggaagactc tgacggatcc cgtccgggtc tggtttcgag 1080

tttgaactgg agccggccac tactgttccc cgagcggctg gaggtacggg agaccggtaa 1140

gaacacagcg ccgcgacctg gacgggacgg gagggggggg gggggggggg gagcttgcgg 1200

gaccgggcgt gtcgtgtcgg ccgcgtggaa gcggacgccg ccgtcgccgt gccggggctt 1260

gtcgcgagaa ggccggccac gctcgggctc ggcggcggcg gagtggctca cacggctcgc 1320

gatggccaag agcccggggc tgtctgctac ttgccgtgtt ggaccggaga cggagccgcc 1380

gaaattaatg ttttctaacc agcaaactca tccgtctcgt ttggagtctc gtttgctgct 1440

ccagtggtgc aggaaccgat cttttatacc aacccccaag cacaccagaa agcgaggcaa 1500

agaacgaaac gtactactac tccggtaagg tctcatcggc cctccaacaa acaggagtac 1560

aggacaacga tcggctgcat cggcgctgct gtacacgagt tctcccaaaa caagcttcaa 1620

atattttctt gacgactcgt ttgaatcctt aattaatttt aattcaaaaa taaatagaaa 1680

aatagaatct gatatctgac tcggtgttta acctgtattt acaaatacag ggatattttg 1740

actctttaaa gggcgcaacg ttttcagaca catctcgttg ttttacgcag taatcaaagc 1800

cacaatttag aaccaagaat ccagccaaca taattccatg gctaccttca caactacaaa 1860

ttttctagcc agacatatct ttcgcgataa gcttagcaag atgaatcatg gtctatgaaa 1920

ggcacatgtt ctagccatgg tgcgaaaaat cgcacctaga tagccacctc accgggacgt 1980

catcgacatt gcaagctact ataaaggtac aacaaaataa tgagaaagac gtcaccgaca 2040

acccttacct tctatcatct atggcaaaat atgtcatgac aaatatagcg atgagcgcca 2100

ccacagtggg aaagttttcc tctatgacta gaacacactt catcagccca agaatagtta 2160

aattgttacg agcattataa ttatcataat acatattcat acaatatagg taaattgtta 2220

ttagaggtta taattgttcg ctttatttta tataaactta attaggctca gaataatttg 2280

atttagatta gttctaaaat tacattcctt tcagaacaga ggtagcatat acatttacaa 2340

agttgaggag gtcaaaaggg aatac 2365

<210> 2852
<211> 1548
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94557_G1, chr3:12525401..12526948, Cluster 16

<400> 2852
ccctgctccc atcgttgcag cagcgactag agaatgtgca tgtgctgccc acctagctag 60

ttgccgctcc actcagctgg tactacgcca taccgaggag ccgtgctata tatgcgccta 120

tctaccacct tcatatcatc tgatctggcc gcagcccgca gcctctccac tgacaaagcc 180

tcaattatgc aaacgtttgc acttgcagtc aaacataaac atatatatac tctgatactc 240

cataaaggga gagagagaga gagagaagtg aagctaaaag gtgaacaaaa aatgatcaat 300

tttcgcagtc ctagctagtc agcgacgatt actaccagca gtcagctagg ttacacttaa 360

accagggtcg acggcaacaa gcaggatagg atagcgaggg tcgaggggac acgcatgccg 420

tccctccatc agagaaaaag gcgaagagcg agcgagcatg catgcttgcc gatgatgcgc 480

catcaaagtg tgcccgcatc tgaggctcat gaaaagcagt gtcgcagtct cccttaaaag 540

aagaacatgg aatggaatgg aatggaggac agtaggatgg cactgctggt gctggtgccg 600

aaacaatcga tcggttccct tcccccgaga tctcattcca tcccatgcat ttcccaattt 660

cccatgacca tgcatccctt gtgtgcagct agctcgcagt gcgggcaagc aaagcatccg 720

catcagctgg agcaggcaga gagagagaga gagagcccca cagcggccac ggcgccatag 780

ccgatgggcg atggctgtcg actgagatac tactagtact atcttactct ttcccccaca 840

cctctgtgga gtagtgtggc ccggccggcc atgtgtgcgg cgcaaaaggc accacgccgg 900

tggcccctca caccactcct gcggctgtgg cctgtgggct gtggccctag ctagctcaac 960

caggccacgc acctttatga acgaacgcgc tgcaatgcgc tgctgcagtg gcgccgtgtg 1020

ttgtgtgggg gtgttgttgt ttggtaggtg caagagagat gccaaaagat taggatgctc 1080

gatgatgctt tcctgctcgg catatattgc tagcaactag catagcaagc agcgacatgc 1140

atgaacgaag ggctctgggg cctgagggag acagggagag atagataagt atactgaaga 1200

gaactcaagg caagcttgac agctgcctat atggcgcttg ctctacacta tagcccagtt 1260

gcagtgggcc tgacccctgc gcagccgccc gcttcaactc atactagtgc tgtagtgtgc 1320

ataacgcagc accggccagc ctctgatctt tgcgtggcgt gcatgcagta gtgagatcgg 1380

tcatgctcat tcaacggagg atcatcgtaa aacgtaggcc atggtagtag tactgcagat 1440

cgatggtctc ttggttgcgt tgtgacttgt gagagtgaga ggcatgggaa gtgagtgaag 1500

caacaggacc aggccggccg gggggtggga cgactactgg tcgacgac 1548

<210> 2853
<211> 2111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96445_G1, chr3:23013761..23015871, Cluster 16

<400> 2853
gtttcttgcc gccgccacgc ttgtttttcc agaccgaacg ttgcgcttaa ccgcgatgaa 60

gcgagtttac ccggcgacgc acggtatctg gtttatgggc ggccttcctt gttttgccgg 120

gttgggggga aatcgggccc agctaccgat gcaagcgttg gctaccggac cgcaatggaa 180

gcggccaaca ccgatcagcc gccctattct ccacgccgca tcgatggtga aagtggggcg 240

tttacatttt tgcccgcgct attatcgacg gcggcaatat cccgcatgtg attgggcggc 300

gttggcatgg tcatggcact ggtcaccatt ctttatggct ttctgatgta tttgccacag 360

caggatatga agcggttgct agcctggtcg accatcactc aacttggctg gatgttcttc 420

ggcttgtcgc tctccatctt cggctcgcgg ctggcgctgg agggcagcat cgcctacatc 480

gtcaaccacg cgttcgctaa aagcctgttt ttccttgtag caggtgcgct gagttacagc 540

tgcggcacgc gcttgttgcc gcgtctgcgt ggcgtattgc acaccctgcc cgttgccagg 600

cgtgggtttc tgcgtggcag cgctggcgat taccggcgtg ccgccgttca acggcttctt 660

cagtaaattc ccgctgtttg ctgccggttt tgcgttgtca gtggagtact ggatcctgct 720

gcccgccatg attcttctga tgattgaatc ggtcgccagt ttcgcctggt ttattcgctg 780

gtttggtcgc gttgtgcctg gcaaaccgag cgaggccgtc gccgatgccg caccgctgcc 840

aggatcaatg cgcctggtgt tgattgtact gattgtgatg tcgctgattt ccagcgtaat 900

cgccgcgacc tggttgcagt aaggagatga tgaatgaccg gttctatgat cgtaaataat 960

ctggcgggac tgatgatgct gacatcgctg tttgtgatta gcgtcaaaag ctatcgcctg 1020

tcatgcggat tttacgcctg ccagtcactg gtgctggtgt ctattttcgc cactctctcg 1080

tgcctgttcg ccgcagagca actgctgatc tggtccgcca gcgcctttat caccaaagtg 1140

ctgctggtac cgttaatcat gacttacgct gcacgaaata ttccccagaa catcccggaa 1200

aaagcgttat tcggtccggc aatgatggca ctgctcgcgg cgttaattgt cctgctttgc 1260

gcatttgtcg ttcagcccgt gaagctaccg atggctaccg ggctgaaacc ggcgctggcg 1320

gtagcgttag gtcattttct gcttggcctg ctgtgcattg tcagccagcg caatatcctg 1380

cggcaaattt ttggttactg cctgatggaa aacggctccc atctggtgct ggcgcttctt 1440

gcctggcgag caccggaact ggtggaaata ggtatcgcta ccgacgccat cttcgccgtc 1500

attgtgatgg tgttactggc aagaaaaata tggcgtaccc acggcacgct ggacgtgaac 1560

aacttgaccg cgctgaaggg ataatgagat gagttattct gtgatgttcg ctttactcct 1620

gctcacgccg ctgctttttt cgctgctctg ttttgcctgc cggaaacgga gactttctgc 1680

gactcgcacg gtgaccgtat tacatagctt agggatcaca ctgctgctga ttctggcact 1740

ctgggtggtc caaactgccg ctgatgcagg agaaatattc gctgcgggac tgtggcttca 1800

tattgatggt ctgggcggtt tgttcctcgc cattcttggt gtgattggct ttctcaccgg 1860

tatttactcg attggctaca tgcgtcatga agtggcacac ggcgagcttt cacccgttac 1920

gctgtgcgat tactacggtt tcttccatct gtttttgttc accatgctgc tggttgttac 1980

cagcaataac ctgattgtga tgtgggcggc gatcgaagcc accaccttaa gctcggcgtt 2040

tctggtaggc atttacggtc agcgttcatc gctggaagct gcatggaaga acgaatcaag 2100

ctgatcatca a 2111

<210> 2854
<211> 1701
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96782_G1, chr3:24905023..24906723, Cluster 16

<400> 2854
cgtccagtcc aacaggtaat tgcgtcggcc ggatacgcag cgcgctcgcg ctgatgggaa 60

gacggcacag ctgtttttt ccactgaagt ttgacaaact tggccccagc gcatacgtag 120

caggcagcca tggtgtgcag gcagaggagg tgccgtgccg actagtagag aagagaatgg 180

acggagggga gcatgggcgc tgctgcacct gcactgctcc agcactgggg cgcatgcaac 240

agtgacaggc aggcaggcag caaccggccg ggacggacgg gcgacggact tttacgtagg 300

attcaaagtc tttgttgagt tgaatcaact agagctgctg tgctgctggc gatcaagact 360

ttcacgtact ctacgcctgc gtctgccgtg ccgcggttcc gcctgcctgg acctcgacct 420

ggacatggcg ggactgcgag cactgcaccg ccgctgctct gcttccctca acggggtcag 480

gtataataaa ataaataaat agccgtccgt gcgtgtcctc gctggtgcag ctgctgccag 540

ccaccttgcg ttgcgttgcg cccctctcgg gtgtgtgatg aggccagagc ggtaaaaaaa 600

aagcgagagg agaacgatcg ggagagggag ggcatgcagc aatcactgaa actgaacccg 660

cttttgtggc ggtcggattt ttgccgagga attcaagctt tgcttcaagg tgattcgaga 720

tcgagaggtg ggagcccgga ggagcacgcg agggacggat ggacgtcagg caactgcgcc 780

cggttgaaaa gacgcaacag tgaagctggc tggctgggag caacacaagc tagcaggaag 840

gaagctctgc tcctacgtac ccacaccgtt ttttttata tcggcagcca tgtcccgacg 900

acgatgtccg tgctgttccc ttccagtcga tgggatagat ggactgcttg actgaggttt 960

ccattccaga atccagatgg atggttgctg aattttggat atcgctgcga gtctcgtctc 1020

gtctcgtctc tctcagacca tcagacgacg tgaccgctac cggagaaaaa tccagctcaa 1080

ccatcatgat gtctgaaaca atgacatcta ctacgtatgg ggacaggcgg gcggccggcc 1140

ggacatttgg attatggagg tgggactcgt ctgatctgga ttatggtttt tctgttcgtg 1200

tcgagctaag taacattttt tgtgatagca tacgtgcacc acactatgtg cacgcacata 1260

cagtcggaca ggaccggacc ggatgtacca cgggcccgtc cctgtccccg caccacagta 1320

aacgtagcgt gtctgtactc tgtagtctga gcgagcaagg tgcacagtga ggcccgcagt 1380

ctccccggcg gtggcagcgt gtgcggagca gatagtgtgt gctcctggct cctgctcact 1440

cgcacggagg ctggagatgc aacacgcaac acatgcagct ctcaattcac atcgtgggcc 1500

gtgtcgccac tcgccactgc cccgcccaga tgccacgttc gcatcgatca gtaggaggac 1560

gtacgtgggc gtcggcgtag gcgtcgtcgt ctgcgactgc gacgttagga aagcgtgaag 1620

ctagcctacg gttttttttt gttcttgttt tcgtctcgga ctcagagacc cagttctaac 1680

gagtttttgg agttcttttt g 1701

<210> 2855
<211> 1105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_66202_G1, chr2:83483805..83484909, Cluster 17

<400> 2855
atagacagaa aaaacacaag ggcaagtaat aatacttaac aagtacaact tagaatcgga 60

acactaaaac ggggacatga ataaaaacaa cttagaatcg gaaaacaaac gaagacatga 120

atgaacgaat aaaaaaagca atttaaatgt tattgctatg tagtttccga tagaaaagga 180

caatctaaat atttcctttg tgtttattgg taaaccgagt aagggcttgt tcggttattt 240

aggggattga aatgaagtga ccaacaccga tatataacta taattgtaat atcaataatt 300

agaatatata tgtatacata agtctctggt cataacagtt aaaatatgta tatgttaagt 360

acataattaa ttttaactta ttataaacta aacctttat tttagccata gatatacaac 420

taaaaaaatc tttttagtta ggggaccatg acccgagcta acctagctcc cctgtctacg 480

ccactgctca tacttattaa tgctcaaaac taaagcaaaa ctcctagaaa ctaaaatcct 540

agtgaacttt gtttttctaa atgaggcaaa caggtacatt ttagaaattg cagaatattt 600

tctacaactt ttatgttgac catcaatacc aattctacat ggataatctc tagaaattag 660

gctagacttt ttacccaaat atgtttttgt tttcaggaca tcattgttgt ttctacgatt 720

acttctaaac tgctagtcag attgaaacta aaccaaacca atttagaagt taaaaatgaa 780

atctacaact gttgtattca tgaaattacc aaaaccttaa tcgatccata cctttcaagt 840

tgtaactact atttagaatt caaagaacaa caaacaacga acaacgaatg atttcaccac 900

ttccctttca cgtgcgggaa ggacaaccta gaacatggat attggtgcca tggtggagag 960

gtgaaaaacg acgatggtta ctggggagag agcagctagg gtaggagatg tagagagggg 1020

catctagggg ttgctggaga ggaggaagaa gcacgatcac tagggagaag aggagttgat 1080

gttcctagtg cttgccagga agaaa 1105

<210> 2856
<211> 1346
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10086_G1, chr1:53649865..53651210, Cluster 17

<400> 2856
tataaagtgg gaactttgcg atttttttta aaggaaaaca atatatgtgt acgaaaatta 60

ttgtgaatga tatagctaga ctgaccacca aaaggacgat gtgttaaata ggggggaaaa 120

gaccaaaagt acaaacattc aaacgtggag cgagcatgtt aacaaatatg ccgtaagcct 180

agctcgctcg gcggtggagg ggacaacgaa tctgcagcga ccaaacaagg acgatgctac 240

agcaatattt ccttgttgga gccttttttt ggtaagaagg gcgcggccac aggaccaacg 300

ttggagtagt actgatcgaa ggtgcagaac aaaagaaaca gtggcgcgac atggattctt 360

tagctacgta ctagctttta tcacttcgta atgagaccat gcctagtatt atcttgtgtg 420

tccgcatgag gcggatgcca cgcctttatc tatcttctcc tctctgaact ttgatgatat 480

aataaacgta gataccgctt cgactattgt ttcattctct gactattatt ttaaactggg 540

gtcgacgata taacctttc ctttaagcga aaaaaaatcc gtgagagaga tttttaacac 600

caaaaggata tgtgtgaact cgatttcttg tcgtattatc gttcgtcgaa tgacgactcg 660

acaagatcca atctatcatt ttgtttgact cctgattctt gactggaatt ttgattagtt 720

tgcagtgcgt gacttgacat gtaaggtctt tgtctatcga aaggccaaaa tcccaggtgc 780

agctccaccg taccttagct tatctcctag ctcatgtggt ggagacggac actccagtcc 840

tccacgtgtt aagaaggaat ccagatgtag ctagatcacg tatacgtatt tcatacatac 900

atacatacta cgtaaaaatc ctcatactgt atatcgtgtc gtgctgtcgt agctgcgtac 960

gtaggaacta gttgcacaac cgagcctcat ataaaatcta tctaatcgat atgtgtacag 1020

tagggttcgc gagatctact accagctgtt tcagaatttg tgttggtcaa acatacattt 1080

agctttttcg ttcggtggtc acacgtacaa ataattgttt tagacttagc tttgattatc 1140

atcagaacat ttgcgtgaat aataatattt tatataaact atcaaaagat aatttgtttg 1200

aaatgatatg gtctcatttt tttctgatca cactatatgc atatacactc atgcatacat 1260

atatacgcaa ctgaccttta taaatacgat cgagcataat ccatgtggga tagataggtt 1320

tcaccacatg aaacctgtat ggacca 1346

<210> 2857
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_102395_G1, chr3:56879405..56880512, Cluster 17

<400> 2857
attagtatag aaagaggttg tggactcatg gaataggtat aagcagaaaa attctctcca 60

cgatgttgta taagagaaag accatcaaag acctacccca caccaaatgg gtgttaggac 120

attatggata ttggttttta agaaagttta tgaagttttc aatttttgaa cttcacctgg 180

aatccatatt gaaatagtga gcgagatgct acaatctaaa ggaagatgag caaacttaag 240

agtgaggggt gtgaatgaac cgaaacaccc cctctattta tagagtgaac tctaggattt 300

ttttaaactt tttggaagtt gttttgaagt ttatagactt taaacggcca agatggtgtg 360

gaccaatcgg aaggtgacac atggtaattg acgatcaata ataaccaata cctctaactc 420

agagaaccta acgtctttgg atgatcttaa tctgtggaag tgttgcacta cttctataga 480

aacttttttc atgataaatc atttcatttt gatctcaata atttcttatt agttacaagt 540

gttgcaagta attttgctag aagattttat gtcagtacat gagattcagt tcattacagt 600

tgcaaactat tacaaaaaac cctcaattgc atatcggatt ttattgacca ttcttgtgat 660

cgtagcccta gctgaaagaa ttttctcaaa gttgaaataa ttgaaacatt atttaaggtt 720

aaccatgtca caagaaagat taaataactt aggcgcttag ctacatgtta tatcgagaat 780

gatatattgg aaaatattat tctgaacatt ggtctgacat attttgcttt agaaaatacg 840

cgacgaagtt atttattttg agaaaaagaa aaaagagaag agcgtcaaga atatttgtat 900

ctattaattt ttcgcagcca acgactcagt tgccaaaaaa taatctaatt ttggtggcta 960

ggggagtgac caccaaaaat gtgtcaggac cgagccacca aaaatatccc tagccaccaa 1020

atgtgggcac aattaatgtt gtgtatgtcc agaagatgaa gtcgcgacat ccagggatca 1080

ctgaagtgcg aggaaagaaa acaacaac 1108

<210> 2858
<211> 1371
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_102398_G1, chr3:56888129..56889499, Cluster 17

<400> 2858

ctacggcaaa cgcaaatccc actaaagatg tacattatcg aatgatcatg acattggtgc 60

agggtgtatt ctatttatca tataggtgaa tcgatgatcc tcgctgccat aatcgtgatg 120

ccatttcgct tcacctcccc taccaatcgc tgaggtacta tagcacctgg ggctacgtct 180

tcttcaatgg atcttcgtcg cctcagatcg ccaccgtgag ccccgaccac aatcaccgac 240

gatggagtcg aggagaagcc tgggagaaag ccaacaaagg aggaacatat aagacacaaa 300

gtattaggtc ggttctggcc cattatgagt taagtgagat ccaaacaacg attaggaccc 360

aactagataa actttaaaac tttatggacc gagtagacac atgtgtacaa gttaagggat 420

tagaaattca ctttactcat ttaccaaact attggacatg tttttacata aatatagact 480

cttactctgc attcgctccg taacaaaaaa aagaatgtaa ttctagaggt tcgaagtaaa 540

attttgaagt attactagtt ttataaaagg taaaaatctc gatatcaaat tttgtccagt 600

accttattta ccatcataaa tattataatc ttttctgtgt gacttggata taatttctta 660

tcctttcata tcacagaggt catgagagta agaaaattgg atgtcataat cctttgaatg 720

gatattgaca tattaaatat ccaacattga gtatatgtat aatgaataca tggactctaa 780

tacgaatagg atctaagcca tgttagacag atcaaattcg aatatgaaca gataatattc 840

gtaccattta catccctatt actaggttta taaaagggaa attcgtgtag ttttgtccaa 900

tatcttattt ctcactacaa atgttataat cttttctatg ccgctcggat ggcaggaaag 960

ggtaagaaaa ttggatgtca taatccctta tatatgcgat tgacgatgat atgaaaaggt 1020

aataaattac atccaggtgg cataaaacag attatgatat ttacgatgac taataaagca 1080

ctgaaaaatt acaatgacat acagggtgca ggaaattctc ttttttttt ataaaaagta 1140

gtatagttat ttgtacttcc aatagattta ttatggaaat atatactatt attcatctac 1200

taacatttat tgcacaccat aaatattagt acattttcgt atacaatatg gtaaagtcaa 1260

gacaaattga ctcgttaaaa agcaaagcaa gaatggcgcc attctttcta gaaacggaga 1320

tacgttcgag ctcttcccat ctatctatat atatctctac tacttattaa g 1371

<210> 2859
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10467_G1, chr1:56067352..56068521, Cluster 17

<400> 2859
attctacaag tgcctgaagc ataaggtttg gattcaattt cgtgttcttt ggttgtttta 60

aactgaatta gaggtaatgt gttcttcttg cttttggttg tgacaaagaa atggttctgg 120

atgctctttt tgaagatggg aggaggatgc tctttttgga gatggcagga gaaatggttc 180

tggatgatta gcacgatgta gaagaaacaa acaggcttgg atgatgaaat aaagaaggct 240

tatggattga agaaggggaa aaagatttgg agatgtccgc tttccttagc ttaggataga 300

aaatagttga gttgctgaag atcattgctt gtgtgtgttt gcattttagt gtgcaatgtg 360

taccaggtgg ttaaaattga taaacctatg tgcaaactat gtactctttg gaacctatgt 420

ggaatctatg aattcagtta atgtttcagc tggacattca ttgtcacata agcatcatag 480

ataacagata acacatcact gataaacatc aaagggttcc atccattgcc acaaccatgc 540

tattttcttg gcccacgcaa aagacacaaa agattaggcc cacagaaaag gtttttggcc 600

gacacaaaag atcacaggac tggtttgttc ttcctgccta ctccaacaga caattacata 660

aactagcatc ataaatctgc ttactccaaa atacatttag gcgattcaag caacatcact 720

tttcttcttc atgcttctct tgatttcagc agatcatgtc cccttcctct tccttccaag 780

tgcttgctac ccagactttg tagatgtagt gagtaggaca ggcatatgca ccatttcatt 840

tgagcttatg tatgaagaat ctggtagagg tccctagggt tgagaaaggc ttcaaggtcc 900

accttccttt gtgcatagac aaacaaagtc attcacatgc cttaatagtt gagaataaac 960

atttttctca cctgttctag taattgttgg atcattgttg gcataaatcc atgtgcttct 1020

tcaaatccat gtgcttcttc aggtccaaat atgttaagat cttgatttag tggggcttct 1080

tcattcatac gttgttcaag tgctacagtc tctatggtag tagcagcact ggcggcctgc 1140

cttgcctctt cctcaagtgt agccatagtt 1170

<210> 2860
<211> 1089
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_109578_G1, chr3:108166642..108167730, Cluster 17

<400> 2860
ctgaaggtat aatctgtttt gtgttttaga tctagtggct aggactttga ggagagattc 60

ttttagaaat cacattattg tcttgaaaaa aatggaataa catttaatca caaaatcccg 120

acctcactat ttcaataccc ccctgcaaat aaataaagtt gtatgttata tcatgaaaga 180

gagaaccaac catctagatg gagacataca taaaccatat gtttggttgc ctgcattagg 240

agagtcagac tcttcacatg tattgactat gagtcaacac atgtttgatt cgttgtatct 300

aggaggccag tcccgcacgc accggtgcat tgtagtctca tttagttgca tctacaggaa 360

cgcaaaaaac gctcgtatcc ggtggactag gctgctgtga gccagactgc gcgtaatcac 420

ctatccaatc atacagaaac agatcaactt aatgcatgat tataaactca aactgctcat 480

aaacacacta ataaagttat atgtgtgtat agaaccatag aaaatattca ccgaaggcca 540

tttccacagt agagtttcac aaacgttagt aaattgatac aatgaagaag agagatatga 600

taaggatttt atgggatgaa ataagcttta taaggatagc tgttttcagc gcatagattg 660

ccttaaaaac cgtgagataa aatcttcatc gagactagtc tagagaactt aagaagtttt 720

tccgtcaaat gaggaatgac ttagctatcg tcgccgtgta gcatcaagtt acttgcaagt 780

gtctcattca aaagcgaagt tgcttgcata acgtgcaaaa gatcttgacc aaattgctag 840

atttggggag acttttagtg ttggggtttg ctacttcaga atgcatgcac cgggagaaaa 900

gaaggtgggg cttgaaggat ttctgtccat ttcagaaaaa agggtgtgta cgtacgtggt 960

cacacgcgct gaagtgacat ggttagctta caaataatct gaactggtac acacatacaa 1020

gtgtttggtt gtctgactaa aatttagttc ataacacatt aaatatattt aaatatcaat 1080

tataattat 1089

<210> 2861
<211> 1296
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11268_G1, chr1:60772704..60773999, Cluster 17

<400> 2861
catttttacc tttttatttt ccaattactt gatcttcaaa aactgaccgc agtttggatg 60

taacaatcct tggagtttat aaaaacatgg ttttgtagta agtgtatttc ttttttggag 120

taataaaaac tccattcagg gacctgtctt atcgataccg taatttctgg aactatcacc 180

caaacagacc gaggttacta gaagccagta atttaatttt gttttataaa atttcttggt 240

taaaaagtca tcggtaagga ctgaaatctt cccatgttat agatgtaata atgatctgtt 300

agcatcattt ctgtgtcctt tttatgagca tgtgtttgct taaattatag tcatcagtgg 360

aatgtttatc agtgtattga tttgacaatt agataatata acaagacagg ctcaggatta 420

tacatgtttt tgtagaatgt acacacatgt ccatagcata aggctaacca gtcaatattg 480

tccaaatcac aataacttgc gcgagtaatg aaaggtaaga catgcaaaaa tgcaattgac 540

actttcatac caccattggc attcaagtat tgttatcatc atcctcgata tcccagctta 600

aatccttgtc atcttcagca gcatgctaca tttggatcat attagacagt ttctttacat 660

gaccttccca agacattctt acgagctact gaaattaaat ggtttgcgaa aagcgtatac 720

tgccttaaga agggcattga cctctgaaca gcagaacaca cacagaacta gatgaagcat 780

ttactgcttc aacgcctact agataagaac tttgaatgtt cgaggtatgt gccagtcatt 840

ttttaaaaat acttaaacag cacaatcaag attatattcc acatggcatg atctccagat 900

tattagcagc aatgcagtta gctttatcac aattatccag tgagcacagg tgccatgttg 960

aattatataa catatagaag atgcaataat tctgttcaag catatgccag ctcgtgatgt 1020

caagttcttg tttgtgtagc acatggtcac atgctcatat tttagttagg catgtcacta 1080

attgatgtcc catgcatggt ggactagatt gttaagagtg tgtttatttt gagaaatcac 1140

ttcatgagtc cattcctcaa ggggtgtttg ttttgagaaa tcacttaatc taaaataaga 1200

tggtgcatca tagatttatt tctcaaattt ggtgggatga ctcaattact cataatagta 1260

ccaactaact aactatgaga aatgcggtgg tgatca 1296

<210> 2862
<211> 1011
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112689_G1, chr3:128670994..128672004, Cluster 17

<400> 2862
cgtgcacacc tgatccaaag caatcgatcg cgccagtcct caccaatgac cgtgttagtc 60

gtcacacatc aaaatcaggt aaccccaagg ctacatgcat ttggctcaca tttttagttc 120

aaaaagttat tcttattagt tgacttatct ggctcaatta aatttgtagt cgaaatcatg 180

tggaagctcc tctacgagga ttaataatgc tttgatttac ataacaatat tatatatatt 240

atgtatgatt taatttttctt ttatatattt atagtgaact attagaactc gaatgagaca 300

tctgtcttgg tctctatagt tacgagtttt tcattcgagg aggaattgaa tggagagcta 360

ctaatgatca tgtaaatgaa tggttaatat ttaatgattt tgcaaaagac acgagtttag 420

aagaattaaa agacaatatt attcatatgg aaaataaagt caaagatcat agggtaacaa 480

tggaaactat aatataatct caaacttttt cattagtaga ccctttctaa ttgatatttt 540

tttttgtaat gaaggaagga aaaggactta gtgagaatgt gcttacatgg ctagctttgt 600

ttgagtatgt cgattttgac tttgtcccca aatctctact tattctgact aaaatcgtcc 660

caactgcccc gactgctcca tccaacataa agaggttgag gacgtcccac acacctagta 720

gttcccacac aaaacaagca tcgatcaaca atttcctagg ttgctaaaaa acaacacatg 780

atattttcta tggtccaatg aatatggaga agtatactaa aaaacttaag aggtgtggtt 840

tcaaagtcaa ggtacttcaa cttggtctca aaatactgaa agaagattag aaacaacgtc 900

agatattctt gatattagag aactttgaag ctaaagacta tgttttatct gtcgttgatg 960

cttagctaga tgaattgtgt gggtgttgag tgatgtgtga aaggaacaaa c 1011

<210> 2863
<211> 1199
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112780_G1, chr3:129205622..129206820, Cluster 17

<400> 2863
ggaggggcag ggatgtggcc agttgtccac cctaaagact ggggtggcta ggggatggac 60

ggtcgacccc ctcggctcat gtctttgtcc agaggtgccc catgttgtat gttttcgtca 120

tattttgtca catgcatcca aatatctcaa cactacttgt tgaactcatt attattactt 180

ttattcacta cgccataaag attttctcat acttaggata gtttaaggcc aaagatgatg 240

aaataatggc catcaacagt tacacatcgt tagatattag tattttctag tgtggaagtg 300

gtccgaccat cgaaattctt ggcagattat ttttaatgac ttgtaccata aattgttgga 360

aggcgttaat ttttatggga aaggcttttt tacggtttca acattaaaaa aataccgatt 420

ttcttatggc gtaggacaaa tgttctctca tcaagacaaa gggtcaccca tggaggagtg 480

tttggaagtg gagaatgaaa gttgttgact catggaacct gaaacaccat gtgatttcct 540

tttataaaag actgaggaag ttaaagcgac gcatgattac agaatgattc ctaatctttg 600

atccgagtct atagactcga gagttgcatg aatgagagag tctcgaccaa aggcagatcg 660

atagagacat gataactcaa ggcattctat aagaaaagta tcatttgctt gaatcaagaa 720

ctcaaccaaa taaaacgagg gggctcttgt taataatatg taccatgaat atccaaatca 780

agcttaatga agcagagcct atatggaagg gctcatgagc tctatacaag ccaaagggct 840

caacaatact atcaggagga agtctatagt cagaagggtt ctagaagtgc atatatgaca 900

aagatcccaa tatagtaaga gataagcatg taaacataga gttggaactg tatacaactc 960

ggtaccaatc tagtttcatc ataaacttgg taaccgactc tgtgcctacc atgtaaccat 1020

tgcccctctt taggatataa aaagagggcg agggaactcg ctgatcatca aaacatacaa 1080

ccatagatcc accacaccta cgacatagga tattatctca cactaagagc ctggataatt 1140

gcccctcttt aggatataaa aagagggtga gggaacttgc tgatcatcaa aacatacaa 1199

<210> 2864
<211> 1061
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114606_G1, chr3:139857344..139858404, Cluster 17

<400> 2864
gaacacataa caggtgtagc ctctgagctc ctaggtgatt agatgaaccg gttaggggat 60

taatcgcatt atcatgatgt taatcctagg gtttagataa accccattat ttgatactca 120

atagcccccc tcgagcccca cagtccctca aaccttatat atgatgttag tgaggggatc 180

ttctcttctc ttaatacttc gcccaaccaa gatgaagccc cattttggat gcgatagttc 240

atctaaggat gtgagtactc ttgtcatggc ctatgggcta agtaacgcca tcggtgagct 300

caaatcaatg aagcctaact gaaggcctag ccaatccctt gaaggataac caactctaag 360

cctacatgag gtgcccctaa aaggatttaa atcactagag tgggtgaata caatattaat 420

tttcttctac aaaccacaaa cactagagca agtaattaga acatactatg atcctagtag 480

ccactacaag cactagctat agttcaatca agcaaggccc ctataaatgt ctagacgcaa 540

atgctttata acttaaacac tttaccacac aagagctatt aacaactaac tacactagag 600

agctaaccta gagagtaact aacatttatc taccactaac aagaacaact acctactcta 660

gagctagaac tgacactaac ttgatagcac aactacaatc cacacaagaa actagcacac 720

aagcaatgaa tactaatgta aattcaagtg tttatcttat accaacatta ggcaagagag 780

ataaacacaa tcaattttgt aatatggttt gatttttgt tggcaactta ctccttgttg 840

tggtaagtct taaggggaat gattcaccac tcagtagcat gacaagctag acccacaact 900

tgggtgtcgc aagaatcaaa ccttagagca ctccaacaag ccacacagaa tttaatatag 960

tattcatttg caccccttga attgggatca agaacctctc atgaatcaat cgattaagag 1020

tagaaacaat caccaatttc catcaccaaa cattgaagct t 1061

<210> 2865
<211> 1079
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11463_G1, chr1:62358065..62359143, Cluster 17

<400> 2865
gtttgcttga gtttgagtgt agtaatatga acaaaataag tgtatctttg tttctcttgt 60

accttgtatt tgtatgactg aaaccaataa tttgttattg tttgcatcac atatattgaa 120

agtatcatgt ctatgtgtgg gtctatggag cttaaaatat agatattggt gtggtcatat 180

ggttgattat gacgaggtta gttaatacct tataacaaaa ttttaaatta aacctatcat 240

atataatgac tatttttcc acaaatcact acaaaaatgt gtctaggagg atttcaattt 300

tagacgtgaa ttcgaggaaa tgaatagata agtaatgcaa caaaagttga agtgcgggac 360

gaggataata catgatcgac gatgcaggga caaaaagatc atggatagtg gtctatggtg 420

cgagggcatg ggctagggca atgagacaaa gagcatgagc attacatgat gaagatgaca 480

tcgtgactat agagaagtaa ccttgtggta tcgagatcag taccacgagc tataacactc 540

aaatattact atgagctaca ataacgtcta tattatatac aatataatac tttgatgcta 600

ctatctatta tgtcgactct tgtaactgta atcttgacac atcagggttt gtttgggaaa 660

catattattt tgttattagt ttcgagacaa taccatcgta attgagtaga ccatattatt 720

ttagaccaaa ggatgtttgt gagcatatct aaaaactttg tattttaact catgatttta 780

ccaataccac ggtatttttg gatcaaaaaa atgaccaaag ttttttgct tgtactcaac 840

tgcggtcttc tcttctccca caccacaact aaaaaattgt gtcttcaaac aggtgttaga 900

ttagattaat gtaaaatata ccatactaat gtcatgacat acaccaaggg ttgtttgaga 960

gcaaagtttt tcatagtgct aatgcaatac catggtatga taatacgttg gtattttata 1020

cagaatggtg tttgacaaag gttcaaaaac tatgtattaa aaaccacggt attacgaat 1079

<210> 2866
<211> 1158

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115806_G1, chr3:148015443..148016600, Cluster 17

<400> 2866
tcttgtctct tgttgtgaat gcggtgctcc ttgattggaa tcttgtgtgc atgggtgaac 60

taagtctctc cggtgaatct ccaatcctct ataccactcc ctactatatg aatacccta 120

gcaccatatg ttgcaacatc acctccacct tccctgtggc taggatcatt gtcgtctgca 180

caaccacctt caccagggtt agttgtgctt tcatcagtcc caacctcctc ctcctcctct 240

tcttcttcgc tttcatcggg tctagcattt tgcctacaac aatgaaacat tgaactatca 300

actttgttgt agaagtaaaa tataatgtag atatgagata acaactatga actaccatga 360

cagaactaat aactacattc aaaataccaa ctaacaccta tccgctaaac caaaatatat 420

caccaagcta ccatctacta catattgcct cactaacata tcaaatattc actaaatatt 480

gttgtcaaaa gacatttaag taaaatcaca tgctaaataa ccagaaaata tgaaatatcc 540

cctctacatg tcgattatga cttcaaatca tcggatcccg ctggctaatt agcggatttc 600

gatgagaact gggtgggacc tgctacctac cctacgaaag tcgttgggca ctaacctgat 660

atcacgtttc ctgttctcgg tgactgagct gccaaaacat cagatctcac tattttcttg 720

gcgagaatcg atgtatctcg cctagattgt gaagcttcgg cgccgagaaa tgttgccttc 780

aattgagctg agcctgaggc tgagcggaga caacgagtga agtggagaat gagttgttcg 840

cccactaggt aacagacatt gagatatcaa atgactaacg ggttggagaa tttgggttaa 900

cgagtctaga acccttttt gttttttggc atcaaaacca tgaatttta ataacaattt 960

ttagcacctc tttaagccct ctagttttaa tacaattttt ttccaatatt ttcaatggat 1020

atttttaaaa ttcaaaattt tgaatcaaaa ttctcgaatt tttttggtag gatccgaacc 1080

cgttgagaac tgagaacgaa aaagaaaagc gaaatccgct gatttttgat cgggaaagtt 1140

aaccctgcta ccggcttc 1158

<210> 2867
<211> 1163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116543_G1, chr3:152169368..152170530, Cluster 17

<400> 2867
aaatcttatt ggttatttat atgcagcatt taataagtat gttgacatat gaaatggtga 60

gatgaaactc tctattgaga gaagatattt cattcatcca taaatctgat gtggcatttt 120

tggaaagagt gacatgaaat cccattgtga atagccttat cgcatgcatt cagcatggct 180

atttaaagca tgcaggcttg attgagaaga caaccaatca gaccctaacc tacacagtgc 240

gctaacagag acacgtttag cagcactatt gcactgtctt ttcttttcct tttacgagca 300

tgaaaatgca taacgcgagt cggcgagtgt aattcgcgct ctcacgtcga tgatgccttc 360

agtatggcct tccaaaccct actcctctat ttgagtctta ggtcatctat aacatgggcc 420

ttaaagtatc ctctgcgcta gattttagag gacagagttg tcctctagac acccaacaaa 480

gttctctaga tttgctgcta gatcctccag acctagcaaa actgaattat atagaataca 540

tttgagaata tgataaatat gtacatacaa aaaacaaaaa taaaaatatg tgtctagtat 600

tggtattaga tgagagaatc ttttagaaaa gaccttaaaa gataaatata aaagacgttg 660

ctagagacaa tcttagattt tagaactggc aaaattattg ttctacaaac aacgcattga 720

aatctacatc attcactttt tttcaaaact ctaatcatcc atcttttca aaaaaaaacg 780

tgagttatca tttttttgt tatgatttgt tttatcacct aaggtcgttt gagcgtgact 840

taaagtttat attttaaata aatattttgt ataagacaag taattggact tttataaaaa 900

gataaccacg tgtcgtataa aaaataacga cgttaagtcc catgacacat atagtaaaac 960

aagagcagcc ttactgcctt atgaaatata tgactttgaa gtctcaattt gttgtacaaa 1020

ataaatcaag gccagccaga atgtatatag caaaacacga gcagccttac gagtaaatga 1080

ctttcaactc taaagttatt gtaaaaaaat aaatgtacgg gcagtcaatg tataaagtag 1140

taatataaat ctgaggccag tct 1163

<210> 2868
<211> 1163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117303_G1, chr3:156498120..156499282, Cluster 17

<400> 2868
ctatatatta aagatataaa ttaaaacaat aaggtagcgt caagtaaatc acagtatctc 60

gtcaatacca ttagcaagag gtaatttaat cttccgtgtt ctcgatattc taggccgctt 120

catccttatt aaaatcctct aatctcaata tatattaaaa aacacctaaa atcaccagta 180

caagaaaata ttggtaggat aaacggaaac atcaaggcca actactacac ggtcaaaaat 240

agaactaata ataatgaacc ggaaatagtg aaatacataa atacattgtg gagagagtat 300

agatagcgtg gcaaagggca cgagaaacag agccccatgc gagctcagag ctctttacac 360

ctatttcgct ttactcaacc actaacggca aggagaatgt acatcatagt gtatttttct 420

gcactaattt cttttaggca ttttatatcc tatcatcatt tcatacagct gatcttctga 480

atgaggaaat tctaggttca tcacgtgttg gatcaagaat gcattaaaac atgtcctgcc 540

ctcatcaatt cagtgaatgg atagatccca ggaccacttt tcatgagaca ttacttgcca 600

catgttttta tgtacccagt agccaacatg cagaaaatat tttatgcgag attgtataat 660

agaaacgttg taaaaaagaa aggcattcca atgatatgga caacataaat ttgggggaaa 720

aattatgtca gttcctagaa accaacttta gaccatgttt ggatcctcct gactaattgt 780

tagctaatta gtcgataaaa aatagctggc aaacaattaa tcacggtata tttggagtct 840

tctctaatgg atgtctaaaa cattgtaaat agtttgtttt gtctcccatg gcaaacaatt 900

agccaggaga gaaaggaaag aatcggaaag ggatagagat cgtttttttc ttttttatg 960

atctactagc acctattagc aaggtcaaat agctaatggg taaacaattt gtcagccctc 1020

tagctaacaa ttaactaatt tattaaccaa ctgtttgtag cccaatatgc taaaattaga 1080

cgataaactg tttgctagat gaatccaaac aggcccatag accaacatcc gtttttctag 1140

cccgatcttg tcgtcaacat aag 1163

<210> 2869
<211> 1267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122664_G1, chr3:187705413..187706679, Cluster 17

<400> 2869
cttaatactc cacctagatt tggccaccat agagtgggag gaagctaggc gcatgccacc 60

caatatgtaa tgctgcttca tgcaaattct aaaatgatca tatcatataa ctttgattcc 120

tttcaaataa tttaatttat gaaacaacta tgtttgtaaa tggatatatt gattccgtag 180

caacgcacaa acatatatct agttaacatt ataatcggta tgcaaatgtg ctttagcgtt 240

gagtaggtca aaaactctct atctctaccc accgaaaatg aagttttata tttttgtcaa 300

aagtttagat atattatgtt tgataaatat atagaaaaga ttaacaatag gtatatcatt 360

aaatagattt gctataaaat atttttacta tgaatttatt aatatttatc ttaaatataa 420

atattgtttt tatctaagaa tggtttgaat tataataaaa ctagacgtct agaacaacac 480

actcgtgcgt gaatctgggg catatgatta ttggaatagt gtgatcagta cgtttccaac 540

gagactacga gaacagtacc attggagttt ggacttctcc tttctttttc tcaacgaagg 600

aaaaagcaga gagaaaaaca aacgtacgca agccggtcct cctgccatct tttttttca 660

aagacgacaa agacaaaacg agtggacagc ggagggcaag tttccaacgt gttcttcctt 720

gctttttctc tcctagattt gaacatcgag gcaatcgctg acgccggccc cttaccagaa 780

ttgaatggtg actatgtttc agttttgaga attaaaaacg tgacacgtta ttctaaacgc 840

gggttgaaac ggaatcaaga atgcacgaag tatagggacc aaaccaagat tctcagtctg 900

gggttatcat acaatacgat tcaattagag cagcccccac caagaaatga tttttatagc 960

tgccacctca cttaaaaaat caattataga aataataagt ttcaacgcta ttttttttatt 1020

gtgctgttgt aataaatatg gatgcggcac tggcagtgcg acgcgatgac accgattctc 1080

acgaagagtg acacgtgggc tccatggatg aaagttgggt gctcgttccc aacaccaaaa 1140

caatgttttc ttgggtcttt gttgcacgtg tagacctagt ttctcacaga ggaaaccatt 1200

ttctcttctt tctcattaat tttcatgtta tgtcaccaaa ttgcttaaac taatgctata 1260

gaaacta 1267

<210> 2870
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123956_G1, chr3:194723692..194724813, Cluster 17

<400> 2870
aaatataatg taagggcctt tctctttggc aaactagaat gcatcctgga caattgcttc 60

atcaccaata aacatctgaa ccagcaagaa caccgttact atcctacttg aaaatataaa 120

ctatgctcaa gataacatca gaatagaaaa tattttccat ggtaatgcaa tgtctccaat 180

gtatcttcaa tgaaaatgga ccaaatttca atgttagtca tgcaataaga ctaatatttt 240

agttaaacaa ctaaaccatg caacgtatca tagagacaag gaattatata caaaatccta 300

acaattcatc atgcacggca tataactggc aactgattaa acttcgacaa ataaactttg 360

gactgacaag ctccataata acagaaagat aaaatgcaca gatctatttt ctacaatagt 420

aacaatattg tatgtacaaa aaaaaaatat taagacacgc aggaacacac tatccttagc 480

aggggcgggc cggcaaattt agaggccttg tcctaaactt caaaagaggc cctattttat 540

agaaaaaata taatcgaaat tacattgtaa tagaattcat gtattctgaa ttacaaaagg 600

tttactagat aactcttata actatttata ttaaatctat ccgtttttac gaattatatt 660

gtaatagagc atataaagaa acatacgtat taatagatgt atttgaagag caacagtcta 720

gctgctaact gagttcaact tagatggtgt aatgttagtt tacttattga tacatattat 780

tgagataaga agtttttag gccctcagaa ttttaggccc tatgcggtcg catttgccgc 840

acgtgcatgt ggcccggccc tgatccttag ttaagttaac aaataaacta tgttccgtag 900

gtagaaaagc accaagagtc caagacattc aaaacttgct tctaagaaca tttgcataag 960

gaaacattgc tttaagacca tgctatagta caggtgacaa ctgaaaaaaa aacaaaataa 1020

tagcagttcc tgaaatggaa accgagaaga aacaaaaaaa tatttgtcta cataagaaaa 1080

ggaaattaac caagatgatg caccccgtcc gtgcttaata ga 1122

<210> 2871
<211> 1027
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124781_G1, chr3:199495406..199496432, Cluster 17

<400> 2871
attagtaacc ctaacaacca gattctctct acaattagaa tataaaaaaa tctcctaaaa 60

atgttgaacc aaactggctc tataatccca aataaacaag ccattattca tgcgcgatgc 120

ccaatcctac taactgcatg cttacattag gtacaccagg aatagatagg tacattatat 180

tgctacctat caataatctt aaagattatc tcatattata tcacatattg ttttcgatga 240

tactaagaga gaatgtaaca cactaatttt tgaaccgtca ttttcaaaaa aaaaattgat 300

aaggtttgag tgatttgaac acacgcaaca tgattttaag taattttctt ttattattaa 360

ccaactaaaa agaatcataa gtttgaacta aatgtatttc attcatgtct ttgtgttgtg 420

tttttagtgt aaaagatgtt taaaacatgt taatatatcc cgtagaagtc tctggtatta 480

tctgtgttta tccaattatt tatcctattt tcgaaaagct aaatctaatt atttgaggaa 540

cttaaataca tttttaaaga tccaaacatt tttattgagt tcattgggtg ccaaaacatt 600

tctagaattt agacattttg agtattaaat atgaatttct gcattttcta aaattcattt 660

taacctgatt ttggatagac tcaagccgtc cttatatata catgtctagc ttcctcttga 720

tgagcccatt ccagaacaca aaacaatttt gcgagattca atctttagct ccctgaaccg 780

ctcgtcgaag ttctagttcc tgcttaactc ccgtgacaac tctgacgaga aattactcct 840

tgatccttca tctccagatg ctcactagga cattaccgtg accttcatct tcacgctttt 900

gaattgtcaa tcgaatcttc ggttcgccgt caatctacga aaaaccgaga actctaacga 960

gttcgtcatc tccgtgaact ccaccatagc cacttttctt tgttcttcat tattcacaga 1020

ttagagt 1027

<210> 2872
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125567_G1, chr3:203520262..203521302, Cluster 17

<400> 2872
tataacttgt aacggtggaa gtacacttta aggcttagtg tcttccagcg ttgtcgatta 60

tttattattg aagtggattg attgataact ggtcttaagg tagattttgt tggaatatca 120

tctaaatttt aacgtaagtc ttgcggggat ttgattctat attggattgt agtttatttg 180

ctctatacgt acatctttaa gtcacacggg aagacaagcg actcattatg ttctttgtat 240

tatgtaaatt cttcttatat agtgaagatt gattgccaca tgtgttttcc ccgcaagaat 300

tttcttcata aaattttgta tcccttgttt gatttgtatg tgtattattt gccaacatag 360

tataaggtac agacttcaga cttggaaaaa ggccataaaa ttttcatagt cagtagtata 420

gaggctcaga gtggcagctt gtcgtcggcg gcagcatgcc agtcatttat ctcaggagaa 480

agagatgcag attagctcca agaattttga aattttcatg tatgttgtta gatgatagca 540

gagaaattgt gattcagtaa tggaaagcaa gaaggtaatt gtagcattct ggagtcctag 600

tgtttgcaca caacagcaaa caaaagtgcc aaaccaacaa cagattttca gtacttggca 660

tgggcactgt gatcactcaa aataggttct gcagaggttg attcccgaga gctgcagttt 720

taaagcactt ttgattgctt gtgacttaag aagaatagta cgtgagttag tatatagact 780

aagcagatgt ttgcccggtg attgtgatca aaggatgcta gctagctgat cagtgcaata 840

ggcacatggt gaaattgaaa cttgagtgca ttgccagagc tagctgcagc cccggtccta 900

tgattttgag ggccccaggc gaactgatca tggtgggccc tctagactat atcaaaaatt 960

ctatgatatg cagcggagta gattagtact tcgtatgtaa ataatgatat gcattgaaat 1020

tggtttttaa aatatctaag a 1041

<210> 2873
<211> 1079
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126431_G1, chr3:207542038..207543116, Cluster 17

<400> 2873
gattaggtaa agtagctaat tttggtcgcc taggagggga agtcggccca aattagtaat 60

ttctgttggt tgaaagcata tagacgatgt aaattactac tccctttgtc tcaaattata 120

atccgtttga cctttttttgc caactttaat cgacttgtct tatttatttt ttggtgaaaa 180

aatgaaaaaa aatcaaaacc atacttaaaa tatattatac gctaaataat attatattaa 240

atttttttaa ataagacgaa acagtcaaac ttagaattaa gagtcaaatg gattataaat 300

tgcaacagag agagtaattt ctaactgctt ctcccggccg atgaaaaatg tttagtttct 360

gtaggccgct ctaaaaatcc aaagaagtta ttttggacca taaaaatttc ttatttttt 420

tgttgtgtaa atctagaagt gcagtaaaaa tagtagagtt atcaaaattt ctgctattta 480

ctagtagtac taatcaatag ctctccacaa acccaccatt gccatcttgt atgtgtgtca 540

cgtttgtagt cctgtcacac ccgcagttta atttcataat tcaagatcat cgtgatcttg 600

cacgtgacac gcttgacgct ctaaattcaa ctcgaattta ttggacgtaa ctagtctaaa 660

acaaacacaa ctttaattac agagcactgc tgctctgtaa ttatttgagg ctctctacaa 720

tgcatacacg tgaccactgc cagaaagttt ggaataacac ctaatttgaa actagattga 780

ataatctagc cgtattgagt tttgtagcgt gaacagtagt taaaacgaag caccctgtca 840

agtttggagc aacaccgagt tcatctattt ctgaaatgcg atttctgtct ctgtttccta 900

agttcttact gtaaaaataa atttctacag aatgaaatcc ctatgttaca acgaggaaat 960

ggtaaactga aacacttgaa tctgaacacc tgcccttctg tctctcttga gtctctgtca 1020

gtctgtttgg ttggcttctc cgcgtagctc gactgcatga gccaggccgg cgggagcct 1079

<210> 2874
<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126671_G1, chr3:208793440..208794458, Cluster 17

<400> 2874
gacgaccaaa cgaccaagga tcgttatcgt taggggtgat tggttggctg cacctttgg 60

cctatggctc gtgggatgta ataaaatacc ttttagatac atgtgcttac tcaactaagc 120

taatggtgtt attaatacat gattagttga tatcgagtga taataaacgt gttttaaaga 180

agtttaagat atattaggat aaaataaaat aacttcaaga gtgtatatgt acaacataaa 240

aaaactttaa gagtgtatat gtatacaata aaaaaacatg aatgcaaact tgtactattt 300

aaaaatcatg aatgtaatct tgtattattt ttatgacaca caacatatct tgatacatgg 360

gaccggacga aacggtttag ttttaatccg aaatgacttc tactattttt ataatatttc 420

tatattttat ctctataaat tgtaaatata gcagtttaaa taattatctt taatctaaag 480

ggaacatgct gaataggttg agtcaacttg cacttgcaca cgttcaattt tatcccaccg 540

cagcatgcct gtcccatacg agtatccaaa cctcaaccaa tcaccttctt acctgaatgg 600

aatttttgga tagaccatag tcgcccccct ggtacaggac gatcgtgtgt ttcgatgtgg 660

atctgccagg cccaggcact ctctgtttgg tttcagccgg cgaccacgtc ggtgcggcag 720

gccgcggcag atcacatcca tagccaggcc gcggcacagg tgaagaagat tggaaaaacg 780

tcctcgtccc ggtaagccgt cgcgtgcccg gtgtgccggc ccgccacgca acggcgacac 840

gtaaaagtct tcgttgccgt gccctgcaca gatcataatt aggaggactt aatcaggctg 900

cgtcttcgtg atttactgtg tttgttcgag agagaaaata gtttatcatc ttctcactcc 960

ttatttttt aatgcaatga attgatccat tagcacatca tttctcatag ttagttagt 1019

<210> 2875
<211> 1331
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126747_G1, chr3:209103488..209104818, Cluster 17

<400> 2875
agattcaaat atatctaaaa atagagagcg gcaccattaa ttaatttttc gaaggtatgt 60

ttttcgtgg caagacacag acacgatcgc tagtcaagtt tacaagtcac tagttagatg 120

cccgtgtatt gctatgtttc taaaaaatgt gttctgttga ttagatgaat atgaatttaa 180

atccatgata ctctaaaaga gttcgctgta aaaaaattca aattcacgga caagtttaaa 240

tggcaaatca ccgattgatc gctcaggctg catgtgcatt actaaatggg taaaagcatg 300

aagtagatgg ggaactcaaa gatagaccta tatttttgaa atgacccaac acacatccat 360

atatatatag tacaatggtc tacaacatta cataaattat tcgataaaat gttactaaaa 420

ctttagagtg aaatattatg tccgttttct tttcttggag aggggcgaag aaataaggaa 480

atggttatgg ctttgttagg aggatatatg ctgactacta ctaagcaaca caaatatatg 540

gcaaaaggaa cctgaacttt gctctagttt gataggtaag tttaacagca tgaataagca 600

attctatgat ctatttagca atcggcaggc tagatagaag agcgactatg ttcaaaattc 660

ttacaaattc atccggataa atcgatgtta acttcatgcg caagtaaaat aaataagaat 720

atatgcaaag tatactataa cttagctcgt aatcaatcaa aattgcagag cctcaattat 780

ttgaatcggg atgtcaaaac tcaaaaccca gctcggaagt cacctcgtgt aagggcgacg 840

cggcaggaaa ggtgcacgcc gtcactgtgc ttgcgagcac cgagcctttg cgcgttgttc 900

ctcacgaaac ctagttctac cacggcgtcg gcggccacgt cgtgcgcgga ggcataacta 960

attcagcaag ttactaatgt gcattttatt attatgtaat aatttctata tacgaatgtt 1020

tatgtaacgc aacttctcaa tgcttccccc atgctaaggc ataactaatt cagcaagtta 1080

tacatttta cttatgcttt ctcagatagt aagttacaga tttttactta tgttttctca 1140

gatctaaaca acctggcgta agtgctaatt caattcaact gcttttatgt cagggataac 1200

attccagtat gaacttaacg cttcaatcat tgtatgtggc tcatcaaata gccagaaaat 1260

gcacgttgtt gtagaaccgg ggatcttgaa atgtataaac tacgattgat acgatgctgc 1320

aaaaaacttg c 1331

<210> 2876
<211> 1285
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_12753_G1, chr1:69864316..69865600, Cluster 17

<400> 2876
ataccttag actttattca gttgtacagg gacctgagag gattgagaga gattaagtct 60

ctttctattc aattttgacc aaaacagatt taatctttgt caattcactt caatccccac 120

ctaaccgagc atgccttagc cggccatggt agggttgggc ctcgggtgca tttggtttag 180

ctgtgagttg tgaaaaagct tttgtgggct gtttggtgtg aaaaaacttg ttgtgagaaa 240

aaaaagctga aaattgtttg gttgaaactg atgcaagttg tcgaatgtaa acaaactcta 300

tgttgtttat atacactcga tttaaatata tctcttaatc aatatatcta atttaaaaat 360

gatttcacat ttatgttcct aataattttt gttacaaata aataaaaaat taattctatt 420

tgtaatattt ttattgaaaa tatttttatt tcatttatta taacacttag ttattttaat 480

tctattttag tttcaattta ttgtgtgtgt ttattaatat aacgaacatc gggtacaagt 540

tgctttcata tttgtagtaa agaaaacctg ttttttccta gcaggtacga aaaggttgaa 600

cagttttagt ttaacttcag ctttttgtaa aacagaagac cctcccttgt cacgccttgg 660

acacttttgc aattttacac tcgcagttta tcccaagaag ccggttgtgg tggctggttt 720

cacgtacgaa agcaaacggg ccaggtataa atctttcttc catttttaaa aataaatctt 780

atagattagt atcttattca acaaacattt gctggttcag ttgagagttg aggccgtact 840

gcctttctcg ggaaagagaa actgcacctt ttgacgaata ttaggccttt ttatgaatat 900

taggagaaat aaggcctctg tgtcaggttt cctttcaccg gctttaccgt ttgctcttgg 960

agccatcttg gattccttca ttggtaacga caccactgaa ctgcactaat cgcccccgct 1020

gtacgcatgt actgtacccg tggtagcgac ggtacgggct gcatcctgtt tcaaatccat 1080

tcaatacgct gtctgagcca catcattcag cattgacaga acctctttaa tatccttgcc 1140

ccctcaacgt cacgctctcc acccactggt ttaatcagac tacgaggggg ctttgatgaa 1200

ttgcagagac ttttttgagg ttgggaaaga aatcaaacga aaataatttt aaccgaaatt 1260

caaacagctt ttgcgcctgc agcga 1285

<210> 2877
<211> 1305
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128196_G1, chr3:216144761..216146065, Cluster 17

<400> 2877
ataaccctaa ataaacactt tactactcta ttattttaga actaagcaaa cctattaatt 60

aatgtgttgt acaactacct agctagtggc taattatgtt attgaaatgc tgaacacttc 120

aattctatga atcatgtatt atgtaatgtt caatatccta gagccttgga aacatattac 180

tcttagtcag gtatcttgat ttccaatttt tgcataaatt atatatatat taatgttttt 240

tataaatctg atgttttcta tagccaccct atagctgtgt agccttaaaa atgatgttat 300

tttgtatagc ttgctacttt aaacattgta gccattagaa gggcactggc atgtctaagg 360

caacatctcg ctaagcattg gacatattta gtgcccctag ttttagtgtg ttcacgtgta 420

atagttagat tcatttgaga ggctatttag gctataaata cacctcttgg atagccttgg 480

ttggtaacta ctagggctta ttgcaattct aaaataacaa caacatggca acatgattat 540

atcattagtt tctactcttc tctcaagttt tggagggaga gaaggtattg cgaggggttt 600

atattctcca ttgatgattt ataaaggtca tgttttactt tcaaacacaa ttatctaatc 660

attttgatga tttataaatg tatgttttac ttttaagcac aattatgtaa tcattcccga 720

ataataatat aacatctaaa acaaacaata gcttgaagga gaaatgttta acataaacaa 780

acataagctt tagatataag gtaacataag agacactatc aatcacaaac ataaacttca 840

acatcgtcat tatacatttg atagctctct aatgacacgg gtgtaacaac atgcaccgac 900

tcagcaaaaa tggtcaaccc ccaagatggt cacactattc gccaatttac agagttgggc 960

ctttatacag cttcatgtga aattataatt ttgtctctct ttctcacatg acaattattc 1020

acatttgggg gagtacattt aatttatttc tccttgcaaa cgaatcgcac acctcttatg 1080

ttcaccgaag cttcctatat cttttctttg tcgaagctcc ttttgggcct catttcaact 1140

gaaggttatc tttatcgacg ctaaagattt acttttgata ccttcaactc catgcacttt 1200

tatctcaccc acgtgttcca aagcagtctg ataagggttc aatgatcaga ggtggttttc 1260

ctttgagtca cgttacatcc ctatcctaaa acaccatcta aatac 1305

<210> 2878
<211> 1288
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128355_G1, chr3:216965794..216967081, Cluster 17

<400> 2878
cctaagaata ctggttagat ttcaagtatt cctaccattc atagacatac taattgatag 60

aaagtataat aaagtaacgt aggcatgctg caagagatgc cacgtccaat ttgtggtgac 120

gtaggagaaa gagaaatgga gaaagagaat ggaagcgggt tgctcattag taatcggctg 180

aaagcagact gctcacgaac tacaagacaa tttgtgagag aaagaatgag ccaagtatta 240

aatgcatatc ttgtatcatg ggaacttatt atatgattag acttttagtt agctatatat 300

atgacatgtc aacattataa agctcattgt gagctatatc gttaacatta ctctaattag 360

ggccatcgtg gacatattgc atgtatacat attaaggttg tagcattcat tttgatgaag 420

gggtaaatgc aaccatattg attagggtcc acatatgata tgatatatag atacacacac 480

ttaataggat tgcaacatgc atgcttacta gtgtttggag gagtggcacc tgaaattaag 540

ttcaattttg gtgtgcaatg tatagaaaaa taatgtttga aatgatggtt atgttctcca 600

acacattctc aaggaaaatg agtaaagctt accaatgaaa ccagggcatt ggacactatc 660

aacattttgt catcctgaac taggatactt acattatccc tccatctaac tacttgttct 720

tgccctcgtg tatctccaac tccatgtatc cgcagtcggt agagttacct gctagaggct 780

tggtgggtag tgaggaccac tatactaggg catctcgctt ttcccttcat ttgacctcct 840

ttgtctccct catctctagt ttggtctagt gacatcgttc gtgctttggt gtttagtgcc 900

aattagttta gttgtgtgaa taagtggctt tagttgggtt aagtcttagt attgatatga 960

agtcatacta aggagggtgt ggcccctcta gccgtgcgtt ttttgggcta gaaggtgcac 1020

tggtgcaaca catggctaat atatgaccat gatgttcaag tgcaatgaga atatgtcaag 1080

ggaataaaca gttttggatt agtttttgga ctaatgatta cataagtgtg tggtgcaaca 1140

tatctcttgg cttgtggtgc acatgtgtgg agcctaaaaa cgaccgatga caatggataa 1200

ggtcaaagta gggtccatgt ttatggacta caagacatga aagatggacg atgaggcttg 1260

gattgaggga ttcgataagc tagaggac 1288

<210> 2879
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128505_G1, chr3:217637378..217638499, Cluster 17

<400> 2879
gttcttttta gacttctatc cgtattcgat ttaatgataa taaatatcgt gacgtacctg 60

tcacttgcac ccgtcgtcgt gaccacacgg cgagcaagcc tctcccagtc ccaaccatgt 120

gcttgaccac ttaccaatca ggattcaggg ctacatctaa agatggcaac agaaaatttc 180

ccatcagcaa atagccaaat agctctatat caccatctcc acgaccaaaa atatttttct 240

gcgccataga cgtgccgggc tgccggccca tggcgcgggc gtacgggcgc ggcccactga 300

ccagtctagg acaccgttca aaagcctttt tttcccccag tggctgcagc tagtggcacc 360

tcacatatta ctgtacaaaa caccaggcgc tgctacagta cagccgcaga aaacgacatc 420

caggtactcg gcccaaggcg agggctgcca gcccattgca tggcctgcgc tgagtagcag 480

tcgttttgat tttgttctag atcaaactat ttatacttta actaatatat atatatatat 540

acataatatt aaattattct aacttaaaag aattacgtgt tatagaagtt caagtcatga 600

tgaatctaga aagtttactt ttataatgta aaatcttcta aaacatctcg tataaccggt 660

caaaattgat agcaattgac ttaagataaa cctaaaacaa ctaattttat ggatagaggg 720

agtactctca gtctttatag atatgagaat attttgtttt tttagaacaa agattatgga 780

gattttagtg tctggattaa atctactgga aagataaatc taggtttttg gagagatcgt 840

ctagagagaa ctaatcttgt ataactgatc gccgcaaaag aacaaacgta caatccatct 900

tcctcggatg atatctttca taccgttctg ccctaatctg tttaaacatg gttctgctag 960

accaaatttt aatcttattt ggcatgatgc acatttgtag atctattcgc tttctataca 1020

cgtttgttgt catgatcatg cttttatttt tggattaaat tagttttttt aacgtgtaaa 1080

gccgatacta aaagatgtct tcactatctt acgatcgttt tg 1122

<210> 2880
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_128508_G1, chr3:217640136..217641512, Cluster 17

<400> 2880
ctttgcagtt ggcactccag agatcaatca atagatcata ggcaatcatg gattaggctc 60

gtcactcgat cagaaaatgc aacaacagag gctgcttgcc acctccaaag tgggtgggtg 120

tccggttacg ctggaacgag actgagaact attctttgaa gttggaatct cggtgatcat 180

caattcttat acaataaatt aggtgattat tccggctaga aaacgttata gggctatggt 240

tcgtgaatca ccgagctaat actaaacaaa catgtagaga ccatttttt ataaaggaag 300

attatattaa taacttcaag cacattgcat cgacgagata ctagcccttg aaatttcttc 360

cacccttata aatacataaa gttgatagtc atatatatat tgtataaata tgtatacatt 420

atcttagcct ttttatttga aagattccta taaatgaaat aaatatataa ctaattacta 480

caatggatgt cactatatat tatatttcga tttcgacgaa agacttcttt tgtcgtagtg 540

gaactctttg tttttggatt tatataacaa caccagacgt tgttctagga ttgccatttg 600

ccacggtagc atcaaatagg aattcttcct tcactttcat tagctatcat ttgccaaata 660

gtcagtatag taaatcaaac ctctggacaa aatattactc atagaaaata tgtagtgcat 720

gtttccatac gcacttcaac atccttttgt aactgtatca ttgctaccta cgaatgtgtg 780

aatgaattca caaacatgtt tattcacaaa aaatcattgc cttgcccttg ttggcaagac 840

taaaagggta aaagttataa agtattatta gcaaatgaca tgcgagatat gcagatccat 900

acatatatac aaaaaaattg gcttgagcat aagttttttt cttttagacc aagattattt 960

ctgtggaaga tcctacatac ccttgaacaa gagaaggaat ggtgtttggt ccatggctga 1020

ataaaagcaa cagttatata gttatgttgg aatgccatca attactcgtt aagaatgtcc 1080

acggcctctt gatagtataa gactcgattc ctcacagagt gtagcacgtg catagtgcca 1140

tttttcatca tgattataag cagtatctat ctggtggaag ctaattaaat agttataaac 1200

atggataacg aattggagtg gaaatttaaa taggaaaaag gtatagggaa ctagataagg 1260

cactaactta aagttgtaag gtataagtat gtatcgctta gatagaacgt tatgtcttat 1320

ttgaaataaa agactataaa aaaactgata tgacgctgca tgctatgggt aggagcg 1377

<210> 2881
<211> 1066
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129413_G1, chr3:222612050..222613115, Cluster 17

<400> 2881
gacgcacgac tcaagatcta gacttcggat tggttatcat tagatctatg ttattttagt 60

ttttgtagt tggctatgta cattaggaag agggcggaag ttctatacca aggatttgta 120

tcgttttgat gtaatgactt ggtatcttca atataagctt cctttatcta aaaacccctc 180

tacccatcag gtaagaagag tagtatgagt atatgttgct cccacatata accgcaagta 240

ttttatatgt atctatccat atatgttgtt agatttaata tagacatgac ttatatttta 300

ctaaataaaa caaattctag ttacatatta aatatctgga gccatgagac tcttttggat 360

actcctagac tcttttgagc cccttaggtt cgttcaaagg ctctcttagg gctaattttg 420

aatatcaagg gacgtcctcc accatggatc ccctctaatt cccttatcac caaacgagcc 480

cttagggatc ttgccgtctt agaaccattt gggggcctta ggttcccttg gggccatcag 540

gatatcttgt gccctcgatg ggcattagta gtgttgaggc cctcgggaca ttcgaggccc 600

ttgaggccat aggggtgttg gagccattca aggttgtcgt agaattatcc ataactgtcc 660

tatgtaggtg tatttgtttt gtcacttgga ctagttaatg gagaaaataa tagtcaaatt 720

gatagagatg taatatacct ataatatatg tggtaatgga tgtacattac gatgattact 780

ctatcttttt gtcttcctac atgtcatacc caattattaa aacaaattgg gctcgatata 840

tgtgtgtcca agaagtctac acatacaaca cagaaataga gtatatcaaa aaataatatt 900

ctatagaaaa aacatatatt taacttttac ttattagaat atagcataac gattactaaa 960

cttatcttca tagggagagt agactagggg tatatacgcc ttaacactta taaaactttt 1020

cagaaaattg actaggtcca ctatttgata catatctatg attttt 1066

<210> 2882
<211> 1232
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129662_G1, chr3:223672603..223673834, Cluster 17

<400> 2882
tattatctgc atggactata tgtattaaag cttgtatgaa aaccaatttt agaataagac 60

gaaagctcca ttctgtggta gtgggctaaa aaatgttggc agtatatttg ttggcttcat 120

tcaataatat tcagaatatc actcctaaag tatagaagat aattttagat aacaaattct 180

aaactatttt taaatcactc cgacaatata tatattatat ttctctccag tatatttgta 240

tctggattgc cctaaccatg tgtgttactc tttattcttt tcatatcctt tcaccttcag 300

attgacatat ccatatgcgc gtgtttattt tcgtccgatt agattgattt tcttttaacg 360

tagggagttg atggaaagca gatttttca gtcctattaa taaaatctcg attgtgtatg 420

ggttttagat acatggtaaa actcatatac caataaagcc aacatatttt aatttggtat 480

ggagagagta ataaacacta ttgccgctgc ttcttttatc atcttgagag ggtcaagata 540

gcactcattg gcgagcgtag tttgacatct gcgacttgtg aatgcagaaa tacgaataga 600

atcattgcaa gcttgcaact gctgagacaa gtgtgaaata attaagtact gttctgcttc 660

tgcatcgact gtatcaaaac tgattgcgtg ataaaggaac catcatggcg gtgaatcatc 720

aaattgggca acttgcatga ttattgtctg cacattgggt gcagaaaagg atggcgcata 780

agtatatgcc aatcaagtca caggatccct tgatggaaca gaaagcaaat agaatgtcca 840

gacaaaagat aaccaaccaa cgcatgaaac tccctggcta gccgtggatg aggaatccta 900

ctacacttgt tgacaagcat atggatgagg aacattgacc acataaaatt cctttcgtta 960

aatcaacaaa gccgtcgctt atgataaacc cgctgataag ataacgatgc gcggtttaat 1020

cgagaatttt cagctaaata aattaaagca gcatatgcta tagtgcagat catctcatat 1080

tctcatgctt gcaggttaca gctggatcac acaacaattt tgtatgtttg gttgcccgca 1140

ccgcatcgtt gattttactt gagattatgt ttggttgctt gtacgtgaga gttaccgtct 1200

gcatgagtag atacaaaata agctattttg at 1232

<210> 2883
<211> 1061
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130452_G1, chr3:227483890..227484950, Cluster 17

<400> 2883
tttgtgtcat attggcttag gtgttttctc acgggctatc tagagtgacg atgcaagatg 60

acaattaatg gaccataggt tagataaaaa agaagtataa gtttttttt gtaaaaggga 120

cgactgtgga aactagaaaa acatcttggc ttgttcggtt gtcctacaaa tgtaatatat 180

agagacaaaa tactgtagaa gccgtagcca aattaaggtt gtagcaaggc acaacgaaca 240

agcctatgtt ttatagaagt agagaaggaa gtaacaaacg attccctgtg ttttaaataa 300

gtcactctaa ttttttaggc gcatagattt tgatatacat ctaaatctat attatgtcta 360

tataaaaatt aatggttatg tatgtaaaaa gtcgtaatga cttggaattt aaaataaaag 420

tagaaaaaca gcatgatacc aacgtccatg gtgaacttgt gctttactag aagccttggc 480

aaggacttga ttattacatc acacatttta tcatccgact cgagtattgt agtgaaaata 540

aatttaatag taggtcatcg tgtattgtag cgaccacaat ttcatcttca aaataaattt 600

tgcatagtaa caaatccaac acaggcattt aacaggacta gcacagttgc acagtctctc 660

aggatacgac agaaggccaa gaaagaagac ttagcattat gtttaacaca aaaaaatatc 720

ttaaataaag gttactggta ctactaacaa ccatgtgaat tatatttgtg ctcataatta 780

ataaattata gttatattga tcatagaaaa gttagtgcat attgtttatt tattatatta 840

taccttaaag actgatttga tgacaaggaa attgtaaggg atccatgagt gaggaaatct 900

cctactattc aaaattgaat agcaagggat tttctctcaa tggaccgcct ccaattttct 960

tgtcaccaaa tcagccctta aagtggaagt ccccctccgt gcatgcaaca actccctctc 1020

atgctgcgaa ttagggatgt tgcagcgaac atcacaagag a 1061

<210> 2884
<211> 1216
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130943_G1, chr3:230410163..230411378, Cluster 17

<400> 2884
atgtcgccct tttgtctgcc cgtccgtgtg gtctagtttg gtttagtgat gctaataccc 60

attttgttac ctcttagcct gccacaagaa gcgagaataa tttaaaacaa atgttgctcg 120

ggtattacga tggcttcctg ggcacatggt aggcatttca tcgtcaataa ttttgtttat 180

atcaagtaac aattacatta aacttaagat gaaacatgac atgtacttca aattgcatgg 240

tacctacgaa tactagcttt cttaataaac tgctaaatgc cacatgtcaa ataatgtgtg 300

gtaaataagc atttagaagt tgaaattagt aggtgaaata acaacagcct tagttgtctt 360

cgagaacgtc aaaaggcatc agctataatt aaatgcatta tgtgctatcg atcttttagg 420

atttttttac tgttgttcga taaaaaagat acttttgttg gcaggtcaga agtatatatt 480

aaaccattgt tcctaacgac ctgcatccat gaagtcttta atttaatctc agaagaagtc 540

ttcacaaggg ctaccttgtg tggaaatgac aacattcatg tatatatatc aaataattaa 600

gaaaagttta tcaacaaatg caaatccatt gccattaagc attcttgcca ttttcagtct 660

tttatacaac aaatttagaa aactaatctt ctttcattaa ttctagctac ttttgtcata 720

tgcataatag atattacttg atgtgtaatt tttgtttatc ttacttccaa aataacaatt 780

gtaggtgtgt tgacatattc aaacctcagg agcaaaaatt ctgttgaaga cttgaattac 840

aggaaagaac attttgcaga aaaggaactt atctccataa gaggtactga atctccttac 900

aaagcatgaa tccagatatt ccttctcctt agtggaacta ctaaggtaat ctaatattct 960

atttgttttg ttgtgtaggt aagtcatatt ctatgtgcta tgagatttga caatagaaca 1020

cacatttacc ttgcttcagg tgaggtcttt ggtgggaaac gtttcatgaa ttaagccata 1080

caaggctatg tttccacagc acagtcggac ctggaaagtt ggaagagaat acccaagggc 1140

tagcagtatc agcagttgat tacatggttt gtctcttatc tgacatctgt gtactgaact 1200

gttctgctta attttt 1216

<210> 2885
<211> 1173
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133945_G1, chr4:11832069..11833241, Cluster 17

<400> 2885
gggagatcaa tagcacatac aagtccattt tttcacggta ctaaagtcat acattgacga 60

aacacatttc tctagtaaaa agtgacattt ttaatgacga attcaccgtt ccagggaaaa 120

tattaattcc ttggttcgaa aacaatctta attttgtcat tgtcattttc aatatacctt 180

tctctttttc tactatatat ttttcccttt tctaatacat cttgatctct atttttatag 240

atattttggt cttttgttat ctacattggc cttcgtccct ggtttaaaac atcaattaat 300

atatatatac attgtccctc atcaagtgtg gcttgttcga gctgctaaca tgagttggtc 360

ctgacaggtt ggatctcaca gtattagact caagacaact aaaactcact agacccatat 420

ggaatcatga aatcgatgca tgtcccgcaa aaattatcaa tgttaaccat ataccctaga 480

aacaatgaga agatgtgtta gtttgttata tgtattgcta tttcctattg tttaaataac 540

tttgagagtg cagaattacc acttggtcta ggatcagaac aacccccacc acttgtgcct 600

ctgataagta gcgaggtcat aggacatgtc ttcatcgcct aacgactgaa tgttggtgta 660

gttcgcttat gtccattagc ccttcatctt ggaccatgta acaccaaggt accaagatat 720

atattaccaa aatgggtggg atcaatggac atcttatgca caaccatgtt caaatattag 780

aactgagtcc tcattatggt ctcacataat tcttccacta gtccttagag gcacatacac 840

aaacatggaa tatcttctga gccttcctaa cacttacaca aacctagtta gcgcataaac 900

aaattgacta agtgtaggaa tctcatcttt tactcaaact ttcacaggga tcttctattt 960

tgctcaaact aagtaatgga agcacttttc tcacagaatt gagttagaga tcaaacaaaa 1020

gtgctaaaac atagtattag gcatatgcaa cttatctaag tacccaaacc ttgtggtttt 1080

accattttac ccaaagttgc actttcttgc tccattttag ctctttagga cttagtgcct 1140

tcaaattgca ttcaagtgga ccagagctca tac 1173

<210> 2886
<211> 1296
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136716_G1, chr4:25649045..25650340, Cluster 17

<400> 2886
atgcaaactg tccataataa caaaatataa aatagttcta tgcctttcgt ggtagaaagc 60

tattttggct caatataaaa tagctccaat atcagttaat agctccaata cagtcaatat 120

aaaatagctc caatatcagt taatagctcc aatatcagtt gatattttat aagaacagtt 180

ctatgccttt cgtggttaac acatcagatt ttcgaaaatc tgaatacagt caaaatagct 240

ccaatatcag ttaatataaa atagctccaa tatcagttaa tagctccaat atgcagtcaa 300

ttttcaggca taaaagacta tattaattgt gtatttaacc caattaatat ctgtctcttc 360

agttgtcttt aaagctaata tatttaggat tcagagacag tgttgtatgg tttgagtatt 420

ttagttgtct actcttttat ggttcaatcg gtgctaccag ccttcaccta tctgaattaa 480

tatatttagt atttaagttg attgcaggca atagtaatct ggttaacaca tcagttaata 540

ttagctagct ttctattttt tctggaaact attgatgctt gaacagttcc aatacagtca 600

aaatagctcc aatatcagtt aacacacaat ataaaatagc tccaataccc taccaatacc 660

ctgacaagat ttatgttgtt gcccattgcc ctgcagccta ccctttcatc caagccttct 720

tcataatgac gaggatgcgc cggttcagaa gcagcagtgg tataaattat aatgtcgaaa 780

ccattattta gttcacagaa ctttacatag atacatgttg agcgagacag gtactgaaat 840

tagaaacaac agtacaaggc tacaagccaa aataggtatt tgacaagaaa aaatggtgta 900

cttgtattta agaagaacac tctgctgtag aatctgaata ttagtctttg gttttctcaa 960

ggcatagaac ttttggatga caaactcgaa aatctgcatt gactgtattg gagctattaa 1020

ctgatattgg agctatttta tattaactga tattggagct attttgactg tattcagatt 1080

ttcgaaaatc tgatgtgtta accacgaaag gcatagaact gttcttataa aatatcaact 1140

gatattggag ctattaactg atattggagc tattttatat tgactgtatt ggagatatta 1200

actgatattg gagctatttt atattgagcc aaaatagctt tctaccacga aaggcataga 1260

actattttat attttgttat tatggacagt ttgcat 1296

<210> 2887
<211> 1232
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136789_G1, chr4:26169391..26170622, Cluster 17

<400> 2887
gtttgatttt tccaacttcc taatcaaatg caacactcca aagagccagc atacttcaat 60

gtcaccagaa atagataatt caaatcaagt atccaaattt gtcatagtaa gaattacaca 120

tatgtctatg ccaatataaa tcatataata gggttgctag tagcacaaga gcaaatccta 180

gtaattatag tttttgtatc ttgaaatcga aatgggtgaa acctatatat attcaaggaa 240

aaagaaagct tatataagtt cacaggcagg aatgtttctg gtaatcagta aggtactgtc 300

atcaatgttt aagagactaa atgtgaaact tttagtttca gtgatataat tctctaatgt 360

tttcctgtaa gctagtgttc atgtgtattt tattgtcaac ctagcatgtt tatgccagct 420

gtgctatatt gtctatcatc aaagatctta atatttcaaa caactaaaag ggaaacctgt 480

caagttacaa ggtgcaaagc caaataccca agcatgtgtt gtttttattg gagtacagtt 540

tgattcattg atcagaaaat aggctatcga acaactattg taactacaag ttactgtgaa 600

tgatcatcca gctgagatac ctccacatgg gtttgcaatt tacagacaat tttgagctgt 660

ataattttgc gtgatcagat gggtgttgat tgttattgtt tcggccaaga aggaaagaaa 720

gaagccatga attttggtct tgggcgacta gcttaatttg caggagtcct agataaacaa 780

ggctaaatat gctagcgtcg aaatgaacta ataaatcttg cagaaggatt ggagagaaaa 840

ccgacatact gcctctgcaa ccaagtcagc tatggtaaga tggtggcatg cgacaatgat 900

ttctaaagtt ttagacatga atttgtcttg cagaaggatt ggagagaaaa gcaggatgag 960

ttcaagaaaa aggtaaggca tcttaggctc gcctgctgct gctgttgtga tgaagactat 1020

tgtggttatg actatagcct tgtagggtag ctttcagaag cgtatgagta agcttgaaga 1080

aatccggcaa ggtatggaac tacctttttgg ttgtttctga gtcgtgttat ttctgttctc 1140

attttgagta acacacctaa ctgattgctc ttttggaaag aaattattgt ttacatgtat 1200

gccatgcgtt gtaattacta gaaaaagagg ca 1232

<210> 2888
<211> 1203
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_145828_G1, chr4:82560970..82562172, Cluster 17

<400> 2888
cccacattag gttattaata gagtagtata gatgacaggt gggaatctcc aaactaaagt 60

atggaccctt cctctgttct ttcatgtata tgacaagtgg gaatacattt aggatcccac 120

tccatgagct agttcaaatg gatttggcat tcagctgtcc taagcaaaca taattttctt 180

tttggtttct tctaattaat ggatggattg gataatagaa actttctcag gagaaagaac 240

aatcatctcg aggacaacaa ttgtgctcta tgcaattcag gagttgagca aacacaaatg 300

aatactgaag aaagtagtta ttacttcttg ttcaatgttt tggaatcatt gtaatagtgc 360

catatttgat aatagttatc accctctttc tcgttggaag tcacaacaca agaagtagct 420

tgttacctag gtttgtatca aggctaaata aaaatttaag ggacatatgc catttcggct 480

agagaagttc tcttaagcta gttgtttctt attgttccga taaaaaaaac aacctaggaa 540

tgctaacatt tatggataag ttttaattat ttaaggatgg gaacatagct ttaaattcca 600

aaataatgtg catcattttt ttcatgtagt cacgccctat tacatatttc ctaatgtaca 660

ctattggtaa aatttctttt gtttgacagc atgatatcaa acctataatt ctcttagttt 720

cactactaca taattgattt tgcgtgtata agccaaacat taagtgagat aggcacaata 780

ggatgttgcc tccgttaagt gtctgcttca ggtgatagat aacagaggtt accatcgtat 840

aagttgtcag tcaccattag gctattccta gtgcacaata tcaaactcat ttaatacatg 900

ccatgtagta taaaaagctg atgtgacatg ttattaaaga gggaagagaa taaagcgaca 960

tcttcaggga gatatcactt tggcacgaga tcatatgcat taaaatctga accatcaagt 1020

ggcccaccat tcatactctc atatacgact aatatttaat taccttgtaa ggactacgaa 1080

ataacacatg atactataca ttgggacaac tttatgtttt atgataacgt atgatgtagt 1140

aactttggat attgtgacaa aaaacaatgg gactacatga attcaggtaa ttcccgtcga 1200

ctc 1203

<210> 2889
<211> 1175
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14956_G1, chr1:82588888..82590062, Cluster 17

<400> 2889
atcaacccac tcctcatgta tatactaatt attagcttat gaggaatgga gtggtgatag 60

atcaacccat tctattccac aaaccaaata aaaaagtgag gagtgagaag aagatggatc 120

acttcattcc tcaaaccaaa cacactatta ggtgacaaca accaccaaga gtaataatga 180

aaccacaacc caatcagtca ctagtgtcac taggtataag aactcaatgc aaatacacta 240

gaatcactcc tagtctcaat ttggatgaag cactagatag agaaatgact ggtaggtgtt 300

tgtagaagct cacaggggtg tatgaccagt tagagagtga agagagatgg ccacaaccca 360

gccaccatct atttataaca ccttcaagcg aaactagatg ttgggctgct tatttggttg 420

aacatgtgac catggatcct caattgtcca tcggattagg agcaccaaag taagtgctat 480

ggataaatat cctatagcct atactctggt gccctgctcg ctcaatctga tgccatgttg 540

cacgcatgtt gtcagataga aatagttgtt ggttgaggtt ggctagtgta atgcatactc 600

tgatgcattt gaatcaatga ccatcataac tcattcagat ggaacacaaa gaggttctag 660

agccacactt tggtgatcat attgtaccag cggtctacat agaaccaatt tgatactaca 720

tttgaaagtc ccttgtgttg acaggtgggg atatctaagt gaaaacacgc ttatatgcgc 780

taatgtctct caatccaatg ccatcggatc aagggaaacc actctgatgc ttacacaaag 840

cctgtctaaa gagggtttcg tcaaatcaga ttgtgttggt gctgagaata agtgtgttag 900

atgcctaacc ataggtttag ttagcacatt gttgcactct acatagctta tattcaattg 960

caccccttta acacaatctg atggtgcatt agagagcatt ttgagcttag tttgatccaa 1020

aatgtgccaa atccaaatat gtttccaata cgtgtgtaaa tgagttagaa ttttcacaaa 1080

gttttcaaag ttttttcagg ttctcaccag gtcaaaagca tatgtgatga attgatccac 1140

ctattgccac ttagataatt attttggatt tatag 1175

<210> 2890
<211> 1125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155807_G1, chr4:151411325..151412449, Cluster 17

<400> 2890

taactacgcg tgaagcaaac atcaagcgtc accaggaaga gctccaagct tgtgagacga 60

acatcaagaa caagagtgaa atgtataagg atgcaaccta ttcatctttt gggtgcgaga 120

gaaaaaacac ccacactata caccaagtac acaaaatata atagacctag cgagttatat 180

tccctaacgc atgttaggac tagtggtaga tttctcatag ttccacacat gctattataa 240

gttgtgtttg ttacatttct ctaaggcatg ttaggattag tgctaagtct actatttagc 300

tttatatatc tagagttcca tacataccat atattgttcc atgcaatatc catgtaggac 360

tgagttcatc aaggcatcta tagttttaaa ttatccaaag atcgagcaag aatacaatag 420

ctagttctta ttttagtttc taagaacatg tgtaacaatt gtgaagcaaa ccattaaatg 480

cattaaaaat aaaatatatt gtaacatagt acaattattc ttacaacgaa caaagctaaa 540

gggatatata tgtgtgtgag agaacaaact tgcttaaaca agttgatgac atatggcagg 600

taagtcggcg taacatgcca caatactgag ctacctacca tatcatagct atgtccttcg 660

tttggtatca ttgttcacga cgccgagaca tgttacctca acaccgtgaa tcatgacttc 720

gaactttggg tcttgaaaat aaaataaaat acacaaagct ttaaatataa caaattctcg 780

tgtgtttatt ggttttgtct tgcaatttgt tcttcacctt tcctccctag tcttatactt 840

gcttgcacta aacttctatt ccatcgtgtt actaagtcca attctggcat ttatatttac 900

tagcaacctt gtgcaagtat tgtgtttata ctaacccgaa ctatcacatc ttgttctaag 960

cacttaacat cataacttcg gattaaaatt gtattgtgtt ttgagttttc aaatgtcaca 1020

tattcactcc ctctaggtat ctgtagtttt taaattgtcc aaagatcggg caagaatgca 1080

atgaccagtt cttattttta gtttctaaaa catgcgttat aattg 1125

<210> 2891
<211> 1224
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16030_G1, chr1:88854651..88855874, Cluster 17

<400> 2891
gcaaggttgg tatcgattga ccggtaccaa ctgatgcaat ggcgttgcga ccactgccga 60

ccaggcgtgg tcggtattac cgtctggtgt ctacatgaca gtatgtgatt tgtccattca 120

atttcaacct tttaaattta aaaaatcctt aaaaagtctc taattcacag ataaatagat 180

ggaggtcctt ccctttattc acacgctttt atctctaatt ctcggcccat ctcctttatt 240

cacacacttc catctctaat tagggtctag ggtctttcga acctccattt ccatatgggt 300

ccgaggtgga gtcccaacta caaaactttc gcctccaatt ctcaagtttt ctccttcatt 360

cacacacttc catcctctat tagggtttaa actcttctaa acctacattt ctatatggat 420

ccgatgtgga gtcccaacta cgaaactttc atggattttc tcaacgagca atctctgtaa 480

cgtcttgaac tttggaagca gtgtgcatag tcctataaga aactgacaaa gagagtcaaa 540

aatctcttat cgaactccaa atcctctagt gctcacatat gagggatcgt tgtcttgctc 600

agttcattgt ctgtgacttg ctatctctct gaacaaattt ttagcaacaa catttggctt 660

aggttttggt atcattattt tacactctgg ttcgagatgg tgtctaaagg gtccaactct 720

ctgaaaacat cttaaaacat gttgtaagcg gctcaaggtg gattccatgc ttggttctgt 780

tggaatcatc caatgctcgg ggatgccatt ctgtacatgg ttatgtaact tagatggttt 840

accagttcca tgacttttag ccaacataag aacacaatgt aggacaatag aaaccagttc 900

ttagatatga tcgcaatcgc cgcactacat aagaacttta tgcttttatt gtttctaaaa 960

tttgtcatat tttttaactt tgtttatttc gtgtaatttt atttttaaa aactagctat 1020

gtatttttag tgttttccat atttttttgta ctttattgaa ttaagaatcg tgtttcattg 1080

cacatatgaa tatgtaaaat aaaagttgat gtgccattga tgtggttgta gattgatggt 1140

aaaaactaca ctagaaagtt ggggtagata aagcctagta ctaatagata tagactggtc 1200

gctagtgagg tagcggtaga tatt 1224

<210> 2892
<211> 1056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161340_G1, chr4:183931224..183932279, Cluster 17

<400> 2892
aaaagtttca aacatccaaa cgcgcgctac tacacacata ctgaaaaata actcagagct 60

gtcaaagtta gacatgtgat aatcggcttc aaatgcaaaa aaaatttaaa taaagcgtca 120

cttggagagg aagcttagcc atatagcatc ttataaagct agagttgtca cttgaataat 180

ataatgctag agcctacgac tagacagctt tagttgtgcc taaccatagc atccgatctc 240

tgtagttcgt tgacaagaat gattggatct ctcaccattt tgttctgctt actctagcgg 300

ttcagcatat gtttattgct tagtattcca acgtgttgtt gattcgtcct gctggtgtag 360

ctagctagga tcgagtgcag agcaagtttt ccacccgagg ggtacatgta tgcttggaac 420

aacatatgat tggaaaagtt cgcgtcgacg cactgggtcc ggttcgttgg acttattctg 480

ctgccattgt cggtttcaaa ctgcaaatac tatgccttta tttactcaaa taattcctaa 540

ttaatttaca gatataatgt agcaattatc atcttctgtt gttgatttat cctcatgtga 600

tagcaattgc cctccaaacc gatcgagctg cttctagaaa ttttttgtg aagctaggtg 660

gttttcactg tttagctata tatatataaa tgctcctgta tttagatgtt gtttagaatg 720

gctccaagtt ctagctctag tgcagatatg tagtttgtaa tatcaattta attagtttta 780

aaaatatttt tcatctaaat aataattaaa atgatttttc taaatatttt ctaaaggctt 840

atagctctag tttcacgatt ttctggagca cttaatgacc tactccacaa aattttctgg 900

agctgaaact ataccaaaca tgactttgga ggcggctcta ttttcaaacc gtctttagaa 960

accgatttgt aaagttgcat ctaaaattag aagttgtaca aaatttgaga ttttcaaacg 1020

atgtccaaca aaaaacgatc aaacccgaag ttctta 1056

<210> 2893
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162728_G1, chr4:190952237..190953483, Cluster 17

<400> 2893
gtgggtgatc atagtaacct catagtcaac attttggtcc tcatgatgat tgtcacgatc 60

aaggggtgga agggcacagc atgcacgagc agggcctctt gttcgagatt atgctcgcgc 120

tggagagcac attagcctca tgcatgcact ctatgcagat gcggcagtgg tgatcgcaac 180

atcatcttta gtggtgcgga tggtggcatc gatgcatacc tatgcatcaa ccaaggctgc 240

gaactccact tcttactttt gggcttcttg agagtcagct tcttgctcaa tagcagaggc 300

cggtggtggt gagctcaaag tcgaaggaag gcataatagc gacagctact gtaggagtga 360

aagcggtata tgtcaaagaa ctaagaaggt gatatatacc atattagaga aaatatacta 420

cataaattat agttgtattg cattgagatc tatggagtga ttatatacat tgcataggac 480

taacacctta agatactagg caatagggta caattcatat ctacgtatat acaacgctag 540

gtagcttggt tgacaagaga agaaccctgc ccaactatag taacaaggtc caatcgaagg 600

tccaatagaa ttgtacaggt aatcctaatg ttcctcattc cacatggaca gaagtgacaa 660

ttgtacaacc caaaatctac aattttatta cttccaaata aaatgaaacc catcagatga 720

agtttgaact gaatttgaat cttaaaaggt gtagcacaaa ttggccaact aataaagcca 780

tgaaatcacc agctccctta atatgatcac caaatcatta tggaactgaa gattataagt 840

aaaagataga atttttagtt cttaccttac ttaccatgtg gttgtaaaga aaatatatct 900

ggtatacata gagcggcgga ggacgcatag aatttgaggt atcgcagatt ttgtacataa 960

ctatatgtac aaatccatat atataggttc tagttcacaa gaaacaattt aaaataaagc 1020

agtaatttaa agtatgtagc agcaaaacaa atgtaaataa ggacattgaa acatacctta 1080

acaaaagaag atgaattcac cattattgct atcgataatg atataagtta caaaaaatat 1140

tggacaatgc accaataaaa atctgttaaa taaaaaataa aaatgtgtta ataatgaaat 1200

tttgataaaa gtaattaaaa caaaacaaga gtaattaaga gatatac 1247

<210> 2894
<211> 1193
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16396_G1, chr1:90935929..90937121, Cluster 17

<400> 2894
gtgaatttag tataattatt aatgatcaaa atcaaataga gaatatatat gtgtgcgcta 60

gttggcacta gccttcccca gcgcgcctcc tctaaccgag cggcccagcg gccaattgaa 120

ctggccaaaa tttctacatt tatttaatat ggaccaagca catgtacgtt atccttccct 180

attatgttac cagagtcagt tatgcgtagt tatcagggtc agtcattgta ttgtatcagg 240

atcaatcatt gtacttttat cagtataggt cattgcattt tgttgtagtt atcagggtta 300

atcattgtat ttttttatca gtctttatat ttatcagggt tagtcattgt attatcagag 360

ttagttatta tatttttatt aagttagtta ttgtattttt tatcaaggtt ggtcaccgta 420

tttatcagtg atcttattat gattaaataa aaatttaaaa tatgtagaat gagtggccta 480

gtttaattaa aaaatcttat aaatataaat ataaaatcgt tttagtgatt aaatctttta 540

attaaaagat acgacggaaa tacaaactaa aaagacaaat gagatgagag agactgagag 600

aggtggggac tgggagtctg ggagagagct actagcgcgt aaaacaacag cttcgcatca 660

ttagctcacg tatcaatatt ccgtgtgtgt gtgtgtgtgt gtcagacgca ccatgtgtca 720

acatgtccag tgtcgggctc tgtcgcagta ctggctacgt gacgcacata tgcgtggaag 780

ctttcttctc aacctgcagg aagctagcaa aagctggggc taccccaccc cgtgttttac 840

agcgagtaat aatcaatggg cctgaacaat tcaccgtacg agaaggtacc acacgcccgg 900

ccggccggcc tctgtcatcg tacgaaccgg caccggtgac cgatcttttt ttaaccgaaa 960

ggcagcagaa ttggtcgacc gaaattatag tactacggag aactacctcg gtcgttccca 1020

aaaaagatac aattgcagat ttgaaggaca taaaacatat atgtatgact ataaaattta 1080

aggaccatgt ggcgatcaga caggctaaat ggaaaccact aaaatttata tgttcgagaa 1140

caccgtaact tgatcccaat ttcaaacaca aatccgagga ctccaaaaac gga 1193

<210> 2895
<211> 1206
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_163976_G1, chr4:196935644..196936849, Cluster 17

<400> 2895
gaccccactt aggagaaaat gggaatataa tttcttttgc cattagaata atgggaggtg 60

caaacccctt ccttctcctt tctctagact tgcatgttcc atgagatgca acaacaattt 120

catcaacatt atgaaagcac atgtggttat tctataatgt ctttttgcag aaactaacta 180

gctaagaaat aagacaaaca ttgtttacct gtaactcttt gaatctaaga aacgcaaaac 240

tgatataatg tgtgttcaca tattggtaag tcgtaaaatc aaaaagaact tatgcctcca 300

tgccaatgtg tcatgacatt gaaagaaagg ccctagagaa gtggaggtcc taggtggctg 360

ttggctaggt ggatggacta gtgccaacag ttcaactgtc accaccgcca ttagcacttg 420

actagaacca ttgctagagt atcagttaag gttgataccg tgtgctgaat aagagctact 480

agtaatatag tagtatgcag attatgtcca acataaaaaa caacaaccaa ctagccatga 540

gacaacagaa accactccaa ctaatcatca tcccctctct tcttctaaat tgagtaactc 600

tagtcttcaa aacgaacaac aaaagtttca acatctagcc aaaagaacat ttctcagctg 660

ctacagctaa cacaaaaaaa ttgtcattgc agtactgata aaggattcag tgtaaaacaa 720

aacctattaa tgaaatagag ctagtctaga attaacacat ccgatggcca catcacaagt 780

ttcacatgca cacctaccat cctacccaaa cagtcaagac ccaaacaatt ttttcacaaa 840

tcactaccaa atgttgctaa tgctagtgag ttcataacta acaagtgagc tcatggaaac 900

aagtatgtaa aggaatagga taacgaaata aacaacatgt atctagtggt tgcttggaag 960

aacataccaa atttgctcag accatttatt gaggccatgc atacagttat aaaaaagaca 1020

ttataaaatt taatcatgca cttatatacc taacagcact agtaaaagta tgatcaaaca 1080

aacacaaaat agatggtgca tgtcaaccat gacaggactg ctgaccaatt ttctgttgag 1140

gtttgctgcc gtcaaaccaa ctttgttgcc tgaataaaaa acataatttc taacatgttt 1200

aatact 1206

<210> 2896
<211> 1282
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_168819_G1, chr4:223070385..223071666, Cluster 17

<400> 2896
gtagcatgtc aagcatatta agttgatatc aaaggtttgt atataactgt cacagttgac 60

ctttaatttt gcacactcca tttttttgtt ctgtgttgaa accatagatg cagaacaacg 120

ctttccttgc atctctcgta tgaagccttc ccatcttatt tttttcgtgt gcacaatatg 180

ataaccaacc tttgccatgt aacacatgga gtagtgtatg tacttttttt agcaactccc 240

aggcattgta tttaaatggc aatctttctt gcatcctagt ttaatccact gccgttaaac 300

tttatataat aatacagctc gatttattta tcacaatttg atgttgattt atttatcata 360

atacaagact agattttcac gttagaaacg catatatcta ccccaaactt gtgctctaca 420

ttttgctcgt cttcttaggt atcattgggc tccaaggcta agctctgtgg ccaacaacaa 480

aatacggcaa ataaaattag ccacaaatct tatggaatgc cagatagaga aacaatatgt 540

tttctttgtg taacaaccac tatttatttc attcaaataa aatttaactg tgaaaattta 600

ctatgcataa ttttgtgatg atggtaaaac agagttgcat attttcttgg ttgtcattag 660

ttttcttaga tcaacataag atcacaggta cacagtgtag ctattcaaat agtgggaaga 720

gcttgagcaa aacattgtac aaaaaaatgg aaggcacgat ggacatgtat tgaaacgaat 780

ttatcatgag ctctgcatag gtagatgttc ttgcaaggcc ttttggtttt attatggtag 840

ataagaacat agcacaagag tattagagta cttattcttg taatgcaagc ataaaagtat 900

cagtgtactg tggtacaaca cctgcctgta ggaaaacatg gcatgacatc aaagatcaag 960

taatgtcacc ctttgcaggc ttcgtgctcc agaacagaag cacatctccc atctttggtt 1020

taacagaaag gccacccttt gcacattcag acaactcatt ataaaatggt gacgagatac 1080

tgtttgttat cgacgcaggg aacacaacct caccaccatc ttcaacatcc aaatatttga 1140

taatggcagt ttagcctcct tgctggaggc aagtgaggtt gccatttgcc ataggtgttg 1200

tagtagtttt gcctcaatta tattttcatt gcttgtccta ggatatcctg ttctgtacaa 1260

attcttatct tttgatctag aa 1282

<210> 2897
<211> 1118
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171803_G1, chr4:237465622..237466739, Cluster 17

<400> 2897
tcttattttg caatttttta ttgtaatact tgtaataaaa gggagggcta tcactagtta 60

gttaaaaaaa tagtctaaag tatctctggt gcatctaaat tagaagaata aaagatgaat 120

tgaggcgatg tttggtttag ctcatgtcac atcgaacatt cactaagctt cgaaccatgg 180

tgcatctaaa tttgaatgca tatacgagta ttaaaaatga acgccgtacc acattcacta 240

agcttcgaac catggtcttt atggagaaaa gcactcttct ctaagcatta catctcaagt 300

tggtttgtgt tatacaaaga aacaatatat aatatataga aatcgtagtg atgcacgagt 360

aacaaactag tataaaacta tatttgtctt ggcctaggta catcctagag accttaatag 420

tggcataaga atgtctaggt cacgatagtt ctagtccctc caaaagacgt gaaaccagtg 480

agctatatca caaaaaatgg tgaaaatatg aatacctatc tgagagcatc ggatgtcaaa 540

aatctataat agaaagtggg cataagaaaa aaagatatgt ggttgaacac atagatttct 600

atacttgaca tgccagaaca aacaaaaata acagtaatca caaaccaaaa acaacgaaaa 660

aaactcatga ccccgcaaat ttaagattat catgggtgta gcaaatgcaa ataacacttt 720

atttgtgagt acaaactagc tagaaaaatg ttgtctcaac ctaggtacac cctataggac 780

ttaatagtgg cataagtatg tttgggactc ggtagttcta ggcctccaaa aaaacgaaaa 840

cctatgagct atagctcaca aaaagtaaaa gcttgaaatc tattgcgaga gcattggatg 900

tcaaaaaatt atactaaaag tgagtgatag aaaaataaca tatagttgag tgactagatc 960

gccatatttg acatattaaa acaaacaaaa acactaggat cataaaccca aaatagcgaa 1020

gaataactca tgaccccgag agtttgagct ccccacggtg tagtaaatcc aaagaactct 1080

ttgcttgtga gtacaaacta gctagaaaaa tgttgtct 1118

<210> 2898
<211> 1239
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173764_G1, chr5:8158127..8159365, Cluster 17

<220>
<221> modified_base
<222> (43)..(43)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (44)..(44)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (45)..(45)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (46)..(46)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (47)..(47)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(142)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (976)..(976)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (976)..(1075)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (977)..(977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (978)..(978)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (979)..(979)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (980)..(980)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (981)..(981)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (982)..(982)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (983)..(983)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (984)..(984)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (985)..(985)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (986)..(986)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (987)..(987)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (988)..(988)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (989)..(989)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (990)..(990)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (991)..(991)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (992)..(992)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (993)..(993)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (994)..(994)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (995)..(995)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (996)..(996)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (997)..(997)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (998)..(998)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (999)..(999)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1000)..(1000)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1001)..(1001)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1002)..(1002)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1003)..(1003)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1004)..(1004)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1005)..(1005)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1006)..(1006)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1007)..(1007)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1008)..(1008)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1009)..(1009)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1010)..(1010)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1011)..(1011)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1012)..(1012)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1013)..(1013)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1014)..(1014)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1015)..(1015)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1016)..(1016)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1017)..(1017)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1018)..(1018)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1019)..(1019)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1020)..(1020)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1021)..(1021)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1022)..(1022)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1023)..(1023)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1024)..(1024)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1025)..(1025)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1026)..(1026)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1027)..(1027)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1028)..(1028)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1029)..(1029)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1031)..(1031)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1032)..(1032)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1033)..(1033)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1074)..(1074)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<400> 2898
aaagttagag acaaacgaat tcaagctgat tacttccgat gannnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nngtatggtc ctgggcagaa aaaaaatatt aatttttct 180

cccaaaccca aaaggggaga agccccccaa tatttatgtt gtttgtgtaa caccccaccc 240

caccccccc caacaaaaat tgtttttaat tggattggga ccgaaaagcg gttttaaccc 300

ctcccaatgt ggttaaaacc agaaacggtt agaatccatc gcctgggggg gggggaaac 360

taattaaaaa atgatgtaaa aatttggatc ttaagctagc aatatgtaat tttaataatt 420

aataattaaa aattaaataa tttaccccac acatcaaatt aaaataagta gagccttata 480

actctcttcg ttcaaaatgt caataattac tctagtaaat tgagcagaaa tcatcgacaa 540

agggggggga cagacaataa aactattacc tcatacaggt aagcccatag gtagaatcat 600

gtgttgccga cacacacaac gaacctatcc gttctagtcc ctccgctcgt catacaaaca 660

tttaccttat tcatgtttaa aagcatcata ctaagtcact ggccttccgt gccttacaca 720

aatccctgcg gcccaatttg ggggggatag aaacacaccc aaaaacccaa agaaacttgg 780

ccattggagg gtcgtcgaat catcccctgt ggggggggata ggagctcacc catcaattta 840

ggactgagga aggccgcgta tgtttaatac cacgaataaa ggcggtcaaa actggtgggt 900

tagtagatca tgcacgcctg tgtagtacag ccgcaaatag cgctcattca tcaaaaagta 960

gcgcacaccc tgccannnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnggatt 1080

ctagagattc gtccatcagc tacatgatgt aaggaattgt gtagtctgtc tactatgttc 1140

agtcatattt gttcatgtgc tgctgttcct agtgaaacag ttgatgagaa ccttttaata 1200

taactgtgct catataaatg cttcttctct tgttatgtt 1239

<210> 2899
<211> 1398
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174085_G1, chr5:10207537..10208934, Cluster 17

<400> 2899
ctcccgcgct gtgtcggtgt ggtgtacaca ggtagtagta gaatgggttg cagccgcgat 60

gcccccgatc gatgtcgccg cggcgcgtcc ttggcatgcc tttctgttcg accccggtgg 120

tgtcactgtc acgtcccaga tcttaatcag tttttgtaaa caacgtttcg ggataaccta 180

tgcatgtaat tgttaaatgt cttccaccgc ttctgaggtt ggtgctgctg ctacccatat 240

ggtattccaa tgcctggtct tgaaagttcg ccacttgttg ttctctttct aaccgtgtca 300

tcaaattgac tctcttcttt cttccatcca tgtcgctatg tacgtattgt tattttccca 360

gcccaaccca ccaactggtt gaacccgtct ttacaacaag aatctgtgga tttgctgcac 420

ggccacaggt atatacacat aaaggtacaa acaagttcgc atgcataaaa catattggtt 480

tggattaaaa ttaaaccttt agatttcaaa tatcacattc gggatgaaaa aaaactgtat 540

cgaaattgac tataatttat tgcagatttc aatgcaacaa atggctaatt attggtacca 600

attagtatca actgaacaat aagcgagagc tccacgtcag agtcatgccc taaaaataaa 660

ccttttcgtt tacatcttta aattttagtg aaaattatca taaatgcatt ggatattggt 720

gatgacgacc aatgtatggc tatttccccc tcttattaaa cacgtgacaa cgcgagcgag 780

ctgttaaaat gaaatggaac cgaatagtat actgaggggg gcataatagt ttggagcaga 840

cttggaagtc tctcgatttt tttaggctat cttccgaacc tttagaggta attgctagtc 900

agctaataag ttaggtatag tcaacaatta cttgatcatt agcgggctcc tctaaccctc 960

tcacccaatt ttaactaata actattagtt ttagaggcag ccccttagtg gaataaaaga 1020

aaatttgatc gttcatattg acacataggg aattgcactt aaataatatg gttctgattt 1080

atccatactt tggttgggct cctttagtcc ctctactttt agtcattgaa cttggctatc 1140

tagtttacta ctggctatcc attgtgctag tctaattttg aagcagtaaa ttattatcag 1200

cctatcaatt tatcctccaa actaataagg ccccatttgg ttcctttagc ccatggacta 1260

aagtttagtt ccttactatg tttggttcca gagaataaaa ctattcaaaa cacaataaat 1320

gaatcataag aggactaaaa tacccatagc attctcacgc tattagtgca actgaagtaa 1380

aaagtgaaat ttgcatgg 1398

<210> 2900
<211> 1277
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175820_G1, chr5:19912218..19913494, Cluster 17

<400> 2900
tggtgacggt tgcgctgccg ctctcctcca cggcacacgc cctgcaatcg ccacacgatt 60

gcgttgcgct tgcttcgcta cgcttttga ctcggcaagg ggaagggatc cgattcgttt 120

cgcgtcctcc ttcctgatcc catccacgcc agaggattcg aatcgtgact acctcggtgg 180

ctctcgcggg gacggtggtg ggctttccca gattcgcagc aattttgtgg ccttggcttt 240

ctgccgttcg ccgctccaaa ttttcaatgc tccggtgctt taggatagtt tatatttata 300

gtagaggcag agatacacgt atcgattact ctgtatgtat tgccatcggt ctttatctat 360

tgtaacgccc aatggacaac ctttaccact gtccactatc ctgctaagtc aatttttac 420

aaaatcttat ttaaaatgaa acgcagcgtt ttttattgaa acaaaaattc atctgagtat 480

atataaataa ataagcaaat aaaaattata tagtttataa aaacaaataa aattgcatag 540

tttataaatt ataaatcgac atgattcatt aaacataaaa aactacatga tatttttaa 600

aactaaaagt tacatattaa caaaaaaaaa ttgaattttt aaaaaatcaa ttctttaaaa 660

atatagatgt caagataata ttaaccgatt taaaaactac gtggcaccag tttactgagg 720

agagacatgt gtgccaacaa gttgtgctcg ttgttgacat gttgtgctgg ccagtggcca 780

cctgccagct cacaccgaga caaaataatc tcgtcttagt ttagtttttt cggatagaat 840

gacgttatat ctttatttcg tggaaacata ttagatatag tcgtatttgt aacagtatat 900

ccaagacata agaatggttt aggagaagtt tttttaaaaa aagcgtacaa agaaaaatag 960

gagagttatt ttggaaaaaa aaaatgtttt aaaagagacc ctctcatctc tatccttgac 1020

tttttgttat atggttgtac tgttacatct gatatgttct cttatctggt taagaaatca 1080

tggacatccc taatttatgt ttagtaagag ccatgggtag cagatgatgg atgaaatttg 1140

ttgctcagtc agacaacgtt tattggtatc tatatatagc aagagaaaat attgctagtg 1200

aacgatgtat ttagaaaggg tatcacacta agatcaattc caaaagctcc cttgaatcaa 1260

cccaaaaatc agattta 1277

<210> 2901
<211> 1125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177554_G1, chr5:28627193..28628317, Cluster 17

<400> 2901
atactgattc ggtttttctt ggtagcatat ggggcgaagg ccagtttaat ctgccattag 60

ctatgtacct gagacacatt tgttcacggt gaagtaaatg tattttaagg accttcggca 120

gagcagacct ctaacatagt atatttcaaa gacgtcctct tgctcgtacg gtttgtctag 180

tgatgtgtaa ctcgactact cgagacattt tttgttgttc agttcgacac caccatgcgc 240

tgtaaaggga agaagtcgct cgtcttgagt tggtgtcaac attttgaaag actgacatta 300

gtacgtaccc acctaataag cactagatca gagaaacaca ctggagtaaa atgtaaaaga 360

aatggtctca gtcaatccaa gtccaagcac accgaacatc tacccaagga gaggcggata 420

aaaaaatgca tggatgcacg catgcaatcc tcgttcaaag gcatggcacg gcgtgaactc 480

tctcgtcttc accgagcttt tgaaaagccc ggccggccgg cccctcggct gcaatcttcc 540

acagcaacta gtagccgaaa agtagtatag ctagctccta gtagcaacaa aagtccaaca 600

agatctgtgt ttccttgcac cttccaccag aaacgtacgc tgcaaaatca cacgtgttgg 660

ggaaaaaaag aactataaag tgttacatag tccaacaact tgcacgaggg actgcatgta 720

aatacaattg tgtccagctg cttggttctg cccatgctgg tcatcaagta aatgtttatg 780

gtcagcggtg ctagctagtc tgctaattta tacatttagg ataagtttca atgcactaga 840

actaatagat agctaggtag ctaaaaaatt gctagtgaaa ttagcttagc taacttcgtt 900

gattttggcc gttgaatcag ctaatgaact attgatgagt agttaaaggt gtagctaata 960

gttctgaact attagctaga cgtgtttgaa tacatctagc taaaaataac tagctaataa 1020

ctgaaccatt agctagattg tttgaacgtc atccgctaat tttggtatct aattattagc 1080

tggactgaat cagctaataa actatatatc gagtagttaa aggtg 1125

<210> 2902
<211> 1356
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_197410_G1, chr5:158876725..158878080, Cluster 17

<400> 2902
tgttagagtt atatttgcaa ttaaagctat cgcacaaata tttttatgac gtcacaatat 60

ttattatact taatacgttg ttatatgagc atttttatga tgttgcaaca tcttttatga 120

cacagtaatg ctttttaaga attaagagaa gtgagttttg caacgataat tttttatatg 180

tgaaagtact aaaattatgt tctaagtttt tgttgattca ttatgaaggt actccatttt 240

catatactta ttgactctag agaggtagat ctcggagatc aagatcatca tcctcctaac 300

aatttagcgc tatcagtcgt cgccagtcag agcatgagtt ggaggttaca aggttgcgtg 360

aggagctaag gcaatgaaac aaattccaaa tagaataaca ataatactat gctttgttca 420

tatcataaca acagaccatg attcatgtaa ggctagtttc taattgttgc cattctaagt 480

atttaagaat gctcaacgcg ttgatgcatt gcacttgccg gcaacgttgc atcagtaggg 540

gatgaacatt atctttctac aatttcaact tccaccatta ctgcaatggg acgggtacca 600

ttaggacctt gtgcagtcca tgcaagctat acattttaag tacattgatt ctagcaaaat 660

ctagctgaac tagtcaaaca tagtattctt tcttcataaa gtctaaactt agtttgagca 720

aactaagttt gatcaattgg cctcttgctt gatgaatttt agaaaaacct actcaaacta 780

gtgacacgta gagcgttatt tttaattttg gctaattata actaagtttt gacatttatc 840

ctcctacttg atgtatttta gtaaaattta ctcaaactag caaaatatag tatattgaat 900

ctaagcttga ccaattcaaa ctaagcttgc tcatttgact tcatttatac attacacaca 960

gggatcccta acacaagggc cttagattta ccatactcca ctagcgcgaa tacaacacct 1020

ggagagtaaa tgtgttcagt gcttgttatt ttcgtaaaat ttttcgatct ttctatgtca 1080

acgattaatc gttgctaata gcacattttg gcctatgtag ttgggctcga aggatgctag 1140

aattgcattt ataaatttag ttttcggtaa ccctttaga ggtagcgagc aaaactccaa 1200

taattcgagc gacaactatc gaagattcct ttttcatata atacttatga ttgtggtgat 1260

ttgacttaaa ctatggatgt ttatgtggtt gtttatgcct atgttgtaca agctataaat 1320

taaatggtac ttgaatcatt ttttgtgttg tgaatg 1356

<210> 2903
<211> 1368
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198424_G1, chr5:164865790..164867157, Cluster 17

<400> 2903
attgaattca acttttggaa gaaccttatt gtgacttaga caaacatatt tagagtataa 60

atcaattgac taagtatgaa aaggttacct cttttccatt cttctgcagc acagaacata 120

tctaaaacat aggagtaaca caaactaaag atcaaagtaa acatatctaa gcaagcacat 180

agctagcaga gacccatacc actacctctt ccgtgaaatt atgaccggag tactgccggc 240

tgatggctag caaagcacgt agctagcaga gacctacagc cggcctaggt taggagtgac 300

gaccgatccg cgtacgggcg tgtccgcacg ctggtcctcc cggttcgttg gaacgaacgc 360

gaaccaaacg gctctgcccg gcccaaattg attgcacatg gcagtgtcca tgcaaccatc 420

gatcgccaat taacgcgtgt gttaattact acgacgggca aaaaccatcg gtcgaagcca 480

ttatttattt gaatgcaact taaataattt gctaaacaca ggaatatatc cagcgatgga 540

agacgtcgga ctcggatcaa gtacatgcac gaatttcgaa cggacaaaat taagcacata 600

aatggcaaat gatttctacg cttacgaccg tacgtgtacg tgtggtctgg tgtggagttt 660

gtgttcgtcg ggtgcgtgcc acgtcccgca ccaaaattta atgtcccccg ggtgagcagt 720

tgcaccttgg tcctttgcct atttacttcg agctaattaa ggtaggtaga tgtatatttt 780

ttttggcggc aaacaaatgg aaagttgcca aaccgagggt attttctaat ctagaccatc 840

taatctcaga tgggacgaaa agtaaactga gtaaaggcac caagcctatc aagcaatttg 900

ggtgtttcta tttctacaag cacgttcttc ttttccttcc cttttcccga aattagcatc 960

ttctacgctt tgaaaacgag accacacggc acaagaaaga tcttcttaat ctaatagcag 1020

taggtattca gtgaatatca atgaaacttg agaccacaca actctttatt caatatattt 1080

aattaagttc tacaatctat ttaaatctat aagttttact gtaatgaata ttacgcattg 1140

taacgggaca tgagaatata tatggtttag gatttttttc tctatatttt ttttgaagat 1200

ggaaccaatt taaatatttt aattttatta ttgtttcatg caaaaaaaat attttgaata 1260

tctttttgga gtttagattt ttattctata taaattaatt tttatataac taatgtcact 1320

aatttaatat atcagattga gttaatttca tttaagatga ccattgat 1368

<210> 2904
<211> 1333

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201386_G1, chr5:181879452..181880784, Cluster 17

<400> 2904
gtggcaacat tagagtaggg tgggcttaag ccccctgccg ttttcgaacc gtagtctcat 60

aaagccttct ctaaaattac attctatatt tttcattatg tattttatga tttatatcgt 120

ttatatttta atataagact actttaaact gttatattgg tttattataa gtggtttagt 180

gagattatgg cgttgtttag ttcaatctct tttatttttt ttctagcttt gtcttggtgg 240

acataactaa ccttgataaa tgtggctagc aaaaaaatgt gattataaaa tttagagcca 300

cactttatta cacttaagta atcttgtcat gcgatatgtg gagttcaaaa gaatcttgtc 360

taagggatcg tttgggataa ctcccttctt tgaagagaat cactccgagt tagtgaacca 420

cttaaaatat caattgattc atgtgggctt gtggggatta ggagacaatc atttcttcat 480

ttatattagg agttgtgagc taaaaaaaca tgtttcaccg tgctccatgt tatattcagg 540

tgggatcaga agagaaccac ttctcatcat ctcctaaccc tgctccatca tatgaataca 600

ctgaaatcac tctatcgaga atcaagtagc agagttgaag aatcatggag caactcccaa 660

atcatgcctc agactatcta ctattcatta aacaacaatg tgaaagaggt tgtcctctcc 720

tcgtcgctcc taaatttgta tccggatgtg tactaacact ttatcacacc taagaaatct 780

tgtcctatgg cacatgcagc ccaaaaagat cttgcctaag gggccgtttg ggaaagcttc 840

aacttctttt gagataatta ctcctaacca accaaaacaa tcaaatgtat caattgattc 900

aggtggggat caatagatat ttatttctcc atttacacca ggagttagaa tctaaaataa 960

tatattccat tctgctccct gttatattca aatgagaatg aggagagaat cacttctcat 1020

cagctccatg tgttgtaggg cgttgtcggc tcaggctcgc tccaaccgag ccccctttcc 1080

ctccctaaac tcaagtgatg gaagggctcc aatgtccccc ctccttgtcc cccaataatc 1140

acttgtcagc tcttttcact cttagagctg atttggtcat aaagaaatgg agggagttca 1200

tgaggagaaa tctccttatt attcaatttt gaatagcaag ggaattgctt tctatagatt 1260

ccctacattt ctttagtcag caaagcagcc tttgaacggg atctctaatc tctccattca 1320

tcgattagtg ata 1333

<210> 2905
<211> 1160
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207084_G1, chr5:213062524..213063683, Cluster 17

<400> 2905
caagtgtatt cgttcccact ccacgcatat tcgcctccac cattacgttt caatatgtga 60

accaaacgac acctaggtaa cggatacctg gaatttaaga atacatatac gtatacatat 120

acatgacaca tgtgtcgtat gcatattata ttgactacta gcttatttaa tactgcatcc 180

gtttatagat atatgacaca attggttttt taatgagtta ttatttattt attatttatt 240

tgttttatca tttaaggatt taaggtagtt tatgtttgac ttaatatttg acattttcaa 300

taaatatttt gaatatgaca agtggtcaaa attttcgaaa aaagtcaagt agcatatatt 360

tgtgaacgga gatagtatat aatttatgtt ctacaacaat atactatcaa actacaaaat 420

ataatatttc tatacataac cgaataaaat atttttata aataactgga tacttttta 480

acagttaact gagtaaagtg tcatttttat ggagggcgat gggcaacaag tcgccgtgta 540

gctgcagtgc aaaggtgccc ttcgcgtcgc cttgtctact cctccccaac ctgtatacgg 600

gatcttcctc ggcatcaaga tcgtcattac ctaccgtgcc aatggccatc gccgcccagt 660

gcgcgcactt ctgtcaggtc gtacccgttt ggtagctgcc aaccatcttc gtgttttttc 720

tctattctct ttaattgttg tgttttcaaa tgcctgtgca gatgcagaac acatacgatc 780

ggtgtgatgg atcattttaa atatttttct tcttcttgga tctgatttag gtggcttacc 840

aattgatggg tatatatacg ctggtgaaca aggaatcgat gggtatcaaa attattaaaa 900

tggcgtcggg atataaaaaa accttgggcc ttcgggccta ctagtcagaa ggggtgtgaa 960

caacttaggt agaccacggc tgatcccttc aaagatctca aaaggtagac ctcgagccga 1020

ccctcatggg gccgaatgga tacgagcatg agagttggct gagctggacc atgacgcata 1080

cggtatgatt ggttgccggc agcctctgcg cctggcttgc acgggtgtgc accggttgag 1140

acgctcatat ttggtttctt 1160

<210> 2906
<211> 1135
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_221040_G1, chr6:86614868..86616002, Cluster 17

<400> 2906
cttaagatac aacttttctc tccctcctat taaatacctt gtcacatcaa aaaaaaccta 60

agtggcatca cattaatgtg tatgatactg tccactgaga attttagata ctaaacttta 120

gttcctccta agaaatatag atactaaact ttagtcccta caaatcttat ttaatttaaa 180

aaatctgttt tagtgactta gtcatctcgt tgggtatttt agaactaaaa gtgactaaac 240

attagacact aaagtttagg acgtggaaac caaacaccac cttaggaata atgtacagat 300

cttctcttaa cgctgcaact acggcacaca gatctagctc tgcatgcgtg ttggtatatc 360

ttaaatttct taatggaagc acagaaacag ttgtatgatt gtatctaact ggccttctca 420

gtcaaatctg aacgggtcaa cctgcacagg ggcctaatct agagtcaaat ttcgaagaaa 480

gagcaagcaa gcaagaacaa gaaagctgga tacataccga ggcagatcac gaggcgtacg 540

tactcaacaa ttttacctgc caagccaagc caagccatgc acggcgcagt cgtcggcgct 600

gcaaggatta ggatttttt aatatatcca ccgtacccct gtgctgcatg catgcatcag 660

cgtgtgctga atccgatgtg cctgcaccaa ctgaatttgc agatcatcag caggcaggga 720

cgaccgtgag agatcttgca tggacccagt ttcagaaagc gaggagtgac gatgccgcct 780

tcgatctgca gtttcagcag ggaccatcac acgcgcgtac gtaaacgcga cacgtagcaa 840

gtgctacatg aggctccaat gggccttcga cacgtcgcgg tatgccagta ttatgctata 900

tactaatgta tattagcaaa agtagtctcg tacagtgtgc ataagcaacc gctcttctta 960

tttaaataca attcgaaatc atatgtacca tcccaactca ttgcatcctt ttaaatcgat 1020

aactaccctc ttctttctct catctcctct aggctctagc tcaagctatt gtataaaaga 1080

ataatactac ctctttctct cgtttctcat ctctcgatcg gcatctttac tatag 1135

<210> 2907
<211> 1173
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224216_G1, chr6:104778142..104779314, Cluster 17

<400> 2907
acatcaacac catatgtgga catattcagc aaattgcaac cagtattgac actgttctag 60

tgttaagagt taaaaggact gttgcaaata ttggggactc atatgcataa ttgtattgag 120

gctcgatata aacacaaagt gaaacctcaa gacactaaaa gttttgaata ttatgcctta 180

acgatccctc tcaaatgcaa catgaatgaa gtgtaattta ggagagctag caaaactaaa 240

cttgaaaaga aaatgaaact aattaataca tccaaaatca aatatgacat caaagcatcc 300

aaaataaatg ttggagcggt attggatgac tgtattgatg ccatataagg agtatccaca 360

tagtacatgg gagactaatg gagggaaatc ctagaataca agattacact aataccttg 420

actattacac cttatcaatg accacactat tggctacttg tataaaaaat ttacaatgga 480

caccaatcta cttgagttaa tcgattcaaa gagagaactc acagttagca acaacgatat 540

gaatagacca aggcaatgca tagatcaccg tctatccaaa agtttatgca aacacctact 600

ctttcgactt acattttaac aaaagaataa atttgttgcg tcttcgcccc aataattgga 660

cccatcattt agattgaaat ttgcatgtgt aaaatttaga aagataaaat aacaaatagg 720

accacaagtg ttagctagct tctttatttt atcaaagcta gacaaaaaaa agtagtatat 780

caaacctttt ttcgctttgt gtgtgtgtga aataaactaa agggcataaa attgtaatac 840

tcgatacata tgaatacatg gtgtcacggg agaacaacac taacgttgaa gatttttatg 900

gcaacaagtg ttaatattga ccaaacaatg tttatgtagg acatttttaa acatcaagcc 960

aacttgaggt atccattgtt attagttatg tcaaaatcta caaatgactc acaaagacta 1020

aagtttaaat gcagcaatcc tgagtaacgt ctttattcaa ctgattgaca agctgaccat 1080

gggattaaaa acttcataaa atcgcaggtg agtgaccata actcatgagc aaaggttatc 1140

tcgcatggtc cctcacaccc ttgtcctata ccc 1173

<210> 2908
<211> 1211
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224253_G1, chr6:105074866..105076076, Cluster 17

<400> 2908
tggcaacaaa aaaataataa gcaaaagcta aagctgagag aaaaatgtat atgcgaaaca 60

atataatagg ttaatttgtg cgattttatg ttataaatca gccgtcaact ttatatattt 120

attataggac tgatgttctt accggttacg caaacctaat ataattcggc tatagcatca 180

acggcaccac ccggccgcca cttcgtttgt ttattccgag cctgactctt gccatacgca 240

tgcatgtaca attgtacatg gtattcattt gtccgtatct gcctttatgt ttagtagccg 300

taccatgtcg ggctaccagt aggcactcaa ttcctctttg aggagaatca cttatctaaa 360

taataaacca actcattgct caatccaaac atccttccac gtgaatatgt tgtatatata 420

cgtcacatta ggattccatc acacttcgga ctctaggcta tttattcctt ccagttcaaa 480

gtcacggaga tatactcgtg tcatggttag ttgttgctta ccaccgtcac cgtgtatata 540

tataggactc aaccaaataa aggcaattta caaaaatatt cacggccggc cagctcatct 600

aagttcacac aatttctatt tgttggttct ggccgaacca attagctagg ctctagagtg 660

aattaaaatt tggtcattaa catgcaatct ctcaatccat atatattaga gtgaattagg 720

atagagttaa accctaaact ctaattcaag tatcaagctc tataacgata tagtatgagc 780

ggaaaaatat tagtatcaaa ccaggcctca cgaggaagtt ctgcagtaaa taagctaata 840

attactatat gttataatct gaattcgtac gaacgagcga gacatacggt taatcagaat 900

gtgacagcac ggtgtccagt cgcttggaaa aaaaaaacac ggcgggaacc tttttgatat 960

atagtgcaat gggccggtgc ggcagttggc agttgctgcc ggctgccgct gtcaacactc 1020

aacacaacca ccaccgtcca cactgggact tcccgtgctg ctacctttct ttttctcgcc 1080

ttatattgat gtgtttaaac tttccaaaag gctccctaca gacataggtt tttgggtttt 1140

ttttcgaaca aacacgttaa ccaacataag atcgggagga attcgtagag ttcaagctgt 1200

aacaaatggt g 1211

<210> 2909
<211> 1208
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225516_G1, chr6:111177177..111178384, Cluster 17

<400> 2909
ttaaagggtt gtttagatcc catgtgctaa actttagtgg ggtgctaaag tttagccctc 60

tcaaatagag actaaagttt atcatatgga tagtgtttgg atgcaagtgc taaagtttag 120

cacatggata tagaaagaca tccatacccc taattaatcc atacatctaa ttaatgtggg 180

gtagggagag agtgtgagat gaggagggta gaagatgtct tttcctcacc aggccacttt 240

tagctcactt tagcacacct taaagaaatt aaaatgttaa tgagtgctga agtttagcac 300

ttcaatttta caaactttta aaactcttgt ttagatcttt aaatgctaaa gtttaggtaa 360

aaatatagtg ctaaacttta gcatcttaga tccaaagagg tcctaagtcc aactaaacgt 420

gagataggta tagttttagc ctcatctgac tcgatcttac ggattaccat gggattaaat 480

ccctatatga atatcgaaga cgaagagagc tgagattttt tgttggcgtt cctctgagtg 540

tcctctaata gtgatggcaa gttgtttttt cactgcttcc tcgtactctc ccttgtaaaa 600

taatacttca aacgctaata tttccttacc gacctaatcg acgaggttga ggtcctatta 660

cctttacttc atcaactagg tgtggtgata gttgtgtaga ccatgaggtg aagctagtct 720

accaaaaaat gatggaacaa cattcgtctg gtcgtcaatc tgatcgatgt ccacaagtct 780

agtccgatgc tatgcccggc atctctagga tcttgttcct tcgtgttgca ggtgttaggc 840

tggttgcagt ggtattgtcc acttaattca ttatcgttaa tgttattgtc acatcaatag 900

ccgtctaggc ttttgtctta gtctcaccaa tgatcaaaac tttccggcca acgaacacat 960

cagcatttct cttctagact taaccatttc gtaccttta tttcaaacac gtaaaatggg 1020

caaccaaata tttttaatta aatttaaaac actcgtgaat tacatggtaa ttttaaaaaa 1080

gttacatgct attttaaaaa taaaaattat taataattaa aataaaacta cataactcta 1140

accggtgtca ccatgacgtc tccagacatg ttgaatgaac ttttattgga cttcagtgta 1200

aattggtg 1208

<210> 2910
<211> 1155
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226575_G1, chr6:117440126..117441280, Cluster 17

<400> 2910
atcgagccaa cgtcccaacg cccatcggcc gtcgtcccgc ccgaggactc cgcaccgatc 60

acaaattgtt ggcctggccc agtacgttct tcgagtgtta cggtgatgag gcaaggggtg 120

tcctcgatcg atttgcatga atgtctcaaa cggttaagtg gagtctagat gtggcggcac 180

aatatcagaa gcagtgtttt aaatagaagc agtgttttaa atagcgagat aagaaattta 240

ttctcagaat tttcaaaagt gtaaagatcg gaatataaca gaatatatcg gactaattag 300

actaactttt cgctgctaaa aaggttatat caagatatat cgaccgctat taccagctat 360

ttaaaacctt gatcagaagt agccaaaaca gtgtttgaga gtatcttact tgagcacagt 420

agatgaactt tgcagtataa atcaggctat tccgtcagca gctgttggaa ctagattatc 480

gatcgagctc tcctattaga gtaggtaatt aggctctaga attttcaatt actttgaggg 540

ccaaaaattt tcatcagtgc taaaataaaa ccgcctaaaa atattgtctt ttttggctcg 600

ggatgtaaac ctcttaggaa acgcatatta ctgacccgct aaacactaat ccggcaaggt 660

aattgcttat tttcataagt actagtccaa attagcacgg gtaatgaatg acgaatcgag 720

gatttaaagt tagtgtggtc caatcttata aaaatcaaaa taaatagatg atttacactt 780

aggtccaaca acatttgaga atcaaataaa tcaaaatcat ctatatactt tagtagggtc 840

aaaatcagag ggtgggccag tgcccacact gtacaccctc tagatccgtc attgcaggta 900

attgctcatt ttatggagtg ttaattcaaa caaccaaggt aattgtttat tttattgagt 960

gtcattggtc acttgcttct gattcctaag agaacttaaa aacaagtcaa cgcaaatgaa 1020

ataactcttc ctttactctt taataaacct tccataggaa aattaattaa aggatgcagg 1080

ctaaaaagat gagtaataac aatgtaccgt taaaacatgg aataacgatt cgtttaaaca 1140

catattactc tttct 1155

<210> 2911
<211> 1054
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227419_G1, chr6:121797472..121798525, Cluster 17

<400> 2911
tgtggggagc acaacaacgg tgaaaatcgt gcaaccagga aaactgatgc tttaatatag 60

tagatagaag agaacagata gagatttgtt ctagatctat gaaatataag ttttaattag 120

agtagacttt gtatgccata tttttatata atatatgtat tttgttcatt ttattcaaaa 180

aaacagtaca tttttaacgc aaatgcaata tttgatataa atattaatga gcattcatca 240

ttgacatata aaatagataa ttaattaatt tatatctatg acaacgtttc aacaatgtta 300

taattagcac gcataaaaat aagtcgggga ttagatgacg actactcttc ctttttattc 360

tagtttaaag cacagcaaga gccatcacca agttctctct ttccatcttg ttggttgacg 420

gagttttgac gtttttgctt tgtgatgcag caacttggaa agaaaaaaaa aattgtccag 480

cagcaccaac agtgagtaaa gcactttctt tcgcctagga cggcagtgcc cacagtcagg 540

cgtcacgccc acagctaggc acgactacga gagccctccc ccggatctaa taagtccagc 600

ggtggtaacg atcatggggc caaacctagc tatttgcaaa tgtgactcca gtcgctaggg 660

aagcaggatg ttttttcttt cttggttgct cgagtggaga agatacagga aatagaaata 720

aaacggtatg ttggatgggt acgtgtaact agtggcatta atgggtaatt atcactaaac 780

tccatgatga ggtataaaat agggtttcat agaagaccat gaatttggcc acatatccac 840

cgttttggta aattcatatt ttatgaagct agaccatttg gataaaaatt ttgtggagta 900

aaactgtttc tgttagatat agagctagtg gagctctatc aaacaaaccc ttgatttttt 960

tcatattcac aatcgatgag ggctcgaaca ctaactttac agtcaaccct aaaattttgt 1020

catagtgaag ataaaaactt tacttttttt acat 1054

<210> 2912
<211> 1010
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227752_G1, chr6:123794083..123795092, Cluster 17

<400> 2912
aacttcgccg cacggagcaa taagttgtca tagagaatct acaaaaggca ctaagggcac 60

aaaacgagta caatatgagg taggaagtgt actacatata gcatcaagga tactttgcta 120

actacaccta tcagcaataa aattacatta ttgtaattat gattttagaa tatttatcat 180

tttaaccatt tagcactact aactaattgc ttttataatc aatgttacaa ccacagaata 240

tttagacaaa aatcttgcca tagtagcagt tgccgtcact accaccgatg ttgccacaat 300

tctatccttt aggacctcct agagctaagg ttcaatgaac tttctaaaat tccaagcagt 360

ttaactctca gattctatac acatttagtc aacctaggta aacttattaa attatagctt 420

catttatata aatttagtga atgaaactat acttgtgcta ttctaggtga acatatttaa 480

tcctatcttt ttaatctatt tcaacctgta tattctagtg atctatagta aatttgacaa 540

aattatacca aaacatctat tggtggtacc aacatcacaa ggttagtttg ctacaactta 600

ataactgcat ttattttgtt aattataatg ctataagtgc taatatattc tctaacagtg 660

ggctttattc ttaattaaag gttgactagg ctgttgactt tggcaattaa cacattcgct 720

tccaacggta gcagacacag ctccaatgac ccttagtttc cttaggtgag acttatcatg 780

ttcgcttgat ttaccgatga gtttattaat aatactggaa tattgttgat tatgatggta 840

gtatgtgtgc atttggttat ttcaatatga tgtatgaata ttgaatgata ttcgtatgtg 900

tatgtgttgt tcaatgttaa attgatgaaa tgtgaattgt atatgggcat acaattggta 960

tgtgatctat atacggatgt acatggaaat tatgctttct tataatgatt 1010

<210> 2913
<211> 1186
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228690_G1, chr6:128551694..128552879, Cluster 17

<400> 2913
agcctagttt agtgctaacc tagcaatcat gtggccctac acttgggaga tgaagtctta 60

tgctagttaa gccccaaggt cgtaagagtt agaggcctta cataggagcc ccttggcact 120

cgctaagaca ccttcgaggt aggatggcca tagagggcat gaccccagca acatgtctgt 180

ccccaaccat gtcggtcaca tgtggcgctt agcaattaaa ataaggcttt cgtccatcgt 240

atttattacg agaggccaca tagcagtcca aatgcatcat tgtaaccaca acttaggcca 300

caggtatgcc cacaagtact atttagtgct acaccttcaa catgtagcac tatgtcatac 360

tcgatgttgt ggtcacacat acctaccgtt gtgtcatgca aaccgttgtg gaactttcga 420

ggcacgctcc aaatatggta taactccttt gataaaatat aagtaattga acctctacta 480

tattgggccc actatccatg cgaggatgta accctctcct cctttaagct attaaaatga 540

ggtatagagt agcatagaaa gggtcggaga aaatgttcac gttcgacctt tagaagctag 600

ccagggttta ctaaaccgtt taacgcaaaa cgccatccac cagtaatggg aaactagaga 660

aaaactgatg aaactcgcta aaaaacaatt gctttccatt ttcaaattaa aaatatgttt 720

ttagatttac cagccgattt ttggcattcc tcgagcggtt tttgacattt ctcatgtggt 780

ttttgccatt tctaggatgg ttttaggttt tcttggttaa ttttggtgca gatgttttca 840

aagttgaaaa aatgaaattc ggcgagaaat tgcgtttttc gacgaaattc gttgttttta 900

ccgaaaatga ttaatggttt ttaaaaaata aaaaatataa gatatacaag aataccagaa 960

aaaatgttta gttttctatc atagttttct gataattttt tcaatttttt aacttttaaa 1020

agaaaagttt ttaaaaagta gccaaggaat cgatcacaga ctggactgat attggaaaat 1080

tggcccaaaa accacaggtt ttcaagcagt tttcctaacc ctagagctag cacatagaaa 1140

gagctcttac ttgagtttga gctctctcac tcaagtcgat agtaga 1186

<210> 2914
<211> 1299
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228716_G1, chr6:128632622..128633920, Cluster 17

<400> 2914
tcaaaagtgg caacaacagt cacacgaggg ccaattccat gctaaatttt gtatgctact 60

acagcaaaga ctagctaacg tgttaacctt atatacagac gtggattttc ccgacatatc 120

acagtgggga atgcactata ttgaaacatc atatcaaaag gggcctttct tcgtgatgcc 180

cttcatggaa ttttacaaca gagttgaatg agaatttgaa atcgtcatca attttgtaag 240

taaaacaaac aattctttca gtaaccatgt aatatatata attttttgg tttataatat 300

ggtaatttgg atgtattcac atatgaagat gcaaccagct ctgatgtgac tttggtgtaa 360

tcagcacggt ggatgcaaaa gacagtcttt atttcttttt gtacggtgta atgtaattaa 420

tttggatgat aggtactatg cgtactgtga cattgtgctc ctctgctact atgtttctgg 480

ttttctattt actgttaagt aacactcagt aattaatgaa tatatagctt ctactattat 540

gcattatata tattccagta atagtttttt attactgagt catgtgagta atagttagta 600

attattttac tactcatagc acttagcaat tgtatgactg ggtcttgtca gtagattttc 660

atttatatta catctcagta actgtattgt tgagtcaggt cgtttttaa aaaaaaatag 720

cacttagaaa ttttattact gagtcatatc ggcaacagtt ttttaataaa atgctctcag 780

taattgtatt actaaagtca tatcagtggt agtttctaat aaaatgatct cattaattgt 840

atttctgtgc catgccagta gtttttaaa aagcaacact cagtaatttt attactgaat 900

gaatccatgt caacagtagg tttttaatac aatgctctca gtatttgtat tactgagtca 960

tgttagcaag tttttttaaa aaaatagctc tcgataattg tattactgaa tcagttcaac 1020

agtagttttt cataaaatgc tctcagtaat tgtattacta agtcatgtca gtagtttttt 1080

aaatagcact cagtaatttt attactgtag caagtcagca gcagttttta ataaaatgct 1140

ctcattaatt gtattgctga gtcatgtcag tagttttttt aaaatcactc aataatttta 1200

ttactgaagt catctcggca gtccttactt tttcaagata agcaatcagt aaattactga 1260

cgaatctaga acgacgtggg tggtacattg ttagttgtt 1299

<210> 2915
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228793_G1, chr6:129101048..129102129, Cluster 17

<400> 2915
ctcatatgac ttaggatggg gggaagagga aacaagggtg ggtgaaagtt gcagccaaac 60

gccataaaat ttcctctacc gaaggtgctc gtgctagtat agagaaatta taagcctgct 120

cataatgtgc ctagaattta caaggtgctt gtggaatcca aaaaaattgt ccctaatgca 180

tggcactgtt cccctattta tggtagtaag gtacaacttt gtatgaaatt agaagcatgt 240

ccataacgtt tacacacatg aatcttaaat cacatgaggg taatgcggtc atttcttccc 300

taaacgagct cccaggttct tctctccctt ttctgcttca tacgccaatg cccgcagaat 360

cgagctaatc aaagctatct tcttcggttc atgtcaccat ggtgattttg cgaagctgaa 420

gcttcatagc tttgaccttg ctttgcatgt tgcttctaac gaagcttcac ttcttagtaa 480

ggtacctgaa ccatttcttt taatttgcta atataggatt tcaaggatct tcaacaatat 540

aggcccccaa tataactcat aactaactat aataaacaac tatatgcact ataataagta 600

tactactctc gtcttaaata ggaatgaaca cttgtgatgt acacctctac tatatttatg 660

ttggaggtta tctctttgcg tcgtcttctc catctagcac aacaaatgaa atagaagtcc 720

aaaaatgagc attgtgctag ggtttgaatt gtcaccgtcc ccctcccaca taaacaaaat 780

aatagatatt gtaaatattc tgaatataga aaccataata acacatgggc aactgactag 840

tttttataca catgagagaa ggggcctttg aggagtacat atactaaacg atgatgactg 900

tagatcttga ttaatatcat ctgttgatct tgttatttgt gcttcttctt cttgattgat 960

gatgtggcta atcactagat tgatgactta gcgaagatca ccaccgttaa tttctcaaca 1020

cttccccttg atcgagtcca tcttatgaga tcatcaatga agctatatat ttacattgct 1080

aa 1082

<210> 2916
<211> 1381
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229019_G1, chr6:129916926..129918306, Cluster 17

<400> 2916
ttgtttagat cctaagcaca aatatggcac tggtggtcat atctacaagg ctaaatgcaa 60

ggtaaattgt attatcattt gtttccagtg acaactgcat ataacttgtt tatacatgaa 120

gctaccctag agtagcacca agtgacatcg aggtttacat tgttggatat catggcactc 180

actcttcaaa tctagagcaa ctacgcagtc aatcatgcat agattgtcta gtgagttcaa 240

aacacttttt atttttttgt accaaatttc attgttatct tacttgtgtc aaatctagag 300

aaacaatgtt ttttactgta gacacaataa ggttaggaaa tagacaatag gttagatagg 360

attgtaattg gcaagtgcta ccagatgatc cttgtgtcgt gcatgctagt ggaggtgaaa 420

aaaatccata catggtatga tattgtattt tctaaaattc tacaatgcaa gtacgagttt 480

gatgttctaa attgcttgtg ctatgggtac tccatgttta atggagtgat tgactccagg 540

taagttagat catagaaagg agcatcttca tcgcaaaggt ctagaggtag tagttgacga 600

agtaatgtac aagtggagtt cctttgaatt caagaagcaa tgaagttgtg tatcgagcgg 660

gagaggaaac atcaagagta tgatcgatgg aattagaact attagtggta gcatgacaag 720

tacttcacct ttatagcaca acagccagca atgtttcaag taagttcgac agatcttgta 780

ttgtcatttc tagattttca catatttcat tctgtttttt ctattttatt cataaaacat 840

gttgtagtag atgggagtag acatcagttt tcccatgttc agatgttgct accaccacaa 900

ttgtgtcctc ttccatcgat gctttggtct caggttatca catctttagc aaacttacat 960

caattataat gacaatgagc caattgagtt tacttctaaa aatccagtta tcttaattgt 1020

aatgaaaatt agccaattag tttaattcta aaaaacccac ttagctcaat tctataaaaa 1080

atagttaatt tagcaaaatt agttaactta gctcaattct agggaaaata atcaatctag 1140

ttcaactata acgaaattta gtcattgtag cgcaatttag tcagtctagc ttaaactcta 1200

gcaaaactta gtcaacttaa ataaattata tctagttgta cactgtgtga cttaattaca 1260

actaattata atatgcatag tttttagact tctccaaaat tactagcacc taaagatatt 1320

gacgtcgagg ggtctgactc atttatcaac caactattta actatacttt agtaattact 1380

a 1381

<210> 2917
<211> 1200
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229512_G1, chr6:132072602..132073801, Cluster 17

<400> 2917
ctgaattagg ttgaggtttt aactatctag atgaagacgt tgatttggca cgggagcacg 60

tgcctgcgca ccgtggcctg ccgaggcgac ggcctcgctg tctggcgcat ctgctgagac 120

ggcctcggaa cgggctgtgt acgtgcccta aagtgactaa tcacaaccca atcacttgtt 180

taacgagcta tggggcagaa tataatgatt acgacgcaca cagttcaagg gctaatgagt 240

ccgccgctct cctgtttggt ccttgcagag cctgcatgct tctgttctta ctttggatcg 300

aagatatcat tagacagagt tgtcaaatag ctggttaggt ctagcacagc aaaaggagct 360

ttagataaga ttctattgtg aagcaccaag tgtgtaatca tgagtgactg cagcttttgg 420

atttggagta ctgtagtatt tattggccaa cacttgtgct tcgacaacag cctctcgtct 480

cgctttgtgg ggtactagtg ttttttagca cttggggtgg tgtggttact ggcgacctgt 540

cagtgttagt atatggcatg ttcatgtcaa aaattaggtg cagaattgaa cattttgacc 600

gtatcagcta actggattgc gtccttccgc acgatagttt tgtgacggac ttcaattctg 660

aaaggaaatt aaaatacatt tcctaaaaca taagagaaaa ggttgtataa aataataaaa 720

gaaggttttt tttaaggtgg tggtcttagt tttgccagtg ttcttatttt tatctttagt 780

cgtgtttttt tattagtttt gttcttacag ggctatagag cagaaggacg tgaaattaag 840

atgaaataca gttttcgaga agttgctttt ttgtaaatac tattttatag tctaatctat 900

caattaatac atagaagcta ctttaaatga gtactaaaat aacaaatgac ccgtgatgat 960

ggcatatgtc ttaggtgtgc atacatggta tcgtacaaaa tacgttagtg gcatacaaca 1020

taaggatgta atcattattt tgaggagaag gcaacataag cagtaaagtt gtgtgcgacg 1080

gtaggtatag attattttga tatgtaaaaa gtagcagcaa ttatgagcat ataataattt 1140

ggaaagattt tctatggact tagaaaacac tgtagaaagt agtacgaatt acattattca 1200

<210> 2918
<211> 1158
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230971_G1, chr6:138852347..138853504, Cluster 17

<400> 2918
ctcggtgtga tttgatcgtt tcttccgact ttaacgccca gataggtcta aagaatcatt 60

agcctccata tatgcacgat gcacaaggtt taatcaatca gcatgtgaat atgtatcaca 120

cttcacacca catccctctc acagaatata attcatgacg atccgtcggg aatataatta 180

tttggtttac cagatatatg taccatatta cgaacgttgc caagatcaag attcttcatt 240

ggcaggaatt cttcataatc acaactgatg ctttattata catgacgatt gtcgattcgg 300

aacgaaattg gaataatgtc atcctggata ttttatcaac ttagccgatc ataataatta 360

ctagtattat tgtttgtgag atggagcgtg gacctttgtt ataatcatca attaagctgg 420

agaataacaa ccctaatctc aaccactatc cagcttggta gctggacccg cctcagcggc 480

taagcagatt aattaatcat ttcttaaaca attgtgcgaa taacagtaca attgaacaga 540

gaaattgctt taaatagctc tggtgaaagg ttgagaaata cgtcttcaat taggggccca 600

taaagtaatg agcaaattca agggaaaatc taaggatcca cgtccgatct ctttttaatg 660

tcgatctcta atgttaatct caatacaagc tctataaagt tttaatggta cttaatatgc 720

acatgacact atattaatga aaaaagggga aacgagagta cgtactattt cggatcaccg 780

tacaactcta gaaaatttga tagacatgat ggagctgagg tactatggaa aatcatggag 840

atgcacctat gaaactttca aagatatttt gataagttat tttatttatc atttagatta 900

aaatattttc aacttttaa atttatatca tagactatag ctccatgctg gatttagaat 960

ctagagcaga taaaattgtt ttgtgctatt tttaaattta taggtgtatt agaaactaag 1020

ggtgtgtttg aatcagattt gctgccaaaa aactggaatc ccaacgaaac aggtacaaca 1080

acataataga ctatgaaaat atatagattt tctagatcaa tttagaattg tctcgtattc 1140

aagattttgc atgttata 1158

<210> 2919
<211> 1327
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231905_G1, chr6:142766999..142768325, Cluster 17

<400> 2919
catctcacga aatttgacgt ggtcgtccaa ctcgtccggt ccagagcgct tacagccagt 60

gccgtactac gtacgtgcca agtatgacta tatatgttta gaaaacttcg ctaaatttgg 120

tagatagatc attagacgtt ctagaaaatt attaagttag agctctacgt ttctagaaaa 180

catttggata agttatttta tttattattt atatttaaaa taattttaaa acttttttaat 240

tgatattata aataaacatt tggataaatt cttttattta ttatttatat ttaaaatatt 300

tttaaaactt tttaattgat attataaatt acaactctat actggatttg caacctagag 360

tatatatatg acaacgacat gtctacgtag gccagtagta cgcagcgtag atgaaataca 420

aactgatggt acggcgcagg acacgtaact tgattcgatc gacgaccaac ggctttgcct 480

tgcacatgag caccgctgct gacctacgag cttaccgctt tgtctatcag atgcatgcac 540

gtacgtaccg gtgaggtcaa gtttcatcgg ggacggggga aaaagttgct gcgttcttca 600

gaagatagct gaataacctc cctttgaaat tttgaatgaa tgaatatgcg atggtcagcg 660

ccgacatcga taatcctata aactatagct ggagtgctga ttaatgtgtg ccaccagaaa 720

atatatatgt catcatcaag aaactacgcg acaatcttta attttatttc tgaagcatgc 780

atgatgcatg catgtcggct gactgactga ctgggtgcac gctactgcaa aaggagattc 840

accggttaag gaagcggcga agcgcttgat ggttgaccgg ccgcctctat tcaattacgt 900

ttgatgaggc aaaatagtta taccaagcta tggcaaattt cggtcagcca tggccatgcg 960

tggacatgga catgttttat tactttattt tagattcaaa agtaagttat attatataac 1020

gtaactattc taggtaagca tatgtgctac tatcaagcat gtgttaagca atgaaagtat 1080

ctcatttcca ccgctttcat tccttcacca ctagcatatt acatttgtta ctacaatggg 1140

agtgatatga caagtgtatc tatatccgat gagagcatca actacaatcg atgtacatat 1200

aaccaaaaaa ggtacaaata aacaaccata tacttttcaa agagaatgta caaggcaacc 1260

attcctaaca tacgaccaag gcttaaaatg tcttgaccac atcggcgaac caaccatagg 1320

aggctta 1327

<210> 2920
<211> 1064
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232205_G1, chr6:144662010..144663073, Cluster 17

<400> 2920
tacctccaag gaaaatgaat taacgcaaac tgcaaacgta taaaagttgc tatttatatt 60

tatacaaata atttgcttgg tggtacattt attgaatact cgatacaaat tttatacttg 120

ggtttccttc taatagaagt tactttcttc ttatgttgat atgtgttcct tatttcttgt 180

ctgtttctgt tggtatgtat caatttactg attccttaaa taaagcatca acctaccgat 240

cttggttctt gaaaaggaac attatctttt tataggagcc ataaaaaata tgctattgta 300

ttgtagaaca ttcagcacac tacagaactg tttcatattt ttcagatttg gttgatgctt 360

aaatggtcag tgaactcttt ctttgtaact tgtaacctta tcccgtgtcg tcacattata 420

atcctcaaag agtgcatgct aattctcact tctcacttcc ttttccatag tgatcagttg 480

cgtatgcgct tttcttttgc tacttttttgt gaagattatt aacctatctt gtgaactgca 540

ttttatgaag atcgtaacga gtgatgataa tatcttacat actgtccgac agcacatatg 600

taattggaag ttccatctta acactttgta ttaacttaga gttagctgat agaagtttta 660

tatctccttt tgggtatcag gtatcaagct tttgttacta aaggcacttg tgataactga 720

taagttgctc tgctactgta gactacatgc aaaattcctg tcattgaaaa tctgcattta 780

atttcttata caattcagta caggcgattt aatgcagatt ctaacatgat gtatcaacct 840

cattgaggtc gaatatcgaa gttacaaatt cagtggctgt ctgtactatg atttatggag 900

acattaatat agtatatgtc tgtgcgttta gtaaaagatg acgtgattgc atattttata 960

acatgcattt ttggattttt tatttcagta atctcttgtt tatttctttt tacttgattt 1020

atggtctatt ggttggttgc attgacatct gcttttctcc tcag 1064

<210> 2921
<211> 1269
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232295_G1, chr6:145252553..145253821, Cluster 17

<400> 2921
ttggctcaat gattagtgga accgacccca atgatgatta gtggaaccga ccccaatgat 60

tttgttgtct ggcttcgccc ttggccttat gtattcttgt ggtatgggtt gttatacttt 120

gtgacagttt tactccaata attcagcttg ctaataatgc cagcatagga taatctgagg 180

tcataagcta ggatagtagc aaggacaagc cacaacagcg tgaattgtga taaacaggtg 240

caacagccag agtcccaagt cacaatgcgc gaacaagtct ataatgcagg accaaatgca 300

caatacagcg gcaccaatca cttttgactc tttgaccaaa tgccaaaaga aagtagaaga 360

atccactgaa acatcccttt ctacaagctg ttataatcag cactacaaca gccacacccc 420

aggacgtaag tttgcagatg gcttcaggca gtggaagatt gggcggctgt agacaactcc 480

aatggtggta aacacagtcg gggtttgaag tggaaagaaa ctggtattca aatcagatcg 540

ggacaccagg ttcctgccgg cggcatgcca atctctctca gatcgcactg ctagcagact 600

agcagaggcc ggaggctgaa gatactgaga caaatacaac tagttttggc agagagtcag 660

gtgaagatca actcataagg ctatctctag cggtatttct atttcactta ctatatcaat 720

ctttatttca aatttcacta tataaatagt gcagtacgaa atagtgtttt gcgcggctca 780

aatgtacact cgacatagga cagtttcagc ctacgtcctt aacgttagac cgaaccaggc 840

tttgcgagat gtttaatgct agcctgccca gccttatgga ccaaatatac acgtgcaatc 900

cttggcactt attattgtac caaaagacat caaagtcgtt ctcttttatc aggccatgga 960

agtaattatt caaacttttg ttcctctcaa gatagtaaat caaactttgt aaaaaaaatt 1020

taaaacttaa tttgttggac tgaaaactta taccgatctt tagctagttc ttatacaata 1080

atacaactca ccttattacc ttagacaatt gcattttctt actgattctt caattttctt 1140

gaattttgtg ttgtgtcatg tggtgacaga cctacattgt cggcggatga cgacgacgtg 1200

acgttgcatt tgggctctct atccgtttca tgatgattga ttgtgcgaaa catgacgaca 1260

aaagtgatg 1269

<210> 2922
<211> 1345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233131_G1, chr6:148811114..148812458, Cluster 17

<400> 2922
taggtagtag gtatttaaga tctagaaaat ggaagtgtca acgctgaatt gggtaacaga 60

tcaagaagaa ctagatcgtt tgaaccgata cgaaccgaag aacgcaatgc acatatttca 120

tttacatggt gaataataga gaggtttatg agaaaaccac tataggataa ctaatctcac 180

ttacacgatg aaggagagct agtttccgtg caaaatagca aaggaaccat cgaaactcaa 240

ccataaagga ccccattagt gtaagaattt caccatatgc tttaggtcga ccgtcgagcc 300

tagagctcta tccttggtta gcagattatg aatcgataaa caacaatatg gtggttagaa 360

gagagatagt agattagttt ttgtttaact aaatgttaga tatctcaatc agtcgtgatt 420

ctctcatatg tagagagggg gtggtcttat gccaagaggt aacaactcca aaatgagtat 480

agaaagtttc ccatataaaa accaattcgg aaataaattg atacagaatt gaatccagac 540

aaagttagct agactagttt tatggggcca aaaactacag ccagcctcac aaaagtcgtc 600

ctggccagtt tctaggggtg acctagttga cttcgggtcc aacatgagca agattggttc 660

gtggcctagc tagcttccat atctagacac ttttaagtgt caacatgtac ctccctattt 720

ttatgtgaaa aatgcataga ccaaaaatca taagaacact aaatattaac gttgtccaac 780

ttatcagcta cctagcatct aaggaatata caagtattga ccattacttg gaaatcactc 840

taggcctttt gccaaaggca tgaaaattat ttatttaaat gtattctatt gattgtgtaa 900

tgaaaataga atgatgccca tttaatgtta ggttttattt ttttatgatc aacataacct 960

tttgactaac attatttact atttttcttt ggatatagtt tcaagtatgc gaagtagcct 1020

tagactaagg caaagtggtg attcaaatga tcagcgcgtt aagaaagaca tattgaagaa 1080

ctactagaac atcatgcaga agtccaagac acaagatgaa actaagtcag ataagaagat 1140

cgcaaattaa caaagagaag aaggctttta gttggcctta aactgaggcg tcatactatc 1200

tataggtgtc agactatata ccgagctatg gaactaagtg atttgttcgt tttcttttga 1260

tttgctactt gctctcctca cggatggtgc aatagccaac tgacagatca agaaaggaat 1320

aagagaagcc aaaacgagga acaac 1345

<210> 2923
<211> 1311
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233278_G1, chr6:149319721..149321031, Cluster 17

<400> 2923
atttgacgtc tcccgaacga gtgctaaaat ttagcgtgca gtttactaga tgttgttgga 60

gttaaaaaga agtctgacgt ccgctatatt caaggtaccg gatcctttac cggaccttgc 120

tggacacagc cttaggacca tacggggctg cttggattac ttgatgaggt ctgtgtcaac 180

ttgccgagct aggaacttgc cctggccgaa gtgagtgttt gattgtattg ctcatatcat 240

ccaccgagga atcatgctcc cgatacccgt caataggaat gtaaatgata tggaattaag 300

gataatgttc gtctgtattc gtatttgatc tgtttaagag gactaagatc cgttctatat 360

tcgagttcaa gtattcagta ttcgatccgt atccgatcta tatctatatt cacatactca 420

aagttgaata ttcaaaatgt cggcattcat ttaaattttt tcgaaacaat tcgataacat 480

tcgtatttga tctaaatctg aaaaaatata aaaacaaata tagaatgact agacgagtaa 540

tatctatctg tattcgatct aattacatcc taacccgtca agacatattc tagatatact 600

attatgataa ataatttata tactaaagca acttgtttta tatgtttaca ataaaatttg 660

tttgatattt tctgatttac cataagtttt tataagtttt ttgttttaaa atttcaaaga 720

taaaattccc ccagaaaaca aaaccctgtc gttgtcgcaa gttggcccag cgtttaggcc 780

cccgctggag gataggtcgg cccaacgcga cgaagcctag ggcgcgagca acaaatgaaa 840

aaaaaaccct ggcgttttgg cctactaaca cgtggtccat tgcaccgttc cacggagtta 900

ggttataaac gatatggata ttatctgttc atattcaaat tcgatccgtc taaagaagtt 960

gagatctcat ctgtatctaa atcagggtac ttaatattta atttgtatct atatttttaa 1020

agttagatat ttaatatgtc gatatctatt taaatcttat ccgatacact ttgataatat 1080

ctgcatctga tccgaatctg aagagaaaat atggaaacaa atatgaaaca actaatatcc 1140

atatgtatcc gatccaatta caaccccaca ctgagtcgtc tacttcacac tcgaaccctc 1200

atatatttct ctatctttgc aatctcgagt acgtgtaaat ctttttatct ctatttcttc 1260

tctactcctt taaagcacga gtttcgtgca tcgtgtatca tgcgtcatag a 1311

<210> 2924
<211> 1206
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235141_G1, chr6:157799193..157800398, Cluster 17

<400> 2924
ctccaatttc cagctccagt atagagttgt agtttataat atcaatttaa atagttttaa 60

aatattttta atctaaataa taaataaaat aacttattta aatgtcttct agaagtttac 120

aactctagct ccacgatttt ttggaacacc taatgatctg ctccaccaac tccaccaaat 180

tttctggagc tggagctatt ccaatagggt aagggagagg ggaaaatgaa ggaggtggta 240

cattcgggtg ccgttagatg ccgccttttg cataagtgtt agtggtacag tgtatgtata 300

ttttgggaaa aaagaaagta tcttatactt cctaaattaa agtcgtatta ctttcaaagc 360

cattcaaatt accatacatt agtttggagt gattttaaaa gggggtttct tagttaaata 420

ttctaataac acttaaacca taaaaaactc taagctttta aaaaatcctg aaaaatgtat 480

gttgaaatat ggcaggccta aattaaatat ttagagctca ccaaaatctc tctatcctta 540

aaatatttag agctccaaaa gctccaggaa atagaaaaat atctagagaa atatagaaaa 600

ttcccaaaac agtacaatcg atgtataatt tttcgatata tcaatgtgct ccattttgtg 660

agactagcaa agtttctaaa cattactaca gtttttcatt tatgtttaaa tatataatat 720

aaaataaaaa tacatgtgtg ttttgttgat tgagtggatg tgtatatgga tttaaagtca 780

acaaccatag ttttaatcct tatttagcat ttttattatt tgaatataag agagcacaat 840

aacactgaaa accgtagaac catataaact agtgcttagg gcttatttgg tagagtttta 900

ctttaagaat ttcaatttcg gttttttagt ttaacataaa acagcttcaa taaatttgtt 960

gaggtggatt caaagactat ttggcttgca taaaaactcc ggcttctata atacaataaa 1020

tttgtgcgag tttctttcat tacctttgat acttagtgga ctatgatggg ctcttggttc 1080

gtgggctact ggaacacgag cttttgatat accatcaaaa caaacaggta tatctgtcat 1140

gttatttgta tatattatat tattccctca ttacgatggg atataaacac acgtatatgt 1200

attata 1206

<210> 2925
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238164_G1, chr7:5260587..5261628, Cluster 17

<400> 2925
tatgtctcat accagtagcg tggaatgtag gatgatatat gatccgttta actatttttt 60

ttcagaagcg gctgttagcc aaatagtttt tgtgatttcc tcgcaatcta tatctcatac 120

aagttttttc acaatctgca gcttacaaga acttttctt aaaaaaacca tgacacaacc 180

aaacacgatt ttatatacat gtatgattcc gcagatcgct gaggttcagg tgtccagatc 240

gtgcgtccaa gtgtctctgc agccagccag agaaacgtac gatcggtaaa cgattgacat 300

gatacgatac ggtatccagg ttagttgaag atactgccga tggatcaggg atcgaatcat 360

catccgttgg aacttggtag gatatgtata actagcaatg taacacatat agcggcattc 420

tgaatgcacg cacgcgcaga ctgttttcgg tggatcgtgt aaaataacag acgcaaaact 480

atgtagatga cactgtctgt agagtagagt ttaaaatagg ggataagata aaggttgaga 540

tatgagatct aatgtagatg gcctaattaa agccatgttt ggatttaatt tgttctagct 600

aaattttagc caggtaaaag tatcatctag ctaaagttta gctagtagct ggatgtttgg 660

ttctcttaac tactagcagc tggatgtcta gttctcgagg taattagcag taagagacga 720

cctcaagacg ttccgttccc tagactagat aatggactag ctaatacaag ctaaaggata 780

taaacaaaag gacatgagta ctattttgat ttagcgtgac cagtgaaaat catgatacat 840

ggatcagtta tctctagcat tagctagctc tgtgtggtcg agaagataac aaaatctaag 900

ctctagctaa agttcatcta atctgttagt tggtctgttt ggttaaaaga tagttaaagt 960

tgcgcaaata atgattatat atctatctag gtcgaggtga agatcgatgt cccttgatgc 1020

atcacaagca cacccactct ac 1042

<210> 2926
<211> 1023
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240394_G1, chr7:17691571..17692593, Cluster 17

<400> 2926
ttgaggcttg ccatacttgg ctcccctcat tcctatatgt aaacactgcc tctcactatg 60

caatgcattc cattcttccc aaaatcactc tctttcacat accaaaatct aaaatccaaa 120

atatcttata atttagatga aggtattaat aaattcaaaa ctagtacgac acatttatca 180

actaagaaac actacaagca cactatccaa tacacatagg aaaaaatcaa ttttcatatt 240

taggggaagc gggtagtttc ttccccgttt ttttttttt tgtcgggtcc ctaatcggat 300

cattcgcacc tgtatgccct agcactgcta gatgtgccgc tgctgcagtc tctgctgacc 360

catcagtgtc aggtttgctt aagacgggta gtggccggtc ttcactgcaa tgtcgtacat 420

gactacatga gcagcctcag cctcgctcaa ccagttgaaa ttgctaatga atctagaaga 480

ataccacaac aggagatcta tacaatccca tattatcatc atcagactca tctaggtgaa 540

gaccaaagag tagttattga gaaagtagac gattcaatgt ctttaatgag acaatagcta 600

gcggatgaca attcagatat gtggattttg actatgcaag gagaccttaa acctatgagt 660

aataactaag attcgcttcc agactaaaaa cctatctctc aagtacaatt agcgttatat 720

tggttgatca tctaaatttc ccgctgcatc ccatcccttc tagccctcag gtataattgg 780

cattgcattc gtagtcactc caacccttg tcaatttata gctagtcaca ttaaggaaat 840

gttccagaac ggacttataa agcgaactct ctagccattg agagagagct agaacttata 900

gggcgagctc aaaagccatg ctgggagatg agccgagagt tttataccac caaggatttt 960

ggtttgatgt agtgttcaat gctacatgtt ttagccttgt gcgcttttat tacacatcgc 1020

tta 1023

<210> 2927
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256427_G1, chr7:120345894..120346935, Cluster 17

<400> 2927
tgtcatataa tgtataacga caaccataaa ctagtcatca aaacgaccga tactattaac 60

tccaagacat aaaaatattc gttactagta acttatcatt catcaatcca tgacagctat 120

ctccacctta tcctcttata atttccctta caattttatt aagtattaga tcagacaaat 180

agatttcact ccaaatattc taacaatgta tatcccagcc atcatggcag cgttactttt 240

gttttatgca agtgtacagt ccaacatgga gcatctcgtt cgatgcattg tatatgtgtg 300

tgcatgattg atccctgacc accgcagaca tataacaagt acacattaat ttctgtggcg 360

ctcctggttg ccatggcatg acgcatgcca aaactaagtt tttgtttttt tttaataaag 420

aaaacgccga gggtgacgca cggatacgga cacggagatt gtgcacccaa gttggctaac 480

tgcaaattga tctgagaaaa gcgtaaaatg tggttgggcc ggcgtacgta cgtgatgaac 540

tgcaaaagtt tggtgactca ccatggttta tatatgtggc cgtgtccgtg gccgtctcca 600

agggatgggc atgggctata tataaacctg gtgccatatt gaagtttatt gccaccatga 660

cacgacggtt ggatggggct agtgcagtgt actaattaca acttacaagt attgcaagat 720

gatgagatac taaacagtgc taccaaatct tggagctcta agtcagatgc atgtatgcat 780

gcatgggtgt actatttttt tagtcaaagt caattgcttg ggatgtagta gtatcccttc 840

acggaaatgt aattgggggc ggtggggata gttcttcgga aagcttaaaa gaaaacatac 900

acggagttca agaactcctc cttaggcctt ttcctttaca cagggatcaa aagagattag 960

acgaattgaa tctattccta ttcaattttg attaatctcc tctaaatctt ttaaaaccct 1020

taaaaaccga acacgctatt ag 1042

<210> 2928
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_261708_G1, chr7:149626786..149627831, Cluster 17

<400> 2928
tcctgcaagg ttattggaga caggaaaagg aatctataat gtgtatttaa acttctcata 60

ttttgaggta ataactacat tggtcctcta gtaattcggt aaaatccaaa tccaaactaa 120

agtagagact aagctcgaat atgagtctag gtcgtagttg agactagagt cgaaccgagt 180

ctaagtcgtg gccgaagatg gtgtcaaatc cgagtcgagt tgaatctgag tccaagacat 240

agatgaagat ggattcaaat ctgattccaa gtcataaacg attttggagt tgaatccgag 300

tacaagtaga agatgaagtt ggagtcgaat gtaagtccaa ctagaagtaa aagctggaga 360

cgaatttgat tccatgtaga atacgaagta ggactcaaaa ttaagtttag ttagaagaca 420

tagttggagt cgaattcgag tccaagtaga agataaagtt ggaatcaatt ccgagtccaa 480

atagaagatg aaggtgaagt tgaatccgag ttcaagttga agacgaagct agagttgaat 540

cgagtccaaa tagaagtcga aattgtagtc aaatttgcgg cgaaccgcaa ggcgccaaac 600

ttgaattcat cttctaatgc aaaagttcat ggttgtcatc aactcttggt tgatctgcac 660

aagttcttct acctggtgtg tcaaatgttg aaacttattc gatagtacat ttatgaggta 720

ggtcatgaga tcaaaaaatt gaagacaaaa gcacaggaga caaaaagatt tagatatgtc 780

cagactctcg ccatggataa tattttgcat catgtatatg gtgaatctgt tattgtatgt 840

tacgatatga gatatgctat gtccttgagg gctcccatgt ccctccttta gcagtcatat 900

ctcctatttt gataattttt ttcatgcttg tgcttctgaa atttcctcat gatagacctc 960

cttctgatca tgaagaccga gtcaattaga tatccctggt atatgttatt aatatacttg 1020

tacatgtggg ccggcctggg ccggca 1046

<210> 2929
<211> 1268
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261928_G1, chr7:150875749..150877016, Cluster 17

<400> 2929
cccatgacac cgactaaagt ttaatctgta tcatatcaaa tatttgaata tcaattatga 60

gggttaaata taaatttagt taaatttaat aaaacaatct cgtcttttga tcttcgtcta 120

tgttattagt tttatattta aattatattt aatactcgta attatcattt taacactcga 180

aagcctaaac taaacattcg agaggctaaa ctttagtaga gagtaaccga aatatttaga 240

ataattttgg gagtcgaaaa attagagaga attagaggga ctaaattttt ctggttattt 300

aactctgttt atttaaaatt aaataacgag atattttagg ctctccaatc ctctccgtat 360

ttgtttcttg caaaatagtc gatcatccat acccctatcc ctatacctct cagctttggc 420

ttcccccgcc gcctgctggg tcgcagatga gctcctccag tccgctcccc tgcgctgcag 480

agacaagcct tgctgggttg gaggcggctc ctcatccact cccccgcact gcggtcggtc 540

ggaagcgctc ccatccactc cgtatctgac ttccacccat cgctccgtcg gaggcgcctc 600

tcgagggtga cgtgaggcgt gtgagctctc ccgtttgctt cccgccctgg ctcaatcgga 660

ggacggtggt gcgctcgagg tcataggaga tcgaacagat ggtgatttga cgaaggacac 720

gaaggttatt ttacactccc gattgctata atgatcagga ttgtcacttt gtcagacatt 780

tctgattcta tatcctggaa attgtttgga gttttggact acggcttata agaaaactat 840

gattacatta aatccgaatt ttgtataagc ggtcgcaaac gtgccttaga cttcctctga 900

tttttgtaag aacaccttca acaatcaaca ataaaattaa cttgctaact catgaatcat 960

gattctttta aaaaatgaaa ttagagtaac ttaacatact agtatatgta actctctatt 1020

ctaaattaag agacattttg agtattctag atacatagtt tttgctatac agatatacat 1080

gtcaagcgaa tgcaaacgct atttccactt cacaagttaa acataaagtt aagtatattt 1140

tcactcatta cggtaaagat gatcacatag tacatttttg ctttagacta gctaaacaac 1200

aaagaacaga aagtgccatg actgtctaat ttcagaaggg cttttatttc tcttgagact 1260

gtggcatt 1268

<210> 2930
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262354_G1, chr7:153583499..153584651, Cluster 17

<400> 2930
acttaaacct tttcaataat gacattgacc ttctgaaata ccttctggtt tatcctgtta 60

gtgtcgacct tagctataat tattattttt tgcagaactg gcggtgcaaa gaatatctat 120

cactgtgaca gatgtggtat ggttgtttcc agctaagtat tctgttcatt ttgtcgatca 180

agaattaatc atattcttct gatggtttta ggacggatat tcatggatct gatgctttta 240

ctttaggatt tcttgctttc gaatctgatt ctgtatagca tgtcagccct tgcgttgaag 300

gactgcagca cggcgtctct ggccttacgc gccagcccaa gccttgcgcg cgagcgcacc 360

accgccacca tcggagaaga agggcctacc cacttgtaga gaaaaattat gaattctata 420

atgtttcatg gccatatgaa tctttaaaat tctacttgct gactcaaatg tcattccatg 480

ctattaaacc aacagtgtcg attggcacat ccggggcaaa ctttcacaaa agacgttgaa 540

gcgacctcct catttaacga ggtagcttcc actaaacgac atcttttgca ttcttgtcag 600

caagtagtcg ttggcattca ctacagggca gcttaaacaa agctttgtca gtaaatagaa 660

ctacgtcttc atatcaggca aaggaggacg caaggcgaaa ttaaactgat tgatgaacgt 720

atgtgaatat ttagatgttg gaatcatcat gttccgttca ggttggatca cacgcatcca 780

aagctctcaa caatgcattg gttgtctgtc ttcaggatcc aatgcgtcaa ctgcatcctg 840

attttatttt tttttatttc tgcttgtaca gtttttttg gcatccttaa ttttagcagt 900

tccttgaaca gtcagcacaa actggcaaat caaggtccaa tgtaatgtag gattcaaacc 960

gtacgacaac aatgtaaaat gatgctttct aatagcagat aattgattgt taaaacaaaa 1020

aaaattgtga gatattgaga tcgatgataa tatatttgtt tcgttttcat gtaatcatta 1080

tatactaata ttttatcaaa taatttgtat atcattgtaa cacacgggta ttgtgctagt 1140

atttatttaa aat 1153

<210> 2931
<211> 1381
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262405_G1, chr7:153836246..153837626, Cluster 17

<400> 2931
ctttattaat agaaacgtgc acaatctcgt gccgttcgtt caaaaaaaaa aactttaact 60

tagtagggaa aacttcatgg cccgcatgtc aaaaggtcga tctcccagaa ggagactaaa 120

ccacgagtgc ttattggagg agcacgatgt ttcaacggca taatcattct atcttgctgg 180

gaagaaaagg ccatgtgcaa gatgctgcga accatataat ctgatgatat atcaggtcgt 240

ctgatcagcg tcgaaaagat ctggacatgg atcatcttgc tctgctgcag agcagtaaga 300

actgcacaca gcacactcta atctcagccc tgtccccaaa aggttctaga ataaataaat 360

aaataaaggc acgcgtttct cttccagcaa gaagtttctt gtcctatata agtggatgga 420

taggactctg atttatcagt cacactcaca cctcaggtca aggctcaaga cgtttgatct 480

tcaccattga aatgtaaaag tatggttgca aataagcaca ggagacctta attacaggaa 540

atgaaaaaaa agataaaaga gaaaaataag gacaggacga gtgtgtgctg tcgctttagc 600

aactattatt atgacagatc ccaatcctat gtacttgcat ctctttcaag tatattgatc 660

tgtccagtat gtacatgtgc agtctttacg taccacgtgt tgagagttga gacccgggag 720

acacagatta tgcgcagctg cagtgccgtt tcactcatct agggggggggg gggggggaca 780

tgaatctatt cttgtttcct tggctctttt ccttatcaga gatggataga gaagaatgtc 840

tgtttgtcac ctgatgagtg ctgtattggt cttatccaag gcttgatcgg gagatcgaac 900

tagacctctc gcatcctgat cacaggtaca ttgtaacctc tttcacatca catagataaa 960

tagggaacgt tcatccgtat cttctcgccc tatacacata ctcatattca aaattcactc 1020

tgcgaacagt acagtataca gtttagaaca atacaaaata gtgattttgg ataaactttt 1080

ggtagactga cggtctaatg ccataaacct aaacaatatc ttctcttagt atgacctctc 1140

atctatttat attatgattt atgaatattt taacttacat cccaaattta agacttatta 1200

tttaagtttt ttaattcaac ctttaaattt aaaatttact gtgcaatttg atataaaaat 1260

tgtttctaaa ttgttaaata gtttgattga atatatatga aaattttaga tggcatacct 1320

tataataaaa ttttagaccc gccactggtc gctatcgaca gtatcgtcga cagacttctt 1380

c 1381

<210> 2932
<211> 1346
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263398_G1, chr7:158452148..158453493, Cluster 17

<400> 2932
ctgaaggtat tattacctta gccgagtgct agcaggtgca ataagggtaa aatgacccaa 60

gaaagagttg aagtagcttt aaaaacaaat aaacaacata agcctatact aattttgaaa 120

ccctcactag catggtgaca cataagagta taagactaca tcaaaagcac attagtgagt 180

acttagggat attatactaa aataacctta acaaggttcg actaagaata atgcccttaa 240

gttcaagaag taaacctatg ttacgcacat tttaaactta taatcttagt tgccatccaa 300

agagaactta cacacaacaa actaaggaag acataatgta agaacaagaa ataagacaac 360

cggattttcc ccatagtaat gaattgttgc cacaaccccc taaaccacat tagagcacta 420

agagtcacca agacttggtt acctcatatg tactagtgaa tgtacattct ccacttcgaa 480

atggtggcct tcaaaactac aaacaccttt tggtggctcc tcaataagaa ctccatcttg 540

ggaggtcacc atgtcatcca tcgaaccata taggccatag tattaagacc tcggctccat 600

ctaaaagaaa cccaactagt aacattggtt gaactcaagg tttatttagc tctcatttaa 660

tcttatagtg tgacaactag gattgttggt taaagtatga ttaggataga tttacattgt 720

tttcttaaga acccttctct tagtgtgtgt ttatgtcgaa atgactccta gatcatacac 780

tagcaagggc tagcataccc atggttccaa ataaccttga tgacaacaag aacataatgg 840

atcaatgaaa ccaactgaaa gatcggctaa gccgaagttg agcccgttct tcgtttgata 900

gactcccaat caccttctgg atagatccat gaggaaggag catattaagg ttctctaagg 960

tcagcaaggc cacctggaat gctcaaatct cgctaggaca catgacgaac aaaatgttag 1020

agagaaagta tgataaaagg gggggggggt aaatattgta tattttgacg attgaaagtt 1080

gggatcttaa tcaattgtta tcctcttata aagaggtagg gggtgatctt atcctagtag 1140

aaaacaagtc caaaatgtgt tctgcaagtt ttccacatcg aaataaatcc aaaaaatgat 1200

ttggaaacta aaccaacttg gactcaggcg aaaagtcggc ttagttaatt aaggagtcgg 1260

ctaagatggt tttcttaggc ttgggcacta tggtcgagag cataggggta gtcggcttag 1320

ccgactaggg gagccaaaaa agacat 1346

<210> 2933

<211> 1198
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263955_G1, chr7:161272714..161273911, Cluster 17

<400> 2933
ctttaatcgt ttcctagatc cgttactagt aatagatgtt ttattggtct gtttatatac 60

ataattaaaa tgttgaaaaa ctatccagac aactatcatt agctaagaaa tagaactaat 120

ccatcaacta ccaaccagcc cagaaagaaa aactaatcaa tcaataaaaa atggaacaaa 180

taaaccgagc tagattatgc agcagtttat atagtacatg gcatgtagac tcataagttt 240

ataacccatc atcacttatt tctagtacta ttgaccataa atccataaaa ctataactca 300

gaaggccatt ctcaatgata gtttcataga agttttattc tcattaaatg atgtgacatg 360

tcatcaattt gaatgatgcg acaagcaatt aaccaaggaa gaaatgaaat gagtttcatg 420

aaaccatgta aaaaatgtta catatgcata ctgtgtcttg catgttatgt agaatattgt 480

accgaatgaa cctatccact gtgagagacg gtttcaatca agattttatt tctttcatgt 540

ttacatggca tcttagaagc acagatataa aacctaccac tataaatgga ctaacaagaa 600

caaataaaat gttgattcat gtaacatcgt gtgttgcata gctcatttac taacatccaa 660

acatgaagag agtgcttcca cattcccatc tattagttat atgatataag aaacagtgtc 720

acatgcccga accacattca tgccttgtag cttgtttgca caaggcgtca tttgatagcc 780

atcatcctct accaacgacc aaaaggattc acctaagaat accatttttg gataatgttc 840

atgaaattct ggcagctaaa attgatgtag tgtggcgaaa gctagcaatc ctctcttcat 900

tgtactggtt agttagctcg gaatttggtt actttattcg tctaactaaa ctttagtgac 960

taaagtacta tgtttggtta cagtgactaa acctaactaa agagcattaa ttagtacgaa 1020

taatgactgt attaccccta ttaattggtg tctgctgcac ggagaaagag gagatgacaa 1080

gtgaggtaaa aaaatcctac tttagtccat tttagtcacc ccttagtgat taaagaacta 1140

aagtttagtc acctcaaata aaacggggtc gtaatgtaat acaagagagt aagatact 1198

<210> 2934
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264359_G1, chr7:163504241..163505487, Cluster 17

<400> 2934
gacgacacta cggatatggt ttccatatgt gcgatggttt gataggtgtg ctatcaccat 60

gagttaggca atagacacac tcaacacaac tgttcaatac ttgcagtgac actatagcca 120

cgtgtgggca tggcagtgta atgaaaggta ttataaggca taaattgcta taccggttat 180

caaccatgct acccaatggt gtggacttca gtgtctattg atatgataag gcatacttgg 240

ctttatgcta gatgcatccg ctgtagtggt aggacatcct aacacagtgc tatgatcgaa 300

aatatggtgc tacatatgac tccacgacta agataaggtt gagtagttgg gtcacaactg 360

attgagggcc atagcacatt caatatgtaa tcctcctcca ctggtctatg aaatgaagga 420

ccaaagcaac atgaactgga gagggcaata tatcacaata gatcatgagg catcgacaca 480

aacaactaga gataaaaacc gagctagatc cacaatcgcc taagggcaga cataaaggtg 540

aactagggac tgttaggcta gaactctcat cgaaaccaat tggaaagtga aagctagaag 600

gtcatgaggt ttagttgata cttgagcttc taatattctt cacacttgtg ctcatctatc 660

taccactctc gagacaacat aggatattac acacactatg gcccaaacct acataaaact 720

gcacttgtgc tggtacccta gttgcaccta gattcaacat atagtgtgct tacgccttgc 780

tttttctaaa actctcctca tttctttttc tttttgagta ctcctataca cccgtgtcat 840

atcttgacaa taaaaagtaa ctaaactgga aatataatat gatgtgttgt atgtaagata 900

taactttaat acaatgtctt gtattctaac aacatatcta tgtcatgttt atattttcag 960

tgtgatatga attaattatt ttaattcttg agagcttaca aggaacaata gcttgatata 1020

tgtgttagaa atatcactct agacataaac atatggcacc ggagtatcgt cggctagatg 1080

attgatgact tagaattagt gcgggttcaa ccgaatgggc attagattga ggtttgtagt 1140

ccagggacaa ttgattgggc atagggatta tttcaccttt aagctcgttg taaatgagaa 1200

caacgatgag gacgatgact tttttgctga tatatcgtcc ctgacaa 1247

<210> 2935
<211> 1140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264597_G1, chr7:164793573..164794712, Cluster 17

<400> 2935
gaaaatttat aaaataggaa attcaattat attgaaatcc acaataaata tatgatatat 60

atatatatat atatgtttta gtgtaatgtt ttttacaact ttatatctac ttttaattaa 120

ttcatacttg cattttcttt ggttcaattg tgataaagtt tttatggtac tctagtcatt 180

ggatgcttga tatgtagtaa acatttcatg gtcattaaat tgtactagca tatagcggcg 240

ttgagaggag gggttgacgg cgacagcggc gtgggtgagg gggatgagta ggagcagcgg 300

ggtcgcaggg aagagatgag agattatcaa aataatattg ttcattggat ttgagtgagt 360

accggataga gggttatcta gtggtcttaa ccattagttt tgatggtgtg ttaagtcttg 420

atgtaattta ttttgtggat ttagtggatg tcatgggtat atggatgatt tggttgagtg 480

ggttttgcga agtttaaatt tgtggattat atagtggtat agatatggct gagttatata 540

tttatctaaa tttatctatt gatctatcta ggtttaacta gttaaaacta taagttagtc 600

atacataatc taacaagtat ggttgttttc tacatctcaa acatataatt attagcccac 660

catagtttca ctataattgg accatagaag ttagatctat agattaatta tagaaagcat 720

atatctaaag ttatagtaaa aattttatac caaaacgcac gctacaacac atatgttatc 780

tagatggtag aggagaggaa ctacttcgct ctagtgaatg aaaaccatct caagtcaggg 840

ttgtattgag tcatttcaca caatattctc gggatcttat tgggcacttc cttacggcta 900

ccgtaatgaa tctctagggc tagctccttc gcatgccaca ccttttttgta gttgggagtg 960

taaagtatga agtcaagtat ggaccaaata agcaatggca ccaaaatgtt aatatcctcg 1020

cccatgaggg ccaatatgtg atgggccaat taacgtgcct aacaattttt ttgtctgtct 1080

tattttatta gcaagtgtgg ggttgagcca ctttccttat ctccaatttg ccatcactaa 1140

<210> 2936
<211> 1144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264619_G1, chr7:165049522..165050665, Cluster 17

<400> 2936
atagatacag aacatcgcta tgatatgcaa aatccgtgta gcaaaatatc attataacat 60

taatagcata ttgacgatat aaatatgtaa tattattata aatatgccga ctcaaataga 120

atgaactgat gtcgaacaaa cattttaata ccgcacaaat tatttctaaa gattccatat 180

agaattttta atgatagaaa atatgtcgac aaccgtacac taatctaatc ttttttatga 240

tattgataag tctttgttgt atgtttgtag ggatggtaca tcagtttctc gaaaacttga 300

tttgatcctt catgtattta tacatgtatt tgccattgtt agggctgcaa gaaacaaaat 360

aatcagataa tggtatcatc ctaattttgt tggcaataaa taagcaataa ttactggata 420

caacggacaa gtaacccatg aacataatag gcatatcaat gagaaaatga atgaaaaatc 480

acaaaaattc tgaaaattat tgtatacata tgaatatata agtatgtacc ttcacaatta 540

ttgccatgat tccccatctt atttgtacaa gcagtaaact cattataaga gccatggtgt 600

gcaacctata acccttaaag tgattatatt ataataatac acataaacgt ctaacgattt 660

ggaccaaaag gattaaaaat ggagacacct ctatgtctgt aaagcttctc ccgggtgtcc 720

tgtggtcgtt tggctgatgc attgcagaaa cataaaaatg gacctattag tcgctctatc 780

ctgacaatac acgatccatg gaccaaaaat actatgtagc aaatatctga aatctgtgaa 840

caaaaaaata ctatgtagca aagatctgaa gttttttgca gcttataact tgtaaattgt 900

tctgatcgta aatgttctac tcaaattgac cgtgcaacaa aatatctcgg tcctcaacga 960

cacaatgaga tactaaatcc agagctaaaa atcagaatag agtttgctca gcaacctgca 1020

ttttgacaac ttttagtttg gtcatcagca acaagtaaca tgcaccagta catgggagac 1080

aacaaacaac atgtagcagt ttgcttacat ggagcatgca aacttcaaat tgaactgaat 1140

aaat 1144

<210> 2937
<211> 1188
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268771_G1, chr8:10384347..10385534, Cluster 17

<400> 2937
cctcttgacg agacagatcg gcctacggac tttttatcct tgtcgtttct ttgctgtcgt 60

ttaatttcaa ccggccaaat tcattaacct atataaattt atatagcaga agatttagtc 120

ctcttaaatc cgctcaatcc acctataatc gaataagctc taacggtaac agacattgct 180

accaactacc gttggttcaa aagaagtatt ttctatatta aaaaaaaagt gaatgatcgt 240

cttgctcaga tggtttggca gcattcctta gtttttaagt ctgattttct gtaccgtaaa 300

tttcatgccg gagttaaaaa aacctcttcg tttgtcaaac ttcaaatcac agtttaaggg 360

tctgattttg gttatagtca atggctatga tacctttgtg tatggataaa gtaaaggttt 420

ataaattttc tcaacctcta taaaggttca tttttaatgt aatattcagg attgtcttat 480

ttaaagaagg aaagtagaag gaatggcact gcgtactctt cctgctaatc agtggtagat 540

tcagaatttt actatatagt ataccaccta aaatttatac atgcattcgg ttaaactagt 600

tatagttcag tggccgtttt aaattttaaa cataatttga tatacatgca ctaaactaca 660

cggtaattct tgaagttgaa gactaattaa aaaatgaaaa tattaaatct tgaatttata 720

aaatttaatt taaaatagtt acaaattctg atataaaaca gatgaaaatg catactgata 780

tagacaaaaa aaggtattaa tgtgactttt tacttgagac cttttaagac tggctccaac 840

cggacaacta agggcttgtc cggttacacc aatccagaag gttttgacta ggaatcctct 900

tatggattgg tgtaaccgaa catgacctaa aggggcagcc aaaggtaaaa tagatggctt 960

ataggcagtg gcggagttag accaccttag cccaaaacac attaaactat atatattatg 1020

taaaaaatat taggcataaa aatattgctc ttaagcaata gctttatttt atttacttga 1080

cgtgaccacc acgacaacac aaacacatca caacaacatg tgaaattggg ctcctacgcc 1140

tgcagccaca ccagatgact atctagttct agaacaagca tgcacgat 1188

<210> 2938
<211> 1047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_271544_G1, chr8:26733721..26734767, Cluster 17

<400> 2938
ccgaagtgga acacaacaaa atagtagcac aactgaaaac agggaaaggt aagatgtaat 60

atttttgta tgtcaaaaac ctaaatcaat tttcaatcac cgacctgagc aaaaacagat 120

ttatatgata cagaacggtt ttctcccgcg gatggaaatc cttgaatttc ccaaaagtca 180

tgtatgatgt ttcactgcag ttttacaaac atttttctgt ccctttacaa catagaagtt 240

gttttttgtt tttattttat ctctactatt ttgcagatat tatgctttgt tctgcaactt 300

atcaacaaca ctataaaata tagtacatgc ttcctagaaa acacttgcct tgttagccct 360

gtaagactaa tgttccagag taattcacga ccttcatgct ctgttgactt tttttggtaa 420

gcttcataga gaagcatgct actgaatttc aaagcaagca ccaagcagat agcttaagga 480

aaaagttgct acacgactgc aacacataca tacatcttat actacaatac aatggcatgt 540

cagctgagag ttattgaaaa ataccacatg cccatttgta aaccacggaa aacatagcct 600

acatgaactt tatcactcaa caacccattt gtaaaccatg aaaaaactga actgtaacct 660

aacaacctta ctaaacagaa atttggaatt atgtctttat gaaacgacca ctgatgcagt 720

aaagttcctc atgatataag taggcaaccc taaagctatt attcgactat acatcccaac 780

ttaagttact atagaaaagc aagcaacttt tagcaaacat tacaatatga aaaaatggaa 840

gtaattttta gagaaaaaac tgagatatat gctaacaaaa aagcagacat caaattacct 900

gatctttctc caataactgc tttcagctat gcatttccac gagagccctt gctgaacaat 960

aagacagggc aatccgataa ttcaaccccc caagccatat gatccggcta caattcgcag 1020

ttaagtgtat aggctattaa acagcga 1047

<210> 2939
<211> 1362
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_27185_G1, chr1:164650434..164651795, Cluster 17

<400> 2939
tcgtcaatct tgcatgtacg aagctaaagt cggttatatt tagaccctat ttgggatagt 60

tctagcttca gaaaatttgg tggagcagct cagtaagtac tctagaaaat cgtggagaaa 120

catttagata attcatttcg tttattattt agtataaatt tatttttaaa actatttaaa 180

ttgattttat aaactacatc tctgcattga agctataacc tggagtcatc ctaaacacct 240

cttaatagtt agctaatttg gtctaactag taaaacaatt gttagctaga ttatcagcgc 300

gctaacaatt agctaaatta ttaactaggt atgtttggat ctaaagatct atagtagcta 360

acaattatct ccttgaatct atttaatttc ttttggatct aaacagagcc ttacattatg 420

ccaagagtaa tctatcagaa taattttgaa atgttgataa taatttttta agagggcgtg 480

aataggaaag gagatacact agggcttatg caagaacata gtgaagggag tctcttttcc 540

ttaatctggt caggttgctc gataatcttc gattactttt caatgcatca aatatccaaa 600

ggcatgcaga acactaggat gcttatgacg acgatgaggg gttgtttaca tatcatagtt 660

ttgactttcc acagaaactc caaaaatcgt ctagaattga gccttttatc ttaaaaatac 720

ttattagttt tagcaatgcc atgtttcgga aaactagatt tgtaacatca gaacatctca 780

aatctttcca aaaccgcgat gctaaaactc caaaataata ctctacatcg ttgatcactt 840

ctcttagaaa tggtgtggcg aactcaaaca tcttgttatc gatgcccaat aaagccccta 900

tggctggtca gtaatcttat tagacatttt tccttctatc ctcttatagt gtgtcgcaaa 960

ctcaaatatc ttggcattat gcctaatcaa gccctatggc tggttatagg tcctatatat 1020

ctgataacat agaaagtgtc gatttttcta tctgtcgatt tctctatccg tctcttggct 1080

tgttgtccta ctctcacctc taggggcata cacaaaattc gatgattaat tcacaaactc 1140

aaattattta gaccctaatc tgaaatctag atcacaattt catatagtaa ccttagatac 1200

ccaaattaat ttagatagtt ttttattgat cctgctaccc aaattaccca taatacttga 1260

aatttatgtg tgatgtgtat gagtgcatat gtttatgtgc ttcaacaggt tgtcagagac 1320

atatgttatt cgatactttg gtatttacta gccaatgatt aa 1362

<210> 2940
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_278767_G1, chr8:79054667..79055690, Cluster 17

<400> 2940
agctacagct acaactcgga gctatactaa caaataacaa ctacacgagc aaagtataag 60

tcttggaggt ttgattgcct gtcgactaca tatgttcttg ctaggtgcct ctcatggtga 120

ttgattcacg cacgactaac aaactactca agtttgacct tcaacttagg tgtcgcaaga 180

gtccaatcaa ccaagaactc tgcaacttgg atgtcaattt gtttagcctt ctgtgtcatc 240

caccaccgtg tcagtctttt gacttttctc tagtccctca gttcaagcct tgacgttcgt 300

gttttaccgt tcctagttca tcaccatgaa tctgcttgac atttatcttc cccatcggtt 360

atctatgagc tccacattgt aagtcaaaag atatgttaca cacactcgtg ctaaagttgt 420

cccataaact taaccactgt aagaatgtgt caactatgta ctcgcagata tataaacaat 480

tccatcaatg cataactcaa ggaatgaaat gcaatgatgt tgtagtagac tttgtaagca 540

gacaaatgta tcatcattgg tagaaccaga aatgccattg aaacgacttg ctaattcttc 600

cccaccagat gatagggact gcagctagga ttgagccgtc atggcccgtc cctatcatcc 660

acgtacatcc aatataatcg ttgccgtgta cagttaattt gtttagtttt tactagtatt 720

acttattagt gctgctgcat gctacagtgt aatcgacgac atcgctctcc attcgatggg 780

gcaaccgatc gaagcgtcat taccagctgc agcaccacac actgggctgg atacatgcat 840

gcatccaatt cacgtcatca agcaagtggt ggtcagctga agtgtattta tatttgcggc 900

gggcagtgat ttcattttac cgcacaaaca aactatatct ccctccggtc gtagtagata 960

tattaggcag ttgatcgtgc tacggttttt atataccata taaatagata ttaagatatt 1020

tatt 1024

<210> 2941
<211> 1273
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_280614_G1, chr8:90720621..90721893, Cluster 17

<400> 2941
tcaaatatat tcaacactaa tcaaatataa aaaaatacaa acatttataa aacataataa 60

cgtcattaga taaatcacta gaatctattt gttataataa atttatttaa agatataaat 120

attattagta tatttttttg taaatcaaat aaatcttttg ctcactgcta atattagtct 180

gactgaagag acaaaatcag aactgcagcc ttctttacaa tatatacaag gcatgtgtac 240

tgttcattct tgttacaaat cctcctccga aataatcttt cgtcttcttg gttgaaccga 300

tggcttaaca ctacacacgg ttttcttcat catcagacgc ttgtgcgtgc gtcggttgga 360

aacggaaacg gaaacggagt acagtatatc ttgggtgttt gaagcgattg gtgcgcagtg 420

cactgcagtg attttggaca gtatcttgtg catccacagc ctgacttttt gtacagtgct 480

gcacctgcct gggcgccgcg ccgacggaca agtcgagtag gcagcacaca aacacatgca 540

tggtctgttc ctgcctgcag ctgaagctgc atatcttgga tgatctgctt cttaggcagt 600

tgctttgctt tggggcctgt gcatgctgtg caacacatca cctgatcaaa taactgtcgt 660

ccaatcatga tggtcccatg tatcttctga acagatagat tgtcgtgaag ttgcgatgca 720

ggttcctcgt cgcccctggt gtacaattat cgatcgagcg aggtaggttg ccatccaccc 780

tcctgacagg caatcatcgc gcgcgattct gtcccgtgct ttaatttgca actgtttggc 840

cggttgatgt tcggattcgt tctcgactgt cgtgtttgtc agattctgtt tgtgttcgat 900

tgtaatgata agacgaaata gaatgtgacg atcccttaga tttagattaa ttacgttgtt 960

tgattcaggg tcaattaagg tttcaaacag tactattcta gtgtcattct cagttgtctg 1020

ttaaatttga cggacaagag tggactatcc taaagtaagc tgcaaagata ctaactccat 1080

catggcaggt taggagcgaa gcaggttggc atgttgggtg cgtcatggtc atggtccgaa 1140

agatgtccac caaaaaccca cacatctccg atcccacaac aaaaacatgc agcgaagaaa 1200

cagtccaggt ccagagccat cttgaagtga tcagcgaaaa cttggaccct ataacaagga 1260

taaaatgcaa cta 1273

<210> 2942
<211> 1268
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282339_G1, chr8:100950499..100951766, Cluster 17

<400> 2942
ttgggtccat gaaatttaga ttgtagctgt tttatgcagt gcaatagaag tgttatctac 60

ctctattcgc ttcaatattt ctaacataag agaatgcgtc ataattggtt gagttggagt 120

atccagctcc aacctagact tgttctgtac gttacccatt aattcttttc agttgtcctc 180

ctcatcgcct tggccatcat gttgttttca tctgcaactg tagtactgtc agcagcagga 240

cagttagtcc tagaactacg acgaagacaa gttggaggaa cagaatcaca tagttggaag 300

gaaaaggtat accagatgat ggactagaat ctgtagagtg tacgttatca ttttgtacca 360

tctctaaatc ttggtctagc ccttggtcag ctgaatggca tgcattagtc gttcttgata 420

cataactaga gttttcacat ggaattatcg aacaattctc ccctacatcc gattttccac 480

aacaatattt ttttttgcat cagaatcaac catcttcgag ccattcagat gctgtgcctt 540

gtctcccatg tcgctgcctg ctaactgtgg atcgttcagt gaactcagcg gtccactagc 600

aaacacaact aactgtgatt gctgcacagc ctacaaaaga gaaaaatccg gtggataccc 660

atacttgtga gcagattgcc tggttaaact tgcacaaaaa tcctctgcac caggggggtgg 720

tttggtcatt ccaacagaaa atgctagcag tattatttct gcaagctgtt tgtatgggta 780

caacaccctc ttccacatgc cctgaagata ggggataaga attactagtc cctttcatct 840

ttttggtcac ttgatcttca tcctcttcca ttctgtcttc ctctccattg gcattgtcat 900

ccctgtcaaa ctaattttca gaagtcggga tattagactt tggctcaaaa ttttcaggtt 960

ccaatgagaa ggtaatattg taaccttccc tgccaactat gcaggtagta attggtagta 1020

gatccttgtt cattattccc actctgatgc gaataatatc cttctgtcgg tacgtgagca 1080

tatcaacttc ctcggtgtgt ccaatcactg aacctagtgc ccaaaacact aatgaggtct 1140

ttggtttgaa gaaaaaatcc atcctatatg aggtggtaca acttgagtcc atttcacaaa 1200

tttagtggaa tggtctcatt cgtcgcatta ttactaatta ttagcttatg agtaatgaaa 1260

tggtgatg 1268

<210> 2943
<211> 1219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_284284_G1, chr8:111174204..111175422, Cluster 17

<400> 2943
cataggagat cagacaatga ttgcattcta tagccttatt atataggcta gccctctaca 60

aagcaagcat gcacaaccaa agatcgctgc agtttcctta atgtcaaaag tggacgcgag 120

cacgaaaacg atggatgggg atagggttgc ttggcaacgc acttggatta ttgtggacca 180

agcaactcta cctatataag cattggtgaa aatatggtaa aaaagttatg ttattttagt 240

ccaatcatcc gttcttatgt ataagcattg atgctgcaac aatagattac attatatccc 300

taatcaagca agtatgcatt acaatagatg ttctggatta attaaggtcc tctttggttt 360

ctttactcgt tctcctaaac ttcaaagact aaaaacctaa gtctctagaa tattctgttt 420

agttcttggg actaaaacgg actaaaaaca ttaactattg tatataaaga taagattgtc 480

tataattagt gcaagtgatc agttttggga gggacatgag agactaaata gtaaataggg 540

aaagcatccg gtgaaagttt agtcatcttt agtcactcct ttggtgacca acggattaaa 600

gttcaggagg ccttttttag tcaccctgtt taatagatta ggaaatgaga aacaaacata 660

agcctaaagt ggacaagttt ggttaggggt cctagtatat tgtgtataaa ttttggcaaa 720

ttgtgtctat caatatataa aagtactcag agctaaatca tgcccgccgt tgcaacaaat 780

gtcggcatat aaaaataagt cgacgacacg agggccatga tgctaaaaaa gtgtggtgct 840

tataattgtg acaatgaact agtaaaaagc taaaaaaaca atgacataac taaaccgtga 900

cgtggtatgt tatggtcacg aactcacgaa cggtctaatg aaaagactag tactcacttc 960

gttccctatc ttaaagtaac caagatttgt tctaaattaa agtttcgaaa ctttaaccaa 1020

taatatctaa aaataattat ttttaaatta aaaatatata ttgtgttaga tgttttaata 1080

ataaatataa tatttttatt tagtcaatgt ttataaatat tttgttatta atggttaaag 1140

tttcaaaact ttgactaagc acaaatcttc gtgaccctca ccctgggagg agtagctgct 1200

aagaggtcat tttagttct 1219

<210> 2944
<211> 1178
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286900_G1, chr8:125384631..125385808, Cluster 17

<400> 2944
ggtgatgtat ctaatctaca aatcctgaaa aacatacata ggctagaaaa aaatcttata 60

tttacaatag gtatatacat gtgcgttgct acggaatcaa tatggtaaag aattaagtct 120

acacaacccc ttgactttta gagactgtct actttactct ttcaccttta aaatcggttg 180

tttaacctct catctttaca aaactagata aatatctttc tggacagttt tagttggtag 240

ttttggtaat ataacactag tttaagcgac atcgttctat ctttttcagt tcgtcatcta 300

ataatatcta aaatttatat gatttaaaaa atcagcaatt aaatattata tctgatctat 360

ttttctaaaa tattaagagt agttgctaaa ttattaaaaa ttaaaaacta cataaaaatg 420

gcttattgtt tttgtccccg attcatttct tatcttctta gtctaaaact tttactagag 480

cttaataata ttataactaa actaatattt tttattttat taagcaagtt aagtagtctt 540

tcttctaatt attaacaaaa taaatttttac atttgttttt ttagaaacaa ctaccaaaca 600

ataataaaaa gatcttcaat ttttatataa atcttctctt aaataaatta atatacacaa 660

aattatttct agaattttct aagaacttct ggacccataa tttacataat ttttttgaca 720

acacaccaga ggttactctt aatatgagtg atgcacgagc atagttaaca taacttttga 780

gtactcatgg tgctcaagat tttttctttt ttgcgtgacc cacaacgctt tcttagtttg 840

ttttttatca ctcatctttg tatatcatgc tctttctctt tccctattac agtgtcttgt 900

atcgacatgt cctcctaaac ctgtatattt ttccctttttt aaaccttgtt gagaggttga 960

agacatttta ttattagata tatcttcaac aatgttgcta gacaattctc ttaatggagg 1020

acgaacatcg ttatttttga atgtgttcat ctacatcttt tcaatcagcc accaaacccg 1080

tgtagaaaag attagtcctc ttcagactgc ttgagagaga gagagaaaag tcttctagag 1140

agggaggcgg atcgcggatg gcggcgttag gcgatatg 1178

<210> 2945
<211> 1195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_287666_G1, chr8:129771745..129772939, Cluster 17

<400> 2945
atatataata gacttacctt gaaagtgaat ttctagagac ggaattatga ccttgtggtc 60

tctagatgat ttcgagagat ggtagatcaa gaggcatacc tttgagtata aagaatcagt 120

gttttttgaa attgtttttt agtaacgtgg ataagattat tagttgctta tgtgtcgagt 180

gaaccgataa tagtccactt gtatacaata ctctcctctc tcattccact tccacttccc 240

gtgataccac tcccgtgata gactgatttt gtaaccctac tcctatactg actttgtaac 300

cgttccataa tatatagaca cattagtagt tagttgctcg tgtattgcta tggtttatat 360

atgtgatata cagtttcttt gtacaacaga aaccaatatg ggatgtaatg gtttagaggt 420

gagtgctctt ttcgtagaga tcacgatttg aatcctacaa gctacacttt tttatatttt 480

atttcgctgg cgcgtaggcg gggatttaag acgaaactac tcctttatat tagcaaggat 540

aaggattctc ttgtattgga tccttttgtt tgcatcattt ttcttgtttc taacccccct 600

tatttaagta tttatctgtt ttttaaaaat cattttaat ttcaaccttt aacgtaaaca 660

cattaaatac gatatacgtt gttagcttta tttatttaat aatagcttgg acgcgttata 720

gcaaaatatg tgtaagagta cctcttgtgt taagtttacg ttatgacaat ggtcgtttat 780

ttatcatcgt gtgaaggggc gctctatttt ccttctccta ttgatgtgct ggtaatttct 840

aggcacctag ctaaaaggat gaacacggag gggccctttt gttgatataa aactaagata 900

atactacctg cgtcccacac acaaaaaaaa agtcattttg gttttgtcat cttaagtttc 960

aataagttta ttacaaaaat gatattaata tttatgatgc cttataaata ttattcgatt 1020

gttggcatgt gatatattcg cataggaaac atagttgtcg tcataaacac cttctctcta 1080

aaggttttgt cgatataaaa atattttgac ttcgtatgaa accaaaacac gccagtctat 1140

gcgagagaga tatatagtgt agaagacagt ttttttatca tatcttgcta cttat 1195

<210> 2946
<211> 1113
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_288425_G1, chr8:133455621..133456733, Cluster 17

<400> 2946
ttactattta gctcttttgg atcaaacaaa tccagctagt aatattaaac taacaattgt 60

ctcactgtaa tattgaacta agccaactaa aacttagcta attaatatta actgtattag 120

ctagctagct aactgttagt aactaatggg ttaaaatagg tttaagagct tgcttggatt 180

tccacgtcta aaatttatta gttggctata tatagttgag gtctaaaact ttagattact 240

ttagctcact tacgtggctt gaagtttagt gagatgatgt aaactttaga taccgcttta 300

gatcttttat ttagaatttt aagagttaaa gagacctaaa atttagtggc tagattttga 360

attgtaggat ccatgcctaa aaatcttttt cccctctatg tactagtcca tatatgtgtt 420

actggtcaca tataaataaa ataatatgtt tgttaataga tatttcctca aataatcctc 480

tttagtgcct gcattgttgc agccaagcta tggcctaacg tctatcacga aagtcccttt 540

ccccagtatc ttgttgtgaa cattgtgctt tcaaatgtgt atcgtgtcat tcccaaaaat 600

ggtccaatat tggagtgtac aatcccagaa taatccacca cgtggtatag gctacctagc 660

tgcattgtat acgtattacc gatcgagaca gagaggcaga cggatgaaac tggccaagag 720

aaaccgaggg catcgaccga tcctagctac acgtcagccg gtgcatgcac atgcatgcgt 780

atatatcgat gcatgtacac ccacgttcag tcccaacaaa actgcagtca aacactcgaa 840

ctcacggatc ggatccatca ttattatgtt aataccggtt gctcttgctc acatgttaaa 900

accccgtctc gtaattagta aaatagtgta tatatagtct atcttggcgc cgatctgtca 960

ccaaacatta tagatgtatc gtctgatgat gctctctgcg gcagcacgaa cgatctacga 1020

tctcgctgta gcatcacctt tccctgcatc gtcgtgctct gcgatgacac atgatcgtct 1080

tcttcctcgc aggaacctag atctcgctca cta 1113

<210> 2947

<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294799_G1, chr8:167006292..167007382, Cluster 17

<400> 2947
acaccgaagt aatttttgg tggcgacgtg atcccaaaaa atgaggggac ggtgtcatcc 60

ccgcctcatc ctactttgac ctcaaaccaa acacacccta aacacatctt taacgaccgt 120

gtgaggagtt agtggagatt cacaatattc tctcttgaga cattatgtaa gattctaaat 180

ctgttcatca catattcaca tatactattt cctaagcata ggggttcatg cttaatagga 240

tacttatcac ataactttat ttgaatctga actttatttg gatgtgcgtt atttgtgccc 300

atttctccac acgtttgtat ctttggaaac aaattactgc agcatggttt gaacagtaat 360

cgtttcaact gaaattttag tcaaaacaag gtacctcatt tgagtagttt gttccgggaa 420

tttgtcatgc cagttagcgg tcaaattggc tacttgatcc atagtggaac gtagtcttgt 480

gggacacctg ccttcaaatg atgatctatg ctattgtgtg tttctttcct ctgaaaagaa 540

tacagtattc attaatttac atgtagctag gatcgtgagt tcgtgacaga tgtagttgcc 600

ttcaaataca caaataattg ttagcacaat tacacggtga catgtcactt ttgctagtaa 660

ttgttgcaga aggctgacgt gtatcaagca caatatttta ctttggtact cagttaatct 720

tgtcccacct cttttggttt catatgctgc agaaggacac tcaagacctt aaaatcaacc 780

actgatccac aaattaagac atatctgaga cctgtgaggt aataatttca ctgtttttag 840

gatgttttcg cttctcggtt tattttgtaa cttgtgtaga gtacagaata gcgtgaattt 900

gtttattact gtggtgtatt ttgtactatc cttcctagaa aatcgtcatc tttagacatt 960

ttgggttgga cgttggagta ttaaatgctt gttgcgttat gagtcttacg gtttccttta 1020

gtcctgtcta ttcagatgca atggctgata tccttccacg ctctgagctt cgcaaccaaa 1080

tgagcttcag c 1091

<210> 2948
<211> 1373
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296257_G1, chr8:173824207..173825579, Cluster 17

<400> 2948
gtaaagactg atacacaatc aatttttttc gtgcaatcac catacaacta aacaattaaa 60

agctgttatt ttttaaaaaa atatagtttg ttatttagcg tatcaatata taaaacttta 120

ttctattcaa tacatctctt aatgaaaagt aaattaaaat ttgaaatatc aataaagtat 180

atttagaaat taatattttt agtagtttga ttgcaagacg attatacgga aaaattgatt 240

ctagctaata tataaaatct ttcatgtaga cggacaaagc gaggtttgga caccaatttg 300

acgaatacat ttagggtcaa ttcataatgt atattacctt ttctttttaa tacaagaatt 360

tattgatagt ggccaaatag tactactcct tcggtcctaa tatataagtt gtaactactt 420

tttattctag tcacatgata taaaatatgc tctgtataaa catgtgttat atactgggac 480

gtcatattga aaactaaata tatttcttag tctttaaata aaatatggtt acaccttata 540

taatggaatg tctgacatag agagtacttg ctaaatacta atgttgaaga cgacaacact 600

tatgtagcaa ttggttcaac ttcttataca ttaagtaaat gtagcggtat tgtttgcatg 660

agtcgttttt taggagaccg aacaaactag gctttagatt ggctccatca gaggccccta 720

agcctcctca ccctactaac atggtccttt agagcatgtt cggtttctta tctctattaa 780

gttttaagca cttccaatcc tcttcaatcc ccaaccgatc agcctttagg agacttctcc 840

aacggtttca taactctagg gcccccatat gggagagata ggaaaccccc atatatgggg 900

agcactatta tccttatata cgttaattat ttgcaacact aaccattttt acgctccata 960

acctaataat aatatgtatt atagtagtac aaatattata tgatttttga acttcaaaac 1020

tggtaaaaaa tgttaaataa catagttata agtgtatata ggagttggat aggggaggaa 1080

tatcttttag tgagaagtag taaaaataat agataataca cgcaaataga gaaatataga 1140

aagaatggtt ggagttagtc tcacggcttt ggtagggtaa cacagagtag tagtctaagc 1200

caaacaagac tttagcacta tttctgcact gagattggct taagacatgt cattttaga 1260

ttcatagttt aaacaatttt aatatatgcc tggatagatt aattaggtag ctctagtagc 1320

gtttatgagg tcgtgaattt aaatcactgt gagagtaaag atcgttgtta gta 1373

<210> 2949
<211> 1403
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31008_G1, chr1:190481176..190482578, Cluster 17

<400> 2949
tgctacttcg acacctgcta tagtgctatg agcctatgat ggcatgtatg tgttgtattg 60

tagctgctac tgcgtctaga tgctagattg ctagtcatgg tcactctgaa attttgggac 120

gacaaccaac aagaacatgt cgtcaaaagt gatgaggttt aagatatgga attattggtc 180

acctgttgtc gtcgtggtta caattaaact tgatgtgttg ttgtggtctt gtggatgctt 240

gcaagttaca gtgtccattg acacgtgtca catacacaca cgaacattca aagtataatt 300

gtgacacaca gtcacacaca aacacaacac acatagatct aacaagacaa aaacctaggg 360

acaggaatag tgtccaatac tcccacatgt attatatctt gtgcattagg cattcaggcc 420

aacccaatca tccttcctgg gaaaaaagtg cctcatgtgc aatggatata gattcaatgg 480

tggaataaaa catgcaaact aagcattaac aaacatttca tcataaaatg taaaattaat 540

actagtattt ttgtacaaac atattttaga gtttttaacg aaatagttat ttaatgagat 600

ttaaaaatgc aattagtcga ttataagaat gttcaataat tttgagcacc cactccattt 660

ttttccaaca tacaccatga acaacttccg ttcacgagtc tatttagagg tgttaaagca 720

tagaaataaa atcgattttc atcacataaa tcaacgtaat aaatcatgcg ataattagtt 780

tttgatgttt tgaagtttta tctccgtatt tgcagtcgtg gtgcaaggca ttcttagtga 840

aaagttccat atttatgttt ccaaagtgcc acataagcgc gaaacaaatg aagtcataga 900

tgaaacttcc tattgtgagt gcacattttt atttgacgtg gtttcatagg taacatgcaa 960

gacacaacat gtctaggtaa ccgtttatac ctagtttcat ctccatgaaa ctcatttcat 1020

ctctctcata ataaataggt tgttatgtca ccagatttga agatgtgtca caatatttaa 1080

tgataatgaa actcccaccg aaaatgtcct aaatgtagat tgtttcgaat tacttggcgt 1140

catggcgtgg gtttgtttcg agttctcact tgtgtggatt tgacacacta tcagatttaa 1200

cctggtctct gatgtacttg gtgttaacta acctatgatc aatggttata ccataaagat 1260

gacttataat ttagaacgga agggtactag ccactaataa tgtttcatta agataataga 1320

tatgaaatca acaagaataa aaaaataaaa ggaagatgaa gaatattata agcagaaaat 1380

cccaaatctc tactactcta tat 1403

<210> 2950
<211> 1266
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313001_G1, chr9:96020685..96021950, Cluster 17

<400> 2950
tcgagcctta tgaatcaccg caccagctag aaaccatgat catactattg acctttgtca 60

tctcttatct attataacac ttcagtacac aagtttatct catgttacac tcatctcagt 120

gtcgcataag cttttctttc atagactttc agttaaaatt aatcacaaaa ttatattaaa 180

actaaaattc attcgtgtag gtaattaatc aaataaaata taaataaatt ataaaaaata 240

aataaaaata tatgattcat aaaccataag taaaattata taattcatga accataaata 300

aaaaaataca taatttataa tacataagta aaaatccata atttctgaag aaaattatat 360

aatttatata tatatatata tattttcctt taggcggttt aaaaatatgt atctggtatg 420

taaagtttgg acaccactta gataaatctg gcaggtacca ccggtccagg tcggtaccga 480

ctggaccgtc caacagaatg gtcgatatgg attggtctag ctccaacacg atcgttacct 540

acaagaccaa ctgtcggcag acccaccaat cgaccggtcg aacctactat cattagaacc 600

gggtcaacca ataccgacca gttcacaagc cacgtcatag gtctatacaa acatgtgttg 660

gatctagcct aagtcaacgt cagttataga gatattttgc agatttacca atttaagttt 720

caattggtct gccacatcag ctaccaaccg tagtattaat tgtgctttca accagcgaca 780

acccttatct actacagtgc tctagtgtac atctttttc gtcaatctac aaccacttca 840

gtgtcataac aacctttta tagactttta gtttacatga aacacatcat tttattaaat 900

agatcttctt ttacaatctt ttaattgaca tggaacatac cgttatatta aaataaaaat 960

acatatgatt acataattaa acaaataaaa ttacacaatt ttaaaaagca atttaaatta 1020

cataagttaa aaaataaaaa ttacatgatt aaataaaatc taattgcaat ggtgtagaac 1080

ctagatatgc ttcattaaat aattttagag ttgatcatgg aacaagctag tatggattaa 1140

ggatgactgc aaagctcgtg gcgtgggtgc tttaggaatg atggttgttg ctgcaataga 1200

ggactcaact atctcatagt tgtccacatc gtattttcct gtaagctcgt ccttaatgac 1260

tatact 1266

<210> 2951
<211> 1267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_314296_G1, chr9:102446265..102447531, Cluster 17

<400> 2951
gaggattgga ccaaggaggg gatgagagtc gagaggactc agctgatcta acgaggaggc 60

tcaggacggg attgttttgg cccacctaaa actttagttt tttctatgct taacattagg 120

tataagaggt tttaaaaaat ttagaacatg gcctactttg ccccctagtg catccgcccc 180

tggtgggaga gagagatgaa ggagacaaat gttacacact tctcattcta tggtgaggca 240

aggctacaaa aagcataaag aaagagggaa caaattggct ctcgtgtata gccaggctag 300

tatggaaaat atgaatcaaa attgtcatat aaaaccatct aggggtatca ttatagatct 360

taagtggtat aattttattt attacagttg agagtgttat agagtcaatc tttgatatat 420

tagagggtta tggtagattt tgtagtatac ttccatggct tacggtcatg ttagcacaca 480

tgaaatatgc ttcataagaa aacatgcctt caaatccacc tgattattta gaaaatttta 540

aatattttaa gaatatgaat atctagtttt atatgtgagg attaaagtat ataagtgcca 600

atagtacggg tggttatata atcaagcata tataggtt ataatcacaa aaatcaactt 660

gtgagttaaa gaaagcctac ataactataa catcaacaca atgctagggt ttggtctatg 720

gactgtgtcc cggtgataag agagagacta ggatgaaaat gaaccataga agcattcaaa 780

agaatggaac cagaaaaatt gaagcaaggt cttccattct tgctcttcgt tcgcaaaagc 840

aaatcttctc acatcttatt gatcatcaac aacaaccatg ggaacctact ggtgagagca 900

tcctcgcctt ctcatgcttg gtcactaagg ggaatggggt gtgatagttg gtattcatcg 960

gcattgatct aggtatattt gcttgtgttc agttcatcgc ttttgatcct aacccttccc 1020

tcgatatcga gtttgttcag ttggttgtgt ttttgttata tcaaagaact tgatttgata 1080

aaaaaattac catgacgtaa aacaccccaa ggaattcaag gatgggcaca gtttccatgg 1140

atttttgcac catgtacctc gagatagcaa agaggtgggt tcaaggcaga tgcagcattc 1200

gcggacccgt atccgaaacc cgccaccaaa actcaccttg tccccaaacc ctgatgtggg 1260

ttaaaac 1267

<210> 2952
<211> 1130
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322046_G1, chr9:143783765..143784894, Cluster 17

<400> 2952
ccatatatgc caccactata ggaaatggac attagtcccg cgccacggta cttcactaca 60

ttttttacg tatttatgtt attgtcttgg ttttactcga agtcaaatat ttatatttta 120

aaccatatat cttaaaaata taaaatttta aaataagatt tatgctttta gatttactat 180

aaaatacttt tataacatgt aaattcgtat gttatgaaat tacaaggatt tttaaaatag 240

atggtcaatg attatgatga ttgacttagg ataaaactaa tgtgtcatgt acaaaacaga 300

ggtatgcaag ccatctatat cattttaatt taatttaatt taatttttta attcatctag 360

caatgtttgg gatatcttct gtcttcttgg taaattgaaa aggagtatag gttaaaaaac 420

atgccaaata gatgttatca acgttagagg gcgccataag agtatcttca ctagttccaa 480

gaagtcccta aaactaattt agtgtgttat taacaaaatc atgctccaac aatttcttag 540

atgaggtctt tcaaatatat caacttcctc aatattccta tttaatcctc agacttagag 600

ggctgtttag cattcccaat aatctatttc gccgtaaaat tacttgtccg ctatcgaatt 660

tgtgctcatg tacaagtgat acactttgaa taatttgagt tacggaaagg atcatcattc 720

tcatttgaca atactgaaga tgatatataa aaaatagaaa atattcaatc atgattcgca 780

tgaacggaaa taataataaa tagaagaata atgattattg aacttcatcg tacaaatgag 840

atcgaattta aagttgcaag taataattag aaaagttgag ttaatataat ttaaaaatat 900

ttgaacaacc taagaattta aaactattga aagctaaagt tgttttggtt cctaatctct 960

actactctat aagacactaa cgagggcgtc caccaccacc gtggctccgc tcccgtgatt 1020

cgcgtgcccc gcctgctccc gcatccgtca tagcgatgcc cgcccgtgcg cccgccccgt 1080

ccccgtgacg cacgccgcgg tacccccgcc cgctcgtgat gccccagcat 1130

<210> 2953
<211> 1002
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322310_G1, chr9:145070270..145071271, Cluster 17

<400> 2953
gtttaaccga ataaaaaaaa ttaagtagtc atggattatt ttggggcatg gattgaggca 60

tggatttaat tccaatcaat gctaatccag agcgggattg gtataaacga acaaagcctt 120

acatttttt ccccgaacgc ctagcactag agttaaattc tgaaaaatac gagccaatga 180

aagaacgaca acgataaatt ctaagaatgt aaacaaccgt gtcaaaccaa atgcttgaac 240

gattgaatcc agtagacgtg gtccacctta atatacccaa ttagtcgagc tgtgctaaat 300

tcatatctcc tttaccttcc taagctatca tcgtgatatg atttttcta cttcaaactt 360

tacaatggaa catcccactc gtttataaac tctcaaaatc cattaaatta actttttttc 420

actgtgtttg atggtggttt catcttcttt ttatttaaaa atacaataaa tatcttataa 480

aaaatctaga ctacaaatat gtctaagatt ccgatcaatg tctaaacaat atcttataaa 540

aaatacaata aatatcttat aaaaaactag aaaaatattt tgaaaacaaa tctagaacta 600

cctaaaaata tccgatcaat gtctaaacac gtttcgaaaa gttcctgtaa caacaaatga 660

ttgcatccaa tgtttctttc atgcttgctg catctcatat ttttgcattc aacgttttgg 720

gaatttttt atgtttacaa atattgtttc tattttacta gatctgattt taaggctgtt 780

aatatatttt cacgagctct aaatactaga tctattttac tatctgtaag attttcttag 840

aattcttaaa gtcttagaga catgttttgt ggtttaaaaa accttatcgg gtatttaatt 900

gggttttaac tgtaaaagaa gaaaccgtcc ctaaaaacac aaatgaggcc cctctcgtca 960

aattgaaatt tgtgtggaaa ttgttgtttt ttgaaatgaa at 1002

<210> 2954
<211> 1397
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322928_G1, chr9:148218037..148219433, Cluster 17

<400> 2954
aatgccagca ttagtgcttt ccatatttcc accgctaact attgtcatgg ttggagcttc 60

atttgtggta cctggaccca ctagtgtgtg tgacgagagc ctcccaaaag cttagtcgtt 120

gatgatggag ctatcatacc cacctactcc atcaccatca cttcttagtc ttgggcctct 180

aataaaaaag agggattgct caaatgcaag aatgtatatt cttcatctaa cgacgacaaa 240

ggaacatcat ctcaaggtga taactgatgc gactcttatg tctgcttcga taagggagct 300

atataagtct tgttacctag aggtgttgcc tttaggggtc ggttgtatcg ttatggtcac 360

tacttatctt agatttcata gacgtccgat tattatctat ttatatgtat ttttttgac 420

ctgtgaactt tgtttgatgc atgtgagatt agttttgtag ggattttgcc ggtcttggta 480

aatttaggga aacaacactc tatccgtctt aaaatacaat gtttgatgac tttctaacat 540

ttatgttaaa atgtaaggcg tgttgatcat gactattttt ctggcaaagt tttttaatga 600

gaaaatcata atttgagtag aaattttctg gtaagtattc ccttcaactt attattattt 660

ttggaatgtg taacattaca tgacggcggg agtacattgt agtatgtttt cctctcgatg 720

tattgtcctc tcctccatga tggacgtctc aacgttggcc cactttgttc gccacgtagc 780

tcctgtggat gataatgatc acgttatcgt ctgaaattct gaatatcacg ccctaatcta 840

tgattgacgt gatgggacgg cgggcccatc acggctcgtc cagtgcttgc aagtgatcgt 900

cactggtcag gcaggaaaac aacccatcaa attaggtgag atgggtgtca atcacacgaa 960

ccaacttctt catatctggt tatcatcatc attgtgttta tagtcaaacg gaaatatacg 1020

agggtctcca cttttgcatg attcatcaat cttcttcctt atctatatac tagacacggt 1080

tgttacggcc tgaagtaacc aaaacagggc aacaatcaac aaccatcttg agctacggta 1140

gaaaataaca aacataaagt tataatacaa gatatcatgc attgaatttg agtacaagca 1200

catataaatc taccaaaaag gtttgttaca agaaaaaaaa cttgatgcaa ctcacaggtg 1260

aatcaacaat agtgcacgtc aaatcagaat tagaaaagat caagagttta tattttggat 1320

cacaatgcct ttgaaagtgg agctatggca ggttgatcta caagctgaaa agaaaagaac 1380

ttcacttcta gttttat 1397

<210> 2955
<211> 1399
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324982_G1, chr10:2425841..2427239, Cluster 17

<220>
<221> modified_base
<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (687)..(786)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (689)..(689)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (690)..(690)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (691)..(691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (692)..(692)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (693)..(693)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (694)..(694)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (695)..(695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (696)..(696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (697)..(697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (698)..(698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (699)..(699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (700)..(700)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (701)..(701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (702)..(702)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (703)..(703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (704)..(704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (705)..(705)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (706)..(706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (707)..(707)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (708)..(708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (709)..(709)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (710)..(710)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (711)..(711)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (712)..(712)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (713)..(713)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (714)..(714)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (715)..(715)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (716)..(716)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (717)..(717)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (718)..(718)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (719)..(719)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (720)..(720)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (721)..(721)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (722)..(722)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (723)..(723)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (724)..(724)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (725)..(725)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (726)..(726)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (727)..(727)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (728)..(728)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (729)..(729)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (730)..(730)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (731)..(731)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (732)..(732)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (733)..(733)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (734)..(734)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (735)..(735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (736)..(736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (737)..(737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (738)..(738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (739)..(739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (740)..(740)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (741)..(741)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (742)..(742)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (743)..(743)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (744)..(744)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (745)..(745)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (746)..(746)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (747)..(747)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (748)..(748)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (749)..(749)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (750)..(750)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (751)..(751)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (752)..(752)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (753)..(753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (754)..(754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (755)..(755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (756)..(756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (757)..(757)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (758)..(758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (759)..(759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (760)..(760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (761)..(761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (762)..(762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (763)..(763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (764)..(764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (765)..(765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (766)..(766)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (767)..(767)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (768)..(768)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (769)..(769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (770)..(770)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (771)..(771)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (772)..(772)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (773)..(773)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (774)..(774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (775)..(775)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (776)..(776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (777)..(777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (778)..(778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (779)..(779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (780)..(780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (781)..(781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (782)..(782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (783)..(783)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (784)..(784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (785)..(785)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (786)..(786)
<223> a, c, g, or t

<400> 2955
agcctataga gagagatctg ctttcctata caaagtattt ctttttaatc agtgctcctg 60

atttttcccc tttcctatgg gatcatcccc actattcccc ccccccccct aaacctggac 120

cattagaaaa gatatcagag agtgagaccg gtggcctaat atttctacag gtcgaaaacg 180

cccctgaatg tgttcgtcgc tgtattggtg actacaatga gttcaatgag tctgctctta 240

aaaaaatggc caaaaaaagt tcgatcacgg actttacctg tttgtttata tacaaatata 300

caagaaaata atataagtct gctctttaaa aaatggcctg aaaaagtttg atcacacaga 360

ctttatattt ttgtaataaa acaacatgag ttttctcttt tagtttaaaa acaaaaaata 420

tccgacctgc cggattcgaa ccagcgacct aaggattgat ctgctcaaac tacagtcctc 480

cgctctacca actgagctaa ggtcggtttt tgtttacaat ggtgcacccg tttattatta 540

gtcactatga accatgttta gtctgtactt cattgaaatc tcacggtggg tgttacattt 600

tccgttcttg atatgggggc tactccttcc ataataaatt ttggttgcat ttagttcttt 660

ctaaatttat ttactagctt tgtagannnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 720

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 780

nnnnnnaatc catcgtccat caatgttatt ttgtctacca aatcatgcaa caggtgtaca 840

attgaggttt cattttcgtt tcaattgtgt ccatacattg catgtgtttc gccatatggg 900

taaataacta acaatggagg tacatatcct cggtatatta gacactaccc tatgtatacg 960

agaatgtata ttaggtaaag tgacaatata actgatataa gtaatacatt gcatgtgatt 1020

cgcgatatgg gtaaataact agctatagag gtatatatcc tcgatatatt agacactacc 1080

ctatgtatat gggaatgtat attagctaaa gtgacaatat aactgatata agtaaacaca 1140

tgtatatgtt actaccgtat gtttcaaata caggttataa tttatagcgt ctgatccaaa 1200

atggaacgtg ttactccaaa cagcacaaaa aagagaagtg tcttcgtact ctaaatacat 1260

acatcacttg ggtctaagag ggaaaaaaat attatcaccc atagattatt atgctcatta 1320

taaattcgtc gtggcagaac aaatcagttg atgttgcgcc ccacgacaga acaaatcagt 1380

tgatgttgcg ccccacctg 1399

<210> 2956
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326763_G1, chr10:11819445..11820589, Cluster 17

<400> 2956
agattaaaga aattagtgct ctaacgttat tttgtgtaat acattatcga caaattacta 60

tagatcacaa aaacttgggt atccaatgaa tacccatgaa acccccctggg cccgccactg 120

tttcatgtgg aaattggaaa tctttttttgt gtgctattgc aaaacgacct tgggttttca 180

tttacagtct acaggtgtcg ggtcaaagac tcaaagatgt tggtgctctt ggcttagcta 240

aacaaggagc ctcttagagc aagcataatg atttagatac ggttctactc acataactca 300

cataaatcag tagtgtcttg agggttctga tgaataagat acaagatata ttggtttgta 360

taaacaaatt tttaagtcta tctagtgctt gaaaaaccgc aacatatagt atctagatta 420

tgcatgtttt atgatagtcg gtaaaagaaa ccgtaagtta aatattaaat atataacatg 480

tatcatgaga gagttattaa atgactatac ttttaatata aactcgttgt ggactatatt 540

attaatcttg gtcccctaat aattccgact tgtccaggtg tcctacctag taaactggtg 600

accactggtt ctaggtagga aacgtgaacc agatttgctg gcacaaatgc agcaattgaa 660

aagtgagtcc aaagtaaacc gtggaccaac gcatgaaaag ggtgaacgcg ttggaaatgc 720

cgaaggagct tgaccgaacg agtatatagg ctttggcttg cgtgaaaata ttccgtggaa 780

atgctcattt ctgtcaaatc tagcgctcgt cattaggcca ttttcaaaac aagactctaa 840

actaagatgt ttaaaacttt gatgaaatag tttcacgtaa tatatagttt catctttgtt 900

gtttatacgt aagacacatg attttatttc cacgaaacca ttttacacct cttatcatta 960

atacattgaa acgttgacat tacaacctat ttaatcttca taaagctccc gctaaaaata 1020

gactaggggc tattttaatg tgagttatat ctgtattact aaatagtttt ctatatagtc 1080

atttttataa tataataacg tatttaaaga gaaatgaaag aatcaaaata cctagagggg 1140

taaac 1145

<210> 2957
<211> 1149
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_327263_G1, chr10:14757699..14758847, Cluster 17

<400> 2957
ctattttatg agggcaggag taatatacaa agtcatgaat gaatacatgc cgttttgacg 60

ccatgaatca agatatcatt gaaatgagct gtccaaacgt caaccattta tagctgaaaa 120

catcctttgc tgatgctgca tcaatgatca ttttaattaa ccactctagt ttgattccaa 180

caatcgtgat taggaagagg aacgtacgtg gaacactctc tctcctctcg cattcgtcaa 240

gctacatgaa aaaacttggg cacagctagc gctttaaact tccgctttga ccatactttt 300

acaatatgtg ttcctataat ctacataaat tgtattcatt ctataaatat ttttacttga 360

ttaactgtat catggccttt tgacggtatt ttactgtgag aaaaggacaa ttttatgaaa 420

aatatatgta aacattaaag aaaaagtttt tttttcacac gacaccataa ataattagta 480

tcacatgtat gttacttagg agcacgcgta aactttaata tgtttaatta tatatgctta 540

gtgttctaat cattgaattg atttgaaacg acgcaatata gaaaaataaa agctggcata 600

aagctatgta tgtccactaa ccgcagcgac gtgaggaaag tagaattaga gaagcaaagg 660

cattccgaat gatctataca tgccgacgaa gatctactgt tgttgagtcg cagttactgg 720

tgccgtgtac aaccatattt gatgctatat tattcatttg aagcaacaca tggggtgttt 780

ttaagctgca aaaaatattt catggtgaaa aactcggtaa tacacataac aatgtttaac 840

cagtggttag aacaacttaa ttttcatgtt taattacatg accaaaaaga atattctaat 900

ttatcattag gttctactca ggagcaaaat cacaatcaaa ttaagaatgt tatcttgctg 960

ttgttagaag atttaaccta ttacagtaga aagggccatc aataccgatt gaaaatcggc 1020

tattgtattg tattcatatt tggtactaga caactaggac taaagacata aatctttagt 1080

tttaatttca tggctgagtg gtctttagta catgtgtttg tggatcgagt actaaagggg 1140

agggggtt 1149

<210> 2958
<211> 1179
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_329817_G1, chr10:29518354..29519532, Cluster 17

<400> 2958
ccaatcccat catcgtcctc ttgtgacgta cgtgttcgtt ttgtatacaa cttgcctttt 60

ttcttttctt tttcttgcat ggtagatata agaggtacat tttctttctc gtgggctgcg 120

gcgcgcgaat aaaacacatc acacaagcat atgtatgatt gatctgcatg tgcaatccga 180

cagtataagg catcttgagg aggtccaagt agttttggac tttgcgtcac ggatgaacaa 240

ccatatatca ggactggacg gtgtagagac atgaaaaggg cactttaccg tgactagttt 300

ggaagcgaaa cctgaacaat ataaagctgt ttttaggctc tctataacag gcttcctatc 360

ctcatcctac cgttttatct cattttcaat tttaaactta actctataaa caatatagta 420

tatcgtgtaa aacattgttt tgcataatca catgcacgta gatctgctga gcgacgagca 480

caaccttaat gtggagggtg atatgtatta accgttatac atcatgctac atcagttatt 540

aagcctacta tcacttttgt tatcaactat agttagtcat ctactataat gttttaataa 600

acaatattta gccttagcaa gtaatcaccc catcgttata ttgatttttc ttttacaaac 660

tttaagttga cttaaactgc atcgttttat taaaagaaaa atgcattcga ttatataatt 720

aagcaaataa aattacaaag tttataaata attgaaatta tataacttaa acgtaaaatt 780

gaaattacat aattcataaa tagaactaat aaactactat ttctctttct catcttcctc 840

ttacacctct ttcgtcgctt atttctccct aatctaagtt actctatcaa ctttttgaa 900

ggccaaatta tggggctttt tcttgtcttt gcccatgtcc gcggcgaaac gctctagcaa 960

tttgttaaat tgctcaaata atttagtttc gtcaatcctc tcactaaccc tatggaagct 1020

tctttaatat tcctttctgc ttagatgtgg atggggactc attgttacat gttgttaggc 1080

ccttcccctt ccattgaact ttttccctat cacggtcaat agagcatagt tcatctacac 1140

tttcatgtga caatgcgcta tgctcaccgt ccaagttgg 1179

<210> 2959
<211> 1120
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33619_G1, chr1:205713399..205714518, Cluster 17

<400> 2959
taatggttac aattttaaag tatcactaga ttcatcataa gatagatttt ttatagtaaa 60

tttatttaaa aaaatataaa tattaatgtc atttctataa atctagttac attttggatt 120

atttgactcg tatagagaga gagaaggaga tttttcttct tctaacggaa ggagtagcta 180

cgatgtctca tcacattgtt gcatgacact ggtcatagca gactggtgtg catgtgcttg 240

tgtgctagct agtattgtat gagcctacta ctagcagttg tctttctgaa ctactgaact 300

cccatcatat aataaaaagt cattgcatga catcttggtc cgtgtattgg tatataagta 360

cgtacgtacg tgtgatacgt cattcaggag gtacgacact gtaaagttct tcgggactgc 420

cgtggtagat cgacggaaga tttgcagcag ggaatgtgtt gtgtgggact gtaaatttca 480

gattcttgat aaaagataat ctccaatatt ttattgggat tatggggcag tgtgttagaa 540

tcatctagaa tgcatgctaa gttgttttag atgggatttt tttgacagat tttttcttct 600

ctatctgcat tcttaaaatc catgtgaagc caaatgcacc tagctagttc agactcggca 660

ttcgatttta actgacaatt caatttggtt ctccagttag gggcgaattt agagtgttta 720

tcgggtcagc cggcgcctat aaaatttata atcgtttagc aaagcattat taaagttcca 780

aaaaaatatt atataatgaa gctaatctta atggctcaga tgatattttt gactaaattc 840

accagtaggt ttgacacaag aaaaagaacc gacaagttcg gtgtccgttt ctaccaaaaa 900

ctgaataacc cgtgatgtca tgtcagcaga gaagataaga gaagaagaga gagcgacgag 960

aactatgtag atgatgatgc atgtgtatat gaatgttgta tgtatatgtc cttttatgaa 1020

ctgtgtgtat ttaaatatgt ggtttttcta gtaaaagtat attatgggaa ccttagtttt 1080

ctaagtgatt ttcatttttt ttaaaaaaag tagtttattt 1120

<210> 2960
<211> 1012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337041_G1, chr10:77461367..77462378, Cluster 17

<400> 2960
cgcctaatta gtaattatat tactctctct gatcttgaat ttaggggtg tttggaaaca 60

aaatattttt gaagctttga ggtaaaacca tggtattgga gaatatcatc gcattgtaaa 120

aaaactctgt tttgaatatt taaaactcca ctccaatcaa aagcattttt ttgtttatga 180

ctacactttc acatgtatac taaatacctt gtctccaaac atattaagag taatgtaaaa 240

aatactataa ttatattatg atattttaaa accgtagtat tctaaaatca tgattttgaa 300

atacttttta tttccaaaca cgtccttaag ttcatttgga cggacgtagg tttcatagtt 360

gaggcggata atgcgtgaca atattgcgct gcccaccaag tatctagagg acccacaatg 420

catgatcaca acttcacaag cacatctcac tgctagcgtc aggatcgcgc ggctagtcgg 480

tctctgcggc ggctgctcca gtcgtcttta gacttttgtt tctgcaaatt aataatttat 540

acggactatt atgtaatcgt gcctataaat caatttggta agcaagacag aaaatattag 600

tcattttcta caaattgatt tttaagagcg gttcaaaatc caagcgttca tgaaaactgt 660

tacgtaagaa tcacaaatgt aaccccaaga gtaacaaaat attttatttt aaaattttta 720

aatctagcag catctacgta gtgtggttag gtaattgtta ttaagagcgg ttcaaaatct 780

ctaggggtat acccctacag cttacggaag atggaatctc ttcgtatgta taaaggtagt 840

actgtactcc ttttattttt tgtcacacca atttttctga tattaatccc atttaaaacc 900

tttaacttga taaaaatacg tattagggta gtacaatatt gtatggttgt tttgaaaaaa 960

aaatcaagaa ataataaata aatgttaaat aattgagtta tagtgtatag gg 1012

<210> 2961
<211> 1101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33738_G1, chr1:206251665..206252765, Cluster 17

<220>
<221> modified_base
<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (852)..(951)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (891)..(891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (892)..(892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (893)..(893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (894)..(894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (911)..(911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (912)..(912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (921)..(921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (922)..(922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (923)..(923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (924)..(924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (925)..(925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (926)..(926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (928)..(928)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (929)..(929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (930)..(930)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (931)..(931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (932)..(932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (933)..(933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (934)..(934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (935)..(935)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (936)..(936)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (937)..(937)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (938)..(938)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (939)..(939)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (940)..(940)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (941)..(941)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (942)..(942)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (943)..(943)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (944)..(944)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (945)..(945)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (946)..(946)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (947)..(947)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (948)..(948)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (949)..(949)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (950)..(950)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (951)..(951)
<223> a, c, g, or t

<400> 2961
tagacgagac tacattgctc cctctttttg tatctcgtag actatgattg tattgtatct 60

agggattact gatttaaata gccatatgtt atatgcttgt aaccattgca tgggagtatg 120

ggcaaacact agggtcgcta agctctgggt atgctcctgg tgtcatgaaa ctaagaatga 180

aacaatgtct ctcaatgcaa aattttactt tactatttta tagattaaca tatcaattaa 240

atgctgcaat ttaatgatca atagaaatta ataaaatata tgaagatgat acaaattatc 300

ctcaatggag gtttcacacg gtttttaaga ctttggaaac gagtcgatat agtttcatcc 360

acataaaacc aattttatcc catgaaactc aaaccttta aatgtcataa aaagctttga 420

tgtggtacgc tattaagacc ttgttgattt ccctcctagt agattatata agttagatta 480

tggtggaagc ctaggaggtt aaaatgtcaa tttgtgatca caaataagct aaaataaact 540

agcatatatt tatggtatca aagcgatatt ttaccctcct cttccactgt aatataactt 600

atataattta gtacggaaac aaacatactc taaatatgca tgaaaccacc ataaaactac 660

cactgataat agccttaaac agcttcgagc catggacata ttcgttggag gagacaccaa 720

tgcatgggaa atccacccct ttggatgatt gaatcaaagg gtttatttgg atactcgatg 780

aagtaaaaat tgaaactaaa ttatatctca atctacttca atatatacta ggtatatgcc 840

cgtgcgttgc annnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 900

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ngacgttcta 960

gagattcgtc tgactaaacc caaatctagt ctctctgaag tttatacaca tgcaatagga 1020

aaagtatcta caaagaggca atcaccaggc atctctactc tacaccgtca gaactcaaaa 1080

gatgataaag ggtacatcaa a 1101

<210> 2962
<211> 1053
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_340323_G1, chr10:95095835..95096887, Cluster 17

<400> 2962
tccccctat agcttcagct tcttcctgac ttcatccttc gatcagcttc ggttagatga 60

cgacgacgaa catttttacc tgaaacttgc ttttctgtga tatcccgaac ccgaaggcct 120

tcggcgataa aggccctccc acactatctt tcatgctaaa actaatagta cttattagat 180

acctttaggg tttgtttggg agcaagtgga atgaagggga ttgagggtgc tagaatctct 240

cactatttaa aattgaatag tggggtattc tagccccttc aatcctctcc attactcttc 300

ctcccaaaca agccctcaat gtttaatact tctaatataa atttgccaaa cttcattgtt 360

tctacagata agaaaatgaa atctagcagg tcaagctgag caagcggcta ggccaaacat 420

atgtggcggt ctttgggtcg ccgtttgttt ctagtagtag taataggcca tgatgcaagg 480

taggaaaggc ccatgggctt gacagcaagg aggaggccgg aaatttgttt tactgttgtt 540

tgggctctga tcatcaattt atatgctcca acgccaacgt acaaagaaaa ccaaaaaaat 600

atttaatttg gtacttttc aatataaata ctcggtcaaa gaataacgtg atcataactc 660

gcagttcaga gatctatgaa tggagcaagt gctaatatta aggaactgtt gggataatta 720

acaagactgg tccatcaaca cgtcattgtg cataggctag taattttagg aaagtgttag 780

aaaatcatgt agaaacttaa ggcttgcagc taatgctttt tatgttttct tttaaatttg 840

ttcatattct aaaatagtgg tagttgtaca ataccttttc attttcgtca ccaatcactc 900

atgtactttt aaattgtatt catgtttttt ttttctgtct cgtgtgatgt gtctcattaa 960

aaagttcacc ttgaactctg tatttaacgt agcaacagat atgatcattg cttcgtcata 1020

tatgtttcca tggtgttaat attgccacaa atc 1053

<210> 2963
<211> 1118
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_342566_G1, chr10:108105373..108106490, Cluster 17

<400> 2963
actcacttgt acgttttggt tgctgatatg tccaatcctt tcaattgtgc acattagcgc 60

caaagtacaa acaagtacat aggcaaagtc ggaccataaa aaacaaagtg ttagaaaaat 120

agaatacatc tacataaata taggggtaat aatagaggac tgatatcaat gaagaggcta 180

agtcagagca tgaaaaaaga gcatcaaaat aaaatatagg cacataaata gaggcaatag 240

cagaagactg gtattaagcc taaacatcaa ggttttaagc aataccacca tatgtaacat 300

aatccgtaca actaatgaat ttaaatgtaa gtaaggcttc ggtgctataa cagtagataa 360

ctgaaatatt caaattttaa gtagtatcca catatatgac ataattctta caactaatga 420

atgtaaatgt aaataggcat tgggtgctat accattagat aaacaaatgc atactacata 480

gaaattaata tatggagcaa accgaatagg tattagcaac gtgaaagaag aaggaaacta 540

acatttacat cggtagtgac agtcaacaaa atatttacct atttgttttt gtcgctgaaa 600

cttccgatgt ttgttgatgt gcacgtgtag gacatacgtg aaacaactgc ataaacaaat 660

ttgaggcatt aaaaaaagca tcagaaatat aacacaccta cctagataga ggcaatagtg 720

gaggggaaat agtatgccaa aactttaaga aggcaataca attagatgaa atgacatagg 780

tattccctaa atgcatccaa aagtagcatg tcgtgcagga agcgcaaaaa ataagaaatg 840

ttacggagaa gtctatattt ttaggacaat attgttagag tgcacttttt tggggtgact 900

agaaatatgg ttgggataag ggtatgttgt tgtgactcta catatattat catatattag 960

cgtttttgta acttggggca gtgcatgcat acatagagcc tttacattgt gttgttccta 1020

tactaataat tatacatgat ttccgaataa ggaaggcaat aaattataat tgtatagaag 1080

aagttctcta acaaaactga ataggcgctt aaaaatgt 1118

<210> 2964
<211> 1341
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34281_G1, chr1:208778933..208780273, Cluster 17

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (358)..(457)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<400> 2964
tacagattat atatttaaag taatgggaca tctgcgtaaa tcacaagtgg tttaggacat 60

tgtatgcata atattatacg ccctctttag ctgatgatgg aatagtggat gcaaattata 120

agagattata aactcctaac ccagtggagg caagcggctc ctggatgaga agtgagctgc 180

ggctaactcg actaccaact ttcggcttgt gtggggtctt aaaaggagtc tgcattggcg 240

gggccgaaaa aattctccac caatcccttt aattgtccaa ggaagtggat aagctgacat 300

ggaggtgcta atcgccgcac ctcttacatg agtaagatgg tcgctgacac gtaaacannn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnngga aagggtgatc ttcgttaatg 480

caatttttga agttttctgc cctttgcatg tgtgcttata attaatagac gaaaagcttt 540

atttgtgcat tatttatttg ttatagaaaa ttaatatcat cctctgacct aaattataaa 600

ttattttgat tattttcctg gatgcatggt tttgctacac gtctagatat acgatatgca 660

tgtctatata catgataaaa attctgtgta aaatgatata taaatcggaa cgcggcgtgg 720

tgtggtgttt ggtttactaa tcgaatggcg tactacacag cgtaaggcac gtccacgtcc 780

ctatatctgt gtacccgacg catgtgccat cactcgcttt ttatttggaa cggcatacat 840

cagcacgact aaggatacct gccctattcg cttgctagct tatattagtg actagcttat 900

attagtgaaa agcctgtgat tttataatct caaaaacccg gtgtgcaaag catgctcttt 960

ttagtgtttt caaatcactt gtatgtctag tgtgtagtta ataacattgc atgtagtagg 1020

tattttactc cgtacgtaac ccatatacat cagcgtgcca cctgtgcact gatcagcaga 1080

tttagttgcg cccaaaatgt cagtgaccca tggagcgtac accaaataag gccccgtttg 1140

gtttgaatga ctaaaaatta gttcttttat tttagtctct aaattatcaa acggtggaac 1200

taaataggga gtaaattgtt tgtctctggt ctctcaaatg gtgactaaaa agaactaaac 1260

tatattaatt ttactttgta tcccttattt atttcagttg tactgattgc ggaagaattt 1320

tacttttgat cttatgtttt g 1341

<210> 2965
<211> 1208
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349522_G1, chr10:145804354..145805561, Cluster 17

<400> 2965
gagcactcca gccttcgatg ctacgacatg atgcagtcca ggtcgatccc cttgcagcac 60

ccgtgtttgg atccatcgat ggcctccctg catccttcga acaagctttg acaggtatga 120

agcttgacat ctacttcaac ttatttgcca gtgaaaatct tggttgggac tgtgaattgc 180

ttgtaccaga ttagttgaag taaaaaatta gtttaggatg tctgtttctt cactaattta 240

tgttttctag tgtctgttaa caactgtcta tgagtaattt atccaccagg aagttattcg 300

tcaaccgaat cttgtcacag tatcaatcga aagtaatttt gctgcacaag atcctatgta 360

tttatacatg gctaattttt ttttggtagc ctagccatgc agaacattta attgcatact 420

gaaaataatc tctacagatt ctaaatgaac atcagtgtgc ctatatttat gtgtagtgta 480

caatatatta tattttacat cagctacaag tatatttggt tgttctttac ctgataatac 540

acgtaaaaac atgcttactt caaggagatc catatcccat tcagatttca tagcagccag 600

acaactaaat caataagcca cacgatgaac cagcacaaat gacctttagc ttttatacca 660

tgatctatcc acttcatcac ttcccatgaa aacctaacac agagatagtt ctctggggga 720

cctccataaa aaaagagaat aggcatatac aacttcctca agtcagccat cacttcctca 780

tagcgctatg aatatgcatt aagctttcct gcttttgtac cagccaaaca atggtgtctc 840

agatttctgt ttatcttcta tacagaatta cagatgaatg cttatagaac ttagtttttc 900

ttattcagta gcactgacaa aataatctag tcatttattg tgcaaatatc tggtatgtca 960

ttgtgcagct ttacttattt tttgttcttt tggatgtgaa cttcaataat gatcatttgg 1020

catgccatta tgatcccttg aaggttgtat tgtttttac cctatcgctg tatcttatga 1080

tttatgatgt aggaccaatt tgatgaagct tcgttctgat tataaagatg aatttgtcac 1140

aaagcatggt ttcaaattgg gtcttatgtc ttgctttgtc aagtttctta gtcttatgtg 1200

taacaaag 1208

<210> 2966
<211> 1366
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_350039_G1, chr10:148838030..148839395, Cluster 17

<400> 2966
tacaaaattt aagatcacga tacggttcaa atgaaaagct tgaaacctta gctcaaaacg 60

caccatgtgt agtaatacgc tcggtgcaaa ataagaaaca caggttctcg aaaacatgta 120

tatacaacaa ggcccaaaat ctaatgcatt gtacgagtct tctgaaagaa gtcttggaaa 180

ctactcatag gtacctctga tttagtacca tacagataag tgcgcttacg ttatgagctc 240

gtgcattata ctagttgggt aacctaaaat tacaagaaaa aaaagaaata acgcgaaact 300

tgcttttcta gtttagaaaa caataagcct acgtaacatc ctacttcacc tcctcatatt 360

caaaatcaat tgtctctcga ctttacaaaa gtagacaaat aacccctaga cagtttttgt 420

tgatgatttt gataacgtgt caatgattta agtgatatca tgtttatctt ttccagttct 480

ttcgtctttt agtatccaaa acttatatac ttttacacaa aaaatcaata attagctatt 540

atattgacct tatttttttt ctaaaattaa ggagtaccgt tttattgtag ctaaataatg 600

ctatcaataa actattatat tttttattga ttttattaaa caagttaagt ggtatttctt 660

ctaattatta actaaatcaa ttgtttattt gtatatgtta gtttaactaa tataaggtag 720

gtctttgtaa aaattggata tattttatta ctttttgcta aatatttcta aaaagacaaa 780

tagaaaatta attttgttag aggcatggca ctttataaat caatttagtt gtttaatccg 840

ctgtcgtggc acaatggcga gtccgaggcg gatggcccgc tcgagcttga ccatgtggaa 900

gaatctgatg aggatgaggg ggtctaatct aatcatgact aaactgaatt taactccttt 960

caatctgtaa ttttattctt cgtttatata tatattttgg atcttacaaa atttcatcat 1020

tttcaattca aaactgtgga cgtgtaaaat gtggcaagtt aggcagcaaa ccaaacgacg 1080

agtcgtcatg ctagaagact taccgcccat cccaggtcgt cgtccacgtt ccacatccgt 1140

cgtcgggatg gacgcgatga ggtagcttgc gtttgatgaa agattacaca tggatgcgtg 1200

tttgaccgag gcgctggcaa gatgttgtgg tgcactcgag cggcatgtag aggcaacaga 1260

acagaagatg gtggcgcatc tcatcgagat ggatcaagct gagactgaca cgagatgtgg 1320

ataagagatt ggacaacctc accatcgagc acacgactaa acaccc 1366

<210> 2967
<211> 1281
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35100_G1, chr1:213216773..213218053, Cluster 17

<400> 2967
gtatttatat agtgaggttt gaaatagggg agtgagatag aaagtgtgaa atagggagta 60

agataggaag tgagatgtgg aggttgctcg agatagcatt agtgcgactt gcagccacat 120

cgcggggagg gagaggaaac taaaaccgca cacacttggg agtcggtgac cacagaaact 180

ggtgggttca agaaatggtt tcccactgtt ttttaaaatt cgtttaaaat ttaaaaactt 240

aaaaaaatat aaaaaataga aaaatattat aagagaatga ataattttct ggtatatatt 300

acattcatat ttatgttatt tttaaatcaa ttagcatttt gggttaaaga acaataaaat 360

ccgataaaaa caacaaaacc gacgaaaata ctggtttacc gtcgagaaat ctctgaaaac 420

tgtttatttg aatttatgaa tataaaccag ttaaaaaatg aaaaccaccg agaaacaaca 480

aaaatcgttc ggaaatagag gtttgccagg cggtttcacc atttttggc ggtaaacagg 540

tgatttattt atttttaaa tttgaaaaag caaaccagtc cgttttggag gtttttagcg 600

gtttttcgac gaagaaccga aattgactag ggacggtttt tgatttcaaa acggttcggt 660

aaaccttggg tgctacccat aaatcacatc gttgtggtcc tagtgacgaa ctgaagatgt 720

acatgtcggg cccagctttt tcgagtaagt ttagtaagtc aaatcctctt ttaaatggaa 780

taaaaaggac taagaaaaaa attgtttatt ttctctttgg ttctttttaa atttagagag 840

agtttgagtt tttaaactag cctttggttt ggggctcaac gaccctgcac tctacactct 900

tcgtcctggt gccggggagg caataattgt tcggccttgt tcatgggccc ttgggctgaa 960

atacacggct tacccaaagt ggagaggaga taaacagatt attatttcat ggaaataaac 1020

tctactattt gataccagca ttcggtatct ccttccaagt aaatgaccct actccctcca 1080

atctaaatct atatcatcac tatataattc accggtttaa actttgcaaa actcatccaa 1140

ctaaatcacc aaacaaattg cacctagact taacacacta tcaaaaccaa ttgttcatat 1200

agctagacaa ccctatctcc tttatttact caaatcttca aatctaatgg acagtatcat 1260

ttggatcatt cctcaccccc c 1281

<210> 2968
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_36002_G1, chr1:217574591..217575837, Cluster 17

<400> 2968
gaatttagta ttgtagtcgg ttagtaaaga tgttcctccc tctatcagtg aaacttatag 60

cgttttaaat ttagccaaca tattaagtgc aaaacaactt attagtaaaa aaccgtgtaa 120

acaatatacc aggctacaga tacaagattt ttttaaaaaa agtatttctt cagaacagca 180

ctttcatttt ctatggatat ttttaaaaag attttgtcac ttccatactt attatatggt 240

ttgcgctgat aaattagttt gtattatgtc cttttaattt attcctagag ctgttggaat 300

atgagatgac tattactatt ggcgttcatt atagatggac atccatacca gctccatgtt 360

gtggtcctaa ctaccggttt agggttttgt aaatagtcca tttgattaga tcgtttgacc 420

cgaggtgaga gaaaaaacgt ggatttaatt gagacagcct cttggtgctc ctaattatga 480

atgagtctga aacatttatt agagtaactt tttatcattt gtgaccataa ccttttaccc 540

aagaacatcc tcttggtgct cctaattatg aatgagtctc aacataactc aattctagga 600

taaaaagtta ctctaattta attgaagtga aacttagtta atgtagcata acttagtcaa 660

tctagcttaa gttctagcaa aaaatagtca atttagttga acaatatctg gttgtaatca 720

atatacctca attctaacta attataatct acatagtttc aaactcattc ataattagga 780

gcacctggac acgcagtcac gtaggggtct taactcattt atcaacgagt ttttcaatta 840

tactctagat agcggtgaga actctaacta ttcgataaat tcgagtttag agtgataaga 900

tgtataaata ttagtatttg ttatgttttt ttacaattaa catatatata tatatattaa 960

tatatatatt atggatgatt tatacaatgt gaattgatat gttgtaatgt gaacaatata 1020

tgtgtttgtg aatgtatatg atatggatga ataaatgtgt ttgtgaatgt atatgatgtt 1080

gatgaatatt tatgtgttgt gaaatatata tatatatata tattatagaa ggatataaat 1140

aagtaattat gaatgagcta ttgcacctcc acggggatgt ttcacagcat gcatgcatca 1200

tcgttttcgc cgtcgttgga catcccattc gtcttcccgg ccttcgc 1247

<210> 2969
<211> 1184
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_37835_G1, chr1:227016230..227017413, Cluster 17

<400> 2969
gtaagctcgc acaatctctc cctacacatc ttttttcttc gcctacctaa tgctctatgc 60

ttttggagat gtgctagccc atttccattt gatgcccgag ctcatggaag ctacgatttt 120

agatgcaacc cgctaaaaaa cacagttgat ccctctagaa gaatctttcg tctttagagt 180

acctgatttg ttacctcatg ctaagaaaat ttggcaaaaa atatagtagt tataattttt 240

tttattggaa ataaaagcta ctcctctcta gagtacctaa ttttatttt tcttggcatg 300

tgtcgtcaag gtactaagcg actttgatgt ttccaatatt gtacatgtta ccttcttcaa 360

taagtggttt agattacttt ccatatgcct tactgataac tccatacatt acaattatct 420

cacgtttttc accatcatta gcttgtaaga aagcaagaac tcattttgta agcaagcagt 480

atgtaagtct gtatgcatgt tcagtgctgg aaccatagtc atctggtggc actgaattta 540

cagcttatag ggcaatattg tacattttga agcaataaga tgtttttat agcttacagg 600

gcaaatctta ttcgtcattt gctccaaaat tttgtgagat ttctgatgca aaacctgtaa 660

tacgaattca tttaataagt agacaagtca aactagtata gatcttaaaa tagctacatg 720

tttttcatgc ataccaggaa ccgatgcctg cctaatgtgt tacagttcat cccaggatac 780

ccctacatac tacattttgg agaatgtttc agcttaacta gcactctcac taattataat 840

ttttgtttcg gtgaagtgat ccggactgct gcactctgtc atctgtcact gacttttatt 900

agttttaatt atcatggcta gatgcactca ttgttttcgt ttgtactctg taaatcaatt 960

acatgtttca ttactggaag accacaagtc tggactagta gtctagtatt ggatcccttg 1020

ggactgaatg atctcttgat tatgattata attgtagcag gaaggacact aactcaacga 1080

tttgtgaagc ttcctagcta taatccttaa tttgcatcaa ttttgtatgt tataaggtag 1140

gtagcacagc tatacaagtg catgattaac ttttatgttt ctag 1184

<210> 2970
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38368_G1, chr1:229904499..229905528, Cluster 17

<400> 2970
tttccgtccg tgaccgacaa atgcactaat gaagagttag accattttac ttctagatta 60

agtgtttcag ccaaaatata atatccaatt gtttattaaa aaagtgtaat agctatataa 120

ataagataag ggattgctca accacgatgg gttttatttc tagcacttag tttaagtgct 180

taacagtagt tttagatcct ttttatcagt tttagagaga tatttgactg ttataatctt 240

gtcatttgtg taactttgat aaaataccta acattgttaa agagtcgaaa taatcatttc 300

tctaaaattt aagttaatct agtcctatct ctgtcttcga tttttggatt ttttttgggg 360

cttctcgtgc atcgcttcta gcaagactat ggttggggtt tctttttgg agaaatcggt 420

gctaacacat gtgaagaggt atttatatga tcaatctctt gaatcccctc aggagcatat 480

ctcgattcca tgtttctcaa tttcgtctcc aaaattcttc atctttggat gaggtttttt 540

ttttgggatg gacgcttctt gatctcgtgg agacccttct aaacctaagc tattttggta 600

attagttgat cgagtttcag accgggtcct tctgcgctcg ttctgttttt ttgctgaatt 660

ttttttctat aacaatcgct tggtccgata ctcggaggac aatcggaggt cgcacagtac 720

tgttcggtgt ttgatatttc tctactgttt cgtctgttga gctgcttcag ctagtccgat 780

gctttgtcta gcactttaat ccgatgtgct cagctcggtc cgatggtgca gctttgcatg 840

cgtttctttg ttttcaccga aggagcacta gcagtcattg gctagcaaca agtgcagcag 900

cagtacgcgc atgacttgga ccatcaaatt ttgagtacct aggttcaaaa tcacgagaca 960

ctagtcgcta ggttcttaaa atcactttgg ccatgtgcat agtgttcttt tggcacttgt 1020

ttgatttgcg 1030

<210> 2971
<211> 1392
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42156_G1, chr1:248868165..248869556, Cluster 17

<400> 2971
tatgatatgc ctgcgtatag cgtacatact actgtactgc tactacttat tctcgctcta 60

tccttaacct tctatttgag agtatgaaac tactatactc gttctttatt cagaccaagg 120

ctcacatacc agatccatta atccagctaa ttcacaggtt agtcggtaat cggataaggt 180

cgtatcaccg gtttaccatt tgaattttaa atattttata attttttga atttttgct 240

aatttttcta taaataatat gaattctttt aagactttcc actaaagcca aattaaaaaa 300

cacggtacag attttaaact aaaaatcaaa caagtttaaa aaaataaaga aaaccccact 360

gtatatttgg gccggtggct tttaaggtcc aataatctca tacaaaaccc tatctgtcgg 420

tctttgcacc cattcccctc tcctcctccg ccgacatcga cctagccacg ccactgccat 480

ctgacggagt agccgacgaa accgtgccgg tgagccagct acccggtcga taactcgcta 540

gaccgtctgc tcgtccgcct agctggtaag ccgtctagtt aacatgataa atcgagccgt 600

gttcggatta attaattgcc acgaaatcac ggctagcccg tagttattgc atcagaatat 660

tacgtagcca agccgcccgc atgagccgac taatcaggcg attttgctga ttagccgtcc 720

ctgctacccg attaaccggt ccccaataga gagataagct gggaggcctc tagtagctat 780

gttttgggga tttgctccct tttaacttca aatcttttta ctattggtac tgctacttgt 840

aataatagtt cataatatat taaattttcg tctttatcta actatagaaa tgaatgattg 900

taaatggtcg atttcctttg tgctaacacc gataagatat ggtcagaatt atgattttta 960

tctgatatgt ttttttatt ctaggaatta aaaactataa attatgtctg cataaattta 1020

ccagggacag tagtcgatcg ggttcaggtc agggtggaac aatctgccca cggttgctcc 1080

cgtgagttta gtttgactag ttactttata atttagttta aacttataaa tagcatgata 1140

ctctcatagt ttgaaaaccc taaatatttt ttgaacccat gattcacagg ctatctaaca 1200

aactgtagtc atcgtatcaa ctatatatct tagaaatcat aactagtagc aatatgtgca 1260

caaatcatag ctaattaagc aaaatcatac tgcacaataa acataacaaa cgaatcagtg 1320

ggatattata ccttggtctt caagctagac ggatcaaatc caaggttttc aactcgaata 1380

acaatattgg ag 1392

<210> 2972
<211> 1047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42322_G1, chr1:249456526..249457572, Cluster 17

<400> 2972
ataatatggt gacaaagttt tattatcatc tttctttaat tagttggtat ggattatttg 60

caaattgata tatatgtacg acccaaattt tttctaagat atttttaata cttctaaata 120

tggaaaaagt ttagcacttg atactctcac cttgtacggt tataaagttt tcttgatcta 180

taaattttaa attaggtggt ttgcctttaa ttagatgcta catatttgta ttgtatgtgt 240

gttgtatgat tatagtttta tgggaggcct aaccgattta tagaaaatgt aagttattga 300

taggagagtt aaaatgcatt tataattcgt ttgacttttt acctcgagtt tgaccagttt 360

ttcatattca aaaagtttca taattgaatt tttttatttt ttcaaaaaca atttgaataa 420

gacgagccga tcaaacttgg taaaaaatca aacgaattat aaattgggac ggagaaggta 480

ttatatatag ctatcaacaa atatttaaat tttataaaac cctatatcga aaagatggaa 540

catgcaaaaa catgggaggt tctatgtggg tgtataagtg ggagtagttt tcttcaagac 600

aacaattgat tctggaatca tctcgacaca gggagaactt attttaaatt ttcttttata 660

atagtttaaa ttaaactatg tcaatatgca tataactcat ttgtccttct tcaagcgttt 720

tcacatattt tacaatggtt atattgttaa gttgagttat acacttagtg ctcatatttt 780

agtccagatg ctaggattac ttactcatga aaagttatgt actatcacca gaaacaacta 840

aacatagaaa caattatgat gggttataaa cttcacattc attttgtttg gatgaatgtc 900

ttaggtaaat ctaacatatg cctatatgca cgaaccacat gatagtaagt tatgaatgta 960

tatgctcaat caatgttacc ttgagtggcc aaaggagagg catgccattc ataacatttg 1020

taccatattt aaataaggga gaatgag 1047

<210> 2973
<211> 1231
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42424_G1, chr1:250309754..250310984, Cluster 17

<400> 2973
cctttagtgt ctctttcctt tgtataaata tcaaaaacaa taaaggatac ggtgcccctt 60

ttcatttcat tctcgcacaa cagttttcat ttcacaagcg ctaccattat cgtgggtact 120

tctaccgtta gggtgccctt atacgaataa tgatatggct gtcagattag tattatgttt 180

gttgatgtga ttataatgat atgtcgtttc ttctatcatg aataaattcg atggtagata 240

cctatccgaa gctaacacgg tataaaatta agatttttt tgtttgacaa taaaaaaatg 300

tccttccctg ctaaataccg aaattcaaaa tcttcactac gtgtcagcta tttcaacttt 360

tgttctctat ttgatacttt tgctattttt ttttgatgta agaacgttag gtctaagtcg 420

aaaagaccat cttgcccatc ccatatatgt ttttagggcg atgtgttgtg ttcactgttc 480

aggcgtacgg gtaaaaaaac tgcaaataaa taaatataga aaaaaatata ccaatacgca 540

gcagccttaa cacagcatat ctgggaaaac acacaggaag ggtaagatgt gtgtgtgtgt 600

gtgttttttt ttgtcttgga cttaactttt acaacaacaa caataaaaaa atgacggaag 660

tgtcaaatag agaacaacag acaaaacatg cgaaatacaa gaaagatttt aagttttggt 720

accaaataga gaggagatga aaaaaaaatc tgggtaaaat cctacccgat aggcttcatg 780

aatacggtta aattttgatg tctcgaacat tctcttgagc gcaggtatat caaattctac 840

cttacctgtg tgctgccatc catattcacg tgcggtttgg atgcacacag tgagtgatga 900

ctgatgaaag aaaaccttgg acggacctgt aagtatctct gtatctgcac acttcttgtt 960

tcttggcctc ttctgcccac ttttgacaaa ccattgcatg atggagtcac tttttcgctg 1020

cgaattgctg cagttttaat ttattgtggc ttctacagta ttttgtctta tagattacag 1080

ctgtaacaac tgtggttgca gagcagtcaa agaaggctgg gtgcaggaca gccgaaatag 1140

tctgcaatgt aaaatagcat aaaacaatac gtgatcatac acactatttg ctgagcagtc 1200

taaagaagag aacacttgcg cagagtggca t 1231

<210> 2974
<211> 1351
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44633_G1, chr1:262138717..262140067, Cluster 17

<400> 2974
ctgcgctgtg taattgttgt aatacgccag taaggatact attattcctt tgcttctata 60

agataattgt tacttctgta agttgacatc ttatatctgt ttagtggcga tcggacacca 120

aagcagaagg tgaaattgaa agtgacagaa gaaaagcttc tgaatttgat gttgaagtac 180

aatggtggaa aaccaagagt tgaggtaccc tcttttctga atcttgagtt ctgcttaact 240

tatggtgctt aaattgaata gcagttttgg gctcttcatg cagacgaaac taaaaagtgc 300

tgtacagtta caagacttgc tggatgctac aagacaactt gtaccaccaa ctaggtactg 360

tatgatcaga taaatatttt agcctagtat ttagattgca tgataacttt atgaaatttg 420

cttccccaac tttattctta tcttatgtat ctgcatgttc tattaccaga ttgctgcatt 480

attcaaattg ttagtttgat ttgatcttct gtttcttcaa ctgctctttt gagttaaatt 540

cggtgaagtg attaatgttg tgtattaggt ctggtcggga gagtgatagt gatgctgatg 600

atattgagca tatcgagaaa cttcgtcaag tcaaagcagt cctagaggag gtaatttctt 660

attatccaga tctacatatc catgacattt gttacataca tgctggatac cttatcacta 720

gatggtttgt atcatagcca caaagttcac ggatcgatag ggtcgaggaa cagggtaggc 780

tacttgtgcg agacatttac atagtgggaa cgaaaatgac cctgcgtatc cgggtcgggg 840

accacgtttc tgggtcgagg gtcattacca ccgtacccgt ttcttgtgac tatggtttgt 900

attcatgtgt ctagtgcaga gtgcaagcta gtagctagat gcaaccatgc gaactgtatg 960

gtggtctaaa ctagctgaag ggtagtcatt ttttggcgtg catccacaat ttttcattaa 1020

gttgaaatgg aagcaaaaaa gggacacaga agttaatact tccaccagtt actttccctt 1080

tttgttggtg ttgtgattga gtttatattt gaaatttaat ggttaataat ccacagcagt 1140

gttgttaatg ctgttctggt actggctgga atgggcagta taccttgcgc tgtcacctaa 1200

acttgcacta aagaggtttc ctcatgtacc ggcctgttct ggcaatccag tccatctcgt 1260

acccacccaa gaaaggtgcc acccaagtta agatatcaaa gactatcaac ttgagcagga 1320

ggaaaaacat cagtgcgatt tgtttcttgg a 1351

<210> 2975
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45046_G1, chr1:264182768..264183784, Cluster 17

<400> 2975
gatgatgaca tttatttttt taagcatgtg ggaagaagtc gtcgacaata atcaaggcta 60

gcgcctggca caaccacata tatgcccttc tagattacag aaaacagtag ccatgctttc 120

agcagatttc gttttttttt ctttcggacc ctgctaggct gcaatacaca tcagattgta 180

caactagttt aaattaacaa gtattaggtt atcttcggta gatcggtttt aaactttact 240

atgtaaacag tgtcatatag tcatctacag ttttatgtac cttattttat ataatccact 300

gaagacaaca ttattagttt atcagatcac acaggaccta cacagtaaca ctggctgcaa 360

acgtgactta ctcttcggat ttggaacagt attcctccgg tccgaaaaaa agacagtgtg 420

attaataatg atcaataaaa tattgaaaca gttcggaaac taatcgtgcc ttgtgaagcg 480

gggagaaaag gacaacatga agaaggcacg tgggggggttt gacgattagc cttttaacct 540

ttccctttca cgcggcaaca aaacctttcc tttattttca cacgagtcta tttcaggaat 600

ttagagtcga ttaataatgt cttcctttat tttgtttcac tcacttcatc cgtctcaaaa 660

tatatgattt tatagaattc aacacttcag aggtcagcgt cattatatgt ggataatgca 720

ttagagcagt cccaaccctt cacgtcatct agtttctata tcattaattt agctaccaca 780

tgagcaatct ggtgacatag caagaaaatt aatgaaaaag gagaggaaat ggtttcctct 840

atgagaaatc aggtctacac gtgcaacaaa gacccaagaa accattgttt tggtgttggg 900

ggtgagcatc cggtttctat ctgtggagct cacacgcatc tcattggtcg caccgttaca 960

ttcacattta ttacgacacc aaaacaaaat attagcgttg gaccttatag tttctac 1017

<210> 2976
<211> 1281
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45355_G1, chr1:266029639..266030919, Cluster 17

<400> 2976
tgtttccttc agcattaact tgtttagttt accataactt cttccagttg acctccttta 60

ttgaaacggc attgcacatt aataggtgaa agaacttaca gttgcctggc gaaactcctc 120

aagcattcac cgatactgca tcctcacttc agtagagtct accatggata acactcttaa 180

cgcatcctgt aattttagtg tataatagat aataatttgt tgctattgcg tgagatcacc 240

ttttggagg taattccaat ggtgatgtat ctgcatcgtc tttctaagtg ggactttctt 300

cttgctatta agaaatagat atagtgataa ttattaaaca gaataaattt ataaagactt 360

gttagtaatt tcttttccta attaacaggg tagtgatcat atttaaacat aagttttgta 420

gtttttgtaa tagtatacta tttggaaaaa tactacaata taataaattt agaaattctt 480

ttcagtattt tcttttccta gataagaggg tattgatcat aattaagcat aagtgttgta 540

gtttttgtaa tagtatacta tttggaaaag tactacaata taataaattt agaaattctt 600

ttcctagata agagggtatt gatcataatt aagcataagc gttgtagttt ttgtaatagt 660

atactattag taaaattact atatacctgt attggtgctt tgtatgtctg tgcattgtat 720

ttctgagtgg aactttcatc ttgctgttac aaagtagata caatatggta ttgttagtat 780

tcgcttttcc taaataatat ggtagtgatt atattcaaat acattgccat tgttatatac 840

aggacatgtc caggggatag ctgttcttag tttctatgca cattaaaatt tgttaaacaa 900

aagaaacgtt tattacctaa aaaacaataa cttgttattt gcttcataga tttgatttga 960

taactgttgg ttttaagttt gcaataacat gacactgaca gagttccatg aataccccaa 1020

tttcttatca atttattacc atatcccaga aatgtgcgcc atgagataac tgtgtagcag 1080

ccttagcttt gcaaacatat ttgtcatagt tatgttattt ggcatgcata tataattatt 1140

atataatcta aaatagagta agctcactgt agttatgtga cagcaacaac aagacctagg 1200

catggtggtg aggaggctgc tggtgatggc acatgcggtg gtgcctaaga tgcaatggca 1260

gccttttttat gtgtcaatgt t 1281

<210> 2977
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46255_G1, chr1:271002736..271003751, Cluster 17

<400> 2977
catttttacc attttagtca cttttagccc tttttatttg agtctttagt ttctaaagtg 60

actaaacttt agtcactttg tatgttggcc ttggtttatt atgctaataa tcacgtgaat 120

catctaaggt tgaactcgcc accatgagga cgtagattgt cggcaagcaa ccgaatttga 180

ggaataaata atgtgactac ctctttccat atgtggtttg cacttgaagt tacccttgct 240

attacatatt gtttcccata atcatattgt gtacagttct ttattaccta ttaagttttt 300

gcatataagt tcttatctta gttctgctga taaggctttg ttcgagaaac tttataggct 360

attcaccctc ctctagccat ctagatccta tcaattggtt agagcttttg tcacctaatt 420

ttaacacata gcaaccttag gtgtaaagat ggctcatatt aacaacatga gaaatccatc 480

acaatttgat ggaacaaact atgattacta aaaaagaaaa tgtgaacata tttaagatca 540

atggacaaaa gagtttggga tgttatagat aaaaaattaa ggccatcgac atgaatagtt 600

caacacctaa agagaaagaa gatctacaaa aagttaaggc cattgacatg aatagtccaa 660

cacctaaaga gaaagaagac ctaaaaaatt aaggccattg acatgaatgt tctatttgat 720

gctatttgtt gcagacctat cgagatttcc aaaagaaaca catgattact gatttatatc 780

cttctttcct ccgaaggtat tgaaggggag aaggaagcat tcgtgatcaa atcattgata 840

tagtaaaggc tttgtaaaca tataaacaaa atgatatgag atgaagtaaa ctccatacac 900

acaagaagtt tcatctatct ctattatcaa taaaatcccc ctttggtccc tgtaaacaac 960

aattcatatt tatgaaatac ataaaagctt gatttcttta tacctttgaa agtgtt 1016

<210> 2978
<211> 1171
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46626_G1, chr1:272931228..272932398, Cluster 17

<400> 2978
gtatcgttag ctgttgggag cgtatcctcg tgacgctcag tagactagta gagtatggtt 60

gagtgcaaac acctctaaaa atttaaagca gaatgtaccc atattattct ttttaatttt 120

tatgaaacga actaaacata cacgtgcatg catccttatt tataataatg tgtttgacgt 180

ctgtggtcag tcaaactata cgttttccaa gcacatgttt gccatggcga gtaatagtca 240

tcactcgcac ggagacgatc cacacgtgta ttgaaacgga gaccctgctc tggaaccacg 300

cagcatgtga agccggtaca gctgtacaag aacatatgca tggaatgtgg gctatttcga 360

ggagaaagtc acgcttctga gttttactcg cgtgcgtgtc acgtctcacc tgatgacgtt 420

ttatttgatg agtccagtgg ccctgcggcg aggggtttta taggctctaa attttatatt 480

ataaaattta aggaccaaaa catattatga ttgggtttgt ttttattaat tttaaactaa 540

tattaaatcc taaataaatt atgaaaaaac atttgaatca tcatctatta ctgcccctac 600

acctacttat ggcacctttg acatttcccc ttgaggtaat tacgctagtg cccttatttt 660

agggtatgac tatagatttg ttcttgtttt ttagacttta atttttttcta aaaatgaaat 720

gttgtatgcc cctattcctt tagtgatact taacgaggtt aagtcttgat aaaagacaat 780

tatgcccttt cattatttgc ataacaattt gattatattt caattataac aacagatatg 840

gcaacaattc aaaattttgc ataacaattc aaaacttttt ttggcatttc caaaataaaa 900

aatggaaaca atctaactat attttttttgg acatattcac aatataacac caacatcata 960

ttaagcataa aagttggata ttacctacat aatataatag aggtaaacac gcaaactctg 1020

aaaaaccgag atacctatag ttactctaaa ataaggacac taacacaatt gtcccaaaaa 1080

aacagagaca aacacgcaaa atctataaaa ataggggctg cagctaaatt aaaggcactg 1140

gcgcaattgc accttaggga aacggaagaa a 1171

<210> 2979
<211> 1078
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46998_G1, chr1:274933410..274934487, Cluster 17

<400> 2979
acattttaat taaagatgtg ctgctctatc tctttgctgt gtttgtgatg agtaataaag 60

tctttcccac ctaaaagaat agtaccagca gggcattgtt tcctcttccc aatgttccca 120

ccgttcccta ttcccaattt ccaaagtccc cattgcaaat ttcacataaa ctcgtgaaga 180

gagatcttga gaaccatgac ctgcaaatct ctgaaagaca caggcccatc atgatgttgg 240

tcgtctgtac cttgatctga atcaggttag tttgaaatca tgggtttgtg agttctcttt 300

atgttggttt ttaaggtggt gttcttagtt ttgtcatctt cctcattttt atccttattc 360

gtgtttttt cttagtttta ctcttttagt gctatatacc agaagaataa aactgagcaa 420

aaaatacgac aaagggtaaa aataagaatg tggcaaaact aaaagtatga atttaatttt 480

ctatatgatt gtttctttat ttcttaattt aattctgcta atgatttgca gatttttagt 540

ggcttcggta acatcgtaat agggcctaca gctacgaatt tggattaatt ggggattatt 600

agaccagttt catggtgtgt ttctcgtcat agtttttgag attcaatgtg atgggaaccc 660

agattttaag aatagaagag caaatggcac atttggtgga atcggtggaa taaatctaac 720

aagacttcca ctagtttcag catcatctat gcaacatata gcagagttac attatgattc 780

acatacttct tcagaaaaac cccacaaaaa caaacgtaca aatgaagcta tgcatgcatc 840

ataaacaaca taggggtct attcatgaca tgtatcctca gtgctgacaa aatttcagaa 900

taacctgcaa ggagtttaca aaaattaaga gcaacttcag agctactgat tttaattata 960

catgagcgcg aaagggcctc tatcgtaata gttaaggttt ccgagtagca gctccgagac 1020

ccggatttga tccaaggggg cgaatttcgg gcttggttaa aaaatcccca cgctgtat 1078

<210> 2980
<211> 1301
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49945_G1, chr1:290299720..290301020, Cluster 17

<400> 2980
agacttgacg atagaattga tctatctgtt tcacgaggaa caagtaatta actaaactag 60

tccatacctt atacctagta aaaataatac atttattaat taatgaggat tagtttattg 120

tgatcgctac tgacatcagt aaaaacgcct ggaaggggaa ggcatctgcg ccggcaacat 180

gcggcctaga aggctcacct agagcagagt ccatcaatgg aaagggggag ggagggagga 240

tcggtgcctt catggagagg agagtgacag gaaacggtgt ggagggatca tgttgatgac 300

tgaaactggt tgaaatatct aggtgtagga atgttaacct aattttgatg ggcttactgg 360

gctgagatgt gggctagtac atttttcctt tctctttttc tcttctttat tgatattttt 420

ttctaaacac tttctcagat atcagaaaaa aaaaactaat ttttttagc tgcgtctatt 480

gctgacctta gctgttggca aggagccaag tacaagagta aaaggctgtc caactttgtc 540

taacacgtat gagggcctat attttcttag ccaactattg agaaccttta tacctaaaga 600

tttgtttgga agcacccaaa ttttcaattt ttaagaatat ggttttatga aaactgaagc 660

ggtttcaaac ataccagttt atatcctagt ttatagaatt ctagaatttc aatttcttaa 720

aaaaccaaaa agctagactc tcctagctaa aaccggttta taaaaactga ggtggttcca 780

aacagcgtga gccatttttt ttcataaacc agtttctagg gtctatactt ggcacatttg 840

tcttcaacgt gcgcgccagt ccactacact gtttcggtca tttggggaca tccttttgtt 900

aatatcgttt gctcatcggg cattacatta ttttgtttcg gttgcgatat atgaagtatt 960

taccgaaaaa ataatacgta taagaataaa ggaaggggag aaagaaagaa gagaaaaggt 1020

gtattttgag tgatctgcgc ttgcgcatga gcaaaaggga cggcttttct ggtcgtcagg 1080

ttggattccc tctgttcgtc gcagcttgtg ggtgaagcaa atgaaatgta cgctgtgtgc 1140

gccctccccc ctgcgtgcta aagacgaatg tatatatata tatgctagtc caagggagta 1200

gcacctctgc tccgctggtg gtgctaattc attggtttga gtagtagtcc aaacagccaa 1260

atttaatctg aaattaatgt acatagcgag tcactgaaag t 1301

<210> 2981
<211> 1368
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50519_G1, chr1:293568834..293570201, Cluster 17

<400> 2981
aacatattat tttgctccta tcatgggtaa acgtttttt taaattgtaa ttatttttat 60

gttggtaata aataatagtg ccaacaaaaa atatgttact gtatatcagg taaaagactt 120

gaatttctct gttccacttt tcgtattttt ttgttcttct gggacacaat atgcaatgtg 180

cgaagcatat caacaagaca caccatatag catgatagtc tagaaaaaat taaacataca 240

tgcaaatgaa tacatattat tgcatgtaca actttatatc aatgtttatg agcttgtggt 300

caagcacaat gaaactaagt acttcaaata gctaatgcaa tacactttca aaagatgtac 360

gaacgagagt atgtttcata gtaggcgtac cggttcaact aaacacttaa tacattattt 420

gagactagat ccatctttga aagtatgttg atctgagggt tcaagatgaa tcataacgca 480

atactgaata actgaaatca ggcttgggtt ttggttcaat atatactcat tatcaagaaa 540

atttatatgc ataattcaaa cctatgaatc aagaaggtaa atagcataaa cgttgaaatg 600

gctaaagcat gcaaagaaga gttgaaaata taccagtgca atcaaacact agataatcac 660

catccaaata gttctctagt tgttcatcga aaccaaacat acaagttgtc ttcatggtac 720

ttctagtttt tttaaggaaa cataaagtgg aagcataaaa tcctagcaaa acactacaac 780

atttcaacat ttgtaataag ctagctctat tagttcttca acaaatccac cctgcaacat 840

tctatctcat tagtttacat tcaatgattg catgatcaca atttacaagg cttatgttct 900

aatggtcaaa caaataaatg gcgtccttta aattaatgtg caataaatgt tgaaactcaa 960

aatatcagtc tcatagaaca aacatgtact aaaaaggtta agcaaatata gcttcagctc 1020

ctaatagact aactttgcat ccccaaccca ttagcaagca atacaagata gtgtaataag 1080

ctatggagta ttggtgttat acatcacaag ataggctaat acaatacaag acagttcaac 1140

acatgtgata tatagtctat taataagcta tggaatattg gtgttacact tgtgatgtat 1200

agtctattac tttggtataa atttggacat tatttaaata gttcgacatg atgacacatg 1260

aatatatgtt caaacaaaaa tatgagtgta cttcaaggtt gtagatatct ttgaatagtc 1320

cttgctccga attcgaccca aatctgaagc tgtactatgc gggtacta 1368

<210> 2982
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50537_G1, chr1:293587129..293588292, Cluster 17

<400> 2982
tactacctaa atatgagggg acgttgctac caatgataaa taattagcta gtaaacaatt 60

agttataata tgtttagagc cttggctaat aaatgtctaa aatatgatga aataatctat 120

tttacccttc aacggtaaac aatagctaag agagaaagta aagagactga cacgggatca 180

tctttttctc tttttatgat ctatagcgcc tattagtaaa cattgggcta ccaattgtga 240

tagaaacacc aaggtgctgt ttgattcaca ttttgtaacg taaatagtaa tggtaatgaa 300

acacacttga gtaccgacgg taacaagttt gaatagtccg gtatccattt ctagtgtggt 360

attcgattac ggttggactt gaacaaacat catttaacgt tatcggttac ctattacgtt 420

accaacatgt gaaccaaacg gtacacaagt tcttccagca agcttgtact aggagacgcc 480

aaaagaatag gattttgttc atccataagt catgatttta taatgactag gtctattgat 540

attgctacga gtaatttttt ttttctcaaa tcaatttacc tcctccgtca ccagacaaga 600

tttaaatttt aaccatgatg gcactatgac aaatgaattc actaacttta tgccaagcat 660

cgatgagtgc ttgtagattt taaaaggatt gagactaagg aggtgtttgg gatggctcta 720

ggttccaact ccgatgtata gttgtagttt ataatatcac tttaaatagt tttaaaaata 780

tttttaatct aaacaataaa caaaatgact tttataaatg tcttctaaag gcttacagct 840

ccagctccat aattttctgg agcatctaat gacctactcc accaaatata ctaagtttac 900

tggagctgaa gctgtcctgg gcctaagttg ccctggtcca gatggtctta gtgttgcttt 960

ctatcgtgtt gcttgtacat ggatcaagaa tgatgtgcat gggttgatca ttagtttcta 1020

cacatttagt actttgccta atcctcttaa tgcaactaca attattctca ttccaagaaa 1080

aagtcatgct atcttggtca ttaattttag atccattagc ctaacaaata taccttatca 1140

aataatttcc aaatcattaa taaa 1164

<210> 2983
<211> 1056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_50734_G1, chr1:294821796..294822851, Cluster 17

<400> 2983
tattagaaca ctagggtgag cgtcatatag ccagcaccgg tgggatggac cacctaacca 60

acatggccta taggtggcgc cgactccata gagttgaaag gacctagata gctagatgga 120

gtgaccgatc aataaaaata ttacataaac catacaatat caggtagagc caacatatat 180

gaacatgggg aaacaattac tttctatagt tttgttctag gttatttctt ttgtcaaact 240

tggagtttgt gaaagatatg tatgaggaag acaaggtact caataataaa gggaaataat 300

attaacacta gctacagaat gagtagatga agtaatatga accaacaagt aaatgtaatt 360

gcaatatagt ttaaagtgca aaccacgtgg gcaagagatg aaacaataat tatctgtaag 420

gtttagattc ttactagcat cctacgtccc cgttgtggcg agtctaaact aggtgattca 480

cgcactatct gacataacaa acagaacaca taaagggcac tacaagaatc aagctaggga 540

tacactccta caagccatta ttccactata gttgatattt gtgaatctcc cacaaggaat 600

gagcacaaga gtccctcgca agaatgatca agtcgacaac aaacaacaaa gtcgctcaac 660

gatatcatgc ttccttcaag ctatctaggt gacaacaacc accaagatta acaagaatat 720

tgtagttcaa tatgatcact agtgccacta gatataacaa ctcaatgcaa attattagag 780

atcactctca aagtcacttt ggatgaaaca ctatcactag tggtgagtgc gagatgtttt 840

cttaggctta ctaggttgta tttcaagttg ggaaaccaga atatccaccc ccaaacctaa 900

ccaagctcta tttataagga atatatattg tgcacaagac caccgttgtg cacatatgca 960

caaactcaat ctaaaccctt cgtttaatga tctttagttg acgtgaaaac atcttctgca 1020

ctctcctccc ctaacctagc tacatatgtg caaaaa 1056

<210> 2984
<211> 1262
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51075_G1, chr1:296881316..296882577, Cluster 17

<400> 2984
ttcgaaaatt ttacacgata tattaaacag cgtagggccg gaccacattt tctctcacca 60

cttttcacgt cttctctccc ttggcaattt taacatatga gttaacggac aaaacacatt 120

aacctcatga ctcccgccga gcacagacgc aactgcacca gcctgaatct tcagatggac 180

gacaaaatga taaaaaaaaa cttggcttcg cccgggttcg aaccggagac cttcagtgtg 240

ttagactgac gtgataacca actacaccac gaaaccatgt ttgtgttttt gttgtacctt 300

gtactgtaat atactatata gcacttcatg ctgtgtgatt acataacaga aggtgatcgc 360

agtctataaa ttaaagactg caagcctatc actatcaggc cgattccatg cattatttca 420

gatgctgcgt tgtaagtgta caaatccgtg ggggcgtaca gattgaggag agaaaaatgt 480

aggcaggcac acactgtaaa ctagctagag tgcacttcag atcattttag cagcgtatac 540

attgggaacc ctcacctgct gcttgaaaag accagcacac agtgcacacc cggatgcctg 600

aaaagttttc tagttagttt cctcgtcacg tgtaagcatg aatccatcct tcattctcaa 660

cctaaaacat ctctatctga ctattcttgg atgaagggtg ttttctatcg cgactaatga 720

agagttcctt tcagaacaga agtactgtta aaaaaaatat cggaacagtt gtgtgtgtga 780

ctgtcaaacc ctctgagcgg tacctcatcg gacccaaata gtttcggagg tgtgtcggat 840

tggtctgacg acatgtggcg atctatacaa caataatgtt ttacctaggg ttttagctat 900

agggtcataa gaccctatga atagtcgcct catcggacca aggtggatgg gtctaacgag 960

tgttgtgtgc agtgaccaga aagggtccag tggacgtcag atcatacgtc caagccaatg 1020

tgttgctccc caccccacg tatgggagac ctttaatctc ctctaacatt ttaattactt 1080

catttcttta tgataataac ctttttaag taccgtaact tgagagcaaa aatgtgtagc 1140

taacatttat tcataaagaa atgaagtaat aacctttatg atttatttaa acttcaaaag 1200

ctattgaaaa aatgtcaata attgaatcat agtatatgga gagaaactgt atagggtgaa 1260

tt 1262

<210> 2985
<211> 1141
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51380_G1, chr1:298975361..298976501, Cluster 17

<400> 2985
tttaaggcta tagcaacaga aagaacggta aagaaggaca atgttgatat gggaagagac 60

agtaaaatgt gttttaaaat gattgaatat acctaaagat ttagtattaa atatgagtgt 120

attgaaaaga gttattcatg tgcttgaatc ttaaattgtg gtttctattg ggcttcaact 180

tttaatacgc actaagttac gtaggactaa aagattctgt tgtctgctga tagaaatatg 240

gaatagtaac caaggttacg tcttaatgca catggaaacg ttggacccat cgaatcacgt 300

tggattattg tcctaaagcc aaactaaagt gagaggcaga tgatgcagcg agcatgcatg 360

cggcgtgaac tccacgttgt cttgatggac gtgtggtcaa ttattggcct aagccaagct 420

tagtgaggaa attatggcct cactacttgg gaagccgcct aatccatcac tagtgcatgc 480

gtacaaataa tggaaagttg catttgcgat ggcaaaaagc tagttatgca gcgcacaggc 540

ggcatcgaat aacaagttga gtactctcac gcgtccactt atcccagggc gtcttcaatg 600

gcatatgctt atagatgtgt gatgacatgc atgtccattt ttctttagat tgtttttgtt 660

tcatgccatt gtctttagag catatacaac ctcatttaat attagggtct ctagtgttgt 720

taattgaaaa aatatcagag acggtctatt cgtgaaaaga ccatatctac acgacttacc 780

atatatattg tcttttaact atatttatga ttcaaaagct cagagttgta ttagttgtat 840

tatgtaagtc gtttaactat ttcttttact tgtacttgaa aatcgggagt gaacgagtgg 900

ggaccagaaa taataatgtt ggcatgtttg tttgcacttt ctactaagct tttggacgtt 960

tcaagaaacc actaatcttt tgggacttcg gcctatgaaa gttgctttat gtgttttgga 1020

agtataaaag cactagtcta aagatgagca aaatctcaaa taagtcaact tctatagttc 1080

ataattcaat ctatcttgaa ttcaatcaaa gaagagtacc aatataaata taaatatata 1140

t 1141

<210> 2986
<211> 1168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51472_G1, chr1:299450614..299451781, Cluster 17

<400> 2986
tatcgatctc agttttgcat taacttggtg agagagtata ccatatgtgt acatctaaat 60

gatatcaccc tcatcaagct accaattttg accctcataa tatgacgtta gaaatagata 120

tctaaatact acgtcacgtg cctctaagaa ctattttgta cttggtccct gcagtgctcc 180

taatctttgt gactattctt gtgtccatac ttgaattgaa ctatggagcc aagatcattc 240

atatgtttgc actatgacta attcgatgtt atatgattcg tgcaagacaa atgttaatca 300

catagcacat atgcccatca aatgccaaaa cccaaatcta aaactagggc ctatacatgt 360

tcaataggcc atatttccca tagcctatcc tctcatcaat ggattcacac acaaatctgt 420

attgcctcgg accttgccac ttgccagggt tagtgagtag cgagtcagtg gagatatgcc 480

accgtagaaa gaggggatgg gtgagccatt cgaggacttc atataaagta gtggtttcac 540

atagccaacc atttgccggt tcttttaact tccttgttta aaataattta tataactttt 600

cttgcttgcc acttgcatgt tcaccactta tgtgagaaac tttgtatttt cttctgttca 660

aaaatgaatt ttgcctgctt tgctaaatgc acaaagaaat cattttgtct cacctcttgg 720

tattagagat attatggata taggagacat caaagctagg ggatggcgtt tgtacctttc 780

ttgtttaata ataatttagc tagctttcat tgtatactgt ttgcttgttc actgtttata 840

ggggcgaatc caggatccaa tcaggcctcg ggccagcttt ttaaatatac tattctttca 900

atatattttg gtctaaatac aacaaataca aatagaaaca tatggactaa acctcgagcc 960

atgggtcagg tgacccgggg cttatattcg cccttgactg tttatgtaag aaacttttt 1020

tgttaataga tgtattttat gtaccttgct aaatgcacaa agaaaacact tgccttgcct 1080

cttggcaata tcatgacgtt ggagataggg agctttagag agagggaatg tgagagccat 1140

tggagggact ccatggccct ccttattt 1168

<210> 2987
<211> 1129
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52571_G1, chr2:4289206..4290334, Cluster 17

<400> 2987
ggattcatgt tcctatggat tttttcctgt ctcgtgcttt ggttcaatcc cgtagttcaa 60

ttccatagga aagtaaaaaa aagagtgctt tggttcaatc ctgtagttca attccatagg 120

aaagtaaaaa aagagctcag agctcatgga aaatttcctc gagcgaatgg ataaacagtg 180

ttgattcctt tcctatggtg ttaccaaagg gcttcccatc tagattcccg tgtttccagt 240

ttccaaagga tttaaggaat ctaacacctc aattactatg tttccctatt tctatgtttt 300

ttaccatgtg ttccaaatgg gccctaagtc tcgtggcagg tcaggaattt acgtttctcc 360

tgtgcggtga gattcaaatg caactcaacc aaaaggtgaa agattattga gttgttgtgt 420

tctctcattt gtgctatgag agttagatat aatagcagat tcataggaag attaaaagat 480

ggagtaatca ctataacata aacccattac tttgtatgtt atagatccat tacactctat 540

caatctagcc attaactcct ccattaatcg acccaagtgg cataatcaca gacaatgtca 600

tggtgcgcca agacaacctc gatgactttg gcaacctagg atgcctccaa catcccaact 660

tgtgtgagtt ctgcagtaca actcttagct atttctctgg gttacttgca ttcagagttt 720

aaataccact tttggatcta ataagacgat aacataatga actctcttta tttcactaca 780

tgtttgtgta tggtcttgtg agtccgtttt gaaataattg ctgatgctac ccactttaat 840

tgcttgtggc catggtattt catctccttc cctccaaggg agtttaaatg caaactattg 900

catgcatgct agagaaagca atatatgagt atgtttggat ccattaatat ctaatagtta 960

actcattagt agcttatgat cataattaac tggttgatta tagatgttgt ttggatctac 1020

caagttatgg gaatgttaaa attgtctata gtgtttgtac attcatttta tctagatata 1080

tgtgcacgga aggagaggag gaatgtttac gaacgtaaat aggtttaat 1129

<210> 2988
<211> 1219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52707_G1, chr2:5076042..5077260, Cluster 17

<400> 2988
aaaaactgag catgtgacgt tcacggctgc gctttacact atacggcgtt gagcagcgga 60

gaccatacct gtggggagcg ggcgggcggt agggcggccg acgggtcgtc gtagccgagg 120

agaagaggac aaatttcgat atttaaccct cattttgtat gcctttctac gtttagcatc 180

tagctagcac atttttgaaa gcttaactct agtcacggta attgttttga tttaagggat 240

tccattctat tcgtttttat ctttccaaag tttcttctca ctctacccat gccttgaaaa 300

aaacactaga atgcccctcc accaaattgg aagagatcac aatttacatg cctagggtaa 360

aattcccaaa gtctacaaat tactgtaggt gttaagccta gggtcaattt tccaaggtct 420

gcaaattaga tgtgggaaaa atataaacaa aaagttaaat atcgaaattt cgcgacaaaa 480

aacaaggtgg ttttttttta cccctcgtcc gtctgtcatg ctcatgctag gctgctccgg 540

ccagcatcaa ggattcgaga tcccctcgct ccaccccggt ggggtcatcg acgctagaca 600

ccactgctta atgctgggaa gagggaggaa aaggtgagaa ggagacatgc cctctttcca 660

tctcctagta gtggtgtgct gcctttgagt caccttcgct tatcagctga accgatcgag 720

gaatcaaaat cctaagatat agtacatagc gaagagtacc ataaaaaatg gggcatatgc 780

ttttttagag acaaaaaaaa ttagcaacta gtatgatcag ttaagaaaat gaatagtata 840

catgtttgta ttaccttgat tttttatgag atgaaaaaat gattgctgta tcccaaaata 900

attacacttc taagtttgag attataagat caatgctatc gagaagctac atacataact 960

atattaaaaa tataattatt gtacttgaaa agaaagaaag taaaaagaga gagagagata 1020

aaagacaatt aaagttaggt tgtcttcata tatagatgtg tatttgtttt gttacaaatt 1080

ttaaactctt caaagtgcac ttattgtggc acaaagtgag tataagtact gaagtttata 1140

taggattttg tattatcttg aacttattat aagactaata aatgacggta cccattcagg 1200

gatgcttcta gacaactag 1219

<210> 2989
<211> 1279
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54407_G1, chr2:14114529..14115807, Cluster 17

<400> 2989
tttaaaacac atatactatg tcctagggcc ttaaagccat caaagccaaa ttcatgtagg 60

ctctcctcac aacaagatgg ttacaaccac ccattagcta tatttctaca ctaagggcaa 120

taagagaatg ttgatcatat gaattcattt gcattcgtat gtatagctaa aatacaatac 180

tttagcactt gaaatagaaa gttgttaata agaaaaataa tttggcaaca cactgtaata 240

taacgaccca caccaataat caaaataaga agatgaggga taaccaaaca tactaggaga 300

tgaactccat gacatggggt taggtggaga atatggatga tgacatgacc aataatctta 360

atgatttagt ccaaacatct aacttggcaa ctatttcttg aatctccttt tctcctttcc 420

cacaccaaat ccttttcttt tagtttgtct aaactatgct tctacaactt gttttctttc 480

cactttggca aaccaagtga gcatcttgat tttatttcta ttttggatag cgacatgttt 540

tctttatttt gggtactctc atctttttc tatttagata tgcagctaga ataccaatag 600

ataatttccc tacttctttg ccatcaatag ctagaacttt caataatgta attagctttt 660

caatagttgc attcatatct gaatttttat ccttgttacc atctttttct cacacgataa 720

aattgcttta ccactttctt cttagattga gatctagtat gattattatc gaactgatct 780

ttacaatatg gtgatttctc taaatatcta ggaggtgcat gctctatgta atatatctta 840

aagtatggta gaatatatgc ctcttgatca aactagcacc aagataagca tgaatgaaaa 900

cctattggtt gtggtccata taagaattag ctgctgaaaa gaagaatgtg ttgctactat 960

gtgagatttg ttcctttgcc aattccactc ttgagacttg tgttttggaa acaatcttga 1020

tgattggacc tgtgagcacc aagtgaaggt catacatcta gatgttgtca agatgcattc 1080

aaggatcctt atatatgagg ttactatggg gcctaactac taggaccatc gcttctgagg 1140

ccctaatacc gtgaggacct gccctagctc cagaatcatg cctctaatac tattgtgaga 1200

cttataagat catatctcgt aacacaaatt ggtagacaca gtagaacaaa gagattatac 1260

tttcgaggct ctgagagga 1279

<210> 2990
<211> 1408
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60380_G1, chr2:48407050..48408457, Cluster 17

<400> 2990
catataggga gcgagctgcc gtgggaagcg gttcgggaat cttgaaggtg atcggacggc 60

cgagctcagt cgaagatgga cgagggtgtt ttggtaattt gagtgttgtc acggcgttag 120

tgccttccag acggttcggc agttgatccc agcgggtggg ccgggcactt tctttcctct 180

cggcctgcgg gtttgaccaa actgcccctc cagtgccttt ccaagtccgc gtcagtgtgt 240

ccggtgctgt ctgcttcgtg atttttgttt ttttttcct tcttaggagg aacgtgtggt 300

tcctctccac acggaggcta ctaggctagc aactagcata tagtgcggca caaggaattc 360

atttaggatt acgtttgtaa ttaacttaat cgattttgct catatgtatg tgtgcttctg 420

cgcctgtaac tctgtctgaa taaaaggttt gaagaacaat gaattttaag aaatgtgctc 480

agtgctacac tctttattat gagatgtttt gatattttta gatatatttc tctaactgta 540

tatcgagata tgatgtatat ctaagtatat aaaaaatctg tgtctaaaaa gataaaaact 600

attttataat ttagaatgga tagaggacta atataacttg aaaaaaacag tgccaagcaa 660

accaaaagtt gatatacatg caggcgacaa gtactccctc aaccttaaaa aagagtacaa 720

ttctatatct atatacataa tagctataca tataatgtac atatataata ttaaagcgta 780

atttatcatt catctattct ggctcttcgc tactaattat atgaaacaaa aactatcttt 840

attcgagcgt ctacgatcca gagcggccag caaggctcat cgcgaagtgc attaaaacgg 900

attttattt atatcacggg aaacactacg tttttcatgg cagtggccga acaaaaaaat 960

agattaaagg aagagctact aaaacaaagc acgtttagcg aaggaggcag tggacacagc 1020

acctgtcttg ggacagtggg ctgagagcag ggacggggtg gtaaatttag aggtcttgta 1080

ctaaaattca aaagaggtct tattttatag aaaaatataa tcaaaattat ataatttatg 1140

tattctgaat tgtaaaaggt ttactagata acacttataa ctctttatat taaatctatc 1200

tgtttttaag aaattatatt gtaatagaat acataaataa acaaatgtat tgataaatgt 1260

gtttgaagag caacaatcta gttgttaatt gagttcagct tagatgatat aatgttagtc 1320

tgttcactga taaatattgt ttaggcttac tgttgagcta agaagttttt taggcccctc 1380

agaattttgg gccatgtgca atcgcact 1408

<210> 2991
<211> 1171
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62343_G1, chr2:58736991..58738161, Cluster 17

<400> 2991
gttgctgagc tgggcccaca aaactgctgc cttcatatcc aacttcccta ggtaccccta 60

gtacatatcc ttcacagctc aaaactggct catggtctaa ataattcact agaaagccat 120

gtaaaccttg gaaaaactat ttcggaagat gaatgaatat tgacccgaca ttcactagat 180

gtgtcaggtg ttgtgtccga tgattgcaat aaacatctga cacaattaat gtctacttta 240

tagctattat cgatataaat gtttgaagtg gcactagatg cgtctagtgc aaggatcgat 300

tgtgcactag acatgatcgg tgcccctaat ttctatgtgt caagggctat cagttagatt 360

ctcttgttgg tttataaata gacccctttg ttggccttag ctggcatctc tagactccat 420

aaaatttaga acacctcttg aggctagaga aacacactcc acccacttgc atatagtttt 480

tacatattgt ggtactagtt gagtggattg ggatgattaa actcttatta ctattggtga 540

ttgttatcat ctagaggtcc taaagttcgt gggattgttg agcaaccatt aaagattatt 600

gccaactatg atcatcactg tgatgtgttc ttgtgcttgt tctttgtaga agattcacaa 660

tgagcaacta taatggaatt gtggcatgtt agagtgtttt actagagtga tccttatgat 720

gtttttattg tgggattgat gtgtgatgcc aattagcgtg taaatcaact aacttaggct 780

cgtcacaata aagacgtagg ttgcccgcaa gcaaccggac ctcgagaata tattttatgt 840

catcttttgc cctgtatgat ttgcacttca tacatattct agaaagtaca tttgtatttt 900

atttgtctat ttagactttg tgtagattct aattgatctt tatctctggc tagcaagtag 960

cttgttttat ttaatacaat cttttatcaa gttatttgat tgattagaag ctagcataaa 1020

gttatttaga actggagcaa atatacactt ctacatccat taacttagct ctagtaataa 1080

tattgagttt tgtagaataa tttatagata ttcaacctca tcctatcatc taggttttaa 1140

cactggtgca caccgtttag gccatcttga g 1171

<210> 2992
<211> 1000
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62420_G1, chr2:59049990..59050989, Cluster 17

<220>
<221> modified_base
<222> (610)..(610)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (610)..(709)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (611)..(611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (612)..(612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (613)..(613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (614)..(614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (615)..(615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (616)..(616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (617)..(617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (618)..(618)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (619)..(619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (620)..(620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (621)..(621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (622)..(622)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (623)..(623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (624)..(624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (625)..(625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (626)..(626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (627)..(627)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (628)..(628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (629)..(629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (630)..(630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (631)..(631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (632)..(632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (633)..(633)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (634)..(634)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (635)..(635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (636)..(636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (637)..(637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (638)..(638)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (639)..(639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (640)..(640)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (641)..(641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (642)..(642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (643)..(643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (644)..(644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (646)..(646)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (650)..(650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (653)..(653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (660)..(660)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (661)..(661)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (662)..(662)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (663)..(663)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (664)..(664)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (665)..(665)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (666)..(666)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (667)..(667)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (668)..(668)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (669)..(669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (670)..(670)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (675)..(675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (676)..(676)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (677)..(677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (678)..(678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (679)..(679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (680)..(680)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (681)..(681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (682)..(682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (683)..(683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (684)..(684)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (685)..(685)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (686)..(686)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (689)..(689)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (690)..(690)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (691)..(691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (692)..(692)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (693)..(693)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (694)..(694)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (695)..(695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (696)..(696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (697)..(697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (698)..(698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (699)..(699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (700)..(700)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (701)..(701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (702)..(702)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (703)..(703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (704)..(704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (705)..(705)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (706)..(706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (707)..(707)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (708)..(708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (709)..(709)
<223> a, c, g, or t

<400> 2992
tctggctcta gagaaacgct catttcttgc gtacttgaga gctagaccta gagataatct 60

ttgcatttgc tgagctagac tacataggct ggtcaagcaa ccaaacacgt gaatgttgta 120

tcccatgatt cgggtcactc catttgcagg caacaagcac acctgtcatg actcatgaaa 180

tgagcttaga cggtgtaaaa agtaagattt ggtgaatgag aatcatgttt gttactacta 240

cataagctca ttttttatga tgaaatcaaa gtctattatt taccttgcat gaagaaccat 300

gcgtccatgc gtgcaaacta cctagccctt ttcataagaa cattgatttc catctcaaca 360

aagaaagaac tcaaaataaa tgaaagcatt gcttgttgtc ctattactct ttttgtcagc 420

cttgtggagc tttggaaagg agagaatttg aatagagtaa ttctcagaaa ctcttattgg 480

atgagagaga gagtcaatat agacactaac atgcttgcta attgtttatt tatataggtt 540

caaatgatgc aatataaact tgttaactta ttcctatgat tagccgatcc acatataatt 600

attgtgctan nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 660

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnna catagacact 720

aacatgctgg ctaggtgttt attatatagt tcaaaagatg caaatataaa ctggacaatt 780

tattgaaagt gatttaggac gatcaacata caagttaagg gctttccaag gaatttttga 840

agatttgtca aggttgtaca aaagtccaaa acacaagaca agataagctt aagcaaaaaa 900

actcgaagaa atattttaaa acactccaaa attcaatatg gtatacggtg gtgtaccgaa 960

tggcacacca gatacaactt gcagagaagg ctaaaacttg 1000

<210> 2993
<211> 1403
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6456_G1, chr1:33260025..33261427, Cluster 17

<400> 2993
ctactcagtc ttatcctacg ttgcctcatg caggagcaca ccaccagctg ggtcatgtgg 60

tgccactcta acagacctaa cttcatccca tgattctttt agagtatgca atgtcctaga 120

gacatcacaa caaatgtcta gctagtcact ccttttggaa tgaacgatct gacgcaaatc 180

actgtcacaa cttcatttta gtagcttgac aaggcaacct ccaagaatgg aggttcatct 240

caatagttgt catctcggcg agctcgtcga tgcctcgatt caaatagtgt ctctattttt 300

ttacatatca gtattagatt tgttctaagt taaacattta ttttttaaaa aagctatatt 360

tatttagatt tacaattaga aatattttca taatatatta ttcatatgtt gtggaagtat 420

aagaattatt tagataaatg gctaatgata gtaatattca actttgaaca aagttaacat 480

gccatgttaa aaagaacatg agtactctct gtattaaaaa aatataactc tgagtaaatt 540

ttttttaac tttcatcatc tctatagaaa aagattacac gttaaacaag tatcactata 600

ttgatcataa aatatttttt atagtaattt ttgttaaagg tgtcaacatt tatatttttt 660

gactataaaa ttggtcaaac ttccgaaagt tttaaaagtc tcaaaccttt gtttttacgg 720

agagtaagag aaaagggtcg ggcactcatt gcaatgctga aaattacaac caagcccact 780

cagtaaactg gtcaggccag attatgtcag gtttttgtgg atagagcaga tcagacagcc 840

acagcctacg gggagacgaa cgcctttcat gtttcagccc gttcatcctc cataaagatg 900

gttcaacggt attcttctcg gcccaagcag ccaactcgct cggggctcca atcgccgcgg 960

acgcacggct ggccgctgcg ccggcaacgg acgtccaccg acgcccgatt ttccgtcctc 1020

tccacacgaa gccgctgcgc gcctgtggtc cgtcgaccac agccaccagc aacggcctgc 1080

cggcggtgcc tcccttagca ttgcggcata cgctccacgc gcatgatccg ccaacaactg 1140

ccacagaccg agccggtaaa atttgatgcc ctcatataaa tattaaaatt aggcctattc 1200

tagtgaaaaa taaaattttg ttaatatata tttgatattt tgtagcaata gcgtataata 1260

caacatgata ataagtaaac ataccttgaa acgaactctt caattatatc tccatattga 1320

atcttctcca aaagtatact cttcaactaa atgaactctt caattatatc tctatattgt 1380

aagggagata aaatatagat aat 1403

<210> 2994
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_64718_G1, chr2:73282461..73283461, Cluster 17

<400> 2994
ccaaagagct attaaataga attgttcttt cctatagtac cctaataaat aggtttagat 60

ttcataaaaa acacaagagg atctttgcct agttggttgc aatgctggtt gcaagcatca 120

aattgcgagc tcgtaggatt gaatctcacg aaacctttct tgtgatcgaa aaacaaagca 180

tttgagagta attagccatg tgtgggatca tctagatcag tggtatacta gtccaaaatg 240

agctctaaat gcttaaaaca tcaagtattt gcaagcatag tgaaaaaccc ttaaacatca 300

agtatttgaa gactggaggg agtatgaagc gacataagtt gcctttggct tcaaaaaggt 360

tatagttact aaagaggcta ttacgaaaac cacagccgcc tatcaaatcg aaggttggga 420

tttcatatgt gccgaaggta aattcaacac tggatcttta taagacaaag agccttgttt 480

taaaaaaatg ctttaaaatg tttctttttt cacaggaaaa agaagacata tggggaggag 540

gtggtggaaa tgtccatcca tgacgaagtc ccactagcta gcatgggacc taagctgaat 600

ccatttactg aaaaaatatc gaaagggcaa aaggatggct tccgttttta gtgtgatctt 660

tggtgctaca tctgctgaag atacatctgt gattaagcac aaagctgatt ctctaaagaa 720

ggagacaacc gaaggtgtgc tggctgtggt gttaccaaag caggccaaaa cccacgatat 780

tacccccaaa gagaaaatta ttcctgaaaa tgtcgacagt gagaaaaata aaaaagtttt 840

gaagatggta gagaaggaaa aggagtactt tcaaaaggaa acacatatgc gagaaggcga 900

gcaagtgacc aggccacctg aatatgttat tcgccacgtc gctggtaagg agctcataga 960

agaacagatt accaaattgc aaagttttgt caaaatgcta a 1001

<210> 2995
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_77444_G1, chr2:155972136..155973181, Cluster 17

<400> 2995
attgccgagt aagcacaagt ggttagggtt ggggctaacc cgcaccttgg taagcatgag 60

cgctattccc aacaattttc aaattaccca atatttcaat agtggctaca ctttaaactt 120

gagatgtgga cacaatagaa tagtgtttca tgaatttaag tagggcccct catgtttgaa 180

aaaagaggtg ttttggatta tttttttgg cttcttgttt tgtttttaa ataattgggg 240

taattcatcc gagaagttct caagatttcc tctctatcac ttagtggatt aagccgctca 300

tgcaattttg gtttcttttt cctcacatct atcctattta ggcctttatg gagctttaga 360

tagagataaa tatgaaacac ttcttatcgt gtctatattt tcaaagcaaa ccaagtgcca 420

aaaagagaag ttttttata caagtagcat ggccaagtgc ttgtgtatag tatgaatgcc 480

cccaaggtga cttttgccaa cctcttttta ttttggatga catatagttc tttttttct 540

ccctctttct tttttctttt ttagaataaa ctcacatgcc atcatttatt ttgtacatac 600

taggtacgtg ctcgtgcgtt gtcacgaaag ttaaaaatta gtataaaaca cagatacaga 660

acaacaaaca tcactctgat atgcaaaatc cgtgtggaaa aatatcaccc taacattatg 720

ttgcatagaa tgtgaccaag taaaagcaaa atgtaagact tcaaacacaa cccgatcgcg 780

taaggtcgtc aataataaat aaataaaaca ttgactgaag atttctgcca cctgtacttt 840

aagagttgcg ttaaactaaa ccacatttaa tccaacgagt tgcaaaagaa attacagttc 900

ttcagatcat catctggcga atgaagtttg cagagcaaac attaactttt tttgttcata 960

ccaataaatg cattgcttac aaaattcctg ctgccgctgg agctacacct ttgtacaatg 1020

acatcagagt cactgagacg ccgcgc 1046

<210> 2996
<211> 1294
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8193_G1, chr1:42865330..42866623, Cluster 17

<400> 2996
ctagacccta ggcgctaggg gtttgacctt tcatcttata tgagattgag aaccttaagg 60

atcctagacg actaagtgcc tcagtgctca aagagcctta gacacataat tctttcatga 120

aaccccaagc catgaggccc tggggatcta gaccattctt atgaatgggc ttcacggtag 180

gagccccgga taaaagttag ttggagacat tctgggggca ccaaggacct cgggtcttaa 240

accattattg cgaaggggtc acgtaagtgc cgaagtgcct agacttagga atgctctagg 300

gcctcaggcc ctttattggt tcttaatgag acctggtgtt gatgtcttat tcctttggag 360

tgctttgtga tcaaattgct tagagggtta agaccctacc ccagatggag ctaggatagg 420

tcttagcaca tgcccccaaa gcggtggtct tagtaactga acccttgata atctattata 480

ataggatttt tgaatacgtc ttaccaacgt ccggggatag gaccttcttt agtatggttc 540

tttgattcac catgaaaaaa gacacatgct agagcgattt gtgatgcaga tgactgaaaa 600

tgtgtctttg attcatcgac ctgtgaaata ctttatttgt gagatgagta gagccttgcc 660

tcttgccctc ttagagacca gattatagtg cttgaatgaa atgctactcc tcctgaaact 720

tgaattggag atgcttggtg atgttcagtc aaaggacgag tgtttttgac gtgtattctt 780

tttatttctt tataaaaaac tttcttaaat aataagtttc tcattctaaa atgttatgac 840

attactttga ccacgctgta tgccatatta tccattggca ttgcaggaac gcacaaggac 900

gtgtggatac ttagcaagca cgtttcgtct gaattgacct ctttgaagtc ttgaagagga 960

tgtacgtccg taattcctaa caagtccttg tcagttgtca cctactatcg caaggagcgc 1020

ccgtcacttt cagaagaaac caagagtttt gccgtcacgg ttttctaaaa gttttagaaa 1080

agtttgtaac ttcatgaagt ttaaaagttt gccgtcacgg ttttctgaat ctccttcttg 1140

tcttctaaaa gtttgcaact tcaactttac atttttttaa actcctaatg gcccgtttca 1200

tcaagttcac taaattttat gaagataaag taatcctaaa cagggttagc ttgcctactt 1260

tttcaagaag ccaagattaa cagaagctga gatt 1294

<210> 2997
<211> 1318
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82425_G1, chr2:184116683..184118000, Cluster 17

<400> 2997
tgtgctcact tgtatatttt tacattcatt agttatattg tcatgttgta tctctcattt 60

tatacaaata tttaacttac aatgtgtagg ttcagattca cgtgctaatg ttgatgaagt 120

tattagaggc gggaaaggac caaagcgtct ctaattagat acttttatat ttttttatca 180

agtttattgt atttttagat gctgaattga agtaaatact atcttagtct atgtttgtgg 240

tatattttgt tttagcatta ttttttttggc cgcacaatat attagggcgg tttaaagtaa 300

ccttcaagtt ttatagagtg cgccggggcg ttaattttat agagctccgc cactgagcac 360

aactactcga gagtgcaaga gtacactgga ttgataagat aataactatt atgcagtggt 420

ttagaaattt agctattttt atacttattt taatctaaaa aactataaca aatttgcggc 480

aataaatgtg tgcaagttta aaatattaat accaacagta gatacatgtt cactagtcga 540

tgtattgagt tatttgtagt cgtggatcac actttataca aaaagatatt cgtagtatag 600

tgccgtgtac gtccaccaat aaaaagatga agtatatcag tggtgagcgg tcaagttaga 660

cgctcctaaa aacgtgatca tttagcatac ccaaacaggt gtcgcagtca cgagcttcgt 720

tctagaggtc tatccttcca atcctacatg tgcgtagagg atctgaacta ttggagcaac 780

tcaatacagg agaaacacac tggtcaaaaa tgaacctgga taaggagtaa atcatcggag 840

gagttgtagg aagaaataga aactcccaca tgattactcc gtgaaaccaa ccacacactc 900

aattaacata atatctccac taatcggtca tgaattagcc taaatggtaa aatcaagccc 960

aacctgcgcc acatcatatc gttgagcgac ttataggatt taggtggata tagggaggat 1020

aaatagccta taaaaagttt tacaaactta aaaatattgg tagagcaaag ttgattagta 1080

ttaaaagtga agcggaagta tatacatgct ctagctctag ttgttttatg caagtcacat 1140

aaacaatact agtagcttga tctttagtac ataatgaatg cagcaagcta tttactagcc 1200

agagatatca gacaataata attgctaagt gtaatctaca aaatgctagt tgagcaagaa 1260

ttgtacaata agtagtatat ataaatgtga gagtgaggag tgtaaaccac atggggta 1318

<210> 2998
<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87177_G1, chr2:211472836..211473926, Cluster 17

<400> 2998
ttctagcgtc gaaccactgt aagcatgtgt atatttgtct tacttcaatc actagcacta 60

gtttgtaaac tgctagtgga ttatagatat gtgaaatata ttgttgtttt tttattattg 120

acggaatcaa tttgtttacc actaaattgc tattatttcc aacatagaaa atgttgtaac 180

gagagtttca agtacaaaag gtgcaacgtt tgacactctt catgtgcagc ataacgaagt 240

ccctaccggc cggctaccgt accagatgag catgtacatg caccagagta cacatcagag 300

atgtctcatg gacgtactat ttagaatttt aatgtattta ttactttgat ttgacaaatg 360

actctcggtt tgctcctagt tcgtccaaca ataattcacg gttctctgtg tttcgcagcg 420

gcaagtatga gcttcacatt tttccttttt aagtatcata tgaaaacctt tttttacagt 480

ataatttttt ttcgaagttc cacaactttc ttaattacct cactcacaac taagaaattt 540

tatatccgtt tggatataga tattggagtg tggaattgag aattggaatt agttttctaa 600

aattctgttt tttggttgca catgaaatta agatttaaaa tcgaagacca aattctctaa 660

aattagacta taactagaaa cactatctcc gaatacagag cattcacttc tctgtattgt 720

atggaattag accgtacaat tacaaaatct aattcagtaa catccaaaca gtagaactga 780

aattacatct tatttcaata tcatgataga tttggtattg aacccaattc aattatccaa 840

acggagcatt acttattttt tggacgagat ttactcgact tttaagaaag caagtcacag 900

agtttaacaa ccataatcct acgcaacagt ggggttacca gtttacaaga ggaaaacaaa 960

acatcctgac tgtcagcaat aactggctcg accaacagag caaaatatca cccagatttt 1020

gaaatacagc catattgatc cgacactgca tcatcacgcc tcggcttgaa tttctgcagc 1080

cacatcttcg t 1091

<210> 2999
<211> 1086
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8776_G1, chr1:46238201..46239286, Cluster 17

<400> 2999
atgctccatt ccgcagtaac cgaacggccc cttaatatgt tccaaatcac taattatatg 60

gatttcttaa tatgtttcaa accactaatt atatggattc tgtgttatgt tttcatctac 120

cattacaact atcggactac ctccaacagg agggggggagg ggggaggggg gagggttatt 180

tttacaaaat tagttggtta gtttgttttt atgtcatgaa gcgatatgaa aaatgaagta 240

gtctctattt ttttaaaaat gaactggtat atttctaatt aaaaaaagaa aaccttgaac 300

catatgcatg aacgatgaca gacacaaaag gaggttctgg cgttctcttt ccagccatga 360

gcccaccatg attgtgcgtg cagcatacag gacaacattt tggaaggcta cactttcgta 420

taaatgaagg tgatgccctc gtcgtaaaca taagagtaaa atagtgtaag caggctaaat 480

gttttgccac atcaaatttt tgcgaaacaa gagaatgata agataaagag aagtatgatg 540

ttaattatca gtcgactaag agttgactgt agcacatatt ccaaaacaag caatgagagt 600

atatgtggac ccagtaataa ttattcgata ttcttgcagc caacaaaata gccaatctat 660

tttatgcagt gactatatag ttaactccgt cggctggcta aactattagc cttgctctaa 720

gataaaaact agattttggc gacattacta tttatttctc ggtactaagc ggctttatgc 780

tctatctatc tctaacgctg gacggtgcgc ggggaaagca atgtctccaa aatgactatg 840

ctagagcgat ctttattact ataagaaatg atgatttttt ttcataacat ttgatataga 900

tttaggccga gggattgttt gtttggaagc aagaaaatta gaggagattg agaatgatgt 960

tacttgttag tcaaaattga aaattaagga gattttaacc ctcataattc tctgcaatcc 1020

ttttgctccc aaacatacca ttgtataaat atgatgggtt tttttgttgc tacgtgtagt 1080

ttatca 1086

<210> 3000
<211> 1206
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95324_G1, chr3:16984284..16985489, Cluster 17

<400> 3000
tgctttgaac ttctataaag acgtttttgc tgaagaacta agtcctggga ttaagctatt 60

tggaaggagc taggataagg tcagggagga ggaaaacctg atgcttgttg ctccttataa 120

tgaggtggag attagagatg ccatctttag ggtatatttg gcaactttat tttccaaaac 180

cacaatttat aatatcatgg tttaatatat gccatgacaa ctatgatatt tcaattcaac 240

acttgtttag agacataata ttttaggtgt agtgtagaat aagagaagac tgtagctgca 300

tgcaacctaa aaatactgtg atattaagaa aaccatggtt taaaatacat agtccttgta 360

tgggctttca aacgcctttg gtctaaaata acatggtata ttaaaataac acgatattac 420

cttggaacta agaaaatacc gtgttcccaa acagggccca aggaatcata aaagtcgatg 480

tgtgtgtgtg tgtgggggggg gggggggggg ggggtttgtc tctttgggta accattgggg 540

atccaactgt gatataagca gttagtcatg gggggaccgg gggggtgcgt gtatgcattc 600

ttagtttaac ggggaaagac aaagggacat gcttgaggct ggcagagggg gacccccctcg 660

cctctctttc atttgggatg tattaaagga tgatagagaa agcagctggc gctggttcag 720

ttaaatgtcc tgcactatct taattttcta gtgctcacat tcctcatgtg ggtgaaccct 780

cgaacaaatt ctttttttgg tttgaacaac ttcggggcat gagggcgtga gcttccataa 840

gagcgaatgc atgcctatga acctagaaga caattctata cttgagattt accatagctt 900

tcactgtcct ataggttctt ttcctattaa atatctggga gtttctttat atatcttttg 960

ttaaattgta tagagaagac atccaacctt taagcttttt aggagaatgg cagggtattg 1020

tctgtagctg ctacagctac gctcataaag acttgcttaa ctagcattcc tatttatatt 1080

ttatctttcc tgaaatttcc aaagtgggat attaagcttt tgactcagat ggccgattat 1140

ctttgcaacg agtctgaggg taaaaacaaa tatcatttag gtaatttgga aaatgtttct 1200

atgtac 1206

<210> 3001
<211> 1119
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95360_G1, chr3:17164338..17165456, Cluster 17

<400> 3001
tgtcacgcct ggttttaagg agacaactgg ttgcgaacca tatatgtgcc ctagatcagt 60

ttcacacaca cacaacaaca tcatcattgg aagaatcatc acacgatact taaagcatat 120

gataaattat cttagaccaa attcgtagca gaaatgagta gtcaccacga ataacattta 180

taattgtaaa actagtaacc ccacatgcat ctaactatgg ctcgcccgcc tagtactcat 240

cgcacacttg gaactctacc atgtactctc atattctcct actcaattgc aatggatata 300

acatagttgt cgtagaaata gcaaaggtga atacttgtca tactccacaa gtgatagtaa 360

agcaggtgct tcgcctttca agctagaata cacatcgtgc ggcaattagt ccaaatagca 420

ctctacaagc cataggaggg aagaccgagc cacatattag gttgaggcac aagcatactt 480

agtgtcgcct tgatacctgg gctttttgga gaccaattta tgaggcgtca gattcatttt 540

ttactaaaaa actacataaa aaagcttaat atttttacct ctaattcatt ttttatctta 600

taaggctaat tttttcccta gaaataaaag atacttttac tgaactacta caatttttgt 660

tgatttcatt aagcacgtta actaatcttt cttctaatta ctaactaaat taattatata 720

tttttctaa aacacttaga aaacaataat aaaacaatct ccatttttta cacatacctt 780

cttttagcta aactatctta tacatatatt ttttagaaat tttctgagaa ctttaaacct 840

aaacctataa aaagttctga gaaatattct gaaaatatac gtttatgtta gtttagctaa 900

gaggtctatg taaaaattgt agatcatttt attatcattt ataagacatt tttaaataaa 960

aatataaaat taatttagtt agtaattaga agaaagaaca cttaacttga ttactaaaat 1020

caacaaaaaa ttaatagttt aatacgaatg tttttagctc tagtaataat tttagactca 1080

gaagataaga aataaatcag gaacaaaaat attaagctc 1119

<210> 3002
<211> 1336
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95784_G1, chr3:19469228..19470563, Cluster 17

<400> 3002
tcgtcgatcg gcctactaca gacacacacc agcttttgta ttttttacag actaccatgc 60

acgcatacac gaccaaacat caaacatggg gtttaattca aataccataa taagcaaaaa 120

taagtaaaac aataaaataa aataatatat agctagttca aaaaaaaata taataccgca 180

taaatcaaac aaagtccatt agcttttaaa aaacaataaa aggacaaagt tcttatcgca 240

aatcgtgacc acggttccat tcgagaactg gtttctactg taccacatga tattcctgca 300

ctggctgcaa gatggaccca tgcggtgcaa tagaaaaccg gttcttcgat ggaggcgaaa 360

tgaagtttcg tggttggtgg tatactacac ttcaaattca tatctagaca aaaaaatgga 420

tctgtataaa ttaaacgtgg gcgaatatga ctgaaagaat ggaaggtgga tgctgtgggc 480

gacagaaggg aaggacccac tctatattta caaggtgcga gttctggatt tttttcttca 540

ttttttttag aatttttca aattccatcg ctgcaaattg aatgggtcgg ctgacacagg 600

tgcaaattaa cacagttaag tttaacggcc tatacacgca ccttagtaag aatttgtaaa 660

aatgtggatg agacaaggtg agggaccgct aatggaatcc gctaaagggt atagcgcaaa 720

ctgcaggtta gtttatttat ttatttttc ttccgctgga aatataatac ttggcttttg 780

ctgcaatttg gcgagcacat gccgttcgta gctatgaata tttgaccact gactggaccg 840

atggtcatgg ccgaacagaa ggaacgcgta cgtggacgcc gccatgctca gtcactcctc 900

gcatgcacgc tctcgaacaa tacaatgcaa gttgcaaaaa gaatggcgca cgcacccacc 960

agctggacga agaagagagg aaagaagaac gcaacaaacg cctgtgacga caagggaaaa 1020

aaaatcctgc cgttttcgtt cgtacgtatc gtcgtcccaa cttgctgatg agcaggcaag 1080

tggtgatgag ccagttgcac tgacgacact actgtggcaa atgctgcagc tagctagctg 1140

ttgcagacac ttgcgttgca ttggcttgca gttcatcagg cgcactgctt aattagctga 1200

tgagtagtgt catatgaaca atttgctaca cataaacaga gaacgtagca ggggtagcag 1260

ctgcatgtgc ttatatatat acacgcgcgt cgtagagcta tgcgtgttta tatacatgta 1320

tactcgcctg ctacct 1336

<210> 3003
<211> 1189
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98324_G1, chr3:33756614..33757802, Cluster 17

<400> 3003
tagtaaatta taaaggtccc aacgctggag gaacatgttc agccgcagcc cgaagaggag 60

ggccggcgag ccgacgctcc cgcagactgc agtggtcggc ctcctcttct ccacggcgtc 120

ctccctctgt ccccttctcc ggcaccagct agcccggcgt ccccacagca cagctgcaca 180

gggcggtgct ggagagcgga gcccacacgc ggcacgccac tgtctcccgc cggaaaaact 240

gaaccggttt attttgcttc aagtagggaa cgataggtta agctctagag cagagacacc 300

taaacattct gttcatcaat gattttataa aggtttaaaa caaatcggtc ccgtagctca 360

gtcggtcaga gcgttggtct tatgagccga aggtcgcggg ttcaaacccc gccgggacca 420

taatccaatt ataatttatt ttttgtctac tttttttatt aaatctattt tttgagacca 480

aaattaattt attatctact ttttgtctgc ctttttttgt ccactctaaa tttgatttat 540

ttctctgtct ttatttaaat ctatttttt ccagaccaaa attaatttat tatctacttt 600

ttgtctgcca ttttctgtcc actctaaatt tgatttattt ctccgtcttt attttatcaa 660

ccaattctaa atttaaaatt gttatgtggt ctttttttaa cgtaaattgt tatgtggtct 720

gtcctgtcta aatttgtttt gttgtctgtc tctttatttc cagtcacaag ctccgctacg 780

tccgctcaca agctaggcta aatttgttgt gtatgttttt tttcctgtcc actcacaagc 840

tgcgctaaat ttgttgtgca tgttattgtt attattttct ttggtctatc ttttttcgtc 900

tgtccactca caagcgagct gcgctgaatc tgttgtgcat ccttttttagc tgcgctaaat 960

ctgttgtgta tccttttttag cctatgagcc cacaagataa tctagccgag tcaaagctaa 1020

cacacccttt cttttgtctt tgtactcaag gtatagtagt caagctaaga ctcgtttttt 1080

ggggaaatac caatggtaga tgcaacctag ataagggatg aaaaatagat gtaaactggt 1140

aggaaatttc ttctcctttg ttttctatga aatttcaacc catgtgacc 1189

<210> 3004
<211> 1085
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_185454_G1, chr5:80270170..80271254, Cluster 18

<400> 3004
agatttctat gtttgttatc attcagtgac aagggtagga gttttcttat ggttggggga 60

atgataaaca tgttgacaca tgtgcacgga aaatcagctg ttgtaacaat tttagtcaca 120

aatggtaata ctatcaaagc acttcaccca tcagtacata catttatcta aaactactgc 180

gtgaaactat caatgtattt tttgcattct ttgcaaagtt tacaacacgg tatagcctgc 240

aaagaacagt ggatggtgat gttcctggac aagagacaac ccagcgaggt tgcacacagt 300

cctataatat tcttgaacaa acatttgcaa acaagatggt gatgttcctc ccaatactct 360

taatattcta ataagaagaa ttttttactc tatgacagtc ctaatggcac atacagtaca 420

tgttttaaca ccatacataa attagattta cagacgtggt catagcactg agcatacagc 480

gagtgactga ggttagaaag acactgaaaa tacaatgact cacatatata tcatgagctc 540

ctggtatgac atgatgagct agcaactgaa ggagcagtag gacagggaga gacgaacggc 600

tgtccggctc tagcagaaac aatggccgga cagtgaatag caattattca aacggttgtt 660

gctgctgctg catggtccat gtgtgctaga tggatgatgg tgaaatagca tcatctgttt 720

ggaatgaact atgtgatcga gatcactgaa taaaatggac tgacaaacgc ttagaaacct 780

aattgctgtc tttaaaataa gagagtaaag aggtgaccaa actttgtctc aaaaaagcca 840

ttatgtgtag aagtaaaaaa gggaatatat tgttgaaaaa ccactgctca tttattaatg 900

attagaagtc caatcacata cttgtccaac agtagatctt ttgtgcctga tccgcctcca 960

tgcactgttg ttcgcttatt ttaatccgta ccggcttcta ttaattctac agcgttttta 1020

tctgtataag gggtgtttgg gagtgaagtt ttttcacagt tttggaaaaa tactgcaata 1080

ttctc 1085

<210> 3005
<211> 1314
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10382_G1, chr1:55507977..55509290, Cluster 18

<400> 3005
gatatgcaag gtaacaatat gtaattacaa tgaactaaag aatctttgat gctgacacca 60

aaccatctgg taaagttact tgccaatcaa actgaagaat cttcaatgct gacatcaaat 120

tgaaaaatct tcaatcaacc tgaatttagt aaaaccaaat agatttttaa atatctccat 180

ctattcaaat cgataatgaa ctctgaagga ctctatagat gatattgatt cttctttagt 240

tagaacattt tgtttactaa aatatttatt ttcttttatc ttgacggttt ctaagaaata 300

tttgctctac attcatttct ttttgcaata ttaatgatac gaatttttt catctattat 360

tatatattat tcatattttt ttgtggtcct tgaattgagg ggccctaggc ggtcgcccct 420

ctggcctatg gctagagccg gccctgtacg tggcccagtt ccttaataca gtggttccaa 480

accatattga gttttgttga acatttattt ctggatgtat cagtttgaat tgtgttggtg 540

tgatgttcta aatgaaatgg cacctgcctt aaataattca ctttttttcca ccatggttga 600

aaccgaattt cattaccttc aaacagtgga attacacaag tctgagcata caatgctcag 660

aacgaaaaga ccaacttcag gggtgtttgg tctaactaaa cttcagttcc tgtcatatca 720

aatgtttaaa agataattaa ttttaaaata tagtttaata taagattaat tatatagatg 780

aagaataaaa gacaagaaca atttattaaa tctaactaac catatattta atactcacaa 840

ttaatattca aacgccctct tcactgggtc tagtctagtg atgacaatag aatgtcttta 900

tctatggatt tgttaacgac aaaaagtcat acctaacgga tttatgggta tgtctggatg 960

tgtatatcca aatctgtaaa cctatgtttt tttaaatatg atcgaagagt agcttacatc 1020

agtctacaat acttcaacta gattgattta tttagagtcg tatataaaaa ttggtggatc 1080

tagaggcgta tataagactg agttctcacc ccaaaatcca agagcacatg cgcgtacctg 1140

aacaatgaca aaggacgccg gcgtgagaat gatggctagg gcctagggtg cgcagttgtg 1200

gatgaccgct cctatgccct acgaccgtgt tttgatctac tggctgccct aggaatgtat 1260

tggatcaagt caaaacagac acattaaaaa tccctttaaa taatttgggc tgac 1314

<210> 3006
<211> 1149
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_107480_G1, chr3:93181714..93182862, Cluster 18

<400> 3006
agttgaaccg tttagccatc tcttttagca cttttatttc ctttacttag tttgtaaccc 60

tccttatttc tctttagcta ggagatttta agatgttttt gaaccacaac atctaaatct 120

acgaattttt gtggaagtgt ggtcgtaatc acactaagtc ctcgtgttgt ttcattttgt 180

atcaaatctg atgttatttc cttttggttt taatcttttc ctctcaaccc atctagttac 240

aattttgagt tgattctttg cgttcactta tttgggtaag tgttttggtg ttaatctctg 300

gtttctggat tcattgcaac ctcacgtatg agttgatcca aattgtgagc aagctttcta 360

atagatttgc tctttcgaca aaaccccaag tcaagttcga attttctgat ccgactttga 420

agtttacatc cttttgatct caaaatttct ggacatctta actctcttgt gaaggtgtat 480

gtaaaacttc agcttaatcg aagtccgttt ggatcgattt tgtattctaa aactaaaatt 540

caagatgcta aaatagtcta ggttagcagc actgttttgg gttgtttggg acatttcgat 600

gtatgttttg cgacatagtt gggttcattc tttttgcagg ttctcccgat aacttttcta 660

catctcttat gtgttatttg aattttggat gttagggtat aaaattgaga agaaagctag 720

aggtgtgtaa gagcaaagat ttttattagc ttccattcac ccccttatca gattcgatcc 780

ttcagttaat ctctgttacc agtgatttaa ttaagctact ataattaact tactaccagc 840

taagaccctc cttgttggtt tgctttggtt tggtttccat gtgcgaagca aatcttgttt 900

ctttttttta gaatataata taagtgaatt gcacacctcc tcctatcagt ttaaattttt 960

ggattgaact gattgttgca tgcaacttaa tatggtatca gaggtagagg tcatgagttc 1020

gaattctgct tagcacaatt aaaataaaat aattgttgct cgctcatatt ccacgtcaaa 1080

gacccaaaaa ggctcgacgt aagagagagt gttagaatat aatacaagcg aattgtccac 1140

atcctatta 1149

<210> 3007
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114018_G1, chr3:136260534..136261615, Cluster 18

<400> 3007
actatggagg aaaagacgac aatgtcctta gttgaccttg tagttcacgt gtataggact 60

gagggcatga ttgtaaattt tacaaaatac gttgagattt aaaatacact ggttacggtc 120

ggtacaaatt gcaacatata cccttaactt caaaaattca gacaagtcgt acatcctcat 180

agaaattagt aataatatat aaatatttat aaattcatga aggattaaag catatttcac 240

aaagcatcaa agcaatatct caaaaatata agtgataaac attgtgcata tatacatata 300

gttagaaagt cacaacgcaa tacattacaa aacaaaacta tccaatcgaa aatatgttga 360

taaccataat aaacactgaa caattatcat acatcaaact atggagcata agaagtcaca 420

atcaaaataa gacaatgtaa tatagcaata taatcattat catgtattta aataaagcac 480

tagcaaatct agtagcatat gactatataa tcaaggtata tatgatgaca tgacacttgc 540

attcaaagct tactcctact acttaacata gtcaacatag ttggcgtcct cctggtcctt 600

ctcaaattac caagcaaatt atgaatatgt gtcaaggata ataattggta agagactata 660

aataagaaca ataccgtttt taaacagctc taaactatat acaataataa gatatatctt 720

gattttagga aaataataaa attagtttca tattttctaa attaagatga atttattatc 780

aatttacaaa gatcgactta gaattaatat ttttctaaaa aataccaaat tcgttaccac 840

gtcaaagtac tgaaatacaa ttttttaac gatttagttt tctattttcg gtaattgttt 900

ccatttccat ttaaccctta attttggtaa aatttcgaaa accattctca aaaaataatg 960

ttttcatttt caaccctgtc tatacctcca gactttgatt atgtggctcc tgtggtatcc 1020

aaaatagaag aacctctgtt cctctttgca caagagaggc caacaatagt tctagttcta 1080

gt 1082

<210> 3008
<211> 1181
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116547_G1, chr3:152182803..152183983, Cluster 18

<400> 3008
ggattggact gacacatcac caaccgggag aagaagacta gtgagactta gtctttttt 60

ttccttcctt ttttattctg agccaacaat atagcctgga aaaagcacat tgattcagat 120

gagacgttat aagatctggt attatggaaa tttccttgac gtacgagttt tacaggacga 180

tcttcgttgt taaaggttgt ctcttatcac tatcagctat caaaggtgtg cggaaagtgg 240

tgatgataac agagggacac aaaagagctt tactaaaacc aaacacagat gttctctctc 300

aatcatctgc atttcgtatt gtccatattt gaagtaaggt aacgccaagt ggtgggcata 360

ttatcgatca aatgttcaga agcacatgaa ttcaatagat attgatatat gtataatctg 420

aagaaaatga aaggaaagct ccgtattata gcagatacta gatggtggtt cagacacttt 480

tttggagtct ttggttgaaa tggtaaatag tatgtacaac tcaactgtgc tttgaactgg 540

gaaaacaatt tcttgttttt tttcaagtcg gtatattcgt cgagctacac gcctaacaag 600

tgctacatgt atcctcctca ttctttgtac cagaaacgag atgcctttgt cagagaatga 660

acttgaaatc ggcttcttga ataattgcag cacggctgtt cagagagttg gtggacatgt 720

gcatcatgtt gcaagctggt aagattgtac aaatagttac tgctgaaaat tcgatcaggc 780

caggttattt aaatccatag tctctaccta gtggtggtgg cagaatcctt gatcctatca 840

cggttgcaaa gtgactagta atgtggcatt gggggtctgg gttagaattt ctggcttcgg 900

gaaggcaccg tggtggtgtg ggtgcagagt ggcggcatgt cagtgagcga gggagggaga 960

gaatgtgtaa gggccattga ggccaggcaa gatgtttgcc ttgcttgctt taaaacggtt 1020

acataaccct tacagatttg gactcttagg ccctgtttgg gaaaaaagtt tttgaaaacc 1080

acagtttttg aaatactaca gtatacttta gtcatgacaa taccgtagtt tacaatacca 1140

caattttgga aactgaggtc tagacctaag tttagaatac c 1181

<210> 3009
<211> 1167
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120112_G1, chr3:174530793..174531959, Cluster 18

<400> 3009
gcttccatcc aacatattta aaaaacacgt agccaatatg gatttaatgg atcaactatg 60

attctagatt aagggctcat caatgcaacc atctccctca atggcaagta tttgctttga 120

gataaaaatg tgtactatag ttattgagtt caggagcgca tgactgatta ctataacact 180

ttagttttgg tgtattgatc tattgaggag tagaaattgt aagctaatag attaagcagt 240

taagaaatta agttctaaat atatgcgaat aagcatgata tcattgtgga aatgttgggt 300

taatattatt tgggctcggt tggactgggt cgtagaaccg agccaaacat ctctctcata 360

acctaatctg ggacgcaaca atctcgccca tacacacact aacgagataa atctatctcc 420

gcgcggaaac agagggaagg ccaccaccac tgctaactac atcgaccatc gaagtcacct 480

ttccatgacg actcctctta attgcgaagg tatactcctt gattcttcat tttatagtgg 540

ataaaataac gagctaagat cctttataca tagataccag aactatattt taatatatca 600

tagttaaaat tacaccttaa aagtcattaa taatcaatag cattatgcta attctgcttg 660

acaaagcact agtttattgc aatcggtggt cactaaatca actctcatcc tcatgaacgc 720

ttgccatgca tgctactcct ctcttaggca catgagagaa tttagagttt gtttgtaatt 780

gtttgcttta ctttttcact ctagtctaca aaatataggg gttgtttggt ttctctaact 840

aaagtttagt tcatgatgtt tgaatatcat ttatgagtat taaatataat cttagttagg 900

tttaataaat ttgtctcact tttagtcttc atttgtgtaa ttatttttat aaaactttag 960

ttggtagaac taaacattct cataaatgta tcttgataaa ctctgtttta ggaaaaaaaa 1020

agactagaac agtatctaag aggtcttata aaactctagg ttttttaaaa aaagttgctc 1080

tatagcagag tgtgtgaaat aaagttggtg gaaaatctta aataactctt aatccttaat 1140

aatgaagttt tcgacagcta gagttgg 1167

<210> 3010
<211> 1020
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121116_G1, chr3:180003683..180004702, Cluster 18

<400> 3010
accatcaact tgcattaggt gagtacttgg agttttcaac ttgctgtatt atttccttag 60

gtactgatgc ccagctcctt ttatttatat ggtcatttgc acacctacag atgcaagctt 120

caacaacgag gagatgacaa gctacatcat gttttattga accagtggat ccttgtttca 180

gttgataagt gagacaccat atctttgttt tagttttcca gagaaccata tacaattgta 240

tcagttatat atgtgatgaa tactgaaccg ccagtttttt atttgtttag agaaccatat 300

gcatcatgtt ttagcacaaa atcggttgtt tcaattgata agtgaaccac aggacgattg 360

cttcggttta taagtgagcc accattttta gtcacaaagt tcttgtcagt gttaatatct 420

agtgttgata tctgaatata gtatggtgct cttgtcatcc ttgtatcgat tgtgttcggt 480

gaacaggctg cacatggtga aaccaagcag acatgtgaat taagttcaga aatttcaggg 540

tggtctacat tgtcagtaca accagtacaa aaaagtgatt ccttcgctaa aacactgaaa 600

gtgagcaagc actgctatac aaccaattgt gttccctgct ccagcttgca tatatgaggg 660

ctaggacgtc taccaggaag tgtagttttt gatgaagcta caacacagga agtgtgcctc 720

ttttgcctgt gtttgtgcga ggtggagtaa ggtgtgttct gaatactgaa gctagcagta 780

tgttataaaa gctaccagtt caaactagca atttatacat gtatgtttta aataacatat 840

cttatgaata cttgaggaat acaattagaa aatagcctcg tacacactag tttgtgattg 900

ttcgagtttt ctttttttt aaattatcat aaaaagttag tgtgctgctc cagtcatggg 960

tagcaggagg tatgtcagtg ctttcaactt atgtaaaagt cgacaacttt tgtatggccc 1020

<210> 3011
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122329_G1, chr3:186225142..186226158, Cluster 18

<400> 3011
ccacatagct ctaagaggga tacgggattg ctcgagagct ctggatctgt tgacaaatct 60

aagttgtcag tgaagaagga tggctaatgt aggtctgaca aatccaatgc tgatgataag 120

cggggagcct tgaagggcct ctgttttact tatgtggaga agtggcaagg ccataatcat 180

agatgtccct cccgaccaag actccattca tatgattcaa gatctattgg cgtcgttacg 240

ttccacttgg atgttgagaa ggacagggtt tctagtgatc tcgaatctga cactgtccaa 300

gttactctag ttgttcagga acaaagtcca tttgacccta gtctacttca gttaagccac 360

atcgctcatg tttctattag gtgcgctcaa gacagattta gtctgctata ggacattgct 420

attatttgat acaagggatt tatccattat tcatatagta atatttttag aaaaacaaac 480

acaactctct aacaatttcg tcttcggtta gttgtttgtt ctcttctacc ttctgatcga 540

ccaatttcag tgtagttgaa tttgttcaag tagccacctc agacgcagtt ggctcattat 600

ttcctgaact cacgtgagtc ctggcaactc tataaccaag tctatgcatt ttctattttt 660

attatatatt ttttgatgta gtgatgtagc agcagccttc aaatattttt gttcattctt 720

ttattcaaaa tgctcgcata agacaagtgt tgaattctta ttctagtcta tgttttgtta 780

ttcgagtaat tttcttattt ttttaaaaaa acacctattc ataatttttt aaataagttt 840

gttactgtag ggggtggcta tagtatttcc tttttttctt tcatattata aaggagaaag 900

agagggatat gtcacgagtt tacatatata gtcattacaa cgcttgcact catgttctta 960

cagagtcggt catcattttt ttccattcta caggagttga gtatcagctt ctgggga 1017

<210> 3012
<211> 1199
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126157_G1, chr3:206206450..206207648, Cluster 18

<400> 3012
aattaatcaa ataggttacc aacttttgtg aaacaaagtt gtgaatctga agcctctcat 60

cacctccaag accgtgtcgg caccaaactc tttcctccat ctcatcatct cccaccacat 120

ttgcatcgcc ttctcggaat caaacttcct gtcttccaga aacatgcatt taaggtcaca 180

cacctgctag gtaaaaccaa gttgttttaa ttgttgggca gcttcagaac ataataaacc 240

atgtggaaaa ttatatttct actttgtcac tccaacgatt tctgtaagga ccacgacctg 300

ttccagatag gaagctagat atacatatta gagatactaa catactgcag tttgcattct 360

atagacatga cttcgccgaa actaacaatg tattgttttt gcatcatatt ggaaagattt 420

atttacaaca atcatgaaca ttcaaatatc taattctatg ccactatttc tgaactaggc 480

actaaactac tccctccact ccaaatttta agttgttatg tttttctaca aaccttagta 540

ccttactgta ttttcataaa tttatgtcta gatacatatc tagacaaacc agaagactta 600

ggctaaccaa atgaagcata aattaaaggc aactgaaaga gaagttattg attcacttac 660

actcaaaatt tgaatcccta gctccgtccg taaagaagat gaaaatgcac gctagaaaat 720

atgaatcaca aattgctgga acaaaacaac agcatatgaa acacaaatcc aatttgctga 780

tagtagatag gcactaaaag aggcacttcc atatgctact caaactcaaa ttcagtcttt 840

cgtacaaaat ggagtttgaa atagtactgt cgtcaacact tggaatcagc tcatttgtaa 900

aacgagttgt tgtggttatc cttgcaatca actatgcatg agcaacatat aatatgttgg 960

tagaaaaggt acattttcct tttcctgaaa atccctttt gacaattgtt tgtattagtg 1020

tcgttggaag tgttaagatg tcacccttc agaaacaggg gtaggtcatg ctaattttcc 1080

tccaggacgc cataggtcga aaaggcacga catcagggga agtccgagaa cacacctgtc 1140

tagtggagtc actatgtgca gtaaaggtct ttaaggctca cgtcattgac gccatcgtg 1199

<210> 3013
<211> 1090
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126215_G1, chr3:206595992..206597081, Cluster 18

<400> 3013
ctattttctg cgacggattt atatactctc tccattataa aatagatata attctcatgt 60

tttaagcaat taaaccaatt tcgaatttaa gtaaatatat actccctccg tctatataag 120

ttagttattt agatttattc taagtcattc actatcaact ttgaccagct acatcagata 180

ttttacaaga ttttacaacg taaaagaaaa attattagat tcatcatcac ttgaactata 240

tataataatt atttctgtag tcaaacaagg ataaaaatat aatgtatatt ggcacaaata 300

taattaataa atttaaaaaa tatttgtata gttagataac gacaactttt tttgatattt 360

ttgcgataaa atgaaatttt tatagttttt ttcctacagt caaagaaaac caaaaaatac 420

ttgtcaataa ctagtacagt taagaacaaa agttataatt tatatatttt aattaaacaa 480

tgctaaacta tctgttgctt gtgcaacagc ccctaattaa tatgtaggac aggtgcaaaa 540

ttaatgtgta gaaaagaagt agatgtcgtt tgctgtcacc gggtgtgggc ttcagtggat 600

aaaactccga atcacatagt acaacccaat taacaggcag ttcgatgatg cgcaaaaaaa 660

aaagcaaaac acgatcaagg ctgctagtta cgttgccctg aacagactaa aggaaatcag 720

gcaaggaata gattgataag aaaagtgcac aaagaaagga agaaagaaaa gatctgctct 780

gttcttgttc taggtcagca ggactttcgc tccagttgcc tagcgagcta gcatctcttt 840

ccatgcctac ctctctagct ctcccaaagt tacgttggta ccgtacacca gcagaccatt 900

gcaatcatag ctgcctcccc gccaaaaact taaggctact gacaacgagg atttcatgtc 960

tctgttttca aaaatgccac atcagattta tagatgaata aaatactctc tctcaataga 1020

gagtttcatc tcactatttt atatgtcaac atacttctta aatgctgcat ataaataacc 1080

aatatgattt 1090

<210> 3014
<211> 1113
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126954_G1, chr3:210223173..210224285, Cluster 18

<400> 3014
tagagaaccc accacaatca attcgtctag gggccctcaa aatcatagga ccggggctgt 60

gtgtgtgcag cagttttccc cgggtacata tatacaactc tatagaggaa atactgtgta 120

cctagagatt tcctagttaa cttgccaact ctcggggaaa aaaatcatat gagtttttag 180

tggtaggtta tttacgcatg accatatata atttaactag ctctttacac tcattctatc 240

acccgagttc agaagcagtc ccaactccca actggagtaa tctctttcgc atgaagcacc 300

atcccttgcg ctcttttaag gcggcaggca tgtctttgtc cacttcgaag cgtagtacac 360

atgaatgtcc tcaaaaaata caatatggca gtgaggcaat ccccttgtg ttctttttt 420

ttttgggtta acaactcaat aggcttgcat aagaaatttg tcagtgataa ctatgagaaa 480

tggattgggt agatatagtg gagacacatg gagagaacga actatagtca gataaataaa 540

caacaggact acttgaaaaa tgtttcgaag ttaaaaaaat ctgaatgttg caattttaaa 600

atacctagct acctgcgcta tttgcttggg ccgcttcctt agtttctcat tacaatactg 660

ttaaaataag gcatcgtata tattagctga gaaagtctag aaattaccac tgtttagaag 720

aaaaatttta aacctacacc tttggatttt atgatggtag aaaggtttag ataaactaaa 780

gcttccatac attaataata gtagattcat aataacaaat agtaacaaaa aaaatgaaaa 840

ctctgggttt tatgagttca aagagaatca tacaagtaaa gagtatatat aaaaacaatt 900

agtaaaggta atttttgaat aaaaacctat tgaaaaataa tagtttgccc accaagaaat 960

ttgggaaaaa agaaacttgg ataagtagtc cacatttttt attaccaaaa cagttaattt 1020

taaaactgaa aattttaaaa tagtagttgg atttccatac gataggaaaa tgcctaaatg 1080

gaaaattagt gtagtgctat ataaggtttt taa 1113

<210> 3015
<211> 1154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127221_G1, chr3:211613450..211614603, Cluster 18

<400> 3015
gatttttcta tactcaccac tgctctatct attcatcagt agctgagtag aaattagtta 60

catacgcgga aacacctagc ggtttataga aactcggccg gtaaggaatt ttttatataa 120

ttgtcgtgaa taaagctact aaaaactatg aaaaaatcta agaaaaatta tatatgtatt 180

tcattattta ttctattaat atatcaaaat ttaaattata acccatcata tgtttgagat 240

ataaaaaaga aaaaaatatc attttaatct tttatattgg atataatttt tctattttta 300

taactcttaa cataaaatga attacaactt aaaattttat agcaaataat aaagtgcatt 360

tataattttg tgaaaaattt tatgactttc agtattttaa ttacacaagg attgcacgag 420

aagctccatt gcatcttagt ttttgcccat aaaccaaata aatttaccaa tagcatcgtg 480

gatgctactc tttattatat tataaacatt tttgttggac ttagaactct catgaacaaa 540

attcactgag agggcgtcct gggatttttg gggaccctac gcaaaattac caagactagg 600

tatttatgta tacaaacatg tatcaagtat catattggtt acataatctt tatttgaaca 660

acattatatt tcaaatcccc attgatgttt tttgtctgcc tatgcctcca gccttgggtc 720

ttgaaatacg tattgtaaat gctaattgtc gcatactcgc tctgtgtagt attagatgtc 780

gttttagata gcattttgca taacaagaaa tggttaattg gaggataaag tttaaattgt 840

gtctatatta aatagaggtc caaggctctt tttactagtt attgacgtct caccatgcac 900

tatatatacc acctgagttt gaaacaagga agctgtgcat gccatgcatt ttttatttt 960

tttatttttg cttcgcgttt ctttttgca tttttctatg gcgcgttttt ttcccttgga 1020

cctgtgtgga caatacaggt tgcattgcgg gatttttttt actgcggctt cttatttatg 1080

ggcaagacta ggtatatgcc cgtgctttgc cacggaaatt aaaaataagt ataaactata 1140

aatacaaaaa cgag 1154

<210> 3016
<211> 1104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_12762_G1, chr1:69884737..69885840, Cluster 18

<400> 3016
tgttggatct caattttgtt tttagtatcc taaacaattt aaatgatgta gcattttaat 60

ttttgggggc actattttaa ggtatcttgt tggagatctc taaaataaga agtagcttct 120

ctactctctc caaatcagac atttgactta tggatgttct atgaatgttt tctcttttac 180

atttatttta ccagtttttt taaaaaaaca atagtaaata aaaaactata attatgaaaa 240

ttaattgtgt tggactccac gaaaataggt ctacacaatg aacatatgat gtggtatgat 300

ttactaaaaa atgttattat agctttagat ctatgctttt ctataattaa tttaattata 360

gtaaattttt tatcatggac taaccattgc gtgtttaagt tgtaggtaaa gattttatgc 420

tcactagatc atgcatatct aaattataaa tttatctagg ctcatgtatt gatttatcta 480

gataaaatta taactcgatc atacatgctc caataagcat aaagtttttg ctacatctca 540

agcatgcaat gtttagccca taatagatcc actattatta aacaataaac caaaagttag 600

aattaattat agaaaaatat agatctaatc ctacaataaa aactttatac taaaaacata 660

ccatatcata tgtttagcat atggctctac tcatgtagag tctaacaatt ttttcatgct 720

tactcaatca tttacctttg tcttgacccc ttatattttg attttcttat ttccctttct 780

atgttgagca ctcaattatc ccccccttgta gctttcaatg gttaccaatt tcttgctcaa 840

tcttggatgt ggaccatata ttattcatcg ccattaaccc ttttgttata tcactctttg 900

gcttactttt tgtcacatgg aacacactta atgatggtta accatcgaca aatccagcct 960

attctagaaa tagagttgat aggcgatggc gagagcgaac gctcgtgtag actctccact 1020

tctctcctca ttttcatgac ttcttggtgg gagagcaaaa cctccactta taaattggag 1080

tgcacgcaca tacactagca gtgt 1104

<210> 3017
<211> 1261
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129084_G1, chr3:220761285..220762545, Cluster 18

<400> 3017
cttaagcttt cgagttagat tggttgatgc atgcaaatta atagtgataa cttataagca 60

cgtgttctta ttcagttatt acccatggtg cattcgattc tccattcttt tcaagtttat 120

tgtttgagaa acccggaggc caaaagctaa ctatttgagt tattgatcct atttgagtca 180

cttaaaaaag aatgtgaagc agcaagacaa tttttctttg agttactaat cctatttgtt 240

gtaagaaaaa tatgtacatg gtttgttcat ttaaagttgt gttgcttcaa ctgtagcaca 300

ccataataca cctctatggc tctatctccc ggtaccttcg attgagtctt gtcagctgaa 360

catttgaatt tcaggttcgt tcttatttct cttacaagtt catttcctgc tgtattgaca 420

gcttttacag tctgcttgca ctcgtttact ccaatttcta ggttaatgac ttttccaaga 480

acattggata tgccattgtc agtcagttct cagcaccgtt gtaagctgca tgtagtcatc 540

taaaggcaat tttagttaat gtgttcctta tagttagcat tagcgcatta aatttctaag 600

cgacgtgtgg actgcaaggt gtgcgatcat atatgtacag tgctttcact gttgttgtac 660

gcttgtactc gcaacttgcc aacttcattg tccactgtca agaagataga cgaaaagcaa 720

gagcagtgaa agggaagttc aggtgtgctc tcagcttttg ttgctgtaga tgagatgtgt 780

tttgtgaata tgttgacgaa aattttaata taataaatta cattcttata acttttagtg 840

gactgaatct tgagtgtcac attttcaggt cgatttaatt catgcggtgc tgaatcagtg 900

gccgtgacat agacaggggg ctagccccct gacaaaaaga aaatttgttt tgtagttgtt 960

ttttatgact aaaataaaaa aaagttagtg tataataggt taaaatatag tctgtaccgt 1020

atatttatgt tgatttttat gactagtgac tgttgtatat tgtgaatgta gatatatttt 1080

atttattaat attataattg taattatata tgtattggcc cgtaatgaaa aatcctggct 1140

atgaggcctt taatttgggc acttcaagac catgcaattt tgagtctctt atgcacatat 1200

tttcttcttt catcgttact gaattcaaat gaagcaatgt ccttttacat attaatcaac 1260

a 1261

<210> 3018
<211> 1394
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129269_G1, chr3:221692250..221693643, Cluster 18

<400> 3018
gtagcttcac aaggaggtta gaaagatacg tggagaattt taacccgtcc catccatcga 60

gtcggtgtga attgatcaaa ccactctcta gatcggggtc ttctccacaa ccgacaaaaa 120

ggaaaacttc atgcttgtgt gagatcttct taaaccacct tgcaaatgtg atcccaagta 180

ctcatagcac gtaaagaagt ccaagaaatt ggcccaaaat acccatgcaa actggagcac 240

caaaacacca aaaacaagtg aaatcgaaca ccgaaatgga aagagcaata aaaaaataag 300

caaacaactc acaaaaaatg agccaccata aacctaggag gtaagggact ccattgacac 360

aagattaatt ggctacagat ttagattata tagatttaat gatttctgca gtgtctaaat 420

tatctaaaga ttttaataat agattagaga aaggggaaaa cctacaagga tgaaatgaaa 480

tgatgtgcta gcgagataaa actggttgga ttagcatcct ccatccttat aagactatta 540

cacattccca actagcactt aaataattag agtcgaacca cttaaccctg tgcacgttat 600

gtgcttcgcg cacgatctga tcgagttcct caccaacact cgtggaaatc actataaata 660

aatctatatt ttcagtttat tgcgatgacg attttatggt tagatccgtt ggtgattctt 720

ctattatgtg ttaatcttat tgagttagtt catatatgtt ctgttctaat gtcatggata 780

ctatctttca gtagatctaa ttttactttt tatgctgcat tataaattaa ccttacgtca 840

tgttaatttt ccaacaatat caaccacgtg tccgcagagt cttggataat ttacactact 900

ataaattaac ggctcgtaaa tagtcatgtt ccacccgaga ttaaattgtt tggccattat 960

atagaattta gaatacgcaa atcaacaaag tcaaatctct ctgattggtt caagcataaa 1020

cgaatttgac catagacgta tatcatatat aattcactgc tgtttctacc gctcagcagt 1080

atacaattgc tgataaactc actgtcgtac gtgtggctag gctccatagc gacctcccgg 1140

gctccggttg ctccaaaagt caacatccca ttacactccc aaattcaaca tctcattacg 1200

cggcagagta cgctccataa tggagtgcct gatcttcttt actcaaggtc gcaactagct 1260

cccaatgagg ctaaagtagt tgcatgtgag cttatgcaag atttgggaat gatattcttt 1320

ggactgttca caagacttat attcatcaat attaaaatca ggcgaacaat attattcaat 1380

cgaatacgga gtac 1394

<210> 3019
<211> 1154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131868_G1, chr4:3043292..3044445, Cluster 18

<400> 3019
agctcaatcg gattgtgggc ccataatagg atcgaggaat tggttgacta gacttagggg 60

gcccactagc cttctaaaat gccataatcc aagcactcat aggagcaaac caaactagcc 120

ttcaacccta gaatcaacat gtgtttcctc tcaatggctc acaatctaat cataaggatt 180

gatgggccca cattcaagca aatcgacgtg ccaagctatt ttggacgaca cttgcccact 240

caggacacat tcaagaggac ccatgagtct gggagcccac atggaagtga gggggtaagt 300

aaccctctag atctaccgat caccctagtg gtcccactaa gatccactgt cgtgtagcat 360

gactccatgc atgaaagcac actcatgcaa catctcaatc atccatttca agttggtttg 420

atcctatggc tcaagatgat gaacacatgg atcttggtcc cacttaaact agtataagta 480

gaggagtaca accactcccc actcatgaaa gcaaagaagg aagcaaagca agatctcaat 540

gttaaattct tccattttat tttagtagta gaaatgtcta gaattagaag ttgaattatg 600

ctttgcttag gttcccaaag ctagactttt ggtcttgtat atctcctgta ccactttcct 660

ttttgtaatt cttttaattt atttaatata ttatccttcc tctactttgt atttactttg 720

tgcaacaatg tactagctat attgtccttg tggtatatca tagcatatgg ttgttacata 780

ctagattgat gatccatgaa ccacacttat attccctcat caccttttat taggatttct 840

aatgatttga ttatatataa ttgcagtagt gggagaaggt ataagtgtgg tccttatatt 900

ttgtgttgat tttggttacc acttgttgaa tatattgtct atagttgcaa gcaaatggta 960

acaccatttt atagtatttg tattccacga tgtatttaga ataagttgtt aaatggtaat 1020

gcaagcatca actgtgtttg ctttggcagg agttacatct cttactatct cacctaccac 1080

ttaatgtacc tattgtgtgg actcgatctg tctattgcaa ttatgtaatt aagggaaacc 1140

atagaagtag agat 1154

<210> 3020
<211> 1266
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131984_G1, chr4:3278699..3279964, Cluster 18

<400> 3020
tgctgccaca agccaacgac catgcattta accgatgttt caacacattt caggaaacca 60

gtcacacaca cgaagtgagt gctatgttct gaatttgaaa caaagcagat taacacccac 120

ccatttttt atcttaggga gacttcattt ggaacatgta ttgagccggc aactgaaaac 180

tgtcttggca ttgactacct agaagatcca ggctgaactc aagaggaata gcgaactgtg 240

gagagcaggg caatggagct acctgacaag acaatatgct agatgatgtc catacaacta 300

ttcttgtcta gttgatgtac atataactat tatgaactag ttgatgtgta tagaactgtt 360

cctggactaa ctgaaataaa gagagaaaag tttgttcctg atgacactca ttcccaatcc 420

ctcattaatt tgtttgcagc gaatgacaaa tcctctcatg gtaagtgttt tttttgtcat 480

acaattttgt tatttggatt atcaaaaacc actactactc taaagaacgt gtcaatttct 540

ctgaatggat catgcatgta tgtaacctca tctacatatt gttgttcacg gggccatata 600

ttctgacata tatgtgcatt cacgcatatt gacgagggag acagagaaag aacatgcatg 660

cctctatatg gaagcacgga tgcgccaatt tttaacacgg ccttaccaag aaccatctct 720

atagatcatt tgtgaaatgt aatcaaattt aaggaggcag ttggtgtttc caacaacctt 780

gagaaaatgc actttattct tagagccgga ttgaagcacc aacaaccact aaaggcattt 840

ctagaaatgg acacgtcgat agaaatttat ttttggaggc aacgataatg tgcctcacca 900

aaccacatgt gtggaaaaaa gttatgtttt ttgtttccaa atcaagttga tcaaatacga 960

actatatata tcatagatgt atattttaag ttctctataa ctttatagtt gatgtatttt 1020

caattgagat tattcaaaat cctagaatta tgttttagtt ttctaacttt catttggaaa 1080

ttttcaaatg acgtcggcta tagatgatct ctattccagc atttttgtgt ttgatgtggt 1140

ttaaaacttt gtaactcaaa cttttccatt tcaaatcatt tatgtgccag aattttaata 1200

caagattcat gaaagttaag agaaaaggat ggcacataca atacactagg aaacaggtca 1260

ccaccg 1266

<210> 3021
<211> 1066
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133439_G1, chr4:9748931..9749996, Cluster 18

<400> 3021
aatttgctaa attgtactac tgtgctcgta gcccaaaccg tccatgtcac catttttcca 60

ttagtcgtct gatcctttat caatggcttt cgactatgtt tgtttttgt tgtgtccctt 120

catgtattgt tcatattgtt ttgaaggagc acatttgctc tttttgttgt gccttagtcg 180

atgtgtcatg acatcttaat ttagaccgaa gatcatatgt taagatctaa tgtagaatta 240

tattatagaa tatcaaagct tttaagatcc tgcctaccta attctatcta agacacatta 300

ttaaaatata acatgcatgc actccattaa ccgtacattc gtaaattgtg cttcagaagc 360

attgtaaatt ttggtacaga tgaatggaat gatctttgtg tttgtacaaa tacaaatgtt 420

gaatatgtaa ctttgtggtt gagagatgtt tctacattta gggtttaggg tttagacaat 480

tatattacta cggtgcatcc taggatgagt tgttgccgcc gtagcatcta gcccacatca 540

caacactcga tctccccatc acgatcgaac caaaggtaga attttgtcca attacccgaa 600

taaagatgtg tggttttata acatattgat tatatttatg gataatatga catacaagtt 660

tacttttatg actttattga atatttgttt gtagtatgga aacacacatg taattgattg 720

atatattttt cgattgataa attattttgg aacttgagtt ctacataatc agtaaaaatt 780

ctataaatta atcgatcacc ttcaaaactt tggtgtagct ttcaaatcat aattcttttg 840

tctttagttt tcaacatata gtcacgctgc atacaaggca tgcttttgat agtaagaaaa 900

ggaattgaag aaaaaagtga atgagtttat tgaatcataa agatgagttg gctattattg 960

cagtggagaa acaacctaat atcaacacag aagatcatgg ccctacactt aaagaaattg 1020

ttgacatcat tacaaaaaat gctagtgttg ttgaagaacc ggtttc 1066

<210> 3022
<211> 1169
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136311_G1, chr4:23622233..23623401, Cluster 18

<400> 3022

gacatgcaat gcaatgcaat gcgatccttc cattcatata gtcccgtctc cctctaacca 60

accaccacag actaattttc tgaacaagca cgctcgttta ttctggcaca tggcgaagtt 120

tctttttgaa cggtgagggg gtggttgcag tcttagagct ggtttggtga caaaagaata 180

aaaaagatcc atcagaagta aacctgcagg ggattttctt tcgtatggac gctctccagt 240

ttttttgtca ctaaaccgcg gttagggaag gagagagaag aggcatttgg gtggggaaga 300

gaaagatgag agagaaatgg gttctgagat cgcttttagt acagtttagt atctttgcta 360

tggagataaa gtgttaatgt gtgctaaact ttaacacaac acttttagtc actctgtttg 420

ttttaataa ctaaagttta acaaacaagt gtcgtgctaa aatttagcaa gagaaaaaaa 480

aagagatcta acttgagttt gcttggagcc ttgtatgcag ctattggcct aagacactcc 540

gttttttagt ttttaggtgt ttagcttatg gtaggataag aagcttaaaa cttattaaaa 600

actaatataa aaagtgaaaa acaaaagcgt aagacgactc cctacgtatt aaaatagttg 660

atggtatgta atttaaattt tattttcaaa tagttgccat tcttatttta taatgcacct 720

ttccttttt tccctttcaa tatttttttc caacgcatct ctatctctat tgtatttctc 780

gttatctctc tttcttattt tttgcgcaca gcaccttta cttcttccaa attcctgtgt 840

agatctataa aatgtcaatt attttgaagg ttggagttcc aaacaacaaa tttgagtcag 900

agaaccaaaa cttcttaagg ctaagagatt tcacaactat ataattagca tcacgatgat 960

aaggaatttc agcgacaagc aaaagaaact ccgtgaaata tccttatttg gcactaccat 1020

aaattttaaa cttttctatc gataccgatt tttatctctt atgtattatt tgtcatgtct 1080

tttagttttt aggcctaacg aatttaagtg gatgatgata aaagactata tttctcttgt 1140

ttagtgtctt cctaatgttt ttttcttag 1169

<210> 3023
<211> 1290
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13754_G1, chr1:75763100..75764389, Cluster 18

<400> 3023
agatcaacat ttttaagggg ttcttattgt catctccatg ggagatttgc aaagaccaac 60

tctagtgata ttgtggcttg ttgaagtacc ggctcgttgc agaaattaat cccatgaatc 120

acctagtgta cgcttgccac aacacggata taggatgcca gcaagcaatc gaaccttggg 180

gataaatatt gtgccatcat ttgccccatg tggtttgcac tccatactat ccttactatt 240

ataaatactt gtttttaata ttttgtattt atatttttaa gaacatagct tgtgtactca 300

tatgtattcc ttacaagata ttagtttgtt tagggaaata ttcttgcata aaatagagca 360

agtaatcgct tctgtatatc ttttttttaat tagctctagt tgtaattatt agttgtgtaa 420

gaaattttta taggctattc acctatctct atccatcttc tgcatgtcaa taggctcgca 480

gcatcgccca tgccccaccc gccactacca catcagcctc gcccttgtca gccaccgcca 540

tagtcaccct tgcccttatt ctcctttgtg acacccacct tatgcgtcca tcgacatatt 600

ccccaatacc tactgtgact gtcatcccca ggttcctaac gccaagacaa gggtggtcgg 660

tgccaattct acctcgtacc acaagatctc gatgaggggc agatttgata acacttgata 720

catcttggct tgagcaaagc tgacatggct tggctccaag gggagtgaat agagctcgac 780

aaagttggaa gttgactatt tttttctaat actaggtatg catgctcggt ctatcacctg 840

gataaccgtg agaggagagt caatgcctcg actgtacata caggaatagc atggtgttga 900

caattcacgt cgagtcatcg acgcctgttg cctcaactaa aagaagtctc tcaaatttga 960

aatttttgaa aaaatatttg agatcaacta tgtcaagaaa gattaaatgg cttagctaca 1020

tattctatcg agaaggatat atcaaaaaat attgatttga acattgtcgt cataaatttt 1080

gcttcaacaa atgctcaatg gagttgtttg ttttttagag gcgttagaac aatatgtaat 1140

ctaaaataat ataattttat tcttatctaa ggtattcgta ctccattttt ttgcttttaa 1200

aatttctatt tattttaata caattactag gtatatgcac gtgcgttgcc acgagagtta 1260

aaaatagtat aaaacataga tatagaagat 1290

<210> 3024
<211> 1307
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_139359_G1, chr4:42141396..42142702, Cluster 18

<400> 3024
gaggttgtag gttgcagtgc gacactacaa cacaaggttt caatgcatgc tatttgcagt 60

attggcgatt ctaaaatgtt aacatggaat aaaataagat atgaggcttg tttgaatttt 120

ataatttatg taggtcattt ggctttaaga aaattgcttc attacattag gaaattgtta 180

tgtagctttt atactgaaca gctgcagcaa tgttatcaag ttgcctggtc atgaggggac 240

caatcagacg actaatagcc tggttagtct tccctagtca gtagtctagt catcctggct 300

tcatgtcttt ctattaaggg tgtatatgtt atatagtata actgtatcag gttgtatgtg 360

ctatactgtg atgtagtatt caccacaatt aattggtaat aatgttatca agtcatccgt 420

ctaattgcga ttagtcaggc ttatcggtgc catggtgatt agctatgcac tacaattagt 480

cacgattagt tgggctgatc ggtgccatgg tgactaggat caattagaag attaaagatt 540

tgataacatt gattggtaaa gaaagcaagc agcctggcat cgagaattca agtttcaatc 600

atggtttctg agtcacttgt gaattgctgt gaactctgga ccctagacta gtgggccaaa 660

ttgccagcct aatataatac cctaaatgca acatgtagcc tagtcttcct ccttcctgat 720

tggacaatta tttgtgttaa gtcaatgact agtcaggacg actaggaacc tagttgagct 780

aattggttgg tggacctaat ctaggccaag ggaccgataa ggatgactta tcacaatctt 840

cggatgattt gatatcattg ctatgcaaca ccatcaatgg cggaaacttt cctgtgatga 900

ccatgcttgc tattcaatta aatgttctat taataacttg tgtattactg tatttaaaca 960

cttgtggctt atacattgaa caaatatatt tcttatttct tgactcttag ctactgttgt 1020

tgattttggt ataactttac tgttttctct gcatgagaat gtgctattaa atttgtgtat 1080

tcaaaatctc ggtgttttga tgctttgaaa ctgttgttta tttttagttc tatttgcatg 1140

ggtctgctgt ttcaatttgg gaacactagg cactgctata gctatgagca gaaaggaagg 1200

aaattatatt acgatttttt ttaaaactta gtcccccagt tatttttttc ttgcatgttt 1260

tttgagtgtt gtgtcagttt ttgaaatttt tgtgatatgt ttcctag 1307

<210> 3025
<211> 1353
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15538_G1, chr1:85893559..85894911, Cluster 18

<400> 3025
aagcttgtct cataaatttg aatacaaata caaattcaaa ttcaaacatt ctaggtgtgg 60

gtgctactac tattggatga ctctttgcta taaaaactga caaccaggtg gcaccattag 120

gatgtgggct atgcaagagc tttggtgcta ggcgggagtg tggcatctaa cacctaggtg 180

atgactaggt ggctacatgg ttaaccttca aacattgttg acaagatatc ctatttgtat 240

tctatatact gatggtcctg tttgaataag tgtttgaagt ctttggtgtt tcagcaaatg 300

ggatgaaaga tgttgtatct ggtgtttcag attcatttgt ttgaagtttt gttgtcctgt 360

gtgaccaaat gggattccct gctatttgaa gtcatgttca aacaagtgtt tgaaatctct 420

gttgtctctg ttgtttgagc aaatgggatt aaagaggctg cctctgttgt ttcagattca 480

cttgttcgaa ttgttttaga tagtcgaaca cttgtgtaat ttcatatttg tgtaatttta 540

gacttgtgta attacaattg ttgatttagt gcagtcacct gaaaatgtgt gtgcatagta 600

aaagtttttc catgtcgatc atgtgtaatt ttcaatgctg aacaaagaca gtgaaccaaa 660

ctaaacatga gttgtgttgg tgcaacttac aaaaaacagt aaaccaaaca tggaccatat 720

tgattctggc taattgggat cagacaacca aacacacatt gcattgcaat tgttgtttgc 780

ttatacaggc tacgttcaac ctgcatctcg acttgaaccg ggctctattc atcccaataa 840

ccaaacagat ggtatatgtt tccaaaaaaa tccaggccac tattttaccc cgtttatacc 900

ttgaaactga agtccaaaaa taacaagcta cctcaaatga cttttacagg tgcaaattgc 960

ctataaccca aaactgaatc ttaggggacg tttggtagag cttccacgac tctgtttcca 1020

gcgagaatca ctcccgcaga gtctaacggt aaaaatctaa actgctccat gatggcagtg 1080

aagtgaatct agtctctatt ttgtactaca aagtgtggga aaaaaacatg cttcccacct 1140

tcccaccgct cccaacctac tccaaactct ctaacccctc aggaatcact ttacagccta 1200

aacagttttc gttaaataga tttacttctg ctagagattt actcaaaatc actctattgg 1260

agggaagcta tgtcaaacaa gcccttaata atcgggcacg gcaccaggcc acctgaaccg 1320

agctaacagt ttctccaaac cagctcgtcg gca 1353

<210> 3026
<211> 1398
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156503_G1, chr4:154801870..154803267, Cluster 18

<400> 3026
tttgcgttaa tagaatttgt ttcattttgc aaaggatgaa tgacaaagtt aaggacaagt 60

tgcttctaaa tatcgaatga agtagagaga cacttagaat agtttaggac cttgtttcct 120

ttggctgaac tataaagaag ggtctacatt agtacttgat ctaaccgagt ctaatattat 180

taagtatgat gcattagccg gcggcgtaac tagaattttt ctttagggta tgctatctaa 240

aattttcata tacatttgat caaaccattt ggcaattcag taatagtttt agttttgaat 300

ataagttact gtaactacac taaattgcag agtaagtctt aaacttaaag attaaattaa 360

tataaacaat aagtcttgca tttcaaaatt aagttaattt tttcacaaat tataatataa 420

atatatgaaa aggcatattg atagtttata aatgaagtca tgaaatagag attcgtctga 480

ttttttaatg agaacttcta agtgacataa tcaatgtctc ggttatgtta tctttgtcta 540

ctttaaaacc ttaataccaa ataattaaat aaattatatt tgcatagatt aaatccttag 600

ccctcacatg caattacaca aacaatgaca tgatatatat cgagttcttg atcaatctcg 660

attgttttgt tgttgcataa atccttggtc tcgctgcaca aaggaatatg aataccttct 720

taattctagc aattcaaata gatatgattt tttacacaaa gaaaaagaga gaatgaatgt 780

cgcggtgata tgattgatca actctgagtc tcattgtttg accagcaagg caccacacgt 840

gtgcgtaggt cctcccctgc catgaagttg tctcggtgtt ttgctatttt ttcacgccta 900

cacctcgtag tatagcctct agtggcatct catgagtcac gcttgtcaaa gaattcgagt 960

gattgagtgt tggattgtca attctgtgat cacatcgacc atccatcatg ctatcccaag 1020

acttcgtcag atgggtccta gggccatgag cctaaacaaa aaggaagcac aagctacaag 1080

accattagtg cacatcattt ctatgatgta tattttcata tatttttcca ctatctttac 1140

aaatatatgt gtatacatgt accatatacg ttgtcggggc atatttggca taccccttag 1200

atcctctcct gaacttggca ttatatagct cagaggaggc ccaaaagtca tttggaagaa 1260

acctaattca catatgtttt aaattgaaag taatttagag gtttttatag gcgttgaacc 1320

ttgagaaata gggttagaaa caaggttgtc tgaccaacga gcatgattcg atgcctacac 1380

gtagggtgct agagtaag 1398

<210> 3027
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157701_G1, chr4:161023519..161024573, Cluster 18

<400> 3027
tccacacctt attaattcta gggaaatata atttatattg tagattatat atattaagaa 60

atagtgtaat cataattttt ctatataacc caatccaagg gcaatttagt ttatctaagt 120

gtctaaaaaa tattcatttt gggagtagta acttcaaagt tatgaatatc tttaaggaaa 180

ggtgttttgg tttaaaacct ttgagaaatt tttcttattt tcacaaactt gaactttagg 240

gtgttacaga atgtacttga atattccctg gtatatacct ttgatagtag cgtgaatctt 300

atttggccaa gtcattggct cacataggta aaactcttat ctcaaatctt attggttagc 360

ttgatcttgt tgtatctgag ctattctatc ttctagctag ttctccaact ccatcatata 420

gttcccgagt ctatagacat ataagatata ctaaataact aactaaacta aaactaaaca 480

tagatcataa atcccaaata ttataaataa caaaacaaaa catcctaata acaaccaaat 540

tagactatat taaacctaaa cataataagt agcattataa cctaaccata aagcatacac 600

actgacatat acacgtacaa gtcgaggatg aaaactaaaa acaggttcat aaccataact 660

gatttacata aataacttag tttatacacc aaaaacatga ttcaacccct aaaactaggg 720

ttacaaaata caccaaacat agaccaagga agaagaatat cttactcttg aaggtttgta 780

gatcaaatct aagctttcaa ggttgaataa atagactgag tgctagaagg tttggaagag 840

agataaaaaa caaataaggt ctatattgac tagggaaccg aggttttta aattagtgtt 900

tgatgtcata gaccagtacc gaggtactca cacatcaatg ctatggtgat aaatgtgttg 960

ctatttatga tgtaattcct tagcatcata taatctatgt ggtcgagtca tataatctta 1020

atgttatagg ttacggtgtc gactctaaag tttag 1055

<210> 3028
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158784_G1, chr4:167212792..167213843, Cluster 18

<400> 3028
gtaatttcat gctctggaat ttcagaaatt ctaccccaaa ttgacgttac aaacatacat 60

catgaccgtg tagtttcatg ttctggaatt taagaaattc taacccaaat tgaagttaat 120

tagaaacaga cataatgacc gtgtaattat agatggccaa ctagagaacg agagaggatt 180

actccaatag cgctagtata aaagagttct atgcggtggg tttatttttt ttacggacgg 240

tttcggttat agcacacaag tgataatctc gattagacaa ccgtcagtgg tacaccctaa 300

accctaactc aggtgctatg aaattggaga aatatttctg tgcacgtaca aataaggtag 360

gcatatgcat gattaacttg tcaaatatcc gccctggcat tccttgaatt ctttatagct 420

tttatttttt cttataaaat gtagaatact aaagacctag atatacgaag caggggtagg 480

attatgaaat gttgattatt cagctttact agctacttcg tcaaatatta ttgctgcacg 540

ggctagtaat gtgaagagcg agagagaagt aatttcgggc gcacaactag ccaaaaattt 600

ctaatatcct ttttaagcac tctggggatt aacataatat aaaggttaca aaaggtgtct 660

tgataatatg ttggataaaa tccttaacgt tgagattatg gcaggtggca agtacatctt 720

aacggaatat atctatcata gaaatttata tacacggcac ccttactttt ggagagaaaa 780

ctctcatagt aactttgacc aagcaacaac agtggaagat cacggtgtgt cgtattccat 840

aagagatcta aggttttgac catgaaaacg cgttgttgaa taagcgacat gtttgtcatt 900

attatcgatc gttaatcagc atcatcatgc gtcccatgac gtcatgcata gcgatggggc 960

tattcgcttc ggattaaaaa actaaaatta tgtataaata gtaaccatat gcactacggt 1020

cactaagtaa gtaagtatgt acgtcctata gc 1052

<210> 3029
<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159103_G1, chr4:169972788..169973856, Cluster 18

<400> 3029
ggaggatgtc ttgtctgtcc tgcctttgtg ttactagaaa gcttggccgg ccggcatgcc 60

atgccttgcc tgctagtgat cattactacc aagcacacag caggccgatc aaaagattaa 120

tgtcttgggc cgacagatca gatttaggtt tcgaatgccc agggcccagg aggaattaat 180

aggatttgat tttggctcat aaaataataa ggtctcagtt cagcaatgat tgcattaaac 240

atcgtcagga ggattcatca gaagagcgaa caaaaaggaa aagtcatgga cacacacata 300

tatataaaaa ataaatatta gaagaacata aagcggcggg ctcttttttgt ggatataaaa 360

atataaaaat ggaaaaggaa aaaaaagaag gagaagatga tcttccaatc tttgtacgta 420

atttgtacaa ttcacatttt gttgggttct gctaattcca tcctctcttc ccaacgcaat 480

aatcttcctg ttgcgtacat gatccatgtc gataagcaaa ttaaagatga cgttttcctg 540

tttcagaaac ctaaaaacat tgttttacta tttgaaatag tatacgtagc atgaagttct 600

tgcttcaagg cttaagaaag ttcaagatag taaattaaaa caaaaggaaa ccctaacctt 660

caaacaagat gtagccatgg cttaattcct taagatgata cgggatcagt aaactgaaga 720

tgggctttct ggttggtgtc acaaaagatg ggctgcagta attgggcctg gttgtttttt 780

tctttctttg tccatcttgg actctgtggt ttagggattt ggggatttgg agcctctcat 840

cacttgttga ctctcacctc ttatattttt tatctttata gtgaagtttt tgctcgtcgc 900

cgtccgtggg ttttctcttc gtaagagttt tcccacgtaa atccatgtgt ctttcatttg 960

tttaggtatt ttactttctc ctcatcttgc tttctattgg agccatctct aaagtttttt 1020

ggtgtgtggt catattggca ttagaggcat atatgtgatg tgttctttg 1069

<210> 3030
<211> 1257
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162551_G1, chr4:190049068..190050324, Cluster 18

<400> 3030
gtgcttgggt ttaggtgttg tcgagttcct tggctgtatg cagctcgttt taggaaatcg 60

gagctgttcg tcccttatgt taagctcgac cgtgatgact ctagatatgc tttgtgtgtg 120

gggctaccgt cgttgtttga gggggcctgc cgatttctct gtcgtgcact ctgtattgat 180

gcagcttatt ccattggagg atagctttgt tttattcggt ttcagctgtg tggctgcaac 240

taaccattct gtccttttgc gttctctacc tacattctat ctagcaaggc agaccgtgtt 300

tcttcagtcg tgatatgatg ttgtgttgcg ccgttttctc attgccaggt cacctgtttt 360

cgaaggctcc gtcgtgatat gatgttgtgt tggggcggaa gaaacatttc tacaaataat 420

tagagttggc agaccattag tcaaacaaag ttcaagcttg ttggttggat tgattggagt 480

tgtgtatctt ctgacacaac tatttcagtg gaatgtacac atccaattgt cagcagatca 540

gctaaactgc ttctacacga tgaagtgatg aaagccgtaa atgagcgaaa taacaaaact 600

caaagaacaa aaatgcttat cctcttcggg aggttgttgt ttgcttattt tagtccttct 660

tctttataaa tattaatcgt catgctcggt tcctttaaaa aaaaggacat aaatgcttgt 720

ttggataaaa gtttgctaaa atgcatgagc tacgactaaa attttcttat ccaagcggta 780

aggtcgagat gtccacaatc agatcagata cgatatgatg ccctaattac tctttttttt 840

taaaaaaaaa acttcaacac tcctaaactt tctactcatt aatattcaga attgtttgaa 900

ctagtcagag tgaacacacg ccttttcttt tctgtcaatt ctgcaaaaaa agcgaaggcc 960

taaaactaag gcatgtgcat ttcaagaaga aaatacacag agtagctaag aagagtggtc 1020

gaaggtgctc gcgaggcctg tgcatttcac acttcacact gacaagtatg tgctgaaaat 1080

tgccatccct gaatcatttt gcaagaaagg atgattgaga aatctcggtt tcaatattcg 1140

actgagattc agcatttgcc tatggcctgt attgtattgt acctatggaa agtagtgcca 1200

tatatactga aagttggatt gtgtgtgtgt ggttttgttt ttctctgtgg ttcctct 1257

<210> 3031
<211> 1021
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_168380_G1, chr4:220513695..220514715, Cluster 18

<400> 3031
ctccaacaat aagttgatca attactaata gttcggtagg gatgggagac actttgaaac 60

tccttgtttg tatagagtgc tttcatttag aactcagtac tcctatatag gggtattttt 120

catacatgac caagttccaa actccacctt atactagagt gctttcattt agaactcgat 180

actcctagcg cccatattgg gacaatcatt ttagatgatt accacaactc ctcttggcac 240

attatgcctt ttattagagt gtttggccta gaactcagtc gtcctcacct aatgggcctt 300

acacctacct catcaaattg ttttgagtat ctttgggcat atgcaacaca taataccct 360

taggacaact gagtctagta cgttgttggg taagggataa tacctatttt tgtttttact 420

taatgatcgt acttgtacga tgttgtaaca tcgagctctt gatttgtgaa gtagttgaca 480

gacgaggtac ctaagagagt tttggtcagg gactcgcaac cactttagaa gtcatctcat 540

tgcttgaatc tattatcgag ctttgttatt taacatgatg tactcgtgtc tcaggtcttt 600

aagaaaattc gaagatgatc ctcttggcac ctaatcctct cgggtcgatg ctacctttc 660

tgactgaagg aattcatgaa agaggtattc attctatggt aaagatgggc tttaagagtc 720

atgtatacca gaaagaaacc attgtaccat agctagatag tagattatat ggaaaactta 780

gttaggaaat gtgtatagct tcgggtccgc aagactatat attgtaccat agctagatag 840

tagattagaa gtcattcgat caacaagcag agtgtgctcc tcatctcctc gacattgcca 900

ccccgttttc aaggatttta taaggtaaga accatgccac cctaatgtgg tctctagtag 960

atcatgtcac tgaggcatat ggtgtcacca ccttaacccg gtagatcttg tactaagcat 1020

t 1021

<210> 3032
<211> 1182
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172015_G1, chr4:239020225..239021406, Cluster 18

<400> 3032
atgaaaccta aacaaactcg agaccatttg caaataggtc agcaggctaa cacgaggaaa 60

tcaataataa gcagttgtcg tacaggtata cagtatatga ctacatgcct gtagatacag 120

tgaaagaaat ttcttctgct aggcaagtaa tgtgtagata tataacaagg aatataaaca 180

tgggtacatg gcatggtttc ccattttcag gattattgct gattgaccat catatttcta 240

atcaggtgtt agtattaatt cactaatata tatagtttgt cgtacacaat ttagttccag 300

aaatgcaaat ttaatcgcaa gcaaagtata gtttaaactt taaaggaaca aaactgatct 360

gggacattac tacattgact acagacttat aaacttctat ggcacaaaaa tgttttaatc 420

tcaaaactct attatatgtg aacttcacat gcactaaatt ttgcaaccag tcaatatcaa 480

ctaaccaata cacttttact ggaatcaact ccccacaacg ccatgaattt gcaacccatc 540

aatcaaattg aatatagaat aggaaacttt ctaacaaaaa acagtatcac attgatctcc 600

aaggggactt gtgttttagt ccaaacctga gcacttatgt tcaattacct gttttgctaa 660

gcacttatgt ggagtcgtcg cgcaagggaa gatgatgtaa tccccactaa ttcgcaaata 720

ggtcagcagg ctcacacgag gaaatcaata ataaggagtt gtcgtacagg tatacagtat 780

atgactacat gactgtagat acagtgaaag gaatttcttc tgctaggcaa gtaatgtgca 840

gatatataac aaggaatata aacatggcat ggtttcccat tttcaggatt attgctgatt 900

gaccatcata tctccgatca agtgttagta ttaattcact acaggcacat gataatctaa 960

ggaaatttag aaggattcaa ttctggtcat ccaataatat gctagcgagt cctaaaaatc 1020

cccaagatgc ttttcgagcg tgatatatga tacaaaaggt tggatacaat aatgtcaagc 1080

acgaagtcgt agacctatga cctatgagca aattatcaca tcagaataag cacatagata 1140

gccaatagca caacttgata gcctcttaga acataaaaaa ta 1182

<210> 3033
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172074_G1, chr4:239443433..239444602, Cluster 18

<400> 3033
gtgtacggga agtccaatgc acatcgaact taatccggtg tgccaacacc tccaactctt 60

caaaattgtc tctctgcata agtggtcagt gcaccaatgg gctggtccga tgtgccaacc 120

aatataagtc ctaagaaagt gctttctacg cactcggtct ggtgttaact ccattttgga 180

taattcttct ttcatttgat tggctgattt tgtgtgtgtt cttatgactt agacagacat 240

atttaaagat taaccatgta gtctaagtca tgcaacttca ccatttgatt tatataactc 300

gcattctcaa tttggctcaa tatagctcaa aaacaccaac ttatataacc cgagatttcc 360

atttttagat tactcaaata tgttccaagg gacatttaga acttatccaa aatgttgaac 420

caccgaaaat ccatctttta cacaatacgt ccccttttcta actgggtttg atttatttct 480

gacttggaat cttcaattct cattcctatg aacctgtgat tacacaatta acaaactagt 540

tagtctatat agccagcaaa cgcaaaaaat aatataaaat tgtctccgag acccattttc 600

ctttcgcaca ctaaactaat tataaaaagg gagggagaac atctcaagca taagcaacat 660

tgccatggca tgcctatgga aagagcacca atacaagcca agaaataggt acgacataaa 720

taattatagg aatggctaca ataaatcgca ttgaggtcct gtttaggata gctccggttc 780

tagaattttt tggtggtttt gatggagaag gttattaggt gctctagaaa atcgtgaaga 840

tagagctcta agccttaaat agaagacatt tagataagtt gttttattta ttttttagat 900

taaaaatatt ttttaaactg tttaaattta tattgtaaac tacagctcca caccagagtt 960

ggaacctaga gtcattccaa acacccctaa atacaacaat aagcatactc cacaacctag 1020

acatggacag tgtgatatca ttatgtataa taatagtgca tgtttgtttt cctttgctaa 1080

actttagcat tgcactttct actaaagcgt agctactaaa taaacaaata gggttgctaa 1140

aaatattgtg ctaaagttta gcatctatta 1170

<210> 3034
<211> 1165
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172571_G1, chr5:1325629..1326793, Cluster 18

<400> 3034
gtaaaatttc tccctctctc ccaactgtat tttcattcac gataaacatt acgcttcagt 60

agacattttc aatatcacat tttaatcact agacatactt gagtaatgag ctacattttt 120

ttgcctgtgt agtgttgcgc acactgctaa cgtcagtcat atgcatcttg attaacaaat 180

actctttacc tgctgttcat aaaacagcag ctatcagaag ttggttttga cttactggaa 240

gttttgtagt atatattgat aaccttgcag ttacatgtta gtcacggatt taaacctaac 300

atcttaagac tttgtgtgtg ggaaccatga gttcaacact agagtagcgt tcacttgttt 360

cattacaaca aactatctgt ttttttaacc ttttcaattc aggcacatct taacttttct 420

tttttgtccg tatgattttt tacgggatcc attcaataaa ccaatgctgc cagtggtaac 480

tagctggcaa tgtagattcc ctgcttttgt ttgttaattt gttttcacta cacaattggt 540

agctgtggtg tatcacagaa gaattgctta gcacatgtgc aattggtatt ttatatttgg 600

tttggatcac tattctgaag ccaggggaag aaataataag tttgtgagct tactgtggta 660

tgccattgtt gataggaaat attgcccatt atagtaataa tactgttctt cgcttcttgc 720

aataaactag ttaccaagac atgggtgttg aggatttacc aatttttctc tgggtttatt 780

tccatttgct acgaaacata gggtgttagg atttaccaga ttttcttgaa tttaagctga 840

tttgaaagtt gaaaccaggt atccattttt tttggtaaac actgatccag cattcttttt 900

tagaatttcc tagttttgta tgtatatcgt aaacaagttt gaaattctgc atatttggtg 960

tatgttggtg ctgcgtgttg attttatata tccttttaga gagcattgca atatattacc 1020

agtgatgtta tttttcattt gttatgatgc catagtttta ccatctgaat ctttgttgtt 1080

ctttctttct gtttgtttat gttgtagttg ttcatggtgc tctccatctt ttaacttgat 1140

aataatgata tattccatga tttag 1165

<210> 3035
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173336_G1, chr5:5437613..5438613, Cluster 18

<400> 3035
aatagtatct aaggcactct catctatatt ttacggtctc acactgatgt atagatataa 60

tttgtgtgaa gaattatgtt atggaaaact tcatatgtac ttgtatcatt ttatgatatg 120

attgtaatcg tatatcacac tcagatgctt ctaacatgtc tggatattat gatttcagtt 180

gaatatgtgg atgcattatc attcgactat tgttttgtgt tataatttgt gttattggaa 240

atctatgttc tgaaaacttt atatgtactt gtatgacaca actgtaaccc tctattgatg 300

tgtgttacac tcaaattatg gttttctact tccaaatgta tggtttatat atttttgtac 360

atcaaattat ttgtgaatat attgttattt attgtgcagg tgatttgaat aaaatacaga 420

caaattctac gatttttatt ttttctaaca aaactgtgtt tttcggacaa aaatcaccgg 480

aattctgtca ataagcaatg aaatccagtt agtcaaattt gataatgtaa atcgatcgag 540

aaatgcgaaa ttcgggtaaa attcggttaa atccagtttt tagaaatagt tgaaatttga 600

atcgaagaac agtatggtta acacttaaca ctgtcactga tgcaaggacc ttaccaactg 660

cggtgccgac cgttcgaacc gatcgattcc aatcgatcga catcgatcat agcattaaat 720

gaaccggtta gtaacaacca actttaatga cctagttttt ctgattagtc tacatatgtg 780

atgtagttgt ttttttaacc atttgaattt caaaaaaaaa atgaaaacca tataaattac 840

ttggttttat cttatttaca atttattttg ttttaatatt taagttacat atttttattt 900

ataaattacc tagtttaaat tattatgctc aagttattta atctttaatc gttgttacga 960

ttcatatatt ctatctgttt aattatgtaa tcagatgtat t 1001

<210> 3036
<211> 1374
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174450_G1, chr5:12287191..12288564, Cluster 18

<400> 3036
attcagatac tctaaccact cctagagaaa ataaatacag tatgtctatg cccaacagta 60

tggcagtagt gaaattataa agttctgcaa aaatgctaat cacatagagc acctacacca 120

agatatatat cataagacaa ccaaaaggac cccactagtt tgtctcatga aaatgcagta 180

agatattcat caccaacata caaggagcca agaggttact acccttaggg ccagtgagaa 240

gcagaagttg aaacaaacaa caagcttttg gagcttcttt tgtggattct cgtatgttct 300

aatggttagc ggtagtgata ttccatatct tatacacttc atcatacaga atttcaatcc 360

aaaatcacct tttccaaagt cacaatccat aataactttt taaaatgtta caggccctta 420

caaatatagc aaaatgtagc attacgtgca caagagtcca tgctgcacag ctaaaggcat 480

ttgttgccca cactaagttt tcaattgaag atacaaattg ccacaccgac cgcatgcaat 540

gatttaataa aagaaaagga gacatactaa tgcacacaaa aaagatgctc ttgattcata 600

aaaccaaaaa aactcaggtt acttattatg aataagtaga tgttcagatc agttattcaa 660

ccatttaaaa tatcagttcg ttaacaatgt acttaatcat tccatacaaa atgtctgtta 720

agatcttgag tcttgactca tctttgttta gttgaaagtg aatcttgttt acccttttca 780

agtttttccc ataaaaaaca attgatggtg gtttagttga agttgattat tcaacctatt 840

gttaaagaaa taacaatcaa aacactcctt aatacagtta ctgttccatt acttaacaga 900

cataaaacat ttttcaaact ggaaaattgt agacaaagtt attagtggaa tattataata 960

ttctccatcc aatatataga gcactaaggc attagacaaa actatcacat cctcccaagt 1020

cagtgacttc ttctgtagcc tccctgaact gaggtttgtg gcacagatat ttggtacgaa 1080

aacgaaaggc tacctgaact tctcaatcaa agggtcatga acaacgaatg caatatactt 1140

catgtgatag taggtcttgt ggttcccttc caccttcttc tttggctgtc gtggaaagac 1200

ccccttttaga atgcatcgat aggaaaatgt caaaaaatga gctcaaggat tcgaactacc 1260

atcttaagta atatgtgaca cacgagccat gtagaagaca gtgactccat aaagggctga 1320

acaaatagtg gtaattaagc tcagctggca aaataactgt caaaaaatga ctaa 1374

<210> 3037
<211> 1157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175039_G1, chr5:15554850..15556006, Cluster 18

<400> 3037
cgagaaaata ttttgtgcca ccaaccctca aacggtgtgg gagtagtagg agcatctcct 60

cggcccacca gcccccacca accatgaaag ctcccatcca gctacttttt ttttcttgaa 120

tctggcttac atcacactca aaacacactg catgagtgta tgcgcatcgt cttcctggtt 180

caaccaaata aatgtaattc gaactcatag attggagttg gagctgatct cccatcataa 240

tcctcataaa actactagac atgaggcgcc ccacttggcc actttagggc ccacatggga 300

ggacaaaatg gggccgtggc agtggtggta ggtgctccta cctccggggt tggtggttga 360

cggatgacat gaccctccca accatttttc ctatacatct ctacgttcta atatatttta 420

ctatctcatc ttaaaattat cttctcacat atatgacgtc tccaactatt tctttataca 480

acttttcata tatacatctc tccttatatt acgttctaat atattttact atctcatttt 540

aaaaaattct cctcgtacat atacaaggtt tccaaccatt tccttataca cctcttcata 600

tgtattataa aattcaacta attaacatct atttacattt tttaaaaata aaaagttata 660

taatatttgt actatcataa tatattatta ctatattagg agatttaaat aagattaata 720

ccgtaaagaa acgactctat taaagtatag aggaagcttc gtactctata tatatacagg 780

gagattcctt ctccctatag atacgaggac tccttacatt gaactgttca tactgtatgt 840

acggttagga atgctattta gtgcaccgtt ggaggcctgt ttgatttaat ttttagtcta 900

aagttagttc ttcaatttga cctactaaac ttagacattg tggcccagcc tccgtgttta 960

ccagcatgtt attaatcagg caaaagttga cctgcaagac atgccatgaa tctcaaaaca 1020

aatgcatcag gctgacgtgc agcccctgca gcaaaaggca tcagcgaacg acaactacca 1080

attaaataaa cgaaacaaat atataaacaa tctcctcaac ccccgcaagt cccaggagca 1140

tgtcaggatc aaagaat 1157

<210> 3038
<211> 1361
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176826_G1, chr5:24728782..24730142, Cluster 18

<400> 3038
tcgatgttcg gatggtcgat attcggacga aaaagtagga attttaggtc cgctctctaa 60

aattaatagt tagctactaa aaattaaaat tagttgttag gtttcaaata tcatcaacta 120

atatcgtaac taattactat ctacctcaca gctaacaatt agtttattag ctagttcaac 180

ctagctaata atttattatc ttactaacta ttaggtctat gattccagac atgaccttaa 240

tctgccaata aaaaatagag tgctcaattt ggaaataact ttcccttgat acgggcgttt 300

agacctatgt ttagatccac cctagttttt taaaaagtgc tttttatatt tggtttctag 360

aaactggctt ttagaaggga aaaattaaga gaaggtgttt ggattcatct agtttcttag 420

aaaccggttt tagcggggag aaacaaactt cttggtttta agaaactaag aaagtggttt 480

ttagaaactg aataaaaact gacttgtttg gagaccttct agatttaaaa aaaagtttct 540

aagaaactag gtggattcgg ccctatttgg gagggtttca tatcaagaat tgcagcttcg 600

gttttccagc ttcaccataa aacgacttca acagattggt aacacagggt tcaagagtgt 660

ttggcttgca catagacttc aacttctgta aaacaattaa tttgtgcggg gttccttaat 720

tatccttgat gattagctgg taattaaaga gacatgaatc gataggtcat gtaaccaatg 780

gcatggtggg taatttttgt gcaacttatt gtggaggtat gaaaacaatg ttttttagga 840

gcttcaaaaa atttataaaa ctggcctcta gtatcatttt ttttgaagct agagctcatg 900

gagttggacc tatttgatag aaaaagttaa aataaatcta aaatttttga agtggagctc 960

tcccaaacag gaccaattga tagtttcact atcatcgact acttctaaga ttgccacgtc 1020

aatatttatc taagaaatat tgtatccatg aaactctctc atctcccata agagtcttgc 1080

atatctctct tcattaaatt acataccatg tcatcatgca tgcttgagtg gcatgttatt 1140

taatgagagt gaaacactaa tgaaatgccc actaaaattt ttcttataag caagtggtta 1200

ggatattcca aatccctagt aacatactca tctaaggccc tgtttaaaac ctttagagct 1260

aattgtttgc cagctaataa gttgatagtt ggttttatct gggttagagc agctaataat 1320

taatatctat ttgtagggta taactaacaa ttagttgatc t 1361

<210> 3039
<211> 1258
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177360_G1, chr5:27770554..27771811, Cluster 18

<400> 3039
tagtgcagac acaatctcca agattacgtc caagacaagg ggacaactta tgatttagaa 60

ctaaacttaa tttggaggaa atttctagta ctctaccgat tgatttagtc agtgaccgag 120

gaagttgatg acatcgtgag agtgttgctt acaagtcacc aaaaaaaaaa gggattacaa 180

tgtcagatcc cttacatcaa tgcctaaaaa agagtaataa aacgtctttg caggagtcgt 240

aagctacaat aaggggggaa aaccaacttc ccaagctaat ctgcgttccc ccatgtttaa 300

aattgtcaat ctcatattga aggagcaccg aatgtgtagt tgggctcctg gccacaccag 360

atggcaatct agttctagaa aaagagcgcg cgacggtgct ccaagtagat ctagcatgac 420

tacgttctct gcacgtgttc tagactcggt acgacacgct gcacgtacgc gtgcgcccgc 480

gtcaagtcgc ttaggtaggc gaagatcgtg ctcagcgtgc aagtatcata aatctaatca 540

acaacacccc aatctatcga ttctcaaaca attaaacgta cacgtgcagt acgtacgacc 600

atattgtgtt tttattgcta aatttatata tatatatata tatatatata tatatatatt 660

atttcgaaga tgtcagatga cttgtatagt ttttttaat atgctagatg atcgcacgac 720

ctgtttatct gaccatatta tatttggtaa aaaaaatatt atatacattt tttatcaatt 780

gtatattgca tttatattgt gaaaaaaaat ggaagacgaa tccatccgtt gctgagaaat 840

gtattctgtt ccgagttggc atatatgggc ctgttggttg ctgcagtagt agctgctgct 900

gttttataca gtagcctgcc tgtgaagggc agatatgcag caacagccgc ccgcttgaaa 960

ggcttccgaa caggtggttt ttgcttgtgt tgagcaagcc atcatgcaca tggagaggga 1020

aaagagagcg acgacgatgg gcgagagagt gtcgcaattg cgcggcaact cagctgagga 1080

ggtgatccac cgttgaaaga ggcacaaatt aaacggtagc gacgcctccg gctactagta 1140

ctagtgctgt ctccctcaat tcctaaaaga tgctgctgag gtgcgtacgc gcccgttgtg 1200

ctttcggcat aaactatttg attccgacgc gcttgaggaa ggaaggaagg gtcaaggg 1258

<210> 3040
<211> 1345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177641_G1, chr5:29051211..29052555, Cluster 18

<400> 3040
tgatacaaga gctgagttgt atatcatgtc tcttagttat ctcttgtact tgaaaaacag 60

atagatgatc tcagggttgt atgtatatgt cctaaagcat cagtttccac ggttttccac 120

catggtcgta ctctcccgca ttaatttaaa tggtaaaaaa gttcaaatga tgcacaaata 180

agagtttgaa ccgtgattgt tggcttcata ccgacattca caaccacata accaatagaa 240

cacacatgtc tttatgtttt attctctgta cttagagatg gaaaccatag caacatacat 300

acactttagg ttacagccag gcttgaacag ttcgtttcgg gcaagaactc atgtttctaa 360

acgagataag gaaattagga aaaagacaca acttcacgtt gtagtcctga aataaaataa 420

taaaataatg tactaattaa aatataaagc tgccccgtaa ccagtgtgac ttgttgcatt 480

attccatata ggatgggctc aaacaacacg gatgagatag gagtgaaatg tcaaagtaat 540

catttggaga gttgggtgtg gctcagccat ataggtgtaa cctgatctct acaaaccaca 600

cacagaaagt attcggaagt aaacgcaaca aaaatcacca aggaaactca cagaacgaaa 660

cagttctcta aaagcactcg aaacaataat catcgaatga cgcctactgt gtagctgctt 720

agagttgaaa cttcaaaatg acaacccact ttattcaaat agctagaacg aattatatat 780

attaattctg cagcaaacaa tactagaaaa tgctaagaga agcgacaaca atagtgtatg 840

cacagtccac ggatgtaccc cggcacgcca ctttctgttg tctctggccg atactgaaat 900

aatgcattgc ctgttaaccc atgggcaaac ggcgttaggg gttagcagcc tactactgtt 960

tgagtatcgg taggcaaacg gcgttaggca aatggccgat accgatactg aaataatgca 1020

atgcattgcc tgttaaccta tgcaaggaga acctctccca atggccgatc gatagatcac 1080

tcctgactcc tgctagtact ttacagccat gctttgattt gatgtgagca ggcacagcag 1140

acatgagtga tatggaatgg acatctaccg gtcaatctcc tttttctttt tttgggatca 1200

agattcaaga agaaataaag caaagcttgc agtcaggctc agcctgcaat actagtatat 1260

atcacaagtg ctaatacact caacgattag ctactctgat ctagatgtgt ttagaacgca 1320

tgcatttgct aatccatgtt taaat 1345

<210> 3041
<211> 1280
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198225_G1, chr5:163735955..163737234, Cluster 18

<400> 3041
gctcaggctt tagctgacgg tcatcgatat gccctaggca agctgctttt gggcgaattg 60

tatacgaact tatctttaga cactagcagg atgttgtggg tagagaccat taaagcaaga 120

gggccatggt gtagagacca ttaaagtagg agggccatgg tggtttttgt aactctaggt 180

caaactatat ttttagcagt acatacctaa cttcctaagg ctacttagca cttattcctt 240

gatccctcta acaaactaat catatgcact tctttgggcc aggctctgtt taagctatct 300

agggagatac cattaaagca ggagggccat ggtggtttct gtagctctag gtcgaactat 360

atttttagcg acacatactt aacttcctaa gactacttag cacttattcc ttgatccctc 420

ttacaaacta attatatgaa cttcttttgg ctaggctcta tttaggttgt ctagtagttg 480

acttgctgac ccatcaactc tagattagtt ttggatcttt tttgaccaaa gagatcctgt 540

ttttgatgta tatgctagct cgaatgagtt taataccccc ttccttaaga ttggataact 600

tcaaaggtga tgagaggatg agtcatgttt taatttttat tgtaattcac ccatgcctcc 660

tacctgttgg catgagtttt gttaatagag tgaccaaacc aggttatgaa tcttaccatc 720

atatagtagc tgcttgccaa cttgtcttct ttcatatttt agccttacat tctatatttc 780

aatatggatc ctaggtggag tctaaacttt gatatcttca gttacttgct caacaagcaa 840

ctcaacgtcc taagactcct gccaacacaa gccatgtctt cttcaatggt ctttctccca 900

cccatcatca tcaataggat gttcctgatc atccccattc tcttcaacct ctgttttcat 960

attcatatcc tcccctccat atccatactc atcatctatg gatgctcatc cttcagccaa 1020

tgaaaatcct accactgatg ccccctccta caaccgaagc ttctaccatc gatgctcctc 1080

ctcctcctcc tcaaccttct gcttatccat accctcctat atactcgtat gggtatccat 1140

atggtgctcc ttcttatgga atgtatggtg ctccacctcc atatgctact caatatggtg 1200

ctcctcctcc aaatgttgct tgatatggtg ctcctccttt gtttgctccc ccatttagtg 1260

cttgtcctcc attctgtgct 1280

<210> 3042
<211> 1159
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200929_G1, chr5:178740989..178742147, Cluster 18

<400> 3042
cttagagaag atttttctct attctaggag tatctctagt ggtactaaga acttcctatt 60

tcacggaagt gcttttagct caaacatgca taggaagcta ttgggacaca tagatctaga 120

tctgtagaat ccttgtgttg tattgcaata tgatgagata ataagatttg aattaactaa 180

ttgattttgt atttcaattt cataattaaa tatttttatc atcttcaata caaggaggat 240

gtgcaccagt aggatgatgt ggggcaagag tatgaatacc ctgttagcta aggggagaca 300

aggacgatac accatcgaaa agtgagatga cacggatgag cactgtgacg actaggggca 360

tgacttctag gtaagattat tatgtatttt ctttggtgac taagtttttt ggactacaat 420

gcatatagtt ccttattgca cattttgta gctatgcttt tatttgccag tggaaataaa 480

ctatgtggct catgcacata agtgtttcac tagaatgcat ggaaggttgt gaaggattca 540

gtgtcctatg accgtatata ggcgtacaat atatatttta aggagaccct aaagcaactg 600

atggacaaga atcggggatc ttcgtccatt tacttgacaa aggatcaatt tttaagataa 660

aacttttta gatattttgt cttaaacccc caacacaata ttgatctaat tataaataaa 720

tatatctatg taggtgacag tttcttatat ggtgaattgt cagaaggctt atcatgctct 780

ttgcaaactc taggcttcaa aagagttata ggatttgtct aaaatgaata gatggaacca 840

tggtaatgat cacgaagcac atttatagca ccagcaacca tattcataag gctaaaccta 900

tggtaagttg tattatatca tatgtttgca atgactacaa tatatgattt ttctgtacga 960

gaagctgtca ttggagtaac cccaagcgat gttaggttta tatgactaga catcacataa 1020

caaactcttc aaacctagag catatgtgca gtcagttgtg cacaaatcat ttagtgagtt 1080

gtctacactt agtatttatt gaataaaatt taattgttac cttgcttgat tggtttgtgc 1140

ttcaatagca atataattt 1159

<210> 3043
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202888_G1, chr5:190246561..190247615, Cluster 18

<400> 3043
tttccattaa tgcttttgta tatcattcaa tgaagcaaat caatatatta ggagatatta 60

atgatcaaaa tagctttgct tatatatgca cctttcctga tgcacgaact agtgagccaa 120

tggttgagtt atataagttt tgagctcaca atcaagttta ggttcattca ttgcattgag 180

gacacaacac acatatgaca actttgatta cttgaatagt tgattctaat agttgtgtat 240

tatacatatg aatggatgca actaaaaaaa taaaaatctc tagaaagtta aaacagaaca 300

ccatagctat ggaacaagtt taaaagagac taatggtact atcttcattg ccaaaataaa 360

ttgattatta gagttatcat gagtaaagta aacttagatt tgattgtact ttgccaaaaa 420

aataccaaca tcattgacac taaatatata ttaaatatta tatctaataa tactaatttg 480

gtacgttaat attagagata ctttattttt tgcctatcca ttattgcctg agtttgtttg 540

catccactca attctaaaaa cgaaatcttt ggccatcgaa ctataaatat tgaacaagtt 600

tggcaatatt gctagtgtta acgtggtttt gtatttattg agaataatta aaactacttt 660

attttctaaa acacaaaacg atttttttaa attagaaaat attaacctaa ttcataattt 720

attaaaaata ttatttatct cgtgctactc tacttgattt tttatttctc aatttctttt 780

ctaggtttta attgattgaa taaatatttt tcatttattt aaatcattat ttcacactat 840

agtatgtaca acatagatcg tgaaaactta tagtagattc caagtaagca taagaaaaat 900

aacaccaaca ttgcaagcgc catgctctgc cgtatatact cgctctgcct gaaaaagata 960

ccattctaaa ataatgcata atcaaattgt attaagtttc actcacttta tgtaagaaat 1020

gatgattatc ttaataaata agtaatttag atgat 1055

<210> 3044
<211> 1293
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203542_G1, chr5:194099177..194100469, Cluster 18

<400> 3044
tgttaatccg tctgattggt tgctcacatc gtctcatttt agaccactgt atttattgat 60

tttatctgaa attatgttta gttacctgca tataagagac aagagacgtg tactgtataa 120

gagatataaa ataagttatt ttgcctgcat ctagcggtaa gcttaaatca tgtgtatccg 180

gccggtcacc ctcccgagag tagcgcgcag gcatccaatc agctccaata taactgcacc 240

ctgcaccact gcctctaaac ttctgaagta tctcccccttg aagtatctta cagaggtaga 300

ttgccctgtg ccaaaagata tatgatggtg ttgatatgcc tgtcctgtgt tcttcatcct 360

ttttttactc tttttcgtca ttcctttata ggacctgata cttagtaaca ccttctgacc 420

actattagga cttgtgaagc ttttcagact cttgctatta ctttatatct tatcaattaa 480

ttgttgtatc ctatttgata caattcatca gctttaatca agcagttttt taagcagagc 540

tggtttgaaa aaactattta ggaaaacatc actaaaagtt ttatgcttaa ctgagggtgt 600

gtttggttcc tttagtaacc cttctaaatt ttagaaacta aactttagtc cttaaaattt 660

gtatttggca gccccgttag ccattctatt tgacagttta gggactaaaa gtgaagtggg 720

aaccaaacac tcaccgagaa aagggaaata aggagagatt gaaatggatg agatgtgaat 780

ttttttagct ttgtgtatct gtccattcct ttgtaagaga atcaaaaggt agttttacct 840

atgaaatgta gctgttttag aaaaaaaata gctttacttg taaagttgtt tttaaaaaaa 900

gattaaaatg tgtttaataa aaaacagatc acaacggctc ataatatgtc ggatgaaact 960

gtgccaaaga tgggacttcg aacttcgatg ttgaataatc tggaaatttg ctcttgaatg 1020

tcacagattc tgtaacttcc ccttttgaaa atctgcagtt ttgctcttgg aagtcaggac 1080

gtagtaccct ctatctccag cgtacatagt cgtcaaaggg actcggttta aattgttact 1140

acaacataga caaaggtaga acgactttag tctatataat atatgcgtag cctgcaaccg 1200

actcgtaagt tcactcaaca attggacact cgctaggaca ttgcagggtt atgtaagcta 1260

gatatgagga aatggataca taggaggtag gag 1293

<210> 3045
<211> 1343
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203859_G1, chr5:195673686..195675028, Cluster 18

<400> 3045
atagcttttt tattttctat atatataaat taatattgat gaatgtttaa tatgtttatg 60

taaaattatt aaaatgtgct catacaaacg cacaaataac ttattttaga ctgtgcatat 120

gtccaaatgt tcaggtagtt ctttttttctt cttaaagttg agacacttta ttaaatttaa 180

ggagtattac atatttttttt cattacaaat agacaagaaa gtttcttttt tgtctccttt 240

ccttttttgtt gtcactgttg tttctttagc cccagcttat ttttcagcac aatttattct 300

tcgtctctaa ctacgatctc tgaccttagg tgaagatgct ctcagccacc aacgaggctt 360

tagcgcagga aataaaaata tattcaacca agggctagtt ggtaattgga ctcattttct 420

tatttttgtg cctaagggct agttaatgtt tcacattctt ctctatgtca cggagatcaa 480

ttttagcacg gtttctatga aaaacatata aaataaaaaa attgagttta aagttaattg 540

aggtccaaaa taattgatgt agttgttaaa ataaatagtg taagcattat aaacagcaaa 600

caaaaagaac aaatgggaag aacatgaatt tacgagtgtg taagaaaaaa aaatgcaaac 660

tctatagcga agatacataa gaataatgca taagagtttt cgatgtgctc agctagagaa 720

taggacatca ctgcttgttg acacgaatga gaaatgtttg ggggaagacc aaatttatac 780

caagaaacat tagtgcattg ggtgggaata taaagttctg gaggagaacc gaagaatatt 840

tagtcccggt aaatttggac gggaacccta aacttctaag taggaataga aagcaaatcc 900

ttttaatatc ggttctctgc tagaatcgct atgaaaggtg tatctgcttt ttacgctagc 960

ttgatgatgt tcttgagtac aggttggtgc gacaataaga gttgaagtgt agtactggta 1020

ctaaagatat ttctgcatgc atgttagtac cagttgatag attaactatg tactaaagac 1080

ttgatattag aatcggttag agacctgtac taatatgctc ggaataaact tgacatttaa 1140

aacccgtact aatgatggag tcggtatcgg ttttaaaaac ataggaacaa aagttgataa 1200

acgaaatccc tattctccaa ctgacgtcca ggcagccaac ggccccgaga gagcactaca 1260

ggatttactg taaagttttt tgtattaaaa ttgcttttac gtcgtgtacg tacatgggtg 1320

atggaacgga taagaaaaag gtg 1343

<210> 3046
<211> 1323
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205133_G1, chr5:203032397..203033719, Cluster 18

<400> 3046
acactctgtt atttagtatc atatcggggc caacataact gaaatattgt tcgagattaa 60

tctccccgac atgaaggtat atcctttcta gctgcggcat taatttagca aaaaaaacag 120

aaatagaaaa aaatacactt gttgatccag taatacaatg tgtttcttct tataggccca 180

actctaccag taatacaatg tgtttcttct tataggccca actctacaat cataatacca 240

atgtccagct caactctttc tattatccat cttaaaacag gtgggccgat ctatgatgcc 300

atggcctgtg gtagcacgag cagagagttg ggatggccca gaagctcggg cggtgcctga 360

agtatgggtc tatggcatgg tgaaagcatg ataaattaac aatggacaag tgctccaatt 420

gtgggaatgt ttgatcgata ccacaccgtg taatctaatc taactcaaaa aatctttagc 480

tgagttataa acatccgaac ttttaaagtt gaagaaccaa tctgcctcaa attcccattg 540

gccgaaatta ccagccttac tccactagaa tacatcctga taaaaggcat tataaacaat 600

tatatcatgg aaagggagaa atctagccca tgtttccaac cacacctttt tctctctttt 660

tttcctttta aaaagacaag gatcaaagca aacactagct tttagaatct agatccaagc 720

acgtcctata cattttcat ggcctattgg tccaacgttg ctttcgcatt atcctcaatc 780

atattcacga tatggataaa aaaacatatg aaaggtgaaa atcgcaaatg caacttgcaa 840

ggtagttcca gccgtccctt cgtttgacgt gggaaaggac acgagaatca ggcaaagaca 900

tgcttgcaga tcggcgacca ccacgacctc gatcgcgatc gcagggcaca ccttgaaggc 960

aagcaccccc gaataaagcg ccggtacgat ccgattcatt ccacgaaagc atgatcattt 1020

aaacatagtc catcaaacac gattaagttt aatggttgta ccgagccgat ctagacacga 1080

tacaaagacc ggctaattgt actaggctgg tcatgacacc accctattag gatagtatta 1140

ggataggtaa cggatcacga tttaaatgtc tctttgtttg aggctttaat taattttagt 1200

tttaaatgaa tagaaataga gtttgattct aatacaattc ggttctcaga ttctatagta 1260

taaaattttt agagcacatt atcaccccta cagccgatac gatggggcag aatcaaccta 1320

caa 1323

<210> 3047
<211> 1326
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_205423_G1, chr5:204830016..204831341, Cluster 18

<400> 3047
tgccccgctg tgaagacggt gtggaggaca cactccatac gtttgtgtta tgcccagatc 60

gccgagattt ggagcccaac tggcatcagc attgacaccc ttgatggctc cacttgctcc 120

tactccacca ttctgtcgac cgccatatct caaaagtcat atcataaatt gttcatgatg 180

ccatgggaag ccaacaatgt cgttgtcttt agatgagact aaaactctgt taaggatgtc 240

gctaaaaaag ttgtagagga tctaaaaatt tggcgccatc gatttcttgt tgagggtgga 300

ttggaacttg acctccgagc gtatacatgc acgtgcaaaa cactgtcttg cactatagat 360

tgtacaaagt gagatttaaa ttagggaccg atataggtgt gagatatgaa gtatgttttt 420

agataatcta aggtcgagcc caatgcaaca cattaggttt ctatgtataa aacttcaaat 480

cttagtttct atcttttagt cgtccactcg ctctcccccc gtcggcccct aggatgtatg 540

acacccccct tcctcttcaa caacgccctc tcacagccac cagaaacagg ggagcaagga 600

tgctcatccc ttcaggtcgg gggagttcta gtctccccca ttcattaaca aatgtgtttt 660

atatgtgaaa ttaatctatt ttaagttcca taacctcata acaatgtgta ttgcgataaa 720

ataaatattg tatacttttt aaaaaacttc aaaaaatgat ataaaatggt aaaaacctaa 780

gttatagtgt attggggagg tgagcatgaa aaacggtaag gaaataggat aaatatggag 840

aaggatcttt taggggaatg tatttaaata tgaataaaaa gtataaatag ggggatttga 900

taggagaaac attggattta gtcttactag taagatgcat gtgattagac tttgttttaa 960

taaaacataa aaataaatgt gttctgtttg ttaagcgggt gtgaatgtga aaatcaatga 1020

ccatagttca aactccaact tgtgcataat tttatttcat ttttgcataa agcgagaagt 1080

agaaatgtga gtgtggaacc atggaaacta gtgctttata tagtgtagat aacacttttg 1140

tttctccaaa tctatgtcca cttcattgct ctctcacagg aatcctctcc atgcgatagt 1200

tctcctcgtg gtcgagtagc gcgcagggca aaccacgttg gcccgcaaca gctgcgcaca 1260

cggtggcact cctctccaat ggcgatgatg gaagaattag acttgatttt ccaaaaggca 1320

tgtcga 1326

<210> 3048
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205766_G1, chr5:206570383..206571388, Cluster 18

<400> 3048
gttgtgcggt taggagtgaa taaactcagt tggccctgca ttgagggggt gtttggttag 60

gagtgaataa acacagttga ccctgcattg agggagtgtt tggtttgaga aatcactcta 120

ttcaaaatga ggtggtgcat cataggtcta tttcctagta aaaataagga atcactccat 180

tcaaattgat atatgctaat acttccttct atttgattgt ctacaagttc gtaaaaatga 240

taaatcactc cattcaaaat gaggaatttg attgtctgca aaccgtttaa tgctcccata 300

tagctatgat caagtaaaaa tatgcttcct atataccatt ctattgctag tgtctagctg 360

atgacataga ccaatattta actcaagcta gcaaaaaaac cgttcatact agttcatcaa 420

ttgctctgct tctagtgttg ctgttactgt tacagcatca acaaggttat atccagaaac 480

ctgtacaggt accatcctga tgagtgcact aactgaaatt tcagaaaata tgtcaaggga 540

tttctgtata tgaacagaaa cctggggagg tcactgcaag tgaaatgcac aagtagagct 600

accacttgtc atcattcagt tcactagaaa acaagcaaac ttgccattgc acattcagac 660

tcacactatc aggtaccatt tcacactgcc atttccagaa tcaaacagat acactagttt 720

tcagataacg atagcaacag gtctcacaga tagagtaaca tacatagtta atgagtcatg 780

atggcaacaa taggtaatga gtagagtaat gatgtcggat tgccgcatca gtttgaaact 840

cgccttctgg tttttcggtt tgatttgagc tctttgatgc agtatcgtta gggtcggaat 900

cagaattaga acttgcatcg aagctgatgc cgtactctag gtccgattcc atgatatcat 960

gaatatgcac gtaatcaatg atctgaaggt aaaaaacaca agtgag 1006

<210> 3049
<211> 1330
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205826_G1, chr5:206908545..206909874, Cluster 18

<400> 3049
ggcatgacag tctccttttc ccaacttcac atatgatgta caccaagtta acctttaag 60

ttggttaaag ttttcttcca ctatcaatat aagattaaaa attttatctt cctaacattt 120

attatgggtc atgaaatatt aaaagaacta aatgagcctt atctattatt taaaccccct 180

aacatttatt acggatcatg aaatattaaa agaataaaat gagcatgatc tattaacccc 240

gacatgcacc ctcccactcc taaaacataa aataaaagac ttcagagaag agagaagtaa 300

ttttctaagg ccggttctag tgagagtttt ttttgtattc aataaggtgt cacataaacg 360

ttttttatga tgtggcaatt tttttaataa gacataagtg aatttcacga ggacaaaact 420

cttttggcac gattactaac tctctacata tcataaaatt agacatctat aaaaaataaa 480

actttctaat aaaaataaat attttatcta gattttattt tttatatgac atctcaatct 540

cgaaaaacgt tataaaactc gttgttgata ctatcaaaac ttgaggagag aaagtagtgt 600

tattcgctga tagtagaaag tctatctatg taaggaccta tttgggaata tagtattttt 660

agttccaaga tgatactgtg gtatttcaac ataccataat attttagacc aaaacatgtt 720

tggtagtaca tttagaaata ttgtacatct aaaatatttt ggtctgaatc aaagtttttc 780

attggcgtat ggaaagcgac ggctacggtc ttgccctttc ttctctccta cgttgcaacc 840

aaaatattgt atctttaaac agatattgga ttaaactaat ataaaatata tcataattgt 900

atcatgtcgc tttgtaaagt atggtaatat aaattgtagt ttaacggttt gtgtgggagg 960

gcttcaatgc ttcactttaa gaatttcagc ttcgtttttt caggtttact ataaaataac 1020

tccaacaaat tattgatgtg ggttcgagaa gtgtttagct tgcacataaa ctccatcttt 1080

tgtaatacaa tttatttttg tgagtttttt tattaccctt gataattagt ggttgtcacg 1140

agataaccga agcactatgt tatgtaacta gtgacgtgat ggtcatttct atgcaacttt 1200

atgatgtatg aaaacaatgt ttgtgaagca cattttgaag ggcttcatta ttttcatgaa 1260

gatgacctat agtttcattt tgttttcaaa gctagagctt gtggtgctaa acctatttga 1320

atggaagaag 1330

<210> 3050
<211> 1130
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206931_G1, chr5:212354811..212355940, Cluster 18

<400> 3050
gtcgctccca cctatatcaa tcaaggcttt gcttggttgt ttgtctagct ctagcaaact 60

atatttctta catcaatatt ctaaccacaa cctattagtt caactaagtc aaactttgaa 120

tccacctaac aaattatcat tatttatgtc agctaggata aatcaactaa tagttaattg 180

cagaggcgca tccagtgggt ggtctaggtg agccgtgtca tatcctaagc cggcccacca 240

aaccaccagt tcacctaggc ccaaaaaaac ctgacaccaa caatgtattt tatacttgat 300

gtttggatta ttttatgttg tatttatatt ctaaaatatg cacttataaa cttaaatgtt 360

aaatctatag tctcatacgc tattattatc tttatattct gaattgtatg acaaatcatt 420

atggattata ctaaattatt tatgaaagaa ttcctatgac atatctcacg aagaaatcct 480

agctacggca ctggctaatt gttagctgaa ttgtagggaa gatgttaatt agattattaa 540

ttatggatcc aaccaccgag accttagcta aatgcaagta gttataaatg ttattagctg 600

tgtaggatca gactagcctt aactatgtcc atatttggat tgttggatat gattctaaaa 660

tctagactct tctttgatgt ttttttagat tttgtgcttg cgtgttagaa tcctctataa 720

ttttgaggag ccgttgggtc cgcaaaggat tatgagaatt cagatttcag ctagcgactt 780

aaaaaaaaga aatctggatt ttgaatagtg ataatcagtt ccatctggat ctcagattat 840

tatactattt tcggatacta gattcactgc agagaagaat gtctaaaatg tccttgggct 900

ttctacactt cttgcatctc tatcgcacac gcgaaatatt aggactaggt gtctgatgcc 960

caagatccaa tcagattcgt acatgcacga attcgaatgt accacacgga ttatggatct 1020

ttggtcccac cgtcctctag acgaaggttg cgtgggcaat accgtctctg ccgtaccgtt 1080

cggtcaactc aacgcccgcg accctcccta gtctccttcc tgtccgacgg 1130

<210> 3051
<211> 1158
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_212402_G1, chr6:29015031..29016188, Cluster 18

<400> 3051
ctattttata cacacacggc gcccccagct atacgtcact gcttacgtta attcccccac 60

cggatagtag ttgtttaatg gcccaaacaa accttgttgt tgcatgcatc atggaccaaa 120

caaaatacat agttagttaa atattactgt tatatataca actaataata attatattat 180

tagttaaaac aaagcaaggc atatgcagca gctgctggta ctacccagta catggcacat 240

gcgtttgttt aatcccctgt tgctgtgtgt gtgattgatt ccttgtatta gctaataatt 300

agttaggtcg gtcgtcgtct cccctctaat ccctcttcga tttagaatta gtagtcttgt 360

acgttgttta atatgcttgg acgacgacgc tctttgttgg gtgtgcactt catctttcca 420

tctacactag ctagctagac acacatgtac tatagctagc tacttgtttt agtatgctgc 480

tcttctaatt aactaaccaa catgattgca ctgctaagca aggctacctt tggtacggtc 540

ttaaactttg tgtggcccat atgctgctat actatatcat gcatgtagat tcttcctgcc 600

aaggtgcatg gtttttttat gttaataggt acggttagtt gtcgtagtac atactaaggc 660

atcgatcgtc cacttatata tatcaaaccc tgcagctcaa acaagctgca aataaaaaaa 720

aaactgaagc tggtatatga gtgtatattg tatatgaaat aataatgcat atgcggctgc 780

atgcatcagg gagctgagtc agatgacagg tgtaggtttg aagcagcttg ctgtacgtgt 840

gcaatttttt tctctcataa tgatgtctcg attggtgatc tgatgacgct gtgattattc 900

tattctattc atctttggtt gtagacactc cttttcattt gttaatagtt ttctggtcca 960

gttgatagat agaggttaaa taaaagccag ttgtagtcta ccttaactag tacgatagta 1020

caacaggatt ggccggcggc gttagtaaat ttataatttc gtatacaagc tgttattgtt 1080

attacataca ctagccggtt actcgtgctt ttctatagtt gttatatatt atataaatag 1140

gtattgaaat atttattt 1158

<210> 3052
<211> 1014
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_221139_G1, chr6:87679989..87681002, Cluster 18

<400> 3052

atttataaat ctggtacggt atacaaaatg atactgttcc tatttgaata aattgatgat 60

aaatctattt atgaacatta atcctgcgta gccaagttat cttttgttac ttgtttagaa 120

agttggcaaa agccacttgg caaatggaaa gacacgcatt taacaaattc atgtgttact 180

aggttacatg ctcgtgcgtt gctatggttg cttaaaattg gttctaaaca gtgatgcaaa 240

aacaaccgaa ggtgtatgtg ccaaataata gtcaaatgcc caaattttat tgatcccata 300

ataaccgtaa cattaacatg tgactaaaca agaagaaaca tagacatatt caagaacatt 360

atccgtagat tattgtggtt tagaaatata aatattctaa gtttgaataa aaatcctctc 420

aaatgtatac ctatcttttt tttcttcgat gaggtcaaga tatctccgaa tatttttagg 480

cttaagaaat cgacatgaat tcacttcaag ttaatagatt aatgaagaag atgcgtcgta 540

gagtcttgcc atcctgtgca atagtagggt attacgaatg actatttcgt caacgatatt 600

attattatta taaattgcaa catgatttat atgtatatgc aacaaaatac tatactcacc 660

atacaatgtt gcatttttag accactattc caccactcca tcgcttgcat aacaatgtag 720

ctaggcacat ttttatttta ttttcaattt tattttattt gtaattttca ttgttgtacc 780

aaggaactcg taagcatcaa actaatgata tcccaaatat accattcaat ccttgaaact 840

acgcaagtcc tatagaaata atacaagctg caatctaaga acacatacct tttgattggt 900

atctgcacac atctatctag tctcaatgca tgtgttgacc taatggcaac ctttgtttgg 960

ttaacgacat aaagtgagac gaaactgcac ccatagatgc aacgttggct aaaa 1014

<210> 3053
<211> 1270
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_223945_G1, chr6:103352284..103353553, Cluster 18

<400> 3053
taaataaagt gtagcacgtt acgataaatt taaaagacaa tcattttaat cgaaatgaag 60

tgaatacaat tgtgaattat gtaggaaatc tcccaaacca gtttctcaga gtagcacctt 120

gtactcgata gttaaactgt tgttggagca tggtggcagt tttggacttt ggtgtggact 180

atcgagctcc ttttcttcaa ctgtaaggca ggttccaatg ggacccgata ccgaccattg 240

acgtctcggt cctcttggca actagtgtat agcgcgctca tgcgcgctcc ttgatcgctt 300

ctacctccat ctcattagat cagggataaa ggtaaccagt tcagtaaaca cagatgtatc 360

atctaaatga ttcccctatc tctcctttta ctaaagaccc atcctgcaac ccacccaata 420

caaaggaata tacatgtaaa aatctaaaac ctaattaagg aatagaaaga gcatcaatca 480

tccgcttctc atgtattata ttctttattt gcataattct agcttcctgt gacaaccttt 540

ttaatgcaga actaagctga tctttttaat gaaattcctc gattgtatag aacagattac 600

atctcgaggc aggaaaaaaa gtttggcgga taatattcac gaaactctac actatttatt 660

tgactactga atgagagtct aggggcaatc taggggtgtg taacatgata cgtctcgaat 720

gaatttaaca atgtaaattt agcatttttt attcaactat tcggagttcc ttcagaacat 780

tttttagcat aactgacagc tgccttttc ataacattta ctctcatatg gcatttcaaa 840

tgtttcgtaa tttagaaaat gttgatttta agctaacaac aacctgatgt gtataaagca 900

aaataaaaaa aatgtaccaa agcattatga aaaaattgca ttatacttta caaggcaaca 960

aaggcctgca ataatagggc acggccgcac gggcacgttc tcattaaaaa gcattatcac 1020

cctgtttttt atattctagc aaaacgaaca cataacaaca aagtatatat tgcagcatga 1080

ctgcagataa aaggactatg gtatcgataa tcacatggaa atatactgtc tttggaatag 1140

ggccacaaaa atgcaacatc agaatcttca catacccatg ccgcaatagg tggaagcgtg 1200

tttgatcaga tatcatttac ttagataaat agtttcctta aggcagaaaa tcatggagac 1260

atttttctta 1270

<210> 3054
<211> 1237
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224850_G1, chr6:108071289..108072525, Cluster 18

<400> 3054
gtataattat ccatttttt tgcttgtgtt gctaattgag ttatacgtgc ttgtttcttg 60

gccctttttg tcaggacttg tgttcgcatc aattatagtc agtggaatgt tactagtgta 120

ttgattggac aatgcgataa taatctgata taacaacagt ctcaggatta gatatgttta 180

tttagaatgc tgcatctgtt tcacatttgt gtttgttgct tttcatccat aaaggtaatc 240

ttgtgcaccc gttttctttt ctcactgaat tttttgttgt ctggtgctgc tgtatgttgg 300

accagttata ggtttttgt gaatctcagc cgggtttgat tcgcaagact tcatttctgt 360

tggtcagtac cttagtagat gttaaatatg gcaaatagga cctgcctgtt tttggactgc 420

ttcaactcca attccagtct cacataggct tgggaatggg ccatataaac tcacgagcag 480

agagtgcctg caaactcact ctagcaaaca gttaatatta ttttggacaa tataagatgt 540

acgagggaac gaacatttat tttatgcaat aacatttttg tgcaactcaa attcttcact 600

aatgaaatgt tctgttactc gagatagcca acttttggtt agatgatcaa agatcagcaa 660

tcaaattaac atgtgatttt aacttcgtaa attgatccat taaatgtaac ttctttttat 720

acagcaacat gcaatttgaa cggatagtgt gtcgattgat taatcgaaaa aatagttagc 780

gggaattttc catttttat aggatgaatc ttcacacttt caaaatggaa tttttgtgtt 840

aagaaattag tgcatattct atttcgaaca tgtgaagatc catttttttt aaaatgataa 900

attactatcg accatctttt cgattagtcg atcattgttt aaattgtacg atgttgtata 960

aataaaagaa tttatagtta atacatcagt ttatgaagtt taaatccgat gttagtttga 1020

ctgctgatct ttgatcatcg tacccaagcc ttggctatca tgatgcaaca acacatttcg 1080

tttgagtgca caaaacttcg agttgacgga tcagtttatt gaagactgag tgcacaaaac 1140

aattattgca ttcaagaaga tttcctttcc tcacaaattt tatgctgtcc aagatggtat 1200

tacctcttat tagctagatt ggagattact tgtggat 1237

<210> 3055
<211> 1065
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228076_G1, chr6:125244107..125245171, Cluster 18

<400> 3055
aaccatcaag agttatcaaa aaccaaccaa aaatcatcta tgttacttac caaactgtga 60

atcggagaat tcatgaaccg ttcctctaga atgaaaaata aaaaaaggga aataacattt 120

tagttagttt gtatcataca aggatatgtc tcagcaagaa attctaatga aaccaagata 180

caagaataaa tagtcgaagt gatactttca gctgtggaga tgtcagctca acaaagaaag 240

agcataatga atgatttcaa gaacaaatat atattacata gaagtgttca gtgacataaa 300

actgagcact ggaagggtaa aactgagcaa aaaacacgac taagggtaaa actgagcaca 360

ccagcaaaat cgagggcacc accctaacat aaaaaatagg aattccatgc tttatatagg 420

atatatagga tcgagggtct taaagaatat gtttttgaag tggtctgcag ctaagagtaa 480

ggtaatgtag tgaatgttgt acccatgaat aaagtgagca cttatgcaat gttgtacagg 540

agaacccaat atatttcatt tggacattaa tatccacagt actgtccaaa ttcacatgtg 600

aaattccatc aagaaatcat cttctcatat aaaattagca ctatacaatt gttttttcg 660

gttgaatcgc tatagcagta aagctggtct ttaaagtaat cagacttttt atcagaagaa 720

acaatcttcc ttcacaccca gtatccttat gcatttacca ttgatctcat ttgtagagtt 780

ggagtaggca aaatcgtatc tagcaaattt gaaaatgaga ttccattgtt gaaggtcaaa 840

attcatcaag tgggctgctg aggcaaaata atcgaagttt ttagtagttc actgctgggc 900

acatgtgcat tgtaagtgaa ttgttgatct tattattgat aaactaaatc tggtacaaga 960

attttgtcat cgatatcagt tctagattga gggatggttc tggcagttta aaaacaagtt 1020

tacaaattat atagtgataa aatgagacag aattgtatct agatg 1065

<210> 3056
<211> 1358
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_229038_G1, chr6:129983265..129984622, Cluster 18

<400> 3056
cccgagccga gtcgcctcac ccgcgcatga aaaatgacta aaaaacaaag aatgacttaa 60

tgttgtctag gatctaaaat tactaaaaaa tcagaaatga ctgaaaaaca cggagagtga 120

ctgaaaaaca aaaaatcact taatattact ggaatgactt aatgttgaat agaatgttaa 180

cgttgtctga atgcctgaat gcctttgttt agactctgaa atgacttaat attgtctggg 240

cgctagacta acttaatatt gtttagaatg actaaaccaa taacaagaaa tatttaaaat 300

gcataaaagt aaaataattt aatgtacact ggaatgtttg aaatagaagg aaaataactt 360

aatgggggcg cacctgaagc cgaatcgtgg cgcagagcga gccgcgcgag ggggaggagc 420

ccccacgtgg ctaggaaacg agccacattt ggcagcatcg gaatgtgatt ttggaggaag 480

aaatctaatt taccgccctc aattatcact gtcatttgat tttccgccca tttgattgtg 540

ttccatctga ttaaaaaaga gtttttaac cctgtaattt aaactataaa tatttttaaa 600

aatatctaaa gtaaattaaa tttaaaatta ttcaaatgta tttgtacata aaaataatgc 660

aattaaaaat ctaaaaacct agtttagcct tggaaaatta caaaaaatat tttagcttga 720

aaaaaatatg aaacttcttt aagattttct aaagtctcta tgctatggtg cctagtttaa 780

aaatatttga atcttgatgg acttattttg gtgcttattt gctagtagaa acatgtctat 840

tataatagtt ggtattaatc atccgaacta catagaagca tgaatggaat atcattagga 900

ctgtaacgga cattgatcct atgcccagct gcatgcgtgc acccttttgtt taatatattt 960

aataagtttt ttacaaatta ctaaatttaa ttaattttta gagaaatgat ttatggagca 1020

taatatggca gaaaaatcaa gatactagca catagatcat gatatttata aaaatagaat 1080

caagtgactt gtacaagata tttcaagcta ggcaccgtaa gatagagcat gatttagaaa 1140

aatctaaaag tagttttata atactaggag ccaaactcat tttcaattaa ctttccgata 1200

tgaaatcatg ttttggaata tttaattata ttattttatc gcataaaaat atatctgata 1260

tctttttga atttttagat attttctgta aaaatatttt agcctcagtt actttattag 1320

aactttaaat ttaatttgat ttgcctattc taacatga 1358

<210> 3057
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229179_G1, chr6:130353056..130354289, Cluster 18

<400> 3057
tttgttgtta attacatggt aatctctatg aacaaaatta aaggtgtgtg cctttaaaaa 60

tgcacaatac acaaggacaa tacatttaaa ctacgagtct ttgtttcaat aggttttgaa 120

tagcaaacta gcaaacattg atttggtttt ttactatcat gttgatttgg ttcaatgtga 180

ctgaacaacg acactaagat ctatgacatt gatattggtg ctatgactat ggcatcaaac 240

cataaaacct agacgccata tgtcatgcca tcaacctcct atgtctaaaa atgaaatttg 300

ttccaccaaa tgtataaaag tgaaaatttt aaaaataaga cagatgttgg gtacaaaaag 360

tcttctccta tctcctccaa catttagcta ttcatttcct tgggaccaag gttggggaaa 420

tttaattatt tgctatcatt tcccatcttc tcatatctct tcctatcact ctctcctctt 480

ttgacgtcgt ccttgacttg cacaccatgt cacaaattgt tataattagg acccttgact 540

tgcaaaacaa aagtgtcttt atttaaaaaa tccaagagaa aaaggtttag atgcataggt 600

ttgcttccaa aagcaacatg attgcttttg ctttaacctt agatgtggga aaaatgcaac 660

gatgaaattt gtcaatagga gtattgatgg tcattgtaga taatatcata tggaatgcaa 720

tatagttagt gttccatcat gcacatcttt atgtgtaatg gatacaacat aacatcttca 780

gcaaagaatg atcaacattt tttgaataag aagaccatgg gggagatcct cacagtgaga 840

aaagatatat taaaagaaca aaaaaatgaa aacgtttact tacaacagag gctagaacct 900

cttaaaacca ccaatgaaca cgagactagt atgcaagttt gagtattcaa atatgttgca 960

tgcaccttct actacgcgta tgacactttg gttttgctct ctgaccatgt ttgtagagaa 1020

attgtcattt ggagctctgt ttaaggtgaa acagaaaagc tatgagaagt tatgaaaata 1080

ggtaatcttc taggacttag tcaattgaat tatactctaa atgcgtttgt ctaagtcata 1140

ggaagatcct cccatgagct gtagtcaagt cgagaagaaa aggaggaaaa atcatgtttt 1200

ggctgctgtg tgggttgcac cggacagtcc agtg 1234

<210> 3058
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230330_G1, chr6:135468436..135469474, Cluster 18

<400> 3058
ttgatgattt cataatggaa aagcaggatg agctcgagaa ggccagtcag gagaattcct 60

tgcagatatt catagtaaga ttatctatcc aatctgaaag ttcttttcta gctacaatca 120

tttagttgtt tggttctata aaatagagat tattctgtgt aaaactaaaa tgttgtttgg 180

attatatgca tgaaactaaa ctgaggtttg ctaatctctc ctttgcctat tatttcaagt 240

ggacaacagc aacctgagca tcttccctcc ttggccattg catatcaaat tcacagggta 300

tcagcatgca tcatgattta tgagacggag tgatcctttc ttccaatatg gtttcccctt 360

gtcttcttta tttatttggt accaactaag ttggtttagg tgtcataata tttgcttatt 420

tccatttttc tttcatgcag caagggacac tgaaattctg aggctgaagt tcttagatga 480

gaaggctgca gaaaacaatt gtacatgtat tcttattctt gttcttttgc tttgttgggt 540

tcagttgtca gcagtgatag tgagacacca acttaagtat atactcaagt tatgtgactg 600

cttatttgtg cttctattct tcattgtcgg tagcattacc atttgcttcc cgcacatcta 660

atcttttgta agtggaatca attatttgct actagtattt aaactatatc tgccatgtcc 720

tgctagagaa caaatagaac aagttattaa gtgtattgtc tagagcatgt aacattgtct 780

atcaaatatg tagaagtgat gtgatgagcc agttagtatt gagttttgta ataaggataa 840

tttgagattg tatagtttca cataagcaca tttgtgctat gatggaccta gatactttat 900

agttacatgt gaagtggttg cttgttgtca tggttttttc atttatatgc taaaactgcc 960

ttacttcaca tatgtggatg gcaattaata tttacaattt ggaaaaaaat ccaaaattgt 1020

tattatggta ctcgtgctt 1039

<210> 3059
<211> 1183
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232729_G1, chr6:147214572..147215754, Cluster 18

<400> 3059
ctaccttaaa cggcaaacct ccatgcttag tgaatatttt catagccacg gtcttgtgaa 60

gtgcccactt taaaaaagac atgtccttct tcagcagggc atttgagaaa caagttcaac 120

aattatccta aaaataacat gtaaattcga gtatatctat agtttctatt aaaaatttcc 180

aacgtcacta aattgttaaa tagatcaaaa gattgcaatt gcctccacac aaatcagaga 240

gtgcaagtgt tggcttactt ttttacttat acatcccacg caccaaataa gtcagataca 300

tcttttggta gtttgagatt aaaagccact tggtggtata aatctagcta cataacaatc 360

aaataaaaac actgaatact tcacttattg ccacacaaac atctatcatc gtatttccaa 420

tttctttgat taaaactatt aattaagaac cagataaata tattgatttt aagtggtaat 480

tctagcttcc acaacaacct tttaaaggca tgtcaacttg attagttaaa aagtgttcat 540

acatttattg cactgtgaaa gttccttgtt ttgtaaggct ccacttaata gaatcttgtt 600

gatcatccaa ttgcacaaat gcaattttag tcactatttt attccaatta agtaacatcc 660

cccccacccc actagaggtc ttcttgaaca aatgataagg ggagtagtgt ttggtttccc 720

tgtctaaagt ttgaatatta attatgagta ttaaatatag acttaagtag atttaacaaa 780

ttctacgttg tctccacgag cacagggatg agctcaccgt tgcagacttg cagctgccac 840

ggcatcacat cacatttgac ttgaaaattg ttgtgaagcc ggcaggacgt aagctgaatt 900

gaacgggtca agtcttagcc tcatatgggg tccagtctct gacgttcatg tccatccatg 960

gaagacttga aatcacacct tggaaaacag gtttggctag gttcacatga acacgcagcc 1020

agatagatcc ccgtttacat tctgtacgca tggctgccaa gtgccaaccg atttccaggt 1080

caagcacaac tgataagaaa atggaggcca caggcccaca gctctttatc tcttatttat 1140

ttattcattc attcactcac tcactcactc atttcgttct att 1183

<210> 3060
<211> 1240
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233180_G1, chr6:148955957..148957196, Cluster 18

<400> 3060
aactagtaca actctgcaag aaaattcttt cgaccaacat taaatttggc ttgttttttt 60

tgacaaagct cattggaaag gtcttcaagt gatgctgggc agttaatgtt gttaggatta 120

aagggattag tgtgatctat cactgctaga tatgttgcta gtagactgga tcttgatgtt 180

attctttttc tcccccgata gagtcgcaaa aaacgtgttg acactagaac agatctacat 240

cacacacgag caaggtctag catacccatg atagacacat gactttgaac gtagtgaggt 300

acgtagcgga ccgatgaaat tgatatagaa actgattaag tcgatgttga tcctattgtt 360

tgctcgtaaa ctccttaaca cctcacggaa agacccatca ctgagaagca cgtgaaggtt 420

gtcctaggat catcgtgact atatagaacg tcaccaaacc catcttatac gtgatgaaca 480

aggtagagag gaaaaaatat aaaatgagta ttagatcaaa ttttggttca atggatattg 540

gataactcat cgatcgtatt cctcttatac agagatgtgg atagtcttat cacatcggaa 600

ataactcgaa acacatttga caagttttaa attataaaaa tcaatttaga aatatctgat 660

tcgaaaatag caaaaaccgt cttgactaac aaacttggct agaccagatt ttacatggaa 720

agtcgacact gtagttggtc taacaatagg gtacctgtct ggcctgatct attttgtact 780

agaaggctag cttgactagg ttttagggac ggcctaacca acttaagtaa ccaagtatgc 840

ctgtctttag gtataaacaa ctcttttcaa ctttgttcta agacggtgtt tgttttttt 900

gacaaattat tattatctcc attttattcg ataatagagt tttagttttc gtatttaata 960

atttagaaaa ccaaaataga ataaaatata aaccaaacat ctcctaactt ttttatgaca 1020

aaagttacac cgtcgcaatt cacgccctag gattctagat ttagatagaa cataaaactc 1080

agtattttta gagtaccgtt tgagaaaagc tataaaatct atagatttgg tctttagatc 1140

tatgcttttt acagatttcg tatagcggga aacgcttggt tttaatttcc taaaacaatc 1200

aggctagcag tgttcagtgc actgtgcacc tccgctacag 1240

<210> 3061
<211> 1398
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_233283_G1, chr6:149324280..149325677, Cluster 18

<400> 3061
tgtactagtt gaatagctag tacacgtgct cgagaagtgg tgcccaaaaa attagctacg 60

ttgggctaga atttctgaca agagtggtag cacgcaaggg cgtagtctgg atttttgctt 120

ggaaggacct acccaatata taactataat tttaatatca ataaatataa tatatatata 180

tataatataa aatagttact agtcataata attaacacac ataaacacta agtatataaa 240

aatttaactc attacgaatg ctcttttatt ttagtcatac tctgcatgat ctcatatcat 300

agaagtcatc aatcaatgca tctactatga actctatggc gatctccttc tcaatgtaga 360

ttatcaaaca attacttaga aactcatatc ccattgtatt tcgatatctt gtcttgacaa 420

acttcattat agagaatgca tgcttggtcg ttgcaattaa aacttgtgga gttagaacaa 480

gacgaatcag tctgcaaaaa accaaaaatt attaatattt gcaagtgaaa taatgaataa 540

tacaacataa gctttaaaca actaaagtaa gaactcataa acctgtccat tgaataatac 600

tctttagatt ttccagtttt cattaattga taataaaggt cgacgatgat tgacaaatct 660

ttgaacatgg gatttattgg tacatcatat tcataatgtt gcaattgtct tcttatgcta 720

gctctctctt atctaaaaaa tcacttggac agaactttga agccagcaaa caagcatcat 780

caattttcaa tgaactgaat gaatccttgg ggtctaaaga ggtgctcaaa aagagaagta 840

atcatatcta tagtgatgct caacaacaat tgtgaaaata tcatatctat agtgatgctc 900

aacaattaac tcatcctttg catgagatat aacaaaatct gcatacaagg catttattca 960

tatctggaat accaaatctg tgtttactac aaaatgatat tgcatcacca ataagatgag 1020

tccaaccatg atctctaaaa tcctaaatta gcttcttggt aatgactaca tcaactattg 1080

cattcacaat atcttggtac ttttgttgta actttttttac aaaaagacca ataataccca 1140

tgagctcttt cataacatgc ataataaaga caaaaccaaa agacatcatt gattgaacaa 1200

cacttgtggc ctttgatcga gcacaaggtg aagttcctga acctttagaa ttaataatat 1260

atttcaatac aagatattta ggcttgtgaa gctttgaaag gctacaaatt gaatcatagt 1320

gaggctccac cttatatcac taggacactg caatgtacaa atttggttag ccgcatttcc 1380

ggtttcaagt tcatcaag 1398

<210> 3062
<211> 1012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2344_G1, chr1:12523624..12524635, Cluster 18

<400> 3062
accataaggg gctttaaggg cttatgcttt aaggcgtcct agggaatgtg ggtccatggt 60

ggcttatatt tgtatgccat ggtatgtggt cctaaaaaca tagttagtgc gagattattc 120

tctggatagg actaggtcct catgtatggg accctaagag cagtccctac acagtgtgct 180

tataggccac ctatgttagg attcttgagc gtgccttggt agcaactgag gatatgttct 240

ttcttgagcg ttgacagact gtgtaaacct catggggtgc acatagtagt agacgtgtca 300

atgcatcaac acttgatgta tggtcaaaag tgtcgagagg gaacaatcat agtcactcca 360

tcacataaaa taaggtgtat acttttctag catggtagaa ctttgaccat ttcttaaaaa 420

gcatatacca ttaacaaata caaaatgagc atcatattaa agtacttttg aatacaaatt 480

taaatatata acatgcatac actaaaaaat atttttggct gaattattag taaaaagttt 540

tcaaacatta tctttttgga aaaacatgca tgccttattt ttttatttca tgagatggag 600

ccatggaggg agtattattt gtatggttgc aaatgcgtct ggtcaataag gatgtaaggc 660

ccttttagag gggagggagg gttgggtatg ctgaatcttg acccactttg gatttggacc 720

ataagggtct atgccctgta ttttgatgtg agatttcatt gtttagttcc atcttatttc 780

attgtttagc tccatttatt ataatttctc gacaatggaa aaatattttc ttaattatct 840

acacatcgat aatacaaata gtccaattta tgttatatta ttaaaacttt ggtaatagat 900

tttgtaagtt gtttctttaa tactctggct gaagcataat aacacatatc aatcaataat 960

aatttaagtg tgaggaatta gtttttctat aaaacaaaat tagtatacat at 1012

<210> 3063
<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236486_G1, chr6:164995563..164996653, Cluster 18

<400> 3063
gattgtgatt ggtatgttgc gtacatccgt ccagactgag tgcgtgtatt aaccaagaaa 60

caatcgttgt ttgattaact gcatagagcc atgttaaggc tgcacccgta gataaaacat 120

aggtaaaaaa atatattcat tagttgtatg gtatttaaac tatgtgatac aacaagctca 180

ccatggcggc ccacatgacc cgactgtaca cggtatcatg tgccacgctg tggttcactg 240

ttagcaattt cgacaatttt tctcgtttc ggtttttata cggaattttt ttgatacaaa 300

tatcgaaaaa ttcgttttac tattcaaaag tttttaaaaa atcaggaaaa ccgaatttca 360

gtgttttcga acggatttca gtgtttttag gcgaaaaaga tcgtttgacc ttgtaaaaaa 420

ttaaatttta gctccatttt attgtagtgt atatgtatga ctttgtaaaa cgtaagatac 480

ataaattaat atgaattgca tgcaattttc atacaatata tatatatata tatatgaata 540

taaatccaaa ctctaaataa tacaagttca tacatgacat aacaatataa ttacaagacg 600

cggacttgtt gagtgtttga gcttctatgt gtttatgatt ttataaaaaa aatgcatgga 660

tagttcaaat caattatgag tttatgtgat tttggacatt aaattatttg tgagtatatt 720

attagtcatt gtacaacatg atttgaacaa tttgcaggca tatcctataa aaaataaatt 780

tttgctaaac tgaacgacaa gtccgccgag aaaaatgaaa tccactaagt caaaatttaa 840

aatagtaatt cgtttgaaat ctatgaaatt tgagtgaaat tcactgattt tccgtttttg 900

ggtggtggtg agaaatgaag aaaaaacggg aaggttaacc ctggtctgaa catagtggcc 960

gataccctat agtatatata gtactcatgc atgtaatgta accaaggtac tagacatcta 1020

aaagttgact tcacttgatt tttcttttcc ccccttcttg tctctactag gtaggtgccc 1080

gtgcgattcc a 1091

<210> 3064
<211> 1295
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236715_G1, chr6:166244752..166246046, Cluster 18

<400> 3064
gctcgtgtca tactcagtgt cgtctatagt catccctaga ccatgctgac attctcatca 60

cgcacgtatg ctcactctta tggtccataa atcacgcttg tatgctcact cttatgctcc 120

ataaatcagt agctgtcgta ggatttatat ttttgttcct ttttattaaa aaaatgctaa 180

acgaaaccta gagcatgcta cgtagtgtgt acccgtagcg ctgcggcatg aggaaaaggg 240

aaagcccgga attcatatgt cttgtcgtct aaaaggccac ggacgggccc acggctactg 300

tactctgctc attccaaaag tgtcctcgac agtttgttaa aatataatat gtatacttca 360

aagttcagaa tcgcatgcac aaaagcaagc acagtagcag acagcggcac gtagcagtag 420

tatatatgac tatattttaa atatgaatca tatgggtact ttttcaaaaa aaaaaaaaaa 480

gaaaccgccg atctcaccct gattcgtgat cagatgaatg aatggggtcc cttgtacgcc 540

gtcccagttc tcctttcttt ccgcattctt tgcatccaag gcatggattc ctccaattaa 600

caaagtggca atatatgtat gatgcgcgtc aggaacccta agctttcgat caaatcagcg 660

tctttttcct ccctggtccc tgcttgtcat cagctcagct gtctatcgat tcggccaggc 720

gaaaagggcc caaatacagg taggagtatg tgttgaagtg gccatcctgt atgttaagtt 780

gttaaccctt ctttttttatt attattttga gcacaggaaa gttactttca tataaaacat 840

tttaaattca gaacgaggcg gggtgggggc tgggacatat gcattcaaga attagtacgg 900

gggcattgta atttgatgcg gcttacttgg tggcacaggt tgttttgttc aaaaatagtt 960

gtcgtttttg ttttttttagg attcattaat tcttagattt gatcaaatat gtgaaaaata 1020

taggtacacc tgctataaat ctagctaaat tagaagaaaa aaatgtttga ctaaaataaa 1080

ttactggtaa ctattttaga accgagaaac caacaatatt gattacctga atgcatcttt 1140

aagggagtgt gtttggttac tttaatcact ctcctaaatt ttagggatta aattttagtt 1200

cttaaaaatt ctatttgaaa gacttatttt agtcatccct ttaatatttt agagactaaa 1260

ctaaagttta agaggtgaga atcaaacgcc ctatt 1295

<210> 3065
<211> 1079
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236917_G1, chr6:167426446..167427524, Cluster 18

<400> 3065
ctacattttt caagacggaa cacttatata actaaaaaca cagacttcaa cataaataaa 60

cacttagttt caccacagag aaaaatcctc atttaactgc agttaaaaca actggcatag 120

atgagaaaaa tgaagcaaat tcaataaatg atcattaaga tgaatctact acacaaaatc 180

ttacaaaatt gagaaaaaga gaatgtgttt agctgttcta gaaggtaaag gaattaattc 240

agcatagagc aatgcataca ttactgctag gctaattaca tactgtatgg cagaagtaaa 300

atgcaaagaa agaataaaat gaaaaggttg tatgtgcaga tgaattgcaa ttagagctgt 360

ttctcagctt tgcatgatag aaccacatag gcagttctga tgcataacta tgggtgaaaa 420

ggatggatgt gtgtggtaag tgcagctttt gttatctttt ttcaccataa atactgcagg 480

ggggagtccc ccaccccaat gtaagaattt tattgttaaa aaaggaataa gaaaagaact 540

gtgcagcagg gaacaactga atggatttca ctaaattatt cgctcataga tcataaatgg 600

attcctttgc ctgtaaagca acaatgcatg caagattcat agagtgataa gtgttcaaca 660

atagcttaga catgctggaa actgtagtag gttgaaagca ggtaatggtc ttacaaattt 720

atgagtcggg tattcagcgc tttgcactcc tgaatgattt catcctcatc aagaagctct 780

tccaatgtaa agttctcctt gtccagaatt gtatccacct gaccaacagg aaaagaaagt 840

taggcatgtg ggacggggat gccccagtgt atgctactaa attttcacaa gaaacctgag 900

atggtaaaaa aaaaaggtat actaagggca tgtttggatt ccaggagcta aagcaaaaat 960

gattatagag tttagttact taggagctaa atatccaaac aggaagagct aaaagtgact 1020

aaattgatac ttttttcacc actataatca gttttagtgc ttcctatttg gatctttag 1079

<210> 3066
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238128_G1, chr7:5153382..5154436, Cluster 18

<400> 3066
gtctctcagg acacgtgccc ctcttcttct aggcttacac cgccatgtgc cataagacgt 60

agggccccat agaggtttac acaatcaagt gctctgggac acgagggatc gtgggggct 120

tatactgcca ccagtaggta gctaattatc caatagtggg attagtactt gcatatgcag 180

tgtactaaac actggtgaat tattagggta gacaaatcta gtagctagta gctgttaatt 240

tgatttggaa taatattgct ggaagttgag cggcatgaac acgaaaattg gcatctgatg 300

gcgacttttg aacacgagag agtgcatacg tatacgcatt aataagagcc agccaatacc 360

gaatctattc gttcgacgat cgttcgtgtt gtgggggtgt gcatagtgtg ttgtgctctt 420

ctcgatctct ccgtaatagt catagctttc ttaggctaac tccagtggat attggcagcg 480

agtacacatc caccgtgacg cgggagccgt ttgtgcaatg aaaaatgcag tgcctaacag 540

cttatggatg taagtgacct gaagttcggt ttaagtctgg ccacggccag gcacgacaca 600

aaaataatta agatctcaag gtacgaccta gtacaaagaa aaaaaatgga ctagtagacc 660

gaaataatcc gagaatgatc atgctgtgtt gtatcttaaa cttgggcacg atagacgaca 720

caacacaaca tgactagatg agtcacgctt gagtcggcat ggtacgaagt gagacaccga 780

ttaaaaaata ataattttta tcttttcaca aaaattatag aaaacatcga tgatgcttat 840

atttatctta agtagatcat atgttttttt attaaatctc tatatatagc aattttgacc 900

ttttgagtca cgttgctagt catagcaata tatttttaaa tgatttctct ttctcatatg 960

attattttta atctataaca aagatatgaa ataatttgaa gatgtaattt ttttagatat 1020

atataagttt tttttgtcgt gcttagcctg gcatg 1055

<210> 3067
<211> 1195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238754_G1, chr7:8924264..8925458, Cluster 18

<400> 3067
cttagtattt cagaagattc atatcaatca aaacacaagt gtggtcatca tagcagcaat 60

aaaggtcatt ccctccctgg tcgagttttt tatagcagca ataaagtgga tttgaatagg 120

gcaatgtgca tcacacttca cttgagaacc accaaatact gtctccaaac tctatgaagg 180

catacatttt ttttgcaaat cagatataga ccatagaaaa agagtcgaag aagaaacaag 240

ttcccagcta ccaattaaaa acaatcacaa tcggcctaga ctaacaagct tcaagtgaag 300

acctttcctt tttcatcaaa taaatcacat cggcaatgca acaaaccgtt gtgaaagcaa 360

tttccaaaaa tgaaatcatc atggtgacaa aatatccacc aaagatggat caaatcatag 420

aggataaaga ggaggtataa ccggtggacg aaaatcacta aaacatgagg atatgttctg 480

catcgtgcat ggaaaagggg ctagccacac ttcaaaaata tgctcaaaat aaagaaaagc 540

atcaaagaag tacaatagga aacaaagaca atatccaact attgggagaa ggcctctggc 600

caaaggttca tactaacaaa atcaatgtct agatattttc ttaggataag gacatcaatc 660

aaagcaaaag gccatcttcg aacgttggac aagctgaaga agacagaagc atagcttcgg 720

cgtgatcgga aaaagcttta gagaaggaaa gcgaagaggg tctcgaaggt gaacaaaagg 780

cttatatggt atgtcagggt tgtaaaataa catgattgta ctctctcaat tacgaagagt 840

tactatgtaa taactaagtg gtaaagctgt aatttcatac aaagatgtat attgggtcat 900

cctataaata gacgaacaat gccactacta taggggtcgg tcctttgcaa atctcacatg 960

tggcattctt gtgtgcagag cttctgaagg tataaatgta tggaaacatc cgtattaagc 1020

ataagcctat ttcatgctca agcattcata ttcatgtata tatgcggaaa attatgacct 1080

ccaaaggttg taatcaatcg aatgacattg aattcttgaa cgacaatcct attccacaca 1140

cttattgaaa tagccaaaac tccgtatatc ttgagtccat cttgtgcctt ggacc 1195

<210> 3068
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240298_G1, chr7:17256529..17257598, Cluster 18

<400> 3068
aatattttgg gcagaatgtc ttatgtaaat ttatcttttg gccacagata ctgttgagcg 60

agagagatat ctttggtcaa ccatgataaa tattcgtgca atgcctcgaa agctttctca 120

aacgaatgct cttggaagtt ggctccatac taattcactg gactttcgag cagctgttga 180

tagggtttac ggagccgatc ggctaatccg accgacttac tgagtggttt attagtaatc 240

ggcaccggat ggtaaggtca tacgcctgtt taccaatttg aatttagaat attttatatt 300

ttttaaaaaa aattatggaa atttttatat aaatactatg aatcatttta agactttcca 360

ctgaaaccaa attttaaaat gcgcaaccaa attcaaacta aaaaaataag aaaatcagaa 420

tgaggaatcg actagatgag tggctagccg atggagaatg tcgattaatc ggagtgaggc 480

gctgataatt cgtcgaccaa ataatagcta gagttagggg ggttccccac ctttcaactt 540

aaaatctttt taaataacca ttgctacttg taatataggc ttctaataca tgtaataata 600

gttcaatgtg ctttatttgc caaaaaacaa gaggtacgtt tctacaaccc ccatgtcgat 660

ttatcaaatc tagaaccaat taatcggtca tatcgaccga taaatcaatg acaaaccgtt 720

ttaattcaaa aactggtttg gatttgaatt tggcaagttt ctatcgattt atcgagatta 780

atcggatatt ggtcccagcc gatttttgcc aagcaatcgg tttggtgaac cttggctgtc 840

ggtaccgagc aagcattcgg tggatcaaag cctttctctt tggccctgcc tgttttcgct 900

taaatcctgc gatctgatga aaaaacgtga ttaaaaataa tcccatcaaa caacttacgg 960

tgcccgattc tcgccatcgt ggtttcgact tgactgcggg atttcaacac aaccatgaga 1020

catccttgca aggggccccg ataaaaacta acggaaagct tacacactta 1070

<210> 3069

<211> 1288
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240876_G1, chr7:20248382..20249669, Cluster 18

<400> 3069
atatttatat cataaattta ttatctctac tatatttaag tgtgagtttt tcgtgcgtcg 60

ttgactccgt ccctagaggc ctagacaccc tcgttcactc aacgtttaaa tacaggctct 120

cgtttgcttg ggtttacagg aagcgttggt ttaaagttga gggcgagtct tatatacacc 180

cattctatct acgactgtat agatgtatgt agtcagtagg aaacgggtga ttgatgtacc 240

tagtgtgtgg gcggtgggcc tactcgatga caaatgcttc tcgttcagat gacgtggaca 300

tctttgctct atataaagtg ctactcatgt gatatagaaa ctacaacaat gtatgagttt 360

ctgactagtc attaggtaaa ttatgaaata catgttcata ctgcaaaaaa tgttatgcaa 420

tcaagatttt ttgtgcaatt tttatgtagt taaactacta aaagttatga aaaattctta 480

aatttttata taccttattg tttactctgt taatatttta aatttctggt tttagttcct 540

cctatattaa gcgatataaa aatagaaaat ccgtttgttt ttaatccttt tatgttggat 600

atatttttat atctcttaat atatgataaa ttagaattta aaatttaata tattggtaga 660

gtaaataatg aaatacatat attcttttta agttttttt ttggtttttg ataatttgat 720

tgcatggtga ctgtacgaga actttgatcg catagttttt atattttata atatatttat 780

ttagttttat agatgttaat ttttataaag ttggttaaat ttaaaattct agattagaat 840

tattcttaaa actaatttat ttaataatag agagaataca ttagttagct ttactttctt 900

aatagggggt gacagatttt ttatagttga aatattattg cctccgctat ttgacgcttg 960

gtctgaaatc ttaattccga tctttgaagg gagaaaatag tgaagtcata actcaaagat 1020

tgtaaagtca tgcttggatt catccttcag aaagaaactc ctataaatga aactagtttg 1080

cattgctata tatcgtaact ttatttaaat gagataatta tctaaacatg ttctaaacct 1140

ttacaatgag cattcgaaag tgctaagtta caaagaaggt gacgacatgt cttactcatt 1200

caggcctcac atccgtcgtg ggcgacaacg ccacgccggg tgcctacacc gacaccattg 1260

ctctcctcaa tcaagcaact acaatctc 1288

<210> 3070
<211> 1214
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_241230_G1, chr7:21796748..21797961, Cluster 18

<400> 3070

attttagat accacttgga tccagattgt taatttggaa tataaaatga ctaacccata 60

tatttttaa cagttcccca aggatacatg tgttcttatg gctattatca aacaataaac 120

tgctcactag agataacttg aataaaagga aacatttact agatacatgt tgtttgttat 180

gtacaggaaa cgaatcaatt tgtcacttaa tgtttgactg ctatgtagct aatttgtttg 240

tggacataac tgaataatct ttttggttgg aatgtaggtt gtaacttgag tcaattgctt 300

atctctgatc gagttctaag aaatatgaat tacagaatgc gatttgtgca gcaattcttt 360

gggtcttatg gaaaacgcga aacaaaatac attttcaatt ttcagggaaa aagttggcct 420

ggtgtgcact ctgctggaag ccgatcttca agacaagtgc ctcgaaggag gtcgatttgt 480

gcactagtat tttggagaaa agggcgcgca ggaaccggag tgcattatgt ggagagagag 540

agagagatgt caagctggga agctttgacc gagaaatttg cgagatttga atcgccttag 600

ctggcgggtt gtgtggaaaa aaagcaatag ttagcaggat gggtggaaaa cattttacg 660

cctttctatg aggtgttgtc gatgattaaa tctgcgagcg tgcttagaat aagctaaaac 720

ctccaaatga tgtaataggt ggaacacttc atttttgtga agaaataaag caggggcaac 780

ctacctttct atctaatcta aaaaaattaa gccgggtaat gaaatgaaat gccagcgtga 840

aatgaaacgt ccgttcaaat ctgagctcta cgatatacgg tccctttcgc ctttcggttg 900

cggtcacgag ttgccacggg gcaggcacaa gtatgcatgc ggacaaaaac aacacgctct 960

gcggttatga acatacgaga tattaagata aatcatttcg tccatagttt caattaactt 1020

tttttaaaaa aaaaactatt taaatttata ttataaacgg agctgtaatc tggagctgtt 1080

acaaatacac tgcaagggtt agtttggaag acacaaaatt gtagagaatt agaggggtta 1140

gaattccctt cgtattctct cttggttttt gtggcttctg aactcgcctt aatagataga 1200

aagtggaatc ttat 1214

<210> 3071
<211> 1008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_24784_G1, chr1:150221519..150222526, Cluster 18

<400> 3071
atttacagtt tcgtgtttcc tattttacgc actctactag agacagtcta aggatagcta 60

aacacattcc tatcatgttt tcctcgggtg tggatctaac ggcctacggg tagccgccgg 120

ccactcctac tctgagcgtt cttcattttc ttcaacatca gcgcctgcct gacttcagga 180

gctcctatga gcatctacga cctatcggtc aatgactaat taaggcttaa ctaagtgcta 240

tgtgtagatt aggtgttctt gtgttaggct aaataagatc atgtggaagt tgataactga 300

tcattactaa cagcaatgcc ttgtaatttt ttaatgttcc taatttatag gttcctattt 360

tctagtgtag agattatagt aaaaagaatc tcctctaaca cattggcttg gcttttgaac 420

tcaacttcag cataaagaag acgatcaaga acaaacgaag attgcttgcc gtaagatgga 480

ggtgttggtg atgcagtttt tccgacatca tggatgggga tctacttata ggatttgctt 540

ttagatttct ttaatcgcgt tgtgtggtgt ttggtcttgt gttgtgggag acatcagttc 600

tttatcttgt gttgtggaag atatcagttc tctatcatga tttgtaatag gtcgggtact 660

tttatctcat tatctaaaaa acgacatctt taattgaatc ttcaaatata aacgttctca 720

aatctggatt tttgtctagc caaatacgga gagcagcacg actccctaaa ctggagtgca 780

cacaagatat gaaaaagttg ttgggtgata cgtaaacgat gcagatatca agtgattttc 840

actctaataa cttctcaaat gacgatttat agagtaaatt ttagaaacgc ctccgaagat 900

gctctttaca accctattgt tatttttcaa atattttgtt agaaatacat atatatataa 960

tattatggat ggagggattg ggtaagtgat tacgcgaaga aaaggcaa 1008

<210> 3072
<211> 1250
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256646_G1, chr7:121411671..121412920, Cluster 18

<400> 3072
aaaagacaat acacttttta tgatgtggta attaaggcca tgtatggatc ctcctaactt 60

atttatttag tggctaataa ttagccggta aataattagc tggcaaaaat tagtcagtgt 120

atgtttgaag acttggctaa taaatgtcct tttctcttta tacgatttat tagcatttat 180

tagcaaggtc aaatggctaa tagacaaaca gtttgtcatc cctcggctaa caattagtca 240

atttgttagt cggtctattt agaggttaag atgttaaaat tagtcgtcaa actacttgcc 300

acatggatcc aagcataccc taatacactt ttttatgatg gagtaattag gtctatgccc 360

ctacttttgc tcctcttttt ttagtttgta ttattgctaa tatttttcaa aataaagcta 420

ctatttgctc ctatttcatt aacactatct aacagtgatt aagtctcagt aaaaaaggag 480

agaaatatac tcttgcacca ttgtccctac tttttcaata gcaatcacgc atatgcctct 540

atttttcaaa ctaaaaattg ttagtactat gttcaaacat attattgaac aaaactttaa 600

tttaattatg gaattaggtt atttttaaa aaaataaaat ttggacaact tatgagaata 660

ttttttagat ttttacatga tttgtaccaa caattcaact atattggcac aatttataaa 720

aaaatgagaa caatttgcct ataattggaa aacaaaatat ggacaataat ttaaccatat 780

ttgaactgca tatatgactt catattgtca atttagtatt ccataccaat aagttcaatg 840

tttcagcaca ctgaaatcaa tgaaataatt tgcggttaga taacaaagca gagagtactt 900

cacaaaataa ataaaaaaca tgtgagatca tctcatggct cttattaatt gaatacttaa 960

ctaagcaaat tataatttac aaatgcatta aagtttgtaa ttaattattt tagatttgtg 1020

tacaaaccgt gaagtataaa atctatattt atttttaat ttagaggaat ctagttaagg 1080

tttgaactaa aaaaatcaaa acatgtgata tcataatgac actatcaaga tagaccacat 1140

caacatggaa ctaacacaac aaaaaagaat ttaatagagc taccgttgtt aagcagctgc 1200

cataacctca tttcgatatt acaagatagt gacggcaatg ccgccaccac 1250

<210> 3073
<211> 1104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261014_G1, chr7:145628670..145629773, Cluster 18

<400> 3073
aatgcctagg gagatatggg agggttgttt tgaaaatgat attttaaaaa aaggttcttt 60

cacattcgtc cttgtgtcta ggttgcacag gtgcactaat tggttcggtt gcacctgata 120

tgttccccat ttcttagaca tatgttgtgg cactcgttcg caatgatgaa ttgtagtaaa 180

tgcctctcta tttatgtcgt ctattgaata aaccttcaca ttcaaatgag gcactacatc 240

aaatacaatg agtaaagaat gccacaacaa tctagcatga taacattcaa ataagagagg 300

atgaatagtt tcaaaactac tacaaagcaa catgattatt accatttaat ttcttggcta 360

ggttatcatt ggtaaggatg actctcttct tcgagaacca taaaaacctc aaatttaaag 420

gtaattttgt tcaccactaa ctagaacatg aaatacatac ttcaatacca ttgttttaag 480

aacaaattgg tcatacttct cttcaaacta tatgaagcgg acaagagtgc ctagatcagg 540

acattgttgt caatacatcc acatctacat atgaacacaa gcaacagaaa tccatcaatt 600

ttatgatata ttattctttc ctagtgtgga ttcaaatatg tctaagtcct tattttatat 660

taccatcaag ctctagatct agccctagtt tttgaattga gtatcatttg catgtttgtg 720

tgtttattac aaaatttgtg gattgtgtgg ttatcgcaaa cttatcgaaa ctcgatgtat 780

taccttgctt tgaacaaata cttattttat ctaagaaaag aaaaatcaaa cactcctgtt 840

gaagtacaac tataatacca caacatgtta agatttggtg agagcatgca attcaatatg 900

atattatagg gtttcaagtc ctaatcctgg tgtgccccga aaagtaaaat attagtattt 960

gacttacatt tctatattat agactagatc agtgttcgat ggccgacaag taatcttact 1020

atggactata gtgatgtttg gtaggcttca acgagaaact caacttgatg gtgaacacga 1080

gacaatgatt tatacatgtt tgga 1104

<210> 3074
<211> 1199
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_262250_G1, chr7:152944579..152945777, Cluster 18

<400> 3074
ttaggtgttg agcgagatca ggaacaacag gtgtaacaat atgacgagaa aaactgctct 60

tagaatattg tgccccgaga tagaaatata tcacgaaata tgcaaggctc tttttagtca 120

atgctagtct tttatctttt acactattta gtgattacaa aatttataaa ctaatatcaa 180

ggtggagtgg tggaccatta gagtcggtct aatcatcaag ctgctcctcc gctggttgag 240

ttcgttggag atatgattat ccctcgccgc gtcccgtcaa atcctctcgt ggttgccacc 300

gagctagtaa acaacaacat ccggcatgtg cgcgtcacca gcgcgtccaa atcgctgcct 360

tttgtcgcat cgccactgcc caacggccct cctcctaacc taaagtcact aacaactttg 420

tctaatttac agggtgtttg tctctactcc cactaggaac agccatggtg ccacgcccgg 480

acgtggccat tctaacagct cctagcttta gtggccgcac actctcttgg ctaaaagaag 540

aaaagttgta aaacgtgatt atcgtggcta gatcgatgat gattaaagtt gtaaacgtta 600

ttatcgtgtc agcaatggaa ttaactccct ttgttcgcaa agatataatt taagatttgt 660

gccaatcaaa ttagcttaat aactttaacc aagttaatat aaaatattat tagcatttat 720

gtctccaact aggtttgcta aaaatacata ttataattaa tttaataata cttactctgt 780

atcataaata atatatcttt atataacttt ggttaaaatt aaaattattt catttctcaa 840

aaagcaagaa gttcatcaat ttgtatgtcg aggtagtaca tagaaatagg agcggtaatg 900

gactacgatt caaatgtttt ttcataaaaa gttagggttc ttaattaatt ctagttcgaa 960

aatgactaga aatagagacc ggtccaaatc ggattcgatt cttaaatttt ataatataaa 1020

atctagagct cattaccaca actacgtaga aaagctatgg tgaagctacg tctcacttgg 1080

attgcatatt ctgtttttt taaaaaagag aaaagtgatt ccgtccaaaa aatatcaaat 1140

agcttacact ataatgagaa gtgaccaagg atataacaat ccttataaca tatccacac 1199

<210> 3075
<211> 1094
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262627_G1, chr7:154902271..154903364, Cluster 18

<400> 3075
ttacgattgt catgcaactc aaatgtgttc cttctattat atgtaaacga gttatgagta 60

gacaactgaa atgataattt attttaataa attgtctatt aaactatctt atgattacat 120

agaactaaat gttgatgtca agctcctaat agcgaacaac tccaagtcat gaaaaccatc 180

atgatgcata gaattatata atatatatat aagagctaaa aaaatgtctc cggtttaaat 240

gtacaaaaga gctaaaaaaa tactagatac aaatttcaaa agtgactttt atctccaata 300

gagcttacca agatgaggcc aacttaattt ggactcagcc aaaattattc tgtcacaata 360

taataatagg aaaaaaaacg agaaagatga caatagctcg agctaaattc tttgctcgca 420

atcattactc tcgccgtgaa ttcagagtat cgagcagtcc agctgttcct cactactgaa 480

agctgaaaca tgtcctccac gtgaggaatc cagagatcca gaaattgttg tttgctcact 540

gtcgtttgcc gcggagattg gaaactgtgt cctcccgtcg attgcttggg ctccagcgaa 600

gcatacatga tacatctgat gctcaacttt cgagacatgt tcagttttaa cctcgtacta 660

ggaacgtaga acaatgtata aaagatcggc attgcacatc agataacaga tgtctttgcg 720

tgctttgctt tgcgaatatt caattattca tggatcgttg ttcctatttt cctgaggtgg 780

atctcctgct aggtttggct ccggttttat cgtaactata gctatactta ttgcatcttg 840

gctccttaat cttttgtgta tactcttctc agtttaattc ctcaaactaa aactgcttat 900

atgctcatgc caattaaatt aaagtaaaaa aaattatctt caatctagct ctctttgttc 960

gttccatggc cgctcactgt gtgtgcctta atttagagcc catgcatagc cacaaagaca 1020

aggccggccg acgggtagcc agggtttaca aaaccggtgg ggaggtaaaa accgtccccc 1080

accggtaatg gttt 1094

<210> 3076
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262740_G1, chr7:155598226..155599356, Cluster 18

<400> 3076
aaacaatatt tcatttttct tctcaatgtt aattcaactc tcatacatgt gtacctagct 60

catggttttc cgacggtgac taccctgaaa tataacgagg tttgagttat gctacaaatg 120

atactaacct cagtttgact aagttttcca gcagcaacat catcagtaat aataataata 180

gtaataataa taataataat aatatgtggc aataaataag tatttttaaa tatcttataa 240

aatggcatat atatacttac agattgtaaa cattgtaatc agtaatacga ttatcgataa 300

agttattcaa atctagaata gtttgaatta ggacgagcta aaattcgtca tattttaggt 360

aagtagagaa taaacatctt cagcatgata tttggatgtc aaaaaactag cactaaacaa 420

gatgtggtgg tttaacttct tgccctcttt agacaatata ttcaccttca catcaaaatt 480

gcctaattta tagattgcca agggtctata tgtatttaga ccatgtttgg tgaagttccg 540

acacatcaaa actggtacta aactcgagct atttttatc tccctctcaa aataaattag 600

aaacatgtaa aaccacaatt tttttaaatt tactggcttt gtctcctccg tacactgtag 660

caaagaggtg gagaaaaaat aaaaccatgc caaatagccc tccactgttt ccctagatat 720

taaatggtaa ataattggtt acttttagtt cagtggtccg tgcaaaatat acatacatga 780

tttccatagt ataacactat agcattaagc aatgcttaaa tagactaaca tttccatgat 840

cacacttgag tattttacca taaactatga aatgttacta ggaaggatgt attagatgaa 900

gttttcttga agaaagagca tatgtatata agttcttaaa aattatccac caatgatgga 960

tagacacgga aaagaaaagt tatcataaaa gtaatgtcag agaaggggac taattttgtc 1020

gcttcccgaa ccgacactac gtgtaacaat taaaagcgaa cgtattttta aaaatgacta 1080

acccttaaat ttgagtcgtt gatctatatc aacatttcat ccaaccgctc t 1131

<210> 3077
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265120_G1, chr7:167825965..167827101, Cluster 18

<400> 3077
aagcagacaa taaatagaac ctacttttca ccgacttcct agataagatg ttttttgaa 60

caatatcagt tgtgccaaac atggtttatc tctcactcta tatctgtcat ttacagagtt 120

ttcaaaaaga ttctttttaa atctaattca tcttcaacaa cattctctat atcttatcct 180

ttacatatta aagacatgca ttagaaacat tttttcatca aaattttata catacgcatt 240

tgtcatacct tgatatttag agctcataaa atatctcaag aagttttttt ttaaaaaaag 300

gtggatttag ctttacaaga aatgaaaaga tatttatgag aaactaaata gttccaaagc 360

attctaattg atgtgttttt gttgtgaaaa gttttaaacg catttagaca tgtattgttt 420

aaattctcta tttttataat acttcctcat tcttctaata tcaaatctaa tctctggaaa 480

cttccggaga aatttcatgt tctctatgtt ttttgtcacg atattcacaa acttagagac 540

atttttgta gcttaaaacc ttctcaggtg tatatcgaat tttaaacaaa ataacaaaac 600

aaccttgaga acgctcttat ttgggaaagc gaggtaatta atttggtcat taataatagt 660

tcagagaaag aatttttcct tatgtaaacg ccatggaact ttctaaacgt gttgggaaaa 720

agagcaggcc agcagcgacc caactgcatg aggatgactg gatgaggcct agtccaatcg 780

ctacatgttc atcgccttgc catcatgcaa tcgcgttctc acgctggcgt tgccggcgcg 840

gacggtcaga ttccatcagt gacggatcta gaattttatc aaagggtatg tcgttcaaaa 900

aatttataca taacctgata aatttatttt ataattatat aataattata gaatttacat 960

cgtgatccat tattgatgca ctaagtaatg aataagacct aaattaaacg attaagttaa 1020

atcatccatt aaatacaata taaatggttt aaaattcata ttgatagttc aaatgcaacc 1080

ataaaggagt attagatatt tacacattat ttgttgactg cctttcaaag gaacata 1137

<210> 3078
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265321_G1, chr7:168900094..168901230, Cluster 18

<400> 3078
aagagaacac gagatttctc tatatttctc gctatctcga ttgtacataa aatttcatca 60

aataacatgt gagtacacac tttttctagc acccacgtat aattgaagca taaagcatct 120

agcacaagta ttaaacatca aacatgttta aatgtcctat aacttaaatc caatagcaag 180

tagaacaaat ccttgatcac attcttcttg ttgcaatgca tctcttgggt atctttatat 240

ttttcttgcc actgaaaaga tatcaaatgt atttagcgag catgtagatc aaaacataag 300

ttgcaggttg gtttagaaag aattgaaaaa gcttataagg catatatata aaggactcaa 360

taaataccat gtagtattct agagatgctg actaatgatc atcattttag tttcaaatgt 420

ggtttgaatc catagagttt caatactcca tcttcgaatt tagtttaaaa actctaagat 480

aggaaacgaa caacatatat attatcatcg atctcaatat ctctcaaatt ttttgccaat 540

gatttaggct atttcaaaca tgtaagacac aatcaatggg aaacaattat agttaagctt 600

tgtattgtaa ttacaaggag ccaaaataca atgatatcct taattgcaaa aaaatatacc 660

aataaatttt ggtgttaaat gaatggatag accaaataca catcatgacg gtgagcaaat 720

gttatttttg tttgttccca tttgacagaa agtcatatcc aatgccttgt tcacatcgat 780

aaggtttggg gtgctataac gatggctaag tgaggtgcta agtgaggtga tataagctca 840

cgatacgcaa acgcaaaatt caactaatgg attgcaaaat tcaaattaat aagggtcatg 900

ggcaaatgca gctaataaac aaatgtggta ttgttttagt taacatacaa caacgttttg 960

gaagttaact tacagctctt ctttgcactt gcagcatttt tcagtacctt acacacagca 1020

tgagctaaaa agtaaaaacc atcaagacca atactttctt tggaagtttg aataaaaatt 1080

atgtagtcca attaacagtt ttctaatatt gtaacttaat tgaatattta tgacctg 1137

<210> 3079
<211> 1215
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266046_G1, chr7:172719411..172720625, Cluster 18

<400> 3079
agagtattta cccatacgtg ggttatccta acctatttgt gaaaatctga ttggtcacgt 60

aggaacgggt ctagatctaa gcacacacat aatcaaatcg aactaatcca tctgcattat 120

catatcttaa gagtcactac aggaaacgcg aaaaaacgtc ggtcacaaca aaaacgtcgg 180

cctcgatggg caaaacagtc cgttctctcg gcctaggagg tgaaagaaac taggaagaac 240

ataaaacgta gaaaagagga ggaaaacact tgaaacgaag atttctcacg tgccttagtg 300

ttagttgaag gaaggcatgc gaatggggac ccaaatcctc aaaagctcgc gaataattca 360

gttccaaata ctgaaatttg tccctaaaat tttatatttt taataaatat tttgagctcg 420

aatgctttct cgaaggaata tttatctttg ctagtaccta ttttttttgc ttagatttaa 480

cttgagtaca aaaatttacc ctggttattt ctcgaaaaaa tcccgattta atactgtgcc 540

ttttatgtcc ggagtttcct tgtttttta gttcaaaatt tatagacagt ggaaactttg 600

tttataaagt aggtaaaatt tcaggtcaat cgtaatttat ttacttggtt ttttttgttt 660

cctcttctgc acatgcagca cggccgtgta aaaacacagc agtggcccaa cgcggcactg 720

ctacacgtac tgggtgttgc tccaattttt tcctatgtgt gataactttg agtttttcc 780

ccaaaatttt aatcacacat attattcaaa atatttatta aaaaatataa cattttaagt 840

acgctcaaac aaccttaagc gataaagtaa attgtaacaa attaaatgat aacctattat 900

tttcttaaat aagatgagtg attaaagctg atgtggcgtc tatctgtttc tagttggtac 960

tgattgtggt gagtttcaaa aataaaaaaa ccacttacat attatatgac ttttatttaa 1020

atataatgta ccttttattt ccataaaaag tcacagttct aaataagagt tagtaagaaa 1080

agttgacgtg acgttgagtc gctgtattct cgtggtaaag gctatgtatt ggagtgatag 1140

ataacacact gataataata gatacaaacc atacactaat atgacggtaa acataagtcc 1200

aaggctaggt gggct 1215

<210> 3080
<211> 1242
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266454_G1, chr7:174275530..174276771, Cluster 18

<400> 3080
ggggaactca gtctgatgct cctccactat atataatcac ttgtgttcct gataatagtt 60

ggagacagca cattatatta ttattcatca gtgccacatg tatctccgct agcatattat 120

ataccagtct atcaatccgt gctatcacac gggctacaat tttagaacat ataagtatca 180

ggtaatgctt gatatatagt cttttattct aaatctatca caagatattt ttccttttct 240

gtttttttac tacgtatcta gacagtacat ctaaatgtac agtaaaagct atatatttag 300

aagacccaaa accatcttat aatttgaagc gagagagagt acaactcact aataaagaac 360

ttacttatat taaactggac acttttttctt tatttagtat aatatatact ctgtagtcta 420

tatctagtta ttgtaaattt attaattact atttatttga agaaagtata aattatattt 480

tttgtgtata ttcatatttt tattttcatg acatcatctc tatatatttt aatatacaat 540

tactccaaaa ccttaccatt agctatggag gtttcttgtt gcatcatgta tttcatgaag 600

taaacgatct aaatgtttag ttttcttttt tttcaatatc aactgctaca acttttctct 660

tgcttaagtt gaaactcttg tacttgttgt agatttcatc aactcacatt ttttatatat 720

ttttaaaata agaatttttg gtcatataat atgttcttaa ctactataaa agcataatct 780

attattagaa acatgcacca tatcgcttaa gataaattat agagcttgaa gtgagatctt 840

gaacatgggt agtaatgcta acctcaaaag aattttagta tctaaccctt ataatggtcg 900

atattttact ctaaagtgtt cttaaagggc caaaaaaata taaccataag tggtacccca 960

acacgcttct caagataatt gaatgttacc tatcaagaaa aatatttgca attatggtta 1020

tactacaata tagacatatc aacatttact taaatatatc caaactaaca atgtatataa 1080

attatatgtt atggttatta atatggtttt aaaaaatctg ttagtaccat tagtatatta 1140

gtgttaagaa agtattattt tatttgatga aacataacat atgtgtttta ttgctcatgc 1200

atgttggtac tacgtgtata attactttat gacaaagggg at 1242

<210> 3081
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267028_G1, chr8:842252..843301, Cluster 18

<400> 3081
aaagataaaa ttatacataa atgaggattc aaaatcatag ttgttggcct tcaaacctac 60

attcacactc atctagttat tctttaagtt atcctaagga taatattaaa tcaaatatag 120

atggatattt tttgttgtat atttgttttc atattttctc ttcagattcg aatcgaatac 180

gaatattatc gatttgaatg aatattgata tcttaaatat ccaactttga gtatacgtat 240

ataaatatag attggatatg gattagatac tgaataccta gactcatata cggatcggat 300

ttcagccctc ttagacggat cgaattcgaa tatgaatggg tatttacatc cctaaattat 360

ctcttaataa cttctaatat cttaattcac ttatgaaata aaagaaaagg tgtcagttat 420

ataacaatga aaattcatac aataatatat taattgtctt atggtcttaa tttttaactt 480

attatattgt tatttgtgac acaatgattt ttttgtctct cctctttatt tcctccacgt 540

gagcaaagat tatacccctc cacattagca tatatatatg gcacaatata cgaaaaagag 600

tataatccca ctattttaaa tcaacgtcta aggttcttaa ggccatatat acaaccctat 660

tttatatgca atttcttggg ggtctttaag gataaactaa aaaatacaag aaacagactt 720

ttcgtgaaga gtctatctct acatttgttg tacatattgt ctcttaacta tattaatgat 780

ctaggagctt agtgttctat catgtagtct agtagctacc tcttagacat agaaaaccga 840

ttcaaaggct cggtgttgta cattccctaa gtgttgtcgt cctcaacatc taaacatagc 900

tatagccagc gtagctaaac ataactaaac attccctaag tgatgtcatc ctagggctac 960

taatagttac aggaagtttc ggccaccttc ctcacctgcc caaccaatag cccccgccac 1020

gcatcccgtg gaaattaggg atcgtttcat 1050

<210> 3082
<211> 1338
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267153_G1, chr8:1833870..1835207, Cluster 18

<400> 3082
accaaagata tcatagagaa ccccttatct cttatctcgc caccatatta gtataaaatt 60

agagctggaa gctaactgca gttccttttc cttttctggt ttcaagttga cttatgatgc 120

tatttatatc aaagtttgat ggtacttctg gccttgtggc atccactgaa acttggttac 180

cttcttatgg aggtaaactt agtggctata gctgttgtcc ttgctctttt ctagcaaagc 240

tctacactat gaattatccc agactaacct ttgatagcaa aacctatatt tctaatgcgt 300

gcttaaaaat atgagtttac ttaggtatgc aaaatagtga agggacagag gtaacgagat 360

taaaccagag tcagataaga gctctttagt gtaacttatc gattcagtag gtggtatagg 420

aggtagtgtt ttggtaacca tcgtggctgg aggggattat atattatggt tttccaggat 480

gatggcttgt ggattgcatt tatatctgtt gcatttgtga acttgttagt tggacttttt 540

gtataccttt acattgttga tcctaggaaa atatctccaa gccatattag cggtgatgag 600

gacaatgaga ggtatgatta tctcatcata tgattttagg gggggatctc gatttgccta 660

ttcgtatttt agaagataaa atacattgag tttttatgag gaaggcatag tagtataatt 720

gcattttctt ctcatcaaat ataaaagatt catttaagtg aaaagtatgt tttttattcc 780

tagctgtttt tggtggcgac tatatatata atatgtgggc ttagagcaag tgcaatagat 840

tttgatgtcc ttcataattt ataagaatag ataatttagt gaaaaattac cctcctatag 900

ccaacacgtt gaactttcat cttaacttat gaattctcta ttcaggatgg accacttcta 960

acacatgtat ttatttgttt ttgcagtcta tgaccctaaa atccttcttt tcatgtttgg 1020

aatggatctg gaatacaacg acacactcat tggtggtggc ttctcttttc agaaatccaa 1080

acaacaaaaa actatcggtg tgataaatct tttacgattg ggatggaata tgaggctaca 1140

acaaaagctt gcaacaacta gaatagcgaa atactagtag taaaatgtga tgtaacttgt 1200

tatatagctt gctccttacc aaatcatgtt gctacaccac tgatacttct ttcgtctcaa 1260

aatagttagc tttcttaatt tttgaggata actttgatca aatatataca aaaaaacact 1320

aatacttatg gtgtatag 1338

<210> 3083
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_268200_G1, chr8:7512813..7513910, Cluster 18

<400> 3083
cgtattcaga ctataatgtg atttctttac tacaaataat aaggatatag aactgtttta 60

ttttgatttt ccattatatt gtaatgattc ctcctaaaat gctttattat gcgctattat 120

ttccatcaaa taacaagaat gcttctcttg aacaaggctc gtgtatgtgt atagaaaaaa 180

aatcttagtc tcttggatca gttatcacaa attgcgcatt agttcaaggg atcaatttat 240

taagcaatag ttcagcaagc atcgcactcc tattatctct ttattctctc cttaccaagg 300

ttagaaccca gaagccacaa agtcgacaag tcacacaacc agaacatgaa acgaaggcat 360

gtgtttgtta agaagctcag tttcaagaat cttggtataa gaatcgggtt ggcgagaagg 420

tcgattcctg ggctgtacaa gtgttgctca atggttcaaa caatacacaa cacattagta 480

ctgatgcatc aaactggaga tcacagacaa catggcagta ctgaaactac aaatgattaa 540

aggaattgta aacggttctc ttaaactgca aatgattaaa gaaactataa acagttcact 600

taaattgtaa atgcttctct taaactgtaa atgcttcaag atggaaggta tgctaatgac 660

tctatggaac tacacaggct tctctgaaac tacaaatggg agatcttttg tcttctctac 720

tccaaattgt acagaaataa gaaagaaatg tgttggtcac ttgtctttgg ttcctttagg 780

gtgtcaaaac caaagcaaca caaatgaaca aacaacaagt ttgtcctctt aattaactct 840

tcttcgagag ttaatcaatg aggaagataa aagaaggtgc atggaagcat taacttgaaa 900

taaaacacaa tagattaaag ataaagtgca ttactcatgt gaatgtatag atatcttatt 960

taattctata caatatgaca aatgattaca cgagtacctt cagttttac aacaagtagc 1020

atgaaggtaa gaagaataca tagctttgaa tgtcgaacct cgcaatctac tctagccaaa 1080

aaaatgtatc atatgcat 1098

<210> 3084
<211> 1409
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_27258_G1, chr1:165414605..165416013, Cluster 18

<400> 3084
taatttagtg catgtccatt tgtttatagc agtagagaag agaagaaata tatgcattct 60

aacaatgatc tctacatgac attttagata cagcataaac aaaaacactt taaatttcac 120

tggagaaagc atagactcaa aacactacaa tttagaaaag aaatgatgtg atacctcatt 180

gatgaggacc atttcaatac ctttgaaaat atcttggaac ttatttctcc tttcctccac 240

ggacaaggtt gcgacttcta ctctgaaata ggcttatacc attcagactc actttattta 300

atacaatagt tacatccagt agttggtcct attcttcata tatccacttt gcaactcata 360

aatagcatat tgatctgtca cataagtcga tcaatccatg atgcaaatga gcaatccaca 420

ttatacaact cataaacata ttgcctcgtt gagacacaca actaaatcat gcattacatg 480

agccaattta ggtagaattt tgaaaaaaaa actgccttct catagactta tcaccaaagc 540

cttgttgttg ttattgtctt gtttctttac acgatgatat tgatagaatg aagcctaaac 600

taaaccaata aatgtgcaaa gtgacatgag ttgctagaga attagctaca catagatggg 660

acgctataaa aacacaacga tatacaataa atgcagcatc aaaaatggga ataagaagtt 720

ggtggatttt cacaataata gtgaaagatg gaagttaatg acaaaacaat aagatttaag 780

aagatatgta gctaaatgat gagttgagga taaaaataat ccctttgtag agtttacata 840

caatttggac tagaaatttt accagtctaa ccagatacat ctaaatagat attgtaaaag 900

agatataact agatcaatgg acattctttt ttgagattta ggaaatgcaa attgtgagct 960

caaatataat tttatgaaca catgttaaaa caactcaagt tgtgtgcatc aggataatga 1020

attgaaagag ggaaaaagga atacattaat attaatatac aaacctgagt agagcatcat 1080

gtaggtccag ttggtttagt tgcaaggaag caactacctt tgagaagtgg atatgaaacc 1140

aataaatata tcattaaata ccaaattagt aggtactcaa tggctcatgg aaaatttaag 1200

tatagaaaaa tacatacaat gttgtatttg ctgcttgtcg tctcaccaat ttgttttggt 1260

ccttatggct ctaatcgata cttactccta gaacggtatg gatattttcc caaacatatg 1320

atattcatat ggatccactg caatggagag cacggctaat gtgaattcaa cacaaaagag 1380

aatgtcctta tggggcttaa gagcaaagt 1409

<210> 3085
<211> 1000
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_280543_G1, chr8:90423436..90424435, Cluster 18

<400> 3085
tgccctctgg gtcgactgat tcactgtttt ccctttttcc atttttataa ttttaattta 60

agtttgattt ccatgttcaa ataaattgtg atccaaatca cttcaaaaaa tcataaataa 120

ttagaagagc actttagtaa agtttgatct catttcttgg tgaggatttt tatacaaaaa 180

taatgttttc cctttctgta tttgaggaaa acatatgtaa actcatgttt aaagggaaaa 240

gaaatcaaat tcctctctaa aacttgtgac atgtgtttgt gtattcatag tggttttgtg 300

tcatacaaag gtagagtgtt acaagcttac atgtatgttc tacttatgga ccctacctat 360

catcaggcct actgcttcta tctcattgtg atctcatatc taaacaaaca caaactctat 420

acctcatagc catgcaatgc acatggagcg cgcatcagtg ttaatcattt ctattgaggt 480

gaccttccaa gctaggcctc gctgagtgag gacatgtgcc ttaaggggac tagtacacca 540

taatagaatc tcagtatggt tccttgtact tttactacat gtaagtatat tcatactacc 600

tagtcatcgc tatagtattt tttccattcc ttggtaaagg gcatgattgc ctgacctggt 660

atggcattaa atgtgatggt agacctacac aatggcaacg agtacatctg tagccctaag 720

agcatgtcag gttgaaggta taaccataac tcatataata atgtagtttg aagcattact 780

tatctcccca tttgtagttg ttcctgtcta gattttatgt tacgtttgag gactttctcg 840

aggtgatttt cataccagtt ggtgggacat gtatgataag ttgtgtctat gggtgcccag 900

gcctgtgtcg cttggtatga tgtaattggt acctaatgta gccttttgta cttgattgtg 960

ttttatggta cactttgtgt gtgcacgctc aactataggg 1000

<210> 3086
<211> 1160
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282653_G1, chr8:102704765..102705924, Cluster 18

<400> 3086
caatatgatc tgatgatcgg gttgaggccg tgcgaccctt ctttttatag ttcagggaaa 60

gggacagttt ggtacataat gcttatctag ctatcagctc gatgagaatg gagatcgatc 120

taaaatgact cctaaaatta atgagatcta tctctatctt tatgtgagga ctcctttata 180

gatagggaca tgctcttgtt aaaaagatat tgttcttatc ataaatgatc atttttctct 240

aatctgttca tgcgtgctga tctggttgtg ggtcgagttt ccctgtgccc gagtccgagt 300

tacccagttc gagtttgagt cagtcagact cactcactca catgtcagta tctccattgt 360

tggggcgtcc ttaacacaac tgtcatctag gtattaggaa aacaacacat ccgtttcaca 420

aatttcagaa tatcatgatg gcccatatct ttgttataga taaactcttg gaggaacatt 480

aactctatat gcaattcttt gcaatcgaca ttagaatgct gaccactctt tagtctcatc 540

tcaagtacaa gaagactaca aacttttgtg atctaaaaag cacaacttat gtgaagtaaa 600

taaaaatcca aagaattttc ttatactcat gatattgttt aaaaaccagt aaattaatag 660

cttgatcaac aacggataaa aaataattgt tcaaacttta tagaaaaaaa ctgaagataa 720

taaaacgcag cacgtactga agctgttcta ttccagcaca ttgcagcagc atctatctat 780

cagtagcgcg cgcatccaat aatgcatgcc ctccaacggt ccaatcctca tcgcatctca 840

cagtagaaat tccagtgccg ggacgatagc gttaagcgta taaacaccat ccgtcaaaag 900

caaacagaat gcggcaacgg atcctgtact aatgggataa gaatggaaca acgtacgcaa 960

gcagttaatc gacccctccc tagcctgtcg tccgtccccg attaattaca actccggatt 1020

actgaaagac catgggtgca acgattttat cactctaaga gcccgttcgt ttagttcaga 1080

ttgtgcccag gaattgttcc ggtttattaa aattatacaa atttgtgaat acaatcaacg 1140

ggaaatgatt ccggagggtc 1160

<210> 3087

<211> 1273
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282853_G1, chr8:103705405..103706677, Cluster 18

<400> 3087
tctataaaag catataacaa gtcaatatca atatgtaatt aattaagtag acacacataa 60

ttgcgtaagc acactcgtat ttcacaaaat tgaaccacac ataacatagc aactcaagct 120

aaaaatcacc ctgctctggg tccttccccc atgtccttgt catactataa tattatatac 180

atagatatgg gatacaattt tgcatataga aatacaggat actccttatg ggcaagacac 240

tgggctaact aacaatgcaa aaacaggata taccattttt gaatacggta cagtataatc 300

atgtattaat atggggtaaa cgaaaacaat cgcaatatgg cctaacccgt ttccattcca 360

ttttcatttt tctcatatct ttttttcata ccgttttcac atgtgtccaa aaatataaat 420

tcaagcgggg taaatataaa aatcagtaca gaacagaacg agatttttt ccaaccgttt 480

acacccctag ctatagctcc aattcatcgt aaagctctgc caaaagggta aaaaatgaaa 540

aagtttaaat actcccctca tctataaaca accttcacat aacactctaa aatatttttt 600

agtttatttt acccctccat ttaagttggt ttcgcttact cttaacattt tttttatttt 660

tttatgtaca aaatgagttt ttagtcaaaa tttattagtt agtagctaat atcataattt 720

agcctaggag aatatattat gatttttata attattttga taaatgaggg atcagataag 780

ataactttaa cagtacaaaa ctaaatatta aaaataacga aaaatactta tgtcagaaaa 840

tataacttaa aatttaattt atgttaatta cgtacaagtt aagttttaag tttatatttt 900

ctaagataat tgagaacatc ataacttatg ttaaattttt tcatcattat tttatattta 960

attttataat attaaagtta ttatcttctc ggaactctaa cctatcaaaa taattataaa 1020

aaaatcatac tatatttttt agactaaatc ataatataat ttctggtttc gtccgtagtc 1080

tcctttatcg tcattcacaa cccttcgaat tgtgtggcga ggttctccag tgaggcagcc 1140

atgtgttcca gttattagag cttgaatctt tgacggcttc ttcgcttgcg ccagcacaaa 1200

gacgatggtg agagagaaaa ataatccctg atttaataga ccctaggtac ctaactatta 1260

cgagcacaag tgt 1273

<210> 3088
<211> 1383
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286794_G1, chr8:124492392..124493774, Cluster 18

<400> 3088

cgtgaagacg tgggcctgat gaaagaataa aagtaaaacc tataggaaat ttggtttgaa 60

aaattataaa gaaattttat ttagttaaat tagcaatgac ttaactaaga aacgagatat 120

tttataaatt atatattttt acatcttatt aagttatttg caatttaatt atactatttt 180

ttacaacttt atgaaattga ttttctaggt gtgctgcttt ttatcttggt ttgattaatt 240

ttattatgtg aagaataaat tttaaatatg tttttctact atattttaca atgataagat 300

tcaaaaacta attttaagtt tagatgacca ttgccgacac ccgtttggat ccatatcagt 360

atatatttag tatgtcatca gcatgacgtc agatccgttt gtccagagga tcaatgtgac 420

acatcttgac aagtataaaa atagtgcact ttgtcagtat atggacggta cggcatacct 480

ttaacaagga ctaaaataat gcagtttatg attaggcgac atgaggtacc tgtttaagtt 540

gcggaccggt agtgcgcgta ctcatttttt tcacgtgaac tttgtattga ttcacttagc 600

tttaattcgt atcgattcta ctgattctac aatattttat ctctttgcgg taatctgaat 660

aactagtttt aatctaaagc gaacaatttt ggaaactaag tgtagtcaaa atcatgtatg 720

agtgtgatag attttttgt tagttcatta cgatggcgtc ctcaaacttc accgtgatca 780

tgactaaaca acctagaaca tcatacaggc gagtgtggat ctactagtag gcaagcacga 840

ccttggccat agatccattc gaagaaagaa gatgaggtag acacacaaag tctgcttgtc 900

attgagataa atgacaatag ttttttaaa agacactgat gttaaattaa acggatttca 960

acttccacat agctcataac ttaccattat ttttctataa cctacaactc atatcccaca 1020

accacttttt tcaaagacca caactcaccc aaatacactc tcagggactg tcagattcta 1080

tgagctaaaa taaaagtgac tacaatttag tccctttgga gctaaagatc caaacaagga 1140

tagttaaaag taactaaatt gatacatttt tactatttta gtcactttta gttctttttg 1200

tttagatcgt tagcttctaa gtgtctaaac tttaattact tttgttttag ctcctagggt 1260

ccaaacgaac cattaatact tatcgtgttg ggctccatat tgcaggactg gatgataacg 1320

aggctcaact catctcctat aactgcccaa gtgggaattg ctatgagtac caagcatttg 1380

cta 1383

<210> 3089
<211> 1123
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_287953_G1, chr8:131116810..131117932, Cluster 18

<400> 3089
ggtgtttttt ggtcccagaa caatcaaatc taacattctt aggaaatatt aaggccactt 60

gggtgtacat gggttgagac aacaattggt tttctagttt ctgctcacaa atatcaagct 120

ctttggattt tccacacccg tgaggagctc tagtacctag ggtcatgaga ttttttttg 180

ctattttagg tttatttttt tctaggcttt ttgtttgttg gcactagata acatgttgct 240

tttcttgggt ccattttctt atgtagattt tttacttccc atgctcttgg accaattctc 300

acattttcat ccgtgtacct gagttatata tcactagttt caaatgtttt ggtgtcctag 360

gactatcgag tactacacat ttaggaaact attaaggcac taggatgtag ggtgagacaa 420

tatatttcta actagtttct tctcccaagc aactagttct ctagattttc tacacctatg 480

aagagctcaa atacacaggg tcatgagttt tttgctattt taggttcatt attccaagta 540

ttttgctcgt tttggcactc agccacatgt tgtctttctt ggacccattt tctaatgttt 600

tcactatttt tggtgagcta tagcccattg gtttcaagtg tttggagagt cttgaaacta 660

tcaagttcta gacattctta ggcaactatt aaggccacta tgatgtacct aggctaagat 720

aacacctcaa atccaacaat taaaataata cattaataat caaattaaaa cttaggataa 780

agtaaaattt aaatctagtg cttgatctca tttatcttta gagaatgatt tttgtttgct 840

cataattgat tggtgatttt attcaaaaaa atttatttat ttggaaccca attaattaat 900

atggaaactt tggttcaaaa ataaatactt taatgttaaa tattttggta taattattat 960

ggatttttat aaatatttaa aaatttattt atttatattt ttatgggata taaggataaa 1020

agattttggt aatttattta tatttatatt tataattatt tatttatatt taatatggaa 1080

cccaatttat tgaaaattat atttatttat ttaaaaatat ttt 1123

<210> 3090
<211> 1061
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_288077_G1, chr8:131806097..131807157, Cluster 18

<400> 3090
aggccatctt ccggcctata tagaacttct agtcatcatc taatacacta gctaacaata 60

tatttatata gtatttgttt ctaaatttta tagtgatcaa ctgacctcaa caaaaccctc 120

tagctccgcc cttgatttgg acaaatttaa taatacagcc aaccgcttat tataaggcta 180

ttatcaacag ctttcataac tcatctttcg ttttaaactc cactctacaa attgtgttgt 240

gcaaaaatag tgttttacac tgctatatac atgaacatga tttgctggac acagcctaag 300

ggtctttacg actcaccatt tagctcgttt gtatagtagt taactcttca ttattaatat 360

aatacctcac ttatctctct catatttttt agttcttgta tctatgccgc ctataaaatt 420

ataggtcgct tctttctatt gtcttatata tctagttcac attaacattt aggttttgtt 480

tgggagagct tcactttaga agtttcaagt ttgtttcagc ttcttctatc caaacagttc 540

cagttccacg agctctagcc tcaaatggtg cttcaaaacc actgttttta tacctcctca 600

tagagttgca caaaaattat ccaccattgt tattggttac atgacctatt gattcatgtc 660

tctttctcca ttctctaatc atcaaggata attaaggaaa ctcatataaa ttaattgtat 720

tataatgctg gagtctacgt gcaaaccaaa taatcttaaa actcgactta ctgatatgtt 780

aaagatattt tatgatgaag ttagaaaacc gaagctataa ttaccaaagc taagctctct 840

caaaataaac cttagtcact ttatagtagt atagccgcac gattgatttg cttcatggcc 900

tgggtcgttt cacagtcata accagaaccg acggtcagtg catctgacgt tagtcccagt 960

agatggatag accggccggc ggtaatgtga tgcttcagtt cagccacctg gcgtgagtcc 1020

gacctcaaag ctaaagagtc gtggctagta ttgtgttgcc t 1061

<210> 3091
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291367_G1, chr8:149615028..149616079, Cluster 18

<400> 3091
gagaaattct gaatgaaatg taggtgtcac agaaagcctt caaagactct gtgcatactt 60

aggatcttct aagtaataca gtaaaaaaat caactaaaac aatgcaaatg agatacaaac 120

acccctcctt cttaacaacc caaccaccca gatttaatag ctctactatt tatcccaatt 180

aatcctacta tgtatttaga tctatcctta gctcagtctc agcagagagt tttattgttt 240

ctaagaacgt agaataaaat ggaacatgga tgaaacgtct acgcttaata taatgaaaag 300

tgtcattcta cgaattttaa atatctaatt ttatgatttg tagaaagtta gtaatagtgc 360

caagagagtt cacttcttct atctcttgtt aaaaatattg tcacatcatt aaaattgttc 420

aaatgacaac ttattagatg caaataaaaa ccccactagc cttatattaa ttgattacta 480

gtctaaacat gccttttatt aaaggacttg tttggatcct tgtggcaaac agtttgccgg 540

ctaattttag caccataacc tacaaaatag gtcggctaat aaattggcta attattagtt 600

gggggctttc aaactatttg cttattagac atttgacctt gctaataggt gttaatagat 660

cgtataaagt gaaaaaaaca tctattagct aagtctctaa acataccctg attaatttt 720

gctagctaat tatttacata taaataataa gctagtaaga tccaaacaga ataaatactc 780

aaatcattta cgtgaaagtt tccacagcag gtgaggagat ggacgtgcaa ttgccgccgg 840

acaaaagcca tagcccacag ctatatgcct acgtcactgg agccccgtga cgcatagaca 900

tgcaagcacg tacgtacgcc acacatgcac atcaggtcgt acgcggcatg ttttagtttg 960

tcttggtttc ctccaccaat tggacgatac agacagccta gtagtctgac ctgtgcgaag 1020

agcggcaaac gaaacaatgg taatcacaaa ac 1052

<210> 3092
<211> 1068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291989_G1, chr8:152727813..152728880, Cluster 18

<400> 3092
tgtgtagtat atgtaaatga ggacgtaact agttactgtc ctagtacgtg aaaagtattt 60

cgttctgctt ctaatggttt gggcagattt agttgatttt gacccgttag atcacttatt 120

ttgtcctgca gttactattt agtaatttag atcatgtggc atgctgggtg gaaactgtgt 180

atgtgaaatg tgtatatgcc ttctatgttt ggccagtgca agctgataat aactaatatg 240

atatctcgaa ttattagaca aatttgtgaa atgtgggtac tattactctc ttagctaata 300

cgatataggt ctggggccgc cgcaagcgtg ctgatagagt gacacggtag tacgtagacg 360

cacgatatag aggttcagtt tattaggttt tgggttgcct gatcgaaatt tcttacgttt 420

tctatgtggt gaatgattag atttaagtac gagaagaact tacgtactca gatgacttga 480

gctagcgagt agaaataatc ttaggaatct tagggtctgt ttggttcatt tagttcatgg 540

actaaagttt agtctctact ttaaaagtat ttggaacaca ttaaatgaat tataagaaga 600

tcaaaatata tcttagcatt atttcattat tagtgcgctg aaataaacga ggggcaaaag 660

gtgaaattaa tatggtttaa tttcttttag tcatcttttg agtgactaga gataaaaaca 720

gtttagttcc tgttttaatc ttacggtttg gtaatttaag gactaaatag aaataaaata 780

gaggacaaac caaatggggt cttagccagt tcttgcgatt ctatgtattg ttttatatct 840

attttgacca gtggcggatc ctggaataga taaaagacga gactactaag ttagccaacc 900

gtggcgttgt tggtctgcgt tgttggtctg acgacaagca gttagtacct tgtcctgggc 960

aacttggcca gttagctatt gtcgatctag agcctaggat gggtggctgt caaccgtagg 1020

tgtggcatag agaaaatgga gggcaatcac tggtgagaca atagcggg 1068

<210> 3093
<211> 1075
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292951_G1, chr8:157926550..157927624, Cluster 18

<400> 3093
atgtgtggca gagtgtagct agcgtcgggt gcagagtggg tatgagaaga gctagggttc 60

atcgtctctt ataaattcta ggttgatttg ggtcaacgac tatttattta agaggcctat 120

ctccgttaat tgattttaag agacaatcaa gttttaagtg tctttgtaaa tggtttgtct 180

gtctccaaaa aatcagggga cattttagaa gacagtgaga ttttatgtcc acctctgtta 240

atcaaatcgt ttgtcttcca aaatcatcta tgtaatagtg ataatatgat aatttattct 300

attgagctag gctcatataa atttagtcaa gtatgcttaa atatttctct tattaatatg 360

caaagtggac tctatttgaa ctcatctaaa atcttcgtat tccggttaaa aggttataac 420

acattataat ttatttttt ttgtaaacgc tctaatgtgt ttaaggaaaa aatatggcta 480

caactgaagt tttattatag gaaaattcaa cgtcctgtcc actgcagtgg aagccaaaac 540

acttgtctac accactcttt gtaactagga tgcaggacct aagagcatgt acaatctaga 600

tattatgtta cggttctcta agcactaata catctaagaa acttcttcat acaattcaat 660

gtatacaagt cttctatctt attcactaga atctcttaac atatggttca tttatgtggg 720

ttgtatggat ggaactgtat ctaaacttag agaaccgtgc tagagacgtt cattcaccaa 780

aatatatctt atgtttttta cacttatctc cttagtaact cttaaaatac agatcattta 840

tgtgggttat acattgccct aacacctata tcttaatgac atccaaagga aggcatgtaa 900

taagaggtac aaacgagctc taaggtttta gcctaccatg catacgaaaa acacaagtat 960

atagatatgt agttttgggc ttatttaatc tggaacgata gggaaaaaaa tgttgtccaa 1020

cgtaaggatt ttacttgtaa gaaaaaaaaa aagacactgt tcatatccac aaaat 1075

<210> 3094
<211> 1076
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292956_G1, chr8:157974832..157975907, Cluster 18

<400> 3094
ttccatcaaa attacagaat agactcgtga tgcaccatat catctagaat ggattgattc 60

ttcaaacaaa acacccctct atagactttg aaatgagtgg atggctcaaa ccgaggagag 120

gaagaaaagg cgagatataa cgtgtatatt tagttataat tagtggctta ttttaggact 180

aaaggtgttc cttgctctcc taaggggaaa aaaacggatg tccattctct acaataggtt 240

gcaacaaaaa ggagataaaa aagtgcacga gaccttggac catggattgg tgaaccgtta 300

ataattggcg cgtcgttgct attattacga tgagccgaac tctgcatgca tgcatgtggt 360

ggtgtttttt tagcgatctc atcattctcg tgcatggtgc atgcttcata acgcctttta 420

taatattgtt aaattaaatg tctagtgtgt gctctaataa atctagtgat ggccaccagt 480

tggccatcag ccagtcggtc cacgaggccg cgccaaccta acctaacctg ccctgccgtg 540

tggtttacat tgccactgag atctcgcttc gtcaccctcg tcgatctggt tcagacgctc 600

gcatagtcgc atggtcgctt ctatacttct attagcccat gtgtatgtat atattgggta 660

tttataaata tcacgtcgac aagcaggttt ggcaaagcac acatgccgct gcgcccagaa 720

attaagcagt ttgctagtgg gcgaacatag aggcaaaaaa aaatatatat tgagaggctt 780

ggaggagcta gcggaatagt tggccccgca caaggaaggg tctaccggtg ttcatttaac 840

ttttggtcat ccatacctac gtgtgtatga aaataaaata aaattccact agattggttt 900

taaaacacaa attctcagta atttttattt agaaatatga ataatgaaat tactggaaat 960

gaataatctc cactccttta aaagttgtgt gcttcgtgcg tcacgctcga tttgttttct 1020

ctctcgcaca tccttctctt gcatgcgcaa ccaacaatgc aaccattacg agcatt 1076

<210> 3095
<211> 1181
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292957_G1, chr8:157976205..157977385, Cluster 18

<400> 3095
tcttaccagc aagcgcctcg aaccgctgcc gcaacactct accacccaat gagtgctccg 60

aatcatgagt ttagttttgc attggttgtt gtcaaagagt ttatgagata ttaaggtcgc 120

tgataatata tgtattgctc gttttcatgt aattgttata cgctactatt ttatcgaata 180

tttatgtgtc atcgcaacgt acgagcatta tactagtata attatgatgt ttgtccatgt 240

aataattcta taatgtctat aaaaaggggc cacccatcat acaatgtttg tgagtttgtc 300

catgtaacag ttgtactgaa ataataataa taataataat aataataata ggatattcgt 360

ctccttatac attgtgtctg agtgtctcta ttgtattgtt tatagtttta tacttaagag 420

gccatattga cacactttgt aggtagaggt ttattgtagt aaaggcacaa atatactcaa 480

atgtaccaaa aaaaggcacc aatatactca aaggtactaa gtaaaggcac caatatactt 540

aagaggtcat attgacatag agcagtctcg acactgtatg gtatgcttat caatcatgac 600

gtcacgatca tgttgatacg gggattttat agaggttcaa gttgcaaggt gataatatcc 660

tacaccctct ctcatgacga atttctatat aagaagacta tacaagagcg caagcttgaa 720

gacagagggg attgtacgtt ttttattacc ttcatggtcc tccttatggt cttatagatg 780

ttagtgagga gaatcctccc aaccttcaaa caaaaaggtc ttctctttag gtgttgtgat 840

attagactcg agtattggtc gtccgatcta atccgatcaa tacaacagac tgatacgatc 900

tatatttttt tatcgcaata attcactgat cacgcatagg ccacaagcca tgtttttacc 960

cagatcccaa tccaacccga agaaatctaa cccaaagcca aaaaacaaga cacaacccaa 1020

aaaaaaccta accgatcctg aaaatctgac ccgatacgtc taacaggtag gcacgggcca 1080

acccaatcta acccgacact gggcacggat caagcatggg ccataccaaa caacccacag 1140

gctgaccttg acctaacgtt tgaacaagtc tatgtggata a 1181

<210> 3096
<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294377_G1, chr8:164942661..164943729, Cluster 18

<400> 3096
gtctatgctt ctaagacaaa tcatggaact ctttcatagc ctagagtttg caaagatcat 60

ggtaagcctt cttatatagt ttaccaccca tgaaactatc acctaaacat atatttgttc 120

ataattaaat caatattatg ctaggagttt aagataaaat atccaaatat gttttacttt 180

atagtattgc tcctcagtca agtaaatggg ccaaaggacg cacaccaatg tatctatgtt 240

atccaatttt aacatagata attcaaacct caaagtaaac aaaaatgata tatgccacta 300

tgtataccaa gtacatatgc acacaatagt gaaaatgtat tttatagttt atcaattgca 360

aaaaaaaaca agtttcttta acaaaccata tatcatgacc ctaaaaccca ttcttaatta 420

tattgaaagt ctgcaacaat gttttttgca aattttattt tagatgtcta tacattttac 480

atatgaatac tggtagttta attataatca ctctattttt taaagaacaa tacacacata 540

caactctttg gtagaagaaa attcaatgcc ttgagtgttg tggcgtggat taaaacacat 600

gatgatgcta ttgttgtaag tattagtgaa gtttaggatc tatattttca ataaattata 660

taaaaacaac acatgattca aacttaacac atggatatga aaaaatgcta aaactaacat 720

gattaaaaat ttgcagccaa aatatcgatt catgtatggt gccatagaaa ggatgcaaag 780

atccgatata atttaagtta tggtttaaaa taaatgagta tttaaatcaa tggaggtgta 840

gcgcaaagat taaaacacat agagaataat tgaaaatttt gtcgaaacat ataaagcagt 900

accttagtaa aggtgatgca gttttaattg catcattagt caaatttatc taaagtttga 960

ccaaacaatt aatataagaa gagtattaga cacaaaatag gtatattgtg aacatatatt 1020

atatgataaa tctaataata catattagta ttgtaaattt tgctatttt 1069

<210> 3097
<211> 1028
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2949_G1, chr1:15138516..15139543, Cluster 18

<400> 3097
ctacataacg atgaatattc aaacaagaga tctgacaacg ttatgcgcta acagccaaaa 60

gaatacagta tagctatttg aattaataag gaaaagaatc cagatcttgc tgcagaacct 120

caacatgctc atcattgaaa gctagattat actagggtgg gcagttggta cacaagagat 180

agaataaaag cttctagacc aaagctacta tttgaaagaa tcttcggttt taggtgtaat 240

cagcagccaa atatgtaccc tactattaga gttgagggtg gaagttattc aggacatggt 300

tgtggtcttt gtaactcaca tgggagtcga taaaagtaca gctcctaaac agaaaagttt 360

aaaagaacac atcaaggtga ctgctaccaa atttatgtgc aattaaggtt aaataacaat 420

gtcttcatgg ctaatgacgc aggttaagaa aaaatgcaac aaacatccac aaagttggat 480

catggtcata tgagatagag aaagaagagt aggggaggtg agtatgaggg aagtaaacaa 540

ttgagggtaa atgtgcatct tgacaccaga agtgtctagt tcctttgatc catgcacatt 600

tgtcgaaaat tgttcgacag tgaatttatg tgctaggtcg cttattcgag aactaaaaat 660

aaagacatag gagacacgaa gatttgtggc gatgtcaatt gctatgcaac atgatctgat 720

gatttgttcc tcattttata atccaaggac gcacgacagg tttacaagat acatatctac 780

attgtctata ggatggaaat cataaatgag tctatcctaa attatcaagg agctgaactc 840

tatttgtaca tgtgtttcac ccttatctat tggactttac catatctgct aggatatcat 900

ctcccaattt tataagatct tccccatatt tatccctcta gaatctcttt gttgacattg 960

tttccctctg gtcatgtcag ctgagtctct agactctcag ccgatcccgt ggacccacta 1020

gtcatatc 1028

<210> 3098
<211> 1199
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295163_G1, chr8:168292572..168293770, Cluster 18

<400> 3098
taacatcaac ttatttctca cagttagtac taacatgatg aataaaatca tccactaaat 60

ttaagaaatg aacttatgat acaccaactc atttcagatg atgtgatttc tcaaaccaaa 120

cattctctaa gacttttgtt tgaggctgct ccaaaaacga agcagagacg ttttagtgat 180

ttcagcttct atccctgaga caactttggt ttcagcattt tttatttggg tcatttttt 240

gtagaactta acgaaggagc ctagaccgga acaacttttg aagacaaaat cctatcaaaa 300

acggtgaatt cgaaattgtt ttggagttaa acaggctgaa gccactaaaa catgactttc 360

ctgaattctc cgtttcttag aagcctaagc ctgactttct ttgtttttag aagcctaagc 420

cgaggctctc tgttcttttt cgtgcttgtt tcgtaggact tttaattcgt aaatacacca 480

aagaaaccct aaggcctcgt ttgggagaga cggtgcagga cgccccgtga agccatgacc 540

ggcggggcag tccctgccat gctcctgccc caggtgtttg ctaccccgcg gggtgggtag 600

ctccggctgt tgtttggctg caccagtgtt cactgtccca cgtgtccaca ctacactacc 660

gttcaaggag cacctgtcat ttgacttatt ttttttattt ttacagccca cactttgctt 720

tcatggaaac aaaaaaatat ataaaaatca ataaatttta aggggaaatg gcctgaatga 780

aaaagaaaaa cctaaaacct ccagaaaaat caataaattt taaggggaaa tggcctgaat 840

gttaacaaag ttgcaatcac aaatcatcac atacacttgt atgttccaac attccaacag 900

tgattcacaa aaactagctg gacacttgtc ttccacgaaa gcatcacaag atcaagtttt 960

taattggatg aaaccagata ttcataaaaa ttagtgaaat ttggaagttc tagctagcaa 1020

atcatcagcc acatgttaaa gcgattcaac tagcatatca tcagccacta tctcaatggt 1080

tggagaagca tcacaagatc atccacatgt tcatcagaag atccacatct ttgggctcga 1140

tgttgtgctg caataacaag tgaattattt caattagtca gtcaaagcct acatgtaat 1199

<210> 3099
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295839_G1, chr8:171410010..171411064, Cluster 18

<400> 3099
ttctgatcac gcagcaattt gatgtaagtg tactctctac ttcctatctt ctaagccgcc 60

gtgtgtcagt aacaatcatg tagcatccta ttcctgtata tttttcgggg ttcaaatatc 120

tggattatct tctccacaca aacttgagaa gttacttttt tttgggggggg gggggggatg 180

tcgtggtcct tggtctaggc tttctgcttc caaggttata tgtttggtgc atgaatgagc 240

tttcgctatg aatgtgactc tgccctagtg ggtctgaaca cttgagagtg caatgcagtg 300

cagtgcagta gcatcttcag agtatcaagg aacacttgag agtaggttcc ccttttatta 360

cgctgtagac aatccgttat gaatactgaa tctgtctgaa actgtgtcta gtaccgtcct 420

tacctgcact gaactaggat atctttctgc gctgcaggga taaaccagtt taattaatat 480

ataaaattga cagggcttcc aataagaatg tcatttttga gtaacatggg ctagatacaa 540

cagttttaac atgtcaagtc ctccgccaag gggtggtggg taatctggtt acaatttttg 600

cggcttacga taatcaacag aaaaaggcaa aagaatcacc attttacatc ccggtttgtg 660

gcaggaaagg aggagcctgt atgggcatag cctggtcgtt atcactggat tctgaatagt 720

ttcagtccat ggatacagct ctaccctggt ctgcatcaaa atctgaagca atgacgaggg 780

acggagtgga ggggtatagt atagagcaac ggcgagcgca catactgcta cttatcattg 840

aggagaacct tggttaaatc ttaaatatag acatccataa atattacatc atttagttta 900

tataaatata aatattgtaa gtacagatct gtattcaaca tacatgtaaa atctttttat 960

gtataatttt ttaagatata ttctaggaaa aaaaatattg atcaaatacg tgagtgaaag 1020

catctaagcc gatagttaga tttcggtgat taata 1055

<210> 3100
<211> 1014
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296074_G1, chr8:172991876..172992889, Cluster 18

<400> 3100
gaataactat taaatttaag caatgtatat agaaatgtag ttatgcaagt atatctaact 60

agtgtgttgt gatgtaggaa aagtgcaaag taggggtaga agtggaagta ggtctgcttt 120

attgtggaac aaaaaagtat atatgatgca tgacctattt gggacagtta gaagatcgtg 180

gggttgggga tcgtaagagt tgattttgcg accagggatc atgagggaat tcatgtgaag 240

aaattccctt ctattctttg aattgcaagg gaatttcttc tcatggattc cctgatttct 300

gatcatcaaa ctagtccgaa aaaagctcgg ctctcacatc tacgggctag tgcatgtatg 360

taactgcaat tactagttgc taataactaa tcgactagtt tttgttaaag ttttatttgt 420

atttaataag ctagtactta atatttttta tataaaaaga agtaaatttt acggagataa 480

aacttttgg cacaattatc tattttatag ttataaaatt aaatatctac acaagcatag 540

aatgtccgct ctcgtctcgc ctatcgcctt ttacggagac aaaactttat taagagtagt 600

tattttatct agtttatatt ttattctata ataattaaat tcatattcga aacaaagcta 660

tacaaacaat tgataccact ctaataaata aatatcaaat aggcttctgg cattatttca 720

ggtgtcactg gaggatggat ccaagaaaga atcagtcgag taactgtgga tggcttcgaa 780

tcggaattca cagtttacac gacaaaaaaa aggaactaca taatctgtgg aactcatatt 840

attttgtcgg cactgacgaa gatgaaccta gattaagcaa aacctttgaa attaggaata 900

gatcacaagc gagatttcgg aagaataggt ggttaagtga catacctga aaaaaaacag 960

taccctctt tattcgaagg gggtgtttgg ttgctcctgc taaagtttag cacg 1014

<210> 3101
<211> 1243
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296360_G1, chr8:174173700..174174942, Cluster 18

<400> 3101
caaatataag taccatatta gcacaacatt gaccttcatt atctaaaagg atatgtggat 60

tcaatcatga ataacaattt catagttcta taactccttt cctctttaaa cgaatgagga 120

cttgaggaga tggaggagct tgattggagg tgttgggtga aactagtgca agttccttgt 180

catgcaattt atgtctacta atgaatattg gttgctccag ccttgttgtt gtatgaacaa 240

atgtgacgtg ctgagcactg aatacgctaa tgctcttttg aatggaagtg atacgtctga 300

gctgaattgg ctttgcatta tacttttgaa taaaccgggg tgtgtctttt agcccttata 360

tctaatagat ggatgggcta caacctataa tattcgcaga caactttcat ttacagtacg 420

ttttgatttg tagtttactt ctattttgcc agcttaaact tctctattct tttaacaaat 480

cattaggaaa caatctattt ttaatcatcg aactattgta tgggtttttg aacatcgaat 540

ttcagaagta ggcatcgaag tatcaatagg actagttttt caaagtagtt ttgcttttat 600

atgtttttaa acaaaaaaat gattaaataa tatcgattca tttaaatcaa aataataaaa 660

ccactatatt tttaaaaaaa aataatccat ttattgatgg tctgtttaga gttatatgga 720

taattactca ttaaaaaatc taccaaagaa gttctttgat aagttcttcc tagagaaggg 780

gagttcctaa acaaattata gaaaccggga gttagaaaaa ggaagcttct atcagctcct 840

ctcatatttt cctcttcgcg ggtccacgtc gcatgaggag ctacgttttc aactaaacat 900

agtgcttttt atagtttttt ttttgaaaat aaggagagag ttgttttata gagaagttag 960

agctagagct agaagagcct taccaaaggg ggcttattta gaccctgttt ggcaaagcat 1020

cactttaatc atttgaatta tgtttcagtt ttttctattc aaacaggtct atctggagga 1080

gctttagatt caaaaaaact gaaacttgag gccaatttca tgaaattttc gaagctcctc 1140

aaagggtatt tcaaaaacat cgttttcata tctcataaag ttacagaaaa aatacccatc 1200

atgtcattgt ttacattacc taccgattca tgtctctttc tcc 1243

<210> 3102
<211> 1089
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298913_G1, chr9:8959885..8960973, Cluster 18

<400> 3102
gggccgagaa tggacttcgg gcctctagtg ttcatgagct ctctctcgtt cgtgcctaga 60

ggtgcagccc atagtcccgc atttctcatc ggattgacgc ggacgcggat gagatgctgc 120

gaggctttcc gatcccggga ggaccaccac aggccacagc tacagggagg actggggacg 180

gacttaacgc ggagagggta cggtggctac ggaggggcgg acactctacg gagcttaggt 240

ccttttttt ttggaacaat ccatttttt aagaaatcgg ttttttagtt tttaactagc 300

agaggcgagc ttcttaaatt ttaagaaacc ggaaatctaa tttctacaaa ttaagacata 360

aattgatatg tttggaacca actcaatttt ttataaatca gtttcttaaa aactaggtgg 420

ttccaaacat gcccttactc atacacgata gatccttgtt taggggtat ttgtaatggc 480

tccaaattcc agctccaata tagagttgta gtttataata tcaatttaaa tagttttaaa 540

aatattttta atctaaataa taaataaaat aacttattta aatgtcatct aaaagcttaa 600

aacttcaact ccccgatttt atggagcatt taatgacctg ctccactaac ttcaccaaat 660

tttttagagc tggagttgtc tcaaacaaag ctttaatatt aacgacatgt ctgcgatagt 720

tttttttaa aaaaagtgaa tttaaatata taggacttat catgaaacag tttgaattta 780

ggattcatta gcatactgtt tagatacata acagtttcgg atgcatgaaa cggaggtttt 840

gctgaaatag cctattttgt ttgctatatc tatatttttt atatactaca tgcgttctaa 900

taaaaaaatg atcttttcta aaaaatgcaa tattttgata caaatactca tgagcactca 960

aaattagtgc acaagatacc taaagaatta atatttgtct ttaacaacat ttcaatacta 1020

ttatgattgt ccatacataa aggtaattaa atattaaata acgactagtt ttttcgttac 1080

atgatagtt 1089

<210> 3103
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315523_G1, chr9:109147643..109148773, Cluster 18

<400> 3103
ctgcttagat atttcataaa catcaaggat aatatgaaaa gatttatctc actatggaaa 60

gaatgccaac tattatgaaa cggatattga aatgtatgac aatatttttg aggttgatga 120

aaatatgtgt tgttagtttt tatataattg ttgcgcaata ctattttatt gaataatttg 180

tgtgttgtca ccacgtacgg acaatgtact atttataaaa cgtgcgtgag actactacaa 240

agttctagag gcagtttaat tttaattaac agcgtaacac atggtcatac atatgttatt 300

atattgctct ttttcgttgc aacgcacggt tatttaccta gtttttgtta agtactctac 360

taaatagact ttaaattagt taaacactct tgagatgctc caccaaatcc taatatttgt 420

ggagttaaaa aagttaccta ccatatcact cgataataat aagagaaaac gactcgatca 480

tttctttcat gtgcctcagc cctcgccatg tgttgtctcc gtctcggcgg agcccttagt 540

tttagaatct ttatttttt agtttcatgg agctattcca aatacatgta cataaaaaaa 600

gatgaaacag aaatatacca ctccaatttt gaaaagttaa aatctagttc attttcatat 660

gacttcatga caacgaaatg aagtaatgaa ctaaccaaaa gttaaatacc taaaaaaatc 720

cccgtgaacc tgtgatccta tgatagacgc tgccatacca aacaaccagc tgttctttcc 780

gaaaggtggt agtggctcga tttgttttca ttatccggag gccgatcaga tcagggttac 840

cttaccttac ctacctactt gatgtgtgat gtgtgtagtt cagtggcagt gaagccgtgg 900

ccattatagc tagataaatt tagctatcat cagaagaaaa acatatgaag tagacttcgt 960

aaatggctct ctaaattcaa attcagtggc tctctatccc caaacaatcc ctctattttt 1020

ggatagcatg cttcacttgc taaacaaagt tctgaattta taaaggctgt tgaactagtc 1080

tagtcctttc tttgtgaaat ctattttaga gggtaactaa atcagtcaaa t 1131

<210> 3104
<211> 1273
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319409_G1, chr9:130491461..130492733, Cluster 18

<400> 3104
ggaaaaacaa tggtgtttat ttatgtgctc ctacacttgg cagtagtgct ggtaacaatg 60

aatgcatcta aaacataagg ttatgacaaa catattacct tactagctaa gttttcgtaa 120

actgctacga tttctatttg ttcttaaata tagaatataa acataaagac atgtgtgttc 180

tgttggctag ttgaatgcga acatgtgttt agagtcaaca actatgggtc gaatcttcat 240

ttgtacataa ttttatcaat tttcaattta aatgtgaggg gcatgacgac gatggaaacc 300

gtgtatccag gaaaactggt gctttaatag agatagagat aaagatagag aagagagttg 360

tagatgcaga tgctcatgca cttacttttt tccttttttgg aaaaaggcaa tttagagaat 420

atgaatgaga gtttgggttt gcgtgtataa ggcttgatcg agtgatacca acaagataaa 480

cttcttacag aatacaagaa tgttttgagc tcggtgacat tgtgaatgtc aaagaagtaa 540

gtaccaagac tacatattgt acattttgtt ggattagttg tggtcacctt cgttaacgag 600

aagttttacg ctttgtggga agttaattat catatatgtg ttgaactgca tacagaccta 660

catttatgca gaactttgta tggatctata tttgtgtgga actatatatg gacctatatt 720

tgtgttgacc tatgtacgga cctatatttt gtgtgggact atgtatgcac ttttgtcatg 780

ttcgtatgga tgtgtcatgt ttaggattca taagtaattg ttataaatgt ttaggattta 840

cgagtaatga ttatatatat cacattctac atttattaat attatttcga aacataacca 900

aatggttgta tgaatatgtc atggttagag aattgtctat tgcactcatc aaccaaacac 960

tactacgttc tacttcactc tagaactaaa catcgttctg ttctgcttta gcctagaacc 1020

aaacaaaaac aattcggctc tgttctaact aacaaatata gagcagagtc attatatcct 1080

caaaatatgg aaaatagttg ttccgtcaaa ctatacttta gaaccaaata ctatattaaa 1140

gtagctattg atgatggtaa tgagtagttt tcattactca ttaagaacat tatactagta 1200

gctttataat ctgaagattt tgagggtcca atgagcagtt atacattcgt agaggcgagt 1260

gtaggcacac tta 1273

<210> 3105
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324074_G1, chr9:153454243..153455329, Cluster 18

<400> 3105
aaaggtactc aactaaaaag cgacttcaaa tgaaaatata aattttaatt caactttgct 60

tttgattgct taccaacgga gcggaaggaa aatgcatgtc tctatacggg aacatgtgtg 120

acacatggtc atacttaagg tgttgtcatt ttagcccgcc acatttttgt atttagacat 180

aacttttttg tttctttgac gatcttagat gaaaagctca taaaaagata tacatgttag 240

gtccgaagtc attctaattt gagaagatca aaaaccatgt gatggcttca tgtttgtttg 300

tctttgcatc cgagcttcaa ttttttcatg tcttaagagt cttgtcatat tttacaggtc 360

ttcaacgtgg cttcctaata tcttccatga ggtactctct tttaataaga cataaaatat 420

atgtgttcta ttagttaggt gggtgtgaat gtggatccca caaccgaggt acaaacatct 480

atctatgcaa aattttactt tacttttgca ttaagcggaa agggtgacac gagacggtcg 540

ttgaaactga tattttatat aatggagatt gtgtattagg ttatgtacaa ccctgagacc 600

ttaagaagcc actcatttaa tggggttata catgcccttt gcaaataaca ttagtcaaat 660

aattatgttg ttcatcccaa ctccaaaatt caaagttaat agctcgttgg cacatgtatg 720

ttatatgctc agtccggttt ccaaatcata aatccttttc gtagatttca gctctcatag 780

caacagtttc agtgatgaca aaatctaatt tcaaacttga gataacatac atcctgagag 840

ctcaggtata tgcaatatgt taccttggat ttttggaaga aaaatggcag gaggtctacc 900

gactaccgtt gcgaaaaatg taaagttaaa ccctgaagga tgacaagtat atattagcac 960

gcaaaataga actaccacag actaaaagag cataatagac aatgatggag ccatgtgtct 1020

tgttgcccat gaaagatgcg tacagaatct ggtgaggccg tcttcccttc gctagattgt 1080

cgtctct 1087

<210> 3106
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324320_G1, chr9:154788808..154789814, Cluster 18

<400> 3106
gggaggatgc agaggaagtg gatcgaaatg gttcgtttgt tttttaggaa tccatagaac 60

ccacattttt aagaagtgtt tcgacctata actaacctaa cccgcgagcc ttttgaacca 120

aacacgagtt gtcgtggatt aaactcgttt caacccgcat caatccaata accaaactca 180

agctaagaac atttgaaaga ataatgattt gcctaaacat gcgtgcgttg tggaggaggc 240

cacgggccta ctatgaaaaa gtgaagattt tatataatca gatagaatca tccattcctg 300

tattccaatt tccaacgtta taattggggt tagccaaacc acctatcttg ttaatcaccg 360

aaaacggtaa aagcactagt tttcgacgac tttcaatttt tttggccggt ttctattttc 420

aaatttaaaa acacttttcg tgtctagaga aaccaggttt ccggatggtt tttggtgttt 480

ctcgatcatt tttcggtgtt tctcggtaaa atctgagtta cgcatttta gttttttat 540

aaaaaaatcc agttttcttg gctaaaaaac cacgttttat cagcgaaaat cgttgtttga 600

ccaaaaaata ttggctagtt ttaaaaataa aaattaaata tatgatatac caaattattt 660

aggaatatat gtaatttgtt ttcataattc tttcttgttt ttttataaaa aaatcatttt 720

tattttgaat gaaatagaaa ataaaatccg ttcttagacc gagccgtgca cgagaaactg 780

tccctagaac cgcggttccc gattggtttt gcaatgtcta actagaactg aatccttccc 840

ctaccttgtt tccaaagcaa acacaatatt acttgcatgc tccatttaag gcttgtttgg 900

ttagaattga attgaagggg attaaatctc taaatagaaa aaaattaatc acatttaatc 960

cctgctgtcc tcatgcaacc aaatgacggc cttagcgagt tgtaaca 1007

<210> 3107
<211> 1184
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325362_G1, chr10:4701601..4702784, Cluster 18

<400> 3107
atcattctat ccctttttt tgtatgtttc gcaattaaac acatccctag atttttaag 60

tccactagag tgccagtaaa taacgaacgc agaagaaaac aatactatac tgtttttctt 120

accaattgtg tttggttaat ctagattgat tgtgatcctc taattaatct atgagactac 180

atgagtttgg atccgattta ggaagattta cacttgtacg tacaaatcat ctcatgtcca 240

tatctagact ttttctgcac aacttagtct ttgttcgagc tctaactcta gcttttagag 300

cttttctaaa gaactgttgc tgagcttttg atcatgagaa gctaaaagta acttttcaat 360

aatgttattg gcttcataaa cttaggacgg tataaaaagt tcatgatact aggcttccca 420

gcttcttata taaactcata ttttttaagc ttatagcttt ccagaggcca aacaaaaaac 480

taactattta tttcattttc tgactttcca cactaaaaaa tctcagcttt ttgctttttc 540

acaccgagaa actagcgaga agctcaaaca aattgacctt tagacgtaga cactaagtcc 600

gtgtcccagc agttcatcca tatagtcaca aaaaatactg ttttatattg taaagtataa 660

tatttatata gtgtagtttg aatatttaga tgaggatgag taagatgcgg gagatagttt 720

tatatatact aacaacgtat attcgctcat ataaacattc gcatgcatat cttatcagta 780

taagcatttc cgaagaaagt taggtcggca aatcataaga ctgaatcgag catctatgtg 840

tgtacgagca tcgttggcta taataatgaa ttaaagaata cgagcatcta tgtcgagcga 900

cggacaattt aaaccgcacg gctgctctgt ttttttttt ttttttggc gaggcatagg 960

ggtagacgac gatttggatg tttgtgtgta cgagggaatg gttggattgg actaatgttg 1020

ggtccactgg gccgcatact gtgtccgcca gacaaaggcc aggttgaagg tgaagcaggc 1080

cgggctccaa aggcccggaa acgtgaattg aatggcaaaa aaaaaagaag ccacacaccc 1140

agcgaatggt cagttcgtcc tcgagacccc catcgaatcc acac 1184

<210> 3108
<211> 1135
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326246_G1, chr10:9144327..9145461, Cluster 18

<400> 3108
atattgattg accttaattg agtttgtaaa ccctatgctg caaaagtaca catatgagct 60

aggtcacttg ttcactagcc tgcatggctg catatgtcat gtgcacttga gccaaactgt 120

tggcaagtac attgcataaa aatctagtgc aggtatcagc caccaggcgg cttggatgat 180

tagtttattt atctgttgtt taacttcgtt agttgctgtc ttttagaatt ccagccattt 240

tttaattcca accatttttt gttctttacg ttaatgtagt agggcagtag gcatccaata 300

gcagttggtt tcctttattt ttcttttctc aaagaagata gagtaacctc cagtgatatt 360

ttatggcatg ctacttttg ggcttttgtg cctcactctg aagtctgaac agacatgtac 420

taggggtaga attcattatc gcagcattat ctcacatcca ctgaaaatgc ttaaatcgac 480

ttcgccaatc aatcaggact ggattcattt atttcagttc atactaccat agtgacaaca 540

attaatataa aaagcttaaa attgtttaaa agcttaaatc tacttcgcca atcaatcagg 600

actgaaaatg cttaaaattg ttgtaggatt aaaagctttt gttgcaatca aaacataagg 660

agtcatgaaa aattctcaaa atttatagtt atactccatt atttacttta tcaatatatt 720

aaattttaag ttctaggcca acctaagtta agagatataa aaagagaaaa aatatgtttt 780

atttttata tctctaatta catctataat tttttgataa tattttatat cttttgatag 840

tttggttgca cgataattat actaaaaact taattgcacc atattttctg tgtatattgt 900

gagagctatg taactatcgt gttttaccat tgttgctttg cctacctagt tgtatatagg 960

ggtgagaatg gtcgaaaaaa ccctctcacc gtttcatccg taaatttttt tgttcggtcg 1020

gaattgaaaa acagaaaagt tggaagcgga ttatgaccgg taaatttcgg tgtcggtgtt 1080

ttaaaccagt tccgacaagt aaatttgttt gtacgcgttt tggatccgga tggtg 1135

<210> 3109
<211> 1245
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326971_G1, chr10:12918865..12920109, Cluster 18

<400> 3109
ataatatcaa tttaaataat tttaaaaata ttttaatcta aataataaat aaaatgacat 60

atctaaatgc cttctaaagg cttatagcta tagctccata attttctgga gcacctaatg 120

acctgctcca ccaactctac caaattttct agagctagat ttgtcccaaa catggcctaa 180

atatataatt gctagaatta ttttaattct aaattttaga aattcccagt ttaaatatac 240

caatcctatt ccaaatatgt attggtattc ttgatcatat tcctaatagg tgtgttgatc 300

ctattctacc tatgtgatta ttattgatca tattcctaat atgtgtgccg atcctattcc 360

aaatatgtgt taatatatta tagatcatat ttctaatagg tgccctaata tttttctgaa 420

tatacgttga tattgttgat tctattccta ataggtgtac taatattcct aatcctactc 480

caaatagttt ctttttattt tcctttgcaa gacaccaagc taggactata aatatagcac 540

ctctcggctc ttatctcatc catctattgg ttgcccttgc tatctctcac ttcactcgtt 600

gctccctcta ggttcaatct tcttctccct cttctccgtt gcaccataga agccatgctc 660

ttgaccaagg atgaccttcc caaaggaaac atctttccca agggattata gaacgggaga 720

agagggagga ttagagagtg catcgacgtt caacgccgtc tagtggagca taaaccgttt 780

cctatcttga gattgaccag aaatcgaggc aatccactat tagatgcatc tcgaggataa 840

ataggaattt tagatatctt ttccccttt ataaaatcag ccttaaacat attgagattt 900

cttgcatttg aattgcaatc aattctagta tgtgcattag acatagtagt gaattcatcg 960

catgttgcac caaatctaca aggaggttga tttgttttta cctaagatag agaggcaaca 1020

gaaagagaat caaagttggc atcttgaatc tccttgatag ctcctcactg atccacctca 1080

aagcatgcta tgtcatactc ttgatcatct ataactaaat catttgccct ctcctccaac 1140

atcttatgaa catacccaag acgttaattg accaaagact tgatgatgag cttgggatta 1200

gttgaatatg tagaatcata tttcttctta tcgaccatct tacta 1245

<210> 3110
<211> 1219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33122_G1, chr1:202768785..202770003, Cluster 18

<400> 3110
ataaatggat atgagatggt gaaactaacc atcatgtagc tctctcaaag tttcaaatag 60

aggaaaagat ttactgagga atttcttagc ccttggaagc caaaaattaa aagatgaggc 120

agaagattgg tcccatcttt tcatatgtag tgcaaaagac agtgatggaa aaaatgtctc 180

atattgtgta gttataactt gtattgatat aaagaaatga aacaaggaca taactagtag 240

catcttataa atgagcagct aactacaggc aacatgcata ctattagagg ctgatatcag 300

agaatcaact ttctcaaaag cagttagcaa ttagcatagg aaaatagcca catgatgttc 360

atcaaagcag ctgggggcat ttcagtagtc ttgctcctca aaagcaattt ttttcataac 420

cagaaagtgt ggaacacata tgcaaagatg ctaatttcta aactgacata atggaacaca 480

tcaaaagaag gattaccaaa ataattgaat caaagaatat caaatggggt gtacaaggag 540

tagcacatat cgaaacatat acatatcgaa aatgtgtgtt ggagatagac acagacacaa 600

ttgcaaatat ggaaaagacc ggatcaaaaa atcaatgtag agaagcttag gctgggagtt 660

aatcatttta tttttagtgc ttattggata ctttgcctcc tactcaaact ttgcacaaca 720

aagagaaata caaaattaaa attgtgtgct tacacagagg tagacatatc aacctattta 780

aatctcaatg caacatcact caattaccag agatgcttgc aagttattgc aaatagaaga 840

caaggtcaga atggcatgaa aaccaaaata aagagtgtgt tcatgactca tgtgaaaagg 900

gaaaataaat actagtctcg aggcataatt ttaggttatt actaatctac agtgttgttg 960

tgctgttatt actagacaat tcagaatcta tgtgaaaagg gaaaataaat actagacttg 1020

aggcataatt ttaggttatt actaatctat agtgttgtcg tgctattatt actagacagt 1080

ttagaattct catgtgttgt tattactaat atgtaggatg tttgaaaaca tactgttgga 1140

gaaagaaact tactttgatt atgttgtccc gtattagagg atcaacttga atcatacacc 1200

ttctctcatc actagaaac 1219

<210> 3111
<211> 1057
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33200_G1, chr1:203167197..203168253, Cluster 18

<400> 3111
actctaatca gacgactgaa acggtaacag taaccgaatg attataactg taatggaatg 60

actggaacta taatagaatg acttaaagta taacataatg gctgaaactg taaaggaatg 120

actaaaactg taattgaaca actgaaacta taatataatg acttaattga acaaatatat 180

actgaatggt tgtatgagta aatggttgag caaaaaaaga aaatatctta ataatcatc 240

aaagtatctt aaattagatt gcacgtgatt aagaattagt gaatgtctta aaatataatt 300

taaatgactt aatataaaag agaaggatga gaatgttgag tgacttaaat gacactacaa 360

aatagttgct aattgaacaa aatgtgtact gaataactta attagtaaat tattgagaga 420

aaaggaaatg tcttaaataa tcatcaaagt gtcttaaatc atattacaca tgattaataa 480

atacttgaac gttactaaat gtcctaaaat ataattggaa atacttaatt gattcatcac 540

cttatgtgac aaatagagtc cataaaatac aacaagaaca tatacatagt cacatagaca 600

tctatcaacc actctatcta tgaaacagga tacaacagac acatgggtaa gcatgtaaca 660

atcttattac gaaaaattgc aataggtccc ctatatcttg atctacgatg gaaaaatagc 720

atttttgta tatattacac tacattattt tatgttagat gtatttactt aacctcgttg 780

agcaagattc aagtattaga caatttttgt tgttgagaga atctagctag ctcaatttta 840

tgttatatac acctggcttg caatttcctg gatattagtt tagacttgta aatggacatc 900

gctgacaaat agaaacagcc tcagagatgt tccagagatg gtcattagct tacactagct 960

caatcttttg gtttcttaaa aagtaaaagc agaaaaccga cctttgagcc tgatatatct 1020

gatatatata tacatggtgg ctgcagcacc cttaatt 1057

<210> 3112
<211> 1025
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33535_G1, chr1:205224559..205225583, Cluster 18

<400> 3112
tactattgta gtacagaagt ggtaatagtt caaggccact atatattatg tgtttaatta 60

aattattatt catttttcca atagttacta tgtgttcatg acatctatta tcaagaagca 120

tatgtgtaac tttctgaaga aatgtatcat gtgaaacaaa tttctagcca atttcttatt 180

aaacttagta atttaatgta tttttgggca ttagatgcca tatttgaaaa ataaataaat 240

aaataagtac aaagagtata catgtagatc tattgtttat caattatata acatcatttt 300

taaataaatg tgtctaaaca gtatactatc taatctagat taggggagca taaacaatta 360

tattaactta aggtttaacc atgtctaatt atatgtttat tatgaataat tacaaatggc 420

aactcataat ggtgtagggg cacacaaagg agttaaaatg actacaaacg aactcaagag 480

aaattagaaa tgaaaactaa aattttctaa tcaaatgggc aacaatagat tttgttgtca 540

tttttacatt attcaggaaa ctagtttata aagcaaggct ttgttaacat ttttacatta 600

ttctaaaaac taatttataa aaccatagta ttcgcaagca tagatggatg tagtagagtc 660

aaggtccaat ggttgtttat ttatttttatc ctaccctatt taagaattat tttcactact 720

ttttcatagt tatcactaga tggcattacc attatattta tatttgcaaa taatttggga 780

tgatgtgata atttcattag ataccatttc ataaagaaaa aggttgggcg tcttttcttt 840

tctaaatttt attttgtagg tataactaat tgctataata gttaatggca tatggataaa 900

gaaacaagaa aaacatcact aactcagcat ccacttcatg tttgccatta atacggtcaa 960

tttgagcttg accttatctc ttccctggag tatttggtct ttggattctt ctcacatact 1020

ataag 1025

<210> 3113
<211> 1029
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33615_G1, chr1:205695022..205696050, Cluster 18

<400> 3113
tagcgcgagg attggttaca catgtaagag ataagacata tcttatgtgg atgttaggcg 60

acacttgtga aaaaaaacaa attcacatgt ttcatgcgtg tggcacgaca cacgaaaagt 120

tgtgatttaa atgagtagaa attggaacct atgcagattt taggttgtta tgcttttctt 180

ttcattctgc ttgtgtttgt gtttggattc atttaatcta aacaagaatt cattaagtta 240

cgttatcatc ctataagcat aagcatttcg aatatgattt ttactaatac gtatagtttt 300

ttgttgttgg ttttttgaga atggatcgga ggtgcatatg tctgcagcgt ccttttcctc 360

caatcggttg ggtcgttgat attttccagc tttactcgga ttagtttatc tcagtcattg 420

tacacagtcg gaaaactgac agaaaccagc gagactgtag ccgttttaaa tgttagctat 480

ttgtaaaaag actaaaattt cacgatggtg caaaaaagaa tagaccggat tactctatcc 540

gtcttaattt acaattcatt tttattaaat ttgttcggct cattttattc atttttcaa 600

aaatttaaag tcatacataa agacatgaca ataaaatcta ataataatta tgatttttta 660

aataagataa actgatcaaa cttgacgtta aaaagtcaaa tgaattataa attacaaccg 720

agggagtaca atttacattc caatttcctc ttgtcaaaat agaacatact atgatgcaaa 780

aggaaaatag ttgggtcata ctaatattcc ggaagagctt tgatgacaaa atttgcgtgc 840

atgtattcat cgagtgtagg tctactttcg tggacattta catttactag taccttacgt 900

gcgtcttcct acacgctcta gcgaaggtta tcgtcacccg cgccaccgct ctgtgttttg 960

ccattgtttc acttttatag aggtgctaaa gatcacattt gtagcttcag ctgcacaatt 1020

ttaactata 1029

<210> 3114
<211> 1200
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_342573_G1, chr10:108113372..108114571, Cluster 18

<400> 3114
taaattttaa agttctgctt taatttttta cagtgaagaa attgacttca tacactctcc 60

agaacactcc tctgtttcga ggtgtgtata tatatctttt ccatgtggcc aaaacagtat 120

agaggttata taaacttaat tgatatgtgc tataattatt agaatggatt tagaaggatt 180

caaacggatc ctttaggaaa agaaatagtg ggtacataat tttctatatt tattacacgt 240

agttcgggtt cactttgact tgtgaacact gaccaactcc aaccattcct tccatatttc 300

tctccctata tatactttct attatatttt actataccct ctaaaaagta ctcctttata 360

tatagaatgt ctccaaacat tcctcctttt tagctcccct tatacacttg ttagtgtttc 420

ataaccactg gccagtaact atcctgtttt gcacatctcg gagcggatgg tgtgtaaggt 480

ggatacaaag gtctatactt gttcgggtag aatgtcccta cgatcaattg agttgtgttc 540

cctacattat tctgtagtag aggttacaaa tcgacgggag agagggatcc agctcccaag 600

tctctgatga ataagtgcac gtgcgattac aagcgctctg tgtagtactt gtgttggtgg 660

tgtatgagtg tttgctcctg tcttgaatcc atggtacttc ctttggtttt ataggttaag 720

gtaagaaaag ggtcccatta cataagtcaa agggtaggat gaaacgagta aaggtcgggt 780

gccgttgtgt agtcgattat cctccatctt ctcaccggct aagggacact atggataacg 840

tctccttcct ctgttaggat cctgtagcca cactaacgcc acctcaaagc atgtcgttat 900

gctcctccat gttcgacagt ggtttacctg gtgtcctttg ttgacttcct aactatggag 960

tagttaagca tatatcaatc tccacaccat gacaattgac gtttgtgtcc tgacatacca 1020

actcttgtgc tgtcatttag accacaagcc tgtgttagag tctgactttc atgttcccat 1080

gttcatagtg gtcgtcatgg tacaatccca aaattttcgg acctacatgg ttgggcaaag 1140

tatccaaccc ctttgtcctt gggggtcggg cgagtcgaaa ctctaggcaa ggtcgctcga 1200

<210> 3115
<211> 1300
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346030_G1, chr10:127269133..127270432, Cluster 18

<400> 3115
atttttttta agtttgcgtc ctgaatcaag cgtcctctta tcacgtgcac aatcccgctc 60

ctgtgtataa atgcacaaac caaacattgg ccattggtct gttgtccaat ggacgataca 120

caaattgcaa aataaccctc ccgtactccc acggttcctc caaccactgt actgaaaacc 180

tcctctccac cctttcttcc ccaaacagaa gcaaactaca acctatatgt tgcctctagt 240

tgaggcctga atataaactt ctttgaccaa gataacatgt gggtaagaca gtagttaaga 300

aagtaaattt ctaaatataa ttaagttagg tcatatttgg aagcaaccta gttttaaaaa 360

atccagttta tatctctagt ttctataaac tggtttacga ataaaaatgg tttatggttt 420

ttggaaacca actcattttt tatagactag ttttagctaa gcgaggctag cttcttggtt 480

tttaaaaaac tggaaatcta atttctataa actgtaatat aaactggtat gttggaaact 540

accctaattt tcataaactt cacaaactag tttctaaaaa actaggtgct tccaaacaag 600

ttctaagtat gagatcaagg gagcaataca gttaaattgc aactatactc acaaatatag 660

ctgcactcat ttgcattcgc tagtagcgct tgataacttt aaaaaaaaac tcgaacgtag 720

tcaatttgca acaaatgtta gaacttacca ctgttttgca atatgttgca gtaaaacgtg 780

cataaacaaa gagtttcaag gtgagatgta tgatttttc ttaaaaaaag aggctctact 840

agctcaaatc ctaattcaca aaggggaatg cttgaaacaa ctatattcat taaaaaaagc 900

agttaaaaag taaaaaccaa acaagaagca aaaacgagat atatatgttg tgcagttaat 960

attacagcgt aataagtttt caaatgccaa atcaaaatgt ctgtatagct attgtacttt 1020

tcattcataa taggtccatc tttaatacgg ttcacagttc atactatcag cacgaaccaa 1080

agctttcatc caacagacag gtttcgcggt aaacaaactt tttcaatctc gagtcttgac 1140

attcaccatc tacgtacagg atacaactac aggtttttgg atcaagaaaa ggactagcag 1200

atgaagcaac tgatatcaaa cacaatcgca agaaattatc aaacaatgct gcgaacatat 1260

actaattaag aaccattttc acattgaggc acaaagcaat 1300

<210> 3116
<211> 1207
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347273_G1, chr10:134050235..134051441, Cluster 18

<400> 3116
gcttctcggg ttgaaaacac ctgttgtcat ttgtcaactg ggaacgatta tatatgttct 60

tgcataagga aaaaatgctc acagaagaaa acccgaattg ttgtagcaca ataaaaatag 120

tctgagacgg cgacctcgct gttgccagtc gcatagacag ggaaatattt ccggaccatg 180

agctcatcac cagccaattc tggtctgggc tggttttaat tcaattttta ctattttggg 240

ttgaaaccaa aacttgagac cagattaaca taagtgcgtt cctatgcctt ggcccatgag 300

cctgataggc ccggctctgg ggtacggcga ggggaggtgt ccgcttcagg cctccgacgg 360

caaagggccc tagcggctat gtgctgtcga tacgtgtatt ggactggacc tagagcttta 420

agcagacagc ttttgtcttg ggctagccca aaagtacatg agcaaatagt tagtagaacg 480

ctgaagattt tctaaaaaaa aggtacgtag aacgctgatg ctttgctaaa aaacagaagt 540

agaaagctta tgcagtcttc gaatcttgca cgcactcaca tcctcttcat aattctgaac 600

ccaacggcca tcgctgaatg gctagattct cttactatga taaatggatg atcaacttct 660

cataaatgag tgctaaagtt caacaagcgt tttattatta gatcgctgat caagtttaca 720

taaattaata ctcaagtttc aagtgtttat tattagaccg ctgatcgcct ttgcgtaaat 780

gaatgttgaa tggaaccttg aggtgattta atatgtaact cctgttgcaa tgtaaagtgt 840

acatccattt tattcctgga acacattaat ttcaattgaa attgtgcatg gaatacgttt 900

actcactttg agatcagttt ctactcccaa tatctcaatc cccatctagt aaaacaaatg 960

caatccgact tcgtccctcc tagctagagg gaagcaggaa gagagggtaa gaacggctca 1020

ggtcccgagt gaggttgtta tttttttttat ttaactgaat tggttagtag ttagtactcc 1080

tccggtccta tgtggaagcg aattttaggc cacaaacagg ggcgacgcca gtagtacttg 1140

tctggtgcac gggcaccagg gtgtatcaag aatttctttg taaattgagt aatatttatt 1200

atatatc 1207

<210> 3117
<211> 1322
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347343_G1, chr10:134407049..134408370, Cluster 18

<400> 3117
aaataccatg gttgacttgg tatttaaccc aattcaattt cttaccctcc aatatcgaca 60

tccaaatgga gcattagggc atgtacaacc cacataaatg tccagtatct taaggggtta 120

agtgcaaaaa acacaagaga cggtatctta gtgaaggaac atctttaaca cggttctgta 180

agtctagata cggttctaac catacaaccc acataaatga gtcgtatctt gagagattgt 240

tttgaatatg atataagatt tagatacatt aggttatatg aaggggtttt ttagtgtatc 300

taatgcttgt agaacaaaaa gtagtacatt cccctcccac atactataat tctcgagtta 360

aagatcgtca agaatactgt atgcgttttg gaacctacag ctcactatct ggtgcttgaa 420

ttgtcgcttc gttttgctct gctaataaaa gattcagcga ccttttatcg ctaaagttgc 480

acgataacca cacccatgat taaagtgcgg gcaggcgatt aggcgttaca aacggcatcc 540

aacactcgat aggcatgctc atttgtttgg gtgactggga cgttcggtcg cagcgcgcca 600

ggcgccagcg tcccaagacc aagaagggat gttgacaggt gggtcccctg tagccccaaa 660

ggggttacag cgtggtccag cacccgggcc caaacgtctt ccaatggcct gacacatttc 720

aatacagcaa tcaattcact ttcggtgaga atcgtacctc taattaaaac caacagttcc 780

tcatatcacc attaagagac accttcctta tttgtttttt tcggaaacat cattattttc 840

tattataatg gtattgtttg acatttttta gtttcacatt attcacttta gttctatact 900

aaatcaaact tgttaaaatt tggcaaatta tttagaaaaa acaatttaa tatactttgg 960

accaatctca cgcgctgatg gctaaacatt gccttgtttg gtcgcagaca ctcggggctt 1020

gtttaggagc agtggatatg ctagattttt gtgctagtta aactttctaa agtcaaacta 1080

aatttataga aaaatattag tgacatttat atctccaaat atgtatatat tttataacaa 1140

catatttaat aattattctg ataatattta ttacttatcc taaacagtag taatctctta 1200

ttctcttatg tatatttcat tgaagttgaa tatgttaaga acggagaagg cacgtttaat 1260

aagatgaatg cgtaagcata catcaacttt tattaaaaaa ctatcatttc atgactatta 1320

at 1322

<210> 3118
<211> 1410
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34793_G1, chr1:211527669..211529078, Cluster 18

<400> 3118
catcttactt ttacgatttt ctacaagtct ctgctcctgc agcatcaatg atctcccaga 60

tccaacaatg tcaggcactt catttgtctt actcttatca atcttcattc ttgtagagca 120

cctgcttatc tttgtggact tcatcctatc tcattcatgg aactcataaa acatgttagt 180

ccacctagtt atattaatta ccaaaactac acatagagct ttatttacat tgttatgaag 240

gaagagaaag aattgttgag aataaaaatt agacattgta gacacggtgt gattcaggga 300

tgacggtgga acttcaaaca tcatcagggt gtgatgttta ctttatagtt cagtttcctg 360

catgcagttg aagttgaatc atttgcattg tgattatcag gctggtaaac ccagctctga 420

caacttttag taactacaaa ggtcaaagtt gtaaaaccag gggatcaagt ttaagcataa 480

atttaagagc agctaccaaa ggtctaatcg tcttcaaagt tgtatcatag cttgccacag 540

aacttacctt taaaagccat ttgagtagtt ttcataggtt tactcatctt cattttctaa 600

atctagacgt gctaaatgac acaaatctac ttctacagca ctaaaacgac agtataaatt 660

acaagtcatt atacagtacc acatccacca atccatgtaa gaaacatgga tataactaat 720

tgaacaaatg actgtttgaa atctctttgt tatatgggaa aataaggaaa catacaaaac 780

atcgaatgat cttgtatata tccttctttt tccatataag gcacattcat cttataaaga 840

aaatcaatag attattttta gctgtgcaga gtcaacaatg tgtcctctgt tagcacatcc 900

aatggcacaa tgttatccaa gcatcaggtc tgtcaaacat agcacgaacc agcaagaaca 960

aggtccaata gagagaggaa acaaacttag ctgttccttt cattaccaga ttttaggtat 1020

agggccacat gattattgat cattttagat aaatcaccaa ataagtgttg ggaaatatgt 1080

atattatgtt agatttgtgg ccatacaaga aatgatagag tccaaaacgg tgatatacat 1140

gatatgttaa ggaagcacta attaaataaa agcttgttca acaccgatta agaaggttta 1200

gacatgtcca ccagaaaact ctaaagacac ccatacgtag tgggatccta aagtgtgata 1260

gcaatagaaa gagagacaaa gaaagaccag gttgacatga gaaggggcaa taaaatgaga 1320

cttcaaataa tgtaatatac ccaatgattt agtcttcaat agaagtgtat gtagaacagc 1380

tattcatatg tctcaaactt gactggtcta 1410

<210> 3119
<211> 1114
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34809_G1, chr1:211675798..211676911, Cluster 18

<400> 3119
gaatgatttt gctcagcacc aaacgctact gcttgttatt gttacaaaaa caagcgcagg 60

ctgagtacca gaatgactct gctcagaacc aaacccttct tgttacaggt aacaaaacaa 120

gcccacgaca gataaaattg ggggagcaac aagctggtgc gatcggggag cgagaaaggt 180

tttgttacat gcctatccct ttggaggggt cagataaaat tgtaacagaa cagaacttac 240

tgtagcacta tcagtaccat gattctttca tgtcgcacac gacagaggaa catcaacttc 300

atcgtatcta tgatgctctc acgttctcaa gatcctgccg taagaatcaa atatcaaacc 360

acacaaacag ccgataaaca cgaagttcaa tcctagagcg aacttaaaca tgcccataag 420

caagttttta atatgggaca tgtactaaaa tcaaagcagc agtacatcct ctcgtcatag 480

tactgttctt gctttaaaaa ctgcatatcc atgttcgttt acaagcaaca cagggttaga 540

aacatttagt acccctggac aaaatttcac tcaagcaaca gagcaaatat caacaatagt 600

gtaggggtag atgcaaattt tgatagctta tctgcccaga gtttgagcga gagagaatga 660

acattcagca tctgttcagt cacaaactca taatcaaagg aaaaattaca ggaaggaggg 720

gggggggggg ggggtattcc taaaaaaaca acacatactg ctcttcatac ctggaagacc 780

tttaaagaga catcaacaga cgaaaggttg aagtattatg tgcagcaagt attcaacaca 840

tggtaaaatt gtatgactaa taaggtcatg tttggatcga ctaggctaac aactactccc 900

tccgcccctt atcttgaggt caccaaggtt ctaagtcaaa gttttaaaac tttgactaac 960

aatatctata aaataattat ttttaaatca aagaaattat atattgtggt agatgtttta 1020

ataataaata taaagtttta tttttattta gataatattt ataaatattt ttttattaac 1080

ggttaaatct tcgtgacttt aagattggag acag 1114

<210> 3120
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349870_G1, chr10:147936507..147937549, Cluster 18

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (359)..(458)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<400> 3120
ggttatctct cgctgaagat actaaagcaa aaaaaaattg tagtggggtt ctcaatgttc 60

aaattaatct atcggtgaat ggactatatt gatttatcat atgaagatag aaagaataat 120

ggagctaatc ttggctaaaa gcttatgccc tcttttagat atcatgaata cttatgcatc 180

ttttaatatc tatacgattc agctgtacat cagacagctc aatcacgact gatgatcact 240

catgtcactt ccggggcttc tcgaaacaag actctgactt ttcgcgacgt gtgacaaacc 300

gtcacggtgt cgtaacacat tttcagatgt ccacaacatc gctaggcgta cctaactgnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnngt atgtcaaaaa gaaaaatgat 480

agtttgttag attagttagg cttatccata actagtctac tcccgccatc tctctgaaaa 540

taagtttttg ttgtgtaagt ttattgtgaa aacaaattca aatatatatc taatattatt 600

aattatgtat tgaaaatatt aatgttttta catatctagt caaattttaa aaaacgtttt 660

gatttatcga aaaaacgaga acatcactta ttttgatgga gcagagcaat taattaaaga 720

attataagac ccacaagtag tgctaatcga gagtgtgatt tatatcacat agggaaaaaa 780

gcactaggaa gcaggtgctc gagtttttt tagaaacatt tgtccaagtt aaatagaaca 840

gcagtgcgtg catgcttgtt tatataagtt gggggcggaa agttgaacac acgcgcatgc 900

cgtcgtgcaa tgtccgtggg ctttagagta tatatccaac agtgtgcaat aactactagt 960

tctagtacat caaaattaaa ataaatctgt tctttttcca acagcaagga gacaaaaacc 1020

gggacaggat aaagaattga cct 1043

<210> 3121
<211> 1072
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3742_G1, chr1:19258158..19259229, Cluster 18

<400> 3121
atcgcaactg ataataacct aacggcctga acggtgatct actgtagacc ttttcttgtg 60

ttagcccaag agaaaaagcc catttgatac tgtttcattg gcacctggcc cagaatgtgg 120

tggagtagtg gagtcacgta aacatgggct tgaggattta gtttgtcact aactggatcc 180

atggaccata ttctagcccg aagatcgtac tttgcacaat gcttttggac ggaaacccac 240

ttatcttcta ttttgggcct tttgggttgt gtgatctatg tactagcttt atatcggtcc 300

gtctagagcc ctacatacaa atgtacagtt agtgctatac acgcaaggaa agacgcacca 360

aaactgttcg tggcgactgg cgagaagccg agaaatacag catatattta tttatttttc 420

ttctttttt cctgaaaaga acggcaggag attttacgat ctatgtattg acagggtaga 480

agtgcatcac agatgacaaa tgaaaaatgt actgatgaaa tactactact actaataata 540

ataataataa taataatatc tattaccaat aaatatttaa tgtacataaa attgatttta 600

aaaatgtact aaaattttgc ttctaacgtc tcattacata acggtgcctt acataactcc 660

tctggatgat gttataacct tatcagcttg ttttttcttt ttttttctta catctatatg 720

gatatcttct acagaacatg attgcacgat gaaattaaaa tagaacaata attaactgaa 780

agctattgcg tgctacttgc taagttaaaa aattattaaa ttcatttata aaatattatc 840

aactttgtag aacttataat ttctcaagat tcttcggtag atgataccgt tcgaagagtg 900

aggcttaaat taggtgatga gctaagaaat gagatagaaa atctgataga gatggcctta 960

ggtatttact cctaggtgtt agaacacggt gcaatacata tgtaggagac ataacggtaa 1020

tatcagatta aagagacaga gaacgataat atcagattaa agagacatag gg 1072

<210> 3122
<211> 1090
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41153_G1, chr1:244067449..244068538, Cluster 18

<400> 3122
ctaaggttaa ctgcaaatcc taactcgatt ttgcatagct tgcattataa gaggtcatga 60

attctgcaca ataagtatac agatgatatg atagctcatg agttgtctag ttttatacct 120

tagtcttgtt gcatgataag ggcttgttta gctttatctt tctttgcact ccctttctta 180

ctttctttct ttctcccttt ctttcttagt ctcgttgcat gataagggct tgtttagttt 240

gttgcaaggt catgataagg cctgaaatgc tccatcagaa atgctcaaat cagacgccag 300

gttgcgttga gcgatgcaac agaatcagat cagtgaggaa gaaatgatga aaaaagaaat 360

caccctaaca ttgtctattt gtaactgata ttttaaaagg caacttcttg ttgcccacta 420

aatgtgatat caatgtagtt ttgacatctt taatgcagtt tttgctggat ttgattttaa 480

tgtagttttt tttacaaatt cagtttttt gtgcaggaat gcttcaatgt ttgtgtgtct 540

ggctgtgggt catcaggtgt gaagtttagt ccggtgaaca atataattat acatatgcca 600

tgtgtgaagc ttagttggtc aaagtaattt agatggtcct tgaggtcagt ttgcttgtta 660

gtgttgcact attagatgaa aatataatca atttgtcctc ttttgatttt taataggcat 720

ctgtgtttct atacattata aatgtcatgt cttggcacta catttcagtt gtaaacttgg 780

aggtcaataa caagttgtat ctgtttgaat gtgaatggca tggctggtaa aaataagtga 840

actaacttgg aatttagtgg cataccggta tattgccttg ttttcagaat ccctggcaaa 900

ccgaataaca atggcagaga cagggaatag ctacacgggt aaatattccc agcagggatt 960

gagtggcata atagggatcc acttgatccc ggggtggaaa aaatcagcta agggatttga 1020

tccgtaactg ccgaacaaag ccttcttgtt cttcaaaaaa acgcgtctcc cctttgtcct 1080

cctaccaact 1090

<210> 3123
<211> 1248
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43062_G1, chr1:253764604..253765851, Cluster 18

<400> 3123
ccacacctaa acaataacaa tgtatggaag caacttgatg tgtaacctac cttactttcc 60

ggctttgttc atccggtcct tcaattcccc acacacggcc acatccactg gtgtggtatg 120

gtccatctat tattgacttt ggatttggct tgaactattt ggtggttttt tttttgcccc 180

tcttaattag cttctactat atatgttacg cggcgaccaa gttatcaagt gagtaggtag 240

ctgattatga tcccttgaaa acgcatgagc aagagtgttc catatatagg ttcattagac 300

tttgtttctt tacaacgaca taggtgcaga ctttatctgt ctgcaagatg gtatttcttt 360

atcattagaa ccctttggag ccttggagga gttataacgc ccaacaaatc gacaagccgg 420

ctcacatttt ttttaagaaa taaacagtac cccatcagtt ctaaattata attcgtttga 480

ttttttgtg tcacgtttga tcggctcgtc ctataaaaaa aatctgcgaa aaatgaaaaa 540

tccaaagcta tatttaaagt atattatctg ctaaataata tcacaacaaa aattaacaat 600

agttatgaaa ttgaaacgga cggagtataa taggatctca tcaggatata gttggtatga 660

acgtaatgag cctcacacaa aagaattcta aacactactt tatctagaac tagctactag 720

ttgcatttgg tcgtagatat cgattgctaa tctaaaagag cagcatgcat agtcaacaaa 780

tattgcctcg tgtagttggc acatgccacc ggctcaaaaa ttgcggtcta gttcatgaca 840

cttgttgtga gtctttgagc tggtacctac ccatcgactg ggacacaatc ctaccacgga 900

ggcaccgatt gcgattttcg tcgtcgtagc ctgaaagcaa acagcgtgac gatgtgaaac 960

gtccatgaga tggaccacgg catgcaatgc aaggcggttt aggcagtgat gcggcaacct 1020

gttctatata taactccatc ggtttcaatc aaaatgagtt agacgtttgg ttttatttta 1080

acttaaaata aacttctata attagattac ttttttttaca gaaaacacac accgtcaaac 1140

atcaaactgg tttgcttaca ttttttcaca attgaatatg tcttggtagt tgatagtaca 1200

tttatataaa tcttcatatc tgtttttttaa aacaaatcct aaccaaag 1248

<210> 3124
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43596_G1, chr1:256564826..256565871, Cluster 18

<400> 3124
cgcaacggta ctacgtgcga tggtcgactt gtacaacggt gctgcggcgt cgctcgctgt 60

cgttctctcg ccaggcgacg acacgctcgt cgacatgctg agcggaggtt ctttttgcta 120

aaatgtcagc tcatagacgg cttatagacc cctgttgtac gtgcccttag ataatcaagt 180

gcaagtacac tgacactagg gagcgatgag taggacacga gattaccatg aacaccattt 240

gtgaatagaa cagctaccag attggccagt gcgagagcta catatgatag ctacgtgatt 300

atcaactttt ataaaatata gacttcttta tttatctact atattttcaa ttattttgtt 360

gcatcaatat tgatcgtttc cttctatcta tatttatgga atattgtaat ggtgaaaatc 420

atgtcaattc taaaaaaaca ttgtactaca gttagtttga gtataaaccg tctatactcc 480

gtttgaatat cgatattgga atgcataaaa ttaaattata cttcgtttgg atatcaatat 540

tggagaggat agaattgaat tgggttgatt accaaatcag acatgatatt gaaatgaatt 600

gaaatgagat ataattccaa ttctattgtt tggatatcac tgaattgtta atattggaga 660

ggatagaatt gaattggatt gattaccaaa tcaaacatgg tattgaaatg ggatataatt 720

ccaattctat tgtttggata tcactgaatt gaagtttgaa attatgtggt ctaattccac 780

gcaatacgag gggtggggtt ttatattgag agggtgtttc tagttatagt gcaattccag 840

ggaattgagc ctctaattcc aaatctcaat tcgatgtgca acaaaacaac ataatttaga 900

aaagctaatt ctaattccta attttgtgct ccaattctac atccatttta aaatggagta 960

ttaagtttaa taccaaatca accatagtat taaaatgaga tgtaattcta attctattgt 1020

ttgaatgtca ctgaattaaa cttctg 1046

<210> 3125
<211> 1022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44937_G1, chr1:263639813..263640834, Cluster 18

<400> 3125
atcccaagac attgtagata agtgtaaggc cgtaggcttg aacacaaaaa aatctagaaa 60

gggcgagacg gcgagtgcct gggaagcggg cgatcgcaca gagacctgca cacgcggcac 120

gccagagcca gccgtggccg tgctggatct tgtatccggc gtgtttcact ttcagccgca 180

tgccgcatgc ctgcactcta ctcatgcacc cttttgggaa aattactccg gtcatgatac 240

attaggacag cgacttataa aaagacagag agtcttccag agacagtgac cgaaagaatg 300

gcgtgaacag tttgggcggc atcgcatttc tgtttttttt aaggatggtt tgttggctct 360

cgagctttgc tatattaatc gattgcaaga ccgttactga caaatcgggc ccagaacaat 420

atttaaaata gaagacttta tttttataat atacacaata tatgttatta ataatactca 480

aacatatata acacaagtta gttgcccgtc atgctacgat tcctatatat aatatgatta 540

gactttgttt taataagaca taaaaatatg tgtattctat ttgttagttg gttgtgaatg 600

tgaagacaat aatcaaggtt taaaccccta tttgttagtt ggttgtgaat gtgaagacaa 660

taatcaaggt ttaaacccct attttacgca atcttactga ataacgtgga acgaccattg 720

aaaccgatat tttaatatag tagatatatt catctcaagt aagaaaatgt ataatatatg 780

gttatcttaa tattttcttc tagcatgtct tgatgcgaaa cattatgata acatcaatat 840

caattttatg cactaatatc ttctcgatat ataaagtagc taaaatattt tgtctttctt 900

gcgatatttt agatcttaaa taatttttcg gcaacttcaa ctttgaaaag attctttctg 960

gtgatgcaac tgtcacagac ataatcacag atcgcatgtc acaaactagt ttgaagtgat 1020

ct 1022

<210> 3126
<211> 1196
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45047_G1, chr1:264197753..264198948, Cluster 18

<400> 3126
agtaatgctt cgagtatgac aaacaacatc acaagtaaca tctacctata tgcaccgaat 60

ctccaccacc accacaatat cgatgtcaga aggctaggga aggacgacca ataatataga 120

agacacatag gccacactca attcaatcaa catcacgaca atctacttga tgtcctatgt 180

agccatgatc tctacgagca atcaatatca atgcactaga atcccaacta cgtagagtat 240

tattggacga acgagtaaaa caccaaagag cagccactgg acgactttct tgcatctcca 300

caaggataaa ttctctcaga tagtcagatg cctaatgaaa ttcaagtcca tcaatattga 360

catgtgcgaa ggcaagaagg atccaaatta gttgattcga cactacttgg ttaccatcaa 420

tctcaaggga ggaaacaaag atatcaaagc atcatgcttt caaatgtact caaagctact 480

ctagtgactt ggcttgaata gctcccaaga ggctacatcg ataacaggct agcactctcc 540

aaggaattaa tggacaactt ccaaagtgca tggcctcgtt cggacaaccg gtacaatctt 600

caaaatggaa gtagaagatt ggtgaaagca tatgcaacta gtacaagctc ttgatcgaaa 660

tttgatgcta caggcctaac tacttcgacg atgatcatgg ggaaaagttc tagtatcaga 720

atttcataaa aacaaaccaa aaacaattca tgagttctaa cacatgatca acaactgaat 780

gaatgtcgaa gacacagtac gagataagtt tgacaattga aaccgtagat ataacaataa 840

agataacatt catagagaca acaagggcag cttatcggat aagaagtgag ggaaagataa 900

cactatgata agcactcgca tcaaagaagg gtggcaagaa caaatcattc aattagcaac 960

tctttgagca acacccatac cacctacatc ataaatcata agtgctctac cactaaatgc 1020

atgcaactca agaactttgg catcatctta gctcggaagc aagacaaaac caaacagagt 1080

tgataaaaaa tattaggaaa aatagaataa tggagacttc tagagggcca caaacatagt 1140

taacctcatc ttcaaaggag catcttcctt aatacctaag aggaagacta aactta 1196

<210> 3127
<211> 1193

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46248_G1, chr1:270985126..270986318, Cluster 18

<400> 3127
agagcacaaa atcaaactac tagaaggcaa aagaaaaaaa aatgacgttg cctaaatgcg 60

ggagagaacc ccacacacac acttgacaac aaactgatag cagagcatgc acgcatgcat 120

gcagtgctac ttatcctgat aagaaacccc atacctctaa ctttagtttc cgtgaaggat 180

acccatgctt ccctgctgca tctatctgaa tgcgcctgtg gctgtgacct gcagatccaa 240

ccaactcgct tcaataactg ctccaagata aaacagaaca agttattact tcatgcataa 300

aatattctca ttattgcatg cgatggtaag ttggctcacg gcctcaccta ccccttatta 360

ataaggtctt gtagagattc aagaggatta aatttttat attaaaaaaa ttaatcccct 420

ttaacctctt aatacatccc ttacctaact agctcttacc tagaactagc tttatcttta 480

tggttatggt tctgtttatt tttcttttag gattatataa tctagcttat gaattatata 540

agtatattta atgatatgtt tatagattat cataatctag gtatctagag ggtaaacaaa 600

cctgtggatt gtctgggctt tatttgctac ttctgccata tttgttgctt ctcctttcaa 660

aagttcaagc cacatgcgcg caacgatcga tatgaacgac tgtgcgggct gggctggccg 720

ggcatcattg ggagttcggg atccagcagt aaacaaacca cgcagatcga tcgccagcgc 780

tagcttctat gcaggcatgc agctggttgc gcggttggcc ctcgatcaaa atagctggga 840

tttactacac cttatttatc ttacgtcaaa tagagtctac ttatcaataa aatgacccct 900

ttctgccatt acgaaagagt ctgctggtcg tataccactt aaggttagac gacgacatat 960

gatacataaa gagagcaaaa cctattgttg tacaattgcc actacttttt ttttatcgaa 1020

tatttgttgc ccgctagtca tgataaatta aaaagaatgg agagaatact aattaatata 1080

ttagagcccg tatttcattt cgagatagat gatactgagg ccccttatcg ctaggaaaat 1140

gctcctatcg ccaagggtgg tgatagctga tgacaccaac gtattcgtag acc 1193

<210> 3128
<211> 1376
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46848_G1, chr1:273980876..273982251, Cluster 18

<400> 3128
cttgtcaagc ggccatcaag ttattgtgca cttcttttaa tcctgtgtct ggagacctct 60

ggtctgaatt taatcagatg ggcaccgtga agtttctgaa tgaaagatag gtaaatacag 120

ttttctgagg ccgctgcata tataagaaac taagtaagca ttctttaact gtacttctca 180

tgataaactt attttaaatg atattggtat ttcaagaatg tcttactgta cttccacctt 240

ttttttgaa gtaaaactgt acttccacct tattggcaga ttggatacta tatggacaag 300

atctgaaggg caccaaatct aatagattca gcatttggaa agcggagata gatatcttga 360

ctttgtggag atgatttgtt gggattgtga ttttcccttg tgcgtcctga atttttttta 420

tttctcatcg tctgttgtat catccttttt ttcaactaca gtttcatgtt gtgcatgcat 480

ctttttgaac ctttgcaaca aatatgctta tgtgacatgt attaaaatga ataccaaaca 540

caataacatt gggaaagcaa accatcaccg ctgaggctag ccccaatggg tagtaacatt 600

actcattaga tgtcacttag gacttctcac tgatgtggcg gactaaagaa aagagagata 660

aaaactgtat catcctgaag atacattagg ttattctcaa ttcatagtaa catactcatt 720

taatatatga cacaagcatt tttaatgatg tggcaataga gttatagggg agaaagttta 780

ccttgaggga gatattgctt ggacgatctt agatattgaa acctacatcg tttaagtggc 840

ctacatctcg ctcatatatg ctagtattta atactctata cagataaaaa aacaatctat 900

aagactattt tcactctatt atatcttgtc acaatatcca aaggtgatat gacatataaa 960

attatataag atataactat ctcaatgcat ggtattatag attacttttt gatcctctac 1020

aaaatattaa aaactagcat atgtgagagt atgagatgtg gatcacttgg atggttagaa 1080

gtttaataca tatgatctcg tgccaagtaa tatctctatt aatatacaat tttctttttt 1140

ctcttaacaa ttttgccacg tcatcaaaaa tgcttatatg atatgtatta aatgtatacg 1200

acacgttaga ttgggaatat actaatatca ttattaagat agttgcatct tatataattt 1260

tatataacat gatagcttta gatagtatga taagatataa tagactagga atagccgtag 1320

tttggacaca atatctaagg ttagaaaatc gtgcataatg cctgcaccta ttgcca 1376

<210> 3129
<211> 1169
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48110_G1, chr1:281329536..281330704, Cluster 18

<400> 3129
tatatatacc gtagtactta gtatgtatac gtatatgctc tttgtatata tgaggcgttc 60

tgcgtgatcc tttcaccagc tggtagtgcg tgcacgcatg ctctaattta caccccgggt 120

tagcataata taatggcgac actatgtttg atcgcctgtt tgcatgttct cttttatgga 180

aaaaactggt ctcgagaaag ttgttgccac cgctgaccaa tggacaaaag tttggatggc 240

agagaaaaac atgatcttag accatctcca actattccct ccacaattgt cctcctatgt 300

atgtaatttc tgttatattt tactacacca tcttaaaaga tacttccctc tacattcagg 360

acgtctctaa tcattcactc taaccaactc tcctatatat tataattcag ttatttaacg 420

atttttgtc ggtttttaaa gttttaaaaa tcatagacta ttcatactgt cataatacat 480

attgttttca ggttacaata attaaaagag gtcaatatca taataaaata gactaattaa 540

agtatggaaa gtattggaac tcaccccata cggatcggac gagctgttgg agccgttttt 600

cccccaaagt acactgaagg tggaggtgga cgagctatac ggttcaacgt tggaggtggt 660

cttaccgttc cttttagctt gagttgcatt agaacctaat aaacaaggta catgatgcca 720

cacccccccc cccccccccc cccaaaaaaa actacagtac tagattaata aagacacaac 780

acctatattt ctttgaacta gaagcttccc tggaaactcg tatgtgtgag agtgggagag 840

agaaattcta aaggcgggta aaaatcatga acctcgactg gaaattggtt acatgtctac 900

cctggttcct ataacacgag ccttattgca tgtgtgaacg cgatgaggat aaaaagatcg 960

atcaaaggcg aaggctggtt tgcacgctgt atctttaata aagcaactcc gccgtgtgca 1020

tatatatata tatacgtctg ctatagatgc atccataata tggtacgtag acagctcaaa 1080

tttttgcggt tcgcataata taccccacca tcagcagacg tatatatgca aaacctttcg 1140

ttgcagccag gttaaaaaaa actgacaat 1169

<210> 3130
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48707_G1, chr1:283313909..283314951, Cluster 18

<400> 3130
cagacaatct tttgtgccta tgcatctatg tatatatctc aaatgttgat aaactatcta 60

ttaccaattc ttaaccgtta caacctaaaa tcagatagct ttttgttcct gtcaatcgac 120

aacatatgcc aggtaattta ccatctttct ttattcattc attttctcta aaaagagtat 180

ttttataata ttattataat aaatattaca atacttacat gcgcgcgcaa ggcgcgcgcc 240

agttactagt gtggattaat ttctagatat ctgttcatga gaatgcaggc tttccattcc 300

acggtatgct ttgttgtcag aatagaagtt tttttatcca tgtaaattta aaaaacctac 360

aaaatttaca caattacttt ggaactacaa ccttttggac atatataaca ttgattgctg 420

caatactaga accatcggtt cttgcaaaac tagagatttt caggcaaaat taaaacttgt 480

agttctacag cgaacaatgt atgttctcaa agtaacatct ggaaataaaa tagcaacttt 540

gttattagtg ttagaccatt gaaggtctac aaacacgaat gtggtggtgt tgtgttgcaa 600

ttatttactt ggcatgactt tctagtgcgg tgactgtaat ttcacttagt gtttagcttg 660

tgtgttaata cgggttgaca tgggcttttg aaaaagagct ttaaatgaca ttagggaaaa 720

caaatttctt aacgaactac tgattttgct gcaaggttct ttaaatgata ttagaagtgt 780

tgatgccttc tcttggacaa attgtctgga tcttcgcact cccactatgc tgactaattc 840

cactctgtcc agctcaaggt tctatatctt gtggatttta gtaattatta gaaacgtcat 900

caatgcaaaa acttatcggt tacaatcagc ttataggtta tcaagtgcag accactttgg 960

cccctgagat agatcagttc ggggccatgc acaacaacat ggttatttgt aaattactag 1020

caatgccatg gtctgttcat gcc 1043

<210> 3131
<211> 1227
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51361_G1, chr1:298790275..298791501, Cluster 18

<400> 3131
gcaaatggaa gagttgggta gttttagaac tccacaagag aagcagcaat aaaaataaaa 60

attcacagta aagtgtagta ctttgcttag gctatacggc cgtaccattt tcataccaaa 120

gagggcacac caagaatgtt tcgctttcag aagcatagtg atatgctctt aagctatggt 180

gcaactgttc atgaaagatg agctgcacga gcagatctga tacaactaat tagtgtctca 240

ccagccatga tatttaattg tatttatttc ataagaacca caatacccga tcttactact 300

aatgttttgt ttccttaatt gaagctaccc aaagagttca gaccagtatt ttttttcccc 360

tcaatgaata ctgaatcaac tcatttagtt aaaatctggc atcattacat aatagcttga 420

tataagtcta ttcaaatcat aaatacttct cgaactgtca agctataatc aacacatagg 480

acagtgaact gattcttcca gacataaaca aaaatatgag cagatataga aatggtaaga 540

cgattttatg ctaataatgt gctacatatg agcatttcag atctatacaa agtattaaca 600

taatctagag atgttaacat cgaactactt atgggttaag gtgcttggta ttgattccag 660

ggcctaggat ggtgaatgaa aaaaaatgca tccttttctc aaaacataca atatgcatat 720

aaaattatct tgctagtttc atacctcgca cacataccaa catcactaat gtaagagtta 780

tgtcatgtga gagcgtactc ttcgatagtt tatttcaaac actagataac ataaatgaaa 840

gatattaagg atcttgatta atgcttttgg tagatgtgag ggcatcatag caatgtgcac 900

taacagctaa aggtagaata aattccatta caaaggtaaa ggtagctccc tagtccatcg 960

aaagaaataa aatatattgg gacaactgtg ccggtgcccc tgttttgggg tgtaactgta 1020

gatttgctcc actttttag actctgtgtg tttgcatctg tttttcaaaa caaaactaaa 1080

caaaactatt gtacatccct gctacgttag ttgtactaga cggtgttaag gaacaattgt 1140

gtcagtgccc ttgttttgaa gtataaccgt acgtgagaag ctaaggaggt gtttggttca 1200

tgcattttca acccgtatcc attcaca 1227

<210> 3132
<211> 1011
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55026_G1, chr2:17331068..17332078, Cluster 18

<400> 3132
gacatagcag taatgagctt taactgcaac tcttattcct atagcctaaa acttagcttg 60

tgtgtacaaa tcaggtaggc cttgttcgtt tgtacgaaaa tcaaagagga ttgatgtgat 120

taaatcattt cctattcaat tttgactagt aaggaattta accctccaat ctctctcaat 180

ctactactaa tcgaacaagt ccttatttgg ttttgtattt tctatgatag atcattaaat 240

ttgtggctgc atatgcttca aatgacccct cttcatttaa atgtggaact agtgcagaat 300

gttgacatca tcaaactccc ttttcaggta tcaagaattc aagaccctaa cagcagttta 360

gcataataat gattggttga tgtgactcgg tacgaggctc ccaaatgagt ggccttcttc 420

tgtaaatacg ggttagtaat ttaaaaagag acggatgatt tatagatggt ctgaagtatc 480

attcctacct gcgtgagcca tcggttaatg ccacttgatg cagtgatgtt tggttgatca 540

aggtcaattt tctcaagggt ggctacctga aagaaatcat tttttcatta agccataatc 600

tgcccaagac ttaatgagga cgcaaaaatg ttgaaattac gtagagttaa cttaacaata 660

aagcgtaaat cacacctata tcagcaagcg cttcatgact agtgttggag gaggaacact 720

aactaataat ccaataacca tcatttaggg cattatcagt aagcacatat cataccagtt 780

aaacttggat acagatcctt tcttcagagc aaaaccatta gttccgttat ccttcagagt 840

aagatcatta gttagctctc tgaatacagt tagctgtgta ggatcattag taacgtgtat 900

tattcagaga aatgccttgt tcttgaatca ttcagttagc gctaactttt aaacaatgga 960

agaaatacct gggctcgtta tctacgtaca agaagaacga ggccacctta t 1011

<210> 3133
<211> 1193
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55197_G1, chr2:18252107..18253299, Cluster 18

<400> 3133
atgcagccac cgtgcgtctc agtagtgagc tctgtgtggc cggcatgaca accttctaat 60

gccaatttat taatcatcta ataaggtctt cagtcttttt tgctcgatgt ttgcaaataa 120

tgtttaacgc gtatcagcac cttgcttatt aagcagaggc tggaagaaat ttcaagggcg 180

tgtatctcct cgatgtaatg tgcttgaagt tattaataaa atcttccttt atcaaaaaaa 240

aaaagcttgc aggaagcaga gtaacaagca agagaaagaa gacaacgctt gccctaaggt 300

tgtctccacg tgagagtgta tatggttgtg taaaacatcg ttttgtacaa tagataatac 360

tatttacaga ttgaagtttc aaataggagg tgggatagag gatgtgaaaa gagagctgtt 420

agagacaaca ttgtttactc ttgaatcggt gaactcttca gcttaaagtt caactagcca 480

agcaactcca ccttgtgccg ccccgacctt agtgtccaga tctaagaaat ctagcttagt 540

tgaatcccta gttgattaag ctaacttttc tatcgagtct gtctaagaaa tctagcttag 600

ttgaatccct agttgattaa gctaactttt ctatcgagtc tgtctgagtc gatttggttt 660

ttgaatcgtt tttttatata ttttaacgtg gaaaacttga aaacataaac ttgaaaacat 720

gtttttagtt tatttcttac taagataaga ccaccatctc tatacatacg agaggaatat 780

gaccgattga gaatgtcgac tttcaattgt caaaatataa aacacttccc ccatttacat 840

gctttttctc taagcagatg ttcatcgcat ctttagtgca attttatgat gccctatcga 900

tcctaaagca acatccacat gcttcccctt gataggtctt cttgaaagat tttaggagtc 960

tactcggcaa aaaataggct caacctcaac ttaaccaacc actcagttaa tttcatcacc 1020

ctgttgcgtt cttgctataa tcaaggttat ttgcaatcac gggcgtacta gcccttgttg 1080

gtgtgtgatc tagcatccat atcagcatca aggcactgtt ggcaactccg ataggaaaaa 1140

gggcaagatc caatctacta gcgacatatc gaatgatgat aagaccaagg gta 1193

<210> 3134
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56061_G1, chr2:22961358..22962424, Cluster 18

<400> 3134
actagctctt atggtgtttg tttccctgct agattatata agctagaata tggtagaaga 60

gtcgaagagt aaaatatcac tttatgatta caaataagct atccaatgtt aacttatttt 120

agtttattta agaacataaa gcgatatttt accctctacc tatttattat aatctagctt 180

atataatcta aaagagaaat aaaatgcctt agttttcatt acaaaatggt tttaagtttt 240

cttcacattt caccatcttt gtttattttc ttgaggcgcg tttcatgagg aaaaaaatta 300

ctcgctccgt tccaaattag atgccacttc agttttaaca taagtcaaat ttctctaatt 360

taaactacgt attagctaca tttataggaa ataaaatata acgtcaaatt agattcatta 420

aatccatact gaattattcc ctgacgtgca tttatttgag cttgtagatg ttaatgtatt 480

ttttctctaa aaacttaaca aaattaaact tcggacaaag aaagtgacat ataacttgga 540

accgatagaa taactgacgt catgatcttt acaatgtcag tgtagctaga ttcgtacatg 600

caatgtaatc gataaagcag caaacagaac ggttctggag atgtaatgga taaaggtgaa 660

aaatacttga cataaaactt gggggtctaa taaagaaggc tcaaagaaat tacgcttctt 720

gcttctccca gagtctcttt ttactccgtt gactacgagc ttggttgact gttgagaaaa 780

tagtatgtaa agcattcgaa ataactctac tagatactct tatgctgtat tgctgcatat 840

ccctttccc acaatggacc gtaggtgtgg cacaatgtct accaatgtaa ggtgagattt 900

tcagctctaa ctcagagttt ggtttgagaa atcacttcat ccaacatatc acttcatcca 960

acatgatgtg gtgcatcata agtctattct ttaaatttga tgggataacc tcattcctcg 1020

tattaatatt aactaactaa ctaactataa ggaattaggt gataatg 1067

<210> 3135
<211> 1252
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57231_G1, chr2:29540095..29541346, Cluster 18

<400> 3135
aaacgaaaaa acaaaaccag agaagaacga gaaggataga ttcaacaaag gtgaaagaaa 60

ctcccctgat ggatgaagcc agcaagatgt taataaaatc tctctagaga aatggcatca 120

aaaaaacgaa aaaacaaaac cagagaagaa cgagaaggat agattcaaca aaggtgaaag 180

aaactccctg ttcgggacga cgatcggttg tttatggtgc catgcaatgt tttcaaatga 240

tctaatcgac cctagttgcc atggcactga taaggcgacc agttgcgacc agctgtagaa 300

caccttttgt gttggtaagt tgataactgc ctcaaaagta tctttctttc ttgtcttatc 360

tatttaatta tttacagtat gtaaagcagg cctctatgta gctttatgtg attgaaggaa 420

taaacagcat ggtagaccat tgaatcaacg agacggagaa tccaacactt gttatccttg 480

ttgctttaga ttgtgcaatt tagcaaacca aaactatact gttactaata tgttctatca 540

gtatacaata atattaaaag gagacaccat gttcatctag aagttatgag attaatcaga 600

agaaaaatat attgtattta tgattgccta acgatctaaa gtaaagctaa ataaaggtgg 660

tccatatcca ctaaaatagt aaattcagag taataaaaaa gggggaaata gtaatttgat 720

ttccaccact gtttagtaag gggattactg agctgttatg acatgtacaa ccttgagccc 780

ctacaacggt tttctaaata caagagtcaa ctaagagttt gcatgataca attatgagcc 840

tcttgataat aaatgtagtc aagacatagt atgtatagat agttgtgtag agacagactc 900

tttacgaaaa aatcgtctct taatttttt cacttatcac cttagagatc ccacaaaaga 960

cacctattaa tttaatgggg ttgtaaacac gcagcagttt ctttacgcca gcagtatgtc 1020

atatttacgt ccgcatgcac ttaagtgata tgttttctgc atataatttt ccccttctag 1080

atatggaact aattccttat gtcctgcagt catatacgaa aattgccttt tgaaaccttc 1140

agtcaaagga taaattccat gtcctaaact gtggtactcg tctactcgga caaatacttt 1200

gacttgacta gaaatatggg atgcaatgcg gaagtgttca catcttgttt tg 1252

<210> 3136
<211> 1051
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59396_G1, chr2:42628976..42630026, Cluster 18

<400> 3136
cccttacatt cttcatagta gtagagatac ataccattaa aacatgtttt tagtaaattt 60

atcgaaaaag ttaatatatt tattattttc tataaagtta tccaataatt atggttctaa 120

ataagtatac tataaaatat gttccatgat taatctacta acacttattt ggtgtcataa 180

attttagcat ttctatgata ccattgtaac aataaaatgc acttgatttg taattgaggg 240

agtactagct ccatcctgaa aagtagtaat tctagtttcc ttttgatcag attttaaata 300

tatatatata tatatatata tatatatatc gtaattatag tattgaataa gtataatgtt 360

aacatatatt gaataaataa atacaatgac acttattttg gataaggggt cgacactcga 420

cagtgcgcgt ggggaaggat tgactacttc tagctttttc agttggtagc aatcccatgt 480

ctacggttga tcgtctaggt cttttacact gtatgattgt atcagtgaaa gtaggctcta 540

gatgctacta tcctattcat aaggtccact aacatgggat gccccatcta tgtataatgc 600

tcttgccgtt cgttttcata gctatagaag agtttatagt acatttcttc aagaatatat 660

aatgcaataa aacatgtata aaataatcat gaagagttga aaatcatgac tcacatcttc 720

tctccttttt taaagatgtt gtattgttgt cacgtcataa aaaatgctta ttgcctgtct 780

ccgaaaggtg tcgtccgaga agtcaacgag tctcttattt ttttgtacca aatatactta 840

aaataccaat attcatgaaa taagtatcat ttgatgtatc atgggatata catttttttt 900

atatttaatc tatttggtga taaaaaatat ggacagtatt ctctttaaat atagccaaat 960

ttaaaaaaaa agtttagctt agttcaaact tatagtgaga ttctttttag agacggggta 1020

ccatgtgtta acctaataaa cacatatgaa a 1051

<210> 3137
<211> 1058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62920_G1, chr2:61860544..61861601, Cluster 18

<400> 3137
ttgtcggagc gaggttcaaa actccaataa ctctcaatta ttatgttaag aatccacaat 60

aaatccacac taaaaatcca catactacaa ctgcatattg actacttgtc ccaactacta 120

catgctatta atgagtaagg gtcttatagg atgacaaaat ctgtgcccct aaaatttatt 180

gttttggtat gaacttttat aaaaatgatt tttcaactca actcgtgaca aaaacttcat 240

gaacgtgtat cctttcaaac attgtgaagg ccgagcatgc tcgcatcgaa ttcaaattgc 300

aatagttatg cattaatttg tgggaacaag tctacataac actctgacct ttagagggtg 360

gtctacttca cccctcacat ttaaaaccag tagtttaacc tcctcaactt tacacaaaaa 420

tagtactaat agtattattc agttctagta aaagttttag ccttataaga tgagaaatta 480

atgtgacaca aaaatattaa actcttttta tgtagttttt gattttagta attaatttgt 540

tactcataaa agttcaaaaa aataggacgg gtataatatc aaattaccga ttttgtttaa 600

aattatataa attttgcaca ccagtagaag ataggattga aaaagacaaa attagtgtta 660

cttaagttag tgccacgtca acaaaaccac taattaacat tttctatggg ttatttgtct 720

ggttttataa agctaagagg gttaaacaat cgatttcaaa agtgaggggg tgaaataaac 780

cactatctaa agatcagtgg gttacgtaga cttattcctt aatttgtggt atttatcagc 840

tttgattttc cacatggaag attaaaaaaa agtgatgtcc ttaccaacat aaacggacat 900

tgcccaatta gctccaaaag tcacggagct aaaagaactt aggttagatc aataagaaag 960

gggagaaaaa tgatactctc atatatgtca tatgaaattg tctatactag aaaaagacag 1020

cgccctatcg ggcactgtat gagacatata tgcataag 1058

<210> 3138
<211> 1101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_72780_G1, chr2:128185637..128186737, Cluster 18

<400> 3138
catacttacg tatgatagtg tttggttctg aaaccagttg ggatgtagtg gctccatacc 60

agggagcgac tccgtccagg gggattttgg ggagtcggat ggttcaacat ttgagcataa 120

tttccctttt ttagatccac tctatcctac gtggaatcaa tccaaataac aacaaattgg 180

aagcatagcg gctccgtccc accatactcc agaaccaacc actacataag atacttgact 240

atgcctattt taaaacaggt attggcataa atcaacctga ctatggctat tttgaaacct 300

agtcaggctg gttctgttgt ctgaggccaa actcctaatc ctagtacaaa acaagctagg 360

cctattttgg catatctcac cctatgaaac ttttgtataa acattcaaaa taaggcaaat 420

gaacccaaat ttgatgaaat ttacacatag tttacttggt gaaggtattt gcgagatatc 480

tttcccaaaa gattcgagtt tccacatgat ttcaattttt tctcgtaata tgaggtttta 540

aaaataaagc tcatgcaatt ggatttggtc ctctatgtga gttttggtgt attagttata 600

aaaaaattta gagattgacc agctttaaga gaattatatg cagacatgtg tccctagctc 660

aacattgtga taaaactttg tggcccctca atactaaaga agaataagtc tttacttgtt 720

ttatattttt aaattgacta tagaaaacat catactacaa agaaggttca ttattttaga 780

aagatgaagt gctcagagat ctatgaaacc cctgagagac acaaacactt tacatgagca 840

catgacaaaa taggtttgac aacttcagaa agtttctaac acgtccttag ttaatccagt 900

tctcaaagtt tggctagtgc tcaaaacttc tagatggttg aaagttccca aagttcgagg 960

cctattagga taatggtcat ttttgtagtg agtaaacaaa cacatacctc ttaatccccc 1020

aatggtcacc actcaaagtt tgactggtgc tcgaaacttc tagatggttg caaggaatga 1080

aggaatataa ttgctagatg t 1101

<210> 3139
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80282_G1, chr2:173420834..173421870, Cluster 18

<400> 3139
gaggaagaac aggaggagtc agagtagttt gttcttatgg tgaccgaata tgtaggatct 60

tttagtcata gtggagctat ggttaacggg aatgccaggg aaaaatgaca ctgctgaaat 120

tgctgcatca tggcagttag aagagagaag ggtaggccta gtgtggtggt gagagttgtc 180

tccctgagtc attaggacac aggttcgaag cagcctctcc gtatttgcag gagcaggctt 240

gcctcctttt atcccttccc tagaccccac ttatgtggga gcctcaagca ctgagtctgc 300

ctttttttta tgacaattag aagagagacg tgttcccgtt gttcttccat agtaaaatat 360

catgaatctc atgtcacaaa catttattac ttgataagga tgtattgatt ctaacaataa 420

tttgtaaagt gatttagttg tgcttccaaa tgatctatgc aaacacaaac tgaacttgca 480

tcatatatac cttttaggaa tgtatgcgct catgtgctac taaaaaatga tataacattg 540

atgcatattg ttattctttg ccaaggcgtc caagattatc ttctcatttt cattttcagt 600

ttgttttccc ggtgcaaatc aagtttaagg catggattta gcacttggcg gcttaacctc 660

agttaagtta aatgaatgca ggcgccaaat atcaccgttt tcctgcaata gagtaataaa 720

ccatgcagcg ctcgcatgtg tagctggagg ggccaatgat gatgtgatag tgcgtttatg 780

aacctttgag gtcatcaaca tctatgttca tgagaacatt gaaccttggg acccaagggg 840

tagtacaggg ctacaggcat agtaaaaccg accacagatg tagcagcttt tagttagatc 900

tggattattt gtgactcatg aatatgaaaa aattagccct ttcattatcc atccacttgg 960

aatagtatcc acccttttctg cgttttaata tttgtaactt gttttttgaa ggagcacctg 1020

accacctctc gctagaa 1037

<210> 3140
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8310_G1, chr1:43690501..43691513, Cluster 18

<400> 3140
tatatggtac gccacgctct atggtctgaa catctgtatg ttgctcctca ggtttcgata 60

ttagaatgta tccaggttga gcacatatct agattacatt tgggtatatt cggtatccta 120

atctccaata tcaaaattaa ttgaattata ataaataaaa tttaataaaa taatatgtta 180

aataaaaatc agataataaa aattaaaatg aatgcccatt ccgtttatct atatttttg 240

gaattataaa attactgcac gagtagagat taacatattt gtgtatatgg aagagacaaa 300

ttaaaccaat acagttatca attaaatatc aattaatatt atgtttatat aaatatttac 360

cataaagttg taaattatat aaatatttta caaaaataaa attaaactaa agtgttaaaa 420

taatttacaa caacaaatat attagattca aactaataac attaattaaa tctttatgta 480

tcattaataa ttttaaatta acagtaaaag ttatttgttg gtatactagt aactagtttt 540

aatacaacat taataatact attaaatact tgatcacatg ttgtaaagtg aaatgtttta 600

aataggttta taataccttg ttttgtttgg gagtacagat actgctgtat attatcgaat 660

aaaactagaa acggattaag aaacactaaa aacaaatctg aatatccata tcgagaacag 720

acacaaacat gaatatccat attaggggat acgacatcca tttccatttt ccataactga 780

actccattcg ggttctgttc ggtcgcagaa ggattggagt gtgacgaaca agcccttagc 840

gggttgtcga gctcagccgg acccgtctct cttgagtgcc ccgtcggtcg tgagcgtttc 900

ttacggctct tcttcttgtg cagcgcttgt gccccatggt gagcgtttct taatgcgatc 960

gtacgaagtt gtggaaattc aaatgagaaa gcatggtgat gaaaatgaaa tta 1013

<210> 3141
<211> 1189
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83342_G1, chr2:189227438..189228626, Cluster 18

<400> 3141
tcacatggcg tgcagctgct gcaggacaac gaggttgagc ccgcctacaa gaaactagat 60

cgcctgcacc atgccgacac ggaacgaggt cgccggcgct ggggtggctg gctggtggtg 120

gggaggctaa tcttcacatc cccatccgat cgctcggacg gcagcaacgc ctagctgcag 180

cagcactgca gcaggctatt ttgttttcct ttaggccatc tctatttttc tctaatatat 240

acatcttttg tttcagttta taattcgttt gaatttttta ctactggctc gtcttattca 300

aaaagtttca taattaccat taactttact aggatatcat ttagcatata atatatttta 360

agtatgtctt tatttttttt tagtttttcg aaaaagaata aaacgagccg ttcaaactta 420

gtacaaaagt caaacgaata ataaattgta actgagagag tattaaaccg aaataagcta 480

cttacaatca ggacatatca agcaacaata taatttaata taatctacgc agtgctagct 540

aagcaagtat tgtacaacaa ctatatatac acaattgcaa gagcaaagag tgcaagccat 600

atggggtaat caataattca agataggtgg tttatatact aattggcatc atacaccaaa 660

cccacaataa taatgtcata agaaccacac taaaaaaggc aacaagccac aattttgtta 720

aagttgctct ttatgaatct ctcgtggaga atgatcacaa attctaacaa gccacaattt 780

tgttaaagtt gctctttacg aatctcccat ggagaatgat cataatagcc ctttacaact 840

gatgagcgaa gctaacaaca atctataata accactcaat aatctcatga actgctggtg 900

gtctaggtga tgacaatcac tagaagtaac aagtataaag ccggctcaat ccgctcaact 960

agtgacacaa gatgtaatgc actagatctc aaacaaatga tgatctatga gatgcaatcg 1020

agtggagcgt atttctttag ttttaaaagg tgtgtaagac gtgaagcgat attagccaaa 1080

aacgactaag gagtctattt atagccccga cttaaaatct aattgttacc tcttcatgga 1140

cacgaattgc acacaacaga tatgtctaat gcgctcttga tccttacac 1189

<210> 3142
<211> 1177
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8339_G1, chr1:43975940..43977116, Cluster 18

<400> 3142
atgaattgat attaatatat ataacgtact gattcaaaaa taggcaacct gatcgctcta 60

ggagtaaaag aatatttact ccacataagc aagaacccaa tgaaaaaatc ggtaatcgcc 120

ttatgtcatt ctcaataaga gtttcatttt gtttccaata ctgctacatc atcaacagta 180

agtttggcac ggcggacgcg ggccctgcac ttaaggcgtg gctgccgagt gccgacgacg 240

tcgaggcgtt agcgttacct cgcaaaacgc tagggcgagc gcttggcacg gttcgctggg 300

ctggaatctt accaacacga gccaaccggc ctttacgttt ttttgcttgg caggcccaaa 360

taacacaaac aacacggccc attccgtcgt ttacgattga accgagaatg tgtcgctgta 420

caagacgttt cgtgctgtct ttaagataaa aaaagaagtt ttctttgatt tcactaagcc 480

ttactgattg gtttaattct actaaaaata actatttggg tttagccact taccgatgaa 540

gaaaaatatt cattttact gaagatgagt agatgactgg ctaaacttca ccacggttat 600

actctttact tcataaatga tgtaatgtaa taaagaatta ttttattgtt ttttctttga 660

attgctgagt atagctatgt taattgattg gagaaccgaa ataatcggta tagagacatc 720

tagagtccat gtaattgatt atcattgctc aaaaactttt tcgtagattt atatttacgt 780

gcacaatggt taagaatttc tatgtttttc ttatataaat tactgattta tatttacgtg 840

cacaatggtt aagaatttct atgtttttct tatataaatt gctgatggct aatttggtga 900

ccagtaatca cggtggatac atggaggaat cattgctatc aaaatataaa tagcaatgaa 960

tgaaacaatt ttccgctgcg tcctctctaa tagtttctgg agaggacggt cgtcgtttaa 1020

tagttttttt ttatcataat cgggggggggg ggggaaaggt tccccacctt gattccattt 1080

catttcacat tcccgtttag cccaaaaagg ctagatggta cagaattgtt tacatagccg 1140

gatatatccg gttgggagag caacatggaa aagagtt 1177

<210> 3143
<211> 1287
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84860_G1, chr2:198021524..198022810, Cluster 18

<400> 3143
atcttaatat ttgtttgtcc tgcacgatca aactatcacg gataaaatta tatttaacta 60

cttagctcca tgttctatag aagatctcct aagccagcat aagcgtacat gatatcttat 120

tacttgctta tcatgcatag acaagccaca atggataaaa gtatgagtca ataatcctgc 180

aactctacat tgcttaacac tagtaactta cttgcacctc acgcgagttt atcaaaacag 240

tgtcgcttta ggcatataaa attaacaata tatgtagaca cttagaatta tttgaacaaa 300

caatttttta ccgttcgatt tacaaataaa acatcatgat cagtctagat gttatattac 360

aatggtgcta cttactaaga ggtgagtgga tatataattt agacacattg tgtggcagac 420

aaatattatt gattatgatg tgagtacaca gagcttgtga gcactaagta tgcttttct 480

caatggctac tgtacatttg ttctgtttgt ggtgtttgtg gccttgggct cttcagtttg 540

aatgtgcaag tgtaaaaaaa cattggattc agtattgctc tacttgcttt tgcaatacca 600

cgaaagtttt atcttacaag tatttttctt agacgcatgc ctgaaagata ggtaaaactg 660

agtggagtgg cagtggtacg gacaaatgac caccacaccc tgcaatctac agatccggca 720

cccgaattag atcgtgtgga gcacaaaata ctggcgacgt ggatatacag atagcaaaga 780

tttgctccgt gctctataga atagaataga aagtctgggt ttaagctaat gctgcaaatc 840

tgaaaagcca agtccggata taagctaatg caatgcaggc aattctctgc aaacctgtat 900

tagctaataa acataaatac tccatccatt ataaattata agatgtttta tcttttctag 960

attcgctgct tttgctacac gtctagatat aagtaatgcc tggatccacc gtaaaactat 1020

aaatctagaa ataacaaaac atactataat tcacaagcta atgcattatt agcttgccta 1080

ataaatccag aatcaagaca atgcagataa ttatgtgttt cttggactcc aagaaatgac 1140

aaaatagtat tgtacttcct cagtcccaaa atacttgtag tatttgtcgt tcctcagtca 1200

caaaatagga ctgtcatgtt acattttcaa ggactcggtg caaagtgaaa accaaaattg 1260

ggcatctttt tacagaatat gaacata 1287

<210> 3144
<211> 1038
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85388_G1, chr2:202190958..202191995, Cluster 18

<400> 3144
agttgtattt atgccaccag ataatcacag cgaaccatct ttcgattata tctattttat 60

ttgagcaagc ccttccattg tatgattgtt tgtttcacat agtttatgtt agcatttgga 120

ataaagcaat atcgcattta aacatcgtcg acttatgtga tatatagaaa ccatagtaac 180

atacgggtat tcatctatct tgctgatttt ttagcgcata acgtttgggt tgttcactga 240

tagctactct tccaagtttt catatgtaac tataattttt tatgataatt ggagtaaccc 300

aggtgataat tttgctcgga tttatgaggt tttgaatgac ttgtttattt gcgccttttg 360

atattgtcgc ttttgtcttt ctgatgggac taatctaggt tataaatcta gtggaatttc 420

ttgattaatg tcttggcgtg aggattcaat tgcctgggtg gcagatatag tgatgggtga 480

aatttaatgt gtgaatacca tgcaacatgt tcacaagaaa cttttggggc cttggtatcg 540

attccctaac gtttgttggg attgttttcg ctgaattttt ctttgttgtt caaatgatct 600

ataaagtaag cagtacaaat gtcttcgtgt tttatactca caaatgtctt cgtgttttat 660

actctatgca ttatttgttt agcaggtata aactactctt tgtggcatac gatggaactg 720

cagaggcaca aaaatgtttt cgtttgacaa cgatgctggg aaattatatg aatgctaaga 780

agctataagg acaaataaaa aaggtatgtt atatggaaag aatctatcca aaattatagt 840

ttcctaaata tgcctcccta ttgactttaa aaaaacacta taatgtctgc ttcgattgta 900

accgctgtta ttgactcaga ctatccataa cactataatt aatgatgcat tatctttcta 960

acttcatctc tattccaaac tcaattttgc taattctcta taacaaacac gttttctttt 1020

ggtatgtttt tatcaacc 1038

<210> 3145
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85599_G1, chr2:203608635..203609664, Cluster 18

<400> 3145
ctttaaccat tcttcggatt tgtagacttc cttcttccag ggtcattcct tttatccttg 60

tctggatcaa ggtccaagca ttcaaccaaa agtggcacat aagaaaaata ttattagtgt 120

ataaaacagt ttttccattg aagcaagcat cattcctaat cctctagaga gtccacagga 180

ccgcactgca acccacaagt agcatgtttc aatttttgtt ttaaattgta aagccatttt 240

tcaagcatat tgtctgagtt tttttggaat tgtatgtaac ttcagagcca tactaatcac 300

tcttcaagta aaaagaggca acctaacagt caaaattata tgttgtgtaa tttcaaggca 360

accacaccaa taaaagttga agtccccttt ccaatttcta gcttttaaat tttcttttga 420

tacaactctg tctttcacaa caagccataa gaataccttt atttttgggg gaatcctagc 480

tttccaattg aactagaaag gaactttgtc aatgaaactc ctacatttga gatatagaga 540

cttaacaatg aagcctttta attaatggac cagagaactt tatttttgaa tcatctagat 600

taatgtcatg acacaagttt ttcaatcctt ccaacatcta agctccttct ccatgtaatc 660

ttcgtctaaa gattagagac tcgtaattat tagaaagagc caagttaaca ctaatgtctt 720

tatttaagga gagttcaaat aatcttttga tttgattgag aaggggtatt ctccattcca 780

cgcttcattt cagaagctgg tggactttcc atttccaata tttctttact attttgtata 840

aaacaactct ttaatctcta ggatcccttt ccaaatttgg gattgttctt gtttcttttt 900

tttgcaaact cataggtttg tttttcatat atttttacca aactttgcta gataccttct 960

tgactttcca gtttccaaat ccatttagtc aagagactga cattcatgca tctaagatca 1020

agagaccctc 1030

<210> 3146
<211> 1014
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86328_G1, chr2:207695633..207696646, Cluster 18

<400> 3146
ctagttgcga acctgctgaa agaggatctt caacatcatc taaaataaac attcaataat 60

ttgtgctcac gccttgtctt cttttcagta atttgtgcta tttcagtcat ttatcgttta 120

atttcagtaa ttatcagcaa ccacattaat tgttagttgc atcgacgtca cgaatcttag 180

cgcaggtggc catgacattt ttttcccgga cgcatggttt acattgtagg ctttcgaatt 240

aattatccct ggctttatga cattatggcg ctttgttacc tgtagttggt tatgtgtatt 300

agacggaggc tggaagtttg taccaggaca tacgatacaa gcttccgtta tctggaaaaa 360

aagttcccca gactgacttg tgctgtttgg ataaatattt atgaagcggt ggtttttttc 420

cccgtcccag tgttactgat gcagaacgga gtgcggcaag agtagtgttt caggtccaga 480

atttgctcca gtggaaacaa acgtattgaa gcgacaggga gagaaaaaaa agaaaagaaa 540

agaaaggaat gctgtattat tgaaactctc aagtattagt acaatacaat ctgtaacatt 600

ctgttacatg agctactaga tgtttaatgg gaaggcattc tgaagcctat caacgtcacc 660

tttgcgtcat ttctgatgct acccggagca tccaatcgtc cgctagatca tcatccttgg 720

cgatgaaact tgcaaatttg caatcaatca gactgcccgt gggccgtggc gcgtgctcat 780

cagtcaagag gaatcggttc tgtcggttgg catgtccaaa aagccataac taaagaatag 840

gccgtgtaat aataatatag cataattgca cactgagact gaaatcttgg agcacattgg 900

aaggcagaga gcgaatagat tggtaactct gatctcgtcc cgattttcaa ctgtttcccg 960

aaaagaaaga tcaaacttga gagcgagagc tctctctctc tctctctctc tctg 1014

<210> 3147
<211> 1118
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87921_G1, chr2:216561452..216562569, Cluster 18

<400> 3147
ggggtctcct tggcacgatc tctgaactcc ttaacttcaa catgaaatca ttcagatgtt 60

gggtcaggga gaaaatcatg tggctgccaa cacttctcga ctgacttgag atgtgtcaag 120

atattatctc tagccgaatc atacttgaag attttaatct tgtgagatgg cattgaatgt 180

gtaatctaga catgtacctc cctcggagga gcaaatggct tcttattctc gatctagaac 240

aattttcagg aaaaaagtat aattaattgt cagatacata ttatgaaaca agtttaaatt 300

taggagaaga cggatttgga catgtagcaa ttggtcacat gattgtgaat tggtaatttg 360

gtatggaatt ttgcacttgg tgtccccctt ttttacttga gccattttga gaaagtagga 420

agaggacgca ggtgcaggtg aacacttaag aaccttaaaa gtctcaaaca aactctaaaa 480

tagactataa actatgaaac atactctgaa aaaaaactct gatgtcattt cattatctat 540

aaactaagaa actctgcaac atactccaat taactaaaaa agacaactca attggcattt 600

cagttaccat aaactataaa tttctgaaac agactatcac taactgaaca ctaaatgtct 660

gaaacagact ccaactaatt gaacacaaaa aatcgagtta ctatatatat ggtgaagatg 720

gactgacaca aatactcaag aatatttata tttttatccc atttgtttta aacaatagcc 780

ttacaacaca gatgactgca tatccaacac actcccaccg ccaagatttc cctacagatc 840

atgagtttga aactacgaac ttactattta tggaccttca attcgctttc atggagcctt 900

ttttaagaat aaatcatttt ccttcacttg ccattctaag tagattgcaa tccaaataag 960

gaatcatgtt gatgctaaca atttttttcct ctccttttaa tataacaggc cttccccaaa 1020

gcgaattgaa ggttcaaatg gaagaactct gcaactcgaa ttccgaacaa ggctatcact 1080

tccccctttt tactggagga aaagttgaag gggagcag 1118

<210> 3148
<211> 1025
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_91337_G1, chr2:232479385..232480409, Cluster 18

<400> 3148
agatctcagt gttggtggac gtgcgaggga caataatacg aacatctatc tacatcaatt 60

gtagtccacc gctcacaatg ttaactcatg tgaatgaagc cactaatgac ttgggcattg 120

tctctccgta gggtagatat tgatatctaa atttgcgaaa tttggtttat tctctattat 180

agtaaataca atattattgt ggatatctac ttctgaaata gtagtagatt tacacatatg 240

tatatatatt gttgaatatt tactgtaaat tttttagata aaggttaaac taaagataaa 300

attatctaaa tccttgaccg ccgccaccgc ccgttgctat tggtgccacc gtccaagtgt 360

ccaactagac tgcgtgttac agtgcgcgcg tgcctttggg gcccgccaag gcagcatgca 420

agtggagctg cttttgccct ctttttctct acgcgcgtca cgtcacgtca ccactcaaac 480

cgaaatagct gctgtcagtg ataaaattca gaagtgtgat catcgtatgg gtgcctaaca 540

tccggtcatc actgtttaaa ttgttgccgg ccggcgcaac cactcctctt tatcatctag 600

tatatactag tagggttttt tcgcaatcta ttttgataat ttgatggtcc tttgcctaaa 660

ctgttcacag cagcgtaaga cctgcggcat atgaccgatt tctaaaacgt tttttcctta 720

aaaaacatag gattttctaa aatttgggac caaaaaatgg ggcaagagag ggagagatcc 780

caagcctcta tgtgtggtgt cttacttctc taaagttttt ctttgttgct ctatcgagtg 840

tctcgtagtt cgttccgccg ttctctctaa cgagaccacc gacccctcct tttatatacc 900

accggtacaa tgctcgtgcg ttgtgacgtc acataaatta ttcaataaaa tgttaatgca 960

caaggaagca taacacataa gtcatttatg agaaaaacta tctcatcagg gcattggttc 1020

cttgg 1025

<210> 3149
<211> 1385
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95734_G1, chr3:18993161..18994545, Cluster 18

<400> 3149
tcctaagacc ttattcggtt gcatacggat aagagaggat tgagggatct atggagagaa 60

atcccttagg gctggtttgt tggatagaga aatggagggg gtccatagag agacatcctc 120

ttgctattca atttgaatag cagaggattc ctccccatgg atcccctcca tttccctatc 180

caccaaatca gcccttaggg gattgaaatg tattgtagtg gattaaatca ctctctatta 240

aattttgact atcaaatgat taaattctca tctaactgaa caagctttaa atgggttagt 300

caaagtctca taggtgttca aagagcgata tcactttcgg aagaaacctt tggtttgatc 360

aaagcataca acagcagcat actaaccaga gcacgtaact gggccacatc tgcaaccaaa 420

acgcaacgaa gcagcaaatg gtacgtaatt aagaaaccaa atgctgaaaa gattaaagaa 480

acaagacctt gccgcattct tggagcacaa ggggagatgc agagtgcagt agtaataaac 540

aagtggtctg ccggttgacc cagaacgagc gctagacatg tgcagttgtg cgaaacaagc 600

atgggatggg aggaagccaa ttctagtttt caacagccaa ccaacagcaa cagcggcccg 660

tactgcacgg aagggccaat ataccccttg ttgatagcac ctccaactca tccaatggaa 720

aacgccccta ttgttaaaaa aatgatgata gtgtatgcta gactgctagt acagctgatg 780

actcgggtta aaataaattt atgagtcaaa ccaaatgaat ttgttttagt caaacaagtc 840

cgatgccagc atatatattt ggaatctagg tttctttttt taaataaaga gatacattta 900

cgcagattgc atgtgagatg tactttggta ttctattcgc agaatagttt actaaaatat 960

gcgcatattt ggaaagagaa gtgtacattc gcggccacaa gtcatggtgc tgagcagacc 1020

cctatttaat acagctgcta cttgttaaaa aacagcttat ctaagaacct ggtgaaaacc 1080

atattctgct tcttggctgt ttttaattta ttctcagaaa caacggaact gataacctgc 1140

tacagaagct acctgtttgg cacagcttat gtttaaatca ttaaagaagc tgaaaataaa 1200

ttatgccaaa caggaccata agcaacaaac actgtttcgt gagaagcatc tacaggttaa 1260

agaaagaaac catatttaat atgtcacaag gagtaattat aaaccggcaa tatagtgcac 1320

ctagagcaag tataataagg tattataagc tggttaaatg ttgagatggg ggagagagag 1380

gatct 1385

<210> 3150
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97503_G1, chr3:28836680..28837761, Cluster 18

<400> 3150
attggatgtg tcggctattg gaaggatgtg aacaaggggg aagggaaaca aaaaggaaat 60

ggggataaaa aatcgataaa ggatatattc acgaagaata atgtatataa acaagttata 120

actctacaaa agaggtaata tctcatgcat tgatacttat ctttctaaga tagtcaacaa 180

cacttaagct ttaaaaacaa caaacaactt atatatagga tatttccaac tataacttca 240

accatctaca tgatccaact acaagaagtt tgacagtgta tcttggactt gaaaaatctt 300

atggatcatc tttgattagt gaccaactaa gctcggtggc aatgcaaatc atgttctctt 360

agccaaacta ttgagggtga ccaaacaata caaaacgact atgatctaac tatcatcata 420

gaaaggaaat tctagaaaaa attaatatct aaagaagtgc aagcttatat ttagcgtacc 480

atagacataa agtagtacaa taggtcgaca tggacaactt cgcatcaaaa cttggactta 540

tattttgatt atctatcctt tgtgaaagtt tatgtaaatt gatgtttcaa acatcatgat 600

atactatctt tttaggtaat ggaataacat atactcatat atatgttttc attatattat 660

gtttttttgg tgctacacat gggtatttac ctggttaaat cttataaata ttaacataca 720

tactccctta gtaatgaatt gtgagatgtt ttggctttct tatatacatc aattttatta 780

tatatttata ataacgtata cccaagtaca tatagcaaaa tctatgtatc tataaaatgt 840

aaaacatctt atctttgaaa aagagtgagg aacttttact ctcttcgttt ttgttacata 900

tcatattagt ttgttctaag tccaatgttc ctacctttta ccatcaattt cagaaaatcc 960

atgtagtcat aatatgtaaa gtatatacta catctaatcc aaattacaag ttgttttagc 1020

ttatccaaat acgtagcttt tgatatatgc attgatatac actatgtcta gatacataat 1080

ga 1082

<210> 3151
<211> 1744
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239863_G1, chr7:14997553..14999296, Cluster 19

<400> 3151
actatttaag ttttcaaact agtattaaga gagagtaaaa acgatagcgg tacaaacatg 60

cataaatctt acgggtaagc atcgctgagt aggtggtaac acgtgccaat taatattcga 120

aatgtttttg ataaagaaca catatacaat ttgggggaga aaattctcta cattgtaacc 180

tgtttcagat ttgcgacaca tgttcctcta tcaatgatgg tgtcactcat cggccggggg 240

cacactctaa gccaggccca ccacgaaccc cacccggcat gttcgtcctt ttcataattc 300

caggctttgg catggaacta acatcgtctt cgatctccac gagccgaagt cacgaaacga 360

gcaggagaca taggatcatc gaacgactat ccacgtacga gcgcgagtgc aaacgagaag 420

gaagcctgga actgtggcgc ccatgtcgcc tgcatgcttg gccctagagc cagctaccgc 480

cgcccataat gccctagcac accaccgtga cgccactgcc gctgatgcgc cgagaggcac 540

gtggccatgg cccttaattg tcccaccgcc aagacgcgcc gacatcgtcg ctatatgccc 600

agccggctag ccgtacgcgg ctgtgttgcg ctggagtttc tagccgccat acgctcgaga 660

cctcatccta caaccagtgc gatgatctga gtttcttctt ttcagagatc tctaatcctc 720

aattatgtta catacgttga gagggatatt ttctttgaag tggacgaaga agacataatt 780

ttgaagtttt atacatttta tgtgtgtgta tatatacaca tattcaaaga gaatcttaaa 840

cgtatggata tatgttagta gggtagaata catatagaaa aatatctaaa attaaaaaaa 900

aaagaaaatt aatgaactca aaacacaata aaataaaata aaataaaata aaaaaggaaa 960

tacactttca gtttcagttg gactaaatta aagtgaccat cccatgctgg gacctattta 1020

gtttcattta atattatcaa ctaaatcgaa aggttattct ttagtattat ttgtttttat 1080

aatctaagac acgaaatctt ttgtacgttc ccgattgaaa agacggcccc gggaaaaaat 1140

tctccaagcg atctgtacta ccctgatccg tccgttttgg cggctacgca aagtgttccc 1200

ggttactttt actatcaaag tacaatagta ctggccgaca ttgatgcgat tctcccgccc 1260

gtgcttgagt ccctactact acctatatgg ggcgaaccgc aggacgatcc gcccggcccc 1320

atgaatagga tgaatacgat gcaccatttt taatatagca aaagaaatac aagtggacgg 1380

tcctaggaga ccacctatag tatataggaa taaaactgac acacaacaca acaaacagta 1440

cacggcaaag aaaaaacagg cgtccaccag ccaaactctc ttggtctctt cgctttgaac 1500

tttgcttttg atcttttgaa tgagatccag tacctaccga ccacttttta gctgaaatgt 1560

gcatggattt ttttatgttt ccaaatccct caatctaggc tagatccatt gccactagac 1620

tatatctacc accatctcac tgcgtaccag tctgtatcta ctagcctcag cctttatcta 1680

ccttaacttt tcactgttca gcctttgaag ttagcctata cccacatcag tgctcatagt 1740

cgtc 1744

<210> 3152
<211> 1966
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112882_G1, chr3:129982862..129984827, Cluster 19

<400> 3152
tgatatatgg ggaaaaattt aggagtaacg attgcagata gcctaatgtt ttattttcat 60

tccatgccca ctgttattgt tctctcactc tcagttcttt gtggcacaaa cagtcaaggt 120

ggcccagtga taaaatgtgg tgtaaacatg acaagtattt ttttttaaaa aaccgtattt 180

ttggtgtatt ttggttattc aaaaaacttt aaatttttat cacatattac ttggtgcatg 240

caaatacgca ccaacatgta aaaactggaa tataaatcca cttttatata aaaaaaaatc 300

aatatttacg gcgcacgtgc agtatacgac aaaatcgaac tttcatctaa aattagcctt 360

gattttacac gggcacattc atccaaaatt tatcgcaccc ttgcaaacag ccatgtcatc 420

ggttgcaaac agcatgcaat tggttcgctg gaaatggaat gggcttgtgt ttttgttgcg 480

cgcgtggaaa ctgagctgat gttgctttat ttgttcacga ccaggggtga tctaagatgg 540

ctcagcaata ttaacaattg aatcatgggc cgtcatttga gctcattatc agcactgtca 600

aatatttctt cagttagatt tacatcatga tcgtgcttcc aaatcacagc tccagttggt 660

ttttttttc ccggccaatc gagagccctt ataagaggaa tttcaaggca aaaacaaatc 720

ctgttgatta tcattacatt gtgccaggag acaggtaaca cggatgcagt gagacgagca 780

tcatgctgtt taattctggc tacttgttcg gtctatgctt ccctctacag aacgaccagc 840

aaactgatca aatgatcagg ccattcttcc agtcgtgaag caacaacaaa gcaaaacacg 900

ttaaaattgt gttttttttt ttgctaagct atctacaact ccagatgcag aaccaaacag 960

ttctctcgag agctgcgcag tgcgcaacaa gaaagcgcat cagccagaat tcaccaacag 1020

gacgctaaca aaaccaacct gcaaattcag gaaatgaaac caaggatagg tcgagtgaga 1080

tcgaatctcc tcagttcagg tctccagatt gttcttccac attgcagctt cagaagaacg 1140

aaagtaattt ttaatcgtca tcggagagca aacgatccat tggaaaagcg aacaaaaggc 1200

cagacaaaca ggaaagagag agcaaaacaa tcgaaagaaa ccaagctttg tatagggagg 1260

agggcgaatg catgaagcga gaggaggaag gaaagcgttc acccggcggc tgagtctgcg 1320

tctgacctgc cggctggttt gctttgcaat atttgtagat tctcggtcta gggtttgcta 1380

ccgtcaggtc gggcgccgtt ttcagtctgg aagtggcaaa aactgggccc aagcgaaaca 1440

aatagaggcc catcttttg tttggccgaa agtttatgtt aagcgtctcc aacaagatgc 1500

atcaaaatag tatgccaaaa atcaaaaatt gaaatgctat atcatttaac atgtttagga 1560

cgctgaaaat aaattgagct ataacagtta agtcctaaac catgtatttt tctaaaaata 1620

aattacatta ttagaaaaga aaatgttaag aatgatgtag aaaacaatga tatggcacta 1680

ttagaggatg tggtatattt tggtcatttc atgtgtgctc tatatttttt tataaaatat 1740

tgtaaaatag aatattgttg gagctatttt ttatgagtta agctctacgt tggaaaaata 1800

tacagggcat tgatttaagt cattgttgaa gatgctctag attgtagaaa aagtcattcc 1860

tcggatctca tgataatctg attttcctca ttatttgcta gaccataatt tttaaccttt 1920

atcttaaaac cgttgaccat agctttttt aacataaagg aggagt 1966

<210> 3153
<211> 1642
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11671_G1, chr1:63662083..63663724, Cluster 19

<400> 3153
taattttcat ggttaaaata attctaagaa actattttaa tccctaaaat acatcataag 60

gatagcacaa tctaggaaaa tttatgggaa tattttgtga cccatgagct tgaaaaatgg 120

ttagagatct aggatacatt gaaatgaact tcgaacatga agatcttgac ttgtggagaa 180

cacgtttgaa aagactaaga aaaatccacg gagtgagata gataatatga gacacatttg 240

caaatatttt ctcaaccaaa acattataca agagtaggat gaatgcatca aacatgatta 300

tatgcatagt tcatttttaa gtcaatgatt ctagaaattt gtagaccatg ttccatgcac 360

taaagtatat aagatcatag gatattattt ttcattttaa agaattttac taaagcaaaa 420

aaccaagatg tgacacttta attcataaaa atcgaatctc taaccactat tttcatatat 480

gagaatattt gaattgcggt aagttccatg atgaattgag ataaatttaa agatacctta 540

gagccataga ttacaacagt gtatgctcat tttcaccatc gctaattttg gattaatttc 600

ataagtgtga actgtagttg gtttcgcgtg atcctaatgg agattagaaa ctaatgtatt 660

acttgactat tatgagaata atagaattgg acgccaactg tatttctgag ccttgtagat 720

gaattataca tgagtgcgct gcttagggag taggaagact cacttaagga taagataagc 780

caaaattaca tgacactaat ctactatgtc tagagatatg tcaatataaa acattcatcc 840

atatgcacaa tgggaatggc acaaatgatg agactagact agaagctaaa agaagttgta 900

tgatgttaag gtgatatatc tctatagtca taattgttga tgcatcatgg ttgttctagc 960

aaggtggaac caatgaggtt tattaagaaa ggcgacaacc cattgtgtcg atcattattg 1020

gtgtgattct agaatgattt tgtactcaca atctactgta tatatccctc aagtcaatct 1080

tgggtatctt actattacta attggaattc ctaatagagg caccacatta atttttgaga 1140

ccctagaaaa atagatctta taaatcctct aataataaaa aaatatctag cctttaattt 1200

ggtaataaaa ctgtaatcat catcgttaat aacaaccttg gatctattgt aatttataaa 1260

atcactcatc tctactatta tgaaaataca taaagtaatc tcctaatctt acattaaaat 1320

tactcacatg taccattccg gaagataatt caaaataacc cctaatttgt atataaatta 1380

tccacattca ttataataaa ataataataa taaaatatcc ctaaatttgg atatgagtta 1440

accacatata tgaaaagtaa ttcaaaataa ctctataaat ttacatatga atggcccagt 1500

ttgctataat gaagataatt taaaaataac cccttaaaat taaatctaaa ttacccatct 1560

ttgttattgt aaaaataata atttaaaata gccatctaac cttgtatata aagtagcccc 1620

atcaactatt ataaaatata at 1642

<210> 3154
<211> 3103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119289_G1, chr3:169088742..169091844, Cluster 19

<400> 3154
ctaacctggg aaaacgaagc catcaggtag gtaggtgttc aggttggtta gtaagctttt 60

acatgcggcg ttgaccattg gagagtgaat aaagtatggg tttggtggaa acgcctcatg 120

gcaggctaga cacttcccat gtgtgcataa cctgtttctg ccgagccata gtccatagat 180

agcaggcgac gaacaaacac aactgccatc atcacttcac tgagttgttt gatggatgga 240

ttggatgcac gaattcgtaa gaggtgcagg gtttaggggc gtatttctgg cacttatggc 300

caccgtcagc tcacgcaaat tattgcagta ccattcggag aaagagctcc aaaattcaca 360

agaatataat ggctgacatt gacatatatg ggagtttgaa actggctgaa ctctgaattc 420

tatatagatc aacaaacaaa gccgtcccaa gacaattcgt aaatgaacac cgatttttt 480

ttaaaaaaaa aacttagcct cgcttccacg aagtgttcat atagaactaa agtgttgaag 540

tgttgtttgg ttaatgaaat gtaacataaa taataatggt aatgattcac acctgagtac 600

taatggtaac aaatttgagt tggtcctaaa caaacatgat ctaaatagct cattacgttg 660

taaatatgtg aaccaaaccg cacctaatta atagcagaaa cgacgctagc tacccgtttc 720

tgaatctaca gccatttgga gaaatggagg cacaatcggt ggaccattta ccaacctgtc 780

tatctgaatt cggaatcaag attggagggc tcaggcaatt agggttaagt ccaccttgct 840

ttccactacc atcggcaaag aactggctac aggacaatcc atcttttgac cagctgggtc 900

gaaactagga gcgtgctttt atcgtagagc cagcagtcca atgacctctg gtacgtacgt 960

acgtgggtcg gtcatgtcat gtgactgttg cgggtatggc aaatttgact actctcggca 1020

ctggtgggtt gggcacatct caacccagcc taggcacgcg ttcgttcgag cggaattcct 1080

tcaaatcaaa tccaactgct tcggtcaagc aaacttagtt ttggcatcgc tgttcaccaa 1140

tagcggtcac catcacctgc tgtgtgcgtg tgatcgtttg gcatgcacac cctcctccga 1200

ctcggatatt ggaaaacgta gacgtagagt atatatttgc tagccgctat aactttatta 1260

tagtgtagcg tattagcgtc aaagatttta agcagtaatg ggccaggtag gagcacgatt 1320

atgtgccaag tcagcccaac ttagcgcaat aatagtacct cggcccaaga tgagatagcc 1380

tattcactcg gtccaaattc gcgcggtgcc gtgaccgtga cagcgtgtgt gtcccattgg 1440

ccaacaccac acagccagca ggtcattaac agataacaac catttcttac taacacaccc 1500

ttttcatggt tcacagcacg taaattgcgt gtatcaactc ctcaagaatg gcaggcgtcc 1560

gctatggaga tgagttagct tcaatcctga tatgtcacgt taaagaaaga ggttccgctg 1620

ggatatgttg catctcgacc ctgtttattg caaagccatg caccaagcca gcacgatgca 1680

ccagcaccac gtgaggggat gtgtgtgcgc gcgtctgtgt cgtactttat agatattgat 1740

ttgcttttct gtatatatta ttgtttaagt gtagactttt gagatttttt ctttagtttt 1800

tataatgcct aagatacata taataaatat tatggtaata tcttatattg tctttcacaa 1860

cgacatatat ggatatgtta aatgcaaact tagaacatta ctttgcacta tctttcataa 1920

tgacaaaggt ggataattta tagaaccatt agaaggtatt ttgaattacc tttcataatg 1980

atagatgtgg taatttaggt acaaagatgc atgcttatta aatcaccatt cataataaca 2040

aagttgggta atttagactt aatgttaggg agttatttta aattatgttt cataggggct 2100

gaggctgata atttagatgc aaattggggg gggggggggct attttgaatt aattttcata 2160

atggcaattg taggtaattt atatacaaat atatggggtt attttgaatt agcttttgtt 2220

atggtacaag tgggtattta gatgcaaaag caaaatcagg ggttacttca tgcattttta 2280

gtggtggata acttttttaat aaattataat agatccaacg actattatcg attatggtga 2340

ttagagttta ccaaatcaaa ggccacatga atctgactat tgtgagaatt tctaggattt 2400

acctttttttt cctaacgtgc cttatgagaa ttaccttggt gtctccattg ggtcctctaa 2460

ttagttataa tatacaaaat aaagacttaa attgtgaaaa tataaatttt caggggcatc 2520

gactacccat catcatgccc atcataaatc tacagagaac cacttgatat cagtaaaaac 2580

ttcacatttg aagtgatcaa tggcattctt tcatgttgta catcataatt gttctgttga 2640

caaaaatgaa gtcaactcct aacctagtca tttcagataa ccactagtga ttgggcatga 2700

tatgaaacca tgaaatatca agctattata aatcgggaat gcctacaatg gacagattag 2760

ctgcatcgaa tacgatatca taaactggta ccacatattc gacaatttta taggttccgg 2820

taagttacaa gcttacaggc aagagaaatt cagcaatttt ggagataact tggaccctaa 2880

atctgtggtg tataactgat atttactcaa tttctgctta atttataaca catggaaggc 2940

tttacatgga acaattacac aatgactccc agtttgacac aatgctttcc ctggagttta 3000

tagttgttca aagcttgaag aggcataaaa ttttagtttt aacatattca gtgaaataaa 3060

ggggttaaaa gggaaaacaa gaccaaccta ggtggttgca agg 3103

<210> 3155
<211> 1638
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119963_G1, chr3:173355848..173357485, Cluster 19

<400> 3155
atatattaaa catcattgta catgtcttaa taagtcatga ccaaacttta gccaatagct 60

agagtaaagg cgcatcggga gaagatagtt attactaatc agacaaaatg aaaatatttg 120

aaaaaagatt gaataagaaa atataaatac tataattaat aaactagtta tccgtgttat 180

ttgcttggac tagtttgcta gttttttcaa gatagcagcg aggtttattt tatttattct 240

ttagagggtt tgataggaca tattatttca taatttttga agcgaaacat gttatttcat 300

aattgtcata taaacacaaa agattagtga agttacactg ttgttaacac acattgaatg 360

aataatcaat atttatgacc cccgaataat atttctccta tttctacaag tttttgtggg 420

tacatttaac ggcacagcta aattttggac ctagttaggg tctgtttgaa tccatgtgac 480

aaacaattta tctgtttata ttagcacctt gacctccaaa caagttgatt aataaattgg 540

ctaattgtta gctagagggt tggcaaactg tttgcccatt aactatttaa tcttgctaac 600

atgtgctaat agaccgtata gagagaaaaa aagacattta tttagctaag acttcaaaca 660

tactataact tgtggctagc taattatctg ctggctaatt attagccacc gacgaacaat 720

tagccattaa aatccaaaca tggccttaat aattatgaac gatagatatg gcctaattgt 780

cttaagtttc ctttagaaaa ggagtgttac ctgctttggg cttttgggca ggcataattg 840

cggttataat tacagccatg actcacttga gagagcagca gactttgtcg tttcatccat 900

gtggctgcta gctgggtgca ggtgagcaaa tcttaaggct ccactcggca tcgtgcacct 960

tctcatagcc aaaaagagaa acggcgcatc atttagatgc attgtataca cgctgatcgt 1020

ctcatgcgtt ttatattata tattaataaa aaaagaagca gcagtggttt tgcatcggat 1080

actggcaaca cacagatgtc atcttggcta gcaattgagc gcacagctgc ctcgttactc 1140

gttggagtat caaatgtaaa aaattataga acaaatacaa accgtatatt ctgctgtttg 1200

gatcacactg gcacagacaa ctcaatctcc cctgatttta aaatgcaagc ttctagagtc 1260

tagacacaag acactgatcg catgttagcg ttgccatagt tttctattag atcacggttt 1320

atcaggccgt ttgccctatg agcacatctc catcattcaa aaaggtggtt tgtttatggg 1380

aggagcgtgc ttttgtttat ttcgctgaac gccaaggaag aagagcgtca cattcccgag 1440

atcccacagg cagatcatcc atagcgccct aacttccaca ccaaatgaaa tctcctgctt 1500

tgcccagatt tatccaccat gtggtggcct ggtgggtgat tagcagatta catgtgtctg 1560

tctgtttgct cgctgatatg aatgataagg ccaccgttct tatttgttta acaaactagc 1620

atatagtccg tactagca 1638

<210> 3156
<211> 2243
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121786_G1, chr3:183376837..183379079, Cluster 19

<400> 3156
accttcggat gcttttacag ggcatgtgac aatggcaaat gcaaattcca caaatagccg 60

acctttttag cggtcatatt gtttatatat ttataggact gagattcctt attatcttgt 120

gtgaagttat atttttgccc ctcacgttta catactattg attcacattt agagatgtac 180

atttctgagt tttcactatg caaacatgcc acacacatct ctcagtcgag gccttctttg 240

ggcatcgctt ccgattaagg ttttcgcttt catcatcaaa gctccactta catcactctt 300

tcctttatct actctcaact cgtttttggc tagctaaagc agtctaacga ggatttagtg 360

gatgaaggtt gaagtacttt ggatcttttc aatctccttg acatgaaata aagactataa 420

acaacatttg ttaccttaca cctttggtag gagaccttgt tctcaatagt ggatctgaac 480

attaaagatg aaggtgaatt atagagagaa cagaggacat ttaatcctaa tgcgttagtt 540

tcgtgtctta gttgttagat ctaaacttcc aaagtacaaa tccataaatg taacatgctt 600

gtttgtattg cttttgatct agggcccgtt tggaagcacc acaatttcta agaaacaatt 660

ggtttctatt cccagtttct agaaactgat ttatgggaaa aaaatttggg tgtgcgtgtt 720

tggaacctag tttcctgaaa accagtttct agctttttcg atacacaaag acaagtctac 780

ccttgctcta ttttcaaagt aattgattcc attgttccct tcatttttct ctgatgccaa 840

ttttaaatat agattaaact ctttttaaat ttaagatttt catataataa ttaaacattc 900

aaataggaca aagcaagcat catggggatc gtatgcatag gtctaagagc ggtggtaatc 960

tccataattt ccaccaaatc aattaagggt ggtacgtaat ttgccaggca aaaattggtt 1020

ttagctagag aaggttagct tattggtttc ttagaaattg ggaatctagt ttctgaaaac 1080

tgaagcataa actggtctat ttgaaaataa ctcaatttct ataaaccaat ttctcaaaga 1140

tttgttgctt ccaaaccgga ccttagaaaa tataagatga gtcgttttat tttttatatt 1200

aactttgcta gatatatcaa atctgattta aataaattaa agtggtttac aatttggaat 1260

gggaggtgta ttttttattc aatataattt gactttcaat ttctatatta aagtaacatt 1320

tctgttatcg tttttggaag gggaatgaca gagcttgtga caaagtggca gacagctcca 1380

ccattttgca gaagtttgag tttgtttgat tagtaacatt cacttctaac ggaacaaacc 1440

ttaaactggg cctaaaagtc atatacgtca caggcccaca gcatcgatac ctaccgaccg 1500

tttgccgatg tgacagaaca gacaaaaaga acatgtgaag cttggttttt atctttgaac 1560

aggttgaaat ttaactactt tatctacaca tcaccaaatg catctaaatc aaaatggaaa 1620

ctggcggata tatagctcct cacaccttca tattcgtaca gaggttagct aagcaaaaaa 1680

aataaaaaaa caacaaaatt gcgtctgccg ggagtcgaac ccgggtctat tgcttggaag 1740

gcaattatcc taaccgttgg actacagacg ctgctgtggt aattttattc agtttatgta 1800

tttatcacat gtttcagtac aataacttat gaaaccaact tgttattata gtattagtgg 1860

actccaattg cttgtcaaag cgtttcgcat gggacttacg aaaactaaca ctgtctaaac 1920

tcctagaata gagattaggt catgacacgc tcttttctat cccaatctct gttacatata 1980

tgctgcggaa tatgacaatt tgggtcatag tcgtctgtgc ccaagactac atttgagtta 2040

gccgagcatt tcatggagtg cgagttctca aacgtaccgt ttctacaaga cgtacgatgc 2100

ataaaaccga gttttttcta ctaaaattgc acctttatt tgcgttggac tttcattttt 2160

tttttcaata atacgtttct catccttgca gatgcgacac cgctctgact cacacttgtt 2220

gcaaggaccg gcatgtggtt gaa 2243

<210> 3157
<211> 2005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121804_G1, chr3:183477883..183479887, Cluster 19

<400> 3157
atctactcct ctaattatac ttgcacttat cgatgccccc acggtaagtc ctcctacttc 60

ttttagtctc tcagcctaaa ccttagcgtc cgtcattcat cgatctatcg gtatggagtc 120

gtttgatctt taccttcgtg gttgactgtc tctaagcttc atagttgcga ccacttttgt 180

agtggtcagt ctgtaaactc aactaaagct gataatcttc ttgagaatca tttatcatac 240

tcagatacca tagacgcttc atagttgcgc cgcgccatca gccacaggtt ggcatattct 300

gttgctgtca tctctgcctt gagttaactg gcggtgcata tagtcgaata tcaaccagta 360

ggagagatgc acagtaagag atatatagaa gcaaacagaa gctcgcagct tttgcacatg 420

aataatttac tgatgtgccc aatcgatcag gaaagcacaa gcatttttcc tgttcctaaa 480

gttgaggaac acaatcagac cccacatcta tcatgtcgtt cctttcccag cctacaaatt 540

tagcattagt ttcttgttag acccgtacac atgcaaatga tacaggggct cccggccagc 600

tactcaattt cttagcttgc tagcaccgct ttgtgttaga cagagcggcc gctgtgatct 660

gcagacactg ttggccgaat ataacacatt tattcgatgt gttgtttata tagtgtatca 720

tatacaatat gtgaaacgga gagagtagaa tagaaacagg tggtggctag atttagattc 780

tactacaaca gtgtcacccg actcagaaat aagtgccacc agtacgtaca ccaatatgaa 840

taagtatata acatttacaa gatatcaagt taggtgcggc ttgtcctgat tttgcaagca 900

accttatttt atgttcgatt ttctttgcaa ctaatcagca agcacctcca tcttgttggc 960

caaaagattc atttaattaa gagataacca tagtatatat gaaagacgcg cttaatattc 1020

cagaacaaat ataattggac atacattcat gtatattatc ctttattcct ttttctgaga 1080

acgtgactat attatcctat aatatataat gcaaagtccg atggtatgat gttagatata 1140

tatgaacagc ctcataaaca cttcacctta ttatttctga atgcagtctt atgcattcaa 1200

ggcacacttt acaatttata gagcattttc tttatggagg tgaagaggta cttatatttc 1260

gtttttttgt gtgtatttgg tccactgatg tgttcgtcgt catcccccgg caaatttatt 1320

aatgtgtggg gtggtcaaca aatctgtttg acaaatacct gatatttttt aaaaactatg 1380

cttgttaata aatacataca ctaccataat ctaaaaaaac cacaaagata gctaacccca 1440

ccccaaagaa aatagctagt ccttagcagc catctctcaa gcaaaatata ataaaaatga 1500

atcacaaatt cacaatgaaa attttattaa cctggtggtt ggccctcaaa aaatgttcca 1560

tatagtcatt gaattatagt ttgtaattca aaagaagtga tttttcaatt aggttatagt 1620

tctcaaagta aagttttgca ttggtcctgg tatatatagt aggtctatgt cccctaccat 1680

tgaaatttac tcttcgaaaa acgctctgct aggaataatt taatttatat accgcatgat 1740

tggttgacgc gctcgccaac gccaggctcg cgctggcctg gacgggctga gatctaggaa 1800

tctcccgtcc ccgctcatgc atccaattgg tgaaaaagcg gcctacattg cacccgcgcg 1860

tgcagatcag tctccgcctg tggcggatag catgaaacca atcatgcgaa tacttgacgt 1920

gtgcatgcaa tggctactaa gtgaaggatg aatttgttct aaatggttag ctagccttcc 1980

gagatctaaa taatataagt agcta 2005

<210> 3158
<211> 3459
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122079_G1, chr3:184842218..184845676, Cluster 19

<400> 3158
atttgtggaa gcttcaactt atgctacaac ttatattcaa tcactagcac tgccattagc 60

gtactgagat atcgatacca ggaaacgaag tgtgctcctg ctgaaagtgt gaataccaac 120

cgcaaaaatc taagctttat aatgcgaaaa ataattctat tgatctaaag tatcggaggg 180

gactgaagac actatatgag gacaatcaaa ggtggagatt gtttgataca tctattcccc 240

ggtactgact agacaatata tcaaagcaac ttccaacttc agagagccca aaactggtga 300

ctgaagacac agatgaatga tctttgtgtt ggtacaaata taagtattca atatgcaact 360

tcatgattaa aagatgttta tgcatttata cctaattgtt cataaacgcg cgcagggcgc 420

gcgctctgga ctagtatgct tagcgcttga cttgttttag ttttttttc ctgggacgtt 480

gactacgtga gaacaccgag tatacggtct tctgagaatc taacgtaata tattacggcc 540

ggggactctg gtatatatat gctttttgag tagcgtgatt aggttccaca gtacagtaca 600

ggtggccacg ctttctcact tgactttcca cagcatgctg ctctttgagc agcgctactg 660

ctgctcgttg accatctatt attctatctt tccacggagg agaataagca ttcaggactc 720

gatcgacagc atgcatgtgt tacgattgcg tcgatgcgga tgaccatacg atgtttttat 780

actcattgct acataacact gacaatataa ttactagcta ggttctagat ccttatatta 840

aaaaccgttt cggttccaaa ttttctttgg gaaaaaaaat tgcatcgaga cttcctaaaa 900

aaatagtatg gaattgctag agctagtaca acgtggggat tgaaacgaag tcatgcgaaa 960

ccggattgtt ggcaaccgtt tctccttgcc atgcataaga aaaaagacac gactctaaca 1020

gctcctccac tagttccaaa aaaacagtcc ctaaaatttg ttgataacca aaaatcatgc 1080

tcccacggta ttttaaatga ggtcccccat acataccatc tttctaatta tccttattta 1140

gagcatcttc actagtttcc taaaaaaata actccctaaa ctcagattta gcaatatata 1200

ttaagaacaa caacctccaa catatgttaa tcctaacttt aggttattaa atatttttt 1260

gaattatgca aactcaacgt ttctaggtat tacttgcggc ttcaaatttg gtttcattcg 1320

tacgacaaag tttaataatc accgttcttc tcttgattac tatttttatt ctgtatgaat 1380

tatagtcgtc agtcgatttc ctctaatttt cttttggatt ggtcttcttc agaatgagga 1440

cggtagattc atccttttca cgactcaaat cattcaaagt gcatcacttg catacatgtt 1500

cgatggtgta caagtgattt tatggtgcga ttgacataca aaataggcta ttgtgggggg 1560

gggggggggg ggtgaaacag ctccctaagt ccgcggacta aatagggatg tttgggaagt 1620

tggtttattt gaggacttca tttaagaaac cgttagagga tgatttttat taataactcc 1680

caacaataat tttagggcct tctttttgtg aactagtggg gatgctcccc aaactttgag 1740

agttgtttcg cagtctcaat agcctatttc gctcatcaaa atataggtat tagttgagag 1800

agaatttcga ttgtctaatt cacccgcttt tagacgccat tgttcttaac accatgggtt 1860

gaagatatta atgcagtaat atataagcat tgtttgttgt gtgtgtgtgt gtgtttatgc 1920

tgaaatcaca aatttagttt gaatttggca aaaaattaaa aaataaaaaa attggtggga 1980

gaagttgcaa atacggttgt tcttaatttg tagttgcctc tacaaatggt tttatagaag 2040

aaggttgtgg tacctagccg cctctataaa tctcatttta tagagatatg gctggacacc 2100

agtctctata agtagctgat tcgtagcgat aaaaaactag aggcgacttg gatatctgtc 2160

tctagaagca tacgagccgc ctcgatctag ggtttaaatc tgtagtagtt tatgcacttg 2220

tgtctttgcg aataccctt ttgtcgtgtc gatttttct tgaaaaatcc agttagtgga 2280

ctattattta tatttgaagt tgagctaaca ctgaaaggaa cgctcaattt acttgctaaa 2340

ctatgacatg catgacccct gcagcattgc ctgttttctt ccatggaggc aatcctttcc 2400

tttgactgct ggagttgtcg cgctaggttt tcaatccaac tacttgccca gatgatatgg 2460

tacggtgtgt gagaccgact tattatagaa cgttccagtt gaattcctgc gtgcgaaaac 2520

aaaacagttg caccgtacca ccagtagtta attttgcagg cgcgagaata caaaaccgcg 2580

gctccaaact ttatttgaaa cgaccagaca accaaagctg gtctgggcaa ggaatttgtt 2640

cgtctttata tgttcgtgtt ttgaccgaaa tatataggtc ggtaggttag agacatgccc 2700

ataattataa acaatcggag acgtacaagg acttggggga aattctctct tccatgcatt 2760

agcgacgacg accaaggtgt gtgtgctagg aattgacaca taatttcctc cggggaaagg 2820

aagcacacac ggcgcggttg tcgtcagctg atccagccag ctaggtcggc gtagtcgtcg 2880

tcaagagagg cgccccaagc aggctgaatc ggagcgatgc ttgctcttgc aggtacttgc 2940

gcagtcgtac gcggtgattt agcgacttcc tcttctagcg cagaagtaac agcgattggc 3000

tgtgcctgtg cctaatcagc attcgtatct cacgtacaca gacgcgcacg gcgcatgagg 3060

attgaggagt cagccggccg gtcggcagaa agtagaaatt aactcgctgt ttgcacttac 3120

tgttgccaag taagtactcc gtataaagag agcaagcagc tagccacgca gctgatctct 3180

agagggaaaa agtatagttg tttagtgttc ccttttttcat gctagctagc tagctaggtc 3240

ttcgccccct ttgaatctgt ccggaatcac tccgaaaggg cgccacaggc agctcaagcc 3300

gaccactacc tgcatacaca tggatgcgga aatgtagcca ctaatcaaca agctgctgtg 3360

ctgtgctgcc gttaatggag acttgtgtca tggaggaaga catgcatatc ccatgcgcga 3420

gtgctggtag agctgcgact gttttagtaa cgcgggata 3459

<210> 3159
<211> 1529
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125160_G1, chr3:201603247..201604775, Cluster 19

<400> 3159
tccaaaggtc tctcttgttg ttttactact tcattacagt cctaggtcca ataatgggat 60

taaaaacata atacacggtc atagtggcct ggtgtaactt tttttcattg ggcacggtgt 120

tcatttacta atttaatcgt tgcatataat agtgtactag caaccagtat aatgcctaac 180

aacaatgata agaaaacaag tttattcatg gatgtaaagt ggcttactag atgtttaaat 240

tgcgatagag atcttcacta ggattctcaa agcaactagg gctatgtagt actagtagca 300

cttgtacggc gcgtcaataa tgcatgtgat gagcaatgca aggacacaat catgtactca 360

ggttgactac ccaaacaggc tatagtacat actccaaaca ctgaattcga acgtgcaaaa 420

tggtgagaaa agtagcttca attcagatgg ctgagtttaa aatactaccg agtcctacct 480

aacctgtgta gccttcccat cagaagaata tgccagctcc gtccagaaat ttattggcct 540

cctggcagaa ggcaaaagga gctaaaaggg tagctttcga cgcccatcat gtgtgtttga 600

aacttggagc taggctgagc tactatgaga caatcgacta atgggttggt taaagatgca 660

aatggggtta aagtattttt tgtcaggtga atggaaagcg cttccattaa ggatcccctg 720

ctgcgctagc ttttcagtgc cacccttttg tgattagctt gctcttcttt ccttctaaac 780

tgtaagtcaa atcgaatcat ctcaagtttg atctaattta taaaataaat taatgatgtt 840

tatatattag atgagtataa ctacattttt attaattata tttttatagt ataataattt 900

gatagtataa gtctttgtag ttttctctat agtttttta tcaagttgta ttgacttttg 960

attgactcta cacatgaaag ttagaatagc ttacaaatgg ggagagtaga tcacagcatc 1020

atcattacgc tgcaaattgc aaatgacaat cctagctcat aatattacag ggagcacatc 1080

ctgtcgtcct ttacaccttt cgtgcctcat tcatggttac gcagctggca aatctctgac 1140

gtttacacaa tttaatcagt ttaaaataaa ttatagctac attgttcact cgtgtgtgtg 1200

tatgacaacg ttatttctca ccctagatga taatcactca ccctgcaatg attcaaaaaa 1260

taacttataa aatcacaaat aatttaacaa tttgttaagt tatttgaggg tgggtgatca 1320

tcacctaaaa tgatgaatag taattatata tatatgcata gacttgatgg agtatttaca 1380

aaagcacatc attaagatca aatgaatgaa atcataggtg gggaacctct ccccttctac 1440

cgacatgaaa aaaatgcatt tgtcgttggt tccaagggtt tttgtcctaa gggcgcgaca 1500

ttgttattat tactatacac tatttttct 1529

<210> 3160
<211> 1800
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125571_G1, chr3:203524920..203526719, Cluster 19

<400> 3160
aaggatggtt catggttggt acaacaatat acacgttaat gtagagatac agtaaagttg 60

gtaaacagta atcaaggcta attatattag tgcattatat cgtcggtggt tagtatgaca 120

aaaataagcg ttgacgttca caagtatcgt tctggttgtt ccaaggaacc tattccaaaa 180

taaaaagaaa atgtatggta aacatatatt tttgaggtat aaaaatcaaa acatgtgatg 240

ctctcacatg ggtttagatt ttcaggatgg gaacgtcctt tttgttgatt ttggatcttc 300

atgcctagtt ttagttactt ggaaagctaa cctgagaaca taaatagaaa atatgtatta 360

agcatgaggt tatatgctga aaagagtgat atatattttt tttaaatgca tgcaaagtga 420

aactaaagta gtctttactt gtatgatagg ttaatgctct agaaacctgt tttacagagt 480

atgccatatt tcttttcata taacaatgtc gtattagtca gaaaaaaggt catctgttta 540

aagtatttac aaatggttat gtagttatat ttgaaccaat aacaaatttt ctttggcatt 600

ctcatatgga aataagtatc tgttctaagc atctctggaa gacgggaaca ttggtagctg 660

cttacgtatg gaaaccatta caaacctcaa ttatcctttc gttattatca gtttggcttc 720

ttggagaaca ttttcaaagc aaaaaaagtt actttgtaac ttctataagc atgctttgta 780

cccatcttaa aagaaataca atcgtacatc aactaatctc aaacaaatac acagagtata 840

ggaagaatga gtgtgcacct tgcactttgg aaagttgtga accactcacc aagctaaaca 900

tcattttcta cgggccaaaa gcccatgaaa aaatgtgaga gttagtaagt ggtgaataaa 960

aaacaagtga ttatagtaaa gaacagttct agaaagaatg tactgtcgac tgtcttagaa 1020

gatcttaaaa cgaaagaaca caattttaca tctttttca ggaaaaaggc cataaaatat 1080

tgtaaacgta ttaacatgaa accacaatat aaatggccaa gtaaataatg taaggaaaaa 1140

ggtaaatttg tgataaaaaa agattgtgga tctaagaaac gaagaacgtg gaattttatt 1200

gcaaattttg gtaagcatct aaattttata tctatgtttc attttgttac cttttccact 1260

ttcatctaaa tttctataat tcttgctcct tcaggcttgt cctctccata acagctggtg 1320

gccaatgcta acaggttatt atttttgta taactggcaa actaagctta tatcacccta 1380

ataattgttt gtagttaaat tgtgagtaat ccttgacatt ttgtgcagtt ttaatgtatg 1440

ttatcctatg aatgcccctc atattttccc tgggttctga tactgcttcg tccgatgggg 1500

gagatagggg taagtgatcg tgtctagtcc atggtgctgc gttttttctt aatcaccctt 1560

gccacctggt ttaacagtta gcactgtttg ttgccccaaa gatatacatt gccttgctga 1620

ttttcatttt agtagaggtt cacctgtgaa acctgaacat tggcttgagc gtgctttgct 1680

acttgcttgg cagttcctat gcctgcttgc taaccactga ttatattccc taggttctct 1740

ttgacatttt ctaactatgt ttttttaca tggaaaagtt aatcggtgtt acctttcctg 1800

<210> 3161
<211> 1719
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126470_G1, chr3:207739235..207740953, Cluster 19

<400> 3161
gtataggaaa caatcataca caatcctatc agggagatcc ttgcctactg agaccaatta 60

accaaataag gagcaggcgc acaaggcaac gagcctgtgc agccgtgcca cctaaactgc 120

ctaaaatagc acacgctaac aaatattaac tttgtgtaag tgcaactggc aaatagttac 180

agttatactc aactcaaaat tgaaatagga tgcttcaaga gaggttactt gtgctgacaa 240

taatacaatt tttgtcagga tttgctcatt ccttctcttc tgagagaagg cactgcattt 300

tcagcttcat ccttggcaat ggtgcctggc acacctattc cacctatgct tgcaaggtat 360

gcacatgtct gaattgagca aaatgtgatg gtttttatt ataattatgt tttattgttt 420

ttttccagaa ttactaacgg gttgactcag tcgttgaaag ctttccatgg cagatcattt 480

acttgtgagt acaagtatgt ccatggctca ttgcctctct aagatacttt ctgactagag 540

ctactcaact aactatatgg ctattttaag ataaaattat ttctaaaaaa catgaaatta 600

ttttatgaat tgctattaca accctgggtt tccagctgta ccagatttca gaaaggtttg 660

cctttgccct gaaccacaat gtcttccaag agtagcttaa acctaagctt tctatcactc 720

atgaagtcct gatttcagac tcctgaattg aggagaatgt ttcaaattct tgacagtttg 780

gaagagtcaa taaccaagaa agaaatattt tcttttattt ttaagcataa cttgtctatt 840

tttgaaggat catgaaaact ctgtagtgct aaggtaatat gcccacactt attcatgatg 900

tttgtcgagc ctcaatagtt tacagtcatt cctttacacg tacaaagttc atggctataa 960

tctgtgttga ccagaagtag ttacttccat aaccattcac caagtggccc atgctcggat 1020

ccccagttta ttagaaactc tctcgataca aaacactgac tttttctcat taatgtcact 1080

tctaggtatg atggtcagcg tgcccagatt cacaaagcac ttgatggatc cgtgcgaata 1140

ttttcaaggc aaatgaaaga atcaacttcc agatttcctg atcttgtgaa tatgattaag 1200

gagttgtgca agcccgaagt gtcaagcttt atactggatg ccgaggtcag tttgactctg 1260

aaggatttgc catccctaca cttgtttggc ctcaaactat ttttgttatt gttttgcaaa 1320

tctaggtggt aggaattaac aggaagaaag gaaatgagtt gatgtcgttc caagagctat 1380

cttcaagaga aagagggaat aagcattcct caatttcaat agagaacata aaggtgagca 1440

tgcgatttac tacacatcat taccactttg gactattaat attgttttgg gtcgtacttt 1500

tatgtgacta atgccaatga cttttataaa tttgaggaat tattgtagtt gtccatgaat 1560

ttctctaatt gattttgtta tggttcacaa ctttaattga acaaatcata gtcccatccc 1620

aagtccctag tgacctactt ccctttgttc gatgaatatg catctgtcct tgttgtattc 1680

ggtctcatat atagagtcct tgttgtatac cctctctat 1719

<210> 3162
<211> 1519
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126605_G1, chr3:208525862..208527380, Cluster 19

<400> 3162
atactttgtt aagtctgtag tttactgtta tgatatgtta gacaatgcag taagtgtcat 60

cactcatggt ctttgtattg catttaattc gtgttccaga gttctatagt cttgttacag 120

gtgatcgtga aagctctgta cataatcttc catatatgtt tatgctatct gatgtttcgt 180

actttaattt ctcaaagatg tagttttgga ggactgatgt ttttctattt ccttttgtag 240

ttcgattaac attgagttgt gtcactttga tgagtttgag acttctcaga gtccaggttc 300

tctttttca tcgctcgcaa tatttgacac tgaatactgt cagcatgtta ctgttttctg 360

ttttattga tattctgaaa acatagtggt ttaccgaatt taaatatact aaagttttgg 420

tactgttttc tgtcagcatg ttattgtttt ctgaatgaca cgaataaatg acagtagaaa 480

aacagcatgc acaaagatgg acgagaatta aatatactga agttttggta caatgaaccg 540

aatttagtta aaactgctgt agttgttcat tattgtatga tgtactatgc aatgtagatg 600

tgtggttcac ttgtctagat tataaagcat cgcacaacaa caagctactc ttcttattct 660

atctttttc tgccttgttt tcctttggaa ttgggacaga tgtaattttg gcatgcattg 720

tatttctcaa aactctcttt tcaaataaac aaagatgcaa ataagctaca aaaatattgt 780

atatatttca ctgaaacata aactaaactg agttcttatc tttgtgtagt aaactgaaac 840

ataaactgaa ctgaattctt atccttcaat gtgaaactct agattcatac tgcatgtgtt 900

cctcccataa gatatagatc cttcgatgca aagaaatacc tctggtcaat tcacaacaac 960

ggagaaatga atatttatct gaacaaaggt tgaggtgtga tgcttgattg atttgtttgt 1020

gtaatgtgcc agagaaacta gagttgattc ttcaatttga accttgccgt gaaggtctga 1080

tagttgtcta tgggagatgg tatttgaatt ggtggcaatt gctatccctt agcaaggcca 1140

accagaattg agtatttact aaacttatct gaaactaaca gatgcctctg ttcagttttg 1200

acagtccctt cagaggcatg atcttgatga ctgtgtgggt gatgcaacat tttgttttcc 1260

tatttacaag ttattttaaa attgagtatt tgcaagatgc tttaaaattg agtatttata 1320

aaattgactt tctttatagt atttgcaaat aaaatgtttc ctaactggag cttgtatgct 1380

atatttgttt cataaactta attttgttga tgcaggacta ctacaaagtt ctagagacag 1440

cttaattttg attaacaaca caatatatga ccatacatat gttattgttg cacttttttc 1500

gttgcaacgc gcggacatt 1519

<210> 3163
<211> 2168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_12793_G1, chr1:70138723..70140890, Cluster 19

<400> 3163
gaagcttatc ctgggaagtc atcttagatt ttgggtgctc cttatgcact tcagaatcag 60

caagagaatc tgaactttgc aagttttgca agactaatac ctaactttta ggtaactcgg 120

atgaaacagg aacgtataaa acatgctggc cagtttattt tagagcagct agaatcagag 180

catcctgaat acacgattga tggagagaag atacatgggt cgagatgata ctacaatgta 240

tcaggagcgg aggaacatat attcaaccag ttccataatt gtttgtgtag aaaagagaca 300

tggagagcct atatctcatg tcagtcacta ggctcaagat ctttttcca gtcatgctat 360

tgttgcaaag caaccatatc aacataatct aggtcgagtt attgaggcac tctgaaatcc 420

tattaattct gcacttttta gaaaatctgt tcgacatggc gtagttcctg gcatgacatc 480

tcctatcaaa tcaccaatat caacttatac aaggtgatcc aatccccaag ctctatcctt 540

tgtcttatta gtccattttg ttttggtatc cttgttcttg gagtgacagc agatcatctg 600

atgtgctagt ttctacagtt cctattcaac gacattattg ctcctctcac ttttttaact 660

tttagtaatc agaaatggta aatgtgctta ttcctttaga ggatgtgact tatggtctta 720

ttttctactc tctcttttaa gtgctaaccg atcacatctg acaaaagttt gggaatcaaa 780

ctagttaggt gctaaccgat agattgtggc acccatgctg ctaaagtcgt tgccatcttg 840

ctaaacatta tatatgtaag cttactgaat acagtaccct agaacaatgc catatttcca 900

tcataaagat tctctttgat ttcttcatat ttggggaaca aatggaggtt gcaacaaggt 960

tgttttcatg tttttagtag ggttatttcc ttttgttaac tgataatttt ggtttgttcc 1020

attgtgtttg aatagtgaac attcagtttg caaaatatga atgaggtctt aactttagca 1080

tatatatata caactattgt attgctgcat agtttatgaa tggggctgga gtttggctct 1140

ttgagtttat tttactgtgc ctttgagatg aacgcaacac tctacaacaa agctagcctc 1200

ctgattatag ttcttaattt attctaaaca aagaatacaa atggaggttg aaatatttgc 1260

caacttatcc ctttatatgg ttacgttaaa acaccaaatt gaatggttca agtatgtttg 1320

agtgatgggg tcgcctcagc atgcagaata ctgacaaaat gtaatatggt gttaataatg 1380

aaacaatact taagtaaaat gtctaccgag aaaaaactcg agttgtaaca tggctatcaa 1440

agatggataa aaaatttgag tacacaaata tttgctaact catgtggata tcggtttatc 1500

aacaaattaa gctaaaatga tttgaatttc ttttcttaag catacacatt ttgttctaga 1560

taaactttta attgctatag agctgcaaaa gtaatacaaa aaatggtccc agaattttgt 1620

aaccaagaag ctcatcttgg atgagattca acaatttttt ataaatatat agtaataaca 1680

aaatgcagtt tatggagttg ctattgttac agtgactcaa acttacattc agttcctacc 1740

atgaatacct ttctttttt gtgtgtggca ttttaccgga agggtagctt ataatttgac 1800

aagcaacaat attctgcata taaattctag ggctgatgta ccttttttcc ataccaagtt 1860

tagtgaacat aaaagtaaaa cataactata gtgatttggc agtagttaaa agggttgttt 1920

aacaacataa aagttaaatt ctagagtgaa tgaccagtat cttacaaatg tcctacttaa 1980

gataaacaca aaggttcgtt tctctgtctt gatatttgag agcatggcta catttgtata 2040

tggcaattaa atattttaat attttccctt ttcaaatagc taggcagcat gaatctgttg 2100

ctccaaactg aaacatccct agtaattcct cttgtatcca aggtcccaac tatagtcttg 2160

ggaatgga 2168

<210> 3164
<211> 1775
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_131861_G1, chr4:3035643..3037417, Cluster 19

<400> 3164
cataatagtg tacctgaata taaattatat ctggataaat agtaaaagtc gtgcacctag 60

aaaagttgaa atgacccata aggctattat tctcaatgtt agttttatgg cgctttcatg 120

cacatttaat agcgtgtcac gccataattt tagatgacat ggcaaagcat ttaagtggaa 180

cgagtttcgt gggatgaaat tagttttatg gggggacgaa accatatcaa cactcgtttc 240

caatgtctta gaataaatcg tgtgaaacct tcactgagaa cgatttattc catcttcaca 300

tattttacta acttgtattg gtcattcggt tgcatcattt taattggtac ggttggtcta 360

tgaaatagtg aagtacaatt cttcatgtca ctctctcgat ggtgtggaag ctttggaaag 420

agcgttatga aactttcgct gagaatagcc tagtttagaa tatgactggg cgttgtttag 480

tttaatggta taatagggaa cacacataaa atctgtgagt aattataaac catattaacg 540

tacgtacgta tgcatgacgt agaggtagac gtttcgaaat ccaaaacgaa ctcgtgcaat 600

aactttaatt gttctatata agggcttatt tgtttagata tgattctatg tagattaaat 660

ggtattgatc agatttaaat ttataacaag ttaaaatata tcttaatcac acctaatcca 720

cgtggaaata aaaatatctg aacaatcttt tgtcccacaa agattcgtat ctacgacgtg 780

accgcctgct gccccggtga atggctgggt cccctagcta gcctcgagga ggatgggaca 840

tgagctgcta gatgcaccag ccacacatga gggattggct atatacacta gctactatac 900

taggggcatg tccagaaagt aatgaacgtg acccgtaatg ccagtgcgtc atgaaaaaga 960

caacactgat cgatccatct ttgtctgtat ggtcgtatat gatcaccaat tatggagtat 1020

gctatatgtc cttttgtgat cattcaaata tgacctgacc tcaccaccac ctagctttca 1080

ttttacagtc gacaaaagca aataaatagt aacgactgtg gattagaata attgaagatg 1140

atgatcattg cattgccgcc actgtgcact aagatctact actacgacga cgacgacgat 1200

gattgacatg tgacgttgca gcaaaggggt tatatataga ttccacgaaa ttatataact 1260

ctgtataagt tgacaccttt ttattattca aaatcatcta tctctaaaaa aggattatat 1320

tttctttttt ctcacatcta aaaattcgat ctttttttaa acgacatcaa ataaaagaaa 1380

aaactggcca aaccaaagtt atatatctca aaagtctata cagctctgta attgacaatt 1440

aagttttgta tttaaatttg gtacccccgt gaaaatcgtt tatatatttg tggagacaag 1500

acaaacgtgc agtgttgggg tggagctggc ccaactgccc tagaaagcta ctcaagctaa 1560

ggaggcatgt agtgtgtgcg gtagtgaagc gtcatccaaa tacagtgcac aaagatctac 1620

tagatctata gcagcagcat ggtgttgtga ccacacttca ctattaccgg agagctgaga 1680

ccggccgtac gtcatctcct gcttcttgtt tgcataattg cattggtgcg gtaatttaca 1740

acttcaaacc ttgagcaaat tatatatata ctacg 1775

<210> 3165
<211> 2012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134810_G1, chr4:15826843..15828854, Cluster 19

<400> 3165
taataagtta gacccttaat aaattttatt ttaaaaatga atagaaatag cctgaatcta 60

attttttta aaatgagatt atactcagct tttaagaaag caagtaacat agtcacttag 120

tgtctggctg tgagccacgc accagtacat gaaactgtgg acaccagttt tacagagaga 180

aatccaaaag ttcagaaata ggctaaaaaa cgcaaaccaa cccacatagc aggattattt 240

ctaagacttc cagatgactt ccatgtaagc aacagcttca cgcctcggat ggaacctgtg 300

tagccacaac cacaatttca tggtattcaa catcagtctc ctttgtgttc agcaacatcc 360

cccaattctg caagtaagag atagcatcat acaagatacc cattgtgcag tcaggaaatt 420

ttttcttagc catcctattc ctattcttcc aaatggccca acccagacca gatatcagga 480

ataaacgcat tctactagat ccctgaatct tagtagaaga atggttataa aagaagtcct 540

ccacagaaca agggttatta ttccactcaa aaatttgttt ccaggagctc cacagaaaat 600

tcgacagccg agtttttag gtgctctaaa tgctcataat aaactggaaa aagaacatga 660

tggctgccga agtttgcgtg ggcaatcagg ggtttccttc tctcgagtcc tggcagaagt 720

gttgaagaat tgtttgagta ttcagcacgg tggaattttc agctttgcag aacttcgaag 780

cgaaatactc tgactgaact gcctgaaaaa tacaaggttc tgttttctca acacaatttt 840

ggttcgtcca tttgttactc tcttttcttc ttagaaaata agttattaca tgtgtcggat 900

agaaatgctt tctttttat gggaaatttt tttagtacac ggacaaaact acttataatg 960

tatttgtttt ctccatttac agtcttggga ttttttttta ccctttgaa cgggaaggtg 1020

aacctatatt tttaattgac tatgaaagca aaatctgaag aacacattga tctcagcagc 1080

atcatggata gacgactgaa tgctaactat cctcaaggta tctcgggagc atagggagta 1140

ttttccagt agcatgaaaa atgagatctg ataataacta tattaatcta ttgaatatat 1200

aatgttaaaa ataatgtatt gaaagaaacg ggttgtttgt tggtgtcagg cttgggccac 1260

gttatactga ctaaggagga gcagacggca tctcaggtaa tgtgtgcagc gctgccctca 1320

tctgagtgac catagcaatc tctagcccag ctcttgctta atcacggcat gtttttgttc 1380

ccaacgcctc tcaaacccac aacaaatgca aatccttcct cccatgcttt gccttctact 1440

atatcgagaa tacttatcag acaacagaaa ttatcatgta gctattattt ccacttccta 1500

tcctgcctgt gtgcacaaca atggcgccac ctttttattt tgctgttctc tgcgatgcat 1560

ttatgtagta ttgaactcaa tgagtgcagt tatacatata cacctaacaa gaccagccag 1620

atatatatgg ttctacagca ccggatcact tttcttctaa atcaagtggg tgccctccta 1680

ttgaatattt ttttgtaagt atattggagt ttaggagtta ttacaatgaa accaagaaag 1740

agagaaaaaa gaacacaaaa ttgcgaacaa gactatccat tgctcaacta acaggatgtc 1800

gaagcaaaac tagtgatgtc tcatatgtat gtttgcgtgc taattatttc aaaggaaaaa 1860

aggaattttt gccagttgga ccgtgaaact ttaagaacgt ggacatgatc ttcctatttt 1920

ggggtgatta gtcctattga tgcctaacaa acaaactgat aatgaaggga tagattatct 1980

aacctttcaa gtataaaaca aacataggag ct 2012

<210> 3166
<211> 2578
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137288_G1, chr4:29004725..29007302, Cluster 19

<400> 3166
ccttattttc atggtagttg acatataata tttttatata tttttattat tctaaattta 60

tgtataacat attttacttt gttagctttt ctaatactaa cacatacttg tcaaatagta 120

aggaatttag tgaggtattt cctcctgtcg agctcctcta gcggcacata gatttcccta 180

ttttgggaga gtgcttttag cttagtagtc atcgagagat gttgatgcac atagcttcat 240

atatgtatat tcatgttgcc gtatctgaac atgactaggt aacaagattt gaatcaacta 300

attttgtatt ttaatttcac aatctaatat atttttttgtt atttttagga tgacgagcac 360

gagcaacaac aatatcacta gtaggacgag tagtaggatg atgaaaatca ggttagcgtc 420

atggacgatg acaccactga ccaatgtgtt tggatgaggt ccatgctggc taggtagatg 480

accttgttgc cagaggctcc cgaggaagct attgaaagag tcatgtagtg gctcctctta 540

tagtgcccac ttgagaggaa tacaagattg ttacctgatg gtgatagaga agggtttcta 600

atatctttgt tttgtatatt tattaaaaac tttatggaga tttatatccc acctttttatc 660

tgtaggtcat gaattgatga gaccttcact tgtacttcta ctacaagtag gttaacttag 720

tcttaggtaa catctgctgt tttcattggt tagggatggt gactatgctt ggtggtgagt 780

gtgttcccaa aatgcacaag tagtgtgcca tgatttttag gtaagatagt tacatatttc 840

cttttgttat tgatgttttt aaagtataat gcatatattt ctttatcacg gtttattctt 900

gtagttacat tttcatttac caactgagga aatcatatga cccatgcaca tatagtgttt 960

aacaagaatg catggaaggt tataaaggac taagtgtcct atgcctatat acagacaaat 1020

aatattcatt gcaaggagat tctagggcaa ccaatggata agaagcacaa ccttcgtcca 1080

tctatttgac tgaggagtaa tatctttagg aaaaacattt ttaaatattt tgtattatac 1140

ttccaacata ataattatct atttataaac aaatatatgt gtaggtgaca aatttgtgga 1200

tggtgaacca ttaggatgct tactatgctt tatgtagaat ttgagcttcg aaagaattct 1260

agaatatgtc taattagtat agaaggaact aataatgcaa tgatgcatac tcatggcacc 1320

aacaatcata tatgcaaggc taaatgcatg gtaagctata ttatatcatt tatttccaac 1380

gactaccaca tataacttct atataaggaa ttgtcaccag agtagcttga ggaaaatcaa 1440

ggtttatatt gctagacatt agggcacata cttcaaatcc agagtagttg tgcagtcagt 1500

tatgcataaa ctgtatggtg agttgtctac acttttttatt tattatattg agttttatta 1560

ttagcttact tagtttgttt ctactataga tgtaatatgg tcagaaaatg gtcaatcgat 1620

ttggacagga ttacaattag caagtgctaa tagttgatcc tttagttgtg cacgctagtg 1680

gaggtggaaa gataaaaggt ataatattgt attttctcaa gttatgtatt acaagtataa 1740

atttgatgtt ctgaattgct tgtgttatag gtactccata tttaatggaa tgattgactc 1800

tagataggtc aaagctaaaa aggagtgtcc ttattgatat ctctggatgt aggatgtagc 1860

agtcaatgaa gcaacaaaca agaggagttg ctttggattc aagaagcaat gatgttgcaa 1920

tgagcataag aggcaacatc aagagtataa ctggcaacga taggactacg agcaacatca 1980

taatgagtat ttctccagct acataacaca acaacaagct ttccttcaca tatgttcgac 2040

tggtcttcta ttaccattta tagatttaaa catagccact ggtgttttct ctattttatt 2100

caaagaatat gttacaacaa aaggggataa acatcgagtt ccccatgttt gagatgtcac 2160

cactgctaca acgaggtcct cctttgccga taatttgacc ttatataatc gcatatttag 2220

caaacttaca tcaattttaa tggaaattag tcaattaata ttaattataa aaatcacatt 2280

tatctcaatt atatctaaac ttagttaatt tagctaaatt aactaagttg gcttaattat 2340

agacaaaata atcaatctag ttcgattata gcaagactta gtcattgtag agcaaattaa 2400

tcaatctagc tcgaattcta acaaaactta cttaatttag ctaaacctta catactactg 2460

tcatcataac tcattgtagc taattgtaat ctgcggagtt tccagactcc tccaaaatta 2520

gcagcaccta gagatgccga caatgagagg tccaactcat ctatcaactc tacccatc 2578

<210> 3167
<211> 2505
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_138985_G1, chr4:39256937..39259441, Cluster 19

<400> 3167
accatctttt ttttctcctc tttctcctcc atactgtatt ggctcgatca gacactaatt 60

tctgtggata taacataacc atcattgttt cgcttcaagt ctggctggca ttaccaaatg 120

tttttgtatg cttcatggtt tgtctctaaa ccttggatcg ccattagttg ttgtgtcgat 180

gatgcagaag tacgggtaag ctagatatgg atgcaaacag cagaatattc catgttcttg 240

cacatggcaa attctatata attatggggg tacaaagtag gctccttttg aaaggcacac 300

atgagcatgc ctataccatg tgtttattca tgttcctcta tcagttcaga gagattgcca 360

tgaacatgct tgattagttg attgccttca tttggcagag aaaccaatat cctaagattg 420

gctggtgaac aggggtgctc tcacgtgaag atgttatggg acagaggaag attcttaatt 480

atgtaggatg tgcacagcat agcctgtttg tccgttcatg ctttctatcc ggcagatcga 540

cagagacaaa gagagttgtt gctgcatgct attgctactt cgctagcaca aaatgacatg 600

cacatgaact tgtctgcatg cagcttttca gcccagagga gaaagttaag ggttccttgt 660

agaatatata ttcttgtttt cttattctta ttttccaact ttattcttgt ttaggaatca 720

atctaaatgt gtagctaaca gcccaaccag taactaacag ttaattagct gcctggatca 780

aacgatttat ttcttaaact tactgtctag atcaccatct gcagaaccat ttggaaaatc 840

gatttctata cgacctttc atcctctaaa tacttgtcat atcctgttgc gctctatctt 900

tgactagcga gaaatatcta gatacctaat taaaaatcaa gcagatagtt ttttttctca 960

ccaagatatc tatttgcatt gtatatccat gagaaagaac ataaacaaca tgaagttgct 1020

ctaagactct tcatctttgc cggacctgca acaacttgga taaacttggg cgtggtgacc 1080

tttttgttta cttcttaccg ccggtttgta aaatggtaac gacgaacacc acttttagcg 1140

acgccgagca aaactgacgg tgatgaagtt gttgttgttg ttgttgttgt tgttgttgtt 1200

gttgttgttg ttgttgttgt tgttgttgtt gttgttgttg ttgttgtaat gatgaggagg 1260

ttggcaacta atgcaaatgg agaggtatag tatacctact agccaactgc tgctagctac 1320

tgtatatata tacgagctga tgatcagcaa cggacgatgg atggatcaga tgcgggacaa 1380

aaccaacgct ggcaagctag ctagctctga aagcagaggc agttggatct atatatctgc 1440

aggaacaaac agtacctgta cgtctccctc acacacagca ggacaggccg gacaggccag 1500

gcagatcagc gtagacgatg atgcttgctg gagtaccggc tccttcctac tatctcatgc 1560

atgcaggagt acgtacgtag atgcaggttg ttagcggtta gttcaagcgt ttggtgtgct 1620

gctccatcga tcactcatca agcccatgca atacagttcg gttcagttca tgcatgtatg 1680

catcgtgtgg ccgacggtgc cacaacgtcg ctatacattt gctttttctt cttcttttta 1740

taaagtccag caaattaacg gagggcaagg caaacaaaat gacaaggatg aatcatgtag 1800

gcacaacaag aacacgaagc acgtcgccag cctctcttgt cattggatgt tcgaacgtct 1860

aagtccaact ctcgttttcc tttgacttca cctaatagga caccaaaatg acacttccaa 1920

tatatgtgct ataaacaagg acatattatt aattctggat agccaaatcc agggaccaaa 1980

agaaacaaat taaacataca cttactttgt tcttgttatc acattcaaac tcaagcgaac 2040

ccttgggtgc aaaaaaaaaa tgcaccttcg caatcacaca aagaagagtt cttaatgcgt 2100

tcatcgatgg agaatcgggg gaagcggaac ccagtgctag aagtgcttgt gtctctctcc 2160

accaatcatt agaaagtaag tacattgcat taaagttttt aggaccatct atgcattgaa 2220

atagaaaaca cctctaatgg tcccaaatat gttaatgaca ccaacttatc attgatttaa 2280

tagtatataa caaggaacac caatttttt acaaataatt atttacatta aagcaacaac 2340

atatgtagaa gcatcgtata cttgtgacct gatgtctcga ttgagacaca accttgctta 2400

ctagaatcat agtttcttgt taagacgctc ctgcatctat aaaaacagag ggacatgtgt 2460

attctattaa gacgctcctg catttataaa aacagagggg cctaa 2505

<210> 3168
<211> 2891
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1479_G1, chr1:7707315..7710205, Cluster 19

<400> 3168
gtatatacaa taccttctta tctcacatta tatgggttgt tttggctatt aaatgggggc 60

aagggcactt gtgtttgacc aattaatggg gtatttgtag cccttaatcg gctaactagc 120

cattactact aacctagata aagttaatga ccgctagacc gtcgaaccac cgccatcgga 180

ccaacccaca gggtccaatg agacacaacg gtaattgttg tactaccgtg atagcactag 240

ttgtttggac ctcatccttg agcgcatgat ccagtgccct ctatcggacc aatccaatgc 300

ccaccataac ttgtatagtc acttttttatc acctattaga accattcact ttagtctaac 360

gaggcatctg ctcatgtggt ccaagaacct ttagccaaaa ccctagctaa aatagtgcga 420

ccatgtggtc caatgcatgt tgttagaccc gtgcgatgtg cccctaaaat tctcaggtat 480

gatcagatag actgttggac caacatatta gtttgatgag atattgttca catgtttaga 540

tggtcgagcg ctcttaggtt atctatgtgg aggcgttgga ccaatctact atggtctgat 600

gacatagaaa cacagggtct agtgcctcaa aacccttccc tcttgtccaa attcaaaatc 660

atggtattgg gttttgatcc ttacttgttt tgggtcatct cataagacac atagagctaa 720

tagacagcta gtgtgcacca tactgaactc attagaatta tttaagttaa actactagtt 780

catacccccct ttataatatg tcaaaggaaa acaacatatt aaactactct aagtgattct 840

taactctaat cgacacttgg aactagccca tccttaatct tgtctttttc ctttcaaaaa 900

acttaataaa atccataata tataggagaa taggaaccat acttcgccca aacatgttag 960

tggcaataat catatgtcgt cataaatcac cagaacactt gatggtctag atgctctctc 1020

aaagcttgta taacttgact tcatatacaa tttttgtttt ttgataaaca ttaaaactag 1080

aaaaccccca aatttttacc ataatcatag tagtatcata gtaaatttga ggctttagac 1140

ttattaaagc cttttcttgg tacttgatca acaccaaccc tacatgactt tgttgtagaa 1200

gtcatttaga tgctattaag cataaaagca aggtttgctt gataactcat gttctcgttc 1260

acttaacaaa acaattctag aaagatctaa cttaccattc catgttactt ttaaattcca 1320

aacttcctaa tccttctcca ataatcaaga tagacaaaga tttatgttag gcatatagaa 1380

gagaaccgac ccacaccatt tatacatact tttgaaaaag gctagcacac aagaaaaaaa 1440

ctgttgcctc tatctttaaa aaaattaagc cttatttttg acgaattgat cccaatacct 1500

tgtcactact ttgaaagatg tgcgaactaa gttgttgtcc tattgactac cacttgatat 1560

gtattgttta aatccaaaac ccactccata atttgtgact aacaccaaag gtattacatg 1620

tcgcatctct tgtgtccctc gatgcatgca acttacatag gggcattcct tctctctcag 1680

ttcctcatct tagtgatagc caccgatcaa tggtctcctc tccgatttgc tctagggcag 1740

cgcaacaccc ttccctaata cgcactgggg caaggagtgg gacacaccct cagcgatggt 1800

acaagattgg gcagcctcag gcatgtcggg cttgccatgc aatggtctat ccaatctggc 1860

tcgagcctta taggtagtgg tggatctagg attgaactaa aggaggggct gattttatag 1920

tgactatcag tagagacaac acaaactagt agagggacac atttttctcc cttcttcttc 1980

ctcgtctctt cttctctacc ctctacttct ttctccaata gagtatgggg ctatttttcc 2040

ttcttcctct tctactcttc acctctatag ttaatagagt ttcatagttc tatgggggct 2100

gcccctctag ccccccttcag atccacccca gcttataggg tcatgcttac gccataggtg 2160

caacctttgg acaggtacaa cattgtttaa tgagtcaatt gtgttgttct catgtgtcaa 2220

cctgatttat atggtgacat gctttgccat ttatatggtg acatgctttg ccagatctga 2280

gtcatgccta gctatgcgat ctatttgact atctatacat taacacacag gtaggatgca 2340

gattggagga gaagatcatt gtagatcagg gtttagaatt tcaccgattt atacaaaaaa 2400

aacattgatt ttcatttcta tcggtggcct ccgttaaatg tacttactag tgatttctat 2460

tctattttgt ttagattttt aaaatttacc taaaattcta tgaaaaatgt aatttttagc 2520

ggattttctt cggtttccgt aattttcatt tctattagac ccctccagta tctatgtttc 2580

aacccgtagg tgaacacaac tacagagtca ataggtacat agggtcgagc cgacaaattt 2640

gaaggccttg tactaaactt caaaacagat tctattttct aaaaaaatat tcaaaattat 2700

attgtaatag aatacatgag tgcaaaaaaa tactagataa cacttgtgac tcttcataat 2760

aaatttgtcc atagcccttt ttacgaaatt atttgtaata aaatacataa ataaatgtct 2820

ctgctatatt aaagcactag tttcgacggt tgctccgtgc catattttta caaataaccc 2880

cttctattgt t 2891

<210> 3169
<211> 2531
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_153296_G1, chr4:135895446..135897976, Cluster 19

<400> 3169
gacatggtct ttccttattt aagatggaga tatttgtcca ggtcagctct ctctcccaca 60

tctaattctt ttttccatgt agaaatttgt acttggtcaa ctaagtcaaa ccccaattaa 120

tgacttttta tttgtaattg tagtcgaatt atgactcttg acttaattga ctaggactct 180

tgtaaccctc acctatggac tatataaaga gaactataca aggaggggag ggactctccc 240

taactagcga acacattatc tactgtatta tgaattagat tgaagttgta tgcacatatg 300

tttgatttga aaattttgtg ggtgaattga tcgttttaac ccgcaatatg atgatacatt 360

ttaattttac aattgtagac acatcaatgt attttatttt ctatttaatg aattactgaa 420

caaagtatat gtttgtgaag catctttgag ttcccaggcg ccggtggacc ctgtcctggt 480

ggcaagacca gtccaatatt tgtttcttca cctagactaa atattagctc tctcgacctt 540

tttctccaag taagtcttct gtcgatacac actgaaattt ttgcaactag ttgaatttgt 600

tttttatatt tgacattgtg tgaactgtac tcccttctga attaatgcca acacatggaa 660

ccttgatgat gttttatgta ataacgcacg attccaaaaa cctacttgat ttggtttagg 720

ctaaccctca tatttgcatg tctattcctg ttctttgttg ctcatccttt tgcaatccat 780

ttaccaataa ttcatttaca tgaattatgt agccattgct ttatgaattg gcaaaataga 840

gctaatccat gaaaacgaag catgtttgtt gcagaattgg ggtaatgttg gtatctaaaa 900

aatgaaaccc tatatatttg gttcactcta atatctcaat attacaaatc aaacacccct 960

gcttgtttca acaatatcta ccaaaaacat gtgatttttt agataacggg acaaggttga 1020

agcttctacg tcaatcgact gcatggtgat aaagatgtat gtatatatat tattacacta 1080

ggcaatcgat gctgctatgc atacaacaaa atgtgtgagc acacatgcta ttctcatttg 1140

caacaaacga ctattgtgtg agttgtgtga gcatgatgat tcccaaattc gagtaagaag 1200

ccttcaacgg atgactagct agcatagctc atgcaagtcg accaacggat ttgggtctca 1260

ctacaacttt gaagggtttc aactctagtt ttcaagcatt agaaattgtt ttcttttaag 1320

atagagaggt ggggaggtca cactccaaaa ccccatcttc tccatgttat taatataaaa 1380

tcaaaaggtg attcatcata cctttaataa ctaatcacta gcctcaaccg atgttttcat 1440

aaagttacac tctgaaatgt cttaaaaatt gagacattta tttgggtcta aaaactggaa 1500

caagggttga tgacattaaa atggcgcatt aagaaacctc attatcgaca atatatattt 1560

ttttatatat tttaaaacaa atcaattttt aattttgtat gctgacttca ataaatttta 1620

tgatttcaat ataaatatat attttaatta ggcttatgca cttacacaag atcatatgaa 1680

attttcatgt ggcgctactc atattatgtg ttatggatta aaaattgata ttactaaaga 1740

aattgtctta gatctagtaa cttcttatgc aggggcgaag ccacattggt ttttcttggt 1800

acacaagcat cagggtacgc caatattttg ctaacatcta tattattttt agtatttata 1860

atctatatac tttccttat atttgacaga gtgtacatta ggattgtttt agatttacta 1920

tatacctagc caatgggttg tcaacacggc ctgagtccga catggctcgg gccgatttag 1980

tcgggtcgaa gcacgacata gggtctgttt ggatgtgtga gactaaacta aagtaactaa 2040

aataactgac taaaatttag tcaccaccta tttggaacaa gtgactaaag cagtcatcaa 2100

tggctaaacc aaccactagc aagcaccgat tatttgaaaa gtgctcgcat ttatgactaa 2160

accagccact aacaagcgct gggtgtgggg accagcaata aagtatgtgt tttagtcggt 2220

tttagctcct tcttggaagc taaaggagct aaaagtttta gtcactttta gtcctttgtg 2280

tttcaaagtt tagctcctaa actgactaaa ctttagtcat tttgcttgag tcacgtggat 2340

ccaaataggc ccatagatag atagcggtag gggcaaagaa ttttcctatg acccatgcca 2400

aatctactaa attttctttt cttcctttca tctcaaccat cttatactgg attatagata 2460

cttatacata gttatatgga tcaatcccac aaccatgaat cgggtggccc aagtgtaggt 2520

ccaccctcag a 2531

<210> 3170
<211> 1527
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156281_G1, chr4:153646043..153647569, Cluster 19

<400> 3170
tatactctac cttttcctat tgtggaagga gaatttacat gcttatatag aatagcaact 60

aaaatacaat ggtaatggtt atgcaaataa tttcaacaga attaagtaac attcataatg 120

caattacatt atatttaatt aaatcaaaca acatctgaat tcatgtatac acattggtag 180

tgtacttgat ggctatatat acgaattatt gtctagtata agtaaaaatc cctgtatgtg 240

aatgggtgta caaacgagac attgaatgta ataaatataa aaaacaaatt tgatttagtc 300

catatttgat cctatgagtt gtttaataac tgagaaacaa caggtagctt tttataaatg 360

ggtagttaga tagctgaacc ttatttataa tctagttgat tggattagct aaagactttt 420

agggcttgtt tgattgagct aagccttata aaaaaattgt tatgaaatat aaaaatgtta 480

ttatatattg tgcgttacga aaaagttaca agatgttttg ttcaaacaag tacaaaactt 540

atattgtatt ttacataaaa caactgtaaa atgtctctct attttcaatg ttttagaaac 600

agaaggcaga aactaaaagc aaggtcaaag ttacatttaa aactctacta accaaattta 660

actacttcta aaaaagtaac ttctgatttt cacccatttg gttagttttg ccttttttgg 720

aagacaaaac actcctaaaa tcccaaccaa agacattgtt agcaactttc tgtactagct 780

gtagctaagt caaacatgat catagcataa atttacctac taaataactt tatggatacc 840

ccacaactca cacattgcta caaaactttg ttagacataa actcattgca tgtatgatta 900

aatttaaatg ttttgatttt tttataaaaa ttgggaaagg caataaagaa atatattaat 960

aatataataa acagatcata ttaaaatgat gtaatggtaa aacaaatagc aatatatgta 1020

tgttttctat attcttatat gttggaagta gtggttgtgt ttagtgaaaa tgatgtggat 1080

atcttgttga cgcgtaccca tacacaaggt accctaaaac aacatagaag gtcactctaa 1140

gagataagaa ctttgtgtag cacgagatga tcccaatcat atatcagaca tgacctggcc 1200

aacttgacta ggttagccct gaccataatg agctcgacca aaatttctcc gacccgaacc 1260

tctaggttag tcctcactag agaatctcct tacttggacc caccaccaag tcggtcctga 1320

cctcaaacac ctcaagcaag ctctgatcta agtctccctg atcagtaagc atcaacctcg 1380

gtcagggttg aaccagtcgg tacatccatg atgggacacc atgacctaga agtgacataa 1440

aaagtgtatt taagacatgc tgacctttaa gcgtacaccc ctaacatagg gtatacacga 1500

cataaaggag tgggtactat acaaagg 1527

<210> 3171
<211> 1583
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157006_G1, chr4:157088738..157090320, Cluster 19

<400> 3171
tgggctgaac caaacaactg tattgatatc cattcccttc cgtaatctga ttacgttata 60

atttactgaa ccaaacgcca cctaaatatg ttcggtatgt aataaagggg atgttgtatg 120

gttgctcctt atcggagatg tgactttgtt tttacctcgg ttttttaaa gttggcagtt 180

atgcatcccg tttaaaaaaa cgaacagaca gttcatccct atttcattat tagtccttag 240

caatgtaaac tcaacccaca aaaaacgttc atactcttgt atcgttgtcc ctcctttatc 300

gattgtttgc aaattggccc cactttgata cgaaagctta gaacatagtt gtgacataaa 360

tcagactata cattttgaaa ataattattt caactttaat ttttaaaata ttttaaaaat 420

caataaaaaa aataaaagat atttttaga aatttaacaa aaaataacaa tatttagagc 480

cgacgacctc taaatagaga gcatgaggac agaatgattt tgcaagcaat gtgaggaggg 540

cgatgcgatg gcatcggagc aagatggtac cggccaacca tagcatgcac gcggtgaccc 600

cagcgtcagc gaagcaaggg gcggcatggt gcaagaaggg gtggcatttg cggattgcat 660

caagcaatgc gagaataagg taaacggatt ttgaaagaaa aaaaaagata gacatgacta 720

taacaagcga agtcatgctg gttggtccag accctccata gtgtaaaagt gtagcctaat 780

aaaagtttga tcccaacgat aaacatgatc gctctaagac tattttcaat aatttataca 840

tctttatctt ttactttaaa ttttatttta taaataatgc aatctatata gcaaaataac 900

acaaaacact agcgactctc gcactgtccc ggaaaaagca gttgcgatac gaccgaagcc 960

ataataagtc acggagacat aagccagcac gtggccttcc ttttatgcgt gcaatctgtt 1020

ctaatgttgg ccagtggagt atatgtacta catgacacgt tacatgcatt atatagttgt 1080

tatgcatttt gatttgggaa acaaataaac tgttcgagat catttaagag tacccccagc 1140

aaaacctcag ccagattcct cgacacaaag gctaaaagat gaaatccttc tatcctagaa 1200

atcgaggaca tacacaattt cattcctact tgttcgcaaa ccaaatgcta cctaagttca 1260

cactcgacac acccatgctt gctgccgtcg agatcgagtt ggagatggtt tgagaactgg 1320

agtactggac agtaggatcg tcgtcagagc tcagaacgcc aaaggagcaa gaaaggacca 1380

cagggcagcc aaccgtgcgc gcacactgcg ctgtctgcgc actgtgcacc acggcccggg 1440

caacgtgcgg tggcggggca tcaggagcgc tcgtgcgtac gagcggatag gtgtgcgctc 1500

ccggcttgcc acgtgcgccg gcaccggcgc accgccctct ctctctctct gccgtgcggt 1560

cccggacaga tacggaccca gct 1583

<210> 3172
<211> 1457
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159519_G1, chr4:172513963..172515419, Cluster 19

<400> 3172
tttaagaata ttttcgacga ccctagctaa ggcacagaaa acaagtcgtt tctagagtaa 60

aaaaatgacc ctaatataac tgtccacata aaaatcacat attattagtc atttatcatt 120

caacatcgta ccacatacac atgatcatgt cattattcaa catcatttaa tattcatcac 180

atattattca accaacatat tcaaaaggcc aagtctatca atatatgcaa tctatttcgt 240

cattcaacat cacatacata ttcatgtcat ccaacatcat atcacatatg attcattcat 300

tatatttata tgaccaagtc ttatatccat aaagacaacg gcaaagcaag tccagcaaaa 360

agcaagtctc acgggatttt aggtcattgt agctatgttt gctacctcca gaattgaata 420

tgttgttgag caatctagta gcctcttcat cctgtgtaat aaagaacaaa gtcaccatta 480

gagataaatt atgagttata gcattataag taacaaaatg aatgtagtta ttgagaagta 540

acaaactaat ctcctctcta catgttgata tcactggtag aagggtttgg tagatgtttg 600

ccacatttac tcctaatcct taatatatat aagttgaaat agattaaata gctagggtta 660

cgttgagtaa gtttagttag aacaagacat gtatagttac attctctaaa tttatacaaa 720

taaagctaaa atctactaag ttgaactgca ttgactaaat tgatatgaat ttaggtaggt 780

ttactgaacg tcaactacag gagctcttgg aggatagact tctagcaaca tcagtggcgg 840

tggcgacaac tgtcactatg gcaaaatatt tatatggtca tgtcgctgct gcaatactaa 900

ctataaatac aacttattag taataaaatg ttaaatggtc gaatgctagc tattttgaaa 960

tcatacatac actaatcata ttttttttgaa cgatatagtt agcaaaatac tcttgatgct 1020

acctatatta ctcttattgc ttcatgttat actcgattgg gtcatcaatg tcttctacaa 1080

ttctcgatgg ataatatatt gctctgtgcg acaatatcga ctactactac cacccaaact 1140

ttgagagaaa tatcttctct aagattggac atatcttgag tcggtcactc cagtaaacat 1200

ggtgtacctt tgaaattcaa attatgtaaa ttttagttga acataaaaac aaaatttaag 1260

aaaatataat ttcacggtgc ctttccacta ccactagcat gcaccaccat cggatcaatc 1320

agtcccttcc accaatcaaa gttcttgcca tggcatataa ctatcttgtg ttcatattgc 1380

ttctacaact ataaaataaa tttataacat agagtctgaa tgttttacaa gtaactctat 1440

atagtgaaca accgacc 1457

<210> 3173
<211> 2393

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160237_G1, chr4:176533261..176535653, Cluster 19

<400> 3173
aagtgtttaa taacatattt tttatcaaaa ggaaggcttg aaaatggtgg tgcatgaaac 60

actattgaag accccaactt aaaaggaagg cttcaaaaag cttgaagagc tactttactt 120

tgttttatat ttcaaatttg actttagaac aagacatact atctagggga tactaaaggt 180

ttgttgggtt gatccaagtc ctcgtaatcc tctacatatc aaatacatgt aacctacaaa 240

agctcgatgt ttttcatcca tattgttctc tagtatgcat ggaaccttca cgtcaaagag 300

catccatgaa ttatggactg agcctaaatg ctctacctag ttgattgatg gtgggtgttg 360

tgggaaggta tttgtggcag aactgcccaa tttaacctaa tcctaattgt acttgctagt 420

catttaacac taagtacata ggagatcaag ttaaatctaa tagtttgttg agtacattca 480

aaggtagaac ttgaaaatct atgttttcat caaagtaata aacaacaagt gaataaatct 540

tacaacattc ttaaccattt acatatcaca aagttatgat ttcatgacag tggaagcgtg 600

atcattttat acaaagagaa caaaatttaa acaaatttta actttaatgt agaggtataa 660

gtgtataagt aaaaaactac cgcaatcata acataagaat ttccttgttg agcccactag 720

gaggtattca cgcataacaa tgcttagctc catcacctag gtactaccta taatagggga 780

aacacaactc taattacaca atgtactcaa aaaagactta accaactagg tggatgcagt 840

ctcccgattc ttaaggatgt acacgggctt ttggctagtt gttttggata ctttttttaca 900

tataagaatt actaataggg catgcttaca ttcaaatttt tagtagttag gttaggttca 960

tcaactaacc attctaggta agtacatgca ctactttcaa gaatgtggta agcaatcata 1020

gcatatttca tcaatagaca taagattcaa tatcgcctcc atgttctaat gttactagaa 1080

tgatagtgac atgatcgaca tgtggcaatc atatccaagc atgatggtga ttgcaataga 1140

cgtacatcca actaggcaat tccaaacaca tccccataca ttttgaagga gcatgtgcaa 1200

ggcaaccatt ccactcatac taccaaggtg tgaaagtgac atggacaccc aaagaaccca 1260

ccataggggc cccgtcctgg atgagttcca tctaggggtg taatcggatc gaatatagac 1320

aaatcttgct tctatcatat ttgttttcat aattcttttt ggatttagat cggatacaga 1380

tattactaag ttgtttcgaa taatatttaa atggatatcg ttatcttaaa tatgcaactt 1440

tgattatatg aatacaaata caaatcggat acagatcgga tactgaatgc ccggactcga 1500

gtacagatca gatccgagct ctcttagatg gatagaattt gaatacaggc ggataatatt 1560

tgtaccgttg acatccctag ttccaaccta agtttaacca tggacattac caggctcttt 1620

aacaactccc aaatagaaac acttcaataa actgtttacg accctcggta gtacgaaata 1680

ctaagcatta tggtcatcac atatctctac ttagtggttt ataaataagt gttctcgaac 1740

tcattttgaa ctctctaatt cgtagcttgg acatacatac cttgggagat atattgctag 1800

aggagagcat actggtgatt aattgcaaga ccaagaactt gtttagtgct agtagaaagt 1860

atgaatttgt ttgtgacatt gcccggttta ggtcaagtag aagttgaagc ttgttactag 1920

tggtgattgg catgacctaa atgtgttggc acttgtggct tagtgatttt ctctttacgg 1980

tgattgttga aggcctagga tttctttgtg ctcattttga gacatgccaa tgacaaaaga 2040

agggctaact gtatgtttag ctattgctcc aacatagaat aaggggttat gacaacacct 2100

caacatcacc accaaggtgg gaatatattg tgtcctattc catttattag tttcagctac 2160

tttgttgtct tcacatctac tctcgataga tctctgccca aaagaaagtc gtctaggatt 2220

agtttaataa tatttgttat atatagacca taaatatcaa tattgttttg atgaaattta 2280

aaaagaggac taaaatgaca ctttttttgga cgacacaaca ttgtggtata agacacgtgt 2340

gcggtggaga atgtttttga tgtcgtagat gctacgtatg gcagctgagc tgt 2393

<210> 3174
<211> 2160
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160492_G1, chr4:178082325..178084484, Cluster 19

<400> 3174
gggaaagctc aaggagcgat tcaacgcact aaagtaagtg ttgttcccat tgacgcgttg 60

ttactcgaca aatctttgct tcattgactt tagaactaag aaggcataca atataactat 120

ccacaatatt gtggctcaac tttgcttatg tgaccagaat atcaaggatg tagaaatgac 180

caaaagcact cttgagacgt ttcatcccag caacaaggta ctccaacagc agaaacacaa 240

catccaaacc taaacaagga agctaaggct gttgtaagta gtaggatagg gagctacttg 300

tatatccttt cagagtggtg atgtagtgtc gtagatgaaa ctagaataac cttgttcttc 360

atggccaaag gtgttgatat caggatattt gtcgtgctcg tgtcattgct ctagatcttc 420

tttacttctc atatggtata tttctatttg tctttggaga taagcaaccg gaaacaactt 480

ttgtttctag attgccatgt gcctttgaat ggcctctagc ccctcgattt ctgcatcaac 540

atcatcttgc tcaaccagta gctcgagagc tttctttttt ttgcctttga tgactagctt 600

cgatctagtt ggtgcctcat tgtagtcttg ttcttcagaa ttgttagtac attcggttat 660

gacaacaatt atttcccttc atggatgcat ggttatattt gttaatgagt tcatcggagg 720

tggactataa atattgtgga cctattggaa ttctaaaaga acaataacat gattattttg 780

ttatatcctt ctccctttta aaggtattga aggggagaag catagagcaa gtttagtgta 840

tttgaatgac ttttgtaaaa ttaacttttt agaaataacc atttaattgc atgtgaatgg 900

atatgtaaga caatatgaaa caaatgattg ttggtggtga gatagtttca tacaggaggc 960

gataatctaa cccaataatc aaatagattt ggatatcaaa taacatattg aacaaacaat 1020

ctttcatgga taagcttcac cattgttgta ctttctaagg ttctccaaag gcaatggcat 1080

gataggcgca gtgttataaa tggccgatct ttgtagtagt agtactattc atctatttta 1140

tagggatgaa ctggtataca cattcatatg caattctaac tttgccccta ttattacata 1200

gcatttttc attcgagtga gtatatttat gtcattttac aaccctgatg tgatgtacac 1260

atcttttctt taccttatag acctttttgct cttttcttct ccgcagcttt ttctgatcaa 1320

accaaagcta tgtttccctc ttctttagct acgtgcatgc tttagcttgt tcaatgtcca 1380

aagcttccct aaggatgata atatttaact ttgaatgacg tacttgatct gataaaatgg 1440

ttgaataatg atttcattgg tatggacctt tgactagagg ccctctcccc aacaattact 1500

aagaaaacaa agttactata gatgacatct gatcacctat gcattacatt atgatgatgc 1560

agataagcct cccctaagaa tgtgccttgt atatgcagat gtcgttgatt catccaagtg 1620

gcgcttctca aatacatata ccaaagaacc ttcactaaca aattcaatga aaataccaaa 1680

ggtagtttct tccttcaaca aacttggaaa tagtgattct tttttcaaaa aaaaaacaga 1740

tatcatctat actccaaaat aaaacctgaa acacttcgtt cactatgcag tggtattcgt 1800

aggtcaaaat ttcacaccca ggataatagt ctgtggtcaa aaattgtata tttatgtgtg 1860

caaaactaaa cataaaacta aaaaaatcaa gaggggggaga ctgaaatgga tatgaagctt 1920

atgatgtgct tgttagataa ttatgtactt gtaagattaa attaatttct aaaacaacca 1980

cttcgtaaac aaggaataaa atacgtatgg caaaaaaagc atatccttgt agtagataaa 2040

atctatctca tagactcatc agtacttcta gaggggattg cttgaaccta gtcaaagatg 2100

agttcatggt gttgttgaag ttcgtagaag tcgcagtgca gatcaactcg gcgagaaatt 2160

<210> 3175
<211> 1820
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162732_G1, chr4:190957892..190959711, Cluster 19

<400> 3175
ttgaaagttc ttttcattct atctagagtt gcaatttttt agattccaag aattgatttg 60

aaggaactaa atctatatgg tgaagaaaaa gggacactga tactctaaca agagaactaa 120

cttaagtttg ataagctaac ttctaatacc ttctagccaa cactttggct aagtcaagta 180

attagtaatt agtttattag tctttagttc cattgttaga gcattagtgt cacttttct 240

tgactgtcta gattttgata cctttgaatc aattattgga tcctcataaa tttcaaactc 300

catatataag atcagtgaaa agaaccttca agagagcaag gcgcacctca ggcaacatta 360

ccactacatc ttccaactat ctcagcagct aacttagcat cttcctttgt tggagatgtg 420

acttttcat tagtagttag aattgattca ccatctaaat atgatgtaga aaagtcatcg 480

ggtgaatcta tcagtgtaat gtcattttga tttgcatgaa atgggcatgg atcaatgaga 540

aattttgact cacccaagcc tatttttgc cctaatccaa acttgaataa cttcgatttt 600

ataacaacta atgatgtagt catagttaat atataacacc aacatgcaca tcaagccaca 660

acactttcaa agcatacaaa catttgattc acatcaattc tctaaattag agcgaggaat 720

aagagcaaat tgaattatta tcttaaggct tggaattgca agtgctctcc tcataccaat 780

aacacatggc ctacttcgga actagatatt tcaaaatata taacacttga tattatgtat 840

ttgtttcact ttgtatagtg tgcacatatc gagttatata gaaataaatt ttgtgtattt 900

gacaaacacc agtttagtaa aaattgcgac caaaagaaat gtccatccta tcagtgtaaa 960

ctacaaagtc atcaatcaga aaattcaagc cattttagtg gagcacatgt tttggctaat 1020

ggaccacact taatatggtt tgtgttcata taaaccctta gtcattaaat aagttcgtga 1080

aggatttaca gggtgttctt tgcatcatta gcaacacaac taaattcatt aattaagtca 1140

agaagggcaa tgcatttgaa gttttatttg tctgcaaggc tgcaatcatc ctgtggtggt 1200

caggttggta catcattaga aatggtaagt ctatgttgat ttttccttt taaaagaaac 1260

atgattaccc cggttatata tgtatacata ttttttgtt aaagaggaca aattatatac 1320

aagtaaaaag gatgaaaata agagaaatgc aagaatattg tagaaattca agctagatga 1380

aataactctc ttttgctcga agcataagca taggagaagt taggatgcat atgcaaaatt 1440

gatttgcaat tgagtttttt tccaaaccta aaagagctag actaagtata gcttaatcca 1500

tatattaatg actatgcata ttgataaata taattttact aggaaatatt tgtcaaatcg 1560

ttgataaaat gcaaacatat tcttatcttt tgtgcatcac gtagaagccc tcatctgcca 1620

tcaagaggag gctcattggt tgtgcatgga ggagccccat ctaaagggaa caccattgtt 1680

gggtgtagag aaagggtcat tgatgccatg tgtaggagag gggatgtcac cacctggtat 1740

gggaaagatg atgttgctac caccgatgtg gggaagaaag tcaccgctgc cactagttgt 1800

aaaggaaagg atgtcgtcgc 1820

<210> 3176
<211> 1725
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_165218_G1, chr4:203481631..203483355, Cluster 19

<400> 3176
tcttgtgtgt attaacaatc actgagatgg cgaatggcca acagattcca gttgactgtg 60

tgtcgtgcta gatttaggtt ggatttgatt tgtaattttg aaggaaggaa ccaatctaaa 120

cgcaggggtg cagacagagt gtattggagc agcaacccag cagtagcagg gtttagtgat 180

gctggcgagg tgcaaatgct gcagtttcgg gcaccaggga cacggacggc aggcacacaa 240

acaagcgaga gcgaaatcaa ccaaacagag cacaggcaat tccgtcgagc acacaccgtg 300

catctactat tgactgcggc ccacagaaga ctacagagga gggcctgcta gggtccaaca 360

ggacccgttg tggctagatt gggatcggcg tacggatgct gggcagcggc ccgtgctggc 420

ccgtgccgca atctgcaaac acaagcacag caatgggttg tggccgagtt caggggcgat 480

tagacgacga gcgctgctct gaatctcgta gaaccacaag tggtgcaaga acttgatgca 540

ctcggaagaa caccaactgc aacagtcaca gcctgcgcga gcttcacaag tactcaagta 600

gcctcaatct gaataagaga ttctaagacc gtttacagca gtctacctaa agtttaccta 660

aaaacactgc tttacattgt agagttactg ttcgtgtaga ctgcagttta aatatgggta 720

cggatatgct aggtatggat atgctagaga taacctaata gaaacttaaa caggagatga 780

acaaaaaaga tgcattctag agttccacca aagagatatc cagattgtaa tctgcacatg 840

ctacattaac cttgttattt aggtgggccg tattgattaa tttgtccact gcacactgat 900

atgaggaagg gaaatcaagg agaacgagga tctttttgct ccgaatgaga ggagatatgt 960

ataatccaga tccgtgagca tcgagtccag aactagcgag aaataatctg aatgcaagca 1020

gcagcgatgt accttgagat ccgacaagcc atgtgagacg ttggcggcgt cgccgcactg 1080

actggaacgc aacggagccg cgccgggaat gcgtacacgg caggtggacg caacgccgtg 1140

cctcggaggt gattttgcca ggaaggatgc cgcacagtgg acaagacacg ggagggagac 1200

gacttgactc acgggtcaat ggcatgaacg cgtcgatcga cgagtgaggg gtgttgtttg 1260

attcctgtat ggaaaacacc ggtttttaag gaactaattt ataaaattga aatgattcta 1320

aacatgttag tttatgactt aatttataaa aattagattc taagttttta aaaaccaaga 1380

agttggactc ttctagttaa aagataaaaa ctagttttct taaaaactag gttacttacc 1440

aacaaggcct aaagtttaat tacttttaat atataaaata ttaaataaag taattaaact 1500

aggcctttca aatggaattt ttacagaata aagtttagtt cctaaaattt aagagggtga 1560

tttaaggaac caaacactcc ctaaatattt gaatatcaac tatgagtacc aaatatatac 1620

ttaattatat ttaataattt tttctggtat tttagtattt atttgtgtga ttagttttat 1680

aattagatta tatataatat ctttaatata tttaattata attat 1725

<210> 3177
<211> 1966
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16535_G1, chr1:91780347..91782312, Cluster 19

<400> 3177
caagtacatt gctacaattt tcatttatac ttaagtatag aatataaaac ataaatatat 60

gtgtgttgtg ttggataggt gggtgtgaat gtggacttag agccaataac catggtttga 120

atcctcattt atacaaaatt ttagaatttt tacaatttaa atgggccatg acgacggtag 180

aaaccatgga aacaggaaaa gtggtgattt aatatagtaa agacttattt ttggataccc 240

ccacagaaaa taaacactat ttttagtgtc gaactttagt gagtgtcttg ccgccaaaaa 300

taatcttgta gccgttaaaa ataaattatt tttgactaaa gacattttgc ccccttggt 360

aaggctcctt taatggctcc ttcaacgact tcttgaaaaa atctaccaaa agggaggctc 420

tttgatgggc tcttcataga aaagagggag gagctcttcc aaaaaccagt aggagctgat 480

aactagaaaa aggagcttct attggcttct ctattatact tttctcttcg tcgacgctac 540

atcgtagaag aagctacaag agaagttata tttccaacca aacagggtgt tttttcagag 600

cttttcttga aaataaggag agatctgttt tcttagagga gccggaatca gaggtgaagc 660

tggcggagga atagccctac caaacgggac cttacttttt cacgatcacc tatatatata 720

gtgttatttc gagggagtaa ctaatttact gattctagta tgagcatagt atataatcta 780

gatgctacta attatccaac tgtctttcct aaagagtgta gcccaattga acataaacgc 840

atgaaaccaa tacaaaatat caggaatagg taagttttac aaagaacaaa aaatggcaat 900

caagcaagca gcaagggtga tcgcactggt ccgtatataa tagtaaatca tacagtatat 960

tgtaacgaac ttatgtacgg tagcatcgct cttatgaaaa agggtctagt tgaccaaatg 1020

aattttaact tactagttct gatacttcat tgccagaatc catgggcata tgatttgtta 1080

atcgcgcaga aaaaaattag catcgctttc aggtttcagc taatccaaca ctaacggtct 1140

gtttgtttca ggttaataac ctttcctaag aacattgctg catgtgcatc tttcaatttc 1200

ttgtatgtac tggaatcaag tgtctgttca atgctatggc aagtctatgc aacaaagttt 1260

gcttcagtac cttacatggt ccgactaagg tcatatttag aagcaactca gtttttaaga 1320

aaccagtttt tatttttaa gctagaagat gctagcttat ggtatttaag aaactatgaa 1380

tccaatttct ataaactgag tcatgaactg gtatctttgg aaccaactca attttcataa 1440

actagtttct taaaaactgg gtagttccaa gcaggcccta agctaatcca gataagaagc 1500

acatcacaaa taaaagctct atacgttcgt gcgtgccacg aattggcatg aatcaggttg 1560

caacaaacat gtatctgaca agtcagccca tagatattaa atttcgttct gacaactgaa 1620

ccacaatgaa ccaaagaaca atttttgacc atcaaataat gaaatgaaaa cttgacggag 1680

tggtactgca gacacacgtt gaaacgaaca tgcaattcga gctttgcttc caagtactaa 1740

gaattctatg gcacataaaa gcagattgca gtaaaaaagt tgtccaaaat gactttatca 1800

caatggctcc atgtatacat ttttcacaaa actcttttgg ttcctctctt tttttattaa 1860

gggaagaaag taataatttt ggttcttagt tatctgcatt atgcacattt ttggaagttt 1920

ccaacaatgt ggaatgttac ttttgtgtaa tgcatagttt tcagtt 1966

<210> 3178
<211> 1455
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16717_G1, chr1:92806072..92807526, Cluster 19

<400> 3178
atcgctcgat taccatgtcc tttagtgtct caacttaact tggtgaacca ttgtcttgac 60

ttgattaaca tggtatactc ctctatatgt acacttgctt gtcgatgtct ccaaatgtta 120

gccacccaca agtgtaacat cccgacatct atttgaccga aggctaccat aacaaacaaa 180

acatgctaac actacaaaat tttagagata taaaaagggt ttcccatagc atattgaaac 240

acaagtacat aaataacaac catatatgac acaaaagtta aataagaatc aatccatatc 300

taacatgaga gaaaatttac ctagcctagc aaattaaact tctctaactg ataaagtaag 360

tgtgctcttt ctaatatgca tctaatcaaa tcgtctctgc atgatgcagt catccagtac 420

ctaagaacca gaagaacaca tgagtgagta ataatactta accaacacaa cttagaacca 480

gaatagcaaa tcaagatatg aatcaatgaa taaaaaccaa tacaaatata tatgatatgt 540

agtgatgtac gatccattat ttcctttgtg tttactagta aaggcaagta aatgtgacca 600

acatttactc ataagaacat gaacataaga tccaaattta ctaggagata aagtgaatgt 660

aaatgaatat cttgaagttt gaattagaaa atgcatagcc agatatattg agatagaaat 720

tgaataaaaa tgaataattt aaaacttgaa agatcaaact agacataacc ataaaaactt 780

ggaagatcaa aatgaacaat cacttgtagg atcttatgac aagcgatttg tcattgcact 840

taccttaatc ttagtgaaag tttcacgttg cgctctcgcc aagagtcgta ctagcaccta 900

tgaaaaaacc accatcataa accatctgat aactgattca tacttgaaaa ctagaataaa 960

acttccacaa acttaaagcc tagtgtaata tgttcttcta aaatttgaga cagatttctg 1020

aagttgcact cttttataca tagctattaa atcccatatc caaggtacat catggaaaac 1080

aatagaaaat ttcctccaac ttttgtgttg atcaccaaga taaattccgt atggatattc 1140

tctagaattt gggctaactt tctacccaaa tatgttttca tttttaggac aacagtatcg 1200

tttctatgat taccactaaa tttctaatta gattggaaca aaactagcgt catttgaaaa 1260

atagtacaaa acctacaatt ttttattcat ggaattgcca aaatcgtaat tgatccatac 1320

catattttga attataattg ctgtttccag accaacgaac gacgaacgat gaacaatgaa 1380

ggatttcacc atgtctcatt ccttctcctc catctcccgc tcttgaatcc cttggagagg 1440

atattccaag gtaga 1455

<210> 3179
<211> 1907
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_167667_G1, chr4:216596435..216598341, Cluster 19

<400> 3179

aatctcagct ctgctcccta aatcagttgc caaacactct caactccaac cgatttcgct 60

cctaaaagac gtggggttta ctctaactct accaatttgg agcagcaaaa gatgtactct 120

ccacatatgg agttgataca aaattaccca cttaccactg attacgcaac tcaaactctt 180

cgttttaatt tatttccttc gtgcgcaggg tccgtcgccg ccgcctattc tgtcgggatt 240

tgctagatga ctgttcactc gcagggtctg ttcacgtgca taatggtgtg atgcagccag 300

tggcctcagg cgtggcatga ccagcagccc tggcattgcc ttcaacgatt tttcactaac 360

agctagggcc agcgctgcag caccatcaat atataaccga aatatatttt catactgcat 420

atttggtgct aaaggtatcg gtattctttc tgcaaaaaaa gtagtcaaaa ttaaggatcc 480

aagcagactt atccgtaatt ccacaaatat agtttgttcc atgaagacaa ataggcaccc 540

aaccacacaa ggaagcaagc aaccgaccac atttggccaa tcaggtcagg ttcaagtgcc 600

attgcggtta cgggaacagc atggcgcgat atgcctgacg cgatacaaac catcatacgc 660

ggatggcagg taagccacac gccgaccaga aacatacgca actgcagccc agtgcaaaat 720

gcttgtcctt ttattttgtt tatctttctt atttttcatt cttatagaat attttattta 780

tttcttgggt tttttaagct ggtgccctcg gttttctggt gtcctcttaa ccgtgttttt 840

ttgctcaatt attttttttg ttattttcta actattttat gtttcttgtt gtatttttc 900

ttgcttcgtt tcttttcctt ttttacttta tagttatttg atggtctttt attcttatct 960

tcttattctt tgtacttttt atcttcatcc cttttatttt ccgtttgctt gtttattttc 1020

atgttgtaat tagttaattt tatttttgtt ttccatccat atttagagaa aactataata 1080

attacaataa taagtaaaca aatagattaa aaaaaagata agaaccgttc ctgctgcaca 1140

ggcttgtgaa atggttgggc gcatgataac aacaagaaat agacgctctc agatttgcgt 1200

gcagattact agcactgctg cggttgttga tggggcactc ttcagcaagt tgttgatcct 1260

gacagaagga tgcaagaagg cattagaaaa taaaagaaaa cgtctctttt accggttact 1320

aacacaccac accggatgca gatggataaa gtctgtgatg aggatggaga cgacggcggt 1380

gataaaagct aggcgcgggt cactttcctg cccttcccta tctgatccct gtccctgttt 1440

ccgccgtttt actcgctctg tcgtacgtca ctccgccagc gccaaccaga gaggataagg 1500

aggaggagga ggcaacgacc tcgctcacct actcgagcgt ctcccaatcc aaatccaaag 1560

cggatagatg atggcctgta tccgtccacc gggcaagtgg ttggttggtt gccatcgtcg 1620

gaaagtgccc gtcgtcgaac ggattgagga ctgggattaa ttattccata ccggaaaccg 1680

gaccgcaccg cgcctgtgtt ttgcaatgga cacagtaaaa gtgctctata gtgatgcagc 1740

tctactatca ttactaacca tcacaggttt gggagcagtc cagtcgtcga atccatgagc 1800

ttttacggag cgagaggctt cggggagaga gacgcagcag ctacgtactg ctgctgagct 1860

caaatcaacg ttccacattc tttatttgtt ttttcccttc caaattg 1907

<210> 3180
<211> 1429
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_168190_G1, chr4:219466726..219468154, Cluster 19

<400> 3180
ttttggatga ggggaagtag ctacaagcgt ttccacaacg tgatgattag ggtaactact 60

cgcggaagca agaaagagct ctatagtacg tgggtgatgg ttatcatgag atcgtgctca 120

acaaaatgtg tatatgaaca tgcaaaacat tgttttgcac ggtagactat gctatttata 180

ggttggagat tgaaaaggga gtaaggaagc aagtgggatt gagagtcctt ggaggtagcc 240

tgagcaagga aggaaaccca aactgatctg cacatgagcg agaaagcaaa accctcactg 300

atctaagggg tggggattta ggtaacccaa aaaattaagt tcattaaaat tcaagtgtta 360

aaaattgcta tcaaatatca gcttaaaaac attactcaaa atttcaagca actgataatt 420

caagttcggg ttttacttga tataaccaaa ttaacaaaat caatattaac caaaaacatt 480

ttaaagaaat aaataataac catttatatc ttcttgtcaa acgaacaaca aatcaattaa 540

ataatagatt tacactgtaa atgaaccact tcatgtttat atattaaaat ataaaacgat 600

ggtacctgtt atcccttaat tggtccaatg gcggatctag aattttatta tacggcatgt 660

cgtctataat cttcatatat atttgattaa actatttaac aagtcaaaac aattttacat 720

agtaaatttt aaattttaat gttaagttaa aaacataaaa aaataagtct taaatttgaa 780

aaaataagtt aaaaatattc ataaattata atataaatag atgaaaagtc atattgataa 840

tttatatggc tttttggtaa taccaaacga ttaagtaaat tatacttgca tggattaaat 900

tctaagcact cacgtgtgat tatacaaaca atcatataat acataccgag ttgttaatca 960

gccttgattt tttatctata tctcgattat cgaaagctta agacccaata tatagttgtt 1020

tgggtgtttc atcgttttcg ctagcctact gcctacacat agtagtctag cctccaacgt 1080

catctcgcga gtcaagtccg ttgaagaaac taagcgatcg agcgttgtat acggttgtat 1140

tgtgcatcta acagaccacc tcaagatttt attagataga tcctaaggca tgagcctgaa 1200

caaaacgtaa gcacaatcta caagactatt aacacaacct tctttttatg ttaaatattt 1260

ttttatttt tctatatata ctatgtagtt acctggggta tgccagggtt acccctagat 1320

catactccgt agatccgcca gggacttagt ccatggtttg ggggcaaagt ttgggtttgg 1380

ggcaaagttt gtacatgacc taccctctat tctcttaata caaagatag 1429

<210> 3181
<211> 1436
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_169233_G1, chr4:224944230..224945665, Cluster 19

<400> 3181
tttgttgcat gggtgtgtgt tatttgttta acagaggctg aaagttgaac caagactttg 60

tggagataat gtattgccct tggttattaa taaaaatgtt ttctttatta aaaaacaggt 120

acttagtctt tatacccaaa cagtcaattt attttccaac tcctgttcaa ataaatctat 180

ttttcctgca aaacatagtt caaaaagcct atagtcttca accttgtatt tttgcccaaa 240

gatgtcacaa aagatttgac tatccttttg gaactttgtg gccgaagttc attgatgaaa 300

catcgatcag ccgccaaatt aatttgatca gcaacacaaa cacgactacc cagcagattg 360

tggtgctgtg cctgtcatag aggagagtgc cgccccagtg ataaagttga caagcaggct 420

ggcagcaaag gctatggtcc atggacgtgc cgaccttgag agagaagata gtaggaggag 480

agggcgccgt ccatgaccac gactgtgtgt gggcccgacc aacccaaatg ccctgccatg 540

taggtcaggc aaaacttaca aacggataaa gggttagttt ttatattttg gccaaataaa 600

gtgggcctag attaagagca gtttagaagc attagccgct aataatcatc tagctaagag 660

atcataactg atattagcta gtttagttca accaatgaaa tagctcattc agcatattct 720

acaatagatc tacagagtta tgatctctta gctagagtat cagcaacaga gttacatact 780

ctatgacagg aggactgtag gagacagtac attcagcata taaatttaaa gcgtcaattt 840

tactaataaa aattggtaga cgaatgatct gtcatagtct gggacacgta ttgttgcttc 900

cgccaccggc cacatattcc attccaattt ccaagttagg ctatctacaa tagcatactt 960

ctctctacaa acagagtgaa atctacagtt taaacaagga tctccttcta attatcgatt 1020

tagcttgagg tggtgtatca aaagcaagat tttccggtct ctcacactag cgattgtttt 1080

agagcagtcc caacccaaaa atgtgtagaa gccgagtcca aaataccacc tcagcaaaac 1140

acatagatag aaatcacaac actcattcca caatttttt ggatgggctc tatagcaaat 1200

tctatcctct tctatggagg gcatgcaaaa aggtgtggga agaaactcga aagccttcca 1260

atacataatt agcagatgtc ttaatgcatt ggttcgcatg tcgacctgat ttcccaaggg 1320

agaaaccgga tctacaattt ttcttctctc ccctcattaa ttttctgcca ttttgaattt 1380

ttgttgattt gtcactgtat taaattctat agaaactaga taacatagag gattag 1436

<210> 3182
<211> 1528
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170338_G1, chr4:229733706..229735233, Cluster 19

<400> 3182
ggttgcttca ttgcttgtgt gtcctcttgt ccgtccgtcc gtagaattac gaagagcaac 60

tcgtcgcctt tttgttcaac ctggaacagt gcgagcacgc accggtgccg aaaacaggga 120

cagccacatg cgggtgttgg cctacgtacg gatcacgcag cagccatcca tgttgcagaa 180

ttgccaatgc aagaaacggg agccgccccc gatctgattt gtagatggac gtaggccttt 240

tgcatttgac gatgtcagta gtgagcgaca aataaaggtg cccttgacgg tgtgccttca 300

ggttgtattt aatactgaca attgatattt aaatatttaa actttaacta gataggacca 360

gaccagacta agacatggta attgataacg ttaaattatg tttggttaaa ttcaactact 420

acattaaaaa ctgatatcga actatttaaa cttattaccg ctggtactta agtgtgaaat 480

tgtcgttact tatattctgt gagccaaaca acaccaaaga tagatcagcg agagtagcac 540

gtggtccatc taatctatac ataccttcag ccggctctgc tctcggcagc aacgacatct 600

cgccgcttta tttctcctag caatttttc tttctttttt ttctttcagt gagagttgcg 660

acaaggacac cgcaacatca cacgtggtcc tgggtgcacg cgttacgctc acacacttgt 720

tttatttgtg acttgcgagg agtttaacac cgtaccgtac tccctcccac cccacacaca 780

cacacacatt caagtttctt tgcgtggtac tgtcacaact tgcattggtt gatgcatgcg 840

tgccacttct cccgctcctt aaattcgttt gggcgcagcg tcgtccagat aaggctgagt 900

ttggtggaca gtgaaacgga gagtaattta tgggaaggaa tttcttccat attcaatttt 960

gaataccgac gaaatttttc ctatatggat catctccatt tctatgttca tcaaatccat 1020

ccttagaaga tgtttgtttg gattataatc tgcttagatt gtttaatcta acaaattcta 1080

aacttaacac taaattcaaa atttgttcaa ttatataatc tgaatatatt ataatctcaa 1140

ataaacagac tctattaatt attaagtaga acccggcgtg cttttgtttg atggccacgt 1200

acgtacgtgg gcccaagttt tgcaacagat agagagagaa gtaaaaaaac actgacatgt 1260

tgtacgagca ctgaaccaaa caacagatat agtggtataa ataaagccac atttgcgtat 1320

gatatttgga tgcaaatctg gcaggcccag atgtccaccc cacaacaaaa acataatgca 1380

atgccctaca gctacggaca ttgcaggtgg cgaacttcaa ttccaacaca cactgacaca 1440

cacacaaaaa ctggctggtg tgtggaccca gctacatgca tccttctttc ggttgaaata 1500

aagttgaccc aacgtacgcc accgccgt 1528

<210> 3183
<211> 1501
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170759_G1, chr4:231993347..231994847, Cluster 19

<400> 3183
catgcggctg gatggcgtgg gcaataggaa cggacggtcc agatagatgg gaggcagaac 60

gatataacca ggggaggcag actacctttg ctgccttaat aagtagtaga gatatttata 120

ttatgtactt cggtatatta tataacttgt ttgtgtgctt gttgtcaaat cctggtcggg 180

ttggtgcaac aatagttggc tgtcaggctc aacatattgt ttaggagcta atcagcctaa 240

gtgataaaat gtcccaatga gttgtatatc tgtacatatt ataagtcaga taggttagtt 300

aggcagtgtt tatctcctat agtctataga ctacaaatgt acatttccca ttgtcaataa 360

tcagaagaca gacgcctacc aagcaatgcg tgtttcttat ccctttggtg catcgccacc 420

ctttttaagg gttttctgag gtaagcgtca tgctgccctg atctggcctc tagtagatca 480

catcaaggtt gtacacttta tcaccttact cttggtacat tttgtattaa gcattgttgg 540

taaaatatga tagtatcatg tgtagaatca atctactatt tcatttaaag cttcatgtta 600

tagattggtt ttacatgtgt atcgctcacc tgattgctac attacacgac atgcgactgg 660

aacatatgca tacagaaact cgagagtctg atatgcatct aacaccttgc tatacatgtc 720

ttagtcatgt cattattttg ggtggacttc cttagaggta ttgatccgtg ttcgcgtgca 780

tgggcatcga ctcatggtta cagatgttct taggtcatcg ttatactaca tactgttgat 840

cggatttgag atgttcttat gaacgactca ctgtttattt ggccctaagt ttggtgtatg 900

gtgttggtag tcctgattcc tttttggccc atttcttagt cttcgagttt cagtcatgtg 960

catggcatgg atcgctctac gaccaatggt cttctaaatc atattttaga caagtttatt 1020

tctttttctg ttgctttcag tgcaagttta tttagttatt ttagctcact cagaaaatag 1080

aacaattgac taaagggagt tgataagtgt gaccaacaca ggccaatcca cacgatcaag 1140

ctagaatttg atgttcagtt tcttgatgtg cacctataga gcaattcacc gatcaccgaa 1200

caacccttcc tagcggacag gtcaagctag gttgcacgcc taaaaccctg attgcctcta 1260

gcactcagag gtagttggag ccacattaaa gagatatgat aataacatca tcatatctct 1320

cgactccaca tgtgcggtct cttagacgac aacccgtcga tttcccgcaa tgacacacac 1380

ctataatgga accaatacaa tggctcatca tcaacattcc cacattagag aagggcactc 1440

ttggaaccag cgatggccag gatgtatggc tagaaaacaa gaccgagccg ccccgctcga 1500

g 1501

<210> 3184
<211> 1937
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171326_G1, chr4:235084551..235086487, Cluster 19

<400> 3184
cgctatcctt gtcggagttg gtttacgttg gttaggagtg gaccatgtat atctaccaaa 60

gagagggatt ttgacatcca ccagccatat acaattggag tccctatgca caaactctga 120

tgggtttagt ccttgtaact gtatagtgaa ttattcttat ccaaaaaaag tactgaaata 180

ataggctaga taatattgat ttttttgtta gaacagtact gagctgttga tacagtgcat 240

gctcttttct ctgtgcatgt tgagacccac ccacatccaa ctgcctgtac cacactaaac 300

tagtcaaact cacttgacag tgtttttttc ctagagatcc ggtttctccc ggctttgatt 360

taactatgct agtataatga caaagagatt aaggctgtta acaatcagct tgaactcaaa 420

caatgatcaa ttattgtgac gattcttttg aattcacgca caaaacaaaa ttttggcttg 480

tcagcatcat tttgcaacag ggagatcata gtgagcggac ccaataatgt accaaggcca 540

gctgcctgtc taggtgaatt accacaaaga tatacacaac tacatcctca ttacatgttt 600

aattcgtaca gtaatgacaa cttgttgtta taggacattt ttgtgatggg aacttgaatg 660

atgatattaa tctaaaaaaa gatttgattt aattatacta gtataccgca cctccatatg 720

tattgacgtg gattgaagag taacttaaac taaattacac cacaatccac ttcaatatat 780

atggattcag gtgttttgtg ctgttgttgt gcagtattat ccagaatcat gtgaacttga 840

gatctgtcaa tccactgcac ctggaaactc tggaatggcg aatgcatgcc aatggaggaa 900

gactccccag tccacgccac gatcatagaa cagacaaacg acctgccacc ggtcaccact 960

caccaccgat gcatgcagct gctggcgttg cgcatctcgt ggatggcaca atcaccataa 1020

atgacagcgc atcatgcatg aaattaaata catatagttt atagtatata gcatgcgtct 1080

cggaatttca ttgtgcagat tttaatagca gggtcatttt ccctaaacct aactgcaatg 1140

caacggtgtg atgatcttga cattgagtgt ggccttatcc tattggtccc gttgtttgtg 1200

gaagccttgc acgtcagcat cactatagtt aacattggcg tcccggccca ctggtcattt 1260

cgtttcaaat ttttttttc tgtatttata tacttgatga agtcatcttc caaacttcca 1320

aacttgttgc tatctgttga cgacaaggct aacatccgaa agaaaacacg caaccttgca 1380

tgcatagcaa gtgggtgcaa gggcacaaat ttagagaagt aaatgcatgg tttttattaa 1440

tgtggcaggt tctagagcag cactagcacc aagagttaac gaactacttg tgtcattgaa 1500

atttttgatg ttttaggatt taaaaaaatt atccttggaa gcttgaaggt tcagtttttg 1560

gacactaagt ttggtccata tcagcttgag actgcggctc ttgcatgtta gtttggtcca 1620

tatatggagc tctattttga gccggatgta atactaaact agaaaacttt ttgttctcct 1680

ccgcaactta aaaaaacaga actaaatata aaatataaaa ctaacatgaa attagaccag 1740

gagtcgtact tatcaaaata agaactagaa aacaattctg gatagaattg gaaagaagtt 1800

gcgtacctcg agaagttgat aagttagctc ctataagttt gttgggtgtg aaattaatta 1860

atatttttgg cctgatgctt cttctctgaa gaatgctgaa gccactatgt tccattatct 1920

acgaaatcag caatata 1937

<210> 3185
<211> 1412
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175041_G1, chr5:15558698..15560109, Cluster 19

<400> 3185

agccttgagc gtggcatgtg tcatcacagg ctcgcagcca caaagcatcc caccaacatt 60

ggatctcgca ggcgggacag gcagatggct gactgagcaa ggaggtcggg cgggcaaggc 120

agcagcatgc atgttgtgtc gctggctgcc tagctccccg ctgcatggtg catgtgagca 180

aaaggttata gtgggcctac tggactgggc catatccaaa aaaacacctc agtatgtctg 240

cacacatgta tcggaattgc tcgtttattt tccccccgtcc ccggatactc catgacatat 300

ctggcgtgta cacgtatctg atatgggata caaggacctg acatatccat gcaactcacc 360

ataccatatc caagatataa ctaatatgca tggatatcct gctaaaaaat accaaaccca 420

ccccagtgcc aacttaatct agatttgcca caacaatcgt gcatccagag atattctaat 480

aatttgttac tagttatatt tcatagcaag aaaacctcaa gcaaaagtgt ttatcagcgc 540

tctagtgatg aatcattaaa agtgactttg agaagtagca taattgtaga tttaaataaa 600

taaaactatt tcatgtttgg tattgcataa ttggaaaaaa atgatatgaa cccttgatta 660

tctcccacct gactatccac agtactataa attacctaca tggtatttac ttggaagtaa 720

aaggaacaaa acaagtcagg caaagcacta tctaatcaag cattgtgcct cagtgaacaa 780

agactatagg ttgttcattt tggagtagaa ggaaaacgga acagatagaa gaataatgtc 840

atttattgtc aaatgttcca ttgatggtaa aactgaatca gtgttgtctt ttatacatcg 900

catcaaaaat aagaatttat agtgcaatga atttacaaaa gcacctagtt ctgctcctgc 960

tgctcttaaa acaacgctaa ttgaacacaa tgcaaatcta aaataaaagg ttgaattgga 1020

tgtatctaga ataataatcc tattagaaag tatacaataa gcaaataata cataagaaca 1080

atactagcta gttacccgta cattgctatg gctatggttt ctatatatca taaaggtaga 1140

tcttgcttaa atgagatatt tattcaaaca tgattatatt ttgttttaaa attattagta 1200

catgtatata tttacagcat ctctccttta tataccacaa acagacatga gttgcagtgg 1260

aaaaagccaa gcgctttata ccaagcgagc agggttcaaa tcctctacac cccatttttt 1320

ggatattccg tgcaggaggg aaaacttgtt tgcttgttgc accctctaga ggaggcgacg 1380

cacgaagaaa ctcacgctta aatatagtaa ag 1412

<210> 3186
<211> 1477
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177564_G1, chr5:28695785..28697261, Cluster 19

<400> 3186
ttcactggtg gacacaagct atcaatgata ggacaagatg gaagtggatt gagaaaaaaa 60

actttggttg ttccctttga ttgggggatc gtggcataat tttaaaggat cgaaaaacct 120

tttaggaaaa gagaattgga aagaggatct gctgaaacat attttttttg gcatcaaccc 180

tcctttattg tttggtatag ggaaatggga ttgcctttag tcaatctggc agaatttctc 240

ttagagcaac ttcattagat ctcatctctt tttatttact tgggctactt agagtattat 300

acaatacaac ctctcctttt gatcatgata taatcgatgt tttgttattg tttcagttag 360

atcaatttat acccttgttg ctgcatatag tagcttctgt agagttagat caatttttaa 420

tgttataaaa ttttgctact tatactttac ctttttaagg ttatatgata accaggtaaa 480

acaatcaatg ctaggtttta aaaaaattat attcctttct tttatgtgtt agtatcttgg 540

tttggttgtt gaaccgttgt cctccatgac ttcatctcag tctagtagac caacaccaag 600

gtcttcagct acactgtttg gtgagaagat tagagtttgg gactcaaggt atgataaatt 660

tatgcttgaa atcctactat tgaattatat agtttgaatt aattggtgga tcctaccact 720

attttcacat gtcgcatcca tcaatagttg agactgcaaa ttcattacaa ctagacgaac 780

ggacaatggc tttgatcgat gtcggctacc gcgctgaaga tgtgttcaaa accatagcag 840

caccagccta agtgataggg cgtcgtgtga gattattaga taaataattt tacgacttct 900

tatatttgtt tatcttacta gattattaaa ttaccttgct cggggaagct aacgtcgacg 960

tgcttagata tctgcgacaa cgtgcagcag cgaccagggc ctgattcttg tgaaaaacgt 1020

gacatgcact cctatcctgt ctttgtatag agaatagaaa ttctggatag atacatatct 1080

acctattctt ttattgagat gtatcgtttt ttctaattca gagaactgtc tatatataaa 1140

gaataggaaa tatgggtaga tacatatcta cctattcctt tattaagatg tgtcattttt 1200

tcctagggtt ttctttcttg atctagattt tctccgtgcc gcaatcttaa caaaaataag 1260

aaaaaaggtc ggctagcaaa attaaccaaa aaacaaaaaa ggtccaaatg ggcctgggaa 1320

tcgacgacaa gcccaacaga gaaccacaca acccattgta ctgtccaaat aaataggcac 1380

aagtagtgta caaaagcttg aagtggtaag cgaccttgag tttttaatct gacaacacct 1440

ccttgagcaa ttgagatggt gctaaacctg taaaccg 1477

<210> 3187
<211> 3398
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_184486_G1, chr5:72676800..72680197, Cluster 19

<400> 3187
agagaatgct gaggctataa agctggtgga ggcaagtcct ctggatgctc tagctgcgga 60

ggattccagt gggcatgagc aaggtaatga tgccaatttg gcggaaactg accaagttgg 120

gaatcagatt gaggctgtct atgaggaaaa tgaggatgac caaactggag gtgataatca 180

tgttcaatca ggtcagggta tggatcttat tgcgattgct ttagaggaaa gttctgatga 240

tgaacatgaa tttgaaagat ctgacagtat cttgcaagaa caagtggaat ctgggagctt 300

aattgataaa gtgattgaag atagggtaga gcagctggag gccagcagga aggctgagaa 360

cacagagaag aagctgaagg tgtcaatgaa accgttggag tgggcagagg agcttgagaa 420

gaggcaggcc tcgtctggtc aacattggga ggaaggagca gctgcgcagc ccatgcaact 480

agagggaatc ggaaagggcc caccagctat cggttacatg caaattgaga tggacaatcc 540

agtaacccgt gtcatgtcct caccgtcatt taggtcagac catggctctc cccaggtgct 600

ggctgttcat aggagctata tagcaatggg cacatctaaa ggtgctgtca tcgtcattcc 660

aagcaaatac tccattcatc aagctgatga tacagatgca aaggttagtc attggtgctg 720

gagcgaataa ggcatgtttg gttcacacta attggtattg ttgtatattt cgacttaaag 780

atggcatatt tgttatgcac tgtcttggtg aagttcgaaa ttgttctttt aaaaaatatt 840

tgttgctgta tataactagg agccttaact ttcttagtct attgtcttaa ggaaaaaaca 900

ggaagggacc gagaagtact gttacatttc tgattctgct accgctgtat gttgcatatg 960

tccatcattc tttagatgtg ttcttgtgat cagaatagca ctttctctaa gaattaagtc 1020

aagctgactc tgaatttgat ttgctgcaaa aaatatggtg tcagttactg cagaaaaatc 1080

tgatacaaag ataacattta ggtagaattt gcaggagtat ctcatattgt aaatttggag 1140

tagaatatgc aacaagttct aggaaggtgc ttagggaagg gaactccatt gtttgttgtg 1200

gccctttaat ggactccaca ccatacatca gtgtgccatt ggaacatcac attgttttct 1260

ttttcattct tgttgctatt atttttttctt taaaaataac tcattgattg aatcgatggc 1320

tgcacatgta aatcggagga acccatatgc aaaatcttgt tggacgaact tggagaaact 1380

aatacctgtt ctagtttggt ggcttaaaag ttctataaat tatgtgaatc actttgcggt 1440

ataaacactt ttaaaaaaac tttcagatgc tgttcttttg gaaccaaggc gagaagactc 1500

aatcaccagt gactgccatg tgctttaacc agcaagggga ccttctgcta gtaggatatg 1560

gtgatggtca tatgacaatt tgggatgtac agaaatctgc agcagcaaaa gttatatatg 1620

gcgagcatac agcaccagta gtgcatgctt gttttatccg ccaatctaaa gccatcactg 1680

gggattcaaa aggggtagtt ctattgcaca cattttccat tatccccgta attaatcgtt 1740

taactgtcaa gggaactcag gtatggagaa acactatttc actctactgt gctcactagt 1800

ttttgtgttg aacatgtggt ctgacaaaac cttgctacaa tttggcagcg tcttttttgat 1860

gggaatactg gaattgtgct ctcagcctgt cctcttgtaa tggatgaatc ttttggtttt 1920

agtaattcat ctgcccaggg aaatcagaca acttcctcca gtggtggtct tggcagcatg 1980

atgggtggtg ttgttggagg cgtggttgga gtagattctg gatggaagtt tttcaacgaa 2040

ggctcttctc caatggagga tggtgttgta gtcatgttta ttatgcatca acatgctctt 2100

gtggtatgaa ccaattacaa ttttggaaac atgttctgtg attttagtag ctagtatatg 2160

tgtcatgaat acttataatg agcataatat catattgttt tcatgttagg ttagactccg 2220

taccaatatt gaccatgttg accatattga gaccttctct agaccagatg gagcacgtga 2280

gggctccatc gcgtatgctg cgtggaaata tacatcatat ttgaatgaat cgtcatcagt 2340

aggtaaagta gcccttcttt catgagcatt ggcgctttct ttaatgtgta tttcaatttt 2400

tggggactaa catgatgatg ctatagatga agaacgagtg tcatggctag cacttgcatg 2460

ggaccgtcaa gtgcaagttg caaagtttgt taaatcaaag atatttaaac acaaagagtg 2520

gaagcttgat agttcagctg ttggtgttgc ctggttagac gaccaggtat gcaaaagttc 2580

ctttttttgc tattcattta atattttctc tacttggtaa caaattaaat tatactctct 2640

tttctcttca gatgttagtt gtccttaatt tgagagggca actctgttta ttctctaaag 2700

atggcagtga gcttcgcaga actacctttg ttcctgatgg ccttcttttt gatgacacca 2760

tattgcacca tgcacatttt tttaacaggt ttggtaaccc agagaggcat tttaacagtt 2820

cagtagcggt aagaggtgct acagtgtata ttcttgggcc atcttttctc acggtttccc 2880

gacttcttcc atggaaagag cgaattgaag cactaaagag ggctggcgat tggatgggtg 2940

cactagacat ggcaatgagg ctttatgatg gtcagacaca gggtgttgtt gatctcccaa 3000

gaacggttga ttctattaga gatgccataa tgccttactt agtagagttg ctgctatcat 3060

atataagtta tgtttttgaa tatatttcaa ttgcgctgcc aaatcatact ggaaaagggg 3120

gagaatcagg tgttctaata gaggcagatc gatccctgct tacacaaaga gatgagcagt 3180

acgctcgtgt aggaggggtt gcagttgagt attgtgtcca cattggacgg aatgatatcc 3240

ttttcgatac agtcttctct aagtttgctg ctgcagaaag tggaggtagg cttattctaa 3300

ctctcagtag aagcagtaac gttatatttt ggctaagttc tgaactttat ttttcatgcc 3360

tttgtgagca ctaaacattt agtatgtcct ataggtca 3398

<210> 3188
<211> 1508
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196093_G1, chr5:151434153..151435660, Cluster 19

<400> 3188
tggatctcag ttgtgtattc gagaaaggag tatgtcaaac attggttagc atgtcagtca 60

tcttccttat tatatatatg aaaagttgtt gcaccctcaa ttaagacata ggagatgagt 120

ctgactcggt cccttgagcg agccaaatga gatcaaccca acaagacaag cttctagaca 180

acagtgttga catcaactta gttgataaag gaagttatat gcttttggtt tctattattc 240

ataacttgca aattcagatt ttgtcatgac tgacaaaccc atatatgtat tagttgtaaa 300

agagtgtgtg tttgttgccc ctaagtttat tgtgagttct tattcacaaa ccactttgag 360

ttccgattca caaatttctg tattgtccat accttattta accaatattg gaaccttgga 420

aaagtagtca tttcctatat ttgtatactt gtagaaattg tagcttaatg tggtgagatt 480

tagccaaata aaagtggact tgtcctgtat acttgaaccg ttgaaccaat taaacaaagc 540

ataaaagaaa agaagaatag gtaatctcta tcttccaaca aatcagaatt cacctattgt 600

ccatcttgag acatactttt ctaaattaca tttcaaaaaa ctactaaatt gtgcagcttg 660

gtagcactaa gaagtacatg gatggatggg aaattctctt gaaagctagt agagattatg 720

atcatgtagc gtctttttaa acttttttggt ttttgtattt tgtctaatcc aaaggtgcaa 780

caacgttatg tatctatgaa gcattcggtc ttctaaggga catagggata gagaatgcag 840

agtatataaa agcaatgcaa catggcatac aaattccatt ttcgtgtttg attttgggtg 900

cacacatgca ttaaacagtt tatagaaagc taaatagata acttattata tgagctagct 960

acctctaggc aggttttcaa gaaattcaaa gatctactta tattaaggcc ctgtttggga 1020

gggttccatt tcaaacatta tagtttcggt tttccagttt catcattaaa caacttcaac 1080

atattcgtaa ggtggtgttc aagaatgttt ggcttgtaca tagacttcaa cttctataat 1140

acaattaatt tatgtgagtt tccttaatta cccttgatga ttaacgagta gagaaatata 1200

gatgaatcag tagtcatgta accaatgcaa tggttttggt gcaactttat gaggaggtat 1260

ataaacagtg tttttaaaca tcttttaagg agcttcaaaa atttcatgaa actgccctct 1320

agtttcaaat tttttatgct agagctcgtg gagctagaca tgtttggata taacaagctt 1380

aaatagactt taaattcttg aagtgaagct cttccaaaca ggatctaaat ggatatgaat 1440

ggacttaaaa gataggatca ctcaaaggta catgcatcca acctggctaa ggtgtgtgac 1500

aagctcca 1508

<210> 3189
<211> 1658
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200335_G1, chr5:175855855..175857512, Cluster 19

<400> 3189
ggtaatgttt tacattaata accaaggata tgtgtcctaa ttataattta aacgaagaca 60

ggttccctgt tggaggttta tctctacaag gaatgggagg tggagaagaa acgcttcccc 120

ccaaatcaaa aaaaggatct ttgtgacaaa atttttgttg tggggacaga aatgagaagg 180

tattccccat tgccgttact aaaaataaca tagtcattat ctaattcatt atgtataata 240

aaatgaatgc attatcatga gtcacggcca cggtaacaaa aaaagtttgt gtagatgcaa 300

tacaaagaat tatcacttaa attcacggtt tattttaaaa aataattaat tccaccaatg 360

agataattat taatttccta tgagactacg actaatttta aaggagtaga gatttaattg 420

gacttagtcc gactcgtaac agatgctagt tgcaataaat gatgaatctc atttgaaaaa 480

ttaattacaa atttgttgag tggttttaag acctgtcatt atctataaaa aatattcaga 540

acaagatggt agacaacatt aacagttgag tcgaacaaaa tactttggtc acagacgaac 600

cacaataccc attacatttt ttagtttaca acaattttgg agtcaatata tgtcgagaag 660

catctactat actcttaagt gttaaactgt taaccatctt cactgcttta ggataacacg 720

acgtttaagt gaatagattt ctcttacagc ctggatatct ggaaggtaac catggcttca 780

gtcatctcct ccagtggcag atctaggatt ggttaaagtc ctgagaccta agccaaattt 840

aatgtgacaa aactacaaca tataataaca gttaaaaatc tacaatacaa cataacataa 900

agataaataa tgtatgaaac aagcaattgc ggaataacat ctttactctt tgccacttgt 960

tccaagtgca gaagtagaaa taggtatata aggtaatgta aagtaatttt tgagaataag 1020

gaataggaac atgaagaaca agattgttta cacttgcacc aggcgggagg agctgcagtt 1080

ctacacttca ccttacacac tagaatgaga catactagaa gaaataataa ctatcacgat 1140

aggcaagcta ttaattaagt agaacaatga gtcatctact ttattcattc gttgtccaag 1200

aagaggcttc aagaacttgt tctagggtca taatggtggt cttcacgaat tcatatgatc 1260

attggaacca gttgctgtta atccatggct tgtagcaaat agcaaaacca atagaattag 1320

ctaccttgag ggaagaagcg ccacaaaaaa tatagtccaa gtattgcctt acagtattca 1380

gatgatttta ccagacccaa atatgagaaa agaacttcca aatgacactc ccattgcact 1440

tgcaagtcac aaccttcaat gcatggattt tgatactata atctgcacat tagtagatga 1500

accaaagtat gtgtttttc tgtgctcgat ttaccagttc agttgcctcc agtagcatct 1560

tcctgagcta ggacataaca tagttcacag attcttcatc agatggcttc tcaatcttgt 1620

atgcgaatgt catattcaat accagaattc atgcatcc 1658

<210> 3190
<211> 1907
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200931_G1, chr5:178742474..178744380, Cluster 19

<400> 3190
aagagacaat gacaagagta tggtcgacaa cactaagtct atatgaccga tgaaatgacg 60

agtacttttc taactatata gcttagcagt agacgatctt tcatgtaagt tcgactattc 120

ttctattact atttttagcg tttaatatag gtaatggtgt ttcatctatt ccattcatag 180

aaaatgttat aaaagacggg gataaataat taaacatcac tttccccacg ttccatatgt 240

cacaaccacc agcaccgcga caacgggata cttcgtcgat tcttggacct gatgtaatga 300

catgtttagc caatttagat taattctact aagaaatatc caaccgagct ttttttctaa 360

acatagttaa tttagaaaaa ttagccaaca tagctcaatt tttagaaaaa aatagttaat 420

ttggtttaat tatagcaaaa cttagtcatt gtagcataat ttagtcaatc taactcaaat 480

tcttgcaaaa agtagttaat tcagctaagc tctatgtaca tgtattcatt gtaactcaat 540

tcttactaat tgtaaaaaaa attagactcc ataattagca gccccctaga ggcgccgata 600

ttgagggctc taactcattt gttattgtta acaagctttt caacaacact tgagatagcg 660

gtgagaactc taatgatcat cgaacgaatt aagttgagac tcatttgata gacttatttg 720

atgtatcaac attggtactt gctatgttat ttggaacaaa ttagtattaa ttaaattatg 780

ctacttaaag atttctaatg aattcataga tatggtatcg atgatttata atttgtatga 840

tgtggatata tatgtgtgtg ttatggatgg atataaatgg ttaatttgca tttcctttta 900

gctagggctc gccgacgaaa attagcttag ctatcttttt gtcgattaac catagccaat 960

aaaacttaac tagactattt tttatcagtt agccatagac gacggatatt aatccggtta 1020

atttttcatc ggctacgatg agccgataga aatttattat caggatgagg caacgaaaat 1080

tatctaattt tcctagcaag aattaaagat tgacgaaaac tatctaattt ctatgggtga 1140

cacaagtttt gtagaccttg accatgatac tgctgtcgct gttaccctca ggaggatcga 1200

catggacgag cccgtcttac acggaacgca atgtgatcaa gctacagctt gctttaacta 1260

tgtcagccag ccgcaatatt ggaataaact cgacatcgaa tcacgcaatt ttcttctaaa 1320

caaacgggga gcttgacctc aagtcaacga tgtgcgagcc tgggacccaa acgattaaat 1380

acgttcttgc tgctctgtca aaaacgagtg aacatcactt ttaagctgct atagcctggg 1440

acccaaacga tgcactgcag cgcacatcgg aacggaagga ttgttaggcc ggagcctggt 1500

catggataac gacgactgac catcggacac cgattcacac ggcataaaca tggaagaagg 1560

ctgcttcatt cccaacatga ttttaacact tgacgctcct aaactaacac tactgctggg 1620

acgccgtttt ctctggcaca gaactgtttc gacgccattt tttcttttc ttttttttta 1680

aaaatatggc tgctgtttcc tagagcacaa aattgttttt gagtttttcc tttacaacca 1740

tatctacagc atttttaggg ttatttttt atctacttta ttatagactg cacagactgc 1800

acgtaggaat gaattatttt cagtcaaatg taacatatgt gtgcataatt tatatgtagt 1860

ataataaatt gataataagg caaacaaact caatttgata gaacatc 1907

<210> 3191
<211> 1478
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201200_G1, chr5:180587878..180589355, Cluster 19

<400> 3191
atccttttat tcatcttcgg catcgaccag caggcactgt tatcgtcttc ttttttaacg 60

cgagaaggga cacccgtggc cgagagacac tgttaccttc cacttctaca tgcagcgata 120

tcatcgtccg cattcccttc actggctatt atgttgtcgt cttccttctt accttactga 180

gtggataatc ctgctttgga tgctacaaac accgaaggaa tttttgtttc atttgagacc 240

gtagtttcga ataattatga acaccatttc acgatgtttc atacttagcc tttttgacaa 300

atagatgttt acttacagtt taatagtaca ctatgtgctg caaaaactac tcactgacac 360

aatacgttgc atacatataa aatttttgt tccaggtatc attatccgat taagaactat 420

gttaattata tgggaactca tatattcttt atttctcttt atgtcgatga tttccacgga 480

gttgtgcctg ttcatttgac aatttctatt gtgactgttt tgctcctctt taggtgagtc 540

acaaacacta ttttatttta ttgatcacac cctttaactg catgttcctt ttccagctga 600

ttattttgta gaggttgaca acatacgtgt gctcataaga tttagctaga aattactcaa 660

ggcagtagtg tcacgaagcg tagctctttg atctatattt tcaaggtcgc cagttgatca 720

ttcttggaca aatgtccttg attttattcc tcataataaa gattgttgat ggcactaaac 780

tcttgggggc tctgacttat gttattgtct tagaaaagtt ggttgtatgc tcaccaagag 840

gctttttact tttgcaaagt acatgcaata gttgttagtg gctttaaaac tgacccacaa 900

gatctcttta ctctcgacct gttctttttt ttaaatgtgt acttacagtt caattgttaa 960

taatatatta agaattcaat caaacatatg ggtactcagt caattgttat ttgtctttac 1020

accgaggctt tccatggagc cgtgcttcta gatttctcaa tttctaacaa cagtgttcta 1080

ctcatctcta cgtaggttcc aaacactaac tcctccattg acaccatttg agcttatgta 1140

atatatttat gtggaccatt agtattaaat tgacaatgtt gattcatatc atatgctcgg 1200

tacgaggctt ctcagttttg caaagtacat gcagttattt gatagtgttt acaaaactgc 1260

cctacaaaat ctctttacta tgaacctgtt cagttataat tcttagaagt atgcatgtgc 1320

gtttcaattg ttaatagcag attaatagta cacttaagta tataggtact cattgacgat 1380

ttccatggag ctgtgctcct agatttcaca attgttgaca gaaatattct ccttatatct 1440

agatatgttc caaatactct ctcttttatt gacaccat 1478

<210> 3192
<211> 1426
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202267_G1, chr5:186975749..186977174, Cluster 19

<400> 3192
atgccagatt aaaggacgtt tgattcgaga acaagttctt gtcaaggatg ttatttttt 60

aatgatgcat gttttattaa ttttcaatct gtaataccgt atgtaggaaa ctacaaaagg 120

ctggaacatt ttttttgttt ccattatcaa aaaaaaatct aggtctgttc tgattaagtg 180

tgaaaacgtt gcatgcatga tggaaaaatg cacgctttat actatataaa taaattaaca 240

ttggaggact gctgcccaaa gtatttgtgc atttgcactt gcactgcatg taggtcaaaa 300

caaactgatc agtgacactc tcggactcct ggttctggtg taataaaact gacaactctt 360

ttcgtctcaa caatctatca ttgattaata agcaaaatta agtatagggg cggcagaccg 420

gcagtttgtt tgtcgtccag acaaactttc tagcaccagc ttttcattac tctgatgtag 480

tactactcca gccatgtata tatagggaac ggtgcgagat ctataataat gcatgggttg 540

tttctatctc tagggttcgg cgcaacaatc caatcatggt gtccctgtca cgctaagatt 600

ttatcttttt ttccagatcg agcgagattt caaaggtttc acacgcatag gatcacgcgc 660

atattctact cgttcgattc gatcgatctg gtcatgtcag ctgaccaact ttatttcctc 720

agcagctgct gctagcctgc tactgctgcc cccgcgttat taataatttt cgttaaacaa 780

aacatgagct agaaggagcc ggaagcatcg gtctcatttg ccaggataga gcaaagcatg 840

ccatgttaca ttgtccaagg aggggaaaag gtattatata tacgttctgc actcatttat 900

tgaggcatgc ctcgatttat atttacattg atatcataaa ttcttaatct gaggctctag 960

acgactcggc catcgtgaca ccaaaattcg acatttttt atgctgagtt cgtggtcgtc 1020

gtgtttgatt aatttgatgc gcgctcttcc tctttgctct cttttaatgg ctttttgtct 1080

tctttacatg acactacctc taagggcttg ttgccttgtt tggtttgagg gattggagag 1140

gtttcctcct caacccccct aaccaaacaa attttgcaac tccttttttt ttctcaaacc 1200

tgcgcatgat acaattaaag cagaaacatg ataaataatt tcaaccgaag aattgatcat 1260

aatttcacca aagcacgtct tatttcttgc tttccacatg gcccaacaaa tagcggatac 1320

cccaataata tatacccctt taacttttgt catatttta gcaagccacg tccaacattg 1380

atccaagtta ccaggaatgt aaccagtgtt tatacatttt ttgcca 1426

<210> 3193
<211> 2442
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202653_G1, chr5:189050964..189053405, Cluster 19

<400> 3193
tttcaaattt gatattgaaa tttctgtaca tttaaaaagg atgtgaaatc ccacctagtt 60

tcgacaaaca tgtaatttat ttacctaaag catttttttc atattttagt tttattatat 120

ataaatagtg atataccatg ctgaagaaca tatcaatatg agaattatca tggaagacta 180

agtggctaac tgcaggagac caaatattat gtttttaaca ttgattttat atgtagtaaa 240

ataactgaaa agataagaaa acggtgctga taattgactt aaatgaagcc caatttgaat 300

tcatgcggac ttacttgtta tctagcagaa tgcagtctga tttccataat tcttgcagca 360

tacatctttt agaatttgtc tcaatcaccg catctgaata agtggttgaa tggtatgttc 420

caaactcaac agatgttatc ttcattgcag taagcttttg gcccaatggc aaccagaaag 480

ctctatcaga cactataagg atcttttggt cgatttgggt attagatcta aggattgtct 540

cgatgacaga taatgacgga tgagactcct gtaattgctt ctcagctttc agtcgagctt 600

caccaatgca gcgttgaaga tgtcttaacc tctcaggaat aatttcaaag gttccagtca 660

aattgcctac atacagatag gcggcatgca gaccaaagaa acataggtaa tatgcaacct 720

gttttaatgc atacagtaca ataagctcca tcttatcttc atatttacag cagctataca 780

ggccttctga accttcccct gttatcagtt caagaagctt ttgctttgaa atgcttaaac 840

cttgcccatc ggagaaagaa tgccttaagt atgcactttc ttgcaaagca gatgtataac 900

ttacatggat gtcattgata aggccttgga taatatctga gaggttgaca ggatgaattt 960

ctatgagttt gttaacttta ggtctggttg aaattgaagc tgcttgtttt gaagagggga 1020

tgtctaaggt agaaatatcc tcagcttttc tcactttatt agtgccattt ctcacattca 1080

agtagaagct tagcccattg gactgtgacg ttgactcaaa caaggatgat tccttttctg 1140

aactcaattt atccatgtgg gtatgacctc taacaacatt ttctagcatg ttcttttgag 1200

ttgcttccaa attagctgat ggatcatgag atataggccc aggaacataa acctcattct 1260

gcttgtcctc atgttgaggc tttgcacttc tcggaaaatc ctccagaaaa ccaatgtcaa 1320

gcgctggcat ctgctggcca cttatttgta gttcagaatt taaactgcaa ggctttacct 1380

cctcaaccat gctctcataa gtagagcaac tctcccggtt gcatggccct tctgataaaa 1440

gatgccaatc caaataaatc ccatctgctg cagatagagg aagtggtttt agggagcaaa 1500

gtacttcttc tatagggggа agcatagatc gcattgcttt atcatcatgt aaaataggtg 1560

taggtagtga tttgaatgta tcatcaacta gagccaattc agagctaacc actgattcat 1620

agaaatgttt tgcttgatca aagtcgtctt tgaatatttc ctcagatgta ttcatctcag 1680

ctttctctga ctgaataaga acaagtgact taaaggcatc cttggaagga aagtcgatga 1740

tctttacttc ctcaaagaga atgaagcaag gaaaatgtga acaggtccca tcaggtttga 1800

gagggtataa tgctgacttt ttatccagta aaataccatc attgatcctt acaaaatcca 1860

ttactgctac atcatttgct gtaattggtt tatctgcttg atactccaca agtggggcat 1920

ctttgcaaac caaggcaaaa atgtcaatat cacatggtct caagaactca tttgagccaa 1980

atgatggaag acagacttgt gctccatcaa ataagtgttc aataatacta tgaaaaaaat 2040

tggatatcat tgtttttgct gggcactcat caagctccca agaattcata ctaacctcca 2100

actggggtat tatttgacca ttctctagtc ctatgatttc catgcagtag ctatctttag 2160

cataaggaca gttatcatca tcatcatgtt ttacagggac ttctacttga taaattgact 2220

ccgcaaattc agctgcatat ggtattcttg tctcagtatc aatatcaatg aaatcctgaa 2280

ataaagcaga aggatgttcg aggacatgag cacaccgaga aacaataaga atgtgatgct 2340

ttcatttcat acttgataaa tcacaaggga atcaaacaaa tgagcatgtt aatcataagg 2400

tgtttgctcc tgaaaccatg ggacaagaaa acactatgtt at 2442

<210> 3194
<211> 1792
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203702_G1, chr5:194821624..194823415, Cluster 19

<400> 3194
cagatagtta gtattgtcga tgctactgcg ctcaattact ggacaacaac acctttcttg 60

agagggagaa tggcgtgacg ggtatgagag actatattga ggacacactc cacatgttcg 120

atcacaaaca atattcacaa ctttaagtta aatgaacctt taggaagttt gtattaaatt 180

tcaaatagga atttagatgt tacaattatg taatgtgtgc ttctaaatag ttatgtggtg 240

tgcttctaaa taatcatatg tgttctcctt cctatttgtg gtgcttttat tttagtattt 300

gcaattgtca atcaccggtg cggacgtaag aatacacctg ttagtatcgg ttggtgtctt 360

taaccgatat tgataaacat tggtatcgat tggagacacg aacctaggct aatggcctct 420

atataggcac gatagttaaa attggtactg atgcttgtat caatatttgt tgtaaagtaa 480

ccggtgctga tttcatctta tggtggaagc atctttctcc aatagtactt gtaaacaagt 540

ccttatgtgt tccacatgtt tgatgtacat cgttaaatga tcaaaaaaaa tataaaatat 600

aagagcatgg aatcatttta ttaatcatgt aatttctaga actttgacca atatgagatt 660

ttcttttaac attgttgtcc attctactgt atagatagaa tttgttaatc atgtaatttc 720

tagacctttg acgaatatga ggttttcctt taacattgtt gtattgtata gatagaatat 780

attatacata taacaggcca tccgtccact caggccatgc taccatctac gtgaaaatgg 840

taaagtgagt gagagaataa tttgatggca actttctggt gcggccagtc agttgaactt 900

ttcttgtgaa tgaccaacta gctaaaaaaa caatagggca gtattcgtct catgtactac 960

tataccttgg catgagacat gggcggacgt attgccgtat atgtcacggt ataccctgtg 1020

atatcttgtc gtacgtagta ggagagcaca tcggctgccg cttgtacaag tgagatttac 1080

ttgctgcctg gttcatcatg gagtgtagtc acagacgtct cgatatagaa ggaagtcagg 1140

ggctcaggaa cacagcgcag gacgaaccaa caagtgtttc ctagtgtttc tcaaaagaag 1200

ccttttctgg tgtttcttcc acagattagc tagatcaata gatcaacttc tcagatcatg 1260

tgaatgtgaa ttttgtattt gtagttcatg ccttttttaca atttaatatt tgaattaaaa 1320

agactcatca tatttttat tgcttattca tcgaattggg ttatgtatgt attgtatagt 1380

ttttttttact gagtttaaaa atggatttta aatttttata taggcgtgcc ctttgataaa 1440

atccgagtca ggactcagga gagaccgaga gagatcagag ctgagcaagg agcataacac 1500

tgtgatgata gaggaggggc acccttttgg tttagaaaaa tagtgggttg cagtagtagt 1560

atcaaacccc ttgcggatgg cttaacatat gataatagta ccatgtggac agctgactgc 1620

aggtgcaaaa gcatggtgtt tattgtcata catacatttt ccttctcact ttctccacac 1680

gacggcctcg atcggcctcg gcctcggcct ctccctgctc ctcgtagtgc ttttcatggc 1740

tggaagattc ttggtctggt gacgatgatg gcggagagct acaagagccc ta 1792

<210> 3195
<211> 1806
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204991_G1, chr5:202193307..202195112, Cluster 19

<400> 3195
gtctgcaagt ccacacggaa acacacaata cagaagaatc acacaaccta tacaagactt 60

aaaaaactag atgacccaag actgtgcaca tttgctaatg aattagtcca gtttggtgat 120

tactgattag catggttgct taaagcctta taaaattaga accagctcat tctttcctta 180

gcatcaatgt gtcatgtcat ttcaaactta aaagtcaaat gttatccact gcaagccttc 240

caatttttaa atcaacaatc ttggaattca aatataattt atactgttac agcataacat 300

gggaatgtat taatgctaat ttataaacag cctacatgtt atacaaagta aaaaaatgca 360

ctgctaatga aaactctgca catttgctaa tgaattagtc tagtctgatt agcatgattg 420

cttctgcaaa gccttataaa attagaacca gctcattctt tccttagtat caatgtgtca 480

tgtcattgca aacttgaaag ttagactcaa atgttatgca ctgcaagcct tccaattttt 540

caatcaacaa tcttgaaatt caaatataat ttatactgtt acagcataac ataggaatgt 600

attaatgctc atttataaac agcttacacg ttctaatgga aggaagaagg cagaggcact 660

ggaagatttg cttccagcat tcagggcaac agcccttcct tgacaatcaa caacaggaga 720

accacttgag ccacctttag taccagatgc agcctaaaga aacaaataat cttattactg 780

tacaagcact agcaaaaaaa aacaactgta tattccatta agtcaaaata gacgaccaaa 840

cacattatca gcatatcagt atgaactaga taatgataca tgtaacatca agtagctaaa 900

ggaagttacc tgcatataga acgtattgaa atcattatat ccatccctgg caagaaatta 960

aaaagaaaaa gaaaatatga acagcaatat agataatgta atgtgtcatt aagcttcaaa 1020

cagctagcct acagcatcca gttcgacaat tcaataacaa ctgtaaaata acaagagtaa 1080

gattacatat ttgaattttt ttctcaatca tttcataaag aaaatagaaa tgaactacaa 1140

ctagagtgta atttgtataa acaatcacaa ctacagatag gagagctaat ttttgtgtat 1200

gttgtttcct ttttgtatgt atggtgtgta aatggatgtc ctgattatta gttaacagaa 1260

ggagcaggcc atgtaaagat aggaaaggtg tacttcttgt agtatggtgc ttctctatca 1320

agtcgagcaa gtgttcctgc caaaattgaa acctgcatcc agtaaacacc agtaagaaaa 1380

cattgaaata catagcacaa tttatcagaa aaacattgca aagaatgaac tacatccagg 1440

ccataaaaca tacatccatg caaaacttct gtggtgctat tagaagcgca catccaacca 1500

gcatgttaca ttaaaacgtg tcagagttat aatttaaacc aatttgttcc aagtcatttc 1560

ttaagtttgc catgacaaat atttaatttg ctaagttgtc agtgcaggca gattttactt 1620

ttgcaggcaa agttatcaaa ttagcatctt ctgggccaac caatgttaac aactaaagtc 1680

taaggccccg tttggtttgg gctaactaaa gtttagtgat taaagtttag tcacttttag 1740

tcactaaaga agcaaactta ttgactaaag tggggtgact aaactttagt tctttagtac 1800

gaatca 1806

<210> 3196
<211> 2237
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205867_G1, chr5:207123257..207125493, Cluster 19

<400> 3196
gaggtttata agaaaactac aaaagaataa caaatcacgc ttacatgaca aagaatggtt 60

gattatgagc agactagtaa agaaaccatc aaagcttttg cttgaaagag atcccatcac 120

gataagggcg tcgttaggtt aggtagggcg acaagcctaa agtggtattg ttggtcatca 180

tatcaagtga tgaacaacat gtttaggaaa ataatctttt gactggaaca caccgatcga 240

tatgttctct atgttttcaa tctagatact ttcaaagttg tttatggtta ttttttaat 300

gtttaactag atagtggtca aaagaccgga gggagtgcca ttttaaccgt gcatcgtaga 360

gacaacgggc cgagggatca aatttattgc tcaaggaatt gaagcggtct tcttgctgcg 420

aaattttaat taatgtacaa ctgcacgaac caatcgcaca catgcaatga attgtgccat 480

gcatgcagcg ctaattttac aggtagtcag tgttttggaa ccatgcatgc ataaagcgcc 540

tgagcgccac atattttgct tggggttagg cggtcggccg tcggcacacg cagatgtatc 600

ataaatttct gcatgcgcac gttattcagt tcgtaacacc gtaagtgctg gtttggtaac 660

aaggaattga gagagattga gaaggaaatg aacaaattcc tcctcccttt aatccccctc 720

aattctcttg tcaacaaatc agccctaaga gcatccccaa tagcttgcta tttcactata 780

tctagagtca ttatctttcc tacatggatt gaaaatatgg agaaaacgag aatagataac 840

gaagatcaaa tagatagaag atttcaagta ttccaaaaaa ctgtgtatat tacgtgtggt 900

actaaatact agttgtgaga tagattacaa tttttatttt tctctaagct ccacatcagc 960

tagctatttg acacaaccat tgtggacgcc ctaaaagttt gtttgagagc cattgcaata 1020

ttaaggtggc aattggcatg tcgatctcac tgccaaatgt gaccataata atatcacata 1080

gtgctaacca tcaagcgcta atgtttggat aaagagtgaa atatacggaa ctctagcata 1140

aacctttct ggtggacgtc tctagcttag gtaccaaaac acattttgat caaagaaaaa 1200

aacaatgtga ttgctccggt taggaaatgt acaattgaca tttcaccttc atcgattggt 1260

atatgtataa tttggctcca tgcaagaatg tcacgttcag actggcagca tgttatatta 1320

ctactttatt gggctacatg ggcttggaat ttggatccac aaatatatat aatagttttt 1380

ttatgtttat gggatcaatc agcgactcct ttcatttgtc gcttttacaa cggttaggag 1440

tgcgcaacca tatattagct tataggagta tctctgacct ctctttgttc attttaagaa 1500

acatcaagga tcgagtctga agtcttagct tggtgggtaa aattcatgca gtggcgtttc 1560

ttaccgtacc accatctagg cggatggcca gacggcccag tacgtttaat ttacggatga 1620

aaatcaggga ggaagtgacg caagaacgaa tctaactgat aatcgcgaac aaagcagtac 1680

gtacgtagaa ctcccaaagc ttgacacgga ctggagtaca tttaatacag aattagaggg 1740

ccggatagaa gtttagctaa tattttgaaa ttagcgacag gaaactttct ctctctcttt 1800

tgagccgcgc atgaatgggc gggattattc aaacgcagag tgcaaaccaa tttcaagttc 1860

gtttaaacga ccgtccaaag tccgactgat ggtgagtttt cagactgatc tgagcacacc 1920

tgtcgggttg tccatggcgc ccaccacatc aggatcatat cacgtccaca agatatccta 1980

ccagacacgt ggggcctctg aattgatagc aggcgccaac gcatggcgtt gttagctgaa 2040

aaaaactagc atatacatgt gtagcatctc tcttcgttgg aggtttcatg ttcatccgtg 2100

ggcatgcatg cttgatgagt acactaaaaa tactccacgc gctgtcgatg tgtgcatagc 2160

gctgcgcgct gctgtgatac gcttgcttct ataccgtatg cgcatatgct gtgaggtatt 2220

cacgtgacac cacagta 2237

<210> 3197
<211> 1788
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206113_G1, chr5:208355719..208357506, Cluster 19

<400> 3197
atatacttat ggacgacgtt tcccatgtca attgtcaagt tcagtatacc aacgaacatg 60

catgcacgcg tccatataca gttctttgtc tatatacatc tgaataaccg ttatgagtat 120

atccatacat gtgttttcta cttgatgctt tccggaaata tatcatgcat gtttaattag 180

acaaactaag ccgtcattag ccattcatct taataattct gaccagacct gtgttgcagt 240

ctcgcggctc agatcagccg ttttatttat gtatcaaagc ttatatacta tacataaggc 300

gtgcaaccta ttactctcag ctttaataaa ctactatttt gtatatatgt acatatttat 360

ttattaattt gagtagtata tctatatatt tgctttagga tattcttatc cccaatacat 420

aatttgttta aagaagacta tagttttaat acattaatat aatatattat catagcagta 480

tataaaataa gtataaccat gtgctctatg tatatagact tttatactcg acatatatcc 540

cggatggttt agtatgatca catactttat atacatatac ttcgtcgggt cgtcgtatat 600

acatcctaaa ttttaatata tacacctata ggagtagtaa ctaatggtat aggtagggtc 660

acttgtattc tcatgtagac aacttggtca aatacaaaaa tgaaatgtat ctggccgtat 720

ctaccattag ttaaaaggct acgtactaaa ataatcttct tattactaga gcggcatgcc 780

atgcatgaag gatgggcagg agaagacaag cacctactct gaataatttt ctttctgcac 840

gtagaaaaaa aactaccgtt agcattgatg tagcggagtt aaaaaagaag tactggtcat 900

cagggctaac aaattaaaat gatagcagcc atgcatagat gtgtgcctct aggttcagat 960

agcagctaaa gattcttagg tcccggcatg agtcatccaa aggtacaaca cataaaagac 1020

ggcctcaaat tctcaccaac ccgtgcttcc ataggccaca tctttttaat ccgtgatctg 1080

ctgagatatt cgctgacgct ggattgactg gtaatagatg aattcaacca tgttgtgctt 1140

aagaaagaag gaaaagttta gcagacagtt ctcgtagtgt ccattcatat ctgtcgatgt 1200

cgtagggcct tgctgtatgg ctggcagcta ggatctaagg tcggagcagt tagggccctg 1260

attgcgagag acgacggtga attacatgaa tgcagactga gaaattatcc gtccaacgga 1320

tcagatcatg gcattgccga aaattcaaaa atgaagtttc agagtttgag ttcaaaattc 1380

agtcattgtt ggaatttggc atatatagcc cacttgttgg tggcccaact caaataagaa 1440

agtcaagttg ctatgaagaa gaggggcttt agtccatatt atttatccag ataggagata 1500

accaatttat aagtaaggat gtatatttct cttcatatgt gacacacaaa tgactataga 1560

agctgctatg aactgaccaa acgtgttcgc tcgtgtttcg tgttttttcg cgaaattaac 1620

ttctgacgag cttggtcgtg tcatgaccgt tttaaacaac aatttttttt gcctttagtt 1680

tatttggtta tcgaatatca cacctaagag tctaagattg tcacatcaat tgggagtaat 1740

gagtgcgcac gtgcgagatc tccgagcgat tgtatgtaga gacgttct 1788

<210> 3198
<211> 1571
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206934_G1, chr5:212364931..212366501, Cluster 19

<400> 3198
tagattgttg atttgcaatc accgtgatat ggttgttgta acttccttct gtaagccacc 60

gcaggagggc tgttctcctt gcctatatta acacggaacc gagggcctgt attggtatcc 120

tcgttaatct acttttacag tgcacaccta ctcttctgtg actgggttgt ggaatgacag 180

gtcaagtgaa tggatgcgat gggaacaggg tggtggatgg gggaaatggg gaggctatgc 240

agagataata aaacctccat atggcagggc ctttgtcaat ggcatgctac attttcttgt 300

cttcctattt cggacagagg aatatgtaat agttgcagtg gatggccaag ggaacacatg 360

ccgagtcctc ccatggccat atgatttttt ccctgcagtt ggttttattg gtcaatcaca 420

gggacgcctt cattgtatca ctcgattggt tgaatgtaat cgtttcagcg accctggtct 480

gtcgatctgg gttcttgagg actacgatac agaagagtgg gttctaaagc atagcctgag 540

cctctttgcc agctggtcga agcaacaaat cttaaataca attcttacta ttctattgtt 600

gtcattcata cagatcggaa tttgatcttt tttgttcatc gcttatacca gaaactgata 660

tcatacgaca tggatagcag gcaagtgcaa gttctgtgct ccttagggca cgattgtcct 720

tatgttaccc agtatgtccc cttcttcaaa tcgttatgaa gcactgaagt tgttagcatg 780

tgggggtac tctttggatg ttcagcaagt gttatatctc ctgagtccta agcttgaaga 840

cgctggcaac ctcgatagat ctactacaat cgggtcactc ctgtttttt ttttttttg 900

gttgcacgga ttggatgtct ttgtccttat ggtgttttgt ccgttacagt tggccaaatt 960

atgcatccgt tgtaagccag ctttatgtat gctactaatg aaatcagtta ccgaatttac 1020

atgatgtgca tctatctttt tgtttctgtt ttgaagataa tctgtgcatc tttcatgtgt 1080

tctgtgtact aaatgctacc tttcaggttt cgtatttaga tataataatt ctatagactc 1140

gaaggatctt tcttttgttt cagtacaact ccaggcgagt gatcaactgc ttgaaacttc 1200

atttttttat atagatattt gttgtgttta tttgtattga attgataaaa tgttcatcag 1260

tatgttgcaa cgacgcagga atctgaaggg attaattatt atttttttca atttttgaaa 1320

gatcggaatc tgctgtcgtg cattcgtagt gtatgaagtg ctaatacaaa gtgcccttgt 1380

cattattacg gtgatcttgt gataataaac tttataaatc ttcaagtggt cgagatgctt 1440

taagtaacca ctagaaaacg cgacattgct ttgtcgctcc cttcttggcg tataccagcc 1500

tatcgtttgt aacttacctt gtataagtgt attagtactt tgatgagcat cttctgatga 1560

agaagaaaaa c 1571

<210> 3199
<211> 2374
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207807_G1, chr5:216844733..216847106, Cluster 19

<400> 3199
tgtaacaccc cctgacctac agacttgtaa ggaaatgttg ttattttact tattgtgctt 60

aaataagcag aatggaacgt ctgctaatga tttttcttat gttgttcagt gtcatttagt 120

gctctttgtt cagtgtcatt tagtgctctt tgtgtttatg tgatttctct ctgtatattt 180

ctttctatat atcattgcag aagctatctg gtagctaaat cgatctatat atcgatgcat 240

tatttgaata aggttgttgt atgcatcata gggctgacat ctggtaatct ttttacccct 300

ccgtgcttaa ttaaaatgaa agacgtacag aatatccaac gtgagcattc tcctaaaagt 360

tgtgtccttc gtttctgaga catgatcttt ggtgttgggc acgtgaattg gtagcttgtg 420

cttccgggtg ctaactttac accgcatatt attaatgttg ctgctggtga ggtaagtatg 480

atttatgtcc tctacttgat aaaagcattc tactcaatac tttcatgcat tgcatacttt 540

tgcttcttga ttgatgtcct ttgctcttga attagcattc tttagaatcc agtaatattt 600

cttgttacaa gacgtttcat tttaatttca tcagtattct taccaacttt tatcttattt 660

gctaggatgt cagtatgaag gtcatatctt tctctcagca agatccaagg gcaatttgca 720

ttctatctgc caatgggatt gcaaatgtta cgctgcgtca agaagactca tcaggtggta 780

catttactta tcctggatgt tcattttcct cttgcacttc tacagtgttt gttaaatagc 840

attacagtac catgaaagag cagtgacata ttcatgcact tgccattata ctatcctttt 900

cctgaactaa ctatataatc acttgataaa gggacaaata ctatgtcata attgttagtt 960

aagtatgtta tcagctatct tttcttggac actgtacaat acttggatct gataacaaaa 1020

atttgtacct cttatataag tttctattta gtttttttct gccaatctct tcaagctaac 1080

tcatgtacgt gtatgaatca ctttctcaca ttgtcaaatt gtcttactat gtctattgtt 1140

tcattgcggt ttaccttaat ctttttatat ttgtttgttc atttatattt tcttgcagcg 1200

tacattgtct taagaggtaa tgtgtggacg cctcccttct cccttaatac gagtatatat 1260

tttagaaaat atgggatgaa ctgtgtgtgg agtatgttcg tagatgcagt cacttttcac 1320

acctaattta tggtagtcat tgacacttca ctgcatgagt catcatttga ttttgtggtc 1380

ttcttgatac atgtttctct cacattagac acaaataaat tactttaaac tataattttg 1440

tgaaatgctt gacgcaaaac attgtcgaag acatctccat taatcaaatg tgatataatg 1500

taaataacac atttttttgt cttttcgtat gcatcaagta cttttgggaa aattctgaat 1560

tgcagtgttt ctgtagtaca agtatggttt tatgtgttga agtactgtac tccaagtctt 1620

gaaagtgctt ctcaatgttg ttgcttcaac aggttataga ggtaattttt ccatgcatgg 1680

ccttcttaca ggttatagag tgcggatgtg gctcccgtcg acgcgtggca cgagcagcaa 1740

gaaaacacct cccggaccca tatttttatt gaattcagct ctgagcattc ccaatcctct 1800

ctttcttccc cttccactat ttatgtttat tcagctctga gcaagaaaat tttgttgtgc 1860

catacccccc ccccaaaacg gacatagttg ctattccaga ttttgcagcc ggagccatga 1920

agaactatgg cttggttaca taccatgaaa cagcattgct atttgatgag atgcactctg 1980

cagctgccaa taagcagcgg gttggtcact atgcaattgt attatttcaa ttattgtact 2040

tatatactaa gttgataatg tgtaattatg tatcttccca tgacatgtaa aaccatttga 2100

atcatgccac agtggacaat gttgaacgtg accgcacatc aattttcttt ttgccaaata 2160

atttaatagt caatagtgca aaaggatgca atattatttt gtagtggttt gatcagattt 2220

gtagtagctg ttttattccc atgtgctgcc acaccaacta tatataatga tgttttgcta 2280

tttgtatatt tctctatcca ggttgcagtt gttgtagctc atgaattagc tcatcaatgg 2340

tttggaaatt ttgtcacaat ggaatggtgg gcac 2374

<210> 3200
<211> 1921
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208071_G1, chr6:680336..682256, Cluster 19

<400> 3200
tctgggccga tgggaattgt tcagatcgac gggaacacta ctaaccaaca tccatcataa 60

gcttgaatgg cggtgtgcat gaccgtgagg tagttgagcg agcccagccc acttaaccga 120

atccattctt aagcggccgg gcttcttttg tttgtagaaa aaaaaacacg cacacagaga 180

catgcatata tagagagtcg agtatcagtt gatcattcag cagagaggaa tggtacaata 240

atggacttag taattaccca acccaagcta atgcatcacc aaagccggcc agttaaggac 300

gatggatcga gctaccacgt acgtaactga tcgattaatg ccaagtcaga tgaagaattg 360

gctcgcacct gtactagcta ggattaaaag caagaagcgc agtcaggctg gctggctgtg 420

ttgtcaatat tggatgcttt caacacatcg tcgtcgtcca tctatctagc ttgactgtgt 480

ctccctccct ctctctctct ctctccttga ggtcaagcgt gctgctccca accaactgac 540

aagccgccgc tagtgcttgc ttgcatcatc gctgtctggg tttactttag ttcaattata 600

gcttatacca gctaataagc aggatcgagc agactggtag ctagctagag cgggcgcaga 660

ttgtttcttc cttgatctgg tgatgaattg gtccacacta cgtccaaaac aaattacttt 720

tacgacctgg tggacaattt ctttttgca cttttagcta ggacacttat tgacagttac 780

ttttacgagc aaaagggtct ttatcgtaat ggttaatgtt tccgattcac accttcacgt 840

cccgggttcg attccctcag ggacaaattt caggtttaat taaaaaaaaa tcatttcgtt 900

atgcccgccc gctctcatgt tacgtcctgc gtgtcacctt tcggctggac cgttgcagag 960

tgggtggtga caacccacta gcgatgcagt cagaggcttt taaaagggga gggacggggc 1020

gtatctgttt gcacaacacc gatgctagct ggtggattca gtcagtcagc agtcgtcaaa 1080

gtgtcattac tgcacacgga tggatcgacc atgtatagta tagatcccat caggcaggca 1140

ggcattagct agtaattata ttcctttcgt tctaaggaaa aaaaacctct acggttgttc 1200

taattaagtt agctcatttt aagtttagca atatttatat aaaaatgata ctattatcta 1260

tgacataaaa ttaatgctgc tagatatgtc gtacaacagt atgttgttta taataatata 1320

acagttggtt ttatagacgc tgtttttgct ctcttttaat tttatgtgta aagcagttgg 1380

tcattcaatt taaagtagct tgatttatgc taaaaacaat atacttttc agacaaaggc 1440

aatatatacc tagtcaagtc aaacaagaga cttgctcaac ctatatatac ctatgtatga 1500

tgtatacgta gagactcgcg cccgctacat ccagaaactg atgctactat acataccacg 1560

ccacgcgtca tcacacgtcg ctgctgccta atacttttt tcacctcctt ttaattactc 1620

tggtcaatgt ctcgtcaaat aatcgtttct tgttattcgt aagccaataa taacactaga 1680

acctttata tttataagtt tcggtttagt catataagct actcaaaaca cctattatgt 1740

gatgcgctat ttgacaattt attgcgagaa gtggaacaat ttctaagttt taggaagtgt 1800

gtatgctcat ttttttcatc tctacgaggc ttatctatac cactatataa tcaccggttc 1860

aaactttgca aatcaccccc acaccataac ctacattaaa tccaccaaac aaactgcaca 1920

t 1921

<210> 3201
<211> 1497
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208978_G1, chr6:7172807..7174303, Cluster 19

<400> 3201
tatgaaatgc tatttgctag taagcctcta tttaggcccc cactcggatt ttgggctagg 60

tccgccccta tacatatata taagtctaac aatttcatat taggttgaat ataatatatg 120

atagtttata tagagagaat ggatagagag atataagggt agaggattat gttataaagt 180

aagtaatttt attgactaga atgtaaatag tggtatagaa taaaaatata gactgcggat 240

atccttataa gttttagaaa gttctattca tccctctagc tagctcgcct tcacggcaat 300

gtaggtacgt gtatatatac tcctctagtt catccctcca tgcaaagaat aatacaatca 360

ccctcttgat agtttctccc tgaatgcaag tctctgcggc tgctttcaga cggcgatcaa 420

gaatgttgac tcgaacgaac cttccagagc tagccatcag tcatgtgtgt aataatcgtc 480

gggaaagttt tgctggtcac actcattttc ctcgcgacag gggataaggc ggctggcgtg 540

cagcttggaa ttcgcaacct gcaagccggc cggccggcct tcttctccct gcattgtgat 600

ttgtggacga acgagctctc aacttgcagc gaaaaggaaa ggaatcgata atgtttatat 660

tgcttaaagg ctaagggaat gaaatgaaga atacatgcag gattctcttg gttcttcgaa 720

aaggatatct ttttttgcca ctagagccta gaggggggagc tagtggatca gattgcgatg 780

gtataaatct tattttcgac ggttttgacc gtcgaaaatt ctctatttta ctgttgtgct 840

cgttcaaacc gtctaaccat tatgtatact aaaatacata gataactaga aatatacata 900

ttacaatata aaaagaaagc ttaaagcttt aaaaaaaaac actacaaaaa atagaacaaa 960

attaatatac atgacatcgg aaatccgaaa caaaataaac taatatcctt agatctataa 1020

ctttcacttg accaatctat ctattaatta ggccagacaa aagaatgaca ataataacaa 1080

gcacaacaac gttagtaaaa agactaatat caaataacat aaatgccatt agagatcagc 1140

taaaagggag accaaataag gaaaatgcta attacatttt acttggtaat tagagggctg 1200

gtgatagacc agacatttag tatgcaataa taaaataaca aaagaggaaa tgaaaataat 1260

aggatgacct agttacgcaa gacgctatta cggattaata tagaaggga acacaaataa 1320

catcgtcaac tagctaatta aaatatcaag tagcaaattg agtaccatgt cagtgtttgt 1380

taggttctta gtttacgtaa tctgcatcag aggaccttat gtgatcattt tagttcttca 1440

gtggatgcat acaaagatgc agtttcgggt ccttatttct cttttctgtt cccctat 1497

<210> 3202
<211> 1680
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_211377_G1, chr6:22129561..22131240, Cluster 19

<400> 3202
ttgttattga aaatatgcac aagcacctta gaacgagtat aacttgaggc tacaagagta 60

ctatagacaa caacaagagt actttgctaa ctacaacacc catcagcaag tactttgcta 120

attataatac ccaacaatat ttagattacc acaagcataa attataatat ttagggtttg 180

ggccatttag cagtactaac aagttgcata tgcagtcaat attgcaatag catgttcttg 240

tcttgccata gtggcattcg tcgccgatgt ttcctcggtt tccatcccct aggacctcct 300

tgagctcagg ttcgttgtat tttctcaaat atattcaacc ttttcgattc tagatacatt 360

tagtcaattg aggtgaaatt aatagattct agacatattt agtcaatcta ctatatctca 420

gctttacaaa tttagttggt gaaaccaaca tgattgtgtt gtagctaaat atcctcaatc 480

gtagctattt aatctatttc agcttgtata ttctagggat atagagttaa tatgccaaat 540

gtatatcata aacctccatg accattagtg gcaggttatt ttgttacatt tcaataacta 600

tattcatttg gttaaatata atgctatacc ctctaattag ttctctaata gttgatttgt 660

tttttattat agggcgattg ggctactgag tttattatca acatattcac tttcgacggt 720

agcaggcata actccaatga ccttcattgg ccatagaacc ttgttttctc ttgatgagac 780

ttatattcat tttctttgta tcgtaatgga atgttgatga atgcaataat acagtattat 840

tgatggatga gacttataat cgtctacttt gttggaagta atgtggctat attgattgtg 900

gtggtatatg tgactgaagg tgatatgaga ggatattctg gttttctcta caagtctatt 960

ttcagcgatt gtcgaaaata ggtctgacgg tatttatttt cggtggctaa ttctggctgc 1020

caaaaataat agtcatttat tttcgatgat tagagccatc cgccaaaact aaatattgct 1080

agacatattt ttggggttta gggtttaggg tttgcccagc agtatatcta aacggcggcg 1140

gttgccaaaa ataactaatt ttcaacggcg gttgccaaaa atagccgata cttttggcta 1200

aaaatctttg tcgggataac actaacgaaa ataagctaaa gctatcgaaa aataagttat 1260

ttttggtgca aatgcttatt ttggtggctt gaaaatagcc tgttctttag tggcggcttt 1320

gcccagcagt atatgtaccg atgaatataa tggatgccaa agaaggttta gagcatgttt 1380

gtctgagcct atagattata atctgtaggt agttgtttaa ttgcctagaa tataatctgt 1440

agggagagaa gaacgccgca cgatggagga aggagacgcc tatacctgtg atttggagat 1500

accggtacta catgcgattt agggaaagtg aatggcagac ttcttaattt tgtgaacata 1560

actatggata gtatacgtgc tatttaggga aagtgaatgg cagacttcat aatgttgtaa 1620

acataactat ggatagtaag tcttttgtca aaaataattt taataagctc ccttgatgag 1680

<210> 3203
<211> 2037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_217658_G1, chr6:65497457..65499493, Cluster 19

<400> 3203
gatcgataca tgcgtgaaca gcatagaaac agcacaaacg tagagaagct tttcacaaac 60

atgaccaaaa aaagcacaac caagctcatg acaataattt agcatgtcta tcatttggat 120

tgatcaatcc agattgatca aagccatggc acaaaattag gaccactaac accaatgcca 180

gttacccaaa gggatttcca agctagtgcc tcaggacaca gaagtaaaga cgcattaggg 240

aaccagttat aagtattggt ggaagaataa aagtagtaaa taagagtgtg gagaagaaat 300

aaaatcattc tttagaacaa aatgagcaac tcatccagtt aagcttgggc atcccaacca 360

aaaacatgaa gaatatatgc atcaaatcta cccgagtcaa gaatcttata tgacatcaaa 420

tcgaactcag atttgtccca tcggtatcat gatccaggtc ccaagttgaa atcacagcaa 480

aagaaggata catgaaggaa atagaatcat agacaaaagt atatgacaga atagaaagag 540

taatgtcaca ttgaatggct cagatttgcc ccaacatcaa cacaacactc gcagaagaaa 600

catgaactcc tccctccaca cgctaaacga acttttgagt aggattgttc acttggaaat 660

ataaacgaca ccaccgccac agcaatggca acaatcagtt gcaaactggt tgcttgtata 720

tggtacaagc catccaagtt taacaatata ttgagcaaaa taccaaaccc taaatcctaa 780

accctaaaca attcaacaca ttcatcccat tacttgaaat ccatgtccca agttgaaatc 840

acaggaaaaa gtaggatgaa tgaaggaaat agaatcacaa acgaaagtat atgacagaat 900

agaaagagaa atattatgtt gaacggctca gatttgcccc aatatcaaca cgacacatcc 960

tactctaaat gaacttttga ataggattgt tcatttggaa ataaactggt tgcttgtata 1020

tggtacacca ccgccacggc aatgaggcaa tcagttgcaa actggttgct tgtatatggt 1080

acaagccatc caagtttaac agtgtattga gcacaatatc aaaccctaaa tcctaaaccc 1140

taaacaattc aagacgctaa aaagtaatag ctcaatgggg atgggacatt tgacatcaca 1200

gccaccgaag agtagttcca aacaagaaag gaagatcaac agataagcga caaataaata 1260

tctagaaaat aaaggaatgc atagagcgtc atcacagcca cagaagaaga gttccaaaca 1320

agaaagcaag atcaacagat aagcaacaaa aaaacgtcag aaaaaacaaa gagatgtata 1380

gaaactacca aaatgaatca atgctgcacc ctgcacagct tcttttgggg tgtttgtatg 1440

ggtgggtggg taaggggggg agggatcagt ttcgcctttg ctcattcatc ttaatatttg 1500

acatcacagc cgctgatgaa tagttccaaa caagaaagga agatcaacag ataagcaaca 1560

aaaaaatatc tggaaaacaa aggaatgcat aggaactacc aaaatggatc aatgatgcac 1620

cttgcaagcc tataatagtt gtgatggcct acaggaagta attgctaaaa cacaatgctc 1680

tcctaagtcc aaagtcaccc agctacaaca ggagtactga gacataactc aagaaattac 1740

tgaaataaat tctggatgaa caaaattatc aaaaagtttc catcaagcaa aacaatacta 1800

tcgcaaacaa ttatagcaga atcaacatca gaaactaggg aacatctcaa cctactaatg 1860

aacagaatcc aaatgtaaat gattggtgtg ttccacaaat gcaacaaaag taatggagtc 1920

ataaaatatg taggtttgga aagaaaacat ggagcaacaa catactcaac agaagaagtg 1980

aagatacaac ataatgtgct ttcttcttcc cttttcgttg tgtgtgtgcg cgcgcgc 2037

<210> 3204
<211> 1798
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_217787_G1, chr6:66455234..66457031, Cluster 19

<400> 3204
gaaacaacgg tctacaaagg cagatcaggg atagatgtta aaggtcactg attttaagct 60

atccctgtta taattaagaa acaacgcatg ggaactcgtt taaaccgttt ctttgatact 120

gacatgcttt taagacgctc ctacagctta tcctagaaga aacaatgctc tacagaggca 180

ggtcaggtgt acaaaagtgt ctgattttta ggctatccct gttatacgaa acaaagcatg 240

tgaactcgtt taaaccgttt ctttaatact gacatgcttt taagacactc ctacagctta 300

ggtactgata tgcttcactc agcggtgatg caaagcaatc aacatccttt ttaaatggac 360

agaagaatat aagatcattg ccaatagaac agacatgcac aaacttccac acaaattata 420

gtaaataaat atcatttcta actgtagatc caaaggttta cttgatttaa tttgtttctt 480

tcttacatgg cactggagtt agactgaagg atgggacagt acatgaagct gatattgttg 540

ttgtctgtgt tggacgcaaa tcattgactg ctcttttcaa gggtcaggtt gctgctaagg 600

agaagggtgg aatcaaggtt actttgcttc tgatatgtca ttttcagctt cgagcaaatc 660

accacacata aaggtgatta tccttcatta tctctgcaga gcaaactggt aaagatgtgg 720

ttatccttca ttatctctta atttcactct tccaatttag tgcttgtagt tcgtaagacc 780

tttaactaat tcaattatac agtactgttg tcaccttatg cactctgtga acttagttag 840

ctttgtctta aattgtctca cctagagtga aatatatatt aaatctaatt agattctaac 900

aaacttattt ggtgataaca aatattatgg ttgttcataa acctaattaa atttaaaaaa 960

gcttgacaat gacattttct atcagaggtg cggctccaca tcattatcat gaagctttgg 1020

ctagcgagca ccaagggtga gtttaagatt aaacgtcctg aattaattac tgagctgagt 1080

gaattatttt tgctgtgtga tttaggatat gtagatactg tttactaggt aagttatgtt 1140

ataagttata tatggtatat gcatttctgt tatcttgaag ttgtttgcca aaacaaaagg 1200

ggcataatga taatgttggc tttgtggtgt cgttctttct gttggatctt ttataccatg 1260

ctaccattgt ctttaatttt tggtgtctat tgctttatct ccaaagcttt gtgttctttc 1320

actgtattaa ttaggttaaa aaatgctaga gtccagctga ggcatgctta tgctaccagc 1380

atataagcga gtctaatgtg ctactggtat ccctaacatt ctaatttccg ctctagacga 1440

ttaagtgcca tggagttaaa tatgctgaag cataaagcaa agagtaatgt aaaagatcat 1500

acaaaggttg tatctaagga tgattaggtt acactgaaag gatctgtgct cttcaatgga 1560

gcttcttctg aacaagctgg tgcataaaat taatgattgg ctagccatgc cattgtctct 1620

ttagatcttg caaatctgct caagtgtttg tttgaatagg atctccaatc atgagatatg 1680

acagtttaat gttgcaaaag tttctgtgta gctatatatt tagaaaaatt aaaccctcta 1740

ctttgtattg ttctctttat acaattgcta gcacgactgg tatatggcaa tgtgctac 1798

<210> 3205
<211> 1685
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225308_G1, chr6:109998275..109999959, Cluster 19

<400> 3205
tgttagaacc aaataacccg aagtggccac atagccatgc gattatacga atttataaca 60

tttttaattt tgaggaagct acaatctctt attatttaat tttgaatagt aaaggattcc 120

agcccctaaa cctgtcaatt ccacctgctt ctaatattca ccccaatcta catgtgttag 180

gtggattggg gtgaatacta gagtacccct aaagggaaac ttctgaaata aagagaatgc 240

ccattgcatg tcttaattta acagaattca ttgcatagga tataactgga gcagggaaca 300

tgtgactgtc aactctttcc agataaaaac ggttcaattt acaacattaa aggcttgttt 360

ggctacatta gcatgggagg ggattgaggg gcatataatc cgttgctatt aaaaaataac 420

tagtaaagga ttgcatgtcc ctcaattcat tctaatcccc atacatccaa acaagccgtt 480

aaaggcaact atatttcaag atttggagtg gaacttctga aataaaaatg cacattgcca 540

gccttaatgc attaaataga tagaactcga taactcattg gtaagaccac agttgttgtc 600

cagtacaaac taaacagaaa ggagcaacag agtacaaaga acattgagaa catatatcat 660

aaataggtat aggatattct acaagtgttc aaacagttca cacatgcatc ggcagtagct 720

tagcacaacc ctagtcttgt tctcaaagag agcaagaaac atacacatct tgaagactat 780

tcttacaaca agcaactcac acttaggtgc taatatatat tacagtaatt tccctggtta 840

tttatcacag aagatacacg aaactacaac aaaacattga agaccctata aaacataaac 900

gctatgttat caacacacat ggatgatgga tcctagatac agaatggaaa gaaccgaatg 960

ttattttcag ttgacataag caaagccaat tgaacacggc tggtgtttta catgctgcag 1020

ccaactgcca gcggaagtgc ttgcatccat gttacagctt aattgctttc cagtattcat 1080

tcatcccagt agaaagcata accataatat taccaccact taacctcccc tctggagcag 1140

agatcagtgt gtgaacagaa gcctcagcag gatgcgcaac caacattgta gtaccttggg 1200

caaaattgga agagatgaat gactcaccgc ttggttccag tgttgttcat aacagatcct 1260

gacgaaccca tagcaccata gtgtctcacc acttggtagt accaggctgt cttccaccag 1320

agcattatgt gcgacacaca atccattctt acccccttgaa aagcgctcgc gagaaccgcc 1380

agatcctagt tgccttgcag aaatcagtgc tcccctgtgc actcttgaat cttgatgcag 1440

ccagcaaatt gacatctttt gcccccacca tgacgaacac agcagtctgt tcgtcctcta 1500

gcgctcttgg tgcatccggg tacaacacat cgctttgggc agccttcagc tccacatcag 1560

taacaacaga ttcagaaggt ctgacagtca aagataactt aaggtccatc acaggctgct 1620

tctccaaagc tctcctgtca ttacaagcat tcgtgcccaa ttttgatgtg ccttcattac 1680

acaga 1685

<210> 3206
<211> 2620
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226602_G1, chr6:117575279..117577898, Cluster 19

<400> 3206
ttgccacatg tccccctcca atcgacttac ctcctctatc gacctagaga gcctatatat 60

acccccccatg cttggggagt gtagaaatag ccctttggag ctcaattgtg aagagtagaa 120

aaaatttgag agtagataca acctagagag cttccccccct ttatattggt agattaagta 180

gttcatggga gttagagatg agtctgagct ttacctcagg agttttggag ttctctttga 240

agtccttgga tataactctt ctagttatcc ttgtgtatta ctctagtact acttttagtt 300

taacttcaag tatttgcatt caaatatcat tttagtttac ctctacttct ttgttattgt 360

tgtggtaatc taggaacact ttaactcaag gcttatgatt gtgttagtct gttgccattc 420

atatcttgtc tatcttggaa gtatagtttg gttctcttac ttctcattgt cgtccctagc 480

aactttacct agctactgac cttagggttc ttcctcatac acctagcttt cctatctttg 540

gattgcattt accctcatct aattactaat gtgtacattt atcaagttta caatttaatt 600

tcaagtttga gttggttagt ttaactgtag tcttccgctt ccgtgtgggg aacatgatac 660

ctagaatact cacagtgaag ggctacatca gtctccgtgt gcatgaggag taaagttcaa 720

ttggcataag aaccaccaac aaagataaag agatcagttt tataaagaag aatatatcat 780

taaaactaaa agtaattagg tcggaccact gaaatggagg agcacaactc acttcgatct 840

ggccctccct cccggcaagg tgacccgcga tgaccagatt tgtattttct atagtctgat 900

caactctgcc cttaaagata tcagtataaa tataagtaac ttatctccaa gtttcttagg 960

aatgacatcc acttttgtgg ggctaaaaac cttaggcaaa ggtgacatag gattggctac 1020

tatttcattc taattgagtc cactcatatt atcccgatga tcgaagtaca caaccaaatt 1080

cttaactttt accccaacgt gagccatgac aattgtgtcc tataattatc ctcatgccat 1140

ctacaactat tttctctggc actaaccaat aaaattttag gtgtcgagta accgactatc 1200

caagttctta cacaaaatta tcaaaccata gcatggacca agtacgtgac tccgcataat 1260

caaaccaaga aaccctctca tcaagataac ttctgagatt accatgccca acaaagaaac 1320

ccccatgatg aacttcacta ttgtactctt caccgccatc atttataaag gatggtaact 1380

aacacaatgg gtcttttgac cgaccaaaca cagaatggca acactatact aaaactgatg 1440

gatatttaac cctaaatgaa atgaaaagtt gatgcatttc aaaccccaac tgacattgcc 1500

tactgaaaac atcaacccta ccaatttatg acgcagacct aaactgagaa ctaattcaca 1560

agaactcgcc ataaatgggt tgcttcccct ttctgccata atcgtgaccc catcttcact 1620

atctagctac aggatgggac acgtgcacat gcctcctttc aatggtcgtc tttcttctct 1680

tcgacacgaa aaacctgcac tcgtcgacaa tccaaagctc tcgtcgcctt cgtctagatg 1740

gggagcttga acgataggac aaccaaatct acgggaatga cctacttgca aataaaacac 1800

tccatgatat tgtccacgtg gcaacggtcc ccacgtgcag gcccattagg atgactaata 1860

agacccaaac acggatcaag gatttaattg atgcactttc actgtttaag gaccggatgg 1920

cacaaccgta agtttaggaa ccagagttga attttgctca atttttttcat aagaaccgga 1980

gtggattgag ctcccgccag atcggagcac atcggtgcct cgcgaatttt ttttatcatg 2040

gaacgaaatg tggtcagact gctgtgggaa cgagccatac attgacaaga cttggttaca 2100

tctttcttaa aataaatacg actagatcct agcgaattag caggacagaa ttatatttat 2160

taatgtgtct acggtataga gagattcccc aaatagtcca ttcaactttt ggttttcatt 2220

tttctgtcgt gtatttgacc cccaccgcgg cacgagacag agagattgta gcagtgcgca 2280

cgaaacagaa cgtgtgcgaa acccgcacgt ttatgtgccg tatttcgtca ttctcgtaca 2340

aacacttgtt ttctgcttgg ttccagtctt cgagcctgac caaatactcc tgaaagctga 2400

attgagttta tcaagctaca gtctcttctt ctcagttaac gagttacata caaagacgaa 2460

cgcatgctga caagcgcaag ccgtctgtgg ttttctaatg cccggaggct tccatggacc 2520

acggccgtct ggctcaatcc atggagccat tcgctccgtg cttcacggga gcacgccggc 2580

gccagagcgc cgcagctttg acaaagacca taggaacctg 2620

<210> 3207
<211> 1467
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231274_G1, chr6:140283832..140285298, Cluster 19

<400> 3207
ctgaacatac agctggttca cagtaattga aaagcctata ccagaaaata tgcccccact 60

aaatgcatta tcagcaacat caattatttg aacagtaata tttcaatact atgtttgtgg 120

cacttgcgag ctatcatttc ttgcaagcac tctttttttg tgaaatgctt attgatttga 180

aggtgctttc agatcatgtt tccttcaata ctgccttggg aaacattaag gatgcttgtt 240

tcatcaggtg acttcacatc aagatcgatt ccaaatctac tggtattact tgatttttg 300

actgtgttgt tagctgcttc tgctgtgctg ttttcaatgt ttaaaatgca ttcatttccg 360

tactttgata ctgcattttg tgctactgat ttgtgccatt ctgatctggc ctcaagttct 420

aggagcagct aagtcatatg gaccacaaac agtaatatac aatgaggtcc ctccttgatg 480

taattgtatg cataggagga gcttgtttct aatagtgtgc tgatgcagtc tgtgccactt 540

aaacactatc ttcgtgggcc tgtttttctg atgaaatgga tgcagcaaag gatttagatg 600

accttctctt aacactctga gacctaagtt tgaaaagatt ctgggaattc ttcaatatta 660

acttccatgt ctatattcaa gttcttttgc tttctttctc caaagttgga tttgatcttt 720

attgatttgt ttacaacttt acatcatttc ttcaacctgg aatttggttg ctgatgaact 780

gctttattga agtttagttt gacaacaacc agaagataag atatagcata aggcaatcaa 840

aacctatgtt ccactatcgc tttgtaaacg atgatgtaat gaaaatgctt tccactgtca 900

aaattgtcag agtaagtgta tactcacatg gatttatgtt agcaccatca gcatatccat 960

ctgttcatag tggtcatgaa cagtatagtt tgtgtagtgt gcactatatt gaaaaggtgc 1020

tgatatgcct attgttgttc ctacttcaat atttctaaaa gtgatagcat acatgtgtgt 1080

atcctctaat tttgaatgga ggcagtaatg ttgaaatgct tagctagtgc gatgaattat 1140

aagatatcat acatgtgtgt tcatgtaaca aagtgatatt ggtcgaattt ccaagattca 1200

tctcgatgca cttgaattca atatgttaac ctaatggctt gttattttta ttgtatggta 1260

ggagtaagga attcaacaca ctaaaaatta gtttttctca tcttaatttg aagtttgtgt 1320

tttcttttac ttctgagttt aaatattgct tttttgcatg cttgttttca tgcctttgtg 1380

aatgtataga tgttatccta ttttgtcaga cgaaggtata attatttact tatgcagatc 1440

ggagatcaaa tttgagatgt tcctgaa 1467

<210> 3208
<211> 1653
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232487_G1, chr6:146127156..146128808, Cluster 19

<400> 3208
ttgacggata ttatcaaaat ggtgctcata aagaccaacg atcaaattgc taatatttat 60

ataaagagtt tgaacaagtc aaagtttgag aagttttgtg aagctcttga tatggtctaa 120

agtaaactct aaagaaaata tttcctttga tggggaatgc aaaaatatgc aaaaaaaaag 180

ttcactcaaa tatttaccat gtaagaaaca gagccaagtt tctagaaact tctataatag 240

tcatggcaaa tcatagcgat gcagggaaca agacaacttc tagcatatta taccataatc 300

ataacaaatc ataaagacat gcaagaaaca atataaacct tataattaac cataaaatat 360

gcatgaaata aggcaaggtt ctagaatctt ttataacaac tatgacaagc catgaagctt 420

agatatttat ttgttgctat ggtaaattag ctttagatat ttgttgagat gtgtataagt 480

ggcagtcatc catagctcat gtgttcctat ataagaaaaa atctaccatt atgatataca 540

tcacaacaca ccataccact ccaccccaca cacatagaaa tgagcatagg tagattatgt 600

agagtttgtg ttagctacct caaaacaatt caatcgtgtt gtgatatatt aaatgtgttc 660

ttgttgtaag tgttagtctc ccggttataa tgtatagttt ctaattactt actacacgtg 720

ctacgattaa tctaaaagtt ctaataatgt gttttgtttc actagttata aattcatcca 780

attatctgtg ctataattca tcacatatat caacattagc attataaaca cttgtccagt 840

aggagtgatt atttattgta cgactaatat ctacatactc atgaagaact ttttaaaaaa 900

caaactgcaa atgcatacca gccaaaatgt gaggaaatac cagtaacaaa cagatatttt 960

accacagaat agaagaaatg tatacataag tataagaaat gatagtgtta ttcacttttc 1020

ttttgatgat taagaaaaac agttataaac aaattaaaac ataattaaca taagaaaaaa 1080

tgtaaaaact tcgcaaatat tacatgtgtt tctcatacac taaaaacatt agcatttagt 1140

aaaaagttgg ttctttaaaa ctgatttagg tattgggaca ctatatacac gacgtcgtca 1200

ctaacatatc taaaatagaa taataataag tacaagtttt acccataata atttgtcatt 1260

aatgcagtct taaaagtgat agatgcttag aacagactca attgtatgtc acacatgaag 1320

accacgaacg gactgatcta ttagaagggc ccgccataat agcaagtgag taaaaaacca 1380

taccaataaa gtttaagttt ataattgtaa ttttagatta agtaaactca aacaaatcaa 1440

tacatgtcga gtctacataa tcactaataa gactcatccg aaaaatctta ccacaaattt 1500

gttgaaagaa atcttataac atttttaga acacccttc tgttgacgga ttcactaccg 1560

acacgctaac tgaagacatg cagggtgacg atgacatgaa ctcttggttg agttgagaat 1620

ctctaacttt cttagtcgct cttttacaac tat 1653

<210> 3209
<211> 2339
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233306_G1, chr6:149373963..149376301, Cluster 19

<400> 3209
ccacgttcta ttgactgtga agggcaaaag ttcaatagaa gagaaatgac atagcgacaa 60

gtagcaaaga gtccctgtgt gaagaaaaaa gatgttaaag aagatataca aggctagtta 120

gaggattact caaactaaat tatttgagaa attcatcaaa ttgttggatt acttcacatg 180

gacgaagata tgaaaggaga ttaaggatcc acaagctgtt cttaaaatag ttgacaaagc 240

aatcgaaatt aaatgaggta gaagcgaaga aaaaggtgaa agaggataat gaggaaggga 300

cgtagtggtg tattaattat ttttatgaac tatataattt ttatctttta agtcacatgt 360

attttaattg ttttttttaca aattatgtaa attttattta cttaattatg taatcgaatg 420

tatttatgtt tttaataaaa caatgtgttt tgtgtcaact aaaaatttgt gaaaaagttg 480

acgtagtgct gagatagtga gatgcatgtg tgcatggaaa tgtcgatagt agaatccata 540

gtacgattgg tagttgatgt ggcagtaata catactcgta gagttgggac cagcgtaagg 600

agttagacat gcatggacgt tgtttatact caatataaat aaatgtttgc gacagacata 660

atatttttcc tagcataaca gatattattt gtgtaatcga gacaatcctt gtttctatat 720

atatctaatt gatacccaca tacatataaa ctcggaatcc aatataagat gtaaaataaa 780

atacggggct actgataact gttatctgtt catattcgaa attcgcaaag atctgtttct 840

cgcgaaaaga aacctgcaaa tcgaagcgaa agttacgttc gatcctgacc ttgtactttc 900

tgcgaatcct catggcatca tgcatggaca cacgttcgtc cccggctttc ctcatctcgt 960

ctcaggctct aaattaaacg gaataaggaa caaaacgagt cgtgttacga gctcccactg 1020

cccgtttcct gctttgaatc cggatgacta gatgtgccaa gccttttccc gtcagtcctt 1080

ttttttatgc cttgccagag caccggttta ttagactaaa gtcatcaatt ttctatttta 1140

aaatttacct atacgaataa tacagtctaa atttcgcatc tatgaataat aaatacagtc 1200

tatatatcca ctcgagtact cgaccgagta cacccacgct caacgcggat cggaggtaag 1260

gtgaagcttc gcgcgcgtcg tgcagattcc gtacgtgagc tcgagctaaa tctgggtttg 1320

gcggttcgat cgaatctgat tccttgacta gacatagcac ttcggatatt gttcgaatct 1380

cctgagagat tggaatctga tgaacactgt tccacgtttg gagccgcgtg ctgccattat 1440

tttttgtttc tgctgagctg ggctagtttt acacaaatct aatcatgggt cgctggattc 1500

gaaaaaaaac gcagctcgac tcgacccact cagcagcgtg ggctactggg ctgtcatttt 1560

tagcctggtg caaaaatcaa gtcaagcacg ggcctaattt ttagctcgtt ggccaaccac 1620

agtgccctaa tctggatctg gaaatagttt ggtttaacgt taaagtagga taggaggggg 1680

cgataccgtc tcatcgattt ttgtgatcat gttaccacaa aaaattaagt cggtgttcat 1740

ctttttcta cgtgactctc atctaaacgt tattaaaaat atatctgttt tcttccactc 1800

ttctcatacg tccaaccata cacaccctaa atgtctattt caaaaagctc gagccaattt 1860

tatacctcct cgtagagttt aagataaatt atacactgtc actaactaat gtgcttgtac 1920

caactctacg gtaacttttt agatgaattg caattgatag aacaaattct gcactcactt 1980

acttcaccgc ataattttct atgctcttgt taaaagctag ttaaaacaat cagctgaaat 2040

attttggcgt gtgctgtttt ttctcctgtg tgatgtcttt ataaactgaa ccagaattcg 2100

gtaagtagaa gtcgaaattg catatgcttc atagcttatc aagatgcaga tgcctatagt 2160

aatatgaaca ctaatgttta gacatagcac ttgcattctc tctcccattc tcaaagaaag 2220

gtacataggt catcaaaaag agaggaattt catctcagat ttaaagtttt ctccaaattt 2280

tgacacccta acatcaacag ggataaaaaa actcacgatc cattgttgct actgtcatt 2339

<210> 3210
<211> 3144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234615_G1, chr6:155438267..155441410, Cluster 19

<400> 3210
taatacttat ttaaaagata tagctaataa ttagttacgg cccgatggcc cgtttggcca 60

tctctactca caactaatac ttatttaaaa gatatagcta ataattagtt agtcaattag 120

ttgatcgatt ctaaaccgtc agctaatttt agcagctagc ttctcccctg gttccgcgtc 180

ttgctctggt ctggtatgct tggtcaggca ggtcatcatc agtgccactg ccagtgccat 240

gcatgcatgc ttccttgttt tggtgcctgc aaactttctg gtcctgccgt aaaggcaaag 300

gtcagaaatc agagctgcaa cgagtgacat gaatgaatga ctgatgtttt tcctctcact 360

gtcgcatcca ttcaagttcg gttggtgcct tgtctgccca gatcgtctca tactcctatg 420

aaaacaccaa acatgcatgg tgccaggggc ccaggaacac ctgctttcgg gctcggaggc 480

tgtaccagga gtcactcagc actggtacta gtactagtac cgagggatat gaggatggca 540

ggattttgct ggcgctgcgg gactgcgggt catggacttg cagtgccaga tatttgtgca 600

gcactgtatg acatcccggt cccacctttt agattcaatg caccgcaagg tggtgccatt 660

tgtgttttag ttttaaatac taacgatgaa tatgattgtt gaattataag ttcatacttt 720

taacaattta tatttattat tattattatt attattatta tatatatata tatatataga 780

gagagagagt atagcacatt tatattttga tatcagtgtt tcgttgctga tcgtcgcatc 840

tatatatcta cactacatca agtgggatgg ctgcaaatca ctctgcttta gttattgcgc 900

tcacgggtac taggacagta ggctgtaggc ctccgaaacg aatgttgttc aaatgttcac 960

atactcgtgt gaagaatgga aatcacattt ttggggagtg tttataagcc acacaactgc 1020

tcactgcttg ttcttcgtca cctcattatg gtcggctcga tgtttcgttg ttgatcatca 1080

cagctacata tttgcattat atcaagtggg atgactatat tgaccgacaa aatgtatgta 1140

tgtcgttgga taagcttctt tctcttaggt ttcaattagg ttactctcta ctttgtttgt 1200

gttcatcatg ttaagatcac gcgtctacgt ttctattgtc actaaccttt tatcatacct 1260

tttctggatt aaattgtaac taaaatgtct aatcttctag catattaggt actttggtgt 1320

gaaatctaaa ctaaattcca taccattata ccctaacaca tatgaattga ggtggataga 1380

tatatggatt aaagtggata tgtgtgcatc taaactagct ctaaggggaa atggcattta 1440

attcctcctc aaaatttcta aatttataca gtagtaaagt acgactttcc atcgtccgcg 1500

tcacacgctt tccaccatca cgcacgaagt gtgtagactt gcttttaatt tacatctacc 1560

cacttccatc cactccttaa agaagagttg ttcgtgtgtc ctcctcctcc accccgctcg 1620

cccgttgcct ccctgatccg ctcaaccgac cacacggttt acgtagttca tgtgaagtag 1680

gactggcgag gttggagagg caacgatgca tcagccaaca ggaatcttat gcattgcgcc 1740

aacgactccg tcgtgaccac catccaagcc atcccatctt cctcctccgg tggtgccctt 1800

tcactttcac tatcgcgtgt cgaaggccag tcaggccagt cactgtgcgt cagcctacct 1860

cctctttcag ctttcatcac ctccaccgtg tgtagggagt cccacacatt gtgcagcgat 1920

ggcggggagt ggaggagagg aggtcgtcat agttgcggga gatgatgtcg cgcctgacac 1980

cttgtaatag gcaatggagg aggatgctat tgtgtctggg gtcgcgcccg acatcaccaa 2040

tattaagcat taagttatat ctacctaatt gatgaagtta taatcgttga tttcttaggt 2100

tggttggtga tgatctggtt gtataattag attatagtag tttgaaaaag atcattgtct 2160

aagtttggat ttatttcaat gtaacatatt gcttactttt taatttagtg tcactaatta 2220

gattcataac cgaggatttg cagttttcac atggacatgt gcaagttagc atgctctaaa 2280

tcatttgttt cgtgtgtact ttaaattgct cagagtgtgc gttttgctat caaaagttgc 2340

atctccaatt tatttgattc tttttactac cgagggagca aattttcttt gtttccttac 2400

catgctatgt catagcttgg ttagactttc ttaccctgtt agttaagttt tcattcttca 2460

gtattgtcta gagtatatgg gcttcacatt tgtttaactg attcagtcgg tcaaagttat 2520

tgacctatcc gtctaagcaa attgacctct ttcatacatg gtgtttggta aggctcgtgc 2580

ctgaattctg aagcggctga tctacaagcc attgcattgc ccttctgagg acacccttca 2640

tccaggatat ttgtgaatta ttttggtctg gattctgatg catctgaggt cggactagat 2700

gaatggaccg aacctgctag gcttgttcag aactcaagtg ctcttttgac aaaagaacat 2760

agaagtaggc tggatgcatt ccacctattt cacgaagagt cgaagatgca tctgttcaag 2820

taatttggct tgacttgagt ggtgctattt atgaatagaa ccatgaattt cacgcaataa 2880

aactttgacg cgctatttgc atcctatcta caaaaataac ttcttctgct taccatgact 2940

ttcttatgct tacatgcaga aaattgttgt ggctttgtca actggcaagg ctgtatagga 3000

tgccgtgtga tgaacaacga tgtggtacac gaattcaaga ggtcctttca ggatagtatg 3060

caacttttat attcgcttta gtgttttaag ttataggcag cggcaaatga tctttctgac 3120

cttttgtttt gtgaaaacat atac 3144

<210> 3211
<211> 1556
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235800_G1, chr6:161368366..161369921, Cluster 19

<400> 3211
tgtattttat tatattggtt ccgttgatac gcacaggcat gtatctagta caaattaagc 60

attatattaa aatattcttg aatacaaatc taaatatata acatgcatac actaaaaata 120

tatgtttttt taattaatgg tcaaagtttt aaaatgttgg ttttctaaaa aacatgtacg 180

tttaatttta tcaggttccg tcagcccaac tgcatcacac gcgcgatcgc catcccgccc 240

aaaatgctat cttcgctcac cgtcgatccc gcccaaaatg ctgtcgcctc gggtcggtac 300

ctaataataa ataaacagtc tatcccataa aataaaataa gacatatata tatatatatt 360

taaatatatt tacagtggaa ctttgaccat tatttctttt ttaaaaatat aacatcaaca 420

aatacaaatt aaacatcata ctaaaatatt cttaatacaa atttaaatat ataacatgta 480

taggctaaaa ttatatgttt ttgctgaatt actggttaaa gttttaaaat attgattttt 540

ctaaaaaaac atgtacgctt tattttatga gatgaatgga gtagaatcta aggtcgcggc 600

tgctcagtta cgccgcgcac cgtcaaacgt tgggcttgcg gccaccgcac catgcaactc 660

actcacgatc tatagcttct acaagctagc ctcaccatca cgctacctct cctggatcat 720

atgaatacac aacacctgtc agtgcgtcag atcagtatca gaggcaggct acgccaggct 780

aacctcactc gtcagtcgtc gtcaagtgtg attaataacg acaattagcg gctcaagtgt 840

ctaaatctct ctgtctgacg atcattagca ctaaaccgtc atcagtcagt tagtcgaccg 900

aaccggtcgg cgctacgtcg gcagtcatcg gggctcgccg ccaatccctt agagcgagac 960

gtagctttat ccgtggtagc tgagctcgga gaaatgccgg tggttggcgg gtccttggcc 1020

cctcgctcga tcggcgcgct ctgttttcgc tggcctgcta gctccacatg tctctaacag 1080

tctaaccgtt gggtctagct acttgtacta atcaatcaat taattagtgt gctggcctgc 1140

tggaacatga gagctggcag ctgctggctt gctgtttggt tcgattctgg ttaagatctt 1200

gccctaattg cttcgctcac tttgggagag gctgtcaaaa tcgcagtata ctctaactaa 1260

actaaattag acccattagg gttgtttgag agtaaagata acggagagta ttggagagac 1320

taaaatcatt ttgttattta aaattgaata acacagaaat tttagccctt tcaatctcct 1380

cactaaactc taaaccctaa ataaacctta tagaaatgta gactcagata actagtggta 1440

ccataaaatc aaataataca aggacgtaaa atggtatgta cactaaaaat caacgttttt 1500

aacaactatg tttgggaggt gtgggtgaga acctcctcct ctgcagtttc tgcgat 1556

<210> 3212
<211> 1884
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237012_G1, chr6:167950570..167952453, Cluster 19

<400> 3212
ctcttcacat cttcattttg ttgctctaaa gccttcacaa tatgagcatt tggacatttc 60

ttccaaccat agagatagag acgaaagatc ccagcttagt agttgaactg gtggaggata 120

ctacttatgt cttgttggtt tacaaaataa gatcaacacc atgtagccac atgcttatag 180

acatcgaaag atgatgcgtt gttggtgttc gacaaaacag aaactataga aatatcaaac 240

aagtcaaaag gcctttagaa gtctactact ttaattcgtc ttcttgggta tatcatacat 300

catttttgc ttttttcttg aggtgggatc cttctaattt tcttatgttg tggaagatcc 360

ttgtcctcaa atttttccta ttaataaaag ttttatgagt cataataacc taacatgatt 420

atgagcagag ccaagtttaa agtttatgaa agttgtagat ggagcaaagg acatagtaaa 480

aatattggct attgtctact agtagcatgg tgatcacggg agatgacatt atagaaaagc 540

aactaccatg gggcattttg ttttcgataa tatcgagtta tatcaatgct tttgacatac 600

ttaataatgt tttatatgtc cattttgctt tcaagttgat agcagccaag tgaaagtgta 660

ctggtcctct aatcattaca attgcaattt gcatacattt tgcatatgtc atttttagta 720

agctaaataa ggagcatacc tggttttcat agtctccaaa gcttcttttg tttgaactct 780

gagtttcttc ccaaatgctg aaatgtagaa aatatgtaga aggattattc ataataatag 840

gacctaagct attagaaaaa atataacaag acataagcta ttatgggtct tcataaaact 900

gaaactaata tgcaatattt cactggactc aaatacattt attacaaaca aataagtact 960

attctttttg tatgcataca tagatatata aatatatagt ttattgagtt ttagtataga 1020

aggtaaaaat caagtttatc ttaatcatac ccaaatggtt catgtccata tcttgagttt 1080

cttcggcgtc ttctggctgt gatgtgcatt gctcctgaaa tattttatag aaacattgta 1140

attacttgag gatagcttat ttgaatatta agaagttggt aaacctgttt tttatgtctt 1200

tggtggtaat tggagtcaac aatggtaaat ccttgtatta tgtcattata gaggaagatg 1260

attctgcttg tctattcacg agttaataaa acataccttt tttagatcca ccagtcttct 1320

atttttagt aggtacctta ggttatcctg cagtaaatag tattacagaa aaacatgttt 1380

taaattttga ttagcaatag aacacattca taaaagacaa tgcaaagaac atattaaaaa 1440

aagacaatgt aaagtatgtg ctagtttcag tttggtctta tagagatggg aaagatgttc 1500

tagctatgaa agatgttact acctgctcgg accataaata gttccagatt ggtttcatat 1560

tcatattttg ctataaggtg acgactaatg ggcaatttat tttgtttggg attagcttga 1620

atatagcaat gaacaaacca ttttttgtgg tgtttgatgt cacgatttat ggtaaatttt 1680

ccaaatcctg caagtcttag tatgaacttt atttccatac cataggggtg gctacttgaa 1740

gcctatggta atgtatgtat tcagagacta agaagaattt taatatttag atgactgaat 1800

ccctcaattc cttccaactc tcatagtttc aacagaaacc gaacagacct ctgcagagaa 1860

gctctccttc cacatttttc tgta 1884

<210> 3213
<211> 8267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238232_G1, chr7:5489505..5497771, Cluster 19

<400> 3213
ttaaaattat taaaaaatat ttttttaaat atttttttaaa aataattaat tgcaatgcaa 60

tttcaaggtc taaaagggaa aaaaaataaa tggagagcta aaatgacttt ttttttataa 120

agtttgaggg tcaagtaagt cattatgccg atacaaaatt ccaatttatt aatttatcct 180

tgttataccc ctacacctca agtgcgcccc tctggcactc acccccttgag gtcacttcca 240

gtattcatcc cctgcaatag tcctctcgag ataactcctt gggaaaaccc cttggcgcaa 300

ctaggggtgt acattcggtc agtttatttt ttctatacca aaagccaaat aaattgaact 360

gaaaattatc tgttcggttt ttgatatttt tttagttgga aaaaaaatct aattgaggta 420

cttataattt tatttccttt aatttttca tataattgtt ttcattcttc aatttactat 480

atcgtatcac ttttaatttt atttttattt caagttaatt ataaaaatat taaaaatgaa 540

atcaaaccat taatgaactc aaaaaaatat ttacttttta tatggctgga tatatgaaat 600

ttatcataaa aaaataaaat gactatcata aaaacaatgg ggtatatgaa attaatcaag 660

taatttttac gatatatata taaagtgata aaagattttg ctaggaaata tgcaatttca 720

aattatcctt actttaatat atggaattta tcataaaaat taaaatgcat agaatgcata 780

tcataaaaac atgggtatat gaaatttatc atttaatttt tgtgaagatc ataagtgaaa 840

tatttattat ttaattttta tgaaatatat atatataaaa agtgataaaa gattttccca 900

ggaaatatgc aatttcaaat tatccttacg tttttaaatt ttttttattt atttcagatt 960

tgatataaaa atataaaaag ataaaaatat cctgtaataa tatttattaa ttgttttaga 1020

atttgggttt ttgatgcatt attagcgaca tcaactcaat tagacactta aataatagta 1080

aagataatat ataacattaa taatcgaaag caaaacataa aatttgcgta tattatttat 1140

attattttcg tatatttaaa atattataaa ttatataaat ttataactaa cttatttgat 1200

tatgcatatt tttaaaatgt aagtatattc atatcatttt tcacattaat ttttaatttt 1260

taatttgttc atatcatgtc tcagttcttc ccataatttg cagggtttag cttccatcca 1320

ttattatctt atacaactta tgactttaac aatttatgga tgagctttac acatttgaat 1380

ggttatccct cactctaaag agcaatttct ccttaattca aggtggatgt gattgcttgt 1440

caagtgtgac aacaagtttt tgtaagatat tgaattttca aaagaatttt tttttttgg 1500

aaaattcaag tatatgtatt atattaagta ttatttttca tgtattatat gttagttacc 1560

tctttcctat ttatattata catgaaattt taaatgttat tccttcaaca attttaataa 1620

gctttatttt tgcaattata tatgtagttg ttgatgcgaa aatacaagtt tagcagttga 1680

tggcagttca ttcgaatgtt gagagtcata agtgatctat taagagatgg ggatagggga 1740

gaggagctct tccatttcca tggctttctt gtgttgagag aatgaaagga gtccccctta 1800

agtcctaatg gttggcttat agagctgtca actcttatgg aaaaagtaag gggcatataa 1860

ggccatatat aaatagcgtg tatcccacat atctatagtc atgcaacact ttggcgaggt 1920

tatctttgag gatgatctag cgaggtttgg tgtacgtgat ggctgacttg gtgagacctt 1980

ttaagtgagg taaagatata caacaatagc tcccttgtca aaaggaaggt tataaagtga 2040

ccttggttga gacaaaataa tgttgaggat gtcgttgtgt ttgttggagt tttaaccatg 2100

cttaatcgtt cctatttatg tcgaacttat attagaacaa caacaacaac aactatgttt 2160

tgtcaaaact caaaggtgac attttgacat attcgagcct aaatgttgca ctagtattta 2220

tgatagtctt aaacctacat ctaaaggctt gaaggcatag aacctatcta catcttgtgt 2280

ggcttaggaa cagaggagac atgcttaaac aacttgagct ttatccttat ccaataagat 2340

gatggtattt gatgtgtttt aaacttgttt acgacttagt cataaatttt tcaaaattta 2400

tcaatgataa tttcatcatt caaagaatga gataaagaac atttgaatta gctttggaaa 2460

atttgatatt gatacaattt atgggattat ttattaagat aattatttag ataaaaatca 2520

atgtttaaaa ttgtgatgaa tacttatatt ttagttgttg atcatgttat ctatttttt 2580

tgaacacatt gaagaaaagc ctataaagag gttgttaatt gacttcctca ttgagccatt 2640

tgggggtgtg tttagacact cattgttcaa cgatttttat ggatagatat tgaatgtaat 2700

gtaaaatatt tggggatagt gatttgtaaa attttggtta gattgagcca tttggggtgt 2760

gtttagacac tcattgttca actttgggat gcaattatcc attgggaaat ggtagattga 2820

gctttagcta atagttgtac caaatgattt gttgaataaa atcattctct aagtgaggct 2880

tcgcagatgt aggattggtg aatctgaatt gcattaacca atgtcatgtg ttgattctct 2940

cattacttat ctcttttact cacgttttgt acttttatg caaactctct aattgtgtcc 3000

caacttctct tctaatagaa gatagaagaa aattgttttg aacattaagt tgaaacaaag 3060

tgcaaaccaa aggctttttc aatgttgttg gtaaaatgct ctcataaggt gttgctaata 3120

taaagatatt ccttttagca aaaattttat gtatagcctt tcttgcaaaa tcaaggaaaa 3180

aatattatta attttgacta gaatttgact actctcgtaa aacctaaaaa agtgttgagc 3240

ctcgaaggtt aaactgcttg gaagataatt tgagaggtaa gatcaccttg taggtaatgc 3300

accttgtaag caagtgaact gaaggtatga tagccttacc atcatcttgt aggcaagtga 3360

acttataagg tataatggta ttggaggtaa agtcatcacc atccaggcaa gtgaattcga 3420

gaatatatga tagccttgaa ggtaaagtcg tcgccttgta ggcaaacaaa cctaaaagaa 3480

catgatagtc ttagaggaac cattgataga gagaggtact agaaaggata taccgagtca 3540

tagatttatc tgtcaagact attcctcttt aagggaaaaa tatcgagaaa gtaccaacca 3600

aagagttagt ttcgtaagga accatcacat aggaaaaata gaaaacttga atggttactt 3660

gaatggaagt ctgttgaata ttatagacca aagcggtcca cagtagacgg ttagtgcggt 3720

tcataagaga gtaacccaaa caacattgca accaggatga aaggtaaaat gaaatctagc 3780

ccgccaaaat ggcgagggtc ttccttagcc agatccattg gtaaagtatc agtaagtcct 3840

ataggactga agtaagaaaa attgagtttg ccaaggacga atcaggttgc tatgacttct 3900

actttataag ttcaatggtg gaaaaaggga atctatacta gtagctgact acctaacaat 3960

ctgaataagg attgaaaatt atgagtaaaa gtatgtccgg gaaggaaaac aaataaagaa 4020

aggaatgtac ataaggaaag gacagagttt gcggttatgg tgagacatct gaaaagctat 4080

caagacatgt cgaatggcta taggatcagc taaggaaaga tcacttagct acctatccgc 4140

ttatagatga gttcagggag agaaccaaag accaccaact cggattaaaa gaaattatct 4200

taagaaaatc atggagtaaa ttgtgttaag tttctatttt tattacccga caagtttggg 4260

gctaacttgc atagtaaaga aactcactga gttcttttga acttatagaa atttggcttg 4320

tgtctatagg actcaaagag tgatcgagga ccttgaggag ggactaagtc agattgtgtt 4380

ggattaagaa tcattgtcag taaaagggtc atgcacatag gaatgtggta cctttaaagg 4440

gttcgcctca gggtcgaata tattgtattt aaatggtttc ccttagagtc aaggttggag 4500

atagtaaatt tttgtattaa aatataaagt ttttgatgta agagatattt atttttcaat 4560

aaagtctgtc tatatattat taagtttcaa gtatggtact tagtccaaat tggtccattt 4620

atgacatttt acacccggat ttggtgatca agtcgggtga gggtgttaca ttatcacaca 4680

atgtcatgag atgcatgatc ctaaatatat ctttttttt cccatatatt gtacttttta 4740

ttcaatttag tctctggact taagttaagc atatatttcg agtcctaggt ttggattaaa 4800

actcgatttc acatactttc attagggaac ttatactttc tactgctaac ataatttcat 4860

gataggtttt atatttattc aatttggttt ctaatgttac aaagttaaca aacaagccga 4920

actaacttta tgatttagcc ttttttatta ggggtgagca ttcgaccgaa tcgaatcgaa 4980

tcgaatcgaa aatttttgag ttaatcgagt tttcgaatct cattttatca tcctaacttt 5040

atttgaagtt ttctcgaatc gagtagagtg agatggaatt caaatcgaat cgaatcgaat 5100

atatttgttc gagttaaatt ttaaaaaata attttgggtc cttataacca ctgtcaccca 5160

tcgtaataaa atttgtccac cttaatcaaa atttttatta actttcatca cctcataatt 5220

tatttattaa tttgtatata ctagttagct tctttgcttg cttagttgtt tcaattatct 5280

tcagattctt gtcactatgt attttgaaat taaaaaatat attaaatata aaaatatgat 5340

ttttaataaa agttatttta aaaataaaat gtgaaattga taccaatata aaattttaac 5400

acgaatattt tatggcataa ttaataattc aattttaata taaatattca atatgactaa 5460

acaattcaat aatataaata atataaaatg tgaaatttaa tttaataata taaatagtag 5520

atataaataa aattattact atttatgttt agtgattttt ttggataatt ttgatttttt 5580

atttgagagt aaagggtgag aagtaaaagt ttaggggggaa aataaaaagt tttggggaat 5640

aaaagtttga gggaaagtaa ataggggggag taaaatttta gagggaaaat attaaaaaaa 5700

aaattagagg ggggagggtt tggggtagat gagaggtggg atggggaggg aataaaagtt 5760

ttagggaaaa agtgggagag agtaaaaatt ttgggaaaaa ataaaaggtt ttgagggttt 5820

ttgggagtaa aattttgaga aaaagtaaat gggagagtaa aattttggtg ggaaatgaat 5880

tttgggtaga ttgaggggag gggagtaaaa gttttggggg gaaagtggga aggagtaaaa 5940

gttttgaggg aaaagtaaaa aagtttggga gtttgggtaa aaatgtaaaa tattatagtt 6000

tgatattcga attatttgag ttattcgaat tcgaaaactc aactcgattc gaactcaaaa 6060

tttgaaaaag aaattcgagt tgattcgaat aactcgaata actcgattcg tttaactcga 6120

aattcgaatt tttttatttt ttcgagtcga atcgaatttt gctcacccct atttttgata 6180

atctaagctc aatatctaac aatttcaagt ctaattcatc aacttatcag gcaactcgct 6240

aaaactttaa caattgatta aattggcata tgggtcagct aaactaagct ctcatgatta 6300

caaatctata aaaaaattca agaaaagggt ttgaatttcg taccttatta atggtcgaat 6360

gttcaagcta aaattttagg ttttctttct tcaatgaaca acaagaagaa atgaagggga 6420

aagatgatta tccataatca tctttcccac tttcttatat atatacacac cttaattaga 6480

cttaactaat cttgtttaat tcagcttaat caagcttaaa ttatgctaat tttaatgcta 6540

atcaatctaa gtggattccc aaatcatcat ccactaaatt atagttaaga atggtttaat 6600

aaccattttg tcccttcggt taatttctat ttaagtcttc aagcctttgg ttaattaaaa 6660

cctataagcg attggacttt tacaatttag tccctaagct ttatttaact atttaattga 6720

ctaaattgct tgatcattat ataatatata tttatattaa ctccttaaat atttctattt 6780

tatatttacg gacttggttt acgaaaatga ggttctaaaa ctgcactttc tggtactatt 6840

aaaaatcggg tcgttacaat aaggcaacaa atttgcctta aaggctatta tatttttatt 6900

atttcttgag tttgcttgtc tacaaggtga cgagtttgcc tccaagctat catatattct 6960

cgaatttact tgccaatagg gcaacaactt tgccttcaag tccattatat cttttgggtt 7020

cccttgccag ttttgcctcc aaactcccag ttttcttgct tacaaggtgg atttacccac 7080

aagcaatctt acctatcaag ttatcttact ttcccggctg tttagcctta aagggtttac 7140

atcttttcaa tttacctttt caggttgtgc aagagcaatc aaattacatt caagattcat 7200

aatatttttt tcttaatttt gcaagtaagg ctatacataa atttttgcta aaaagaatat 7260

ctttacgtga gtaataactt atgaaaacat ttcgccaaca acagaaagat gtcttcaaca 7320

ctattttgcc ttaagcaagg tcactttata aacttccatt cggcaagagg gtgttattat 7380

tgtacatctc cactgcactt gaaaggcatt accaggtcga ccattatgca tagatactta 7440

tttgctcgat tagccttgaa gactgtacaa acccaatttc tgcccggccc actaacaaat 7500

aacccagtca ttacagcatt aaacccaatt acaaaaccag ccctaacccg gagcccaaac 7560

caaaggccca atgaccaagg cccaatttca caaaaaaatc agcctagggt ttcagaaaca 7620

gaaaccctag gcgccgcact agggtctttg acccttggcc tcctgacagc gccgaatctg 7680

ctgactcttg gcctctgcca ccgccactgt cgcgccgcac ctgccaccat cccatcgcca 7740

cttgcacctg cagagaagaa acaacaagga atatagaaac agaccacaaa atcgggggga 7800

tttttctctt ctttttttctc tttgctttcg gttataaaaa ccgatgattg taaaacaatg 7860

gggttcgacc cctctttcat gatttcaaga aataaaaagg caaagaaaac atattcaaaa 7920

agctcttttt tggaataagc ttttttttt ctttctttc tctttatttt ttttcctttc 7980

gtttgcaatc aatttttat atttttattt ttgttttatt tttaaacaat gtaaaaaaca 8040

aaaacaaaaa aaatacctt ttaggatttt ctggccaccg tgtatggtgg ccggcgcgat 8100

ggcgccgatt gcccgagcac tcgccgaatg ctgaccggag tctgggttga aagagagaga 8160

agggagagag ttttctgaaa tttttttaa aagagggatg aaatgatttt tttggggttt 8220

tttttactta tataaggatc caaaacggcg ccgttttgga agggtca 8267

<210> 3214
<211> 1571
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240290_G1, chr7:17240765..17242335, Cluster 19

<400> 3214
tatttttttt attttagttt ctagaatgca aattatatgg tcgaaggaag gctcaatgga 60

tggcaataac tgcacttgaa tccggagaag attaaatatg aagatgtaat tgaagatttt 120

atttcaaaaa acgtgagata caagatactc tttactagaa gctaaaaaaa tatcagtgag 180

tatcatacat tgctgctcta aatatttaaa tgaacacagt gaaataaact ttagattatt 240

tttaacttta tatagtatat attatagggg cccaatgtta tgttttgcac atgtgccaat 300

aaaactcaga gacggtcctg ctctatatcc aagcatcact acagttcttc tagtttagtc 360

gacaacaact cagcaacagc aacagtaact gcagatcgct ggtactgagc tacagatttt 420

atcattttcc tctgcagcaa caataactaa ctttcattct ttggagaagt agagcttatg 480

aaggttgtca agaaacactg agcatttagc atgtttgttt ttaaaatcgc agttcacctt 540

ttctggcttt catgggcgtt tacggtcacc ggtggatctg aacatgccaa ctctttgcag 600

gagcaagtcc aaataagtat aagtccaatt gattggactc agttgcaaga aattgagtgg 660

ataaagatcc agtagcttgg tcttctagaa ggcgatgctt ctgtcatgtg atttttccc 720

ctttggcaca ccatttcact gctttgtggt ttcttggttc tgtttctttc tactaattct 780

ctactctgtt tggatatcca aacagacaga gggtctgatg aacgtacatc actgtattca 840

gttgacatta tgcaatagag tctttaaaag ctatgcatac tgctgcccta atttgcctct 900

ggccatatta tttctgtgga gcagataagt tgttgcctca atacctctgt ataaccaaag 960

ataaactatt ctggctttct cagtttccct tcctgataga gcactgtatt gttctttttt 1020

gtgtatctat tttggtttgg tttttccccg actgcctatg ctttgcaggt tggtgcatca 1080

gcgtcaaatg gaacattcca aagaaacgta tttggtggta tataagcact ggttagttga 1140

tcaggtcact gggtaacaga atatatgaaa agatttcaac atttttgat gtgtattaac 1200

tgcattatag gctactattc tttggatctc agatcttcac acaggcatac caagaaatag 1260

gtctcttgct tgatcaaatg ggctactgga gctcaaactt catttttta cccatgttgt 1320

atattccata tctgatcggt tagagtatat actatgtcta aaagaattaa gcctcttgct 1380

tgaacaaatg aactgctggt gtcatcaaat tgacattcaa attttgatag aattgtatcc 1440

tacatattaa tggttagtgt atgtcaaaat ttatttaaaa tatgcttgat tcatacacta 1500

gaatcatagt taccatggct aaaattgcca gaccaaaatt ctgctatgta atcagcgtcc 1560

tgaagatgaa t 1571

<210> 3215
<211> 2889
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_244521_G1, chr7:41546861..41549749, Cluster 19

<400> 3215
gaagaagaag tagacaggtt tgtggctaat cctttcttat tcaattcgtc atctctgacg 60

gtttatcagt acaagtattt ataggccatt agatgggcca gattacaatc aaagaaaagc 120

cacacaatgg cccagattaa ccctaatgct tctagaacct catagatctc cagatctact 180

actacaccga actcacctct gcttcagtca ttacacatgc atggtaacca aacagtacat 240

gctctctatt aaatacatac agtaataacc aatagaaaat acaacacttt tttatttaat 300

tatatgatgg ctatggcgcc ccaccagcag caatgtatgt actcctctca ttctttttgc 360

agcaaaggcc caacataaat tgtacttaat aataatcaat atatgtggtc gtattattga 420

agaacatctc atatgttcca tgcctttctc gacctcttgc gtttttcata atgcttggat 480

aaggttatac ggcaacctaa caaaacaaac aaacaaataa agaaagcagt cagtagttcc 540

cttataattg atcgatcagg cggctccgtc ccaataaatg aaccggaaca agaaagaaag 600

aaagagtaat aaaaggaagc atgattgctt ttttttttt ggcgcataga gccgccctgc 660

accgacctcc acttccactg acactgacga catcactctc gtggcttgcc cgtccatctc 720

catcacgggc ccaccaccag cgccatttcg gcccatcctg tggccacggc tgccccgccc 780

tgcagcctcc cgatggaata cacagaatta ggtcaccatc acaggcacag tggtaaataa 840

acaaagacag agaaaatcgt agccacactc tagctagcta atgccactgg ctgggcagtg 900

ctgccgtgcc ggtggttgaa tcccgtccac aaaagtgatc acgccgcgct ggacaaaaca 960

aaattccagt atattattat tattattata tttagtatat attatgtgcg tgtggctacg 1020

ggttcttgtc acgaaatgct agccgaacta gctagatcca cgacgacgac cgatcgagtt 1080

tgggtggggg tgaaaaaggc gtgcctacgt gcgtgcgccg accagaggat gagaatctga 1140

gccgaaatca catgacatga ccggcaactg aagaaaagtt gccgcgatgc cgtcacgtac 1200

gtacgattgg attatagtat ttgggttcca atataatccg cgtactacgt atatatatat 1260

ccaacggcga cgggtggtcg acggatgtaa tgaacagccc atggtttcat gtatatcctt 1320

ggatatatat gatgggacgc agcagggacg gcatgggagt tcagttccta cgttttcttg 1380

cttctgtcgt ggcactgaat gccagatgct tgctccgatc catgtggcat cgtactgtgc 1440

catgtgcatc tacgtggcag attcatgctc tgacgtgctt ggttgcattg ctactacagt 1500

cgtgtagtgc gccgcccaaa cccgtagcaa tcgcaacagt gcgcctgatc tattgatttc 1560

tacctacttt ataagcgatt cttctcaacg tgtttttga attaatataa ggtatcctcc 1620

aaataaaaaa gccactttgt ccacttctct agttttaagt gacaatttaa tgaagacgtg 1680

ttttagagac aatttaataa aactaatttg attatgtagg tgttaacgtg tctctctatt 1740

ttattagagt ttggtttatg gcatagataa agtagcctac gacaacttat ttatgatgaa 1800

aagtgtacta gtatcatggt ataagaatat tgttacctca agcaatttac ttcttccatt 1860

tatttttata agaaacacac ttgtcttaag gtccaacctc ctaattaact aacaattggt 1920

cttacaaggt gtgaattttt tgttacagat gagtgatctc ataggatgcc tcaattttgt 1980

tccacagaag tgatatcatt ggatgcgtgt gttaatatgg tatcttatat aagattacaa 2040

ttacaatttt gtcgatataa gcattaaagt atacaaaaag atttgtaggt caaattataa 2100

tatttgagat ggtttcatgc taaagctgag aatgaaagcc accaccacca ctactaccat 2160

ccgactagtc atctagagca cttctctctc catgttgccc ctccccctcc ctctccggcg 2220

aggttgctgg tggaagggag agatgactcg ttatttctca tctacaatta aatagttctt 2280

taggtatatt ccaaataaat gtaccaatga aaccatcaca tgtgtttata agttggaaac 2340

tcattatcta tgagactgat gattttcaca acaagattgc cgttgaagga gttaaattca 2400

ttggtaggag accaatttat atggtatgca aggacaaaga tgctcaccga cctcatcgtt 2460

gatagtcgtt gagagagaaa aattaacatg atagattaag agttgaagat gttgaatatg 2520

tagcatgttt tgcacctgac cattcaacta gcaatgttgt tttttcatcg attcaaatgt 2580

gtttccgtgt aattcagaat gttggatctc gtgggttccg tgtgttagat ttggcatgag 2640

aattatatgt tccgtgatgc tatgtccatc tacaacatcg actaacaatc aaagctactc 2700

ggaaagaagg cgatgaaatg aatgttcatt ttaactttta accaagatct agcccactca 2760

tttcccaaaa caaaaggatg agacgacccc agccacaact tttgagttag cggagcagtt 2820

gaagcctgtg tggtatagcg tgatgcatga cttgaatctt tgtgtgtttc ctagccgtct 2880

tgttgtctt 2889

<210> 3216
<211> 1717
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_25102_G1, chr1:152168975..152170691, Cluster 19

<400> 3216
taccctaaat ctgggagctg gaacgacatg caaaatagcc aatactattt ctccattggt 60

aaagcgacac tatctagatc aacataggtt atctagaggg cgtcctaaaa gtaaaatgag 120

attatatgaa tcaacaacac agacctcaag gcctggtttt aacttgtaac tgaaggtgaa 180

tgaggaattc ggtgtgctgc ttcatgacaa cattgtcaac cagtaaaggc tctaaggaaa 240

gatggataca tatgatagaa cttctaggca ggaagttgct tttcatggtc tagaacagaa 300

gatcctaacg acaatagtgg caagggagca agtcttatta tcagagtgct acctcctcta 360

tgtataaact gctaagtata aaaaagactc ctctataaca gcatatagtt gtaccaaagg 420

gcattccaat aaaatcatca tgtggattgt gaattgagct taggcgggaa caaaaattgc 480

atgaagacat gactaatatt gataatggcg ggagagtttg gatagtgtaa tagtatggcg 540

gggctaatat tttgtggagg gaagcatgat tagtcatttg aggcatattt ggagtaattt 600

tagaaccaaa agactgggaa cattatttga gatcagatac tgtaacaaca caacctattg 660

tagatgaata gaggaatagt tttcggagaa ggaatagcaa tgtgaagcat atatatgaga 720

acagagacac cttgtggctc ttgaacactg attgaaatgc aattcgacag ttcgtcagtt 780

caacaaacac gaagaaacat gcaggcagat gttttttggc tagtgtagaa acccaactga 840

ttttacagg atcttcgaga gtagaaaaca aggcacatcc tgtaaaatat tgtttacagg 900

atggatacgg tggaatcctt tagcataaaa attgttcatt catcacatac attattttca 960

agagtagaaa acaaggtcga ccatacctta tggcgcgtga tgtaggccta cacaaaaggt 1020

gctagaatta gatataggct ccatacaaca gcacctcatg aatctacaca atccatacat 1080

agtctagggg cataacgtag aattgaacca atggaacaca cttaaaattc atgaggcaca 1140

cgtgatgaag cgcgtcaact aactgaattg ctgagaaaat caagctatga gtgtcttctt 1200

gcagacccca ccaacaataa taacctatga aggggaaggc taagcattag acaaatgtag 1260

tctagaatca atttatagga ataacatgga accaaaccga tcatacacgc taaaaatcca 1320

cgaggtacaa ctctgcaagc atgtcaactc accaaattga tgaaaaggaa catgcgatga 1380

gtgtcatctt gcagaatcct ccaatcgtcg cctagctagc aaggaaagag ccagacatta 1440

aaacaagtag ctcaactgta attataaatg gctcgctcaa atccaaagtg cacacaacaa 1500

caacaacata agcatcaatt gaaagcaatc tagacatcga catatcttta tttgggccca 1560

tctttatttg accacgaagc taaagatagc agaagggaaa aaacagatgg gacataatca 1620

acaaaaaaaa tacgtggcaa acaatactgt agataaaagc cactcatgat tcatagcaca 1680

catccatggc aaaacaaaac taatgtccat tcgtcca 1717

<210> 3217
<211> 1570
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253701_G1, chr7:105744250..105745819, Cluster 19

<400> 3217
tgttattttg gttatgtatt ttacctttt acacaacaag gatatgtata atttccattg 60

gttataaact gacagaaatt agtgttccct aatggaagtt agctgatttg cgtcatctta 120

ggtaacttat gtcagttccc aaccgacgct tgttaggcga tggaagttag ctaacttcca 180

tcgaccacaa gcagctcata aaaattacct caggtcacac taacttttat cggctaggag 240

taagccaata gaaattagct aacttcaact aacgaaattt tttggaagat taactttcat 300

cggcctccta cttggcgaac aaaaaataat ggtttcaaca cctgacaaat agatattttt 360

atttatttta ccacataaac catataaaat acattcatcc atagcacaca taatgattca 420

agtaccattt catttaccac ggtcgcattt atcacatgga atagaatgtt caatagccac 480

cctgggatga ttggagtatg ggctctacct ccagaaggat caccaaagat tgcatttaca 540

aatgtacttc caatatccat cgatcccaat tatatagacc aaaatatgtg attagcaaca 600

attagacatt gatatggaaa aactaaaagc ttatgaatat aacaagcact aaatactcct 660

gttgtccagg tgttggtatc aatgtaggtg gaatgatgag aacatagaca ccaactatat 720

gatcaaggcc caatcaatga tagagtctta gtccatagtg gagttgaagt ccaatttatt 780

cgtgagtcta tatgtggact gggcgtccat tttagcgaag cccactcctg tagcccgaac 840

caaactctcg aataaattgg acttcaacta cactttggct tgattgggcc ttgatcatat 900

agttggtgtc tatgtcctca tcatggagta tgataactca gatgccatta tcccactgat 960

tcctgtgtga aatgtacaaa taaggtcaaa tgagcaaact tagtttaaat tggtcaagtc 1020

tagatgcaat atactatatt ttgctagttt gagtaaattt ttctataatg catcaagtag 1080

gaggacaaat gtcaaaactt agttataatt tgccaatttt aaaatagtac tatatgtttc 1140

actagtttga gtaggttttg atataattta tctagcaaga ggccaattga gcaaacttag 1200

tttgctcaaa ctatgtttaa acttcattaa gcaagaatac tatgtttgaa tagtttgagt 1260

ggattttgct agaatcaatg tacatagaat gcatggctta cttgaaccct aaagtctgtg 1320

tagatggact atggtaaatc taaggccctt atttcatcga cccctattaa aatatacaaa 1380

tgaggccaaa tgatcaaact tagtttgact ttgtcaagtt tagaggaagt gtattatatt 1440

tttctagttt gagtaagttt tgctagaatg catcaagtag gaggacaaat ggcaaaactt 1500

agttacaatt ggctaaatgt aaaaaccaat gctctgtatt tcactagttt gaatagattt 1560

tgctagaatt 1570

<210> 3218
<211> 1471
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253720_G1, chr7:105928705..105930175, Cluster 19

<400> 3218
aatgttacga atttaccttt tgcacttatt tgagagacga ctctaaatcc acatcttgaa 60

atctaaattg tagagatggc tagatctaga cccaccctct aaatataaga atattttcta 120

tagacggcta aaaataccga ccgtaactac ataagccttt ctagagacgg gttagtttga 180

aaaagcattt taaagacaat tttaatttaa gctacctcgt tctataaaaa ggcacatctg 240

agaatggttt ttttgcggtg gtgattcgac aagaagaaat catattttta cttgcatgtc 300

attttagaag ccacttattt tataaccttc ttacttttct cgaaaggaga ctgacatgcc 360

taatttacat cagacatctc gttatttgga aagtgtggca atagaaattt cttcaaaaac 420

aagttaattt tatctaataa gctatagcta acaacctcct agcccatcaa atcacgctcg 480

ggaccacatg ccatgtcttc atcaactaga cataaggctc tgtttggcat ggcttcaatt 540

tcacatattt ctactcaact acacaatttt agtggagtag gctctacata gagttggagc 600

tatctaggag gagatgtttg gctaatagag tgtctctaga aaagagattt ttacggctcc 660

tttgacattc ttgccttttg ttctattttt aagtgaaaca atttgtgtac aaatattttt 720

accttgcata tgaaacaaaa tgaccattga aaacgttaaa ataccaacat attacatgtc 780

cattatctgc aacagtatat ttcatagtac accatgttat taatttttat ctagttccag 840

gccaaggcaa tagaagtagc caaagtatca cgaaatgtat ccatggtaac aaagcttgat 900

tctgaagttg atccatcaga agcatgctgc aacataacat atttattgta cctttctaaa 960

atagtaggaa caaagtttgg gtctcaatcg aaattaccga agtcttcatc ctcactttca 1020

tgcgtatgta tgaaattttg aagaaccatg gtagctaggg atgaaaacgg tcaaaaacaa 1080

tattgtctat acaaaaacga tagtcggtca gacagaaatt cacctagttt cataattaat 1140

ctttttatta atgactataa tacgatgttg acaaaatttt taaatacgat aattttcgga 1200

aatggtattg tacttacgaa aacgatacaa ttactaggct ctggttacat aatttttggt 1260

ttcagttttc atccctaatg gtagtaccaa taatcttatt ttgtgtaagc atggaaaagt 1320

atggcatctt ataaatgatc taccattttg tatttaatat cccaaatgag ctatctatga 1380

tattacatat agatgagtga aattgtgtag ttgagtagaa atgtttggcc aaacatctcc 1440

tcctagatag agttggagta ggctcaatct t 1471

<210> 3219
<211> 1779
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254676_G1, chr7:111343634..111345412, Cluster 19

<400> 3219
ctctcccatg atctgatcta attcttgact attcgggctt gcccactgga caatccgacg 60

ataccagtgc tgtcaatttt agtgttcaac gttgggctac gcaaaatagt ggctccattt 120

ttattatcta aataaaaaac ctaaactatg tataatttat gcaaaaaaac ataactatgt 180

ataatttatg caaaaacatg gaagtcaaga tatctaacta agagcaatat ctttccacga 240

atctaggaga ctagggacat tacacagtac atgatttatg gaattgaagt gtttagcaat 300

tcaataatac cactatctag gtagttgcac aacatgataa ttaatatgtt ttcttagtta 360

tgaaatgcta gagtagtaaa gagttcacaa gctcatcgac atggtaccaa cacaatacct 420

tgatttagta cataacaaaa aaaaacttat tggtgcaagt gaacaactac tagtgcaatc 480

tattcatcaa gcatatagtt atctaaataa gaagaatgca cacttgatga ctgatgatcc 540

atgtgaataa catttgcata ttgttatgta tgaagctagc tcaagtcgat cttcattaca 600

ttcattacta tcaataaact ttatcttcct tcttcattac attttattaa tttttggtcc 660

accatgaaaa ttaaaaatag tgtccgctat ttaaaaatag tgtccgctat ttaaagctaa 720

agctacgaca tttagcggag atacaacggt tgtagttgaa atatcatcta aaagtaaaat 780

atcatagctt tacgttgtag gaaaaggtta tagcaccact atttgaaacc ttttttagt 840

gttcagacta aaacataata ctctaacaca gatacccgtt agtgaaagat agaggccgat 900

gatatttatg ttcactttag cgaatattgt aaaattgttt aaaatgtaaa aaaacaattt 960

taaattattc gtttagacgg tagcttaaga aagtctttag ttcaaaagca tctctaatga 1020

cagtttttag gcatacaaat aaactcgtga aacaatacta catgtcttca tgcgaaatta 1080

ctttgatagg tttagggtac ttggtaaata cttcctcata cataagttca agaagtcatg 1140

gtgccttttt attgttcgca cacacggtat ttggattgat tttgtcatac caaaggggcc 1200

cctgctgtgc ccgaaggcga agctgggcga cgtcacaagc agacagtaaa cttatatgta 1260

gtttttttta aagttaatcg aatatttata aaatataata aatattatta ttttagttgt 1320

ggaatgtact tttattgaaa agttatttaa atgcaaaaat attaatatca tttatataga 1380

cttagttaaa ctaagagtaa tgtacactag cggtgtacga atttggcacg ctctcaaact 1440

tagaaaaccg ggcgaatagg ttctcgaact ttatcagttc ctgcaaaact atccaaaacc 1500

gggtttgtaa aaccggctta ttgtcatagt gacttgtcta tagacaccac aaaacatttt 1560

ttaagcaaat tgatacacga gactccccgt tgtcctattt accgtgtata cagtttgacg 1620

gaggttttta tcttgcttgc aggcaaaaca aaggtctggg tccttttttat taacggcgtg 1680

gatgaactga tctgccagcc cactaggttg tgctcttgtg ggtggacgtg ggtttggttt 1740

tgtttctatt cttctttctc gccccgaact tgcgagctg 1779

<210> 3220
<211> 1847
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260570_G1, chr7:143234045..143235891, Cluster 19

<400> 3220
ttttctttcg ggtttcgttt ccattagaat ggctaggttc aacgttggct tgccaaacct 60

atcacagcat cgcccaaatt attttaaaat gttttcattt tgaactgtgc agatatcatg 120

gatggagaag tttgtgcaaa agggtactca gattatagcc cctgtaccta tgggagttcc 180

agctacgaca ggtatgggag gctttgaaag gccgactgct aagggtgaca tcttgcggtc 240

agatgcaagt gcagcgctaa atgtcggtgt tctccatctt gtacccacat tggatgtatt 300

tccattgttg gaagatccaa agacgtaaga taactgttct catgtgtgtg gaagttagtt 360

aaatttcata ttatcgaaaa tgaaacttcc taggtagttt agttctattt gtcaaccctg 420

aaatgactat ttaaacatta aaatgttgta gtaaaatcag tacacaaatg gatctcaact 480

tctgtttcct aaaaggctct agaattagtg ctaaacatta ttttgcatca aattaccagt 540

tcgtaaagct tttccttgat aattattaca acaatagtaa taaacaagtt tctgcatctt 600

ttttctagaa tgcaagaagt ttcagcatat atccaagtta tccaaccttt taaatcgtga 660

taattgatct gttttgcagg tatgaaccaa acacaattga tcttgaccag gatgagttca 720

agtattcttc tatgtctctt acttaaatat atataataga aattgagtcc tttggttata 780

tttgagatca tcatgctagg tactggttca agattttgtc agatcattcg ccggacctcg 840

tggacaaggt atgatgttgc acttgcaaag acatctgcat agttcatctt ttatttattc 900

atggcaatgt gttaaaaaag gtttgcaaat gtcgttctca ttacaatcgt caagccatcc 960

gagactctgt tttcagtatt tgccatctta atcagatata tctccttcag tttccgaatc 1020

cgtctatgga atggcatctc tggtacagtc ggaatgaggc ggtctgtaac cccataaggc 1080

tagaaccaca catcatttgg agcagaaatt gtctcaccct tgatcttgtg ttaaccaaat 1140

ccattttctt aaaaatatct aacttcgtta ttgttgggtc cttacaagta agtatatttg 1200

tctgtaaact gccggctact tgtagtttgc aacattatac acaccacctt tattggtttc 1260

cacataagca ggtatgcacc tggcacaaat gtttgccaaa aggaacacag agtatccctt 1320

gttaatggac tagttaactt gagtaactag tagttgtttc cgtggcttag cgagcttagc 1380

tccttgactg tattgaaggc aatatttcca cttcactatc atcacaatca aatttacatt 1440

gaacttgcat attttgggct gaggtagtac atgtatagtt tttcattttg tggtaatact 1500

gtatgaattt aggatattta cctgaatatc catttcttgt ctgtttggga gtaaatggga 1560

tccagaaact gtatattctt gagtcttgac taacctgtgc attctatcat ttgtaggcag 1620

ttgctagtga aggtgggact gatgatgcca aaagacgggg tgatgcattt gcacatgcct 1680

tttctgctca tctggcaagg taaaaaatgc tattgcatgg cattagttcc gaggtttttg 1740

tttctttgtg taccactatt ggctgtggat agaatgctag tctcatatgt caatattatc 1800

cgttctcttt gctacctaac tggtgtctaa ggttagattg atggagg 1847

<210> 3221
<211> 1983
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261793_G1, chr7:150053268..150055250, Cluster 19

<400> 3221
cacaaatttc atgcagtctc ctctctaatt tacttgcacc aactgtacca tctttcgtta 60

gccaatccat aactctttca catatccatg catttgtagc attctttgcc ttctcatttc 120

tttgcgtgct tgcacaatta tgcttgatcc tatgccttca aaactataat caaaaagaaa 180

tgcgaacaaa tacaatggaa tataaaaaat aacatgacaa tcctatgctt gcacataaaa 240

tgaaatataa aaatatatag tacctgaaat atacttttc ccatcattgg tcttgcaaaa 300

atatgccatc cgcatctcaa cacaatgagc tataaacatc cccggttcat tcttgtcaat 360

gttaaattta aattcctttt taatttccta ttgacaagat ttcccttatc atgtacaaca 420

ataggaatgc taatattgtc atcttcggta ccttcccaat tagcatcaac aatatcctcc 480

tctctaccat cctcatcact gtcgaccacc acatttgtta ctataacaac atcaataggg 540

gtttcaacac cagacagagc tacaacatcc taaagaacat tatcatccaa ataaatgccc 600

tcatcgtcca caccaacata ttcaagctcg taagtcggac ctaataattc aagctcatgg 660

acatgttttt caacaccctc ttcttcaaca attggggcag gggtgacttg tgcattgctc 720

tttcttagat gatgttgctt cagctaagaa ggtacacata atgatagcat tttcgagttc 780

atatagatca tggacaattg cttgctatgt aagcctcctt acatcccaac attgacaaaa 840

tgcaacagat cgctctgttt aattcaagat ttattttagt tagctgttgt gattaatttt 900

taaaatgact atttaccccc tctctagcca gctccttgaa cctatcagcg tgatattcta 960

tggatttggt gatagatgat gtgtgagtac cctttatata taaacatctg catttgtaca 1020

ggatcttgaa aaaaaggtat ggtgatccac caataatgtg ccgattaaca tttaaagatg 1080

ctcggttttt tcaatctata tttggaatga atccacaaat agatcgttgt gaggaactaa 1140

taaaatgtaa tctctccttt tcgaattaca agtcgttttc aacttttttc gaaggatgaa 1200

atttgatgga aattatgaaa aaattataaa gttttttttat atcgaaccat atatttattc 1260

gatgccgtaa atctttgtaa ttctatctat aattttggac aagtttgatg ccatagatct 1320

ttataatttc ctctattatt ttagttgaca ttaaaatatt ttgattctcc aatgcaacat 1380

ggttaaattg tcttgtagat ttacgatgga gtgagtatca aagaactccc ctcccgtacg 1440

tgatcaattg atgtgtatct cttacggtta cattcaatga ttaaaacatc ctggtgggtc 1500

tataataaac tagtttgaag ttgcaagctg ctgcatcaca cgtggctgca gcttccacga 1560

catgtcatga agcacacctt cagttatctt tgagtgtgat atggggtcgc gccgtcacac 1620

tcacaagacg tgcgtgcgtc atgacacaga gtgtgcacct ttattttatg tgatatatcg 1680

gctcgatcga gacaaaactg aaaattgtgt agggcccgga gttgcatgct tgcaacaaga 1740

tgagacgttt ttagtgacga cgatggggag aagaaatggg taaccctcct cccattgcac 1800

tggcggctta aagcacaagg ttttcctttt gcctttgtta atttagctag aggctaggac 1860

gggaagatac ggctagctgc ggcctgcggg tgcaattagt ttcgtgtgca cacactgttc 1920

caggatctag ataaaaggac gtcacgcact aaaaaggtat ttggaaaagg aaggatagag 1980

agt 1983

<210> 3222
<211> 1851
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264497_G1, chr7:164249103..164250953, Cluster 19

<400> 3222
ggctaatggt ctgatatatg agaagatttg cctactttgc ttgtttttct tgtcgagagt 60

acaaatagca aagatcggtg tcaactggcc aactgcaaac ggtgcaatgt caggttgggt 120

attcaatttg ctcccacaac ttttcccttt tctcaagatt ttagtggttg cggtgtaact 180

ttgcttccaa acaaagaaac agcaggccaa ttcgatgaaa gtttattaaa tatataatga 240

aatgtctcgt tgacgttgtt gtgatttcta aagcaagtgt gacagagata ctgctgtatt 300

tcgaaaaaat tgagaaaatt tacagatttc taatgctaca gattaaaaaa atacgccgtt 360

gccggggatc gaacccgggt cacccgcgtg acaggcggga atactcacca ctatactaca 420

acgactgtag atgctgctca gtatggcgtc acttatttgt catattatcg ggacggtgga 480

tatggcaaag agcgatgatg gaacaagaaa aatcagtgtt gagaaaacag gggatttata 540

actttatatg gaaggcgctc acgaatcgat agattttgaa ggatatagac agaactcaat 600

agtcagtaac ataagagatc ggtatttcat atggaaactc ggctatataa ctgcgagctc 660

ggccaagttg gcctcgagct ggtcacacaa actctgaaca gtgtcaacca gttcagcact 720

atacctgtcc tgctccaagt tcatctgagt ggactcaatt gactaatgtt tcttttgatg 780

agtgagcatg agtaggagtg acttttcctc ggtcccgtcc aaaatttcct acaaaagata 840

tcatcagaag tagggattta caagatgggc taggatttag aaatattagt ttttagaagt 900

cgtcagcgta ctatcgaggc ttctttaact agtgttggta attctgccaa gtccaacttt 960

accataagat attgtacaaa catcactaag acttcattgt gtttggtttt agacacggta 1020

gtcttggcct cgcacagaat ttcctcgata actagatccc atcacttgta tcagtcaaca 1080

actcaaaaac tgcattgact acatgagggt tcaatagaaa tataattacg aggggcttag 1140

ggatttgtgg aggaatcggt acaacaaatg tcatggcagc agcagtcttc tcagcccatg 1200

gctttgtggg agcaagggta ggttccatgt ggacaaatgg ctcgactagg cgatctagga 1260

ccaaatcctc gagggctcca aaggactcga cacttgttag cacttagttg gtgttggtat 1320

agtatcattg taggctcaac actgatagga gcgctggtcg ttgagtcctc tcgagcgata 1380

gagcttgcct tatctttagg taactctatt gaatgtcaac aagatcgagt ttcatgttta 1440

taattattct tataataaaa atcatagcta cgcaacagtc acaccttaca gaattttgaa 1500

gctctctaga tttcagctct ggtggctaag tcctctagcc tctctagatc atagctattg 1560

ttggcttcga gtcaccaccg aaggatggga aggtgccctg accgggatgt tggattggga 1620

cgattgtacc accatggaat cgaaaccata ggaggaggag catcatggaa tcgaaaccat 1680

aggaggagga gcatcatgga atcgaaacca taggaggagg agcatcatcg ttgtcattgt 1740

cgttcgagac atcgactcat gccaccttcc tcctctgttg tggcctgtgg aggaggggtt 1800

ggtttcttcc tagtaacaag aggagcctcg agggctcgct cagtgagctg c 1851

<210> 3223
<211> 2484
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265679_G1, chr7:170942043..170944526, Cluster 19

<400> 3223
tccgtatata gaacgagata cagagaatgt tgttattaga aggtgaagat atagagaagg 60

aaaactttag aagagactgt aaaagataga tatagagaat ggatttagat aacattgttg 120

aagacattct gacagatgga gtcagggaag tgtcggattg agagtgagtc caacgccccc 180

ctttctcaaa gttcatgcac gtgtattatt tactaagtag gtggttgtgc gttgcaacga 240

cataaaaatt attcaacaaa atgttggtgc acaacgatta cataaaaaca aacatcatat 300

atattatcga cttcaatatc tcacaaatct ttttgacaac aaccaatgta gaactaaact 360

gatataaatc aaattatact ataatgcaaa tatcaagaag aaactaatat taaaaaataa 420

agtctaagaa gtgagtataa tgctcgtgcg taacaaatgg gagcaaaaaa atatgaatat 480

ttgtttttat cctatactct gaaatcgtgc taacgctacg tcaaaacaaa atgaagtatg 540

tatttacaaa taacacccca aatacacatc aacttgttat tatatacaat agttaggtaa 600

gtgtgaacta ttactttaag catcattcat tatctgtttc caagatcttc aaatgggaac 660

aatacctgaa gtgtcacttc taaagaaaac cttaatttag tacactggtt taagtttgac 720

aagacatgca ctcccctcaa ctgagatgca agggatgcac aaataaatat aaggggaatt 780

ataacagcca aaatacagag atgtaaacag aacaaaacca agattagtgg cagcagtggc 840

gcagttaaga tataaaaaat tacactcaca cacactacat gtgccactcg aaaagtatga 900

gatggtgtca ccattggcca cctggactct agcaattttg ttttgatcat attgtagtga 960

ctatgtaaac aaatatgaca cagagatatg atttgagtgg agagaatgag ggcaactatc 1020

gattggagag cggagatggg gggaggtgaa gaagaagaca gctatcagca ttgttgcgac 1080

atcctaaata taaccaaata acttgtttaa atgtacttac tatattttct tgtagaacag 1140

tgtcacgatt cacaacattt ggtgacgaat gttgctcgtc cactgagttg tgcattttgt 1200

gcatctttgg catgttcaga tgctccatct aagttttcct tgtcaatgtc aaagaactca 1260

agcttcttca cttcttgtct agatgtctaa aagaaggtta cttgggctgc atctcttttg 1320

cagtggcatt agaccactca gtgctagaag tagcaacaaa tggagcaggt ttcttgaaat 1380

ggaccacaat aaccgttgtg ttaccacatc cttcgcaacc agatgtaggt gtcacacagc 1440

agctgagcaa cttctcccac acacgggata acttatgctc ctattaagtt attaggcgga 1500

tgagggaaca attttgatat gtaaaggtat gaaacacaac aaagttctcc acttaccgtc 1560

tatagctgtt tgtgtacaaa atcgactaca tcttgacttg atatgcaatc cctgtatgaa 1620

ggcctcaact ggcgaatggt gactttcatg cctgagccct ggcaaccagg gcacctcaat 1680

gaggcgccag acttcgagtc cttgttgaaa aaacaagaaa gaacgttaaa tcgaaggttt 1740

tgaaaaaaaa tattcggtta aacagggagg gcaaaaagaa ctaacccctt gcatttggag 1800

caattgacat tgcgcgaaag agagagcttc tttgagatgc cattgtaaag atcttccacc 1860

tgctacttcc accagacaaa aacatataaa agccagttgt cacattgata atgaagcata 1920

acataaaaaa aaacagtcac acatgaatat aggtacgata cctccaaaag agggtccaaa 1980

gaactatgag aagatgtcaa attgatcaac atgagatcca ccaccaccca ttccttcctt 2040

aaaggcacat tcaccataat tatcatagat ctcacgttaa ggatcaccat tccttccttg 2100

ttagcttgtt cgagctcctt gaaccgatat aaattaaaaa taaagttttt actctataaa 2160

tcatggatca aaaaataaat ttactaggac agactgagcc agctgagaga gggaacatgt 2220

atcatcgcat atgccacttc tatatttttt gttacttaaa aaaattgtca ttgtataaac 2280

cagcagtgtt atggtacaca agataagcat gcaaaaacaa tattattggt tcaaataatg 2340

tggttgtcgt cgacgtgctg ctcttcgagg tcacctgcag tcggtgcccc gtcgtgacgc 2400

tgcccaacag gagcccggtc cactttgtgc aaagggtctg ggagctccaa gaagccggga 2460

gacctttcga agccgcggac gcat 2484

<210> 3224
<211> 1487
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266113_G1, chr7:172916582..172918068, Cluster 19

<400> 3224
ggggagcacg acagcccatc gtgaaaactg acgctttata tagtagatag aagaagaaat 60

attttattct aatgacaccc atgggattgc tagataggga tctcaaggga gtttgagttt 120

ccaaactagt ccttagacgt tgtttctaaa aaaagtcagt ttcgaagtta aggacctgtt 180

taggaatgct ctagctccaa aaaaattagt gaatttggta gaacggatca ttagatgctt 240

aaaaaatcat ggagctggag ttataaatct ttagaaaaca tttagataaa tcattctatt 300

tctcatttag attaaaatat ttttaaacta tttaaattta tattataaat tatagctaca 360

gctggattct ggaaccttaa gcagtttgaa acataagacc ttccccaaaa gattatacgc 420

atgttttttt ctcaaaagaa atttccaaaa aaatctaaac atttgttcct gctcagaaaa 480

atataaaacc ggtttcagct cagaaaattt gtgtcaatta aaaattaatc tcctagcagc 540

gtggagttat ttgaatattt tattgtcttt tttacgacta gatgttttcg ctgcctgtta 600

taattagtca acgttgtcag tccttactac ctagcagcag aacaagtgac ttttcggtat 660

ctaccaccgc acctctcgta tctttgtgtt atataatgaa tagatattat atatatactc 720

acaatttaaa aaacaaaaat atatgtttaa ataaatatat catttaaaca agatctatct 780

atatggttta tagaaaacac gagaagtagc aaagcccacg tgacggcctt gggccgctta 840

agctgcatcc tctttccatc tgagaccgca actaaaacat cttacgcctc tgcaagagtt 900

tagcagaagc agagaattga caccaaacaa agccctgcca ctctcaagta gggaagctga 960

aacctgcata acgaaggatc acgcgttatt ggcagctagc atagtgctat gagtgttcat 1020

ttttttttc tatctgaaac tccaatatct agaattctcc acccgtccag taatctgaag 1080

tatgatcagt acagtaggcc agtggttcac ctaacgaagc ctacagaagc atctccacca 1140

taggtgctgt gcacttggtg ctgtttattt gtaatataat gggcaactaa tcgtgtttgt 1200

ttatatttaa ccgtaatcga ataccacact agaaagtaat accggtttat tcaaacttat 1260

tatctttagt actttagtgt gaattattat cattacattt acgttacatt ttataaacaa 1320

aacggtacct tgatactatc gtcgtctctg ttccgctcaa actgaaagcg acggggcctg 1380

caatcaccgc aatagaacaa gcagttcgct gagcctcccc cactccccat cccactggtt 1440

caccgatgga tgcagacatc gccagccaaa gctctcctgt cccctct 1487

<210> 3225
<211> 2478
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267618_G1, chr8:4411423..4413900, Cluster 19

<400> 3225
catttcaagt cccaagacaa tcagacaata acttgttata gcctgaaaca tataggccag 60

ggggaataaa agtccctaca cagttatatc gtcaaaaggt ggcgtggtga ggtggccgat 120

acctcgaaac ccgagaaggc aataataagg atctttaaga aaaaatcctt caaatcatag 180

tatatccttg gaactaacca gaaactttgc attatttgta gttgacatgt ttcaaataga 240

cgagaagcac atcataagtt aagagatcta tcttaaacaa tgatggcaga ttcagggaag 300

atcttgggag gagcccgagc atgcaatgaa aaggaaagac aaatttcaaa atccaatcat 360

aaaaagatgg aatcacgaca tcaactctgg ttccaagatt tttagaaacc atctacgtat 420

atcacagata aggacatcat agaaccaaat attgtcgcgc attgaaaagg ctcactgaaa 480

ggagtgcaga acacacaggg gaaacatcat ctccgccaaa ctaaagaaca actcgaccgg 540

tccaagtaac ccatttttct ccaactcagt aattttcccg tcatataaaa agtatgtgaa 600

ccattgaaac tacgtatctt agataagtct atcctaattc gtttgatatt tgtctattat 660

attcctacat tattttaatt tatgagtaaa tgcagttttc atgcaatttg atggcctgat 720

ccatgaaaaa cgattctgtc ttacaaacaa tttaatctac tcgtcattag gcttaccgaa 780

aacatctcgg tcatttacta tgaccgagat actcgggggc tagtatacta gataacttat 840

ggatccaatt taaacatgtc tttatatata tcacccactt ctcatgattt ttcttgaaga 900

ataaaatatg aattaggccc ggactttgct tgatctggtc atcactctaa gggtactagt 960

cgatggcccc gctgctaaaa atttatgaat gactcagccc gaacattgtt ggggtccctc 1020

aagggaaagg atgtagtatc acctacatag ctttgtaacc gtctcgtgcg gaagtcctga 1080

aggttattcc ctatttctta caacactttg gtagatttag gggtattgag gggacatgat 1140

caccccctgtt acaatgatat tggactcaat ctagataaaa tagggctccc tcaagggaag 1200

ccgacaagta tcacatacat ggctctgctt gttgcctgtg atccattatg ggatagaaaa 1260

aattcctctc gatttggttc actgacatga caatagattg atccttccaa gggcaaaaac 1320

tcttccaaaa acatctaata agctgagtcc ccaaacttag atcccaaatt ataaagctcc 1380

tcagggagca tcaaaatttc taagtcctag gacctagcct ctaccacaag accctatcag 1440

ggcaacaaat aggttgagca cctgtgaccg gtcttctgac aaaaatacct tcgcacatgt 1500

tctttttggg aacctttttgt tcgatgaaac caattcggtc tctaactact ctagcctatt 1560

ccatggaaga ggtaccggaa catttaatag ctccaaagaa aggaatgatc ataactatac 1620

aaataactaa gcaatgttat ttaggtttac ttgcaggttt cgcatgacac catatggtca 1680

cttagtgcaa caactaatct cgattatgag aaggttatca gtgataaact cgtaggcata 1740

catcgagtct caataataag gtatttatga cacatggata ccatttggcc tagggactcg 1800

gccgaccaaa aaaatcatac ccatgaataa tcaataaaca aagaaaccca catcaagata 1860

agttaattaa atatcatgtc aactaaaatt atatattaaa agaccaaaga attcgtaaca 1920

atgtcctagt gatcaaatgg taatgtcaat atattccaga atatcggcca ccgcaattta 1980

actatcatta agaaggttgt gtaatttttg gttagaacaa tcaataacag ccccttctta 2040

aatatgaaaa aatattttgc aggataatga tacctggtca aggacttgat tagggtgtca 2100

tcccactcca tactatctta ggaaaacatc aatattcgct tggggagcct caccaatttc 2160

tatggcaccg actaattctg tactttggaa tgtgacctat ataagcgatc aagcatggca 2220

tattggcgtg ctttcactaa gcttaccttc gcctctacaa atatttctaa gttataattt 2280

aggccaaagg aagttttaag agaaaatatg aatgttgagg acatgcttac cgcctaatct 2340

tctttcgaca agttcttatc atgaagagtg agctttaact tctcgaccat aacagagttg 2400

gtggtcatct ccctttcaag ctctttctta aattaaacca agttctttaa ttattcatta 2460

caatgcaaca acttattc 2478

<210> 3226
<211> 2730
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_271566_G1, chr8:26764378..26767107, Cluster 19

<400> 3226

cttatatcga gaatccggcc tgcataatgt ctcctatgat tttatcttta actttcgatt 60

atgcaaccta ttactatcga acaatctttt gacaacctgt aagcatatct atgcttgaaa 120

gtagatcaag gaataacata ctttaaaagt gaaaatagat aaaattgaag ttatgctttg 180

tttatgaacc tatttagttt cgtgcatggc taataacttt catgcaaaaa ctgaggatga 240

atgaaaactt ctaccacgag aacaaaacag agaaaccatg gtgatataat tgtgcccggt 300

gcactcttta cctcgatttg taatccacgt caattgcatt ataattttat tttatctctc 360

attgtagaaa tttgcatgaa gatatatgtt ttcatcatca tctatccatt cgtatttttt 420

tgtgaaatct ttcaagcact cttttattga atttttgaa cgggggtata ggagcattgg 480

aacaggatat gttctcgtgg ttatagtatt catagatcat gacccatgat tagcattttt 540

ttggcatagc ctcatgctac caattgggcc agagaagcca tagcctttcg gtaaataagt 600

ctaaggtaca aaatcatgag aaatactttt taattttctt atcatatttc caacaaggtg 660

acttaaaata gtaccccaat aattaaaata ctacatcatt taaagtgttt agaaaactaa 720

aaacatatcg tgtcccaaca gttaaacctg aaatcatata ttctaaagaa aatgtttttt 780

tagaaaacaa ggatagcaca ctagtttgga gtatagtata tttaagtcac tttatgttgt 840

gacctatatt ttttttgaaa aaaaattgta taataggaaa ctgttggaac tatatttttt 900

tatgtattga gctatatatt ttaaaatagg gcactaattt aagacactgt cggacacact 960

cttaagagaa aaacaataag ccactcagcc acaaacactg caaaataaaa ccatccaaat 1020

ccattattgt tcagacacca ttactctctc tctctctcct cctcggtaaa acaagatgag 1080

atgcacttga aagacccaat gaccaaagta caaaaccctg gtaataaaga aaggtactac 1140

tccagcgctg gttcatttgg aaagggagcc catgcccctt ggaatttgga ggcacccaca 1200

tctgaagcca gttttttagt gcatccaatg aggtttaaag gtgttttaag attgttaagg 1260

agttcaaggt tgcagacacg aggtgggaat tggtgcaggc ctccacatgc gcgcagcagc 1320

tagctctgtg agttccaatc cgcctcccct ccgtccactg ccactgctag cctctcgctg 1380

tctctgctat actgcctttg gcgactttag ggttagggtt tcacaccctg acaaacgcta 1440

gccccctctc tctctcttcc tcttcctcgg cggatctggt gtagttgtgt agagtcttct 1500

ggtcaggagc tatttggtac tgtacagtac tgtgcttcat ctcaagacgg tgaagaggat 1560

aaggtttagg ggttgtttgg tagtcccttc attttagtct atgttaatct ttatattact 1620

aaaatataag ggggaataaa atatatttcc tccactcttt agttctatgt ttgtaatcga 1680

tgcaaaaata cattttgttg atgcaaatgt gtggcgtgaa cgaagaacaa aaaaaatgtt 1740

cctattcaca gttttgctgt tcatttatta cttattatgt cacagaatat aacgtgtaga 1800

agggggaaaa gtgtcttttg atggccataa gctctatcta gtggaacgca ggtaacaagc 1860

tcttgaataa cttgttcaac tcaatcaagt gcacatgcct gttatcagat actcccagta 1920

acttgttctg caacacatgt gatggatcga tcccatatag ttacttatca atttgagggt 1980

tcttgagggc attgtatctc tattatttaa atccaaaaca gcatcagtta gtagtatata 2040

gtatgctcct cgcggaagaa ttaattgaga acatcaaacc ttaattatgg gttaacactc 2100

gagcataatt tatctagtga cacttagaag taagtagcaa taacccaaat cttgaaattg 2160

taatgataat tacgaattaa taaataaaaa atataccatt tcaaacagtt ttattgagtg 2220

cgtatatatc gaacgttata tttatgaaag aaatataaac acatatgata ccagcagtag 2280

cacaggtaga accctctttg actagacatt cttgttactc agtttttaga gattggtatc 2340

tggcacatct tcaagagatt cacgcatgca gatataccaa atatgaacaa gtttattgtt 2400

ctgaaacagt tagctaggtc aatcactagc agttaaacgc ttaattactg cagacaggaa 2460

gcatacagac tcgcagcagt attcacaaaa taccttggat cgttctaatt aatttctctt 2520

cgtatcttgc agcttgcatt gggtgaaaaa aacagtcact tgcgttgcgt gctaatgaac 2580

aagaaaagac tcctcttttc aaatcacagg aaaaccaagg ccggccccgg catgtaggtt 2640

cgcatacttt cacaaaccaa atgctgcggt gaacatgcgg aaaagacacg ctggtccaag 2700

acgcaaaaca caagtggatc acaaaatcat 2730

<210> 3227
<211> 2139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_283492_G1, chr8:107108481..107110619, Cluster 19

<400> 3227
cataaatttt gatataactg atgcattacc acacatgtga atcgtagatg tcatttcagt 60

tatctcccat tacaaaaaca gagttttctg ctacttgctg catcaacatg gttaagaaaa 120

caaaaggcaa aacatgaaaa ttaacatgct ttttttacaa ggatttgaaa aatacattct 180

accataaaga caacattctt gcataaagca aaagaaacta tatttataaa acattttata 240

tgtgcatgtt gctgcatatg cattcaattt ctagtagaaa gaccacaact gacagttgtg 300

tcaacaaatt aaaacaactc tttgtattat caagtcaacc atttctagct tgtatgtggc 360

acgtagagat atagcaatac gtttgtgttc gacaaaacaa atcctatttt cattctggtt 420

aatcctattt tcaagtgaac tgtgactgat gccatcaaac tgatacttag atatgtcgag 480

gaataaggtt taatttgaac aatatgaaac aaagaaatgt atgccatgtt ctgatgttca 540

tgctcattta gtgaggttag caatggcaca atacacagaa ggcaacacat gaaatggtgg 600

tgagtaatta tcaccataag gaattcaatt agtatcatat gtagatatca ccacactaag 660

gtagatactt tgatttaatt aacatccaag gacaaacaac caagaatttc agatcctcca 720

acgcctaatc tctgatcaaa gatgttgata atatttgaca aaatttctta gcatagtaca 780

agtgctaaaa atagtatagt gggaagagta gaaaacctta ccagactcac agaacgagaa 840

tctttttaa caatagattt cccataaaca aatgccaaag ctgtaaacac cacacttatt 900

gttgtatggc ttaccatcaa gaacctacag aacatacaaa gaacagggac atccatttta 960

tttttagcat gggaataact aaaaaataat gcaggttatg gaatagaaaa gataaaaaaa 1020

ttagtctaaa atcaattatg agatgcttgt ataattatag atagtgtctc attgtacaga 1080

tgacacacac atgatatgga taaacaagta cttctagaga cctgtaataa cggatctgaa 1140

aaagaaaaca gtagaagctt gacttgaaat ccacaaaata ctattatagc ataaaattca 1200

gactgttggg tggattcaaa caaaacctga atatataact aaatgggttt accctccatg 1260

catgccgatc caaaatcaat tactttcact ctacctgttg tttttaaact gcaaaagtca 1320

ccacttagtc atcaggccac aagatgccaa cattggcatc gagaagaatt aactcatgtt 1380

ggagctataa ggatttttt ggttttagat cacaatgaat aatgccaaca tctttcatga 1440

taatcaaggc atccaatatc tgaaagaata tacacatcac atattgtaac agatacatca 1500

tgggttttca ccattatccg gaagaatatc caatatcttc aaagcgatgt aggcaagtta 1560

acctaagtgg actctgacaa agaaataaat ccatcatggg gtttcaccaa caccgagcag 1620

tatatgttgt ataaatcaat acaaaacaaa ggaaagaagt tatggcatgc aacaaaatat 1680

tcagttatga aatactctcc ctattccaaa caattgacgt tttgacttct ctagaggcat 1740

acatagtaaa cgcagtgtat caggacaaac taaaatgtct cataatttag aacttgagtg 1800

attgtaaaac tatatctaac tttgcgaacg agccagttgg agtccctagt tcctaacata 1860

aatatatagc ttggatgtgt gagatagagc agtttcttaa tgttgatttg tagtaaaagc 1920

aatatttaca gctaaagacc catactatat atgcaaaagt caaagcattt cagaaataat 1980

agacccccta gacatatcat ttagtcatga gctagctcaa aataaaggct aaagtgacaa 2040

atataattat aatcataaat atttattcca gttttataaa caagttgacc aactccacaa 2100

gatatgcaga ttgttaacct ttgtcaattg ctcatatat 2139

<210> 3228
<211> 2667
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2855_G1, chr1:14556693..14559359, Cluster 19

<400> 3228
ctattaggtg aacgacgtac gttgctacaa agtaaacatg ttataataaa atatattgaa 60

attcagaaat actaattgct attttatgtt catgaatcag gaaaattgat tacaagaaat 120

gtgagtataa tgttttgaag gtattttctt atgtgtatca cttctcctcg aggttattcg 180

tcttccttcc tgttggaggc aacatagtta gtagcaaagt tactgagacc caacttaaac 240

acgtcatggt tcaccccgtt ctctactaaa acacttgtca cttccatttt tggtaactgg 300

aaataagaga tgaatatatt tatcagtcac gatgacatga agacatgatt accataaaag 360

taacttctat gcgtgcatac atgcaattga gatggcatat atgcattata tgagtcagtg 420

agtgcaatta caatacaata tgaccagacc tacatactta cgccttatag agtgttgtat 480

ttttgggaac caagtgtatg caagaaccca aatagcctac actgcttgta tgtagttatt 540

ttagtgtgtt tctacgataa tcaacttggt atatttattg aaatatgcca tttgatccta 600

ataaagccaa agtattgttt ttcaatcata tagtgtagag aaaaacgagc agacccacta 660

acctataatt cagtattttt aagtttttg ttctctgaag taagcttggc atcccttaca 720

atcataaata cttgagtatg aaatcaatta gcacgtctag atacccatag cctccagcaa 780

tataatagaa aggcactaaa aataacattc tagattctaa attttgtgta tagttagaga 840

atgaggtgaa aacaatacag ataagtgatt actgattcaa tattcctgtt ctcgtcataa 900

aaacatggat ttgtagggaa tcccaatttt cctatggatc ttctggaaat gcccagtctt 960

gtgagtccag ttggagaata tttccttcat acaatgacca agagaaaaca atataatatt 1020

caacattctg ttcttacacc agataaggca tctgattcag aaaataaact taagcaagga 1080

acacaaaagc gtgtgagtgt gtaggatcat taaaggaatg tatcattagg taaacaatat 1140

catgctggag atgcaagtag tagctctaga ttgttcacac aaagtaactg taactggagt 1200

gtgttgtgtg ccaccgattt tcttcaattc tctcacaaaa cttgttcagt aaatgatcag 1260

ctagttgatg aaagcctaat aagccttaaa cacttgaagt ttcatacctg caagagagaa 1320

ggttgtgttg gtgatagtgc tagattactt gagggagctc actgccaggc agattaaagc 1380

atagtcagcc caactccaat tcaaacgtcg ttgaatccta cctccaaaaa aaacaagata 1440

cacaaatgga catgagaaca caagctggac caaacataaa aaaggcttct acacaaataa 1500

ggacgttgat tcctgatcca caatgtggac gaaacattta gagttgggag atccctgtct 1560

acaagtaaga caatgaatgg atcacctcga aagatgtgac gaaaccacca ctcaacccca 1620

tgcaggtcct tggccaccga ttcttgattt aggggatgtt gactcatatc ctaatcaagg 1680

agaaacatca acctagtgat aatctgatgg ctgcaaaacc aagaaataat taactaacat 1740

atacctagtg atacatttac aaccataaaa taagaatagc aaagtagata ttttcccagc 1800

atcacaagca ctttctccca acaagaaaga ataatgctct aattcaacac attgacatat 1860

tattgtatta actcaattgc attttatttg tccatttttc atagtgtttg gaaacttata 1920

gggtatacag ttagatatgt tacacttgtg ccagatcaaa atgaaatgtg actggtcata 1980

tatcaaagtg cagaggtttg tttatatctc tatttttttat tcaaaaacat aaatattttg 2040

tactggaagc taataaatta agggttgttt gggagtgctc ggctttaaaa aatgaatttc 2100

aaagatgtag atttaccatg aagcaactcc acttcaaatt tctgaagttt ataagaattg 2160

tttggcttgt aatacaactt ccacttcaga aataagatgt tcacttagaa attgcctacg 2220

ggaacacaaa aggggtgggg gagagtgatt agagccatag tttttaaggc gtccgtatgg 2280

cgattattgg acatataatc atcattcatc gcatgctgac caaagcttgg ttgattatgc 2340

cattattaag gaacagtagt ggaagatgga tgacataatc attactcatc accatgttga 2400

ccaaagcagg gttgattcta ctattatcaa ggaataatcg taaaagaata gagacatgga 2460

gtaatacttt gctctataca attattgcat tattgactga agtgatgtgt ttagcttatt 2520

cttctgtcat gaaatggact caatcagcac atatgtatat cgagattgtc agtaatttcg 2580

cctatcaaac aagcttgtgt caccaaaagg aaaggtgcaa atgacaacac cacctaagtg 2640

cagttctttg ccagcctttg cgcgggt 2667

<210> 3229
<211> 2116
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290661_G1, chr8:146015414..146017529, Cluster 19

<400> 3229
tttacttata caaggttcaa gaaggctata tgaataacct ttttttaaga aatatgttga 60

tcccaaccta cataaacaag ggatttgttc aaatgttcga cgtggttgag ataatatcgt 120

gcgggtagga tacttacata gaccataaca ttattatttg aagatcgaga tcgcaccttt 180

ggtacaacta aaacaaggct ttatattcga ccatagtggg tctcttattt ttttataaaa 240

aatagattca gtggggataa caacacagaa aaaagctgca acccgctttt acactatcaa 300

acttgtagca ttcatgtagt tgacacatag atattgtgaa ttcattaatc tccctcccgg 360

tggcatccaa tgttgtcttt ttatactcat atgtgattgt gccctatcaa tttaattttt 420

gtcgatgagc atcttgtcga ctttctccat gcttactttc aaaatttcat ctagttgttg 480

catctctggc aaatcccaag tgtattcttc ttggagtcta tctcgaggcc caagtgagta 540

tatcatttgt ttggctatat atgacttttc tagcaactcg ttagggactc ttacacatag 600

gaagttatca aagttattgt cacttcatac atgcatagat tttaactcta atagcatgat 660

gttgctttgc aatttcctcg ctccacaacc cgaataaaat ggtgctttc tatcctttct 720

cattatatat tttttcaact atgtagcact aaagaatcca ccctctacgc cacgtagcat 780

atgaaaaggc catcaccagc cacgataacg atagcaagta tatttctaaa tgcatcatca 840

ttagtaggca ccagttgtgt gtagacaccc atttcgttat tagtaacgat ctctttcctg 900

attagacaag tttccttggg agggggaggg tatgttagat atgattacat cagcaaaggt 960

tctcttacag aacattgtca ccattacccc atgtttatta ctctatatta tctagtcttt 1020

cacgacccct ctggtaatca agtgatacag tatgtgttcc atattaataa atcaccttaa 1080

ttagattttg taatctctgc attggcagta catgtagcat tgatctattg aattacatgc 1140

aaaataagct ttggcgggca tgatgaggtg ttgtttccca tcaagtacca catatgtcag 1200

accatatatc cacactctat caatcactgt gcgaaaaagg tgccaagtgt gtgaggtctt 1260

gacacataat tatttttgct tcatgccaca taaaaataga gtaatataag ataataaaaa 1320

attagagtct ttatggataa caattgtagc tcaaaacaat gagttcctag gtatcacatg 1380

gatgtgccca tcaaaattga aaccgccagc ccttttgaag aacaattatt ctactttata 1440

tcatacaaaa aaatagggag actatagtgt acgaaaataa aaattagagc cttcaagaac 1500

cagctaaaac aattgggtat catatagatg tgttcatcaa aattaaaatt gatagcccta 1560

ttaattagaa agaaagaaaa aaaaccctac tatactccat gcaagaacta aagcatcaca 1620

tactaacaag caacaaccat caaatcaatc gtataatttg ctagaaatta aatgggttta 1680

tatagatgcc aatctctcgg aacatagatt taccataatt cgaatgcctt tgacctttaa 1740

actaaggtga caataatagg gaccttcatt gtcggtttgt tagaacctcc ggtcattttc 1800

gaatttttag taaaaaaaaa acttatcacg gtttaaaagc aaaggttagt gattctgtga 1860

ttggcctaca ttgaagaccg gttctacggt gtgatatcta gggtgtattt ggttaaacag 1920

gttggccata aactgatatc tagtgtgtat tataaatgaa attaaaaata tatttatttg 1980

taaaaaaata ttaggaacat aaatgtgaaa tcagtttatt aattaaatat attgattaag 2040

tgatattgtt aaacatagtg catataaata atatacattt ggtttaccgt ggataatagt 2100

ttgaaccaga cgattt 2116

<210> 3230
<211> 2380
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291068_G1, chr8:148277606..148279985, Cluster 19

<400> 3230
ccaccacagc agcacaagag aaatcaacag gccatgcatc tgcatgttct tgtcctgaac 60

acacggccgc cttgatactg cagtctgcag gatgcatgcc agtgaaagga accagatttt 120

taacatccca gaggtgaaca caagcaatgg agcaactcaa gagcttacga gtcaacgaga 180

acagacgagt aatatggacg gaggagagaa acgctgagac gataccaccg gccggaaccg 240

gaagagactg gagaggaaca ggccgtctgt tggccttctg gagaatgcta gctatggaat 300

ggctcatgga tccaaaacgc gaggaacaaa ggtcttaaat agttgaagag gagggactga 360

catcatttct atagctagcc catacagtat gtgctgctga ccacctctat gcatgtacat 420

ttatgttgtt gcttgggcgt gaataatgaa gataaaatat gttcgtcata ctacaaataa 480

ttgaatgagt ttttgatact ggagtttggg tgaataatgt ttctgccaat tcaggagaaa 540

cttactaaat ttttattata taaacaattc atttggcatc atatagtgcc tttactttct 600

tgttactttt tttttgaagc acactcatat acacatgcat acgctaaggt tactcctata 660

tcaacacaag ggtttaaaag ttctatcttt tttagcacct tcacagtact tgaactgctg 720

catttaaaaa aatgtatgcc tcgtcatcga gggacatatg atctgccatg aaaaatagac 780

gccatacatg catgagagca caattgtcaa gccgaagcat ttaaacctag ataagcagct 840

ggtgtttcaa taaagagaac taaccaagtt acacactcca gttggctgct gttgctgtta 900

gcatagtgac atgtgtgaaa ggtagttgaa gccacagcca tatagcacca ggggaaaatg 960

gctactgatc aggcccaatg atatcctgct aatttttgtg ggaaaaccta ttagttgaca 1020

acaaggtttt gtttccgctt caatcgggag acatcaacga agataaatga agttgcatgg 1080

gcgttcaagc aggactgtgt gcctgcacat gcacaactag ggttgtgaac ggacggaatc 1140

agtcgggata aatactttct cgtttttatt tctttaattc gaaaacggat tcaggatcga 1200

aattatctaa aacgggatcg gatatgggat gtgtggatga cgaaacgaac taatccaaac 1260

agaaatgcat cggtaataac aatcggaatt ataaaacgaa aacaccgtca tcatacatag 1320

tctcatcaat ggacaacaaa tatatgacaa taatatttaa tatgggtaac ataagtacat 1380

acctatagat tgataattgg tctataaaaa catgtaacaa gctagtatcg atgtgtaatt 1440

cattaaacag acacacacaa ttgcccaaac atactagtag ttcacaaaag tcaaccacgt 1500

ataacactat aactcaaact gaaagctcaa agctcaatat ggtcatcaat aacattagaa 1560

tcacggtcaa tgtatttgtt cacttcatca tcctgctcct ggtcattccc ctctatgtat 1620

ttgtcatcct ataactttgc atacataaat acgagatata attttacaca tagaaatacg 1680

gaacgcacca tgtgagtgag catggaagtg gacatactga ctaacaacat aaaacagatg 1740

taccgtattt gaatatggta taattccata ttaatacggg gtaaacgaaa atggtcggga 1800

tatggtctaa accgttttcg tttttcttat tccgtttttt ggtaccattt tcttatttgt 1860

ccgaaaatac gaatccaatg caagcgaaag ggaacagttt ttttttatc aacggcttac 1920

gtcctacatg cactatccct tgtcgtccac acccttctca gctccgagtt cacctgattt 1980

taaaattcct tgctgaagca cagcaattcc aagatgaata tatgaacctc ttagttctgc 2040

tttccaagca aagttgttaa attaccagta aagtttcttt ttggtacttt actagcattt 2100

cttggaatat ttacttggaa aggctctagt taaagtagta gtagtacaga gtgcaagtgc 2160

aaaaaaaaaa aaaagagaga gaggctggaa tggtccatct ggaccctcta tgtgtgtttt 2220

aggcctagct agtatatagg gacacgcata tcttgttggt tggtaggtca ttcccaatcc 2280

cagtcttaga ttcgttagca agttccaaca aaagcgcata atactaggca aactcctcaa 2340

tctctcatat ataataacta actataagca ggctaaatga 2380

<210> 3231
<211> 1986
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291571_G1, chr8:150540783..150542768, Cluster 19

<400> 3231
gggagaagtc caaattactc ccctcacctc acctatgaat gttatgtgta aattattttt 60

tagtttatct taatgctgca catattcagg tcggtttatt atacccgtta acaaagtttg 120

ccttttttat ttttatgtac aaattatgtt ttcagtttaa atttattggt aagtagttaa 180

taacatagct tagtttttt aaaaaaatat tataattttt taattatttt ttatatgtca 240

gagagatgag ataatatctc caatgataca aaactaaata tgaaataata attaaaactt 300

cttctaacat acttttaac ataagttatg atacccacaa tcatctcaga aaaatataaa 360

cttaaaattc aatttgtatg tggagaaaca aaaaaaaaga catctccata tacaaattaa 420

atttcaagtt catatttttt atggtgatcg aggatattat aacttttgtt agaaaaacat 480

gttaggaatt cttcatcgtt atttgatatt tagttttgta ccattaaatg tactatctta 540

tttggtccat attttatcaa attaattata aaaagtcata ttttggctaa gttacgacat 600

tagctactaa tcaacaaaat ttgaactgaa aacctaattt gtttataaag aaataaaaaa 660

caagttttga taagggtaag ttgaaccaac tcaaatagtt gaaggtgcaa aataaactag 720

aaaatacttt aggggattat ataaacatcg tctataggtg aggagtaatt tagatctata 780

aagccaaatt actacgtctg cattgtcgtg agccatccgc tatgacatcc ttagctctgg 840

taggaataat ttgagactag ccttccatga caacaatgtt ggcagttttt atcatctaag 900

gatagatcaa aataacacta cattgataaa atttagcttt gttttccgtt agcctctagt 960

tctcatatat taacatacaa aaattagctg atttttttat ccgtagttga cagaaattat 1020

taattcttgt tggcttccat cgtcctacag ggtcaacagg aatttgctaa tttctgtcga 1080

cagggttaat ttacattgga ttctgcatgc aagctggcaa aactaattct tctaattttc 1140

gtcggctatg gctggtcaac agaaattagc atgtttaatt tttgtcggct atagtcaacg 1200

acaaaattta gtctcgatga ccactggttt aattattcac atctaccaac aatattatat 1260

atatatacac atccaatcac aattcaatca taacagatgt atattcatcc acatcatatc 1320

atatagattc aaaaatacat atataacagg atgacaaatg agttataccc ctcgacgtcg 1380

gcgtctccaa ttgctgctaa ttgtggagga gtccaaaacc tttgcatatt acagttagtt 1440

gagttatatt gactactatc agatgatttt cacctaagtt aactattttt ggtaggattt 1500

aagttagatt aactaattta ctctacaatg actaaagttt cgtcgaacta gattaatttt 1560

tttctagaat taagctaagt tggctagttt tgctaaaact aactaagttt agataggatt 1620

gagctaagtg gggtttttag aattaaggtc aattcgctaa tttttattat agttgacata 1680

agtttactaa agatatgatt acctaaggtc attaaagcat cgacagagta aggccccatt 1740

acggtggtgg caccagcgat gacatctgga acatgggtaa attaatgttt atctccattt 1800

gctacaatat attctgtgaa tgaaatagat gaaacatcga taattatgtt aaaatctata 1860

agtaataatg gaatatcagc cgagcttact caaaacatcg cttgctaatg tgctgctata 1920

catgcgaaaa atactcgcca cacttccgct cgtagtccta atgtcagcaa ccatactctt 1980

gatgtt 1986

<210> 3232
<211> 1776
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294384_G1, chr8:164948216..164949991, Cluster 19

<400> 3232
caacggcgct gctgctcata gttggtgcct tgagggaagc cacacgcacg gcaatgcctt 60

gatgtgtaag gtcccattac gtttcgttac aggagggcaa aaggatatct tttccctttc 120

attcacgtcg gatcactatc tatatcccaa ttaacatcac atttcgatct cctttagttc 180

attcaccatc ttcttttcca aatttccttt tcacaatcat taagtataga tcacaccgtg 240

tctaataaga tcccgtgcat gttgcttgga ctggcatcat atatgatatc aagttatcaa 300

ataaaaacta gagaaatcaa taataaaaca ataaaacgag agttaaatgc atcggtaccc 360

atttgtgtca aaggatgggt tcacgaaccc tgaaaatgca tttatagccc ctaaatttgc 420

caaatctaag catgggcacc atgtagagca tcttatattt tagtagaaat tttagaatga 480

agtcatatat agtgatattc taggatagag ggaggagagg gaaacctttt ttgcttaagg 540

gcgtgtttgg gagcaagaaa attggagaga attaaggcct tgtcacttgc gtgggaattg 600

aaaggtttga ggtggttaaa tccctttata tttaatttta attagaaagg aatttaatca 660

tctccaatcc acttcaaacc ctctccgaac aagctctttg gctagtggtg gattgatggc 720

tgaaatccct ctcaatccat ttcaaaccga gcaagatcta aaagggttaa aatctcatta 780

atattcaaaa ttaaatagca aagtaatttt aggcccttca atctcttcca cccctctccc 840

aaattaaaca agcactagct aataggcaac cgcctgttgt cttttgagct tgagacatac 900

cggcctttct ttgacgcaat ggctgtatct tcagccattt gaagctttga cgttgccgaa 960

agacagctaa cttggagttt cgtttctgat aggcaggaga tacagccact gctgtggcca 1020

aacaaaaaaa cagtgtgttt tcttctcatg tattgtactg tacttaatta tagtgattaa 1080

aaaggcacta aattgattac ccaattctaa actgatggat ccaaatctgg gcgcaaatta 1140

gagaaagaca tgagctagct aggtgtcgca ttccaatcga gttggttcaa attgtcacgg 1200

agcacatcaa cgcatggctc cataaaggga caggaatgga tcgagcatct tgggcaccct 1260

gatggccaga tagcactgta tgatacttct ggcactggct tggacgtttg cgacgagttg 1320

cttgctacgc cccaaacttt tcactgaaat ctttaccacc actgcagcct tgcatctgta 1380

ccttgtgttg ttttccttgt ttcgtcgggc cttcagctgc tctgctcatc tctcagtgaa 1440

caagtacgtc atccctgtct tgctacgtcc actcccaact acggaccgtt gagcctatac 1500

cagtcggatc gtcgatcgag agctgattag ccgcgtgatg gaaaacgtat atactgcata 1560

ctaacgtatg taccatgttc aatcaaaata ctacgtaaaa agagtatcat gaattattat 1620

cactagacgt gtaacacaat gtaaaaagtg tatcgatata gtaacaaatg tatcgatata 1680

gtgataattg tgtgaggtat caattaattg tgtgaggtag aacaataata gtacatccaa 1740

cttggatttc ttgtcttttc caatatgaaa gataca 1776

<210> 3233
<211> 2199
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294389_G1, chr8:164955950..164958148, Cluster 19

<400> 3233
atctagctta ttgaattttg attaatgatt ttagtcatgt gttagaaaaa atagatgaac 60

cctctttcta tgtaaggagc gataatgata ggtatttttt ctgaagttat cgtagatagt 120

ggatcttttt atcaaataag ttgaaacaag tatcagttgg gcagcttacg agattatgat 180

aatctgatct ccatattata taatttaacc atgtttgttt catatctaga ttatttaaga 240

tggataccat cgtatccata tgctattacc actgataaat gaattgggca gaaataatcc 300

tgtcgtcttc tttttgtttg gaacgacggg cagtgctcct gtgctagaac agaatataat 360

aatgaaagga aagatcacgc acagcacgga gcgcccctgc cgctgctggt tgcattgcag 420

ctagcagtac actagtactt gtacctgcaa ggctgcaagt gagtgaccat cgatctacaa 480

tgcaaagctg aagaaaaatt cgtgagacca tgtcattttc aggtcatgga ccccgagagg 540

atcgaatggt tgttcctcgc ccatcgcctg gctccaaatc tggtgggcat caaccatcaa 600

tccactgtgc gtatctatgt ccgccctggt ctcagacgca gagagaagag aggaaagcta 660

cagctcaaat taaagctcga aagaccaaga aacacacaat agatatgagc caataaaaaa 720

attcgttcaa aacaatcttg aatttactct cattcctcgt tcgaaagcct tccaatatca 780

aagagctaaa aactttgcgg ggaacatgca gggtccgttc attttaattt caatgtatgt 840

ggacgagatt aagcaggttt agtctctagg aagtgaaaat tattattgat ttttttcaa 900

tcctatccaa acaacatgac cttcaaagtt attgccatta gatattttac tgaaccactt 960

gacctaggga caaaatgatc tatcttgagg atcttcatga ctttgtttaa cttcgacaga 1020

agcttcgtga tgacaccatg tgtcacctcc tgttaccact tgaattttga ggtccaaact 1080

cataaaacat ttgttcggtg gtttttagac ctaaaccatc aaacccctca tgagtaatat 1140

atcctttatg ttttctctat gatctcgatg tgtgtcacca cttgatcaca aagtcctcta 1200

gcacgtctct gcttaccttg gtcaaccact gtattaactt ggtcaacata gcctgctccc 1260

ctatgtataa tctgtacttg tagatgtccc caagtatcat cacccacact cagtcttcta 1320

gcctctttgg tctcttagtc taagtctcgg catctgttcc ttcaccgctc ttgatctaca 1380

tttaccatcg ccgtcaacag tctccataat ctacgcttgc acaccacatc aatgagaaat 1440

attatacaac actaactcac accatatagc taattctaaa ttcaataaaa atcgatcatc 1500

tgcttaataa tctctcatta tattacactg aacaacataa gcattagaaa ccatactgtg 1560

ttcgcaaagc taaaggtcca accattaccg tcatcgtgaa tataatggag ccctatacat 1620

agctagcaaa tgttgctgct gctagctgcc aagacttttc gccgtagcac agctttccgt 1680

cgatctatcg atcggtcgaa atgggcctct cagctcaccc tcatgctcct ttccgacaga 1740

tttcacttgc tatatgatag ctcaggttca gaactacagg ccaaatgtgg cgtggaatct 1800

ctctggacta gaaaggcata tgatagctga caccaatcca cggagaatac atggcaaccc 1860

ggccttttcc ctattaatta atataattca gcgcatacaa aaaaaatgtc attgtctgat 1920

aatactcctg ctagctaaaa gaaacttcaa ataaaatcct caccaggata ttattcctag 1980

cctcttttgt ttttttgcgg ggagaaatat ttaccatgca tgcatggcta aggaaaatat 2040

aacatgtact ctctctacat ccacaaatat tattaggaat tgtgtagttt ttaatacaag 2100

ctagttatgc agggtagaaa aaaaatattt catatatgat ggcctctcac tagatcgaag 2160

tacttggatg ctcaaataat gcacaaaagt tgaacaaaa 2199

<210> 3234
<211> 2662
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295651_G1, chr8:170431414..170434075, Cluster 19

<400> 3234
gtcaacgcga gaaccttacg agcaagccaa ttgggttgag cctagaatag agtcaacaag 60

tgttaccaaa ttcttactca gcacgcgtgg gctcttccca tttttggcat catctatgtt 120

acctgattgg ttattttacc attattatta gtggtttcag aattttgcca ccctaagaac 180

cttaccagca agccaactag gttgagccta gaacagagcc aataagcgct accaaattct 240

tactcaacac gtgtggactc ttcccatttt ggcatcatct tcatcgccta atttttatt 300

ttgctattat tatcagtggg tacagtattt tgccccaccg ataaccttac caacaagcca 360

attgggtcga gactagaata gagccaacaa gagttaccaa attcttactc aacacacgtg 420

ggttattcct gtttatggta cccatcttcg tcgttcaatt tgttattttg ttattattat 480

cagtgattca aaattttatc attatatcta caaaccatag acatacacga tccatagatc 540

ataagcatat atgatataac aatgtcaatg tcaatgaact caatagtaaa atggatatta 600

tttcatctct ttttctgtca tatcttccat gctcactcct gaatcggaaa caccttgcc 660

atttaaaata tttcaaaata gtatcgcctt gttcccattt ctctccatgc accatacatt 720

tcttctgggt ttttagatat atgttattat aaaaattgag taatttaaag atgtcattat 780

aatccatgat acccgatgtt tgtcattatt cgataaaaat tttggtccca accattatct 840

atgatcacac gtgtactcta cattagtatt gtccctttta cccttcttcc tcactgctct 900

tctctctccc tgttgagcgt gttccatgtc aaccccgtgc tggatacgag gccagtgcgt 960

cagctattgg ggacaaaaag attagaggaa atcagtgtga ccgtgcgata gagacttgag 1020

gtagaatgaa gtctatggcc attttcgtct tctcagacga atcttatacg cgtgaatgta 1080

gataatggca caaacctttt tttatcgatt aatgaataat gacaatcaat gtgtatcata 1140

aattatagta acatctttag aatactcgat ttttataata acatatatct aaggaacctt 1200

tacttctttg aaggagatga agcttcaatg acagcactac tagacctgtt caaaagtcgg 1260

gttagatcaa gtttgaatcg gatcgtagtt catttaacac gatccatatt caacacgtgc 1320

ctagtattgg gtcgggtcaa cgtggtccat atcttcctgt ttgatgtgtc atgttggatt 1380

tttgggttgg gttggttttt tgttttgagt tggatttttt taggtgggat caggttaaaa 1440

aatcaagatc catatttgat tcataaattg ttgtgcgtca aaaactatag ttcatacaat 1500

catacttatc ccatgtattg atcggatcag atggatcgag tggcctatga gagcatctcc 1560

aaaaggaaac taatttttt ccccaaaacc tgattattag cggcagacaa aaacttatta 1620

gcggccaaat acaattttac tccagcagtt ccccaaaaaa tgaaaactgg gtcagcatac 1680

atgagaaaca cgagttcagg attcaggcat catatgtttc agtatctcag tacaaacaga 1740

cgaataaaca ctcaggataa tcagctaaag cttttgatgc aaacaaagga ataaaaacca 1800

ggataatctg agacacaagt ttttgataca ctaggtaaat gaaatatcga cactagctaa 1860

cagtttctaa ttatgtgaga caaatgaaat ctaacagtac tcagacccag aaactgatga 1920

atgcattcaa actctatgaa acacagcaac ttcaagttcc aaaatgatga aggaatgtcg 1980

gcctccaccc agaatttgat gaatgcaaaa aaaactgaga aacaaaaaca catgtcagaa 2040

tcataaagag taatatagtg aaagaagata aaaacaaggt aaacgaaccc ataaacatgc 2100

tcaaggtagc agtgccactt gcaagaacaa aacaggtaga acctgctact agctggacca 2160

tcttgctccc tagtactgct gaacaacagc tgccaccaac ctagtaactg aagataatgt 2220

aattccaaac tcaaatgaca gaatgtcgac aggataaaaa ggaaaaaaat caaagaatgt 2280

cagattacat gaactgcaag tacatttctt gaaagtacgg ttcaactagc atactgtttg 2340

ctggaagatc gaacaaaaca tgacgaccat cactgcctcc ataggaggat gcaactggat 2400

cagactcaaa tctggcaact tggatagtat gtcgcaaggg cctccactgc tgcgccactg 2460

cggaaggctg tcgccgatgc agaccacctc ccgcaaggcc tggcagtgac agcgtgatta 2520

ggctgacaga tttgtagcgg caggaataca tctcagccac cgacatgccc tccacctcca 2580

ggctccaacg tagccgaatc tctccctctg ccaccaccgc ttcctacctc cgccaccaaa 2640

acaacgtacg cagcaggaaa aa 2662

<210> 3235
<211> 2103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298834_G1, chr9:8614624..8616726, Cluster 19

<400> 3235

acatgacccc atacgtcttg gatcgaattt cgtatcaatc atcactagac gtgagttgtt 60

atatctcata tgagtgcggg tcatttgagt tgtgcagttt gagaagtaca aaaagtggat 120

accaaataaa ctctctattt tcgggcagtt agagggaggt gagagaaata gggatgattt 180

tttggctctt taatgtatac gtataggagt gcagaatcaa aaaattcaca agacatagtt 240

ctgtatctac atatcctcac taaaaagtat atagcacatc caagacttag gcctcctttg 300

atagggttct ttcctcctta ttatcaagaa aaacatcata tttggttgaa atatagcttc 360

tattgtagct tattctatga tgtagcgtcg aaaaagagaa aaacatggga gaagagctga 420

tagaagctct tttttctggc tcccggctcc ggctgttttt tggagtagct tctccttctg 480

taggaagaac tcataaaaag gctctcgttt ggtagatttt tttcaagaag ccgtgaagaa 540

gtctttgaag gagctattaa aaaggggggct taatttgtaa tattggtatt ggttctccaa 600

aaccgcctgg tgggggtagg atgtcatccg gaacaaggga tccatgatcc agatatcatt 660

agttacaata aatttgtttg tcttgtgcag ttatgccgac gataattatt agggagaagg 720

tctccgacca acgatcccag ataataacac taatttgtac ttgctgtttt aagacaagaa 780

ggttgaactg gtttgaaggg ctactacctt cgtccactga cctctgtcgg attgtatagg 840

aggtcagcct ctataaatag tttagcagtg ccaccgccag aatagtcaat cgtttatgaa 900

atttgcatct ggcattatct cgtttcgcct aagagcttcc taagctataa tcctatatct 960

gaagctcatg tcttcattcg tgtgtacctt ttgctactct tatctgaagc ttcaataggt 1020

cgcagtccca gacagcagca gttctctccc aactcggttg aaaccatcgc ctaggctgct 1080

ccaattgcat gcctgtgagg ctgtgactcg tgaacggctc ctgtaacctc gcccgtttaa 1140

tccaaatgtc atgtgtgtaa catctgaatc atgctttatg atgccacatg cccatgtgtc 1200

ccaaatcatg gttgccagtg tgccttgaac aggcatgtca gcgtccctaa ccttctactc 1260

ctacatcatg aacccatatg tcagatgcgc atgcacactg aatgggcaga caatgactct 1320

catgtataat ttaatttgtt gaattttgaa tggtttgtca agctagaaat attgtgcggc 1380

tgtcgaggaa aaggggattc catagttcca cactgtttgg tagttcacaa ttattgccag 1440

ttagcctcac aaacattgat caaactgttt ggccatttgg ccgcctatgg atcgtagcct 1500

cattggtgtc ttattcacct gccgacacaa gccctgaaag cgaaacgctt ggagggtcct 1560

tatgaggcta tgagtcgata atgagataaa gaagctgctg ctttgtcagg cgtcaagctg 1620

tatggttgaa acttgacaga ctgcatacac acgcaaaact tagatttgtc cagattatgc 1680

gttcaaagtc agtcagatct aatccccatc acacctgttc cctactaata ggggtctaaa 1740

cagtgccaat attattcgag catctatgcg cctgaagagg ctaattatct ggctagataa 1800

tcttgataac ttatttgtaa ttttcggctg acactagaat attttataaa tttaattgca 1860

ttttaatgat tttctacata aataaattaa taatacacat gatagcctta taaattcatg 1920

gatttttttc gaaggtgtag cataagtcca catataatcc taaaaaatgt ttgactcaag 1980

gaggtgctaa atgattacaa gaactatgat atttgtgaaa tagtgtatta cacgatatcc 2040

gacaaaaata ttttttaccg acggtttccg tgtctgacta gttccggatt cgatacatga 2100

cta 2103

<210> 3236
<211> 2354
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_303563_G1, chr9:34909782..34912135, Cluster 19

<400> 3236
catgtctctc tatccttccg cccatgtctc tctatccttc cctctcacac agtgcaggcc 60

tgcaactttc tactcatgac tcctagccgc cgcctcgtcc cagtagctgg cctgcacatg 120

ctattgatta aatctcaact agtgatggct gacactgaca acataaggca aagtagcaat 180

ttaagttttc tttgttatga tacttaacat gtgttatgaa caacaccatg ttatttctcg 240

aggatctagc atttacttaa gacgctataa catatggatg tcactatgac actatcccta 300

tattttagga agcaatgtaa aagaaaaact tggtagactg gtttaacact gttgtgcaat 360

tgatttcttc cttaattaag tgtttctagt atatttccct tgtataaaaa aatgttactt 420

gaaatgctct ctttatgggc aatattcctc ttatcttgat gtttataaat atatggattt 480

tgtcacaact cacaatggat tttttggttc ctaagcagcc cacttatgaa tcacttttat 540

gtcattttat tagttttgca gttcagaaat gatgggaagg ttttcctttt tgatcttgga 600

agcacacatg gatcctttat caataaaaat ctggtaatat gtattctgaa taaaatctgg 660

ttttaatatt tttatacttt acacaatgaa acgacattga tgcattctgt catttcacct 720

tgtttttta atcataaagc agtgtgattt gtgttggtat tatacctgta ctcatatgtt 780

gctgtactat atatttatga tgttgcactg ccaatttaag aagggcagac ccggtgtagt 840

ggtgagagct gttccaccga gacactaggg tgtgggatca aagcagactc tctgtattta 900

cgaggagaag gcttgccttg ttttattcct tcctaggtcc cactcatgtg ggtgcctttg 960

gcactaggtc tgcactgcca atttgcactg taaatttgcg acatttataa ccttacaaaa 1020

aaattaaacc atttgtatga gatgctttgt tttatgccca tacatcccat atctttttg 1080

aaaaggtaac atcagattaa tttgtcacgt tcatttgctc tcgtactttt tacttctttg 1140

agtcacacaa gggttgttga atagtatctg caatgctaaa gctgtaatga gtaatctctt 1200

aaagttaacc ttttagaatc tttatttggc tggcctttgt ttctatctat tgtttcaagt 1260

tattggactt ccctgtttat tgtcttatta tacttttga tgacatgtac tgaactagca 1320

gatcaagaag aagctgtaca cagagattca tgttggagat gtaattcgat ttgggcagta 1380

agtaagcttg ttaactaact attcgtccat tccttgtgtt caattctaga gatcttgttt 1440

ctatttttc tttatcttcc atttcatatc cagaagttcc ttcgtaaatt gcagcactgt 1500

ggtgttcatt tattcccaat gctatctctc tagggcttct tatgtctgca tatagacaac 1560

ttggttgcat accgttctta tttcagagtt aagcacagtc tctggtcaaa tcaatacaca 1620

tagcaggcat tggttgtttg atatactaac gttaaacagt ttttatatcc ttgtggctaa 1680

tgcttcataa cttcaccatt tccttttgtt ttactagtgt ttattgttgt gtgtttgtgt 1740

gagttttggg tgtgttgtat attttatgtt cttgagttct agattcaatg atattcttgc 1800

ttacacaaga aaaaataact agggtttact gtgcttatgc tttacacaat atgcatatta 1860

gattctataa actaggactg gattatagac ttgacaattg ttcttcaaat gtaaatagaa 1920

agtaagaaag attgcagaag gatataatgt tggtaaaata aaaatgccac ttttatctgt 1980

aatttcgtgt cttgtctctg ttagttcttg tattaagtta aatttgcttt ccttcgatga 2040

ttacaagatt gtacctttg ggagcctgtt tactattgat ctcatgtcct ttttctcact 2100

tcttgggact cacttagttc tatgtattaa ttagatcatc acggctgtac atttttcaag 2160

gaccatctga gctaatgcct ccagtaagat tctaaagctc aatcaactca tctaccactc 2220

ttaaattttg tcatttcttt aagtatctat cccgacttgc atgttgaggc gagtactaca 2280

gttcctccat aatcacacag aatgattcga caatgcaaca agtcagcctg ttgctatcta 2340

tttctaccat gttg 2354

<210> 3237
<211> 1456
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_307907_G1, chr9:64274863..64276318, Cluster 19

<400> 3237
gtcgaagctc tgttgtactc cttgcgttcc ttttgcttca ctgttataac ttcgacattt 60

ggtccttcga catatttgtt aagattaatc aaaaatggtt tgttagagaa ggagaccctc 120

aacatgttct agattgagaa tttttagagg ctaacttttg tggtcgcttt ttcaccccca 180

ctagtcgttt ttttatctcc aatatgtagt taatctataa gctaatttat aagcttttta 240

aataattgtt cataatggaa aaaaattaga aaattagaag ttattgaatt gtcaattata 300

atggtaaagt tggatgattt atatataaat ttatggggtc ctttttataa tcagtagtaa 360

ctttttagga aattgatcgg aatggattga agctagctta ttattctaaa actttcacga 420

aactgacaaa gtacaataaa tcagccaaag ctgtttagtg catgaccaag ttccccatga 480

tctccgtaag gccgtgatgt gtttcggata cctatttaat tgatagttct gtgccacaaa 540

agattccctt ttgcaactca taattctcag ctgagatgtc tgtgcacgag gtgcccacga 600

tcgcagtgtt tttatgtacc gtaggatcac aaaggaaaca tctcttaagg cttaagccaa 660

gcaagattta tataaaaaag gagctaagat ctgtcagctg acctcatctc gaatataccg 720

accgaatgat cctatgtacg atattttatt tgtgaaaacc aatcatgttc gtttaattta 780

ttcatctgga gctagggccg atttgataat ttgagtgtga gaatcgaaag ttctagttta 840

ttgtcttcac tattttgtat gttctgtttc tttttcagct catagcacag acgtatgtgt 900

aattcttgct tccaactgaa tgttcacata ttttatttaa aatctattaa agacttattt 960

gttttcccgc taattcaaat ggtctggagg ggatcaaact gaattgagga ggattttgat 1020

tggttaagaa tcaaatcttt ctgaatctct tccaatccaa ttgaattgga atttaaatga 1080

gcaggctcta attgataatt tataactgtt ctattttaga gtttgactat aacttttaca 1140

gttgaaacgt tttcaattgt ttactgagat atcatggttg gattagaaaa aatggtaaat 1200

tcatttctta tttgaatatg tatataattt gagaagaaaa atggaggccg tagcattatg 1260

gctctaaata tggtggattt gtagtcgttc gaggaagcaa ttttcaggca gcccggtggc 1320

tcaaggcaca tcctgtacat tggaggttga gagggaacac aataaaaaag tatatatcct 1380

cacttcattt tctaattata atttaattcc cgtatatgta catattgtca ttaccgtggt 1440

taaagaggtt gcttga 1456

<210> 3238
<211> 1851
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320153_G1, chr9:134157793..134159643, Cluster 19

<400> 3238
taccgaacca tgggaaatct cgatgggaat aggggagttc ttgatcttga tgtctttggc 60

ctctagtgct aacaacagct gattaagaag actcgaacca tagatggagc atagtcatca 120

ttaaaaaggc atctaagcca acaaaaacta ttcatattga ttttctaaga aacaaagtgt 180

gtgtgtctcc cagtttgacg gttttttgga tggtattgaa accaaatcat tggccttccg 240

aatagagaaa agatgaatat ctccaccggt gccactcatc caacatcact agtcattctt 300

cccctgactc atagctgtag ttattaggtc gaaagaagag atgtagagtt atacaaaagc 360

acatataatc tagagatatc tagaaagcaa tacgtgaata catgagagct aaaatgcata 420

actcaatcta gcatgtgttg gattgaaggg atgtgaacca aattgaaagg ttattgggtt 480

taggattcta ggtggccaag ttttttgcac cgcccttaaa atttttctct cgtttggttt 540

gtggtaaaac tttggccatg tctgaaaatg gcatgtctaa ctagtcatca acttggttct 600

agtgattaaa atagttatga cattttggt tttgttatcc ctaacaatat tgctaaggtg 660

acatattgtg attgattgct tcagatgttg cactttgag tttacagttt ttcggtgtga 720

tttatttttt aaaatatgtg ttctatttaa gttttgttac aaaacaatat tttacataag 780

tatatttcaa tatacaaatc tttataatat atgtggcccc atataataga caaattagtt 840

attggcttga tcacaaaacc aagcatttgt ctaagtttta acgaaactaa tttgtcttca 900

caagataatc cttaatagca caattgattt gcttgtccca tttagcttgg tcgtactagt 960

aaatcaaccc tcctctagct agaatcaatg ggtgcaaaac aatgtaatta attgtttgct 1020

ttcatctagt tagaccatag agataaacta tttggttgac tcactcatgt gctcctcttg 1080

catcatcacc ctcataccta ggatagtcca caacacaatc caagcccaaa tgctacttga 1140

gggttgaggc aactaattta aagtcaaacc tacatatctg catattgata aactaatcca 1200

aataactaat caaacttaca agttttcttg agctataaga gcctcttcag gatactctct 1260

ataagacttt ttatcataca attagaaaat agaccagaaa taaagcccca atagatttaa 1320

taaaccactc ttggtttatt tcactatcaa aaattatctt tcttgctctc tatattaata 1380

gagagaccac attgctctct acaattcaag atatggtagt tctattatga atgatttttc 1440

ttcatgcaaa tgaaattatg ataaattact aaagtctaga aaacaaatct tacaagacta 1500

tcaaagacac gaaaaaacat atagagagaa tattcataat attacttcta aataggggta 1560

tacattgtta gggacaattg tgattatacc attctctgac cttgcaattg tgattttatc 1620

cattgttttt caactttatg attttaccca cctgttttga aaaaaaagaa gcccccattt 1680

gctccgccag ttttgaaaaa agaagccccc atttgctccc ccttaacacc gttaaaaaaa 1740

cgaggggtaa aattataaat gcaaagtgag agaagggtat aatcacaatt aacccaaaaa 1800

atcaacattt tttagggtta attatgatat accattctct cacttgcaat t 1851

<210> 3239
<211> 2440
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321267_G1, chr9:139526968..139529407, Cluster 19

<400> 3239
gtcttgggat atattccgta gtagtactat ctgtatatta tatttaataa aaaaaataaa 60

acactgcaga tgcaggagac gttgcatgaa tggtacacag tgatgacttc attatgcaaa 120

tcatgtcgac gacttgcatg gttgtgtgta ttattgcagt tggattaagt ggtacgagta 180

caagaaaaaa aaaggctctt cttttgcaac tcgcaatgca ttactaggat attgcggcag 240

tactcacagc gcgggtacgt cctgccatgt gttgggttgg ttgactagag attgcggctt 300

tcccttggta tctgggatgt gggggaaatg gatcagctgg gagtacaagc tgtgcatgtg 360

tcctgtccta gggctgtcca attactgtgc tgctgtgtcc tcgccgaaaa acctccgttt 420

ccgatgacat gtttcatcag caccgtaaca gtatgtgctg ccaacaggga aattgcatcc 480

gacagctcta gcaattactc ccacggttca gttcatatgc ttacaatatt agtcaatagt 540

cagtactcaa cggttttaat attgtgattc aaacatggta cagttagatt tgtaaataaa 600

atatgaatac catctgataa agtaataatc atgatcatcg gccagcgctt ctctcaaaaa 660

aaaaaacggc gccggatcgc acgtagagga gggcttaggc catttggagt tttattgtag 720

tttcattctt attaaatgag ataacatatc gtcatatttg atgacataac acggtattta 780

tgataagata gatagatgga gtttttcata aagagagaga gagttcatcc agatgaaact 840

taggatatag ggttcggtga ccagtcggcg tcattttctg gctttccgaa gttggcctcg 900

ctatctacta cgatttgtgt cgcagagccg atgagcaagc caaggccgat gggcaccata 960

tggatcgtcg tttggaggac cagtaggcgc agaacagaag aacgtgaaga acaaggcagt 1020

agtaattgta agacgggacg gaatggccac tcgtgtgatg tggcccctca gcaggctccg 1080

gcccatgggc agcccacgcg agcgaaaggg aacaatatca tttttccttt tcgcgcggac 1140

aagagaagcc aacttggatt tcgccaccat ttcctaatat ggatgattga tacagttgac 1200

accgttgggc atgacataaa taaagccctt gtacctacga gatgaccgct atctggatga 1260

gcctgcaacc gatgctacca gagctaaata aacgttgtaa taaaataact ccacgaccac 1320

gaagttggct gttcgtccct ttcacgcgcg cccagtccca gctttgcata gctttacacc 1380

aatcaaactc tatattagta tagattggaa ttaaattcat accttaatct atacccaaaa 1440

taatctaaaa ctatttgaat tattttattc gattataacc atcatagagt atgatccaat 1500

ggttatggag ggcacgaatt atatccatag ctcattaggt atgaaacaaa ttcataaaga 1560

tatcgcacaa gtttatatta gaatagatga ataaaaaaat aactagtttt aagagataca 1620

tgtattagat gatggattta attctaccat aggattgggt gtgaagtacg gattcactca 1680

atctaaatct gggttaaatc tatggtggaa cttcatccca tataaaggct tcattggtac 1740

agctctagag cgtacagcga ccgtacacga cacggacaag gttagctagc tggagagaag 1800

gagcagagct tggcgtgcta gtatatatta gtaccatttt ttataatgcc acccgcagct 1860

gacagttcac cagataacaa attttattag ctacgaagac gaaggataca cacaattaat 1920

ggcgtgtgtg gggctggctc caaccattca atggcttaat ggcctttatc ttggtggcac 1980

tcaccggtac aggatatttt tgatgtacca tcatggacga aatcatcatt gtcatctcct 2040

tctaccatct tggagtgacg tcacatgccc gccctgaacc ttttttttc ttttcttttt 2100

ggaaccaaac tgctgtattt gaatatagga tgttctcctt tttctcttga gacgacgtct 2160

gagtaagtga aattggttag gtgaaaaggc gaaaagcgtg tgctcctaga aaggtaaatt 2220

cgtcaggtcg ccgcttttca tcacaagttc ccgggggtaa tcgagaaaaa atttcgtcat 2280

gttacattgt tacccgtacg aagcactaat ggtgtgtttg gtttgtgtag tcactctatg 2340

tttaatgagg tgatacatca taaggtcatt ccatcaattt tgttggaatc aacatactcc 2400

tcatgtatat actaattatt agcttatgag gaatgaagtg 2440

<210> 3240
<211> 2482
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_321862_G1, chr9:142817057..142819538, Cluster 19

<400> 3240
cagagctgca cgaagaggaa gcatggtgtc cgactggccg tgcccgaaac catcctgtct 60

gcgtaatcat ggctgggcca gatccaacgg gagtgctagt agcactcgat gggaatgaga 120

cgttatcctg tatttctgtc tctgtctggc atgcaacgtg tgtgctccgt gatttgattc 180

atgggcaaca tgtttagttt ttttttctta tctgccctga ttctctgcgt tgtgtagtag 240

taataggtac tgcacactat agtatcacgt tcagttaacc tcctgatgca gatgcacggc 300

atttcgctgt tgcacgggct cttgtcctac attcggaatg attcttcttc ttctttttc 360

ttttttcccg ttcgtcctaa aaagaaggtt gcagtagaga agttttttt ttcctgtaga 420

cagctggact ggacggtgct tcgagctgta aagaaccccg tagtcagctt catttaaacc 480

aagtgattaa taaaagaact gccaaggaca ggctttgacc gcagggccaa gagttacagt 540

tttttaaaaa aaaaaataaa cggagggaca gcggacaagg cgcagagtgt acagcagtgc 600

acagctgcac cgcagttgct cacattttca aacggacatg aatgaatgtc tgctgacgtt 660

aggcggagta aattactgca ggccgtcttt ggataaagaa tgaagtcata ctttataatt 720

acaatttaca agccactccc taggtcgaaa atggtatttt caccgatcaa gttttactaa 780

atctaactaa aattataaaa agtttctcgg tatttatttt taatatattt attataaaat 840

tagattcaag aatctatcta ataatactaa ttatataaca tacatacacc atattcgttt 900

tcttctcttt tttttcccca aaaccatgcc gtctctatca atatagaaaa caaacagaat 960

gtaacgcaat aaatgtgcat ctaaatcagt cacttttaca attataaatg acaatataaa 1020

ataactctcc tatagatgta tcgccacctg gtagataatc taataaaaca ttaacttaca 1080

tctaaagtta ccaatatgtg gcattattaa gaacaactaa aatataccct ggactcttca 1140

tctaaattgt cagcatatca tattgagtat tgacaaaata aataaccata aaatacacct 1200

atatatgtat ttctagatcg tcactttcta ccgctaccaa taataattaa gttgaattga 1260

ccatatatac acgttatata tcatcatgca aatgaaatat gcatgtgtac cgtgtacgta 1320

aaagataaat gtatatttct actgtctaac aattgtgaaa ttgatccctt aatagaccac 1380

ttactaatga tacctaagtt cactttaaat taatattgat acttcatgat aataacttac 1440

ataagttgtt attgtatact ttctttgttc taaattataa gatgatttat ctttttttcta 1500

gatacattat gtttactatg cacttagatg taaattatat ttagatatgt agtaaaagta 1560

atgcatatag agaaactaaa atattttata atctgaaatg gacgaagtag aaatttacgc 1620

atcttgacca aaactttgaa ttatatttac atgaataacc cgtttggatg tagatattca 1680

agactagaat tgggaattgg aatcatgatt tctgaattct actctttggt tgtctaatga 1740

attcagagct agaattaaag ctcaatttct tagaattgta ctttaactaa aaattgtctc 1800

tcacagttca aagccaagac tctaggtatt ggatggaatt gcaattccag atacatccaa 1860

acaacactat tccaaagaac actattccag ataaatccaa acaaccagaa ggcatctaaa 1920

ccctaaacct atttccaata ctagacagat ttggtattgg atctaattca attataacat 1980

caacaatatc tacatctaaa caggccctaa acactctatt tgtcgcaaac caacacaatt 2040

gcaagggaaa aaaactttga tggagaaatt ttacatctct tattatggtt agagtatatt 2100

gagtcgatga caccatgcaa gtaaaataaa aacatatggc atggtgtttt atctgtgaaa 2160

gtgtataata tttttctcta tcgcgccaag tcaaactaca catgaaaatt ttaccgggcg 2220

tgtgatttgt acaagatttt aaatctttct catggcaatg ttacgtagca tgttcattcg 2280

aagttttttt ttcatgtgac tatgcattct gattggcatt acgctgctga gtgctgacag 2340

tttccacaac tgtgttggag tagcaaacac gtcgacttaa ctgaagtacc aaggcagcta 2400

aaagaaaaaa aaagtaaagg agttgttttg ttttctcgaa aaaagaggga aatatatatg 2460

aaatccacat gcatattttg ga 2482

<210> 3241
<211> 3145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322830_G1, chr9:147654122..147657266, Cluster 19

<400> 3241
cgtcttggca ggccggcatg acagagggat tattctaggg agctaacacg ctgcaaagtg 60

cagttccaag ctgttgttaa aaagctactg tttacctata aaacgaaaca aagggtgcaa 120

catataaaaa aaagacctat tgccaaagtt ttttttacgt gaatcgggtg taagaaaagg 180

ataaatcaaa gcaaaccttc tccccccata ctaataatta tataaagaga ttgtcttcga 240

acctgcaatc agtaattata aaccttctca ccattacaat atgatgttct tatacacata 300

tgctgcccgc aatgaatcgt acgtctaggc tgtgtatggt ttaagcgtac atggaattaa 360

tggctgatgc tagcttatgg ctgttcatga cgaagaaacc agaacttcgt gaaatttatt 420

tccttttca catgctgcat agttatcaca attattctag cagtcatgat aacacttttt 480

ctatacatat tatatagaaa gcaactaact gatgagtggt ggtaatatct gctgacttcc 540

gagggtgatc ttcgttcctc atgggtcaca taagcaatca tattagtaca aaagaccgga 600

taattaaaaa atagctattg cctataataa agagatctta caggacaccc atatctgaga 660

atttcggaga ttcagtacaa aagtttgaga tagagaactt acctatcgaa aaggccagct 720

ttcccctgct tgctttttgg cgcaatccac ggctgtttct atcatttaat ttgtgcagaa 780

attcagaaga tatataatgt atgcatgatc acagtttagc ctaacatatg tttcaaagta 840

gtctgggttg taggcagggg cggaccgacg tttagagtag tgggacatgc ccccacacaa 900

ttttttagtt tagtggactt tttatcttat ttactataat cacaaaagtt tctttataat 960

taacccttca tttaggtctc tattcagatt tttggttggg tccgtccctg gctgtaggtc 1020

accgttagtt ctccggaaat ggagttttgt tcatatcaat tttataggct atgtgaatat 1080

atatatgatg tgtactacat ggaagctttt tgttaagggt atgtagttct ggtgggtcgt 1140

ccatcaagaa aaaggttggt ttgtgattaa tgatcatata tgttattcaa taattgtgac 1200

gtttaatcta agtaagctgg gacccgctaa ggaatcgagg tcgcaaatag ccatcagcac 1260

caaagcacgt atatagtgca tgtgtgtggt gcaagcgcat gaggtggact cgtcttatcg 1320

gcatatatat cgatcaaatc gtgaaccaat cggagcgtct ccaaccacaa aaccaactcg 1380

ttaatcagtc cactgttcgg ttagaatcat gcgtgccgtg atggctttaa cgtctttaat 1440

aacaccgtcc caaagagcat ttgttcggcg tttgcattaa atactaaccg gagagatttt 1500

cattttccta tggtgtttct tttttagaag gaaagataac atttactctt caaccacttc 1560

ctagctagta gactgtatga tgattcagta gtgcactagt gcgagactgc gagcaaggca 1620

tgttcctgct tttaaataag tgattctatc acatatatgg ttcataaaat ggacggttta 1680

tagtacacaa ataactaact attagctcat tttatttta atgaaatgtg caccgtgatt 1740

tgtcattttt ttgtcttctt aattaactct tattagcctt ctatttgagt tttgtgcatc 1800

tacaaaatta ttgaattaga ttaataaaca ctatatgtag taacgaactc ggatgaatac 1860

atgttaggaa acaatctgtt tatgaatttc catattgata tataggtaat ggacaaacaa 1920

tttaataaac cttgctaaaa gtgtatgtac cgttacttca atgacaccct aaactattag 1980

tactagtacc ctagtagata actcaagttt agctaaccta aacctaccta agctcctcaa 2040

ctcccgtaat gcttttatct caaaaccaaa ccaaccgata cctatataat ttccttttta 2100

gcctaatatc ttgacctgct attcgtcttg aactgtttgt ccactccaat ccacaattgt 2160

acagattcca tttttctgat acttttggcg gtattaaagg tcatgtcatt gcaattcgct 2220

cattcgatat gtgtatcatt gtcaacttct ttttttataa aataaaacta taatactttc 2280

ttcattcttc actccaaact gtaagttgtt tttttttttct agatacatat tttttccaca 2340

cacatggata taatatatgc ttccttcgtt tttttgtatg tgtcgcgttt taatttaaaa 2400

aataaacaaa gaatggaggt aatacaataa tacattatat gcataacaaa cgttacgtga 2460

cttaaaaaat tagacccttg taatgcaaaa acatagagag tagctaaaat gtgcaccaca 2520

gttctaatca tttgaatctg aagtttcata ttttcggctt gcatgctttt gtggaatgac 2580

aacgagcaaa acagagtaga gaatccaagt tgttcgtctt gattcagcca tgtgcacacg 2640

tgttgctttc cagctatagt agtaataaat tgttcaaaca gaaaccatca tttctttcat 2700

gtttttcttc tctaataaat actgtaggag tagcccttat catgtcctat atagcaaacc 2760

aacccacgaa gcaactgttc cttcaacaac cgttgtcacc gaatccacgt tttttacatg 2820

ctaccccact gagaatgtga tgcaccagaa tcgtctgtgg aaacatttta acaaactttt 2880

ttctttgaaa aagagaaaat cgaaagaaaa aaggccacac accgctgagc agtctcaccc 2940

tccctgagat gctggggaca gcgtcatggc cacaccactc ccacacaggc gcgtcgcaag 3000

cgcagggcag aagaatcagc tgcccaaccc aagcaaagat caccgataac cgaagcaagt 3060

cacagaagcg agcaaaacaa ctgcaaaagc agcgagagga gtgggggggtg gtgggaataa 3120

aaaaaaaaac tcaagcaaaa tcccc 3145

<210> 3242
<211> 1433
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324328_G1, chr9:154804004..154805436, Cluster 19

<400> 3242
tgcataaata aagggtattg ctttctctaa aatgaacaca agaaaagaaa catgtaaaca 60

atttttttga tttggtacac aagaaagaaa caaaacatga aatgaacaca agaaaaagaa 120

catgtgaacc caaatgaact gatttgagat aaaaaaaaca tgtgaaacca aatgaattga 180

ttcgaggcgt aagaaaggaa aaaaacaaga aatgaacgca agaaaaagaa catgtaacac 240

aaatgaattg atttgaaaca caaaaattga aatgatcaca agaaaaagaa cacgttaacc 300

caaatggatt gttttgagac acacaaaagg caaaaacatg tgaacggaaa tgaattgatt 360

tgaaacacac aaaaaaaatg aacaaaagaa aaatgagcat gttaacccaa atgaagtaca 420

aacataaaaa tataaaaaac atgtgaacac aaaataattt atctgagaca aaaaatgttc 480

aaaataacat gttaacctaa acgaattaat ttgagacaaa aaacaaaaaa tatgaacaca 540

tataaattga tttgggacaa aaaaagtatt cgctagaagg attgttttga gacacacaaa 600

aggcaaaaac catgtgaacg gaaatgaatt gatttgaaac acaaaaataa aatgaacaaa 660

agaaaaatga gcatgttaac ccaaatgaag tacaaacata aaaaatataa aaaaatatga 720

acacaaatta atttatctga gacaaaaaat gttcaaaata acatgttaac ctaaacgaat 780

taatttgaga caaaaaaaaa caaaaaatat gaacacagat aaattgattt gggacaaaaa 840

aattactcgc tagaaggagg gcttgaacct ccgaccttgt ggttaacagc cacacgctct 900

aaccaactga gctattccag cttgatgttc aatacttaac taagtcatat atattctaat 960

gagtaagcca tgtgattagg tcaccacatc aagcaatagt gtcagctcca tccagatgca 1020

gaaaactcag aacgagttag ttcaccttaa ttaggttgtg tttgtattta gcatatataa 1080

taaatcaaat ggaagcgact gagaaaaatg tagccataaa aaagaaaaac ataaagcatg 1140

gcatggcatg gaatggcttc agtttatttt gatcataaag aacaattaag tggataacgt 1200

tttcaacaat gctttccaac aaagctgaaa caatttttc cttttatcga gcggggcaat 1260

gttcaatgcc catgagaata attcctctat atttttagtg ttccatacta atttttttata 1320

tccaaaagga tgttctgact ttaccatttc aaaaatggtt taaagttcac atgagacaaa 1380

atattttacc ttatgtcaac agaagttctt atgttttaat aggctatcat ata 1433

<210> 3243
<211> 1660
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32585_G1, chr1:199893755..199895414, Cluster 19

<400> 3243
ttaggaaaca tcccggttta atttgaaaag aaaaaaataa taataccagc aatgctacgt 60

tactatgtat aacatccctt cttgaggcca aaagacgaaa agaatatcga tgctagaact 120

tgcaacgaga gaatgacata tctccatcag tcgcctacta aatttgcatc aaattgccag 180

cggtcaccgc aaacggtagg tgtactttgt cttgggatac aattattctt tccataaaca 240

tatacaagca ctttaatatt tgggagacga agacaattat tggtcattgg gagttgtgtt 300

tttccggcac catttggtgt atgaatggaa atggaagtga ccttgcttag gaattggagt 360

tgtacaattg ttttcctgaa gtgtaatacg gatggaactc ctggcataca ccgacacaat 420

gaacaagaac cgacacaacg aatagttctt ttccatttgt ttatctaaga tgtcatcaag 480

gttttcggac tctgtaagcg ctgggtcact tctttctgct gatgctgtat aaaagtactc 540

tcatttttta aaagtttttg tgagtttttt tttccatgtg atgcctctgg tttcttgtct 600

actaatcact catcgattca ttatccacct ttccctttga agtcataaaa caagtctaat 660

tcatacgact ggattaaaag agcattccag ttaattgcat atgacttgca aaaaaataat 720

ttcataagac taattaggaa gagtattcct gttaatctca caagactaga ttagaggaat 780

attccagttt ggacagaatt ccttcttgta agggtcaact tatacaaatc agagttgatt 840

tcaatgctat atacattcag ggttccacgt gtcattaatc atccttctcc aatgttgcaa 900

ttgcgaattt acccttcgtt tttcaaattt atgatgttat cccttgtttt gaaaacgaac 960

ttatcactgt tagtgaaaac caaaattagt aattaaaaaa taaaaaacga gagctaaaat 1020

cacaattgca aggtgagata agggtataat cacaattaat actaaaaata atattaaaat 1080

tttagagtta attatgatta tatccttatc tcatcttcac aactgtgatt ttacctctca 1140

ttttttatat tgtaatcacc aattctgatt tccactaacg gtgttaagga gatgggtaaa 1200

cgacggcttc gtttttttaaa aataaagggg taaaatcata aagttaaaaa gcaagagtaa 1260

aatcataata acaaagttag agaagtgtat aatcacaatt attccaaatt taattaaata 1320

actgttgcac agctgatggc ctctcattaa ttaatcgaca acttatttta atccatgtta 1380

actttttaa gacttaaaca cctcaaagtt agacaactag agttgactcc agggctctgt 1440

gttttcttaa agttgatccc aatagtgtta cgtgtgacat tcctttgtgc agccaaagaa 1500

catagatgct aggctttttc ttatgacgag aaagggcatc aatcaccaag ctaatttgca 1560

gcttttgaga aactccgaaa cttttgtagc aaatgatctc actcagacta aatttaactc 1620

tgacgctaaa ttcgctaggt acaatttgtt acctttagat 1660

<210> 3244
<211> 2321
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32612_G1, chr1:199994670..199996990, Cluster 19

<400> 3244
ctttcttgcc gcgtgcctaa aaagtagccg agctctccag atataagccg gtatgagcct 60

tcccaatctt gtttttgtcc atctactgca tcattcgttg acacaaatgc actccttcaa 120

tcctgcctcc tccctctacc catgtgccaa aaaggtgact gccactacag ggacgaacaa 180

ctcaacaaca ccttcaagat aaatcgtaca aacgtgactc aatcatgatt acttctatca 240

atcaatttca tgcaatacta ttttttaagt tcaaataaag gaaattgttg gaggatgagc 300

tctttttag atctaagtat ttttaggaag atcctaatgt gaaggtattg gaagttaaaa 360

agtaagaagg tgttggagat gctctatggt atgacactat aaaactacta caattaccca 420

aggtacaact tgcaaaatgt atcatgtgtt tctaataatt atttttgcaa gtcatatgaa 480

ttcttgatgt tccattgttt gctagtcata acaatattag ttctgttgca tcagctgatt 540

actatgttga taatggcatt tttcataaat atcataacat taggaatcat gttcaagcac 600

caatgtccac tataaattct ttgagtatca tgttactaga aacatacaat gtgcatatcc 660

ttattcatta gttataaatt catgatatga aagaactaac tatggtgact ctaattattt 720

agccaaatac tctcaatttt tagtaccata agcatatgtt catactcata atttggcttg 780

ttatactagt acaaatttga caagtttatg cgaatggtaa tactcatgat ttgactttat 840

atttactcct atctcaagtc aaatcaatga aaggtgagtt aatgttaata ctcgtgattc 900

taattcacat gtcactacta actctagttg aaatgagaat ttagctagat attctcaatt 960

ataccttgct aaacttagaa ttgtaatttt agactctcta aaaacaaggg ctagacatgc 1020

ggaaaatagt tatgacatgc ttagtgcccg ctttgggata actagtgaga tgttgatcat 1080

acatgagcca tcaaatatga ttgtaagaaa agaagctttg ctagttggca taattgacaa 1140

acaaagaatc gattgggata taagtgagtg ctcagttatt aaagtcaaac aacaaaccat 1200

tatttttgaa tcaatcacat ctcaagaaac aagtttggct acaaaaaata tgggaagcac 1260

aagaagctgg ctagagttga ttttttagag ctaaaggtgt tatatgttta cttagtgact 1320

accacatcat ttgtgaacat caaattatag cgaaacaatg tttggttgac aaagcatata 1380

aaagtactga agattaaaca cctaaaagta aaaaataaag agatgaagtt tgtatcacag 1440

aagtcagcca tgcctatttc agcatctact cataggctag caagaccaag tttgcatcgg 1500

ccaaactgac ttcgcctgcc taggtcatcc aggctgggtt acagtcagcc aagctaactt 1560

tcgttgtgcc ttttactata caagttgaca aactagggtg aaggtggcta tgctaacttc 1620

ccatgttcct accattgtcg atgcatctat agatgattcg gacactattg ttgctatgga 1680

caacatcatt taaatcaagg acatacactt ctctaacatg accaataagg taccaaatac 1740

aaatattttg ctaaatttac atatattggt gatattcttg ttaatagatg taatggatcg 1800

ttgaaaatgt cattttattt gttaacaata aaacaatttc agattctatc gaccaacata 1860

gtatgccata cgacaaggcc aatagtggta gtgtgctaca gtcaaggctt cccaaaagca 1920

accacaaagt ttggtcaaat tgactgatgt cagatctaac ccatttgttt acctagatct 1980

aaagtggttt tagtggcaaa cagattttaa atcagctacc attaactgat tcactcacaa 2040

ctcaaggccc taatgcccaa gagagatatg tggagccctc aagtgaagac aatgtcattg 2100

tccatgaatt tcaaattgaa gccattctag aggacaatga tgtggtcgga attccagaag 2160

atgttaggga gcaaatgaaa tctcttcaac tcaagcaaag accgattagt cccattgaat 2220

aatggaaacc atctaagggt cctctttggt gcatgtttat caagatgggg agaaaggaga 2280

atacccgtag agctgatgga ggtaaaggcc atgacaagct g 2321

<210> 3245
<211> 1966
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326491_G1, chr10:10523263..10525228, Cluster 19

<400> 3245
gtttgtgtga gacttggttt tttttgttga actttgcttt ggcgttgtct ttattgatat 60

gagatttgat cgttttaatg tgatggatga atgatatgtg ataaatgtcg aatgacgtta 120

aatggatagt atgtgataga cttggttatt taaatgtgat ggatgaatga tatgtaatga 180

atattaaatg atctgaattt gtgtatgtga tattgaatga tgaacgtatg ctatgtgatt 240

tttatatgga tatgcagggg aattctagac cctagaaatg tcttatttta ggcggcttga 300

cgggccactt aaaataaacc caatttattt tcgacagcca caaccaactg ccgagaatag 360

tagactttat tttcgacggt cggctataat tgtcaaaact agacgtgtca ggtttatttt 420

tatcggtctt ctggccataa aataacttat tttcaatgac cgttattgaa aataagcttt 480

atttttagcg acaaactttc agcgaaggct gaaggcctat gtcgaaaata aatcggtagc 540

cgccaaaggc tatagtgact tgtaggtgtt atgttgcttt ttccaaacac tgatctagaa 600

gatgccacaa aagaatttat gattaatttg acgtcaatgg aaaagaggaa agccaacgaa 660

ggctattaca gataggacta gattaggcta gaagagcatg agcatcatta gtttgtatat 720

attttaggga agaagatgct gaagatgaac tagcagcaaa agcatgtttt atcttcaaag 780

tttactaggt acatgcccgt gcgttgcgac aggattaaca aaaattggta tgaatcatac 840

tcgcagagta aaaaattacg catagcaaca aaaatcccgc tctcataaat attgatggta 900

tccttgtgta gatcagaata gcatatatta ccatggttga atcattgaac atgtacaata 960

aaaggcacta aatatgggca taaccttaga caatgagtag ctaaatgttg atactaataa 1020

caatgactaa aatgatagcc actatcagat tgaaaatatt acctccaacc aaggattaaa 1080

tgccaaagca ttaattgtcc aaaatgtctt ttaataccac caattttagc ttgcatgttt 1140

tgatacatta tcatcgaaac taaaataaaa aggctcttaa tgtagtgaat agcaatgtaa 1200

ggcaacacat ctttattttc ttagagggtt aattgaaatt tgaaagtggt tcttcaaaaa 1260

ataaaaaggc tcttcatgta gaatgagaac acacaaatgt catctatgtg gctctgtcaa 1320

aagaggtgtt taattacatg tttattgttt ttttctcagt tcaagtcact gggtaagata 1380

cttcagcttt tgcacaaatt attgcttgaa gacatggttt cccttatttt ttgctgtaag 1440

cagcctgtat tattgcagat aattttgatg gatgagatgt ttggataggc ttggtaaccc 1500

tggtggatca aggatcgtca cctgaagctg tttgttagtg aggaagtgca ggcaataact 1560

acttactctt gatattggcc cattctaggt ggctcccatg ataataaatt gaggggggcaa 1620

aaattgaaag gatgaatgac atgaaatgtt ttatgccccc tctgtcgtgt gttctgtgtc 1680

atgctctcga tgttcattgc aacaggttga ttaggaaact agttgattga attttatata 1740

tatatagaga gagagagaga ggcttgcagg tttattcagt tcaaagtgca aaactctacc 1800

tttttctttt ttgaattcag agtttcagac atgtaccggt tcttctagga atccggtcag 1860

ctgtgtacat gatatattat taggtgtttg taggtaaaaa tggtctagat ggaggtgggg 1920

ttttttttgta caacccacat gctattcaag cttcatgtat ataatc 1966

<210> 3246
<211> 1476
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326516_G1, chr10:10571093..10572568, Cluster 19

<400> 3246
attaggagag acaaagatag agggttgtga attgaaccca ccaattcatc cacattatat 60

gcaacttaga caagaaaaca gatcgaacta cattgcgacc aacaaactaa gtcacaacaa 120

aattgaggat ggaagcatat tgaagaaaaa acatccaaac taactaacca atctgcggat 180

ggagagagag cagacaggtt atagtaccta ctgaactcct ctccgcctcg tggccactcg 240

agatctcgtc gtttcagtta ctttcagtta cttagtatac ttagtagtgt gtggtttatc 300

aaacaaacat tgttttactg aatttatatt gtttagatgt ctatttgtag atgtagacat 360

caaattgatt atttaggtat taagatgcct tcaatggaaa atattataaa ctaaaaatat 420

atagagatat gaggtatcta taaatattat atgaacattg taacctatac gatgttacat 480

gaaataaaac ccatgatttt tatagaatat ttatataaat caaggaaaat tagtcatata 540

ggaagatata atttatataa gaattatatt taatgataaa atctccattc ttttagttcc 600

aagtgttttc ttgaagtaat tttggtacta aaatagaaaa ttataagtct aaatataaac 660

attggatcaa tttttaagta tcaagacaat ctcaaatgaa gaattcctaa ctataaagtt 720

gaaaaatatc ttctctctct ataaatttta tataaattat atatttatct gagttcaaat 780

ataaaagata taatattttc cagatccacc gatagtactt tccgtcgatt caaagtttta 840

aattttgtag tttgagaagt caaccaatct taaatttgac tacatttata tctccaatag 900

ttttaatatt tatatcttct aataggtcta ttatagaaat gtatgatgct tatatagtat 960

tacaaataca aatattcttt aatatatatt tgatatgaga tacagactta ttttaggaca 1020

tgagaagtag ctgtatactt ttttttactt agacaactat ttttctctac cttgcatcaa 1080

acgatttctc atatttacac aacaaatcca tatgtttcaa cagataatct ctcatgctgt 1140

tgcaaccgaa accaacatat tatatgttac atggatatct gatgatctct aacgctgaaa 1200

cagaatatat ctccttttt tttgcagtat cttgctgttg gatggtgtgc ctcgttagtt 1260

aatggactga gatgtttcga tagatgattt ctcgtgttgc agttgcagca aaaaaaaacg 1320

aagaagagat gttcctctat atctatacta tacttaaaaa cagtgtcttt ctacttttt 1380

ctctctcccc tcatgtctct accttcgcgc tacccgattc tcggcacagg gcgtaggagc 1440

aggcgcctcc tccccgtatt catccgacac cagtcc 1476

<210> 3247
<211> 3319
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326665_G1, chr10:11305464..11308782, Cluster 19

<400> 3247
aaagcattat cttgtaataa gatagcaaac cacacacaaa tggccataag ggaaaactta 60

atcactcctt aaagtaccaa agaaataggg gttggtaaac tcatttgtac gaggacaagc 120

caccctagac tatgcctcct aaccaccaat gcttttctct taaagaagac cctacccaac 180

aagatcttgg atgtcttgtt tttcaacatc taagtgtctc caatcattaa cctcagacaa 240

cattagggtc ttcattttgt tgatccacta aaacacctta ggtacatgag tagatgtctt 300

actctttctt attttgcaaa tgttgaggac atgatcaatt tttgtgacta catgccatgt 360

tatccttggg tgtcattctt gcttcaacat aagctatctc aatcacaaca ttcggagtag 420

aggttactcc actagtggtc tcatttacca aaactaagca tagagctttc accaccttag 480

aaaagcagtc caagacacaa tagtatgggt gttaagcttc ttggaggcaa catgatttgt 540

ccatgtccac cattgacaga cctatgctag aacactgcaa gccaaaaggc gcttgttgat 600

gtagagtgcc taggaaggac acaagatggt agggtgaggt accacacata atgatacatg 660

gccagaggct agggcttgct agaactgaaa aaagtgatat gttttctagg taatataggt 720

gaggtatatg agggattaaa tgcgaagcac tagacatagt caatgtcata atggcaacgc 780

aatgttctat agaagtgtca tagtgcttgt tatggaccta gcacttaaca agtgtaatgg 840

cctaaaatgc atgtttaaac ttagtggagc taattcatta ttggactagt aaaacaaatt 900

ggaatcatac taagtgggat tgccaacaaa attttcgagt cttgccaaaa agaaaaaata 960

gatttaagag tagcttttat aaaactgaag catgtgggta gtttcgatgt agatttatga 1020

gtgttagctt atgttagttt tcattatgga aagttatgta atttagatgt agatttaaaa 1080

attattatgt tagtctttta tactagtaga tttgggtagc tttgtagagt aaatataaat 1140

aattatccaa ttagattata cattatataa aaccaatggc gggatgatta tataatgtga 1200

atttctatga tttacccatt cttctcaatg catatggatc actttgttga acttcaggta 1260

aaacaaaaac agtcctatta gtacatgatg ctcttaagat tagttcttct ttgcaaaaaa 1320

atctacccac tctatgaata acatattgca tgaacccatg agaaacaaac attataaaac 1380

ttgtttggga taatgaacca tatcagagac gatatgaatg ggacctgtct ctgatatgat 1440

gccctatgga ggttacaaca aatacatgtt agagttcggt tcagtctcta ttgagaagca 1500

agggccatca taaatctgta atagtgacgc atacaattga ttcaatgtgt tgaacttcgg 1560

gtaaagcaaa agcagtccaa ctagtacttg attcttttaa catcagttcc tctttgttaa 1620

aaaatctatt tggcatgtca gtaacatatg acatacatcc tatcatgaga aatgaagatt 1680

atatgacttc tttgttatga agaatcatat caaagatgat atgaatggga cctctctcta 1740

ttgtgatgcc ctatagaggt tatagcagag acatgttaga gtctggttaa gactctaatg 1800

agaagcaagg gccatcacaa tctgtactag aggcgtgtac agttgatact acctctaaat 1860

agttatcaaa cacatgtgta gttgatcagt ctctgaatag tgttttcttt gtgatttcta 1920

aatagagtat tggatatttc ataaactagc aattccacaa gattgctcta gaaaaataaa 1980

tgacttgatt taatgattat tttatctcac gtacagacac acatctgttg cacttcatca 2040

gttgaccgta acaagttagt ggcaaaaaag tatagtcaat tatcactacc aattcaatca 2100

tgataattat atgtttccta agtaaattgg tgaggtatat gagggattag acacaaagta 2160

ctagacatag tcggtgccat agtggcagtg ccatgtcata taaaagtgtc atagtgcttg 2220

ttatggacct accacttaac aagtgtaatg gcctaaaaat gaatttttt taaagttagt 2280

ggacctaaat tatccttggt aaaaaacaat tgaaagcata ctcaaagggt ttgctaaaaa 2340

gaacttttct gtcatgccaa aagaaaaagt tgacttaaga gtagtatttc taatagtgga 2400

gcatgtgtgt attttcgatg taaatttatg agggtaagct tatgttactt ttcattatag 2460

aaagttatgt aatttaggtg tagatttaaa aattattatg ttagtccttt atactggtag 2520

atttgggtag cttcacagaa gaaatcgatc caattgtcca attagagcaa aactaaatgt 2580

gaaatttcta tgattaaccc tttcttctca ctatatggtt cattgtgttg aacttgggaa 2640

aaacaaaagt agtccaatta gtacatgatg cttgtaccat tagttgttct tctttgtcaa 2700

aaaaatatat atacagtcta tcaataacat atggcataaa tcataccatg agaaacaaag 2760

attataaagc ttctttgtga tgaggaacca tattgggacc tatctatgat gtgatgccct 2820

acagaggtta caacagagac aggacaaagc atctccaaca ggtccaatcg ctattcccaa 2880

aacaatagtt ttggggtaaa tctgaaaaaa ctcgatccaa ccgttcttga tctatgcctc 2940

taaattattc ggtgccccca aaccgaagcg gcgaagcctc ttcctacata tttagggtcg 3000

acccactatc acctctattt tagtttcctg cagcatgaaa agctacgcgc gccatctcca 3060

acctcctagt accgccgtcg tggtggtgga ccccgaccgc gcaggcctcc cacactctcg 3120

ctcccgccgg ccggcgacgc agcccagcac gagccgctac cgatctatgg gtgacacccg 3180

atgtcgtccc tgtatacata gaggcgccat ttcatcgtca gtctcctggc ccaggtgcag 3240

atgccccacc ctgaagccat cctgcctccg atctagggac actcacattg gttcacacag 3300

tcagttcaca taatctttg 3319

<210> 3248
<211> 1952
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33537_G1, chr1:205234666..205236617, Cluster 19

<400> 3248
aagttttcat gtcctttcta ggtgatatta atttttagta cattcgattg taacaaacaa 60

aaatgtttta attgtttatt accttccaca cccatggtta gtgccaactt tcaggtatat 120

gttattgtag tatagagtgg tgattggtcg agtaactatt tattatatat atttactttg 180

atgattataa attttctcat cctatatatt gtaaagataa catagaaata attagatgta 240

taaacattat tatgtgaacc aagattttag ttggattcca cttaaattta ccaatagtac 300

tattaaggat ctaacaccaa atgtttgaca aggaataaat acagataaag agtatcagat 360

aaaggtatta tgcattaata gtaaaatatt ttaaaaataa atgtataaat actatactag 420

aatatagatt aatggaggaa caactattac attacctttt ggtttaacaa tgtctagcta 480

tatgtatatt tggggtgcct tgctatatgc tagatttcta aaatatgcct tatatatggt 540

gttcaatgtg gtgtcccatt gtgtatgcca tagaaaagga gaagattatt atgatttctt 600

actatgactc gagaagctag cttttgctag tccatatggc taacaagaaa ttgattgtgt 660

tttaaactag tgtcaactta aaatatgttg tagtttatgt tcaagggaac acactagcta 720

tgcttctcag ctcgattaca acgatgagat gagaaaggaa tgcatcatct aggaatgttg 780

catgttaggg tctataataa tgtcctttta cttttaggct taatgtaata agcttttgcc 840

acacgtgtaa attgtgtgtt tatgatgaat cttgtaacaa gaatgatatg attcataggg 900

aatgaagcca aatattgtac tcgacatcaa aaagtatata ttgtgtattg ttacaaatgt 960

tcttatatga cttattgagt aaaaccattc tcataatata tacacatatt tcttagaaaa 1020

aggtaatact ttcatagata atggaagagg taacatatac taatatctat aatgactaac 1080

gaacattaaa tgttctaatc attaactata tatgatagac gactatgtat taataaaatg 1140

tggtagcaga ttatcattcc atatgtgaag aaacaaaaca aatgatactg tcagttgatt 1200

ttgtgttttg ataaaactct agcaatagtt tcctatagtt gttaggccca cattgataag 1260

ataccaataa ctttgctcaa gagaaaatta aatgaccaat gagttaatta taaaaatggg 1320

taaccacttt ttcatcattc tacaattatc tattcatgac atgtcgtaaa ttattagaac 1380

ttaataatgc aagaataaag tttcaactaa taatgtaact actaaaacat atgataccac 1440

tagctatgta tctacaagct tcagcagaaa catactgaag ttaaagaaaa tagtgcatgg 1500

ttggtagaca aatagataga actaacaatg aatttactca atatagggca ggggcgtgaa 1560

gaggagtgca aatgactata gatggactca acaaaaaata tgacttggaa actatttgga 1620

cattgttcaa acttatcttc acttgtagtt gtatagagta catttgaggc ctaaggattg 1680

ttttcacct tgttcattta aaagttattt gaatttatta tatttttgta gttatcagta 1740

gattgtgctt acattgtgta tgtttatatt ttgacatttg tgatgtagtc ataatttcac 1800

tagattgcct tcataaagaa aatagttgga tgtttgtgat tttatttct tggcttagct 1860

atttttaat tgatgacaca ttcataagaa aataaggtat tcatcacttg atcatccatt 1920

gtttttccca ataatgcaca atgtgagtag ct 1952

<210> 3249
<211> 2202
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33933_G1, chr1:207022302..207024503, Cluster 19

<400> 3249
gtccggtggc atgttgttgc atgtagttgc acccaaaacg agaatgcatt tatatttgtt 60

tttccatcat atcttttaaa taaaaaattt aaccatcgaa tcgatttata ttcgtgttcc 120

tggatttttg aacaaaatta aaccacgcgt gctatataat atttaaagat ttatctattc 180

actcttgtct aacactcatt ttggtgtaga taaccaaata caagctatat ttgtcttaaa 240

tgtaaatatg taataatgca aacaaccaaa taaaagtcta tgcacggatt tagtctgtgc 300

acgagtccga cccctcatgt ataggacagg ctaccactgt acaacaatcg tatatgtttt 360

ttcaaggatc gtacatgcat gcatcgcact gaatcgaaca atttgataca aaaatcgaac 420

acgattcatc agaactgtct tcggccatga ccacgttttt tttcacaatc gggtaccatc 480

caggatgagg cgggatgctg gtgatcaggg tcgtctcgaa aattttgaag tcccggtgcg 540

aaatgaaagt agagatctaa tttaacatac taaaataaga atagtagtat gtgataatat 600

attgtcataa aggtgtgaac ttagtattgt acctggtaca taatattcac ttgaaaattg 660

taaatatttt ttgtgttctt tgaaatgaaa tcttcaataa tatattcata atcaatcatt 720

tctagtatgt ctcccttaac tgctatgaca gtcaatgtat taagtctttc tggtgtcatt 780

gtagagcgta agtaggactt taatgacttt agcttaaaaa agcttcgctc tgtcgatgca 840

acagttgacg aatagtcaaa agaactctat atgcaatggt tgcattggga aaataatcat 900

gctccttcag aaaattttga atttcaagag gaccaatatt tttctgtgga ataaaatctt 960

ggagaaaact taattccacg tataggtgat ttgcatcaat atcagattgt ccatctttta 1020

aagtgcatcc tcaagatgat gacaataaga ttttaaactc tttttatcta atgactgcaa 1080

tgcatcacaa ctaaataaga aatcaaatat ttttttataa ccttaataat gttcaattct 1140

ccttgtgagt gaagaaatag cttgagcaac aataggtata aaatagatta ttctaaatga 1200

ttcctcttca gactgtatcg tagcatgtgt tatctggatt ctcatcaaaa tgtcttttc 1260

tcttaatttg tcacttcata cgaaatgtac taccaatatc catgtcaagc aatttctttt 1320

gcctcctcta aggtttttat gaaaccagag tctattggtt aaaggaagaa atcaaaccct 1380

gcacttccca ataccaacat caatgaacat atcctttgat tgcaattcct tgcttactag 1440

attaacatca tacaatacaa gaggtcatac caaatgacta ttgccactat aaattcaaac 1500

tcttcaagtt cattagttgc taaagattta gcctcactac ttatcactgg atcattatca 1560

ctattagata attgaagtag aacctcccaa atatttgcac attgaaacct gatagcttta 1620

acactatcaa tatgactctc ccaacgagta gctaacactg actttagagt caatcatgta 1680

atgttatcta ttatctttaa ggatttgcta tctcttagta gaattagtaa aaattgtgta 1740

gacgtgttgg atgatccaaa aaactttagc tttaccacaa ctcttggtca tatcacaaag 1800

tgttaaatta agactacgac aaccacaagc aaaataaaca gctctaggat taatattcga 1860

aagttttcct ttcatatttg ctccattatc aaagcctagc ctagcacgta cataatagaa 1920

attagaaaat aagaaaacta tcaaaagtca tatctcatat tgagggagct cgtccatgtc 1980

tccatgaaca aataaaacat tctaatatgc tacgaatcac atacaagttg aactgcagga 2040

tcgcaggaac agagtgcgga ggcacacatc cgacgtccca agagcggcga cggcgtacag 2100

gcaagcgacg tataaacttc taggtcatga cttaggaaca ttggcatagg agatgggaat 2160

aatggttctg gccttctgga attttgtaca ttttttatta aa 2202

<210> 3250
<211> 2743
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34049_G1, chr1:207624501..207627243, Cluster 19

<400> 3250
aaggacatat gagaaagctt acgttaaagt acaagatgat gaatatgatg ctaatatgca 60

gtttgctcta cattagtcac gactcacggg aggagcatga ttacaaacaa aggggtagtg 120

gatctaggtc gagccaaagg gtacctcaag ggttgggctc aaggatgatg acaaaggact 180

gatcacaaat tccatagggc gtaagaggct acaatcttgg ttctagctct agcccacagc 240

aagaggatag atattggccc ctgaacaaga gtacgagttc gaaaggctta ttggaagggc 300

ttaggcaaag gattgtcatg ccattgacat acctggtcac aacgcgaatg gccctttaag 360

acaacaatca tagagactca aaaacaagtt aattgatgcg aacattttta ttgtatttga 420

tatatcttgt ataaatatgg atcattacta gaaatgcaag tattagtgtc accataccca 480

ccgaaagagg gattgatagt aaatatttga atcaaaagat aagagtttca agtagagaat 540

gataactaag agaatgatta gaccgagttt ggtgtcactc tcatgtgtaa ttatggacta 600

aatcaacaca caatagtatc attagtgttt tgatttattg caattacatg atgtatttat 660

gaaagtcagt atatgcaact agagcttctt aagaccatag atttataatg caggtaagtt 720

ccttttggg ttgttacttg atttatattt gttttaattt tcataacaaa accccaacat 780

ctaacataat cgtattttat gtgataatta tatttaaaat aggcacaaat tcaaaatgaa 840

caaatttaag cattagagaa tgagaggcaa accgaaattt agcaacaaaa tccaatgaga 900

taatggcaaa tgtcgaacaa aaacctcagc ttcttgccaa atctgtggcc ggaacaagcg 960

tgtgggcaac gttgagccag ggcaaggaac cgatcgagca ggcgacatct gatgtttctc 1020

acctaagaaa tgctatcaag caaccaaatc tcgccgctgc acaagcgaag acgatgagtt 1080

ggttgagttc aagagtgtgg agtgaggcga aagaggtagg gctagtggct ttttatgtaa 1140

atgggctaat ggtataccca tgggttaaca gattcggttg ttttttaac tgcctaatac 1200

acttatattt aaatatggga tatatcagaa tactcagaaa aaagcatcca atttttacca 1260

taatttttc tgatttttat atttttttaa aaaatgaaac aaaatttgcc aaaacaggag 1320

gggggaaacg tttctcggcc aggaacgaaa aaacacagaa tttattttgg ttaggaaatt 1380

taaccctgcg ggcgaccaag gcttgaaagc gcaggagtgc caaggcgcta ggcgcccaaa 1440

gatgttgcaa cgctctccgt ccatggtggt ggatcaggtg acctccaccg acatgacaaa 1500

agagcattgt acacaacacg aatagtgtgc aaagttaact aagatcatgt catgcttacc 1560

gatgatggta caggtggggc cttcgtgcct ctgttctcct tgctcttgaa atcgaaagtg 1620

ttgatgatga acgatcaatt gaagaaagtg taaactataa ttttcattga tctctgaaat 1680

atatctatac attggaaaaa agtgtaaaat ataattctca ttgacctctg aaatagattt 1740

atacatatgc ataagatgtc ttcaacagac acttattgga acaatttgaa aaaagaacag 1800

ttgaatgaat ggaaagagat aaaaatttgg ggggaagaga acagttgaat gaatggatat 1860

gtcccatcag agacatggtt aattgaccaa atctatctct agttgcatgt gaatgaatga 1920

gatcatcatt tgaaaatgtg tctattgaca tcaggcaccg tttcacaaca ttgcaaaggc 1980

aaattagcac acaccgaaat atagttacta atgcgaatgc taaaacaact ggagtaaaca 2040

cacaagcaaa agaccatgta caaagttgta aaggaataag catacctatt gggtaattaa 2100

attgcacagc cagtttcaac acatcatgta aagcattcat aaaacattcc atccattaag 2160

aagcaatagg tatatactat atagtaacca tctgagaatg aatacgaata atgccaataa 2220

tttaattagc aaaataacgt gatttggctt atccatcttt agaaagacag atgaaagaaa 2280

tctaggaaca gaagacttcc caagtgacaa gtaggggatc taaattaaac cagaagttac 2340

atgttctaga ggagaccatt tcaacgcgta aacacaacta aactttgtat tacctgacta 2400

tagatgcatg actgaatagt gaatggctac tttgaagctg cttatgattg gactggtatt 2460

gctgcatagt gcataccctc accaaagaat ccagcgctac aagtccatgt tatttgcagt 2520

ttagaaacac atgcaaatct aaatactatc tccatcccag aatgtaccac attcattaac 2580

tttgcatctt gaccaaatat atcagttatt gtgttatttc tcacaaatta ctacagacat 2640

cccaaagctc caaagcagtt cacactaact gggaccagca aaaatcatat caaacttgag 2700

gaaaaacact ttacaccttc aagaaaaatg tactcagatt tat 2743

<210> 3251
<211> 2101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34083_G1, chr1:207726698..207728798, Cluster 19

<400> 3251
ttatttagcg agctgctctc tagattgata gcccttggca ggataacagc tagctagcac 60

ggcaatccga tcgagaagat ttgattcccc tcatcgttcg ttttggtcat agttttatcg 120

gtcggcatgc aggcaggcag gcacgtacgc tgcacgctca tactccagcc cacgcacccg 180

ggccggcccg cgcgccatga aaaaaaaaag aacagatcaa agcggagaga tagagagcgg 240

gagatggaga cgcgtgcatc gaatctagtc tagcactgcc agatcccgct ttgcgctgca 300

cgacgtagat cgataggctt cttttgggcg ggcgttcaaa gttgctcttg ctcgcgtcgc 360

gcgcgcagag gcgattctct ctcttcgctt agaaagctac ttgtagcatt tcccttccca 420

agtcaaagac gccgacgcgg cgccctattc ttgggctttc taccgttcta cgtgcccccc 480

ctcctttctc gtgatactgc gttcttttgt tgccacgcag tgttttgctt ctgggtttag 540

tttactactc tatttgcatt gaaattgtaa atcattctag cttttctatc ttcgtttaaa 600

ttgtaaaata ttttaacttt ttatacacat atctttctta tatatattta ggcatacact 660

atattttgat atatatatat ataagtaata aatctgaaaa ctaaaaaaat ctatgattta 720

gaatatggat ggaatagttt agaatgcaga gattagaatc tgaaaactaa aaatatacga 780

tttaaaaaat catcatcatc attgttgttg ttgttaaatt agttatgaaa tatattttta 840

ttgtaaacat attgatacta ttttctgaat tttatcaagc ttagaaaagt ttgaacaagc 900

aatcccgtgc ttgcctagtg ggcctcgctc gtggtttgtg acttcgtggc ctgacacagc 960

atatgatcta catgccaatc tgtgccatgc ctggctcaac cagtccgtgt cgtgctttag 1020

cgggttatgc cagacgacct atttagacat ctatagatct tctttaaata tagaagtacc 1080

ttaatctaag gccttctttg gctgagtttt tcaacttgct ttggtttttt ttataaaagc 1140

caatcaaaaa agagttggct cccattaaaa tccacaacca aaagcagctt ttatccagta 1200

taagtttgac aacaccatta cttctactgt cacatgcttt tgaatttata ctatttacaa 1260

aaattgtttg catgtcacta gttatagaag atatcacttt ttccatatac gtgattgttt 1320

ctcatcgccc acaactatag tctggacagc aagtcgtcta gaacactagg gcaccccggt 1380

ggtggcatgg tcaaccctag tggtggctca atcgatgtag cgtgatgtgt cacagcgcga 1440

tgtgggcgga cccagtgggg acgaggcctg ctccaacacg gcacagtaag ccatggtggc 1500

agtgcatcta gccctaatga aggcatggat aacattggca tggcgcgacc tgtcctagat 1560

gcgtgtgagg agaaagagac ggacgaccta cactgtctat aagagaaaaa aggggtaaat 1620

tagcgaggtt cgcttgtcag tgacagacat atttgagtgg tgagaaacat ggatcatata 1680

tatggttcac tttaaagttt tttttcgaaa ggcaccgttc tcaacctaaa tagctcttga 1740

ctttataata acccatataa cacaacagcg ttttcacagc ccacatctca tagcagcatt 1800

ttcaaaactc acaactcaac actacaacac ttgtgacctt ctatgacgtt ttctttatgt 1860

caccaaacct tgaatttatg tcatccatca tgaaattcac ttcatcacct atcatgcgta 1920

gcattgcatc atctgtgatg tttcatgatt ttttgtcata aatttagtga catattatat 1980

gtcgtcatag tttcgtgaca cactattttc gtcacttacc atctctaaaa aacgcaagat 2040

catgcttcca cgtagggtaa aaatgtcata aaagtagaca tacaaatgac atggcatgac 2100

a 2101

<210> 3252
<211> 1907
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347279_G1, chr10:134077683..134079589, Cluster 19

<400> 3252
tgtggtggca aagtgtttgg attctagtag cattcgtgga gatattaagc aatgctggag 60

atagttatct atttgtggcc ctcaaatcca aaatatgcat actatagctg tttcaactgt 120

ttgctgggct atttgcaaag ctcataatat aatgtgcttt gagaatgtgt tgatcaagtc 180

acctttgag attatctact atactagtgc gttgatgatt tactaggcag ggttaagcaa 240

gaaggagctt caagacttga ttcaagaagg cactaagtta ctggatgctc ctacggacca 300

tggggacact aatgatgatg aagcaagtga agattagttc cccttgctag ttgggtggtg 360

gtcgtggagt tctcttttgt ctggtggcat tgtatgcctg ctcatgaatg tttcatcgtt 420

tcttgttttt agctcctgcg tgagcctttc agtagcaaat gcgtgctgtc ttatgcgggt 480

ttgccacttt aaaaacttag tttgaccctt gtcgtgtgtt ggccgtcctg aatcaaggta 540

tgtccctttg gctcccgctt ttggtaatat ccttagattc ttgtaaccaa tttctatcat 600

agggagttag tctattggtc tagtcctttc aatgtgcact atgttgtatt tctgttatga 660

aaataataga aatgaggatc tcctcttata aaaaatttat caccagatgt aagataagca 720

tttgttaaat ttactaacaa gaataataaa tccttttact ccaaagcaaa ttggatagag 780

ttgaaaccca accgaagcca taaatcaggg tttagaattc agatacgtag atagttgttt 840

ccattcactt ctattcaata ctgaatctat ttttttgtta aagtcaccac cacttaggcc 900

aaccagacta gtctacagtt agctaggatg gaatgaagtc gatctgactg aattgtctaa 960

agacgacatg gtcgggtttg gaggctgccc atgcaaaata ttagtcactc ggtttcataa 1020

tcaaccaact ctgattcaga cacttaaaca tctgtcaagt tatctttgga accaggtgaa 1080

gtcacatgaa caaactcctc aacactagac ctcacacaac agagtcaatc aaaccataaa 1140

caaaactaaa aacaaattca catcttagaa agctaccttt gtgaggttca caagtaaaaa 1200

gcataaaact tcacaaatct cacaaaagca aaatttagag tcttcgcata agaagcttca 1260

tttcaaaaat caagcaatga gagctattgt tctcaccaaa gcactagcaa acgatgaccc 1320

ataagtgttg tatatatagg cgacttcggt gaaaagtgat tatttgaatt ctttatatac 1380

tcgacttcga tcaaacttga ccattacaag tttgaaatcg aaattgttca ctttttcaat 1440

gaccaactct aaagctcgag gacattgttc tacctttata taactaaaca attctatgta 1500

acaatctaat gttgttttag actttatata ggtaaaccta gaatatgtgt ttaggttaaa 1560

aagatttagt tacccttata taactaaaca attgtatgta ataatctaat gatgttttag 1620

aatttatata cataataacg cgaatgtgaa acctagaata tgtatttagg ttaaaaaaag 1680

actagattgc ccttgtacaa atgaaggaat atatgcaagt aaacagagaa tacccttaca 1740

tgaccaatta gttgtatgca agttgccata tattagtcca agttcagtaa acttcttcct 1800

tcttgctaag atggctatag agtgtcatgg tcgagataat aaaaaatatt ttcttccaac 1860

ctgctatttt ctttttatgc ctttcaagca ttcttttgcc ttttcag 1907

<210> 3253
<211> 2139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348016_G1, chr10:137774111..137776249, Cluster 19

<400> 3253
ttttctatat tattattaga gagtaaaatt tagaaagatg gccggagatg ctctggtgtt 60

ggtgctgaaa ccacggaagt tggatagttt atcacatcat ttgacagaca ccatgcagca 120

ggaaattcga cacaaaattc acgcggcagc gccgttccgc gacctgtgtc caaattgcta 180

aagttaattt ccgcttttgg ccggacaagc aatatatacg aaccagattt tcgttaaagc 240

tctcgcgttg ctttcaggaa tcaggacagt caccagacta agaggcgaat gaaatatacg 300

agaaaaagaa agggacgatt ttttcgtttc ccgggcttca ctaaataatc tttatcttta 360

ctatattaaa gtactagttt taatgatcgt cctgcgttaa tatttttaa aatgatctct 420

aatttttaa aatcaaccta cacttctata atctcttctc tattattata ataggagagt 480

ttgtgtaaaa aataagttga aattatatat aagtgagtgt ttcaaccttg gttgttggct 540

ctatattcac actcacatat aattaataga aaacatatat tttatgacta gtgccataaa 600

atatttcaca tatactcgtg taaatgttag taattatttt agggtttttt aaattggtgc 660

tcttagtttt ggtggtgtgc tcacgtatac ccttagtcgt gttttttgct gggggtatat 720

gtgagcaacg tgcttggtta agactccgtg agtgcaagcg ttaatggaat ggttaccgcc 780

gtgattcaat aaactgtttg gtgacccaca gtcccggagg atccagccca tttcctggcc 840

caaaaaacca cagaccgaat tatcgccgag acttaaaaaa atgtgtttgg tgaccacgct 900

ctcgatccga tccgcgggag actttaatta aaccagctaa ttttactcca cctatatatt 960

aagttgtcgc agaactgcta ccgctgctgt gcagataaat atcagcgctt atctttttct 1020

ttaaccgagc aaacaatagc cacatgagat agcccaagta aaaagaacca aggttaactg 1080

caaagaacga caacgcttct atctttttct ttttccttag gacgcataca aatagaatgg 1140

ggatcaataa ttcagtagga agcatcttac tgcagctgat atataggtga gcacaccacc 1200

aaaaccgagg gcaccaattt gaaaaatccg ttattgggtt ttttaaattg gtgactgtag 1260

ttggtccaga cttcatcttg tgggaaccac atggttcaca tcctgccgct ttggtaattg 1320

cataattcat tgaaatcctt tgcatggtcc acaacttgtg tgggtttagt ttcaaacttc 1380

aatttttcag tattgtttaa gaagtccttg caggtcgaac tggtccagca cactatggag 1440

aattttatag tgctttgtat ggtctttata tagagtttat gaactctatt ttttgttgga 1500

tggattacag gatatgattt tttttaccaa gtctgttact ttgtaggtaa tattacatgt 1560

agtaaatgct gaaactatac tttgtaatga ctagcaaaga tgtaggttac tttgtagatt 1620

ttgatgttaa gcttgagagt gttaaaatat ggtcattttg aacagagcta ctggacgaaa 1680

atgttagctt cataacagtt agtgtaaatg ttaaatgtta ggaagttatt ccaattccat 1740

tttctttcaa cctcacaaac actgtatcac tttcatacag attatacatt aggcggtggc 1800

cgtgttagtg gcagcaaaag gatttcttca gaacatgcat caggtagtgg ccatgttagt 1860

gtccgattgt tttagcttaa aaagataaat cgacaaacag gtagtttatg taaagcactc 1920

aatttctaat ttagtctact ctctacttat acatgcatat taccaactaa tttctgattt 1980

agtctactct ctacctattt gcatgctctg atttagttac cttattttgt ttctttgtaa 2040

tgtgttgcta gtaaaatctg caatgagctt ctgctgctgc tcgatccatc cattgaaatc 2100

ttgaggtaat cattccatca gctgtcagat ttcctgaac 2139

<210> 3254
<211> 2970
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348673_G1, chr10:141468832..141471801, Cluster 19

<400> 3254

atatatgtta ttatatttta ggacggagag agtagtaccg gatatctaac aaagtgattt 60

tgtttttcgc gttccacata tatacaagag tgattagctt tttatattcg gctgtttaat 120

tagcgcgaca agttaaaaaa acaggctata tttagcttgc tgtttgtcca taagaatact 180

aaaaaaattc gaacatatat ttttatctat acgttttttt cctctaagaa aacatttatt 240

tgtgatacag agcttattaa cggacagtta gattctgatt tagggagcac ataaaaatat 300

ttctttaaaa aacctaaaaa ctaaaatgtt tttataagaa tctgaatcca caccacaccc 360

actgttaggg attcagcata caactacgac tcggcaacag taagcgtact gattagcgta 420

cgtgctggca cgtcgtacgt agaatacact gctcatgatt ccagctagcc cacgatacac 480

gcgcgcaaag gaaccgataa actagtatac acaaaagtgc caccggccgt acacgttcga 540

gcttaatttg ttgacatcct tgtcttttga gaacctcacc tcacccctgg tctttgcgtg 600

tatcgagcta ctactttact actgtctctg acagcgcatc tgctgggatg aggatgagcc 660

atgaacaaag caacatgcat gcatgtcgat cgacacaatg atatttatgc cagaaatctg 720

gccaaaaacc tcggaacatg ctaacgtgat tgccaaagtt cctggcttgc tttttcatgc 780

gcgctgttca tgtgtcatgc atgcatcgca tcgcatccat gtggctacca tgcacaggtg 840

actgcacaca ggagccagat gcaggctggt agttcatccg tgcccgtgcg tgatgctgca 900

cgccgggtag ggtaggtagg cattgctatt tgctcagctc ctgtctggct agctacccta 960

ctaaaacaag cttgcgtttt aagagactgt tgttcttgta aacaaaaata ataacaaccg 1020

tcgagctgtt gcacgagaac caccgtaccc gagactgtgg cactgtttga tcctatgtgt 1080

aaagattacc tgattaataa agttgaattc taaagtttag accacttcag cccatttggt 1140

gtagtctaat gaactaatga tattttcttt ttgtgagatt ggattaagtt tagatatggt 1200

tttaaatcac ccgtttggag tatcgagagt taaagcggtc tagagtttat taggtaaaca 1260

ttaaaccaaa gagtccaaac aagacctatg ttgtatggct ttctactata ttcacggaat 1320

tggtgtctgt ttttttgctc ttgttaaggc catatgtagt aatttggaca ttgttatatt 1380

atagaaaaaa aataaaccac ctcttgtgag ttagttgtct aactaaagtt gtcgcctaaa 1440

aattcggcat cctaaaagat agcaattctc ccatactccc atataagttt taaaatatat 1500

gggacattaa ccttatgcaa aatgttctcc tagcatctcc tctaatctga tttgtgcacc 1560

ccattccccc cacttcaaac ttaaaatcct ggctttgctc ctgggtacca tgtgtgtttg 1620

aaagcagagg gagcatgtcc ttgcatgaaa ttgcaccgct gccaatatgg tttcggtcta 1680

ccaaacagtg gcgtagctat tgagtggttc aggtgggccg taatataccc taagtcggtc 1740

catcggacca ccaccagtct accaagaccc aagaaaaaaa gaaaatggta tatattatat 1800

ttcattttga tgtatgtatt tatggactta aatgttaaat acataatttt atgtactatt 1860

cttatttta tattctgaat tgtgcaccaa attattatag gttatactaa attattaatg 1920

aaaaaacttc ctacgacata ccctcatacc tcatgagaaa attctagcta ccccactgct 1980

accaaacgta aacatcattt gaaatatgga aaaaaaacat tacattaccc tggtagaccc 2040

catgcaatct gtttgtatag cttacatcac gacagtacgt tcatcttttg ttccgtgcag 2100

aggagagcgc atgtgaaggt gctgcacgca gcacgctcgg tccaaaaaga agagaagaag 2160

ataatggagg gagcagagcg agagagcgag agtacgagac cacctcgtat acagtatacg 2220

cacgtaagcc ggtcgtggtt ggtcgacgac atggcacatg catgcaggtc agtacagcac 2280

gtatactgtg ccgcgcacca tgctttgcac ggatcgtgga tggatggacg atgatgaatc 2340

atgggccgcc gttgtttcgt gggcgaacac ttttgtacac ccaatagtgt tcgtgcgcag 2400

tagcacgcac gcacgcctgc ctgctgcccg agccgagctt ctttgctgtg gcgcccctac 2460

ctaaaaaaaa cttatgtgca cttaaacttc acgtataatt attgtgtaat taaactatta 2520

aaagttatag aaaacaaaaa ataggtatac tttattattt aatttactaa tatactaaat 2580

tttaactaat aattaatcat atgttaaaag atataaaaaa aaattaaaaa ttctatgcag 2640

cataaataat taaaaacaat agaatttttct ctttttgtat attttaacaa tttacaatgg 2700

attaaactta aaatttatat agttatagag taaacaatga agaacttttt tattttgtac 2760

ttcctccgtc taaaatttag tcgttttaga ttttttatag tttgatcgca tgacgtgtac 2820

gtcctgtcct ggtaggctgg tccgctggta gcctggtact gaacacgcaa cgcccggcag 2880

ccggccggtt aattaggctg aatgacactg aatactcatg tacactgggt gtgtttcaaa 2940

aatacaaaat aaagtacgct acatctggtt 2970

<210> 3255
<211> 2470
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_36257_G1, chr1:218734356..218736825, Cluster 19

<400> 3255
ttattggctc gtgaacatct tatttgagag ttttagggtt ttggaggatt aggtaaagat 60

ttgggatgca atccaagatt atcttgtgcg aatatttttg ttgactctta tttacctttc 120

tttggtcgtc tgattcattc cttcatttgt tggagctatt gttgtattta aatatttaat 180

aatttttttt tgctttcttc gagaactgta tagatgtcat cgttgaacag gtagttaaat 240

ttaaaatatg gtaagacgat ttcgacgtag cagtagtcgt ttgtatatag aaaatatagt 300

tacccgaccg ttttaatcat gaaacgctgc tcaaacacta cgtgcatttt ttttcctcaa 360

tctcaaatat tcgccacgaa atgcatcttt tcattagaaa tgtagtactt gtataaatat 420

atatcgctaa tagtttaagt tattcttgcg ctgtgtgaca cgataacaaa tgatatcata 480

gcatttttga cacgcacaca gcataatatc ggctctggtc gtgtcacacg tacgaaatgc 540

ttcgattgtg atgcgtgatg ctgtgcatct gtccatccag gccccagcaa aggaacgacg 600

tgtgcagaga catgctcccc cacatttgta atctctttgc acaagttttt tttttctttt 660

tcttcttccc acttcatttt tcgatcatgt gaccgatgtt gattttataa ccaaatggtt 720

cttaaaatag tatattgtgc tcgaatcgtc tgtgcttata tattagtgtg tgtggtacac 780

ctattttatc tgtaaaaaac aaaattaaca aaaaaacaaa tttgagcaaa actaaatcag 840

atctgtcgct gtcttggcat ccggctggtt caacgaacgc gagcctgacc tgaccagttc 900

tgaaacggcc aagcaaaacc ttgctctggc tggctggctg gcagtgtggc ggcgtcatcg 960

gcacgcgcag acaaggacct gatgagaatg agcttctcct tcatcgtctc tcgcgtcgcg 1020

tggactaaaa tattgcaacc tgcagcttgt acgtctcttt cttcgactat cagctgatgg 1080

caacactgaa tgcatgtaga gtctgacgag ctgaattaaa caagtgcaca aatcagaact 1140

tcaattcagc tgataccttc tgcaagatgc cctttacttg tctgtgactg tgggatgatg 1200

cttttgctga catgaggaac agtactacca ctgctcctcc ctaatcagga ttagggcaca 1260

catcctttta atactcctag atacatatct tatcccagat tcttcagatc aggaacaaaa 1320

cctacccaag tgtcaagtcc ccaacctacc acctgttctt tccagactgc tgtaccagta 1380

gtgatgcgca tcaaggtcac atctgattcc ttactactaa aaaccttctt tctaaactta 1440

tccccctttc gccccctgg taagagtaaa gggatggact gtcaggctgg ctagccctcc 1500

ttggcatggc agctttggcc tccactgaat tctcatcatc tagattctgg gctggtaaga 1560

gttgagaatg cacttgccat atctagcata gaccggactt tgtctaaatg catgatgtgc 1620

agatcagaca tgggattttt ttcctgttga ggtgacaatt aatttggttg ataaagttat 1680

catgatcgat ctgcagcgcc actagacaaa catgagcggg caacggaaag ccaaaagaaa 1740

tcaggattgc ataaaaaatc tgttccaaca gggcgaggga agaagagcaa aatattatgg 1800

tcacaacaaa ataatgcctt cttcgtgtta aaacatggga tgtgggaggc tagcatgggc 1860

atgtcgtgta ggataacgca catgttcctg tgccctgact taaaggctgt gattttcttt 1920

ttctttatca agagttttta gtgcttggaa aataggttga gcaataacta gtaaattact 1980

cgctcctgta aaccttatat gtagccatat aatataagtt ggagatggat agatatgttt 2040

agctcttctt ggcattgcag ctttggcatc cgctgaattc ttgtcatctg gattctggtc 2100

tcggtaagag ttgagaatgc atttgccata tctggcacag accggacttt gtctagatgc 2160

atgatgtgta gattagacat gggatttttt tcctgttgag gtgacaatta gtttggttga 2220

taaagttatc acgatcaatc tgcagcgcca ctagacgaac acgaggggggc aacagaaagc 2280

caaaagaaat caggattgca taaaaatatg ctccaacagg gcgagggaag aagagcaaaa 2340

tattatgatc acagcaaaat aatgccttct tcatgttaaa acacgggttg tgggaggcta 2400

gcatgggcat gtcgtgtaga ataacgcatc tgttcatgtg ccctgactta aaggctgtga 2460

ttttcttttc 2470

<210> 3256
<211> 2720
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_36579_G1, chr1:220803529..220806248, Cluster 19

<400> 3256
ggaaattcga gaccaacaaa gtggaaattc tttccaaatg gacaacattg ttaggtatgg 60

ttggttaatg aggttcacaa aacaccaggg gataaaagtt catgtacaga aatcagatat 120

aaattgctct atcaacatca aatataaatt gctctatcca aatgacaaga aaacttacta 180

atatatttga tataaatact tattcaacaa tcaaaataac aactttggtt gtagctgctt 240

ttatgtccac tgtcctactg gatttcgttg ccctatggac acttgcttaa aaactgaaaa 300

gagacattga attgacctct atctagaatt taagaaatac tagttggaac attagtatta 360

ataactaata caaagaagat gaataagata tcttcatgca taacgagtaa tactagtgaa 420

cgataatgat tagaactctg aaaatgggac caacatatcg aagcaaaaga ttcagtttac 480

tcctgtttcc aagcacaaga ttcagttagt acccccttctg tacgaatcca tgaagagcag 540

caactcacat ttatcacatt ttacctattg ctcatctcga atttgctaaa tcaagcaaac 600

gaaacgatgt ttatttcagt gttgttcact gttgttcata ttatagctac tgaacatcaa 660

acaagcatat gtacaaccat taacgagcaa gtaaaaatca aagagtatat tatatgtacc 720

atgccggatt tggtggtcga tgtcgcgact caggtaggta cgtgatctgc agaaggaggt 780

tgctgcgact ccggcgtaga gggcaaacgt gacgtagttt ccggaacacg ctggtgctca 840

tggatagagg cgccaacacg gggcttcaca gctacgcatg aacgacgtag tactgagctt 900

gtctccacct ctttacttgg ctccatggtg acgagcaagc agggacgagc aagcaggaat 960

ggggagcaga taggggccag cggacatgac cttaccaacg gcggcggaca gggacgggga 1020

gcggccgggt agagtgcccg tccggcgacg gtggataggg acagggagcg acctggtata 1080

gggccttacc agcagcggct aacagggaca gggagcgagc gggccaagag taggagctgg 1140

cggcgccgga ctgctacaga cggacctaga agacgaagaa gacatctagg cgcaagagaa 1200

gagcacgcgc gtggggattt cgtgagggaa gatctgggca cgagagaaga gcgaacacgg 1260

gagaatttcg cgagggaaga gtgcgcggga ggtgcatgtg atccgccatg aaaagatcgg 1320

tcacagtagg cgtttgagcg tttcacacga tttcatgtct tgaaaacgag ttagcaagtg 1380

tcgtgggcat gaaactggtt ccttctcttc atcatttaat cagtgccata tcatcaaaaa 1440

agctaacgtg ttagggtaat taataccatg aagctagcac cctatgaaat tcccattgtg 1500

aatagactaa gatgtcgtta ggtttacata tttgtaacgt gatggataac tagtaatgtt 1560

agatcatgtt tgtttaggtc caaccgtaat caaatactgc aataaaaact aataccggca 1620

tattaaaact tgttatcact ggtactcgag tgtgaatcat taatgttgcc atttacatta 1680

tattttgtga accagacatc acctaattga cacatgtagt caggatgtat ttttcttcta 1740

gcacatggac gaggatctgg tctcaatgca agattcatag tcattataca tgctctcttt 1800

ttatgtaatg tttttccagt ctgtatgctt ttatatatat gttgaagtgg cttaatgaat 1860

attatcaaac tctgtaaatg tcccgaatta agaaaagtag tcactcaact tgtgctcctg 1920

catgagctag aatttcatga agcagcatta gtttttaatc aatatttcca actagtaaaa 1980

actacttata tcaaattgca catttttac ctttattttc taacacaata gacatgatag 2040

atagcttgta atctctattg taaccatatt aattattaat ctatatcttt ttcattcata 2100

ccaagagttg tttccatttc atggcacatc tttgtatttt caatataggt tgagtaaccc 2160

ttctcctata gatgtctaac caaaggacat gtgagacaac tttgcatggt caagatgttt 2220

tgtgatattt gtcggtgtga tgctcacaat acggacagat gtcctcaatt tcacggggag 2280

aaaccaagtt ctttgacctg tggttatgct gtggatagat tttgatttta ttacatacct 2340

ttttagcaca aaagtaagcc taaaggggag gtaacaatat ctatggttaa tgttacaggg 2400

ggtgttctct ctgaggcaca agtgatctca gaattccaga ggctggtttc caataaatgg 2460

aattgggaga ttattcagac tagggttaat tgcttcaaga cctctttccc accatgttct 2520

gaacttgacc atatgttgga atgggggtg caaacaaaac gtaatgcatc gatgaaaatt 2580

gaggaatctg tgattcggga aaaagcaaaa gtggagctta agaaggtttg ggtccagttc 2640

attggtttac catctgtgat gattcaattt cttcttatat gggtggtggg ttcaatttta 2700

ggtgtgacca aggcagttga 2720

<210> 3257
<211> 1978
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3673_G1, chr1:18956449..18958426, Cluster 19

<400> 3257
agcttcacaa tctagcaagt tacattatga taattcgtcg gctagcattg tcttgtcctt 60

tttttcccta aaattccttg cccattctct ctactcgctt cactaaagcg ttacaaaatt 120

ccactctttc ctttgatatt gatcatttcc agactgtagc aaatggagct acatgagcta 180

tgctctacac cacgggtcga gcggccccgt gcgcgggtcc ccttgggcat gagtgttagt 240

gacgaggtcg atcgatcatc gatgataact ttaactatga tgtaaatatg ttgccaacgg 300

ttaaaatctt ccttgttagt ctttcatgat taacataata gataaaaata gaacacatag 360

acacaagaga taataaggct atctgtattc ctctaaatat cgatgtttac aacatatagc 420

tttacgtcta tatatacata gttctatatc tagacttaaa acatacggag taaaattaag 480

atttatgttt ctcattttct ttgagctgga gttcatatat tttgaggaca aacacagtca 540

gactgaagaa aagattacaa atcgccgctc aggatccagg caaccgctac tattgaacaa 600

tcaggtagtt gggctttcca cataagcagc aagtggagta aatattatta gtgtggcatt 660

ccttcaaaag taaactattc cagcaaaact tggaatcatg aagcatataa aactttattt 720

aaaaaatgtg gccacagtca aatggccgac cttctaacct agtttttcgg ttagcgtcgc 780

cactgaatgg aatagatccc ctcctccgcc tttcagtttt ccatatatca gcgaagaaat 840

ttgttacgta aagtaccccg tagcagtttt ctagtagagt ggtaacgata ggcatcagtt 900

gatttgtaat aatccaaaaa gaaatagaca ggatcccatt gcgtgattcc tgtcctgata 960

tgatgcacag gcatacatct gcagttggtc acggctttca gatttcctta atccttaggg 1020

acgagcgaga tgtactccct cggtccttgt ctagttgtct ttaagtgccg ctgggaatcg 1080

tgtgctagct aagttttgtc ggatttaact aagtttatga aaaactttaa cagtatttat 1140

ataacaatac taataatgat atattatcaa tattttatct tatatattct gttaaagttt 1200

aatacatctg gacttgtgag aatgagaacg acatgtaaaa aggaacggca ggagtacaga 1260

tatgagatat gacacagatc tgatccgacg tgggacgttt ttaaaggaaa catgacattg 1320

gttgttccag ctttttgcac ttttaaaagg cactgggttg cgtcggcact aatccagtgg 1380

gtgataatcc aattgcatgc ttccaaaaag cgcttgcaca ataattgtac acgaacagta 1440

gttacgcgtc tacgcaccta gtgttggatt aattagattt gcctatagtt aattaatcta 1500

gcatttttta aaaaataaac atctaccaaa aatacttata aaaatgagat ttgtatcaag 1560

cgacacactt accgccggta agaattttaa cttaaatagg aagttagtta gtgcttctat 1620

agaaaagttg atgggtgtca ttcaatttga cagaacagca catgcaaagc tagcgtagcg 1680

ctcacctatt tttgtttttt gaaaaaaatt agaactacta ctgataaatg attttgtagt 1740

agactatata tgtgacagtc agttggtcag tgtttttat tctctagtag cttggatcat 1800

gtgaacatat agtcatttgt ataagttgca catgagcaaa ccgcagcaga ctatacataa 1860

gggagtcaat tgatttcatc tctgatagaa ttgaataata atggcaaata gttcttgctc 1920

aaataattgg aatgcatgta tttaaccaag ccatgtgtta aataaataat ttattact 1978

<210> 3258
<211> 1450
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_36750_G1, chr1:222162668..222164117, Cluster 19

<400> 3258
aaaactgaag gacaacaatc tcagctagac accaaagctg accttgagtc aaaagctagc 60

acagtatttt ggacaacttg ctttatattc taaaaaatgc aggtattcat atgttttcat 120

agctccgaga caacaagaaa cactaagaaa tgaaaactca ttagaaaaga aaattatttc 180

agacgatcaa caatactaat attatcttca tttgataaga gacgaactcc actaaaagcc 240

aaataaataa ctttccaaat atcaaacttt tatttgcaaa taatgttata caacctgtcc 300

aaatatatat attcttttgc atatgtgata ctttcttggc aagtttgttc gagaaaattt 360

tcagaacaat tccgacatct gacattatac ataaaatctt agaggggggt tttcatgtaa 420

agagagtgat ttagctgccc attcaaacta tatgttcaca aataaaaaac agataaatta 480

agtgaaaata gtgacgtgac tcacatcact aaatgttttt ctaagataaa acttattttc 540

ttttcaatgt atatgcttaa ttccagtgca ctatataaaa acaattaaac aaatattaaa 600

aaaatgcaac agtatttgta aaacactata ataccatctt atattacaca aatgtttctc 660

ttaattttta ctggaaatta gtaataagag ataaacataa acaaatttaa tatattacat 720

tgctagaaac tcagctacat gagtatctgt tctatttcag acatacaata ttaatttgtc 780

ggtatttaca tatccatgta aaacctataa gatttatata atttttcgag cattctttac 840

aacaaaataa gtatcgagtt ttaatataat tgaataaaga gctaacgttg catacttaat 900

taaaagtaca atatgacttt aaattcttta aatacaattc gagatcgttt aagccgagat 960

ctttcgacct acggtgcaaa ttaattagat agaaacaaat atcataaaaa tcgcttataa 1020

atcattgtta ggaacgtaat attacttctt aactacattg tcttatgata agggattgat 1080

ctatgttatt gtttttcttc agggtatata acttttacat ttgacatata ttcaatgtct 1140

atcgttgtct ccttgcatag attaatgaaa acttaactag tacgttccta acaatacttt 1200

attagcgatt tctataacat ttctttttat ctaattaatt tgcaccgtag gtctgaaaga 1260

tatcggtcta aataatcttg aattatattt aaacaattta aagttggatt ctacttttgg 1320

tttagtatgc aaggttacta tttattcaat catattgaaa ctcgatactt atttttata 1380

gataatgcta aaaaaattct ctctaccttt taggttttgc atgtacatgt gaataacaac 1440

aaattgatat 1450

<210> 3259
<211> 2678
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_36922_G1, chr1:222961259..222963936, Cluster 19

<400> 3259
taaaatatgt ttgttttaga cgaattaaaa gaacagtttg attaccgaaa aaagaatttg 60

accttgttta tgggagtgct tgaacctgct tcatctatgt ttttttagaa tttcgtttca 120

tatttttaag tgaaaccgtt caagctccac acacacaaaa gagatggagt tcacccttct 180

cgctaaacct ctttattaga gttgcaccac tcagcttgat catgagtgat tcgtccaaac 240

aggttcatga cttaagtgtg tcttatttca tatttcttga actcatagcg tgcgcataca 300

atacgcttta atttaagaaa gttgagttaa ttaggttaat ttctcataac gcaattaatc 360

atttattata gacttcgaaa tttatttggc ttacaagatt aggctaagcc taactaaagc 420

tagcaaaaat ggtgacatag cttgttatta ttgacacggg caccacgaaa caaaactaaa 480

ccctttataa cacatatgtt tgctaatcca ataaaaaata ttgttcaaaa acaattaacc 540

ttgtgtttag gagccgagga gtatgaagac agggcggacc tacatacaag agagtgaggg 600

cctaggcccc cactcattgc tttgttacaa gtattagtgt ctagattttc accattaagt 660

ctcttgctga gcctaattga gatgtcctca ctcttgtttt gttctaggtc cgctcctgct 720

gcagaggaag aaggatgacg aaatagtcag gacaaaaagt catttcaaac ctctatcaga 780

tgccaaagta gcatagaggg aaaaacgatg acataaatgg cataataact ttctcgatta 840

ttcatatgaa atttagatat tttataataa attgtaggaa attggtttta gcatgtctaa 900

ttgtttttat tgaggcaata tgccaaagtt agagaggcaa ttaaacaaag ctcttgaaca 960

gcacaagagc atcttcatag aggctctaca taacagatct cgaatggttt agatgatctt 1020

ttcaaataga aaactctcta aaagaaccag aagggatttt aggaaagaaa cacttatatc 1080

tagagtggtg ttcatgacac aacgataatt atcgaattca cgtaatagca ccggaggcat 1140

aaagagctat ttcaagaggc actttatatc tttcctaatt gaattggaca tccaaacata 1200

gatatcatgt aatccagact tcttgttagc caaatataaa aaaaaaagtg cgagaatgac 1260

tctttaaatt gtgtacacaa acaagtctcc aaataacgat tgaaagagta agttttactt 1320

cttggagatg cattgagacc atatcaagag tcttaatttt attaccccca aatcatcatg 1380

tggagagtta ttaaaataca aatatctttc tatatcggta acttccgtgt atcttgtgca 1440

tactctagat agctatactc gctatctttt ttttttttt gaccatcgaa aaaaatctga 1500

gataaagaat ttcagtattt aaagatcaaa ctaaagatat tcttgaagat atccccctgt 1560

agtggccaga agcccagaac tacactacaa cgcccaaaaa tgtgcaatga cagagaagat 1620

ggatgatgtt ttagattata tgaaaatata taggaatgta tattagatca actggaaacc 1680

tatgggtgtt tgtttctaaa gcgcaggtgt agtatcagac tagattattt cttgggctac 1740

tggtagcata tctctttttc atggaggtca gtgctcactg atttgcagaa gaaacatttc 1800

tcccttgcaa ctgggtctcg tcaagcgtag acacccaaca cgcatgaaaa aggaaaaatg 1860

gattgtcagc ccaagtagct gggcccccgt tttttggttt gcctatgcaa ttgtctgggc 1920

ttgggttgtc gatttgtgct acagacatct ggactggatc tccagaagtc gcaaaaaatg 1980

tgttggccag acaaacatct acaagaaccc gtaaactatg cttcaggaac agcgatagga 2040

ccaataacaa cagaacggtc tgtttgctgc ggcttattac gaaacgattt cattttttta 2100

taatattatg cctctataat tacagctgct gcagttcgaa caggaccaaa caaaccgaga 2160

gttctattcg ggagctgaaa aggggcgatg acagagtgag aacacagtaa ggactaagga 2220

actctgcttt tggactaacc aaacaagaaa agcagcacag cacaggaatc tgatttggat 2280

ttttgctcct gggagacttc atgttgagca ccaaagagtc tcccgatcta tctcgcctct 2340

cggctctcgc actgaccggc cgtctagtct ttggaattcc cggggtgtcc cattcaggtg 2400

agcacgtccg gataaagact aggatgcaga gcgacgtgag attggcaaac gccaacacag 2460

gaaagctgcc tttacgggcc agtaacgacg ccccttggtt gcatcagcat cacctcaccg 2520

gccaatattg ttcagcggtg cggcggcgtt tgtgcagttg ggtctcatgc atgacgcagc 2580

tgttggatcg atctcaagct aaacttgatc aaataattga acgtccgtcc tagttaagga 2640

acgcaacaat taattgattg tggtcctcct tcacagcg 2678

<210> 3260
<211> 1662
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37332_G1, chr1:224751210..224752871, Cluster 19

<400> 3260
actaggtagg ccctagtgtg taactaggtc atagccccta tcagtcccct acctccaatg 60

tgctcgtttt gtaataacac tttctgtaag gcattcgtat ccgatatggc gaaaagatca 120

ataaaagcct tagtcgtgat gatgaacctt ctgtcgtcgg tgtattgccc tatgtcagac 180

atgatgcttt aagtgctttg tttttacttg agtatataag caagcgaagc attagtgatc 240

atggtcaatt agttgtctcg actcctgttg aatccttagg atcgtgaact gaaatctgtc 300

aggttaacat tccatttctt ttaaattctt tgcatatgct tggttaggga actagtgaaa 360

ctgagagatg aatccatctt ttttgatgca gtgaacatct gccgtttgct atacaatcat 420

gaatgatgct atacgagcta gaatgtattc atcgtgacat gaatgatgct acgcaaatgt 480

atatgtagcc atcgtgacat gaatgatgtt tcgtgagcac ataacttgta cctgcattta 540

caagttattt tattttatct tggcagaatc aaaaagcctc aaggtaaact aaaattatat 600

aataaaataa taagtatcac tagttatttg attagttatg ttttttatag tatacctatt 660

taatgtcata aatgtttgta tatctttcta taattttaac ccaaacttag atgctttgag 720

aaagttaaaa taattataat ttaaaatata gggattactt ttcgtacatt ttgtagcata 780

tataaatggc tgaaatagct cagtttgaat acaagtcaac ttggacaggg atttgcccct 840

aaaattcaac tcacatatat acggtgatga tgaattaata tgctcatata tgatgtactc 900

atgataggaa gtggatataa cacagttcag tcttcctcac agataaaaat gcattcactc 960

ataccatata taataagcat actacattga gaaacacata taaagggcag caaaaatgca 1020

ccagttagtc cctcctctcc gttgcaacga ggagaattca gactaaaaca tcagcagtta 1080

aataatagca atcatataaa caattaacac agcgatttat atggaaaatc aaaaaacatg 1140

gaccgaccca gccggtccgg tcctaacttt cactgtaatc aatattgatt acaatgactc 1200

gtctctagag ctttcagaag attacagaga caacaaaaat gttcacgccg ctatcccaaa 1260

ttcggtaggc atgtagattc atgagcccct cgtaacatcc tacttttgta tggcacaaaa 1320

ccactatgaa tatacaacac atgtcacaag ttttagagat gaatttgaat tcctttcctt 1380

ttaaaacatg tgtttcctta tatattccaa acagagaaag gaagaatttt ttttgtataa 1440

aaatcctcgc cgtaaaatga gttcatactt tgctgaagta tttttctttt ttttttgaaa 1500

aaatcaaagc catttcgact tctttggttt gaatttgaaa attatactta aattccaatt 1560

ctgaaaatgg aaaacaacaa aatagtgtaa actgtgcgac ccagccgaat tcagcccaac 1620

aagccacgtg tgcccgctct ccccttctcc ctctcactaa ga 1662

<210> 3261
<211> 1469
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_39461_G1, chr1:235692220..235693688, Cluster 19

<400> 3261
acaacaaact aattgatgct tattcatcta aatacgctga tatgggatgc cagtcagaac 60

atcatatatt ttgctttaag aaatactcga caaagttatt tattttgaat cattataact 120

ctatgtaatc tgaaattgtt taatacttta aattttctcg ctatttattt tgaaacatta 180

gagctctatg taatatgaaa ttgtttaata ctttaaattt tctcacttga ggtaatcgta 240

tagatttaac attgttttac tattcttatt ttcttctatt ttactataat tattgaggat 300

ataaaaagaa aaactaatga cacaaacatt gagattgatc tagggtcctc caaaatccag 360

agtcagccct gagcataggt acatgcacaa tgaagcaata caacaaaaca gatgacgaga 420

catcagctaa cttgagtcaa gagttacttg catgatcgag acatcagcta acttgagtta 480

agagttactt gcatgatcgg gcaagcatac gaggtaggca tgctaattct tatcagtttg 540

ctcttagtga tcagacttct agatttttg tgttgaccat ggacaaataa tacagagttg 600

tgttcatgtg gtttgcttag gcacagacat gtcaaagatt agcatggttt attaaacatc 660

ttacgataaa ttgtattaat tcatagattt cttaggcatg tactgtaatt aaatatagct 720

ttgattttgt tgtatcccat cttagttgca agcttctatt attgaactga aattgaggtt 780

gacatatttt cctttctgaa ttttgtgtcg cttgccattt ggtaaggtct aaatctgaaa 840

gcatgaacac ggttttcttc ctcttttag attactgaat ggatgagcaa ccgatctata 900

aaagagatat aagaatgtat gatagtctat atttttccca ctgaatttta tgttgccaat 960

tttctcaagt atataagtgc aggagattca aatattagtc agggtgtctt gatacatgtt 1020

gagccttcgc ttcaagtttt atgtctagta acatataaat tttttattct agacaaggat 1080

catcagttca acaatctcct ctagctgccc cttcagctgg atctccatct caagctactg 1140

caaatccaca aggaaccagt ggtattcaag gagcctcttc taccgacaat aaattcagta 1200

gcaggaaaca acttccagcg gtatgtcata tatgattagt tgcatgtttt gtgtcttcta 1260

acgttaatga gcattttctt gattgaatgt catgtcactg agtggagttt tatttgacaa 1320

gcactacata tgttgtcagg tagttaagtg aaagactcta aatgttgcgg gtttgtaact 1380

aggtagcctt taggtcgtgc taactactta ttatctgatc attgcaactt ataaattttg 1440

gacgatgaac aacttataaa tgtaccaag 1469

<210> 3262
<211> 1938
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4674_G1, chr1:24043440..24045377, Cluster 19

<400> 3262
aggactataa ctctaacttt gatcaaacta ttaatatcgt ctacccttaa tagtatgtcc 60

aaagattaaa gccataacac atagtctaat tgttcccatt agtaagtcca cacttagaca 120

ctaccatgtc attagcactt ataaatgtca ttgtgccata catagaatcc aatcaccaag 180

ggtcgagaaa accaaataac ctcaatgtga attactcttt tccataagca ctacaaaaca 240

aaattagctg catgtttctt atgttcatca atcactaaat attgaattag gttatttaat 300

ggttttgaca cacatgagtg tgcaccctat cacacatata caaataaacc aattaaaaca 360

cttatgcgtg agccatgagc ctcacacaaa taggaagtta aaaacaattg cataggatct 420

acaatacaat gttgaaatag agcacctatt gatagcatca cgaacaactc taataaaaaa 480

tactcaaagt attccttgtt gaatagaatg ttcctaaaaa cactagacaa agtcacattc 540

tatgatgata ctttgttttt atttttgcaa ctataagatg acacgttaca tgcacaccac 600

tacatttta ttttttcaac tataaaatag caacacgcta cactcatgcc aaatgcacac 660

cctaacaata tctataataa gccacaaaaa agattgtgtg tgattatgat agaaataaac 720

cactaaaaca cttgtagtgt tagcgtgagt ctgataccat gttggacatt taaaggggag 780

ttctaataga taagttcacg accaataata gtttcaatac aatgcaactt atgatactct 840

attagttgga gtatccatga aacactagga aaaatgacca ccaagtacaa ttaagatggt 900

gtatatgcat gtgtttggac aacataggat ccttgtgtac acaaatggaa agagtataac 960

ataatttcca cctttgtgta gtgaattgta gctaatgcaa tttctgttgt tcaccacttc 1020

actctggttg gtgcacctgt agtgttagcg tgagtcatga taacatgttg gacatttgaa 1080

ggggagttct aatagataag ttcacgatca ataatagttt caatataaga caaattatga 1140

tactctctta gttggagtat ccatagaaca ctaggcaaat caccaccact tacaattaag 1200

atggtctatg tgcatgtgtt tggacgacat aggatcctta tgtacacaaa aggaaagagt 1260

ataaaataat gttcatcttt gtgtagtaaa ttgtagccaa tgcaaattat gttgttcacc 1320

gcttcaccgt agttggtgca cgtagcaaat ttcaatgcat attcaaccca tgtttctcca 1380

ctttctttta cgaaaagata ctggcttttc aaccaatttt gcgttcacgc aagctagtgt 1440

aactgtttct tttaaacttt ttagtggcgt gacttgttac gttggcaacc atctatgagt 1500

ggatcagtta tactctaata attccgagat cagatcggat gcgaaaacca cacaacaaca 1560

tgataatgtt tttatagcca tcctgcagtc caagataaac tatacgaact ttgggtcttg 1620

gatgtcctga atatcaatat aacagccaag ccatggccta ggtagtactc acattgttct 1680

aatttataat ctgtttggct ttttgtgcac caatttaatc ggcatgtcct attaacaatt 1740

ctgttattat tattgtgata tcatttagta tataatatac tttaagtatc gctttgaatt 1800

tttccaaaaa aaattaataa tgtgaggtag tcaaaattga ttttaaaaag tcaaagaaat 1860

tatgaatggg aacagaggga gcataagttt attgctggat acaaaattcg tagcatgtat 1920

tctaaaacgg tccatatc 1938

<210> 3263
<211> 1545
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50545_G1, chr1:293611650..293613194, Cluster 19

<400> 3263
tttgtggtgt tactaacgag caatttatcg ttcttgagga cccgggttta accggtggaa 60

taaagcccga caacccccat gacccatgtt ttcggaccgt gggccgatcc taccaatccg 120

atctatttga gcctatctcc accgtaaaaa tacgagaaca ttatattttt ggatcgaaac 180

aatgtgtttc acacgtttgc catttctaac attggcttta caaaaataag actcaaaaca 240

tgtcacactt ggtttccata ccattttaga catttttgct cttctatgcc cttatgtctt 300

tttaaggatg aaaacggaat aggaaaatcc tataacgatc aacatcgtgt accgtaataa 360

ccaacagtat atcgtatcca caaaaaacaa caacgagaat attcctgaga aaagtggtgg 420

gaacatgaat ggaaatgatc gaggtatttt ctcgaccgta tttatggatc ttgtatttat 480

ataggaaaac catgttggta ttttcttttc tatttgtata agaattaagc tcatctaagc 540

accccaaacc taccaaccac actcaaccca aggcctcata caaataataa tagacttgta 600

tgaactatag gttgttgcac ttgtagattt ttggagaaac ttatttattt catgtaatct 660

atttgagtgt ctctgactag agtcaagaca tattaatggt tactatgttt gaacttatga 720

gctactatcc tctctcctgc tataggttct tagttaggaa cttatttatg gttgtaatgt 780

tttaacttat gaacttattt gttgggttat gctactgttg ttggtttggg tgtttgatgg 840

agcgataagc gatgcactcg tgctgttgca tataatcgtg gcgccgtgaa atggtgaatt 900

attatgcata ttgaaacttt aaaggcttat atataatata ttatattatt gtaaggtcag 960

atgtatttgt tacgttgagt taaacgtttg aagtggttag atgcatcgat attctttatt 1020

ttaattactg actcctaacc gttaacgatg tattcctggt cgattgtgtc atttatcgtc 1080

atctcgttac tcctgatttt gtttcctttt cttgaccggt gattctgcta ccgttctcga 1140

tttgagatta caatatagat ttgaaagtgg ttggagggtt ttctcaaccg tttccgtccg 1200

ttttcgtctc tatgccgttt actcttttat atgtgtatgt gcgcacacaa gagtaaaaat 1260

atcaaaaacg acattaaaac tatatgtaaa ttattttgag tcctaatttt acgaagccaa 1320

cattacggat ggcaaaagtg acgagtacat agtaccaaaa tccatttttt tcgtgaaaac 1380

actcatggct ccgttggaac gcataaattt cacaaaatga tataggaatt ttataatttt 1440

ctcgtgaaaa cactcatggc tactttggaa cgcataaatt tcacaaaatg atatagggat 1500

tcactaatta aatttttttt ggttacaaag gacccctgag ccgtt 1545

<210> 3264
<211> 1551
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51178_G1, chr1:297570680..297572230, Cluster 19

<400> 3264
ggtgacctag tggggcttgc agtagtagcc cattagaggc atgcaccaac actagatcaa 60

gcggcgcccc ttcaggcgcc ctacccagta cctttggaca acacaagaca aaaaataata 120

gtgcaaaaga tttgaaaaat tacagtttat attagtccta aaaattgcct caatggttct 180

acatggggcc agtcagaaca caagtaatct tgtagcatgc ataatctaca acaaaataat 240

caattcaaca gtcaccactc atcagtcatt caatcctatt tgtagttgtc ttagtattgt 300

tactcccaca cctgcagatg taggtccttc gacgaccaca cataacagct aactaaattg 360

ctcacaaatg aatataaatt gtagttacaa atgtagttag caggtccttg ttctttgttc 420

ataataaagc ctttccaaat ttccaattat atttttaaag catcttgtta tgaacttgtg 480

aatgtaaact gtaatcactc gatgtgcaat tgcatctaat ttaacttggt tgcagttggc 540

aagtcattgt tttctgttag tttgtgtaag tttattcagc taataattag tacctctttt 600

gatcgaagta tttctagaat ctagctatag tcagtaactc cattttcacc tgctatgatg 660

gtttcaattg tatctttgtt tcaaggacat aatacttgcc tcaataagat catctacaac 720

aacatatcca tttgcctctt ccaaactcat ctgcatctgc atggttcaac tatttttta 780

agataggtga cctatatctt ttagaatatc agtgatgcac atataggtta ttttacatga 840

tattcgactc tatttgccaa cctaatatgt tggagtaaaa attttggagg tgctagaaaa 900

acaagtagta gttgttgcaa tagaaaataa taaacatatt ctcattctga acatacataa 960

aagattaatc atgcagtatc catttagaac aaactgttaa tttatctgat tgaaataagc 1020

aaccttaacg tattcatatt gtagtgtaac attcatggct caccaattag gaatgctaag 1080

ctctgtcgca tagccagcta tcttgctccc gttgtccatg ttgagataat tattcatgct 1140

tcacgtagag gaaacacaaa gaaggttaca caaatgggag gatcagaaga ctacaaagcc 1200

gcttcttgcc ggggttggca atggcgatta atttactgga tgaatggaca gattagagtt 1260

tttttaagga taacagattt tcatcctccc ttaagaattt gtttgatata aacataacaa 1320

gatctgcaaa caatctcatt atgataaact tagaaggtaa acatacactc caacataata 1380

gcagcagcaa aaacttccac tttaactgat aagttagtga tcttgattta cttacttgaa 1440

accatgggac ctgtcaaatg aaatgcttat tagaccagac taagagagct gaactattgt 1500

acatcaacaa ccttcttcat ctcaacatcg tagatcctga tcttggggtc a 1551

<210> 3265
<211> 3705
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51473_G1, chr1:299452067..299455771, Cluster 19

<400> 3265
catataaagt aatgtttcat gtagccaatt ggttcctaat ggttgtatct tccttgttta 60

ataataattt agctagcttt ccatgcttat tgtttgcatg ttcaccactt atgtgagaaa 120

ctttgcattt ttgttgaaaa tgaaatttgc atgctttagt aagtacacaa ataaaacgcc 180

taccttttccc cttggcagta gcaggtcagt ggagataggg gacttccgtg agaagaggtg 240

tgagccgtct gagggactcc acaaaaagta gctgtttcac ataactccac ataaagtatt 300

agtttcacat aattaatcat ttgtacatgt ttgtagtttc cttgtttaat aataataatt 360

tagatagttt ttatcgacgt ttgtagctta tttgtttaat aataatttag ctagctttcc 420

ttgttttcct tttccatgtc tatgtgagaa actatgcatt tttcttgaaa atggatttta 480

catgctttgc taaatacaca aagaaaatac ctacctttcc tcttggtagt agtgggtcga 540

tgaagatagg ggacattaaa gagaagggtt gtgtgggcca tcaaaataac tccacataaa 600

gtagcagttt catatagtta gttagttgtc gatttttgta gctagcttct ttgtttaaca 660

ataatttagc aatctttcct tgtacgttta cgatttgcat gttcaccacg aatgtgagaa 720

actctttatt taatgatttt tgcgtgcttc gctaaatgta caaagaaaac acataccttg 780

ctacttggaa gtagtgggtc ggcggagata ggggacttta gagagaaaag gatgtgtaag 840

ccatcgaagg gactccatat acagtagagg gttcacatag tcaattagtt gtcgatatct 900

atagcttcct gattcaataa taatttagct tgcttttgtc tatgcttgta gctttcttgt 960

ttaacaacat tttagcaagc tttccttgct taccatttac atgttcatag cttatgtgag 1020

aaactctatg ttttttgttg gaaatgaatt atgtgtgttt tgctaagtac acaaagaaaa 1080

cacctacctt gcctcttggt agcaacaggt tggtggagat agaggacttc agagaaataa 1140

tgattgagcc atcgaaggga ctccacataa agtagccatc tcacatagtc aatcaattgt 1200

tgatgtttgt acttccatgt ttaataaaaa tttagctagc cattcttact tatcgtttgc 1260

atgttcacca ttcatgcgga aattctgcat ttttgttgaa aattaaattt tgtgtgcttt 1320

gctaaataca caaaaaatac ctacattgcc tcttggtaat agcatgtcga tggagattgg 1380

agacttcata aacaaaggat gtgtgatcca acaaaaggat tccatataat gtagctattt 1440

cacatagtca atcaggtagt gatgtttgga gcttccttat ttaataataa tttagcttgt 1500

ttttgcaatg cttgtagctt tcgtgtttaa taatagttta ggtagctttt cttgcttaac 1560

atttgtacat tcatcactta tgtgagaaac cctgtatttt tttgttgaaa aatgaatttt 1620

gcaagctttg ctaattatac aaagaaaacc cataccttgc ctcttggtag tagtaggccg 1680

atggagatag ggatgtgtga gccatcgaaa gtactccaca taaagtaaca gtttcacata 1740

gccaatctat taccaatgtt tataacttcc ttatttaata ataatttcgc tagattttgt 1800

cgatgcatgt agcttccttg tttaataaca atttagctag gtttccttac atactgattg 1860

catgctcact gcttatgaga aaaattgcat atttttgtt gcaaaactca ttgtttaata 1920

gcaatttagc tagctttcct tacttaccat ttgcatgttc actgctaatg tgagaaactt 1980

tacatatttt tgttggaaaa tgaatttcac gtgcttttct aaatacacaa agaaaaccac 2040

taccttgctt cttggtagta ttgtgtcgat gtagataggg gacttcaaga gaaaggatgt 2100

gtgagccatt gaagggactc cacgtaaagt atcgatttca cattgtcaat cagttgtcaa 2160

tgtttataac tttttactta ataataattt agctagtttt taccgatgtt tgtagcttca 2220

ttgtttaaca ataatttagc tagctttcct tgtttattgt ttgcacgttc acctcttata 2280

tgagaaactt tgcatacctt ttgttgaaaa acgatctttg agtgttttgc taaatacata 2340

aagaaaatcc ctaccttgcc ttttgatatt agcgggtcgg tggagataga gcacttcaaa 2400

gagagaggat gcgtgagcca tcgaagggac ttcacataaa gtagcggttc acgtagccaa 2460

tcaattgtcg atgtttatag cttccttatt taataataat ttagctagct tttgttgatt 2520

tttataactt tcttgttaat aacaatttag ctaactttcc ttgcttgtca tttgcacgtg 2580

aacttacgtg aaaaactctg catttttgtt gagaggtgat tttttgcatg ttttgctaaa 2640

tacagaaaaa aaaccttacc ttgcctcttt gtagtagttg gtcggtggag atagggaacc 2700

taataaagaa aggatgtgtg agctatggaa gggacaccat gtaatgtaac aatttcatat 2760

attcgatcga ttgtcatgtt tatagccttt tatatttaat aataatttag ctagattttg 2820

tcgatgtttg tagctttctt gtttaacaat aatctagcta gctttttgc ttattgtttg 2880

catgttcacc acttatttga gaaactctgc atttttgtt gaaaaatgaa ttttgggtgc 2940

tttataaaat acataaagaa aatctgtacc ttgcctcttg gtagtagcgg gtcgatgaag 3000

ataagggact tcaaagagaa aaaatgtgtg agccatggaa gggactccat ataaaatagc 3060

agtttcaagt agtcaatgtt tatagttttc ttatttaata ataatttagc tgacttttgt 3120

cgatgcttac agatttcttg tttaataata atttagctag ctttatttgc tcaccgtttg 3180

cacgttcatt gcctatatga aaaactatgc atatttttgt tggaaaatat ttttgcgtg 3240

ctttgttaaa tacacagaga aaaacactag cctcttggtc gtagcgggtc agtggagata 3300

gaaggcttca gagcaaaagg agatgtgagc caccgaaagt actccacgta aagtagtcgt 3360

ttcatgtagc cattctatta acgatgttta tatcttcttt atttaataat aatttagcta 3420

gctttagtcg atgtttgtat ctttcttgtt tacaattatg tgataaactg catttttaa 3480

aaataaattt tgtgtgcttt gctaaataca caatgaaaac ccatgccttg cctctaggta 3540

atagcgggtc tgcggagata gggggcttca catagaaagt atgtgtgaac catcgaagcg 3600

actccatgta atatagtggt ttcgcatagt caatctattg ccatatttat agtttatgta 3660

tttaataata gtttaaatcg tctctatcag cttacccatc tttcg 3705

<210> 3266
<211> 2123
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51655_G1, chr1:300261494..300263616, Cluster 19

<400> 3266
agtctcctct cgtcaatcga ggcattacgt ccgaggattt ataatcgtgg ttggtttcca 60

gcaaattatc ctcgaaagag gcatcaggta tcgagttgca gataaagtta tctgatatta 120

agccatatca aatacagttt aaaatatcgg acccgatttt tgttgggttc gatccgcgag 180

tttctcgcca cgatctaatt tttcaaatat aaatataaat ataaataacg ggtaaaaaat 240

catcagactc cagaatattc actaaatcaa actctgtcca aatattattg tcagtctcat 300

ttttgttcga tcctttatta catcttttag accctgactt tataacatca aaaaaatctg 360

tatttttctt tgtaaaagaa gaaagcaaaa gtgggaaaat ctttgaaaaa tctattcagc 420

ctcatccaaa ctaccgctct tcctctggtg gatattttct tcacgccgtc caacttttct 480

cggcatccat ctcccctata tctctaactc ccacaatgtg agttctcttt gataaatatc 540

ctaggttcac ctctcccacc agtaagcccc atcggctaga ttttttttatt tgccaaacca 600

tctcctatcc gtgcatgtac tcaagaagct cactcacgtc agctgatcct tatcatcctg 660

cgagcgtgca tgggaggcct cactctgtac gttattctac catggccgtc gattcatgtc 720

gttcttgtgc acaccttcct ctcccatggc cgtccgtcaa tccgcgtcgc gccggccgtt 780

cgctgccaac gtatggccgc tggtcgtgct cctcccctcg acgtcggatt gcaccccatg 840

cccggcttcg atcggatgta gcgcgtcgtc ctctgtcatc tagcatcgtg cctcggccgt 900

gtacttgcct tgttgcgggt caccatgcat tgtcgtcttc taaccacata gtcaccctcc 960

ctcgccaagt ctcgacgcca ttgtttccca tcgtcgtgct cggcaataca cctgaactcg 1020

agtttcgtcg tcgttcgtgt cggtcttggt aagcaaagta gctattcatg ttatttaaat 1080

tgatgaatgg attgattgta tgtgttaatc gtgatgtgtg atgaagttta ggcttagggt 1140

actattcata agaaaaatat tagtagacat atatgtgatg tcttggcgag ttgttggcat 1200

ataaaatagg ctagtaattt atttgactag ctagtcgaca agttctatcg gtattgttgt 1260

gtcaatttag tataattgag aaagtaatgc tttgctagta gttattatgt tttgtgttta 1320

gtggacgtgt atatctaatc atattaaatt aattcgatga ttttatgttt ataattaggc 1380

agtaggcacc ctgcaattgc gtacttaaat tcagacttga ggcacttatc ttgcaagaag 1440

tgttttagtg aaggtaaagg ttaagtatgc ttgaataagt tctaggtttg tgtaataggg 1500

cacattaatg gtacaattag gttactagct ctgtcttgtt agtttaccag cacttagcta 1560

tgaggctttc atctcttgat gaaatatatt ggtagccatg tttgtgatgt gtggtcaaat 1620

taataatatg aggaatgggt ctagtgttcc taccggctag ccgacatatt caactagaat 1680

taattgtgcc aattgtaatg atacattaat gttttgctta gtggcgtcgt gttctatgtt 1740

agttaattgg ttaaatgtca taaatggaga tttatcgctc aggtagtcaa gttaaccatc 1800

ttgaaaaaat atttatcatt gtcctaatta gtttgaagca aatattattg taggtccggt 1860

tcaagtgaat tttgagaact gcgtagtgag cattgcacct tggtgttttg agtttttagg 1920

ttttaaattg tgatcttgtg aaactctata tcgcttgtta atgctctact tgttagaaca 1980

attagtgtgg cgctttattt agttgatatg cttttcataa tattttagaa tagtaatttt 2040

aaagctaatt gtaaaactac tatttgttat tctaagtcct aggtatccta gattgattaa 2100

cttaagtatt gttagtcttc ggt 2123

<210> 3267
<211> 1721
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54863_G1, chr2:16646805..16648525, Cluster 19

<400> 3267
tatggtttat tttatcctta aatatttgac attgtctctt tctaatgcac atttactttt 60

tcccaataca tttttaacta tattgtttga ggaacatttt ggccctttc tctctgcctt 120

ggtctatgcg agaaactcta aacaggcatg taatatggaa aaaatgggac agagggagta 180

ttacatattt gtttatggct tgatttgaga gtttttctt gaccttgaaa atccattgaa 240

tgtgcatacc tacgtgacta cagtgtacta ttattaggat agtatttgaa gtactttgtc 300

cagcgacctt cattaaatta tagtacacta tttgtctatt cgttgacaga atagaagtcc 360

ttaagaaaat tatcaagagt attatagata ttcactcatg ttttgtagtt tatccaagtc 420

tatcgtgcct acatataaag aaaaaaatta taattaaatc cagaaataaa aacaaatgtg 480

tgatggtcat tataagtatt taacccctt taagacatta aaacatggtc agagaaaata 540

catacgagaa ttttctactc tcacgtccca aattataagt tattttaatc tttttagaga 600

gtcaaagcag atcaaatttg acctaatcta tataatgaat aataacattt aggatactaa 660

ataagtatta gattcttcat tacttatata ttttttatag tatatttatt tgatgtcata 720

aaattttata accgatttgt atagttttgg tcaaatttca gatgctttat ttgactctta 780

aaaagttaga atgttcttat aatttgtaac gtgagacata gatattggca tcaaaaccaa 840

ggccgttctt tttgagctgt tccggaggaa ttttgctggg aatccgaccg aggtaatatt 900

atatctttgg caaagtcaat gcttatcttt tcagatgtat ggatcaaatt atgtgccccc 960

aaaaagaacc gcttttcagg catgggggag ttggggaata atttccacca aagagaagaa 1020

gagaaagatg ggagagaata tttggcactg tagtaggcaa gtggcctttt gtctctgtag 1080

acgctgttac cttaacagta gacggacaat tgctgctaag attgagaaat ctgttagcct 1140

tgcccgggaa tcgcagaaac gagacaagcg tgtccccgaa cgtggatgca gagataagag 1200

atgcgacaaa gccgatgccc tggaccattt tatcatgcga tctgacaaat ggacggttgt 1260

aaaaatcgga atcaaatacc gtcaaaagtc tattgttacg cgtgcgtctg gcctaagcaa 1320

ggatacctac cgcagtagca aaaaaattta cgacgaaaaa ctaccacatt gatggctacg 1380

agacaggaac caacacaaca gctagcagca ctctcgtgtt tattttgttt cactaaaaaa 1440

atcctacctt acgtttaaac aactttctct ttttctaccc aactgaaagc tccaatgaga 1500

aaggaaaagc cacgggtacc agtcaagcga aagatgatat gaagtgttta tagaacatcg 1560

tccttagacg acagcttaaa aaagagtaat gattgtgaca caacaaaaaa ctctaattaa 1620

gctcaataat atatactgca gggaagggga ctccgaccct gcacctcccg gcgtgcaggg 1680

ctgcaagccg atgaatcagt tagtgtcagc ggactagact g 1721

<210> 3268
<211> 1445
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55164_G1, chr2:18142933..18144377, Cluster 19

<400> 3268
aggctcgctc acagcagacc ccggctgtct gccgtgctca ctgctcaatg ccttttcagc 60

acatcttata tgctatttta acaaataaca atgacgcaaa aggagggaaa ataaaatgca 120

attagtttaa gctagtggct ttgttcccct tcctcgaggg acggcgtctt ttcacgtttt 180

ggcgttttgc tgttgcgctc agacgtcatt ttttttggc agctctcggt acaggacacg 240

gttttctttc caggggaagg actaatcgtg actccgagtt tagggcggtg agccggtgat 300

gtcagacttg atgagtgatg gtcgatagac tgactcccct gctccacctc tcccaagaca 360

agaacacaat tatagatttc atcaaaattt aagtaaattt agcccattct cattgtgaga 420

aattttataa gagtttcgtt cttattaaat gatataccac atgagcaaac aagatatgtc 480

aagcaattta atgaagagac atataagaga gtttcataaa agatgagaga gaggatgaaa 540

ctctgtgtac actatttatt agaaaaatat tttcgcgaca tcctttaaaa cagtgtaagg 600

aaactcccac cgtgaatgga aaatgctgcc aataattatg tctccaaaca aatatgctat 660

acaaatattt ctttctataa taaatcaaat gtcatataat ttatcatgaa tatcgttttt 720

ccataaaaaa tcaggcgtac tcatattttt tttcaagatg ctgataaaag gtagtacctg 780

cgcgtatacg tacatatatg agtgcgattc aggaaaaaag aatgaaacta atctgactta 840

gcaccttaga actctagaag gctagtcctt gaaggccttg catgaaacat ttgtgtatct 900

ctacggatac tatacgtact agtcctccag ccctcttaag aaaaaaataa atctcatttc 960

tcgataaggc aattaatgtc aaatttaacc aaatacataa aaaatgtttg atgtataaat 1020

aaaagcctgt ttaacatata tagacttgag agtatttttt tagggcgagc ccaaaaaagt 1080

gacctacgac tacgaccagt cgaccatccc attggtgagt tcggctagct ggagcacagg 1140

ctgtctgatg ttttttactt gaaaatttaa ttttaaaaat actccgggtc aggtttagaa 1200

cgagaaaaag ttttaggcaa ctgccaacta ggcatctgtg aacaggggcg gagccaaggg 1260

ggcggcagga gccatggccc ctcccaaggc tgcaacacat acaagaatat atatatatat 1320

atatatatat atactctaaa ttttgtgcag cataattaat caaatgtgta atatagtggt 1380

tagtaataca tgatccataa ctatgttgta gtatgccaac caaagtctaa aaaagacaaa 1440

gaata 1445

<210> 3269
<211> 2238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5545_G1, chr1:28399561..28401798, Cluster 19

<400> 3269
aggatgttag atccatcaga gctaatatta gcagctaaca aaataataat tatcttataa 60

gatccataca aaatctactc ttacaaacga gagtaccatc cacatattta cactgctaga 120

caatagacat gacaagtgga tagcagttgc aaccaaaagg tatattataa tgctaattgt 180

tctcatttca tagacattag agatgattta gggaaaatgt catctccggt tgcatatgtt 240

cttttatatt tctttaacca aatataaaag attgcattgt caaatataat aataattgat 300

ctaaactctt agcttacccc acgaagtcgt gacatagacc agtacattga ctagcatgaa 360

aggaaaaaat aggtatccat cgctatccta aggcaagggt cctcaagcta tcagcttcac 420

ttgtttctct aattgtagag aaatagaatt gctagcgata gtcaagccat ttttgttgcg 480

tcaaaaaaaa cataagcgaa cttaaaatat ggaataaatg tggccactca aatttggact 540

aaaataaaat agatgtttct aggcaagaaa caaatgaaaa ataaaataac atagcatcga 600

tggaccaaag tccaaaggct tattgcaatc aagtgttatt atgtgcacct atttgatagg 660

atattgcact atgcaatttg atcaatttta actttctagt tttgagtaac aaggaagttg 720

ttttttgga agaggggac cctcctgttt cattacgaaa taggaataga acaaagccat 780

ggcgattaca tccatgcaac acactaaggt ttaatagacc tcaacgcccc agacataaga 840

gcacaacagc atcaccctta tttacataga ctgaacatgt ccaaaacgat agtctacacc 900

acacatgcgg ccacatttat gaaccaaagg aacatcaaag tctaaactaa gtctcctttc 960

taaagatcac cgaatcagaa acctttattg ctttaaacca acatcctcct agaaaccgaa 1020

gcccaacctc tcgcccgatt gaggcactca tttgttgtcc ttcgaactag ttagcttcct 1080

tctggtagcc tccttttgg tgtctcgatc tgcaataaag cccaataatc cagccaaaaa 1140

caacagaggt aaatcacatc agagggatca gagaacattt tattgtcaaa acaagctatg 1200

ttccttgttt tcaagattgc ccacaacacc gccccacaac caaccaacat caactttcag 1260

ttgtctttct taaaagattg aatccaacta ttaaagagat gacaaatgtt cttaggagta 1320

ttaggcaagt taaaagcaat ttggatgatt ctccagatgt aaatggcaac cgaacactaa 1380

aaaagaaaca acgacaatcc gacaagccta cccaaccact ttttttagat tttctttaaa 1440

caatatccag tttttaagta acaacgagag atttttattt tctaagggag ttttgttttc 1500

cacagaaacc tgaacgacac tttggtggaa tcacatctga tctgtaagta aacagacttg 1560

actgaaaaac ccttagtatt aagagcccaa atgactctat cacttacatt agtcaggcta 1620

aagtcctcgc aacaattttt agattctcaa acatactagc agtatcaccc actattctcc 1680

ttctaaaccc attttcaacc gaaatgtttt ttatcaaagg ttaactcaaa taacctttg 1740

aattttcagc gaaggggaca acaccacacc acacatcata ccaaaagctg gtattttccc 1800

catttccaat gtttttgctg aatcaaagga tactctttaa cttccatcag ccctttctag 1860

aattgcatgt cattgagctt ttttctttac caacaacaaa tgacactttt taagatattt 1920

tccctatcaa tcctctgcca aagaccattg taagaatcaa gtctccaaag ccacttgact 1980

aaaagactga tattcataca cctgaggtct aacaaaccca aaccttcctg atccctaggt 2040

tgacaaactg aatttcaatc aaccaggtga tattttctag tattcagacc actcagacaa 2100

agcatatttt tttctcacca gatccaaatt tttaatcata gttgtccgta cctcagaact 2160

acggtatccc ttactgctgt atcattttat caaaataaag tacccacatg gttatctcta 2220

atcgtgtgct aaaggact 2238

<210> 3270
<211> 1651
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56395_G1, chr2:24801482..24803132, Cluster 19

<400> 3270
gggaagaatg aaggtcaagc tttgttgctt gctacaacaa atcgaacaac tcttcttcag 60

tcatatcaac attggagccg aacaaagaca tcaggacaat ggttgaatca aacaaaatga 120

ttatgagaga agaacgagaa gatggtatgt aaaattgaag ttagggtcgt gtgaatgagc 180

tcaagagttt ctcctctcta tatagaccag gctcaatttt ttttataatt tttttaactt 240

tttgaattca aaatttgaac gaaccaatca aaaaacattg tatataagac ataaaacaga 300

aaacctgaat tcacgtactg accacagaac acctgaattc acgtactgac ctaacaacct 360

agcatggtaa cacaaataat tctaattcac aacataaata attctagttc atatcatcac 420

attcatacct atgataagaa tacagaagtg tatataagac atgccgtaag tctataccta 480

tatatagcaa gccagacacc ttaaagctga ctctaaaacc gccttgtgtg aataagggca 540

tgtttggaag cacctaattt ctaagaaact gatttatatg agaattgatt tgattctaaa 600

cataccaatt tatacctcag tttatagaaa ttggattctc agtttactaa aaactaagaa 660

actgtcctct tctagctata aaatataaaa acgagtttct taaaaactag gttggtcgtt 720

ccaaacagga tctaagctat ctagagatta tattatagaa accgagtaga atgggacggt 780

catttcttac tcctgtgcat ccgcgttgct gtctgaattg ttctcacgta ctgtctgatc 840

gaataccgtg gtggatggtt cccgtcaccg tgtcaacggt ttctgacccg gcttgcagtc 900

ggtttgtgat caggccatac gataagggaa ggaaccagca tatatgatgg gtagatagac 960

atcaatatca tgcatcgttg tcacacacac ctagatttta tatattacta ctactcgcta 1020

cgtactacca gtaccaggcg tggtggtttc tgaatgcata aaacgtccag ggcgatgaca 1080

tctgcatgcc tctcaagcta gaatgtacgt aacagccatg caaattcgtc atcgatctgc 1140

ttgattatgt tgcatgttca atgggaagag cgcatgatgg gtgtggctgg tgcttagttg 1200

ctaggtacgt acaagatgca atcctagcat aatagcacca agcttggttt tgaccacacc 1260

tactacaatc cattcaatcg gtagattaaa gtctgttgtt cggactatta tatctattat 1320

ctataaagat aaaacactat aaaaacagta tagattaaag tcaagcgaac aagccggatc 1380

gagccactcc cgtatacaca ccatgcatgg ataagggata gtgttgtcat tttcattctc 1440

gatagacaag ctaaagcaaa ggatatgtga tccaagtcat attcttcata cagtcaaagc 1500

atttcgattg gtttctaggc acgcacctat atgttatatg ctagctatat gcgtgcatga 1560

atcggtacaa accatacgag atgcgcgtgg agcatattca gtcgaaaaaa ggtgaaacaa 1620

ccatgcttat cttatctagt actctctcca t 1651

<210> 3271
<211> 1603
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57827_G1, chr2:32940042..32941644, Cluster 19

<400> 3271
aataaatatc ttaatactta ttaatatgat atataaaaac tgtagcaaat cacgagcaac 60

tggctagtat caatgagtgc acccaaaggc ttttgtcagc aaggttgcaa actgactatt 120

tatgagtttc aaggaataaa atagaacaac atcctactaa aattttatgt taagacaacg 180

gcatacactg aaggttatct taagaggcca gcgcaaacca aaactaacat ccaaaatcta 240

ccactgaaac tgagaacaac aactgaacca cacatgtaca agcctcggct taaacctcaa 300

accactgcca catacagcta gctaatccac gccagtggca tctggcaact cgatatcggg 360

gatgaaaaac aaaatgctac ttgcgtctgg aaaagctaac tcctcccaac cttcctctct 420

tttgtttcat cactttgcat cttcagaaaa gccctagaca tgttcattcg tcttgtggat 480

ggaaatatga aacagcaccg ttgcctgatc tgtccttgtg taaacctaag agataaatgg 540

acatgccagg caaatgacct cagtaggaga tctaactaat ttgttttcca aaacaaacat 600

tattcgttgg tttccaaaag gcctagcaat ggcaacaaag cctaaccatg taaaactgct 660

ttctggttta ctgtcagctc taaccacaat cgacgcaagg cttcaaaata gacattaacc 720

agccgaagca ttaagtggca aaaatattca tcttcctcac aagttgtcaa tttattcttc 780

tcaagagtta gctcagatca gctggattat tactccacgt gtagtctgaa aatttctcta 840

agttaatggt tatgattaga tgaaacatgt cagtatttct agtccccgac ccacaaactt 900

atgttttgaa gcttaatata ttgagacttt acctaagctt tttatcatgc tgatgcatag 960

aactccatag taacaagatc ctccatttga acctctccaa atttaacatc acagagaatt 1020

ctccagattc cctcggagaa aggcaaacag ttcaaagctt aactattgag attggaggtg 1080

atgcaaagcg ttccaataac taaccatatt tacatctagc acaattgtct gggtggtgta 1140

gttggttatc acgttagtct cacacattaa aggtccccag ttcgaacctg ggctcagaca 1200

atgtttaccc attttttta ttgttcagtc atctcttttt tttcacatct tataatttgt 1260

ttttgttcag tcatcacctt tgttcttttc tttcttgttc agtcatcact tctgttcttt 1320

tcttgacatc tagtagtatt tgtttttgtt cagtcatcac ctttgttctt ttgtttcttt 1380

tttgttcctg tactgtacag tatttatcag tcatcgttta cccaattttt ttgtgttcag 1440

tcatcacttt tgttgttttg ttcacatcta gtagtatttg tttttgttca gtcattacct 1500

ttgttctttt ctttctttat ttttgttcag tcatcacttc tgttcttttg ttgacatcta 1560

gtagtatttg tttttgttcg gtcaccactc accacctttg ttc 1603

<210> 3272
<211> 1963
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57856_G1, chr2:33192664..33194626, Cluster 19

<400> 3272
ttatgccaac aaccaatctc tactacaaag catcgggtta cacatgcttt ggtggaactc 60

agaagttcgt ttcacaatca gaatagctta acctaaagtc caattcttat ggtggctgat 120

ggtacaaagc tacaaaagag aatctgtaag tacaatctca agaagaaagc agtcctaaat 180

gaaggtataa tctcaaaaag aaaccggtcc ttgaagatga catctggtct atctatgcag 240

cagctcagaa ggtgtacgac aacatatttc aatcctaggg agaccatgtt taattgaaat 300

ctgagttgtc ggagccacaa catcaacatt tatcccaata tcatcttcct gaaagaaatt 360

acagttgcag ggcactatcg gcggttgccc acatatgcac atatgatttg cacgtaccgt 420

ttgcatttct tgagcatatc tggtagtcat ctcagtgaac tttgccaaaa ccttccaaat 480

tagcgatgtg tttgagcact aaaactttat aataaaaata aataaagaac caacatacat 540

aaaatatgtc aaaggaagtg catacctctt gatattcaga ctcaaacgta gacaaagcag 600

atcgtttttg cctccacgct tcgtagcttc tgcttttgat catataaggg ttcaacacat 660

acaacttcac aatatagctc gcactttaga aaaaattgtc acccaaaaaa ggattgattt 720

tcagtaattg ataatatagt aacaaatgcc tagatatggt acaactgaaa acaatattta 780

ccatatacgt caaaataatg ggttcctgtt ttcagttcat ttacttcaca aggttgaaaa 840

ccatcacatc ttttaaagaa agcactgtga ggatcctttg cagtaacaac ctagtattaa 900

tagaagcttg tagaaataaa cacaaagaaa aacaaaaaga ggcaaaaggc actaatttgt 960

atactcattg agttattttg ttcaaataga tgcacaggaa agcttagaaa gaacatcccc 1020

gcagaacttt tctcagtaat ggttctctga ccaaatcaga gcagcatgca aaataaaagt 1080

gatggggccg gatcaaaata gatcgatcct atttatatac atgcaagtga cattatcgtg 1140

taaagaggtt aacagttact gcagcagtaa ctttgagtcc agagcaatta gcaaacaagt 1200

agcaagatgg tagaatgcaa ttgaaaagca tgggagatcg atagcatcta tgaagtttgt 1260

atgatagatg attatctgag tatgatctat gaagacttct gtatgaaaga tgatcatctg 1320

attatgtcag gcttcaactg atgtgttaca agtatctatg gaataatttg atcacagaga 1380

aattcctggc agaaaatttc ttcagttatt ttaacctgga ctccaactac ttgttatcaa 1440

atgatgtcaa ggggtacatt agctcactga ggttcgatgc gaaggtgata tttctcacct 1500

ttaaactttt cagttcttct ttataatgat agttgctttc tggaataata catggagcca 1560

aaatttattt tgccttatag gaaacaatat ctttctaaga aagaattgat atgaatgcaa 1620

taacagaaca atcagcaggg tatttgttta gcaaggacta aaaagttcac caaagaacca 1680

aaaaagaaga cgtgcgagat tgtttgtaat ctcacaatca ctcaaaacta acggtaagtt 1740

gaagctattg gttatccaag gaatcaatta tgatgatttt taaaaggctt cttgatgtac 1800

tttctaacac catccagatc aaaataaaac acaattacat actgacgcgc catccgagag 1860

aggagagtaa cccgagacat ctcaccagca cttttagtca agtttgacta atcaaacaac 1920

aacaaaatac caggaaagta aagcacaaac ccatttggca agt 1963

<210> 3273
<211> 1553
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58368_G1, chr2:36818192..36819744, Cluster 19

<400> 3273
agtaccgtac cggacttgtt tccttcttta acctttccg tgagcaacca tccgttgtgg 60

cttagcttct ttaacagctt cagaagatat ttagagctag tttttcaaac aagttaaaac 120

taaacagctc ttcaaacaaa tctcttaaaa tttgaatatc acagagctaa aaatgttagc 180

ttttcctaac tctatcttca aaatctatct atgaaaaaac tgttttacta aatatttttt 240

aaaacacaca aaaaaaacag gtaagctccg gtgaccacta gacaagtcag ctatgttcct 300

tttcaagtgt tctagttttt cgttggctta atgcggaagc catgttctaa aactggtagg 360

ccgagttcgt ggcacggtga tctttgtgcg atcggtgtgt tccaacacac tggatgtgga 420

aatagatttg cgtcaacgtc gctctaatgg ccttgatcat acggatggct taattggtac 480

gtgtgttgcc tcctcgataa ttccggctgg atgctcccat gaggattgag tactcatcaa 540

ttcaacatat agatagctgc aaattcaatt caaaacgaaa atgatgagaa acggtacagc 600

gatgatgcaa tagcgatgat gcaatgtgtg agacggtgat gaagacgatg gtccacatca 660

ctggtgtcgt ggatcggatg ctccggttgt gtgctcttca atttaatatg gatagctgca 720

aatttaatct aaaagaaaat ttttaagaaa tagtacaaaa ataatgcaac gtgtgagatg 780

acgatgattt gcatcactag tgtcgtccac gcaagttaca cgactataag tgattaagga 840

gcaaatgaaa ccaaggcaaa tctaatcaat accagggttc aaaattttgg tgaaatttca 900

caaattttgg taatttcagg ggtggtcaaa agatccccca ccccctgaag ttccataatg 960

cactaataca tatgctatat aactcaataa ttcacttttt tatattttta tgttttatat 1020

ccttctactc aataaatatg tagtcataaa tcatgatata gttttgtttg gatctatttt 1080

taaaataaca gacttcatgt ttttaagttt gttaaaaaaa tacaatgaaa ttcaaccaag 1140

ttttagtgat tttagaatgg ttgaaaaaaa ataatactaa aatgcaaaac cctaacccag 1200

aactatttta attggccagt cttctttgtt agggatgctg gttgatttgg tccagcttta 1260

tgaaccagat tccccgctaa aatctggaat gtcaaccaaa cgagtataac cacagaatat 1320

attcctaaaa atctatatat tcctctagtt caattcagaa tcatctctta ccccatattt 1380

tctaggtttc tgccgttcac gttaataaac tatcatgctt atataattta caatttagaa 1440

ttgttttaac caaacatatt ttatttttct catcatcatc atcgtcagct cgtagcagat 1500

ttctcacagc tcagttaatc tattaacaga gctgggcatg ttaagacaac cgc 1553

<210> 3274
<211> 2711
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60339_G1, chr2:48094398..48097108, Cluster 19

<400> 3274
gagctacgaa cagatctgca ctcccaccat gtctgtgtca acatttttt ccatccgcac 60

gatctgagat ccgatgtcgc atgaccactc ttgaaaagtt catgctttct aaaaaaatag 120

catggtaatt attataatat acaactagga gcatatttgt actcttgcat gtatgcgtca 180

actttttttc atccgcatta tctgagatcc gatgtcgcag aacaactctt gaaaaaacaa 240

tgcatttttg aatagcatgg taattgtttt tcacaataca acaaccataa cccaaaatag 300

tgtattaaaa tatttaaaac tgctagtctt aactaactct gggcatattt tgtgggcctg 360

cctcttatta gaaccttact atcaatagta attcttatta aggttttggt atgtgcaatt 420

ttatataaaa caaagtcaac attccttttt ccagcttaca cttgcagtgt ttccaaacag 480

acaaaatgat gatgcatcag aagagagcct ccattctatc ctactgttac taccggccga 540

aaggcctaca tcaaatggac atggccccat atatggtttt gtttcataag caagtaaccg 600

attgatgagc acatcatgtt aacctcaatg gtatgctctc ccctcccttc tggttgcggt 660

cactagcccg tctatttcac cgtctatgtc tttattgcat tattatgtat atcaacttct 720

agttttgata atgtctattt gttcatccct tgatggtaga cattgccttg acgaaatgca 780

tgtggtagac attgttcata cggtcgattc tgtcccatat ttgatagtgt ttatttgttc 840

atcccttgat ggtgtaggtc attataatac tccaatattc ttttattttt taggagcagg 900

aagggccaaa gtcctataat actttgatct gactatttgt agctgcaatt aaattgtttt 960

agcacacaat tagatacgat gaaacttata tttatttagg tgatgaccca attagatatg 1020

acgccaagac tctacatata ttattgtttt gtagctaggt tttttagata atggaaacaa 1080

agaaaaattc cagccttttg cagtctccta catacagcct tatatattct aataaaaaca 1140

cacgtcataa aaagggacat ccttagaagg aaacaggcca taaaaaggaa catccttagc 1200

taggtacaat gcatgtatat atagttagca tttacatcat gctatctgct tcctgaagac 1260

aaagatagca tatcattgca tcacacataa ctttgaactg gtaccaaaat tgtatttata 1320

tcatcatatc aactttgaac tagtacaatg catgtatatc aatgttgtgt tacctcaata 1380

ccttcatata taacattctt ctttttttata tacattgtaa tatgatgata aaaaatgttg 1440

cgtgtggggc gcgagattat gtccatacct ttatttccca aacctcagtg tcatcttctt 1500

aggcatgtaa gacacataaa gagaacacaa tgttggggtg gtcgatgtca actcatatat 1560

gaaaaaagac aaagcaacct atgttatcct taaacttctc atgtcctcca tgctcttcta 1620

tcctaaatgc agcatggaga ccagccatcc tgacaatgtg gcattacttt cagttctaac 1680

atcatctgca catatgaatg cattagaatt aggatggtgg gtgcatatat ttctgggtag 1740

gcagggttca gtggtgtgtt tccagtatac agagaagatt acctgacttg aaggaaactt 1800

attttggaaa ttgaattgca tgaccttgga ttataagttg tttatatgtt ttgacatatg 1860

gaggtggaga acatagcgcc aaataatatc agttttgttg taatttttc aatatatact 1920

tatgttagac taacttattt gggttgttgg tatttcggta tcatggtgtc ttagtagtta 1980

gtacaaaatt aagctgcata tattcaacat tatgaatgca tggttcgtgt actttctgtg 2040

ccacttcgat tttaccaaca cattgtgctt tatgttctac aattttcatg tcatgcattt 2100

tatttttaca tagtagccaa tcactgctat ccttttgaaa ctatttaagt tgctattgaa 2160

tgttgtcaat atctacctat aatagactat ttgatctagg ttgtcagtat ccacttacga 2220

tacactatct gatctgggtt ctttcatagc atcagactac ataccaacaa aagattgaac 2280

caaaccaaac taaatcacag atacaaaatt tcacaaattc tatcttatga tagacgctat 2340

tttctaagat ttctataagg atagcgtatt tgataacatt gcaatcagtc aataaaggaa 2400

acatatatga taagtatttt tctcttttag tttctgctaa ttaacacatt tgtattacaa 2460

cttcaaatcc ctctcatcaa ctatcacgcg accagatatc cttgattttt atatatcttt 2520

ttaaaattgt aaagctacac aaaatcttaa ataactttgt aatcatatct actgctacat 2580

actaaatata ttggtattta ttatccagta tttatactct ttttgagcaa tgtgaaacct 2640

attaagccac tagctatttc atatttaccc tctgtctttt acccttttag tgttttcccc 2700

ctatctttgt t 2711

<210> 3275
<211> 1449
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6793_G1, chr1:34924017..34925465, Cluster 19

<400> 3275
aggacacact attgtagatg atattgttta taaagtaaag tttgaaataa aggatgagat 60

agagaattaa atagaggata gatggcctca tggttcaaga cttgaagcca taggcagctc 120

tcatttttt gttgtctatt ttgctggccc aatggagagt gatggagagt ggccacgctg 180

cgcatgcgga gaggctcacg ttaattgttg gtgtggccgc gatggcgtgg ggaatggacg 240

cgattattct cgcttaaata tagtagagat ttttagcaat ttgtgtgttg gcctgtaaaa 300

aacagaaact tgaagcattt ctcttcgtat gcttaaaata aaaatgttgc ttttagttat 360

cttcgcatgt tctatttgtc acttctcata tccagtttgg cagagcagct ttaaggctat 420

gtctaacaga agctctgtca aacagttttt actaagtttt gttttgctga tttcctgaaa 480

taaactagga agccaggagc tgaaaatata ccttctctag atttgctcca tgcttagagt 540

cactgtatgc ataaagttta ttctaaagaa tcaattttag tcataaaatc acttctcgca 600

aagcatgaga tcatccatag gaaatctaga acacaaggag ctatagctct accaaattac 660

tgacccttgc ctaccaaaca attatatgct ctttatacaa cttcatttgc ctgtgttgtc 720

gtcaagccat gtatccacaa aatatatatt attgtggata tatatgtcct ctaagcaaca 780

atatactcac ggcactgctg ttaaatatgt tgtaggcacc tagaggacat tgttgccatt 840

tccatcccac cggacacagg gtctcgtcca atcttatggt ggatacgccc atggccatag 900

gcagtagcgc ctatcggtta tttggagggg gtgataatcg atcagatacc ggccctaaag 960

gttccttaca tatataggta aagcatggta ggacaactat ctagttaaca tgtcccatca 1020

aagttagaca agagtctatt ttactgtggt gtagctttat cttgagactt gatacaactt 1080

tttaaaattt ggtctcccat atatcaatat gatggttgtt aaattgtgcg agcgatgtgc 1140

ttgttgttta tctcgagttg gtatgggaca cacatcagaa aaattaccag gatcgtttca 1200

tttaaggcgt gctggtcaga ggacggtgat ccggtttgat gagcatattt tagatgattc 1260

cgtactagag gagattttca gagtgctact aaatatttag ggcatgttcg gtttatacct 1320

aatccatata gatttgagac aggattgagt gagattaaat cctaaataaa ttataatctt 1380

tttatttttt aatctcattc aacccatcta gattaggaat agcccaagaa gaccttagga 1440

ggattattt 1449

<210> 3276
<211> 1960
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_77581_G1, chr2:156926887..156928846, Cluster 19

<400> 3276
aattccaaat tggatttcta cttgtggtat atctaaacag atgccattat atttttgtct 60

caattagtat atgtgcatgc tttctttatg aattatatag aattaacttc cttgttctta 120

aaatccctat tatgcatata cattatcata cactatatgt gtgcatacac ttaggggaga 180

ttatctatgc atatacaact aggactagga tgccttttg gccaaacccc aaccgggctc 240

acactaccat tatggccgaa gagttccgca aagaagtatt agaccgtaga gagaataaac 300

atataaatag agatataatt ttctagaaat gataataaat tagatgaaaa taggaagtgc 360

ttattacttt agcccatgag actatatatt gtaacagata cacttataag taaagaagga 420

agtctttcgt tcaccaagca gcgggtggtt ctcatccctc gatgcatcac cataccttcc 480

ccaagggttt tccaaggtaa gcgcaatgtt gtcctgatgt ggtctctgat cttgttaggg 540

cggcatggtg caccacctta ccccagtagt tctttatcaa ggatttttcg atagttagac 600

tgtatgaggt tgcttgcacg atctaataac taaaagtaat gacatagaat gcataatatt 660

tatattggtt tgggctctta tgcgagataa taccatacgt ccagtttgct agtagctatg 720

cttatgattg tgatgcttct atccccttga gcggcctcgt ccctcctttt tatagttgat 780

gagggattcc attacaggga aatggagcct ttcccattac ataataagac ccttatctaa 840

gttacaggaa ctttctatcc ttttctctac atgataactc ccttatatgt tgtgttactg 900

tttacaacaa tgatacacaa atatcatagt cttatggata tgcaaattcc attctaatat 960

aagatcatag ccttcctaat gtccagtcaa aatctaaatc cgagaaggat tctaagtcat 1020

agacatggtc taagttgggc acacaaacca acctttcaga gatcaacatg ctcaggatac 1080

ccgtacacta cagaaaacgt caaagaaatt tcgatcaaaa tagaaacatc cgtcataata 1140

agaatgtcgg ctcggtagaa ccaacacact taacataagt atgtcagccc tttatgtaca 1200

tcaacattag tacatcgggt aagtacgttg gttagccgac gtactcaccc taagtatgtc 1260

agcctattag acgaagtgtg ttggttcctg gccaacgttc tataaatgtt ttcctataat 1320

tctgacatat attttctata gtagccaaca actcaacatg gccgagttat ctcctcgagc 1380

aagtagagtt caaacatgtt ttcgttattt ctggtgctaa gttattcaca ctggattagg 1440

cctctaagtc caaatactta gttggtttac tgttcataat tcggttagaa ggcattagtc 1500

tgactcccga aagttgcatg ccactttagg ttctggtcat cactttgaaa cacctcaagg 1560

gttataaata tacataccat cgacttctag ggttacgtga ccatatttca ccttttacat 1620

tctcactgtc atctcaaact tctaagatat catccttttc tttacaacgc cctagcccaa 1680

gctttttcgt acgcattaca atggctgcct cacatcctca cgaatttgag aagtcatcaa 1740

tcataataga agatttggaa gccttgatgg taatgaagct tcttcccaaa acggacatca 1800

cccaacagaa attattaggt aagaatgaat cttttcccat gccagaaggt gacagattca 1860

tggtctttca acaacatttc cttcacaggt tgggaatctc gactttggcc tttttgagag 1920

gtttgctaga atattataag ataggttggt ccatttgaac 1960

<210> 3277
<211> 2466
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_77595_G1, chr2:156968538..156971003, Cluster 19

<400> 3277
cgccgcctgt accacctcca acccgtacgc tgccaccagc tgtgggctcg acaccctcga 60

ccctatgagg ggatcattgg tggaagcatg attgatgagg gagggatgat ccaaataaga 120

tagactattg gatttgagtg agtaagagaa agaagagatt tagactgatc tcgtcccttg 180

gtttcaaagg gaggatggtt ctaggtgcat ttgtttgggt gactattgca atgtttgaag 240

tggtgctcta tataggggta tagataaatg aaataaggag actacaattt aaattctcat 300

attaattttc tctatcaact tgattatcat acccttttct atatagttat caaacacaca 360

tatagtcatc tccatggtgt tttagttatc cttgtgtttt agcttaaaat tcttagcata 420

gctttgaccc aataaatgta gcaagtcaaa agtcttgatt tgagcttact tgatgaagtt 480

ggttcggctg tttctagatg gattgtgttg tggtaacaca ctagggtatg caaggtacca 540

caaaaatgat tgctcggggg agtaggagag tgagtcctaa tgctacagag tatgcctacc 600

aggtcatgac atcacgagta taatgacata gaaactgtta tagaggtttg gagcatcaag 660

tgtgtaacat cctatgttct ctttcttgtg gtggatttct gtacacaagg agtgtacaag 720

attacaagtc ataaactata ggcacaaaaa acatccacaa aaaactgtgg gctaagggaa 780

gctaaacctg gtcttctttt tgttgtgggt tgctttcaag gttcgtgtcg tgtgtttggt 840

cgtgtgaacc tgaaattgaa tgttattcca ccaccccttt tattgttcaa tagcgtgata 900

gtattataag tatactcttt ttctaacctc ggtctgtcat aaggccaact acacatgtca 960

tattacaaac tttacatggt atatcttacg gtggatgtgc taccatttaa tcattttgct 1020

ctactcctgg agcattaatt accttcatac catctattac cttcacagtc ctcggtacaa 1080

tcctatgcta gctaggagga tcctcctaat ctttgaatag gcaaggtctc atatctaagt 1140

gttgcaatat atgttagttt attcacgcgc ggctgctccg tgcctacccc acatgtcagg 1200

gcggtggcgt ccatgtatca ctttatttaa tgcattggtg tctaagttgt cactttgtat 1260

gataacccac cacatcgctc tccgaggtag gcattaaatt atatgccatg aacctttgtg 1320

atgcattcac attgtgagca catgataggc taccgacgtt gctccctcta cttcattgta 1380

cctcctagta ctgtggccac atatcattgg ggttacatga ctatcgtgtg ccctacttag 1440

attccttaag agttcttcaa gctatgagtt acctttgttt atcttgctag ccttgtaatg 1500

ttgtccatca aacatttaat gtgatgtacc ttagacattc attaagtcat tgttctacaa 1560

catatctcta aatctcacta gcatgggccc acatcctggt gtcatacagt ccatagtggg 1620

cctcttgcca tcttttggcc tcatagtacc cccaaagtgg ttactaagtc catatttctt 1680

agggaagggc cctttagacc cagggtgtcc atatgagggt cttaagggct tattctatta 1740

agtgctctag gatgctaggg gctttatgga attgtaccac tatatgccct aaggtgtgag 1800

ggtccccgag atcttagtgt tgggtgcctt agtgtgcgag aggccctgag ggttcatatt 1860

attaggttcc ccaaggcgtg aggggtctca aagtctttac tattaggtgc cccaaggcgt 1920

gaggggctcc aatggcttgt atgatcaggt gtcctggggc ataagagggc ctagaggctt 1980

atactattag gtgccctagg gtgcgatgta acacccctag tgttaagcat gctcatacat 2040

ttcatatgca tcatgaaaga atcatcataa gcatcattaa tcattcacta cttacatcag 2100

aatcttgaat tgttactatt tgttggaaga gaattcatgt ttgaactaat aggaagccta 2160

tgttctataa tagtaggtta tcaatgagtg cttgtgtgta taagtaaacc cacttaaaga 2220

atttaggttg gttatggtta ctcttcaact cttgatttca tgtggtgatg gtttcttaaa 2280

ctatatgtaa ttgaaaggct tcgtgaatgt tggacataat gagttaaaat gttaccaaaa 2340

gccaaaaacc taaggagtaa gtatttaact cctaaagcta ctaaatataa ggactcaaat 2400

ttcaaaagga atatgaagtg taaccctaat gaaggtttga gatatggaat aaaagaaatg 2460

ggaaaa 2466

<210> 3278
<211> 3731
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8053_G1, chr1:41872342..41876072, Cluster 19

<400> 3278
atgttcattt tatacagact cgatctcctt gacactttgt ttttctctcc acatatatgt 60

tgtttaagtc atgggggaca cttaaaagtg gctgtgataa gtttttttaca agatttagtt 120

caaaatatga aaaaaattgt tttaaaattt gaaaaagata ttctaattaa attttagaaa 180

atactctatg gcttaaggag actaagatat aaaacatata tcttatataa ctctaattta 240

ataagttatc ttatataact ctaatttaat agtgaaatct gtctatccat aaagtaaaat 300

gaacttgtcc atgtacatga agcaaaataa ttaagttcat atataaaatg atggtagaaa 360

gtcaggggtg taatgacata tggtcggagg gctcctagcg gtggcatgag gcagatacta 420

ggtggcggcg gcgctgagag ttcctttcga acttccttcg ctcttgtatg tgagagatag 480

taaggatatg gatgaccttt taaatgatag agaatacaag aataaaatta aaatagataa 540

aataaggttg aagtactatt tagaaaaggt tcatactaag tactatatta gataagttaa 600

aactattagt attactagaa aaacaggtga tacgaatgtt ataatagcaa aaactttgct 660

cttatggcgc acaaaagagg acgacgagga aaaaagaact ttacatctaa ctttatgttc 720

ttatacagtg caatggatgg aattaaagca ctttacatcg aaaatcgtag aaagagagaa 780

aatagcctct tatattctta accctctttt aaagtacact agtgcaacgc cagtgcgctg 840

cgacgacaca tacattatag aatacttaaa tatttcaatc tacaacttgc taatgtgcaa 900

aaacatcaca acatcattac aataatattg ggactgtgac agtgacaatg agcacaaaca 960

taagaagttt agcggaacac atattttaat atcacatcat gatatgggaa ctgcggccat 1020

agcaaacaaa agtattacaa gcctacttga gatcaataat cagcaagaac tatataagaa 1080

actatgcata taacaaaaca gtagaaacag actggttgag atatgacaaa agacgtcgtt 1140

ccaagagatc tagagtgatt tataaagtgg ccatcaaatg atcgtgcaaa aagtccaata 1200

gcatggttaa ccatgctcat ttgaagaaac agtgcatttt tcatctcctc atcatggctc 1260

atcaacgacc acactttgaa tatgtgttgt caaatacgtt gaattagatt tggtgctaca 1320

aaatcacaag taaaagatct aggcaacagg tactcacata tatgaggtag gtcctagttg 1380

atattataaa aataattgtg cttagggcca tataactccc agaagcaaca tcgattgata 1440

taatcctctt tgctttcaaa ctatttggtg acttggatga tttggtccct tcaaacaaca 1500

tcacaattga agtgcttagg tattaaaaag gcatattgta aggagtattc cctctacttc 1560

aatttgtaaa ttgttccaac ttttctaggt atatatataa cttttaccat gtatctagac 1620

ataacgtaat ctacgcacat atcaaaagct atgtccctag aaaaactaga atgatttatg 1680

agtttggacc agggagagtg taacatatat tgaaaagtta aaaagctaag gctacaacaa 1740

cactatgaag ctacaaactc acagtagtta taagcaacaa tcatcaccat tgtaaaacat 1800

gataactcca ctctccagtt tagtaaaata agacaaacaa tgagctttaa tagataaata 1860

gacttagtaa aatcaaagac ttaaaagaat ttatggtgga aagaaaaatg aatttctact 1920

aataatatgg agtgtagatg aaataacata agcatgtaat agattaacat attagcccca 1980

aacaacaagc agggcatctc atgggacaag aattgttaat gaccaagcac aacttactat 2040

gcatcatttc atcattagac aaatttcaag actaatttga acaacgtcag aaagggacaa 2100

caaaccatgc tcaactaaaa caagataata ttcacttttg gtgctataag tggcatcaac 2160

gactgaaatt ccaatattgc tttcacggat agactcacca tccaagaatt catacctaac 2220

cattacacaa tgatgcccaa acatgtttct gagattgttt atgacatgtc aattgcgctc 2280

tgaaataatg aactaaaaat gcaactcaat aataagcaaa caatttacaa aaagatatct 2340

cagatgcatg gaattaatag acatagaaca tatgacatag ctctcaagac aagctcgatt 2400

taatatccca acgtctttag ttcgtttcta agaagtttaa catttttct tctctggaaa 2460

agaattagca ttgatgtgaa cttctacttt actcatatca cgctttcatt ctaattagat 2520

gcaatatata ttttctttta actaaaatca ttccacaaga tgactgatca atgcacagaa 2580

ttaaccaact tgctgactgg attcagattt agaaaaagga attggtccag gtgttaacaa 2640

cacatttcgc ccttaccgat caatgatttt gcagaggtat tcttgttgat catctcgtag 2700

caagacatcg ataaaatctg ttggttgaag aaaatggtgc atggtgacat tattggttat 2760

gggatcatgt caaagagaca agaacaaact tgtttatccg gtgttagcct tgtttgcttt 2820

tgctctttac ttttgctcat tttgatttgc aaaaggtaat agaaatttgt ttgtgcccat 2880

tctactaatg acaacctttt aaattggaga atggaaaagg tgtagttgct gagttgcaac 2940

aagggatggc tatcataatg atatacaaaa atcacttgcc cgccccagtt atgtcagcac 3000

ctttgaaaga agtgtttctt gtggcaagtg ccccttctaa gttggcattt gataagtttg 3060

cctgtaaaac aaaatgaggc gaaactaatc acagctcacg agtgtgttga aagaacaaat 3120

caccatgctg atagtgtgac atatatgcac atgtagttga atcagtgggg gaaagcgtga 3180

agggaacaat gagaggagca tgaacgaaat gggcccagta tataaatgtc tgatttaaca 3240

atggctaaac gttttggatg agaatgagga tgaggtcctt gttaggcatt ttcaacaaaa 3300

tagagtatag acacgtgcac aagcatgctt gaattgaatc ttgatgaaac caaccaaaat 3360

catgcgcaac cctagacatt ttacctttat taaatttgct agtgagaaat tagggtcaga 3420

gagatcagcg cctgaatttg tcggacaaca aacatatcca ataagccgcg caaccaaaac 3480

caaattagga acttcccaaa gataaagaac aagagactgg aatcatcgaa gatggagcaa 3540

caagaaaatt cagtacttgt gaggtttgca tcgaagaagc tcgcgccaag caggtttgtg 3600

cctttgaagt tcgtctgcct cagtataaac tgcaccatca agaaggtcaa gattcaacga 3660

gcatgagcaa gcaataccct ggcaaatggc atgccttgga agatttgatg cggttagaga 3720

tagggttctt t 3731

<210> 3279
<211> 1768
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8076_G1, chr1:42028392..42030159, Cluster 19

<400> 3279
tccattccat ccatgagatt gcttccgtag cccagaggtt ttcttaaata tctcctcaaa 60

taaaatgtgt ctttatttgc taattcattt ccactgatgt accaggattt tatataaaaa 120

tgtagtggaa ttagtaaata gtgtaatgaa tatattcaac aatctacatt gtaggttggt 180

gactacaaaa ttgtcttttt tactaatttc gccactattc ctctggtctc atgtatcctt 240

ccatattttt actcaagtct acagagaact tagagcctat tcagttgtct gaaaatattg 300

caatctagat agtgaatgag aatctaaatc tataaataat agtttggatt ttataattta 360

ggttgtctga tctcttgaac acaagagcta gattgttgtt ggttaggttt aagggagatc 420

atgaacctat taacctagtt attgtactat tatattctct agcaatttga aatgtttgga 480

tcacctacat atttgtatct agtttctatg atccttagat gatcctaaaa gaatgttgat 540

aatgtttaaa aaagatggat gtgcaaaatc tataaggtaa aaacacttct gcgtgtctga 600

caaaacaaac ttgggtaagc caagttctat aagttttggt acggaaatca atttgaaatg 660

caattaggct ctattaggtt ctatctaaaa tcaaactttg taaaggtgtt cttagtgccc 720

aacaacttgt ttacacaagt actgcactca caaacaaaac acaccaagta caccaaggtg 780

gaagcaaatc attccctact aacaccaaat tctagcattc ggtgcacaaa taatatatca 840

tccacacatc acatatggca caaaacatgc tgcttggact aatctaaact catatgcctc 900

aagcgttact gatttttaca atgtgtgata catcgaattc attgttggtt gcaaacacgc 960

atcgcatcat aaataagaca taaggaactt agatcaacta gctagggtag aatgtgtgat 1020

catgcttcat gtatccaact acacaaaaaa atcttcttat aataatgaaa acctttctaa 1080

ttcttcttag attgaatctc tctcactctt ttttaaaaat attggacatg acactaaatc 1140

gttaataaat gaagtacatg tgagcaatac tatcatacca aagacatcaa gtaacaaagg 1200

tataagagga aagattgtta tggtaatagg aagcgagtcc tggtatcata gagtatgtct 1260

accaggtaat gattacgacc ctaatatgtc tggaagtgca taatacccta cgttctctca 1320

tggctaatgg atttggtgta ctagggtatg tacaagatta caaacctcta accaaagggg 1380

aaattttatt ttaaagagaa gagtaaatta aggcaaccta aactaacttc tgttattgtt 1440

gtgttggata gattgctttc aagtctattg gcttgagttt ggtcttataa acctaaattg 1500

aatattgttc taccatcctg ttttgtagtt gaaataggtg atagtattac aatatatgct 1560

tcctatggcc ccaacatgcc atagagccaa ctccccacat attgtcatag gattatgtgc 1620

catgtcctat ggtagacgtg ttctaatgta atcacattgt tctagacttg gtgtattaat 1680

gactcctcat gcctttcaat acaagcacaa ttatatgtac catcatgtgc tgcaacaaaa 1740

atcctaccaa tctttggata ggtgggat 1768

<210> 3280
<211> 1625
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81594_G1, chr2:179822301..179823925, Cluster 19

<400> 3280
aacattgatg tgtactctta agatttggaa accccattgg aactcatctt cacacttttt 60

agctgcataa aaaaactgtt tggaaaccca ttagaagtgg tcttcatact ttctagctgc 120

aaaaaagaac tatctgatga cactggcagc actagccttg ctccatgttt gcctttctaa 180

gggctagttt ggaaactcag atctcaaggg gttttcctaa acggatgatc aaggtacaat 240

cctttgcata ttatgagaac aagatatgat gttctgacaa gtaattcagt agtggaactt 300

gttgaattct tgattgatct agctagggga taacaaaagc tacagacgat gacttgacta 360

gcactagtat attcctcgat ccatcgagca tttggttctt ctataatatg gggcttgcga 420

tggtcattgt cgctctttgc caataggatt ccatgtaact tcggtgttac ttggggtgct 480

taggctgttc ggtttcagaa catctttaac catattagaa aaattaagta ctaacaacat 540

gatttttgtc ccttttttctt tgtatctgta agttgtcatg acttgcatcc atggctggcc 600

atcttaggag cactagcttg catataaaaa cttcaaagaa gaatatgtat tatcagctct 660

atctttaatt ttattaaagg atcaaatcag atgaccaaag ggattaagag ctaaaaaaat 720

tcttatgctc agacaatatt ggtttatctt tcaatgctat gcctaaccct ccaaaactcc 780

aaaagacagg agagagatgt gtaagcgagg tgatgagcga agaacacatt gaagtgttca 840

aatcgacaag aaatgtgttt gcgaggaaaa ccttacaaaa ttgaaaaatt aagcacttta 900

atggatataa agagatcgtt aaaaaaaaca aatcaatcca ctagtgattg catgttttga 960

aaatgttttt tgagatcaaa tacgggccca atgaaacaaa ccgatcgcaa aacagacacc 1020

gaaaagtcta aaacttccca aaaacaatac cacacattta ggctttttt agcagaccaa 1080

ataaaaaaaa ttctaaaacg ccaatcgatc tgaacgtact ctggttgagc taaaaatttt 1140

gcaaacacct tcataatgta gttttaaaga tgtccataaa atttgagatc aaaagattta 1200

aacttaaaag atagatcaaa gaacacaaat tcaaatcgag gttttctcaa aatggctcaa 1260

gggattggaa attcatgcta caagtggatc agcctatatc acttagtggt aatgatctta 1320

aaaagtccta gcatgtttct atccagccca aatgatctca agaacttaga ttcataaaat 1380

cccacaaaag atcaaaacga agagctaaga aaaaaactca aagagaattt caagcaaatg 1440

attttatgtt gagatttacc atagagatca caacatggtt aaggccacgc ttcttgattc 1500

tcagaaacat agatgtaaca agtccaaagt acataaggat cttctaacaa aagaaactag 1560

caagaaaatt gcaaaataga aagctagaga gatagttaga gagataatta gttggtgcaa 1620

ccttg 1625

<210> 3281
<211> 1464
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83890_G1, chr2:192441127..192442590, Cluster 19

<400> 3281
tatttcacaa acgaatcaaa aaaaatgaaa aaatagtaga tgttggagaa acttatttct 60

taaactaaac gcacctaaag ttattccact atttttttta aaaaaataaa ctcatggtgt 120

atcatcattc catctaagtt ggttagttct tcaaacaaag gcttcaaaaa tcggcaaagg 180

cttctcatgg gtcgggccat ctgaatcctg aatcgaaatt tgataaaaaa aaggctctgg 240

tgctggactg gaccagcact tacattctag tacatgggcc gtggtcagac accggtcagc 300

tgcgaggtgc gcatgtttca agaaaaccga tgtagcacaa ctagtcacag gtacggccgt 360

atgagcacga cacgacacta cttcgaggtc aagaatctgt accattcgaa tcgcaatcct 420

gttgtgagct gctgccacgt tgaattccaa acctgcagta gccaactcca acagccagcg 480

gtgatcttcc acattctcat ctcaacctca actaggattg tttgcaccgc gaaccattaa 540

gcatgtattt ggtttgtgac taactgtgtc acattttaaa gttagtcgtt taaatggaag 600

cactaatttt agatagaaaa agttagataa acgtaacaaa ttaggcagcg aaataaacgg 660

accctaaaag ctaagtgaca agcactccaa tccactatta atccaccaaa cgctatcttt 720

taccttgttg aaaagtgaga actcaagttg tccctggctc cctgtttagt ctctctccaa 780

caatatcctt aaggccccgt tcgtttctct cggaatgact ctagaatttt tcaggttgat 840

taaaacttac gtaaattaga acaataataa agcttggaat tgtttcagtt caccgttccg 900

agagaaccga aagcctccta atatgtcccc aaaccatgtc tcctaacctt acatgttcga 960

gtaaacagtg ttgaccgaac ggctctaaca atccacccta tccgttgtcc gaacatgggg 1020

acgtatggat ttctccggac gcatccaggg acattccttc cccggatcca ctatttgcag 1080

gtaagtataa agtattctat tgcaacctgg acaaaattgt tttatgctca caaattaatt 1140

tgtaatgaaa aagaagagtt agttgatata ggggaattgt cgggatgttg gagaaatctt 1200

ttaggggagg tatggaaata tagtataaaa tacatttatg tgttgtttgg ttcacaaaat 1260

gtgacgtaaa tgacaacgat aataattcac actttagtat cagcggtaat aagtttgaat 1320

aagttgatat catttttag catagtgttc gattacatct ggacttaaac aaacatagat 1380

taatgttatc aattatttat catgttataa atatgtgaaa caaacaacaa cttagaggga 1440

gatggatata ggtgttgtta gggg 1464

<210> 3282
<211> 2716
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_89229_G1, chr2:222972447..222975162, Cluster 19

<400> 3282
atcggttagg ataacaggca atcagaatca gttaggataa caaattagta agtgaataat 60

aatgtacata aacatatata ttgagaaaag accacatata ttgaacacat gcacaagaca 120

tcaatttgaa ccggtttatc acaatttaag gtctttgtga gttgttaact tggtatacta 180

tacaattttg gcttgttata ttgaatctgc attacaaaac ttaagcacga tatctttcca 240

aggtgtcgtt tggtaggcat gggattttag ctttggataa tgtgcccatt atcttatatt 300

atcaaggtgt agttggatac tcagattttt gtctagaatc tagatacaaa atgagacatg 360

tttggcatat tatgattttt tgtgctagat tctaagaatc tcaacaaacc aaataggccc 420

caagtagcat agcatgatag aagttgattt catatgatta tgaagtagga cctcgggcaa 480

taaaccagct agtcagctac tgactttgat gttaagattt taagttgtta taatgtcaaa 540

gatgttatgt aacttgtaac agctttgaaa aattatattt taaatttaca tgttaacaat 600

attgtattat aacagccctg ggagtgacaa attttataaa agacatagta ccatgtcaat 660

tatcgaattc atacatgtta agaatataaa gatgttgtaa tagtcgttat cctctcagag 720

gtattatacc atatataaca gattttgaac tttgatctta acatgtatga tcagacatgc 780

tttgtaaatt gtttaatgac aaatctaatc atacataata agtatgacag ttatgagtat 840

gataaatttt agttttttc tttttcatgc aaatttggta tagctacaaa ccatttgcca 900

gccatgcaaa taaaaaaata atagctacat atatgatatt gtccctgcat acatgtcggg 960

catgaggagt accttcataa ttttaggagt tgtggttaaa tcatgttttg acattgaata 1020

gatttattga taagaaacat caatattaac aactaatgta tgcatgacaa tagaggtggt 1080

gatccaatta cacccatcac cagaataaac gtttcttgtg cacaatgttt cacatatttc 1140

ctcataccat attttctatg ttcctaataa ttgttctata ttgtagaaac ttttagttta 1200

cttctcagcc tacatatgta gaacacagat gcagataccg tatacgatgg tgagctgaag 1260

tctttctctc ttttttgagt tagttaaatg tgcatcatat atattattca cagatgcaga 1320

taccgtatat gttggtgagc tgaagtcttt ctatcttttt ttagttagtt aaatgtgcat 1380

tatatatatt attcgttttg agttagtata aactgatttc tttctagctt ccaggcaacg 1440

acgatggcgt actttatagt aattaattta gtcaacatca ccagtccgta tctgatctag 1500

taatctgctg ttcaggtgag aatccctttt tgtccctttt cttcacagtg aaaaaatggt 1560

attgtaagtg cccgttctaa aaaataaaga ggaactaacc tgtttttttcg tatgaagcta 1620

taactcttta ggatggatct ggcgctgcga tgtcacattc agtaaaagtt tcggagaaga 1680

tgaaggttgt agggaggagg agaatggctc ataccttttc gaagcatcaa cccaggtcgc 1740

ccagcccagc cctcgcgcgt actgaagcat ccgaatcaac gtccctcgca gtctccgtct 1800

tgctccgcgg ttggcaccag caccgcaacg aagaggcacc tgaagacgct gacactgctg 1860

tgcgcggagg gggcgaggag ccgaggagtg acatcgtgag agtcatgggc ggggcccacc 1920

cgaacgcgac gagggacggg gagggcacgg acgacgaagc atagccggag ctggaggagg 1980

tgacccaaca ccagatcccg agaatggggc ggaggagcct gcgagcggcg gcggggcagc 2040

gggcaagacg gtggtggcaa tggcaggctg aggcggagcg tgagagccag cgggagcgcc 2100

atagagaaca tgacggcggt gaggcggcag caggagcatg cggacggcgg gacggggtgg 2160

aacggtggag atttgacacg atcccctcag tgctctccgg aagattcccg tgcactcgtg 2220

gagatttgga agcggacgtt gctggatttt ggtttcatgc gttctgtggc cgttgacgcc 2280

ggatcgtgcg gctgatattg aaattactga cgtggacacc accagagagc ccgtttctta 2340

ccggctttgt aatataggaa atgtcatgtc atgacttatt agtcctcgtg caacgctcct 2400

tcctctcggc atgctagctg tgcgtgtacg ttacattctt tcttacattg tactgtacat 2460

ttttattcgc atgctgcaga attggaattg cagacagata cagacgactg atcgtctatt 2520

cgtctgtctg tctctgatgg tgtcatcgtg tgtgtgtgtg tgtgtaagga ggacctgccg 2580

cctgcgtccg cgcgcttgga catgaatatt gcattggttt gtttggactt gcatgggaac 2640

aaattaaaat tccctcctga atgcgtcaca gactcagtgt cgcatacaat acactagcga 2700

cgacgccacc gatggg 2716

<210> 3283
<211> 1592
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93801_G1, chr3:8560261..8561852, Cluster 19

<400> 3283
gtttccgatg gcaaaggtaa agagatctac aaagtgcata atttgattgt ccaagtgtga 60

aacaaaggtg tgacttcaca atttgctcag acataggaat ctttaagttt ccggatcagg 120

atctagcata aaatgaaaat ggaacacatc tctcacgagc tacattggta aatccccttt 180

caggtttgtt cgaaatagag gaaaatatat agattttgtt tcatttaggg atgctgacag 240

gctatcaagg agacattcta ctaaaagtac atgtccttgt gaaaatcaac aggtccaacc 300

atcttaacca tgccacagaa atgtcaacta ttagtgacct gataaatgca gtaaaacatc 360

aattggtaga gtttgagcat gatagctttt atgaatgttc aataaataga tactcataga 420

gaaaagaaaa ctggacgctt agtagagtga cttgctgatc atatgtttat ttgttagcat 480

acaagcaaaa tggacaatcg aggttgtagc ctagtcacac tagaccttaa tgtttagtaa 540

acataattaa aaatcaattt gttgccaaac cagaatgacc tgggcaactc cggttgatag 600

atactcgtac cttttatgaa acagctgtac catacagtag aagttggtgt ttttttggt 660

gaaaattggc atgatattgc taaaattgtg gatttttgga gttttagaaa ctcaacttta 720

gacaacattt cccctaaaac atggatttgc acatatctag attctaaaat tacaattttc 780

taatatcgca acattaaaaa aggcccttag ttttcaatgt gcctcaattc atgttagatg 840

attttacaag gattttgctg tctattgttt cctcttttct tttttggctc gagatcgtaa 900

aaatgaacta aaaagaagac agtccatatg gaattatgta cactgggaac tggctgagcc 960

tgctgttaat atcataaatt tgagggatcg catggtaaac tacttctctt tgattatata 1020

tctgttccaa ttttcaatat atctggctcc actcagtcca gtcaatgttc ttttcatggg 1080

gatgtattgg ctcagactct ggagattatt gtagaaacaa gaagctcacc aagagattct 1140

tgtggtatgt caatccttag agatggtggc aatggagatc cttgcaaaac atggttagag 1200

ttctaatgcc agattaaagg acgcttgatt cgagaacaag ttcttgtcaa ggatgttatt 1260

ttttttaatg atgcatgttt tattaatttt caatctgtaa tgtcgtatgt aggaaactac 1320

aaaaggctga aacatttttt gttttcatta taaaaaaaac atacttttcc tggatgagtg 1380

gagcctgacg agatgtgaat gagtggtttt tggacccctt tgtttctctt attcttttcc 1440

atttcttcag cttgctcata tcagtcttgt agtatatcta ttgtgctccc ctgctccttg 1500

agattcaaac tagtgcgagg cgcgcgcgtg ttttatatat atatatacca gtagcacaat 1560

agcaatagta atacaaattt agattacaat aa 1592

<210> 3284
<211> 1687
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94571_G1, chr3:12609913..12611599, Cluster 19

<400> 3284
ccctaggatc acctgtgtag catgagaact ttgtttaccc cacaagctag gaccatcaag 60

gagtacatgt aaccaataca accaaagaaa cggatggatc tcggcgagtc gacagaaaag 120

aaaaagaaca gtacagagca gaacaaacca ccgtccatac ctttgcagga cgaactgtac 180

catgacctaa ctagaaacag taaagaaacc gactaacatc ctgtttagat ctctcgtcta 240

aattttaaca ttaaactagt aacttgctcg cgctccgcgc gagccttttt aacgatattt 300

ttaaagcagt tggtttgatg tacatataca tcaagaaaaa agttattgat atacatgaac 360

aatatatagt tgtattggta tatatgggaa ccatgtacat agtagggaca taattagtat 420

gcatactttc acaataatga aagaatcacg tacatagtag agacataatt aagtgtgcat 480

acttttacaa taatgaaaac ttggaatttg caaacatagc atcataagca gttttgatat 540

tatcttacat tgggtcttag ccatcacaaa ttaattgtac actaaaataa agttcacatg 600

gagcttgtct agtaacacag ttcgcattgg aataggcata tatacaaatt tcttggggca 660

gcataatact ggtatttaag accacaacag gcattacaga aatatgcccg aaaggtaatt 720

agcttgacga catgcaaacc atgtgtaatt gtttttttta tatataagat ctgtatctat 780

gagttggtac cttagtaacg gaaacaatat ttgctatctt aattgtggtg acatctcacc 840

ataacgtgat aagagtgaac atagaataga cttagcaagt gaattcacta attaaaacag 900

ggtcaaccta tagcgcagtc acccaaaagg aacttttttt tgggggaaat agataacatc 960

tatatcatac catttataat ggaacaatgt catgaatata aaaaaatagt aattctaatc 1020

cattataata ttgcacatga tacttggttt taaataaaaa ctgagtatga aaccaaggaa 1080

acaatatgtg ctaccttagt tatgctcata ggtcaacacc ttaccataac gtagcaaata 1140

aaccaaagca aggtcaacct atagcgcagt cagccaaaaa agaacttctt ggggaggggg 1200

ggatagatag cttctataaa tcagacgggg accatttata atggaacaat gccatgcata 1260

taacagaata aataagagta attctaatct atagcacaat aaataagcat tgagtacttg 1320

cttgacacct tggatttcta aagttatgtt atttgacctt tttcttatat aaatatattt 1380

tgcagtatct tacaaatcat atttcctgct atcatgatac atttatttta cttagtcttc 1440

ttatatttgt catgttgtat gtgaagatag aggggacatg agtgtctgtg gggaaaagca 1500

atgcacatat cgggaattac gtggtggtca ggcaaacagt tctagcctca agtgagtgtg 1560

aaaatcaaac aaccagcaat gatgaaatac ccagatcaga gtcttatttc gaggtcacca 1620

tgactcaggg ttatgtatcg cgtggagtga aggtcctaaa gcagccagag aaaatcctct 1680

atcttca 1687

<210> 3285
<211> 1674
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95297_G1, chr3:16866637..16868310, Cluster 19

<400> 3285
catctcagtt tcttacctgg gtctccgtga tccatcgttc ggagtgagtc cgcacttata 60

tccccaccaa acataaattt attgtcctcc ggtttccaaa acgaggacac ataactttgg 120

gtgtttttgt gatagagggt ggaaagaaag aaagcaggag caaaggagga gcgatgaata 180

atgggataaa ctcaaggata aaataagttg catcgtaaag atcatttctt aagatattat 240

attatatttt tatctttaaa ttataaaaat aattttaaat ttatttggtt tataattttg 300

tctatacacc taaatatata ctatgtgtta tattaaaaat tgtaggtcta aaactatgaa 360

aatattttat agtttaaggc aaaattagga ggatgcagaa actactctag tttctctgtc 420

gtgagtgccc aaaagtctca catgtattgt ccctcgataa aggctctctg tctcccagta 480

aaaaatctct tgtaataacg tattaggaca tataaccaac tagagtcgct gtcactgcat 540

tggcatttat tccgcaactc tgctattatc ccctcgcaag tccacaatac cactgctcca 600

gcttgtgctc ctccctctcc ctgcgttcca tcgaagtcta ctcgccacct cttcctattc 660

ctgccatcgc acaactaagg tattctataa atgtctaggc tagaagatcc taacagttat 720

cctcctaaaa acatatattt ctaccgttac caatctttct cctattccct attctagccg 780

cttgggaagc tcacatatac cctttaaaat acaagcacca tgggtcctgg tccaaatttt 840

ggtcttactc ttggtattat atttaaagta tatcagctct tccagacctt attcttgtca 900

ttgttgtacc tcctaaccca aaacgccaag agacaaattt agatctctta aattagggat 960

atgtagcgcc ccccccccc cacccacaca cacacacaca atttccttac acataggaac 1020

atatcccgaa ttacctcaat gatatttttt taccctcaga gtcattgcaa agataattga 1080

tcatttgagc attcaaaagc tttgtagccc actttggaaa ttttaagata aaaccaaaat 1140

aggaatgcta gctaagagat agtctttatg agcgttgcag tagcagctat agacaatagc 1200

ctattaagag caaatataat aaggtgatgt agattggacc acaagagatg tcatgccaaa 1260

ttttggtgt tgtggaataa agagaaattg agagagaaag aaagtgggct tttcacaaac 1320

tctaagacat tttgtgagag aaagagatcg agcaagtatt aaatgtataa tttatatcat 1380

gagatggtta ttatatgagt agacttttta gttggctata tgtgacatga caatatcata 1440

aagcttgcta tagcatatat tattaaactt gatctaaagt gcttatcaac tagaggttgg 1500

atgtcttctc tacacaattt aacaaaatat aaaggaattc ctagatattt aataggaaaa 1560

gaacatatag gacaatgaaa gatatgagaa atcttaagta tacgatttta ttctaatttc 1620

ataggtatgc atttactctt agggcttgct tgtgagcaat aggattggag agga 1674

<210> 3286
<211> 1465
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9679_G1, chr1:51391654..51393118, Cluster 19

<400> 3286
ccttttctcc tgcgctttcc caagttttca gtggcagggg agaggaggcg gaccactttt 60

cgttgacaac aagccaggcg ggacggcgga ctttttcttt tgtctttttt atatataaaa 120

tttcacattt atatttttat gacgactatt agcatattca gatcttagga gtccgtgtcg 180

tgaaatacaa cgtcgaaatt atacgattca acgtcatagg tcatgctgtg ccgatgtatc 240

accgaagcta tatagtagta aaaatccaaa aaccagctgt attattcaat tcttcacaaa 300

aaaaaaatgt gcacataaca agaaccctat attatttata aaaatcattt gtttatttca 360

aattcatgtg atacacaaat aaacctatag cattttataa aattgataaa aatatttatt 420

ttaattaatt aatttagtaa caacccagaa tggagatttt agcgtgtgac attgatgata 480

gaactttcaa cgagttgaga tccatatata ctttaactta tgttccgtaa tccattacat 540

gcttgtgtct aattgtatcc tccaattcgt gtttaaaaaa taagacatgc aagtcatatt 600

ttctagtggt ttgttgaaaa tattagccat catatgtcac aaattcaatt tgaagtttcg 660

ttagaagatt taactatcat tgttatggtt aaccatatga ctgcacgaat ggcctattct 720

aagcttcgaa ggagctagac cattgtgagc ttcaacgacg gcacatttgc atggagctgg 780

aggctaaaat atgattcatt tcttttctcc tattgctttg gctccggcca acactcgaat 840

aacacttcta atatccgttt acgtgcctat attgtaaacg atgacagatt attaattctg 900

gatagataaa aataaggttc aaaataagca aagatacact cactttattt ttgttaccat 960

actcaaattt aagcaaccca ctatgtgtgc aaaactccgt ttaattagcc agtggggctc 1020

gtaaaataaa tgtatgcgcc gagcggtagc aattaattag acaggtacaa gaccatgcgc 1080

gcgttcgttc tttgtttagt gctccgcatg attggaacgg ctgacaattt gaggggcgcg 1140

atggatcttt ttattaatcc cgcagcgcaa ctaatatctc tggcgcatgc gctttctgct 1200

ttcccatgtc attaaccatt cgcatcagta ggttgtctag tagtgactaa agtggagtta 1260

ccactggatg ccaccttaag ccaatcaaat ttatgacaag aggggacttt cagttacctg 1320

gttgcctctt ttcgtccacc ctaaaatccc atcattgtac tgatgccgga tcatgcggtt 1380

ctctctctct ctctttttg ttccattaac ccggctaatt aaccaaggta gccaggcttt 1440

tataccggca gttttcagag attgt 1465

<210> 3287
<211> 1966
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97629_G1, chr3:29456196..29458161, Cluster 19

<400> 3287
tctatcttcc ataaatgtat ttggtctcca tgatttatgc ataaacaaca ctatgttagc 60

aaatatgatc tacttggtca ttgtaatttt agtgatttat ctcgaggtag gttcgatcaa 120

atatgattcc cttataaagt catactttgg acatattatt caaaccacac ttaaatattt 180

gcttaattaa tggtatgcaa taccataata ctatatcttt aaaaagttgg ctcatagttc 240

ttctataaat tagatatgag tgaacaagaa caatatgttt catgcataaa tgaccactta 300

ttaattgtgc aaaacaatga aatttatcct ttgggataat aaatccttct agagaactat 360

ttgggtaagt gagttagaat aatcaatatc ttctagatag ttccttaaat cttatactag 420

agtttgaata cttgtaattc atccttagtg tattttcaca ttatatgttc cacaaatctt 480

tgatatttta accgtaccac taaagagtaa atccaatctc acgtttggca tttagaagat 540

aattgaattg ccaaaatcac cattgttcct atatttcttt agtatttaga gaaaatcacc 600

actttattgc tagtttttaa tatgcacttt ctaactattt atatgacaac ttcatggtgt 660

ttattattcc tcgttttcat tctcttggat ctacatttac tttagggatt aatggtgttt 720

attcaataat caacccataa atcatccatg gattaattcc ttaaagaatg ttctcattct 780

tagcgaataa tatatctctt ccatgagata tattctctat tacataagat attatcatgc 840

aatatacata agttagagtt actaatataa agtcatttat tgactttact tcttctatga 900

catgctcttc ttgagacttt aataatcata caagaatata ttttacatta cactccttaa 960

tgtttggtat agatttgtca tcgtattgtg acaccaaggt ccaagagtac tagagaaaat 1020

aagagggaga catagagagg gtggtaggtc aaggatcatt ggatcagagc atgaacatgg 1080

cagattgcac acacaagatt tatagaggtt cggattgctc tactcctcta tatggttagt 1140

gttaacatgt aagagcaagc atagattaca tgttgtgata atgtctaagc tagcaagtgg 1200

gggagagaac acactttcta tgccctagct cccagctcct aagagagtta aagacccccт 1260

ctcaatgcca aaaatctccc cagaacgtcc acccaaaaat gacacctaaa atatgaaccc 1320

aaaattttcc atccgttcta tggtacccta cacctccatt ttatagtaca agggaagaga 1380

aagttatatc cctgcatggg cactgagccc tatccaacaa gcgtccaact acttatacct 1440

tataatagtc atcatactat atggattgca tgactttgat gtggcacaac aatgagtgtg 1500

acacaccaca gtatcaagca tgtcatgcta tagtgattat aacttcatct gttcttgttg 1560

ggctggcaac tgttttgata ctcttttgca gccatttta ttaggcataa ctctagctgt 1620

caacatagtg ttcaactagt tatgtggccg tgtgttgcga cggaagtaaa ttttttata 1680

aaatttagat atggaacgac aaacattact atgatgtgca aaatatgtgt gacaaacatt 1740

atcaatatcg tatagattat ttctaaagag tcaatatata atttttaatg atagacaaat 1800

atatcgaaaa ccgtacacta acctaatctt ttttagcgat attgacaagt ctctgtttgc 1860

agggatgaca tatcgacatg aattatcctt ataacttaac agattaatca caacccgtga 1920

tataataatt ctttgatggc taactcttct gccgtagagt ccttat 1966

<210> 3288
<211> 1435
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98900_G1, chr3:37243849..37245283, Cluster 19

<400> 3288
ttgttcgtta gctaaatgct tgctatgaca aggtttttag agcatctccc tagaaaataa 60

ctcctaaaaa aatctaggag catctaaaaa tgtatcaggg gtagatttaa attagaatta 120

aaattacctt gtacttaatg ttttaactct atgcttaaat aactaaatag gcacacacat 180

ttttatatgc tgtcatgtgt tataaacaag cccgtaaatt aataggagtg ttaataaatc 240

tcataaacat ataggtgctc aatacagtga gcacacgcgt ctctagaacg ttcatttaca 300

tgatttattt acaacacaaa acaatatagg ctcccatgac ccatcctatc tgacagcgcg 360

tatgccggtc tggaccgtgc tgtccacgtg ctctatgaac gaggtactat agcctgctcg 420

aagcaaatgc agcagcaacc tatcgattcg aatcgatttg atttgatttg attcgattcg 480

attcaacacc gcgccggtgg ttcgcaaccg tcatgagcct aaacaaacaa gtcaaatgga 540

agagaagtat gatgatgagc agcagatgaa ggcaggaaga atgcaccgtt gaatccttgc 600

cccccgttga aactcgaaag ccagctagct cctcgaactt tgtatgtttc aatgattgtt 660

agttggattg gattggatgg aacacacgga gcttggatgg aacacgtgct agctcggggc 720

ggactggaac aagtatatat gctggcatgc ggcctggact agactagaat atggagaagc 780

gagcacgagc agcatacgcg gaggcctcgc cggcgtggac tggaactcgg actttcacct 840

gctgctgctg gctccggcct ctttggttct acttcgataa taagctggtg taacttttat 900

atccatcata ttgaatcggt gcatggcagg cagaaatctc taccacaaat gaagagggcc 960

atctactaaa aaaaaacacc atgacattag aggacttcct cactactgcg acggacaagc 1020

tatccaccca tagtctcgaa taggtaataa gtcaaaaata atcacctaaa cagatgtatg 1080

tatttctcgc caaatattat aaaataataa aatattgctc aataaaacat aatgacctca 1140

tgaccccgtc cattaacata tttgctgcca tatacatgtc acctccaagc aatacaaaaa 1200

aatgctgcca acaaggaaaa tgtccacata tgacacccct tagaccttta taaatgttca 1260

gttgtagcta attactttta gccatagttt tgtttgcttt attatatatg ttctctacat 1320

tgtatagtta tagaaacctg tcgctgattc caaaccagga cgttcaagcc ctgccgcttc 1380

gccaacaaag tggtacgcag tagtttgagc tatcacaaca agacgctcaa tcttc 1435

<210> 3289
<211> 2500
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257541_G1, chr7:125978470..125980969, Cluster 20

<400> 3289
tgtgtttgat gtttagacat tttttcttca aacaatgcat gtttagacat tttatattat 60

atttgcattc taatatacgc gcttattgta atgtgcacgc ttatggactt aaatgctaaa 120

cctatattgc catatgctat tcttatcttt atattttgaa ttgtatacca aattattata 180

aattatacta aagtatttat gaaattctta tgatacacct cactaaaaat tctagcaaaa 240

cgccactgtt ggccatctat atgttggttg ttgaactgcg ttgaacttgc tgagagatat 300

aacttctaaa ttaaattaaa aactctgtta ttagattgat actctagagt actcacttat 360

gattacaatt ttatatcgta taatgaaaca ctagaaaaac gccttgcttc tagaaaagat 420

gggccggagt acgtagctag tcatacaaaa ctttgaagca aattaaatat ccttagttgc 480

tatctatcaa cgcagaagat gaattagagc ttatgctaag atgtcatgtc agtgacatat 540

cactgtttag taccattgga aaatgaattc tagtgaagat attatatgca cgcagatcat 600

attgctgtct agtgaataaa aagttcatat tggacgccga attgtagtca tgtttttttc 660

gtgctcctta gtcaaaaata aaaaccatac tggcatactt aagttctgtt agatttgaaa 720

attcacttag atcactttct tcttcttttt gcagaggttg atatatagtt aaagatgcac 780

gaaaaaaata aataatgaat tgcttgagag ctaccactag tcgcacatat gtcgttgttt 840

atgctgaaca ccatagacga acgtgttgag atatatacct acaaaatcat tttggagaat 900

cgtgttttag attcatattt caaagtactc atttgatata gttttgtttt gtaccataca 960

aatgaaatac tatagagcaa tcgttgatca aaggcttgtc ctaactgaag gaaaaatgcc 1020

tagcttgtga tagaaaatga gtgagcacat agctgtcgtc caaactctga agaaaatatc 1080

cttacatgct aaccgtaatg aagttaaatt agtgcttatg ctaataagag gtacagtgac 1140

agtgcttatg ctaagaggta agtgtcactg tgtggtggca ttggacactg gattatagtg 1200

aagttgttac atatacatta aaaagctcat gcaccgtact tgaggagttg tgttttttgt 1260

gctcctaaat caaaataaaa aaaccatgca tacttgagaa aggagaagag aaaattgcac 1320

aaagaccatt aagttttcag tttcacacat acaaggtcaa tgcttgaact aattttgttt 1380

tcaccacacc tatttccaca atatgtttat catacaatgg catataagtc cagtcatggg 1440

tataaagatt ttgactagaa tagggatggt actcaagggc tgagttgtat tcttggagca 1500

gtatgacatg ccatgttata atctagacta gagtcgacta tgacgacgac ctaatagaga 1560

cttacctaac aagagtatgt atatgatatc aaatggattg ggatcaaatc ctagcccctg 1620

tacaaaggga cgatgtatgt aacactcatg tatgtatggt ggaattctgc cctatacaaa 1680

attccatatc ttatctctgc tgaccaatgc aaaaattaag caaacaaatt gcagttgtac 1740

acagcattta tccgattagt atttgacaag ctaggtcgca ccgacgagac gaggcgacga 1800

catcccgggc ccttggccga gccgcacacc cacacccacc cacgcgggcc gtcctcggcg 1860

ccaggacgac gcccggccgg ccggccaagc gggaggtgac acgagatcgc gagccgtgca 1920

tgcatgcgca gcgacctcgc cggtgcccgc ggggcgccag ctggggctgt cgtgtggtct 1980

ccgtcaagcg ggggccgcca atcatgagga cgagcggaaa gccccggcgg cagggtcatc 2040

agcggggcgg ccaggtggag gctcccgaga gttcgagccg aggcgagggg cccgccgggc 2100

cgggcgaaca tggtgtgcgt cgacgtcgcg gccaggtcag acgggcttgc agcttgcttc 2160

cagacggttc tcggcatcgg cacccgcgcc tcccgcacgg ccgggaactg cccggttgcc 2220

tcctcgcgcg gtccgatccg ttgccgtgaa cagctcgcgt cgtcagtgat gtgcacgcat 2280

gccctgcaag ctgactacga acaccgtgcc gggagcgacc tgcaggttgc agcctgcaca 2340

gtaatgctgc acgatgtatc ccttttcctg cttccgatcc gttccctgca tgattcttca 2400

gtttagcgtg cgaacgtgtc tcgatcggac atcaccacat gataggatca aggataattt 2460

gtgcacacag ttcctagatg ataggatcgc tagggcaaca 2500

<210> 3290
<211> 1532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_100850_G1, chr3:48488864..48490395, Cluster 20

<400> 3290
atttgtttca ctttgtattt aaaaatactt taatataata cttattttat atttgttgat 60

gtcatattta aaaaaaatat tggtcaaagt ttcactttaa agacttttc aaaaatgcct 120

tatttttgg gatataggga gtattatatt ttatgaattg ctgcttctgt actccttgtt 180

ttggctttag tctgtgttct atttcagttc taaacagtcg gacttctatc gcttttcgac 240

acacatttat tttatggaac catcaactaa tgttttcgtt tctcagcatt ccagcaaata 300

ttgttattca agagttttgt attcactatt cagatgtttg attgacaact tgctgaaacc 360

acatttcaat ggaaagaacg agatcagtct agatctactt cgatgatggt aaatatttgt 420

ccaagcttct tgggccttta tgtcatttct agtgaactta tcaattgtct gtcaccttgt 480

ccatcaacgt atcggtttgt ttgccagtgc ttcttggagc ggagaatccc cgagaaccac 540

ttcctcaccc aaacaacaaa attgcacata ttctggtggg tcgcagacaa gaatcacttc 600

ttcatttaca atgggaggta aaaacctgct cttcactact ccctattcaa tcctcaccaa 660

aatcactcca gaatctctcc acaccctgtt cctccaccat aatcaacaag aatcactcca 720

ccaaagaatc aaggagtcta cctctaccaa acaggccctg actttcgtaa tcagagtttc 780

gattaacagg ccactaaaac cacctcaaaa aagtcattat attggttcct gatttttcca 840

gtgctgatta tgaccacatt gttgtgtctt atgtcaaaat ttctttaaaa attgggttgt 900

ataataaccc acactgaatc aagttgaaga gttttttct atatctaaag atagctgaat 960

ttaagggcaa ttttacgtga ccaaacaggg atcaatctcc tactcaaacg ggagaaacag 1020

agacatggaa acattctatc cagctgaaat ttgcatgtag aagggttgta cattttcaga 1080

ctcagaactt gctgccaata accttgcaat ccttaattgt acaaatcttt tatagcaaat 1140

tcttgaacgt ttgaagacga gtgacaaatt agctgagttg tgttttgaca caaaatataa 1200

acattagact tatatagagc aagtcaaaat gaaagcactg agaccttaca atcatcaagt 1260

tacatacaaa tttagaatta aaatatggca gaacagaaac tgtaaaattt atatttttat 1320

ataggtaaag tcaaaattcc tgtagtatga aacctgaagt ttgaagtagt gatttgttgg 1380

agatttgttt ttgtctccca atgtttcttg ctatagtttc atttgccata tcattgcatc 1440

cttgtttcaa ctagcatata gttcgtgcta gcgctacgat cccagagagg gaagtggtcg 1500

acggcagcgg caacgacacg aggagagggg tt 1532

<210> 3291
<211> 1606
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_101100_G1, chr3:49626974..49628579, Cluster 20

<400> 3291

acgtgtctcg gccgaagctg cggcccgtcg gtgttgggcc tagcagaccc atgctgggcc 60

accatttggc catttatatg cggaggtgtg gtttgagacg tggatgtggt taatttgaaa 120

tagaaataga tgtgaggggt tatttgtaaa aagattacga ggaacgaccg ttgaaactgg 180

tgctttaata tggtagagat agagatagag atagggatag agaagagata gagattaaga 240

tataaattaa actaattgac acataatcta cctcaactca tatattaggg tgaatactag 300

tctatcgaaa catagcctga gcgtcatttg gttggttggt tttcttcttt gacttgaaaa 360

taaggagact atgtgctcac ttactagtgt agtatccaaa catatttatt agtttgaata 420

tgactcactt cctagtatag tattcgatta cggttggact taaacaaaca tgatttaacg 480

tttttagtta cctatcacgt tacaaatatg tgaaccaaac aacaccttag acttaactca 540

caaaacaaat tagttaaaga aaactcaaaa acaaaattac aaataggtgt agcaacaaaa 600

ctttgcctgt ctgtttggat gagttagaca tattaattaa ttgggctaaa atagcttaaa 660

ttagttggga ttatatacct agctaggtaa tagctaatca aaagtttggc taaaaatagc 720

ataactatta gatctcttgt tgatacactg tggtttttag ctcttcttac ttaattctaa 780

acttgtcctt agagcataat ggattggtca tatttaacat ttggttcgac catggccatg 840

gcgatggcca tgggatacat cagttgatgt ttggttggct acaacaggga taaagccttg 900

ttgtgcacgt gtaagggtgc cccttccagc aaaacaaaaa tggattccat ctctagcgag 960

ctagggtcac acatgaggca ccagaagata gagattggtg caagacgaga gatcaaccaa 1020

acaacatccc attgtggctt gcctaaataa aaatatgata agcaaacaaa tggagaacgt 1080

ggtaattctg gctagccgaa accgcgtttg gttagctgta taaaggacaa ccaggctcct 1140

ccgatgcatt gcacgaccgc aacatggcta gctactaggc ctggcaggct cgtgcagtcc 1200

tggctgtcga gggaagggaa tcaatcgcgc cctatatctc gcgtatgagc taagcttggc 1260

tcaactataa atctatattt ttaagggctt attcggctag aaatgcattg aggaggatta 1320

aaggagatta aatctttttc tatttaattt tgaatataaa gaaatttaat ctctctcaat 1380

ctctctaatc tatctgtaac caaacggagc ctaatgaatg gataataaat agagaaaagt 1440

gttttttcgt gttgtaagtc atgtgatcct cgaggttttt ctacctttтc acacttgaac 1500

tttttcatgc tgcctccctc gtcctaccct cctcaccaac tttgactagg tatggacgta 1560

tggttaagaa tatcaagatt tactttaggg atagtttggt gacaca 1606

<210> 3292
<211> 1705
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1077_G1, chr1:5527034..5528738, Cluster 20

<400> 3292
atttcttatt tgagctgccg cggatgttat gacaaaacaa ctttaaatct actaatggag 60

ttgcttgtag agttagcaaa aggaatgtag gagtatttaa taggatctaa cggtattaag 120

caagtttaat actatacccc actgcaagct ttatgacgtt gtcatattat atgtagccaa 180

ctaaaaatct cttcttataa taatacaagt tgtacattta atacttgtct catttcttcc 240

tcttacagtc aatcttggag tgcatgagca acccacttta agctagctac tagtgagcgg 300

tctggtttca ttctctccac atttctcttt tttcatatta ccataaattt gatgtggcat 360

atcttatagc cgatctacat catcttgtca tacttgctct caatgtcgcc ctctttttat 420

ctatggctcc aacgagacat gagttgattt tttagggttc ttcgtacaaa ttcatttttt 480

tattttagtc gtcactaaag tttagagtac gaacaggggc ggagctaggt gcaattgctg 540

gtatcatctg aaaccggtag attttgtaaa accaacgaag aaacattata atataatgct 600

tgcagtgtat ttgattctat tctccaatga tgatgacatc aatggtgttc ttggctagct 660

tcatccccgg gtacaaccgt acgaaccaaa caaacttaaa tcatcttaaa ctaatagact 720

gcataataac gagtcaaaca aaaaaacaaa actaatttta atatgtttaa actaaatcta 780

tattatatat ctgataaagt tagatcatac ttttttatgt aactaaattt ttagtatatt 840

tatctaagcc gcaacccacg tgcatcatca aatgcatgag caaaatattc atggccctaa 900

agtaacgcac ctaaacctac atcagtgtac ttatatgtct agtaatcaaa ataaaagagg 960

tctcaggcgc tcaagataac tttctctaca attttcttca aaacatggag tgtggcgtaa 1020

ttcttgtgtg tgctgtgtgc accgtccgga cgagcttgct atggaataat tgtactagct 1080

agtacggcga tatgggaccc ttgatttaat ttattggagc cccaggtttg gcattgccaa 1140

attaaaggtc aaaaagagca gcattttctt attagaatta gcatgatcga gccggcctac 1200

tttattgtgg atagaactta gagctaagga tcgagttaat aaagtctaga actaaggtcc 1260

cgtcttgcca ggaattgaat gtcgtgtacc agagcattag agttgaagaa gccataaatc 1320

gacttcattg agggtgtcgg tacaagcacc gcgtaatcac gaagatatac tgtacagtgt 1380

tttctttttg ggctcttcgt ttggcactca atgttctacg tattgttcga tcgagcctaa 1440

tatttgagcc cctttaaatc gatattacta attgttttct ttgaaactat gttatattta 1500

atagtctaca gctataaatt ttttagtatt atattagtca gttcagggca gaactctttt 1560

ctggatactg tagctgctcg ccaatcaaaa ctcccttgca gcagagttta aaaacgcagg 1620

gtggcccacc gagaacacag caggagcacc gagggcccta gaaagaaaaa aaaggagaaa 1680

cgggtacgta gctcgttttg cacga 1705

<210> 3293
<211> 1862
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11051_G1, chr1:59760976..59762837, Cluster 20

<400> 3293

ggagggtctg aattgagagg aggtcacatt tgcagggatt ggaattaggt tgaaatggtc 60

aattcaattc cacggacaac caaacagacc aattgttgga aaatgattca attcagacca 120

attcttggaa gccaaacagc ccgtatagag aatccggaac cgggtctcat tgccaatttg 180

ccatctctgg tcggaacttg gaatcaagaa acgcaggaaa tccttcgcga atgctaagct 240

gacagaatac ttaagcagag ttggtcgctc tttgtcgtca aggagacatg catggcaata 300

tacggcgacg gaacgatctc tcgatggggt agagactcac cggagagcca aagccacggc 360

acggagcagt ggagcaccac gaagcttcgg atcaaaccca ccgcgccgcg cccgaaaggg 420

cctcaacaga gtgactgacg ctgacgcgac gcagggacaa gaagaataga agatgctaga 480

gagcatcatc catgcttcaa ctgatctgta ctgtagcttt gtaaaaaaat aatttactgc 540

taaatctaat ttaagtaaat tatgagtttg cagctaactc taaaatctct atacaataca 600

tattcctacg tctaaacaca cacatctata aaatttctgt ttcccagcca gctgattaca 660

ttttttttc gtttcttcta tccgtgtctc tatacgttga ttttgttata tctttgtata 720

ttgtattcct ttgtttacta aaatctcaac atagatatat tgtatcaaga aaccactcaa 780

attaccatga ttattatcgg tggggaaggt agagcagatt taaataggat acgtttgcct 840

tgctgacaca tactatgtga ttggttcgat gaatgttcag cacttagctg gctctaacct 900

ggctcatggg atacactctt gtattgtgtc tccacggata cgggcaaagt tattcaattt 960

ggcttgaatt gcacccatag atgcagatgt ggcatgtctc gtacaaacaa ccaaacacag 1020

accaatgttt gatcaatgca tatgtagatc gagtctggtt gtgctcgtgt atacaaccaa 1080

acatatggat aatgatctat tatagacatg catatatggt gagattttaa ctatctatat 1140

attttatatg tttttggtgc gtttgcaccc tctaaaaaca acgtgtcttc acccctgatt 1200

aatatcatcc tcttattgag ttggcttaaa cagagtattc ttcatagttc gtgatatgcg 1260

tctcatacaa cataaggaac gacattttat atccctcgcc aagtcaagta tttgtcacat 1320

atatacgtaa caaagcaaaa atttagatgt ctacaacgat ttttgtttac attaaattct 1380

caattttaga gttatataga atactaatta agattcttgc ctatcctata ttcctatatg 1440

ggacatgtga actggataac cgtccatatt tcaccaaact tgggagtcct aaattagaaa 1500

ttaatttcca atggataact agtgggtgcc cttctgttat cgtcaccaaa aactcgaaag 1560

tgctcttact attcatcgtg aatataggat tacactatgt aggatttacc caagtaatat 1620

aaatcattta aggccttttc aggtaataat gttaagttgt ataaatacta ttttgtgttt 1680

tcacttatca agctatgtag ttatgtacat aagatttcct taagccctta aggcacgtgt 1740

gttgttgaga gggttgttgg accatccaag gatatgcctc gagctcgaag tgtctgtcaa 1800

ggatatagac atctcgaact taggagtatc acttggctct atttagttta tgtgtctatg 1860

tg 1862

<210> 3294

<211> 1724
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_110941_G1, chr3:118178922..118180645, Cluster 20

<400> 3294
attaacaccc gaatcccatt ttcttaatag acacatgtct cccatctggc gctttatgtc 60

gtcttctatt ttcaattgat agtgtcaaat cctattattt tagatgaggt tgataactaa 120

taattatagt agtagatatt tgtgtggtgt tcacatgtat cttgtccatg tctaaattgt 180

gcgcatccac catttatcat taaataattc acacctttag ttctttctta cacttatcat 240

atggtcatcc aactcacctt ataattttag ttgtgtctcc atctatatac aaagaacacc 300

atcgaaagga ttctgaatct ctacaaggga tctctagaaa caactcattg ataggtaaca 360

aaaatctttc tggttctttc tcaattttgt atttttgtt cattttggcg catgcacgct 420

tgttcttttt accttatcaa tagatatatc tctactatat aaatttgttc aaaatatatg 480

cttgctataa ttttcttcat ataactttgt tccatgttta tattattaat attaacaagc 540

atatattgat taaaatttag tcaaattata aattaacttc acttaggtta agcaataaca 600

tattgccaaa atgatgtgtg ttgggggtat tgattggggt ataaagttaa tatgtgcttc 660

tactataaag aagtccatgc taatgtataa aatagataga tggaaggatt agatggtagt 720

atgctttttg tagtgtgcac ttacatccgt cgccatttca ctctcgcttt cacctgctag 780

atggaaggat tttatcaagt aaataccatt gtgtcatttc cactatgttc atcttttagg 840

cataatcatg tttgatacaa tcatacaata ctggtatttt acaacctcat cacaatctaa 900

attgataaaa caaactgctg aaagtatctc tgcataaaaa gatgtttttt gacctgcaca 960

acatctcttt gctgttgatg caagatattg acgggaagat ctaggaagga agcaaatctg 1020

atagcttccg agccaactgt agttgatatt tatggtactt gttctagata ttaaaataag 1080

acataaataa gtaacatata atttagtaaa atgtattgcc attatggctt tgtgtggatc 1140

ttggtttgag ttcatacttc gatgccatca gggaactatg cggttgtagc tggaaagcct 1200

taaatttatg tagaatgtgc aatagctgcc ttaacctata tgaaatgtga tggtggtgtt 1260

gtaatttttg catgaatatt tggcttattc tggactattt tttatgcgaa tagttcctaa 1320

cttatgtttg ttccatctat gcagaaataa aaccaagata gttcttcttg acttgttgca 1380

gaactcaccg tactcgagat caaagttgca ggcagacacg atcgagaaca tcgtgaccaa 1440

tattgcttcc caaaaaaatg gcgaagaccg tagcgacaaa tggaagaaga tgcttgtcga 1500

gattgtgaaa gtcaacatgg agcaaagccg gaggcatgtg tgacaattgg ggttgggagg 1560

aaatgacacc attaccggtt gtaaatattg gtgtcgtccc tatcgtggag aagtttctca 1620

cttcaccaaa tgaatgtgct cgtaaacaag catgtttgga acaaattatc tctatttgaa 1680

tcgcgcacac atttcatgtt attagtggga atttgtgaga tatt 1724

<210> 3295
<211> 1478
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_113401_G1, chr3:132392908..132394385, Cluster 20

<400> 3295
attgcctcta cccacactct tcatataaac agctccactc ctagtggtca tactgcaata 60

gtcatttgtg gtcatagacg ctgcaacagc ataaaaagtc tccttcagaa tcacaggaat 120

taatgaactt gattggatct atgtatgtag gaagagttgt gtatttgtca ggaattttaa 180

ccaagtatag cacaagtcgc atttagcaaa tcaaatggat gaagaaacaa acatcctaag 240

ctgcgcaaag tacatattat ggtataaatg tttatctttg gatttttgg ggaggttttt 300

tgacaggtgg tatgccatcc tcaacgactg aaaccgtatt ttggcaatcg gttaaaatac 360

tggggctatc accctaaaac tgtaaaaaaa atattatggt ataaacaaat tctacgatgc 420

taaatatcag atatgtgaag ttctatggaa gaacaaggaa taatatacta ttatgacagt 480

taaatataaa tttttattaa atttatatag atcaaatata catgaccaaa agaagagaaa 540

tgtaaagtag agggtcaccc caaatttccc tagaagatga ttggagaaaa tttgattgct 600

ctagcaatct tgacaatcaa cttgccactt ggcctccacc acttgtatac atagctctgg 660

ctcgaagaca ggaaactgaa tcaggataaa aaattgattc ctcaaaaaat aaggattaga 720

aattgaatat ctaaatttat tgataggaac caacaatgaa gaatatcaaa tgcacatttc 780

aggattaaca ttgctagcct cctgaagttt ggtaacaatt aacttttat taattgagtg 840

cttcagcacc tacagtcaag tgtaaaggta tcattacact acatatcaca agttaaaagg 900

aatgcctatc cgaaatagta cagatcaggg ggagattctt accttcataa ttgtccatac 960

aaagcttaga aaacgggaac tgtgaacttg gccacgttcc tcgtttcagg aatgttcgtt 1020

ccgttctgtg aatgtgggaa caatcatgtt cccatagtgt taaatcctag tttttatagc 1080

gtatcgcgta ccacgtttcc gtccctcgat cccatcgatc caggaacctg attattaaga 1140

tacaaagtct aaaatattat tgttaactag ttttattaca atagttttcc catgtaaggg 1200

cggttgattc atttgctttc cattttatat tatatatggt tttgtcaaca caccatcttc 1260

atagacgaag ctttatgtct tatgaataag ccaatttatc tttatttcct ttttgacctt 1320

gcttctcagt gaagtttatc tggtggcttt gcttcatctc tgaagaggag agtcttcatg 1380

agggaggctt cattggtctt gatgattcct atccttcaac actatatgag tttacgcctc 1440

gtccttggtc tttatagtct atcaaaacca tacaatgg 1478

<210> 3296
<211> 1605
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115496_G1, chr3:145793074..145794678, Cluster 20

<220>
<221> modified_base
<222> (210)..(210)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (210)..(309)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (211)..(211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (212)..(212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (213)..(213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (214)..(214)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (215)..(215)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (216)..(216)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (217)..(217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (218)..(218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (219)..(219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (220)..(220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (221)..(221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (222)..(222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (223)..(223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (224)..(224)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (225)..(225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (226)..(226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (227)..(227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (228)..(228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (229)..(229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (230)..(230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (231)..(231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (232)..(232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (233)..(233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (234)..(234)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (235)..(235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (236)..(236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (237)..(237)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (238)..(238)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (239)..(239)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (240)..(240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (241)..(241)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (242)..(242)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (243)..(243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (244)..(244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (245)..(245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (246)..(246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (247)..(247)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (248)..(248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (249)..(249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (250)..(250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (251)..(251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (252)..(252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (253)..(253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (254)..(254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (255)..(255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (256)..(256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (257)..(257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (258)..(258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (267)..(267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (273)..(273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (274)..(274)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (275)..(275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (276)..(276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (277)..(277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (278)..(278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (279)..(279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (280)..(280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (281)..(281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (282)..(282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (283)..(283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (285)..(285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (286)..(286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (287)..(287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (288)..(288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (299)..(299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (300)..(300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (301)..(301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (302)..(302)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (303)..(303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (304)..(304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<400> 3296
ggctatgcca tagattgcgc tatggagtcc ttctgcttta gtactggaat gagagattgc 60

ttcgttgcag gcatttgctc gtggattgat gcactggtct aaatgacgct gaccaatcct 120

cctcagctcg acgcagagaa gtcatagacg tacgcttcct gctaccgtca cagtgccgaa 180

gtacgaataa caggttaact gctaaccggn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 240

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300

nnnnnnnnnt acgaatctag agatcgtccg ccatgtgaag ccttgtgtac ataaagagca 360

ctccatgtga aaaccacaag cgccgctttt gtactctagg tctgattgtt tgtccgattg 420

tctactctca gtattgtgga catgcaaata tcaattacga ccatcaaata taatttaatt 480

ataaaattaa ttatagagat aaagactaaa cgactagata atttattaag tctaattaat 540

ttactcgtct tacctttag ttctaattag ttttataatt aaactatttt taatacatca 600

aacatctgat gtgacacggt aaaatttatc ttccaaacgg gccattagtc aagatcccat 660

cttcatgttt ggttgtctag tcattctcta tagtctggct ctataaatac aaaaattctc 720

tctagaccta tcttccaaaa attctctaga gtcagtttat gctggtgcaa tcatttagta 780

ttatctaatg gtggattaac aatgtctatt aaataatttc aatctattta aaattaggat 840

taagacttgg ttcatactag tccatttact atttatgtaa gtagtgtttt agttgtttat 900

tttgcttagt gattagctag tcttcttcta cgtatctttt actagctact aatttgatta 960

agagataacc tagagcaagc tagaacaagt aatttcgtcc acatattcaa atatattggt 1020

cctagttgta atcgtaggtt ttgtcaaata attgtttatg agctattcac cacctctggc 1080

caactaagtc atatcaagta gtatcaaatc cagaaaacca ttgtttttag gcttaacatc 1140

ttacggtgaa aaaattactt ttagtcatat tggtacaact cctccttttg atggtactaa 1200

ttatttgaaa aaatgatgtg cttacattta aaagttatga gcagaaagat atatggtgtt 1260

gtggatattt ttgtagcgat tgtcataaaa gatccaacac atagtgaaga ggagaaattg 1320

caattaaatt atcaagccct taacgtcata tatgaagcct tcgatcccaa agtctttgaa 1380

tcaatcaaat acttagaatt tgtatgtaac tctagaaaac tcttatgaga acacaccagc 1440

tgtaaaaaag ccaaattata catcttcaaa tacaaacatg caaggttcaa gatccaagaa 1500

gacgagagtg tgcacgaaat gttttgtaga cttaatgtca ttatagttgg gataaaaaac 1560

ttaggacata aggtggacga tgaggatttt ttcattggtt tgtaa 1605

<210> 3297
<211> 3148
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115703_G1, chr3:147279019..147282166, Cluster 20

<400> 3297
aaaattgtgg catggaatga ggtagacagt tctacactag caaaaggaac actatttgtg 60

gcacaagtaa gcattgtcaa atgaatgtta aagaaacatt ttaaataaca atatcaatgc 120

aattccaatc atatatttca taatattgaa atcaaaccat gttcaacagt tggtgaaaaa 180

ttgtactaaa ctgaactatg gttacaacgt cttccatttg attatgacac ccaggatttg 240

aactccaaac cctgaatcta gggctaggtt tgtactccaa accctgaacc taagactgaa 300

ccctgaacct gaatctagga ggaacaaaaa tagtagcaac tgacatggac cacactttca 360

agaaggaact gaatcattaa gcaactaatc gattaaaacc aaaagcatga ttaagagaaa 420

ttcctgcctc aaagttgcat agggagaaga atcgatggtg agataccaca gatacattgc 480

aaatatttta aatagggggg tatgaataac tttgttccat taaggagaat taaaaaccag 540

aaagctaata tacagtaacc aaaccaattc aagacaatgc atgtataaac tagaaaaaga 600

ctatttttaa aaggacgacg atacaacaag acagttcata aataagtagc atacatgtgt 660

gctggacaca aaagcccccg ttccatcaaa attgccccac atcaaaattg cacccgtcct 720

ttactacctg cgatagtaaa aataggaaaa tcaattttat gacactataa caaatcaaaa 780

gaaagcaaga catggaatct caaatcagga cacaatagta gaacagagaa agcaagactg 840

ggaaaactca atatcaggac attatagtag agcaaaggca tccaccacag aaggtaccta 900

gcctatcaac tgtttgtctt tcgaagagtg tgtttcacag aaaacagaat gctttggttt 960

catagtggga atagcacggt cagcctcaga acgaggttgt atgtctcgcc attattttaa 1020

aagaacaaca acctacaagg gacagtaaaa caagaatcag atcatggata cacaatacca 1080

tatgcccgtt ttagtgcaaa aacatgcgta ataaacgtaa ttcgtatggc accacacaca 1140

cttattcatt agatttcaat tatttggaac aacttgagga ctaatggaag gactttagtg 1200

ggtagccact acaacataaa catctacatg ggattcctat aggtgacaga agtctgattg 1260

tgcccaattc ttgcatatgg ctgaactgca tgctttttag ataagtctca atgatggtta 1320

tcaattttgg attcagtgtc ttaactagcc tataatccta attttttttg ccttttgga 1380

aaactattat agatacactg gtaggattgg agtccctacc aaggactagg ggcggaccca 1440

cggggaggtc caggtgggcc acagcacacc ctaagcgggc ccaccaagac ctaccccgtt 1500

ctttggtcgt gcgtctgacg ctagttgccc tagccacaga gctcgcaccg tcgccggcta 1560

gccacgccct agcgtcgtat gccatgcgtg ccaccgctgc agtacttgcc caccacgcac 1620

acgtaagcca cagccgccac cgaccaccgc tcagcagtcc gtcggcgccc agccaccaaa 1680

cacgcagcta gccgggtttg gccagcgcca ggccaccatg gccgcggctc caacttccaa 1740

cgctgtgccc cgcctggcaa ccaactgcgt ccaccgcctc ctggctggct aggcaggata 1800

gagacagatg tctcatccag tgctccactc ctccagtgag cactgatccg gtctccacaa 1860

cagcaattgc gatttttaat tcccaatttc taaggtttgc attagtaggt gttgacttta 1920

ttttcttgca ttgtggatgc agtagtataa taacttcatt ggatttaatt attgcggcat 1980

ccttttctgc ttgagacacc tgctgaagct ggaagtacat gctttcttat tcctctcttt 2040

tctccttatg gtacaaggat gattatactt ggtaaggaaa tgttggtttt ctcatccaat 2100

tcagataatc tcgtttccat ttgatcacac gtgcttcata catcacatgg atagtatgta 2160

tgaatcctaa aaagatctaa ttgaacatcg tcatttaatt aatacatgtc ggtcattttg 2220

caacccttgt taacaataac cagactgatg gattttctac cgccgtaaat ttcaagtaaa 2280

ttttttgtta tgatgttcaa tttttcttgt catgtgcggc ggaaacataa gtaggctgga 2340

taaatagttt tgtaattttt atgcctaaac atgttcaaac aaattgtttg taatctaatg 2400

tatgcaactt tgatgcttag ctgttatgtt aaatactgaa tgtactataa aattatatat 2460

tagatatgat ttatatataa aattatatat tatatatgat ttagtccctc tattttattt 2520

cattttagat tctaaattgc taaatgcgga aactaaaact tcattttata agttgttggc 2580

ttcagattaa acctagttgt ttgtactgct gcaattataa tatacagaga ttttttttt 2640

gtaagagtag tagaatttgg tatagactaa acccacacga acacgttgac gaattacgtg 2700

cttctcgcga aaaaaaatca tatggctcat agagacggcc caaattcata atttctaggc 2760

cgtgatttgt agaggttatt gcaggaaaaa aaagagagaa atttttatat aacattaaat 2820

gggatcgtta catgtagctg catgcggatg tctttatttg catctggtgt gatggggata 2880

taggctgcac ctgggtgtct tcttgcatct ggtattctgg tggatggatg ctttagaagc 2940

atatacgaac gatgtggtgc gccatccatc agtcgttttg ctgcaaggat gcaatgcaac 3000

ccacctatgc aagcagtacc gcgcttgccg ctacaggagg gagtattgta ttgtggtgga 3060

tactgtttga cagaggttta tcatcggaaa agaagtgaat ttggatctag aatatacttg 3120

aattctccga agtgtttgtt atagcttc 3148

<210> 3298
<211> 2450
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116108_G1, chr3:149555408..149557857, Cluster 20

<400> 3298
ataaaccgcc ccttttagc ccacttgtgc atgtgtaggc ttactacttg tgtacttttt 60

actagttctc gtcgaccaat aatctaagta tccagtatac gacgacgtct ttgcagtttg 120

ccaaatctac accggactgg tttggtttaa actgtaaaat cgggcttttc gtgctcgatt 180

tgtttgcact cctcgtctca tgtgctggat tgtatttgac ttgtcaatta ctaccacgct 240

cgattcgtac gtctttctcg cagtctgtgg ctctgtgcgg tcgtcgtcta tacgttggca 300

tgtcggcaag gcatctgctt cgagtagtta gttatattgg catggagccg catgtccttg 360

ggtgcagttt ggttcaaaaa atgtaacgca aatgataata gtaatggttt tggcttgatt 420

actggcgata acaaatttga ataagttggt atcaaattgt actgtggtat ctgattacgg 480

ttgaacttaa gcaaacatga tttaatgtta tccgttaccc attatattat aaatatatga 540

accaaaccgc accttgattc actgggccag ccacaccgcc ataggcatta ggcataccgc 600

atgtgacctc tgctctgctc tgctctgcga cgtagcacaa gggaacaaga aacaggtcgc 660

gagtcacgag gctgtcattg tctcgtctcg tctcgtctgc atggaaacgg aactgcctca 720

aaaggctgca atgcatggaa accggcgaga aggttcacgc acgccacggt cagcctcaac 780

ctcgggagtt cccctaaact aaacgaaaaa aaagagggca tggaccaatg cacggatcag 840

caccaccagc agcagcagaa gatattccct ttggtcaaat actgcagagg ctcctagtac 900

gaacgagcgc tctctgcttt tgctttcacc ccaacccgac tactccctgc atgtgtaatg 960

tgtccagtgt tccaacttcc aaggacgtgc cagtgctgct gccagacttt ataataataa 1020

ttaaaaatta ctagcatcca tatcatatgg ttgggcaatt gtatgatagc agcagtatta 1080

accagcagca cggccggatt gtcattaacg ggaaagctga gtggattcgg agcgggggt 1140

acccgtgaaa atgtaaccat gctcgcatcg catcgcatgc cggcagcgca agaggtatgg 1200

acgatgccta ctgagatttg tgcaattccc ctctggaggt ataggtatgc aacgcaatgc 1260

aactggtgtg caatttcccc tgtcccagac gcaaattcct agttgtactt actagtcgtg 1320

cgtcaaaata aaaaaaaata aaaacgaaaa aagagatgac ttctttttcc tagcctcggg 1380

ggactgggtc ctcccaagaa attgcaaggc tgacttcctt ccaccggtgg atcttttgga 1440

tgctgagagt tgctgcgcag tttcaccgaa cctgactccg cagacttgct tgcagctcca 1500

agctagtatg gttctgatca ttgagacagt caatcggact tacctctatt ctgaatggag 1560

acagatttaa gttcataccg aaaggaaggc tggttaaagt tggcaaccac acaaagaatg 1620

gtgattgact gcaaaggagg aacaagtgca caatacagaa agagcaagta tgcgaataaa 1680

agtgtacgta atacctaaag aaagacaaag gtataataag ataagtcgtt ttgttctaac 1740

gaggaatgaa ggcgcaatgg agcgtatgtt cgaatttagg atagagtgtc ataccattaa 1800

gagggaggtc taattagaca acgcgatcat ctagctagct gaaaacttgg tgttggaatg 1860

tcatgcgttg catattaagc gggacgcgag aaagcaagtg gaaagattta tttaaaatac 1920

ttttttaaa agaaacgcta actaggctct aacatgtttg gcaaaatatt tatttaagag 1980

ctagctcgct tcaaaatatt ctcggtgcga actttgacgg acatgtccgg taaggaataa 2040

gacacgacat ggaatacgag cgtggctaag gtttagtata cagttcttca gccatatcag 2100

catggtgttc agtgtgcacc gaacgaacgg aacgggtggc atcggaatga gtctggcgtg 2160

aggcaccgac tgttgtccca gtgtagctca ccgaacgtgt ttgatgtggc agtggatacc 2220

acagtggaca tgaaactgaa aaggcctgta aatttgcgta gctaaacgtt tctgggtgac 2280

ttgtttgtcg gacgtctgac aaggttagtt tttttatgga caacgcatat ttttttatg 2340

gacaacacat gttttttta tatggacagc acatatcttg tttctatttt taatgaacaa 2400

aaaaagaata ttcatattat tgttgcgatt gcttcaagcg caagaagaaa 2450

<210> 3299
<211> 1410
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116502_G1, chr3:151935730..151937139, Cluster 20

<400> 3299
gtgatctatt accaacccta cctagaacat gttacaattg atgaaccaat aaatctacac 60

gatggtaaga agtggattat atcattaaat gaaggtaaag tattggtttg tgttagaata 120

ataataagac aatctcaata taactatcta aaatcaattg ccaatacaca tgccggatcg 180

acgactgtag gccttaaggt cgataggtta gcagtttagc acgctagcgc acgacaactg 240

tgggtctgtg tcatattggc ccagttaaga attgtcctaa aaaagttttg gtggcccagt 300

taagtattgc agcgaatttt cggcccataa tatagatagg cggttggctc caacgggtcc 360

cccggtggca tcgcctgctc caccactaat ccgtaatccc atcaactacg gctgcatgca 420

agtggaagca ggtaggtggt ggacgaacca gcagttgctt ttgacgtctc tctcggcgcc 480

ggcgaccggg accataaacc acacgccgaa ttgccggtcg ctcggctccg gccccgcccc 540

gacgtccgct ccggcggcag gctccacttc gatcggtggt ctgcttcagc ttcacggcca 600

gaaaaacggc cactgatttc gccttcattt tcccagcaaa aacggccact aattgcgtgt 660

gagtgcagcc ttaagcgcag cactcctagg cgcctgacac ctaaccgtcg gttcctcgaa 720

ctcgcgggag ggcgtcgccg tcggggtcgg gagcgagcac gcgcgagtga gggagacgac 780

gaagtagata ttctggtctc gcaagctaaa gcgtgccact atcctttcta attgggccct 840

atttgaaaac atccggtttt taagaaactg gtttataaaa attgaggtga ttccaaacat 900

atcagtttat gtctcaattt ataaaaatta gattcacagt tacttaaaaa cgaagaagtt 960

aacttttct agcaaaaaaa attaaaaact ggtattttaa aaactaggta cgtttaatat 1020

tgttttaagt taaattgttt tagatttctt caagtttata ttcagaaaaa tatcaatcca 1080

aatataatac ttctgagtta tgacactaca ataaataggt gcagcatgaa aatatatttc 1140

attatggatc taattaaaca tatgtattcc attttttgt attttttat ttaaacatgg 1200

tcaaatttta gttattggga cttaagacaa cttgagatac taagaaagta ctgttttttt 1260

tgcaagaatg tcatatggtc tgtttggatt agttaagact aattatatat tacctacgat 1320

aaaagatagt ttaatttagt ttggatcgac aaactaatta ttaactagca gttagttgaa 1380

ggcggtttgg ctaaaaataa tgtatctatt 1410

<210> 3300
<211> 2480
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118813_G1, chr3:166007432..166009911, Cluster 20

<400> 3300
acaaatgaat aatttttaga aaatatgttg aaatcagtca aatactacct gattggttgc 60

ctgagcatca caggccaggc ttgtgccatc taggtcagct agaaatggaa gtttttgaca 120

tatgagcaga tgcagtcaaa taacctcaaa atgatttttt ttttgtattc attcgtgcaa 180

cccacgcttc aaatatagag acaaccaaat aaaaacctaa ataaagtcaa tgcacgcaat 240

ggcgcaagat gagaaagtac gattaaccaa tcacgcaaaa aatgaattat tttgtatata 300

ctcgtacaat tcacgattca aatatataaa caaccaaata aagacttaaa taaagtcaat 360

acataccatg acttaagacc agaaagcacg actaaataat cggacgaata gctactaggc 420

tccggtcaga gggacacgag aatagctcgt caattcgtca tcgctcgatg ctcgatgcct 480

cgatctcggc cactcggctg ctctccacac acggccgggt gacaagtgac gctcccctcc 540

atcgcttcca cttcgaaaca tttcgaattc ctcaaccccc gaaagggcga aaaccccaac 600

gcctccaaaa gtttcccgcc cgagcccctc gaaccctagt accatcaccg actggcgacg 660

cctcgccggc ggccggcgag atgcacatca aggaggtaac tctcgagggg ttcaagtcgt 720

acgcgggacg gactgtggtg ccggggttcg acccgctgtt caacgccatc accgggctca 780

acggttccgg caagtccaac atcctcgact ccatctgctt cgtgctcggc atcacagatc 840

tccgtcaggt acgcgctgcc tcgctccagg agctcgtcta caagcaaggc caggccgggg 900

tcaccaaggc taccgtgtcc atcgtcttcg acaattccga ccgctcccgc tccccgctcg 960

gctacgagga ctccccggag atcactgtca cgcgccaggt tacacatccc ttcgccgtct 1020

tcattacttc aagcggcctt ctgaagcgta cccttgctac tgcatgtttg agttcctttt 1080

gtgtgcgtgt gtgtgtgtgt gtgtgtgtgt gtgggggggg gggggtaggt gatttggggt 1140

ttgcgccacg attttgattt gcatatcctc aatttcggcg ctgatgtgtc aagttggatt 1200

aagatgctgc cctgcgaact ccgaagagga gctgctgcat gaggtggttt caggtaaaag 1260

gagatggtga cttgcgatgt ctggagctgg aattttgagg aggttgtgtg atttcatcct 1320

tcacgtctaa gttgttgaat acttgaattt cttgatgcca gggttcaatt gtttgtatgt 1380

tttttggttt ttgtgaactg gaatcgtttt gtatttttg tacactgaag cgttggagat 1440

ggcgattctg agtttgaatt ttgatatgaa gtacctttg tctcgttgct aaaaactgta 1500

gctaactgag gtttagtgtc tgttaaatat gttgttccaa gtgctcaact ggatgtgttc 1560

atggaagtct gtaattacta atctgctatg cgtgctgaat taaatctgtg tctagcttgt 1620

tgtttttcag tttttcagtc aaacacctag ttgatgtgta tgaatctggg gttcttttaa 1680

aatctgtact agatgaccta cttttaatca gggattgcaa attgctatga atgttgatgt 1740

gaaatgtgcc tagaggattt ttagtcaaat atacactgtt ttttttgct aatctgtgtg 1800

tacctgactc attttaagtc aaacatttag ttgatgtata tgaaactgga gttctgttaa 1860

tgggtgttct aacaactgat tatttttct taagagtaat caggaactac aaagttgctt 1920

ataatggtac tggatttgtt catattttgt tgatgctcaa tctagcggac acatttttt 1980

agtcaaacaa ttcattgtaa atataagatg ttttggcttt tctagacaca ccacttttgt 2040

tatgtatcta gatatagtgt atatctaagt gcatagcaaa aactacgtac taaaaaaacc 2100

aaacttcgta taatttaaaa tggagggatt actttgcttc tcaatggtgt gtgtcgacgt 2160

tttgtgccta gtgattcatg atattattca cagataaaat tttgaaatta ttttaggtcc 2220

atgagtttaa ttctactgaa atggtgctat ttaggttgat gtggagtgaa tatatatagc 2280

tgagtgttgt gggccaaggc ccattacaat ggaggtatac acagagacgt aaacaacact 2340

ctaacaactt gattaattca taaaatggct gatagatcgg cttcactcat atgttctttg 2400

cactttgatt ctacctattt gtttcaaaac gttttgtgtt gtttctggtg aaccaatttc 2460

gtcccaattt tactgggcat 2480

<210> 3301
<211> 1659
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119833_G1, chr3:172339173..172340831, Cluster 20

<400> 3301
tataatcata caaataataa tttatattat cttttataat gacatgagct tgatgcaaac 60

ttagaacggt actttgcatt atcttttata ataacaaata ttaatatatt ataaaataat 120

aatagtttta aattatcttt cttaatggta gacgttgatg atttagataa aaaaagttga 180

agggttattt taaaccatcc tttataatgg taaagatatg tatgtttcat aaccataaga 240

gtgcgcaatt tattacggga ttattttaaa ttatatttca taacgataca tgtgggtgac 300

ttatagaaga atagggagtt cttttgaatc ctcttgtgta atttagaggt tggtaattta 360

gatctaaaat taggaggtta cactaggttt ttcaatgatg ataaaggctg ttaatttttt 420

ttataaatta taataaatgt aatggttatt atctcgagtt tgttgaatta aaggctaaat 480

gtttatttat tattataggg atttctagga ttattttcct aatgcatctc gtgtggtggc 540

tccgttagtg tctctaatgt attagtaaat gtcgtgaaac ctaaccacct acactttgtt 600

tttttaccca acatttagtt ttttataaac tgtttatcaa cagtcggtag ccaattcaaa 660

tattaccaaa atttgtgtta tataagtata tatttaagct accgaaatat gatgtctagt 720

tctcttcatt tttttctaat gggacaggca cacttttata ttttgtcagc actcgtataa 780

aatttagtcc gaaactttgg gtatcaaaat cacattttag gagaagaaaa aaagagaata 840

ggagcttggt gacttgatac cagtggatca tgaatcatca ggaaaaacac aggagggaag 900

ggagaataat aggttctaga tgggatatct atggatgaat ggatcatgca tgtctgaaag 960

cagagttaca cagtaccatc actgactaat gcgcttacac gatataggca cttgcaagtg 1020

gaatgcaaat ctgtggtacg gcacgaacgc aggtgtctag atgcaatgaa tctttgtgta 1080

gggtgccctg tttgcgtcct gcagggaaca gcctacagcg tagtatatat aacagaagtt 1140

ttttttacgg aggaaaggtc tgcttttgta acaaagcaat tgtttacaaa tatagaagaa 1200

aacgcaacgc cgggctgggg acaccatcca acgttaaaga tcaaaaccaa agaaactctg 1260

tataatagaa cttcaccgtg gctgtattca ttctgtccac acattctcca ccttaagggc 1320

tagtttagta atcttatttt tctaagacct tgtttatgta ctctagtatt cacttcaatc 1380

cacatgtatt gagcttgatt ggagtgtaaa aatttacact ccaattaacc taaatacatg 1440

tggactgaag tgaatatgag agtacctaaa caagacctct gtgattttta ttttctcaaa 1500

taaaattagt ttatttattt taccaaacta actctaagaa taaggatttt actttggacg 1560

aggattcgtc aagcattgac ttttacttga ttattaccac ctgttgaagg tgcgcatgat 1620

tactaggcat cgcagcaggt tggataaaag cataagaac 1659

<210> 3302
<211> 2597
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1217_G1, chr1:6213724..6216320, Cluster 20

<400> 3302
ggccggataa aactctgaga taaatatatt aagtgagatc tagttttaaa gtttccgtcg 60

tgacgaacac aatggtggaa ttggttttca atttcgacac tcggattagt agatattatt 120

atttttaaat gaaacatgaa tcatgcatga agtcattttt tgagaaagtg gttggagcgt 180

ttatttagtg cagcattgca acgggctaac gacacacaaa atatttgaca aatgttagca 240

cccttatggt tatttgtctg tatgttcaat ggtacatctg gagaagaagc atgaaaagaa 300

gcggatgaga gagaatgaaa ttgggacgaa tgcaagtgca atgtacaaaa atatataata 360

tgtataacga ccagaatgca aaatggtagc atatcccata ttatcataaa aataatggac 420

acattggaat cctgaagaaa acataagggg cgtgttagta ttttattaac agacaaatca 480

aattcaatca gtacatgcaa caaattcaat ctcaaatgaa taaaaagtga aacgacatac 540

gcacaatttc atataaaaag tgaaacgagt caacagttgt tccagtttca atcagtacat 600

gcacgggcac tgaagtaaac aacttaatca ccttcaggta tgagacgact atgcacaaaa 660

ccactcatca attgtttata gtaactatca tctccttgtg acaagcttca tggtattata 720

taatataata aagtgtggca acctcttgat aagtacaggt caaactcgac catgcatttg 780

ccctgcaaag aaggccagga tagttctctg tgcagttgtc ttactccaat atctattaga 840

ggtcttcttg gtgatttaag aaatgtttct ggaagggaaa aatcttatct gcattgcaaa 900

gagctttaat agtgtacttc cacaatttac catgcagttt tgttgtgtaa aacccttaaa 960

gaagatataa tatcaagtac ataaatcatt ttttcaaatt aaatatgtgt ttctccttga 1020

tatttgatca aacctttttct aaagaagatg ataaaaaacc agtaaaaaag gtattgatta 1080

aaaattcatg atcattcaag gaagaaaaat acaatagaga aagcatgccc agtcatggca 1140

agcaacaaag aaatgatcag ctccttttgt cctattccaa tatgggtaca tggtcgagat 1200

aatgttggtg tgggttttaa caaagatgga caatggctca attgtatttg agccaggtac 1260

ataaaggtta tgctctagtt gtcgagagct atatgtaaga ttgaataaat gggctctatt 1320

tggatctctc acaacaaaat tctggtttgt ctccatcaat ttcataaacc atccctcaga 1380

cacataaata cctttcaact ctggggaatg gaaaataggg ttttctccat catgatatat 1440

gaaaacctta agaagtctct ccataagttc ataactcctg aaagcatgag tcgaaaaaat 1500

ttaataaatc aaccactgaa atgaaacaac caattcacat cagagttcaa cacataacaa 1560

cagtatgata agttagaaaa cacagtatgt catattagga acataagtta tcattgtagc 1620

ttccttttta ttaggaactg ctcacatgct actgatcatc caatgtcatc caaaattagt 1680

tctttttttc gaagagaacg ataaacaaga atgttgttaa acacatgatt atgcacttct 1740

ttttttgga aaagaatcat gtaacatacc aatcgaaaga gagacaatat gaagcctaac 1800

caattcctta ccttttaaaa atggacacat tctggaacaa gggtgcataa agatcaaggt 1860

cgtctaagat caatggtgca ttagtgatct ctttctttgc atatataagt tcttcatcag 1920

ctatcgttga ccaaagaggc acctgctaaa ttatcaaggt aagaggagtg ttattaccat 1980

tttgactcct aaatcctaat aataagcatt gaaaccacat cctaaaagat gtgaagcatc 2040

aacctctggc attaagacat atttggtatc catgacatat tctccattga catcagagct 2100

cattgtaggc aaacaactat aaatgtaggc ttcacgggta aggaggttat aaaaataaat 2160

atgtaagttg ctacagggaa atttcaccca tgtttagtta gatatgtacc tcttatttga 2220

gaaaaggagc tgattctttt ggtggattta tctgaagtgt cattagaagt attgagaaaa 2280

cacgatttcc taactgcatt aagttgaaac aaacatggca tgcaaaaaag aaatagatat 2340

agtgatatgt caacttttct aatatatcat cgaactcata aattatagac atataattat 2400

aaacatcatc ggggagccaa aacgagagtg acaaaataac aaatttctcc ctccgggcag 2460

agcagaacgt cgctgtggcc cacctacacg ctcgcccgtg gtggcctacc cgcacgcgaa 2520

cctggcggcg acgttgaagg ccgcccacgc gtgcgtgcgc tggctcgaca gtggcttagc 2580

tgggccgacg cggccgc 2597

<210> 3303
<211> 1464
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124985_G1, chr3:200695018..200696481, Cluster 20

<400> 3303
gttctaagag cttgtaccta aactactaca atagtaacat cattcctgta cactgatatt 60

atacatatat actaattaat tgctcgtgcg ttaccacgat ttctatatat catatgagta 120

gacttaatta ataagacaca aatatatact atgttctatt ggttagctgg gtgtgaatgt 180

ggagccaaca atcaagattc aaacctcatt tgtgcataat tttacttcat ttttgcacta 240

cacgtgaagg acacgggatg aacgttaaaa ctagtacttt atatagtaga gacaattagt 300

aactaaaata tgtgtatggt catgatatag tcgagatcta ggactaccga aaggaacaaa 360

agaattgaaa ttttggttat aaaatttccg ttcgtttgag tacgggtgtt tgggtccctg 420

actaacgtgt tctattgaat gttatatgta ttaaatatag gcttaattaa gtttaataaa 480

tttgtctcct cttttaatct tcaactgtat aattagtttt ataattagat tatatttaat 540

atatataatt taaatatttg acgtggtaat gactaaactt tagcgggtga aaatgctagt 600

tcccggatcc ataccagaat gcacaaaaaa aacctaggcc atttcacttt tcattattcg 660

tacacccttc ccggtatccg tgcaggcaca tgtgtcttgt ttttctgtcg cggtctcgcc 720

ggttgctgcc gccgtgccgt tgccggtacg ccgagccgtc gaggcctgga ggccccgcgt 780

atcgatagcc atgtgctgga cacgaagtgg agagcgagct tcgtgaccgc ggcttcgttg 840

cgtccacgag cagatcgagg gggggaattt cgcccggggc cgtcgggccg ccgcctggag 900

acagcactgc tctcgtgctc gatcgacgat cgcggtcgcg gactcacggc cgccctcgcc 960

ccgctgcgga ggaatctttg ctgggcgacg ggccttcgcg ttggcgcgcg tttcctgaaa 1020

catgcatctg cccgtccacg agctccgagg cggcgaggcc gggtttttt gcgctctacg 1080

actaggccca aaagtgttta ataataagtg acctagatta cgtcatgtca gatttttttt 1140

gaaagaaaaa gaaagaaagt gggctaaagt ggactgcttc tcagactcca aaacatttta 1200

caggacgaag agattggaat aaaaaaatta aatgtatagc ttatattata gcctttcaat 1260

tagacatata tatgacatat caacatcata aagtccacta taaattatat tattaaattt 1320

ggtcgtagag caataaatac agccagccgt tggctataaa gatttatttc atccatatag 1380

tagttaacgt tttattatta atataagact ctgcttgtgt attttacata gtttggttcg 1440

tgactaaatg tgtcacactt tatc 1464

<210> 3304
<211> 1737
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125246_G1, chr3:202051600..202053336, Cluster 20

<400> 3304
ctctctatgc ttttcttttc accagatcta catggcacga caagctgcaa gaaaagctat 60

gttttcaacc aaacaatgct ctttctggag cttttcatag aaataaggag ggaactattt 120

ttagataagc tagagtcagg gttggagcta gcagagaaag agccatacca cagaggtatt 180

tcagacagac agatagacat attagtaggt acatacatat atgttcattc caccttattc 240

ctgaattata atctatttag atttttttaga gagttaaaac gttttagatt tgtccgaatt 300

tatataacga aataatataa tttaggtcaa attttgctat ggggcaccgg agaaatatag 360

aattgatccg ttcacatcgt gagcaccgtt acgaatttgg ttcattacag tacagaaaaa 420

caccacactg attattttat gtatttctcc tgttttagat agaaggttgg ggtaatgtct 480

tatttgccct cgtcttcgat gctgaacact tggactgttt actaaatgtt tttttaccaa 540

acatcagtca agtgaaactt tcactatatg tagacggtgg cttacaagag gagtaaaaga 600

atgataacgc gtctccattt acagaattgt aatcacaaac tcaacaataa tttcttatat 660

aactttagtt aaacttaaga tgttttaact ctgaaaaaac agcggagaga acacgtagat 720

atacagatgg gcgcaacaca attcgtcctt gagcagacag ttcaaccgtc aaggcccacc 780

accatattcc ctctcctcac caaactgggg cgattgagat gccgcatgta actacaaaca 840

ttagctattg attactcggc cccattccta attgtggatt ggatgcgggc acattcggat 900

cctgtcacat ggagctggtg ctcattgcgc tttcggcaag aaaaaggtga gatatatata 960

tgtgacacca caaattgtca tgaatttctt tttctcggtc atgcatcaca cgcaagggga 1020

agcgtgcatg tgtttaacat cggtttcatc acacacatga ataacggtta ctacgtttgc 1080

ggttgcaaac aattttgacc gtggcaagaa aacgtaacag accgagaaaa ccgatcaaca 1140

ggtcagttag gcttatgttg atttcgttct tcaactagta gactctcgca cacacttctt 1200

aaaagaaaaa aaactgccga gaagaagcac gtagaggttg ttctaggatt aacaaaacca 1260

ccctaaaata acatcaaatc ttaccaaaag acatgtgaca acaatatata agatagagag 1320

aattttggaa aattttgtga ctaattaaac tacgcctagc tgagaaagac actgcacgca 1380

ggcgcattcg gatcctgtca cgtgaagttg atgtgcaagt gcggcaatgc actttcggca 1440

agcaaaagtt gacagcggct gaagaataat agtggtgcga ttatatgatt atcgttgttg 1500

ttattcaaaa agagcactag ctcccatcac gtttgcgtat ctctccaaca acaagggatc 1560

gtagtagtcg tagcacgcaa atagtttgca tattgaccaa aaacgagtct cgctagcaat 1620

ttggcatata tttatcggta gttgttcagt tgacgacttg atgtttttgt tacaaattat 1680

aattcgcatc gatatatcgt gtaaataagg ggtcacgagt atgtgtattg tagagta 1737

<210> 3305
<211> 3034
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126434_G1, chr3:207543816..207546849, Cluster 20

<400> 3305
agatattctt tcttatttac tgtagttata aaaacctatt aattagtaga cctttattta 60

gaccttcact cagacattac attagcccca ttcagatatt gtgctgtgtc cgccccacg 120

tggacgtacc gtaggagtag cacggtaaca tttgaaatgg cgtttatttt tttaccccta 180

tgtgacctga cgacagttaa aaaccgtctt tctaaggccg tggagtcatg cgtggcggag 240

cggtaagttt tgatgctccc ggcccaagat cattgcggcg tgcagggcct ggactctggc 300

gaggaacaca aacaagccca cccaaccgtt tctggcattg tccttgtcac ctgccttaat 360

cctcatgttg acacaaactt ctaacttacg gaaacgcaaa ttaaaaaaac atacggaatt 420

gcacggtagt tctcacatgg atgcagatct ctgcgaagta tcgccatcaa gcaagcacca 480

ttcgtcgaca cccatatagt acatcttttc taaattccac atatatatag tacatctttt 540

ctttagataa aagcaatagg atgtggcttc aaatcccttt taaaagaagg agtcggtcca 600

accctataca aatcaactag gaaataccaa tcgtccaaac attattaacc aatacgaaat 660

ctcaaagtaa tccttggaat gcgaaaggct ccattgctct ggtttctaag cgatggcacg 720

gcgaaactaa ccaatcccta tgatggtcac cggtgcgcgg taacaatgaa accagtgtgt 780

gtccctttga aaagtacaac tggaaagaat aatttgtgtt tggccagatg attggcattc 840

tgagaaattt tgatgcctga tataaaaaac gagaacataa ttcggtcgca cgcagataag 900

actgatctgt gtcacatgcc atcattcgtc gtctgcatga ttcgacgcgt tcaccggcct 960

cgctcgcttg cggtttggca caaggtagtg gaggccaggc cactgtggct tcgctggttg 1020

tctatagcac aggaacacta gtggggtgct ccatgatatt ccgaagcatc ttttctcagt 1080

agctttgatc tgctgcctgc tgtgtgttta tccctttga acagcagggg ctggtagtgt 1140

ctgctcatcg gtctgcgact ttaaaatatc ttctcttcca tacttgctga cacttcgctt 1200

ccttctgaag acgtggaagt gaaaaagtct gtcgcgataa attccatgcg atttttttt 1260

tggaaaacaa cgtctttttt tgttttgaaa cggaaaagta acgccttatt attagttctt 1320

gcccatttgt taaaaaaaat atagcgatac tttaatcgaa agatatatat acttatatag 1380

tgatgactgg tgagccatga gtggattagt gcagccgttg ctgtttcgtt agcttttgtg 1440

tacatgtcgg gctcgccttt gctgtcactg ttcgggaaaa cttagaagca atgccttgtg 1500

accagattat gacgacctcg acgtctcttt ttttcactta attctgcact gtcgtttatt 1560

attcttcttt ttttgtgcga cttttcgacg tactgtcgat taaaagacga gaaggccacc 1620

ggagaccacg caacaacact agtttttttc ccgttcaatt ttcttgagag cggcagccat 1680

taaattttgt acaaaaggag aacacttggt agaagtagca cctaactcat ttgacttgac 1740

gatccttgat gggtgtccac aagcgtcttt catctccaca cgttcccgtt gctatttcaa 1800

tagaacttta attgcatcga gattaaattt aattagatca cgaagaagtt tacctcgata 1860

caggcacatg tgcgatatat tgcttaattc aaaatcattt gctaagcata taggatacac 1920

atagctgcac aacaataccc aaaagctgta agttgagatg atctctgtta tatcatatgg 1980

aacagctaga agccaacaaa agcattggca tgtaggttgt tcgatgtata ctatacttat 2040

gctccgttta gatgtctata ttggaagaca tagaattgaa ttgggtttaa taccaaatta 2100

gccatggtat tgaaatgaga tgcaattcta attatattgt ttggacgtta gtgaattata 2160

gttggatttg tgtggtcaaa ttccacataa taaagaggag tgatgctcta tattgggaaa 2220

tgaagtctct aattatactc caattccata aaattgtgtc tctgattcca aatcttaatt 2280

ctatgtacaa ccaaccaaat aatagaattc tagaaaggtg attccaattc ataatttcgt 2340

tctccaatat ctatacccaa acagggtatt ataggaaata taaaactatc tttctgacat 2400

gcatgattaa tctcaactta ctgataagag agagacgtat tattgataag ataataatat 2460

aaggaaaaag agggattgtc ggatacaaaa cacctgaggg aacacgaaga gcaagagaga 2520

ggtttccgag gcgagaccgg gggggggggg gggggggggc taggaagcta aatagaaact 2580

aaaatatgat tgaaaataat taagtgttat aatgagtgaa ataaaaatat acttttaata 2640

aaaatattta aaatggaatt gtaaatttga tttattaacg aagagatgct acaaatagga 2700

aataaaatgt gattaaaaat aattaatcca atatattgaa ttattgatta aggcaacttt 2760

tctaaaccaa gcgcatcctg agggtatcgt tgtgttggca gtgactaaga tcatatttat 2820

tttccttcta aactatataa gttagattat ggtataaaag tgaccgaata aaatatcact 2880

ttgtgatggc aaataaactg aaataagcta tccaatgtta gtttatttca acttatttat 2940

ggttataaag taatatttta ctcttatatt ttttttact ataattcaac ttatataatc 3000

tagagaaaaa caaacaacta tgtctagtta caat 3034

<210> 3306
<211> 2382
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126699_G1, chr3:208895335..208897716, Cluster 20

<400> 3306
tatatatttt cttaaactga ataataaaac gattaaaata agtacaacaa tcaatataaa 60

tatcaatcta tgaatatacc acaataacat tgcataaaaa tgttttaatt agcgtatgca 120

ttccaaaccc taggttaaat tgctcgagac gacatagtat atatactcgg agaaagaaat 180

acttatagcc aactaaaaac ctatgtttag ctttgttaat tgaaacaact atgtattaac 240

ctctacacta gtgttatgat tgagataggt taaatccaca ccaaggttga gcaatattga 300

tacttatgaa gatgatgaga ggtggccaaa atataaactt aatttaaagc aagcaaagaa 360

acccaaaaga atattagagt ccaagataaa cattggcgaa agctttacct tagacaaaat 420

attgttatcg ccctcttgat taggtataat atgttggaaa atacaatcta aatttatttt 480

aaaagacctt tctcaaccgg tctcttaaca ctaatagtaa aaaacaccac taatagttgt 540

atctattaaa acaataagac catattgaga attgggtcaa atatttgtac tttatactct 600

atcaatcatg gataagtaaa tccccttgat tcaagtcatg ttgctccttc caacactatt 660

gtaagttacc agctaatgac actcttaaca ctttctcgtt gtttttgggg tttcatcttt 720

agtggcttgg tgttctttat taatcaaacg tagcctcgct ataatttaag gatcatgaac 780

aattcgatag tcattagata gatacaccac ccctttagct cctgaaaagt caagtctaac 840

caatttcttg cacttccatt gttttgacac aactagactc atctcttgag tgaatttaat 900

ttagaatgga tttattttgt tcatttttta ttcgataaac actcacttat gtttgaatca 960

actctccctt tgtcaattat gttagctaac aatgcctttt gttcttgtaa aattctagcc 1020

ataatctaag attcgaatgc atttgacctt ctagcaactt tttaacataa taattgccaa 1080

atttgtttgt ccaaaaaata taagctatgt aggttaagct attagcaaac tgccactcaa 1140

tgctttcagg ttcatatggc aataaaacat caacaccaat catactttac aattgactaa 1200

ttcggccatg actagaagat aaagctaaaa caaatcaaga gacacctata aaaattctgc 1260

tactacatct ttgttgattc actataatta ccagtaagat gtgaagacaa atcatgagta 1320

ttagtactag catacccCac tgaattttta ttgatttctt tgtatttatt agtaataaca 1380

tagaaagcta aatcatgagt tataacacta gtatgcactg ccgagtttcc atgaattcga 1440

ctatagctat tagtaatata ggaagtcaaa ttatgtcaat taacacttga atgacttgct 1500

aaaattgtag tagttcgccc atagttatga gcaacatatg aggttgaatc atgagcatta 1560

gacttgaatg ccttactaat tatttactga atttttattg atttggctaa tcatttcaag 1620

cgtatggaga ttaatcatta ccattatccc tgaatacttt gctggaattt caataatcta 1680

gtcatagtta ttagtaatat atgaggcaaa attataagct tatgtattta atatgatact 1740

gaatttgtag gttgaacctt tattttatta gcatattgtg catcacatga aacttgagag 1800

taattggcag aatagttagt attaccatag ccaattctct cattcatcga cacatattat 1860

ggtggaagca cacattatga agttatagtc gatggataag gttatgtatg ttgtatgttg 1920

ctagtagcat taaaccccaa ataattaata gttgataata actcttgaac ataataccca 1980

acattgtgat gcatatgatg aagaatatta tctacataat aattattcaa tgcaaagtac 2040

ctaatattat tatgactagc aaaatcaaca tgagaattca tatgcaaaat aattattaga 2100

ttcctatgat gaatttgcaa gctacgcctt gggttatttg tagtagtatt gtgtgatgaa 2160

ccacattggt actccatgat gtagaacttg actactttgc tgaatttttc aataacaaga 2220

gcaacatgtt acaaaacaac aagcaagatc acgtgatttc aaaccagatg tgataggcct 2280

tttggggtca gatgcaacaa tattaacgag tataagaaga tagaccaata aagaatatag 2340

ctaggacaaa gaaattcggc tacaaagtag agtcaaagca at 2382

<210> 3307
<211> 1711
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127248_G1, chr3:211735175..211736885, Cluster 20

<400> 3307
tcataagttg cagaacacga acgccagata aacatcgata gcagaaatga attgtcagaa 60

aaatacagat attacattat tctacgaggg tgggtcaaag caacttgcct ctatactaga 120

gtagtttatg attcttctag tgtagaccaa aaaataatcc tagaagtaag cttttaaaat 180

tccaattcac ttccccccct ctcggggcta ggagcctagg acccatgtgt cccctctaca 240

tgattaaaga ttacatattt agaaacagtc cataaatgat tttaggttct ttcatagaaa 300

ggacattagg tcaaaacttg ttaatacatg gtacatcatg taataaacta gaaaccatga 360

tttaggagta gctaattcaa ttttattgtc gtttggctaa cagtagcgca caggccattg 420

ttccctcacc ctggcttact aggatgttga caacttcctc tattctaaat tataaggatt 480

ttttgatata atggttttct atgcatatag acatagtata tatttaaata catagaaaca 540

atcatgaatt ttaaaaggtt aaattatttt gtaatttaga atggagggtg tagctaatta 600

tactgaatct taggaaaatc atactgaata tcaaggggta ctgtaaactg ttatgcctta 660

cagtctggta tttgggagtt gggactgaac tctaagaagg ttgtctgtag tgtctatttc 720

aagtttaaat ttacagctta attcaaatct taatcaatga ataatattgg taggagaatg 780

cttgaccata atactgaaaa aagtttcaga aggctcaaga cacaaggaca tggagacctt 840

gttctgtgtc tacactatag ggttatatat tctttctaat aaccgagtta tgtggaataa 900

atcaagtgcg gagttatctg aaacaaatag atgagtaagt aatcactatc actaagctaa 960

tttacagttc ctgatttaac tctaaaatta catcttacta cagtcttaat cagcaaagaa 1020

tactgccaga gtaatactta ttggtcacaa tgatgaaaag agttccaaat gcctcaagac 1080

acgataacat ggagacctta tgcacatgtc tgcaatttgg agttttctag cctttgtgac 1140

tcttgaaata ttttgaatat gaatcgatac gaagttatat acgaatatta tatgagacgg 1200

taaattagta tcacaaaaca atccaactaa acagacaagt acaagctgat catattcaaa 1260

ttactattgc agatacccaa gatttaagct gtttggaggg caactcaaag gaatagagat 1320

gataaacacg attaaaaggc tgacagatag ttgtttttt ctgtaacgat aaggttactc 1380

catgactcca tgtaatccat ttacattaca tttcggcgag ccaaacacca cctaaaaatt 1440

ctacttaaaa ggacgtcggt cttatatttc tagtctgaat ttacaactta tcccaagtac 1500

ttaaagcacc tatagtaata atctactccc tctattccaa atacaaagtc gttcttgttt 1560

tttagataca ttatttttat tatatttata gacataatgt atatctagtt atataacaaa 1620

agttgtgtat ctagaaaagt cggacttaca attttgaata tgggaagcaa taatagaact 1680

gtatatttat catctaacac tgaattgtaa t 1711

<210> 3308
<211> 3019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132840_G1, chr4:6628398..6631416, Cluster 20

<400> 3308
agaccatcca acatcctaac atttgaaaaa cctataatga ttggttcagg agggatactg 60

taagggttgg tggacttagg gttgttgtag ggtcactagg gctatttaga gcacatcaaa 120

taatcattat agatgcataa atcagaaggg cacaaaaata aagtcttata ttttatgtgg 180

gaagctacct ccatctatat ttcgtataaa gctattaccc attaaacgtc tatagatggg 240

catataaata aagtcttata ttttatgtgg gaagctatct ccatctatat ttcgtataaa 300

gctaataccc attgaatgtc tatcgcaata tgtagaccat ctacatcacc ccactaactt 360

tccacatcat ctccactaat agttatgtta ctccactaac ttccaaaatc ttaatgcaaa 420

ttatccatgt catccccact taatttatat atcttatgaa gctaatgccc actataaatc 480

tatatcaaca tgtgggccat ccacaccatc ctccactagc acatgaaagt tggaccacct 540

aacatcatgg gatttgcgaa aaaacctaca atcaccaatt caggagggat cctgttaggg 600

tttatgcaag gctacttaga acacatcaaa cagtacttat aggcatataa atcattatta 660

cataaaaatg atgtcttaag ttttctatga gaagctatat atatatatat atcttataaa 720

gctaataccc actactagtc tatctcaaca tgtagactat ccacatcatc caccactaat 780

tttcaacatc atctccatta atatttatgt caaccaacta acttccaaca tcttagtgca 840

agctatccat gtaatctcca cttaatttat atttcataca aagctgatat cccactacaa 900

gtctatctca acatgtaggc catccacatc atcctccact agctcatgaa agctaacctt 960

gttgtatcac tactagacgg atcaacaaaa tggacacatt ggtttcaaag aagttaggga 1020

gtacatgtca caaaataaga ccatacttac tagcaagacg gaagcaacaa tgaacaaggt 1080

caacatttag tggtctattc tttgcatcaa attagtcttt caaacttttg atccatgtaa 1140

caagttatgc cacttgatct accatattct agtttttgcg gaaaacaaaa cctaggaaaa 1200

agagaactat ctactctgtc tctgatagta gctgctacac tcaaatttta taaatatgat 1260

ggcgtggatc atgcagatgt tggatctacg ggagctacac aacaaagaga tgtagagatt 1320

tattgtgaat tcacctcata acaacaacta ccttagttat atatattaat ttcttgtaca 1380

tgttgccatc tcaagctatc tgtctttgca ttacattgtg gcatcatgtt ggtccgtttt 1440

atgttttact actaagtgaa aatgagttat tgtataatct cctattaaaa gtattgattg 1500

ttcgatggcc attctctatt gtttgtcatt tgatcaaaac atggaaaaga catgacattt 1560

aaaaatatga tgcatggata cttaaaacta acacgaaagg ttaaaaatcc ttagtgtgtg 1620

aaacataatt cactatatct ggaagagttt acaagtcaag tgtgttccag aagataactt 1680

gaacttcttt tgacttttat actttcccct ttttcatttt taattccatg gtcctgtaga 1740

taggacaaat gaatggggga actagatttc actctgaagt taactaacta ttgcacaaca 1800

ataaattata gtcaataaaa cttatgtgct atgaggtgca catcactaat gcattagtag 1860

gtaacataga gttgatgctt gtacatgacg acttgtggat gaggttatat tatagtgcca 1920

tgaataatat tggtgacaca aaacataaaa cacaccaaag tgctacattt ttggattgta 1980

gatcaataag gttgcaatga gctcatgaaa gctggaccat ccaacatcct agcatttgcc 2040

ataaaaccta taatcattgg ttcagaaggg atattataag ggttggtgca cttacggttg 2100

ttttagggtc aacatggtta tttagaatgc gtcaaataat cattatagat gcataaattg 2160

gaagggcaca aaaataaagt cttacatttt ctgtgggaag ctatctatat ctatctctct 2220

tataaagcta aaacccaata taagtctatc ttaatatgca tgccatcctc attaccccac 2280

taacttcaac atcatctcca ctaatagtta tgctacccca ctaacttcca acatcttaat 2340

gcaagctatc cacatcatct ccacttataa tttatatatc ttataaagct aatgcacact 2400

ataagtctat ctcaacatgc aggccatata catcatcctc cactagcaca tgaaagctgg 2460

accatcttat atgcactact agacaatcta acatcttgag atttttaaa aaaaatctat 2520

aatcactggt ttagggatac cattagggtt ggtgcactta gggttgttgt aaggccagca 2580

aggctacttc gaacgcctca agtaatcctt ataggtgcat aaattattac ggcttaaaaa 2640

ataaagtgtt atatttttta tgagaatata tctatatcca tctctcttat aaagctaata 2700

tgcactacaa gtctatctca acatgtaggc tgtccacatc atcgaccaca aattttcgac 2760

atcatctcca ataatagtca tgtcacttca ctaacttcca acatattaat gcaagctatc 2820

cacataacct tccattattt tacatttcat acaaagctaa catcccacta caagtctatt 2880

tcaacatgta ggccatccac atcacctgca ctagctcatg aaagctagac catgttgtat 2940

cactactaga ccatctagga ttgtatgttt tcccaaaaaa atatacaaca aatggttcat 3000

aaggggtatc actagggtt 3019

<210> 3309
<211> 2043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132947_G1, chr4:7010486..7012528, Cluster 20

<400> 3309
ccccactatt tctcttcaag atgcatcgtg ctcgcctaaa gcgcgagaac agttttgtgc 60

acgacatggc ggtgactaca cacacctggc gcaacgactt gtttgctgag tatggggtgg 120

aagccccacc tatcccacgt agcttttatt ttaagttttg atccgatgat agatctatgc 180

tcttgttggt tttgctacct gtacttcttg gttttgctct gagtcttggt tttcttgagg 240

aactctccag gttttgctaa gatctttctc accctcctta tcattgctga ataatgaaac 300

tgtactcagc caccgaatga atgagcagtg actcattaga ccatcatcac attgtccgtt 360

aaatgagttc cttgatgtat gtatagacaa ctggttcttc tccgaataat acaggagaga 420

tcatagttta gtggtgctat caagaatcaa ctcaacaatt ataacaaatg tcagtctgtc 480

atttcgaaca accaaaaaag ttgcgacatt agtgcagcac caatcctctc tttagcgtgt 540

gtatgtcttt gtgctcgccg cggtcttctc cattcgccgc cgctgaccgt gtcaagccag 600

ggaacgcctg gatccaacaa caactacccc agggccatat gctgtaacat tgtgtctgac 660

agccagattg aaaaggtcga tgccgtcctg aatcagaata agtgctagct gcaatggttg 720

tagagatgca tttcctttga aatgtcccat caaaagtaaa caacaccctc aaaatctctc 780

gggtgccttt tggattgttg atgttgcccg acatgtctag gcttgaagaa ttcctaagat 840

taaactagtg caggataaca gtccatatca gtttagtgaa gagtcacact ttaccaagat 900

gcttctggat acggtatgca caagcgacaa ataggattat tcagaagcat gtttgaaaat 960

ttcttaatat tccaagggtg gaatacactt atcgaccaga acttagcaga ttacccaaag 1020

tttacacata tgtatagact gtactgttcg caaattacgg tttaaatata ggtacgagaa 1080

tgagtaatct gagatttatg gattgccgtt taggctgttg ggtaagaaaa atcttttcat 1140

gtttcttttc gcatatatcg catatatgca aggcaaacaa tagagagtgc atgatagaag 1200

ttcagtaacc catcaattca gtttgtcctc catttgtcgc gcactgccgt atggtgaagt 1260

tcaagggagc tgcaagcttt tactcagcaa ttgagtagca tccgtacatg aggacagacg 1320

aacagggatt gcactgcaaa aacagagtgc catacgtgac aactacccta tcttatcccg 1380

tattttaaac tttactttgt aaacagtgtt atctaccata caaatcccct attttacgcg 1440

atctgctata atagaggtcg cttttgtgct ggtagcacat acataggtgt atcatgtccc 1500

aaattgtttt tcctttgatt tctggactcg agtacaaaat agtagccgga agatgtaaat 1560

ggaacatgta caaagttcaa atttaacatt tgtactagcg tggcaaagtt ggataatgga 1620

ggcacgtgat gcattgaagg cctctatttg gtaatacaat actagttagc caggatccac 1680

attttataat ggactaatgt tagctttctt tatataggac aaaatcagat gaaaactgtt 1740

ctctgaaaaa tagtacagta gagtatgtcg ataacttgtg tgtttcctta taatcaaagt 1800

cactggcata gcagagtttc agagatccat gtgttttatt gaaggtagcg tataatcttt 1860

gttcatgcat tcagagatcc atgtgtttta ttggaggtag catacaaata caatctttgt 1920

tcatgcattg ataactacag tctgaataga gaccctaaaa caaaactgac aagtaaaata 1980

tttgatggcc acattggttt atatgagttt ttgtttgcct tggacaaaca gactgtttct 2040

ttg 2043

<210> 3310
<211> 1507
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_135413_G1, chr4:18570184..18571690, Cluster 20

<400> 3310
aaattatcta caccatgcat tagaatcgca catcattgat taaagagaga aagcacagtt 60

gataaaatgt catctcttga tggagagtaa agtgcaagaa aaaacaaagg aagaaagaaa 120

atactatgct gaaattttga tgatacatct gttgttagtt cattaatgaa caacaaaact 180

agatatagca tcaaggaaga atgaatcaca atcacttggt tggcgtacat tggttgacca 240

ccacaaatta ccaatatcag aaactctcgt ttaatatgga aattacagat aatgtacttg 300

gttggtctac attggttgta ggaaacagta gataacattc aggaaggtta aatactaaaa 360

ataatctgac cacaacattt gctgataatc acaagttgtc aattgtgatc ggaaaaaaaa 420

aactatggct ggatgaactg acaatgttcc ttgcataatg catctaatga catttatatg 480

actgaaccac atctcaacaa acagaatagc ttgaatcata attaaataaa tgtaaacttt 540

aaaggcccat tggcccaaca aagttactta acctcaattc acaaaatgtg gcttgtcagt 600

ttagttactt cacctcaatt cacaaaatgg acagttttga tcatcaaaat tgacctagct 660

gtgaaagttc atctgaatat aagcaaacat aataataatc agctcttatt ctattcaaga 720

tcaggcttca catgaaaatt gtattaacca aacgaaaaat accaaatgtt ctgctacatt 780

aaatggctaa tgagttagcc ccatgaagtt aacagatggt agggcctcag aaaattctga 840

tgaatactaa agtgacaaaa acatgacaga ctaatctaca taggaaatgg ttcaaggctt 900

caagcaggtt ttacatgata ggttcagtat tgtgaccgtt aattttcaga atttaacaca 960

aggtaaaatt actagtaact gccacagcct tcattgagca aaccatggca ccatgctaac 1020

acaaacgtct gcatctcaat agatttgaca aagttgcaag ttatatgtaa agaaatagtc 1080

tatacgctag taccaattct tacagacaat gatatgctcc cagaaacatt accactagat 1140

ggttgcacct cacctatcat ccccatatcg taagtgattt gctcttgaaa aatgcaatga 1200

gctagcaatt catttccata tattattaac ggcacgtccc taccacatgt ctcacaatta 1260

ttaaaacttg attggtacaa aagcccgata aactaaacaa atcatcgtta gcatagaaat 1320

agaaccataa ttagcaacta caaattacag caaagaagat gaatatgatt ttgctacaat 1380

gcattgagag ttgatcattt agctgcagca gagtcatata gtagtatgtc actaaaaaaa 1440

acctgcagct gataatagtt tcacggagtg gtggcaggat gccactgagg ctgctaatgt 1500

ttcagca 1507

<210> 3311
<211> 1442
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1382_G1, chr1:7304181..7305622, Cluster 20

<220>
<221> modified_base
<222> (1007)..(1007)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1007)..(1106)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1008)..(1008)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1009)..(1009)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1010)..(1010)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1011)..(1011)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1012)..(1012)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1013)..(1013)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1014)..(1014)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1015)..(1015)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1016)..(1016)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1017)..(1017)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1018)..(1018)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1019)..(1019)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1020)..(1020)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1021)..(1021)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1022)..(1022)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1023)..(1023)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1024)..(1024)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1025)..(1025)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1026)..(1026)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1027)..(1027)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1028)..(1028)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1029)..(1029)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1031)..(1031)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1032)..(1032)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1033)..(1033)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1074)..(1074)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1076)..(1076)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1077)..(1077)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1078)..(1078)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1079)..(1079)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1080)..(1080)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1081)..(1081)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1082)..(1082)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1083)..(1083)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1084)..(1084)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1085)..(1085)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1086)..(1086)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1087)..(1087)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1088)..(1088)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1089)..(1089)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1090)..(1090)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1091)..(1091)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1092)..(1092)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1093)..(1093)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1094)..(1094)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1095)..(1095)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1102)..(1102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1103)..(1103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1104)..(1104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1105)..(1105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1106)..(1106)
<223> a, c, g, or t

<400> 3311
ggaatacaat tgttagcctc ttaggggctt gtttggttag aagtggatta aagaaaaatt 60

agtttatttt ctcctaatat cctccaatcc actttaatcc tcctaactaa acaagccctt 120

aatgtcgaaa tacttgataa atatttcagt tccaagcatg ttatcttttg aatacaaaat 180

attataaaca tttgtgtctt caaatatgtt tgttacaaaa tattttacaa ttagattctt 240

attcggtatc atttacgcta gtacttttgt tttggatata tcaatttgtt agtttgtgtc 300

acacttgcac ttaagggtgg cgtccttgca tctatttgac ctttgtcgac attcttgaag 360

gagggtaagg agagcacttt tagggcgtgt ttgggagaag gggacttgag ggaattgaga 420

gggctaaaat atctttctat tcaatatccc cttgctccca aacaagccat ttagtgcctt 480

tggttttgct tggagaaaga tcaagaccac aactattgat cctaagaagt catgcactca 540

tgttcctttt aagagttgtg accaagaaga ggtttgagaa ggtgtcacat gagttatatg 600

ccacttcgct tgacagctgg tggtgtgggt aggagaggtc gtcgtcatat agctcaatga 660

gatcttgcac aggagtcctc ttgctctctt tgccttcttc taggcagtag gcacctcttt 720

ttccttcgga gtcgctttat tagctaggtc ttgctctgat ttttgctagg ccaagagcaa 780

ggatgttaga agagtcggag gaaataatta tggctattga ttgatgtagg gattacaata 840

tttaggccaa tggtttccct aatcttaata tgtctaataa gctatacatg ggctaggtta 900

ggctagactc atgatacaca caactacaca tactaaacac aatcataaca catatattag 960

ttgtataaca tcccctgtag ttgagactct agctacgaat tgatggnnnn nnnnnnnnnn 1020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1080

nnnnnnnnnn nnnnnnnnnn nnnnnntccg gattctagag aattcgtctt tgttgtcgag 1140

agttatttca ctatgatata agactacaaa aggaggaagg gcctggcgga cactgcccac 1200

aatcatggac cccagaagcc caatctcctt ggcgttgagt gccctggctg gacttgtgat 1260

cctagtgagc gggctatatg ccctatggag aagctcgcga ccttccctcc cctctatggc 1320

gggcgaaatt atcttctccc cctataccgc accatgacac catgggctcc cactcctgcc 1380

tccaatatct gaggttgttc ccaaggaaca tgacctaccc tcaggtgtac tatggcctat 1440

cc 1442

<210> 3312
<211> 2682
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_138993_G1, chr4:39334737..39337418, Cluster 20

<400> 3312
aactccacac gcacgttgct gaaacaagca gctaactttt gtttccttga taccactctg 60

acttgcattg tgttgccttg cctctacaat tttcttgtca gcatgggcgg tagacgaatg 120

gatggatgga tacaatacaa ctgaggggtg ggagagcttg aagagcaggt caagaagatg 180

cggtgagcta ataagaacta gtcccttgct tgcttgttta atttcccttc tctgcatgca 240

aatgcttcaa gaaatctaga actagcatgg tacgtactac ttccttgttc cttccacagg 300

ccggctacta cctaacctgc tggccatttt ttttctctct tatgtagcaa gcatgcaggc 360

tatctattac ctactaccat taggatgtga ccctcttaat aagctggaaa atcatgtcaa 420

gaccttccct ttaatgcctc tgtcatctta cgccaccatt attattgctc cctctttttt 480

ttttgcaggt aaccgaattt tcgctccagt tgttgaattt catttagact gcataaaaac 540

gttcctacct gctgtctgtt cctcttccga tccggcgttg tactgcagac cttgtcttgc 600

ttctagaggt tgtactacta ctagtgcatg cccttctgtt tggtgcatat atatatatac 660

atgaggaaaa ggtgtgggtg attgatggat agatttcagt ttgatgatgg atccattttg 720

cttttctttc tttctttctt tctttcttca tgtgctgaca ggacaggtgc caataaggct 780

tagataacaa gctgctaatt ggggtgcaca aaccagggac ttggcaggcc acctaactag 840

ctagctgcta gagatttttc tgtcacctcg ttcccacaat taatgtatct gaaaagcaac 900

aaaagtgttg tttctgaaca cgcaggagat cgaaggaaac actgatgaga tcacgagcat 960

gcaatgcatg catggggcat atgtcgaagg aaacaacgtg cattacatca gattccatgc 1020

gtcctagaac agttactgtg accactgaaa ttttgcctat taccttattt cttaccgtaa 1080

acgttctaac cacttctatg ccgctcggat acaatttatt acctttctat gtcatcgtca 1140

gtggtctaga agactagaag ggtaaaaaaa gctacatatc ttaatccctt ctatgtcccg 1200

atgatgagtg attaagacaa ttgaggtgat aaataagata aatactgagc aaaattatag 1260

tgacatacat gaaattgtgc catatattat ggatgtttca ggtgtttggt gtaactttaa 1320

tatcagctta ttaattgtgg tatgaaatac tatggatgtt ttaggtagct atatattatg 1380

gtatattata attttctatg catacagtta tatatttggt tcatatgtat gtgaacttgc 1440

agagatggat cttcgttcgt gcatgcatgt gggcttggtc agttggtcta gcactctagc 1500

tagcaggtaa atgttgtagt catgactgca gttacgcatc gatcagttta atataaaaac 1560

ttacgttgaa aagagaccga acaataattc acttgtatta ttctaaagac agttaataag 1620

aaaacggcag cacttgcaaa ttactacgta tactgcttgc tcttactgat catatccatg 1680

agcagcagat atgcatgcat atgcgattgt caactaatct aattagctag tacatacgtg 1740

caaagcacgc acatttcatg tcgttgtcgt ccgcttctca tcagggtcgt cgcttccaag 1800

ttccagctcc aatctagaat taccaagtca tttttaattt tttttggggg gcttgcctac 1860

gataaacatg tatacatgca tgtcaatgtc agcttaccta ccacacacca gcgcgcctcg 1920

gcctaacggc ttagcaattc atgcgtcaga actttctcat catctcatga acccctagct 1980

taattacgtg ctaattaaac tgttcttcct gtctccagat ggcctaagct agctaataat 2040

aataaatccc ttattacgac ctgtttagat tttatgaatt gaaagtgctt ctcgatcgat 2100

catttcacta gctattcgat tattcttttg atttcgtctc ttaaatcctg gaaaccaatt 2160

taatttcttc cggaaaattt gtggagtttc aaggcgtgtt ggtgctttgc ttcgtggcac 2220

gcggcgcgtc cagtagccag acgcgaggtc ggcggcggct ctcgccatgg ctgcctgctg 2280

gcaggcaaaa ccgcgtcttg ctagcttatt cgtctggtgc gggcattatt agttgacttt 2340

ccggccggct ttgcatgctc tggccttgat cttaggagct gacttcttct taagaacgca 2400

gtgtgtacct ccgaaataaa tcctcagcta cgacagttga ccgagctaaa tggcacacat 2460

gattaggagg gagaattctt tcttacaact caatcgatcg agaaatggga gatgctttta 2520

ttcgtacatc aatttgtgga tgatcaaaca tgagtagttg gtagtgtttc aggtcctacc 2580

agggatatgc tgaaagggag tatgggttag gggaggagca ggacgggcta cgggctccgg 2640

catggaggtg gtgctggtgg ctgcctcttg ggtgccatag tc 2682

<210> 3313
<211> 1937
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_145861_G1, chr4:82772655..82774591, Cluster 20

<400> 3313
ttaacattta tctagtaaac agtgtatcta gagtttcatc ttcatgaaac tctctcgtac 60

ctctttttat taattaaatg tcatatcatt ctggttgttt aggtggtatg tcatttaatg 120

ataataaaac tcctcccact aagacctaaa agaatagaga tatattattt ttaaggggcc 180

aaatataaaa cgaagaattt actcatgtct tcaaaaatgg gcctcaatct atcagtagat 240

gcatggagtt tgtcggttac acaacccaat agattcacaa aggaaatgaa aatatggcct 300

ggttgcatat tcaaagcagg cccatgatca catttcttac taatacacta caagccccat 360

ttaacctact acgttttgct gcatgaaaga tttgtcattc aaaacacaaa agtgaaaaaa 420

atggatcaaa cttccgcatc catgatacat atcttgctaa tacattgtgc gggccattta 480

aactactatg ttttactgta tgaaaaatct ttcattcaaa acacaaaagt gaaaaataaa 540

taggtcaaag tgttgttcaa tcaatatccc gtgtaattgt catacaatca aactatcaaa 600

agtcatgaaa aattctcaaa aaattaataa atacacttta ttatttactc taccaatgta 660

ttgaatttca tattctaatt tatcctacta agagatataa ataacagaaa attctatcca 720

acatgaagaa tttagaaata atagaacttt ctcttgtttt atatctctta acataggatg 780

tattagaact tgaaattgta tacattgata gagtatatga tgaagtacat ctaaaactat 840

tttgatcata ttttgtgact tttggtagtt tggttgtgcg gaaattgtac aagaagcttg 900

attgcacata tgtttctcca aaataaataa aaggaaataa actacacctc ttgtttcgaa 960

ttaacactaa gtcaaacatt ctcactttgt tcaggtttat gctaagaaaa aacatataaa 1020

tatgcaaaat accgaattag tttaatcaaa ctaaccattg acccatgcat tgcaatggac 1080

tcaatacatt tgaacaaaat gatataatgc aatgaactag acaaataaat taaggtcaat 1140

acatgtcacg tggaccaaaa tttgtaagga ccaaaaaatt atcacgatca acgtcaagtt 1200

tcctaaatat tttctaatgt aagtcgtagt tcgactggtt gcacgccatg tctatgttgg 1260

ttggatagtt tggtggccat attttttttt caaataagaa actccaataa atataacttg 1320

tagctttaaa tgcaagagcc ttgtaaaaag gaaaatttag tagaaaattg tgctccagaa 1380

ctcagcagta gccaaccaga tgattgtaac atttattaaa cctaaatata ttgaagtagc 1440

tacatccctc ggatattcct ttatttcctc gagcatatca tgtactccct ctgttcctta 1500

tcttatctac aaaaatagtt attttaaatt aaagaaatta tatattgtgc tagatgtttt 1560

aataataaat gtaatatttt catttttatt taatcaatgt ttatgaatat tttactatta 1620

ttggtcaaag ttttaaaagt tcgacttaga caaactttcg tgaatttaag atatggaaga 1680

gagggagtat gtgtaaagta ttatgtgatt ggaattgcac acctaaccac ggcggcgtac 1740

tctatttata tattgccaaa tgagctacaa tacttgaaca tgaaaaggtt cagttttaat 1800

tacaggaagt tcagattaca tattcagttt agcttcgact ctatcttcta aacaacctga 1860

actagataga tagtctctga ttcagtttaa cttcgactct atctcctaaa caacaggaac 1920

taaataatat ctggtca 1937

<210> 3314
<211> 2168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14838_G1, chr1:81598285..81600452, Cluster 20

<400> 3314
tgtagggttg agggcacgac aacggctatc catctcgacc tacgataacc tctacatcct 60

cttggatgcc aacgacaccc acctcctctg ctctaggcat ggtggaaccc tcatccacct 120

catgagatct accattgatg tgatcacctt cctcaacaag atcacactat tgattcaaga 180

ggtggtgtcc gacatcatct ttgacaagaa ctttggtggg cttgcgatcg gtggcaaatt 240

tacttgacct cttggcaggc ttgctgggat cactagctct ttgatgcatt caatagtagg 300

tttagcaatg ggctcatttc caacaatttt tatagaccaa taaccactag aactcataga 360

tcaagctcta ttacatttag ttgtagggtt agtcaaagtt gacaagccat ctataacagc 420

atcaaaactt gggatagcta agatgatatc aatggtagcg ctggtgatgg tgccaagacc 480

cgcaccttcc cctcactaac cgtgttagta attaagtctt ttttgtttgt gggttagagg 540

aggtatcact aaatattggt tagcatacta ttgtcgtctt ccatttgtgt ccatagtgtg 600

aaggggtcgt aaccaacaga ttgtaacttt attcttattg ttcttgtttt tgcacttgaa 660

aaactaaatg gtgtccttta tgtgatgccc tttctagcaa catcatctac aaatgtcatc 720

atccaccttt cccgtttgag ctatgggaaa atagcctttc tccattagaa cttgcttcct 780

tactatgtgg ccttgtgaat ggcctatttt aatttgagct tattcatgct tggggagaca 840

tgaacttctt acgctgattg gatagccttg attcttgaaa tgagacttaa gaactgcaat 900

tcacaataat agtctcaaaa ttttaggtag tgagaataat attaagtgga caatgaaatt 960

attctttaat ttcgtattaa aggacttata ttatttgcaa aatttgtcat cttaattatg 1020

tgcttcctta tactagaact atcatatatt ttagcaatat ttttttaata ttagtttcaa 1080

catatgcttt ggaggaacta gtgaattgtt gttgaatctt gtcaaggtac tttacgacac 1140

tctaacattc taatagtgct cccattatag actttatgat agagctcttt accaccataa 1200

tgaatttatt attgatcttt ctcacttaac gaattcgaga tcatatgcca tagttaaggt 1260

tctcattatt agctacacaa ggagtttctt ctactctcaa taatgtggca acaagcttca 1320

tattatcaat ggttgctcta tttcagctaa taataatgcc ataccaaacc aaccatttcc 1380

ctccaagagg aatatttaga accactcaat ggctcaagcc caaagatgaa actcatgaca 1440

ttgaaatctt gtatggtcat gctttagtga ataataaaca taaataggta cataaataat 1500

ttgatgttac tttaaattca taatatttga ttaaaaatat tttaatccta aatcatcatc 1560

ggacggaatt agaacaaaac aaaaccctct tacaataacc atataattaa catccttcaa 1620

tattcgcaat atgtatatat attggtttca atttaattag agaataaaac atgtaaattc 1680

aacacaaaat tcttaatttt ttagcgctta atttccttac caagtataaa tattcaatag 1740

ggtgccaaat acatgtatag agcataatat tcaacgtata cgcttcaaat aatacaaaaa 1800

caaacatcgt tttttggcaa accagtccat agtggtcgcc tagtctcctc cccacgcgaa 1860

cctatgccca ttccacaatc tagccttagt caagaaaatt gtggccccac ctaggtcaaa 1920

ttcgtcaact tccctagcga tgaccgatac cattgaaaat gatctaataa caatgattcg 1980

tttgcacatg agtaaaagac caaaaaaatc tgcccccttaa aaccctaacc actcttcttc 2040

ttcttcttct catattctag tcgtagccat gttttgctct ctctacctct tccattgatc 2100

ctatcacacg tgagagggag ggcattctag agtagcagtg ttgctagccc gacccttcgt 2160

tattgcag 2168

<210> 3315
<211> 2958
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14988_G1, chr1:82696754..82699711, Cluster 20

<400> 3315
ctatgatatg ttgttttatt tacaatatcg tgtgtataaa tattttatgt ttttcacttt 60

gtttgatttg cagtaccaca catataacga ttttatgtgt tttccgtggc aacgcacggg 120

tatagaccta gtctaataat agattagaaa acactttctc aaacaagccc ttaccggttt 180

acttccatgt tcctttctta aactacaatg ttgtacaccc ttagcctttg cgcattgcca 240

ggaacttttt ttttggctat cagcgtccca gttgcctact ctggtaggta gtgtccaagt 300

cactttatgt ttactataag catcccagtt gattaaaaaa cactccgaat tttaaggagc 360

aacgacctgt tggaatggag aggaacctaa acagactaaa agtagtcaag acatgcttat 420

acccctctaa gttggcatgg aatgtaatta gcatcaaata tactggtata tgaatagaaa 480

atggaaaatc ttcctaatca ttattcgttt atgcacccta gtccacagca ggttaattta 540

taagctttta aagccacgta tctgaagata accaagacaa cataaaagtt aaggttcaat 600

gctcatgcag attttgtgca tgatatcata aaactcaaaa ggggacgcac gagacacagt 660

agctatcgaa atgatttcat gttagttgat aaacaaaagg acagctttgc caggtataga 720

catgaatgac atagctgctg tgttgtcact gatcatctag tctttgttcc aaaacttaga 780

aatagattag acatagcaac catgcatcaa ttactgtcga ccatagtatg acaggttctg 840

aacttctgat tgtactttat tgaacatcat agtacatttt gcccccacca gtcttatcgc 900

acagctttgg agccccttca ctcaaactca aagaacacat catcattaag aacatgaccc 960

tggacagccc atgcacgtca atgatcccat cattatcatt ataaccatat caaacagaag 1020

atggatcaac agaacagata gtaggcaatt ccactcaaat acaaatataa cagaaccaga 1080

tcgacatttt tggcatgcac tactaatacc aagtgatttt tttcatggct tgaattttca 1140

tgaaaagtat tccaaaaatg caataattat gtgcttcata aaagcatata ctaaaaagct 1200

aattgtccaa gtgatacctt gtataaaaca catgctgatg ttcaaagcaa cttatatagt 1260

atagctatat ttgcaatttg agatagcagc agttaaacgt taccagcatg cttccaataa 1320

atgtacgttc agggttacag aagaggtgac aaaacacatt tgtggtataa aaaatggaca 1380

gatatgagat ttcagctaat gttactccaa accaaagaac catggacatt gtctatctga 1440

aaccaaacat acgagataat aaaaagctga atatttgcca atatcgtcag atgccaaatt 1500

ttgtaactga gcaagtgcca aaatcaatcc agtataattc agaagatata ctagtacgta 1560

gtggctgtag cacaaatagg acaatatgaa ggaaaatggt tagtcaaact tcactagata 1620

ctgttcaact ttcaggagta atatggaaat taccgtggat tctgctcacc attatgtaag 1680

tgtgagaatt tcactgatat tgaattactg actgatgcaa gcacacattt tttgtttgta 1740

taacagtagc aatgtagctt gtaaacagta ccaatgaatt agaactcaca gatcagcaca 1800

ttatcaatgc caactgccat ggcaatatac tgtcacaacg cttttgcaga aacaggtaac 1860

atgcacagac tgtaataaaa taagaaaagc gaggaatgtt acacaagtga cttgactagc 1920

tccctaaagc taaaattata gaatggtaac tgccttagga gtgtcaccag catgacagag 1980

cacaagctcc aagcatttcg aggaataaaa aaaaagcact tcaaacctgt tgagttacct 2040

ggtgtctgtc aagccattcg atgtaagact tggtcctttt acgctacaac catcttcctc 2100

cagagatcct aacttttttt agttgtagct aactagctat cgttgcagca agatcagttt 2160

gtttggatgt gcctaccgat caggtcaata attcaatgca cggtaaaaat gtgcatatgt 2220

cataaaacac aaaatgagat tcacagtaca aaactagctg tctaattatt tcatgacggg 2280

caatgcagaa atgataggtt ttccaggtgg agacatgaat gaccacaatt gcttgattgt 2340

cagtgatttg ctactccttg ctccaaaact tacgaacaga tcagacagag caaccacatg 2400

tcaactactg tccatgataa catgacacca tctgaatgaa cagtacagtg cattttgccc 2460

ccacacatcc tagattttag aactatatat ttgtggaccc tttactcaaa ggacttagca 2520

tcatcattca aaagatgacc ctggacgaca catggatgtc aatgatggca tgattgtaac 2580

catagaaaca acacccagag tacaaagcca aaggatggtt taagttactt catccaattg 2640

caaatgcaag ttatcacagc ggtcatcaca tttttggttt gggctgccaa atatcagtat 2700

acagaaaaaa atttatatta acaatatgca attagtatga cttgtatttc aataatgtac 2760

aactctaatt ttaaatatca atgatcaaat tgatatacat gataccgaaa aaaaataatg 2820

tcaaagtgat ataatatctc aatggtcaaa acttaattct tgatgccttg ggtttttcag 2880

ttcttacccc acaacctgat gataggagat tttcaggctg gtggtccagg gtggtcaggc 2940

aagtggctag agagctta 2958

<210> 3316
<211> 2942
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_152901_G1, chr4:133458981..133461922, Cluster 20

<400> 3316
acattctttg aagaaagagt aggttattac attatatcta gttattgaac agggcccttg 60

cttgaaaaag aaatagttag attatattat gctcatgctt tattaacaac acaagtaaat 120

agtagtaagg ggtctaattt ggtaaggttt tgcgtcagct tctttgaagc aaattctttg 180

agaccttatc aaacagttaa agaggcattt gtaattatac ccctctctag tcttgcaatt 240

gtgattttac ctcttgtttt tcaacattgt gattttatct ctccgttttg aaaaaaagct 300

ctgtcatacc tttgcgccat tacatgtagt tgacagtgtt aactatgatg cgaaaataca 360

aaaagtgatc atgcatttta ttgtgatttt atctctcgtt atgttatgga agtgtggttt 420

taaccttatt ggggttgccc ctcgtacaaa tcaaaaggag aatagttcgg acctttcatc 480

catttatttt cataattgat tttcactaac aatgttcgaa gaggggcaaa cggtagatta 540

attttcaaaa cggagggggt aaaatcacat ttgaaaaata gagtaaaatt ataattgcaa 600

ggctagcgaa gggtataatc ataattgtgt tagattcggg tatggagctt acaagaaccg 660

cttctttgtt taaactatga gtctgaggtc tctttggttc gactatagat tcttgaaaat 720

ctgattctac ttgcaggttg agagaaaact gttgctagtt aacggttgtg ataaaagcta 780

aaatatattt gtttaaaata attgtcaact atgtagattt ggtaagagca tgatagttag 840

attttgtaag agcatgatag cttgataaca tggacgacaa gaatctaaaa attttgaggt 900

aggaggtgat tttgaattgg atttttagaa atctattttg ttgtatccgt tttgttggga 960

ttttagattt tttacaacaa atttggttta gaaagttaaa gtagacacac ccaaaagtaa 1020

aaatattctc ccattgttct tcattcattc actattagaa tcacttctca cctagataat 1080

tcaaaagtaa agctcaataa ttaggatagc tttaccaaac tagcgcgcta aatgaacacg 1140

ttgattccac gaacactttt ctcgtatgtt acttgttaaa gataaaaaca aatgaacaag 1200

taactggaat acctatcaat ttcattgatc tcttggtgta tatatacatg tgaaaatgtg 1260

tatctttatt agtgaaaaga taattaatca ttaaacaatt attgctgaag gatatgcctc 1320

tttgataaca tgcctaacta ctaatcctat cactaactgt atatactagg gcattgggcg 1380

cgcgcgctcg atagttgcag tcgttaaaac tgtagcccaa ccaaaaacta aagatggaac 1440

attattctcg cttataatga catgaagcat aatatcaata agaaaattag agcacaaata 1500

acacatgtca caataatcta aagctgatgt tgcaacagta gtttaaaacc accaaacatt 1560

acaagcaaca attagagtgc cattctaaaa gcaaacacag tttgtgtaat acattttgaa 1620

cgtctaggaa ggagcaacct acacattatt tggtggagtg accagttcga tccatacatg 1680

tacatataca tatcctgcta ccttaccgca tggacaaacg gcatttcatc acttgatact 1740

aattaagaac catcgtcatt ggacctaaga cacaaaataa actgtcagta ggcaattgat 1800

ggcatgcaaa aatgtgtatc tataataaat ttgtgaaagg ctaaaaagtg aagagagaaa 1860

aagtctagaa aatatgtata aaatggatca agtaatacca tgtagatctt agcaataaca 1920

tgcatgatag cataatcatg atgtaagctg aaaccaaagt tgtggatctg gacatgatgg 1980

catgttccag gaaggattga aaggtggata aaggaactga aggttcttgt cagaagggag 2040

tgtatatgtg tcttcatcgt caaagtgaaa atgagactat aaacaatatt cttcaactgg 2100

tggtccacct ttttttactc caacaacaat gtatgtgcca ccacttgtag caagagaact 2160

gacatattac aatgttgttg tctgcatgtt gtatttgcta gaggaaagag gctacttgtt 2220

gtgttggatt ccctggaaga cttttattct ggagataatc ttgtattaga tgggaaaagg 2280

atggatatat cattggtgtt agaaggatgt gcttgatgtt gatggagtca ctcggacaac 2340

taacatgttc ctctttggag ggtcacatgc ttacaactaa tagcatagag cgagcaaaga 2400

agattgcatt tgattggaag tccaagctat ataatcttga cattgatgat tgtaatggga 2460

actgtcccta ctatgcaaac tttaacaaaa gaacaaacct tctatctgat ataatatcaa 2520

cacacaattc aatcatacaa tgaagctatt atatgtgcgg acattaagtt atactatagt 2580

tcactacatg ttaggattgt taagtatgtg actctagctg tgtggatgat taggctacaa 2640

gaagtaatgg tcgtgtgtgt attgtttcta attgtagtag gtaattttat ggtctctaat 2700

attctccctt ttggtgtacc caattatctt tcagatgaga gcacaaattc aaaatcagag 2760

aagccgtctt caacagctag tgcaggcctc tccaatcctt ttgtttttt cttctatgag 2820

aagcttgctc aatgtcactc tcttgatatt gtcttaatat gttttgatta agatgcctat 2880

gttggacaat atctttttct cctggctaaa tcacgttcct attcatccat tttgttaatt 2940

tt 2942

<210> 3317
<211> 1425
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15388_G1, chr1:84818568..84819992, Cluster 20

<400> 3317
atggttggat tatggtccgc ctaccattta tgtaacctga ttgtatacaa tggtttactg 60

tatgtgtcat tatattttat atactattca atatgactta tgtgtgtgac tattgccgta 120

taattaggtg taacttactg cccgataagg cgcccaaagg ggaaccccat gttctagttc 180

tatgaaaact tgaatctatt tgcatagatt tgtaaagcta gggtttggat tgagagttat 240

cttgagaatg aggaaggaga gcaagcaaag agagagggag agaaaatgtg gatgccggag 300

agaaggacat ggatgtcatg tgtatataga aatatatccc acacgagata gttggaatta 360

aatgttttag gttggaaagc agacgagtgg caccgttgct catcctccaa caattaatag 420

tttgactatt ctctttcctc cttatataga tagacatata tacatactac tcacacttga 480

tggtcacaat agataaaaaa tatagatcat gaccataaaa tatgagacaa acattgataa 540

aacattttga cgcatataaa attctttata gtgttccctg gtatgcttag taaaacatgt 600

atcataacac aagtcgaagg tgcgtgaata taaagacaca aagccaaagc tttagctcca 660

aaagataagg ctttagagaa gacaagattt ctagagcgca tataagagaa gacgtgccca 720

atacacctat gtagtgaaat gacattgttg cactctctaa atactaggag cgactatgta 780

accatgcaag agggataaaa atataatttt atatgaagat gtatctaggc tcaaacatat 840

aaatagataa acagtgccac cattccaagg gtcggccatt tctgcaaatc tctcgtccat 900

ggcatccctg tgtttgaaga ccttccaaat gtattaacat gttgaagctc tcgtattaag 960

catatgtcag tttaacactc gagcattcat atatatatat attcttcgtc attgatgtat 1020

tatgaatgga aatacctgtt attcggagtt gtaatcaatc gaatgacaat cttatcgcac 1080

acacttgcaa agaatatcca aaaccctatt tcacaccttc catccaaaag ctttggaggg 1140

aagaaagacc tttgaaacta atggtgttgc attgttgtta tttttaaaat ttcgacatgt 1200

acccaacaca tcctattatg tcttgaccga caaaaaaaat ctttatttat acatttgcct 1260

tcaatccata tggtattatt tctctttctt attttccaaa tgttgagcac tttgatcaac 1320

ttgtggccac atctcatctc ctccatgagt ggcatccttg cctaaccttg gtttgaatat 1380

aacatctcag tcacaacact tagagtaaat gttagttcac tagct 1425

<210> 3318
<211> 2236
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_154390_G1, chr4:143073893..143076128, Cluster 20

<400> 3318
atcccatgaa actgaaaaaa tatactctaa taataaccat caggtttctt tgcccacgta 60

cgtagcatta accagaaatg ttcattagct atagttatta ctctagccat cagatttctt 120

ctgtcccacg taacattaac cagctgaaat gtctaggtta cttcattgca aggtaactgt 180

cgtctagaaa gtggagaact ctttcaagta atactataat atgaatataa aaatattttc 240

aatttttgtg gtatatagtt cacttagtac tggactaatt gctaataatc taagtatata 300

taatgttttt gtactatcga actaaatgtc gcccactaaa atgagatgga gtgagtatat 360

ataagttttt gtttaatctt tctactatcc gtctctgagg ttttattggc ccctgatgca 420

aaaccacaaa aatgggccct atggcctata ctatacagag ataaaaatca cctaaatttt 480

atttcactat atatatattt atctcaatat ttaaaacaac aatagacatt aacgttaaaa 540

ggtaaactgt gtatcacact tactgatata tttttaagtt atactaaaga tcggatcttg 600

tgcctgtgtt ccacgaaatg aaaccttcaa ttacatatct atatttaatc ttatccagaa 660

catcattttc aagtttagtt attgtcaatc cattgagtct ttattgtgtc atagtactat 720

gcatgtagga gttgagcaac tttcattttc aaaaacttca ttttgcagat gcaattgtca 780

tcagaatagt cagcaaactt ctatatgtaa tatggccatt acaaaaacat taaatccgct 840

tcataaactt cagaatgtta caagggccca tgtcttcgtt agagataaac ccttggagga 900

acattaactc tatatacaag tctttatcgt cgtcatcaga atactggcca ctatctagtg 960

tcaactctag ttgagtgtaa gaaggcatca aacttttgac atctaaagag cagaacttat 1020

gcgaagtaaa aaatctaaag attttctcgt acctctcata ttgtctaaac cttgtagcta 1080

gtgaagtaat agcttgatca acaatgtgta aaaatatttg ttcaaatttt aaagcaaaaa 1140

aaaaaaaatt agaggccttg tgtcatggct ccccttgcgc taggcaaggc atgggcctat 1200

cgagtatatt aattgtttgc gacatatata cgagctacat ctatagatat ccataatttc 1260

ttattaacac catatgagta gcacaataat taaatgaaac cctcaaatat acttcctcgc 1320

ttctaattta tagtttggtt tgtcttttct agataaaata cttttattat gtatttagac 1380

atatcataaa tatatagatg cataataaaa aaatacatag cttaaaagct aaaatgatct 1440

ataacttaga acaaagggcg ataaacataa aacttgtttt aacaaaaaag atgatagcta 1500

tatctgcgag tttgcctagc tcccatagag cgatttggcc atttttggaa agaaccaata 1560

tactcacatt ttattacgag tatgtcttag gacttttgtg acaaaaacca ctatactttt 1620

acaaaacctc gtatatgaaa ccatggggac caaataccaa taccactttt ctatttattt 1680

tataaagagc tgcaattttc aaacgtcagc ttaacaaaat taaggttcat ctacggatat 1740

atatttcaaa acaagaaggc aactgtattt acaatattgc tcggcttctc gacagtgata 1800

tgtatatttt tttaaaaaaa atgggcagag gctactctca cttgtcatga gtcaatgtcg 1860

tcgaggaatt tttacaaacc ttgggaggct aaaactagaa gagcaagacg taacagctcc 1920

gcactccggt agatcttttt ataatccttg taagggccta cagaatcttg aaacggattt 1980

tttttaaaaa acagagcatg gagcgcggcc tacaataaag aaatcacttt tatggaaata 2040

taaaagatta caattccagt tgcgaaatac gaaattacta ctaatcagta catccttttt 2100

ttgttttgtg atgattcatt cgcaaaaaaa aagtatgatg agtcgagtgc taccccaccc 2160

actcgcttaa tctaataaaa ccctatccca ccgtccgtac cacataacca taaaccaaaa 2220

ccggtagggg tataag 2236

<210> 3319
<211> 3112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159726_G1, chr4:173326080..173329191, Cluster 20

<400> 3319
ggcaacaatt cttctttttt ggcatcaggg aaacttaata cacaacagtt attcaaattg 60

gagcagtttc aactttcaac gatactaatg atacccatga caataataga taaaaccata 120

ataagattat acagcacata cacttaatac tgataccttc tagtgttttt ttcttggaca 180

acgcctgggc tttacatgca cgtaattgac gagatattat ctcttcgact gagtttagaa 240

ttgacaggca cttatcatca ccttcatctc tcaaaggcag accaaaggac atagtaaaga 300

gatcctcttc ctacacatac atgaaaaagg atctgtctca caggtgaaat catggagtta 360

caactataaa aaagatgatg gtatctcaaa tttcaggtca aacagtgatg aaaactgatg 420

ctcatattga catatgaatt atgtacggca gatctcacac attacagcac cctaaagcta 480

gcttcctcca taatcacttc taccactaaa agaatatgaa atgtaagaga catattcaga 540

gactagtgaa gtccattcca gtactccaca cacaagctac cagttgctag ttgtctaaca 600

aagtaacaaa gttatgccac ttaccatata ctaaaaacta aatcgcacaa atctataagc 660

aacaatgtta atttgtgcta ttcatttgca gggagaagct agtcttacaa aaataactca 720

tcaatgtgat tctcttcaga tccaatcaag ttcagcaaca cgatagatta acgcaatttt 780

caagaaagaa tttggtggag atagtcaaat acgtagggta taaaagaacg aacttagtca 840

aggtagtcaa tatgcataaa ctatttctag aaccatcaca ttccaaattc ctgacatgcc 900

gaaggttact gataaaagta accaggggaa aatggagata gatagcatcc aaggtccgac 960

ccagtacctc atgagttcgg gcagtagaaa cagcagaaat gacagcatta caagtagcac 1020

gcaaaatcct gcaaaagcta tttagtacag catgcgatga agttctttcc attctcataa 1080

ggtagataca tgtaaataca gtctgagcta gagtgtgccc cttgtgccat gttgcctggg 1140

aaatgaatca ttaaaataca tggtttagtc aaattgaaaa ggttgcacat attacatgca 1200

acaaaggact taagtacctc acatgagaaa agatgatcca tgacatcaat agagcgttga 1260

acatcaagtg tcctgtccaa gctaagtggg attggggcaa caccatcttc tattgcttca 1320

tcaatggagt tgtatcgact tctctcaatt ccagaatcca tttttggatc cattatctat 1380

caggacggag tccatactga gaactaaaat caagcaatag attgaaacaa taaaaacaaa 1440

acaaatcgat tgaattgcct cactcaatgt ctctcagcag tatgatgttt ggcttagtca 1500

ctatgaacta aaatgtcctt tgaagcattc actaatcact aatattttta aaggttccta 1560

aaacatatct gccttttga tccataccac atcttgaatt gcctacctac atgcatgttt 1620

tagattttgg aatagtgagc gggttcgcta gcagagtatg aagttaatgt tctctgtctc 1680

atatttttta aagaaactct gatcggtgag aagaatcact ccatacaaaa aacattgacc 1740

aagccaatct aaaaagacag atccagtgct ggcggctccc acatgagtgg ggtctaggga 1800

aggaatagct gaggcaagcc ttacccctcc attttacaga gaggttgcat cgaacccagg 1860

tccttcggct caatgggaag gccaagccaa tctaaaacta aaaaacattt gcctatcaca 1920

tcaatgagtg aattgccaag atattgcttt tcacaaggat gcatgcatcc agatcctcaa 1980

gtgcccaaac aagttgagtg atagttcata aaagcaactc gggtgaccta gaaaatacta 2040

tgcctacaag gaaaagatca accaattgct aagtcatcat aacaattaaa ttcgcaaaat 2100

agttcagtag aaacaagagc atcatgggcc tcaacaccca taatgcacaa tagagagaaa 2160

aaagaagatg aagcacaatt aaataccagg ggatgtagtg tggccttact tccaatgcag 2220

acattgcagc aaatagacta aagttttctc catgtacaag ttccccatcc tcgagatcta 2280

caattatgaa cagtcagtag gagacaacaa ataaaagata agttagctag tagatcttag 2340

cacaggctca actcttagtt gtaagtttct atcagtacaa aagagttcga gatggatcta 2400

aaatccaaca tcaacatctc ccatagtggt ctttggcaac aagcactcaa gcagcgctaa 2460

actctctaga tgcaagaaaa ctacaaacca tcccaacttg agattgaacc aacttattag 2520

ttttgaaaaa acaagattgt gtacttctac caaattgtaa aatatttta acaaatcaga 2580

gttattttca tgtgtagcat tttaacttga ttacttcctc caataatgtt gttcatagca 2640

ccaataatgt atataaaaat gtttgaatgt aattcagtta tgcaaatgtt gtattttact 2700

gttttgcatt tatagaaaag tcaattccca aacaaaaatc atgaaagcac catgtggcaa 2760

aggatacata atggaaggtc agaaaacttt tcaatttaac ttggtggata aaggtgagtc 2820

cccccagact gctcatagct ttcagggcca tggttcctca caagtcacaa cccccagaaa 2880

ctcagcccct ggttcattac caacaagggg ccgagccaag ggccctgcca cccccaaact 2940

tggacactat ccctaggtga tcgcatctta tacttcactt agttacaaaa ctattcctca 3000

aatagtgcct tcagggcacg taagcagaca atggagaaac atctgagttt gcttctctta 3060

ctgcacatat agctagctga aagaacttcc taatctttaa aacaaatcca tg 3112

<210> 3320
<211> 1501
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159993_G1, chr4:175140148..175141648, Cluster 20

<400> 3320
atgaaaatga tccttactaa tacatgcgca agatctagcg tcattaaaaa aaactttgat 60

agcatatgtt actccaataa aaaactcttc ttatttgcag cataatgctc tttacgatga 120

aataccaacg gatttagatt ggttgaacta ggcagattct atttcataac atgattcatg 180

acaaagcctg caaaatctat gtttaggccc gttgacagcg atataataat ttacttcaca 240

tgccatacga taattgaacc ttcactagac ccaaagtata tttacaagct gacatcgttt 300

gatataatag agcaggatct tggaaataat gaaacatttc taggtatggc cctattctat 360

gtgtagtaac aacatgtttg ataatatttg cttccttccg ataataaatt attttctact 420

aattgctatg cagatgtact aggtgtgata acatagatat atgaacttcg atcagtttgt 480

atttcttatc aacaagaacc tattgtgaat cgacataata ttcattagag acacaaggta 540

catattacct aaacacttta aatattttcc attgttatct tcaaatgaac atttagaaac 600

ttcatttttc ttcttacaaa taaacaaact catactcata gtttcttatc gttttgttaa 660

acacgtgtat tgtatacaag caaacttcta cattattttc tatttatttc cctgatattg 720

aaacacatgt gccacagcga tgcaaacctt aaagttactt tacggggaga acgagtaata 780

tctacaatga gacaagaagc aaaccagtta tcgttctctt tgttggatgt ttagcaaaat 840

attttaaagg tttgacaact aacatatact tcgtcctcac tataacgatt ctattgtttc 900

ttaagtgctg cacagacatt aagtattgag tcccaaatct tacagtatat tctccaaaat 960

atgtcactgg tttttaaatc gaagcatttt agaagctgaa acctactaaa aaaggttcat 1020

tagtgtacat cttactcttt aaaaacaatc acttactatt cacaatgtga aagtattact 1080

tatgaaaatt aggaccattt catgtttact aaatacagat ttcaaaatgc aacaaaggaa 1140

tttttgtaca attttttttа gaaaatgtac ttacatggtt tgatgctttt ggatatcagt 1200

tatactctat tttcccgagc gtgactacct taaaaaaaca gccacatgcg tccatgtgta 1260

gcagcttcat tttgctcaca tatacaactt ctatttctaa acacacaacg tgccttttct 1320

tcatcttaac aaattatatt aatctgtgac atctatttga ttgcgtcacc tggatttcat 1380

ttactgtatt atttgagcat aaaatacaat ttaccatatt gaataaatct aactcgaata 1440

cgtaacatag cgcacaaggg cgtgccccat ctactagttt ctagcaagta ccgcacgcag 1500

c 1501

<210> 3321
<211> 1418
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160235_G1, chr4:176530889..176532306, Cluster 20

<400> 3321
atgcaccgta tcactaatgt tagtaggtac caactggctt agatcggtac taactgaacc 60

atccaacaca ctcgtatcga ccatcattat cgaccaacgt tagctccaat ataatgtgat 120

cgataccgac cgaaccaatc ggtcgaccga ccgacgtcgg taccaaccgt tctgcaggcc 180

aataacatcg acccaccgtt aactcgaggt actcaatctt aaataacgca aacaaaggcg 240

ccatcaaatt taattacatt cacgagcagc ctatttttgt aaattagaaa ggatataaag 300

agagtatttt aaagttgttc tatcagttgt gcctttaatc tttataataa gcatttaaag 360

cgcccaagtc acgcatgatt tatttagttc tacgtactac tagcagctag caacactaga 420

atactgcttg tctgctacag tgctactgca gttcaaagat gtggatatac tgcagcacgc 480

aacactgatc aagccatcca tcacgtgcaa cacattatat aatataatta tatatataat 540

catatatatc ggtcgtgcaa tcaagacaga atgataggga tagaagattt ctttagaaaa 600

gaatattttt aaaaaagata tgatgagtat gtattgaagc ttagacttaa aagtgactgc 660

acataccgtg ttgaataaag tactcaattt gagtctagcc cctgtgtgta tatactagat 720

ccggcgcgtt gacattcgtt actaaggaaa cgccgctgca gttgaatggc aggaattaac 780

cacattagat taaacttgct acgcctctct aatagtagtg atcaataaga aaaaatcact 840

atatatggca cttcttcaga tcggccgtgg tagttaataa ttgacatatg agagagtact 900

acagagaact ataatattag ctagaagatc gtcgattgaa caagcagcct catctctcaa 960

ggttacatat ccatgctcaa taattttaat tatacgacat ctcgtttaag ggatatgatg 1020

atttattatc ttttcattca tatttttttg tttggtttgt gaaatggaat ccatcgcgag 1080

ctttgtataa gcataagaat agaaccattt catcaaaaat catataataa actcatgatg 1140

taccatctca aatgaacttt caaatcggtt cgcctagttg ctcaaaccag agaccatatt 1200

aatttcatct ctaaactttc gaattattgt cctaattcct caaacttaac actttataaa 1260

cttccccttt ctgaactgaa gtcatccttt gtcctcggaa gatatgccat gttggtgttt 1320

atagtaatct tgaggtgtgg tgccctttgc tcatgagatg cctctttcat accgtttact 1380

acatcaattg aggacacacc tcttcaatcc acaatgaa 1418

<210> 3322
<211> 1938
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161094_G1, chr4:182053347..182055284, Cluster 20

<400> 3322
aaggtaaaac acactaccaa gatatacaat gtaaatacaa aagctaaaga gccatagaga 60

tacaaacact agaaaggcaa taacacgatc caatatgatg cacgcaatga tacgaccaac 120

agtgtgtgag cgcggcgtgt agtgcggggt agggtataga gagagcatgc gcaacgagag 180

aaagaagata ccatgactat agaaatagaa cctcgatgca aagatatgta atgctgatct 240

cggtgtcagg agctacaaca ctgatgagga attgtatcat catgactaca ataacgtgat 300

ccacatcatt tatagcataa tatcatggcg ttataatata tagtgtcgaa ctgtgtaact 360

ttggtgtaca cccctatgat taattcaccg gagctttta cttgattttt ttatataaaa 420

aaagccggta gcctcgcacc gtcacacgta cattacgcga atcaagcaac ggcatcgtgt 480

ccatgcacta aacgcggcat atacacacat cgcaatagcc aaaatgtaga tgcgaatgga 540

cgtaaatcat gcgccctgtc tctcacgggt ggcagacagc aggtggacac caaccttggc 600

tgccgccact ttgagctatc ctaaaatcct aatcatagta tactaacgtt tcatccgtgc 660

aatcagcacg tgttctgaga ttaggaacga gaacgacctc gcgtgcaggc atttaaaaat 720

gtcccaatca aatcaacgca caagtgctcc gtttgtcggg gtggtacttt ctggtgaaag 780

gcaacaaatc tgcttacatg tagtgcatta acgaactgcc atcaggcatg aaaaggcaaa 840

gcgaaaccaa acttgccgcc gccagcagga ggatccctga tgccagtggt ggatttgatc 900

tttctcatca accagtaatc tactcgaact cggttagtgg taactgcaat tctcaggaag 960

attatttgct acaagtgtgg aagcgatcca gaggaaacaa acattggcgg gaacggaatc 1020

agtggacctt ccactcgagt cccgggcgca cgttgagcat ggtgttgagt ggtgtctttc 1080

agtctcggca gcatcaaacc ttaagcaagg ttcagtagtg ctcatgcaac tgccatgctt 1140

tctgttccga ttccgacaga aatggatcgg tcacctttcc tgacgtgtgt taattgccga 1200

cagactggta actactaccg tgttatcttt cttctatttt ttttccagca tatgtggagg 1260

gggccagtgc tccgaatgct cagttccgtg gtgtggtaga ttccagcttc tgctgaccgg 1320

cttcaatgga tcgtcaacct gtgaacagag agcgccgtaa ctgtcagctc attgaaacag 1380

tgtcgcgagg atgacactgt gccccgtaca gtgtccggag ccgtatcgtg caattagctt 1440

ggtactgcaa tgcaagcaaa gcaatagatt actcacaaat catttgtcca ctgtttgctg 1500

aatgattaac ggcatgatga tacatggtgg cctagttcaa tggattctta tccccatatg 1560

tggggcggac tgaatttttc ttctgttcaa agaatggctc agagttgcaa cttacagcta 1620

ccctcttgca ctgtgctttt ttgtgtctct agctcacgct ttagagcata aattttatat 1680

tatactattt ttattatcta taaaattaat ttaggtctgt tgcagaacag ctgcaactcc 1740

aattgtaact tctctggtga aacaactctt tgtgtcttta acttcactag ttaaaaaaac 1800

atttaatgaa ataacttctc ctagctatta accaagtatg gaaatttcat aatgcattat 1860

tttttcctct ttctcttcta tctccacctt atctgctctc ccacgcttct tctaccatac 1920

cacacgcatc cacttctc 1938

<210> 3323
<211> 2235
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161102_G1, chr4:182186415..182188649, Cluster 20

<400> 3323
tagtgagcta tatctagtgt tgagattttt gtgtattccc tcaaatttac ccccccattc 60

tttgaggcta atatacccat gcgttgtcat gagagtaaaa aattagtatg aaacatatat 120

acaaaacaat aaacatcatt atgatatgca aaatcagcgt gacaaactat caccataacg 180

ttaatattga tgatattaat attaatatga ggaatagata ttgaaacatg tttcaaacca 240

ttacaataca tttagttttt atttgcattg agaacaaggt caataagcat agggctttcc 300

aaataacgaa cttacaatgg ttgcacaaca catgtgtaac agaacggtat accatattga 360

tgactgagcc tgtgactaaa atgtttcata acctttgaac tggtttttgc tctaaaaatt 420

tgatctggtg tctcataaca atgttgcacg tgaacccatc tgggcacaag cctaagcgag 480

tcatctcctg ataaagtgtc aatgcttctt gtgcatttcc agacctaaaa gctccatcca 540

tcgaactgtt gtgtacatgg acggtaggag caaccccaaa cctgggcatc tcaaaaaaca 600

tatcttttgc ttcaatgaac ctcttcgctt tacagaaacc atcaatcatg gttgtaaaga 660

taacaatatt tggaatcaag caagtcctct ttcaaactat atacacgaat aacagtgtat 720

acatgaatgc ataggttgta ttagttgaat gttgaatgcc atgacatgca aagaaatggg 780

gacaagacag tagagagttt agtggatgag caaacaacaa tgccaccttc ctaatgacca 840

tcaaattctg aagcaactga gatcgttctg tccttggact ccacaactac aagataggat 900

acatgaccca tataaattaa ctaagaccta gcaagtccaa atccaaaagg aagaaagata 960

taacccctg gctagattca tctatactat tcaattcatg caaacactct attcacgaat 1020

gatagaaaaa tagcaaccat attatcatat ataagtaggc aagatgcttt tgtaggtaag 1080

aagatcaagg ccatgaagta tggtgtacac aaattatttt agcacatcat cgaactattc 1140

gacgccatga aaacaaatta gcagaaaaac cagattgcca gcaggtggac attgtacaac 1200

tgccacgtag atggtgtaac tgattgattt tgtaggcttg tagcagggag ggagctgcca 1260

aggcactccc tgcctagctt tagctgcttt atggtgccat acaagtttcc atatagaatt 1320

acagaatccc gtgcaaacaa aaaaaggaca acacaacgtt actgcaccag tttagctcat 1380

atcctctagc ggctgttgtg actcgatttc cattcttccc acctgactga gctttctttg 1440

attctgattt tgataagaac actgatgtta agagatgatc cgagactaca tgtttgtgct 1500

aataaaaaag caagagtagt gagaaagaaa gatgctagga taagacgggt acctgatgat 1560

atgcattctg aactccttca agcatctgga caacatgact catctttggg ctcttgtcaa 1620

catcaggatc gacacacttg aagccaacca agatttcctg cttaagggca cattttggtg 1680

gcttaacctc gaggtttgga tgcactacct catctgccct cttattggta accatcattt 1740

taagccactc taagagattc acctgaaaca aacaatagaa gaagtttaag aagtaaatgg 1800

aaacgcgatc gcaccaatgc tttgaaattg agagaactcg tacatcatct gcaggattag 1860

cgtaatcaac tggatcccta gctatcacac attctaacaa caccactcca aaactgtaaa 1920

tatcacttct ttcatttagt atcccactat ttgcatattc agatgctaca tacctgtcac 1980

cggattaaga tgtgttgacc ctgaatataa acaaagaaaa taaaataaaa attagacgac 2040

atagttgtag ttatgtttac tatcagatca taatgaaggt gtatccagat agcattgggt 2100

gtttcaacca aacatctgca aggaacaaac tataatgcat gtaaaccttg ttatgtacac 2160

tggtaacaca aattttcatc catatgtact ctagtccttc ttagctgttg agaggacatc 2220

agaacaatcg aatca 2235

<210> 3324
<211> 2573
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171244_G1, chr4:234715780..234718352, Cluster 20

<400> 3324
gtaagcctag gattatctaa gtttaactaa gcagactatg atgaaattct atactctacc 60

attgcaaccg agaaatgagc aagggcatgt gccctcgctc actactacgt aggttcgcct 120

ctgatgcggt atgttacaca tatatttttg aataatcggc agtcaaattt tacaacgtct 180

ggattttaaa attctaatag catcctcaaa cgaggtcatt ataagtacag gtacaatgat 240

gtcacgaaaa aaaaatagat gaactgaaca gaggagaagc gcatggacgg atgacaacgt 300

atgttagaga gcacacgcga catggcccgc agcccagtgg gctcccggct aatgtgcttc 360

caaagccctc ttttataaaa gaagattaat atagtgccta cgatagtgca ttttgtctga 420

attggtacac atacagccta ccacacacgt ggcataagga tctcgtcttg ttattaataa 480

tcattgaaaa ccaactagaa atctagatat ttttttgttt ttaattatat tttagataat 540

ttattttgta tcgctgtgta tgagcgggct tatttttat gaccatcgaa tataacattc 600

attcattaat ttgttgctaa atacacattg ttctcgatct atatgatggc atgacatata 660

tgtatgcttt aggcgatttt tatgcatcaa tattgattga agcagatagt ttaggaacat 720

agacataatt catgtgattt ggacattttt tatgatagca tatatatacc gttacttagg 780

atgctaattt gtattgcttc tggtagcagc taacatagta gatccaatat ctattcttaa 840

cgatggttag agttttagta aattggtgag taaaattttc taatcctata agaatttcta 900

gagtttatat ttttatgcat cagctcatct acagcttcac tgacattctt tttttcttct 960

tcttttgcct gcttaactga cacgatgtta tttatttatt tatctattta tttattcaga 1020

tacgcctccg tgagctccgt aaccctgaaa cctcatggtc atggctgtca cctgctagtt 1080

cgctggatgc aggattgtga tccttggcga tgtcaagagc ccatgctaaa ttagcaaaag 1140

agatggatgc atctgagaag gacgcaccag atctctgccc agccagattg cacaaagctg 1200

caggcgtgat cctgatgagg tttaagggaa aaaaaaaggt aaggattcta cataatctcc 1260

tctcatccat cgacacacac gacaagtaaa aacgccttga gttgcagaga tgggtaaaat 1320

aatctattca tgcatactgc gacgatcagc gaccttatca gtctctgttt cttattcctg 1380

atcactctag tctccgcatt atcttgaatt aaaaaacaac aacaactcta cgtgttttgt 1440

ttaggagcaa ggatacctaa caaaggagct ttgattcgaa tcatctctcc ggtattcttg 1500

ctcacaaaca atccctaacg aatacctaac aaaaggacgc tgatccttcg accaaacatg 1560

gtgcaagcac agattctcct gcaaattttt taaaaaaagg gcgcggctgc tcgatctcct 1620

gaacaaagat agattagagc agcgtccaaa aaaaaaaaac gccagaattt aacacgcgtc 1680

actacgagtt cctcgtccag ctctctttcg gtgcacggct caatttaaca cgccacgcgc 1740

ccacgcgtgg cagcttcact ttctgaccac gtgtggaata cagcagcaag tagaagaagg 1800

tcatgacatg agtggtgatg agtgccgttc tgaactccga cgagttcagc acagtttctc 1860

agcttttca ggtgtcgcgt ggctcgtgaa ccttttgtcg tcggtgggaa gtgaaaagaa 1920

gagcttgttt actgactgtg ctgtggttta aactgataaa gaaaggtaat aaactgatca 1980

agagagaaag gtaaggttac gatcgtgcat atagacgtac aaaaaatacc gttctacacc 2040

gttcacggag aaggattgac taatatttgt gaggagtcgt accaaacaat taattgtcta 2100

agttaccgtc acagatctcc ttctctttga gacagtggtg gccctgaggg tggggcagag 2160

gggcggtcgc cctgaacccc cgaattcata gggtccaatt ctactcatgt gatccaatag 2220

tccattaaca aagtaataaa tatctaaata tgttagaaga aaatttaaag atgatactac 2280

aatatatata aatattttta aatttatttt aagtgtttaa ttattaatat ttatatatta 2340

aaaataattt gaaggacctc tatttaaaac tttatcctga gccccggtcc cctaaaatgt 2400

ttggaccgcc actgctttga gagatcaaaa gatagaaccg aataggagga gtctgaaaaa 2460

gataggatcc attcgaaggg tcattctgta cgcgtttatg ttatattata aatgcccttt 2520

ttgtttcttc tatctctcgt tgcctctgcc tgaatttgtt gttgccgcct gga 2573

<210> 3325
<211> 1468
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171599_G1, chr4:236358269..236359736, Cluster 20

<400> 3325
ctagttaaag tttttcttca ctcatagtga tcttggtagt gcttcactat caggaacttt 60

ggttccgcaa cttggacagc tcaaaaactt gtagtaccta taagttatct tcctttgcta 120

cagacaaagg ttattaggga tatgcgatct gggatgatga aggtgatgta atctaatctg 180

gagctgggaa acacagtgaa aagtggtaat aatatgagca ttcgaaagtg agaattaaag 240

tattccattt tccaaattct tcagaccaca tacactaaaa gctttgctac ggtttttcc 300

gcataaaatg gtagtgataa caatctttgc tactgcgcat tttggtggat taagatgcaa 360

gtagaagaga aaaacaacaa aatacttgac gaacaataca tgtcccttag cttttagaag 420

cgatagactc tgacatcttg actaaaaaat aaactataaa atgttggaaa cttctactca 480

gtgaaacatt acaacttttt gtgatacatg ctacacttga caacggaaaa aagaagcaga 540

ctgtgcaaat ttactgttaa aataaatgca cctctaaagt atggctttca tcaatctact 600

gaaagggaca aaaaagagga ccacaatgaa cttgtataca tgtaaacatg tagaactgta 660

ataaagtaaa tatagattag tagtgggagc atttgtaaaa tatttaattt acttaacatt 720

tgaatagtta attgcttaag agaagggcaa ataatgaaat taacattgtt ggataaaaaa 780

tgtgcttcat ttgcataaga gatacccgaa gataaaaatg tcaaaataga tttgaatcaa 840

gaataatcta acgaagaaaa atggaaaggg gaccttacag gttagctata tcgttgttga 900

agaaatggta taatatttac tacagcagag aaagccaaat agattgagtt ttggttcttt 960

tttacaagac aataagaaat tctgcagcaa ttcaatataa aaacaaattc aagatttgtg 1020

cagatagaag gatagcagga aatttatatt agtatttgtg ctatcaatct ataatcataa 1080

taaaaactgc tttgcaattc aaaagaatgg agaaaacgga tctatctttg gacttagcat 1140

gtaatagaat ctaagagaag gttattgcaa cctcggagat acagaagttt attttgtggt 1200

gatgtgtaga atgggagtgc taatgttgta tagtgatatt cagaacatgt tgatttccaa 1260

gcacaggaaa ttttgcagag atagaaactt acgtggtgac aaggttggaa gtctccccga 1320

gctcagcgac aatcctaagt tgctccagaa tacaccagtc gttgacatgg acaccaatgg 1380

agcacatttt tatctttggg tatctcttat tatactctca gtctctgact tctctagcac 1440

aaggctcgca attcctttcc tgcaggat 1468

<210> 3326
<211> 1527
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171964_G1, chr4:238383801..238385327, Cluster 20

<400> 3326
gcattacaat ttacaatgta aagtagcagt agaagagcaa acatttaaca cataaatatt 60

cccataccaa acctttcatt ggttgcttcc tatttgttta aaaaataagt gatacagtgg 120

agcagtttaa gtaaaaaaaa ccatactacg aagttgcaac ttactggatg tagaagttta 180

tcactggtga tgacaaatat actccaggat caagacattt aatatcagat ctgctgagct 240

caacagattc ccgattatct ctgttcacat aatacagtca aaagaaggta aagtgaattc 300

atgatcttca gaaaaaatgc acaatattca cctcgatggg tagtagatct ttggtccatt 360

cctgaaaata caattcgttc agttgaaaca taaacaaaaa gctcagctaa cagtttacat 420

gatgaataca acaccagaaa gaagcttact gtccgtcaga catgtcacag tttacttctt 480

cctcaggctg catatcttcg tcatccaata gaaccacatc ttgaacctta taggcaactc 540

aggttagtaa ttgtgtaagg ccaaaataac atgtaaaagt ggtgcaatga tcaaactact 600

ataagaaagt atgccaatgc aatatatgac agccaaactt attatgagca gataatacca 660

tggtaaaaat agcagtgtct gtctaacaaa gaaggtaaat aactacctga cctttctaaa 720

aacaagcttc agtatgaaac tcaaacacaa acctttgtaa actcgtgtta acaaagagag 780

tttatttttc tcaatgcaat atatgacagc caaacttatt atgagcagaa taccatggta 840

aaattagcag tgtctgtcta acaaagaagg taataactac ctgacctttc taaaaacaag 900

cttcagtatg aaactcaaac ataaaccttt gcaaactcat gttaacaaag agcgtttatt 960

tttctcaacc ttgcctagcc ttgctagtgt ttaatcgtta gtgcaatgaa accatcaact 1020

gtccaaagaa atgtccttga taataaacat caacactcgc tatgttctcc attgttctta 1080

tgaccacaga agtcaaacat ggcatgctca ttacacattg catgcaatag gatttcattg 1140

aaatgcaaca taaataaagt tcgcacaatt tagcagataa tgttaaatga ggaccgtgtg 1200

gttttaatat tcaagcaaca aaggatgtat gataggttat ggaataaaaa tctatagcag 1260

aattcacaaa ttactaaata tcagcaaacc tacctttcga gggtacacag aagatgaatt 1320

ctgaagttgt tccttcctcc tgcatagaat aattaaaaat gagctgatga ttcatacttc 1380

tagacagagc aaagtaataa gtaataaata taataacggt acattataaa tgcccatata 1440

gatgacaata tgtccataat atgtaaatga tttgtacaat atatacaacg cagaagatat 1500

ctttaagaat ctatataaca taaaaag 1527

<210> 3327
<211> 2467
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176247_G1, chr5:22095542..22098008, Cluster 20

<400> 3327
tatagtaagg gaacataatt aatgtatgca gcaagagtat tttcccttat ttgtaaccta 60

ctagtacaat ggcaaaggtc gaatattgtc tagctatata tgtggtatat gcttaatttc 120

ttaagtctga ctttctgagt tcaataatgg aagcgcctgg tctaaattac tgttgttttt 180

ctttgacaag agacacgcac caaagtgaac cttagcaagt ctatggatgg tattttgtta 240

caatataaga tggcattagt agtagtagct aataatatgg gtggttagag aaggtgtctg 300

gcatactgct gcaaaatcca agcgcgcctg tccaacttaa tttctgctat gcttcgatag 360

tggcaccgaa tacatctatt agctatatat aaaataccat attgtatata tatacaaggc 420

acagagtgca agaacatata tatatatata taattatcaa ttgtacatgg aatttaaaac 480

tttatctcta agctaaatta tgctcgttat aataagtgtt gtttggatat gttcaagctg 540

acagattact cattctttat ttgtggcaat gggacatgat gtgttatttg atctaatgat 600

atatgatggt caaggcttgc acaaaacttc atctcaaaag agatgacatt tattaaaaga 660

ttgtgcagct cgcataatat tttgcatatt tcgaattatt ggaaccattc atagtttcta 720

aaagtcattt ttgtgtaaca tgtagctata gagttcatga ttgaccagca aaaaaccata 780

atgactaaca tatatctata caattcatgc tactagattt catatgacat aacaaatcac 840

tctaggaatc cttttggagt tttataaatc aaatttgcat tttatagagg tgtctcttgc 900

tactaaataa ataccatggg atataatgac gtgagaaatc atgcacaaac aagttaaaga 960

tatattgatc tctatgatat actcaagcat tttgattcaa cgggttaatt ggaggatatg 1020

ctaaaactag aggtgatagt caaagtttta acataataat attaaagcat taaaaaggaa 1080

tatcaaaccc aaaaaataca gatatagata gagaaattga atatcgtacc ttcccatatt 1140

tacataggag catcgacaat ttcagtattt caatagtatt gtgtgatgga cgcaatatat 1200

attaatataa gtaacataca aaaacattag gacctacatg tagatttttt tgctattgag 1260

tgcaatgaaa taaataactg taattataaa caaattgtgt atttatgtag ttatttatac 1320

ataatatgtg catttcttta agagaagaaa aaggtcaaac ttagaagtgt ggcttctctc 1380

atatatttta tgtataaaga aattaaaaga tatagtaata tctaggagtt ctagtcgatt 1440

caacatgata gggatatgcg aaaactctag gcatgacact caaaaatttg atataaaata 1500

acattcatac attgaaaagc ataaagtggg ccaaatatgt atatccaaat gaagaaattg 1560

atgagttacc tttgtatatt ggcatattta tgagtgacaa ctattttagt atttctttaa 1620

tgcttcatga tacaagcaat atcttttaat aagcaacatg gaagccaagg aactctacat 1680

gcatgtttct gctattgggt atggtgtgat aaactaataa cagatcatgt gggtatcctt 1740

gtgtagttgt acatatcact tgtgcagaac gagaaatagt taagatttag aggcaatata 1800

tttttggttt tcacactaca ttttatgaca ttcgatagaa tggtggtgta ccaataatgt 1860

actaacaaac taaatatata gtgatatcga actaattaag tgccgcataa tgttacaatt 1920

caacacacat tgggcaaaca tatgattgga gatagaggtg aaagtaaaaa acacatgaca 1980

ttcgtccatt gggaaaaaat acacacatta aagttatgag atagtgttga gatagatata 2040

gaaattgatg attaaatata gtgatatcta tgtgtcaata atttttggt caatgtcaaa 2100

ccaagatacc ccacaattaa agttagcacc gaaataaagt tcacacatta catgcattga 2160

caaaaatata tatcgaacct gaaaccacga atatagctag aaaattctta tatcttaata 2220

aagataagaa gatatctatg gtacaaaaga tatgaaaatt catagcttaa acatatggtg 2280

atacctacaa gtcgttgaac atttcgattc aacacgctcg gcaaaaggta ttctaggtat 2340

taaaggtgtg atgcaagaga tactatttta taatagaaaa aaatgatttg tacaaggcac 2400

aaactttccc tatgttggtg cgtggccata gcggtgtccc aatgcacctt taagcccctc 2460

tgttcta 2467

<210> 3328
<211> 1591
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_179499_G1, chr5:38481506..38483096, Cluster 20

<400> 3328
aacaacctta ggatcttggt ccgttaagcc catgagctct tcatggttga aattttgatg 60

ccttctttaa tctcctgatc atgtccatgt ataatcaagc aacatctaag tggtcttttt 120

aagagaatcc atgaaattct cttcaagtct tttgtatgtg tgttattgta tgatgaagta 180

tatatgctta gtccccaagc ctttcactat ttaatataaa tagcttgaga gtcttttcta 240

caaatctccc catctttaaa gaatcctctt aaagattttt aaaacatctt ttgagtatat 300

gtatcctatg gcccctgagc ctaaacaatc ttttaaggaa ccctcatcct tgggctcttc 360

ttatcttgct ccttcaaagg gctcattagt gactggttag ctccatccca tcaacataac 420

ttttcctacc accatccttg gaaccctaga ttggttgatc attgtgtctt gaccatcatg 480

ttcttattag cacattgtct agattcatca tgattctcct tttcatagag atccatgtca 540

tttgtatcat ctgccaatac aacaccccat cccatatcat ggccacgacc acaaccttac 600

attccacctc ttggttttct ttctctcctg ctttttctag cactagattg agctaaaatt 660

gaccaatagt aaattatccc actcacgatt cttcttatgc aaaccatctt tgcactctat 720

cacatcctga caaatgaagt tacaaaaatc aaagaagttt ggaagcttct catattgact 780

ataaatctcc tcttctcttt cattatgatt ggcatgacct aaaccatggg tttcccaata 840

tctacaaata ctcttgaatt aagatacatt gtcaaattta ttttcctgtc gtttaccatc 900

attaaaatgg gaggttatgc aacttccctt gtcactctct ttgccaaatc tgtcctcttc 960

atcaaagcat tcaaaactcc ttgaccccac acccaaactg tatcttatca agcgtgtatt 1020

cttttactct tgagaagcta tactcagtag aacaataggc gcttcgttga acaaccaagg 1080

accaccctcc atcacccgat tccaatctct aaggtaatga aatcacacta gaaatagatt 1140

tggttctagc accttgaatt tgacatcctt cgtggccact cgtgcaaggc actgaacaat 1200

gttacaaggc taaacatttc atggtataaa acctaaacaa ttccaaccag tgagcctcct 1260

tgatcatttc aaccatctcc cctaagagat caaggtcttc ctcctctcta tgtaagttca 1320

gattctccag acactctttg atggatgctt tcgatgcaac atgatcgtcc ttgccctaca 1380

tctccatgct ggatgaaaat gccatggcta gcctcaccgc ttgtgttgat atgctcttgt 1440

tgttggcctt tgattgcttt caatcttaca atagaaagta gcatagtgga ctctgacagg 1500

catcatagct agaggaatgg gaaacccaaa ctaatgtgtg ttaaagggag atgaaatcta 1560

ctctatcatg tttttgcttt attatgagtg c 1591

<210> 3329
<211> 1639
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_180190_G1, chr5:42862167..42863805, Cluster 20

<400> 3329
tgttgttccc tagccttcca acatttgccc ctctggcctc tattataaga tttggtgcat 60

tcaggtagat gcctcttctc atgtctttgt cgtcatcaaa tcaataatga catagcttcc 120

accctgatct tgtagcattc aaacttggga gtaagatttt ccttgtgtcg ttatgcgtcg 180

accatgaaat gatgttggcc tcaagagtat tgtagacttt atgtcctcca actttatgaa 240

agtcgaattc aagattatgt attgtggaac tgtcaagatt gtgtttattg catcaacgat 300

ggtacatgtc aatgtttcta ctctcatcac aacgtcactg cttgacctca tttagtttga 360

gtatattaga atgacatcaa tcatgtgtac attattgtgc acgttgttga ttcttgtgtt 420

gccgacttta tctctcaatg ttagtcttct tccatgctac cttgtatatg gagatgtcga 480

cttcctcttc atcattcata tcaataatag ttagcataaa aacctcccaa ttgtgatcat 540

agttgttcga gctatcatag gtgcatggct tggtgattat ttcttctatg atgtctatga 600

gagcaactct agctagatat gatagtgggt ttatatgggc aactatgtag gaagaatcag 660

aagaattctc gagtagctag gtgccaagcc aatgtatgat attcctttat ttatctccct 720

cttgctctag tgcaagagta gaagagatga atcttgagac tgtcatttga tgatagagtt 780

agtattcttg aacctgaatg ggagttgagt tagtttggac catagtcgtt tgatggctta 840

gaagctgact tagaaaactt gatcatgttg atgtcaaaca taatctatac gggttgtttc 900

ctcatccgag tcatactaga attcaaaaaa tcattgaaat tttctcgata agatcctcca 960

gtgagtttta atgaagagct agggattctt agtactttgt agtctccatg aggcaaccgt 1020

ggattttgac aaagtcgttc gccatacaga ccgaggaacc aaagatgaag attgatcctg 1080

ctatgaatgt cgtgatgatc ttgaagtcca acgacctttg gagaatattt tgttgataac 1140

cccaccgaga gtgccatttg ttggtatctg atgatccata atgttactac ggtgttatcc 1200

ggagcaagac ttggtggttc aaggggagat caaattttta cggtgaactc gagataacga 1260

tttaaacata ttcagattat tgaatagctt aatatcctac atcatgcacg ttggattgac 1320

ttgagttgga ttattgagta taagatgtta caaggggagt gactttgcct ctatttgtat 1380

agtctataat acaaatgctt gattctagcc ctagttagct acaatagaag aatcctaatc 1440

ctagtataaa gattatcttt ctttagtcga ctatgtcaat tttcttgtcg tagaagccac 1500

accaccttgt tttgtgtctt cctagtaata tgtgggctaa cccatcatct tgtcggatgg 1560

tgagccttat ataaacccct tagggattgt ttggttccat gggacttaga ggagattaag 1620

gggcatataa ttccttgct 1639

<210> 3330
<211> 2590
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_184065_G1, chr5:69967592..69970181, Cluster 20

<400> 3330
gagaggaagt acctttccaa tacgaaatgc caccatggag tcatagcgat aaccttaggt 60

gaggggcagt tgcagggtac taaagttaga ggagggtagt cacagttgat tgttactgca 120

cagtatattt acttttgatg gttacctagg ataagactga atcactacca ggacgaacaa 180

acctatgtct gttacatatc cttgaagtca ggtatgtaga accatgaacg aagttatgca 240

tcaatgtgtt tatgcagagg aaatattcat acccagtctt atacattaaa aaacaatgtt 300

cgtggtaaaa tcatgggaaa ccactaaaaa attaacttgt ttttagggta agggttttgc 360

ttcactaatt ttacattcac ttgaattgca ctctacacct gcacaatgtg cctttactct 420

gcagctacat tcacttgagc tatgatttaa caacaccact tctattggca atttcctctg 480

caacctacct tgggtattat gttgggcttc atagagacat atattatctt tgatttcttt 540

ggttagcaat taaaaacatt ttgtatccct tattttctcg cattcatatt tattactctc 600

acatcctcct tgcagagccc tagcacaaca ttgctattga agagctagaa gctactagct 660

tggacttgac agggcgttgc gagtctctag aggagagctt caacaaggag aagcctaaaa 720

actggtgagg ggtgatcttg ttgggccgtt gtgtgataac ttctatattt tcgactgcaa 780

ttttatattc tcaattttac atatggcaga tcactatgga atcttacgag aaagtaaagc 840

agtaaaggga atcagctgag agatcatgag atgtgctaac tgtggaccta gaaagggtca 900

ctcatgatgc taaggtttta ttgagcaggt aatggttgat agaatgtatt tttgagaaat 960

gatgaacata gtcttattga atatttttac atgggtttct acacctattt gttatataat 1020

atgtgttgtg ttaaactagc taaaaatgat ccaagacacg aataaaaggc ttcaataata 1080

caataccagc ctgcaacaat acaactgtaa cctttaggct gatgcctcaa agagtggtga 1140

gactatctcg aaactttaga aaagagtgcc atgatggaaa ctatggcaac tctgagagag 1200

tgtaacaact taatggacaa tcgacttgaa tcttctagag tgagtatttc tatgaaatat 1260

atttgatcga ctttgtaagc atgctctctc ttctgccttg aaagcttaag tgctctctct 1320

tctgccttga aaggttaaga acaaggcttg agtccctata tttaaatgat gtttgatgct 1380

tatctcattt ggtaattgtt ctggatttca ggtgagaatt tgagcccttt taaaccaaaa 1440

caaaaatact tgggtgtaga agttagcgat tccttgcttc ttgtttgtgt gggcctaaaa 1500

aacaagtatg ggttgatgga ataaatattt ttggcctttt tggttgtttg aatttcccaa 1560

tttaaggtca tagcattagt gtgttagatt tacatgatga cgtgcagttc acgaatagac 1620

tgtggggctt ctagattggg atgtggttag tgacttcgat taccagcact tgtgttagtt 1680

aggctaacat cactgatttt agtagtatgt taattgtgtg atacgtctag ctatttgaat 1740

atgatttgac atatattgta gtcactcctg taaatcgttt tctttattct tccattttct 1800

ttcatttctg ttagtagtat tttcaccatg ctcttaaaga atcaaggcca aaatatgttc 1860

tatgcgttta tcttgttgtt tagattttct tgcttgtagc cataagtcat gcttaatttt 1920

tcgaatgtac ctaggtcact catttttggt agttatattg acgccaacta aaattagtgt 1980

ttaagtattg taaactacag atggtaatgc aaggtcttca acctatttta ccggctttgg 2040

ttgattgcca taatctgttt tggtacaagt ttgcaatagt ttaattccat agaagtattc 2100

agatgttgag tgagtatagc ttgtggccta tcttatgatc atactcatgt gtactttagt 2160

ttatgagaag cagcaacaaa aaaaattaat gccataatgt tccaggctct taatttttga 2220

gatacaatta gttcattgca cctaacatat tttgtttttt taagacagaa atcttcattt 2280

gatggttcag atccatgtaa agggaggagg atgcttgtag ctacacttat gggtatcatc 2340

actttaaact gtgataatgc aaactactca ttctttcagc ctttactacc tgcagatgct 2400

gatacaagag aaagtggtcg gtgtccccct ctcaccagaa gccatctcag ctgacgccat 2460

ggacatacag taagatgctt ttatccctgc tttctatact cgatccgtag aattgagtta 2520

gtggtgtctt tgttgatgaa aatgtgcaag aaagtgtagc aaaattctct agggcatccc 2580

taatcgactg 2590

<210> 3331
<211> 1713
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_184523_G1, chr5:73031867..73033579, Cluster 20

<400> 3331
atctatatct tcacatggga gataaatgat actttagtat gtgaccattt gtcatgcaaa 60

atgacaattt atggctaaaa ccatcttaaa tcgatgtcct ttaagggtag actacgtcaa 120

tgtagatcac cgatctaaag cgggaacccc agtataaaat tctaaaataa ctggagagaa 180

aaaaaaggta agccaacaca tttaaccatg atgagatatg tatagttttt ttagtttaga 240

aaaaatcaca cttttgcttt ccacacagta cgtcgccctt cacgtacatt tcttaatgtt 300

tcggtcgcta gctagaggct attagcaaag caaatatagc tttaaaaatg gaacctcaat 360

aatacagaat gttgttttgc gaaaacgctc ttagtttctg tgcaattcaa gccgttggag 420

gaccgaatca acgacaatgg agttgtggtc catatacttg ttactgcata acaacgaatt 480

aactatttca acgagcaata cgtatttttt taaaaaaaaa tgagaggcgg atgaattgtg 540

aaagcgggaa ccattcaaac agcacggact ctttctccga caacaaatca atttttttt 600

aaaaaaaatc attaagaact cgcccaccta ccaaaaaaaa gacaaaaaag cataaactaa 660

ttccgcgtca caccgcatat ttcgacacta gcaccagcga ggattaaaaa aaatgcccct 720

atggacgata caaaacaagg aaacgaataa aaaaatccca accattgttt tgaaaaattc 780

ccactaattt agctccaatc actaaaccga acaaggctaa taaacttccc gcctcggtta 840

agatctctgt agtggtcgta gaacctcagc taccattgct tctttttttt ttggtgcgca 900

atattgtata tacacagcac ggctatgtat gtatttgctt ttctagatat acagtattta 960

ctatttattt agatatccac tgtatctaga tatacgataa gaacatattt aaaaagatat 1020

aatatcttat gatttaaatt agaatgaggg catgccagcc gaggtctcac atgattgcat 1080

ttctgattga aattattata tacaagaaag atgccgaaac catcagagtt tactaggaaa 1140

gaaaattgta tttgaagatg cttcgtttca taatgatcga aaataaataa aataaaataa 1200

aataaaatac atggatttcc taaactattt tcatataatt taataaaata aatcagaaaa 1260

agagataagg caggtgggta ggacttatct acacaagggg tgcgtgaact aatggacaaa 1320

cagcagcacg tcatgtgcct atgttgtttt ttaaaaagaa aaaaaacatt tttggcagcg 1380

aggcaaccat aacaagtcaa tcgacatcat ttcatttggg tataataatg caatactatg 1440

tcacactgac tgaaccacct agatcaccca aatccataat tcgcgtaaaa taagatacta 1500

ctacaatgtt ggcccattga tcatatcaaa tcgtccgaaa tttgcccctc actaaaaaaa 1560

caattcagtc aaattacgcc tcaataaaca aaacgtattt tataagatgg tcgagaatat 1620

ataaataatt cggctgcaag aaatatggtc ccgggcggat gcatgtgacc gctttggaaa 1680

tcgtaattaa ctactagtaa gtgcttgctt cta 1713

<210> 3332
<211> 1666
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_187450_G1, chr5:92359147..92360812, Cluster 20

<400> 3332
attcatcatt ctagatgatt atcatcaatc ctaaaatggt ttcacaaaaa ttaaaaatgg 60

tttacaaatt aataaagatt tgtttaccaa tttcagggtg ggggatcagg tgggtgctcc 120

tacagtcaac aaactatagg tatttgtact agatcatcaa gacatcaaca ctttggtgtg 180

caaagattcc agcaatcgtt ggcaagtacc acgaaaatac ggcaagcagt aaaacacctt 240

ggcaggtagt ctgatgcgtg actgccacac gtacatactc atcaactggg ttgagcgggc 300

aactgtacta tcggacctct tgctatctct attcaaaaga atacaactcg gtgctaacag 360

tgttgctata ttaatcattt ttttaaactt aactagattg ctaacaatat tagcaatatt 420

tatattttaa atacatttat taatatatat atatatatat atcaatagat ttagctttgt 480

taccaattat acatgataaa taataatatt tttttatatt taatcaaaga taaaatattt 540

atcttcccaa aaaacgaggg tggtgttatt ttctggagat ggagtaggca catgttaaat 600

tatttctgtt ttggccacag tttataaaat tatttttac actacaaaat aagtattgtc 660

agatttatga agaaaatatt gattttagta ggtatttttg gaacaaatta attcataaag 720

taacataaaa agtaatatga catacatgat caaaattaac agtattattc catatgtgac 780

taatttagag ttcatctcaa aggtcgcaca caagaacaag agaaaagcaa atggatgaag 840

atactctata gcaggtcagt ggcaagaact agagaaaaga aaagtaaggg gatgaagata 900

tactatgtag cgggaccagt gccacgcggg cacggaggca ctgttctgtg tggagttgct 960

atcaatttta aattgatcga cattgatggg tcgatagaga ttgtatgttg tgtagtagtg 1020

agaatgcatc gaaaatgtaa tagaatgaaa cagattatga aaaaggaaac aagttagaac 1080

aagggaccac aaaagacata caaaaataaa aagcacaaag atcgaagtgc tgacatgcat 1140

catcacaaaa gatataaaaa atagctagca acaaagaagc aaggctggaa tggagagctc 1200

taagggactc cccaagttaa gatatttctt agtttttct actttggatt ggctcaattc 1260

atggatcaaa aatcaagacc gaacctaaca cgatacaccc atatgtatgt ttctttcgga 1320

caagttagag cagatgaccc atgatcaggt ctacccatca ccagtcttgc aacacacctt 1380

agctagcgtg ctaaagtgat tcatcatcat gggaaaagtt gggtatagtc aaggaaacaa 1440

tatctttagg aaggagtcat ccaactaaca ttaattcaaa agagcatgga ctccctatat 1500

caacccaaat aaaaatatgg gcatgaacaa ggtttgaaca aaaacattca accctagaca 1560

gtaggtggac ccaagttcac aaactagtag tgtaggccaa ctagagccac cacttacaac 1620

atgcatgaac ttgagattga tatatatact caagtgttgc tctacg 1666

<210> 3333
<211> 2460
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199951_G1, chr5:173160950..173163409, Cluster 20

<400> 3333
cttaataatc tttcaactat tgcatacatg gaacttttac gcagtttaat aaggcttttt 60

atcaatcagc ataggtatgt gtataggaaa tcttctatac ccaacagata tgagtaactt 120

gatgggtaat ttttttataa gtataggtat gaaataatac tacccataga tatacacccc 180

gttgtcatcg gtacatggag ctcaacaacg aacgggctgc acaaatgtgt ccccgacggc 240

cggacggggc aggtgcgagc ttagttgggc cagacaattc gctggagaga cgctgttggg 300

ccaaccaatt tgtactagag aaacagcttg ctgggccaag aatcaaaccg gagaaaggaa 360

ccctagcaag cagaagccgc cgccgccgcg ggcaagctat aaatacggcc ctcctgaacg 420

tttctacttc caccatctct tctgtccgcc gccgccgccg ccgccgctag gaaacgacgt 480

ctcgtctcgt gccttcaatc tctccttttg ccgtcgtcct gtgtttatcg cttgatttcc 540

tctgttatcc cgctttcttc ctctgtaagg gcaaatgatg atgcaaagtc atgcaccact 600

ctgaatgagg ggattatcct ctctttgggc tgacaaacgg acttctaccc atttttcgtc 660

tgagccttgt gattacatcc gatttcttta ttgtctccct ggcttttctt ttttcttgct 720

gcttactgtg acactgatct tattgcgttt gattaatgga gctgtggagt gatctcggag 780

aactagatga tgtgggtctg ccgatccaac catgatgcgg actgaatttt atttgaggtc 840

aaatgtaatg gattctgatg gttctcgagt ttatctccct tctgacattg gcatatttct 900

ttcttccctc gaatgggtca tggagcgaaa attagtgcgg ctttgttttt gatctcttgc 960

tttcaattgg tttgttggtt agaaagctca aagaaacagg tgatgaagcc aatttgcaga 1020

gcaaaggggc cagataagtg gcaatctttg cattgaaggt tggccacaac gaaactgcag 1080

ttctccgtgc cgctcagatt tctctgtttt gtgacggcct cgaacaagct gccacattat 1140

catatcttat atgttatcca ttttgttttg gtttttatct tcttcgtatc gtgtctccag 1200

ttaaaagcta cggaaactaa catgaactac ataatacata tgtacagtat gtagcgcata 1260

tcgcatgaca accgaacact acatgccaca gatgaaagac agatagtgtc agtaaagaaa 1320

cagacggtaa agccaatttg cagagcaaag gggccagata agtggcgatc tttgcattga 1380

aggttggcca caacgaactg cagttctccg tgccgctcag atttctctgt tttgtgacgg 1440

cctcgaacaa tctgctacat ggtctcttat ctgtgatcca atttggtttt tggtcttttt 1500

tccatcctag ttaaaatcaa acatgatgaa ctatactaaa cattacgtgt cgcatgacat 1560

tggctttgaa gcggcagttt taacagatga attactgctc atcattaaag aacgagttaa 1620

tatcagtaaa gaaccgagtg gataaatcag agcagatcag taaagaacgg ttaactaggg 1680

cccgttccaa tcgcaactgc tctttggtgc ctagtaccgc agtgtggtat ttaattatgg 1740

ttgaacggta tttgattatg gttgaactga agaggtgatt gttatcgatc tatgagtttg 1800

agaatgatta tgcacacatt gaaacattga ttttcaagaa tctacaactg aacaaaacat 1860

accctaatat gctgtatcaa attacgaggg atactcaaat cactgatgct caaaatatta 1920

tgagggatac tcaatttcaa gcataactca ctttatacaa catgttcatt tggatgattc 1980

tggaacatac gatgtgaaca agctagttga ttcattcgtt agcaccaatt atcatcttca 2040

aagcactcat gatttttgta gcaggttttc aacataaggc ctaatctatt ctagttcggt 2100

ttatgattaa ctataaatcg attttatgaa gcataacttg gatctacata atagcgatta 2160

gattttattt atatgaacca tgagtttttt ttcaagttat gttttatgtc agttaaacct 2220

ttatctaaga cagattattg tgatgttgat gtagctgtac gttgatggta aaatttatat 2280

gcagaataac aattaacaat gatctatagt agaatcaata attcagatgc tacagttaat 2340

atagatccat accattcgaa aatttgttga acatttcttt tagttttac ctacggttac 2400

tcaggatatg tttggttagg ttgtgactat gaaaaaaatt gttgtgaact acgataatat 2460

<210> 3334
<211> 1820
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_200497_G1, chr5:176879526..176881345, Cluster 20

<400> 3334
tattactagc gattcagaag ctgaagtgtc ggtagcagtc atgtttcatg tctacactag 60

ttttgatatg atgtggtgta ccataggcct agaacccaat cattaagcga aataaagaaa 120

tcgccgctaa tatttctatg ggaggttcat tagtaatttt acatggattt tgtgtggcag 180

ataagttctc aagtgcacat gatagaactg tcccatcatg tatgctagga atatatattg 240

taataaccat agtggctcgc cagttatatt ttatgcactt atcatgtcac atgacccttc 300

ttttcatgtg tggcatgtga ggcttcaagt ttttcactta agaatagaga ggggctttaa 360

acaagactct atatgatatt tatctcttat ttttatgctt gcatgcaata tttttgtcca 420

tccctttttct catcagtcac cttcctactc catttgttct ttctctatag cagccatctt 480

tcctatcctc cttgtttgac cataatagat gcaacctcct ctctagacca gctttctcga 540

gagagagtgt tgaacaagga ggatttggac aaggtatgag agctcctagg atggatcatg 600

tcgttagcct ccaaccatgt ccatccaatg tcatctcttc catcaaccca tcgggagaag 660

ttgggagaat atatcatttt tatattctca tgtaatgttg ggtctaaact tttcttttat 720

cgcttatttc ttcacatcct tgactgttat ggtcccaagt tgggcatctt atgcttattg 780

ttgtacttgt cctctcaacc ttcacataca tgtgtaaagc gttcatcgaa ttgaggccat 840

gtgtagaact cttttgcctt tctttcttct ttaggcatca agtggccaaa atcgttttgg 900

ttagattacc tccacctttt cactaggccc taatatcgaa caacatatgc gaccactaaa 960

cttttgggga agtaggagca ctagctcatt gtggatctac atcatggttt gcccatcctc 1020

aatgttgaat cgagactagt gggaagatct tatagagatg gatgaagtat gagagcttgt 1080

tcttcgatgt attaaggagc ttgctatggc aaggatatct tctacaacct cctagcacat 1140

ttatatccta gcaccttgcc ttactttaga ggcatgcaag agccatgttg gacttcacta 1200

gtgaggatga caacatgtag attcaatcaa ggccaagctc gagtcttcac tctaacacca 1260

tgctgaccta gtgcgatttt gcaacgggtc ttacaacgat aatatgttgg ccaccccagc 1320

caaagtattc cccttgtttg aggatgatgc aacatttgat tgggtggtcc ttaggatgcc 1380

catacaaaac ttagtggttt gggacccaaa ttgtagttct atcatttgtt aaggccacga 1440

agctttcaaa tgatgtgatt agggacctca tcaaaagaag gagacccctg gtagtgagac 1500

aactcgctag aggcaagggg ctgcagcaat gcatcaagga aggggaaagg agttacccca 1560

gaagaggtcg aacctaataa cactaggagg aagagggtat ctcactatgg cgattcatcc 1620

ctagagaagt gcaagtgatg ggacaaagga atggagctag aaaaaattca ggaggggttg 1680

aattaaaccg ctacatcaat ataatctcac taaaccactc acattagata taatagtttg 1740

aagtagtatt atattaaata taaaagtagt actacattaa aacatcgacg attgataaaa 1800

accatgaaac acataatgag 1820

<210> 3335
<211> 1591

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202223_G1, chr5:186723002..186724592, Cluster 20

<400> 3335
ttagccgcta aaaacggtta acaatatgcg gtttgaaaat ctgaaaaatg gcctacatcc 60

caaacttcct aaaatatcat ctcttctagc aaaatcaatc ataatagtcg tgcaaaatac 120

tatagaactt aaaaagggat agaaagttca tagggtcaag cggaaggagg aacaaaatca 180

aggaaacatc ttgcaaactc gagaagtcga attttagccg acaaaacacg aaagttacgc 240

acttcaacat tgaaggccca caccgattac attctgttgt acacttgttt ttgattcctt 300

tggttataaa aagcaaaaca acatagtaaa attaatgttc atcttcatct ttaagctcat 360

ccttcttcga gaagaaagtc aagtgaaaga tgaatatgag attaaagtgt atactccctc 420

cgtgcacatg atttgatcat tttagtttgt cctaagtcga actattttaa ttttgacaaa 480

tatatatata tatataatat taaattattt taaactacaa aaattacata ttatgttagt 540

tcaagtcatc atgaatctag tagctttact tttatgaaat aagatcttat gaaacatctg 600

atataatcgg tcaaagttga cagtgaccga cttaggacaa aaccaaaacg actaaatcat 660

atggacggag ggagtacatg aataaaatgt ggacaaaact gtaattaaag tgcataagat 720

atgaaagcaa ggcatataaa aaatatttgg tcatcattgc ttactttctc taatcttttc 780

cattattaaa ttagatatta catttatacc tttgacttta ctaagcttac aagacaaggg 840

gagagttaca gcttcgaaga caaagctatt tgctttcttt ctggtccaaa ggcgtacaaa 900

tgcatgacac tgtttctcta attataggtg tgggctacaa cttcggtgaa atgacaactg 960

tacctcaagc ctgtacattt aaactataca acatggtgag ggtaatgatg ccttttttctc 1020

ttgacatctt ggtgaacaaa ctcttgaaga cttctttggc ttcacccagc ttggtcattc 1080

ataccttttgc gctactgtcc cgatgcttgt gtcttcgttt acggttgttt catccgaagg 1140

tacttttggt ttgagtacat gtaatactta aaaataagcc aggaattaac tattatcttg 1200

atacaggcta aaccgtgctg agttaaattc cgtgctagcg ggcctgcgct agttgatttg 1260

tatcactaag taccaaaaac tgttccttag tctgctctac tgaaagcggc accacggccc 1320

tgctaagatt tggcccaact aaacttgagc ccaactggcg aatcttttct tgtgtcttgt 1380

cttcatggac ggctctctct catccccacg agacacaaac acaacatggg aggagaggag 1440

gcggcctctg agtttctgac taaccttcct tcccggtaca tctgcatata aatccttcca 1500

gcatcctgtc cgtgtctctg ttgatccata gtgtgcatat gtacgctcct ctgtgttgtt 1560

agtacgtgct aagttagttg tgttctgggt a 1591

<210> 3336
<211> 1415
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203199_G1, chr5:192157521..192158935, Cluster 20

<400> 3336
tttttttcaag cttgtgagat ggacgagaca atcttgactt attgcatgag taagctgaat 60

cgatctcgtc tcgtctcgtt ttcacccttg ctcgccaccc ctctagctcc atatctagcc 120

gtcgccggcc acccgagctc gatcatgcct tcgcgcgatc tacttgtccg tcttggtgtc 180

agatctgcct tcgcccgcat cgtccatggc caagatggta gcggtggagt acaacaacaa 240

aaaaagttat gacaataaat aaaacacaca ttgaaccaaa agaaaattta gtacaaaaac 300

aacgttaaga agtacctcaa attaagaaaa aaattgtttg gtacacacca aatcagcaac 360

ttaattaaat ataaattatc aaacaaagag gaaacataaa ttagcactga aacacatggc 420

ttcaacaata ttatgataag cttgaaccca aactatagaa aataaaccat gaggaatcca 480

aactcaagac acataaagtc aattggtaaa agcaaaatgc tagaatgagt gcaagattat 540

aactctgagt caatggtatg tccttatgaa ataataaccc cgacaacaga cctaaaaaga 600

tcacattgag ggaaaataag agcagtgttc gaaactagag aagtagagac gcaagcaaat 660

ctcactagtg ataaaaggac atgagttccg cacgggcaca gagccatgga gaaagtcagg 720

ggctcagggt ggccgcttgg ggattttgtt ttcgtgagtt tttagggtcg attcaagtgg 780

atggatacat gctaggacat ctaaagaaca tctatatcaa ctagttcggg tattcttttt 840

tcttgtgagc atgaagtttc gggattttgc ccgttcttga aaaaccctcg aacaaagata 900

tgtttttca gatccctaga gtttaattaa taattaagtt gatattttgg gaatagtttt 960

ctaaacatcg ttaggaacat ctccataaaa tttgagctta gctagagttc ttttgagcaa 1020

ctttgcactt ttaggagaga ttttttgggg tgatggagga ccacgttagc taggccgatt 1080

ttgaacctgg tcaggtctgt ctaaacttgg ctaggctgat cctgggcctt agttagatac 1140

ctgttttggt atattttcga gctatggtac tacatttctc aattcgtttc tttcctaggg 1200

ttttcgagat gcctaagaag ttttctaagt catcaaacca cccgttagtt taggtgattt 1260

gagtgtgcgc tctttctttc ctttggttga agttgagggc atttcatcac ttatgggttt 1320

tagtgtgttt ctttcctagg gtttgaatcg ttgataggga taacggacat ttcagaagaa 1380

aatttgattg tgtcttcttc accgtcctct cgtcg 1415

<210> 3337
<211> 1770
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203803_G1, chr5:195439084..195440853, Cluster 20

<400> 3337
tattacgaaa caaatagcca cataatttta tcaatacttt tataataaca aaattattgc 60

acatgtagag attaaagtac ttatggatac aacatacaca agaatagctc aaaaaacaat 120

gtagttatta ataaatattt aataattgaa tatatcaatt aatcaaccaa tattatatct 180

atataaatat ttatatgaaa ttataagtta tataaaataa gttacaccaa taaataaata 240

aactaaaata ttaaaataat aataaatata ttaggtttaa actaaaacaa aaatattaaa 300

aataacttaa tatttatgaa tcattaataa tattaattta atactaaatt tatttttaga 360

tgtattaata aatggtttca atgcctatgg cggctcaccg gcggcgcccc ggccaggccc 420

cacgttggtg gcttcgttca tgtggcggcg gcggcccgac caggccccac gatgctggct 480

ccgtaccctg tgccccgcgg tcgtggctga gccaaggaca ggccccatgg tggtggctga 540

gtaggttgtg tgggcgacgc cctggccaac ttcgatggag gtggtgacct tcccatgaac 600

ggcgacgaca gatggatttc ctgaaccgat aggaacactt cgctgcaaga ggattcgatc 660

catctcctga gtagcgtcct gttggatgtt gttgtcttct ccctccattg tgtccatctc 720

caaggttgct gctcgaggag gagccgccgc caatcgtcta cggaagaaaa caagagaaac 780

agggaatacg gaagagatcg tgggtgaagg gttaccgtgt gtaactaatg acgggtaggt 840

aacttttctg caacttcgtg aggagttatg aaaatatggt ttctaaacca tcctttgagg 900

agcttcgaaa atttattgaa actggtctat agtttcaata ttttttgaa actagtttct 960

agttttttt ttttttgaaa ctagagctca tgaagctgga cccattttga tagaaaaaaa 1020

ctacaacaaa gctaaaaatg ttgaagcgaa gctctgccaa acagacaatt agtaataata 1080

aaattaaata attggtcact cgttataaat aaaaaccttt taaatagatt tatgatagct 1140

ttttcccttt gcaaaactta tgttgttgga tattatcgaa tacagatctt gaattgaata 1200

gagaaaaata tttttaaaaa ccagatgtat tcatctagta tccatatcgg aaatagatat 1260

gcacatggct attcatatta ttagtttgag ctaattccga tattagataa ttcggatatg 1320

catttcatcc agtttcgttt tctatccata gtgcgaaccg cgttgcaatc aggagaccat 1380

cggaagcggc cagtatgcat ggaggcggac gggtcttctc ttccaagctc agcccagtgg 1440

ctgtggctgc aaacattgac agttgacgat cacgggcgtg agtgagtgca accggacagg 1500

aagaatagtg aaaagacagc cagtcttgga agtggcgatt ccaagtccaa cccggccgtg 1560

cggacgaagg cgtcgtcggc tgggctgttt gacccacaca ttctctatct ggatagaaaa 1620

ggttgacttg gtatacccag ctgcaccgta cctgctgctc tcggtgacct ttttcagagt 1680

ccttgccgct gagtggcacc atgcgcacga tggaaagaaa agattattgt cacggttgtg 1740

gccaagtcaa tgccacaacc cttcgcgtcg 1770

<210> 3338
<211> 1563
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204244_G1, chr5:197781125..197782687, Cluster 20

<400> 3338
ggttcactag ctaacccctt ctaaacctct attagtagag gtttggaaca ggtccttaat 60

cgttgctcac gtgctcatgt tcaataccaa tcatcctaca cgtagagttc tcatacaaga 120

ttgaatccac gtgtctatcc ccaatatgaa attctcaaat ctcacatggt cgcgtcagat 180

tcccaatgtt taataaaaaa atcataatct ttgtgcaacg gatgagcatt tatatattag 240

agaatatttc tgcgtgacac acaagcggcg acagcatttt atttgtccag tttgcagccc 300

atgattgccc tggatggcat aaaggactag gctttcagct ggacctctta tggactcttg 360

tccagggacc gagcttgtat cttgtatgtt aggcccaaca tgcaactcgc tcaaaatagg 420

atgcaaaagc cttcggaagt catcgttaac agcccaatat caagtataag gcctgttaag 480

catggaagct gatcgagatg cagcaggcta cagcccatag tttggccatt gcatattctg 540

tagtactatt gttcaagctg acccttcca ctttctatgt ttcatacttt catttcatat 600

atatatatac ttctggagac cctagcatgc atgtcgcagg atcacatatt gggcacggaa 660

aaatcaaaga aaatagtttt tgatcattaa tttatcctta ctatgtattg ccaataccta 720

aataattaat atcatcttat ggatacttcg aatacaaatc tattaataca aggtggcgtt 780

tggttgagtg gttgtaatgg taacgataat gtaattaaat aagagcggta tctattacca 840

tggaaatgga aagcgccaag gaataagagc cgtaaattga gcgataacga gatgaaatgg 900

ggtggagctg actcccaccg tgacggatca tggaccatag gaaacaaaca aaagcaacga 960

catcagattg cggtgggaat gattacgggc cgaaataagc ccaaccaaac agctcccaag 1020

ttccatgtct gaaacatgta tgtaatttca attgattgtt gataaaaaaa ttatataagt 1080

tgattttcct tatacagaat atgattataa ttctagtatg gcgagagtat aattgtatgc 1140

tcatgggtat taattttagg gaaacaattg aaatcttcat aggtgaaaac gaaatgccca 1200

ctccaatttg aaaaatcaaa atcgtgtgga catcgtcacc agatgctgtg tcataggtgt 1260

ggcaaaaaaa ccattcacca gactcgtgaa gaactttaaa ttgtggtagc actagcacaa 1320

taggtgagac gacgagctga cctaaataaa ctatggcatg agacatgtag tgatagtgag 1380

aagtgacgta gctccacagc gaactaaacg gactcttagt tcagcttatg ggccaagcaa 1440

attgagatgg taatgagtcg tttatgggcc aagcaaattg agataagtag gaagtggata 1500

gtacaattag ctggtaacct tgttagctag ctttagccaa gaatagaatg tgcatatagc 1560

aaa 1563

<210> 3339
<211> 1948
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204578_G1, chr5:199882519..199884466, Cluster 20

<400> 3339
gagacttgta ggcacagagg gcgtagacgg cgacgacaga ccttatgact cagcattcca 60

tacggtacaa gcaaatccga tcagagcaca cctcgatgtg ctaggtagta caagctagga 120

ttttgggcac tgtttattta tcccattaga atatgtattc taacatatgc aaggagcttc 180

aaagttgcaa caacaaatta ggttgtatcc atttcatagt tcatctataa tttccttgag 240

tctgctaatt caagacatta gcttcaaact ccataaaaag tagggtggga aaagtaaaag 300

gtggcactta ctatgccatc caaacaaagt tggtagaaag tttggatatc agctcaacag 360

ttgtgatgtt caaacttcat gttcttcata tataacatat atgagtcagc atacccattt 420

tgtagagttt tgtcgagtcc aaacatgtag acactattat tcgcttatat ggattctagt 480

acaacatttg tttgcttact aatttcggtt gaaggtttgt gtatcttacc atggggtcaa 540

tgctttagat gtacgaggac gaagagctac tacatgatac gttataaaac aagcaacaaa 600

caattgaggt atgatttgat agaatatgtt aggtgtcctg tgcattgcaa caacatacaa 660

aatattcaac aaaataacgt atagaatttg taataaaaaa tagacataca aggcatgtgc 720

aaattaccct ttctatcctt ttttctattt attatcactc cctttcttca tcatcttcta 780

ataaacaaca cacaaaacat tccatacatt attctttgta caaattaaca tcgtgaatac 840

catggtcatc ttctagtgtc ctctgtgttc atgttctcac taatctatat gcgtcaccaa 900

aatatgctta aaaataaatg aagaaagaga cgtaagagct tatacataca ccccaaaagt 960

tacgtacaat cattttcata gttttttgg aattggacca cttaaattgt taataagcca 1020

ttaaaacata tccaagtaga caatagttac aactcactta tgtgaaaaac aaaaaggaaa 1080

tgagaaagaa acatacatga atgtgagacc tcgaagacta acaacatctg ttgggattgg 1140

cctatacaag ttattctgtg ttgtaaactt aggaaacttt tctgaaatca actcacggat 1200

aatttggtcg agtcaatttc cctaatgaac ttgggatatc accaattcac tcgttactaa 1260

aaaggttaag aactttcaga ttgatcagct tccctatatc tggaagaatt tcacctgata 1320

ttaagttatt ctatagtgac ctgagtcaaa ccaataatat ggttggatat tgaacactgg 1380

tactgtctca tttcacaagg atggatggta gtcataatta gtgaaatcca aagtaaatac 1440

aatacaggtt gattacagat attcactaac atggatgttc gtcaaaatag caaaaacaca 1500

aaaatgtaca agccatgtat cacacccatg aaatggtaaa acctatgaaa tgtggcttta 1560

gcttcaaact acaagcaaca aaaatgtgca gattgggttc ttcagtattt gcccattctt 1620

tatggacttt tcctcaaccc gatacaccta gttcttagat tcatgtgcaa tctaatcaga 1680

tagctaaagc aaggtacggt tagctaaatg aaaactcatt cacacttctg cctatctcca 1740

ggaaaagtgt cctattacac gtttctacct atcaccaggg ataaatgaaa aatccatcat 1800

atgcatgatg tccataatcc atagagaaag atggagagcg ctcacttgcc ctggtatggg 1860

tttagcaatg tgcaagtcat ttagttttgt aagtctgcaa tttacatttt tttctcacca 1920

acactatatg tctggaaaca atgacatc 1948

<210> 3340
<211> 2374
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206654_G1, chr5:211211457..211213830, Cluster 20

<400> 3340
attgtggtca ttctttagtg aaccaattac tgctgtgatt ttttagtgac tacaattggg 60

gatgttgtgg gcggtttggt tctggtggct gctctatttt agtgaataat ctgatggact 120

ggatacaatg tttagtggtt gctatttgtt gtcatatacc cttgttttta gttctataca 180

tattccttac gcatgagcaa attgagggta ttttttagtg aaccaattac tgctgagggc 240

atttttagt gaatcaatta ctgaactggt ggctgctatt gtttactgat taatctgatg 300

aactggatac attgtttaat gggggctatt attttggtgg ctgctattgt tttaggtttt 360

agtgatgaat cagataattt gctccatggg attgcgtcgc ttttgattgc aaaactggga 420

gatcgttgat gtccatgcca atttttatc cattatgtca aatgcattca tgtattacat 480

tgatactgtt tgtgttcagt tatggtttag tctatacatg gttctgcttc atgtaacaga 540

aattcagttt attcattaat cagataattg atttaccgat gaaccataca tgattagggg 600

ctggtgttgt tttagcagaa caattaaatc tatacccttg ttttttagga ctgtatatac 660

tacctaatca tgagcacacg tgggcatttt ttagtgaatc atttttttatt gcaaaactgg 720

agtcgaggct gtccatttca aatttttat ccattatgtc aaatgcagtc atgtattatt 780

tcaacagctt tgtgttcagt tatggtttag tctatacatg gttctgcttc atgtaacata 840

aattcagttt actgattaat tagataattg atttaccgat gaaccataca tgtttagggg 900

ctggtgttgt tttagcagaa aaattaaatc tatacccttg ttttttagga ctgtacatac 960

tacctgatca tgagcacatg ggggcatttt ttattgaacc atttttattg caaaactgga 1020

gatcgaggct gtccatttca aatttttat ccattatatc aaatgcagtc atgtattatt 1080

tcaacagctt tgtgttcagt tatggtttat ttcatgatgt ttgatatact gatgaaccat 1140

acatgtttag gggctggtgt tatttatgcc gagcaattaa atctataccc ttgattttta 1200

ggacggtaca tactacccga tcatgagcac atgggggcat ttattagtga agcatttttt 1260

tcattttcct gtttcaacgt aatagaaatc ctatagaaac aatgtgtcac taaattggtt 1320

gtagtccgag atggtccttc atttggcttg aatttttat ctattatgtc aaatgcactc 1380

atgtttttgt ttgctttatc ggtatatctt gcttacactt ttgtgcattg aataattggt 1440

tgggatttca acgcttttga ttgcaaaact gggagatcgt tgctgtccat gtcaaattcg 1500

taatccatta tgtcaaatgc actcatgtat tacgttgatg ctctgacttc atgtaacaga 1560

aattcagttt actgaatttg ttttagtgat taatctgtga actggataca ttgtttactg 1620

gttgctatta ttttggtggc tgctattgtt tttaggtttt agtgattaat cagataattt 1680

gctcatgggg gcatttttta gtgaagcaat tactgataga aacctgtata gttatggtgg 1740

ctgctatagt ttttctaatt aattagagaa ttgttttagt gattaaccat gtgtgtttag 1800

tggctggtat tgttgtcata taccttgttt ttaggtctgt acatactacc tgtatatgac 1860

cacattagcc ttatgtttga acgatttcac acatttacat ttgtgaatgt gttgaccgca 1920

agcatcatct ttatttaaat cggaaacttg gttttacaat gatgtctcat tcccaatgtg 1980

acgccaatca tctgtactct ttagttttta tctgttgccg cttctgttta gtgacctcgc 2040

ttgtttgaaa aaaaatatta tcattcgaga ttgctgccag cgttagaatc tgatgttcct 2100

attgcgacac atatttttg ggttgtctag gcgtgctgtt ttttatagga tactaaagga 2160

gaaaacgtaa acaaatactg gtcttagatc ttcacagatt agtgtacagt tagcacgatg 2220

cattgcactt tatggcagga gcataatatc aattggcagt catagatgca ttgcacttca 2280

tggcagttac gagctctaaa agtaaataga aatgagtatc aaaatgaatc gcacttgtgt 2340

agaactgcag attgaacata aaacctactt gatc 2374

<210> 3341
<211> 1777
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207289_G1, chr5:214105633..214107409, Cluster 20

<400> 3341
tccgcttcag gctcagcctg gcttgcatcc atcgcccagt ctccttggta gacattggga 60

acatctctgc aaagaacact atcgtttgtt caacatccag cctccttggt agccattggg 120

acaagatatc atgtcaaact ggctccaccc aaaaaataca tcatctctaa cgacaatacc 180

gagccaacac acgctcaaaa aacaacatga tttacggttt ctggcttgtt acaagcactg 240

cacaataaaa aaggtaacta taccatgtca acctctatat gtttcaggga agccgcagtc 300

tgcaattctt tatgggacat ttgccattga aaattcctaa ctttcttttc cgtatcaaat 360

tagtaggtct actaatgacc gctccattag tcaaaaccat atatataaag attttctaaa 420

ggtccgagat ttatcaatag cccatctgac atcattcctt ctaggtggac tctgaagcga 480

cattgacatt ttaaataaaa agaggagagt gaattagaca gtctattttt ataaaccacg 540

gctttcaaaa aaaactgtct agtcaaaata tatataataa ataaactagc tatatgcacc 600

tactgtttta actaaatatg ttaatatctt tttatcgcaa agtattatgc aatctatgtt 660

ctaattctat gaactgccct aacaactaag ttaggaaggt aaaactcgca gctaagatgc 720

acaaaaaaga gaagagcatt tcaacttaga accaaagaac ctattattct gcatatatat 780

ttagccctca accttctaca ccgcaggtca tttcacctct atcaatcttc cagatctttt 840

tagtgaacag actggtccat aatttctacg ttaatgataa ctagtccacc atggatttta 900

tctttggata tagatactca ttttttttatt ggtacttaat ttgatcatct gcacttctcc 960

aaaagaaact aggccttacc gtatccatct tgctacggac ccctttaggc aggtagtaga 1020

aacccatcac atacgtatgc aagctactca gacatatgtt agtagtcaaa ataagctttc 1080

tcctgatgtt atctatgggg tctaaccttt taaccatttg ttatcgttcc cttcaaaaaa 1140

actccaatcc ctaacacctt gtgagagata cgaatgccta agtatttcat ggaaatattt 1200

taatatgcaa gtgagcatat tacccttga ttcattatgt ttctaactat atccacaaat 1260

aataacttta tttttgtgaa aaaataattt tcacacctga caatcattca aaacagtata 1320

gtgagatctt aaggttagta ctggacgtat atatctgaac catccaacat gatgtttata 1380

tcatctgcat actagatgta ataaacgcca ttaggaataa gtgaagataa accctcattg 1440

ataaactatc tgttaattgc ttttatccaa catttcactg aaggagtcag ccactgagtc 1500

aaacaataga taagatagac gatcccctta ccttaattca ctcaaaattt agaaatatgg 1560

tcctcttgtt caatttacat atcttataac atgtcatata tgctcgttca tgatttttca 1620

ttccattata ttgcaaatgg tttacccctt tttatgtaca taggtttaat cttactctca 1680

catggtacat gtctatgaac tttgattata cagacttacg ctaaacatat catgttttag 1740

caataagaag ttcatatgaa ctagtttcct tttagag 1777

<210> 3342
<211> 2066
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207333_G1, chr5:214339851..214341916, Cluster 20

<400> 3342
atgtatattg tttcccccag acatttttt tttgttttca atagaggtac ggtgtacttc 60

tgtaatagaa cagacaaagg ttgtccaatg aagctccagc aagctgcagt gcatagctag 120

cctctgcatt gcattgcatg acatgccatg tccttttttt taactcggtc aggtccctcc 180

aacatgtcct ccatgaaacc ttcgtttgtt gttctaacgt cattgggatt tgagaccaca 240

cacatgtcag ctgcttcgtt cggtaaattg catgcgttgg ctacactctc gcctctccgc 300

ttcttcttac tcctcctgca tgaggtcagg tccaccgtct acgtacgtat catctcttgc 360

attatagaac agccgcatag tggcgacaag ctaagggcag ccgcgccgag ctagttcctg 420

gttatataag gaaggagatc aagagagaca ttgaaaaatg catggcagca gcatataggt 480

tagagagagc aacaatatgc agtgtgtatg tgtagcctct caactcttca agtccatgcc 540

atgcctttcc acagctttct tgaacttctt cttcttcttc tctcttggaa cggcagcttt 600

cttcgaatct gtctctctct ctctcatctc cgaagacgaa ggtcaagaaa gctgtgggaa 660

gaaatgacat aacagggact ctggaattat attctgtagc tagtcagatg tgatgttaat 720

tggcggctct cttcctcaca ctatcgttct gtccgcaagc agcagcacac gggccggggc 780

cgatcttact cgttgagcaa ggtgagcagc tcatcagtca ttcagttgcg cctcctccgt 840

ttcctccagg ccattaattg ttcatagttg cctgttcccc tccgtgctgg tagagagctc 900

cgtacgagct agcttcagct tgcgtccatg acggacgagc agcagcaagc ctctccttcc 960

atcacacacc tgcatgcata tgacaggtgg acccatctga tataaagcac aaaaacatct 1020

atccaacaaa ttatcgccag cagataacag cagcacgagg tcacactctc attcactaat 1080

cgcgtttcat tttctccccc tgtgcatggt taattagcgg ccacacgtcg cacaatcaaa 1140

atatctctcc catataaact ccgattccat tgattcttca tcgatttatc tgaaatcaaa 1200

ttatacccat cataatgttt cataatcttt ataacttatt taaatatata tatgaacaat 1260

tatttgtgtt tgtttgcata ttttggtcat tccgtgtttt taaagaacga ggacgtcgag 1320

gatcagtgct ctcagaagtt tgcctaggac gacatggaca tgcatcgacg acggaggcaa 1380

gtctaacatt atccaccgtg atcatgttga tcctacgtat agacgcaacc cgtagaagcc 1440

atgttcaaga tactgcataa agtgttttgc tgcttagttc caaacatgtt tagatatcca 1500

ttcttttgaa ttgatatgat gacctgatgg ttgcctaatg atggattatt attacgatgt 1560

ggagaaataa ttatctagta tgattaggat tttgatgctc gttatgcata atgtcgaaga 1620

atattctaaa ttgattagac gtatcacgac tttgcgagat tgataaccga aggtaaacgt 1680

agacatgacc gaactcttaa tgcgagataa tactctacat catgtgtatg tgttggtggc 1740

tattgcctat gatttgatga tcagccctct tgggacgtct catcccttct tttttagtca 1800

aggaggagag tggttacaag aaggttatcc gatatcatac cagataagga tacatatcgt 1860

actaatcgag tctatcaaaa actcttagtt ctatctttac atgcaagttt tccttatcat 1920

gaggacacta ccatattaca tggacatcaa catttctatt gatctgataa gatgctacat 1980

cattattttc tcagacgagt catgcctttt cctgtcacgt gggccgagtc cctaaatagt 2040

gtagccaggt tctcaaacgc acccgc 2066

<210> 3343
<211> 1662
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2109_G1, chr1:10984939..10986600, Cluster 20

<400> 3343
ttggttcttg catatttgtt catgcatttc aacaaattgt ataggaacat atttcaatga 60

ataagagatt tatgtcttta ccatagcatg tatctattct aaattctaac acgtcttgga 120

atcagagtat gcatcatggc aatatataca cgacacgtgt gctaacttgt atgagagtcc 180

aggtcacatg tgagagagaa gagatgagaa gtaaattatg gcagatgcaa gaatccttta 240

tgttttaaat attagactag tacaatatgc acatttgtac aaataatata ttaaatatta 300

gactagtaca atatgcacat ttgtacaaat aatatattac ctccgttctc ggatctaaat 360

gagattggtc aaactttaaa tcagataaat ttttagatcc acaataaatg ttagtgcaat 420

aaagaagtaa gtatgaaaaa taaaagaaaa ttgactcaat taagtacatt aaagctacaa 480

tggtactaat cgcttctatg aatttttgtt ggctataaac acaagaaatt gttgacttgg 540

caagtttaaa taaagctatg gcgaattggc gatcataatt tttcaatgaa ttttcattgg 600

tgtgcaaaga cattattgcg tatagcttga ttaacttttg tgtacacgag taatccctag 660

catagacatt ccatatggct ccctagcttt ttagtatcgt cacaaaatgc aattgtaatg 720

ttgattgaaa tctacacaat tgtcgtatgt ttccattact agtactatta cataaagcac 780

catcagtttc agtggttcca ccatcgtcgt aagtaactcc ttccctcccc aacatttaaa 840

tggcaaagag ttaaaaatat gcacaaatgg ggattcaaac catagtcgta ggttccaaac 900

ctatattcac atccacctag ctaatataac acacatcttt atgttttata ttctatactc 960

aagcataaat agaaatcata acaatgtaca tacactttgc tagtatgaat tatattggtc 1020

ttcacttatt tatttaaata taacttgata aatctagatc attactattt atatgatttt 1080

tgttcttgta ataacctaaa aaacatttag ttttcctaca ttgagctttc cctcatttat 1140

attttggtta aaagttcagt tacatccaat tgaacactta tataccctag agtattgcct 1200

ttctttttt aaatacagtt ataatgagaa aacgatatat gttttgcatc ttgtatttta 1260

cttgcatgtg tgattttctt tagcatcttg gttatttaaa gaaatgtgaa ggaccgagaa 1320

aagtgaatgg atagaggtga atgagaacca aattcaaatt tcttctgaaa tagcaactgt 1380

ccgaaaatca ccctccaaaa ttattaaact cacaacactg atgccctcaa gctaactggt 1440

ggctaaatgc tgttgatgat ggccaaatag agggacagta aacaacaata gaaaaccaac 1500

taggacaata aaacgacggg tcataatgaa gtcagactca aaatctccta acttaactag 1560

tgacttgagg actaagaaaa catattagta cacatggagc aaagcgaaat agataacaac 1620

aatagacaca acgaagcaca ccaaaacgtc caaataggtg ca 1662

<210> 3344
<211> 1620
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_211704_G1, chr6:24313149..24314768, Cluster 20

<400> 3344
ttaaaatgtt cacctctaat tttgatcaca gttctagaat aaatgcacta cgaagatata 60

tttgttggta tacctacagt ctctttttt ttcttaaact cgcatattcc acatttgcaa 120

caccatatac aatttaaaat aaacttgtaa tactaatgcc tactacatta ccaaatattt 180

ccacgttgct ttggaccaat ccgatggact ttattacgtg caatatccac ttatatttca 240

catgctcttt actttagcgt tgtccagttt ttttttgcct aatttaaatt gctttgatct 300

tggacaaatt tgcattcata caaatatata ttaagttgta caagttctaa caaatactta 360

ttaaggcata tttagtaatg cgatggtttt aatagaacta atttaatgat gtagatgttg 420

atgtattttt tttctattaa ggcatattta gtaaaaaatg aatgaagctt gattcagata 480

aaactgaggt caactataat ttaggtcctg tttgagagag ctccacttca agaatttcaa 540

gcctatttca gcttcttcta tccaaacagg tctagctgca cgagctctag cttcaaaaaa 600

attgaaacta taggccaatt tcatgaaatt tttgaagctc ctcaaagggt gcttcaaaaa 660

cattgttttc atgcattctc ttgaagttac acaaaaatta cccactatgc cattggttgc 720

atgacatatt gattcaaatc tctttcttca cccgtaaatc atcaagggta attaagaaaa 780

ctcacacaaa ttaattgtat tatagaagct ggagtatatg tgtgaagcca aacacttttg 840

aactccgctt aattaatatg ttgaagttgt ttcgtagtga agatggaaaa ctaaagctgc 900

aatttttgaa ttcttgaagc gaagccctcc taaacagggt cttgataccc aaagaatact 960

atatagatag atgcatcgac cgttccgtgg ggagatggct acattaatta ctgtatagta 1020

ggagctattc aagggacacg aaaggagggg ggaaatagcg agagaatggg ctaagccaca 1080

agtaatcaac tcactggtgg cccatcaggg cccaaactcc agcctactaa aacacactgc 1140

caagtttgga tgggtgtaat gtaatgccgc agtgattaac cactgcgtca gtagtcgatt 1200

atattacata tatatacatt ctctcgtgtc catcaaattt aaattaaaat acaaaaaacg 1260

aataaggaaa aaaaagcaat cgcatcctta aattgctact tacttgaaat ctccgatttg 1320

tctatcgcag agtttaaaag gatatccttt actctatcaa tgtaaagtca ccctgcctcc 1380

aaacagattc accatgcagc tgctcaaagt aactgcaccc gatatggacg ccacgaaatc 1440

ctccgattct aaacacagta tatttcatgc tggatttaat tcaaagatcc aatccgtgtg 1500

ttaattcttt ctattcttct gatgaggcca tttctactca ctctgcctat aaatacttac 1560

ccaccacagc aaatagcaaa gaacgaagaa atcgatccaa attccaattc actcccccac 1620

<210> 3345
<211> 2380
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_219497_G1, chr6:76480982..76483361, Cluster 20

<400> 3345
cgtccactcc catatgccct tgccctgcta ccacgttgtt cttctccggt atcaacatgc 60

tcaagtttgg ttggaggatg gatgaggcat gtgtcgcgat gccgctggag ctcaggtgag 120

gagtgttgct gatctaagtt catcgatggt tttggtttct ttggtggatg tagattggat 180

gggaatggct gacaaagcca caagtgaccc acatgactga tcctaaattt ggatgtgtcc 240

taccaagatg ccttgtcatc tagatatctt ttgcttcctt agaggcttgg aggcagaggt 300

gattgttatt tcttgttttt tatgggttcc tcaatgattc tgttttatga ttcatcttgg 360

aggcaaagct gatttcttga ttgcattact gaccatttta tttttgaaat ctaaaagcac 420

taactgatga ttttcatgtg aattgtcttg caaaaaacaa gctattttgc atatgagaat 480

ttatagcatg attgtgtgat aatggtttca acgttctaat gattattcag ttaatgaagt 540

aaattttaca actaaagtag atttcattct tttttcaaac aaaatattca catttatttt 600

tgtactggcg tgttgactgt cgtgcaaaaa tgggtcctct acattgtatc ggttgtgttg 660

attgacacat tgtccttgtg tatggtagct aggtattgtt agttggtcaa atattatttt 720

gtagattatt gaacatcatt gttccttact tgtgtagttt gtgctagcct gaaaaacact 780

tatgttatga agcttattac gccttcatgg ttattccaca gagtggatac aagttcagtg 840

ctttaattta gtttttgaat tcttttgccc ttcaattcat agtgagacat tgagttatag 900

ttctagcaaa ctctctgtat gactgcacct aaacattttt attttaagat tatttgatat 960

tcattttcgg cttgcagttt agaaatgatc attggatccc ctagtagcca aggttactaa 1020

agggtaatag aacatcttga ccagcagatt tgtaatattt actctgtttg gttgtcaatg 1080

tttacttgtt gtttaagttt tgtttgattg tcaacttttt ctcactgttt agggtttcac 1140

tctacttgac acttcagtta tctatgcgac taggcctgtt gtttgacttg cggtacaggg 1200

ttttcagact tttactctgt ttgacatatt tacctcaaca caagttagtt gcatgccatt 1260

atattaagaa gagaaaaggc ggtaatagcc cttaccaagg ggtgagctga gtatcctttc 1320

tatttgacat taaaatcatt aatatctgct tcagtgatat aaattccact catgcaatct 1380

cgcttctcaa caacttccaa gttttaacca ccattagttt gagattttct ggtctatctt 1440

ttgaatagga agcctggcca aataatatcc aaattattca gatgagttca actaaattct 1500

tatgctatct ctataaacta tttagtagtg ccttcgctta caagttgtct tatgcaggac 1560

ttttgttgac aacttatacc ttgttcctgc tcttttgttg ctcatcggag acaactaggt 1620

gcttggtata catcctcata aggtgcatct tcggtttgtc aatccacttc taccctccaa 1680

caaaattttc ctgatctcaa ctaagttatg tatacacttg ttatccttaa tgtataatat 1740

tcacattatt tagatttatg gtgtccttag cacgacttcc gagtttagga taagaaataa 1800

agattatatt ttttgctctc actcgttatt ccgttctttt tggtattagt ttagttctat 1860

attagttctt gccaaagaat ttgttagctt gagatcaata atatatatga tgttcgtttt 1920

tatataatcg ttgtgtacta acattttgtt ggatattttg catgtcgttg caatgcacgg 1980

gcacccaact aatacattag aatatatgac tactttcact acatcatcac tgtcttattt 2040

tgttgtgctg catgtctaat aacaataatg atttataatt ctctatttaa acattatgtt 2100

aattgaattg tctagcttac tcgtccttag tctagagcag catgggaggg ctcgagccgt 2160

cgaattaagg gcgagggtgg tgctagctag agctggtggc gagcggctca agtgggctgg 2220

tggcactaga gcgcatggtg ggccggcgta gatgacaact cgagaagaaa aggaaatgaa 2280

gagatgtgtg acccaaaaag acgaattata tgcatccatt ttactcaatc acctcaatta 2340

ttagataaaa agtactctcc cattttaatt tataatttat 2380

<210> 3346
<211> 1641
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_220274_G1, chr6:81694782..81696422, Cluster 20

<400> 3346
tgcaaaaatg gtgttaaagc tactacttgc actagcacta attgaccatg tgaaagcctc 60

taaatagttc tagtagcttg tattttagtc tatgttgata aaaatgggct actaatcaac 120

aaggtaaaat acaactaaca agagttatca atcaaatgca attgccacta cttacaatct 180

acacaaggct agttaagcaa atatcattca acaaaataag tgtagcgagc aaaccataag 240

gggcaagaca tggcacacaa tatatcccta aggttttgtt tgcttttcgc aacctactcc 300

ttattttggc gagcctattc taggtggttc acatgttaat tgacatcaca tgctaagcct 360

caattagggt gtcataagaa ccacactagt taggcgctcc aacaagccac aattttatcg 420

gagttgctct tcacaaatct ttcttaggga atggacaaag agcccctcat aattgttgat 480

caaagctaac aacaatctct aatagccact caatgacccc acaaactttg ggtcgtctat 540

gtaacgacaa tcaccaatag taaccatagt ataactagcc ctagtcgctc aactaatccc 600

ataacatcca agaactatat gcactagaag ctctctaatc tcacccaaat gttgatctac 660

aagatgtgag tggagtgtgt ttccctagcc tcaagaggtg ttcacaagta tcttaactaa 720

gatcgaccaa gaggtatatt tatatagacc cataataaaa tccaactatt atctcttggt 780

gactagtatg gtgcaccgtt ggttcctgtc cctgacatat tcaatttctt tccaacaact 840

atagttccaa aggttacaaa ctagatgttg ccatctgtca catatatggt acttatatca 900

gacacgacat tagacacatc tagtgtgtgt tagagctaga gtacatattt acaagctctt 960

cgagttctct acctggtgtg acatcagatg ccgcatcgga cacgaccgat gagtgttaga 1020

gtgaatgtgc cattttacat gttctatgaa tccctgttcg gtgtgccatt caatgttgca 1080

ccagacattt agataaggga gacctagtgc acactggact tcactatgat cggctaaaac 1140

taaggagcgt gtgtgagctt gccttgtcgg gtgcatatag aaaagctaca ctgagagcac 1200

tttctcgtct cttaaacata ctagagcaca tttaattttt tctaagtatt ttccacaaac 1260

acattaactt gcacttcgca tgtgtcattg agcctatatg caatgcacat aatttcaata 1320

tctagtggca ctagatggct gaattatcca attaagcttc cttcgtaata gtatgatcat 1380

ctatcctaga tcatgatcat gtgttccatt gcatcttgat tgacaaaaca aaatgtagtt 1440

atatctttgt cttgagccat tgcattttta tacccaatct ttctatgttg ggcacttgat 1500

tatccttcgt ggccatcacc attcttttca aggttgctaa tattgcttaa atttagatgt 1560

ggacctaacc tattcatgat actagagtaa atgttactcc agtagtttc tcaattacca 1620

aaacctcatt tcgaacattc a 1641

<210> 3347
<211> 1422
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2230_G1, chr1:11954311..11955732, Cluster 20

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (367)..(466)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (459)..(459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (460)..(460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (461)..(461)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (462)..(462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (463)..(463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (464)..(464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (465)..(465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (466)..(466)
<223> a, c, g, or t

<400> 3347
actctatact tataaataga aatcttaagc aaatttcaaa tggaccatat atagagtcga 60

atgaccgact ggactggagt cgcgtcctga agcccagcgg gcagcctaga atgggcggtt 120

gggctagttt tgggggattt ttttttttt ggcgtgggag cccgtggggt agtcaggtga 180

gcatggccgc ggtggcgggg gcgggggccg cggtgggagt gggctgggct gggctggtgt 240

tgcctgccgt ttgacagttt gagagcgtcc gatccggacg tccggtgaag caagcacgcg 300

atgagcggca gtaaccacca tgctcgtcgt gcgtgtgtga gcgtgactgt gaacttactg 360

tatgtcnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnncgtg tggtgagcgt 480

gactgggaac ttactgtatg tccgtcgtga ggtcgcctga ggccataggt acacgaacgc 540

actagccatg tacccgtttg ggtaggacac accacaacct ccattcagga cgtgccaaaa 600

gtgccaagcg ccacgccacg ccatgcgtat gtgctgtgtg gatggggcag ctgtctggca 660

ccactcaagg cacaaggtgg ggtccacggc gacagtggcg acgcatgtcc accgctttgg 720

cgcatgcaag cgcgctggtg gctgtggctg gtgcagcccg tgggttgtat tgtacccgcg 780

gcgcacgcgc acgtccattt cgtcccggac agacttgcca actttgccag tgcagcagca 840

ggggcccttt ttgaacataa atataaataa agcgaccctc atacagtcgc ctactagtct 900

acttcaagat tatattaact taagacacta ggccgatctg taactgtaac tgtaactgta 960

tccatcctat gcatgatacc acggtcctac caaattaaaa ccatatcgat gtgtcctaag 1020

ttttaaagtt tacagtatta cttaaagtct ccacgttatc atataaaatt ttatagtgta 1080

ctatgatcct acaacaccgt acagtaatta atataaacga ctttttaaat aattgagcta 1140

caataaagta ttatttaaaa tttaagcaga actattacag tagtgtaaaa ttttacattt 1200

taatgtagaa acagtgggat aaattaatta cagacagaat tatagccttt aatctatata 1260

atatattaca gataaatata taaaactata aaatcacatg gtattaggat actataaatc 1320

tatgatacga tgctacatcc tcacaacttt gatccttttc taaccatgaa ccattatttg 1380

atccaaacaa cctgctctaa cgaatcaagc tgattcatga gc 1422

<210> 3348
<211> 2041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_223716_G1, chr6:102417034..102419074, Cluster 20

<400> 3348
ttcaaaaaaa aacatggcct ccattcatgc atattctttc tttcctattt gacaacacag 60

gagatcgaag tgtaggaatg aagcacgaat catctcatct ccacagtttg gtaaagctag 120

cgtgcagtca atgcagatgg gcccagtacg tgtgagttag ttggtcagtc atgaagtacg 180

atcgtgccac tgccagccaa aaatgaaggg atcacaaaca acaggagata gcgtgcctgc 240

cattgacaca tacagtagga tgagaggtct aggatgtgtt gatgaaaaca acagttgatc 300

accatttata gtacacgaag agatagctag catagcatct gattaagacc gtgttaagtt 360

cagtgatggt taccacaaaa aaaaaagcgg tggctgtata tgtagcaaac tcctgacaaa 420

ttaaacatat gatatgcgcc tcctcataat tcagggaact gctgatcgag actggtgctc 480

ttaaattttg gaaaaggcca taccagtttt tgcctagcta gatatcttgt ggtgcacagg 540

tagtatatat actactagct ggttaataag gagcctccca cgcatgttgc aaaagcatgc 600

attgaatagg tctagctagt aggatagcta gctgtactgg tccctcgtcg tcactaactt 660

cgtgctaatt ttccttcagt cccgttcgga ttatgatgca tggtctcatc ttaattaggt 720

tgcaaggcat agtaatgata tttttgcatg cccgccagtt ctacctaaac ccctctagat 780

ctgcggtgat ggttgatgta catgccagta aatggattaa tgacgacgtt tcctctccct 840

aataattgat gagagatcct gagattagtc ataaatatac ttaaaggaca gatgtgtagt 900

ggctcgatca gtcttaatca acgcatttta cagagagaaa ggctggtctc ggtttatctc 960

ttcttcttca gacctagcta tttatatgga agctagcctc caacactact acaccttccg 1020

ttttagtcat aatatacttt aaacaatact tcctccgttt gtttttatgt gacatcagcc 1080

gtcaaattag aaagtgaacg tacacttgaa gtaaacagtc ttgaacgggg aaattaaagt 1140

caaactattt tctcaacaat cgaattaata aatgcagtct tacaatccat tttacaagcc 1200

ctaaccagca gatcatcctg ggaatgaaga tatatatgca tgccaaagaa atactgtaag 1260

gacagtatag cacatagcaa cacatgtgta caatatataa tatccacatt cattagatta 1320

attatccccg caatactgca agccactagc tagctgtagc agagaccagc caatataaat 1380

catccattgc ataacgctag ctagaaatat caccgacagt gtatgatcgc actgcatgcc 1440

cctggtccta gcctagctgt tgatcattga gcgagtctga tgatgtgttt tctcttcttt 1500

tcctccttcc atatttaatc ttggttgtcg atcgataatg cgacgatgca tgctctttaa 1560

gatttgtttt gaagcaacct ccgccgagaa gagcaagaag ccatggagtt ccccctcaat 1620

ttcttcttgc gcttggtcaa ccagtttgtt tcaaacaagt gcatgccata cgtactgcca 1680

caacctgtca ctctatcagg cttgttacct tcctcatttc tgggaataca caactcccaa 1740

agcacagtaa cctgggcggg catgataaag tgctggaaat agttgcatgc atgatgcatg 1800

gcctgctatc tcaaccccat tattaataga gttgtataat tattaataga gttgtataga 1860

tagatgcaga acactgtaaa gctaagcact gttcagtgaa atcacaaaaa attcatgaga 1920

aacagaactt gccccctccg ccaaataggg aaactatata atggaggttc gtgatcgcac 1980

aaaaatcatc ttgagaaacc gcgaaagtga aacatgttat tgcacttgtc gatcaaataa 2040

t 2041

<210> 3349
<211> 1499
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225224_G1, chr6:109532676..109534174, Cluster 20

<400> 3349
ctcatatgca tgcaacgcag gagccaggga ggatcgagat cgacgacggc gatcgatcga 60

gcatgcgcag agggttcagg cgtatgcaaa tcctcgcagg agcgcacctg ccgcaccacc 120

atggaccacg ccgatcgagg actcgcatca gcaagcacca tcctcctgac ggtcttgcga 180

agaaatcaaa ggcgccaacc actctttgcc cccacagcaa actgttcttc tcttttgttt 240

agatgcgtac ttaaagctgg atcggaaaaa aggggagacg aagagatatg ctagctatag 300

tagctagctt ttccattcgt ttgctttggg caaatgggct cctctgcgct gcggcgcatc 360

tgggcctgcg cgtctgcaat actagctcga aaggtttgtg ttgttattaa taattgtttg 420

gatatagaac taaatacaac aaaaatggtg ttttctactg cctaatattt cccgtcgtcc 480

gaacacgaca aataaatgaa caaaacggag ggagtatgtt tcttgatata gaagaaacta 540

cacgtattta cctacgatat tttttaacat atatataccc ctctgtgcat atgaatggcg 600

ggtgcacgtg tgcatatata aaattctagc ctttaaaatt agatataatt attaaacggt 660

gcacgatacc ataaagtttt ctacaaatga acccgccatg catgcatgga tgaaaggttt 720

cttttattta tttattattt ataaaacacg caccgttaga tctgatcttg aaggtgcacc 780

ggccggcact tcatgtgcat tacatatcat ccctattttt tcccctctaa caaaatagat 840

gcctttacat tgaaaacttt gccactgcac ccacgcccaa gcttagtcat gttttagttt 900

ttagacacgt gacgtttgtt tacatgcaca cgtactacaa ttaacaatta cgtatatgat 960

aaaccacact ttgttactac tagtactctg accctgagtt tttttgacta actttataca 1020

cttacaatta ttgtaggaac ggaactagtt ggccaaacat ttgtttttc ttcttctaca 1080

tacacttctc catctttcct tcaacctcct gctcgtgcta ttgctttctt cttccttgta 1140

atcaactttg catcccatat ccatgcataa cgcagttgct tcttttgggt tgcgttatgc 1200

cttaagtaac ccagctattg ctctctccat ctttgagaag gaagagttgg gcgaactctt 1260

tctcttcttt ttccacctct ggtaatagga tcactgtcag caagttgttc gatcagcttc 1320

taaattttga gacccatgca ggcgttgtcc ctaatagcag atctgttagc gctatgagcc 1380

gagaacatga tggtgctact cgacgataag ggtgggatct acggacttct aggtggataa 1440

ttcaatcttt attgcactac attatacttt ctttctcatt aaggatcaga aaacaaaaa 1499

<210> 3350
<211> 1591
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225909_G1, chr6:113043688..113045278, Cluster 20

<220>
<221> modified_base
<222> (1372)..(1372)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1372)..(1471)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1373)..(1373)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1374)..(1374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1375)..(1375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1376)..(1376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1377)..(1377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1378)..(1378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1379)..(1379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1380)..(1380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1381)..(1381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1382)..(1382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1383)..(1383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1384)..(1384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1385)..(1385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1386)..(1386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1387)..(1387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1388)..(1388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1389)..(1389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1390)..(1390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1391)..(1391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1392)..(1392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1393)..(1393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1394)..(1394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1395)..(1395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1396)..(1396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1397)..(1397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1398)..(1398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1399)..(1399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1400)..(1400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1401)..(1401)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1402)..(1402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1403)..(1403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1404)..(1404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1405)..(1405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1406)..(1406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1407)..(1407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1408)..(1408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1409)..(1409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1410)..(1410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1411)..(1411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1412)..(1412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1413)..(1413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1414)..(1414)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1415)..(1415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1416)..(1416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1417)..(1417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1418)..(1418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1419)..(1419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1420)..(1420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1421)..(1421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1422)..(1422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1423)..(1423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1424)..(1424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1425)..(1425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1426)..(1426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1427)..(1427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1428)..(1428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1429)..(1429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1430)..(1430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1431)..(1431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1432)..(1432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1433)..(1433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1434)..(1434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1435)..(1435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1436)..(1436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1437)..(1437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1438)..(1438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1439)..(1439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1440)..(1440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1441)..(1441)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1442)..(1442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1443)..(1443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1444)..(1444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1445)..(1445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1446)..(1446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1447)..(1447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1448)..(1448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1449)..(1449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1450)..(1450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1451)..(1451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1452)..(1452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1453)..(1453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1454)..(1454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1455)..(1455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1456)..(1456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1457)..(1457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1458)..(1458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1459)..(1459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1460)..(1460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1461)..(1461)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1462)..(1462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1463)..(1463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1464)..(1464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1465)..(1465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1466)..(1466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1467)..(1467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1468)..(1468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1469)..(1469)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1470)..(1470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1471)..(1471)
<223> a, c, g, or t

<400> 3350

cacattcagg gccaccactg caccgaccgc ggcgagccgc actgctgcgg gaaccgatag 60

tttctttttc gcaattgact aacattccgg cgagtcgagc tgtgcagcgc tggcttccac 120

cgccatctcg ccattgatta gatgtttcat gtggcctccg gtggcaagtg cgctgtacca 180

gcacccagca ggctattatt ttgtcggcgc agtttctttc gagtcatagt ggtgacgcac 240

ggcacaaggg tcaatgcggg tgcgctgata atggaggcat tctcatcagt tgcaaacacg 300

aagcgcggcc atatcttaca ctcggttcgt gcttctcctg ctatattgca tcttcatctc 360

atttattccg tgctgatttg gtggctcgtg taacttttgg ttccacctcc tattctcctt 420

tactgcgtga cacaaagagt aaactagaca atactactac gggctgctag catgtgccaa 480

ttcaagaaaa gggggaaccc acgaccacag aatgggcttt aggttagaca gaggttgagt 540

tccatacgaa catccaacct tctgatgatt tttttgtgtg tctgcttgat agcttggtaa 600

tggacatgga tggtgacctc agattacatc ctatgatgag aagagcgccc tgctggatta 660

tgttatctgt gatcctggtt cagtaaaaat tcatgctgac ccagcaagaa tcttgggcag 720

tgaatcaaca atggtggggc ccgttcaaag atttagtggg tttcaaagca atgcctaccg 780

atgcttgctg agtaggtgtg catcaatggt cctttcgcat tgacttttcc tcatgaagtt 840

gcctgacaat tatattggac ttttgtgggt cagtcagtca tgttcaggat gaatcttgac 900

tcctcagatc aacttaaatt gaatagtctg attaaccatc gctttgtaca aatccagcta 960

aggttacaat gattgtggcc gttattggaa acccgaccta ccactgaaat cattctagac 1020

cagaatcaaa gtacagcaac ctcaagtgca ctatgataac gttatagcct tttgctatca 1080

ctcagacttg tggctccctc agtttgtctt tctgcattct ctcttctctt ttgcatgcta 1140

tccaatttca tgaagtacaa agtatttaat gaaagtcaca gtgtattgtc ttggtaactg 1200

catgtgcact caattatcag tctagacatt ctggaagtta ctgtttattt ctcagctttg 1260

atctatccac tggacattga aattagcttt gatgttctat gttttctact aaatgttgta 1320

agttcctttg tacagtaaaa gttatttatg tttggacgaa gggcgaatcg tnnnnnnnnn 1380

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1440

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ngactacata cttatcatat attagagaga 1500

aaagaaagaa aagaaaaaag aaagtagttc gtgcaacgta ggaaccccaa gataactcag 1560

acacttatag ccaaaaacaa cctatatact t 1591

<210> 3351
<211> 1427
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226024_G1, chr6:113778611..113780037, Cluster 20

<400> 3351
cggagtagga ggaagatggg tcagtaaagc atcattaaca ttacaatact gtcacacatt 60

gacaacgtca aggtcgaaac aaaatctacg tcacatcaga tatttaaata acaattgtaa 120

gtattaaata tagtctaatt ataaaactaa ttatactaaa tggttagata aatctaataa 180

acgaattaag actatattta ataagtactc gtaattgata tcggaacatt tcggaacttt 240

agtcattaaa cttctgacag tcctgagaag aaagctgccg agctcaaacc ccaatacctg 300

tacaatgatc acgacaacac gacagttttt tttcaatgat gtccaatcct ggcctctact 360

catgagtgat gagcggctgc atccgagaag aaacagtggt cgtgactaac aacagcttta 420

tctgatcagc gctagtacct ctggacctga gacctgaagc tttgtaggtc ctgctggagc 480

cagccagcaa gatttgaaac tgaacaaatc attggggctc gtcaatttag gggttaagta 540

cagatattat tgatattgta tttatttatt gtttttttgtt tgaatttgat tcgaattcga 600

atagtattag ctatattaga atattagata ggatataaat atgagattta actattcatt 660

catatatgaa tgtgtggtat tagatattaa ataatcaggc tcatataaga tgaatctaaa 720

ctcttgtaaa taaattcgga ctcacatata ccatcagaaa atatacgtat gaacacggag 780

acgaggatct ctagagagaa caaaaacaat ttgatattcc acatctggtt actaacagca 840

cctgataaca aattatatcg atttggaaca gcaagagaag tcaatttgat tcacctctca 900

gatgagatga gatccctata tggaatatgg cgcatgcatg atacccgccc gctcatctga 960

ttgagtggag tcatttggtg caggcacttc acaatgactt ttgtgatata aaatcaagga 1020

gaaaggagga gaaacacact acatgagaga gttccacgtc actaaaaagc actatccttc 1080

attatctcat cggaatactt actgtacctt gaaaactctt ggttccaccg ttccactcag 1140

cgtgggcacc gtgtagtcca ccacgattgg atgtcgatgc agaaaagaga gatggtgata 1200

gagaccaaat ggtcacgctt ttccataagg acggagcatc aacagcagtt cacttgacag 1260

tggtggtaag tggtatcttg atagagtcct cgctgcccta tggaatatta ggggtattct 1320

ggtatttgta tctacgtgta tatgatttat aggtcttatg acaaattttt ctaaacctat 1380

tgataataac ggtaaatagc aaatctcgta acaacactga acaatga 1427

<210> 3352
<211> 2643
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226783_G1, chr6:118502611..118505253, Cluster 20

<400> 3352
gtatatagaa gcgtagtcta agattagccg atagaatagg ttaggttaaa tctagttgat 60

aaataacctt agagggaaat aaccactcca tcgcatttgt agtatatgat atatccatcc 120

taaattaata aagtttatta tcttttatct caatgtcatc aaattgtctt tgatttatat 180

aatgtttagc atgatagttc ggtaaaatac accaccatca actcaatagt caagacaaag 240

atccaaatct aagttgaata gttcaaaatc tcacccaatc cgcctctcat ttgactcaag 300

cctcgtccat taaatccatg cacacaagca tcatagcctt cctaacttta aactagaaac 360

ccaatccacc aaattttaac ggtgcaaact aaaccctaag ttggttttcc aatttgaagt 420

ttaaatctaa acaaaggcaa gcaacttctt gaagtggaag tacttggatt aaatgtatcc 480

cttgaaacta ctattttaca tgcattaatt tcttcacctt ctttaatagt caccattaat 540

attccacttc tcattatttt ctatgaagag acacataata ccatcaaatt ggattatgat 600

aattttgatg ggtaaactat tggagatagt cttagaacta agatgcttca aatactctta 660

tactataatc ccttcaagta ccaagaaatt gatctaactt cttgggttaa ctccttcgga 720

gcctaaccca gtccttcttc agactaatga aaatgatttg atttcataat ctaatcctag 780

atctttttcc atgctgagtg agaatagttt tatagatccc attggtagac ttatcaagtg 840

cacatcctat ggtcaagcct tatgtcgaat cccatgtagc aaactagaag ataaaactgt 900

agcaaagtgg ttcaaaattt tctatgaaga gacacctaat accataaaat tggcttatga 960

aaattctgat gtttttgaag acccttcttc cttcagacta gacaacttat tgagaatcct 1020

agaactaggg acttacacat tcatccttgt tttgtaccta tagcacaaat gcttccaata 1080

gagtcattaa cattggctac aaatcatatc agtctgatat catagctcgt caatttggtc 1140

ttggtcaact gtctctccat ttccaaaccc atcactacat agagtgcaga gatgatctga 1200

atgacccaac cttctgctct gggcatacta tattttctct gagctatcaa tccctatccc 1260

ttataaccta gattttaccg atatcactaa aggatacaga gtttggtggc aaatgtggta 1320

acaatgcatt ctaccatgaa ataaatgtgg catacaatct tcataagatg caataaataa 1380

atgtgatgcc ctaggagctc tctaatctca ccaaaatgat gatcccaatg atacaagtga 1440

gtggactgtg tctctttacc ctcaagaagt gtgcataagt gtatggggtg gcaagcatat 1500

ggccaaagtc gaccacatgt caatttatag actccacaaa tgcaactgtt accctcttcg 1560

tagaccaatt atagaatcac tagatataac tgatgctcca ctagtgccta caccagacat 1620

gtttggtgtg tttccaattg ttattttcca ctggctaaaa actagccatt gaggtatctt 1680

gggctcatgg cgcttgtgtt tgttacatct aaaatgctct atttttatgc tcaattccta 1740

ggttgatgtg gcgtatgatg ctagtaccat acatgtcaat tttgtcagtg acggaagatg 1800

cctaaaaatt taggtatggc tgcggggaac ttaaatgact gagctagtta caagaatata 1860

aacataacta tcacattttt accaagttca ctggaaaaca agtaacaaga ttgaagtctg 1920

tatttttat aatatcaatg atctggtatc gcaaggaaag ttgaaatata caattgcata 1980

gaagcaatgt ataaatattt gatataccat aagtagaaat ctaactgcat atgatgtatg 2040

aacaaataat gcatgaacat gccaccgtac aatgtatggt tcggcgagac acacactaat 2100

atttttgttt gccggtgtct gctaagaggg agcggatggc ggagcgccag cgactagagg 2160

tcagagcgtc aggcgcggtc atgcggatca ggtggcggag cgccgggtgc agtggcacac 2220

gactgtgagc gtgtggctca cgactgggat ctaagagcct gaaaggaggc ggtagcctca 2280

tagatgatga caggggggaag cgcgagcgag caagcgaagc tcgtagatgg agacgacagt 2340

ctgctcgaat gtgatacaag gaaacgttag gctttctcac ttcccatgct ggaccgagct 2400

gaaaaatcta ggtatggcgc agaccacagt gcaccataat ggacgttgtg ccactggatt 2460

tggttgttta ttggtgtacc atctcaaaaa agaaatgtga atcttatttt tttagaagtc 2520

aataaatctt aaatttgatt aaatttatag aaaatagtat taatatgtat acctccaaat 2580

aggtttatta taaaatatat tatctagtac attataaata ataatatttt tatctatgtg 2640

gtt 2643

<210> 3353
<211> 1496
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227223_G1, chr6:121067781..121069276, Cluster 20

<400> 3353
actctgggaa catctggatc tcatgttcgt tgtactttct aaatttatgt ttaagttatt 60

catttctgga tagatttaat caaattaggt gaatttagca tattgttgtt gtgttggcca 120

atctttgaga acttagtaga ttgtagttac atttagccaa tctaggtgaa cttagtagat 180

tttagttata gttagtaaat ccaagtgaac ttagtaaatt atacctttag ttttacaaat 240

ttaattagtg aaaccatact atgtgaattg tagttgaatg tactcagtcg gaccaatcta 300

atctatttca actagtatat tttagggatc tgaagttaat atggcaaatc aatatcatac 360

ccatccatca gtgccacaac cagctacaaa tgagattatt tttcttatat tttaataact 420

atatctgttt ggttacgtat aatgttataa ataatctttt attgtaggat gattaggcta 480

ctcacttcat caacaatata ttcgcttttg atggtagcgg acacaagtat acaactccaa 540

taatcctagt ggctttagaa gtttgtttca actattttag actatatatt agtttgtttt 600

gtatcgtatt ggattgttga tggacgtatg gacctgttga atgaatgaac ttgttgaagt 660

tatgtgttgg ttgtgaatga tatatgtgct tgaagttgta tgtgatatga tattgtgtgt 720

atgaaactgc atgcatgtgg ttatggtgat atgtatgtga tatattgttt gtatgtgaaa 780

tgaatgtaaa attggagcaa attttgattt cctgcataga atattctttg gtgtccagtt 840

tattttagac ggcatataga aagtcgttga aagtgagaaa tttttggcaa aaaaacatcg 900

aaaattacaa ctgtattttt tgcgaccaaa ccagaggccg tcgaaaatca tgacagccac 960

caaaaataaa cggcgtcgga taactttcgc tggtctaggt acaaccgcca aaaatagcta 1020

atttttatgg tagccgtcga aataagaatt atccacgacg aaatagagtc acgtcaaaaa 1080

cgtggaaaat aaactattgt cgtcgaaaat aagatattct caaaggaaaa gcacttattt 1140

tgggtggctt tggtcaccga aaattacctg attttctgta gtggtagatc aatactaatt 1200

gagttatcta acacccaatc accccatcgt tacatatttc tctttttcta atctatttgt 1260

tgtatccctg agatccaaca aatgtttagg tagccatgtt tatcttataa caacaacctt 1320

cgatgtatat ttctctgatg gatcatttag attggtgttt tgagctttaa tgacaaaaac 1380

gatctttaga ttaactactt gacattagat ttatttactg tgtgtgatag acatgttagc 1440

ccttgtaggc acatgattca gaatctgttt tagcgtctaa caccgagcct ctgcat 1496

<210> 3354
<211> 1547
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228587_G1, chr6:128059471..128061017, Cluster 20

<400> 3354
tcagttaagc atgcattgcg agatctagta ccagtagtat ggtttcgttc gtttgtccgg 60

ccactcagca gctctaggtt gtcgattacg gtcatctgac gactgagata gatgtctgac 120

gggcaagctg aaagctagat cccaaccaaa catgatctca atatcgcaca agtattacgc 180

tgtgatgatg ccattcctac ttttgctaac gtacaatttg cgtgaatgtg aaaggtctat 240

gatggtgcgg tatgcgtcta tgtgaggtcc attgatcgtc attgtatttt ggttattttg 300

tgaaaaccta accaccgtac actacagaaa aggtttgact aggatggcaa tagcaaccac 360

agctctttaa acaaaaagtg ccaaaattgg gcggaacaat ggctggtgag gtaaaagtgg 420

tgtgggtaat tattcgaatc tgaatttcaa ggatataaaa aaaactaata ttcatgtggg 480

taggcaaaat ccaagtccaa ttatgtgtag gcacagatag gatatgaagt tgacaagacc 540

tggtggatat agattgtccg caaatttata tgtgttatcc gatgcatgat tagaatagtc 600

aatttgataa tttctctccc taggctaaaa aacaaattaa gaggaaccat tgtttactga 660

ctacttccct ctatgtatat ggtggttttg ctccaccttc taccctcatt gggaaccata 720

tagagggagg tcgaggatgt cccatagtta agaggaaaag tggacgttaa ccggaaccaa 780

atgtatagta taagagagtg atgtgacaca attaaaggtg tcgtttggtt cgcgaaatgt 840

aacgtaaatg ataatggtaa cgattcacac tcgaataccg gtgctaacaa atttgaataa 900

ggtggtatcc atttgtagta taatatcgat tacggttgga cttaaacaaa catgatttaa 960

cgttatcagt tacccattat gttaccaata tatgaaccaa acgccaccta attcaagagc 1020

aaatgatcat aaattcaaca actgccacgg tcatgcctcc caggtattta taggtcatac 1080

ccgtggcaag aagaaattac agtggacaaa ctaagggcct tcttacatag atatggggat 1140

actacagtca tttgacctct cgcccccaac cactcccagt aacactgtct agagctccgc 1200

ttgaggatac aatggttctc tatcttccac caaacgacaa ctaagcatac gttgtgaggg 1260

ttctctctaa ctggcttggt atgcgtctat gtgtggtcca ttgatcgtca ttgtattttg 1320

gttattttgt gaaaacctaa ccaccataca ctacagaaaa ggtttgacta ggatggtaat 1380

agcaaccaca gctctttaaa caaaaagtgc caaaattggg cggaacaatg actggtgagg 1440

taaaagtggt gtgggtaatt attcgaacct gaatttcaag gatatataaa aactaatatc 1500

catgtgggta ggcaaaatca aagtccaatt atgtgtaggc aggcaca 1547

<210> 3355
<211> 1727
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229296_G1, chr6:130927196..130928922, Cluster 20

<400> 3355
gcagtccaag gcgacgacct ctcggtctcg gaaactaagg ccctttttag aaacaaagtt 60

cttgagaacc atagtttttg aaatattaca ttacacttta ataatgacaa tactacagtt 120

ttaaaaacca aagttgaaat ctaattttag aatactctaa aatatctaag tacttgtatt 180

acttcagttt aaaacagaga ttttagctac cttattacca aacaactttg tatatataat 240

actgagtatt ctttcaaaac tatgaaaaac tttactccta aacaccaccc taaacttctt 300

ccggaccacg ttgaacagac cagacgggca acaaatataa tggttgtctg ctccaagggg 360

gaaaaaatga cagggtccaa gtagcaggaa ccttcttttt tcttgcctcc gaatggaaca 420

ttccaccacg gctgagccaa cacgcaacac gtgacgtgaa tgactgaacg agagatcctc 480

tccggtcaaa agacaaacaa aaaaacacgt gaaggagata caactacaaa agtgcaatgg 540

tcagcattgg agtgacacaa taagcgccgt cgtcgtcagt ggataagcgt ggaggaattc 600

aaagcatcga ccgtttgccg aaagcgagcg aatacgaaac gtttactcgt agtatagtga 660

atttcgtcgg gtttcatggc agggagcaga gatagaacta aataccatta ttttacatat 720

gttttcttta gatatcgtga ataataacga cggaaagaga ctcgtgagta ctagcccctt 780

aatcgagcca cctcaccgaa agtgaagtct ctaaacctta ttaggttgcc ggattcgttc 840

aagtactcga ttttatcttt aatttactgc atctaagacc tgtttcaaac ctctacaaat 900

aattattagt cgactaatga attgttagct tgttttacct gaattagagc agctaacaac 960

taatggctat ttaacaatta tctggttcat tagctgatcg gttctaaacc tctcagttaa 1020

ttttaattgt tcactattag ttttataggt ttagaacagg tcctaactat taccacatga 1080

tatcgttagt ctccttgcct taaaatttac caaatgatat cttctgtcgg attgctttgg 1140

cttcatcttc acctacgatt ttattaggct atgtccaatc tatagtatca tacatattta 1200

ggacatgtca tataagcatt tttgatgatg cggcaagaga gttaggagaa gagagaagaa 1260

agttgtatct tggtggagat actacttgag cacgaggtta tatgcattga aattttaatc 1320

attcaagtgg tctccatctc atactcttgc ctatactagc atttattatt ctatgtagca 1380

taaaaataat atatgatatc atgtattgaa gtagttgtat cttatgtaat ttcatatgat 1440

atgatatttt tggatatttt gacaagatat aatagattgg aaatagcctt cgtatgtgca 1500

aacttttaa aaggtacacg atgacatctc ttctatctag aaagattttt aatttttaa 1560

tctttttcta aattttattt ttaaaatgat attacttatt tttttaataa aaacaaaatt 1620

ggtagaattt tagtaaaata agatttttaa aaagaataaa attaaaaact atagaaatga 1680

tgatccctcc tcgatcaacg tcgccatcat ctcatttcac acgaatt 1727

<210> 3356
<211> 1988
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230743_G1, chr6:137883087..137885074, Cluster 20

<400> 3356
gcaataatgc agttctcctg catgttcgaa aaaagaaaaa gtacatgcaa aaacctaagc 60

atctttgcaa aaagtactct aaaacatgta tctgtacata tggaacaaac caattaagtt 120

aacgaactgt ataataacat tttttgtaat aaaataatac taataatgca aagtagatgg 180

gtgggatgta gaacttttac ataactttaa tcaaggtatc tttaaataaa aaaatatgat 240

attgcagcaa aaatacacta acacgacaca aattccttcc caactacgaa attagaaaca 300

attcttgcta atggatattc aaccaaaatt aatacatatc aaagagatga caacacaccc 360

atatagatag cgtaataggc acaccttcaa caacaaggcg ttttgtcaaa taagaggctt 420

gaactgttgc ttcatgtttg tctgagaaga cattattcac ataccacagc acaagagatg 480

tttttccaac tcgtcctaca acaaggggaa aatggcataa caaaacgagt aaagggcaca 540

tgattgtttt gaaaaaaata gttaaacatg ttgcactgta caaaacacca aagtatatag 600

ttaagcaagt gacctcatgc catttgtcct atatcctaag tttacattac attcatcacc 660

aagaaaacat taactaaggg tcaaattttg aacaatccta ctggtggtgt gaactgaaaa 720

ctggtggttc gatgagctag atcacagtgc aacagatcaa gtgccatcgt cggatttgag 780

cccaaacaaa gctggaggta gtgaatgact tagtggcagc atgttgccct ggttcatgaa 840

gcacccccac cccctccgca ggtccacaga tgcaaccaaa gttttatttg tttaagcagc 900

cttggttcat accaagctga agcgttgaac cgaagaatct tctccccttg tcgatgctga 960

tagtgtgtaa attgaactat atgactgtca catagattta caacactgga gctactcgaa 1020

cagcttatag ggctagaagc ttacaaaata agcattacga tttagcacat agcatatcca 1080

gttaagaaca tttctccttt ttagtatgat cagtagtatc tgatttgttt ccaaatatta 1140

tatacatata tacacacagc taggcctaaa ctactaacat cttgcaaccc tgtctgttaa 1200

tgtaatgcca atgcatcaca caacagtcac ttctattccc atcatttatt aacctccgtc 1260

ttccattttt tcaatcagaa ttcaatggat atatataatt ttatgcctat aaagatcgtt 1320

attcttggat ttctcctcca acaggatgca aactctgatg aatccaaaca aaaaaacatt 1380

gcatgtagct agtacaataa gaaacaacac cacttgtgct ggtcagacgc atggtgcaaa 1440

atcataaaaa attattgcaa atagttgact aaaacatcta cagatgtact gttacgacgc 1500

agcttatgat ttttatccaa gctcggctgt caagcagcta cgctattgtc cgctctctta 1560

aaactctttt gggaacacca ttggtcctag aaaatgtagt gaccgtcatc tagcagagta 1620

gttgcagcta ataaattctc ttttgcttca agttttattt tatcaaccca aaataagtaa 1680

atcaaatttt gtgttatgag atctatcaca catattatat gtcagtaatt tttgaaaggc 1740

tattccttgt tttatgtgtc agttactaag tttataaact gtggcttttg cttgtagatt 1800

gcatgtgaat aatttttaa agcatgccat ttgcatgaga aatcagaagt caagaaacaa 1860

ataacgaagt aaaatagtag tctgcaacat gagtgtattt gaggtttacc ttgggaaaaa 1920

tgagcctgat ccaattggcc ttctatgagc acttttcaaa taacgagtca agagtcccgt 1980

ttcaggat 1988

<210> 3357
<211> 1552
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232222_G1, chr6:144700575..144702126, Cluster 20

<400> 3357
taaatccttt acggaatgaa gaaaaaaaat aatactccta ccataatacc atatgattcc 60

tgtcatggtt caatacgaat atacggtact gtgtgggtga cggatcgtta gatccgctgc 120

gcgggcagta aagaatgtta atgtcctcgg tcataataat gtttgtcagt gagatagttt 180

ctttgtttca attcaggaac atgtaaagta tttttttgt agtttttaga taatatcata 240

atttataata atatcataag atatttagtt atattcctga aaattgtatt tttttctaaa 300

aaaacatggc attctaatac aatagtattt ttttagtgtt tggaactgcc tcgctccttg 360

ctctacaact ctgccccata aacaatttta ccaaacatat tcgtctccac catcaccact 420

actaaaaaca tactcctatg gatttgaggc caactgcaca tatttggtgg agcgataaaa 480

taggtgctcc ataaatcatt gtttcatacc actttatgaa gttgtgggga aattagctac 540

attgccactg tttacacaat ccctctcatg tgatcatgtc gtagaaaaga atcctctgcc 600

cacttcgcct cgcactgcct accgccaccc aggacctcgc cgccgcctcc acgtcgccgc 660

ccaagacatc gccaccggtc gagaagctcc cccatgtcgt gcctcctcca tgctacgggt 720

ggctccccca tcgcctcgcc tcctccacgc cggcggccag ccctctcctc atcatatgct 780

tcgatttta aattttatag tataaaattt ggagtataat atttcttaac gattagtttg 840

agcccttagc caattgtagt tcgaaaatga acagaaatat agtttggtcc taatatgctt 900

cgatttttaa attttatagt ataaaatcta gagtctatta ccacccttaa ggacaaccgt 960

catgtctgtt gtatatctcg aagatctatt tcaagcgcac acttagactc tctagcaact 1020

tacccgttgt atctcatatc tcatctcata ttgtaaactt caccttataa acaatacaat 1080

atatggtata aaacagtgtt gttcaccacc atatgcacag tctattggag acagcctcag 1140

taaataggac ataacctggt tagcaagtgg ctatcaatct ctgacaagcg tcaacgttgc 1200

cacaacacac aacactaaag tactagagat cgacgacaac gcggttccgc aaagcttcgt 1260

ctggggtcaa caattggctc cagattgtcc ccaaccaagc aaaaaatgcg ccgccgagca 1320

ctaaacgcca ccctaaccca catggtcgat cccaacaatg cagaggcact gaaagtctga 1380

aaccgtgtag agcacctggc tgctgcatcc atatgtgagg agacaaagag ccgtagcttg 1440

caggtaccga ctgaccggcc gacgtcgttt tccttgggtt tactgtctat tccgctcact 1500

ttagataacg gaataaacgt catctggagc tcagacttca tcagagcaaa at 1552

<210> 3358
<211> 1504
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233009_G1, chr6:148241950..148243453, Cluster 20

<400> 3358
ataagctcga ccaatacatg aacaatatga ccgccaaaac ggtcgaccat ttttgacatt 60

tgtatccggt attgtctcgc gtcatctgag aacttctaaa ggtataatct cacttctaag 120

ctcctgcctt tatcacgcat gcatttcttt gttcattcgt attcaaagct tataccgtct 180

taagggcttg tttgaactac aggagctaaa ataaaataac taaagtttag tcacttggcc 240

aaaaaaatcc aaacaacaaa agccaaaagt gactaaatag taaaaaataa ttttagtttg 300

ctttagctcc tagatccaaa catgttgatg tatacttttt ttttcccaat ccattgcttg 360

cttttccatt ttatgacgta cacttttctt tcccgatcca ttgcttgctt tcaagattac 420

tccgtattga gataatcata ggaataaaat ctcgtatact atttttccaa tccattgctt 480

gctttcaaga ttactccttc atattaagac aatcatggga ataaaatcga aagttgatta 540

ccagacctgc tagtcaacaa aagtagcaaa atacactttc actacctcct ttgctctgaa 600

atataacagg agagatgttg tcacgttgtg gagggttcgc ggctcttggt gcgaacaacc 660

acgatatttt ttcctcgggt acatgggtga cgatctagtc ttcggattga ttgtcgctag 720

cttgggaaag cgactgcggt tatgtttgtt tttttctttt tccttttttc ttttaggatt 780

ggctatgtgc attagacata ggccgaaagt ttatgtacca agactatgta tcatcttgat 840

gtatcgctct tggtaacctt ttaatataag gcttccttta tcgaaaatac aagaaataca 900

tattaaaaat ctataatggt acaagacaac agatggaaat acacacggaa tatttggtga 960

ctttataagg attgtataga gataatgaaa aatataaatg gtcagtgtta aaagatgaat 1020

tgagtaaaga tgagtaattt tattagttgc tactacctcc gttccacatg attttgtcgt 1080

tttggattta tcctaaatta atcactatca actttgatgt ttcataagat cttacatcat 1140

aaacgtaaaa ttattagatt tatcgtaact taaacgatta taatataaaa ctcttttagt 1200

ttaaaataat ttaatttaat atatatattg ttgtcaaaat ttaaatagtt tgatttagaa 1260

caaacttata aacacaaact catgtggaca gagaactaag tttacctatg aaaattttaa 1320

tacttgtgca acgtaacata cagcacatgt tgatgatagt catgacaaat aggaattgga 1380

tcgttaaact actatgctta ctataggctc gttgctgcta caagtaatgg aattcggttc 1440

gtcatagaaa aaaataatca tttgtgctac cagcgagtca gtgtctacat actatccccc 1500

gaac 1504

<210> 3359
<211> 1734
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233286_G1, chr6:149333116..149334849, Cluster 20

<400> 3359
tctccctctc attgtcatat cctctacacg tgttcggctc atataacatg agatcttttg 60

gctgcatttt tatgatttgt agatattttt gatgattttg attccaagtt ctagattttg 120

tgttctaatt ttaataggat ggcactaggt gtaaaaatcg gtaccagaag aaaacgtatt 180

ttaagcacat gcaaaaatta gctaaggatg aggctaatga ttgtgcacat gtatagacca 240

tcaaaagaag ttcaccgatg atcgtgtgac caagaatttg tctcttttag ttcgaagaaa 300

gccatgtttc cattatagtt tctctttgca aaactccatg gggaataagc acaagagcct 360

cttacaatga ttatcagagc caaatacaat caccaaagcc actcaacgat cctgaaccac 420

caagagaaac aagaatcaca ttgctcaata taatcaccag tgccactaga tgcaacaact 480

caatgcaaat cactagagat cactcccaat ctcactttgg atgagtccat atcactagag 540

atgagtggta gatgttttct taggcttact agagtgtatg tcaagttagg aagctaggat 600

atatatccca aggacgaaaa aactctattt ataaggtccc aataagtaat tactagccat 660

tggtaccatt attgtgcgga aaacaagagt gtcaaataat ttaatgataa ctatcatacc 720

atcaacatga gtctgatgac tcttgagctt gccacatgca ctagatgttt gaatgttatt 780

gttgatgtct caacaactat gactgcatat ggtccaatga ctagagttca acgttagttg 840

atccacacca tcttaggtct gatgccatgc agaagtgact agagtgccat ggaaagcgtc 900

acactggtct aacgcctttt gtcggactaa cactcaggtt acaacatctt cgatgaatgc 960

aaggctaggg ttatccattg gactaacact atactagtat gatactctta gggttagggt 1020

ctgatgccaa ctataggcac cttatagccc attttcttcc attcttgata tgtgtgctaa 1080

ctacaactgt ctcttacact tgtgtatgtt aggtagctta atttcgattg tgtctaaggt 1140

ggagttttta ttcactaggt tcaatacata tgcatggagt caatttacct agtggcactt 1200

tagtagccat tctaaactag ttcacttctt tatagtattg ctattggcaa aaaaaatcct 1260

ctaagtatac cttagcctta agtttttgta ttttgatttt ccccttcctc ttttcatgtt 1320

gagcacttga ttatccttta tagctatcgc cgtccttctc atggttgcta atcttgctca 1380

atcttggatg tgtatttaat ctatcccatt tataacactt agagtagaag ttagtccaca 1440

ggtcgtctca attacgaaat ccgcacataa agctttcaat ggtgtctgcg ccaaacaaag 1500

gagaataatt aggacacttg acattagaat agtgcataga tcaaactttc attcacttaa 1560

aaatcaagca cacaacacat taggaataat agatactaac aactctaaat aatatcaaat 1620

caagaacttg aaccaccatg agtgctactg ttcaaatgct caatactcaa tcatcactat 1680

tacgaaagac aagaaatgga cacatagata aatcattcaa tcattacata caca 1734

<210> 3360
<211> 1419
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234858_G1, chr6:156528939..156530357, Cluster 20

<400> 3360
tagagcaagt gtaaactgga tgttgagata gaggagaaat aatagggaga gagagagagg 60

agggaaactg accataaatt tacagtcgat ctaggggggg aagaacaaaa aataagaaaa 120

ctatgagaga caaatagaca tatattaata ataaagagct aacataagac gtcatcttaa 180

atgattcgta tcttaaaagg tatcaaaaga gtaagtgcaa aaaaacataa ggaacgtcat 240

cttggtgatg aaacgtcttt agcacgattt tctaagtcta agatacactt ttacccgtac 300

aacccacata aatgagtcgt gcctttaggg tttctagtga ataagatacc aggtatacgt 360

taggttgtat aaacaagttt cttaggtgta tctagtgttt ggaaaaacca caacatggta 420

tctaggtttt acatgtcctt agtaggaact aacgtggcta atctcaaagg tagagcaact 480

tatgaaatta atgcagaatt taagtcacta ttagtctatt agggcatgta cggccctgag 540

tctctggatc agttctccat gtataaaaga ccgataagag attgtatgat actactctaa 600

gtcactagat cataaatata gttagataat atatatagag cgagtcgtgt agacatgaac 660

tctctgcgaa tagctcgtct cttgtaacgt ttttcattta gctccttaaa aacacctcaa 720

gagaccccat attaaatggg ttgtacgtgc acttacgaca cctctaagca cgtcaatatt 780

aaggcatgta caaccacatt taatacccat cttttaaggg gtctctaaag ggttaaataa 840

aaaaattaag agacaatctt ttcgcgaagc cctccatgca tattttctct taattattat 900

atttataatc tgattgattt taaagacatc tcatgatatc atgtaatttt ttagttgtat 960

tttgtgctta gaaaaccaat caaggggcta taaactacgc atgcccccga tttcggaggt 1020

tagagcgtgg tgttggatct ttgttagggg taatcatata gttttctctc tctaccatca 1080

atgagtttat tgtcaccgta ctgctacttc acattcgtcg ctaccgccac ttttatgtgt 1140

aaagtttcaa tgatgatatc atgtagcgta aatcgagcta ggaattcgaa gatcgacggt 1200

ggtaggacct gataggttgt ctttagtgga tggtataaaa taagggaatt tgtagggtag 1260

attactgttt gtcaagtgaa atttaaaata gtatatgaaa ttagagatgt gacatgggag 1320

ctgctgactt gctgagatag tatcattggg cctcccaata agcaaaccgc ccaaaggagg 1380

acaagctgga ctagaaaggc taaatgatca gatattcag 1419

<210> 3361
<211> 1434
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235467_G1, chr6:159428182..159429615, Cluster 20

<400> 3361
gagatttgtt ccacgataga ctgtatcttt ttagaagcaa gttcagtttt atataaataa 60

acaacactac atcttggtcg caagctatgt gaaaacagaa acatttgcat aactcaaaat 120

gatcaaacac taagcacacg tatatatgta ttatgccccc cgtctataaa tgtttgtcgt 180

tatggtattt atgttggtca aacctttaa aatttggcta gatttataga atatgtcagt 240

aacatttgta tcttcaactg caaaactaga tttaaagaca tatctaatgg tactaattaa 300

tggtattaat tatgtactat aaatattaat agtttcttat ataaacatga tcgaagttaa 360

aattggttga tactcaaaaa gtgagaacga taaatatatg tggacaaagg gagtttttt 420

ttggttagcg gccaaggtct tttcgataaa tgttttataa gcaaaaacta aggaagcatc 480

gaaactacta atagtgtgtt tggtttgcga aatttaacta tactagacga gatggtctac 540

cgtgagccta ttttataaat tttatagaaa atcacggtat atgagtagct tgcaaggaat 600

aaaatcattt ctattttgca aacaaaacat aaaaagtgga taataaaaag acgataggct 660

aacttattaa atttattcat atacaactat agttattata tttattcatc tggtcgtttt 720

aattacatta catatacaac tatagttatt atattttact catcacattt gtatatacaa 780

tttacttttc taaggactaa aaatcatgtt tttatagaaa acaaatgagt acatggatac 840

ttattacgcg aacttttatc gtgttagaaa caaaattatc aaataataat gagatctctt 900

ataaaaaata gtgtgttcct actttatcag atatataata taacagctct aaaaaagcat 960

ccaagttgct gtggtgtagt ggttatcacg tcagtcttac acactgaagg tctccagttc 1020

gatcctgggc agcaacattt ttaggaatat taatttttt cctcacgttt tttgttattt 1080

ttttttagtt aatcacctgt gggttttttt ttctcgtaac atgttcgctt agtcttcttt 1140

ctccccccat attttttct catttccaat caacacatta acacatcttg ggtgttttag 1200

ttttcgatta aatctcggca ttccgtggag caacgtgata agcgtggaca atttcgcctt 1260

aggttgcaac acgtccgatt cttatcattt cggctttaac tacgctacaa aatttacagt 1320

acaaggctgt gcactatagt atatttatac ggtaaattac agagtcaagt ttgaaagaga 1380

atgagatagg tatttagggt ttatgatgtt tggtttctag agactaattt ttag 1434

<210> 3362
<211> 1895
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235977_G1, chr6:162301826..162303720, Cluster 20

<400> 3362
gagtgctagt cgtggtggac aaactacaaa acaagattca tgtaacaaaa ctgaaataat 60

tagtcaaacc atgtattaac aaaactgttt gtaggcaata cagatcaaca aaacaagaca 120

tgatgatggt tttttagata tatgccatta taaaaaacaa gtgttccaaa ctttgcgggt 180

tcatactaga caacatagga ttttgataac agtaagattt tgggatggaa agaattctct 240

cttatctcat agaaagggat tcaacaacta gttttatggt ctcggattca acaactagtt 300

ttatctcata gaaagggatt caacaactaa ttttgcatgg cggctatttt tatttaaatt 360

tggaaagaaa gaacacactc aataacatat taacacccta aaacatatgg agaggaatcc 420

aggcctcctt ccagactggc agactgtgaa tataggtgcc ttcctactga aagacatggc 480

gactcagctg atcgtcagca atcatggttg ttcctactga aagaaggaag aaaaaaaaat 540

aaaatctagc tgaaggcatc tcctgctgat gcaatcttgt ttcttacgta agcctatcta 600

cagcagctta ctcatactca tattcatact acactctata aacagtacaa tgtacaaggc 660

aaaacgatgc aaaacagtgt ttctggagac aatataggtg caatgtacaa cagttcactc 720

atatggtcat caaatacact gttctagatc gttttgtact atacattaca ctgtttgtag 780

agtttagttt aaatatgggt atgagcgtgg gtaagctgcc ggatatagtc taactccagc 840

agcccacttc ccaacaggaa aggtattaac aaaacgccac ataaccttgt tccttacata 900

actccagcaa catagttttt tatgcattgg actgatccca taacatattt acatgttggt 960

gactctaatc gtgtgaagtt gcttggtgcc ttggtgcaaa tatctgcaca caggagatgg 1020

ggttcctcaa ttccttggtg aaatgaaccc tgaaaagaaa atactggctt cccttgctgc 1080

tgaagagctc aacttccttg gtatcttttc ctaattcatg tcaatcaatt ctatatatct 1140

tatttttagg gatacgagag agcgctctgg ctaattcatg gattctacaa agggaatggc 1200

gggtgcggtc atgtgaagaa accagatttc ttgatgcaga cggaaccaca agtctttgac 1260

ccaagagaac cccaacctat gaaggaaaca tcgcgctgcc acgccatcac ttcacattgc 1320

cgtaactcca atccagacca agttggtttt tgattccggt cgaaacaaac agccagaaaa 1380

gagacgaaca ccgtaccgat tgtttccgcc cggaacaagg gtcggaacag gtggaaccgg 1440

ccgaaccgaa cggaggaaaa tcatgcgcac aagttctacg tgaacgagaa cgaaattaca 1500

gttctccttt gtgatttcac agcctgattc gtccagaaaa attgtgttta tatgtagtga 1560

agcgctaatc tacttgtagc tagacattca gcacacaagg catcatgtgc agcactgtag 1620

gtgaccgagt caaataagat taacatttat gttcgtgaaa gcatgaccac acacagggat 1680

agttccccat tctcgtcccc acagaacccg atccgacgag gcctatattt ttcccatttt 1740

tgattgacta agttacccca tcctcgctcg tctactgata aaggattttc tgcgggaatt 1800

atggatcggg acccattgtc atctctaggt ggtattatgt gggagcgaca cactatgtgc 1860

gacttcctat cgtgttacac tttgatgatt tctta 1895

<210> 3363
<211> 1526
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236698_G1, chr6:166184677..166186202, Cluster 20

<400> 3363
caagtgaagg tgcgagaact tggtaattga ataatggagg acaagtggag acacacatta 60

agatcatgga gaaagcataa tggatacgct actattgttc ggtttcgcaa ttcagtcctc 120

aaaatcgtgg gcgagcggtt tgtcgaattt gagcctacaa actcgaagta gatctcatgg 180

tgacacatgg tatcatcgaa gagcttgtat cgaggcaaaa catattgtct tgcaaaaacg 240

tatcatcatt catttgtact gttacacccc ctccctttat tatgtaaatt aaaacttgag 300

aattcatgtg gtacgtacat caaacatgtg tattatttta ttggataaaa cgattctgta 360

ttaatttgat atagtatttt cagaatttta attaaaagct tttatctttt agtatcgaaa 420

aaatgtgcat accctcgacc ataaattacc ggcgtaccgc gcgctgctag ctatgcgaca 480

gaacaaaata cgaccaaatc aaaaaaaaac tgaaagtttg gcatatcgag ctcgcattgt 540

tatccccact tgtaaaaagc ctcgatcctt ggaacatgtg acgacgatgt gaccactgag 600

cagtctgatt cgatccatgt cttcatttgt ttttcgaaga gattctttgg caagttggag 660

tgaagatacg ttacgtaatc ctaataaata attaaatcag gaagaacata gcatcagcta 720

ccgttatttg tcttggtgta tgaaaagtcc aatgcaagcg ctaaacaaga aaacacgtcc 780

atatatacgt acgtgttctc ctacgaagca aagtcgatct acgtactcac cggctcaccg 840

ctgcacgaat ttttgttttt atcacggaga aagaggccta ctctcagcga ccacacatga 900

aagaggtttt caaaagtgtc agtttttatt aaaaaaaacg gattaattca tcgtattgtg 960

cagcgacact cacatctctc aaatatttat ctcgaaggca caattcattt tctcctgttt 1020

gtaatgaaaa taaatcgttt cgggcacaat tcattctcat ttcggaacgt gtggtaatgt 1080

ttattctatt tttaaacaga acataaaact tctgaatttt gaaataaaaa tgctactctt 1140

ttctattaac aataggaaaa aaatactgtt ctcacgagca aatgcaaaat ttcggtctga 1200

atgccttctc tggtttgtag aacaaatgta aacttctttt tttgatgaaa aaattacttc 1260

acttcttacg agccaatgta atctcctaga cctttcaaga attgtttagt ccacctaagg 1320

agcacatcta aatttttcc ccaagaaatc cttactccat ttttgcaggt ccatttctag 1380

aagcaaatgt aaacatttca tttgctttta ggataaccta ggaacaaatt gaaattattg 1440

atgtgtttcc aaattatatt ttgaaatttt ttagcctcct ttaaagagca tgttatcagc 1500

ctttgggttt aaagtggaag aaccat 1526

<210> 3364
<211> 1582
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237799_G1, chr7:3485795..3487376, Cluster 20

<400> 3364
tggacgcact tcttctattg ttctgaaatt gtgctatgtg tgtaatacaa tagagagttg 60

cttggtcgtc agaacgagcc ttgttctggg aaaagcaaat tttagccacc taaacctcaa 120

gttcaacagt tctgccatgc tctcaaaatg ttcatgtatc caatgcttgc ttttggggaa 180

attagtctgt tgctgttatg tgtagtgctg gtagtggtac taagtctctt gaattattta 240

atttgcttga tcctgggcgt cggatgttca accactactc ccctacctgc agatttaatt 300

tgcttgaatt atttaatttg cttgatcctg gacgcacttc ttctattgtt ctggaattgt 360

gctatgtgtg taatacaata gagagttgca tgatgggtag gacgagcctt gttctgggaa 420

aagcaaatta tagccaccta aacctcgagt tcaacagttc tgccatgctc tcaaaatgtt 480

catgtatcca atgcttgctt ttggggaaat tagtctgttg ctgttatgtg tagtgctggt 540

agtggtaccc tcggctgcaa gccaagagtt ttttcttgct gcaagccaag agtttttct 600

tgttttttt cagtgtgtcc aggtgtcttc attctgagcc acaattactt tcttttccat 660

gtcacacaca aaagactgta gcttcgtttg tatttaaaga ttttttgact atatagctct 720

ggaacaaact gtcctactta caatgacatg aaagtaggac agtttgtggc aaggaacaaa 780

caaccatggt ttagggtttc tattgttctg aaagtgtgct atgtgtgtaa ttcatttaaa 840

tccaagaaca aacttctgat gctccaataa cttcttctgt ttataatatg aatcaattta 900

tttgtggcaa ggaacaaaca gccatggttt atattctatt gttctgaaag tgtgctatgt 960

gtgtaactca gttaaaccaa gaacaaactt atgatgctcc aaaataactt cttctgttta 1020

atatgaataa atttatttgt ggcaaggaac aaacagccat ggtttatatt atattgttct 1080

gaaagtgtgc tgtgtgtaat tcatttaaat ccaagttcgc tgttctgatt agaaaattgc 1140

agtactaact gtgcttgctg ttcaataaca aagttctgca tcagtaactg tgcatccatt 1200

aaccatcact ataattacag atagtaacca gtaccaaact gcacatactc aatagcttta 1260

aggattcagc catggtttat attatattgt tctgaaagtg tgctgtgtgt aattcattta 1320

aatccaagtt cgctgttctg attagaaaat tgcagtacta actgtgcttg ctgttcaata 1380

acaaagttct gcatcagtaa ctgtgcatcc attaaccatc actataatta cagatagtaa 1440

ccagtaccaa actgcacata ctcaatagct ttaaggattt atttctcata tctaacagtt 1500

ttcaaaccga aatagtggaa taagtaactg tgcatccagt ttcagtttca agacttgaaa 1560

ctgaaacaat tttcttcttc at 1582

<210> 3365
<211> 1564
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237975_G1, chr7:4256020..4257583, Cluster 20

<400> 3365
atatttagtt gtgatttgta accatctaac acttcatctc actactagtg ggagtaaacc 60

acatgttcta ttttgtctta aaccaaaaga caaaaaagaa gttagaatga ataccacaca 120

tctacaaaag ttatatttta agaaggccca agcaacaata tagagtttaa ttctaataac 180

atattatagt tggtaatgac caatgaatag atcttagagc tgtaaaatgt acatgtgtaa 240

aaagttgtgc attctattgg tgaaggtcca tgctaacaaa aatcattgtt caaatatgct 300

tttaggtatc aggcctaagc aaaagttaaa gtctagaata aagcacgttc gggataagga 360

ataaaggcca aagctttgta ctaattaata aagaagttta ttgaaaagtt gaagagaaga 420

ttaatatcaa gcacgacaag gtagaaccaa agccaaaagg agagatgaag tctgattgcc 480

ttcgaagcta cactcaaaag atgaggcaaa agaggattct taggaagaag aaaagacata 540

tgtgatacat ctttgctgta aaaatgcatt gattgtacct ccctagttat gaagaactag 600

tgtgtaatgt ggaggacatt cttgtaattt tgtacagaaa tgtatatggg cttggcccta 660

taaatggata aacgatgtta ctgcaatagg gggatcaact tgttgtttat aatcttatgt 720

ctgcaatatc ttctcctaga gaggctcaga aggtataatg agaacgaagc tttgttgttg 780

ttgcattatg tttcgtaata tgttaagtgt atttgctatg ttacaaaaaa ggacatgcac 840

catctattga agtgttaaat gggcattaat cctcgattaa acgtatattt gtattttcat 900

tggtgctaac cttcggctta tcatgtctat tccgaattgt aatgcgcctt atacttgtca 960

ttctcttcga caacaccttc caaggggaga aggatataac ttaaccatgt tgtcttgttg 1020

tcttcatctc tagaatcttg acaggttcca aacacattat atcgcttcaa gatgtaaata 1080

tatgtaacaa gttatgcatt ccattgcaat gcaaagttat gtttgcaaat catactaaat 1140

tgacaccctt ggatctatat gcattataac tctttaaatt gaatgttctc ttttatgatc 1200

ataactttat agttataagc aatataatag gcatgtttag ttgtttaccc ataaaatata 1260

agatgaaatt atcagctagg ccaggtttgc ttcttcttgc tgatctgacc gtgcttaaac 1320

aatgctaata tattattttt tataatggaa aacagcctta catgtaaaag ttacaactcc 1380

acaaacaact atgagatgat aaaaaaatat ctgtttggaa ccataaacaa attaggcagc 1440

cataattcta acattggatc gttatccatg gcttgtgaag atcttcatgg acaccatctc 1500

tagggattaa catatattga gagattcttg gtgtgattct tccttctgca gtaggctccg 1560

aaat 1564

<210> 3366
<211> 1836
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238071_G1, chr7:4831428..4833263, Cluster 20

<400> 3366
ttaatggaca aattaagcat gttctttgtg caagtaaaac aagcgtgctc atttattcca 60

ttggattagt tgatgcactt agttggacat ataacgagaa tatgtaattc tcatttccga 120

tagattatat atcctagcag gggaacaagt taatccattc tttattcgct actagattaa 180

ttggatcatg aaccagcagc agtgatacga tgagtatcac taacagtcta agccatgacc 240

cgtcaatggc actcgtgata ccactaccag atcagtgcac accaaagaat gaattgttga 300

gtgccaactg tagtaccacg tccaataatt ctcatttctc tcacacacca gacaattctc 360

atcgttgttt catttctcat aaggtatata atacatcatg tatacctata aaggataaat 420

taacataata ggtagcaaga taatcaagtt cctacaaacc aacaatatat gactcgttat 480

ccttagtctc ttacactgat attaaactat attatacaaa ccaaagtcat gatgagtgca 540

cacaccctac tcgatctaat tagtcacttt catctcacaa tactcttagc ctcaacttta 600

atagtccatg ccgtgatcat ctcttattgt gaagtggaac tacttatgta tatcaacaaa 660

tgagaattag tgcatatata tgctctcttg cctcaaagga acgggcacac aatctaccat 720

agattgaacc agctagctat aggcactcca aattggcaat cgcctatagt agaatattca 780

cgtaacccgc gaccattttg tcgtggtcct tgaacctaca tactaccagc gacgatatct 840

gattttctcc gccacttgag ttagaatgga atggaagagc tacattacgt aatgtaatgt 900

gaaatcataa aacagaaact acaagtggta tcatacaata aatagaatgt gatgttcaat 960

gaaaaaaatg attatataca catgtgagca tcacttctac tatatatacc acaatctaca 1020

ttgttgtccc tagccgtctg ctcattgact gctgccttgt cgtctaaaag atttgcacct 1080

tgcgcgtatg agaaagccag gaattatgta tccattgatg ccaaagctca ttcatgcatg 1140

catattccgg caacttctca gctccaagca gttctctttc atccaacgcc acgccgtcgt 1200

ccccacaatg caaatttcta cgatctcttc aagctcatgc catcttgaag cgttaatagt 1260

gggaagctgt ccacaatggg ccacgaccac caagaaacca gagtgtatct tcgagacatc 1320

taatcatctc aataatcatc taagataaat tatataggtc tagtagggag agatccaagt 1380

gcctgggatc gatgaagttc tttggcagtg ataccgggtt tagctaggtc ggacagtgat 1440

gggctaatcc cgcgtagtgt ctgcttgata aatgccaaca aaaccttgtc cgtaaactaa 1500

aaaaattgtt ttaccacaaa ggtttttta ctgagatagt actgtctagc ttgtgctacc 1560

tgatcgagtt ttgtgagttc tgtacgctta aacaaactaa gcctactgtt tatggcttta 1620

ttggtgactc gtggacactg cagtgtgaga tcatccaata aactttgctg ggggtcagcc 1680

tcaagatgag gacccagtgc cagtggtccc ggaggatggt cagcagctcc ctcttgagtt 1740

ttttggtttg ggtcaacctg tgccggctgt gggctgagat cttaatttcc cgccagaagg 1800

caatgtccaa gctcaaccag cagacaacat tcaagg 1836

<210> 3367
<211> 2169
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238171_G1, chr7:5268801..5270969, Cluster 20

<400> 3367
atcctagaga tagactggga catgagaaac gaaaaaatta ttaactttgt aaaatacatc 60

tagaagcttc cgctgattag atctataaga ggagattaat atctagaaga ttctggaaaa 120

aaaacaaaag ccaaagtaca ttataatcaa tgtctgaatg tgttagcaaa aatgaggtgc 180

aacatatagt aacactagtt gcaacttgtt tttattgtga ttttttttaca tcgatcaaag 240

tgtttcaggg atattcttga ttttttttcat ttttatagct agatctagtt tatagaagcc 300

tctacataca ttttaatgag ctccacatat gttattctga ttttccatgt cgccatctat 360

ctctatgatt tttccttaag atcttagatg tttagagatt ttttcacggt ttaagatctt 420

catctgatct ttattgattt cttattagaa agttgatgaa gtgtatgttt ggttcacctt 480

tctgaaccag attcactgcc aaaaatctga aattctaacc aaactggtac gacagtagaa 540

tagattcctg aaaatttgca tgttccttta gttcaattta gaatcacatc ctacgctata 600

tttttctaga tttctaccat ctatgttacc tacctatcat gctcttacag aatctatagt 660

ttatagttgt ttcaaccaaa tatattttag cttttcctca accgtcactt cacaatagtt 720

ttctcacaac tcatggctag aatcagattt tctagaattt acagctaaac caaacaaagc 780

tgaagtcatc tagaggacca cttctagcta ggataaaaca tagagaaatt tttattcaga 840

cttttctctc ccctttatgg gaggtcctat ttccccttat atagttgagg gagcaggtag 900

cgttagttat agagaaaaat ctatgtggtg agccttttat gcctatgggt cataggtcgt 960

gttctatgct tccgacgacc tattgttact ggctcatatg gcttctaagg ccttgtcact 1020

tctgagttgg gttttgcaaa tgggcgtttg gagtttttt gtaaggaggc atctctaagg 1080

aatttgtatg gtagttggcc tcaaagttcc tttcctctcc tcatgtctta tttgggggcg 1140

cttgatcacc ttatgcctat gacaaggccc attgtggtct tccatcgttg tgaatggtcc 1200

ttgttgtcct tcaaagagtc gagtggttgg acttggacgt ctttaacatc cttcaaaatg 1260

taactgtctc atttagtgaa cacctagtcg ggcgtgtgcg ccaagaagtc acggagccat 1320

atatgtgtta gccctgcaca taaattcata gggcctccag atcatggcac tggagagtct 1380

tattaggtta gtacgatcta agatgattta gcttagagca gttaggcgag gccaacttgg 1440

tcaggatgac taggcaaagg gtcgctcgag gtaacctgga ttggttttga cttgcgtgca 1500

tttatgtggt tacaggccca tcacatgcac tatttagcag cctcaagtgc actatagtct 1560

atcttataag tcagtcctat aaagtcactc atcaggcact taatatgttg tactcgagac 1620

ttatccatta agttaccact ttaggacagt cttgaagaca tttaggcatg gggcccttga 1680

cttggcacta gactaccact agtggccccg tcacatcctt caaccctaag atagggctta 1740

gactgtcact taaagtccct gattcatcag ggcgatctag cccttggagt atatatcatc 1800

atgtgtcccc aagatgcgat aggccctatg ggtttatgtc gttacgtgcc acaagacaca 1860

agaagcctag ggtcttatac aggaggtgcc ctatggcata agggccttgg aggcttatat 1920

ggttagatgc cctatgacat gatgggccct aatggttaat atcgataggt gccttaggac 1980

atgagcgacc ccgagggctt acatcgacat gtgcctcaag gtgtaagggg gccgaggcta 2040

ataccgtcag gtgctctaga gcacgagggg ccctaaggta aatgccctag gacgcaaggg 2100

gctccgaggg cttattctaa tatgccatgt tatatggtct agtaggccta gttaggagca 2160

cccttgtat 2169

<210> 3368
<211> 1904
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238758_G1, chr7:8933056..8934959, Cluster 20

<400> 3368
acgagcagcc gcgaggtcac ccttttcaac gacatctaca actgattgcc cgtgtggctc 60

aggcgagcat atcaaataat gctatgctgc tcaaagtggt aaaggagagc ttttgcaata 120

ggcctgtgaa ctaactctaa gctggagcac atgtaatgtg atcttcgcca tcgcccaagt 180

gctatgcatg agacagtgat gacaactcca gtgatgcaag caaacgatcc catctcaatg 240

tggaggacga ctatagcttc acatcactgg acaatgtcgg actaacacac cataatgccc 300

atgatagggc aagagcgcaa cataaaaggt aagaggtcga caacgagtag tatcgagtcc 360

cctgccacgc aaaagagaat ggtgaacaag ctctacaaga ccaacgagaa gataagtcaa 420

tcaaaattgt acgagcactt cactgctgac atgaatgatg atgtaaaagg cccacaaatt 480

agctgtaaaa atgagcaagc aatattaaaa ctagatgagg aacaaaatgc ataagaaatg 540

gacaatgatg agcattttat cgtcttttta tgaactatgt agtttttgc attttttac 600

tttgtttcag ttatgtattt tatgtattga tgattgtttt caaatgaaat atcatgatct 660

atttcaaata atagttcata aaaagaaaag ttgatgtgac gctaaggtgg ttgtaggccg 720

acggtaaagg ctatgtacta gagtgttatg gtagatataa taactaacga tgatcggtag 780

ttgatgtggc atacggtaag gacttctagc actggatcta ccctaacgcc attacccgtt 840

tgtggtaata tgtgttacgg tgttcgtgat ccacctttca tgtgtgccac cgatgaccat 900

aacattagta cctcgtttgg atgtagatat tggtgcacat aattgggaat tggaatcagc 960

tttcctaaat tttgttgttt ggttgcacat ggaactaata tttggaatct gagagccaat 1020

tccatggtat tggactataa ctagaaactc cctctcccaa ttcagagtgt catgcctcta 1080

tattgtgtga aattagacca cccaattcca aactccaata cagtgaaatc caaacaatag 1140

aattggaatt gcatctcatt ttattgccat aactgattta gtattgaaac caattcaaat 1200

tcatgccctc caattctgac atccaaatgg tgcatagtag tctatgggat gcatcgacat 1260

ccttgattca actgtcatgg cgtcgtcaac gaccatgatg ctactagtca ataaggatgc 1320

ctagttgatt gtaattcaat tatagggtgt caataatcta tagattacgt gatgacggga 1380

tctagtaggt gtcatggtgt caccaaaaaa cgtaaaggtc actagtatat ggatccataa 1440

tgttttatat atcgttaaac tctataattt tgatataaaa tttaccttaa ttctatgtaa 1500

tatggaaaat tatgagtttt ttgtgtaaaa caattatcat tgttgattca agtgataaac 1560

aaacaaccat aatacacaac ctatcattgt cagttgaagc cacaaattgg cagtgatagt 1620

ccatctatca ctaatggttg ttttatcacc accgattgaa tccacgaacc aacagtaata 1680

aaatattact aattccaaaa caaccaacaa tgacagtttg atagtgattt aagttctata 1740

gtagcggata gccattgttg atggtcaata aacgttaaat ctgaaacgat tgtggcgtct 1800

aagagggagg gttaattagg taacttaaag cctacttctc atagtatggc cacaataatg 1860

ttaaataagg tccccgagcc ccaggggccc acgagtcaga aaga 1904

<210> 3369
<211> 3408
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238948_G1, chr7:10159715..10163122, Cluster 20

<400> 3369
ataagcatgg caacgagacc tcgtgcgaag gcgggtgtct caaattcgta cacgtattcc 60

acgttaaaaa aacacatgat tagcttgtta tataggacaa gcacctgtag tgcttcgcta 120

gtatgcttgc cctaggacat ttttagaaga aattgcattt ttaatttcag aaacagcttt 180

ctagaggcgg tcaacttaga tcttggaaaa ctactatata tacaaggtag gatagaaaat 240

gtctaaagat aattttcacc tacttctata aaataattat tgcaatgtaa tgtttccggc 300

tttttagtgc cacccatcgt ctgacttcaa tttgacgcaa cctacatact tactgcctcc 360

cattccaatt tataattatt ttgactttta ttttaagttt aaccatgtct tataaaaatc 420

ataattataa ttatttttta ttataatatc gtccagcttt aatatggctt taaatttttt 480

tatttttac aaaaaataaa taagacgact tgatcaaact taataaaaaa gccaaacgaa 540

atataaattg ggacggagtg agtatataag acatttgtag atgtcttaac tcaagttaca 600

cttcacctat taatgtgtac aagttcgtac cgccttaaaa catgttggtt cttatcatct 660

gatccacgag atggtatata aatgttatat ataggaggct aagaaatgga taagaagtta 720

aaagaaaaca aatagatttt atgatgtggt gccatggttg cattgtttta gaaaaatcgt 780

gtgttgtgtt tgaacttcac aagaaaaggg aacatactat aaacagagtt agggttggga 840

ggcaacatgg agagattttg ttatgccatg ttttggaaaa ggctagcctt taacatgtag 900

ttgctcttga tcttaagagc acgctccagg aaacgatagc cactggtctg tcccatcaac 960

ttctgttgta gcattatctc gattgcattc atatgctagt ttagtttgga cataagttat 1020

cgcccactga atatactggt tagcatgttt caatatcatg ctcaatacat tcaagtgaag 1080

ggtacgggca gctaacatgc atgttctata ccaagatcat tgtacaatga ggttgctaga 1140

gtatatccgt tttgtcgtat cccgaattca ctttctttga aaccaggatt tcatgtataa 1200

ttctatctat tttctctgtt tgttttatat gcattcaatt catattccag atagtgtagc 1260

aactcatctt tatttcagac aacccctctt ccccctcctc tattcagaat cgaactgatt 1320

atatcattgg tatatatgca aatcaattga aaccaagtat aacaaatcaa aaggttctat 1380

tatgcggtta aaacatatcc aatggacatc cttcctccat atacagtgct tccatcgagt 1440

taaaacacat ctcatgcatg agtgtttagt agggaattat tcatactatt ctgcggtgga 1500

catccaattc ctcttgttgt atccttgtta aagaaatatt gaaaacttta aaagatgcaa 1560

gtatttgttg tccaccacat ctccatataa tatgcatggc tcttgattct tgttcactga 1620

atagatcaaa tcattcgatg ggtggtgacg atgttgatcg tttgttagtt gcatgcttat 1680

ataattatac tagttaggtg cttgtgcatt gcaacggttt atatatatca ttctttctaa 1740

gacaaatcgt ggatgcaaaa aatttgttgg tgttgcattg ttgtcgtatt ccatctaagt 1800

cagaatgtgc gcgaacatat gtactgtctt tcatatttat tattcaaaac atgttgacct 1860

aatatgaaca aaaaataact atttttaaca tatcacaata tcattctttc taactcatag 1920

tttataagac atatcgtgtc tgcaaaactt ttgttggtgt tgcactgttg tcgtattcaa 1980

tctaaatcag aatgtgcgcg aacatatagc atgtctttca catttcttac tccacaacat 2040

tatgtaaatt cataatatca aggatacgaa acacaagctt atttcttgat atcaaggata 2100

tgaaacacaa gcttatttcc tgcagcacat gaaagtcttt ataatacctc attatcagaa 2160

atttaacgaa ttccatggta gcattacgtt tcaagtattc tatagtgtcc atagaggcaa 2220

ctggcctagg ttttttatct gatttctaaa gttgttgtgt tgtacttcga cagcttcaca 2280

cttttgtttc aaaccctcaa cttgttgaag atataatact ttaacaaagt agctaaacgt 2340

gacaaattag atagtacaat acgacatcgt acttgcctga gattgcaact ttagaatttc 2400

ttgattcaac tactcatttg acttctgcaa gtgttcaaca ccatcaaaat atagctaaaa 2460

atagttaatc taaagctagc tatttagaac cttgctttgc gtgttttcta ctaaaaattg 2520

tattgttgaa aacatttatc atggacaata gaaagttata atatgagctg aaatctcttt 2580

ggaacatgtt tgtgttcaaa tgattaaaag actaacaaaa aattgttgaa agtaaaggaa 2640

gcataccgct aggttgtgca cttttgccta cataaaatta agccatacat gatattataa 2700

accacataaa tggcatgaaa cgagactcat agaaaattga ctaaatataa aaaatatcag 2760

gatcacaact gaagtctatt gttagtatgt tacatttggc ttgatagtat ttactgtttc 2820

cagtgcatga aagatcaaca atattctaaa cctgcatgtc aaaattaaat aggcaatgtg 2880

agcaattgtt acaagtttgt gaatgaacta acccaatgtc aatatgccat tgtgacagcg 2940

tatggatctt tcccagcgat ttcaaatatt aatggcaatg cagtctgact aacttggtca 3000

taaaattcaa tcatgtagtt atatcaagtc aaatgagaag aaaatgaata tgaaagggta 3060

tgttcataca tatgtaattt tttatagaca aaatgattgt tttttcatag aacaggtaga 3120

tgattgataa ttactcatct tgatagatag ttgaatacag aaacatgaca tatcataaga 3180

agaaaggaat taaaatcatt aactggttca aaagtcacga caatattgtt tttcacattt 3240

ataaagaaaa ccaaagacaa gaaatcataa ataatgcttc aatcccttta tagaatagtt 3300

gagaacttga aaaataaaca aggtccagaa tacagggtag taaaagtatt ttacaaacac 3360

attaagtcta gactcaccct tggtcataaa atgcttgatc acccttgc 3408

<210> 3370
<211> 2785
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239613_G1, chr7:13962948..13965732, Cluster 20

<400> 3370
tatagattgc ggcaaagtat acaatataat cctctttcaa atataaaata tagcagtatt 60

ccacaactaa atggccacat gatcaacaaa tttcatattt taaccatcca tgttccaatc 120

catacaagct ttagacattt ctgtttgatt ctcacttcat tggcggactt gtggcacgaa 180

gctgtatttg taccaaagtc attcggtaag gttattgcaa tctctctcct ttcaactgca 240

gaggctggct caagatccca actacgccgt agctagggct gcatcaagag ccattaatga 300

actcaagaag cagtgggaac ttgaagaagg tgacagtctg aggtttgtga tgaatcagaa 360

tctggcctcc ggggatactg atgatgacaa ttcagtagca gatgatgcct catgagtcgt 420

aaacaagaag aaagattcca gtttcagtgg caatggatca aagcataagg aatcaccatg 480

ggcagcacat aagcattccc attttacttt taggactcaa aatcagataa atgtgttctg 540

gaacttgggt aaatggggga attctgaaaa cagtgtaaat agaagtctgc tccctttgga 600

tattgttcat gcatgaagca aaatgttata tctgctgcca tatgtctcac tacagataaa 660

ggctctgcat aaatcgcagg ctctgcaaaa ccctaaacaa cgtggtagca gaaggccata 720

tggctcacta cagataaagg caaacaaaaa agaaaaatat agattgcggc aaagtataca 780

atataatcct ctttcaaata taaaatatag cagtatacct aaccaaaatg ctgctaatga 840

tataaccgaa atgcatgcaa aagtaatata atgctgctaa tgatcatttc agtactgatt 900

tctataaatg tttactaatc gaaactgtta gtaagtggta tggtatactg ctataatata 960

cagtgtttga taattatttt ctgcaagtta tgtatgcaaa aattattttc tgcaagttat 1020

gtatactaca ctgcacagat cattgcaaca ggacaagtca ttcgacccac atactggtca 1080

acgccagcac acagtacacc tgtttaaacc aacaaacatt aacccttgca atttattttg 1140

agaacatgaa tcaattagac ctcaattttt ttcacatatc ctacattgag ttaaagatta 1200

tttcaaacgg gaacaaagga aaccgagcga aacttactat acaaacagta gcaacacaag 1260

ggagcagaat cgtagactgt aagaatgaca agcagaacaa caaaaagcat cgatatgaag 1320

catgtgggct gataggtatt ataggcatga taggtggaag aatgacttgt acaatgcctc 1380

gacctttaca gctgttttta agcactaatc aagtgaataa gaacaacaaa aacaactgtt 1440

tttaagcaca tctaacagaa gcaaatcaag tgaataagaa caacaaaaac aactgttttt 1500

aagcacatct aacagaagca gcgatatgaa gcatgtttat tttatttggg atgaacaatt 1560

atatgaacct taaataagaa tgaatgaata aagaaataca aaataataaa taaaattatt 1620

tgcccgttga tccttaacta agaatgagta gatatgcatg cctagaccat ctttgataaa 1680

gaaattacag atctagttta tgggtgagct ctctcatatc tcctcacagt ttgatagtgt 1740

aagtatcttg tagtggttcc tatagtttat ctgttttact tatctgtcct taaaagttca 1800

gaccatcatt attttccttg tattagatgt ttggccatgt atgacagtca gaatatcatg 1860

ctgtacattc taggaatgct gcttagttat gcaaatttgc tcagatattt tgaagctgta 1920

atacaattcc tacgcctata ataatacttc tgtcagatgt gctttaaaac agctgcttct 1980

gctctgttat tcatgagtca tcccaaataa agcccacaat catgaaggtg ttgccgatct 2040

tcttgaacaa cctgtacaat gcctcgacct tgttcatgct gactgcaaga atgacaagca 2100

gatgcaaccc aaccaggcag gaaaaggatg accaaaatca caaacaaagt tattagtgtg 2160

agccaaaaaa ccagcaataa tcaaatgcac agtttttag gactcatgtt gaagcaagtg 2220

ctagtcagca gaatcaaatt ggaattaaca agtgaagaca atgtatacga tatgatgctc 2280

taggtgatta ccgaaaagta tcaaatcatg tattaagata aacatattac tcaccaagat 2340

aacagatatg catgtttgga agtagtagat ctgtttagac ttgaaacttt gatcaaatct 2400

gtttatactt gaaactttga tcaagtcaaa gtgaaaccgc attgtacaca agaaacataa 2460

ttgtattaat ttgttaaacc attaattgaa aatgcgtaga aaaatagcaa gcattacttc 2520

atagcacaga actgtagatc actataagca gaagaacatg caatagaaca aagcattttg 2580

aaaataaaac acaatttaaa gatctcatgc agtccattct tcatcagtga catatttcta 2640

tctagctgtt agaagtatga ctcatgaatt caagggccac agttggaaca aatttatggt 2700

tgcaatagct ttccatctat caaggatatt ataatcgata gagatgacaa ttcaggctat 2760

cagatgatat aataagaagg caaaa 2785

<210> 3371
<211> 1940
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240396_G1, chr7:17693356..17695295, Cluster 20

<400> 3371
tgggcattta gttaaatgct ctatgaaagt gaagtcacac agctgaacaa tacaattagt 60

aagtactaag tagtagtaac aggacgacca atgcatagag ctaggtgctg gcaagaaaag 120

gataaccgct gagaattgaa ggctcgttca atgcagccga agctgatggc caatttgctg 180

atgaccatct ggtgaccaat ttgcagaacc ttttttttcc tcgctgtggt gaccaatttg 240

ctgatgaaat ggcatttaat ttttcagcta gaattttctg ggtgtagcaa cattttctgc 300

tgtctcatag agcaagatac ccagtcccag tcgctaaaat ggacaaagat gtagaccact 360

cctggactcc tccatcaccc acactcgacg ccatccgagc ttgcgtcttc ttcaaacttc 420

atagcacgac tcgagcggcc acctgctttc ctcgccatga cccgcacaac ccactcgacg 480

ccggctcgat cgtggctgcc tcgctcgctc ctccgtgcgt gcgtcgaggc tcctgcgcag 540

actggtgcag caactccttc catggcaagt gttgcccgtg actcatactc acacagcgac 600

ggcatcgctc catcgcacgc gccagcatca atggcacgac gagcccacgg cacacacacg 660

cctcgaacac atacgcgcgt aaacttacaa cacatatata cggggaaaat caacttttt 720

tgtcattacg agggagagta gcatacaaaa tgctatatga gtgactcagc taaccagtga 780

ttaaagacca tcagtaaaga tggcaaaaaa attaaatacc ccatccatca gtgacttagc 840

aaagggacaa tctagtcttt tgtcatctta cggggtgatt gacagacttg atgcatgtta 900

atgactcaac tggttggtga gtgaccagtg gtaaaagaaa tttaaatgcc cacagctgag 960

cgatcaagat ctgaacagag aaatggtggt agtcatacca gtggcagtgg tggtccataa 1020

tagtgggtga catgctgttt cattaccgct aagactcagt ctcctgatgt atcacattcc 1080

tagcgggagc cattgatctg ttagttactg cataaattgt tgccattcgt tgatttctca 1140

atttatcctt ctgacggcgt agggtggctt tatatatata ggcgtatatc ttatatcaat 1200

gctagctatc cgttgtttcc ccaccaaata tctgcattca gacaactaga caagaacgct 1260

agctatataa aaagaaactt gacatgccta aaacaaattg cttgttgtat cgatgacact 1320

ttctttatag atgatgacaa ggggaaaagt tcgattcacg ctttttttta ttatcggtta 1380

acaatatata ggtacaagta gaaataaatt atcggtaatg gttgtgtaaa tgtgtcttta 1440

ccaacgattt tctcaaaagt catcgccact acaaaaaaaa ccatgtgttt gtattgttgg 1500

ttttgttaaa aacgttatta aaaatcggat ttttttactc acggtttca taacaaaatc 1560

actagtgtac atacatgctt agagtatgat acttatgttc aatggtttac aattatgttt 1620

gtcactacca tattcgttgt aggcatatta tattattata tccacgtgtg catcttatat 1680

tgccactatt tgtttaatat gaatttttag attaaattat aactgaaaaa gtctatcttt 1740

ataactgtaa cagtcatccc gatcgattta aggtacttca tcgaaatttt gcgccaagtg 1800

gagttaccgt tgttggtgag tgttaaaacc agcagtgcat gcacttcttt cctactcgct 1860

attttaatat gcacaggaag caatttttga tagggtaaaa cccgtagtta tatcttttt 1920

tctaatgcat cttgttagga 1940

<210> 3372
<211> 1478
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240399_G1, chr7:17714769..17716246, Cluster 20

<400> 3372
tagtgatgac atcatactct ttttgctaca gatttcttct aaattaggat caacttttgg 60

gctaatatga ggaatctgtt tcctcttgtt aggatttggg gagggttcta aaacctcaac 120

attactggaa gaatcaatct cattgtcttg tatactttta acagacattc ctttctcttg 180

tttaaatccg aaggcaacaa aataacagcc aattttggtc taaagttttt tatatcggtc 240

tgccaagtaa gaaaaataca tggtgtggta ttagagatat cattggatat ctaccaataa 300

ctgtagattt tgataaggtt ttttgctata tctgtgtaaa attgactgat agttcgactc 360

ctatgtagta ctctatatag ttaagtagga aaaacgtttg taatcagtgt ttttacaacg 420

acaacgtttg agtttactat attataaaac tttgttgtcc tctgtttcgt gttcctgtgt 480

tctcatcacc aattccaaga aatttttttt tgctctttac tccatcctcg cgcacatgta 540

accatgtttt tttcaaccca ttttaattca aaatctcaac tatgtttgca gcaaaccata 600

atgagccaag catcaaattc acttgtgact gctttttttt ttgtctttgt tactgtaaaa 660

gatgatgagt catccattaa aatctaggtc acattagact ctagttaggt gcgactggtc 720

tgcaagaaca taggagaatt tgaaggcgat agattagaaa tttatagtac ttctgcccga 780

aactaaagat gtttagcaac ttgttttgct gtcaaacaga gtcttgaaca aattgctctg 840

gcgctctgct tggcaaaaaa aaactatttt gacaatgcat atgtagtgta tggtacagtt 900

tctatgtttc aaagaaacga aatgaaccgt attatcattg attcacatgt atacatcact 960

ttgtgaaggt aaatgaactc aaatgtttca tctttttttt tattcctggc cggtaaccat 1020

gcatgcactc aatgtaccta acttatcaac tccacggttc caagttaatc tttatagcat 1080

gcaattctct cacatacact aaggcatcat ttggttcctt agaatgatgc cacgtaacca 1140

tacctaccaa gaatgtttgt ttaatttata taatttttga tgagttgaaa tagttcgtgg 1200

ctacattcag ctaaccgctt gcatttccca cattttcaaa ctcttgtccc tatctttccg 1260

tccacttttg tggttctact cgagtagaac gtacaaggca ctggaaaggc gcgaagttgg 1320

ctcttgctgc taatatatgt tttcccgata cctctaaatc ctgatgtgtc aacatgaaat 1380

agaacacaaa aaaaaaattg atgattttct gccatgattt ttgtttcact gtactgctct 1440

atgattccta taattgatgc tcatggtccc ggagaaag 1478

<210> 3373
<211> 1631
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_259947_G1, chr7:139597154..139598784, Cluster 20

<400> 3373
aggacaatac ttcactttta ttttctatag atttttgtgg cgagtcacta tagaggaaga 60

gcagcaagtc atcatgagct agagcatgat gacaatttaa atacagaagt tggggttaat 120

gatgataata tgagtgaaca taatttaatt acagatgttg atgtcgatgt caatgaggat 180

aatgctgcac agaaaaaata tgcatccttc acctgatatg aaaaatccaa atggcgctaa 240

attatctatc tttgatccta taacttggga taatcttgat aagaggaaaa gggacatgtt 300

aattgaaaaa aggctagtaa gagaattgaa tatggagttc cctatggatg ccattggtag 360

acatttttca tatgcttact actctagaac gttaactaat ggtgaggttt ataatagaaa 420

gtggttggtt tactctaagc atatggacaa agtgtattgt ttttactaca ggttgttcca 480

atcaaatcag agcaagtctt tgttggcatc caatgaaatg agggattgga aacgtcttag 540

tcaaagactc aaagaacatg agagtagtat tgagcattta acacacatga gcacatggaa 600

tgaacttagt ccaaggctaa gaaaaaaatc aaacaattaa tgatgatttg cagtgagaaa 660

ttgcaaagag acaagttttg gtaaggatag ttgatgtcgt gaagtttcta gcaaaacata 720

atctggctat tcgaggatca aatgagaagt tgtatcaagt tagtaatggg cataattgaa 780

ataattgttg agtttgatca tgtaacgcaa gaaaacatta ggcgcattca gaataatgaa 840

gtacgccatc attattttgg acacaatatt cagaatgagt taatttctct tcttgccaag 900

tatttctcta ttttttattg cacccctgat gtgagccatg aagaacaaat gaccttgatt 960

gtgtgttgtg ttaatatgtc tagtaacaat ccaagggtgg aggagttttt cctatagttc 1020

ttaaaggttg atgacagatt aggagcagga ctttttaatg tgttgatcaa tacattgggc 1080

tctcttgatt tgaatattgc tgaagtgaga ggatagtgtt atgacaatgg atctaatatg 1140

aagggaaaac accaagacat tcaaaagtgt ctactagaaa ttaacctcaa agcattatat 1200

atgccatatg catgtcctag accaaacccc actcttcatg acatggcaaa atcttgcaca 1260

caagttattt cattcttcgg tgttatacaa agaatatatg cattgtttta atggtctact 1320

aaatagtgga atattttgtg ccaaaatgct acaaacttaa tatgaaacct ttatctagta 1380

cgtgttggga gagtcgaata aaaagtgtgc aacctatcat gcatcaagct cctcaaacca 1440

ggggagcttt gcgagaagtg gagaaggctt ctaatgatga cctagatata gtaagcgatg 1500

ctcaatcttt actcaaatca cttgagaatt ttgaattttt agtgggtatg attgtctgac 1560

atgatatact attttctgtc aatatggtga gcaaaaagtt acagccaaaa attgtttgca 1620

tatatgctac t 1631

<210> 3374
<211> 2732
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260799_G1, chr7:144537056..144539787, Cluster 20

<400> 3374
aaattgcccg aaatacaacc tctctacaac ttcggtctga tgccgcacca gactgggtcc 60

ttgtacaccg gaccggtccg acgctctctt ctgttgaaaa ccagttgcat ccctctttgc 120

gcactcagtc tggtgcacca ccaaaccggt ccactgagta gcacatcctc taaatcattt 180

cgtgtcattt ttagataaca aaggattaag aatttcatta tttattgatt gactattttc 240

agaatgtcac ctcatgcaca cataaaaagc caggtgatta aacacatagt acatctttct 300

agcatgcatc ggcgaccaca catttaatta ctagtcaaac ttttgttggc atgcaataca 360

tgcattgttc atctgcctac acgatatttt ggttgccggc cggccgtgtt tgcctcgtat 420

atatacgttg tggtgttatt gccgagcgcg atgagtgtgc gtaaagacta atcttggata 480

gatggtagca gtgaataagg tcggtcagat gtttggaaag tatttctcct ttgccggccg 540

cagaattcaa gcccacacac gtactgactg cagcatccgt agtcgctttc agagcacatc 600

gtctgcatgc tgccctttga catccttgta tggtgttgca gcatgcacat cccctcgacc 660

aattcaagtc caaatcacat ccatatcgcc ttggactact aaaagctatg taccaagata 720

catcaacgac accgtgtatt gtacacacat atgtgacatt tcatttcatc atgcatggta 780

taggtatcta gacacccatg cctgtgaatg tgatacatat gcattggaat gacagggata 840

agacttgata tctaataagt caaccaccag cttagtgaag acatgcatgc atcaaaccta 900

ggttgactat tacttaaatc tgcatgcatg gaagacagag aaattctgct ggttaataaa 960

caaacaaaca aacaaaaaac tagcatttaa tctgtttaac ctgtgtcagc tggtagcaaa 1020

taatatacca ggtgcttaat gctttatgtt ttttctcacc ataaataaaa tgtatttgca 1080

ctctagcagt ctagctagta gacttttttg agaaataatt taatatttta cgaccgtatg 1140

tagtagaact gagttgacac cctgacgccg aaattagcgg gcgacacaaa taaatgggac 1200

aacagcaaag gagatcgatc gaggaagacg gctttacaag acttactcga aaacgcgtct 1260

gaaattattg ggggggacat gatgacaagc aaagcaatag atgtcaaggt tgaaatccct 1320

tgtcgttaag gttgaagcca ccaccaccac aacaagaaaa gcagcatgca tgcttcagct 1380

cgcttgcata tgccttttc tcctgcatct ctcatactcc actatctagc cttgctgagg 1440

ccgcccatag gcggaggtca aaacttagtt aggtaaagat tcaatttttg aataatgact 1500

gggttttatt tgcatgcttg acccgagtaa atccatatat atacccgaat ggctatcgtg 1560

ctcggtgatg cggaccacca ccaccaattg ttttggcaag gtaaaggggg gggagcgaaa 1620

aagatagata tgctgactag ctagctgctg aaggagatgt ctacacatgt tgatgtggac 1680

gaggacgacc aaaggtaact cacatgtact acaagccatg attgtctttg ggaacaactt 1740

gtgcactcta ctactcctct agagcataca cactacggga aacgtacgta cctctcttta 1800

ttagcgagtg tcaaccactc tgcaaagaat tatttgttga atgttactct cagtgaagaa 1860

taacactagg caacacgtaa ctttcttcac cgagtgccaa ccactcggca tactctgttc 1920

cggtagtaga gttactccat gatgtcactg taattgaagg tactcacttc acctttgtta 1980

atttttggc ataataaacc agataattaa gttatatata cgcatgcatc ggcccaactc 2040

ggacgatgac gtcgttaaat gatttgtaat taacgaatat tattaattat tagaacctat 2100

atattgcttc aattcgttcg ggcagacagg cacctgtata tatgtgcata atgtggcatg 2160

cgcgtgccat cgtgggtgtt gcaatgatgc cacaacaatt tcaatctgca ggatcactgc 2220

gcggagcgtg tgtgagaaat tcctgagttc atggtgggct cagatgagat agagaatcca 2280

gcgataacga tggagccagg gcatgctaca aatcataatc tgaaggcatc ctatgcacgt 2340

tcggttccac cttaatttaa cttcgcttag ggtacgtacg gtacggtccg tcgcacttag 2400

cttaggtgca gctgtttgtt cacaaaatat aacataaatt acaatgataa tgatttacac 2460

tcaaatacca gtggtatcaa aatttaaata gtccaatatt agttctaagt gtgatatctg 2520

attacggttg gttctaaaca aacatgattt aacgttatta attacccatt acgttataaa 2580

tatgtaaacc aaatggcacc ttaattggat ttcagtgatg gcacagatag agagtgtttt 2640

tagtttgttt aactgcgtat ccaatagttc acaatccaat tgttcatcta gcatgtgcat 2700

ggttggtggg acgatggaga atggcatggg cc 2732

<210> 3375
<211> 1449
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263206_G1, chr7:157507184..157508632, Cluster 20

<400> 3375
aggcagacag tcccatagag agaggtcaga cagccaccct accttccaca tacattacat 60

tactattgaa gtgacatcca ctgttcgtcc accactctaa taattaacaa tcgacaataa 120

tatatatcac tatcgattgt ttaaaaaccc ggatagataa tacatccctg caagtctaga 180

accatcaatg atatttggat caccacgacc agttcacatt actcctaatt ctagccccaa 240

actgcccgtg ataatatcat tactgtttct aggcttgatc caacacacat agactacacg 300

aaaaaacttg ataactttct tatttgggag caattgcatg gctgtcccag ctcacgactc 360

taactttatt ttactcatgt tttatgaact ttgaatcatt gcccctcttt tttaaaaaaa 420

agtcaggtgg cccttatttc gttataagca cataacaatg ttaactcaaa ccataaaaat 480

acatccatac cattataata ttgtccctct tattatcgac tgtttggaaa attggccaca 540

ctttgatata acaacttagt gtttagtata agtatgacat aaatccaacc attaatttta 600

aagtcagtta tttcaaattc aaaattttca aatgcttcga atttaataaa aataaattaa 660

tttaacatta atttgtttaa taaaaaacta attataattt tgacatgatg gatatggtcc 720

aactacataa tataatttta gcaacacctt aattacataa tatagtttta taaaataatt 780

tccaatttag ggcctattcg ttttcttgtc agtctatgct ggaattgagt ggatttaaat 840

tccaaataaa tcagaatctt tcatattttt tcaatttcat ttaatccaca tgaaatatga 900

ataattgaac aagacattag tcgacacatg atgtaagata tgtcctcact attatttagg 960

catctaatgc ctcccgttcc tcccctcggt ggctcggtga ttcttggtgc ctctaacttt 1020

gtagccatca gatcgtttct cgactatcca attttcctta accataataa aaatcttctc 1080

gctcatggta ctcatgaagc gggtgatagt tacttgttct ctcttttaa attataaaaa 1140

tattttaaaa tttctagata catcattttt attatttgat atataaatgt atcgtataat 1200

ttgacgaata ataggactag tataggtcac gtagagagaa gagcaatatg gcataaagat 1260

tttcaattta ttaagtctgc ttgatctaac atttgtaata gtgctctaca gttacctaat 1320

ggttaactta attatccttg atacttaaaa aacgatttga tggatcgcac aaagtgtttt 1380

acctcgttaa atagctcgtc gcagtcgttg tgtatttttt tgtgtcaacc tgtaaagtat 1440

agactctaa 1449

<210> 3376
<211> 1778
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_263584_G1, chr7:159417421..159419198, Cluster 20

<400> 3376
cttcattcac taacaagagc ttttcggttg ttccttatct cgttacgttt acgtgattta 60

gtgggtttca gtacgcagaa ataaatattt tgtgaaataa gtgaaagatc aaacctaaaa 120

aggagtaaaa gatactaaga aaaaaaatga acgtccacga gattcgccaa tggagcaatg 180

atgacgacga cgaggctcat tggctctttg cttcaaacct gggaaatgag gctgaagatg 240

attatctcac gggatcttac ttttagaaag ttggaccaac ctaactgtct ctgctctccc 300

tctttttta ctcgacatta gactacctgt attcaaagca gagatctttt ggccaagtca 360

aaaatgtttt atattaactt ataagaatac aagtacttcc ttctttaaat tatagattat 420

tctgggtttt atgtgtgtgt gtatagcttt atgaatggtt ttttaaacaa ttttctagac 480

ttttgtattt ttagcttggg tttgtgatta aaaaagtact atttagaaaa tgattgcagt 540

gtcccagaga cggttaaaca atttggtcta cctgaccctg gctgattatt tgtggggcaa 600

gcaattgata tatagatgtg aaaatcccac tcgctaacca cgcatactca taagatcgca 660

tcgatcgaac acacttagca cagatcgcca tatctgttgg atgaatacat ttttctggtt 720

agattattgc ccatctagtg ctactcagct gcatcctatt gggcgagcga gggagcaggg 780

gctgtaaaag actgaaaagg ctgaacacat gataattagg cccaagaaaa gagatgccca 840

aagcttgaaa ggctctttgc ttgtccagtt cagttccttt tatctagtaa actaatgctg 900

tggtaggcaa ctcgatgtga attggttcta atctctgtgt tctttgtgca ttagtatatt 960

gggcccaagc taagctaagg gttatattat acctgggacc atgtgttttc taacccaagc 1020

ccccacattg acacatggac aagcaaccca aatgctgctg ccacgcctcc actagagctt 1080

caatatcctc acaatagctt ggcgccatac aaataaataa aacctctcaa tattctacac 1140

ctgcctgtga tgcatgcatg tgatatagta atcatttttt gtgtttacca ctaggtacaa 1200

aatacttggt ggtaggccca attatttagg gcaagtgcaa ggctggacct ttgtttgacc 1260

actacaatta tagctaccat gaacacacat ctggaccttt gtataatgct tctttatgca 1320

ccaaggttat cctcatcgtt aaacaattgc tcggctccct gctgcccaac ttgcgattac 1380

ttacaacaag tacgtgttag tggctatcgt atagacgtac tcataactca tgcatatggt 1440

agttgcaatg gtttgacagg gaccaaattg gagtctggag cagttaacag gagctgcgtc 1500

atgagtggca ggaaagagga aagagtgatc cggactgact ttgtcattag tgtctaacaa 1560

cgtcttaaat tttaataaca tcactagttt acttccagag agagagagag agagagagag 1620

tagttgctaa gttattatat catctgcgga ccatgactgc gagattatat atgtgtaaaa 1680

tatatctggc atgttacccc ccccccccag aataccaaca tttcaaagcg gcaaaacaat 1740

aaatactata aaggatgagg ttgaaacagc tcacgtac 1778

<210> 3377
<211> 1560
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264641_G1, chr7:165240063..165241622, Cluster 20

<400> 3377
catcgtaaaa aattattcca taattgatca aatgatacta atttggtgtc ctacgtgttg 60

atgttgtcta ctacaatttg atcaaacctt ccatggcttg acttaggaca aacctaaaag 120

gctaggctag aattactcgg acagagtgag tggttctttc attatatcca ttgttttgtt 180

gtatttgcta atcagctagt tacaatggtt tttgataatg gcttaccttt tttatgagca 240

gtcaacacac atggcatccc aacagatccc aaaagatgtc gaactttgca cacgaaatcc 300

catgccaaaa gctattaagc agatagtttt ttgctattaa atgaaccatt ttcaaccaac 360

ttcaattgta tacttggtta ccgtatgtct gtatgatcct tttgatagtt taggattcgt 420

tgtctaaatc tatatttcca tacctattta gatatatctt acatgaagat gagagaaggg 480

ctggccttgg ttgatatcat atgggaggct atagagaagc tactcaaatt tttcctctgg 540

tcattcatta ggcataaatt cagaagtaca tacttcatta tttgaataga tcaaataaca 600

gaaccatatt ccagagagtt acataaaagt atagtttgct ttatttatat gtgttcgtgt 660

ttatttctac acttgtcaca cacgcttcag ctgttttaaa tcagtagaat ataccaagag 720

aaggtgctat aatactaata ggtcacatgt tgaaattcaa aatacacatt tcaattttag 780

ttattttgaa attactaaag ctacaatcat cacttagtag tcttaaagat tgttattttg 840

atgtttgttc caagatgcta gattctaagt tttgctatat aaaaacaacc ccataatgct 900

ggattcttgt ttatgcttat aggttgttga gttagggtta acaactttgg tgaaattgga 960

ttgtgatgaa catgaatgtg atgtaatatc ttttttgca gatggaggat ctgaatagtt 1020

tttatgctct ttctagaaga agtctatcta ttcgcttagt agcctacact ctgttcaaga 1080

ccataagctg gtgaggataa tagctatatt ttttctccca tgtaaagtag tctagattta 1140

tcttgcaaaa gtaaagtttt tttggtgccc cgtgatgaat ttgggttcga agcgcaacca 1200

aacccacgaa attgcaccaa ctatgataaa tgcaaatcgt tgttaaagat tgtggaactg 1260

agttcagatg ttcgcagttc aattcggata agatcttatg cttatcacga agtgattgac 1320

ttatagaagc catctattga tgtggtggat gctattggtt gctctatcct tgccaatctt 1380

gccaaccaaa atggcaagtc tcaagatgtt tcaccagagg acacctccct tgcacaatca 1440

gttgtgtaga gattggaaca catcgaaagc gtgttgatgt tatcttgtat gacattttat 1500

aactgttccg attgttacat gcatgttttt cgttgcgact ttaatccatc ggcttctgct 1560

<210> 3378
<211> 1932
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264643_G1, chr7:165254474..165256405, Cluster 20

<400> 3378
ggcacaaaaa caaatggcag agccgttgaa aaccgtggcc gagagccgga gacaagataa 60

agcaaagaaa tctacatgaa agccctgcat cgaacagaag cgacagcaga aacagtgtat 120

taagctgcac tatcactttt tcagcctaca acaagcttgc ttctcgaaaa acaaccaaaa 180

aaaacttagt tattagggtc tgtttggaac atagtaacaa taccatgata tttaagcata 240

ccatggtatt ttagaataaa cggtgtttgg gagcacatct aaaaactttg tattttaaat 300

taagattctc aataccatgg tatttttagg ggttaagaaa acttgaccaa agtttttgt 360

ttgcactaag gtgtcgtctt cacttctccg acactacaac taaaatattg tatctttaaa 420

taggtgttat attgtactga tgtaaaatat accatagtta tgccaatgac atacaataac 480

tgtgatatta taactgtggt tttgagaaac agagttctct aataggtcct tagttttcgc 540

gaaccgggct aaactttaca ttttctttcc ttcttgtccg ccttttttt ccaaaaggaa 600

gaaaagagtg tgatatcact ccgcagaatt tttgtcacag ttcacaatgg agcgctaaca 660

accattatcg gcgttaataa acctgtgttt ggttggcatc gtcttgtcta ccagtctatg 720

aagtctagaa ctcaaggcgc accacctacc atgacctacg tgaggttgtt gttgaatgtt 780

gacatgcagt gtacaggaag ttgggagcag acgcagctga tccgatcgat gtcgcgtgaa 840

aaaaaaagat aataatcaag gcacaaaagc acgcgttgac atgaaaaagt tcacgctaac 900

tattggtaat gactatgtat gccaaaggac gttgctgcta gagtgctagc taatggaggt 960

aggttacttg tatgcatata tttaaaacat aaagcctctg cttttggcaa cataaagaag 1020

aagatcagct atgattcaat caacagggta gaataaccgg tgtagaacta gtctagaagg 1080

aaatacgtgc atctttttt tttctttggt tcaaatccag atgtcaagta agctgtctat 1140

taattgcaga agcgagtata tatcatcccc attcaagaat caaaagaaac ggtcggcact 1200

cagttcagtg tatatataca tgctggttga ccaaatcaat caagccgaat gaagataata 1260

tatatagttg tctaatctga aaataatccg gcaagctagc tatcgtagag cctttgtttg 1320

cttgctcgta gccgacagac tgaaatgcaa cagatcaact aagagatgcc cgcgccgact 1380

aatcaccagc agcatctgtg acacgtatcg agctgcgtgc gtatctacag gggacatgga 1440

ataatcatca acataaagaa tcctgatgca gaatatatat gtgctcacgt cggagagaat 1500

ggatgatcca tgcatattaa aaccgcaagg attttcgctc aacaaaacca agagccctag 1560

ctactagaca catttttttt gtcccctatg ctttgttctc atatcaaggg ccatgcattg 1620

atctagaatg tttagctgaa aatgacagat actataaggg ttcccctaga tcatatctta 1680

tcctaaccct gtggctgtgt gactgccagc gtgtttatct gctaattagg acagaaaact 1740

aatcggaaaa gaagaagaag aagagaggtg cacgggaagc tcgatcggct cgaccatgta 1800

acacacgcgt atgtgactat agcagttggt aacgggtcgt cttgtgtgac atctgagctc 1860

ttcatggaaa aagatggcga acctaccccg tatctctccc tcttcctctc gctctcactt 1920

gacgagggca ac 1932

<210> 3379
<211> 1592
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265104_G1, chr7:167706550..167708141, Cluster 20

<400> 3379
catgcatgcg aaacccatgc atcaaatggt gagtaaagac aacgatttgg tcagcttcaa 60

gcattgggta ggattcctta cctaggattt ttttcccgtt gaattatatt cttctggagc 120

agacctacta tcaccagagt ccttaggtct tttgcctcga ccatggaggt ttcaaattcg 180

tgtggatgag aggttaccat tggtgcaatc tctcgatctg gtgatgatga gggaaagcta 240

gggtttatat agagtttggg aattgaactg acaaccgtaa ggaactagtg gaaggctaga 300

atactgagga tggtacgatg aagcccaaaa gttttagggc attattattt tatcctatta 360

caaaggatga agtgtcatgg agctatggaa gtcgaagcac tacaaagcct tattctaaag 420

ctaaaaagga agtcaaagcg atttgatttt tcataacatg tagtgccagt ccagtaaact 480

gactgagtct tgaacagtaa aatcccgagt tcaagagctc gggggctatg gtgtgatgat 540

ggggactcga ccaaaaggca gaacaatcag accaaaaaag aatccaacca catcaagatc 600

aagctatgtt tgaagagtca agtgaatagt cttacatcgt ctgagttaac gacccagcca 660

aataaggctc aagagctact gttaaagaca tacaccaaag gtatcctcca atcatccccc 720

ttggcacgat gagtagccta gggactcaaa ccacatctcc gatgaagatc ttcatgcaag 780

aaagctccta taagattaca atggcaaaga ccttatcaaa ttaagagata gcttatgaat 840

gtggcaaatc atgtaccgat aaggatatga tccctagtaa attaggagag gctctgccaa 900

ggctggttat tgtccatatc ctctaagcga tctagattca tattatacaa ccaacataaa 960

catgtaattg tcgctctcct tggactataa aaggatgacc gggacgctcc aagagggtag 1020

atcatctaat catatggcat agacaatagc caacaccaca catgatgcat gatattatct 1080

cacattaaga gacatgactt atctaaatta tcatgtccct ttgtcccttt accttcattt 1140

ctctatcttt cgtgatccat cccatgaact cgctaccaaa aaatcctcga caaatagatg 1200

atgtaaaatc tttaccaaaa cataggtttt gtgtatgata taaagaaacc attaaaacaa 1260

tgcagtatat attgctattt atttttaaa caaatggtta tttaagtaac ttaaattcag 1320

gcgagtcttg aattgagata tggaaaatat tatgaagtca atatgaatct ccaattgcat 1380

gtagtgtttt ctttatattg gataggagat ggaaaattaa tgctaacttc attgtggcac 1440

aataatgatt attaaggcta ttttcagcag cttactcatt ttgatctcta attttaaact 1500

acacagtaaa attataaacc ccgctctata aacagtatga tctacaatat aaaatagtga 1560

tttgtactgc ctaagaaaca aagtattcta ag 1592

<210> 3380
<211> 2265
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265262_G1, chr7:168588755..168591019, Cluster 20

<400> 3380
agactcctct aaatactttc tctgttgtcc taatttataa ttcgtttgac tttttctaat 60

ttaggctaac ttatgattcg tttgattttg tttaccaaat ttagccagct cgtcttatta 120

aaaaaattta agaaaaaaat tcaaagccgt actaaaggta tagtatatgc taaacgatgt 180

tatagaaaaa aattattatt attatgagtt aatcaaatat aaatttaaa aaagtttaaa 240

cgaaatataa attgcaacgg atggagctta caatggcacg actgaaccgt tggtgcgtca 300

tttctctagg atggcacaaa atctcaaacg gcagcatagg agccaggaga atagaaggtt 360

ctattctact actctacatc cagccccagc acgtgagcgt cacgtggcag tgaccgacaa 420

aactcgtgta caggcagtgg atgagctgag atgttgtcag caaccgaagc tgcttggctg 480

ccttgccctt gcctgctgta aaatgaaatg cagcctgagc ccgtgacact gcctgaattt 540

ggctactgct tattttgctt gattggctgc ggctgggaca cctgaattga cgtatatata 600

aagtggattg gatggcactg aactactgaa cagagacgct tctccgtcac ggttcttgtc 660

cgacatatca gtgcgcaagt gacctctcag gaattgccga cgcttcgctt cctgtcgatc 720

tcactgacct cccatctggg gatcgatgca acagccaaca ggtgatggaa atatggacag 780

ggatggccgg gacggggtca gcttctccct gccagcgtca gcaagcaggg tccgccttgc 840

aagtcgcgat tcatgccgcc accgcaccaa ggagcggctg tttgtccgcg aaccgtctgg 900

aagcgagctg aacttggcgt gactgtcatc tgcccctcga tgaactaact aacagcttgc 960

atattgcctg acaccgatgc tttccgaagg aggaccatca atggatgcat cattaagcag 1020

gacgaagctc tgccagtctt gcgttgcgcc cacggagcgt tgaaggcctt gacagtctca 1080

ggtcttctgg tgtcccatcc caagcgactc tcatgccgtg aagcaatccc agccgccgca 1140

cgatcactca gactgtccgt gacaatcctg gtggcttctt cccctgagaa gcaaaatgac 1200

ttatcattga tgtccaatcc tctttaattc acccataact gaacaagccc tatggtagta 1260

ttcagtttcg tagctagttg ggatagagcg gcatatacca gagattatag ggaaaccgaa 1320

tgatgtagca tttgagtata attttctttt ttatgagcca ctttatcctg catagaacaa 1380

atctaaacaa caataaattg gaaactgatc actaccaatc taaacaacaa acacaaccta 1440

aaatgtttgt ccctcatgct gaattgttgg gatgtagctc ttctgattcg ggtgacacgc 1500

ttgaaggtgc aaaaaaaaaa aaaaaatcat gttggcgtca ccctctttga aggacctgaa 1560

ctgtgcttga tgtcaggcaa ttcatctgga caaggccgag ggttggcagc ttgagttcac 1620

tacactacac agttcaattt ccccttgcga gagttgcctg tgttgcttat gaaaggaact 1680

tgtttggttt cggaaagcaa gaccgtctcc aataacaagg aacaagtgaa caacacatac 1740

gtgtgaccta cagaattttg tttctccaat agataatgca tatgcaaatt tatgtattgg 1800

aggagagcaa atccaaaaga ctctttatat tctccctaat agatatgaat aaagatttta 1860

aatatatttt taaaaaattc ctgtcatgtt tttagaacct ataaaactat atggctattc 1920

gatctattcc gtttttcata tatttttaa aattactagg aagcaaatag atcgaactaa 1980

tatatctgag taattttagt gtttcaaaaa gtatggacta aactgtggtc tacatttctt 2040

attttggaac ctttaaaatc caaatagatc gaactaatat atcagagtaa ttttgaggtt 2100

tcaaaaagta tggactaaac tttggtctat atatttttt tattctggaa ttttttaaaa 2160

cctaaataaa tcgaaaaaaa ttctagtgtc attgaagaga tcggtataga ttttaatggc 2220

attagaggga tttgctttaa atggaactaa cgacgttagc ttcaa 2265

<210> 3381
<211> 1875
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266481_G1, chr7:174439052..174440926, Cluster 20

<400> 3381
gtgactcaaa aacaagagat tgatatgtat gacatgttaa ttaagtagaa gaaattgtca 60

taagaatgag taaaaagaag agtagtgtat gaggcggcta tgaacataac aaagccattt 120

ttgtcgtcgt tgggcaaaga atgctgggag agaggtccac cgtaccttat gtgttcatgg 180

tgtcgtcatt cattgaggac cctatatata taccgttgct agatatatag ggttagtggc 240

agcatgcata gatcctacat atgcacacat ttttttgttc tatatagtgc actgtactgt 300

tgagtcatcc tctccttccc ctctcctttg atttcccgtg ctagctagct cgatctatga 360

aaatatataa atctaaaacc gtttttttttg tgtgtgtgtg tgtgaaaact ggcgagacta 420

tatatacccg atgatggaaa atgttaatag tggtcgatta tgttgcttaa attaaaagag 480

gttctctcag atctttttt tattattcca caagtgggta gaacagcacc ctagctagca 540

atcatgcatt gtagtatgca tggcacatta tactattctg tttagtacgt gtggaaatat 600

caccactgta ggattatgac gacatacata tatatatcac tacaggatta tgatgacata 660

gcaggaataa tgtcatctct tccttgttac cgacaggatt agtaaagtgg tcgaggttcc 720

tcaaggcgta tccaatcttc agccctaaaa aaaaggagtt gggactgcta catcgtccac 780

agtgatatat aagaggctgg gtctttttta tatttctgaa agacagcaaa ttaacctata 840

tatatatatt gtcgtaaacg atgagagata tccatgcact gaaaaaaaaa tgcgacgact 900

cgacgcaaga tcaatggtcc tgtttggtgt acctttttggt ttggatcttt gtgaaatagc 960

agcatctatc atacacagtc tgctgctccc tctccggtcg ctttctcagc tcgctttgct 1020

ttgctgcttc ctcctctcct tttgcctgtc catggatcgt cactgtaagg cgaggagagc 1080

catccaaagt gcaagtggat cattacatgc gtgttcatgc tggctggccg gccgaccctt 1140

ggaagccatt ggaagacagg caccaaaaga gctgaagcaa atacgaaaag gttcttgacc 1200

tcctgtccag tacagtgtac aggaattggg caaccatcta tgcgttgtga tgagagtcag 1260

agtcagactt gttgcagccg ttggctggct catgctcctc cgcccgttcc agaataaaat 1320

cgcagctagc aacgtgagaa gccaactaac ttcaagatta gctagattgt cctgtttggg 1380

agtgcttcat ttgaagaatt acatatttga ttttccagct tcactataaa acaacttcaa 1440

taaattggta aagcagtatt caagagtgtt tagtttgtat atagactcca gcttctgtaa 1500

tacaaatatt ttatgcgagt ttccttaatt aaccttgatg attagcgaat gcagaaagag 1560

acatgaatcg gtaggtcata taaccaatgt catgttggat aatttttgtg taacttaatg 1620

gggaggtgcg aaagctatgt ttttaggcat cctttgagga gtttcgaaaa tttcatgaaa 1680

cagacctcta gctttagttt ttttaagtta gagctcgtgg aactagaact atttggattg 1740

aagaagctga atttttttgaa gcgaaactct cctaaacagg gagagtggta tggatattcg 1800

tatctctcta aattaatcgg aaatatatat gtcatgatga tgattagtac aatatatgat 1860

gttgttccga cattg 1875

<210> 3382
<211> 1816
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270588_G1, chr8:20680906..20682721, Cluster 20

<400> 3382
agatatcttg gacccattta tcaaatcagc atcactcaga gtcctataca acaatagaga 60

actgactaat ggatctgagc tcaggccatc gcaagtagct tatgaaccaa ggattgagat 120

tgctggatat gacatgagga ccctttacac tttggtgagt ccataaccac atgctacctc 180

attgcagcgt gctaatttta aataagagta aattgggctt tgcaccacgt aaaatgtctt 240

cattatgata attagtttgg agtaagcatt ttcattaatg gcatttaatc catatcacaa 300

ttgacaaaag gaaaagaaca tcctgtgaac agttatagcc aaaggttctt gaaatacata 360

aatctcaaca tatatacagt aggcacctag aagtaaatat caaataaggg ccagcattta 420

aatctcgaga ctattattat gagagataca agattataat tgttacatga aaaagcaaac 480

attttgctca tatactttaa aaaccatcaa atgctgaaga aaagtaaagg aatctaaaca 540

ataccctatc atagcaggga aaatggagtt gttgttaagt tcatcctgaa gcattaatac 600

ataacgtcta ctaacataac attgatttag ttttgcaaat aatttaggat gtccacgaag 660

aacaaatgga ctcgtgaaga atagagctat ataaaatgca ttgctataaa ataaagatcg 720

gtgattccga ctatactatg tatttatgca gcactaatag aaacaaaaaa aaaagaaaag 780

agagcaatgt gcaaaagtac agataaaggg agatcatccc cgaagtaaaa catgtttatt 840

atatggattt atagattcat tataacattg cccaaaaatt gttataattt cactacacca 900

gaggaagtaa aacagaaaga gttttggttc cttttgaaat agtttgtttt attagagaaa 960

ttgatatgct cacagatctg aggcttgttt aaatgtagaa atcaaaagca gtacgctctt 1020

tttctttgat aacctataac aatttttttgt agaatagtag ggaaatattt atgtagaaaa 1080

gttacattat ctcctaaaaa tggtacagtt tcactacacc agagaaagta aaatagaaac 1140

ggttttgctt ccttttgaaa cagtattttt gcttggatgg aaactgatat gctcacagat 1200

ccgaggcttg ttaatgtaga aatcaataac agttcattct tctttgctaa cctaattttt 1260

ttgtggaaga atagtaggga aatatttatg tacaaaagtt accttgtctg cacaattgct 1320

gatggtgcat ccaggacttt agacctattg atgaaaatca ataaaaattt tcgtgcacaa 1380

actaagaaga gcatgtggta aaaaaactat gtaataactt tagggatata atgcagtaca 1440

gtgtaatttc ttctcgtgtt ggatattcga gttttttgcc aacctgtaat gtatgagaaa 1500

atgtaaatat ttatagaaca tgtggaatca tctacacatg gattaaaagt gtaaagaaat 1560

atcttacgcc tgcagatatt gttgttgata atttctccat agcagtagaa ggtgattctt 1620

gcagcaattt aagagtagat actttgtttg gtgtaggacc atgagctaat attctgaatt 1680

ccttttggca aagattgttg tattcaacac tacattatgt tgggccttgg ggtgtaacat 1740

cgagcatctc gcgcgcgtgc accaagtcgc tggcaacctt gacaacatat tcttccacgt 1800

gccagcctag gcggag 1816

<210> 3383
<211> 1697
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_271933_G1, chr8:29734464..29736160, Cluster 20

<400> 3383
agatcgattt taatgctttc acaattttta atgagttact cactggttta gagtgttttg 60

ggggtttcta aactatcgag tccaagacat tctttggcaa ctattaaggc cactaagatg 120

tatatagggt gagacaatat ttttctagct agtttcttac cacaaacaat atgttctttg 180

gattttccta cacctatatg tggagctcaa ataaccaatg tcatgagttt ctttttgct 240

attttatgtt tattatctct aggctttttg gttgttgtgg cacttagtca catgttgttt 300

ttcttgggcc aaatttcttt tgtacatttt tatggtccat gctatcagac cagttctcac 360

gtttcaccat tttgtgaact atagcaggtg ttttgggggt cctagaacta ctgaacccaa 420

acattcttag gcaactcgta gtgccacttg tatgtgtcta tgatgcgtca acattttgta 480

gctagttgat cacaaatgac gagttctcta gattttgtac acccatgagg agctcaaata 540

cccagggtca tgagtttgtt tcactatgct caaatgacga gttcttggta ttctagtttt 600

tttattcctg ggatttttgt ttgttttggc actttccaca tgctctgttt ttcttagact 660

tgttttcttt tatagatttt ttacgacccg tgctcacaaa tatattctca cattttcaca 720

atatttcatg agctataacg cactagtttc atgtgtttgg gggtcctaga actattgagc 780

ccttatcatt cttaagccac tgctaagtat catggatgag ataacatttt tctagctagt 840

ttctagtcac aaataacaag ttctttggat tttctacacc tatgaggagc tcaaatggtc 900

agggtcatga gtttttatca ctattttggg tttttgattc cttggattgt tgtttgttct 960

gacatgtcaa acatgtataa gagcgcaatc acatgatgct ttccttggga ccattttatc 1020

gtgtaatttt tcatgtcccg tgcactcaga ccgattttaa tgttttcacc atttttttgtg 1080

agttatagct cactagtttt aggcgtttgg gggttcttga tctatagagt cctagacatt 1140

tttatgcaac tattaattcc actaagatgt atctagggtt agacaacaat tttctagcta 1200

gttttactta taaacaactg agttatttga attttctaca cccatgagga gctcaactgc 1260

tcgggtcatg tgtttctttg ctattttgag ctttttattc cttggatttt tgtttgttta 1320

gacatatcaa acatggcaat ctaagcactc aaccacatct tgtttttctt atgaccattt 1380

acttatgcag atttttcacg tcccatgcac tcagatcgat tttaatatgc tttcacaatt 1440

tttcatgagt tataactcat tagtttaggt gtattggagg tttcaaaact atcaagtcca 1500

agacattttt tggcaatagg tcactaagat gtatctaggg tgagacaaca tttttgtagc 1560

aagtttctga tcacaaacaa catgttgttt ggattttcta cacctatgtg gagctcaaat 1620

aaccagggtc atgagttttg ttgctctttt atgtttatta tccccaggat ttttgttgtt 1680

ctagcactta gccacat 1697

<210> 3384
<211> 1669
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285246_G1, chr8:116028606..116030274, Cluster 20

<400> 3384
tgcaattgag atccagagat gttttattat agatattttt atatgtgtat ctttaatcac 60

ggtggttcat ggtaaactaa agtccactct tatgtatctt taatgacttt aagttcttgt 120

cttgaatttt ccttccacaa ctcttctatt ttgatctttt gtgtgatctt ttgaatttga 180

gttcatgggg acatttgggt tggatagaaa tgtgcaagaa ctcttaggat cattgccacc 240

aagtggtttg atctgattca actgcagtac agaattccaa cccattaacc aatttttgag 300

aaaaccccaa tatgcatttg catttttta atcttagact gaatttgata tatttttagc 360

tcaaatttta tagatgcttt tgaaattcac tttgtgaatg tgtgtgcaaa acttcagctc 420

aaacatagtt catatggttg attttgcctt ttggagcttt gatttagggt ggtgagaata 480

ggttgaacga tctactaggc aagaagtgtt gggctctgct cattagtttt tcacaagaag 540

caacactatc gcactaatct gggtaggtca ctattttggc cactttcata attttaggtg 600

tctgcttcct tgggcttgtg tgtgctctag gaagttttca aaagcatcca atcagtagtt 660

ggttgtgttg tttgtggttt aagcatcttc tttgttttcg ttgaagtaaa gagctcgagt 720

ttcgtaattt ttggggagtt ttcccccatg aactggtttt tggtcaatct gagtacttca 780

ctgtgttcat cgatcatcat cgagaatatc aaaccatttc ttagcattta agtatatctt 840

ttgatacttt tggtgttttg tacgattggg tgaaactttg ggatgcaaac caagattgcc 900

tttgagaaaa aaaatttatt ggctcccatt cacccacccc actagtcgct tgattaaatc 960

cttaacacat gaacacaatt tacaatacat gaaaacatga catcctagtc gctaccacct 1020

tcaaagagaa actccttgtt ctggtcgtag tcctcaccat caggcaaaat cacattcttg 1080

tggctcaact tagcttcctt ggaccaatat tcttttgcgt gaagtaagtg gtctccacat 1140

catcaatgac ctaagaaatt agacatgaat gtatcttcct cctattacgt cttttgcatg 1200

tattagttta tttcgctaga ttgatgaaat cacaaagttt agcagtgtcc tcctcatatt 1260

ccccaccctc atcgacctcc aaaatttgag ttaacacgag gcgagtagct ttgtttttct 1320

tctcttttgt ctttcttttt tcaaacctgt cctatgctgc cttaggggca taatcacagc 1380

tacatggttt tcctgcatgg atgcatacaa aaaagctagc caactcaaaa agtaattaat 1440

ggacaatgaa actattacaa taccaatgca cttactagta tatctaggca agacaaaaat 1500

aaggtccata atgatatatt tgaacttttt gatctccctt gacatttcct tctctttctt 1560

ttttgcggta gtcatcctcc ttttgtctcc acgagcaaac cattcaagcg tattgggatg 1620

tattaggtga catagaccca tttgtttggt gtaatgatgt tgctccttc 1669

<210> 3385
<211> 1535
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286525_G1, chr8:123473427..123474961, Cluster 20

<400> 3385
tatctgcatt ccgtcgcgtt ggaagagttt ggaacaaacg tggggccgag ccgagcggag 60

cggaaaggcg aaaggaaacc aggttggagt tggactggag ggctcccggt tttgtggaaa 120

tcgtacagcg aagcgacggc ccctgtttcc gctgcttctg tgggcgggag ccaataccgt 180

gggcgggtta tggatttggt cccctcccac cgtctctctc cagtcgccac caccccgggc 240

cggcggcacc cgcacacccg cacccgcacg ttgacgttga cgttgtccag cgggactccg 300

ggagccggca gccgggaaag acagatgagt ggcgtcaacg gaccttgcta ctagcctact 360

aatgactgga tatccaatct ttcaccaggc atgaattcag tataattaag tttatataaa 420

tatcattagt aattatgata atgtacatgg tatgagtcta ctccgtgact aattcaataa 480

tacttatttt ttatatcata aaatacttat ttttgtctta gaattgataa agttttagtt 540

ctcatttttt tgttttctat ttttttattc taaaaatgtc ctgtagaagg ttcgccatgg 600

ttgtgcgctt ttctaaaata ggctgctaat tccctttttat tcaaaaaata tttccaaatc 660

ggacatgtct ttttagttag atcaacaaat agaaaattct atttttcttc gttcataaaa 720

atcattcatt tcatatattg tcgccaaaat cattcatttc atatatttca taaaagtata 780

atttagccta taaaatatac tatgattttt tataattatt ttgataggtt agtgattgga 840

taatataata actttactgg tacgtaacta aaaataaata gatgatgaaa aaattgaaca 900

tatttttcta acataaaata cgatctcctc aactacctca gaaaatgtaa actcaaaatc 960

caacttctac atgaagaaac aaataagaca aatattatta gaaggctttg tatttttttc 1020

tctatgtaca agttgaattt taagttcata ttttatgagg tgattgaaaa catcataatt 1080

tatgttataa aatatgttaa gatttttta ttgaaattcc atatttagtt ttgtaccatt 1140

aaattattat attatctgat tcctaaccta ttaaaataat ttttaaaatt ataatatatt 1200

tttctaagct aattatatga ttcattttac gtttttgtca tagattttag aagatctcgg 1260

actttaagag aaaaagataa aagccaacaa aaagaaaaag gctcacatgg gctcaatctg 1320

tcccattagc gagaacatgg cccagcacta gagcggcctg tacatggttt tggcctggcc 1380

cgtggctcaa cgtagtttga tagaaggcac gtcacattgt ttttttatac ggtctgattg 1440

gttgtacgta cgcggaagtc actggctccc atatgtggat gccaaacaaa aaaaattgag 1500

accatttatc tgcaccctca atcctcagat acatc 1535

<210> 3386
<211> 3222
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286901_G1, chr8:125385842..125389063, Cluster 20

<400> 3386
tatcatgttc taaattttgt ttcaaagaat gagagaaaat gaattatttt aatggctaat 60

tttggtcaca acacaagtgg tccaaattgt agagattgat attagtcatt gcaactggaa 120

caaaaggtag aaatagatac tgcagtaaac atagaaggta taaaaaatta ttgcaactaa 180

taatactgta gagattgaaa ttgcactaat aacagtgaac atatttatta tgtcacatag 240

agctcacacc gttttgtaca tagaggtaac cattttaagg tcaaacacac gaccagtaca 300

aatagatcat aaatcattat tactaaattt ttcctgaaat ataataaaca aagtctctac 360

aagctaaaac acatgtctca atctagtatc atgttgacaa ataagtcaat ctattcttta 420

gaaatctgtt gatgaaacaa ttccttggtt tttgaatcaa tgagcgttga attgttgcaa 480

tataaaacat gatttgtaag aatatgatta ttttaaatta ttattattaa ctatgttatt 540

gtaataacca ctcacttttc atctagtgtg tagtgtgatg atctgggttg aaatgaaaag 600

tgttgtagtc gtaacttttc gagaatgata ttgttatagt atggaattaa taaatataaa 660

aattaagtac atattaaaag attttagaca agtaataaat tactgtgtat cttgttatgc 720

cgcatcatag ttctaataat tatactcttg atagctttag ataacgaaca tcgtataaca 780

tttctttgca atgggtcagt ccatgtctcc ataatgatta gatttcacca ataaataaaa 840

cattaattgt ttgaataaaa tctatcaaat atttaatgat ttaaaaataa tataattatg 900

aattagtgtg atctgaaatc cattagtatg gcctctcgta tgaccttcca gcaatatgtt 960

ctaatggtgc aaaatgaaga actatggtaa taatgtctga gtcattcaca tgtgattagt 1020

taaatatgaa taatttgtag attttagtcg gtataattat aaactatata caaggaaggg 1080

tcgttacata tgaacgtttt attaggttgt tgcaccacct catgaaatga cataagatgc 1140

tttggatatg gagaaaattg aaatgacatg ttgaatggct acacaatagt ttgtgttgtc 1200

aatgtcaact ctagattatg tctaatattt cgaaattgaa tcgcacatag tttagacaga 1260

acgctattct atgcaatgta tatgtgcatc cttgtttgag taagacgtca aatcgttgga 1320

tatttttgtg gtatgaaatt gttcaatttt ggatgaagtg aatatgttga ctttatttta 1380

atgattgatg aagtgactca cagtgatata ctataggagg aaggacattt tattacgata 1440

ttatggttga acagggaact taacaactat tctcgcaaca tcactcttta tttgtggtaa 1500

gccaatgaca tcttcaacgt cgtcaaataa cacaaactac attaataata aattttagct 1560

tatttttca ttcatatagg tgtgacaagt gaactatgta aggattaagc taaaattcgt 1620

gatttattta gtttcgtgtt atttgacgat gttgaagata tcattggctt gtcacaaata 1680

aagagtgtcg ttgtgaggat aattgttaag ttccctgttc aactacaata tcgtgataag 1740

ttgtactcta ttttacatga cgtcagtatg agtcacttca ttaagcattg aaattatgtt 1800

aatataataa ttttctaacc catgtgccat gtattctcaa atatctagag attcaaaatt 1860

gaatcgattt tagactacga aaattcccaa cgttttgacg ttttactcaa tcaagaatgt 1920

atttatacat tacataaaat gatgttctat ctaaactaga ggggttcaat tttggaatat 1980

tagtcataat ctctgacatt aaaatcaaat actattgtgg agccattcat tatgtcaatt 2040

caatttcctc caaatccaaa gcatcttacc tcatttcatg agatggtcca ataacctaat 2100

aagacgttca aaggtaacaa tcattctttc tatatattta tactttatac cgaccgaagt 2160

ctataaatta ttcaaattta aaaaatgcat atgaatgact cagatgtttg gcatagttct 2220

ttattttgcg ctattagagc atgtcgacga aataccatat agagaagtca cactaatgga 2280

tttcaggtca cactaattca taactatatt ctttttttaaa acattaaaca tttgatatgt 2340

tttgttcgaa caattaagat tttatttata tgtgaaattt aatcatcatg tggacatgga 2400

ttggcctttt ataaagaaat gctttatgat aggcattagc taaagctaac aagagcgtaa 2460

ttattggaaa tatgatgggg tgtaacaaga tacatattaa tttattatct acctaaaatc 2520

tttcaatatg tactcgtttt tcatgtttgt taattcacta taacaatagg gtgatcagaa 2580

agttctaacc agaacactgt tcattttaat ccagaccatc acattacaca ccgattggag 2640

agcgagtggt tcttacaata tatttaaaaa aataaaatta taataatttt aaataaatat 2700

attcttacaa atcatgtttt aaattagtgc acttcaacgt tttttgattt aaaaatcaag 2760

gaactatttt catcaacaga tttctagaga atataattgt ttatttgaca tgtgatacca 2820

ggttgagaca tgtgttttag actgttacag tatggtattt gtttcttatg tattaggaaa 2880

agcttagtaa taatgatttg tggtctattt gtatttgtta tgtgtttgat ctcaaaatgg 2940

ttctctctct ataaaactgt gatatctgat ctctatgtga actaattaat aagttcatcg 3000

ttattagcgc aataccaatc tctacaattt tttttaattg cgatgatttt tgtatctcct 3060

atgtttaatg tattgttaat ttctaccttt tgtttcagtt gcagcgatta gtactgtcaa 3120

tctaccaaaa ttagccattg aaaccattca ttttcctccc attctttaaa acaaaattta 3180

gaacatgata ttagaacaaa atttcctctc atatgccagc aa 3222

<210> 3387
<211> 2659
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_28700_G1, chr1:175632498..175635156, Cluster 20

<400> 3387
agcattcaga cttaacaggg gtagacacac tgtagtaacg aaagttattt tcgaacgtac 60

atgattacat ataaaaacga aatctttgat tagttcctac ggagtcgtaa aaaatatata 120

aaaacaaagc ttgctgcttg ctttctgtca cgattatttt aagaccagca gcacctagtt 180

atatatagta tatatactag tgtattgcgc gcgcccatgc acgcgtattg agtcattttt 240

tcatatatat aagtatgtct tagtgcaagg aaagtgtata tgaacataga taaaagtggt 300

tatgagccac ataagtacat gggaacaaga taaggcatat gcaaaatgtg ttgttttaca 360

ttttttttcct ttgataagca tgttgtagta caaggaaatt gtacatgaat atggagaata 420

gtcgttatgg ggcacataaa tatttgagaa caagatcaga agcaaacaaa ttatgttgct 480

ttgcagcagc tgttgatgaa ttttaagcga gaattttggc actaaccgaa gctgtagtgc 540

gaaatgagat tacaaaaatt aataagtagt tctttagtgg caatggtagt tcatgtttag 600

tgagttgatc tgtgtatacc tgtgatcaat aggataaata ttgttatcta actttggtag 660

tccaaagtgg agatcattat tctactaagg aatttgcatg tgtttaaatg ggaaaacagt 720

tttcaccaat tgttatcgag gcattaacat taaacaaatt tgtatttcga ttaaaatata 780

gaagtatgta agtaaatcga atttacctct gtactttatg acacatcaaa atatactaga 840

acgcgtcgag cctattaaat atatttcatt aggttgtata tctagaagat gctttgttaa 900

agttgctaac attatcaaat aagaagcttt gtaccgtgtt tgattcataa atttgtattg 960

gtagagtatt agtctgaggt agttaactgt gaacacaagg ttacagagga ttcattttta 1020

aataatgtct tcgaatactt acttctttgg tggcaatggt agttcgtgct tggtgagctg 1080

atctatgtat ttgttgacga cctgtgatca ataggataaa tattgttatc taacattggt 1140

agttcaaagt gggagatcat tattctacaa aggaattttc ctgtgtttaa ctgggaaaac 1200

aaatttcacc atttgttatc gaggcattaa cagtaaatag atttgtattt tcattaaaaa 1260

tatataagtt aaatatgtaa ataagtcgaa tttacctctg tactttgtga acacataaaa 1320

tatgctagaa cgcgtcgagg ctgtcaaata tatttcatta ggttgtatat ctagaagatg 1380

ctttgttaaa gctgctaaca ttatcaaata agaagctttg tattgtgttt gattcataat 1440

tttatattgg tagagtctga ggtagttaac tgtgaacaca agattacaga ggagcaggtg 1500

tacagaggag aaaaatgaaa actagggagt gtttaaaagt tgtgtcgttt ccgtcctgct 1560

ttaataataa ggaaacacct aagacatgat actcccagac accaccaaga aaacactaaa 1620

aacttagtgg cacatccact gatgtataaa gtgttcccat ctttgtctca gtttctttat 1680

tgtattttgg taatttgaca atacttctat tgtgctttga tgtcaaatgg ttggccttga 1740

aacatgatga atttgttggt gtattatatc gaaaaatcaa attttgtgtg tgtatttcag 1800

gtggcctact ttccttttga tgatcataaa tgtcctccac tacaacttgt catttcattt 1860

tgacatagtg cctactcatg gttgaaggag gaattaaaca atgtggttgt tgttcattgc 1920

aaagctggta aggcaaggac aagattgatg atctcaagtc ttctactatt tataaaggta 1980

aggttagcat gcattgtatc tataaaccat taagaagata gttactgcaa aatcttcacc 2040

aaatatctta caattggagt taggaaagat gtgtagatgg aaaatggctt attctaccaa 2100

gtcagattgt gagtgaccct cattgttgtg gaagttgatc atataacttt tgtctttata 2160

ttattttgaa ctttctaggc taattgcaga gatatgtgaa gtatttcgag cacatcttaa 2220

cttgcttcaa tggtgaaatc agccaccttg gaggtaatta tacctttca accatggtat 2280

cgaaatgata tgcatgtgta ttttgcttta gtaattaatc atgttgttac actttccagg 2340

tgtatgctta gaggaatcga tgggatgcaa ataaaatggg ggagggtgga cgtgttaatt 2400

aaacatacct actgtcctca aagtcaaaag tgctaggaat tagagttctt ttggtgctgg 2460

gagtcgacct gcagaatcca ttagaaatta ggcgaccaag gggttattaa tctcagtaaa 2520

cacatctgca aaggaaaatt tacaccctaa agatattttc attactctca gttcttcaac 2580

tggtgcccta tggcctgtgg ttagtgtccg gacttctcat gaaaaacatg cagccataag 2640

ggataaggtt gaggacccc 2659

<210> 3388
<211> 2890
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292873_G1, chr8:157661711..157664600, Cluster 20

<400> 3388
cctgttgtga aagtaaaaga ttgtgatcta gcatatacta acacaatcca tatttaaaaa 60

aatcatattg gcatgtagag atacactatt ttgaatttgg gcgattcagc tcacttgaac 120

tacaaagtgg ttacctgatg gttctactaa gtattaagtg gctcccttcc atacactgtg 180

attcattcat atatgaactt gatcaagagt cgctaagaat atctggcact cattatcaaa 240

atgttttaaa ttattgaaat ccaccatggc aaaggagatt gcaggtctag gaataagaga 300

cctaaataaa gttggtagag cattttaact acagtgtcta cagcaggact gggtggacca 360

aacgaaaatt tgggctggaa tcgacgttca ctatttttg tgtgaagcga acagatcaac 420

agtgaaagga catatgctac aatataggta gaacaatgta acaggaaatt taatagtctt 480

gtacatgttg atgtctgttc tagggtagag atagtagcag ttcatgtaag aagagcatgt 540

attcataaaa ttcgtagaaa aaaatgaaac attatttctg aacttaccta ctgaagaagt 600

ggacagtaca attagaagtt ttgaaaatga atgggtgcag ctccgcgtaa attgttggta 660

tatccataaa tataaaaata tattagtgcc catataattt actgagttga cataacgatg 720

aatatggaac tacacatttg accatgcaat ttaatatgta cttgcataag ggtgtactga 780

tgaattttgt agtgttcata acagcccgtc gagcagaagc tgcaatgtga actaatctca 840

atgttgatga gctggttgag cgagctgcaa aattagaatt agtatgcatt gttagtaagc 900

tacaacattt aatctgtgtg gatctatata atatgtaagg tgaatgatgt aacatttagc 960

gagacaatct aaatctattg cagtagtgta tgcatcaagc aaactctgta atggtgttaa 1020

ctaaaaaatc tatttgggat gtttaaataa caacaaatgt ggatgtacat tatggaaaac 1080

tataactttc tgtgcacaac aattaaggtt taataatctg cattgcaaca acatcatttg 1140

taattaaaaa ataatacaat aactaagctt taacaatcga catcatagtt gacataaaag 1200

caaaacatga ggttaaatgt cgtctacgga gttgaaatat gggctgcaaa atttaacatg 1260

tgtgcaaggg attgctgctt atgacaaata agaatagtgg actatcaacg ggaatacatg 1320

tatgcaaatt tttctgagct tacctacaga agaagtggac agtacaatta gaagcttgaa 1380

aatgaatagg cgtaggtcct cgcaaatggt tggttttatc ataaataaaa aaatatgtgg 1440

gtgcccatat agtcagctga tttcaatatg aaagtacaca ttggaccatg caatttaata 1500

tgtacttgtt gtataagatt gtattgataa attttgtatt tcggataacg gcccaccata 1560

cagaagttgt tgcaatgtca accaatcaca atcttgatga ggttaatgag cgagctgtaa 1620

aattacaatt agtacatatt gttagtaata tgcaacattt aatctgtgtg gataaatatg 1680

atatgcatgt aaggtgaatg atgtaacaat tagcaagata gtccaaatct attgcagtaa 1740

cgtggctgat gggcacattg actttcagtt aaatgtggct acctgttatg aacagaggaa 1800

tggttttaaa gagaagttcc aggataagaa ctgtgctgaa aaactgaact ttagattgaa 1860

cattcgtgat taaagtgctc aaagcattga cttttcaagt cctgtatcat tcgcgtcaat 1920

ctccatccaa ttcttctggc ttatacaata gaagatggtg cacaaataat actaagaata 1980

caaaaaaaaa ttatatgttt tgatagttaa gaacacaaaa tatggttaag ctgaactaaa 2040

cgtatctcta tagcttctgc agttctggta caatataatt cagcacatga acacatctga 2100

attcagcaca tgaacacatc tgaattcagt aaaaaaaagg aggaagaatt tatgcatacc 2160

aaagaatttc ctatgatgca atacctggat gaggaggctg gtccatcttg tgcgccttta 2220

gttaagccag cagattctaa tgttccattc cggcgaagga aatacagttc actaaggcca 2280

tttagcacaa tagcaactaa gtcaaacata tttggaagta cttcaaattc taatgctgat 2340

gttccagttt gtcagcttga gagattcaca cccattgtac taaataagaa tgtgcagcgt 2400

gtgcaagctg ctaaggaatt catagaaaat agtgctggag ctgaaaattt ggaagatttc 2460

tctgcagttt ggaagcagac atattatcct caggatggca gtgaggatca aatcagggag 2520

ctacaggtcc cacgggaagt ctttccgcca acagagaatt tggttgttaa acagcacctt 2580

aaaagaaaaa agggtccaat tttcagaagc aaagcgtagt agcagaagaa ccaagaacaa 2640

tagaaggatc ctgactaaat caagattcag tcgtaagttt ttctttgtta gtgctcagta 2700

ttttgaagga tatactctga tatatctgca aaaaatatta gtttcttctg gtaatcctca 2760

caggttatat aaaggcctag aaatacagaa gaggtcacaa aagatactca atttaccttg 2820

tatacggatc ttggaagccc aagttcatcc accgtcctgg tttgacagcg ggcaactcaa 2880

cattaactga 2890

<210> 3389
<211> 2764
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293480_G1, chr8:160291699..160294462, Cluster 20

<400> 3389
tgtgtaatta ttttttgca tcacttgaag tcttgaacca tgatttcagt tttctacttt 60

tttctaaacg ttggaagtag aaaggtgttt catagttgtt ttgaagaaga tagagagagg 120

gagggtaggt ttgatggtca gatggtggtt cataccgaac aacttatagt ttttagcaca 180

tagctaacga tagtttttc acaactccta cctcatggat actatttcat tgttcatgat 240

tgaaataaat aagccattat gttgtgtgtg acatatgagg atgcttatgc aatgttccat 300

tgatcatttg ttattttcaa tttatatcac gaccacacat acttaccaaa gcacatttca 360

catgttgtaa caacactact ttaagttctt ttttagttat catacaatgc attagctttt 420

tggaaatatt tttcacagac tagtctatct aagactgcta tctttataat ggtttctacc 480

acaatcgcca ttggcaatgg cccaacgcgg ggatttcctt gcatatcttt tgtattgtat 540

gtatggtttt ttagggctag aaaaggtaac ctagctatgg gacccgcttt tcctagattt 600

atgagtagga tatggcttca aattttaaat agttgtttaa ctatgaccaa atgatatgat 660

gtacaattat ttccattgtg cagtacaatg tgacatgttg tctcactatt tttattgtat 720

ttttataaaa taaagttata tgttttcaaa ttttatagca aatgtatgat tataatcaga 780

aaacagagcg ggcattcaaa tttgtcatgt gtataacacg ttaacacagt ggagttgtca 840

acttttagct gacatcttct atagtaaaca ttcatttgat ggtcacatat aagtatccct 900

cctgtcaccc accttatacc aacctagaac aactaggtaa gttgtcgcaa caagcaagtt 960

gtgatagttc aatgcaataa aagatttagt gtgtttagtt ctatagccag ttagcatcaa 1020

aagcttgcca gcatgagaag atgttggcaa agcttgcccg catgtacata gagaaatagc 1080

tagttggcta ttcaaacatg tttgtagctt taatttctca ctaaataagg tcggatggtt 1140

ttgttagaaa acaaatttgc ctctatttag gagtttttag gttatgtttg gttgaacttc 1200

tggaaagtgt ttctgctaag ttgaacacca accaaatggg tgaaatctaa acctgctttc 1260

cataagatgt tattttgtgt agtaaaattt tcatatatct tgaacactgc ttttgatttt 1320

ctacttttc caaatggtgg gatggaaaga tgtttgatag ttgttttgaa ggagatagag 1380

agaggagtag gtttgatggt ggtttcaaca taacaactta tagtttttag cacatagcta 1440

acaacatttt tttcacaact cccaactcac tgataccttc cattttcat gactgaacca 1500

aatgaactat taaattgtat gtgacatatg aggatgctta tgcaatttac cgtttgttgt 1560

tttaagttta tagcatgacc acacacactt attagatcac atttagcatg ttgtaacaac 1620

actgctttaa gttccttttt agctatcata taatgcacga ggtttttgga aatgtttttc 1680

acaaactact ctacccaaaa tagttatctt tacaatggtt tctaccatta gtacatgagt 1740

aggtatcctc acctatctga ccaccttgca catcatcata ctcctcatgc aaactatcaa 1800

gagatcaagt aatcgggtgt ggtagctaat gtgcattaac attacaaggg ttctagtgaa 1860

aactcgacac atcaccctct ggcatgtgag ccctccttaa aagtgttgct aaagaaatac 1920

ttgttatgtc cactttgttg ggtcctaagc aatgcaactc tctttcttcg ctacttctta 1980

acacgagacc tcgcaaaaga cttttactca ttgcagagtc aagaggtaat aatattttgc 2040

gatgtgttta atagatggac atggagtaac atatcaatgt tgtgtactga aatgtagtgg 2100

tagatgaagg ttgacatggt cgatacacat cagtcgatag ctggtgtgac agtgaatata 2160

gccctgaagg gatgaaatga gcctaagagt cggcgacgta ttttactgta accatgatgt 2220

tgagtagaca atgcctagca cattaagtat attctatacg tttgatgaat agtgtttttc 2280

acatgtgaaa taatatacac aatatttttt gagatcgaga aacatttttt ataacacgaa 2340

aaatgttctt ttcccactct acaatgttct catgctagca aagcgctaaa tatgttacag 2400

tcttgagtta ctttttaata aaacttacag tgttgagttg gtgactcaat gtcatgtcgt 2460

tgatggctag ttataacctg taaaatcaag tttggttggc aatccgcctg cttgaaagtt 2520

taagctttcg aacacgaaca gtgtagaaaa tgcaaaatga aaaaaaaatc gcgtgtaata 2580

aaaaattaca gtgttacagt cttgagctac tttttaataa aaattacagt gttgagttga 2640

tgacttaatg tcatgtcgtt gatggctagt tataacctgt aaaatcacgt ttggtgggta 2700

atcagcctgc ttgaatagtg tagaatcacg tttggtgggt aatctttcga acacgaacag 2760

tgta 2764

<210> 3390
<211> 1559
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295852_G1, chr8:171587625..171589183, Cluster 20

<400> 3390
gtaagtattt tttggagttt atttgtcgtt ttaatctctc atgttcctag aaagactgca 60

tgatttggct gtgttccttc tttatgtttg cttctctcta tcttccatca tctagtttaa 120

tctatgttta gggcttctcc ggttcttttg gatctctgtt ttttcaaccg ttctttacgg 180

acggttgttt ctctgtttgt tgccttgggt acggtgaggc catcgtggtt gcgcggcgct 240

ccgtgtcgca gtagacgctc tcgcccaacg acgatatttt tcaggcgaat gttttttttt 300

tgtttcaacc aatgaattaa ccatgctaac tgaatggaca tctgattgat ttgtcatctg 360

agctaatttg taaattgtga tctaattatt gaggaaagat gttctctaga gtagtaaata 420

ataataataa attgtcggac tttgggcttc tttcatttct cgagcttcag caccctgcaa 480

tttcccatcg tgttagcact gaatctatgt gaaatacgac ttgacttttg ctattgtttc 540

ggttttcaat ttacaacggc aaataaagta aaaaagattg gagcctacgc attgggtaag 600

gagttgctgg tgaaagctta actggactca tcggcttcca tgaaaatatg atgacacttt 660

cattaatatt atcctaaata tatctataaa actctcacga aacatctatt aagaatttaa 720

gattgggcta agtaacctga ttaagatagt tgtcaagatg ttatgaatac tagttgtttc 780

caatgggctt tggctcttac ttaaatactc aatgacgtag gaatagttgt ttccaatggg 840

ggttgggact ctctttaaat gctcaatgac gtgtcattca ttctcttttg aagagttcac 900

ctttttttcct tttgaccgtc tcttgacacg tttttccatt aaaaggaaat atagaaattt 960

acaagcatca agacggtaat catcggataa ccaaacactc agcaaagtct cgctaggtcc 1020

gctagtttgt ggatagtttc ggggttcagc catctcgggt cgctactgaa gctttcatga 1080

ttagggatct aagaccttgg tgctggcatt tttgccatct aatagcatat aagcactgta 1140

atcgaatgtc ccacttaaaa ttttatagat tatatatgtc ctagctaata aataaattaa 1200

attatacaaa tgtcagcttt atctctccta gtaaggtgtc aaaaactaac aatacaaagt 1260

gaatagacat taacaatcgt ggcaaaaata atgggataac gaggggaccc aaaaaatcgt 1320

gagtcgtgac acctatgtca ctgatgttat tgttagctaa aataacaata gaataactat 1380

ttctatcagt taaggacctt tacaaattat cacctataac tttacatgaa ctataccttt 1440

tatgttacag tagcaacatt atacatgtga ttttgtctca tagctgatag tataccaata 1500

gacgggtaaa aaaagcaaat aatttgacag aatattaccc ttcgtttgac atccgtatc 1559

<210> 3391
<211> 1513
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296080_G1, chr8:173011120..173012632, Cluster 20

<400> 3391
atataagtat cgaatatcga accaaagcag cattaaagta gcatgcacca agagctagta 60

agagtgtgtt tctaggcgtt gcgtcaatat atacagatat agaaatagtc gaatagctgg 120

tttatattta cacaaaaaag tcttctgtcc agtagtgatg ctactcttga tgagtgggca 180

aaaaccaaat atctacatgt atacatggga aaatatcagt tatggtaaaa gtgtttgtca 240

aacattttgt tgttgtatac gtggttcaag taatagtgaa agataatatg ttgactatgt 300

ataaaatatg tcatgtgtag acgttttgaa caggctttca tatatatagt aaaatatata 360

gtaaatggcg tgagtgagac ccatattcta ttataacgtg catgcatatt tgacactaac 420

aaaaaaggaa cagttagtag caaggtcagc atactagaga tacagcaata attccctcaa 480

aatatacaat gattggttca ctaccgaaaa caattgaaaa ttttgaactg tttgtgctta 540

tgtacagcat gtctcaagtt gttaaagtcc tgaccgagcg aagcagccaa ataaactaat 600

ctgatcattt ccaaccaaga aatttctata tttattaatt gaggtgctaa ctaaacaaaa 660

aaatgatgct gtattaaaat taaaggagag agagagagac tgagagaaag gataacataa 720

tttcatagat gagaaaccat ataatgtatg taattgaata caaaattatt ctatacaaac 780

tatatattat ttgataatat agcttagtgt ctatataatt tgaaaatatt ttgtagtctg 840

ttttgagacc gtactgaggt ggccttttgg ctcaggggaa cagtcttacg gaagcgattt 900

aaaccgataa aaatatgagc ataaaaaaaa taaaggtccc accgagattt gaactcgggt 960

tactggattc agagtccaat gtcctaacca ctagaccatg ggaccgttga tgttactgta 1020

tataaattaa aattattaaa gtacatacgt gttgctagct gtatttgttg tctcttaagt 1080

tcagggcttc aggctatttg acccgaaacg gtcgatgagt ccacccaaca agccttgatt 1140

gcaatctcgc acccatcagc gcgaagaggc gtagcagcgt atcaccgtat cactccagcc 1200

gtccagtgtg agtcgcacac cacggagaga gccgcgtgca tctccgcatc caaagcggac 1260

tggatatatg gattctgctt ctaaattaat tcttccagta tagagtgtaa tacggagtat 1320

cgctcagcga ctcagcgtta caactcgacc caacgctagg catttcacat caacgacgcc 1380

aacataacaa ccgattaatg attagtccag ctacatcgtc accacccgag ccccatgccg 1440

aggtttcatg acgtgacaaa tagtagtaca agttaacagc acgcgtgcaa aagcgtatct 1500

tgtgaaattc gtt 1513

<210> 3392
<211> 1856
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296432_G1, chr8:174430477..174432332, Cluster 20

<400> 3392
gatataggcc acacgaccaa gcacatgtct cttctacaaa catagaacaa agtaccacac 60

ctcggtaccc aagaaaattg cttatgagaa cagtcgataa atccccgtat gtttaaatga 120

caccttatga atttaagttg caggccgaac aatgaaacaa tctaccacct gatatcatat 180

caggtcaaaa ttacaaactt ccaaccggaa aatagagact tcatgttgat ttcaaccata 240

atctgatgca tgactactta ttgacagaaa tatgattgaa tttcatgctt tggtaaacat 300

ccaagttaca aagaggattt aaacgccctc ccccacccac ccacccttcc cttgtgagag 360

ccgagaggca tgattatgat gatgtcattc caaacaaagg gcaaaatctt ctgagcagga 420

attcgtctct gcatcctttt caattcatag ggttctatag caagtttttt gtatccattt 480

attcatgagg ccttgttcgg ttgcgcaggg atcggagatt gacaagatga gtaacacacc 540

tttccgaagt ttatgtcacc atgtgtttgg gcatgcagtt cagctctcat gataacaagt 600

tcagtattgt tgggagcttt acttgttgca cagtcagtgg cattggactt aaactgggaa 660

ttgttgatga ttgacatcgg cttcttgact accagcaagg aagtgcagta tagtgctaat 720

tgcttgagct tgacatattc cttgtctcat gagcttcttg gtacttcaat gttgatcagt 780

atggcagaaa agggaagcct agagtcctag agatagcata ttagcatttg gctttgataa 840

atcaataatc atatgggatc taggagccaa acttatgtca tttttgcaca gcaattcatt 900

tgatttcttc aagatttgtt acagtcaaaa tttatagatg gcaactaaga aatactaatt 960

gtggcaaccg caatgtatgg tgcacatgct tgtcttcact tatgcagcac caacatggag 1020

ttttggtatc agcttggcac attcaggtgt attacagcca ctactggttg aaacatatgg 1080

acataggtgt gccatttgtg aagctaatag tatggcctat gatgcaattt gtattggtgc 1140

cactggatgt tggattacta aaacattgct gttggttgag agcaaaaaat ttgtcgtcat 1200

atatatatat tgatatgaag actttgttgg aactcaattt gacatcagtg gttgtcttca 1260

tgctaacatt aacaatgagt tggttgagac aatgttttgt tgccagctag ctgcttgttc 1320

ttgatcgtgc agtggtagcc aaagttcaaa ctggagatca tgtctggtaa agctaagcag 1380

ccgcgagggt catcaaggca agctaaatgg cccttgcccc tgttcttctc gcttccttca 1440

ggatggatcc gacaaagttg gatttttagc caaaaccaaa accatagaac tttcctcttt 1500

cctaattctt tctgattcat agccgcctgc ctcccacact gcgtggagac atgtagcagc 1560

cacaacaatc tccaacacgc ttacacgcat gcgcagacaa cctgagctga tggccagaga 1620

caagttggtc gtattatcag ttcgaaattg actgcaaaat caacatatag ctccgaatat 1680

tatgcttggt tcaaagatga cattatgctt gttcctcggt cacctactgc aaatccagta 1740

actagtattg tcgtgtaatt aacacatggt ggtgttcata tatttcttgt aattatgttg 1800

ctaaatacaa taaaatgata gcatagtctc agaggaaccg gtggcagagg tcgtga 1856

<210> 3393
<211> 1597
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296433_G1, chr8:174433722..174435318, Cluster 20

<400> 3393
cctgatgtat aatatgttac caccattagt tgctacttca agctcctata gatgatagcc 60

acctttagag gtttttactt atacaagagt gcctttgctt tgtgaaaact tgagtgtaat 120

cagtgtgaca aagaaccctt tacactccga aaccaaataa attggtgcac ttccacttac 180

tgaaagaaca ctatgtaaat tgcaacatta atctttgtca tgtacacacc caaaatcagc 240

ttgcatcaag ccacttttc tcacttgcag gaaaagtttg gtgtttgctt cacttttcaa 300

acgacaaagc tttggatctt gtacataaat ttttatttgg gtatttgtag catgtatatt 360

ttagtttagt ttttcatatg tatataacta agaataagct tatgatgtag tacatgatgg 420

tgcttggaca agctcaggct cactttaatt atttaacaac atatcgataa attaaacttg 480

ttttataact tgtgagcaag attaataact aatgaaactt gaatgtgtat caagatctaa 540

caacagaaag ccaaccatac tgagttttga gacatggtct agccaacttt ggagaaccga 600

gataaacaat cactcctact ttagagaccc atcttgaccg actttgatgg gcggcctagc 660

cgactctggt ttatattgca tttttttatt ccgaacattt ttgtgtgtct aacactgcat 720

aaacatcttt atatgctaac tcgtaattaa tgtaatcaac aagcatttaa atgaggtgaa 780

gagtttaacc ttaatcatta ggaaacatac ttaaggtagc aaacatctca acatttttat 840

ggtgttttat ggctatttta ttcataaccc taagttatac attaatcaaa caagataatt 900

attcaaaaca tggatatggg tgcttcatga aactataaaa tgatgctcat actgcttgag 960

gggcatatct taagaggaat aaaatgtaaa ggtgtgcgac attcatcccc taaattacac 1020

ttttcacca tccttttaaa gattccattc ccctaaatcc tagctcccac ggtggttccc 1080

tataaatcca tccccatata cacaatacat catattccta atatatttta aattagttta 1140

ttttatatat gtatttgtta tagtctaaaa tggtacatac atattaattt tgtgtttaat 1200

ttgtagttta tattataaaa aatagggaga aaaggaggac accttaggtg ttgtttggta 1260

cgcatatttg taatgtaatg tgtaactaat aatgttaaat catgtttgtt taagtccaac 1320

cgtaatcaga taccacacta gaaagtgata tcggtctatt caaacttatg actgttggta 1380

cttgagtgtg aatcagtacc attatcattt atgttacatt tcatgaacta aacgacacct 1440

taaatttagg ggcagtagaa cttatcccct aaatttagga tgttctttag ggataattat 1500

tgtgacttta ggacacctct aaaggtttag agggtgcttt aaagggcacc tctgcagaga 1560

gcctgaggct gatgaccaga gacaaggaag tcatatt 1597

<210> 3394
<211> 1604
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_297045_G1, chr9:1582560..1584163, Cluster 20

<400> 3394
agtgcatgga tgtgaaaaag agggaaggcg tggggttcga gtggagaatc gaggggattt 60

tcctcaacgc ttgctcgagc cagattccaa tttcatgtgc aaatcacgcg aggaagggaa 120

gcgccagaaa gcatggggtg acgaaagcac tacatttggc atcgtttgct agttttttg 180

ctagaacagg acaaaagttg ttgcaaatat gtcctaggag tgttgccatg tatgagtgag 240

cctttaatat ttcttctgga ttttatttta agtaatttgg tcaagcctaa taaaatccaa 300

cacctgttag tgcaaagaat gagcatgcga cgacgagcta gctaatgacc tagagaagaa 360

gcttagggag gatgagctct ctaacaatgg aagagagggg aggcatgagg ttcaagtggg 420

gaattggggg catttttct cgagccggat tctaatttca tgtgtaaacc acatggggaa 480

atgaagcgtg tgaaagcatg gggtgataga agcactgcat ttggtgtcgt ttgccatttt 540

ttgccagaag cagaacaaaa gttgttccaa acatgtccta tgattattac tataaataat 600

gccatgtatc tactcataat gtattcgact ttggtgcttc actctctgca ataggatcat 660

tcggaatttt agatgaagtg tagtgtagtg tagcacatga ctggaatgat tggactacat 720

aatactctca agtgagcgaa tgatatgtca cttttgcagg aatagttgag ttgtccctac 780

ttgctactcc ccatgcaatt gtacatgtct caccaggtgt gtactcccaa gatttcttat 840

gctatgtgtt cccaacggca tctaccctag caacaccgat gacaagtgtt gtttaaggct 900

gactccaatg attccctctc ctaaattcct ctgtttgttt ctattcttat taaatatccc 960

cctcaaagat tcttcccttt atttcacctc ctctccaacc attccccata ttcagctcct 1020

ctttactctt taactgagct atttgactaa tctacatcag tttttggagc tttaaaaata 1080

ctacaatatt tgtagtgcca tcatacacat tgttatcagg taattatact agaaaaatat 1140

taatttcata gctaaaagta ccgattaacg aatgggggga ttaagacttc cccatgcacg 1200

acgtgatttc cctgctaccc catggagagg gcacccgagg ggaaccgttg ggcacaccca 1260

gggtgtgctc gtacatgcta gccggcgggg agagccgttg taggctgtct aattgctaca 1320

aaagggtaaa gcggtgcacg tgtcggttag atttactctc atggtctgat tttgggaagt 1380

gatcgacata aaagtgtgga aaagacaaac cacccatatc aagtgtagcc aaaacttaaa 1440

cgtttagaat agaaaggtac tatcatccct cactaattcg agttctagac ttgtcaagtg 1500

tagtcacata aagttgaaat caatttaagt aaaacaaaaa catgcacgca caggttaagc 1560

aagcaaacat gcatgcaagg tttgtgtcaa tgggtgtgaa acat 1604

<210> 3395
<211> 4316
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298920_G1, chr9:8965106..8969421, Cluster 20

<400> 3395
gaaggagctt agtctccgtc gccatttgat gacaaccatt attctctact tgttatataa 60

cacgaatggt aaccgataac gttaaatcat atttggttaa gtccaaccgt aacgagatac 120

cacaccagaa attgatatcg gcctattcga gcttgttacc accggcaaat catgattacg 180

ttacatttcc atttcgtgaa accgaacggg acctcagtga aaggtttcga aggctagatc 240

tagaatttat gataacaatg ttaatcaata gaatcaaacc cttttccacc gtttgtggcc 300

cactaaatct aatgagccgc gcggggccta gtcgcttgcg gggttggctt gggcagccta 360

ctacaccagt ggtatactcg ctccccggcc ccctggggcc aggcgcctct gctgcagcac 420

tgggccagcg ccacgtgtgc gtgactgaga tgcgttgtga ggtggtccta cctccaggac 480

tccgatcgtg ggctagtgct ggtaccgagc gagtgacgaa attcaacggg taattcctgt 540

tgactttgcg tgcagtgtgc tctctctgta aaaaataaaa ataaaataaa cgttttttt 600

tccataaatt ctgaacttga aacaaaaaat ggctgcgagt gtcgcactgc cagctccttt 660

taccgtgaag gacctagaac atccagtcca gtccgatcgg ataataggtc cagcctttct 720

ttttcatgg ctcttttgcg aacctatcca gtccactgca actgctacat cgtgtcgtgt 780

attatcctgg gctacgagcc aaaggcgtct tttaccgctg ccggcagcag agggcttgca 840

aggtcggcac agcggggagc gcggcaggaa aagcgagtgc gcgtcgtccg cttcggcggt 900

gtggacaagc gtcatttctc cagcggccgc gccgatttgc cgaacctatg ttttagtttt 960

gtcgtgcaat gacatattcg caccacactt aacgctaaaa gtaactaaaa aatatagtaa 1020

aatttatctc ttgagattaa aacagagcct taatcaaatg ataccttttt gattaatata 1080

taaaggacat atgcatggtt tatttcctca cttcctatag gagactttgc tcatttgtca 1140

ataacttatt acccagagtt caattaatat aatagccata cgtacgggag tttaggtaca 1200

ggagcactag cagatcaaag tagatggaag gagagaaaca ttattgtcac aatcctcttt 1260

gcttatattt tgcgttgaca acatcttttt tttagtaata cgcagacacc aaattaaagt 1320

tgttttgggg ttttgggcaa tcatctatcg tcttatccat cgtctacctc aaatgaaaaa 1380

aaaaaaataa aacaaactaa actagggtga tggatctaaa ttaggaggct ggctggatat 1440

tgaaaggact ctctttttag gacacaacac aattatcaaa cataaatcac ttttttttg 1500

agaatttcat atggaatcaa gttcaaatct tcatgatgat aacgtatgga ctacatatat 1560

gagtaaagtc tcttacgatc aaattttaac cccatatttt ttatttttta atcactaatt 1620

ctaattttca ctaacaatgt taaggggaag gcaatcgatg gcttcctttt caaaaaaaga 1680

ggagtaaaat cacaaagttg aaaaagagga gtaaaatcac aattgcccct aaattttatc 1740

attatacaca tacaattttt cataatagtg ctcaagtaaa tatgctactg agtacgcatt 1800

gagatatagt accacattta atatgctaac atctacgtgt aaatatgatc ctttattatg 1860

ttctactctt gtctgatatc aaaatcaaga tttccatttt aagttggtaa cacaattagc 1920

agatacttaa tgccatatta aatgtttgcc aatttctata acacagaaaa ctttagtacc 1980

atgtatttct cgagagtcat atgtgacgaa aagagaaaaa ggaatcaaat ctgacaattt 2040

tgttcgtaaa ttcaagcatc ctcatatgtt tgtatccaaa tccaacatag tcaattccaa 2100

ctattctttt agaattttgc tcgattggat agtagctaga cacccatttc ctataattat 2160

attttgtaga atatgtaaat tccaatgttc atggtcaaga accaatagca tggattatgt 2220

acttttccca atccataaaa cttaaacaat tatcaagtat atcacacatt gacaatttat 2280

taaaataatt taaaacaaaa taaattgatc tacttttgta ttggaaatgc ttgataacca 2340

aatgcatatt aaaatgtcgt ctcagcatca aatgtgtaca tagtgctagc tagctttgtg 2400

agatgttgcg aatccgaaag aaattttgaa gccacaagga tcatccatgt ttaagacatg 2460

gccatactaa ttatgacatt tcttacaaag tgtaatgggt ttagttatga actaggtgta 2520

tttaactttt cataataaaa atataactaa acttaataaa ttgtttgcac atagctgaat 2580

ccaataatat acatcgatgc atatatacaa atcacaatca tccattatgt gagcataata 2640

tagtgcacac tttattagat tatcaataac tctaacatag gaaattcaat caactgtgac 2700

ttggagttca gaaacaagga acaagagcac tgaattataa catcattgat tgttgctttt 2760

atttttgtca tcctttgtta ggaaaaacaa acaatcatat tgaccatcaa ctaccacata 2820

gatgtattat tgttaacatt tttttacatt tacattcatg tatggttatt ttgactgcac 2880

aaattaaaat ggtcgatatt gtaacataat agttgaattg caactttatg ggggcatgct 2940

atctaggata aaatatatgt acctaagacc tattttacaa agaataaaaa cgaaaacaag 3000

atttaaattt gtattgatca atatataagt tttatgattt aacttgatta caactaaatt 3060

taatgactac atcttaaact agatgaatgc attatgaccc atcgtatcat cacacctaac 3120

acgttcttgg tcgtctcaat gcttacatta atatgctagt tgctaggcat gcaatgataa 3180

tgccaccaat tatacacaac tttctaactt tgagtacata tatgatggta tattggctat 3240

ttcctctcta gtatgaaatt caagattctc atattaggat agtatcaaag taggaaaaac 3300

ttaatgctat attaaatact tactaaacca tggaaaactt tattagcaag acatgcatgg 3360

aatggttttt ggatacaaag agaaaaaacc aaacccgata aacctggtca aagtatctcc 3420

atctattcgc actcaaatct aaaataatca attctaacca ttttaataat tatattgatt 3480

atatcattga ttgtgttgag ttagggttat atagtttctc ttgtactata atttgctaaa 3540

aaattaacca taaatgtttt aaatataaat caaattatat tatttgcatg caatgagttt 3600

tttagcatgt ccacggtaat ttttcttagt tttgaaaaaa aataccaagt tgattgctgg 3660

ttaaatatac aaggtttgac tcagaacgat aacaaaatac caacatttaa caatttgaat 3720

atattttatt tgatgtgcat gttatacctt gaaactagta tggtcctttt agaatgtaat 3780

aacccaataa tgtgcgctgg cagccatctt gcacaatgaa tatagtgata taaagaaatt 3840

gtgccgaaag ataagtcatg ctacatttct atataattca tagttctagc tcattgtttt 3900

gaatttttaa gttgagatac ttaaatgaca taataaataa aaagctagaa ctttaaatta 3960

ctaaggttaa ttgccactca aatatatatc catgcaaata gaaataaaga acaataatgc 4020

attggtctag taattgtatc atgtaagaaa agctttgagt gattatagga ctatacatta 4080

cttaaagaac attagataaa gtggcataga gatggaaatg aatggcgttt attgttaata 4140

tcatatctcc aatctttcat taatccacac accatgcaaa tgcatggtag ttagtaacaa 4200

tgataggaat agacatatgg gtgcaatgta aataactacg atattacttt caggaataca 4260

tctctaatcc ttgcgctata aatttcgggg tgtatgtgtg aacgcgaatg tcacct 4316

<210> 3396
<211> 1543
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299564_G1, chr9:11238551..11240093, Cluster 20

<400> 3396
tgatgggctc atttgaggta tcctatttcc gaggaccaat cactactaca ctgtttactt 60

ataattcgaa taatctagtc acttaattct aaacttaagc tctgagtttt ttccttcttc 120

gttgaggagg cttcatgttg ttgtgagagc gagctaagtc atccctgtct attttgactt 180

tgtctatcaa gaaagtattc atataggcat taccgtttga acatcgacga agaggattaa 240

atgactttgt atattattct ttgtcttcgt gatcttgtga agtggttctt ccatctatga 300

tgttattttg atgttagaac acgatcaaag taatctctgt aagtagataa taaagaagtt 360

gttaatcaac tttaaaacat tagggactgt ttatccggac gctcgtgggt aaaggcctgc 420

tccttgataa agggcaccat tgatatcata atcaacacat agcgaggtat attttagtgg 480

taaaagtgtg attcattctt ttaataactg aatttgaagt gatatactta aggcacacat 540

aagtttttta tatccatgtt ttgataaaac tttacttcat ttaatccttt tcctctcaat 600

agcatattaa ggaagaatac acattcttgt gattagtatc caaagactaa atgaatttgt 660

gatgcctgac acaagcctat atgtatatgt atatgtataa tcgattgaaa tactccaata 720

ctccacaatt gtgatatatt aaatatatca cattcgattg gtatcatatt catggaatac 780

aattcacttc aagatgcctt tatcgtgaga tggtagtcat gagcatggag gtttgagtcc 840

tcttcaagac ataatacagt cagtgctcat taaatgagca taaaggtata aatcacacaa 900

aatcatgatt ttgaacaatg gtaaaccatc atccctaagc ttcaaacttg gccattggat 960

gttaaaaggt gaacaatttc aatttgaaat ttataacagt caagtttgat caaagtcgag 1020

tatgcaagga atggaaaatg agcatacact tttgaccgaa accgcctata tatactatat 1080

ttatgggcca cagttcaata cctttcagaa aaaagagagg tcttgttgtt tgttttttac 1140

aaaacaaagt tttttgtgaa gcatgtttgt taagctgtct gtgggccttg tgaataagtt 1200

ttctccttgt tacttgtgag ccttgctaag gtaattttct aacttgtcac tttgtttttg 1260

tttgttgtat ttatgggttt ttactccttt ttgtattaga tgtctggtgt tgaagagatt 1320

ccccatgtga ctttacctga tattaagaat gatttagcag atgtcgaagt ctttgagtta 1380

gaatttgttg atgatgaaac caaatgattg aggtttggca agtcccatac ggatgaggca 1440

tgtcgtgctc catggaatga gataatttta aagcttgaag cagatgaatg tgttatcttt 1500

agacaattct tcactgtagg gctttgttgt cctatttagg ggt 1543

<210> 3397
<211> 2460
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299986_G1, chr9:13429649..13432108, Cluster 20

<400> 3397
agccacgcca attcaaggag agccctacgt ttctttctgg tggtatgtgt tacgaataaa 60

cactatgctg ctattaaaca catactattc cttgatattt aattttcagc tgactgtatc 120

actgtaattc ttatggatct atcctttcca tgaatggtgc ttttgatggt ttttgaaggc 180

acactacatc cctatcagct tgaagggtta aacttttgc gatattcgtg gtttcataac 240

aaacgcgtaa tccttggtga tgagatgggt cttggtaaga gatgcttgta ttgtaaggac 300

aaagtttttt gttcaaatgt tgttttggga tttgagaaaa tgatgacaat tgcagggaaa 360

acgatacaaa gtattgcttt tcttgcctca ctctttgaag acaagtttgg tccgcatctg 420

gtcgttgctc ccctctcaac cctgcggaat tgggagcgtg aatttgcaac ttgggcacct 480

caaatgaatg ttgtatgtgg atcaaactat tttgagacca aaattgtgtg taatttggac 540

agacttatat ccccttaata ctttttcctt attgtggaca ggtaatgtat tttggagctg 600

ctgcttctcg tgacattatt aggaagtacg agttttacta cccaaaagag aaactgaaga 660

agctgaagaa aaagaaatct tctccatcta atgaagataa gaagcagtca aggataagat 720

ttgatgtctt attgacgtct tatgagatga tcaacatgga ctcgtctatt ctaaaaaata 780

tagaatggga gtgcttggta cttctatttt gtttcagcat catatctctg tccagttgtc 840

catacatagc atgttttaag atttaattaa cctgtttcca aaatgtatat tgtgtcaggt 900

tgtggatgag gggcatcggt tgaaaaacaa agattccaag ttgtttggtc aacttaaaga 960

ttataatacc aaacatcgtg ttctattaac ggggacccca gtccaggtta cttcttcata 1020

tacattgtca tgcggtcatg cctgagtttt tttttggaaa aactatacat ttaactttac 1080

caatacctac ctgccaaatt ggaagtattc ctactactgt actacaatat ttgcttagaa 1140

attcaacagt gtcttgtacc ttctagctct cattgttggc atttttttgc ttgttaagtt 1200

tttgttttac ttgctaattt cggaatccgg gtattcaagt aatgttcata ctatcttcct 1260

cgtcaaacag atcaggacac aacaatctaa ttagtatatt tgttgaatcc acaatatgct 1320

tatgtgaaat aagaaacgac acttttacac aactggtgta ttttggatgc tatttatgaa 1380

tcatgtctgc aaattaagct cagcaacttc acatgagtgt tgatcctata ctaggtgacg 1440

tcatcatttt atttgagacc acatttgtta gttattctta ttcaattcat ttgttattaa 1500

taatatggtc attgtctagt ttcgtttcac tattcttact atgctgttcg ttgtactagt 1560

gtttgttgca tcccgaagat ttttttgcaa gtgttttaac ttgatgttct attttccttt 1620

ttttcagaat aatcttgatg agcttttcat gcttatgcac ttccttgagg gtgaaagtgt 1680

aagatttcct acttcttgga tgctcaaaat tttatttcgt ttagttcatg acactctgtt 1740

gtcacttgtt tgttagtgat gatctccttt ctgtggcttc tgtggccttc ttctttctta 1800

taaatatgtc atggttacac gtgctagtgg atgctgatgt ggacactttg catggcgaga 1860

tagattgcta gtggggattg aaaatggaca tttcattttt tgccatcctt acggatggca 1920

ccaaatatca ctagtcactg accagtgggg ccagctgagt cactgacatt ctctccgtaa 1980

caatggcaaa agattagaat gtccgattga aaaatgtaag atatatagat atatattgct 2040

tctgaagggc ctaggcctag gataggaatg gctgtttgtg taaacctcac cataatttct 2100

tgttctgata tgctttcata caaggagttg ttgtcattac attaattgct tacttgctgt 2160

ttatcattcg tcctggtgat ttataatgct gtttccacta tattatatga gcctaccatg 2220

ttcttaactg tcagatggct tggtaaatat gcttgcaaaa aaaaaaggct ggctaaatgc 2280

cataaggtgc ttttgtgaaa ccccccataa aattgaagtc tctgttggca ttgaatttca 2340

gaactgtatt aatggagtac ttaaggaaac ctttttctg caagtacaag gaaaaatagg 2400

attagataag gtttaagatg gtgaaatact gtatatataa ctgaaccatc gtaatttact 2460

<210> 3398
<211> 1636
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313089_G1, chr9:96445752..96447387, Cluster 20

<400> 3398
ctatagccta tttggaattc agtaaatcaa agcatacttt ttacaacacc attatttctt 60

cgaagccaac tgaacaccat tgtgtaaaga gacagaacat agtataactc acttgcaagt 120

tgcaatgtct cctttctaag ctcaccgcat acctgaatat tgaggaacaa caccaagtca 180

gcaaatggcc aaatacacaa aactccagag atactatgta tcccagagat ggggcattga 240

gatagaacaa acttaacaca tcgacatcag tcacagcaca atcaaataac acctacgtat 300

ggatgaaatt cgggtttacc gttgtggaaa ggatgaagga ctagaggaaa aataaaacag 360

ctgttgaaac tttgctcatc tgaatatcca caagatgtaa gctttcaacg attctgtaca 420

ctgggagata tggactgtaa agaagagatg atgaaaaaaa gaagagcaac cttacagcaa 480

ctctgatatc gctaactaat aaaaaaggtc tcgaattgtt tccagagtag taaggtgtaa 540

ggataaccat tacagctaag ataacactct taggaacctc aataatagtt ggaactgaat 600

gacacaaacg ctaaaacaag ggttataatg cataatggat ttcagcatcc tccggtgaag 660

tcaacaataa tagatttttt taaataaaaa aagtgctaca tgcaactgag cttacattgt 720

tctaggtttt cactggacca gttgaattaa agaatgcatt atatgccgct tatgtcttta 780

ggtagcctct gtaactcttc agtactgcac aaaaagattc gatttaaaag atagcaccat 840

ataacaaggt tgtcaacttc tgtcaaacga tgcatcatca ggaaaattaa tattgtgcaa 900

atagacatgt tgtcatcaac atatacaatt agaagcgcag cacaacaaat cagctgtgca 960

taaacagtcc ttccaaaatt ctatagctag tgtcaagttt catagaagca gacaagcagt 1020

ccaactctac atttcccccc acaagctgcc tggccctggt cgttcaggtt tgccttacca 1080

taaagatttt ctaggcttac atgggtctat ccaaagatga gaaggcctta ccggcggccc 1140

cttgcgtgaa ggtgtgtcgc ctcttctcac tcgaacattg accatttagt ttttcaaata 1200

tgttctatct acaccattgg ctcgataaaa aggtaagatt ttatctataa atctgtatgt 1260

atgaaattta tttatagtta gaacaatttt taggtggagg tgacggggcg gatttaggat 1320

cctggctgcc acctaggcta ggggctaggg cataggatat gacctaaatt tttttaacgt 1380

ccttaaaata taaaaaaaaa tacatgatta atctaccttg tttcaatggt atttatatag 1440

cttatgttct tcttaattta tattgtcttt atttaacatt ttattattat tattgtatta 1500

ggttgattga tgaagaagaa ttaatatatt gtttttataa tggcgttttt cgtatgttat 1560

atatttatct ttatgttacg ttgtcatcaa acttgtgagc tatattcgtt agcgtgcttt 1620

tgtcagttgt cataag 1636

<210> 3399
<211> 1511
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_316091_G1, chr9:112327725..112329235, Cluster 20

<400> 3399
tgtgtgtgtg tactcccgtg ctaaactcgg aggtgcagac tactgtcact ctaccagata 60

tcttcaggta ccgctaccgg caataatgat ggattagcat tagctaaccg agggctccac 120

ctgcttgttt aaacgagcag gcagaagaac cagagacatg tgaagaaaga gaagggcatc 180

atcccaatcc caaagcaggg ccgcagacgg tggtagggcg accagggtat ccgacggtcc 240

ctgcacgaga ggcgcctttt gcggagtgag atggggatag aacctattta aaaaaaaaat 300

tcgtttctgc tctgcctctg cctctgcctc tgcctcacct tgcatctttg aactccatgg 360

aaaacctgaa aaaaaaaata gggagcaaag ctgtgctatc agtggttgca ttgtcggtag 420

actagcagga gctcctttta ttttattttt ggagagagag agagaggctg caggctgcgg 480

cattattgga ggcaggaaaa agaatgatgt acactctagc atagccggag cgggcggcga 540

agcaatggtg gcggtgggtg gcaaaaccga tatgaatgat ggtgcaggtg cgcaacccaa 600

ccgtttgtgt actactactg gtgtatacga ttgacaccaa caaacaaaca aacaaatact 660

tcgagcgttg gagataacag ttggaactag ctaagctaca aatccagtgg atgatcttac 720

aaattatata tggctcttgt aatccatttc ttcataaact ccaatatata caatgattta 780

tacttaagtt gtggaacatt tatttaaaat ttaaatatat ggtacatcgt ttttttagca 840

tagctaaatg tctattttta tatgcaattc atgatacgta catatgctta aattcacata 900

taaggggtg tttgagagta aagttttttt atagttttgg aagaatactg caatattata 960

tacacaaaga tatttggcaa ggtagctaaa atctctgttt ttaaaactaa agtattgcac 1020

cttcttagtg taccatgtat actaatctca ttcctactta gtacttatca tgggccttta 1080

atttttttga ccaactgcta gataaactat atactaagtc caactaatca acattggcaa 1140

ttgtttagag ttgcatgtgc ttgaattgtc ggaattcaat cgacttgagt tcgtggagtt 1200

gtatgcgctc gcgttgatca aagttatgtc catttgagtt tgagagaggt agacactaac 1260

aacatgatgt accagtcaat atttggcgta ggggatagat gttttgtgta cacaaagtat 1320

ttatcattgc atatttgaat cttgttttat tctaaagcaa agatccaatc acttattcaa 1380

cttaatagag aaacaaatag aatattcctc tttgctaaat ggagatatgg gtaatttacc 1440

agcaccacag tataaggata ctttattttg ttttttaaa tagttggtat ttttccgacc 1500

ttttgagagt t 1511

<210> 3400
<211> 1603
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321841_G1, chr9:142749043..142750645, Cluster 20

<400> 3400
tcactgaaag caatagagaa atcgcgggag gtgacaggcc cacacgcctc aggcctagta 60

gctagctttt ggtgatttct atgcgctgac cacacgaatg gaaaggaaca actaaaacaa 120

ctgtgcttac tcctcctacc aaggccactt attcccctat gtacatctgt taattctgtt 180

tcatgtgata ctagtttcgt cgtccaaatt ataattagtg tgtttttcaa ccctcaactt 240

gcacataagt ttggttttca accttaaatt ataaagctgg gtactagtag tagacatcct 300

ccaactccaa ccgttgaaat cggacaaatt tggtcccttg actagtgtca aaggtggcct 360

tcattttata aaaataacaa aaatatgctt taaccaataa aatgtataag taatctattt 420

taaatcggaa atgtgtgaaa tgtttcagtt tttttttct aaaaaaagtt atctaactgt 480

tggtaaccta tttacagtta ttcgaaactt atttagcttt gtttctactg tttcattgct 540

cttgcggact gatctattga aaacgtgaac caagaagatt ttaaataact acaaaggggg 600

cataaacaaa tgaatactat tttcaggaaa aaagaatgat attagtttca cattttatt 660

taaaaatgaa aagtttatga atttttagag atcagaacag gtttttatta gtttagaaaa 720

atagacaacc acctttgaaa ctaggtaaag atcaaattaa tctagttttg ttagttggag 780

ggtgtcaaat acctgatttc atagtttagg gtcaaggtac taattaaata tcgtataacg 840

ggttcataat tgtttggcat cgagacaggg ggatcacggg tgctgtcgct ggcgtaagtt 900

tcaatagcgg tatatatatg atgaattgat gatcacacat atatttatgt atatatatca 960

tgaataataa atctaaatgt atatttaact atacttgaag acctgatgtg gcacacactt 1020

taaattaaga aaaaacatgg tgttcaatat attatatata agtcatcaca tgtcagagtt 1080

tataacagaa tagattatga gagccgtaaa atagtcataa gatcatgatt ctttatcact 1140

gtcgggagca gtatttaatt aaccttatta atagttaata tgtgctagga ttatttactg 1200

catatcatat cacgcttacc actagtggtc gctaaattcc aacccactaa atctgctagt 1260

ctgctaaaga ccgttacgaa cattattaat tagtagcttg tttagggtta attagaaacc 1320

aaacttccgt gcgaattgaa ggttgaaaat aaattttgcc cccaaaataa tagactgtcc 1380

attgagttgg gttattataa aataaaggca aataataaaa aacaacttac aatcatatcg 1440

aaattaattt ccatacacat gatccaactt tcctacgtga tgtaacgtgt cagggtgggt 1500

tcgaatattt tttgctacgt aatgtagtaa cgtgtcaagg accttcgctt gatgtgatgt 1560

aatgcgtcaa ggacatttgt ttgagtaatc ttttcctaac atg 1603

<210> 3401
<211> 1733
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322790_G1, chr9:147503595..147505327, Cluster 20

<400> 3401
taacctggca agtggctttt cacgctcagc tagctgcata agtatgaaat actaatctat 60

taagagccta atgctgcttc aaaatttagg gttaaccagc agaccacata aaccttagta 120

tttgaaaata aataatagtt atatttgagt atataataat tgtagcaaaa caccgagcaa 180

ggaaaaggtt atatattata atttgtggga ttcggcatcg ctccctttga gacaatttga 240

tccatcagag cgaatgcatc tcaagcctct tcgctacaaa caaaatccct tatcgctgct 300

ttgtatgcag gcaggcaggg gcatctggct agggctagca cgccctagcg catacatctc 360

cttgggccca tagcttagct atggggatgg agaagagggg gcccgctgga gttcatgatg 420

ggctcgaatt tgctgcgttt ctttctgggc ctacggtgct atccgcggcc tcgccctccc 480

cgctggtgaa attcttcagg gccggcttcg acgggtcacg ggcgctggcg ctgatcgtca 540

gcatcggctg atggcaggag aagtgaacac gagacagctg ccgccaccgg ccgccggtgc 600

acgcgtcgcc gttacggtgt cgacatccgg tggcacggtt ccatagagag taaggcccag 660

tcgtcttcgc ttcttttggt atcccgatcg ttttagaatt tttagatgtc ccattcgtcc 720

gatcggtcca aactgtgcgg ccttcttcta ttgcgtgtgg tgcaatgcag cctctacctc 780

tacaagtata ttcgctggag cgtgcgcgga tatatcctca ttggcggcgc agggaaaaaa 840

aaagaaagaa aacaaaaatc cttttcctat tgacttttt ccatgatggg taccaaaaaa 900

aaaaggcttg acgacaataa gaaactttga gcacgacaag agtcctttcc tgtcacgcct 960

gccatatgtg gcttgtccaa acaaacctca tcggactcga tacaacacga atcggtatcg 1020

actcctgaca tgtagtagtc gttatcgacc atagcgatat caacctcgat tggttcaacc 1080

tgtagaacgg tagctctacc gatcgtcgta gaatctatcg gtacctatcc gcacttgttt 1140

ggtaacgacc aaatttagtg acattgagtg ttttagattg gttcatacgt gtgctacgtt 1200

atctagttgt tttgtaacaa tttaaagtcc aaaaatacta aaaaaaccat acagtctgat 1260

ctataattta tattttatgt atttattttt tattttaaaa ttatgtgaat ttatttataa 1320

aacatatatt ttaaattaat gtgattgagt tatgcaacga ctgattgttg ttttgcgtca 1380

tctaatttta tttgcttaat tatataatca gatatatttc agtttcaata aattacaaca 1440

tttcatgtca gttaaaagat cgtagaagaa aaagttacgt ggtgatgaga tggttgtagg 1500

ttgatgtgat ttctctaaga acgatatgat ttctctaaga tgataaccct gatatatgat 1560

taatatgatg taaaatttta tattattttt ttcatatttt aaggattttt aataaaaaaa 1620

tacaatattg tagatgtcat tgagaactaa aagtttcata aaaaataaag atatataact 1680

ttttaaggta caccatttta atccttttgc ttaagtttct ttttttgacc cac 1733

<210> 3402
<211> 2235
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322921_G1, chr9:148196112..148198346, Cluster 20

<400> 3402
cataccactc gcttctcctt caaacagtta gtttcaaaca atttgcatgg tgtgaagtat 60

gataattaca gttaatcaaa acgtttttat aatttattca gatcatctct cgcattttgc 120

atctgtaggt ttacagaatt tcgtatatta cttctggtac aaacattttt ctatataatt 180

gaacaaacac atttgtaatt gaatccgttt tgcaactcca aactgaaact aaaatccttc 240

aaaaacccaa tccaattatc cttttaacta gaacacaata gatattatag ctatacctta 300

acatgatcga tagaacatct gtgggtgttt ctgcatatag tctcgcaggt aggaacactc 360

atgataaaag aagtagcctc ttggtcacat attagggaag ggttcttcat ggcaaattag 420

aaagtgcact tgaataaaga agacataaga agtaatccta caattcaata tgtttagcca 480

attatgtagt tccatttcgt ctctatagaa taaaaatata aatatactca tgtctatatt 540

taaatatcca ggaaccatgt gtttggaaca tacatgccat ttcattaatt tatataaatg 600

ttccttttca tggcaaaaga caaacatatt ccatgtgtta caacaatatt tgtagtctga 660

aacaaatctt aaactagagc tggagaagaa gcttccattg tacttcaata tgtgtgctct 720

ccatcaacct tatctcttca ttaacaaact cctacatctt gtatctctta tttatgtttt 780

gttttgttgg tagctttctt catcttttct ctatgttggt ggttttctta gataattgat 840

gctgagctaa cagcttttcc atgggaaaaa catacaacaa ccttatgctc gttttccgtt 900

tttatgctga ttgactccct acaaaccatt gttctgttca ttttttttgtt cttatgtctc 960

aacagaatag tgattttgtt aggtgatgcg tgcaatacct attgaagata aggatatatt 1020

aactgcatat aatttttcgg actaatcaca acttactcct cgtgtcgtct tccttgtcag 1080

cttacacaat tttaaatggt acctatatgt ttccatgatg ccatctactt taaagttggg 1140

ggcacatgga acctgtactt tgcttcgacg gtaatatagc agatggacca attaactgta 1200

tcatgttcac tagcatgtca gttgttacct gcatcaccat atcataatac tttttctttg 1260

agtatccatc tctgttccta tcacttaaac accggcattt ggcttctgct ttcttgattc 1320

ttcactcaag gaaatgacac aataagtgtc cttattttac attcttattc caaacagaga 1380

ctatgaggtt ggtaggccat atgtctaagt aatcgcttct gctgcatgca gtggagctct 1440

gatcagttgc accctcactc caactgagtt gaccaacgta ctggggttgg tgctaaattc 1500

ccacttttc taattaatgt aaggattcat aatgcatgat tcaagtgaca tttaatgatg 1560

tgatgtcaag acctttttcca gtgcagaatt aaacttcaag ggaaggactt agtccatggc 1620

gccaggtacc tctagattgt gttgtgaaaa cattggaaaa atgaaggggt gagctcaact 1680

ttgcagtgca ctttttgcac cctcattatg ataatcgtga tttctctcta cagttctgga 1740

cagctaccct agcgctggat gtggcaaaaa ccacaagggc ttgtttagaa tcaaagataa 1800

tagagtggat tgaggggggct agaatacatc gctactcaat tttgaatagt gagggattct 1860

agcccccttca ttacccttta tcccagacaa gccctaatac atccggaccc tcatgtgagt 1920

cgaaactcat tgcagatttt gagcatggta atgctcttac tagacctcat aatggtattg 1980

taatcattat gtgttaacat tttgttaaat gttttgtgtg tcgtcgcaac acacgagtat 2040

ctaactagtt attctataaa ctgaaggact ataaatccat attctatcat gtaggttctt 2100

actcaataaa taaatgaggt aacaacatat tagataatta ttgaacactt aaagaataaa 2160

tatattaatc gcatcagtga gcatgttgga taatggactg caaacatatg atcacgtaca 2220

ctaaaaagtg gagtc 2235

<210> 3403
<211> 1689
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325401_G1, chr10:4867602..4869290, Cluster 20

<400> 3403
tcgaatctga aatcgtttga ctcttaagga acaagaacac ggtttttttc aggcacctct 60

tttgtttgaa atgaaccggg ccaacacgac aactctgtgg tagcctcgta aagatggggc 120

tcgtgtagga gctttcatcc tgaaaggaac aattcggcat tttctttagc ccggcccagt 180

cccaatagtc taagcaatat ctctgttgca aaaaaaaatg aaaaaagggg agaaaagatg 240

cattaacatg tcgaatgtgc tcaatatctt ttacaaatcc aaacatgtga cggttttcag 300

cccgctttgt aggttatgct ttgaaattca tgcccatgtt aaacaaacta ttatttgctt 360

ttcaagagaa tccacttcta gaaaaaaaat cttgcggcta tggacttaga catctacaaa 420

taagccccaa ttttgtgtta catttttttt tgttaatgtt aaggcctgtt tcaatccaca 480

atgctataaa attagcacta gtggatctaa atatacccgc taatagacca actaaccact 540

agccaaggac ctactaacta tcaatcacat tttttggatt tgaagccgct aatatgtgat 600

aatagggggt catgggtgcc aattagtgat ggtggttcca aatagtctct actaataata 660

agctatctat caactactat ctattggcta gctgattatc agacgatggt tatgtttgga 720

ttataatagc ttcatagaat catgttggta acgtaatgag taaccgataa cgttaaatca 780

tgtttgttta agttcaatcg taatcgatac catactacaa atgaatactg ccttattcaa 840

atttgttacc accagtattc gagcgtaaat cattaacatt actatttaca ttatatttcg 900

tgaaccaaac cctacttcta ggattctagg gatatggtaa tatacttttc atattcaatt 960

tcttatttga aggtttattt ggcagaactc ctagtgcaac tcttaggctt gtttagtagc 1020

aagtggagtg aaggggattg agggtcctag aatccctcac tatttaacat taaatagtgg 1080

agtattttag tcaattcaat ccttcccaat actcttactc ccaaacaagc ccttagagta 1140

actctaagag aagttcacac tctttattac atagaatcaa gtatccatgg tgtatatgtg 1200

gaggtattgt ttaaaacaag gaactaagat gctagatgct aatatgaaat gttagggcga 1260

ttcctcactt gtgctacttc cgtagtagtc acacaatcga accttatatc tttcgccaat 1320

tcattttata taggcaatca ctttttacgt aatgttaatc ctagagattt atcttttagc 1380

cgtataatca cttgttctga aggttcagaa tcggagagta aaagagttcc accaaaacaa 1440

ttaaaaaggg ttttaaattg ctgtgagaca tttgtccgag gcccgcattt atcggatcat 1500

ctagggcaac agtgccttag ttccatgtag aagtttttac accatcctta gcattacata 1560

tagcctacaa gtaaacaact aagctcttca taaaattgtg tactgcaccc ccacaccatg 1620

caaggctatt attgcccctg aaatcgagta tatgcaacac ttgcctagtt cgctaagatt 1680

tgggggcat 1689

<210> 3404
<211> 2764
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32588_G1, chr1:199896903..199899666, Cluster 20

<400> 3404
aggttttcga gctcgttaat gcattttgaa ccatatgaat tccatctttt tgaccctcct 60

ttatttcggt tacactaatg ggggagaatg ttaagaagta ttttggtcct tttatgattc 120

atttaataca ttttgaatac tttagttcct aaaaccaaat aagatagata ctaaatttta 180

gtctcctaac ttaaatttta gtccctggat gaaataaacc aaacgaccct aactagtaat 240

agaatataca aggagcactt ggaagtttgc gcaaattgga aatatgtcct tatgccaaaa 300

ttagacaatg gttagttatt ttaactagct caccgatccg tgctctagca cgcctgtaaa 360

actgcacaat tattacaagt ttcacggata attttaatat gtataaacta tgtaaaattg 420

gttatcttta ctctctctat gtactaacac aatagatact tagatatttt acacttttt 480

acccggctat gataaaactt acaaattgga ctatttatat tttcatattt tttattagca 540

tccctgattt tttctataca tattaagttg aaattttaat ttaagttgta tcaattgcat 600

ctcttcttgt gacatcataa atttatattt tggcttttga acttttgata tcagattttt 660

ttattcaaaa ttctagtgtc tgttatattc tttgttcatt ttttatttat atcagtttcc 720

attagttagg atggcataaa cgaacgtttt attgtgctgc cgacacttaa gatgttggat 780

atattttata tcaaagaatt ataagtgtaa gtactattat ttaaattata gtacctgcaa 840

ttaaactatc aatactgata tgttataacc tgttagataa aatatataaa cttctataaa 900

gtagcaactt ataatttttc attatagagt tttaatataa tttagaatga aggtcagtgt 960

ttttggtatg tgatttgtct agggaatatt tttcaacaat gataaactat taaattatag 1020

ttatcactaa tctatatgta tatatttgat atatttggca tatatcattt aaatttactt 1080

tgaatttaat gattgttgta gtgggcatat agcatatatg tccacaaaca tccggacatt 1140

agtttggttg gctacaatcc tcatagagaa taatagatat tggatctatt atgttcccta 1200

aaaacagtcc atttttttcat tagagaaaaa attaattacc ccctaaatct acatctaaac 1260

taccaaccta ttataaaaag atgaaacaaa atatatcctt tttgtttaca tctaaagtat 1320

ccaccaaaac cgttgtaaaa ggacgtaaac gaaaatattc ctcaaactta tgtccaaatc 1380

atcattataa attaaaatat aaacgctata cattatatat gtttctaaat tatgtggttc 1440

tacactacaa aattcaaagt aaatgtaaaa cctagttgtc accatgtata catatacatg 1500

catatcttag cgttgaatat atattttatt ttttatcttt tagaaaaaaa tctaacattt 1560

acaaagtaca tctcaatgac actggaagtc tagtttaaat catattaata ctctataata 1620

ataaattttg taagttgtta attaagctaa gtttatacat gaccataaca ttataaattc 1680

aatgatcata gtttatttaa ccatgaaaac tttatttttt atttaaaaaa taatatacct 1740

ttttaggaga gaaaaatcaa cttcttaagc accctagtgc atcctgaaac aaaccttata 1800

tgccattgca ataactacaa gaagagttta ggacctataa tccatttact taattaaata 1860

taaaaggaac tatgagtaaa atatacaata agaactacat tcaaatttaa tacatggata 1920

agaaaataca acaactaata agattaaaag ttcaaagcca gaatacatat aaattcatga 1980

tatcataaaa ggaatgcaat acaatagata taactttagc caaagtttca tgtaaataca 2040

cattagaaac ttgtagagtt gcactgcaac aatggaaata catatagact aaatggtacc 2100

acacacacac acaatttgtc catggaactt tttaatgctt atttacataa ggttatgtag 2160

ggtgtaggga ctagatggga tgggatggtc cgaatttgtt gtctagatga aataatgagt 2220

ctatccctgt tttttgtgtt atcggatatg gtgggctgga atggccttgt ctatagtttg 2280

tttggaagga tgaggatgga acaactatta tgattatcct catgtttgct ggcgaggtta 2340

cattctaaaa atttcaccat tttctttacc ttctttgatt tttggtacaa aacactaaaa 2400

gttaataaaa caaaaaacaa cataaggtcg atgcattata cataacatga agtccgatct 2460

tgatacataa tactaaacct aaggttgtca cataatgcca actttaggct tatacaatac 2520

agaaaactaa agccaacaca tagtacgaaa ttcaagcttt agatttgtta atctatagtt 2580

atttttccat ttggtacaag caaaagaacc attcaagtta ccatttcact actctagaaa 2640

cttttcacaa atgaacatag ctacataaat aaacttatgg tctaaaataa ggttgtagaa 2700

tgttgttgca atgtcaacat tcttcactga atattgaaag tagattgata tgtgagtgtc 2760

cttt 2764

<210> 3405
<211> 1708
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326190_G1, chr10:8843573..8845280, Cluster 20

<400> 3405
ttcaatttct atccgtgaag cccacacgta actcactggc cgcgctggca tatccatatt 60

tatgaggaca ccataataaa aacaaaatta gtgttataac gtatagtttt tataagtggt 120

tttttagtga ggtggcagct aaggaaatta tttagtagtt tatgggctgt gactgctctt 180

aacatcccta gctagagcct agcttccaga acataaatga ttccgttgtt tagcgcatgt 240

tggcactgta ttttttttc gaggcagaca tgaggggtac tggggtactg gggtagaaaa 300

catccttact gtgcttatat tattaaataa agaaaggagt acagaaagaa cgaatatcaa 360

aaggaaagaa agagagtctc ctccaaactg tgcttattag acgagtcaag attgtgttgt 420

gtttagacta ctgcacagct gccaaaggag aagtcaagga tgtagagtct cgaaattaaa 480

taccgatcaa gttttttgg ataatatgaa atgtgctttt gcagcatcta ctacaatgga 540

agaaaaaaat gtcaatcaag tttgacgtga caattaaatg ccaatcgatt ttttaattca 600

ggctgcgtcc ttttgtagta ataacaccat ctgcattctg caacctctcg gcaaagcgac 660

tcattcattt ttttggtgtt tattttattc tacaaaaaag gaaagaaaca gaaattgtat 720

acaacaaaaa aaactgcttt cgttgagagt tgaactcaag acctcccgct tactaaacgg 780

gtgctctaac caactgagct acgaaagctc ttatttcttt tattttgtgc aaaagattgt 840

gaactttcat ttaaaaaatg taacggaaat tgtataaaaa aattgctttc gttgagagtt 900

gaactcaaag acctcccgct tactaaacgg gtgctctaac caactaagct acgaaagctt 960

ttatttcatt tgttttgtac aaacaactgt tgaacataat cgaacgtggt taatgaatag 1020

gtatggtata ataaattgag tacatatata atccacggct aagatacaaa tgtccacctc 1080

tcccttatca aagcttttag tttaaactgc acgtacacac aatttaatat ggtattggag 1140

ccaaagatct taggtttgaa tcctagttaa cataattaca taaaataatt gtttgagtct 1200

atcaacgttg acgatgaatc agatccacac atctggtgct agtaagagct tgtttaggag 1260

caagtgaaat ggagaggatt gaggggacta gaatacttca ctgttcaaaa atggatagtg 1320

aaaattctaa taccttcatt acctttgcta ccaaaagcct aggtttccgc cagcgaatct 1380

catactccca tcccacgcgt gcggtgtggt gttcttggga cgctgtagac ggacggacgg 1440

acggatgtat gcaaggtaaa taattaatta tctagttata tttgtttcat aactttggct 1500

tgattaatag tctgaggata acatttggaa caaatcctct gtctaattct aatcacttag 1560

gtgtttttg ttcacaaaaa tgtaaggtaa atggcaacaa aaatgatcca caatcgagta 1620

ctagcggtaa caagtttgaa ttggtcggta tcagatttta gtgtgttatt tgattatggt 1680

tgaacttaaa caaacataat tcaacgtt 1708

<210> 3406
<211> 2134
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33540_G1, chr1:205237601..205239734, Cluster 20

<400> 3406
atcgttctcc atacgaagtt gtaccctctt atcctttgtt gtaatcttac gaagcctaag 60

atacttgtat aaatctttaa ttaataaaag aaagagaggg cattacataa caatgttttc 120

tatatttgga tcatgtatct tccattaaaa ccttatctta catcattatt gttttgactt 180

tagatgtttc atctgtttgt ttataccttc atcttcatcc tatcaatcta ccttctcttt 240

gagaccgaag gaatgatagg gtaaagatga agcccgatct aactgtgttg ccttgaaatt 300

taatgcccaa ggggattgaa atcaagtgta caacagatcc atctagcatt tagtccagtt 360

tgaatttagc acaatgtgag ccatgttaag tgtttatgtg atattatgag gtttttagcc 420

ccacgttgtt tattgatgga tgggatgaca accaaaccaa tgggtgcaat aacttgtaga 480

gtttgtacat aatgagtgta ggtacatgtg aaaactacac atatgagtac tatcaagtca 540

gctatctaca aatgatttgg gttaggggca ggtatgcatc ttcacctata ggtacttatt 600

aggtatccta aaatccaatg agccaatact atttttccta ccatatccat catgtttcca 660

ttacaaattc ccaacccaaa gaaactctat cattctcata ttccctccca aattgtatcc 720

tttgctttcc cactcaaaca actctcattg tcccacaact atctttcagt ccacatggac 780

ctaatggact aatttatcgc catcaaacat tagacattct tgcctaggcc ttcattgtca 840

atcagcctca tatagcccaa gcatggtcac ctattccaca ttctcttgct actatctagc 900

aatgagttgt tgctcccttg tgtaataagt tcctcttttc ggtaagtcta gttgctcctg 960

ctatactcta tgccttcctc ctgtcaagtc cttcgtgttg tgctaactta atatagtttc 1020

actaaaggga atagggagaa gtgaatagaa ggaagaggag gaagcaatgc aaggtggtga 1080

agaaacatgg acaacgaata ggaagaaggg gaaagaacta ggcattaggg agttcaaaaa 1140

ttttctcaca tatttgtgat ctcaccataa aggtagtccc tagtagctat tgatgcatac 1200

actcatcatt agaatggaaa aaaatcgagt tcatcaactc agatttgcga gatctaggct 1260

agtatattcg atgaatatct aggaatagca tgttcataat ttgactagtg ccttcaaaca 1320

caagttgtag ctctcatttc tatatttcca atggtgttga tttgactcaa agcgggtcaa 1380

tggtttaggg acatcagcca aaatagtgtt attgtcctat ccatctagga tttttctttt 1440

ctagatagaa atatttttag ttttatttga aattagggtt ggtcctagta acttaatcaa 1500

aagttgtagc aaaaattcta tagatattta tgatgtattt attttctaca ttcggttaag 1560

tagtttgaga attatgctca aaacagagag caaatttagc aacctagtcg aatattttta 1620

gaaaaaataa gagaattgac aaattaggat ctaatgaggg atttagttga gatttcatac 1680

aagatttgtg actaacttgg actaactcat aagttagttt tgttccatag tagtggaaag 1740

tgcgcgtgat gaaagtgtga tggcggattc tcaccgaagt taagccaagt gcatgacgaa 1800

cctatgtttg gacttgtgca cattgcttga gttttcaaat tgatttagtt aattcatgtg 1860

ttatgttcat gttccatcta actcaatttc atgtcttcct ttacattcag tccacgtttg 1920

gtggatttgg atgtgtgctt ggttttatat tcaaattcaa gctttaagtt ttggtttaca 1980

ttgaatatca atgacacttt tattcggtgg tgcaattttt ttggttccta tgttcatgtt 2040

tctgtgagta agtgttgcct ccacttgcat ggcttttatt cttgcacttg cttggcttta 2100

tcgataaata ctatagatgc atttaggcac tgtc 2134

<210> 3407
<211> 1416

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338277_G1, chr10:83597064..83598479, Cluster 20

<400> 3407
tggagttgta aggtcgtatc cagcaggtta ctcataccct gttattctat atatatgtct 60

tgtattttat atttaacatg tcgcactggg aaggtgttca tccgtacacg gggatagata 120

tgggtgctac tccttccatc tggagaccgg caagctgtag cgcttggtga tgaaagatgg 180

caaggagcac ggtgacgcta tgtatgccta cgccctggcc tggccgcctg agttcctcgc 240

tccaagaaac tgatctggtg atttccattg ttttttgttt atagtaaaaa gttccgcttg 300

atgaaatgct caactagttt tttttttctt tctttatgat tatctgtatg catgtatatt 360

ttgccatatc atattgtaga agtagaggga gcaagatatt ttctttttgg atttgatata 420

cagttcttac tctcacttgc tggcaaaaag ttagaacatg gaaattatca catagttgta 480

gaaaagcttg atggtcatca gtttggtgag ttgtcccccc cggtagctgt aggatgtggt 540

atgtagtatg tacttatagt tggtacaaat taattgctca atatgttcta tatacttggg 600

caccaaattt gaagtttgtg ttagactttg cagtattatt caacactcca gattgacatc 660

ctttcgaatt gttggtaata attgttatta tgtgtgaaat ttaaggaact gctttgttta 720

tttcaaatct ccgttgtcca cttaactttg caaattttca gtttcatgta ctttaggctt 780

tgttgtaact tgcatttgtg caattcagcc ttttacgggt tatatagtat ataccttgtg 840

tgtctagata ctaaacataa gtgttcaaca caaaggaata ctgtaattga aacttgtagg 900

actccacagc aagaagcatg gggcccatct atgctaactc ctttgttctt gatgcctgtg 960

ttcctcgatt tttttgctga gacattcctt ggcttccatg ttcatgtctc atgtcacttg 1020

tttatgtgaa gttgcttgat caaatagaga tgtaacactc taaaatcaaa tcgtatcttg 1080

gttaattaag aaaattccct aaagatttaa aatttcaaac gtaatataac aaaattatga 1140

attgagacta tcttccctaa aatttaataa atagtaaatg taaaatgttg gctatatact 1200

taaactataa taaatatgag ggtgagttat gctatataaa ttactcctat tgggttatat 1260

aactatgtga attccatgct tattatattt catgcataca aatacttatt tgagcaaagt 1320

aaataaggag taaataagtg taaaatattt gcattcatgt tgatgttttg gttgtgcata 1380

taaatatggt ttgacgaatc ttttagatcg tcatcc 1416

<210> 3408
<211> 3364
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_338361_G1, chr10:84100282..84103645, Cluster 20

<400> 3408
tatgcctctt caattatagt acaaccacta aaaacatatc aaccattttc tgactaaaaa 60

tcattgatag agcttgctat attaagtaac taatatcaca tatacccatg tcacctaaaa 120

tatgttgaaa ttggatttag gtgttatggt ttgggtctta agggtgtgtt ggaggattaa 180

tggatcttaa ggtaggaatt taccacatgc ctacgacttc aaagataata gtacatacaa 240

aagtcagatg acatgggata ataacgggta agctccagca atgaggaact ttcagtcgat 300

ggataagctc ataggaaggg gtggaagctc ttggagatga aagtaaggat ccacccccttc 360

ctctaaaaat atttagttta gtaagaaaat ggttgatgct tcataggact agaactatgt 420

agacatagct ctaagttgag aaggtttgat atctatggta ctaccattta caattgcccc 480

tcccttaatt ttacatcacc tccacctata tttgtaggga ttgttatttt gtggttagtt 540

tggtgctaac agtagataga atctagcacc agtagacatt ggagatggag taggatgaca 600

tggtagggaa aacttttga aatcattttg gggagttagg atggatgaag agtcccaaga 660

aggaggaact aattgagtgt gcgccaacgg accaatcttt ggttctagca acgtagcagt 720

aattgactat tggtaggttg catcaaggtt aggagtgaca taagcattag tgttagtgta 780

gaaagaagat aaggtatagg atagaggaag ataagagaga tggagttagg tttaaatgga 840

aggaatgtgt tggaaatacc acaaaatcca attattaaaa gaatataaca tgtcaagact 900

aactctatct aataacattt tattttctta atggcctttt cttattaggt aaacacaaac 960

atctacaaaa atatcaatca atgaatccaa acatatagca ctcaacccaa caaatgtaag 1020

gaatgttcca agttattatg tgccaaatat tgagaatata tatatatata tcataatggg 1080

agaaaacaca taaatatatt gaacaatgca ttcttaagtt aacaattcat tttcaattct 1140

tgtagaatta gaatatattc tagatatgtg gaggaacaac tttgaatttg aaaaataatt 1200

atttacataa tagcaacaca caaaagtgaa ctagacgcaa accaatacaa atggttgtta 1260

cacaacatgt ggcaaggaat tctatagaaa aagttccatc caatcaacat tttgagtata 1320

agttaaggaa ttttttttata ttggaaagaa atgacataat catcatggta tgaccatgga 1380

actcaatctg gatcatgtct ctaaaaattt catggtttaa ttcctaatca tattgatttt 1440

ttttattttt attatgaaat tatttgaact catatgcatg catatattaa gcacaaaatc 1500

tctagaactc tatataaaca tgtgtacata aatttaactt gagtttgaag ccaagatttt 1560

ctaggagaat gtcttacctc tttctacgtg attcatgttt ctttatattg gatttgtgtt 1620

ccttaccacc agactcttga ctcttttcat ctgacacatt tttattgcca tcagaatcat 1680

gcatcttgct accatggtca ccttgtttct tgccatgaga ctgttgtttc tcacgatcgg 1740

actccatcat ggttgataat gggatttta taggtttttg atgattaatg cctttgaaag 1800

agggatatat atgagtgatc taggtaaaga gaaagttgag acaagcatca acaaggttgg 1860

taggaaaggt gaatgttgta tgatggttga taattgtaga acatttgaaa agagagaagg 1920

ggagatagag gtggcactct cttgatgagt caatgagaga gagtttgtag agatagggga 1980

atgtggtagt agggtaattt atacctagaa gaggtgaata attatgtata tctttaatgg 2040

tacgctttta atatccagga gatgccaggt gcccatcttt attatgtttc aaatttatat 2100

ttgctagttt gtctggattc ttaaatagaa aatggatagt atttatacat gtacaaatct 2160

cttgctctct ctatcccctc tttatcgctc ttatggattt ctcaaagaaa tcattaaagt 2220

tagaatttcc caacaatggt ataagctaat ataatgtttg tgtatagaaa aactagcaag 2280

ctaacttgca tgaaaaattg aacataacta acttggttag gttcctctaa ccacttatgt 2340

tcaagtgctc acttcttgac ttggcacaag tgctaatatt ttgtcaagat ttagaccgga 2400

cattgatatt tttcaataga ctttgtcaac aagatttatc tgttttgtct tttgaaggtt 2460

ctagtaggag tagggtttac gtgtgtgtgc tcatagcaag tgagtatgtg tgcttaaatg 2520

tgtgtatttg tgtttgtacc atgtacttag aaaaaaatac aggtattgca tagggactta 2580

aggttaatat aaaactgatg ttattaaatc ccgcttctaa gcaacaacct ttatagttta 2640

tacactcttt taccataaaa acaagaaata tatgtatgtt acatggaccc ttatattttg 2700

cacattttgt atctcgataa aaaaagttac gcacatatct aaatttcctc gtagatatgt 2760

actctttatt ggcttactcc attccttagc taacaatagt aattgacatt agaacaataa 2820

aattaactag tccataaaat gttcattgct ttgtcgtagc atcaactatt gttgacataa 2880

ggagtatagt gtagggttta attgaataaa acaaaacact tttgtaccaa tcttaatttg 2940

aaattatgtt ttgtttatat atgtgtagat ttggataatg agtcagctcg gtttggtttg 3000

acttgttatc ttaacgagcg ataaggctag ttcgactcgg gttgtttata agttcgagct 3060

gacttattaa gtttgtgagt taagtataaa taatatatat gtacacaagt ctaacaatat 3120

actatagcat tacacaatac attcatggtc tatagtttat accataaata atgcatcaat 3180

gagtatccat acatccatta caaataaagt gataaagtca taatattctt aagtttataa 3240

ggtctagagc agccaccaac gatcgtaaag tgtaagacaa aactaatata aggtcaagcc 3300

aatagttttg acttgttagt ctcagcaaca agctcgttaa ctatatttaa ctatataagt 3360

taag 3364

<210> 3409
<211> 1709
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33863_G1, chr1:206746430..206748138, Cluster 20

<400> 3409
agctctagaa ttaataggaa ccagggccta aggcgcatgg tcggccgcat acgcactatc 60

gttgttggtc ctagcatgtt ggacacctca cggtgcatgg cttctgagtg aaggggtatg 120

aacttcgcta ctgctatacc gaagcctttc caatgtgtac acaagagata ttttgtatat 180

atacgggctt aattgcgctt cttaacaaat agggcatttg gtctagtggt atgattctcg 240

ctttgggtgc gagaggtcgc gagttcgatt ctcgcaatgc ccctttttt atttttatt 300

tccatcagca gaatcagatt tttttggcgt ttctttgctc ctggtttcga aatattgttc 360

atttattcgt taaagtcaga atcagaagtg agcagttacg cacttttga atcattaatc 420

aggctaacca gagtgtacac acgtggggac gtgagcttgc cgggtgtttt tcgtgtcttt 480

tctgcttctc gttttcaaat attgtaatct agctctcatt gaatcactat caaatatgtc 540

tatgcattgt aatagaatcc acaacttatg tacgtagtca cctaaataac ttacggctcc 600

gagatttata aaacgaccat gtcagatttt gtgccatggc aagtagcatc ctatttggtc 660

ttgcaatgga tttggattgt gctagtttta gatccgaaat gtgattctgt attgaattta 720

gattagaaac atgtggacgt caagagtgaa aagcggacag aaaatacatg aatagaggat 780

agtgggatag gatgaaaaaa tgtatttgct tggtagcagt gcgctgtagt gggaggaaaa 840

atgtcatgaa aaaaaagaga atgcacacgc tctatgtatt tgcttggtcc taaaatgttt 900

gactttatat cattcaaatg ttatcttaaa tgagttgtta ttttcttttt ccaatgcaca 960

tttctcttct tctaatacgc attttctttt gccgatatat tttattggag atcaaattag 1020

ctcagacaag taaaaataat aacaacttaa ttggatattt ttatgtccat gaatagtaca 1080

tgtcaggaga cagggtcctc cgtattcgta atatttgtgc aaagttctaa ctacccttga 1140

attataaggt tataattgtg tgctcattcg agggtatttt ggtctatttc tatgcttatt 1200

agcctttgaa tccttgttag tgatcagtct tggcaagcat atcttcgctt ctaaaaagac 1260

tctctagagg ctttatttga ttgtatgaag atgttgtctt tctaggtgaa gcttcatagg 1320

tcctgaggct tcatacaaag tcttcgtagg tgaaacttca taggtcttga ggttttgtat 1380

tgtgtattcg ctggtgaagc tttcaagcat agaaaacaaa ggtgaccaaa taacttcaat 1440

attcataaga tcttcttatc actttactgc tttgttgaaa gcaaagatgg tcatgaaagt 1500

aaatttgaaa caaagaatgt tgttactcag ctctaaaata tcggcgacca cgtttgccta 1560

atgtggaatc cctaatagta gccactcata ggtgaagtcc cagctaaagg tctgaatccc 1620

ataaaacttt gatttcaagt aaatgtaata gcatcatccc caatatttag tgttggccat 1680

taaggagtga acaatgaatt taaaacttg 1709

<210> 3410
<211> 1896
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34424_G1, chr1:209301379..209303274, Cluster 20

<400> 3410
tacggttact gatttcagaa aataataatg ttttgtaggg agattattac aagccaatgc 60

aaatccacac tgtttctctg cagtgcttcg gatatcgcta cagctagcta gctgtgctga 120

gctgaaacag gaacaggaac agtctctttt ctggagaaaa tcatggcaat aatcataaac 180

agagcgatgc agatatatgt ctgtcaaacc gtcgtcgtta gtccgtctgc gtcgtccgag 240

ctagctagat tattgcgcgc caattaaggt gcttagattg cgcctcgcac gcacgtccgc 300

ccctagctca tgtcagtatc gatcctggtt aattttggcg cttctaatga gggtacacaa 360

ttgaacagac acttcagtcg acgcgtggtg gtgcttcgct tttatttgca tccatctgtc 420

ctttagactc gcatatgtat atggtactag ttgccttgcc tcctcccccc ctaacctctg 480

aacccaattt aatttcaata gactctaaat tccatttata tttcgtatcc ttttcagtag 540

cagcagcctt tatttttatt taattattct ggcaaaggga agcgcgagac acggctacaa 600

ttcattcaga ggggtgtgtg tgtgtcaact gtcaagtgca ggtgcaggtg cagtgcataa 660

aaatagagag agatgcatgg cacagagcac ctcttacccc ggatgcacgc atcattactc 720

tacaacttta atcatcaggg caaccactgc taatcattcg aggtctctcc tgctctaatt 780

tttccttgca ggagtcaagg gagccagcca taagatcagc caaaggaagc caaaaggcac 840

tccatgcatt tggcttaatt atatagtgcg ttaccatctt ccatacatct tctcctctct 900

ctctctctgt ccaatgattt acaagcacgc atcactttta gattttcttc tccgtctata 960

acctccaacc caagttttaa aatttgtatt cgaggtccac accaattaat ctaaaggtta 1020

tgacttcgaa gaagggtggt tagtaaagat aataagcctt gttagtttga aatactaggt 1080

catgtttgtc aactagtagt atgcagtagc tagcagggct tttgtggctt gcggttccca 1140

tgaaagacac gcatcaacgt cgttgcaatc atgggagtgc cgatcggaca ccaaactatt 1200

gcctctcaac tgcaactcat cttttaaaaa atgaatttgt actgtactcg ataagaaaaa 1260

cactgcaata tatatatacc atgtttattt catttacaaa tttaatcttc ttgatcccga 1320

tcggtgatta gaaaaatgct ttagggctgt acgttgaagc aggcagctaa gttctctgag 1380

cactgagcag tagatggaat cggcgacaaa tcaggcgtag gagagtacta cacgccccca 1440

tgtcgtgttc cacgtcttca ataatcaggc ctctacgcac cgtttagttt aaaaatgttt 1500

atcatgaatt agatggtgac agctgtgggg ttgggggtcc aaagtattga acaaaaccct 1560

ggcctgacag caacgtgttg tatgattttg taataacaca tacgcagttg ttccagatgt 1620

aaggctaaat tcatcttcac cctatctggg gaatagcaac cccgattaca tgtcacattt 1680

gtcctaaata tgagcgtata tgttgtttca ttacaaatta atcatactca actattagtc 1740

agaaattgtt atagtagaac tcgttcacat cgagctagtt tcatgcactt acaaacacat 1800

tttagagcag ctcccagata ttctctatat tctctatatt gtggccgccg ccgctgggtt 1860

ttgccttcga tttcgttgac ttcagaattt tttatc 1896

<210> 3411
<211> 1510
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344494_G1, chr10:118143677..118145186, Cluster 20

<400> 3411
attcaagcat atgacggtcc aaagaggcca attatctggt ctaatagttt tttcgatatc 60

cgcaacatat ccagatttca aattcgagtc cgaatagtat agttcggata tcggatataa 120

atatggatgg ttgatatccg tcgggttttg gatatctaga tatcttcccg gatatataga 180

tatctttccg gatggttgtg tgcattttga tgatttctaa aggaaaaaat aacaatacac 240

aaatagcctc agaaattcat gaaattttac agagccacaa cctatgtcca tatataacct 300

aaaaatattt gaaccataaa atccataaaa tgcaatcgtt tctttcattc cacttcaact 360

tgttgcgtga gttacacatg aaatcactct aaatatctag gtttcaacat aatcagtact 420

tcaccttatc attttgtgtg gagacttaat attatcttat tatagaatgt ttattagtat 480

tggtaactta tttgcatttt tggttgacac tcgaatattt tataaattta atttttttat 540

gattttctaa agaaagaaat taataatata caagtagctt ggaaaactca tgaaatttta 600

cagagacaca acatatgtcc acatataatc ccaaaaaatg tttagaccat acaattcata 660

aggtgtgcgt ttagttgtcg tagaaatcga gccaggatcg catgagtcta gccagtatta 720

gtagaactag gatgagatca tgcagacgct tttgtttggt tacttgtata gacttgttca 780

gattagacac agattttgtt tggttggtta cactaaaacg tgtattagag aaggatgcac 840

aaataaatct tcaaatatta tatagcatga atggtctagt tttgttgaaa aaatcttagg 900

aatacaaaca tgaaattagt ttgatgattc aatcttttaa ttagaagata taataaaaaa 960

acaccctaaa agatgtctcg tattccgtgt cattgcatgg ggctggctgc tcgcagcctg 1020

catcccgctg tacgcctccc acgggcgtct ctgcgcagcc tggccggaca ccccttttgc 1080

atctgctgag ccgagcttcg tagagaaata aaccaaacaa atcctgcttt aaagatctgc 1140

ggatgcagtt tctcggctca tgcaaccaac caatcatacg gaagatgtca acgtttattc 1200

tatttcactt ccacttgttg catgagttat atgtgagatt actataagta ttcaagtttc 1260

aacataatca atgtacttca ctttatcatt ttaatgtagg gacttgaggt tgtcttctta 1320

agaatattta ttagtcttgg taacttattt gcatgttttg cctacacttg aatcttttat 1380

gaatttaatt gtttttaaat gattttctgt tgaagaaatt aataatacac aaatagcctt 1440

agaaatttat aaaactaggc acaacatatg tccacatata accctaaaaa tgtttggact 1500

taatgaatgg 1510

<210> 3412
<211> 2272
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_344835_G1, chr10:119886934..119889205, Cluster 20

<400> 3412
ggggatcgcc tccttcatct gcgtcatccc tgactttccc aagctaggtg ggttcaccct 60

tgtctttcgt acgagcgtat ctcaccttac tcctctctgt atcaacaacc catctgatgt 120

acaactcacg tggttggatg acgggttgct gaatgagtgg acacgagctt cgttttcggg 180

atttcgtttt ttgcgttaac tacgctgcat aaactcacgt cactgcttat atatttttta 240

ctgaaaaaat atcggagtgt ttgtttgacg aaaagatggt tcagcagtca aacttagtta 300

ctattggagt agtggttaga ccatggaggt ataaaaaact tttactcacg tgagaggtgt 360

actagaccac aaatataaaa tatgttcttc aaacaatatt aaaattagga ctgtttcaat 420

cctactactg aaatatcgat ttcagtttac agtaaaagct ggctagcaga tagatccatt 480

gtcttcaagt ctattgcttt gctatgcaag aattcaaaca atgtaaactg caagtatgca 540

ctacgcagta cacacgataa ctcatataaa acttttgcac taactgcttg ctaacatagg 600

actgtgatta gctgatggaa gtacaaaact atatataata tataattaac taatctgttg 660

ccattgttga tagttatgac tggtcattct gaaggtagga atcaagaatt gttatactat 720

atgacagtgt agaaacaacc atgccatttg ttttgtatga tctgctctca aaagcacatc 780

aaccaaattt ttatgatcct gaaatcactg attaaaacgc tataagagat gcttgatgct 840

ttcatcttta gcatgaggat atctaattag taacacataa ttttgtccaa actgagtagc 900

tgataacatg gtatccggtg tttattgtta aattctaatg cttcaaaatt atactttgtc 960

atcaccagtt tttcatctcc ttcattccta ttgtttgagt gctataactc agttgttacc 1020

tataagtttt tcaatgattt ttttctcatt ctccacctat gttcaattaa tattcttatc 1080

tactattggt gggatatatg gttgtctcaa tgaatattcc tatctactat ttgtgtgata 1140

ttcacatagt ttgttctgct gcattgtcat cagttagtct tgctatatgc tttatatgag 1200

aaaaagtgag aaattgcacc tttttatcag ccataagttg ttggtttgga taataaaact 1260

ggtttttcct gaaccttggt gcagtaagta tcatcattca catactgtga ctaataattt 1320

tgtactccct ctttttttatt tttacaatgc ttgttcctct tcactaaaat ggcgagattc 1380

tgtacagttt aagttgctca tattgtctat ccatgttctt ttgatgtgca atacagggaa 1440

tgagaatctc ttgcccttga gagccttttg acttcagaat atttgcaatg ccacgattat 1500

gagcctggga agcctaactg accaaaggct aactgattca ttgttttcac catgattcag 1560

acataacacc tatcaccatc atcactacac cttccttctt ccatttacta tagtcatttc 1620

aaaaaatgtt tttgtaccat tatgtggatc aaagatatcg aaaaaggagc gatgatcgtt 1680

tcttatgtac ctgtggttgc agaaggatgc aaccaaatgc gagatctacg tggccttcaa 1740

caccaatcac ctattgatgg tcatcgggct tccagagtgc tctgggttcc gataggatct 1800

ctaaagttta cacctttaca taccctggaa tctctaacca ttgttgcatt ccactttggt 1860

gagtactatg aatgagatat gaacattata aaactgttac tttgatccct ttgtggtgga 1920

ctagatgcaa caagcaattc atttaatttc tcaactgtca caaccaaaaa cagagatgac 1980

ataaggtaat aagtaaatga aatgacctat gatgacatga tgagggtgga tagtatataa 2040

aaacaattga caaaacttat aattgtaact aagatccata tatttaaata tatgaattca 2100

agagaattgg ggacatccat ggtgaatatg tgcgctgaca tgcagtcttg gtcaaaattg 2160

cacccatcac caaatggatg aatcttttg gattgaaaga attgtagcat tccctagccc 2220

tttcttattg ctttcatggt catcactcac taaatcgaca cagtgagctg gc 2272

<210> 3413
<211> 1599
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347380_G1, chr10:134660407..134662005, Cluster 20

<400> 3413
acattaagaa aaggttagaa ccatgagaaa acccttaact ggtcctaggc atggaggttc 60

tgccttggtc tccatgtggg tacggttgta cacctctgta gagatcattt tggatgcata 120

aacttcgggc ataagcattt ggtttttttt cttttagaga tagtgtagtg agagttaatg 180

aattcgtagt taagatagat ttttattact tatatatcat gtttatgcat gtgtaaattg 240

tgtttatggg tttctagggc tccatagagt gtatctagtt atgtgaatct agctacattg 300

catcaatcat caaaatcttc agcgggtcgt tttctatgag atgaataact aaattgatca 360

tttgtgcatc tagattgttt gatcttgtgt ttcactcatc aaagtgtgga ggaggtgttg 420

ttgagcttct caagatgtgg gagaagttgg acccgcctct ccttcccttg gtcgccttct 480

tcttgatttc tcctcttaac tgcttgttgc tagggaaaga gggttccaca atatacaatc 540

acaagcagct tgtggattcg taaaccttcc tctacatgat cttctttcta gacatgtcct 600

cctaatgccc ccttctccct cctttgttct tggcggttcc tagaaagagt tgagatgcga 660

atgtgagaga gtgagggtgc tggtggtgag tatgtccatg aaatggatat atgatgattt 720

gttgccatgt ggagacagta gtgccttggt gagggtagtt cattgttgtt cttgaagtat 780

tctgacgaat ggttcatggg atcattagat ggtggatggt ttacgggatc attagatggt 840

tcgtgagaat gaaattaatt tataagtgat gcttatgatg aagaagatgg ctatatcaca 900

atcaagtctt ggcatctttg gtgtagagga agtggtggtg aaggtgttct taattgttct 960

cgatctttcc tagtcattgc acctcttcac gtaggttgag caaatcctta aatgacatca 1020

ttctttttt tttaaattgg cgtggtattt tcttagttgt gggtttgcca ttatttttaa 1080

ttgatgtgac aatccttgtg ttttatgtta aaagcatttc aagaatcctt ttgtaacttc 1140

taaggctaga tctaatatat taggtatata tctagtgcca catcagctat tgttgccatt 1200

gtcagcatgt atttaccaca acaccccaat gtgtagtctt ttatcatctt acagccacat 1260

cggtgctatg tcatttttc ttacgaactt ttatttaaaa tgaaacacgg tgttttatta 1320

aaataaaaat tacataatat atacaaataa aagttccata attcataaat atttttaat 1380

tttttaaaca ttaatatata ttatggacca ataaataaat aacacatgcc atcaaatgga 1440

cgatagccca actgggtgaa gcgaaccaat ctactcggaa cccacaagcg ttgtcgccac 1500

taccaactca aggggatgat attgccccca tttgtgcctg cctagccagt aggaataatt 1560

ggtacgagta gatttttttt taaaataatc tcttatata 1599

<210> 3414
<211> 1737
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347616_G1, chr10:136011584..136013320, Cluster 20

<400> 3414
attgtcccgt caactagcct ctctttagac gttagattgg ctactcttat attgacccta 60

atacatttgt attgagtaga ttagagtata acttaaacta atttacgcca aatggatatc 120

aatacatatg aatatagcta ataatagaat gtccaaccaa agacttggct tagggatcct 180

acaaacttgt cacgggacgg cactgttgtt aggcacttcc gtccagtccg gttctgccgg 240

aggtgcctag ccatgtccat tcggtaatag cgatggaaag agaatgctct cgatgcacaa 300

ttccgtgcac gcgacagcac gagcacgggc acgggcgcac gacttgcact cacagggcgc 360

gacaaatagc gtgggcgtgg catgcaatga ggcaagtgga acgcgcacgc gcatatgctt 420

tctcgacctg gctcgagtga ctgccgttct cggttttacg aatcatagac tggagacctc 480

tctatagacg actatagagc gcactggcct ccggcgagtg gccaagggaa taaaacgagg 540

aaaaggacag ggcagcacgc cttctctcgg ataatatatg gcaggccgcc gaagacgaca 600

cagctgaacg gtgcagcaaa ggcaactggt tcatcgattt tcttgtcatc ggaatgatta 660

attagccttt gttgcacagc aaactagcta gagcctagag gtaaaagagg taatatatct 720

agataatagt atagatatgg ttttattacc ataatgaaac tcaatttatc tttttgatat 780

caataatagc cccctccccc ctaacatttt attttcaaag ttggtttcgg tcggcagtag 840

gctgctgctc gctcgtaaca aaaacactca gctaaccaaa acggggaagg actactacag 900

tcgtcgatgc tataaaccag tctcatatca tatgactgcc ttgccttgcc ttgccaggac 960

cggtggcgac cacacggtag tacggtacgt ctctctagtt tggttctctt gattgttggc 1020

ggcagcacaa gaacataggt gacgtcaaca agactcatca attcagtaac aaagacctgc 1080

aggcaatgat tcgtgggaca tgtccatctc tgtacagtgc tagtgtcatg gaccatcggt 1140

gcttattcaa ttttcaaatt caaccggggg ggggggggggg gggggcggct aaagaaccca 1200

acaaatgctg gaagggctcg gtggtaggaa gaatgagacc gtgagaattc aaaagtttag 1260

ttctcgtcct agagcatgtt tggttccttc aattgacgga ttaaagttta gttcctatac 1320

tgtttgtttc caggtgctaa aagtattcag gacacattaa gtaactcata agaagaccaa 1380

aacgctcctt atctttagtt cctattttat ttttattatg tggcaaattt tgagactaga 1440

tggaagtaaa atgaaaaaaa taattcttag tctatagaac aaacattctt gtaggatgta 1500

gaatagacaa tttgtttgta tacaatataa tattatgagc tactacctcc caccgatcct 1560

agttctcttc aatttatcca aaacatgata agtttttta aaaaacatca atatgtatga 1620

tataaagtat atatgtaata acaatacatt tcatgacatt acacatattt atatcataaa 1680

tattaaaaaa tataaattcg attaaattgg aatactttaa ctcggtacat attagag 1737

<210> 3415
<211> 1589
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348407_G1, chr10:139989581..139991169, Cluster 20

<400> 3415
tgtgtgccca agcgggcaag cggcagcaat cgcagctggt cccggcggcg gtcccaacgg 60

tccaacaccc atgagttgag acgagggtgg ctttaaaaac agcggaagtc aaagcctaga 120

ccaacgagac aaaccaatga gcacttccaa acagtagtat gtgtatatcg cggaggctac 180

gtcgtagcaa ggaaggcagc ggtctatttc tggctgattg aaaacgtgag gtagaagtgg 240

ggttgcttct tgttttcaac taggtgaaat cacatcagca acgtttcaat gcaactcgta 300

actcccaaga agctaaacaa tttttaaatc taactaaggt cctatttaga agcattcagt 360

ttttaagaaa ctagtttacc atacacaaca gtttatgact cagtttataa aaattacatt 420

atcggtttct taaaaatgaa gaggatgaac tctcctatct aaaaaaataa aattagttta 480

ttaaaaatta ggttgctttc aaatagaacc taaatttata taaaaaattg ccagtaatta 540

ccgcaccaca taaatatcaa ttgataaact aaaaaatatt ttttcttagt aaacatactt 600

ggatacctaa atattgaaac tgttttctat aaacttgtca aaattttaat ctggatccaa 660

aaattatatt gtttttttaca tagaagaagc acgccgtaag aagaccccac acctattttt 720

ttttaaaaaa aagaagttta tttttatgaa actgctggag ttttccgaaa aacaaacgag 780

caacataaca cataagctga ttggaaacgt ggggtaaaac tgacgtgctt gttgttttca 840

actaggcgat gtcacatcag cagcatttca accacatcta gttatttact ctaaaacaaa 900

atccacacat acgattgttt tagggttttt tatggtggtg ccctccattt tgctggtgtg 960

ctcatttta cccttagaaa ccccttgttt ttaacgtgtg taccgtgtgc gtgcacacca 1020

tcgtaaaacc gacgccaaag gcgtctgttt catctagaac aaagcactgt ttctgtttgt 1080

tcattcatct gtactagtag tggtaaactt taaacgagga gaggacggcg actggcgacg 1140

acaggacagg tcgcccaccg gccgccgttg gacagagacc gaggagagcg aattccgtag 1200

ggctagggcg tgcctgccag tggcctgcct catccctcct cgtggagatc agatctcatc 1260

tcatcaacag caggaggagg atttctgttt ctcttttacg gctcgtttca ctggtgtggc 1320

tctcactcac tcactgtcac tgtctcgcat cgcatgcatg gtggtggacc aaacttggcc 1380

ggtgaaattt tacccgctgc tgaaatgcga ctgcgactgc gactgcgatg cgatcagatt 1440

ccacaggctg cggttcgcct ggttacaaaa acagcctgat tggatggctg gttatgcgcg 1500

gtcaggcaca caccaacctg gccggctgga tacaatagag ttgagcgtat ctgcccgtgc 1560

aacaaaaatg acttgttttg catttactc 1589

<210> 3416
<211> 1856
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348782_G1, chr10:142169824..142171679, Cluster 20

<400> 3416
ggctatatat attcaacaga tttccaatct tatctcttat ttcaaacttc tctctgtaaa 60

tagtgtcatc tactgtttta cgtatctatt tacacgatcc actgaagacg atctaagcta 120

taagctatct aggttcacct tggtcaaact gcatctatcg cggaaaagat aagaagaaga 180

aagttgctcg tatatatagt ggactggaca ctggagacat cttgtctgtt tcattgtgtt 240

gagaggtcta tcgtcgtcgt cttacacttt ttagctcaac tcaatggtgc acggtaactc 300

aacccactta ataaaaagac atctcttcgc tgtcttttga aacagaggtg aagggcgctg 360

ggtgcttttg gagtgtcaac ttgtaaacag ttagctagat gctgttaagt tttatgctgg 420

caaaaaaact gcatttttt ttgcttccct taatgataat tcccagaaaa cacaccctcc 480

gtgtgtcata taattgcaga gaaaacaaga gcgagagtga agcgcaccta atttggcgac 540

tagctacctt gtctttacgt taattatcac aaagctccaa agtatgatga ttactactcc 600

tgtcgctatt cctgtgtaca aaaaatactt ttcacatttg actttgggta taatcactaa 660

tatttactct agaatattaa aaaaagactt caaatttatg agattttacg agtatatttg 720

actactatat ataaatcttc aaacgtacat aagcaacatg tttcaaaact aaataacctg 780

aaatctcaag atacatgcag tagatacaca agacgtttta ggaggacgga tgctaaagct 840

ggacttgatg ttgccttgat gaaattatgt gctgctagct ttggtagaat tacgggaaca 900

aattgtggat ggggctggat ttggcaccac acaaatgtgg gatgtccttc tccacggtag 960

agtgtttttt agcttcgttc ttccattaat tgtatgcatg gtcttgtact gtttgatgcc 1020

ttctggaact agagattgga gcgttactgg gcctttactt cacagtagag aactagagat 1080

gccatgcatg atgagttaag cgttgtttcc cttctgtctt ggcggaacgg aaccggttga 1140

tatttttgc tgaaatttgg cctagctact tgattgaacc tattattgtt gacagaggat 1200

tttatggatg cgcaataata gaacagatta aagctaaaac gaagcaagaa tcaatgattg 1260

ttaatcacgg agacaggacg gccgactttc cttgtctctc tttcaagctt cttttctttt 1320

ctttggatgc caaacagaat cttgattaag gagacactgt cacctgggaa cgagtacact 1380

acaagtcgag ggcaatgaca aggcgtcaag gcgtcattca tctcctctcc ctgactatcg 1440

tggaaccggc tacacagagt cagccaaggg acgagaagac gtggctcagt ttggcgccaa 1500

cagaacacgc cgtggtttct gaacctactg gacctcatat tattagggta ttattttatt 1560

atttttgttg ttgcaatgaa ggtctaaaat gagtgtagct ctagagaagt ccacatgtat 1620

atgtatttat tacagataat aaaaacgaat gtctcactta caagccctga tcctgtgatc 1680

catccagata tgtctaggct gggccacgga tggcaacaag aaattctcca ttaaaaaata 1740

gcttctcatc actgttttca cgataaaaaa aatttctcca taaacgcttg tgaaaatgtt 1800

tcttccacat ccttgtttct tgtagggata aattcccgac aaggttctaa aaaccc 1856

<210> 3417
<211> 1746
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349151_G1, chr10:144111852..144113597, Cluster 20

<400> 3417
tgatattact agcatcagct tcaagaattt gtgcagatgc gccttttgag gttaaattaa 60

tcctattcca cgtagtggat atggtacggt atcaccgcac aaaagcatat taattgacct 120

aagaagtata tatatgtctc caaaaattat tagagtacat ttttcctttt ttaatcaaat 180

aaaacaaaat aaaataggga attgtcttat atagaactca tgaagatgct ctaattactt 240

aacttcccta aacatcatga tgcaatatta aacaatgggt attatcaaaa actcggccac 300

gatatacatg tcaattaata aagagacagg gtaggcctat agtactgaag actttcacat 360

tcatggagct tgaagaagag ataaaatgag tcaaagtctt atcctcgcaa attcaaatac 420

agagaagcaa tatttcaaac ctacgacctg atgacttagt gagacaactc tcattactgc 480

atcatgtata cccgtcacaa gcatgccaat tagtcggact gtcggagtaa caatctcatg 540

agaagcaacc aagggtcatg tactcatgtt tgatatggct cataagctgc ttagatcagt 600

tctagtggta tagatgagca aaaagacatg actaagcgta aaaatgagga gaaggcaaaa 660

ctaagggtat gaattttaaa accgtattaa ataaattaat caatatagta tatataaaga 720

gagatgacca agttttcgta gggaacaaaa gatttttttg ggataaaacc ttgtcttgtt 780

ttcgacgtag gagtcataaa attgagaccc ctgaaatctt cgtatgcacg cttctcctca 840

cgtcatctat gtgtattgtg tactaaaaca gtaaaacgca gaagaattca ggttatacta 900

gcttttctaa cctcaatttt gctttatttg tatagctcct ctgactccga tcgttttacc 960

acatacggcc aaagtgttct cttttctttg ctaatctgag aattcctagg acccctttta 1020

ttaaaacaga gggagtacgt gcttaaagtt agcaacaacc aaatctgtac gtgttgacgt 1080

acgagtgtaa agatgtagtg cgttgtatct ttaactgaat tatgaagatt gaagaaaatg 1140

aactgacctt tcacttttca gagtttagct ggttttcact tgcatgaaaa ttgaaagata 1200

cacgtactta ctagcatgcg cgcgggttga ccgtttgacg ctaaagctag tgaaatggta 1260

aacccaatac ggtgaactca taatgcaatc atatgcaaga ttgcaagaac agttcagctc 1320

cacgcctagt cttggcgaga gacctaattc aacccttttct tttccttagt tcttcgacgg 1380

cgtgatcaat acctacaaga catgaccgtt gaaatggaaa aaaaaattag accatctttt 1440

gaaaaagaat ttctaatcaa atggggcact aaccaaagca attaagaatc gaaatcatga 1500

gcgacacact aaagatctca gtgtttttat tacagactac aataagctac aaaccaagga 1560

aacgaaacat tgattcagct agttacaagg tgtgttcgta gtagatcaat gtacagttaa 1620

ctgttcgtgt cgcccccgcg tggggcaact cagacgcccc cagcaaccct agccgtcgcc 1680

gcatcaccta gggtcttctc cttctgcgcc gatgcctgag tgggtcaaat aaaaagtccg 1740

cgcgac 1746

<210> 3418
<211> 2010
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349305_G1, chr10:144744437..144746446, Cluster 20

<400> 3418
tcttggtgtc acaaatcatt tggcggatct tggtcaagtg tgtgacagaa gaaattattt 60

aaggacgtgg atccatatac cttgaaagaa ttaggtttgg tgtcttcagg agttctcttc 120

aagcacttca cgaggcatca cactgagagc ttttgtgaag tgtttggggg aactcttggt 180

gtcacaaatc atttgcattt gcttgatgtt agtcatgcac catgtgatat gagataaagg 240

acatggcaac gttttgtgtt actaggagtt ccctacaagc acttcatgag accttgactt 300

aataaagggc cattgtgaag tgtttgggtg aactcttagc atcatgaagc atttagttat 360

aataatataa gttatccatg tgaataccat atgggataca cctttgaaca atgtttggtg 420

ttaccatgag ttcccttcaa gcacttcaca tgaggcacca ttcaaatgac aactccattt 480

aagattatgt gtaatgtgaa gtgtttgggg gaactcttgg tggtactcaa catccatttg 540

tgtcttcaag ttggtgatac tcaacactga tgtaagtttc caagaaccca acacttgaat 600

catggtttca acttccaaat tccatatatg catgtgcttc atgagcccta gatatgttta 660

ttcatttgtt ttctattttt gacactaata tatgacaata gctagatagg ttcgtctcta 720

aggttttttt tggtctatgt gcaaaataca aaagtatgcc atatcaccta tactacataa 780

aaataaaatt atcctaaatt ttattccact gtgtttatct aaatatttaa aacaaaatta 840

ggcattaaaa ttaaaatgta aagggtgtat catatttact gatatatttt taacttctag 900

taaagaggat cttgtgcctg atgttctttg aaatgagatc ttcaattaca tcttcatatt 960

taatcttctc tcgaacaaca tgttcaaata caattgttgt tagtattgtg catgtgggac 1020

ttgaacaact tcaattttga aaagctttgt tctacagatg caacaaaagt atgcatgcaa 1080

tattggcatt aggagaacaa tccattcgct tcacgaactt tagaatatca tgaggggtcc 1140

atgtctttgt tagagataaa gtattagaga aacattaact atatatatgc aagtctttgc 1200

cgccgacatc agaatattgg ccactcttta ccgtcatctc aagttgagta gaagaagaaa 1260

ataaactttt gttatctaaa gagcacaact catatgtaaa caaaaaatct aatgattttc 1320

tcataccccct tgatattatt caaatcttat agtcaatgaa gtaatagttt gacaaaaaat 1380

aggtaaaaat attgagggct ctaaaaattt ggaggtcctg tgtcgtcaga agaattttcg 1440

aatgtgggca tgaataggtt cggtgatgtg gcctagcatg cccacatcac cacatctgca 1500

ttctagaact tcctataatg tcctccttca aataatccaa gagcaacccc ctcccacctc 1560

aaaaatggtg atttttgtag ttctagaacc tccaatctca tcaaaatgaa tgggggagct 1620

tccggagaaa gatgatgggg gtggttgaga ggatgatttt ttagccaaga ggcacatgct 1680

aagggctagt ggatctgtta atgatatgtt aatggcaaca gtcgtactat tgtcgtctct 1740

atatattatc atattaaccg tggcagacta cttaagatag tcacctaggt taactctttt 1800

attggagatg attgtcataa agtgtttgac ttcgttaatg aactattgga ggtggattgt 1860

tgtctccggg cctttcgaca attaacgaaa acgacaccta ttgtgtacgc cttcgttaat 1920

ccctaggtag cacctgtaaa attatttaag tagtattgta aaagacaaat aaaaatatat 1980

cactattaaa aataaaagct tacttcgtag 2010

<210> 3419
<211> 1668
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349575_G1, chr10:146187975..146189642, Cluster 20

<400> 3419
gaaactcctc ccctcttttt cttcttttct tctgggggga agttttggga cagcaggcca 60

tccccccctg aagggcagcg agatgggctc tgaaggatgg agcagcggag cgggccggac 120

agcgccaacg gcctaggtca gtcagttcag aaaagaaggc cggactggac caaattgctc 180

ctagtgcaac gtcatcgccc gagcagcatg gaggttacct gtcactagct taatagacca 240

ccttgcctcg ccgctgtcca atcagaggca tcaatgacag cgacaggagg aaagtgatta 300

tatataacta gaaggtgaat aattcgtgat tgatgggcca tgcaaaaaaa aaaacaaaaa 360

aaactattcc ctcggttcca aattagaaat cgcacagatc atttatttcg gttttccaac 420

tggtcatttt tatggccttg cattgacgga ggttactaaa taccaattac tatgctatag 480

tcgctatatc tgatcaggtg ctggtaaatg ttgcaacttg caaactagtg aattttatgg 540

gtgttttaca tatggatttc aggatttgaa tatataatcg gaggtcgact agctttcatt 600

atgttattaa ttgcaaccgt ggatcacaat caatcaatca gtcacaccaa ccggcggcca 660

gtccctatac gccgcatgtg cctctcctgt acgattgatg gctgctttgc ttccctaata 720

aataatgcaa gccaagattc gttgaattgc aatcgatttt aagttctgaa cgagcaacaa 780

ttcaccaacc tttcttaatc ttcgtcacca acaaccactg cttctttttt ttttggcgc 840

gaaggaattc aattaaatcg agaaaacagt tacatcttta cattcaagtc tctcaacaat 900

aagggaatgt acaactatga gcctttggtt caatttttcc agtataagag agaattaaga 960

gacaactaat ataactctaa actcctaaaa cataaataca gtcaagataa aatatgtata 1020

gagagtcgtg tagagacgga cttttcgcga aaaggctatc tcttgacatt ttttcatttc 1080

ggccattctt actggaaatt tagtagcact cttttcaacg ctgccacatc atcaaaaaca 1140

caaggaaact atgaatgaaa caatgtctct caatgcaata tttcacttca ctatttcgta 1200

agctagcata ctaattaaat gtttgaactc aatggcaaat agaagttagt aaaatatgtg 1260

aagataaaac aaatcactct cagtggaggt ttcatacagt ttctaagacc ttggaaacta 1320

gttagcatgg tttcatcccc cataaaacta atttcatccc atgaaactca atcctattaa 1380

atgctatgcc atatcatcaa aaaatcttat gtgacacaaa caaccattgt gattagcctt 1440

agtcccctag agacccctta aaagacccct catttattta ggttgtatat gccctaagaa 1500

agatacacca taattactcg agagtccctt tgtaacctcc agtccattta tgattgtcta 1560

gttttaatat atcaaaactc aacaacgacc accattggag catgatcttc caaatcaccc 1620

acagccataa accgcaaacc ttgtaagggt tcggttccat atgaaatt 1668

<210> 3420
<211> 1495
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_36329_G1, chr1:219227845..219229339, Cluster 20

<400> 3420
gtctgaaatg aacctatgct tcttcggatc caaaatattc ctttcatttt aactgctttg 60

tattatggga gctattcccc ttgaaagata gagcctaacg gtacgagact aagtactcac 120

cgtctacctc catccccata tctaaaatgt cgccacacaa ggtgcttaag ataaatttat 180

caagttcctc ctcagccaaa tcattctctt ctttctctaa gacacgtgat agaccgtcct 240

gcttatttcc gatttgtggt ttcgaacatt tatagttaac taaggactcc actaatttat 300

gggcattact aatatctacc ggacaatcac tgattgtttt ctcttgatcg ataaattgat 360

tagatgtaac atgtaaggaa gcaaaaatat gttcgattca caatggttaa tttccacgcg 420

taggagtaaa gaggaatgca agtaaaacta tatttattat tattgaaaat agaaagatgt 480

atagaatgtg aatttaatag aaatgtcgaa attgttgcta aggacaaagg aaaaactcgt 540

aaaatggact aaaaggatat acaaacgcgt atatccattt gagtttcact tttcagcttc 600

gaaaatcaaa gcaaatccta aatgtcagtt taaaaccctt gatgcttgct tgtacaaact 660

atgcagttgt taattatcta aatattacat ttatatttta aaaaaatctt atgttatatt 720

cggacctcta gagataatag ttagctgcta aaattagttg tagaggttca gaagatctct 780

aaactaatat ctaactgatt attaattacc cacaactaat aattatttca ttagctggtt 840

caacctagct aataatttgt taattgtcta actattaacc ctagggttcg aaacatggcc 900

ttagttatgg ttctttctac aaatacctac atgccacgtc gaggagatag tccaaattaa 960

accaggtata cttgcgtttt ggtctagggt gtaattaagc ggatttattt gtggctagcc 1020

cgacaaatat gcagatttca caggttatta gtctgcttgc gtccctaatc tattcttatc 1080

gattggctgt ttctctacct attaacctat ccttagcgtc tagacaaata gatgatttga 1140

caggtcgtct ctcaccacca cctgtcaagc gacctacaca ttgtattgct tgtgaacttt 1200

taaatagctt ccatatcgaa ctgatacctt ttgcaggcac ttaacataaa gaggtaagaa 1260

tctcttcaac tttcttctct aaatttttcc cctatatctc attttcaacc ctataactgc 1320

cactattgtt tatgctatca ataatccctt atctatcata atactctagt acattgtctt 1380

tatcatcaac ctatagacaa acccgctagt gttaaattag ttcttttaca tacttctagt 1440

tggtacaaaa taagatgttt tattaaaata taaataaatc cgatacataa tcaag 1495

<210> 3421
<211> 1599
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3705_G1, chr1:19094032..19095630, Cluster 20

<400> 3421
ctaggcattt tccttatctt atatatgtag ttttcgtaca tacatatttt atatcatacc 60

ctcaaatgtc ttaattatat atatatatat atatatatat attagttttg cttaatttat 120

tgtccaaagt ataaaaatag gtagaggata gaaaaaatct atatatataa tgaagaagtg 180

cgttctatat ttatagaagg ctttaaaata ttgttgaatg ctatattgga gaaaatattt 240

tttatatttg aagtagagga gcctacagag tctggcgtta cagaccgacc tataatcctc 300

gcgtgcaata gcagccgaaa agccattaag aaagaacaga aaaagaaaat agaaaactat 360

tttctcggga cctcaagaag acaagaacag aacaaatgcg ttgcgacaat ccggtgttct 420

gcccatggtt tcatggcatg tgggaaatat ttccggtgag cggtttcagt tctcccttgg 480

actagatcta acgtgtgcac atcaacaatt aacaaattgc agagaacatt ttgttcttat 540

tccccagagc attcgtcagg aacagtgtcg agtagttgtc tttcatagag tattgacaga 600

ctaatgttta gtgattgagg caacttgtca gcaattttct tgggagcact ccaatggctg 660

ttgtgtgccg tctttctact ctctccgaga aacaacagaa acaagtacac gttgttgtgg 720

tattttatgt gcagaaaacc gagatgttcg gtctcaaact tatttttct gtccatgtgc 780

atgacacttt cttcaaaaag tgcagttcat gtgcagcctg atgcaaagca gtagtacagt 840

ataccctagg atacaaaaaa atttccctga aaatctgaaa aaaagtcaca aaaagctttt 900

ttttttctc atctgcacta gacagacgag gaaagaagag atggctgagc aagattcggt 960

cattcagagc aactttatgc atgcacctat ggctttccat ttttacgccg attcctaccg 1020

gactcgactt cggcaaaggc cggttttctt cctcgatgta tagccatccc tgaatataaa 1080

agatggtagt tgtatcacat gaaagtagga attgttttgt gttggcctca gaatataaga 1140

atcacatcat atgacagtct aggagcaata actcagcaaa aacccaaaga agtagcatct 1200

gtttcatcag tttaatgaat tagctcccaa actgtcacca gtttcatcta attttcatca 1260

tcagccataa aaactcagtt acagattcac agccacagag tcaaagtaac atattacaag 1320

taacagatgt tgactaacat attcagagta acagattgca ccaaaaatta cagattcgaa 1380

gttctctgtt taaatggtca gattcaagac cagggattac agatttagtt cgtcagcatt 1440

acaaatggac aagtcatcat ccaacccaac atactcattg tttggtatgc accaaaaata 1500

gttacatgac ataggaccaa agatcagtgc acaaataatt gaatcagaat gattagatta 1560

gcatctagat tagatgccag ttaggtccca aaccgaatg 1599

<210> 3422
<211> 2009
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3741_G1, chr1:19255581..19257589, Cluster 20

<400> 3422
ctatctctgt ctgtctggaa ctgccttctt cttgccacag atcatggacg gtactaggcc 60

tgtagcggtg acatttgagg gcagagcgct gtagctgcag ttgcggaaac tactgtgggc 120

ggccgggggg tatatgcatg ccacggcaag ggggaaaacc atgcaagagg agagagagcg 180

accaagatgc tcagcagatt tgccgggagc gtgaacgaac gaacgaagga cgaacacatg 240

gagttattag ctgtcgcgta ccccggacgc atcggccggt tgatgtgccg tcaaggtcgc 300

ggggcccgtg tttttctccg cgagtcccgt gtgctggcgt ttggcgggga cgaacggagg 360

aggagtcttt gagaaagaat tggagcgaaa cgggacgacg gcgagcgccg agttggccca 420

cggcaacggg accttcttct tcctggagcg ttcgaagcag ggtatcggaa actgagctag 480

cgcgctcagg aacggccgaa catgtcggtg tccagatgga ttgctgcgct gtctcttgcg 540

cggcgcagtt gtcatgcgct gtacgctgct cttccagcgg gaagaccggg ctggtgacgc 600

gtagagaggg ggggctgagc tgttcgtcgc gcatctgtgt ggcactctgc tgtgaccgca 660

atgcaaccag agccagccaa ggaccaccac catgtcggct cagctgctct ggtgccgacc 720

tggctccagc agccaacaac ggctgggcaa gttccgaact agtagtcaca aagttggtcg 780

caacgcgcaa gatggtgttc tgaatgtact tcgggcgtga catcttgtcg tccatggagt 840

ctacttttcg ggacgctccc tgcaattcta tctccaacca attcttggaa agtttaagcc 900

tcatctagtt ttatctaacc atcatcatta tcatcatcat aagacgtacc gtgccaaagt 960

acctttaagg ttcaagtttg gattaagtca gtcaaaccca tttaatttcg ttcgccgtta 1020

caataaccaa cacgaacatt tatagcacca aataagcaca atatttttt aacaatatat 1080

taggttggta gtctaacgtt ttatttggga cacctccagc tccattaaat tcggtagagc 1140

aggtcattaa gtgctctagg aaaacgtgaa actggagatg taagccttta gaaaatattt 1200

agataagtcc ttttatttat tatttagatt aaaaatattt ttgaaactat ttaaattgat 1260

attataaact acagctccac agtggaaaac tgtaacctag agccattcta aacaccggct 1320

aagggttatt tgctacaagt ttttatatat atttaaactc ttgtctgaat gcacatatgt 1380

ccacctcaat ccacatgtgt ttaaagatga cattctcaca aactttattc aaacaagttg 1440

acatggtaat actatatgtt gtttttcact gacgattaga ttgcttaaca tctttcctaa 1500

taaataatat caaatatatg ttttactatt gttggttaca agtagtaaaa aaaacaacaa 1560

atcatagaaa tgtgttagtg cacaataatt aaacagtttt aataaaatac atttttcttc 1620

acagtttcct attatgatag agttaagtct aattgatgga agtttataga tatattttga 1680

ccagcttcaa atctttttt ttgtttctca tgtaccaata tatttgtagc attttcatac 1740

tttttaaaaa gtctatggac cttatgagca ttatagtttt tttggtttac gaaccatatg 1800

cgatgtttaa actattttaa attaaaatta tgaaatagtg tttaaaacca tttatgaaga 1860

caagtgtgtc atttagtttc tttttagagt taaagagatt ttttaaaaaa aattaaagct 1920

catgaaggga aactagacta tggaaataat ctagaaagac aaaatgatgg tttgattcct 1980

tcgttcatta tgacattatt aggcctgca 2009

<210> 3423
<211> 2299
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38311_G1, chr1:229562916..229565214, Cluster 20

<400> 3423
attttcttat ctttctgttc ctattacaat gatcgttggg aacttatcct tctccaggtg 60

tgaaaaatcg gtataactaa tttcatacag tttgtctttt tcttcattgt ttcccaattt 120

cacacgtcac taaagaaata gagtgattag ggggacttgt tggtgaaccg tatgtggtac 180

gcctgtagct tgttgtttat gcttgacata tggagtcaaa tgatttatac gttgtcatta 240

ttctgcaatg ttctgtgcaa gatattttgt tgtgtagccg attctagagt actcccgatt 300

ctatattgaa gaactaaatg tcggacttcg tggcgtcgcc accttctttc ttcacgatgg 360

tgcgccctgg cacaggctgc tcatcgcttc gacacccatc cgacaactgt ggaaattgga 420

agttctaaaa aagagagaaa tgtggaattt ggaaattgca atctgcgttt tattattgtt 480

ttcactagat aagtacttgt atcatgtgcg ctatatgttt tagcagaaat acaactttgc 540

ctcattattc ttgtttttt gccacataat gtttccttca agagcttaat aaaccagtca 600

atagtatcgt ctgttatgtt atttatttct tacataaaaa ctccccccct tcataggtac 660

aatgaagatc gaagtttcat aaaatagagc catggaggta tagttgcaga gtaattgttg 720

gtcaaaagtt ttccctgttg aaatgaaaga taataattat ttctaccttc attctctttt 780

cctattattt tggagattgc attgtatgca gtgcattcgt tattctttc ctgattgtta 840

catgttacaa atattattga tgtacaaatg atgataaaat agtttgatga taaatcccta 900

ttattatttt gatgtgataa aagtataaat gctttcatgt ataccagtgg ttcaagtttt 960

acaatgtcga ctacacactc atttcgagac gatatgtaca ataaaatata ggtaggtata 1020

atttgtaaaa ctgtgttgtt cgtgttacta tatggtattt tacttttgca cagataccat 1080

cttatcaact acatgttaat tgatattgtc agcttccggt gttggtaggt gtgagatcag 1140

taatggaggg tgccgttagg aaactaaaga tgggaggaca atttgtgcct actcaataag 1200

taatgttgtt ttgaaacatt agttttctac ttttcacttt gtttacatta ttaaaactac 1260

tttttaagtt ctgcataaag aaatatctga aggttgtaaa tgtctagtgg gtttcaaggg 1320

tgatggagaa gaagtcttga aggtaccatt cggaaagtag ttagtttaca gccttgaatt 1380

tagcattctc ctgaaggggt agaaattcat tgtatcttta tgtagctcta tggtgtggag 1440

caagtggaaa gtgctgtttt gaatggtgga taacctcgta atttttgggt cttgaatatg 1500

ttccaaagta catgccccat attgtaccat cttgaggtat ccatttttgc tacttttta 1560

atttgatagc atttaataat tgtttgtttg aatgttgcta ttgcgtagtc ctttaaattt 1620

gttattctat gattgaattc agactttaag tgaactttag aagtttataa ctatgaccag 1680

gctttagttc caagctggct ccttggcgct accttacact aggctaggta aaggtgaaat 1740

catttgattt cctagagatt cggctgctga agcctgtgca aaatgaagtg actaaaatat 1800

ttatttacta gagggagcac aaagatgcaa tagtaacctc cagagctagc aaaataaaca 1860

atgctgaaat ttggtttaac acttatagaa tgttaggtgg aagtccatgt agttttgttg 1920

tgctcatgag acaatacact atgttggaca atgaatacaa gtgaacccac tatgttgaaa 1980

ctcaaatgaa cctccaaata ttctcataaa aagtgcacct actttgtagg aacacagata 2040

aattataata gtacaaattc ttttcttttt cttttggcaa cttgaataca tgttcctcat 2100

tttacgagat actagaatac ttagtttgtg ttgtgttaac gagagatcat catactaatg 2160

ctggttgcaa cctgtgagga caaaaaggtt tgaagtacct tgtttcccct ataatggatt 2220

ctacctaact cagtagagtg aatctaagtt cagctttgc atattgaact agattagttg 2280

caacctctgt gccaaacta 2299

<210> 3424
<211> 2305
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40351_G1, chr1:240481019..240483323, Cluster 20

<400> 3424
acctcaaaac atatcttgca atcgaggaaa aagatccatt gttctcccgt aacagcaatt 60

gcgccgctga actgcttcgg gctccacttc acctggtgcg aactgccctt tccagtggga 120

aggttgggct ctttgctaga tctctgctac atgattctct agctctgaga gctgattttc 180

taacagagtg attctgaatg attctctacc ggaattgaat ttatttgacg aaaactgtct 240

gacaaatagg ttgtgaagtg atttttgagg ggttaaagag taggtagcag attgggagtg 300

ctcggaaact gggtttttt tctcccactt tctaatacaa agtagatact attcactcta 360

ctcctaccat gaagcagttt cgatttttat cgtttggctt ggtagaagtg attttcgctg 420

tgagggagct ctgctaaacg gcgctaaaac atacaatagc gggggaaaag cctgtctcgg 480

ttaaaaacaa tgtgtatatg cagagaaact gtcattagtg ggtgcattga tcgtaaaaat 540

aattccatgg gattccggtg gtccagtatc gtttattcta ccgggctcaa aagaatgtcc 600

tatgcaaatt gtagaattcc aatattgttt ttttcttccc ctatggcata aagccaacgg 660

caatgccgag aaacaagacg acaaataatg tttttgacgg tcctgttttc tggtctgcca 720

atgctcgcta cgctaggggc cacttgggat tttgtaagaa acaaggagag attcttttat 780

ttaacatgct tgacgcacgt aaatacggac actagaatag ctatcgatct atcatttcct 840

tcccaatgga gagtcgacac gacacgtaag gagccatggc catcgtcgaa agagaaggac 900

gtttggttgg aggggcacca aaccaaagcc ccccaactgt tgaaactggc aactcaatta 960

ttggtttcgt tcgtgctaat aggggttact gcatgatatt acactgctag ggggctctct 1020

ctccctcgtg cttagctgct gctggccatc tgaaagtagg cttcattatc aatgtggggt 1080

tactgcacga tattacacta tttcctgagc cacctctaga tgagcatacc ttgtatgtat 1140

tccatccatt ctaaaacagt agtaagatgt tctgactttt ctaaataaat tacttttatt 1200

gttattatgc atatttattt atttatatgt agcataagct ataaaaagtc aggtctaata 1260

cagtggtgag cggagtcagg ccacgggttt gaagtagtct cttggtattt acaaggaaga 1320

cttaattaat tttgtccctt tcttagattc tactaacata acatgggagc ctccggcata 1380

agctttgtat ctaaaaacaa aacgatctta taatttaaaa gggagggaat actatctatg 1440

actccttagg gcagtgtttc ttaccttatg tctgcaacta gtagcttatt agatgatggt 1500

acgtatatgt tcaatcaatt catggtcagt caaggtaaag agaagagaag atgattacca 1560

tgaactgttg gtacgccaac tttgcgctgt tgctacttac actgcgtgcc tcctcccccg 1620

cccccgcaac acatgcccaa acagtcagtg gatgacccat acgacatggc cttaactctc 1680

ctttgatctc acgagcaatg atgtcttgaa ggggatatga tcactccatg catgcctctg 1740

agtctctgac ggcctttcta ccatttcggt gtccccaata tgggagtcac cctccttgcg 1800

atcaggcttt cgtcttttgg gggcttcatt ggtcctgtaa tagccaaaac ctggcgtcac 1860

ctgaaatttt ggctgccatt tggtttacca ctaaaattta tcgacacctc atgtttgcca 1920

tgttaaatct gtgctgaata tatttttttt gtacatgtta aatctatgct gaatactgct 1980

tgtagcataa attttggtag ccagacatat atatatatat gcaggttgct acaaatccct 2040

cagagcatgc atatgcaggt tgtctctcca gtaatcaaat ctcaacgact tttcctttga 2100

caagttaggt tcagggaaac aaacagcagc ttttctttta caaataaagc ggctgtacgc 2160

gttcaaatgg tgcaaaatag tcaccaactt tcgctgtccg atcgaagcaa ggcttgcgcc 2220

ttgaaggcca ccacatcaca tgtatgctcg ctcacaaagg atcggaggcg cttcacactg 2280

catctgcagc taaacaaagt catcg 2305

<210> 3425
<211> 3381
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41706_G1, chr1:246678566..246681946, Cluster 20

<400> 3425
taatagtcgg tatggtagtg gcctaactct ccatatggta tgtaagcctt ctatcgttgc 60

tcctaactct aatcctcctc gggggcacaa ctgcaccaac actttctctc actcgtgctc 120

tcatccctaa ccctagatcc caaatcatct cctttcttga cgatggcaag gtggtgactt 180

atcatcgtca tcatgtacac gcttgtttga acatctatat tctcttgagt cgcttttTat 240

cctcctctca ctagcttctt tgcccttcca ttcctaagcg gtgggtgtag tatgtgttcc 300

tcctcccagt gttcctcaca tgcgaatctg tgctccgcct acgcatgtga gcttattttc 360

tcacatcaat ccctcctctc acacaaacct tagtatcatt ttccctgatt ttatgtccat 420

atcgtagatc ttaacctatt tttatttgct cgtgcattat aggtgtcaat ctttgtatca 480

tgccaatgtc gcatagccat tgatgaacct tacttgctga gaggggccga ataattagtt 540

gaggtgatgg actttaatct agccactgag gaggagtact gactctagga tcatatcgag 600

gatgaggatg cctagggtta attgtcgaga agcaaccgga cctaggagat aaatcattat 660

acgcatccac ttgcatgatt cattccgatc attatcacag tggcatttac attcatattc 720

ttggtttgca tggtagttgc ttgagtatat gtagaggaac tcatgttaac ttctttttac 780

atccctagtt agctctcgag ttaaattatg tagttattaa tttgtgtgtt tgagtaatat 840

caacatatag acttagcaac tagaattgtt ttaaggggggg cttgtttatt gtaaaataga 900

ggtggaacaa tatatatttt caccgccata ttcatcaacc tttgcaaaaa tatttcgtga 960

tcttgaaaga aagttttata ggctatctat ccccctttag caatctagat cctatcatca 1020

acattgcata ataacatatc taaacctgca atataatgac cctgtttgac aaaacttatt 1080

tttagcttct tcacagattt aagcagaagt tgtgtcaaac tgacagcttc tcaagcagct 1140

tatcagttca gctgcttatc agaatgaatt aaaagcagcc aacaaacaga agctgttttt 1200

caccagcttc tcatataagc tgcttttcta accggcagta gcccatacta attaatttta 1260

tgatgtggag ttgatgatga tgtttttttg tgatctccac tggacttgta atctatatgg 1320

aatatatgat acggacttgt aatattattt aaatatgtgt tacggattta tgatggtgtt 1380

caaatatgtg ctccgaactt tgtagcatcg ttctagtatt tgatttaaaa ttgcatcctt 1440

gaaatctgta tctgtttatt tatcctctgg tgtgtttttg ggcgccgaac taatgggtgg 1500

catggtcctg tgatcctgtc aaacacgtcg tcgtgctacc agcctagtag cacgatagga 1560

aaaatgatct tacgtgggcc atgaaaacag cacgatatgt tggcacaaca tgcaactgtt 1620

gtcgtgcata tagctgaacg cttttcatgc cacgtgctag tcgtcgtgct atatcaaacg 1680

ggatatctac aagaaaagat agggccaaat gatgtgccta gctactagct ccctcgtgca 1740

cgacaaccaa tattaaatta aaggccctgc atgcgcaatg caatacgtcc gtccgtatac 1800

tgatatatac tccctctatt ttggtataag tgtactttta aaatctattt ctagagttta 1860

ggatatgttc taaaataata tatatctcta aacataagat aaaataaaac taactccagt 1920

ttttttatc gaattgtagt gattatattt ttacaggagg gcatgtatat ataatgtcta 1980

actaatatta ttctttgtac tgtttttta aatcaaaact gatagaagtt ccttttatat 2040

cttgaaaccg aaagagtacg tgtggagact gaaaatggtg tcaggtttgt cgggtcccat 2100

gctgcgtcga tcgagtggat ttggattgcg agactttctc cgccccgatc ggatcagagc 2160

ttccacacca caagttctca ccgagtcacc gacaaattaa agcagctttc ttatatgtgc 2220

tttgtttgct cctgcgtcga ttctaagcaa cctaattaac ctgttttcgt gtaagaataa 2280

agcgatccgt atttttctt aataaaatgt gtacttaaac tagccaccac cgcatgcata 2340

cgtactgctg acttatctat atgactgtat gtgtcaagca tttcgatcga tgccagggct 2400

caggacacag tggcaggcgg cataaacctt ctgggagagg agaagattgg tcacacattt 2460

tgactttcaa tttatctgtc acgagcccgc tgacagctac gggtctgcag tggcaaaacg 2520

catcgctttg gtacaccggc gatgacgatt gagagtattg acgaagtggt acgttgctga 2580

ggacacggga ctactttcgt atacaccgga caacggttgt catctatttg cagctcattc 2640

acttgatggc gtacttacgt gtcctatgag gtcaccatga gtgggtgtta gatttgtagg 2700

aattaattta tatagtctat ctattttatt tcattttagt ctctataaat tattaaatac 2760

gtacattaaa atggtaattt ataaagtaaa atagaataaa acaaagggac agaaaaatag 2820

tctcaagaaa ccaaacacct tataatacta atggcttcga tgacgaccac aactaaaaga 2880

cagaattact tctacacagg ctattttgtt tgggccgtct ctacaatgcc acatagaata 2940

attgatcttt ataaacatgt tcttagacaa agtttgctat ctagccacct tttataatta 3000

actctaccga gacggttagg tagcaagtcg tctctggttt ttgtaacatg tggtatataa 3060

ccggcctcac tcatttcgcc tctacctatc tcaaatcctt acacacacca ccttctcgac 3120

tccagatcga aaaaggttta tgtaggccta gagaggtgaa taggcttgtc taaaatcaaa 3180

cttaatgcaa cgatgtaagg ggtggttagc gactacttct cctaacttat gtcctcaact 3240

tgtgccagtg ttgtccatat ttacttttga atatgataat tctagctctg agtcatggat 3300

tcgcttactt catcgtccca tcaaactttc agatgtattc tttggactcg gcgtttgtgg 3360

gcctactggt tagttcttga a 3381

<210> 3426
<211> 2725
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42258_G1, chr1:249325922..249328646, Cluster 20

<400> 3426
cgtgtatact ttaatgttcg acccagacct agggtttcaa aatttagagc taattgaagt 60

atcaaatcca atgagatttt taaagcaagc tgttcaggaa atataagttg aggtttcttt 120

tctgaattgc tgtcatttat ccttgcaaac attgcaatgt ttctcaacat tatcatgtgc 180

attgcttatt atcttttgtt attatcaagt gtcacgcaca attattttaa ctgatgggaa 240

gaagacgtct acggattaca gcaaggaggg cgatgggagg aaaagaacaa atgaatcatt 300

atttctttat gatgagtggc attggtagat aattaacttt aaactccaca tttatatatg 360

aaaacaagtt ttgtgaagta tctcttttat tgctctacca aaatagcgaa gttcactcca 420

actccacgtt atttttgtgg agcagagttg ctgaagttta attgtttga caagcaaaac 480

gtggagcgga acagcaaaaa taaagtgggg gcagttccaa acacccccta atactctcct 540

atgttaccat gttaaatgtc aagctataaa ggatgaaagg agaaagctaa aaacggatgt 600

gcagtcaaag cttctcatga aattaaacta ctaagtcata gcaatttatt aaaaaacaat 660

agatgtattt tattattaaa aaaagttaag ttacatgtac caaccagttc aatctgaaag 720

ctcttacttc gatgctctct taggcacctc agatgtggaa taaaaacgag caataattat 780

ttttaattaa ttgtgctaac caggatttaa atttgagatt ctgaattgat gtcatattaa 840

gttgtatgca ccaacaggtt caaccaaata acttagactg atggagaccg gtggagaatt 900

cacttgtatt ttcacgaaga aaattttatt ggtagaattt tctctttatt atatatatta 960

atatatgatg aattataact tgaaatctag tatattggta gagtaaataa taaagtacat 1020

ctatattttt taaaaatatg atttttggta gtttgatttt aaggtgattg cacaagaaga 1080

ttgatattac aacatttttt cctagcataa gtaccacttg ttctaggtgg tgctggcagc 1140

ctagtgccaa ccatttgttg gtgataagat taagatagta ttagatacca atttttagta 1200

ggtcatgtac ttgtattcag tactcatggt cggacctata tataaattca tttctatatt 1260

ttaactccca gtgaagtatc ttaaggagtg ttagacatca aggtgctcct agccagttaa 1320

aaaaaatcaa ctcctagtga agtatcttca ggagtgtaga catcaagggt gctgccatac 1380

aatccaagtt ttcattaagt gaatgcaagt aatattatca catgcaacat acactgaatg 1440

tcaagcaaat agatgtagcc tacttctatg ctactatggt attgtagatg tgtatgacaa 1500

ttagaaggta ttcacacaga tagccttcga agatattcat caaactcaaa catttttaat 1560

cagtttaagt ttatatgatt agatctatac aatatgttct tcttcttatt cttttctatg 1620

aacaaaccat cttctactgg attcacagga agaacacata gcacaacctt agtcaactcg 1680

tgactcgtca actaagagga agaacaagag ataatgcttc ttgataaatc tatctacaac 1740

tgtttataga atgatgggga acaatctcta caactagcgg aatcatagaa agaacatgta 1800

ccacaactat agctaactct gtggattcac tggatgaact agcgacattg cttcttcaaa 1860

actctacatc tacggctacc cacgggatta cgaggacgaa acataccttg cagggtcttt 1920

tgccggacct tccttctaga ctgtcgatgc tgctaccgtt gactgatttt gtcgagtctt 1980

gcttcaaatc tgatggggcg tgtctttctt acacgaacgc ctccccttta aactccctag 2040

acgacgcttc gaagccggca cgatagacac aactcatttc accttctata gtttagtacc 2100

ttctccctca ccgttcttga actcacgagc aagaaaaaac aagagagaga actttatctt 2160

gtctaaccca acaacaccta atcgccattc acactcacct aatctatggg tttgaatcgt 2220

gtttaagtaa ccatctcatt taagcaatgt ctatctattg atatatagaa attgtaccga 2280

tggtgcacgt gcaactaacc attactttat aaactatcaa acttttcaac tatttatatt 2340

acaatttttg aatattttga acttattttc caaatctaag acttatttta tttatgtttt 2400

aaacgtaatc ttcaaattta aaaaatatcg tgtaattaaa tgttactgaa ttgtcaaatg 2460

gtttgatcaa atgtatatga aaattttaga tggcatatcc tatagtgaag ttctagatct 2520

atcactccaa gagatgttac gtcaaatttg tggtgacgtg aaagaaagag aaatgaggag 2580

aggagagtga attattcact agtagccatc tagagatagg gtgctcacag actcaagaga 2640

ttttgtgaga gaaagatgtg gactaaatat acagcttata tcatgaaaga gttattatat 2700

aactaggttc ttagttagct atatg 2725

<210> 3427
<211> 1650
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42928_G1, chr1:253112190..253113839, Cluster 20

<400> 3427
tggaacatca tatatatatt tgcatgcgtt atggatatgt caagttccaa attttgtga 60

atgttcaaaa tacattttta attactttac atgattccac ctattaggtt ttctccacca 120

tatatttggc tggtttaagg gctcctcatc ccgtcccttc aatctgtgtt ggagatgcac 180

catcatgatg gatcctactg atctttattt actctttagt agtttttgtt gaggtggttg 240

gataatgtag tataaagcat tttggtgggc aatctctttc ttctcttcct ctttccccaa 300

gtgatggtag acacgaccat gtatacgata cgccctccgc catcgacaat gttaaacggt 360

gattgggatg agtccaggtt ctacctttag tgtggacata tagtttataa tataaattta 420

aatagtttta aaaatatttt taatctaaat aataaacaaa atgatttatc aaactgtctt 480

ttaaaggttt acagctctat ctccacgatt ttctagagca gctaatgatc tactctacca 540

aattctctgg agttagaact atcccaaaca gtacagattc tgaacaaagt tcttttgtga 600

gtaaaattac gggattgata ttttgttggg gaaggttcaa atttagtaac actaaaaagg 660

acttggttgg gagcaaggat attggagaga attagagagg ctaaaatctt cttgctattt 720

aatttggata gcaagaaaat tttagtccat ccaatctctt taggtatttt ttctccaaac 780

aacccataaa acatatacta cctctcccac ctacccggcc acccaaaaaa atgatgattt 840

gtcgttagga cccaaattta tcccacaaac gctcaatgga actaggtttg atctatgtca 900

acttgatatt atggtttgta tgctcatttt tttaattagc ggcttatttt ctagttatct 960

tggatcacat ttaataaata gggatacatg gatggtttta attgctcact gatacataca 1020

tattaattaa taaaaatctt agaacatcaa gtgttgtaag tgaatactag catattaggc 1080

tatctccatc agcttactca tcctcgtacc cgtattcaaa ctctagtcta caaataatac 1140

aatctactac aaaacagtgt tttaaacaac tatacgaggc ggccctcaat acattaattg 1200

ttcgttatat atgatcatgg cacccaacgc acgtaggatg catcttgtag tgatgagagt 1260

aatcgtcaaa attcaataaa acttcccttt ttatcgaaaa acacatatat gctgcgcctg 1320

cgagcaacag ttggagagac gacgttagtg ctatgctgat tccttgctga ggcaacaaaa 1380

atcaatggtg gtgcagtggt ctgtgcggtg agccgtcaca gttaacttca aatcttcgat 1440

tcgatagcac gttgggcccg tccctttgac catgcatcca tcctccattc atctttgatg 1500

gtgggccatc gatccgtccc acatatagat catgccatgt tgtagcacgc agcctgtcga 1560

gcgagtgcaa atgatgaggt acgtgatcta gggttagaca agataaagtt tttttctctt 1620

tgtctgaaac acggcctatt taataatgtc 1650

<210> 3428
<211> 2963
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43577_G1, chr1:256469704..256472666, Cluster 20

<400> 3428
gtatcttttc ttgcgtgcgt gtcctgcaca tagacttcca ggatgcggat ctggatcgga 60

agctgctggt tcgtcgacat gcggcttaaa ccaatgccac gattagcgcg tgtttagagg 120

cttcttctaa tctaatcgtg tgtgcgaggg caacgtttgt ttactcgagt cgtgatacgg 180

ttggtgttgg tagggtttgg gcgtgatggc acccgttggc gacggagtca cagaggtcat 240

cttctttctg atggcgatcc tcaggtttta tcctcacaag ggaaggtctt ggttggtggt 300

ggccggccac tgtcggcgtc tcggattgca catcaaccaa gtttgcatca tggagatata 360

tgccatgcta gtttaccaag tttatcctct acttttcatt ttttaaagta gacatcatcg 420

cagaatacaa tgtagcatgc atgtagagga taaacttttg attttaaaag tagacgttga 480

tgatagaaaa taatactact aataatagat gatgacattg agagtgtaaa tgactaaatg 540

tgcatcggtg ccggtagaac caatgggttg gagattataa ttttttttgtc ccttatataa 600

tgctgttttt gttgactgcc taacctaact aaagccgcta gctagcgtag cgtctaatca 660

cccattccca tttgcattca gagaacctag aggccgggca gagagaaccg gccggtacct 720

cttcgtgcgt gacagatggc accaatgctc tccatggtgt caaaaggcca aaaggagaca 780

acagcagagc ctacggggga tggtcgaggt ccacttgtgc tttagcttgt actagtgagc 840

taataaaaat aaaaaaaaag caactgaaac cacgtagcga cgatgcaaaa tataaaatag 900

aaacttcttg tgccgtccaa acacaaacag aaacggacgt gaaatacgac acatatgctt 960

agcacatact agtagtagta cagtacagac agtagacgcg agaagaagaa gaaaaaaaaa 1020

tcgagcaacc agtcgatttt gccaggcgag caaccagaaa cgtcccgcac tgaattcaaa 1080

gggcctgaaa gcaacatctg ccgcctcttg ttgtctcatc aggaaggcgt cactgttacg 1140

tcacagcggc ggaagaataa tctcgttatt acaacttgta taggggagta ttttgtcgct 1200

ccaccaaaca aagtagtacg acaccaattg cccatttggc attttttttg gagggctcat 1260

gtttgatgga tagaaaatgc ctcaaaacca taataaacat tccaatcgtc tttgctcgac 1320

taactattta gtttagctac gaaactcaat cgagaagcta gcttggctta aaaagaaact 1380

cgtgtttgca cactgaattg ttggacatgt tcttttattt tctagttttt tttttgtatc 1440

tattgctggt gctagattta taattatata catcttatat ataattgttc ctagcgtgta 1500

ctatgtgtgt tatttattta aaccatcaat ttctactata ttaaatctag agactagcta 1560

agagagaatc tgtctataaa taaagtatca aatctgctgg ttagattaac taagttatct 1620

ggagggacgg ttatagcttc aatagtatat atgtcttccg gttggctaca tagcgcgcgc 1680

ccatacacca aatcagtggg acacatacac gcaccatgat tgcaaaacta attaagaaaa 1740

ggaaggctat gagagggaga taaactaaaa ggcaacacag gaaaaaaaac gtggggataa 1800

gatatcgata caaagaaaga ttggtgaggt gcggtcattg ttgaagccct aagccaagag 1860

aggccgttct aggtccacca actggttgtt atatggagat ggagaccatc catccatcca 1920

tttatctacc tatccaccgt ctgccgtctc cgtatctagc ctggctgccc catccatcca 1980

tccatccgtg ctgctaacca aaacgcccac tcccaacctc aatgtgtgcg tcgctagcct 2040

cgtgcgtacg tggcttggat ttcatttcaa gagctgttta ttttctctgt ctggatcaaa 2100

tttaaaatca atcatccatg cgcggtttag atcaagagcg ttatcatcgt ccgtaactgt 2160

aaagcgccca acttgttcat cttatagttg tcagtttaat cgccagacac gtcggggtgc 2220

tccgggctaa actttacttt tgatggatta tgatcttaat taacctgtga ccttttttgtt 2280

tcgatagaaa catatgctag ccacgagtcg gcaacgaaag aaaaaaaaaa gttttgccat 2340

tgtggttagc tagctagctc tgtagcttgt tgttgtgtaa aggagcgatg gtgtgacttt 2400

tacctgaact tcgatggctt tacttcttcg gaccctaaaa agctaacgct gtggaaattc 2460

ttgtctaggc attttgacgg aaaagaaacc ttttttttccc tcataatctt gtcaaggaat 2520

cttatgatat tctcttgaga gaacaaaaaa ctggaccagc attattacct tttaggttgg 2580

cggttggacg catgatgtgt ctatttgctt ccataactcg caaataaaaa aaggcattca 2640

aattaattaa agtcaactac ttattaatta aagttaattt aacttcggtt gagaactgtt 2700

tgtctacagc aggtgatggt acgcgtcttc gctgaattgt tagccgaaca ttgtcgggga 2760

aaaaactgga acatttggtt ttaatttact ccaaaaacat taccatgacg acaaatgtgc 2820

ccagaaaacg aacagatatc taaaggcatg tttgattata tacttgaggt gccaaaaaat 2880

tgtcacatat tttatgtcat acttgtataa gacacctatt tatgattaga cgttcaaatt 2940

ctacatcata atttatcacg tct 2963

<210> 3429
<211> 2078
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44137_G1, chr1:259300048..259302125, Cluster 20

<400> 3429
ttaaaaatat gtcctttaat ttgtctctat gaaagtttcc gcatttgaca gcacgaccct 60

ttttatagat aaaaaacgca tttcttttgt catattaaac agctatttaa tttaataata 120

tctggacagg tcaacagtgg gtgcttgttt gttttatttt tgcatacatg taattgttta 180

gtatatggtg aaagtgctaa gacattgcta gtgccaccaa cgtttggtat tcagcgagat 240

ggtgaagatt tgaaatggtg agaaatatat ttttttctaa tcttctccca ttggtgcatt 300

tacaaggtaa agttattgga ccatctttca cttcatggtt atcatctgtc catctggact 360

taacctattt ctcttgtcac tgttagctgt actgtctcgg ctgtcttgtg gaaatatatc 420

agcttacaaa aaatgattat atgctctggc atgctcttag tcaagaaatg tttctctttc 480

tgagaccatg tttaacagac ctgtaacaaa taactttgtt ggattggtcc acatgcatgt 540

aaccgaagaa gctgcaattc agagattatt cagtctttcg acatgcagta cttcaatcag 600

aaaacaaaat ggtgctagaa attttctgca aatattctta aaactcatat atttacctat 660

ttaccatgtc tggatggggt aaacattcgt agggtagcaa cctgcctaac tacttattta 720

cacagatgac tcaagaagtt aatggaccat atcatgaaac aaaaacttga tctagagaac 780

gaaaagtgac aactgcctaa tcttagtgtg cttaccctgc atgactgaaa agacgcaaag 840

gtctatgaga attaggccat gtttgaacac actagagcta ataggtatcc aaacattccc 900

ctgaggtatc atctccatga ctgaacagac actactaagg tattgctaaa ggcccccagt 960

gtgacttcaa caatagagaa ttcagttcac agttgaataa acaaccgatc accagcgcac 1020

gctgcaaact gagacaatcg agctgtctga cactcttaca tattgacaat ttacttatat 1080

accgagtcgg tcagcggtac cgtttcttcc ttttccatgc atgtttcgca atcgctagct 1140

ggccattttc agagtaagag catcatgaaa cggatcaggg ggggattccg tatacttgta 1200

cttgctcaac gctgacattg ctatggcttt cagcagctca gatgttaagc cattggttgc 1260

aacttgctcc tcctgatcag ttgcagcttg gccctgctcc gtacaggaag gattcttagc 1320

ctgagcccta cagctataag cccgggagag agctgtgctt gaaaggagat gtataaaggt 1380

cagttgttta tatcaggtca gtttaatcta catcctgaga ctgagagctg tattcatcac 1440

tagatcgaag acttactaac ccaaatctga caaatggagc gactccattc agggcctgga 1500

gtgctgaatg ttttctgaaa acgacagtcc actgagccac actcaagcgt cgagacagtc 1560

atgtcatgtc caagcaaatc gttcagctac gagcctacga gtacgagaca gttacaccac 1620

gcccaagcat aaacgaccat gcgctagctg cttgttccgt gctggtagct ctggtcctgt 1680

tgactgggct ctgatcctgc gaccttcagg ctttcggctg tctgctgcgc gggtttcggg 1740

agtcctgaaa tgcacgcacg ctccaaatgt cacgctcgat tcggcgagaa gactctgtcc 1800

actatacaag gagggtgcca cgggcccacg gcacgtgaga gcactgcatt gttcatggga 1860

aatggcaccg atggcaaggg acatatatat acctctattc gttctatgtt cgtcctataa 1920

ttcagcatgt tttcaaactc ttccaaagtt tgtgcaaagc gcaaaggtac ctttagaggc 1980

tgtttggttt gctacataag gcacaccaca agtctagttt ttattctacg aaagttttgc 2040

atcatatatt gcaatcctat tctagcatgt aaattcta 2078

<210> 3430
<211> 1696
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54353_G1, chr2:13704033..13705728, Cluster 20

<400> 3430
gagttgattt attttgatac agagggtggg atggagtacg tagttcacaa acacgatgga 60

cgcagatcta taataatttt gttttcccat ctcacagctt tttgagcatc tctagcatta 120

gggtttcctt ccgttttacc tttggcgatc tgaagtgcat gcaccgtggg gctgcatggt 180

cggacccact agcagaggga ctggcgccat tgcgtgggtc tcacttcgtc ctcaagttct 240

cagcactacc aagcgcaacc cattctcgag aaaggcgagc tcctgacatg cacgaccatg 300

gctgacaacc tcgtcgagtc accgactcac cgcctaggct tggaggttta tcctctattt 360

cggtttggag gtttgtccct ccttagtgag cagtcaacta tgttgttagt tttgtaaaat 420

cttagtccta acctcggtag aggtgaaagt tggattttgt tttcgttatc taaaaaaata 480

tacacggtct gctgtcgaca gccttagagt gactcacaag tcccctctct atagtgactc 540

attagccgtc cttacaatat ctggcggtgg tagcatttta tcctaaaatc tttcctaagg 600

ataccatttt ttaaaaaaaa tacttacctt ttttatggta caaattctgt gatcgatcta 660

taggtgtttc tcttcctgat ttggctagcc ttactatgca attagattaa taacaaaaac 720

actgttgtaa gaaactgtag aattaagaag ggcgatagat atgcatacat accataatcg 780

tatatatagc atgctgatca tggaataatc atatagtatt gagatactat tgttagtgtg 840

ttatttagag ttagtaagtt tcagttgagt atagattttt aatactgctt atatcatata 900

taacactaac catgcatggc tgtcgtacga tctgtactta ttgttataaa gttgcatgat 960

tgcttgtcat attttagtta cataaacaat aatagtgaaa ctaacgcaac ttggtagaga 1020

acataaacta tattgctgcc tattttgttt aatgaaaagt tcaacgtacg tacatccaag 1080

tctcaccatg tagttgaaaa ataaaactat tgcgttgatt tgtcgcgaag aacgaatctc 1140

accaaatgat ctagaaggag aagcattaaa aaagatgtgt aactttgggc aaactatctt 1200

tgttggatgc taaactcatg ttaattggcg tcgtgaaaag atagtaaaaa gtagttagct 1260

tccaacaaag cgttttcagc tcatcatacg tggtgattaa tgaaagtact actggggtgc 1320

gctggttaca gttacgattt gataagatat tgcatataaa aataagttat ggtgaggatg 1380

atgtgggtca tccccatttg acctgacata gtttattaat agtaaactac atacaatcaa 1440

aatttaagtt cttgtctaaa attatgctag aaagaacaat tggacaatta aaaaaacacc 1500

aatcagttca taaaattgaa atttatatgt tgatagaacg acacaaaagt ctcatgtata 1560

cgcctgtgta catgccggat tgccggacgt gcagtgtatt gttgtctcca taagaatcta 1620

ccgtgtttgg cacaattttt tcagcttctt tacaaattta agcagaagtt ctgccaaaca 1680

agcttctgca gcaact 1696

<210> 3431
<211> 1609
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54858_G1, chr2:16633926..16635534, Cluster 20

<400> 3431
gatcccgtgt tgtataaaag atgaaggggg aaaaaagatg aagaagcgac gcggcgcggg 60

tggtgagctg taatcaagga tccagggtgc aagtgcaaac cagacggcat gaaaaccgga 120

cccgtatacg tgcgtgacta gtgccatcac gctgatgagc tggttgaacg cgacgatatt 180

ccctcatgca cttaactacg tcgccagtaa aggctgcgaa tgttttctct actactacta 240

cagtactact agcaccttcg acatgcatga ttcagacgag acgtggacgc ccgcatgcat 300

ccagctgtga ggatatgcat ggacgtcgca actcgatcgg aggtcgacga cgtggactag 360

aagcaaaatt aattccatac aaatatggac gaaagcaggg acagggattt gtacgtccat 420

gccggcaagt ggtcttacaa tatacaagcc taataatttg agtgcccgca tcatatgtcc 480

caatgttcta tggtagaaat tatattgttg aaggatgcgt acagtgcagc ctacgagagt 540

aaattgtcgt tagcttggaa actaaacgca agtttctcaa attcacttca caaaactact 600

gtttaggttt tttttccctc ccgtattata cctaaaattc tcaaaaatca taaagtcacc 660

ataaaactct caacgtcaaa gcaaggctac gccgcctggt gtgcgaaaga atgaggctat 720

cagatttttg aaataatttc atgaaagtgc aaacactcat attaaatacg tacacttaag 780

ctctaaccgc tagagctaaa gttaatattt agtcggttac aaaaatcgtt ggcttggtta 840

aatcagctaa tgaacttatg tgtcgtttga tttacgaaat ggaacgtaaa tggtaactat 900

aatggttcac actcgattat cagcgctaac aagtttgaat agaacaatat tattttagtg 960

taatattttt tttacggtta gacttagcca aatatgatgt aacattatcg gttatcgtta 1020

acgctacaaa tatatgaacc aaacaacact ttattgttgg gtatgagttg gataacaatt 1080

agctaaggta ctagctagag gtgtttaaaa catgtatatc taattttagt agctaattat 1140

tagctttgta ggttcggacc ttaaactagg atggatatct tgcgctgcaa aaaatctaat 1200

caactaaggt acatgtagtc aagtagttac ttgtgtatag atgttgaaaa tcgtatatgc 1260

aagatgataa tgttcaacct gtttttttt aataaactag accatctctc tgagacttaa 1320

cacatgaaat tgacaaacaa catgatagag cttgacaaaa tttaggaggt tctgaattaa 1380

accactacaa cgatataata ttactaaatt acttacgata gatagatata atagtttgca 1440

tgtttgaaat tttaggatag gtttgagtga ggctccatat gttgaaaaaa gcggtatcca 1500

tccctgcagc accccactac cgtttggaaa cacaatgctt tgtcactgca tgtaatgcca 1560

aaaaattgtg gtgcaataac ttaccacaac atctctagcg gtttcttta 1609

<210> 3432
<211> 2807
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54868_G1, chr2:16682028..16684834, Cluster 20

<400> 3432
cgcgtggatg agaggaggcc aagagtctgt tggtgtggga acgaagcgaa tgggtgtgtg 60

aaacgaggag ataactacgg tggcatcgag gtgtagacca tgaacgacat ataattttgg 120

acaaataaaa tgagctaaaa cgccagttaa aaacttggac ggagggagta cacactatcg 180

gttgccttca tgccttgtcc actgccagcc agccagccag ggcaaggtcg tgcggggatg 240

atgaggaaac gcagcttttg caacgacaca ggtaccacta gtagctttct gccaggggca 300

tcgggcggtg cgctgatgtt ccaacgaccg ctacaaaggc tgccgatagg acaaggagtc 360

caggacgcag tgcagactag cggtgtgggt atgattggag gcacgatatt agatccatat 420

gagtttttta cttattgctt ctatatggcc ttaactacac tatgtaatcc atgtgtcaat 480

tggtttgttt tggtttttg agttgaattc cctatccctc actattttga ttcagttttt 540

gggctcgaat ctttgcttac caagttggag aaggggtttg aggaggttaa aattgtgttg 600

tgaaactgtt ctgggatcat tgccacctct ggtatggtct gattcaagtc atggacaagt 660

ctctatccga gttatactat ttgaaaaaac cctaattcga gtttgagtta tgtgatgtga 720

ttctcaagta ttgatctttt ggagttcaaa cttttcgaac catataatct tctctcaatc 780

tcactacata caaagtttaa tctcaatcag aacaagtttg ctcaagtggc accgcatgca 840

cgacactacc gcgctctgac attgacggcc agaggagcgg cactgccgct ttgcctagta 900

agattatcct ttggttcttt cttggatctt caatgttaaa ttgagtttcg tttgttttgg 960

tagcttcata ttcatctcaa gaacttgtta aagacatcca accatctatt ggttgaggta 1020

tccttagttt taaacctttg ggaggggggt aaatttgaga atcaaatcaa gattgcctta 1080

gtgcaaagaa ttgtattggc tcctatatat ctctactctg gtcatctatt ctatccttca 1140

caagtatttg tctagttcct tagctctcgt atatattaaa atttgagatg atcttgcttc 1200

ttatattatg attctatagt tttttcatgt agtattgttt gattcttatc ttgtagttcc 1260

ttgttatgag tctatcacca cttttaaatt ctacgtaatc actagttacc ttaatagaca 1320

aacttataca atgtgtttct tttagatgta tcgtacaaat cagtaatttc ttattttgta 1380

tacataataa aagaaaattt atgagttgta tgccaatcat tagcatataa tgatgtcaac 1440

cttatcacat aaactttagt ttattaggtg gtggtttggc aaaacaacaa catctttctg 1500

ccacctcatt atctcatctc cacatttttc aaaattcttg catgactttg tattagacta 1560

gctatcgcaa tgggggcata atatgttcac aaacgagttt ctcaccagtt gtggtctcaa 1620

ccgattttgg tcatggaact gatattggtt agaatttcaa ttttcttggt attgttttgt 1680

cattgcaagt gttctgatat actcgatggt attattgagt tcgtattgtt ttgccattgc 1740

aagtgttttg gtatactcca tggtatcatc gaatcatagt gaatctaatg aagttttaaa 1800

atatattact atctattttc caatataaat atttgttcgt ctatttttt ttgttattca 1860

ctagacgttg tctaaagcta cgactaaagt attgttcttc acaatcaatg ctcatcaacc 1920

attaatgctg tcacttgata tttgacaact tcaatgatat tatcaaagag cacaagaaat 1980

ctttttttac tatttttagt acatatttct ttgctttagg gccaatattt ctagaattat 2040

ttcttggcat catttaattc atatgcaatt gagttgtcat ctataaaagc tttaatttac 2100

actaatctat atttccttta tttatatcta tattagatta tattttctgg tcatattgaa 2160

tatgaactaa attgggttat ttattaattg tatttgatat ggatacatta tttattctta 2220

actaatgcaa cgatgatatt tttatttctt attagtattg taatttttag acttgtattt 2280

gatatgttct ttttattcat ggtcgacaga tcatcatgtt caacggcgca catttctata 2340

ttttcccaat tagccacata atttctagac cttataattt gatacactat ttattcttgg 2400

tgttatattt atcatcataa gatctaacta tgcatatttt atttttact taatcgtgta 2460

atttcaggcc ttgtatttta ttatattatc ataaatttaa ttatacatat tctttatttt 2520

ttatttttg taatttctag gtgttatatt tgacataggt agcctattta ttctcggtta 2580

aatcaccata aaaatctgag gacacatttt ccccttttt atttaatctc ttgattttag 2640

aatcctgtat tttacatcaa tacttttttg ttagattcat actgagagta gaaaaaatat 2700

aaactgatca acaatcaatg cagatgaaaa aaggctaaag gtggaaaatc gcaactgact 2760

aaaaatgcat aacaacacgg atggagaaaa aaaactaatc aactaat 2807

<210> 3433
<211> 1674
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55765_G1, chr2:21404339..21406012, Cluster 20

<400> 3433
ctatttttt ttaaaacagt tttttagaaa ctggatgctt ctaaataagc tcttagttgt 60

ttagaaagtg tggaaacgac taaaggagaa agttaggaat attaataaag aaatatctaa 120

ggatatgtgg agataatttc ccaacaactt agcgtataag cttagatttg gtgtgaatac 180

aggtagtatt tagaagtaga gtgcgaaagc actccaaatt tcccaatatg ggaggttgca 240

tgcacaacac agtcccaaaa gttgtattaa cgagtttgcc aaaaaaacac acacacacaa 300

ggtaattctc gtgctactat tctcttggcg attttgttag tacagtgttg aatttggcaa 360

cggttaacat attgttagaa ttcctggtga catccaacaa tttacaccca agacaagcaa 420

ctctacgctt atccaaatcc atctaacaac agtcatacaa attacaagtc tgaccacatg 480

aattgtgtct cgtcaaacaa cctactaccc gtttcaacaa ggcattaaat tccgctagat 540

tccaaagatt ggctcacaca cgaatttgag ctcgttgacg catgaatttg agatttttt 600

attcttcttt tcttgagaga gattattttc ctcatgcttc tcttctaaaa agtaaagttt 660

aatgaagaaa atcaagggtg gaaagtatta aggcacccac tcaacgatag ccacgcctct 720

accactagct aggaagagca gaacagcgct gtcaacagga attaggaggt tccatgtgct 780

gacgtatttt tacacccaaa acaggctgct atattcaaat cagcgatgac acggccgaga 840

caaacgctgc gtcagaaatt aggcgattta tttacatgcc aaggaaatta ggcatcgtca 900

aggcaaggta gccatatttt actctggtcc aaccaaaggg tcggtgtttc ttctgggtta 960

acatggtgtc cacactagtt gacgcgagcc agcccaacct tagcttgcta gttataccaa 1020

acaaagctgt tccaaaacaa agttaattca tagatgctgg ataattttta tgtatataaa 1080

ttcgattcga tcttcttggg cgacaaaaaa aacaacagtt tttttaggaa agaaaatgat 1140

atcccactgc cctccgtccc gaaatacttt actgattttt tttggaacaa gctagtgcta 1200

tgaagaagct aaccatgaac taccactgtt tattgaatgt gatcaaatct aattactagg 1260

aataaatcac taattaaaaa atgcatggat acatgcagcc tgcaaccaca tgcggtgcta 1320

aattatagac ggtaggtggg atgttgattc gggcccaacc tatgtcaaag atttgaaaca 1380

ttaagttttc tagaatattt ttaaaacctc gaaacattaa gtttttggtt gcaatactgc 1440

aatgcaagct cttatctcaa atggactaac tttcaatatc aagccatgtt tgtgtccacc 1500

ggagattgtg aaaatcatat tgcaaactgt ggatcatgaa aagcttggat tgtaacaaac 1560

tagactttag actttaagaa gctggtgttt ttaggatggt gaaatctttg tcatctattg 1620

tgcaatgtcc atagtaaccc aagtttgtat gtacttattt ttattatgtt gttt 1674

<210> 3434
<211> 1797
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55860_G1, chr2:21815629..21817425, Cluster 20

<400> 3434
gcgtattgct aaacctccaa caatagaaac gaatatttca ttgttaaggt ttccaaaata 60

catcatgtat ttcgcagaga gctctgctcc tcctgttttt taaccagcgc ccaaatcctg 120

gtatagtgtg ttccctagta taaagtcaag ggtaaaaaca ttataaactc acatatctaa 180

tatgatgatg acaaattagc tctctctttc ttctttggtt gtagtgagaa atctagttta 240

gtaggtcttt gtttcactta tatatatcct gacaactata ggtcaggatg aagcttagaa 300

gtaaaaggtc tacaagtctg aagcctctaa agttgtccga aggccaaaat taaagctatt 360

tttatgttga tctaccccta ccttttatgg ctcaaggaag gatagagtga tgcacgactt 420

ctaggcagtg gaccctgctc agtagaagtc caactacccc tatcttttg tgcacgtgga 480

gctgtacgtg atgacttgtc ttgaatatgc cacgttgttg agattaccat gctatgatcc 540

ggataacacc agatgcttcc taaaaagctg attgttcgca caaccgatca agtatcgcag 600

atgcataggg tggttctaaa ggttagctct cctaacacta tgttggtgta ttggattatg 660

acatgaagat tcagactgag acgtaactta atcgagaagt aagaaaggtt gtgttattgt 720

attatgtatc atgatcgttc tactagagct agatctaata gtacgagcta ggtgctgtga 780

gattaaaaga tggacagttc agtttaatgt acacccatta attcattgtt acgtgtccat 840

tatacctcat tcattaactt gatcaagtgg aaaaaatagc tcatctacat agcacggtca 900

tagacaaagt tacagtatgt tacaatggac ctgatcacct gaacaaccgg gggctatgtc 960

agcactcagc agctttatag ggccctcgca tctgacgcca tagagaggtt ataagagatc 1020

cggaacgtct tcaaagccca taggtcctga tgtacgttct aatggtcacg tcgtcctaga 1080

cgttccgaaa atcacgagac ctcccaaaca catttaacat atatctagat taatttattg 1140

taattaaata aaacataaac aatggtcatg tcaaatctaa catcctatct cccatatata 1200

agcacacaag caaaaaacgc acccactgta ttagtatatt tttgtttcgc cgacatgttt 1260

tttctttgtc atcggtttgc ctctcctaac ggaacggtac ggatacagac gtgcaaacgg 1320

ataagccttt gtttttgtta tccggggctt ccaatatctg atctgatctg atgaacaacg 1380

ttttttttttc ttcctgaacc tggtccctgg ttaggtgacg aacaagtatc atagcaccaa 1440

gaagcagcac gcagcatccc ggtggaggtt tcctattgca ccagcccgat cgtgccatcc 1500

aatccaaccc ggacacatga ggtttcctat tgaaccgtcg gtaccgagac gtacgattcc 1560

gattctggtt gcgcatacga agttcacaca cggggttggt atatgtattc taactggaga 1620

ccttaaaatt tgatttatgc acagacgccg tgatgattat tttcctcttt ttttttgat 1680

ttctctgccg ctgtcgcggt ctttaccagt tccacagtag taggtggtat cgtccttcct 1740

agcgctaagc tataccatac gatacgactg catttctacg gcatcattgg gccatgc 1797

<210> 3435
<211> 2049
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5607_G1, chr1:28613065..28615113, Cluster 20

<400> 3435
aatcagctaa ttgttagtcc gaaggctggt aaactgtttg ctcattagcc atttgacttt 60

actaatagat gttaatagat cgtataaaga taaagagaca tctaaccaag tctccaaaca 120

taccctgact atttttatt tgctaattat tagccactcg taaataataa gcaaggagaa 180

ttcaaacatg gccttaccat acccttgtca ccttctaatc tagtatatta agtttctgcc 240

gttatgtacg tatagtaaat aatataatta acatggtatt ggaataatct ctaatcaacg 300

tacaactatt ctagttagtg aacaataata tgatactgcc tatgtcctaa aatagttctt 360

tattattata acccactttt ttccatccat atttattcaa atgataaata agagtaaatc 420

attatatggt ggccaatgga cgatggacga cgcatctttg ggggtagtgg atgacactgc 480

acgaagaaga aactattaaa gctatatggt gaaccatttt tttttaaaaa aaaggaataa 540

gagtaaatca ttagaaacag ttgaaggaaa aaacaacaaa ttagctcctt tttctttttt 600

aggagctaga acaatcattg attagagatg ctcaaaaaat aaataccgtt aatgggagtt 660

agagtgatct agattattta aaaaaacttt tgagagaact gttagggccg tcctatgaga 720

tcaatttttt ttccagcggt cctataaaaa aagtttgtca ctatgtcatg tactagcact 780

ttcaagaaaa cgaactatcc gattaggctg attcgccacg aaggtagtgg acctgtgcaa 840

attcgataag acgcccggat gttatgaaat tgtacattgg tgatttggct tactcgccac 900

gaaaaaagtg gcatttgatc gatcttggat ccctctatcc ttcacgaaac gaaacgatct 960

cgaaggacga tgctttgtac tgttattatt ggacctcttg acgagccagc ctttcctgag 1020

gtcttccacc cgaaattcta aggatatata aatatataat atagaaaaaa accaaaaaaa 1080

aatatagttt atttgctccc gatgctaaaa tactgtccac ccgcgctgca aagcaaccga 1140

tccacagtca tctcttatca gcaatgccta tccttttttt tttgtaattc actgtccttg 1200

tcagctccca ttttccactc ccagcgccag cggacaaaac cccatgacgc acgcattgag 1260

ctgttcgtga taagaataaa agatacacgc ccgcccctat ccctatccat cccggttatt 1320

tatttactta tttatttatt ttattgacac cccacctgtc gccgtctcgc tcagcctttt 1380

ttcccggagg aatataaaac tgataccttg gcaagcaacc gaccgtgaca cctgagccgg 1440

aggcgaggta aataacacgt gatggagcaa cgagataata cgcccgcccc cgcacgcacg 1500

cacgcgacaa cgctactccg tgcgttcctg ccgccttcgg cttgccggcc ttgcgacctt 1560

cctcgtgtcc gcgcggcgag accaactggg tactgcacgg ccgtttgcgc cagtgcccat 1620

ggatagtgga gactggagct ggagtcactg cttgctcctg tggccactcc tttgtacagt 1680

cggaggcgac gaaattaaaa accctagcca cctcatttct agagggaggt agaaaaacga 1740

attcttgctg gagcgcacca ataaggagct agagctggag ttgtttagca aaccgagatg 1800

ttttccagaa cgctagctag tactcgtatt tacaactgca tgcagtactt cctaatcacc 1860

ccgatggggt gttcattttc agggttaacg actcatcagg caacgaccag gccgtcaccc 1920

atggcgttta gctaagcgaa acgtcactac catttgtgcc attagattat ttgagtccat 1980

tcataatttt ggaggttact tgaattctca gcagcagccg cctgcagcaa aggcaaagga 2040

gatccagca 2049

<210> 3436
<211> 1863
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57771_G1, chr2:32502797..32504659, Cluster 20

<400> 3436
cccaaacaaa attcaggttc cagttatttc tggcttaggt tcgggttttt tttagccggc 60

tgcagccagc gtatctgaaa ccctgcgagg gcgaggcatc gagatatggc ccgtgattcc 120

attcccctca ccacttggtc cgctttgttt tgttgtcacg atcctctttg gacagctaga 180

gatgctctcg ccgccccggg tatgcaggtc cgtctgtccg tttgttcttg ttccgtttct 240

tcatccttgt atcacgagtt tgttcttgtt cggctgcaga tgtgaataaa cgacgctaaa 300

aaaaaggcag aaagaagtga gtgatacaag gatctatact aagtctgtgg cagtaaattg 360

cgtcacgggg gttaggtgga gcttcgacgg gattagcgag aacgccaagg aaccctaatt 420

atctgccaat tctactgtac cactagcttg ctttgagatg tgagaatatc tacccggtcc 480

gctcgccagc caaacgaaca ggtgacaccc acgcttgggg tgtggtccac cctgtttctg 540

tccgcttgag aacaagttgg tcaattattt tcgttcccgg atcgcccagg tgcacacgca 600

attcctattt ttcatctgta ctagcggcac gaaagatcgg gcgtgtgctg ctgtccctca 660

ctggtacgtg atttttttat cccagataat gtgacgtcca gtcagctcgg ttgtctcgtt 720

cgggaaaaaa taacaatagc tgatttttaa gagcgggcat catgagttgg cctggcccga 780

gctatgttcc ttgactatta ttgactattg tattcgtact aaacacgagt agcacgctgc 840

atgtattcta gtggagagaa aatacagcct catgccaagt acgagccaat taaacaaaat 900

gtcagatctc tctataaggc tacttctcga agtatatata cacgatattc tttgtgcata 960

atgtgtcttg agtcttgact gtatttatta tttaagagtt aagggttgta ttatacaatt 1020

tttagttgtc tcttatattt atgaaaccga tccaaatggt cagggttgta catgcccctc 1080

gtatctgata ttctcggctg atcctagcta gcagaaatta ttcttatcaa ccgttagtta 1140

attgtttata tccttccaca atataatgat acacacacat attcatatac atttaaaaaa 1200

cacatttata atcaatacat tataagtatc aattcacata tcacacaaat aaatccatat 1260

catatttata aatctgtaag aaaccttcaa gtctaaaacg tttgaaacaa cataataagt 1320

atcaatattc atatatatcc aatcaatctt agctcgaatc catcatatga atagagttct 1380

cgtttctact ctggttaaca aataagttag actcctcggc gtcttcgtat agtgctagtt 1440

atggaggaga agactggaaa ctttatatac gacgttgagt tagaattgag ttacattgac 1500

ttattgactt ttagttccta tattttattt tattttattt tattttattt tagtttctaa 1560

agtaataaat acggaaacta tagtttttat atttaataat ttaaataata aaatagaata 1620

aaatggagag aataaaaatt agtaactaaa aacaaaacag cctagttaga ctctgatggc 1680

tagaccacac gtacggcggc ctggaatgca tgcatccaga ttccagcatt catctcagac 1740

ggccctcttc ttgcagtccc ctggtgagct gagcgcctga gcccttctct tcttggagaa 1800

actgcactgg tcgcttttca catttcagcc accaaacaga ttagctgatg ccacattaac 1860

aac 1863

<210> 3437
<211> 2329
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60216_G1, chr2:47548903..47551231, Cluster 20

<400> 3437
gcagcttcta tccaaatagg tctagctcta tgagctctag ctttaaaaaa tttaaaactg 60

gaggacagtt ttatgaaatt tttgaagctc atcaaagggt gtttccaaga caatattttc 120

ataccttta tgaagttgca agtaaattaa caaccgcgcc actggttaca gatcataaac 180

gcttcgtttc tatttatgat ctcttccttg tttcacagtt cttcctccgg cgtgtcggag 240

gtcttcccca gcacgacatt ggtgtccgcc aggcgtccct tcatgacgag ccactgggag 300

cgactcgggc atgccgagca ccatgtatta gggagtgcac cagaaagcat ccagtagttg 360

acaacaaagc ccatgaggaa ggcgcatgcg aagaagatta ccaccacgaa gacgatgatg 420

tagtggcgcc cgatctagtc ggacgttcgc ccaaccgcga ggagccgatg agcgagtaca 480

cgatgaggat gccatgagga tgttcctcca ataatctaaa gatgaaatac tgaattatac 540

ataaattata aatgtgcgtg tgttttatac aatgtggcgt gtgtttatgt cctataagag 600

aaaataatgt atacaaataa ttttgttttg atggcatctg aaaagttggc gctccaatcc 660

aataacccac caacatactt tcagcccaat caacgagccc accaagacga gtccactact 720

aatcataaac agtaacgaag aaaacttaca taaattaatt atattacaga agttgaatcc 780

tatgtgcaag tcaaacagtt ctcaaaccca tctcaacatt ttactaaaat tgttgaagtg 840

aattcttctc aaataggccc ttattttgag tttttagcac gtttcataaa aatctacaaa 900

atatatggac ctaaccacac atctgaattt taggatactt tatattttac ggaattaaag 960

tgtttaatta aaaaaataag atttaaaacc gtttttaaat ctaaagcacg tgaagatgtg 1020

cttaaggcta tctacgatga ggtactctaa agagtactcc accaacatag agttaaatat 1080

aaaataaaaa attgctccaa cgaagtgctc tataatctac tgtaaacttg aggaggagac 1140

cgaacgaaac ctaattccag cgttcatgta tttctaccct atcagacatg tgaagacctg 1200

ctccacagtc cacacattcc atgcgacagc gagctggcgc ggctgaggaa aagtatataa 1260

tacagatata aagttgatgt atagagtaaa tattattgta gtagattatg atatagagta 1320

gagaatcttt ctaataagaa tataattttt ttaagtatta atttagagta agagtgcgga 1380

taacctaaat acccttatat acagagataa gaacagagcc tttccacgtc agcaagttcc 1440

cttgctgggc gtgggcccag atgctccaag ccacacaaaa tatctcggtg tggagctcag 1500

attcgcgaat ctggtcgctt tgatactgaa aattgttacg gcaaccccac aatccatgct 1560

tgtttttat atttctcgtt tgattagatc tgcatgaatg tccactacat ataggagcat 1620

ggaatataac tctaccaagc gttcttctaa taaggtattt atacatttgt acaacaaata 1680

gtatgaagat ttcataagtg ctcatgtcca tagtatacaa tgaaacgatg ttatgcacag 1740

tccaaaatct aaacattaac atatgggatt gtgcactaaa aacagatacc aagcgttctt 1800

ctagtaaggt atttatacat ttgtataata aatagtatga agatttctta agtgctcacg 1860

tccatactat acaatgaaac tatgttatgc acagtccaaa ttataaacat tgacatatgg 1920

gattgtacat taaaaacaga aagaaatagt gtctcaaata tgaaacatat taaggatatt 1980

gaaaatttta gaagtatggg attgtacatc actccaagca atatttttgg agacaagtat 2040

ctcaaatcat gatatttggt atacatgtgc tagaagctag tcatagataa aaactttagg 2100

ttagagtgga tactctaaaa attccatgat aactactaaa ctatggtatt aaaggtagaa 2160

ttttgtataa ggtagccaaa tacctattgg gaaaaatatc atggtatata aacatataaa 2220

aatattttgc tttcaaaaac accctctcta cagtgtttag aaagaggaaa acccacaacc 2280

gtaacgacaa cggttctaag gaaaatgtta accaagtaga gttatgctt 2329

<210> 3438
<211> 2940
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6855_G1, chr1:35235400..35238339, Cluster 20

<400> 3438
tgatgatatc ttgacaaata attcttgcag gatgtggttt ttttcataca tacaaaaaaa 60

tcattgttga gacatgctta gagccaagga acaacacata tttttgcagc tcggctaaag 120

gatctcgttt tgtttatgtt ataggacttt caacaatcta gatctgagtc aacatgttct 180

ttctgaagtc attataacta ttgaaatttt gtaacattct ctcagacatg ttatatgttc 240

taatttttgt gtcttatact tctatgctgg tcaaattgaa tatgactttc taggcgaggt 300

agaaattgat tattcttcat actagccatc atactctggt gtaagctatt atgacaacaa 360

caacaacaat aatacacggt ttagaaggga taaacatata tttataggtg aaacacaagc 420

ctcagtagat ggcttggcaa tgcatggtct atggagtact ctacgatgac aagtgataca 480

tgttaaggta gaacttgagg caatgacact agaccactgt gcaaatgtac aaggtgacca 540

tgctaaacct ctatttttta tggaaatgcg atagaggtcc caaaaaacac atggcatctg 600

gagtgctaag acaatatgtg ggaatctaaa agctcaaaac acaagtgatt gaagacttgg 660

tgaaacagtt tgtggttttg ctctgattat caatgggaat atacttgtta caaaggtggt 720

accgtagtaa ctacgacaat ggcatgaatt tttgtcgctt ctatgagtat actcgtgttg 780

ttaaaagagt aaatactaca gttagactca gttgttgagt ccatctttga tgaagatcac 840

acatctccat aaagctagcc tgtacaagga cgtaaaatca tttgatctat aaatgtatga 900

tgcttcgagt aaacttcgac aagaggatgg caaagtaaac ttacaaagtc ttgagacttg 960

gttattgcat gaaaatgact tatccttcgt tctagatttt tttgttggtc acttctaatg 1020

tctgataagt attatgtgtt actcctttca aagttgtcat gtgtagtgtg ttaaagagga 1080

atatttttaa gaaaatagag ggttcaaaga aaacaagtct ctttgtctta taccacaatc 1140

taagtatttt aaaataacat atacatataa cctaaactaa acagcaaaca aaactaaaca 1200

ttataaataa caaaataaaa catgtatcga atttgatcta acccatatct acctataaaa 1260

ataggctaga aaatatacct aatgtagaac aaaacaacac ataaaaatga aaaaaatata 1320

gaggatacct tgatcttgaa gatataagga ttaaatccaa gcttcaaagg ctgaatacat 1380

attagagata gttgaaagga ctagagagag gaaaacagga agagaaacga gaaataaatg 1440

gaggtcgaac gaatgccaag cagatgaaag gagaatgctc ggccaagatg tgggatccgt 1500

aagaattatg gaataaacca aggtcagcgt cataaatctt gaggtcatac catgttattg 1560

gtcatgctag ccgctggtgt gatacctcaa tgctataatc tgtaataccg agacgtgtaa 1620

ttttagcgcc aagatagaac gagttgctct agggtttaaa cctaattttg tgtgtgtgga 1680

aaagactaaa atgaacaatg tggtgtggtt atccattgcc gcttctccag tcaagactcc 1740

aggaggcagg agcagagagc tgcagcgaga gagcgcagcg ctgttcgtga gacgatcgag 1800

gtaacatttg ggcatgtacg acgatacagt acatgcagag ggatgggacg ctatcccatg 1860

cgtactgtac tggtacaggc catgttgtac tacgtaccca tccatgatga atctcgctag 1920

gcgctcgatc atccatccag tcgccaatgc gattcacgcc ccgcctccac tcactccttt 1980

tatttacaac ctgtcaggaa ccactgcctg ccatctccga ctccgtccat gccccagccg 2040

ccctggtccg attcgctggt tccttgcaag ctggctagct agcgccccat gctagctctt 2100

gctgccagcg gtgagccgag ccgtggggca ctcacgtccg ctggacggct ggaggacagg 2160

agacatacat gaggcggggg cgagggtggg gtgacgctag cccgctgctg gagtacgggt 2220

tttgaggtcc ggagcgtcgg ggcgacgacg aacggatgca ctaccgcact ggtgtctgtc 2280

ctgtcccccc ctcccctccg cgcctgcggc gttgccggcc cggcaggggg tagctctgct 2340

ttgctgccga aagcgctgtc aggacggcgg cccatagtct gctaccgcta ctgctatagc 2400

gctggctatg ctgctgcgtg cagcatgcgg ctgcgccaac ttgtcgggct gggcctgggc 2460

ggcacggcca ctcaccattg ctgatgtgct gagtgtctag agcaaacaca gactccgcgt 2520

tcaggttcaa caagcagacg actcggcatc aaaggaaatg ctccaagtct gtagaagtga 2580

agccctcgac aacctaacaa gataccagct agaaactaaa ggcgtagagg gacaggaaaa 2640

aaaactcccc ccaaataact caatgaaggc gatctagtct tgaacggttg aaccgaacag 2700

ccagaagccc agaaccgaag gcaaaggtaa agtcgagtcc aagtgggagg gaaccttggt 2760

cagcacaaag aagatttcac caaaatcata taggctagca agccaaatag ggggtcaaag 2820

tcaaactcga gcagaactgg aacgcagaca aaattctaca tctaaatagc cgcaccgagc 2880

gaggaccctc gagtcctcta tatttttctt tctctttcgc aatcatgtct tcggagaaat 2940

<210> 3439
<211> 2898
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_79861_G1, chr2:170494134..170497031, Cluster 20

<400> 3439
cttgacatgt catatttgtt ttctactgaa atatcacact ctacaccagt tcccttacca 60

ataaccttcg ttatatgaac tctagcagtc acaataggtg aaacaccata acaacgacca 120

tgacctaaaa ttagtaagat aaacaagagt taatttcaca aaactacaac tcatgtaata 180

aggaactaca acttctgctg gtcatttcat aaaactacaa ctttgaccct agaaacaagc 240

aactacagct ctcaagtaaa caagttgtgt ggcccactaa gactatactc tatttgaatg 300

gcaggtgggt aagttggtgt agttttatga aatggtcacc attagattgt cacaaatggt 360

tgttgttttg tgaaattaat ttagaaagat atattagaca aggaaaagac aaagcataac 420

attgccatcg aaagtttctt gctaattgtc tcatcacatc caacatgtat aggtatggaa 480

atttccttag cattaacact aattggaatg aaaacttggc tagctaattt ccctaacttt 540

ttctatcatt acatccctct catattcata tcaatcttag cctgcaacct taacaagaaa 600

gaatccaatt atacaagtgc ccaaataaca aaataataca aagttgcttc caagacgaga 660

tcaccatcct aatacaatgt ccttataata atatcacaac tattaactaa caacaataat 720

gaaatattac atggaaaatt agggcgaata gcctctgtat ggtattagtg aatcgttggt 780

ttttatatgg gtgtatctgg atcaatgttt ttcacagagg caaatataga actaaatgtg 840

gggtgcacat gattggagca tatccatttc acatttaact tttcctagtg agttgaagca 900

tatatccatt gcacatttaa ttttttttcta caaaactgtg gtagcatgca tagggtgtcg 960

tcattgtatc agaaatttaa aaacatcaaa ataattgtat tgtgttatat gtttgtgtta 1020

cagctccttg aacatgttag cacaagctag cagaaactgt aaatccaggt tctctgatca 1080

ctataatgct attgttggac ctattgtttt atcaaatgag cctttatggt cacttcaaga 1140

gtagttcgct catcactcat atatggagtc gttagatctg tttcattccc attattcaat 1200

tctattagct ctagatctta ttgtgcaagc aattcaattt acagataaga ataagaaaat 1260

atggaagggg caaaaatgct agaaaagata tgagatgtgc ttagaacaat gattatgctg 1320

atgagaaaat agaacattcg caagcttcct aaaatcgaga aatcttgttc ctacgaggat 1380

attgatctat tacatccgta ctgaagttga tagagaggtc cagatcactt tgagaagtaa 1440

atagctccat tgcgaaagat ccaaatggtt ccacaattag aagcccgtta tttttatctg 1500

aaaagtaaca ccaactatat ttcaaatgaa aaacaaagac ttcctagtaa aagtgatagc 1560

taaaattcca cagatcacac tatcaactaa aactaaaaag aggtgtgttt ggctggaatg 1620

aaacacaata taccatcaat taaaccatgt ttagattttt aacacacttc tatttttttct 1680

taatgctcta cgctaccata taggggacac cattttctat atattttcta tcatttgaag 1740

cataaatatt taagctaata agatatcctt aaataaggtt tatggtgaaa ccctattatg 1800

ttgttgcata gttatccata aactttgata tgttttaagg aggtaatatt ggttcatcca 1860

taaaaaacat ggttcagttt attggtccta agcaagtttt agtttgtaca aatgtctata 1920

aaaatcaaaa tataatttga gtaaaatgtc tgcaaaggct tgtcgtcaaa atgagcacca 1980

tttccgccag cattcaagtt tatttagaat gccttgtacc gtggaccata aaatgtttgg 2040

tactgtgagt acatgcaaca taattcagat tttttcttct ggacaatttt caagttagta 2100

ggactgggat agaagaatct tgcgcagatg tacaacaatc agatgagttg attctatatc 2160

ttttagatcc cacacagatc catatatgaa gagctctaca tattaagatt ctagaaaata 2220

gcaaatcaaa ccctcaaact ctgacaacaa gaactagtag agtgctagta catattatag 2280

attatgccat acaaagtgga tcacctataa gaatcaaaat ataatttgag taaaatgtct 2340

ctaaaggttt gtcatcaaaa tgagcaccat ttcagccagc attcaagttt atttagaatg 2400

ccttgtactg tggaccataa aatgttttgt actgtgagta catgcaacat aatccataat 2460

ttttctatct tccaagcgtt tttcaagtta gtaggactag gatagaaaaa tcctgggcag 2520

atatacaatg ctcagatgag ttgattctat atcttttaga tcccacaccg atccatatct 2580

gaagagctct acatattagg attctagaaa atagcaaatg agaccctcaa actttgacaa 2640

caagaactaa cagagtggta gtacatatta tagattgtgc cattcgaagt ggatcaacta 2700

taatctagtc acaaaaatga gactttcaca ggtatgaaaa gcaactataa tggaaccgaa 2760

agactttcaa gtctatccca tataatggca gtagatgtgt gtcatatatg taaggaaaca 2820

accgaactac atattcatga ggaggtcagt ggtggtcttt ggttgacctc ggtcaagttc 2880

gtggacgaga gcctcgtt 2898

<210> 3440
<211> 2012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81521_G1, chr2:179444231..179446242, Cluster 20

<400> 3440
tcaaaacatt aggccaacaa atctaagtca acatagccgc ctgcctcaac gtcgataacc 60

acaattaaat ccaagaaaat gtgagtttc gtatgaagtt tgcaaagatt cttgggctcc 120

atgttacatc tgcatgccat attaagtagt caatgaaatc aagatgactc gaaacttatt 180

ttatattttt atactaataa cacagatcat gtggaactag ctgctagctg gatcataagt 240

ttttaaatgc cagcagggtt gtgccgctaa aatacctaat taactattac tttgggatag 300

acacggtctg tgcaaacgtg cttacatgtc acacaaaaac tgctacacaa tcaaacttta 360

tataccatcg tcatacagaa gtcatatatt ttttatatat tttaatatag aataaactag 420

aacataagat ttgcacatag tgatagagta aataataaag tacatctata atttttata 480

acttaattgc cttgcgaatg tatagtaaat tattgcgcaa tagttttcta attagctcaa 540

aaacgtcagt ttggtaattg gtagtagtga caaaacaaca ttattaacac tgctttgcaa 600

aaagtagtga caagattgta aagagctgct ctctggtcct cccatgtgct gctgctcctt 660

tctatcgtcc ttgtttttta ttcggacata tgccattttt attgttacaa cttccctttt 720

taaacattca tcggccaatt ttaaagagaa aatacgtgag aaagaacaaa gagcaggaca 780

tggtccatga taagagagaa aaagaaaatg taaaagtggt tggaataatt tagaaacagt 840

ttagaatttt tgttgtaaaa ttatcttcta catttagacc cagattctag aaattgttgg 900

agaaatccaa taaatatact gtttttttagc cacttgaaaa gtctcttcga tttccttatt 960

gcttttctag aaattattga agatgctcct aaaaaaagga tatggacgga gcactaatta 1020

ctcctatgta aatgcacgca caaccgatta atcttgtgaa agcataaaag ctaataagat 1080

ttgctaagtt gacttgaata tagtcgccca gatgattttt atatggtttt attgcataaa 1140

taaagaaatg gatgaagggt tgactaggag ataaacaaaa tatgcgtgtg ttcatatata 1200

aaagcataac atgttgactt gatcgtctcg tgtgaaggaa aaaacgtact tatatagcta 1260

tttcacggaa tatttataat taacaaaata ataacattgg ggatcactct ctagtctgta 1320

tgctggacca ggaagctttc tcagagtgct gggtcagctc tttaacatgc acgcactacg 1380

cacatcatgc acccacgccg gttattatta tagtgaagca catgccatcc gatccatgca 1440

gagagtagag aaccatcatc ccatcattat ttatttattt attaggaagt gtaaggagat 1500

gttccacgtg tcgctgatca aacgaatggc ttcctaaaca aatgatgatg cgattcatca 1560

tgcaagatta tatatatata ctcttatgcg tatattataa taatattatt gataataaaa 1620

aatgaacggc tcagaatggt gccattcatg caagatatat gtgtataatt ataataatgt 1680

aatggctcac ataaaaaaac cgcaaaggaa gctagcagag acctttagt taaaattaaa 1740

ataaatcggc agtgcgctca actgctcaag tcgatctagt aatctcttat accaatgacc 1800

atgctactat agattatgtc ctcacatgca tgtatatacg taagtgatga cattgcaagc 1860

cgtcggacta ttgaagaact gtattctagc taaatctact aattaacata tctattaaaa 1920

aacatataaa tacaatatta tagatcattt accactagac gtgcaacata agtagcagaa 1980

gaaaaacgta ttgtcccttt gtgctgctca ag 2012

<210> 3441
<211> 1533
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8190_G1, chr1:42854864..42856396, Cluster 20

<400> 3441
tagtaaaaaa atgtactact ccctccattc gtttttgtct aacgtatttg atcgtttcat 60

ggagaccaag aaaacgaatg caaatacata cgctgcatta aaacagttgt tcgaaaacaa 120

actccattat tttttcccaa gctaatatat tccatactac tgcatgtggt gagttttatt 180

attaatgaat acttttcaat acagccacac aatagttttt gcaagatttg gttcatgaat 240

aaaactactt ctctcaatgc atagtttcat ctcatgttta atatgccagt cacaacatta 300

aatagataag tggtattgta ataaaacgtg ccatatgaac aatatagaaa agtacaatgg 360

tatcaaaatt atgtacaagc gcatgaaaat gccaacaaaa atagtttact ttacttcaac 420

attcatatta ttaacaaaac atataataga gtcacatgta aactgaattg gatgtaacac 480

atgttaaata ttggagccat ggtgcacaac gaggatgtga gttgcataag attggccaaa 540

atatgtgggg ttgcaattat gagcactcaa cgcaagtttt gtgacaaatt agaaaggggt 600

gcaactttgg tgtcttttat tgtgggaaag aaatagttca acacttctct ttgattgtgc 660

ttatgttgtt ttttggcaca tagcatacct atttttaggt ttgcgaccac ctaataatgt 720

tacttatctt ttcaatggac actacaaaca gacaatatat ttaacaatgc ttttatatta 780

ttaggaggaa ctgtaatttc tcgaattata cgacttacaa aaattgttgt tatttttat 840

agatgtcaac ttttttgtag gttttattca atagaacaca ttggttatac cactaaacac 900

aattggaatg gtgtgaagga aacaacttga acactgtaat gcctttaagg cattgtgcac 960

cccagttgag gcacacacca aagctaggcc tatgggaacc acaccatgca accccactta 1020

gacatgcccg tctgttggag gtggtggtgg ggaagactat gtgaggttct aacgtcgctt 1080

atgcaatggt cattgtctaa gttactagag caagtattaa aagtgactgc tctagcaagt 1140

gactgtgttg gtgtatccat agttgtgttg cacaacaaaa tacaataatc tcaacagaga 1200

aaattttccc taatccccta cctagtgtgt cgagtgtcat tgtggacata cactagggta 1260

tgtaactaca gaaaagaaga gttattggag agagcaaggg catagtccaa tgaagcattg 1320

aacctaggta caattaatag agagaggttt gggtcatagt gtgtgtaata ccctatttcc 1380

tcttcctact catcgatcga cgaacacaaa agtgaacaat actacaagct cataattcaa 1440

ccgaccacca tgacctccta gctccccctt tccactttgt ttgagtggga attctagcct 1500

atagatcgaa aattgtcttc ccttagatgt tat 1533

<210> 3442
<211> 2132
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82662_G1, chr2:185401880..185404011, Cluster 20

<400> 3442
aatcgcgtag ctcaatatga tcattagtgc cactagatgt aacaatcaat acaagtcact 60

agaaatcact cctaatctca cttggatgaa tcactatcac tggaggtgag tgagagatat 120

tttattggat ttgctagggt gtatatcaag ttcgaaacct aggatgctca cctcaaaccc 180

agatacgctc tatttataag gtcctaagat gaaactagtt gttggatctt cattgtgcaa 240

aaaattaggg ttgtcacacc gtttaacgcc ccactgtcaa accataatgc gagggtttga 300

taaatctaga gcatggcaca tgtactagtc gtttaaatat tatcgccgtc tcaccaatga 360

ctatatcatc gtatggtccg acattcatag tttctagagt ctatgagtta gtcttttgta 420

aatggtgact aagatggcat tttgtaactt caccaggtct aatggaaaag tataaattca 480

ttccacctaa tggcacttaa gtaaccatct tcaaccttaa gttttcctct ttatagtatg 540

actattctaa atccaatcac acactctatt gacttttcac tagtaaagta agttagctta 600

tactttcatc ttgagccttt gtattttgct tttctaaatg tttagcactt gttcatccat 660

cgtggttatc accattctcc ttacagttaa ccaccttctc aacatttgaa tatggacttg 720

aacctatctc actcacaata cttagaatac agattagttc actagttgtt tcaattacca 780

aaatcataca atgaagcttt catatggtac catgcatatt cttatacttt ttatatgctt 840

atttacgagt aattatactt tctgaatttt aagagcactc ttttctatca tatgcccata 900

tagtccttgc aaaattcgat ctaggtcgtg acacgtgagc atcgaacatc tttggttgat 960

gcacagtaca tgtcattgct cgcttgctgt tgtgcttgcc tgcgtttgtc gctcgcatac 1020

aaccactgct tgctcgcagt cattgatcgc tggcggcctc tcttggcaat gatccatgct 1080

agcctgtgtg tgttgttgtt gtttctctac tgcttcgttc tcgtctacat gtgtgattgc 1140

ttgttaaatg tgataggacc atattcatgg ttatgcttta ttcatttatt tgttggacct 1200

acggccatat ccaacctccc atatttcaag cttcactatg taaacactct caaacaatgt 1260

catctacagt tctgcgtcct ctattttaca cgatcaactg aagtcatctt aataagatag 1320

gactaaaaaa accctattaa attggaatat gtgagatatg aagaaaaaat atttaaataa 1380

atatatgttg tatgtagcac acataacagt cggacgtgca tccacttgtt gtgatcgtcg 1440

tggcacatca gcttcaggtt aactgtgtct gaatgtggct gttgggtcta ctgaacaaca 1500

gcactaacca aagcgcacct agccagccaa tttcatctgc accactagct gctcttcggg 1560

ttgccaaaga attatgcctc caatataatg gaatgaaggt tggtgtgatg gtaatgtgac 1620

tgcaaacgtg tcaaccctgc aattttggcc gataaggcga gaattttggg gggggggggg 1680

gggggggggg gggcaacatg agacggtttt tttggagcaa catgtggcgg gttttttttc 1740

ccgatcaaca tagcgaagta tgtgcgcgag gatagtgctg tactgctgtt cctgcttcgc 1800

catgaagaga agatcgaaac agtcgccctc gacgctccct ctcgtcctgc accgaccact 1860

agctcccact ttactatgct tatcttccgg ataaacattc atgcagtatg tttcagattt 1920

gctgatgtta gcgtttggag aatgtttgaa atttaaaaaa atcgtagttt ataaactaaa 1980

catccaatta aaattctaat tgcattaata atgaatcttt aaacaaaacc ccacataggt 2040

atatttagat agtttctttt ataatgcagg atttatttct tgaagataga acattcttgt 2100

ttttatcaag tacaaatgat gtttgttggc gc 2132

<210> 3443
<211> 2237
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83392_G1, chr2:189494768..189497004, Cluster 20

<400> 3443
acacgtcaac ttgaacagca gtttccaaac tatagactag atttctctct tgccacatat 60

ctcaacggct ccatgcaagg ccccttctac tgatgatgag taaactcttc cattttcttt 120

atttgcgagt aagagtacta aattaacctt gcttttccaa ccactacggg ttgacaaaaa 180

agagcaaatc attctctcac actgcatgca catcatcttc catgttggcc tgctgctacg 240

aataagcccc gaacggctaa acatatagat atatagccgc atcattagtc cgagaactct 300

tgtttgatct cgacatttcg gcatggcgag gatttttttt taaaaaaaat cttatcctga 360

aaatgcgttg tcgatacaac gtcgtgttgt ggatgataga tactcgatac aacggcgacg 420

tcgcgcccat ggcagttgag ggatggaggc gtatatacat agtgttacaa cactacacgc 480

cctctttatc ttatcaggcg ccggaaacta tatagtagta ttttgtttgg tccattagtt 540

cgtaaaatgc catgtgaatc tgattggtta tggcatcacg gcggccattg gcatgaccct 600

gcttgaagtg agctcatatg cacgtccaat cgcagggcaa gagtggttac tacattgcgc 660

atttaaattt tacgtgtcgg tgcagcattt gttcagggca ctttttctca taaacatctc 720

ggtacataca caggactata tataggtacc cgctagcccc cattattctt catgaaatga 780

tgatctcaac aaactcgttg tcgcaaaaaa aaatgaatta ctttatgaaa tttcggtagc 840

aaataattag ccaggagaaa aaaaatcaaa gataaggtaa gaccgaaggt ctgcaatgca 900

actgtgtata tgagtgaaat aaagggtact aaagtgttcc ctcttccaaa gaggtttcgc 960

ctttgtctca agccacattt ctccaacttt aatcagactc ggtttctata tatcatatag 1020

atataccttg tttaaatgag atatttattt aaatataatt ttttatttat aaattattag 1080

tatatatata tcatctctcc tttgtataac acaaatagat atgagttgtc gtggtcgagg 1140

ttaagcgctt tatatcaaga tagtagggtc tgaatccacc acacttttt tttgatatct 1200

tccgtgtgga acgagacgac gcacaaagat tctcacactt aaatatagta cacttaaata 1260

tagtagagtt ttctagataa gtgcacaatt attttttttt gtatacttga tcaaaatgta 1320

agaagtttag cttagtactt cctttgtctt caaatacaag tagtagatct ggcaaaagat 1380

caccttattc cttgctaact ggaatagagg gaataattag ttgttatttt ttttgtaatt 1440

attggctagc tatttcgagt gaccccaatt caaaaggagc ctcaatattt cttgctaaaa 1500

aatatagagg agagaggaga ttaaagagta taccttatat gttggtagaa atttcgaatt 1560

cttgaaccat ttaggattag ccttagtgga gagttttgtg acaaagttct caatgccaaa 1620

ttttttgtgt tggtaattgt aacgataggt tttatctaaa taaaactatc tctaacttac 1680

caaatttgat gacgtgtcac aatattgaat aagaatgaaa cccatttgga gaaaatagta 1740

acttgctagc tcaactggct ggatgtgtaa ggtgtggcgg ccatgcacaa gtcacctaga 1800

ttcgagttct gttcaactta aatcaaggtc cctattcaca aaccacatga ttcctcttag 1860

acaagttact ttttataggg aatgagccta acccaattag ttagttagga gatgtggtca 1920

tgtatccaac tagtgaactc gaatttggat gcctatcacc ttgatcttgg tatgttgccc 1980

ttagttttta gtttgtttga aaataagagt aaacttttтc ttacttctgc ttaccttcac 2040

acctctattt acctctattg agaatatata cttaatcttt gtttatttca aaggagttat 2100

agtacattaa gagatattac aaggagcagc atgtgtgcct tgaattgaac taggtaaata 2160

atgaactaat gagtagttga gggtgcaact aatagttagg tacactatta gctagaggtg 2220

tatagatgta tactgct 2237

<210> 3444
<211> 2355
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84976_G1, chr2:198819774..198822128, Cluster 20

<400> 3444
ctgggcgagc gaccaagtgg tccacccctt caggctgcat agaggagttt gaggtgcggt 60

ctcaaacaca cacttgaacg gtcgaccagg attatccaca catgtgagtg tgagtcaatt 120

ggggatctca actccattaa cttctctagc ctttgtaacc acaccatatt tgacatgacc 180

ttaagcaaac tttacaacaa ccatgccgat aagcatctaa tcttgagtgt ggttgataac 240

catatcaaac aatggaggca ttgttcgtgt tggagatcag tagtttttgt cgactctaga 300

gttcttattg ttgaccatga acttatcatg ttgttcatgt tcatcgacct tagcaacatg 360

catgtctgga acctatatgg atgcaagagc ctcacaacat agctcaaggg agggagagag 420

gcaagaagat gatgctgaca tcttagccca attgctactt atcatccgaa aactaccata 480

aaaaggctag atgtgaacga tttcaaacgt tggatggtca aagattccta gtttttaagt 540

ttgatagttg aaacaaaata atactggtgt taagaacatt tctaatagtt ttataaaaag 600

cctcccaata aaggttttga tgcaaaggtg aaaatggatt tccaacaagt actgatccat 660

gcttgcttct agtttgcact aaaaaatatg tctccacgaa ctcctcacat atgaatgtac 720

aacactcttt atctatgatc tatcatccac tagccatcca ttgttgcccc accctactct 780

ggatggtcct acctagttat ggttgtcgtt atcttgttgg gggggggggg ggttggcttt 840

ggccttgttg ctaggagcta gtggtggtta tggagtagtt gtcagctagc tacatgttag 900

caggtggggc tatggacaat ttttgaccct tcacttattt tcttattctt ttagaaacta 960

attattgact attgcagaat gcaaaaattg ctcctatttg ttttagttac ttagtataat 1020

caatgatttg acaactattt taattaagga gatcttagag attctcttgg atgagcattt 1080

agttttccca aaatgttatt atgccagcca aggtctcata cttattggtg aagcgtgttg 1140

ctcactacat ctcattcaca atggtaggcc tagtgatctt ttataggtag gacaaactta 1200

acaaccacaa ttttccaagt tgggatgcca tccatacttg acggctttag attgtatggt 1260

ctagttgacc tatgcatgta catggatgct cactaaggag cctaggcatg tgcaaagggt 1320

ctctaggacc tatgtatact tgaacaaatc acacaactcc tcatataaga acatatccat 1380

agatttatta gttagatgat aaaaatcaaa ttattccaaa agattattgt gccagccaat 1440

atctccttat acatacttga aaatcagtat tattcacata tgacactcgt acacaggact 1500

acacataggt gataggtcta gagattttgt acaactagga cgtacttaat aaatgctagc 1560

tattccaaat tggtttccca tccatggtca atgattttgc atcacatgtg ccaagatggc 1620

cttcctaaat ccatggactt tcacaaggag cccggactgg tgcccagggt cactaggcca 1680

tggatctgcc tctatggata gttgtacata tcatgcaact cctctagtga gcacaaaggg 1740

gatccatgtt tcaatgtatt atagaaatta gaaacattta tagataaatc ataaaaaaca 1800

attagccaaa tcatatgaat atgccaatca acatgttatc catcaatcag tggactgcac 1860

ataaaacttg aatggagtgt gggatcactt tcaaagcata aaatgggcta atagcatata 1920

taatagtccc ccaaatatca ctcctcatcc ccataaaact atcatattgg ggaggtaagt 1980

acttttcctt gatcccctag ctctcttttt taagtggcca catacatatc caggggcgga 2040

tctacacccc ggccacccgg tccgtggcgg gggcttgatc catgtgatag tatataaatc 2100

tatatttaat acaatataaa atagttaaga taaaatggag aagaaaattt agtagattta 2160

gctcgggtca tagaaaaatt ctggatatac ccctgtacat atcccccatc tcccatcaaa 2220

taaaagggga gtcgtttatc ccccaatagg ttaagagcct aggatccacc ccaaatttca 2280

cgcactccaa aataaaggaa aagtgagtcc aaagggagta cagaaaaatg tgcgcatggg 2340

aggagtggat gtttc 2355

<210> 3445
<211> 1693
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87446_G1, chr2:213212693..213214385, Cluster 20

<400> 3445
catgtcgtaa actaagttca gccaaacatt aattcggcca ggcctcctaa acctttttt 60

ttttttgca tagaatcttc gtctcgatcg atttagaggc actgcaagtc acagcaaatt 120

aaattaattt attattagca gtttagcacc ccacacctca aatgcagcta ataaacagct 180

attgcatgtt ggaattcgaa atctactgat tattttgcca tgtttcttcc attttaatac 240

gtgcaaacca gaaacagtat tcgacttagc ttccactgcg aatttgtgat cattcctgtt 300

ggcatctgat tgacgtgtta aacttgcaaa gaaaaagagt taaattacgg acattcatga 360

attcgcgtgt cacagcacag tcgcgcagat caatcttttg actcttaaca agtttcagaa 420

ctagctgatt atttatttat atctttcgca tacgatggcc cgatagcctc caattcatcc 480

aacgagaatg aggtatctct ggaaacttca attttattag atataaaaac acattgtcag 540

ctttcgggga ggtcatatac ttggatctac caatacgtct tttgtagata tatccaatta 600

gaagaaaaaa aatctaagat gatgccagcc acgtgtcctt taggctatct tcagcatctt 660

atctaacctc gtatctatat tcaaacttta ctatgtagac aatacaatat gtaatgcaaa 720

acagtgtttc gactgatcat ataattgaac tgctaatatg atcttatagg ctcaagtcct 780

aggacatttc aaccggaggc tctcccggcc ttcgatggcg tgcatgatga aggatcaaat 840

acttgatgtg gcaggactaa aatttagtcc cttaatccaa acaccatgta cagatattac 900

aaaagtttga cttcttgact ttgcaaaaag gtccttgttt tttcaagcta attctgaaaa 960

cggatatttt ttcctagact ttgcaaaatc ggatctctct ctctctttaa atcggagctg 1020

atgcctgccc ctattctgct aacagccact aggcgagaaa ggaagctacg acaatggcaa 1080

agcccgagca caggtgggct taaaactgat aacctcgctg ggctagggcc caagtgggct 1140

tttatggaga gacgcgcggg gaagagaagc ggcgatggca aaggctctaa acgactaacg 1200

ccagataggt attacggttt agtaccatct cgccagcgga aaaaggacaa ggttggtcgc 1260

agtttataca ataggagcag tggctaccca tgtatcacaa gcagctgtgt ggcaagcaca 1320

aagcgaacta ttctttcgcc ttttactaaa gaataccgtg tgcttgccac aattacagca 1380

tacatttatt tttggaggtg ttgtctcttg ttgagagagc cccaacaatg ctaaattaaa 1440

ttttacatgg tttgctatta aattttatat gatttatcga gctctagcat tggtggttta 1500

tatcctttgg ttttgaaggt ctttctttaa caatgctaaa taaattacat tttatatgct 1560

ttcgaaattg ctgcttgtga ttggagtacg caacacgtct gtttgatgtc tatatagtta 1620

accttatgcc aactaagaaa ccaagggtat acagccaaca taaaaaaaaa cacatgcatc 1680

cttggatcaa cta 1693

<210> 3446
<211> 1436
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87554_G1, chr2:213819513..213820948, Cluster 20

<400> 3446
cattgatctt tcgaattggg cattaactat attatcttgt gagaacaaaa ttaatttgta 60

actcgtattt ctttgatcgt ggagagatgc cccatgcctc catttgtact aacaactcta 120

tgagagacca gtaaaagatg gggacatgat ttagagcgtg tttaaaagca ctacaattaa 180

tagttagctg actaaaaatg agtagttact aattttagat gggttgaacc aactaataaa 240

ctaataaata gttgaggacg tagctaatag ttagttggac tattagctga tgaaaatttt 300

aaaagtagct aatagttaaa ctatttatgt catgttccaa actatataga taattattag 360

tcggctaata agttgttagc taattttagc tggtttagag ttgctaacaa ctatcaccta 420

tttgagtggt ataatgaata attagttggt ttattagctg acacgtttaa acctctgagc 480

tatattttag ctactagcta ttagttttag aggtctgaaa ctgtatttta gctaaattat 540

ttggatgact ttacctaatt ttatcaagta attattgggt ctagcgtatt caaacaaggc 600

attagttatt gcccattaat cattggggtg tttgttaaga attgaatcct tggccaactt 660

tttctttcac actctatgaa gtgggacgtg agaactctaa aaattagatc tcgtttctca 720

ctagagaatt acatagataa tacatttcta ctatatcaaa ggacaagttt ctatggttcc 780

atagtttata ccatcgttgt gctcctaata tttaaaatag taaatgataa aataatacat 840

aaatagggat acaaactata attattattt gctctaaacc aacattcaca ctcagtagct 900

aacagaacac atgtttttat atacttaaaa ataaatataa actatagtaa cgtacgaaaa 960

ttttgctagt acaaatgaaa tgtgggtaga gccttatcgt cacttttgtt agtcattaga 1020

tgaatgtata atgtatagtc tatcgtcact agagaattac atatgtatgt gcgtgtatat 1080

cctgtcgttc tcacaattag aaggttctta tcactttcgt tttccacgca cttttgtttg 1140

ggtggtggtt tttagcaacc cggccctatg attttaaggg actcagtgta gttggacctt 1200

agactatata aaaaattcta tggtatataa aactatacat gcactaattt acgtgcaaaa 1260

ccaaagcaaa tacattgata tatttaattt aatatgtcaa atactaatcg aggaataaaa 1320

tcaaccaaaa taccaatata tttgtatctt ggagctatat gattatctta ggttgtcttt 1380

agtggattgt gtaaatagag aacacaaaac tatagacgac actatttggc attgtt 1436

<210> 3447
<211> 1573
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89040_G1, chr2:222266929..222268501, Cluster 20

<400> 3447
tgcattgatc aagtgttcaa atagaaaagg aagaaagaga aaataagcta caagggctcc 60

aagcaacggt gtaactagat cattttattt taccagtcaa gacataatag actctgtgat 120

tggatttagc acaaatgagc atactattaa gagaagatct taattggact tttttgtcat 180

ctagtgctag tagacattga aattttgtgt gcattgcata ggcttaagtg acgcactctg 240

agagcaagca cttatgttta tggaaaacac ttctaaaatg ctaatattgt tctaatatgt 300

tttgccaaaa aaattgtgag ttggcacact tgagaagaaa ggataaagtg ctctcggtgt 360

agctattctg catgtatctg acatgtcctt tgatgtacca ggtttatgca tcgaacatga 420

ggttgttcct tttatgttgc atggttttca atcggccaca atggagtcca gtgtgcacta 480

gatgtccctc accagatgtg tctggtacag catcggatgg tgcaacaaaa caggtcttaa 540

gagagaatgc aaattggcac atatgctcta aaggtcacta gatgtgtcca ttgaagcacc 600

gtacaccaca taatatagag aacttagaga gcatgtagag aacttagaga gcatgtaaaa 660

cacacacata tgctctaaca tgcactgaat gtgtctagtg tcttgtctgg tgtgtacact 720

agatacccaa cacacaataa tgactagttt atagctattg ggagtgcacc ttgtgggtat 780

ataaaatata aatagacctt gtggccagtt ttcgctggca tctcagcacc ccattcacct 840

gtgtacacct cttgagagcc aagatacagt tcactcactt gcatcatttg aatcatcttt 900

tggtgagact agagagctaa gatatagtcc actcactcta gctcatcata atctgacagg 960

atatctcttg catcactttt tctctatatc cacttatctt ttttctatat tatcataatc 1020

tgacaggata tctcttgtag ctcagctaca tcaccttatt atactgctct ctctctctct 1080

cctctgtctg ttcgatgtca gcatttaatt aatcagctaa gagccggtca ctatacttct 1140

tgcttgatat caaatcaaat ctgaaccgca gcggcgcgcg cggtatacgg ccgtgcatga 1200

gcagccaact gggaatttaa tggttgttgt ttggtggccg atatgacagt atatatatcc 1260

cgggcaaatg ggcaatcgat cgagattcac cgtgtacgac acagcgcatt aataatcttt 1320

ctgaccgcag ttacagcagc ttttgttgtg tactacgtac tgatggagag ttggatcgga 1380

gagtgtggtc ctcctgtgaa tgggcacgta cgcgcgtgct tgctggagta accgctagta 1440

gctaccaggg gcaggggggcc gggaggaaac caggtagtat gtattatgtg cgtgtactac 1500

gccgttgaca caagtttgtg tgtagagagg gtaggtacgt atagctagcg ctgccccctg 1560

ccctcgagcg agg 1573

<210> 3448
<211> 1621
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8914_G1, chr1:47137919..47139539, Cluster 20

<400> 3448
agcagagaga aatgaacggg ccagtgtacc atggcaaaaa aattctggga gagaagctaa 60

ggcaccgtgt gtttgagttt ttggacagtt tttcagtata aaaaactaaa aatcgaaata 120

aactgttagt tttttgttta gtttcgagaa agttagatta gaagctctaa aaatttgagt 180

ttatgtagga agataaaaag tctagttttg tgtgctttat gtagttttgt gagtttatga 240

agctaataac actattaaaa agttattatt ggtttcttag aatcaaaagt ccaataatag 300

cttttcagaa aagctccaaa agctagctca gagatgggct tcatgggtcc gacgaccgta 360

ggaggggcta gcctttgaca caaagatggg cttcatgcct tcatgggtcc gtcggccgta 420

ggagaggcat gccttcatgg gtccttcggc acaaagatgg actgctggat ccgcccttag 480

tcaaacgttg cttatctata gactgctacc ttttatttag gatattcgag atcaaacatg 540

ctatctccta tctcccattc agggtttgtt tggttagaag aggattgacg gggaaataaa 600

ctatttttt atttcccatc aatccccttc taaccaaata agacattagg ttattcacga 660

ggtcaaacac attcctagtt aacttccgtg gcgttatcaa ttgtgatgag ttctaagggt 720

tcctttggaa tgtggatttc ctcggtttct tatgtatttc aactgattta tatgaaattt 780

ctatataatt gttctgaaat tcctgtattc taaaggaggc ataagtatgt tttctagatt 840

gccttttctc ctactagttt cagttttcac cccacctcta tagagtgtga tgttcagctt 900

ggtgaaatat tcggaccata cattcttaat atagtaaacg tgacagtttt attaaaaaaa 960

gtactgagaa gtttttttaa atgatccaca tccgtatcca tagatgttcc ttttgtcgt 1020

gtaaaagttg atatgcaact tgtttggtaa aaatgctagt gggaataata aattatagat 1080

gtttgtgtgc aggcgcacct aaattttatc attttgtatg gggttttatt tatatctatt 1140

atgtttgtta tgtttgtatc ttaacttttg tggtgaaata cacctactgt ggttgggcat 1200

ctttttttt ataaaaaaac ttctaagtat attttagagg atttcatgtt tgcacccaat 1260

tgataggttg cactgaatga atgtttctgc gcccaatcaa tagttgcact gaatattttc 1320

tgatatagct gatatttttc gtacgagttc cgttcatact gtcgccacta gagatattta 1380

caggataaaa aaaaagaggc gtgtttacag atatacagta taatcattga atggtggtaa 1440

tctgagaaag caaacaatga aagctaccta tgcttggaga tggtaacgta tcatgatcga 1500

aatgattttc ttcacaataa gttagtgacc ttaattaagt tttgttaaaa aataaatagg 1560

aatagtacct gatccaaatc tgaattgatc tttaaacttt tttatataaa atctagagta 1620

c 1621

<210> 3449
<211> 1893
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89659_G1, chr2:224853842..224855734, Cluster 20

<400> 3449
atatttcgaa tttgtcgttc ctcattttga tctttactgg aaactcgtac atatccaaat 60

gttttgtgtt tcatttcata cacctcataa ataattataa caaaaacatc tgtaaatgtt 120

tatgggatat acagacatcc gtaaaattta aaatcaactt ttacagatgt atttccctaa 180

aggtttatgt atatctgtaa aggtacactt ttatagacgc atcaaataat tcctacacct 240

ttaaacatgt aataataaaa aaaactatta aatatccaaa taaaacccaa tgatctcata 300

cattctgata tcactgggtt ttataggttt aatatttttt tatcttttat tttcacttta 360

caataagaaa ttgtgaaggt cataataagt tgtttaagtt aaatacttcc aacacacata 420

cccccgtcct tttttggacg ggggtaaaat aaagtgttat tcaacaattg cgcccgtttg 480

cttaataaca agtgtggttc acaaagtttt actcttgact tagtttagtg taattatgtt 540

gaatgaaatc cgtcattttt tcatcataat cagggtaatt aaaatctaat aaagatgcaa 600

ctttttaga ataggctcta aacatatcac aacataactt aaaggatccc caggattctt 660

tataaccaga ttgactaaaa gtttttatta gtttttctaa ctcttcttca ggaagataat 720

taccaataaa tttatggttc ttgccaacac taaaattaaa tccttctctt ataccaactt 780

cccatgacat cattcgtaag agttcaggac gaagaatttg attaaaatgg tctagcgcat 840

aaaaaagctc tttcctataa aagccttttg ctatataagc tgatacacac caaaactcat 900

tacagcaatc atcaaactct cgctcagatg gtttttaat ccaatatttc ttgtcatttg 960

gaacaatttt ttcattaatg tgtttatctt tgtcaatcaa aatttccact aaaccatctg 1020

cgtcagataa atactgatct atttcattta gaggaattaa agttaaatca atctttatgc 1080

catcattaaa atacataata tagctgaacc aatttcctag ctctgctgga aataactcca 1140

tatcttctgg tttttgcata aaaattaggt caccaaatat ttcgagccaa taatcatctt 1200

tcttatagga ctctatatcc gatacaaaaa aggaaatatc ataatcttga aaatcatctt 1260

taggaatgtt tttgttagtc ctggaaccct caagaactga taatctgatc ctatcatcat 1320

tcatagcaat attttcaaaa agagacatca tctcattttc attacgcatt taaattcccc 1380

cttttcacta ccataacatc actactattt agtgcttttt gttaaattat tctgcctcgt 1440

tacttttata catttcatca aaatctcatt caaccgttac ttaaatatcc attccgaata 1500

gagaaaatca ttccaaaata tgactctaaa attgaaaacg accgcttacc cttgctccag 1560

ataagcaccc tttcgctgaa cgaatccttt ttctttggct aggtgttcta gaacatgaag 1620

agacatatgt cgttataatt cttcagcaat cagttgaaat tcgtcaaaaa tcgaaagatt 1680

cataaagaaa cgccatcctt tctgtatatt tctacaaaaa gaatagcgtt tttttagttt 1740

tatggataca atttttagc ttgatgccga tgtgatgcta ccccattgcc accaaactaa 1800

gagaagacaa ctaccctaaa aatgaaattt tgtgctaact tgtaataaaa aagctcattt 1860

ttttcttttt gggtaaatct gttttcttaa cat 1893

<210> 3450
<211> 2735
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92390_G1, chr3:1560544..1563278, Cluster 20

<400> 3450
gacctttac ttgataatgt ccatgctctt gttttcggtc aagatgagac ttgttagaga 60

gatagaggcg gggaaggatg atctctctac tatggggtgg agaggaaggt ggaggaggat 120

atttcccttt tctatggggt gatggagatg ctagtggtgg tgtgaaagag gtgagtcaac 180

tattttagtc ttcattggaa gaacacatat ttgctagcta gagatgtttc acttaaaagt 240

gtttcctatt tttgtttaaa aaaattaggc tttttggcta aggcaaaata gaaggactta 300

taatttaaga aagtctcatg gtaggccaaa ctctttcggt cctttaatta ttcacgggac 360

aaataaaggt atgagacatg gtggatctat cttagcttaa acacatgagc taggggcat 420

caaaactata caatagccat gattaaggtg catgcattct gagtgtgaat tatgcaaaaa 480

ggccatgcat gctaccttcc atggaggacg aatttgtaaa actcacccca attttagtct 540

acgaacgaac actcgccgtt ttttactttc tactgcacag cgagaaagca gcacgcatat 600

aggcatctca tttcagttga tggcgttgcc atgtcagttg aacgatggcc aaaaagtctt 660

ggaaatcagc tacccttttc ttcaggaatc aaattatatt tttttccata cattagctat 720

atagccaact ctctcacgcc attttggtgg tcccatgcat gtaaaccgat ctaaggcgtg 780

tctaggcact ccaccaccga cctgtccgac catgcataca tgcaactctt gtgaccatat 840

atatactgga ataaataaat aataatgctc ccattattca tgcatgagtc ccatgtatct 900

ctattatatt aaactattag ttttcctggc cttatatttt tctttaatta taatcagccc 960

gcttctaact cgatcgagta aatggagatt caaaccatag ttgctagtca acaaaagtac 1020

aaaacacaca tgtatttatg ttttatacta accatagcaa tatactgaca attttctagt 1080

gctcgcctat atataatata ggagtatata tatactccga tgtggcagac atgtttttca 1140

ataccgaatt ccattaattt tggccgaaat ttcaccgaaa tttcttagag acttaaacct 1200

aaagtatgtt ttttctaaaa ttttcaaatc taaatagaat attactatga tttatgatta 1260

taaatatatt aagtagaaga atatgtgtaa cataaataat aataaaaaca aaagcatata 1320

tgattatata gcagatgtat tagtgtgata gaaaaaattg gaattttctt tcggccatca 1380

ccaaaatcca tgaaattccg ccgagattgg aaaccctgat cacagtaaac aaaggtaata 1440

taaactgcag accgtctata tatagtggaa gtggatggaa caaccctgct aggctgctac 1500

gtaccattat attgcatgca actagctagt agccagtagt ctaagcaaag atggaataat 1560

aatttagctt ttgagaaagt gtgttagcac taaatcttat ataataaaca atgcgatcct 1620

gtgatcgtcg atcggcagca tatatgttag aaagctagtt ttttttgtgt gttttaacaa 1680

atgaagattc ccaacagacc gaacggcaag gaatctggaa tctccgtttg gcaggcacgc 1740

atacctggta cctgtgcttg ctagctactc atccgtcccc tgattgtgat cagtctcttc 1800

atcacaaccg acgatcaaca tccgtgctga ttgtaatcac cacagtatcg aaatgccgga 1860

agctgccatc tgtagcaaga acaatcatat atgcatatgc atagcctcct cctcgtactt 1920

taattagtca attgattaat cagaacatgg ccttctctac tctatcggag atttgcttta 1980

ttttaatttg cgtgcgttgt atatatatag tagtaatcag tgggcggaat attcgtagtg 2040

agctagtagg gtcgtccttg cactgcatcc atccatccat ccatccttgg gtctgtgcaa 2100

gcctgtaaaa ttaaagcgcc ctgcctacca agtagaaggt gtttttcatc gattaactat 2160

ggttgttaat gctttggaat caatcaaggg cacgcttgtt agttagtagc cttttgcatt 2220

ggttagctag tgttagaggt gtagtgctag ctaggattgt gcatatatat gctaactttg 2280

cattacttaa ccagttaagc tttgctttgc catctctctc tgtgtgtcac acacacacac 2340

tctctagcta ttgctggttg ttgcctgcaa agtgcagaga ttaaaatatg ctaccgagcg 2400

cacgcctcca tgtgggagcc aaaaaacata gctgatgctg attgctggta gacgagataa 2460

caggatcata actgattgct ggtatttgtt tcagtagatg tttagtttct ataactgacc 2520

aacgcacaac aaacatctaa agatgttatg tatatacgcc actgaatgtc cgactgtata 2580

catacaatct cttgcgtctg cattgggtgt tgtctgtctg tctctgtccc agatgctcaa 2640

aggaaaggaa aggatctaat ttgtcgctcg cgtcacatgc atggacacaa tcgacaggaa 2700

taattaatat cctaaatatt tggacattat ttgcg 2735

<210> 3451
<211> 2574
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93187_G1, chr3:5588654..5591227, Cluster 20

<400> 3451
gcggctcctc tcccgggcac ggacagctac cgtgttcgct tcccgtttgc ctgtacccag 60

ggtggtacgc cgccgtacgt acctactcct actgctcact ggcaagcgat cgttcgtcgt 120

ccgtcccccc tccgctgtct ctgctgcggc atcgtctgaa gcggagtcgt gtcgaacggg 180

cagtggaaag aggaggggg cacagggtac ttgagtacta gtgctactcc ctatcgtcgt 240

tgccataacc tttttgacag cgagtgtgtc agagagagcc caaagcaggt ttgtgcggca 300

ctaatcttgc aatcaccgcc agatccggag aagcttttgg tttctgtttt caggcggcac 360

taatcttagc ttaaatgagg catgatggtt ttgttgatct gcttgctagg gttaggggaa 420

tcatgcacct acgcggatct aatcttcatg caataacaaa tgaaagacca gagagaaacc 480

acttgggttt tggataaatt tttccatgct ctggtcagat ccatttgcag aaagataatt 540

ataaagggtg ggtggagaag ctgctagttg ccccacttag tgttattatg ctttgaaaag 600

gtcagtggga tgtgttctaa aatcttgctc cccactaagt tagattcctt tttttcgatg 660

gatttgactc tgggaagtag aagctgcgat cttaagaact gaaaaccaga gaagatatga 720

aacgacacct tacctgaaaa tttgaagccg acgatagtaa agtgcagatg tgggaggtgc 780

cattgctctg cgtttacaaa agaacagcta atttttagga acctcatcat aattagtaag 840

ccttaacata tgtatcgcac acgtcactac gaaattttct tgaaaaatta tggtcataac 900

atagtaacac atagcatgca gaggtgagat ggcccagttt tggatttaga tcagattggc 960

gccaatcatt gggatttgcc aggaatatct ccgcaaagga cccaaggcga tggaaaatgc 1020

caggttgata atgccccgac agtcactgaa acattcttct aaccttagcc ctaacaaaca 1080

gaacaagcta gctagccact gtacgggaat caggacacct tgaggcttca gataccgggt 1140

tgacgacgac ccgctaccca atccttggca cggttagtgg aagaaaacag ggacgtcaca 1200

tgcaaaagaa acaaaacagc ccgtcgtgta cgcacagagg ggcatcgcat tgggatcgta 1260

aaggaaggaa caaaaggaat caatgatggg agagcgcaac aaggacgggg gcctgcaaaa 1320

aatatttccg ggcagcagag cagtggccaa aggccaaggg gggatcccaa tagcgacctt 1380

gcacagccac acctcactcc tatggcatca tgcagctgac cgcacactgg tgagttgcag 1440

ttaaaggctt tacgagtgca ggtccaagag acatgtacag gtgcaagatt ggcttggaga 1500

ttgattgagc gagaccagga acaaaggatc tctgaaagtc tgtatggggc aacaggagca 1560

agtacagact cactttcggt ccttgaaatt agtgcccaca gattatcctg cagtattatg 1620

gactcgctgc gtatggggta gttttctagt tatcatggta gtgctcataa aaagcactcg 1680

ctcactcctc cgttctagat tataacatgt gttggctttt ctagatatat tgattttact 1740

atgtatgtag gcatactgta tagctaagtg cataaagaaa agccacaatg ttctataatt 1800

tggattagag ggactaaggt gccgtttggt tcatgaattg taaccgaaat gataatggta 1860

atggttcaca tttgagtgac agcgataata agtttaaata ggccagtatc tatttttagt 1920

gtgtagtatc tgattacgat tggacttaaa caaacataat ttaacgttat atgtggttca 1980

tgaattgtaa ccgaaatgat aatggtaatg gttcacattt gagtgacagc gataataagt 2040

ttaaataggc cagtacctat ttttagtgtg tagtatctga ttacgattgg acttaaacaa 2100

acataattta acgttatatg ttaaccatcg tattacaatt atgtgaacca aattgcacct 2160

aaatgtgaag gcaacgatac cggatagggc tttgatgtga atgttgggta tacatatgaa 2220

agtattgcag aatgacaacg gtgaaagaaa agaatggcag gtgaggtaaa ttttactcaa 2280

tgatgaagca attactgacc atgagatcta tagtgcaaca gtgctgtact attgttggcg 2340

tgggcaggca ggcttgcttt gtcttgagaa ttgtttacca aggattaacc tgctggtagt 2400

tcctgcacct gatgccagta cacctggttc tcacagcatc tcatctgtcc tctgtgaata 2460

aatgaaaatt atgtagtgaa ataaaatgta acgaggggaa gatttactgt gtagttctag 2520

ttcagtagaa ataagagtct gatgcacgat tactacatcg tttaaccaaa aaaa 2574

<210> 3452
<211> 1510
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96777_G1, chr3:24850182..24851691, Cluster 20

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (453)..(552)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (459)..(459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (460)..(460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (461)..(461)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (462)..(462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (463)..(463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (464)..(464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (465)..(465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (466)..(466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (467)..(467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (468)..(468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (469)..(469)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (470)..(470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (471)..(471)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (472)..(472)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (473)..(473)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (474)..(474)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (475)..(475)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (476)..(476)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (477)..(477)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (478)..(478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (479)..(479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (480)..(480)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (481)..(481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (482)..(482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (490)..(490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (491)..(491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (492)..(492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (493)..(493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (494)..(494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (495)..(495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (503)..(503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (552)..(552)
<223> a, c, g, or t

<400> 3452
cattacatta attattcctc ctatttacat cttgaaattc gggaatttca ggtgtgacaa 60

catacgagca cgcatgaggt aagctggcca aaggatacaa atttgcatct aattatcaat 120

gccactaaac ccatcagagc tttggtgtgc ccgtggtaac ctttatcttt gttaccacta 180

catggtggat ctcttatatg tgaagtcagc ttgttaatgt gaaggtttga aaaaaaaaac 240

gactgtttgc agtatatttg gtctaaagca ctatgggatc gaaaactgtc atgcaagtaa 300

tttacttgct cgtgttcact tctctttttt ttttaggaag agcaaaggca aggaagcttc 360

ttattatggg tgggatcatg cgggtgctcg cctacaacat tgaatggctg gcaaacagta 420

ttataagatt cgttgtctca gtttgttctc tgnnnnnnnn nnnnnnnnnn nnnnnnnnnn 480

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nncaccaatt tcaaaagatt cgtccgtcat tataatccct tgcgctaaaa 600

gcaagcatca aatttttatt gcagggatgt gccaaagctg tctgatgatg ataaagtcta 660

aagttgagcg ttggtgtttg tagtttacta tgcatggctt ttcatgcccc tctctctgtt 720

gggttccagc ttttatccac tgttccctgt gttctggttc ctctgcctgc ctgcctgcct 780

gcctgcctgc ctgtgaggtc tgctgtgcgc gtggggtctc aaatggctgt attagtaaaa 840

attctacata acctcaattt tttgtagttg cctactccat cctctgaact attgattgtc 900

gtctacttca gtgcgtcacc tataaaccca agtattgtat acctcggact actaaaaatc 960

gtctaaataa ttttctaggg cggttttaaa ggtgattttt tttactgttg tgccattttt 1020

aaaaaaaatc tatataaccc cctaacatct caaggattga ttgtataacc ctctcaacta 1080

taaaatatga cattgtactc cctaaaatat ctagtaatat tcaaatgacc tctagatggt 1140

catgtttggt cgtttggaca ctattcacac cacacaaggc ataagtacat atgtttgcac 1200

acaaacctat cgtctaacac ccccccccc ccccccgctt gtgctaccat ccgatgaaca 1260

ccaccttatt ttctactcta cccatgcact cctcgttgac attgatcgaa tacgttctct 1320

gtgcccttat catacggcct ctcacatatt gtgcccctct tactttatgc tcttatgtct 1380

acatgaaaaa ctgaaggaca gtcggataga ggatgtgcaa ggagttgaag tgttgaacga 1440

tgataatata tgtgtgatgc ttaaccttaa tgtcattgga cagtgacgag ggttggagca 1500

gaatataaga 1510

<210> 3453
<211> 1623
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96778_G1, chr3:24852496..24854118, Cluster 20

<400> 3453
cgcctttgcc ccctaacgaa gggagaggag tggaaactgc tacgtgcctg atctgaagta 60

atcttcacct gatgcacctg taccaaaaac atgtttgatc gtagttgggt cagacagatc 120

gagatcatgt tcggcctccg ctccaacaat atcttacgtt gcttatgcca atgtggtagg 180

atacaatgtc caaaatgact caacataaca atccagtaaa tcatttggaa ttaattgaca 240

tttgaagggc tataatacca cattttatag ttgatgagtc atggagtcaa ctcttgatat 300

gttgtggggg gtatatagac tattcaaagt gacatgtcaa caaaaatcac ctttacaact 360

ctctcgtgag attatttaga cggcttttaa taatttgaga aatagaataa ctggttttta 420

tatttatgag tggtggaaca gacaaccacc ctatggttaa ggtggctaaa tagattcttt 480

ctttcttttt ttatgtgtga cagggtgcgg cgggttgttg actgaaatgg agaaaacctc 540

atttcaacta cactagcctg atgtactact ggctctgctt ttagtgtgtg ttagcctttt 600

tctgctaggg gaaaccccca cttctccacg aagctcgtgt gttgggtatc aacgcggcaa 660

gggactcgta accctggtta catccctgac gctgacggaa agaaaactag gcgtgttgat 720

ctagatctgg ctcgtttggt gaccaggcca caagcggctt tgtcctctac ctccagccag 780

ccagccattc agggaccatt ttagtctcgt ggaaatttgg tctgctgttt tacgcatact 840

tgctcagcac aggcgcttgt tactgtgcat atacttattt ttttcactca aataagctgc 900

acaccgtcat cttttattag caactcttgt ttcatccctg catttgaact ctagttcatg 960

gggttccttt tcctgcagct gcaggttact ctgcaacttt agagctagtt tggaagccat 1020

aaaactggaa tgaatcgaat gagctagatt agctttctta ttcaattttg aataagaaca 1080

tgaatctagc ccccttcct ttttctctat ttcaaactag tacttacatt acaggtacag 1140

atgctgttgc agcctgcagt atccatccgg atcttgcatt gagttgacca tcatcactgc 1200

cgcaggcgtg cgtgccgcac gctccctatg cgaagtgtac gaaatatttt atacgcgcat 1260

caaccattcc acccatccaa ggaggaataa acaagccact tgtctgctaa tacaggtgat 1320

gaagtggggg aggaactgct gtgtattaca aaagtattat tgcctttgta gttcgtgcag 1380

ataactactt gaaaaactgg acaaactgtg ctgaaaaggc tagtggaatt cttaagaata 1440

tacagggaca acagtgagct ttcgcattcg acctttcagt cacgtacagg ttccatttca 1500

gcacagcaca gcactggaaa ggaggtcgaa ctttttttac ctttcagaat aacaaacaaa 1560

tcctagtact agtaccagaa aatgtctacg cttgtttatt tggcaggcag ctaccagtct 1620

gtc 1623

<210> 3454
<211> 1476
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98329_G1, chr3:33779483..33780958, Cluster 20

<400> 3454
gtggttggac cactaacttc tatcgcatgg tggcactgta ataagttaag tttcactttc 60

gatagccaac catagtcatc aaaagttacc tatcctgtgt gaacttccaa aagctatgat 120

cattagatgg aagttacatt aaaaagtgct atttattttt ctttttcct tagtccataa 180

tttaaaaaca tgtcatatat gcacatcaca tcatacatct tataacccaa agaaagttca 240

aattctcact ttcatacatc aatttcacac atacatgtca aacaatacta gtgaacatgt 300

ttaaacatct tctaagcatg acaaagtatg aaaagaactt gctcaacaac tataagtgtt 360

tttcatccag gtacgacact cacacatcta gacaatgctc atgaatatag tttgagtttt 420

gtatgctact tgtaggtgtg acacatagaa atccttggac atgtgagctc gaaccgtcgt 480

ctcaaaatct aggtgcttgt aaactagaca acatatttct ataaatctaa atatacaagt 540

gttagatgtc aaggtgcata tacagataag tttaacttat gttgaaatag tttacctaag 600

gtggatgcca tggtgcaggt ggcctaggtg gtggcatccc catcgatgga agttgaatgt 660

tcagtttcaa tcctgcacct tacaatggtg tctatgaatg cactgtttta gtgatcaatt 720

acatattcaa ttaattcaaa taattgacac aaattaaacg tacctgaatt tgatgagtaa 780

tctatgaagc ataatgattg gcatagtaat attattgtga agcgatgtag tttgtatagt 840

aggcatcaca ttaattaggc catcttttca cgcagacaag tgactttagc atcttgccct 900

caactacaag aagagctaat cgctaaactc tgtgacccag atgttgcctt ctctcatctc 960

acccctcttg agtcaatcac accagtaaac atagtatatc tgcaaaggaa aaagcaaaaa 1020

ctctaattga tatgaaaaaa caaagactct atttgacatt tacatcaata aaagttattt 1080

gaaagttggt gaagcccata acttgcaaag agcatgttaa ccttatgcat gattagccat 1140

ccaaggaatt attaccttgt gtaagaaaaa tggaccatga tccatttgat taagtgtagg 1200

ggtataatcg gatcagatat gaacaaatat tactcgttcc atatttgttt tcatattttc 1260

ccttcagatt tggatacgat taggatatta tataaaattg cgttgaataa gatttgaata 1320

gatatcgaca tcttaaatat acaactttga taatacgaat acagataaag attggatatg 1380

gatcgaatac tgagtaccca aactcggata tggatcagat ctcaaccctc tttagacgaa 1440

taggattcga atacggacgg ataatatcca taccat 1476

<210> 3455
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_217939_G1, chr6:67227678..67228708, Cluster 21

<400> 3455
ggcagaaggg cttgaaccct cgcctgtgag aagacttgga ccatccgcct cgccaatgac 60

ctaacgatat gaggggtaat attcatacca aaaagggtgc tagaaatgtt aatgtgtaag 120

aagaaaatgg tatgattact tggaagcacg ctctagtaat ataagcaaca tagattgtct 180

gatgtgacat aaatagtttt ccctatgata atcaggccga ttgaaaaatt gtacatgtaa 240

cactaccacc tccttagact ataaaataag gtgatggagt gacattcaag gcaggtccac 300

acaaccaacc tcaagataag agaattgaag atagttcatt caggctagta gtgtgagggg 360

gtggttaata tgtcttagct tcatactccc atgagaggat tccatctctc ctcacttgag 420

gcttgtaaaa ttgtacacta attttatgta taaacgctcc actagaaaga ggacacacga 480

tattacgtcc ctagccgttc gaacatatct aaaaatctct atcatcagtt gagttactat 540

gataccaatg tgatgatatg gtaggcaaac tctatggaac tagggctcac tccctactcg 600

cctgattaat tcatcattgg taccttgggt accctggtgt tgttaccatg acatatagca 660

atttagcttg gcaatcaaca cgatgaacta tagtatttaa agaaataaga gatcgaattt 720

catttgccat actaagaaaa ctgggatttt agatggttag ctattgttag agacaggctt 780

cttgaggccg ctttttgtag agccaatgat agctccaact ctagctagat tttccatata 840

gtacaacaag aatatgttta tctctctcct ttcaaaatca gctaaccttc agcgaaacca 900

ttgatttttg tttcactagc ttcggcccct ctgtgcacta atgcactaaa atcggatact 960

agagctcaca ctcccgacaa ggagcgcata tattatacat agtcggcaca taggaagggc 1020

attacactat c 1031

<210> 3456
<211> 1248
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_110554_G1, chr3:115307502..115308749, Cluster 21

<400> 3456
ctttgtttct agagccctcg ctcttgttgt cattctgtgc aagaattacg aaaagcatca 60

tcgcacaact tacttctttt aaaagtcgta tacgagaaga gtagtataca acaacataca 120

taaaaaaacg cacacactgt acagcatatt gacactacga gcaacagatt gacgctacca 180

gagctaaaac cacccactat atcaccgaag caccggcagg actgcagtaa ctgtatattg 240

aaataatcca gtgtttcctt gcataaagga aaataaaaaa aacgtggtat attcaatctg 300

tagtagatag atacgttgga caggaaacat gcgacacgaa acagttaaaa taaaaaaaaa 360

gttccattgc cgggatttga acccgggtcg cctgggtgaa agccaggtat cctaaccggg 420

ctggacgaca atggaatcaa ttgggacttt tacaaagtct aatctctaat cttgtagact 480

agcgcctcag ctcatgttta atttccaaag cacattttgc gagtttcagc tcccaaatca 540

tcaaaacttc cggtgaatct tagaagacta gactagcctc ctttctcagg ttctgaatct 600

ttgaagacag ttgttctact gaaccaatat cctaaaccga aaatcggtga cgatattctc 660

atcggcttgt acacgtgtgc tgtggtatta ttgctggcag attttgtacc accgtacttc 720

gttttcccta acaacacctg ctctattatt ggactccacg tggctgatcg agacccccac 780

cttgacatgg ctatccaatc cggctcgtgt tgtctgaatt gaatttgaat cggacctagt 840

tttttcccct gcacggccaa caggcaacat atgtcacgca gggtcgcatg aatggaaaaa 900

aaaagtttta taggaatgca cgaaacgtgg aaggttgacg tgtacataag ttggaacata 960

ttgttggtct caaatggtgt gggtgtgcgt gctatgtagt atgataccga ccctattttg 1020

ttatatgtac tctagttcta agttcctact tatcgcttcg ttttcttaaa aggtctttct 1080

aagaaaataa atttaccgtt taaattattg tttgagaaat tatttaagca aaaactgttt 1140

tctgtacaac attttttttgt tatcttatat ggagagtcat cttcgtcgtt atctttgtta 1200

gcaagaaatt tagagtaaat gatatttact gcccgttcgt tttagatt 1248

<210> 3457
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114664_G1, chr3:140106950..140108061, Cluster 21

<400> 3457
ctttgtaaaa ttgtaattat ttgtgagcca ctgaaaccgt cagaagttga gcaaatttta 60

ggacataaag ttatgctaat agtaaaaaca agctcaagat ccaagtcagt ttcacagtac 120

acaacaagct ggtttgcagg gttaggtgtc ttctacttct ttcttgtctt gtgctctaaa 180

tttgctgcat caaatacttt taccttgagt aaattgcaaa agtggtcatc taatttgggc 240

cactgaactt aaaaccccag caaattggac gatctaactt tggattagct caaagcggat 300

gccgacttgg cgtgtcctat tgaagcatac taatgaaaat tcggaaaccc aaatggcaca 360

tgtcaaattc gaggacacaa gtgatataac ctgacaagtt tgggacccaa gtgactctaa 420

tgtagcacgt cacgtcgata attttgagct aatccaattt tgaatggttt tactcgagct 480

gataaaatta tagacctgtt ttgatggttt tataagttga gtgacccaaa taattaagcg 540

tgccaaattg aagaacagct agtacactct aaaatggtca cgccaatcct gctaagctgt 600

cgtgactgtt cctactccct agcgcccagg tctaggccta ttggagaact gaccaagcct 660

gttttcttgc ctattttgag ctggttagat ttccaattca tctataaata taatgtattt 720

ttgatgtgga aaaatatgga aaacatgttt cgaatttctt ttctattagt ttaagatcat 780

ctccctctat atagattaaa agataaccat cgattgaaga taactttcaa tataaaaaca 840

taatatatac ctttttctct gatttatctc tctattttat tattcgtcat attttcggtg 900

agttttgacg gtgttctata tagctttgtc gaccttagaa taatttctag agtctaccat 960

gcaaaaaaat gaactcaaca tcagtctaaa tgacacatcg accggtttca tcgatctatt 1020

attggggcat gtgcatctct aaggggggtta aataaaaaaa caacaatatc tttgtgaaaa 1080

gtctgtctct acacgactct ctatatatat tg 1112

<210> 3458
<211> 1064
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115303_G1, chr3:144356477..144357540, Cluster 21

<400> 3458
ctaagaacta atattgacct attcaaattt gctaccaggt acttaggtgt gaatcattac 60

cattatcatt tacgttatat ttcgtgaacc aacaccttaa tattaccaat catcttttct 120

attacaagca ctcaggtgtg aatcattatc atttatgtta tatttcatga actaaacaac 180

accttaatat taccaatcat ctttcctatt acaatggtgc ttttggttgc taccacttct 240

aattcttttc taagtttatc cttttcgttc ttagttttat caatcttgta gaagcttgtt 300

actgtccact tgcttttgct ttttgttatt gttaaacaaa taattatata atcattacat 360

caattttagc aatttggtta aaagtaatat gttttactag actagatgag ccggtggtgg 420

tcctgagatt ttaggggatg aaatttcaaa cagaagtttt tttaatacta tataaaatt 480

ttactaataa aaactcaatg tgatcaatta aaaatcataa acttgaagtt gtttttgctc 540

ttgtgagagt gttgtgaggt ctttcattgc tgtcagttat tacatataaa ttttacaata 600

aactcaatgt gatcaattaa aaatcatgat cttgataagt tgcttatgct cttgcaaggg 660

tgttgcgagg cgtctttcgt cgttgtctca actgatgtga tgtttttgtt ttttgtttga 720

gaagtcactt tattctaaat gagttgattt attatgggct catcatatga attttgataa 780

ggttattatt tttatgctag taattattat tagctagtaa ggaatgcggt aacaacaaat 840

taatccattt aatttcacca acgaaacaaa aaataataat aagcaaaagg ataatatatt 900

acttattcat ctaatagtat acactatatg ttcattatat acataaatag agatatttta 960

tgctattaaa aatatttgtg tatgatataa ggccccatag tgtgagggct aggattggac 1020

ataccgtccg acccccctcaa ggtcgacact accaagagtt tacc 1064

<210> 3459
<211> 1344
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117502_G1, chr3:157926213..157927556, Cluster 21

<400> 3459
tttagtgata gaaatctttg tttctcatag aaaaggttaa gggttaaaac ccacaatatt 60

gtttagtttt taatatttac tatttgttag tagaacgtga ataatggccc ggtgaaaaaa 120

tgagaacccg agtaaaataa tgacggaaac ggaagtcacc atgaaaaatc ttgtatcaaa 180

atcagaaaat aaaattggga tttgaaacag acgggagaca cagaacggaa cagagaaaac 240

ggatagttgg cgcttagatt tgaccgataa ataaaataat aaactatatt ttttggattt 300

aattaaactt tgccatattt aaatcaaata aataagactc ataataaatg ctaggataat 360

aaaaagttaa tcaaatactt cctcggtatt aatttataat ttgtttaact tttttgtgcc 420

aaccttaatc ggttcgtctt attcattttt ttgaacaaac aaaaaattca aagccatata 480

cctaaagtat attacatgtt aaatgttatt acagtaaaag ttaataataa ttataatttt 540

ttaaaataag aagaaactta aacttgatgt taaaaagtta aacggattat aaattagaac 600

tataaattag aacggaggga aggagtatga attatatgga tacatatgat atcagattga 660

ctcaatttaa ataggcgtac gtctattata agtgtaaaaa agatgaaatg ggataagtta 720

cacacggtac aaatgtgatc cgacgacatt cagaacatta catcattaga ttggtgccag 780

agaaaattta ttttgtaggt tcaaacttaa aatggaaagg atgggagcaa tgaacggcgg 840

cgacacaatt tgaggggttg ccggttgcca ccgtcgacgg cggtggggac gcgtgggagg 900

gggagcggta ggatcgcggg tgagagggga aggatgagag atatccaaat tatttattgg 960

atttgagtct taagtgagaa tgaatgatcc tatgatctga actgttaatt ttgatggtgt 1020

gaaaagtcta agtacaattt gtttagtaaa tatagtatat attataaata tgggagtgat 1080

ctagttgggt ggattttgca aaatttaaat acggtgacta actcgattga atgtatttat 1140

tacttaggtg acaaatagcg ctccttatat acgactcttg gtcggtctta aaccttatcc 1200

aagtgttttt cataaaataa ctcgcgagaa gtaatattgt taattaatat ttctaattat 1260

agggagtaga atttttttct gtacataaac tatatctgta tttaatactc tcatcattct 1320

ttttatttgt tgtgtttagt taaa 1344

<210> 3460
<211> 1237
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120314_G1, chr3:175677119..175678355, Cluster 21

<400> 3460
gaggccttgt ttagatgcat ggaaattgag gaacatataa tcacttgcta gtcatctttg 60

actagcaagg gattatatgc ccctcaatcc tcgccgatat tcacatatca agcaagctct 120

aatatctaaa agctagtgaa catcactaat aacttatctc aactaaaagg ctaatagatg 180

agttattttt tttattaaaa aatcagtctt ctactagtta ttacccaatt agacaaacgg 240

attcgaataa ttaggttact ttttagcttc aactaataac tagctcactc atccaaacat 300

acttatcatc atggcacctt ttcaaaaatg gatgctcttg aaagttctta tagttgaaaa 360

aataaaagtc atagttttta agttattcac ccctagttgg cataaactcc tttgactatt 420

cgactataga gggggagtag cgtccatcat gagcagacca tccgatcaca atgcataatc 480

aatagacatt gtaacacata ggacatatga tattatcttg cattgatagc ttaagcatgc 540

ctaaactctc gtgtctttca tgcattaacc ttcaattctc gatatcatga tacatgtcct 600

acataaattc actcctaaaa ttttctcaac accttagtct tggtatacta tctattgaga 660

agtgggaatc ataagttaat aagtaaagaa atttagaaag taaattttta agcataagga 720

aagtaatatg tggccaaaga aaagaatgtt agattgatct aacacctaca tacatatctg 780

atctaagtct agcgcaagag aaatgaaggg aagatcgctg ctctaagcaa ggaagaagag 840

gaggaggaaa gagcttccta tggccaatat attgaacacc aaaagtataa tacattgtta 900

tttcctgata ggtctcattg agaagatcca tttattctat cattggcatg atccttggaa 960

ccctagagag atgttggatg cattgggtgt tagactcgtt ggattccgat ggtagggttt 1020

gagagtagac caatttttt gtcttcaacc gagatgacac cagcgcgtga tcgcaaatat 1080

taaggttatc agctgtgaga agctgtaaag agtactctgc caacataaag ttagatatac 1140

agtaaaaaat tgttgcaacg gtgcatctta tcggacccta aacttaggaa tacaaagaaa 1200

acgccattta cagagtctat actcttttac cctatca 1237

<210> 3461
<211> 1129
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120569_G1, chr3:177114747..177115875, Cluster 21

<400> 3461
acatatttct accaccttca gcagtctcta tgtggaagac agagggatat gccttaggtg 60

atgttttcat tgcgaacaaa actgacatgc aaaagaaaat aaagattgtt tggatggggt 120

aattttgatt gctgttattt ggtagttact ttattattag ctaactttaa tctaggattc 180

aacttcattt gttttcttga tagttattca aactggaagg acatgatgat aagcctcgtc 240

tgctaacacc ggtatgcatg tatcaaatgc taatactttt gtgcatattg gctttcaaag 300

tttgtaaagt ttcaccatgt atccataagg gttttatgtg gatgtggatc accacacatg 360

caacaagttg tattacttct tatttgtttc taccattttt agtggcccta gactatattt 420

ctagattgtt tactaacctt cttttctcta tcttaatgca ggtgttgtca cttgtcagtg 480

acagtttata accaccataa agggatctat tgtgaatcac tcatcggtag gtaggttttg 540

catcagctgg taaataaaat aaacatgtgg tcagtagggc tgctgcagat tgtagtcaaa 600

gcgattcttg cacgagggat aatggcatgg tagagtttga gaaaaccaat attcttgcca 660

tgggaccaac ggggtcagat acatgctctt tatctttgac tacgttagtg ttgtattttg 720

caatcgtcta acgctgtcca ccaatagaaa atgttttgaa atcaaccatg tacttaaaat 780

ttcattttgc aattttgtgt tggcattgaa atccttgaaa aaggaaacat attaatagaa 840

gcagactata tgctcagctc tttgaaacca agattggatt tgtcaggtat ccctgaaact 900

aatcataggg attaattgtt tgaatttata cagatcaaca ccttagtaac agtctttaag 960

aattaacacc gatatttgtt tttgtgtgac tgcagaaagc caatctacta tccccgatgg 1020

atattcttat gaatgagaaa ttgtatgaag cagctttgac aattgtgttc aatttttga 1080

agaggtcagg aataaaaaaa aaagtactcc aattttcttg ctttttac 1129

<210> 3462
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122582_G1, chr3:187271052..187272335, Cluster 21

<400> 3462
tagaacagta cccatttccc ggcctcccgc cgaacccaac cctaaaccca agggagagag 60

agagtaccat atatttttat gtcaactttt atcaaatttc attgttgatt atacatgaag 120

tatgatactt agcaaagcaa agataaagaa atttttttat gaaccaacca gaagtaacag 180

agggagtaag taacaaaaaa ggcatacaaa tcagacagta tccattgtag ggtgaaacat 240

aactatgcag tggacactat catatgccta cttttcattg ccaaaagagc acccaaactg 300

gatcatacct agaacgcttc cagttacaat atccaacatg aatattttat gtctatcttg 360

gttgctgaaa caaatcattt gtaggttaaa acttttgaca aaatgctaaa aaaggcagac 420

aatgctagct gcagtttcat tctttgccca aggaatcaac agaaacactt cgtccagctt 480

tctctggtgg tgattaatgt tccttctgta ctgtttaatg atatgaaaag gattctcctg 540

tgggtgtcgg ggtgtctgaa ctctgaactg agatcaaaca catctgtctc agtgtctgta 600

ctttgtgctc gctgttaggt acttttaaga ttaagttaat gtttaaaaca atcaatacat 660

aaattatgga taaatcatat atagtaaata accacacgca aaagaatagg aactgaaact 720

aactcagtta caatctaatg aattcagttc cgaacttgtt ggcaaagtca aaagctgagt 780

cgattaagat ctctatgatc tgatagattc agttctaaac tccgttgtgt aaggcaaagt 840

cagattcatg agtaagcctt tgagatttat tctgaattta ttgctaaaca aatagcgctt 900

tcaaaatgac atcaaagtgt tttatgcatt ctaccctaag ttcaaaagat ctttgctttg 960

ctaagttatc tacctcatac aatgattcgc tgtcagagtc tgactcgctt tcaagagcat 1020

gattcgctga gatggttagc ccggggctag ctgtgaccag tgcaatacgg caggtgagca 1080

atacttgaca tgagctattt tggatgtttt ttaaaaaaat catgcatagt ttggatgtga 1140

tagtagtact ctaaattggt tcggctagct gttaacatat attcaaatag gcatgtttag 1200

caataggatt catgtgcaaa ctgtcataaa tagttgatgg ttgtggtgtc ataattactt 1260

tacccttttgt acagaggtca cagc 1284

<210> 3463
<211> 1225
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123955_G1, chr3:194720070..194721294, Cluster 21

<400> 3463
ggcaactact ccatggttca tgaaagcaat acaccgttca tttaggatac atgcctgcca 60

tcatgacacg ccattgcaac atatcattcg aatcataata tcacactcgc aacatcgatg 120

gtgaacaaac aatgttatgg cgagacaaag gcaaaataaa agatctgata tactgtaaaa 180

aaacttgact cataatctca ccctttttcaa cactgatggt gaacaaacag tgttatggcg 240

agacaaaggc taaagaaaat atctgatata ctataaaaaa cttgactagt aatcttatgc 300

tctcaacacc gatggtgaat aaacagtgtt acggtgagac aaaggctaaa gaaaagttct 360

gatatattgt aaaaaccttg actcataata tcatgctctc aacatcgatg gtgaacaaat 420

agtgttatga cgtgataaag gctaaagaaa agatctgata tactgcaaaa caaaacttga 480

ctcataatct cacgctatca acaccgacgg tgaacaaaca gtgttatggc aagacaaagg 540

ctaaataaaa gatctgatac actttaaaaa aattgactca taatgtaatg ctctcaacac 600

taatggtgaa caaacagtgt tatagcgaga caaaggataa aaaaaagatt tgatatacta 660

taaaaaactt aactcataat ctcacgctct caacattgat ggtgaacaga caatattatg 720

gcgagataaa ggctaaagaa aatatctgat atactgtaaa aaacttacat taaaaacata 780

gcttcgatca tccatatagt agtgttacaa tacaaacaac atatggtaca tttattttgg 840

caaacaactt aagcagagaa gtgtcaagga tgtcagcacg attcgttgca gctatgacca 900

ttatcatctc aacatggttg aatgcagcca gttgattcaa taattccaac atttttgct 960

gaacttctct atcaccgcta acttcactat accaaaagaa caaaattatg aagcatacat 1020

catgtaagct tcttcctaat aagaatgatt tgtttacact aaattgaaac aaaaaatatt 1080

ttgatcctat acaggcgatt aacattttct tctcatagag tatcataaga caaaatagga 1140

ataaaaccat gcaagagctg aaaatgtcat aaaagacata cctatcaaaa cgtttggtgc 1200

caatggcatc tatctcatcg ataaa 1225

<210> 3464
<211> 1205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124363_G1, chr3:196928115..196929319, Cluster 21

<400> 3464
ggccactaaa caggaaaaat aaaagaaaaa taaaatagta aaaaaaaaga tagaaacaag 60

gaaaagatat aattagaaag gaaaaaaaag aatacaatac aaaataaaaa taataattag 120

aaaaacgaca ctacggccgt gtttggatgg gatcctcact cgcagagctc tacgaggcag 180

aagcattcgg caatcggtat tgatgtatgg ttcagagtct tcgtgctgcc agtgtcttca 240

gcagttttta ttttaaattt tactgctgtt ccgtttagat atcgatatta gagaggatga 300

aattaaatta gattcaatac caaattagat atggtattga aattatatat aattatactt 360

ttattgttta aatgtcactg aattggaaga tataattccg cgcaataccg atgggtgaga 420

ctttatattg ggagatgagg tttctattta tagtccaatt ctagagaatt aagccattcc 480

aaattttaat tccatactca accaaacaat aacattttcc aatgtgtatt attgaaatta 540

agtcaattcc tttatgattt actcaattca tttcagtttt tcatacgttt gccttaatag 600

atgaaagtat atttgatctt ggagtacaag tttgctgcta tgtctacaaa aaacagagaa 660

caagttattt tatcctgatt tagtcaatcc atctttatat caataatagc ccatatacaa 720

gcaacagaca agtcaggaca gacaaataaa aatttgctaa taaatcaaat aggcccaaat 780

ataaatcatt ttctttgaaa attcagggtc agacttgcag agaactaatc gaaaacatgg 840

atggcttctg attttttttt ctggtaggtg tacatgggca gaccaagact cagtgagtat 900

tcacctagga agctatcagg aaagctacaa ccagcgacct tgttcccttc gttgtagacg 960

cagctcttcc gggattcatc acgtcaccgt cgggatggcg cagcagcaag cgatgggaat 1020

ctcagatgga cgccacagct cgcgcgcgat gcgatttgga ggtgcgaagg caggagaaag 1080

gcgcaggaaa aggaaatcgc gagagatttg gagcgtcggc gtctgcggaa acatgtgtat 1140

gctggaggtc tctttactca cgcgacgcga ttgggacccg gactagggat ctattggggg 1200

tctat 1205

<210> 3465
<211> 1238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125456_G1, chr3:202918721..202919958, Cluster 21

<400> 3465
ttaatgatat tttaaccatt taaagtagga attcaaaata aattctgaaa aataaaaaag 60

atccatttta taaataaagg tggggtgttt aggttcattc gcacttttg ctctccattt 120

tatttgtctt cctccgtatc atagcctcct actttatatt ccaatattga tatcagacga 180

agtcaatact ttgaaacctt catcgagttg tttaatgagc aatctcaaca acgctttgag 240

atctctgtcg gtgtcggcca tgtcttcttc aatgaccttt caccccgtac atcattgtta 300

ggagaatgtt tctgcccatc cacgtccact gagtttgcat cctctgtttc catatatata 360

tagtcctcct ctatatccct accgaccata tgtggatgct cctcctcctt ccaataaaaa 420

tcctactgac gcttctcctc cgaccaatga tgcttcccct ccttaacctt tcacttatcc 480

ataacctctt tcatactaat atgggtatct atatggtgct cctccatatg gatcgtatag 540

cactcctcca tatggtgctt atcttctatt tcattctctt gtaggtacaa taatgcccta 600

atcattgaca gcaatgccgc tttgactaag ttcgcttact ctggtgctcc ttaattctaa 660

tggcaaaggg actaatgaat atggaggatg acaggatggt aagtacatat atatttttat 720

gaactccata cattttagg tcaatgatag ttttttagct cataatttta taggtttgtg 780

tgtggctagt gcactttgtg gaccctatcg atgataatgg taagaaggga ttgaccttct 840

agggccaaat agtctgcacc tacatctcca ccacataatc cccctcgcta caatacctcc 900

aagcagctaa aagatcagtg gtcgacaagc aatcagaaga tcaccctctt taatgccata 960

taggaccgct tgtacacaac ccgatcgagt ggaacatata gtgatgtgtt gtttgaagca 1020

gccaagaact tccacaataa gctcaacaaa accaacctca agctagagca catgtggcat 1080

gcttttcgct atcagcaatg tagactgttt atagagtgga atttgaaata tggagtgaga 1140

taggaaagct attatagata gccttaatac cagcacctcc aagtaggaga tcaggtcctt 1200

aaacttcaat gatacactca ctaatcacga caacaggg 1238

<210> 3466
<211> 1308
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126893_G1, chr3:209830501..209831808, Cluster 21

<400> 3466
actttagccc aagatatcaa acaaccctta aaggggtgtt taggatgact ctaggttcga 60

gctccaatat gggattatag ttcacaatat caatttaatt agttttaaaa aatattttaa 120

tttaaataat aaacaaaata tgactcatct aaatgtattc taaagggtta caactctagc 180

tccacgattt tctggagcac ctaatgacca actccaccaa ctctaccaaa ttttctagag 240

ctgaagctgt cccaaacatg gcataaatac tatagtttaa agaaaggcgg acacaagtac 300

ttatggatgt ggaagttctc ggaaataagt ctcattagtg ctgctacaag atacactctc 360

cagaatatgt ctttaactat ttaattggtg tgatgttgtg tctataagaa tggacccaaa 420

tatttttga cgtaacctaa gatactatgt taaagcagta tcttacttgg gctattctcg 480

gtgtatagtg tcatactcat ttaatacatg ttatatagga tggaaagatg atgtggtatg 540

tgagtaaaca agaaagagaa taaagtagta ccttggggaa taccactcag gcacaagatc 600

ataggggata ccactcaggc acaagatcat aggggatacc actcaggcac aaggtcatag 660

gcattgaaac ctgaaccatc taaatggctc ataattcata cactcataca catctagtat 720

ttaattgtct tataaggact atgaaacaac acataatact atacgttggg acaattgtat 780

agttacacat gatgtggaac tttggatatt gtgacaaaaa acaatgggtt gggaatagat 840

ttaatataca acttttctct tctattaaat atctcgtcac atcaacaaaa aaatcttaaa 900

tcttatgtga caccttatct aaacttagtc gatcgaatta aaaaactaac attagacaga 960

aaaattagac aagttgtgat gtctttgggc atgtacaacc tagagcctta ggaaattgca 1020

tgatacaacc tagatgtcct agatcataaa tacaatcaag acacactatg tatagagagt 1080

tgtgtaaacc tgggctcgtc tcttgatctt ttttcactta caccccctag agacccctca 1140

gagctagttg ggtactctag tattgacttc aatccacatg tattgatgtg gattagtgtg 1200

taacttataa taatttacac ctcaatccaa ctcaacacat gttaaatact agattaccta 1260

aaaaaagcct caagagacca cataatttat gggcttgtat atgtcttt 1308

<210> 3467
<211> 1276
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128771_G1, chr3:219175736..219177011, Cluster 21

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (486)..(585)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (490)..(490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (491)..(491)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (492)..(492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (493)..(493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (494)..(494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (495)..(495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (503)..(503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (552)..(552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (553)..(553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (554)..(554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (555)..(555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (556)..(556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (557)..(557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (558)..(558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (559)..(559)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (561)..(561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (562)..(562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (563)..(563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (564)..(564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (565)..(565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (566)..(566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (567)..(567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (568)..(568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (569)..(569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (570)..(570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (571)..(571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (572)..(572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (573)..(573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (574)..(574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (577)..(577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (578)..(578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (579)..(579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (580)..(580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (581)..(581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (582)..(582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (583)..(583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (584)..(584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (585)..(585)
<223> a, c, g, or t

<400> 3467
tgtgatcccc ttactctcat caccattcac cagtctgaat ggcccaataa attaacatgt 60

acgtaacgat gtccaacagt gatccataca gtattactct atcacctaca atatgataga 120

tacggccata acaacgagca ttatacagtc aaagcggaaa ggcgtgaggt actccgatcc 180

gacccttggc agtactggaa gcacgtatga tgcatgtgac gtgcggtcca gcagcagcag 240

gatatgccgc ctgctgctcg tcctactgct gctgctggtg ggcttctcga gagcagagca 300

cgctcgctcc gctccagtcc aatttagatt cccttcttca gcatggtgac cctgacgcac 360

gtgggcctag gcccattcag aatgtccgcc gcaaccgtcc ctacacctct ttattttata 420

tttattttac gtttcctctt cctagccgcg cagaatctcc gtattgacta ggtgttttct 480

tcttgnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnacctg atgaatcagc 600

ttgattcgtt gactatagct ctgttgatcc tcttgcaaaa atcttaaact atataatata 660

tagtaggcta cggctataag gtcatgtgtt tgcgaagctc ctgcgtgcac gtgtgaagtt 720

ctgtatccag aagataatca taggttctgt tcgtttttct agatgctaat ataatatgag 780

tagcactaaa tataggttaa ttttagccta ataagagcta ataaaggtta attagttgtt 840

ttgtcctatt tatattatta ggctgtgttt attttcttta tccactttcc taaactaaac 900

tatcatattt ggtttccgag actaagaccg actaaagagc attaaatatc gcgtataaag 960

acaaggctgt ccctatttaa tgcagatgat acaattccag agagggacag tgaagactaa 1020

ctgaagaaca aaacatgtac aaatataact ttagtcactt ttgtcacccc atagtgacta 1080

aagaactaaa gtttggaaga gctcctttag tcaccatgtt tattagcagt ttaagaacta 1140

aaattgacta aagcctagtc agtaaatttt aggaggtggc aaccaaatgg gaccttaatt 1200

aagcgctaac ccctattttc tttgattcta acctcgaaag tctatgctta tacaaataga 1260

tcagtgtagt tctgtt 1276

<210> 3468
<211> 1362
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129463_G1, chr3:222809218..222810579, Cluster 21

<400> 3468
tactatgaaa ggcactatat atatgtgctt gtagtctgat attgttgctt gtagtctgat 60

attgttgcac gccacatgaa ttagttgtat ttgtttttaa atttttggcc agatcgtaga 120

tgctactcta ttattttgtt tcactgagta cactcataga tgtaaggaca atactatttt 180

ctttcactga gaatagatat ttttatttaa ttaacatata agctacttta cgttgagtcc 240

attcatgggg ccactaattt gcatctccat tatctttgga agttctgtta tgtgacagta 300

aaaaagcgat gtactgaata ataatgttgc cagcctgatg tttgatggga agaacatgaa 360

cttcctggaa cgtgagataa tgttgcccca tatttattgg gccacatatt tattggaact 420

tcctgatatt tattgggcca catatttgtt ctgcaatgtg ctcaataatt ttgcaagctt 480

gtggttcatg tcacttttta tctgcatttt ggccacaagc atcctagaaa ggagagtgtt 540

tggttgtgca gcattcttaa aatggtatag ctgattatat gcaagtgttt gattgtgcaa 600

tattctttat tacttgggcg caaaattgat tggctgagcc gaatagcaag gcattttgat 660

tatgtacaaa cttgtttctc aatatggcag gcaggcaggc aatcaagtga accaaatata 720

ccaattgttg ctacaataac tatttgtaca ggtacgtaac ggcaccacat ccttatcaca 780

ccggtagagg tagcgtgacg gaaaacatgg ttttttggca caagttttgc accgtttttt 840

taagacttat atcactattt tttttttact ctagctttca ttttaatttt aatacaacgt 900

atagtacaaa aaaattgttg gtccatgtag aagctgatcg aagccatttc acgtttagaa 960

gcccaagccg cataaactta actttcctcg gcatttttc gagcccactt tcataaatgt 1020

ggaaatagag atgaagttca tacgaattac aggaaaaatg ccaccgagat ctactcccat 1080

gcacaactaa agagaagtat actttggata tttgactact tccattcttt ttttttaaaa 1140

aaagatgcca tcttgatctt tgaatctact tttccaaaga agccacaact agaaccgttt 1200

ttggagaagc caaattcatt tgtatataga tgcatcatgc atgtaggata atattataat 1260

ttttgaaagg aggaatagtt atttcagttc cttaattttg gagaacccca attatactaa 1320

tgctctattt attctaaatt gtaaattatt tggactttta ta 1362

<210> 3469
<211> 1289
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130840_G1, chr3:229734695..229735983, Cluster 21

<400> 3469
caagcaaaca atcaagtaca tgacagttcg accaaatcaa tatcaagcaa tctggaagat 60

atactacgat attgcatttt aagttcaagg tcccatgatc agatgatctt ataatccaca 120

atcacaattg gccacaagga gtagtcgaaa gcgaaaacaa gggaagagtt cagatatact 180

acaagccttg tgcatatcaa aggttcatca cgattttgca agccatgcat cagctaaaac 240

attacaacaa cactgaggat aagcaacccc gaacttacaa atagaaactc tgatacatct 300

ccaagaaatg tagtaactct gaagtttgac aactcatata attcaggcat gcacagacca 360

agacagcaaa ggatctgtat tgccacactg gtggagtagt acattgcagt gtttgggata 420

ctgtgacatt cgaaaatatt gcaaagggaa aaactaaact ttgtgtgtag tgtattaaaa 480

aaactgaact ttctgtccca tccaagaaat gataattggc attctaattt acatttcaca 540

tgtcaaagaa gagagaaaca gcacaagtaa agtttactga ttattatgta gaaaaaatga 600

actcgaagaa actactttga attaaattaa gatgaagata ttcatggatt ctatttgtag 660

cactaatcaa tgcacatgaa aggaaattca aaattatgaa actgaaacaa atcttaagag 720

atgaacaagt ggtactcact tgaggcttgt tgcatgaaga agaaaacact tactgacaat 780

gcaataagac ctggagcaga ttgataagaa aagtactaat agccaaagca ccccaaaaaa 840

tattcttcaa cgagctcaaa tacaaaggaa caacacttat catgacaacc cacaaaggga 900

agtctcataa tgagctgggt aaaaagagta tcatcaatac aaaagtcagt caacaaaata 960

agctgcaaca caaccttatt gaaaagataa acaacaaaat aaaaccatag atatgctcag 1020

atggaaagga ttttttaat ccaagataac ccacagaaag aagtgatatc atgacaggcc 1080

acaggaagtc tcataatgag ctagatagga agattataat caccacatac tatttcctta 1140

acacattgtt ttactagtca aaggacatca gtattagcat ggttaatgta taccatcact 1200

gggaacagga gaagaaacca aataacccat tcatatagtt taagacacag tttaaatcca 1260

tgctttggtg atgtatctga aacataaac 1289

<210> 3470
<211> 1104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131819_G1, chr4:2941991..2943094, Cluster 21

<400> 3470
gaattcaaaa atattattat actagacatg gtcataaggt tatcttcagc tgccctatct 60

catcctctat ttcattccct atttaaaatt tcactctaca ataattctct tttaaggtaa 120

ctgttgaaat tcttattaca aacaccacat aattactggt tgaaaattaa gacaactgtt 180

gcaatgatat aataaactgt tttaaggtaa aagctatata tgtgtgccaa taattctctt 240

ggaaatgaag taatgcaata agtgagcctt cgaggaaaca taatccatgt acgattaatc 300

ctaacacaca atttgtatcc tagcgactgg ttttgtcttg caaccaaaac tgcatcctag 360

cgtttggaca cagtcgtgct gtcgttcctt gttcttccga agatgcccaa gcagattagt 420

acttgtgcag ttgtgcaata ttgctgattt cagtggcttg ttcttgtgca tggcgtcctc 480

catatgtggc aataagaaat ctgtctgaat ttcaaatatg agttgaaatt aaagagcgtc 540

actgatgact agagctaaaa gacggataca catggaacac atcagttctg tttgtcttaa 600

tgcattcatt gatcgttgaa ggcaagaata caagtcctct ttagccaaaa aaaaaacgtc 660

acggttgcaa gtactgcaca agaactagta tacacctcgt agagcattgc tgtcaacatc 720

atacacctct agcggatgct ggtacttcat aatcccaggg accaccgatg acggatcagc 780

agtagggcag gttgggctct agccccctat cgctcccgaa tctatagagc tctactgaaa 840

tccttcctaa attttaaata tacaaattat tctatatgtt tattatgagt gatttagtga 900

gattatatcg ttgtagctct ttaaataagc ctcaactatt tttttcggac tcggtccatg 960

cctgatccct ctcataccca atgacaactt atccaatcgc atgcgtgtct cagatgggct 1020

acaagtagcc cccctgtgta gcaagctgga aaaaataatt atatacctat ttagagcatg 1080

tgcaacctaa aaactcctgt ttag 1104

<210> 3471
<211> 1097
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132570_G1, chr4:5423988..5425084, Cluster 21

<400> 3471
gtttttagg aagcaaccat tgacatatgc atgtggcgcc actgctcgat gagaccaact 60

tgccattcag ataaaacaaa ctgtttgttc tataatctct accacgttat cctgatcact 120

tttgtcacga ttcttaatgt atatttactt tattgtattt taaatttatt gtatcgttag 180

caccgacacg ttaccttact atttgtaccc taataattat cagttcttga attctacgcg 240

atgctaatat caatcattgt tgtcctttgt ttaagatctg tcgctatgta tatatagcag 300

tcctgcagat gtgtgtaatt gcgttgtaaa agttgacaga taaatttgca gtccatcatt 360

gttttaggtt tgtcgttatc taataatcta ccactgtaga aaatgagatg acatgcatgc 420

caatcagtct gtcctttctt ttagatttat cgtcgttgtc taccagtact atctcactgc 480

tagttgtcac aacaagctta ccacacaatt aaatattcgc gcgggtcacc agtatagatt 540

acaccaaaca tttgcaaaag aaaagaaaaa aaaccgtctt gatctcaaac cggccgggcg 600

atcgagatgg cgatgatgtg gacgctcgac cacaaatgac gaagacgcag gttgcctcct 660

cagaacgtgt ttcatacaac tcatcacatc cgttctttaa tttgcatgtg tttcaaatcc 720

ttttggcgga gggaattcgg cactaatttg actgtatgcg ccacgtacgt aatcaatcag 780

atggtacatg cggcgcagga ttaaaaaaaa tatagtatca tatcatgcat ggattgttgt 840

cgtcgtcctc gaccacaaca ttgcaatcca gaaatggcgg tgcttgcatc acgccggatt 900

atatattatt tagactaatc ggccgctcat ctgaaggaaa ttgttctttt gatcatagct 960

taacttagaa ccaccaggta gaaccaggtt ttattgtaaa atgtccacgt gtgactcgtg 1020

caggcattat ctaggactcc cgacgacaat cccaacaaaa tattagtatc caaaacaaga 1080

gaattgtatg taacgtc 1097

<210> 3472
<211> 1143
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132738_G1, chr4:6172523..6173665, Cluster 21

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (790)..(889)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<400> 3472
gcagtcgacc atattatggt ggctgcctgc aatttgctga acatgattca aatgaaattt 60

gaatttcagt ttttctgcca acaaaccata caacaaaatt cattgttatc atttagattt 120

cgatacacat cattcacaac caaaaaatca tggcacaata tataaagtgt tattcatcca 180

tatccacaat acaaagtttc aaatgttttt acatacaacc aaaatatatc attcatccat 240

atagaaagtg tcatttatcc atacacatat atacaccact agttttgtca tttattcata 300

ttcacaaaat tagttcaaat gtttcaaaat tataatatat gatgcttctt gaagttaatg 360

agctctggat gatttgtcaa tgatctgtca tggtcgaaga agagtcccgt tatgtgtgtc 420

acttcaggtc ataagtgaaa taaatttgtc atcaccgtct tgactcatgt gtcttccata 480

ttcctataaa atgtccacgt ttctttgaca ttgtggtgct gatacaatca aaacatagta 540

actataattg gaatgttagt gaaaacaatt tgctcacacg atggaccata atatacagat 600

acgtagaaca acgttaaatt acatcctcac gatttggaat atatatgccg ggtacagcga 660

agcgcctcac acacataata tctgcaacta gtgtgtaggt ggttgcttga aacagggaac 720

atcttattat gaatcctcaa ctccttgacg ttgtctaggg tgatttcctt tattattggg 780

gggtggattn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnng ctgatgaatc 900

agcttgattc gttcggttaa gtggaccgta tgcaaagaag agatgtttgg aagtggctct 960

ctaaacatct gcttgcaaaa ataggtgggg ttttagatgc agttctctta agccaaccac 1020

atctaataat attgtttgca agcggttgtt taggatccgg gtgctcaaaa caatgtagtc 1080

aattgcccta taaacgctgc ttgaaaaact tggtggttgt aagggttgtt tttagtagtg 1140

tta 1143

<210> 3473

<211> 1076
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132949_G1, chr4:7029000..7030075, Cluster 21

<400> 3473
cctgtcggta gagcgagggg ctgacaggag ttacatattc attgaataga ctttgcatct 60

ctctcaatta ttatagttga tagtgtaagt aaaaatagca tattaattga atagactttg 120

catctctgaa ttaagcttcc acattttgta tattacttgc ctaggttatg tgcttactta 180

actagtttat cttgctagac tttgcatctc tccacccttt gccaaactct catcagactc 240

tccatgttat gagtacacta gtttgggcat gactagattt ttttgagcca aaatggtcaa 300

tggagtaata acattattgt ttgtttcata tgtgtttgtg gaaacaaagt gtggttgtag 360

gaacaaccat gaaaagagat acaatagttc attgaaactg tagtctgacc caaccacact 420

tagcatttgg tataaggaga tcaagcacat aatatagcac tgtcaaagca tgattttgat 480

gcatagagca cggtcttcac gagctatgct acaacagttt tatttgagcc ggacgctagg 540

gaaagagaaa aagaagcgag ggaggaccgg aggatcggag aggcgtgttc atggtcagca 600

actaggttaa aatatggaag gcgaggaagc aaatgggtgt tgcgagagga tcataaccag 660

ggctaattaa ggatcccatg tgtcagcaca tattgaagtg agagtgggta cattgctagg 720

ggggtgtaat cagatcagat atagacgaat attactcgtt tcatattttt tgatatttta 780

tcttcgaatt catatcaaat atggatatta tcaagttgtg cgaataagat ttgaatggat 840

attgatgtat taaatattca actttgagaa tatggatacg gatcgaatac tgagtaccca 900

gactcgtata ctgatcggat cttagcctta cacacctaat ggtgagtgcc acaatgttac 960

tatggctaag gtagatattc gaaagaaaca aggcaaaatg ctggtggttg tggtgagcta 1020

aagaggaggg gtgccgtgta ggagtgagtt gtcgagtgtg caattacctc ctcagt 1076

<210> 3474
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133102_G1, chr4:7449239..7450283, Cluster 21

<400> 3474
cttgtccatc gtaactttct gcatccagtc tccaccatgg atgctcaacg ttcaccatcg 60

tccccaagta aaaaacggat gagggagaag ctctataagt tcataatgaa gcgttatcca 120

ggccactatt aataatgggc ttcaagatag gctattgctg gaagaatagc cggcgctcga 180

tgtcctcatg cagctgtact acaggactcg cgcatagttt attgtgtatg ctgtgtttac 240

tttccgactt ctttaaatat ttacttatgt catttaatta ttgttcatat attgtttatc 300

atatattctt atatgttgtg ttgtacgaaa catactttag ttttaaatat tacttttata 360

tatgcttctc ctttgccgta acttaaattt gttccgtccc gccaacggac agacgagcgc 420

gtgaagcact gctcccaggc ctccattatc gagttgctta aagttaatta attaattaat 480

aaggagaatg ttaaaagata tgaaaagaaa aaaaatctat ctaatacgaa ggattatttt 540

tttaaaaaaa atcttaaact atggtaaatt aggaactaaa atgtataata ctggtaaagt 600

aaataataaa gtatatcgat atataatttt aagaattttt atgacttttg atagttcgat 660

taaacgatta ttgtacggaa actattagaa gaagagtttt tttccaaccg tgaagaagcg 720

ctatcctaat ctagttctat attagaagat gagattatat gatcaaattt gaaacgttaa 780

aaatccttgt ggggtccaat agctttcaat atgcggttgt catcaatcac acccatccat 840

ctatgcatag cttttaggct aagatcatcg gatcggcttt gaaatgagta aaacactatt 900

ctacgctata ggggatcggc tttgaaatga gtaaaatact atagttgtat tgtttatata 960

ctagtgtccg tgcgttgcaa caacatacaa aatatttagc aaaacattag tgtaacgatt 1020

ctaagacaac aacaccttta ttatg 1045

<210> 3475
<211> 1169
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133502_G1, chr4:10046764..10047932, Cluster 21

<400> 3475
ctgcggacag agacaacaac attatgagct tttcctcctc cattttgcag aaggatcaga 60

caccaccaag tagaaatcag tgaccaaaat caaatctacc taccggctgg agcttttgta 120

aaagaattgg catcaccacc agccaacgat aacacaaaat tcgactctgt cttgaagaca 180

tcgaacaata gatccaaatg cacgtggcag cacgatgaac tcttaaatcg attgaaatgc 240

tagatgtttt aatctcttat ctggctgtga tatcacttgt tagtaaataa tgcaaatctg 300

gatcaaacac aagacacaaa attttatacg aaaaactctt gcaaaaaaac caagagcgcg 360

aaaccgacaa tttttactat atgagaaggg tttattgaac gcagggaata caatgagttg 420

tcgctatttc catgtgactt ataagatgta tatatagcga acaaactcta gtccagtatg 480

taaacaaatc cgctcaaagc ttatgatata atttaaatca tattccaaca agaaatgaag 540

tcaatacgag gagatttcga cgaaaataaa taggccaaca aactattcaa ccttctagag 600

atagatttat tatagacaag ttcttgagtt aggaacctat gcaagaacat aggggtattg 660

tgcaactaat aatttattga tacttatttt gtattataat taagaatacc ttttttatat 720

gtttggtcaa acattgaatt taaaatgcga taattataat cttcatggag cgagtacgta 780

tacaagaact gaatggaata tataccaata gtcatcgact tgtcgctcta catgcaccct 840

ttccaatatg atttctttta cgtccacatt aattttggga acatgtattt taatgagact 900

ttgttgaaac atgatatctt ttctaaattc aaaatttgtt tttatgaaat ttctacttta 960

caaaagggat cttagcttcc ttgccattct actaactcga gaacatcctt gggacatcgg 1020

ggtcaatttc attagatgat ataaactttt ttgaacttga atagtatttt cttgaaggat 1080

ctataatttt tatcgagatc actgacccta ataaagctcc taaacttgca cctgcattgt 1140

gaacactcag gtgccgtttg gttcacata 1169

<210> 3476
<211> 1009
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136110_G1, chr4:22628103..22629111, Cluster 21

<400> 3476
tgtaaaattc taccttgtaa gtatatcttg aaaatcacct tccatccctt catagtccga 60

gccactcttt ccgtcatcta gcacacatcg ggctagcttt tcccctaaaa atataaatca 120

tttcgtgttt tctataaaat ctaaagtatt gctgcacgaa cattattttg gatttcatat 180

ttcttaggac taagccatag acaaacaatt gactcaaaat tgtgacctac attccaacca 240

aaaagactat ttagttaagt cgacaaattt ttagctacac gatagtcaaa cgttaagcga 300

taaatcgatt cttttgccat acagaaaaga caacaagtat caaagtaatg gttttggctt 360

attcaattat ctctagtgag aagtttttt ataacagcca tagaaacaca tggatcatgg 420

gggaactgtt agcctctacg ccacaggaac caaaaccaat tggatccctc taaaactaat 480

tacaaaatat aaagattgaa ccgagtacat gcctttcgaa caaaaatacc aattgatttg 540

gtcattttca tctaccaaat tcactgtatt tattatagaa ataaaatccc accacaaaag 600

catgttgttt tcagagatat ttcttctgaa agatagcttc gactccaccc catcccaaat 660

atcactaata gaggtttctt gctcattatt aattatatac aatggccaaa attgtgcagc 720

taaacttgag tttccaaacc aaatgtcttg ccaaaatttg atccttttcg cgttgacaac 780

tttccatttt acccccatat gagtcgcctt aacagcccag agaaatcctt tccaaaatgg 840

tgaggttctc ttttcagagc agcaaaatat gtttggattt gtaactttgt attttgaatt 900

aacaatctga acccaaagag catgctcatt cagatgatat ctacaaatcc atgcaaccag 960

aaggcataaa tttaaacttc tcaaaccagg aactcctaga ccactaaac 1009

<210> 3477
<211> 1015
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_139634_G1, chr4:43603528..43604542, Cluster 21

<400> 3477
ctctaatgct ccatgcacaa acactatgag ttagagaaaa aaattagggc acgtttagaa 60

atatagtatt ttttagtccc aagacaataa cgtggtattt gagcatatca tagtatttta 120

gactaaaata cgtttgagag tatattaaaa aatatgtatt ttaaaccatg gttttagcaa 180

cactgtggta tttctagggt taaaaaattg tggtctagat caaagttttt tgtttgcacg 240

caactgcact cttctcctat actgcaactg aaataatgtg tctctaaata gctattgaat 300

tggattgatg taaaacatac catcatggca tacaataaac cgttatatta taaaccgtgg 360

ttttaaaaag catagtacct aaacaggccc agtactgcta gttgcattgg aggccacgag 420

ttaaggttaa ctccatggta atcctcacaa cacacgctat ggggaaaagg aaaaatttca 480

aagaattctc atataaacca gcaacaatta gttttaaatt tggtagactc tagtcattat 540

cgtcaataac agttgtttaa tctattcaga ttttttttaaa aagctaccca cctctccatc 600

attaaaacaa taaagtaatc cttaactttt gcatctgaaa tgtccattta agctattacg 660

gaagataacc gtaaatttgc atctaaagtg tccaactcta tctctatgaa agataataca 720

aaataattac taaattgaat tttaacttac cctcatctac cattataaaa tataatatag 780

attaatttct ttattttcta tctaaactat ttatgtttgt tgttataaaa taaactaaaa 840

tatccctcaa atattgatct aaaaactaac atgagttatt atgggtaagg ggcgaaaggg 900

actctaggct agtggttaaa gacttccgag tagcacctcc aagtccccgg gttcgtttcc 960

tatcggagac gaattttctg acttggttaa aaaatcctct tgttatgccc catct 1015

<210> 3478
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162852_G1, chr4:191522214..191523239, Cluster 21

<400> 3478
tgccatgcca gtgagcgtac gcacaagatc gcttggaagt gatgtctgat gacctggttc 60

ctcaaaacaa acaaaaaatg gattcactct atttccctaa ccaaacacaa agaaagaacc 120

atccgatcct ctgatgacct ggttcctcaa aacaaacaaa aaatggattc actccatttt 180

cctaaccaaa cacaaagaaa taaccatccg atcttgtgag aaatgaatcc attctggatc 240

aactggttcc ggatagagtc aatcctctaa ccaaacacgc caaaagttct tcggtagtgc 300

ctcagtctaa tgagatgata tcatattacg ttaccatgtt ttctcaagta ggttcaattg 360

tcacaaagat ggaccataat ccacaggaaa aagatggtcc gtaatccagg gctggcagga 420

gaaattcata tcgaaatttg gtaaataaat tagtataaag ggcgtagcac aatccatccc 480

aacctatacc atgtcctgtt ttgatgtcac aaagggatta tgtgatgagc tgagtataat 540

tattgggaga tattggtgga gtcatcagga ccaaacaaat aagattcatt ggctgagtta 600

ggaaaaactt tcgagaacaa aaaataaata aataaataaa aataaagggt gcctcggttt 660

cggcagttac acctatttaa tatggctatg ttgaatcgac aagcaaggag atcgcttacc 720

tatcctaatt ctcattgtgc taaggtttta acgcctcgag gaacaaacat cctatctaaa 780

gtgagcgagc atattaataa tcttgtaaca ggtgtgttgg gatgagcaac ttataggaga 840

aatcttttgg ctgaaggatg tcagtgagat caacttatag gagaaatctt ttggctgaag 900

gatgtcagtg agatcctaag aatcccaatt gtagataatt tggagcattg gcatgcatgg 960

tattttgaca caaaggtctg ttttcagtaa aacaaacatc ctataactta agtgaatttg 1020

gctttc 1026

<210> 3479
<211> 1334
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_163706_G1, chr4:195553031..195554364, Cluster 21

<400> 3479
ctacggaagg ttgatgtatc aatcgaggat ttgttccttt taatgtgcta aacgatttgt 60

tccatgtgac atgttcaaat tcaattatat agttcaactt gtaaccaatt tttaagtgta 120

gggttagtat tgctatatca tccacattac cacatctagg actgattaat aattatctcc 180

acgtattgtc cttagttgtt gttacaaatc gaaggcagtg aattgagaaa ataatctttg 240

tgagagaagc aacaaatgca ttatgtttat aagacattcc ttttagttct agaaaacaat 300

gtcttcgttt atctgtgaca aatggaacaa atgaaaacca tgacaataat aaacccaaaa 360

tagcaaaaaa aaactcacaa cccaagtatt tgagctcctc atgggtgaaa atctgaatta 420

ctcgtttatg agtagaaact agctagaatc ttgttgtctc accctagaca catcatagtg 480

cattagtacc tgtataagaa tgtctaggac ttgattgttc tatgacccca aaacatctaa 540

aactagtgac ctaaagctca caaaaatggt gaaaatgtga gaatctattc gattgcatgg 600

gatgccaaaa atctacataa gaaaatgggc ccaagaatga taaaatgtgg ctgagtggta 660

gaataaaaaa atcctagtaa taataaaacc taaaatagaa aaaatatgac cttggctatt 720

tgagctcctc tcatgtgtag aaaatccaaa gaactcattg tttgtgagca gaaactagct 780

agaaaaatgt tgtatcggat acacccctagt ggccttaata gttgcctaag aatgtctgag 840

actcgatagt ctggtgtctc cggaaacaca taatcctagt gtcgtatagc ttacgaaaaa 900

cagtgaaaac ttataaatag gttcgagagc atgtgacata aaaatctaca taagtaaatg 960

ggcccaataa aaacaacatg tgtctgagtg ctagaacaaa caaaaaatcc taggaacttt 1020

atgagcagaa actagctaga gcagaaagta gctagaaaca tgttgtctca ccctagatat 1080

accatagtag ccttaatagt tgccaaagaa tgtatggaac tcgattgttc cagtatccct 1140

aaaacactta agactagtga gctatagcgc atgaaaagtg gtgaaaacat gagaatcagt 1200

tcgagagcat ggaacgtaaa aaactacact agaaaatata ctcaaggaaa acaacatgtc 1260

gtttagtgtg cgaaaaaaca aaaggtctat gaataaaaaa accaagatcc taggtatttg 1320

agctccttgt gtgt 1334

<210> 3480
<211> 1065
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172656_G1, chr5:1866625..1867689, Cluster 21

<400> 3480
agtgatgagg gagaaacgat gattcaaata atattggtca ttaaatttga gtgggtaaaa 60

aaagtagttc ccgttagttc tgatggcatg tttatacgtg ggtacaattg tttggcacat 120

ttaggagagg ttatgagcgc gagagtgatt tcgttggatg ggttttataa agctataact 180

gatgagttat atagtggtat agatatatat aaaaagagtg acgatatttc ggctgctagg 240

tatttagtta ttttcacgtt tgattatatt gctagtagta acgttagaag acacgtatgt 300

taaaaatata ccctcttcat tgttcaaaag attattttgt tttgacagat attcatacaa 360

cgaccacatc ggagtagtga taacttaggg tctatttggt ttctctttgg atccccgatt 420

aaaacattta ctaaagtaat taatgttgtt caaaaggaac aaaattcgta tctaaacagt 480

gtcctaatga ttcttgttag tgtttcttcc ccatgcatgc atgcatgcat gctccatgcc 540

aaatattatc aaacaccaga tacgttcccg ttcatcatca ccattcatat gattgcaaga 600

tgcatgtata tatgtaaagg cggcacatgg tatgtatata tatgttaaat tattagatgc 660

atgtatgtat acgcagatta cacatgatag acggatccaa atatatacaa atcgtaagtt 720

catctgaaca ggaattgaaa ggctctatga tgaacgaact gaatactgta tataagtccg 780

gatcgaggaa atggaataca agctcactgg gaatgggaat tcacgtgctc tccatgttga 840

gggcaaaaag gcgaatcatg cacgtgtgga ggaccgacag cgagattgaa aaaaggggc 900

aaatcttgca catgtggatc aataccgaca acgagattgg gataaatgga aaaccaataa 960

aactttcgct caatatgttc ttgactgtcg tttcaacaag aacatgaaaa tattatttgt 1020

atcatttgca ctgttttata aaaatacatt ttgcactgta gatta 1065

<210> 3481
<211> 1112
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_178120_G1, chr5:31558491..31559602, Cluster 21

<400> 3481
attttgatct ctgttggagt taattgatat acaattatat ggtgcaagct ttttttatt 60

aatttattgt ttttgctata cacaaattag tatacacatg ggtatatatc ctacgagata 120

agatgtaaac accctaatat cttattttgg gatttaggaa gaattttcca aaaagattaa 180

taatttaaat gtccttaata aggatttctt ttcctttgga ttcccctctt aaaatgaata 240

aataataata ataataataa taatagaata tttgtagtta aaaacttaga cctcaacttt 300

gaaaactaga ttttcacttg gaaaaaagag aaagccttac aattcatttg ccaaggtgga 360

gtatgcctct catgaattat atacttacaa atactcttta agaatatttg aatgaaagtt 420

tctcttgata agagattaca catttaattt ttctaaataa acatatgaat atttaatatt 480

gataagagat tacatattta attttgtttg aattaaagtt tctattgata agagattaaa 540

ccatataatg aaagtcgtca aggacgctca ctactgcatt tcaaccctag acgagagagg 600

agagcgccgt gacggaccgt accttctgag taacctatca ctcatctttc acagtcaagt 660

ataccctctt gaagaaaaga tcactcgctc tgacctaaca attggttaaa aacttcagca 720

ggtgcaccct attgattaaa tcatattgtt tttcttataa aggttgtccc ccgtttctat 780

tattttcata ttgtatggtt tcaacaaata ctcaagaaga aattcatacg tctggacttt 840

acattatatt ataagttccc tgagagcatc aactctgaaa aaaaacttat tttagctata 900

gataaatgtc acctcattgt aaccccagag agtactatat ataacaccct atatgttatg 960

ttacacacgt gtcgtatgtg ccctatttgc ttctacaaat tcatcatgaa cgcaagttat 1020

tgtgatccaa caactatatg gcccatgatg aactcactca accttgtgtg caaatgggac 1080

catatatgtc cggtctcctt taatttgtcc ca 1112

<210> 3482
<211> 1228
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_186743_G1, chr5:87912915..87914142, Cluster 21

<400> 3482
atggctcaca cctccaaatc acggtagtcg caacaacact ctagtggcgc tggcttggac 60

aaaggcgagt ccatctgcaa aagctagacg aagccacaaa gacaacaatc ttggatcatg 120

gtgtgtagaa aagaagaagt tgttgtgagg gtatattcgg gagattcaac tccctctttg 180

ttcgaggggt ggagagtttt taccatcaaa aacaaagaaa gttatcagga actgctggag 240

caagaaaaga agcatatctt ctctaatatg acagatatat aggaataaag agtctcattg 300

aagaactgtt gaagatgctc taacaatcat cttgtacggt cagagcgaca ttttgttatc 360

atgaaataga gtgacatgta ttcactgaag acatgttaaa tgcaattaaa taacaattca 420

atacttaatt agggtactct catcaccgta aaagagagca atccatattt gaatcaaact 480

aaatgcactt aaataaatta agtcacattg aactgtaaaa agcagtgtag cctataaaaa 540

aacaatagca actcccatga ttaatataaa aatgtattat atgtttaaat gcttccaaat 600

aaattctatg attaatgtag tagcgctgct actgctgctg ctactaataa taataataat 660

tattattatt attattattt aataataata ataataatta ttattattat tattattact 720

tcctctatcc gagaaaatga tacacatatt tttgttatga aaaaagtcac atatgacagc 780

tttcggcgat taatatatca tactatattt tttaaaaaaa atcaatacca tcacacgatc 840

actttgaata gagatctatt tcaagcaagt attgtgtcct aaacttctgt tagattcgaa 900

aagttgttgg tcaaaattta aatacgtata tgactatcgt ttgaaggcag atggagtaac 960

cggtattaga agcatcattg gttttttag agatttaaag ccagtttaga aagttaaatc 1020

tcctcggaga atctatgaga ttaagaaggg aaatgccttt attttctcaa tctcatggat 1080

ttccggtgga aatttaagtt tttaaattag ctcttagtta gattttaaat tatttaacgg 1140

aaccccacat ttttcccgga agaggttctt cttcaagcga aagaaaaaaa acaaaaagga 1200

gaaaattttt atgctgcaac atcacatc 1228

<210> 3483
<211> 1092
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_192638_G1, chr5:131563124..131564215, Cluster 21

<400> 3483
tcgtgtccgc cgtacgttcc caccgcaaac ttttcctctg cttcacatgg tctccgctat 60

acgtttaggc agcttaaaaa aatttagtga agttggtgga ttagatcatt agatgctgta 120

aaaaattata gagttaaagt tgtaagtctt tagaagacat ttagataaac cattttattt 180

attatttaga ttaaaaatat ttttaaaaac tatttaaatt gatattataa actatagttt 240

cacattggag gtggaagcta gagccatgct aaacatgctt ttagctgttc aagcgcagtt 300

ttgcctgaga ggattttgtg ctcgtaaatc tcagttgctc aaattggaga agcgtgttag 360

agtttggtcg tatgccttct ctgccttagg aatttattgt tctgtgttat gtaaacatgc 420

ttgggtcaat agtactcgct ctgttacaat ttttaatcca ttgcccgctc gtcttattca 480

aaaaaaatta aaattttcgt aaatttttt aacaggacga gccggccaaa ctttataaaa 540

aatcaaataa attataaatt ataaattggg acggagggac ctggtttaat tttctgctat 600

acacattagg tgccatctga tttgtaccga actaaacatg tacttgtgac cggtagccac 660

tagccagcag cacggtggtc aagtcattat gacttcttca cctgcctctc gctacggctg 720

ggttacgcta atgagtggtc aagctggtgc agtgttcatg tctcctcgat tataaattga 780

ccactgcgat tatagctgct tccgtgtcca tcatcctctg ccctacaaga aactctacta 840

tcacatcaca ctcgtactac cagcgatcac tcttttgtag attatttaaa ttcgggattt 900

cgtagtatat gctattaaaa aaatcgttta cattaatatt ttggtgtaat ttgtagatag 960

aatccatgaa gcaaaaagct cgagtgtggt gtagaaatat ttcacccaat ttttactaca 1020

cattaaattt gggtgtataa gctcacataa tttgagtgta ggagataagt tttgcatggt 1080

aactggcagg ga 1092

<210> 3484
<211> 1154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202126_G1, chr5:186231963..186233116, Cluster 21

<400> 3484
cttttgccg atggattcgt aacaacatca gttttaaatt acctccacac cttgcaatta 60

aagggtggtg ttttctacct ttattttaag tcaaacacca tataaagttt aactaagttt 120

ataaaataca catacatata atattaaata agtgttcttg aattcatcaa attatatatt 180

aatgtcaaat gcgctgatac tctttactta gttgaactaa tatagttttg cttataacaa 240

aattaagatg ccactttatg ggacgggaat aatagttttc tatcgaaatt ggagatatta 300

caatttctat cttcaaacta atttcgtttc tagtatatac ttcatataac aaattgaact 360

cttataggct atatatttgt gaaaatgaaa aagatcttta cacaaacact ttaggacaac 420

tattactttt ataaaaagga aacgcataat tagtgcgcat gtgtatacat acggaatact 480

caattaccga ttaccgataa cttatattat ggccactttg agttaccata acaactatac 540

caatttacaa gattcttgta actctttcta aacgatttat tgtaacatta tatgatggta 600

tactagtagt aattaacaca ccataaattt gtacaaacat tatatatatt atatgtctat 660

gaacagaaaa attgtcaaac cctagtagaa actatataat tatttatgta agctttaaca 720

ttctttgctc tgctgagtga gatggcacaa acgaatccaa tagtagcttt ggggtgtgtg 780

tgtgtggggg gggggggggg ttgcataatt aattgcccga tgtgctggtt tttataagta 840

tggtggatcc gccagtgaac catgttgcat tgcacgtaag agctacttgt atatatgtta 900

ttacgtcaat acaatattcc ctctatacaa taataataca gaaaatgcaa tcactctatc 960

ctccaaatat acacgaccag caaatattta gtttcagata tgacatatat gagctataga 1020

aattaattaa ccacttgcta ttttggacgc ttcacaaact tgggcagcac tcagcagact 1080

acgcttattg atttaattaa agtacacaca agtattttaa ttttctacca actacccccт 1140

gcgtccgaaa taag 1154

<210> 3485

<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203330_G1, chr5:192875930..192876998, Cluster 21

<400> 3485
tatctattta gtctctgtat aggctctgat ccacattgtt cggatcctgt gtaacctcct 60

ctccttaatt gtcgtgtata tctgattgca tgtgccgcca gaggcctacg gtcatctcgg 120

ctccttctgt tgtactttgc ctatttatag gaaccattga atgaatggaa cgacagcaga 180

gcgacagctt tcagaaatga caccaacaga agtgacatac atgtaaacta tacagtgaaa 240

tgaaagcacg tacattagaa cacacttact tggaaggttc ctcgtacaac cttcaatggc 300

cgaatcatca ttgaaggaag ttcaataata attcgctcat tattagtctt gtaaccaggt 360

gtaactactg tggatcgaat caagttgcga acaccagaaa agtcagaact tcttgaatct 420

attgatcctg taaaaatctg atcagttgtt gacgaatctg tcagttgatc atccacactg 480

ctgcagatat tatcactttg tctctgcaca atttgttcat gtacttcatc tactgtaatc 540

aaagaacttg caggaagaac actaagtaaa gagtctccat cttctgagtg gcatgcgtct 600

gcaccatcac aaagaaactt ctgctccaca taattagcag aagcacccaa gtgattcaac 660

caattgtagt tccttttcat aaatcttctc attcttaacg aactttcagt taagtctaac 720

ttccagaaaa tctgtgtaac agaaaaaaag gaaaggcgca aaatagataa gaaaacaaaa 780

ttcatgcatg ccatttagct ttacagtgcg atttttcct gattgaaaaa aataaatggt 840

tcaacatcat cataaagtga tcagaaagga gaattgcttt tcataataat gtagtataac 900

aaggaagtgt aaaggaaaca cagaactgtg accatacact atcgggacta cagaggagtt 960

ctccaaaagg tccgtagagt ctacttgtct ctatcaagca gtgaagaaga tgctgccatg 1020

cccgaagtcc aatagacatg caactgcggt tcaatatttc gacttgtgt 1069

<210> 3486
<211> 1023
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203333_G1, chr5:192881369..192882391, Cluster 21

<400> 3486
gaagtctcga gttagaatcc tgattagcac aattaaataa aataattgtt gctcactctt 60

attccacatc taaggcctga gagagcctca acatgaggag tgttaacata tcataagata 120

acctactagc tacagacatt cctgttaatt aagaacctac aagctacaag cagggtgttc 180

ggtcataatg cagcctcttc agaagttcat gcttggttcc cgtaatgact aagggcctta 240

ctgattacaa gcttaaacaa atagtattgt ttattgcttc atgataagtt gttcctagaa 300

gttggacttc aatcttctat attatatatt ccctaacaat actatagtgc ttcttacaaa 360

ctaaaaacat ttagatgaca ccagcaaatt caccgatact caagaacata gaaagaagtt 420

tgacatgtaa tgatgtaaca tgatgaaaca ttgaaaggac attctagata tacatacatc 480

aactggaaga ccaccagcat cacttgacaa agactgtctc gagtccccag cttccaaatg 540

ctcactgcca gttctactca atgaatttga cctactgaca gctgatgaag ccattgaagc 600

aggtgaggca gcactatcag ctaaacaggc catgaaaaat tgttgactgc gtgacctcaa 660

atgatcttcc acaagcatca gcagaacaac tgcattctca gccaacatta ctgagagatt 720

ggcaactttc tctgcatgta cttttgtttc tttaggcact aaaccctctg ctgcaacacc 780

agctgcagca gcagcaatcc cttcagtttg ctgtaaagac aaatagtaaa agaaatcatt 840

gatgtggtga acagagaatt attaatttca taattttaat taacttatga gacaccattt 900

gttatgtcat agtactgaac tgtgagacat caagacaagt gtaggtcact gcattaagag 960

tatataacaa ccatgatctc tagtaatatt gttgacgatg gaaatgccac agcaatatat 1020

tac 1023

<210> 3487
<211> 1156
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203668_G1, chr5:194569550..194570705, Cluster 21

<400> 3487
ctggagcacc agatgtacaa agatactaca aatatatact atggcacccg caccgactag 60

acgtctgcat ctgctcctac acaaacacaa gcccaaagtc tcgtgtttgt cgtgcggttt 120

ctattaccct ttgaataacg acccattgcc tcgcgcgatc cttgtctagg gaattgattt 180

gttcctttcg ccccttgctg tttgaaaaac caaaggtttt ctcattacca agttgaactt 240

caaattataa acatgcatga aaatatatcc atgagccaac atggataatc atctgtacaa 300

aatatcacgg tatattttga atatccacat taagatagaa aaaagcaatg tggctgatgg 360

atggattgtg atctttgggg gatagaacac atgagcacta aggatctatt ttgttcagat 420

gtatattcat gaaaaaactg attctagctg tgtgagatgt aaggaagttg atgcgagatg 480

attgttgtgg aaaaactaaa atatacgtgg tcgaataatt tacgatagtt tcgtgtaata 540

cggatgacac tatatatagc acaaatttgg aaaatctggg gtagtggtga tttcgaatta 600

aactacagaa atctatttag aaacctgttc tgttgttgac ttgttgtacc catttgattg 660

caattacagg tttttaacag tgaatttagt ttaaaaaact gaaccaaaca cgttttaaat 720

agacggcttc tctttgtata cgggtgggct ggctcaacca gatgcatcca acttttctag 780

actaatgggc ttctaaggaa cctatttagc ccagtgagct tctaaagcgg cgtttaggta 840

tccagtttag ccctattgct cacgggcctc agtatcttta ccttctccga taaatactaa 900

tgtgggtggg ctgtgaggaa ctccatccac tgcgctttac tacattttac gaaaaattga 960

acaggcctac gctacgcgct cacgacacga gtactactcc taagcctcta ctctagcagt 1020

ggatcgggtt ttattaggaa cggaacggaa tgggccggag cgattcgctc gttggggtcg 1080

gcacttcgaa caccgttgag acgctggcac ccagtcgatc gtgttaagta atactagtta 1140

atatgtgggt aaatac 1156

<210> 3488
<211> 1345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2065_G1, chr1:10837095..10838439, Cluster 21

<400> 3488
ttttttgctt ctataactgg agtcttgtca tcgtacccca tgtaccactt aggttgatga 60

tagttgacga agagtgtgcc acatgtgctc caacttaaag ttggttttat caggcttgtt 120

tcggaagctc ttcttggctg ctcatgcagc atagcatcat ctgctccact cagtcaagtt 180

gtatacaagt ggttgtagat tttttgttga agaggatgat cttccggttg ctctcgacca 240

ctgatccttc aactacttgg gtgtgatagc aagaagcttc tatggtggag ttgtaggtga 300

tggctatttg gacccaattg gctgatacat tcttgtcatt accatcaata gggtccatag 360

agtgcaatag aaatgcatgg acctataaat tttaaaactc agaaaaagaa ctatcaacct 420

aaaaaacgtg aaattcatta aaaaatgtgt gtagacttag ggacaaggat ggatagaaac 480

atcctttcga cgatgatgta cgaaagaaag gtcgtcgaag aatacatgtc cacactccca 540

ctggcgtggg atccatattg gaatagagtg ggaggctaca ataaataaat cctataggat 600

attagagaac caatttaagg gacagctcga aatgaggtat ctgtgaagtt ccaagaatat 660

gtaatagata aaattgatta aacgaagacc ggtgctagct ttagaaaagc atgtcaatat 720

gtagccgaat tctcttgact gcgataggta tgttaacata tgatctttta tctcgtgaat 780

ttctgcctct tacaatgtca cattctagga aatcctaaat gaatctaaag atctttatat 840

ctaagactgc tctaatttat cgtattttca aaacttaaaa ctaaataaat atatatttca 900

catgttacct ctggaaatga tagaaagtta ggaccattat atgaatatat cttggcattt 960

ggcatctaat aatgaaagtt cactcgctca aactgtttgc tttacctgta ctacaatttt 1020

gccgcaaaaa tagtacagta ctattactat gttcatctag aaaagaatat aattctaaat 1080

gtatttttag tcacagtgtt taaaagtttg actaaatata tatgtataaa cataaaactt 1140

tactagttta gttgccgtgt gtcactacat ttcctatatt attcacaata tttacaatat 1200

ctatctttta tagaacacaa attgatacga gcccggtgat tagaaactgt gagtgggggg 1260

gtgagggcca ccacaattta aacctagat agcaccacac tcatttttgg atggattttg 1320

tcgcgcgtgg ggcgagggaa tcgtt 1345

<210> 3489
<211> 1274
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_210577_G1, chr6:16278839..16280112, Cluster 21

<400> 3489
ggatggattc cggacgatag aaactgctaa atactagtga ctggcgcgcg ccaacgcgcg 60

catgtaagca ttgtaatatt tattataata atattataaa aatacttttt taagaaaatg 120

actgaataaa gatagatggt aaattaccta gcatatgttg ttgattgaca ggaacaaaaa 180

tatatctgat tttaggttgt aacggttaag aattgataat agatagttta tcaatatttg 240

agatatatac atagatgcat aggcacaaaa gattgtctca tgtagctacc attaaaaaga 300

acatataagt ctggcataat attcatggaa caaacactgt tttgtcacat atttacatct 360

aagtaggttg attatcacta catagtaaca aaaaatggtt gtcacatatt tacatctaag 420

taggttgctc atgactatat agtagcgaaa gataattcga agttactgat ctattattta 480

ttgaatggag cgatcatgga gtcttgctag cgtggcactc atccaatttg tagcttgaac 540

caagcttctt gcgtctacaa tagaaaatta aagttaaata tttgtaaact taattggtac 600

atagcaggtc attactttag tgatatataa gagaagatgt gtttcagtac ttgttagcat 660

gcaaatcgta agcatgataa tttgatttgt atgtgagcag ttttgttgga agtattattg 720

caatacaaaa aataagagtt gtttagaaag gaggggcaat aagatatata tttatataat 780

agaaggaaat ttgttttgca aaaactacta ttgcaatgca tgttgttgta ctccaatggt 840

aagcgcaggt cttagtagtg aaggtgaaga tttgagttga atgtgtaatg aaatgaatct 900

tgaccaagca gcattttccg tgaacaaata tgtagaagtt aatgatgctc gtgtttccaa 960

accaaggatt aggatttact gtcaaataac agtaaacaaa tcagttagca gagaatcata 1020

caaatttaat atttgtagta acatgttaag tgtgcatcag tatgaacgca atgtgttagg 1080

aagttataaa ggaaggctta atggaacaac ctttatgaag cagtaaattt ctatgtaggt 1140

ctgcacatgt taataaagca tgtattgtga aacaacagtt tagagtatac taccaaaaaa 1200

gcaataaaat taaaacgttg tgtacaatat tatagaaaaa tgaatattgg caatctccac 1260

atttggttat gatc 1274

<210> 3490
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_211853_G1, chr6:25281535..25282642, Cluster 21

<400> 3490
catgactcaa gaaccgctta tataattctt ggcattggcc agagctttgc aggaaccatt 60

tacggagatt atgaatcggt tgctttgcta gttcaatttc ctcaaccaca tgagatcccc 120

gatgcaaaat tcaaacctag ctactgctcc cacgcatgca aaccaaataa actcgagaaa 180

aattcctcga ttgcctctga aacttgtaac aatctctatg tcccatccaa aagtatgttc 240

cccttcatta ccatctgatc atgttatcca tgcactttgg taccattttt tgtcaatcca 300

tggtttaatg ttgtcatggt gtatatcggc actaacgaca tcttgcacgg tccgagatga 360

ggtataaagg ggacatgaga aggataactt gaaatagtcg actctagcta gatgcggctg 420

cgcgcactag tgaaaaacta gtgctgcata aagaaaccaa ataaaaagca cgtggaaaac 480

acattagcat aatctgtagt agcacctgac acatttttc ttcattttct tgtgaactag 540

taactagatg aaagtaatat atattgctag tttattaaac tcaatcaata tggaaaaaag 600

ccgaccgaac cgtaaagatg aatctagaga atgaagaaca acacgcgtcg ctatagagaa 660

gcggtgggat gcgttggtag catgttgaca ataataacat tgtcacggat cttagattcg 720

aactgtcagt aagacggagg tgtgggtagg aggtagaaga tctattttcg aatcctttgc 780

gcaaaataga aaagagacat gaaaaaaaca atagcaacgc aatcattatt cgttacaaga 840

ggtagtgatt tagagcttgt ttgaaagcat ttagtttcta aataaactaa ccagagtggt 900

tccgaatata ccaggtcata tttcatttta tggaaactgg attctcggtt tcttaaaaat 960

caagaaggtg agctagtgat taagtataaa aaaactagaa actgagtctc aaacacttac 1020

atccaacttt ttttataaaa atatttttt agaaattgag gatagaaacg agtttttta 1080

aaaacccagc agacccttat attaaaaa 1108

<210> 3491
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_212593_G1, chr6:30095954..30097090, Cluster 21

<400> 3491
gtgtgggttc aaacctcagc tcttgcaccg tttttaatat tttacactga gttgatttgg 60

aagaaatgta gtgacttttt tgtaaaaaga tgacgcggaa ctatcgttga aactggtgct 120

ttaagtatag cagagacata taaaatttag ttttatgaat accaatactc tgacaaaact 180

gaattttcgt tggatcctaa accgcgtgtg aatgtgatcc acatccttca gtaccgtttc 240

ccacattttg cggcagtgtg ccgctacggc atgctacacg ctacactgct ctggtcagtg 300

tacgtgtgtt gcacatatat gaaggtagtg aatgcaaacc cagaagatct tggggcgaag 360

ctactaatta acttccctaa cgtaaatact ctttgagtct tgtcaagttg tggtacagaa 420

tggtacccac acacacacgc gtatattata attatatata tgttaaatgt gcatggtaga 480

cgtcaacaca aactatacga tgtttttaa atacagatat atagtacaaa tccaacaatg 540

attatgacgt actgaaccac acaatctgtg ccttttcgta tgttagaatt gctctcgacc 600

ctagttttgg gactctaata aaaagttctt ccactattac gtgatttctt tattttgatt 660

aatatgacat cacatactta ctacgtactt tgttccaaaa aaatgtaacg atgtaaatta 720

gctagaacgt gcgtaggaaa aaactattgg tcccacatgt ttgagctaat gcttaacttc 780

gtgatattat tggcctagct acccttgtcg caaagaatat aacctaacag agatgggcgc 840

ggcaaaaaaa attagaataa gaggtctaga tgagatggac aacctctact tcttggagcg 900

taagacattg acaaatatgt ttagtaggaa agtatctaga tagctagaga aggatgaata 960

atctattaaa aattataaac ttcacaacac gggtataaag agggttagta aactaactag 1020

tcctaatagt ctcgatttgc acaatcacta ctttcaccca agcaaacatc ctacacaatc 1080

tagtagcact attttctcat tctagtcaca agcaccaaac tagagctact cctagca 1137

<210> 3492
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_220783_G1, chr6:84664173..84665255, Cluster 21

<400> 3492
ggacatgggc ctcgagagtt atggtcccag tatagtgggc tccatgataa tttattgtac 60

caagatcttt gaatatatct ttacgcttgc tattcagatg gtggcaactc actcttttaa 120

actttaagct attctaattt tcttacagag ccaaaagttc ttaattttaa ctaaattttg 180

taaaaaacaa tatatatgtt accaaatata ttattcatta aatatattct catacacata 240

tttgacgttg taactttatc attctttcta taaagctaac attttacatg ggtgtttttt 300

aggcagtagt atcatttgac cctacaagtc taattacatg tgctaacgct acgatcccag 360

ggaggggagg ggaggggtat ggaccggtgg cggtggcgtg agggagggtt cgacaacgat 420

gatggcacgg gtgatgggag gaggaggcgg ggtcgctgag gtgggggcgg tgagatccct 480

aagagaagga gcgagaggga gtatgatcca aacaacattg aacattggat ctaattgagt 540

aagagagatg tatattaatc tagcgatttg aatcattggt tataagtgtg tgttatttgt 600

aggtgtaatt tttttggtgg atgcagaaag gtaatgggtg tgggagtgat tttttgtcat 660

gaagccaata ccgattagca gcatgcaggc gaatgaagga ctgaagactt cggtggatgc 720

tgaactagtg gagccaaaga ggacgaggaa gcccagctca gcgtattttg gactagactt 780

gtctgtagtg gtccgtttgc gcccgagagg agatagggta tttagggctt gtttgggatc 840

aaaggtaatg tgagggattc tagcccctca atcccctcca ttacccttta ttccaaacaa 900

gcccttagtg tttcctgtac ggtaaggagt gtgtcatggt gaacaagacg ctggttggct 960

gcgtccaaag ttcttctatg ttgtaatctg gacttcgtga gaggcctgag cacatagagc 1020

agtgctcatc atcataatcc cacctaagca tattacattt tggttgagtg tgtttaataa 1080

aat 1083

<210> 3493
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224166_G1, chr6:104448229..104449259, Cluster 21

<400> 3493
aaaaagacga tgcaatttgg tggtgagctg gagctcagat ctttgttctc acttaggtca 60

tcgtgggttc cacatgccaa tttggttggc atagtttgga aaatgtgctg cagacgagca 120

ttaacaaagg aactggcgaa ttgctgtatg cctgtatcct aatgtaggcg cacatagagt 180

tcgttgtcgc cattatatat atgtttatct aaaaagtcgt agtgcaagaa aaaaatcgta 240

atgcaagttg cttatttatc tagaaaatgt aatcgtccta ctttccgtta ttctcaatgt 300

tcgcttccaa cgaactgaat ctctgattga acagggcggt tggcatagta cagctctcta 360

agctgattaa gtaaaaggtt tacaagctga tgtacagctc tagtgctggt accacttgga 420

cattcgttaa tcagtgaaat gaaacacata atgtttggtt aggcttaatt actagtttac 480

tactctgtgc tcatgcttga taccataaat tgtggctatt ctttgagcta tggaccactg 540

atgaaacaat caaacgagga caataaaaat tggaaggtcc atgcaggctg gaattgaggt 600

gtccataggg caaagggcat gtttaggaga aggggatttg aagagcagga ggaatccact 660

tctctgaaac aagctctaaa ggatgatctg cttgcatact aggattatat ttttgtctgt 720

acaaatgtcc ttgctgcttc acctctagta gcattagata ggttggttct aatcctacag 780

gtctctcaaa tcagctattg atcatattgt tgactctatc aattaccgtc tgttcacatt 840

ggtttttct tttacagatt ttttacataa aacacgtcgt tttattgaaa taaaaatata 900

ttcgactata taaaatctac atattcataa accacaaata aaaattacat gatttatata 960

acatacataa aaatcacata atttataaag tgtaagtaaa aatacataat tcatgtgaat 1020

tttaaggact a 1031

<210> 3494
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_227301_G1, chr6:121325651..121326761, Cluster 21

<400> 3494
ccagcgtggc caaccccacg caatcgtccc ccacattcgt gaagagttca caatttttca 60

attaacccta gagactcatt aaggaaccct atatatatta aatggtgttg tatatgccct 120

ttgtgtatag agagctagtc aaagtaaaag attgtaccga tttgcttaaa cctaattgct 180

atagcattaa gaccgctaca acaacattcg ctcatcaaca cataaccaat aaaaagttga 240

tgacacacta attaaataag caatattagt gcatgtacaa cctagggacc ctcgataggt 300

tttctatgta caatagacag ctaagagacg gcatgatgca acctcgagcc tttgatgcac 360

gaatacaatt aagagaccca caacaccata tgtatggaga ttcatgtaga gacggattcc 420

atctcttgta ttttttcaa ttaaccccta tagattactc aaaagacttt atattaaata 480

taattatata tgccctaagt tatagccatt gtacaacatt cactgccaag cacaatatca 540

ctatctcaat ttcaagttat aagaccatct ccggcaactt attcatactc atattcatat 600

tcaaactaca atctacaaat aatacaatct ataatacaaa agatattttt ggtgaccata 660

tgtgtgaact attgtacatt gcacctatat gatcattaaa agcatcgttt tatatcactt 720

tacattatat attgtattgt ttatatagtg tagtttgaat attggtatga gtatagataa 780

gttgctggag aaggttaaga cgttctacaa ttttgaatag ggagagtagg agacgttgtg 840

actctagcgc ctaggagagg agagtgccct cccgcttttt attatgaagc acaaaaatta 900

tgtgactgat tcgtaacttg cttcttcgac gtcgagcatt ctagaggata ggatgactgg 960

catgccatgc catgctttcc ttccggggac gaacgagaat tctgtttttt ttcccctggc 1020

cgaacggtga agcgacgaat ggaatggaat ggaatggaag cttttccgtg tcgaagagcc 1080

cgaaaggggt ttggcacatg tcccctccgg c 1111

<210> 3495
<211> 1053
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227473_G1, chr6:122079518..122080570, Cluster 21

<400> 3495
ctctctatcc cctttgtgtt ctttactttt acaacactta tttgctcatt tggtatatct 60

agggtttgat atctagttat cttcgctata ttgagtgttg tgtctactag ttattagatt 120

ttaccttata tcaatggaaa tagaaattta ctttatctac ttgctacaca ttaactttca 180

agtgaagcaa gcaacttagg tttgtgcggc agtgccatgc attgtccaga agtgctaggt 240

cacggcagtg ccaggtcgtt gtagtgatgg gtgtcaagtg gcactgttgc ttggttacta 300

ctaagtgttt aagctcaaat ttgataggag gcacatattc accccaatct cgatgtacta 360

gatccttaca gtagttgcca actatgttgt agttgatgat gtggacgctt atactcgcca 420

ttgtgacata tcacattcac tgttgtggca cattgaaggc atgctccatg tatgctacaa 480

atatgacaac atatgattag ttggttcttt attgggtagg gctcgctatc catataggga 540

cttaactctc ttttacattg tgctataaat aaaggtgtag agtaacataa taaggctttt 600

ccctctctca cttttggagt cttaaggttt ctagacttca ctttctcaat agctacgcga 660

tacatataga aagagctatc gtacgagtct gagctccctc acccaactca gtagtaaaca 720

tcacaatgga caattagggc tctccttact tgctagatca gacatcatct gagcatacat 780

tctttgtcca tatttgcatc taaacatcaa aacacataca agacgtatac gcttaggtgg 840

cccaaacctc tataaatcct ctatatgtat acaaccatgt cgatgcctta ttttagcaat 900

cttagaccta cccctctatg tctctagttt tctctgatac tcttggcact atgttgtagc 960

aacatgacaa caagatccta tttcattatg atggacgatg tttgttcatg gtagccatag 1020

ccacggggac gagttcatcg tgttgggtac cta 1053

<210> 3496
<211> 1080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227900_G1, chr6:124472498..124473577, Cluster 21

<400> 3496
atgagatttg cgggaggggg aatgacagcc taccgcctta ataatagaga agagatttaa 60

gaaaagaaac atatttttga gttatgcatc aatcattaaa atataaaaaa aacttaaaac 120

ggttagtatt acgatgaacc tcacttcgat tccatcgatt tttttcttgg aattggtttg 180

tggtacagag gcattttagt cattgacatc acaaaccgct tttctgcctt tttgtgatgg 240

tgaatcaaag aaccattaac catatttaaa atgaaattga aaacaaatcg aaaaagaaaa 300

aagagtagaa ttcacaggag gaagagaatt gcgaagggaa aaatacatag ttaacaacaa 360

ctaagggtga taatgaatca tgatctaaat atttctttac agtaaattag aactttcata 420

atttttagtt taaaaataca taaaaatata gatcaatttt aattcaattc gatacataaa 480

aatatagaat ttattatcat tcctaccaac accatactat atgcatatgc aaggaggaag 540

agataaaagg gaatctgaaa acaaggctga aaataattgc tcctatggta cacgtacacc 600

aaaaacaaag cttggtatca ttttttttcga gattcttctt gtttggttga gattgagatg 660

tcaaaaaagc tgatgttaac cgtgaagtgt caaagaggtg ctataagcta tgtgctatga 720

aaaattctaa cgatttttt catggaattg gtttgtggta caaggggcat tttagtcatt 780

cacatcacaa ttctaacgat tttttcatgg aattggtttg tggtacaagg ggtattttag 840

tcattcacat cacaaatcga tctcgctttt ccgccttttt gtcacggtgg atcaaaaaac 900

cattgaccat gttacaaata aaataaaata aaacaaatga tcgaactctg aacatatgca 960

tatccacatt tacattcgtt tgtatgcatc cgaacaccac cagcactgct ggtggctaca 1020

agaaaattct gcaagccact gtagtcttac acgcagggtc tgcttctgcc gcacgtagga 1080

<210> 3497
<211> 1195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228254_G1, chr6:126085629..126086823, Cluster 21

<400> 3497
gaaaataatt atcctcgtca ctatcattag cttgaagaat aagttgatca tgtgacagaa 60

ctagcataac gggttaaaca ttaaccacta gcatcagagc agcaggctat gaccaagttg 120

accaaccatt tgttgcccct aattgttgca tgtgcaactt ctagattcta attgactaaa 180

tcttctagat tttcaccctc atcttgcaaa ttctcatcat catctagaag tggatgtgga 240

ttgccgttgg ggggagctca tcttccgaaa actcaagcat gcccaaggcc attacccatt 300

ggacaaccat taacgatgtt cagcacataa gtcagaaccg accaagaata accacgacca 360

aaatgatcat cctcaaaaga tagaacaatg cttcgaggga ctttgagaac cgagttgtag 420

aggcatttga taagcacata tgacttaatt attgtgctat tatgccatct gattaacctt 480

ccaaaaagaa gccactgctt gattaatgta gatgttgtgc atgacatgta gagggaaacc 540

tagcatataa gagatgctct gcatgatcaa tcagatgacc attgtcatcc accccattct 600

ggtatatgag atttccctga agttcattgc cctatcgttc ctaatcaatc ggatgacaat 660

ctcatccact tcatggttgt taccactcat caaatgatcc ctttgaagta aactgtccaa 720

ctcaaaaatc cctagcccaa acggctgcct agcaacagtg accacttgaa tcctaggatc 780

atcttagata aagtcccaaa ccaaattgat taacaattcg atgtcaactt gaccatgagc 840

atcatccaca tcaagcgcaa tgatgaactc ttctctctag ttgtccagag catccgtgag 900

gtgaactcta gtccttgaac actattgcaa gccaccatct tcattttgca tttttggtgg 960

aatgtaggct tgagggtcta gagggaagtt caccacattc gagagatgga cagtcgctac 1020

aaagacgtgg gtggaagatg atggtgtgtt gagcggtcgg agggaacaag agagagttgg 1080

ggttttcttt atgcgggaag acgaacaatt accaatatca ctcagggctt gttttggttt 1140

tctagtattc accccaatac acatgggttg agggggaccc caatcctcct caaca 1195

<210> 3498
<211> 1099
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229771_G1, chr6:132942122..132943220, Cluster 21

<400> 3498
atcagactgt gtgctttggt ccaatagtgg tcgttgaact agtctgacag gtagtggcta 60

ttgttaggtt tgtttacaaa ggtcatcata ccttgagtta tttggtacga tgatcatcag 120

acttagggca tcagaccata ctgttatagg tggtagaatc taagtgcatc agacctgagc 180

tctatgttcc aacgctaggg catcagatgg tccaacgacc catagactac accgacttag 240

ttccgatctc tagttgaccc ttggacatta aatgaatccg taagatcatg gatatcataa 300

ccgagtccat ttccttcatt tttgtgtgcc aaattctcta aataatagaa agagagtgtg 360

tgttctccct gaaaggcatg agaaacaacc aatctactat gggttagagt tttagactcg 420

tatggtgaga catttggctc ctccatccct gacacccaca tgatgatgat ggtcgaagtc 480

tagtatttct gaaagcttga tgtgctgcat gggttagggt gaatcggttt ttggatagcg 540

atcacatgac tgcttatcga gttggtctgc attgtgagat ctactgactt caacaacacc 600

gcaaacttat cttttaccat gatgctagag tgattctcat tgtgactaat aatgagttcc 660

ttgctcatgc ttatgttaga tgtgttcaag atagattcaa tccgctacgt agatatactt 720

tttattttca tacgtgtggt ttatctatta tttatgtaac tattgcttta tgaattaatt 780

taatgttaaa agtttgctat cttctgacaa tagaatgcaa gcgttttcta gtagatagtt 840

aatctttttg ttaccttgta gttttataaa ctctctagca ggtggtacac agcttgcccg 900

agaggaactt cgtctatgta ctaatcattc aacgcacatt aacacataag tagctaggta 960

cctagataat gctaaatctt tgtatttatt tatataatca tagtggctct ctgagactgt 1020

taagatatta agtggccaga gacgtggagt actcggaact tacatcaata acctttggt 1080

cagagcattt ctatggggg 1099

<210> 3499
<211> 1327
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231344_G1, chr6:140540627..140541953, Cluster 21

<400> 3499
ccgttctcgg ttcacacgga atagaagact gaaatagttc ttacccaaat tgcttcttta 60

atttgtataa gttttgaata ataggaacaa tttttggtgc attcctgcag aaacgaacag 120

ccccttaggc atatcgggac cttccgatgc caccgggtca tccgagaccg tcgagacaat 180

ctagagttgt tagggctcaa gggcatcggg gatatctgaa atcgttggag ccatcgaagt 240

tgtcgttagg gccctcttgt accgttagga tcgtctcgtg gtatcgccgt atcggcaccg 300

tccaaaggtt tcaacaatcg ttaggatctt cgaggccgct agacgtgcgt gtgccgttac 360

tgtgtatgtg gctggtgtac gagtatttct gtttgccacc tgagttagtt gaaggaggag 420

taaacatatg gattgatgga ggtgtaatgg atctataatg gacgaagtaa tgtgcctgtg 480

cgcatgttac gacaattact ccatccttcc gttttcttga aactcatggc attatcagct 540

atttcaatca cacaagaagt cacagatcag aatgagcaca aaaaaacatc catgacttct 600

cggttcagtt gcaagataga gttttctagt ttcaatcctc tacgtgcata gagttaggag 660

gacatgactc tgaaaccact attccgcatt gaagacgtcc gctagaattt tagggagcgt 720

ttatgtgact gcttgctaat tatcgtcttc ttttaggtgt tgttttgtgg gacggcagta 780

tgaatatttt tctgcatcaa atatggtttg ctaattcgac caatgcatag gggcggatct 840

gaaggggagc tacgggggct ccagcccgct acatacatgc aactttatcg gagaataggt 900

cgagggtaga ggagaaagaa gaagagataa aaatgagcct ccactccatt gaagaaagag 960

gtgggtacat cagaaagaga gagtaagaag cacagagaaa aaaatgggaa aaaatgggtt 1020

gtaccatctt gtggtgcctc tagtactgat cactcgaaaa tcaacccctc ttgagcctaa 1080

taaacctaga tccactaatg tcaatacacg atatcaactt gtgtgaatgc tcgataggta 1140

cattttgatc tctggcttta aaaaaatcag tattatatat atagtaatag catgtgttcg 1200

ttatatatta ttgagagtag cacatgtata tacactacta gtattacaaa tacgcatgcg 1260

cacaatgatt atatgaaaat gagcaatata tatattacca tcgaccttaa tatcttataa 1320

attattt 1327

<210> 3500
<211> 1130
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231467_G1, chr6:141057373..141058502, Cluster 21

<400> 3500
gttgtagcgg tttaatttag tctctcctaa atttttttcta gctccgcctc tgagctcagg 60

taaaaaaaat attggaggct acacatatca attggatacc gcatagcata taactaaaat 120

gtcatacaca tgtacaaaca gaggtggcta ccatgccgat atttttaata ttattatgct 180

tcttagagca ttctggtgct gctcacgtcg ccgaccgtgc aatttgacca aggcctgaca 240

cgattcctgg ggccatttgt ttacgcacat ctcgagagca gatagtgaga agaagagtcc 300

aaacataata attgcggagc atgtacgaga cgattggagt gtcgctgaaa atcaacggtg 360

cccatgacga caatgcaagc cctagctagc taacccaaac cctagaaatc gaagagggcg 420

acctagaccg gtgaaggctc gacgtgaatg tttgtttcgg agacattcac gtgggcacta 480

cgtttcctca tctcttctcc cgattaataa gaaataataa ctagaatttt aacctgtggt 540

taaattaaac ctccctacta gtatacacat agggcacgca ggtccacctt gtgagtggac 600

aactggacaa tatgtcaata tatatacgtg aaaacataga gtaatatcta ataatacaaa 660

tttagataca gttagtggtg aaatgatttt tttgtcctag ttctcctgct ccaaatacat 720

gttacagtag ttactcgccc aaaaatgtta ccttttcctt tccattaaca ccgcgatcga 780

tgctattatt tatagttcac tagacacact actgcagaaa caattttagg agacagttta 840

ttatttttgt tttctgaggc aggtacaaaa tactattgtc tcctaaaata agttacaact 900

tttggatgcg tagatgcttt atttacggag acgtaaaaat ttgcccgtcc ctaaagagga 960

tttagctagg aggtcatcct ttaaaaatta aagctactta gtcgttcaaa aaatctaatg 1020

aacaatatta tttggatcgt cacttattca tccattctcc cataaccttc ctctgccccc 1080

tccacctcac tggtgtcgcc gctgccgcca ccgtcgccgt caaccactcc 1130

<210> 3501
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231516_G1, chr6:141225704..141226755, Cluster 21

<400> 3501
atcttagtga aagaatgtct ctagcacgat tctctaaatc taatatatgg tttcactcat 60

acaactcaca taaatgagtt gtgtcttgag atgtcctatt gaataataga caaggcttag 120

atagagttgt atgcacgagt ttcttatatc tatctagaat atggagaaac ataatatagt 180

atttaggttg tgtatagctt gagtagagga ctctttaact atatttcaca attgaatagt 240

ttgatgtcct attctcggtg ctagtctcac cattttcatg ctcaataaat aggtggcaca 300

tcagcaaata tgataacatg aggagaattc aattcttaca tcagcaaata cggtaacatg 360

aggagaattc aattcttacc actaggttga tctaagtaat gccattaatc ttaatagagg 420

tccaagatat atcactctta aatcactcca tcttcatata atatcatgat agctactatt 480

tcatcttttt atccactctt accaagtttt aacattaaat tttacatgct ttgactgatc 540

tgccccttac tgtacgaacc tagctgcgtg cctgtttgaa gacataccat tgaaataata 600

taatataatt agataaaaaa actaaaatat taaaacatat gaaaatacac aataccaaat 660

ataattaact aaattccatc ctataacttg agtaaaggct aacacaatat ttcaatattt 720

tagatacatc taatttaaca tttcttagac aataaccaaa catctccacg acataatagt 780

aagatctaga aaatgtttaa attagatgca tctaaaatat caaaatattg tgttgatctt 840

tactcaaatt atatgatgga attttgtgaa ttataattgt tcttttaatc tacttatatt 900

atagtatttg atgtggtgtc tagatcatgt tttttcttat gttccttcac aataacacgc 960

aattgtgtgt ttgtatagtg aaggacaaat tggataaatc acgtgaaatt tagtgttaaa 1020

acttgattga agtggagaaa gagagagatt aa 1052

<210> 3502
<211> 1365
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231942_G1, chr6:142957358..142958722, Cluster 21

<400> 3502
tacgaaaaaa actagaaatt agacagaaac gggtaatatc aatttcatcc attcttatgg 60

gatcttactt ttatctaatt gaatccatat ttatccctta tttgagatat catatccttt 120

atttgagata ttagggaaaa acatattatg cattattaca taaactaaag ttatattctt 180

atgtgacaaa ttatagcata attggacatt ctagtcatct cctctcttca atgacaagtg 240

acataaaaag cctcaaataa tatcggtcat agctacatgt acactactag caagcaatat 300

aacaattgaa tgttgtctcc ttgtatctat ttatttcacg ttattatcct actagtcaat 360

caccaatcac ccatcaacat catacgtgtt tgtattaaat tacgagtttt ctgaataaag 420

acaaatatca ggcgaccatg tacaacttag tgctcgttgt taattgtaat tatatacgtt 480

gaacaaaaaa atatttacta gatgatagat tttgcaatac ttccattaac acatatgtac 540

cgacaccatt aacaaccatg accaggcatc ttgctccttt gacgtggcaa accgctcctg 600

gtcataggca tccacaaggt acatcattgg atgtacctaa tcagaataaa aacaggaagg 660

ttgcaaacca aatatagaaa agcacacatt attcagtaat tgaaactacc gtgcagaaaa 720

caaaatatgg caccatggta actccatacg actttgatat ctcatgatgt tgtttagttg 780

aaacctgaaa ataagtcatc agtgcaataa atcaccaata agtaaacaat ggtatcatcc 840

taattttgtt ggcaataaat aattaataat tactagagat aaaggagatt gaagtaacct 900

ctgaatagaa tgggcatatc aatgagaaaa tgaagtaatg atggaccatt gaggactgag 960

gagaccaaac acggataggt gggagccaat caaattttac tgctgaacac tgaaaataag 1020

cacttcactt caattgaaat aaagtaagca ctcaaatcaa aatcgcatca gcaaattagt 1080

gatctcatga tttcaaaatg ttcctaatac ccacacaaga tcagcaaaac aaatggatcg 1140

taaatcggac accgaaaagt ctaaatcagt ccaaaactgt gtcgcgaacg ggtgctgatt 1200

tcaggagcat gaaattttgt tgtcacatgc aaaactgaag caaacaaact ccaattgaga 1260

tgaaattctg tacacacctg gaaaaatatg tttccaaggt ctacacaatt tttgagctca 1320

atcggacttg tgaatcaact acagatctga aaaaactaac aaaat 1365

<210> 3503
<211> 1044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232742_G1, chr6:147254418..147255461, Cluster 21

<400> 3503
tgcttgaaag gaatttctca aaagtaaatg cttaatgtaa agaaggatta gaaacacctt 60

gatttttgc cacacccatg caaggtgttg ctcccccatg atcctagcac agaccaggtg 120

ttcgatctct acaagttagt tattttcctc tccgttgttg ttgtgaacca ctcacaaccg 180

tgtacacaat tgagtagggt cacccataag atctctagtt gatcaccaaa ctcacgatca 240

ccactaaacc aactaagtgg tgccaatcac caagggtaat aaacacaaac ttcccacttg 300

atataatcaa ggataatgac aataacaggt gcacattagc tactctcaag tccctcacta 360

ggtaaaggct ctttctcaca ctcaaatggg tttcttcggt tgttagaatg gcaagagagc 420

tataatggat gagttgggtt gtatttataa cccacatccg accaactagc tattatagta 480

aatattggag aaatttgtag ttgtcaaacc attgacatca atcagatgag acatagcggt 540

catagtgacc tcaccatgtt aggcacaact attagagtgt actgcattca gcatgtgata 600

tgctgcactt tgtcggactt gtctgatgct catgaaacca ctctagtaac tgtttggaga 660

acatcatacc aagacccaat ggtttgattg tcaccctatt aatagggccc aatgctctta 720

taggaagaac cttagttgct atagatgcac catagtccaa tgactcttat caaattagcc 780

tcacataccc tagagctctc tagtttgatt ttgtagacca tcaggctgat ctatattggt 840

ctgatgacca tgttcatagg gttcgacgat cattccattg cttgcatcac atgtgaaagt 900

gtcagaacat ctccaatggc ctaacgaccc tcattcttag gatctctttc ctctaaaact 960

tcctaaatgc tccactttgt gaatgaggtt tttccaaaca tcttttggac ctcatcaaat 1020

ctatttatag ctaaagacaa ctag 1044

<210> 3504
<211> 1210
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233124_G1, chr6:148787900..148789109, Cluster 21

<400> 3504
gaaaggatgg taactaacaa gtaacatggc agcaatatca cgaagcatag ttgaatgatg 60

ttcctgccta tgtactacta gtttcgctct cttttgccta tgtactatta ttttcactct 120

cttttgacac acccttttt ttgaatattt ttatatttta tcttaatcaa tagcacataa 180

gatggaacca tactaagttt gagacttttt tatgcacgga tgtgtcctgt agaaaatttg 240

aacaatgtgt tgaaactttc tatcatgatt tctggaatcg gaggacaata agatttgtgt 300

tcgacaggga tgttagcgcg aactcacttc aaatggtgag ctacgagggg ctcgagggtc 360

gatatgaggc gagtcggtta tactcacgct cttattacta gaccttatat tgcgtccaag 420

gaagtgatgt cctcatcatg actttcccat tctatgatgg acctaggtga agtcccgatc 480

ttttgttaga caagatccat cattattgat ctatttcaga tctagatcac caaaaacctg 540

aaaaagagac cagaataagg atgagggagc gcataacaac cttctatata gtgtcctcct 600

tcgagaaatc caagaacaaa atcccttctc ccaaaataat tagtttttgg agttctagta 660

ttcatacctt gtcaaaaaat gagcgggtga acccgtagat gaagaatatg ggggtggttg 720

ggacacacat ttaaaggcaa acgattaata gagtcgaaca ttataagacc aatgacctct 780

attaatcaca tatattaacc gagaccttgt gcactactgt agtagtttct ttcccggttc 840

tagaaactaa gaacgtactc gtgcacttta aatcttgtta aaaaatataa tcatatatga 900

tcagcttttt atggttccaa cattataggt atgcaggaag tgccgaggaa gacagatagt 960

atgcttcttc tgataagaaa ggctttctca ccctactact atttctcctg gtcttcggcc 1020

acaacacata ctaataggag gctaggagca aagcaaagca tccgatctgt tgttgttcca 1080

aatcttcgac tacaattatt acgacgcaac gcagatggct gcgcattagg cgcggtcaat 1140

ggccgctcga caccgcgcac caattctcgt ctcgacgacg gtgaatttca atttctcacg 1200

gctcggtgaa 1210

<210> 3505
<211> 1077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233222_G1, chr6:149131581..149132657, Cluster 21

<400> 3505
gacgtgcaca gtgcatgact ccacttctac gataagatat gagtacaaca atgtagaagg 60

ggtccataat ttggtgcaca aaagtttagg caagtccacg actccaatag atccaactaa 120

gccagccaat taggattagg ctaggtctct taacaaaacc gaagtagagg gtgacctagt 180

aggtcctcct actcacagaa cgtctgagtg tgtaatcttc gtcttcgctt ctaaccatta 240

atccaccata aagaggatac atgctattac gtttccacag cttcgacctc tataaactgt 300

ttgcatgctt atagtcatgg tagcgccatg atccaacgag cctccagcca atgttccctc 360

gctctcctcc taattctact aacttctcag gtacccacga tagactgata ttgttacgtg 420

acgacaatct actacttcaa acataagatt taaattcaaa tttttgatta ttgaaagttt 480

caacatccaa aactatgaaa gtattacaaa aaatggtaac tccattcaac tttctaggtc 540

caattttgtt gcactaacat cacatattgt agtataacat atcacattat agtaaggcca 600

atcttagtgg tgagtttcat ggtattgtta taaggaccat tatgtcagct tttctgttag 660

taagtgtgat aatcggttta gctagtgttt gtagctagga tgactgattt tagtcagatg 720

aaactctatc tctctcttca taattaatca actaactcga caaatatgtt gatggatcgt 780

actactaatt gcaaatgaaa ctttcaccga gattagccta atcgatggaa tagaaaccaa 840

ctagtacaat gcccatgcgt tgcaacaaca cataaatatt cgataaaatt ttaatgcaca 900

gtgaaatatg ggtaagggag gctcacccgt tgatgtcctc tatggcggct cacccgatga 960

gatatcctct atagcggtgt aggaaaatat gggtaatgaa ggcgaaagcg gaaaaaagac 1020

aggaagtgga tgattaatat atgatggcaa caacgaggag gaagaagcgg tatggtg 1077

<210> 3506
<211> 1312
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233395_G1, chr6:149700503..149701814, Cluster 21

<400> 3506
atcctagtct atcaagccct caagctattc atgttggaac tttgaagtct tcttgagtct 60

ccaggtgact aactagtaga atcaagcaat gaccaagtat cttcttaata gaagccataa 120

aacactattg aagttttagt tctaatcttg tgcactcttt taaagaacat ctattgggtg 180

tagcccccaa gcctcatgtt tttagcacaa aaagattgag agttcttgta atcttgtgat 240

ttttttaaaa aaggttcacc taggacattt atccaatagc cccttattct aaaaatcaag 300

tacatgacta ggaattgatt cttaggatca tagacatcct caagggtata taaaagtcat 360

caaccaatca taatggccga aagaacgctt tgttagtgag tgctttgttg cttactgtag 420

tcacgcacac acaatatagg tatcttgtat tgttttctat ggtaattttg tcaagatgcc 480

ttatttttta tgttgagtgc actaaaagtt ggttaataat tggcctgagc aacacatgaa 540

cattgtcctc gttgatagac aatgggctat aataacccat ggtaagctca atgcaggctt 600

ccactagtgg taaccaaaaa cttagtttc cagcttaaac aggatagtct atgagatgtc 660

aagccaccta gtatagttag aagattgaag atcttacctt gcaactagaa ctcttgtgat 720

ggctacatat agagtttgag tgtagtacac ttgttcttca agcctactat gatttgtacc 780

taagaccagc ctatggtata aattagaata ggtattaata gacctagagt atatcttggt 840

aagctgttcg aggtagcatt ttagccagaa gtctcattgg ttcttctagt tctatgccaa 900

agaggagact actcactctc ttgctattga gggtacttat ggaatgctac ctttaataga 960

tcaacctctt tgacatacct tgatgcacta tcatcaaagt cagtgttacc attgtggtaa 1020

tacttaaaag tggtatcagc catgtacctt cattgtatgg tgttattggc aggcattatt 1080

ctgtgttttc gatcatcaac tatccatatg atgagaatga tttcatggac aaagtgacta 1140

atattgcgac taattgagtt ccacaagttt tgtttagaat atttgaatgc aggttgagaa 1200

aacatgcaaa aagaagtaaa aatggctaat taagagtgga attggctaag ttaggggcac 1260

ctcctagcag gtcggccatc ccctagccac ctggccaccc tagaggtcga ta 1312

<210> 3507
<211> 1247
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240012_G1, chr7:15677053..15678299, Cluster 21

<400> 3507
cgcttttgaa cactttcgtt aagttatttg tatttcgtta aagacttgct ctataataag 60

agtttaatga tttattatat aaaaaattat gttgagatac taatgatgca aactgtgtat 120

gctattttta tcatggcata tatagtttgc acatgtctat tgcttcgaaa ccaggtgtga 180

aaattagcaa ttattgagac aagtatatga tccgaagaac ataatataat aagccatcta 240

atctatagtt ttagagagaa tcttgaaatc ctagaactat cctttgtctc taccaaaaaa 300

caaccattga aaccttagaa cgtttttttct caaattaaga tctcatgcaa aacgatatac 360

gagaggtatt aacaatcttg accaacctca gtagaacaaa tgaagacaaa ccctatcatt 420

ctttatctct ttttaaacac aacaaccatg aaccctaaac taaatttgcc ttgaattgag 480

aacaaaacat ataaacaaga tataagacat caactaagct ttctcgagca acctccttca 540

aagaaatgat gattgtaatt tcttgacctc caagatcatc accaaatggg acaataatag 600

attggatcac tagacatgta caacccatat aaatgatcca tatcttaagg agtatctaag 660

gggtagagtg caaaaaacac aagagacata tcttggtgaa ggaacgtctc tagcatggtt 720

ctctaagtat atgatacggt accacccata taacacacat aaataagtcg tgtcttaagg 780

ggttctagtt aataagatat aaggcttttt agatacattg agttgtatga acgagttttt 840

tagatgtatc tattgcaaca tatagtatct aggttgtata tctcattgcc atgcatgtgt 900

ggtgtgatgg cttacattgg attgtcggtt atgatcgtgt tacaagggga gtatcttgcc 960

tcagtttgtc agcaaaattt caaataaaga gtgataggta ttctaatgtt aaaaaaaggt 1020

caagttacaa aaatctggct atagttaatt gtggatttgc acccacccaa gaaacccaac 1080

ttgcagtgct gctgcagcga cctagcaact acacacctga tggagtaaca aacagataat 1140

ctacaataat aatacatcgt tattgtcatt aaaaagggcg tgaatatact atggtgcccg 1200

caggttcgat gtacatacac agcatcatgc ccacgcatta ctattcc 1247

<210> 3508
<211> 1182
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240735_G1, chr7:19361992..19363173, Cluster 21

<400> 3508
tagtcgttgc ctactagcgt gttcaccaat ggatacttca tccttgtgcc tccaacgaag 60

atgagcatga tacacaagat ataagataca tcgctagaga agtattgtaa aaagtgtaac 120

atgtcaacga tgtcgcttaa aaccataaac ctacaaatcc aggggaccga accatggcct 180

ttgacaatta tatgttaggt tgatctcacg tcattcttga ttagaggact gagcctaact 240

ccaccacatg catcgatgga aggtgcaaca acctttggt tacttattcc cgtcatgttg 300

tgtataacca aaaaagggat gaggtcaaca cagaccggca ttcataggta cctcctaatc 360

cctacacacg cgatgtgatc ccttcctata caattagtaa gggaaagtgt caccaccatc 420

gacacactaa ctccgatgct gatcatcaga gtctccctac ccatggtgac ctcctcctcc 480

aatcttgaag gtgatttctt tccccactct ctcggttcta ggttttaggc aaaggaagat 540

gttacattac ttgacaatgg tattaaagac gcagtttgca cctaaacctt accctagaac 600

ccaaacccat cgtgtatttg gatttgatgg agccaaatcc atatactggc tcttatctgg 660

atgatttta gatctataac aagtagaaag aggagaaggg acgaaattgt ggctcaatcc 720

ctaagcctaa gttggaatcc ccaaatagta gcacatcatt taatgttttg tggtcctccg 780

agaatggagt ggttgaaatt tgccgccatt ttgagataaa agtttagtgt ataagtatga 840

cataaatcta accttaaatt taaaaataaa aaatttcata ttcaaaattc caaataaaaa 900

cacttattat caattgtttg caaatttgcc ccccacgttg atataaaagg ttagagtata 960

agtatgacat aaatctgacc atacatttgt aaaccaattg tttcaaattc aaattttaaa 1020

atacttaaaa tttaatgaaa acaaattaaa tttaatgtta tattttaacg atattttagc 1080

agcattttaa ttataatgtt gtaattaaat ggggttttac atgcccttat ctaaagtgtg 1140

tatatatata tatggattgg tgtgaacata gaacgagtca tg 1182

<210> 3509
<211> 1401
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_251281_G1, chr7:91867522..91868922, Cluster 21

<400> 3509
gggttcagtg ggcaacgaac gagcaagaca gaggctgagg agaggagcaa cgagcaagac 60

atgagaggag caacgagcga gacacagacg acgactaggg ttcagtgggc atgcgtcgaa 120

aggttagttg tttttgggcc caaatttcat ttggcccaca gcgcacagca gcagctcctt 180

tagcaggcta aatgatgtag tgtttagctg ttttagcggg ctaatattcg ttattagcgg 240

ttctgtccgt ttagcgctaa attgtgatta tcttataccc acccttctcc agctatttta 300

aacattgatt cagtatcaat caaccaactc tcaccaaact tcagcttagc agtctcttgg 360

ttggtatgtg aaagaaaaac ttgaggactg atcaacaaca ttaatccagt gcatatactt 420

cataattcaa tggccgagtc acaagactga aataaaacta aaaagaatca caaataattc 480

tccagtcttc gtctccccgc aaagtttatt ccagtaacac ggaaacaaac aaatgagggg 540

ggactaccat tatgacggat acccgaccat acacagcaga attatgttgg tcagtgtttt 600

caacacaact tgtacgagac cagtgttttt agagcatcct ttgagtagtt ttaagatctg 660

gacgacccca gatcatgttt cgtgtgaacg tgaaattcat ggaactaaga tgtttaacct 720

ttcaattggt agaacatagc tgtttttttt taaaaaaaaa tctaggactg atggagctct 780

cctagctaaa tagcctttat atatcaatgc ctaaaaagat aagtagatca gattagagct 840

cagttgtggt agtacagatc tacgaaggaa tacattgaaa ttgaatcccg atcacggtta 900

ggcgtccgcg aagctccaca cacaaatttc aacagtctta gcttagttgg cacctttatt 960

cttaatctca tgtctatgac ttaggagcac aactatactt atttacgctg aaatcatgtt 1020

aactgtatca agttgcttaa taaactatct ctgaacaaga acacataaac tatttgccaa 1080

atgagtccac atccagttta cctattctga aatcaattaa tgatggagaa tcttgatgcc 1140

gataaaagcc tggtgataca aagcgaaaaa cagattcttt caagtctaac ggaattgttc 1200

tcaaacgtaa ataaaaagca aaaaaaaata gcaaggacag gactcgaatc catccacagc 1260

tatgctcact tcctaaatac attttagaaa agagaagagc tgtactaaaa ttaataagtt 1320

ttgattttgt taaaacccag cctttataaa tttgttaaat atggaataga atcaaacatt 1380

cttatggttt attaggttac g 1401

<210> 3510
<211> 1321
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_251605_G1, chr7:93736492..93737812, Cluster 21

<400> 3510
gtcatcttga tgattgggca agtctaaaat ttttgcatgt cagtttatag cagatatatg 60

gaatggtaag cctacacttt atatgattca gaaaagtctt gtcaatgata gaggtttaaa 120

gtacttaagc agattaagtt aaagaaaagt gagatgggaa aagtaaatta ggaccaaagt 180

gaggtctaaa acttcaataa ttgcatctga cacatggcaa ccaaagtggg ttctatagaa 240

tcttttgagt acgtacctac acgtcttcca actacatcag ctatacctgg gattgcaaaa 300

atgaacatca gtagcgtatg gccatattta attctcatgt ttgtagcatg aaactatttg 360

gaatacctag aaatatgatt ttgcttttat gaactaatga ggggaaaatt aatgacatac 420

catttaaaaa aacttcatta aaaatcaaga atttaaggtg cctagtacac tatggaattt 480

acatcccaaa gctagtaggg tttctatgca agcatatgca aagaagaatg taatagaatg 540

cagcaccgca taggaagcaa caaaatcaat ttttgtatgt gtataaaagg tggatggtcc 600

aaaactgccg catgatttta gaacaacaat attatgacaa gcactaaatt atatatacac 660

atgaaaaaca ttgaatcaac tcaagaagtt gagttcatga aaataaagta ctagttccat 720

aaacttttg tattaagtgg actttagaat tatccatcac atgtgctgtc ctgaaacaaa 780

attcagagat ggttcagagt ttttaatgaa gaaaacatga agatggatgc aaaaacaact 840

aaaagaatag caaacaagca cttcatttgg aaaagaatct tttatgcaaa gcttatagtc 900

aacaaaataa gggatctgtc ctagcagatt aatcttctaa tgagtaaaag gggtaatcat 960

aagttcataa ctatttaatc aaagaggcat tgatacaaag aaattgcaca atacactgaa 1020

tttgttgcaa aaatagacgg atcgcgaaga cattttcttg taatttcagt gatgccataa 1080

aaaaggttac catatgctac atgaagcttc tttgtattat ggatacaaaa aataaccaat 1140

tactccctgc tctacccaaa tagtaatctg gtaagcagat aatctacgaa tccacaatgt 1200

gaataactta catgttaggt taatacttgg ttatgcacat gatataattg gaaaagtaat 1260

gattgtagca agaagatacc gacggtgtgc aaaaatcacc aaaaatcaca tcagagtaat 1320

a 1321

<210> 3511
<211> 1032
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254413_G1, chr7:109527173..109528204, Cluster 21

<400> 3511
tgcaagtact agcaaactac ctagtgtgca tgtaactatc agtttgggaa ttgggcatct 60

aactctggag actgacgcgc tcatggttga gcaagctatg agatcagata catactccta 120

tttgtttgcc ggtggtctga tgcatgggag gagctaaagt ctctagcgga ttcaaatttc 180

ttaagttttg agtgtgcgtt taaacctaga atttgtaata cggcggctca tgagttatga 240

gttagctatt ctaggtttgg gtaacgttgg aacattacgt gcaatctccc caatgacgtc 300

gttcatatag ttgcgtccgt ttccaagtgc acgcgcctca gccaggccga gtagcgaacc 360

ttgcctccca cgttcgtctt cttgagttta gctcgcggga cggggtaggt gcgttggtcc 420

tggctgcgga gccaaatcaa gctagctacc aatcacgtct atatttatca ttgatgatat 480

atcagcaaaa acgaaataaa tatcgcctag tttggaaaaa aaacgttccc tgatttattg 540

taacaattaa attgtatgtt tgcatatgtt ttttttata tttgaacaca tgtaaaataa 600

gacagttcaa gttattagcc caatcgtata tatgtggcca cgccacgcct ccgaccattc 660

tccctcctaa atcccacgtt catatccgta ttttctattt atatttaaat attttctcct 720

aaactattct tcccctatgc tccttctctc taatcattct ctctattcag ccccttact 780

ttttaactga gctactggac ttttatacat tggtttttg agttctaaaa aatactacta 840

tatttgtagt accataatac acattttatc aactaattaa acttaaaaat ggttaatttc 900

ataattatta tcgttgatta gtggtaaggg aggcacattg gatcgttgga ggcagcctaa 960

catggtaaaa agttaaaaaa gaagtttgac ttaaggtaaa ggttaaactg atttacagta 1020

gagtactctc tt 1032

<210> 3512
<211> 1083

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255775_G1, chr7:117265313..117266395, Cluster 21

<400> 3512
cgtcgatttt acgttgggaa accgaatttt caaattcttc gaatttgaaa tgccaaatca 60

atcgattttt agcggttttt cgttgaaaaa ctgtaatcga cgggggacga tatttgaatt 120

caaaatggta tggtgaactc aaacatggtg acacatgtag ataaatctag tggtattttt 180

aagcttgatt ggttggtagc caaaacttag ggcaagccaa actatctggt ctgatatacc 240

aaatctatag taaatatttt tgttaaagtt ttaataattt atttttcctt ttgccaaatc 300

ttggaaattt aaaagcaaaa atttggtcat gcgtctcgta cgcctgaaat cgtaaattcc 360

tgacgtgggt gaggattcga actattcgtt cggctcgaag catttcattc acttctacca 420

ctataacaca catatgttta tgttatataa agaaattata tatattaata atgtgaaaat 480

aaaaatataa ccgtgtttaa ataaatatct tatttgagca tcatatgata tatagaaaat 540

catagcaata cacaagcaac taactatttt agatatatac aacaattttt ggtagccaac 600

taggtccttt gtctcagcat cacgacaaca tccgcaaaca caacgtacgc acgtatggta 660

agcaaataaa ctaagacatg atttacaccc tgtttggatc ctcctagtta attgtttgtc 720

ggtgcgtgat aattagccaa caaataatta actatcaaca actagttagg atatgtttag 780

agtcttggct aatagatgtt tttttctcct tttatgatct atcaacaccc attagcaagg 840

tcaataacta atgaacaaac aatttgtcag ctctctggat aacaattagc caatttatta 900

gacagtcagt ttagatccca aggtactaaa gttagctaca aattgtttac ataatggatc 960

caaacatgcc cttagattgt tcagttctcc ttgaaaaaat agaacagctt agggcctatc 1020

tggttataca tactcttgtt tctagttacg atttctatat agggctcttg tttctagccg 1080

tat 1083

<210> 3513
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256135_G1, chr7:118928110..118929139, Cluster 21

<400> 3513
gaatctgtcc cttaaaatct aagaattaga aactgttaaa agctaattta gaaacctaaa 60

aattagtctc tagaaaccta agatgataga ttatagtgaa aatggcccga ttcgaattag 120

gataatttat catcgagtta gcataattta aaaatattta acaacctaag aattaggaac 180

tgttaaaggc tatttttgtt cctaagaatt tagtaagttt tttagaaact aatggagatg 240

ctctaattaa caaactaccc cgggatgact tcatttctcc tttcaaaaca tataacaaac 300

agaccggccc tatttgtcaa acattattat gctcaatgac ggcctacata ttacaacgca 360

accaaagtca gcgtgcctgc acaccaatga cgcatcgaca acagcagtat taattaagtt 420

attttgtcaa gtccacatgc ataaaattgg atccttatca ttgggaaaca aggtgatgat 480

ctcacgtacg tacgtatata catgtgcatc cactgacagc taatacagca caagctatat 540

attttgattc acgctgtgat tagcatatag gcaacagtac atgcatagag tgcactggtt 600

aattatttag actaacatat atacaggcac gcactggcta tatgattgga aaggagaatt 660

tcttccgaga gaaaaaaaag gcaataattt ttcaggataa agaatgccgt attcttcatt 720

tcttcatcaa ttaaggttag gacattttat ttccaccagt tttctgctca ggtcctatac 780

acatttcttt ctttagtaca taacaaaaaa cacaaaaaaa ttgtgtatca ttgtaattaa 840

gtagaatagt ttaaccatac aaacaacacg tttctggtga gtttattatt tggtagtata 900

atatcgatag cttgttattt ataattagct aaatttaaga tactttaact tttactcagt 960

agcatgcatg ttggaattgt acaattttat agacgagagg gtaatataac atggacaggt 1020

gacaataaat 1030

<210> 3514
<211> 1331
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260238_G1, chr7:141449491..141450821, Cluster 21

<400> 3514
ataaacataa aatttccatt gtggaggcat gtatgttttt atttttaga gtctagtgca 60

gtctcatagg tagggtatct aagaaatcag ttcttttgtg tattatggag gtattcaaga 120

ccttcagttt cactgaggaa ttcgttagat cttgttcagt tgtacataga tcggagagat 180

taaatctctt tcttttcaat tttgactagg aaagatttta attccttccg gttcccttaa 240

tccctatgta accgaataag tccttagttg tctctggata aacataaaat ttccattgtg 300

gaggcatgta tgtttttaga gtttagtgca gtctcatata taggtggggt ttcatttact 360

gtattgacat taggagcagt ttcttggttc tttgttttgg tgtgaccgtg tgagtttgta 420

ataattggtc caattcgccc tcctagagga atagaggaac gatgaagcct atttttttgt 480

ttccattatc tagaaagaag tgtttgcgag gatggtacgg gaggaagggg cacctaaaca 540

agttaataca ttggcaccta cccaatcttc ctcaacaacg tccaccacac aaggatgaca 600

tggttccgag aactctaatc agtatacatg aaaagtagca acttgagtag acgatagggc 660

aaccacataa ccgtaatcaa tatatgcatg ttgtggccct aatcaatttg tctgctataa 720

ccttagctgg tatatgtgta tgtgttccac ctcttaatca gtatggatgt tttaacccaa 780

atccatatac atagatattg gggaatcatg tttgagaatt ttaaaatgta gcaacatgag 840

cagacgatcg taactctaat tactatcccg gttgcgaccc ttaattgata tgcttgctgc 900

aaccttaatt ggtatgaatg ctgcaatctc ttactcggta tggatactgc aatactaatc 960

aatatgaaca agtgagcgta tgatacatgc ttgtgaaatc taaaaagtag aaacgtaagc 1020

atatggtaga gcaaacccta taattctaac ttgtatgtct gctgcaaccc ttaatctata 1080

taacctcaat aatcctaatc tctaagtata taccttcagt aatcctaata tctaagtaca 1140

atataatata ttatggcatt ttattagaaa aagaaaggac ttatctaaga tggatcttgg 1200

atgagcacat tatctctaat tcaccatatt tcatcaagcg agaactatag aaattcaatc 1260

caataaagtt ctacttttga ttgtcatgcc aatgtaaatc tatgtggtga tatgtctacc 1320

ttgcttggtg g 1331

<210> 3515
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262980_G1, chr7:156659636..156660640, Cluster 21

<400> 3515
taaaacaaat cagcaccaca ttcgaagccg attctctact aaatccagta gaagatccac 60

caaacacttt tttttataaa gaacaattct ttatatgaag cgtttttttt taaaaaaaat 120

aagactttat atatgccttt aactaatata acacgcctac gactagcaag gtgattctcc 180

atcgtaattt taagagtgaa attaaatata attatttttt agccacggaa tcacgtctct 240

agtagattca gctcctctaa atgagtcaga cttaattacg agaagctcta gctacgaaac 300

aaagaaatac acatgcctag agactagaga gtactttact atacatacgg cgtttcctct 360

tgaccttaaa acttatactc cgtgctagct gtttccaaat cctctggccg cgaagccgtt 420

tccttttgct ctcatctcat tgccttattg ctactgctcg tacgattaag cactgccttg 480

gcacaagagt ttgctatgct tggtctattt atttagtaat aaaaaccata ataaatcgta 540

aaggctgaca tacagggcgg actcacgttg gggctgagta ggggcacggg cctcactcaa 600

atttctggtt ttagtagagt ttttatctta ttcattgtag ctataaaagt ccattagtaa 660

gtagacttct atttagtcac ccaatcaggt tttaggccca cactcaaact tgtggccggt 720

tcgctcctgc tgacgtatga atctaacttt atattaaaga taagttcaaa accgaatcat 780

cagaatgcag agagcgtaac caagtcattt tcctacttca gaattgaatc cattaaatca 840

tggagatcgt aaccgaagaa gttttagttt actatctttt tcgtgtgttt atctttaggc 900

tagtttccct acatatacta ctttattaaa aagttaatgt tggcaagatt gagcactttg 960

ccagaaaata ccacgacagg aagggcaaca agatgatatc atttt 1005

<210> 3516
<211> 1074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263669_G1, chr7:160091804..160092877, Cluster 21

<400> 3516
aatacctgaa cattaatgtt ctactggtta gacagattcg tttagtgcct ttcaccttgc 60

ttccattagg gtgtgggttt aaaccccacc tgctgcactg ctttttacta ttttagtttg 120

agttgatttg gaagaaatat agagattttt tttttaaaaa gatgacgcag gacgaccatt 180

gaaactggtg atttaaatat agtagagatt tacatgtgaa ttgatgtata agttaaatta 240

atttacactt taattcatct caatctatct agattgaggt gaataataga gtatctaaat 300

aaggtcttag ggatgaggat agaattattt caatattgtc tctagttatc cattaaaatt 360

gatcactagc tgtttcacca ccaaacacat ggactataac aagtcaagtg atggacacat 420

agaggaacgt gcaacgagca tagtaactgg atctggatct atgtataatc attatttccg 480

gtcgtggaat tattgtcgtc aacataaaac ctgtcccacg cgacaactcc tgtcagagct 540

tcaaagaagg ctgcgggccg gactgatatg cgagcataga cttggtagtc gccgtgcgct 600

gccgggcgcg gtagttgtgc ttgtgcatgg gcacggtaga ctcttctgaa tgaagcaatt 660

cgccttgatg cggtcgctat acgcactctt cgacgctgct gaaacagaaa cagtgagcag 720

ccttttcag actgattggt ggagtgttcc aaatggtcca atagactgtt ctttatgtta 780

gtgtcatcga gaagtttgac gccgcaatgg aatgaaacac agataaatta tctgtttttt 840

tatccgatag ttccatattc tatggcttca tatacatcta attaatttca taactgatat 900

agagtggata atggcgttaa aaaaagtttc accatcataa cacttacttc ttcttctctc 960

tctttttttt taaaaaaaac attatctcat cgtcaacttc ccgtgggagt cagagactat 1020

ccctaaaaag cacccacact ggttgttccg cccttggatt ggtacaccca cttt 1074

<210> 3517
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265520_G1, chr7:169909996..169911103, Cluster 21

<400> 3517
aaagatgaat tacaagttca gtgaacaagc cacagagctt ttaacattat atatttcttt 60

ggatcctaac gattctttca gttcattgaa aattgatgat gtatgctctc tacctgtaaa 120

gttctaccat atcgatattt tagagcaaga aagaagtcgt gaggcttcaa ttataatatt 180

ttacatttca tgtgcctaca tattttattt tacaaaatat gataatcatt gtcgattttc 240

gtcagtgacc aacataaatt agaacatcag gtgaatatga ttatttgacc ccttcagggt 300

cgtctctgag ttctttaggc cccattgcaa aaattgaaaa tattccctat aacctatagt 360

atatggagat aaaagtattc taaaataagt tgttttatac ttgatctatt gttatattct 420

tgcctctta tgttatctat tttaaagtta agattttata gtttaattta caaaatatca 480

aacaatattt gcattttata ttatttatat tgagaacact caaaaaatga tgcccaaaaa 540

gttaggggcc ctgtgctgtt ggctgttgcc ctaggtggta gagaggcctc gccctttat 600

attttattcc tagctccgct actatgacca acacatcacc aacaacacct agatccatgt 660

tggaaatgtc acatcagcaa aatcactcac taaaaatacc gatggattat ttgactgatt 720

ttataaagtt gaggggttaa ataactaatt ttgaagatga gagataaaat agattatcct 780

ttaaattgag aggttatata tcttttctgt tttagggtca atataaaact ggtttcatac 840

tttttgaatt aaaataaaat ttagaacatt ttttagtatt aagtattttt aaaatgtata 900

ttatattctc gaaaaatatt gattattttt aaaattatta ttattgagtc gacaaataaa 960

aaattatttc atagttgaac taggttaggt ggacttttc tttctacggc tgaaccgctc 1020

aaagtcacgg aagcattaga gagcccggcc cacgcaaggc ccaaccatct ctccatctat 1080

catcctcccc gaatcgccct cagtcgcc 1108

<210> 3518
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265967_G1, chr7:172385791..172386852, Cluster 21

<220>
<221> modified_base
<222> (345)..(345)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (345)..(444)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (349)..(349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (350)..(350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (351)..(351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (352)..(352)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<400> 3518
atatggcaca acaactatga caagattaag tagttgaacc tctgttaggt agggcccacg 60

gtccagacat gaatataact ctcttctttt gtgttgtaga aggaaggtgt agagcaatgt 120

acaaacaagt ttgtcattaa caacatgatg gttggtgaat agagacacta gggaagatga 180

aaagcattta agggttgctt tagtctatag ttgcacctaa gtctaggagt ctctaggctc 240

atagttctca cttgctaact cagtcatcat ctaagctcta cccatggttg tatataaata 300

tccaccacca tagaggacat atgggtatta aacttagggc aattnnnnnn nnnnnnnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnngtgaca tatggtttta atataagaca tttggtactt 480

tgtatatcgt gtgtgttcat atgttgagtc agcgctctat aatggtggtc ctagcctact 540

agacctacaa ctatctctat aattctctct ggtaccctag tgtcacatcc caatgatatt 600

tggcatgtta gatatgggtg tggtgtgctt tgttgtgttg gcagacatgg attcattaac 660

acacccagtc gattgagcag ttgcctttaa cactagctcc aacaatccta accatacacc 720

acatcacaaa gtatgcagca gccttgctta gtctagtcct tttattgcct taggcaaggc 780

aagggctaga tcgggctaat cctactcttc tagctttgct agaacaactc cctctaccaa 840

tatagtctag taacccctca acgtggtccc atggcgatgc tatcactagc accgcttcca 900

tccatgatcc ttctaatgca cataacacct caagatggac acctccttgg acactggaag 960

actgccatcc tcctgcatgt gttactcctc taactttgct ttggagccct acaaatggtg 1020

cctccaagca tggtggcttg tctcatcagt ggacatcatg ac 1062

<210> 3519
<211> 1010
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267530_G1, chr8:3874851..3875860, Cluster 21

<400> 3519
cattttacta taatacatta tgaaacattg ctatttcaat atattattat attttaacaa 60

tcatattatt tgaattaagg accaccaata gacgtttgat aatttcgaag tacttttttgt 120

agacttcttg ctggattagt tagaagttgg ttatatataa ttatgttctc tatcaatcta 180

tgtgtgtatg tgatcaacta tatgttacta attgtattgt atgtcatgat attacattga 240

tttaaaatat ttaagaatgg ttaattttat tcgatccaaa actatcaaag ctattttcct 300

attggatcag cgaatcaatg atcttatgaa atcgctatcc attttcatcg tgacttgaac 360

ggcagcatgt aaaacgcttt cttatcctat atttagagaa gattctctct tctgctccac 420

agttctctaa ggtatcctct aaatatagag gatgtttctc aatcctctcg gtacagagaa 480

tctttcttat ctcgatattt atattttaga taatggatta agcaaaacta atatatatat 540

ataagatatt taagggtatg ataaatacat acataaaaaa tataagtaaa atacagaaaa 600

tgttttatag aaaataaacc ttttaataaa aatatgtaaa ttataaatat agagagggaa 660

ggtaaagaat aggtttgaag acacactatg gggttgttca ggactgcttc acgtagagct 720

gtattttagg atataaattt gaatagttta aaaagtattt ttaatctaaa taataaacaa 780

aataatttat ctaaatatct tttaaatgtt tacaactcta gatctatgat tttctatagc 840

accgagcacc taataacatg tttcaccaaa tgtactaaat tttatgcctc gagaaaaaga 900

aagagataaa gaagagaaaa tgtctcaaga agatccaact gtctctatcc ttgctttctg 960

atagactgct ccgccgagta gtggaaactc gagggaggag ctcgacggtt 1010

<210> 3520
<211> 1163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267534_G1, chr8:3877808..3878970, Cluster 21

<400> 3520
aagcatgttt gtttgggata atccaactta tttagtttca ataaaattag attatataaa 60

ttggacatat tataaatctc aaacaaacat accctaagtc ggctacgaat ttaagtatgc 120

aatgtgccct atctcctctt ctctatcctt caccttagca ttttgggggt gtttggttcc 180

cgcctcctaa aatttagtga ctaaagttta gtcactttta gtcctaaaat atcaaatggg 240

gtgactaaaa taggtgtttc aaacaggatt tctaaggagt aaagtttagt ctctaaagtt 300

tataagggtg actaagaggg gacatttggt ttaaagaacc aatccattct agattatgtg 360

gtgcatcatg agtctatttg ataaatttgg tgaaatgaat tgatttctta tattgttact 420

aattattttt tatgagaaat aggatggtga tgaatcaacc gatttcattt tataaaccaa 480

acaataaagt ggggagtgtg aagataatag aatacctcat tagtcaaact aaaaggttgt 540

aaaggaacca aacactctct tagccatctc attatacttg cccaaacggg gagatgcttc 600

tcgatgcaac tgctatcccg gctgactcat catcattcta tacccttttc gtgatctgtc 660

ctgattattg tcagtatcat atcttgctcc ccgtcaaaaa gcagagtcgc cactagtgat 720

ggaatatgca ggtcgaaaag cgaggggggaa agaagaaaaa aaggtgacgg gtttggccac 780

tatgccagca cggacaggtc cacggacaca cacgagagac gagcccatcc gtgcgtgtta 840

gctatttcgt ggttggccct aatcgtgctc agcgatttta ttgattatgg gtgtgaatgg 900

ttggccctaa ctcagctacc cacccttttg tttagtcgtc tatatccctt ttattgtgag 960

ctgatgcaaa tagtgcacct gagcgaggct acgaaagaac tgtcatttta gtcgtatgcc 1020

cgtatgaaca cagctagact gggcataaaa accaagacct ggttttaatt agttttattg 1080

ttatatctct tgattaatga atcaatttta cttttgcgtt tctaatattt ttatgagcaa 1140

aaatgcatgt cactaactat ata 1163

<210> 3521
<211> 1243
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269959_G1, chr8:16834229..16835471, Cluster 21

<400> 3521
catccaagtc actcgacgcc acaccatgac atatttgttg ttagttgctc taagctcttt 60

ctcaaccaac tcattggcaa cttcgtatca tcggcaataa taacatcaac aataacgtct 120

cttcctccgt agttaaaagg tgtacactcc atgatccatt tttttatatt atgtcgtctg 180

ctatatattg ttgttcatgc tatttaatct aactagtatg cgagcacatc tagtattagt 240

atttgtgcta gtgttgtttg atataactag tataaaagca ttgctaatac tagtatctga 300

gattgccaat gttctagttt taatccagaa gtgacatatt tattcaacat ttgttagtat 360

gtacgagtac aattctatat gaagggtgaa atatataggt gactataata atgtcatatc 420

tagcaacaag tcatataaca acaagattac tagattatta gctaatcgag atttgacatc 480

tgaaagaatc agtcagtcaa gctgccttcg tgtagctttc ccggaattca agtggatggt 540

gtgatatcac gaccaaaagg gtgtaggcca gtatggccgc tcaacgtttc ttatcggtct 600

acatacacgc acaatgcatg catggtttta ggtcacgacc ccacaattta taatatgtga 660

atatgtgatc atgtgcatga tggagaggtt aggtaataac gaacctaggt acacatgccc 720

taaatatata cgtccttcca aaacaaaggc ttgcaagaga caaggcacat tccaccaatt 780

attcctacct cagaccagca cacatacgca gcgcgtcttg aattataact aatgtattct 840

agctagtacc cctgaaaaga agagctaaca acccatatag caatgactcg taaaactaat 900

ggacatattt atgcatgcat gctctatttc acactagtta tattatatac catgggctta 960

ccgcacgtaa gagatgattc atcgcgcaca ttatattgct tctgtcattt tgtgcgccta 1020

cagatgatgc gccttttgag atcgatcttg ttgcttgtat tttcacgatg gttttttag 1080

aactctattc ttttttatt ttgaatagtg agagaatttt agccccttca atttaaatgt 1140

agttttctcc tgtgcattac cattcttgta tcgatagaga gtattcatat caccattgaa 1200

cccgtgtccg caatgtcgtg tgtggttgca acgataaaac cat 1243

<210> 3522
<211> 1025
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269960_G1, chr8:16837313..16838337, Cluster 21

<400> 3522
ttattttaca taaaaaggtg gaaaacgctc aagaagaaga tgaatactaa aagataattg 60

aagaacatct catttatact atctaaacat acaagaatac atcattgagt ataacatgta 120

acaaggtcaa tgaaattaaa aagaatacca catgaacact atttgaacaa tctaaaatag 180

ttgaagaaca tctcaattat tgtaattgaa catcgcatga aaacatattc aaataatatc 240

tcatttatag tacataaaca tctcaaaata catcacaaag tatcatgtgt gtactacata 300

aacatcacat gtatcaagtt caatgaaaat ttaaaataac atcacatggg tactatttga 360

agaacctaaa atatattata gaatatatga tgagtattgt gtgaaataat taaagaacat 420

ctcattgtcg taagggaaca tcaaataata catcatagaa catccacata tgtactacgt 480

gaacatcaca tggaaacaat tattgtatga atagtaaaag ataattaaag aacttctcat 540

ttattgtaag tgtacatcat atatgtatta tgtgtatatc acatttatta tgatcgaata 600

ttttgatatc atatggaact cacacaagtg caaaagacac atcacagata cacatattat 660

ttctatatgt aagcaaattc aaatattttg gtataccatg caatagacac aaattctaaa 720

gatacatcat aaataggcag ttattctaca attaaacaag ggaaaaggaa tataataaaa 780

caaaaaaatc acatctacta aatgaaaata aaaagaatag aacatggata ctagtgaaaa 840

atatttaaaa taaagtataa tacgttaaaa aaatatgcca caaatacatg taaataatta 900

aagatacatt atagaatatt ttgcttatat tatgtgaaca tcttagaata caatatggaa 960

tgtgccatta atatagtatg aataaacaaa aaaatacatg acaacattac atggatgcta 1020

catga 1025

<210> 3523
<211> 1209
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269962_G1, chr8:16839586..16840794, Cluster 21

<400> 3523
ctgtggcatc gcacgggcac gttcctagta agaacaaaag atcatagaaa ataaaaaata 60

gaaaaaatag aggcaagcaa acaaaacaaa aaaaaaagga aaaacgcatt gttgctacgt 120

attgctgtgg cccgtgaaca tcgcttgtgg gagttagtgg gccgcgagcc ggcacgctcg 180

ctccaaaagc ttcgtgggag cgtcacttgt ggaattggat ggtgggccgc gctctcccta 240

ggaacggtgg catggtcacg gttgacaatt gacatgatgc tgactgccga gtgccgatcg 300

gtcgaagcgg atgattggcg aaaaaataac gaaaccgacg cctaaccaag taatttaggc 360

ccagttgacc acataagccc actacaatct acaggccagg aaaatctttg gaaattcttt 420

tttgagaaaa aagcgaatac taaaaaatat tattattatt aaaaaataaa tatttacaaa 480

actaagagct ggaataaaaa attgcagcat aggattctgt caggagttat atgaccaaca 540

ggatcctaat cggaagtcga gtgaccaaaa aattatgcca cgtgtttaag atcacatcca 600

tatgtacata gtttatgccg acatgggaat gtagattggc cttatcggca atccaaccgc 660

tgataagtac ctccaaaatt acatttcagt ttgaaattaa atttcaatac agtaatcttg 720

ttttgaatga tttgattctg aattcaattt taaatttatt ttgagcaggt gctttgttaa 780

gaaactttgg atttcatcta attgtacatg tacaaaaatt acgtgacaaa atactactta 840

ctgaactatt aatttagata ttttttttgat tttttagata ccgttataga gctaaaaact 900

taccaaaaaa ctcgagcaaa acattacaaa caattataaa aagcaatggt gccagcaaaa 960

tatgttgtgt ttaatgttac aaaagcaatt acatgttgtg tctagatgtt ttaacaaaaa 1020

aaatgaaggt aaaggatgtc ggcttatccg cttacaacat tggtcttctc tagtcttatc 1080

tacgactagc aaaaacgggg gagtcaaaga agtgtacaaa gagagcttgt ttgtcctttg 1140

gtgaaactag taaaaaatgt tcgtctctta tcgctactcg tctcccttct tcaggcactc 1200

accttaacc 1209

<210> 3524
<211> 1002
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_277848_G1, chr8:72418965..72419966, Cluster 21

<400> 3524
tacagaatcg aatttttaac ctcaaatttt gaaaatactc tgtttttttgc actaagacga 60

tttagagggc ggttttgttt catctgatgg gacgccacgt cagttgcgag gggtgtaaag 120

tcaggctttg ttggtagttt gtgtttacgg attaaaattg tagtgttggt ctagtttttc 180

tatgatttaa atatcgtcag ttataaaatt gttaagaaat aatgtatttt ttgttacatg 240

taatacaaaa gaaatcatca gctagacaga ttcttcaagt tcccatagtt taattatcag 300

cgacatttga ccttttttttt gttgctaaaa tcttaatccc acgttgttaa aacgtatttt 360

tgctccattt tccaaacaac cggatgtgaa tgttcacccg cgcgtgtagc tgtagctgta 420

gtagattcga tacgtccata tatcgtccag catcacggcc aactactttc cataattggg 480

ttagaaacat gttactctca gtcacaatcc aaacgagcaa attgcacgcc agcgtgcgac 540

tggtgctgcc ctcgtgtcaa aaggatggtg gtgtggagaa atttcaacca atttatttaa 600

tagcggctcg tcaaatatcg taccatcaaa ggttggttgt actattaact cattaaatat 660

tactgttttt tatcatcatt tttttgcaaa aaaatatagt tccacagcat ataagctata 720

cactttgttt ttttctattc cacaaagaat gcaaaatcta ccacagtaat agtaacatgt 780

ttcatcatct tattaagatt gaatgactgt agataataaa ccaataatta tagtatcgaa 840

tgttattaga ctaactgcaa catatatcat gtgataaatt gatctagagt tgtaaatata 900

aattatacac aataaaggtg atcgaattta aatcatttta gttggcacgt aaccttactt 960

gcatttttt cgaggcacag agagtgatgc cagagtagtt ct 1002

<210> 3525
<211> 1283
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282950_G1, chr8:104274024..104275306, Cluster 21

<400> 3525
tccaggtggc cacggtcgtc cagggagatt ttagagcaca gcgactgctc gctgagccgc 60

tgacaccgac tgtgtcgatg tcgtctctgc ttcgccatat ttcaggacct cctgacgccg 120

actatagccg accgatcagc gtctcggcgg ggcccagatg aatgcgccac ggagttaaag 180

ccctcaaccg tctcggcggg cgacctatgc atggacatat tcattcatca tatcccaaga 240

tcgatatata tgttatatga agaagtcggt cgatcccatc ccgatcggcg atcggcccga 300

gcctaataat gatgagctct ctagtacttt gtcgataatg gcgtgcatat agtctacgag 360

ataaccacca ccaagttaag gacatgtttc tttctagatt atataatgca cctaatctag 420

gtatctagat tacataatct acctaataat atatgttatt tatttgtctt ttaatctatt 480

taagctgaat tatataacta aagggtaagc aaacagtaac ctaaaaaact caaacgtcaa 540

tttgttcaag tagccaaggc gtccagtcca atctagagag tattagagca tgcttgtttc 600

gttccaggat tatataattc tagtcttcta gtagacatgt ttgtttactt atttggatgg 660

attaattggt agtgtttgac cgcaaaaaca ataataacct atacgttttg gtgtttcaca 720

ttatttgttt actcagatta tttatttttc tctttttctt ttatatttat tagaaaatat 780

aaaagaaaag gagtaaatca cacaaaacca gatacaaatt attagaaaat cctagtaaat 840

cacacaaaaa cataaaataa aaattctgat tatgttaaac ttcacataag cagatctata 900

cagtgaatat atgatatggt cgtcccacga gtgaaatgtg atcaccggtc ttgccttcga 960

atagcatggt gccagatcat tcaccaaatt tgacggtgtt gtggatcacc atgtcgatgc 1020

gagtgaaggt gtgccaacat cctaacatgt ttggcgatgt ggtccttgcc ctttgacttg 1080

ttacaacaac tctagcccaa tggccatgtt tggcgtagcg ctttcactag ttgttgttgg 1140

gggcctgtcc accactggat tggcccttgt agacatcacg cgatgcaaat ccaaagctct 1200

ttccattgcc atgcccacga cctcacccgt ggccaccaag cttcttgtcg ctagcgccac 1260

tatatcaact ccggttgccc ctc 1283

<210> 3526
<211> 1059
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285395_G1, chr8:117200954..117202012, Cluster 21

<400> 3526
tccaaaagaa tttaaaagac cttgatattt cagaatttaa aagacattga tatttcaagt 60

gaattcccag tacatacaat ccactattgc catcgggtgc atgaagttgc ttcctctatc 120

tagcttcagc ttcttgtcct ttagcaactg ctctttgcat gtaaacaagc catcacttag 180

attgaataag aaataccgag aacagaaatt ggtaatgtag attattaaca gtgatgattt 240

ctgagaggga atcacctcct gggttcttca catcaaagct tagcatcata ttccttgttt 300

gggggatatt ttggtagatt tgatggatcg caggcataat actttgttat aaagaaccac 360

aaaaagaaaa caacaaatta acaaagcagc actaaaactg tacctctgaa ttgaacaacc 420

agatccataa gaacagcctg gatgtaataa acacataaac ctaagaggct agtatcatct 480

ccaacgcctt ctggtctagc agcaaaaacc aaaaaataat attatctttt aaaaaatatc 540

atggtagttg atgcaaacaa aaaactataa ttcagaatag ggagtgtaga ttttgacgac 600

ctttaagtcc aaaacctttt agcctggtat tttgattttg gttagcagag tttgtaaatt 660

taatttaata tgattttgat gcctattagt tgatagcaaa tggtgtggtt aaacaaaata 720

gatggctact tgcaacactg atacgattac gtaacaaata catgctcata ttacaatagt 780

acaataataa tcacataatg taacacttga agagcacttt tatgtttctc tggatctaaa 840

aacatattat ttgtttgatt tctgttggta ctggtatgcg ctaaggacgt agatactcaa 900

gaattaatag atagagctat cactaatatt tgaggtaaag tttaaactga aagcgacata 960

gtaaaatacc agaatctatg tagttgccag tagtaaccaa gggataattt tatgtagttg 1020

ccagtagtaa aataccagaa tctatgtagt aaaatacca 1059

<210> 3527
<211> 1253
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285630_G1, chr8:118385439..118386691, Cluster 21

<400> 3527
cgcgtgggtg cggacgtgcg gtcatccaat cagacggata ttgtcgattt tggaattaaa 60

ttgttgctga aattgcttaa atatctcact aactctctct ctctttgtct tcgtctacag 120

ttgttcctag ctagctagta catgcatatg ctctcgtaaa tggtccgtac tatgatatca 180

tagcgcataa tttcagaaaa gtaattagaa atgatcttgg tgacatgcat gcatggtcgg 240

accccggccc gcaattaaat tcgctcctga attattgagt gctcgctgca ctggagggaa 300

agaatcattc tcactcaacg actctgggtg aacgttaatt aggcctatat atgctggcta 360

ttctatatct tatatatccc tctgatcttg tatagaaagc tattataaga atatagtaca 420

gtactctctc aaatataaaa tggataaaaa aataaaatag tacatacaac atgcattatt 480

atatatatat cctgtaccgt ttcctatata tgtgccaagg aatttacggg gcacctaaaa 540

tacaaaaaag aaacaagtgt ggtagtacag tggttgatcg agctattaat ctgaaaggat 600

agtaatgggc gatcaaccag taccactaat aaactcctag tcgcttataa tttattggat 660

tacacgtctc tgtcaaatct taggggaaaa caataataga gcaaatgagc cactagatag 720

attgaagtag aaaccagaag cgtaatggaa tgtataattc tactcctcta tcttataatt 780

aataaaataa ccagaagcgt gatggaatgt acggctttta aaagcaacaa tatataaata 840

attacgtact aatgtattct acttctctat cttataatta ataaaataac cagatgcgat 900

cttgccttat atattataat aacaagcgta agatagttgc gtggtcacct gcatctatat 960

tactatatat ctccgagcaa caccaggaag aataaagtag caattaaaaa agcaaggtag 1020

ctaccaacaa gatccaatca gctaagggat caagtggctg caatataata aataccatag 1080

ggcttcaaat cacagtagtt cctaataatg gctctgacgt aacaaactgt ttcaaccggt 1140

ctcaactcat aaattgaata ataataagaa gcatcatgat atgcatgtag ggtacatgcg 1200

gtcagcagac tgtcagcctc gaattagaag aagaagaaga agaagaagaa cac 1253

<210> 3528
<211> 1049
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286790_G1, chr8:124477633..124478681, Cluster 21

<400> 3528
ctagaaccct tagaacggtt ttttaggtac aaaagacagc taaaagatta catgatacaa 60

cttcgagctc ttatatcatt gatacagtta aaaaacaata tgcatcaaag gtcgtgaata 120

accgtctctt gatttttttc tcacttaacc tctaaagacc tctcaaagac cattcattta 180

atagttatac atgctctaag gacatgtaaa ccttagtctt tagatcgatt tttcaaatat 240

aaaatataac taaagtctct atgatataac tctgagtgtt atcataaata taattaagag 300

ataatataaa tataaattgt gaagtctttt gaatttttc acttgacctc ttacagattc 360

atcaagagac ccttaatcat aatattttat gtatcctcgg tatttttcct cggtggcaga 420

gacgtggggg ccatttggtg gccggcagcc cggcacgttc ggcactccca cctcgcctac 480

cggtggcagc ttgttaactt gttctttcca tttcgaatga agccggccga cggccatgct 540

gagccaaatc gcctcacgct tcatgaaggt tgtcttaggg tatttgggaa caaagtattt 600

tttgcagtat tgaaggtatt gagtaataat gtagtattat atatttttgg tgtttaaaac 660

tcatctgaaa tctctatata ctaaattata gtatttttaa tactgcactt gttttgtagt 720

tttggaaatt ttagtcccaa ccaaagtttt tttgtgtaaa gagagcgttg atgctcagtc 780

ccactctagc caattggtct caaccaaagt tttcctcaaa caacttgatg tattgtatat 840

tgtagtattc gaaaactaaa atattttaaa ctacagtaat gacacgagta aagtatacta 900

ccatattttt aaaaaaaaat tgtgttccca gatagggcct aaggtgcagg ctttggttgt 960

tctctgtctg aaaaactatg tgctgtttgg gacaactttt ttcatgaata gcttgacgat 1020

ctcagtgttt tgataatcta gttgtcaca 1049

<210> 3529
<211> 1212
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_288522_G1, chr8:133998499..133999710, Cluster 21

<400> 3529
tttttgtaac cgcatatatc agcaatatat aaacacagac cgtgacccta gagggcatgg 60

agcccagcca attaacactt ttgacctgta catggcaccg ctacttgcac acttgtattt 120

ttatacaaca atacatgaaa agttcataca gaattttatt ccaggggatc aagtaggcta 180

ctcacttgta tttgtataca gcatacgcat tccatacgtg tagcagtata caatgaggtg 240

aaatgttagt ctggtgtata tacaccggag ccaatgaatg atctagctgg gttcttgtga 300

cgcagttgga atagaaaaac aacgctagct agcagtacca tgacagcaag ggaattgttt 360

gatatttgac tactcgcaga ccatgttgac atataatact gagaattact gatgatgagg 420

ctgctcatga gtcatacata gtaccttaat tggtactcct gaactgctga tggcgacctc 480

aatcttaacc atcccagctt aagcttgttc gttaagctat ccataaaaaa aaccgagcgc 540

agagtttcca gtgtatctag tggcatctca aggtctccat cctatttcca ttctgatggc 600

gtcaggatca gcatatgaca attcagataa aagtgccagc cgacgatgga gtgacaaatc 660

ctagctagtt taattcctca gaaatgatat tttttagctc acatagtggt gacaaatcct 720

agccgatcga aggacttctg aggatttcaa tgcaaactct tgccgagttt ttttttcttt 780

cagattctca agtttcaaac gaaacccaat ttgaacatag agtgaaaaaa acagttgtca 840

gtgcagtttt ttttttattt gaaagaatgt gactcagagg attattgcaa ttactgtgat 900

ctacaggaag gagatgtaat catctttata atactcatcg cttacaagtg cacagttgac 960

ttagagagag agagggagag agagagaggt gctcacagaa tatatatata caccactatg 1020

catctgtatt ggatgcttgg gcatgattag actgcatgct catcctagat tctgcaactt 1080

ttgttttcct tcatctattc ctgctttcac ttttcctttc tgcctattct taggttcatt 1140

caatagaaag catattacgt gatgtctctc tctcaccctc tggaaaagag aaacgaaatc 1200

tcatttcaag tt 1212

<210> 3530
<211> 1204
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_289955_G1, chr8:142470200..142471403, Cluster 21

<400> 3530
aataaaaatt cttcaaactt ataataaatt cacatcatta aataactaaa tatcttcttc 60

atttaatttc ccatgtcatt tatgtaggaa aaccatttta ttttaaaccc ttcttagaaa 120

ttaatatcaa tcatttactt taggataata ttccttttat gtttacctcc aattccatgt 180

ttctcatata tttattttag caaaaagtaa atattttcaa atgtgaaatt ttaattgaaa 240

aaatatataa tttaaatctt taggggattt atcctactgt atagtcccac aaaatattaa 300

tttaattcat gtgatgatta tctgtttagt caatcctata ttaggaaacc atttatttaa 360

atcttacagt agtttcccca aaagaatttt ggggtgctac agagagctat gatcttatag 420

gtcaatctct ttgtatgccc cttcaggctt ggattttggc gaatcttgat gtctggatgt 480

tctgcttgct cattttagtt gagctatgat gatccagttg ttaatgttca gccatcattc 540

ttttgcatga acatgctaag ataactcacc atgttgaaat actgcaaaca gaatagccaa 600

aggtaaagaa acatgtgtgc gccttgtgac actatgtttc ttgaaaggat ggggatgttg 660

tctcaagcgg gtaaattggc gtttatggaa aaatcttgca caattcaaag aagcggatta 720

taataaaggt tacacggatt tgtccataac ttatgcacgt atgtgtaatt tatgcagaga 780

tctgtgtagg ttacacaaac agtcaataga aagctcaaaa gattacactt gcgctccaac 840

tcgtgttcaa acaaaactta gagatgtgtg tatggaggag tttattagca agccaacgaa 900

gcacctttac tcaaaataga tacaatcaag tagatcgaaa gtgaagcaca aatcaagtaa 960

aaaactcaag agaaattaaa acaaagtgaa gacacaataa tttatttccc aaagtttggt 1020

atctttaaag gaaagattta ctgatagagt tctaattcca ggatttcact aggtcctcaa 1080

ttaccatctg gtaacttagt catagatgga tacacataga tcttatttct aaaagatagg 1140

gatgggagga acttggtgtt ataccttcta gactgatgtt gaaggtggcg ttggctattg 1200

cagt 1204

<210> 3531
<211> 1225
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290508_G1, chr8:145368992..145370216, Cluster 21

<400> 3531

tgtgttgttg gtgtctacaa gagttgtcta ctagtggtga ctttttagaa catttttggt 60

tgtgcaaaca ttactatttg ctatcgataa agtattgcac ttttgatata tccactgtgt 120

gaccaagcta tacatgtgat ttcaatacat atgtatagtg agcataattt gttgactgct 180

aattaccgaa gtttggccac agagcgtcgc cgctactaat aaactaaaga ttgaaggatg 240

tggtgtggta gatgagtacc ataaccaggc gaacgcacgg taggagtatt ctttttgat 300

tcttatgtgt gtgaccactt tgtatatttg gtatatggac catgaaaaat agtgaaggta 360

gtgttttggt cacgtatgac tatagcctta aattattagc cttagaccca aatttgcccc 420

tactcgtaat gtagtatgga atcagggaat gtcggttata gaaataaaga aataagttaa 480

atatatcggg ctagtttcac tgtactcaac ctgcttaggt tatttacagt ctggtgtatc 540

ttcacacaat acctaatgct gacaatgcca tgcatatgaa attacataag atataactat 600

cctaatgcat gataccatag gttatttttt agtcctctat aaaatattaa atgctagcat 660

atagtatgag agtatgagat gtgggccact tggatgttta aaatttaat gtatatgatc 720

ccgtacacag atagtatctc tcaagataca actttcttct cttttctctt aactcccttg 780

tcacatcatt aaaaaatgct tatatgtgaa atgcgtaggt tactgtggac ggggaataac 840

cttaccaaga aatatgttgc ggaaaagtaa agttatttgg ccgtgtgcgc acccgtccaa 900

atgttccagg atgggtcctg tgattaattg gtaattcctc catcacacaa aaaaattaca 960

attctaacgg tattatattt tagtatttta aatttaatta attataaata aatattataa 1020

tatttaataa atattgttac cctaattata aaatgtgtgt ttataataaa ttaatttaga 1080

actataaatc caaatactat ttactaaaaa aattcgatca aacgtaaaac tatttggtac 1140

atactccata gttgcatcga ctactagtgc gtagctagat ggcccgccat gcatttgcca 1200

attcctacga ggcaaatgtg cacat 1225

<210> 3532
<211> 1180
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298702_G1, chr9:8021623..8022802, Cluster 21

<400> 3532
aataatattt tggcacgtgt taaagagaga acactgtcgt atcactaaac actagtacaa 60

tgttcgtgct ttgtgatggc agacaaatta tttgataaat tgttagtaca cgatgtgtct 120

taaaaatatg cttcaagtat gtatttttgt tatgtgctct tccatggagg ttgctcactt 180

tctcgtggat gcatatcagt tcatgggaac ccagcgctgc catattcggc ctataaaaca 240

ccatccgagc cattagtgtt agtttgagag ttataaaacc gaaggatatt ggaggaacta 300

aaatctccct cttatttagt tttgaataaa aagggattct agcctctcca aaaccactcc 360

aattttatag atcctaaact agctcttagt ggatgattgt acaaactggg tctgaatcca 420

tgagcttaaa aaaggcaaac agtcatcgtg caatttaata caatggaaga aagatggcga 480

atcaaataaa ggttagagca ctcaagagac cagtgagatg tgtttatgtt ttttagataa 540

tggaaacaaa aaagtttcag ccttttgtag tctcctacat acgaccttat agatcaaaac 600

ttaataaaaa cacacaccat aaaaatgaca tccttagaaa gaaacacgtt ctctaatcaa 660

gcgccatcta gtcttgcatt agactttcat tcatgtcttg taaagatctc tattgctacc 720

atctctaagg attgatatac cgtaagaacc ttgtagtgag cttcttcttt ctgcaacagt 780

ctccagagtc tgaaccagta tgttcctctg gaaagaacct gcaaaattga tgttattggt 840

ttaaaagtaa aggtcacctc attgcgacaa agccaaatag atcaaaacat tactgccact 900

ctaattaata gttttttcc tatgtgttgt tcccttgtta acagctcaac tcataattat 960

atgattaaca ctgttggaaa agcaaagtaa ataatttttt aaatattttt agcaagatag 1020

ctgaatagac tcattttggt tacataacca gaacttccgt tccgtttgtg cagtctatac 1080

tccagaatta catttagaat ggaacaattg cgatagtttc tcgtaccgta attacgttta 1140

atcgatcaat ttacaaatca cccaataagg atggatatag 1180

<210> 3533
<211> 1271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300068_G1, chr9:13906192..13907462, Cluster 21

<220>
<221> modified_base
<222> (1002)..(1002)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1002)..(1101)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1003)..(1003)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1004)..(1004)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1005)..(1005)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1006)..(1006)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1007)..(1007)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1008)..(1008)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1009)..(1009)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1010)..(1010)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1011)..(1011)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1012)..(1012)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1013)..(1013)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1014)..(1014)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1015)..(1015)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1016)..(1016)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1017)..(1017)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1018)..(1018)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1019)..(1019)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1020)..(1020)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1021)..(1021)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1022)..(1022)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1023)..(1023)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1024)..(1024)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1025)..(1025)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1026)..(1026)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1027)..(1027)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1028)..(1028)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1029)..(1029)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1031)..(1031)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1032)..(1032)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1033)..(1033)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1074)..(1074)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1076)..(1076)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1077)..(1077)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1078)..(1078)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1079)..(1079)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1080)..(1080)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1081)..(1081)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1082)..(1082)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1083)..(1083)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1084)..(1084)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1085)..(1085)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1086)..(1086)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1087)..(1087)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1088)..(1088)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1089)..(1089)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1090)..(1090)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1091)..(1091)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1092)..(1092)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1093)..(1093)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1094)..(1094)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1095)..(1095)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<400> 3533
ccccacaaca ctgtgaaggt cagtacagct tgttttaagc tcgaaaaaaa ccttctcaac 60

agctggtgtt gaaattagat ttgcactgga ggtaggttct tcaagtttgc ccagaatctc 120

atgtgttttt tcttctccag ctgtaaattt tatttcatat aaccaattat tatagactat 180

gaagccctga ccttgtgaac accagaatca caacaaattg gtaaagtaaa atatctagca 240

gctagcaatg cacataaaga cctagagctg gcccaaaaga gatggaaacc caatctgctc 300

tgcacggaat gcatagaatc acaaaatcaa atagcaacat tagccgcaga gaaacaaaaa 360

agacactaaa atagctgatg taatgatata aagccattaa aatattgtag tagcaccgtc 420

aaaagtattc acaagaaaat catgtagttc gatctacgat aaacaacaac ctagaagcag 480

caaaattagc aagtacactc caaagtctgt tcgggacagc tttaactcag ggtggtttca 540

gatagaacac tttaaggctg tggtttcaga gagaacactt taaggcaaat aggtatccag 600

agttccagac caacataaat atgccctcta aattcccact caatattccc atttttttat 660

tatatcacta aaagacaaag gccactacat gctagttccc tgaattgcac cacatataaa 720

ggaatctact ggaatcctac gccacatatg tatctaccaa aggtccaaaa caaagctgag 780

taactcatcc aactcattga gctatgctgc tgcaaaaaat ataatgtgga attacggtca 840

atatttttt ttgttgaaag aaacaacagg gtacattgct tgtgtgtaaa cttgagttgc 900

atctgcgttt attgtatgct atgttctctg ctccatctgg gtcaggatag agaaaatgta 960

cgaaacgaat caagctgaac atcgaatacc gggacccata cnnnnnnnnn nnnnnnnnnn 1020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1080

nnnnnnnnnn nnnnnnnnnn ntcctgttcc cggtatgaag gagattgcga gagcagaaca 1140

tttagagtgc taaactcgtc aataattgat tgcagaaaac aaataaataa agataggaaa 1200

agcgttgaac acaagaaaaa gagtcgtata aaggtaatgt agtatctcaa ggatatggca 1260

catgggaact a 1271

<210> 3534
<211> 1269
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300564_G1, chr9:17014391..17015659, Cluster 21

<400> 3534
ctggtacagt gatagtagaa gacttgaaat gagagaatat aaataaaact tctcttgatg 60

gggtacaaaa ggtacatata gctacaatac ttgtgtaaat tcatagttga actaaccaaa 120

cataaaaaag atgctgtttc ttaggttccc accgtctaac gggtcggaca aacaatttca 180

gagttacatc gctataactc atagtattta agacatttta tttacatcta agtcattgtt 240

gttattgcac agctaaattt aagccattct tttcaaatca cagtttctaa gatattttta 300

tattgtgtcc aagttattca agcattgcag gattggattt aagtcatttc atccaactca 360

cggtatttaa gacattatat gttgtatcta agtcatttca gtatttaaga tattttatct 420

atatataagt cattgcagcc attgtagagt tgaatctaag ttgttctatc catctcacat 480

cttctaaaat atttttatat tgtatctaag ccattcatgc attgcaggat tgaatctaag 540

tcatttcttt caacttacaa tatttaagac attatatgtt gcatctaagt cattccaata 600

tttaagacat tttatttaca tttaatagct tttaatattt tgtttacatt taagttgata 660

ctactattga agagttgaat ctaagtcatt ttttcaattc atggttttta agatatgttt 720

gtattgcatc taatttattc atacatgtac tgtctagatt aaatctaagt catttcttcc 780

gtctcataat acttaagaga ttatatgttg tatctaactt attctagtac ttaagacatt 840

ttatttacat caaagtcatt cctgctatta tagagttcta agtcattttt tcaactcaca 900

gtttctaagg catttttata ttacatctaa gtcatttttt gcattgcagg attggatcca 960

agttatttct tccaactcat aatgtttaag actttatatg ttgcatcgaa gtcattctag 1020

tatttaagac attttattta catctaactc attcttatta ttgtagagtt gaatctaaga 1080

tattattttg aactcatagt ttctaggata ttttatatta catctaagcc cttcatgtat 1140

tgcaagatag aatctaagtc atttttttcta atgtataata tttaagatat tatgtgttgc 1200

atctaagtca ttccagtatt taagatattt tatcgttctt gctattgcaa agttaaatct 1260

aagtcattc 1269

<210> 3535
<211> 1075
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_311848_G1, chr9:89011077..89012151, Cluster 21

<400> 3535
tatgttgaat tattgacgtg cataaatact ggatcgtcaa tcgtgtatgt ttaaactttt 60

tattatgtcc gtttttccaa tacgagctct tttccgctta aggaaacggc agctgacctt 120

ccaaaaattt gaaagcataa gcaaaaggca gctaacctgc caaaagttga gcataaaacc 180

gatacgagct cttctgtccg cctgagcaaa aggcagttga cctgccaaaa attgagagct 240

tcaagtgcat attctatata tccgatctgt gccgtctcac gtaaatgatc agcgggtcag 300

cgcaaatata atccgtgtgt tctcgaaccg gaataattta tatctgcgga atgagtggtt 360

gctgtactta aagaaaagag cagtggttct gttagttgtc aataagcacc gaaattattt 420

atatatagga aatgggtggt tgctgtacgc ctgtatataa aaaaaggagc agtggcgctg 480

ttagctgtca aggaaaggct gagagaaggc acagggcagg aaaaataaaa taaaacgtag 540

aaaacaaaaa aaatggggca ttccgagaat tgaactcggg acctctcgca ccctaagcga 600

gaatcatacc actagaccaa atgccctatg ttgataaata attatataac agtattatta 660

ccgttgttaa cgtgtatgta gttgtaccgt cctgcccctc gtttagtagc ttgtacagaa 720

aataggcgta tattgacgct tccaggagcc aaataacatt gaagcttttt gtcaattcga 780

aacgagaggt gttttactcg gccatttctc tcctcttcta aacccgaatt tatcttccag 840

ggatagagat ttggaatttt tttgtgttag atcaggattt tgggtaggag tctgtatttt 900

agacttcgta ggggaaatca ggatacaaat gaaggagcac atgactaaaa gcgggtgaat 960

atgagctaat aaaattccac tcaaaatgat atggatttac ttcctgattt gaccaaaaga 1020

gcgatcacat acaccaaaaa tcctgtgaag gagaatacat acacatcaag tagtg 1075

<210> 3536
<211> 1132
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313743_G1, chr9:99701540..99702671, Cluster 21

<400> 3536
taggtctaga cttatcatat atatgctata aatttatagc tgtgcaatat attacggtat 60

tatatataat aaatagttag actttatata cacaccaatt ttttttacc ccttatcaat 120

tttgaatagc catttttaa attttgggcc cgtccctgtc aacatgtccg gttgtatatg 180

atatgttgcc atgttaattt ccctttaaaa attgttcatt gtgttgcgca ctttaacgaa 240

tagactgcag ccccatgcat tcgatagccc tgtgtagtgt tgggtttgtg gcgtaggtca 300

ttgactcatt gcaaacaaaa cgcattagca gaacatgtat aaaagtaatt aaagcttcac 360

acttacaatg tatcatgcgg gtagtactta aattacagag aaaacagtga acatgcacta 420

cagcgcgata tgcccatctt atccatctat gctaacagtt tcaggaattt agtttattgg 480

gtttttttta ttatttgaat tggatcatag atttttttat gcaaagatat attgttagta 540

atcgaaaaca atagaaaaga tatatcaaca ataggtccaa aaacaaaaat agaactaata 600

tcagcataca caatttagat atattagaaa taaaaatata aaaggggaaa atatatgtca 660

aaaatatata ttttttaaa aaatagtata taaggtagga agatatgtca agaatcgttt 720

tgaaaaatag aaatagaatt tttagcagta tatacaaagt ataaaatata ttagaaatat 780

aaataaaaaa gagaacgtat gtcaagtaac agaaaaaaat atatgtcaag aatgggattt 840

gaacccatgc cctttcggac cagtacctga aactggcgcc ttagaccaac tcggccatct 900

tgactacatg ctgatctcaa tttatttttc tatacataca aatatatttg agggaagata 960

atattgttca ttactgcagt tgcatatatg gcggtggaca ttccccccttc agtaaaactc 1020

aaaaacgaaa ataaaaacag atggatcctt agttggtttt tctaatgaag cgtatgaagt 1080

ttggatggag tttactactt caccctaaaa actcttttg gtcagtttag aa 1132

<210> 3537

<211> 1105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319475_G1, chr9:130807254..130808358, Cluster 21

<400> 3537
ccgctcctgt tgaaggcata aacgacgtcc cacatttgaa ggagggcaat taaggcctag 60

tttgagtact cttagattga aatggtttag agtgattgaa aagtgtttaa atcatcaata 120

gatcaaaaac tcccgcaata catcttaatc cactccaatc cctctcattc ctagagtagt 180

tagaatgggt taattatggg tgtatgggca tttccaataa taaattcaac ttactagctc 240

atataaaatt ttaaaaataa atacacagta aacttaccat gctagatgaa aaatatgcat 300

atgaattatt aaaatatgcg gcctatcatt ctcgcctctt ttcattgaat aaaaccaata 360

ataaaatatt ttatgagtca gccctcttaa catgtgggta caaatatcgg acataggagg 420

atagcggtta ccatttgggt gcaagtgtgc aacggaaact ggctgaagac caaacggagc 480

caaagttatt tttctagatt tcctctttta tttaaggctg gagatagaga tcatttgtgc 540

gttcccataa gtcactaata ccctagctac actagtctta tactagagac cgacggacgg 600

agcaacaaat agtatcctag actgcatgtc tggagatgcc ttctttagat tctaaagaac 660

taattaatta gtaaacaaat agaattgata ttaaataaag tggcagacgt atatagagga 720

aaagggcagg tagctcaaaa ttaaatctga tcgtgtcata ccttgcttga ttcctgatcg 780

tggacttcgt taattacgtg tttaaattaa catgtgcatg tacgaagtgg ccttaacatt 840

aacccccac cccagcgaaa attaaagaag tgcaaccgat agagttttca tttgccactt 900

cgagtatatt aaattaaaat ttaatccaac ttgctttgct gcccgtcaga tgcgagttga 960

cttgctaaag tatacatgaa ttatagattg cttgattgct ttctgacggt cgtactaaac 1020

agcgaacgct cactagacaa ataatatgtg agaaaatccc ttcaatgtca tctaaaacta 1080

taacaatctc ttcaatacca tcgaa 1105

<210> 3538
<211> 1326
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320616_G1, chr9:136147305..136148630, Cluster 21

<400> 3538
gcttaataaa aaaattgaaa cgctcaactt tagctaaaat tattttaaaa tttgtaaacc 60

caaacaaata tactataaat ataaaatata agtaaaagaa cgtatcaggt gtaaccaaac 120

tgattgatac aaccgtacaa ccaagacaca aggatgatag cgatagaacc tttttacaaa 180

taccattttt ttttcataac aactgtccca cctctttctg ccttttacct ccatccttgt 240

atcttggatg caccaattag tttggttaca catgatacat tctataagta atcaaaatat 300

tgaaaagtta ttaaatatta taagttttat tatgttatta tataaattta gataaactcg 360

acaccatttg actatcggaa acaattgaaa tctcgtataa attttggatg gaaggcattg 420

tggccattta ttggcaccaa atcctgatcg aattgatgct agtatattga cgaataggct 480

caacataagg aagctattta gcatacgtag aaggataagg tccaccgggt gtgtatttta 540

gataggactc atattaggtt aaaatcattt agaggatgct tatcggtaaa tcttatacta 600

agcattgtta ttagcaaaat ttatactaag cattgttatc tgctgtgcat ttacgttcgg 660

tcgctgacgt gcggacccag gcggaggctg gccctgcatg tcaatgaccc ggctagctgc 720

aggctgcagc tacgtctaaa ctgtagaagt tcatctttat gttattgaat tgaatttaca 780

ttgtcaaata tgtatctctc gttcactcca tgacgtatcc aacatatcta gtactctgtc 840

ttatatgctt tggtcgtatt aattattgga gatatggagc caaagattgc aggctgacaa 900

cggcacggcg tgcctgctac ggcgaccggt ggacggtgag ttgccatagt ggagcacacg 960

ggtgcggcgc cagaatgtcc acagctggag acggccgccg tcgcgctttt ggttctgcag 1020

tgcacagagc aggggtagtt ggcgggcgct ggtcttgcgg tggatctgga ctgacagtga 1080

aagaaaagag gcgctaaacg ccgtttttc aagttaaaac aaaatcaatg gtgtactcct 1140

gtgcgcagaa agttacgtgc aagcaatttg caagtgtaaa agaggttacg taacagccaa 1200

acagattttt acgtgttcgc ctcggcgtcg tgtgaactgt cgactccgat cccgacgtcc 1260

gcgtctcgtt atccacatgc agctatttta tataccattt tctctatttc aatgggacct 1320

agcaga 1326

<210> 3539
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320619_G1, chr9:136154618..136155725, Cluster 21

<400> 3539
taatgtaatt tttatccatg agatatggaa ttttggatac ccattgtcaa atctacacgt 60

cccaccgaat caggaataga gccatatata tatctcgtgg aagacacgga cacgccggcg 120

catatgcaga ccacagcgac cttgatggcc tcctgcgcgc ttgacgtcgc tgactactgc 180

tccatcggcg tcgtgtaaaa agttaaaaag taaactgcca aacagatctt tacgtgttcg 240

cctcggcgtc gtgtgaactc tcggctccgt tcccgacgtc ccgtgacgca agcacgcttc 300

agcgttcgcc ggtttgacaa cgaatagtcg aatatatact agggtatgat caggcgatcc 360

tgccggatat tattatcata ttcccagcgc aagcttctac tagtagagat ttccggggtg 420

ccgtccccgt caagatgcgt acccgagaca aggtgcacag caataaattt aaagcgcggc 480

tccgtttgtg aagaatattc atcacgcacc tagctcaaca actaacggtg caagatcgaa 540

cacatctata cagtaagcaa caagtgtttc tgtgtttgta taaatacgcc tacgtgctta 600

tcgtcccatc cttctgccac ctttatttat gtttaaattc gatcggagta tcatgcttac 660

actccttact agttttgttt caggtcaaat atttgtatct ttgatcgtca attttaaaat 720

ttttatattt gttagtgata taaaatttgc atctttagat ttatttactg tgagaaatat 780

ttttataaaa tatagtttat atgttggtga tggtttattt gatcttatgt tattgaccaa 840

tatatgattt tttttaaaaa aataatgatg atcaaagata aacatataat aactaaatca 900

aaataaagct aataggacat gtatacaaaa aaaataatta ggagtaatcc agcgaagcct 960

cgtggcaagt tgtaccctct tttaatattg catgtacaga taagttcgta ataatgaaac 1020

tacattggac catgcatgtc tggtcgcgct cgtaggccgt tgaacggcga tcaattgcgc 1080

cagaaagaac cggacaacat acatatat 1108

<210> 3540
<211> 1114
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323309_G1, chr9:150195165..150196278, Cluster 21

<400> 3540
aactgatgtg ttgagggata ggcacatcct aaggatgttg actacttgaa caaaccaata 60

gagaactacc aacagattcc taccatctct ggcaatgggt tagcaactgg gaagtagggt 120

atggggtcaa atgaggctat aggttcacct tctgacttta ctgaatgctc acaacatagt 180

ttgtcaatgg atggggcaaa atgtggtcta aaatatgaag aaggaccaaa accacatgaa 240

gaaataacta atatgaagac acatgaccaa ggatcacggg gtgggtctgc atctcagcat 300

ctgcaagcaa gaccaaaaag aggtatatgc taactaagga agatacattt gtgcatctag 360

gaatgagtgt tgttgtcaac aatgtcacta aagctattag tgaacctaag gtggtagaag 420

tccacctaga tctatatggg gcggtgatgt tcatgactgg attcagtgat gaggccttaa 480

tggtggcata ctcccacttg attgacagta agacctaggg gcgaggacgc tacatctgtt 540

agtatgaatg aggctcatcg tgtcctctgg ttacacacat tcctagctaa aaactgctac 600

acaatttagg ttctaaccga cagtgccgtt tctagaaata tggggctccg aagcgaactc 660

aacgataggc cctaaataaa tatgaaaatt tatatatatg tatagtatag ccaaagtatg 720

ctttaagtca cttaaataac ttagatatgt attgttccat atcaaatact aatattaaaa 780

tagtaaatac ggtgttaacc ttatattcta gataaaagcg ccaacctcaa acgatgatgg 840

ttcgatgtaa ttgtattcta atcaaatcac tacgaattga gtagctattt tatatttaac 900

tcctccaacc tatagtattg gatgtaacag attgtttggt tgcacgattc tgtgactgat 960

ttcgaaagat aattataaac gatggaaata gatgctaaac gcgggccgcg gatggcgaag 1020

ccgctgtcct agatacggct ctccatggac accacgaagc tcgaatccgt tcacgactac 1080

tgaaatggtg aactggcgac atacacattg caat 1114

<210> 3541
<211> 1293
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32355_G1, chr1:198533952..198535244, Cluster 21

<400> 3541
cgcaaaacat ttcgcctatg cttccttgct gcatcgcgtg caaaagacaa acaatttttt 60

aactgcagat attgaatcac cttgttgatt tcttggagca tgttagggtt ttttttcct 120

ggttaatact agtgtgctaa tcagcagctt gccagattca tacacagaca ggttgccgta 180

acttgtatcc ctgcatctta acggattggc aatacattgt tcatcattcg tatgagcgtg 240

atcatgctag cttgctctag tactcttgca actgcaagaa cgttccttgc aagtaatgtg 300

ctccatctct ggcctatcgt ctatatacag ctggctagcg agaacaatgc atcaccgtca 360

aataattgta gatagatgat tctccggccg cattgccttc ctctaatata atctactcgt 420

acacgctaca tattttagat aatctagagt ctaaccaggc aatgcaagat actacatttg 480

ttgaattaat tattagtgtt tggtatgacg gcgcaatgcc tcttgctgcc gtagtcgtac 540

ccacatcgcg acctgactga ctgcccattt ccagcagtgc ttactccgtt tggaactaag 600

gaaattgcat gatttgtgat ggtcgtcatg ggtgtttgag aacataagaa taatctgtca 660

aacttggtta tagttttcct ctttgaggct ttgacgtgat cgtttctgtt cgaagttatt 720

ctccaccccc ccccccccct agtttaaagg cttgttaagt ccattttacg aaaatatggg 780

ctaattatag actaatgaat ggtaacaact gattagacat cattagctct tattagctta 840

gaactcaccc acatttagcc tttttaatgg gtattttaaa aagtttgatg ataagagggg 900

ctgtgggtga attgtacttt taaattgaac aaaacaagag cttatggaat catcatatca 960

tatatgatga ctatttttat gtaattattg tgtactaaca ttttatcgaa taatttttgt 1020

accgtcgtaa cacacggata ttatattagt accactctat ttttagaaaa ttagatggtt 1080

agttcattgt gatgtcatag attggcatga aaatgaatta gtttctaact tttcaaacga 1140

aatggtataa ttctagctat atgggctaat tgttagctcc tgatcaatta gtaccactct 1200

atataggcta attgtgagag ggaaaaatca ttgcgcgagt ttatcgatag ataagcacaa 1260

cgacccttac caatgatgca cgttgtgaga cca 1293

<210> 3542
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325185_G1, chr10:3964515..3965519, Cluster 21

<400> 3542
ccatattctt cgttatgtat tggtgtggga taatatggca cgctagagaa cgattttcac 60

tattatattt tttaatctaa acacttttaa ataaaactca gaaaactatg tacaaaagta 120

tctttatcca acactatata aaaatatgtt tttataagac ggcaattaat atgtcattac 180

aattttatat tatttatttt gcatctcaac aacctcgaat gataaaattc aaaactagaa 240

aattatagat cacagctata ctttttacat gaagagtatc ttaattggag accatataaa 300

aagggatgaa ttttctaaga cagtaagccc tgatagctgc taaaagttta tattacttct 360

tagcattata acgatatcaa ataaaaaata aaactgaaaa gttagaaaat cgtatatctg 420

atcgagaact agaatccccc agtgtcatgg ccaaacagta cttccacacc tactagaaag 480

gtgcggtaag gtttttcacg tgaaaattgt tgtccagcgt gacagatcat atcgaccgat 540

gtacctatgt ctacgtgatt ttgccaaaac tgttagaaat aaaaataaag agtggataag 600

taaaattatt ccctaccgca gacaccgctg ctggatgctt ggatggacgg tggactggac 660

tcgaagggaa acattgccaa aagaaaatct gcagttgaac tctgttgatg ccaaaagaaa 720

aggtgtgtgc tgtgttctgt ccaccatgat tagcttctaa ctagagatag actcaatact 780

aattaatact aagatatcgt ttggttcacg aaatgtaaca taaatgacaa cggtaataat 840

tcacactcta gtatcaacgg taacaagtat aaatagaccg gtattagttt atagggtggt 900

atctaattac gattgaactt aaacaaacat agtttaacat tatcagttat acattatgtt 960

acaaatatat gaactataaa caaggcacta gatgattaca gttgt 1005

<210> 3543
<211> 1143
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326363_G1, chr10:9894001..9895143, Cluster 21

<400> 3543
ttatattcct tatagttaat gggtttagtc tcaaatttaa ttgtactgaa acaggaaaca 60

aattcaatca tttaacacaa ctatggttat tctttcttcg tcatgcatgt catgtcctcg 120

attcctcata aatgtgtgtg ttcatcaggt tattagtgag atacaggaag aatatcaacc 180

accaaagagt acaggaaata gtttctctac ctcaactact ggcaaaaagt ttgatcgcat 240

gaggacaatg acactgaatg atgatgtact tgttgggaga aagactgaga aatctgaagt 300

tattgatttg attggtcaac cttcggacaa gctctgtaag gtgatctctg tgtggggaat 360

gggaggactt gggaaaacta ctcttgtccg aagcatctac agaagccaac agcttgatga 420

ctggaactgg aagcgcgctt gggtcactgc tacgcgtcct ttcgacaatg aagtgctcat 480

cagaacccta gcttcgcaac tactccacga ttctaataca gcaaatatga agttggatgt 540

cttaagaaaa aagatagacc agcttctact gaacgagaac tatctcattg ttcttgatga 600

cctatcatct attgaagaat ggaacttggt tcgagaccaa tgggcaaagg ctaaacgcat 660

catagtcacc acaagagaat atagtgttgc caaatattgt tcgggaggag acatgaacac 720

gcacaaactt caagtcctac aagaagagga tgcacttgcc ctcttcctaa agaaggtact 780

tctgaacatt cctctgtcaa ttattactat tagtccatca acccgtgctc tcacaccgga 840

taaaatttta gaagatataa gtatattgta atgccaaata atcctttcgt tctaagttat 900

aacatatttt gtgttttcta aatatatatg tttttaatat atcttgatag tacatctaaa 960

tatatagcaa aagctaaaaa acttaaagca tcttataata taaaataaag agagtacatt 1020

tcactgataa gaattactta tttttttat ttattttcta atatgataga tataatagat 1080

actttatagt ctatgtctag ttatcatgaa catattaatt actatatatt ttaaggcact 1140

aag 1143

<210> 3544
<211> 1143
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3280_G1, chr1:17004831..17005973, Cluster 21

<400> 3544
gccataattt ggacatccat actattagaa actctggtga cattgcctga ttggtgaata 60

gaagaatgac taatattatc aggaatgtat cctcaccata agcacaaaaa ggatatgact 120

gtgacaaaca aatggaatca aggctaaaat acaaaaaata aattgttaat gtgatactta 180

cttggatgag gcgcttccat gacatcatat gtgtgtcgcg ccattcaact cgaactggtt 240

gagaaactcc aacattgttc gaggcagatt aagcgtcaga gtccactacc acatattcca 300

cacccacatc atggtcgggt tatggagggt catggggtcc caaatttccc aactctggtg 360

aatacccatg aggattggaa tcaatggaga ccttacacac aaccatgttc aaatattggg 420

actaagtccc catcactgat cacacataat tctaccactg atccacatag gcaattgatg 480

ccatctgcct tataattgag cctttcaaac acatgtgaaa taccctctca actgagatat 540

gatcatcatt tgcatcacaa ggtagattct tctagatcta gcaaacaaca actgatcact 600

aaatagcaca aactcgcttt gcattctaac aaagaaaata tttccctagt cattttgtg 660

catattgttg ccatggtact atgttattag aatgtctatc tatttcatat aaaggaacaa 720

acttagtacc tttaaatata tttgagtaca agtgactaaa tacaaactaa agactatcaa 780

attaccaact aactaaataa tatgtaccta agttttacct aattaactaa ctaaacaaga 840

cctaactatc taagtaacga acaaactaac aaacaaaata tccgagttac taaataacac 900

taactaagta actaactaac tactaactag gtagctacct aactaataac tatttgaagt 960

aactaactac tactaactag ctaactaata ggcaactaac tagctacatt actaactaaa 1020

taagttacta actaaatcac tagttaagtt attaatgcat aaaaacacct tcataggtaa 1080

ccatgcaaag gtgtgtgcta taggcggggg atcgaacgac ggcgtggaat gcgaggttgg 1140

gcg 1143

<210> 3545
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337386_G1, chr10:79123407..79124473, Cluster 21

<400> 3545
tagggacaag gatggaagaa ttttcttcta aatagggtga gtatggagag acgttcccca 60

tctgaatttt ttccattgcc atgtctaagc ccacgcggtc aggcatgtga cctagaggct 120

agacgggcac tgcccaggca caacctatgc acctacaatt agtgactttg tcgtgttttt 180

tgtgaaaaca tatttttag agatagatta gatccaaaat tagattctaa tatagggttt 240

ctaggatttc atggagaaat ctttgtggtg cttttggaaa gcattttgtt cttggtatca 300

aatatgatgt ttaaacaaga ttagtgtagt aatcttgttc ctctttctgt gctcattatt 360

tgcatgtcca gcatttgatt atagattgat ttgttaaatt tcaaatgtta ctcttgattt 420

atttcattta gattactgct agggaatcaa gtcagtgacc tgcaaagttt ggtcagctaa 480

tcttttatgg ttcttgatta attgtgaaat taaggcttga tcaactctcg ttaatatgtc 540

aagatatgga agtccagctg atatgacttt agttgggtta gttgcataat tttatctagt 600

ttagtttgat aatgttttag gtcgatccaa gtgatgtatt ttgaacaata tcgtttttta 660

ctaataaaac aaagctgatc aattctcgtt atactctatc acaaccgtct tgatttgtta 720

atgtcacaac atccgaaagt ccggtcgcaa tggtttcagt tgcgttactt acgtaatttt 780

atccaaattt agtttgatta aatttcagat cagtcaaagt tatggatttt aaacaatctc 840

gtttttacta atgaaacaga gttgtgtcta gtttagagaa acgtgaatta acttgatttt 900

gtgattagaa aaaggtgtta taattataat tgagcttttg cgatcatcca tttctttgat 960

tgcctatcgc tgtatctttc aatcccacaa ggggaaatta gacgtgtttt tcaaacctac 1020

aaggagaaat tagatggcgt ggcatagtgg agcctcaaat ggtcaaa 1067

<210> 3546
<211> 1251
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345609_G1, chr10:124673488..124674738, Cluster 21

<400> 3546
aaatagaggc ggtctgtttg ttttaattga ctttttttgtt gcatcaatat ctcactaggt 60

gctttcaatg tatactgaat cgtatattag cttttggtac attctgcagg agctcgacca 120

aggggtataa cacgtacatt gggtatatta atgagataac tctttattcg acactagagg 180

cgtaagaact ttttatagag agcgccaaaa acaatattta atagattatg actctgtttg 240

ggatagctca tgctctagaa aatctggtac aattagtgga gtaggttatt agatgcttca 300

taaaatcgtg gacctaaagc tgcaagtctt tagaaaacat ttagatagtc attttgttta 360

ttatttagat taaatatatt tttaaaacta tttaaattga tatataactg tagcttagct 420

gaaagctgga gatatcccaa tcacccctta tatatagaac ataacttaat agactatatg 480

tttttatcaa acacaaaaag aaagaaataa ccgatattta ttgaatcaac caatgttttt 540

atatacttaa ctatttaaaa ctagtagtaa ttaatatgta tttatatgtt tgtacaaacc 600

ttaggggcc tggccaggcc ctgccatccc caccatcccc acttgtctag gccactgttc 660

gacactaagc tagtaattca tttattggtt ctcagtatta atctttccta ttaacagcag 720

atgtaaattt gattccctat atgctacacc acaaatttgg actcctaaca acattaactt 780

ccatgctaaa agacgattta cccctatgaa taatcatttg tttattcatg aatacttaca 840

ataaaaatta ttggtattct aataattatt tgcatataaa tacttgtgag taattattac 900

aattatttat acataaataa ctatttaaat agttattggg taaaatcata tttttatatg 960

aaaacaacat tattagaggg cagaactaat gatagtatca tatagaaaaa acaaatttac 1020

atggaatatc gaatagggaa gataatattt tcagggccaa gaaataaatc aaaattttta 1080

ccggtgtcaa ataaagaatt gtttctatat taacaccata ttagctcaat caagctttga 1140

tacaatgttc aattagaaaa tatccatacc atatgtataa ctgtattact aggtaaaact 1200

acttgttgtg tgcatcaata aaaatgagag atacttaggt tacaattcat g 1251

<210> 3547
<211> 1165
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346552_G1, chr10:130364949..130366113, Cluster 21

<400> 3547
cacagtccaa aatctgagtg gagcctaatg taggggccta ctaactaatg gacttttata 60

tctacagtaa ataagataga aggttcacta aaaccagaaa attgagtgga gacatgtgcc 120

ctcactcacc attacgtggg tccacctcag gctactcata ttgtactaac gtttttacct 180

tcactaatac aatgttcgtg cgttgacggt acataaacta ttcgataaaa tattactaaa 240

tatcaatttt gattgtgttg ctatgacaca taaattgttc gataaaatat tagtgttgac 300

aatcaatctc tattgttata aaacatcatt ttaccaaaac ctgtagaaat aattagatta 360

agcatcattt taccaaaaca tgtagaaatt attagattat atagctgtcg tgttccataa 420

ttgcgtacat aatccagatt agtctaataa agtccctata tttcctccca tgtacaacca 480

aaaagaatat aatcacattt cttttcacaa tctcgctgtc agcaccattg acctagtggt 540

tgtctcatga ttttctgtta gtattgtaat tccatctctg taacggacat tcaaagccag 600

taacaaagaa gctgttttaa ctgaatagta gtcatgatct gcagccaaga gatacaatca 660

atttaacaaa aaatgatagt tatgctagat gtattataca tgtaaataaa gtaatgaaca 720

tcttctaatt tttttatcac ctcaatacaa aatgaaatta taaaagtacc ttcgagcatt 780

caaataaacg acatatttgc agatctaaat taccaaatag tatggcagtt gctcactctt 840

ttgccttata tttaataaag atcagatcga aaacaatgtg ccaacaaatc aaccacactc 900

tctgaaatct gaaactatct ggaatctgaa gcacacacaa ctcttatgaa actgctggag 960

gaggacaaat aaacaaagga attagatatc aaggtatggg ggttataatg ttaataggtg 1020

tcaagtctag aggttggtaa ctgttgttgg ttgatgtcaa gaggtgtctc ttcttggtct 1080

gagcttcatt ggtctccaaa gttgattgtc ccaataccat cacggccaaa gcacatcgag 1140

aaggaattag acgtcaggac ttttg 1165

<210> 3548
<211> 1314
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347364_G1, chr10:134592006..134593319, Cluster 21

<400> 3548
tttattaagt tcttatccat agatctaatt aaatagatgt atacaacatt aggtagagtg 60

cagtttaaat aggtggcctc ccttttttg tcatgtactc ttgtggtaat atactatagt 120

tactgtgtct gcacaagaga caatttacca agccatgcat gcatgcgcag cagcaagcta 180

aaggcctggc atatgtgcag aatgaccaga cagaatatag taaaagatgg ctgcacatac 240

ataaataatt ttaaaagctg catgcgtatg catttgttaa tgtacgagta cgactacata 300

tactagtata ctactacccc cacgcaggag aaaccggcgt gcctctgcct ccatcgtctc 360

ttattttcta ggacggtcca tatacttcag ttgtaatcct atatatagct tctggggatc 420

ggagctcgtt ggaagcgcat taaactcttt tgttttaatt acaatgatgg gcaaataatc 480

ttgtgtattt aaacaaaata tgcatggaac aatataaata ccttcataga tatatcgaaa 540

caaattataa agccaatgaa ttgacaaata tgatccaagc attcatgcac gcaccgtatt 600

gttccattaa gtatatatca tgtaccatat gttgaggaat gagctaggtc taggcaggcc 660

tatctttaat tttatgaaaa ttttaaaacg ttcaaaagta tttcaggtat acgtcctagt 720

ctaaaataaa cttataaaac tgagaaaaca aaggatacaa cataacacaa tggttccttt 780

gaggtattga gttggatgtt ccacttccat taattgtcca aaaaaacggg tcatatgttg 840

gtatgaaact catccggtca cattttcagc tagctatgaa acaaaacctt gagaccaaat 900

ggaaatcagc aaacagttag tcactgaaat tcataaatat cttacatgtc tgcatcattg 960

agtagctaac aaaaatgcat acatatggaa ataaaacggt agactagcac acccagggaa 1020

tcagatatgc tacccaaatt aactttggaa atggctaata actgaaactt tggtagcaaa 1080

catgtttcta aaaggaacgt gatatgccaa aatattatgg ctgaccacta tccttaatta 1140

ggttagttat caccatgtgt attgaataaa aatgaggata aatgttatag ttagagaaat 1200

ggatcattta ccaagcgcgc acaatagtaa gaatacaaaa tccaacataa actgaaaatg 1260

caaacatcct tagaaaactt cagcacgcgc attctccatc ttgaaaggga tacc 1314

<210> 3549
<211> 1364
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347516_G1, chr10:135594838..135596201, Cluster 21

<400> 3549
gatggagagg ctccattcta gagagcgatc gttcgaggga ttttggagag tcggatggtt 60

caacacttaa acataatttt taagccattc tatgctactg ggaactaatt caaacaacaa 120

caaattggaa gcgaaggggt tctgtcccac cataccccga aaccaggttc atgactcctg 180

atggataata atatcataaa tttgagaata ttgtagtatt ctaaataata aggtgtttgg 240

ttgaactttg taaaacacta ttttgaatac ctcagtatag ttaaaactgc actatgttta 300

gagtattgat gatgcagttt agatcaaagt tttctaaact atggtattat tgtcacatgc 360

aagtatatac catggtattc taaaatcata gcatccaaaa acattctagc aaacagggcc 420

taagtagttg gatgcagggt tttagactca gatagcaaaa agttcctggc ccgaacaaaa 480

tggatgaatc ttgaaaaatt ttagactagt atttatttgt gtcgactact gaaattattc 540

ctatctagct aatgtttagt taaattgtag caaaaaatgt tgtagagaca tgaagagaaa 600

atcaaggaat atagtttgat aattttcact actatataaa atgaaaaact tttgtttttt 660

aactctatac tagattgaat ttcaaattgg agcaaaattc atgattgttg gtacaatgtt 720

gtattggacc tcactaagat ggatggcttt tgctgaaatt caattcttct aaaccaaatc 780

ctacaaccct gtttagatgt tgattctagg tttctctggt ttcaagcaca tacaaattgt 840

aaaactatta aggatcaaga atacacaata gaggtaataa gagtagttat tgcattgatg 900

agagcatcta atagtatgtt acctagtaga cttaactttt ttttaaaagc accttactat 960

tcaatccatg cacctatgca tatgcacaac aaagggtgca agtacttcat caatatattg 1020

gacaaattgt ttcataaata gatatatacg tgcagagaat tatgtcaaca acatgagaac 1080

aatagatttt atcaacacat acatgagcat acaaagagat ggcattgaac attataatag 1140

ccacagacat ctaaaaaggc cagataatta agtaatacat cgaaaatagt aatattatta 1200

gagtcgaata gattagatag tgctatttat cattttcat tgaattattt gtcaccgggt 1260

ttcggtgaag ttgattatga aactattttt gacaaatcta gctagtgccc atataaattt 1320

catgttgttt ggcttctgtc gctaaatata gtaacaagct gcaa 1364

<210> 3550
<211> 1226
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348032_G1, chr10:137839528..137840753, Cluster 21

<400> 3550
gacctgtggt ctgaccgtct gatgtgcggc cgtgcggggc aaagcaagag tcggctcaag 60

gatgcgcgct gtcacagttg gcagagtcgc ctgctcaaca tcaatggaca tggaccaacc 120

tgccgtccga attgcatgac caagatgtca agatagttag cttaattaat ggtcgactgc 180

tgccactgtt gatcaactag atctgcagct attgctatgc tattactatg gcatggcagg 240

tttgcgacct caggggttc ttttcagaca tacggaccag accatgtccg aggagggact 300

cgtaaaattt gggaggattc taggtacatg ttggaatcac tcgtctaatc agattgcaag 360

tatacgtctg agaacaccct caaagtcaac ttactacctc ctatgaatta aaaaaacaca 420

aaaataagta agcaatgtaa tctagtgcag aaaaaaaaac gtgtgagcat agcgaactga 480

acccttcgta aaaaggtagt acctcattat tctttcttat tattgttgaa caaaatattc 540

tatgagctac ccgtcatcat ataaaaacgc tatgagatct gtgccaacta agtttctaga 600

aaatgttggc gacatctgta tctctagata aatctattgt taatatatat aatgatctgt 660

actaattatg tattgaaatt gttattattt ttatatatct agttaaaatt taaaatgtat 720

aatttctaaa aaaaacaaga atgatagttt ttatgggatg gaaatagtag ttgtttaaca 780

ctgttggagc tactcaaatg atcaagcgat gatgactgat gatgatttaa tgcggtagct 840

tcaactccca tctgttcaga tgctagaatc cagaattcca gatagtccag gtcactatga 900

cacaaacatt tagtctggtc aacagtataa ttgattttct agctcatata aacttgaaag 960

aacaaaaacc gagtaaccta acataatacg cgggcttagg aaaaatatgt aagcaatcga 1020

tgcatgaata aaaaaatgaa cttagcgctt tagaactaac ttattattat tctctctttt 1080

ttatcaaaca aactattttc tgagctaatt gttataatga cgacggagct gtcctttccc 1140

cctagaggta tggataaccc catttaatat ttaatatatg gtctcttaag ggatttttag 1200

gatgttaatt gaaaaattgt gaaggg 1226

<210> 3551
<211> 1209
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34963_G1, chr1:212525021..212526229, Cluster 21

<400> 3551
gtctacttac gaaattagct acattacatt ctttgccatc gaatgccttg cgcaacaaat 60

ttaatggtct agctcagagg tcatatgaag ctttactcta ggtgtttaga tttggatata 120

tttgctttat tgttgtgcat acaattgaga atattcaatc catgcagtcg agaagacaac 180

ataaataatc aagcagcagc tagctgctat agagcaagca cctgagcagt tgactaaaca 240

gagaaatgaa agaaaagaga gtttgttagt gtacaatcac aaattgatca aatatatggt 300

gaaatcgttg gcaccataga ggtaggtgag catgtgacga cacaacaagt caatgagatg 360

atttaacact tgagaggcct aaagactctt ggtctcagct ccaggagctt gagaaagaga 420

aggcactttt ctatcttttg ccttttttgtt tattatgatg ctacgacgct tcatacttgg 480

ccacggtttt ttattcatga aaataatttg gtttgcatag taataggttg aagaagggtc 540

ttgagcatgt aatcatggta catgatcctt gtaccatttt ggggatggat tttcttagca 600

cactgactga agttcatcta gatgactatg ttggcaacaa cttttaagag cattagtaat 660

gatacattgt caaaacttga caagacagta gatagactta atgaagataa gaagttgcgt 720

ttaagcaacg tagaaccata gaattataaa tatctttcag tgatgaattt tgcggtatat 780

aagctaaaca agtacgtctg gagcagattc atgtgttgtt aatgggacct atagctctgg 840

taaggcatat gcaaccattt aaagttggac ttatgtcagc tctgactagt atattggatc 900

aactgaaaat gtctgtaaaa agaaacaaca cttagcaata ttttttattt tggtgggttg 960

gacttatgtt agtgcaaagt cattcactcg ttttgtgaat gtaccatttg taattggtaa 1020

cattatcctt tctagagaga agtgcatatt ggttaagcat gcaacaaaca tcattatata 1080

tatggagtat ttaggcattc atatcgacct aactatgtta gcaagaagta tgttattaac 1140

aaaatttgca taaatgtagg tactgaataa aaagtcagcg acggccaagg cgctgcctcc 1200

ctattcatg 1209

<210> 3552
<211> 1190
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40853_G1, chr1:242566812..242568001, Cluster 21

<400> 3552

atccgtttgt tttgctggtc tcatgtgaat gttataaaca ttttgaaatc atgagatcac 60

tggtttaatg atataagttt ggtttgagca cttactttat ttcaattgaa gtgaagtgct 120

tattttcagt gtttggtaga aaaatttttg attggctcca ttcacccact gatcgtctta 180

gcggtccttc atcaatcatc accagatcaa tccatgctta tgcaatttgt ttagttgtct 240

ggcattatgg tttttaataa ttatgtagtt ataaagataa atgtttaaat tatattctct 300

atggtgattt aagtaaaaac aaaattcaag aaatgatttt acctattaag cgatttttaa 360

gtggatgaga ataatataat cacaaaaaat gtccctcaac gtcacctata aaagtatccg 420

atagttacta tcgtaagtct ctatactttt atacttttaa gtctatattt taaatctttt 480

gtatggtatt taaactattt atattataat ttatgataat ttttacttag ctttcaaatg 540

tatgatttac catattattt agtttataca tctagaatta cattgtaaaa ttttataatt 600

gttactaaat tattaaatga ttttatagca ttgtatatca gttttttag gctgcgaccg 660

taaatcgctt tctcccacaa ccatacgaaa tttccatgaa aaagggaaaa cagaaaaaaa 720

aatagcacgc cacaagatgc ttcaaccaga acgttaaaac tttgcaagat tttgttcaag 780

taacagatgt cctgttctac aaaaaataat tatcgaatcg tataaaagtg ggttcagata 840

cactaatatg acatgacact gaaaacctgt ggcctggtag agttttgtct gtctggttcc 900

actgcatcca aacttcagag tctggagcat tgcgccaata tcaaatggcc gatttggttg 960

aaataaacga ataatcaacg attcacgggt gtgattagaa gtcgaacagt atgttgaccg 1020

cgtgaagtgc ggcatctgct gtttggtctc ttggcaaggc ttgaacttga gtttgttccc 1080

ccttttctct tgacctgatt tttggaggta ttatgattgg aagatagttt agccgcatta 1140

atattatctg catcttcaac ttgtattgct ttgttttgaa attttgcctg 1190

<210> 3553
<211> 1249
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43854_G1, chr1:257778141..257779389, Cluster 21

<400> 3553
ttagtgtatt cgctccatta atctgtctcc ggttggaagc tagtgcagat ccaagcaccg 60

atccttacaa cttaaaatat tttgtgttac cttttacttg attgcgagct tatacctaat 120

tctttgatac ttggtgttcg tggccgtttc aagccttgtt ccattatacg gggatcgcag 180

ggactgaagg gagtaatttt ttctatttaa tttgactagt aaaaggttta atattcttca 240

atccacttgt aaccaacaag cattcagagc atgtacaact atatttaata tagggacttt 300

taagtggtct ctaggggtct aattgaaaaa aaaaatacaa aagatgatcc ctcacgaaga 360

attcgtctct atacgacttt ccatacgtat tgtctcttaa ctgtatttat tgtctagtat 420

cttaatattg tatcatgcag ttttttaact gtcgcttgta tttagaaaac cattgtcagg 480

tttgtacatg actttaggct tctaacgcac ggttttcaat ttgcaactga ttattttcct 540

tgcacagctc tcccataaat gtcccgcctt atgtcgatac tccaacggtt ataattaata 600

atcagattat ataattaaat caaaacctcc catgcatgga tgcatgtcga aaatcatgtt 660

atttggatac tcctacgatt ataataatca gattatataa ttaaatcaaa atggtattaa 720

ttatatgatg gattattata ataaaatctc ataaacaatc ccataaccag gttgagacca 780

ggttataaga atttgtcgat gctaaaagac caacttgcca ccaactaatt gtccaattta 840

ctaaactata aaggataata taggaatttc tcactttaac aaaccatcat caatcaccat 900

aatctcgata cccaacgcta ttataatcca taattctgat tacaataatt tgatgtataa 960

tctagattga aattgtccag ttgtgatcca aactggctct agtctcactc tctttggttg 1020

catgagtgtc cataaacata tctgattagt tcgattttat gattagtttt ctaacattag 1080

caatgagtgg gcccaataag agtcatgctc gttgatgtcc tagtcaactc actattaatt 1140

aatcatgctt gcatatgcca tgacgacaca gatcacacag gagatcagag catgcatgct 1200

caccagtggc gtagcagtat aggaaaactt gaaaaatatg tcggcctgt 1249

<210> 3554
<211> 1077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45914_G1, chr1:269076651..269077727, Cluster 21

<400> 3554
ggtagaggca agtcaagtag ttagtggcaa tttgcagctg cctagccaga caatacgatg 60

aagtataaag ggtgaggttc agatatcagc gtctgcaagc gaattaggtt tgacgtttaa 120

tgtattgatt ggtcatttaa cgaatatttt atctttttt gtctccttta gactttggtt 180

gacatactac actagagtta tggatcatat attactaact attatattaa atctgtgatt 240

aattgcgctg cataaaattt agagtatata tatttacacg taaaatttca actatatata 300

ttatattgta tatgtcacat ccttggcccc ctcccggccc gcccccatat atatatacgg 360

tgtttattat aatagtattc gtttataata taatagtact atcttggtac cggaagaaat 420

cagtttctaa aattaccata agtttttta tgttcgacta aatttatata aaatagtata 480

aatatttata ataccagata aatatatata tttaatgtta ttaatttagt ttttacgctg 540

ttctcggcaa acttggccaa atataaaata tgacttaata actttaggaa acagaatatt 600

caggtggtag actgggacat tcctggaaca atatactttg accaatagat tttgttttcc 660

accttcacac gtataacatt gtccctgcta atagatctca tgtatcgtac tcataaagag 720

tgaaagattt ccattatact acaaggttta agtagaagta ctaccagatc taaaagaggg 780

tcattccaga tttaaaactt gattaggctt ataaaaatgt actatcaata tttatatatt 840

taatgtgatt aattataaat atatattata tattttatct aataatattt attccacctc 900

atgtcgatat attttaatat atattcgatt aagtgtaata tttgttgatt tctcgaaaaa 960

attaaatgac aaataatttt tttccagaag ggaggtggta caagatagta ctcctttgct 1020

agaaaataga agggtttatc tatactatac ttaaagcacc agtttcaacg atcgtca 1077

<210> 3555
<211> 1397
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46575_G1, chr1:272669961..272671357, Cluster 21

<400> 3555
gaaatgggga tgaatcaaag aaatggggat gaatcgaagg taatctaacg tgtttgtctt 60

atccataata tatggatctt tctgaatttt ccgatgaaga tgctaacaag aagaaataca 120

acagaatatg tgtcaatggc tgtgaagagc ggagcaagac atgcaaatat aggacagttt 180

caccagacag gcaaacagga taaattaaat gataaagaat tgaaaacttc tatgcggtgt 240

tagttatcat attacatgca tgatctatga tcataatgga agttccagtt ccattgaatt 300

aagccaatta aataacactg ccagtatggt tcgcttaccg aaaaaagaat gtttgttttg 360

tcctggtaga cagcattcat tgctggagtt gattcaacct cttttgccac tgaacagctt 420

tctcctagtc aaaacacaaa tccacaacag taaggaacta tattttcagt aactgatatt 480

tttgtgcagc ttataatttg tacaggttgc tctataacca catgctcatc aaggaaaaag 540

ggacagttat accttctcac aaggaacttc agagtccaga agatcaatta acgactctat 600

agcatatggc aaacagtttg tttataatga aactattgct gaagtggtga ataatttagt 660

ctgacacagt tttttcccta actcttacca taaaaaatgt cttcatcgga gcaaatggtt 720

gatactaatt tctaaaacca aacagtggaa aaacattata tgaatgctaa aataggatag 780

ccttattcac acgtattatt atgctattaa actataaagc ttcaggatga atgtggatgt 840

cacaagaaaa caggagtacc tgtaagaatt gcttgatcaa cacgcaattg gtggcttaac 900

atttcaacca ttctcatgtc agccggaact ttgcaaccaa cttatccaca aaggggaaaa 960

aagcatcaac caaacaacat caggaaaatg ctaatcttaa tactaaaaga aaatcattag 1020

atgagcaatt gacagtacct cctacttcaa ctatatctcc tgggacaagt tctgttgctg 1080

gaagtataga aaagcaacct acaggattaa catcgataaa tgtgctagtg ctaatcagct 1140

atatatctaa caaaacatac aagaaaaata ttttagactg gaatttaaaa agaattgtct 1200

caaatcagtt gttgtttatg cagtatgaac tagttagtat agcagagagc attgttttga 1260

ccgatgatta tgttatatat gtgaaagggc ctctagcgta atggttaaga cttctgagta 1320

gcacctccaa gtctcgggtt cgatcccccc cggggacgga ttttctggtt tggttaaaaa 1380

atcccctcgc gctgccc 1397

<210> 3556
<211> 1311
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47311_G1, chr1:277132712..277134022, Cluster 21

<400> 3556
tggtttccta ctgtgatttt cacatgtacc attttctttc caagcatagt atttattttg 60

ttgttctcaa atcattttag ttcacgtggt gcttcttttt gttgagaaga tcttggaacg 120

aagtgcagtt ctgttatgtt gattagtcat ttgtagaaat ggcgatatta ccctgaagta 180

gtcaaatata tatggctacc aactgatatg caattgtgtg ctcatctgta gtacttatga 240

cccagacaag gtgttttctc taccaatttt tttgcaagcc atatttcttg gtcgataaca 300

tggttcctcg gattacacgg tggacaacac tttgataatt gagcccatgc taacttgatt 360

ataatatcaa tattccatat atatttttat cttgtacttc aaattagatc atcctaattt 420

ttttctatcc gtatttcttg gttgccatac atattattga aaatgtttta aacatgtttc 480

aacaactatc tcatttgaac aaagtctacc tatataatat ataggcaccg tagcaaggca 540

cgagaaaaaa agaaacaaga ttgaaataaa tttgtggagg gtactcttgg gatggtaggt 600

gccactatga ctgttattga gatttgaaac ttattggctt taacaatgca ggaaaacaat 660

aaggttgaaa taaaaatatt gacaaggaaa gatgccacga tttcatcgag atgctgaaag 720

tttttgtggt aacgtaggta agagttttac gtgagaagca aataaagccc attcaatatt 780

gcattgtaca tttgctaaca aaagggagag gatcatggca ccactttaga ttaatcatgg 840

aatcgacggt gatgtccctg atgcgtacta tggcattggt ttttcggctc agttcgatga 900

tgtgtacgat aaccaaatgc aattgtatac tatcgtagct agatgtttag ctgggtgtta 960

gcaagcatgg ggaactcata caaaaaaatg ttcacttata tactgataca agctttgatt 1020

tggggtaaat agcttattta agttgagatg atacagatgg gaaatggtta tatattgatc 1080

ttctcttttg tttgtagtac actattttgt tctgagctag aggttttccc ctcctcgtgt 1140

ccggttaagg catgagagcc cagaaccact tagagcaaat gatgacgatg aggaaacaga 1200

aacaacaagt agaatagaca aagacaagta aaacaaacta caacacaaaa atgaaaattt 1260

gtagcactgc ttatggagat aaggtgccac caaaggagca tggaaagcta c 1311

<210> 3557
<211> 1152
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_50830_G1, chr1:295366011..295367162, Cluster 21

<400> 3557
cacggccatt caaattcagg tgcccacgta cgtcagggtg ctgctgctcc tactgtcaag 60

ccaataaaag ggttgtttgg gagcaaaatg gtttttaaac catattatct catgcgccag 120

gtggttggtt gcatccccga aaattatgtt ttttaaaacc acggtattct agatactgtg 180

ttatttttt atattaaaaa cttcacttca atccgaaggt ccttcgtggc acagctagct 240

tttatctaat accatgtttc aaattgttgt atccaaataa tgtttctcaa aattatggtg 300

ttttttttg agctggccta aactacggta ttatcataac aattgcaaag tgtagtattg 360

caaaaccatg gttctgtgaa acattgtcgc caaatatatc ttaatcgttt ggcttccatg 420

attcacgttc ctaatacagt ggtactcgac ctaaagcttg ggctaggcca ttttggctct 480

cagacacatc ttaaaaatat aagcattaag cacggtccaa tataaaaaga ataagtaggg 540

ctaccacggc acatagtaag acacgaatta aaatcttagt agaatatgtg ttcttattca 600

aaagtgtgtg tatacaattt tgagtcacat tgctagaaat agagatatac ttttaaaggc 660

tttcttcttt tcacgtatga ttttttaatc tataataaaa taatgaataa cggcccaccg 720

tgcttttggg tcgtatcgtg cctaggtttt agtatttggg tatgatctag tccaatccaa 780

cattattttg tgtccttcta gccttaaaaa attgagtcaa agcacgatag atatgtgtca 840

tatcggttca gcacgatcca actttcaact ctaaatggta gagctaatgc tactaaaagg 900

ggtcaaacat tcgagcttgc ccaacatgtg ttcatggctt catgccagtt tggtggtaaa 960

tattttgatg ccttatataa ccctatttaa tataaagtct cttgagaggt ttatagaggc 1020

tacacaactt tcaatacata ttgtctctta actgtatttt tatggtctaa tgttttaata 1080

ttgtattatg tagtctctta aaccatcttt tatacttaaa aaacataacc atgttataca 1140

tgccgtgaga tt 1152

<210> 3558
<211> 1177
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52477_G1, chr2:3869051..3870227, Cluster 21

<400> 3558
ccgtttagtc gcgctgtcta gcctctagcg cctttgcttt aatggctaac cttccatcgt 60

ggctaatgtt gtctgttgac cactcgtcga caattcgtgt aaaaaaatct atcttctact 120

actaaaatac acgtgtgtaa gcgcgttatc gggaagaaga agaaaaaaac tgttgtactc 180

agttttgtaa ggttgcctaa tactaacgaa aacgattttt gggataacat acatgattaa 240

tctcagcctt ttatatatag acacgtaatt aaaaactgct agattacttt cgttatttca 300

cagtttttgg gataacatac atgacttaat ttttcccttc cgtatactgc ataagaggac 360

agactggaca ttaagcatat gagaatgaca ttagaaggta aggggtacgc atctgacaat 420

tacatttctt cacagatcga tcttatcaaa ctagatgttg atgttcttgg atatatatct 480

taattgaaag ttgtttacaa ttttcagatt ctttttattt ttcaaatcta aaaaacttgt 540

gaatactttt ttatagctga tctgctattt gcatttggca tcaattcatc ccaaaagata 600

tagtttatac taagtgaaat catttaaatg tccattgttt tatacacaaa aacgatattt 660

atcacctagg gtccatcact tgattaaaag gactaatcgg actagcccac cagagaagta 720

acatcaggaa attaaccgga ctagggaacc aatcggcaac tgcaccatct gaccaggagt 780

taaaacgatc ccacacgtgt ttaacggggc tgatccgtcc gttgccctgt agtgcacaac 840

aacaattatt taaccattca aggtttaatt tactttagcc atttaaagtt tagttcgacc 900

attcaaaata tacttcagtc atttaaggtt tcaacataca acataaacaa ctatttagat 960

attctaggtt tacttcaacc tttcatcaat tttaaaattt tataaggaag aaacattcag 1020

aaatttaagg tttacttcaa ccattcagga ataaacattt agcgactcaa agtgatgaat 1080

tgaggatgag aggcggttgt tgcggcggtg ttgagtggag gcgcgacaat gaagatctgt 1140

ggacgttggg tggtgtgggg tcggcgcggc ggtgggt 1177

<210> 3559
<211> 1273
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53432_G1, chr2:8960035..8961307, Cluster 21

<400> 3559
tggaccagag atggaagtac tccccgtgtc ccaaataaac agttcgaact tttcttgaat 60

ttaaatatat ttatataaaa tatcaataat ttttatattt taatattttt aattatggaa 120

acaagagttc tggctttagc ataaagatat gtacaaccaa tacatgacaa ttattgcact 180

agagaacagt tgcttgaata attaaactaa ctcgaagaaa acaaaatacc atgactatag 240

ataacactag ccaacttcaa ttcttgcatt taagcgccat ccatgaattg caatttgcaa 300

agactttcat cgctaccact tccaaagctc gacaaacatt aaagatttgt tgatactttt 360

cctccttttg tagaagtctc cagaatctaa accagtaagt acctctgaaa ataagctaca 420

caactgatgg tattgattta ttattaaaag ccctcgtttc gacggacatc aaggatttat 480

attttaaata agtttattgt aaaaataaat ttagtactaa tgatataaat tatatactat 540

agatattaat atcgttttta tttttgtata aataaaacta aaatatgtca cttcatggaa 600

aagcgacaat taacattact tgtctattct gggacggact gatgaattac ttacgtagtg 660

cgtatgtcat gtagccccac tggtacctgt atgtagcgcg cgtgtcagca cccaggaaac 720

agtcgagtac gtccacgttc ttttcgtttt catcagtgtc tcgctgtcac tgattaccac 780

attttacctg tcgcccccga aagcgccaac acgttcacaa cgtagcacgt cggtgctcgg 840

tagtgtgtgt cagcatagtt ttatactttt atatagtctt gttgtttact ataaggctgt 900

tgtattgtat tgtagtataa aataaaacga aattgggatg tcataaaaaa ccgtgtagac 960

acctatttaa tatttaaata aataaagatt ccatttttca cggagactcg ctgccctgtg 1020

ctaggaagaa gacggataga ggctaaaatt taagtgaccc cggaaaatga cgacgaatcc 1080

actaaactgt aaactgaaat taagtattga ctaacaataa ccccacgtat cacgcgcata 1140

tatactctcg caaaaccagc atactgaaaa ctggattgga tttagatttt cgtatgaaac 1200

tatccatgag gttcttagag tttaatcgac ccccacaagt gttaatagca cattattaaa 1260

gaagcatacg aga 1273

<210> 3560
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55492_G1, chr2:20001876..20003122, Cluster 21

<400> 3560
tttcagtttc cgccaaaaat aatttgagtt ttttttcagt gactgcatgt tgcgcgccac 60

caaaagtatg taatttgagt ttatttttt gactgtcttg gagccatcca taacaaaaat 120

gaacctaaat atgcatataa aattcacata ttatccattc atcattttcc attcaacatc 180

acatacacat attcatatca ttcaacatca tccaattttc attgtatatc atctatccat 240

cacatttaaa tgaccaagcc tatcacatat tatccattca acattattat atacacatat 300

tcacatcgtt ccaccatatt caaatgccca agtctcatat ccataaaaac aacggcaaag 360

caagtccagc aatctcgaaa gcgaatatgt ctttgagaaa gtcaatagtg ccaaagggcc 420

tctagacaag ttggttagtt ggtttcagta gcactcttta ggtcctggat tcgactatct 480

gtggaagcga atttcatgtt gtggttaaaa aattttctcc gtatgtccca taccctgccc 540

tcggattaaa gccgcagcga acatggtgaa tgaattggat gtctttattc agaacaaaca 600

aactaacctt ctctctagat gatgctaaca ccgctgaagg ggtttggtag atatttgtca 660

taatcactct tgattcttag tatatacaag ttgaaataga ttgaataact aaggttgagt 720

aagttcagct agaacacagt aagtatagtt tcatccacca aatttagaca aatgaaattt 780

gaatctacta gttcatctag attgactaaa tatgtctaga atctactaag tttaattgta 840

ttagctaaac taaattaaaa ttggataaaa ttcatccaac ctcagctaaa aaaatatcga 900

tttcatatat gtttatcact gtgtgtgcat atatcatcat tagtaggcat gcacacatcg 960

gcactggctg gcagttggca cgcacctctt acccggccgt acgggatagt ttatccacgc 1020

gatctgggac tcccggtgcg ctgaaaaaga gtagtattta acggcaacta ctcgtagcag 1080

ctggcgacct cgtattgcat gcatgtacgg catcagataa ttaagctaga taggtgtgca 1140

tggagatgct gaggcgtgtg ctggactgcg acgccgtggc cgtatgtgtc tggagccttg 1200

gtagcggcgc cagatatatt ctacgtgtgc cgccggacga gcacatt 1247

<210> 3561
<211> 1201
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5823_G1, chr1:29670951..29672151, Cluster 21

<400> 3561
acattgttta tatgaacttt tagcgctaaa ataagagatg ttatatgaaa gttcatataa 60

tcaaagttca taaacctata tcatgtgaga gaaaggttac gatcatatac atgaaataat 120

aagcttattt gtaataaata tgaagtaagg aattcaaaac aagcatatgt gacatgttat 180

aagatatgaa ttagaaatag tacatgtcac aacatgacaa ccatatacga taacataaag 240

cttataatac aaaccaagag caaaattaag tgcatatgaa agtatcacac acaaaaatca 300

tatgaaagaa ccaaatatga atcactcata gctcccctct ttcactcaac tcacacatac 360

tctccactac ccccctttg catcaagcgc caaaatggct ccaaacctaa gggtcctaag 420

gatgagaaat tgcaatcgtg caaagaaatg gagggtgggt gtgaaatcaa actgaattag 480

tagggtatgc tcatctaatg aagcaattgt ttgtctagaa ggatgtgttt gtgccttagg 540

tgctgataaa ctagccggag gaacataagg gatttgtggg ggtctaatga ggccattgag 600

gaaggtaagg tctcggtact ccaagtaaca ggtgcttttg aagatggagg ctttgcacta 660

aagttatgta aaccatatgt ggagccctag taacctgatt ggtggacgtt gttgaaatag 720

gtgacacaat aacaattatc actaagatga acgatgtttg aagtgtaatg attggaatta 780

cctcagacac cccatcaaaa catatagtct gatctagaac gggtgagata tgctagtagg 840

gactctagcc caagagttct cgagactata ttactagggc cattggagtc taaagtgtag 900

gctaaggagc catattaact agcaatggtg ggactactac tctagactat tggaacaggt 960

tgtgacaata gaccatgttt tgagtgtgat ctgccaacaa ctatcgctag aaattgatca 1020

tgtctgacct gatagtctca aatagtgtta gcatcatatc tatctgccta tgttaggcct 1080

cattctatcg gtgttgctcc tcatgctgct tagcatcaca tcttagttca tcatctatta 1140

tcctctgcta ctgagtggct atctgctact gctctatggc aagctactgc tattgtatca 1200

t 1201

<210> 3562
<211> 1366
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_58251_G1, chr2:35870330..35871695, Cluster 21

<400> 3562
acgccgacgg ctctcgtctc ctacactaga attttcgcgc ggcgttgccg ctcacacttt 60

tttatttta ttgtgttttt ttagttttta tttatcgtta gcattgtttt gtaaaattta 120

aatggttcca aaattgtaga cttacatgtt tatgaaagtg agaatgcaat ataatatcat 180

cacacataga aggtataata atgttaacat aacatctaac tgtggtcgat ggttaataaa 240

tatagtctta tgaaaaaaat ataatgatta agcaaaagta aatacatttg atgatattgc 300

aatgtaaaat aatgatgtag ttttctaaag ttttgtaaaa aaataatgtt gtagttttct 360

attaaatacg gttttgtgaa atcatatgag ttacatgatt aaatgtaata aaaatagaga 420

aaataaacac atgattatta aaaaaatata ggtagacaaa atatatttac cttgatataa 480

ctattgatga aaccgattga gctaatgatc tgatcttgat tacctagaag aatttatttt 540

atattagtgc ctgactgatg agaaagtaaa gggatacaaa atttttgta ttttctctat 600

ttgtgctggt gatataattt tttgttttct tgagttgact gatcgaaaac gttgttcaaa 660

tgagtaaggt gcatgaggca ctttattttg tggataaaaa tggcatctaa tcgcgtacat 720

attatgagtc cataggcttt gttttccttc ggccatgatt tgtaaaatga attaacatcg 780

agtggagaga gatgaaaggt gaaaaacaca acctgtagag gcgcgatgca gatttgtaaa 840

ataaatttat accgagtgga gagatggaag gtgaaaaaac agcctataga gtatagaggc 900

gcaatggaga tttgaagttc ccggggagca tcgagaagca ggtggaaatt tcatggcatt 960

ttttgagcc gcggagctaa agaatcttgg attttgacgc tgctcggctt gctatcatag 1020

acctaggaga cacttgggaa ccagtctgcg atcatctaga ctggacgatt ggtctagtgc 1080

tagctgctta tgggttgttc ggcgggcagg attggcagtc ccgcttcacc gtgttactcg 1140

actagtaggc tggtcgacag ccacgtttca ccgggtcgct cgacagcccc gtctcgttcg 1200

gttgttcgac aggtaggccg gtcaacagcc ctgcctcgtc gggttgctcg ccaggcgggc 1260

tagtcagcag tccggtcggt cagttagtgg gtcgttatcg agaggccttt tggccttctt 1320

tgggtacccg gttctcagat atctaacgta tatacttttt agatcc 1366

<210> 3563
<211> 1269
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58581_G1, chr2:37869937..37871205, Cluster 21

<400> 3563
catggagcca tccctaattt gcagttgcaa gctgctcctg gaataagggt cgctatgaag 60

ggtgtccatt gcatcagcac atggttatct gatcctaggt caacataatc tgaaaaatca 120

agaagtctgt aagaaaactt cagtaaagaa acctatattt ccttaagtgt ttcaatctaa 180

actaaacatt gcatggataa cagataacac aaaaaacagg aaaagggcat ttaacttata 240

acagcaaata gcaccacaaa ctaaaatcat acatagacat tttaatggga ttatgtgaaa 300

gcatagcgtt ccaattttcc ccaggatcaa atccattctg aatgtctcga atcacaaaga 360

acaataatct aacatattga tgaattgtgt gcgaaatatc attcctgatg atttagacgt 420

caaaggacat ttgctttcct cttctgttgg caaaaaagag agatggaaag tgggaaacta 480

tgggagtaaa cccaattcat tgtcaatacc tcccaaaact ggggcgcaaa ctcaatttca 540

tccaattacc aatccttcct gaacaaaaca tgatgcagtt gtgagtaact accaaatcaa 600

acactaagaa tcaaaaatca atcacaacta agaaaataaa ggcatttaag tgcttttgga 660

ttcaatggat ttggaaaaag gttgcttttg gattcatgat tgcgctgggc ctggattagg 720

ttcaaatatt cataagaaat ttccaattag tgaatgtcac actttcacgc agaggcagtt 780

ttaactttcc aaatgagaaa tttactttta tatgaacata aagcctgaga gagtgcagta 840

tggtatgtac tagtgtacta tgatactatc cgactgctct aaagggtcgt acatgcatag 900

ctgtcttgca aacataagtt ggataattat gagtgaaatt tcatttgtag tgacacagac 960

acttgataga taagttatca caagtagagg gcagggcttg ataaaaaaaa ataaaaatgc 1020

atgaatagta gagaaattcc atgatcatgc tatttttttgt accaaaaacc ttacatatat 1080

atgggataac accacaatgc cagattgttt tcgtagatca agacaataca agcctttgaa 1140

ctttcaacta gtatggtcag gaaaggaaga gcattataaa tagaagaaag tgatgggaat 1200

gacactattc ttgttatggt ttatacatag actctaagtt cctatggaac ataaacacta 1260

gagtggaac 1269

<210> 3564
<211> 1297
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59233_G1, chr2:41726391..41727687, Cluster 21

<400> 3564
acagcaatgt gtcagtatgc aaatatgttc tgtatttgtt tatgtgcgca tcttgcattt 60

tacctgtttt tacaacaatc tgaacggtct gtggtggtac atgccgctga aatttaacgg 120

ttccatctct atgcggtgca tgcatgattc aacaccgaat aagtgctatt gaaagctata 180

ccttactgga cgggttactc agtgtcaatc agaatattga gatgtcctca ttgccccata 240

attgaaaaag atcagatcca atgctagagg ctcccacatg agttggaggt atagggaagg 300

gacaaactta tttactcggt aaactcattt actgctccga tgttgcccac ttgttcttat 360

accacatttc taaattgcac gggtgggcta ccaattcata ttttgatgga tgactactga 420

gatgcccgtg catcgctaca gttctatata tcatatgagt agactttgtt ttaataaaac 480

ataaaaatat gtgttctgtt ggttaggtgg ttctaaatgt ggacttgtgg agccaacaac 540

aaggttcgaa ccccaatttt accttatttt tgcataaaga gagaagggga gacaactgta 600

gaatcgtaga accatgggaa ctggtgcttt atattttgat ggatgaagtg tttcatatgt 660

tgtcgtaagt ggaactgttt tttggctatt gaaggctcaa gtaaatattg tcatattact 720

tcatccgttc caaattgtaa gtcgttcttg cttttgtaga tacatagctt ttactatgta 780

tctagaaaag ccataacaac ttacaatttg gagtggaggg agtatataaa aattgatcgt 840

atttgttcta caaaagaact tagtcctttc tttgccatct actaacacat gtcactaaaa 900

atagtaggca gtacaccagt agcagagaga gttatatctt atcacacatt tcattttgta 960

attggcaatg atgccacgta aaaacaccaa atttcgaccc acccacccat ccaatgtaaa 1020

ggtctgtttc tgcagtgagt ttggactaac ctgaattgct gatgaccacc tgtgcacagc 1080

tggatccttt ttccttttta ggtaaagatc tgcctacgct gtcagtttgg ccttccctgg 1140

attgccgatg gcactcagca aacagctgga tcctcttttc tgatggccat caacaaagat 1200

ctggatcctt ttttctccct tccttgcagt agatataaat tgatccttac gtaacattcc 1260

tgtgatgtag tgataaatga catgaccaag tatatgt 1297

<210> 3565
<211> 1310
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59463_G1, chr2:42943320..42944629, Cluster 21

<400> 3565
acacctgaac atcaaattat gtaaaagttc catgtatcaa atggtttacg gattattaag 60

attaatggtc acccttccgg tctttactgg atccactgag acagtctttt agctacaaaa 120

cttatcaaaa cacatctacg aaataaaatg tgaggtgatt ttatgtgaag ttacttgacc 180

atctataatg atatagaatt gatagctatg atcaactctc atgatataat cgaagctttt 240

gatttggttg atcattgtag aagcaaatta tttttctgtt aaagttaatt aatatacaat 300

tatatggtgc aagtttttt attaatttat tatatatgct acattagtat acgcatgtgt 360

atatatccta tgatattttc ccacctataa tatttgataa attgttcggc ccctcgcttc 420

tatgttgtaa tacttgctcc gccccaggta gaactcttta tattccagtt tttgtgcaaa 480

taattcttta actgatatat atatatatat atatatatat atatatttaa gataatctct 540

atgtgtggag taaaatgaga attttttttat ttctggccct taattcattc gagaaaatca 600

cttcgtgaaa ccagtgtagc ataaaactgt ttggcattct cagatttagc ctagcctcta 660

cacaaatgga gggggtatac tctgaacctg gaactctgca aggtgtggtg aaaataagac 720

acatatattt accgatatta gttccttctt tatgggacaa aagaactaca tggaatcttg 780

gataacccat atctgaacat ttaacattta tatcagaata cttaaaatcg gatttctgat 840

atgtatataa ttaagacaca tatcaatatt tgacatatct aatatgaccc ctatctagtc 900

tcgagatatg attaaaaaaa cagatatgag aaaaaaaaat gatacggtat cactgatact 960

tgtgtgtgcg atatcccgtt tctcactgcc aggggtactc ctgctagttg catgtatgat 1020

tgatgtatcc gaaagttggg tacgaagcgt tgtcctaaac gtccagcagg gagattattt 1080

atattgttta tttgatcgcg aaaatatgtc agagtttacc gaactggcgc ttcttctggt 1140

acctgacaag atcccaggtt tattctgaca ctttggaacg agcaaacttt taaatactaa 1200

agtgtagatg gtagactgtt tgaaccgact acaatttgat tataaaatac atgccagcga 1260

tacccatgtt gcatgcgaca tcactccatt tccttttgcc ttcacaacca 1310

<210> 3566
<211> 1135
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59586_G1, chr2:43726104..43727238, Cluster 21

<400> 3566
aggttagggt ttcctcaact tcactaaaaa tctcacaaat tcatgttcac aggaatctga 60

ccaaactact tggtagatat tttcctctaa ggtctttgca tttttcttcc caacccaatc 120

agtctcaaat ccatagaatc ccaaaaacca ttaaaacaaa agagaagggg gttaataaga 180

ggaaaaatca aaatgaatca agagattaga tcttttgatg aatgattact ttatttcatt 240

cttgaactag tcagatcctt ttccaagttc tacaaatgaa ggattatata tacaaaggga 300

caaagaatct catctatgga tctctcttaa ggctctaatg ggaaactaaa aactagagaa 360

tggaaaacct aagcaacagc aaatctagca aattatcttt gggtataccg aggcattgta 420

caaccccaca acttttggaa gaatagatgt ccattcattt catgagattt caaagttttt 480

tttatcgagg agagaatcat aaagtaaacc ttgccgctat tttttcttat caggcaaatc 540

cattcatgtg tgccatcaaa cacttttga tgaaaacaaa ttgactttgc aatactaagt 600

gcattggcat tacttatact agtccataga tttggtatgt tggttgaaga gtttctacac 660

aaagttacat tgtagcattc tcggttctca acttactaaa tcactagagc cgactgaatt 720

tacaaaggtt gtgctctagc aacttccatc aaaaaatagt tttcatcaat aagcgacttc 780

caacacacat cctaaaatga cacctggtca ccagagaact atcaaccgta acacaacacc 840

agcttggaaa atatttgcac atgtatcttt caacagagat tctaacattc tggtgttcct 900

ccccctcctt tcttggcaga ttattcctaa tttcttgcta atctgatctt ggactagaga 960

aacatggaat caaggaaaaa atccatcctt tgaacaagtt cagctagaag tcaaaacctt 1020

gcatttgtag agatgcatag agaagagcct gaagaggtac ccataggaat gcataccatt 1080

gcctagtcag gtagaccatg aacgcatgtg atgtcacgaa gccgacaaac ttgga 1135

<210> 3567
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_63195_G1, chr2:63471681..63472778, Cluster 21

<400> 3567
atatatatat aatattttca tttgttgcaa tgaaaagtac ccagcaccag accggtcgtc 60

ggcttccaca caacataact tataacatta ttaaaaccaa acagatttgt gtgtaaagaa 120

acggggcaac cagaagggtc gtctcctgtt tcttggtcaa tcaaaatatt tagcgatgca 180

tctaatttct acctgccttt gttgccttcc tgcaacggtt ctgcagatac caatcggtca 240

atgccaccac aactttactc cagagacaat aatcaccatg tgctctaaac gtcctgattg 300

attggtcctt ttggctggtt ttaggtaggg aggatactgc aacaaatata tcgatctctt 360

gctgacaacg accaaatata ttgttgttta atgtgcaaaa actgatgttt tgcagtatga 420

acaagactga ttgacaggag cattgagtga ttcacgggaa ccttttttt tggaaggtct 480

aattcatggg aatctttgaa cggctaaaaa ctatatagct gccgactgca acatatatat 540

aggtcaatac atgcatgcat gcatcgatgt ttcccggtgt ttatatatcg tgccgtaggt 600

gcaggggaac tgtgcaaacc acaggtgaca agtcacctat ttgcctgaca tctcacctga 660

gatttgcctg gctgactttc tgaagttatc tccacccaac agccttgttt ggaaagcctt 720

gtttggaagc attcagtttt ttaaaaaata gtttataaaa attgaggtgg tttcaaacat 780

actagtttat gacttaattt ataaaaatta gattatcaat ttcttgaaaa ccaagaagcc 840

ggcctctctt atctaaaaga taaaaactgg tttcttaaaa accgagttgc ttctaaatag 900

ggcctaaatc atctattctt agagttgact tcaagaaaca taatttttta aacttacgga 960

ataacttgtg aaagtgcaag cacatagaat agctccaatt ctaaacaacc ggatccactt 1020

tcaagcagct ctaattagga tttagaatct caatagtgct aaaaaatcta tttcgaatat 1080

ctacatcatg aatctatc 1098

<210> 3568
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7375_G1, chr1:38213275..38214326, Cluster 21

<400> 3568
ggattgaaat gaactgataa taagtttcaa cttagtttaa caacatgttg ttctcagcca 60

cattaaaaaa cattagcctt aataacagtg tcaaaacaaa tgtatcagtg acaagttctc 120

caaaagtctc tccttcgcag ttttttttgc cctgtcttct atatgactga ttgactggaa 180

tgccagttgg tagggattta cacttccgtg caagtttatg attttgaaaa tattaagagc 240

atgttttgat taggatagga tttaagggga ttagagagaa ttaaatcctt tgctagtcaa 300

aattgaatag aaataaattt aatcctcttt aaatcctttt cgatccccac acaaacgaac 360

atgacctaat tagtaaaatg aagccccggt ttgctttatg ttgtacattt agccaaggaa 420

aaaaattgtt cccttccaaa ttctgttttt taggacatgt tatttaggag tcaacatgcc 480

aaacatccgg tgcaatgaag tacataaacg tcaccttgcc tactaaaatg tacaatcatc 540

cctgttattc tagacttttc tgcaccagct tcacaaacca tacaagaaat catatttaaa 600

cttgcaaaag cagagaaaaa aattcatagt tgtggatgaa aaaagaagcg caaataaaag 660

agtgagcatg tgttgtacaa gaagaggcct cgttctcatc caacgatgac agatgacact 720

gcgctatgga gcaactacac gaaaggtgct ggaaccagaa agatcgttgg caacagtacc 780

aaagaaagct gggaggcgcg aatgacgcaa taggaaagtg attagggttt atcaaaaaca 840

aagcgtgcgc ttgttatgcg tttagacttg caaaatttct cctccaggtc tcgtttagac 900

gtttagtggt ggtggcatgg ctaaactgtg caataaagag attctttcca ggtttacaca 960

atcgagtctt tgtgctggca gcctggcgtg gtgaccattg tcttcttggt gaatgatggc 1020

gatgccagga tgagcctgac cacctataca ct 1052

<210> 3569
<211> 1345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_76733_G1, chr2:151692006..151693350, Cluster 21

<400> 3569
aatattaagc tactcaaaaa tctggaagga actaactttg tttgtactaa atctcaaccc 60

atgcttggca aagacgaata ccacagtatt gacatgcatc tacatagcct cttatgtcat 120

gctgagtgtg tatctctttc tcttctctcc tgtcttagca aacattcagt ggcaaaatta 180

tgtcaaaagc tagcctggca ttgatgttgg tctttgatct catttgtgaa aaataacgtc 240

cagaactaga ctctggtcat tagaagtagg cattaattgg tgttgttaag atacaagtgg 300

atcaccacaa tctctctctc tctcaactta atattttgga ttgaactaat tagtatatac 360

aacttagagg tctcgatttc aaattctagt tagtgtaatt aaatagaaat aattattggt 420

ttcttctcca ttccatgtgt ctgagacttg ggatagcacg tcttgacgtg aggaagaata 480

taatgttaga atataatata agtgaattat ctagctctct ccaccagctt aatattttag 540

gttgaattgg ttgttgcatg caacttaata tatgtattta tcacaaagga aacaaatgtg 600

ctagtagcac taaatatgat tattggaaat aataaatccg taatccacgt ccacattatt 660

atattggttg ctcggctttt tctgatgccc atcgtacgtt cccacgctcc aataaagaac 720

taaatgccct cggaataaac agctctaata tgaattgttg ttgctacgtc cgtcgccaac 780

aacgctgacc ggcagagcgc cccatttttg tacgaacagc acgacgggta aatttgagct 840

tattacgtga gagacacgat aatgcatgct gaggagcgtg acgaactttg tgctgagcgg 900

agcgtgcttc cgtcagcacg atggaaactt tcagaatttc ttgtgtttta ttagggcaga 960

acgctgtaaa agctgaaaag gtcatgtcgt cagaataacc aacaagatag cgactgctca 1020

ctgacccaga caaggttgat tttccactac aagcgacaat tcactacgta cgatgaagtt 1080

aaccaatcct tgggcgttgg gccaggttaa tttcatgagt gtaccattgc cgaatctaac 1140

catgcatgat cttcaaaatc acaagtacat gcagctgcct ggcaaagaac cagcagttgt 1200

gctccgtagc tttagttcct tcccacggca ccagttcttt agtggatgac aagaagctag 1260

ctagctagag ctagagagta aagaagattt cctcagtcga ccgcaagaac gatcgaggag 1320

ctgagggtct taatcactat tacta 1345

<210> 3570
<211> 1370
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81625_G1, chr2:179975637..179977006, Cluster 21

<400> 3570
atgttgcact atccacctgc aatgataggt ttaaataaac attaaagtcc attagtaagt 60

aaacgcacgg gcctttaaga tttatcaagt tttttttttg catatgggct tcatggattg 120

ataagaaatt aggctgagaa ctttattatt tttgaattat ttttttagat taaaataatt 180

ttagaaaatc ccaaatatat catttgacat ctagaaatat ttagaaaggt tcaaacaatt 240

tgagaaaaat cctagagaca ttttagaaca tgaggcactc aaacaaaata attagagttc 300

atgaaatgca tatgcgtgta tctaaaaatt ataatacgct cataggtaaa agaaaaaata 360

tgccagatag attggataaa ttcttggtaa gattatagcc atagttggat gaataatgaa 420

cacaacaaat aatttagaat acaagaaaaa tatttttaga aggtccaagc aaaagaatta 480

aaataaaaaa gatagatttg actatgtaaa gcagtatgtc gcagagagaa gatcgttgtt 540

acacaacaca tataacaacc aaaaacaaac atcacacctc caagaagctt gtcggattaa 600

tttagaaaag ttttaaaatt atagttttta ataaccaaaa agcttgaaaa gttttatata 660

aatattaaaa tcatttattt tagtgttttc tgtttacaac ataaaattac aaattttgga 720

atatgacatc gaaagccgaa agttaacata tgcccgtatt ttttgtggct tagttcgatt 780

tagcaaaaaa aaaataagct tactttcggc ggctaaatat atcgtagtaa aaaacaacgg 840

taaattttga taatatattg ttgacagtta tgatccacca aaattagcgt aaagctgtag 900

aaaatatctt tttttactgg aatagatcat atttttgtc ggcaaaaatt atttgaattc 960

ctgtagctag cagaaggccg ttcccggcca tggaataatg ggcgtatatg tggcacatgc 1020

attcctgcac gatcaaacga cgacacacga cagtgaaata aagcaacaag gatatgataa 1080

ggtcgtccat agaccatata gtagcttcat ttggatgctt ctcgccattg ccctttccat 1140

ttctgcatgc cgccattgtt ggctctctcc gatcgatccc cggacggcca ctgccaacca 1200

agaacgcaag aaccaagagc agacgtgcat gcgcaaataa agcctacccc tatatatatc 1260

atcagcaagc actcaattca acagtacagt gtacccacgt ggattggatc agcagataga 1320

aagaatcaaa gaaagggcta taccacctag ttgggagcat aggcagtaca 1370

<210> 3571
<211> 1203
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81673_G1, chr2:180180776..180181978, Cluster 21

<400> 3571
cacactaaaa ccaggaaaag ttatggacta ttgttgccaa ataacttatg agatgtgcaa 60

gcttcctaca taaataaaag tttggcctaa gctttaaaat ttcttttagg tcgggctact 120

tattgcgtag tcgcgtccat gctatgcata acaaaaatga tgggtccttg gagcttgatc 180

gaatcgttta gaggtgtaag gatttaagat tgaatggtag gaattacttg ttaagaaggt 240

ccatgacttt gtaactctat ggttagctcc ctcatcaagt taaaagttgt tccattgaga 300

tcaccagagt atcaattaga agttgtagaa atgttataaa tatggagagc aaattaaact 360

atgtattcaa ttacgaaaag gtacaatgta tgaggtagtg gacattaact taaaattgca 420

aggtagagta tgtattgcat aaaatgttgt ttctacaaaa acttgagcaa tattttgggg 480

acgtcagcgc gaaagtccat ttggttaacc accaccagat cattgaagct cacattgtaa 540

atcccctcct tacggcatgt ctagatctcc atcctacacg atacgaagta gttgtaaggg 600

cacacaagga ggcattgaat atatatatta tcaacttgta tacaagagag atggcaaata 660

cttatagaag ccatcttaaa tgtatccttg aagtccagca gcaccacatt aaggctatta 720

tagaagttag aatattttat gagcacacca aaatacgtat tgttagaggc taaatccttc 780

gtgtaccact catggagtcc atgtatttgt gttggtaagt atttcgctaa ctctagcttc 840

gctagaggct tggcatgcca taggtgggga ggagaaaaca agcgaaaggg gtaatctctc 900

gctactggca aaaaactatg atccagacca aagctttta gagcctaaaa atattatggg 960

attggtgaaa ccatggtcta agatagagtt tttaggtagg tgtgctcgtg aacacctttt 1020

ggcctaaaat accatggtat gctctcgggt caatttttgc aaaaatagat attagctata 1080

taattttgta aaagttgagt agcatgtata caatttatcc atgctcaaaa tgctattgtc 1140

ctaggactag aaaatagttt tccaaacaga cccttaggag ttatgcaaca cttatgaggt 1200

gtt 1203

<210> 3572
<211> 1259
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82339_G1, chr2:183627951..183629209, Cluster 21

<400> 3572
agcttcttct atctaaacag gtttagctcc acaagctcta atttcaaaaa aataattaaa 60

actaaaaatc agtttcatga aatttttaaa gccccagaag ggtgcatcga aaacaacgtt 120

ttcataaccc ctcatgaaat tagggctaaa ttgcccacca cgccattgtt ttacacgaac 180

gcgaggtctc acaatctctt tccatgcttc ccatcttcct tatttttacc atgagtcgta 240

ttttttctca gttttgccct tctgctctat agcactggaa gggcaaaact gagcaaaaaa 300

acacgactaa gggtaaaatg agaacaccag caaaactaag gacatcacct taaaaccctg 360

ttattccaaa gctaattcaa aaaaaggctt cgttaggcgt gtgacaaact aacaactatt 420

tgcagctaga agatgtctcc tgtgtgcaaa aggagtagac gtcgcatgca atccttaaca 480

attttctgta ctccataatg tgttgcacaa taaaaaaaat tagcaatata tccatgtcca 540

ctatttgcat ctcctcgatc caataggaga atcacgtcca ctccttttgc atcgcgtcca 600

ccacaaccca ctaatcattg tgggtaatta aggaaaatca cataaattaa ttgaattata 660

gatgtcagag ttcatttaca agccaaatac tcatgaaacc caccttaaca atttacttac 720

aagccaaaca atcatgaaac ccaccttaac aatttactga agttatttta tggcgaagct 780

agaaaactga agttgcaatt gttgaagtgg agttgtccca aacatgctct aaatacggag 840

acagaggaga gagaagatga gagaaagaag aagcgggttg taaacttatg gcctgtttgg 900

aagcacaaca gtttttaaaa aaattgattt ctattcccag tttctaggaa ctggtttata 960

aaaaaattta gttgagggtg ttttgaactc aaattctaag aaaccagttt ctagtgtttt 1020

gatacacaat tactagcata atcttcctct agtttaaaaa ttcgtggcgt tatatgtaaa 1080

ttcattgaaa caaacaaggg cattgtgtaa ttaaacaaat aaaagctcgt tttagctagg 1140

agaaggtaac ttttggtttt taaaatctag gaatctggtt tctataaact gaaacataaa 1200

ctgatatgtt tggaaccact acaaaagttt cttacaagct gggtgtttcc aaacatgcc 1259

<210> 3573
<211> 1150
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83584_G1, chr2:190398497..190399646, Cluster 21

<400> 3573
aatatttgta atgtatgttg tgttttgtcg gctgtactag cctatactga tactagagga 60

cagctacgta cgacaaaagg agtatatgtc gtcgatgtaa ctaggactag aaacagcagc 120

gacgaagaac gaaagcttca ctgacgctga cgctcgtgta ccgacttgca acgacctctt 180

ttatggcggt gtggatgtgg acacataata gaacttttct atggaggacg tggcctcatt 240

ggtgtagaat caattttcag tcgcagtcca aatccaaatc gatttttaga gaagtttttt 300

taactggctc tattcatgta tatctgatat ctctagaagc aacctaagag cgacacgccg 360

agaaagcatc agaatatgtg caacctcagc acctgcctta ccattctacc gcactgctaa 420

atcctgtaaa atagaaaatg tgatattata gattataata tttaacatta tttgtaggat 480

aaaatttaaa atagaggata caatggagaa tgaattaaga aatctacagg agatggccta 540

actaaggaaa tggtgcctat tttttattaa cttcagtgaa tcttgttaca aatatctgag 600

cttctaaatg atttggaatg aaaaagaaaa actacaacta cagcttcggt ttacgacata 660

tattctccta agatagcttg gaaaattcag atttttaaa ttttaaagtt tgaacgcaac 720

gaagattggc acaaccatac atgtttttta atagtgtaat atattttcat gatatacgca 780

aaaaatatta ttctttatga ttaatagtat aaagtctggc tagattaata atacaatatg 840

ttttcgggcc actgttatgt ataggtcgta ctaagccaat aaccaataac aaagtattct 900

cccatcgtag ctctaataac ccaaggagta gcaagaagga ccctagaggt tagagtcatc 960

atccacgaac tttcttaggg cctgtttggt aatgcagttt taaaaaattg tagttttaag 1020

atactatagt ttacaatcgt acatgacata aatactacgg tattgcttta ccacaataaa 1080

actacagtat tgttcaaaac cgagatctgt ttggttctat tgtaaaaaca aagtatatgt 1140

agagagaaga 1150

<210> 3574
<211> 1266
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83739_G1, chr2:191427764..191429029, Cluster 21

<400> 3574
gctctcaagt gtggtggtgg tatccaagct ccacatctca atccttctag ccatggtgta 60

actagtactc agctcgagtg gacaaacaga cggtggagtt gctctaactc ctgttgatct 120

agttgtgact gcttcttagt gaccttagtg atccatatgg agctaactct gtcacctcga 180

tgtgcaggct ccgctgcctg agcaatttat agggcccttt gagtctgtcg attctattaa 240

ggggcctatc atgtcaatta aaagaagatg aatctagaaa atgatctttg actttgtaag 300

acatgaaaaa atgtgaatct ccttattgtt aatgtgtttt cccctaaata tttatttaaa 360

tattttgcta aaatattttt tcccaaacat cattttcatt tatcaattta aagaaccaca 420

actcaaaaag taagtatttt aagtcgcaag gtctatattc tctaagtcaa ctcttgtttc 480

ttttttgaag tcaaatcacc ccttttcatc ggcctatata gttttcacag cttatatatg 540

tgcactggtt gtctatctaa aaataaaaaa gagataattg tgattatatc ctttgttgcc 600

tttgtaattg tgattttacc ttacattttt caactttgtg attttacccc ttcattttag 660

aaacgaagct actatttgct tcttcctctc aacgccacta gtgaaaatca taattaatga 720

ttaaaataaa aaataaaaag attgaaaggt ctgaactatc ctcctattat gtgcgggtgc 780

aaccccaata aggtaaaata caattacata atataacgag gcatagaatt attgcatgga 840

tatttttgta ttttcgtgtc agatttaaca ttgttaactg cacgtaacag tgcaagtata 900

tgactacaca atagagaggt aaactcgtac aaacgaaaaa caaggagtaa aataattgca 960

aggcctgaaa gggatataaa gacaaatgct cgaaatagaa attcagaggg taatagtgat 1020

gggtctattt atttctgctt gtagattata taatccatat tataatatgt tgatattata 1080

atatatatgt agtcgtttgg ttgcctagat tatattattg atctctgaga cacaaaagca 1140

acagtatctt tgttcatagt cgtctccttt ttttatagct atggcattct atcgcctcgt 1200

acaactattt tcaaaataga aaatttacat tatgccaatt tacacatctt acttgtctag 1260

agaaat 1266

<210> 3575
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86465_G1, chr2:208340525..208341586, Cluster 21

<400> 3575
atctccatat attttactga tttctattgg ttgtttagtt gcagcattta attgatatct 60

tagtctataa aatagtgaaa ctaaatttta tattgagagt ttcatgacac tcttgatgat 120

gtggcagtgc tggaaagagt gttataaaat agccattatg attagcctaa cgacaacaag 180

ttccgcgatc agcgggcacc taggtcaggc aaggtgaata ggtcggtggt gactgctaca 240

tgcggacgac tgttggaacg ggtggaggcg tggagcgctg tgtggcgtgt ggtatactgc 300

attttaaatt acaagtcaat tcaattttat agagaatcac aacgttttaa gcgtaaccaa 360

atttatattt atattaatta cgatataaaa atactattag attttaatta attataattt 420

tatagtatat ctatttaacg ttataatttt gatcaaattt aagatgtttt attttaaaat 480

aaataaaatg tcttataatt taaaaagaag ggggttcatg tttgtgtaag ccactaaggc 540

tgtgttagga ttaggaccca tccgaacttc tataaactgt ggtacaaggt aggtttattc 600

gatttccgag actgtggaag ctggcttgta aagctaatga atgtttgata ctagcttggt 660

tttcataagt tagattgggg agtctattaa gatctaaacg ggttctaagt tagtcggcga 720

aaggtgtgag gctccggctt aaaaagtaga tgtggagctg aactagaggg ggcccaatgc 780

tggccatgat gttttttttt tggggggggg gggggggggg gtaaagaaac agcacataca 840

gagctgaatg cagaactgga actccgtggg gtgcatgttg attagtggtg atggtttgca 900

agtcatttca gcacgtttta cactcgcaat cagggaactt gttctctcgc gccttgttaa 960

acaagtgctt tcaactgcgg tcaagctgat accaagcttt ttcactcttt ggctcttctt 1020

tgataaaagg caaaagagaa aaatcggagg aaccttattg tt 1062

<210> 3576
<211> 1128
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_88369_G1, chr2:218950044..218951171, Cluster 21

<400> 3576
gaagtttcag cttgctagca caagagcact caactcaatc accaagcaaa atcatagaga 60

gatactacca ccaattctca ggtctaaatt atcatgactc agttatcaac tagtaatgga 120

catcaatgca caaaatctca tatactcatg tgttatacat atatgtttgt atatattaat 180

cactaacttc attgcttcga ccatatcacc acatttataa cttaaggttg attgaagtta 240

actaaccatt agacttttac aattttactc taccaattgt gagaagtgta ccaatttagg 300

aatacttaac caggcaccat tcattataca atttgtttac taattaacat tccaactatt 360

tggagcacta tagtcacaat catacaattt acaagcacac atatctcata ttttcctatt 420

tgacgagatg tagccctcat attaagacaa cactaacaca ttacaagttt atatttttct 480

cggttagggg atgtcaccaa aagactgatg aattttatgc tcaccatttc acgacacata 540

aacttagact atggatagaa gcaatttact aattctataa ttcactttat taggttaact 600

tgctttacgc atcaactaaa taaaactcac atctttcttt ggtctaacac atagagtatt 660

aacacatggc ataaaactcc ataaggctac attttaatac ttaaggacct aaagcactta 720

tgtgcatatc tcatcggatt attctttgat ttcaaaggga ccgacttata aatgctactc 780

gcttccaata aatttttggg cagcaataac actcatagta tggaatgtaa tggttaataa 840

aacgaagcat cgatctgtca tacatcaaaa atcgacatga taacactaat agatactatc 900

aactaattgt ttggaacact aaacttattt ctcgctttgc cactacacta cccttcaatc 960

acatgaccat catgagcatc cttcacacga aacttacatt aacaacctaa acatcgtgtt 1020

acataataca tacatcttcc ctcatcgcga gtataaccgt atcacgacat atactcgcac 1080

acctcaatca aacatcttac gcaaccacta atacgatgga ccacaaca 1128

<210> 3577
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_88592_G1, chr2:220060597..220061679, Cluster 21

<400> 3577
taaactactc tctgattttt tttgagctga ccttcttaaa ttttacattg aggtacgaaa 60

tgttagtatg ttataactta catccacctg tcaattataa ctgaataaaa aagaagtcta 120

gaagccattt actgttctaa tcgggttgtg gaggatgtgg ttggaggggt cgagagcgca 180

ccggcggctt taatcgggtt gttgtcgggg aaaaatgtag gcaagcagct ggttgccatt 240

gcgaggccgt gaagcaggaa ctatcaatgc aaagcgaaat ataatgcatg gaaagcagca 300

ctaatagtaa cggattactg ctgacgagcg gcgatatcaa ctttcaacgc gctggcatcc 360

gattagtgtc agatctcagt ctttcttttt atctattgtt gttaaaacat agtgcaatta 420

ttggtactat gatcaaacaa gttatactgc tatatttggt cttataactc ttgtcgtgat 480

ggcatgattg cttgacaaaa tgcctaacaa aattattctt caatacagta taaaaaatat 540

ggtgactcaa aatcagaaca aaaggtctat ttaatcttct tcatcgaact cttttgtgcg 600

gacagtttta gtgctaagta aatgaataat gtacatttat taacaagcca ttccaatata 660

aaagtattga attcctctat gactttgtgc acagtgacaa aattaaataa agccatgaca 720

atgatgaaca gagacaacac agtctgatgg aatcttagat tgtggatgaa atttacttta 780

tagaattact atatctaaac cccttctcat aagttgattc gatgcctaaa cttgataaaa 840

aaatggatta atattttgga tcatacctag ggcaacctaa taagcatggt gtcgctaaca 900

tgaagcaaag gtctaccaga gaatagggtt tccatccctt aatattactt atttcctaag 960

aaccatactg aaattaaggg taagaaatcc agtcaacatt ttaaataccg gttttaattg 1020

cccagagctt tggtaccgac cggtggttgc aacctagatg agctctctat tcatagcgct 1080

ata 1083

<210> 3578
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8952_G1, chr1:47468790..47469822, Cluster 21

<400> 3578
ctagcgccct cgaccgcgtt gcgtcggtta ggatgtcatc gtcagcgagc cgagcacggc 60

cgtcgctacg gaaagctgac cggccggcaa ggcgacccgt gcccgtgcat gcgcctgctt 120

aatcttttca cgcgcagcgc aggtacctgc aactgcaagg gggcgggcgg tggatccgtt 180

tcaaatgcga tctgctcctg catttagata ttagtgatag gaggccaaga gagagtagta 240

ttacgatgtt gtctataaat tatttgtagg ataaaacatt cttaaggtca tgtaatgata 300

tgctttgctt attggttggg ctagctacaa tgggatactt cttctataat gaatgctatg 360

gagtattaag ctatctgctc atgctttgcc atgtgtcctt ggtcaaacaa acttcagtga 420

ttcctattag ccgcagaatg gctttagata gagaacagat atagaataaa actatatata 480

tatagttcac aacagattga gttatgctct tctatgttgt atattctgtg tcaaagtaaa 540

attcagagca gattttggga atatttagag acagaccggc aaactaaaat attataacca 600

gttgtttatg gcacgtatgt acggcaattg ttcatggtaa ttttttttct tccaaatgag 660

cacgttcctt tgacgcggag acgagacaag ggaggggctg tgtgctgcag cctgcaagtc 720

tacaacgaga aacgagacgg atatgacatg gtcacatgga tatggataga aggtactaga 780

accgttgtga ttcgtgagga tcttttttaac catacagtat ataagtgtat aacatagaat 840

taatgtttcc acacactacc ttttctaaac tatgataaat aaaaaagaat gggtaaagta 900

ctaaacactg ctcatactta taagtatttt taaaggcaag actgccaaaa tcttgaaatt 960

aacgaagttc tcgcacatgg aaaacgtcgg ctaccaccat gttcgctgtg acttgctgat 1020

acgattatag ttg 1033

<210> 3579
<211> 1150
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89606_G1, chr2:224481797..224482946, Cluster 21

<220>
<221> modified_base
<222> (249)..(249)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (249)..(348)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (250)..(250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (251)..(251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (252)..(252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (253)..(253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (254)..(254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (255)..(255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (256)..(256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (257)..(257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (258)..(258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (267)..(267)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (273)..(273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (274)..(274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (275)..(275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (276)..(276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (277)..(277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (278)..(278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (279)..(279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (280)..(280)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (281)..(281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (282)..(282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (283)..(283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (285)..(285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (286)..(286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (287)..(287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (288)..(288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (299)..(299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (300)..(300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (301)..(301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (302)..(302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (303)..(303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (304)..(304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (315)..(315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (318)..(318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (319)..(319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (321)..(321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (322)..(322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (342)..(342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (343)..(343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (344)..(344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (345)..(345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<400> 3579

tatacatggg tatcgaatat atattgcata tctattctaa tagtcccgtg tcctcttcag 60

ccatgcatga ataaactcgg agcaaagcgt gcgctcagca ctgctccttg gtggactacc 120

aaatgtgtgt ccttcgcctc tctgatcagg cccaatatga attggatgct gctaggacac 180

tgctctctcg tttcagtatg tcagatgatt gcctgagcca ctgaaaaatc tctcccctcc 240

ctccaatgnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnncc cccccccccc 360

ccacccatgt gtaatgttca gttctttgcc tggcttgcct cccattgaac gtctccaatg 420

tcgtgtcaat cttctttgaa aaaatgtaat gttcagatga cgtttttgaa gtctacctct 480

cccaaccgga gacaactccc acacatactc ttccaccgtg actttgcgag aagcctttgg 540

tccgcggttg gcgtcccagt ggcagacgat gccaattgca gcagcactgc ctcggcttag 600

ccatccatag actacttctt ccccttccta tagttgttgt atacagaccg tgtttgggcc 660

attaaaagca atgaaaaaac atgcaaaaca tacaagcaca catatatata gatcagagag 720

agagagagag agatagtctt tgcatccaaa acatattttt ggcccatcgt ttttattaca 780

atagctgcat ttgtagtaat aatgacaagt agttcttttt gtaacagcaa taacaagtag 840

tcgttctttt ggaacaagag tgctaaataa atggatataa agcaaagtca catcatagag 900

taccatgcat ttagatctat cagtttagtt ggcatgcgtc ttcaagctct ttttttccca 960

tatgaggcta atggtggcca tggtagagct agcagaaggc tgctaggctg ttggccatga 1020

cgaatgcctc gaaggagtgc ttgctggcga gtttagaagc ggtagaagcc ggtacgaatt 1080

aaagtcaagc aaacaggcta aaaatgacta agtttgttca cttctttatt gcaacgccta 1140

ttttttatag 1150

<210> 3580
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89995_G1, chr2:226591073..226592090, Cluster 21

<400> 3580
ttgtcttggc cactttagtg taatttggca tgtagaatta gtatagtttc atctgggtgt 60

gaagatggtg atttatattg ccgtggttgt tatcggtaac ttcgtgtaat gtgttagttg 120

tatggtaaaa gctaaagtgg cacaatatag tctggtcttt tgtccttttg gaaactgaat 180

tggaaccgtt gttcaacact tcttggggcc accagccaaa ggcgtgcaag gttttttttt 240

agcatgttat ttgcactaag tttgcactgc tactgtgttt tacgactaat ttgtttttta 300

tctgggattt ttcaaacaca agagaaaatt acaacgtgct gagaacgatg ctgcctctgt 360

tcaagttaca gttgttagtt cttgcaattg gctcaaaaca atgctatgca ttccaaaaag 420

gctcccatga acccgtgctc caaacaggag gaaaattcaa cgaggactcc tcaccattgg 480

cttcgtttca gaaatcaata gtgaatttaa aaccgagaca gacaactagg gatggcagtg 540

agtgtggatc tgggtgtcaa atttcaccct agatctatac tcgatccgta aaataattgg 600

ttagagctag gtgtgacttt tcacccacag gtactcgata gatctcaaaa tactagcttt 660

taactcattt ttcaaacatg attttgctga taactgaatg actgattttc attgctcttt 720

aattctaatg ctcattagct atttgaatgt gtaataaaca ttattttgtc aagtatggtt 780

ttacactttt actgttgtca ctgagccaat ctaaaatgta agaacttaga ttattactat 840

tatttggctt actggactag ttatgttatg tgtcactgaa actaaatgga gtttttgaaa 900

agttatgatc atgtgaaatg tgaattgata atacattctg tgcttttaaa taattatgtg 960

ttaccttgcc atttatgctg ctatttattt aattatttgt aattgtggat cacccaac 1018

<210> 3581
<211> 1238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93582_G1, chr3:7215583..7216820, Cluster 21

<400> 3581
cacacacttg tatcctgtgg atggagatag cacaacttgt ttttttcaag agctgacact 60

tttgagtttt atggtgtagc ggtggagaga aaacgaggat atgtttgttt gtatatacca 120

aagtggtcgt aacttgtgga ttagaccacc actagttgag ataggtgtaa atagtgacac 180

acacgactca gtatattgtt tgtggtcgaa gatgatgtgg catgctttgt tttatcgaga 240

gcggacactt ttaagttttg tggtcgtgcg gtctagtgac caaaagagaa tgaggacgtg 300

tttgttaaag tagtttgtaa cttagatttg gcaagcacta gaaatggtag gtgtaaataa 360

tgtaactaat gtttgaactg catgcaccag atataagcct atgtgagcgt ataatatgtt 420

tgtttgcatg cataatcatg atcctaatcc cactatattt aggctatgaa cgtataaaat 480

gttattttag gttgtatact gtactgttta tatagtgttg tttgaaatga gagacgatga 540

taagtaggct ctactggagt tagccttaca aggaacacct tcaattggtc caagacagca 600

acattatgca agctagggtg aagagaaacg gcgtccaaac cagtttatgt agagctagac 660

actctaaaaa cgtgcggcct ggctcattgc ttcatccaga taacatgtgg acgtggtgga 720

tacccaaaca ggagaaagtg catcatacag gccacttctc caagcaggcg aacagacacg 780

catcaagacg gtcccaccgc atcttctttc tcgcgtgcac gaacgagctc attcatgatc 840

aggtcctttc acgtggaaaa ccatttgtcc atttcccatc cgtttggttg ttgtacaacc 900

tgggtctgta tgtgaggagc caagtctact gtacacagct aggtacttgt atatgtttgt 960

gtttggttgt taatttgcat taatgtattt aggacagaaa ccgatagtgt ttggttaaag 1020

tgtactagaa aagagtatat aaataaattt tcaaataaaa tacaatatgt atgatctagt 1080

tttatttata ataagctcag aaacacgaat ataaaattag tttggtgatt aaatttttta 1140

tttggaagat ataatgaaaa aataatctaa aaaacacttt cggtttatgt gccgctacat 1200

gcagctgctg tatatgcaga gcatctcgcg cgggcccc 1238

<210> 3582
<211> 1306
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93764_G1, chr3:8327194..8328499, Cluster 21

<400> 3582
gtcagaattc aaccaaagaa cagttcataa agttttctaa gtgtttgata agagaattac 60

ataagctgag atatagtaaa tccttaagtg cgtaaacatt taaaatatga tctcaccaga 120

atattgtagt gatcggtcat cattgctatt aaccccgcag cagtagctgt tccctctgga 180

agagataaat atgcctgtat aggtctcaca gcttaattca gtacaacaaa acacatgtag 240

aatacaagct aataagtggt ttatcagact atgacataga aatttaggtt attatatgga 300

aaaggaagtt ggttacagga tttaccttat taatgttgta aagagcctcc accatttcag 360

atgtcctatc acgtattgca ccagcaacct aaaaagtaaa tgaaaaatca gtataatgaa 420

aagtcgcaag ctatatacaa atttgttagg gtatcatact aaatgtattt ttatgtctcg 480

gttctgtcta gaagggcata aaaaaaactt tctccaatct tttccatatt ttctgtaggc 540

tccatagaag cgctcgagct catctttgct ccattgagac ccaagcatgt cagataactt 600

tttcttctgc aaatgagttt cacttggatc aatattcaat gatgaagtta aggaacttag 660

gtactactca actgcattag cagtatcaaa attcattcgt aaaacagttt ttccgttgaa 720

gtcataaggc atcccaaaaa atggcaattt tgtgacacct gacagttcca cttataaata 780

cataatacag cattatcatt ttaacaagaa gtcaattacg ccatttacat aacgatgatg 840

acaaagcaaa gagattgaat gaaggctaaa tttacagact tactcgcact ttacttttat 900

gtacatttgt ctcatcttta tcctgccaat cttcgttgat tttggtgtag cgtttatttg 960

cattcctcac ttttcgcgac gaagccattg agaattgaac agcctacctg agaacacaat 1020

taactcgaga tcattgctaa atttcatcac aggatcttta gtgagcaatg aaacaaggag 1080

aatttcaatt tcaataatat aagtggactg tgagccttat taaataaatg aagattcaat 1140

ttttcacgtg tacatgttgc tacatgtaca tttacaaaca tagctcaaca ttgatccaaa 1200

ctttcgatga tcagagcatc ataccatctt gtaatcgttg atcaagcaga aaagaaacat 1260

gctgtttgga atttttacaa taatctcctt ggggttgctg tttcta 1306

<210> 3583
<211> 1113
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94161_G1, chr3:10432692..10433804, Cluster 21

<220>
<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (289)..(388)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (299)..(299)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (300)..(300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (301)..(301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (302)..(302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (303)..(303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (304)..(304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (315)..(315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (318)..(318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (319)..(319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (321)..(321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (322)..(322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (342)..(342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (343)..(343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (344)..(344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (345)..(345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (349)..(349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (350)..(350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (351)..(351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (352)..(352)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<400> 3583
gtaatagaga agggattata ggagtgcggg ttgattctaa ataaatgtag tgtttttaa 60

aaatattaac gtaggatgcc agttaaacct gatgctttaa tatagtaaag atatatatta 120

gcctctcaac ctaggtggct gtgcgcagta taaattactt aaggtaactt ataatctggc 180

cgtgcgcaac ctaagaaaat tttgttaggg ctagttcggg aacgctaatt tcccatggtt 240

acccccccact caatgggagg ttattccctc tttttaggtt tacctcagnn nnnnnnnnn 300

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnga aattagtgtt cccaaactag cccttaggtg 420

gccgtgcgca atataaaata ctttagttca aaaaattaaa taatactctc tctatcctaa 480

cttataattt atttaacttt tttttttgct aagtttgata ggtttgtctt atttatgttt 540

tttggaaaaa tggaaaattt aaagtaatac ataaattata ttatatatta gacgatatca 600

taataaaatt taacaataat tataaatttt tttaataaaa taagccggtg aaacttaaga 660

taaaaaaatc aaatgaatta taaatatcaa agcgcctgtt ccattctctg attcttatca 720

ctgaatataa ctaatccatg tcaagaaaag gagtaaaacg aattatgccc ttaagattgc 780

tgagaattcg tcggtggcag cacgaacggt tattctctgg ttagttagga tataattgca 840

gcatcaggag caagctagct tttctatccc taataagtag tctgatgaga tgtcactaat 900

atattcatat gccggctgca gctgcaaggc tacgtgctta aacgacgaac gcagaacaaa 960

agccattagc cgcgctaatg tgaggacgac gtgtagtgta gtgagacaaa gcgcaaatct 1020

tttcttgtcg ccgtgtgcgt tcgtacgcga caaatgctaa tgcgtgttcc catgcatgcc 1080

aaagtagtgc caccgttttt tttttcctct cta 1113

<210> 3584
<211> 1291
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94273_G1, chr3:10951705..10952995, Cluster 21

<400> 3584
cggtcatctt cctcctctag ccatccccca tttgtgactg gttttttttgt cctcactgac 60

cgcaatggct gcaacctgag cacttgatta atgagtaggt cccttgagca aacaataatg 120

tctttaaccg aggtgcttct ccctctattg ccataacttc tgccacattc ttgttcacgt 180

atggccttat ataatagaaa tttgtcgtct atgagcttct ttgctaccac caaagcatca 240

atatgactat cgatgaagat gatgaacttg tcgaaatgcc aataatttct cgagagagct 300

aaatgtgatt agaaaagacg actctgatta catgtgtaaa tatgttagca tattatctcc 360

atcaggctta tgtttgtatt agaagatcgt aatacaagtt catatcaact atgatcttta 420

tatcagattt attttgctca ttttatctac aaatagagaa gtctaattga actactacat 480

atacaatcta tacaagagtt cttttctaga tgcttcgatg ttcgaacgta acccgtatgc 540

gtgcggacac gatgagaaga gagcgagagc tgtaggccgc agcccgcagc ccaccaccaa 600

ggaaggtgaa cccaacaaat gagttctgga cacgtcgcca taacaatgcc atacgcctct 660

tgccgttctt ggaaggagta gtagagttgc agtgtcgagc cgttgccctt gcctgtcgga 720

gtgtcagcca ggtccgcctt gccgtgtttt gtttcacaag acagcaagac cacctccgtt 780

tttggcatgt tgtgtcacat tttatgtcta tcgagagcca ttgcatcgta ggaacgaagc 840

ccacggaagg tgaccgcagt gatcattgga tataaattag gaagtactac caaacatacc 900

cttgagttac aacagagtct aatacgtata agaatcaaat ctataaaatt actatacgca 960

agttgttcta acttgtatga gcacgtgtcg taaatatcga gatatgtaaa gaatgacaca 1020

atgcgtattc gaaccagatg tcgaatcttt catatctatc attgtgaaca aacactaggg 1080

tacataaagc tatgaaaaga agagatttgg agaaagtgga gcataggcaa ccagcttgtt 1140

aaagctaggc acaacaatga tctagcacat gggcaaatta gagagattca ttttcgtaat 1200

acgtgtaata ccctacatcc tcttactact tgtcgattga tgaacacaaa gggtgaataa 1260

gcttacaaga tcataacaaa actgagcatt a 1291

<210> 3585
<211> 1374
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96494_G1, chr3:23184584..23185957, Cluster 21

<400> 3585
atagggtgga tgttgtgcat ccatatatgt gtatctatat ctatactatg attgacaaaa 60

aatcatttgt ttctcttttg cataagttca gaataaaatt aaatgttata atacatgggt 120

gctcaggagg aagtagtaat gaccatacaa attaatgtag agtgctcatt gtctaaatta 180

taatgtagtc tccctccatt ttaaatttca agaggttttt atcttttctt aatatatata 240

gagagagcaa gagagcctct ttggttgctc ctgtttcccg cttaccggtt tcgaccatat 300

tgttttcttg gcttcaatca atccatatcg ttttttttttt cgcttgttgc ctgttcgatc 360

gattcattct gtccgcgcgc gagtgcgagt gcgctctgtg tggacttgta tccatgcgct 420

tggacttttg tcattgttaa tatgcgtgcc caaatggggg cgcacagcag ctaaagatca 480

aaagggagtc gaatacagca ggccgggaag ctaagcttag ggctggacag ggctacaagc 540

tgcttacact ggtagctggc ctgtcgccgg ccatgcatgc tttggcagcg cgcgtaaata 600

aaacacctaa aaacaacttt gcatctgcgc aaaggtctct atgctttctt tttggcgaaa 660

catgaaaggg agagagagag acatgtcgag ttgatgcggc tagttgcttc tcatgcatgg 720

atgcaggcct tgctgattaa agtggctgtg cgtgggcggt aggacgcagg aactcagagc 780

tacctagaga tcatatcgac cagaagcgat agatccagca ttaggagaca tgcgttcttt 840

gacaacttca tggaatatga tatgtgtaag tgtatctcga gaagctcaca caccagtcat 900

ttggttggcc tctgtaaacc tactacatgt acatacatgc atgcaagcac aagttgtgtg 960

ggctagccag atagccgcag aagcctgcat cagcaccttc agattagcta gggagtctat 1020

gtatatgtat aggcaacgta tatataatgt agaacgagag agagagaagt atccaaccgt 1080

agatgaaagc tggcaacaaa taaatataag ctcacatata attagttggg ggcattgttt 1140

cgactcaagc taatatcgcg acatgaatag tcaagacggc gaaatatttc gtacgctata 1200

gtaggctata gaggaagtgc ataaatttgg tgacatgaaa tttcttgtgt tgagcctaac 1260

ctctctcaac tctcgttaat gaggtgtttg atttgaagaa tcaatttatt ttagatgagg 1320

tggtgtatca tgagtctatt tcacaaattt attggaataa actcatttat cata 1374

<210> 3586
<211> 1059
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326869_G1, chr10:12348441..12349499, Cluster 22

<400> 3586

aactaaaatt gtttggtcga aacaactgtc aactatagat cctctaagag catgatagct 60

tggtaacatg gatgacaata atttgaaaat tttggggtag aagatgattg tgaattaaac 120

tagaagaata tccagatttt caaaaaaatc taccctaccg ttatacctgt ttggttggaa 180

ttccggatta ttttagaaag ataaaaccaa acatatcctt aagcatgtca agagcttgtt 240

catggcttct cataggcagc ggaatggcga ggatgcgatg cgagtaaaaa tatgtggcaa 300

gcgttggact gctgaactgg gtaaggattc ctgagccctg atcatcggcg gtttgtccag 360

gagagaggag caactgagca aagcatcgtc gcaggtttgc agtttctcgt tgagttcgtg 420

aacctcttgt gggcttggct gtccagccca tgaagtaatt gtagccgctc cacatgagcc 480

agccatagag tctatttgtt ttagctcttt tctgataagc ttttatgaga atctagttat 540

ggagaaaatc tgattgtaaa gagaatctaa atatcgtgat gattgcgtgc ggacgaagat 600

caatgagtcc ataaagagta tcatatgaaa actagcacga gattcctaaa cttgctggaa 660

actttgttgt gtctatggta tgttatcgtg agtttttaat aaaggttgtt taaaactgct 720

tcacagactt ttgtacctta cgtcatccac cgagaaactt cagagaatta tcaagcactg 780

tcatccaccg gttgcccaaa cttcagaaaa gtttggtatg tttgttggtc ctcttttgca 840

aggtcagcct tgcctgagcc agagagcgtt gttttctagc tcacgtcagc aaaacaaatc 900

aaacatttgt gcgacggcaa gagttgagtt ccaaacgccc ccagcctacc gtttcgtctt 960

acgtaacatt ttatggttga acagggcagt ttaatacagc agacaaatac tctacagatc 1020

acttgaatgc tgccaaactc ctccagacaa caaaaatat 1059

<210> 3587
<211> 1203
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_100036_G1, chr3:44091468..44092670, Cluster 22

<400> 3587
cttgagagca atagtctggg aaagtatatg gtatagaaaa gtacaatttt cttgcttatt 60

atgctgtttg ccaagtactc ttgttcttgg cctgaaacag aaaaatttgc aagtagagtt 120

gagccatcaa tcaatcatcc atccacccta tgaaaaagta atctattcaa tactatatac 180

ttttgtata tacaccgaag atttcaatta cgaatcagct tcaactaaat ctctagtgat 240

aatagacata tgaaaagcat agcctgtagt tgtaatctaa tctgtgcaac aaaggaatac 300

aagcgaacta tactattatt acaggctcgt agcacaaaga cgtgagggta aagggccaac 360

agaagcgtat taaactagct agcaatctca gacacttcac aatcacctca gcccttcaga 420

aatatacttc aagttgatgc gcaaggatca gcataatcaa caatatacta gtatcaactc 480

tggaacaaca ataccttacc atctagtagt ccaaatataa aataataaat atactatatg 540

gcattgaatt caaattgaga aaatgatgaa gtaacaacaa ggaaaatgct gaaataagaa 600

cacgtaaggt aagagctaac aacgtttttg gttagtggaa tgccgccatg caaaattatc 660

cgatccagaa accgaacctc ctcaagctgt ttgatctgcg tcatggattc acttcgtttg 720

ttaccgtgta gtacccctgt taggccgtta caatgattcc gcagcacgat gagttcattc 780

cacacaaaaa atgccggacc gacccattct gattaaactc atgcggcacg aaccaaatcc 840

acaaaccaaa cacactgtaa acagctttag taatctttgg tacttttaat atcggctgca 900

ccaaccttcc agcgctctgt tcagtaacct catttcttgc tccacaaaac acccacatca 960

atagctttgg attactcaaa atttcttttc ccattaattt tctagaacat ccttaccaac 1020

ccacacttca gcagcttaag tctaacattt tctatagatc aattctcgac ttaataaaag 1080

agagaatacc acattcaacc aatcttcaat tcaatggaaa tacttggaat cagatacagc 1140

caccatgcaa ctaagctgtc agaacacatg actgacttgt agctataacc caattgtctt 1200

gaa 1203

<210> 3588
<211> 1181
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_107462_G1, chr3:93084485..93085665, Cluster 22

<400> 3588
gttctcatct caattcacga cttaaagttg tatttctgga tggtcagaaa acaaacttga 60

catatctatt caagtgtatt atacattttt ttttcttgat ccattgctgt tcaaatcaaa 120

ttaattaaaa aaggtggact gacttggtca tgtggtgtgg gctggcaatg acgacggcgg 180

gctaacgaat tgcagttaca aagtcttaat tgtgacgccg atcttgaagg gcggccggcc 240

gatccagtaa tcaatctagt ggcagagaaa aatcgtcgca gagcaggcct tcttctctga 300

ccggccgggc ttccggcttg aatcaatctg ccttctggtt ttcattttca aataaaattc 360

tggtctctgt ctctacggca gcgttctgaa ttggagtcga aattcaaatt gacacgacta 420

ttagccgtga cgaataacga agggtttact tagggcacgt agaacccata aaggacatat 480

acaatgcata ttaattcact gtgtcttagg atttgtttag attcaagtct atgagattgt 540

ctccctcatt ttaatccaat cacgaagaga atttaagttt tcaaattagc ctttcatggc 600

ttagagttgc taatatatac ttgttgattc atctattagc aggtggatct aaatagcctc 660

ctaactaaag attagctgat attcttcatt aacacaagat atagatggtt gtgtcatata 720

tgctctacgg gacatcattt atgctccaat caagtccatg catgtgaatg atgtggaaag 780

attaaaaaaa aaagtcccat tattctgtgt gcgcgcttgc ttttcactaa cctagctaga 840

agcacacttt ccctgctgct ccttgtgtcg acctcgttcg caaaccaacc gaaaaatatt 900

ccaagcaagc aaagctaagc aaactctcca ctggatgcca acaagcaacg ggtctttttc 960

ttttcccgct caggtgccgt tcctttcctt tccctttcc tcgtgaaaaa agtggagtaa 1020

actcaaggtt ggtagagcag caccatcctg ttcattgtca tgcttgtagt agcagtagct 1080

gttgggtctc ctctatcaat cgataatata tatttgccta gcacaagttc ggccctgtca 1140

tcttgggaaa acaaaaaaga aatgagaaac taagacctcc c 1181

<210> 3589
<211> 1300
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_113238_G1, chr3:131621276..131622575, Cluster 22

<400> 3589
acaacagaaa aaaaaattag aacctgcctt ttactttcca acagaaacat tttatttttg 60

tgctagttga gtaccagcat ccaatgtgac ctgcaaaagg aaaactcaat ttcagtcctt 120

ttgtgtaaac taatgactaa gagaacatgt ttacacacca atagtaatta aaacaagatt 180

acaacactac tttttatctt ataggttacg gagttcataa aaaaatctcc atcatatcaa 240

gaagcaacat aagtaattct atatttttc ccactcagat cataaaaatt tatattatat 300

gaaactatta gccattagaa caatcaaaca agctaacaag acaacagtag aagtacctgc 360

taattaagtg tttatgacat taatccaagt atcggtggta tgtgcactca aagccacaaa 420

attgatctga tctagacctg tgacaggttg tattaatcta aaaagacaaa actacagtag 480

caactgtgga tatacaaacc ctagaataaa cagtcatgaa tatagaaaat aacttcaagg 540

ggaaatgaaa taagagaaat aaaaatgaaa ttagaaaaaa agtatagatc acaatggttg 600

aaaggttgag gtagcgattg cctctggaga agtcgttggg gcttagtaaa ggtggttacg 660

agtcatcagg accatgtaaa tggatttgca atccaccaaa taactattgc atgatatgat 720

tttcttgctg tgataatcat cagtttgtaa atgtttaata tattaaatca ggataaataa 780

ttgtgttaaa tagaaaaatc ataatgtgta ttttaacaca ggtacataat ttccagtaca 840

tttcctaggg ttgagaagct ttccatggat tgtcagaaat ctcacaaaac tagatcctaa 900

ttcgtagctg caccgtgagc gttcctacct ccataccacg cgcagctcca cagccccgcc 960

cgacggcgcg agactaagcg taattagaaa aattgaggtt cgagtcaaaa tgaaatagaa 1020

gaaattggga ccgaagaatt tacaaataac tgcacataat tagaactaag aagtcaagaa 1080

ggatgaaaag tagcctaacc ccttgtttgg ctgcagccgt atccatttga aatccatatg 1140

tgtagaacta atgttcacct caatcaaaca taaaaagaat cacctcaatc gaccccaaaa 1200

catgtggaat gatgtggatc tcctcaaaca cattccaaca gtccgctgaa ctttgctcaa 1260

aatatttttt tttcttaatg gaagtgcgac tgatgctaaa 1300

<210> 3590
<211> 1236

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116472_G1, chr3:151615341..151616576, Cluster 22

<400> 3590
ctatctcttc aaacaatctt atggattcta aaactgtggt attgaatact tggttatgac 60

attgcactca aaatagtgtg tggtattgaa tacttggtta tgacattgca ctctaaatag 120

tgtggtataa aaaaccatgc ttccaattac accttattgt agtgcactag ttgtatgtac 180

atagaatgaa tgaaaagagt aaaagagaac aagaaaattg atcggagtca gaatagttaa 240

tagagaacac aagaagcatt aggatatgta caaccttgag accttggatc ggtttttaaa 300

atataagggt ctgtttggga gggctttact ttaaaaactt tggatcattc tagcttctgt 360

cactaaacag gtctagcttc acgagctcta gctctgagaa aaaatgaaac tagaggccac 420

cttcatggaa ttcatgaagt tcctcagata gtgcttcaca aacactgttt tcatacctct 480

ttataaagtt gaaattaccc accacatcac tggttaaaca acacaacgct tcgcttcgat 540

ctctcgtgac atccactaat catcaagggt aataaagaaa actcacacat atcgattgta 600

ttacagaagt tggagtctat gtgcaaacca aacactcatt gaacccactt taacaaattt 660

attagagttg ttttatggtg aagccgaaaa accaaagcaa aatttttaa agtgaaactc 720

tcctaaacag gccctaagag acaattaacc gtttggttca catattggta atataatggg 780

taacccataa agttaaatca tgtttgttta agtccaaccg taatcgatat catactacaa 840

atggatatcg ccttattcaa atttattacc accggtattc gagcgtgaat cgttaacatt 900

aacatttaca ttacatttgg tgaactaaac agcacctaag agaccgtaag atacaatgtt 960

aagccattgg atcataaata taattgaaag ataatatgca tagagaatcg tgtagagaca 1020

agtttttatt gtatttttta tttaaaacta taaagaaatt ataagatacc cgataattat 1080

taataggttg tacatgccct aaatgtaaaa attccaacaa gtatatttgg ccaactgttc 1140

acggttcttc accagttgcg ttcgtcgttc ccgttctcct cctcgtatcc cctggtccgt 1200

acgtcgtggc caccggcgcc gcctagctcg caccgc 1236

<210> 3591
<211> 1233
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116939_G1, chr3:154560214..154561446, Cluster 22

<400> 3591
taccaccaac aggagcaacc ttatttagct aaaaccctaa gacattacgc taatgggcct 60

tattatcagg ctggtagtac cagtcgtgca acccacaact aaaacacccc acatcttaaa 120

cagtcgtgca gcccagggaa actaaacgtc tccactcaaa ctggacgact aatcagagga 180

tcggacaatt agtcgaactg atcggatcgg actctggttg cgcagaaccg actagccaga 240

ctagtcgaac gacttaacgt tattgtgggg gcacacacag atagatattt atatatagga 300

actagcagta tatagagaat ataaattatc atagaggaag gtacaaacaa aagcattgac 360

gtacaaaatg tagaggataa agagatggtc tagaggggga aaagattacg tcatttcaaa 420

gaaagacgac agagagagct agctagctag tattcggcta tggtcatgtg gtaaatgatt 480

ggtgcctgcc tgcctgcctc ctccattcat aaatgagcgc gtcctgaatc ttcgccgctt 540

gatcgacggc acgtcaacac tgcacctaat ctcggcgctc attattggct agcagtagca 600

agaaatgttc taacgaggga ggcagcagct tgatctatat gatctaacga gagtattgta 660

gtgatagagc aggtgaccga ccaggtggcg gaaacagaac cgagcgtgaa aatccaaata 720

tgtcgaggcg caagagtaca tgggagaaag ctgaagcaag cccaacaagt caaaagccca 780

tgggatatga tgattaagac cttgacggga atcagatatg atgattaagg atttgcttag 840

ttgtaagtag atttaaaaag aataaatcat attctattta attttaacta gaaaagaatt 900

taatctcctc tagtttactt ccttttgtct agaaatacac ctggaattat tccaactgac 960

caaaacttat aaatgagaca agcaatctgt tccaaacagc gattccataa gaacagaacg 1020

agccctaaaa ctttactcgg ttgcataaag atctaaattt ttttaagata attaattttt 1080

tttctattta attttaacta gcacaagctt taatctcgga gatgcagccg cggtagaaag 1140

cgtgcacgct gccggcagca ccacgcgcgg ccgcgggatc aaacagacgc tgcactcggt 1200

ctcgtcgtca ccacccgtcg caccaccgtc gtc 1233

<210> 3592
<211> 1344
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117803_G1, chr3:159526451..159527794, Cluster 22

<400> 3592
ggcaccgtgg aatctgccgt tttgcattgc atgcagttga gataatttgt aaaccaaata 60

aatataaggt cgcatcagct agcatcgtat gtacagcgaa caggcagcat caagcattac 120

tgtgggtttg cgtatgcagc atcgaccaat cagcactcag aacatagatt tctatcgcgg 180

tttgatgacg gctgctgtct gtgtctgtcg cactgcttgc tgatttcgcc ttcgatgaat 240

atcacggttt ttggaggtag cacatttggc tccaacctgt tgattatggt tactctcttg 300

catcggaatt tgaacatgta ctgacagaga gatgcatcag gaactgaatg aaagcagcaa 360

acgaagcccc cgacgattac gcaattatac atcaagaata catatatggt atgtagcagt 420

aatacatacg cactgcgaaa ttgggaagtc tgcgtgcgaa attggtaagg agttgagctt 480

ccctatctta ttctatatct caaattttac tttacaaaca atgtcatcta tagcgtcgtg 540

tcccttattt tatccgatcc agtgtaaata ggcttattag ctggatttag gtacgtacgg 600

tgtatggatc catctctagt taattctaaa ccattctatg taaaagtttt atagcattgt 660

ttctaaggcc accatatcat atagaataaa atgaaatata gacgaaactg actggataaa 720

aaaaataatt tatagttcta tagacatttg gttttatgat ttctatagag ttagtagaga 780

ttcgtccctt taaattcact ctcttctttg tccgtgaaaa cgaagtgctt aggccatttt 840

tagtggaaat tttatgcaca cgattaacta gattgatacg tcatctaaaa gggtttgaaa 900

ctatgataaa tagtctcaca taatggatag tttcatcatt attgtttcct agtacacata 960

caatacacaa acactttaaa atagtacaca tggtttcatc tccataaaac tcatttcata 1020

tctctcatca ttaatacacc gccaaatcac caaaaacact gatacggcag cctctttaat 1080

gctcatgaaa ttaaaatggc cttataattt attaaataag aataaaggtt tgattaaact 1140

tccacctata tctgtacata tggaccagtc tgtcccgaca cggcacatac ccacgaaggc 1200

acgggccgca aaagcatatc cctaattatg ggtcgtgtta tgccagcacg tggccctggc 1260

catcagtcca tggcacaact cacaattagt tatttgtgtc aggctgacca aaatagctta 1320

gaatgcttta gtgtgccaga ttgg 1344

<210> 3593
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120993_G1, chr3:179419306..179420357, Cluster 22

<400> 3593
gctccggcct ccatgcgtga ccccgcattt aaaggcccgg gctggggact tcggtatgcg 60

gtttcgttga tctagaagga cttgtatgga aaaacgtaga tgtgcttgcc cattactgtg 120

tgcccatagg aaaaccttta tttaatgcat aggcagccag ccatatgtgt gtctcctgca 180

tgtatgaagg tatatatcct atcttccaac aactattgga gtagttgggg cagtaaacct 240

agtgatgctg cctcaagttt catagtacgt ggcagggaag caagaattaa cttttaagtg 300

ttcgaatata tgcaagattg catggagagg cttaaacaaa taaaggcaaa attactttag 360

gggcaatcat atggtggcaa ttagttgatg cacgtatgta ataaagtact ctgatttaaa 420

ttataagaga ttttgtcttt catggacaca ttgtatttat tacgtattta tacatagtat 480

atatctaaaa acacgacaaa gactgaatct agaaacaaca aaacatctta taatttgaaa 540

tagagggatg attcttttta acattgtatg tcttgttctt gaagtaagaa tagtgtgtga 600

tgcaaggtgg cgtaaaggca gggacataaa gaggcagtgt cgcagagata tggcatcaat 660

caagatatgc atgaatgcag taaagtatta tcaatattat atcttgttag taagacgatg 720

catagtcaca agggtcgaag tggacagtta cacttcagtg atgagcaggt acgacaaatg 780

tggacaaaca accatacatg gtggcacgcc gattaggcag gtggtgtagc aacaaaagta 840

aactatagag ataatgtggt ggcacgttga ccaagcatag aaacaaaaat ggttggtcga 900

tggtagatat agacatgaag gggaaggtta gtgccacgac aaccatttgg tggtagagga 960

aaacaaggac aaaggataga tgtgtcacgt caaccacgat caaagagctt gactatgtac 1020

gatggttgga tggcagggtg gcaaggtgtc at 1052

<210> 3594
<211> 1034
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121339_G1, chr3:181278676..181279709, Cluster 22

<400> 3594
gtgaagtgga taagaacgcg cagtacacca tcataagcaa atggacactg tcagctgtgc 60

gcctgtgtgg gagaggagcg ccttgtgaaa ggtattgtgg agggcacggt gctccaatcc 120

aatatgaaag cattggggtt attaagagat ctcttaggtt gtctttcact acatcgtgaa 180

aataagagat ttctacggta gatggcatat tttggagagt taagctcaaa atagaggata 240

agatagagaa gctgttaagg atatatcctt agctaaacaa ttaaagctac aaatggagtg 300

gccttccttc tcgacgctct caacttgcgt tttgaaatac agacagacgc gtgagcattt 360

catgcgataa gtgtgaggac acacggcatc cgagcttcat acaaaatagc ataaaaaatg 420

ttcagtaaaa gttttcaaat tgagcttgaa gttcaatgta atcgagggaa gtatatttgt 480

acacctatta gattaggggc attcgtactt tagttattgg attatctagt gtatactttt 540

tgcttatatg taccatgtct caaaaggaac gaaacactga aacagaatac aaccaccaag 600

ccacggccca ttgatgttgt gctgcgtgcc tgtctcaaat ggactcattt tgggacggct 660

aaacagactg aaggcaactg attttcagct ttgcactaac tgacgagaag cccatgtctt 720

gctttataag ctgcgagtta ttcgaatgac tcaccctcgt cgccactgga ctttagaatc 780

ctctctatct tactaggttg caatttataa tttatttgat tttttacctt aaatttaatc 840

aactcgtctt attaaaaaat cataattatt attaatgttt accgtggtat aatttagcat 900

ataatatact ttaagtatga ccttaaattt tttttaacca attttcacaa aaaaagaata 960

agacaagtcg gtcaaacttg gtcaaaaaaa aatcaaacag attgtaaatt agtagtacca 1020

cattgtttgc atca 1034

<210> 3595
<211> 1076
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124189_G1, chr3:195945889..195946964, Cluster 22

<400> 3595
aaaaaggcct taccggtact gcgctgcacc cttctcccat ctcctctgtc ctcgcctgcc 60

cgctatccga ccatcccgtc ccgcacacac catgacaagg ctcaagaagc acctagtctc 120

caacttcaag acaattgcct ccatggtcaa gaaagaggca cttccaagcc tccaactcca 180

agacaactaa ttgttggcga cactctttgc gattacaatc agcccagctc caggcatgcg 240

ttgacgacga cataaacttt gaaatacacg aaccaatact ctttacgtga taagaacagc 300

gaggtttact agtaaaccat caaacatcac gaagaacagc cagtagtttt taactaaact 360

aggaaagaca aaccattcgc ctgggcaagg acatcccaga gttactctcg atcggaccac 420

gggcttttag gacatcattt gtggacatcg gatcgggaga taaacaccgt tcggttaggt 480

aaaaatgatt aagaagaaag gagtactaaa tgtaaaaaag attattatgt tagatgactc 540

aatcagtgat ataccgcata ttttataggg agtagaggca gtcttatatt gtccagacgt 600

gtaaaatatg gatttttgca tggtaacttg gttcactcga cctaacaaat tgcattcgac 660

ttaacacacc accaaaacgg tttagactac tagataattc tctattttac tcgctcaaat 720

ccaataaata atattatttg gatcatccct catccttcga ctccgctacc cctctcctcc 780

ccctcactcg tgtcgtcgtt gtcgttgata cctccactcc tcgaaatcat agcgttagta 840

caaactatac ttcgcacata gctcaagaaa aaacagtgaa cctctacttc actcatacaa 900

agctacaccc tagcccacgt aaacacaaag gtttaattat atacatgcta gtcaactttt 960

tttgcaaaat taaatgatta cttcattttc atgttataga gtggcataaa aataaactag 1020

tttctagctt ttttttcaaa attgaagtgg agactcctct gagctttgta cctaat 1076

<210> 3596
<211> 1386
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127044_G1, chr3:210668234..210669619, Cluster 22

<400> 3596
atatatatat ggatacggac ggtgagatag tttgagtgtt gccacctctc tgttcgtgtg 60

ggctcgtcag ctcgatgttg gccggggaca gacggacagt gaggcaaaac gtaggatctg 120

acgacgggac ttcacataaa gcaggtctag ctagtgccta caatacgctg ttacgcccta 180

cgtactcgta cccggcacag cacaggggac tatagtatag gagagtgtgc gtgtgtggct 240

gtgtgctcac tccactttcg catccttttc ctgtctcagt tgattgatgt gtcccgagac 300

cattggtgcc atgtcgggtc agcttgcttc tcgttcttcg atctccttcc ttgccttcct 360

gccatttttg gggtcaggag gagtcaggac acacgaccgg tgttgattgt tgactgaccg 420

gtgctcgctt ggccatctgc tgaaatttca gcgcatcaaa tgagtgtgtt tcttaccttt 480

taatgctact ctctgtccaa tagcactata tagcagtgga gtaccatttt agctaagagt 540

aaagccttat aatataatat ctatgggcta tgcataattt tgcacagtcc actcgtatag 600

cggcgtttgg tttatacaga ttctagtaaa tctgatattg catcaaatcc aatgtaaaag 660

ggattatcag tttacaggaa gattgtgaga ttctgggctc tgggaacaaa atccaatgta 720

cagtataaac tgtttggtta ataatcagat tctaaaatga gattttgaaa ataagcccta 780

aaaccaaaca caggccctta ttttactcgt caagttttta agctcttgtg aataaactaa 840

cttcgcttct cttcaaaccc ctctcctcta acaccccacc tcagtataca acgcacacat 900

gctgacatgc catgccatgc catgcatccc tttattatac ttgttgtaac gagaaataaa 960

aaaaagaaga tttagcgtgt aaggactaag gaatgcgaaa aaaaagtata aggaatgaga 1020

aagaaacaga tggtcataaa agatactcca tcggtgctta aaaaatgtaa ccttcagttt 1080

attaattaag atatctaata tgacactgta attaaagaag ataggaaaat ggtttcttaa 1140

taaaaaaaaa tcatgtctat gcagaaaaca aataatgcag aaacgtgatt gatagataga 1200

tgagtgagag aagacatatg attggataaa atgatcattc tatataaatt gtctattaaa 1260

aacatcaagc atagtatcta tccaaattaa ataggcatag aaactgctta gaacaaggtt 1320

ggtaatatag cccatagtgg gctttaaacc cttgccatgt catctataac caacaataaa 1380

aatatt 1386

<210> 3597
<211> 1347
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127236_G1, chr3:211677044..211678390, Cluster 22

<400> 3597
tgtattgttg tctgagtgga gggaaaggga actgtagcgg gatgatagtg gtatgaattt 60

cttctcctgt tttagagctc tgctctgtat tgttctttag gtaattcagt tgtcgcttct 120

tttagctaac atgtttcatt cgagtcacca acatctcact ataaggcctc atctcatact 180

tcaagcggtt tttacctgaa attataagac aaaaatatgg ttagcaatct ctagttaggt 240

tagtaggatg ctcaacatct tattgggtgt atgcaatata actacattgt tgcaccttga 300

tgtctatttt tcagagacac tccactacct gatgaacttg gacgtttcat atttcagtaa 360

acatgttacg tgtaagatca tgtgtcttct tattaaatat cttgaaggaa aggaatgggg 420

gtatgtccca ttatataccc gactagcttt tatatagatg tttgtaacaa aaaagaacat 480

atatataaat gtctgctttt gatccatatg cataaatgcc cacatgggat tagaaactag 540

tgatggtatc tatgtcctca gctaccctaa ttcgtatttg tacggtgaca atatctagtt 600

ctcgcatgaa attgcgattt acttggaatc actgcaaata tacatataat catgttgtgt 660

ttattaatgt gaaatttgtg ttgcttcaag ggaattatat gacgtctgat agggcactat 720

tgattctagt atctactaca tttaagtggg attttctcct ttcgtgcgtt gtctcacgca 780

gcgaatgaaa taaaagtcca aaaatgagtg ggttcatatc atcacccttc cccctctcgt 840

ggctaggttc taacaactgg agctcacaac catttatgtt caacaaagaa taaatatggc 900

aaatattctg aatatagaaa tcgtagtaac acgcatacaa ccaactagtt aggcatagaa 960

gtgtcaactt tgatcttcgt gcatcttaca gaggcgatat ccaatgaggg tctggcttcc 1020

tagttctcct ttggtgccga acttgttacc ccagttcctc tacaatctaa atgtcttcct 1080

ccacctcctc cgccttctgc ctcgtggttg tgacgcccat cttaaagaat gggtttaact 1140

gaacgcgacc acaatcaagt gtacaactgt acaagtacaa cttttgcttg aggaaatcat 1200

atacaccgac ttgctattgc aagagctcaa ttcagacaga cttgacaact ttagcaattt 1260

tctctaaaaa ctccaactcc aaccttcata actaaggtac tgtttggcta ggtgtacgtg 1320

aatagatgct tccgtgatct aaaacgt 1347

<210> 3598
<211> 1124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128957_G1, chr3:220032152..220033275, Cluster 22

<400> 3598
ggatgagacg atccctcaaa ttaggttatt tggttctgga ttaagggttg ggacagtact 60

attacaatgt tgtcccctgt tgtcctttaa aattggaggg acgagagaag acgccagaga 120

acgtccctgt cctagctgtc ccgtaaccga acacaccctt aaagcacgga caggatcacg 180

tggcgaggtt tcgtttcaca gccatgttcg tacgtactat gattaactat taactactgg 240

tgcatggttc attagtacta aaatgcacag cattgctttg ctagacctct tgtcggtgtg 300

agaggtaact ttatataccg ttaagcagag cgttatggtt cattgtctga tctgatctcc 360

gtgtaagact ggaaacacaa tatcacacag actaatgaca gcgacctaat aattttgttt 420

gtgaacagat tggtcaggct aggcgccatt agcacgtgaa gtggaccgga ttttgaagcc 480

tccgacgacc ttttgctctg aagacttcaa tttcttgtgc ttcgcatgga gcggacctgc 540

tggaccgtac cttttctcga aaccagccac caagagtcaa ccaatatgcc gaacttcttg 600

cataattttc tcaaaaagag ttattatatg caagattaaa gcataagcag gtccgtatgt 660

attagctagt agtccatcga cccatattgc agaataacca atcttgcaag agtaacctat 720

gactattatt agctagtagt ctatcgaccc gtgtgggaag aattttagaa gacataagca 780

ttagatactg atgtttaata cctacaacca gtagaaaata cttatattag tttatttcta 840

tatttatttt ttattttcaa acatgatggc catatactat gagatctatt tatcaagtta 900

agatgaattt atcgtttact gatttatgtg tttttatcca tacgtatgta tttcattatg 960

cgtttaattg agacgttagc ttaagtcatg gtggttttgg ttgtatccca tgacattatg 1020

aatctaaggt gttgtttggt tcaccaactg taacataaat agtaatggta atgatttaca 1080

gtcgaatgac aactgtaata agtttgaata agccgatatc agtt 1124

<210> 3599
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1314_G1, chr1:6779688..6780733, Cluster 22

<400> 3599
tccctcctcg agatcataac attagcgcaa gctatgttac ttgtcataat aatagtaaat 60

ctattgcata aataatctac atatgttttg tattttatgt cttttaacat tgaataaaat 120

ataagttaga atttgatata ttggtagagt aaataataat gcacatatat atatttagaa 180

ttttttatga ctttagtagt tcaaccgatt atacgaaaaa tttgattgca caatagtttt 240

tatcgttatt gggatacgta tcagttgtgt gataagcatt ctctaaaatt tctaaataat 300

taattgaaaa gttattcgtg taaaaaaact attctccatc ttagtctatt tttttatata 360

ttatccgtac tctgaataac catttttct ttccatcttt aacaagccaa aaaatctgaa 420

atacaaaaaa atctttattt aagatctatt taaagatgct ggtggagtgt acttttttatg 480

aaaacctcta tgctataaat taataatgat ttagagggtc tctaggaatt actctgaata 540

tctatcattt gcaggagcag attagtgtag gagtaggtga aaaactacaa tgttcttgct 600

agaaaaggca tctgacactt tatagacact tgacttgata ggacagttac tctttctcag 660

cttccaggag agcctttggt gtggtcgtgc caggtccgga aagatatcta aacgactaga 720

cccggagttt atggagcctc tgtcgttttt tgtcttttct tctttttat ataaaagttg 780

ttttttatat ttttggttcc acctgctgct gttgtaaaac tgctgcatag tacaatctta 840

gatgaccacc cctacccact tgcacggtgg catggccccg tcgtccgtcc aatcgaccgt 900

cgggccactg caccggccgc acggccttgt ccgtcctatc cgacgtcgcc ggcgagagag 960

gagcactggt agtaggtgtg atgacacttt actgccttct attggcttcc ataaacatat 1020

tacatcagcg agagagagcg agatgt 1046

<210> 3600
<211> 1058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131609_G1, chr4:1998593..1999650, Cluster 22

<400> 3600
ttaggtaaag tcttccagca aatgaacatt aagcatgcag ataaggcagt tccttgtttt 60

cccatgatga aaagggcctg aagatgctac ttgttctttg tttatcaata aaaaaaatac 120

tactactaac ttaccggata ttcattttaa caacatatat gacacaaaac gttcacttac 180

caatcacgat caatcctgga aatatcttac gatcaattag ctataaccta atcactattg 240

ataataataa taataataat ggttattgaa tctattcatt tttcaaaata attatgcact 300

tctgctgtta tgtaaaataa tataaagtta cgtattttat aataataata tttattggat 360

gtattctttt tttctaaata gttatctaat tttggtatta tgtaaaatat gataaactaa 420

ctcatgactc taacatatat gtcgttaaca gtacacatgt tgtgccaaca aggctaagct 480

ataaaataca catgttacat ttcaccctat aaaagataat tccttaacaa ttcatataat 540

agtaatacta ataaattaat tatttaaaac cttgttagta accatagcat atactttata 600

tatatatata gttatgtaat ttaactaaaa tgtttgatat gtctatagtg taaccataac 660

tgcgaatata taataattcc ttaatagaaa aactcatatt catcttgaga agtgtaggag 720

accacaggtg gatacatttt ttggagttta aaaaaacttt agagtaaaaa gtcagttatt 780

aaatattaaa attttcttta ggttagcacc gctaacccta taagagatgt cacttaaaga 840

tatgtggtgc ttgtttcaaa gaattaatgg tgcgtatgct attgtaatac ttaagaacaa 900

actctatgac ccaaaaattt tatattaaaa agtgcaaaaa tgagagtaaa tgaaatatac 960

aataagcata agctagagtt tcaacttaac ttgaggatgg agagaaaaat tatgacagtc 1020

gataagaata caattaaaaa aatcaaaatt tggattca 1058

<210> 3601
<211> 1290
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132212_G1, chr4:4208865..4210154, Cluster 22

<400> 3601
aaggagcgtg cgctggcgag ggctcttacc atggtttcaa gcatccactg cactccctat 60

ctcactaaga gggaggagaa ggagctcaga gtcaaggaat ggagagaagg gagaagaaag 120

ttgcaccgat gtggggaaag aaaggaatta cccctccccc cccccacaca cacaccaaaa 180

actcatattt tctagtttcg caaataaaca acgttgattc atggtcatag gatcaggatc 240

taagggtgtc tatggttcag gctccctttt ggccaatgtg agaaagggtt ttgtggtcta 300

gacccatgtt agggcctagc acgcgagggg acagagaggc ggctaatagg acatcctctg 360

agtgggccaa cttaggataa tttcctttgg gaacaatata aaatagtgct cggtgttatt 420

tattttcatt tttagtaatt ttctttcaaa gaagataatt atacaaatac ttatataagt 480

attgtacatt tttttgttta atacttgctg agaaaagtta agttaagctt actgagtttt 540

atgaattctt tggtaagttt ttcgacgcac ataaaagttt atcctctgtt aaatggaaac 600

catcatggaa gttaatttag ataatattgt tgattttaac actaattcgt ttaaagtttg 660

tttagttcta attatgccca agggtagttt agaattgaag caatttattt tagtattgta 720

catatatatt taatttaaac caatgttcaa ttttccccat gataatgata taatgggaaa 780

tgaaactacg ctatttcagt attgtatact ccgagtagtt ccccgtgatg caatgtgaaa 840

tgaaataaaa ataggaatcg ataaatataa ggaggcaaag aaagcagaaa gcgtcgaacg 900

aaccaatatt attgaccctg tttgttttgg cttttaaccg gtgttcgaga ccctccttga 960

tcgaagatcc tcgtagcatt aacttcattg ttgttttcaa gtccatttta ggtatgacag 1020

gtaattgccg aatgatacat gcatcacatt tgcaaataca aagctatagg cttcgactca 1080

gccgcatgaa cgcgtgacaa agaaaccagc aagggtaggg tgaaaacttc aagacgtgat 1140

caacaagact acgaagagaa aagaggacag tgcccttagc aagtttcata gttcatatgt 1200

atgggactga tggcatagtt gtaatttta tgaggctata cctcgtgact ttttcgacgg 1260

agacgagctg aattgctcta tatctacgaa 1290

<210> 3602
<211> 1066
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132948_G1, chr4:7012603..7013668, Cluster 22

<400> 3602
agctgcaatt tggcaatgtc aaaagttcct ggctactata tgtcagtctc aatggctgcg 60

ccttgtaaat attccccaat ttatggtaat cttgggtgac gtgtggcatg aataactaaa 120

ttaattacat tgtaaactct agcatgaaaa accattacca agatatttga ggaagtccaa 180

tagattgttg agaaccataa catgaactca aactactaaa atactctaaa gaaacatggt 240

ccacatgaac acctattgta aagaatgaac aatactgcac atcacacaat ttactctgat 300

gcaacatgga tttactatga tactacatgc attcgtatcc atatggagtt attcatttca 360

atgtgcactc gtgttttctg gtccacatcg ttggtacaga taatttttg aaagccactt 420

gaaaacaacg ataagcttct tgcgttgctg gatagatttc atatttctct aaatgcagct 480

gcaagagagc aaagagattg agctggttaa acaccaatat gtgtcatctt gctctcgacc 540

tgcatggtca ggaaggagag aaacaactgc atgttccagc acacgacatc gtccccaacc 600

tcccctctgg ccaagaagca gagtgatgga tcagagtcca tagttgagat cgctaggtcg 660

ctcgtgcttc agtcaatacg tatggtttgc catttaggct gtttagcggg aatgtttcat 720

actgattttt tttttctaga atacctgcac atcattttat tataaggtga ggtaactcat 780

caatgtaatt tgtccttcat ttgtggtgca ctgacatatg gtgaagttca agggagctgc 840

aagcttttta ctcagcaata atggatttag caaccgtgac gagagagaaa cagagactgc 900

attgttgaaa tagagggcac agtggactcg agtacaaaac aaagtgatgt acaaaatagt 960

gtctggaagt tgtaaatgaa actcctacag gttcacattt aacatttgta ctagtgtagc 1020

aaagttgaat gatggaagcc ctctcttcct taaaacacaa cactag 1066

<210> 3603
<211> 1095
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133450_G1, chr4:9858844..9859938, Cluster 22

<400> 3603
ttttctgttt ggtttataaa attgtaagaa aaacagaccg atgtctattt aaatgaaggt 60

tttagtgctt gataatcaac actatagttt aagcttatat tattaagaaa atttcatcag 120

tgccatcaaa atctatacca aacccttgta tgtcataaaa aattatgagt tcccttcaat 180

accattaatt tggattttaa gtcccttcaa tgccattacc gtcacttgcg aggaggacat 240

ggcgtacgcc accacggtcg tgctgcaata cagcgtggcg aggtgaagca gtcgacagca 300

gtggtggtca tgagtttgcc aacaatggta aagttgagtg tgtagctccc tacaaagcat 360

taaggaaatc ggtaggccga cactttcagt tggcagacca cagtgacatc ttgtttagct 420

gtaaaccaat tgcacactca aaagaacttt gtcatcttgt ttagctgtaa accaattgca 480

cactcaaaag aactttgtag ggaaataccc aggctactat gttcaggcag catgaactat 540

gttcaagctg ttatattgag taatgttcag acactaggga ctatgctcag gcaactactg 600

tgaaaaaaaa atcagaactt aaccttgtcg acaacaaaac aggatgttca agcaactgtg 660

aaaaaatcgg aacttggaat gtatgttgcc aaaaaagaaa tcagaacatg tttgcttcca 720

gaaggtaaag tttagtcacc ccactttagt caccatgttt gcttctttag gtactaaaag 780

tgactaaagt ttagtcaccc taaaccaaat agcatccata catgagttca agacatacat 840

catacccata catgagttca caaatacccc gattctattt ttggcaatat aagcttcgac 900

aatttcattt tacaaaaacc tcatcttggc agttccattt tcctaaataa ctcggtcctg 960

agcatgccgc gtagtagtca cagggctagg tggttgcgtt gaggaggtga ggtgagaaga 1020

gctgaagggg catatggagg ttaggctatg acgagtgagc ccaatcgaac gaataacggt 1080

ggtaaacagt agcaa 1095

<210> 3604
<211> 1206
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_133576_G1, chr4:10345822..10347027, Cluster 22

<400> 3604
ttatcgtttt aacattagta gcactacata tttctaatat gcaggtacat gtttgacttt 60

ttgatgttct acattactaa tatgtacatt ctgggcaaag tatctgtttc agaaggtaca 120

tattagtaaa tgaaatatgt ttgcgagtct tacaacattt tggcattcat tatttcgttt 180

ttaacgcttt ccatggaatg ttaggttccc atacttgcat ctgaacattg ttcaaataaa 240

ttggtaccaa ctaatttaga aaatttcatg aaattttata tcattgtaat gtacaacatc 300

aaaaagtccc atcaaactct caacaaaaat aaccaaaagt aaaacttgta aagccaaacc 360

cagtcccttg ttttcatttt gaatcagaat caatacatga attaggttgg cacaacaaaa 420

aaggcaccct tttagtcagg aatatttggt catattgagt atacctcata ccaaaagaat 480

gataagtaaa ccacaacaaa aaatggaaaa tcaagtccat taggtgggga agaacttatc 540

atgttgcatg aacaaacctc atggctccac tatatatccg tggttttgaa aaacctcacc 600

atgttgcttg ttaaagcaca tccaacatag ctagtgtcct ttgatggatc atgtaaaaaa 660

actcatctgc aggggaaaca aacagacaga taaacatgtt acaacaggtg gaagaaccac 720

actattccgg tagcatatac aaagaaacca agatagctca aaattaaaaa tatagatcaa 780

tgccaaatta ttctcacaat agtttctaca tatttaatat tatattacct caaagggaag 840

gagtctagtg tcacctagat caagtgtatg cttgagccca ccaccaggcc agtcgaacac 900

atgcaggtgt cttccataaa attcaaaaca tatctagatc cttgatagaa ttactatatc 960

ctgtgaaata gaacgggaga aatttcatgg ttatcctcat aatctaatcg ttttttctat 1020

ctaccaagta ccagcaaagg atacacagct cttctatggg tttgagagaa aaattcgtgt 1080

cagttttttt atgcttgctt agtgcatatt atcatctttg gggaatgtac tttttggatc 1140

agatggctct aaataagatg aggatggatg gagacgtgga atttgagatg aacatatgaa 1200

accagc 1206

<210> 3605
<211> 1211
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134378_G1, chr4:14033376..14034586, Cluster 22

<400> 3605
gtcacacctc aaaatttgta ctattggatg agaacacaaa tagcactaaa taaagtaaat 60

tatctaatag tttcttaaaa aacagatgtc caaagtttag ttatttgtta ccatttttca 120

aataaaaaat aatttataaa aaccataaac ttttttttct ttgggtaagc ctagtttcaa 180

aagcaatttg aagttttaga ttcaaatacc ctttaaattt atcttaaaat aaatattaaa 240

gtacggttga acttggttta gattctcaga atggttcaaa agtatgcata aataatgtta 300

gaaaaatagg ttcaaatggt ttgagaaaat aaataaattt tgaatttaaa atggtttcaa 360

aataattcta aagtgatttt aatatctgat ttaaatattt atgaaagtaa agtttaaaag 420

gtttttaaat tatttttaa aagttcgaaa caaaatagtt taaaccattt tcaaataaaa 480

tttaaaaatg tggatttgaa tgaatttaat ttgttttcaa atatcatagt ttggaagtta 540

acatttcaaa ccgtttaagc aaaattccaa aaccaggcat tcaagattat gaagtgtttc 600

aaaaccaata gtgggtgaaa ccttcttcaa aatcttagct actccatgtg tcgctttatc 660

attattttgg tctgccagtt tttgtctctc ggaccaagcc taatcctcgt cttgggcact 720

ggcctatcaa gctggcccat ccatactgtg tagcagctgt agcggcccat tcgtgtcttt 780

ttgtgaccag gccacaaccc catcttccat gccagcactg catcagcccg tcaccattct 840

ctgtctaatg tcacgacctc atatatatgt cgggccattt tcatcctcac agccctttc 900

ctactttggc cagtgatgaa ttcagctgtc acttggccat attcacctac ctgtgctcca 960

tttagattat cttcagcaca gcagcttaca catctatatt tttatattca aatttcactc 1020

tacaaacagt gtaatctaca atataaaaca gttcaaaaca acattttacg taaccatatg 1080

ggaatcttag accaactgtg gtagttccca aaagaattcc ctaaacaaga aatttagaga 1140

gtttttataa aatctactct tcaactgctt ctgcttctga aatcaatttg ctaaatttac 1200

aatatattaa a 1211

<210> 3606
<211> 1216
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1438_G1, chr1:7493408..7494623, Cluster 22

<400> 3606
gaatcgggct tgtgaactgt ttggaacatg ggaatttttt tccaacgctt ttttcatgtg 60

aaatttgttc atgataacta taagattata aatctagttg aaatctataa acttattata 120

aagtttatta tctttgttcg tcgtcatata aaaaatatat ggtttttca tcgttatcat 180

agctataaac taaattggtg gcaataatcg gtagtgagaa atctacctat taagtcatga 240

actgatagtt atacaaccaa ttatatgata tctgtgtgct gggggtagcg gttgatatga 300

taagatgtat ttttggagta gtggtcgatg ccatgatagt catttttttt ttcaaatgaa 360

caaattcggt gtacatctga ataacacaat gcatgcaggg gtgccttgta tagttgtatg 420

gatggagtac ccatggtgaa gagaagagac atatatgttc gtccagctgg acaggtaaaa 480

gtctccgtta tgacgactca ttaactcgta aagtgacgag agtgctgaat ttatgcgtgt 540

atgcattgat tgaaggtttg gctagattgc tagctaaaac accggggcga ttattgcttt 600

ggtacttgtc tctgggggaa ttaggcaatt gaattccacg ttgttgattt gatcctctcg 660

aaacgtatga ataatgggac tggctttatc acttatctga agtccacgtc aacggagtac 720

cgtctggatt cacggggatt ctaagaatct ggatatatag aggggaggaa aagcagactc 780

aaaatctgaa aatcttatgc aaacatcacc ttatacgatt ctatagaatt ctaaagacag 840

ggactcattc ataattcaag taacatcaga gagacgggtt ttttttatat aaaaaaaaat 900

ccaggatccg gattttagaa ttattcattc aatccaaacg tgccgccata tataagctcg 960

ttggattgga ttgaggtggc gactatatat ttccagcttg tttgaagcca agtactttga 1020

accgtaataa atggaagtgt gaagtggacg taataaatta acgtcgtctg cgctgctggc 1080

catatcttgg tatttcagta gtacagtacg ttatcggtcg cggtccatat taacgcacga 1140

cgatctcgac gtccagaata ctattcgccg ggcccgggtc cgggacgacc gcccaaggtt 1200

atctgctgat taggta 1216

<210> 3607
<211> 1251
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14679_G1, chr1:80862361..80863611, Cluster 22

<400> 3607
tcttaagcat cgcttggtgt ttccaaacca gtcttaaagg gttgtacttt agtaccggta 60

tttgctagat ccggtattat agatatgtct gcacattagt atctgttagt gtattaaaca 120

tgtactaaag gcttgttaac catgtcgaag atagcacatt gatgagacag aggcaaatac 180

cctcatttag cccgctatag cacattatat cccgatatag cccgttattt gcacttttga 240

gaagcacccc gctaaacctc gtagcccgct atttaaaacc atgagtcaaa ctacattaga 300

cgtatatatg ttttatgatt tctagttttg ttaggaacta ggctcaaatt tccagacaag 360

tcttttatgg gccatgatac gtgacttgta tcttgtaatg aggagcccaa gaccattcag 420

gacatgtccg acgtgggcct gctagtgtac tatatctctc ggtaatcgaa acttcagttt 480

tggccgagcc ctttcaattt aggcctagaa tgctctacct tgtctacaat aactctagcc 540

attcagtatt tcagtttagc actcgagtat cgcagtcacc cgatttttt ctatatctac 600

gaaaccagtt cttttactct tctcaacttt taagaaccgt tcatttttgc atccatgtaa 660

ttactgatac gacgctatat cagaggagat aaaatcaaac tatgttaaaa ttgtaaggag 720

gtaaatggaa ctaccaatat ttttgaaaaa aagttcaaaa cttatttaaa tatattttat 780

atggaaagtt aatgcaatta aaaattataa aacctaattt agtcttggaa attcatagaa 840

aatttatttt aactcaaaat gttatgaaat ttgttcattt ttttttctaa agtcataatc 900

tatgttatgc taccaagctt gaaagtgtat agattttatt agactcatta cttttgatct 960

tatttttagt agatgctctt gtatctactt cgataatcga tatgatcatc ttaattacat 1020

agaagcgata ggttcattgt gcctagaaaa aatctaaagt atccatgtta ggcctccttg 1080

gtagccaaga tcccggaagg atccaaaccc attctctggc cccgaaaacc acgggccaaa 1140

ttaccctagg tcaaaaaaat tcatttggtg gcccacgctc ctcagcccaa tccgcagggg 1200

aggacggcac tttcgccttg gtctccgaag gccagaaagg gttttctcgc c 1251

<210> 3608
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_151664_G1, chr4:125487854..125488888, Cluster 22

<400> 3608
taacttggtg aatcacgtgg accttccaca attgcaacaa atttgtccac tactatgtct 60

atctcatttg ggagcatgtt gcccatagca tacagagatg gaaatacaat agcagcaatg 120

acaatcacgc agttccgcaa aggaaaaagg acatgtattg ggttgaacta aaaaagttct 180

caatgcatat agattaagaa tataggtgaa agaatgggct ctaaagaata tggtggtact 240

attttagagt cataagaaga aaatttagaa gtttcttgag tatatgggca ttattaggag 300

gtgttcatac aatacaagca attgaaagat gggcactatg tttctatgaa gaaaaacaat 360

aatgtgttca aatgaaagtt ttcatatgat tgaccctagt ggttacaaaa accttgtgga 420

aaaaacacaa aaatggtatt ataccaatgg ggaagcatct tgaaatatgg tagcttatgt 480

tttaatgaaa gaatatgagt tgaaatactt gatgtttcca tcgatgagtc ctcaaaagtg 540

agttcatacc taatagggaa aatgataatc tcactattgc tctttagaat cccgagcacc 600

ctagccaaac aagagggtaa ggcattttgc ttggaagtat ggatttgcta tgaacattga 660

cacatataag aaccaacata gaagtaagga caaggaggaa gaaagtgtgc ataacttgga 720

atgtcgacca gctcaaactg aaacatctcg catgttgttt attaataata cttcatatgt 780

aagcaattgc caatttaact tagcaattgc caaactttct agtatgtata gacttgcaca 840

tctcgcatgt tgtttattaa taatacttca taacctttt ccttttagta ttacccacaa 900

ggacaaggaa ataatttttt ataataattt aagaataact tataggattt ttataaacaa 960

atataatggc attcgtagta gtagttattt gtatatttat tttataagaa tttttcaaat 1020

aaaaagggta cggca 1035

<210> 3609
<211> 1209
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_154824_G1, chr4:145728456..145729664, Cluster 22

<400> 3609
tgtttttccc atatatgacc cctgcaggaa tatctcgtca atatttttt ttgtttttcc 60

catatatgac ccctgcagga atattcttct taaattccat tcagtattga ccattaggac 120

agcataaagt ttaactgtac attttccaat taaatcttaa attctaataa atgtattttt 180

gtagtttttc ccatatatga cctctgcagg aatattcttc ttaaattcca ttcagtattg 240

accattacga cagcataaag tttaactgta cattttccaa ttaaatctta aattctaata 300

aatgtatttt tgtagttttt tcccatatat gacctctgca ggaatattct tcttaaattc 360

cattcagtat tgaccattac gacagcataa agtttaactg tacattttcc aattaaatct 420

taaattctga taaatgtatt tttgtagttt tttcccatat atgacctctg caggaatatt 480

cttcttaaat tccattcagt attgaccatt aggacatcat aaagtttaac tgtacatttt 540

ccaattaaat cttaaattct aataaattta tttttgtaat tttttcccat atatgacctc 600

tgcaggaata ttgtccttaa attccattca gtattgacca ttagatcagc ataaagttta 660

actgtacatt tttcaattaa atcttaaatt ctaataaatg tggaccatta gatcttttta 720

attaaatttg ttcacgctct tttttctgat taattccgta atttttagac cctttcggtg 780

agcgtggagt tttttttaa ctttgttgta gtaatatagt acatagattg acgagctata 840

acatggtttt ttcctgcaac ctgtacagat ttgtattcca gatgttttat tgatgataac 900

atatcagtct gtagtgattt ggtaagacat tagcgaatgg tcaaagcata cttgaaagac 960

tttttaaaat cctaatacga agttcctgac agatacatca agctgcaaag agaccattag 1020

atcagcatat tcttcttaaa ttccattcag tattgaccat tagatcagca taaagtttaa 1080

ctgtacattt ttcaattaaa tcttaaattc taataaatgt ggaccattag atctttttaa 1140

ttaaatttgt tcacgctctt ttttctgatt aattccgtaa tttttagacc ctttcggtga 1200

gcgtggagt 1209

<210> 3610
<211> 1063
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157922_G1, chr4:162346687..162347749, Cluster 22

<400> 3610
gtttagttca tcgaccttaa ttttatttca tgaaggattg gagtcttttt ttcattggtc 60

ttattatttt tttatatatt ttctgtacag cgagtttgat tcagaaaact tgaatccaaa 120

catgaaccta catcgaagca actacatatt atgtgtcgtg aagaaatatg aggggttaca 180

aattccatag ccgacaaaaa ttagcttttt tccgtcggcc ttttctaatc gacgaaatta 240

accacttttc atcggctgct cacaaaaaat agatactatt catctataca tttacatgag 300

ttaaatgatg acagaattag actatgccca cagaaatttg ttatttttac aagtgacacg 360

tagtttcgtt aatctttatc cgacaaaagt tatttatatt attgttgggg acttgtggtt 420

gtaggagcgg ccacggaagg cggcaatgga atgtgaaaat aattgtacca gagccggggc 480

aggtcttggt gtatgtttag gttagaaaat ctactagaaa tcatctagga aattctattt 540

tattcaacgg tcataacaaa agcatgctta ttgtcatggc cataaatttg tcaacaaata 600

ggagtatcta gtagcaagca tatataatgt tgtttttttt cctttcctaa attaattgac 660

ctcgacgtga gtggtcggaa cacaaacacg agaagaaagg ctgggacaga gcggaaagct 720

aataaaatgg tgttcacgtg aaaaataaac aaggtaacct attctacata agaaattaat 780

cgaatccgtc gctgttggta tctcgtggaa atggctacct gactgacaga cgcacgttat 840

ctgcccctgc gccgctagct ctccgctcgt gacgtcgtct tcgagacttt aaagatggta 900

cggtaataag tagtggacat gcatccattt acatgtcaaa ctaaggtgcc gtttggttcc 960

taaaatgtaa cgtaaatggt aacggtaata gtttgtattc gattactagc ggtaacaagt 1020

ttgaataggc tagtatcaat tactagtgtg gtatccgatt acg 1063

<210> 3611
<211> 1180
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159841_G1, chr4:174046875..174048054, Cluster 22

<400> 3611
attaggttaa ttgatttatg ccgaaattgt gatggttaaa atagattttt ttaaaaaaaa 60

ttctaaagat ccaaatggcc ggcgtcccaa cagaaacatg acacaaaaag atggaagcaa 120

tgtcgatcct ccaaacagaa cgaagatacg ttgtgcgtca cgcatcatat tggagtaggt 180

agttcctcca tttgtgtcgg tggattaagc acagaaaaaa aaagatacca cattttggca 240

ggtacatggt tactgactcc aaattttgtt ttgttgaagc aacaagttgc catcttgaca 300

agattcaaaa cacatgacga agtgttcttt tctagtgggg gccgggcttt aatacattcc 360

ttcagcatgg gtggcctggc ccccagtata cataggtaca gtatctggct aagtagccgg 420

ggggaaaaat acagtccatt ataataacaa ggcacgagag ccacaccaaa taatagaaaa 480

ttttctcaca gagaatcgtg atcggggcca ttggcatctt tagacaggag gacaccagcg 540

acattggtac aatacctggc taaagagcat cgggaaaaaa aatataatcc attatatata 600

tataacaagg cacgagaggc acacccaata ataaaataat gaagatcagt catgaagaca 660

gcaatgcatg caccctacca ttacaaatta tagtagtaca gtgcattttt gattcgctgc 720

ggaaagaagg aacttcagcg ttttttgat caatcgtgta ttattgtagg caggaaatag 780

agttggcact ttggtcaggc catcatttga agtgagctat ggcacaatct tttgctatcc 840

tccatctgtt ataaaaaaga atatatttct ctttcaatga atcaaatagt ccaagtgctt 900

gtttagaagt aaatttttt tatagttttt aggtaataca atgatttaat gataccatag 960

tattttatgc cataagatgt ttgtttacaa tcctgaaaga tatgttttta aaaccattgt 1020

attttagata ccatggtatt ttttttgag tattgaaaac ttcactccaa cccaaagttt 1080

ttatggcatt gctagctttt acctaataac atggtttaca atgttgtatc caaacaatat 1140

ttctcaaaac catgatattt gtggagctgg ttaaaaaaag 1180

<210> 3612
<211> 1337
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160576_G1, chr4:178508665..178510001, Cluster 22

<400> 3612
tttatatttg caaaaaaaaa gttatataag cacctattga agttgtttat tgcttgcgcc 60

caaaattaga tcctttactg ttttggctta tcattattag tactttacat tgcgctgtaa 120

agcttatttg aatatgcatc gtgttgcaca acatcttagt gctttgttag atttgagttg 180

cacaacatca tattcattta tgggtagcca tcatcttttg cattcggatt gttagaatca 240

ttgactaagt tggaagtcat ctcttcatcc tagctaccga accgcttacc gcacttgatc 300

accatggcca ccactcctag gaatttttca ccaagggtct cacggaatag tcaccaccat 360

ccccacctat cttccctaac attccccaaa agcccaattt gtaatataga atctaggcta 420

ctgcaacgtt ctactactat atcaccacta tgtatatact ttcagaagtg tcacttttct 480

gtttctgtat ctataataac acttctttga ctatgtatgt gtgtcgagtc aactataaat 540

atattgttga aaggcttgcg cgaagcgcga tcaagttact agtactgtaa tacatttttt 600

tgctggttaa agataaagag cgcataaaat ataaaaatgt tatataatat tttaaaaata 660

tttataaaca tttttatttt aatgattatt taaatagtga tttcgagagt aatttaagaa 720

aagatggcac cagattaaat ctgaaaggca acggatctcg gcaacagttt ttaggagcac 780

ctgtgggctg tggctatgtc tcgctgctca ccaagttctt attgtgttcg tgtgtatgta 840

tcattctgca taatataatt attaaggatg aatgcagaga atcatataac atagacgatt 900

ataggatagt caagtcctcc attgtcgccc ccaaccatta ttccggaaac accgagagtt 960

tctgcaacca ttttgcaatg tgagatcgta atctatgcta gcccggtaca tgaccaacat 1020

gaagcatatt tgtgatatcc atgaccaaca tgaagcatgt ttgtgatatc cgtcaaaaga 1080

attatatttt atgtttatga attttgtaat ctttatttt agtaatatac ttttattaat 1140

tttatgaatc atgtaaattt tatttttaac taatgtaatt taatctgttt tacgaattaa 1200

gtatatttat ataaatctgt aaaggaaaaa ttgacatgat gatgatttga tcatcgattg 1260

atagtaaaga tttggcaaag tggagtgata aataaaagct agcgattgtg gatggtagga 1320

tccttggacc gagccta 1337

<210> 3613
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161541_G1, chr4:185331493..185332623, Cluster 22

<400> 3613
gtaaaaacat acatattaca atattacagt aaaatttttct tataaaatgt ttagatacaa 60

ttagacgatg gatatatcgt ggcctccaac tcttcaatat tttgttgttg aaatattatg 120

tcgtaaactg ataacctaac tactaaatat atacccagga tcgagaccct atatacttgg 180

aggtctgggg cgaaccaacc ccacccttag gatgggtcca acatatctct ggcccattcc 240

ccacaatagg tgtacgaatg gggtagccac tccaatggtg ccccctcgcg agcgggtggg 300

cgccttctca ccctatgtac gaggaaatct gatatttcca catttcgcta aacaatgctt 360

tatttgtgaa attatttttt tctctttaat taccttaaaa caatgtgtat tatggtacta 420

taaatatgat agtattttta aaactctaaa attgatgtaa aaagttaaat agcgcaatta 480

aaaaataaag ggaagctaaa cagagggagc tattgaagaa gaaataaaat aggagggaaa 540

atagttgagg tatttaaata taactataaa gtacgaatgt gtggatttga gaaggagaat 600

ggtagagaag gtcttagagc cgccactggg tttactccca cctcctccct cttaaaaaaa 660

acaaaaaagg tgtttcctac ttacccaaaa actttggctt ttatcgggct atacatatac 720

acacaggaac tctataattt acttaaattt tagagaatat aaaaatagtt cattaatatg 780

atggctttaa attcttctaa gtttatgtat atatctatat ttctatatat atatatttgc 840

agtacctcta atacatattt gttaattagt aattaccaag gggtgtactg agtactgacg 900

tgggcgctgt atcaatctga gccggcccat gttgtccaca gtgagtcatc cacacggccc 960

acgaagcaat tccaactcaa cggctgcggg ctgccactgc cagacacaag ggctggttga 1020

cccaggctgg gctctcggcc caacacgtgc taatgttagg attaagcaat ggactgtgat 1080

caattttgta ctagttatta tgttgcgtag ccacggcctg ttaagtaccc t 1131

<210> 3614
<211> 1191
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162197_G1, chr4:188677617..188678807, Cluster 22

<400> 3614
ctctctctag tgcgcactat ccatcgcagg cgcttgaaat ttctgcagca tgcatgcatg 60

cagctgcgac ggcaacatat aatatgtata aatactatac acggatggat ggactttgtt 120

atcacgatca actttcttta aagtgagacg cactgaacct ggtcaccagt cgaattatta 180

cctactatag ctagaagact agcttagacc ccgttgcact ttacctgtct taaagtttta 240

tcttagctag ctaaattata gttgaaagtg ttaattagct agctgaagtt tatctatagc 300

tagcaccagt agtgtgtttg gtttccagct agataatata tatagaccag ccaataatat 360

atataatctt gtatttttt agaaacactg agcagacagt gataaaaaga tctccagttt 420

ttatatagtc gtcctactct ctctcggcta aaaacaactt acacaaatat ttatacaact 480

ttcttagcac ttaaattaaa cgtggacaca taacttcatt acacaaatta acatttctcg 540

gaactttatg tgggtccaca tataaagtcc tcggaaaatt ctacaaatat ttgtgtaagt 600

tattgtagct cggaggaggg ctatgtaaaa attatagatc gttttattgt tgttttgcta 660

agtgtttata aaaaaagcaa atataaattg atttagttag ttattagcta gaagaaatgc 720

cactaaactt actcaataaa atcaaccaga attttagttg ttcagtaata gtattagtta 780

tttccaataa aagttttagc ctcagaagat aagaaatgat tttgagacaa aaaaattaag 840

ctttttcatg tagtttttat ttttagtaat taagctgcta aacctaaaat tcaagaaaca 900

ttaggtcaaa tataatacct cattacaaac ttatgtgcaa aattatataa agtttggata 960

cagttaagtc acaaaactga aatagacaaa attggtgcca cggtagcaat gccacactag 1020

tagccaatta atacattagc agcaaatgtt aaagccaagt ggcaatgcca catcagcaag 1080

gccattcact ataactgtat taggggggtta tttgctcagt tttaaaaagt tgtggagggt 1140

tatatcggga gaggaagttg actgaaagtt ctacataacc ccctttcctt t 1191

<210> 3615
<211> 1228
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162689_G1, chr4:190618258..190619485, Cluster 22

<400> 3615
catgaataaa gtaaattatt aaccaaatca aaaatcagtc gaagcaaaat gctagaatag 60

gcatggatta ctctttttcc tgcaaactaa aagagtgtca attttacata ataggacgcc 120

cctttcataa gtcgtcatag ttacgtgtcc gtgcgttgca acgacgtaca aatacaaaat 180

attcaacggt tgcgcagggc aacatcaatt attcagttta ttgagaagtg caatagcaca 240

ccacctccga aaggtacaat atttatttat tctggcaact ttttattatc tatgtacttt 300

atgtgaggaa caaacacagc ttctaccttt ataaaaggta tacttttagt cacttttagc 360

tcctaaggcg aacctaaaat ttagttagtt tgtttagctc ctggatccaa acatgccttc 420

agcaagctca tcttctttta gaatgttgtt tctagccaaa atcaataaat gcgagtggat 480

tgtttgaatt tgtagacaat gacaacacag atacacaaaa attaaagagc tccttttcta 540

ataacaaact tgatgtagca aagttaacca gtatagtact tcaggtggtt aagatcatac 600

ctactgttgc caaactggat tgtgtccttt taaaataact cataatagtg tcgaggctca 660

atgcgatttc cttgcaaaaa cgatgaaatt cacataacag aagagtcaaa acatgagtag 720

tagatctgac agattaacac acatattgct agaaacctta cattgatgaa agttccatgt 780

gtactatcaa caaccattag ataaggccta tcaaacaaga tggtatgata aattgttact 840

gatataatga aatcgagaag gcattactta tatcccagag aagagatcaa gtaaacaaat 900

gcaaaaaaag aaccatgcag aaacattaaa aggatatcca agtaatacta actatctgat 960

acccgctaaa tgattcctat gtaaatgtgt ttcattctct tgtaaaaaga acccacaaac 1020

ccacaaaaag aacccacaaa tccaagagaa tgtaaatgat tccttttata tatccaatga 1080

aaaagaacca tgtagaaaca ttaaaaggat atccaagtaa tactaacatt aaaatggaag 1140

catgactact gtaaatgtgt ttcattctct tggattttcc ttgtgtccta ccgctgcaaa 1200

catgtgggag tgctttcgaa gaatgtgt 1228

<210> 3616
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_163451_G1, chr4:194218959..194220122, Cluster 22

<400> 3616
actttaacga aagaaatttc atgggctcca tatggacatt aaagcctctt gaagctccta 60

aactaggaac tagagcttca agttactatc ttagcatgtt tatgactact gacccactat 120

acataaatac atatgcaata catcatcttc atattaatat aaaccaaaca aagcatatca 180

ttgcttctga tgagcacaac ttcatacttc cgtaaaataa cgaagtcatg agagatgctt 240

tatgtagcaa aaaacttgaa tgccaagatt acttagagca ttttaagtgc tacataatag 300

ggaagctata gccttgactt accagtgagc atgttcaatc taaattcact tttgatgagt 360

aaaatgcata gtgatcaaac ttgggacatt cacaccatca acacttgcga gctagttatg 420

catttaaatc aagctatgta caagttatgt cgcctatagc tagaactgaa aaatgagaaa 480

actagcctat tggattcaat ctatgggtag taatttgatg aaacattgat atgtgctgct 540

gtatactttg cccacataga gatcttactc tgactatgca gcatatgtag tatatgcata 600

atatatgtag catatgcatt atgtgtagag tatatgcagc atatgtagta tgcattctac 660

acaaaagatg caacctttgt tcaaattaaa atgaacaagt agcgtctagt tgatagcaag 720

taaattgtta tattgtagaa cttgaaagga atattagata cataggaatc aaggaactta 780

ctaaagcata tgcagtatga actccctcct tatagtcctg aaagtgcgaa aagcaaggtt 840

atcttatttg ggacattcac aaacacactc gctgctttga caagctcagt atcggtaaac 900

tccaacctag ttagctcagc tatatatttt tgttgtaggg cttgcattgg attctcatgt 960

gcagcttcct cttggagctt agtttcacgc tccataattc caaacatttt tccaaagtga 1020

tttgaagcat tcttaagatc accatgaaat ccacctacca tatccaaaaa tgggtcactt 1080

aacttgctaa cttcatttcc tttgtctcgc ttccttatct tggggcttga tgaagtagaa 1140

tcaagtgagt tcctctatga agcc 1164

<210> 3617
<211> 1186
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164332_G1, chr4:198850196..198851381, Cluster 22

<400> 3617
ttctctttct cgctcaacga gaggttcttt ataggaagat gagattggtt gtcctgtgaa 60

ccatctacag tcgtgacctg ggaaaagaac aatcaacaac tcagtgaatt gcaatcaaga 120

ttaaggtttg tcaatgagtg tatataatat tgctgccatg ccatgccacg aaaaatactg 180

aaaggtgcta ccaatgatga catagcaact gcaaaatagc atatgcaact attatatgca 240

taactgcttg tatatttgta actgttatga gccataccag gcacatgacc gtttagtaca 300

tgttgataca agactggtaa atacaagaaa actagcaact attatatgct taactacttg 360

tatattgtaa ctattatgag ctacaccagg cacatgacca tttagtacat gttgatataa 420

gacagtgtgt ggtaaataca ggaaaaccaa caaatcctgt tcccagaatt actgtgcagc 480

aaacctggtt ttcaagttgg acattgagag catcaatact ggttatgctc ccatcgtttc 540

cagcttcccg aataattgct tctaactacc acaggaacaa tttgttacat caatacatga 600

gaagtcaaca cagcatatat aatgtcacta tacgaaggaa gctatcacat actagtccct 660

tgtagaatgc aatctgggac acataatact ttgttccgag ctgtgattct ttgtcagcaa 720

cattattacc actccgtagt acaccattcc atcatattga ttgatgaatg cttgcaactc 780

aaagctcaca aatgcgagtt ctttgttgat gttccaaagc gtatcattga acagttgttg 840

atcattggct gcaagccata tatgaaataa ttcaaataag tggttggagg ctagacattt 900

gacaaaatga atagttgttg atcattggtg cttgatatat gattcagctg gccaataagg 960

tttataagtg aaaataattc caacccaatg tacaatgaaa gccattattt cagacaaaca 1020

gataatgcgg gtttgaaatg caagtgtaat ttccagtaaa ttcattgaaa tgattgtgat 1080

cggtttggct catcagcaaa tgagcagtca aatttcctta gttatatctt cgatttttt 1140

cttaagatag tgataccttt gatgagaaag taagtgcagc tacttc 1186

<210> 3618
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164416_G1, chr4:199285230..199286275, Cluster 22

<400> 3618
gggctaaaag gatcccgaat gttcgctact tgtccatgga ggtggtggtc gagctggcgg 60

atgcagagcg aggctcctcg tttgggcgga gtggggctcc tcatcgatgc ggggtcggcg 120

aggctcttca tcgggtttca atttagcaaa ctggtgtctg atttattcct atgtggtttg 180

tctgttctgt atttgtatgt tgtaaacatg tcttctcgca aaaaatactt atttctagag 240

ctactagcaa ggtgctcata cgttgctacg atttttattt atgcttgagg atagaattta 300

aaacataagg acagtcaaca atcatggatt caatctctat ttatgtattt accatttaaa 360

tataggggca caaacacagg tgctttatat agtaaagatt aattgccctg attcaaatcc 420

ttatttatgc atacttttag atttttatta tttaaatatg agagagggtg gtcgttaaat 480

tatggaaact ggtgttttat atagtagaaa gttataatct tctagtcaaa catcttaaaa 540

actcccgagt agctactcct tcatggattt tggagtagat ttgcttctgg gagttttgga 600

gccaagttga ttctgggtgg ggtggagcta atgctaaaca cgcccttaaa aatatgttct 660

tttgtttcgc gtctttttt cgtcgctaga cctcctcgcg ctcgttgttc tcggtcgtgc 720

accgtacccg ccactgctcc acgctcaccc catcccgatc gatcacaccc tactctgtag 780

atgtgtgcat gagagggtat acataaatag atagcaatca atagtctata aaaatttctc 840

tataaaaact acaatactaa aggaaagatt gaataataga aaatgaagtc ttaatagtaa 900

ctaatttcgc actggctcta tttcactcga aacaagccac ttcatgattt tataattcta 960

gtagcttgac ttgtagtcta tttgtacaac aacaaacaaa ttacaaatac aatttagcta 1020

aactagagag gtaagtaaat tacaga 1046

<210> 3619
<211> 1381
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1651_G1, chr1:8454255..8455635, Cluster 22

<400> 3619
atgtaggttt ttgcgtgccc gggaagcgcc agaactgaag cccaacatta ctattcgcaa 60

cagcaaatga cacatacctg aaaatcacat cgatcaaaac aggaaccaag ttgaatttaa 120

cgaattcaaa gataagaata tgacttgtgc tcaagccact agtgactcta ctcacacgag 180

ttgatactac ctacgtgaag tcgccgacca ccatcaatac aaataaacga acggtgaata 240

tgttctttgg tcgtcttttc acgtaaggga cacccgtagg aggtaatggt tggagttatg 300

ggagtagtca ccgtaacctt cattagctag cctcgccacg ctatgccacg actcacctcc 360

ggggcaatga cacacacgtg tggagcatcc ttggcccgtc tcatattctc aatatgtcaa 420

catatatagt ctgtcttttt aaaccgagtc aacaaacagt caaaatacct cattattaca 480

ttgcacaaag catttaatat cggtctatat tttatttgat ttaattaaat aaaatatatg 540

ccaaacctat atatagagat atagatagag atatagcttt tatcactttc ttttttatta 600

tagaatagaa gagatatata gatagagata gagtttttat ctattcattt attcatgttt 660

tttgtgtacg ttctttctgg cccttctttc aatgtccgaa tttctaactt ggatcaactg 720

ggcgtttcaa tcatcttttt tttcttgttt tatttaaata aaagatgtct tgatttgttc 780

tttggaagct atgctacaga cggaaagggg gatgctatat cctagacgcc tgaaaaaaat 840

gaaaaaaaaa accctgacga attctcatgc gcttgctgtc tagtctccgt gagaaagtag 900

caatgatttc aaatgcaatc aaacgcatag gagttggtta ccaaaaaaaa agaagcacat 960

aggagtctct tgagatccga actagtcaaa ctgcagcagt gcagctcttt ccatcgcaca 1020

aggcagcaaa gcagatcatc cggcccagtc cgcccacagc ttcagcccat acatttcggg 1080

cccgaccgcg acactcggtt ctggcccaag ctgcgcggtc aaagttaggc gccacgtggt 1140

ccaccgattt ggccgcggga gacggcgtgg gcccgatccc caacgagcag tcagttgggc 1200

tatcaaacaa taattctgaa atcaggctcg gtcacctaag agagcgaggc tccggaaatc 1260

aggctcggtt cggacttttg aacagctaca ataaatctaa tttagagcat aaactgtata 1320

ttttatatat aaaataaaaa atatgtacca aaaattcagg aacatatttt aaactatatc 1380

t 1381

<210> 3620
<211> 1273
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16738_G1, chr1:92874037..92875309, Cluster 22

<400> 3620
agaggttttt aggggtccac aagggttttt ctgctaagta ttttctttaa aattagaaaa 60

cttgttgtat ttcatatgtc agaaatatgg tatttttcag gtaacgatct tcaccattga 120

ttcatgagca tgtaaagttg agattcattt taatgcagat aagcaaatga gtggatacaa 180

tatcattgaa gacaatatat aaatcaaaca cttgaccatt aggaaaagtg aacaaataaa 240

aggtcttaca acaagctcat gaaacaaaga aagagataaa gaaaataata taaattacat 300

ataagctttt ttccattgat taatttgaga atcataagct ttctttgctc taaaaataac 360

tcaagcaaag tccatcttga aattcatttt gccatattga atggaaagtt gaacttgtcg 420

caatattgca tcatttcata ccgaccaaat agcctaacac atagatatga ccacttccat 480

aaagaaagga acccaaaact gattgctgaa agaaagaatg gcttccaaag gtcaacaaga 540

gtacagtagg gatggttaat cccaaattgg ctagcaggct atagcaaatg ggcattctag 600

gcaaagatga ataatacttt cttctgtcga caagttgcaa aacataatta taatcctcca 660

taaccatatt ttcagtttca gtaaattcct tatgccgaga cagtccttga gtaaaagcca 720

gaaaaaggcc tttcattttt ttgacagata tgctcagtgg acttgtctat ggccaatcaa 780

atgagcataa ggcttttgaa acaaaaaata gaagaattcc atatataagt cagaggtcag 840

tcttctacca agtgtaaaat gccaactatc atggttagag tctaaaactg atggaaggtt 900

tcaaccaata aaggtaaatg taagaggtta tgcggagact gagcttgaca tgttcgcttg 960

actgttggat ttttagatgg ggcatgttta ttccattcct tgcagcaaac ccaattatta 1020

tcatgcttca tttttacttc taactataaa atcagatgtt ttagctcgtc taactactaa 1080

atccctgttt gttttagttt attgtgagct tttgcacctc agctttggga ctcgagcatt 1140

aaaaggcttt cagaagccaa atgtataccc ttaaaatagt attaaagtat caagtagttc 1200

ttggagaaat aaaattagag tttattttaa tcgatgtttt atttgtgaga catgtttcct 1260

ttgaataaat att 1273

<210> 3621
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_168857_G1, chr4:223211262..223212392, Cluster 22

<400> 3621
tattactgga gtgtttgtgt tgttagtctt ctttaaacca tgtgcatcta gcgtgatgca 60

aaaatcaagg gtttttttgt tgtcaagaga gttgtgactt atgattatct tgatgcaata 120

aattttcttt tataaaaaaa tgttccttag ttttttttcc tccttgatgg gtcttcgtat 180

tagtgttttg tatcggtcaa ttttttttcta cattttttcca tcttaatata agtataagca 240

atcctcgttc gcgttcgaga gaaaaaaaag caaaggacag ccagtattgt ggcactagca 300

gtggacagcc gcaaattgga agatgggtgc tgaagctgca agacaattcg tgctaggggc 360

tctcacctct acagctgaag aacattcgta cttgaacacg aaggccctca tgccatatcg 420

tattgttcag cttgtctgtt catctcattt gctaggagtt ggagaccgca gtagtgcagc 480

gcgctggtgt tgtaacagta cagctgtcat gttttgggtt acactacaac ttcatgttgg 540

ttggactcat caacgaaaat ggaggctagt gccagcatat gttagactga agctgtagga 600

ccacgtgcaa acactaagct gcctcaacaa ttctgtaatc ttgtacagta acatctgatc 660

aacgatcaat tgtgcaggaa accaagacat cgacaccagg aagcgttgat gcatcaaaga 720

tcacaccact tcttataaat taagtaaagc atgtacatgc acaggatagg ttatgactgg 780

taagctgatc actgggtcat ttaatttttt tttttctaca aagttccagc agctacttaa 840

atgcctcaat tgccctaaat gcgctcttaa ttgaattcag tttctccaca tcagcagaca 900

ctcggtcttc aggtccaaga gagaggttgc ttctttttag cttaacgagt gagacaagac 960

ctttattccc ttgtagtatt tccttgcact ttatcactta tcagctccaa aaaagagggc 1020

aaaatctctt tcccccgaca cgacatgagg gcacattttt tcaaagaaaa atgtgaaatg 1080

attgatacta tgattagcct gtagtcacca aggtacaaac aactcatttc a 1131

<210> 3622
<211> 1195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173208_G1, chr5:4756285..4757479, Cluster 22

<400> 3622
cacacacggt ctttgtcaag caaaatacgt gctctctttc aacttgtaac attcaaccct 60

ctgtttcgat atggatccaa tgtggtgtcc taactttgat acctccacaa catcttaaga 120

cccctcctgc tctaggacat gtcttctttg ataatctttc tctagtacat catcagcggg 180

aggatgttct tgctcatccc cgtccactta atctacaacc tctatttcta tatcccctcc 240

gtatccatat gatcatcggt tgatgtccat cctcctacca ctacgtctcc taccatcgac 300

acacattctc atatcactaa agtccctacc attgatgctc cttcttcgta gcatttttct 360

tatcaatacc ctcatccata cgcgtacaat tatccacatg acgatcctcc ttgtagatct 420

tatggtgctc ctccatatac taccccatat atatggtgct cttcctttag tttatttcct 480

gtatggtgct cctccccata tgatgctcat cttcctttac gttctcctaa aggcaaggta 540

gtgcccctaa gtagccacaa acgatatatt gtgcactgcg ccactgttga gttccaacaa 600

caaaatgaat taagaggagg acaaagaata gtaattagac atattttatg acttcgatac 660

aatttttagg tcaatggaag ttctttgagt tcataaattt ataggtttcg cgtaactact 720

gcactccata aaccctgcta aaggcaacat caagaaggga tgggtccttc taggtccaaa 780

tatccgctac acaaaacttc tctcctatac tatgccacta ccaaaggtat aacccacaat 840

atgactctaa gaacatgata agaatggggt tgttgagctt agcaattgaa atccgagttt 900

aatgtagcct ctccccttta atgcactata aaagggagaa aagtaacagc taggggcatt 960

ggaggatatc attccatgat atgatatgat cccaggttga acacacccaa gctaaccaca 1020

acatactctt gtgcataagg ttgtgtagta ggaccattag actataactt ccaccataag 1080

gttatgcaca acgaaccatg catacagtca tgcaaaacat tggtttgtac tgtatattgt 1140

actatttata gagtaaagtt caaaatgaga gatgggatgg agatagccaa accaa 1195

<210> 3623
<211> 1131
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_178230_G1, chr5:31952801..31953931, Cluster 22

<220>
<221> modified_base
<222> (477)..(477)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (477)..(576)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (478)..(478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (479)..(479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (480)..(480)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (481)..(481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (482)..(482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (490)..(490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (491)..(491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (492)..(492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (493)..(493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (494)..(494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (495)..(495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (503)..(503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (552)..(552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (553)..(553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (554)..(554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (555)..(555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (556)..(556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (557)..(557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (558)..(558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (559)..(559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (561)..(561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (562)..(562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (563)..(563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (564)..(564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (565)..(565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (566)..(566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (567)..(567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (568)..(568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (569)..(569)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (570)..(570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (571)..(571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (572)..(572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (573)..(573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (574)..(574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<400> 3623
atgatacgtg tccacctgct aatgattata cggcttgcag atttcacctt ttttttctc 60

ttcaacatat cgtgctctgg gtagaaaaaa acgatggatc attgatcgcg aatggaaaaa 120

agactctaga gctacttttc tatatatagc cggctgtaga gaatttttta catacatccg 180

ctgtgtcgta ctgtcattgt catctataaa ctactagtcc aataatcgaa cttgtgacaa 240

catataatca tatttgatac ttataaaaaa taaatttaat atcaaaacga atacatggtt 300

tatatatcag atattaattt gacaaaaata tcttaatcaa atggtcaaga aatgtataag 360

ttgaaaagga gtccgttctc cttcagctaa cgagatgata ttatacgagg agcgttgttg 420

ttaacatttg ctatcataag taggctagct gggtttgtca cggctccata tataaannnn 480

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnncaac tgattgggag ctagatccaa 600

gacataaaaa aaacacaagt gccaaaggaa actttgagac acgaacacca ggaggatcgt 660

acactagccc accaagctag cacctcgatt cgtccctgct atgggcaatg tgcgggactc 720

ctgggtaaat ggagaggttc acagagttgc tactgtcaaa ctcctctcac ggaagtgaca 780

ctggaaaaat caaattatag ggtcgttaca ttcaacggac cagtcatcaa ggtctacata 840

ttaggttatc atacaataga cataattaaa aagctttacc tcacatatcg attacttcaa 900

acaaaatagg aaatataagg tataggatga agccttaatc tgggtatgat ttttaataaa 960

tcattcaagt ttcattgtcg cagggtggac ataatcatcg caaaagtagc gggaaagcag 1020

tcacgagaaa aatgcgtttt ccacacacac gcttggatga gtgacatgac caatgactag 1080

gtttctgggc gcacctgcaa ctgcaacttc aggacttgac ttgtatgtac a 1131

<210> 3624
<211> 1228
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_179731_G1, chr5:39942440..39943667, Cluster 22

<400> 3624
aaaactgttg tatattcgta ctctgttcgt tgtacttgac agtgttaagt ctttacatgt 60

ttttataaca attcaaatta ttttcacaac aattcaaaat attatgacaa caatttaaat 120

tattttcaat attctaaaat tattttaaaa aagtttagaa ttttgaaaat aattcaaatt 180

attgcaaaat aatttgaatt atcatatgta aagtctaaaa ataggggcaa aactatagtt 240

acacttaaaa atagaggtac tgacgcaatt gttccttgtc tatttcttaa gacttaacat 300

cgtcattaag tataactaac ggagtaggag catacaacag ttttgtttta gaaatcagag 360

gcaaaactat agttacactc taaatcaggc aatgacacaa ttgtttcttg tctctttatt 420

aaaacttaac acctttaatt acaactaacg gagtaggtgt gtacaacact tttttttga 480

aaaacaaggg taaaagcgca aagtctaaaa aatatggaca aatatgcagt tacggtccaa 540

aacaggacac tgtcacaatt acctcatata ttataattta tttaaacttt attcttagcg 600

tatatgtaaa aaatatacta atatctatgt catcttttgg ttacataaag gtctctataa 660

atatattttg actgtgccgt tatttaaact tgtatctgca attgtatttt tttaaatgta 720

ttggcaaaaa ttaaagaaat ttaacttgaa ataaagcatc caccgttcga gtgctctatc 780

atatcgctgg gacttgggag taagaaacga cttgtctctg ttcacaccca ttcttctatg 840

taagactagg tgaatgccgt gcgttgctac ggagtgaaca tgttataata aaatatattg 900

aaattcaaaa atacaaattg ccatgaacac aacagcacag tcaatttcag gaatgagcac 960

atatctttag gtgagaaaca tcacaaataa gacaaaagaa agcatgaagc atgtttctcg 1020

tgtcactttt atttaaattc aattcagatt tgaagataga aacttgaatt ctacaagaag 1080

aatgagtgaa tgaccagaca atcatttttt aggagacaaa aacacaagca aaaacatatt 1140

gagagatctc gatagtgcca taatggcaag atattgtgca tgaacaatct ccagaacacg 1200

aatttgttgc tttgatttct ctatcaat 1228

<210> 3625
<211> 1021
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_179997_G1, chr5:41791895..41792915, Cluster 22

<400> 3625
taaaaagtag ctacttcggg agtcatttct tgagatttaa agacccaaat agaaagtgca 60

atctttaaac tatcaccatg tgtcaaatta tgcatctcaa tgttgtatgc acttagaatc 120

tcctccaata agtcctgaac agtatggcaa aggccaacag cgaagaagtc tccaaagaca 180

acacatttat ccgctttagg tatcggatgt cccattcctc ggtaaatgaa cttgatcttt 240

aatgaagttt ttatatgaat aaaaggggca agagttgcct catccatcag ggacttgcca 300

aatctcaacg actcggtttt tatcatgaat aagttttgac ttagagactt ggacatattc 360

taaaccatcc tgaaaaacag atgaaggcac atagggaata tgctcaacac tagacatcta 420

acacaaaaat aagcttcgat caaaagcgat tgttcaactt tcttatatac ccaaatttgg 480

tcgagctcaa ctattaaaaa cttggaatca aaactattca ccatctaacc tccaacgacg 540

aaccgcaaga cttgggatgg tgtgtttttt ttaatctttg ttcgaaatca taatttcacg 600

gatagacgtc caaaggagaa cttcactttg gaggggttgt tggtggtgat ttgacattag 660

acaaacgtag tccctgctgt ttcggcatgg atcaacaata attagtcttc ctctaattta 720

cttgatatat gttttgagga gcatcctgtt agaagagaaa acaaagatat agcaaagaca 780

tacggtccac ttcgcctgag tgtgcgaaga ctcaacgtgg agatcaaggt cggttgcctc 840

tcgtcgctga gatgaccaaa tgaagctact gctagacata cttcgtcttc gttgagaggc 900

aaagtcttga aaaattaatt aacgaagata gaggttgaat cactcctgga cgatatggag 960

cctgtgtagt agtaaagatt atgtggcgag ataggtccta aaatatatgt ttatatttaa 1020

a 1021

<210> 3626
<211> 1144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_183198_G1, chr5:62694901..62696044, Cluster 22

<400> 3626
caggtacatt gcttttctct cgatgtcccg ccaaacaatc agataagcta agggcaactc 60

catgaggcta ctaaaaatgt tcctcaaaac atgtgataag ggctgttgta aattgttttt 120

ccataaaaca aaactacacg tacaataggc tgctaaaaga actaatcccc aaatttttt 180

gaacaaccat ttgggccaca ctaaactaat tgggccacaa cattgtgttg ttcctgtacc 240

tcaacatgac aagactttct gcagtagcag cctgcagctc attcacactt gtatcaccat 300

tgatagactt ggcaaataaa tgattgttta ccattctgaa taaaacatgt agcaggttca 360

aaggatatag aatttctaac aaaaacatag aatttctacc aaactaagaa tgtctaacaa 420

actgataatt tctaaatgga cagtaacaaa gctttatttt cagcaacata acaacttgtg 480

taactggaca acaacaaagc ttcatttgca agaacagaac tgcctgtgta cctggacaac 540

aataaagctt catttgtaac tgaacaacaa caaagcttga cgcatattca tagtgctaca 600

ctatttttg ctacatttat ctggcatcat gaaacatggt tgttttttgg tcaccacaca 660

aatgtcttta tcctacttgc gtatgacaat tttgatcaat ctatttatgt tctccttttg 720

agcatcatgt atacttctac catgcatatc taattattat caattttaac tttcaaggta 780

ctaccagttc atgaggtggg aacctttgaa tgctcattac aaattttaac tttcaaggtg 840

acaacagaga gaaaatgaaa ctaaaaatgc tgccataaat cttaagcagt ttgatctggt 900

taaacacaag agaattaaac aacacttagc agcaacccct accaattgaa aattccatat 960

acatgacacg agcagtacca agcttcatta ctccagattt ccttttagc aaaagcaaca 1020

gtaatcaaaa gagatatcaa actcaaaata atagtactat cagattaaca tagattaaga 1080

caacattaaa caaactcctt cataagtatg tagcaaggta tgaacattaa ccatattgtg 1140

cacc 1144

<210> 3627
<211> 1191
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_184969_G1, chr5:76730639..76731829, Cluster 22

<400> 3627
agataggttc gaaacaccga cactccctaa cactacatgg tttttaggca aaggtaaaag 60

ttcaaggcat aaaaggcaaa ggtataattt aagatatttt tattttactg gttaagacat 120

aataaagtgt gtaatcttgt ttagaataga tggatgtact actaagacaa agttatggtt 180

catttgatag agctctgctc catgattctt tagctttgag agttgattct ccaatagagt 240

gattccaaac aattctctag tagaagtgaa tatatgtgat gaaattgttt aataaatttt 300

ctatgaagtg attcccgagg ggttgaagag cgggtagcat attaggaacg acagaaagca 360

gaggtttttt ttggctcgtg ctctctagta aaatagatac tagattcact ctgctcctac 420

catggaggag ttcagttttt tgccatttgg ctgccaaaaa acctcttaaa ttagataact 480

caattatcta gtgacattag gtttgaattc atatgcattg catatggctt ggagtgtaaa 540

gtcagttaac acatgaaccc ctagtcggcc attagaaagt gcatacactt tttagtgtta 600

ccacaataat aacgcttacc tcgacaacaa tgtgtcaaat tttatcgaag aggttggtct 660

aagtagaacc gtgttccacc ttaagtaccc taagggcacg agagtgagta gacctccttt 720

aggcacgaaa ttgtaagagc caatatggaa ttttggctaa gatggtcccc gatggtctac 780

taagatatat tctattttta ttgacaacta ttctacttga aatcataagt tggacttaga 840

tacaaatcat attagtttga aacagcaagt gtatcagact gaacaagcat attcaagcac 900

catccgaaga ttttttagtt gcaagataac atttcaactc ttttaactat gtacggaggc 960

acaaacatct cagagtatat catattcaag accgaagact agattttcaa atgaagctta 1020

cactcctgga agccttgagc tcgctatggg atatatctag tgtccatgaa tatgtacaat 1080

gttcaagtga tgcatgttgg acctactaac acatggttag gtgggctcaa acactcgggg 1140

acaaacgaaa ctttggtgca cgacaggacg ttagctggga actgtagcat c 1191

<210> 3628
<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_186956_G1, chr5:88999498..89000566, Cluster 22

<400> 3628
tgggccggag ttgcggcccg tgggcgtcgg gcctagcgga ggtgtggttt tggaaacatg 60

gagggtgcat cgggtcaatt tgaaatatat gtgagaagtt atttgtaaaa atatgacacg 120

gaacgaccat taaaattgtt gctttgatat agtagagata gaaatagaga attctaccat 180

ttgtgaacat cctaattttt aattagagaa gatttttaat acatgtgtat attgaaatgt 240

caagtgtgca ctcggattct tctgcctcta gcttcaccct gtttgtgtat tacgtggcgg 300

ctcgaataga cagcagccgt ctatatcact gtgatgccca gatttaatta agcgatggcc 360

catgccccca catgtcgcgc gcgattggag accggcaaac agttgagcag atcatgggca 420

ttggacaggc gattattttt agtccacgtg caacaacgac gcgggccggg atcagagaga 480

ttgcttggaa cggcaccgga taatatacct ctagggctag tttggttgag taaaaatgat 540

ctaattttat cctcaatggg aatctaggag gagaactagc tagcccctag ttttagaata 600

atgtcgacgt gacgtaaatt cgaccatgtt tatagaaata ttaggaacat atatcttcaa 660

ataagtttgt tgcaaaaata tattgtctat gtcagaccta agtaacgcag gcacacatgc 720

atacctgtgt caggcctacc attgctcaca acctatgatt ggttagaaag ggtaagtaca 780

ttttcgacct tctggcgggt tgtatgttag ttcgattgtt aaccgtaaac tataaaagtg 840

agtagtagac acccctcaac agtcgaaccg gatagattta gtttgtattt tccagaaata 900

atataaattc agtttgatct ataaaagtat taattaattt tctaaatcaa aatatatagt 960

atgagttctt ttttttgaat gacacatata tatagatact ctgtttagaa ttagttagat 1020

cttgtctagt taaaaaataa tgaacacgac tacagtaata aaacaaagt 1069

<210> 3629
<211> 1049
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_202819_G1, chr5:189886618..189887666, Cluster 22

<400> 3629
tttgacactt gctcagaggc tcagagccac aaattctcca ttgtgttcca gctcttgaag 60

gctactatag caaatgcagc attaatagtt tcagtttgaa attgctgtac acgtgttaca 120

ggaacctttt gagcgtcggt gaaattagtc agtagactac ctgggggagg tcaacataat 180

tcttatcctc taggccatta tctggaattg gaaatgacac aatttcctcc attgcagtat 240

attctgctgc tgaaagttct ttgagtttcc gcctggtaac acacccctcc cccgggctcc 300

attatacaac tagaaaacct acataattcc acagtgtctc tgatgaggga actggccgtg 360

caaaattaat taggtatccg atcaaacgcg cgccacatga gccctgaaaa acgctctgat 420

gttaaatgtg tgtatgatta aagtcagcga cgtgcttgta ctccaccttt tctgcttcag 480

ctacgtgtag atcgttgact gactatatat catctcatca gttgcttcaa ccactagatt 540

attgccggct aaaaatgccc ctccaagctt tcgcgtgtag tcttgcggta aatattctaa 600

cacttctttc tggtacattt cataaatata tctgaattta aagtaatttc aagcaacaca 660

cttatataat caaatcagta cgaataaatt attattatta ttactactac tattattatt 720

atataatcaa ttagtacgaa taatcgtctt gtgccagtac aaaatagatt ttgtcagatg 780

tgtgattttg ttctaaggaa aatttcactc tcagagccga aaactgcaga acgtaatgtc 840

tatataaatt gcaacaacct aaaactataa ttttagtatg aatatataca ataatcgttg 900

cctaaaacga agcaaaaatc tagacagcta aaatttaacg agtcaatatt ctaaacgatt 960

gctgcagttt gttgtttttt ttttcaataa acttttgcgt ggtcaaattc cttccgatat 1020

cacatgcacg tgacacgtgt acatgagca 1049

<210> 3630
<211> 1295
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204904_G1, chr5:201609443..201610737, Cluster 22

<400> 3630
cagcagagca cagtcaacga catgcatagc ttggatatac atgcatatgc tacacggcca 60

ggcttttagc ttgcggccgg acagacacgg tgcaccaccc aagcatctca tgcgatagga 120

caggagatga agaaaagcgg ccggctccga tgcccattga ccacctttt ctcccttcgc 180

aacacacacg cgtggagtcc atgcggctag ctagctagcg acccacctca ggggacgcac 240

caatggctag ctattacgca gcgctatcag ctctgaagga atataccatg caaaattcag 300

taaagttgcg atgctacaag agcgcatttt acaacaaaca catactcgta tccattttgc 360

tatagctacc ctaaaaattg atgaagacgt tattctttca gatacgtgga caagacttgg 420

cttccgttaa agtcacacaa ttatatttgt tcgcacaaca acaaacatca tttattactt 480

acaagttttg gattattaaa catgcacact aatatttagt ggaatagaaa acattcagtt 540

tatacttggg atttttatat gtgaaatata ttcccaaaat ataagtacca cagaaaaatt 600

acatgatcag gtttcataga ttaaccatta caataaaaac aaagcttaat tctgattaag 660

catgtgggag caagataaaa ctagagatca atattctgtg taaacaaatg gtcatattaa 720

gtattcattg ggcataacaa cgtcatgcaa acctagataa atcaacaact caatcacacg 780

tgcactaatg aagctgaaat ttttttacca tagattaagt atcacatgaa tagcctccat 840

aaaacttcca tgacatttgg agcacgtgaa taacagatat gaatttagcc ctataaagca 900

taggcaaacg gcaaaccatc tacagccaaa aaaaatacta aaatatgcca tattatataa 960

ccaatgtatc gatatactca caaggagttt agccaaactg atttttttcc ccattttatg 1020

atatactcac aaggagttta tttactatga gtttaacaag tttcggtagg tttatttata 1080

aaagaaaaag aaaaacattg ttatcattca tatattacag attttgcatt gtgaactcaa 1140

ggtttctaat ccctttcga ccttcttcct caacctaaga agccctgcgg tggcaggcta 1200

ggcgcctcgg cccggggacc cgaggcatcc tggccacgtt ggcatgcgac ccggtcgcat 1260

gtaggccggc ggcagtcgct cggtggcgcc atgcg 1295

<210> 3631
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205043_G1, chr5:202391124..202392173, Cluster 22

<400> 3631
tcaatttatg ttatctggat gtcatttttg acagagaagc atctaataat aaggatgcta 60

cactgctact gaaaaaactg gccattatat tgcatgtaaa caattgcaga aaatacatta 120

tagtcagcga attttatatt gggttaaatt tcatctgata tactaatcac gagaaagggc 180

gacatatagc ttcgtgaatg agactatatt gttggcagtt tgaaattaac caacgcacac 240

caattcaatt agaatacagt ttcgtcatgt gtttaggata tcttattaag aaacatactt 300

atattatgtc caacatttta catattctat ctccatattt aaactctatt atacaaataa 360

tatagtctac agtataaaac aatattttaa tgaccatata gaactcctcg agacggtcta 420

aatttgcatc ttggagcaag agcagtccac ctcaatacct catacaacct agctaatagt 480

atatatagtc aataacgggt tacataaatc tttatagcct ctctcagtat agttatatag 540

tagttagctc tttatcgtca atatgtagct cgtttatcta tcttataaag tttttatttt 600

ttatttaagt tgccttcttc tctttcatct ccaccactct aggcacccta ggctatggct 660

agcaaatcgt gtatatagtc gtgcaaaaca ctgttttgta ctatagaata tttatagatc 720

aagtggactt gaaatgtaag atgagtaagc taacagagac aaccttagct cttaggctat 780

ctccagtggc ctcactatct cactctacat ttcaaactcc actttacata caatgctttt 840

agatcgtctc caacagttta ttacctatat ggtcatccaa aacaatgttt tgcattgtaa 900

actataagtg gagtttaaat atgaggatgt agataggtaa gctactggag atgaataaac 960

ttacagtgca aaacaatgtt acatacactc gtatacacgc tattgcttga gatggcctaa 1020

tgcatgcatg aggaggtaga gaaagcgcac 1050

<210> 3632
<211> 1282
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205563_G1, chr5:205509404..205510685, Cluster 22

<400> 3632
tgatgatcgt tccaacccgg ttgaagatga gatccggtgt cattaaagac agtacatgtg 60

acagtgtaga tcaacttgac atgcagacgc gtgatcgctg ctaaaaaact tggttcgtcc 120

taacacgtgt tggttcttta gtgtagcgag ctttcggata cagtactctt cacgccgtcg 180

ttgtaatgat ggcattaggg atggaggagt ttgaggtctc gtagcagtag caccgaggat 240

tcacttgtgt aaaaccacaa tggattggtt ttctttttta catttagggt tgatttggtg 300

gccgaggatc ccgagggaaa gaaattctct tgctattaaa aattgtgaac tacaagggga 360

ttttttccca tggatcccct ttggatcacc ctctttatta tatacgagat gcaaaaacat 420

aagaaagtaa gaaattgtct tgattacaat ctccatgaca agacaaatca gccattaagt 480

aaagaacgcc ctctttatta tatacgagat gcaaaaacat aagaaagtaa gaaactgtct 540

tgattacaat ctccatgaca agacaaatta ttgtaggtaa gtgtaaaaaa aataggtgtc 600

caactgacgc taaaatctca agtcatgtga ataatcatgc aaaaaaaaac acgaagcaaa 660

cgaacgtacg tgtacgtccg gctttaactt aatccatgtc atgttttatt tcaagaaaac 720

aagacaaaag atatttatgt tgactttatc ctctatattt ttacgtgagc ctaaaacatc 780

accatttta cttccactat gcacgagtaa atatttgaga tttatttcgc atttttatga 840

taaaggaaca ctggaccatg tccaaaaaac ttcaacaaaa tcttgaatgg aaatacaagt 900

gactgtgtgg aacaaaatct tgaaatggaa atacaagcga gcttaggtac tgtttggttt 960

acatatttgt aatataatag gtaacaaata acgttaaatc atgtttgttt aagtccaacc 1020

gtaatcgaat accacactag aaaattatac cagcatattc aaacttgtta ccactggtaa 1080

tcgaatgcaa cccgttatcg ttaccattta cgttacattt tgttaaccaa acaacacctt 1140

aatccatccg gtttcgtgct cttgtagtgc aaagaccaaa gagagacgaa caacctgcat 1200

tgtaaaaata taaagttaca tttctcgtta gctaattaaa gctagtacca gtagagttaa 1260

aagtcatggg tctgaattct ag 1282

<210> 3633
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205574_G1, chr5:205531075..205532321, Cluster 22

<400> 3633
ctctttccgc tttgttctaa tcgatctatg acgaccaaga aacaagcggc atagtcacac 60

gtactattga atattgattg attgattgat agtacaaaat gtttttagat gactcgcgga 120

ctccgacagt ctagtcgaca cgatgacatt atacacctat atactgacgg aaagaaattc 180

aggacagttg gcaagtcttt gttgctgaat ccgtcttcga tgacctgtgc gcgcggcttc 240

aaactttgac ggtgaaaatt aggtgctcaa gtgagggtga cagcagggtc tggctggtca 300

tgtactcgat ccagtatgta ccatctggtg gcaatataaa agctttgacg gtggaagaaa 360

aaaactacat gatcgctgag tggccaaggt taatataaaa gcttaataag gaaaagaagg 420

tactaattat acatagattt cttgtgataa tctaatgggg cttagattaa aggaagagat 480

ccatattact cccttcacat atggacaata tccatatgcc taaagatttt ttagttcgtt 540

ttacctctcc aactatttga attggttcaa tctatccctt aataaaatgt ctttttttatt 600

tctttgtgac aagctaagtc tccaattcaa tttttgatgg ttactagcta ataatgacat 660

aatttagcct aaaaatatat tatgaatcat cataattatt ttgatacggt atagatcagg 720

taagataatg attttaatgg tataaaacta aatattttct gaggtgattg aggacatcat 780

aacttatatt aaaagtatgt taagaatttt tcatcgttat tgcatattta gttttgtacc 840

actaaagtta ttgtcttatc tgatctttaa catatcaaaa taattataaa agttataata 900

gatttttag ggtaagttat gtcattagct actaacaaac aaaattttga actgaaaact 960

cagtttgcat atagacaaat aaaaaaggca aattttgtca aggggtaatt tgaaccaact 1020

caaataggtg gacaggaaaa tgaactgaaa atactttagg aggtcatatg gacatcattc 1080

ataggtgaga ggagtaatat atatggactt cttccaaata tatataaaga accaaggtat 1140

cctatgtgca actaagactt tgattaagca ttgttatctc tatcacaacg agttatgcaa 1200

cctaggttac aaaaccaagc tgctagccta tgactaagct aggaaga 1247

<210> 3634
<211> 1139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_210421_G1, chr6:15489011..15490149, Cluster 22

<400> 3634
cccagtttcc tgcagcacca atattgttat ttttcttaca aaactaacat aaattcacac 60

agatatcata tacagtacat acatattcaa atagcctata ttagcacatg tatatcacat 120

ccatatcgat tgtctcagtt tcaaacacat ttagtctaga aatctcaagc acacataagt 180

atcaagttca tacacaatct cacataagtc caaatccaca caaactcaca aacgtccaag 240

tcgatacata aacaagcacc ggaggtccag agcaatccac tacgatggag gagtattgga 300

tcctcctccc gagcccgcca aaaagccgtt gacgtccaca tcagggttag cattatcatc 360

tcgagcatgg gagctggtag aaccctgcaa atttttaaa gccatcaata gtcatgcaga 420

tttcacacta tgatgcatcg gtacatttgt taatctatct atgtactatc tattacaaca 480

tgtttgaata atgttgtttc agctggttct gaagatgagt agaatgttta tgccttgcat 540

ggtttatcag ttttattttg caacttaatg tttgagtttg tggagcaatg gctcaaacca 600

ttttgcaagt actgtcaaac tcatttgttc aagcacattt ctctgattcc ggtgatgttt 660

atttgttttt tttcccaaaa tctgctaaat ttctgtcaat agttagcagc aacactggag 720

gtgactacct taacaggcct caagttctac cttaacaggc atatcacttg tccctgcatg 780

ccccatagac catggattgc taaggtgact actggaggcc cccatgtcat ctacaaatat 840

gtgcttagcc cttttaaccc gtgtactgtt gctgccatcg tcataatagc ttacagcaaa 900

gtatgagggc tggtatgaag aataatcagt ttctgcttcg cctagaaagc agaaagaata 960

ctaaactaga aatgtattca ttgtattttt catcatgcaa gctactgcac taatgttagt 1020

ctactgaata ttgtagtctt acctatatct attagtcata tattcaattt tattgatgct 1080

aataaaataa tactatacat tatgtagcca taaagtgact ttttttggtg cactcattc 1139

<210> 3635
<211> 1120
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_220931_G1, chr6:85604694..85605813, Cluster 22

<400> 3635
ttgtgcgctc ttgaggcagc aaagaattgc agtcaatcgc agcttcttga catctctgat 60

tctgtctgta ggaacgcggc ccaagtgggt taacatcaag tcggtaaatg atcttaagac 120

aaagttgtct tggttctact ggttggcatt ttcgagaaga gcaagaggga cctcttatgc 180

tttgctggat cgattttcct atatatcttc agtttgcctc tacctacttt ccatacctga 240

aataagagtg tttgtatata ggtgataggt ctgttctgtt gctgctcaat gcctcaggtt 300

gtgttcgtgt gtagtaaata gttaggaagt gtggtgattt tccaggtact cttgtatggc 360

taggcagttt cagttaggca caaccacact acatccagtt agctaggcag tttccaggta 420

ctcaatagct gatattctct tgagtgcagg tgcttttgaa gggacattca ctgcttcata 480

accgaaatac tgactggtta actagttttt gttagaaaga aatgcacaca cattgatgtc 540

ttctggtatg ttttatgaac agatttgaag cgactaatca tatctttccc tttttctcat 600

ccccatattt ggtgtatgga aatgtttgtc cattgtccct ctttgatagg ctgttattgt 660

tatttaagcg cgttctcctg ttgaaccctt gtcaataata tgacagtgat atggatacta 720

tattttaagc ttttgaatca actgaaacac atgaattcag tggatatgta atcattgtca 780

tgtattaagt gataaacttg tgactttata tattcaagac aatatatgaa gcatttctga 840

gctgatgttc ttactataaa taaaatcaag gagcatagat tgtgtactat gtaatattat 900

ttttaacagt ttgatgggga actacaacta ctacaattga tgcttcagct ctacgccttc 960

tttcaaacca aacgttcaca cgtatcttgt gtatgtgggt atcaaatgct tggtgtatgc 1020

tacatactct tttccatatg cagtgaggag caacaaaatt agaagcccca acttgctttt 1080

ggttcctctg cccattgttt tgatagttca tggttacggt 1120

<210> 3636
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222591_G1, chr6:96388661..96389830, Cluster 22

<400> 3636
ctcaactatg ttcatccaag ttcatgtttc cgtcgtgcac ttggaaaacc agatataggt 60

actcctccaa cttcagatgt ttccatccta tatacactca aaaccacgtc ggttttatct 120

acgtatagat gtgtacacta tactatcatg ttcaactaag atagcatgta agtagaaaat 180

tatagatcgt cattattaga tgtaccacag ccagaacatg atgatatagt gaaagtagta 240

gtacatcctc acgtactacc aatgacaaca cgttcacatg tgctcctcaa gtttatcgtg 300

aacacctcta caatatccac acatgcagag gtaaaacatg gtggagtcat gtgctagcac 360

cgtgcacgtg gcgagagaaa cgacaacatc gtcttggacg cccacaatac taggaataga 420

ggtgatggtg gctaagacaa tgctctctat cccgctagtc tcttcatata ggcttttacc 480

ataaaatcac attagcgttt taagggtcat tattgcattt tagatatatg ttcaaataat 540

attgtccatt ggattgagta agtaagtgag aaaggattat tcagcgatct gaattgttgc 600

tttcattgtg tattaagtgt gggtgcaact tgtttgttgg atttagtgag gttatgggtg 660

tgaattttgc aaagtttaaa ctagtggatt atacaatgat atagattact ccttttgtta 720

ggagagttac tatccattat tcctacacca atcagcccaa ctggcacaac caaactcaat 780

tcataccatg gcatgttgtg gtgcgacatg catggcacga gcacatcacg tcatggcttc 840

actcgactcg actcacgaca ccatggttca tctaggctcg gtggcagagg acatgcatgt 900

ggcatgccct tagcttctct cttattctca atagatgcac aaagttggtg catttgatat 960

attaatgaaa gatggattaa caagaagcca cttcaccaaa caaaatcaag ggcaagtagt 1020

catataatta agaggagtgg agaagatgat ttgcaacttg aatgcctatg gtgtgcccat 1080

tacaattgaa gacaccatat tcaccaacca aagaagaaat caaagaaaaa gtggttcctt 1140

tggctgcagt aaaaagggca cttatgaagg 1170

<210> 3637
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224717_G1, chr6:107303480..107304524, Cluster 22

<400> 3637
gtatcgtccg acgtccagtc gtcggcgctg ccctgtccag tatgacgtcc gcctcagctt 60

gcctcaccac tctgaatgag ggggttggtc tatctttggg ttggcaaacg agtttctgct 120

aaagtgaagc agaagttggt gagaattcag aagaataata gagtgacaaa tgcattgaat 180

ggtaccaaag ctgcacttgg aaaagtcatt gtaccaggta atgtgtcatc taaggttcat 240

gttgaatttt ttttatgtta tttgctccta atgtttccct gttgcattag tacttttttat 300

tggttactcc tattcaatta cttgatgctt atggaatttg acactgcata tatttccagt 360

caattattga tgcttataga atttgatgtc cataagataa ctgttctgat taagtttgca 420

attgcacatg gatttgccaa gttaacagaa tgcatcaaat tttatgcatt gactacaggg 480

gaaagaagcg tgcgcgcgtt gcttgctctg cctagaacaa caatgcactc tccctctaca 540

gccatgtcaa aattgaagat tacataaaca catagattgc ttcatcagca tctcttaccc 600

accaacaaac gataaagact aggtgagtaa atacatgttc gacacatacc tccccccctcc 660

ccaattcacc aaagctataa gcccatactg tcatacattt acattgtatt atttgccttt 720

gtatttttcc acaagaaaca aacttcctca aacatggatg aaagtggcag tgaggaatat 780

ctgcaccatc atttgaatca ccctcaaaaa ggtcttgcaa tagtgaccaa gtcttcttaa 840

caccaccttt tacaaacttc tacccttatt ttttatatat ataggatgaa acaacagatg 900

caaaaacatg atgcataact actccctcca aaatattata aaattcgatg catgacctac 960

acatgttata tagctccaaa attttgtcag gaagtctcaa acttttgtct aaatatttta 1020

acagttaccg ttttatataa tttta 1045

<210> 3638
<211> 1214
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224895_G1, chr6:108309169..108310382, Cluster 22

<400> 3638
taaaaaattg tcttgtaatt taagctttct catcatttag atatttatta tcctttatat 60

atttcaaatg ttggctctta tcgccttcct tggttgtggc atgcattcac atgcactata 120

ttagtgagga tatgggttgg catggaagct aatgcttttg cgcttccgca aaccgtggcc 180

gccacaaact aagaaaggat atgatcttcc tattgtcgcc ttagtgacta gaaatcaccc 240

aacctcctcg tcgacaatgg cgcacgtgga tcctaatact tatacttcat tggtagccga 300

cattcctcac taaaggtccc aatgcgcaag gaggaggtga aacaaaccga ggaggaactc 360

cactactaga acaatctatg actccacata ctattgcaac aagtctccac ctcaactcca 420

aaggtatgac tccccatccg cttcctcctt ttgctctttc actagtgcac aagttaagta 480

cctattacta tatactctag aaccggaacg tgttctagag gaattagcta gttcctaaat 540

gtaagaaagt ggtctatgaa tgtatcaaaa caatattagc atacacaata catataatat 600

attcctagat agagttgaac aactatgctc tattggtcgc aataggcaag agtgtaacat 660

aagggtaagg gaccaacatt gagtagtagg agtcctctac cgagaagaag agcatgataa 720

agaagctctg caaggccagc gagaagataa tcaatcaaaa ttgagttgtt ggatctgtcc 780

atcgtcaaaa tggatgatga cataaaaagg acccacatgt tggctgtaaa tgaattgatc 840

aaataattaa aactagagag gaaaaaatga gaaagtggtg gtggaggagg attatttttt 900

tgtatgaact atgtaatttt aattattttt ttgcatttta tttactttgt ttgaattatg 960

agtttttgtt taaattacgt gttcgatgag atttttttcct aaacaaaatg gcgtatttca 1020

ttttaaacaa gaatatgtaa aaagaaagct aatgtggtgt taaggtggtt ataggctgac 1080

ggtaaagctt atacactgga acactgtgat agataaggaa caatgacaat aaatagcatg 1140

gtcggtgata tgatctgtat ggctagatgg acgagcacaa gccacttggt atgggtccaa 1200

tttagacatg acct 1214

<210> 3639
<211> 1191
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226052_G1, chr6:114083818..114085008, Cluster 22

<400> 3639
ttgtgatttt acccctatgt ttcgaaaacg aagctgctgt ttgtcccccc tcttaacatc 60

attagtgaaa attagaatta atgattaaaa attaagaaaa caaggggtaa aatcacaata 120

gcatgtgaga gaaacgcata atcataatta aacctaaaaa taatgttgat tttttaaggt 180

taattgtgat tatacccttc tcccacctta aaattgtgat tttacctctt ctttttttaaa 240

ttttaatcat taattttgat tttaactaat tgtattaagg gagagtggca aacagtggct 300

ttgctttcaa aacagagggg taaaatcaca aagttagaaa acgaggtgta aatttataat 360

tgcaaggtca gagaaagata taatcacaat tgtcccttgt catcttaccc ctctgtttcg 420

aaaacgaaga tcattagtga aaatcagaat taatgattaa aaaattaaaa agagaggggt 480

aaaatcacaa ttgcaagggg agagctgaga gaaacgtata agcacaatta atcctaaaaa 540

taatgttgaa attttagggt taattatgat tgtacccttc tctcgtcttg gaattgtgat 600

ttttcctctt atttttttatt tgtttaatca ttaattttga ttttcacttg cggtgttaag 660

gggagaggca aatgatggct taatttttaa aacagatggg taaaatcaca aagttgaaaa 720

acaagagata aaattacaat tgcaaggtta gagaagagta taattacaat tgtcgtaaca 780

aaaggtgtat cattgtttta taatgggatg tacatgaatt gagacagttc gcgcatggcg 840

tgtaggacaa gatgtttctc aaccgcttgc tcgtacgaga tcacacgatc attaagttct 900

cgtaaacttg tcatatgaag agcatatgtc caggtcttta ttaaatcact ctaaattata 960

atttattatt tagagagcta tttgaataaa attagttctc tgtatctttt ttattctcta 1020

agagcaaagg ctcttgacat tgttcctaat gtagaggaat atgtacttgg ttcaaagata 1080

ccttccaata gcctctttaa ttggatttct aaatataaac atcttctatt atacatttat 1140

tgctagtcaa agatggagaa tcgagatggt cctctagtgt gtttggttgg a 1191

<210> 3640
<211> 1237
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226257_G1, chr6:115559670..115560906, Cluster 22

<220>
<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (483)..(582)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (490)..(490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (491)..(491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (492)..(492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (493)..(493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (494)..(494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (495)..(495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (503)..(503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (542)..(542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (552)..(552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (553)..(553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (554)..(554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (555)..(555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (556)..(556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (557)..(557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (558)..(558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (559)..(559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (561)..(561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (562)..(562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (563)..(563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (564)..(564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (565)..(565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (566)..(566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (567)..(567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (568)..(568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (569)..(569)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (570)..(570)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (571)..(571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (572)..(572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (573)..(573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (574)..(574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (577)..(577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (578)..(578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (579)..(579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (580)..(580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (581)..(581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (582)..(582)
<223> a, c, g, or t

<400> 3640

tcttgttcgt cgattcaggt tcatcagact tccttaagtt taaattatat atataacgta 60

ggataaattt tgttttaata aatcataaaa tatatgtttt ctattaatta ggtagatgtg 120

aatgtagagt caacaattaa gattcaaata ttcacttata cataatttta ccttattttt 180

ttacataaac tctcttatta aagtagtaga gaaaagattg caggagtgcg ggttgattct 240

aaagatatgt agtttttttt aaaaaatatt gacgcgggac aatcattgaa actattgctt 300

taatagtaga aatgcagata gagagcagag aagtaggtca attaaaaaat ttagcaatat 360

ttgtgtattg attatcaaga tgtatttatt ataacaatac tagttctaca tcgtaaatat 420

taatattttt tcatacactt agttagttat caatacaatt ctggtctatt tatactagta 480

cannnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nngtctcccc gaccggatga 600

atcatgcttt gattcgttcg tgaaaatcga ctcaataaca tattcaatgg cttttaaaaa 660

tcgttaatca tgatcgaagt gactgaattg ttagatattg gtgagaattt gtaaagttta 720

tttttctagt gtgtaccttg aagttgaggt ggtccccgat tattaagggt cgagtcctct 780

tcgaaattaa agagaatcaa gagaaaaatt agtttatttt cttctaaatc cctttcaact 840

gtgatgtgta ttgtattttc atttatgttt tcttttcata tagtattatc taagggttag 900

acaaatttta gttgtcgcaa agtcaaactt aaaacaccag ctttagtttc ttaactggta 960

atgttgcaca cattccttga aaaaatgaac atgggcgtat atcttctaat tccattggac 1020

catttagagc atgattatgt tagctccgtg ttgttattat attatttaca aacaaaataa 1080

tcgttgaatc ataatcacgc acatacataa tgcatcattg tattgatatc aggttcatcg 1140

tgcccttatt atatttggga aagcttgttg aagctaactt gctatagatg tgtaatcttc 1200

gtatatcgtc cgagcgcttc gttaatttca aaaaaat 1237

<210> 3641
<211> 1137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227691_G1, chr6:123430674..123431810, Cluster 22

<400> 3641
tcctatgaca ccatggacag aaggggagtt ttgatcatac tttgttcatg gtaattttta 60

tgggaggttc taccaaattt gttcgagaaa attctctata tgccattgca attttgccca 120

gtaccttatt tgctatcaca aatatccaaa tcccttatgt gtcactcggt tacaatttgt 180

tttccttcca tgctatcatc agtggcacaa aagagtaaga aatttgcatc tcctaatccc 240

acctatgtca ttagcattgg catggaatgg taagaaattg catagcatag aagggattag 300

gatatttgat ggcaaataag gtagtgggca aaattgcaat ggcatgcagg gaattgcccc 360

aagacaacat tacatgcagt atatactaat ataatacctt agaacatcaa gttagtgcat 420

attgtctagt tccctatacc tttttatatt taaatgttcc atctaatttg ctatccatgt 480

ttataattat tcaactttca ctagatacta cttataatta tgatggaaca tggcattacg 540

cacgtgctag actcaatgcg aatgtcatta tcatactacc aatagaccat ggacattctt 600

aacgagtaat tgatgtattc caacttcact atctgaccat tgcttttatt cagtcatgga 660

ccaaacatca ctcgttttca tgtgcaggac aaggagtatc ctctgcaaaa acgatcctag 720

tctaaaagaa aaacttatgc tcggaacaaa ctttttggct atgttgtcgg ctaataatac 780

tcaataatac caaaaaaggc aaggcagata tttttatgta tattaccttt atgaattcat 840

tcacatgttt attggtaaca agacagtgga taaaaaataa cgaagtactt atgaaaatat 900

gcaccatata ttttgttgcc aataatatta tccaaagttt ctggtttgct atattaatta 960

tttggcaaat gacatctaat gaaaatgaag aaagaacttc tcccattgaa tgcgatcacg 1020

gcaattcaag gccaacttgt agagttgtta tataactagg ttgtatcgaa agatggaaag 1080

ttccactacg acaaaagaag tcttccatga gaattccaag ttatatgaat aaaaata 1137

<210> 3642
<211> 1167
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228729_G1, chr6:128732559..128733725, Cluster 22

<400> 3642
gttagagaac ttgatgactg aatagacaat agataacagg gaaaacattc ctgtttctac 60

cactagctga ttattaaatt ttcgtatcac ttatttcaaa atcattcatt tgaaatgtct 120

cttcctggtt gccttcatcc cattgctagt gattgagggg gtacatcctg caaaaccgga 180

gaatactgct attgacggtt tgctcttttt gtccagagat tcgtagtcct tacttttctc 240

cttagcaaga tgtaatcata tccgtctata gtatttaaag aagaaacact tgttgtgaca 300

aatagcattt tatttaagta atttaccact aactgaaaat aaaaggtatg acaaagggaa 360

ggatggattt tctgttgatg tcaagcttcc tgttaagaat gtattatcta gagaattaca 420

ccgtacttcg attatgatac aatgcattgc atattactca agatttccaa gaaacttata 480

tacctcttga ctgtttagtt ttgtagatgt acttttataa aatagttgag tttactatga 540

gtagatctga tacatccctt tttaaagaag ctttagtgag catggcaaaa gattttggtc 600

ttcagccttt gttccatatt tttcctataa ttgatcacag ttctattctt agcaagctta 660

aagctaaacg ttaggggatc tagcaacagt atgtcaatta tagatgcctg tattacggcc 720

tggatatcat ctttaatatt cagctcacct gagcatttct cccagatttt cgtttcactt 780

ttatttttga aatcaagttg ttgatagaag catttagctc tgccttggca ttcctttctg 840

ctatggcgga tgccctagat ccaagagatt catcactact actttccttt acaaagaagg 900

aagcatcaag aacaggcaat ttgaagttct caagagggag gattactcta gcagagtagg 960

cactaaagga tccctcctaa actttagtac tttaatcacc atgaggtgac taaatttaca 1020

gttttctctt tctcttctct actactataa aagaccagtt tctaccatcg tcgtgtgtta 1080

acacttttac caaaaaacca tatttttgt aatcaaccgc ggtccaatcc tccacgcaag 1140

tggaagtgag aaaatacata gaatgta 1167

<210> 3643
<211> 1068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229012_G1, chr6:129905090..129906157, Cluster 22

<400> 3643
taatttttt ttgctttgtt atatttgaac caatgcgaaa ttttaattga agaatatcat 60

aaatgttgac gctaagtcaa attaaaagtt atgttttgtt ataattatgt tcaaatgtat 120

tttagaatta gagtaaagtt taagcattat acatatttaa tataattcaa tattgaattt 180

tacatgcata tggatttaaa gtttaattat tcatgaagca tcaccatcta agatatctaa 240

caccctaggt gttatctctg gactagagcc actaaatgac tccaaatatc tctcttggag 300

ggagaagata gatatgacat tggttttgat agaaatagac tataccatta acaatcctaa 360

gccttgtagc cctatactag caattgaagg aacaaccaag gtggctgata atgctgcctt 420

gacgatagca tatgatctca aacgtgtaaa atgagagaga tcaaataaga aagatatgat 480

agtcatcgga atatttatca tagagtccat taggggagta atcccataat ttctaagtgc 540

caccgagtac ctcgataaga ttcaatagca acttactagt tcctcaaaga catatgatgt 600

gactattatt aaaaactgct acttaaagta tgctatctta gaataagaga gcaaatccgt 660

ttgtggattc cgggaggggt aaagcattta gccaagttgt tgtaagtttg gggtttttg 720

gagtaggaca attgtgccac cataatttgt gtttcctttc ctagtgtggt ggtttttttt 780

gtactccagc ccttttaagc gctcatcttc ttatttaata taacatgcaa ttcttgccag 840

tataaaaaaa catttacgcc aatgaaggct ctgtagcctt ctcaggcttc atctgtgatg 900

atacttacct ttcaagtctt gatgtgcccc atgactatac ctacatctca tcaacttaaa 960

catatgcgtc ccttaggcta ttcttaaaac tgagggctga tctgttgact aggaagttca 1020

tttcctcctc aatcccctgc actacccctc tgacccccct gtcatcaa 1068

<210> 3644
<211> 1320
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_233119_G1, chr6:148774502..148775821, Cluster 22

<400> 3644
cggtcatgat ccctggaggg ttttaactat ggtgaggcag gttcgcatat caggtcgtca 60

acaagctagc tagcttgata tacgtacact atatggcgag tttagtggga cctgtaccag 120

gtggctaatt aatctttggt acgcaccagt aaacaccacc caagtctttt tcaggcttca 180

atgcttcaga gacgaacgac ggaacgagcg acattgcagg caggaactgc gctgaagcag 240

ctggcagtac tatcatctgg ctaccactgc aggagctgcc ccatgcatgc gttgcatgca 300

catttactcc atgtctccat atgcatggtg cgaaaaaaaa acggcagtgc cctgctacta 360

cactcgtttc aatccaatcc ttgggcgatt ggcacgacgg cttgggcaga gaaaggagga 420

aaaactgcag tgcagcgccc tccgtgcatt ttttgccctg agaccgaccg actcgaccgg 480

gcaatgcggc tgcgtgatgg tctgatgcgt ggtgtctacg gctccgggca cgtattgtca 540

ccgtaccgtt gagtggccaa gtcatgccat atatatatag tcggttgggt aactgtaaac 600

tccaggatac catcgcacac tgacgcattt tgagctccac cagcacaagc cggactggag 660

atgagatgac tgctagctgc cgatgggaga taggtcaagc tggcgccatg ggcacttgta 720

gattttacaa cgtagctcga attgtttttg ctaccctgtc tttccgatat attataattt 780

gccatcaata atattgatcc cttctcattc tagtatttaa gttatccgca ctcatactac 840

tctaaattct taaccttaaa aagaatattc agttattagt atatgtcgtg gctctgtctc 900

tgtctgtgca cttatgcctt acgcaaacat gcatccacac gtaaattgca atatatcctg 960

ctgtgcacct atggtatatt ttagtttttt caagtagcat tcatgtggtg ctctttgata 1020

attttaggac gttttctcac tatcttttct ctgttacttt tgattactat ttttttattt 1080

tgttttatcc cttgtagttt tttttatatt tcatgaggtg ctacaagtat acttttatct 1140

aaaatattat gcccgtgagg gtagaatatt ttttccttag atttaaatac tttaatatag 1200

tttataatag tataaatata taggtaatat caaacatcta aatggtgtag agttgcgaaa 1260

tgatttttt cttaatcttc tagtctaatg ttcaacctct cctacatatc atttctgttc 1320

<210> 3645
<211> 1281
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233766_G1, chr6:151779747..151781027, Cluster 22

<400> 3645
agtaggtgac acaatattat atactcataa atccatatta ttagtttgta accataattt 60

aacacaaaga agaggcaaca tcttgcacta attgttcctc tgaagatcat tgcccacaat 120

cacatgtcga ttttttgaat gttttttaga gttcacaaca attcaagact aaaatgatgc 180

atcatgtgac accatgtcat aaactaattt ggagatataa aatttaatct agatgttgtc 240

atcatcatat gacaacaggc tatcgtgggt acgagagaaa gagagagaga gttgagggat 300

acaaaaaggg gtgcaggctg gaggcacact aatcgtgggt atcgcctagc taccagcaca 360

tgggtgaata tagaggttta gatcacaaga tgtgtaataa catacatcct ttttgagtat 420

ggtggattga ttgagaccaa gataaataag attacaggct caactatcta ccgagctaat 480

aactgaataa ctctcccttc ccttttggat ctagtgagag ttctattcta gttggtctct 540

agttcacctc atatatcaat tatatataga gtaagagagt ccttttgaac tgacccccac 600

tatgtactct actcttccct tctatagttc aatggaggag agagtgatac atgcctgctg 660

agtagtggat cctgtctaga agaggctcaa ctatccctat cttgccatag atagtcatac 720

tcggtgcata ttttggacat gtcacaatat tgagcttatc atattgtggc gatagatatg 780

tcttgtcata gtgccaagtg ccaaagtcca cgcatttggg tatggcgtag ttactaaaca 840

atatagttgc atttaccttt gtaatacttg ttggtatgtt tgcatgttca aacatggcta 900

tagaagtgat gttgcatacc atatagtggt ctaggaacac atgttgctaa taccatggca 960

acattgcacc tctttgattg taatgtcgcc tatcacattt aatgtgatgg atggtagcct 1020

tatttatctc tctagtacca cacaaccttc ttgagtagag atagacgtgg cataaaggtc 1080

atacttttt gggttgcctt tccctaggga tagggccagc catattcctt agagattgat 1140

gtggcactgg ggtgtacttt cagaggctgt tgtgctctag gggaagggat agccatccat 1200

ggcatgtatc gtatagtagc cttgggtatg tctactgcta atgtcatggt aatagtgcac 1260

ctccttgatc gtaatatctt t 1281

<210> 3646
<211> 1385
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234196_G1, chr6:153663301..153664685, Cluster 22

<400> 3646
gtatgtttct gctgtccgtt cactttattg acgtgtcata catgtcttct cttgactaag 60

aatttttcc taaacaccat tcttagatgg tcttgtcgtt cgcccatttg tcaataattt 120

acttggttct ccatcgatca gaaagagatc tttgtgaggc aaagctttc ttcaatgccc 180

atcccttgta atattgaact gaaggttaac aaaatataag ggtcagagaa caaaggtcgc 240

aatccttgga accaaaccaa ttcatttgtc ctaaaataat aattagaaac tattttgatt 300

atgagggacc tttagccaga gaccttctcc ataatatcag gttatgtcta cagagattgc 360

aataaagtaa agctatattt ttattaaaag gtacatgtaa taatcattgt ttgaaattaa 420

acttagattc agacacaatt ttaacgtctc attttattat catggaaaaa tctattggag 480

ggaattttag ggacgaagat tacgatgtta gattaaatta tcatctccca acaatgcaag 540

taccgtgtaa ggtcctctcc aaccattcac tctatatatc tcctcttatt tgtactttat 600

aatatatttt actaccttcc cctaaaacat tctccccccc cccctcctac ctgtactttc 660

taatatattt tactttcttc catttaaaga ttctctccta catatagtat gtctccaacc 720

attctccata tacaaccccc ctatacacta taacttagtt aatcaacaca catttatcat 780

ttttgaatt ttttttaaa aatcatataa catttatagt accataatac acattattat 840

tgtatcatgg atcttaatta gagattaaaa ctacataata aatgtatagg gggcatgtta 900

ggggctattt ggcacacttt ctaagctata tcctatttgg taaactgcac aacacaatgt 960

tgggttgtat tgcgcagagg ctacttttat gtctggtaac tgcgtaaacg aggatggtag 1020

ttataactgc caacttctat tcaccaacat ttacaaactg acaacaggta ctactagcta 1080

catcaaccca aatacatgat gcacaactac aaataccaat agttcattct acgttctcgt 1140

aagttaacat tactaatcat tacaccgaac caaaatataa gatgcacatc aagataatga 1200

tcaccaagaa ctgggatatt agaacataat ttttaatatc accaaaaaga ctagctggct 1260

tggcatcttt tacttcttcg tggcacttca tgcatccatg atcttccaac taccgattgt 1320

aggcgtgcaa tgcttcatct ctggttttgt agctcttgta gcaacagaat caacattccc 1380

aagtt 1385

<210> 3647
<211> 1252
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237329_G1, chr7:723164..724415, Cluster 22

<400> 3647
gcaatgaaaa cgaacaagaa caacatgtcc tattttctat tttgatcttg tcattttctt 60

atttgtggat catgtttttg tatttccaaa aatgggatat ggtttttcc atccgttttt 120

gtgatatccc attttaatgc atgatgaacc catatttatc ccatttttaa tatatgtgtt 180

gaatgcataa caattacata ttcttgtgtt atgttaatac tcatattaat caccaaatat 240

gcatgtacgt atgacatgaa tgaaagtgaa tattatatca atattcatac atgtacaaca 300

tttgtgactt tatgtatgca tacttgataa tattatatta tgttgtattt gtttattttt 360

ttaggttttg tgtccatatt tgtctgtttg catattttcg catatcccga ttttgttttt 420

tatcatgact ttttcgaact tgatcccatt cttgtcaaaa aaaatatgga acataaatgg 480

aagagggttt tcccataaaa aactagatat aattgtctta ttttatctat ctttttaggc 540

cttcatagat tataaacgag tttatctttt actattaagt agcttatttt atttgtataa 600

tcttttatca agctactaga atgattagaa gctagcatag agttatttag aagtagagta 660

agtatatgat tttgcatcca ccattttggc tctagtgtta atacttattt tttgtagaat 720

aattttatag gctaccctct tctagacatc tagattctat caatatgttt tagaaaaaaa 780

gtggattata tgatggaatt atccaaaaaa attaaaaaat atgggaaatt tatcaacaaa 840

gatgtagagt aactcatata cttcctccat ccgcgaaaat atgtcagcct agttttatct 900

tacaacaaga acaacaaatg atagtttttc gacataaaat atgtgtgcta tggaattgta 960

tttgatgata tttatttgat aatacgatta atgatagttt ttacatattt gtgaaattta 1020

agatagtttg acttattaaa aaaaactaga atgtcatttt ttatggatca gggggagagg 1080

aaagaataaa agaatcaatc acaaagcagt caaagtatct aaaatttggt cattttata 1140

taatcaaata tttataacga cacaccctta aaaattacac tttcatagtg tacggattta 1200

gtgccatggc tgtttgtttt ctctaatcct aggaatattc catccttttt gc 1252

<210> 3648
<211> 1204
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2376_G1, chr1:12656983..12658186, Cluster 22

<400> 3648
ggtagcattt gccgacatca tccaaagctc tccatgacat tagtctttag ggcctctttg 60

gaagcaagtg cattggaggg gattgaggtg cctattcaaa attaaatagt aagaggttat 120

agtcctctca aacctctcca atactcttgc tctcaaacaa gcccttagag tctttagtga 180

gcctttggga cttcggccgg gagttgccct cctgtgttat gcttctcgct tctctgcctt 240

cactgtgctt ttatctgctg caacattttc cctgcattca tgaacattta aagaccttat 300

tatatttatc tttgaggatc atcgtttgaa acctttgctt ttcaaataac gtcagtttca 360

ggtcttcact ccccaacaca aagtaactgg atataactat atgagtatag taagaactta 420

tttggttcct ttattccaag aattaaattt tagcccctat ccttttggt ttcagtgatt 480

aaaaatgatc cctaaacata ccctaaacaa ataaatattt acgcatgacg aacagtttgc 540

gctgctcatt attggtagtt gcagcactgg aattgcaaag aatgaagtgt caaatttggg 600

acagctccga ctccaaaaaa tttaaattag ttgctccaga aaatcatgta gttggagata 660

taagccttta aaaggtattt atttaagtca tcttgtttat tatttagatt aaaaatattt 720

ttaaaactat ttaaattaat attacaaact acaacttcac actaaaacta gaacatagaa 780

cataccccat tagaaagaac atgaatgtac gacctttcct tgatcctact aggaatacga 840

tttggactgc ccgaggagtg aagcaaggca tattcatctc tgaattgtgt ttactaggtg 900

ataatgcttt atagtgtcct cgtagcacta gatatgatcc ttattcgccg aacataatgt 960

ctgaattttt gggttttggt tccttcatct ctgtactgta cacataatat tcacatcggt 1020

tgatcggtag cgtatttgtg ctctatgttt tcagaacaag aacacatatt ccttttaact 1080

cgccttccta cctggaaggc gtattcatat ggaacccccc gtcctcgcac tccaattttt 1140

ttcgccggtg ggggggggg gggtcagcag cgtatgatcg gttggttcat cagatctgtc 1200

ctcc 1204

<210> 3649
<211> 1246
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238496_G1, chr7:7011331..7012576, Cluster 22

<400> 3649
cgaaaacgaa ggcgctaaaa ccaatttagg gttcctgcag cagtggctga tgagtgccat 60

gacttttttt gccaatacaa aattaaaata gttgtgatta tggagctagt tttataagtt 120

ggagttcctt ttttccttct ttttttttctc tctctctcaa agatatcgta gtttccctga 180

attcgtcagt ttaccatcag tttaccatcg gtgcctgaat aagaagaaaa aaaaactcga 240

cttacaggga taaaatcaag gatttttta aagctggtgc cctcagtttt gctggtgtct 300

ttatttttat tcttagtcgt gttttttttt gctcagtttt actcttgaag tgctatataa 360

cagaaagaca aaactgagta aaaacatgac taagggtaaa aatgaggaca ccagcaaaac 420

tttgggcacc agcttaaaaa acccgaaccc taagattaat tgtatttttc ccatcttaat 480

ttttgcactt gagggagtat ttttaggagt tgtcatgcta taaattaaac tacgaacaca 540

tggttgatac gtgcccacag ttttggttga gtttgaggac taactacggt gtgagtgtgg 600

tattgtacaa catatctctt gacttgtgat atgccggata agtaaggatg atgacatgca 660

atttaacaaa agggagatat cagatggttt tatggagatg agaaagttta cactgttaca 720

aattttgata tgacagtctt aaaacagtgc aataaaatta tgtattgaga atggccttag 780

gccacatata aatgtccttt aattaatgac agtattatga catggtcgca tgtacagatc 840

atggatggcc cccacgccca cgggatatac accgctaaga agaagattca agtattcaac 900

aaatcttcgc cacgtagctc ctagtgttaa acttaacttc gcccagtata tatatcttcg 960

accaaatgtc aaaactgcac ttagacgcta caattactac gagaagtaaa caagattaag 1020

acacatgcat gtggagcccc cctacgtacc ttcatatgtc aacccttgct ggcccgtaat 1080

tttaagtcac ttttctttac acggccaagc ttacttaagt ggcggctaac ttaccactag 1140

gcatactaaa tcactaatca taatcagcag gtaacacgaa agacacgtgt tgtggatcag 1200

gatctgatgg gttcatagga tttaatacga gcggtaggtt tggggt 1246

<210> 3650
<211> 1248
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_249178_G1, chr7:77958235..77959482, Cluster 22

<400> 3650
ttgaccctca gatagaagga ttatgtcatc aaataattct aatgtctcct gagctggttg 60

cagcaatgaa acaaccattg taagatccat cagatgggcc atctgttgaa gaaatgtcat 120

aatttcaagt gtggtagaac tgtcaaggcc tgttgataca tcatccataa agaaacatct 180

tgcacggcca actagcatct ctcctgattt ttacagccat ggtggtaaaa agtaactgat 240

aagtgataag attacagtat gttaaaaata aaataatgag gctacatgaa tgattaagag 300

tctatttgga ttaacacctg ggaaagctac ctaggcaggt agtgctccga ggtgcctgat 360

tttggacgcc tagggccaaa gatgatttgc ctagccaggc aatgcttggg aggtcacaac 420

ccaaatagat cccaagtgca tcacatattg caaacatttg taaagcattt gtagaaagat 480

atgatatctg gctttgatta ctcccacaac ttgattctac tatgctccaa accaattgcc 540

cttaatctat aacctggtga gtggtgacta ctctgctagc cgagccagta gtagatgtgg 600

actcattgtt gcaattgtta agtttataat aatattatat atactaggtt taggtttgta 660

caatgtatca tgatttgacc cttttgcttc ccaatatgca gggatgggtt ccacttgctc 720

agtagcaagc tgcacacagc accaaatgag ttcgtttgct ggtaagaatc cagttaatct 780

tctgtcatct ttttgaggcg ttcttcgctg ttgggaattt acaccaaact aaaaatcgga 840

agagcatttt aagtgtaatg tcattgtcaa attggttgta tagaaacata gctaagatgt 900

tctaaatgac atttacgtta aaaggaacat gatgtttttg gatgaaatca aacaagttgg 960

tgaacattct gtactttcat atcctttccc cctcaaagaa acccccttctg ttaataaaaa 1020

taaggacttc ttgctcaaat tttgtccgta catataagga tttctaatta tcaatcatgt 1080

ggtggccaga ggagttgctt cggccccttc aatgtgggac atgaaagact tttccatcct 1140

cttaatttgt cctaagattc acgagtcttt catatttgtg gatgaaggga ctatattaat 1200

actaatctgc tactagtact ctctccattt cattatatta ggcaatag 1248

<210> 3651
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255888_G1, chr7:117782315..117783341, Cluster 22

<400> 3651
atgcttaccc ccacaggtcg agtttttta tgttacaacc atgaaatctt gtaaagtttt 60

taagccaaat catctttgga aacacagatg tgtccttttt gtaattgcat attgttcttt 120

gcaattgcag tattgaatct tgtttttcat ttgaattgat gtgcagaaaa tgttgctagt 180

ttagaacagc gtcagattag ctgtctacaa atccttgtgc tttgtagttt ctacaagaac 240

aaaatatttt ggaatttgga agggatatgg tacttttgta ttaagcaaac gaacctgtac 300

aaagctgcca taatactttt ttgacaactt atctaaaaat aatttgagta tgtgcctttc 360

tttgtcagtg tgcttgcaca tattctgatg attatttggc accatatttg cacatggctg 420

tatttggtac tttcttctca tatgggaggg ttaggtttta tatgtatttt actaggaaca 480

aattttagaa cccacttgat ttgaagttca tcggatagga accttggatg agctggcttg 540

tagaaatgaa atttgatgag agcaaagcta tccaatgtaa atagtcatgg tgtatttttt 600

gtgttttgtg atagttgact atttgaagat gtcaaaatcc ctttccgcac cactttgagg 660

tccacagcat atctttcgtt aaatgaattt atgatgtcat taatggactt actgctgtgt 720

gctgtgactt aaaatatagc attccatagc tgtttcctgg acaaaattat tagttggctt 780

tggcactgtc acttaaccta tacatcaggg ccaagtacgc aaaagacaat gtttctatgt 840

accctatgct tactattttc ttcatttata agttaatgaa gttatccgta agatttgaag 900

ggatgacatt gtcaagtaca aatcgtcaag cttgcaacat tgttgtagcg ctatggacaa 960

gcttgttatt tgtccccagc aattatggct tttattctag ggatgatttt gtttacttgg 1020

ttgtcca 1027

<210> 3652
<211> 1263
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260336_G1, chr7:141789680..141790942, Cluster 22

<400> 3652
taattagtta aatactaaaa aatggtcaat ctttttttct tggttagata cactagagct 60

aatctagaat atattcagct agacagtgat tagcgtatgg atccaaacac ctctctctat 120

ataatcacct tcgtcatctc atttgcgttg agtttacgta attcaacacc actacattgt 180

ggccacggcc agttctcttg tgccgacagc taaacaggga gagcatatgc cgtactctgg 240

ggctctgaac tccttcatgg cgatcggtct cggatgctgg ctagctagaa atgactttga 300

caggaatcca agcactgcaa acatcttcac agcattaagt ggcactgtta ctgcattaat 360

acgttttctc tgtacactgt actcttccat gggaagcaga aaaattcatt tctcatttag 420

ttagatatgg acagggctca gaagttatat catacccctg gaggacttca tgattttaac 480

ttctgcataa gacgacaatg gcttcaagcg ccacttgctc tttcaaggaa ctattaatcg 540

acggatcgac caacatgctt gcattcatgc ataggatgat gtgatgctgt tgggacgctg 600

tagtatgtct taatatactc gtttcgtatt aaaattgttg atcttacaag gttgaaattt 660

tatcgtaaaa tagttgtcat tctttacaat gcacttttct tttctgtcca tataactttt 720

atttttata tgcatatctc tatttttttct ctctctcctt gtttttttat gtatcacaca 780

tttctatcta gaatttgtcc tcaacaatac ctagatgatg aatggatgca atgtaaagtt 840

cttttgacca ggtagatatg ctcccaggta ctcgaggaac aaaccctaga tatagctttg 900

acatgcaaac aatctaagtg gagctccatg tttccatgaa cctactgcga gaacctcacc 960

atccaaaaat agtccaagtc atgtatattt taccacccga gggcacctac accgccctaa 1020

aacaaaaata tacacatctc gttcttgttc acaaccgtga gaacctcaga ccatccaaaa 1080

atacacatcg ttattgttcc tgctgaccat ccacctacac cgcgaatcgt atgggagaac 1140

aaccgcaaac ttgaaacact tatagcttac agtgtagact tgatcacaaa gaccatctgt 1200

gaaaaagtcg gaccgtccga gaaaattatt caagttctag taggtaacaa aacttgagaa 1260

ttt 1263

<210> 3653
<211> 1221
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260765_G1, chr7:144210046..144211266, Cluster 22

<400> 3653
tctctcattt caaactctac tcgataaata gtgtaatcta cattgcaaaa tattattttg 60

cacaaccata tatttgatct actggccata tcctaaggta tagttctcgt tgactccacc 120

tatataactg tcgatggctt cactcctcct tataatcacc acataacagc catttttata 180

ttgtttatgg ttagaaacct ataaatatta gacagtacat ttgattggtg taataatatt 240

aagtttgtat tgcaataatt aaaaagttgt taatcagagt actgccaaag tttataaagt 300

taactcttga tatacctaaa aatccttata aattatggca cagaataaca tcgatttaag 360

gtggtgttag agacttctcc aggttctaac tccagcgtgg agatatattt tataatataa 420

atttaaatag tttaaaataa taaacaacgt gacttatcta aatgtcttct aaatgattat 480

aactctagct ccataatttt ctagagctcc taatgacctg ctccaccaac tccagcaaat 540

tttttagagg tggagcagtc ccaaacacct tatttaattg catgaaggca tatacggtct 600

taaatgacaa ctaaaataag aggtgtttta cggtgcatga aaagcataat agtgccaatc 660

agccctcaat taagtagtag aagataagag acagttagtt ttaaattata aggcattcta 720

gaattttcta tgtatattat tttaaacata tatctagatg aaatgtatag taaaaactat 780

ttttaattaa tagtcactta caaaacaaga gtactatcta taccactata taatttattg 840

atttcaactc tgcaaaacct actcgaccaa atcatctcac acccataacc tcccataaag 900

tcaccaaaca aattacacct acacataaca aaacaacgat aaaaatcgct agataaccct 960

catatctttt actcaaattc aatatcaaat gttatttgga tcatctttcc tctcacatct 1020

ctcacatgca cacattatcg aagctaacaa atattttatc agggtcatca gtattatcta 1080

ctgcatttgt actatataga attactttag tatagaacta ctttagttat cagtgttttc 1140

cattatatat tcaaaaaatt atggggttag atggcaccat tgcctcctcc cgcgaccccg 1200

ccgcaccctg tccctctatt a 1221

<210> 3654
<211> 1243
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265589_G1, chr7:170306248..170307490, Cluster 22

<400> 3654
atccatcaga cttccaagat caccatcatg tgcagattgt tgatcctcgt gctaatgtgt 60

ataagtgagt gctttcgttc aattttcacc atatttgtac tgatactttt tatattcggt 120

tattgtgtca tcctgaccag aaaatgaatg ttataattac tctagccatt ggttatactt 180

tcagtacaaa atgtcgtttg ctatggccta aattatagta ccatcatgta caacttttt 240

cctcgttata acagtaatcc attagtcctg gatatgacag gcaatgttat accctgggaa 300

gtagttcatc ttgtccatgt tggtcacgtg agtaatttta gtaatttaat gctatcattt 360

atgattttat ggtttaacaa gacatggatg tgttcatgga accacgaaag ttctgtgagc 420

tagaattgtt agaagtgctc ataactttga tctgaatttc ttctgcatgt acttttccat 480

ttttcttttt ttcttgtggg tgtgattgaa ctcaataatc cactccatat ggaatattga 540

acgcaataac caagtcctta tggaatagaa gtcttagctc ataaagcatt ccagatggaa 600

tattgtttat gtctattgtc ttgccagttg gatgttggag ttgcactagg aatgctctag 660

ttgatatcac acggggcaca ttgggtttca gtaaatgcac tcactgtttg tagggtttct 720

gttgatgttt ccttttttga atgaatatca atgaattata atactaactt aagcacatcg 780

tggatgataa aaccaagttt cacactgtaa ttatttgttg aatgaaaatt aaaatattgt 840

tattttcatg ccattataca gttaaatata aattcaatgt ccaaaactgt cgtattcagc 900

gtgcacaaac gccttgtgct tttttgcttg tgtgcctgca tgtgtgttta tgctattgta 960

atgtgttttc ttctttatta gtagattcac gggttcaatg cagaatcaat catcagatca 1020

taacatttca aaaaggtcaa ggtcacctac tttgtcctac gaggatgctg atggcacgaa 1080

agctcatgtt aatactggtg gaaattctag aaggtatcga atgatgtttg ttttttctgg 1140

ggtaatttaa tacattttgt gcatagtaac cttgctttct gtagtgctta aacacctagt 1200

tctgcagcaa aatgacttcg aggtattaaa ttatgttgga aat 1243

<210> 3655
<211> 1277
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_270318_G1, chr8:19117284..19118560, Cluster 22

<400> 3655
aaggcagagg gactataggc taagattgag taccctatta aaaatactat aaactaaaat 60

tattaaaaca aactttactt attatgaaaa gcattaaagc aattaccaat actagttctc 120

tctaggaaag tcactgaaca attatagtag ctttatatta atcgaagcat gccacttagt 180

acgagatatc aaacagatgt aattgttact agttacaatc cacgcaagaa tactgcaagg 240

aggtggatgt aattgtaaga gtatgtgtag tcactaaacc atgcggggca agaatcgact 300

cgattgcttg tcggtaagtt atgttcttat agatatgaat ctaagctagt aggttcacga 360

gctaattgtc atcacatgct aaatccacga taaagtgttg tgaaaacccc agtaaatatt 420

tactacaaga agccaaaatt ttaatagagt tgctcttcat gattgtagcc gacaacaatc 480

aagcctctca atattctttc gttgtctcta agacatatag gttgtgaact agcaagagta 540

ataagaaccc tattgaagct agatgcatta actcaataca aatcattaga gatcactttc 600

gaactcactt aactcacttt agaggtatta atgttactag agatgtgtgg gagatgtttt 660

cgtaggctca catgtttacc atgttaagaa ggtaaggtat tttcttcaaa gttaaataag 720

ctctatttat atatctcaag aggcaaggag ccattgaccc tttactatag aaaagtcacg 780

ggccatggac catgtgacac catccatcgg actatgtcat atgggtctga tgtcctctaa 840

gcttggcacg tggttgaaat ctaccattgt cgctccaacg ataaacactc ttatcgagtc 900

tgactaatat aatgtccata tattacaact aaacataaat tatttgataa aatgctagtt 960

cataatgtgt cttaatcaac acttcaactt cttcgggtat caattgcatt aatacaattg 1020

taatgcaagt ataagagata aaatataagc gtacctgatt agatacttag gtaagaactt 1080

atcttattta ttaggagaag agataaggct tatcttatct gattgttacg tgagataaga 1140

tttatcttat ctggttgcta ggcgagaagt gtgagagaga acagatttac acatctatat 1200

atttcgtgtg taacacacga tacagatcat tgtcgaaact agtctaaaag tagaaatgtt 1260

gttagttgac gggcatg 1277

<210> 3656
<211> 1323
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_278641_G1, chr8:78355170..78356492, Cluster 22

<400> 3656
aaaatctttt atttttatag taatatagag gacggtgtgt ctttggagac ggtttaagcc 60

tacaactgta ggacgagatg tgttaaaagg aggcagaagc ttttaattct tccaaacaac 120

caaagctaga cagcaagaaa gagaagtgta ggcctttata taaaagttga agtgaagtgt 180

acgtcggtga agaacatttt cttgagacgt tgatgagtgg agtttgaccg acctggagta 240

acaagatttc ctacggtagg catgcaattt tctcatgtca tgctaaaaaa atcactcaga 300

aaaacatact ggtcttattg tagaaactga ttttagaata acttaaggtg tcctaaattt 360

tagtttcgcc acttttagtg cctaaactag caaaactaaa agagttctac caaatagatg 420

tcctaaaatt taggagagtg actaaaggaa ctaaacaccc cttagtttgc cttgttttcc 480

acatgtacca aaatagatct aaaaatttga gcaaatacaa attgtctctc tgcatggaag 540

gagagggaga gagagagaga gagagaaatg cctagagtac ctttcttgaa gcaggggtag 600

atgtgaacag atcaagcagt tgtgttcatt gtcttcgagc tggagttctc agcattggcg 660

attgacacct tgaacctctg gagagacatc accttctcct caaccgatgt ggctcctctg 720

tccatagcct acaagagcag aatcatactg tattgttgta caaggatgca accagggact 780

cactgagcct taagacaacc gatgccaatt ctggcatagc tatacattta gctttctcga 840

tagaatgggc tatgactcat gaaaaagtaa cgatttcaaa gacaaatagc ataccatagc 900

caaaacctaa atgaatagaa acacaaaact tacctgaaga tccttcatcg ggtttcaatc 960

atgttccatg aacaccaatg tgtcggcaga tgtcaagttc aagccaagcc caccaactgc 1020

caattacata gctctctaaa aacataccat gggttgttaa cagaagcaca tcaatggttt 1080

ggtctgaatt gaatgcttta acaatttcaa aactgtaagc tctaggtgcc ccgcaacggc 1140

cgtatggatg gatactagtc gcttgcgcgc gccagcgcgc gcatgtacga atattttact 1200

ttggcgtcaa tatgatttac tatcatgagt gttaatgaat gtaaatttga ggaagaaaat 1260

agctacaatt tctgatggag ctgtcactga atttgatgta gatgctaata gtgacataga 1320

taa 1323

<210> 3657
<211> 1298
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_278782_G1, chr8:79131164..79132461, Cluster 22

<400> 3657
gcccccattc aaataaaata tacatgattg tcattgctgc aaatgtgctg ggctatttag 60

aaggctagga ataatgtgtt ttgaaaaagg aaaaaaaact tattaactct cctaatgata 120

tcatttgaca cgcgggtgcg ttgataactt cccgggcatg gctcagtaag aaagagctta 180

aggatcttct ccaggagggt gccaaactga tgatgagtgc gtgctcggtt atgttagttg 240

tcgttgtttt tcattctgtt tggcccctcc ccttcgtggg tatgcatgtg gctttttggc 300

ttgtctggtg agatctgaac cagatcatcc aagagtgaca ctgtcccgca gttgctttgc 360

acctggccgt ttgttctggc tgtcacaact tgaaactctg tatttctgtt atgatcataa 420

tagaaatggg gatctccctt gcattaaaaa aaatgtatgt acagtgcatt ggctaatgca 480

tatcacattc tgtgaatgca agaaccagcc ttatagactg tactgcacac acacttctgg 540

gggaattact tgacagtgct ctaacccatg aatcaacctg gaaaacaacc aaatccaatg 600

caaatcagtc tctgtcacac gtatttttt tctttctgca tttcagagta cgtgtcacct 660

gtatttcgga ggtacttact ggagcattca aacttcaaca acatcacata acagcgtaga 720

ttcatgtggg ctcagatctg aaacacagaa atgtcacgag ttcagtaaca gctaataaca 780

tccaagtgca tgccaaattt acctgtagat tttagataat agtgtataaa cactgtcctt 840

gtagaacaac atccaagtgc ataatagcat catctaatag agttgggtcc atcgctatac 900

agtcatatac accaaaagtc ccatagtcgt ctcgttgtta ggtttcaaca cttgtgacaa 960

gagtgatgca aaaggaacag atactgacat aggtttcgta cacttgtaat gtaacttcat 1020

caacattttc caacccgcaa ggtcaaagca caaaaaaatt tcaaataata tcatcagcat 1080

atctcaaaat taatgggcta ttcaacaaaa gtgtgcatat ttaagtgaga ttccctttcc 1140

tcaacacccg cgcgctattt gggatcgtac ttgagctttg gataattcaa tccgccgcca 1200

acgaaaattg ttggtgtcgc aatcatgatt gttgcggttt tggaagcagg gaaactttat 1260

atagattatt cagcaacctt gtcgtcgtcc tcgttcat 1298

<210> 3658
<211> 1065
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282320_G1, chr8:100760471..100761535, Cluster 22

<400> 3658
ccgcccatgc ctccaaacat tctgcaagca aaaaaaaatg gaagtagtaa gaacgccgtc 60

ggtttgggtg tgcatcggcc gtcaggcgac gctcgccgga gtagacgccg gaagttcagg 120

ggcctccgtc ggcggcggcg tttccttctc ctcgccgtga tcagcgtctt ccttgccaaa 180

ctcctccgtt ttttcgtttg gctcagcatg ctctttttct tcgactgtcg tggtcgtaac 240

ttcctgccac acgtaggcag tgagacaagg cccgccgata ttttcatgac aatatttttt 300

aatcgaaata gattttatta gtttacattc atacaataaa actttcttca gtttaacatt 360

tatcatgtaa catagttgtt gtttggttca catatttgta acgtgagtta aaccatattt 420

atttaagttc aaccataatt agatatcaat ctacaaattg ataccgtact attgaaactt 480

gttaccgcca ataaaaatgt taattattac cattgtcatt tatgtaccgg ttccgaacac 540

atctgaatag tttttgcaga ccgagttttc gttgtaaact cgttctacaa tgaaattatt 600

catatgctac tatgctagtg aatatttcat tgcatgccgg tcctacaatg gaattataat 660

tgccaaaaaa aactaccata acaagtgtag ccacactatt tgcccaagcc atcatactaa 720

ttattttata acatcaatca aaggataaaa aatatttaat gcagcaatta atcacgatgc 780

acgtacatgc atgagaacta agagtctttt ttatttagtt gtaaaaatct tattcctaat 840

cgtaggttgt gagaaagcta ctgtgaccta aaggttataa gaaagctaaa atatacttgg 900

tcgaaacatc gatcaactta gattctgtaa gaacataata gcttatgaca tggatgataa 960

aaatctaaaa aatataagat ttgaggcgac cagagaaata tatagatttt taaaaaacaa 1020

ttgtgttgtt atatattttt atagcggatc tgattcagaa agtta 1065

<210> 3659
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282619_G1, chr8:102406405..102407502, Cluster 22

<400> 3659
tccaagattt ttttacaacc acaatcaaga atttcaaata cgaaggcagg gtattgaaaa 60

caataaaggc tacatatctt ctatcatagt tgaaccatgt aggtgataca tcaaacagct 120

gtcgcggatt taaaaaatca aactgttact ttgtctcaga caaaaatgca cggtagatga 180

gttatttcta agctatgagt tgcagtaaat agcggagcta ttcagagcta cagtgctcag 240

agctaacaca gcaagacaag gtctgaaaca gataataggtg gattatattt gaaacattgc 300

tcttaccaaa agatatcttg aataaaaaga tgcagttggt ttttttaaat gcaacaacgt 360

catagaacat ttttttgtgc ccctcatcaa caagacagaa caaggaacaa atatttgcat 420

caattgtatt tgtattgtag ccatattgtt tggttttatt tgttcttttg gcgaagttta 480

tgaattttcc tgaaaaggaa tttcattttg ataatgaagg aacagagagc atggaagcat 540

tcaatcacta actaatctgc aattaacata ccatgcagtt caaattaagt cgaatggaat 600

agagaaatcc acaatgttcg tcaaattaag tcgaatggaa tcttatcacc tgtggcagcg 660

tggcctcttc catagacaat gcgaaggtac atagagggga gaaagatgca cacccaagca 720

tcgatgaact gaaataaggg atgattcaaa cctcatctct taatcctttt tctcgcacac 780

taataggcgg gcttgtttag tgtaactttc ctgatcatac ggactataca catccctgtt 840

aatggaatca agacatcttt ttattcagga tgaaaagcgg accgcctaag cggcgactgt 900

tgggcagtga caaggccatg gtccatggaa tggaaggacc actccaactc atgtggttat 960

gcaggaagga tttggtcttt gaaaaaagaa ttgttgctac tcctttgcgg gttatctatc 1020

cggttatcca ctagctacga acatggatta ttctacagaa ggtatcctca tcaggattcg 1080

gttacagcga cgtgtcaa 1098

<210> 3660
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_284165_G1, chr8:110582631..110583631, Cluster 22

<400> 3660
ccctatgggc ccgagaatct tttccccgac acttagtgtt cgctggagct tttagcattt 60

ggaagatact tagcgcccta ctatgatatc gtgcaccttt gttgagttgg tgcatcaccc 120

agtgtaatca tgtcacgtat gatgtactgg tggacttcgt gaccatggtg atatatttga 180

tgtcttttga taattgatat atttgtaatt attatcatgt agtgaatatt tatttctatg 240

ttgaagtatt ccccatgggg gctcaaacag gaaaaggaga tccatgggaa cgagggatag 300

agatgggttt gtccctgtta agctaaacgg gacagggaca aggaatgagt ttcagtgaac 360

gaggggcggg tggtccccgc cccgttgcca tcctagggtg ggtgaactag tgatatatac 420

tggtaaagac actggcccta gatttctctg aaatctatag ttatacagtg tgccaactaa 480

aatggaggag gtggcactac tactcttatc tactgcaaaa tgtgctaaag taggcaagat 540

tattgatcct atctgctagc aattattgtt ggaactgatc ccatcgagcc tgaatggtct 600

cgaatagggt tagtattttg tctatctgaa tttttacata tatgtatact tacgaacgat 660

aaaagttagg atctcatgta taaccacgag tgcatcatcc gcattttact cgacacgttc 720

ctatccctat acaggatatg taataattta ggggtagttt tggcttttaa tctgagccct 780

acgtatgggt ccaaagtaga gtggtatata gggcaaaata aaaaaaatca acctagacga 840

tatagataga atgttttaaa aattaatgtt aaacactaaa tatagaaaac tctacttttt 900

ttcaagcatg agttcatacg tcacgcttct cacgtgtaga gcatattcta ttctttccca 960

cgtcttgttt ttagatagcc cgtgacaaaa catacaagcc c 1001

<210> 3661
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_28732_G1, chr1:175890836..175891865, Cluster 22

<400> 3661
gaaagcttct taagaaggtc cggtggcaac agctccttta gatggtttga attgaactct 60

tgttgggctt accgacaatt ccaacaatta aattgctcac ctcttttat cacaatttaa 120

atcgtgagtg aattgttcac ctcattttac cggcttaagt tgttgtgtta aattggttgg 180

tgcatacaat ttaatataat atcaaagcca gagatcacaa gtttgaatcc tgttaacaca 240

attaaataaa ataatcatta ctcatttta ttccacaact gaggcttgag agagcctcga 300

tgtgaggagt gttagaatac aagtgaactg ctcatcagat taaaattaag cttttagatt 360

aaactaattg gtacatgcaa cttaatataa ataaaataat tattactcgc ttttattcta 420

cgtatgagac ctgagagagc ttcgatgtga gtggagcatt agaatacaag tgaactatcc 480

acctctattc atcaaccttt cgggttaaat tggtaggtgc attcaactca atacatataa 540

ccaatatcga tacctttagg ttaaagaaag tgcaattttt agtaacaaga tcttttttatc 600

aacgggagaa tatctaaagt acaaattagg tgaaatatgc aaagaaactt tgtcaactca 660

tatcaattag ttagtagatc ctacaataac ttcaaaaata tatatttggt ttcctagact 720

tgtgataagt tagacttgta ataagttaaa tattagatat gtatatatat gcagctctcg 780

tgtgttctag aaaaaaaaac attccttgtg tcgaatcaga tgcctgtgcc taaagttgct 840

aggtaaggaa ataataaact tcaccaaaac tgtttcttac tcattcatgt cagtataaat 900

gccaataaga atgcactgtt gacaagccat gcagcagaca agttaatgag tcctgatgca 960

catttcagat gtttgcaaaa tgttaccaac aaggcaatac tagtgtgagt gactaacatc 1020

atgtcacata 1030

<210> 3662
<211> 1409
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293392_G1, chr8:159947819..159949227, Cluster 22

<400> 3662
ttatcgtcga aaaccattct accattctaa tacagagata tacatatctc ctgcatatgt 60

tatcaaacca aaaaaaaatc aatggtgaca gtgctttaca gatttctctt taagagcaac 120

atttactact tgaacttccg ttcctccaaa tcatagaatc ttggcacgac atgtatgaga 180

cttttgttgc ctttgaagaa agtttaaagg caacataatg atctgaattc ccgattctgt 240

atgatattga cttgacatat agaagaacag ctcctgcggg aatccgcccg ataaaaattc 300

gtagaagacg ctttgaaaaa gaccagtgtt ttaatcctgt aggcgtggca ataagaaagc 360

atcatgattt ttcaaacttc tcagtatatc tggatcatct tcttatcagt gtcaccattc 420

acccacacca tgagattatt tatgctgcat ctgctagtgg aattctcaag gaaaggatgc 480

gtctttattg tcttttatac aagtgggctc aacattcctc gcttcgcttt gttctttccc 540

cttgtgcaaa gcgattccat ttcgtttccg ctttgagatg ggaatggccg aatgggggat 600

cgctcctgtc cttccgtcgc gccacgtggc gattccacgc gcgttagaag gtggtggcag 660

tagaaggggc agatcatctg agctgtgatt gactctttct tgaccacatg ccctttgtgt 720

agctcattaa ctggacattc tgatgctcta tcattttgta gatacaatac cagtataaag 780

ttctattttt ttctaaaaaa atggatgacg tactataagt aaggctattt ctagcagact 840

ttttatctca ccccttattt aaaaaaccac tcttcaaatc gtgtaatcta ccgtgtaaaa 900

cggtattttc tatgcacatt tatacggctt gttgaagatg atctaagtgt attgcaccgg 960

cattccgaaa aaatagtggt agatcagacc ttttttgttt ctattgtttt atctctacta 1020

tattaaatca tcagttccaa cagtcgtccc gcgtcaatat ttttcaaaaa aaataccctg 1080

catttattta ggaatcaacc cacacactcc tataatcttt tctctgctac tataatagaa 1140

gagtttatgt aaaaaataag gtaaaattat ctataactga atgtttgaac cttggttgtt 1200

ggctgcatat tcacacccac ctaatcaata gaaaatatat attttgtgct attaaaaaca 1260

aaagatttat tatatattct acgtataaaa atcgtagcaa tccacgggac acgtgaatag 1320

tgtttgttat atgtatttgt ttcgagcggc gtttctttat ttattattac atgcactgca 1380

cagttgaggc aaagtcgatc gtgcgtgtg 1409

<210> 3663
<211> 1200
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294580_G1, chr8:165998316..165999515, Cluster 22

<400> 3663
cgccaacaat ctccccgcc aaaaccgcat atcctcttgt ttaggtaatt ttgatcacat 60

tatgccttct acttctcatt atttcctttc aaaattttgg gatgtagctt gtgaaactct 120

ggaatctaat tcaatagttc attaaggtca atatttgcta tggaacatcc taggaccatt 180

ccccatgagt ttcaatggct tccacaactg aacaaatatt tgtccccctt ctagaagcgc 240

tccccctcag ctggtatatc taactattac aatgtacaat ttggtattac aatgtacaaa 300

tatactatgt gtttgcccat ataataacta cctaacagta aacttttaaa gtatgtagaa 360

gccacagtca attacaatgc aacttcttat ctctatgagc tctaggttcc tataccaagg 420

aaaatgctta agttgtgaat ctaatataag ccataactat tgtgttcacg cacaacaaga 480

tttccatatt atatgtaacc aactagtggc caccatctca ctttttgtat tcactttaca 540

gaactatcag atactctagg gctagaaatt ttcaaccatg ttttgtcgcc tattgtcttc 600

ctctaaagaa atcgacatgc tctcccacca gtgatctaga ccttcttgaa actattgctg 660

atagggtttg tgacatcaaa gaagtcaaat ctggataggt gcaaactccc cgttggaatc 720

cgcctgtttg taccagctgg tcatactgaa gccgacatgt ctaggctttc tttatccttg 780

aagagagttt atgtgccagt cctttgagac tgcttttgat ccacatcgga ttcccttgaa 840

gacggaagtc gtccattttc tacgcgcttt gtactctagg cattgtgttt ggtaaatgta 900

cataacatgt acatttctat atgttatgaa ttcaccttgt tgtcgctcat actttgtaga 960

acagtgatgt tggagaatat tgcatttgtg ctatatatct tgttgatttc catgagcttt 1020

gaacctccaa ttgtttaaca ttactatttt ccttaactca ttcagtacaa ctccatgtga 1080

atttctggat atgatatggc atcaaacaag cttatctttt gctctcaaat tggttgaaac 1140

agttctaatt cattttaata attatctgaa attctgacac tggaccattg ctttgggtct 1200

<210> 3664
<211> 1007

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294598_G1, chr8:166084482..166085488, Cluster 22

<400> 3664
gtgtttttgc ataactaaag agctgctaca tcagtttgag attgctcaag atagtagacc 60

tttctccctt ttggaagtat ggctaataaa tttgttgaag acacatagcc ttgccttggc 120

ttctttttat gcaaaatatg gccagaatga aatcttgtat tgcgtggctt gagggtgata 180

ccaacactcg cttgttccat gctcaggcca gtgaaaaaac tatattgcca atattatcgt 240

ggatgatggt caagtgctcg cggcccatga aaataaggct caggcattct ttagcttcta 300

gactgggcta tggaataaat gtacataacc ctttgacctt taaaggatga tttatttcac 360

actctcacct tcaaaatagg ttgtttaatc ctctcagcca tataaagctt gacaaataag 420

cactagacaa ttttagttgt cagttttgat gacatgacac tgatttaaac gacaccagtt 480

ttatcatctt attgtatcca aaatttatat aattttgtac aaaaattgtt aattagatat 540

tatatttttc ctaaattgtc taaaatttta ggagtacaga ttaattacta aaaataaaaa 600

actatataaa aagagcttag atttttttta tctctgattc atttcttatc tcataagcct 660

aaaaattata cttgagctat ataatactat tactaaatta ctaaatattt tgttttatta 720

atcaagttaa cttgtttttc ttctaattac taaccaaatc aattgtacat tatttttttt 780

ataaaaactt actaaacagt aataaaatta tcttcaattt gtacacaaat cttctcctaa 840

ctaaactaac atagacaaat tttctgagaa atttgaatgt ggaattgcta gagctgtagt 900

ataaaaaaca agagcatctc tttctctact ccaaaaacaa ctaaaacaaa tttagacgtg 960

gagttgacaa atatttaccc atcattgccg cttgttacaa aatggtt 1007

<210> 3665
<211> 1292
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295308_G1, chr8:168930979..168932270, Cluster 22

<400> 3665
tatttctcat tttttgtttg gcctataaaa tagaatgagt tgatccaata ttaacacatt 60

tctcataatt aattagtatt aatatgagta atgaggtcat ttcaccagat ctaaagaata 120

gatttataat ataccacctc gagtggtttt ttaaatcaaa cacccactta atttcacctc 180

tatcccactg ctccccacct tccagctatg cataccctac tccattactc cgacatatga 240

ccataccaac tttgatgtat tttcttattt tcaattcaat tagtttatat attttagaat 300

tttcgattat tatgtaatct gtagttttaa tttgctaaaa atatttcatt atgtcatccc 360

atttatttaa aatagagaat ataaaatgat taaatctaga agagagaaca tgacgtggtg 420

gtgatgcggc tatggaccaa ggctgcagcg tttgtattag aggagcaagg ctgaactagt 480

tgtactggaa ttaacttaaa tcaagtttaa aaactatatc acggtaccga cttagctgta 540

cactttcaca ggccgacacg ttctgatccc agcaagcaat agcattcaga tttcggtgca 600

tgaatccatt ggtttgatgg atcttgctaa tagataaaac cataaactta aatgaactta 660

atcttgacac tttaacaaca agtcaagatg gccgagttgg tctaaggcgc cagtttcagg 720

tactggtccg aaagggcatg ggttcgaatc ccattcttga cataattttt taaatttatt 780

tttttcagct tactttactg aatgcatcac tgaatgtctg aaactttagc gaatacatca 840

ccgaaccatt ttttatattt atttttttcac cttactttac tgaatgctcc atggaagtct 900

gaaacttatt ttactgaatg catcaccaaa ccttttgaat ataccatttt ttcactttgc 960

tttactgatg catcactgaa tgtctgaaac tttagcgaat acatcaccga accatttttt 1020

atatttattt tttttcacct tactttactt aatgcaccat ggaagtctga aacttatttt 1080

actgaatgca tcaccgaacc ttttgaatat accatttttt cactttgctt tactgaatgc 1140

attgctgaaa cttttcaatg taccattctt ggtattcaat cttttcacct taccttgctg 1200

aatgcattct gaaacttttg gatataattt aactttcttt gtttagtgta tgtcgtttac 1260

cttttgaagt ttatttttct cagtttatag gc 1292

<210> 3666
<211> 1168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295702_G1, chr8:170760685..170761852, Cluster 22

<400> 3666
cgtcgaggtc gacccctcct tttatagacc aagtaggggg tttacagatg gcttctcacc 60

agaagggagt gtaacataaa cacagtatcc acccataaaa attggtcgtg tgttgattcc 120

cttgcctgtg tgggttctct gtcgtatctc taatattgtc ggtggtggat atgattcatg 180

ttggcgaggg aagctcgagt gtcatcatta gtgattttgt cctcttcttt tggcgtcgcg 240

gactgagacc taggacctgt aggtcatgag tgagactctg gcccaaatct cgtaggttga 300

gtgggactct ggcctagaac ccatagatca taagtggacg gaggcctgac actattcacg 360

ttgcgtctac caactatcgt aattaatacg gcatactcgg ctcgatgcag ggcagagggg 420

gtgtcctgtg gacgtggtgg agtcgctcgt gatggattgg acccataaca tactaaccct 480

ggttcttatc cgtctacccg aagatctcag ccccagcctg atccaaatca gtttaatata 540

ttaatataaa ttaattttat acacgttaca aacataaata acatattaaa tagaggttat 600

acggatgtac tagcgtgctt gtttgtttta ggttattgct agcttctatc agccaaaagt 660

tgaaacaaat aactgttgag ccacctttta aaaagctaga aagctaattt ataagaaaat 720

aaactaaaag agtgttagga ggttttatga tttttgtgtg ctgaaaggct aaaagatgtt 780

acaaaagaca ttttgacaaa aaaaaaaaga gttactgttc acaagtacca actaaaagac 840

aagggctaga aaaccagttt ttgagtcaaa atgtaaaaaa ctcttaggag gaatatcttt 900

tcatagaaat ggacagccaa aaaagtttga cctaggacga atgaagatga acttatattt 960

gatttaagta gctagcaatt atttctagac agtgtgaatt caccaaaaaa aaagattatt 1020

ccagcagctg gtgggaacac ttaggccctg tttgggaaca cagtttttcc aaactgcaat 1080

tttttgggaa cacagttatg acattactac agtttacaat gcttcagttt tcgaatacaa 1140

cagtatctaa tacatcaagg tgtttgag 1168

<210> 3667
<211> 1059
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300312_G1, chr9:15169965..15171023, Cluster 22

<400> 3667
aggtgagagc tgagcagaga ggatgactgt gtgagggagt gatagagtgg agagaatgag 60

cgggttgacg aggtgaggga gcagatgcaa caaatatcca tcaaggttaa tgtctacaac 120

ccatttttt gttttttggc acaaaaaaca tgaatatttg aacaacattt ttacggctca 180

tggagacctc tagtttttat tagaaaattt tattgttttt aataattttt ttgaaattcc 240

acgttttgaa acgaaaaaat tcagaagctt ctaacaaaaa atgttttcgc ctagttcaat 300

aacggtaaaa attgtcggta acctctggaa actgagcggg aaatttaacc gtgattgcgg 360

gtgtgtggag gtgacgtctt ctcaacttca atcatagaac gattgattaa cttggatagt 420

ttagagtaca agaagacctt aaaatcagtg attcacatac aatatatcat tatagaatct 480

tgtaactctt gtgaactgcg caaagacaaa ttcgagggaa tttatatata cacacagtga 540

aaattgttga taagtttgcg attgcaagtg ctcgaaacaa cgaataaatt aaccaaaatt 600

agctacattt actcgtatac gcaattcatt tctgtgaagt ttgaaacact caagccatat 660

tctatagcca aaaagctttt tatcatactt taggggaaca gtaactaaca acagagtggc 720

ggtcctaaga ttttgaatgc ccgaggcaag ttttaatgta gagacccttc taatattttt 780

atatatacat attaccaata taagcactca atatacatat aaaggtattt atatcaaata 840

acaaataaat aaataattta catattacaa tattacctta aaagtttatt ctaacattat 900

aaatatgatt aagatatgga tacattgtgg ttgttagttc ttcgatactt caccgctgaa 960

cttgtagacc ataaattggt agtctagcca atataaacat atatttaggg ttaggccctt 1020

tgtaattggg ggccagggcg gccgcccctc tgccccacc 1059

<210> 3668
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300325_G1, chr9:15301984..15303007, Cluster 22

<400> 3668
tgttgcaacg cacgcgtatt tacctagtta taatatattt ttctagacta atttatggca 60

ttagctactc accaataaaa tttaaactga aaactcagtt tgtacgtaaa agaaataaaa 120

aaagataaat tttgttaaga gatggattga accataggga taaattgaac taaaaaaact 180

ttatggggtt atgtgaatca tgcatagatg agaggagtaa tttggacgtt ttccttttaa 240

caatatagaa acaaatttat tttatagtta tttaagttta tgaatgtttc atctatatga 300

aactagcata ttttctcgta ttgaaaaata ttaccacatc acaaaaacat acttatgtga 360

caacagataa aactccaact gagacttgac ctaaacaaca gagaaagaaa tgtgcacatg 420

aaactcacgg taagacttag cctaagcaat agagacagat atctttctcc ctttaatgtt 480

aggtagaaat gtatcctaga gagttaaaga atctttttaa aaaatagtat ttaaaaaaaa 540

ttaggccttg ttcattcgta ccaatatagc tctggattaa catggattgg aattaaatcc 600

atgtcacaag tcatgcccca aaataattta agtctagtca aatttttat tcggttaaac 660

acatcatgaa ttataaccca aaggtttaga aatttttaa actatgtaag gcatggattc 720

tattcatagc tcattaggta tggaacaaat ctatgaagat attgcacaaa tttatattgg 780

aatccatgta tcaaaagaat aactagcttt gaaagataca tagattaaat gatggattta 840

tcacaccata ggattaggtg tggggtatgg attcaatcaa tccacacccg gattaaggat 900

gtgtttggtt tgaagaatca atccattcta gatgagatgg tgcatatatt ttataaattg 960

gtgaaatggc tcattcctca tattattagt aattattagc ttatgaggaa tgaaatggtg 1020

atac 1024

<210> 3669
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300544_G1, chr9:16980235..16981239, Cluster 22

<400> 3669
ctggacgttg gcatgcataa atcatcgaaa ggaaatatac cacacccccg ttcaccgttc 60

taaataaatt ataaatcata agatgttttc agttttttt aaatacgtta ttttatgtca 120

aatcctaaag gtccccctt tcattttgga aactcctagg ttctttatta ttatgctata 180

tttctagagt taacatggcg gggaataaag tcacaaacaa aaatgataca aaagcttgct 240

ctcgctcaaa aaaaaaacac attaggcgtc tgacttcatc ttggatctaa ggctatctct 300

aaccattctt cctatatatc ttgcttattt ttactttcta atacatttta ttataccctc 360

ttaaaatatt atcatctaca tacagaaggt ctccaaccat tttccccaat ataattgtct 420

ctatacacta taactcagtt atttaacatt tatttaccat tttttgattt ttttttcaa 480

aaaaaaatca tacaatattt gttctatcat aatatatatt attataaaat tatggggctt 540

acataatagg attaatatca caaacaaacc actaaattaa agtataatgg agcataagcc 600

tctccctata tatacatgga gattccttct ctctatatat acatggagta tataggagga 660

gccgtcctag aactgtgctc ccactatata tggttgaggg aggcatacag ggcagtgttg 720

gagtcagcca aagctccggc gtctttctta atcttatcta tgactctatg agcacatgag 780

gtgtctagtt ttttttcttt tcaaggttca agcatttctt ctaattccct tatgcacacc 840

ttgctcccaa accaattaag agtacatgag tgccccctat gtatattttg gggcaccgga 900

agtaccgagt ggttcttgca ttaaccacta cttcctccac cagagaagag tgtatattta 960

gatcttataa aagtaaaaaa tatcgactaa atttagaaaa tagca 1005

<210> 3670
<211> 1233
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301465_G1, chr9:21968990..21970222, Cluster 22

<400> 3670
agcccgtgtg gccacacatg cttgcaggca tgcctttctc accaaaaact acaccctgtg 60

tgttgtgtgc atgtgtgtga atgtgtttgt tgtctatgtg gcgcatatag gcgggcccga 120

ggggtattca tcgaataccc catttttgct aaccaacaaa gatatttaaa gggaccatta 180

gttatacatg ttataagata ggattaaatc aatctttttt tgtttccttt tgaaattttg 240

agtataaatt gtctaaatct taagcccgcc ttttttgtat gtcagcgcgc gcacgtgcac 300

gatgcatgca catgtgtaaa tagctatcct taatcaaact aatttgagaa gtcttcaact 360

atatatataa tacttaatag tataatacaa tagttaagaa catagcattg tcgataagca 420

catagtttga ttaagcattg tcgataagtc ttcaactata catgtgtaaa gtttttgttt 480

cctttaggga tgcgtgggtg agggatagga gcagaaccac ggtgtacgat ctacattagg 540

tgcttataga gtagtagtag aaatgtaata gttaagaaca tagcattgaa aacatacaaa 600

ggtaaatgac taataatgac ttgttcttat caatgacact aaaattcgga caagatgtac 660

aagttaataa gagaagggac aaacaaaaaa aaagtaaact tacttatcga caatgcattt 720

gtaacatgaa tgcaacatgt catgagttat actagctagt tagttttggt tacttctttt 780

gggtcttcat tttattttat tttttgaaat agatataaga tgtcatcatt tttaatggtt 840

gcaaatacac ctcgctcaac atgacatgcc gtcctaagat tcaaccgttc aacataacac 900

accatttctt gttctagagc tagctggagg aggggtgttt gtcgagttgc gaaacaaaaa 960

ctttcggtct tcgttgagta gaggttagtc cactagtcac ctcaattact aaaaccactc 1020

atatatggag ctttcgggaa gaaggttttt ctgttgggtt gttaaatagg aacttcagag 1080

agaaacatga tgctaaagtc ttggtcctct cttcatcgtg catttcgtaa caactaactc 1140

accgaaagag cgagatctgg acttgcagac tatatataat tctagttttc aattatatat 1200

acatcttaaa aaaggttgga aagttgaaat tag 1233

<210> 3671
<211> 1192
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_306860_G1, chr9:57619088..57620279, Cluster 22

<400> 3671
acattttatt ggaactaaat aagtttttt tggactttat ggtgttgagg tgctcattga 60

tttcttttca aatgactcta ctactattct ataatagttt ggtggatgca ggtttttac 120

atccagtttc atcttttgga aatcgataat caatgaaaga acatattgtt cctacaggtt 180

aatccattct gtcattatag caaccatgat tgatacactg actatgatac acaatgatta 240

tggtacttac tatcaaacct tcatcatgca aaatatgttg cggttgtgtt ctactctata 300

aagaagagtg cattagtggt tgcacagtat actaatggtt agcttttata gttgttagga 360

ataatgcata cccattatga ctttaaacat gggtattgtg tgaaactcaa aggtttggct 420

atttttactt aatagaatag tctacttata gaaaaattta accccttatc caccccaaaa 480

tggtcatagg aaaatacatt tattgttgaa tatgtactac caagcataag gtagtttatt 540

ttggttcttt cctatcaatt ggtaagtgtt tattttctta gtattgtatc tctattggaa 600

aattctgatt atatgttgca tgatgaacca attgtattca acggagggaa ctaccaacca 660

tgtatagatt taaatttctt ttctgctttt ttagctgata tgcttttgat tatggattgt 720

tggatttttc agataatgcg agattggtga aggtagattg catattataa taaaaattat 780

gttgttacac ctcaagtcat ccattgccat aaatttctca tttcatttaa tactattttt 840

ccattcgcgc aaaaaagtaa taagtgccac tttcttcata tgcaaacttc ctagagtaga 900

ccttgaaata cttttgtgaa ttccccttctg attagtttgt aaaataaatt ttacacatga 960

ggaatcaagt aaacgatgaa caaattacgt gcacgcatct aacaatttat ttctattttc 1020

ctttgtgatc tagacttgta tgcaattcct tagctatcag ttgcctcagt cactcactcc 1080

aaacatggaa cttacatgac tcaatttcta agttttgact gatttttcct ctttttatat 1140

ctatgtaaac acatagtgca tagactcgcg cgaagcgcga gtaatttact ag 1192

<210> 3672
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_307610_G1, chr9:62249602..62250646, Cluster 22

<400> 3672
atgtgcatag atcgtgtctg ttttatatat gtgtctgttt tatacagcct atttgccaaa 60

caattttagt taaatagatt cactttcgat agagaatcaa tcgaaatcat tatactagag 120

aatcagctct cggagctaaa gaatcatgaa gcggagctct accaaacgag cccttaactt 180

cttagtgttg gatttttta ttgactttcc tctactatat taaagcatca gtttgtggtt 240

ccatggtttc caccattgtc gcaccaaatt gaaattgtaa aaatgctaaa attatgcatt 300

ataaataggg atttaaatca tggttattgg ctctgaaccc acattcacac ccaccaagcc 360

aagaaaacca catgtcttta tgttttatat tctatattaa atataaatga aaatcgtagc 420

aatgtatgag cactttgcta gtaaaataaa attttaactc ttcaacacaa caaaagtgag 480

aaaagcttaa ctcagcaggc ttttcagttt tcggtttatt tcccagaaac cttattccag 540

cttttcaaaa gcacaagccc tatatatgta actattatct atttttttatt attgtaatat 600

taaatagcaa agtgcttcta caactccttt ctttttttccc tttttacttc caaaaatgct 660

ttgaatctga tctagactct tctcatgcat gaagttatat cattatatta tattttaaca 720

tataacctag aacctggaga ttcttgatgt cctgcaaata acatgaggtc ttcttagcct 780

atcttgaaca taccatgcat atggtcgtac aaaacactgt ctgtagagtg cactatttac 840

agagtttgtg tttaaaatag gaggcgtgat aggaggtgga ataggaaagc tgttggagat 900

agccttaagc tatctccaat agtcttactt atcgtgcttc ctattttaat ttaaactaca 960

ctctgtgaac agtgtagtct gcaatatgca caatctgcta gtgacagtct taatagcctg 1020

ctagtaccta cttctaaatt agaca 1045

<210> 3673
<211> 1053
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320824_G1, chr9:137342115..137343167, Cluster 22

<400> 3673
cacatactca atgcctcaac aagtgtcgta ttgttgaaca tgcacttctt tggtgcatgt 60

tctccagctt ttaagaatga caggtggcct atgcaactca atactccgga attgaggatc 120

tggtagatct caataatatg tcaacactga taatgtactt ttctttttct tactttatgt 180

cctgtgtaac ctataagcat taactccctg gtctcaatgc ccaagaagaa ggaaaagaca 240

gcactaattc aaccacttca ggtttctagt cgataaattg ataaactata aggggttcat 300

tttgacagga gccaaacaga gtaagatatc aagccaggta gaaatcacta gttcttcatg 360

ttataaaaac atgtgaatat gtgatgatgt tgaatgaatt tgcgaaagcc ttttctcatt 420

ccatttcctc tcaataaaat gtactgtcta aaagaaagta taaagttggt taaggcacca 480

acagttcctc cattgcgatt catggtgtta acgcagtgtc atcaccatct tatcaattta 540

aactcagtgt cataaactag tatatccctg aaggtggatt cttgttgact tcagtgcaaa 600

tttgcatttc tgagtcacta gggcagaccc actgcagagg ttcccacaag agtgaggtct 660

agtgaaggga taaattgagg ctgaagggat aaaccgaggc aagccttccc cccacaaatg 720

tggagaggct gctttgcaca cgcgacctga tgactatgtg agatagctct caccactgca 780

ccaggcctgc tctttatccc tgaatcactt gctgtcatta tatttaaatt cacttgttgt 840

ggattttcca cagtatagta gtgtactcat ggtgacatat gattttcggg ccacagaaga 900

acaatctaat cacaggatga gtatcaacgg tggataaaaa tttaacgaat gcagctcaga 960

tcaattaggc agaaatgtga ccttagctgc aaacagcaag tgtcatcacg ctaattttct 1020

tactaaagag caatgtggaa agcaattgca agg 1053

<210> 3674
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322364_G1, chr9:145498914..145500160, Cluster 22

<400> 3674
gacgatgaca gccagaactc aactatccac ctccactcga ccacgccaac aacccttgca 60

catggccaac acctacacgt gaagtacaac aatcaaacat gtacgtgttt ggacaatgac 120

ccctccaccc tcatatgcat atatgcaacc accaccactt gagcctacac atggacaatc 180

atttttggt attataaaca tgaatccata tggttccata gccttccatg tgtattattt 240

ttgtttggtc attaactgtt tgtttgtcat tcatgttatc tcgctagttt tatttcatat 300

atttgtatag aaatatatat ggaattggcc catacacaaa tgtttcaaac gtgcctaaat 360

attatgtctc gaggtaaata tatggatact ttatcattca acttgtttga acatatgtgt 420

tatgaaaaaa ctttatatga gcatatatgt cattattgtg ttccattcca atcacacttt 480

ctatttgcat atgtgtttta tatgtgattt tggtgatcaa attatgtgtg aatctactag 540

tattcattat gcaacgtgaa ttaaataagt tacaaataaa tcttgtcatt tttttaattt 600

tcaagctcat gtaatattta tcactggaaa acactaataa accggtcatt aagtataatt 660

tcttggttgg tttatacgaa accgttttta aaaagaaatt ggtcggtaaa tttgaaaatc 720

gctagttctg gcttgatttt ttgttttccc taatgaccga gatttaggtt aaaaatgaat 780

caccacttcc ttccgctccc caaagccttc gcggcttcgc cacatgttga caggcaacat 840

cacaacaact atataaccaa aggtaaacaa cagtataata cccaaaaacc cattacatgg 900

tctctcaaag caaattattt ttgaagtttt gatgtaaaac catagtgttg gagagtacca 960

tggtattttt ttaccaaaat atctttagtt atcttaacat agtatttttg gagtatttga 1020

aacttcactc caacctaaag ttttttgtct atgactagct tcttgcacat atatactaaa 1080

taccataatt tgaggtactt tatttccaaa caaatattgc taacaatgct gtaaaaaata 1140

ctatagttta ctttatttcc aaacaaatct ttactaacta ttaagaaggt aacatagacc 1200

acttttgtgc ccccgcctcc ccctctgctc gactcaattg cgtgcac 1247

<210> 3675
<211> 1280
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322891_G1, chr9:147985005..147986284, Cluster 22

<400> 3675
catggtggac gcgtcatact gacgaaaacg tagagtagga agttcagagc tggacagcgt 60

agttggctcc tggatatgtt cttcgtttat aacagaatct ttacacacca acagttaagc 120

aggctaagat aagaacatct ctaacatttt ctaaaaaaac tcttaatctt gttttttttt 180

ccttgtaaga ttggagaaaa aatgtcctcc aacagctttc tatcttaatt cctaattttc 240

tgcatttgaa aaaattgact aggccctgtt aggaagcaac ctatttttta aaaaaaccag 300

tttttatctt ttatctagga gagaccagct tcttattttt taagaaatta aaaatctaat 360

ttatataaac taagttataa actggtatgt ttgaaccacc tcaatattta taaaccattt 420

tttaaaaaat tgtgtgtcat gaaatgactt gaggtgaaag gacgtgggag gagaataaag 480

aagcaaaata ggattttcaa tacaaatgaa attgacaaga gataaagaaa gtataaaagc 540

gttatggtga tttaaaaata tttcaggatt tctaatgtaa aattttcttc tatatatgtt 600

ttaggagcag caggattttt aaaactatcg gagaaagttg acaaatatac tccctgtatt 660

tttttaagcc actttaaaat tttattaatt taacatttga ttattttatc aatttagcca 720

ttgatttttg aggaactatg gagatgctct aaagagctga atctactctt actatatatg 780

taccaaaact gaagtatgct caagtccaaa ataacttgta tcttttccag ttcataataa 840

agaggatggc acacacaatt gcgcaacata aacagagctg acaccgccta cactagctag 900

aatataaagc ctccaagtac gaaggcacat cgccatctat ccatgcatat tatgatacga 960

tggcaacgac cccacctcac caacgaggcg ccactcaccg tagattcatt ggtggacaga 1020

attggaatac tcacaagtca cgagaatgtt gtatacatgg ccgggaagtg gccagcaatg 1080

cgcaaccaac ggaacgtaca ggggagtagg ggacgagcag gagcttacag caggaagctt 1140

tcgagcagga gcaaccagcg ccgccggctc aggatggaga cgacactgtc ctatgctcgg 1200

ctcccttctc cgtgagaatg aaaaatgtta aacgcatctt tctaccaaac agactattca 1260

tcctcgttta gctaggcgtg 1280

<210> 3676
<211> 1231
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323175_G1, chr9:149474935..149476165, Cluster 22

<400> 3676
gactatcgct ttgggaggtt aatatgtaca catcatttgg agatgactcc tagaaaaaca 60

tttaataggc gggtcttttc tattttcaga gacgagagga ctgaccgcct ctacaaaagg 120

tatctactga cttaaaataa gtcttcatct cctattttaa aaagtgaaaa gttttaactt 180

tgataaaaat atatcaatac taataatatt aatatttgtg ataccaggta aatactatcg 240

gactgatcac attatatctt tctattgtaa acctatttta gagatactaa tgttgatatt 300

attattttta aacctggtca gagttaaaat tggttgagtc cttaaaatgt gagatgcaga 360

ctcgttttag aatggctaga gcatttgcta ataagccatt tcttgacacc ggcatactta 420

gattatcttc aacaattatc ctatcacatc ttctatctta ttccatattt caatcttcac 480

tctataaaca atgtaatcta cagtacaaat ttcttatttt atatgatctg ctgtgaacaa 540

ccgcaccttc ataaataaca tttttagaaa caaaatgtct gaaaaagtag caaaccattt 600

ttttaatctt gggacagacc ctagacatgc accttggaca accatttgaa ggagaaaaac 660

aatagttttc aatatattgc ttccataaat ctagatgaaa tgtttcgata gatcataata 720

ctactttatt tttatacttt acacaatgat atttctgctt tttacgtcca ttaccaattt 780

gttatgttcg ttttggtttg ttttcgttat cctgttagtt ccgtttttga ttcgttttca 840

atttcgtttc tgaaataaaa tgtggaagga gttattccaa atcccaagcg gtcctctttt 900

ttatccctag taaccagtaa ccacactgac ccacgggacc caccaaccga acccaagctg 960

cgtcgcacta tccttttgtc ctcacagcag ctgtgcggag aatccttatc atacgctcca 1020

tgaagacgtt tgaaagcaaa atatttttag agttttgaga taaaaccatg atattagaga 1080

atatcatagt attttttgc taagagttgt ttggctatat tataaaaaac ttgttttgaa 1140

taccgtggtt ttgtaggtac catattattt ttggagtatt tgaaactcca ctccaatcca 1200

aagtttttat ttatgactag ccttgcacat g 1231

<210> 3677
<211> 1269
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32559_G1, chr1:199758410..199759678, Cluster 22

<400> 3677
atgcaaagca agtgtgaata tccttttgcc atgttttta tgatgaaact atttttcact 60

acaattgttt ttcggtttct tgttcctttc ttttctctcc ccactcccta cctacgatta 120

ctgcatacca gtaaattgta aggaaactgt tttccacttc tggttctaac gtcttaatgg 180

ttatgttacc catgtgtgcc tttacaatac acaatggttt caatttcaca tcttattttc 240

aagtggattt taataacact atcttcagtt atccaagtcc ctaactacaa ttagtacata 300

ccagtaaatt ctacaaccac ctatgaataa ctttactata cacatatgtt ccaaatttgc 360

atccttttcc cactggattc atgtggcatt atatttgctt actaaaattc agacactccc 420

tacgatctaa caaatgtgtt acttgctaca taggtcaatc atatctaagc ggtactacaa 480

caagtgcatg gtactttaat caaaacattc atgaggcaca agactactac atcaagtaaa 540

gcacaataag tacaaaactc agaactttta gacactccct acttttgttt tcccctctat 600

acacatgctc cttagtaatc ttatgcatgt agttaactgc ctcaacctaa tacttaccaa 660

tattaatttt tgaaacaagg ttgtagtact acattcttct tataaccatt ttttcacaaa 720

tccacaatta gtgcatagtg aaccatgaga aagaaaggaa aaaaaaggtc tagtgacatt 780

tatgtggtcc aaattgtcac attacttgaa ggttacaaag cagtgatggt ccaaattgtc 840

acattacttg aaggttacaa agcagtgacc tccaactgat taaacccaca acagcagtag 900

aagttgaggt ttctcaaaca cctaatttca aagacaaaac tgttcaagaa ctactcgaca 960

tggatccaga tatgttccct gtaattattg ccaaatcctt ttatattcca ctttttaaat 1020

acaccaagaa atgagcttat tctatttgta acatactttt taccttatat gatgtagcca 1080

caaggctata aatgcattgt cactatctca cgactcatac aagaaagcaa atggtggttc 1140

ctagcttgta cgagatgcaa aaagtcttca cctcaaacat ccattggata tcgttgtaca 1200

ttgtgtggct atacagacat aaaatttggg taaccctgaa catacacatt tgatttgtca 1260

tagttcatt 1269

<210> 3678
<211> 1111
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326752_G1, chr10:11803598..11804708, Cluster 22

<400> 3678
attgatgaga gaagccaaat cttgattata gaatataaag tgatcccaag ctttgtgagt 60

ttgcctttgt ggcatcaatg agttgagaag cttatgagag ttatcctaat cttgatcatt 120

gagaaagtca aggatctttg gtttgttgca ctcactctct tgaaaccttg ttcctaggtg 180

gcaaggagtc atcaacaagc acctaaggtg gtgtggactg ttgtggtgaa aattgcaaga 240

agggctattc ttcttgttga aaaaggaaag gagccttctt agtagaaagg ttgaaagaga 300

ccattttggg ttcaacccca agtaaacttt gtttgggtaa ctcaacgact ttcacaatgg 360

agacgtaggt accttagggt agcccgaact ctagtaaaac aaattcttgt gtattttcat 420

tggtttgcct cgtatttatt catattggct tctgtttaca ctaatagaat atgatgattt 480

gagaccatag aaaatgtgtg gaagtattca cctatttata taaaaaacta tatatcaagt 540

tgtatcaaca ttgtaagagg aggttcaaag tttttagcgg acacagtcag ctaagccacc 600

atgtatatct ggtcaaatca attttggcgc tataatgatc cgacaaggga aaccttgtgt 660

ggccaaatcc tatagttggt caagccaact ttcccaacga gctctattat tagttgtgtt 720

tatgttaata tttcttaaga aaatttatag agcgtattca ccccctataa gcattgaacc 780

catactttca gttttcttta aaaacaataa atctaatcat tttttctatt ctttgacgta 840

aaaaataaac ttttaaataa ggaaaaatga tatgatgtac acatggttat aaattaatgc 900

atgttgaagt tcaagaaaaa aatagtttga caaacaaaaa taatccaacc ggggtgagag 960

ttcgttaagc taaatagtaa gctcttttta tgtagttttt tatttttagt aattaagttg 1020

ttattcctaa agttatagaa aaaccaggac aaatataaca ctcaattatc atttttttgtt 1080

taaaattatt taaattttgg ataccgttag a 1111

<210> 3679
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_327218_G1, chr10:14522456..14523498, Cluster 22

<400> 3679
tggccaaaag tgcagcagga agccgctggc actcctggct actgttcaga cgcaggctta 60

gaatttgaag ggtgagtatt taaaatttta gcggagcata atttttggc aacctaaatc 120

ttactataat agtctttaga catatataat tgattatagt attatatata agttgtttga 180

tagcatttaa tatatatagc atataatcga atacacatta cacaactagc aaactagatc 240

ataagttcat aactcacatg acaaagaata gatcataaaa gttgacaaca ttcaacatat 300

caaagtatta attatgtcga cataatgaag tggatagtga caatatctta aatatataga 360

atattaaata gcataagaaa aattatatat tacaagacaa cttttcattg cgcatgttgg 420

tagccggcca gccgcatccc ctgctctcgg gcgtctatgc agagctcagc aggataagga 480

gtaaaaagtc tgatagccta ttgtgctgct tgatgggatg caaggtagag aaatgaagac 540

cagtgaaaat caaagtttgg acaaaatagc tataaaaagt gttattttat atttaatact 600

atggtttttt atgatactat attatgtggt attggaagcc aaaatatgtt tgattggtac 660

agttaagaca tagttttaaa aatcatggtt accaaaactg tggtattttt ggagttttgg 720

aaactccatt caggatctcg attttcttat gttatctcta cgaatacttt ggttttataa 780

tgaaaccaaa cacatataag ttattagcaa tattgtggtt ttatcgtggt aaggtgacac 840

tgtagtattg taatattaat atgatgtaca attgtaaatt atgatatttt aaaactacat 900

tactaaacgt gccctagata tatacacgat tttttacgaa aataatggtc acttgaatac 960

tcttgctttc catgtaggcc cgcccctggt tgcctcgaga ctgacataca ttttgctcca 1020

atccatacgt acatgattaa aat 1043

<210> 3680
<211> 1048
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_336212_G1, chr10:73219434..73220481, Cluster 22

<400> 3680
taaggttgtt tggtttatag tcaggattgt gacagagcca tcataggaga atactttcaa 60

ttcttgtcgt tctcagttat cccttaaaat cggatggatg agtctgttcc cccaagagac 120

gaggcttctt acatcccatg catgtgtatt tattccttat gcctcggtct cattcctcca 180

accaaacaaa gacagggatc aatacatctc tacctatctc tcaaaccaaa caaaaaactc 240

ttaatattcc atcccccaac taaataagag tagagatcat ttcataccat cccccgctgt 300

tatggtgttg ttaccgcctt gtcaggttct cgtaaaatct gtactacaac tgcccaatta 360

ctccacactt agatcaggcc acctagcgaa tgttggccta gcaaatgtca aggtcaacta 420

attacatttc aatttataat gacattgaaa ggaatatgac caatgctaaa attttcctga 480

tctccagaat cacatttgca tctagtagag tatatcgcca acataaaaac attattttat 540

tctaccatga aaagaagtca ctctcaagta aatcaagttc aaatccagca ttaaatagca 600

actttgtggg gggggggggg gggggggggt ggtgagatgt gatgcataga agatcatatg 660

acgctggtca aaagtctagg gtgcacatgt attgttgccg gcttaccgct gattgccgtt 720

tcggttcttt tgatctttgg cgtgacttat accaacaaaa aaagttaggt atttttttgg 780

ctgcaatcta atctacatta ataaatataa tcagagtaaa ctatactgca gtcaaataaa 840

aaattgcatc aggctgtatg gtttaggttc tactagtgga gaggaggtga aaacagcgtg 900

aaacacgcgc cgaaaatata ctttctctat tctaaattat atattatttt taaggttgtt 960

cggttgtgtc taaatgaaaa aagattggaa ggtattaaat ctcttagaaa aataatgctg 1020

catgtacaac gatgtttaat gtagagac 1048

<210> 3681
<211> 1266
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338912_G1, chr10:87163127..87164392, Cluster 22

<400> 3681
ctgagaggtc gagtactcat gagacatatt cgatatgctg tcggataggt tatcagagag 60

gtatgcagtt gtatactcga gtgctatact cactagacat atccgatgtg gcactggata 120

ccaatgcaat aatggctagt tttttaaact agttgttaga aaagaacctg atgtgtccgg 180

tagagagatt gagtgtgcac cgaacatgtc cgttgcactt aactgggctg agtggagggt 240

aacaactagt tccttttctt aggactattt atgcccctaa cttgttcata tgaggtctct 300

tgctaatttc aattgttaat taagaaaatc catttaagag tgagaaagaa aatttgacta 360

gtgagggact taagagttga taattactta attagtgacc tcattaatat attaagggtg 420

gctcgtgtgt attcatcacc tcgttcagag cttcagaagg taatgggtgt accatagcat 480

tgtaaaattt cataatgatt ctataaggta acgggtgtgt cgtagcactg tcaaatttta 540

tatcaaagtt gtgtgtctag aagacttgaa gagatctaca ttttgtacta gtttgtatct 600

ttctcgaaca agccgtttta ccccccattt taataatttc ctacgccatt aagttgctcc 660

tgaggagcta gagtgacgat cgtaattcat aagagcaagt ataataagtt gatgtaggtg 720

ggcggcaaga gataccatgt cagatttatg gtgatgtaga aggaagagaa gtggagagag 780

agagaaagca tgcatgttta tcactagtag ccggccgaga gtggttgcac acggacttca 840

agactctttg tgagagaggg gtggaccaag tattaaatgt ataacttata ttatgagatg 900

gttattatgt gattaggctt ttagttggct atattttaca tggtaatatc ataaaagccc 960

cactatagac tatattatta aacttgctct aaccttctgg ccgccacaga catatgtccc 1020

accgttttat cagtagctcc catgtgcgac atccctgtac ttgtcgggta ttgtataata 1080

agcttaattg atgaatcatt cgcaggagag aagtaatcat actagagatt gaacattatc 1140

taagagttta tgtcatgttc tagttaagat taaaccatgt caacttatgt gtatgtactc 1200

caattaagtt catctagttt gtaggtggca gaggttccta acgcaaataa ttaacgcacc 1260

acataa 1266

<210> 3682
<211> 1326
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338914_G1, chr10:87165570..87166895, Cluster 22

<400> 3682
tagggtcaat ggtctgtttg ttagacgaga tgtaagggag caaaacatat ctactctata 60

tgcttctcgc gtgacaaatg acacaaaact cgtgctttaa aagagcgaag atgtattatc 120

aatcactatt aaaatttact ttagtactgg ttttaattca atcgataaga atgttaacaa 180

ttccaaagcc ttttttagag tagtgtcgca gtgacgatat cgtaggccca agccatcgta 240

cgggcccgtg caagtgcaag tggggtcgtc gtttggttgg ttgcattggt ttggacgtcg 300

ttgacgcctt ttatggtttg tggtgtgccg accactacca gatacgatgg agtagctagt 360

acgatcctgc cgactccctg tagatagcta ccacatgcat ggccggtgac caccacagtg 420

tttcaggata atctgtcggt tgatgatttc tggtccaaca ccatacttaa agaaagctag 480

ctagagacca tgcatgatct gtagaggcat tatattagat tgaagacatc atggctgatc 540

agattcaata gcatttgagc acggggcatc cgatcgggca aacagattca tcaaccagag 600

ctccttaatt aatttggccg gctgaaccta tctaaatctt gtgtccttaa ttaatttgtg 660

ctatatacca tcacaattat tattggcgta tactctacat cgccggtata tagtttatga 720

gcattaacta tttgctttac tgatggtggc ctacctgacc tgaccatata tatgcacaca 780

aatttttctt cttcttcttt atatatgtgt gtctgattga ggtgaagctc atgtgaccat 840

catgtgacat atgaaatgaa catgcatata taccttgaag cttgaatcga tgcatgtcat 900

tgtggggaag cccgacaaga accggccgtc acatgcgcat agattatacg agcagaggga 960

aagattttag gcagtctggc atatattgtg gggaaacact acacgaggtg ttttgttcga 1020

gtaatcactc tattcaaaat aagataatac atcatgagta aattcctcaa caacgtgttt 1080

agtttgatga atgagtcggt ctatcatctt ctcactcctt atcttttat ttggtttatg 1140

gaattagttg atccatcacc atttcataat aattatttta ttctcatagg ctaataatta 1200

gtaataatat aagcaatgaa ttcattccac cgaatttata gaatggactc atgatgcgcc 1260

agctcatcta gaatgattga ttttttaaac caaacacccc caaatttggt aggatgaccc 1320

atcctc 1326

<210> 3683
<211> 1214
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_340122_G1, chr10:94032505..94033718, Cluster 22

<400> 3683
tctcctaaaa tatgaacaga aggccatata tatatatata tatatatata tagaaaattt 60

tataagtata gtatagctga ggcatgattt tagtcactca aataacttaa atgtgtattc 120

ttccatatca aatactaatg tacaaagagt atacacaatg ccgatctcat gttctagaga 180

aaagcatcat ccatcatgta ttttttgaga tgaattcttc agttatatct tcataattaa 240

tgggttagca aacagcgacg gttctgtcac tccatgtgat gataatattc ctattatact 300

agtggctgtc gcgcgtagtg ttgtggaagt aaaaaagaac acaaaagaga agccggatga 360

agactccaga aataactggg gacacgcaag ccaatttgta gagaaactat aatcttactt 420

cagttagtac atgtcacttt tcctggctag catctgataa aatatgacac tgatgaaata 480

ataaacctaa tagcataaat gaggtaatac agtttgagca gcgaggtgat gcaaatgaaa 540

caaaaacaaa gcaaagttat agaaggtagt tgggggaaat acactgccag accgtttcag 600

ataaatttta gagagtttaa tatttcctga ccttctcttt ctcccgctaa ctcttcccat 660

cctatatatt atcaaagatt aaatgatttt atttctagac atcaggcgtt atagattttc 720

cgagtaatga tattgtcagt gcccccactt tgtccaagat attacagatg cagtaacacc 780

aggctagaaa ttaagatgac aacattttac agcctgatga catggggcca gtaagaaact 840

gggcgcataa ttgtcgttta tcttcacgcc acctcctcac agtgtcatcc aactctgaaa 900

atgcagaaag aagaagaagc tcaaggagtt caaaacattt tacagcctga tgacatgggg 960

tcagtaagaa actgggcgca gaattgccgt ttatcttcac gccacctcct cacagtgcca 1020

tccaactctg aaaatgcaga aagaagaaga agctcaagga gttcaaatgc tagccgcttc 1080

aaaaaaatct gggactatac tgtacggagg gaaaacccaa atagaaatgt aagctgacgg 1140

tcatattact gatgtggctc ttcttttatt tcctattgtt tctcaaatgt atattgctta 1200

ctacgttcca tata 1214

<210> 3684
<211> 1192
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_340357_G1, chr10:95207906..95209097, Cluster 22

<400> 3684
aagactgttg gatgcggtct aacgtgtcgc gctcttggag atcactgtgc gtctgcgtta 60

gtatgcaaat ctcgaaaccc ctgcggtcaa cttggccatg attaaaggta aaaagagagg 120

actgaactgt atgtgatggt aacaacacca acaaaaggaa acgcgtacgt cctctactac 180

tgttgcagta tcggaaaatc atctgcaatc caacagatat ttttcagccg gccaacgatt 240

aatcagtcgt tgctacgaga atgtacaggg gaacagtgaa accgaacttt atgaattcta 300

ttgcagtttt tatgtagcaa tggacaacaa taaaaccgtt tagacttctg gaagaacaaa 360

gcaagacatt gtcttttata tagttagcta atcattccat agtttaaaaa tactatagag 420

ccaccaaatg ctagcgtgtg tttgtcccgg attcgaagag ggcaccgtga caggtgtctg 480

acctaccttc cacatgtcca acggtatggg gtgctggctg gtttgctttg cagtataaag 540

tcaaaggttt ccagtgtggg ctggacaggt gatggctggt gtaaccgtgt aaagctagat 600

acgcatatta gtatagatta attatactcc ctccgtagtc gtcctaagta aatcgctatc 660

aactttgacc gtgatacctg atgttttata aaattttata atataaaaat aaaaatatta 720

aatttatcgt gacttaaact attataatat ataactcttt tagcttaaaa taatttaatt 780

atatagatat atattaagtt aaaattaaat agtttgattt agaacaaagc caaaacgatt 840

aactcatgta cgccgagaga ataatttttt agttggaggc ctcatgcatg taatcagtga 900

cgtggtgcaa tgatctcttg agagattgca tgccacgtgg aggatcactg gtataaatgg 960

agatgacgta ttctgccaat cggcggcaac cagtgcgtgc attttctagc cagatggacc 1020

aacttttgtc tgacatcact gctggcgcaa atacatgttt tgagaattgt tggttccttc 1080

tttgccatca cagacacttt ggtgctgttt ggttcaaaaa atgtaacgta aatggtaatg 1140

gtaatggttt cggctcgatt actgacggta acaaatttga ataggctgta tc 1192

<210> 3685
<211> 1138
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_342106_G1, chr10:105303547..105304684, Cluster 22

<400> 3685
gaccctggcg cccggtcggt agcctcaatg atcgcgcgcg cttcggccat tgttggagcc 60

atgatgagtg atatcgatgg gtgccatgca tgcaggcgat atcgtccaaa gctcgatcta 120

tccttatcct tgctttagag tggggactag aaactatatc aggtgtaata tgtctttggt 180

gtatatagtg tacatattga attgtgatta tcaaaaccaa atttaatgtg ctctcacacc 240

tccctttcag tcttatattc tcactatccc atttattaag ccgtacatgt atttagaaaa 300

gtcaaccttt taaatctttg actaataatt tagtctaaac atatattttt agtttatgca 360

tgctatttat ttggattcat atacaaaagt tttctaagat gatagtattt ttatatttat 420

tgatgatata ttctgaaaaa tatgaaatga tcaaagtttt gttgtaaaga ctgccaaaaa 480

cttacacgct ctaattaatg ggatagaggg agtatatttt acaaacaact tcacgattta 540

agataggcac caaaggctct ctacgaagaa tttgagattg agtgggatag aggatatgta 600

atttgagtgg gggaggtgga tgccgctgcc gcctgctgag ctgccgcgtc ttttgcatag 660

ccaggtcagc ctttgctccc tgctttctct ctcacgcgtt gtgcgcgcgc cgatgccatg 720

caagggtcct tttcttttgc tggcagactc tgtttttcag ggaagtaggg atcgatcgag 780

cttccccttt cacacacaat tgcctatcca tgcagacatg cagaagtgct cccttcgttt 840

tgtttcttta tataccagag cacaggatgg accacagtcc acagtatatt cgtcctcatt 900

catgtacgta ctctccatgc acaaatacta cctccgttta ggaaaaaaag atacaatttc 960

gttttagatc aaggcttact aaatttttaa aaagtatcat taacatatat gattcaaaat 1020

acatatacca tgaaaaaata ttttatgcca aattcaattg tatttatttc atataacaca 1080

tgtatatatg tatgattaaa tttaaaatgg tcctacttct caaaaaagta taaactga 1138

<210> 3686
<211> 1008

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344806_G1, chr10:119761412..119762419, Cluster 22

<400> 3686
tgtccctgat ttgctgtcta tggtactcgt tcgatgactt ggcatcaact gtctatatgg 60

cattttcttt accacggtat cgactcggta tgcttctacc tcagtccctg attgggctga 120

ccttgtgttg acctcggttc ttcactagtt gtgctcgtct actagtataa ctaaatagct 180

agtaatagtg ctaattgctg gaatattttc taccttattg cttgagtgat tgattgatgg 240

tgcggctagc atcgggtgcg caaaacaacc gaaacaagta tggccatgaa cacggaaatt 300

ttctgtgaaa agagctttca ggattaaaaa aataacagcc cgacaaaggt gatcttcacc 360

agtattcagg gtctatttgg attttggacc accttagatt acagtaacca atctgacaaa 420

aataatctcc aggtgaccta taaacaccca gcaaaatgga ctgtaagaat tatataatgc 480

atctccaacc tactacgaga gattcaaggt tccaaactag ctggcaatct ttgatccaga 540

ttaccataat cctaatcatg atctagattt tgtagtaagc taaagtgaac caaatggggc 600

ctcgatatat ttggaaaaaa cattacaatg agttgtctga ctcatcatac acattacaag 660

aggaatattt atggtgatac aagataagag ttatgcagaa acagttctgc taaacatatt 720

gctcagtgtc ttgtcagccg aaactcttat ctgatgatga ttaaaactcc atcaaagatg 780

aattgatcac tactaactca agaacacaat gaatagtcta tttgttttta tgttatgcaa 840

ttatcagggg cagatggtct attatggctt attatagcct gaaccatacc atgtctgaaa 900

acaaaattaa cagatatgtg acccaattct cataagacca caaatccacc tgtccactcg 960

aaacagctga cagccctcag cagccagcct ctcacacggt cacatccc 1008

<210> 3687
<211> 1358
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347361_G1, chr10:134587949..134589306, Cluster 22

<400> 3687
ttttacatac ctaaaaattt atatgatgga tatttaatat atatgaatat taattaatat 60

gtctacataa aaatgtacta gcaaattctt tccaacgagg catatataca aatagtaata 120

atagttcttt ctaatgggac atatgtctaa agttataagt agtatagtaa tatatagaaa 180

tattaatatg tgtacattaa tttatacaaa tggacaatag tagtagttct tgaattgctt 240

aggtgttctc aaatggagta gtttcttcat ctttataaat tgtgatttac aaaatttatt 300

gataataagt attattatac taaatttata gcggagacac tttacattta actaaacatc 360

acctagaaca tcactcatag cgattggaca acagtgacaa ggaggcaaag tgataaatag 420

acaaaattgt tgttggtttc actttgtctc ggttgaggtg aacttaccct tttccgcaaa 480

ctagccctta aagcatgaca taaaacaata tattcaacta gccctaactg taagagctag 540

tctacttaag cattgttcat aatacatcac ttattgctct aagggtgagt tgctagtttg 600

atgtattttc ttatttccta cctaagggct agttcatgat tcaacttctt ctttatttca 660

cgacgatcca tcgtagcctt tttttctata gaaaacatat aaaatcatgt taagctcaaa 720

aataatggat atcctagtta aaataaccct aaaaccaaca actttaagtc atgatcctaa 780

accctaaaca gtgtaggcat tatggaccgc aagacaatgg aaaaacatgg gcaaacacca 840

ttttctatat atcatgcttg catgtgtgta ggaaatgcaa actccaatgc cactatgctc 900

gcatcatttt ctaaacccta atgcaatatt caatgcaaac tctaaggtgt ggtaataaca 960

gaaggtgtgt aggtgcacaa gaataatacc agtatttgag taatcaagaa tatgttataa 1020

caaagcttca gtttcgagca tgctcaccag tggaacgggg cagttgcatg tgatggcaag 1080

gtatccttag acttagtggt gctacaagct cacgaaaaag aaagacttga ggaatgcaaa 1140

atttataggg acaaacttta gtaccatttt aactaagaac tggtactgaa gattgtttga 1200

gcgggaaatg aaagttctag gtgggaacta aggaaaactt agtattggtt ctttttaaga 1260

gccggtacta aaaacaatga aaaacattag tataggttct ttttcagaac ctatactaaa 1320

gtcgtgtgag cgaaaacaaa aacttcaagg tacgaccg 1358

<210> 3688
<211> 1207
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347747_G1, chr10:136620657..136621863, Cluster 22

<400> 3688
cctctgttcc atagtgtata ttactatcct gtttgcggtc ttgtgggggа aagaaagtct 60

aattaaatcc cgaaaaaaaa aacaaatgtg taacgattat actataagta tgtaaccact 120

ttcaagacat taaaacatgg tcagagaata aatatatgcg acagtttttc tacgtgctag 180

catcaaaatt aaggcagttc ttttgatgtg ttttggagga attttgctgg gaatccgacc 240

gacgtaatat tatcgtgtgt gtggcagagt caatgcttat cttttcagat gcgtggagaa 300

aaattatctg ccaaaaagaa ccgtttttca gacatggggt gaatcatttg taataaagtg 360

aagagaagag attggggaga gggagaatat ttggcactgc agccaccatg gacactgcag 420

ccaccatcgt catctccaaa ttttatcctc tatgctccat cttctcaaat ttttcactac 480

cattttaata caaatttttc caaaatccac aatcgaagca tgtccagcaa aacaaagagt 540

gtggttcaac accacttatc ttccacttga tgttttggag ctagcaagtg agttgcacag 600

atactttcca ttttcctgaa taatttgaga cattacgtat atcttgtgag aatatatata 660

tactagcact aggtatttta atttgaaatt tgctagaata atatcggaga agaaatttag 720

tgtatataag gtcttcagca aattggcctg agtagctagt taactacagt tgaacaaaca 780

tttaaacaag ggtcaaattt ttatgcgtga ctcggtctaa gtcaagtatc attatcgatt 840

ttattttact ataatgtaat acggagaagt tggaaaacac gcattatttt gaatgttttc 900

tgtggtttca gttccacctc tatctggaat tggacgtgtg aaaatgcttg ctcggagtca 960

tgggcaggac ttaataagtc aaaaaaaaca ccgtggtcaa aatgtaggtg taatggcagt 1020

aacttatata aacttgttct aataatgcga cgtgttggat atatatgcac atggaaggtt 1080

ttgctttcaa ttgaccggat aacaaagccc aacccaacct gcacatgtgc atgcaatttc 1140

ttatacacaa atataatcat ttgcatctat gtattctaaa tatcgtcgta tgaaagattt 1200

cttaaca 1207

<210> 3689
<211> 1322
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349892_G1, chr10:148122432..148123753, Cluster 22

<400> 3689
acttgagttg gcgtccttga gatcccaaag ttccgtgaga tgctccgcca gtcacctttg 60

ccaaactttt caaaccaagg aggaacaatc tacaaaatca aaatcaagtt atagagcatt 120

tcaatagcaa tgcagcagat cctaggtgga tgaaactttt gagaatttaa gttgtattgt 180

atatgtccag cctctggaag aaagaaacaa tgtttaaatt aaaattttaa actcttgcat 240

gcaagttact tatgttaaat ctaatcatct agaacattca ggtttcagga ggaaaaaaaa 300

ggtgaatgtg tcatctatga tatgtgacaa attgaattgt tcttatataa aagataatac 360

tcgacggtgt gcccacgtca aatataaaga catctcttta actatatgca taacatcaca 420

tacttgggaa atggttgcat tcttaaagct gtaactacta tttaatatta cttacttcca 480

cccaacgctt atgcttcatc attaacctta tgtattttca ctttctaatt acattcaaac 540

acaatttcag tcattctcaa ccattaaaac acaagcgtgg aaccaatctt tttagttcaa 600

ggaaacgaac ccatcttttt tatttgacaa aaagggggac tgaatcaaat atgtcaccta 660

cctaaccgaa atactatcaa caaaccaacg acaatgggtc cctacttgta cataccaata 720

aacaagaatt actttgggtg gatatgaaac ttttgatatc ataagttaca ctgcatatgt 780

ccagcctcca gaagaaaagg acaatggttt tgctgaactt ttgcatacaa gttacttatg 840

ttaaatataa tcatctaaaa catttagatc tcaggaggaa aatgaaagtt aaacatgtca 900

tctatgatac gaggccatgt agattgttct tatataaaac ataatagttg atggtgtgtg 960

cccatgtcag tgataaaaag atctctttaa ctttatgcat aaacatcaca tacttggaaa 1020

tagttgtatt ctcaaggtat ttgtaactac tatttacgac tacttccaac caacgcttcg 1080

gcttcatcat tagtgatatg taatttcact ttctaattac attcaaacac aatttgagtc 1140

attcaaccat taaaatcaca agtgtggaac caattttctt ggttcatgaa agaaaaggaa 1200

cccatctttt tttagaacaa aaatgaactg aattaaacat atcacatacc taacagaaat 1260

attatcaata agcaacaata atgggtccct agttgtggat aaaaacagga ctacttgtaa 1320

aa 1322

<210> 3690
<211> 1173
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35342_G1, chr1:214303352..214304524, Cluster 22

<400> 3690
ctttcgagaa gggttggtta ttagagacaa caagatccaa gaaatgttgg aggtggcaat 60

gaggaagatg acaacacaca ataatggagc cctagcactt gtctccagct cgatagatat 120

gccgaggtaa cttaggttat tactaaccaa gtggtcactc tagctaaatg gcattaaatg 180

tgtttggtct tttgagaagg gttggttatt agagacaagt ggcatgagtt gtagtaggac 240

caagtgagtc aagacaaagc ttgttacaag tattataata atacacatta tttaatttga 300

gcaaatagct aggggagcca tgtgaaccac ttaaaatcta ggatacatag aagagtatca 360

ttagtgtgct tattacagac atcatcccat taaggttcaa aaggtggaat gggaaagtgg 420

atgacccatg gagggctcat caaagtctta aggatgatgt ttgaattaag ttgaaacagt 480

atttcacttc ccatgtggtg atgatgaggg atcaagaacc gcttctaaca caccatgggc 540

cggcatcaca ctcaagaact ttaggatgga aatgaacaag ttagtcgagg aggataaaga 600

gctagttcga gaaattagta cacaaattag catgacttct aggaggattt caagcaatac 660

aagttatctg atgatgtagg gaagtgtgtg ctaagaataa ggcaaacatg aataagaaag 720

tagatctaca ttggctcagc tcatgtggct aaattagtaa aatgcctgtt tgggacatgg 780

aagttgaggc aatggaacaa caaagtatta cacatcaaac tggcaagtgg gagcctagat 840

ttagccgaga gccatgttca aagaaagaca gtatatgcaa ggaagctcaa gatctaggga 900

gataaatatg gcaaagatcc tatcaaatta gaagataaga ttgatatcca tgtagatatg 960

ataaaacccg gatgataaga gtgaaacaca tatattgata gagataagct acccaaacca 1020

ggataagctt ggttgcggtt tccttgttag attcaatcgt tgtccatatc ctagagttga 1080

ttaggatcaa tatcttgcaa acatcgtccc tccttggact ataaaaggag ggtcgaggcg 1140

acctcattgc ataggcaata aacattgcca aat 1173

<210> 3691

<211> 1378
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_36469_G1, chr1:220062546..220063923, Cluster 22

<400> 3691
gtatacaaat taggcagaaa aagtaccatt cttatgacca tctcaaataa atatctctag 60

acaaattcaa agtaaccata gatagcaagg ttaacatgtt atgccattcc attaacttga 120

tctcctaatt gtgcggcgaa aagataaatt aagattcgta actgaaaaaa catctgccac 180

cagagcagat ttgttctgca caatattaaa gagatttgga aattactcac taaaaggacg 240

gctggttaac tatttatcct ttcaaaatct ggtcgtttga ccattcctca ctttaaagta 300

aactcaaacg atgtgaactc ttctctttgt agtttgtatg accccagggc ccaggtcggt 360

ttagtccttt tggcaatata ttcaggcggg gatcctcttc cacagttgac actcaaaaaa 420

aaacttaaga tacacattaa cacatgtggt ttaagtgatc atgagactga taaggttgct 480

atttttgta gtaacaataa taacgaataa tggtttttat gaactattta tgcctgccgt 540

aatttatttc atttccagat taactccgag atacgatgac ttatgtagaa cactattttt 600

tttcttagtt taagtatgtg atgcctcacc tcttttagta cagttaaatg tttatttaaa 660

catgttatct attgtatact tgtttaaatt tacctataat tatcatatga cctcgatgcc 720

aatgcattgt caaaaaggcc aacaacagaa catggcaatt cctctagtct agtaaaaaag 780

ggccaacaac agaacaggac gatactgtac agaagctgtg ctggccttct aattcatgtt 840

tcctctcaga agtttgtgtt gatccagcgg tggagcatgg cctcagttgc acacttgcac 900

tgcatggccg cctgcacaat aatgtgcccc catttgtggg tgaacttatt acttccaggg 960

atgagggacc tcaagattaa cgtgctcaat cattcattcg cggccgtgac aaaaatattc 1020

tttgccgttt ggaggttgga atgtctcacc tgatttttt tggctgctaa taattcgata 1080

ccgtcgccgg attacgaatg caaatgatag gatgatgtgc aaggatgcgt gacagcgtca 1140

gtgagtattt cggttttgtc actttcggtt ttaagtttgc aaatctctgc agattacagg 1200

cattgcattg cattgtaact tttacaccac cattactagt ataatacaca tacgttgtga 1260

cggtacacca attatatttg atggtatgca atggttctat aacacgtaag agccaagtga 1320

taaatcagta taatggatct cccaaaaaaa ataaatttaa aattaaagtg gacccatt 1378

<210> 3692
<211> 1147
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38817_G1, chr1:232338757..232339903, Cluster 22

<400> 3692
aaacatgatc ttttatgcat tctatcttcc aaccacgtgt agttgatacc aagaagtaga 60

tgtacagtct gacctaatac acaaaccatc acactcacaa tagcctactc gttcggggca 120

cgaacactac aaaatgatgt acttacacct cacatacggc tgtgatctaa agagcgagag 180

gcagaggagg gataacacac taatggtgtc cgtatgaaca gtacacatcg gaattgtagt 240

gccagctaga ttatttctaa tcatccctaa atgatccctc actttactat agagatgtta 300

ccaatggact atcaagctca ttaagactct aaaggcctcg tgaatcatgt cccatctatc 360

agagtctaat aatggatcca atccaactat ctttaggcat atattcatca ttctcatagt 420

tgcactagag ttaactatta aagtatcttt atattcttac ctcttaaaaa tgaccttgta 480

ggttcatcca accaacagtc atgacccaaa aaaatatttt cgatcaacta ttagcattga 540

ccttataact cttaaaagtt catgaaaata tatctcgcaa aacctatgcc gctcatcaat 600

gttgtctttc tgccactcga cacctagaca agtgcaaggc gagtgaagtg ctaccctcgt 660

caattcggcg atatctcgca ccacaaccaa gaggtgatgt agagctatgt gttcatgatg 720

tttagtgggt tatgcgtttg taatcttgtt cacctttgtg ttcatcaatc gatgagtagt 780

gagagaacat ggggtattac atatattaca acctaaatat ctttaaacta tttgtgtggt 840

ggctcctagt cgtacctagg tttaacacat cgctgaccta tgccactttc tctctcctat 900

aaaaccccttg ttttgagtaa tttacatgca ctagtgttat tttattcact gtatgaacaa 960

tggataaatc actcataaca agtaaaagtg tgtctacata agatgttaaa tctatcttaa 1020

acacatctag tagaaacaag gagtgagaaa gtcatcatta ctcacaactg gattgctcca 1080

tcctagtcga agatgagttc gtggtgttgt taaagtccat agacattata ctacagatca 1140

actcggt 1147

<210> 3693
<211> 1115
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40008_G1, chr1:238347084..238348198, Cluster 22

<400> 3693
aaacacacat gaacatgatt cgttcatgtg agtgcactac cgtctacacg ataggaacac 60

ttacttccaa cttcaacatg acctcattga gcacattggc tcaacttgct ttaggggcat 120

catactagac tagttgccca tttgcattac acaacattct aatagtgatc aagatagtag 180

tgttttcatc aatgtggtag cagcaatcaa gatctagtac tctctatcgt cgtttgtgtt 240

tgtcgttgtt tgtatgtctg tcatgatttg tatgtgtcta tgttacaaat tagatctaaa 300

accaaaagtt gccaacaaac gcatcttggt ttgatttgta ccattatgag ataaccaact 360

gtaattccat atccactaat gttgcaacac atgagcacgt ggtagacttt taaaatgttt 420

gttagcacaa cgacatcaaa caaagctaac ataatgctcc gataatagat aggcgtatgc 480

ggggagtttg tttattaaaa gtaatctgat gaactactgc aaaaacataa gtcaaataaa 540

tacaaatacc aaacttgtaa ggattgagcg caaccaagta tataaatatt tggtgtttgc 600

agcctcaaac tccatggaaa cttcattcag tattagacat gccgacttga accttgaaca 660

tgatctattg ctttagcttc ttatagtata cacgttgagc aggattgcaa gtgaactatt 720

caaatgccaa gatacattcc tcttttgcct tctagtcaat ccttttctgg tgttccaaat 780

gctcttgttt aatggcccac ttttctttct caatcttcag ttgttgttta cgaaactcat 840

cagtcctttt tgccttttgt cgctcatatg ccacaattgt ctagtaagcc gacaaccttt 900

gcagagaaag attacccaat ttagcaagat gctcatctaa ggatctcata gcagttgagc 960

tagattgggt cttcttattt tattccttgc ttgcttattg acctagagat cgattcaatg 1020

ttgtgctgcc aggacatgag tcttcacggt ttagctcgat ggtgttagac ccaattagtg 1080

tagcttgaat gctctgaact tgttgaccag aacta 1115

<210> 3694
<211> 1272
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41007_G1, chr1:243213425..243214696, Cluster 22

<400> 3694
gacaaattta ctcgttggtg ctagttcaaa acaccaacac ttacaaactt atcttttgtg 60

atgttttaga gctttacaat attgttggaa gacctaatga atttgtttat ggtgaaagag 120

gatatgggtc agtttatgag gttagtttat ctataacact catggatgtg aatttatagg 180

aagcctctga tagtaatttt cctatgttgt tcaaagcaaa agggtatact catgtttttt 240

aattgtatgc tagaaatgtt tagtttttat gttcagttcg tctccatttt tgggagatgt 300

gaaatacttg tttcgattat tttcacttat atcaatgtaa gcacactagc tacattcact 360

atattcccta tggctttctt taacgcacgg atgcgaggga tctggttcct tccatctatg 420

gccacgtgcg cggggagaat catgagtggc cgttgctgca agcgacgatc aatcttacct 480

tgtttccacc ccaccatgtg tattcttttg ctcaaatgga gaatatgtgt cctagaccca 540

agagttctag gactgacaaa ttctaggcat gtgatcaacc agtcggatac ggatggtcta 600

ctagtggatt aatataatat cgtggttatg taataaatat tatgtttcgt tattaataaa 660

gcaaagtgtt ttagcataat ccacaatatg atatcactat acatgtgatt cttgatccga 720

ttgcatgtat agtagacttc cagttttatc ctttaaacct ggtgtgacat atggctatgt 780

acacatgaac ttattgtgtc acaaacttaa ggggttatca tagtttcata gatgattgac 840

tctagtgtaa gtgtaagatt gtaggttatt tgtcgaaaag aaaataatgg tccataaaga 900

aagttaatgg atctttatga taaaaggcta ttagcaggga tctatgtatc caaatgaact 960

cgtgtactag tgtatacatc ccacaaccta gctattatcg cctctctttc tatgattatg 1020

ggtgttccag ccatggtcgt ccttcctctt actgcaaaca tggtgctagc gtatcggtgt 1080

cacgatgttt catcctcact catgtacatg ccgactactt tggagatgtt gctgctgcgg 1140

tgttgattgg caataaacat aaggagcacc accgaatgtg tcatttctac tattaggcaa 1200

gaacatatga ttacttttac tatatggaca tacttttcta cggttgtatt atgtgtctag 1260

tgataataat ct 1272

<210> 3695
<211> 1048
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42030_G1, chr1:248316233..248317280, Cluster 22

<400> 3695
agcaagatca tcgacactcg gtcggtcggt atggatgtaa tggaggagga tatggatata 60

gaaagatatg ttgaggagta agggatcggg gcgagcagga tcatcatctc atcgatgatg 120

gataggagga acaccattga agaatacttg ccccacacta gaaggacgtt gcagaggttg 180

ctcattgagt aagtccgtga acatatcaaa gttgggactc aacctaggat ccatatcaaa 240

tcggagattg taaagctatt gaatcgaaac ggagagtgga acaccacgaa tggaatagag 300

gacttttgaa ttggagatga atgtgtgtaa ataaacccaa gcacaaagca ccccctctat 360

ttataggatg gattcaagtt ttttagattt tttttaaaaa cttttacaat ttgagtgaat 420

aaaatagtgt tgaccaatca gacgacgcca catcaacaac tgacaaccgt taattaattg 480

tgtccgtccc aacacatcgg tcgataccaa tcggttcgac cccacagtat atccaagccg 540

accagtcgac agccttagct gactagtcaa tcctaccgcc cgctattgac ttcgccttgg 600

tcggtaccga ccgtggactg tgctatgctt gttggatcta gcctaaaaac aagggtcatt 660

gtcgcttatc aaaatattaa ataaaatgct tttcaatata catatatata tgaaaaaatt 720

attaattaca atatataaga atatttaaaa atataaatat tactattata aatctagttc 780

ttttaaaaaa atgacgtaca tagatattat aatacgtaat atttattcat gatggagagt 840

gtatatatag aagtattctc caacgacgaa gagaacatat ataggagtat actccaatat 900

ggcaatggcg tgcctgtcct gcgagtctgc aagacaacat tttgtttctc tctgttaatt 960

aggtagcctg tcaacgtctg tggttcccta tcactagcga tttcaattag gcacaggtcc 1020

cagatcttga tctgcatctg agtcatgc 1048

<210> 3696
<211> 1330
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_445_G1, chr1:2303940..2305269, Cluster 22

<400> 3696
tatagtgttg tttcctgcag tggcaatcgt gcaggtcatg cgtgacctcc tgctgctact 60

gctagatggc tgctgcagac tctcctcaat tggttcctgc tgctgcctta gtttaattta 120

ctatagtttt atggtggtgc agcagttagc attcttcaag atggtggtat catgcatgtt 180

agcaggtgag tttccagcgc tagcatcacc cctggaaaac acagtattgt ttatcttgca 240

aatgtgtata cgtaggcaag atgtgtgttg tcggatgcag aaagccattg cagctgcatg 300

catgcatcat ccatcaaatt cactgagaat tttaagggca aatgtttatg ccgtggagaa 360

atgtgctggt tggatgctgg cgccgtccat tattccaatg tcaaaatgct tccattctgt 420

agaggacaaa taaaaatgtc gcatcatcct tgaaactgta ggtgggtggg tagattgaat 480

ttatattaat cataataaat aataaatgta tctgttgtcg gatggccatt ggagtagaac 540

gacgtagcaa cttttgcatc atcgatccct atagcctcct agattatata agttggatta 600

tggtaaaaat gcaggaggat aaaatatcac cttttaatca caaataaact gaaataatct 660

acccaatact agccttttt ttaacttatt tgtggtacta aaatgatatt ttacttttct 720

accataatat atactagcct ttttattacc ataatctaac ttatataatt taagagagaa 780

acaaacacat cctttgaatt gtacaatata agggtagtta gtaaaatatc aggatatata 840

gcacaaattt actttgcgat tcatgtgtca gaaaaggctg tcaactaaat gttgctttta 900

gttcaccttt tgccctctaa gttattaatg gagaagcatg tactcatgag atattttcgc 960

atgtgttcta caccttgtct ttagaagaaa ataaaataat gttgcagaac ataagacttt 1020

tcttttatac attgtcaagg taattaacaa agatgcgaga gagaaattca tagagttaat 1080

tagaaagaaa aggaggggca taagatggat gctcgctgga tcatatatag tgtttacatg 1140

gctatacgct agaggttcgg gttatgaaag cataacacat catctttatt atggatgaat 1200

tgctgaaaac acctcttcaa cctctctata tatataattt cacaagggat ttgagtattc 1260

aaactagccc ttatacgacg cttcaagaaa aataaactat attctcttag atggtacgat 1320

ggcaaagacg 1330

<210> 3697
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4546_G1, chr1:23577948..23579231, Cluster 22

<400> 3697
tatgtatcgc catccactca tcgagagacc agcgtacagt tgtttgactt gcagctctct 60

ccccacccca tcctcaccaa ttttgatgca agcaacccgt ttcagtattg tattgtaagt 120

aaggttcaca atttcgtttt gggtaaaccg aatttcgttt tgttaaccaa aatttgactc 180

ttgtattttt atactttgaa tcggaatcta gtttaaaccg gtccaaaatt caaaacgaaa 240

aagaccgagt ttcggtgact ttggagcgat aaattaaacg ctgattgtaa gcctacctat 300

gtcacgttcg gtgttagaaa tagtattacg cttaaaaaaa catcaaagga gaaaaagcga 360

cttgtgaaag ctacattctt ttttttctg atacaaactg gataaagcga cttttgcccg 420

tgtctttaac ccttcgtctc catgccatat ggtcactcgc tcacttttgc atactgtgga 480

gttcttctag gtgctgggct gcatactgca tttcgacttt cggtgcaacg caagcatgta 540

gcgcaaagaa aataacaata attattatat tattaagaga ctgtctaggg tctctgctta 600

gtttaatcta gaccctacaa aagctgcact atagcatagc aataacaatc tcgtgcgtca 660

aaatctgagt gactatgact agaccattga ctagatgatg ttatttggat taggcgtttc 720

gtccgccgta ctaagggcga ccgtgtatct ggccctctcg gcccgcccaa ctaatccagg 780

ctaagtctat ttctgtccta aatgctgcaa ctcatcttgt ttatgcagtt atattaaaca 840

aggctgccca aatgacctgt tgtttgccac actcaagcaa tcgggccaag aagctaaaac 900

taacctaaaa tcatttacct tgcggcacta gcagtcgagc tccaagaaaa cacagtctta 960

ggttatttca aaataggact atctcctaca ctttatatat atatttatat aaaaaaatag 1020

tacagtatac agtgcagaat agtaaaaaaa tagtacatta tatatattca aactccaaat 1080

agtacagtat acagtgcaga atagtaaaaa atagtgtttt aggtaaatta tggacatgac 1140

acagtctaag gtgcctcttg gaagaaaaga atgttctaga aaatttagat tatctatgtg 1200

aggtggatca tgagattcta ggtctttgag tgataaggtt ctaagaatcc acgttattgt 1260

ctctcccgtt tggccgagtt actg 1284

<210> 3698
<211> 1395
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4717_G1, chr1:24202522..24203916, Cluster 22

<400> 3698
tgcgtccagc cacaagaaac aagatcgggt taatagctag tagcacctag caaacctcac 60

cctcacgagc tttcgaatgg acagagttaa catcgttgat ttgagggttc atcgatcaga 120

aaggaaaaat aaattgacaa gaaacgttga tctggtcatt tggcgtctct agatctccct 180

ctctctttct ccgagtaatg attatcactt atatttagca tcgatgttct ttgcatttat 240

ctgtttgata attatatttt gatatttata ctgtatttta cgtgttttcc aagttataat 300

cattgaatcc gtgtagtttt gttttgtttt ataatatact ttaggactat atccttcttt 360

gttatagctt gaagttggaa ttgatcggaa cgactgatct tattttcgtt ggctatttcg 420

cgtcgcagct aggccagtta taactgaatc gagcgtgggt ttgtaactga tgttctagta 480

tatatgtcaa ttttgcaact tctggtgtcg acgaaccgtt tgcatttgtg tggtttggat 540

gttcgcttac aaaccgtgcc aggtggtact ggtttacact ttgcaacggt tggtaacata 600

tgtttgcagt tgaacctctt acaggttaat cattgtatct ctagttcatt tacagttaca 660

gctacgattt gtccatgctt acaaagccat gcatgcgtgc acggtaggat gagctaacat 720

gtggaagacg agagatggaa gaaagtaccg ggggtacaat ggtcgatgac gtataggtag 780

gggtgataat gagctctaaa tttataatat atataaaatt taactctatt tctatttatt 840

tttaaataaa aaatctttat gggctaaaat aaattataaa aaacatttaa atcgtaatcc 900

attagcacct tggatacatg tgaagaaccc ctatactcta aacacatgcg cattctagtc 960

gcactctgta atatattgac gcatgcatcg atcgatcaat gcacacgatg tatgcatgcg 1020

tgactagcta gggtgctgcg tggctggaga tagccgttgc gacctcgttc caattttctc 1080

ggcggaacgc gcgcgatccc cggatagcaa actgcatccc gaaatccaca cgaagcggtc 1140

acgaaatgtc gtgcttgtcg tgagcctaga cgccatcctt tggacgggtg gtagagatta 1200

gattatcaac gcagctgggc tgcttcttta atccccaacg ccaaaaacga ttactatatg 1260

gaaatgtgac cgaaccaaag gataaaaaca aagggaatgc tgtttggtaa aagctgcggt 1320

ggtcaaggca cgaatagggg cactgttccc cactctgacc actgtttcaa ccacctcgaa 1380

catgactata tataa 1395

<210> 3699
<211> 1372
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50587_G1, chr1:293937668..293939039, Cluster 22

<400> 3699
tctccccccac ttagtcatcg gtgaatgtga atttttatgc attaataact taattagtaa 60

cttagttagt aatgtagttc atagcttagt tattacataa ctagttaagt agttagtgac 120

ctcttagtta actagtcagt agtaggtaat tactttgata gttagtagtt agatagctac 180

ccaattaata gcggtcacta aaacgatact tccaatagct atgctgccaa caatgatata 240

ttcttaattt taggcagaca aatacaaggt tcaagtgaaa aaagatgcac ttacattgtt 300

cttgttacca cactcaaact caagcaaacc tccacgtgca aggataacta gatctccaca 360

atcacgtaca caaagagagt tatcaagtcg ttcgttggca aaaaccaaac acatgattat 420

aaatgtaacc gatctgccta aacaactttg cttatacacc aaaatcaaaa ttatctacct 480

agggttgcaa atttcacata acataagcta actcaacaca tataaaatga ggaagagatg 540

aaggatacct tgctttgaaa ggtctaagga tcaaatccaa gcttccaagg ttgaatcaat 600

agattagaga aggctggaag aattggggac agggagaggg agaaagatga gaaataaatg 660

aggttcgccc cggctagtga actgatgttg attaaattag agcatgacgt cacgagctat 720

gacattgagg tactgccacg tcagagccac aataacgttc actctattta taacataata 780

cctcggtgct ttgacctata acgccaagcc atataacctc aacaccattg gtcacgacgc 840

tcacagccga gtccaaatac ggtatcaatc ccatcaagga tgtaattgta aaatttttt 900

ataaaagaga ggtaaaatac ataaaatacc gagtccatta ttaacatgtg gcaaagactc 960

taagcagact aagttgtgtt tgtgcgtttc tgtaaaatgc ttctgctgct aaaaggcaaa 1020

caccaaccaa caaaatgaca gaagcacgag aagctacctt ttcacgaagt ggctgctttt 1080

gtatagtatc attttcagtt gttttcacca atcaacttaa gacttttgc agcacatagc 1140

tcacattacc cttttgacat cttatggtgt ttttttcaca actcagactt gaacaaaaca 1200

tatacgctaa gccgctaagg gcctatttgg ttcctttgga ctaaaattta gtcgagtttg 1260

tagggactaa aagtatttag aacgcattaa gtgactcgta agaagactaa aatatctctt 1320

aacaatcttc tgtcattagt gtaacagaaa taaatgagtg gcaaaaggtg ga 1372

<210> 3700
<211> 1275
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51120_G1, chr1:297164664..297165938, Cluster 22

<400> 3700
tgtgtggggt gtgttctatt cttgtaaatt tagtttcttt ctcctattct ctacgatgta 60

ttcgaggaaa aaattgccag gaggaaaggt ggtgaaattg ccaggaggca aacatgctac 120

atcagaagtg gcccctcatg gggatgtgaa tattgaggag gaacccatat ccaaaagaga 180

tcatatattg aatgtgtcac atacatgggg gtgcttttgt cagctattcc aaatttaaa 240

taataaaata gatcaatttc tacttttatt acctgagatc aatttctatt tgtttaagta 300

agtgatatgc gtttacttta catttgtagt cataaaacct tttaatttcg ccaggagaca 360

aacatgctac atcccctcat gagaatgtga atattgagga ggaacccaca aacaaagaag 420

accatatatt aaatgtgtca catatagaag agtacattta tcagctattc taaattttaa 480

ataataaaat agatcaattt ctacttttat ttcctgagat caatttctat ttgttaagtg 540

agtgatatgc gtttattttg catttgcggt catgaaaacc ttttgatttt ttttttctac 600

ttttatttcc tgagatcaat ttctatttgt taagtgagtg atatacgttt actttgcatt 660

tgcagtcatg aaaaactttt gatttcgcca ggagacaaac atgctacata ccctcataag 720

aatatgaata ttgaggagga acccacaaac aaagaagatc atatattgaa tgtgtcacat 780

acagaagggt acatttatca actattccaa attttaaata ataaaataga ttaatttcta 840

cttttatttc ctgagatcaa cttctatttg ttaagttagt gatatgcgtt tactttgcat 900

ttgcagtcat gaaaaccttt tgatttcgcc aggagacaaa catggtacat cccttcgtga 960

ggatgtgaat attgaggagg aacccacaat caaagaagat catatattga atgtgtcaca 1020

tatagacggg tatatttatt agctattcca aaatttaaat aataaaatag atcaatttct 1080

acttttgttt actgagatca atttctattt gttaagtgag tgatatgtgt ttactttgta 1140

tttgcagtca taaaaacctt ttgatttcgc caggagacaa atatgctaca ttccctcatg 1200

aggatgtgaa tattgtggag gaacccacaa gtaaataaga tcgtatattg aatgtgtcac 1260

acacaaaggg gtaca 1275

<210> 3701
<211> 1328
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51591_G1, chr1:300043361..300044688, Cluster 22

<400> 3701
gttatatgat ataccaatat aattagaggc attcacctac ggtatgctat ggtttagcac 60

ttaaacataa actttacaaa atagacaaaa aaacgagaat gatataaatg gaaaggaatt 120

taacatgtat aagctgatac ttataaacaa aaggtatacg atatataaat ataatcagag 180

acattaatac aattatattt aattgcaatt atgaacgata tgaatcatga ttatagaacc 240

aaaatgaaga ggtgtttagt ttcatctttg aatgtttgaa tgataattac agatattaaa 300

tatagtctaa ttataaaaaa aacatttata gggacgaaga ataaaaaacg agataaactt 360

attaaatcta attaagccta tatttaatac tctaatgagt ctgaaaggca tatgaacgca 420

acaccgagaa actccaaact ttctaacagt attaagagtt aacaataatt atacagctga 480

tgagtgactg atgtgtgtgg tctactgact gcagctgacg caacacaatc tcaggcacgc 540

acgcactgac agaacattat tgtaatagca taataagaag aaaagctttc aagaagaaaa 600

agatgaagaa aagctagcat gtctttttg acagtaataa ataaagaaga agaaaaaagg 660

agagtagtta ggcaagtctt gtggcttgga ccacctagct atacaggcta tggctagttt 720

tttgcctgcc tggatagctt ttggtcaacg ttcaagtctt gctagctagc tcggggatca 780

gtagacatgc atgcatgttg ttttgcttgt ttgttgccaa ttcattttca tttcatccag 840

tccagtttca tcagtttatt cttaattgca tacaagttga tttcatgcat catatccata 900

tagctagcta gctaattgtg ccacgagctc aaatctaagc aagtgggtgg ccttttaatt 960

tttactaggt ggatgggatc aacagcgacg ctgcctacag agaacctgaa cctctttctg 1020

ctctcctcgt ctcctagctg ctgcgcaaat gcatgcatga acacctgccg ccccagcatt 1080

attatgcgta ttttgttccc agtttatcat ttcatttcca cccaacactc atcctcaacc 1140

atccatttct attctccatt ccttagccaa acgtacaact cctatatata tatatatcaa 1200

ggatcgagga agttggatga gagcctaacc caattttctt tcaatttcag tcaatatatt 1260

aacaccgtct aattaacgaa acgattgcaa atcgaatact ctctaaaata agttgcacat 1320

accaatac 1328

<210> 3702
<211> 1300
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53137_G1, chr2:7304197..7305496, Cluster 22

<400> 3702
ccgcgtctgg cggtcggtga atgcaagctg gatcactttc atcttgggcc ggcgaaggcg 60

aagctcgagc aggctgggcg gtgcctccgc cactgctgct gggcacgatc tacatccacg 120

ctggctacag cgaggccggc gcgcacaagc ggctgggtct ctgcacgtcg gcgactatat 180

atgtaagcgt caacaggacg tcgttcatcg cccgatggtg ccccggccgc cgcctgctcg 240

gatccaccgc catcctgacg taacttttgg tggcggagat caggaactca ggatgcgatt 300

ttttctgttt tttttagcca ctcgtgtgcc gctcccgtgt atacgtcttc aagctggact 360

caaggcctca agctgttggt actcatgatc tctaagtagt agatggtgtc gtcgtagcta 420

gagtaaacca gagcacgagc gctaggcttc tgacaagggg gcagctctcg ccgccgtctt 480

cagagaaggg aagagaggag gaaaaaagac atgacgtggg aagcccacat gacataggaa 540

cataggaacg atgagacacg atatgacgat acatcggttc ttttcgaccg agtgtgactt 600

aagtgagatc aaaaggagaa tatgacctta atagacatat tttaaaaatt tatgaaccat 660

gttaacacac tcacaagtta agagaccgga aatatactat ccaaaggggt ttaactttct 720

tcccaaaaat atttgttaca tttttttcta gtttgtacat gtgtaaataa ctgttgcaca 780

tacctggata tgtatatttt aagtagtatt ttataaaaaa aacatttaat ttgttcattt 840

aagcacaccc taaacaatct acacgataaa taaagagtgg ccgatcgacg ctttacaatt 900

tagtgtttgg aatggcattg gctataatgt agtctttgta caacgtctag agttcttcat 960

tttcattatt aatgtatctt tttgtttcac ttattagtgc gtctctatgt atttgctcgc 1020

atataatttg atttgatata ttacttttttg ctcagttttt attacatcta taattagggg 1080

ggtgaaggtg aaaataacta attttcccct gatcctctct aacgaatagc agagatttcc 1140

tcctccatta atcccctcaa ttctcttaac accaaatcag ccttaaaaag attcaaatcc 1200

aattcgagat ttaaaaatag tatatagccc gtaaacaaat atattttctt ttttttatt 1260

tgacatagct ggcggatagc acaagtgcct taaaataatg 1300

<210> 3703
<211> 1272
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53693_G1, chr2:10375230..10376501, Cluster 22

<400> 3703
ggaggtaatt atttccagtt aagtattaac ttatatctaa atagggccat tctcacaccg 60

tcacacatgc acacgcactt agagaaaaat aagagaataa gctagatgat gaagagagga 120

atactcatcc tgtcacaagt accaatccat caagagagca tatatggtgg cttggtggag 180

catgcatcac accatctgca gagaagaata acatccactt acaggtccga tgccattgtt 240

ctcactcgtt cagataagcc attcaggcta tctatgactg actcgtggga tgtggcgcca 300

ttttgcattt gcccccgcgc taggccatga tcacgatcaa gggacggacc tagaacaaaa 360

tataactgag agcatactta gtatttaaat ttgactgagc aggggatctc atgataaaaa 420

tctaagctcg agtaattaga acaaagaaat gcacctgtga cgatccattc cttatttcag 480

aaactctcac tatgtcatgc ctctttttc aaatgaaagg agggagggca caagctagcg 540

tcactttctg taatggataa acatactccg gactgcatgc atacctacac tagaacctaa 600

cctggtggct gctgatgtag tgcagtggct gcaactgcac tagccgccgc gctcgccgtc 660

tgttcagcag ctgccctgct ggccctgacg cgaatgttgg catattcaga acacgaaccc 720

ctgaatgaaa gcaagagaag gcaggcaggg cttgcgaaaa taaatgtcta actcatgttt 780

tgagaagttt tttttaaata taattaatat ttataatata taatatgtat cattagacta 840

aagacatgtt tagaagcaca ccagtttttt tataaaaaaa actcaattct agaaactggt 900

tcatgaaaaa aaggtggagg cgtttggaac taagtttcta attaagaaac caccttctag 960

ttatttgata cacaattact agcatatctt tcacctgttt taaaaagcgg tggcaataga 1020

tgtaaattac aggaaaccaa caagggcaag atgtaattaa acaaataaaa gttagttttg 1080

gcaaggggag tagattcttg tttttaaaaa gctggtaatc tagtttctat aaactgagat 1140

ataaactgat atgtttggaa ttattctaat ttctataaat caatttttaa aaaatgtgtg 1200

cttccaaaca ggctccaagt atagagtaat ttttttttgaa gatgctgata taggtattgt 1260

tctttgaatc aa 1272

<210> 3704
<211> 1233
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54304_G1, chr2:13455075..13456307, Cluster 22

<400> 3704
taatttttt ttaaaaaaaa agcgttgtag attgctgaga acaaaaaaaa taattataag 60

atagaatagc agatagagga catcattgca gacacactaa ggtcttcttt tgaacatggg 120

aaattttctt gcttcctgcg ttttttttt gaaaacgaac tgatttctat aaaatccgta 180

tatgagtcct ataaaattct ttcgttctaa attagacata aatttcttac gaaaacagac 240

gcaattcttt gctgatccct tccctttccc ttttcttgtc gtgttaattt ttgcataacg 300

atgaattgat gatggtccgt gaccctgact ccctgttgct ttcgaggaaa aataaaactg 360

ttgcgtgtct atttgatatg aatgcgtgtc gcattctaaa atttttgcag taatatagag 420

tacggtgctc gacacatgtg tcggtcggtc agtgcagcga gccggttggc tggtgagtgt 480

gccttttgtt taaaaccgct cggcgccttc gcatcggatt ctggatatga tcgcgatagt 540

tttaccatgt cggtgtgtcg tcttgctcct cgtgttttcc tggaaactcg tggcgctcaa 600

cgaacgagcc cagccgggcg gtcaatgtct caatgattag atggaatagt ttacagctcg 660

ttccgccgac ggcgatcaaa gcctacgaca cggttcctga aatgacagaa atagcagcat 720

gattttctgg tgtacatgag tctaaaattt attacctttg tttgaatttg agattttaca 780

tgtgagtaga gttgaaaacg gtcgaaataa tccggtttca ttctatcccg atttctatat 840

taacttgttt gaatttgtat tgacggacac tccaactatt ttcgtttttc ccttttgac 900

aaatgtggaa atgtgacggg acaatatagg tgtttttttcg accaattttg cttttctcat 960

ttttttaat caggatatac cattttatc cgtacataat gtccagtttt aggtaataca 1020

ataaacaaat catagatgat tatgtcatat ttcaacaaac tagtccttaa ttaattattt 1080

tcttggtagt catatgtatt ataatatgtt gcttccatat atctagatga gatatttcag 1140

tcgatcataa tattatttta ttttagactc tacgggacga tgtttccgtt tttatttccg 1200

atttctattt ccaatttcga cctattattg gtg 1233

<210> 3705
<211> 1147
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55541_G1, chr2:20190016..20191162, Cluster 22

<400> 3705
tgtggaatat ggatgagaag aatttctcca aaacgatgcg ggtattgaaa gacattcccc 60

acacattttt ttgccgctgc catatctagt tggagtggca ccctgtacac gctcgaaagc 120

tcactaaata ttaaagcctg tatggaagat ttttttttcta ttataatact tatatcacgt 180

ggcttatcca taatagtatt tatattttat gctcaacggc aatgaatcca gcgtgtacat 240

attatattat atatataata aatattttta aaacatttaa catgaaaagg atgttacatt 300

aataattttg tagattgtgc gtccttttgt ttagatttat ggcttcaaga tttatctaat 360

aaagtcttaa gataatctgc tatacgaaaa atatgattat aaaatcgata gtccaatgtt 420

cagtcactcg gatttttttaa cggatgtgac tcgtgagatg ttgctgaaaa ctagattgct 480

aggtgtaggc tagcgaaaac gatcgaggtt gatcaatagc tcggtgtata ttacgcgact 540

gttcgtataa tcatatgtga gagctaggaa tttaatttgt acaaatataa tttatttaat 600

cgtttgatat tatattttaa agtggacaag gataacataa ttaaaatatt gattatgtct 660

cttagaaggt atcaactaaa aagtcatata aactatcaat ataatttta tatctattta 720

tattataatt tacgattttt aacttacatt tcaaattaag acttattatt tatgttttta 780

acttaacctt caaacttaaa ttttactgtg gaagaatttg acgtaaaaat cgtttctgga 840

ttgttaaatg gtttgattga atatataaaa attttagatg gcatagccta tagtgaaatt 900

ctagatccac cattgtttat attctctaga aagtacttac aatgtcaata attattaatt 960

tttattttct ttctttatcc ctaccactta gggacatctt tacgcttgtt tttagggaca 1020

tctttacgct tgtttttccg tgacgataca gaaacgaagt atatgtcctg aaagcggtac 1080

cactacctga agtcctaaag aaatataccc ttttaagagg tagaaaataa gaaaaaaaat 1140

aaaataa 1147

<210> 3706
<211> 1250
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56093_G1, chr2:23130749..23131998, Cluster 22

<400> 3706
ttcttaaaaa tttggtgctt ccaaacagac ccttactcgt tttgaatatt tgatgcttat 60

cagtccatgg acacatgttt tatgcaggat aattttgtgc acattatgtt gggtttggta 120

aatctagcgc acgcttctca acggcttgac tgtagcattg catgctttat ggttgttcac 180

attcttatat agatcttagg gcatgtccaa ccccattaat tagaggtatt ttgaggggtt 240

tgtaggggta aaaaaaatca agagactaca tgactctcta tacctattgt ctcttaacta 300

tatttataat atagagattt agttggaaaa ccgatcccaa aactatgggt tatgtatgtc 360

cttaagccat ctcttttatt ggaactatga aaaaataatc acaccttcaa ttatgcatgt 420

attttaattt tttgctaata atttaacaaa aaaatatgta tttttagtgt gtgtgcatgc 480

tatatatttg gactcgtata aaaatattta gatgtattta ttgatgatat actttaaaag 540

ataggactgg tcaaagtttt gctttaaaga ccgtgcgaga aatttatacg ccttagtcaa 600

tgtgacagat aaagtatttt ttgtaaaaaa gtattgatag tatctatatt ctatgatagt 660

agacaaatgt ttagatcgat ccatattacc atctagttca atgagacgat aacctttttg 720

ataaaatagg tcgactcatg tcccttgatt ttttttaaa aaaaattggt cttgattcct 780

catttccatc ctgactttct agctcacgga gttgttgatg ctaagtattc tagttcgagc 840

cttctagggt taagcaagta gttaacactt gccaagcgtt gctcccgagt ttctattata 900

cctttttctac acagcataca attcttgcta gctaggccag ccgtgagaag aatgctaata 960

taacactaac agcaacagca atgcctttgt gtcctagtgg ttgtgtatgc caagttgttg 1020

ccgtgggact ctgggaacag tgcggcttgc tgacgaacag cgacggtatg tagggagtat 1080

ttaagaggcg ctaataatct gcgtcaacga tgagcagcag gaatatctgt tgttgaatgg 1140

ccaagtcacc cggcgaccat tctcggccgg tgatgcgtgg cgatattttg ttccctgaca 1200

acttggccgt ccaaggcacc tcgctcctca gtttgtgttt gtcttgcccc 1250

<210> 3707
<211> 1355
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56298_G1, chr2:24384473..24385827, Cluster 22

<400> 3707
catagtatat aattaaatta gaaaagttgt cggattcttg ttgacaagcc acaacggatg 60

agcagtagta gatgcgcatg cctgcgtgtc tctagagcct agatgccatt ccaaagaacc 120

accgcatatt ttgttatttg aaaacacaag gagtatttgg tttaaaaaat aaggtagtct 180

atcatcttct cgtctcttac ttttttattt agtttataaa agattgagat agtctatcat 240

cttctcgact ctcacttttt tttatttagt ttgtaaaaaa gaatgaattg atttattacc 300

gtttcattca ttataattta ataatagtaa taatacgagg aataagttta ttccgctaaa 360

tttgtagaat agacttatga tgcactatct catttagaat ggattgattc tacaaactaa 420

acatcccaaa gtactagcta atgatatata tataacgacg tcttttcttt tgatttgatt 480

ggcactctag gtacgtccaa ggtggaattc caatcacaaa acaaagagag aggatcagag 540

ccagtgtttg gtctaaattc gtcgccgcga ggacatatgc atacatggac gatcatcttc 600

gattattacc tgtctcactt acttttatta gtaagttcag gacaaaaaga aaggggatt 660

cgattgagac gtcagttgat atatatgtgt aacccaacta ataacaagcc ttttgccaca 720

catattgcca ttcttggttt ggttgttgtt tcttcatcgt cgacgtctcc cagcttagct 780

agcgtagtag tacttgtatt cgactgacta gtgacaggat cgtcatctat cgtctgatgt 840

gtttcgtgtc aaccttcttt ttcaaaagga aaaaaaaaga agaaacgttt ttagctacct 900

tgcttgagtg tcgttgtagg tcacgtttaa cgacatgtat gtatggccag ctttctctta 960

gaccgctccc cttcacccca cctcatcata accgccatcc actactagga ttggcttgca 1020

gccactgact tccttatcaa aacctactag attcctatga actacaatgc taagccaaaa 1080

tgagccctaa ttagcttgct agagatttca ttcatgtccc gaaaaaagga gccttggaaa 1140

aactatagct aatggatatt atacctatac gtggtactca aagcaacatg aaacactcga 1200

gtactcgtta ggtttctcaa aacccgctca aacacttttt agtagcttct acgtaaacaa 1260

ggttacgatg accaaccact cacattagtg tttccatgaa gttctctggc agtctttagg 1320

agccttgaat aaaacctaat gaatattata cctat 1355

<210> 3708
<211> 1317
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56985_G1, chr2:28300377..28301693, Cluster 22

<400> 3708
acaataggcc taaatgttgg agtagagctc cttgttggag atgctctaat tcacctccta 60

ttattcgttc cttttgcccc gctagcgggc acaacccgaa catggcaggc acaaccaggg 120

gcgaagccaa ggggggccgg caggggccat gtctcctctc aaagctaaga cacagacaag 180

agaattataa atatatatag tgtaattttg tgtatctaaa taaatatatt ctaaattttg 240

tgcagcgcaa ttaatctaag gtttaatata gtagttggta atacataatc tatactttga 300

taatacataa tctataattt tgtgcagcgc aattaatcaa aggcttaata tagtgattgg 360

taatatatga tctatacaat aggacaaggg ttttattctc caatactaat gatgtttcat 420

ctatttcata cgcagaatac gaggcaacat atgagggtaa atatcgattc ctctgtgatt 480

gagatgctgc caccgttgtg atggagtcct cctgcaccga tgtttctatc tcacatattc 540

acatctttaa caaatctacg tcaattatag taaaaatggt taattgagca taattctatt 600

aaaaaactgt aatgaggttc ttctccgccc atgcttcgac ctcggttaat caaatcttta 660

gcagctacag cgacatggct ggagatggaa attttagctg gccagagtcg gatgagagca 720

tgtccctccg gattaacaag ctcagatatg aatattcttt tacaacgaac ctaatctact 780

acgaaacaaa agctagataa actgtgtgta cagatcaatt ttgatgtcag cgatggacat 840

cagggaagat tctacccgag caatttaaaa tgtgctttct taggttgtat tttctcaggg 900

atctctaaat aatcattcgt tcagtgctgc cgagtgttgt gatcagtata gtatacgcag 960

gaagccagtg tggactttgc agcagcatct gattacacta gcacctttcc caaccacagc 1020

agcaggagga gaggaggtga tagtaattaa gaaatcaacc tggcgaagtc gagcctccag 1080

gttgcagatc attcattcac ataacttttt ttatcataaa taacgtaaaa ttaatatgat 1140

gtgaatgggt gaatgttgca gacaagcgtg tgctcaagtg ctaataatca tccagtacca 1200

tacagagcaa gaaaccgacc gggccatgca gagtgcagag tctgaatacc gccgcgggct 1260

atatatctca tatctatcta tgttcagaaa ccagaaccaa agcaccacca gtaatgc 1317

<210> 3709
<211> 1047
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57049_G1, chr2:28706008..28707054, Cluster 22

<400> 3709
gtttcatcat aaaattcggg agccgacact tgggtgttgt ttagttcaca aaaatataac 60

gtaaatgaca atgataatga ttcatagttt agtatcaatg gtaatacgtt tgaatagact 120

gatatcaatt tctagtataa tatctgatta tggttcgagt taaacaaata tgatttaata 180

ttatcagtta tctattacat tgcaaatata tgaaccaacg ataccttggt aacgggtgac 240

ccatgtcgta tattgtggat ttagcacgat ttgtgtattc ttgtcttctt tggtgacggt 300

gatgctctcc agtgaaggtt taatcatgtc atcaaggtag caaaatagtt gcacacctta 360

caacaccgag tggaattggg cctttgttat cgccaaatcc cgaccggatt ggtgcaacaa 420

gcacttggtc gacgggttca atatatctat atcactatat aatacatcat ttttttaaa 480

attcacccaa ccaaatcacc ttacacccat aacatccact aaatccacaa aataaattac 540

acaaatactt cacatcatca aaaccaacgg ccctgctcgt tggataaccc tcaccactta 600

ctctaaattc aatgaaaaat attatttgga tcttccctca ttcctctccc tctcctccct 660

gtccccactg cccctccctc ctcactcgca ttgtcatcat tgccgccgtc aacccctctc 720

ctcgcgtcgt cgatatcgcc atcgacccct ctctccattt catcaggatc gtggattgta 780

gtgttagcac gagctatatg ttagttatct agtagtcaat gggttgtgtg tatgtagata 840

aatattagtc agatagagtt agttaggagt gtatatcgct caaagtacat ggattatgag 900

atgtatattt ctcatcatca ataatcagaa agacatacgt tcccaagcaa cacatgtttc 960

cttatctctt cggtgcatcg acaaccattt cttgtttttc catgataagc gtgtttcctt 1020

atctcttcgg tgcatctaca cccattt 1047

<210> 3710
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57123_G1, chr2:29117555..29118578, Cluster 22

<400> 3710
gaagagagga gcctcgcctt tgccttttcg tatggatgtt ggatgttttg cgtttgattt 60

ttccctattt gaatgaaaac tgacaaatct ttcgcgctat tacagatcag tttctttgtc 120

acaaaaacct ccaggcctaa accaagagga caacgtcggt actgtagtac tgtacagtgc 180

tccatcctcc aggcccgagc aaagaagcgg agatgataga gacgagagcc tgacatcgtt 240

ttgtcgtctg ccatataggc ataccgcata ccgcataatc gaacggattc aatcggttgg 300

atcaacgtac agcccaccaa aaccattttc agcccataca gcccatctaa attggtccaa 360

gtcaaagctt cttcgtcgca aaatctgtta cccattccgg cgatgacgaa ctgacaacca 420

ccgcctacgc tgcgcccatc cccatcccca tccccatacg ttcccctgat taaatctatt 480

tctgttcgat tttgactaga aaataattta atttccttta atcaccttca atccgcttcc 540

aactaaacat aacttgagca gatcaaaagc tcaacggtgg ccatatgcct cagcatgaca 600

cctaggtaac ctagttcgaa tgccactctg aagaaaaatc ggtggcttag accttactcc 660

tcttgtctcc cactattttg tactttctat tcatttttaa atgcctccca ctctttaatt 720

tctttctcta ttttacctta tctcccgctg ttccctttat ctagcttcca tttaaactct 780

agatgcgcta tttaactttt atatatcatt tttttagagt tttaaaaaag tatacagtat 840

ttgtagtacc ataatacaca ttggttttag ttaattaaac ttaaaataat ttattttatg 900

actaaaatat gaattaatga aagagagaga ttagagctcc cccgtgtaaa ggggaggagc 960

tcctctccca gataatatgg tgaccattag ggtgacactt tggagtgaga ggggatgttg 1020

tgta 1024

<210> 3711
<211> 1328
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57332_G1, chr2:30340775..30342102, Cluster 22

<400> 3711
atttgaaacc ggctggcatg ttgtttgggt ccccatgccc gcaaatttgg cgagaatcca 60

taagggcgga tggctgccaa aggagaaagg cctgtggccg gagccgatta cctggcaaga 120

aaggctctcc acggttcatg gctccatgca tctgatatgt gtatcatgct gaaatgataa 180

gctggcaact tgttctcttc tcattgttgt tttctgccgg gtgtatcgtc acatccggat 240

gttgttggaa gggtagacta gcgctagcct ctcgcctctc cggattcaga tctcactgcc 300

agttacacgt gttgcaactt ccgttcttga acgtctacgt ccaaatggga tgcaagaacc 360

tcgtatgctg cagtgccctg tacgtttgca caatctctat ctctcggtct gcatgcgcat 420

ggttgctttt cagagatttg tagctgtact gttgagcatt tcaatgagtg tctttgactt 480

aacatgttgt ctttttttca ataaaaatt tgaaatttag cagttgaaac ctttaacagc 540

cattccttga tttgaattga agtgtcatgc gggcgaaaga tacaaaggta acgatgttgg 600

gtcactcgga cccatcccgt agcctgagga gcttggaccc tctttttac attaaataga 660

acaaagttaa caaattttat aacagctcaa aaatagataa ttagtccacc ataaaaaaat 720

tatcacaatt gaatcataga aattacaact atgaatattt acttatagga aagcaaagat 780

ctagagatat agaaaaaaaa actctttact aaaacaataa gctagctgtg ggctgccagg 840

ttttggccca cacttgaatg ttttctgtag tctcggatgg attgttttct agagtgggta 900

ttgttgggcc aagttttatt ttggttcatg cattcaattt atctcattta tcaatcttct 960

ctactatata aagcatcggt ttccacggtt ccatggttgt atacaaaaat aagataaact 1020

tatacacaaa tgtgttttat tgaggcaaag ggggtgtttg ggatggctac agctgtagtt 1080

tataatatca atttaaatag ttttaaaata ttttagtcta aataataaac gaaatgactt 1140

atctaaatgt tttataaagg cttatagctc tatgattttc tgaagaactt aatgacctac 1200

accaaatttt ctggagctga agctatccca aacagggcca aagtctaccc atatgaatgt 1260

gacatacaga aatcgtacca atgcatggac atttatcatt tatgtttgtg cccatgtttc 1320

tctttctc 1328

<210> 3712
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59922_G1, chr2:45963293..45964344, Cluster 22

<400> 3712
gtgttgatac tgcaagcatg ctggacagct tagtttagac ctacaaaatc caattagttg 60

gttagcttta ctttctatgc tatgaggttt aagaaaaatg tggactaaaa cttatagtac 120

aaacctgaaa tgtaaggtat gaagtagacg aatgatttgc catgttttct tcccaaccgc 180

atctgcaatt agaatgaacg atgtgtagat aaaaggatta attgtataca tgttagtaat 240

gtcactctac ttttgcaaaa ttaaatagtt agtttatttt tataccatag agtagcatga 300

aaatcaacta gtttctaact ttttaaaact aaagcgacat atttctaatt aacccaaaaa 360

atgggttaga ctgagccatg aagacgaaat acttcgatcc aaccaatctt atccgacacc 420

ttggtttttg agctcaatag ttaaacttga tgaaccaaat gtttaattaa gcagaaaatc 480

tccaataata ggcgaaacta attagcaaat ataggcatca aatagacaat ggattgggat 540

aaacaagatc tgacaccatg tttttcagct caacaattaa catgcgaaca agaagtttaa 600

ttgaacaaag aatatttaat aataagaaaa attaattagt gaatgtagct accaaaatat 660

aaaatacact atcgtaaaca aaagtattgg attgaatgac cggtaagacg accagaggtg 720

aataaatgtg agccaatcaa attttacaat caaacactaa aaataagcac tccactcaat 780

taaaataaag taagcactca aaccaaaatt gaaagttacc ttagtgttta aaaataaaca 840

ataattatat ttgaatgcat atcttaatac ctatttatat gatatatgag cacaatcaac 900

cgtaagaatt aaagttcact ttaaccgatg gcacgtgaga gaacctcatt tttaaaagac 960

attttcattt gttaaagaaa attaattcat ttcacttaaa aaaataaaaa tctctcaaac 1020

tactcggatt cgctaccacc actgaaaaaa gc 1052

<210> 3713
<211> 1254
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60395_G1, chr2:48586393..48587646, Cluster 22

<400> 3713
gaaaattttg attaccccac acaataggaa ataacataat atcattcaac cccggtgtaa 60

taatgattga accctgcaat agcgcatacc agctatcaat gtaccatatc gatgagatag 120

gatcatataa caaggcagac caaggttacc tgaatgaaac cttctcgtgg tggcattgtt 180

ttccttcaca catggtgtgc tctgagacaa tggcaacgaa gaaaacaact gtcattgatc 240

ccctttcgtc agcatgagat atagttctgt ttcaaggatt atgactgcaa ctggaatgtt 300

tagattgcat aaggacgtga aacacctgtc attatgctcc accttgcaag agtttgcaat 360

tgttgaagtg taattccttt gtccctctct atgggttgtt cactcggcct ccaaggctat 420

aatatatcag gtggaggttt ccctgaccac caccacccca cacacacaca ccatattttg 480

cagaagtttt gcattctgaa tgaaaggcag aaaggtccac caaaatgatt tttagcttaa 540

tgatggggag gatcacagtt cctcagcaca gcatttccac atatgtcgga tggaccgggt 600

ggtggaaagg gtcgcaatag catgaacatt actgagtctc aaaggagaaa ttgtccaagc 660

aaagaaagca cacttctcga taggcaccgg agaacaagca cccaagattt taagagaacg 720

ttgccttctg tcaaagagga agtgtgccac aagagaaaga taaaaacaga acatctaaaa 780

acaaaccata tttttagtaa taacatcttc taactttgtt acatggtact gttgttcagg 840

cagacagtgt taattctaaa ctctctaaag cattagcagt caatttaggt tacaaattgg 900

attgtcatag gtgagaacac atggttttgt agccttgtga tttgtgaaca acatatagca 960

cctcctcaga tctaagttca acttccaatg cttagctaaa tggtactcat gctgcatcac 1020

aatttgttac ttactatagt tttgtgatat gaccaaatcg ttcaaatttg cataacaaat 1080

cactgtcaag tgtacagtta ttaggaacac ccattagata acttaagttg tctatactat 1140

tgactgcaaa gatgtaaagc taatttgcaa ataccaagta taatgttacc aacagaagtt 1200

ctgaataaat cggtgactgc tagtatccat tcagctaata cagaaggtgc aaca 1254

<210> 3714
<211> 1049
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61582_G1, chr2:55040325..55041373, Cluster 22

<400> 3714
actgttttgc agttcacaga aggtggagtg ttccagtagc aaattgaaca ccttcccata 60

ctcaaaatta tgaaaacaga acccatgaca aaacaaacag aaaagtggca taagaaagaa 120

aactatatta accagaatgg cattttcag aaccattcag ttactgtttt gcagttcgca 180

caaagtgtga atgtttcaat agcaaactga acaccatcca atagcgatgt ggtgccaagc 240

acgaaggtga aacggctaac caataataat gtatattcaa agtccctgga tttgaagtca 300

ggcttctttt tctcggtcaa caaaacatta caattactaa tggcttcttg gaaaggattc 360

aggtcaatta ttttttcaca atctgggaga agacactcct tgcaacctaa tgcaacaata 420

ggtgatccaa cattagtgaa tcagctatct tcgagaaact cggccaaccc aagcttccta 480

ttaagcttat ccaaaaaaaa ctaagcccta ggtatatctg actttcccat gggagttatg 540

tcgaccaatt tgagagcaaa agataagcct gtttgatgca tatcatatct agaaatttgc 600

atggtagtta tgagttgtga cacaaccaaa aaacagtcct accaagcatg tgtcgaggca 660

acaacaggga ataggccatg cattattgca ttcaaacagg gctgaggtgg taaggtttat 720

tcttcgatca tcaccttgga tgcgccacaa tattcctccc cctgtcacaa atttaggaaa 780

gcaaaataaa ataatgttcg ccagttaagc aagatgttaa cagcaatacg aagcgagcta 840

ttttgatcat caatttgtac atggacaaag ttgttttaaa atacatacaa tatatagtca 900

gaacagagga cagctgtagc attcctgtac tctaccaaaa tatgccctat atcaatgaat 960

ggaggcaata cttaccagca agttgagaaa tcaaaatata aaatatggtc attggattta 1020

cctgatccac ccgtacactg ctcggtgtt 1049

<210> 3715
<211> 1009
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_64643_G1, chr2:72677176..72678184, Cluster 22

<400> 3715
gtcgttgtcc ttagtgtgat tccttgtgtg gttaatgcta ggagagattc cagaaggttt 60

tggtggagag gagaagaaag cccgtgtcgg tcgctccttt ggtgttcggt cgaatactcg 120

aactaggatc cgtcgttgat ttttcacgaa ttcgagtcaa ggttggtttg gtgagcaatt 180

cgctactcct gctagctgac ttgtgtgacg gattgagtaa gtatattggt cgcgatgaat 240

cttctgttag ttgcacatgt gcattgtggt tatattaaat gtttgttaaa atgactcctc 300

acatgtagtg tgtggttatg ctcataaatg tggagtagac acatcgtctt tgttgggtga 360

agcttaggtt gtaatgtgaa ttatgcacag tgggacaagt ttagttcttt cagcatttgt 420

ggatatgtgt tgttggggtt gcgatgatga tttaattata ttgatgaata tgtatgtgat 480

tatgttaggg ttgtgataga ggagtttagt agtttctata tcactagtga tacgttgatt 540

ttttgggtag tggaatcaat gctctaccta ttagctcaaa agtgtgatta ggttaagtca 600

atgtttgtga tgtgcttgtg ttaacgatca tggagtagac gtagtctata tatgtgatta 660

agtagtttct atgtatgtga aggacagtgt ttgcttaggc aaagagtgct ttgggaaacg 720

agtttgtgag gcatggttaa gttaataatg caaagaaatg tttattactt ctagtgcttc 780

atcactaata attattagtg ttgcttatga tgagatgtcg tttgtttgta tggagtcgat 840

gccctgccta gagtttgcgc taactactca ctattcttgc acttgaagcc tatggtaaag 900

cattctagtg attattaacc tacatgtctc attttggact tcctctattt gttcttctat 960

ttgtgctgat ttctagttat agtttttgtt ggcatgcata ccttactga 1009

<210> 3716
<211> 1269
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6932_G1, chr1:35815131..35816399, Cluster 22

<400> 3716
tttgacttcc ctagggtcgg gtccacatgt tggtttcata tgacccccaa tgggccccta 60

gcatcagtac gaccctcggt gggcccttga caccttttat ccttgtagta gcctgtcata 120

ttattttatt gagccctata aaagattagg tcgtccctaa cttaacctat agcatattat 180

tacaattcaa tttcttatta acaatcaaac aacttcactt tgaagcacaa taaatgttcc 240

ttatagggga tatacaaatt tagtgatgta aatggtaata tccttatata taatattggt 300

taaactttag aaattttgat taattctaga gctagaattg cacctttca agacggaggt 360

aataacttat ttccatgagt atggtcacaa tgttgcaatt tcttgatatt gaaatgctat 420

aaagaaaaaa aatgaagcgc atgttgcatg atttacatta tgagggtaca aatgtttggt 480

catagttggg ttgacattgc cgaaaacaac aacaacaaca acaacaacaa caaaaaaagg 540

cacctgttta gttgacttat tgctaaatat gcagcagttt gaacggcatc aaagtggact 600

cttattattt aagagaagct attctattat atttaatata taaacttata atatgataga 660

aaaataaaat atcacaaata atcatattaa atatgagata atatgtctct ttgtcatggt 720

gatcttcacc atcaagttcc tgtccttcat gccttcatgc ttgagtcctt caagataata 780

tcaagaactg tgctacgaca ctagataata aaataattac atagaaacat caagcattac 840

atatatattt ggaccatacc attcacaata ttcttagcaa aaccaagtta ggtgaataat 900

tggatactac tgtgtgatgt gtaaagggat tattcaaaca atctatgtgt atgcaaacaa 960

attgatcata tgaatgaaat cactatgaac atctcatcga ttgatcagat caagccaatt 1020

ctcaggcatt ccacatgcct ctatttttc catcaatcat atttacaatc acgtgaggta 1080

gaacaataat agtacactta actcagactt gttgcctttc tcaatctaaa aggcacatgc 1140

actattgttc ttgatagtaa aaccaactag taggggcaag ttatgcgagt gaccgtgatg 1200

aaaaatatac tgatcttatg ctcgatgaag attttagctg gtaggggcaa ataaggtgtg 1260

cgagtatac 1269

<210> 3717

<211> 1154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_72631_G1, chr2:127440516..127441669, Cluster 22

<400> 3717
ggccaagttt gaatatttgg tcacaggaac attctaatgt tgatatatta tattgttaat 60

ggccatgcgg taacctatgg tgctgtccga aggaagtgca atgctctata ttaaaaccac 120

tttgaattcg ttctgaattt acgtatggtt tggccggaca aagctacgaa aaatgtacca 180

agctttatta tcattaattg ttggctcctt gttgcaccat ccaacactgg ctttgccctg 240

atcttgcttc atgccaacaa ttacgtactg cccaagagca aaattgcaat ttgcatatat 300

acatagtttt aagcagtatt tgaatgccgc cttctgccga attctgtttt agttacatag 360

tctatttcct tccattaaca gaagcaaata tccaactagg ccaaaacaca attctcctgt 420

ttctattgtg aaaaaacatg actttttgt ttcttacctc cttattttct ggatcaacct 480

ccagctacca catccagcgg aacagcttca gtttaccctg aatggcccag aaaatatgcc 540

cttgcttatt agaaagaaac ttttcccaaa aaagtatgga ccaatgttct gattctgctt 600

agcaaatttt catataaaag ttcatagtcc tattaatcta ccgataaaaa atgcttatga 660

tagtatctta cccacagaaa cagcaactct ttgtttggac cactctttct tgtaaagtcc 720

gtcaggggga caaaagttcc actaatagaa ggttctttgc cacaacctgt gataaaagca 780

accgattata ttggcacaac acaaagagac tccaaattat ttgctgaaac ataaagctat 840

atgatcccac cttccttccc taaaggaaaa aaaaactgag cccaacaaag tcagttcatg 900

tgtctggaca tgttatgagg cagttaaata gctaataaaa tatagaaatt tagctaccat 960

ctaaatgccg catcctccaa ccatggtagc atgtgtccga aaattcatta tcgagtatca 1020

gcattctaca gccattctac aagtacagtc agcccgttca ttggataaac aagcagaata 1080

gttcatttag gcatcagtat atctatacat tgtcacacta catggtcaat ggtagtgttg 1140

tccatgtaat agct 1154

<210> 3718
<211> 1200
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80300_G1, chr2:173456880..173458079, Cluster 22

<400> 3718
ctgagtagca taagcaatga ttttttacat gtcagtcaat tcagaaatta ttacctttt 60

ctgcagaagg gtggaatctg cactctgggc agaaataaat aaatcatgtt caaaaaaaga 120

tatcaagaat ccttgctatt acagaacgat agtcattatg gttatttttc tgacgatgaa 180

tatatggtat agctgaaaaa gtgtctctgg tgtggcttcg cataactaat agaattatga 240

tagtgggtca gtagcagaac agaggggtgg agatcataat aggaaaaaaa aagtttgaag 300

acaatttcat aagtggtcca ggggagaaat ggaaaaatta aaagtacagc atataaaatc 360

tgaaaactaa atacaagcac caaccacaaa atttagaaga ctgccataca agctggcaaa 420

atcaatgagc tgatctacca tttgtattgc ccctatgtat atgttttaca gattattcta 480

ctaccagggt tgacatacca tgctgaatga aaattgaaat agctgagcat tctgcatcat 540

cctaatatca gcaaagcttc cacatttcct ttatgggcat gctatattgc tatatgctgc 600

ttaaggccgt gtttggttaa ctagagtttc tggtgatcag ataaattgta tcggatattg 660

atccaaacgt tttgctttct gtgtatcaga taatgtgctg ctagaaagaa tctacattat 720

caactttaca ttggtttttc ttggatagtg tgcattatcc agatttcaaa aatgtgtcgg 780

ttcccaaacg cggcctaaat actgctaaat gcaagtggtg atgcatatta atcaaactct 840

ttaagcaccc atttgtattg aaagaattaa cttttatgcc ggtggatggt gcttaatgat 900

gcagcagcat tctctctgtt caggtggcca tgtttacaca tcttgttata catgccctga 960

taggaggtac tatccaataa tccaatatgt aagatcaggc acatcacgaa ttcataaatg 1020

caaatcaaaa gaagcaagag aggtagaata tttgaaacat gaatatcaca agccaactag 1080

aaaggaaggg aaggcaaaga aatagagaac agggtgcata ctagcagtaa tattgctcat 1140

attcctttgt gaaactccat tataatttaa tcttgtaaat caataacttg gtttaggaag 1200

<210> 3719
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85595_G1, chr2:203584606..203585767, Cluster 22

<400> 3719
tctcaaaaaa attgttagct gcctcatgaa tattagagtc attatataaa agttgaatct 60

catcagtcga atattcatcg ttatatcgtc tttattattt tagtattgtt cttgcgtcac 120

aactttaatt caatatatca attagctaga aaatggactc atccactaaa ataatttata 180

aaggtctaaa attcttattc catgtcgagt acttaaattt gataacatta tacgattttt 240

tttatcagat agtattgatg aattgatcgg cctcccttat attatattcc tggctccacc 300

cctgtttgaa gtacataata cgtaacaagg acatgcatgc gttagcactt catattacca 360

agggtcctaa acaatttatt ggaatgtttc actggccatt cgggggcatc aaagaagtga 420

ttgaaagaaa gaaagaaaaa gaacagacca tttttcaact agtggaagtc atgtaatttt 480

cagcaattac actagagtga agttggtgaa gtactaccct ttgatggtct ctaccaaaat 540

agtgaacctg gcccctgggt tcatcaattt aatgaatcta aaattgcaca aaactagatc 600

gtttgcctaa cttatcgtaa agtaaaattg ttttagtgaa tgtgaaggtg ctagagttat 660

tccaagtaga ccttaagaca ataatgcaac tacgctataa caagctagtt tactcaactc 720

acccaaattt gtttatttta tttgaatcca caactgtttt aatttgtagc ggtagaataa 780

taatgtaaac tatattcagt gttcgtcaaa cctgacatat tcaacattag gtaggagtac 840

aaaattcgct taaaaaagct cagcacatat cctgcgggga acaggaatca tgggcgtgtt 900

ccgcgtcgat ggggacaata gcgcacgctc tgtggtacac cactcgacgc cacctatttt 960

taacgtgttg tctagaaaaa aaactatctt gactgtcctc ctttctcaac tttttatata 1020

aataagagct ccttttcaga cgttctaaac catgttgctc tgtccgtttt aaaatatttg 1080

atctatatta tttaaatttt atcataaatt acatgagcca ggcgcaaacg actaaagtcg 1140

tctatttgag accgtctatt at 1162

<210> 3720
<211> 1400
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86692_G1, chr2:209120950..209122349, Cluster 22

<400> 3720
tctgagcagc ccaaatcaat gtctgtcttg gcctggtaga ataaagtttc ttcgagaaac 60

agccccagat aagtaatgta gcgggatgac ttatggtggg tgttttatgt agcatattga 120

cttaatgaga gtaactgtga tgataaatta tagaggggaa aataagaaaa tacatatgga 180

gcttttatgg atttttacca tgataatgat gaccattata tagagaaact ggtccttcta 240

aatctaaaat aaggaagaaa atgcatgttt attagcttac tctgtatctt tgtggtaact 300

agttatgagt ccagttcaaa ttcgtacatt ttgtttcatt ggtaaacact gtttcaagac 360

agcatattca agacatttgc ttctttacca atagcctgtg tggttcactg ttgacttcaa 420

agcaggtact acttacaaat acagtgattg taataaaatg atatgacttc aaatcgtttg 480

atcgaagtac aggtatcgca caaacataag ataagaggct aagaaccata gattcttagc 540

atatagatga atccgtgcaa agtaatgtga aagaatataa aaaggagggt aacaaatcaa 600

catatcaatg gaactataca tggaaagaac cagaacccat tctttttcag ttggaaaaaa 660

gtgcgtagca atagaatctt tagtgaaagc ataaggtgac acaatgctga atacttgata 720

agtgagatac catggccatc atatcatgat taaacttaat tgcaaataag ggcagaacag 780

cacaatgtca aaatctccac tagaggtgga cattcacttg tataacgacc aacaactatt 840

tttatttaac tgtgttaact aggattcaaa ctcgagacat ctaatcaaaa tgttatagaa 900

ttatttatat ttacctacca acggaaaact ctaaacagtt cataacaagt taacaacaat 960

caaaactaaa agatatttca acgatgataa agcaccagtt ttcatggttc aacggtccat 1020

gatcagtaaa cttttgaaag cactccttaa ttttgcttca atcaaaccat gatcctccca 1080

cctctgcgac gcacaagccc tcgcaatttt aaaaacacca tcaattttat ctatatcaac 1140

ccgcggtctt gcccaaaata aaagtccaaa aataaacaca atgttggagt tcaaaccatt 1200

accctcccct ctcacatgtc taggttctaa ctactaaaac ccacaaccat ttgtgttcaa 1260

caaagaatag atattgtaaa tattgtccgt gttaccacgt gggcaaccga ctagttgata 1320

taaatgcaat acttagcaaa tttgaagcta tcttcaacat gttatattat aggcagacta 1380

aatgttcaag ttgctatgct 1400

<210> 3721
<211> 1235
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_88072_G1, chr2:217463122..217464356, Cluster 22

<400> 3721
cgggccacgg cccaggtggc ccaggcccca atatccgccc ctgccctcgg tcatcatgca 60

catagagaac atatataatc tcattagcaa taataattga ttatatggat atctaatttg 120

tctaatgctc tgtttggata ttgataatag agggcataga attgaattgg gtttgatacc 180

aaatcaatca tggtattgaa ataagatgta acttcaatta tattgtttgg atatcgctga 240

aatggagttt gcaatttgta cggtctaatt ccacacaata cacagaggtg acgctcgata 300

ttaggagagg gagtttctaa ttatagtcca attccagaaa attgggtctc tgattccaat 360

tctcaattct gtgtacaacc aaacaacaaa atttagtaaa gatgattcca attcctaatt 420

atgtgctcca acatcgacat ccaaacggaa tataatatcc ttgtgtggta aaattgatta 480

atggttacta gtatttattt ataatatgca taccaaatgg aaaaatggat gtatctgaat 540

tcgtatttta gtgtttttct tcatcagacg cttcgaaatt tgtattcaac gatatttgtt 600

agaatagtat tgtaaagaaa acaagtatcg taaacctatt tagagtggct aactatttaa 660

ttttattatt accgatgatg cattgacacc atttgttgtg gtttagagcc taggacaaaa 720

aaattaggtt gctaggggat tttacgagct actattgtcc aatggctttg ctctcatgag 780

cttgcgagaa ggtttaacct tatttgagga agtctcttac gtccagtata gttttgaagt 840

ctttgttgct actttgcatg tgttacaagg cgaagcttgg agctctcgta cttatgccgt 900

tggttgcttc tatactagct tggatggatg tttagatgcc cttgtgagag gagggagcaa 960

attacataga aaaattaatg gagtgagcct tttcatgcct atgagtcata tgtcatctta 1020

tatgctttcg agggcatgtt gttagctcgt ctaacctcca aagtcatgtc actttcaacc 1080

taattggacc agagagcagt tgggtcttgc agaggggtgt acgaagcctt ttatgaggag 1140

tagctccaag gaaacagtac gagtggttgg catggaagtt ccttccttct tcttatgtct 1200

tgttcatggc ccttgaccgc cttacgcctg tggcg 1235

<210> 3722
<211> 1158
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_897_G1, chr1:4727593..4728750, Cluster 22

<400> 3722
gcaggtatgt caacttacgt aacctcagta tacaccgttt ctctaggctg aatgtacgtc 60

gcatgacatc gtaaaccaat aggatgttag ttctccctat acttagtatc aaaacctcgt 120

ttctcctaaa cctagacact gaccatgttc cgctttaaac aaaaatgcac atgaacaaca 180

gacgttgtac atagcaacca cacatgtttg caatgtgtct ggccactact acccggttac 240

agccgatact tcctattgac ttttttattt acttatcttc tcggaggaca aattaagtta 300

agttttacaa tgccaaaaca gaaccacatg cgctatactc gatcgaagtc tatcatcttg 360

ctcacatctt tagtagtaca cggcagctgt gttgccacta aatccaccgt tttcccttgt 420

gccgtcgtcg gatcagcaac gtatccacac agcacacagg tagtacatag ctaatctgaa 480

gagccatctc tgcggtgctt gggttgccgg gctacagcag agatgtgagt ccaaattaac 540

tgaacatgct tgctgatcaa tatggccgaa aaggttaatt catgtgcgtt gtgctatggt 600

gcagtgtcag tccaccatgc atgctgcttt tggtgtccaa tgctttggtg tcatgaacct 660

ttgtaaaatc gcgtttttc actctctttt atatataaat aaataatact cactctgccc 720

caaattagta ggttttctaa aaatagttga cgtttcatgt ttgcacacag gaatttagaa 780

gttaacaaac ggtatgtcac gcatgcagaa aataaagaga tatagacatg catcaaaaag 840

aaagaaaaaa ggatatatta agagaagaga aatgtgtatt agaaattgat ttgttcagaa 900

agagagagag agagagagag agagatgcat taaaaaaaga agaaaagata tgttaagaga 960

agagaaatat atatattagg aattgaattt ttagatagag ttttaatctt atagtgacat 1020

taactataat gggaccgacg gagggagtat ataagctgta tggtcgtctg tacgtccctt 1080

acctatatat atactagtta ggtgcccgtg cgttgcaacg gagatcatat aaatccatat 1140

gttttgctac gcaacatg 1158

<210> 3723
<211> 1323
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89795_G1, chr2:225533288..225534610, Cluster 22

<220>
<221> modified_base

<222> (462)..(462)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (462)..(561)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (463)..(463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (464)..(464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (465)..(465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (466)..(466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (467)..(467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (468)..(468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (469)..(469)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (470)..(470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (471)..(471)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (472)..(472)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (473)..(473)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (474)..(474)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (475)..(475)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (476)..(476)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (477)..(477)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (478)..(478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (479)..(479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (480)..(480)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (481)..(481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (482)..(482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (490)..(490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (491)..(491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (492)..(492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (493)..(493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (494)..(494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (495)..(495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (503)..(503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (529)..(529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (552)..(552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (553)..(553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (554)..(554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (555)..(555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (556)..(556)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (557)..(557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (558)..(558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (559)..(559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (561)..(561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (895)..(994)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (911)..(911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (912)..(912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (921)..(921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (922)..(922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (923)..(923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (924)..(924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (925)..(925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (926)..(926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (928)..(928)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (929)..(929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (930)..(930)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (931)..(931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (932)..(932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (933)..(933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (934)..(934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (935)..(935)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (936)..(936)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (937)..(937)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (938)..(938)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (939)..(939)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (940)..(940)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (941)..(941)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (942)..(942)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (943)..(943)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (944)..(944)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (945)..(945)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (946)..(946)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (947)..(947)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (948)..(948)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (949)..(949)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (950)..(950)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (951)..(951)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (952)..(952)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (953)..(953)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (954)..(954)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (955)..(955)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (956)..(956)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (957)..(957)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (958)..(958)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (959)..(959)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (960)..(960)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (961)..(961)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (962)..(962)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (963)..(963)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (964)..(964)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (965)..(965)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (966)..(966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (967)..(967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (968)..(968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (969)..(969)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (970)..(970)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (971)..(971)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (972)..(972)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (973)..(973)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (974)..(974)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (975)..(975)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (976)..(976)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (977)..(977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (978)..(978)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (979)..(979)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (980)..(980)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (981)..(981)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (982)..(982)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (983)..(983)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (984)..(984)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (985)..(985)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (986)..(986)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (987)..(987)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (988)..(988)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (989)..(989)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (990)..(990)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (991)..(991)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (992)..(992)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (993)..(993)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (994)..(994)
<223> a, c, g, or t

<400> 3723
acacactata atttattagc cgggaaaccc aataatcctc gtaacgtcgt ttccaaccaa 60

taattgaagg ggcgtttaat tattttggcc agccaatttt cttaaatttt aaaaaaattt 120

taaaaaaaat aaaaaaaact cccaaaactt atacacccac tcattaaaac cctcccggtt 180

ttatttccca ttactttcca aaatcagggt cttaggggaa ccccaccccc aaacgcccgc 240

atcccctcca agaagaaaaa aaggaaaacc ctccggggtt tacccctac ctcaccccca 300

aaacaaaaaa acctccgggg acccaaaaac agggggggtg aaatttcccc cacacctcgg 360

ggaggggggc ccccgggggt cctcccccca aaatataaac tctttaaaaa atattttatt 420

taaggggga atctctcaaa atatttaaaa tttttatatt cnnnnnnnnn nnnnnnnnnn 480

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nnnnnnnnnn ncggggtttt tcgggatcat gatggtgagt gtgtatgtta 600

ggtcgtcgtt aactggatcg ctcgaccaac taaggaagaa acagttgcat gtcctatgat 660

tagaaccatt ttgcatgacc ctttagggac ataaaccact ttgcaacgct cactctcctg 720

tttcccgagc tgctccattt ctttggagct ctccccatcc tcatccgact atcatgacac 780

ccccagggcg cgaattacta ctacaccaaa attgcacgac tctcttcacg ttgaaaccat 840

attgttttcg gttgaaggca gcttaatgat ccacagcgca gtctggtagt tggtnnnnnn 900

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 960

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnncgtaac attgctagta tagatataga 1020

ctataaatct atctcatcat tagtttcatt ataatagttt tatatcggtg ggacacacac 1080

cactataatt tatagtcaga aaccgaatag tctcgtacgt cgtttccaaa ctagtatgaa 1140

tggcgctata ttatttatgt cagtcaaatt ttcttagatt tataaatagt tttaaaaaaa 1200

attaaaaaaa ctaccaaaac tagtacaaca aactaataaa aactagcacg tttatatctc 1260

acatagcttc caaaatctag gttcttaggc tgactccaac tccaatagcg ctcgtatcca 1320

gtc 1323

<210> 3724
<211> 1232
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_90267_G1, chr2:228077788..228079019, Cluster 22

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (873)..(972)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (891)..(891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (892)..(892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (893)..(893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (894)..(894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (911)..(911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (912)..(912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (921)..(921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (922)..(922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (923)..(923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (924)..(924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (925)..(925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (926)..(926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (928)..(928)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (929)..(929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (930)..(930)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (931)..(931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (932)..(932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (933)..(933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (934)..(934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (935)..(935)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (936)..(936)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (937)..(937)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (938)..(938)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (939)..(939)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (940)..(940)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (941)..(941)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (942)..(942)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (943)..(943)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (944)..(944)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (945)..(945)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (946)..(946)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (947)..(947)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (948)..(948)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (949)..(949)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (950)..(950)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (951)..(951)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (952)..(952)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (953)..(953)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (954)..(954)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (955)..(955)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (956)..(956)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (957)..(957)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (958)..(958)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (959)..(959)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (960)..(960)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (961)..(961)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (962)..(962)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (963)..(963)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (964)..(964)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (965)..(965)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (966)..(966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (967)..(967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (968)..(968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (969)..(969)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (970)..(970)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (971)..(971)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (972)..(972)
<223> a, c, g, or t

<400> 3724
taaacgtatg ggtattgtac aagtatgtat gtgcaatcat gcaatcgtgg tttgtagttc 60

gtttgatctc catttaaggg tggcttcaaa ttttgcaaag atacccatcc acctcttatc 120

taatcattaa ctatttttc tcaaaatccc tctcaatcga ttaggtttca tcacatatta 180

ttgctcctta ttgctaagat aagtatatat gttaggcatt tgttagaact agagtcttcg 240

gcaaagacga tgtggatatc tccaacacta aggttgtcca cgacatatcg tgtaaaatag 300

gatatttgta ctgtagatag cactgtttgc agtgtgaggt ttgagatagg ggatgtgata 360

ggagagctaa tgaagatagc taaacctgtt atcccctgac tgtgtggatt ggtcagtgtt 420

gccatttgca ctccagagaa tttataccac tatatagtac accagtttaa actttgcaaa 480

acccactcaa caaatcacct cgcacacata accttcacta aatccaccaa acaaattgca 540

cccacttagc atgccattaa aaccaaggat tagatcgttg gataactcac tctctcttac 600

tcactcaagt ccaatgaata atattatttg aattatccct ccccttgtga gcccaccacc 660

ccgggcccca acctcccccc gaccccgcaa cccctcctca cttatgtcgc tgtcgacccc 720

tcttctcttc agggtcagtc ttctatacct taaactctgc aagacttacc aaaccaaatc 780

accccacacc cgtaacatct actaaatcca ccaaataaat tacacccgaa cttaacacac 840

catcaaaacc aacggttcag atcgttggat aannnnnnnn nnnnnnnnnn nnnnnnnnnn 900

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 960

nnnnnnnnnn nnccggacat cttctggcat ttttttaggg tggcgaaatt tcgaataccg 1020

aaatcaaaaa ggtagtagag ggagccggag atcgagaagg cgaacgacgg gcggcaacgg 1080

gagatcgact tgggctcttt gcatgcatgt atgcattcgc atctctgtaa tctggtttgt 1140

tgtttattgc caaaaaacct taccaacgtt ctgatgtttg cttgtcaaat ttttttttt 1200

ggtaactttc gcttgctttc caaatctttg tc 1232

<210> 3725
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_90949_G1, chr2:230629051..230630056, Cluster 22

<400> 3725
taagacaagt gtaatatttg ttcttatcgg tttaatattt gatatatgga ttatatattc 60

actttgacat tatatttatt tttatgaata ttaagtatga ttgtgtgtcg tcgcagcgtc 120

cgatcattgt actagtatcc attgtactag tatccataaa agtgtggtta aactgcttga 180

gtatatgcca aagcgaggac agtctgaatg tccataaaag tgaggaaaat atgcttgaat 240

atccatagaa tgtggataat ccatgcagtg cgtagataat ctacaatctt attaatggtc 300

tattacaatt ctatgcttga aatttcgagg aacatctact caccctcatg ggtaaagtac 360

attttaggat ataacccatg ttctaatccg ttgcactcac tcacatgggt acccccgatg 420

aagagatgat gacaactgat aggtgggatg caataaatat ccatcttgtg gatgtacaaa 480

cacctggaga cgtcttttca cttttcaccc ctcgcggtcg cggcagtacc tgaatattga 540

aaggtcaacg accctctgga ttgcacttgt gcttcagctt ctggacactt ggacagtagt 600

gtctttttg cacatcagcc ctccatagac acgtaatagt agcacaacca ccctctagtg 660

ggtcgaaacg tatattgagt atgggatttt tttttttgt atcgagcgcg tcaagaaaac 720

ttggttttat gaacatcaca tcataaaaca tgctttggca tgatggacac tataaaatgt 780

gtatttatgc acgtagtata ttatacgtat caattagaag acccctttgt atgcatagag 840

agatgcgtgg tgaaagaact aaaataactt tagggcttct tcgggagaag tgtctccttc 900

tagtgtaata gaatagttgc cactatctcc atgtgaaccc gtacagaaat aggtagacta 960

gccatatgaa ttttctctct cttcccttct ggaaatcctg cgttat 1006

<210> 3726
<211> 1185
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_91003_G1, chr2:230878308..230879492, Cluster 22

<400> 3726
acctacaata cacccccacc atgagtttct atagtgatga gttctgttgt ggcacctaat 60

aagagttcta ttacatgatt gtggagtttt caatctaatg taaaattgaa aacctatttg 120

atagttatga ccttttccat tttattgcaa attagcacag tatgaaacag aatagacgat 180

tatagaaggc acattaatag cagtgctgca gtggaccaca atatcaaagt ctagaaggcc 240

aaacttgtat ccgtaagtga tgaccatatc aaaagtagac caagcttata tcaacaagtt 300

gaataggaca cctttttac ttttttaagt tagtattgtt aggttcatat atgctcgcat 360

gtatttagtt gaaatctgat gccaccttgg tggctgactg actttatcat atatttatca 420

atgaagtaga tgaaagaaat tcttctgaaa aatgtagcca tgctatttag atgtatccaa 480

attgcaaatt ctacctataa cctttggtca gaatttaatg agagtttgtt caacgcattc 540

tagggtgcca tttattttac cctgttttgg tgtgtgtttg gggggggggg ggatgtctac 600

cttgtaaatg cagccaaagc tacctttgcc aattagattc ctgtcagaga agttatttgt 660

agcaccaacc aactgggaca aactgaactt gaatgcatct gttatgacag aagaaagacc 720

tttgaggtcc taaaatcaat ctaggcattc caaaactcta ctattttcca caaccatacc 780

gatgtagttt ctgatcacct ttttcctatt taactgacca tacctgcgca attcacttgg 840

agggagcacc ttttaacttc actatacact tcagtcctgc cacatggtga gtgaattcaa 900

ttatgctatc taagaattaa aaatgttatc cttgtacctt acatgtcagt ttaaaaaagg 960

ctaaaaattc tatattgtgt acaagacttt tcaccaaact atctctctaa agtagagaac 1020

ttcttaacaa aattcaaaac cacatgtaga cagacttgat tcttgtagta ggacttggtt 1080

taaaaaaatc tcatcgttgt gccccgtccg ctcccgcgtt acgtctcgtg tgccaccctc 1140

cggctaggcc gttgcagagt gggcggtgac ggcccgcggg ccagt 1185

<210> 3727
<211> 1159
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93575_G1, chr3:7207297..7208455, Cluster 22

<400> 3727
taaactttta gtaattagtc tcggttcaat cattattcgg tagtcccttt gttagccgca 60

ccttgttagg aatctaataa ataaatcgat gagtctaaca tagtcataaa ggaaacaaat 120

cgccgtagac ttataacgtg acacaacaac acgctgagtg catgttagtt agatgattgt 180

agccataacg tatagagtgt tagtccttat attatatatg tgtatttttc agtcttacag 240

attaattatt aatcatcgaa agttgaggcc ttttttattt aacattagag ttgaaagtta 300

agcacattag ccttctcttc actctaaaaa gactatctct atgcacttct actcgaatgt 360

ggcgcttgga acttttagaa ttgcttggag atgttgcaca agtgtttggg aatgaaagca 420

caattattgt tgtttgtcta ggtcgtctaa agacgtattt atagcccaaa aaaaccccaa 480

ttagtcgtta ggcgagatcc aaaaatatgc accttagtgc tcatattttt atggtttcca 540

tgtaaaacat catatgtaat aacattgcta cagctttatg actcctaaaa aggcgtcact 600

atttgctata acccgtgatt ttcaacgtta accaccgttg aagggtatgg tataacaacg 660

ttttactgtt tatctaatgt gcattaaaat tataacggaa tttccactgt gattggtctt 720

ataaaagaca cgaacaccta gggcgagatc ttgtgacgat ttattgatct aaggctaggc 780

ccaactagat tcgttgtcga ccgtggggga ggggttgcat tggatggtgt catcgatact 840

gacacgaacc gttcggtggc aaccatgttt agtgacgtga cataatctaa ttaatccgcg 900

tatgttgtgt gcgccatgtc gccttttttac accatttgaa gtccaaaaga aatccaaaaa 960

atagaacctg accaataaat caaatttttat ttgtcgatta accaatgaga tgtcagatgg 1020

tatcgaaggc taagaaccgg cgctagatta taaatcagct gcctcatcaa cttgttggga 1080

ttctacatgt agcacggctt aagaattcat cgagccatca tatgtttatc tttttgataa 1140

aaaatagcat atttatctt 1159

<210> 3728
<211> 1106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94946_G1, chr3:14938630..14939735, Cluster 22

<400> 3728
aaataagtta gattatataa tctagacaga taataatctc aaacaaaaaa accttagttt 60

agtattcacc cagaccactt tacttttttt cttactttat ccgttcgaaa ttgaaaactc 120

tggtcgttgt gacttgtatg atgccaagat ctagagacaa atccttatat gacataaagt 180

gtacatatca tttacatacc attcaaagtt atacattccc ttcatcatca tgagttttaa 240

tctttcttgc cccttatatg ccactattat gggtttgcac tcactttatt ctagtgcgaa 300

agtggaaaaa agacaaattt acccctagat aaagcataag aaagtttttt taatgggtct 360

ttcaatcctt ccatgtcatt gaactcatga acaagtatac atatatcggt gtcctacctt 420

gctacgtgca caacattcaa cagttgaaat atgtaaaatt gacggtggaa aacatacaag 480

tgatcaaatg tataaatgaa cagaaacaag gaaggcaata atttctagtg gcatatataa 540

cggtcaaaaa ttgtctgcaa gtagtttgat tgtctgaagg aacatggcgc caaactgaag 600

ctgacagaga tatggatgga tggatggatg gatgggtgat attaataact cagatttgcc 660

tgtaactcct atccatgatc tgtccggatc ctttggacct ttttgacgtt ctccggcgac 720

ggaaattgct gctgccttct ggacgtgtta gctagactca cttttctttt ttggacattc 780

ttaacaagaa cggaaaccaa tggctctcaa cctttcatgg acacaaaaca gtcgtttacc 840

tgacatggag ggcgacaata ataatagagc gaatttcttg gagaatcagg tggccatcaa 900

gtgggccggt cgagacgtcg tgagtacgtg acgagatact tgcaggccgg cccattaggc 960

cattaccatt ttagacatcg ttataccatg ccgtatgcaa tcagacccta ggtgtaatca 1020

tttattctag tcctttccat gcccatccaa agatggatca ataatttcta atttggctct 1080

cccaccagta cgttccacca gcgtgt 1106

<210> 3729
<211> 1120
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96212_G1, chr3:21853327..21854446, Cluster 22

<400> 3729
tttgattatc aatggtgcta gtagcgcaag ttaccgatga ctggaagtag ggacattcta 60

cccaaatcag tataaatctt gcgctctccg tacacgccct ccggagcctg gaacgagtac 120

aataaattta cttgtcgaag cgaggtacaa aacaccgaca agtagtaatt cacaatccat 180

cacccataaa taatgatcat tttgatcaaa caaatcgatc cacggagcaa agtacaaggt 240

gattaggcaa gtctagattt gtcacaagac agaaaaccta gtaattcaag aaatatcagc 300

tagttttgtt gatcaaagtg tccccaatta cgaacatagt ttagaaaaca tatctgagta 360

ctaagttcgg ttgggggcaa ggcaggagaa tagctgcagc tgcaacctgc cgtcgatccc 420

aaaatggcct cctgagcgat ttttttttctt caaaaactaa agagagtttc agatcaaaga 480

gtaaggtaaa gacgaagcca tctttacagc aacttctatc aaaatgccgg tacatagcca 540

tgaaaaagca acaaaaaaaa ggcaaggcaa tatcagaaaa ggaattcttc gttgcctaga 600

aaagacatac atgaacatca ttgacggtca cctcatttgt cttcatatat actacatcag 660

accatgtgcc atgtactatc tatccaggta tatctaacca taatccatgg ttttgaaata 720

atcatgtgga cggttagtgc tcattaattt tgtattaaac cacttttcca ttttcatgat 780

gtccttttta ggtgcttgtg ggggtcttga aaaaactaga tgacatatgt tctcgattct 840

acaggcaaga tggtcatttc gaaaataaat agagactgat caaatggaag attatttgtc 900

aacataaaga atatagcgga ttgggggtag ccaatctagc cattaagaac atttacttag 960

caaattgctt tttagattat tcaatgaaga tggtacattg gtacatggcg gaaaattgtt 1020

caaaataaat atttaggatc caaatcgctt acgcaagtcg tgggaagacc aagtgactca 1080

tatttttgt atgggttcat gaatattaaa gcagaattct 1120

<210> 3730
<211> 1323
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_99886_G1, chr3:43355890..43357212, Cluster 22

<400> 3730
acagaacata aaaaatatat ttattattca agaatcaaca atgtaattga cagtagaaag 60

atcatgccgt ttgtaacatt accatatata tcatacgaca tgtcatggca aaatcgtata 120

gagaactacc tgctttgaag gaaatcctgc catagagtgg ggacttacta gtacatagtt 180

ctcaggataa atatgccctt tataggggcg ggcctagaac aaaatgagag tagggactta 240

cttgtaaaga taagcaccaa aatattatag aggggcatct aaacgacgtt gagcagagga 300

ttttatggta aaaatttaga ctctactact tataaatgat aaatgaacgg aggtctaacc 360

cctcacttgg acatatgtag gtccgtccct gtccctcagt ttactttccg tatgtgtctt 420

cctaggaatt tcacaataat agacaaagaa aaaatccccc ccccccccccc cctcccaagc 480

tcaacttttc ttcccttact ctttccttaa actttttttct tgtaacaaca aacaaaagat 540

gctctctctc tctctctcct cagcttcagc ccatacctgt ctttgtggtt cccagaaatg 600

ttccacgtac tacatgcgct tgacaagatc gcagagaatc cgatgcagag ggcacgcgtg 660

cacgcacggc cggacgcacg tatcactgct gtttgttgtt gggttgcttg cattggctgg 720

cgcccacgct agagacacac acagagagag ggtggagtca tatcaatgta ccaacggatg 780

ggtcgacgtc gaagaggcag ctagctatac ctctggctcc gagaaggaat cggttgctca 840

cgcatctttt gcttcccgcg aggagaaatt tctcttgctg cttgcttgtt gcgcgacatg 900

agatgagatg agatgagatg agttggatgc acgcacgtct ccatccaaaa cagcttctaa 960

cagcaggcgt ggtgtgcaac agacagctct tgcctcacaa acgcacacat acacacgttc 1020

tggtttaatt tcttaaagaa gaaaaaaaac ccacgcacta catacgtagc acaaaaaaga 1080

actattatta ttatagttat ttttattatg ttgttgttgt ttacttaatg cagccaatag 1140

gtgacatata tatgatatat atatgcataa ttctataagt ataagtactg catgcctaga 1200

acacaagacg tttggtcaaa ccaaaagaaa tctataaaca ttaatgatta tcatattgtt 1260

taatttgaaa acatgtaagc tggtactagg tcattatctg atgcagtatt tgccgttact 1320

aac 1323

<210> 3731
<211> 3965
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31710_G1, chr1:194939396..194943360, Cluster 23

<400> 3731
gtttgtttca atttcataat ttaccattgc aacagctgct cttcgacgca gaaacatttg 60

tcgtggttgg agaaatatgt atatgtgcaa ccaacaaagt tcagattgat tacgacgaag 120

atcggcgcta gcttgtttca agagaaaaca aatgcatctc ttgaggcaac atcggagaga 180

caaaaatggc atgtagtttt cttacacaca acggaattgc tgatgaaggt tttagtgatt 240

gatggatgat atttgtagta actagtttta ttcatcaagg gaagtttgtt ccaatggaaa 300

tgtgcacaac tactaaaaat atcttatcgt ctcagaagga agaattggtg aatatattta 360

gcctcatttc ctagacgcat acatatattc catactaagt caataaatcc atggacacca 420

aaatgctgca taattagcga atgcaaggat gcctcgccgg ttttaagaaa ttctggtagt 480

agcttgcaag ccaacgccaa gacgacgaac tagtcttaag ttgaaaagat cctgatggta 540

aaactctatc atctttcctt tgcctcattg tcttgcatga caatttttg gtttttctgt 600

gttctgattt aattggttga atgttgtaag acagaaactg ggttacttca ttatcttaat 660

gaaataaaat cccttcataa aaaaaaagct tgaatgtctt agtgatctag ctcgtatttc 720

tctcttttga agcttccttg tccgttgcag tatcgtccaa ttgcagaaaa aatggtgtgg 780

aaatttgatg ttttcttgtg ccaagatggc tcatcaggtg ttgtatttgt atatattctc 840

tccctttaa aattaggcaa tatcgggtgg ttagtgactt ggttctctca ccatgatgcc 900

actatcaacc tccatttgtt cagaagatat tcgcaaaaat atacagccat tctaattaag 960

ttcgtgttgt ggaagatgta aatctgttgt cctaacctgt ctaaatatga acaaagataa 1020

ctagattgtt tgcacgtata gacacagcac caaattcgac caaatctggc ctcattgcag 1080

aagtgtaaaa tgttaacaac tactacgcac agctcctgct gtatttgtgt aaaactgaca 1140

aagaaacttg tgggcggcgg attcggtgag ctttatctct acgtgttgca ctttagatgt 1200

ttatatataa attctgttga caaaagatta ctggagtttc tagttccacc cagttaaggc 1260

cgtacgccaa ccctttgaag agttgggatc ttctacgtgg catgattcat ttctgacagg 1320

gattattatt aatggagaag tttccttaag ttcgaagcat ggctaaacaa gcaacaccta 1380

actaacctcc tgcatagggt aaaacagtcc ccgaatattg tattaagaag aagacaggtg 1440

aagtaaactc gtaaagcggc accatatata gggcattgtg agaacggtcg cagttaggat 1500

tgggtcttag acatgtgctt ttggcgtgag attcagaaga tctaaggatt gctacgcaga 1560

ccgcctaatc atataaatta tgaaccaatg catggattaa ctaataatat cgatagatgt 1620

gtctttttt tctctctatt ctgtgggatc ggatcagttg attcgctcac tttcactcac 1680

ttttcttttg cgccgatgtg tccgcagtta ccttccccat catgaacttg gagaccgaaa 1740

ggtgtggtgc ctagttaccc cgtactgcaa tttaccaatg gcgctggggt ggaaataaag 1800

ggcaggcgca caacacagaa aggaccagca gcagcaccac caccaccggg cactagctag 1860

ctagctctct ggtcaatgga gcatgcagct tagctgggat tcagacactg ttgctggctt 1920

gctgctgctg caattgcttg ttcaaggcga acacaagaga gatccgaagc atggttgagt 1980

ctctgggcgt agaaaacagt gccggtttcc atcggttaga caagaacgca agagagagat 2040

cgtccatacg acgtgcatga ggaccagatg gagattcaga gacgacccca tcttctttgc 2100

ataaagaaac tagatgaagc ttgtgtcgtc gcctataaga aatgaaacat ctgcattgtc 2160

agcgtagtat cccagctgat ggagaggaca tacccatgag gcaataaatc aaacgacctt 2220

ttaatttta cagccaatgc attgcatgct gcattatcaa actggcgaaa agtgcttttt 2280

tttaaggggg ggaaggctac catgggttgc attgaccgag tgccccctct cgtagggcct 2340

atgccacatt actttcttga aaggcaacca caggctgatc tggaagtcca ttccacggtg 2400

gcatgcatgg gcggcgccac acgtcagtca tccgctcgag ggcaagcttc ggtcgatcga 2460

tgacgctgcc cggctgcatg ccggaggaat agtggagaag ggtgcagagc agagggatgg 2520

tcagatcatt ccagttgctg cttttcggca cttgcatatg tgatatatgg agcaaacagc 2580

accgctggct ggatggatcg gatcgcatac accatatatg atcgaagatg agcctagcca 2640

tgcatgttgc aatatggact actatgtaca tctgtcgcac gtactagctt gatattaatt 2700

cagtgtacat ccaattacac acatgcatat gcagtaactg gacgtttatt tgcacacttg 2760

cactatatac acatcgatca gacgtcgctc cagagtacat tcagcactgg gtttttcttt 2820

tctttgggac tgactgctat gctagcaagt cactaactca ctatagctag ctagctagct 2880

ttgtcttgtg ttttttttcc ctgtggatgg atcgtcctgg cagtggagga gattgttggt 2940

ggggtggtgg agctgagatg cagcattatt tgaaagagat gcgcgtcaaa tgattaagtc 3000

agggacgcct ttccacatat tcgtgattca gttgggcata ttgcactgca ggcaggctag 3060

ctagttgacc agaaaagtga gttgttgttg cattgcattg catgcatgag atccaagtac 3120

gtgttaacct gggtaggatg tttcctaaca tgatcacaca cttccccatc atcatatcac 3180

tagtaagcta gcccttgctg gaatgtacag gacccaacaa aaagaccatg catgcatgca 3240

tgactaaagt ccataatgta acactgacag acagaggata tagatagaac agccgcgccg 3300

gcctgaagaa acatcagcag gtcatcaacc acttagtggc tgcatgctcc tactagtctc 3360

ggcaggccat ttctttctag aggacaaaaa cgcttgcaag ggtactctag cttagacggg 3420

cagagatcga gatgggtagc tagtgggagg tgtggtaatg ctgtgcccat ttgctggagg 3480

ctagctgctt gttggagagc tagctaaggc gtgggagagg ccaggggggg ataagagatg 3540

atgctcgggc aaggcaactt gggtggtcgg gccgagacct gcaaaaggca agtagtagct 3600

gagctgggac gacggcattg gaggcctctt ttttccgatc ccgctttacc acttctttct 3660

atcgcatctc atcgatcccc caatcccagc cgatcctcgc tcatcgtggc cccataatgc 3720

gtgctgcccg ctagcttagc tgccattgcc attggaagca ccagtccata gcagcgcgtt 3780

gctgcatccg gcggctgcct gttggggagg agacgatgca tgcacgcgtc caatccggtt 3840

gttcgttctc aataatatca ccccggcccg gcccgtattt agagatattc gcccgagcgc 3900

agtccagcta gcacagcaac gcagtcgcag tgcatgcaat gcaagttgga gtctgtcagc 3960

gttac 3965

<210> 3732
<211> 1416
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_101092_G1, chr3:49548588..49550003, Cluster 23

<400> 3732
aggtgccttt ttattttaca tatttataaa ttgatattga tgaatattta atttatatat 60

taatctatgt acatacaaat gtacaagcaa gtaatatagt agtatataaa aatagtaata 120

tttgtatatt agtatataca aataaatagt aataagtatt attatattaa attcaaagcc 180

aagaaacttc attaaatcca aaggtagtag ttcattactt tattctcgaa gtattccttc 240

acctcaatgt tgtaccaatt gtagataaat tagcccttag catatgcaat gaaaagttac 300

atccaattga aacatcactc atagccctaa cgtcaagttt actagaacat cactcataga 360

cctaagggct agtttattta ttggaacatc actcatagca cacaaactag tttactgaaa 420

catcactcat tcctaagagc tagttagatg cactattcat tgccttccta agggccagtt 480

catgattcac ctttacatcg gcactaccaa taggacaaca atgacaagga ggcaaagtga 540

catgcaaaga acttgctatg ggctccacct catcactagt gatagtgaca aggaaacaag 600

ttggtgtagc gacatccctt agccacaaac taacccttag cacaaggaat aaaacaaata 660

tattcaactg gaacatcaca attaactcta agggctactt tactagaaca tcactcatga 720

tacatcactt attgccctaa gagctagtta gatgtctctt catattttgt accttaaggg 780

ttagttcatg attcaacttc tccttcattt tatggccatc catattagca tgattcatat 840

gaaaaaatat aaaacaaaaa aataaggttt aatgttcagc tcaagtataa tgatatcctt 900

gttaaaataa ccctaaaccc aaatactttg agtcatgatc ctaaactcta aatgatgtgg 960

cattatggat aacaagaaaa aacttggaca aacatcactt tctatatatc aagcttgtca 1020

gtgtgtgtaa gaaacacaaa ctctatacca aagatacaca agaataatgc tactagttga 1080

atagactaga ataatggtat aacaaagctt caatttttga tgtgttcgtc gggggtcatg 1140

gtatcactgt tgcatgtgat ggcaagttgt cctcgaacca tgtggcggtg cagtgagaga 1200

gggctcgacg agctcacaaa tgagaaaatc ttaggaaagg ctgaatatat agaggtaact 1260

ttagtactag ttttaacaaa aaaagtacta aagatcaatt tagtacaagt tcatacaaag 1320

aactagtagt gaagatttca ggaaaaaaac agttagtacc ggttctttgt cgtgcgttgt 1380

ggcccgtgag gttcgaactt acaacgtccc ttttac 1416

<210> 3733
<211> 1534
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_102571_G1, chr3:58060106..58061639, Cluster 23

<400> 3733
agttcttttg agcaatgatg ctatgatttt tgacgttact aattaataac aatgacaatt 60

tgctgagctc tgctcaactg ttaattgtaa caatcccaga aatttgcgcg gaaccttgtg 120

aatgtggctt atccatttca acttcctttt gtaaacatgg agccaagaaa ccgcaattat 180

gttggttgta aactgcttga cttacaacaa aggactggtt tgtcttcaga ttcaggcagg 240

catgtgccag ctcccatccg tccgctaaat tcctaaataa ctggtagtta gagttttctg 300

gttgtataat tagcatcatg gtaaatttcc atcagtttat aatttgtggt gctcattgtc 360

aacactgaaa acctttcatt taaactgatc ttttatgttg atctttaatt actactgctt 420

cggtgcagac tgatccaaaa tggagtgatt ttctgtacga tgatgctaca aggaaaattc 480

agtctgattg acattggagc aagccgtggt tttccaaaac gctttgtaga tgattatctc 540

cagtgagatc ccgttccaag attacgagca atgtaatttc agtgacgacc attcagatgt 600

agcatctagt gctggatagt aacgtcgaag agatcttcgt ttccgatgtc ttgtgtgact 660

gaaatagttc cttctcggct gcagctcatt accatgtaaa aacctattgg gctattacaa 720

gcagcgtacc acgttacttt acctcatttt ctacgtcgtt ctcgttgatc tgcgaacttt 780

gtgactacgt tcataatccc tgagaatttg gttggtggac tcgcatagtg tgtgcgcagc 840

ctgaacactg acagccttat tgattacgca ctaatatcgt tgataagttc attgaaacat 900

aatgtggctg tagtttagtg gtgagaattc cacgttgtgg ccgtggagac ctgggctcga 960

atcccagcag ccacaaaatt tttttatttt tttttatttt gtcttagaaa cgcaacgccc 1020

ttggcccatt tatctctttt tttttaatgt atgtcttgca gagttactgt tttcttagat 1080

tgctagctag actattttag ccactacctt cttacgtaag tatttctgtt ccagttaact 1140

aagtatggat ctcaggaggt tgcctattct ggttttctcg tggcaacatt ctgcgcttaa 1200

caatttggag cgttggtgat ttgttcaggg catcttccta tattattgac tggatatact 1260

tcttttaaag tttccacgtt aatctttatg gtatgtgata tcaaaatata taaatttaga 1320

agttctaaaa gaaatatatt tgtgaccgtc gatgtagatt ttacgggttc taaagaaaat 1380

gtaattctat gcatcaattt atgttcaact attaacgtca acaatgtcca ttggatccat 1440

ttattttcaa attgccatct ctcgtaaaag gataaaaaga ttgagacatt tctttcctaa 1500

catgtcacca agaaaacgca tacgtcatcg gtat 1534

<210> 3734
<211> 1582
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_106255_G1, chr3:85781962..85783543, Cluster 23

<400> 3734
tatggcggcc accggatcct ccacctcgac cgagatggca aaggtgggaa gaaagagagg 60

attgggaacg ctcagagctg aattcaataa aatcttgggt ccggaaggtg tttttcctgt 120

tgctcgtgcc acgcgtcgac ggaagccaca gccgcactcc gtggaatgcg gggaggcgtg 180

caaatggtgt caggttttaa taactccgat gagtttcccc aagccaaaac ttgttatcta 240

tagacctccc agcaccacca tctaccgtgc tcgatctgaa ctacttatag cacacaagca 300

gtggtaccca gcagtaaata ctcgcaatat atttgcaatt taggtaagat aattattcaa 360

gtcgtgtaga ttttaaacta accacaattg attctttagt catctctccg tcccttcatt 420

tcttaacacg atagcagttt agatgcacag caatctttat caccgtgtta aaatttatcc 480

aattgcctct acgtgtttca atcattcgca ttgcactact gtatgctttt aatgtgtatt 540

tactataatg tcatgttgta tctatatatg ttttggcttc cttatttgtc gacaagtttt 600

acatatatat ataggtaagg ttggaaaaaa attgtagacc gcgttcattg atgaagacac 660

attattttcc atttgtttta tccatgaagc tgcaaggagc aacgattacg gaagcacatt 720

caccgtgtgt ttaattggcc aagcaggttt tctaactttc aaagggaaaa cacatgcatg 780

catgaacgat ggagtacgtt accagtttac caccaataac tctcaagact tcccgatgcc 840

tcacatgtct ttgctgggta catctagcca agctagatta tttaggcacc tgcagccacc 900

atgtagtctt aagcattttt gttaagttat acacagttaa aaccttaaac tatataggaa 960

acgatttgta ctggctcagc aggatttgtt ttactatatg atataaattt tattcaactg 1020

ctttcttaga cctgacacat ggaaattttc agaatttgca attatatatt gtatttaatt 1080

gtgcttacaa agattagaac acaatatctt tagctttgca ttctactgag ttggatgtgc 1140

tgatcagtcc aactaaaata ttaagctcat ggagaaaatt aggcaattca cttatatatt 1200

cttctagaat tgctataaag tgaagccttt agattgacct tacaagtaag tcaggcgcca 1260

ttgctgtgtg catatggctc ctacacctac catacataat tgttagctag accaaaacat 1320

agagtgcata tgatataatg aggtactgta gtttctttct ttccttctaa ttaataatta 1380

aggcgggatg gagctttgta taagtataac tgagttatat acatgatata gtctggaaat 1440

cttaaactat ataggaaatt atttatactt caaaaatcca ccccctcgtg tgaagtcttt 1500

ctttgacctg acacattgaa atttcagatt ttgtatttat atgttgtatt taattgtgtt 1560

tgcaaagatt agaagacgat at 1582

<210> 3735
<211> 1526
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_107909_G1, chr3:96026188..96027713, Cluster 23

<400> 3735
cacgacgtga tatgttaaca ataattaacc gacaaataat tagtttgcaa caattattct 60

gggcatgttt ggaatcttgg ctcatagatg ccttttttctc ttgtcatgat ctagcaccaa 120

ttagaaaggt caaatgacta gtgagcaaac aatttgtcaa tcctcccgct aacaataagc 180

caacttatta gatagcctgt ttagagtcca aggtgctaaa attagctagc aaactgtttc 240

ctagatggat ctaaacacac ctttacttta gctattcagc tatttaaggc ttacttcagg 300

cttttaatat ttcaacatgc aataggagca aatattgaac tattgattgc gtacgtgtct 360

gatctaggac cactcgtgtg gagtatgtat gttaacatgc atggtgcttt atatactaga 420

tactagatta ctcctagtag tatattaatt catataattc atgcatgata tcggtcggta 480

ctagattact cccagtagta tttccctcat cctccatctt tggcagattt tgcttcacat 540

ttcctcgcta ggatttgttt ccctggtagt tttcggcact aaagttaatt agaatttctt 600

gtaaccgatc taccttcttc attcagcatt ctaaacaact tcagccactt tctatgttgt 660

cacagtaagt tgcttaatca ccgattgtgc atcaaagagg cgggaaaact tcgatgtgtg 720

gccattaaga acttctcgga actgtgaaat aaatatacag tagattgcga gacgaacagc 780

taatctattg ccaactattc cattcaggtg cacttcatta cttagaacaa tgtgcttact 840

gtctccttca gctgcactgc actacgtttc gcacaaaagg aaaaaaaaaa cttgaatggt 900

gccacatgcc atcgttaaat ccaaaagaaa agccgggtcc actccaagac gctacaatta 960

agggttctag gcttgtgctg caactctttc agtattgaag tccctacacc atgcaattga 1020

cttgagttgt caatcacatt tggtccttgg gattccaagc gagcctcccg aggatcagtg 1080

tcaagattcc agtggctctt aagaccaaga ttagaaaaac tgcttcaaag ttcttgtttc 1140

gatacctaag aagcctgcga cttcattgaa cactgggtag gattcgatag gccaaggatc 1200

cgatcatgct cgagagtcca agacacagca tcttagattt tcctgatcct ctcgctgaat 1260

gtagctggtt gacctcctcc tgtctataga caatattcac atattttagg ggttatgtga 1320

acattgtagg ggagtaattt gaacttttc cattctaaaa acacgtatta aacatatgtt 1380

gttttattgt tagcaccata tagctaattg atagtacggt tatatcattt atatggttga 1440

tcgtgtttgt ctattttaag tgtctgagaa aaggattaag acgaaccaca ctcatgtcgc 1500

tgagctgaca ctataagaaa ccctaa 1526

<210> 3736
<211> 1518
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112438_G1, chr3:127229126..127230643, Cluster 23

<400> 3736
tgacaaccac atgaacattt atgcgcgcac acacacatct ccataccatg tttacctgca 60

gcccaaaggt ggtcctgttc ttgctgctca attggagcaa ggataccgcc aagctcgaga 120

ggttgtacga gccaataatg acattcatat ttcttggata tattatgaga aaatttagtg 180

gtcaaaagca tacttttgaa gacttaaaaa ttcataattc gcctacgttt gttcttcatc 240

atggctttgt gataacatgg aaggcatact gctatcttat gcccttgtgc cttttacatg 300

tacctcaacg agattacttt tatcaaataa ttctcaaatg tgtatcttga agatatttgt 360

ccaaccctgt tttctctgtc ttaatgcagg tgttgttagt agcagtttat aacgttatgt 420

ttttagatat ttgtccaacc gctatgtttt tagatccaaa gaaacagaac aacactgtct 480

acaaatgtta cattgtgttt tcaatattgt actattgtaa tatgagcatg tatttttaca 540

taataatatc aatgttgcaa gacgtcctct gtttttaatt gtcaatcttc tctagctttg 600

aactgacaac ttttttgagc atttgatctt gaacactttg ctttattgac ttggttttgc 660

agctatctgg ttccaaaata cgagcatgta tcacttcagc atgtttcatg cctcccatca 720

cttggagccc attatagcaa ctgaggacga ggtaagcgca ccctctgata agatcaagta 780

tctttaaaaa cttatagaca acctgctgga taaattgcaa tgctaatctc acctgttgtt 840

ccattcaata tttttcattt ttgtaagaga ggcataagct ttgaagtaga cagaactgat 900

tatgtgtgtg gagtcgtagg attgaagtag tatgaacaaa caataatcaa gatattatta 960

actagtgaca ttccttttca taattatcca tgacatatat tcaaatgcaa tgattaaacc 1020

aaacacatag aaagagactg aacataacga tgcttatcag attggaattg caggaaaacc 1080

ttcatctgat gtagcaagca caccacaaac agaagtgcaa taaaagcata actcagacac 1140

ataaccacaa acagaagtgc aataaaagca taacccaggc acatatatat gtgcactaaa 1200

atagcagcgt ctccttcttc acgataaaca tgtaactcta ggtgcttgat taagaggcat 1260

cactgttatt tccacgttat taatctaccc taaaaatgtt ataaatgatt acatatgagg 1320

atgggcagga ctcaggagag tatcctaaaa aaattataaa attttggcgg ctgaatgcgg 1380

tgaaagggaa tacaaaatac agtggggcaa tgtgggccgt gtaatagaaa tatgagttgt 1440

tattgctggc cttagtcgtg tatcaagaaa cactataagt gaagttaggc tcgaggacag 1500

aggcacgcaa gacaacaa 1518

<210> 3737
<211> 1477
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_113314_G1, chr3:132024180..132025656, Cluster 23

<400> 3737
aaattagttc gttagaaact aaaaccccta taagtagcct gtttttcttc tcttttaatt 60

taattttctt ttatgccact ataaaactaa tataggtatc tgttgcagct ggtccacgta 120

accttatcat actttattgc tctggtgcgg ctttcattgc ctggggccga gcgccatgag 180

acagagagat aagatttttg tcttgtcgtt gtgccacgtc gttgagaacc acaagaataa 240

tgtggcaccg tggctgagtt agggtgagct tcggcttccg gatcgtgcta ctagattttt 300

tttctttttt tgtgttgttc gatccagaca tccaccagta tccaatgcta cacctgcact 360

accgatcgtc cactgccttt ggaaccggca atgaatccat gtcaggagcg gtgggagaga 420

gagagcaaag ttagtataga tctaaattga atttgtgcct atccatatct agttatttgt 480

gcgctttatc tcaccgtaat cattatttta gttactcctt aaaatttgta ctccagtact 540

cagattagat tattctccgt agaaattttg taggcatctt ttcaacgcta ccatataatc 600

aaaaatacta tgaaactatg aatgcctctc aatattttac ttcactattt ataaactagc 660

gtactaatta aatgttgtaa cttaatgatc aatagaagtt agtaaaatat ataaagatga 720

aacaaatcac tctcaatgaa tgcttcacac gttttctaat acctgggaaa taagttgata 780

tagttttctc cccatgaaat taataccatc ccataaaatt caatcatctt aaatgctata 840

tcatatcatc aaataatctg atgtgacaca cttttaaata tatacgaaac taccatagaa 900

ccaccattaa taacaacctt agacactata attaatgttg tgctataacc aatgcagtag 960

ctaggatttt agtgatggat ggtctcgttt aacctttttt aactatataa atgcaacata 1020

tagacatgta aataaaaaat accgaataca atatggtcag ataaaaaggt attacaatca 1080

tctaacatct tagaaataaa aattataaaa atcatctagc atcttaaaaa taaaaattat 1140

aatttttac ctaatataat atggttttat atactgcaca cgtacatatg actctataag 1200

aattgatcga tccgatattg ttgatgagat ttacgatacc tacgcgacaa gggcgacctt 1260

gtcctgtcta agccacttga cgcgggtgac aagcgtgcaa tgtgttttac tgagcctgga 1320

acacgtacgc accgtattgg tgctcaatct gcttggagtg ccatggtgca tgcttgttct 1380

agaacctagt gtggctgcat gcccaagctc ctagcttcac atgatgttgt gatttgttgt 1440

agacgcgtca aataaataaa acaaatttac tggttaa 1477

<210> 3738
<211> 1595
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_113813_G1, chr3:134909127..134910721, Cluster 23

<400> 3738
tttaaaatgc tatgtagttt atttaagtat tcaaaagaca caacaaatta atattcactt 60

tatccttaaa tttaaaaatc tttaatatgg taatacctct tgctaaaatc actttgataa 120

aatacgctat ttcaccagat aatacatatt gcaactagat caaacattct actctcaaat 180

tttccatatt ttcagaactt atccgtcttc cagagtccag acaaaatgcc aattgcagaa 240

acttttgcta gcacatctgt gcacacaaat aaatccattt ggagccataa tgatctggtg 300

ccaataacgg aatcctgtct cctgcactct attctttttt ttcaatcatt cagcagcctg 360

gatttcataa aacctatgca cgtaacagca tgccagattt cacaccgaag gaataacaat 420

atactcactc catacaaatt tataatttgt ttgaattttt taccaaattt gatcagttca 480

tcttattcaa aaaaaattgg aaagtgaaaa attcaaagtt attcttaaat catataataa 540

tgatattata gtaaaaatta ataataataa taatgtattt ttaaaataag acgagctggt 600

caaacttaga gttaaaagtc aaatgaatca taaattggaa cggagagtat aattatctga 660

gcgcatgttt gcttaagttg ttgcttttgc acaaattact gtgagttgtg agctataaaa 720

aatatgttat acattacggg ttgtgggaaa attgagagta gtttgattca acaagtatga 780

cttctttgaa aagctacgtc agcttcacat ataatcccac cccacgtatc aatcacctaa 840

tacacttttc tttgtttttt ctatgtttct tctgattcgc tgatgaggcc atgaatgcca 900

ctcaatgcct ctctatgtca tgctcttgtt gcctagtcct caatgactag aggtggacga 960

cgacatcacc cgtggcggcc catgtgacta aagtttgtgg tatcattgaa tatctaatga 1020

agattgttgc aggctccgat catcattatg aggggccatt atgtccattc tccatgggag 1080

attcaagaag agcaactata gtgaaattgt ggcttgttcg agtgcctcgc aagggtgata 1140

cttatggcgt ccttattgtg ggattgacat ataatgaaaa ttagagcatg aatcatctag 1200

cctggactcg ccacaataac aacatatgtt gtcggcaagt aactgaacct cagggatata 1260

tattcagtca tctcttgccc tatatggttt gcagtccata cctattctta ggactgcata 1320

tacttattgt atcatatttt tctatttagc cttgtgtcga ttattgttga gttttatctc 1380

tttctagtaa gtagctcgct acaatcaata ctatcttttt accaagctgc tagattgatt 1440

agaagctagc atagagttat ttagaactag aacaagcata cacttccatg ccaataaact 1500

taatcttagt gttaatattg agttttgtat aacaattttt ataggccatt cacctaccaa 1560

tagccatcta gatcctagca aaagccatct tgagt 1595

<210> 3739
<211> 1791
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118862_G1, chr3:166394837..166396627, Cluster 23

<400> 3739
aaatctagtc aagatggggt gaagtcacct tgattgggtt cctgctgtcg tcccgaccac 60

tatgctagag cttgtgaaag tcggcttggt caggtttgga ggacgacatg gccaagattg 120

cttggattac aaaccaattt atttcattga tttttgacat gggaatctta cagagaatat 180

gttttatagt tgttttctat agagataaga ccacaccctt ctacatataa gagcatcagg 240

gtggatcgag gtatttaaca tccaattgag caaaaaaaaa caattgatta tctctcttta 300

aattgtatgt tagtgttggt cgattgatct aattatcaag tatggcactc taggcttgcc 360

aaccgatcta gagcaacctg acgacattct ttccctcatg aggtccctcc gaggtgagag 420

ctttgataat tatttcttta gtttgcttga aaactagcca ttcttttcat gtaagcacga 480

ttggttattc tttgatggtt tgctcgtaaa tctctctgtt cttcaccatg caaatgtgat 540

atcttcactg cattctttgg ttcttggtga ccagagtgat ctagctctag ctggtctgtg 600

atcccattca gtgtcaacat acttttgtg acttggttgg aaaagaattg cttcagttct 660

actttatagc tgaatctctt tgccctagct atactcttcg tttatccatc attcttctac 720

ttgccattac cattatatct aacctaaaag tctatcctat ctagttatca ccctctcttg 780

ttcttattat tgtgcaacat gttattatat aagtctatca agacaattaa gaactagaat 840

catggaatac caaggtatga caccataaaa ccactacatt tgtctggagg tacaacatgc 900

aaatacatca tgattgtagt aattattttg caaatcatat gaaatatcat gttgatgtta 960

ctagctataa aaacaataga tctattgcat caactaatta ttatgtttat aatggtcttc 1020

atcttaaaca tcataatgct aggtatcatg ttcacaagcc aatgtcaact atgaattctt 1080

tgggggttta gtgctgctag caacatacaa catgtatata tttatttatt ggccgtaagt 1140

tcacaacata tggttccacc ataaggtata ttgagataat tggctataat tatgctaatt 1200

atttataaaa ttactctaat ttttcagcgc catatgcaag tgttcatgct cataatttgg 1260

cttattatgt tatgtctaag tcgagacaaa ctaatgaaaa ttcagcaata tgtgctaatt 1320

gtaatactca tgattcggct tcatatgttg ctcctaactc aagccaaatc aatgaaaggt 1380

gagttaacgt cgttaatatt catgattcag cttcatatgc cactagtaac tatagtcgaa 1440

tcactaagaa ttcggctaga tattctcaag cataacttgc taaacttaga aatataatta 1500

tagactctct aaaaacattt gctagagata gaaaagaagc tatgcaataa ttagcaagag 1560

gccaatcaca catgagtcat gagcataaac ataagaaaac aaactttgct agctggcgaa 1620

gttgacaaag aaagaatttg ttcgaatata gacaagtgtt ccaatattaa agccggacaa 1680

taaaatatcc ttttttaacc aatcacatct caagaaacaa gtttaaccgc ataaaaatat 1740

gaaaacacaa gaaggtggct agatttgttt tagagctaaa agtgttgtat a 1791

<210> 3740
<211> 1525
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120230_G1, chr3:175151703..175153227, Cluster 23

<400> 3740
gagaatccaa ccaaacgtct atattatttt cacatctgat agaatcaaca atttaggtgt 60

tgaactaata agcaagaatc gaataatcgc gagaatcttg gcgtttccta gaatctaagc 120

gaggtgggga gaagcgtaac caaacaggac ctgaggaacg ccgctcatag catcacagga 180

aattttcctc tatatactaa aacctaatgg gccaaacaga gagcctagtt gctaaggacc 240

tggcccatgt cagacactgc aagttgggcc agcctactaa tcgtccatat ggcctagttg 300

atcgattaat cgaatactaa ttgtgattaa gcaatcaatc agaaaagtat ttgagctaat 360

tgtaacgata gtcctaatcg aggtcaacta tccgataagg tcgcttaatt gcctgatcag 420

ataacattga cataatgtga actttccatg ttcagtttac tacaaatggt taattgtaaa 480

atctattgag atacaaaata atcaacaaat ttaatctgtt cattagattt aaaagggcac 540

atctcaagtg ccatgcccta gttccttcta ttcattttct tttacctgca taagtgctct 600

tcttaaaaag aatgtcctaa caaacactat cacttcaggt atatggtctc tgactgtatt 660

tgcaatatat gcaggatatg tttctcaaga gaatcgggca gaaacaccca atttacacat 720

tttccagagt gctgtctata aaatgtttgc attcaatatt taatcaggag atgatctgtg 780

ccatcctcga atctcttttg tcccgcggaa atgaattaat tgattatgtt gagtctgctt 840

gtgatctatt actggtaagc atagccacac ttataatata tatttttcat ggaaattatg 900

gctgtggttg cttgggaaat ttggaaacag agaaatgctt ctatcttcag gaacttgacc 960

ccctctgtct cctcttggcg gaattgcttt aatcacacgt tgaagcttca aatgcttaga 1020

tttagccccg ttcttaattt tagaatctct tcatggctga attctcttta tgtctctttg 1080

ttttgccttt gtttgctcct aatttatttg taaaacttgt ttcttctctg cttcaataaa 1140

atcttgctgt aggggtttct cctgcagcct ttcaccgtaa aaaaacaaca ataataatat 1200

ataaaatata agttgggggc agatccagca cactctgatc atcatccatc aaattgagag 1260

gtcttgtttc aaaatttggc ttcctcatcc tagacatgct tgcattttaa taatgtatcc 1320

cttatatttg catcaatagt tgtgaatcac cgaagtcccc taataatggt aaaatgtttg 1380

acaactatat gttgaaagaa acattgcacc aagatattaa attggttgcc ttgagctcta 1440

gggtcgatgg gctgtattac aagaggaatc ctgcctggtt acaagttaca acatcctaat 1500

cgactttgtt agagtatatt aggca 1525

<210> 3741
<211> 1854
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121240_G1, chr3:180585304..180587157, Cluster 23

<400> 3741
ttaaggagat acaattttag ttacttttta gtatttgttc tagctatcaa tcatactaaa 60

gaggttatgt ggctgcacag gagccacgct ctaggacact ttactatcgg ttctagccac 120

tcacagatac tagagaggct atattgtcta tatatatttg tttacatcac ttatattata 180

ttaatgcata tttaaattct tatatttaat ggaattacat gtatcgatag taatatataa 240

tttccattgc gattgattat atatttagat cattatttat taatagtgat atatatatat 300

atacatagga ttattatata ttacatattt ttatttaact aacatatagg attatcacta 360

aaagattctt ccatcttagt gaaaatcttc gtctttggat gcaacctagt tatataagaa 420

ctcaataagt tttttttta aattgcgtga tcacatccag cggaagttct ttcttcattt 480

cattaactga ctttttatct tgctcgtata tatgatagat atcctcgaaa ttgatttcta 540

cgccattgaa gtagtcgata tttgatgaga acaccaatac atatcctctc aacattagat 600

ttcttcatgt accactcatg taatctacac atttatattg gaagttgttt gaccaacttc 660

gacctaatta gagccttgcc atgctcatac ttctaaaatg tatagaagta gttgtgtata 720

tacttgctag ccccaacact tatttttag gcttgtagac ttctaaaatg cttccatatt 780

aatgtcatgt ttagatggca tgttacgaaa tggttgtggc tattttctaa gctacattac 840

atctttctta gcctgtttct gataagattt tttaatacag caatcatagt ctgataaaat 900

atctttcttt ggtttcttgc tcatcttcac aatgaacctt ctcactatta gatctattga 960

ttctttcttt ggatgactta ttttcctaaa gtgatccttc acctgggtgc cataacttga 1020

tccaaattct tgttagttaa gtcataagtt tgttttatgg tgccaactta actgaagagt 1080

ttcttggtgt tctatggctt ttacttttaa ctaacttagc gtgtgtttgt cttttaagag 1140

ctatttggtg tttagtgttc ttatgaggag gggtggggct catgtgagga gagtctaacg 1200

atggtaggac cttgtcacat atcagtgcat tgtgatctcc aaaaattatg acatatcaca 1260

ttttctatag aataagtttg tacaatgcct acgaaacttc tctatcccca tcacccccta 1320

tgatcttgag ttcctagtct ttgtaccctt catagatcta atcaatgctc actatagagt 1380

agatgtatag aatcttcttg ttgtagtatg acatgccttg ttgaggaggt gaagccatac 1440

aaaaagccac cttagttgtc aagtttctta ctgatatata tatagctcaa atgatattca 1500

atattgaatt tagtccatag gatattgttg ctctacatat agtttgatga aagcacaact 1560

actttatcat tgagagggga taactatgtt agaatgaggc aatatcactt gttaagttaa 1620

gttggcaatt gtttgtgcca cttgatgttg aacatcaacg ggaacacatg ctttggttta 1680

agctagctaa caataaaagt tacacaccct ttcctcctct ttgaccttgt ttctatacta 1740

gctcttatat gtgttagttt ttgcaagaaa tccatgcttc caaggaaaat tgtcataccc 1800

tcttatccga ccagggtgct tggcattcta tggggcaata gtgacctcat catt 1854

<210> 3742
<211> 1821
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122000_G1, chr3:184455382..184457202, Cluster 23

<400> 3742
catcatcacc tcattccttt caaagagtac gtactatgga catccacatg ttgcggatga 60

tgacgagtac gtactatgga ccttctctcc atcgtatgtg ttggactgaa aaaatatctg 120

aacacagtaa agtacgaagt tttgataagt gatacgtaat tccaaggcca ccttctcaac 180

agtgccgtca aaatcgcctc tttttaaaaa aaaaatcaag tgccaagcta aaatgacagt 240

agcaacagcg gctggtctcg tccattcgac gagccttttt gagctcgcaa tcggaggtgc 300

acatagctcc ggatggtttg tctttcaaag agaaaagtgg ctccggattt gttaaagacg 360

atgcacatct acctggccag ataaactatg cacatcgtga caaggttgct gatctcttgt 420

cactggcttt attgctttgc gggctttact gcacagtgca cacgtttatt tttggaagat 480

aggaaatgac ttcgtgcatg gatgcttttg ttctgatact tccttcatcc ccgtcccaaa 540

gtatatatat agttctagat ttattctaaa tcagaatata ttttaagttc cactaattct 600

ataaaataat atattaatat gaaccaaaca ctataaatat acacgtcaag gaatacattt 660

tcataataca tgtacttgaa atgatgagtg gcgtgagctg gtgatgatat ttttacaaac 720

tcagttaaat ttaaaattaa ttgattctga acaaacttaa aattaatatt gctttcgtta 780

ttgaggtggt acttgagttg gggtttagat gataaggtga gcatgccgcg tatgcagaca 840

tttattcatt ttcacttgtg tactggcgct gtcaccggac tgtgacaggc cgaaatacgt 900

actagtagat atatagagag tagactagtc tagagataag ggtgcacttg gctctccctg 960

gaaaagcatc ctgctcctcg ctgcacatac tgcctgtaac atgtttattt gtagctaacc 1020

ctgtctttct gtttttatt tttaattttc aacttcactt tgtagataat aaatcctaca 1080

gtataaaata gtgtttgttt gtccatagaa ctgagctagt ggccttagac taaataaaac 1140

tttctccttt actgctcact agtagtagaa tttaaggatg gattagacta acttttgggt 1200

ggatccgcag tgtcaggagc tgatatggtg atgtgtgcat gcgcactacg caaaggggaa 1260

aaaaactcga cgaaacgaaa ctgttatggc ggcccgccgc actagtgcac tacaatgttt 1320

ttactaacgt gcttcagcat gccatccata ttgcacaggt gaaaaagcct tcattagtac 1380

tcttctctct cctacctaca ctaccaaatg taaagaatgt gccgcttaga tcttggaagt 1440

ttaaatgata taggtgcgtg cctaaatttt ttaactgatg aaccatatgt cttgttaatg 1500

gcttgttggg ttgagagtgg ccggattgaa gtgattggag aggattaaat tcattactaa 1560

taaaaaaata aatagaagat ggtttattct tcaattctat ctgatccata tgcaatcgaa 1620

caagatctaa gatggcatac cagcatgtta tacttttct acacttatta aacgcaccaa 1680

tagatctttt cttctccttg gttccccttc ttttgtggtg gtcgtagccc gtagatagtg 1740

tagcgtgaga taagcgataa acaagggtcc acttgtgtaa gaagatggac gaagaagggt 1800

taacataaaa agacatgtta t 1821

<210> 3743
<211> 1896
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130540_G1, chr3:227928910..227930805, Cluster 23

<400> 3743
ttgtatcttc ttatctgggg tgaggcttct aatgttcggt ttatgcctga atgcttgtgc 60

tacatattcc accatgtaag tatctctcat ttaagaaaca acattttgag cttccttctg 120

atttactcag ataaactttt gggctttaat tatttctcta gaatggctta tctgttgcct 180

ttccatagaa aaaagaacat tgttgacata ttctgtttaa acatgatagt tttcaagatg 240

tttgtgttgg actagcatag tgcagttgct ggttggactg gtatggtgta gctgctgttt 300

tgctgatgca ccatgttagt tgtgaggagg gagtctggtc ttgggctgct gtaagctgca 360

gctgactggt gccttcacct gttatatagc tgatgaaagg gaggacagat aacaacccta 420

gtgctttta caacctaaga aaaagatttg acttgattca aacttgcagc ctaaggtaga 480

gaccttgacc tcttgacttg acttaataac agaagactaa catcagcgag gactactcta 540

acaatttgaa atctccaaag tctgactcac tcatttgctc caacaaatat atggccagtt 600

tcttgatgtt tagttcttac aggatgagct tcaatgtttc atcaaaatct atcacttttt 660

ataaggcatt aatatgtgat ttgatcatca gaggcgacat aatccactga agaaaaactt 720

gtgttaaatg ataggttgag atccttaata cttattagta ctcttccaga ccctaatagc 780

tcaacacaaa tcacattggt ccttatgcta tgtatgaata tcaattgtaa aatgttgaat 840

ttgttaatag acaatcatac ggttcagaac aatatggata tatgagcctc agttgaatcc 900

atcccattgg tactgaatat gagttactac accaaaccac aattcctaac actagagatg 960

gaaaaaagat ggattaaagc tcttgtaact atgggaaact tggcattcac tcaagatcca 1020

gttgtaagca tgattcgctg aatatccatt gtaagaaata aatttatcaa tagccaatca 1080

tgaactatac tacctattca acgaggctgt cattgtgcaa cataaagttg aattgtaata 1140

tgtgtgtagt tgcagatttg ttgagtttct tgtatatata tactaatata aaactttgac 1200

agccatgcaa ttttaattta tgtgacagat ggcaaaacag ttgcatgaca tggttgatga 1260

aaacaatttt caaccaccac aagcacctgt ggaagaggga tcatttctga aaaatgtcat 1320

tgaacctatc tttaaggttc tgcaaaaagt gagtgcataa agttcaaaga gcaatccaca 1380

ttaatattct agatgtattg tgcttaaaaa gttattattc ttcattcatc ctgaaggaag 1440

cacaaaaaag tagagggggt acagcaggcc actcggcttg gagaaattat gatgacctga 1500

atgaactatt ttggtaactt ctctgccaaa ctattgcaaa actaggctat tagtgtgtat 1560

gtgtttttcc acaatgacat ttttgtttgt cctcttggat tgtaatactc actctatacc 1620

aaaaaagaat gtaaatctcg tttgccgagt agtcaaagat tcttaatttt gaccaaatat 1680

atatgttaat tgtactagtt acttgcccat acattgctac ggtttatata tatatcttac 1740

aggtagattt ggattaaata tggtatttat tcaaacatga ttatattttt attttcaaat 1800

acttagtata tatatttata ttatcgccac aacccctttt tttttgcaaa tttcctcgct 1860

ggctgctacc ctcgcgcgca ggcgtttaaa atgagc 1896

<210> 3744
<211> 1507
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131623_G1, chr4:2036867..2038373, Cluster 23

<400> 3744
tgcaactgaa tggatgagct agcacaccaa caggaccaag ggggatgcat gcatgcatgt 60

gcgtgcttcg tatcaataat agtgctggcc gattaatcgc tcgtaaaggt cgttgttgcc 120

gtggtcgccg tcgcagcaga ttggaactcc atccgatcca ctacaggaaa cttgctggta 180

tcagttgttg gttgtttgga attaatgctg cctgcgcgct actacttgtg tgtggtcggc 240

cgtctcccgt tttttgggag ggagagatcg agggggggttg tcttgaggat tattattggt 300

tcatgatcta ctcatctccg tcaaaccttt ttcctggtca agctttttc cacatgggag 360

gatccagcca gggtatctgt tgctagaact gggttagata cgatgatgat gtgacgaaca 420

gggacgcatg cagcttagca tctatatcat cacgtggccc aaaccagtct agttagctgc 480

tgcttctcag catcttatta catagtagta gtagtagcta ttagctatag agttcgtgct 540

tgaatattct gcagagatct gtatatatta gtcatcggat ttcagttcta tgtgactaaa 600

gatctatgat atctgtagtc acggatttga gttctatgat atcgctacct acgacgacca 660

gatcgacgtg caaatgagta ttaaaaagaa agaaaattgc atgcagccgg ccgtctttga 720

aaataattaa ttggaatggg gaaaaaatga aggatgggag tcaagaaaaa ccgatgaaat 780

tcggaggaac tcgtggtcct tttgttgctc acatgggcgt gttgataatc atataatctc 840

cttcggatcc ctctctgtct atgtacaggc tgctgtgcta tgaatttttg ttccaacagg 900

tccgtacatc taaagcactg ttgaagaatt gatctatagt ttcagttgac aaacttctag 960

ctagctagtt cttaattagt caggactgcg tgcaaaagtc ctcgtcctct agcgccaaga 1020

gtggaggagg aagggatggt ggcggcggcg tccgagccac ctcacgaaag acgacgcagg 1080

gtttgaaatt gtgcaatcat agtttgttac tcatcatata aaatagattt atacatgttg 1140

caagatagat acgtcgagat cggactcaac taccaattcg aatagatcat aaaactattg 1200

taaagatttg gaacgtgttt taacaactat ctcaattaaa cagaatctaa ctatctggta 1260

tatagaaacc gtagcagcat cggtcacggg catctaacta tttaccgtat atatatattt 1320

caccgttgat ggatcgaccg gtacgcgtca tggtctctat agcctactac tgctacaaaa 1380

taccgttaaa tactgaaata aatccagaaa acaatagcaa gtgttaatac taaagttaac 1440

gaggaccata tatatagaga gcaggttgta tgcacattag taaaaagctt attgtaaata 1500

acacgtg 1507

<210> 3745
<211> 2042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134039_G1, chr4:12211068..12213109, Cluster 23

<400> 3745
aatctttgat tctgaagtta gagatagtag tcgtcaccat gcccttatta atgtttcaag 60

ccatctacat gcaaagattg tatttgtgtt ggttatgcca ctaaactgcc atttatttca 120

tccttcatag tgtaggatct tagcaccacc ttttgcaaaa ttaatataaa gaaactgaat 180

aaagaaaagc ttcatgccaa gactaccaca aaaatatagt gatctaaccc aagaagccta 240

aaagctctat gaatgatcct gatttaaatg gtctacaagg ggaggtggag aaggaagact 300

attttagagg catctgtgtt tcctatacta tctaactttt gtgttcctcc cacctttag 360

tcatgaatac tagactatgg taggttctta gttggaatat tctcggaata aactcaaata 420

ataactaaaa ttcggttaag gaacgtatca tggaaaattg ttgtgatatt tcttgtttgc 480

aagaaactaa gcatgattcc tttaataata gtttcatatg tcattttcac cttattttga 540

ttgttttgag tttgtccctt gtatgggtgc tttggttggt tctataactc tctagagaag 600

tggctccttt catggtacat ttatctttta gaattatttt tcaattttag tttaattcca 660

ctccttatat tgtttgaaat ttggtttcca acgaatgtct atgccccatg cactatggtg 720

gacataattt tttaaatctt tggtttaaaa tatagacgac atatatagtt gattgatttg 780

tcgttagaga ttttaacatt tataggaatc cagaggatag gaacaaaccc aatgtttatg 840

tggcaaaaat gtttgtattt aatgaggcaa tgcatttttg atgcatgatt agtttatctt 900

taaaacatgg accaacaagc aataattcct ctttttgcaa agattggatt aatttttac 960

gtcattttgc tcgataactt ttatagtact ataaagcacc agtttttgg ttccaccgtc 1020

gtctcgtttt gcaaaaaacc ttctacttct atcgatatcc aactcacggt taccgctagg 1080

agccaaatgt gttcgccaag gtcttctgca cctacaccca gcactacctc ctcgatgtag 1140

gcctcctctg ctggcaggtc agcaagatcg ccgcccacat cgacctagaa tttgaataat 1200

gtatatggaa gttgcatcaa aagaatattt tttaatacca gggaatttca tttagtagaa 1260

caacaatgca tatgtatgta tacttctatt tcttttgaaa tgtgaactga cttctttgat 1320

ttctttgtat gcctgaatta gagatagaag tattcttgag tcttagcgct ttggtttctt 1380

gtatgtctcg attagaaata gaagtattat ccagtataag cacttcaact ctcatcgtag 1440

tattctacca ctagagctcg tgtcctttaa tgttatgtgt tgttcgtttc catataatca 1500

ttacgtagta gtattttatc gaataatttg tgtgatgtca caatgcatgt gcattgtact 1560

agttttatat gaatgcttgt gcttctcaac taactatgga gacatcttat catatccgct 1620

acctagttca atcaatataa ctataccaaa gtttcacatg ttttgctttg aaatatattt 1680

gttgatcatg aagtgttcct caatcaagca aaataaggtt ggtgcacaca tacttaacac 1740

tcagatgcaa tgaagaatct tacaacaaaa ttcaagcatc tttgaaagat tttaaaatcc 1800

ctagatgttc ttgttcaaat ctaaaagata ttattgctag agtaaacctt atcttggttt 1860

ttctatgttt tctagcaaaa ttttgagacc ctctcattga atggaacatt agctcaatcc 1920

tagaagcaaa tttgatcttg caattaatct agttccataa atgtgaattc aatgtcattc 1980

ttttttattt ggttccacac ttcctagcat gatctctcat cttgtggttg ctatagaaaa 2040

gg 2042

<210> 3746
<211> 1721
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136247_G1, chr4:23362606..23364326, Cluster 23

<400> 3746
gggaggggc gaggcttgtg gcagcgacga gccgacggcg caagtgaggg gcggtggggt 60

caggggagg agaaagatgt gacatgtgag cgatgaaaga ggaaggataa tctaaataat 120

attgagtaag agataggagg tttatccagc gatctgaatt ttcgattttg atggtgtgct 180

atgtgggtgc aattcgtttg atggatttaa gaaaggttat gagtgtcggg taatttggtt 240

gtgtgagttt tgtaaagttt aaactgatta atcatatagt ggtatagata tgttttgttt 300

tccaagaggc ctttggcttt aattaaccag gaaagaaacg gatcaagagg aaattgatgt 360

gtgccggata tcctttattc atccttttcc accatatctt aactcgccac caatatttgt 420

ctagatttat tagcatgtca atagtgatgt cacaagaata tgatctcttc attatagacc 480

ctagaacggt tttctaaata taagaaaaaa ttgagactat atgatgcaat ctgagcctct 540

agatcataaa tacagttaag agacaataag tataaaaagt cgtgaaaaga tgaactcttc 600

gcaaagagtt tgtctcttaa ttttttttcac ttaacacact agagacccct aaaaagacac 660

tttaattatt atggttgtac ataccttaag atatgttgta ttaatatcaa tgaagtgttt 720

agttttcacc atcgtcatac gtcaagtcta ttttttttct caccctccc cacttttgta 780

aaaataaggt aaagttatat ggttcaaaca ttgattatgt ttatattata tactcactca 840

tattataata caaagtatat ctatgtgata tataaaaatc gtagcaatgc acatacatct 900

aattagtttc attattaagc gtttaataga aaaaaaatga gttcgttagc actacaattt 960

aggccctacc acagatgttt ttcgattaag gcctgttgtg aagatgtata ggcccaatta 1020

ggtggcccat tctccgcact gttcagccat tgacatctcc gtttacggac ttgcagtttg 1080

cagggcattt ggtacctgat actaattgct aacaaaacct gacattatat aacaacgaaa 1140

attgcaacaa aaaaatgtat ctacaacaaa aatccatgca catctcgatt cttcaaagcc 1200

taacaccagt aggtcttcaa cagatattat taaaattgaa ttcctctact ttaaatgagt 1260

tttgatcaaa agaaatgaaa ccgcactttg tacaatagta ccgagacacg gtacaccaat 1320

catcaaatca tatttgatgg tgacagcgag ggctcaataa aaagctagtg tgatagactc 1380

ccataaaaaa taaatagagg gattaaattt tatgcttttt atttatctaa gtatctagat 1440

catataatcc acataataat ctatgctttt tatttgtctc ttaacttatt taagatttaa 1500

cttatttaag atggattata taattcagag agtaaataaa tatataggac cttaatagtg 1560

agtaggaagt aaaatccgat acttatggat acaaatttgt tatgtacagt aagtttttct 1620

ctatttaaaa ttcgactata gataatattg gttgtgttgg ataagatata aatagatatc 1680

aacattgcat atatatttga cttgagctat gtgactttag a 1721

<210> 3747
<211> 1816
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136760_G1, chr4:26002973..26004788, Cluster 23

<400> 3747
atatatgtca acaaaggtgg acaactacct tgtgttcttt tggttcagaa agagcaatct 60

gctctaaact ttgttacaat tctagacggt aatgtgcatt cctaagcatg tatccaatca 120

tgaggacact gtacataagc tgagacggat tttcatagac ctatgttgat aaaagacaat 180

caagcatgta ataaaccaac aaccaaaaga tgcaaatgtc atgtcaaatg taaatttgcc 240

attgggaaga cataggaacg ggaggttctc aatatcaata ccactgagac aattacagtg 300

aaaaattatg gtggtaaagt gctcatcaca ttagtcacgg attggtgcat ggcatcgata 360

agctttgaga aaaaaaaata tggagagccg ctagggatat tttaaaagtt acaaccgata 420

tatacaccta ataaaaatat gaaaaatgca attgtgttgg agctcttttg tatgaagagc 480

tccatgaact ctagctggag attttttttt gcatatttta ggataatatc tctctcctgt 540

tcttgggttg ttaggacagg aaacatcaca ttagcatgac tgcttgtttg taccacataa 600

acaagcgagg aatttgcaat agatgtaaaa ggggtggttt tatgaaaata aatgagtcaa 660

atatgcatat aattcggaat aagcaagaaa ccaataatct tcgacagata tgttatccac 720

aaaccgatat gtgcacatct aactccacca cgattatttc cccacatgcc tcaaaagaga 780

tggcgtgcat gagcgtactt tgcaatgaac cctagtagtt tttcaacttc cccatctgat 840

ggcttttcac catatgagca tacaaaatat acaattctta aaaacggtga tttttcacaa 900

tatatccatg tcgtacaagt gaacatcttt ttttatttaa ataatccaat agcacaacat 960

caccatgcaa tattctcaaa ttgctttgta atttattacc taccgagcta aggtatgtct 1020

ggacgaacct tctctgctcc tcaaaatcta aaatagtgca aagcaataag atcgagcagc 1080

aattgtaacc tacaaagcaa gacatctatc aactcacaag tgaaactaac caggatattt 1140

tgtaaaattc agcacacatg atgtcgttgt atgataatcg acagtcttct cacagaagtg 1200

attagcaatg ttaaatgcaa cggggtccaa actcacatat tcatattatt gtaggatgta 1260

agacttcgac aaattatcat tcagtttcag gaataacatg ggtctaatgt gtagtagaac 1320

aagaaccctc ctcactggtg taatcagttg cccttattgc aatttggtag cattgctcag 1380

caaaccagta ttttttgcat ttctataact tttttactaa catatcacca ctcctaaaat 1440

ttcataataa tacacaggaa attcataatt atgcatattt ttacgtagaa ttattcaaat 1500

aatagtatcc aacacgtaca tgattcaaaa tgagaataaa acttacaatc aagttgactt 1560

gtcttgtggt cttcgtatat cataatattc ccatactgta gattattgtg gcaaaatcca 1620

aatgattatt cgacctccga gagcctcttc ttcagaattg cattctcatc atctagctta 1680

ttcaactgaa attgtttagt ctcttcccca aaacacctgc cacgagccac ctcaagccat 1740

tgactgcata taaacccaag caatcaaatt cgaaccagaa ctcaaaacac gtttctcacc 1800

aaaatcatag aagtaa 1816

<210> 3748
<211> 2934
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137845_G1, chr4:31829161..31832094, Cluster 23

<400> 3748
gaaaaagatg gggatgtaca ggaacatgtt ccccatcaac atggacattg tgtttagaaa 60

tgatgctcta tgttatagat ggtctgtgtc tatctagaag ctcaccttgc aagtggtaca 120

tcaatcctga tgttcctaaa gcaaagaccc ctcatggcta ggtaatactc tcctttagca 180

gtcagataag tgcaactgct agttatcttt gctttgttct aaaaagaggc ttttccaaac 240

tctgtacaaa ctagtgcaag gagtgtgcat aagacaaaca agtggaacaa ggtactaact 300

tcaagttagc atataacttc tattgctaaa gaacaaaagg tctcttatac caagtatctc 360

catccctttg agaacaagat tggctacaaa gtttccacat cgactatatg ttgggatatt 420

cacagtggtt aatatttgta tgtcatgata gtatatcatg cactctaatg tgaaacattt 480

atgtctgaaa ctccgatcta ttgttatcca tgaaaacata ctcatttgaa caatttgtta 540

tgaagttaag ctacatttac ataacattgc cttgcctcac ttgttctgta gaaaataaag 600

ttcctggtta ctttcactat aaagaaaatt ggcagcaagt ggtggtacga cccatgcaga 660

aaatgcaccc acacatcttt aactcatgga gactcctaca agtgcattga ttgtaattgt 720

gctaccattg gcatgcccac ccaaaggtta ggtggcatat tctcccttta cttgtctcca 780

tcctatctta catgctatct cagctggcta tgtggctctc aattgtggat gatgtagagc 840

tacctatata acctacacat taactaaaat tttccacttt atatactcat aaacctacta 900

tgttgatcgt gctaattcat tctcgtccta tgtttcaggt ataagttgct tctcaatacg 960

gggacgagat gggtgacaca gatttcatcc tctttggttg catggctcgg cacattgtta 1020

aaaggccatg caatatgctc aaagctaata ctctaaccaa tttcattcca catttagtca 1080

caaagctcct tgaatggcat ttatatggaa cattagcttc ttggagaaca caactagaag 1140

tgtttgctta taggtcagtg cagttgtagg agagagattt attagaaatg ctcattccaa 1200

tgtcaactcg tggtcacaac aattatcact catgctctca caaggtgcaa tcaacaacct 1260

gcaaaacact tctaaggaag atgccacctt ggttttgcct ccaacagccc tcacacatca 1320

aggtgttgga gccaattatg aggataaggt atgtctccca ctcgtgttag aaactcacaa 1380

gttcataaat tttgttcgat gtttgtgtga cctcccactc ccgtacgttg cctctcccct 1440

cgctcttaag tctcttgcag gtgggcccgt gttgtgagtt tcttccccac cgtttcagct 1500

ttcactctcc cctgctcgat gccgtggtcg cgtctacgtg tgtccgccgc tgcactgcac 1560

gcgtctcgct gctcgtctgc ccaccttcgc caaggagcag tccgcccgtc ctctcgcctc 1620

ctgcgtgtgg agaacacgtc accgccatga cccttcctct ccagtatcat agccatctgt 1680

taatttccca cctccactac ctagcagttt cccatcttca ttgatgctgc gtcgattcct 1740

ctctcctccc caagccggac ccccgctccc ttctcttcct gacctcctcc ttctgctact 1800

gcggagaaca gccgtgctgc cactcatcgt cgacgccggc gtccgcccct cgtctgagat 1860

tctgtggccg cgtcgtcgct ggtgccctgc gctgcttgtc ctaccgttgt cgcaccatgc 1920

cctgatccca acgcctttgc tcgccatcgc cgtaacctcg ccttcgtgcc tagcaaccga 1980

gacctcacag gctcgcagct ggagatccac gtcagaagcc accgccggtg cctgcttccc 2040

tgcaccgtcg aagtcacgtc tagttcgtcg aagacctcgc caatgttctc ctctgcgtcc 2100

aggtccttgt gtgcctgctc atcgacgtct cccttcgctc cgtcgtctgt tcgtcactgt 2160

tcgttgccat tcgacgacgc ccgacaccga agtctgcctc ggtgtccctt ccctgcgcgt 2220

cgaagtcaag gtacaagaaa acattaaaat taccagtagc ctaacagcta tgtttaataa 2280

cctatacact ccgcgatgaa ttttcttatc atgaatacat atttatgatc caaataaaat 2340

agaatgtatt ttattagccc ataataatgt gctagataat ttataattgt attagcaaca 2400

atttgtatat tttcgtagat taagttgagt catgattgtt agaattgatc tatggtaatt 2460

ttataaataa gaaaggaaag aaagattaca tatttttacc aaaaaaagag aaaaactata 2520

aatttattag ttacccctcc tagtctatct ttacttatgt agatctatgt tatagtttat 2580

taaaaaatgt atattttgga acccaaataa attagaaata attttattag tgtcataatt 2640

atatgataag cattttaatt agtgttgcca atagttaaca tatttttttt gatttactgt 2700

tgttatacat gaaatattaa aatggccttt tcaatacata tcatgttttc ataatttaac 2760

aatgttcatt ataattgttt aagtatagtc ttcttaaata ggaatttaaa aagaaaatgt 2820

agaaaaaatg ttttttcaat aactttaaaa gttaattata tatcttttc cataaaagtt 2880

gatttagatt atactcaagt attttatatt aaatatgtgt atgctagata ggaa 2934

<210> 3749
<211> 1889
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_138689_G1, chr4:37283499..37285387, Cluster 23

<400> 3749
aagatggaat aacacgcagg gaatatgaca gtaataggag ctggagtaag ctggcatgtt 60

gcttcttgtt gccaatacta ggaacatgaa cacatagttc agttagacta gacccaatgc 120

ataataaatt tggacagcat gcggatcatc ttgaaacaac aaaattcaga ttctaaatgt 180

tgcaagaaca gcaggcttgc caaacatgcc agcaatgctt gcacgtgtac aatcatgcat 240

gaactgtgaa gtcaactgtt ccttccgtct attttactcc ggatgcaaag attactcatc 300

gatctcacaa tctcaataag agattggtga aatacacata ctcgtgcaga tgagtttgct 360

gctgcttccg gcttagacat cacatgtgga tcataagctg cactgcattt agagatgcct 420

ctcaagctgg tcaaaccaac aacaacaaca acaacaaaaa ggtattccag cttgtcatga 480

agatgtttgg tttcgttgca ggagcacgac acggcattgt caatttgttt ctacaaggtc 540

agcaatgtca ctccttcaac ttgtatcagt atacatagag gcaaaaccat agccaagaac 600

acgccattga agcagcttat ctcaaattct cagtacagtt tccacttcaa ccatgtcttg 660

ttttgccggc tcagatctgc tagccaaaaa aacatgtatt ttaaaagaaa agaaaaaaca 720

cgagctgacc tgcattgaat ttgagggaaa atcttaaaaa catattttaa agaagaaaaa 780

atattgtcaa gaatgggatt tgaacccatg ccctttcgga ccagtacctg aaactggcgc 840

cttagaccaa ctcggccatc ttgacatttg gtgatttgtt atagttttgt atttatatac 900

actacaatat catgaacatg gtttatatac aactatattt aatatgttca gtgcattttt 960

cgagttatac atctatatat gtgcacacgc tattctaact catatgagtg catatatttt 1020

ttgggttaga ctctgcaatg tagttataca gctacgtaac ttgtatgagc acgagtcatg 1080

gttcagattg tgaatggaac aaacaaattt gcattatatt ctctaattca tcacatattg 1140

ttattcataa taaaattagt aaaaccaaag aaatggaggg acaaacaaaa tggggaggga 1200

gaatgtgatg caccaaaact taaccatgga tatttactcc ttggaatatc atgtatagta 1260

gcaaatatgc tcgtgaatca aaataatgct tatatattgt tgcatgacca cttaaatgat 1320

ttgtggatct atgatgtatt taataattat accattgtag cataaccatc taatttaacc 1380

taatcacaag tacgtatatc agttatttga cactaaatat agagaagtcg accaagttaa 1440

actcggtaat ttatcgagta caccaaaaaa gaagaaccca ataattcatg ttttcatcag 1500

gaccataaaa aatggataaa acttataaca ttttttttaaa gtgtttcata tgtcacattg 1560

taataaaatc agggtatttt atagagcaag attcagaaaa acaataaaag atgatcattt 1620

tacaaaagca gtggaaactt tagtagtttt tgaacaataa agtaggggaa gagatgtaac 1680

aaataaaatt ccatgatcac aataacaaag aaagtcttgt tgagcctatc aggaggtatc 1740

cacacacaac aatggttaac atccacctgc tacctccatc agagggaaac aaactctaag 1800

tatactgtat actcaataag acttacgtga ctaggtgaaa gtagtctcct aactcgatct 1860

caaggatatt cagattgctc tttggtccc 1889

<210> 3750
<211> 1439
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_144125_G1, chr4:71039102..71040540, Cluster 23

<400> 3750
tgtaagatgt gcatgggcta agacacaaaa gtaaaaaagc ccgcataaat aaaaatgtga 60

cgcaatacat aattttcata gtgggtttag ctgttattgt gaaacttaaa ctaatttcat 120

ggtgtcctgt agtagcttat gataatgtat ttcccctgag gttttattac gaccctcatg 180

aaataaaact atttcatcag agtttgtttg taactccaat gaaaatttac caccctcatg 240

aaatcttgaa tttctggtag tgagtttaaa tgagtggcta atgtgggcac ttatttttca 300

attaagaaat gtggaagaag acacgtgatc atacatttgc tgactcgcaa cacatacata 360

tttacattta ggaggccaca tcccacatat cactactaca tgaatggaat aacattaacg 420

aagatttttt gcagcttcat acataatcga tgttgcatta gagaagaata tatattctat 480

ctcttctggg ctccgtccag acttgaatct atatttgaca tccaccgaac ccaagtgagg 540

gattatagac tgaggaatac aattagaaat acgggagtat gggatgtatg taggggaga 600

gaggacaaaa gaaatttgtt tttctttact tcctccgtcc caatatttat aaatcgtttg 660

actttttac caaattttat tgtcttgtct tattcatttt atacaaaaga aatgaaaaat 720

tcaaagacat aattaaaata tattatatac taaacaatat tacaagaaaa attaatatta 780

attataaatt ttttgaataa gacgagtcaa tgaaatttag gttaaaagtc aaacgaatta 840

taaatttgaa cgaaggatta ttggatatgg acaactttac agattttctc cggttcttaa 900

actactattc ggctctctaa aaatagatga gtacggcata tatactatga aaaacaaagt 960

catcaatcat ctatctacaa atctcttcgc tactggttac ctctatttat ttagtttttt 1020

tggttagtct atagagcaat catgcactgc atctattctc atctgtgctt cttgctcgtg 1080

tgccatccgt tgcctgagca cctattctcg agcccacttt tcactttggc cccaacagaa 1140

aagggaaaat tccttgacct ttagggtgtc catagtatat ggtaaaatta aaatgttgtt 1200

gagcacacgt tgatcttgtc gtgcaacatc atggacccat gaaagatcat actcttttt 1260

ataggatgga tctagtgctg gtggctctta ctattcgcca catcagctac caaccatact 1320

actcaccgca ccgttgatcg tcgtcagccc ttatttatca cagcgctcca gtgtagagcc 1380

ttcaccatca acctatagac actcagtcta attttgctct aatatgtgac ctctatttt 1439

<210> 3751
<211> 2340
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155133_G1, chr4:147660744..147663083, Cluster 23

<400> 3751
aactaagaga ctgcatgata taatcataca cttctaattt ataaatatag ttaagagata 60

atatgcatag agagtcgtat tgagatgacc tcttcacgaa gagcatgtct cttataattt 120

ttttaagaaa acatatatta aatgagatcg tacataccct taaatatatg tcacttaagg 180

ggtctctagt gaggtaagtg aaaaaaaaaa cagaagacca tctcttacga agagtttgtc 240

tcttacataa tatttcaagc atataagact ctagtctgta caacccagtt aatggctaat 300

gcccgtccct tgaggtgtat ttagtggtaa tacattgata atttagagac acattgttgt 360

atagacgtag tcccttagct gttttttctg catggaaaat cgatcaacga actctagata 420

catgccctaa ggtattcaca tacacactct aagtcagaag ttaaaacaag gacttagctt 480

catctggatt attatgtgac tgtgaatctt agtttctgta ctgaagtatc tgtattctat 540

gaaatttctc aatcacatga agagcctatg agccaacaaa ttttgcctag tttttctaaa 600

gtttgttgtg caagtttaga ggaggttcct actgtttcag tgattaaact gttattagaa 660

taggcaaggt caccggagac aagtgaaggt tctgatgcta atccatagtt gttgacaatg 720

cattaaatga tgctacaaat gaagttgcgg aagaggacaa tggtagtatg tcttttgcat 780

catccttgga agaagcaaag gagtaataaa actcacatgc aaatagaata aaaatttcca 840

ttagagcaga cacatctcgc ctgtctgcag taacaagaga aatgcagaag gtgcagtctg 900

tgtgcaatag gaaggtacat caggagggca atgaagtgac cagttttcgc tccaccgtct 960

gcaagacaga aatttaaaga catgaaaaaa ttctcgaatt attttagaga ttcgaaagca 1020

gaagaagacc catatttctt ctgcaagatc aagctagaag aaacccacaa ggttgagaat 1080

ctattctggg ttgactcggg tgcagctgca acccatactt acacagagaa acactgggta 1140

actggttttc gtgaagagta ctggtagcag aaggtgctac gtgtaaggag acatcatcac 1200

ttcttcggat ttaccagatg aaagtaaatg agatattgca gaagaagacg acgccgactt 1260

caatcagagc acaaattgta aagcatatca gcctgacgag gacggggcaa agacttccca 1320

cattcttcat tctttaatcc tcttattaga agccctttcc atgataaaac gcctttacac 1380

tcagaaagaa accgatatta ctgttttaaa gtatgtgttt cgacgcccag acagcttggg 1440

acctttcaac aaatatcatt acgtgggata tataagcaac ttgacgagat ggccgagttg 1500

gtctaaggcg ccagattaag gttctggtcc gaaagggcgt gggttcaaat cccactctcg 1560

tcaatatttt tgtattgttt ttttcaacct ctgcaggaac tttcgtctac agaaaagtac 1620

tcgtcggttt acagaaaaaa taggaataat tatatttgac atgggcaaag caaaagggcg 1680

caggagtaac atatacggag tatattacta gttgaatcac cggccattga ctggaagcag 1740

tagtcactca ttccatctgc tgtgcgttca acaacaacat gatgttgaac ttctgtccgt 1800

ttcaaaagat tactgtagtg agcttttgtt caccataaac gttctgcgca tgacccctac 1860

tctaggtggt ttgtagagta atatatagtt cagagaaggt attttattaa aggattcaga 1920

accttctcat gcatgttggc cgttctagta tccacctgat tgcacagtca gaccggtggg 1980

aaacgacgat ttttggcgta caagcagttg caggcaaata acttcaaaat attttttttg 2040

tattcactct atacagcccg cgtcccaagt acaggaacta aacatatact caacaaagtc 2100

aacacacgcg atgatttagg ataagactat acagttaacc aatcagacgg tatgtgaata 2160

gttgttgttt atttggtaat cctagctccc ctataatgct ctggatacca gaaaagtaac 2220

ttaggagccc actagtctgg tttggtccat cagagaccac ggatgcaaac atgtaaaaag 2280

ggtgctgtcg tgctggctcc tcttgcctcc tatttatgtt gcttttctct cctccccata 2340

<210> 3752
<211> 1431
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15828_G1, chr1:87903237..87904667, Cluster 23

<400> 3752
aatagagatt agataaatag aaattaaata ttgtaaccaa aaactagtac tcacaataac 60

aacattataa tattacaaca caattacaca aggaatcgta cacttaattt tgaagtgact 120

atcctaacac aaattctaca tatgattaat ttaccataat ctcgaatttg tgtgagtata 180

gtggtatggt gagttgtaat atatatcatg tcaagggttg gcacctttct tatatagata 240

tgagctatgg atgaatgcca cctatacata ttatagaaag atctaaacaa atatttaaat 300

ctaaataaat tctaatttat catgacaaca aatatctagg cttcataact tgtcatggtt 360

gttgtagaaa attctagaag ctcgtattat tttatgcata tcgcatggtt agccatagtt 420

gttatagatg attagctata attgttatag aaagttttaa aatattatag aaccttatat 480

tactttatgt atatcgcatg attagacatg gttgttatat atggttagac atggatgcta 540

tgtttatgat atgagagcaa aagatgatag ttatggtgac gaggtgcttc ataattatat 600

tcgttatcat ggtggtgagg atatagattt tgactatgtg gagcgtgatg aggattatga 660

gccaacaata ccagaaaggt acaacaaata acaaatatgt agtggcatcg gatggatgca 720

cctcactctg tagtttacca actatggata tattatgtga tgaattagca acaagcgttt 780

ctataggttg gaacaagaat attttatggc agcaatgtat tgagactcga atatttatgt 840

aatgactctt taatatttaa tgaacattgg tatttatatc gatgaattgg tgtatttcat 900

catttttatg taccataaag tatggatatg ctattaaaaa tatctctaaa aatattggtg 960

taatatcatt tttaataata ttgattgatg tgaaaaatgg aagaaacaaa acatgtggtg 1020

aatactttga tcaagggtaa aaatgacttt ttcaaccaaa tcactaaaat cgtgaaacta 1080

aagttggtat gcaagccaaa cacatgaaaa aactcatgaa cttcaccgtg aagctaagct 1140

gtgataaagt ttctgaagct gaactgcatt tcataagaca actctcccaa ataggaccta 1200

aggtgtcgtt tggttcacaa aatgtaacgt aaatggtaat ggtaatgatt cacactcgaa 1260

taccggcgtt aacaaatttg aataagacga tatccatttg tagtgtggta tcgattacgg 1320

ttggacttaa acaaacatga tttaacgtta ccggttactc gttacgttac caatatataa 1380

accaaacgaa acctaaaagg tactctgtac gggtcaatgg aaaccagtct a 1431

<210> 3753
<211> 2053
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162354_G1, chr4:189181793..189183845, Cluster 23

<400> 3753
tcatgcattg ttttacttgt atagatggcc aaataaacca tctgatctga acccgcataa 60

gcctgaccaa gacaggaccc aatagttgtc aggcgagcaa cacacgagtg tgactaacta 120

acacattggg ttgtgttgca cctactcatg gctacacatg tgcctcggtt ataaccttgg 180

tcataacccc ataaaccttg agccttacta ggttggccca ttgacacacg agcccgttgt 240

gcttgaagca ttgcaaatct attatgccac taaggttgtg ttcggttcag ctttctgaac 300

cagactcgtt gccaaaaatt tggaacttca aacaaatggg tacaacaaca taatagattc 360

ctgaaaatcg acatatttct ctagttcaat tcagaatcac cttttacccc agatttttag 420

attcctatta tctatgctat aagctaccat tctcttataa aatatataat tgatagttgt 480

ttcaaatttt cagtttttcc acaatcgtcc cttcacagca gttttctcat agctcacagc 540

tagaatccga ttttttagga atctacagtt gaaccaaata gacccgaagt tacccctaaa 600

tagaaggagg ctaccaccct acccctgcat agatcagggg tgaagtcact gcctcacccc 660

tgcacaaatc aggaaggatg atgcatcacc ctatccatgc ggtcggatct aagggaagga 720

ggcccacaat accacctaca catggatctg agggaacatg tcaccatgga tcttggtggg 780

cattaatgag aggacaaacc gagaggaatt aatagacatt agtgagagaa ggaacattac 840

caattagagg acatatttcg tttcgagagg agatgtgaca ttaaattgac tagggagtat 900

gatgtaggag aggagctcgg gaggtgattt ttctagggat aggatctggg aggtcatcga 960

ttgggattag gattatgaga ggagagggaa taaaaataag gtgtccgagt gagagttcga 1020

tggggtggtg ttggtatata ctatataagc tagggtttaa agtagtgggc catgttgcgt 1080

caggctggca cgtgtgccaa ggggatggcc taggcattgt gcaagcgtcg gctaggccaa 1140

cataagcatg acgattatgg caaaacatca ggctatgggt catgttgatg gctaggactc 1200

gagccttatg gtcatctata gttagttgta atagtaagca gaccctattt attattgcat 1260

agtcatgtac atttcatttt ctcatcttca tgaatgctag tgaatatcta gttggttgtg 1320

acaataatta attttatata tagatggaaa aagggacaaa aaggaaaacc attgcaaaat 1380

tggatgccag tgcacatata gcgtgaatag acatggttta ggaagagatc actagctact 1440

agctagaata gggcataagg tcacacacaa atcatgttaa attttgaaga ataaactggc 1500

agggatccta ctatcgtgga caacatagaa ataggtggta ccgatgctca caaagctgaa 1560

tctagagcag ggaagacttt gaagatccat gacccaaggt tagcggtgac cctgaaattt 1620

ggacaatttt tagggattat tttggaagca ccctggtttt taagaatcca gtttctagaa 1680

attggtttct aaaaaaaaga ggtgagggtg tttgaaaccc ggtttctaag aaaaacaatt 1740

tctaattttt tgatacacaa tgtctagcct atccttcctc tataaattgg gtgagggtgg 1800

aaataaatgt aaatgtcatg aaataaataa gggcatgatg taattaaaca gacaaactag 1860

ttttagctgg gagaggtcac cttctggatt ttaagaaact agggatctag attctataaa 1920

ctagagcata aaccattatg tttggaatca ctctagtttc cataaactag tttcttaaaa 1980

atgggccctt aagagttgtg gaatgaaaag gttaaggtat aaacaaatac atgttttctt 2040

ttttagttga cga 2053

<210> 3754
<211> 2250
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_163651_G1, chr4:195183197..195185446, Cluster 23

<400> 3754
ggtagccaat ttggtttctc atggcttgct ccagtgccag atgtcgaagt gacattacca 60

gctcatgtct ccactgttgt caagggcacc ccagtaagtg tcaagctgtc gatcacatct 120

ccactatcaa aattaccatg ctttcttttg agcagtaatt aggagtaatt tatcattgct 180

attttggcag agctatcttg atcaggaata cttcctaact cacaaattta ctgacaagag 240

tgatgtttac agtctgggtg tcatgttcct tgaaatgtta actggtatga aaccaattga 300

gcatggtaca acacatagtg agagaggtat gcacttcttc agccatggat atattacact 360

tttaaaggac aacctgttct cacaaaaaag taaaacaatg acagctgaaa ccacttgaaa 420

atccataagc ttagactgtg ttattatcga cttgtgcttg gtgtcagtaa aaaacaagca 480

catatgtaat gaagatctgc atcttcctat tcctctaggt aaactgaacc tgtcagtcac 540

aagcataaac ataaattagc ccgctatcat cattgacttg ctagggaagg gacatgagga 600

aataatgaac tatatggtac taccctcaag ttaactacct catcaagatc tctaatattg 660

ggcctatagt cttgcactgg ttgatggttt catttttta taatataaca tctcaaaggt 720

gcatgtcaat attattacat gttatgtcac accttcttgt gtagcttgct atgttttctt 780

ttttggtctg cagatgttgt acatgaaata cggtggaaat aaactattaa atctgctagg 840

cacatggtat agatctagcc atttctggca atcatttta gttggtggta ttttgtacta 900

cataacaaca cctcgacttg tgggtgcata tactatgtgg aaactatggt agccacaatt 960

ttttgtgat taaaattatg gctttgattc caatgtgttg cctctagctt tgccttacac 1020

tatccttctt tcttacagcc tggctaatct tcacagagtc tcgtttcaag catttacatg 1080

tgttgtctgt ctgcttggtg cttatgcata tctctcggta gtttgactaa gactttgtgt 1140

atcttcgaaa agattttgga atggctttat caatgtatgg gtaaagttgt gtgcaacatt 1200

cttactttct cctctttcct tcatatcttt actgttcaca tcgtaattaa ttcattgcag 1260

gagaaacaca gagctgtcat gcttgcctag cctgactcaa tatatcggaa tgaatccatc 1320

agccatgctt ttaagacaac tcgttttggt ggtttttgtg tcggtgcatt ggtaattttg 1380

ggagattgca ttggcgacat tgaacaccta acagttccag tcttgaaaaa aaatcgctta 1440

tttgtcacgc agcttcagag atttgaccag cacgtgtgct tttgctgtgc cagttccatc 1500

gttgtaccat attgactcac tgaagcaatg ccaggcgcat cggcctcacg gccgagtgct 1560

gaactggttc tcgcttcaac cttgctctag aggaagacga tggaggtgag ttgtgcgtgt 1620

tgtagaaaaa tacccaagaa gctttaatta atcattatca tgctgagaaa gaactgtaat 1680

tatggcgagg tattctctgc tgatattggg gattgattga ttatatctct ggtgtcgttg 1740

gtactgttgt aagtccctgc aaataaaatc gtctcatcca tgtacaacaa caaaggctaa 1800

aaatagcata catgtaacta tataaatata attttccagc ctaagatatc attgttgtca 1860

aaatctactc tacagttttt ctaatgatct catcttatgc ttctaggcta tcaaaactga 1920

aaagtattga atttgttcac gagaatcatg tacattccga tcacccttgt cggacccgtc 1980

ataacataac catgcaatgg ttcttgtacg gtaagtaagt aagtctaggc tttcctatta 2040

gctcaagtgt atttctgatt tataaaataa ataagtatgg cttgaaaatc atacaagtag 2100

attttagttt tacaatgtcg aactattcca tggatcaatc ttagtgtcac actaacacta 2160

tatcattata aaatggccag cttatctcgt caagaaataa atgctgtata ctagtgcagg 2220

tatctaaagc ctaatggatc ctagcaaact 2250

<210> 3755
<211> 1543
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_165433_G1, chr4:204699389..204700931, Cluster 23

<400> 3755
caccagagag agcaaccgtg attttgcaac taatcctaac aattgctgaa aaaatgctat 60

agactacgtc agccaaaagc attttcatgc tcaattgttt acgtttgtta aacagaagtg 120

gcatcattgc tggattgacg gttgacgcca gggcgttggt tcatatggca cagcaaatta 180

taaatgataa ggacggcagt ggggaccacc tcaaactcgc cgtgacatca tttgactcat 240

tccgttcgac aatgacagac gcatctttct tgggtacagt atctgactgt tgtggtacca 300

gtcgaataaa ggtgtcgttt ggttcccaaa atgtaacgta aatgataacg gtaacagttt 360

gtattcgatt acaagtggta acaagtttaa ataggctggt atcaatttat agtgtgatat 420

tcgattacga ttggacttaa acaaacataa tttaatgtta tttgttaccg attacattac 480

aaatatgtga accaaacagc acttagtgct tttagttgtt aatatctgac tgctatttta 540

aatagctgag tgttatttga ctcgtacaca atgtgcatct ttatttttag aaaatccatt 600

caatgttatt gaaacttata cggatcattt taatgtcatc taaaattata ctattagttt 660

atattttcta tcccttcaat gccattgtcc gttacctgtc accattaagt agtgcatggg 720

tccagatgtc accgttaata tggcattgat cactcttaac agtttgagct tgataatatg 780

cttaggtttt ttttattttc accgttacat caacagctac tcttgtcggc tccatagcaa 840

cgaccaaact atccacgtag tccaaaaaaa ttcagaccgt ctgatcgtca atcaacggtt 900

gacggctcct ctcgctctcc tgctcccttc atctctcgat acttccgttt gattcgatgc 960

ttggccggtg gacacctctc ctcgctcctt ctgcctcgtc tttcttcgtt ctcactccct 1020

ccgtgtcgtc gttctctcag tcactttgtt tttccgtcgc tttctttttc tctatgccat 1080

ccttttccca gcacttttgc cttatgtccc tttcgtcgtt ggcttcgcat gtcgcctcct 1140

gtattgtcgc cttcatcacc cgctccaact gttgctatga atgaggtttg tttccctttt 1200

ccatcaacat ttttccttgt cgcagatcca gtttctttcg ctccagattc gtttttgag 1260

ttacgcatca ttttctacag tcgcagttcc ttcttgacgt gcttccacat cttcctccct 1320

gatacaaatt acagacctct cgtacaaata gtgtgttggt ttttcattat aactatttgc 1380

cctttgcttt tttagtgtgg ttgtgtcttg tatgtgatct tggatgctgt acgatttgat 1440

tttactttgg gcaactcgat cgctatcagt tgttaaccta tagctaagtg ttacggtagc 1500

aacacgactt gatatcatga cgactccttc tgtttaaact agg 1543

<210> 3756
<211> 1619
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_167826_G1, chr4:217583010..217584628, Cluster 23

<400> 3756
tcctcacgac ggctgcccac aagatgcttg tgcataggcg ttgctatcat ggtgtctcta 60

ttaggagcag agatttcttt cgttatctgt catgcttgtt cttctgggat tgtgaacata 120

gtatactatt gagccttttt attgtatact tgtgtatata tgatacgaaa cacaagtgtg 180

tgcacttgct tttatagtac ggtgtaaagg tcttcagcct gagattcttc ctgttgttga 240

gaaatccagc agaggtaatg tttatttttc tgggcctggg cctcatgtag cgcgctggcc 300

taacagttgt ggagaacaga ggttaatcga tataaaaata tccttgcatc tctccacttt 360

gctaggaacc tgggaggggt gtttggttat gattaagtgt gagataaaaa gatccttgca 420

tctgtccact aaacttttac atagaaatga tttgttgctc aataaaatga tacttgaacc 480

taggaggggt gtttggttat gattaaatag aaatgatttg ttgcctgtaa cccgcaccaa 540

ctaagctttt acattgcttt tcctcgactg aactacctcg cttgtagttt cttagttaca 600

ttattcaaca atccttgtgc atttttctct tgcgcatctt gatgtaagta tgtaacccat 660

ataaacaaga ctcctatata aaatagcaac tcaatgtgca cactctagca gagtcaacta 720

aagtcccatg tctgacataa cctatctaat acttgcaacc attatctgaa atttatccct 780

tatgcatatt gatgtctcag ttttacacca ggagattcca catcgatagg aacaaccaac 840

tttctgtttt ttacatctta actccacaac ataatggact ccaatccaac ttataactga 900

catcacacaa ataatgcaca tgggagctcg agtacagttg taacccatat aaacaaggct 960

catgtataaa acaacaactc agtgtgcaga ctctgttagt gtagcaataa tactgttaga 1020

aaatatggct tcagtgacac ttctgcattt ttagcatgtt ctttagattc taaggtataa 1080

gatttctttg ccatatacat tcactttgtt gttcctacaa tgcactggat atgcaagggt 1140

gcgccaacca gatgcattct gactaacggt taatgtatct ggaatatttt tttaagagat 1200

ctgcaatatt accagtcctg caattttgtt cctactgtat ttcggagaaa ttatgcttct 1260

tttaggagat ctcttaaaaa ttattataga tataggagat gacataggta gattatccac 1320

tcataggtag attatccact ctagcttgtg tattagatct tgtataatta attattaact 1380

gaattcaatg atatgtaaca ttgaatgtgc agaatgggaa tgtcctgagg accaaattct 1440

tggtataatt attaaagtac atggacaatg aatctaaaga tttgtcgtag tgttagcaag 1500

attttgttac gtttattaat gggtattcac tttattatct tttatatttg ttaactcatt 1560

agcgccaccg ctgccaatcc ctcccttcct cggaaccgta gcgttagcac gggtattag 1619

<210> 3757
<211> 1422
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171997_G1, chr4:238800690..238802111, Cluster 23

<400> 3757
atcaattctg ttataaaccg agtttgtacc cttcgcattg gtgacagtat agcagccttc 60

accgcatcac cgccacccgc tgtggcggat ggctgcgacg acacaacatc gagattcacc 120

acattttagc tctcagtcat ccattttatc atgccacttg ttacccatgt tttcgagtgc 180

ttgggcccac tattctcagt ccccaacacc tatgtaatta agtggtttca tggttattag 240

gagggatcaa tgtcggggtc atcctttgtc ccaacagtag gaactatatc ccacatacta 300

agttcacaac tttcacaaat tccttcacaa cccaaagtac aataccttat gccatcttta 360

gtacaaaatc aaaagaaaca gttattgttt catatgcaaa gcatcttaat agtagtggtg 420

catttgtgaa gaggatagaa acccttctcc tcggtagcat tataattttt tgcctaaaga 480

aacgattgac aactatgact ttagtaatga tgcatttgaa gtgactctct ctctctctca 540

tgcgggacct accacataaa tatagcttca atgcatatct aaattgaatt acttcgtagg 600

tatccataag acattttgtt aatcgaagca ccaatttaca acattgaaat tgggtataaa 660

ttgaggaata acacatgcaa gtacactttc atcctttgtg ttcctcagtt ccttcgtcgt 720

tgaaattgag cagtatcgga gtaagcagac ttgttcaaag catcactgtc attggttggg 780

agcattatca tagcctatag gaggacgaaa tgaagacaaa cactacataa gggaggggca 840

acatacgggg gaggaaacaa aagagggcat cgtatgcagc atcatatgaa ggagcactat 900

attatcccca catgaaggag cactatgcgg atattcatac aagcttcaat ggtaggggaa 960

tgagcgtcgg tgtaggattt tcattagtag gaggaagagc atatatgaaa ggtcgatagt 1020

gatacataga ataaaaaaga tgggtatgga aacataattt ttggagttag gtaaagagga 1080

caggcagaaa tatcctctcg acgatgatgt atgagagaaa gaccataaaa gacccctct 1140

acgctagcat atgtatcgaa aaattatgga gattggtcgt taatcaagtt agtgaaggtt 1200

tgaaactttg gacttcactt ttgatccata ttcaaataga gggtagaatg ctacaatatg 1260

aaagaagaca agcgaaatgg agggtgagga tacgaatgag tccaaacccc ctctatttca 1320

gggtcgttat tttgtggaat atttttgcg ttttaacttt aaaagttcat aacggtgaac 1380

caaccagaac acgacgacat atggtaaatt ggtactgaac ta 1422

<210> 3758
<211> 2028
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_179884_G1, chr5:40941718..40943745, Cluster 23

<400> 3758
ttaaagtttt gtgtatgtac gggctcattg tattggatgt aaatgctatg gagcattata 60

cacttcattt aaaacaaggt tacccgtggt gtatatttcg atgaaatttt atataaaaat 120

tcttctaatg attttggaaa ataactaaaa atgaaattaa aacaaaaatt aaatatattt 180

atttatatat tccaccttag aagaatgcta ttctagtttt agaagaataa tatttctagt 240

ttaggacgat aacattctag gttcaggaca ataataatat ccaagaaaaa aatattttag 300

ttaaaaggaa taatatttta ggttaaaaca aagtaatcca gttgagagaa aaatattgaa 360

gtaaaatgga ataatatttt agattgaaag ataatgtttc aaattcaaaa gaataataat 420

ctaagttact aatcatgaga cagatatatg tctcctcata tttctactat tgaagcccta 480

gggcctaggt tcctttgcag caccatcatt acccctcctc accacgcgat gacattctta 540

ggccattttc aatggtagtt tcattctcat taaacgatgt gccatgccaa caatttggat 600

gatgtgtcaa gtatttaatg aagaaagaga ttaaatgggc ttcatggaga tgaaaccatg 660

tatacacagt tatctagaca tatctcttgc atgttaccta tgaaaccgtg tcgaatgaaa 720

ctcttcacta tgagagactg tttcaaccaa gattttcttt ctttcttgat tatgtggcat 780

cttggtctac actgttatgt ggacatattg tctgttcaac catgattaca tttctttctt 840

gattaagtgg catcttggaa acataaatat gaaacctaca actatgaata gccttaagat 900

cacgaaccct tcttcatcga gtctagtcat agttattacg gtttaggtcc tctatgggct 960

atataggcat ctaagccgat gttcacttct tttggggggt tgttatggct ggagggtcat 1020

cttgtttctt ctttacatct ttgtgtcatc gtctcattag atttcgatct tgctatgtcc 1080

acaaagtcat ccaaccatct agtttcaaca tggctattac tagtggtgct agattgggtc 1140

cattggatag ctttgatgat gagacattca atgctctttc aatgtgtcag atgcgtcaaa 1200

tggaaagatc ccatggtgtt gaatcatgca atgtttccaa ggcttagggc ctatcattgt 1260

ggatgatttg agtcgctaag tttcaacatg ccaaacctag gcaactgtca aggacatgta 1320

ttggagttga ataatgttat tagggagctc gagtctacta taatatacct ttcttattgt 1380

ttagagactt agacataaac attgatgcaa cttctcttta gatataatag aattcctttt 1440

cattcaaaaa aatataagtt acgagaataa taacttagtg aacaacaagg catcaaataa 1500

tcttccattt gatgcaatat tatctttatt ggatcgttag atccaccata ctattcatat 1560

agagatccac aaatctatta ataatattcc caaccatttt tctaatgcta ctttctaaat 1620

cttttatatc tactatatga agaagtgtgt tcatttatcc taacaatttt cttttgcctt 1680

cattgcgaca catctttact tgtgcgtctc gatgaccaca aaaagttgaa tcttccacca 1740

ctctttgtgt tgacggtcac taaacaccat tgcttaccat caatattgca ccaaagtgaa 1800

ggtacatcaa cattaaaaga cttaagtatg ttttcaatta acttagttcc acttgtactt 1860

ggaagtaaac tgaatgcaaa aaatcaactc aaaattcatc aaattcaatc ttgagatgca 1920

agtggacgtg gaaggggggac tagggaccac ctagtgaggt catttgatct aaccaatggt 1980

cgctaaacct agactcataa cctgccacac cactgtctga tcaaaact 2028

<210> 3759
<211> 1845
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1812_G1, chr1:9221764..9223608, Cluster 23

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (347)..(446)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (349)..(349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (350)..(350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (351)..(351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (352)..(352)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)
<223> a, c, g, or t

<400> 3759
ctactacctg gccgcggatc acaggcggag cccaggccta actcctgagc ttctttctca 60

tcgattaatt tatctgcagg tgtggacggt gagatgatat ttgttgtagt gcgtagctcc 120

tcgacggccg ctagctgctg ccgagtcctg gcctcatgct gctgctgccg agtcctggcc 180

tcatgctgct gctgcttcat gcatgtttct ccagctgctt ctcatcatat gcatgactac 240

gctagtaaat tcaggccata gatcctctcg cttcaatagt taaattggtc ttccgatcca 300

gatttcgctc cccgttcgag gtgatctacc tacctgctgt atatagnnnn nnnnnnnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnngtat ggtttcttaa gtttaagctt gattcttatg 480

cttccttccg ccaaatacaa attacattct agtaggtaac caagcataga tgtgtgttcc 540

ttctattgct cctacataac catacatgat aaccaacagt tcatattaca caaatgcatg 600

tagctatgca acaacaaaac atagggacac tcactatggt tttttcatat gtaaccttaa 660

agtagtaata tcatatgtgg ttgtttcata ttttaagtgg tgtctcatca gatgtagcct 720

taaccatgtc atctctaagt tccccaatgg cgcacaatac ctcactgaaa taatggctaa 780

cattcaccat agaccttctc caagtttgat taattactct agaaacattg ctatgcatgc 840

tatcttaagc gatccactat tcttaatcaa gttgcaaaga ccaaaaaggg aggctctcct 900

catacagacc atgtttacac actaaacatc attgcagtta taaatgtaat tttttgcctt 960

tcttcattca tagcactcaa gggccataag aaatccccag ccttggtgac tagcataacc 1020

taataccagt caacatgaaa gcatacaaat cactaacaag aacaacagct tgagaaatta 1080

acttattcct ctctaccaaa accatctaag caaatgaaaa taaccatcca tcatatgttg 1140

atcaaaggga ggggctactg tgcttagaat caaataagaa cagaagtata atcacgagca 1200

tgggctacaa tgctcaaaat caaattacaa cacaagtata atcataggca tgggctactg 1260

tgctcaagac taaagtttta acaacacaag tcacaagcat gggttgctaa gctcagaata 1320

tgtacaagaa tcacatgcat catagacatt gcatgcattc acatattcaa gggcactaga 1380

aaagatcatc gacttgctga gaacacttga tacaaccaac catgcaactg agagtctgag 1440

accttctaca caagcaagca actcatcacc actcctgaag aagaaccgtg taagagggaa 1500

tccatggtgg gttagggttt acttatgagg gggagatgta gaggaatgac atgcgtctag 1560

ggaagggagg aggcagtatt gatatatacc aaggtattgg tgggaagagg aaagataacc 1620

atactcttgg tgggagcacc attaaagcta ggcgggagaa ctctcactct ctcgccattg 1680

ctcacatgga gccaagcact agagatgtgg tcagtttgcc tcgcatccgt ggagctaggg 1740

tggggagtgg tctttgcatc catcgggaca tgctagggag ccaagccaga aaaccaatca 1800

agtgtgggtt gcaccccatg ggccttgctc aagattgggc caggg 1845

<210> 3760
<211> 1472
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_184092_G1, chr5:70184107..70185578, Cluster 23

<400> 3760
taacacaagt taatgaatca atcaactttg tattcccaat ttagtatgga aagccaaatt 60

agcctttaga tgcatctcat atgtaaatcg ttttgtttcc tgtcatttgg ttataagtga 120

ttagcaaata atttgaacct ttaaactact tgtccaaata tgttaagcgt gtggtacatg 180

tagtaacaca tacatgcgtg gaaagaacaa tcagtcgttt ggactctatt gcaatcatgt 240

ctttctcctc catgtgtatg tgtaaaacag atttgaatga ttattcatgt caaagcgatg 300

aacattacat ctctctttga gtctgcatag ggatagttca tttgccacac atgtctaata 360

agctagatgt ttttctttca ttgggtgaac catccatatg tcattagata ctattactct 420

ctatctatat ttatatacga gtttagttca gatgaagcaa agttaaaatc tagatatgat 480

cataacgagg accaagtgca tatatctttg ttaactgttt taaattgata tattggagga 540

gaacaacatg gtctactaat atatgggttt agtttagatg aagcaaagtg aaaatataga 600

tataatcaat aataaggaat aagtgtctat gtctttgtta actatttcaa attgatatat 660

tggagaagaa caacatgtac taagaagatg atggagctac accaataatc gagagatgtg 720

tttggatttt agcatggttg agggtggaca atttcaaatg ttgcatctcc tccagaggtt 780

gttgctgaca cactatcatt cttcacctgc tgtagggttg acgcttttga gtggtattct 840

caccccatta ttgagacagt ttgatcattg ttgttggatc ttcgtgctac cgttacctcc 900

tcaaataagt cagttggtcc tacatggaag aagctagtgt catacttctc attatcacga 960

tttgtcactg tgctaagatg gacgtgtcca gagtctggga gggatttgcc atcaattgta 1020

acgatgacaa gattgaagat tttttgaaag agctccaacc agtggctact aaaattacgt 1080

cttatattga cattcattta taattatctt tttatgtaat tgcttgagaa tgctaaacaa 1140

tttgtttgtt tttgtaatac gcaactcttt ttagcttccg tatgtgataa cagtttttag 1200

tgctcgagtt gggtactatc tctgaattaa gtctgttttg catgaggcta atgaaccttg 1260

tagacatcta agtttcctaa acttgtaggt agtatatatc ctaatattga agactcgatg 1320

ttccatggcc ctcatgggga ctcttgagtg aggtggtcga gcctcatgga ctcaacacta 1380

tggtgttttg ggaaggactt atattataca tcgagtctca tggactcagt tttcacatga 1440

atgaccaagt ctcatggact caaccatata tt 1472

<210> 3761
<211> 3326
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_195112_G1, chr5:146413445..146416770, Cluster 23

<400> 3761
tgatttgata gaaacaatgc aaggattata cacaatgtca tgtgtgtact gcaccatgtc 60

atattttaat gaaaacaaaa tatgcccata taataccttg gccgtatagt caccagagcc 120

actaatcaaa tattgattac tgtcgtcacc tgtgaaagca attcaaccct tgtatttttc 180

acttgtcaac aataagacta tttggagaat tgttcataaa gctaccgggt taagtctgcc 240

taaatccatc tctcatttgg ttggccattg attgaaggac atttgggaag aatgatagaa 300

aattgatatt tatacaagct aagctacctt taaaggaaca tgttggctat gttttaggct 360

ttattgcaac ttgggcaaaa gggaactatc cactccacaa gcaaagcatt aaatgttgtt 420

gcgttgcata tttctgccaa gcaatagatt tagctattga ttagtatttt agttgtcatc 480

tcatttgatt tgtgttaaaa tcaagctata aggttgagat ttttataaaa agtggttgtg 540

tgcacttgca gagaccgaaa cttattctct tttttcatta aaaatcatca cctctgaaga 600

aatccaggca gctcacatct ctcttatggt gacacagagt atactccgct gtgggggaag 660

aatggctcca aagctgcaaa aaaagtatag cttagggatt cgcaagtatt gtgaaaagta 720

tagtgttaaa gacatgtaaa aaagggagag aatcttaaac ctttattttg cgatcacttg 780

aagctgtagc aaaattatca gtgccattcg ggctaaatgc cacttgacgt atggaaccat 840

agcgtcccag ctcaaatgtt tgtatgcact cccacccttt gtcccaatcc caaagtttca 900

tttcgcggcc ataagccgaa agcacatatg gtagggttgg atgaacgacc aacactccat 960

cagagtaacc atggaatatg tttgataccg ctacaaacat gagaaaatag ctcattatat 1020

aaaatgttgt caattaatta ataggttagg ttaagtaggt gccaaaaaaa ttctaagact 1080

acttgattcc aaattaatag aaggaataaa tacctttgaa tcttgttatc agtttcattc 1140

ctgtttcata ctcgtacacc aagatgaaac catcatgtgt cccaaccaaa acccaatgct 1200

tccttgtaat gattttgaca gaataaacat catctttggt gctcatcaaa tataacgttt 1260

cctgatagta aaatacatta atttcgttat ttataatcca atgcaaggaa aacatgacgt 1320

tatttataaa ccattattgt ttagcattag caactgacat gcctgggtgt caatatccct 1380

tataaaaaaa tctccatttt gatgaaacgt cattatcctg tgtgacaagg atattattta 1440

cctataggat cttcgcatgc aaatgattta actgaacaaa ggatcttcac aagcagatga 1500

ctcaccatga atctgctggg ttaacatcta gtaaagatat tacatcatta tctgtcgtag 1560

ggtgccacaa accccttatc tgtgttaacg tttgggttac gtcttgtcca gtcgatcggt 1620

tctgcaaatt ttgacacatt atattgaata ctttataatt cacttttaat taaacctttt 1680

cacaaccaca aaaaaattgg ttatcccaac aggactagct attactgcta gtcctacatt 1740

gtaagggtat aaaatcattg aagattaaaa aaccagtagt aattccgatt ccatctcacc 1800

tctgacgttg tctcgccttg ctgagacaaa acaggttcta gcaccacctc atgcaccaca 1860

ttcctggtct ctttagcatc cttaaaaaat tgatcgcatt ctgattggtc tgtgaaccta 1920

tagatgtatt tatccccata tatactgctc tgcaagatca gattggactt ttgtttatct 1980

gtcggcattt taatatcaag agtatatatg gatctcgaca tcacaatgtc gtggtttagt 2040

ggtgtcgctt caaagggctg ctcttctgtc gtactgctaa gcataaaagc aatgtgttta 2100

tcagttttgt ttgttaggtg cagtaagcaa gggattaagt tgtcgtcttg aaaggataag 2160

tgggccttca gcgggtggat gtgatgaatc tcacttgact cttgggtaat caactgcatg 2220

aaaataaaca ttgtcatggt taataacctt cttgcttccc tgtgaacaga ccttgatcat 2280

gaaattaaga gactaatgat catttcctgc agttaagtag tctgatataa gaatcaagaa 2340

tgattgaaca caaccacatt ctagaaaaat aacgctataa agtatgtcga tttcagtata 2400

gaatcatctt ttgcaacaaa ccttggaata aatccatgta tacaatggaa ctaccatcgg 2460

gacaattttt tgtcatgaaa cttcaaattg aaatgttttt ttaccattat aatatatata 2520

ttgaaccacc acaaataaga tggtcttata gcttcttcca aaggaggatt tttattattt 2580

tttaaataaa aacctagatt gatggtgcta ccatccacaa gtacttcaaa aatctgatga 2640

ctgatgctca tgcacaacaa cattcaaact cattttaag ggacatttaa acatattttc 2700

gacagccatg tatcgccgaa aataagccat ttgcgagttt tgacagcaac agtgatggtc 2760

gtgtttgtgc taggcataat taaggagcca atttgaacta gggtaactga atagacaagt 2820

ttggcaataa ctaattacta gacacaattc taaaaaataa aattatttca atttctatgt 2880

gattgtacct tgttcgccct caagctccaa ggacccgata ttgtattcta tatgtccatt 2940

agctttatac caagtattat ttcagttcgg caactgtaag gccgtaacaa agaaataact 3000

aagcctaaaa aacttgacct gcaagagtaa gaatgcttcc acgatattat tttaaaaaga 3060

agacctcctt atgtaggttg agaaaactct gaactcctgc accacctaca cactgtatca 3120

catgtgagaa cgaccgcgac cggagctagg ccttagacct acactttgac gtgggagaga 3180

cgaggggatt ttttaaccat agcctaaaat tcgctccaca ggaagtcgaa cgcagatctt 3240

gaggagtgct atttagacca cttacccaac tcacgcaaca tgtggaaaag gaccctaatg 3300

cttgtggacc cactagatga ctagag 3326

<210> 3762
<211> 2281
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196240_G1, chr5:152200392..152202672, Cluster 23

<400> 3762
acactaaacg gttcaaagga agcagtcttc cccataagag accgttcggg aaaaaaatta 60

aatactactt taattagcaa gaagccgcca tggaggtgga tgtatcgatc aaataatgat 120

attgccaatt tacaatgcaa agctacgtcc tcatcactct aatcaatatg cactaacacg 180

tagttactaa tcgtgccatc ataattgcta attgtaattt gctaggacaa catcgccaca 240

aaaaagaaaa acgagcatga taccgatgct agtccaatca tttttagaaa cttttatttg 300

ttaggtcaac cttccacaat tggttttctg tagactgata catataatag ggcttaagta 360

agtgacaata attggacaag agtagcagtt ggtgtgcggt cagtcagcca tccttaacca 420

tgagagctta tacaacccta ttaattaaag agtctctcga agggtttata gagagatagt 480

aagaaaatta agagaggaga tttttcacgt atttctatac atattatttt taattactgt 540

acaattagcg ttgaagtctt ttagttgtct cttctacttg aaaaatcgat ccaatgtctc 600

aggatttata tgtcctaaga gtatgttcaa caatttttga taaattattt ggtaaataag 660

tgagtttttt atgtgactaa aaaagttaga agcatatttg ttgacttctt aaacagtttg 720

caaaagaata gaaggtagta ttttttatta caaatccaaa ctattagcaa cttttatgaa 780

tctttttctc aattgtatat ttgaatcagg aacaaaaaac aggatagagt tcatgataca 840

actctgtgag gagtatttaa aaaacaggat agagttccag ccaccgttga ccgtaggttg 900

actttaactt taaatttatt tttttagaag gattcacttt aattttaaat ttgtattttg 960

tggcaaggat caatcatact ggtttaccac tgaactctcg agtgtcatac aactattgca 1020

ctataccatc aaatacgatt ggtgtccatc gcaacacatg gatattgtag cagttattat 1080

ttacaaattt gactttaaat gcttcatgtg ttttaaatta cttttatttt aattgtattc 1140

taagtcaaac ttatagaaac atttataacg ttaaacaaga ttcataagat aataatatat 1200

aaagtaaatt atttttcttt tgatgattgt agatgttaac atattaccta ctatgttcta 1260

tctataaaaa aaattcaagt ctagctttga atctgtataa aagtctgtcc agatttaaag 1320

ctaaaattgt taggattgca tacgtaatgc aagctagggt gtattttaat tagaatttta 1380

tagaaatata gtaataacat tgtttatgct gcgaccaagc aaaacgagtt gtgttgtgaa 1440

tgccttttt tagcggtgaa ctgtgatggt caacagacac tttgctatta tggattaaaa 1500

aaacagatgt ttccatatag tggtttctgt aaagtattat atatgctact gctgtactaa 1560

attgttgttt acaaagttga cattaaaaat actccgctat ctctgttagg agtattttat 1620

taattagatt cctgtagaaa tatatatatt aattaaattg tttatctgcg accaagcaaa 1680

acgagtcgtc gtgagtgtgt gtgtgttttt ttagcggtga acagtgatgg tcaacggtgt 1740

tgcatcagat ttcctactag aagcttcatc agacatcagt tgagagtcac atgcacgcac 1800

aacgagcctg tacccgcagg atcccgtgag atgcgtgcgc tgtcttcttt ccctggcctt 1860

cccgcccgtg ccgtgcatct cgcgcctcta tcgggacact tgccggcctt tattcccagc 1920

ctcacgttat atctgtgctg tgctacgccg tgatatcaag actgaaagac acgaagccgt 1980

tactttctct gaccctgttc gaaacagttg gtattctcag gaaagtaatc cgtacgagtt 2040

tcacatgagc acacatccga cttgagcgaa tcacaagtat ttttggaaca aaaggaagtg 2100

ctattaacta ttaaccattt ttttccacct atatggagct tggcgatgat aacatgcaac 2160

caagcgagta tatatttcga tttcataatt gggacagggt actaatattt catcatagat 2220

gtcgtttggt ttataaaata ttagtattag tttttagtgt ggtatctgat tacggttgga 2280

c 2281

<210> 3763

<211> 1627
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196800_G1, chr5:155103563..155105189, Cluster 23

<400> 3763
ttggcatggc catacagtaa aagatataat gacccattgt aaatggtcga ttcacatgga 60

tgcacctata gcatacatta gcaacataaa aaatattaga aagatagagt tttttagtaa 120

tatatgtatg tacacaatca taatcggcta tgaaatggac cccatcacat acactataac 180

catgtaaatg tatgcaacga tgattgccta tgaaaaacta ttgaatggtt tttaattata 240

ttcaacaaga aatagtttat gatggattgt ttagtatagg aagttgatct atttgcacta 300

tgcaatttct aaattgtaag ttgttgtagt tttttagata tatagttttt ctatgcactt 360

aaatatatca tatccaaata tacaataaaa gttatgtatc tagaaaatta ataacaattt 420

atttttgca atagatgtgg aacctagttt ttgctttgcg tctttgtttt ttttgggaaa 480

acaacatgtt ttcaccttct atcgtgcttt ttttgaaaaa tatttgagaa atctaggata 540

caaagaagac aaaaaatgtg agcaaaatta tgcatggctt ctagccattc actaataagt 600

gttcaaagtt ttgcttagct ctaagcataa cttgagcaaa tcccttgcga aagacgtctt 660

aacagtgatc aaccaaagga tatacatgga agaagatgga atcatttctt actgtccaaa 720

ttactagcac atagtaatga tcacctcaat aaaaaagaag ttgcaattgg tttttgaaca 780

aaaccaaaaa tgttaaggga taattagaga gaaggatgag tagaccaaga atatcccaat 840

aagttattgc aaaccggcaa gccaaggaga gatgaactag agattcttcc actacaagaa 900

cacaaagaac acaatataat catccaaggt catagtcttt ctccttaaga gatccttggt 960

acttagttag tctttgtaaa ataagacaaa agaatacttc attttgttct agcaacaaga 1020

tttccataac atggtataaa catggtgtac tttctaccaa ccaattagat gcacatacgc 1080

ctgcttcaaa gagaacatgg tgcagttcca aatataggtt tagtaaccaa aaccatcttg 1140

taaatgcatc ctgttaataa tagctaaaat gtcattttat tgtcgaaaat cttctagtaa 1200

aaaaggtagg taaatgtaga gcaagtgctt gacaagccta ttgaaccatg aaaaaatatc 1260

tttcataaag gagaataact ctagtagaga ggtacttggg gagtaaccat tccatgatgt 1320

acccaactag aggaaacaga agaagccatt attaatagtc acagtcacta aacccttgaa 1380

ggaatccata agtttagaac atctcaacac caaaaggaat acttacgtgt tgaagtcaga 1440

gggaaattat ttgcatacct aggtgcaggt atcctaggca ctacaaccaa actatgtatg 1500

cacggagagg gcaggctatg agccccacct ttgaggtggg ttaggtcgac aaggcccctc 1560

tgaaaagaca agaataatac gtggccgaaa tccctgccac gtgtcatcgc aagggccccc 1620

cttgcca 1627

<210> 3764
<211> 2931
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200789_G1, chr5:178062129..178065059, Cluster 23

<400> 3764
gtctcatctc tcaagtctca atagagtttg aggacacaat tagtaagact gtcagattag 60

cttttgtgt tgataattgt gccaatgaat ttaatctaaa tgactctaac aaactctcaa 120

tatctctctt aaaattaatt tgtcaactcc gcaaatttgc taatatataa acgaaacact 180

tttcaaaaac ttcattaaaa ctggactcac gatgtatgga gaaacctgcc actgtcaact 240

tagaaaaaga tattcataca ataaagttaa ttacctattt tctttgtaga aagttatcac 300

aactagggtt aaaaatggat agaaaaaatc ttgttctaac tcgtactgtt ttccacattt 360

gatttgtctg ttttcggaaa aatccagaaa ccgaatggaa atgacagacg gtctatctcg 420

atcgtatttg tggggtcctg tttttagctg ggttgaaccc gtatatccgg tgtttgataa 480

acccgaaatc aacctaatat gcattagtgc attagctaag gccttatatt cttacatgat 540

aaattatagt agaagagatc attttagaca ccggttctcc ttaatgacaa gtggtatata 600

ttactagcaa gcaaacaaca ataaagtgtt tttctctgta tatatttgtt ttattatcgc 660

cctaccagtc agtcatcggt aggcaccaat atcatgtgtc tatattaaga cactgtttga 720

tacaacttca tgtccataat ttttggtaga gttggtggaa caggttatta gatgctccat 780

aaaaccgtag agctagagtt gtaagccaca tttatataag ttattttgtt tttatttaga 840

ttaaaaatat ttttaaaact atttaaattg acattataaa ctataactcc tacactagaa 900

ttggaaactt ggaacctaga gtcattctaa acactcccta aattacgagt ttacgcctaa 960

tattttcatt tctgtttatt tttatacatt cgtttatctc gctcatattt ccattttcga 1020

ctatttctga ttcaatcatg tttacggtga taaaaggcgg aaacggaaat agcagagggt 1080

ttttggtttc attcctaatc acaaccctgg ttagtactag tacagtagta ataatcgatt 1140

aaccagaaaa aacctgaaag tgtaacttga tctggaattc ctggatccgt gcgcacactc 1200

taggcgttgt gcgtgtttgg tcccgtcaat cagtcagtct ttacgacgca ttcgcattcg 1260

cgctcacctc cagaaccgag atccaccacc gcgcaccttc acgactcggc cggcgctccg 1320

tcactcatga tggccggccg cccgcgcccg cagacggagc tgcactcgcc gtccgcctcc 1380

acgcggcggc gtgagcggtg gctggttgta ctcggcgtcg cactccacgc cgtgtacatg 1440

ctcagcatct tcgacatata cttcaagtcc cccatcgtgc acggcatgga tcccgtgccg 1500

cctcgcctct cggcgccccc cgccaagcgc ctcgtcctcc tcgtcggtgt gtccccttga 1560

tcctctgatc ccgtctcagt aagcttcggc tcgatgttgg gtgtgtaaat ttggctgggg 1620

ttttttggtg ggtgcagcgg acgggctcag ggcggacaag ttcttcgagc ccgacgaacg 1680

ggggaggtac agagcgccgt tcctgcgcgg tgtgatcgag gagaagggcc ggtggggagt 1740

cagccacgcg cgcccgccca ccgagtccag gcccggccat gtctccctca tcgctggctt 1800

ctacgaggac cctagtgctg tcaccaaagg tgcgctgccc cggtgctagc tctagtgtac 1860

gtgtaccaca tcaggctgtt cgttattcaa cttgatgcaa tgttttcaca agccattcag 1920

tttactttaa ttttcaagta tcatgcacgt ttagtgtgtc attgcattgc tttgacattt 1980

tcggtagttg ttgctactga actaataata gttggtactc ttaaccttat ggttgttaac 2040

caaaaaaaca tgtactgaat gtagtgctta gtaccaatat tttgtaactg agagaaatgc 2100

gcataactga catcctgcac ttggttaata ttgcttagtt gaattaaagt gttatatgtt 2160

atgccctaat agtgaaacag tgagtattgt atttggcagg atggaaggcc aatccagttg 2220

agtttgattc tgtattcaat cagagtcggc acactatctc atttggaagt ccagatattg 2280

ttcctatatt ctgcagtaac ctacctcaca gtacctggga cacttatccc catgaatatg 2340

aagactttgc aacaggtcag attgattggt attacatgta gcttcctgaa gcttaaggca 2400

ttactatgtt attgtacgtt cgtaactgcc atgcaagtac tgtcgaattc atgaaatcac 2460

attgtgcttt cctcgctgca ttagatgact ttgtgatttc tcatactgca catcgtttct 2520

ttggaaccac gttgtgcttt tctcactgca ttaaatgact ttgtgatttc tcatactgca 2580

catcctttct tcctgaaata ttgatactaa tctaaaagtt catcttgcag aaggattatg 2640

tatataaatt atctttgaaa ttatttctta ctcttggtct gagttttttt actgcaaatc 2700

acaactacta taatgaattc tacagatgtc taggttaatt tgtaagtaat aaatctgttt 2760

ttttgcacaa actgtataaa tgcctgttcc tctttaaata catgaagggc ctgtttggtt 2820

ggaggcctgg caggcaaatg caacacatcc tggtctaatc ggacgcctgg gatgcatgcc 2880

tgatccagtc agccttttcc aatttccaac caaacaggcc caaaggctgt g 2931

<210> 3765
<211> 1646
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201858_G1, chr5:184689518..184691163, Cluster 23

<400> 3765
gaagtaaccc taaacggaac aagcaaggga agcttagatc tatcctggac ttgacttgtt 60

tcttaggttg ttgtttcctt tccgaaaact gtgagctaaa aaagaacaac aatcaacggg 120

ccgagtaagt gaatattcat ctttaattga ttaaggatta ccctttctct ttaatgtttg 180

taagattttt tatataccat ttcaaatgat tgaatttaaa catattagaa gttgttaaaa 240

taactaggtt aaatcaaatg aatatcgaaa ggtatatggt aactgaaact atgttgtaaa 300

agaaaaagaa catgtactta caatcacaat gaattcatat atgtcaaatt ggaaattgac 360

acttttgact cactgttatg accatgttac tatatacaat gaagacaaat tatcgcttat 420

gtatggacca agtatgaaga aaatatgaat gtggttaata tatttctaaa tcaaatatgg 480

catcgtctaa tctactcaga acaattggtt agcacaatat ccttgtctcg tcgtcttgtt 540

cgttcactat ttctctttga ttaggactat acttggttga tttggatctt cagttgcaaa 600

tatactggaa agccaaatga agtttcaaag tggaggcatg ccttcaactg accatctgtt 660

gatctgcatg tggcgaagtg cattggaaaa catatttcca atctcacaac atgaaaattg 720

aaatcaaaat gagtgcagtc taattgcctt ctaaagtgtg gcaaatatat tgagtgtttc 780

cacttatttc attgatgtat tcaactagca aggcaaaggt aatttggcga gaggttcttt 840

ggtcaaggta atttctgttc atttattttc aatatacttg taaattcaag atttagttaa 900

ctggaatgtt ggcttgtctt tcagccttat taaaaaaaca aaatccttca gtcttattac 960

ttgccaagtt tacaatggga tctggaggag aatgtatgtt ccttttttgg tgttatatac 1020

ttacgagaaa gacctgttaa ggatatggtc taattgaaag agtctatttc ttgttatagg 1080

agtgttgaaa caggagtgcg cttatgccat atctttgcct gcaaaactac tacatttttt 1140

ctctggttgt gaatgcaatg aaatttgaac tttgcatcaa cttcatgaga taatgatcca 1200

gtggacgtgc caatgacaag gtcatagaag aagctatgtt gaggaagctg agtgattgaa 1260

ggatttcatt ttccgtacta tcatgtttca actttcactg gccagtcatc aaagaagtct 1320

gatgtgtttg gatttagggt tctgttagtc aagttggtca ctggtcagaa ggcgttgtat 1380

tttggaagag tagcaaatca gaaaggtaga gtgctcgact gggtaagcat gcatcttgtg 1440

tttacttatc caatttcaga ttttctttaa aacttataga tgaacatcgc ctatgtttcc 1500

tttattatat tttatacctt gttttgcttt gcccttcaat tcagtctctt gatagttctt 1560

tgagaattgc aagcttctgt cattgccatg accatgtttc aggttaaga aacttcatca 1620

agaaaagcaa ctaggcatga tggtgg 1646

<210> 3766
<211> 2760
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203331_G1, chr5:192877032..192879791, Cluster 23

<400> 3766
aatgatgcat aacaatttct aaatatcaga gtggatgcat tccattccat aacaacatac 60

ctcaactcgc tgcaaattgc gtgctaacgc aaaactggaa acaagaagtg caacatattt 120

gtatgaaaga gcagaaaaat ctcttcctga aacagacttt gagtcagcag actgcagaca 180

ctccatccat gcagcaccca tagcttcaga tatgttccac ctttgggctc tctcaatatc 240

accagcagac ctcctctgtc ctgaagtagc catcgctaca gcactaagac cccttcttga 300

accaatctta gcactacgct caaggtcacg agcagcagcc aaggctgcag cttttgcagc 360

tgctttgtcc tttggtgctg atgtgggcaa gcttggtgta gtatctatag gcatctgaaa 420

acttgagaaa gtgtgcaatt tagctgccct acgttctagc aatgaggtgt cacgcctgcg 480

caacttattg gttggcggtg ctattgtttc tgtcccagag gcaccagcag caatcatggc 540

caatgccatt gcaactggtg gagaggcaaa agcagcagcc caggcaggtg atatcattgc 600

aacaccaacc tgagatcaga agacatgaaa caaaagcatc accatgaaca gatggtcttt 660

tgataaaagt gatgagatct ttatctatta gcaatacaaa ctttacataa aaaccattgt 720

ttttattaaa agtagcatgt aatagtatca tcacttaaat gtttatgagg acttacttaa 780

gcaagcatcc cgtgaatttt ttcagaaata aaatacaaat agcaacactg cgagaactga 840

taagtgataa gtctgtaaaa cacagtttca agtagatgaa aatacaagat aaacaagttg 900

cccagattca gagtttcctt tgcaaaagga aaatcatatg ccgcctaggg ggactggtgc 960

cctcattcta aaataccatg ttgcaatgtt tcaaaaatca gaaattcagt ttgtagccgc 1020

aacaattcaa taagttcatc tttgatgctg agattaaaaa acagaaatgt cactgtcagc 1080

acatgatgaa caatcccagg ttgactgact gtctattttg ttttttggca tctaggatga 1140

attttgaact gaattgttgc agttgtactt aactttctgt atactacata aatgattttt 1200

gaaacattgc aacatggtat tttagctaat gggggcgcca gcctccctgg gcaccaaacc 1260

tgcgcccttt gcaaaattag ctttttttaa agctcagagt ttcctttgca aatttatttt 1320

ttcagaaaat tatatgatat aaacgattcc ctgaaacaat ttgttagaac ttctaatatg 1380

agctactgca tagtaccaac agtcactgat ataatatgag cacaagcacc aggcaccctc 1440

agttcagttg tcacccttca tgaaatataa agtataactt ttacctcaac aggtgaagtg 1500

tctgctgtcg aagcccagtc atcaataagt agtggatttt gcacatctgg acatgtaagc 1560

tcatgtatac cagccaaaac agaacgatat cttttcagga cagctacaaa tggcggcatg 1620

atcaatccaa catacttttt tctcactggt tttctgtcac tgcttacagc atgccataac 1680

tgttatgata cataaatttc atgagcaata tgtgctaaag aaaacttgtt catctagctg 1740

ctagaaataa gcagtatcaa caaacagaca gtagcagaat agaattccat gaatttaaaa 1800

tgtctaacac agaaacctta cttagacatt ctaaaatgca agctatgctt tgatatccag 1860

cagtgcacgt tatgattatc atagatcatt gagacgctga ataagtatag acaaacattc 1920

ttccttaaaa tctaaagaag ctatagtgac acagagttga ggtagcatta aacatcaatt 1980

tcaggtatac aacatatgtt tttagagttt gaaacagtcc atggtacatg ctttgttttt 2040

ttctcgaaca cgcgggagac atgctttgtg tatcaggaca atttgattca ttcaaaagag 2100

aacagacaag aataaaaaag tacaagagag attacaagtg aaattgatgt tccttatatc 2160

ctatgtttca tataagacga aaataatcct aagcttaagg gaaaaaaaga tgaacataca 2220

gcttttatgc agatcacatt gaagcattaa aacactttta tggattcctc caaagcagaa 2280

aagtaactta acagcatact ccctcaatac cggaatggca aacgtacttc tattagggaa 2340

aagtcaaaca aaataaattt caaccattaa tttgtgttac tatatgttga catttgctaa 2400

agaaccaata tcatctcaga ggcactttga atagaaatct attaaacaag tttcatggcc 2460

taaacttgtc cataatttga ataattgatc aaagtttgta aattttgaat tttcaggaca 2520

gagggagtat gattcatggc acttttaaga aaaattatgg ttagaaaaaa aatgtgacat 2580

catgtgctga cttcaataaa ccactcaagt tggaatgaga gcactgaaaa ctgaaacctc 2640

atcagatgga ggcctattat tctatgacaa taataaataa acttacctct gaataaagaa 2700

tagaagaagc aaccagaact cgttgtctct tagattcaga aactggcata ttaagaacag 2760

<210> 3767
<211> 1512
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203337_G1, chr5:192885472..192886983, Cluster 23

<400> 3767
agtgttgtgt gacacaaaga aagatatcta atttataatg caataaagaa acaaagtttt 60

acaagcatgt tacatgtaat aaagtcaagt aattaacgtc aataaaacat taaattcaca 120

aaaaacatgg atacaaatat taagacagaa tacagtctta atgcatcaat agatatacct 180

gaataacacg agcttggaat gaccttgatg catatggaag agaacgaagt aggactacca 240

aaagaggaat gtgtttaaaa tggtatccag aatcttgtaa atttttcagg ttatcttttg 300

aagaaacatt gatctgcatt caagaacaca aacataaatt tagggagtct ggaggaaaag 360

cagttgcact tagaattcat agcaagaatc agagctaaat aaactttgat aacttttata 420

tggaagtcat gctttttta aaaaaaagtt ttaggatgtt ttacttcttc aagtactttc 480

aatataagga aaaaaggcaa tcatacagac caactactat agtgctcgta catatccttt 540

acacataact acataaggca cctgaaaaac acccatacca ctgaagaaat taacgccgtg 600

tagacatttc tggtcataag cctcctcggg gctgcttgga aagctttctg caatgcaaag 660

agcagtagag atactctgtc ttcaaacatg gtatttcctt ctccattaga ggtagtcaga 720

aaaccacttg gtaacttcgg tctcacagta ggcgaggtag aagtcaggtg gcctgaagca 780

actaaagcgc ccaaaacacg gactatccca acaagaactc catcaccatt atcaatattt 840

tgcacattgt cagagatatt tggaacatcc atgccaccca aattctttaa gaactgaccc 900

tttaataggc tccatttgct agtagatcca agtccaactc cagtttcatg agagttgggt 960

tcataatgct gcactgattg aatctgatga tcctggcagt ttgtttcacc actggcattt 1020

ttaaattttg aatccttatt ggtaagctta gaagattcat tccacgaagc agaatcatgt 1080

gacacattac agctatggag aatattgcta tcaccagatt tagcttccct ctgcaaaaga 1140

acgagtaatg cttctactac tccacgagaa atgaacgact gagcaaacgt attggctcta 1200

gaagtgttcg ggtgcacaat caatctgtag atgagaagca ataccctagc aacctgccaa 1260

tgtagaacat tactaaaact ataagaacca tatcttactt tacttatact taaagaatgt 1320

atacaatgtg attaagagca tgggctcagc gcacaactca aaaactaaat cgttaagaga 1380

gtaaacccta gactaatgac atgataactc caagaatcta aactctcagt taattgatat 1440

ttgtaataat ttggaaacac cggaaaatat gtgttttaaa agcgcttctt tctgcataca 1500

aatattcaac ct 1512

<210> 3768
<211> 2695
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203827_G1, chr5:195551641..195554335, Cluster 23

<400> 3768
cccataacag gtgtgtattc atgctacttg ccctgtaacc ttatgattca aggattttct 60

gcacgcgttc atctttaaaa tcaccaacac ttcagttcat attaatgtag agatcatact 120

gtgtaccgaa gtttttactg aagtgtataa tattaatgag ctataagtgg tatactttct 180

atcttagttg atttagttct attgttttga tttgcatctc aatatcatgc catggaatac 240

aactacacta cattgttgtt tccctatcag gctatacagt ggtatactct ttgattatga 300

catatattgt gatttattca ccgtggaaaa cattctgatt atacaagctg attatgacct 360

atcatgtgat ttattcacct tattttatga actaaggtag ttcaatctga atacacaccc 420

ttttgaatac attctgatta tacaagctga ttatgaccta tcatgtgatt tattcacctt 480

attttatgaa ctaaggtagt tcaatctgaa tacacaccct tttgaatcca ttctgattat 540

acaagctgat tatgacctat catgtgattt attcacctta ttttatgaac taagttagtt 600

caatctgaat acacatgaaa actcatatat aattatgatt atagcatcga cacacccttt 660

tgaagatgtt ggtcagcata tatattttga gatgcaaata cagtattcaa taccattgcc 720

ttaagggtac acacatttta catttttttgg atatactatc aggcgaaaaa gtggtatact 780

ctctatctta gttgatttaa ttctattgtt ttgatttgca tctcaatatc aaacagttca 840

atctgaatac acatgaacac acatatagta cattatatga ttataacatt ggcaaatggt 900

ttggatgtca ggtcactttt gcgcatgtta ggtttcaaaa attgctctgt gcaaaaggat 960

atttcagcaa acaatcggcc ccttctatac ctttcaaaca tacttgtaaa acagttcaac 1020

ctgaatacac atgaacacac atatattaca gtatatgatt atagcattgg caagttgttt 1080

ggatgtcagg tcacttttgc gcatgttagc tttcaaacat attttagagc ttgaaagatt 1140

ataacccatc attaaaaatt gctcagtgca aaaggatatt tcagcaaaca atcggaccct 1200

tctatacctt tcaaacatac cttttatgca tgatcttcta aatcatttgt tctgtataat 1260

ccttacattt tacactggat gattatagca atcatcttct ataaaccttt tcgttctgca 1320

aaaccatttg tatgtaaata ttgtgggcat gcatatgatc ttgtgagaat gtaattaaat 1380

ggcacacaaa gcttactact caatgggatt gatggctaca tttctttaga aaaataaaag 1440

ttctgaacac cagtgcacgt tttgtcctct ttctgcaggt aggaacaatt tgacggcgac 1500

acatcactat ctggatattg tgtacttgct gaaatatcca gttcaacatt caggctatct 1560

tggatatact tgcaaccctt aataggtttg atttgctctc tttatgctaa gccttcactt 1620

tcattttgac tttttatgct ttaggctcct ctctttttga tttgcatctc aatatcaaac 1680

agttcaatct gaatacacat gaacacacat atagtacaat atatgattat agcattggca 1740

aatggtttgg atgtcaggtc acttttgcgc atgttagctt tcaaaaattg ctcagtgcaa 1800

aaggatattt caacaaacaa tcggcccctt ctataccttt caaacatact tgtaaaacag 1860

ttcaatctga atacacatga acacacatat attacagtat atgattatag cattggcaag 1920

ttgtttggat gtcaggtcac ttttgcgcat gttagctttc aaacatttta gagcctgaat 1980

gattataacc catcattaaa aattgctcag tgcaaaagga tatttcagca aaaaattggc 2040

cccttctata cctttcaaac atacctttta tgcatgatct tctaaatcat ttgttatgta 2100

taatccttac attttacact ggatgattat agcaatcttc tataaacctt ttcgttctgc 2160

aaaatcattt gtacgcaaat attgtgggca tgcatatgat cttgtgagaa tgtaattaaa 2220

tggcacacaa agcttactgc tcaatgggat tgatggctac atttccttag aaaaataaaa 2280

gttctgaaca ccagtgcacg ttttgtcctc tttctgcagg taggaacaat ttgatggcga 2340

cacatcacta tctggatatt gtgtacttgc tgaaatatcc agttcaacat tcaggctatc 2400

ttggatatac ttgcaaccct taacaggttt gatttgctct ctttatgcta agccttcact 2460

ttcattttga ctttttatgc tttaggctcc tctcttttg aatctactga agtttagatg 2520

tcctctttct ataataactt ttttgtcttc ccatcagtga gtttagtaag agatatggta 2580

aaattcgtaa ttaaaatatg acatgggtta attccattgt gtgtattggg ggtatatttt 2640

ggggtataaa attctatatg catgattcct gtatatatag gttgatgcta aactt 2695

<210> 3769
<211> 1517
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204027_G1, chr5:196672044..196673560, Cluster 23

<400> 3769
gaatctacaa aaaaaacgta ttgatgttta ttcgcttaaa caaacatcat tagataaatc 60

acattatata tttttgttag taacatattt aaagatacaa ataataatat gtttaacatt 120

ttatttaaaa ctagaaatat ctgattcctc gtggtacaag aacggaagcc gtaactgcac 180

cacgcgcagt aataaacata tttaaaatcg gacgacgcag acgcccctgg tagctgtgca 240

ggccgggacg ggaagcatct gcagggccgc catgcatgca tgagctcatc attcttgcag 300

cgcgcgggct ggcagctcag cctcatctca cagaagtaat gcatgcatgc tgcgcatgct 360

tgtatgacct gcactgccag tcaggaggac tgtctccaac tttacaacac taaaatactg 420

tattttattc ttttaatggt attcctgcat gtatgaacca tgtcggcgcg ttctctttcc 480

tcttggtgcc tacatgtcgc ccttgtatta ctctctctct tttaaagtgc cgcaatgccg 540

ctatgctagt tgtattaaac ttttataggt tctattatat ttttaaggtt caatataatt 600

gtgggccaca taaattagtc cataaatttt ttatattatt gtcaaagctt aatagtgaag 660

agctaagtag ctaactacta agctttatca tttagtccat tttttagttt gacaaaattt 720

gtagtgcata atataaaaga ttctccctcc aaaaaagttt tactacaaaa tatgttataa 780

ttattctaat aatatttatt atgtattgta aatattaata cttttatata aacttaatca 840

aacttatttt taaactcggc aagatttgca ttctttctta gaggagagac tgataatttg 900

aatatgttgg gttttgaatt taggttttat tacaattata gtagtcgtag atgcgcataa 960

tcctaattac tttgtttcct tttgcaaaaa tgatttaatg acataccacc accatatgga 1020

ttatttcatg gtggtaacct aacttttgg gcactcctaa cccataaact tggatagttt 1080

atatgttcat ttattatagc gccagctatg tgaaatgatg atatgtcatt aaaatttaaa 1140

aacgtagata gatagagaaa gagagagata gagagagaga gagaatggtt tcttaggcta 1200

ttcatattca caatgcatac tatcatagtc atttaatatg tgccacctag ggtaggttgc 1260

ttatgtgaca tgtgagttaa aggtgcgaga gaatagagcg gtatcatcct ggagataccg 1320

ctatggcaca agatcatagg cattaaaacc tgaacaatct atgtggccca caattcatac 1380

gctcatacac atctagcatt taattgtctc actaggacaa taaaacaaca atacatcgag 1440

accattatat cttctatagt aacatataat gtggcaactt tagacttcgt gacaagaaac 1500

aatgggttag gaataac 1517

<210> 3770
<211> 1948
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205706_G1, chr5:206265670..206267617, Cluster 23

<400> 3770
gcatatgagc ctaagtgaca catgtgagag caagccaaaa tgtttaaaaa acactttaaa 60

aatgctaact atgttctaat atgtttgaga tgactcgaga tagtgctccc gatgttgatt 120

ttcttaaggc actgaacgta tctgattgtg cacatgatat gtgcatcgga tatgaagtcg 180

actcatacac gttgcacact tttgtgtcga gcacattgaa gtctagtgtg catagtatat 240

gcctcaccac atgacccatt agacaaagaa cccaacaagc atgtcaaaca caaactttat 300

ctcaattata catcacaggt gtttggtatg ccattggata ccacactgga caaacactta 360

gagagcatgt aatatgtaca ctttggctcc aaacgcacta ggcatgtcca atgtcttgtg 420

tgataagagc accacctatc ttatagatgt aacatatata gttgttgaaa tcacaatagt 480

tgggaaggca ccatacacgt tcgatgcagg aaacaatggt ggactggaca agtccagtgc 540

ccctaatttc tatccactaa gggataacat ttggatttct agttggagct tttatttaat 600

atttgctaag gatcaagcta ctaataatgt ttaggggaat tattgcctaa aaaattaatg 660

ttaggagaat tgcataaaat aaactagagc tagagcaagt atatattctc atgttttctt 720

tgttaacaat caattttggt ctagaaatat ttatggattt atcaaatatt tttatattgc 780

tatttacctc actctagcca tctaggtcct atcacgtggt agtgatagtg tctgtgccga 840

ctacgcgtct gtccatgccc agtccacctt cagtagcctt ccccccctcc ctctctccct 900

agtccctagg cacgtccata cttatgagga agaaagaaca agaggtagac acttggtttc 960

attctaatag taaattagcc aattaaaatc aaattgctat cgtgtggatc tgaatctact 1020

atgtaagcca aacgattcta tggtagatct cagatttact agtggagctg ctcactgaat 1080

cccaaatcta tgtttagttc gtttaaggta aaactgatgt aaacagactc taatataaga 1140

aaatgactaa ttgttcactc aattcctttc aacgcacgtg gagaatagat acatcaaact 1200

agggctacat gacgagaatt tttgcatttc gatgtaggag tacatggtca tggacaggtt 1260

tcactcccct acttgactct gactccaaag catacagatt ctgcagatct gatttggtcc 1320

aaaaaacaat attattagga gcgagtggcg gtccagtctg tcagaccaac agggagcagc 1380

ggccgccagc aggtaaacct tccccattcc ctgctcaaca gctcaaggcg gcagcggcgc 1440

cccttggctg gccctcgcat cttttattgg ctttttggac aatggcgacg cagagagcca 1500

gagacgctaa agactgtgaa taatggaatc tgtgccaaat tttctgagat gtgtctcgca 1560

atctcgatca ctcccttgag agagagagat gtgtttgact gtttgtaggg ctagggcctg 1620

agctcctcgt gtcgttctgt ggtggtactg tgtttgttgt ccgtttgatt gtagggatga 1680

agcgaacatt tattctcctg tttagtttga tggatgaagg tggatgagat gagaatacta 1740

gactaattgc atttatatta ttttaaaata ataacaaatt acttactaac attaggtttg 1800

tcatgataat tactaattac aaataaaata tgttaattag catataaaac atgcattaat 1860

taacatagta gtgcctataa atttagcctt gacgtcatac ttactgacta gaatgtaact 1920

taagaataat ctttaatcat ttattcat 1948

<210> 3771
<211> 1410
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206774_G1, chr5:211746870..211748279, Cluster 23

<400> 3771
atagagataa gctcatggat acatacttgc tagagtcctc tgacatagcg agcccgtacg 60

caagaggccg gcagcgacgg cgaggctgac cagcgataat gcgagaggaa ggcgagagat 120

cgagcaagac gactagatga ggccacggga gaaagacggc agagccggcc caagcacgag 180

gacgaggtcc aagcggagct ggcccaaatg cgaggagaaa tagagtgatg aagagggctt 240

tgtatgggct ggattggaag gtttggccag gttgggacaa accgagccga ataggtcttg 300

gagctgaatt ttggctacat ttcgtttttt agaggtagat tagaataggt ctcgtcctat 360

aagtttattt aaaaataagg taaagcaata tataagtaat tatatatcgt agttgggtta 420

tataattagg agttaggaag tagagtgcta cagataggat cataggatga ttggccacgc 480

aggtgttaag ccagctagtg ttaagtaacc ctaaaatgtt cttgatctct agaaatgggc 540

cttttcattt tcgaatttaa ataagtgata tgcaaagtgt ggttagttag tcatttataa 600

tttcaagtta atctaaaaat tataggttga tcaggtatca ttatactctg tcacaactgt 660

attgctttgt taatatctct ggatcgatca gaagtccgat tgccatgatt ttacttgggt 720

tagttgcgtg attttatctg gtttagattt ataaaatttt ataccgaatg tagttatgga 780

ttctggataa tctcatttct actaagaaag tagagctatg acaattttga aaaacatgag 840

ttaatttgat tttatattta gaaggaggtg ttataattat tttatagatt taaaatcatc 900

ctcactctct ggttatctat cactgtgtct ttcaatccta caagtagtat caaagtgagt 960

tttgttttta aattgatcat aaccagttat tagaataaac aacaatggat agatattcca 1020

caagatttgt gtgttttcga tattgttgat tttagttctc gaaagaaagt atagagacac 1080

atattcaagc acaagtattg aaaaaggatt aattgtatac atgctactca ttttttacaa 1140

aattagatgg ttagaactgg tttccaattt tttaaaaaat ttgagtggca tgtttccaat 1200

tgacccaaaa cattgactgc tactaagtgt ttcagtaatt aactgctact actatatgtc 1260

cttagtgact caaaacattg actgtatgag gacccaaaac tatattttga gtggcatgtt 1320

ttcaactgac cccaaaaaaa tgaaacgaat attgttttgg aaccgtggga gtattttata 1380

gccttaagat tgggtaaggg aggagccgcg 1410

<210> 3772
<211> 2421
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208014_G1, chr6:338407..340827, Cluster 23

<400> 3772
acacacgagc acctaattat aatcctataa tgtaggagtt tctttgtgcg ccacaacatt 60

tttgcagaaa ccccttttcag ttttccttcg atcaacctat agtccacttt cttcttttat 120

tttctttctg tcacatataa aaatatataa tgtccccctt tagttttatg gcacgccaac 180

aattggcagt atatttctta agacatgtaa aattgttgtt gtgtagtgaa gaaatggcct 240

tattcttgtg ttaaaactga tcatgagagg gttcgtggga gaatcttagt ataatctgat 300

tgtttatgca gtgctctctt cttcggtacc actgatcgag atatttagga aaggagacta 360

ttttcagttt agcgtggggg gctctctgtc actggaggcg tctttcttgc gctgtcttta 420

ataattctac aaagattaaa aatccaaact atctgaaaac cgataacatc gtcaggtatg 480

atctatgatg gttatttttt gtctaatttt gtgtgtttat gtacaatagt ctatgtttgc 540

acatttgtta ttttaaactt gcttttacca tattttatac agtataatga gaaatgtatc 600

cattcttact agctttctcg aagttcatgt tattggttac tgtttgtaga ggaagagctg 660

cttgcgtact ggtggagaga ggatccttgg ttgaaagtga tgtttccgca tatctttata 720

aggttgagga agagcaggtc aatggttatt gccattagct ttgctcaatg cgctcatagc 780

agctctcaat aacagcaagc aaaattagtt ggatctacat ctttcatatt tggtcgttca 840

tctgtttgtt cttcctacat tcctaatcat gccatttcat ttactattat gtttcatggc 900

aaaactatgc attttagagc tcagttctct gaattaataa tctttctaca ttaagtaaaa 960

agcgttatta gtttgaacta cgatgaggtt ttggtgtcat gttcaatgtg tgtgcatgcc 1020

ttagttttag aatagtaata cagaattggc ccaacaaaat tcatttaaaa ttcaccatcc 1080

ttcatgtcga tttatttatt tatttataac atcatattta ttagcttata caaccactgt 1140

ttcagtcatc aattttgata ggacatgaat tttgggagat gggatttgaa agtgatgaag 1200

atatattatt ttcgtttagt aaagttattg gcaagtgata tggaatttag gttctcgatt 1260

tattaacaag tgattaatct gaacactgga ggtttgagaa gctcgacaaa tgttcacact 1320

tatccttact taaagaatcc aaatattagt ttttatcttc tgtgcatgct tatgatattc 1380

tttactcagt atgtagcaga ggtttcatgg ctatgatagc tgacgatgta attcttttt 1440

tactttgttt aagggtcaat ttgggttatt ttcttcaaaa tgctctgaag aattattttt 1500

ctcatagata gattggtgga ttcaaagtaa attaataata tggaaacaag aatccctgaa 1560

cattgtttca ttatttgatt gtgtttagaa cggcatagtt gcattcacta atttgattgt 1620

caaatcactc agacaaggct attgctttct tggtgaatat tgtgatgtgg acatgtggct 1680

gtttgatgag ggtttcaact gcttatatca gtagaacatg tggcctcaac tctggtagat 1740

tcagtgtgtt ggtattcatt tttgtttgca gtagtggcac tgaactgtta aataattgca 1800

tgttggatga catttcttct aagtaaatta caaggagctc aagatcttgt aaaaggtacg 1860

gcccttgttt cttccctaat tgagtgaatt gctcgcctca ttgctgtcac gactcataat 1920

agaaaaaatt gctttgaatt attttttttc ttcactaaca aaaaaacgct aatccctaag 1980

gcttactggc ctattgaccc taaactctaa tatcattaca attgtgtgtt tcttactaga 2040

atagtatggt tttgaagaat gttttgtgct gatatctatt ttttgggata gaaaacaaaa 2100

taacgcactt aaaagtttat aatcaaacaa atgcatacac tggtataatt attctcttcc 2160

aaattatgat tcataatggt taattaagtg accttagctc ctgctcccag tctcaccatt 2220

acttttgtc tgcatgaatt agtagtatct ctagatacac taattcgatt tgagacagtt 2280

ccttgcgact tcgtgacaga agcagtgagc atctttcttt tgatacattt gttgaatttc 2340

tttattagtg tactgatgat attttaatac aatttgataa aatgcagatt tgaggacaga 2400

ttaattatca ttcaattctt a 2421

<210> 3773
<211> 2104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208514_G1, chr6:3852429..3854532, Cluster 23

<400> 3773
gtatatactc tagccgatcc atccatggac gacctctcat gtatggcttc tttatgccat 60

gcttctgcgc ttaatttagt tgtacgtacc caacctacta tatatcagtt gtccatctat 120

gatctgtcta gcgctataca tgcagagata gtagtatatt tcagtttttc cttgctcatt 180

ttaccggcat gcatgcagta caaatgagaa cccctatata tcacttgcag aaactgaacc 240

ggcagagaga gaaatgacag tgatgaggtt tttctattta tccaatccgg caataattaa 300

tagtaatgat cattcttctc ctaaactaaa ccaactgtga tatcctcaag atcactgctg 360

gtttaggact aaaactggac agtatatatt gattcgaaca acactgttgg cttaagttac 420

aaccggcaga tatacctaac aacacttgct gatacatgca tatgctcttt ttaggccctt 480

tgtttccctc ctagattata taagttggat tatagtgaaa aagaaagatg ataaaataac 540

actttgggat cactaataag ctaaaataag ctagccaacg ctagcttatt atttcagttt 600

actaccaaca atatccatat atatatatat gttacaacat gtgtatgtcg gcacacaaga 660

ttatattact aacagtaatg gctatggcta cctttatcca tacaatgtag ggctcaactg 720

ctaggttccc agcgatcgat ctcaagtaaa ttaagattac gtactatgac atcatattcg 780

attagtcaaa acactaacac acatataccg aacatttcat acgcatttat ggtttgtcaa 840

cgaaatttct tgatttcatc taaagaatct ataacagtcc agtaaaacct acgccacaat 900

tgcatataat ttgtctcatg cttgttttgt ggcatatcgt aaccgagtgg cgagtgttct 960

tgccgtatgg agaccgtttg acgaattcag ttgaaaggcg catcatgtgg aagaaggaac 1020

acgaatttat catcaattaa tgcttcgatc tagctagtga tctgtatatg catgcaactt 1080

gttcgatcaa cagttttatt ttattggaaa gaatcaacta tccttttgga tcctacaaca 1140

attttagcta gactgaaaac taaccgactt cttgtgctta agaaagtata gtgtaaatat 1200

ttgttacttg aaaatgaacg catacatgta cccttcatga tttgtaacaa attaaaggac 1260

agttccatgt tgaatacata aaaagtatga aaggtacaac tacgacccta ctgtcagggc 1320

attgttgttg agatcaaaca agttacacac tacattcatt gacttcagct ttgatgcatt 1380

aatagtatct agccttaaaa tttaggcaat tataattaga taatagtctg caacagaaaa 1440

aacctatttg ccttatgttt ttatttaatc gtacatgaaa taacatatgt gctaacacat 1500

gtgcttgtat ttttttgct actattactc gttttagtgg ttgccaacat gcccattgac 1560

agtgtataac tcacaagaca catgttgtga tctctatcaa cctcaagatc ttctagccta 1620

gtttctcaaa tgtgtctgta tatatatgtg tgcatttgta tgtgtttgtg atctctgttt 1680

acagtaggaa ggggaagctt gttgttgaag agatgtttac aatacgttct ttcaagaagc 1740

ttcaaattat gttgggactt gggaaatgcg taaggaagtg tcacgtcgtc tttgatttag 1800

atccacgttt tgcttaaaat aaacaagatt ataatatata aatatatata cctcctatca 1860

ctaaccagga caaatcatag aattgtcaat ttcaaatact aaacgaataa ttcatatatc 1920

aataagaaca tttggtatcc ataacatatc caaatctgaa catccgatcc aaagttagat 1980

ttctgatctg tatatgaaat aatgtaccaa tatttaacga attgtacacc atttgtattc 2040

gacagcgaat cctgcatgta ttcatattcg tcatatccgt ttgtatcata tctaggaaat 2100

gagg 2104

<210> 3774
<211> 1683
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208578_G1, chr6:4293499..4295181, Cluster 23

<400> 3774
cttattctga tgatcagctt gattcgttat ttactacaat cttattgcaa tgattatctc 60

actcgtattt tagcgtaaag ccagactctt tcgaaggaac ataaatgcct ttgatatttc 120

ttttttacca actttaaaga aaatattatt gtcgataaaa gtgattatac aatcatcaaa 180

acacaagctc ctatcttatt tttaaattta ggttttacta aaatcacggt agaaaatact 240

catttaaaag tagtactagc gggatatgca ttttccgaga gaaaagagag atacaatatc 300

caatacggga cctaggatat agagtggatg gagttaggtt caacatgaca ccatcaaata 360

cttcaagaca tcagactgtg tgttttatct tttctcttcc ttgttttctc cctttgactc 420

cagtcgagta cattggattg gaaaaggcta taaaaacatt tccccctttt gttcccgccc 480

tctaaattta attgaataga ttggattaga aaatctggaa agaaaatatc atggtccatg 540

tatacatatt attaccgtat tggacgacta gactaactag ctttgtcatg tagacaatga 600

gtctagacta acaagattgg attggaaaaa gctataaaaa cattcccccc ccctttgttg 660

tctccctcta aattcaattg aatagattgg attaaaatgg aaaaaaacca tggtctatgt 720

atcagtgtta tcctaaacgt taaacggtaa acagtcggtc atcctgtact tagcgtttaa 780

ttggactaca caggtgttta gtttaaacag actaaaaaac aaattatgtg agattaaacg 840

gcctaaacgg ttagctactg agtagcattt aaacggtcta aacggttgtt taggataaca 900

gttctattat acacatatta ctgtattgga cgtctagact aactagcttt gccgtgtatg 960

actttaatta ggtttattat aaaaagtaaa ttcgtaatca atatagccat aataatctag 1020

tgtaataaat attagtggta tctttatata agtctcgtca aatttgaagt tgtttacaag 1080

tgagagagtt gttttttacg acttattata ctacctccgt ctcaaaataa gtgttattcc 1140

ggtttgattc tctcaggaat caagtgtgta ctttcaagtt gataaaatat attaagagaa 1200

taatattttt gatatatttt accgcaacta gatgcatcat taaatttatt tttatgataa 1260

actttcttgg aaatataaat gtcgttcata ttttggacaa acctagtcat ttaaagaaaa 1320

aattgaccag cacaagtacc attattttgt tacggaggag gaattaagta caattttaca 1380

tagagcgaca acattctcga ccgcagaaaa gaaaagaaaa gcaaagagga aattcagtaa 1440

attttgtatt catgtatgat taatttgttt agcagtacgg ttaattgtcc ctgcagagcg 1500

gttaccgact agctagtagt agtaccaata gtacgtgcgt acgtacgtac gcactcctat 1560

atatatacag agcggagtgg aatctggtga cgaggtcaat catcagctgc tggcgatcga 1620

gtcgagtcag cactgcgaac ctgcgataca ccgacggcca cctcgatcac tgcggttact 1680

tga 1683

<210> 3775
<211> 1489
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_209963_G1, chr6:13986311..13987799, Cluster 23

<400> 3775
ctaatttcgt ttctgagata gatccgtagt gtttgaagtc gccagggtat cagtcgagat 60

ctaattttgt ttctgatata gatgcgtagt gtttctaggt agatctggcg tagatctgga 120

tggatgaagt gatttcaatt tctattaccg gtaagcacaa ctaaacatac tctatatttt 180

ggaatatcct tttgcaggca tagaagtagt atatgccaag aagcctgtta atatagaacc 240

tagccttttg tgttccaata caaatacaag ttttacttct tacatgttgg tctaaaaata 300

caattgtttg ttttaggttc tactttctac aagaaaaggc atgagatggt tgaaacaaca 360

ggggctaatc aagttgaaat tgtgtttggg cgggtggagg ttgaatgtgg acagagtgga 420

tgaatgattc agcgtagtaa aatattatgc tttttctctc ttaaaaatac tatatcttga 480

acttcagact tgcaatatgg ttctttgtga aatcagcccc gtacaaagaa taaaaaacac 540

aaactcgaac aatatggaga aagaatcagt gagaacgact atatacatgc cgaccaattg 600

ggtcttaagc tctagcaatg gattggacat cgcttgcaac tgagggtgtt ataccaactt 660

gatgcactag gataaactgt tatattcaca tgtggttaat tgctcatact ccttttatga 720

tgcactgact caactctctg tttcacttag cttggggaaa atttgatcta ggtgcaactc 780

cttcaagtgc ttttaagagt attcatgtat acattttgtc tatctatatc cgtgccccat 840

atgtatagta tctttgctta caatctgacc aaaacgttcc atgttgatta acagaattgc 900

ttctgacttg tgaaaatggc gaatgaacta cgctctattt atatggtcca gaaggttcat 960

attcaatctg tgttgttgag cagaatatct tcctattcgt tttgtagtgc aatttgattt 1020

gtcttgtcgc ggcagccagg tacgtctcct ctcgccccga gcgtcttttt ctttgatgtt 1080

gcagtctcac cagcataagc atctaagtta aaggagtact tatatgttga agcaaaatat 1140

atcttcccct cattccaacc cttaaatact cgcccagcat ccccttcaat attaaactga 1200

agcaaaatgt acacaatata aggcaatgta atggcataaa aatctattgg ggatgggtca 1260

attatcaaaa gatttattgg agcttttcag atttcctttg tagtgcttgt cagcataaag 1320

cggtagcatc ccaagaatcc aacaactcca aacatgtttt ccgagctgtt ggaggctaac 1380

attaccgttc cacaatatct aaactgatga caaattgaga tatcattagt tagcatcact 1440

agtacacatt ctaacaatgt aggaacatat aaatagagtg agtttaatt 1489

<210> 3776
<211> 1848
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_209993_G1, chr6:14100718..14102565, Cluster 23

<400> 3776
gtttctgccg gaacagggat gaaacgtatt attctccctc catttgtttg actttttga 60

atacatagta tttgtcatgc atctagatat acactatatc tacatatata agaaaagcaa 120

tgtacttaga aaaaaataga atatctttta atttggaata ggggagtaga cctttacagc 180

tcaaagaccc aggtcctata ccagtcaaga agaggtaatg caaactctac taatttcgaa 240

aacgatgcaa attttattag gttcaacttg atttggttag agccctataa ttaaatgtac 300

tatctaatta ttacaaattt ataagtatat aaacaacata atataaaatc aatagaaaca 360

caatgtaata tatgacagac gtgtcatgtt aaaccgcgtc ttgtgaaagg gaattgggga 420

gtattaaaaa ggctaggtga ttataaatct aatacaccct cgtcctcgtg gttacctaag 480

ctcagctact tcaatctttt actactatat tttatattta atatactatg tataaaatat 540

agcaaattta tgaaactact ccctatgatc ttgaataagt caatatttag agttgtcttg 600

agttatcttt aaaaaaaaaa ttaactgaat ttttagggaa ctaacaacaa atttcttttg 660

taccaaatta gcatcattac atacaccatt tgataaatct ttggtgtgat aaatatttat 720

gctcttttaa ggtaaatcta cccagctgtg ccatttctaa acattagaac tcaatgtgcg 780

agttaattta gaacagttga ccataactgc aaaacataac ttattttgag gcctcaaaga 840

gtattcaata atattcgata tataagtgaa ccgtagcgat cgaacctgcc agaaaatcat 900

gatgatgagc cttgcagcca tcaccaaaac cagaatcagc cgcaacaacc ctctcatctc 960

catgcacctc ttttgaagtt gccaaatcga tcgagttagc caacctttta tttgctcctc 1020

ttccctagca aacttcgctg gatattctcc tcggtagcat ctggcacatc actagtttaa 1080

tgttgtcttt gtgtgtatag gtcttggagt ttttgtttta tatttgattg ataatttgtt 1140

agggagaaaa ggaattatgg tagtataaca gctatatgac tctttcggtg acatagtttt 1200

catcacctgt ttcgtctctt gtaagaggct gtaagtttcg tgttctctgt tgtttaatta 1260

atcggagtaa cttttatggg ttgcagcact agctgccaga ttaggacgac gtacagggag 1320

ttttgattgg gttctggcgt tgttacgcat gctcagtgtt ttgcccaagt gcccgtggca 1380

tcgatcgtgt tgacacaaaa agaaaatcgc gacgtagcat gtttttcatt gaacatgaca 1440

aaaattttgt tacaatagtg cctaatcacc gcaatcccat gattaccgag atcaacagaa 1500

acccagatta ttacacacgg ttgtgtgatt ttcatgcata ttgttgtgtt tcgcaaccta 1560

aattattcca ccacagcaac ctaattaaat tccatgagga gccgattcca atcgccgcct 1620

cctcaatcct ggctgccaac cgctgtgctg aagacgccaa tccattgaaa tttttattaa 1680

gttttagata ttttttttt ataaaatatg atattcctag ttcgattaac ctcaaggaat 1740

ttttaactta ggaggtgttt ggttctgtgg actaaagttt agccctggtc acatcaagcg 1800

tttgactttc aaataggaat atgaaatata gacccaacca actgtact 1848

<210> 3777
<211> 1719
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_212590_G1, chr6:30091250..30092968, Cluster 23

<400> 3777
caactaaggc agtgtacaac cccatttatt agatggtctt ttaaggtgtc tttagggggt 60

taattgaaaa aatacaagag atgggctctt catgaagagc tcgtctctac acgattctcc 120

atacgcattg tctcttaact tcattatggt ttagaggctt agggttgtat catacagttt 180

ctttgttgtc tcttgtactt agaaaactgt tctaccattt cagtgttgta gatgccctaa 240

atgtttagtc gtgtaataat gcatgttgta tatttaatgt ttggcttatc tcttcctctc 300

acaaattgtg ttggaatctg tgaattgctt gctttcagct ggctattagt gagcagtgcc 360

cggttttctc tctctccatt tctctctgtt ctacatcacc ataaatctga tgtgacatgt 420

cttataaact gcaatattat attattatac ttgctcttat gagatcaaaa gcttagttgt 480

acaatactgg tctacaatct aagtgtgctg ggacggaggg agtaaactag attcgggcac 540

agcttacctt atcaattcgc ccaaacaaat taagtacgca atgaatggcc acacaatcac 600

gcacgcgcat agcgttcaat tgtgttacag tccttcttat tacgacttaa cgagtacata 660

tacattatat tacttctatc ctatactgct cccaccaaaa aaatacaatt gtagcatgcg 720

taggtcctgt ataggacgtt ttcagattcc accttcagtt tagagttata ctttataata 780

taaatctaaa ctgtttaaaa atttgtttaa tctaaacaag aaacaaaata atttattaat 840

ggtgtatttg gttcagattt ctaatatata ttcgctgcaa aaatctggaa tctcaaccaa 900

aacggtacaa cagtaggata gattcataaa aatctatatt tacctagttg agttcggaat 960

ggccccccta ctccagattt tctgtcatcc atattaaaaa ttgtcatgct cttataaaat 1020

atatagtcga cggttgtttt gaccaaacga atttcaattt ttcacaatca tatcatcgtc 1080

agttcacaga tagaatcaga tttttatgaa tctacagcta aatcacaacc agaccctaaa 1140

tatcttctaa aaattaataa ctctagctta acggtttttt ggacctcata atgatctgct 1200

ctaccaaccc tagttatcaa atttttgta gctgaagtag tctcaaatag gaccacagta 1260

tcgagtcaaa ttgttcctag tgtaactaag tttacataaa aaattattta aagatatctt 1320

tatctttact atattcaagc accagtttta acggtcgttc cacgtaaata ttttttcaaa 1380

aaaatcctac gtttgtttag aatcaacccg cactaatata atctcttctc tactactata 1440

ataggagagt ttaaaaaata agttgaaatt atgtataagt gagtgcttga accttggttg 1500

ctggctccac attcacaccc acctaatcac tagaaaatat atattttgtg ctttattaaa 1560

acaaaaatta ttctatgtca tatatataaa tcatagcaat gcacgtacat ataactagca 1620

tatatatata tatattgtct ccgctcttcg cataatattt tttatgaaca cacgggtatc 1680

ataggcagca aatcagaggc ccccaccact cgcctcccc 1719

<210> 3778
<211> 1638
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_217732_G1, chr6:66033077..66034714, Cluster 23

<400> 3778
agatatggct gaatttgtgt tgtgtgctca tgaccggaaa ttgttttccc ctattggaca 60

gttatagcta cggtgctacc aatcttatat aagaatttcc aaattaggat gtcatgcaca 120

ttagctaatt ttgagccaag tttcatctat gctagtgtga aggcaaacga acaattacag 180

ggtaacatgg taaggatagg gattctgcta aaagagctta catttcaaca cacttactta 240

atgcaggcta cttaattttg atttaggaga taacattcag gtatgtgttt tcttttccct 300

cactaataag tacagagtga gagaaaccat ttaggtttgt gcattgctca aaagtcccta 360

caaatggtgc atttctattc acttgatttc atggctgaat agtatttgtt tatagtgaaa 420

tactagctaa aaatttagaa aggtgatatg ttgaatactc cctctgtttt ttgtaagacg 480

tttgtctctt ttgcaatctt tggccttatg caccttgtgt tctctggagg gagcaggtgt 540

ttgcttggag aaggtagtgc tatttgagtg aggattgggt gtatatttgt agaactattg 600

ctcgatacat gtcattatgg atatttcccc acttcagcat atgccggtga ccatattatt 660

tttcttttgt gtaaaaagag tagttcacta atattattgt gtttttatgc agtgattact 720

cgatgcatct caatcctttg aggactaaag ttcatcaagc tcatcatgat ttggtaatag 780

atatgttgga gtcagcaatg aaagatctat tgtaaataag tagagatcgc ctcacttaca 840

agaagcttct caggataatt attgttctgg taagcagaac atatttgcat tcttctctat 900

gaatatgaag catgaactta gtgcagctac tacaagcaat agctagtttt aactgaacat 960

ggagaacaaa tgttgtaata aaaaataggc aattttgttg tgttgtgtat tccattttga 1020

gcttatttcg tggttgctat gggctagttg tctgttagag ttctcattgc tggagataac 1080

atcaatcgga cgtcggaaca agctgcatat agctgaaaat tggttgtttt ggctagacat 1140

ttcagatgat attagacaat tcaattttct ataaaaaggc catggttctt ttcctcatcc 1200

tgaagaatga catgcgtgag tttgagtaaa tatgcaagtc atggtttacc acacatgtat 1260

tgtattttag ttttggggag gacaaatgat caatttatat gactgatatg aaaaatttgt 1320

aaaacatata ttatattcag ttaaatttaa tagactcact ttttgtaaga aatatattaa 1380

tatgttaaac ataattagtg attctctttg cctgagtcaa actcttgagt ttcgaatgta 1440

tatatatgca atttgaggcc aaatatcaat atatctttta gatttttcag tttaatggag 1500

gtgtttgttt catatgtgca ccacttttct aattaacata cttcgaattc tcaacgctcg 1560

tacatatcac catccattta tgtaccctac gtaaaaaagg aattccccat ttctttatac 1620

ttggaattaa ttcctttc 1638

<210> 3779
<211> 1971
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_223707_G1, chr6:102373630..102375600, Cluster 23

<400> 3779
ctagatggat tcaataagaa acatcgacaa tatagcatag gtaaacgttc gacaaatata 60

ccataactat tggatttcat gatgaataat acttaatacc tcataagaat agaccgaagc 120

ataaacctac agtgccaact acataaaaca caatgactca gatcatacca tttaaaatta 180

aaataaataa aaacagttag attctaagaa taacaggagg attcaaaagc aacattaaag 240

aaacaaggta aaagaaggca aattaaaaga agtgacgaca cacataaccg aatgagacaa 300

cagatgtatt gagtaaaggc atgtgagaat gacctgattc tcgtccccat catgaagatg 360

agcatggtct gcgctacatc gggcagattt attctgtcga gggcaaaccc cttcaccatg 420

acggtgatga gctccacaac atccccgtgg cggagggtgt agagtcgctc agcggtgccc 480

gtgctttgcg atggcacact catgcttttg cgactgtgtt tgtgatcgtg tttccaatat 540

actaatcatg ctagaatgtt ccacaaaagt agaagaataa aaaccaaatc actgaaaatt 600

atggcaacat tatataatgt caatctaatt ttaccttctt aaacaatcat gcctactttt 660

caaatagaag cgaaaataac tctgatcaca agacgaaggg aagcatctag gtaatcattt 720

taggtatata aaaaataatg ttctaaaaac attaaaaaga tttagaattc taaagtgtca 780

ataatatata tactccttat gtccagacat ttaactttat ctagatgcaa tttcaaaatc 840

agatacatag cagtagcaca aaaaatagat acacaacaat agtacaaaat ggggtaatca 900

catttggatg acaatggttg tttggtatgt atatcacctt gtattaggtt gcatctcttt 960

ttttatatat gtcttcatgc atgcatgatc tcaaatagtc tctacatcag ctaagcatca 1020

caatccttca ttttttgtat aacaataaat aagaaacaac tcttataatc ttataatctc 1080

taaaggtaat gaagtgacct attgaagttc tacatggtgc caaccaatgg aacaactaca 1140

gtgtagcaga ttaacactgg gattgcgaca cataatgcct ttttttatac aaaagcatgg 1200

agaatagtga atgaaaaatg aagtgtcaaa ggtggctttt taagaacaac atagctctac 1260

aaaatggtga aaatgaatta ttcataagta gtctttagtt cgattaaggt ctatatcttt 1320

caaagaaagt tatgctaagt tatagctctt ggtgtaccgt tctacatcaa aggaaaaaat 1380

aactacctct aaaaggtatt cactattaaa ttgtttgttt gcagtattcg aatagtgatg 1440

gtgagctgat ctgctagtgg agcagttgaa ccaaaactga tgtaatatcc ctagtatcca 1500

acttaagttc ctcttaaaac ataaactaaa ggaggagaaa gaatggttta tgtggaacat 1560

ctccaaaaaa gacgtcagtg gcattgcttt ccttcaaccc gtctgtgagc atctgcacaa 1620

acatttgtgt ccatacttta tttataaaaa agtgtgcacg atgcctatta gctagttatg 1680

ccaaatttag aatacaacac tgaatacata aaggaaaatg tgtgtgcact tcctcagtct 1740

accctatgat gcatgttagc gataagacca catctagtaa aatagacatt tatgacacta 1800

tgttcactat ttctagaatc ataaggtttc ttatctactt ctaaatagtt aatgatttct 1860

ttacaacact tcatcagtgg ttcgacttta aatgttgagc acaactctag cagagaacca 1920

aacaatcatt ttgcaatcta catagacaac agaatgaaag acgagaattc a 1971

<210> 3780
<211> 1560
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224181_G1, chr6:104471623..104473182, Cluster 23

<400> 3780
tgaattgttg tctacctatc aaaattatag ctcgacctct atttcttatg tacatttaat 60

gtgtggcctt tatttttgtc ttttttattg gttaattacc aatgactcct tctattgttg 120

ttgtttgtgt tctgtagcaa cccatcttat tttttctttc aatattttcc acatgacaac 180

ttggataaac ttttatttca gattagatca aatttgaaaa tctacagttt acaactactg 240

tcaagtgctt atctttgtta gtaatttgtt gtcctatggg actcttttgt tgatcacacc 300

ctatggcgtg catttagcct aggaaaactt caggtaggga aaattactta ttttagtttt 360

cgtttagttt ttcaccatgt cgctatgcaa caattgatga cttgtacagc tcttgaattg 420

ttgatgcctt ctttgaaata gacatttcac attccggttg gaacactctt tctttggtac 480

tccacttgtt tttcaacact caggagtcat caaatggaag tgtatccctt tgtgtccctc 540

tacatggggg aggaaccccc ccacacccac acacacacca cacacacagg gagctctaat 600

atcctccttt acttgatcag tgtttttaac tgcaaaatgt gtattgcgat actacaaata 660

ttatattttt taaactccaa gattgatgca aaaaacaaaa tatctcaatt aaagtatata 720

gggggagttg gataggagga atggttggag atgaggtgaa atagggtgaa ggtcatttaa 780

atatgaatag aaactacaga tggcgagatt ttgggagaag tcgttggaac cggtctaaac 840

agtgtctggc tgggtttatg tttagatgac ctaagggtct gtttggaagc acccggtttt 900

taagaaactg gtgtgcttcc aaatagacca atttatgctt tagtttctag aaactagatt 960

tctagttttt aagaaaccaa gaaggtggtc ttccctagct aaaactagtt tttgctcgac 1020

aaattacgta ctgcccttag ttgctttggt ggaaattacg gtgatcgcca ccgcactcaa 1080

taatatgcat gtgatcccct caaatatgtt atgcttgatt tgaatgttta attattagtt 1140

aaaatttttt acttagaaat attagtttaa tctatgttta aaattggcag gaaaggaaaa 1200

taaaaggaat aaatgaatca attactttta aaatagagta agggtaaatt tgtctttgtg 1260

taccagaaaa gctagaaact agtttctaag aaactggatt ccaaacatgc acacctagtt 1320

ttttcaataa atcggttatt agaaattgga gatagaaatc ggtttcctag aaattgtggt 1380

gctttcaaac aaccctaagt gcttcatccc caaaacagaa accaagtaaa aattgaagat 1440

gtttttgtat aatatatgtt tggaagcatg ttaacccgat tttggctttc tgtttttcat 1500

agttgtttgg agttgtttca ccagaaaaag ataagaaata gaaggtatat tttatattta 1560

<210> 3781
<211> 2208
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226813_G1, chr6:118682559..118684766, Cluster 23

<400> 3781
tgtttttttt ggagattgtt aataacgaaa aagcgtgtaa caaaactatg acgacaaatg 60

acatgtcact aaatttatga caaaaaatat gaaacgtcat tgaacatgta atgccatgca 120

tgataggtga cgaagtgatt ttcctcatag agatgtcata aatttcaaaa tgtgacataa 180

atttagagtt ttgtgacata aagaaaatgt catagaaggt cacaagtgct gtagtgaatt 240

ttagcgttgg aaaaatgtat aaaagcgtga aatagcaata gacaacttaa gatcttaaga 300

attatgtacc atggccgtgg gtgagccatt ttcccacaac aaagacgaaa taatatttgt 360

gaggatttct ttaaaaataa acatcttgca tttggcacac attaaacaca agattgaatg 420

tcaaccatat ggtgcgcctg agtagccaac accaattttt ttgaaagctt caaagttctg 480

atatagatta gtccagattc ctgaccagct caaaaccttc tgatacaaat cttgtggcca 540

attttggctc atgttgcttg ttacaaggtt tgcaatctgc aagttgtgaa tgaaaaatgc 600

atcagaaaag accacaagta ctgcatttat gtttagcaaa ggcgttattt aaagctgagt 660

acatcaacaa aagataaggt tcagtcatga atgttttaaa ttgcaaatgg gaagttatac 720

aaaaaacaaa tatattgata tattccttca ttttcccatg acagaaaaac gaatataatc 780

cctctttata taccctagga caagcttgca agagatcaat cgtttgatta ttgccaaatt 840

aagtgtagtg atggaaagta ccacaacaac aagcagtaag ttgccatgtt aggatgcaca 900

atagatatat aattaaccat aggtatacca acctctatca tcattgtgtg catgcgtgcc 960

ttgaagttta atcaacctaa accacatatt tattggtagt ttataaaaag gctagttcaa 1020

tgagctaact aaacccacga aggccgggac caagctaggg gagcatgatg atatgatcag 1080

acaataaaaa agttaagaaa acacaagcct tttctcctct aatcctccac cttttctact 1140

atgtgctatc ctaaacttgc atcatttgct gccgacaaca agcttaagga catacgaaaa 1200

aacataagga atcacagttc tagcaagcta gaacctcgcc aaagcattaa tatagttaac 1260

caaataaaat gggactagaa ccggaggcac cctcacgggc gccctatcag gagaataaac 1320

aacttgctat ggctaaagtc agcaggcagt tagaagtttg ttggattcaa tagcaattga 1380

tatatacata agtggttgct tgcagataat agcatttcaa atataaccac acacataata 1440

agtcatagca tagatataca catacacata cacatataca tatataatta agtgacatca 1500

atggtagctg gatgacacta caacctttaa ggcttttgtt tagctacatg ttacattaag 1560

ccttcaagta gaaaggtaat gacatataat gtgagagatc cacatctgct ttagttttga 1620

cgctaatact gtcttgtgca acaatttcta gcgtcctatt aagatcatct ggagacaagt 1680

gacacctagc ttcttcttct catctattgt catttttcta taatatcaaa atatagcata 1740

aggaatttac acatatattg tgcaaggagt tcaatgcttt aaatggtagc tacctaccaa 1800

tgtcgtaact ttcatatgta gccactgcct ctccatggcc ctgctcaact ccaaaacaac 1860

atctttagtt gggcaacgcg atagtaaatg acacctcagt agattattta caccactgtt 1920

cattttaatt gcttcgagtt atgtatagca aggctatgca gttgcaattt gctctaactt 1980

attgatttaa aaggccaatg ctttgtataa tttaacccaa aaaataagcc acaattcatt 2040

ttaagttata attttagcca aggaaaaagt ttggtcccat caagattctg ttgttaagga 2100

gtcaacacgc caaacattag gtgcaatgaa gtatacaagc caagcaactc tcaacacact 2160

aacaattaag cgcaccttcg gtaccaaaga acaatctaaa aatatact 2208

<210> 3782
<211> 1505
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228981_G1, chr6:129821589..129823093, Cluster 23

<400> 3782
ttctctattg tccacgattc acgacaacct agatatgtaa gagcgttctc aactgaacat 60

agggtatcac atatattatt aattagtgta aatttatgta tcatgtgcta ctcttaaatc 120

ttgttgtata caaagtgctg atctaatctt ctagttggac aatatactct accggacact 180

atcttacatt ttattctttt tttacagaca aggatatact gttattatag ggagtctcta 240

gctaggtaga tgaaagccgc caaattgtaa ctcaattggt tgctgtatgc aatatccttg 300

acgggaacac aacggggtag gacgacagct gcatttatat ggatataact agaaatcgcc 360

attgtctttt gtcgttgtgt cccaatcagt cactatattg gcatgtgcgt ataaaaagta 420

cgtatcgaaa tctttggttt tagtcctatc aaatattcgt gctgtgtttg gatgcgaaca 480

aactcattca tatgaataag acatcaacat tgtctttagt ttgagtccca atcagttacc 540

tattgacatg tgtgtataaa ttatgttgta tcccaaatct ttggtttgag ttttatgata 600

tattggtgtt ttgttcggat agaatttgtg ttaactaatt ttttttatcg atctgtttag 660

gggcatttgt gctaactaaa ttgttgcctc tgttgtgatt ttacctctca ttttttttaac 720

ttcaagattt tatactttca ttttaaaaac aaagcgttgt tatacccttg caatgttacg 780

tatagttaac aatgttaaat ctgatgtgaa aagacaaaaa tatctatata atttattgta 840

ctttatctct aattatatta cgtaattgtg attttatcac cgatggggtt tcgcccacac 900

agaatagtaa gatggtagct tggacttttc acctatttct tttcacattt ttatttttt 960

aatcactgaa gctgattttt gctaacgacg ctgagagaga ggagggcaaa cagtagctta 1020

gttttcaaaa cagaggaata atatcacaaa gttaaaaaaa cggaatataa aaccataatt 1080

gcaagagcag cgaagggtat aatcataatt gtcccatcta tctacgtatg ttttaaatca 1140

gtaagtacag gcatgctaac aaaaaatgca ttgattcagc attatcataa aaatgttaat 1200

aataatgctc caatttttat tttgttctta gatcgtctcc gatgaaagtt ggtaaaggct 1260

tctctacata ccatctccga tgaaagttgg taaaggcttc tctacgctaa aataaaatgt 1320

atctaaaata tgagtcttta acgtatatga tacataggac aatgttacag agaatgagat 1380

aaaaaaatta aagagtttgt aaataacaaa tatagatgag aggtttaaag tatagggcta 1440

gagacaatct tataatcaca cctttcgtcg agtcaccatc gcctgcacaa ctgcatatcg 1500

tccac 1505

<210> 3783
<211> 1523
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229285_G1, chr6:130885208..130886730, Cluster 23

<400> 3783
actacactac agagaaaaga aagtgaatgg tagagtgaga ggtgtgaatg aactcaaaca 60

caccctatat tatagagtag atctattttt ttgaatttct tgaatatttg ttataaattt 120

taaacaatca aaatggcacg aatggatcat gagatgacgc atgataacag atggtcaata 180

ctaattggtt ctccaacaca cgagtcaata tcagtcgctt cagctacaac accattaata 240

cctaccgacc gacgttggag ttcaattgat cgatagtgac cgcctaacta ataggagcat 300

aggagctaaa tgtcggctaa cctgggtcac caggcccccc tggcctttgc tcatccactg 360

ctacagggtc aagacttcct gtcacttacc ttgagctctc gtgctcttca gtcccccatc 420

cactactagt cactcacatc tcttctgcag gtaggaagat ttgagattgt tttggttatt 480

tttttagttt tgtttttgca tctgattttt gaacctcatg tactacatcg tcggtcctca 540

tgaaattaag tagaaattca gcatttgaag gctacttact tcatattggg tatatgttca 600

tttatattaa acaaaatgtc ccttaatata ttattgtgag ctccacaact tattaagtgg 660

ttggatcaat cagggccata gctcaatccc aatacgtcaa acaaaacaaa agctttgctg 720

aatttagtcg aaataatcaa taccaacatc tggtgggtta gtgaaactag tctaatgagc 780

ccatactaac gctaagctcc tggggatggg aagtgaagag gccggcgacg acgacacgag 840

tgagcagaag ggaggagggg gaggatgtgg cagggttgca gaggggagcg ggagagggag 900

gggcttgtgg cagcagggtc acatgggtta ctctacatgt gatggatgag agatgaagga 960

ggaaggatga tcaaatcatc caaataacat tgactattgg atttaagtga gtaagagaga 1020

ggagggttat ctaacgatat gaaccgttgg ttttgattgt gcgttatttg tcggtgcaat 1080

ttgtttggtg gatgtagtgg aggttatcgg tatagaggtg ttttgattgt gtggatttca 1140

caatgtttta acaggtggat tatataatgg tatagaggtg tagatcaaga cattaactaa 1200

aacaccaatc tcgatgaaaa tattacgagg gaaagagtgt gaccggtagc taagcactct 1260

tttcaaacca gtatgttgtt attatgttat aataataatg ggccaattct aaaagtctct 1320

catagtcaca cccagttcta tcttaactag ttagttgctt attcaccaat acattttcta 1380

tatattacat atggttcctt tgtataacat aaaccaacat gagttgcaat ggttcgaggt 1440

gagtactctc ttcatagaga ccaaggttca aatcccagta agcgcatttt tactcgcact 1500

ttatctatac ccatatataa aac 1523

<210> 3784
<211> 1916
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229391_G1, chr6:131491848..131493763, Cluster 23

<400> 3784
ccattgttgt ggcatgtgaa tatgtcttgc ttttgcttgt gcagatgaca gaaatcaggg 60

gcacagggca aggcaatggc ttctttggcc agaacagaac catctgattg gagaagaaaa 120

ggaaacaaaa atatattttt aggagcatat aagggctatc tgggctgctg cagtctaggt 180

ccaaaggcac gttctagccc aatagaacat atgagagcat gatttatggc acatatagag 240

agcatagtca caaagttccc agtgcgctgg ggtcatggaa ggtggcacat tacttgcgac 300

gggcaggggg agagcccccc ccccccccct acatccatga aactccattg gagaaagatg 360

tggaggcctg gagggtagag gagaagggag gaggaagaag aaaaagagat aaaaatgagc 420

cttcctacca gcttgtgctg cctccgccac tggtcattag gaaatcagac ccccttttagc 480

ccattcctag atctgccact ggtgacgggt ttttacatgg cagggtaaaa aatggctctg 540

catagcaggg ttggggaaga ctagcctggt ctgttttgag atgaatgtgt cttggacgat 600

ggatggtgtt cttttggtct aagttcagtc tgtttgctgt tatcgccaga ctaggtgtgt 660

aataagggtt gttttgaagc acagttattt gtttgtctgt cgaaactttg ttggcggtaa 720

gaatagtgga gcttgagtag gagcatgttt gccgggtgga tgaacccttt gtgttcatgc 780

ttctgggtag gaattcagga tgtggtcgtg ttatttcatc gttaaaaaac ttctataatt 840

ctgttgttct tgagtaatga aatttggttc gtccgtgttg aaaaaaaggt gttgatgtct 900

ttgaccctgt tttatgtgac tagactgaat tttattggaa tgacacataa aacgcaaaga 960

tgcttatata gacacttaaa gagagaaacc aaatgtgaca tcagcaagct tttccacaag 1020

agtcagtcta caatggaaac aattatttcg cagatgctta aattggtaaa tttagaaact 1080

ttttcaagca cttgaccata taatgtattt acatcataat ccagttaatt tttttatttg 1140

gagacaaaag ccaggctcct gtaagagatt gaagcaccag acacctacac gagcgccgat 1200

tcaggatgca agaacacatg ctgcctcaag gtagcttaca catggattga gaccttaggt 1260

gtctcctaag agcccagtgc tgaacgtgcc cttacagagt gggtgttaga gagattgctg 1320

gagatgctta gcttggtgtc taaaaagtta actagtgcgt gccatttatg gtctcaatag 1380

aaaagaaagg cattaattgc atctgtgtat gttggtgatt gattgagggg catcatagtc 1440

atttcccttt ctccttaatc tgccttaaaa ttcttataca tgcaaatgct tgtagatgga 1500

gagagtatga attataagta tgttcagtgc atagaaatta tacagctgga ttcatatttc 1560

aaaatgcttc caaactatat cagtttccta gttacagatg atacgttttg tgagaaacca 1620

atggccaaag tataacatta aagacaaaag aaaaacaaat atgcctataa aattgtggaa 1680

caaagggagt accttctgaa caatatttcg ctaggtgctt accacttaag ttctaccaaa 1740

tgaccccaga aagaaactat aacgcaatta aacataatgg aagtcctagg gggtgtcact 1800

gctgaacttg atcagcgaat ccattggaag cacgcatcgc agcctcgcag gtttcaagta 1860

tatttttgca gcagcatgtt tcgcacagca gaaagggata atcggcacaa tacggg 1916

<210> 3785
<211> 1742
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2304_G1, chr1:12415855..12417596, Cluster 23

<400> 3785
gatggttctg tgccaagtgc agttaatgtg gtcggtctct tactcaggcc tggggttgaa 60

cctattgtac attgatacaa catgataact gaggaaatgt acttatgcta tgatgattga 120

aatcttcctt attcaagtgt tcttcatgat aactcttttc tacttacccc ctattgaatc 180

tattttctgg ttgattgaaa aagtagggct ctttcataag tactccaaac tatgcactct 240

ttcttgatta tcccaaacta tggacttctt tcgtatttac tttacccttt gactactcct 300

ctcaacttgg tttcatggat aggtactagg agatggttga agggaatgag attttgttgg 360

tggaagtggc gaatgaggta gttgatgtaa tctattgtac atgtaggact tgtatcaacc 420

ttgttggtgt ttatgccttg aacaatctaa gtatgaattg ttgattatgc tactattcaa 480

atatgagaat aagtccattt gtccaatgat gttattttca tgttattctt acttgtatgt 540

atgtgttccc agatgttcat atatgttgtt ttactggtta taacatcttt tatgtgttga 600

ttttgatatg tcaggcttgt atgtgttgtt tactccttct aaaagcctat attgttgttt 660

cctagttagc actacatgta tgttattttt ttccctaatt ctctcagttg tatgagctat 720

tatctggatc tagtttagat gtttgtgttg atttctggtt ctgatagcat gtatgatcta 780

ccagtttcaa tatctggtga aatgataaac cttatcagaa tgttgcaatg aagattaggt 840

ggtttgtctt tcttctacgt gcatgatgct aactacctga gcataatttg tatctaagca 900

tatgtccatt gtccaatgat gtttaacaca tggtatcttt acatgtttca ctatattttg 960

tgtatttgtt ggccatattg catgacttct gatgtctggt tctaacaact tgtaagtatt 1020

gttgtcttga tcaaaccaag tggtttttta tcttttatgt gccaatgatg tatatgaggc 1080

atttacattc tattgaaatc tatgacttgg tatgttgtcc atcgtggttg gcaaattgga 1140

gttcttccac atgggaaacc tgccatgcca aggtggtagg atacaaaggt gcatgtttca 1200

aaggttttat ttcaagagag gaggcatgtg ttgtatttca aggagaagat ataaaggaaa 1260

atccaagaag tgctaagaaa gataggacat ctccatttgt caaatacgac attattttgt 1320

ttcaaactgt agttatttgt gttttagggg gtgtttggga ttgctccact ctattactgt 1380

tgctccgctc cacgatttgt ttgctaaatg ttctcaactc tagtaactgt gctccaaaaa 1440

acgtggagtt ggggtcaact ccaccatttg gtgaagcggt caaataggta ctccacaaaa 1500

catgttttat atataaacat ggagttcagg gttaattacc caccaatgct attcgttatg 1560

gagaaataat gattcatttt cccatctttt atttcctctc atcacccttt ctccctgcca 1620

gcacacatct tcttccccac cattccactc cacgttttgt cgagctctct ccctctgtcc 1680

acatcggtct agcttgcctt gtggacaagc accactctag caactatcca tgagtagcta 1740

gt 1742

<210> 3786
<211> 3074

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230893_G1, chr6:138639377..138642450, Cluster 23

<400> 3786
aggtacatct taaggtgacc atctctaata atcaatttac aaatatggac attctaagat 60

gaccaactat gttaatcgat ggttgtcata tataggcgat tgtcattgga cacctgcctc 120

tataaatgat cttcatagtc atgcgtttgc ttgaaggcct cttgggcatt tacaaattac 180

aatagtaata tcttgatgtg cttgattcca ttaatctgaa aggttgcctc ctaaaatcaa 240

tttagttgta ataaaaattg ttaatagttt gatatgttgt aagttttaga aatttaaaac 300

tacattcttt tacataagct agaaacctcc tccatcaatg ctaggggcat caagattttt 360

ctttggataa atgttagtcg agccaagttt agagagatga ctattcatgc atctatccac 420

tgtaaggatt cttgtcctcc acttttctac atttcttaca cttttgaatt ctaccataaa 480

aatctatgct tcctcacatt cttttgaatt ctaccataaa aaatctatgc ttcctaacat 540

tattttgaat tccacttaat ccattgtaag aattcacgtc ctccacttaa tctatgtttc 600

ttagacttcg ttcataactc tttctaacat tcttttgaat tctaccataa aaacaaactg 660

actagatggc tccaagattc actatggttc cttgggttcc tataatcaat tatttgataa 720

agatatccca ttagggttag ccttcaagga gttgtacaat ttataatatg gtgaacaaca 780

caccaaaaaa taacgaccaa gaggaatttt atgaaaactt gtttaaaagg tgtttgcgaa 840

taatagatac tttgtgtttg tcttctcatc cattagatta catgctttac atggcatcaa 900

tctagatgtg gatgcattag gtgaaaggat tacttggtac aacgaaacta atgtggtata 960

gaaagagatg cttagagtgt atactcatta ttattgttat gtttttattt aaggttctca 1020

tattctattt acagacacta cttacatatt ctggatgata atttcacata tgcagcttgg 1080

agcttctagt caattcaaca tcaagccaag gaacaactag atactactag tactatgtag 1140

atgtaggcct cactacacat ggatggcaaa gtcatttgta ttttgttttg aaacctaaca 1200

cattatcatt tagaccaaga tgttccatct ttggtatatc atgtgttgat ccttggaaag 1260

caagagaggt acacaaatgc atgcatcgat ttatttaaat aatgtgcttt gttacataat 1320

cattgataca acatgaatgt gctttgttac ataatcagag atattcacta cacaaactat 1380

atcatgtaat gtagtaacta gtggtgatgg gtgtcctcca cttggtttgt cttaaagaga 1440

ctattgtgtg taattttgta tgtatgaaca tatattaatt tgtacattac tgtttgtaca 1500

ttataacact tggtatgtat caacttgatc tcttttaaat tatgatatat tcattattga 1560

atcatgtgac ggagattcga gctcgttgta attatagtat aatcttgaca gtagcgagat 1620

atatctatgc attaatagta ttaaatgtag aatactagaa aatatttttt acatttatta 1680

ttaaaataaa ttaataaaga cttaaaaagt gaacaacact gctgggttta agccacttac 1740

cttgcagaga gtataatact ctcactgcta agtagaggct tgatccaaca atgaccctca 1800

tcctagcttg ttggatgtag ctaagtttag tctagatact aatttttgg attaggcgtc 1860

ttaatattat gaattggaag cttccaacgg tgctccaaac atttatcttc ataggacaat 1920

ctagcaaaaa aactaagtcc taaaattcat aagataatta taaatatata gtctttcatt 1980

tggtggactt caaccaatat cgccaataat aatcactaga tctatttttt tctaaaaatc 2040

acccatctat acccttataa aaatacataa agtaaaccta aatctttatc ttatctaaat 2100

taccaacata tgccattatg aatcaataat gtaaagcaag ggctaaattt gatttttaat 2160

cgtcactatg agataaaata taaaataacc cttttaactt tgtatttaaa tcatccacct 2220

atctttcatc acaaattact tataaatacc catatgagct attatcgaaa acaatgctat 2280

aactgtagaa cacactatag atgttctaat tatacattgt attcattatt aaattaaagt 2340

aaaaataaat tttatatgcc attatttaga ccaagtaaat atacatacat tatattagga 2400

taactattta ttttaaaact ttgtggttct ggaaaatgtt ctgttcacaa accatatacg 2460

aatgatacta acactcacat gatattatat tgaaactcaa tgaactataa actttgtaag 2520

ttattacttt atagaagttt atatattttg attgaagcat tatgcaatat gtatgctagt 2580

aatttaatta taaatacggt ataattaatg tgagctaatt gagtgtcgtg gtgctggcca 2640

aagcaacctt ttattctgtt atagtaaata agagtggagc acaagaccta aaattcatct 2700

cttaataaaa cacaaaatga ttttttgca aagaaaataa gattagagtt tcaaatgagc 2760

acaatgttga tttcttacaa tagctaataa gattaaaagt caaaatctga tatagagatt 2820

tatcgtaaaa cttttaataa atatttatct ctattatata aagcaccatt ttttcatggt 2880

tccacattcg tcgtgctcat ccttctcctt ctcgctttat gcaaaaataa ggcaaaatta 2940

tgtacaagtg gggatttaaa ccttggtttt tagctccaca ttcacactca cctaaccaac 3000

acacatattt ttgagtttta ataaaacaaa gtctagccat gtgatatata taaaccatag 3060

caatgcacgg acat 3074

<210> 3787
<211> 1605
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231461_G1, chr6:141048157..141049761, Cluster 23

<400> 3787
caaactcgat ggcagatgcg agacaatgat ttagacaagt tgaagccact gaatagtgta 60

ttcttacgtc ctatatgttg gatttgtctt gctttgaatt attcatatta gttgttacaa 120

ggggtacccc tgcatatctt tatatattct agagggtagg cacgcaattc taattcttgt 180

tggctactat agaaaagtct taatcctatt ataaatatta ccattctata gtcaattagg 240

tcagtttact tgtgaaagtc acatcacctt atgttgtgta tttactagca gtccgatcca 300

tctctttgtc aattaatcaa tatatagaaa acctttagca tggtgatccg tcggctatct 360

ttcaacttga aagcacctat atatatacac agagacaagt gggcatccat gtttatatac 420

atattcatta atgtttttat gcaactattt ttttctcttt atctttctat agcatataat 480

tagttcacgc aggagtagtg attacagtgg ttcagtttgc gagaagagca tcaaccagta 540

caacttgtct tcagaactgc attaatgggt caaatcattt tgcagcgatt gcaagttgaa 600

gcaacaccct gcagctagat tctttcgttg gactagttta cagagcccat catgtgcact 660

gcacgagacg aagaagaatc gatgcataga caatctggtc gatttggttg ggacctaaca 720

agaacaatta gtacccttaa ataaaaaatt aatacagcta taaaatttat atatgtcgat 780

ctgtcaaact agtttaagtt ttatcaaatt tttcataaat agtattaata catatgtctg 840

tattaaagtt caatataaat acaattaatc taaaagtacc tattttgtat tataaatatt 900

aatttttaat atagttttag ttaaagttta aattatttga cttctcaaaa aacaaaaaaa 960

aataagaatt atatccttct gtggatatag agtatttctt acgtagacat accttgttgt 1020

agctatacat agcactagcc ttgtctctag tgccatccta ccacattaat tataatttgg 1080

aaggctctaa cgcaccaagc ttacttggtc gctgtattgg attagatcgc attgatcaag 1140

acaacgttag ggaacatata tagatacaat atgtttgtgc caacttctag ggtttttaag 1200

ttcaagtttt tgttttgcta atagatcagt tgaaatattt tttgtaatta tttatgatat 1260

tggttattcc tacatgcatt ttccaactta aaattggccc ttctcggctt ctcgatctag 1320

ttagggtgtg tttggttgca acgataagac aaggcaaaat aagatgatcc ttagataaag 1380

ttgtttggtt tagggttagg ggtcgggaca agactgtcct agtagtatcc ccattgtccc 1440

tcgaaattag agggacgaga ggagacacca gggaacgtcc tgactatctt taggtgtccc 1500

acaaccaaac gcacctgtgt ttgtaaaata atataagtcc atggtattaa gaacaaaagt 1560

caacaacaca taatgtgaac acatataatc ttgcactttg tatgg 1605

<210> 3788
<211> 2687
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233355_G1, chr6:149583787..149586473, Cluster 23

<400> 3788
atacagaaca ttgcatatac ataaaaaata taggaggata tatacaggcc aattcatcaa 60

ccttgagcat catagctaaa tatcttggca ctaactatat atgttgcaga gtaagatgta 120

gctcgccaat tgctaatgct gcaaccactt atatctagtg acaagaatca ttgtgaatcc 180

attagtttaa gagcaagagt aaaacattgg aatgaggcaa cactttgctt agtagtattc 240

acatattgta tttatatttt cctgtcggaa agcgtatagc taagataatc gataaatatg 300

gttccttatg attaagttct aaaacaattg cacgacttta gtcaaaggta aacaactatg 360

gtgtgtgttg ccttagggtg gtagcaatag ggatgatgta aggtaaagaa agagtagaga 420

agacaatgga gtagatagta ggagagggag agtaaggagt catatgttac tttactacca 480

agcaccatga agctataaac tatagcaagt tagctaaaca aaggaataga ggggtacaca 540

agcactttag ggcacacccc actctattct tccattttca catgttaact agaatagaac 600

aataatgatc cctatgcttt aataattaga cacattgtgg tgaaatatag aggatggaca 660

aggctatcac cacttgccac ccaccactaa ctatcaaaag gcctagccaa aaccatacac 720

aagcgatagc ctaagcacca cgcgtcatct atatgctcac tactttgatt tgatctccaa 780

tgaaatgaga ttaaagcacc ctaactagaa cggttatctt atgcaagata taatcacact 840

aaacaaggta gttaactaaa ctagcaatta agcttatagc aaagctttaa gactactcaa 900

ttaagtacac tcaaataaag tacttgaaaa tagtagaagt atatgttcca aataaggaaa 960

agtcatacaa aagtcgaaag gtataggagc tagatcacac ttagaagttt tcttctacac 1020

tccaagcata gctcttactc tatctcctac tactagccta gctactatag agtgaactac 1080

attagatcct agagcttctt gatcttcttt gatctgagtt atcctttcct atggtgccaa 1140

catcactatt tatagtgtgt atggagcatg tgggtacttg taggggagag taaagaggta 1200

gtggatcact ggtggggttg gacgtcccgt aggatcggct gaccctaggg gggaaatatc 1260

atcccgtgta taggacctcc ttcgtgcacc cgtacacaaa atcaatctag aacattcttt 1320

cgagcacacg ttttgttgtt gttgcaaata tactactaca cacagggaag cgtatgtgga 1380

aggtgtcttt ccttaaacac acataagcgc ttaaccaata acaatcacgc cagccgaagg 1440

atgatggacg aagcatcgag attgactttg tgcgcggatg cacacggagg agatcttatg 1500

catagaatat attcccgtcc ctaatgtgcc atacatactg gatgagttgg ccaggcaggg 1560

ttatacctag catgcatcca tacctatagt ttgttgatct attaatcaat aacaatatca 1620

actgacgatg ctccacaagt gcccccttgag tagtatatcg tcgcacaaaa tctgaatgga 1680

gactgcagat caggggggtca aaggttgatt tgtttgctta agtatatatg tataggacct 1740

aggctaatta attagcgatc gagcaggtgt agctagctag ctaggagagg gaatgtgtct 1800

actttatttt cctcgccttc tgtgggcacg cacgcacgct tgcatattat atactcgtat 1860

atatatggtg attagcaagt tttttcaacg ttcgcaaagg cacacatgtg tcgcaagcaa 1920

agcaataaga cgcaaagcta gtcaagaaaa cgacgaataa tgcattgcac gcacgctcgc 1980

ggattaaaga gatgtgcaca tatatattat tataataatc aaaggctaaa ccacacacac 2040

aaggactaat atatacggcg gcgcgatcaa ctgcagagat cgacccggcc gtgtgaagcg 2100

aaaaaatata tagcagaatg acgacgtgcc tttttatttt tgtggtggaa gtcgcgtgca 2160

ggatatgtag gtcttatagt aggcttttcg accaagtcca actttagggc tctccttgga 2220

ttggacgacc gatcgatcac gccttgattt gttccaactt ccaaccttga cgcagtgcga 2280

tctatgtgcg tggggtacgg tgtggtcgaa agcacaaatg gagagagact cgacgtcgac 2340

gaagataatg taataaatta gtgcgcttgg cctggccaaa taaagtgcta cacaggagtt 2400

tagttgcttc ttgtacatgt acgccgcatg catgtgtgtg tatacgtgca cggttcttct 2460

tcgttataaa attaatgcgc gtgccatgca ttgatgcatg catgaagagt tcatgtgtat 2520

acgtacggtt cttcttcgtt ataaaattag atatttttta gttgtagatt aataaaaaat 2580

aataatacta aaaagctagt gacaatagaa aaatggtgca cgtgtgtcaa cttagcgggt 2640

tttggcatca aatctttgag taacaattat aagtattaaa tacacac 2687

<210> 3789
<211> 1805
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234041_G1, chr6:153191455..153193259, Cluster 23

<400> 3789
ctttgctctc acggttaata tatattaatc gtacgtacgt gtgtccttta atttaattaa 60

ttcagaactg atgggtactt attactggat gcaccagaga acgaactatt atacctgcaa 120

attaatatat gaacgacacg catgcatggt cgtctttcac accatcgtga aatcgatcta 180

gagcatcatg cacatcatcc cagtattctg cgcactactg atgagagcag caaagtaaca 240

caataatgta taacgttcgg tgcattacta catattctct ttgataaaag agcaaaattc 300

ctcgaactta gcaagctcta tcactcgtac ttagatcgaa accagaaaaa aaaacggtcc 360

tataacttgg ccaatctgta taaaaccatt caaaaccggg taccgacatg acgtggtttt 420

agatggaccg ctaagctcta gcacccttt ctagttgaga cttcaaggac ccaaataata 480

catcatgtcg agtttaacaa gtgcaagcaa gtgggagaga cacacgttct cacacactca 540

gcgaaatata tataaaaaaa ggcgcatccg ctaggatttg aaccatggtc tttagttaga 600

aaagaaaaga agcaacataa tcatctctaa caattacaac ttatattggt ttatgttata 660

caaataaact atatgatata gaaatcgtag cgatatacga caactaacta gtatatgttt 720

aattcgctag ctagcgtcgc ttttcgttac aaacgacaaa ttccttttca tttcatgttt 780

gttcttatta tgcagggaac aacgccaaag cacatagcct atatatgtgt cgcgctaatg 840

ctgacacata tatatattct tctagaatag agagttgttc ctatttgtat aacatataac 900

tcataaagcg tccgtaccat gttatcatac cgcataattt cagaaaaata attagaaatg 960

atcttggtga catggtcgga ccccacaatt aaattcgccc ctgctgaaat attgagtgct 1020

cgctgcgctg gagaaagaat cattctgcct caaccctgat aaactttggg gcctatggct 1080

attctgtatc ttatatgtac gtatctacgt cggatagaaa cctattggct attatacgtg 1140

cacagtacag tactttcaaa tataaaacga ataaacaata aaaaaatagt acacacaaca 1200

tgcattatcc ctgtactact gtttcctaca attgcaagaa aagtgtgtga cagtacacaa 1260

gtctattagt ttggaaggac agtaatggac gatcaaccag taccactaat aaattcctac 1320

tcgcctatag tttattggat tacacatctc tgtcaaatct taggggaaaa caacagagca 1380

aatgaaccac tagacagatt gaataagcag gaaccagaag cctaatggaa tgaacgcata 1440

taagcgttat tattactagt tggatttgca catatttgtg cggcgtggtt tgttgtaata 1500

ataaaaaaaa gcattgttgc tagaatggct tatctgtcat caagaaaaat agtggaaaat 1560

gtaactaaat aaacattttc ttgattgatt tttccaagcg gggaaagcca ttattgcact 1620

aacgtcagaa tccattttct tgatttattt tccatgcata ttccttttt ctaacacata 1680

cttgattgat cggcaccagc aaattttgtt aatggtaaat aaacatggtg tttatgatga 1740

aatcgtttgt tcttgtcaag cgcatatcaa aatacctatt acatactcca aggccgcctt 1800

cttta 1805

<210> 3790
<211> 1633
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237627_G1, chr7:2635310..2636942, Cluster 23

<400> 3790
aaaccaaatt agaaggtgta ttaaagtgtt ctctataatt aaactttgct atatagacta 60

gagtatatat aaactttacc ttctatgtat ctcaaataaa cattttaatt tatcctagtg 120

ttgaagtcaa tcaattaaat tcttagccat gacaaagcct gttgaggaat gaagacataa 180

agacattgca agatgctaca aagactaact atgtatgaac aaagaacacg caacgctaaa 240

ggagaatctt ggacagcatg atggtatctt ttccccacct ttgaaattgg tgtggattct 300

aaggcaagca acaagaggat tttatttgag ggcttttagg atttggatgt gtgtgcactt 360

gctgaggaat ctctgccatc ccaccaccca aaaggaagcc accactgcac aaaggacaca 420

ctacactgca ctgcatatat gcatttgtgg accacgccca caggatgatc agcaggaaaa 480

gcaaagcaaa agcaagatgc tatcggatgg attagtggcg aactagatgc caatttgcag 540

tgatgtgtgg atgaggaggc agccagtggt tttgatgccc tcctttaggg tgatggcgac 600

cttttgggat gcaatggttg gtccctttct tgctagctag tgcatctctt tctttctctc 660

tcccaacttg atgcgccatg gttaatgcaa cggaattctt tcggctgaaa tatatagaaa 720

caaaatattg tataagctac aacagtagcc gaattaaagc tacagcaagc caccacgaac 780

aagttggtcg tccactgaga atataatata tccttagata tactccttca gcttcagttt 840

ataatttgtt tgactttctt tactgtaatt ttggccggct attcttattt aaaaaacttt 900

tgaattgtcg ttaatttttt ctctgatgtt gtttagcaaa taatatactt taaatatggt 960

tttgattttt tatttttttt ctaaaaactg aataaaacga gctgatcaaa cttggtaaaa 1020

aagagtcaaa cgaattataa attgtgacgg agtgagtaat atatactcta ggaacaagga 1080

atcttgtcct ctgcgtccag attgcatgca ggccaagaga ttcctattct ggttcatgat 1140

gatgctgatt gacggtcatt gtgatctgat cgagaaacat atgctgcata tggggtggcc 1200

tgaaacaaaa tttaatcaat aattgacgcg tacctaataa ttcaagagac gcacacccac 1260

ggaatattca ccaccagtga atcattcctc cttcacgagg gacccaaaag catataaaat 1320

ctggatgcag tgggaagcta gctgcacgca cagaaacgtt gtattgtact ccctccattc 1380

ctcacaagtc atgattccaa ctgtcttttt tatcataggt taaaatgctt taaattaaat 1440

ctgactagaa ttataaacgc aattacaaac aattatagcc tatttattta atatacgcgg 1500

tgtaaggtta ttatgttcct tttatccgtc agttctgatt tggtgatcat gaattacgag 1560

gggattgaat cccctccaat cctcttgtga ccccctttcc cctcaatccc cttcaactcc 1620

gtaattcact tgt 1633

<210> 3791
<211> 1512
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_241003_G1, chr7:20722065..20723576, Cluster 23

<400> 3791
attactcaaa ctagcaaaat ataatattgt ttctaaactt gactaattca aactaagttt 60

gctcatttgg cctcgttcgt aaatttcaca tagggatcga tggcacaata gcctcaaatt 120

taccatactc cacctgcaca aataccaacc ctagagatat gtgtttagtg tttgttatat 180

tcttaagatt tcaatcgttc catatcaaca tctaattgtt gctaataaca cattttggtc 240

tatgtagttg ggtttgggga tgctaaaact gcatttgtaa atgtaatctt cggtaaccct 300

tctgaaggta gcgaccagaa caccaatcat tcaagatatg gctactgaac atttgatttc 360

atgtaataca tatgactaat aatttgactg acactatgga tatttttgtg cgatgtttca 420

taagaaaatt ctaaattcta agatatgtga tggatatttg tgaatggaca tttgagctat 480

tgttatatgc caatgttata tgagttatat ggatgaaatg tacatgaatc attttgtgtg 540

tggtgaatga atgaatttta tgtgatttat atgagaaagt aaataaatat catctattgt 600

tggctgttga tactaccatt ttttgttagc taaatagaca attgacaaaa gttaatcttc 660

tagagataac tttcatcgac taaacgacca gtcgatgaaa gttagctaat ttttgttggc 720

ttgttcttga ccgatgtaag ttatcattat cggagctaat tttttgttgt ctgcttgtag 780

ccaacgaaaa ttagctaacc aactaaagct aataatttcc gtttcctaat ggacattagc 840

cgaggaccga caaaagctag tctaagtcga tgaacattaa ctaacttcta tcgggaaaca 900

atattttcat tgggttagag tcgacgaaag atataattta ttgttgtgca tctcatgatt 960

gaattcacaa aagtctccat aaaattgctt ccaatgattg tgtcatgcta aaacgcagca 1020

gaacagatga gtaatgcgag ccctagtaga ctttaaaaga taattttata tgtatacagt 1080

tggaaacatc tctctatatg gtagtgttgt ctgttactct agatgctaaa tagttatttc 1140

gctcctgacc tcctgtccta cggcctacgg gagacgtctg cccggtgccc gcgcatgcac 1200

atggactggg aaagacccgt gcgggaaacc ctagccgcat gcacgtggac cgagaaaatc 1260

ttttttagtt tgtttgtttt cgttatatct tataattaaa atatttaatc actgaagcga 1320

tatcatattt gtgtttctaa tatttttttga agaaaactag atcacatgct atatatattt 1380

taatttttta tttaatcaca ttgactgacc ttgataatac agtgaccact gataagtaca 1440

atgaatgacc ctaataacta taatgactga ccctgataaa aatacaatga ccgacccact 1500

aaaattactt ct 1512

<210> 3792
<211> 1700
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_243301_G1, chr7:34457154..34458853, Cluster 23

<400> 3792
aatgggaaaa tatagaaaat ttaaaaaact attgttttcc tgttgtgcac attatagaaa 60

atcatttttt gtaaacaaca ggaaaataca tcaagcaaag tgacgagatg cacaagtgaa 120

aacaactcct tttcctgtac acgaccgatg acaagatgtg ccaacattgc tttatgaatc 180

actttacaac tagcagccaa acacaattca tcaacaaatt cactcctacc agagaatcgc 240

ctagaatcag tccactagag aatcagctct cggagctaga gaatcatgga gcggagctct 300

accaaacgag cctttagttt cgactagatt tgttgaatca aaaacatgta attatgcata 360

gacattcaaa cgataatata aatggcttcc ttttgttgta gttatggagc cgcgctttag 420

ttgtgtctaa acaacttaaa aaagaagaaa aggaaacctt taatgattat taggtcaaaa 480

tgtaagatga agctttacat ccattaaaaa agcttaggat agagtgatag ttcccctaca 540

ggtcgagttt ataaggtgta acataacaat ctcctaaatt atgatttgac taaacatctt 600

tcgtattgta ttgtttgtga ctattagata acacatttga ttattattgg ataacacatt 660

tgtttatgat catgtttggt actataggtt gtgtcaaaac aacatacaaa agaagcaatg 720

aaattttcca tgattattat taggtcaaaa tgcaagatga agctttacat ctattaaaag 780

cttcaaatat agtgataata cgtcttttgg tccggtttat aaggtgtctt ttaacatagc 840

agtctcctaa attgtacttt gactaatcat ttttatatca tattgttcat gattattgga 900

tactacattt gattataaat ctaatacata gtatcaagct tgcattacaa tagttaaatg 960

tttttggtca aattgttgga caaaaaacta taaagtttga ctcttgatgt aagcaaaact 1020

ccttataaaa tggatcaaag gaagtaacta acaagcccct ttcaacctat caatataata 1080

gaccatacaa caatcctctt tggcatataa tgtattcatt gatatttaga aacttcattt 1140

tctcatagat ctttcttgtc caatcagtca ttcttgttca cagtttttat agtgttaatc 1200

aatagttttt tgacaatgta ccaacaaagt tcttgtgtca ttttacttgg gtttctctac 1260

ttttgtaaac tttatttgtg tacgaatcaa tcaaatagaa agtgcagaaa aaatccacca 1320

ctatggaagg tccatgggga tactaaacaa gtttgaatta ccaagtaaac aaaaacgtgt 1380

agatgttaga agttttccat tgttcaattc ttcaaagtat tttaattggt cttgtaaaca 1440

aaccctctcg tcaccctaaa aatgaatttc atatttttg cttctctttg caaatatgag 1500

ttttagcttt agtttttaga atataaagta catgatatcc tatgttacaa aaaggtttca 1560

taaactttta attgttactt ttatgtgttc tgatatttgg tgggttgatt tagtcctaac 1620

ctgtatatga aaataatctt gaaatatctt aatgtatttt aataacaaga gcctaaacaa 1680

tcttctatga tatcttaatg 1700

<210> 3793
<211> 1419
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_243311_G1, chr7:34482420..34483838, Cluster 23

<400> 3793
aaagtagctc tagtgtgtcc aaaagggctg gtgggctaat tttagaacca tatcattaaa 60

aaatcgttgt ccaaccagct agccatctac aactattctt ttttctattt tctagcctca 120

cctagtagta tccaaacaga cccaatatct actaaaatta atatataata taattagtat 180

atatagcact actacgtaca atctttttt ctttcccgga gtgtatatgt acatactctg 240

acttttctac agtctaatgc taacttattc tttcaattag aaacaaacgg tgtgccttta 300

attagggacg cgcgtgttct tttttcacat tatacatata caaaatctaa agcagcagta 360

acagtgcgac catgtcgtcg tcttcgtaga attcgacgac tcatgcagga aacttcaact 420

cttaattatg tacgttgact ttccttgctt ctgtggttga tattctcgat cccaaccaag 480

gcttggatgt cgtcaaaacg aggaagtcgc ccctctttga tcgaagaatt tggactatag 540

agataaataa tatttttat tattatagcc tagtttttga ccaacagata taacaacatc 600

tttcgtttga attcagactg gcgggggtgc gtgtcggcga tggatgctgt ttccgggaag 660

taggtagcgc gatgtgttct acacacatca cattattgct gcttacgtgc gtgatagcta 720

ctgtgctcaa ataatggtgt atatagtcat cagtattctg gacctctatt ttttttataa 780

aaaaaaccat gacgtacgta cgtggaaaac caatcttaca ggcaccaatg agaaacctat 840

gtgggatctg catatatgca caaatgacaa ggacgatctc tgatgaaagt gaagctcagc 900

aattaaaatg taaatttctt gtcagtaaac gtttgtcttt tgttgttacc atctcgatgt 960

ctcggttatt ttaattattg aacaggtcgt tgatgagaag aaaaagtgta ataatataat 1020

ggaaaatata taactatgta cggggtggcc agagatcgag ttggagcctt ggaggacacc 1080

ctgtagccag atgcatatgg gcaacgctta ccagcagatc atctgttaag tacacaggtc 1140

gcaacaaata taataggccc aggataatac aataatatat aatgctgctc agttagccgg 1200

ccagtccttc taaggggtgt ttgggagtga agtttttca cagttttgga aaaatactgc 1260

agtattttta aatactgcag tattatatac agaatggtgt ttgacaagct gactaaaatc 1320

tctgttttca aaactgaagt attgtaaata ctatagttgt tttaaggtat tctaaactta 1380

ggtctggacc tcagtttcca aaattgtgat attgtaaac 1419

<210> 3794
<211> 1981
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_244009_G1, chr7:38607822..38609802, Cluster 23

<400> 3794
gattttcaga acttgagttt ctgacttgtt attgatcttt gaactatctt ctccaagtca 60

ctttggatga acttagagag agatcatatg actcagacaa atatatctag aggctttctg 120

actagtctaa gtcatagatc tttgtcattt taattctcta actcatatcc ctttttgct 180

caaacaatct ccaaaatagt gatttgttga tttcgagctt tctagcctct ctagatgtat 240

cgaatagact cgtagggata tttagaactt attcaaagag tagaactagt actcttagaa 300

agttgtgagt agttcaactt taatctatcc catgataata tagataatga cttcaaatag 360

ttgtacaaat tatgtgccat aatgtcgaat aacatgatga aggatttttc tagagttgtg 420

gtatctctgc ctttagaaat aaccactaat tcatatctag acaatgactt tctaggttgc 480

attggtcgtt gaagtgtgga attaattcat ggcatgtagt tgggtggcca gtggtagtat 540

tgtaactaat gcaaaagtgg tgaagtgcag tcatacattg gaatcccaaa gtttcctggt 600

ggtctttggg gttgcatctt gatgaaacca tcataatctt gtttatggtc tttagggttg 660

tttgtgcact agagttgctg gatctctctt ttaacctgtt tctcatgtcg ctggcatctt 720

caagcgaatt gtggtctttt tgttcttttc tgggttgtaa tcttttgca acacatagtg 780

tttttcttgt tcgagcttct ttatttcttg gttaaatgct tctaaatttt tgaggacctt 840

ggcttgcaca taagtttatg tatcttcatc tttgactttg ctcggtgggg gatcttacac 900

ttttcctttg agggtttcag ttcattggca atctgtcttg acttcaccat ttgagacatc 960

catggcttta gcaattttct ttgcagtctc atttgctttc gatgactcta ggtcttttgt 1020

ccttggcttc acatcctttt tagtggcatt gaaaggtttg agcgacaacc acgagtgggc 1080

accaactatt gttctagacc aaagccttcg tgcataggga gtcgctgaac ttctaaaacc 1140

atggctaaat gtaggaagaa tcgtgaagca aatatgatat gaaaggggaa tagaaaagct 1200

tgttgagaga acaatgggaa tcaccattca tcctcctcct tgagactatt gattagggca 1260

ttatgtgtag gcctcctctt acatcgcaaa agtatgtcat gcccccatcc taccctaaat 1320

cttgagtaaa tttctctgtc ctaggggcat gcttgtgaga tcagtacaac ggcccaaaaa 1380

gcattcaatc accctaggac atgggggcca tagggacctg gttcgctgat gctaccataa 1440

gtcagcttca cttgggtggg gggatatgcc ctttcaacct ccccctttgt taatattgtc 1500

tttgcttctt ttcgtgacac ggggaagagg tccaacaagg tcccttcaca acttgtcatc 1560

tatgaaacct agcgaagacc tgcaacaagt aatgttaagc aaatagttgg acgacatgag 1620

gcaaaggtgg gcatgacgaa aggggcctct cccaacaatc tccactataa gttctatttc 1680

aatgtgcaat ctatccacat tatctattac taggtattca cataattatc tactaatagt 1740

aatgccattt cactaactta tagcctttaa tataaggtat ccacatcatc tgcactgaat 1800

gaaaatacta ctttcaatat ataaatacta gaaggcattc atgtattgct atttatttgt 1860

cgttccatca tctcataatt taatctaatg ttgtttgatt ctattggatt atttcattac 1920

cttgtccatt tttaggaaaa atggaagtaa gaatatgtaa atttaattca tacatactat 1980

c 1981

<210> 3795
<211> 2069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253600_G1, chr7:105234608..105236676, Cluster 23

<400> 3795
cctacagttc cgattattgg ataacttact ctctcttact caaatccaat gaataatatt 60

atttgaatca tctctcatcc ctcatctgcg actccgccgc cctagcttcc ccctccctcc 120

tcttccctca cctccccatg atcgtagcgt caatatagga tatatgctag tagtaaacaa 180

aacattagac aaaaaagaac agagcgagtg ccaaactgtt agaaaacata caaggtactt 240

taaagtacct tagggcatgt acagtccaca aataacggtt gtctatatgt gttttgaaaa 300

acacgtacag ataatataaa caacaagcca tacattgagt tgtctattta tattgtctat 360

aaatatttta attcatgtgt ggaacaaggg ctaaagcaat catatagtgg ttgtattata 420

gtctcttgca ttaaagcaca ggctgaagcc gctcttcacg agagcacgat ctatgcctct 480

ctcctcctca attagcgtcc atattagatt ttttcattta attgctgctt acatgactgc 540

ttagagatgg catatttaat gccactgtac gtgccctacc cttagtgcgg agagtgtcat 600

cgttcatatg tgtattaatt actctgtcac ttgagcattt ttctgatata gcaaacgatt 660

taaaaaggag gaaaaatatt ttcttcatag gatgaaaaga tgtgataaac agataataaa 720

gaaaaaacat atgattagat aaaaaatatt ctgtaaaaaa tataagaaca tagtaatgtc 780

tatataaatt aataggcata taagtataca cattaattat ttctagcgtt ggaagtgcct 840

ctgctcccat gctgcctgag gttactgggt agatcgatct tcacatttca gaatgaatgc 900

gccgcagaca gttagggcga gtctctcgag gcagaaacaa aggcactgcg ttgcgacatg 960

gagcttgtga gaaccacatg ttgccaattg gacgaagcat cctacgccgg ctggtttgaa 1020

ccgactggtc atagatagat ttcgatgatg ttggacttgg acagagacgc aagcaagaga 1080

aggatgagac ggttctatcc atttttaatt tggctgggag tccaaggagt gcaaagcttc 1140

cttttcattc aatggtggct aaaggcatcc ttccgtctta cacgagcttc gcaaaattct 1200

actatactcc gttagtcgac cattaatgta acgacttctg agtttcaaag tttcactaag 1260

gatatgtaca gcccatagac agttgttgtt tatatgtata ttgaaaacaa cataaaaata 1320

gatgtttaca ctctctgcgt agcttttaat tgggacacaa atcacaattg ggacataaac 1380

acacagcata cctggtttaa tctttaggaa atagtcgctt cctcaagcat ttcagtgtag 1440

atacatgttc ttccttttct tcaaacagag gatgaacaac attatttatg ctataagcta 1500

acaacactat ttatgccata aactaagtag aggatgaact aattaatcta acgtcctcct 1560

cttatggtta ttctccctat aaatcattgt aaacagtggc ctaatgtgag catgcaaaaa 1620

aaaacagagc atgtaaaaga aaatctatta tctgagctac cagatagacc agttctagta 1680

gttgtacttt gccatcagtc cactagtcac caggttgaga atataatctt gtacctttt 1740

cctttacttt tttaatcctc ttaccacagc taagaataat ctaatcttat aattgatatt 1800

ttcataatgt ttttccttac tattttgtaa caaaagccta gtctaaccac acactattta 1860

ttaactgaat aataacacac gctattttga agaactgtat tagcataatt gtatagctca 1920

atcatttgta aagcacacca gtagaaccat ttcaagcata tatctagaca aagattgaat 1980

ctttgaagaa actatctaga accagatgtt ggattgaatc tcacgtacca agttcttagt 2040

tctgaggagg gaaacccaga ttgagctac 2069

<210> 3796
<211> 2466
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264909_G1, chr7:166734529..166736994, Cluster 23

<400> 3796
ttaaatttat ttttcacagt atggtctgta gtattttgca cggctatagc ttgccaaaaa 60

atagctctgt ctctgactta tcctaaaaac agttttttt gtaaagctga agcaatttcg 120

caaataattt gacagaaaca gcttatatat actagagtca gagtcatttc cctgtattaa 180

agtgttagaa ttatagtcat ccagagccag agtcgatgat gctactattt gtggcttttt 240

ctccgcagtt aaaaaaaccc tgactattat atgtttttg cagtaagtca tttacaaaaa 300

aaagtgttta gtaagacttg ttttttaga gaaaagtcgg aatcgaagct ctgccaaacg 360

agctctaaat ggtggtttat tgaagacgaa agtaactaca accgagagtt gtaagaactt 420

attgttgttt acacaaagaa aaaaggaaaa ggacaaaaca tttatgattc aactgatcaa 480

attaaaggat caggatcaaa ttaaatgtgg ccacgataca agagttttta agcctacaga 540

gtcaagagca gatgtcacta ataacttatc tcatgcttgg cactgcaaaa cgaagcaaac 600

acgttataaa aaaagcatga caccacaact aggagaaaga attactttat atatgcacta 660

tgactaccaa accaatgcaa aatataattg ttttttaga gaaatgagtg ctttttattg 720

atcatataat aagtcacaat catgtagatc tatatattta ggtcaaaagc ttttgctctc 780

cacgtttgga ctcattattt tcttttggtg aagagtttct ttatagtgcc tccgttggaa 840

aatagctcaa gctagggctt acaaaatatg gatgtcacgg tctgatggtc ctagcctagc 900

atggctactt ggaatttttt tcttcgcctc atattcctct agttcatata aaaactcagc 960

tagtagttat aatcatgggt atgtagtagg atcattctgc caactggcaa attgcagatt 1020

cactccaaac ttttggctcc aaaatgtggg gaaagattgc ctagatgcag tctggaccat 1080

ttaatttcat ttacaaaatt gttggcggct ttcgtgtatg ctcgtttcag aaggaggggg 1140

gggggggggg gggggggatg atagaggtaa atgggtggga aaaaaagatg tcggcatttc 1200

aactgcccaa actgactttt cttcggtgtg gttgacaagc tctgggcaga agcatggccg 1260

aacaagaatc cacccaaaat attcattctg ctggtgcaaa atccctaacc gcgcaatgga 1320

cattttatat attttattaa taaaaaagag aggatggcac atattacatc aactcttttt 1380

ttttctctat ttaagatcga atatcatgac ttttgcgcgc tccaaaagaa tgaaaaaggc 1440

tgcaagctta accattttca atccatttca actatgcatc aacagtgagt actacctttt 1500

ttttaggtga acgaaagcag agggtccata cccgatcgat cctatataaa ttcctgtgaa 1560

agacaactat gaggttgtac taaaagtaga catgcataag attctacttg gttgtatcta 1620

aataatcatt ctatgctaaa taaactttag ctatcttagg gccaaatagg catgactaaa 1680

taaactttag ctaagatcaa attccatcca ttatcgcctc aattaattgt agaaaataac 1740

agctaataca gggcgattga catgtttaac cttgttgatt cttactggtg gcgccaaatt 1800

aattaattaa aagagtgtcc atatcctttt atttatatta gctaatccat tatttaggaa 1860

atcaaatacc ctgccgcatg ctagctaata ttttcagctc aattttagtt agctagagta 1920

gaaccaaatg gggccatgaa taaagattca attcaaggcc cggcaggcat tattatcgat 1980

ctcttcctcc ggtggaaaat accctaaaaa taaggcgcac tactaacaaa cggcagctac 2040

tacttccacg ttctatgatg tgtatgtgca ttgtatatat gggagtaggc gagtacgtgc 2100

tttacagtca ctgtctctca agtaataaga catgcatgat taccttgttt gaatcttacg 2160

ttgttggatc gtcgacgagg tgttgtttat ttgctttgtt ccttttgttc gttcccatgg 2220

cttgaagata agatgtatca tctagtagac atgcatatgc atgcaccggt gcggtacgtg 2280

agaagaatat ttacgcagaa atgaaggcta acatgatgag atcgagtcgt cgaaccatta 2340

tattggaaga agactagctg cgtacaagta ctactggacc gcattgcttg atcgatgtat 2400

tctagcttgc tgaaatattg ccgtgtgata acttaaaaga accaacgtgt agtactcctt 2460

tcgttt 2466

<210> 3797
<211> 1662
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268143_G1, chr8:7293919..7295580, Cluster 23

<400> 3797
cgaaggcaac accatttata attcctctag catgtaccgt ttagggacgt gaaacagata 60

ttcgattgac ttgatgccat cacaattcta gtgtttgagt gagtaatctc acccaacaga 120

tataaacttg cttggtagct ttaaaatagt tagacctctc aagctaaatg ccaatacaca 180

ttctctaatg catggcccag ctcaaaaccg ttccttctgt tggatgaatg tacaaagaaa 240

aaaaacgtgt ttccattcta caaacatgta ataagctaag ggagcattaa tttgcaccta 300

tatataaaat gcattaccta actaacaaga gtcccaaagt ttattatatt atattggtgg 360

ttaatagaaa tgactaagaa aaggattttt tagtggctac aacaatttac ttgagggttt 420

gcacccaaca aaactaaaac acttccttgg agcgaggtcc ccagttatac ctaagcaatt 480

gaaatacgca ttttttttg gagttgtttg ataattcatg gttttgaata gcgtgtccat 540

ggaaatgtgt aatttcctcg gtggtttggg ttgttactaa aaaaatgcat tttcttggag 600

gctttgcaca acccaagggc caaggtaatg atatatttct tgagaggttc taatttctcg 660

ggtaggttaa aggagtgttt ggtttatagg aactaaactt tagtccatcc attctattct 720

attttagttc ttaaattacc aaatacagaa actaaaatag agttttagtt tccgtatttg 780

tcaatttgta gactaatata gaataaaaat gaagagataa aaaaattagt ttctaaaaag 840

accaaacacc cctaagacac tgtagagtat taattcatca cgtaagaaag gttcgcaaca 900

tgtgccaacg agaaaacgac gacacgaagt caactagctc ttccacccag cactactact 960

gttgaaggaa ctgaacgctt tcatgcatct agctagctaa taacgaccaa gaattgaatg 1020

gaaaaaaagc tgcgagaatg atccactgcc ctttaattaa cgctgcccca ccttttgcat 1080

atacttctcc tccgatccac tgaccaccac acgcccttaa ccatcatcac ttcatcggcc 1140

gtcggattgg acggcctctg tatatgcagt gcacacatat cgtcgtctcc tgtccattcc 1200

atcagtttca tgaacgaatc gacctctacg cgctcaaata gtctctttct ccagaagcta 1260

ctacttcact agtccctttc tgcttctttc ttcgtactcg tgtgtacaga gatagatagg 1320

ctaccgaaga tagcctaaga aaagtatata cacattgaaa aacagcgaaa aatatttgtg 1380

ttcttctagt atagttactt tgtcattttg tgatagtgca tgtccttttg agtctaagtt 1440

ccagaattgc tacaagtatt catattttta atttctagat ttactctata gtaacaaagg 1500

atcctagtga taggcggatc gaacaatgcc agctgccaac gaagcatgct agcaggatgc 1560

tgataggagt ataatgtggc ttttttgtgt atttattaca ggggcgagtg cacatatata 1620

ttatattcgc aaaaagaaaa taaaagggaa aaagtgaact aa 1662

<210> 3798
<211> 1447
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268269_G1, chr8:7772537..7773983, Cluster 23

<400> 3798
accagtcgtg agccgtcgga gactcggaga gcgaaacggg tccgagctgg ttgctgagac 60

gaccgtgaag gcgtgaacgg aaggggggatg cggtggacgg ccggcccagc ctgggattgc 120

tcggcccggg agagcgcgca cgggcctcca cctcggccgt tatttttcac acgtttcctt 180

tgcatttttt tctctctcac tatttcttaa tttgtgttct tctcgatttc atctctatca 240

atggctagca caacattaat tttaaaataa gatataacaa taattatatt aattagaaat 300

tttggcctgt cgtagagtat aataataatt ttacctctat ttattctaac tttgtaattt 360

tgtcgtatgt gtttttttta tttaaagctt ccgtttatcc atgtttctaa taacgttagg 420

tgggccgaga tttaatcaat ggaaatggag agacgaacaa atgaaaggac taccatgttc 480

tttcacctaa cctaaggtgt tcagtccttt atactgtctc caaccattta tctgatattt 540

cccctacgta tagggtgtct ccaactattt ctctatgcac attaactcag ttattttata 600

ttttagaagt atgtatctgg caaacttttt tcaggttgtc tgtaccaaga atagttttcc 660

ttttcagttt tcggtgacag tgacacattg tgttccaaac attctccgct tttgacaatt 720

cgacacatgt tcaaaatcgt tatggtggta ccagttttct ctgtcacaac gcatggacat 780

gggtaaacag aaaaaaggtg aacgatgaac aagcaaaaga taaactgaac ttacaggcga 840

agcgaaaata tcataataat agctttcgac gtaagaatct attgatatcg agtggttgtt 900

agcaaataca cactttacac aatattagtt agttgttcgt acaatgttat ggtttttata 960

tatcatatag ttagatcttg tttaaataag atgtttattc aaacatgatt atatttttt 1020

actaattatt agttatatat ttaaagtatt atctctttat atgacatgaa caggcgtgcg 1080

ctctagtggt acaagtcgct tgctttgagc tgaacgtctt attccatgct agcgcaaatt 1140

cagatagcgc cctcacaagt gcttgttcgc tgggaggatg cataaagatt ttcatccttt 1200

ataaattata ataattataa tagattatga ttctaatatt cttcttatgc tcggtatggc 1260

cagttggcca caagttggac acaagaaagc ggtggagatg gcgtcgtagg acgacaaaca 1320

ttatattgag ttacgcccgt ttgttaaccc tctaaattat ttaatccagc ttaataaata 1380

agttaccaag caaacaaaca acatatatta ttagagtgaa ttatatatag tgtgttgttt 1440

ccttcca 1447

<210> 3799

<211> 1521
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_271941_G1, chr8:29820192..29821712, Cluster 23

<400> 3799
gtcagtaaag atgccatata acacataggc ttgagatcgt tactatactt gttcttagtt 60

taggtcaata agattatgga aggtaggacg agttaggtag gctgtataaa taaggaagtg 120

agatatatag ctcgttatta tactgattta atatctaatg aaatttatta gtagttggag 180

cctacgactc ctagaagaaa ccgccgtggt ccattggcca aggtcaatcc aagcaattca 240

agcaaaagca aacataccca tgttgacaag gcttctcttt ttcccaaacc tcacttctcc 300

cgaagtatca gagtatctca cttccctgat tccctcttcc cttgcagcag gctagcattg 360

caaggcacga ggtcatggca ggcgaaggcc agccaaagga tctctctcaa agaataaggg 420

catatacaac atgaaacaaa gttttttcaa atacaagaga tggttaaacg attgtatgat 480

ataaatttaa aatcctagat caaaaataca gctaagagat atcgcgtatg aaaagtcgtg 540

aagagacgag tttttcccga atagcctgtt tcttatattt tttttactta acccaagaag 600

acacgatatt aaatggggtt atatatatgc cttaaacgcc acctttgcca gtttatttgt 660

taatttatct gagaactagt tgttcttcgt taccttaaca cgatgtcacg attgattatc 720

atgagatagt ttacatgcaa atatatcagt ttttcactgt atagttctgg cgatgcgtac 780

aatgagccag catacacata gagagaagta aagaaagcga aatgtttttt tttcctgtgg 840

actttggaaa ggaatctttg tgtccctttg gaaaggctgt gtcttgtgta gtaggagggt 900

taggctagcc ttggggcatg catgcacagt gcacagtgca atggaaatgc atgcacgagg 960

cggatggccg ctagaatcct actagggcct gctagagttc atacgctaga atccaaggga 1020

ttagcgttaa acaaaactca aaggctactg ctagtaattt gcatcgctcg ctcgcgattc 1080

gatcagctga ttctcacctg ctctcgcttt ggatttcgca tcgcatcgca tctcatctca 1140

tatcatctct ccggcatata gtgtattgta tgcgccacac tgagtctgtg tccaacaagc 1200

tttttatcac acttttttact ttaaactcaa ctctataaag aacattataa aacattgttt 1260

tacataaaca tatacatgtt ctgttaataa gcacgacttg gcgtggcaag tcctgtaacc 1320

cacttcccaa ttcccatgca tgtattggcc atacactcca tccattgtca tcatttttca 1380

aattaaagag caatgtttgc atctcttcaa tttattcatt cattcacgag ttttcaatta 1440

ccaaaactat gtattgcatt gcacagttcg gttgtcgttt ttcttattct acttttctac 1500

gtgataaaat taataccata t 1521

<210> 3800
<211> 2124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290742_G1, chr8:146544312..146546435, Cluster 23

<400> 3800
gctagaaact caaaacgaaa caagcttaag gtagctgaaa agaaagtaag aaagaaaaaa 60

aaaacagaga tgatggaaaa caaataccca gcccttacgg atgcagagta gtatagtagc 120

gtattcttgt cttccgcagt tggttcagac ttcaggctac tgaatcataa aatgaacaac 180

ctttcagtct gtcaagtgaa agcgccccca tcggctgctg ccggaacaaa agaatgtggt 240

cagtgagtat gaaggaacac catgcctacg atttaaaacg cacagttcgt agcatttgct 300

ttttcccacc gcttgcgttg cgtttgtcgt agccgtgcgc tctgtctaga cctggacaca 360

agatctcatg tgtggatgtc accaaaatga gcatcctgct ggcagcatgc atgtcaaggc 420

tcaagtgtca accttgcacg tagtacgtag atgtacgtcg tcgttccggc cactgggtag 480

cacagggccc gtacgcaaat tactctcaaa agatggggct tctgcgctcc atccaaacct 540

acaaggtcgt ctccgtctcg ccggtcgctg cacgtacatg tgtggtcatg ttttatgcag 600

tctaaattgg tgaatatcag cagtgtcagc tcatttcggc cccagctaag ctccattatt 660

cctgagtccg tcatcgagat agttgcgaac tggttcagtt gtttgaagat ttctgaacgc 720

catttgaaac ccataattat gaagttggag ttaatctata gcaaacgata ttatttggga 780

gcaacattta ccaagtacct acggggcgaa cacttgcaca tgaggtgcca gacagtctgt 840

gcatacgacg cccatatctc tgctgccaaa atgtgcccgc actccccatc aggactaatg 900

atcgcgcgag cccaattagt gtagatgccc cttaacagaa gtgcctaaaa tgatctagca 960

gattgctcat atgccaaagg gcatggccca aatcaagtac gggccagctc cgagaggctt 1020

tagttgccca accagctcat ggggctgaat tgtaacatgt tcggacacag ccacaccaca 1080

caggttgctc ttcattccaa agcttatcaa ttctgaacct ccagttagct ttcgccgagg 1140

tgtctcaaga gtcaagtcta aacctccagt gtgcagcagc cttgccactg ggcaatggcc 1200

cattgcaacc aaaaaccatg cgttaaatct gacagcgcca aataaccacc gaaccatctg 1260

tcatgagatg gttaataatc ggcagacgca tcacgctccg accgtgatga ctgatggcca 1320

gaatatatag atagatacaa gtagagagtg tctgtccggt ggcacggctt atgtttgttt 1380

aaatatacta ctgttgtgac atgtttttta actatttgtc ataatattaa gagcagaaaa 1440

aacttagcat acttttatat atagccagtt taattatact tcataataca gataggttaa 1500

caaaggaaat ataaaacata atagaactca caaatcgtga taccagatat ttgagacaat 1560

tttttttat tgtcgcaaca aacatagccc agtagacatg gacacgagtg ttcttctaat 1620

agcaaacaca tacaaagtga gcacttcttt gtacacatga ctttcttggt attcgctaat 1680

ctcttcattt ggtgtggcag cgaaaacttt gaggttgctt gtcgtagatg ttcatatgac 1740

atagccacaa gtagttgtct atgcgagaac accagtttaa gtagataaat accaacacga 1800

gggattgttt gttcgttctt gagatttatt gagagccgtt atgacgctag tcctaatagg 1860

gatatgtttt cttttaaact taaatatttc attgttcgac gggcaaaaag tatgcgcggg 1920

aggaatactc tctttcctgc atgtgttcta acacagttta tgcatctacg gtgtttctct 1980

agaatgctaa caattagata ttttctatat taaatttcga atataaatca catgatcaac 2040

aataaataat ctagttgtct gttccacaat aagtaaccta acaagttgac taacaggtta 2100

atcataaaaa ggcagcacac ttct 2124

<210> 3801
<211> 1822
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291669_G1, chr8:151010573..151012394, Cluster 23

<400> 3801
atggcagtgt gggtggccat tgcatattgc tcccatcttt tttttcctca cctcaccgac 60

tagggtatgt aaaacctaga gactataaat ccatttttaa agtaaaagac aacaacaaag 120

acagtatgat acaactctaa atctttaaat tataaatata gttttcgtct cttgtatttt 180

ttatttaacc ccctaaagac tttttaagag acaagttatt aaatggggag gtccggaatc 240

taaaacatac tcactcgtcg ttcccacttt tcaagaaaat caaacttttc tatttttgat 300

taaatatata aaattcaata ttaatatata tatttagttt tattaaatta atcatcaaat 360

gtatttttta ctataaactt atttagagat gcaaatatta ttattattat tttataaatc 420

tattaaatct taagaaaaaa ataaaagata tatattttat agtgatattc tttagaaagt 480

agtacagagt gacaactata tgcagagatc ccttcccctt tttggcaatt atttcagttt 540

acacgctcat aaaattttag atttatttat ttcctattat atatatatat atatatatta 600

ttttacaaac ataatacata cagagcaaac attatacgaa aagcaataat aggtatcgaa 660

aatagctcta tgttacacct gtaacgatgt tctccgaaca atatcactgc tttgatatga 720

tattcaatat tattaacttt tctattttaa aaaaatgttt tagcctttta tctaagtttg 780

aattttgttt ccctgattta aacacatata atacatacca agaatttaga caatacacat 840

gcaaacatat tagaagtttg atgactaaaa aacatttaaa acgctagttt cttatattat 900

tcgtgacacg atgatacatt acttattata aataagaaac taaaacttca aatgtttctg 960

gtcatcaacc ccccatcatg gtataatgcc ctaattgtag tcattctcaa tttttaatct 1020

tctcgtattt ctcctaccac ataaagtctt tgtcgtggtt gtagtcttta attggatgtg 1080

catatttgtg catgacaacg tcaaacatgt gtgctatgat tcatgttaca tgcttactgg 1140

tgacccatca attctcgtta tataattacc agtgacccta tagctgctat tgaatttctc 1200

taactctcta agttacttgc aagtgtagaa tttatataat agtgtccgtc aaggttgttt 1260

cgacgcattg aactatataa tatatgatcg attaaaaaag ttgcaactaa caactagcat 1320

gttgccatat ttggtcttgt tcttctcaga tctcctatcg atgaattcgg gatcgtcgat 1380

atacatcttc taatcactat acaaaaaata tgtgagtcaa tagccattta aacatgattg 1440

tttatgtaaa gggataagta ttcacttata aggttagtac accctcaaag tccttgtatg 1500

actcttttag gtaatttaaa gagtcaagta caacgataat tccccactag atagactata 1560

aatacaatct agtgaccact cgtgcacgtg ctgcaccatt caaaaaaaga agtttcaaat 1620

attgaaatat gaaagccttt tgacttaacc agaacagtag gggcaagggg acacccattt 1680

tcctcgatgg acttcatgca tatatacaca tacattgccg cctgatactt aaggttgttg 1740

tggatagctt tatgggattt attctctatt catcattcaa gttcttaaga tctttatgat 1800

catctgagtc ttgaaacatg tg 1822

<210> 3802
<211> 1541
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295802_G1, chr8:171270157..171271697, Cluster 23

<220>
<221> modified_base
<222> (242)..(242)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (242)..(341)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (243)..(243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (244)..(244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (245)..(245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (246)..(246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (247)..(247)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (248)..(248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (249)..(249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (250)..(250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (251)..(251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (252)..(252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (253)..(253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (254)..(254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (255)..(255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (256)..(256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (257)..(257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (258)..(258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (267)..(267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (273)..(273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (274)..(274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (275)..(275)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (276)..(276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (277)..(277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (278)..(278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (279)..(279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (280)..(280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (281)..(281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (282)..(282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (283)..(283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (285)..(285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (286)..(286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (287)..(287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (288)..(288)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (299)..(299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (300)..(300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (301)..(301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (302)..(302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (303)..(303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (304)..(304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (315)..(315)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (318)..(318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (319)..(319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (321)..(321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (322)..(322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<400> 3802
tagccagctt gtcaaacacc attatgtata taatactgca gtatttaaga atactgcaat 60

attcttccaa aactgtgaaa aaactttcat tcccaaacac cccctaattt ttctatgtcg 120

tagcatttta aaatataatg agaaatacct tatcttttaa tttgatgtat cagtctctat 180

gacatattgt tttcaaagta atttacttaa tcttatatag agagagaggg atgagttatg 240

annnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ngccattata tttttgcccg 360

gagagggatg gagaaaaaat gtccccgaaa actttttttaa tgtcgtcgtg ctattagaga 420

ttatgaagga ggaatccttt tttctttgat tgatgtatca gtctctatga catatgtttt 480

cgagagatat taacttaact ttatagaaaa agaggagagt taagaccgct agggacataa 540

aagtatatac tgcttcattt taaatttatg attacttttt ataccgagtt tgattagctc 600

gttgtattaa aaaatcataa attattatta atttctatag taatatcgtt taccatataa 660

tataatttaa ttacggcttt gaatttttca ttttttcaca aaaaagtaaa catgatgagc 720

tggtcaaact tggtaaaaaa aaaatcaaat gaatcataaa ttgagacgga aaattaatat 780

atacattatg atccacaaat atcgtcctaa aaataaataa atagaataaa aggtgtttga 840

attcactgga gctaatagta aacagaagcg ggcccagaca tttaagattg ggtattcaaa 900

aattcaaaag attaaagaat ttaggattct aatgctattt tatataatac attattgaca 960

aattagtgtt ctaacactat aaatcaccaa aaacatgggt attcaatgaa tacccatgat 1020

acccctgggc ccgcccatga tagtaaactg ctaaaattag ttaaaaatat ccaaacaccc 1080

tctaaagcga tcaaaataaa ctaacatcac cattcttgaa atgttgccat gttatacaat 1140

tataagattt gtccagatac tagctcgttt tacatgagca acaatccctc cgattatacc 1200

attgctgtca cttgcaacgt gagctttaat ttgattttgt ttcttgcttc tgagaaaaca 1260

aattaagctc tcggctttcg acagtgaaaa atgcacgaat ttcgtttgtg ctgtggagga 1320

ataaaaccgg gtggagctag catgtgtggt atacccggaa aaacaggtgc tgtctacgag 1380

ggcgacgagg gggtgaatgc aaaagaggag gcaagcatat acggcgttta ggacgtcgcg 1440

agcctgcgtc accggtggcc cccaccgtga cgtcgcataa gcacccataa tccttcctca 1500

ccgcccgcct cgccttaccc gcaccatgat acctccgcgc g 1541

<210> 3803
<211> 1448
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_311466_G1, chr9:86385237..86386684, Cluster 23

<400> 3803
ccatgtttta taacagagct ttgatatctg atactagtta tcatggtgtg acttttgtcc 60

ttactggtaa aaactttata taaatatctt tttgatgttt gactttacct ttttgtcttt 120

caccctagca agctcacatg tgcgctagta gtaaattgtc tcctctttgg gcaattttgg 180

ccattgttat tcttggttca atgagatcat ggtgcttctt agctacttgg gtagctctat 240

gcaccatggt tctttatgtt cagctgaata attgcataac attgatgttc ttattctcta 300

tagatataag ctatctcaat ggtcattgct tcctttagtg ggttagtttt gataggatgc 360

ttagattttt aaataaaaca ccatttttca tgtggcatag ggaccttgcc atcctcttat 420

gcagtttatc aagtgcatgg attgagcagg atgagctcga agctactact cggtccagat 480

gcctccctta gtcttctcaa gcggcactca gtctcaaatc tctagagcag acactgccta 540

gatggagcag gtaggccatt gatgggatca gaggaggagt ggtgaagatt gaacagactc 600

acggacccca gccatagcca gggttaaagt gggcagtttt gaaaaacctg acatccatgt 660

gtgtcgtaac aacatcttca gctatcagac aagacaatag tggcatagaa gggtgtgaaa 720

aaatgaaatg atatgcataa ataacatgaa ctttttaga atttggagcc tcctttccct 780

ctgcatgggg gtacttccag gtttgagatt atggccatgg atgatggagt tgtgtggggt 840

ttgttgtcat catccctctt tatatggtga tctttgtcaa taacagaaaa atattttatt 900

cagtatatct ttattttagg ttgtcctttt gtaaattggg tgtgttttac ttgcatgtat 960

tattctcttt gagaaaattt ctaacaacat aaatcattta tatctgtaga cgctgctact 1020

cttgggattt ttctctatta ctttaatgga aggtgtataa caccagacac attagattgg 1080

ggtgatgagc tatatgatgc tgaatcaaat tattttcttt gaaaccataa ttctcgtgta 1140

gttcacttct gcaggaaacc tcctattgta gcataatcga attcaacctt gtggattgtt 1200

ctaggaatgt ttgttcatgt gtttcgacta tttataggtt gagaaattgt agatcttggt 1260

tgttgactga tcgaaataca ttcacatata ttgcaaaaga gcataacaga tgagatgaga 1320

gctattacta gagagaagaa gatgagcata gaagaaggaa gcatcggtgc tttagattcc 1380

atggttgttg actgatcgag atacattcac gtatatagca gacctacttg caaaaaatca 1440

tcacatgg 1448

<210> 3804
<211> 2384
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313339_G1, chr9:97800424..97802807, Cluster 23

<400> 3804
aaaataaata agtgttataa taataaaata aaaaatattt ttaatgaaaa atatggaaat 60

ggaattataa aattaattta ttaattcaat atactagtga agagatacga taagaataaa 120

ataagataaa ctaaaaataa ttaattagat atattcatta agagatatag ttaaataaag 180

tgcatatgaa caatatataa tttgttcacg gtaggcaact cacaacaatt taaaccaaat 240

aatttttagc ttttctgcag cagacaacat ataacaattt catagcagac aacagtaccg 300

aacacatcct taaccgctat gctcgaggca ttttcagtct tccaatttat atttgttcca 360

aagttattta cgggaaacca tttaggttcg tgtgtgctac aggcctacaa cgaataggtc 420

caagatggcc accaagacca agttggtgcc ctattgtttc tgcccaaaag gcccactgcc 480

aaggcacgtt ttcttatgtt tttttctgtt cttctgctct gacgaacgat caaatcaaat 540

ggtcgcatca gcggctgttg acagcacctc tgccgccact ccactcgatc taggggtcaa 600

gtgctgggca ctgcagcgcc gcagcggccg ttcgccgcgc acacggacgc ggatggtgac 660

tggatggtga gatttgaatg cacacggacg gccgagcgga gtcgacgcga cgccgagtat 720

aacatgcgtg tgtcgacatc gtggtgtaat ctcaaagtgt cggtcgcgta ggtttccaag 780

atatcacttt tttttgcatt cgactatgaa tatagatgtt gtcggatata aatacaaaac 840

tctcaaattt gaatatctac ttgaattaaa gataatatgt atccatgtat ttataagtag 900

ttttgcagta taataaatca gtaacggtta aaatgaatct gtacaccgta aataaagaaa 960

aatattaaga ataaaatatt ttaatcgcta ttttatacat taaatcaata aaatataggt 1020

aatgtatatt ccctctgtcc atacgagttt atctttttg tttaatttaa gtcaatcact 1080

atcaactttg gtcatttttt actagatgtt tcataagatt ttacaacaat aaaagtaaaa 1140

ttattatatt cgtcgtagct taagaattgt cttaatatgt atttctttta gtttaaaata 1200

atttaatctt atatagtttg ttggttaaag ttaaaaagtt tgacttggga caaaattaga 1260

aaggcaaact catacagacg gagagagcat taaccattga gttcaaataa tttaaaatat 1320

attctaaaaa tatataagaa aacaaaatac taagtaaata atattcttta attcattaat 1380

cttaatattt atatattatt tacaatattt aaattaaatt aacaatagat aacttcttga 1440

taaagagata catatatcat ctattatatt aaaattattt ttatatagtt aattagtttc 1500

tagtttgaaa ataatttgta ctatatggat ataaataata tcaaacatta tatattttg 1560

ttgatagtga tgtggcatct aatagagaat aatttaaaaa aaataaatgt aaatacatcc 1620

atatctggat cctatacaaa tacagatatc tatctttatg ataaagcaga aaaaaaatca 1680

gaccatatct ttcgcatatc ccctacggtc attgtatatt gacaaccttc tgctgttgtg 1740

ctaaagaaaa agcttatttc actttcactg tattatagta gctagtagga caaattaaac 1800

agccagagaa agccaaaaga gacgatcgag aactttatac gccgaaacag tgccacgaac 1860

agaagcagtc tagccggtct tttacgattg gattggattt tcgccactgt gatgaaagga 1920

tcggatagaa ggcgggaaaa tgacaggagg agccaaggag gggttgctga cttgctgctg 1980

gtgaactgac aggcgcatat acacgcaccg tcgttctcat cctcttgacc tcttttcctg 2040

gatgagtgcc attaaaatgg tcaccaaccg gcaaatggcc aactgttcct actacccgcg 2100

tagtcgtaga cacacggctt gtgtaataca gcgtcgtgcg tcgcgtcgac cttgttcgct 2160

acagagcgaa ggctccaaaa cgaggcagaa tattcgtggg cataatcctt ctagttccca 2220

aacaccaccg ggtgatgcac acatgcatca gtccaggcct cctagatggc gccctagccc 2280

ttagccaatg ccaatgagct taacaaaagt gatctatgga acgaacccat ggtactcttt 2340

cctctttctt tttttttgc taccaccaac ttctttgttt ttta 2384

<210> 3805
<211> 1779

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313985_G1, chr9:100933246..100935024, Cluster 23

<400> 3805
cgaataagct ttgaagtttt ttttatttgt acacccttgt tgatcacctt gacctttgta 60

cagttcttca tacaattctc caagtatggt tgtctacgta gaggtcatca tcgatatatc 120

caattcatct ctgtgcaaaa tagactttga tgggaagttg ctcgatcgac gaaaattaga 180

gcattcaatg gtaagttgtg acttttaccc gtgtgcccaa aaaggacccc accctccaag 240

ggccccaaaa tattagctag taatagttta gtcagagtag aagatctagc taagttagct 300

cggtaatagg aaacatggtg tttgtcgtgg aaaatggagt gttaatctct catgcaactc 360

gttttagcta cgaggcgaag tgtagccagt acatgtttga agtaatgaaa gaaaaaaaaa 420

tgtgtttgcg tcctttcgga agaacttaca tcccttcaca tgttaacgac acaaccacga 480

ttaatatatg agattaatgt acatcatcaa tctttaacaa agaaaaaaaa tcggtacagg 540

ggcttaaatt atgccggcca ggccctggat gctatatttt ggtgtgtgcc ggaccctgcc 600

ttcgccgctg gtagtcgtcg tcaggccaga ctgtccactt ctaatccttt ccaggaggcg 660

tgaaattggc ggcgaccacc ttgtgagtgc catgccatca tcggttcggt tggccctttg 720

cgctctggca ttggttctct atggtttcct gatggtgaaa tgaaaatacg aaggcttgtt 780

tcaggccatg ttttgatcta gtcgttacat tctcttttta taaactgcag cttaaggtga 840

cacggtctcc tactgtcctg cgctttattt tctagctaga attaaagcta cagagacttt 900

tttctctaaa cacatgacac tgtctctcaa actacattat gatcatttat ttatactata 960

ttgtttatac ttataaacgt atgataataa tagtatattc aattataaat ctaaccatat 1020

cgaatttgta ctataataat taaaatttat tagctaaatt actggatcaa atattttaat 1080

tttaaatcat gatatatgtg tgtcttataa aagaggttgg aggaagtatc aactaacttt 1140

taatcactat aattttagtt ttaggcaaaa ggtcacatgc cggttctctt ggtcgtgtgc 1200

atacgagatg gattgatcta ttagaaacga atccttgtgt aggtgctgag agggcttaac 1260

gcacaggtaa agatctggcc tataggggga ccctcattct atattggagg ctagttttcg 1320

tgacctttct tggtctagct tcgattgaga ttcttattaa tataatataa tataatataa 1380

tatcgtgagg tagtctttct cctacagtcc gagtttttt aaatggacga attaattttt 1440

agcataatcc aactaattat tagcccgtcc tagtagttta tgtattcaaa cagcacaaaa 1500

ctaaacttta ctcgcctaaa tttcaactgc ctaaacttta gttagattaa tagctagtct 1560

aggtgatcaa acaaacaatt aggaaaagga aatagtccta cagcactgac aagtacaagc 1620

ataggaattc agtgactcgg gcatatcgtt tcagtaaaac ttgcttttag gccataaagc 1680

aaggttttaa atatccaatt atagcgactg atatatttcg atatagcatt tttagcagcg 1740

aaaggttatg ttgtttagct tgatataccc cgttgtatc 1779

<210> 3806
<211> 2288
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322567_G1, chr9:146406774..146409061, Cluster 23

<400> 3806
taacaactaa tagcatggta aactcttgtt ttcaagagag ttgtgactta tgattatctt 60

gatacaataa attttccctt ataaaaaaaa gcatggtaaa gtaaatgcac acaaggcaga 120

cacgcaagga agctgtttct tagcgctgta tgactgcttc cagctcaatc tttccaagtt 180

gtactgctat gtgtaatttc tgaaacggaa gacgcaaaag ttcgaacgtc taccatttac 240

cactcattaa gcaaaaaaaa ggtggcctac ttgaatctaa aagaaattgt ccaagcaaag 300

agaaaaaggc tgtccaacaa aagacaactt aactgtactg catctgaaaa caaaaacatg 360

tgaagcatga ataagaaaaa atgtcaaaaa tgggatttga aagcatggcc tttcgaacca 420

ttacctgaaa ctagcgctgt tacaactgct tccagctcaa tctttccatt ctggaatgca 480

agacacaaaa agttcgaacg tctaccatgt ccaagcatat gtatttccct cccacaaaat 540

atcttaaaca aactaaggtt tttatattat atatcaaata tataaagaaa aggaacgacc 600

actcattaag caaataaagg ttgtctgcct gaattttaaa aaaattgttc aagcaaagaa 660

agctgcttac ctgtactgaa tctgaacaaa aaaacaaaaa catgccagga atgaataaaa 720

gctatgatga atctgtaaaa catgtcaaga tcaaccacac attaagcaaa gaaaggtggt 780

ctgcctgaat ctaaaaaaac tgtccaagca aagagaaata gattgttcaa gcaaagaaag 840

gttacctgta atgaatctga atctaaaaca acaatgcaga aacatgtcaa gaatgtacaa 900

aaactatgat gaatccaaaa aacatgtcaa gatcgaccac tcattaagca aacaaaggtg 960

gcctgactaa atttaaaaaa atgtccaagc aaagaaagct tacctgactg aatctgaaaa 1020

aaaagacaag aacatgtcaa gaccaaccac tgaatctaaa aatctgtcca aacaaagaaa 1080

gcttacttgt actgaatctg gaaaaaaaaa gacaaaagca aagaatgaac aaaaaaaaat 1140

gagaatgtac aaaaactatg atgaatctga aaaacatgtc aagatcgacc actcattaag 1200

aaacgaaagg tggtggtctg actgaatcta aaaaaatgtc caaacaaaga aagcttacct 1260

aactgaatct ggaaaaaaag acaaaaacat atcaagatca accactgaat ctaaaaaact 1320

gtccaaacaa agaaagctta cttgtactga atctggaaaa aaaaagacaa aagcaaagaa 1380

tgaacaaaaa aaatgagaat gtacaaaaac tatgatgaat ctgaaaaaca tgtcaagatc 1440

gaccactcat taagaaacga aaggtggtgg tctgactgaa tctaaaaaaa tgtccaaaca 1500

aagaaagctt acctaactga atctggaaaa aaagacaaaa acatgtcaag atcaaccact 1560

gaatctaaaa aaatgtccaa acaaagaaag cttacctaac tgaatctgga aaaaaagaca 1620

aaaacatgtc aagatcaacc actgaatcta aaaaactgtc caaacaaaga aagcttactt 1680

gtactgaatc tggaaaaaaa agacaaaagc aaagaatgaa caaaaaaaaa tgagaatgta 1740

caaaaactat gatgaatctg aaaaacatgt caagatcgac cactcattaa gaaacgaaag 1800

gtggtggtct gactgaatct aaaaaaatgt ccaaacaaag aaagcttacc taactgaatc 1860

tggaaaaaaa gacaaaaaca tgtcaagatc aaccactgaa tctaaaaaac tgtccaaaca 1920

aagaaagctt acttgtactg aatctgaaaa aaaagacaga agcaaagaat gaacaaataa 1980

tatgtcaaga atgggatttg aacccatgcc ctttcggacc agtacctgaa actggcgcct 2040

tagaccaact cggccatctt gacatttatt gatagaagaa gaacatgtta atttttatta 2100

tcagatctgt tcatgtaatg aattcaagag ctatattaca gtacatttta aaattcaact 2160

tcgttaagtg actatgaaca tgagtcatga atttagatca cgcacgagac aatagataaa 2220

tttgagagcg gagttggggc tctgttcagg acgttgatcc ggattagagt ctctcttctg 2280

aatactct 2288

<210> 3807
<211> 1733
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32356_G1, chr1:198535375..198537107, Cluster 23

<400> 3807
ctatatacca ttggtatttt tagagtattg gaaacccaat tccaacccaa agtttccatg 60

gaacgactag cttttgtcta aataccatgg tttataatgt tgtatccaaa taatgtttct 120

caaaatcatg gtatttttgg agtcggctaa aactaattat gacaaccgca aagtatagta 180

ttgtaaaacc ttgttttaga aaaagattgt tgccaaccag acactaaata tttagttggg 240

tccttggctt tgttagggcg tatataaccc tatttaatat aatatggagt cccttgaggg 300

ggtttagagg gttaaatggg aaatgttata atagacggtc tttctagagt ctgtctctac 360

acgattctct ctatatatat tgtcttttaa ctatatttat agtgtgactg attttaaaga 420

tatatgtagt cttttagttg tctcttacat ttgaaaaatc gattcagcca ggttttatag 480

accttaaagt ttatcttttt cccattcaat tgttcagcag ttgaattaaa tgagtttgtt 540

taaagaaatt aaattaaatg agtttttgtt cgaccgatgg tctagaaaaa gcaaagtttc 600

atccaaactt taggccctat ttggaaataa agtatttaaa aactatagtt ttgaaatgcc 660

aacacatatc tacaattttt taccacaata ctaaaacttt ggtctggtgc tacgtttcca 720

aaactataaa agtactaagc atatccaaaa ctataatttt gaaaacaaag tttttgaaga 780

gtctaacgaa caccgcattg aaaaataaat accacagtat ctcaaatact acagtattct 840

ccaaaagcag agaaaatact ccacatccaa acagtccctt acaaatttag ttgttctttt 900

ttgtccattt tgaagcatgg aaaatttagt gtatttgtgt atttgagccc ggcttcaacc 960

ttaccgtgat aatataggga attcgggttc acggagccat ccggccatgt aaaaaaaaat 1020

gcttgacctg gccctccacc gtccacgcct ccacttatgc cctcctttgt cttccctccg 1080

acccccccgtt actgcctcac acgttcttgg cgcatcgttt ctctatatat attgttttta 1140

aactatattt atagtgtggc tgattttaaa gatatatgta gtcctttagt tgtctcttac 1200

atttggaaaa ccaattcaga gcctcaagat tttatagacc ttatagttta ccttttttcca 1260

ttcaatagtt cagtagttga attaaatgag tttgtttaaa aattaaatta aatgagtttt 1320

cgttcgaccg atggtctaga aaaagcaaaa tttcatccaa actttaggcc ctatttggaa 1380

ataaagtatt tgaaaactat agttttgaaa tgtcaacaca tatctacatt ttttacaata 1440

atattaaaaa ctttggtctg gtgctaagtt tccaaaactg taaaattaat gagcatagct 1500

aaaactacaa ttttgaaaat agagtttttg aaaaaagtct accgaacacc gcatcgaaaa 1560

ataaataaca caatatctca aatactacag tattctccaa aaacagataa aatactccac 1620

ttccaaacag tcccttacaa atttggttgt tgttttttgt ccattttgaa ccatggaaaa 1680

tttagtgtat ttgtgtattt gagcccggct tcaaccttaa cgcgacaata tat 1733

<210> 3808
<211> 1464
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323572_G1, chr9:151072470..151073933, Cluster 23

<400> 3808
gcacactcgt ttcatccaag aaaatattgc tacaggttag tactaatcaa ttttttatga 60

atttggatag atttatatga aaaaagtatt aacaacattt atatcttaaa ccagtttact 120

acaaaaatat attcattaaa attatctaac gatactagtt atatactata aatatattta 180

tatgttttta tatgttttat taaaataaga aacaattaac ttctcgaaaa aataaaaatt 240

agtactagta ttctttatga gatctaggca gtagacttca atttcgaaca tgagcttagg 300

ccgcatcgag atgctgtcct gtgatgaccg gccttttttt ttacatcaaa ttaaattggg 360

cttgcggctt tgttagatct gccatgtcat tttggctcgt ttcataaact caagcatgca 420

ttggccaatg tgaaaccatg ctagtcaata gagttctcgt tgaccccaca aaagaagttc 480

cgcttttaaa atatttttaa acggcgacgg cgcaagctaa gtcaaacgac agatcgatgg 540

cagcttcgca aatgtgcggc aactcgaaac tcgtgtgtct tggttacaga aattaacgac 600

gaccctcggt gccagaagca tgagctcatg accaaggcta gatgctcttc tgtgcgcgct 660

cccatatcgg tccagtccag acgaacgatt taggccagct ccgagagtcc atctgtatat 720

tattttccat ctagatggga ataaaaattc agttaatttt ttttacttct tcaattagat 780

tttgaaatgt tgatgatctc tattctaaat ttctaagata gagagcgaag tcaactctct 840

aaaatacgta taccatatga aagttatatc tacgggtaaa aagatataaa gaacgacttt 900

tattcaaata atgaattatt agagagcgaa tctaaaaaaa ggctcataga gatccctctt 960

agattctatt tgggtccata gtaattgtaa taattagcta atactccctt tcaaattcta 1020

agaaaatttt acttttctaa atacattgct tttattatat atctatagac attttatcta 1080

aaaattttat atctcgactt aatatatatc tatgtatata gcaaaaacta tatgtataaa 1140

gaaaagctaa tacttctcaa aacttggaac gaatggagta taatctaatt atgattcaaa 1200

ccctatattg taataatcct ataatccaga tggattgaat ggagtataat tagattatta 1260

tatgatggat tgatataatt gaaaccctat attgtaataa tcctataatc cagataatgc 1320

atattttta gaaaattttg ggtgttaaaa gtctggttta catccacatt tagcttttct 1380

tctcttcgcc atcaagtaaa aagtggccct aggacaccac acaacgtcaa ataaaaaaag 1440

tgaagtcaaa ctaaatgagc gata 1464

<210> 3809
<211> 1538
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323894_G1, chr9:152509839..152511376, Cluster 23

<400> 3809
atattgtttt tttggacgta tggttttatg tttacaaaac ccgctgtttc atttcacaat 60

gatttccttt caacttaagc taccaaaaca aaccaagaaa ttactttcac atagaggttt 120

ggatgattag aatatacact tttattacat atacgtgagc atttcccct acggaaatcc 180

ctgtatgaag cagtacaaaa ctgatttagc attagggaaa cgatattgta ccatagcatt 240

cccgtgtgtt ggacactact ggctaaacat aatttctatc caaatcagta tatggctata 300

tgttgcgata caacagctga caaactgttg tagtttttgt cagttctcac catcttttct 360

tttccccaaa gaatcgtaaa ggacttcagg caagtgtttc tcaccatctt ttcttttccc 420

acatagaata tgtatgagag ctgtgtatct taggtatact aatatgtcag cataacctcg 480

cagcaggaat tctggtatgc ttcaaagttt ttttttgaat aatatgtgtt ttgtttttat 540

gtaatctttg tgctctaata tactgctccg attgatatgt tggcctgcta aagctataat 600

tttcagttta cttgcatgga actcattatt tttatattgg ctctatttta tttgaactta 660

tagtagcaca tctgtccatt attgatattt ttttcttaat acatgattaa tctagctcct 720

gttattctat tcactatatt gaattagttt tgaccaaaaa ccctagtaag ctggaatcac 780

attgttttgt agatgttttt cttcactata aatgcttaaa attaacctga taaattcatc 840

tacgggctct ttcaaatggc aagcccactg ttgttgagtt ttatgcaaac tggtgtgaag 900

tctgcaggga actagctcta gatatccaca aagttgaaca acaatacaag tctgcaggga 960

actagactct gagaacccta ttgttgatgt ggagagcatt gtagccaagg ccataagaga 1020

tggcgcaatt gatgccacca tagatcatgc aaatggctgg atggtatgga gcacttagac 1080

aacactaaag tgacgagcac aaagatggcc tcacgtcctg caaacatgta ctgtcaagaa 1140

agcgaacagg aggaagaact ggctaagcac atggctgagg tgggtgacga cttctatatc 1200

tgccttttga gcaaccactt gcaattatgg acttgttcga acgcctggtt aaaccctgcc 1260

tctagctact cgagtcatgc aaacactgga ctttgaaatt catccactgt aatgttatgt 1320

tgatcagtgt ttttctttaa attcaatact ttgaatttta atctccctga attgttaaac 1380

catgaaattt acccaccatg caaacgactt tgtttatttc atgcattctc tgctcccact 1440

tggggctttt ctgaaatgtt gtattctgtg ttcgattttt gtgtctttat ttaataaaac 1500

taggctctcg ggccttttaa ataacttgac gcccagct 1538

<210> 3810
<211> 2042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326723_G1, chr10:11611893..11613934, Cluster 23

<400> 3810
ggcgacccta ggggtggggc agaggggcgg ccgccctagc ctccagatcc atagggccct 60

gatcctagat ataaattcaa tagttagact atcagtgtat gacataatag tttagcaacg 120

aagtaccaaa gagtttatgg ttacgacatg ttcacaatca gatcttatat atctaaacat 180

gttagaaaaa aacttttaag gtaatatttt aatatctatc tttttattta cttattgctt 240

gatataaata tttttagatg tatcttaagt gtttatatta gtagtattta tatataaaaa 300

aaattagaag ggccctgttt taaatcttgt caagggcccc aaaatctcat gacctccact 360

gattccttca gaacatttca cacaaactaa atgagcttaa acatgaacat caatggaccg 420

gggttttgaa agggacctct agaaatacca ttttaagact attatatata tctcaaacca 480

ccgtatctaa gaatgatcgt ttaaatagtt accgcccaaa aaatctatat atgcacaaca 540

ataatctgaa taattttcat cggctaaagg tcctaaaaat tatatgttat ccatgaaaat 600

tagctacctt tcgtcagtat ttactaattt tcgtcaatct ctaacttttg tagattatgt 660

ggggtgtccg acggaaatta tcaattttaa tatgatgtac ttagtcgaca aattagcttt 720

accaacaaca aattaatcat tatatccatc cataacacac acacataccc attcacaaca 780

cctatgtatt cattcacatc acatacattc actcatatca atccacaaca cacaattcat 840

ccataccata tttataaatt tataagaaat cttcaagtag cattagttct tcataagtct 900

agatcattca aatagaataa aagtaccaat attcatacac taaaaccact ctcaaatagg 960

atctgccaaa tgattagagt tctcaccact atctagaggg ttcttgaaca atttgttaac 1020

aaataagtta gatatgtcag catctgcagg tgttgctaac tatggagtat gagtctaata 1080

atgatgtaaa ttataattag ttagaattga tttacaatgg ctacaattag atagaggtga 1140

gccaaattaa ctaatgtttg ctagaatttg agctatatta actaagttat tctacagtgg 1200

ctaagtttag ctatagttga actagcttga ctatttttcc tagaattgag ctaaggtggt 1260

taattttgct aaattaacta agttacatag aattgagcta tattggctac tttgctagaa 1320

ttaagctaag ttcgcaaatt tttattagaa ttgagataaa tttgctaaat atatgattac 1380

ttgaggtcca agcattggtg gagaacccca ttacaacggt ggtggtggtg gtgttggcat 1440

atggaacaca tgaaaagtga tgttttctcc atcttctata acattgtctg agaatggaat 1500

aaataacact attatatata ttatatgcta acagtgatga tagaagatcg gttgaactta 1560

cttgaaacat catctgctgt tttgctatat agttagagaa atattcatca tgttgttggt 1620

catactattg tcattgcctc tactgcttat cgtacaacct cattgatttt tgaatccaaa 1680

gcaactcatc ttgtgtcttt gttcgaacaa cgccaactca gagctctacg gtgaggatgc 1740

tgctttctaa gctctcacct tcctaaaatt agtcactcca tttaacatga agtaacctga 1800

aatacaaaca atttagaatt tcaatttcgt acttgcatta aaaattttgg gggaaattgt 1860

aatatcatat cgctcgtggc tctttccacc tccactagtg tgcacgatag aaggatcaac 1920

tagtagcgct tatcaattgc aattctcttc aaattgattg actatttctt gatcatattg 1980

cattaagagt ataaaaaacc aagaaaggta acaataaagt ttgatataat aaaaataatg 2040

tg 2042

<210> 3811
<211> 2602
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_329124_G1, chr10:25017109..25019710, Cluster 23

<400> 3811
tccacacgcc tctagggtga tagactctaa ctagctgtaa gcactaagca gtaaaactct 60

tctcaacttc ttttttatta ctagtgattg tagtgagcga gctaaatact agattgttca 120

agtggtataa aattttgcat tcattagtta tattgttata ttgtatctct cattttatac 180

aaataattaa cttgcaatgt gtaggttcaa atttaagtgc taatgttgat gaagttatta 240

gaggcgagaa aggaccaaat cacctctaat taggtacctt tatatttttt caagtttatt 300

gtatttttag atactgaatt gaggtaaaat attttagtct atgtttttgg tatattttgt 360

tttagcgtta tatttagccg tacaatattt tagggttacc ttcatatttt atagtggccc 420

ggggcgttag ttttatagag ctccgccact ggttctaaac atcgacaaca tgaacgaaga 480

tatgagaagg atccacatgt tagccgttaa atggttaagc aaagaattaa aactggatga 540

acgagggaac gaggaaagcg aggcggacaa gtagttttta tatgaatttt gtagttttat 600

ttgtttttaa aaatttgttg tattttatga agtttgttta atttatatag ttttatttt 660

gtaacgagaa tgtttttttt atgttgggac agatggagta tagtagataa cacactacac 720

actagtgaat agataggtat aaactcggtg catagctgtc atccctgcta ctgattcaat 780

gccatgaaca aacgattggc acatgatttg catgcacata tggtccagca gagactccaa 840

gtatgaccgt agcacagtag taacactgtg tcatcaattc ggtgccggcc agttaactat 900

gagcagacga cgatccaatt gcccatgcat cgcccagctc tcacagcacc gtcagatcaa 960

agatcgtgcg gcctacacga gcctgccggt tgatcattta aataagctgc attgatggac 1020

cgtggtcctt gtgaatgatg ccgtctgaat ttaggtctgt tggatctgat ctgaacatgc 1080

atgggcgggc tactggagca atataaaaga aaaatggtct aaaacttgta atacgtatat 1140

ctgaattcat atctgtttct aacgtgatat gattttcctt attcaaattc attgttctta 1200

taatatttct ttatccaatt ttagatccgt atttaacaaa aaaatataga atattccaca 1260

tttatccgca tccgcgaaga acaagtataa catatctgtt taatttttt atctctataa 1320

ctagtgacta attatttcat ttcaatatta ttaatgatgc attaaaacca tttatattgt 1380

atctgtatgt aatttttaat attaatttaa tactattaat gatacataaa tattaaatta 1440

attttagtat ttttataatg cattttaaac ctaatatatt ttgttgcaaa ttatttaata 1500

atttttttatg tcaattaatt tatataattt ataattttat gataaacatt atataaataa 1560

tgattgattg attgaaaaat tatatatata tatataatga gttattcttg gttatgttgt 1620

ataccaacat actttattct ctaataatta tcaaaattga taaatcaaaa tgtctacttg 1680

ttgcctacca tcttttattt aataccatcc attataattt agttcacttc tacattggag 1740

atcattagaa gggcattctg attttatttc actttggtta ttgacgaact tagtagaaaa 1800

ttttctattc atctatgtaa aatttaacaa tatgcacttt gagttgaatc gagtaaatat 1860

ccaaatagaa atccgaattt gagacatttg ttttgtattc atattcaaaa agatcagcat 1920

ccatatttga atccgaacta aaatatggta aaatatgaca ttcagaccca gtttcatgtg 1980

agtccaattt ttttttctat ccctaactac gactcacatg gatgcccgtg gccgccgcca 2040

agtttgggtg gtttggttgg ttgcatgtta cctgagagac ttacagccac atttttcttt 2100

gagctgcctc acttgttttc tacaattttt ctttggacca cttgcttgct gctgctgctg 2160

ctggtggggt agaatcgaag tagaaggttc tgattcagcc acattgccaa ctgcacattc 2220

gtgcattgat gcatggagat gattgacagg ttggcacgga gtgtgatggt tttcaataag 2280

gagaagctca ttttatttt atttttaact ccacagagat gcatgttagc ataagaaaac 2340

aaaagtttga ggtttcatag tagtagcaac atattgttca tctggaagta attatatatt 2400

attgcaaatc atttctaagt ttagtggcag caaaaataga agacaaacaa aagaatcatc 2460

atgctggttt ctttacccaa acaaacaaga cacgcaagtt gcatggaaaa actgcggtct 2520

gcggctagct agctgttggc ctgttgcata aacttgttat tcaccgctct cctttgggcc 2580

gccatcgcat tgctggacga at 2602

<210> 3812
<211> 1841
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338902_G1, chr10:87127402..87129242, Cluster 23

<400> 3812
catataacac accgtcatat ggatagacaa tttgacccct attgaataat tatctaaata 60

attatttata tatgaatact tgtaataatt aatataagta ttagtcaata aatatttatt 120

ataaggctat caatttttat tataggtatt tatacataaa taattattca ataagggtga 180

aatcatattt tccacacgaa agttaatacc gttagaggtc agaagtaacg ataatgtcat 240

atagggaact aagtttatat tacgtctagt gttaaatagg gaagatttat agtctcttta 300

atctatgtcc atgctaataa tggaccccat aaaccctaaa aatagcaaaa gaatcatcta 360

agtgcttgca ccatactttt agaagggcaa aacctagcct acacatcagc tggaaaaact 420

aattcttgag gtcacttatg taagaaaaat caaaacaata aagaaaatgt tcctttgtag 480

cattttactg taaaatgtat agcctaaaaa cctaataccc taggctaaga gaaacgacgc 540

cacaaggaaa atccataaaa agttttcatt atcagcaacc aacaacaaga aataaattaa 600

atttctttat ctctctactc attaaacaat aaaaatgtta tggttagggt ttcgtgacag 660

attaagcaat aaaacttatc cctctaccca ctaagcaata aaattattct ttatctctct 720

acccattaag caataaaatt tatttatctc tgtacctttg gttagggttt cgtgatggac 780

gggattcaac ttttataggc ataacacctt tgcaagcggt tgctttaaga ggccgtgtgc 840

aaaaaaaatt attacagaca acccacgtaa cgtaaacaac cacgtataaa gttttttttt 900

ttttttttt gcaaacggcc atctgaagca acaacttgca aataaatatt tttttataaa 960

cagtccaact gtttgcaaaa actgttgacc agctttatac ggagtgcaga ggattataag 1020

ctgtttaagc ttttacaatc ctctctgcac accgcttaaa catgtaaagt atacatattt 1080

tacatgtata tataagctga tcattttaaa aacaactgtt aacttatggt cgatataagc 1140

tggtcatctt aaaacatgta aagaggatta tatactttac atgtaaaata tatatttttg 1200

gaagcggcgc acttaaaaca gccgctagca aaaacaggcc gtagtttttt agaggcagat 1260

gtccaaaggc agtcgcgttc aacaattttt tttaaaaatt ttttgcaagt ggctagattt 1320

agtggttccc gcgcgcgcgg tccgaaacaa tgcagccggt ttcccctgta aacgccgatt 1380

gaaaaacaac atatgcaagt tagttgaaat gagtgtacga cgtcgtcaga gtgactgctg 1440

gtgatgaagt tccaaactgt gctttcatgt cacgtgatgc acggacgcga taatgcatga 1500

agttaagttg acaagcaagt ggccggggtg gcaaattgtc tctctgattg ggaggcgctg 1560

gagacttact tgtccggcaa gctctaagcc acagcatctc tagctactag caagctagtg 1620

taagtgtaaa aggggtctgg aattaggcaa agctaaggtg gttaagaaaa tcaagtgtgc 1680

atgcatggat ctgtcatgca cacgtacgca atctgtgaat tgtccttctc caagatcaag 1740

tcctatcccc tagccagcaa ttacccgatc gaggtccgtc cacttgatgt tgtgaaaagg 1800

tgaaggatgg atcatggata tgcatgcaca gatgcatgag c 1841

<210> 3813
<211> 1419
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_340413_G1, chr10:95539809..95541227, Cluster 23

<400> 3813
tatgggagga tcaagaaaag gtttaccttg ccctctacgc aaaaataccg gtggtacact 60

gtttcaatcg tatttcaggt aacatagttg agggttaaat atgtatacct agtatggagt 120

atctatgata atagagaaag aaaaaataag ccagtatgga tatatatgaa catgcaaaca 180

ataaacatgg gggagcggtc caaggcgttt atgttagatg aacatacctg ttgcaatcgt 240

tggaagattg tagatgcatt caccgagcgt gatgggacaa catgcaaaag cagttagaaa 300

acaggttagc aagtggattt taatccatgt aaacaaattt tggtactaaa tatcaacatg 360

tgtgcatata tgagattata tatgctacca catttggtac acaaatagat ttatatatca 420

catcacagta aatatattat ggaggcgttc ttttttaaa aaaaaaaggc taaacaatca 480

catgcatatt tggtatgtga tgcacaaatt taattgtata tatagcagta gattgtccat 540

tctataccag cacattatct atatattaaa ggtatatgta cttgtattcc aaatacatat 600

gtatacatgt gttcatatgt ttaccaatgt aagctactac atcatatata tgtgaggaac 660

ttttttctc aagctcgagc tttgatgtac agttctatgc ttcaagattc tgaatcttcc 720

cagtagattt gctcctcgct cttatatata aaaaatacaa tagatcagag cgtgatgaac 780

ctttactaac ggcgtgaata atttataagt cgaaacaact gaagatgctg gtaagagagc 840

agatgttgca gacaatcttt cactatgagt agtttggtca ttttcgtagg gcatcagttg 900

tttagttagg ctagactcca aatatccagt ggacatataa ttcataggac aacaaccgtt 960

ttagtcgcaa aactcatatt aagtccaaac agatgaacac ataatccata gacacatgga 1020

aattctaaca aagagacaat atttcgagtg gcaattctaa catttgcgct acgattgttg 1080

cattggatgc tagaaatttg agtttgtatc tgccataaag aattattgtt gtgccaataa 1140

gattttatgg ttagaatgta cctatgtttg tacatatata cctgaaagca catgttgcat 1200

attatttata tgcattaaag tttaaagtta catgttgatt tcactaaatg gtaatagaac 1260

aacacgtgtt cgtagtgtct gtttatgttg ataggtataa attttatgag tttgggtgga 1320

caatgagtag cagtaatgtg taaggtggag acctttttt agagaataga actatttatg 1380

tgttgtgttg atgccatggg tggggcagag gttcgacgg 1419

<210> 3814
<211> 1693
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_343321_G1, chr10:112322095..112323787, Cluster 23

<400> 3814
gccattggga aggcactaga cgtgtttggt gtagaagctc gcagtgcacc agacatgtat 60

gctgccccca ttttaagccc ttcatgaggt aacgattgga ttttgaattg gatctataaa 120

tagacccatt agctagcctt ggctggcatc ccttcaccta ttacacttga gaacacctca 180

tagggataga taaatacact ccattcacgt gcatctcgta gttcatcttt tgggtgagat 240

tgtagagctc ctagttcata gtatatagct gttgtgtctc gtggcactag ttgagcggat 300

tgggctggtt ctactcttgt tactattggt ggttgtcatc ttttagacaa cccaaaagtt 360

aatggcattg ttgagaagct attagagatt gttgccggct ccgatcatca ttataaggag 420

ctcttgttct ctttccctat gggagatttg caaagagtaa ctacagtgaa atagtagagt 480

gttggagtgc ctattaatat ggttcttatg gggcatgatt gtaggcttga tgtgtgatgc 540

caattagtat gtgaaccacc tagcgtagac ttgctacaac aaggacgtat attgccgata 600

aacaatcgaa cctcgaggat atatcttgtg tcatcttttg acccatgtgg tttgaactct 660

taacttacca ttgcaaatac atctatctac ttgttgtata tattctgctc aactagcttt 720

gtgtagacta tactttgtat ttattgatag tagccgagta gctttcttta ttcaatatat 780

actaaagatc aagctaatag atttttttagg ggacttcctt tcagtaaact aaaactagag 840

caagtattca cttatgcacc atgtttatac caatcaactt tgctctagtg acaaatgtgt 900

tttataaaat aattttatat gttattcacc caccctctag acatctaggt cctaataagt 960

catatcacag cccatacccc attattttaa tgcctaacaa cctatgataa aaagatgaga 1020

attaattagt ttgccaaacc acctcacttt aattgaacta aatatgatta ctgggaaaat 1080

aggatatata tatatatata gacatttaaa gaccacgagc cataaatttt gggtgttatg 1140

aatgattctt ttgtaattct agatattaag aacccaacat gaagagaata ataagaagtg 1200

caaataaatg attaagtcaa tatgatctat gaagctcttg atccaaaggt ctttgagtca 1260

gtcaatgatt tgaaatttgc tcatgatgtt tggaaaagac ttgaaaattc atttgagagc 1320

acattgctat taaagaagca aagttgttta tattcaatat gcaagaagat gggtgtgcta 1380

gaagtgttct ataggctcaa tgtttttgta aatgcgctaa ggaacttagg gcacatggtg 1440

gatgatgagg acttttctca ttggtttttg agatgtttgc ctccaagatt tgatacttta 1500

gtcaccatga ttatgtgagg tgttttgaag gagtaaccct aacccaagta ctaattgatg 1560

tggtcaatat gggaagagat gggaaagata aagaagatga taagaaaaag gaagaatgtg 1620

tcattcaaat ccatcacctg atctaagggc aagagaaaga ataaggaagg attgagtgaa 1680

gatgactgct caa 1693

<210> 3815
<211> 1905
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344664_G1, chr10:119144946..119146850, Cluster 23

<400> 3815
agtaggccac tagcatggaa ataggatagg ctagtgtcat cccatgtcat ggggccaata 60

atggggccct aggctaagaa gacgtatgtg taggaggtgg tccatcccag taaggtggct 120

ccatcagata ggacctcaca gtccctagat gctatcttgg tgagatccta gggtgttatt 180

gagcagatgc actccatgac cacaaccaag taaaggttgc tcgagaataa gaggaatatc 240

cttgagcata tggggactag ctagaagtag gcgtttagga atcctgagtg acaataacag 300

tggactccct cgcaaggagg gaggtggaag aggtagtgag gaagacaaaa gaggaggcac 360

tggctactag ttcccttgcc tccaaatcct aggagcaggc caagaaattg aagaaggtgg 420

cccttcaaca cgagaaattt aatgatggat tcatcgtagt ttatgcgaaa aacaattctg 480

aagcacagtt tagccgcata agcttaaatt gtaatggatg caaatgcatc acaaaagcta 540

aagttggata cattgtgaga atatagtgta ctgaggcatg ttaaaactca gtttttctta 600

agaaaactta ggagtctaat tctttgacct gcaaacaaga cattctagtt tagtgaaatc 660

tgttgaaaca gaaatgataa gtgcaacgat tcacatagaa ttaaggtcac tagaaaaatg 720

ccctatcggg ccctctacca tacatgtgta aaaaataata taagtgcaat ggctggtaaa 780

cacagtgcaa caatatctag atatgtttag atatgtagag gggagattgg cgtagccctg 840

atctgtgcac ttgcaaggat ttgcacagac aggtaaaaca agttggatct ggtgagtata 900

tttagtattc atctagatat gaagcagctt gagtaagata tgaagccacc atgcacacat 960

gccctattat atacttgcct cataaagaat ttagtattta gatagtttaa aatgtatttc 1020

atctagaaag caggcctcat atataaaatt tgtgtgggtc tattttctat ataatgaaca 1080

acatcatttt ttagtattca taaggttgta tatttgtttg taaaggaaaa taatacgaca 1140

atgtagtact aatccaaagc caaaaaatga tattgtacct atagaatctc aatacatttc 1200

tttggtagtg tagctatgct tatatattgt ttgcatagta acttggttac ttgcttgcag 1260

atagcaatta actacggttt tgccaccata acagcacttg aagactcccg gatccatttg 1320

tgtgcatcag tgcatgatgc attgttatgc aaaacaagaa agaaaaaact cagtgctcaa 1380

gctacagata accacaacag cttagcaact aaaaagaatg acaatacata acctaaagat 1440

aggtggatat acatatacat aacatgcttt cttcctacat aggcaaaaga ttgttcatct 1500

cctacgatcc agttcagaat agatggtctg ttgttaggca tgattacaga tgaacatgtt 1560

gtgtcatgga agcaattatt cacaaagatt gaaaatgtaa tacaagactt gagatgaaga 1620

tactctagtc aagccatgaa ggaagacacc aacatttata tagttgagag attacttttg 1680

gaggtgtcga ggaagcttac acaagcagaa aagaaagttg aggtaatcgt cctgcatcga 1740

ttttattatt ctatctatta actgattttt atgcaaaagt ttttagatta ttttttggta 1800

tgttaacata tcctctgtat acaaggtttc tctgagggag tttaaccaaa ttaccatacc 1860

tagaggggtt ttacatgaga acaggaggga gaggggggtt accta 1905

<210> 3816
<211> 1631
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345674_G1, chr10:125093604..125095234, Cluster 23

<400> 3816
ttccatgagc actcccaaca cagatacaga taaaatagtg ttcgttagac aactaaacat 60

gttgttctta gagtttacat gtaatctctc cctcccaggc atgcataaat aggcccaccc 120

aggtgtttgg tgtaggtacc gagatcctta tgttccctgg atcttgatcc aacatcttgg 180

gcatgttcaa ttaagatcag caatgcaaca ctctcataaa tactccctct gtttcaattt 240

taaaagttaa tctgcatcta gacatgatgg gtttggtact gcattctaca aggcctaatg 300

ataaatcaat aaaggggagg tgatgacaat gatcaatgat ttttatgtag aatacatggt 360

tatagctaga ttgaaaataa tgctagacaa tttggaaata cagattcata atgaatgtta 420

gttttgtttt aagatttttg ccaagttggt gaggtactga ctatctggcc tagcaaacta 480

ataactaatc agcaagagtc acattgcatt aatacataaa ccatatgtaa ttgatatcat 540

acatgagctc ggacaaaata agttaaaaaa ggtaagattg cttttgaaaa ggcttatgat 600

aatatattaa ttatgtctta gtgaaaaaca aaatggtgaa gaaaggttcc ataaaaagac 660

ttatcaacac taccaagatt atcatcaaag gagcgacaat atgtgtgaac attaatagag 720

aaattgaact tatttgcaac ttgcaggcac taacacaaag ggaccattta tatccttttc 780

ttgtcaatct ggctgcggat gctttggaag agggtgttaa ggggattgtg tcacatctgt 840

tctagggagt catcacatgt aagcaatatg atgatgatga tactattctt ctaatggaag 900

cataggatat gaattatcac aacaacaagc ataagagagt gatggtcatt catgtactat 960

gacaaattta gatgaaccat aatcattacg tgctagagta tttggtcatt gagaaacaat 1020

ttcaccttaa gcgggatgca accaactaca ccctaatgca aagatatttt taaagacact 1080

tttgcgattg ttatccattt tccattgtgc taaaaaggcc taccttcctc tcatacaaac 1140

atggctacta aattatgtat ttttccttgt ttcttgatct gttgcactga ggctttgctt 1200

tctttatttt tcctaatatg tatattaatt aaggctgcgt ttggtttgct tgagattttt 1260

ggaatctcat tttgcacaga atccaatgta ctattccaga attcagttga agttagattc 1320

tatagatttt agatacaaac acactaccct atgcataata tctaatgtgt ttgactcatt 1380

atgagatctt ttttatctgg attctaaaaa tcccatggga accaaacgca gcctaattag 1440

tatgtaggtg aaccactcct attgcctata aaaaacatta cctgagtcaa tccttgacct 1500

catgatttat catctgggat ttgaacactg atgatgcttg ctgttttcta gagataggaa 1560

caaacacaaa catacatggt gcaattctgt ttattatctg aaaaacgaag tattataaat 1620

cttctgaatg a 1631

<210> 3817
<211> 1570
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347106_G1, chr10:133491965..133493534, Cluster 23

<400> 3817
tcgacaacaa ctcaaattat tttacaataa tttaaatgat ttttaaaata aaaattattt 60

tgacaacaat ttagattatt ttgtctcgtg acatcaaatt aaatagttta tcaaaataaa 120

ttttaaattt tgaaaacaat taaattattg taaaataatt tgagttgttg tccaaaataa 180

tttaaattat tgcggaaata atttgaattg tcataaaaac acgtaaagtc taaaaatagg 240

gcaaaactcg attacactcc aaaataaggg caatagcgca atggttccct gtcttttcta 300

atgaagactt aacaccattt tgttttgaaa aacagggcta aacatgcaaa atctaaaaaa 360

acagaaataa atctgtagtt acactctaaa atagggatac tggcgtaatt gtcccaaaca 420

caagactcta cgcacggtgt gactactatt ttaaacttac atagaaacta ggcgcaacat 480

attagccttg acactcatag agttgtcccc caaaaaaata ccatgattag ctgatcgagc 540

ctccatgcga ttaatgaatc cgagcttggg gcaacatgga ttattaaagg agaatcggta 600

atgaggtcac ccatgacctc aattgtaagg tattttggtg aggcagttgc atttgattat 660

acccaaaata taagctaacc atgggggggac catggtattg tctagaaccg tatgcgtact 720

ttatcagtaa actggccagg atctagcaga gttcatatat gctgggcgaa tgaactgcgt 780

gatctgtgga cacttgtagt gccgttctgt ttgttgtcct aggggaaaaa aagatctgca 840

atctgtgctc tgctgttttt ttctccttga acgtagtagc acccactaca ccgcaagaat 900

tttcaagcac tgattgcgat ttagaaatcc gcaatttgtc ctttttgttt aggggataat 960

tgtactgcct ctgaacctgt actgaaagct ggcatgcaga catatttata tccattatta 1020

ctctgcgacc aacctttaa aaaaaacagg tccgtttcaa atgtacgcta atactgaatc 1080

tagcaataag aaaattgttg aactggatgt taagtacccc cgacagaaaa atatggcagt 1140

gtcaacagtt cagcacgcat gatacgacag ccgatccctg aattatgatg ccaacctctc 1200

tgcctctctg gctcttgagg ttttgatgat agaaaggaga ggtgcagact acagttcgta 1260

gttgctggta gacagatgat aaaaggcaat ggttccgcga caaggaaggt gcaggaaaag 1320

tgcactcggg aatggaggca gcatcaagca agttgtaggg tagtgtcctt attgtgactt 1380

gtgatgcgtc tgagctgagc cttcccatgc ggccatgtct gcactctgac ccttgccgcc 1440

tgcccattcg cgcccatcag caacccacga atggcggaat ggccaatcat tggacagcag 1500

cggtttcggt attcgtttcc caaaaggtca gataatgtgg agagagcgtg gtataatgtt 1560

cagagacacc 1570

<210> 3818
<211> 1832
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348227_G1, chr10:139044150..139045981, Cluster 23

<400> 3818
gaacagagga gaagagtcta tatactagta taaataagtg attttcatag aagaggattt 60

aaatgatatc attgaagcac atgcatgggc agattttaag gggggctggg ggtgcttcaa 120

ccccccccccc ccccccctat agatgtccca gcagtacaac atagggacag gtgatgctca 180

tcttacgtgg ctacgactgg cgcacagcca ttggcatggg catggcaaca agttcctaga 240

atctgagctc agcgagcatt catgaaactg atctaatccg atctttacag aagataccga 300

gattactagt ataaccatcc aatgctctat acacagagat tacgtaaggt catctcacat 360

gtgtacgttt ttcaggtcta atctgatctt cacagaatat atagagatta cacaagagaa 420

tggagaagga agacgaaaga aagagaggga gatgagcctc cttgccagct tgtgttgtct 480

gcgccattgg tcacgagaaa atcattctct actttagcct attattggat ccgccactag 540

attgaaagct atataagtat agagaatata atattttcta tatttaacat gaaaaaaaca 600

aataaagtct tttgttcaga caatcttaga cggtgtgggt gtaaaggtat gaacaaccca 660

cataaatgtc acatatctta agagtatata aggggataag tgcaaaagaa cacaagagac 720

gtattttgat gaaataacgt ctcaacggtt ttctaagtct aagatacggt ttaacccata 780

tagcccacat aaatgagtcg tgacttaggg catgttcaac ccacataaat aacttgtatc 840

ttaaggggta tcacggggat aagtgcaaaa aaacacagga gacatatctt ggtgaagaaa 900

cgtctctagc acggttttct aagtctgaat acgattccat ccatacaacc cacataaatg 960

agtcatatct agataggttc tagcgaataa gatacaaggc acgcttagtt acatttggtt 1020

gcatgaaaaa gtttcttaga ttgacatgct cttaaggagt tctagtaaat aagatacaag 1080

acttagatac gggttttatg aatgagtttt tttgtacatg tagctagtgc ttggagaacc 1140

gcaacacagt atttaggttg taagtgcact cagagaagag acaaagtcga ggagacgtgg 1200

gttcgaaaga aagaaagaaa aaaaaaagta gtagtgtaag atttttgacg gaagggagag 1260

gggattggtg tggaaaaaga agacggttga gggatgacga gttttttaa cgtgggtctc 1320

acctatagat ttaggcatgg ttctatacat tataacctat ttaacataca gaagtcacgt 1380

tattttattg gaactaagat cggttccata aattagagaa gatgccctta attattatgg 1440

ccaggaggac caaagcagca agctgcagtg ctcgcccaca cggtagtagt agcggtagca 1500

gtagcactgt ccctaccgtg caccgcctgt actacgtcag ggcctctttt taggtgtcat 1560

gtagcaaaaa agaccagaca gtgtggcctt tgttgatagc tataggtttc tttcgccagc 1620

tcgatcgtct tccctgatga aagtttttc ttcataactg cttgttccta cctccgaagt 1680

gtaggaccaa gaagtgcttt ttaaaccgtt tttcaatgga tagttttatc acgttgtttt 1740

caaagctatc atgcgaacat ttatctagga aactctcatg aaactcccgt caagaatggt 1800

ctaacaagca acatgaggcc tttcttgatc ac 1832

<210> 3819
<211> 1481
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41211_G1, chr1:244302501..244303981, Cluster 23

<400> 3819
atagttctat ggatggtgaa ccaccaggag gcttgccatt ctcaatgtag actctaggct 60

tcaaaagatt tcttggatat ataatagaag catatatgaa actagggaat gatcctaagg 120

acacttatgt cactgatggc catatctgta atgctaaaca cgtgacaagt tgtattatac 180

caatatttcc aatgactatt gatataactt acatatatag aaagctgcca ctagagtagc 240

atcaagcgtt gtcgaggttt atattgttgg acaccatggc atagattctt caaatgtaga 300

gttgttgtgt agttaatcat gcacagattg tctagtgagt ggtctacact ttgtatttat 360

tgtaccaaat ttattattac cttacatggt ttgtttctat tacatacata atatggtcaa 420

gaaatagtga atcaatttag agaggattgc aattggcgag cggtactagt tgatcatttt 480

gtggtgcatg ctagtgaagt tggaaagagc cacaaaaggt atgatactat atttctcaaa 540

ttctataatg caaatacaca aattgatgtt ctaaattgtt tgtgttgtag gtactccatg 600

tttaatggag tggttgactc taggtatagg gctttgggtt acagtttagg gtttagatca 660

gagcttagaa ggtagcgtcc tcgtcacaaa gatctagaga tagtagccat cgatggaatg 720

cacaagagga gttgcttctg atttaagaag taatgagtct acgtgatgaa aaacatgtaa 780

ttctaagagt atgatcgtcg acatcaagac ttgaagtgac atcatgacag tgggtgctag 840

atgtttggga gagaataaac caaatacaaa atagagaaat aaattgtatt ggattaaagt 900

tttcatgttt ttgaatatat agtacgatgt tggatattta taggtgatcc atcttcgtaa 960

ttatggaaaa agatttaact acacttgaac tataaagtta caattgcttg tttgctttag 1020

gataaattgg tcaatttcta ttttcactag tcatcatgtc atcaatgatg ttcagtcttt 1080

gtaaacatgt ttaacttcta gcaaagatta tttgtaatct ttgtttggtt gcacaatgat 1140

gtaactcatt cttataaggc ttcattggac atctatctgt atgtcaagcc ttcataaaga 1200

tgaagtttcg cataccttag ggtttagtag atgaagcttt gtgtatcttg ccttcgctag 1260

cgagacgttc tagcaaaagg tggagccttt gtgtttatgt gcattgattc cttctttctt 1320

atcactttta ttgttttgta taacatgaat ttgattatgt aagctaatgc caacaacaaa 1380

tggtcattat ttagctccta attattgaga ggtgcatttg cttgtgctga aatccctagt 1440

agctatagtt gaaacctagc taaaagcaca agccaaattt c 1481

<210> 3820
<211> 2593
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_444_G1, chr1:2300275..2302867, Cluster 23

<400> 3820
tctcgtcgag cccgttctgt agtgtcattt aagtcactca acattctaat ctttctcatt 60

ttacaccaac tcattccaat tatattttaa ggcatctagt aacattcaag tatttattaa 120

tcacgtataa tctaatttaa gatactttga tgattattta aaacattctg ttttctcaat 180

catttagtta tgcggtacaa gttttgatgt catctatttt gtagtgtcat ttaagtcact 240

caaattctca tctttctcgt tttacattaa gtcgttccaa ttatatttca agactttaag 300

taacattcaa gtatttttct aattacttgt aatctgagat ttaagacact ttgatgatta 360

tttaagacat tcactttctt ctctcaatta tttactcatt caatcattca ttacttattt 420

tgtttaattt aagtcatttt gttaccgttt caatcattcc atatcattca atcattttgt 480

gacttattta atatatttca tattatcagg agttactaca agaccgtctt acaaatattt 540

taattcattc aatagtttat cacctagaga ctcataatat aatttaagtc atccagcata 600

tagattgaca taattatttt atcacgattg gacctgttta atagatgagg tgcgtccagt 660

tgaagcatgg ggcacgcacg gtggattgta gagttaacga acattggacg ctcgcactgg 720

ctcactgcaa ctaggagagg tagtagttat gaacagcacg aggaaccaca atatagactc 780

aatctatttt aactcatcta aatatatgtt cacaactaat ttttttagtt tatctatatt 840

ttatttatcc atctaaactg aagctaaatc aatctcctaa tgaccaacta atggctaact 900

ctgaacttct cagatgaaat tgaaatccag attttattta aatatacctt gctttagcca 960

ctttgcttgc atctggcaca accttgcaat aatccttcct cttcttgcgc ctatcataat 1020

ttagtcccca catcacaatc acttttacta atgttattac tttgtaatat atctatagtt 1080

ctgtacgcag ggaagttgtg ttgccggatg tagaaggcca ttatattgca ctgtgcaaaa 1140

caaggttgca tgcatcatcc ttaaaatttg aatagtttca aagtgatatg aaaaaaaatg 1200

aggtggtgat gagctgatta ttgcacggtg caaattcaaa gatgtatcac tgatgggcac 1260

taatgaggaa aatcaaagtt gttgctttgc ttttaaggtg gtgatgaaag ataactactt 1320

tttcttttga ggtggtgatc aactgagtat ttagtacttg gacaatgtaa attcaaagat 1380

ataacactga taggcactaa tgaggaaatc aaagctgctt tgtttctcca catgagcatt 1440

gtgaaccaga ttattgcacg tactcttcgt tcattccgat gattactgcc tcatcaggtg 1500

tcctttggtc tatttttcac atttgctgct tttgttatat attttctaga tgttgagtgg 1560

tcgtcgtttc cttctctttg ctgctttgct aacatccttg agattgttca tgtttctttc 1620

agtcaccatg atttagcact gggtcattgt tctaacagtt atatatgccc atagctagct 1680

ggattcattg tatatatatc aagataagct gtagaaaaca gtgatttta gtactttcac 1740

atctatatga ttaagaaccg tgaataatta agttgcttgc tttctttctt tcaggtgaca 1800

aattgataga acctgatgaa caagcatctt gtcgtcaact ccgaacattt tacttcttgt 1860

tttctatgcg cagttccagt gttttcttgt ctccaagcta gtaaaaatat gttctgtttt 1920

ctacttgcta ctagtataac ttctctgcag atttgaacac tttcaaactg ttttgttcct 1980

ctcttttcct ctaccatatt gagctaaaaa ggagttgatc tccagcaata atacatcaat 2040

aacgaagtta ttgaaagcca cactttcatg cacgtacgtc gatgatgggt gaaatttgga 2100

caaatcactg gttcattcat atataggtgg cttaaatcta ttatttatga aactatatgc 2160

aatcatatta tttatgaaac tatgaaattg ttcaacaatc aagatatata ataagcgcta 2220

ctgcgcgctg gtgatcatct cccttgaaat tcctgaagaa agaaaggagg gctatatatg 2280

ttggatccat tgacctttga atttgaagtg acacaacaac acagctaggt aactgcatcc 2340

aataacaata aaatatagta ttgtgacatc acaaatattc aaaccctctg tatgaatagc 2400

tctcagttga agaggagatc gatgttcaga tatcttactt ggctgattgg atattacagt 2460

aattaatata gtgttgtttc ttcgaggcgg aggccgtcga cgtgtgcgtc ggcgggcaga 2520

tctgtgcggg gggggggggg gggggggggg gggcggcgca cggcggcatg gcgactcagc 2580

gtagccggag ctc 2593

<210> 3821
<211> 3478
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44702_G1, chr1:262445574..262449051, Cluster 23

<400> 3821
tcaataattt ttttctctgc cattctttaa tttaatagag aattttatga aactaatttg 60

aatagtaaat attgatgttt cttttacgat attgatgaaa gttagataaa tagatttaga 120

agaaaaataa aagaaactat agtatgtaac gagaggcgta ctgataaatc aatgagaaag 180

cctaaatggc acgattcttt caaacactaa gaacatcatc aatatttcta aaaaataatt 240

gataaatcaa ttaatcttct aaatagataa aaaagttggg tgcacatttg ttgggttcct 300

ctaattttta aaatctcggt actaaaaata tatgagacaa ttttatatca gaaatcatgg 360

acttcctaaa ttatgctgac cattttgta ttttgttcct cgcctatata tttgcaccat 420

gaaccatatt ctactcttta ttcttctcta cgtccttcca catttaaatt ggtcgataga 480

tacacacgtg aatatatcct taccaagtgc agaaacattg ggagttgaga tagagttatt 540

gaagagtaga ttttttcagt tttgtcaaaa agtgtagatt agaagttggt tttagaaagt 600

cttggagatg ctctaacaaa tcaatcaaac ttgaaaagta gcatcacaca cataggaaag 660

aaaaaaatgt tgacacaaat aaaattttgg aaaaacacac acactatgac caagtatata 720

gaaaacaagc ctccctaatt gttactcctc cattctaaca cgtgagaatt ttatgttttg 780

ctgtaagtta agcttatata actttgatgg aattggaggt aaatacacca atacctaaaa 840

catcgaacta gttttatgaa gcccaaattt aaatatcttt tcatggtaca cttatttgat 900

attctaacct cttagttcta acattcaaaa tttgtccata aacgggagca tttctggtat 960

atccaacctc tcctccatta agattaattt agcatcatta gttcttacca tttagttaat 1020

aattagtgca tgtcatttta atctttatgc ttaaaatgtt agttagctcc tgctacaaca 1080

ggtgttaatt gcatacaata acttggtgat taattgtgga gcatcacaat cattttcttt 1140

ctccttaatg tgtcttactc ttaaaattat taacatctac tatatcgcta cataaatata 1200

agtattttta atggttttct tcaaatatgc cacttaaatt ttataaaaat agataactag 1260

tttatttgga tgccacttta tagtatccaa atgaattagc tatctaattt tgtaaaattt 1320

gagtggcatt ggaataaaca ccttacgttt ataaggaagt aagcccacca ccactgcttg 1380

gcttggcgat ctgtgtaaag tagtactcca gctttcatac ttcactgaca agtttagtag 1440

ttgttctcat ttaaacaatt ttattacacg caccaccctt gccagttacc atcaattcca 1500

aatacattgt ggcatacctc tccctttttct gtttaaaact tgatgatgcc atcttcctta 1560

tttaaacgtc aaccaacaat ttgagaaaca ggaagagcaa atagaggaca aaacgcaaga 1620

aacgtcagtt catgttcatc tgtattttca ggtcagctgc ctgccaccct acaaagcctt 1680

cccattttca tcttctccgt tttcatgctt tatgagaatg cgaagcaccg ggaaaaggac 1740

acgctcttca gcagaatgac aaggttagta ctaaatattt tgattctgct acctatagtt 1800

ttcttaaaga aaataggctg gagttgtttt catcattatc taaaaaagca tcctaagtga 1860

agcgagataa ggcagaaccg tgtctcatgc tgacagtatc attgttgtct atctactaaa 1920

tattcttttt ttctaccaat ctagccaagc gggatggaat ttgccgtaaa catatcttgt 1980

gaagcaccac gaggtccacg acatgaattt gaactgagcc aaacatctaa ttcctggact 2040

tagtcacggg cttacgacgc atcagagatg gacatgcttg caaaaaagat ttagtcaaag 2100

tcgtgttcga catatccact cggtcagtgg cagcagcaac acccacaact ttactgccat 2160

gttttgttag attttaatta agtttgattt attttaaatt ttattaaaat aatttaaatc 2220

acaatgccaa taatactaag tgcagcatga tttattcttg tatacaaaat aatgataggg 2280

gattgactca aatataagcg gatgaatatt ttgtgagtta gatctaaagc ttaacaatcg 2340

gtacaaagcg ttcttcctaa gttgtgttgt gctcaatcgt gcctaaacct aatttggtgc 2400

aaaattagaa catggatagt tatgctcatt gatcacattg catgaatttt ccaaatagct 2460

aaaagaagtc aggagcatat ttgttgggtt cttcacacag tttccaaaat ttgggttcta 2520

aaatataagg gacaatttta tatcagaaac catcaatttt ctaatttatc ctgcacattt 2580

tttttatttt ctttgttact tgtatatttg caccaggaat catgttctac tctttattct 2640

tctctacgtc cttccacctt taaattggtc gatagataca cacgcgtatg taccaagtgc 2700

aaaaaaaggg ttgagataga gttattgaag tgtaggattt ttttttaatt ttgccaaaaa 2760

gtctaaatta gaagtgggtt ttagaaagac ttagagatgc tctaacaaat caactaacct 2820

tgaaaagtag catcacacac acataggaaa acaaaaaatg ctgacacaaa taaaattttg 2880

gaaaaacaca cacacactat gaccaagtat atagaaaaca aacctcccag attgttactc 2940

ccccattcta acatgtgagg attttatgtt tcgttgtaag ttaatcttat ataactttaa 3000

tgaaattgga ggacatcgaa ttaagtttat gaagcctaaa ttaaaatatg ttttcatggt 3060

acacttattt ggtattctat cctctcaatc ataacattca aaatatgtcc acaaatgaag 3120

catttcttgc ataatctaac ctctccttca ttatgattaa tttggtataa ttagtgcttg 3180

ccatttagtt attagtgcta tgtcaatgta atcttgatgc ttaaaatgtc agcatgtgtt 3240

aattgcattt acaataactt ggtgattaat tgtggagcat cacgatcatt ttctttttcc 3300

ttaatctgcc ctgcttgtaa aaatacttag atttatgtag agatggagta gatgttaata 3360

tttttggaag agtaaaaaaa gattgacttg aaataaacac attacgttta gtagctgttc 3420

tcattcatta aacaatatta ttacacgtac cacccttgcc cattaccatc aattcaat 3478

<210> 3822
<211> 2257
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45689_G1, chr1:267773440..267775696, Cluster 23

<400> 3822
cccaatgaca tgtctatctt ggtttccttg gaaatggatt tttgtcatgt ctatcttcag 60

tattttgttt gtgttacact atatgacctg ttcatagatt attgttcctg ttttctaaac 120

ttggtcttat gactaatagt ttttaatgag tggttctaac tggactgctt ccaaatgtag 180

tcattggcta agccaaaatt tgtatttcat aaagtaacta agatcagtgt ttgtctggat 240

cgtgacaagg ctgtagcttt tcccataatc gatcagacca tatcctagga ttaaggatgt 300

gcaacagaac ccttttgttg tcgacgatat caatgagctt cagtttttt cacatccata 360

actatatacc aagccttttg ccacatttgc aagccacacc atcgctatga acagaaaaac 420

tattatgtta gatgtagatc catcttctat ccacatatca taaccataac gggtccttca 480

aaatttagat gtgaccttaa tgctttgata tttgattggt aagggtctac aggatcttat 540

gaccatatta cgtcacaatg caatcagata cttaccctga tactttgtat ttatgtttgg 600

aggtagcatt gatattgtca actgtagttg tgtcatctgt gccccttat tcttaagact 660

cactatattt ggagaggtat ccaggagatc atggatgaag aaatggatga agatgtcata 720

gtcaaggttg tggactgctc gaaccaatca gaggtgataa atcagtgcta gttattgctt 780

tatatttctg aacaagacgt ttctgtctgt tagaaattgt tgcgacattt gcttagggat 840

tcccatgtgc catgttacta gttacactgc tattgctggt gatgttctaa ctcctatcgg 900

ttgtacaatt taattctatg ttccctttc tccttactaa atgcttcaag catcactaat 960

tcttggtgta caaatttgtg aactgatgag acagttcttc ggtgtagttt ggttaagact 1020

tagtaaaaat atagtaggtc aggagctttc atgtttacag caacatcaac ctgttcttgt 1080

gccatttcta catgaattag tgattactgc taaccagtta gaaagtacta ggacctaaaa 1140

tctggtcatc gattttggct catttgctct ttttattaat aattgggaac aatggaggta 1200

caactaggtc ataatatgtt tattttcttc tgatgaacta atagtttgac ttgttctctc 1260

tattggatgt tatatatata tatatatatt ttgttaatgc atttagaaat ttgaactgat 1320

tcctaaaaaa tcctttggta gtagatgttt atgtgtttag tgctgttact acttaatttt 1380

gaaatggcgc aggtttgcgc gacatggctt ttcatagcgc tcaattggat ctatcccctg 1440

agcataggag aaaagtatca atttgtacag tggatccaag tattctacaa agcatgcatc 1500

ctccaatttc ccacaagcga gaatggcatg atctgatgga tgaaatggtt gttgtagcaa 1560

taaaataata tcggtcaatt gtctttcaag gaacaattgt ctttcaagaa ccacactttg 1620

ttgaatactt cagatcggta ggtttcaact gtatctagaa ttcttacaaa cataacactg 1680

atggggtttt gctatttgtt tggaagttct tctaaggtct tgactaaata ttgatgattt 1740

tgatcattaa acttagaaat gattaactac cattgcatca ctaacttagt gccttctttt 1800

tccatctttc agatttggta ctatcttgtt atgattgatg tattcatctt tgcatcacaa 1860

ttttcttgtt ttctcactct ttactaagct accgtattct ttggtatctc aggttcattc 1920

ttttagctta caagaggtta tcagatatgc atatttgtaa tgaactcttt tccccgcaat 1980

atttggattt attcagtcca ttaacatggt gtgtacacaa catttcatag gtttactata 2040

aacaggatct agttgactaa tttccctttt cctcttttcc ccacaaataa cacttactgc 2100

ctatattgcc ttgtacttag ccttgaaaat agttatatta tattttactt gcatttatgt 2160

ttatcttttt ttatctgttt ggacagatct ctattaaatg tcatgtcatg tgctacaatc 2220

gttaggacta ttaatagatg ttgctctgtc tatctat 2257

<210> 3823
<211> 1674
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47608_G1, chr1:278880182..278881855, Cluster 23

<400> 3823
tacctagctc tagtagctcc ttattttatc cacaaaatag actgctttca cactatttgt 60

gtgtacgtat cactcggatt aacccttctt tcccttacgt tcctttgaaa tttagagttt 120

attgtttcac aaaggggaaa cacgtcgcat cagaaagaag catggcgcaa caaaaacctg 180

ttagctactc tcgatctctc tctcattgct tgcacgtacg agctcggaat ggaggcacag 240

gcacaagcag ccatggtgat atgtatccag cgccaggaga gggaggatgg agcgaagagt 300

tccatccacg cgggaaaaaa aaacaaggat agggagtcag cagctcggat atatgcggca 360

cgaagctctg gttctgggag cactcaataa gttaggagca catattagga gctattggac 420

atgatttttt ctgctattct tcaaaaataa gatattgaaa acactgtttg ggagagattg 480

tttgggagag aggagatata taagaagtta cgacagccta gaacaacttg tgacactagt 540

atagatgatc atataacttc gcagaaaatc atctctcatt ttattcctta tgcgtgtttt 600

gataagtttt atagctaaag aggctctctc agtggttgca gttgagagta gaagggtgac 660

cactaattaa tcttaataac ctgtcaatca tcggatatat ggaactttta tacagattag 720

caagacttct catcaaatca acaaatgatg ataatgtatt tatctctaga tgattatata 780

catgaaattg aaaaaaaaat cagtaggata acatttttta ctaaggtgta taactttgag 840

atatcaaatg tgtcacttct tggatctaaa gaagtagaga gcgacaaaag aattgtcgct 900

tgagagttga agtgatcttc caactcagtt agttgttggt taattgccat attaaacgca 960

actatttcat aatggtgaat agttataata ttatcatgct tgttcatgta cttagtaata 1020

tcatacactt aacatggaat aagaactcta gttatttata aattgtccta atccatgagt 1080

tcatttttta gctaattgat ttgttgaact aaaattgtgg cacagtgaca atatcgatat 1140

aataaagaag acatattgac gaatggcggg ttgatgagat caacttttgt aaaacgactc 1200

taccatctat gagacaacta atgaattttg gagagaatcc aaaaattcaa ctagcttata 1260

gaatccatga aaatttatca gcttgtgcag gtacacgaca aaattcatcg cgcacatagc 1320

aactatcaag tgacaacttt ggctgaaatt catcggtttt gttattagcg atgaattata 1380

tgccttaaaa atatgtcaaa ttttaattgg atggacaaat ttatttttac caacaaaaaa 1440

cttcataaac catgatatat tagttaatta cacgtgcatt gctacgattt ctatatatca 1500

tataggtagg tattgcttaa acaagatagt tattcaaaca tgatccaaac tcatagattc 1560

tcagatcgtg cgaaactgag ttaatcgggg atcatgacag ggtcagcaca agcaccgata 1620

atcagtgtgt ctcgggattg agccaaacca atgccgagct aaggcgtgtg acag 1674

<210> 3824
<211> 1609
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49498_G1, chr1:287057810..287059418, Cluster 23

<400> 3824
tctatatttg attctacatg ttcaccacga tgggcggata tatatccaat ctcccaaaga 60

tttcaacacc gacgatagca ggtacatcca tctaaaccct atcctctgtt tactatttat 120

ctatttattt atccccacat tttcttatta cccttgctgc attgtcataa ataatgtatg 180

ttaatcacat ctacttatct actacctacg tcacatgatt acaaacgaat tatacacatt 240

aaaaattaga ttctactaaa tgtacattgt cgcctacata caaattcaat atgcaaagca 300

acgataattt tggctaagaa tgtcaccatt gtggtcagga aggtacatgt gtacacatca 360

ctgattttgt tgcaactttg ctattaataa aatacataaa aacgatgttt taaacctcat 420

gtgttggctc tgtcaataag tagtggagat agtggatact aaaaactaca ctttttcact 480

ggaaagtggg aggcatcgca agtgtttatg ttttatgctc atacgatctc tgcgtatgtt 540

ctgtgactca gcattccaaa tttacatata aaaccatctt cgcagaccag aggatgatat 600

aaaacattgg tccaagatac catcatttat gtctcttctg ttaattgatt acctaacttg 660

gtgttgttcg ccatcttgaa tgtattgatg atttgttttt attccctttc tttagagtca 720

gatggagaca gatggtggtg aatctctgga ctttagcaac tatccttata tatttatggt 780

atgggattag ttttcatgtt catttgttca tgtataagtg ttttatttac catttctcta 840

atgctccatg tagagatgga aaaacaatat tttgacaatg ttgttcactg tgggttaacc 900

atcgttggtt tctacgacgt ctattatgga aaaagcaata tttagtcaat gttggagttc 960

actgtgggtt aaccatcgct gctttctacc atgtctactt tcatgtagcg acggctccaa 1020

tagtgaattt tattatgata tatatagtag gtaatgaata tttttctgtg atttgtttgt 1080

tgcgaatagt aatggtattg agtcgaattc attaatggag aaggtgggct ggtatcaaca 1140

cttccttttt ctctttatgt gcagttcatt tcagaaactg cgaataatac tggtatcgaa 1200

tcgaatgcat taatggagaa ggtaagctgg tgtaaacact tatttttctc ttaatgtgca 1260

gttcatttta gaagttcgga ttgaagtgta ccaatgttaa aaattcgggc tcactttctg 1320

ttagcatata gtgtgtccct aatgttgttg tatcaaaaga aatgaatggt ttgtttatgt 1380

aaccgtttgt ttttagctag actaagcaaa ttgccacttt gcaccttatc ttaaacccta 1440

ttttgggaa aacggtaaaa atgtatccaa cagctcccta cttaggcccc ctttggcagg 1500

gctgtctcgg tggctctttt tctggctctt cgtgaagctg taccaaacgg tcttaaaaac 1560

ggctcctcac cgagagccat caaagagcca gagccatttt actattggg 1609

<210> 3825
<211> 3185
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51640_G1, chr1:300219793..300222977, Cluster 23

<400> 3825
atcccctctt gcttgctttc gttcttacag acagcatatc taggaatcat acctatacat 60

tggcgacaat atcatagtta aacagaagac tcgccaatcc gcaaaactag ctttgtttat 120

agatttttt acctctcaaa ctatgaatct gaataagcag tctgtagcat gcaaatgaac 180

taaccagcaa aaccagtgcc ttattgaagc taccaagaaa atcaggctat tagaagtact 240

attgtactat actgctatca gtaccactct catactgttt gtctaaactg tagcaggcca 300

acatttctat ttagttgtgt tgtaatactt aattaaatac aaatgatttt gtaaaagggg 360

tgcaaggtgt gtcttgggat cattttactc tctaagttat tcttcttaat ccaaaggaaa 420

aaaactttag agaattgctt acacactata ctgcacaatg caaacttttg taagaaatat 480

gttacctgca ccttaatgtt gacctgcaag caattctcta aagtttttg tagaattttt 540

ttacctctaa aactatgaat ctgaataagc aatctgtaga gtgaggaaat ggtcttgcta 600

gctgttcata ccaaatatac ggtttaagta gaattgcttg catgtaacat actgctatac 660

tactatcagt accttactgc tatcagtacc actctcatag tgtccacttg ggctcacttt 720

atttgcttgc acattgtata cgcttagtct ttctttactg tctgtctaaa ctatagcagg 780

ccaacatttc tgtttagttg tgttgtaata cttaatcaaa gagaaatgat tttgtaaaag 840

gggtgcaagg tgtgtcttgg gatcattgta ctctctaagt tattcttctt aatccaaagg 900

aaaaaacttt agagaattgc ttacacacta ttctgcgcaa tgcaaacttt tgtaagaaat 960

tctctaaagt tgacctgcaa gcaattctct aaagtttttt atagaatttc tttacctctg 1020

aaactatgaa tctaaataag cagtctgtag agtgaggaaa tggtcttgct agttgttcat 1080

accaaattca aatatacggt ttaagtcgac acaatagtga ggaaatggtc tgctttaagt 1140

agtcccaaca cgagagcaag aagctctaag gctttgctag ttgtttgtgc atgggagatt 1200

tacttcaata agcattcaat atcgtcgatg gtatatgact gtttgtcact gttgtgacta 1260

cttaaagcag tttgtcatca tattgaatgc tgacagacct ggagaggcaa tgagcaattt 1320

gttaaaacta taattttccc atgtgaaatt gatatacaaa ctaatgttca gtcaaataaa 1380

aagttaagtt cgtttccctt gacaaactaa tggcatagcc tcgcttactg ctttattatg 1440

cctgactgta tcctagaatg caatcaaact gatccttaga aattgaagat gtacttttaa 1500

cagttgagaa tgatccttag aaatttctaa caatagatca ttaaaattta taacatacag 1560

aatgataatg atctgttgtt acttataaca tacattaaaa gcctcgctta ctacctataa 1620

caatagatca ttatcattct gaactattaa aagtacatct tcaatttcta aggatcagtt 1680

tgattgcatt ctaggatata gtcaggcata ataaagcagt aagcgaggtt gtgccattag 1740

tttgtcaagg gaaatgaact taacttttta tttgactaaa cattagtttg tatatcaatt 1800

tcacatggga aaaatacagt tttaacaaat tgctcattac ctctccaggt ctgtcagcat 1860

tcaatatgat gacaaactgc tttaagtagt cacaaaagtg acaaacagtc atataccatc 1920

gacgatattg aatgcttatt gaagtaaatc tcccatgcac aaacagctag caaagcctta 1980

gagcttcttg ctctcgtgtt gggactactt aaagcagacc atttcctcac tgttgtttct 2040

acttaaaccg tatatttgaa tttgatatga acagctagca agactatttc cacactctac 2100

agcctgctta ttcagattca tagttttaga ggtaaaaaaa attctataaa aactttagag 2160

aattgcttgc aggtcaactt tagagaattt cttacaaaag tttgcattgc gcaaaataat 2220

gtgtaatcaa ttctctaaag ttttttcctt tggattaaga agaataactt agagagtaca 2280

atgatcccaa gacacacctt gcaccccttt tacaaaatca tttgtctttg attaagtatt 2340

acaacacaac taaacagaaa tgctagcctg ctacagttta gacagacagt aaagaaagac 2400

taagcgtata caatgtgcaa gcaaataaag tgagcccaag tggacactat gagagtggta 2460

ctgatagcag taaggtactg atagcagtat agcagtatgt tacctacaag caattctact 2520

taaactgtat atttggtatg aacaactagc aagatcattt cctcactcta cagactgctt 2580

attcagattc atagtttcag aggtaaaaaa aattctataa aaaactttag agaattgctt 2640

gcatgtcaac attaaggtgc aggtaacata tttcttacaa aagtttgcat tgtgcagtat 2700

agtgtgtaag caattctcta aatttttttc ctttggatta agaagaataa cttagagagt 2760

aaaatgatcc caagacacac cttgcacccc ttttacaaaa tcatttgtct ttgattaagt 2820

attacaacac aactaaacag aaatgctggc ctgctacagt ttagacagac aatatgagag 2880

tggtactgat agcagtatag tacaataata cttctaatag cctgattttc ttggtagatt 2940

caataaggca ctggttttgc tggttagttc atttgcatgc tatagactgc ttattcagat 3000

tcatagtttg agaggtaaaa aaattctata aacaaagcaa gttttgcgga ttggcgagtc 3060

ttctatttaa ctatgatatt gtccccaatg tacaggtatg attcctagat atgttgtctg 3120

taagaacgaa agcaagcaag aggggatgca aaggttgagt aaggctaacc aaggtgcgtg 3180

tagtt 3185

<210> 3826
<211> 1670
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54149_G1, chr2:12807733..12809402, Cluster 23

<400> 3826
aactttaaga tacatatttg tatgtgcctt ttattcacac tgttctatta tataccgtat 60

tctgccattc ataatttatc caaaaatata aaatatttgg aaaacataag gatgttttaa 120

ctaaataaaa tactcgttca aaaattgcca tttttggtat aagactatct ccagtaaata 180

aggtaaaata ggggggacgc ggaactatag atgacacact gtttgtatag tgtaggttaa 240

aatagttgat gagatagaag atgtgataga tgatctgctg aagatagttt aagagagctt 300

agactccacc tttaataatc aatagaatcg gatttcagta gattttagaa agttaagtga 360

tgggtacatg cgtccgcgtt cctattatct aaaatagcta aaatatgcta tatatatttt 420

aggacaaata gagtattaac ttgtcgtttt ggtgactatc ggtgtctgtt acctgatggc 480

aaatgccttc ctttttgcga gaatggtaaa cggttaacag gcttatgttc tccccagaaa 540

gtacgatgac tactgagcat cttggaacat agtgcagctc atctacattc ttattatgac 600

atcaataaat taaataaacg tgtgagatgt tcgagagtta cagaaagttg cttaaaaata 660

acagtggtta tctttttaa aataatatat gtgtgtgcat gtgtggattt tactagctag 720

ctgtctagct tctcgtagct tacgtactgg tcaaaccata ttcaacacct gcgccttcta 780

atcttttacc tcagccggaa tctatttcat gcgtaggcat cagatgcgtt gtttcgtaga 840

ctaattaaga aactgtaaga acttattgtc tgatcagttt gacttagcac catggagttg 900

agtcaagaca aagagtcttg tcatcactta accacactcc aagtatggag tatttttga 960

tgtgtgtgca cccctgtttc ttttctactg acaactgcac attgtgccag ttagctaggg 1020

ttcaattctt taatacctt ttttcctccc cggtggtcct cttggattcg aaactgcagt 1080

ccccactggt ctctcccttt accacgctat ggaactggat tgacttcttg actcgcaata 1140

ctgtccaaaa ggcgatcaat gcctgatctc tactccacag agctctaaga gaggaattgt 1200

ttgcagttag tgacggagaa ctgcagtatc tgaattggaa tttgagttca gcctgtcatg 1260

acattataaa atactgaccc gttcacaact gtttagaggt acggccggct agctattatt 1320

gtaaacggtt gagttaggtg ttctagatga ttttttttctt tcgtgtgttg tgctgtgatt 1380

aagacgatat atgtgtcttt aacaaaggct agagaatctt ccattcaagg agtagtgggt 1440

ttattttatc tagactatta agtatctcag agtgattgaa gaatgacatg catgcaagca 1500

tgtgttttgt gtctgcactt catttgtatt tatttgaaaa taattgggaa cttttgtagt 1560

cacacattat aagttatttt taacttttttt ctatatatct aaacacacat tatgtctaga 1620

gacataattt tagtgcatat atttatatca tttagaatgg agggctatta 1670

<210> 3827
<211> 1734
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54332_G1, chr2:13633133..13634866, Cluster 23

<400> 3827
aaataatata taaatatgta atcagacact aaagcatcaa atgtttttt aaaaggctat 60

attgactttt gttatagtgt ttactgttgc gtggatctag tgccgatata tccaaagagg 120

aaaacaacag tcataaaaat aacggtgagt aaagtgattt tttttgcact cagcaaatta 180

ccaagccata tcaaccaagt gcttccaaaa ttgttaatct atctatgtgt acttgttatg 240

atgcagcatg agccacatag ctctcacgca gccaagtaac ttcttgttgt tctagtagtt 300

gataagaacc taagacccta tagttagtac ccatgtccat ttcgtccaaa agaccagaag 360

agaagcatat aatgagttat tggcatgtct tgttctaaaa tccacaattc taaaaaaaca 420

aatgtatttg gaatccacta accaactcca gcaatatata attttcatcc tcccctgcga 480

gcaatattcc aatgaatttc caggctgacc agtggcgcat ttgttctttg caaactgaat 540

ttgtataatg ctttgcagct gaattcactt gctatatttt ttgtgatgca gatcctcaca 600

ttattattgc cttgtaaata tggtttgatg ccctttaaat cgggatttac tctcagaaca 660

cgcggagaga tctgttaagg caagtgtcaa actgcattgg acatttggat ggactttgct 720

ggcaaagttg gtaagcagtt ttgatttttc ttactgatct cagctaaata tgacaaccga 780

cctaaaacta aaggcagcat tggaggtgca ttgcccttac aactgaacta aagacagtta 840

tggatgaacc gaccatctat cattgcttgt gttcaagtcg actggattca aaccaagggt 900

agttacttac cttaccacat gatgaaatct aggaggggtt gtgatgttgt tgatatctat 960

ttttgaaata gtagcttttt gtgtgcgagt gaaatcttag attccattga ccattgttgt 1020

taatgtatta aaccatgttt ctgaagggga ttctcaattt atttggatca tcaatagtct 1080

aaaaggcggg tgtatcaaac attatacaac aggttttgtg tgtgcaaagg taattgttca 1140

tggaatgcga cattatcacc caggaagcaa tgagatacaa tatttattcc ttttgttttt 1200

ttgtgttaaa ttgaactaat ctatctaata ttaagctgca atagtatatt aagtcatgat 1260

cttgtgtgtg acctcgatca taaagagcag ctgaccattt atatatatat ttcaccttgt 1320

gcaaaattgg gtgttataat ccaagagaga aagagtcaat ctgaaattca aggatgggtt 1380

atctgatata cctcagtatt tttgttatca tccagaatta cactttctcc ggtctccgct 1440

tttcaatgga gcataggagc ggcttcatca tctacttctg agcataattt gcactaattt 1500

attcatgcat ccaaatacaa actgcaatct taattaagct acacttaagg acaaatccag 1560

atgaggaaaa tatcctaaga aaatgagaaa agtatgtggg tttgtggctg tagatgtaca 1620

acgcattgca acatgagttt ggagagcgat gaggaaaata aatgcgtaat ttgcagtaag 1680

ccacgaacga cggaaagcga acaaaagcaa gaaaagaatt tcgttacctg aaaa 1734

<210> 3828
<211> 1416
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55225_G1, chr2:18355963..18357378, Cluster 23

<400> 3828
ctccccaagt cccgaccact aatagtcgtg atctctgttt ggagacggtg actagtggac 60

aaatagtgca ttcacctcac cctcacacac attttttttt tgaaatcaag atccattgaa 120

catcttgtcc agttaaatca ctggacaccg tgacagccac attggttagt tcagttcgtg 180

gtggaccgat ggttcgcagt cgcagcatca ccctcacaca tggtccgcat ggctacgcgt 240

atctgtatct atgctcgtgc gaagggtggt tctatatatt tagactacct taagtgcata 300

gggtaaaata aaggaagcaa aattatagat gatattattt aatatttttt ataaaaatga 360

tatttgaaat gatgactatg acagaggatt agatagggga tctgctagat tactgcaggg 420

tgttaaatct tgagtgattt tcgccaaggt aactagtgtt tttctacagt tttcggtact 480

agctcaaatc aaatttcaaa aaattcactt aatatttttt tattttaaaa ataaaaatgg 540

gtaaaaattt ctattaacaa ctagatggct ccaagagctc tacaaaaaat tggtgtttaa 600

aaattcatgt ttttgtgcca aaaaacaaaa aaggggttct agacatgtta acccaaatgg 660

atattgttgt atctcccccc ctcgcctcgt caacccgtct ccactcgggc actccactcc 720

ctcacccggt ctgtgctcag ctctcatcta agtggccgtg acactcttct cgcgctgtag 780

ctgttgggat ccggcgagaa gctttcagtt ttcgttgaga agaaaccgat ttttgctcta 840

gccgctgggt ctggacgtga agcagtacgg gaagaggcga gacccgatcg accgacacca 900

tttttggcta gaaggggcca gtttccgccg agaagacgtc agtacaatgt tttatgtgat 960

tttggacatc aaattatttg taaatatatt ttatgcattg tgcatcgtga tttgaacaac 1020

ttacaaacat atcctatcaa ttttttgaat ttttccttaa ccgaaccatc tttctcagtt 1080

caaaagcagc taaaaatcat cgagaaatgc acaaaaacca ccgagaagaa aatgaaaacc 1140

accatttcaa atttgaaaac acaaaccgtt taaaatcgac gaaattcgag cagatttcga 1200

gaatatccca ttctcggaca ctggcgagaa atgagccaca aacgagaagg ttatccctga 1260

tttagagtca cgttatggca aatcaactct caattatact atccatcctg ctattgcctt 1320

tttagtcttt atctactaac actacaatac acaactttta taccgaatac ttggtgagaa 1380

aaaatgattt ggactagcgt gaatatggat gtgacc 1416

<210> 3829
<211> 2569
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55531_G1, chr2:20111876..20114444, Cluster 23

<220>
<221> modified_base
<222> (1793)..(1793)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1793)..(1892)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1794)..(1794)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1795)..(1795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1796)..(1796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1797)..(1797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1798)..(1798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1799)..(1799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1800)..(1800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1801)..(1801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1802)..(1802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1803)..(1803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1804)..(1804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1805)..(1805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1806)..(1806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1807)..(1807)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1808)..(1808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1809)..(1809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1810)..(1810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1811)..(1811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1812)..(1812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1813)..(1813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1814)..(1814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1815)..(1815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1816)..(1816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1817)..(1817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1818)..(1818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1819)..(1819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1820)..(1820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1821)..(1821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1822)..(1822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1823)..(1823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1824)..(1824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1825)..(1825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1826)..(1826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1827)..(1827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1828)..(1828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1829)..(1829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1830)..(1830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1831)..(1831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1832)..(1832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1833)..(1833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1834)..(1834)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1835)..(1835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1836)..(1836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1837)..(1837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1838)..(1838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1839)..(1839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1840)..(1840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1841)..(1841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1842)..(1842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1843)..(1843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1844)..(1844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1845)..(1845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1846)..(1846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1847)..(1847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1848)..(1848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1849)..(1849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1850)..(1850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1851)..(1851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1852)..(1852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1853)..(1853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1854)..(1854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1855)..(1855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1856)..(1856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1857)..(1857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1858)..(1858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1859)..(1859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1860)..(1860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1861)..(1861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1862)..(1862)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1863)..(1863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1864)..(1864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1865)..(1865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1866)..(1866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1867)..(1867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1868)..(1868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1869)..(1869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1870)..(1870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1871)..(1871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1872)..(1872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1873)..(1873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1874)..(1874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1875)..(1875)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1876)..(1876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1877)..(1877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1878)..(1878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1879)..(1879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1880)..(1880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1881)..(1881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1882)..(1882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1883)..(1883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1884)..(1884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1885)..(1885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1886)..(1886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1887)..(1887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1888)..(1888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1889)..(1889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1890)..(1890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1891)..(1891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1892)..(1892)
<223> a, c, g, or t

<400> 3829
tcatcactgc aacgccgtct gtgtggcggc tgaaaacgat aagtggtgcc atgtgtgctt 60

cttcttcacc ttctcagcac actgcaggga gcagctccac ctcgagttcg actgcgcaga 120

cgtaaaacaa agaccaaata gacgtacgta tgtagtgggc taacagctac tcacatagag 180

ggcatgttca ctttatagat catctttatg atatgacaaa ttagctggcc aggcagaagc 240

aggaaaaaac agagttctga ggagacgtgg gctgctggac cggggctgga gccccggcag 300

ccccggtgct ggatccgccc ctggaagtgg gaacatacca ggcttaataa tttcaccagg 360

attggacttg attggaagct gcctaccatc aagatgggtc agaatgaact ggaatccaca 420

taaagcctct atcagataga gcgtgtgctc agtgaacagg tcatcgaatt tattcctgaa 480

gcttggatgt tatttaactt gcaagacgaa aacaatgtct cctgccactg tcagactgca 540

acaacatgag cggcatattg caatgttaat tgtgacaaac gcagttataa ataactcaat 600

ggatgtgtat aagcctgaac cttatagcta caggaaagga gaagaattga gcgcacaact 660

ttaccttgga acacaatctt ttggccatac tgcattcctt tctcaatata aacctcaaga 720

accttctcct gaacaacatt gctgcctctg cggcttgggc gcctatccct ttcacttagg 780

atttcagctg atcaagcata cacaataaag atcacaagat cggcacaagc aaaacacaat 840

ttgcatgaag atatacacaa atcgaatacg attaccatat gttggatcat gcctaatcct 900

atctgtcttg ttacagtcct cattcctaca ccatgacatc tgtagcatgt tcttatccat 960

gaaacacaaa tcatcagaac aattaaatag tccaaattca agcaagtaag cactgtgtat 1020

cctcatacct tttctaggtc tccagttgtc agggtgcctc tttatagcag ccatccggta 1080

tgccattttg aactcatcct ggcaggcagt attgcagacg ccaaggacct cgtagtactt 1140

ggagttgttg ctccaccatg gagcacatcc caaacatttc aatcacagga caatctccct 1200

gcaattctga aaaaaagaga aaactcaact gaatcaacta aagaaaagta gcctaaaatt 1260

tttaccaaat caaatattca tcatatcact tcgtcagcat ccatcacaga ccatcaaatg 1320

aaaactaaaa caccaaccaa atgctaatct ggtaacacaa taggcatgtt aaatcattga 1380

ctcatttggc aacacccctc taacatattt tataatattc cgcgcaactt agtgcagttt 1440

gtcatttgtt atgttcagtt tagcttgaca taaaagatac aacgtaactt aggtttagac 1500

ttgttttgaa cagttatgat agcaatgaaa gacttgtatg agctgatatg atagcaatga 1560

ataatgtggg aaaaatatac aagaaataac ttttcgacaa cgtgtaatgt ccaacaattt 1620

ttttctctgt aatgtttaac acaccatgta tgagatcatc gcttatcagg gttaccattt 1680

gtacttacaa gctttcctca ttgccttcaa gaatatagta tttgagatac aaattttcgt 1740

atttttcccc actggtcccg agccgttatt tatgggcgaa actgagaaat tannnnnnnn 1800

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1860

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nntttcactc accgaaataa atttcaacaa 1920

cgtttcccgg aaggagggaa ttgtttttct atgcccttgg tttaaagaag gagatagaaa 1980

ttaaaatgta taaatgggtt aatttaacca aataaaagaa aaaggaaata gattgcacca 2040

cttaggtaaa aaagagggga acggccaagg atggccacaa aacccaggca tatatatcga 2100

atggaatttt tttttaaatt tttgtattcc agaaattggg agtgggtgtg tgtaaatatg 2160

tatatgtgta tatatatata tataaccaca cccaattgaa acatttgata ttgtctacat 2220

ctataagtgt ggtcaaataa tcacgattta tatcatatat agtatcagga gctaaatagt 2280

agcataagtt aagaatcata aaataaatac aaaacaattt tattatcttc cgaatctttc 2340

atcatagttt gaatagtaat ttttttttcag ctctttacct tctttagtta actagcgttt 2400

aagttcataa tcaaaagcac taatttttac agactaactt ttatgccttt aaggacaaga 2460

ccgagaacct ttgaaactat atcatcaatg ttgattgaca ctttctcaaa gttcaaagtt 2520

cttgacttga catcaactaa actaatcaac tatcttgtca ggttgttta 2569

<210> 3830
<211> 1961
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56089_G1, chr2:23126896..23128856, Cluster 23

<400> 3830
ctcaaaagat atgcggagta tgaatatatt gatacatcct tttgtgcatt aacatataaa 60

cattttcatt aacatgttgg ccagagttta tatagtgttt aacttttttt ggattctaat 120

tcactgtaaa ttttgaaatg gatcagagtg agtatatttt ttttctcaac taataagcct 180

ccgaatgtca aatccaccgc aaattatata tggcgagtca gtcactgtct cgtgccaaat 240

cattttctg cgtatatttt gaatcattca aggcaggaca tttgattaag atattacttg 300

atttagtgtc ctttccaatg taagataaag agaagtatat tttgatacat agagactcca 360

aaccgaggtt actttgtata tccacatggc caactttgtc agacaatata actttattca 420

agaaataaaa aatgtcgttt ctctcccttt ttttatgcgc tctaaatcta gtagacctgg 480

aacctttga tcaaattagt tagtcggctg accagttttt aaaatgtcta tttaagcgct 540

gtttttggat tctatacaac tcgaataagc actgaaatat ctgtccacat gtaaactgtt 600

cttagcagtc ttactgcagg gagcttggtg tcattgtaac acaactccat tggatcaaaa 660

tgacattatt cgggaatcag caggagttac aaaagatccc tgctgtataa aatgcagtaa 720

agtgatataa ttcgggaatt ggcaggagtt gcatgggatg cctatcttga gaagcagggg 780

gtcatgacgt taatcttgtg gtcagtggtc ggtacaaaat gggctataac ttaaggcaga 840

caaatccaca aaaagacgat tctacttgag caaatgatga atcatttatt aaatcttgtg 900

gttggttgca gtgtgctttg gccagtagca tacgagaatt ccttatcatt ttattacctg 960

gaacttgcag tacttcatat ttaaaacgat gatcgtggac ttatctgatg ggccaataca 1020

gacactacag acagacaatt tttcggtctg ctcgtacctc tcgtgtttgc tcttacattt 1080

cttttcatga taacgacttg gtgtgaaatg gacttttcga ctttttttaa atagaaaaaa 1140

aatgccgtga aagtgataac aaaggttttt aaggacagaa gcacacagtc ggtctatatg 1200

ataccatatc tcttggggaa tctggagtct tggacaggaa gtttggtaga actgtcggcg 1260

gctcctcttt ggaaatgcat atcatgcaaa gattgcgttc cgcgaggatt ttttttgttt 1320

ttgttttcag acaccatgaa caaaatctga tgttgtgttc tttttccatt tgagcagaca 1380

aaaaaagagt tgcatcctat attattatca agataaattt gattatataa gaaagaagag 1440

aaatcgcaga agacgcggaa gctacagttt aggtgagtat gtatgcgtgt atatctacta 1500

atcaagagta gcggagagca gctagaacga agtcagcatg atcgcttgtt aaaacttcca 1560

atgcaccttc agccaagtac tggccatcca ttgtgcagaa aggaactgtt ccaagctttg 1620

gttagccata atgtcaggat ctcactgggt caaaaactat cgcagaagac accatatatc 1680

gccggatgca ccaactttgt ctcgtcatgc acaaatgaac aaaaaagaca tgtttttctt 1740

gtaaggactt tggacggcag tggtcttaat tagcttacat ccatgctacc tactgaactt 1800

caattgttat ggactcaagt gttaactgtt actcctactt attttagatc tattgcgccg 1860

ttctttccta ctacaagaat gtaagtacac caatatagag actgagcact gtattgattc 1920

agtagtttct tgttatcgtc aacaccgagt tatttgcact c 1961

<210> 3831
<211> 2953
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58453_G1, chr2:37139720..37142672, Cluster 23

<400> 3831
caaattatat gagcttatca tgaacattaa atagttgtga tatagacttc ttttttctgc 60

ctcacataga actaaatata atgagagaga tggataacta aaaaaccaac ttttttaaaa 120

ttaggttgca taaaaccatt agtcaaaatt accatagcac caccgtcatt ctcagcatgt 180

ttattttatt aaagttgagt gactagcaaa aatactataa tgtcacaatc caagttctga 240

tatccacaag gtaaaatata tggctagtca tccttttcaa catatttatt atatatagtt 300

gagtgactag caaaaatagt ataatgtcac aacccaagtt ttgacatcca caaggtaaaa 360

tatatggcta gtcatcttta atagcaacta tcaaattaat aatgcaatgc aataattaat 420

tcgatcaatt tagtttatgg gacggtttaa cggccagttg cgttgtttct aaagtctaca 480

atgttcaaaa agtcttgaat aactcaaact ttgctgctcc tgaatggatc ttcaaagctc 540

tcggcattga tcttcgaatt gaacctacat aaagcttatg tcctatcgca actaacgtac 600

aaacaaatca tacataaaaa tattgtacaa gacaaaagtt cgaaaaaaaa aacatactaa 660

aagataacaa ggtcgtagag ctagcgaaag aacgcaaaaa aaaaaagaat ttagacagag 720

aagctggcaa gctgcgaagg ttaaaaggga agccatgcga ttatggatct gcgtgtacaa 780

cggaactgat ccgtggattt aaaattgaaa ggtagatgaa tctgcgcgag ctggcacaat 840

gcttgcaact cagttgactg aaggtaaaga aacaaacata ttgtcttcgg attaaagaca 900

attgttcgga ctgcggcagc tacaacccat aaatacaaaa cactatagac agaggcggat 960

ccagaatttt tctatgatcc aaaccaaaac tactaaattt ccttcttttt attttatctt 1020

agttatttta taccgtatta atagagactt atatagaatt aaatagatca aaccccgggc 1080

cacggtccgg gtggcccgga gtatagatcc gcccctgact atagaagcag tataagtcgg 1140

tacagattaa agccaagcac atagactgaa taataaagca attgatgcta cacgtctgtg 1200

tatcacagga ttctcagaat aaagaaacaa caacagaata aaataaaata aattggactc 1260

agaaaattat ttatttcatg cattatctct atttatatta aagcactaat aagtcgaccg 1320

aagggaaata aacaaagata ataaagcagt tgatactgca cgtatgtgta tcacctgatt 1380

ctcggaataa agaaccaaca acagaatgca gaataaaata aattaaacta ggctcataaa 1440

attaaataaa tcttatttct tatttttatt ctctactata ttaaaacact agtttttctg 1500

gtaccacagt ttccatcgtc gtggccccac acttaaattg aaaaaataaa tacaaaccat 1560

agcaatgtac ggctactttg ctagttcatt tataagactg tttaggccta gtttggatat 1620

tcttggattg gaatggttta gagggattga agagtgttta aagctacccg cagtggacta 1680

cttcatttac tacccgatct gacatagagt aaaatatctg ctgtagtggg ggccgtatgt 1740

ggtactccat tctagagtag aagctcatga gtgtagtacg gatttaactc tacgcgttgc 1800

acatattcgg attcaactct atgctacagc cgtatatgta gggaagacaa ttaaaaaaat 1860

aatataatat atagtagttg atatagagtt gagatataga gtaaatataa ttacagagga 1920

ttgtgttata aggtaaaaaa atttgctgat aagtacataa gtctttttat ggtacaaatt 1980

tagagttgta tgaatgcgga tgaactaaaa tctccaataa aactaatcat ctctcaatac 2040

atgtatctca aattctcaat gacactcata gtacctaaaa taggccctat ggtgggacac 2100

catatcagac accgagcgcg gggaaaaact cccaggcgcg tcacgcgtgc gttgtctcgg 2160

gcgctgcacg tccgagactc cgagcgggac cggcgcgcct gtcctctcct ggcctgccat 2220

cgaatagtca atagagagaa aatatatttg aaacgtcaac ccttgcagat gcgtgcatgt 2280

gaacctcagc gtgacagcgc gtcataactc atatcacagg cccaggccca ggctcagttt 2340

gttcgtctat tctctctcct gaccaccaca ccgagtcacc gatcatctat cctcacgtct 2400

cacgcttgtc tacagtgttg tccgcactcc catgtgaccc gtcctccctt aatgagttgt 2460

gaccttagcc gcgtttggaa cgagcagatt ttctgcaatc gcatgcatgc atgcatgcac 2520

ccggcacaga aaaggagtag agaaaacgtg cacgcacgga aagggagaga ggaagagact 2580

gcgaagaaag attaaaaaaa aaagaactgg ctgcatgcaa tggagaaaac tggcaataat 2640

cagttccatt tttcatggaa aacgaggatc gtcgctatgt taaaactaaa ggatttcatt 2700

ggaacaaagg aatttcacag taatatgata agaattttac aggaattagt ttaaaaacac 2760

agtaaaaaca taggatttat gaaataatcc ttcaatccaa agaagcccca agactgtgaa 2820

gcaaagtaac gaaaatccag ataatccgaa gcgtagctgg tggaaaaaaa ggaacacgaa 2880

tctctcgtca aatagttggg aaagatatag agctatttcg aacggtggtg gcggctaggt 2940

ttagattcaa atg 2953

<210> 3832
<211> 1640
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61414_G1, chr2:54252580..54254219, Cluster 23

<400> 3832
ctgtagtcat gttcctatat gcacatttat atcttaggtg ttgtttctat atgcacattg 60

taggtgccac aaatgtaagc tatcgatccc tccttttttct ccgcacttct tctagattct 120

tattcttcct ttttctgaat tattatacca gggcatcctg catagaattc gtattcaaga 180

gacattggaa atagttcttc agtgtttacc atatatcaag cagatcaaca gaggcttaat 240

cctactctgt ttaccacata catgaaccat tgaggtatac aactttactt agtaaatgat 300

tataattcta catacacaag ttctacatac aatttttatt attcagcatg tgttctttga 360

tatccttatt aacagttttt tctttttaac agattttcat gtcgttaaag acatgactaa 420

gctatattgc aagaagtcgt tgtagtggtg cctcttctct attgttcaat gttcttttat 480

agtgttgttt tgattttcca ttaaatctag aaggacttgg cataactctg tcagcattat 540

ttgagtttag aaatgcttat aaattatgtc ttcaatcttg aatgggatat ggctagcacc 600

gttttccttc taaaatcaag cttgtgacag ctgcatagtt atctctttgg tatatttgta 660

tggtactttg cacttttcac tataccaaaa catgtttgtg cttggtaact cacattaaca 720

aacaatacat tttctgcata aaatggccat ttacttatta ggtttactct gcaacttatt 780

aaagtgtcga cttacacact aatgataata tggtgtttta gttgacaatg ttgctctttg 840

tgtcagttga taatatttgt aacagtataa tggaggatta ggttaatttt tctcagtgat 900

cattttttat ttgtacccaa ttgtgccatc tacattttcc caacgaatag tctcctgacg 960

atgtcatagt gagtagtctc ctgatcaatg tctcgccatt gtaatttgta cagttcatca 1020

acatctcagg aaacaaatgc ttagcatgaa tcaaattcca gaggaaactg tgtcatgttg 1080

atgtgtgagt tcattacgct ttaatcagag tagtactggt ctttccacta actaaaatta 1140

gttatattga ttcaaatgaa atcacacata caaggtaaaa agtatacaag gtttgttctg 1200

cataatcaaa atacatgctt ttcacatggt gaactgtgta tagtcttcat caattacaat 1260

gattttagga ctaccatcaa atcaacttat aatgctccat caaatacaaa agaaccatcc 1320

gaaacatcgt aatttcatga gctatgatac aaatggaaca aattaaagga aaagagtcct 1380

agaaaatggg aaaataacat ttcgtttctg tttgagtatt ttggtacatg atgaactaag 1440

gtactctatg ttatactaaa ctagaataat gtagagtgat ataacttatt tggttggagt 1500

gttgaacttc atgcacatgt ccgttttatg atataattca agcatagtag catgtcaaaa 1560

aagctttttc tataacaatg tgctaatttt tcattgcctt ctttcgagcc cttacaatgg 1620

aatctttgaa caaagctatg 1640

<210> 3833
<211> 3067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6366_G1, chr1:32650667..32653733, Cluster 23

<400> 3833
agatatactt tttacactaa ttattttctt gctttattta ggcaagtgtt tcgtatatga 60

aatacacaca aataagtttg aatgtgagac gaaagttaaa agtttaattc aaataaatat 120

tcattttact ttatgaaaat caatgtccaa tgtaaagaat tactttaagt cgtatatatt 180

tctttataag tatttctaat tatatagttt attcaaagag taattcaagt cttatgatga 240

ttattttatt ccatcttctc ttagaaaaca cttttattta gttctcgaga tgaattttct 300

atagatccca aaaataggat ttttgggtgt tacaacaata atattgtcca tctatttata 360

agaccgggcc ggtatacaac ttgggatgaa actaccgctc tgccagccat actacacaat 420

aacacttctc aattaattaa gtacaatttg gtctttttat atctacgtcg tatcatgtag 480

aacttccctt gttggagtcc accttgggcc tccttcgcta gaagacgata tggaaagctt 540

ctaaggttta attctgcttc cttgggatcc tcgccatctt cggctttaga gctcgcatga 600

aggcgtcttc tttactttgt ctttgaggct tttcttatcc cttggctttt aactgtatta 660

atccgagaaa acatctaaac gacggtttta tagatatttg gttagagacc taacacgata 720

ttttatattt ttttaggacg aagaaagagt atacagagta tatatatacc ggctgttcgt 780

agagtccatt tcagattttg tgctgtctcc agcatgatcc ttgattcagt ccgatcagca 840

tcaggagtta tgatccttgc acccaccgac tgaaaacgcc ataaaatacg gttgaatcgg 900

tcgttcgcaa gaatgggacg agagaatgca agattccggc tgttttatgt cagaccatca 960

ccacttcgtc cggtccgggc atgggcaatg gcgatgtgag tagcagaaag catgcagagc 1020

atgtctcaca agctcgccgt agcttcttcc tccacagccc atatagcgac gcgggccggc 1080

cattgtattt agggcacgta gagtaattaa tatcggattg tcttgtcact tttgctctcc 1140

tctccaataa tcacaataca tgacaggcgc aggcggtttg gtctggtcgt taccggggcg 1200

gggggaaagg gggctggaaa aagtccgtcg agaaaacgat ggccggagtg agggagaaaa 1260

aaaaaaacag gacggcgcac ctgcacgccc gccacctaat gtttaggcag gcaggccgcc 1320

aattattgta tcgggtggca catcgcgtgc gccacgagtg ctgcgtcgca acggatggat 1380

gcctcacgcc catgggcagc gacgggacgg cctgacgcgc cctccgtctg atctgcctga 1440

tctcacccaa cctggctggt aggtcgtcgt tacacaaagg cacggagcat tgcttctgat 1500

gcaattctta agcctttctt accgatagaa acgtccgcgc gcgcaccgct ggtccatgag 1560

gtctttttc cttatgtggc cgcttcgctt tcattctgtt gtggtatcaa gagatcagat 1620

ggtggagaac catactgtga agtgcctctg cctcctaaac gtgtctggac tctgaactga 1680

ctacaactcc ttgtgacgac ggacggaata attagtactt gaattgcacg gcaataaaca 1740

tgcttcgagc ctgaattccg gcagcaacac gggaggatct ctttccctgc gtctcaatgc 1800

cgcatcagtg cgtagcagat gagctcacac taaaatctgc cgtcagatac taagatttga 1860

cccaatagta gtgcaagttg taatgaaacg acaacaaata cgccagtgaa aggcaccgct 1920

gattcgttcg tagtagcgtg acaggtcaaa tcagaatacg tcgattcctg tcgctgttct 1980

gtcattatac aggagtagta gctattattt atcgccttgc tgatttcttc cactggtttc 2040

atcaacagga agtgatgtca gaaatgattg acaagcgcac aaaacaacca cttgatttct 2100

ctggacaata ataaaatctg gatggcgttc cagcgttcag cttcaaccag gatcatcaat 2160

ttgataggga catcaggtta gggggttcga ttttttcttt tcctaataat actaactgta 2220

tgaatcccaa ttataacgcg cagcgcatca tctgttggcg ttgttgcgct cacagttgtt 2280

atgttagtgc tcgagtatat atacatcgag tgaaaagtag gtttggaaag ttgctggatg 2340

atggaaagga tatgatgcac taaagaagcg gataaaacca ggcagccagc tataaaagat 2400

cctagtatag cgttattaag tggttgctac atagaacaag gacaagtggg agctgacaag 2460

gcagtaccat gctccattca ttccctaata tttttagata aagggtgtct tgatctcata 2520

atttcatttg cgggtgaaga tgtaggtgcc aaattttact tcaataatag gaacgctccg 2580

tgcctccgta cttattcgtt caatgatctg tggcaatatc atatgattgc ttacttgcta 2640

gtaagttttc taaagtctaa acacgcaaag cattacaaac atctgttgtg cccatttttt 2700

tgtacctaat caaggaatgc aaaattaagc tacgttggta aggtagcatg attttgacag 2760

gcatgaactc ggagccttaa ataaactaat tggcaatcat gaaaaacctc aaaatttaaa 2820

tgagcacacg agaatcttca gaatgaaata ggcacataaa atagacagag aacaggagtg 2880

tatgccttgg atttctgaaa cagatactag aagatttcta tggtttttac tcctactagt 2940

gctagtttcc atccctgaga tgttttgtta ttattagaga actgcttacg aagccagttg 3000

acgaaatctc gtaacattac tgtgggcatc tttggaagcg aatagcgtga ttggttcaca 3060

gtatttg 3067

<210> 3834
<211> 2080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_65456_G1, chr2:78237290..78239369, Cluster 23

<400> 3834
ccgcgacgct gaccgtgacc caggattctc gcttctccgt ccacgtccaa tctaagtcct 60

tttcatttat cctcaacatg gctgaagatt acattcatgt ttttttcttt cctgattaca 120

gtagttgata ttggtctgct tggaggtact tccagtcatt ttgcaaacta tgatcccccc 180

atatggttag atagctatct tgagaaatgt tattttagaa attcaatttg ataggtttgc 240

cagtctggtc ttgtggactt ccttcaatca ctttgaattt gtgaacttaa ttgcatgatt 300

tgcttagctc aaagtttttg cagtccaatt attcttatat gttcttccta attcttttca 360

gttcatttag taaattgatg ccatttttt gcttaagtgg agaattgagc cgtgaatgta 420

aaaaataact taggctagaa aggcagattt tagaaattga tagtactgtc agactgtaat 480

gtgtatgaat aggaaaaagt tatcatgtta gtttctcaaa tcataccatt ttcctcctat 540

tccttcatgt ttatttcatt catgatgctt ttgcacaaaa aatgtttttg acattacatt 600

ttgtaggcat gagtaaaatt attgcccttg cacatgcaaa tgcttggcat atgtgactga 660

ttagtttgat gacttgtctt ttgcacaata ttaaatttcc tgatggtgca tcatttgaca 720

gaagttgagg ctactgaaag attctatgtt ttctaaagct cagacaacca taaaaaacta 780

cgggtttatg caatatggac taagtgaagg tatatattaa ccatgtttct atttcatgaa 840

caaaactaat tattgggctt cctgaagttg cttttgtaga taaacccccc atatctgtat 900

tgtgaacttt tttttatatc tgtatcatgg agtgtcgttc tcagattcaa taattatcaa 960

acaatatgta ctgattatat tttttagcaa gctgtcagtt gatgtgatgc tctatgttta 1020

cattttgtca aattaccgac aagagggtta agttttagaa gaaactactc tgcaatggtt 1080

aatgatatct gtcaggaccc aagttggtcc ccagtccact ttgattggtg ctatgtccca 1140

gtgatttgag gaaagttcta gcacaacaca ttgtattttg attagtgaat gaagcattta 1200

gacgacaaac cattttcttc tgccttttac tctcagaact tctttagtca acacacattg 1260

tattcttgat tcttggctat catttgccaa gtttagaagt tcaccatccg ttagtttctt 1320

ttgaactaat gcacttcatt aacttctttc tagaatttct tggatcagtt atgcaaagga 1380

gttgcacact gccatggcca tggtatcctt caccggttgg atttctcttg tctaatttat 1440

attgctgaac tcatcagatg agtacaacat tgcattttga ctttttttgat tcatccacaa 1500

aacatgctgg tgtacaagaa gggaatacta aagattgctg atctgggact cggtagggct 1560

ttcactgtgc cctaaaagct acacccatga ggtactgctt accatttgga gttggaaggc 1620

tcgatgcaat tttagttttt aaagaaattt ctgggcatga tccattaagc tctttatatt 1680

atgtatttat gtagattgtg acacttttgg tatagatctc ctgaagttat ttttctctta 1740

tcctgttgaa ggaacactag cacataacat tttgctgcaa ttgttgtacc tctttagttc 1800

cttcttggcc aggaaatcta tatttagaat aacacttcta ctgtcataga gtaacacttc 1860

tactattaag aaatctaagc tcatgttgac aatactatat cgcaacctcc aatttcacaa 1920

tggtttgtca acaatacaac gcaaatcttt tattttacat gattcttatg ttagggacaa 1980

cctaaacttc aaaaggttca attctcaaat gtcagatctc agcagctgtg ctcatttccc 2040

gtacattaaa aagcaggtgc agtgcatcca gtccccctgt 2080

<210> 3835
<211> 1914
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_75335_G1, chr2:143251844..143253757, Cluster 23

<400> 3835
ttatgttctt gtatgatatg gcaactttta tgccttaaga acaaacgtgg aggctacttt 60

ttagccgata ctaatagaga ccattcttta tttgatcact actaatgatc ctagtttatt 120

tcctgacgct caaaatacaa atcttcctta tttgaaactg gtaaattagg ttcctatatg 180

acactatcgt tagatctaac ctctaacgat attaaatttt atataaaaaa gaaaatttta 240

tctctattga ctaattattt atatatatga atacttataa taattattac aagtattcat 300

acataaataa ttattcagat aattattcaa taagggtaca attgtttttc atttgaaagt 360

taccattgtt agaggttaga actaacgttg tcatatatgg aaccaaattt acatcaaatg 420

ctaagtaggg aagatttata tttggaggac caagggccaa gaacgaggaa cttcgttagt 480

gtcaaataag gaattgtctc gaatataaat gttttataaa agcaaacctc gctgtctttt 540

caaaactatc tacatggcat accaaattag gtgccacatc atcctctaat aaatgctgca 600

ataccttctt ctaatataaa cttaaaactt actattttca gctactacca tacaaagcat 660

ttatactata ctatttgttt gccttcacat tctcacataa ttcggtctaa taatctttaa 720

gtgttttatc ttaatcatac atgagcttac ctagttttgg catcatatct attacattta 780

attatgggac aatttattcc taggaaaata ttgtagtaac gtgtggtatt cttctaatat 840

agtagtttat tatcccacat tgcatctttt attgttattg gacatgtgtt ctttctagat 900

taacatggaa aattgatttg taacatggtt cattgaaccc tttgttatta ttgtaataga 960

aacttacata taaatgttta ccatcttagg tagtatatta gcttcttttt ataagccttt 1020

ctcatgtgag aacaagtttt tgaataatgg ttactctcgc tactgcaaaa cacaccatcc 1080

ctctagccca tcgccatcgg gtatgctaga gctagtggtg agccaacttc acttctatgt 1140

cataagccta gaatccgaag aatgattagg atcttattaa cctaacaatg aaagcccatc 1200

actatcggga tatgaattgg accaatagtg acctatcatt atattcatct accctcatta 1260

ctcaattctt caccattgga tctagccacc tattatgtct agatataaat agggcccagt 1320

gttcttcctt gctcccaagg tgttaggtag caatcaatag gttcctctag atgcgctttt 1380

atagttgtta gcatttttat gctcaattgg tctattccac aagcatactg catacattat 1440

atcgatgcaa aactttaatt tggagtattc ctagtatcat atttatatgc ctagggaaag 1500

tataagacga aggtagtttg taaatagagt ttgtggctga ctatgaacaa tcaccaactt 1560

aaacatgggt aatactgata tagtaaaaag ggagagagat gataaagtat agataagtaa 1620

ataagtgttg tagctagtgg gacatggagt gagtatatga atcctatgtt acttctaatc 1680

tagcacaaca tgagctaaac caatggtcat acaagcttgt caagatatag ccaaataatc 1740

cataatagtg ctttggggcg gactggcccg aacttcaccc aaaaaaaggt tgattaggat 1800

aaagtgccat gagacctatg atttaataac tagatccaac atggtggaat acaaagaatg 1860

gacagggttg tcaccacata ccactaacta tctaaagagc tagccacaat ccaa 1914

<210> 3836
<211> 1572
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7578_G1, chr1:39768740..39770311, Cluster 23

<400> 3836
tcaaagggtg acaattggtc cctgaagcat aatggatggg tggcctaaat cttatattga 60

ggttatgcta gtagcaatga acataattca ggacatgaaa gaactcaacc ttattgaggt 120

ccatgtagcc aggagttgga taggacgatg agtctccccc ttatcagaga aagtcaacta 180

tgcttgggag tatggagaat tggttgatcc atcctaggct actttagaaa atagtactat 240

tagaagccac aaataatttg tcgcaaatct ttagcttagt tggagactgt cgaagggaaa 300

tcctatcaag tcatgctctg tgacgattcc acacccaatg gtattttcca taactttatt 360

attgcatatt ctgagttatt tgattccagt tgtgaactct tcttaatcta agttagatat 420

tgatgttgtg ttggtcttca ttccaaacac gttcgattta gcattcagat cgggactcct 480

ccccggttga tgagaaccta agactggagg aagaaattta taccaatcct catacttgta 540

ctaccactga actagaggag gagaacgact tggcttccaa ggatgatcgt aaggatgccc 600

tttgactcct ttgaaaagga aattaagaaa atcttcaagg tatgactcac aagatagtta 660

gtataatttt gtcttgaagt attataatgg taggtattaa atttggcaag gtatcaatag 720

agctaccaaa gataaagtaa gctttgtgcc atctagctca cttactaggg taactgttgg 780

ggttgaacct gcttctgtcg tgttagagcc ttcagttgag ataccttatc tagttgagcc 840

ttctaaagcc ccctgaggga acaattctgg ctcccacgtc atcttcccga gtgcctccaa 900

aaactcccat agttgttgtt gcccttggtt gcattggctg acccttttggt cgcaccagct 960

aacccttttag cggctcctgg accgtcatca attgccaaaa aagcttattc actcattaaa 1020

tattgtcaat tgatcatcgc tgctctagtg cagacccaaa tattgaagaa gtgttacatg 1080

aagtgaagat ttcagtatct gatgactatt atcaacactt cttggttcgc tatgggaacc 1140

atctggttgc ccacattgac ttggtcaaag atcaccacta attagaaaag gccaaacaat 1200

ttgaagaagg ttttcacaaa tgccattggc taagtctcta actcatgatt ttactgagta 1260

aaacattgtt tctggtgact ctgtccttaa gcgatcatgg atgagtcaac tgataagcct 1320

ttacttctta tgttgactca caaaaactcc aagttgttga atccatgatg gaatatttgg 1380

agaaagagaa ggccacaagt tcagaattaa tgggcttggt ttagaaccta aggaatcaac 1440

ttaaagttaa gtcacatgaa ctcgaatgta tgtatcataa tcatataaat actagcttgt 1500

tggagcgaag gtcgtccgcc ccctcgatca gctttcttta acataagttg aactggttct 1560

atctcagaca ca 1572

<210> 3837
<211> 2563
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80265_G1, chr2:173327355..173329917, Cluster 23

<400> 3837
tgtgaagaag cgggtgcagc gctaggtctc acgcgtgaaa caaaaatcaa gtgtggaaat 60

aggaaacctt cgtcggattg gagcttgatg ggtaacgaat atttgcgttg tgaatggatt 120

gatatccgca tgcggggagt ttgggagcat aactaggaaa cggttaaagg tcaatttttc 180

ctttttgccc taaaacgagg attagaacca aggttttaag aagctattac atattactat 240

ccatccgaga gcaactcctc tattgtagtt ttttcctctt tggctctttc ccacctgttt 300

tttctgctct ctcttggttt ttgaatttaa gaatgctaac taattattga taaccattat 360

agaaaggcaa aaataaaaat tcttatttta tttttctcac ttggcacaat cattgcttta 420

ccaaatattt taaaaaaatt attctaagat gctctcagta atttgtaggg tctgtttgat 480

aagtgctaat tcctatatag ctaacaatta gttaaaatta gctataacct attcaaactg 540

agactaataa atgagttatt ttttagctat gttataacta gctgttagct aactagctag 600

ctaatctcaa atatttcggt gtaattttcc aagtagtagc tagtcctagc tcatttaatc 660

agcccatatt tttcttgttt tacgttgcct aataaataaa aaatttaaag gttattgcga 720

accaaggttt aaaattgcgg gctatacaaa atagcgacat cattttttag actacaaggc 780

tatagcgtag ctataaaaaa tagtgaattt ataaaaaaca tataatatgt ataatctata 840

aaaaagaata tggaagtcaa gatatctgac taagagcaat atgtttccaa gtctatggga 900

gactagggat gtaacataat atacaattca tggaattaaa gtgtttagca cttcaataac 960

atatagccac taggtagcta cataatatga taattaatag gtttgattag ttctaaaata 1020

ctagagtagt aaaatgttca ctatctctcg ctgtcatggt agcaacacaa taccatgatt 1080

tagaacataa caaaaaagtc atcaagcata gagttatttg aattagattg atccatatca 1140

atagcatgtg catcatcttc ttttgtatga agcaagctct agttggtctt cattacgttc 1200

attaatatca atgagcttcc tcatccttgt gcatcatctt cttctgtatg aagcaagctc 1260

aggttggtct tcattacatt tattaatatc aactaggtat gtgcccgctc gttgccatct 1320

actttttttg gtttgaactt ttttagtcca acccaaccct tttagaccat tcggttcttt 1380

caactagtat cccaattttg agtccattct tgttttacca gatgatgcaa ttgatagatt 1440

tcccaaattc agacaggcag gatacatacc ctttataaca cgttgtttct tttgtaccct 1500

acaagctcaa aaaatacatt gacagatact tggttgcgca tcttaacaaa aagaatacaa 1560

cgcaatgaag aaagaagaat aaaaatagga ccatcaccac ggtcaagaaa cataaaccct 1620

tagacaaatt ttgcattttg taccatatac ggggaatata gccctttggc aggccaaatg 1680

gctttaaaaa tctaggctaa gtaatgtgct aaggcagtga actaaagtga ccaaatttgg 1740

attctccaaa tctataggtt cctagcaact tgtagctata attgtacatg aagccatcat 1800

ggttaggttt tgctcttgaa cttgcgctat gctttcaggt caactacgac gacagtgatg 1860

ttgtcttcgc tccccttttg aagagcaagc tttgacaagc attccacagc cgcttgagta 1920

gttgggtttg cggaattcac taacccatgg ggacgatgat gaacttgtgc cattcttttt 1980

gtgccacaga agtatctact tgcgagcaac ttcacataac tcttcatttg acattacatt 2040

ctagaggtcg tcgctggcaa gaataaggcg ctcatcatcc ttagcctgtg gaactattgt 2100

tacctctaag actgaaatta tccatggtta tagatatctt tcacctgcaa ctaatacaag 2160

ccattacagt tctgatcata taatacatgc tttgtatctt ggaatcttgt ttgaagtaaa 2220

acaactaaaa ctaccaagct gagagtactt agttcttcta caagcatatt tgaattgaag 2280

aactaatgtt gtgtcctgaa tatgctccac ttagggtaac atagtcaaag ttcatagcag 2340

aggagacaaa tttcaaaatt aggtatatgt tccacactat agtgaaagat ctattcacgc 2400

cttgtgctag taaatagaaa ctaaaatatc aagctccttt agtttgtatg catcatatac 2460

aagcaaatat caaaactttg taatctaaga agtcaagaac tcaaaaggaa gcatgcagca 2520

taatatcaaa ggcatagaat gccgagaaat gagtgtactc gtg 2563

<210> 3838
<211> 1549
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_83748_G1, chr2:191436042..191437590, Cluster 23

<400> 3838
atcataaagc tactatatac taattagtgt gctaagataa acatgtaggt tccacctcaa 60

attaacatac tgagtacaat acactcaatg actaaagtca ttatatatac aatgtatcaa 120

aaaatcaata ttaaccaatt caccccctaa aagtaacaaa atcctaaccc atacaaccta 180

ttttttgtt caacacaacc cgataagtaa atcaacccat tcccacccat ccaaaatgca 240

tccacttgag aaccccaacc cattaaactc atcccaacct agtctattag caagcctacc 300

agtgcttggc cgttggtaga atgggtcgtc cctcccatgt gtacggtgtt ctctatgttc 360

ctaggagaag gatcgaaata tacacgaaag aatagaatga ttcaaggtga aaagtgaata 420

gacaaagagt gacccagatg atttagaaat actttagagt tacaatataa aagaataggg 480

gggcctattt tagttaatgt tattggagac ggcagcggaa accatgaggt tacgtaaaca 540

aataaggtct tgtttggtag ctcaatattt ttagagtttc aagacaaaaa atggttttta 600

tgaataagta tttgtggtta aaaaatgttt ggttagtgct tgtaaaattt cgttttagat 660

attgtggtat gatcaaaacc acactatttt ggagttctcg agactgaggc tggttgctga 720

agttttcctc tgccatgcaa gcccatgtac actatctaca tgtgcccact gaagttttgg 780

acattgtgtt tttcctaacc cccgagcagc cttttgctgc tggtggccag caagcccatg 840

tacactggta tgacaagtgt taatgctact ttgtttatgt gtaaaaaaaa ctatgtatcc 900

aaatatgcat cagtagttag aaataccatg atatttgaaa accataatat tcatgctaca 960

gaaattctaa aactgtagta tttcaatacc atagtatttg aaaaatgtgg tggcaaatag 1020

gccttaagta ggggatccgt ttttttaatg ggggcattaa aattcatatc cttagttcac 1080

caacaactca gctttgtccc tctctaataa gtaaaaatgc ctcacctact actgctacta 1140

ctatagagga gtaaacctaa gcattattgc tgaactagag gcacatattt aaaaattctt 1200

ttaatgttgt tgaagacgct tcttgtttaa taaatagcaa aaactataca tgtataattg 1260

tgaatatatc gtatttttct cccaccaaga aaaatatttg gaatgacaaa tcaagtacat 1320

ctcgatttga aggacgtaac ttgtattaca tacactaagg taataagata acataaattc 1380

aaatacactt cataatggga tacattgtgt aagtaatcaa ccgccaccgg ccaggcggcc 1440

accatgaccg gaggagcatt attcttcgtg ccgtgtgaat gattgaaaga gtagacggac 1500

cggggcgcat agtactagac tattaaacaa cctcgatgct gctgcagcc 1549

<210> 3839
<211> 3251
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84433_G1, chr2:195641855..195645105, Cluster 23

<400> 3839

tacgggcggt accgattgac cggaggcaga accatgttac taatgcaatc ttcgatgagc 60

tgaagaaatc tcgcaagtca ttttcaatga cgttccataa gagattacca acataagccg 120

agaggcagcc ttcgaacttc ttggggtcag tttggaactc tacctccttt tcttatttga 180

ggtggccgtc accctgcacc tttcaaccct cagatatcta ctaccactgt acatgtagtg 240

tatacacaca cacacacaca ccagagtata tcagtgaaaa acacaccaga atatgacaaa 300

aggtactaac agttcggcat caaagttgaa accaccatgt gcaagtccac cctgttaaac 360

aaaaacgcag cagcttatat gagtgcaacc aggaagtaca taggcaaact gtggatttga 420

gtaaaaaggg agagagctgg ttcatgccac tcacattctt aactacactt gacataacca 480

aagtagcctc tgcaatgtct atcatgaact gatttgtgtc ccaacctttc cataacggta 540

aggtaagtta ctatgcatgc ctcatttttt tttatttttt tctttctcta taaaagaata 600

aagaaatgca tgtatgtttc tagtgtaaca caaataatat cgggtcatac acttattaaa 660

aagcaaagga gttatataca acagtgacac ataccaactt gaggatcacc agtgtttgca 720

tcgatatttc caagcagccc attaatctgt ggtctccaat tcatgatggc agctgcaagt 780

ttaacatgta gttctttaag ctattattca actcaattta ggcaagcaaa aaaccttaca 840

tgtgtccaga tagagtagca tggttgcact caacattaat cttgaactct cctatgtcac 900

acaagcttca ctcacagaat tttgctgaca atgtatccac atttcaaaaa tatgaaaact 960

tatattacta gagaaatcta acccatggaa cttgccccat ttgcactaag cattaaccag 1020

ctagttccgt attataaatc gtttctcatt taacactaca gatgtttttc attgaacata 1080

ttttacacca caaaataccc tacacctact tccccccctgc acgcacacac atacacactg 1140

aaagtgataa caaagcctca gctgaagtaa gagcatatca gtgacaccat atacggctac 1200

tcttctgaac atagtttttt ttctgaacat atacttattg aaaacataga gtgctttggg 1260

acaagttcag gtaaatatca acaatgttca taatagcggt aaactaaatt ggaaagcaaa 1320

gaattagttc gcagcaatga ttttgcagtc atccggatag agaactggga atactaaaaa 1380

tgattgtgtg tgcgtgcatt catccggata gagaattgta aacattcccc aaactaaatc 1440

atgtaatata caatttggag taacactaat tgttcatggg cacttaatga acatagattg 1500

ttgttcactt ggaatctaga aatattttat cacgtaatga aaattaaatc agctattata 1560

taacattcgt attttgccag gtaactgtat cttttatcat gctagactgc taatttgtcc 1620

aacaactttt tcaaaaaaat gacagcggag tagcatcttc aatcaatcaa aaaatattgc 1680

attttggtaa tggtctttta atcaatattt tgtgctgctt tggtccagaa tttacaaaag 1740

aattgtgaac tcaccaggta attcctttgt tgttactgtt acattccttg tcactaaact 1800

tgaggttgta gagatgttga tgaactatta aatcaaacgg taattcatta acaaaaatgt 1860

attcaaattt gtttatccaa atcattgcaa tagtaaacca aggtgactta ttatacatag 1920

caaggtagtg tgctggagag taataaaaag cataccaatt gatcgcgaca ttgtaagaac 1980

aaaaaaactc gataattgtt ccattgtatg accttaccac cctcttcctc aatccttgca 2040

tactcatcct ctaaatgtct aaatgtcaaa tgtaataaaa actgtcaaat gatggtacag 2100

gggcttctct aaatgtctga atagactgat tagtaatcct gacatttttt gacatggaca 2160

gtttgttgaa ccttacttca gattatcaat aggagtagag taacaactta acattgacat 2220

gcatgccaaa ggataaacca caaaacatag gtgataaata atgtagatgg caaaatgtat 2280

caatatcagt cataggatct gccagagatt tatatacatg aaatacaaca atctgtaaat 2340

agaaattagt aaattctaga atggtttaaa aaaagtcttc aacactgaat tccaccatta 2400

catcagaaaa ggcacgggtt taatcaaata gcaagctttt ttgaggaatc aaatagcaag 2460

cttaatacag tcaaatagca agcttaatac aatcaactct tgtgtataaa accaggttac 2520

caatttatga ggtgcatggt aagataaata aatggcattg atgagcttag tgataaaccg 2580

tttctgaaaa tgacctattc tgattgttca aaaacatgca tgcagatcac atcactcttc 2640

agcataaata tattgcagcc agaaactctc atctacaagc acttcataat ggtcaatgaa 2700

ccagccacca tgaccatgca cattcaacaa aaaatagttt acattcgagt tgcctaaaaa 2760

caaaaggctc tctcccaacc ataacttttc tctaaattaa acaaaaaggg ccaagatcca 2820

gtgcactata ccatccttca gtgccatgct ccaaacaaaa tcgatcttca atgacagttt 2880

tagatatcta acatgtagtc aaggagaaca tatccatatg cccacaactc gtaagcaatt 2940

tgttagtagc tgcaacaaga cactgatatg acaattcaat catcaattct aatatgcagt 3000

tctgattatg tgttgctgtc agggagctga ttggttagga gtgattgcgg atgtgttctt 3060

tcatgaactc aactttccaa agtctaaaat gaactctaat ttccaactac aaatcaacat 3120

tctcaaaggc atgaatgaat ttatcatcac tgaacataaa tgaggaggat tagaagaagg 3180

cataaggaca gaaaaggcaa acctccaata caagttgttt ctgcaggctg tccacaagtt 3240

gcagataggt c 3251

<210> 3840
<211> 1726
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85720_G1, chr2:204126017..204127742, Cluster 23

<400> 3840
accacatcta cagtatggat gataatttaa aatacacctt aatggtttaa agtagccact 60

tatgccaata tgaaataaaa tgtaaattaa ctcctaagct ttcattacct acccatatat 120

gtcatcacca atcataacat aaagtaagac ttttatattt atagctaacc caactgttat 180

aaaaaataaa taaaaatatc tttcaaatct acactttgat actaattata ctgttacgag 240

aaataattca aaacagtcat agataacgat ttgtgtattt ctaattatat acttctacaa 300

ccataaaagt aagcatagtt gtatattaag ataaatattt aaaataatat cttacgaaac 360

atagaaaaaa tattacttaa gaagccacat aacaataatt atactgacag ttcacttaaa 420

attatattac tgtgagataa taaatttcat aagttgttat tttaaagtat gtttacatat 480

tttaattgaa caatatgcca tactatattg gtaattagtt ttgaggattc tatgtcgtat 540

ttatataata ctattacaca taattatgtg atgtaaggaa ttcaacatgt tgagtgtggg 600

ctttaaatag gcaacaactc ataagagaga gagagacatt acaattaaat tgtcgtcgtt 660

tgcaggtaca caggcgtcaa ctatggttga cggaactgtg tcgtctttgt tatcacttgg 720

ccaggcctgt aggagtacgt aaagattttc cttttccaca atacgtctat tggaaaatgg 780

aaaggactct ggagtcgttg gctctgtcca caatgaagac cgaagaagat attcacaact 840

cacaagttgc ccacatgttg ccgtgctgga gggtgcatta caaactacag tctacagctg 900

gcatgcatga atgcgtgcgc gaagggtcaa ctggaacact atgctcgccg gtcgtcgacg 960

aagataaaag tttggcaaat cacgaacatg acatgtggaa tgagcgacac aagaacatct 1020

cttaatttca ctgtaaatat caagaaaaaa acgaatataa aataaatggc acgcaaaatt 1080

ttcttatatt aggccggatg gacctaatta tatcattaca tgtttccatt tgtaaattat 1140

tggcattgtg gcatatttga gaaattaatt ccaaaaattg ttgtccttca ttttttgatt 1200

ccttgttcgc caaagtctaa atatacagag tggagatggg cagaaaggtc ttcaaagttc 1260

tgactaagat gtgaactaaa tgccagatag ttaggtttca tcatataatg gaatccgtcc 1320

atccggattt tttttcttaa tcaagactca gaaataatct gtaaacgata tttttatata 1380

taacttttt gaaatttttg aagacatttg tcgcgtcatt gggtgttaac gcatacaacg 1440

atgtgccagt taagacaagg gtgtgtttga ttctgttatc tagctatctg ctatgaaaaa 1500

aattgctttc tattgtttgc tatgaaaaag ttgttgtgaa ttgtctgtga aaaaagctca 1560

aagtcacttg attcaaacca ttatgagttg tctaccatga ataaaatgta tattgtttat 1620

atgtatttta tttaactata tctcttaatc aatatattca acaagtttta atatttttta 1680

tcaaaatatt ttattagttt cttaaaatat ctatatctat actata 1726

<210> 3841
<211> 2221
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_90804_G1, chr2:229912009..229914229, Cluster 23

<400> 3841
agttcatggg gctgttgagt agctattgat ggagttgttg caatctccga taatcaattg 60

taagaggctc ttgtgctcat tccccatgag agattcgtga attgcaactt aagtgaaata 120

atggcttgtg gagtgccttt tgtataattc ttactatgcc ataagtgtgg gcttgacatg 180

tgattccaat tagtgcttga accacctagc ttgggctcgc cataatgagg acataggttg 240

tcgacaagga atcgagcctc agagatatac cttgtgtcat ctcttgcccc atgtggtttg 300

ctcactatac ttactcttgc aattacattc acttacttat tgtatgatat tttatcaact 360
agtattgtat agattgtaac tagtgataat tacattttct tgatatctct tgatagtagc 420
tagccttaat caacatagac taaagaccta actattagaa ttgtttaaag gctggcatag 480
gataaattgg ttctagtgca aagtagttgc ttgaatgcca tttttatatt aatcaaactt 540
tgctatggtg gtttatgaga ttgtaggata atccttatag gctattcacc cctctagcca 600
tctaggtacc atgcggttag accatgacaa aggttggtct aaagagaatg ggtggtaatg 660
acatgggttt cactatgggt tttgaaggtt gtatgtatat ttctttctta ggtactatgc 720
ttggactttt tcaatgatac cttgcacttc ttgtgttgct acactaagat gtttgggtgc 780
caccaaattt atctagtgga tcgcaccaga taaacaccaa acaaaagagc acatgtgacc 840
atttaaaatt gtggttgttg gctctgtcat agttgacctt tggtcactca tgattagaat 900
gttggtcgag gtggtcagat caccaaccat gtatatagcc tattggaagg cgagacttaa 960
tagtttaccc ctccctatat atagttgaga gctcagttct ggaggtttct catccactac 1020
aacaaatgga tacaaccctc tagatcccaa aactcctctc actcacttgt atagcttgaa 1080
atctcattca tgtgagattg aagaggcttt agcgcattgc aatagtgcgt ttacttctta 1140
tgtcactagg ctagtcattt tcgctgagga tatctaaatc ctcttggtaa ttgccatcac 1200
ttgtcggttt ggagcttgtg gagatagttt accattactt ggtgattgtg tggggattca 1260
accagtggct ttgtgagggg ttttgtgatc ttgccataag atttccacaa agatcaactc 1320
tgaagaggct tgcagaggtt cttggttacc taccagctta acactagtgg acaaatcata 1380
ggggtagagc ttgtgtgctt gcatggctag taaatcagtg atctaatagg atccacctca 1440
atgcaaatta agttgacatt ggaataaatt catgtatcac ttgcacttgt tggtttattc 1500
ttgtatttat attgcaaaac ttgtgcttat gtagttgttt gtgtagtagt agctctctag 1560
tgagtagagt atgtagttca gatcttttgc ttgtgtagct cactagttat tgctgattcc 1620
tctagtaact ttcatgtttt agttgtttta tttaaacctg ctattagaat tatgaaggaa 1680
tgattgcttt aaaatgaata gaaaatgcaa aaattggcca ttaggattat cttttatact 1740
taccaacatg tctagtgcta tgaccgtaga gaattttaat aggctatccg ttcccctcta 1800
gttgtccgta gctcctttca ctaaatgtaa cactaccagt gcccataaaa actagaagtg 1860
atcttagaat atcactgctt gttgtagcaa aaaaaatggt agtgatacat cacatatgat 1920
tgcaagccaa ataagcaatt atatgtatcg tatcactatc agttattggc tacaacttgt 1980
agtgccatta ctatccttat ttgataaaat cttatccatt ttcactacat gtttttttact 2040
acatcaaaca tttattgata aatttggata atttctctag tgagaagtgg attctcccaa 2100
atgccattaa acttgtgggc ttcaccacat tgcctatgaa atgtgcataa ccttctgaaa 2160
tgcgatttca caattctgat tctagtttaa tcacttttg taaaaacaag taccttcgat 2220
g 2221

<210> 3842
<211> 1793
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92289_G1, chr3:1092662..1094454, Cluster 23

<400> 3842
tctctctcat ctgacatgaa taatgtatga gtgtcgtgtt gtagagtatt atgtgaagcc 60

atcaacctgt aagctttcat aattatccgc acgcaggagg acgtccaact gtgcccagaa 120

aacattgcag ctcaaaattg ctacacccat atcaaaattg caagtactcg tctttatttt 180

tactacactc taggactgaa tgtatgtttt attcttccca caggtctgtt cacaaattgc 240

agctcagcgt gcagccaatc ctaaccttga taaactatat attacaaaag tgagtagctc 300

tataggtcct gctcatgagc tttttatgga tactgttgat tacactcgta atgactattt 360

ccatttgact ttttcgttaa agtccgtgaa gaaattgttt cttgtgccta gcaaacgctt 420

taaatgcaat gaaatggtta gatcttgatc acacactatt ttttgttact aagtgactat 480

gattgtcaag aaaagctaaa ttcagccttt tttagatatt tcactctgat tgttttgcaa 540

taatatcgta taataatgct ctatattttt tgtgaggcct tttttcttaa ttctggactg 600

cagaagacaa tttaggtaga agctttgact tctttttttac tgcttgaagg aatataaaac 660

attaaaaccc gcttagtaga tgcgtactat aataaaacat atagtctcca attttctatt 720

ttatttcatg tttttgttat gttatctctg tatttctaac aatcagtagt tgtctatata 780

tatcattctc ttgaaaagct tatttgattt tgatatctgt attactagca gcctgacatc 840

atattctaat tattacagaa tgataaagat gtctttatag agtcacttat ttgcagatta 900

gataataaat gtgataaact tttgatatgt aaattggact ctgaattcag catgcctcaa 960

gtaagtatat gcaatttgga tcatagcatt acatttttca tgctagcgta cttttatgaa 1020

aataataata ttctttagaa ttgacaaaaa tatttagatg tgtgttaaaa taacctactt 1080

acctttattc tagcaatgtt gttagttaac acaagataaa cattaattag aaccactttt 1140

gtaattaata attaatagaa ggggtatgta tttaatttga tggtggccat gcttggaaat 1200

gtaagctgcc ttcgtctgag ggcccaaaag cattgagttg ttagagctgt cacataattt 1260

gcatttagta cccttaaatt tcaagtatag accaaccaaa cctcacatat aggtaatgga 1320

ggaactcaac tctcggttgg aattgtgtgg gcctttcacg ttctgatttt gcactgaatt 1380

ccacgtctgt gcttgcaatt acagaaaata aagttgtact catgaacatt tatcatttgt 1440

actctgctgt ctagccaaag ttgtgtaggc agttctgcta aataaacggc caaaattagg 1500

gtaatttaag aacaactaaa gaacggcaac acaactggtt tggactagaa acatggtagt 1560

ttttttttc tggtgtttga ggtgtgtttt gtccagctac ctgagttgtt taagagttgc 1620

agtgaataat tactgtggtt ataactcgat ggagcagagt aggatcatga ctgattctga 1680

aatagtttta tatcttgact tatcagcaac acacaatatc tttacttggt tacaacataa 1740

cttgatttag tttttattgg tataatacta tgatgtatgc atttttttgaa tga 1793

<210> 3843
<211> 2665
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9383_G1, chr1:49375497..49378161, Cluster 23

<400> 3843
gttataattg tcaatctcat ccaccttgtc tagattgtcc caaatatcgt cattaatttg 60

aaattagttg ccacaggcag ggccaaaaag gtcatagtag taaatggtag catgctctaa 120

caaattatca tctccctcaa tcttcttgcc atcctcttca aaaaaactca atatagtttt 180

atttttttc cattggcaac tctatgaaaa aaactcatta ttgccatcgc ccttaagaag 240

ccaagtttca tgagatctct atctccagta catctcctct tcttccatca tcataatatt 300

ttcacttaac atcctgactt ttggttccat ctggaggcca tttaagcccc tctcctcttc 360

aattctctct agctcggcta accaaagttg gttttggatt ttccttttt tttctttttc 420

caccttttc attctagacc caacctttta gaaactgttt gcaaagcttc agcttttgct 480

gaactttatc aagggaactt ttggttctac aaggcttccc ccatattctt tctatatgct 540

ccaaaaattt aagatgagag agccaaccaa tctcaaaacg aaagacaaac tgcttatcct 600

cattcactat ttcagttaaa acgagcaagg ggttgtgatc agataattcc caaggaagct 660

ttcttatgtg gaccaaagga tagatggtct cccaatcttc gctcattaaa attttgtcca 720

gcttaactag tgtggggtca ttttggttat ttgaccaagt gaaaccacca cagggcatct 780

agatctcaat taattcatac ttatgaatca aatcattgaa aagatcagaa tgcttatgca 840

gaccacattt tttatttctt tcattagaaa atctaatgat attaaagtcc cctcccacaa 900

tgttgggatc tttattattt tcacaaaata ctgccatttc aactagaaag tcatttttct 960

ccttgtcatg ggcagggcca taaacagctc caaggatcca ttttctatgg aaattcttat 1020

cccaaacaat caactttatc atataatctc cttgattaaa ataccctaca tccaactcct 1080

ccatattgat tcccaccaaa ataccaccag atttaccatt agagggcatg caaacctaga 1140

gataaacttc agaaggatcg aacccttga ccatatctca ttatattcat caatcatagt 1200

ctccaacaga catatgaaag caaacttgtg aaacttaatc aaatcctaca aataaacaga 1260

tagtcctttc ttccttatgc cactacagtt ccaaaagagg cctttcattg taaaacactt 1320

gaggttttgt catccatctt tacaagagga ttccccttgt cacactcccc ttttttagcc 1380

ttttcctcg agaacatttt cttttgtttc ttagtctatt ttttctagat tgaactagaa 1440

caaaatcccc ttgtgcacct ctatcatcat aatgctcata ctccacctca cttacgttat 1500

tttcatcaat cgcttctaaa ccatccttac actgctttta atcacttgca atttttttctg 1560

atttagattg tgtctagata gttccatttc tttaatttgg tcagcaatat caaagttttg 1620

atcactaatt ttaaccccca ttttttgaaa ccttaatgat atcttaaaaa ggtaaaccag 1680

aaaatttatc aggtttctgg gaattacctt caagatttct cttggcatcc atccttctat 1740

ttttctcctc gattctaatt ccactgtcct ttttgagcct ctcgctgacc cttctttcct 1800

ggggagcttc aacttttttt ttctttttgg caggaaccat acctccaggt agatcatttg 1860

tcctacaaac tttttcaccc ccttcttcac ctttttcacc ttgagaagca ttcaagacaa 1920

tactgtcttg ggtagacctc acattctcct ctatatcatg ttgtccctta atgatttctt 1980

caatcaccat cgagctctta gcaacagact tttgtttaaa gatttcctca ttcaccttct 2040

cactcccctt atcttgtatt ttccacacat ttatgttaga agaaccacaa atttccatgc 2100

ctccaccaaa attttcttcc ccaaacatat cattgtttct tcagcttcac tgtctgttat 2160

ttgaaccttt tcttcgttat ccatatgatg ttttccaaga ctccttcgta atattgcctt 2220

cctctatcac cttctttcct ttgttagcct ccacaatttt agtgaaacta gactaagttt 2280

tcttcataat cttttgatca ttgtattttc cattgctacc ttttccaagt ttagggaatt 2340

gttcacctct ttcaaacttg gtgcttagca gtatgatgct tgtttccctc actgctgact 2400

gcagttttca atttctcctc atcttcatca gcttgaactt ctctcttgaa gaagaaatca 2460

taaatgtaca tgcccaaagc actctcaaca acctcaggga ctgcactaac ctctctacaa 2520

gcaattcgag ctctgacata ttcattacgc aatccggatt tttcatcaat ctccaccact 2580

ttacccacca aaccaccaat ttttgcaata gttttgatag acctttgttc catcggaatc 2640

ccacggattc tgaacaaacc tctct 2665

<210> 3844
<211> 1711
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94317_G1, chr3:11220476..11222186, Cluster 23

<400> 3844
tagctgcaaa agtgagtcat gtctttttta gtcatttctc tgaagcacct acaggatgca 60

gctatcctgg agaaactgat tgacacaaaa aatagagaac taaaggtcac agcaaacaat 120

aaccaatgag ccacaaaagt ccgaatcaaa ttaaggccct gggatggaga cataacagag 180

cacaagctgg tccaccagac caccactgcg tactgcagca ccggttctac taccaccaac 240

caaacagacc tgattttgaa gaaagcagtg agcaagtgac agagaatgca tatacaagtc 300

cccttcaact gtaccttccg gcacagacca aatgacagga tccagagggt ctaccgtcac 360

atggcacagc agatcctccg gaaagcttcc cgtctgttaa caaactgtac ctccgacagc 420

agtccgccca tccggtgcac agctgtgatc gggctgtgga acggcgtatt ttaacaaaga 480

cagacagccc ccaaagctac cgataccgcc acagagaaca aatcacaggg acacgccaac 540

cgagccttct ccccactcta aaaatatgat gagcagagca tgcttggagt tggaatgcac 600

acccctgtgg atccagctta tggacttacc ctcgaagacc ccaactctac atagttatac 660

taccattgca gttgcaggcc cccagtacac tccctaagag gcttaccact gtgctactct 720

aattcttcat taagtagcac ttttggtttt tgtctaattt gattaggttg gcacagtaag 780

ttcaacagca gcagcgcgct aagctgcttc gtgatgattg gagtcctttc agcttttatt 840

gccctcaaat ctgttaatcg ataaatgact tcaatgctct tcccattaag ttagctgcat 900

ccactgacat gcacagtgca ggaagcaaag caagattgga acaagttttt cactatcata 960

acttctagtg gggcttgacc caacaacgtg gtccaatctg gaaaaggaac gcacaaataa 1020

gacactgtat gtttggagat cccagatttg aagaaaagta aacagatagc tgctagcgtt 1080

acatattctg catattgcta gcgtttgtac gatttgataa agagcaaata catgtgctaa 1140

tcatgaaact tccaatagtt atccaaaaaa agttctgtat cctaaaattc tcaagaagtt 1200

cacagttaac acaagctagg ctaataggat aatgaatcca atgatcactg gatagggacg 1260

gggagagaaa gaaaaaggca tgtttgatgc tattgctaat tcagtgaatt cttatgtact 1320

tgctatttgc taaaaggtgt ttatctttaa tcagcatgtg gtggaggaga atttgatgaa 1380

ttcgaacaaa attatatgct actagtacaa caccaaatat ttcattttta gccaattaat 1440

gctaaatcaa atgaagatca tgcagtttag gcaaagggga aaaaaattca ccacgttcca 1500

gagggcctta tagtttgatt tttaatttag atggtaaaag gatcaagatg gttaaggggg 1560

gattgaatta agcttatcta aaaattctcg cagcaattta attctatcat atagcacact 1620

tcacccctgt gtctaagtgt ttttttttatt ctatcacaaa gttttgttcc tcggtttcaa 1680

ctgtatttta gcatggcaat tatagtaaag a 1711

<210> 3845
<211> 1659
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95111_G1, chr3:15880477..15882135, Cluster 23

<400> 3845
gtagtattat tgtaatcttt atgtttaatg tatgcaattt tcatgcttat ttgttgagtg 60

tcaaacttta tatctatata tcaaattgtt taccaaattt actatgaaat tatatgtata 120

ttagatagaa ttttacataa aaattttgtt gtggcacacc ctatgtaaaa atcctagatc 180

cgccactgct agtggatgcc ttgatatagt gaacgtgtta gggactcagg gttggcagaa 240

tccatcatcg ttagaccatt aacataatga catccatgtg agatgagact gatgaactac 300

ttaggtgtgc tactacgtac cggacttctc actggccatt gcatgaacta cttggtttct 360

tttcacgtcg tatgtctctt cagagacctc actgactgag cagtgagcac aggtttatat 420

tgtctatcta acagatcctg aaactctctt tgttgttcag gttatcagga ttcaatattt 480

acagttgata ggaattctga cgataactct gtaggtagag ctgccgctgg aacttctcat 540

gtgacagctt atttttgtct gattctgtat aagacttgaa tgttcgtgta gaattggtgg 600

cactgtaata gtctatttgt ttttaaaaat gaaaccaaaa ggcctggcgc agcatgctac 660

cactcctatt atatggcagc ttattagcag tgaataatgc cggtcaaaag tccacctatc 720

aaaatagata attttcacta ctctgatttt ctttgctttg gaaaggaact tcaagtttcc 780

ttcatttcaa atagtatgat acatatgatc cctttatttt ctttggtatg agctgttata 840

gatggttgaa attgattgaa acgctaagaa cacttgagaa ctttataaac tatttgtcga 900

acaaattgga agaaggaatc atccaaacac ttgtttgaac tcggttggtt atgtcgagat 960

taaaaaaagg attgaaagac atggtcggta tcatgacaac taagacataa agaacaaatg 1020

ggacaagtga aagaataatt caaggtatgt aagaggttga tgatgaggca gaccgatacg 1080

tgttggaaag gcagggaaga attcatgttc gggaatctct ttcacttgac gaacaagtga 1140

gatacattag aaaggcaaac attccaactc aaaatgttat ggtcctctgc actcgtggat 1200

gtggcatcat acctacccct gtggcggata tgatagccaa gtagtgaagg acatctcgaa 1260

cactgccact attgaaggca tggcccttgg tataaaactc caagaacaag ataagaacag 1320

ggcagtcaag cttagccaat ggaatatgag gtttatgtaa ctgctctcct ccattgcatt 1380

ataaaaggga ggcgggagta acattagggg atttagatca ctcaaacgga ttttgatacc 1440

agattcatag ttcactctta caatggacat acataaagat ggactgggac aattagtcta 1500

aaactcaaac cacgaccaag aggtcaggga gagttataag gtattgatgc tcaatggatg 1560

taggatatta tgcacacaat ggctcaaacc tctctaactg ctagtgtatt ggctcccact 1620

tatgcccaag tttagcatga ctactgacat gtgtcgtgc 1659

<210> 3846
<211> 1451
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96849_G1, chr3:25315353..25316803, Cluster 23

<400> 3846
atcaaactac attcattttg ttacttataa tgctataact tataatttgt tctctaatgg 60

tggactttgc tctttattac atgatgaaca ggttactgat ttttatcaac aatatatttg 120

cttctagagt tagcagacac aactctaatg acactcaatt tctgtgaact tggtttttgt 180

tagacttgct ttattgttgt ttttatgaat gagacttggt cattttaata tgatggttga 240

atgttgttaa tgtgaagttg aatcgatgat atgtgtagac ttagttattt gaatttaatg 300

gatgaatggc atttgatgaa tattgaatga cataaatatg tgtatgtgat gttgaatcgt 360

gaatggatga tatgtgattt gtatatggat atataacggg attttggacc ctaaaagtga 420

cttatttttt gcagacctag ttagccatcg tggttgtccc ctagccacca aaaataaatt 480

attttcagtg tctactataa aaaataagtg ttattttcga ttacaaactt ccaactgtgg 540

cctaacacca aaaataaact tatagccgac gaaaacaagt tatcttttgg tgggaaacac 600

ttatttttgg ctaccaaaag tttatagaat tcttgtagtt gtgttatctt tgttagaagc 660

ttatgggtta tacctatatt agggaattac aaaacaaata tatactgatt ttaataatga 720

gtttatctct aaggttttca tctattcaaa caaaatagaa gagtttgatt aaatcgctac 780

atatacaatc aatctacata ggacttttt ctaataagcc atactaggcc catgggtgat 840

cctacttgat ctgatagcag atctctaaag agatgaccga tctgtagcat acgtgccagc 900

tcttaggcta tgtctcgcat aatggcatgg cctcacgcac gataggtatc gaccatcacg 960

aacatagaca tgcattacaa tcggttgtcg gtgggtctac caatcggtca gcatggtcga 1020

taccgactgt gtcgggacta tgctagtcag tatcgattga ttggtattga ccctcacttt 1080

tgagttcgag tcgataccga ctaggtctgg tcagtacata tagcctggtt ctaacatggt 1140

aggtttttat tggttggtac cattttaatc gtttatattt caaaaaaatc tttaaaataa 1200

aaaattgtaa agccaccatg taaatagagg gtgtttagat tcattcacac ccatcactct 1260

ccaaatcaca agccttattc tctttctgta gcctttcact ctttgtcttg atatggatat 1320

atccaaggtg gagtctgaac tttgatacgt ccaccgactt actcaacgag caatctccac 1380

aatatctcaa gacccatacc ggtatgggac aagtcttctt tgatggtatt tctcattgaa 1440

ggaaacatgt g 1451

<210> 3847
<211> 2140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97851_G1, chr3:30524212..30526351, Cluster 23

<400> 3847
agactcacaa gcaagtgctc tcaagaacca ctctgtgccc aagtacatct attaaaacct 60

caattgcaca aagacgatga cccatgtgcc tggaatggct ggcatctgca acttgctgat 120

gtatcgacaa caggaactgc aatagattaa gaggacagat ggaacttgat cataatcaca 180

ccacactcta caagattgtg tatatttaca tatctaagtc atgctcgttt agtttatacg 240

caaaaactta tattatttgt tttcacagaa agaagaccat ttcgaccatt tcgtgctatt 300

acaatactgt ttgtagagag aaatgagata gaaaagtgaa caccttatgc ccactaacag 360

gacaagctac aaaaatattc agggaaactc atttttaat gaaggacaaa ataagtaatt 420

attttaatca caatgtaatc aaaccacaag tacagtttta aagttgctgt ttagatgtat 480

ccagcaaaaa caaacaaatt ggatagtgat ctctatgtaa tcaaaccata aatatcaaaa 540

caaattggat aatgatgaat acgcaactta ttgtttaaat aaacatgcaa atgggtttcg 600

tattgatgta gtgtattctt agtttgatgt tgaaatattg tttgtttgtt tttttcctga 660

attcttaata gttcatcatc aaagtatgat atatcctaga tgacaaattc catatcacct 720

ttcttgtact acaagaataa atttaaagca catatgggat actgcaaaag gatcctcagt 780

ttgttcatag agatatctgg gagcatagag tgtgatttac ttctctactt tccttgtttg 840

atgtgtgccc cctggcctct ctgtttgatt agatgcacgg catctgcttg atgcatgtag 900

atgtggatct ggttgaagac taatcgcgac tagtcgactg gtcggtagct atacgactag 960

ggtcaactag acgacttgaa aacattgagc cctacactaa gctttgctcc tgagagcatg 1020

tatatacagc ataaaatttt ggacaagtgt cacgattatt taaagaaagt acaaattctt 1080

tcaatcaagt ttgccatatg tccaaataaa ctaatgtttg tctcgattta ctacctccaa 1140

ctacttgagt tggttcaatt tagccattaa caagatatgt tatttttggt tctaaagcat 1200

acaagtttga gtttaatatc gtgaggttat atatgacatc atactttatt ttaaaaatga 1260

acacatgtta aatttttcat cattattttg atagcttagc aaatttaata ataaattaac 1320

actagagata taaaacagta caaaacacta tagagggggt gttaaggtat aatagtcaag 1380

ggtattagtg taatctccaa gtccagggta ttagtccaat ctccaagttt agggtttccc 1440

tcttgtctct ttcatgtatc tatatatagt agtcgtattg ggcctcaata ttatcatcca 1500

attcagcctc tatattacta acaactaact gccacctgct ggttttccag tgcacactaa 1560

aaacatgacc agtgagcgaa gaactgccac cacggctttg cactaaatca aaccagccaa 1620

ggaaacccca aaccctgggg tcaccctatt gatccgcacc ataatctgga tggtggccac 1680

tgccactacg gacgccttgc ataatctgag cggttaccac atattcacac gctgccacta 1740

tttttggtgt gaagcacagc acggtttttt tctttcttgc agacgaggat ttgaaacccg 1800

gtattaacag tattgtcata ttataccact tcctcaactc aataactgca ttctctagtc 1860

caggtaagga accctgatct ataccaacaa agataaaggc attgcagcag ctaggggcta 1920

ggcagtgccc tcaaaaaaac atgagggtta gacaaatgca ttatcctttg cagaatttga 1980

attcataaaa atgataatca tgagacaaac agaatacctt aaaaactctg tcagcacgaa 2040

atatattaac tttatcacta acaactgtat cagccaagtt atcatccctg aaatgtgaaa 2100

agtcagtcct gatactggaa taatgattga attataatgt 2140

<210> 3848
<211> 2029
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_99490_G1, chr3:41133334..41135362, Cluster 23

<400> 3848

tacgacatct ctgaaaatac ttttggacat ttttacgtag gaaaaggtct acttaataac 60

tccctcaaac tattgaaaaa cttctaagga acctcctgag acgattttga tgttttttt 120

caaatgtatc atttttagaa gtctatataa ccacatacca tatcaagggt ctatataacc 180

cctacctata atattgtaaa caataaccaa aaaataaaat accagctcat caggttttaa 240

ctccttattt acagatgtct ttttcttaat tgttttcttt gatatgtttg cctttagtat 300

atgaatttaa cagtatatcc gcaacatcaa tgaaaaaagt ggaataaata aataataata 360

agagatagaa caaattaaat atataagatt gaaagatatt aagacaaatg attatagcag 420

aaaattatgc aatgacaaaa gaacaagaaa catatgcaac ttattctatc atagagcaga 480

cttggtgttg aaggctctaa caacatgagt gggggaaggg atataaactg aggcaagctt 540

tctctcgtaa atgcggaagg ctgcttcgag cctgtggcca ataactgagt gagacagctc 600

ttacctgtac actagacatg ccctatttgt accaataata ggagtaaaaa attcaaattt 660

taatttggta ttttgagttc taattcctag ttcatgtctt aaaatttatg agaaatgcag 720

acatatgatc cctagtaggt gtgttaaatg tttgtgttct aattcctgat ttttgtattt 780

tctgctattg tttgcaatat tataggcaaa gggttatata gactcttgat atgttagggg 840

gttatataaa cttctaaaga tgacacatca tcaaaatcac ctttaaaatt gactcaagaa 900

attatttaga cgattttcaa tagtttgagg ttttttttcga cggttttata ggtgggagtg 960

aaatagacaa ccatccatag tcgagggtgc taaatagatt ttttttttctt ttttacatac 1020

atagtccaag aaaataaaag caagaagggt tggatgagaa cagtgctgtg ctgacactat 1080

aattctcgga ccacagagtt gttgccctgc tactgccctg aatctttggt aaagaatcaa 1140

cataggtgga gatatataat gcaaaacaaa aaaaaaaaga aaaacagcag agtttaatga 1200

aggctcagtg ttcaagggac atgatctgta actggcagag tagatttgca ccagcagcaa 1260

aaatgtatac acggttttat caaaatcctc caaccatcga gagacttgat atatctggat 1320

agccttcagt aaaccaggca tctggagttt agtacaagca cataactgat ggcttaaact 1380

tcgtgcagct ctggtggcaa cactgcaagt ctgcagacta ctgcagcatt agatgaacag 1440

atctgcttta tactaaaaaa aatatgcagc acattgctga ggcttgtcat cttgtatctg 1500

agctgttatc atgtaaggtt ttcataccat actagcttga gcctgcaaga catgctcacg 1560

ccctgttaat agaactggaa gaattttgta ggagtagaat aaaaagcatc tgttcgtcat 1620

tttcttcttc agacaacaaa attctttact cttaacaaga aaacttacaa tgtgcatggt 1680

tcatactctt gaagcactcc gcacattaga agcatcactt gctttagacc tgttcatgat 1740

attatagtgt tccggcattc caattagcag agtggtggtg acctgtggaa attatttcac 1800

atattgggtc ctggttcgta tcggtggcct tagagcacat ctttagtagt cattttgta 1860

gaggaaaacc cagattttat agaaagcttg taacaataca attggtagtc attttaggtg 1920

ctgttacttt tcgtgcctgc tttccatcac tttttttttc atgaacttct catgctgagt 1980

tgctggctac acccaactac tgcaggtaca gagccgtgac aagtgctta 2029

<210> 3849
<211> 2606
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81941_G1, chr2:181418576..181421181, Cluster 24

<400> 3849
cctgtgcggc ctttttttca ttagacttgg tctcctacat aatttgtctc gctagcgttg 60

gtgcagtgaa tgcagcagcc acgagtcagt gtaagtcagt tgactcgctg tttatttatg 120

cagcaacgac ccaacattat tcatggcgag ctagccggct agcgtgataa atgaccgatg 180

atccagctcc ggatcgattg atagtacctt ggatgggcac aactgctgtt catgttcccg 240

gccgccgtag atttttattt tttccgtgag gacagcggag ctgctagcga tctgctgtgt 300

atagatagct tcagtgcttt tacagactgg gagagagatc aaaaggaggc actgcaggac 360

acacacgtca cacctcacac gcatatctgc cgatgccgtc gacgtcgtct tcgatctcgt 420

gctgttcttc agctttacag ccggtggaag agctagtagt agtagtaaag aggagcgaag 480

actggaagag agagagagag aggggtacag catgcatgca gctgatgatg atcagctctg 540

ctactcctga gtgctggcta gctagctaca ctaccatacc aataagtcac ctcacatgtg 600

cagtgttgta ggggcatgca tttatgcctc tttcgtttct cttttcatct gcagcattca 660

attccatcac tctgagtgag tatgtgctcc tatactgcac attgtttttt tttccttcta 720

atctatttcc ctctctctct cgtttgcatt gaccatgtct cattgaagct aagatttctc 780

accattgcat gtgttccttc tccatgcacc ttcatgcact gaaatttttg agcggtttaa 840

gtagttgagc aatattttat cattcacatg cctcaactgg agcactcatg catgcagcgg 900

tcgatcgaaa gtgctgaacc tttccatcaa ccatcatgag gtcatggctt gcatgagatg 960

gagcgccttg gctgtttctt tttttattac agcttcagct aggtgcgggt gcggctcatg 1020

tatgcacgcc gggtgcagca gggcagggcc gagaaagcag ggaaaaggaa gatgtcaatg 1080

gcgccctaca aaatctgcaa gcgcgagagc cggacgcggc aattactccc gtcagtccct 1140

atactatacg tttccaaggc cgcatcatcc gcatggcatt gcactgcgtc cggggtccct 1200

tgttgccttg ccctttactc tgatggcctt ttttttctt tgtttcctat ggctgccgct 1260

gcctggtgca tgcgtatcca tgaggaggct ggttagtata gtacatgcat gcaattcaga 1320

gcagcatcgt catggcggtc gtcccgttgt ctcgcaccag tgctgcgcgg ccactcctgc 1380

agaatccaag cgatgcttgg atatgttttt ctgtgtgttt ctgatcgggc ttgaatgctg 1440

aaaggcacca ctacaccact agtatgcatg catgccatag caaggggtcg ttgacatcaa 1500

gcaaaaacag acaccaaatc cataagcagc tgcagtagct agaggcaaga gaagtgcatt 1560

tactatttac ctagggcgcg cgctatatat atccatgttc ttggtgtgac tgaaaatgga 1620

agttcgttaa caaaaatccg aggaccagaa ctggcagtgg actgctgtat aataaagctg 1680

gtgcccttag ttttggtggt gtgctcactt atactcttag ttgtgttttt ggctcagttt 1740

tgcccttcca ctgctataga acagaaagac aaaacagaga aaaaaaacac gactaaaggt 1800

ataagtgaac acaccaccaa aattgagggc accaactttt atggtagata gacaaaattg 1860

ctccactttt gattaaaaca cattcagtag tataaaataa tgaaatattt gctccacttt 1920

tgattaaaac acattcagta gtatgaaata tttactcaat gtgtgtccga gagtctccgt 1980

gacaaggcaa aaacaaagat cggctaatac aatcataacg cgaccatgca ataatatgat 2040

ctatgtgcaa gggtggatct agccctaggt tgtccgggtt gcagcagggc gtggcccaaa 2100

gatcccttta atagctcctt tatgtcaata ttggtaatct tgagttacaa agaatgaaaa 2160

ggcacagatt atgtggttga tcaacgaaaa tatatattta gcttaaacta acacggacta 2220

aaaatctctt acactatttt ttagctcttt ttaagatgtt ttcagatctg gccactgaat 2280

atgtgtaact tagtatatgt agtgatcgat attcactgta atagtctaaa tttgtgctta 2340

tgaatgagta aagctttgat aaatacttta atatggatac catcttttg agcctagtgt 2400

atagtaagtg atcttattga actattggtc acggtaaaaa aacctttta ttagggcttg 2460

tttgggtcca attcccttgc tcttaaacaa gcctttagag tgtctaactg tcgccggtat 2520

gatataactt ttatacatat accacttgta ataactaatt aagacaaaga gccagaatag 2580

agctataccg attgatgaat agtaac 2606

<210> 3850
<211> 1682
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112169_G1, chr3:125709493..125711174, Cluster 24

<400> 3850
tcttagaagc cggaccttaa aatttaaaca tcatgttcac atcttaaatt tttcacaaaa 60

ttaattgatt ttttaaatga gtaagaatta tgatatgcta atttgtgtac aatgtgtagc 120

tagattcatg tgtggattcc accttagaag ccgaacctta aaattaaacg tcgcgttcac 180

accttaaaat tttcataaaa ttaattgttt ttttgaaatg agtaagaatg ataatatgtt 240

aacttgtatg caacaatata gctagattca tctatgggtc ccacatatat gtctagtgtg 300

tggtgagggt tggaacgcat tccaatccca cttcaccaac ccacctaatt tggctctaaa 360

actcatttcc acccatctaa acaacactta tatcaacatc ttcctattaa atccattaca 420

acccgatcca ttagaaggcc tactatctga ctgacttctg cgacccaaca ccacgacaaa 480

actcgctcgc tatgcatgta tgtacaaatg aaatgagcga ggcatcgact cggacgaacg 540

atagaataac gggcagcctt gcttttaggc gccatttagt ttataaaata taacgtaaat 600

aataataata atttatattt aaatatcaac ggtaataaat ataaatagat tggtatccct 660

ttttggtgtg atatccgata acattaaatt taaataaata tgatttaact ttatcggtta 720

accatcactt atcaatcgct gcacgtctcc atttctccgg acggatgcat gcaccccgag 780

atgtccgcca gataaagaat cggatggcac gtcgttttaa gaggcaatgc aaatgtcgag 840

agttgagacg acagagcaag catgcatgca cggttgtcgt ccattctctg attgtttgct 900

ttgaattaaa actagttatt tgatgcagct ttagtttatg aaaacaaaac ggtgtactct 960

ctctgtccat aatgcccgta ccatacaaag gctgctctga tttgtaataa ttaaatcttg 1020

atatcagaga agagaaggct aaaaaagcta ctaaaattag ctagtccata acgagagtat 1080

acttatttag gataaaatct attttttttg taaatatact tattttggaa cataggagag 1140

tacatatgta tgtacgccat atgtctacct cgtcagtgtc gaaaagagtg aaggtggtgc 1200

cacgagatgg agaaggtctc aatagtctcc aggaaggcgt ctcgagctta tgggctagat 1260

tgggtgaact aattctggcc caagtcatct gtagagcgat actgctgttc ggtaacaatg 1320

gaccaggatc tggtgcccca tcgctgtctc acgagacaac gattgatgac gatgatgaca 1380

taggatagga ggagcagttc gagatgattc tcgctatgtc gggagagaga agaactcgaa 1440

gcctggaagt gggtctttga gctcaagtga tcatgacaaa ggtaaagaca gcgaacgcgg 1500

gcctcggcgc ttggaaagcc ggtagtcgac aatcgggtgg ctggtttgta gtactatgtc 1560

gttaacagac ttggcgagtg tgtcgaacaa ctcatcagtg acgatgtctc tctagagaaa 1620

agggggagcc aatcgagcct ttcgcttcag attatgaggc tcatcgcttc agattaaagt 1680

ta 1682

<210> 3851
<211> 1672
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112558_G1, chr3:127693228..127694899, Cluster 24

<400> 3851
aagcagaggg atggcctcca tatcatcagt aagtaattaa aattttctct tgcgtgtgtc 60

agctcctagg gcgttcttct tatgcttaga gacggtccta acattattct tttgtaatta 120

cacatatggt tgcataggag ctcgactcct ataaatagat acacatatgt gagcgtcgaa 180

ggggtcaacc attcgtggtt ttttactgac gtcatctcta gtcggccgag agcttccgaa 240

ggtataattc tacttctgaa gatcttgtct ctattgttat acgcctttca ctactcttcc 300

acacctgaac ttattatatt ttacagcata ttggtttttt ctctttaatt gctatttgcc 360

ttaaaactat ttctttatgt aatgatatat cttgcttatc aataacacgg ataaaagtcc 420

cacgcgccat cttctccctc cttgacgaag tatacgaaac accgacaaat tcctgtaatt 480

attcttttgt gattattctt ttagacccta gatattgtgt gatatcgtga caagagcctg 540

gttttggttg caagcgcata ttgtcaaagc ttgcctcaca aaaaaaaaaa ttcactctac 600

gagttccagc agtcaacgtg tggaatatag caggaaaaag aaaagacctg gcgctctcga 660

agtctgaaaa gcaagctcac ttacgtcgga tttctaaaag aaatattggt tgatgggata 720

ttttgtgcgc aagtttctgg tctcaatttt gtagtgagga tgtttcttcc gaaagcacgg 780

gattcatgct ggatttacgt atccatcgac gagtggtggt gatggtgcca tttcaaggca 840

tggtggattt acatgatccg caggtccttg ttgaaattgg tgggacgtgc agaaggatga 900

gaatgtgagg ttggtcatcg aaggcgtctt caacaaatca tgtaaaacac tgttttattt 960

gcatgtatag tagggtttga agacgtgata gagaatgcga tagaagagtt gctggcgatt 1020

tgccatatag ataatgttgt ttgcagagta gagttttaag tagagatgtg taatagagaa 1080

tgagataaga gaagtaccat ttaaaattag attattattt tttgtacata tgtatttgtc 1140

gtagtctaaa atggtaaata catatttaat tatgtgtttc attcatagtt agaatataag 1200

aagttttaga gggagagaga atactctaga tttggagaca agagtacctg ctcctaaatt 1260

tagggtttag ggtttatagt gtgtggatga gtggaatatc agcagaaaag gatgcgctct 1320

gaaaagtctg aacagcaacc tcacttgact attgaccgga cttgcagtgc agtcagtact 1380

acggttggtt cttcttcagg catcacgtca gatttccgaa aacagttgta atgtcggcaa 1440

cttcaagaga aaattgtttt ggattgttga cccagtaggc cagtatacgc gcgctctact 1500

ctatagtcca gacaaggtac actgaaagga ttgatttgaa acgttgatgc agttagaaaa 1560

aaaaaagtga cgattgcaac caactcgttc gataaatttt ctcatcgtgt cgtggttgta 1620

aaagaaaagg aaaaatactg tagcttattt atttatttat ttatttttga ta 1672

<210> 3852
<211> 1740
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11532_G1, chr1:62694623..62696362, Cluster 24

<400> 3852
tgactttgca tcatacattg gtactcactc ccttccaaat aataagctat tttaattgtt 60

tactagaacg tacttgctat gatttttatt tatgtttaag tatagagtat aaaatataaa 120

acttaaaaat atgtgtgttt tactggctag ttgggtgtga acgtggttta gagtcagcaa 180

tcataattca aatcctcatt tatacataat tttagcattg ttcaatttaa gtatgggagg 240

gtacgacgat gatagaaaca agcagaaaaa ttgatgcttt aatatagtag agattacggg 300

acaaagcatc ttatttttg aaaaaagtca taaaaattta tgacacaaaa taaatatact 360

ataaaattat aactaataaa aaatctaata gtacataatt agcattatat atataattaa 420

atttaacata ctttaaccct ctagaaaaac caaaattatt ttagcccctg ccccggcctc 480

gatgccaagc gtccccacct ccccgcaaag aatccgggcc gatcacatct ggcccaatca 540

ctcttgccct ccaaagcagc gttatccacg ctctatcctc gccaccgcca aagcaaagca 600

ctattgccct gacataaacg aacaatcgta ccgtctactt tgcttgtggc agtgtttgcc 660

aaacgaattg gttgagtgat agatatttat atcattgaag caactagtgt gaaagaaaag 720

attaagggtc tgtttgtttg aaagccctta atttctaagg aactgattta tgaaaactaa 780

ggtggtttca agcataccag tatatgtttc aatttataga aactgaattt ctagtctttt 840

ctagctaaaa ctaggttata gaaattgata tggttccaaa caccattagt tttttttca 900

taaaccagtt tttagaaact ggattcctaa aagctatgtt gctttcaaac agggtctaat 960

ttttaaaaga ccttctatct gtactatact gcaaactagt aaaaaaagtt catttttat 1020

tggcggggta gtttgatttc accgagggtg gtctgaactg gctagagtga gggtgagtaa 1080

aaatggagaa ttcccactag aactaatttt aaaattacca ggacaaacac atcttcatta 1140

gcgatacctt tataccaatt gttagtgtaa atatatttgt atcgtcagat tagttacaaa 1200

cttacatatt tgtatcgtca gattagttac atcaacaaaa ttgcaaatgg tttcatgaca 1260

aataaaaaaa taaaaaacaa ggctaagcac tggatctcgt actcgtacta gtgatcaaaa 1320

ctaaacaaca agctaacaat agcacataca actacagtag caagagataa ggcatgtaaa 1380

gcgatagcgt agataatgca agttacaaaa gagagagaga gagattgtat tctctcaagg 1440

tctgttggct taccaacagc ctacttcaca ttgagactaa ggatcgagat atcaactaaa 1500

ggaatatgtg attaagagaa acttgaaatt ttaaccctca caacatgtta aatgtcaagt 1560

ataaataatt atggtcctaa tcaggctttc tgacaatgat caagaattct gatcttgcaa 1620

atacaaaacc taaactgtct atggattttc tagtaaaata tagatatgtg tttactatat 1680

atatgtaggg aagtatgatg agcaagtttc atgtgatggt tttgcctaaa tggttcacaa 1740

<210> 3853
<211> 1527
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119631_G1, chr3:171026982..171028508, Cluster 24

<400> 3853
aacgggccta catattacat agcctaacag tctaaaagac agtgatgcag ttttgacgtt 60

ttccattgac ttcagtacaa ttttgatatc aaaccaaaag aatcaatcat cttatggaac 120

tatatttata tccataggtg gatcgtcaaa atagagatga aaattgaata aatcatgaga 180

aaagttagat taattcatga acttgtgcat gacaacttat tatatttgag attggatgag 240

taccatggct tcaacatcaa acattagatt cttgttcatc tttgtcatta agcaaaagag 300

atagatttgg ccattttata gtttttcctt gcaagaatca tagaaatgct attagagata 360

agtccaacaa atctatgaga tgactaggct atggatgatc ttgatctttc tcttgatatg 420

atggagcaat tataacgctt tatcttgcat ccatgcatag attaatcaag agttggggct 480

tgagaaatta ttacaagaaa atgaggatag agagagagag agagctcttg agctcaccaa 540

gaatggagat ggagatctcc actttgatat tgggatagtg gtgttgatca cttcattttc 600

tttatctttt tctcctctcc tttctctcct tagttcatca tgttcttcac ttgacaagag 660

ggaggttttc caagtcacag agtaacatgt aacttttca tgcaggaggc tagtttttc 720

aagtgccaaa agattgggag cttaggttga gagttgttgg agatgtgttg tttttaatct 780

tgccaagttt tgggaactct tgaggatgct cttaggagaa tcataaatgg aaactactcc 840

ttctttccac atttattttt ttgaaaataa atcaatacta aaatatcaag ttttagcacg 900

gggtagatgt cttcttttaa aaagtctttc ctaatgtatt ttcaagtatg atgtatgtat 960

gaggggtgca ccaaagtgat agtgcagcat gaatattcct ccatataacc ttaccaaatc 1020

tcgcatacat agagctatct aaatgtcaca ttagctagtc aatccatatt ctttaataag 1080

gtcattcaaa tgccacttct gcatatttgt atattttatt gtgcttaagc tagtttgttt 1140

ataaatttga cataataaca tacatagttg ggttaaaata tctagccata aatagcctca 1200

tcttgctttg catcaaacct attgactcta gcaacccctt aaccccaacc cagcactaaa 1260

caaccttacc tctgcactat tatgatagcc aaccatcaca aacctcctcc cataaacttc 1320

tatatataac aacatgccat aatggagtac aacgccccaa aatacaggca tcacatagtt 1380

tctcggggat tttgacgaat atcgccacgg tgccacctca caaccctcca acgccacccc 1440

tcaaccccac ccactcacat accaccaaca accaccccca taaatctcat tatataaatc 1500

aatatgcatc gttagatcaa aatgtcc 1527

<210> 3854
<211> 2273
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121292_G1, chr3:180934169..180936441, Cluster 24

<400> 3854
ctgtcatggt tgattcaggc gacctagatg tggaatcttt cgaaggatcc catctggtct 60

tggttgccac cggatcagac tcatttgagg taatcacaag ttcagtcaag tgcgccaatg 120

ccttctctat cttatgatgc cccctcttgt aaattcaatt ttggcattat attcatgtca 180

tgagacatga aaacaataga ttggagctaa tggacacggg ttattgacat attcgtaccg 240

gatgattttc ttcccaataa gtttcttttt agttccattg ctttccccat ttcccttat 300

ataatttttc tatggatcca tattggcatt tacaccccta actagcacct gttgtcaccc 360

tgatcaatac atcaactact ttagcacaat gacacatata ttacctgcta catttttca 420

tttggtcagg tggtgtctta taaaagtaag tatataaata ggtgaaacaa acagtgagga 480

aacagatggt ctggactgtg gagaattata tatacactca gatttgttta ttttatgaat 540

gtattcacta cattggttgc cattctcact tttttatact ggcataatga tggttggtta 600

aggaaatggt ctgctttaca atggtttttc tataaatatc aaattaactt ggtagtccca 660

acacgagagc aagaagctct aaggctttgc tagctgtttg tgccatgaaa tttactttga 720

tagaataatc gttcaactaa gtttcggtct cgtattggtg gttatcaaac ctggagagga 780

taaatcaatt gctggcgttg tcactgagag aggtaatgaa caatttttgt actcttggca 840

tttaacttgt ggcctgtggg tatgatggaa aaaatgcaaa atcatgtaac actacctgca 900

tttctatttg acaaacaatc ttgagcataa atgcataatc aacagatgtt aactgtctga 960

aacaagattc actcgacaag gtatgcacta ctgcaattca cctcccttgt agaaattcaa 1020

atttcaatcc atcaattttc agagaatcat cgagtgagtg cctattgtcc caaaatttcc 1080

cttcaagcca ttttgttgtc tatgtgtgtc gattttcctt ttctgtgaaa ataccgccat 1140

taaaagtaaa ttcttcacgg tatatcatca aacaactcta ccattggctt ccacgtcacc 1200

cacaaaatgt cgcaccttcc tgttctgttg gtcgatcata catttccagt acgggtactg 1260

ctattcagag tattgccatc agctatggaa ctcttattcg taggtggtta ctgaacagaa 1320

cttatgttgg acatgtctga cttagaacca agattaaatg acctataatt cggagcaagg 1380

agttcagttt gaaggtattc ataagccatt gtaccataat gcagaacact gtaaatgttt 1440

gcctaaactt atgcagagaa tcaggaatgt ttgagtgcac tgaaacctca tcctccatta 1500

tgtgccatga caactgtcaa atatggtgaa acaaagtttt ccgtagtaat ttaacttttg 1560

gtcaatatat tgtattggca ccataaactg ttaaaatatt ttggctgttg ttaagaaatg 1620

gattgtattc atcaatcttt ttggtactct tggcctgttt gtttcataac caatacacaa 1680

atttcatgta ttatctaaaa tttgtttact ttgtcaggga atgggtgcct caaatattat 1740

ctgtcatgta tcaagcatta agcttttgag ttcaatttgt caaatacttg tgagccatga 1800

cctatacatt cgactgtctc attgatctaa attctaaaat tcatactatt ctctactttg 1860

atggtgtttc tgcttattac atggactgtc caatttacta tacattagct tctgtcttca 1920

atcacggtag ggcgcccttt atataatttt tctatggatc catattggca ttgtataaat 1980

atagtgaggt tcagcaacaa cattgctacc atgaaggcaa ccaaactgat tctctctcaa 2040

catcctctat atgttaaata ttacattaga gacatatttt attctatact ttttaagttc 2100

atatttgtta tatcttcgaa taccttttc ctgaaaggtt ttctacttta tatcatatgc 2160

ctatctaaga ttatatttag ctataacatg tatatttctc ctctatataa cttcttttta 2220

aaagtttgtg aaggttctct tctctatatc caatctatta cattagagac ata 2273

<210> 3855
<211> 1581
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_123429_G1, chr3:192045712..192047292, Cluster 24

<400> 3855
gaaacttcaa gatcaattag aaagaacgac aacaagacat attgttgcat gcgagcctca 60

tggtatatat agtgcagggg ggctcattgc taggaaacac aagctttgtg ggtcactatt 120

ttatgttgat attttttta aaaaaagaaa cttgagtaaa ttcagtgatc tgattgtatt 180

atgactacat caatcatcaa catgactgga ttttttagt aggaaagctg aacacttttt 240

gtacagaagt cacataagct ctgctatata taagaaagta attagtcacc aaggcttggt 300

cataatggga gcatgattta ctacaatggc tctatgcttt acttagctag aacatgttta 360

tttgcttact gccctgtccc ctgtatattg agactaggga catcatgttt gcatttcttt 420

tcacttttt ttgttactgt tagatataca ttttcattga agatggaagt tactgaagtg 480

tcagcatcag acatggggct tggatgcatt tacatatagc gcttacaaca tatggttttg 540

ttcatgctaa ttatgtgatg agctgctaca aaactttgac atgatgtaac gagcacaatt 600

ctgtgaacca atcaagcttt cggcgcatgg tttggtttta gtatgcctgt ggacacattt 660

gattcttccg aagtcatgct ccctgtctca aggatttttt tttggaagca ttatcatggc 720

ttgtttcgtt gtttggctct aaagctggat ccagttgagt tggagggaga catgttgtta 780

tgtttttggt gtaatcatga tctacaactc cctttctgct ggtagcctgc ttcacagact 840

tttgaaggcc cttctggtgg tgttcccctt tgtacagggt ggaagttgtt ttccacctca 900

tgctttccta agaaaatgtg ccgattatgc ttttctcttt gtttttacta acttagtgaa 960

tttgccattc ggccacacgg aatactacaa tggcacgtgt actctgattc tgagtttttg 1020

ttttaaatat attttattat catgaaaact acaaaaatat atacgctggt tgaattccaa 1080

aaataatata tggacagtcg tccgatagtg tctttcaaaa atcgttttac cagagagtga 1140

ctcgttataa tgtaaaacta tccccccccc ctccccccct tccgctgttc cgcaagttca 1200

ggactacaaa agcacgagac aagcacccgg tttagcttaa ttttttaaca atactaggta 1260

tgtattcata cgttgccatg agagttaaaa ttagtataaa acatacatac gaaataacaa 1320

acattactat aatatacata atttgtctga caaaatctca cagtaacact aatattatat 1380

tgatgatata aatacgtaat attattataa atacaccaac tcaaataaaa tgaattggtg 1440

tcgaacaaat attataatcg cacaaattat ttctaaagaa tcaaaatata attttgaatg 1500

atagggcatc acaagcgggc ggccgcgcgg cgtctgtaaa atctgaccat attgaatgtt 1560

gttcggtctc acatgtaaaa t 1581

<210> 3856
<211> 1945
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124185_G1, chr3:195922245..195924189, Cluster 24

<400> 3856
gacaaatccc ggaacttaaa caaacgcagc cgtatcgatg ttaatccaaa agcttaaaga 60

ccaaaaagtt gaatgggcat ccatggactt ttgactaaaa ataagagcac atgcttggat 120

gtggtggaaa tgggatccgc gaacctagaa aaaagaaaga aatgctttat tctaacaaag 180

gagactagtt taagggcctc tttgaatcta tcgatttcaa tagcgaacaa ctaaaattaa 240

tagtagtact taagtaggct tgttaacata ctaattaact attcgttagt tccactagca 300

gatttaagat tgctaataag taattgttgt ttttttgcta gctaatttct agctagaatc 360

catatgctaa gctgttaata ggtggttggg ttgtaagttt aaaatacata taaaatatta 420

gaacctagta gcaactttaa acgtaccaac acaactaata gttagcgtgc aatatatcag 480

ctaatattta gtagaattat tattagatat atttagatcc attgtggtgc taattttagc 540

tactaatatt aacatgttca acttctagaa tgcatatttt ttatagatag ttatgatatt 600

caataagtat tatgtaattt atgataagat gtattttata aaatatttat ttaatatttg 660

tatctatata tttagttaaa ctcgaatcat ttttgacgtg tttagttcgc cgtctaactt 720

gccacaactt acataacttt ttctactaaa gtgtgatgtg gttattcgca attgtttctt 780

gttaggacga agatgataaa agtgtgaaaa aagtttagtg cagatttaga acgtaaaaaa 840

aactatgttg atttttacag aaaaagatca taaaccaggt tatttttata agaaaaaaat 900

atggaaatcg ggaaaaatcg ctccagtgcc atgtgcggca ctgtacacag tcacacagat 960

tagtggtcgg attgaatgct ggcaagaaat gctcgtggag gaggaggctt cagtgacgaa 1020

aagctgcagg caggcctgta gctgcgcttc accggaccgg cgagtcaccg ttcatgtgtg 1080

gccgctgttg tagagaatct ctctgcttca actcactttc cgagctaaaa ggtgatatgg 1140

ccacagcctt tttgaagctg ggactttcac tggagttgcc tttttttgt tccagaacga 1200

ggctttctct aaagtacttt tcggatttgc tttttttcc ctgcactgtc cccgcagtgc 1260

acaggttttt ctaagccgag ccgaggcctg gccgcctttt tgcaaatgat caccactgca 1320

acgcccagag cgacccaacg agagaggagt ctttgttaaa ggcaaggaag cagcatgtac 1380

tcgcgcgcag gagtgcccac catgggtgcc ttttgggttg gttacacgta cgtttcctct 1440

catgctttgg gtgggggga gcgggtttta ggctaggcgc cggccggtgc tggggaaatc 1500

tgttgcaggg cgatcagtac catcatatta gacacagacg gttctgagag ggtaaaagtc 1560

catcatattg ttccatgtgc atttcaaaag cacatcactt tcagcgtgtc ttatagacca 1620

gctggtattg taggtcgtct actgataaag gaagaggcag accaacaacc aaagaaaaga 1680

agagaatgtg aggatggaag tgcctcccgc aaatagtata ctgagtacag tatatagcac 1740

gaagcaggct atgaaacatt atcgcgttgt tttcttgttt cttttcttcc tttttaaaat 1800

actaacggag ctcctaaaca aaaataaaaa aagaggggct aggttcccta tgctagatct 1860

gctacaagtg tcgagcatta cttatgactg tattactata taaaaagaat ccacagattg 1920

tttttttac cggtaaatat tgtgt 1945

<210> 3857
<211> 1900
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125431_G1, chr3:202761887..202763786, Cluster 24

<400> 3857
atatcgtcaa ctcatttctt atagttagtt agtactaaca ttaacacgaa gaatgagatc 60

atcccattaa attttggatg tgtttgtttt gatgaatgaa gtgtttcatc ttcttctcac 120

tctttatttt ttttggaata gaatgagttg atttatcaca actttatttc tcataagcta 180

ataattaata tatacatagg gaataagttg attccaccaa aatttatgaa atgaacttat 240

gatgtatcat ctcatgagat atagaatgac ttcagtaact aaacatacca attagtaata 300

gactcatgaa acacccccta ataatttaag atgaggccat cgtaatggag tggtgtacct 360

gctcaattga cgctgatcgc tctatgtgga tatggatgtc gatgcgaaag gaggcgatga 420

tggttgtctg ccctgtacct tgaaaagccc atcaagccca ccggctttgg cccacaatct 480

cgttgtcgga aaggaaaatt ccaaaacggt accaaatccc ttgctgcgga gctgtttttc 540

gggtgatgtg gtggcctggt ctgtggtctc acacggagct cagctccttg tattgtatac 600

agaaaatttt accgcggatt cttcgttctc aatcgctcga gcattcaacc acacgccaga 660

cgaagggatc gctgtcagtt tttttaaaaa aatatatata tatctcttcc tgggatcgct 720

gtcaggaatc ttcaaccaca cggccaggaa tcgctgtcat gaatcttcaa accgcactgc 780

cagggatcgc aatcaggatg ctgtcatcgc tcacgcatcg atttcttcct gacatcgctc 840

acgacctcac gtacgcttct cttccgggat ccataattcc aaaaaaccaa aagggtcagg 900

cgtaaaactc gaagagacgg gccggacagt ggcacagtgc tactgcgctt cgttgtgcat 960

ggcacggtca attcgtagcg tttatatata tccaacaaat tttcacctct ctgtttctaa 1020

tccttattca ccaacactag tttgtctaaa atcatgaaat ataaggcata tccgatttcg 1080

agcactactg gttttggtcg ccgaaaaccc gaaatggttt cgaatgaggt gtttatgggc 1140

taaagactta taggattcga ttgaattccg caagctttct atgaaatgct atctcatcat 1200

atgatttcga acatatgtta catgaagaag tggataagtt ggcttctttt atccacactc 1260

tacagttgcg tatcttcgaa aaaatcatta gttttccata tgacgtggat gggtgcacgc 1320

attgtgtaat ataaacatgg cgagataggc agattcttgg ttgttggttc accaaccttt 1380

ccatttaaac ccatccgaaa ataattaata gtacaacagc tagataaaaa atgtttattt 1440

aaaaataagg ctctctttgg aactgcttca gcttcacaaa atttggtaaa gttcataaaa 1500

catgtcatta ggagcttcaa aaaatcgtga agttgaagtt acaaactttt aaaatacatt 1560

ttgataagtt attttgtttc ttatttaaat taaaattatt ttaaaaaaac tatttaaatt 1620

tatattatac actacaactt cacgctgaaa ctggaacgtc aaactgaata cacgaaagct 1680

acagagctgc tttgttccaa agtataggtt attttattct tttagagtaa aaaatcttaa 1740

atttaattaa agtataataa aacaataaca tttatgatat cgaacaagta ttattatcat 1800

tttttactaa ttatatttcg atgatatgtc tatttgatgt aataaatctc tgtagttctc 1860

tctataacct tagacaagct tatagatgtg ttttggctca 1900

<210> 3858
<211> 1947
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125813_G1, chr3:204666553..204668499, Cluster 24

<400> 3858
ttatttcggt ctctgacgtg aaatatagaa gcaagcaaca attattttat ttaattatgc 60

taaccaggat tcgaacttga gacctctggc tctgatacca tattaagttg catgcaccaa 120

ccagtccaac ccaaaatctt aagctgacag aaagtggtgg acaattcact tatattatat 180

tctgacactt atgacttcta attggacatc attacattta tccatgtgca agatcatgca 240

gcacaactgc acaagctggg agcctctttt cagaaacaag cagtcctaga gggctcagca 300

tgttgtatac actctaccgt tgggagaaat caagaattct ctgaagtata ttgcgtcatc 360

aaatgctcgg aaaacctgaa atgtcagagg tgttgcaata acattttagt agatgtcaaa 420

tgtgttgaaa tcaaagctcc aatcatcatt gtgaggggct tttgtgctca ttttccatga 480

gaggttcgcg aagagcaaat caaattatag cttgttgaaa tgcctcttta gcgtggttgt 540

tatgttgtcc ttattgtggg cttgacatgt gatgccaatt agcacgtgaa gcacctagtt 600

tagactcacc acaacaagga catatgtcat cggcaagcaa tcaaacttta gggatatatc 660

ttgtgccatt tcttagacta tgtggtatgc gctcctaact tatcattgta aatacttcaa 720

tacttgtcgt acattcttac tcaactagct ttgtctcgat tacaccttct attgttgttt 780

ggtatctctt acgggtagct cgcttcattc aatgtacact aaatatcaag ttactagaaa 840

tgtttatggg ggcttgcata taataaacta gatccagagt aagtatatgc ttctgtgcca 900

ctctttatac taataaactt gggtctagtg ataattttga atttgtagaa caaaattcat 960

agactattga ccccctctag tcatctaggt tttaacaaac atggtagatt gagtttcagt 1020

gaagcgctta tagtagtcat gtatactttc gtcatccttc tgcttgcaat tttgggaatc 1080

atgctaatca gttggacgag accacacact ttattaaaat tattcacaaa tcttttgcag 1140

agctagccag ttgtcgatga agctttcgag agttgcttaa gccaagtcag tggggtatct 1200

tcaagtacca ttgggaagta gattgccttg gtgtctttgt ttcctcccat gtgatctatg 1260

ggagttgagt agcataaaat ccattgattt ttgggtcttt cttatcataa tagatgtgga 1320

tggacttgaa cttcttcgga tatgtgaggg agttaagtct tctagagaag taggggaatc 1380

catccacttt ctcatcctca acattgtact tgtttgtctc gtaagactcc acatacttgg 1440

atctcggtgt ctaaaattta gttgctcgtg aagatcacgg ctatggagga tgtcacatag 1500

gttgcatgat gttgatcaac ttgagggtgg actttgcctc ccctatgctg attatcagtc 1560

tctcgacatt gggtccttag ctaaagacat ggtgtgttca ggtagacgca acattcaatg 1620

atgtttgttg tccatggagc attaatgtat tagcctccag catcacctta taacgtttga 1680

actcaagagc aagatttctc tgctatgtac ataatgttgg ccatggaagg gttgtacact 1740

ttgtgtcctt tgatttctag gaagtcaaat tcaagattac gcactataga gtttcctaga 1800

ttgtgtcggt gatggtggag gtgcggtggg ggtcctcggg agtggaagaa gagacagaag 1860

cgatgactgg tgctgtagag ggggtgagga atggtgagtg gtggccagca tagcaggata 1920

ctaagggcat gtggagggga cagccat 1947

<210> 3859
<211> 1543
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131802_G1, chr4:2921600..2923142, Cluster 24

<400> 3859
gacatcaaga atggggtgtc agcgaactgg cttgggcgat gttggcaaga atgagaccgg 60

acagatagat gcgaggactg ggccaaggag gaggacgaga gtcaggagga ctggtcgatc 120

cgacgaggag gcccaggaca aggctatttt ggcccagcca aaactttatt ttcctgtggt 180

gaacaatgaa tgaacactag gtataagagg ttttaaaaaa ctgaggggac catggcccac 240

attgccccat gtgcgtccgt ccatggatta tttcaccaat gagtatcgac atgagatttc 300

ttcatttcag aaggatataa acaattaaat actatgtcat aatttttctt gtattcatag 360

tgtgcatcta cttcaattta ccactcatga ctaatgaaat gcgacaacac taattaagat 420

gttctaccta tagggtagca tgccataatt ttgttagtgc cacctagagg cctttggctc 480

aaaaatttct ccacgtgatt ctcccatata tgggatgcac taaggaccta caaactacat 540

actcgctcca ttcctattta taattcattt gactcttttt acctcaaatt tgaccagctc 600

atcttattca ttttttgga attattatta attttaatgt gatattgttt agtatataat 660

atactttgag tatgtctatg aattttcaat ttttcgcaaa aaaatgaata agacaagtcg 720

ggcaaacttg gtgaaaaaag gcaaataaat tataaattga gatagagtga gtatataata 780

tgagggagac gcataaatgt cagatcgaac aaatgtgaga agctatgaag gcagtacgaa 840

gccaccagtg cacatagaac tttagatcct atacaacttt ctaaagcacc ttgatgcttt 900

cgacattgtg gacctaatat tgcattggta gctcctggta cctctcatac ctaatgattt 960

ctctgttagc tctgatggat catgggaaaa agaagttata tttataggca acattaataa 1020

ttgaagtcat tgtccctgat aaagtaagct actttcttaa atccttggca catcactttc 1080

acttgtggta tattccaatg taagaataaa atgagaccaa atgtatacaa ggagctagtt 1140

ggagatatac aggcgtacac atggtgattt acatagcacc gacaaagggg atacacacta 1200

ctacattgat gggatcagat taggtatctt tcccatcata gaccatgttt gactatactc 1260

gtacatatct acctcaatcg acatatgttg ggggtgaatt aaggtgaaaa tttaactaat 1320

ttttaactta acctactcta actcaaatgg attgaagtga atacaattat atcaaaacaa 1380

acaattgaac ggttctacaa tggtagcctc cataacctat gtatttttt ctcagaactc 1440

actagaaaca actgacgtgt acggacatca gtttagtgtg gtgcctcatc ataacttgca 1500

ccatctcgaa aatcattatc ccatgcttct ggatcatttt agt 1543

<210> 3860
<211> 1862
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13557_G1, chr1:74609478..74611339, Cluster 24

<400> 3860
ataatataac tatagtatat tttatatcgg tccaatccaa cacctgtttg aagacaaatt 60

tttagttgta gaatgagggg aggagaaatg atgagaatat gactgtaatt tgtcgtgcgc 120

caacaaaaag aactttggtc cataccagat ttttttagac tttaaaaata ttgtggtatc 180

ggtgaaacca tggtttaagt tagagtttct agatggactc acaaacacct tttggcctaa 240

aacactatgg tatgtttaaa tactatagta ttatcttagg actagaaaaa tattgtgttc 300

ataaacatgc cctaagacac tttagagtga atataggtgg tggtgtgtgt gtgtgttgaa 360

ggggtgttcc aacgctgttt aatttgagag ttgaagcgag atcgctctat cacatgacta 420

gctaactctc gattgggttt gaaggtgtaa agttgtatca ttgagttggt tttaagccaa 480

tggatgttga agaagttgaa ttggtcaaga ttggatttga aatgacctaa acaaattgtc 540

ggagcatgta caagacaatg gggttgacac ctggcaggtg atactcaatg agttagccta 600

gtaacacaat ggttgttgta tgacccggtg gaggacttca tgactttcat ggatcatcat 660

ccagtgaagc caatctagaa ttagtgacta agttggtaga ctcaccagac cttgatggat 720

tatttggtga aaatctaact tgacttagtg acttattggc atggatattg gaatgcattg 780

tgcaatccaa tggatggttg tgtgacattg gtggatcatc tggcgagcca acaaatttaa 840

tgatgagtcg acaaagtgca tatacatttt aggttttttg taaactacca gtttattaca 900

atgaggaata tttacgacta acatttaaag taatccgaag catagcgcca ctttataatc 960

taacaatctc ttcgctgttt atgtaagcgc taaccttggc ttatttgcaa ctactctttg 1020

accctattct gcttagcact ggtagagatg tttgtgaagc atgtggggat ttgattgtta 1080

acttagagta atgtcgatgt tcttgcttgg gttgtcttga ggagaagctt gaaaacttat 1140

tactcttggt gatggctgtg tgaaagactt agtgacattt ctcaattgag ctattgggag 1200

aatgcttcaa aaaacttgta gatggtattg aaactcgcca tgttatggtg gcaaacgggt 1260

attcccctag gggagtggag ggtaaccaaa ctatcgtggc ttaggtcctc caagccattt 1320

tcactttaac ttgctctttt tattgacttt actttcgttg tttccaggtc tcttatgtga 1380

caactaggat atatggtaga gcatgcttag cataggtttt atttatgcac tctaaggaca 1440

ttgatctcat catgacttta ctaaggacat ggttagttca ttggccacaa gattcattag 1500

cctagatttt agaagaactt aggagttaaa aacctttagg gaaggtttga tgatcagggg 1560

tcacgagggg atccatgggg gaggaatcct cttgctagga atcctccccc atggatcccc 1620

cgtgatccat ggtcagcgaa tcaaccctta gggtttagat tttgcatagg ttagtgtttg 1680

tactttattt tttagtctaa atctgccctt tcttaggcca tttgatcttt atacttgata 1740

tccaagcttt gttgcttgtc tagcaatcat tggcttgagt aatggctcta cgagggagtg 1800

ctacacttag gttcaagggg aggaactttc attattggaa gcctggacga atctctagat 1860

cg 1862

<210> 3861
<211> 2802
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_135655_G1, chr4:19857179..19859980, Cluster 24

<400> 3861
ctaacatata tgactctaac atatatgaat tgaggttaat atatatacac gaccttacat 60

gtattgttgt gctgctatat atatagtcca tgatgccata tttacagctc ttgatggctt 120

cagctggtgc ttagtagcca tatttttatt aaggtgtcat tcgttcagcc ttctaaacca 180

gattcgatgt taaaaatcta gaatctcaac taaactgtac aaccatagaa tctatagatt 240

tctctagttt aattcagaat catcttctac cccaaatttt ctatattcat gtcattcatg 300

ctataagtta ttatacacct acaaaatcta tagttaacag ttgttttaac taaacatgtt 360

ttagattttc cataaccgtt aactcacaac atgtttctct cacaactcat agttagaatt 420

agattttcaa gaatctacag ctgaataaaa cagaccctaa gaggacgtga cgtgtggcaa 480

atcgactcgc attgttacca tcgccttgac ctggtacgat gttattcgat aagaactagt 540

atatggttac acgaactatg ccttgtatta cttcatatag aaatgagctg tgagaatgat 600

ggttcgcttc catatgtatg tatgtagttt gtagtaacat agataaggta atcaatttgc 660

aactgacggg cataaaaaaa ggcttgaaca ctgctgtact ggcgtacata gtgtcctttt 720

ccgaatgata tgccatatag aacgtgttct gtataggtcc cattggctcc agcttgtttg 780

atacaattag tttatgtatt gtttataata tatagttata taggttccgt tagatttttt 840

tagtcctatg actaaggtcc ggtttggttc agctttacca gctagattca ctaccaaaaa 900

tctaaaatct aaaccaaatg gttacaaagg ctaaatagat ttctcagatt cccactttaa 960

aaactttaat aaaattactc accataccat cggttgctat aacgaaactt ttttctgttt 1020

tgtattcccc aagcagaacc tatcttctgg cgcgagcgac cacgccgcca ttgcttctga 1080

tacggtgtcg cccctgatcc tgtccattgt gggcgataac gctgccgctt gatctaggtt 1140

cgtcaccttc tccttgatct ctggactctc ccatgggtgt tgtagaactg cacgccgcat 1200

gggtgctgct agatcgagtc tgcgccgcct acaagttgtt cgagaaaaaa atcgaaccag 1260

tcagatagat gctgaataca agaacaatag tgtcaaatag atgcctagta gtcctcgtcg 1320

actgctgcca ccgttagcac gagtcctgca gcggtgtcct gggcggcgtc gcgcagactg 1380

caacctgcaa tgcaaggcgg gccgcaagtg gctatttgtg gaatattttg caattttgaa 1440

ttaggaacat ttgcttttgc tgctgtgatt gacgtttata ttgcaatttt tttctgaatg 1500

aaaatagtta aacttacttg aaccacattt actagtgatg caacggcaac taataatgca 1560

gacctatttg tttatatatc attcgttcat cctccattgt agatggcttc tgttactacg 1620

attagcaagt gtacacctaa cattcagttc taatgacaag gcagttgcat aaggtgcaac 1680

aatggtagaa aatttcagag atgtagatgt gtttgtgtct acatttgctc taataacttt 1740

agcagagttg cataagctag ctgtgttcta gaattttaac ttatttttt gtattagtat 1800

ggatgacaaa gcagtctgga ataaagaaaa cgttaagcat ttatgtgaca tttgcaagaa 1860

tgaggttctt gccggccata gacccttatg gcatcttaat aaagtaggat ggaagaatgt 1920

cgaagataag tttgcagaaa aatatgtgaa gaaactagaa catttgcaat tgaagaataa 1980

atgggatagt ttgaaaagaa gttattcctg tttcatggat ttgaaaaata tggccactag 2040

acttggatgg gatgaagcaa ggcaaactgt ggattgtgat gatacatggt ggaaggatca 2100

ccttgcagta agtgtcacaa aacatgattg tttattgttt atggtgattt gtcgttagta 2160

tctaacttca tgtgtatttt ttccagagat gccatgatcc agcaaatagt aggaaatgca 2220

agcatgtaca gttcagaaaa tgtggaccaa ccaacctaga ttcgttgcac atcatgtttg 2280

gaagtgcaca tgttactggg gcttctgctt ccattcctgg agatttgtct gatgatggca 2340

gtgatgatga ggtgcatgag ttagagaaaa agccccatga atgtcaaatt gtctactttg 2400

catataccaa aacacaagaa gcgtaaggtc tcttcaactg ctatggaaga caaggaagag 2460

aaaagtccat tcttacgctt gtacaagcaa acttgcagca agatagaagg agtggacaag 2520

ataaccacaa gtattgaagc ttcatcggct cctcctatga ccaacccagt tcctacaatt 2580

gcagaggcaa tgaggatggt gaaagaacat ggagtgcaag aaaaaaactg cccttatgca 2640

ttcatcaaca ttgctcatta tgaaacctga acttaggaag gtcctcagtt tgttagggac 2700

aactgaaggg agacttgatt ggttacaaag ggaacatgag ataaagaagc tgccatgaat 2760

ctttatcttt gttttgaagc aaattattct tgtttgcata tc 2802

<210> 3862
<211> 1508

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136884_G1, chr4:26680648..26682155, Cluster 24

<400> 3862
gcaaatacac ttttttttc ttcgtggaac acgataggta tcaaaatgct cacatgatgt 60

atgcatgctt acccttattt ttaagtgcat ttctgaaata ctgaattagg taattagcag 120

ctcttgaggt ccacaaaact accataaaca tgtagttttt aataggcata ttgcctataa 180

ctcaaaatag ctttgttaag ttgaaaactt ggacccatca taaaaattta aacctaatcc 240

gctgctgacc tagtctgcac acatacatac acactctgcc tgattggacg agtgtccacc 300

cacgagggca aacaaacaaa aactcagata aagtcaacat atacggtggt ccaaatcgag 360

atggtacgga caaccaatca ctaagcgaca tagatagcat ttagatatat aggaacatga 420

ttatacctca gggggacaag acagtttcaa tcacgactat tccctacgta cttactgtaa 480

cggtcgaaac agaaacttag tttccatcag cagttagtta agcaacagct aacgtgtggt 540

ttgtcatcgc cgtaaagaaa taaaaccaga gattttagtg tagtatctag ccagtgcctt 600

gtgtgacgat atatgcaact ctccgtgtca ggtataattt tatttataca cagtattatt 660

tatttaagcc accgttgatt tttaaattcc tgaaaaagta ttcagatatc tggtctatcg 720

agatcacaac cgtaataaga ggagtaaaat aataatctac ctcgggttaa ccatatccgc 780

ttgcatcatg ccaggcaggg tctgtctgta cgtgttcacc ttgtttttgc acatactgct 840

aggtgctggt gatggtactt tgttttctac agcgatgtta gttggcttag cctgatcatt 900

gataaaaaat aaaggaagaa gtccaaatta ctacaatgac catatgttcc ataaattatt 960

ttttagttca aatgtatccc actcccgcct atttaagttg gttcaatcta ccctttaata 1020

acattttaat aaaattcttc tttcttattt ctttatatac aaactgagtt tttagttcag 1080

tttttgttgg ttaattagta gttaatgtca tacttagctt acaaaaatat attatgcttt 1140

ttataattat tttgatagtt tagagctcaa ataagatggc aactttaatg gtacaaaact 1200

aaatataaaa taatgatgaa aaaaatctta acctattttt ctaacacaag ttatgatgtc 1260

ctcaatcatc ttaaaaatat aaacttgaaa tttaatttgt acacggataa acgaaagaca 1320

gattttatat taatcaatac aaaccttcat gtttaaaacc atatataagt ttttcaaaat 1380

attgaaattc aacttgtgca cggaaaaaga caaaatttat attaatcact acaaaccttc 1440

atgttcacaa ccatatataa gttttttgaa aaattataaa tactccatgt acagggaaac 1500

attaaatt 1508

<210> 3863
<211> 1460
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_138952_G1, chr4:38953465..38954924, Cluster 24

<400> 3863
ctcctatagt gatgtcccag cagtggacaa ctagcaaggt gccaatcaac aaggccaagc 60

ctactacaaa aggaatgatt tagggtctac aaattacctt gggtacacaa gagccagcat 120

taataagatg ctggcaaaga agtcacatta attgattacc ctgtcgagga agacatacta 180

catcttgacc aaaacaggtg gactattgtg gtctggcata aacaatacat acaatttgtt 240

gaccaaccat cttcgagtga ggatgacgat catgatgaat tgacacctca taaggcacca 300

tcactaccta ggcctccacc tccccctcaa ccgcctaaaa agattattct catcctccat 360

cttcacccct agaagagagc agtctcctct tccctttca cctcccaaaa gagctcatat 420

cctcctccac taaagtccaa acaagtacca tctagctagg atgaacatag actcgcaaca 480

agaacaaggt catcctctta gaaagtgtca tcgactttga taggtaatgt tgccaaatat 540

ggttaaaaat caaaggccaa tgagcgggaa cataacaagc aagatgaata aaccaaaata 600

gtttgctccc ccaagcttca aacaaaatcg aaaactttgg aacctatgat gtgcccgcta 660

agccttggct ctctgaatat caaaggtaaa tccaaaacaa tgtgaataaa gatgaagtcc 720

aacaagaaca cacatttgat ttgctgcata ggcaacaact agatgaaact tttgatccaa 780

aaaggatgtt cttgttgatt ccataaaagg ccaataagtg agtaatcatc aaaaacaact 840

ttacagatgt tccaaccaaa ggattgaggg aatgattgta attaacgatc taccaatctc 900

gtttggaaga aatattagtg ggagcatatt tctctcactc tccccgttag gagcatattt 960

ttgggctttg cgacatctaa tagggttagt catgatagag agttttataa agttgttttt 1020

aatactatta tatcataagt aacaaaataa aatataaata aaacattcgc tctagaaaag 1080

ttttattcag tagtttgtag acacttaatt ttattattca taaatagacg gatctaaggt 1140

cttatttgat ttgctacata ggcagcaacc ggacgaaacc aatgataaat ttttaatgat 1200

gttattagct tcctaaagct ggaagctaca aaaatccaca aaactaggct ttttagcttc 1260

acatataagg gcatgtacaa cctagatata ctatattgtg gttctccgaa cactagatac 1320

ttataaaaaa ttattcatgc aatgcaatat atcaaagtct tgtatcttat ctactaaaac 1380

tcctcaagac acatcttatt tatgtgggtt gtatgggtag aaccgtatct taaactgaaa 1440

gaaccgtgct agagatattt 1460

<210> 3864
<211> 1590
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14823_G1, chr1:81574950..81576539, Cluster 24

<400> 3864
ttaattgata tccatagttg gaactttatg atgttaataa atttacaaag atgcctactt 60

agttggaact attgatatcc atagttggaa ttttataatt aacaaagaca atcatcttat 120

gatgtctgtc actattaata aagacagact tttgccaaga ggtggtacaa tcatttatag 180

atgtcgtctc tggatatgac cgcttctatt tgtcatatat gttgtctcaa ctttttcct 240

cttgtagtac ttcaacatag tcaacttctc tttagtgatg actaatatca ttatttgatg 300

catatgtatt atagattatt actagtgatt agtgtgcacc ccttgcacga ggattgacaa 360

cttagttgtt tttttggaaa cacataattg attacgaata atgacgtatg aaacaaaacc 420

aaagaacagt gtacaacatt gcagagatgt tcaaagatta caatttgaac acacactaat 480

aacataggtc atggtagcca aaataaaaat tcatagataa aacttaatat atgttgttaa 540

catagtttct aagtgtcaaa ctccaaaatt tcaacaattt taggctgcaa atagaaaaca 600

ctaaatgaaa tacttttga tattgataaa gttttccaat atagtttaaa tttacgtaaa 660

tctagttata taaatggtag atttttaaaa ttttctaaat taatttggtg gcttaattga 720

tgtgatgttt catgttgttt tgatctatgt tgtgagtgta taaagttttc aaaacgtgta 780

gtacaacaat tctctctttt ggcatgtcct gctttttcta tattcaaatt taaggtttct 840

tggtctatat attttattta gaattcccaa aatcttttct tcgtgctcca aatcattcca 900

ttatgttcat tgttcatctt ctccctaaaa gcttcccaag aatatttcta gctttttct 960

taaaactttt cacttttcta taagtgcatt ctaattttag atactctcat atatcttttt 1020

tgaactccaa tactttactc atgttatcca tgttccaaaa tatctacgat aaatttttc 1080

cattattttt agagttttta gagtattttt tgcagcctaa atactaatta tgaacttttc 1140

tataattact gtaatcctag gtataactaa ttctaaaaat aattaaattc taagctcaaa 1200

ttcttagaaa ttcatgaagc cattatataa aaatcataac atgccttatg aattaacggg 1260

ctttaatgtc tgtctaggcc tattagtcga ggtggaggca caaagttttt cttcttatat 1320

atgtactata atttttagaa aaggcacaca aactaacata agtagagcct ctaaattaaa 1380

gatccttgag gtagtaaatt aaaaaatttt actcttcttt ctattatgtt atgttgtctt 1440

tgacatcaaa cccatgacac tatcatcacg aggtttgttt catcattttc tatatcatag 1500

catccttctt ttagaagtct atcatgactt tcacctcttt gtttttattt ttcgatgaac 1560

ttcacacccc atcattgacg attctttggt 1590

<210> 3865
<211> 3089
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15227_G1, chr1:84055702..84058790, Cluster 24

<400> 3865

tggaagtaat acatgaatat atgtgggcat taaacataga acatgatgca gccctagcaa 60

agttggggac ttagtcaaaa gacaaagaaa cttgaataca acaagatcaa gctaatcaat 120

aagattcaag ataagagtct tatatgacta agccaatgac tcgaccaaat aagacttagg 180

ctactgttat agatatgact agtgggtcca tgggtttcaa ttgagagcct agggactcga 240

ctagcacgac tagagggaaa tcctctttgt gaaattactc tagaaagata aagatggtaa 300

gcatttaatt agatcaagag atgagatcga tagactctgt tatgattcct tattaggctc 360

agttgcaatc catatcttgt aactgaccta ataaatatc ctataaacac cacccttct 420

tggactataa aacaagggtt aggaagccac aagagggcaa tcatcagatc acattgcata 480

tcaatagtca ccaccacaaa tagggcacaa gtgtgtttcc catgccttta cctttatgtc 540

ttgattacac gactaacatg agctcatata cagggtgccc aaaaataaac atgaaaaaac 600

cactcaaagg ataaaaaacc ttcatgggaa caaactctag gcatatcatc ctcagctagt 660

tcacctcaac aaagttaggc ccaaccatag caacccaact aaaatccccc aacctagtcc 720

ttctcactat gttggaccca gctcaatcac cccaacctat tagactcaac atgacaaagt 780

agaacttgac cacgacatac tgatcatagc aaacctggca tagtccctcg accaaaccat 840

actaactagg tcgggcccaa gcaaacctac ctaaaggttc ctaaaaatgg gtttcccaac 900

caaggcacct taaacgagtc ccgacccaag tctcctcagt cagtcgtcct aaacctcagt 960

tatgccaaac ctggtcagcc tagatcatgt gcctctgaaa ggacattata gcctaggggt 1020

gtcatgagcc tctgaaaagg tatagtacat ttaggatccc tttaccaatc gacacatgtc 1080

caccttacc aatggacgca tgtccatggc caaggaatgt aacgactaag gaaaggtata 1140

gtatgaagga cctagaagtc tctcctactc tgactaaaag cactgcaagt catggagggc 1200

ctcacttcaa ggagtatggt gtcaatatgg atgtatggga tgaaggcaga gagtaagatt 1260

ttgaagcgaa ctactcgcac ataagtgtac caggtggtaa agcattagac acccatacga 1320

ctcaaccacc ctgatggtct gacaaaagat gacaactgat gcatgtgtgg tgacatacta 1380

gaaaggacca catgtccaaa gataggaatg gtgtacccca tcaaaatctt catgtaacaa 1440

tggccactcg ttcctccgac tatataaagg aatgagggtc gaaccataga ggcaggcaaa 1500

ctcagattgt aatacttctc acacaagcac gagatctaag ttctctgccc tgtaacatgt 1560

gaaagccagc aacaaagact tcatccaagc gctctacctt ataacacatg aaagccagca 1620

acaaaggttt catcgccata ctatacgtag gagttttgtc cgaaccagtc taaactctat 1680

cccataagct cgtcatgagt aaagccattg ggccagcaac ccactagccc catcataacc 1740

tacaaattta cttgttgtgg ggttgaaacc atgacaatga cctacctcat aaattcacta 1800

tcgaataatc ttcgacagtg gcgaccatac tgggttggtg catccttagt caaatgctta 1860

caaggatgga gaccctcctt cgctcgtact tagatgtagt ttttgtttta aacccttttgg 1920

tcattttgtg acaagttatg gttttgtaat aaacatcgca ttgtatcgct atattatcat 1980

cgtatgtgtg acttaaatag atcattgtca tgcatgcgat gtacatttga ttttatctat 2040

aaaccgatgt gaaagttatg tagtatttta tcagacccca acatcaaatt tactatccaa 2100

caatgatcta tttgtcattt tattacttat ttgggccatg ctcaatgtag ttcaactaga 2160

ataattattg tatcctccaa aagattatat cctttatatc tcgttcccct tcagcagcgt 2220

cttctatatc tcgtcctcta tacataaata actatattag aggcatattt tatttaaaat 2280

gtttttaggc atgtgtttgt tatatcattt aatgttatat atatatatat atatcttaaa 2340

ctattgtttg aagtatcaac atggataaag aagagtgaag agaatctcta tatacagaga 2400

acgaaggaac atcctccata ttaagaggat gttgttagag gaattaggag agggaatctc 2460

ccctatattt agaggagagg aggaaaaaaa tctctatagt cgattgtata gaaatttctc 2520

tctagcttat ttcctattca tgacacatat gtatctacta atgattggca attgtttttt 2580

ctagcccagc ataattaaag aagatgagaa aagccgctaa agccagtggt ggagacaagg 2640

gggcgaggag gggccttgac cttcctaacc ctcatgtgtg tctatataga gagaacatat 2700

ggatagtaga gtttttgttg attaaaataa aataatttgt taaaaaccca tgtattttct 2760

aaaatatcaa attcgtcgct aataataaaa tctatgaatt tcaactgaag ttgtcaccta 2820

atatttgtcg tgtacacgac gaatttgaca tgtacctaca caagtgaagg attttaatgg 2880

attctagaag ctagtttgat ttttttaatt ctcttaaata tttgttagct gtctcatgaa 2940

tagacatgtt caaatatcaa atcgggccag gtcaaggtca gggtagtagg tcatttggca 3000

cggaatgcgc ctaacccgtg tatagtgtcg gtttaaggcg ggttggcccg tgcctctctg 3060

ttggatgtgt cgtgtcggtt tttttcgag 3089

<210> 3866
<211> 1454
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155124_G1, chr4:147581446..147582899, Cluster 24

<400> 3866
atttgtggtg aattaccatg ggacatggtc tttgatcttg tggtgtttgt gcaagtccag 60

aacatctaca ctagaacacc taaaaagaag tccgccaaag atttggttag ttgcttcatg 120

atttctcttt ttctctctta atacttagct ctatttgatt gatctgtgct atactgctat 180

gtgctatttt tttgtatctc aaattagcaa cgggagttgt tcaggacaga gggagttgtt 240

caattcaatc catatctgtc cttagttcaa accatatctg ttttgggaag tttagactct 300

ttcaaaaaaa tattgtaaaa ccttatagag ttcgtatatg ctaaattgcc ccaacagtgg 360

aatcccattt cttgatttaa attttaaatg atagatgcca atttataata ttttaggaga 420

caatactttt taaaagttga gtctgcatca tacaagtaga gaatccatcc aaaatcaaac 480

cactgggaac ccaactggca gggttgtttt aacagatcta caacgtaggg ctgttattga 540

tgctgctact attgcggtca cagggccatt gtattgtggt aggtctagac aattgagtca 600

ttgttctgga caaagttgta ttgcttaagt caaatcatct aatggagctc attcaatatt 660

gtaaatattc ttgtctgttc aacaaacttg gttaaacttt gttttttaaa atccactaca 720

cttcaggaca gagggtagtt gttcaagtca atccatatct gtcctattct ctatggtatg 780

ttactgaata gcctacacaa aagttaccat aatggattag atcttaacgg aaattgttta 840

tgaatatcta tctagcttct ggagttctgt taagccttca tttatcttct aactaggcag 900

aggatcgtct cgtttaccct ttagctgaga acatgtccat ttcaccttca tcgcttggag 960

catgtccatt tcaccttcat cacattagta atcatgtact atcaggacat aatcccttct 1020

ctgcaaagga aaggcttggc tttactttac cagtaagtta atataataac agtcagatac 1080

tctaatccac tagcatgtgt cacttgcctc catagcctat agtaatgttg tactgtctat 1140

tgtacaagac acgcctaggt gtttctttta ttactctgta ctgaggggtg ctatgcctct 1200

atttttgcct tttgatgttg gtcattgttc atattctcct tcaggaactt gtagcactaa 1260

atcattctct atgatctgtt aacttgatag aagttaattg catttgaatt ttaagaaatg 1320

taatcagatt tcctcattgc tcagaattga tacggtcttc attttgcaat gtccctaatc 1380

aatatttagt tttttttgtg attttgcatg atattttgtg atcaacaatg tgcagggtac 1440

ttctattgta acta 1454

<210> 3867
<211> 2404
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155222_G1, chr4:147921043..147923446, Cluster 24

<400> 3867
gctgacttgg agtgttggta gctaccacta tcgctagctc tataggaact ggagtaggca 60

tgactagcac tataagttgc tggttgacgg gaggtgacta ctctgatggg ggaactaaat 120

aagggagtaa atcagtggaa agtgttagat caactggcac atataaagca ggtgtagggt 180

atcaagtgat ctcattaaaa gtacccaaca agctttgagt gactgagact aacaaagtgg 240

tccaactagg catggtatgc atgatagctt tctactaagc taacactgtc ctagatggtt 300

gccctcatcc tagagtggtg aacaactaat tcaactatag gggtgaagcc aatggaaagg 360

tagacaaacc ctaacttaga taggtaggtg aggtggccgg atatgatcac ctccagcagc 420

cgctatgtcc tctagtggga aaaatccgtg tcgtaagggt gatgatgttg tgagtcataa 480

caaagtggaa tcctcatgta gcattgtata gacccacctg tgactctagg atagggatct 540

tacgtgacat taagcctatt tttcatatca tctaggatga atatcttaag atttcaaagt 600

taggggattt acaatatggg cttcgtggat ccagtgatga ttaatcaaaa taacataaca 660

tgatattaca atgatgcatt gaagagaata ttgatgttct tgcagaagaa acattacata 720

ctgatacctt acagcttcaa ggtagtgcat attgtcatgt tttcaatatt gttttctatt 780

taaatgtccc atatagcatt ctatccatgg ttataatcgt ttagcttcca ctagatactc 840

cttataatca caatggaaca tggtattgtc catgtgctag actcaatgag taagccggtc 900

acaggttacc aagacaccat ggatatttga tgagtaattg ttgtcatttc atcttaacta 960

tctaaccatt gcttttattc attaattgac caaacaacac tccttttcat gtgcatgaca 1020

tagttgatct tatgtaaaaa caatctcatc ctaaaataaa aagcttacac atctcttatg 1080

tatggatatt cacatctctt atgttgtttg tcaataatac ttcataacat ttacttttta 1140

gtgttaccaa caagggaaag gcaacaatat ttgtggataa tatatttgtg aattgtccac 1200

acattcgtaa gtaacaagaa actaaaaaga tgtcaaagta cgtatgagaa catacaccat 1260

atattttcta ccagtaatat tatgtccaaa ggttctgatt taatatatca attatttggc 1320

aaacgacaac taatcaaaat gaatgaagaa ctcatgttgg atgcgatcgc gatattcaag 1380

acaacttata cgattctttt tattaccggt tgttatctag aatcggtact aaagtgtatc 1440

tagaacatag ctactttgca accacgtaac ttctttagta ccggttaatg acatcaacca 1500

attataaagg cattaattag tatcggacta tataaacagg actaaagact gaagttttta 1560

gtttcagttg tatatagtac aggttaaaat tcgatactct tgacagttta ggactgatac 1620

taaaaattat ttcgtagcag tgtcccccca ctggcaagtc aagtcctgca tgcctgtcaa 1680

agcaaagcca tgtaaggatg gctttgaaac caaacgtgcc cttcgtggta gacccgagca 1740

atatagattt ggcccacgcc tattaggcta gagagcacga aacaaaccta caaaaataat 1800

gttactagcc aaaatttcag accgaaaaat aattgttttt tttacccgat ccaccctgca 1860

aaaatggtcg gatacttcgt atgtgtgtct aggccatatt tggcataatt catcaccagc 1920

ttcacaagct atttagacag ttaactgtgt cggtgaccca tagacttgtc aatggatgtc 1980

acataagtcc acgaatttta aaaatatatt tgtagattct ttaaacttgt tcaaaacaga 2040

ttcagcaaac tgacagagat gctctcatac agttaaaaga caaaaataga agggataatt 2100

acattagtat ccctgtttta aggtgtaact gttgatctgc ctctgttttt taagacttcg 2160

tgtgtttgcc catgtgtttt taaagcaaaa ggtattgtat gtttctactc cgttagttgt 2220

atttgaataa aacaggttaa atataattaa cgaagtaggg atatacaaag ttttatttga 2280

ataaaacagg gacaaacaca taaagtaaaa aacaagaaca aatctgcacc ctataaaaca 2340

tggacattat cgcaattacc cccaaaataa tagtaatact aagacgtctt acacagttaa 2400

tcac 2404

<210> 3868
<211> 1890
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_155924_G1, chr4:152078728..152080617, Cluster 24

<400> 3868
tctcaacgtc accagttcta gctacttata gcaaggcact agcagatgtt ctaggcatat 60

taggagtttg atagggagtg gagtaagaat aaccaagact tgtggctgtg ggagatggat 120

tagaaccata tatcttacct caattgatac ttttcttaca tgtattgctt ggttttggag 180

gtctctgtag tgtcatagtg tggaagttcc accacaagga acgatataat aagccgagct 240

ccgcttagtt tgtatattaa ccttctttta gttcaataca cagattcaat ttcacttagc 300

caacatatac aagttattgt tttagtagtg atggtatgca ttggtaatag agaaatagat 360

aaaggtattc gtttggtcaa ttttgcataa tggatagttt gtcatcatgt aggggtactt 420

caattttatt ttctctaatt gacacgcctt gagaattaac atgggtgtat ttttgttgac 480

aaaaggcctg cttggatggt ttccagtttt tgtctaacca aaaccatggt aaggcaaagc 540

ttaggtttgt caatatcaag gcttgcacaa tttattatgg taaaaagtat aggtgtgcat 600

ttggttcagg gtcatgacaa tagtagaaag caccatttcg ctcttatgca atttaaaatt 660

tttatagagt gtcatcaaaa ctttgatcat aaatattggc gtgccagttt tttttagcaa 720

tgagccaatt acttgatgat taaaagtttt atttggcttg tcatgatttt ttgttaggca 780

agaattgaaa gccaaccaag caggtcctag atactaagac aatagatgct attctatatg 840

gtaataacag gatttggatt tattgtgtgg ggtatgtgcc accttgctaa tttatgtatg 900

cccaatcata taggctagga tcttttcgca gtacaggctc tctgcgcggt ttattaggca 960

aggtttctca gtactctgtt aatacagtga aaattttctt tttagtgatg gtatgttttc 1020

tttatctatt tctagagaaa tagttgagga aaaattctcc agtaatatat gttgtgtcct 1080

tgagagagag aaaaaagaaa acatagctac cacgcttgga tctgaaccag ggtccatggg 1140

gggttgggcg gtaggtgggc aggacgcatg ctaggatatg atcacaaggc tgtttagtag 1200

gttcgtatca tgtctacaag atagggctgg tacttacaag ataaggttgc agatgaccac 1260

tctcatcaac aagcttagga ggccctagcg cgtggtgtgt ggactatatg agaatgagat 1320

gacgcgcggc atgcatgatg caaggtttgt cctggaatat gataccccgt ttgtgtcgtc 1380

caatcttaat ttacatccgt ttccaatctt taattaccat ctgagccatc caaatgaagt 1440

tcatgtatga ggaggcttga attcagaaac tacgttcagt tcagtactac tgcccttgct 1500

tcccggtcca tgagatccca agatggcaaa gtctataaca aactctgccc acgccggcat 1560

aaaagacaag atacacttct agacgtgaga ggtcccccac agcagccgct acagaaagta 1620

ggtccggccg tatcctactg gccactgtcg caaaccccca aacatgtcat gactcatgag 1680

ccatgcaaga gagcatgaac tacattccag aaacgatgga gacgatgacc ctgttcttga 1740

tgaagacaat taggcctagc tagaggtatc agactaaata tgcactttta tagaatatat 1800

gtccctcatc tcgtcccctg ccccttcaaa aactggatca tttacgtcaa ttaagggcaa 1860

ttttgtattt atacatagta aataatgatc 1890

<210> 3869
<211> 1478
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156848_G1, chr4:156387222..156388699, Cluster 24

<400> 3869
ctattgatat gttgtgttct agtctacgct atgcccatcc ctccttttat agttcaagga 60

gacgggtgaa tacgagtagg ttacatgata tgtctaatct agtaacctag tcatacgaga 120

atccaactct ttacaattac atgtgtatat tctttatcct ttaggatctg ccctatctgc 180

ttaggagact ctgccttgta tgttggaatt ttgtcctatc tatttaggac actcacttgt 240

ctctcctatt ctaataatat ttttgtcata tttgtactta tagagtcctc gtattagacc 300

ttttaaaaat catgacggct gagtccaaag actctaggta ggagacaact ccgacgagtg 360

agtccttaat ttgtgtcagt tgcagcgatt gagagtccac gcgtgcggct tggatgaacc 420

gaggttatat ggattttaaa aatagtttag gttcctgata aacatttgtt attaattttt 480

ttaaaaatgg tcaaatctac ttaaaccagc aatatgcata ataatactaa gtcaaatgaa 540

accgatttat taggtttcta taaactagat ctacagaata tagataataa aaaaacatga 600

aacatatttt atattttcta tgtaatatta tttgtggatt tcttaatatg ttagtctaat 660

ctttgcgagt cacgtgtgtc atcacaagtg tggacgaaaa tttatagcct aaacttagac 720

ataatctagt atattctgta aaccttatta taacaaagtt agaaacgttt gacttattta 780

gatcaaagac aaaatgaagt gtaatttgga aacgaggaag tacctttag agatgtgtat 840

aaatggaagg acgacgtgcg catgagcatt ggagattggg atgggatggg aggagcgtgg 900

aagcaaaact gatggctgtg ccaaagagaa gggtagcagc cttttgttat catagaacat 960

gcatgcatgc aaacgaaagg cgctttcttt tctcagagcg acagagggca ggctctttaa 1020

tttcctccat cgatcccgcc tcatgcatat ttcgtctccg ataaatccct tctcatcgca 1080

tcgcatgcat ccatggtcct acactttccg accagcagtc gaggagccgc gccagtccat 1140

catcctttgc ttggaagttg gaatgacgta cagatatgat ctgtgccaaa catgctgtgt 1200

aagcatcaca tcagtcatca gataacctca tgcctgcatg caggtaataa ccatgtcagg 1260

gctagggcaa tcactccgta atactcctat taatttctgc tgatctgctg taaattgcag 1320

cgaccaaaaa tttaatcacg gcgagactgc agttcgctgg ctgctcagtg ctcaatttag 1380

gccttttttg tttgttataa gaatgcacca gaaatcgttg catcgatcaa tccgactaga 1440

aatcatttca agcaaacttc cacacctcca actactta 1478

<210> 3870
<211> 1597
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158084_G1, chr4:163647018..163648614, Cluster 24

<400> 3870
tggaaaatcc actgtggttt tgtacaggat atgcactaga cattctcagc ttgctaggta 60

tgtaaccctt atgtttcttc tgaattacac tgtttagtag cttctctcga tccttttttat 120

agtgcagatt caccggcagc actgtcatca ccccaataga taggcattag ctgctagata 180

aattagccct ttatcccaga ataataattg ccaattattg gtactccttt tctcgattac 240

aaataaatag gtgccttcaa tggaaggata actcatatca ctctcaatca ccttcagagt 300

ccactgagtt tcaggtctct tttcactcaa ggaaggatgc aactctgctg ctagtttatg 360

caaacatcgc tatgctcttt ttcctgcacc aggatgggga aatccttatg ttattgatcg 420

taacgttctt gaccttgcaa aggccaaggt gttgacttga gaggtgtggc ggccggcttc 480

ttgaagtgac acatttttt ttgttcagtg ctggcccttc tcatctcaga ttaatgtctg 540

ttcagtatgc agaccgcagt atatattagc tttcgcatgt atagattgat cttttctatc 600

gtgtgctggc tggatgtgtt gtgtttcttt ccagctggta gatccagcat ggatgcctga 660

aataacatgc aatttacttc tttaagaagt tggtgccctg ctgcattgtt gccgtgtcga 720

attttctctg aaatgaagct taaaaatcat ttgccgccat tgccctcgca tgctgcttgc 780

actagacatg acgcaaagtt aagtgttgct ggccacttgg gcggtgcaag tttgcagctt 840

ttctggaggc ttttttttt tgagcttaaa actttccggt gcggtgcagg ttgctaaagt 900

aagagacggc gtggaatgtc gatgcttcag tgagatattc atctgcttgt cttttggcga 960

tagatctata ttcgctttcc attctttttg taccagatgg atctaagttg gtttctccct 1020

ccgtattttt ttctctcgca tttgcagtga gatgaacagc gtcatctggt ggttaaaatt 1080

ttcgtatgat ttcaaaaggg gggaaaaaaa tctattttac ctctcttaaa agttagtttt 1140

tcgtccctta actataaaat cgaacataac tctttcctcg aacacatgac ctctctgact 1200

gttttctcgg tggttttcat ttgtccggtt ttgtagttga gaaaagaaaa cctaacagag 1260

acgacagtgc aaccatgtcc gattttatag ttgaggaaag aaaacctaac ttttgtgacg 1320

gttgatgaaa gatgaaatgg agtttttctc atttctaaat gttaaagcag tgtatttggg 1380

gccatttgga tcctctaccc aacatttact aattgtacag taattctgga ggcaactgcc 1440

atgttgcatg tgttaatttc gcaacctttt cggatgagta aaatgagaaa tttgattaac 1500

ccttgacctc aggggcaaca gtatcaactt gcaggggcat tccttccgtc attctgtagt 1560

gtgtactaac gtcgtaggta ccatcattct aattaga 1597

<210> 3871
<211> 1711
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159105_G1, chr4:170021793..170023503, Cluster 24

<400> 3871
ataattgcat cactcgtttg ataaagtttt gtgtgtatca cctgctaatg aactatatat 60

ttaaggtttc atgtttcaat agctattata cttcattgtc tgttacatat cagaatgtat 120

agtgaactgg tgtcaaacac tatttctgaa ggagagcttt ttgcttcaaa gacatcattt 180

ataaaacttc tgaggtatga ataatcattt tatgatggtt cctgttctag gtgattagtc 240

acactaggga aaacagtttg ttcctccagt gatggttcct gttctaggtg attagtcagg 300

tgcattatat gtttctctgg tttgatgaca attgagatgc ttgattactc ctcaactctg 360

gagaatttca aggtaacatg taactcttgg ttaatgcccc gaactacctc gctatctttg 420

tccaaagctg tgggaatcta tccaaggtaa gaatcatgaa atggttatca gatttggttg 480

gttcttgagc tgattttgta agtgcaccca cgaattgctt tattcagatg tgttttgtgg 540

cttatttatg tgtaaatccc ttgaaggtag agggttgagg taggattatg ggaatctata 600

tttaatctct actatatata attcacttta cgattcattt ttgatgagtt attttatctt 660

gcttgtgatt ctgaaataaa gaccaatgtt gcataatgtt ccccaatatc atcaggaagt 720

attaacttga atggtaaact cattgtcgaa gttagaagac ccggtggtga gactgtcatg 780

tctaacatac ttcacttagt tgaagaagcc tggctgacaa ggtatagtat gtgaacggat 840

tcctacactt atgaaagtta gaggtatgat attcaaagca ttacatcttt gtcatgttac 900

tatctcaaca atctttgtgt gattggaata gtacatttat catggccaac aagaatcatg 960

ggttctgtag agtttttttt acttctgtac ttatttttt acagaccaag tgaacattgg 1020

tgattggtta ctgcatctaa ttgtttttac cctttggtat ggctaatatt taaaatggct 1080

tattttagtt ggagcacttc ttcttgtctt catacactta ttttatgggc atcaccgatg 1140

aatcatgtta gtgcattcca ttatatgtta atttcctatt aatggaaata ttggttttgt 1200

tattattttg gtactacttc catatattgg tgcttgtgga atttatttga tcttgtactg 1260

tattatgggc atcaccgatg gatcatggtt gctttggtgg tgtttctaga tgagtttagt 1320

aacagtctta gagatccttg ttttgccaca tcattattgt ggccttaatt agtaataatt 1380

taactcttga tccaatgtca attttattgt taacacaggt tgcagggaac tttattgttc 1440

ctctacttgt tcgctacaat gtacgtacat atttaatgca aactaaacac attaaaatga 1500

taataaacta cattcttata gtaaatctcg ataaagcttt agagacagat attttgaaat 1560

ctagctatgc aattgtgcaa gctacctatt tttatctaag ttattttgtt ggaccatgag 1620

gatacattct tataactatg aagcatttgc atttgcttct gttgtcccat gatttctcta 1680

tgccatccct gaaagtaatt tgcatcaacc a 1711

<210> 3872
<211> 1513

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_165234_G1, chr4:203553305..203554817, Cluster 24

<400> 3872
actggaatgt atttgaacaa ctatcaaatt taaacaaggt ctaactatgt ggtatatata 60

gaaaccgtag caacgcatga gcacctcact agtgggcatt taaatggcac ttattacatt 120

catagttcaa aagcaaatca ttcatgagca gagaaataaa ataaaaaata gacacacatc 180

tgttctggtt tactctccta tctgctacaa ttctttgtaa agtacacttt catattccaa 240

ctttgccttt cttggaacca ctgggtgaat tgataatttc actatcattt tggaacgtgg 300

gtgatggagg aaaaaaaggt gtttgtcaat gagatgttat atttactgca gacccatgca 360

ggaaaataga ttcgaggaag caatgcagat gaacattctt gtggttaaac atacctcttt 420

tttaaagaga tcaaaggatg cttcagcttc tagacatttc acattaaaca cgacctcttc 480

atcgtctgca caatacgtgg caatttttc atctgttgta atgacgatga taacactctt 540

ggaatgtcta gatacaagtg caggtcgtat taagtcccat tcttccacag actgtagatc 600

atcaataaca acaagacact gatgttcttt tagaagctta tgacactcct gaatagggtc 660

tctgattccc acggcatctg agtgaaaatc caaaagtaag ttccgagaga agtccctcaa 720

attgaatgga tgggacacgt ggacccaacc atacttgtca aacattgggt cctctttaag 780

catcctttca tagtacaaat ttttgacaag atcagatttt ccaacaccag caattcccca 840

cacagacatc acttgccaat ctttgaaacg ggccgtggtc tgatacttac gaagttcatt 900

catttgtgac tcacgtccaa caagggtaga ctgatccatc caactgctgg ctaaagcctt 960

tctagaggtg ggaatcctac cataagtaag gcctcccctg tggctcattt catcttctaa 1020

tatttcacca ctgctagata ttactcttcc agtcttcttg ctctgagaat attgataata 1080

tacagttaga agagaaagga aaaaactgat gtttactata tgtgggtgct cccaaaccca 1140

tcaaagttat tataatctga ttctgagcct agttctcata ttgcctagag atttcatcaa 1200

tcttcagtat atcaaagtgt tccttgaata tcatgtaaca gactgaaaaa catattaata 1260

tgaagtatcc atgcaccact agtcacttgt aagtacattt tctttactgg caaccatttt 1320

aatgttgtac ttgtggtata aatatatgtg agacctatta aaaccccaat ttcatggttt 1380

tatctaacat atcagaaaat ataatgacag catgtatcag agaatgtatt tcacagtaaa 1440

aagttagata ccattacaga taaacagtaa cattttgttc ttaaaagtaa tttgactctg 1500

ttccaggcta acc 1513

<210> 3873
<211> 2080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_167588_G1, chr4:215997272..215999351, Cluster 24

<400> 3873
actgtagcga cggcgataaa gatgaggaca gtacgctgga cgcatatgca gcagttgcag 60

cttccgcgtc ctgcgccatg catgtgccct ctctctctct ttaagccatc aatacagtac 120

gcgtgtgtcg aatcatattt ctccaacaat aaccatatat atgcggcgtt gtaaaatata 180

tatactggac acccaacaca cgtactcctt ccgacatgca atgtaagatc agtttaatta 240

accgtgctgc tacctctaac acggagaggg agagagacgc gcacaccaac agctttcacc 300

ctactggaaa aaggagatat gaatgaacag tgtgctgtgt gtctttcgct agcatccgtc 360

gcatcccttc ttgccctcct atgcttccct ccttttagag cacagcggaa cggcgtaaaa 420

agggtgtgtg gcgagagact ccagtacacc atatcgatcg caactattct gcatcatccc 480

atcgacgacg acgacgacac acacacacac attattccgg ccgtcatgtc tagcttgtac 540

atatatagtg gaccctgcat gtgttgttgt gacatgcatg tgggctcaat ccacatgctt 600

cgtccacgct caaaaaaaaa acccccacta ctatacaaat tcatgtattg tacacacaac 660

acgtgcccca tgcagatatg tatatataaa aagcacagat tatttggggc gtctaacatt 720

ttcaattcag gaatttgtgg cgaacatctt tttcgcgttc gtacaaatat catgtaatgc 780

ttcttgtaca atttggttaa aaaaactaac aaataatcac caaagcgtaa tgcttgtaca 840

aatatctact gtaaaaaaat agtttgtacg tgtaatgctt gtagagaaga agaaaaaata 900

aaggcagaaa attaacctaa aaggatcgag cgaattagat gctaagcttt acttattaac 960

catatatatg tatcaatgtc caaataagat gcggcgtgaa gaaagaagcc atatatacaa 1020

taaaacactg gttcatttgc ggctttctaa gatatgtgtg tgacgacgac agattagaac 1080

aagatacccg cgatgctact tacagataaa caatatatac cattgtatat atattgttct 1140

aatatacaat ggtcgtaggt ccaatcagtc tcagtagaag ctatcaaaag gtttctatga 1200

acagctaaca ctatatgcat gcatatgcaa agattacata tactacagca caatattata 1260

tgaacagtta acaaactttt gacttattta gtatatacgc atgatccaga atcgaaaacg 1320

tacgcatgaa atttctctag caaacttcca agggagttac tgacgattat tgttccagct 1380

agccttttcg attgaaagga acagaccaaa gccaaagaga ttaggccgaa tcaccatgtg 1440

cctgattgtg acttctagtt aattagctaa aaaatatgga atactttagt tatttgatga 1500

acaagagagt gcttactttt taagaaacca atgaattcgc gtgccgtacg ttttatctct 1560

ttaaaaatgc cactttgtgc tcaccacaca gcaaaatctc gcaacacgca taaatagttt 1620

ggacaattct actgatgaga aactaaatta caggtaccgc tggtagctta gccttaatta 1680

gctcctctat aatttcaaga ggcaacacgc atgtatacca attagctgag agcatctgat 1740

ccgtcaaaca agtacatata taatggggtg attatatctg actaacttta gataaatttt 1800

gcagatttag cattgttgtc tgcgtaacaa atattaacag gatagcgaaa taaaggtcgg 1860

ccaccatagt gtgcctggag gtcaaataat gtcttgtcca aactattgct tcatgttcct 1920

gtcagtgttt cttaaaatta tagaccacca gcagtaaaca caatcgacga ccatcaattt 1980

gacagaaatg taaacataag cacactacag tgtgtgtcac aaaacataaa acatctctaa 2040

gtttttttag cattgaatat atatagaagg ctcatcaaac 2080

<210> 3874
<211> 1789
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16769_G1, chr1:93068685..93070473, Cluster 24

<400> 3874
gaacgaggtc aggacgtcaa tgattgggga aagttggcgc tgtcggggcc gcgcggggca 60

ggcaggcgcg cgtggggtcg tgggtccctc tgtctctgct tcgcttggtg cggtccgacg 120

tggcgtgcgg cggggccgac gaggcgggcg cgtccacgtg acctccctcc cgctttcccg 180

ttccgatgca cgtgacgctg tcttccaagt cctattaggg cttttattag ggctgcggat 240

taatgggata gaaatcatct ccatttctac gtaaaaccct gtttggtttc attagtcact 300

aaaatttaat gactaaagtt tagtcgctaa agtatcctgt ttgtttcaat ggctaaacca 360

aactaaaaaa cattaattac tgtgaataat gattgtatta cccctactaa ttagttgatg 420

tttatagtaa ataaggtaaa aatactactt tagttccttt tagtcaccct tttggtgact 480

aaagaactaa agtttggtca tcccacttta atcaccatat ttgcttcttt agagattaaa 540

actgactaaa ctttagtcac taaactttag tcaccccaaa ccaaatagga tctaaatcaa 600

accagtcctt agatatttgt atttccgtat cttgcaaaaa taaatacaat acacttctac 660

ggattccatt ttagtaggta ctttttacct ctcaaaacaa aaatgcactt tttaaaactc 720

tagtgaaatg attcatgcta ataaaactat atatacctct acaaaggtgt aattactatc 780

aaatagaaaa cccaactcta taagacaata actagagtta attcttctcg tatgggaaga 840

tataagataa atttttaaaa tttaaaaata tacttatcat gaggcgaaga tagtatacta 900

gcagtacggc taatgctcag cgtctattta ttttcattag cactcaaaat taatagccaa 960

gattaatgct ggtggattca aggtttataa agttactaat tggtaaccgg agaactgcta 1020

actattaatt ttattaataa ttttcagttg ctaataggaa ctaataattt aacttaatat 1080

ccaaccatct attagtacat tgataatcca ttgctaagac cctatttgga ttgactagga 1140

ctagtgatta gtctaaggcc ttgtttgatc ctctggttaa ttttttgcca gtaactaaca 1200

attagccaat aaatatttag ctagcaacaa ttagtcatgg tatgtttaaa gtcttgacta 1260

atagatgtat tttctctcat tatgatctat taacacttat tagcaaggtc aaatgactaa 1320

tgggtgaaca atttgtcagc cacgtggcta acaattaacc aatttattag ccaatctatt 1380

tggagccatg tgctaaaatt agccggcaaa actgtttgac agatgaatgc aaattgaccc 1440

taactctttt aatgtagtat ataattataa agacaacatt caaaaggagt ttcccacgca 1500

accatgtttg gttcccacgc cgtcgtgtgc tagtgttttt ttcgttttgg attacaataa 1560

taacgctgca gtgtagttgt tttgttctag gacgcggcgg cacgtggagc agtggagtga 1620

gcaagggcgg cgacgtgtgg gaggaacagt gcgtccgaga ggagatagtg ttcagcggca 1680

tgggcgactt atgcagcagt gagctaacaa ctagttagaa atttagttaa acttaatcgt 1740

acacattagt ctctctattt agatttttta ggactaaaat ctagcaact 1789

<210> 3875
<211> 2163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_167845_G1, chr4:217674210..217676372, Cluster 24

<400> 3875
gaccacacac ctagaaacgt atccataagt acagatcaat tgtagtaatt agctcatcct 60

ccattaaaaa ggttatgtgg tagcacgaaa aagttgctca atccaacatt aacaatggat 120

agtccttaat caactcaagt ggtttatgtc atcgagactc ctctcgtgac cctacaacct 180

atttaagttt cacattcttt ttaccaacaa cttccattta gcaacaaatg acactaccat 240

catgattaaa agactcttct agaaatgtgg ttgattagct tataaagatt ccatactata 300

acccatatga aactagactc actttaagca tgactaagca ataaactagt aatcattgac 360

ccaactacat gagggacaag gcataagtta gtaaaacaag gaaggtaaaa tgcatgaaat 420

catatctact acccaaatac agaaccataa accacatgaa atccataata taaaataata 480

tcaagttaac attgcaaaac ttgggaatac aggacatttt tagttggatg cctagtgctt 540

ttgtggattc ctcaatttga ttgccctctg actcatgttc tttggtttcg ggctccagaa 600

tttcactctt tatcatgtaa acggatgcat gcattagaat gatggcatga ttgtaggtga 660

tcatgaaatg cttatgaact tggatgatgc aaaaaaaatt aaacaaacac aacatttcaa 720

accattcaaa cataaaggtg gtggctagga ggtgcaaagt ttaacttagt gaggtgagga 780

gtacatattt caacataatt tccaactaca gggggcatta acaactcgat ttagttacta 840

aaaactggat atgtaaactt cacaaagtta tgtttaaatt tacatagaac aggggaaata 900

acttcatgag gtagattgtc cattttaaca ccattcaaac ttatcttttg tttaacttca 960

ttttgaggtt acaagtgttg gggagaaggc tttgccaaag gtcctcatgt aatgatacct 1020

attgttttaa gtttgtctca taagttagtt tctgaatact ttgaacatct gcttcaagtt 1080

acgaaggatg agattaagcc ccgttggtga atgaatgtct gtgataagaa gtgaagggca 1140

aaacgaagct tcatttacct tgggtcatga ggagacgaat ggagcacgac acatcttatc 1200

tacaaaaaga tggagatacc atatagcaat tgtataaata ttgtatgtag gaactgaggc 1260

attttgtat catatgaaga tgcacgcctt agtatcccta taattaggtg aacagtacct 1320

atgcaaatgg gatgacatta tttctactct cgagtctatg cgacccccgg agagctttgc 1380

ctttgaagag tggtcagtgt ttacctctcc aaacgcccta tgggaccttc aaaggtagtt 1440

gtactcaata atttgtaatc cttcatgtat gcacattcat attcgataag aacacaagaa 1500

aagaaagaaa ggaatatgga atgcaactgg catcatttta tttactgaca tacaattttg 1560

acaggttaat ttctttgttg ttttgtcctt atcctcttat ctgcacatct tcaaggataa 1620

gggaaaaaga ttttgtcctt cagttgtatt gccctaatat ggttagcttt taataggtga 1680

ccaacacata gagagcaagt taattcacaa caggtgttca taattttaca aatagcatca 1740

agatgatttt taaagttcta agcaaggaaa taaaaactaa aatagttggt tttatatttt 1800

tagcattttg tgccagtttc tatgtcgtta accatttcta ggcaataaaa aggaataaat 1860

acataaacaa taaatatact tgtttcatga gtatataaat ataaatatga taaacataag 1920

ttaaaagggg tcggtaaaaa tggtctcagc gtttttatta ttataggcat ttagttatgc 1980

atttaataag gtaatacatt ttaaatatat attagttagg tatccgatgc gtcgctacgg 2040

tttttatata ttacattgtt agattttgtt taaatatgat aattgtttaa acgcgttgca 2100

aattattgca ataatactaa ccacaaaaat ccatatattt cagctttgct tgtctctggg 2160

ctt 2163

<210> 3876
<211> 1639
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_168431_G1, chr4:220943754..220945392, Cluster 24

<400> 3876
aagacaaatt caaggacacc ctaagaaatc agcaacaata acacatcgtc agtaaataaa 60

tctctggaac ctcacctaga aatagttctt gccttcgtcc ttcattttct cgcttcagga 120

cagatcaggg aggctaacac cactaccaac atcagcaatt gtctggatat ataaaagaat 180

aagtaggtta taaaagaata agtaggttac atctttaaga acacaggaac ctgatgtgct 240

tggtagataa ggtccaaatg tgaatgaaac acctcgatca ttgatggccc agcctgttgc 300

ttcattggaa ggataagacc aaagattatc acagagcaaa ccagcatcag gcaacatgtc 360

ttacaaccac tgtaacatgc agtgctaatt aactttatat tcaacataat cctatactta 420

ttctgatcac aatatttgca tacaaatgat tttcatataa ttatacagtg aagtcgaatc 480

gtattctgaa taatgaaagt agctagatgt gtcattaaca ctatttttag cataatccta 540

tacttattct gatccatcaa actgtaccct aggtagctcc tctgaactca ttgtcaagaa 600

aacaatgaag gtcgatatcc cagtagataa aaattataca tagatgacaa catgaatctg 660

aacggtttag ggcaagtagc atcagtacac acctgaaatg aaaaggtttt cttgggcggg 720

ttctccttgg cgggaatttc tcctccttcc tcggctcctt cctcaacttc tcctaaatgc 780

tcaaaatcat gtgtaggtag acagtgggaa ttttcttttc ttcattactt gactactcaa 840

tgcatatcca aaaagtacag tgaagttgaa tcttattctg aataatgaaa gtagctagat 900

gtgtcattaa cactattttc agcatccgga caggtacaat ttgaagtagc agagtgaaga 960

cggtaactaa tgcaaatgca gcagcaacaa accattctga gaccgctaga atttattata 1020

tgaagtcact caacaacctt tgcattgaat atatataata cactaatgaa atcatagatg 1080

cctaatagtt aagcacaata tcgaaccact ctcggcacta ccaacaccac taaatgtacc 1140

caaatttttt ttgtcacctg tagtttcagg ctgtaatgtc tgcttgggta tccatcacaa 1200

aatttgtttt gttgataacc aagagttgag catagatgag atattaacaa aattctataa 1260

tcatagacat atgagctctg gcaatcatct tatcagctat tagttgtagc cgatttgtga 1320

tcttctcata ccttttggct ggtttaccac gaagatttcc cttgaataag ttggtaaata 1380

gaacttagct cttcgtggcc attatacttg agacctttag tttatctgac aaaatgtcag 1440

attagagtaa agttaagcaa tattctgtga gagcacttgt cttagtcaga ccaagagcaa 1500

acttgcttag ttaatccact acagccaatc aagcatttgt cgcaactaca acagtagctc 1560

aatcagttca cggagacata aaacaagact aacctcaaga ccagcgcctt gcctctggaa 1620

cgtgcgaaac tcgtcaacg 1639

<210> 3877
<211> 1433
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172554_G1, chr5:1230728..1232160, Cluster 24

<400> 3877
cttactaaat gttatggcac gacagtacga gtgttagctg gaacctacta aaaaaacttg 60

ctcaaactcc tacctatata tttagctttg aagatagatt gacaacatgt tttcaatgac 120

tctgatgtag acctgcactc ctgcagatac acagtgttga tactgctact ggtaattgct 180

gcagtccttg agggcctcca gggatttatg agaactaact tgtttgactt aaaaaaaagg 240

gttccactga catccatgcc tcatgcacat tagttgagat gaagttgccc agcgtacatt 300

aggcaggaac tgaaggataa ggctcaatta tatttctgaa aaaaaagaag tgactgcatg 360

ccacaattgg tgttcagtta attgcatctg ttgctgatta ctgtgaagca cacaataatt 420

tatatgctca tgcttctttt gactcttgag aatggaaatg ccatgtgttt gctgttgtaa 480

ttgccaatta aaaaaacatt tgctagatgt acgctttgaa catttatctc tcttacatat 540

actaatctat tcatctattg atgcgacttc tgtccactaa aaatgcatgt actttgatta 600

actgttaatc aaaacttaca aaatttgatc cttccaaatc ttaattagat agtactttta 660

gctgctgttg agaaagaatg tgaagactga agagagaatc agtatttgca ccccattttc 720

cttcatgtct gatcatataa ctgtataagt gacccctcta gtagtttttt atgaactttt 780

ttcttctgaa attatattat gaacttgctg ataattatta taatacacat attttcatta 840

cgtgcatata tagacatatg cttattctca gcctgtgcct tcttatatgt ttatagagtt 900

tgtatcacac ttgaacacat ttcccccatt gccaggttct gaaagatggt ctatcagctc 960

tccatgttcc ttattcatat ggctttgcaa tcattctcct cactgttctt gtcaaggcag 1020

ctacatttcc tctaacaaag aagcaggtgc tgtatctatg ctatgtttct aaagttggga 1080

tatgcccccc cctcccccaa aaaaacacta ggagaatgta cagtcaggat tcattttgag 1140

gtagttgaat gtaggatgcc ataaatactc ttcaaagttt aatagtgaag aatactttct 1200

ttttctgggc atggctgctc ttattgggca cttctcaact gcagctcagc aaaatttatt 1260

gagatattta tcgatttttt attacacgtg tggcctaaat atctggtggt gtcagtactc 1320

aatattttct ttcttctgac tacccgatta ttttcaaaga tatcctagaa aatggtaccg 1380

ttcgagacct catttgatca agtagttaac cgacttcatt ttttgtattg ctg 1433

<210> 3878
<211> 1784
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174393_G1, chr5:11955775..11957558, Cluster 24

<400> 3878
acgacgtcgg tagaggccgt acattttgcg caactgtatg cacgacctgc tggacatgtg 60

aatagtacaa ttctgttaca tatttgcgat catatgtgtg agctattgga ggccgtctta 120

gttcaactta taaaataaaa taattttcta gctttaatag ttcaatgaga aagcaaaaaa 180

atcaggagac aatgaagtaa ttaaaattca tccatcacaa gccattcgga ggggtaaata 240

tgttaacccg agctcttcat caagataagt aattttaagt tggaaaacgt caaaattact 300

cccctcacct ataaatgatg ttcatataac cccttaaact atttttagtt taatttatct 360

ctccgcataa ttgagttagt tcaatatacc tcctaacaaa atttgtcttt tttatttctt 420

tacatacaaa ctaagttatt tgtttaaatt tgttggttat atctaatatc ataacttagc 480

ctaaaaatat attatgattt ttcataatta ttttgataag ttaaaaccat ataacataac 540

aactttaatg atacaaaact aaatgtaaat aaatgataaa attttaacat atttttctat 600

ccttagttat gatgtcctga atcacctcag aaaatatgaa cttgaattca actttttacat 660

agagaaaaaa caaatctttc cctaatatga tttgtctttt ttgtttctcc atataaaatt 720

aaatttcaag ttcatatttt ctaaggtgga tgaggacatc ataacttatg ttataaaaat 780

atgctatgat tttttatcat tattttatat ttagttttat atcattaaag ttattatatt 840

atcagatttt taacctatta aaataattaa taaaaattac aatatatttt tctaggctaa 900

gttagggcat tagctactaa ccaacataat ttaaatcgaa aactcaactt gtatataaag 960

aaataaaaag ataaattttg ttaaggggta gattaaacac catgcttcag gtaacaaacc 1020

aacacaagta atacaaaacc agcaacaata ccgagtatat gctgttttga ataatatatt 1080

tgcaggaaaa agcatagtaa ctgtttaaag aaaatgcaac acaattcaaa aggagcaaaa 1140

taacataaag ttattatagt tgaaaactga tagtagacga ggcaagtggg ttccaacaca 1200

aaaatgaaca acaagaagaa agtcttttac tccatgcaag ttgagtaggg tagagttaaa 1260

aacccaataa catccacaag ttaagggttt gtacatatat ataattattt ttcatgtacc 1320

cctattcaaa gctaaatctt tagatgtatt ctatcctttt aagtcttctt taactctctt 1380

tctatatcaa cttcattttt cttctttctg tcttctcatt gatattgtgt aggatttcat 1440

tatgcattga cacatttgga ggtctatgtt ggatatgttc aaactatctc aaccgatatt 1500

agataaactt ttcttcaatc agtactgtga tcaagtcata cttcgctact gcgatcaatg 1560

cttcagctaa catgttcttt tatccagagc gcaagtatgt gacctacatt caaaaactgc 1620

ttggccataa cacatcacaa agatctcacc tacatgccac aaaagtagta tagcatatcg 1680

ttcttagatg agaactcttt gcttcataac aaagaaagta catggcaaca cgatttattc 1740

ataccaagta tagggctaga aaaacaagta ctatagctcg gctg 1784

<210> 3879
<211> 3035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174735_G1, chr5:14023720..14026754, Cluster 24

<400> 3879
caagctcact tcacaagttc acatgcgtcc tcgtccttgg gttcaacttt aaaagatgtt 60

ttcgaacata agcttgcgtt ggaaacacca atttgtttgc gggtgaaaat gtatcgtgaa 120

atcctagcaa gcgaggagat actaactagt acattcattt gaggctggca gcagcagcag 180

gatgggcagg ctgcatcaat gctcgccatc acttgtccaa tcggccggcc ggctctcgcg 240

gagctcgtag tgcgtgtcca atgtgccggt gccggagacg acgcatccgg catttcgggc 300

actgaaatgt cactcgctgc cgttggctcg tcaaaacaaa aggctcctac aggcaacagc 360

caacaggcct tggtgtttga tcccgtcggt ggctggtggc tgccttgtct ggcgacgaaa 420

tgaactacca cacggcgggt ctgggtatcg tatggtcgcg tccgctccag ccctcaccgg 480

tcacgtcgtc cccccggccc ccccgggcct gtcatggcag cgtctctctc cagtcagatc 540

gacgcagata aacgcctggc cgcacttgtc gctgtgctca tgcctggcca tttctcggtg 600

tgcgtttatc gatcggcttg ccgcctgacg ggatgctact actgtcctac actggtgctg 660

tacctatatt taaaaaaatg attctcgatt tcaattctga tattgtcatc gtgattcgtg 720

aatcgtgata cgacatgacg taccttagac agggcaagtt agagacacgt tgatcctgag 780

cacaatctag ttatcagcac acaaaaaaga ttatataggt gtttgcataa aaagattata 840

catcaattat cagtttttc acaaaacctt tgaattcttc tcgtttttg cttatctttg 900

aggagaactt gaaattattt atccaatggg attattctga gggaggtaac tactcgtatc 960

attctctctc tctctcaatt ttattttaaa attgaaaata taaaatcttg gaaatacagt 1020

gattatagtt tttgttttac atatgatatt tgaagttatg gttgtgctat agcatattcg 1080

cattttatg tatgtgcgta tatggtatag tctttggcat gactttcaaa cagaataaca 1140

acataaatta aatctagccc tggttgaact ttcttgatta ctttgagctt caataaaagt 1200

actaactatg aattatgaaa gttatatatt gttagggaaa atagaaatat gcaagatcaa 1260

ggaaatatgc attgtcacac ttcttctttt caacactgtt aaattgcatt ttaattggaa 1320

cttggataaa gtcatgtatg attggggcct tgttcttaaa cttttgattg tcacaaaaca 1380

tagtcttaac tgggtcaaaa ataaaagcta cttatgcata gaatttcagt aatttatttt 1440

attgtaataa acaatcaatc aaattcaagc acaaaaatgc atagcatatt cgctttatcc 1500

aaattttaag gtagttgaga aaaggatacc ttgtcttaaa attagttatt aattacgctc 1560

atttttaagt tatgttcgga ataaattatg tgtgcataga tgtgaaagtg tgactatatt 1620

ttagcatgcc ttgtatacat atttgttaca tgtgtggatt aattattgga tttaattata 1680

atgtctagta ttacaaatta cataaaaaga agtaagttca tttctttttg tattcttgat 1740

gaatttagta tcacaggaag agaatttttt aaaacataca ttgtacaaca ttacacattt 1800

atcgttttta gagggagatt ttggttttgg atcctttaca ctgatctttt ttactttgat 1860

tttgaatttt aattggtttt gtaaatgaat gtcaatgttt aatgtctatg tggtgttgct 1920

aatattttcg ttaaggagaa tattgtaaaa tcttgtgtga taatccattg ttttatatta 1980

gaattacctt tgttaagtga ttaacatgat atgatgttag gcatgtgtgc taatgtgtgg 2040

ttttgatatt gatttaacac actcatgggc gtggagttgc atggattgac ttcgagggtg 2100

catttggttc agtttttga aactatttcc gttttaaaaa gtagaagcta aaccaaaagg 2160

ttcatctttt ctagtactac ttaaaaaaca acctttttgta gtacaaattt gaaaatgact 2220

tggacccgac ttttgttcct tatctaagtt tgatatatta aaaaaagata cgataattta 2280

aaactaaaat tagatttaaa ataattaaat gttataataa atgaaataaa aatatatttt 2340

taataaaaat aataaaaaac gaaattttaa aattgaaaac ataaaatttt ggaaatatag 2400

ggactatagt ttttgtttac atatgatatt tgaagtcatg gttgtgctat agcatattcg 2460

cattttatg tatgtgcgta tatggtatag tctttggcat gactttcaaa cggaataaca 2520

acataaatta aatcttgccc tggttgaact ttcttgatta ctttgagctt gaataaaaat 2580

actaactatg aattatgaaa gttatatatt gttagagaga aaaagaaata tgcattgtca 2640

cacttcttct tttcaacact gttaaattgc attttaattg gaacttggat aaagtcatgt 2700

atgattggga ccttgttctt aaacttttga ttgtcacaaa acatagtctt aactaggtca 2760

aaaataaaag ctaattgtgc atataatttt agttatttat tttattgtaa taaacaatca 2820

atcaattttc aagcacaaaa atgcatagca tattcgcttt atccaaattt taaggtagtt 2880

gacaaaagga taccttgtct tcaaattaat tattaattac gttcattttt aagttatgtt 2940

ctgaataaat tatgtgtgca tagatgtgaa agtgtgacta ttttagcatg ccttgtatga 3000

atatttgtta catatgtgga ttaatgattg gattt 3035

<210> 3880
<211> 2176
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_17536_G1, chr1:97507341..97509516, Cluster 24

<400> 3880
cttatgagtg atcttcacca aactgtgtag agtattgaat tatgaaacca tatgttttgg 60

aactgctaaa tattattatt agactagtga taaccatact ttcgtatcta cgaaggtata 120

agtattgtat cactcttatc gtaggagtat aatgtatcta tggaggtata ggtattgtat 180

cgctcttata ggagtataat atagaacaca atcggtgaag tgcatactca tgtgagtgat 240

cttcatcaaa ctgtgtagag tactgaatta tgaaaccata tgttttggaa ctgctaaata 300

ttattattag actagagata acacatcatt tttttgttga attttcatga gtttaatggt 360

ttttatttga caaaacaagg ggctttgttt ccccctttgc tgccggttta tctgtttatg 420

accgattaat cggttgcatt gactgtttaa tcaattaaaa gctaagctaa tccaaaattt 480

gttgtgttca aatttagctg atttcaacag gtttccgtcg aataatcagt aatcggtggt 540

gacctttttg tgggtgtgac taaggactac attttcgatt taatttttc agatagcttt 600

ttgttgcaca aagttgacac ttaaaatttt aaattcactg aaaccggatc ggtttttatt 660

ttcctatcag taacggcaat gggaaatatt accgaaaagc agtcaagaaa ctcatccctg 720

gggtgaccag cttggtgaac cctgtgcacg accaatcaga tgacatccat atcttcaagc 780

cacaattagt ttgactaagt attatataaa tcatcactgt cttgatctca tataagttgt 840

ttatgtgacc gcctaagtaa caaggtacat gttcagttac aatatacgtt aattcatttg 900

ttagattttt atgctaagtt attttattac ccttttaca atataaatta ctcctttaat 960

catggtaaat tactgccagc cgatttgcaa tgtagactag gctgaaggct ggtggagagc 1020

tgagttctgt tcccgaactg tgctcctatt caagagctta agagttgtcc agttatgcga 1080

tggaacgggg catgaccgca tgtaccattg aattagactc gtttttagaa atgaacagat 1140

aattcaaaag attactatca aattgcagag taggtactaa gaagatcgaa atccaataga 1200

gctagacggg tagagcggct gcagatgcga tcagagcctg tcgggatgta tgagaagtca 1260

tcactttatg acatcagggg attgacagac tttcatacat gcatcatcac ctcgcatcga 1320

agatcaacta acaagaacaa atatccgaca agagaacggc tacgaaaacc aactcacaaa 1380

agagactatg ccaacgataa aaccgggtca gttggaagaa cacgaggaat gaatctaaga 1440

gaagaaaaga aataacaagt ggctcagaac ttcttagagg gtttgtgcaa ccaacaccgg 1500

cgtccgaggg atgcctccgg cacacggatt tctttcctca tcgccatcaa actgctcaaa 1560

acgatatagt aatcgacaaa cagaaacaaa gaaaaaatgg agaaaacatg aaggcgaaag 1620

aaccatcgga cacagagagc tagcaacggc ggcgatggga aatctttcgc tgtgctctgt 1680

tttatagacg cacaacccta acacctggac ataaaaccct agatgtcatg ggcttgattg 1740

ctgggtccag caggagcgcc gcggtggaac tagcccatgg gcctcggatc aatcgggtga 1800

gaacctggtg cataggaaaa aaaaactcaa caaatcctcg gagtgattcc aactgccatc 1860

cagtcgtcta ggtttttttt caaatacaca agagagttac atatcatttc attacaagaa 1920

attaaaagaa ggatgaagaa aagaaattat atacgcccag ccaaaggcta aggcacacag 1980

acacgcacta cccacaaggt tggactacag agagccggtt accggttagg aaaaaccagc 2040

aacaacagcc agcaacctga cgacactaag acaaaacacc tacatcatcc acatcctgca 2100

gcaactggag ctgggggcct ttagcaccaa ccttgctcca ccatcaggcc tcctctccaa 2160

cattggagag agcaat 2176

<210> 3881
<211> 1544
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_180774_G1, chr5:46766763..46768306, Cluster 24

<400> 3881
tattatcagt aaatcataaa agagggtgga gaaagtctat cttactatcc acgctacaaa 60

aattattttc gtctaaaacc tgaacaaaat tctgacttga tccaagagag aactttactg 120

tcacaaaaaa acataggaga cgaagggagg ggcgtaggtg gcactgttgc ggtagagccg 180

tggagcactt cattcgcgct ccgtgagtcg ataacccttg gcaacggttt agcaaatgcg 240

agaatgatct tcattatttt tttgttcgtg gtcaatggta attgttttac ttgtgtctgg 300

tgtcgctata gctcgttgtc attgcctttc tattattata ttcctcttct gggctataga 360

ttgcctatat tttggagtta ttttttagct accactaaac actaaacact cagtcccagt 420

gtagtttagt caaactaagt taggtgcccc aactaatctg atttttatat ttttaataat 480

tacttggccc gtgtttcatg agatgatttg ttaatgttaa cttttctgtt tgtcttactg 540

acggagtggt caaatggcgt accttgtgaa atcagttagg ccctgttcgt ttctcccaga 600

atggccctgg aatttttcag gttcatcaaa acttacataa attagaaaag caatgtggct 660

cggaattgtt ccgggtcacc gttcccacac aatcgaacgc ccccttaagg tattctgtac 720

gatgcaggga acatgtgtca gctgttaggc tatctccaac aagcaacaac tttactcatc 780

ttatctctta ttttaaaatt cattttataa acagtgtaga ctatagtgca aaattgtaca 840

ttcatatacc tctgatggca acagccttat tgatggcgtg gtggcgtagc ttgtgaaatc 900

cgttaaggta ttttatagga tgcaggaaat tagctgttac tgatggagtg gtaccacaaa 960

tgaccttgtg aaatcggtta agatattcgt aggatgtagg aaacatgtct cagctgttag 1020

ggagcatcta attcctcatt caagattttt cttttctcaa gtttgagcac cagaataaag 1080

taaaatatat aggtttattg ggactgtttc tttatttgaa tcacaactag tttcctgttt 1140

gagttaaatg cataagcagc cctgaagtcg gtgccacttt ggtccatgaa ctttgaaaat 1200

atatttcaag attactaaag ttgttaagtg gtgcaccaca atggacggta tactccaaaa 1260

atagacttgc tatgcaccat ttcactagtt tagacatatt tcgtgcacca taaaacaaat 1320

ttaaggaccc aagtgacacc cttttataag tttagacgtc gctgatggat ttaactcttc 1380

ccgtttttat ctgaaaataa agtttgtgtg gcatgcataa agttgaagga caaaattagt 1440

tggatcttta tgggcacgag tagaataagc tgtcatcttt tcttggcttg aagggcttgt 1500

acttcaacgg tgcatgaact gattcataga aaccttggtt tcag 1544

<210> 3882
<211> 1473
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181950_G1, chr5:54482029..54483501, Cluster 24

<400> 3882
catcacgaac gaacatgacc aaacatgtaa gtacgaccac ttgaattcaa tgttgagtga 60

agtatcccta gcattttgaa tcctaaaact gaaatacact tctccgaatt ctgaaactga 120

aagaagtgtc cctagttttc taaaacggaa acaagttcag ccacttgccc cctcaaattg 180

aactaaaact aaaacatgca agcaaacata aaatgtctat aatatcaaac ataacctaca 240

gatatctaca tcaagactag aagcatgtgt tcttctaatg ttgtcaaaat gccatgccta 300

gtcatgtctt agacgaggaa cttgggctcc aaaagaaaat gtcaccaatt gaggagtctc 360

caacaaccac acctagctgg tcacacatga cctgcacaat tgccacatga aacaacacta 420

tattaattaa tttacaatca acagttgtag cttctgtgaa agacttaaca aaatgaaggc 480

aagaaataca tatgagtgtt ggtgaataga ctaattttct ctttaggtta ctgcacagaa 540

acccgatgac ataatagaac ttttgaaatg ataaataagc agtaaattgt gctaaacgac 600

aataaagtgt gctcattaaa taaacatggc taaacaatag taaatatgat atgttactaa 660

attacagact ttgaatatat cattagcaaa aggtcatgta catgcacacg gatgagtttg 720

ttttatgaag ataagcagac ttcgacaata gtttggtttc ctaagtattc aagacacttg 780

atgaggcacc acatgtttca aaactacatt cttcaaaggt gaacactgct gggcagtaca 840

caacatactg ctcattcaaa agaaacccga taatataata aaacattgaa ataataaaca 900

agcaataaag tgtgctaaaa caatagtaaa gtgtgatcat taaataagca gtctaaacaa 960

aatgttaaac aacattgaag tgtgatcatt atgaaataaa caatagtaaa gtgtgctcat 1020

ttatttcatg tgtagttagc cttaggtatg cttgctaagt catctcgtcc ctcaaccaca 1080

tcaatgcaac ctctctatat gtatatgttc aagcaaatat gttgattgtc agggtccttg 1140

aacaccttat aggctttggc cttctcctca tttgtgacat ctaaagtgtt tagaacttct 1200

atgcaattct taattgagaa atcatcacct cctcttcctc cctttctctt gccaattgtg 1260

tcgcctcatc ttcagctcgt ttgcttctaa tgtctaggta catctccatc aatacttcta 1320

tgttggaact cttcttcggc ctctttagtc ctttttcttc tccattcctt gaaaacagtt 1380

gtagtccttt ttggcctttt atccttccta tcagcattta catgaaccct tcaacttcat 1440

acactctgtc ttctgcttca ttttgtccgt gcc 1473

<210> 3883
<211> 1579
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_182869_G1, chr5:60136635..60138213, Cluster 24

<400> 3883
cacatattca tatatataat aagcatgcag catcagtctc tgggtccagt cagaatatta 60

cctttcttca tttgatacac acatctcatc attcttctca gttaattaac tagtcatatg 120

cattttgaac aaaacaaaca aacaaacaaa caaacaaaca aaaggagcac ctacttcata 180

cactttggta tgtgatctct tgtcctagct agcttcacca tgccctgtaa aattttgata 240

gctcggccgg cctacagtct agtccggctc tacatgcatg tagagtggta cagtgtgtac 300

tgtccccttg tgctatacta ctatacgtct agctagctag ctcttgtagc gcctcatctc 360

tcctttgcta gccttcttcc ttttcacctt ctcactttca attgtatatt tcctttcgtt 420

tcaagaaaac cacacgtata gcttttacat ttgtacgggt accgttgttg ctgcttaatg 480

gacaccagta ggattgttaa tcaggacaag ctagtttcaa aagttcatgc atgcacgccg 540

ctcctcctgt ctactatgaa tcaggattgt tgctgcttgg acaccagcag gattattcat 600

atataatagt catgtttcat gtttgttcta gctaattaat aagttcacct agtgatctgt 660

ttaatttgca ctcatatgca tggcataaat tctagccaat atggttgtac tgtcacgtag 720

aagcatgcac aatgtatata taagatgatc tttatagcat tacatctaac tatagaccag 780

taaaagttac tttgattaga tagatgggaa taaatggaat tggagataca taaactaata 840

atggtatagt ggcatacagt agtatgtagg tagcctcaaa ttaaagcagc tcccgtatgt 900

gcatgcataa atctgagtag gagtgcttca aatttttatc atttatacac catatttgga 960

agtgtttttt ggttatgaga attcacatcc tgcttcagac actcaatgga gaaccaatct 1020

ttacatgcat atatatgtgc ctatttttt ttacgaagtt agagtaagta agatttgtta 1080

gattctagag caatagtgtt gcataaacaa ctcaactcta ccgtgcattt caatgacagt 1140

acaatctttt tcatatatat ggcttacagt ataaaatttg cagcagtata tggtgcatac 1200

aaattaaatt aagaaaccta gtatttctct atgagcacta ttttttttgt tattttcata 1260

tcctctacag ttttgaacgg aagttttaga aacatattaa cgactcttag gcctcctttg 1320

ggagggctcc gacttcttag aaaatggctt cggctctagc tcttccgtag aagtcagtgt 1380

cttttacaaa ttatttggca aaacgactct tttggaaatg actcctcgtg tgctttctac 1440

tacactgctt cctactgcat tcatcaaaca taaagaaaac ttcagtcaac tgatgcacta 1500

ctttctatta cactggttag ccaaactata ttcaagtttt cacagtttgt ctctgtgtga 1560

gtttggctaa caggaacag 1579

<210> 3884
<211> 2323
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_186110_G1, chr5:83855156..83857478, Cluster 24

<400> 3884
aattgagtga ttcgttgtct gctagcccac gtgcgctttc taggacgaga agcaggcgtt 60

tgaatgtcac ccctaagcac cagaggggtc gggttgggtg aatcgctaag gagcgtttgg 120

tttaaaggat tacttcatcc aaaataaggt ggtgcatcat aaatttattc tcaaaattgg 180

tggaatgact acattcttta tgttagtact aactaattaa ctatgaggaa tatgataata 240

atgaattaac ttattccatt ccacaaacta aataaaaaat aagaaatgag aaaacaataa 300

actagtttat tcttcaaacc aaatgttgta taacattgta gcataaaggc ttgttctgca 360

agggtgactg ggtttctcag cccacccaga gagtgagtac cttgggctca tgtctcgata 420

cgccacgtgc atcaaagctg ggcctgcatt ggaaatttga aatagaatac ataaattata 480

gttatggtag tagtagtcca gaggaaactc gtgagaagaa tggaagaatt cagatgaaag 540

ataagttttt tttcgagtag cactacattt tttttatcag ctgcacgttg gttggtgtgt 600

catcgcactg taagccaaat aaaagaaaaa gagagagaga gacaacgaat cagatagcaa 660

attttaggac aagcttgcag gtgaaagatt cttaattcta catcgttatg ataccgtgtc 720

acatgatttg agacaatttg tctggttgcc attgccatgg aattccacaa aaagcgcatt 780

ttaatcaagt ttagctatta tcatgtagta tataatatga agtaattttt acgaggctcc 840

aaagtacaac ggaattgcag aagctaaaca tggtagtagc aaaattatgt acattaacct 900

tatatacaca taaataaaat cgatctttga taaacatgta aagatatctt gcctataaaa 960

tcataggcca caagtcacaa gagtcgacca aaagcatcct aagataacga tgatttatgg 1020

gaaaacgata aaatttgttt gatgtttaag tcaacctgaa tttacaaaga tcggttcaaa 1080

tttttgaaga attaccgagt tcatttccga cggcaaaata gcgagtacat gcgatgattt 1140

tcggaaacga ccggaataga ctcaaaccgt ttcatattcc gtttctgatt tttttaatat 1200

attctaccga ttctatttca gtatcttcag caaccggttc cgtttagcac tgaatttcgg 1260

taaaattttt ataaacggtt cccgatgacc cgaaacgccg gatgtgcttc gccccctacg 1320

ttgaacaaac gttgccttct tggtgcatgt tatatataat gcgagaaaaa tggtggtgag 1380

cgatcaagag ccaaacgggt ggcgtaactt tggatccagc taaaccctag atcgcacact 1440

gaacatttgt cttcggggat cttgtgaacg acagtcgcct tgcagcgaat gcttgtagca 1500

gtagcagcca ttctagcgca gcgcaggtga cgcacaactg ttaaaatcac aaaccctaaa 1560

aactgaggaa ggcgaagcgg gaagcgagct gggaaagatc cagcctggtc tgggcttcgt 1620

ggacctcctc aacagatcga agcggatgtg cttcatgggc cccggaaagc gggaaggcgg 1680

tccaccgtta gcgattctat atttttttta taagatgttt ctcttgcata gagtgcccaa 1740

cgctctgaat aaacctaata tttctttcat cacactaata aatcgaatac ttttttccca 1800

ttacaattct atagattcga atataacgtt tctttcaccg tagctacact gtacatacgt 1860

gtcacgtgtg tgtacaatgt atggtacggt acgccttttt gcacatcctg ccaatcttcc 1920

gaccgtttcc cgagtcggtc gttttttttt tttggcactt gtgcagatgt gcatggtgac 1980

tcagattacg tgcgcaaaga gtacagaggt ttttttgtt ttttgttttt gaaggcgaaa 2040

cattaaggag agagagagag agacggtcaa acatggaact gtaccgtgtg cacttgcgca 2100

cagatcatcg gatagatatc ctctcgagga gtccagtcaa gtgtgagcca tccgttgctt 2160

atccagagtt gcacaccgat caacccttgg atcccctacg tgtaccgtga tgtacagtaa 2220

cggtgtggtt cgttgctgtg gcaggctagc caggcttccc gcagcagagc caggatacgc 2280

agcatggggt taaactttat gcaagacata cttgtttagt ttt 2323

<210> 3885
<211> 1521
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_187687_G1, chr5:93833120..93834640, Cluster 24

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (645)..(744)
<223> n is a, c, g, or t

<220>
<221> modified_base

<222> (646)..(646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (650)..(650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (653)..(653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (660)..(660)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (661)..(661)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (662)..(662)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (663)..(663)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (664)..(664)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (665)..(665)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (666)..(666)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (667)..(667)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (668)..(668)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (669)..(669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (670)..(670)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (675)..(675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (676)..(676)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (677)..(677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (678)..(678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (679)..(679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (680)..(680)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (681)..(681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (682)..(682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (683)..(683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (684)..(684)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (685)..(685)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (686)..(686)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (689)..(689)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (690)..(690)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (691)..(691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (692)..(692)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (693)..(693)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (694)..(694)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (695)..(695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (696)..(696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (697)..(697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (698)..(698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (699)..(699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (700)..(700)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (701)..(701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (702)..(702)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (703)..(703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (704)..(704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (705)..(705)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (706)..(706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (707)..(707)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (708)..(708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (709)..(709)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (710)..(710)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (711)..(711)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (712)..(712)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (713)..(713)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (714)..(714)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (715)..(715)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (716)..(716)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (717)..(717)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (718)..(718)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (719)..(719)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (720)..(720)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (721)..(721)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (722)..(722)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (723)..(723)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (724)..(724)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (725)..(725)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (726)..(726)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (727)..(727)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (728)..(728)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (729)..(729)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (730)..(730)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (731)..(731)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (732)..(732)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (733)..(733)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (734)..(734)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (735)..(735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (736)..(736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (737)..(737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (738)..(738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (739)..(739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (740)..(740)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (741)..(741)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (742)..(742)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (743)..(743)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (744)..(744)
<223> a, c, g, or t

<400> 3885
caagtgacat gctagaaaca cccaacacat ggtagaccaa aagatttgca tgtgttgtgt 60

gccatacatt tgttaagatc tgttgcctta tacccttgtt taaatctagt taaaggatac 120

accggagaat ctcgaacaag aaacaggcgt tcccttcaag ttactgggtt tacatgccta 180

agtagagcaa ttccataaaa acaatcttgg ataggtcact caacgcaaac atagtgttgg 240

acaaactttt tgctagtaaa agtgttgtca tggaacgatt aagataggtc ctaagcctaa 300

gtgcttcact caaacaagaa tattaccaga ctaaacttga tttaaaatgt acattctaaa 360

ttacttgcca agagaattta catgacataa tatatatgtt ttgccaacat tgaaagtgat 420

tatactgcca agaaaataag gtctggagat tcagtacact ggaacaccat cagagacaat 480

actaaacagg gaaacccaga tgtcgatgag agtaaacatc tgctctcaaa gcgtgcaacc 540

atgaatacaa gcatagagca agaggaccca aaggcaaaca gtacaaagag tttctaacca 600

agctttgaat aaagcacaac atcttattag tggatgttca atccnnnnnn nnnnnnnnnn 660

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 720

nnnnnnnnnn nnnnnnnnnn nnnntaccta gtggatgttc aatccttcat tttaacatta 780

aagagaatat aagcatgctt gatagctgga atcaagtagt ggatttaatt tccaagtagc 840

tctaagctat gagcatacaa atcagcaata gaaaaacaca agcatctaaa tcttccctag 900

caagaaatat gccatgcaca acataaattg actcaacatt tttgggcatc atgactcatg 960

catataccaa ttttgtccaa acaatagcct gacaagccat gatagttaga gctaatagca 1020

taaaatctct ctgtgattag aaggtagtaa ctaattcatc agcaattttt tttcaaacaa 1080

tatataccaa agcaaagtag ttcaaaaaaa attcaatacc aaagcatcag ataccgagca 1140

atgaagtatc caactatcca tgttgcacaa agcattaagc aagaataaat gcaaatgcag 1200

attaatccca acaaaggaac acattggttt agcttctcct atcaaatcaa tgtaaggcct 1260

ataacagtgg tcaatcaggg aaagctggta aaccaggcac attacaaatt agctccggat 1320

ctcctctcac caagaacaaa cataaatagg caatgcaaca gattgttctg ctaaaactta 1380

tccacccaag cgaaatactt aggttcctct atctcagaag aaaaggtgca caacaaaaca 1440

ttccgcccaa atttcgctcg aagggagaat atggaaatcc tctagaacat atgtgtgata 1500

tttagctgat gtattgtcca t 1521

<210> 3886
<211> 1451
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196090_G1, chr5:151421094..151422544, Cluster 24

<400> 3886
taagattctc ttccacctaa tgctcactgc actacgtcta tgtgttcacg gagaggtggc 60

aacacaacct ttaacctaga ccaaacatag acacagacac aacagaaaaa agttgttctg 120

tagaatgaaa tctcatatca gtgtcacaat gacgcagagg ccagtagtta gcaccactcg 180

atcgagctga ggatacccag ggcgacatgc gtgatcatgc caaccaacct tttcttcctt 240

tttctctccc tctccctttc cttcctagaa gcccaagatg cccgagtacc taaccaccat 300

ctccgccgtc gggagagtga cacacagcaa gtcaaccaca gtgcttgctc tgcctactat 360

tctgttatgc ctgtttttgt tcgaatcgtt tcagatcagt cgttggttac acttgtcgat 420

cgacggctag gccggcctac tgttttaggg taggcttggt acacttgcaa gctatatatt 480

gtttcgttgc aagatcaact ggcactacta gcagtttggc tgatgtgcgg tctctcctgc 540

tctttatttg tcctattgtt ctgtattttc aacactattc acatttctcc agagaaccaa 600

aagagagatg ccactgcgat cgcgctttcc acattgactt tcggagagat gtccgagtgt 660

atcatgttgc tgatccatat atatggcatg cgaatggtag tacgagtaac tcacagtcac 720

aacgattggt tcaaagttgt agaagaagag agagagacac tactcggcgt ggtcatcagc 780

acttcagcag caagtagggt gtgactgtga gtgtgagtgg ctttcgtcac atcatgtcgt 840

cgtcgatgga gctcgagcat gtgccttttc ttggcttgat ttctgcaccg gagctcaccg 900

ctcaggtgag cagttcaggg ggccatgggg agacccgtgg gtggatattg aaacacgatc 960

cgaacctgca ataatttggg tctctaaacc cgaaaactcc tggagaaaaa taggacccga 1020

ccttgaatcc gataggtccc aaactcgtgg gtcttcgacc taaacccacc ccactgtcat 1080

ccctagttgt gtgtctttaa aaaaggattt ttttcctgtt tgagcttaag cctctctgat 1140

aaggcataca tttgttgccc tgattcttaa actagaacaa aataatatct ttaaaataac 1200

ttggtatcaa tatccataaa attctcaaat taaatatcca tgttggtttt agtttaatgg 1260

agaataaaat atttatttgt agaaaaaata tctaaaactt ttaaacttaa acttaaagct 1320

agaaaaatac taaattaatt tttcatgctc aagattaata ttcagatatt tgtacaatta 1380

atgctcgtaa gaaattgcaa taaataaaat aaaaaagaga aatttactat gtttcattgt 1440

tcttgtaccg a 1451

<210> 3887
<211> 1459

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196360_G1, chr5:152839921..152841379, Cluster 24

<400> 3887
tatctagctg ttctcttgtg ctttgcctgc cttgaaggga agaggaatgt tctcttgtga 60

gctcgacttg tcaactccta tatactaatc cattgatttt ccgtaaaaga atggtgtcaa 120

ggttagatat ggcccgcaaa gaagcatata tatatatata tatatatatc ttaagataat 180

ggggttgcaa ttctgtcttg ttgatgtctc cttcccgtaa ctgtaagcat atatatgcag 240

ctggtacaag gtttggatga tgagtggcag caacatattc tctcaacgtg gtgtatctgg 300

gagtccagat ggcactacac tacattgttc tggctgccca tgttctggac cagagccagc 360

ccatcacaaa ttcacaagtt caaaagataa ggtgatggct gacgcgatgt atcttctata 420

actacaggct tattttgaat tattagatgt tttgactttt ctagatatat tatctttgtt 480

ttatatatct agatatagtg tatatctaaa tgtgcagtaa aaactgtgcc aaaacttttt 540

atagttttag aacagactga aggcgcaagt gctgttgtaa ccataaccac gggaaggatg 600

acgaatcgtt tctgttgccg gctcctgtcg cgtatcagct tcagctctgc tcaatctctt 660

tctgtgaagc ccaccatccc gtcccccacc caacccaacc ctaggtgcag gcgcggcctc 720

gtgcgttttg gttgtttctt cacaaccaga aaggtggttt ggtttgttag cctgttgctc 780

gtgcaccgtg ctgccaagtc tagtagttgt atggcaatga atggcaacac agttagatgc 840

catagtgcat tgcagaagct aaatgagtca ttgttcactt gcactacact gaatagacaa 900

aacagcagca tcgcactgca ctgaagactc attgggtttt tttaacctcc tctttcttgt 960

aaaaaaaaag aactcttgat tattttggta ctactgtggt aattctaaga ttgaaactta 1020

ctctctttta atgcaaaaaa acgtacccca aaatacagtc gcgaaaaaga gttatctgac 1080

aaatatctat gtaggtttca cgtcgtaaac cttcgcgcga gctgtacttc tcagggcagc 1140

agaagatgca actggtttca ggctttcagc ccatatgctg acgaaaggcc catcaatggt 1200

tctaagatgg gctactcgtt cagtcttcag tggctttgct ggatgccaca cgttttcgct 1260

actgtgtatg aattgtgaat ttttcatatg ttaattcctt tggaccggaa ttcgtataaa 1320

aagagcgaat gattatctcg tatacaccgg tttctctgat ggtctgatcg ttgtcccttt 1380

tgccaaaaaa aatattctta tacttattct ctatttttat aaagcacccg tttccgctgt 1440

cgtacattgt caagtgata 1459

<210> 3888
<211> 2061
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198727_G1, chr5:166496397..166498457, Cluster 24

<400> 3888
agctgtcaca acttttatac catcaccgaa taagtgtact aatttttaac ttacgtagcg 60

aagcacgggc acatacctag tatatatata atcgtgtttc aataaatgtc ttatttaaac 120

aaggtctaca tatatgatat acagaaacct tagcaatgta cgtgaaacta actatccatt 180

gttaatatag aaaaactaat tatgaataat acgcgtcact attcacacaa tgtattcata 240

agtatattga ttagaaatga tcatgtctta tttccgcgtc aaacatagtt ctaactatgt 300

ttcactaaac gcaagctaag catgctttat gcttagaggt gcaatgtgaa aggaataact 360

gtgaatatga acgaaaaagt atatatagta attagtaact agtctattac aaccaaaagg 420

aaaatattat ccatacgagt aggatgttaa aatatgaact aactagatag accaaacata 480

ttgttcatat atttgcaatg atccctaacc catgaatact taataactat cacttttaa 540

atcaacacat ctcaactgta ctcgtcgaca atgatacaaa tttggtgatt ccgctgatct 600

caatatatgt tggttcaatt ttttgaaggt gttcacagtt gctaacaatg aaatgaatgt 660

gatgaatctt ctatgtaaga aaatgtcaaa tagctatggc cattaggtga ttttggtgat 720

taagtgttat tatggattgg actaatgata tgtgctaaca tataaggttt tagtcatata 780

gatgcaagga ccgacttagg tgagacgatg ttggcgatca tgtgctcaag acctcaagca 840

aatgatcgag gaactaattt gaagatccta gaggacaaac aaaaagttaa atcatcaagt 900

aaaagaattt gggatgcaaa gacaaaaata aacactcacg caacaccaaa gttgtaagga 960

tctagatggc cagaggaggg taaatagcct ataaaaaatt tcttctataa ggcataaatt 1020

gtcggcgcaa agtgtttagt ataaaaagtg tcccaaatag caactacaaa cactagctct 1080

agttcacttc aagcaaaccc cttacactag tctagtagta gttgatttct attctaatca 1140

gtttaccaca agcaactagc tacacaacta agcaaaagag atgaagtaga gagtgactac 1200

aatctagtta ctactaaaca agaacaacta gctaatcttg gctactacta aatacgagag 1260

ctatcactac acaactatac aagcaataag cattacacaa gcaattgaac gaataagata 1320

caagcaataa gcaataatgt cgaaaacaac ctatcaagat tgtcactcta atgtgcactt 1380

tgatgtggca ctagaggtat ccactgagcg ttagctccta aggtcataaa accatgctct 1440

ctagaattaa catatggtgg ccactataat gaccacaatg gaactatctg gtggcttctt 1500

tgagtttttt taccgttgtt gaatgcgcta aacacaagat ctagtgctcc ttttgatcga 1560

aacagggatt tattgcatat gcattatttt tcaacaagaa aatgatcaca attgtaagct 1620

tcgaggtctc tagtgaggca gtgaccccat cagacatctc cagtgagtat agagaaacat 1680

tgaatgaaca acacttctca ccccctacat aggcatgtta acatcaagtg ggtttgtcct 1740

ttgaatacac aaagttgagc atgtttagtc ataattgttg ccttttttctt gaagggatcc 1800

ttgaacaacc tctagaaaac atttttttggg tgatctaaaa ggaaaattat ttggaaacca 1860

cattttagg gataattatg ccaaccatct ttagacttta gaaatacaac atttgagggg 1920

gtgattcaca aacatgggcc catcacaact ttttttacga gacttgcaac aattcaactt 1980

gccataaaaa acaagacact tctattaatc attttgtact agtgatgcaa caacatgatc 2040

taaagtatat ataatctagc t 2061

<210> 3889
<211> 2332
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204028_G1, chr5:196673919..196676250, Cluster 24

<400> 3889
ctctatacca cttcagatag tgaagcttgt tgacaaatta cttttactga taaaattaat 60

agaagagcac atgttacgtt atacacatat acaagataac taatatgaaa tatatatcga 120

attgcctata tatattaata aataagtatt ggtgtttgtt gcattaagaa tttgcaccaa 180

agaaaagtct aatatttcat accatgtgtg taataaaata aaaactccct cttatttcaa 240

atatttcaaa tgtgtcaaga tgttggcgaa tatgaagctc ctacctgcat tatttttgta 300

aacaatcttt aattaagaat gtagtatatc atatgaaaat attttccatg atgaatccaa 360

cataacattg aacacatgtt gtcgatacat gtagcttttc ataaattgat ggtccaaata 420

attggaaagg tttacctaac tagaatccta aaactgatct atttagaaac cgagggatta 480

ataccttata catatatttg agctataaat atatacctta ctagtaacat atattctggt 540

taccgtcatt acccaaagaa aaagtaaaga gtactctcca cagcgttgaa ggttgtgcca 600

ctctacagga ttcctactgt gtaaactcgg caaaagggat cggagcaagt aggtgggaaa 660

aaaaagagca cacgcattgt ccttttttcac ttttaccaat aaagatgttt aatctgaaga 720

tttagctaaa taccatgcat gtcactagct ccatacatta ttatatgata aactagaacc 780

cagtacagtt tagcagattg atgcaccaga agtgaattta aaaactttca aaaatattgt 840

tcagaatttt agtatccaga gtcatattca agtccatctt tcagctatta ctttgacaca 900

tgaaaaatta tcaccaccag tgtaggtaga ttgagcatat aacatggttc gtttgttatt 960

tcaatgagat cgaggacagt gatatattgg aacaatgtca cattttgatc tgataatatt 1020

aactcataat tacaagccca aaattaaaga gttgatagtg ctttattaga tattaggcag 1080

gcaaatactt gtcacttgca gtaataagaa acacacatct gaagcagtaa attttctgat 1140

ggatggagta aaatctatta cacacaaggc tatatatgag cagcaataca cgcatcagat 1200

attaaaaggc gaggtacgta taaacgtaca tattgacgag gttactaaca aagccattaa 1260

ctacacttga tcaatgcaat aagcaaattc gtatgtaaaa aacaaataac aacccctttt 1320

acccttaaa gtgaaggaaa caatgtgatg aggtacatca gtataaaaac gaccaataag 1380

gaacagtatg ccgtagactg tggagtataa gtgtaatata atgtactgac aaagaaatta 1440

atctgtctaa cgtatacatg cacggagtta cagatcgata tttttattaa taagctagct 1500

tggttccaaa aacaggacct ataagcatgt ctacgtttca agggcctagt caaaaaatca 1560

tgacctggag ttttcagctt cctgttttga tgtaggatcc agttttcggt catggtctaa 1620

gcctatacat agggattcta aatttctact aagctatact agtacccgat atagagaaga 1680

acgtaaaaga ggacaggttc tctagaagga aggcatttat ctatctatct ctaaatcaag 1740

ctctagccct actagagaac agtggatcat aaggttgcag ttgcagacat ctatatgcat 1800

gcatgcatag catggagcca tggactgagt ttggactatg gaaagacatt tcatacatgc 1860

tgaacacaac aaagagggat ggtgtgagca ggacctcagt aagttcacat atatatgaga 1920

ggcttccaat ccatcctttg tgaagcaggt tacatcaaca tgaccttccc cttttcacct 1980

taccaaaccc atacatatcc ctcaatcatc ccctcttgcc ccccttccc atcattcagt 2040

aagaacaaag gcacttttct tgcaaggttc agtgcccatc ccttcgtcta agtttccgac 2100

ccattccatt gcaaaaagaa ttgcacccat gccctacagt ttgctaggta gttaggaaaa 2160

tccagccaaa gccggccggc tgagcagatg acgatgagag gccgccggcc ggtacgtacg 2220

tggcttcttt cctcccacac cacgccccag cgcagtactc gcatcgcagg ccggtgcagt 2280

aaaaagggag aaggccggac gagcaggcga gctcagctag cagtagcatc ga 2332

<210> 3890
<211> 1575
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204029_G1, chr5:196681275..196682849, Cluster 24

<400> 3890
acccgtttta ctagtttttt tagttcgatg atccaattga cacaatatat caagtttgag 60

gaccgctact gcattttatt cttttagaat ggaacactga ggagagcgca gttagttgcc 120

aaaacttccg agggatgtat ataacgatga tgggcggcca tcaattttac tgacttattt 180

gtactccgta ctcgttgata aacatacggc tggccagttg tttgttcctc gtattagact 240

agtataatta agttcgttca ctttcaggta gatatatata attccagttt gtgaattgga 300

gttagatact gctaaactgg gctactttgt gccacgttgc aaataaattg ctgatgtata 360

gcacgtactg ggacatcatt attgcccaca ttctcatatc ctgtttaagc tgactgaagg 420

ccagcaaatt ggagctagct agctagcatc aaggcccgtc ttgcattggt ccctgcaggt 480

gactattgaa gggagatcat gtggtttgct tctgcatata tcatgcatat ataagggccg 540

gggcatgctt tacatctctc cagaaatagt gtgatgggcc ggtggatttt gcttctgtac 600

gaaaagatag caaaatcttt tgctttactg taataataac aacattatta ttagaagcta 660

gaggctcaga cgctcagatt caaggagaga tcggtgtatt ttgtcttttg cgctgtcctt 720

agatgcatcg ttcgatagtt ggcctctagt agttacctgt tgctacaatt aatatatctt 780

cagagaaaca gttggtacgt acgtgtagga ataggatgtg tgcgccttat ggcctgtaga 840

ataatacagg aagccaaaat gtatatcttt attgtgtccg tactactggg tccgcactag 900

tagcgagcta gctatatata caacagggtt cgaatcccat gaagataagt ggggcaaatt 960

catcaagcgt agtttagttc tgcataactt tcctactacg tacatatata tacagagaaa 1020

ctacaagtgg gtagcaactt catagttatt gctgatgata gaccctaatt gtctaggaaa 1080

cagtaaacat cggctactat agctacttgg tcattgtata ctgtgaaaga cacatagata 1140

atgataatta attacgtcag tacgtactag tacaataaat taccattatc tatatatatt 1200

ttagtttgaa tatagtattt ttacaatgtt attagacaag tatttgcaaa agctagcacg 1260

ctggtcaagt attagcaaaa gtcactctgt tttacccaaa gtagctaagc tgcagggaca 1320

ttctccctcc cctcgctcgt acttagcttt ttagctgtct tctttttga gatgggtctt 1380

tgtttcctag cattttaatt aaacatgcaa attaaaggtt ttatagtaag ttgaacgcgg 1440

ttgatactag atctatggtg gtggtgggtc tcttttgaag ctctaccgga gacattcgtc 1500

tccaattcct ggggatacat attgtattga tctcatgtga aaatcaagta gtaagcctca 1560

tgcttactaa gcact 1575

<210> 3891
<211> 2057
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204304_G1, chr5:198301540..198303596, Cluster 24

<400> 3891
tagtctagta taaaggttac caataactcg atggagcagg tccaaatcgc ggaccaaacg 60

ggcgagctgc tgggcaaggc gcgcgtctct actctccagg cagttttggc ccctagtttt 120

ctgctgaacg cgaaccatgt ccatgccgaa cccccgcgca caccacgcca gcgggggtgg 180

agacgaaggc ggcgctggcc gcggcaagtg actcggcata agcagcgcag gatcgccgtc 240

gtccatcccc accgcagaat cggtaacgtc tctctcacac actcctcgct atttgcgcat 300

tctagctcgg ctcgatctga cgggccttag gactcgagtc atctactgta ggtgctaatt 360

acttgcgttg cgtttgagag gatcgcaccg aagggcccga aattagggcg aagtgttatt 420

gctatgttgc agcgtactac gtaggggtgt ttggtttgaa taatcaaacc aagatgagta 480

catcataagc tcattactaa aatttggtgg aatgatctta ttcttcgtgt tagtactaat 540

tatgggaatg agatggtgat gcattaactc atttcattat acaaaccgaa caaaaaaaag 600

taaagagtga gaagataatg aactagctcg ttcctaaaac caaactacct atttttggat 660

tgatcaactg aaagataggt ttaactttag ataccatttg acttttgga agaagtcggc 720

ttacttacat gatgaaacag aatttgtaag tgggattcca agggctttct ctagtacgat 780

gaacgcacat gtgatattcg gcaatgttct gtttctgatg gctatctatg cagatacatt 840

gattcagtgc gcgcttgcaa atgcatattg acgttcatac gactcgtgaa ttttgtctgc 900

ttggatcttg aatccagaga tagtggaaat gtggaattat ccacaatgta gcacttccct 960

tccatgcatg ggaacaacta agtctctttt tgtgtgattc aagcacatag gggtttgcat 1020

acataatttt tgcagcgaga cagggattca ataagaatgt acagtcgaat catgttgtga 1080

gatctatgga tcctctaact tgtaaaatac gctccttttt tatttgaatt gcagactggc 1140

gattacaaaa tagtggacaa gagttatatg gtttgagtgc attaatttag aagattcgtc 1200

atgttcaagc actaggagta ttttcaggat gtccggtgcg attgaaatga tgacttcttg 1260

caggtagtgc agagagactg atagttgatg tggcatgaca gctcagtagt tcactgccca 1320

tagacataat gtgataatgc tcatgttttc acacctcact atgacagaac ttggtgcatt 1380

aagactctgt ctggtaagat tctaaatggt agcaactgct tttattcaaa ttactcacat 1440

tacattatcc tgcattccaa tgtactacag aattacaact acctttcaaa taggttcgca 1500

agtgctcagc aatcttgact gttaaataga ttttagtgtc ttagaatgct ctcaaaactc 1560

taaatgccaa taactgtatg gagatctctg aatcatttca cacatacact tctgtccttc 1620

caacttctct tgacaacggt caagtatcct tgattgtaca tggttgagct tgatgttgta 1680

ttttcctcct tggtggttct taccagatgt gttgcacaag gttgaatccc caacacaaat 1740

gataaactga cacttcccct ctttatctag aatcaaattt cgactgtgca tacagttgag 1800

ccaattcata tgcgtgcttg gtgcattgca tgttctgcgc atgcctggtt gataagagct 1860

cggcaagtgt tggaaactat gttgccatac accatatctt tgagtaaagg ataccttgta 1920

ctgtggtatt aagaaactct ggcaattaat ttactttgtc atgtcaaatt tacttttgca 1980

aatggctaat ctatcacgca gctattgatc catcatccat ccacagcact tcttatctgt 2040

tctgaataac cttgtgt 2057

<210> 3892
<211> 2974
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_20568_G1, chr1:117708829..117711802, Cluster 24

<400> 3892
gctttgttga tgaaattgct tcctcggtcg aagggcagta gcttatattg agaagtgaac 60

actaaaaatt cagtcaacaa gacagacagt ttgcttaggt tagtctcttg aaggataaca 120

catgagaaac ttagaaaatt tatacggagt taatatagca cagaacagta ggtgttaata 180

ttgcacaaaa cgaaaatagt aggtgttata tgacaaaaaa atcaacataa aaatcaatca 240

ttaagagaga cagtttttgt cattttgaca agaaaatata atgtccatag ggaaaaatat 300

ggaagacgca tgatatctga aagaacacac cagaaataaa gaggacacat tttctaacct 360

gactaaattt tacaacagag gatccacatg tcccgttgga gctggtcaga caagccagag 420

cggtgtttac acctttttca acctgaacga acgacaacac ttcttcagca aacacagggg 480

cattgtaact gaaaaaacct tttgagcaag ggaagaaatt gcggaacctt tgctgctccc 540

agcgcaagcc gtttcgcgta gtcatcagtc gtgtgctgtt tcgcagtacc tgagactgca 600

tcgtgatgct gggcaatccc catcgcatct tccaagctgg aagtgaacaa tcccaaggag 660

ctcctaccgc ccaccaaaaa ctctatctga cgtgcagcct gtcaggagac acaactttct 720

ccaaggttat tagagaactc aatacatggt ttagaattta gatggaagca tgattcatgc 780

agtgcagcat gtgaatgttt taccaagtag tatccgctgt gtactcgaac atatcgcttg 840

aaagttggac ggctcgtaaa gtacccagtc cagtatgcat tcgttgaatc agcgtagctg 900

cgattaattc attcgatgca tcatggatat tttctttagc atgaacattc catgttgtac 960

ctgtagttcg agaactcacg ggaaatagtc gtcatatttt actggccaag attcattcga 1020

tgcatgctta gcatctgtgt agatagacgg agtagaatac aacgcatgca ctctgccgtc 1080

ctgcagggtt caggaagtta ttattatctt gcttttcaaa cataatttag tagagattcc 1140

aaaaaaaaac tagtgctaaa catgaaaact ctgtcgaaac ttgacacgga aggataaaat 1200

ttgcaatacc ttgttcacat gttggataag tttgtccata ttccggaacc aggattcagc 1260

gtactggtag ttaaaatcat cccccatggt ccacattatg tggtctgtac gtgtaacatt 1320

tgcctgatcc ccaaaacatt tcagaagtgg gttacgtgtt tcagttagaa acacaactac 1380

ttggaaccgc tggtatcgta aacagctgga gatttacctg tgctaaggct gcagcaacaa 1440

aatcatctac acgttcttgg acattgtagt caaaaagtga caggtcatcc tagaaatagt 1500

tgtgcatgat ttaaatgaat gtaaggttgg gtgaaaaaaa aatcactgtg gttcggtagg 1560

atgaaattgg ttatgtatgg atttaattac ctgaacaggt atgatatttt catccaaaac 1620

ttcgaagcca aagccatctg gtgggctata atggacagga aaggcattcg tgaagatctg 1680

cagtttaatt atacaattaa ttacatgagt cgaaaaaaat gtgagagtta ataatgaata 1740

gtatatgatg gtatacaaaa atatttgtaa ggaaaggaca aaagaaacct gtgaagatga 1800

gccgaaagtt cttgagccac gccatataac ctctaggcct ttgtctgctt tccgtgttgc 1860

cctatcttgg taatcaattc ttgcgaaatg tacagaatca aaaccaagct acaagtgcag 1920

taaacaaacg ttacatgcag tgttttcaga gatttatgtc tctattcagt gagcctagga 1980

aacaggaatt tatactacta tagtagtttc ttgaggaact ttaacatcat tgcaaatgtg 2040

atgaccacag tacctctgct ccaagcaaat aagcttgcac tgcagagtga ccaaaaggat 2100

caatttgcca gccagctctt ggagtcttat tgaactgttt cttgatcatc cggtgaccaa 2160

gcgtggtctg atcaatcatg tcaatgtaat gcacggcagc ttcatcgtgc atacaccacc 2220

caccatttct gggaaaaaga tcatcaacaa gatttttttt aaaaaaagta tgatgccaag 2280

atcaaagcgg atagggacaa tcacgttcca tacatgaact ctagctgtcc ggaatcaacc 2340

agtttgtgga ctatgtcctg gattgtgggg cttttctcgg cccaccacct ttggaagaaa 2400

gcctgaaagc aaaaaaagga ctaggtaatt acctgggaaa caacacatac agaaaaaggt 2460

tatttttctg attttgaaaa gaaccatctg gttcgctccc cattttttgca gaaactttgg 2520

ttcggtaaaa aaaaaactgc tgcttttacg cggaatttga cacaaggaga acatgaaaca 2580

ggtatgggca tccatatata ggagcagagt ccacatgcaa catgttgtat cgcttgtaca 2640

tgatagcaac ccatgactta ggtagatatg ggcgtgggcc ctctatttca acttgtcagt 2700

ttgaacatca tccgatcggt acgcaataat ccacacacct tgcattgaaa gttatatttt 2760

gttcagtact agcttcaatg gtaaaatggc gtaggaatac tttgtgcata aaatccattt 2820

atttttatg tgacccgatg tttatattac taaaaaattt gacgaaaata tttgtagtat 2880

tcaaatattt gtagcattca ctaagaggaa cagaggaaag ccgccctaac aagttcagtg 2940

ctccgcgtta ttctagacat gataggctta acaa 2974

<210> 3893
<211> 1515
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205684_G1, chr5:206048132..206049646, Cluster 24

<400> 3893
aaccaccgaa tcggaacaag tatatggcac aaagatttgg caccaccagc catgcatgtc 60

aacatgccgt ttatgtacag gataggatac cagcaccgag gacaacgcaa cagacgaagc 120

catcggatca tgtgagtgag aggatacgta taattaagaa aacagcctgc catgatccag 180

aggatcacag atgctagctc tctctctctc tacctgcaac aacagttcgc ttcttggcag 240

cgtctggccc aaggcaaggg gaatgaatat attatttgtt ccgacaaccg gccaagatct 300

caagctagcg ccgggcttca acggccggaa gatcgctgag aatcgcaaac ggtagggttt 360

atgcgaggtc tccgaggcta ggtaatgttc gcagcgtgcc gaaactaaac atgtgtgcct 420

gaatgtgaaa cacaagaaca aaaccatcat agcctcgacg cgttttgttt tcctcttgtt 480

aaaattaata cgtttatgtc tgttctgctg ctgtacatct gacatctcat cttggatcga 540

caagggaagc aagtaaaatc tgccggatag agccgctcaa tccccggaac caaacacggc 600

gtttgtggga ttactgcaat atattagcat agtgtactac aatggcaatg gcattccgtt 660

aaccctgttt gaactaacat gctattccca taggagtata ggacaaacgg gtaactaaaa 720

ttccctactt ggcaccaaac tagagtataa aatatacaac agcatcttaa cacatagaag 780

acaattgcag cgcgccactg atttttttta ttgtttgtgc cgtaggatct tccatccttt 840

tgaagcataa ctaaaacatg gggcgcccta tcatccacac aaaatttcct aagttacatc 900

catagtttct gcagagcgtt tgaactgagc tctgcacaca cgcacaatta cttgtaacaa 960

taagcacatt actaacacaa aacacaagga aaatgggaat gcaatactga cacaacaatt 1020

agatataaat caaaatgcag taacattaga gtcgcttcat attccatcaa ggcctggaaa 1080

ataattacat agtttgtttc acgcataatt aattcttgag gggcatacca gatcctggtg 1140

caacctttc ccttcttgtg acttgttcat agtatctttt tgccaagcag acatatcaca 1200

ctcagaaaat ttgcctttgt tttatgtgtc tcaacttatt taattttggt ccaatgcaaa 1260

cattattccg gccagtagta agaaaattga cgcgacatga ccataaaata ttgtaaaatt 1320

gcagtcagaa aacagaaatt tgaaaacaaa atagtttgac atactcagtg ggcggcgagg 1380

aagcaataac aacttagtga taaaaataaa attgtcattg cagaataaaa tctgcctgct 1440

aattcacgtg ttaatggatt attgctttca gatgagtaag atggcttact tttactagtt 1500

aatctacctc tgaag 1515

<210> 3894
<211> 1881
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2059_G1, chr1:10822555..10824435, Cluster 24

<400> 3894
ttattcacat gtaaaaccat ggatccaaac tagttataag gggttgtttg tttgaagaat 60

caatctattt ttagatagtc tatcaaattt agtcgaatga actcattcat catattatta 120

ctaattatta gttcatgtag aatgatatga tgatagatca attcaatcta tttcacaaac 180

caaacaagaa agtgggagga ctactccatt ccacatacta aacatttgtg tgacgagcgg 240

aacatttgtg tgtgtccatt tgcaaaaatc acaaggccat atatatttgc gacagagacg 300

aaggtgaata atatccagga cgttttcact tcatttcagt ttgcatcggc cccgggcgcg 360

tttccaaaac atgctcacaa aatatttatc aaggagacat tcagatccga ttggaacgat 420

atatcatccg tatacatttt tacgttagac cattttcaag attcgaattc agcactaccg 480

catgtggttc tctttatatg cccaacttta ttttgaagat atggtgatac tcatccgatc 540

gatcccaatc gatcactcca acagccaaat cgcttcaaga catatatgca gtgctcatct 600

ttatatatat gtatgtcaag ttaatttgca ttcggtaggg tctggaatct agataagtcc 660

gtcatctggt atttgtagat agttttcctg agaatcaaca attatttaga atgggagaaa 720

atttattttt tggcattcat ttttctgaca tgacagatat atgtatgtag tgctgttcat 780

tgtatcatat atctatatag atatatttca ttaacctgta tataaaatat atatattgag 840

cagagggaag catatatgaa aaagagcttg tgtccttctt cactttaaac acgacaatga 900

ttgatgcctt catctcctgt atggtatgat atcgtattaa gtctcctttg atgcatgtgc 960

tattgattag gatgcaaagt gatatcgtcc ttagcttttt cttgtatttt ttgctttcca 1020

tgctgtatac acggtgttaa ttccacaccc ccgcaaaaaa aaaatcaaca acctgtgaat 1080

catgtaccga tttacaaaaa tacactttgt gcaacatgta taaacctatt taattattag 1140

catttctgga aacaagtttc tgccaccact ttagttgaac tgtttctgat tttattttaa 1200

tccactaagg aaaacacaat tggagacttc atccctccac ctaataagac agtatgtaaa 1260

tctaccagtg gtcttgagtc atatacaata cagtcattca tcaagaagtc aaatgaatta 1320

tgtctgcgtt taagtgagta atgactataa ggtccatttt acgctagctt tttgggatta 1380

tattaaaaaa attcaaagaa ttagttttgg atctgttcca caaaacatgg attttttta 1440

caaataatgc acttcaaatt atcaaccatt acaggggtc aggcttttgt ctgccaagcg 1500

gtaaccgtac caaacagccc ctcttcataa tcaatatatc ctagctaatg caagcatgca 1560

actagtacat tttatggatg gcgattcacc cttattactt atgctcaata cgttcaagtg 1620

tatttgtata taatccttac cctaggcaac tatatgtttc tatacatgca acattatcat 1680

ttgacctgct ccatatatat ttacacacgc aagttgaggt tgagacccat ggttctatct 1740

atctcccata taactatgag ctgcttgttc catcctgctg tccatgtaac acgttcagga 1800

ctgacctgtt tttaaaagat ttttttggcc ttaagattat atatgttcat agttacactt 1860

acactagcca caacttttgt t 1881

<210> 3895
<211> 1444
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206383_G1, chr5:209756937..209758380, Cluster 24

<400> 3895
agccctttta accattggct tatcatcaaa gccttgacaa aagaagggta tatagtaatg 60

ttatcgactg taaagtcttc cccaatctgg gcatgtacaa caaaggttta caagttagaa 120

gtagctttat aatacagtgg tcagtaatca aatgaaggtc aaagaaaaca tgtagtatta 180

tgcattacat gaaagtataa taatggaaaa cagagggagg gatttggtca gcttattacc 240

ccatatcatc agctaaaatg caaccagaaa taccatcagc actcagtgac ccagagacac 300

aatcaaacat aaactgaact ccttccctgc attatagaac ataaaaatgt aaaaagatgc 360

atgctaaact aaattataat tattacacaa aggataagct aattagtagt tcaaaaacaa 420

actaattaac ttttcctaag tgacatgctt tcaaaaagga gggtgtaatg tatagcataa 480

ctacttttac aacagagaac aaatcaagtg tgtaagaata ctcaaagtga aaacaacaac 540

ataagagcat aataccttg atggggtcgg aggtaacgca cgagcaagtg gtcaacttcg 600

atagaagcag aattgcaatt ttccttctca cactcatcgc gttgccacaa aatcaatggc 660

tcaataccag gtggaagagg ttcctccttt tctgatgaac tatcagaagc aacaactggt 720

gactgtggaa gatggtgtat aatattaatt gcaaatgtct gtgttgaacc ccacgggaca 780

aatctcttac gagctgaaag gcgtcgagca agctgctcat tactgtcact atatccattt 840

tggcatggag gtttgaatgg cttacgaact attgctgctg catcagaaac tgaaagaata 900

cgtggaatga gtggttgcct ccttacaacc aggttgcccc tgacagaaac caaaaatata 960

tataagtgaa gtcaaagaca atgatgttaa tgtgaagtca gattagttgc caattgtctg 1020

tttcctgagc aaattgtgct actgacttaa accacaaact tctcagccag aaatgcagca 1080

ttgtcagtaa cttaagttaa catttgatct catttttatt tcatatgtac gttgtctcat 1140

aaaattgcag aaactcttag gattacatgc tatctggtag ttaaggtttc ataggttcat 1200

aaaaaattga gaccttattc ataatatttc tgaaaaggtt agataactat aactcgtcac 1260

acgtgtttgg cattcttatt atcatagcac gcatcatgta tagtggacag ggctcaaacc 1320

aattaattga cattcaaggc ttcatacact ggatattgta gaacagattc cttcaggaat 1380

tgaacttatc aaatacttga cgaaatgatc aatcctcaac aggatcaagc catgtaacat 1440

tatt 1444

<210> 3896
<211> 2091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206673_G1, chr5:211295759..211297849, Cluster 24

<400> 3896
tttctataaa gccatagaat gaaacaatcc atatgaaatg ggtgtttcat tcatgtttca 60

ttttattcta tataatatgg aaatcatgaa aacaatgcca taaactcctc attgagattg 120

acctaactaa ctatgagtaa acctaccttc ctacacttta gaaggttttc ttcaaatctc 180

ttatagtttt gctttatcga cttttgtgga aataagagtc attttgtgtt ggtgatgcta 240

aataaatggt agatatcttg taactaaatt ttaagggaag catggtgaat ttttttgtaa 300

ttcttgtgtc atatatggag cattcaacat gcataacatg tctttgacca atacatgtga 360

agcagatttc acggtaaagt taagttctcc taaactccaa aagattagaa tttatgaggc 420

ttggccaatc attgaagtca cacttagttc caccatttat gcgttcatca gtgcaatgaa 480

atctctttta aagcactaca acataatttg gaagtacttg caaagactca taaataataa 540

tgtaatatgg tctattacgc tctcaaatta ttgggagtat tgcgacataa gatggaagta 600

ctcacaacat attatattgg actactgaaa tatatgatgg caacaattga aacaatatat 660

ttgtttggat tctaagcaat tcaacatacg atgtaagtac ttgcaacatg aaactaatac 720

tagttcaaca tggccgaata cataaaagaa atgtcatagt tctcttggtt cccagacagc 780

atgtctcctt atcacaatta tgtgaccata gtgagaaccc catttataat aactagagta 840

tgactagatt aatatactat aattgatgag atgatctgga aaaatcaaca atgcttcttg 900

atgaagtcaa atgtgaagaa ctttttcctt ggtggtagaa gaaagaccca tctgataagg 960

ttcttgggtt cctggcatcg tatcatgcaa tatcaaaatt aaaatagtat gaaatagaaa 1020

tggaacatag catctagaaa ggggaaagga aaaaaatgtt agcacaaaca caagtgggct 1080

caaatgtagg gtccatcttc atctcaatca agactttaga gaaagcaata catgcacaac 1140

attggtggct cctcaatata tattctgagt gatagtgcat ttagacgata gatcaccaac 1200

gtaaccactc caacatggca tatacaaccc ttccctgcat cacaaagcaa aacactacat 1260

caatggtcga tggagcacca ttgcacccgc atggtgccac taacatgtga ccgagaaata 1320

gggagactgg gagataaact aaaacatcaa aagtaattac tcttgatcat aaaactaaac 1380

tactcatatt tttccattac aacatgaaag atgatataat ctccacaata caatctaatg 1440

tatggaacat aaacaaaaaa attgtaacat tcaattgttg aaccatctaa gtttaagctc 1500

atctttgcaa cattatattc aaatttgttg tattgtatca tgtcaaattc tctattttaa 1560

acacccaaat tcaccaaatg aaacattgta tttttgtaga tacatgaata atttaaaaaa 1620

tggaactaca cttactgtat catatgatga tagttaccaa ataaataaaa aatagttaat 1680

tcaaaagcac aaacattgac atgttgtatc attgtacctt tcatcaaaag ataaggtaaa 1740

cagctcctac aacatataaa aatgttatca aaacattttt caaaaatatt tataacttgc 1800

gtggtgataa tttcctcact tttgttggca tttgtcatct ctatgctgcc cttaccacat 1860

gtgtgggcta gaggatcata cacttagtaa cctgattctc aaatcgacgg ggtcaacgaa 1920

ctgaaactta gtacgtggta tgttactaaa acaagatttg aacattatgg gaacaagatt 1980

gtttccatgt tcccagaatg aaacgaatgt tcccgaaaca agtaatgtgg ccaagttcaa 2040

tgttcctgga ttataagatc aaacaccctt tgctatttgc ttcacgtgtg a 2091

<210> 3897
<211> 1421
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207280_G1, chr5:214064517..214065937, Cluster 24

<400> 3897
gctcgcatcc ccgctgagat gaatgaaacg ttagctaagt acaggaacat acgcatataa 60

acgacgacat cagtttttct cttcttaggt tatctcccgc agatttcata ttttaagctt 120

ctgtctacaa acagtgttat ctacaatttc attacataca ctttattggg ggacaatctt 180

atattgtatg tagcattgcg tgtggaacaa tcataaaaga gtgttattta cgtttaaaaa 240

acaaagtact agtacatgat ataatggcag ataggtactt cgatttatgt gtgttgttct 300

gatttgatat agattttaat ttaaatttta tactaaatca cttcaaccca catgtattgc 360

acacggacat gcatacgagt atttaaacaa ggtctagatg ttgtaccatt tgctatgaca 420

atatggcatc tcgtaaagga ctcagagatg tcatatttca tcgacaaata aactagctag 480

aaaccacctt tgcttgagca aggataccat atgcaaatat aataacgcag atcagcacaa 540

tttcatacaa tcgatattgt cgtgcatgca tgcctatttg tgtagaccgg ggtacagaca 600

tacattatca tccattttta tttaatgaga cagtgagaga aattatttat atttaggtca 660

tgtttagata actttagctc taaaaattta gtagagttga cggaccagat ctataggtgc 720

tccagaaaat catgaattta gagttgtaag cctttagaag acatttagat aagtcatttc 780

gtttattatc tagactgaac atatttttaa aactatttaa attgatgtta taaactacag 840

tttcatgtta gagttcaaac ctggagccat ctcaaacacc ccttattcga gtgaaagtgg 900

agtagtttgt tgtttttaga aaaaaacata gtggggtagt gtggttagtg caggctagga 960

tagcggaagc gacgggctgg aaatttgtgt gtgggaggtc tgtttacata actttggtca 1020

ttagcctagt gataactagt aacaatttag ctccatattt ttagaaaaaa aatcaatgac 1080

tcctaaattg ttctagcttc acgagctcta gatccaccaa atttgtagac caccctctca 1140

aaattgtatg ttcagagagt cagtaaaaaa tatacatcac tatcatctgt tccgcgaaca 1200

ttttgggttc gttttttctt ttgtgttgcc ccctatttag catgtatatt aattgagcta 1260

ataccactaa aattagattt ctggaatttg cctaaatgat cacaagtggt taaaatgttt 1320

agacagacta ctcgaattta aatatagtta gtaactcaca cttgtttata gtaccatctt 1380

tgaatttaaa gtttaagttt ctatctttgt atggttttca t 1421

<210> 3898
<211> 1974
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224334_G1, chr6:105336397..105338370, Cluster 24

<400> 3898
atcaattagg cagctatata caacatgata attgataggt ttgcttagtt ctaaaataat 60

agagtagtgt agagagttca acacttcatc aacaaggtag caacacaata gcattattca 120

gtatataaca aaaaaactca ttattagtgc aagtgaacga ctattagtgt aatctattca 180

tcaaacatga agttatctaa atcaaaagaa tgagcagtta tggactgctg atccatgtca 240

gtatcatatg catcatcttc ttctctatca aaggatgaag caggctcaaa ttgatcttca 300

ttccattcat taatatcaat gagcttcatc atcctctttc tacttcttgg ctaaacttct 360

ctcttccttt tcccttgttc tgttgctgac gtgtttgcac cttcaacagc ttcagtgtct 420

tttattgttc agttgatgca actccagcgt tccactcgtt gccattgtct tctaggatat 480

tagcaacata cttctcaatt gggtctctcc atttgttctt ttttggcccg ccatgcaaac 540

tagaagtagc ctacgctatt cagcgctaaa tctacgacat ttcgcgtgca gcgctaaatc 600

agactatagc acttgtagct gacgtaacgt ctgaaagtga aatatcatag ctttagatcc 660

tccaaaacgt tgtagttgga ctgtagcgcg ccactatagc cgctatttta aaccttggct 720

ctatcatccc acctttgctc gactgtggtg atgcattcgt gctataggcg gcctctagtg 780

gtggtgctcg acatcttgtt gaaatgcatc gttggagttt tagttgttga cctagttgag 840

atcccagtta ggtcttttta ggcaagttga ggtgctagct tgttgacttg gtttgactag 900

gttgtgttga tgtagtttat ttgagcttgc agtggtatga catccttggg tattaatgtg 960

cattagcttg tacggaatga gtgaagcact tttttattac gtggtttttg gatccggttt 1020

ttatattaaa aaaagtggat gaacaatttt atatttttca tcatcatata aatattgcgg 1080

cagagatttt ccatctcctc cgcaaaaaaa aaaaaaaaga aatagataga cctgatcctg 1140

aattaaagtg agcagaatgt gattattgcc atgccatgca tgatcactac ggcctcagag 1200

tatctcctga ttgcgaggta ctcagctggc ctttccaaac tgtttgctct ataccaatgc 1260

ttggaagctc acatggctct tgtcccacgc aaaatcatgg gtgtgggcaa gtacgagcta 1320

accggcacat cgacgatcct attccaccca gcttcttcag tctgtccgat agtggcagta 1380

ctcttctctt ctgcatacat tcatctcaca tggcatcccc agttccccac tgcaatttac 1440

cctcgcaaaa gttcgataca atttctttcc cttttatatc atcgttagtg acatagaagc 1500

gattaggcca tgtcatcttt ttacccttct atatcgctag tgatggcatg agggttaaga 1560

aattgtatcc gagtgacata gtggggatta ggacatttgc gatgagaaaa aaaaagggta 1620

gaattttctc ttgttttaat acgtacgtcg ccattccatg accactgtgg tgtacggtga 1680

aatctcgatc gggtgtttcg ttactgcatg gagactcaat atccatggat atggattata 1740

agacactcat tttgacctag ctaggtagag tgcaagtcag cgtagatcga tgggccagac 1800

agacagacac ggcgtttgct ttgcaatgta ctccaaacta aaggaccggt gagacgatca 1860

gaaagaagga tcagacagaa ggatcagaca gaaggtaaat gggaaccaat aaaattttgc 1920

tgtacaacac taaaaatatg cacttcactt caattgaaat aaaacaatat agct 1974

<210> 3899
<211> 2238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226563_G1, chr6:117374479..117376716, Cluster 24

<400> 3899
tgctagctaa gtgaattgta atgtttggtt ggacagttag gaggtatttt ttgcctatgt 60

ttcagagctt atgtcatctg gtcgtctttt tacacatgaa gaatattctt gttgttttac 120

ttttggtttg ccaaacacat attgtacctc caaagaacat atgtgcaagt catacatgtg 180

aatcatagta ttgattggat ttaatttggg tatattggga cttcattttt taggacatga 240

aaggaaatat aaatttcaaa ttggaaattt ttggtgactc agatggaacc ctagccccac 300

ccgagcgccc ctcctgtctc tacctcgagt ctgttctctg ttgccaccca agcacaccac 360

cgaaagttca agcaattggg ggtctcttcc tttggtcttt acataccatg cgaacttagt 420

ccaacatcaa ttaatcacat aaatgttatg catgcaactt cctaagggca tgagtgatta 480

tttccactaa aacgttcatt ttttggatct agagctaaac tccagccaaa ttggtgtatt 540

agctcggtga ttagagacta tctccaaagt ggagctactt cttgttggta gagttggtgc 600

tttggagcta ttttttaaga gttgtagctc tcgtaaatag acttttactt gaggactata 660

taacaatgtg ctgcagccaa gaactattga cattacctca caacttagtg gttggaatct 720

atttcaaatg tactattata gctctctagg aatttggatg ttatagatga gttctttgtc 780

tctactacat gccattcaag catatttatg tccacctcta gatccatgtt gttccttgtt 840

gcatgtcatg tttcttagaa ttaacaaaac ataaaataag cttaagggca cgattggttg 900

gttggatttg gcccaataag gctaacaata tttaagaaca tgttgtttga ttgcctgacc 960

gatgagttgg gtctggctat gctgatgcaa aagaggtgtg cgagccttgc tccgtatatt 1020

tctcacgagc atggcttagg catggccacg agtgtgtaag tagccatgca tgagaaaaga 1080

tagggttact ggttgtttga ccctcccatg actgatgtct agtgttgttg tctctccctc 1140

tcctttgttc actgccctct ggcactagtg agttcatcct tttgctcctc tctcgcttag 1200

tcccatcacc tccctacaat cagtcccctt tcttagcttc aaataatata atctctcctt 1260

tgttcttgca atcaatgttt gatttgtgca tagcatagaa aataggcaac aaatttccct 1320

aatcgtcttc aacctctcat agttttgtat agtattggat gtaaatgtct tgtgaatcag 1380

tggtgttttg tagtggtgtc tagattacag tagttgtttg ggggtcaaaa ggcaattagt 1440

ttttccaaag ttgtcacatt ttctttgtaa aatatgcaca agattatagg cttggttctg 1500

gtttcttata gccattgatg ggttttgctt aacaaatgga attctaccac atgggttgtt 1560

ggtgaataat tgaaaagctg acatgcatta atcaatgtct actcctagct ataatctcta 1620

aaggtatctg gaaaacaagg gaatgtgttt gtgctccaaa gttgtacaag agttcttgat 1680

attgatgatc tgttattcaa aagggtatgt agaggatttt catatgcctg aacaagttga 1740

tttcctctgt ttcggttgac ctgtgattct ccttaagtga gctataaatt atcttaacct 1800

cgcctcatgt agtgaaatga acaacgacat gtgttcttgt ttagtcgaga gtgatttgtt 1860

attgttgtgt actaaagtaa tttagtttgt tgagattttt acatgtgtct caactctcaa 1920

ttcatagttt ttctttattt agtcacttgg aggtaacatc accaaactaa caaacggtga 1980

ccaaacacaa atgagtgtag cattcaaagc cagaaggcta gcactagccc aaacaattca 2040

agccacaata taggcaacca atcacaagca caatgcagac tgatccaaac aatgttacct 2100

aacaaaacat gcttgcctac atacacataa gctagccacg cttgatgtag tgtagtccaa 2160

gtataagtgt gaactgcata gtcatcctcg cctaagtgag caggcgatca tttgaatgac 2220

gaacattttg gaggctct 2238

<210> 3900
<211> 1948
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226613_G1, chr6:117602673..117604620, Cluster 24

<400> 3900
attctaggtt cagtcaaatg gtatccagta atatttatgt ctttgtatta gaaatgaaaa 60

aagcgttcca tgaataatgg gaacaattaa ttcacatcat tgaagatcat atggatatat 120

agatacagga caaacaaatt tatatgcatg ctagaatatc taattaatag tgtgcaagta 180

aacaaaaata tatcgtagaa catcctatac atagtccacg aacaatccaa aatatataat 240

agaatatctc acgagcactg taggaagatt gaaatataga acatgtatgg aacacgaatg 300

ctttggaaag aagtctagaa tatattaagg aacatctaaa aaatgctata aaaacaatca 360

atagaatatc acagaacatt tgatgaatac gcatcagaaa tagtaaaaac caattatatt 420

atatgaggaa taattcagaa aaacatcatg aatactggaa aagcatacag caaagtaaaa 480

acaacgtaaa ctaaactgaa tagctaagta aataaaaaca aattataaag gatagagaaa 540

aactcaacag aaaaaggggg aaaacatgtc atgaaggaaa aaagaaaata acataccaag 600

gatattgtgg acaagctaag atataagtac taagtaaaaa atcaaaagta catcgtaaga 660

catctcatgg atactataca aacagtctag agtacttaca ccatccatca aacatctcaa 720

aaatgttata tgaaaattac aaagacaatt tgatgtttcc gttcttgctc catactttaa 780

tggtggtttc atttttattg tcttaacgtg aatttggaat aaagttgtcg ttaatctcta 840

ctttttcata gtttagatag tctcatattc acgtcaattc atgtgtattg agattgattg 900

ggtataaatt agtttaaatt ataccacaat ccattttaat acatgtggac tgagatggac 960

acgagagtat cgaaaccggg tctttgtttg gatggattaa attttaaaaa taagaaaaag 1020

aaaagacatc cacacaaaac gacaaccatc tctcagtaac aagttttgat cgagcacggg 1080

caccctctcc ctccttcgct cgaccgcacg gctccacggc ctgctccctc gctcaaccgc 1140

gagtgtgagg aggcgcctcg atccggccag cggccatgcg catggccgcc tcaccgtctt 1200

atgccttcgg cgagactttc cttcgcttat attgtctacg catgccacct atattctggc 1260

ttttgcactg gattgcaaat atggaatgga atggaattgc gtccatagat ctcgcctcct 1320

tgtttccgtt ttgcttgcgt gcaaatccaa tatgctgctc gttttctgtc agtgccatgt 1380

ttatctgatt tgggataatt acagtacatg atcaagtcca cacaaggaat ccctctaacg 1440

catcatctgt ttgttcatta gcatcgcctt tgttctcttg aagatgacca ttttctttgt 1500

tggttgttaa ctttaagaac tattcttgtg aggatatgtt atcttgttgg ttgctctccc 1560

atgcagtggt gttgtacgaa ttttgttctt ctgctatgat agaaacattg gtgttttcat 1620

atttgtaaag taccacatgg tcataggctt cattatcgtt ttttgcttcc actacaacgc 1680

tctaatcctg ctggttgcta tctgatggat tagtgttggt ggaattttct tgttctgctg 1740

caggcatgga tcactggagt tttcaaattt gagtaccaag gtttcagaag ttgaattttt 1800

ggcactacaa tgctctcatc attggttttc aattctgccc tctaaatact taggacagat 1860

gttttggctt ccagttcgtc cactttcctc gtccctttat taatttattt ttctttctgc 1920

caaaaaacag gcttgatagg taatccat 1948

<210> 3901
<211> 1513
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228499_G1, chr6:127764041..127765553, Cluster 24

<400> 3901
taattgtatt cgaaccttaa cttatgagtt caattgagtt ttaactgtat tctatctaaa 60

tttggttaga actaaaatac tttgttattg atattgtaag tttcttatat gacttaggac 120

ctatatgttt tcccttgtta aagtttagca ctacattttt ttttgttaaa atttaactac 180

taaagaaata aacaggatgg ctaaacgtgt tgtgctaaag tttagtatcc attagcactt 240

tagctccacc aaacatgcta aactgtgata aaagtggtcc ctcaatctta ttgctctctc 300

cactagtatt taggtcgata catatgaatt tatgtgactc atgtatcaag gtaaatacag 360

aattctgctt tccctctact cccacagacg gtagcttctg ctgccatggg gtaaagacgt 420

cgtgtactta ttgacgctag cttccacgtt aattaggaat aatatgctaa ggtttagcag 480

ttacatccac acttccctca agtgctaacc cttagcaggt gctaaacttt aacaagtatt 540

tagtattatg taaacaaaca ggcccttacg agatactcgg agctcagttc tctgagtctg 600

tggtgctgca gacgctgata acatagaaaa tcgttatgcc gaacattaac aagaaacaca 660

gatgactgaa gagtcagact atatatactc acatatcccc atcgatgcca cacatgacgt 720

ctcaagcatg catttttca gttctgccgc aactaaccga caaatacaga tgatttcacc 780

aaacattaac aagaaacaca ggtcagagtt agtggcaacg caacgcaaca aaatttcgtg 840

cccaacaaaa tctgacgggt accaaattgg catccagtat ctgttgacaa actgtacatg 900

agcaactccg tttaataaaa aaaggtaaaa cagttccgtt tatgaagacc agttcctcgg 960

gcgttgagtc tgaatccaca gtaaggctag ctatgagcaa cagggacaca gggttgattt 1020

tatattcttt aatacccaag gtgaaggcgt tcgaactgaa atttcggcac ttgtgacttt 1080

atttgtgaag gtacaaatga gagcttagtt gttctaggag tccgatgggt tcagactaat 1140

agcttaagaa gagggtgaca acatttctca tgttgtctct aggcatggaa aggaaaaaaa 1200

aaggcaggca tacaatgact cacttacgga gaaaaggaac ttcagatatg agtacataaa 1260

gtagctagtt aaggcttgtg agatgaaggc tcacacaagt tagaagacaa tgaacttgac 1320

cgaactggat tatgtcgtcc gtgatgagat tgctaatcag ctgcagatag ctagtaatcg 1380

acaacaatgc taatgaagtt aagacaacga caaacgctac tatgacacgc atctgcgtat 1440

tcaaaaacag tattgcgatg tttttgtcgc actgaaaacc taaaactggg agctcagctg 1500

gctacgctca cta 1513

<210> 3902
<211> 3109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230421_G1, chr6:135992102..135995210, Cluster 24

<400> 3902
gatgtgaaga gcaaaacgat tagggcaaga tctaattgca catgttgatc aggatcccac 60

ggctgacacg gtctccctct cctccctctc ctcatgtttc tccttccttg cgatgatccc 120

taccattaga cctcttgttg agttgatcta ctccatgtat gatatcaccg taaaaaacaa 180

agaagagaaa atacatagaa cagatgagtc aattctagca cagataggct tatctaaaat 240

agagttagat gagttgtgct aggagttaat atgtttgtta caatatgtgg agttcggttg 300

ctatatttac acaaattatt ctcaaaagaa cagaacaacc atacacacac atatatatat 360

atatatataa catgcaaaat acatattcca aaactcaaaa gacttgtgat gatatgaggg 420

aatcttcggg tattggaaga cttgttgttt gtttcttcgt tgatccggag ggatcctttc 480

taaaacctat agatgaaata taaaaatcat taatgagttg ttctatgcac cttcatgcat 540

ggagtgagtt gtgtttgtat ccttttcttc acatattaca aaaaaaatag cgagttattt 600

ctatatattt ttgcttattg agtgatttct actgagtgtt atgtgtttgc atccttttg 660

gttacagatg aagatatatg aagaattcta gacagaatca taaattgaat ttttcaccct 720

tcccagttga ttctattcaa cattacttaa taattgtatt cccttcattt cggagttgtt 780

tttttaataa aaaggccatt aattgtaatg gaaaatatat tgtcctagga atggctgaaa 840

atatgggtaa agttctataa tgatgatgtc atcggtgttg tcaacattgg gccttttaa 900

aaaaataacg tacgaaagtc agtggataat atagttcagt tatttgtgag gaaataataa 960

gtatgattag tgttgtcgta ttttgttagt tgacattacc tctcctagca agtctatttt 1020

gtttaatcaa cactctttag gttctctgtg cttctgcaac acttgttgga actggtgtat 1080

ctaaagtcaa agagtttgga aagagaggtc atatgtcggt gttaatatct caatattttg 1140

tgccttttct gttgtaaacg tctacaataa gaacgtattg cgcttccttt tccttacggg 1200

tgtgttgcta ctggttgatg catttgttga tgagggattc attgttctaa tgatgttctc 1260

ataacctgtt tttaaatgac cttcagttaa ttagttagtg gataggccaa gggaaacaaa 1320

gagagggaga agtatacttc acttcatggt tagttattca tcacgaagga gagagagaat 1380

agatggtttt gttaggcaca cacatcacac atgtgcatat tatacatgca tatatgtgca 1440

taagatgtat ttatgaatgt atgtgcccac aaaggaggtt aatcatctat gcttgtatag 1500

ttaatgtaga aatatacatg aatatgtgtg aatgttataa gtttttttta aaaatagttg 1560

ggtatcacat cacagtaaac tatagcaggg tatttttaa agaaagctaa acattcacat 1620

gtacaattgt ttttttctat gtgcatatgg taagtcgtat atggcagcat gttatattat 1680

ttagtctatg tatgtgtaca tctattataa acatgtatgt gtacatgtgt gcaaatgtaa 1740

attaccactt tgtgcatctc ttatgtttgt gtgtgtggat atgtatgtat gcaaaacttt 1800

atgtttgtgt aataaaacat aagtgttgca ttctagtttt caatctttaa ttgaatggca 1860

catttgaaaa gcataaagat gagtgtgttg tcataaactg gaaagtcata cctgatctag 1920

taggaactcc atcacgttaa aaggaatttt gtgatagttc caagcatgtg ggcaacttgt 1980

aatatttagg aataaactgg tcaaaatttg ttgtagccat gttaaggaat tttttgagaa 2040

aaaaggctaa aaaaagtaac actatgtatg tatcacacat atgtggtaaa acaaagtata 2100

ttttttaatg catcactgat gtttttgtgt gtagatatat atgtatgcaa aaaattatat 2160

ttgtgtgagg acatgtatgt atgcaaacat gtacacaaca gcatgcatgg atacacacta 2220

cgcaaaaaac tatatttatg tgtgaggata tgtatgtatg caaacatgta cacaacagca 2280

tgcatagata cacacctgtg taaaaaaaca tgtgttggat ttctattttt taattaaacg 2340

gtacatttga aaaccataaa gttgtgtgca ttcccgcaaa ttggatagcc atatctaggg 2400

ctagatatcg agctgacttg ttaagctaac gaatttgtaa tggttccaag cattgggggc 2460

aacttgtatt atttaagagt aaccagatta atttttttgt atcacataaa cgtagtaaaa 2520

caaagtactt tttttataat catacttggt ctggtattca attgattagt ggataggcaa 2580

agggaaatat agagagggag aagtagactt cacttgatga ttggccattc ataatgaaag 2640

cgagatagaa tagatggttt tgttgcatga atagcgcgca cacacatgtg tgcgtattat 2700

acatgcctat atgtgcatag gatgcattta tgtacgtata tatgcacgga tgaggttaat 2760

catctatatg cttgcatagt taatataatg tagcatcata catgaataca tgtgaatgtt 2820

attatagttt ttaaaaatag tggggtatca catcacagta aaatataact gagtattttt 2880

ttaaagaaag ctaaacattc acatttctat gtgcacatag taagttgtat atggcagcat 2940

gttatattat atagtctatg tacgagtaca tctattacaa acatgtgtgc gttatgtgtg 3000

catatgtttt ttaatgtaca ttatatgaac actcatgtta cattatcaca tgagtttggt 3060

tgttcggttg gcagctacgg ctgaaagcta ttagtaatgc tgcatcctg 3109

<210> 3903
<211> 3404
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234266_G1, chr6:153837706..153841109, Cluster 24

<400> 3903
cctgctagcc gctgaccaac caaaaggtaa ctcaacttgt ttatcatttc tctgaggtat 60

tagcgttttt ctagtatagt ctgagagtta cttgatgttt tgtatttcct gacattgagg 120

tcttgtgtaa tgccaagacc atcacattag atattaaata caataatctc atggtgaagt 180

ttgctcaaca tttgttgtcc aagcttgacc tttctaaagt tcggtgtcca ttggaaaaag 240

caataccttt tgtcgctgac ctccacaagc ttcactaggt acgcacttga tgtctttatc 300

taccttgttg agtgtattgt ctaacacctt atttggtagg aaatttttta agagtcggaa 360

gaaaaatcca tctgcttatg ttgtcgcata agaaacttca aactcttgag gtcattcggt 420

aggacctagg gcaagaaagg agagccaaca ttactaactt cattcaaacg ctatgtgacc 480

agcttaggac cctctcagct aagctcaaaa gtatcactag gcatttttac tcgcatattc 540

catattacat ttttcattta aacactatgt gaccagctta cagtttactc tcatattcca 600

tattacattt ttattttcat aatcatttgg cattactctg tagcttataa atccactgtc 660

ctggcgtcaa tcacaattta gggtctataa gtagagcagg ctaagatgaa ggaaaagatc 720

accgacttga agcatattcc aggggacttc aagaagaccg tggatggtga aaaggtgtcc 780

aatgaggtgt tgacaaaaaa gcttgattcc atgtctgaaa aaatgaactt agcatcccaa 840

gcttggggtc agccctcgcc gataggtaga gtaaacatta tgttgtccca ttctcgaata 900

gctctgtatg tcgatcatgg ccatagtcca tagtgttttg cagaaattca taaatttcct 960

tttcttcaga ttcttttgct aaggtcgaca atgaaccatg tatatggttc taattattca 1020

tagggctcca gtaacctcta aagacaagct agtctttaca acaagatcaa ggaaatctat 1080

cgggctcaca tggaggaagt cagtgcccta actctaggca ttaccacatc tcattatttg 1140

aggatgaaat tgtccaagat tcaagaaggg tttccaacca acttccctaa ggaaaagatt 1200

gaatacatat agaaggatgt caagtcgatt gctactaagt tcatgtcttc gctaggcatt 1260

agcttgtagt tatattgtga tataaatatt gaagaacact gaccaactct ctgtaatata 1320

tagtattttt atatgggcct agtcgtagag attatgttgc tttcgatgtg caagggtaac 1380

tttgtggttg aactttcgtg ttgaattgaa tgttatgtta attataacta agcttatttt 1440

aattctttca agatgcataa gtgttaagtt ttgtgttttt aagtgaactc tttatgtgtc 1500

tttggataca acattgagtt tttattagat tattgtaaag gtgatagcat tgcgtttggc 1560

aaaactaaaa attccatcat cacattattg accttagtaa gacttctcgg tctagtgagt 1620

ggctttattt ttatgatgaa tgataattac caatttggtt gatttactta tttcctttgc 1680

agttagcgag atagaatact cctattgcta tgtttgaaga gtttcttcat gttaaagtca 1740

acatgatctt ggaaagtttc attattgatt tgattaacaa gattgttggt cttgtaattc 1800

tagtggatga ttaattgtgt tgtaacgtat ttattaatag aatctatttt agagttggtg 1860

acatcatgtt gtatgttgtt tgtgatgtca aatgtaaaac ttgtctggtg gcagtaaagt 1920

caagtcttca tgagcttgaa tgatgtattt tgttttgatg agcattgcaa aaaggtcagt 1980

atttttaata ttagtgatta tgagtttagt ttatatctca cttgtggcct ttagttccat 2040

ttgttgtaaa atgttttgcc tctcttttta gcgaaggtat cgcaccgact tctgttagaa 2100

tatcgtccct ccttttttag ctgagccaat gcattgtttt cacttagaaa ccttttttcat 2160

cttttgtgaa aacatcatcc ctctattttt tagcgaaggg ggcatattgg cttcacttag 2220

aaaccttgtt tcacttattg ggactatgtt gtacctcact ttttagcaaa gttgacatgt 2280

tggttttgct tagaaacctt gttttacttt ttgggaaata tttccttttc gatttagaca 2340

aattatcatt aatctttaag gttattgtta actattttgt ttttaaattc atcaataact 2400

tagtatgctt ttggttcgta actttaccga aggctccatg gaatattaag aacatttatg 2460

tttgttttct tttatgttct aaaggtctat ctgccaaagc cccaaaggtt gccacctgct 2520

tttcaccaaa gctttgtctg aaggaaagga tgtattagtg gtgctatcca aaagacttca 2580

tagtttattt tcacaataaa gtttccaagc atatacttac attagtgatg actctataag 2640

ttagtaaggg aaatgtgtaa tgtgtataat ggttgagtag ctccttagat tgatttttat 2700

agttattttg ctcctcagag ttatgcttgc ttctcaatgt atatatttgc tccttagatc 2760

tttgctttct acttattata gatctttgct cctcattgct tctctttctg cttattacaa 2820

atctttgttc cttagagctt tgatttgtac gttttgatat ctttgctttt tagttattta 2880

tacctttgct ttcttcttat tgtagatctt tgctccttag agttttttc tttttctaat 2940

tgcatatctt tgctccttag atatttgctt tctgcttatt atagatcttt gtttctctca 3000

attattgtgc aaatgtcatt ccttcatgtt agcgaaggta ggatgtatgc ttcgctagaa 3060

gctttggttc acttattatg aaattgtcgt ttcttcacct tggtgaaggt aacacatgtg 3120

ctatgcttat aagctttggg tcacctattg taaaaattac attacttcat cttagtgaag 3180

gtaatgcgta agaatcttta ggaaccttgt ttcacttgtt gtgaaaacat cattccttca 3240

ctttttagca aagttaacat gtatgattct ctttgaaact tcggttcact tattgtgaaa 3300

aaagtgtatg ctttcttttt ggggttttag atagtttagc agtaatcttt gttgtaacaa 3360

aggttatctg tatctattat tgttttctat ttttgttgat aatt 3404

<210> 3904
<211> 1756
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235935_G1, chr6:162146470..162148225, Cluster 24

<400> 3904
cttataagta acaataccac acattcaatc ccacaggttg tacaaaacat cgttggttat 60

ctaatgaatc atgtttaagg acgtgtttgg atagcaatga taagcatcac aatccttgtc 120

cgtcttcaag acggctagca agagacctgc caagctggta tgggaagagg gtattattag 180

catcaaaatc tttttgggtg ttttcatacc tataaaaata tctcttaata ttttttccca 240

acatagagtc ccaagatgaa agattattag agagaaaaaa tgcagtatgc aattaaagag 300

gacatgtagt tcattacatg tgcgtggtga agttatccag agtttgttag cattgaagct 360

acaactaata tgactagatt gtgccaaagg tgttggtggt agatagaaat actggtgaat 420

tcatagcaag aatataaata tgtaaaataa gatttgttgt caacacatta gatacgtggt 480

ggcaaaagaa atatttgaaa acttgtagtc ctcgatagta tttagtatta ccagtttatt 540

ttagcaaaat gaatttcgat gatgtgcaaa atacccatag gaaaaataat gtcatagcct 600

tattttcctt atagtgagca tgaaatgaca acaaagtgtt gatgctaaca tataagattt 660

tgtgatggtg ggaaagtaaa agactcgata gaagtattgt attgcttaac taataaaaaa 720

ggttgtataa catgcacaat agtcatgtat agcaaaaata tgataatttt atttttttt 780

ccctaataat gtgcattctt gtgatacgat gaataagtgg atagttctag ctacaaggtc 840

aatcgaccac tcataaacaa atgacgctca ttatctaata gcgtctgtta acgatgtgtt 900

tggatagcaa tgatagagaa cagaaatctc tttctttttc atgatggcta gcaagagagt 960

gttggtatta aaatcctttt ggatattcct ggaaaactat ctagatagac ttaaagaaat 1020

atatcttccc ttaatgtctt ttcaacacta cgactcatcg tcaggcatcg aagcaaaaaa 1080

acacatgcaa ggtgcagcca aagaggatag tacacataat tctagttcaa tgaatatgca 1140

tagaaaaaac ttatgtagag cttgtcagac atcaaggcgt agatatccga gcaccataaa 1200

tgtgtatcaa aggtgttggt tgtagatttt tttattggac gtgttggttg tagatatgaa 1260

tgtgtaggtg cattaacaga aaggatagaa atctataaaa taagtattgt tgggcatata 1320

tcagaagaac tcttagagca atatatcttg tttttcaatt aagtcccagt atgagttgtt 1380

taagaaaaaa ccatgaaaga tcaagacaaa atagattact aggacatttg gtacttcaat 1440

caatgcgcat gacaaactta tgtagagttt ttttggcatc ggagccacac taacaaagac 1500

accataaaag tgcaccaaag gcgtttttag atgggacaat agatgttttt aggtttatgc 1560

tgtggaaggg cagatgatat ttaggtttgt cgttttgttt cactaaaagg ggtttttgtg 1620

acatccaaaa tattcatagg aaaagtaatg tcctagttat attttgctta tatggagcat 1680

aaaacgctaa aataaatttt aagtaataac actacacatt caatcccata ggttctacaa 1740

aacattactt gttata 1756

<210> 3905
<211> 1497
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240729_G1, chr7:19356467..19357963, Cluster 24

<400> 3905
tcttacatag tcatatggat gttttcagcg tgttgcaagt tcccacctag cttgttagta 60

taaacccaag tccaaagggt gactatccaa cctttcaccg cacttggcac ctgacggtct 120

ataccctgga ccccctacac catgtcgagt aagcatccac tcatccaaga tcttaagtct 180

actttggcca agcatagagc acactaaaat cttggtgttt actcgacgag ccattcctta 240

tggtgaggta ctttgcatat ggctactcta tgcacaagcc tccattccat gttgctaaaa 300

agaaagattt aattatcatt gttgcatata agagataatc aagattaatt ataaccatca 360

ttaatatatt attattaaag gtagagtact aacaaaagac taacatatca atcgaaggtt 420

ttgtataaag gtaaaacttg gttagtcatc cttagtagga gtgaccaaaa ttaatgcact 480

acaataactg aattcaattt atgggtctgc tcaaatacta attgccttgc tcctcaaaag 540

cagggtcttg tccttcccaa gattgctctt tgtccgacac gttccactcg tcgcctatac 600

gttacacaca tcaagcaata agaacaagag aggacaaaac aatacaccaa acataaatga 660

caaagattca aaagaaattt aaaaacaatc taggatttgc gacatggtta caacaagatt 720

gtcgagaatg gaattaaaac aaaacataca tactgatttg aagaagacca cacagtgcac 780

acacagatta aattaatcgg tttttaaggt ggtgtcttta gttttgttgg tgtcctcatt 840

tttacactta gtcgtgtttt ttttgctttg ttttgtcctt ccagtactat atagtagaag 900

ggcaaaacta agaaaaaaat tcaactaagg gtaaaaatga gaaaaatggc aaaactaagg 960

gtatgaattt aaatagccca ttaatccata gaactaagat tgagggcaga taaagatcta 1020

aacaaatata caaaagttga tgggaaagaa gcaaagcaaa tataatttct ttccggttgc 1080

ataaagttta ttggttcatt aaatagatga ggtagcagtg gaaaaggaaa ggaaataaga 1140

tgtgcataga aatatatttt ctcctgtatg ccactgtttt ctttacccgc atggcactct 1200

acgcagatag gttggcacca agggagggaa gaggaacaca tgtggctgga aaaaaattgg 1260

cgtgcgacga cagcatgact gacggtttgt ttcagcttac agattatata atataaaata 1320

cataagatta aataatctaa attatataat ttatatttaa tagctaccta gcatattgaa 1380

actttgatta gttatgtgtt acgtgcgtcg tgggagcaaa gaaaaataga taaatatttt 1440

tggtcaagag tgacaatggt ggataatttc tcttgaaggt gccatgaata gtgggtt 1497

<210> 3906
<211> 1970
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_241284_G1, chr7:22000402..22002371, Cluster 24

<400> 3906
gcccatgaat tttgttttta tctttcttct ttactgtttt gagcgcttga tcatcatttg 60

tgattgccat catcacctcc atgagtgtca cccttgctca accttagtgt gggtttaacc 120

tgtcctaatc acaacactag agtagaggtt agtccactag ttgtctaaac tactaaaacc 180

aaatataaat cttttgactt gtgatagtga ttgcctttct tgtagctcaa caccccttta 240

tatagtgttt aggggacatg tagatacttt taggatatgg agggaagttg gtggatcact 300

aggggtgtcg accgacccag ggggcatcaa ccaactcttt gttccactcc atcccatggc 360

tatggagtgg ctcctagagg aggtcaatcc tatcctaagg cagttggagg gtcgatgtag 420

ctcttttggt gtatgatagt gggccatcaa tttaagtgaa gctcatctga agcccttgga 480

gcaaaccatc atcaaaccaa catgccaaga tgcttcaagg tgtgtttatt cactctccct 540

caaattagtg gcatgaaaaa ggcttagggg gcatcaacaa atgtctaggt ggcgatggtc 600

tcaactaaac tgagttcccc tagacgcctt accacatcca cacctgctta gctatgtgtt 660

agttgaaaat gagaaaaatg acacatgaat aacatgtttt atatttacca ttaagaatag 720

ttaagaataa tcatcttaga taacatgctc ccatgaatag aatttttgt atgtcccata 780

aaaattgaag ctaaagttgg tgcactttag gtatgaagat tgaagttctc atttacagta 840

tgtttcagcc attaatatgc atctaatcgt ggggaaggtg tcatggttca tttgtggatt 900

gaccaatggg tgcacaactt ctcctttgaa cacttgacat tgtgtttgtt tagtgcaatc 960

ctcatttcct ccaatcaaag tccattattg aagccctcaa ttttcaacct tgggttctta 1020

acattagagg cacattgatg ggttaatttt ttgtcaagta caacatcatt tgtgagcctt 1080

aaaaatgtag attcacatgc taaagtttga ataaatttga ttggttgtgt tggtcaagtg 1140

atggcaacta ctcaactata ctaatcgagc cttctttgtt ggtgatgttg gttttgcaag 1200

cagagaactt tggaaagcaa ggatgctacc aaaaatgaag ttattttaaa ttgctcctta 1260

aacatattct tgtcagcttc atcatcatag ggttatttaa actacgacct agcatgatgt 1320

ttacgaccat ccaatgtttt atttcacaag tagatcacca tttgtttttt gtaatagaca 1380

tatacttgta acttggtctg gttcttcata actaggtgtc ttctcactag ttgatattgt 1440

attttcccct catcttaatg aaaaaaatgc atgccaagga atgcttgtgg aaatcccaat 1500

aagcatgacg tgatgctcta agtgtccatg caagaataac atagagctta acaacaaaat 1560

ggaagggtta tgtaattgaa aagggtaagc taacatattt actcgttatg tcccaaaata 1620

tttgaaatat aaggtatgaa aacattcata atttatttca aattataagg tattctaggt 1680

gaactaactc tttcaaaaca acaattacat gtgtatatac cataaatgtt gaccatatag 1740

cttaaaatat ggtaagcaca atatttctat aggtaagtaa gatctatatg tgtcatttgg 1800

tttacctaat aagttgtctt agaatcttat tataccttat attctaggat ggaggggtta 1860

tctataataa gtttaaatat gcgatgaagg attgctgcct aatcaacacc actctaacat 1920

gatgtgtaac tatgtcttgt tttaggaaaa gggagtaaaa aaggatacat 1970

<210> 3907
<211> 2619
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_243398_G1, chr7:35096958..35099576, Cluster 24

<400> 3907
ttgcaaggtc tgttctctct ttctgcacaa tataggcccg tgtgtgtttg catgaatctg 60

ttgctcaatt aattatcctc gacttgcaag accttcgatt tccattatcg cgttgtgcag 120

taatcttcac tcagcttttt tggtttgcct ttgtaccaaa aaaacatgtt ttagagatag 180

cctactaaaa tctaaatata ttagatcatt tttcggtctg tatggttaat gactcattca 240

atatgaaaac tacatacttt gtgtgcagga cttaccatag ttgacaacat tatatttcac 300

atagtttatg ttagtgtttg gaatagagca caaattattt taaaagtttg gaaacttgtt 360

tgaacaacta ttacatttaa acaatgtcaa cttatgtgat atatagaaat cgtaggtcaa 420

cttattgtaa aagtaattct gtttatttt aaaaatgttt attgatggca tgttattgta 480

actagaaaac ttttttcatt gcattgcatg tttatttcag tttatcaaaa acagagccct 540

tttttatcac accaataaaa aataaaggta gtccagtcca gtcaattgtg tttatcatat 600

caagaaaaca ttttttcatt gtcatgtaaa aaatataaaa taattatatt tatttttgtt 660

gtgttcattc ttaaactaca atttagtagt tcgaccccaa tgctcatgcc ttaattgcat 720

ttttttcatt tttactttcg ctcaattttg tgcagcagta ttctttagta aaagacgaag 780

gaagagtttg ctctgctaat aaattgatga cttattatta gccatctgtc tgtacaggtc 840

ataatcgaag ggtttaagag ctacaaggtg gagatcaaat agtgtccttc agtcccaaag 900

ttaacatcgt tggtaaaccc cttctgtcgt tacctcacaa atatcactta agtcataggg 960

tggttagttt tcacgtcttc tgcttgactg cttcctaatt gatgcacaga taacagccaa 1020

cctctatcta gagatttatg atgagctgtg gttgcatttt tatcaattta tgattgaatt 1080

tttttacggg tgctaggatt tatgttgtca aggggctatt gttttgcgag acaactttca 1140

tagttggtgg gtagaaacag tattttatat ttagcataaa ccaatcacat tatcttagat 1200

ccaaatgaag ttatgctaca atcttccatg ccatatgtac cattatcaga ctgcttccgc 1260

tcaatgctat gtgcaatatc ttctgtcctt tcttatgtat gattgttttt tatgaaaaca 1320

atgtgtgcaa tatcttagcc tttttatgta tgcatgatta tgaaagaagt tttgtatata 1380

gtttgcaagc agcaatttag tcacaatttc atactcgagg tgttctcatt acatatagtt 1440

gttaaaagtc aaactcttgc tactggccga gggctgcaaa cttttaaaac cggactacaa 1500

ggtagtgtct atattgttaa gctgaggaca ccgaaatgat tgcaagtaag tgtgtactat 1560

atagcaagta cttaaattca ttatgtattg ttggcatatt gtgtcctgac gaaggaaaac 1620

aagttataac agttcttcct aaaatttctt ggatttcttg tctatcaact gttactattc 1680

gtgataatga tacttatttg tcattccaat ctgcattccc tagtttgatt aaagccaaaa 1740

aatttaaatg agaaaacatt gaacgcttat tttactttct acacacgtga tgaataagca 1800

catactgaat tttcgttctc atacactaaa tttattttga attgtccagt gctgaaagtc 1860

gctaccatga agcgtgcagg agtactttct tgtttaacta agtggatctg tattaggaat 1920

attgctcagt ggatagatca ttgtgttcac acatttattg caaaatttaa catggttttt 1980

tcattgtgat tggttgattg gtttcatgtg ggttattcct tccaggttag gttctgctat 2040

taggttctac aagtcggtca tgtttcgtgt atgtatttta attgttgaat aagtaaatac 2100

caaatagtaa acgatgattc ctctgatctt tcaataatag cgtagaacct acacctttca 2160

gaccatttcc ttgataggtt tatatttttt ggcctaaaaa tgatgcagct tccgtctaga 2220

aattttgtgt tgattttctg tcatatttgt ttacatttac tggttaccca gttccttgat 2280

aggtttacat tttctttgtc aaggcgctta gcccagttcc ttgataggtt tacatttact 2340

ggttggtgtg ctatgtaact gatcacttaa tgttcaccta gaaactggtt taattgtttt 2400

gtgttgagtg ttactgcatt cattatcata ggctcaagta acctatttct atttgggtgg 2460

cacacaataa atcagacttg ttccattttt acttcggaag tcattgtatg atgtttcaga 2520

agaaaagtga aaattgtaga gcttcaaaat tgtacaattt tttagcatta taagaaacaa 2580

agattcaatt tttttgcacc tatcgttatc ctaataatt 2619

<210> 3908
<211> 1707
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_25653_G1, chr1:155639451..155641157, Cluster 24

<400> 3908
attttgtcgc ttgtgaatgt gtacatgttt ggcagctagc ttcctgcatt atatattggc 60

atcgtgctgc tttttttcc cccctcccat cttccggtcg taggctctgg attgttctac 120

atgaacgaac tgtacaggga tttgtttctg cgttaaaaat aaagtgaaga cgagagtggt 180

ttaaacctag ccctgatccc acatcgattc gcgggcgttg tcactgtcgt cgtctcgtcg 240

atcggagtcg tcgtagcacc ccgcgcgcgc tactagccta ctagtacaaa cagttccgtt 300

gaatgcggca tgcaggcttc cagtaccaat tggacatact agctatagtc catgtcgaag 360

cttccttcag gtattagagc atcactaata gactctatat tttggaaaac aacaccccat 420

ctatattttg catgctttta ttgcttacac catatataga tacaccaaat tactcccatt 480

catttcgcat cccattttta tctcttctgt ccataagaaa aacataaata gataaacgag 540

tgttatttcc taataaagac tgtcttaaag tagtgctgtt ttgtagattc tcccccggat 600

ttgtatgcac acaaaacatt tgttttgaga attgttgtct ggagcgttca ataactccaa 660

ccgcgcgcgt ggatcgtggt aaccagtaac cttacggtgc tgacggaagc taagtttggg 720

catgcctatg ctaatagcta gcagtagtat ggattactct tatcatgtgg attaatcaat 780

ttctttggtg ccacctcgca atcacacgac gatcttttac ggtcgtgaaa taatattcta 840

cgcggcagta gcagccgcct cccgtgtcgg cactcggcgc ctaaagtttg cagccgaacg 900

ctttgggcac acggacaaaa gcagtggcca tcgatctgac ccttttttctt ggaggtgcac 960

gtacctctcg acccctaccg ccttctaaca gcttcaataa catatttctc tccaattcac 1020

agaccgtaca caattaagat tcaataaata aactatataa acacacatgt catctcaaca 1080

tggtaacatg gaaggtgtag ggagccgagg atcgcttggg aagtggcggg agaaggtgac 1140

cggcgcaaag aaaagaaaac aaaaaaaaat attgtttgca tccgagcgtt ttgcgtacgg 1200

acaaaagagt tgccatcaca gcatgaccct ttttcttgga aaaggcgcag gtacgtatcc 1260

tctcgacccc tgccgtgcca tctcggaagc tcagcgtctt ctcgacacgc tcacgccgat 1320

cgccgcgcac ttggaacagg gaagcgaaaa ggctagcatg ttcgtccttt agtatactgt 1380

atacacatat atgtttagtg atatcctttc gcgcccaatt gtagcgctat tctctagcaa 1440

atatagaact ttcgaccagt ttttagctct agcgtgagct accattctct acctttttaat 1500

ttataattca tttaaatttt ttattctaaa tttgatcaac tttttttatt caaaacaaat 1560

tataattatt attagttttt attgtaatat catttaacat acaatatatt taaagtataa 1620

atttattttt ttcatttttt cgaaaaattg agtaagatga gcaaacttgg taaaataaat 1680

taaataaatt ataaattagg acggagt 1707

<210> 3909
<211> 2074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262218_G1, chr7:152809744..152811817, Cluster 24

<400> 3909
atcagaattt aagaccgaaa gaagagacaa aatgagggta gagtggataa ataatagcat 60

gctatgctat attacgcggg atatgtttgc atacatgttt cttaaagatt tgaatcatat 120

ccggctaatt tgtcatgtta aacatcgact atatcattta agtgtaggct gaaaatattt 180

agccttatct tggtatctct ttgattcact cctgaatccc cactggatga aagtatcagc 240

agcaaagcaa gccaagccat ggacataaca caagtggagt ggatatatgg ataaggaagg 300

aaggtgacaa gacgggggat gcggagtccg gcgattgggc ggcaggctgc tctgctcgag 360

ggctgggcag ggagattcgc ctgcgacgat tgatgccgtg ccgccgcgcg tcgggcagcc 420

ggatgcggga tgcccttgcc tgcaggaagc cgacatgccg gtcgaaatgt gatgcagagc 480

tattctttac ttcttttgat ggtggtcagg gttaatggcg atggcgcgcg ctacgtgcca 540

cccatcgacg tgatcgatgg gaggtccggc aggcggcagt ggcagcgacc tgcccagcca 600

gaagtgagct gctgatttga gatccagcag tggcattatc tggcgctcag ggtctaagtg 660

tacacgtgta ctacaagtac tacctttccg tgccaacttc gctcaagcag gtctcgagtg 720

ccctggcagt ggcacaggca gaagcagcct agtgctgctg tggtgtggcc ctgctctgtt 780

taggctttac ctgccgcatc aaggggggtgt ttgtgtctta tcaaatattt aaatgttttt 840

ataagtatta aatataagat taattatgtt taataaattt gccttttcaa gtcttcgctc 900

ctatttggaa ctatagagct aatagttagt caactaataa actaattgtt agctgtgagg 960

tagctaacaa ttagctgtgg tattagctga tgttgtttga aatccaacaa ctaattttta 1020

gtagttaact attagtttta gaggttctaa acaaagcctt catctatata attagtttat 1080

aattaaattg tatttaatac tcgtaattat cattcaaata tctaatgcca tagagactaa 1140

actttagtta agtgaatact atagaaagag ctctatcgat cacagaccta ccgaaccaaa 1200

gtgacttgga tagttggatc cactaactcg gattcaaaag taccaacatc cactaaatcc 1260

tccttggatc cgatcgagat cacaaaaaga agctcctcaa taccagacat cttcgcaaaa 1320

ccaaacaaac gacgttcgag caaccaaact tcccacaaac attcatttcg ctaaaaccaa 1380

atcacaagac ttttcattta tggttaacaa agcatgatcc acaaatgtgg tatatataga 1440

tggcctcgat cggtcaaaag taactgtttt caccttta gt ttatacatgg ctatagttaa 1500

acaatttcat gggataccaa agtaggcctt cgtccatgag aggctactgt gaaggatttg 1560

accaaagata aatgtactca acggtatttc aaagttgatt aacaatttct tccttttgt 1620

tttgacacct gctttcagaa ttgactttgt attgagaaaa aacaacgaga ataagacaga 1680

tatctcgatt cacctaagtg caaaaacaaa aagtaaagac cgaagacatt tgaccatctt 1740

cgtctttcgc tcaaagaaca aagtctactg cattatttct acaaaaaaac atggacgaga 1800

cacgaaatca tttcattctt tttgccaaaa ggcagactaa gcctcattga caaagaatct 1860

aatcttcata agtcaagcaa agccatcata tgaacttcac tatgagacga agagaaatga 1920

tatgaagctt catttacaaa gattggcagt tgacaagagc tatagcctaa ggtagagaac 1980

aaatgatcga actgacgaac aattgtagtc taataagttt agggcatcat agattttata 2040

tagacaatta cgaaagcgag aacatctata aata 2074

<210> 3910
<211> 1753
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262370_G1, chr7:153696346..153698098, Cluster 24

<400> 3910
aaaacgaaac gatttagacc tcttttaacc attttcgaaa ttaccttatt tatttagtat 60

tttataacaa attcgttaat tttccaggaa aatattaaat ctgaatggat ctttataaat 120

ttatattaaa ttcactttaa cttagaaaaa tatgaaacta attttattgt ttttctaaaa 180

tcaagatgta tataatggta tagtttagag ttgtttggaa cttttataga tcaaacttat 240

ttatagttcc tctcccatta ctactcttgg taccgattat gttgactttc taactatatg 300

catgtgtgca cagtgtttgc catttatatt tgtaagatat ttctttaatg ctttatgaga 360

tatgctttaa tccttcaaaa atttatgaat atttatatta ttaataattt ttatgtagat 420

gtatgactcg tgagaatttt taatgtaaat tgtgggtaca tgttatgatt gttaccggtg 480

tattttagtt ttcgaccgta agcggtgtgt tttccgtgtc aaattttcgt tctcgatgtt 540

tttaaattag cgatgtcgtt ttcgttttaa aaaataaaaa taaaagtagt tttagtgctt 600

aaggaccgtt ttcacccccg gcctagattc acggccaagg ctacgctgat gtcagatcga 660

gatgatctga aacgaaaaag gggtacgtcc cggccgaact gtgacgtgat caactaactt 720

ttcgcgcggg acgaacgctt tccacggtca agctttccag cgttaacgat cgatctggct 780

tttttcttgg gcatcagaaa acagccacac agcggccacg gcaagtcgga ggaattgcct 840

caaaagcctt atagaattcc agaagcacat gttttgaatt ccagaaggca cgtagctaac 900

tgatgaccca gaacaacttt ttgattattg gacggaagaa tcagttacgt accgaccgtg 960

acagaatgga gggaagcatg catgcggcgc ggtgagtgag gtgcgtacgt agctttcatc 1020

agtggaaacg tgatagtggc atagtgctga ctacctgatg gaaaaccacg aatcaacagc 1080

tagctcagga aagaaaaaaa aaaacaggtg gaaatgtcag aaaaaccagg ctgctgatgc 1140

aaattacctg gcttgcttaa ataaccaaca aaggtctacc taaagccatt ctagaaggtc 1200

aaaagggaag atatatagct gacgccgtgt tatgtttata ctaggcgcgc gctcgtatgc 1260

atgtgggatc aggatcacgg ggagtgtgga gtcatatatg ctcatgccat tatatcaaat 1320

gttcagggtc atgatcggaa gggggaggtg aaaagcgtga tattcttggt taggtcaatt 1380

gtggacctaa catgggtagt ggtattttta gtcagcctca cagagaaact attcattcgt 1440

tagaccacac gggtgcgtta aagttgtcat aagtaaacta tgtactacca tgtgattcaa 1500

acatggcctc actttttttt aaggctctcc tactatttgt gggtatgacg ttttttatct 1560

attccatcag gagacatcaa atcaagaccc tgaaactcat tctagtcgac actgacatat 1620

aagatctcta gtcttcattc atccacatcc atcatcagga tgggcgggtt gacagggagg 1680

gagatggtag ggttgggggt ttatgtcgca ggagccatac ccagggagag agaataaggc 1740

tggctcaacg cct 1753

<210> 3911
<211> 1688
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262575_G1, chr7:154603547..154605234, Cluster 24

<400> 3911
cgacaacgga ttgaaccaaa gctccaaaaa gcaaaaaaga cccaaactat aatttagttc 60

agattttatg cacgcataca ccttcacatg aaagtttttg tgggccaacc gcgctccgat 120

tattttcggc tgtttcattg cgatcgctga aaataactta tttttgacac cgaactttcg 180

ataacatgtg accttcaaaa ataacactga aatcatggaa aatatattat ttctagcgaa 240

aactgtttat tttcggtggt tttgcccatt gaaagttagt tggtttcttg tagtgtctgc 300

aactctaata gttaaactaa caactgataa taagcatggg agtcaacaat gtctactttc 360

tcttttctag tctactagtc ccccccccccc ccccccccaca actgacttga taaaatcttt 420

actgccaaca ttttttttc aacaaccatg gttaggtagg acaagtaaga actacgagag 480

cttatttgtc agaaacgcct acgtgacaga gctttacggg gtaagtagag tcattgtaaa 540

ttgttttttt gatgccgcat gcaggtcgag cccaaacaaa agtattggct ctatgtgaaa 600

caggcttatt tcggcgcaaa agtaggagta tttctcaaga gttaataagt aacgttaggt 660

taacttttct acacaggaga acagaagacg ttgaagatgt caaagaagga atagataaaa 720

agtgaagcac atggacaatg aaaaatactg tcaactgttt atatgatgat gagcagcttg 780

atcgaatcat caatatcagg cagcagccag cagatccagc ctgcggattt cttttcgccg 840

tggtcggtca caccgaccgg tggcaatcaa gtcgggcagt aggagtattt aactgtagag 900

aacggaatcc agacaaccat ttttttcttc aagtttttat ctttacacga ggtgaattca 960

gagggtgggg cagaggggcg gtcgtcccgg cctccgggcc tccgaattca tagagcctaa 1020

ttttagttat gtgatcaaat agtccatcaa taaagtaata aatatctaaa catgttagaa 1080

gaaaatttca aagtgatact ataatatata tccttttatt tacgtattat ttgatataaa 1140

tatttttaga tgtattttaa gtgtttaatt agtaacattt atatattaaa aataattcga 1200

aaggccttta tttgaaacaa tgaaatcttg ttccgggtcc ctaaaatgtt aggaccgcag 1260

ttgggtgaat ttgtcaaacc tccgagataa atatacaaac tatttctttc agctgaaaga 1320

gacacgggaa atacctgcag cccttgcatt attgccaaga aataaaaggg aaatcagagc 1380

tcaaatagaa caatgattga atactcgtag atcttggttg gcatgaaatt taacactagc 1440

tagatgaagg atatatatca ataatttata aaataatcaa caaaatacag gtcatgtaat 1500

catataaaag ggttttcttt gccaggagaa tgtcatcatc ctaagctcat agcccactca 1560

tgccaaacca gttgctagct cttgcctact atcgtggtcg ataaaatttc gattttatcc 1620

tacaattcca catctaagga ctaagcaggt ctaaattgat tggacaaagt ctagatttta 1680

cacacaac 1688

<210> 3912
<211> 2243
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_26347_G1, chr1:160520032..160522274, Cluster 24

<400> 3912
atgcttggat gagcttgatg gcaccaaagc ttggtcgaaa cggtactaca tttgtactag 60

tcgaactact caacaataga agatcacgtc ctaggtggaa agatggaccc tatgggttgg 120

attgtaaata gataataggt tagatggaaa ggttggctaa gaagtgttta tcgctttagg 180

tccatgggac aatttaatgt aatagtttac aatcataata atatgaaggc atccgttcac 240

caaggagtgt gtgcttctca tctccttgat gcatcatcac ccctttcctt agggttttct 300

gaggtaagtt tcatgtttcc atgaggtgat ctctagtaga taacaccagg gtatcatggt 360

gtcactacct taccctagta catgttgtac taatcattgt tgttagcaag atctactagt 420

tatcatgtgt aatttcaacc tttttctact tttaagcttc atgttattag attgatttta 480

cactgataga tgtgtattcc ttaatcagtt gctacactct actacatcca agctacagca 540

tgtgcatgtg gcaacacgag aggtcaatac acatctggca ccctacctta catgcttagt 600

ataattgttt actacagatg gacttatttg gaggttctaa tcaatgttca cgtgcatgat 660

gattggctcc caatgaagga tgttgctagg attgccaaca tgatacatat tgtagatata 720

tgtaggatgt tcctatagtt ggtttactgt ttatctgacc ctagatttga ctaatagtat 780

gataatcttt tggcctattg ttgtgccttt agccatgcac gtaacttgcc tcgcttaaga 840

gtaaacaatc aactcaaata tgctttagat aggcttactc ccttcattag tcactttcaa 900

tgcatgttta cttccattta ttatgatcat tactaactcg aaaaaattac aaatagctca 960

agggagacaa ttagtgcaag cagctcaggc tgatccgcgt aatctagcta gaatttaaca 1020

tttaatttat tgttgtacat ttgcagagca attcaccaaa atcatcacat ccttcctggc 1080

tacaagtcaa gctaggtggc atgcctagaa ccctcatatc tggagtcaca attaggaggg 1140

acaaccataa tagttacaca cctcttagct ccacgtgtat cggttgtcgg acaactccca 1200

agcaggtttc ccgtgacgac acatttctac atgccatgtg ggaccaacga atcaactttc 1260

acatcagctc atcaacataa actcgaccac gactccacgt caactcttca ctaccacctt 1320

gaatcgcacg ggtaaagaaa tcatcatcaa tgatgatagc aagcactatc catcaggcaa 1380

gacaacactg tcgtagctca acgacttcaa tcccgagatg taggagtgtt atgaccgggt 1440

cctcaaaacc ttaactgata aactcttcac atgtttcacc tagacatggt ctagtgttgt 1500

ctggctcact aggaaaccaa agacgcttct ggaggaggtt gatctttcga caccattaga 1560

ggagcgcact gtcgctcttt accaagaaat gaactacatc atccaccatt ccatggtaca 1620

acagtcagag atcccaatca actccatgga gggagttatt gcacgagtgg ctagatcgat 1680

tctagacatg aactacacta ccctagggcc aacttttggg tccaattagg gcaagaaata 1740

attctatgct tggccaatag agccaacaca tattagtgct ccttagggca ctacgatcaa 1800

attccttgcc caccacccta atttgccaca caagataccc tccattatct atgttcatcc 1860

ttcaacatat atcctggagg tcaattttcc agtagtgttg catccttggt acaaataagg 1920

taagatgatt gttcatgatc ctatcacaca agactgatat ccttataaat gtagcatatc 1980

ccaaattata agtgagtcca catgtaaaga gatagagata agtatctcca tttgtaggag 2040

ggggtctgtt aggccaatct tgatccttgt ctagctagcg gctagatagg ctttctataa 2100

ccaaccacac cttttgggac tataaaaggg gcggtagtgc tcaccaaagg aaaatcatct 2160

tatcatatta cataggcaat atacaccata ctacatagaa tgtaggttat tatctcacac 2220

tgagatccca aatttgtcta aat 2243

<210> 3913
<211> 1423

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264575_G1, chr7:164697459..164698881, Cluster 24

<400> 3913
gataatttag actagataca agttatatgg tatctatttg ggtatattgg gtttagaaaa 60

caaaacaaag agagataaca tgaagatata aataatttga gttggttgta ggtacatggt 120

catctaaact ctttatgtct tctcagattc tagcttgtgt aaaaacatcg gttgatgaat 180

tagcaataaa aatgtgtatt aacattgcaa aaaacagaga gaagtttctt agtgaagtga 240

gaaatgaagc ttgaatcttc atattaatct atcagttgat ctctaattca tagtgcatcg 300

tttgtggcac ttttataacg ttataaaggg agaaacttgt ttagatgcac tcatatacat 360

cttaatccgc gtatattaga atggattaag ataaaactaa gcttaatttt caccatgata 420

tactccaata aatataagct acgatttcta tatatcatat gggtagactt tattttaata 480

aaatacaaaa atgtatgtat tctgtttttt aagtgtagtg aatgtggagt caacaacaaa 540

ggtttaaact tccacttata cacaatttta ttttattttt gtctcataaa gcgtgagtag 600

atagattaat ctgaatatga atatatctaa acaagctctc agttgtggta aaataacact 660

tcacgtgaaa gctgaacttg tggcgagcag aaaaacaaat ctcattagct gaaagctatt 720

tctttggagg caacagggct cctgtttata tgaaaatatt ggccagatgg acacgtccca 780

atccaaaatg atgccacatc acccccacgc cactcaacaa gcatagatcc aaaaattaaa 840

accttagcct ttgtccactg acggccaacc acttcgaaaa gaggcgaact ttctaagatg 900

caaatgcagt atgcagctgc cgaagctgct actcgacata tatctaggtc aaagcgtcta 960

cgactcctgc caagtggcat ccatcgagtg aagtactcaa gtttttgcac cgccccttt 1020

gcatattttc taggttccac ttggattttg tacgtactag tgtcggcaaa taattgcttt 1080

gaaaatactc caactatgtg caagcgtctg aggaaagtca tatctccgga tactagcaaa 1140

acatattttt tgaactccgt cagcagaaaa tggacctata gcgctacgtc gcagggacca 1200

agtctcgtgc cagcctaaca ccatagaata cgcaaacacc agggatgcta aaactaagaa 1260

atataaattc ggaagcatct atgttgtatt tgtaaacatc acagaagtaa aatagacata 1320

atcaattata atgtgtgatg tgtcgcacta acatgcaaca caggagagac ccagtccccg 1380

cgccgccggc gcgccggttc cttcggctcc cggccttcac cgg 1423

<210> 3914
<211> 2443
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_266135_G1, chr7:173034202..173036644, Cluster 24

<400> 3914
catgcattct tttaaatatt tcacctttt gcatgatata tacatcttaa ggagaaatat 60

ctctaatttt gagaaagcaa tgtaacgata gcatactggg gataccattc accgaacaaa 120

acattaaagc aactacaaga tcaaatttca aagtcgcggc acacgtaagc tcagtttaaa 180

cttcatctaa caaattatga tatactagca aggtgctcat acattgttat ggtttccatt 240

tatgtgtgtg tttattggtg tgaatatggg tttagagcca acaacaatgg tctgaatcct 300

catttatgca taattttagc agttttaagg tttaaatgtt ggggcataac gatagtggaa 360

accgtgaatc catggaaacc gatgctttaa tatagcatag aaatcgttca tgtatatcag 420

cttctcccta tctgtcccct ttagtagaat actccatttc cgcaaccaat ataatgttgc 480

atacatcaca tgagttggcg ctttagtttt gaggggattt cttctctata gtcgtcttgt 540

ttatagaagt ccacaaagcc caagcaaaat atgcagaggt acacattatc aatcctagtc 600

gtaaggtccc cttgccttgc agccaagtta tagtgatatg cattaaggat ttaggaaatt 660

tttcaatgga acaactcttg taaagtactc catgtcaacc tagccaggaa gcattggaag 720

aaggtatggt ctacagtttc taactttcac acaagaagta attttcactc ccttttcaac 780

acatcttaag caaagaatgt gccacatgaa gcttattatt aaagacctac cacaagaaaa 840

aattgatctt caaagggatt ctaaataaac acttcgaaat gatatctgcc atctactagt 900

tactcatctg tttgttaaga atatgtacaa cgatttagta ttgaactgac aattcttctc 960

taaagtccat atgactatat catgggaatc ctcatgtaac acaatggtaa gcaactcgct 1020

atatagagcc ttccatcact taaattctag aatagaatgg gatcttctaa agtcaacaaa 1080

ccagtccccc tcaacccaac actctgaaac tctacaacct agtgacatta ccattttgta 1140

aagctcttca tagttgatca tgagaggaac ctcatgaagc aacaatatta ccaaaatttg 1200

taggtcttac catcccctat cttgaagata actccctgtt tgaacatatg cttaactttg 1260

tatgggcctt gccaaaactt cactatagcc aaaaataagt tgcatccatc catatactta 1320

gccttaagga ttctaaatca taactcgtcg ggttgttgta aaattttaca aatccatttg 1380

actaacaaac attcattcat tgttgtagtg ttgatgatgc tcaacccagt ttggtctttg 1440

ctcctactca tcatttctca cttagtcgtg tggtatctaa acttattttc tattccttga 1500

cacaaaaaat tacctcggaa gttatcgttc ttatgcccca tcttgtaacc aatagaagtc 1560

catacaataa agaggaatac tcctccaaag tggagatgcg ttcgcggaga tgctaattat 1620

gactatgaca catgcaatat ctttggttag atgatgtcga atagtgtaca tctatcttaa 1680

ttataaaata tttccactat aaagtgagtc tcatatgaga ccttggcata aatttatata 1740

ctcgacacat acatagatac attaaagtca gccttatccc acaaatttgg agctacccca 1800

tataatggag aacatttaaa tgctctaaat tatactaaca aaattcacca aggtactctt 1860

atacttctga gagtgcaaat ccaggacaga gaaagcatag tcacatcctc tgtatcgtta 1920

ctaagtatat gtcttctcag gattatattt tacaagagaa cttttaaatg atcaatctag 1980

cgttgttttg agcataataa ggtaaactac atgaaaccca gaaacaatga gagaagcgat 2040

tggatttatt tttcatcctt acaactcatg aacacacaca tagggagaga atgcaattta 2100

aactcttcat tcattgaaga tgacttcaac attattccaa gagaagtttg gtttcatata 2160

tcaaaattat tgaaaattac tatctaatca agaaatttaa acaacctact cctaaatata 2220

tattaaataa aaaattggaa aaatttgtgg taccatttca tatgtactat gaaacaaagc 2280

acagaagaca taccacttct ttgcaaagat atttcaaaca tggtataaaa ggtgttaaac 2340

cgcctcacaa aacaacttta catatctact taacatgaat aagacctctt tgaatggaag 2400

gtaacaaatg tcaagtggca catttccaac aactcccgtg tgg 2443

<210> 3915
<211> 1429
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268578_G1, chr8:9259442..9260870, Cluster 24

<400> 3915
tagtatgata aagttgttaa cattggcgtt gttagcgtga caatgagttc tatacatcac 60

tatagcaaat aaggttcacg attcagagaa ctacatgtca atgaatggca actcggaaag 120

atgagtagca ccaagaccaa gagtagcata gcaacttcac tatttgagca agaaaaccgc 180

acttcaattg gccctacatg attgtgaatt gtgatgtcgc tgacttggta gtctatcttc 240

ttgtctcttt tttgtttgtt tgtatgagcc ttccatgtca ccgttatttg agcaagagaa 300

tcgcacttca actggtccta catgattgtg atgccacata cttggtagtc tttcttcttt 360

tgtgtctttt tttttgttcg catgggcctc actagaagga caaataggca caacgcacac 420

tcatggtcac ggtctcacga ataccgaata aaaacatgac aaaataggaa aaactctata 480

taatccctga tctttagagg atggtgtagt tcactttatc accttcaaaa ttggttgttt 540

aacccgatca tctttataaa aacagacaaa taaccactag accgttttaa ttgactgctt 600

tgatgacgtg attttgattt aagcgatacc ggttttatct tttttaattc tacattctag 660

tagtatccaa aattgaaatt atttttcaca aagatcgata attataaatt ataatttccc 720

taatttccta aaattttagg agcatcacct taattactaa aaataaaaaa ctaaataaaa 780

acttaatatt tttgtcctgg gtttatttat taccttctaa gccaaaaaat tacactagag 840

ctaaataaca ttattactaa actactgaaa tgtttgttga ttttattaag caggtcgagt 900

ggtctttcta ttaattttaa ctacattaat tttatattgg cttttataga aacacttaac 960

aaacaataat aaaataatct ctaattttta catagaccat ctcttagcta aactaacata 1020

tataaatatt ctcatatttt tttgagaatt taaatctaga tctatataaa ggtatcagaa 1080

ataattatgt aaattatagg tctagagtta aagttgtcag aaaattctaa aaattatttg 1140

tgtatgttca tttagctaag ggaaaatctt tgtaaaagtt agagatcatt ttattattgt 1200

ttgataagtt tttcaaaaaa aataaatgta aatttgattt aatttataat tagaagaaag 1260

aacacttcac ttgcttaata aaattaagaa atgttttagt agattagtaa aagtattatt 1320

tggctcacgt aaaaaattta gccttagaag ataaaagtga atcagagaaa aaatattaag 1380

ttttttttata tagtttttat ttttaataat taaggtgcta ctcgaaaat 1429

<210> 3916
<211> 1918
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270093_G1, chr8:17666923..17668840, Cluster 24

<400> 3916
aatatgtgcc aacttagagt acagtaccgt catgatcgtg accatgaatc ggcttagatc 60

aagtataata ctaggctata aaactttcat cattataacg agaagaggaa ctttaaaagt 120

gcttccaaac agaatgctag gtacaaagaa acaaaacaga tgggtgtgtg gatatccagc 180

ttggccttct caagcaatta gctcactgag agtatgcagg gaagtcaaca ggtcggttgc 240

ataagaattc actgcaaaag gcatatcggc ctagtgatat ggtaacaagt cgcatcatgg 300

actaaatttc tcagatgggc attattacat tttaggaaat aagtcacatc gaatcttgat 360

aattacatgt gttaagtata atctatttat aaaactaatt atacatatga agactaaaaa 420

caagagaaat ttattaaatg tagttactat atttaacact tataactgat attcaaatat 480

ttaatgtaac acgaaataaa ctagggaagc aaatacccc taagtctctc ataattctag 540

agagctgcac aacacatcat aaaccaaaat tggattaatt aaacagtaac atggtccact 600

ggataatgta aatctgatgt gtttagctat aatataagct tcttcagtag gtgccgcccg 660

tacagattat gatgctcata ataacaaaaa aaagggtgta tgtttttccc tcaaacaaac 720

aaaaagaatc caactgttca cgttgcaaga tagttgggaa gaagaaaaaa aggtaaaaaa 780

aggtgttgtc actatatatg tacgttcttc ggtcgtacta ccgttgactt tcttcaagca 840

tgtcagatta taaagttaat aaactacaac cagcaattac aaaagaccta aaaaatccac 900

aatacctcgc ccagtgatct atccttggcc ttgtctccag taatgtgatt cctcatccct 960

cgtggaccac aaacatgaat aaacaaaaat tatgaaacat attatgcaat taacaatcca 1020

agaaatgaag atgatgttgg agatcataag caacttcatg agcatctcca ggagttccct 1080

atccaaactt ttagagtcaa aatataggtt tatgcaacaa aaatcaccct ccagcagcac 1140

ccctatccaa catcttatat ttaatcgtat cctaaatcac cttcactttc cctcaaatat 1200

ggtgtcgaga aactgttgga ggaaacattt aggaagggat tttttgtcag gatgcaccta 1260

tacagtgaca taggggaata agtttacatt aacaaaatta atcaaactta ctttgttaaa 1320

aacaaaaata taaagaagga acaactctac atgatatatc atggattcat taagtatcac 1380

aagaatcagc gagtcctctg ctgggcctgg caaacctttc aaaaccatgt cctttgatac 1440

aaaaccaaca ccacccctcc agtcagttga gggtttatca actgtataaa atacctgtaa 1500

tattttaagg acaatgctat acatacagaa gaaagttatc catgttttga tggattacac 1560

ggaagggcat acctcgcgtg cagtggtgac cactggtgag aggtgtctca ctaagtcagc 1620

aagtcgcgag ttgcaagagg aaggcttacg tcagtttatc tcttgtctag actctagacc 1680

ccactcgttg gtcggttggt gttatacctg cacaggggcg gtcctaattg aattcaatgg 1740

tattcaaatg aatacccatt atttttgtca aaagtacttc aatatatata catatatata 1800

gtgtatatgc atgaatagaa aatgaatcaa ataaataaag aaattatgtt aatttagacc 1860

aaaatatctc cttcctactt ctcataccta accaacttta tagtttgtta tggaccat 1918

<210> 3917
<211> 1528
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270319_G1, chr8:19118594..19120121, Cluster 24

<400> 3917
aaggagaggg tagaccatcc cactagagga gccctaattc ccctattaca tctcctatct 60

tatttttatt ttcaaacttt actccgcaaa tagtattaaa tagtgtcatt tacacattat 120

cgtatccctt attttagacg atccaccaaa gataatccaa agcgtttgaa agtttttggg 180

taggcagtag aagtggctga aggcacctag tagaagtcag ccatcccgac agagatggag 240

ggatagcgca ggcgacgagt gagaatgcag gtgataggtc gctgacattt tgttcagagt 300

gaaaaaatta ccctttcac tcgtagcttt tattattcac acgttgaagt ggatattttg 360

gggttgttag ccagtgggga accactggtc gtgtacgtta aggcttcctt tgaaacgtgg 420

tattattttt cgccttctgt atttttactt tgaaaacgaa tttattcttg taaatttctt 480

gtatgataaa ttagtgtgtt tcaaaaagga cataatgaaa gaccgggcag gaaaataatg 540

aatgcaccct gtatgatcga gggcgaggcc aaggatgttt gcgggatttc gtgaggtcgg 600

tgagtgcggt agagccgacg agcagtctga tccggagtgt ggctgtggga gtcggccacg 660

tggcagacga agccctgccc attagagcag tacagtatga cctacggaag tttcaagtgt 720

ggcggccgtt ttttaggggc gttcgttttt tagagggaga agattaaggg ctttaatagt 780

taaagcctaa ctccttttgt tgcctcaatt gggcctcgta tttggtcttt taataggccc 840

attgtttgtt ctagcctttc caaatggttt tgtttggttt catggcatgt acccggctct 900

atgaatgtga cgaatactcc ggtaacctgt aagggtaggg ctgtatcgtt tgtacagtga 960

aatttaaatt aaatggaggt atatcaaata agatggataa gctgctgaag acagcagagc 1020

atatgaaata gttctctagc cctgagatta aaaaaaacag tagtccctgt tcttaatctc 1080

tgtttttggt aggaaggaga aaaaaacgcc ttataaaagt tttacatacc gacttggcag 1140

atgttctttt ttatttttt atatctcatg caaagtgccg tcaatcagat tctagtattt 1200

taaatgtata tgcttagtac aaaaaaatat atttggatag ttttcaaaca aatctacatt 1260

ttttatagtt taattagcca tcttgaacaa agtctaattt acctagtcgc agctaacgta 1320

gcatgacaca agctaagggt ctatttggtt cagctataga ttcctgaaat ctgattctag 1380

ctgcaagctg tgagaaagct agcgcgagcc gacgatattt gcgagaaagc taacatacgt 1440

ttggtttaaa caattttcaa ttgtatattc tgtaaagagt atgattagct tgataatata 1500

gtcgacagaa atctagaaaa tccaggct 1528

<210> 3918
<211> 1453
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_272676_G1, chr8:34193410..34194862, Cluster 24

<400> 3918
ctagtcacgt catcgtagtc gtgcttggac ccctccgtta ccggcgtctg ctcttggtga 60

gacccgccat gtttctcaac ttatttcctc acccgacgtc atgcctgcta atgatgtatg 120

tgtatgtgtg gatatgttga ggagtgaaat ccctggtagg ttaattggag tatgagggcg 180

aagtcctagc gtgatgctca tcaagtgatc gatataaggt ccaaactgag agcatcgctg 240

ttctcgcgga tctttgagtc agattaggat gtggtgagcc gattcatatt ctttttgtta 300

gctagcttga ttattagatc gtatcatatg ttagtcgcgg tgatttttg gtcggcagct 360

cagatgtgat gcgatgatgg ccttcggatt ccatgttgtg cttgtgtgtt gtttaggcgg 420

cacttagaga gctatttctt ggtattttcc ctttgtagaa tgttgtgatt tcatgtatgg 480

tgaagtaggg gttaaaggca agcgatgcgt aaagtgtttg ctaaaacgcc ttatctcgta 540

taatgttatg ttgtatgcat agacggaaag tagtcgtaat tatgagatga agtttgcata 600

agggttgttc taatgactat gtaggcgagg gggtggtgtg taatagagtt aaagttgtgt 660

tgggtgcttg ttaaagtggc tcatttcatg cggtaaccat gtatgtcttt gattgggtta 720

tgtctatatt gtgattatat ttgagttttg gcagactagc aagtgttgtt gagatacctt 780

gtttcatgta tttacatggt tatgctagta agtataaaat agtcgagtca tgtgaaactt 840

agatttaaaa tgattgttgt gtgaggagta tttaaatgaa tagattagag aagcatgagt 900

gaatagatct tatgtttgta agagtatagt tcattagcaa tgatgtttat gctattagtg 960

ttgtcctctt agtcctcttg catttagcat taatgtactt tagatctttt gattttaaaa 1020

gtgtagttga tagaattatg caatgtctag tactactcta cttactaaat cagagaatgt 1080

gacttttcct acctagttaa tacattgcta tacttataag aggtatggtt aatttagtaa 1140

tgaaaagaat ttgtttagca cttctagcac tttgccggta agaattatta gggttgcttg 1200

tgtgaatttc tattgcatag tgacattgat gccttgcctt agaaagtatc accttctatg 1260

ttatttgctc aagttaataa atcatggagg gtggagattt gctcatggtt cattaaaggt 1320

ttgtcatatt aatttcatca tgtcatatca tttaagtgtt ctcccttgct aatatagagt 1380

ttgtaaagga aagtaatgca gatctatttt tgcttgggtt ttatttaggg agtggaagaa 1440

tcaagtagat ata 1453

<210> 3919
<211> 2749
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_278096_G1, chr8:74139224..74141972, Cluster 24

<400> 3919
atatttccat tagattcaga gattccagaa tgtaaccagt tccgatggga ttatatatag 60

gatcgaacga aactcaagac ggatgtcatt aagggtgact aaccttcttt ctcgcttgca 120

ggcattgagg catgtgcttg ctgaagttga tttggaccgg tttgaccacg ttgagcgcat 180

gccagaccct atgccaaagc cagcttgcta attgtgttgc tctctctcac cacagtctag 240

accatgactt tgtagtttgc aagcatctgt tcatcacatg tttgactagt aaccgaaaat 300

gtcaacaacg gctgctgagg ccaagatatt gctctggctc cgccttatct acaggcaggt 360

gttatttact gtgttttaca cctatccagc tcaatttgct acctggagct tgaattgccc 420

aaactaatag aaaatggtga aaagatcaca tgttaatacc tacctaatgt attgatctca 480

tctgcagaat caggtgaatt gctgagatga tttctcccaa caaaaaatca gtttagatac 540

atgacacaga atgcactgac cttggacttt tgcacagttg ttgaacttta gcccatcatg 600

gtgctactga atgatcagtc ctgtcagttc tgatagtttt gtcttttcat ctacacttct 660

gacaggtctt attaatagcc caagatgctg aaagcgctga actattcaaa gaatcaaaga 720

gctgtttggt gtgcttccgt gtctaaaccc aatactgcga tatttcagag ctgtttgcct 780

ttgctgccct ccctgttcca gcatttgtgg tgtcaggttc ctttccacca gtttaatcca 840

gacttgcttc ctaagggacg gacctaagag actgacaacg ataattcaga cctaattaac 900

tattcaactg acacaatgac gccagggaaa ttgcagtttg ctacaacaat acgagacccg 960

tttgtctcaa cttgagaccc gtttgtctca acttgaattg taacagatgg tatgctgcat 1020

accacaataa gctaagacaa agaaacatat atatatataa ccttaaacgt gtgtaccaaa 1080

ccatatagag cagacccacg tgattgcaag cactgggaac atcattgtac tccaaaggaa 1140

aacatcctaa agagccgtga caagtcgaaa cacttgtatt aattcgaaaa cagaatgatc 1200

gtcacacagg aaagaacgca gtggaaagat tttttgctag atatcttttt gaaagaaaaa 1260

agaacacaat catcatcact agcaacagag aaagtgtgga ctcgaagacc tctgtataga 1320

tatgttctca agaatttgtc gggaaaagat gagatattcc cagtagtaaa taaagagcaa 1380

agagctaaga tcgcatcagc tcgtatcaga tagttgccac caatccttgt ggctccaagt 1440

tcctaagcaa cgtgcaggct aaataaaacc aaatcaagct caaagttcca agcttcaaat 1500

atatttttag tacctgctga tctcaccctt cccagcctta aactactact ctatctgaca 1560

actacggata agataacact agcccatgca tctttgctta aacaagtcct aatctctatg 1620

agaaaagata ataatcttct aactggattc aagagggttc gggaaggggg agcggaatta 1680

aagaatacat acccgtgggc aagaatcatg tagagctgag ctgcataggc aactaaccac 1740

ccaaccaaca agattaaaca actaataatc aacagatcaa tacaaagcat tcgggtacta 1800

ggcttttgct atttgtattt aacaaatctg taagaccaaa ttgtgggacc ctggggacca 1860

ttttcttaca tgagcatcta tactaaggcc ttaaagggct tgcatcaccc agaaaaggct 1920

ctcgtgctac agtgccagac catgtggttg aaccccagcc aaaaaaacag cagatttgtt 1980

aattggaacg agtgatgcac tggactcaca tacagtgcta acggatttgt gatcctagtt 2040

ggctcagctg gtatcaacta ctcaaccgtg tttatttgtc cggaggatag atatattgtc 2100

ttaaacaggg gatcatgttc atgtatgacg cgtgtcagaa cggaatatgg ctggcaggtt 2160

ctggagaact ttgtgtccat actggggcag ctttcaacag gtcatgtcca catttggcct 2220

ccactgatgt gcaaaatgtt cacataacag atgctggacg acggactgtc tcgcctacag 2280

gattgcaaca cgagccctcc caaagtgctt gctttgtgtt gtggacagga ggagatcaca 2340

catcaccttc tcacgtcgtg cgtgagtgtt cgcctggaga acttggcgct gaggcattat 2400

tccgtgttcc acaagtgctg gcatagaaac tcaagcgtgt aaatgtgtca actacatggt 2460

gatcctaacc acctggatgg tttggaatca tacaaattgt tgcgtctttg atgagtgcag 2520

atggtcgggt agtgttgcag gacatcaacg agcagacagt ctttcgggtg atggccgacg 2580

ttaatgtaaa caccaaactg ggatttctaa gataatgatt attcatgaaa taatgttagt 2640

gtgttattat agaggcatga tctttctttt aaataaagat gggatcctta attattgtat 2700

atttcactct atactaagtt tatgtgtgat gaagcattct accagttgg 2749

<210> 3920
<211> 1964
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_281185_G1, chr8:94303349..94305312, Cluster 24

<400> 3920
gtgaatgcca aaactagttt tatctatatt ctgggatgga aagagtattt cgttaatttt 60

agagataggt tcttaaaggt aaagtcatct catctatata tagatttttg gattaaggga 120

tatttattcc attgataaaa tgaaaaaact cagtttctgc ttaacagcat tcaaccaaag 180

agatcagtaa agccacagac tgtcatgcaa gacagtgagc aaaggtactg aaatttagac 240

atcgcactta gatctattga acttaagacc ctatcctatt gctaaacttc cacccattcc 300

ttgcaaaaat ctctattaaa caagtctcca acttcagaca cagatccttg atcctctgtt 360

actcctcttt tcccaataaa ttgctccaaa atctgaacca gaaggtgctc ctgaacaaaa 420

cctgcatagg ggatgaaata aaagcattgt tgaagatatg tagatgggga tgtgtctgtt 480

tcggttgtaa gcaagaaata gatcaaaagt cccattccct tttctatcca tacccttgtg 540

gcatggccat tgggcatcag catggtcctt cttacctggg ttcagggcca tatgaagcgt 600

gtccatgaca gaagagtaca tgaattatgt ttgataacac tcaacggaac tgcaaatgtt 660

ttgaatattt ttctacctgt aggtagggtg cattcatgca ggagtcactc ttccgcgcct 720

tagaaactta tttggttatt ttcaggtatg tgcttggggc tgtagaaacc tttcttgacg 780

ctgttccttc tgctggactt ttccaaagta agttacaaat ggtttggatc aatatattta 840

gtttgtgaat agaattttca tcttgttatg tatttcaagt gtggttcatg tgctttagta 900

ctttggagtt tggacatatg gagcatctat tcacacaatt gcagtttatg agataataat 960

catgtaacat gttatttaat attcccttat cacaaaatat aaggcagaca tgcaatttca 1020

gtgatgagta tgcatttggc gccgtgctta tccacaccat atggattgaa ttctgaaaat 1080

ctgctcaaac agacactatc agcagcagac ggctagacag tccagtaaaa aaataaaata 1140

tgtacttgta taacttatct gttcttaaaa atgtggtctc tgttcttaaa aatggtgtgt 1200

tctctgtact ttaatgaagt agagatgaaa tataaagata aagatgtttg gatcgcgggt 1260

tagattagaa agaagtataa ggacttttt ttcgcaaaag ggatgacggt ggaaattgtc 1320

acgaacctgg attgacggat acacctctgt ccctagggac tgtagtgtgt gtatatatat 1380

aaatatatgc tttataagag tagagaagag atatgcaacc agttctatct gttgtaattt 1440

tttttattat gccaccgtta acctgtcttt cgataaagtt gctgggggca accacatgca 1500

atggctgaga tagagagggt gctagccccc ttgggtgcca caccgtttc gtttcattta 1560

tcctttctct tatttagccc cttctacatt ttctctcata gcatatgtat tggatattca 1620

tacaatattc tttgttcttc ttaagacgtt agcacaaggg tgtaatgttc atttcctggt 1680

gcctgtattc ctttatgtta taagcacctt aattgttgta tagacatgat gtgccttgtg 1740

gaagaaatga aggggttacc tgaaaagaca taacaaaatg catgcatatt atcatatgat 1800

ttagcaccat tttttttctg ttaggtgcat gcatgaaagc aaatatattg gtggttgcct 1860

tgcccacctg tcatggcagt cacaaaagag cctatttcgt agcttgacca aacccttctc 1920

cgactgatga catgcaacaa tgagcaaagt tagctagtta gttt 1964

<210> 3921
<211> 1921
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_28538_G1, chr1:174371305..174373225, Cluster 24

<400> 3921
aatggccaca aaatgggtga ataagctgta caggctctgc tttctcaccc cacaaatatc 60

taagtacata ggcaaaatct ggcagttgca ctgttatttc ctatacccca atcccttccc 120

ttatgaacat ttgtcagttt gatgtacttt gaaaaaataa ggcttgaatg ccaacaaaca 180

ctcaacacaa gagttcacca ttgtgcaaaa aagataacca tggaaggaaa aaacttttac 240

cagccttcaa tcttaccagt ccaattgccc acacctcgtg ggaagggaag aatcgaatta 300

cagtaatgat tttcaatctg gttttttcaa ggtccttaat ttctttccag atcaattaca 360

atttagccat gtcagcagca ttagaggtga ttttcgatct ggtttttca aggtccttaa 420

tttctttcac tagatgcttc tcatcagata aaggtatgct ttcaggtacc atgcaatcat 480

tcaacatctt aatctagggg agcaatggaa gaaaaacata tagttaactg tttcaagaat 540

ggaagctctc ttagcaaaaa ggttcaggac atatccttag gtcaagctcc tcgatagaag 600

atcataaacc tacactctat gccctcatgg catcgttttc atcacaaaac cttcccagac 660

tattctgaag aggctccatt tcttttatct tctcattcac aacttcatta tattgtttgt 720

tctcagcact caattgcttc agctccacga taatactgga caacagatgt tgctaatgaa 780

gtgactaaca attttataca aggatatttt agttaacaaa acttgtgatg tgtgcttttg 840

ctgctacttc aatagataca atactcagat tgatttggca tgaagttgta gacttaatag 900

acaaaattct actttggatg tgggttcacc taaaaagcat cctcctcttg aagggtcctt 960

gatctacaaa caacggatta tagtttacta ctcacccata aattagaaat tagttaccta 1020

gtaatttgtt ggctaattga gtaaccatca gtgatggtag tcaacaatca ggccacagga 1080

gacgacaaag ccacgatttg gaacaaataa ataaaataaa agatatccac cttagaaaat 1140

aaataagtta agaacaaaag aacacaatta tagtatataa attactaatg tatcaacaat 1200

ttcatctgtc tcagtctcct aggtatgagt ggcacaacga aatgatacat gaatggtata 1260

ccagtgtgct tagacttaat tggacacatt aacgttttaa aaaatgaaaa acaaagaatc 1320

agcatgttct aacactaaat catacatttc tatgttgcta ccacattaga gaaaagaaca 1380

tattgattcg gcgtggcttt aagtgcagat caaacaaagg catgctttgt agttgtccgc 1440

acaagcagtt ttcctcatag ttttgatcaa gcacattata tatgcatgca agtttggttc 1500

agcaataaca accaaaaccc tcactgtcct ggaggatgca agtatgtctc aattttcaca 1560

aaaaaaatct aacaaatctg gacaccaaac atgaaaaccg gaaggaaaaa aaatcaaacc 1620

tccaatcact tgatttcaac tactgtaaca agtaaaaata aaccagtatt tcagatcaat 1680

gatcacattt ccccccaatc aatacatcaa ccttttacta tttggaactg gacaagagga 1740

gttgaacaat tggaaagtaa ataatgtaat tttcatagaa atcataggcc attgatctgc 1800

atcacatgtg gctgtaacac atttacaagg agacaaatca tgagcccaac cccgagagtg 1860

tggtgggaaa gtaaaattgt aattttcaca cataccatag gccatcgacc tttatcctaa 1920

c 1921

<210> 3922
<211> 1961
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286771_G1, chr8:124289789..124291749, Cluster 24

<400> 3922
atcccacgag cctgaccaag ccatatacaa caaaccaacc acacacttat taagatttac 60

tcatgtgtct ctcacttatt gtctaaagag ctaggccata ttggtagaac tccaagtctt 120

tggaatgaga ttcgacatag agcagcttca acttaaatct aggatcctac tattgttgag 180

aaaagtgtat ggtagagctt ttattgtgga tatgatagaa cagtctacta agcatccaat 240

tatagtataa gagaagctaa ctacatacta tcaatgggcg ttcctcgtcc tcttttgtct 300

ccctgcgtcc ccattgtgtc cttatatata acagatatgt aattgttctc tcgatttaaa 360

agaaacgttt ttcctatgta aattgttttg agacataaaa atatatgtgt ttcaagctgt 420

atattactat aattttaata aaattgtctg gcctaattcg gacatttggt gggggctaac 480

attgacttgc tcccatgcaa atactactga acaaatttta aaggcacttt gtttcttcac 540

atatatttgt aattttagtc attatctctg ataatgaact accccataca atatatttca 600

atggtggttg gtaatactgt catgatttag aagttgtact tatgactttg ttttagcctt 660

tagcaaatga tttctaaggg taggtcatgt tactaactat ccctacaaac ggatttatag 720

gagatgtttg taatgtcaac ctccataata aacacctcat ttatagagat ggttgaaaag 780

accaacccta gaaattcttt caccgttata taaaaaatgc tcatatatgt gtggttgctt 840

atgttatcat gtatctagaa ctatggagta tgtttttctt gtgttctaat ggggaatcct 900

atgtaatctt tcacattggt cgaagtagag tgcacattgg ctagtaagtc gggtttggtt 960

ctaaccatag ttcaaaataa gaacctccta ctcttgattt gagggccata ttttataaat 1020

gacaatatat taggtgcaac ctgatctatt gatgtaactg gaactcgtgc aaccaagact 1080

taagttgtaa gcatggaggt ggcaggggct gttttgaaaa agaatatttt taaaaagttc 1140

atccttcctt tatattcgtg tcttgattgc acggttgcgt ctaatatgtt acctttataa 1200

acagagatag attcgatata tatgtaatga tgtcaatgat attgtagcaa tctcaagtag 1260

aatttgtgaa aatcaacaga taacacttat tataagtact tcgattttta tatttgatgt 1320

ttgttagtac aaatttgaac tgaccgatgt caaaagaaga agaatggagt aggttgaatt 1380

tcaagccgtg ggtttctcaa ggtgctggtg cctctcgacc tcgcagtcgc aaagatgaaa 1440

ataaacccaa caaaaacaga agctgtatcc actagtacac gtttcaaggc caatccacct 1500

agggatcgga gaccatacaa ggctgaacat cacgtcaggt cacacaaccc ggtccaccgg 1560

ctgcccgtca atattttatg gctagcccga ctccgatggc tcccacgtgt caaacctcgc 1620

gtcatccaac agcccgagag cgaacagcgg cgggctcggc cacgtggtgg ttacgtggta 1680

gcacgaggcg ggcctgtgcg tgagcacctt ccggtgaggt gaccccagca cgcacgacgt 1740

ggcacagtca ccgacgtgtg aatctctccg tggacatctg acggtggtcc tgctatgctc 1800

tagagagaga agctgcatgc tctctcaata tatatacaca actcaagtat cgatgttctc 1860

agctcgtgat tcaccgtgat attctggtag atgacgggct ctaagtgaaa tgattttaca 1920

ttatttatcc ttacgtaaaa aaatgatgcg gcgatgtgtc a 1961

<210> 3923
<211> 1996
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292223_G1, chr8:153703656..153705651, Cluster 24

<400> 3923
ctgtgcagtg catgccgatg tctctacaac cacacctaaa cgtgttggca tgcccgtaag 60

tatttttaaa gtatatatag ttacatcatt tatcaactac atcgtactca atggcatgga 120

ctccagttcc taccactatg ataggaagtt tttgtcgttg tagcgttaca tgttcgacgt 180

tataaaatga tcgaggcatg gactccagtt cctaccacta tgaccagggc tccacgacta 240

cgacaagtta ggtgtagctg gacctatatt gggtagggcc tattaactag caaacatgta 300

actctctgcc cccttgtgct ataaaaagga gaagagtaac gtagataagg gatttccgat 360

tgggttcaaa ccgagcccat ttgagaagtg tctccgactc cattaggcca ggatcaatga 420

gtgtgaacca gaggccagta ggtctagaac tctcaccata actaaaataa aagggagagc 480

tagtcggtca ttgggctcag ttgataatta gacatgtaat cttctttctc ctcagcattc 540

atcaatccgt catatatata gagaatgttg gatgttacac atccatggtc caaacctatt 600

cagatcttcc atgtaccggt agccataaaa gtatcccgac caacgagcct acacccatcg 660

gtacctcctt aaaagttttt tatgcttttg ctacctacgg taccctcgtg tctcattatg 720

tgataataac cttctaattt ctacacaata atattttcta ataaccatct aaatcaacgg 780

tccacgatta tttgaagtac cgcaataaac cccctatatg aacacaaata aaactctgtt 840

ccggtttata attagtttaa cttgtttaca ccaagtttga ccagctcgtc ttattcaatt 900

atattatatg ctaaatgata tctccataaa aattaatagt tcaattatat tatatgctaa 960

atgatatctc cataaatatt aatagttatt atgatttttt gaataagacg agccggtcaa 1020

acttgaggag aaaaaaaacc caacgaacta taaattggga caggagggta caaagcacaa 1080

agctaaagta gtctcaaagc aggcagataa atattattgc tgaaacggaa tcatgaatct 1140

gggtagtagg tcagagcgag gagaacacca tcgtatctag actattagct agcttcgtaa 1200

tgacgaaata gtgacacatc taggagcaga gggattggcg aagatcgaat tccgcagcag 1260

ggcaccgaac cgaatcgcca cgtccagctg ctggggtcac cggtctggtg gagttgaagg 1320

ccagggccat cgccgtcccc gtcacgtcta aaacagatac agactagtac gtagtaacta 1380

ctagcgacca attggatgca cagaggttga catcgttgac atattggcat gagcaagttg 1440

gcagctacct tacctgcggt tatgcttcac atccagagag aaaatttggt accagacgta 1500

cgaacacgaa actcattagc acataatgaa acttgttccg caaataaaat ttgcaacaaa 1560

gattttgtcg tcctttaaaa aatccatgca tatgatctgt gggctagatt caaatgttca 1620

tggctcctac atatcctgta tcaatcggta tcaagatctg tgcatgtgga tcaagtatat 1680

taagtattct ggttctagta cttccccatt gcaaaaggcc gaggtggttt tgcgagatcc 1740

caaagtcaga cgtagaatcc gccatggtct gacgagaacc cgcagtccgc gggggtggca 1800

caggtattac tttacgctgc cagtggctac aagtacagaa gaatcttagt ctcgtagttg 1860

ccctatcaaa gagcttggat ggatccaccc taaaatctta taagaaactg tatattttgg 1920

ttcgctgtct cacttgacac agtttaccaa tattaggtaa atatgtgttt gatttatagc 1980

cacaattgtg acaata 1996

<210> 3924
<211> 2586
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293611_G1, chr8:161138936..161141521, Cluster 24

<400> 3924
gcaatcatcg atcctatagt tgttgacatg ggcaagttga cgtgcttcac catcagctgc 60

ataatctaat tatatctcta gacagtatat attagtctac tttgttgatt cgatttgtgt 120

ttgtgttgta attcatctct ctttgtaaac cgcgtgacaa ccattgtaga tgtcatgtga 180

gaacttccta acattgtaca actagacaag tccttgtatc ataatgagac cctaccatcc 240

taccgagatg gcctcgacct ccttgcgacc ttaattatat ctcacgactt cattaagtcc 300

ttaatgttgt cgatgaaatg aatgaaaagg atatcatgca ttgctagctt cttgatctta 360

taatgtcata tcataacctt acaaacaatt aaggcttctt gttaagatga tatggatgac 420

tatagtatca aaaagtagga atttacatgt tgtcgtcatg ctaatcacat gatttttgc 480

atagaggtag gggatgccat acatgaacca tcgattgaat ctggtaatgt tttgccctaa 540

attgtattgg ttcctttatg gaaacaagtt atatttttca ataggtgtgc catttgattg 600

gcggactcaa tgtgtaactc tagtgcaagt atcatgtttg ccatgcaacc actcatcatg 660

tttgttattt tttgtagttg gtataacaca atattccaat caaacacatt gttgacaacc 720

ttaacttggg tagaatatag ggggacatag attaaaataa tgaatactgt ctatttttcc 780

ttcaaaatat ggtttctgga gaggtaaaca tgaacattca ttttctttc agcccatgca 840

ttacaagtga atggtatgtg tttctataga tactcattcc tccttatgtt atcttaagta 900

gagtgttgtg tgagggatat aataaattgt accttgattg agtggcttaa gcataataag 960

atccttacct tgcctcctta atgagatgac ttgttcctta aggcatcatt gttgcaagtg 1020

atgtttcaca tcattccacc atctattttg cacctgcatt gactcactga tgatattctt 1080

acttttaag tcaatcatta ttgcatatct agcatgtcag ttgtcatctt ctcattagtg 1140

tatatctgac atgcttgtac ccttcaccta gcacccatgt attgctcctt gtgtcatgat 1200

aaggtgggtg ttgtgttggg aacttgggat tggggtacac cataattatg tttgacacca 1260

accatgtaca agacacttaa cttgtcttag aatttcaagg cacgcaagaa acattgaacc 1320

aaacaatggg atgggggctt aggcccatca tcctagcctc acatgtaaca tttagggatg 1380

gatggagaac ataaataaga aaagatagat gacgaaggaa aagaggagaa aaagcaagga 1440

taaaaagagt ggtgaaaatg agttgcccta tataccttca ccacttgtat tgaagtcgat 1500

taagtttacg ggcttgtgga ggaggcacaa atatgagcaa cctgagagat ctagggtcct 1560

cccaactgta ctaatatata tacccaaaac aaaatactaa caaagaggca cttgtaatta 1620

tatataacat ggtttaatta atgaggggaa atatatcaag tggaccgagc tccaacccta 1680

gtcaagaaaa accatgttat atagttggtt tttcataatt agttggtaca aaatctctgg 1740

gagactaatc tagacaatca cttgggactc catgacatgt tttttctagt taaataatct 1800

agtcaatcac tatatggcaa ctatataaat aattagagaa aaataatcta gaaatcactt 1860

tgggagtcca tgaatccatg tgagaatgta gaaaaaatta accgatagta catttttat 1920

ctttgagtga tatagttggt tttatagaat ctttgtcata caacgttatg tcatatattg 1980

tattaactca aaaccacttc ataataacta tgccataaaa tatggatttg ccaaccaagt 2040

tacaagcttt ctttgccttt ttgtatgagt ttaatgtcaa tagaatttgg gaaagcacac 2100

aacattcttc atacagatgg tgagacactt ctgttcacca ttttcatggt gccatttaca 2160

tattcatggg ctacccccat cataatatgt aggaccatgt atgttcccat cacaatacta 2220

tatcatgtca tatatgatat ttatctaaaa ccgtttgaaa atattacatc atgtgctttt 2280

ttataacact ttcacttgtt aatacttttg tttcatattt tcattcttag tgcaactact 2340

tgtaccttta attcttgttg gagcataatg tgcaccttag ataattagtc atttcattga 2400

taccatctcg attaatcgat taatgtcaat atttatgtta caaatgcatt gtggttgtgg 2460

tggttcatct gatgaagtat gtttgttagc ataggtaact ttacacttga tgtgtttgca 2520

cttgctatag ttggtcatgg ttgtccattt tgcgtgcatc acgcttgttg tgggtgttac 2580

cgctcc 2586

<210> 3925
<211> 1778
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_293957_G1, chr8:162582104..162583881, Cluster 24

<400> 3925
tgggccgggc cccaacgaca cgcatggcta tttctcggcc attctgctgg ttcagcccac 60

aaactaggtg acatgacata tgggtatttt tatttagagc ggcagtgctc cttgacagat 120

gtctagaatt tttatatagg ccgttcaact ctattatata agttttgaac acataagcaa 180

tgcgttacaa attgatcaca tatacatcgt ttttagaacg tgtcaagaga ccatcatttc 240

tcttgtgatt aagggatctg tttcctgtag accccaatta ggtgaaggaa tttgttaatt 300

gaaaaaaggc aggtatcatt ggtgtgcaga tctgtgcttg ataatcccaa atcaaataaa 360

ctatgcacaa ggcgagatac acattatctc atctccttta gcgttcactg cttcgcttta 420

cacgtgtagc actaatccat cactattagt gcttcctgct gctagctagt ttccctttgg 480

caaagtccaa gcaaagagga tcatatctga tccgaaagga acggaaaagg accgagcagt 540

ttgctcctgg gagacagtat catgaaaagt tgaaaacaat ttcgactttt tctttataca 600

tacaaaaaca tgtaatttct cccccgcccc aaaccgtaac attactttaa gttctactag 660

aaaactagcg cgcaacctta ctgaaaggat tactaacagc gcggcggtga taaactgaaa 720

accatactta agcttgtcca gcaaattaaa ggacttagaa caaaggatta tttctgaatc 780

ctgcatctgc gtttttgaa ctaattccta ttaaattctt ataccatcac tatgaaattc 840

ctgcgtttca aaagatgcct aaatttttag tgtccagaaa ccgccccata ttgattatga 900

atcaaagaac taagagcatg tacaacctta tttattatag tcttttgagg agtctctagg 960

ttctaggaga ttagttgaaa aaaatacaag agacggactc ttcgtgaaga gcacgtctat 1020

acactattct ctatacaatt tatctcttaa ctgcatttat gattcagagg ctcggagttg 1080

aatcatgtaa tttcttaact gtattttata cttggaaaac aaaaccatag tctcagggtt 1140

tttcatgtcc taagccatat tgtccagcca ttggctgtca aatcatccag aaaatgagac 1200

tccattaagc tgcactttct atcaaacacc ttatgagcgg tgcccatggt tccatcaatc 1260

cacaagtgtt aatgaacaca ataaactggg aaatgtaagg acatgagaga tcaacataca 1320

tggaggagca tacatttatc aaaagtttgt gtagcatgca atttcttata cactgtcact 1380

gtcttccgtg tcatcgcaaa tgtcttaatc tattccgtgt cacccggata taatttttta 1440

tccttgtatg gcatcgctag tagcatagaa gggtaagaaa ttgtatgtct taatcccttc 1500

tgcaccactg aggatgacat gcaagggtaa gaaattatat ccaagtgaca taaaagagat 1560

taagacgttt atgacgacaa atataaggta ctaagtaaaa ttacagtgac atataagaat 1620

ttgcccttgg aataatattt tgcgtcaaac ttttatactg aatagaactt agtaatattt 1680

agttgtattt aatattctac tagttagttg cttgtgcatt gttccagtat atatatatat 1740

atatatattt ggtgcatgat aaatatactt atttttat 1778

<210> 3926
<211> 1684
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295303_G1, chr8:168919279..168920962, Cluster 24

<400> 3926
aagactaaat agacaaggtg ctataatacg agaagaattg cattaactag gagctttttc 60

tagatgtttt actagcgaga atattttcta gatggtcaag ttaaggagtg gctttgaatg 120

gatttctcct cagaagtgag ggtgaagcgc gcgaagcaat tggaggtgtc tccaattgct 180

gttgtgagca ataatctatt cagattggcc aattcccgtt gcattttggg tgggcaaaat 240

gtgagaagag ggagagggat taatcagatt atggccgcca tggttggtag cagtgagctt 300

ttaggcttgg cgcggacacc agcgtgagaa gggaatggaa gttttgggcc gagtaaacaa 360

aaggcccagc cagaaggcac aattcgggcg caacattgtg gacctttct cgtcctcgtc 420

ctcccctgct acggtgctac cccaatcatc tcactggctt cgggttctgg ccgctaggtt 480

tgggacccga cgaggatgga cgagatccgg cagtttggag atcgaggcta agacgaccga 540

cgactggtct tctgtggagg tgctaaagac aagaagatgt atagccgtga tgctcgggat 600

ggcagatggg atgctggtcc tacagatgaa agagatggta gaaggtagag ggaaccttca 660

gagaagacca agagatgaat gcctttaccg cgaacactga gaaggtccag atcagaatac 720

cagggcgcag tatagaggtt gggatcaaag ggatgctcat ggaaagatgc gtcagggaga 780

tgagtgggat gtgaggcaga tggcagagat gatctttatt tgttgcaaac tggatgatca 840

tcgacaagga tcctaaatac cagcaaagat gggaactcgt ttagcttgat caggtattct 900

ctctggccaa cgtgctatat ttcaattgca atttgcaaca gaacaggaca tcagaaaata 960

aactgtttca accatctgtt ttgctataac ggtaagcaaa ccagttgaaa gcgtctaggg 1020

gcatattgtg atgattgaac tcaaacacga acagagaaaa acaaactaca ttggatagta 1080

attctctagt ttgtaaaatg tatatgttgg atgtatttat aggagtcctc atttttgtaa 1140

ttcactagtt aataagtgta tgtaggttgc tactgtatat atcacatcat aggtagacca 1200

tgtttgaatg ggattgttgt ttaaatatgt tccaaacctt tacaaaaatt tgtgctctat 1260

tcaaattggt caaacttgca agctacaaca ttgatctcca cgagacataa gggctaaatc 1320

ttttgttagc ctaggaacat tcaagcagct gaaaagggct tttcagaaag aactccaata 1380

ctctttgtgc acaatatgag gtagaccatg tttaaggaag ctttcttcct taagtttgtt 1440

cacaatatga ggtgaaatct tttcatctaa cttctttgct attgatgtta gcctatgtca 1500

cctttatatc tagtggcgat tgaatagctg cctcaaaatc ctatgtttct acaagcgcat 1560

gcacagatac agccaacaca actgctacca aagatttgat ctgactacct gtaaaaaaat 1620

tcacggttat gattgtcgat ctttataggg tgtggtagaa aatagatgta tcttaaaagt 1680

tctt 1684

<210> 3927
<211> 1887
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295706_G1, chr8:170786084..170787970, Cluster 24

<400> 3927
tatgagaggt tatttgtaaa agtataacgt ggaacgaccg ttgaaaccga tgatttaata 60

tagtagagat agagatgaaa taatttaggt gcagttgtat ggtaacctag tttattggaa 120

ctttgattat taattttagc catatgttag gtggtgggag caaggacaaa tatttttta 180

aggagtgata gtgatcgata acttcttcta aaattgccat gagtagtggg tagtctaata 240

atttgtatgt ttgtttaata tccaaattgt ttaagctgga ttatataata tagacagatt 300

ataaggtaaa acaatgtgcc cctcttaaaa agtatacatg acctttgttt ttaggttgta 360

ttcaatctat atcattgttt gctattattt attggaaata ttaatgtttt atagatatga 420

ctacggattt gctgataact atttgtagtt gacataaacg aaagcccgaa ccacttttg 480

agacatctga ggaagactaa tttcagaata ggaaaataca tccaaggaaa acgtgactct 540

agtcttgaca tgacatcatt taaggcacaa ccgcacaact gatgaacatc aacataatgt 600

ttgaatacgg agacttcaaa gttggtgcga tatctctcac acccaacaca tacggccaaa 660

gaggttccat ttatagttac cgggaaaaaa atatagagat atcttcgata agccaacaaa 720

gaagatgttt gacggaatca taacctactt ctacttctgg tggcatatat ggaagaagaa 780

cattccagca aaaaccagtc gaccgaaaga agttgcaatg atgactgttg caagctgttt 840

gtgaaatgat gactgttgca agctgtttgt gaaatgatga ctgttgcaag atgtctctcc 900

acgaagcgca taatccttca ctgcaaggat ttcagaaaaa aaaaagtaat tttatgggtc 960

acatggacaa gggagtcctt ggttttacaa tgaaacgaac ataacattgt tgaccacttt 1020

ttgactcttc tttctgccag ctactacgcg tcaattgata atgtcattat acttctgaaa 1080

ttatgtgctt acagaagagt accgattcag acagttctct gaaagttttt ttttttttgt 1140

gaaatgatta ctgttgcaag ctgtttgatg aaatcattcc tgtaatgctc ttgtatcata 1200

ctatactcac tcctttacag gtttatgaga tgactggaac tggatgtttc aaatgttaca 1260

gtatgttaaa taacacgcaa aaggttgagt ggagcagtag ttaaggtatg tgtggacaca 1320

accttgtaga tacgtttgcc tttcttatat ttttcttggc tttagctttg ttctttttt 1380

gttgttgaga aaatggcttt agctttgttt aatctgatta tacgatgcca catatcggta 1440

ggggtttctc tacactccat ggtgcattgg tagctgctgc cgtttctttc tacttggcca 1500

tgacctcttt gtagctttta cggagctttc cgactgtagc agcgtggctc ctgcaactga 1560

tgcgaaaaaa aaaatgcgag atcttgtgat acgctgctac ggtgcttctg cagcagcaat 1620

agaatggagt tcttgttttt tttttcaaaa aaaaacaaac ctttgttgca ctcatgaaaa 1680

aacagtcgta taatttatag ctttgtattt agcctccttt cttgcatcct gtctagatgc 1740

gctactggtt gggctgttcg tcgcgacatt aacgtgcatc tgcctcgtct gttgggcgct 1800

ttgggggtag atgggcagta cgccagtacc agcctaccag gtccatctgc ctcgtctgtt 1860

gggcgcgtcg catcaggttg ctttgtt 1887

<210> 3928
<211> 1434
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295803_G1, chr8:171271731..171273164, Cluster 24

<400> 3928
aaccagccaa ccaggcttcg gggtaccatc ggtttcacgt gccagtttgg ttgagaccag 60

tgattggcca taaaacgagg aaagggaagt tatacggcgt gggtatccac aacgagacaa 120

tgtctattca aagtagtggg tgggcctctt acaacgagac acggtctatt ttttagaaag 180

tgatgctacg tgaattataa gaaatttaa taaccgtttt ttatgaaggg tggaccatat 240

atctattctg aatgagtaaa gaaagatgta tgtattcatt gagtttgctc aaatctatga 300

atatcattga agctatgata ataactattt caggatttca cttgtcatcc acttatgttc 360

ttcacagtag ctaagctaga gaaaaatctg agagggtaaa cctacatttt agatgcttag 420

atttagggtc tgtttaaatc ttatgtgcta agctttagca tagtgctaaa ttttagcact 480

ctctaatgga gagcataagt ttaaaattag tagtgtttgg atggcagggc taaagtttag 540

catatggata tataaagaca tattcacata tatacctcta attaatgtga ggcagggaga 600

gagagtggag taagggcttg tttgtttata tagtgttaaa gtttagcacc tgctaatttt 660

tttgctaaac tttagcactt gtggctgttt ggatacaagt gctaaacttt agactttagc 720

atattaattg cagccacatt aaatgtccga gagcatgagg aggggagaga gaaaaagtga 780

cagttgtgag tgggagagaa aggggctggg atcactttta gtttatttta acacctttgg 840

aggaactaat gtgttaatgg gtattaaact ttagcacaaa atttttagcc accatgtttg 900

tttctttagt agataaactt tagcaaaaag tgcactgtta acctttaaca agggtaggag 960

atgtcttttt tcactctgga ccacttttag ctcactttag cacccttata ggagctaaac 1020

tgctaatgag tgctaaagtt tagcacttac attttacaca ccttttaaca cttttctttg 1080

gatctccaag tgctaaagtt ctaaaagtgt agtgttaaat tttagcatca tgaattcaaa 1140

cagacccctg atgcatggtg aaaatctgat ctatttaata acattctatt ttaggtgtat 1200

tccatggtgt gctggttgtt ttaggtgtcg ctcctagaga actatcgagt tcggcgtgta 1260

ttctaaggaa tgatttttac aaaactgtgt tcttatttta gttgttgctt tgatattata 1320

ctttttgatt gttacatcat gtccttgagc agttacatcc acacgcggag tacctccttc 1380

caacctctat gttttcaata ttgcttaata caaagctttg ggtaggagtg gtta 1434

<210> 3929
<211> 2113
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296141_G1, chr8:173322761..173324873, Cluster 24

<400> 3929
atggacgact ctccaaaatt cctgtcacac tcgcttaggc cctcttggcc tctttggtaa 60

ggctgcttca ataactcctc caacgatttc ttgaaaaaat atatcaaaga ataggctatt 120

tgatggtatc tttctagaaa agatgaataa gctcctccaa aaaaccagca ggagatgaga 180

gccagaaaaa agagttttac cggctcctct tccttgtttt tctcttcgtc gacgctacat 240

cgtaggagaa gttgtaaaaa aattatattt ccaaccaaat gggatgctct ttcataagct 300

ttttctgaaa ataaggatga acctattttc ttagaggagc tagagctatg actgaaagtg 360

acagagaaat agccctacca aacggggcct tattatatta ggactctcca tattatagtc 420

agtgcttggt gttgaacgca tttagattcc agttttgatc ttaggatttg ataaacacag 480

gtttatatga ctaacatgtg ttctacaata ttcattatat gtatattggt tgctcgcttg 540

cagaccacac atggtttttt tatcactcgc taatagttta gattagtaac gaatatggtg 600

caaagggcat tcaatagcca agatttttct ttagagtgtg tttgattaga agaggggttg 660

aagaggatta gagaggatta aattcctttt tagtctaaat taaatggaaa ggggtttaat 720

caccttaatc aacttcgatc tctatacgac cgaacaaggc cttaggatga ccaactcgat 780

atataactat agttgtaatg tcaataaata aaatatatgt atatatagaa tatataacag 840

tcgtttgtca taataattaa cacatgtatg cactaagtac acgataaatt ttaacttatt 900

ataaactaaa ttttttattt tagccataga tatataaatt atttttttct ttttagtggg 960

gacacggtcc ctgcttgccc cctgtctatg gcagtgggca ttcacacaga ccaaaaaaaa 1020

tatagagatg agtgcaagct tagtgctcag atgtgcttga tgtagtgtat ggggctttgg 1080

tttcatttat ctatattatt agaaagggat ggaggtctca gacatggaac ttaatgagac 1140

tagtgttgaa atcatttgga tattcatggt atcgtcaagt catagcttaa gtgatatcat 1200

tggataggtt tttgagtcaa ggatctcaaa catgttatgt gcgtcattcg atggtgcata 1260

actcactttc gaacttggtt ctagtatgga gtagccacca tattatcggg tgcgacttcg 1320

taatgccaga catatcatct agttaggatg ccaccccacc tatgttcacc gtacaatcat 1380

gtggtgactt tgtgatacca gacaaatagg ggtgaaaaca gaaagaaacg aatagaaagt 1440

actctcttct atttccatat tgcaaaggca tatcgtcaat gtgatatatg gtcatccaaa 1500

aatagataaa tacaacaaaa tagactataa atgaaaaatg ttaggccaaa aatagatacc 1560

atatggcagc ccaattacat aacatacgac aaactaaata tttatacaaa taataaaccc 1620

tcatgccgtg acatgacata cataaacaca atcaaaattg aataacatgc acattacaag 1680

tcacaatgat agacataagc caaacttaat aagtacgact cacaagtcac aagctcacat 1740

catcatacac ataagccaaa ctaaaaaaat caaagatata gtacacatga taactactca 1800

taagtcacat atgagagact tacagtagta caatgcatac atcacaatac aatattagac 1860

catataagtc tatcattcca caaataagta cataatactt caaataatag acgaaacaca 1920

caagaccatg tgtgaacaac aagtccacca acaacacatg tgaataaaaa ctctatgtgt 1980

taaaagcttc tcccaggtca ccattttcat tcattacata tggatcactt tccacttctt 2040

cacgttttta gcacatgtgg ttatttataa tcagttgcaa acgtaaacct atgttattat 2100

tttaggttgt tga 2113

<210> 3930
<211> 1839
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296234_G1, chr8:173698663..173700501, Cluster 24

<220>
<221> modified_base
<222> (40)..(40)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (41)..(41)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (42)..(42)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (43)..(43)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (44)..(44)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (45)..(45)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (46)..(46)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (47)..(47)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(139)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<400> 3930
atacgaattc aagctgatca taagacgacc ccccccgtgn nnnnnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnna acatcttatg gagcctctat gcaaataact actctaagtc 180

cttaggacat gaagtcagaa aatatttgct agacacatag acatacttgc gaagattaac 240

cattcacaag gactggtaaa aggagatgaa caatgaccat attaccctca tgtaacaaac 300

tactctaata taatatttat gggtagaaaa gtatttacac atgaattata aagatgcccc 360

cctataaata tcgcccaata tgtacaaatt tttattcaat acaattcatt ctctccattt 420

gttatgttcg tactttctct cctcaactct gggatgctcc taacaatatg actcttagac 480

atttcctttg tcgtttaagg ccccctaccc cctagatctc aaaggtcctt ggcgttcaat 540

aattcaaatc gttaggccct aggtttccta aagagacaaa atgactcata caatgactaa 600

gtatgaaggt acccacaagt caacaaaaca catctagcct ccactagagg catgataacc 660

ctaaaaggta cgataccaca tttgagatct acccatgatg gtctcatgtc gatacaaata 720

agtattttgt atatcatatt aaatatgatg tgagacgtta tggaaagata gatgcactat 780

tgtcaagact taggctacag acgtgctcaa gataactatt caatatgtgc attgacccta 840

tagccatgtg tgggcatgat aatgtactag aaagtattat aaagtacata ttgctctatg 900

aagaagaatg gctagttttg gggcaaacta gtaaagaaaa cgtcgaagct cttgtctgtg 960

agggacccca ttagggtaat ggcattgcca tgttgccctt ggtcggccaa caaacctaag 1020

tgccatcttt ggtcatcaga tcaaggagtg aacatctaca tgaggtttca atggacaaaa 1080

gagaggtatt atatttttt tatttgatta gttgttggat gcctcaatca tttgcaattc 1140

tcttatttat attgaggggg tgatcttatc tccatatgaa agaaatctag atccaaatct 1200

tcaagtttca catgacaaaa gtttagaaat taattagttt agactataat ataaaaagtc 1260

gacttgaaca attttcaccg agccaaatag ccacataaca tgtatatcac tgtcatctta 1320

gtcgattttg tagtgggtcc acagctgaaa atattttaaa acttatctag actccaacaa 1380

gagaattcat atatgtttct ttgccaactc gacgagagga gcacaatgat tcaatctatt 1440

attttatttg agcaagttaa aaaaattcgg tctatctagt ttcggaaacc ggtcgatttc 1500

actggttagc tctctaaaag ttgttttctt tgtttggacc tcaaataaca taacataaat 1560

atattttatg tatgtcttga cgatggaaac atgatggcaa agtctactat atgtgttaac 1620

caattttggt ttctagcaga attcgaagta tgtatatgtc tactactata gagcacaagt 1680

ttctattgtt tccaccatcg tcatgtgtca cgtgcgaagc gcttaggtct gtttctctcc 1740

ctcgcatctc acgtctagcc taacaacaca cccacacatc gactatgccc agtcaacctc 1800

gcctcctttc tacctactgt tcccccaatc acatgccac 1839

<210> 3931
<211> 2240
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296850_G1, chr9:961244..963483, Cluster 24

<400> 3931
ccaatagttc acatgccttg cggtagcagg tgttgcatta tgtcgtgtaa ctacactagt 60

ttcgatttgg ttatccattt gcttgtattc acttgacatt ctacatccat atatctggtt 120

tcgattgcag tggctttacc tttactagcg gtgctctact gcttcctgaa gcaactagca 180

gaaaatgatg ataggagttc tagtgacact gatagtctat ggaatctctg gtttatcact 240

tcaggaattt ttctacggct cactatcaga ctaaataggt atgtgaccgt gtattacaat 300

aggagttaaa aaatagtata aaacatatat atagaacaat aagcatcact ataatatgta 360

aaatctgtgt acaagtagtt tatagcaaaa tcatcaatca cttttgacca accaatagtt 420

gcagacttct tagcgctaca aaagcacaac acacaagtat ttgatacggc tgcatgacat 480

taacaagccc caccatggtt gatgaagtct agtgatatca aaaagattta agttcaagag 540

ttcctcccag caaaattaca ccatgatagt tcacctgctc ctttgaaaag ttaacttcaa 600

taacgaactt ggacctgaat acagtagcaa aattcataag ttaggacacc catctaaata 660

attagtgtca atgaacaaac ataacataca catattaaca catagtagca aaactactta 720

ctatgtaaat gaatcaatta ccttgtgtag tacataaaca caagcttcaa aagcatacaa 780

agtttagaaa aaatagacaa gtgtataaat cagtcaaaca aggagtcgat ctgatctaca 840

caaggtacca aaggaactaa ttcctacaac atgccacata tcttttaagg tgacaaggat 900

gaattcttac gagaaatgga tgcatgtgtt actcactctt tcagtacagg ttgagctttg 960

atgattcttc tctaagcttc ttccctctct attctccacc tttcttccgt cggcttttgc 1020

tgctcgaatt catgcctcac caagctctct agttgaaagc cttctggtct cgtacaatgc 1080

ttcggttcag tcttaagcga catctaaaca aggagtatgt ttagacagga tgaaccaaga 1140

tatggtgcca actaaaaaca ttcagagtaa aattttcaca taccatcgga tagtctgtgg 1200

tgtatgggta aggactagct ttgtgaacct tggccttttc ctcctccatc ttttgtaaga 1260

gatgtgcttc tagttgcctc tcttttaact ggcctctttc ctgaaacaag ggatgcacaa 1320

ctattctgtt gcatacgcat gatgagaaat gttgtggctc aaagaagaat cacatctcac 1380

ggacctctgt ttgtagactg aaagggtttg gtatggtgcg tctaggcaca tcttgcttgt 1440

tgctgtttga agaacattca gagtgaagag agagctagaa aataagaaaa gagcttaata 1500

aggcattgac caaaaaatag cctagtacaa tctacgagca tccaacacac aatctccatg 1560

cttactatga tcactatggg ttgcaagtac agttaccata catatttaca agcagttttt 1620

ccaaagagca gagaacagaa aatcattagt acaaacacca tgtacaaatg aggagcaccc 1680

ctaacatgat gttgatcaat tctctgtgtt aactccgtca gacattgtat tctgattgag 1740

ttctttttca agctcctcga tgactggctc cacaacagca ccaatctcat catttacctt 1800

gtcaacctgt acgagtgagg agaagcatga accttcattc cagtttaact ttcacttcac 1860

atgttaacac aacatagtga aatgtttcat gctcggttta tgttactgtc aaataatcca 1920

ggaaatatca ccatgtgaag gtttcttaat aaaatctgaa taaatcactt ttagatgcct 1980

tgccagttgt agacacatgt ttttctcagt ttcctttaca aaaattgtca ttaacttatg 2040

atgccaccaa aaagtcactt atgcaggtat gcaaacttaa gtgttgtaaa atgtaaaaca 2100

attatgtgca caacaatacc agaattccag aaatattgca aatggtaact gacctcagtt 2160

cctcacaaga aacaactaaa ctaaccttct tcaaagcaaa gccttttaag ctagaaaggt 2220

ccagcaactg gattggggga 2240

<210> 3932
<211> 2204
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29843_G1, chr1:182630340..182632543, Cluster 24

<400> 3932
ttatctatat tgctattagc atctacatca aattcagtga cagctccata aaaaattgca 60

gctattgtct tcctcaaatt tacattcatt aacactcatg atagtaaatc atattgaggc 120

tatagtaaaa tattcgtaca tgcgcgcgcg ctggcgcacg caagtgacta gtatctacaa 180

ttcgattcca caaacaaata taaagcacca cagcaaaagt aattgacttc aacaagtcaa 240

ccggaatgtg ccggttggat ttttcgaagg aaatctaacg tattttctat aggagtcata 300

aacacgcacc ttgtgtgaaa gctgacgtac cactaacaat atgcttaatt atgcttgcct 360

aatgctttga tacgtcccgt tattctataa atgaataaac tatttttta acgaatctcg 420

gtacaaacac tgacacactc acgtcaacac aacacatgtg taaccaccct tatcaacatt 480

catcacgtta cccataatta agcaaacaag ctactaccgg attattcaac actcccatca 540

acgaatactt tttttttcc taagaatctt tctcttcgag cttcaccttg gtcaagtgct 600

taacaacaga gaaatttaaa cctaattagc acaaaattcc ctccttgtcg gaggcaaata 660

ctgctgagaa ttgaattagt ttcaacctca acaaagtgtc tgtcggcaaa aaatgttgta 720

caatttaatt gttttcctgt agttgtcatg caatcaaact acaaaaagtc ataaaagtta 780

tagatatact ttattattta ctctaccaac atatcaaatt tcaagcttga attcattgta 840

tattaaaagg tattaaaaaa aatttctatc caatttggag gatgaatcaa aacttaaaat 900

tcgatatatt ggtaaaataa ataatattgt ttttatacat tttcataatt tattggtact 960

ttgattgcac ggcaattaca ttaaaaaact cgatatttca catatctctc ataggatatc 1020

agtatggtag gataggatca atcggatgga atcccactta gcaatgcgaa tcaagaactt 1080

attcttgaag agagtaatat aagatatata agagaattaa aggcacgtac ctcgtgggtg 1140

attcctactg tgtgcacatg tgtgaaaagc gggcagaaag acgttaagat tggcatgcac 1200

cgttcagttc gtcactgtta ctactattac tttaatttgc ctttaaaaaa atattctccc 1260

gtttatcatc cagagctgtg tattgtttat cagcctttca tagacaacaa tcgttgttga 1320

gaactttgtt ttgtgcggat gaaatcatta gcataatttg ttaggacgtt cgctattata 1380

tatatatggc ttgtggagga aacgacacta attaaggtag attaagaccg aatcgatcta 1440

ttattacgta tcaatattcc catgctccca aaccaaaagt cccaatgcca aacgtttttt 1500

ttattagagg cgcctctcct tttttaagat ggttttatca agagccggct ctacgtacaa 1560

gtggtcacac gaatatatga ggccaacaaa taattaaaat cccgcatgca gcttccgtac 1620

taattatatt caaccacaca acatgtgtga ctaataagtt ataggtgctc tccttttaa 1680

attcaatgca tattaatgca cctacatgtg tcttagctaa aataagatat aatgggatac 1740

gtacattaga tgtgtttaaa acccatgtct aacaatactt attgcgccaa tcaatatatt 1800

caataaaatc ggatgcacca accaaccaac tacgtcttct accttcttat ctgtcatttt 1860

cgttttattt tttatttttt taaaaaaact agtgcttctg ccagtggcat cctccagtag 1920

cactatcgaa gctctctgca gtgcacggat ggatcagctc tctcctgtcc taatgacaga 1980

cacgtagcag gtagcaaccg agctatcgta gctttcaagc agacgtcgtt ctaaatagag 2040

acagttgggg ggggttatgt tattacaatt attccggatc ggactctgct tgtttaacga 2100

tacgatcagt gagtgcggtt agatagagac gagacgtcgc tgctctccct tttgcgcttc 2160

ttttcggcta caataacaag gcaacgtatt atatacgtac tgta 2204

<210> 3933
<211> 1827
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299140_G1, chr9:9724868..9726694, Cluster 24

<400> 3933
tgacgcttcg agaagcatat caccatctgc ttcgctcgat cggaccatga acaatcattt 60

gtatatgcct ttgaagagga tgaccttgtg gttgtttgtg gaccattggt ccttcaactg 120

cttggggttg gggtacatta gggaggaggt tttgtggagt tataaatagt cgctattttg 180

cccgaaaggt cggtcccttt ttgtcgtttc cctcaacgag gtcaatgaag tgtaatagcc 240

acacatgaat ataaaaaatt atgaactaaa aatattgttg gcctaaacat tatgtccaat 300

tcataacaat atatatgtac ttaccagtct tttatccttc gtcttagttc aatttcttcg 360

ccattggaac taggccgcat cagagtatgt ggactggttg gaggatgcat cgttgtgact 420

tcttgggggt actatcatgc ctgttggagg ataaaaagga gcatgcacac tatatggggg 480

atcaccatat gggagaggga acgaaggagg agcaccatat ggaggattgt atggaggagc 540

accatatata cgatctataa ggaggagcac catatggata cctatatgag tatagaggag 600

ggtaacaata agaaaaagat tgagaaggag tgtcgatggt aggtggtagg agaaggagca 660

tcgatcatag gaggttcaat gtaggttgag gagcatcgat gaatagtcga tatagataca 720

gaggaggaca tgatatgtaa gtataggtta tagacttagg gaatggagat gggaaggaac 780

atcctcattt cgatgatgaa cgtgagaaag accatcgaag aaaacttgct ttatactagt 840

aggggtctca gaacattatg gagattgctc gttgagcaag tcgatgaatg tatcaaagtt 900

catattccac attggatcca taataaaaca taaagtggaa ggttgcaggt agagaataag 960

gcttgtgaat tagagagtga cgggtgtgaa tgcacccaaa cacatcccta tttatagggt 1020

gaatgagtat ttttttaaa ttgttgaaat ccaaatgtct aaagtggcac caacatttca 1080

gaaaccacca tgtcaccacg agacggtcga tactgaccag acctagctag taccgatcta 1140

gactccaaca tcgtggtcaa taccaattag catggtttca acgccactgg tactgactag 1200

tgacaggtcc atcgatcgac agaccataac acctaccgat aggaccacat gtgatcaatg 1260

ataagggccc aagctgcacc taaccttaca aagtgggatg ctgagggaaa tgtggactac 1320

tcaagtatca ctgcaggggt gggataagtt catcgatata tggtggacgt caaacatatg 1380

caactcgatg tgtgtatgac atgccacatg tataagttcg acgactttac taagccatca 1440

aagttaactt gaaataaatt tcatagccta tgggccatta aaattatcta gcgccatgtg 1500

tgcctaccac atcacccata taagtttgac gattttaagt tgttgagatt aatttgaaag 1560

aaattcgacg ccctatgtag accatcgaaa gtaattttaa tttgatgggg ccatcatact 1620

tatgggctta atttcatcaa gttaaatttg acgggaaacc atccaaatta acttaatatc 1680

atcgttttgc ccttaattta aatgggtttt tggccatcga attttaagca atttctatag 1740

tgagtggagc atttattaat aaagtacacc agatattgat aatattgttg taaaaaatcc 1800

tactactaaa attctctagt tgatgat 1827

<210> 3934
<211> 2016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301696_G1, chr9:23132131..23134146, Cluster 24

<400> 3934
cttagagtcc aaagggcact accacgagct gctggacgcg acaactgttt gccatcacgc 60

ctgcccccac acatcccgtg aaatgcatat gcacattagg gagccactga tgatagccta 120

atgtctcctt caaagttaac atataaagga aaagatcttc taggcacaaa tagatgtctc 180

cctcttctgt atgaaactat agttttcact ttggtcttta tcctaagata aacttttcta 240

atttaaccat tttctaaaaa caaatatatg aacactagtt caataataca ccattaaaag 300

ttagttgtga atactttaat aaaaaattga tgttgtaggt gttgatgtat tttactataa 360

attttatcaa caatgtttaa gagttaagac aaagccaaaa agaaaccata atttagaatt 420

gataagatct ttctacgttg taggtattaa acatactcat gcttattatg cttacgtttt 480

ctaagatttt agtctatgta acatgtcaat gaactagtag ttatctaaat aaatagataa 540

tgggcctcca tcgtggagga cacaccaaac caaaacaaat cgttgatgaa ttgaaccacc 600

acgaaacagg ggcgtagcag caagatcttc tgttagggcg ctgtataagc aggctagaat 660

gcattaggcc cagaagtgct ctagattaaa ataaattaat acaacattta aactatttaa 720

tgtctttgtt attcatgtgg atttttaaat agttaaggat tactggatag tttctcttaa 780

tagagaggga gcaccttctt gaggttgttc cagtggtcac ctcggagagg gcccctcaag 840

tttgccatat atgtatgacc tctaacccag attgtcgacg atgagatcgt cgaagtgaag 900

agtctataca tcatttttag gagcaggcac aatattcttg aaaactttaa atatagggta 960

taagaaaact gctatgggag agatatttaa atgtataaac gtctgggatg atatctttat 1020

gagacaatag gaatcgatca aattagggaa ttattaatct tgtaaagaat acaacaaaca 1080

cggatatcat tctaacaccg tgccgccagc acaacgtatc taaaggtgat gccaaaggat 1140

tgagaaccaa aatgattcga gacgatccct tgtggtgtta gaggctgctg gattagttgt 1200

atatatctgt cgatagtgag gatataagtc atttaattat attcggacat caaatgatga 1260

gtactccact ttttaaaaaa aatataagac atttaacttt cttgaaaagc caactccaac 1320

tcatcttaag tccgattatt aaaattacag agagaattat agaaatttat aacaccaaat 1380

agcagattta ttactatgaa aaataagtaa taatataata atacttattt gttattacaa 1440

ttattattac tattttaata tgacatttag ctgaatttaa ggtctcgact cttcggaaaa 1500

ttagaatggc ttataattta ggacggaggg agcagttcga ttgacaaccg cggatcagtt 1560

tcagcccttt gtccatcctg tcatatacca aactctccaa gggatacaat catcaagatg 1620

tattaactct tcaaatcaat cccctctttc ttgttgcttc ataagagtga atccatttta 1680

tgggcgaaag ccgggggctt taaatccacc gatggattgc ttcactcaat aacatcatta 1740

acaaacaaaa gaataaatag agggattcca accatcagag caaagatttt ctctttgtta 1800

tttttacaaa tagaaatagg tatcaaattt ctagattatg gaacaaaacc gcattataac 1860

aataagaatt ccacgggccc tttccgctct aattagataa aggggagtaa ggacctgcta 1920

agttcctact ttttcatgtt tacaatctgg atcctctaat tactatagag atgaacccaa 1980

tccagaatac taaccgtaaa agaaaacacc tattaa 2016

<210> 3935
<211> 2395
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30714_G1, chr1:188930491..188932885, Cluster 24

<400> 3935
atgccttggc gttctcgact gcggctagcc taagttttca aactacccta aaaatataag 60

tgctagtgag aaatgcacct agacagttta gtaagaatat ttcttataga ttctagcaaa 120

tcatggttaa ataacatata tgtaatttat caaaatcgca atagaggaag agtcggagga 180

gaaaatatat atcgatttaa actacaagat cttgccacaa aggttcaaaa gagagattta 240

tttgttacca taaggtcaac ttgaaaaagg tgaggccctt caccataaaa taacacaatg 300

acatagagaa aagtacagac actctcaacc acaactcttt ctctcaatac aagactctaa 360

gtaaagattc atgcatccga taggtacaag cttttcagga taatgttttg ccttgatgca 420

agattgccaa tgatgtcacc tgctgcctaa caccatccgg gttttgagac ccaaacccaa 480

caaagccgta tatcgatgat tttgggttcc aaaccacaaa acctagttgg agaagcgtat 540

tcgctactac tccatgatct cgacatgtgt cacaatcctc aaaccattct caattatcta 600

atcaccaagt cctcatgcac tattcgacat gatcaagcac catcttgatt tggtcaacac 660

ggtctatgtc atcttctcat atacacttgt tcgtcgatgt tgccaagtgt tattcatcca 720

taaccctcac gagtacctta gtacaagcct ccccaactat cattcaccaa ccctggttca 780

ctggcataaa ctcgtttgat cttatccaat atagtcaatc ggctcaaccc ctgcacccat 840

cattaagtca aaatatatat tgcataacac catactcaca ccatggttag tctcagcaat 900

gaacccaaac ttaataatca ccttgacaat cacttaccaa aataacacac atgaccacat 960

ctcaatcacg tgttcacaaa attattttag ttcctagaaa taatgatact gtgatttttc 1020

tcctcaaact ctctaaagcc ttaacccatt taaattacca ccatgttgta gttttgaaga 1080

caactttctc tttttttatg gaaaattggt aaatatatga caatgttttt aaaccattca 1140

aggtgtctct accctcataa aaaattcaaa ggaaccatat aaataaggtt atgaagaatc 1200

caagtaaaat atttagagtt tgtgataata tatctagaat atttaggaaa atatatttag 1260

atcttggaaa acgagacaaa aacattcaaa aaatctataa aactaccaaa aaatggcgag 1320

gatgacgtta ttttggagta acaattaatt ggctctttgg cccatatggt atttttatg 1380

taaacatcgg aggagctaag aggcttcatt tgaatatatt tactatagat cccagcaacc 1440

cttaaagggt ccaacatggt gcgaagacag aggggagata gatgataacc aacatacaac 1500

aaagatcaac taacagactc cacctaactc aaaggttgac atgaacttag gggctaaaaa 1560

atggctacta gaatgtcgga tatagagcaa agctcagaga aggatgaaag ggtgatcatt 1620

caaatagagc aaggtcttga ttaaaaaaga agaaagaaaa aacaaaaaac caaagttgtg 1680

aagacaacaa tatataaata ggatttttt ttgccagtca agacgtaata gagtgtttga 1740

ccaaagttat gaaaactcta atgagcaatt tcggtcatct ggtgtcacta gatatttggt 1800

tgatctacgt gcattttgta tttagaccta agtgacacaa gaaagagcaa gtgaaaaatg 1860

tttatgaaag caatttgaaa atggtaattt agacttacac gtttggaaaa aaaatgagaa 1920

ttgacacact tacaagtgaa cgagttgtgc gctcagtgtt attgtttaat aggcaccgaa 1980

cgtacacttt gacgttcgtt gtgcatcgaa cacccctgga ccggataggt tcggcacaac 2040

caggatgagc atgagaaaaa tttcaagagc aacgagttca ttttaaagct cgctagatat 2100

gtccagtgtg gtatctgacg tcataccaga ctagacatcc gaatagatta tttttaggat 2160

cggaacgcga gagtgttgtg agtagcactg gataaactac tgtggcaatg actagtttct 2220

tataacattg aatatacact atatgtactc gtatttgtat atatttggtt aaaggtaaaa 2280

atagatgaat tcttgaaaaa ggaaaaataa ctgttttaat ttaaaaccaa gcgattacta 2340

tcaaacaata gtaatagtag taagtctaca ctactttatt aataacatac tttat 2395

<210> 3936
<211> 1620
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313155_G1, chr9:96769994..96771613, Cluster 24

<400> 3936
aacctgatgc cctaatcgac cttgctacac ccccttgaca aggcaccagg tggcttaggt 60

caacccctag gtgacttagg ccaaccaata gacttcccta gtctatggta gaggacaaaa 120

gaaaagaaag gtatggctag ctagtagggg aaaaagaaaa aaagaggaaa tgttgaacca 180

ccaagaatca aacgcatgac ctaatgttac aaacactaaa tcttaaccat cgcaccatgt 240

atgactaagt gtttataatg gaagatatgc tctttttaaa attttaggta tggctagtgc 300

catactccgc cactgtccct aattggccac cgacaagcca tggtcgacca ccaccctatg 360

ctcgccaatg tcactttggt agtcatagag attgcaatgt tgtttaatgt tttgtggaag 420

acgatagtga atgtgagagt cataattgta atgttgttta atttttttgtt tccaaattga 480

aaaaattctt attatgtcct tctcacatcc tttaggaaat tctcagtgtt ggtaagttta 540

agaagaagcc tttgaaaaat taatatgact tgaaggtaat gtttggtagc atcatttaca 600

aggaacaaga taattggaat cctatgaatt caaacccaac catacccata catgatgata 660

ctccgtttga tgccatagag attcaggact atcccatgga ttacaacaat tcttttgaca 720

atggtgatga ggtcaacaag tttactccta taaaaatgct aagcatcaga ctcatgttat 780

tctttgacaa gcttaccaag aaatctaagt gaagcatgac acttgttatt caacgacaca 840

tctcaaagat ttttaagtct gcttcctctt ttatgtccag taagcatgtt aggatcatca 900

ttgagtaagt catggaacat attattgcat gtggcacttg atcaataccg atgagcattt 960

tgtggcaaca gatttatttg tcaagagaga ccaaacgaaa atattgatga ctgtccttat 1020

cgattagagg ctcatttggc ttaggaggaa gtataatgtc atgtatggag aaaagtgaaa 1080

gatgtgattt catttaggga tattatcgtt atttattgtg aacttttgga catgtcgtcg 1140

ttatttttat gatcttttta gcacgttgcc ataatttta tggtcttttg aacatattgg 1200

cgtcatttat tatggttatt tgaacatgtt atcatcattt attattatca gttgaacatg 1260

tagtcattat ttattttgct tatgtgatca tgccatttgt tgcagatgtc tagcaatgag 1320

agtgacatgt tttttaaata accttaggtg acgctatact tgcccaaata tattatgaca 1380

tgcacctaga taaaaaaccc accaaggatg tcaagaacta gtgggatgag gtttttgcta 1440

aagacatggt gcactctggg ggaatgtcat agtcaacttc atatgtgcaa tgaaatattt 1500

tttgatatcc atggttcatt gttagagagg tgtgtaccac gaccatcctt gtatatgact 1560

atttatgaga accttggcat gtttttgttt acatgtgttg gaagtgagtc aacctggaaa 1620

<210> 3937
<211> 1486
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313735_G1, chr9:99685363..99686848, Cluster 24

<400> 3937
ccatctctag atgcgtactc acatgtgaag tttattttat atactattca ctttataaaa 60

atagatgatc tatcgtactc aatgaattct ttgtaatatt aaatttctaa aaactagagt 120

ttttgcatgt attgatttct ctttgtgcta tatgcatgta ctgattttag catgtgctga 180

aaattgaata ttactatcgt catgtgttga tttcattgtg tttaggcatc tacaagtttc 240

acttgagaaa acaaatggtt agtataacta ctatcttcaa tcgaatgacc acacgacaat 300

atacaaattg atattcacga ttgatcttgg ttatatgcag aatattaaat ttcttataga 360

tgacaactag ctgtctatga gttgtatgac atgtctcttt aactatctct atatcaaggt 420

ctacctattc gatatataga aatcgtgaaa tgcatggaca cctaactagt atacataagt 480

gaattttcca ttcaaaggtt tcttgtcact atgtcgaagg agagaaatag ctttggttac 540

gacatgatac atgcaaccaa ataaaacaca ttcaattaaa ctcgcatgtg ctacgcgcta 600

gggtttgttt gatagagaca gattaagttt aatctcctta catgttcgtc accaagtgca 660

gccaacctat gtataggtga aacatgggag atatgttaca ttcattggcc caggcaatgt 720

catgcaggag tgtatcactc ttctcactct cccacacaca cacacacaaa ctagaggttg 780

aaggtggaga acacaacgag atgaactgct tcccactata ggagaaagga aatacaatgt 840

atgtacaagt caagaaaggg ccatgcctcc cactacaaga gtcatgttgc ccactactag 900

atactactct acctactaca cccataacct tgtacatagg ggtagtctag gtagacctcg 960

actaccttga aatttggtct aaaatcaaac taattcttag catttaggcc caaacaaaca 1020

aatcgataca acttgcaacc taatttgatg aattaaatgc attatggtac attttggtta 1080

ttttctactc atgaattgaa ttgatgaaaa attatatatg tggtaccaaa ttatacatga 1140

tattacatat caatttttg accttgacca tcctaggttt aaaatctagg tccacactgc 1200

cagtacatac attctttcat tcacttgata aatataaaaa agtggtaggg accttcccta 1260

tcgatgtggt ataaaaggga gtggacaatc agagtacaca tgttctaatg atgcaaaggg 1320

cattgagcat cagattatct atcaacttct tccctagtct tgccactgct tgatctcgat 1380

cacatcaatt ctagcccaaa gctcctagaa ccaaacacat ccaattggtt aggtacacat 1440

gtctatgagt cgctgcccaa agtcgatgaa cattaggaca atccat 1486

<210> 3938
<211> 2713

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315281_G1, chr9:107627872..107630584, Cluster 24

<400> 3938
aagagtgctg gcgtaaatct aaagggctaa atctctagtt tgcaacaacc acacctaggc 60

acccgttaca aggagtcttg gaaagttata tcaacgatga gctgatggaa tgtgatatag 120

ttgtaccaaa gtgttttata gggtagctaa ataaagaaaa ttagagctat tgtagattca 180

aatcgatcgc ttgtgtttgt cgatattgtt agtcctaggt agctagctac cagcagtcaa 240

cagacgttgg tccatagagc atgaaacagc gaaactcatc aaaaggtatt attatatatt 300

tatttcactt ttcacatgca attcagcctt ttctccgaca aaaatatgga aacaagacct 360

tgcgttgttt atggaaagct aagtttgacc aagtggcaac aagcaaacaa gacaaaaaac 420

tatggctatc gataaaatat actttatgtt gtctttttca acataacaga ttcacaccct 480

gaagattctc ccatgagggc aaaagctttt gtgttccatg cacactccat aaattaaggc 540

agatggatcc ttttagctaa ggaaaaaaga tgattgctaa cgtgtgtggc gcttagtcaa 600

atacggcatt gcagtaaaag gtgtttcctt tggtagtata tgagagcctt ttttttccc 660

ttagcttggt tttagacata gtagtttcgt tacctctttt tgtcatcttt cagatttgga 720

agttatgtcg ggccagcatt tcatctgaga ctttgagttg ctatccaacc atcatacaga 780

ggctgtgtac caaaaggcct catctagtag gagactgaaa aaagctgaac tgctgtgtca 840

gtagtacgct cagcgtctgt tgttgattca tctttcatct aatagctccg atggtattct 900

gtagttcaca acaaacaaac aaacgatgca agtttgaatg atggaaacct atttgtttgt 960

ttgtatatgg atgcattgtg tacttagaat ggaggaaaag ggaaattgtt tatcaattat 1020

agcagattgc atatcaatat aaccaggaga aaacccacgt tctgcagaag taaaaacagc 1080

aaaaacttct cagtgtgcac aaacgaatcc gaacaaaatg cactttcaaa ccatctgaca 1140

acttatatat cgaggcccat tggtatgctg gcgttacctt tccattccaa tctgggacca 1200

caaagtgagc gaaagataca cattccataa tcatggacca cggcacgccg gataaaaaaa 1260

atatattata gttggttaag gttaagcgcc taataaatta taaaattggg ctcattggaa 1320

gaatctcaga caaatattaa tgctgcttga tttcatatta agatgcagca tgccgtacac 1380

ggtacacatc taacatctta gcagagaaaa tggtcattac acaacctaaa aattagtact 1440

ccctctattc caaattaaaa gacgttttaa catttctaga tacgttcatt ttattacgta 1500

tctgtttaag tgcatagcga aagtaatgta tctataaaag ctaaaaatat cttataattt 1560

ggaacggggg agtagaatca aagatatact gtttaagctc catgcaccag ttccttgaga 1620

gaaactagat gcatgacagg ttgcttagtg aatgttaaaa acaatactga tgatattgtt 1680

gaatggctcc aatagaagaa aattgtaggt catcctttac ttttgcgaaa ataaacttat 1740

ccacaccaaa tgccatggta agctgaccca ttcttgcata atgccgtctt tactacggag 1800

tatttgctaa agtaacttat gccatttatg atagcagaag aaatatacat tagaggatga 1860

gttatatgac gaatcactaa aatcttgagt tttaattaac tactatgaat gaatctgtgg 1920

gatttagttc actttctact tcgaatgaaa atattgattt tgattgccaa attttacaga 1980

acctccagaa acacatcctg aaaaactgat atcgaatacg gtaacagact taacagtttt 2040

ttttagggca agtaaaaggt gaacagttga ggaaggcatg agctcgtgat atgtgaatat 2100

tgaagtctga gtatgtgcac attggttgac atcaggcatg catcagtgat ttggtcacat 2160

agggtgaaat gttctttagg gcatatgttt gatgatgaac attagttgat actttttatg 2220

taacaacaaa ctagttagca gccaagtacg tggccagaaa agaaaataca aaaagataag 2280

aaaacaaact attaaatcaa ccacctaagg ctataatcca agaataggag ccattaggag 2340

ggagagactc ttggcccctg ccatctccca tagatcctta tcttcctcag cagacaagga 2400

actataagaa agatagtgat gatccaatga aaaacaaagc agcatactga gagacatttt 2460

tagtttcttt tgaagaaaag atatatagat aagtttgaag gtaatgactt tagttgattc 2520

agatagcata ttatcagttg aagtattcaa aaaagatatc gattcgtagt ttcacctaga 2580

acaacatctc tcacctaaat tctagattta tgagagtgat tggtttatga aatgtaaata 2640

gtgccttagt taatcgtacc aacatcgtaa tgtgccaaat taagaagtat agttatcaag 2700

tgatgtaaat att 2713

<210> 3939
<211> 1438
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321514_G1, chr9:140776147..140777584, Cluster 24

<400> 3939
tgagctgcga ccttttcatt gttggagtag gactttcaaa gtgcaaatcc aaccctagat 60

tgtttttatc tacaaattcg tatgcttgag cacctatcct tcatttgttt tgagcttgct 120

gaaattcata tatgtgtagt aaattgtgtt ctacactgac catagtgtac aagttcatat 180

gaattatcca ataaactagg attgtttctt atgagaaatt tcataactca aagttcatta 240

attacacccc caccaagaaa taaagttcta ttcattcaaa acagcagctt ctgttcatat 300

ttaaaagctt catttcgtaa tgttgcaacg aaaacagtat ctgcaatagc agattagtac 360

agtacagttt tttttaggaa tttaagtacg attcagtagg tagggtgcct gtgtcaaaac 420

tcaaaacaac atatcagata taatgcaaag aaagacaaca gcgtattcat ctaaagtaac 480

atatcagata tcaccccaag accctcattt ttaggaaagc ccaaggaccc tgttttgaag 540

gctcttttat aaacttgtcg cgcatactat tcatccaaaa tatcttgtta ctggacatat 600

actgttgatt ttacttggac acagtagaac cacatagatc caaataggct tgcttgatga 660

ttataccggc catatagctt tgattagcac atcattataa actagggccc acttgaagcg 720

cattggattg ctggtatttt tggaggaaca ccatagggaa taattcaatt ctgatggagg 780

gttagaaatt atcatgtttt agatgggatc tttccacact tctacctata gaatcgataa 840

tgtgagtttg tgtcattctt ataaattgaa actagttagt tacccgtaca ttgttacggt 900

ttgcatatat catataggca tatataggca tattttcctt aaatgagata tttattcaaa 960

cacaattatg tttttatatt tacaatatct cttcttggat cctggtacat tacaatcaat 1020

ggttgcagtg gtggaagacc agcgatttca tttgagggcg ctagggtttg aatccttctt 1080

gcccctcatt ttttggctgg ttattctgct cctccttttc ttgttttgga ggattcccaa 1140

ctattacagg cagctcgaaa tgggtatggt atgggtattt cagcagtcta gtcttaacaa 1200

ctggcgtttt gtttgggaac tcgacggctc gatggtgtgg tatgggtatt tcagcagtct 1260

agtcttaaca actggtttca tagtaggtta gcaccgcata cattaaactt ggcgattttc 1320

gtgctttata ttggtatgag ctatacttgg atagtttttt ttatgatata acttcatatt 1380

gctactggtc tagcagcttc ctttgttgtt tcatgatgag gtccgcgaat cacatact 1438

<210> 3940
<211> 2557
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321766_G1, chr9:142284477..142287033, Cluster 24

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (259)..(358)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (267)..(267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (273)..(273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (274)..(274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (275)..(275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (276)..(276)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (277)..(277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (278)..(278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (279)..(279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (280)..(280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (281)..(281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (282)..(282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (283)..(283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (285)..(285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (286)..(286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (287)..(287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (288)..(288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (299)..(299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (300)..(300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (301)..(301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (302)..(302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (303)..(303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (304)..(304)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (315)..(315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (318)..(318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (319)..(319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (321)..(321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (322)..(322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (342)..(342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (343)..(343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (344)..(344)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (345)..(345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (349)..(349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (350)..(350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (351)..(351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (352)..(352)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<400> 3940

caggaagttg cgcccgtcgg ctatattgtt accaaacctt ttcttgttcg tctcacttct 60

catatctacg aatttggaat ccttgatgta catcttgtaa ggttgtacaa aaaaagaatg 120

atagtcaacg ataaattcaa catagttgtt tgtctaaaaa ataactacta tcacctacca 180

gcttttccac tctcaaagtc cttatacaac tattttagat aatccataaa gacgaatctc 240

tagatcgtac ttaggttann nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnaa 360

aaaacaatca ttgagaaata agaagaaaaa tacaatcaag tgacccattt atttttaggg 420

atgcaccatt caaacaaaaa aagtttaaaa tcttgaaata tataaagggt gatcctaata 480

gctacacata tgtttcaacc tagcatgact tacccaagta ataggggggca aattaaggac 540

acccatgttc cttgacgaat ttcatgcatc tatagacctg tgttgttggt tgatacttaa 600

agttgttgca cgaaggtttt ggggctttta ttctgtcttt tgtgttcagg ttcttaagat 660

ctttatgatc atctaacaag tcaaaactca tgaggcatat ctagttaata tgcaccagag 720

agagatacat aagcttccat tcaattcctt gtggatgtgg taatacatgc tatagggaga 780

aatcaatgga tctgatttca acccaatgaa gggctccaac tgctagtctg catggaggtg 840

ttatacatag aagttagcta acttatggct atctctcttg tgattctaag taaaccaata 900

tcctcttgac catccaagaa cacctttcac tcatatcttt gtcttatgct tcatctaaat 960

tgagattgtg agtgaactag tgcatttgca tttaattgtt gcatctagtg gcactagttc 1020

aacatttggg ctagttgacc atttgggata tatatttctt gatactcttt atggtttcaa 1080

tcacctagat ggcttagaga agcttgaggt aattgagtaa gattggtgat tgttcttcgc 1140

ctgcgaccaa tgttcgttat gaagatgttt ttatcccatc ttacggagtg caaagagata 1200

ctctagtgga ttgctcatgg ctagaggaag tgcttctagg cttaatttg caacgccaag 1260

ttatgggtct agcgtgaatg ctagttagcg cacaaattat tcaccataat acttgccaca 1320

atggggactg aattaatggt aagcatccaa attcaggaga aaattgatta tgttatttct 1380

cctgtctgat ttggcataaa ctctacactc attttattca tatacttgtt aatagtaaaa 1440

gtgtggttaa ttatagctag ttgtagttct ttactagttt agctttcttg cttagttgtg 1500

tagctagtag cttgtgtggt gaagtgtttt tagataggat aacttattat actaaccatt 1560

ttagtatagt gaattgttat tgtaaaagat tttttatagg ttgttcaccc ctatagccat 1620

ctaatttctc tcaactttct tcctctctca tctcctactt gtaaaaaaga gtgtaactaa 1680

tatggaacaa catatttcat gtgtttcaga ttataatcca tttagggttt atactaatca 1740

aactttgcca gcttttacta tatgttaaga agaatatatt taacgtttat aagttcaata 1800

aatccattat cggatacaat ttatgaagga tgaaacaaat tccatatcat agatattagt 1860

acattctttt acaaatttat taacaaaagt taaaataata aatttaagat aaccaaagga 1920

aactgcaatt tgaaaattag agtagacagg gtctacatac ctaacataaa aaatattccc 1980

tctgttcgaa ttagaattta tattacgttg actttttac tctaaatttg attgacccgt 2040

tttattcaaa aaaaatcata aatattgtta atctttacta taatatagtc tagcatataa 2100

tatatactgt aagtatgact ttgaaatttt ccatttttaa aaaagaaaag acaaaccgat 2160

caaatttgac gaaaaaagtc aaacgaatta taaattagaa cgcagagagt attaaagagc 2220

caaggaagaa cctctccttt atccattcac tcctccctca ctctcttccc gtttaagttt 2280

ggagtcgcaa aattttcatt ggtttcacaa gccactgctg gcttacctac gtaaactggc 2340

tcaatcatct ttcactttct catacggaac taattcttta tcatactagt tttgaacttt 2400

tttttattta aggttatgct ttaaatccaa caatacgcag ctcattattt ctagcacaag 2460

catcacgcac aataaattgt aatcctgttg caacatattg aggatgcgtg ctgataatat 2520

tgtatactag tggctttagt taaagaaaaa aaccgtg 2557

<210> 3941
<211> 1942
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322449_G1, chr9:145888223..145890164, Cluster 24

<400> 3941
agcatatttt agatctggtg tgttacaaag ggaacaaggc aatggggctt gggtgtaaaa 60

ctgcaagtgg tgtaggataa gttgattgga cgaagccagc gatgaggaca aggagccatc 120

aaagatagag ccatatagtc gattgagact agggaatgac aagaaaggaa tggtggtgat 180

agacaacagg caagggtgta gttgaggaaa aatagatgag aagaaataaa ttatgtgttg 240

atacctatat taacgtgctt gtgttagaca tgagcttcct acaaagtgag tatcctaggc 300

agtaggcaca acaacttgtt actcaaaact acaatgttaa atttgcttga ataagtacta 360

gttttacaaa tgagtactaa ggttttatcg aattgtaatg taaatcattt cacgtctgta 420

aatatggatg atttattaaa attttgcaaa gtccattatc aaatcaaata ggtgcatata 480

gcaacacttg gtcgcaatga gcctttgggc tgtgtccatc gatcctatgt ttttatttt 540

atctatttcc tgcctagaga catcaacttt agtccaaatt tgagtgacca catttattcc 600

atattttaag atcatcatgt cttattgttg caatgaaagc aacttaatta tctctagcta 660

ttccaaaagt caagttttag agcaattatt atatttaaca atgcaaccaa cccaagtggc 720

caaacttatt tatattgatt aataatatcc attaacatca gttacgaaac ataaaagaat 780

atgtaacctg gaatgaccca tttgccctaa tcatatataa tatatagaaa atgaaaatta 840

ttaacattat aatactacac tgttggttgc aactagtatc cacttgttac gtctactagt 900

agcttataac catgtggatg atactctcgt tttgtaacca tgtcaatatt ttttattagc 960

taaataaagc taaacacttt aactaatagc taaaaataaa ttatttagct aataaaaaaa 1020

tattgactga cactattgag ctaagtactt ctactaacta ttagccggac gatccaaaca 1080

aagctcaact aatatatcag ttaacagcct gttagtaaaa aaaaaactat tggctggttt 1140

cctataacta gtagtagcca accaacaatt agctatctgg gtctaaacag atccttgcta 1200

caggcagaaa atttaaagaa cttcccaagt ggaaaaaaaa cttgtttgat cttgaaaata 1260

tatgcttcat gactacacta caactggtat tttcttgtag ctggcaaaat gaacttccat 1320

cacggataca agaattagta tcccctacaa ctctgaactt gttgctgtca gaagctctct 1380

caactcttcg tccaggttat agcattatta ttataagatg aaagcacgca cgaacgcgcc 1440

agccaatgcg ctactgcatg caatggaaaa tcagtttgcg tgcgtagaaa acgatgggga 1500

ttatggtctg aacctcgcag attatcaaag ctgattacga gatttatcac tgctgaagcg 1560

tcgtgcgccg aacaaacgtg gccgtcgtcg ccttcaaagg aaaatagaaa ataacacctg 1620

ggtgctgagg gcaaggcccg gccacaaggt gggtcacacg acgcccacca ggccaccagg 1680

gagaggaggc gcagatcatc gctcaatgac tgcgcttcta taaaatacgt ccatgattgg 1740

tcaaggtttt aacttgcggt tggggatccg gatcctttga gatgatggcg tgcgtgacaa 1800

ctgagcgagc gccgcatgtg atggcctgat gggactgaag tgaactgccc agccagaggc 1860

agagggtacg gcatgatggg acaatcatgt gagttctcct ggcacttggc ggcggcctac 1920

ttggctgtct ggttgttaag ag 1942

<210> 3942
<211> 1843
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323186_G1, chr9:149521056..149522898, Cluster 24

<400> 3942
tgtagggata aaaaagttag gaaacccttc tcaccgtttt gacccgcata cgtttttgtt 60

tggttagaat ccgacaacgt aaaagtcgaa aatggattat gccgaattcc agaatataaa 120

atatagataa atgaggacaa aatatcttga aattaatcga gaaacggtaa cttaatttag 180

aaaagctcat aataagtaag ttccaactac acacaataaa taagttccaa ctacacacga 240

ctgttcattt acatctacat acaagtttca ctcacacaaa cactatagac tatccatgca 300

gagttgatca tatatatcca tttataagtt ctaaactttt aatacgtatg ccttaaacaa 360

acgatacata agctaaaaat cttgtatcat atcgtctgga tcacttgata tacctttat 420

gacacccaaa aaaataagta tcacatctaa aatctctaaa tccataggaa gagataggac 480

atgcgtgaaa gctgaaatga aagacataaa acaatttagt acaagaaaat cttctatagt 540

tacaaataaa aacttttaa attacatgat ttttataaat aaaagcggta caattacaaa 600

ctttttaaat tacatgatga ttacaaatga aaattgtttc aatgcaaaat gtttaaatta 660

catgatgttt aaatgtaata tgttatgaga tgtttgattt aagaaatgac tactaacgat 720

gagaataaga tgataatact aacattaatt gtttacttgt aaacaataag atgatttttt 780

ttcaaaatat gagaaattac tgaattttcc cgaagacaag aaattgagta caaatacata 840

aaacacgaaa aattaccata tttttccgaa aaatatgaaa atagacggta aatacgcccc 900

attgtttatc gtaccgtttt ttaacacatt atcccgtttt cgtattgttt tttatatatc 960

ccgataaata aaaaaataac cagaaaaatt gagtaaacaa taccgaaaaa ctactgattt 1020

tttccaactg ttttcaccct tagtcacatg acttgcacta ctagcaatgc ttatgctttc 1080

ttggcttcgc cgcatgaacg aaatgacaac aacatgggcg ccacactgtc ttggtccggt 1140

ccatgaaaag tctgagcctc tgaggcctag cacgagaatc tctggcccaa tgtggcaggt 1200

gtaggaagac tacttatgct ccgtttgaac gttgatatta gatgatatag aattgaattg 1260

aattgaattt aataacaaat cagccataat attaaaatga tatgtaattc caattctatt 1320

gtttggatgt tactgaattg gagtttggaa ttgtgcggtc taattccaca caatacagag 1380

gggtgacact ttgcgttggg agagagagtt tctagttata gttcaactct agaaaattag 1440

gtctctaatt ctaaatctca attttatatg cagacaaaca atagaattta ggaaatctga 1500

ttccaattct taaatctata ctccaatgtc ggtatccaaa cgagctatta tactcatctc 1560

ctccgaccac tccttcctat gtagttaatc gtgtcctccg aacactgctt cttcccctcc 1620

tccaaggctc tacccttgca cgatggacga tggatggacg aacaaatgtt gttactcgta 1680

gtcgtagcga tcctagattc gaatccggcc acagagattt agttgggaga gttgccttga 1740

cgggaacccg tgctgtgcag ctgtgtgcgc ccgatcgaca cacgcgccaa attcgggcgg 1800

ggcggcggta tttcgcacgc ccaaaacacc ttggttcaga tcc 1843

<210> 3943
<211> 3528
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324478_G1, chr9:155542790..155546317, Cluster 24

<400> 3943
gcaacaccac caacgtcgtg gctcttcctc gtgggcaatg acggatctac gccacgagcc 60

acccctagtc ctaggattga gctatgtaat tatatatgag tctctaattt agtccgtata 120

aaatggtaca aatagctaag atgaggggga gtaaagtaga tttggtctgg ttctgccccc 180

tgctaggtgg gtggcgtccg gttgatccta tcgtaggcca cggtcggggt ggtgctggca 240

gccaagttga aggaccatgg tgggatggac gagggagcac actacctggt cctggtcatc 300

atgtgtgtct tcgtcgtcag gcaaactctc atgtatctgg cacccaccga gatcggcccg 360

ctggagatga ggtcggcgct cggcggggca gaacatcgtc atctgcttcg tgtcgtttct 420

gaccgttgct tgcgaaaatg aagccgccga tggagcaggt ctagttttga aaaaaagatt 480

tttatcatat attgttttgc attgtattgt attggtgtct cagtaacaac cgatagagca 540

tgtgtgtata tatatactag tttggtgccc gtgcgttgct acggtttcta tatattatat 600

aataaagaat ttacaattgg ttgcatgttc tcaccctaca acatttaacc aatcatcata 660

gctttgcttt gaaatgtaga gcacagttga acccaacaga tctaagaaag aactaagtta 720

catatacaaa tttctcgatg ttttgtttac atgtcaagta ttgcaagatg aaaagatcat 780

cactatgtac caccgatttt aaactctagc gagttgggtc atttcttcag agtgtaaaca 840

ttggtcttgt caaagacttt catcttcccg acgaacacta tttctaacat tattttggct 900

ttgatagcga caactttgat gaactcaata ccaaatatgc agcggttatt gacaagaaat 960

ccagaggagt gatttctgct ggcatacact ctggtttcac agaatgaggc acactttgct 1020

agtgaccggt tcaaaatttg attcctgctg gccagtatgt acctaatgaa ctcatggatc 1080

tggctatgaa ggttagttag cttattgatg aattttcctt cagtgttact tcacataata 1140

agctatggac ttgcatgaat tattgctaga tacagtgttc tgtaaactgg atgtttgcag 1200

caatgtaggt actagctcat tagttcaagt tatttttcga ttaaaagaac cacattcttt 1260

tttctaaaac tattgtgttg caggatgcca agatgcaaga ttccctctac ttccattata 1320

tcactaaagt tgtttttgc ttttaaggct tctatattat tcaacaattt attctcatat 1380

tatgttgtta atatattatt tcgttgcaat ttctagagta atgggaagct acaaggaaat 1440

ttgctccaga aatttcacaa aatcaaggta taagttttcc ctccttttat ttaatgaagg 1500

tgggaagtgc aaaaaatgct tcatgttgct ttattgagaa gaatacaacc ttgagagcac 1560

ccaaacaaac aaccacactc atatcaggga gataaccaat agactccaaa taaagggtca 1620

gataataagg agaaactctt agcccctacc aagctccaaa gcttcgtcta ctatctatct 1680

tatcaaagag tgtctcttaa ccttggcata acacaattaa gtacacatat gttcctatgt 1740

ttctaccaaa aaactacaag aacttttctc tctcttagta tttacttaaa ttgttctctc 1800

tttctctttt aagaactttg ttattttgtt gaatcaccca tgggaaattt ataacgcata 1860

aaaaatctta attttaccta caacaaaaga ccataaaaga tattctgatc agcgaagtgg 1920

aaaccttctt catattgtga atagtattac gtttcaacgt tccataaatg aacaccagtg 1980

cttctatagt catttattct gttgtgctaa aattacagga gatggcttga ctttgtcaag 2040

ttagctttct atacagacac aagcttggca tgtatcgagc ttgtcaccac cgtcatcgga 2100

aggtcggcaa gttggataaa gtatgtgatc tgcaagtgtt gaaattcgaa tgagtggtac 2160

gcaatcactg gttggcgaag tcctaggtat aacttttatt ggtgaaactt ctttcttttg 2220

atgtactatg tgtgtccttt attttgcaca attgcggtgc agatgacctc gtcgttcttt 2280

acacctgact acttgggggc tatttttcaa ggacgacaaa cttcactaga ttaaatggaa 2340

tttcaactaa caagaatgcg ccatgtgcaa cataacaaca agcatgtata tcaatactcc 2400

agtgactgtt gttaaattta gtcattttag catctatttt ttgttcaatg tttttgaatg 2460

gagagaggag gagacgaagg gagagggagg gagggaaata gagggtttaa gaggtagttg 2520

tgtttgtatg attttgaata acatatttga tccagcatgt aattcctgtt tgcattgttt 2580

caacaacctt atgtttcatc tttgtttagt ttcagttttg agtaacagct ttgaatacca 2640

tttatgacct tcagttacga gtaacttcgg ttagtgctac ataagagcac ataaaatcat 2700

agaactatac ctaaataatc ctaaaacaca agttgttaca caaactgaaa ccacaaaact 2760

gatatcacag gtacactgtt actgctaata gaggctagca caagtaacag atatcacaag 2820

ctagcacagg tacatagata tcataggcta gcacaaatta tgtagaattt taggttcaca 2880

cttacaaact tcttcaggtt cacacacaca ctgcttcatc aggttcacac acactaaaca 2940

ggttgacaca atacataagg tatacaacta cttcaccagg tttcaaaaaa cccaactctt 3000

atacaagtac actggcatac tttgcacata tattttcatg ctgcagattc tttttccttg 3060

ctcagtggct gctcttatgt gtgttgctgc tattctgctg ttccagacaa caaagcagac 3120

ccgattacgg aaggtatgca cataatgcat atggtggtgt tgtaggccat ctttttgtgt 3180

gatgttcaga tgtgctacat tcgtggttta ctttccatgc atctctcttt tctcagattt 3240

ggttctctcg tactttgctt cctacagttg ttgctacact tgaactaggc ctatgatttc 3300

catagatgta attttcatag aacattgtat ctagcaataa ttcatgcaag tccataactt 3360

attatgtgaa gcaacactga aggaaaattc atcaataagc taactaacct tcatagccag 3420

atccatgagt tcattgggta catcctggcc agcagaaatc aaattttgaa ccggtcacca 3480

gcaaagcgtg cctcattctg tgaaaccacg cctccgcttc taaacacc 3528

<210> 3944
<211> 2046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325207_G1, chr10:4037358..4039403, Cluster 24

<400> 3944
tggacagtat agatgttata ttacaatggt attgcatgct cacatatgag tgggccagtt 60

tctttgtatc ttcagttcta tgttagtaaa tttaaggaac taagtgatct tatagttgaa 120

gtgcatctaa catgaaagga agccatgctt tttcaatagt aaaaaaacat ataggttaac 180

acgtagataa acaacttaga ttcagcaaga aatgttgtaa tgggtgagtt cggattccaa 240

attgaaagta tgtacatcga actaagcgat cataatgttg aagtgtatct aacatttaag 300

gaaaccatgc tttttcaatc tataaaacag acatatagac taacatctca attcagttac 360

atgataaaag aaaaggaaaa aaatcactcg cagcattgta atgttgaagt tattataatg 420

ctctgcataa atgtatcgac aatctacgac atggtatgag aagatagtac ttacaacttt 480

aattgttagt atcagatggt tgggattatg aacttaaaaa cataatttcg ctgaacttta 540

ggagaatcta gcagagatat aagcaatgta cgtagtactt gtttttggta tcagcttcac 600

gtggatcaag tacatacttc ttgtctgtgt aaacaattgc cctgaattct aaactgtcag 660

cccaccgtat caatgttgca ttgttgctga aacattcctt ctcttgtaca cataaggcac 720

acaacggaaa ttttcagaaa tcaagtagaa acggaagtgg ggagattcac tacaaaaata 780

tcaataccaa ggcatcgtac atataacttg taaaaaagag tggcatcgca aattgggaca 840

acctcctcag ttctgcactg atagttgagt ttgcaaggtt cccttgtgct taggcatgtg 900

gtaagcattg ttgttgttgg cttgatgttg tggtacataa gttggaacta tgactatgtt 960

gaaagaatca tcatgtccat ttgagcacct aaatccaccc ttaattgatc aaatccttgt 1020

aaaatggtag catggatatt cataggtgga cagatttcaa aaataaaata tgagcacata 1080

gggtaacatt ttttcatagc ttacagttaa tggtcaatcc ttcatggtaa accacgtaca 1140

tccatcctgt tttagtccag ttcaaaaatt tggggtgtta aaaataagca aatggaagaa 1200

tgctaaatgt atgaatgatt cacatcataa gcaccctaat taaccaaaag aagaccctgg 1260

tgcataaaag gtttgctgga caggctgacg gaagagtaca aagacaaagc gatgtattcc 1320

agcatttggc tttgggtttt catagctgac attttcattt tctgtgataa aatttattta 1380

accatgtcac agtgaggtaa tatgaacatt attctcatct gtgtaaatat tatgagatga 1440

acattcgttg ttgtaaattt taggttttga aatatgcaaa ttacagggtt gctcatgtta 1500

agctaaaaat aaaagttcag ttgaactaac taaatgcact tttactacca ttgaattgca 1560

caacctttag cagtataatt caaataattg actgatatga caggcaacta cttattgtcc 1620

aggctgcaca atctatggtg acatttatat tatgagtttt ttttaaataa aatgtagatg 1680

atatacttgc ctttacgttg tgcagtgagg aggtatacat acatgtaatc ttgaggaaca 1740

ccatatccat ctaatataaa tattgaagta atgtattatt taaattgaga aggacagaac 1800

agaaggaccc actataggaa gcatttgttg attccaggat gtttgtcatt ttccaatagt 1860

tgtgaaatgt tccaggtctt accaatgaag gtattctctt tttttgttgg gttacttaga 1920

cttgggaggt atacagttgc ggcgacggag ggagatgggg agagggagag ataagagatg 1980

gttcaaatac aactgtccat tagatttgag taagagaggg ggttatccaa tgatctgaaa 2040

tgttag 2046

<210> 3945
<211> 1901
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325589_G1, chr10:5906031..5907931, Cluster 24

<400> 3945
attgctcaga gtccttggat tatctcaatc attatataca gctaacatgc atttgctgcc 60

cgtgtcctgt gccataaaac tgtttgcctg gcacatttca aaaccttagg ccaacttaat 120

aacggacggt agtacagtaa caaaaaggct gcttgggttg tgaggcataa aagttgttac 180

cagcgagtac aatagagttt ctgctagatt tctgaagacg acaagttgcc accagcagat 240

tattgagcgt cgttgcatga ctcgtgctga ggctcctgga taatatcttt atgtgttatt 300

acttattggc taacgctgga gcagaagact gttccaatcc aagttccaac acgatgacga 360

ggtcacgctg tagcggatga ctattacaac acaatgacaa ggtaacgctg ttggaattta 420

atttggtgga atagaatggc catctttagt ggatacagaa acagaaataa gcatgacaat 480

caacaacagt gctgaagatt aaaaccaaca gctcttagta ctttgcttgt ttggctgctc 540

tgcacttgcc gccttcatag atatagatgc attgcgaaat atatataacc tatctggagt 600

gggttcaatt gcatgttctt ctttcacgaa ttacgactgg gcatttcagt tctcggatac 660

catgatcacg ggaacagtgt cgcagaaagc gactcggcca tttagacgca ttacattaca 720

ttacagcact gttaggttcg ctcatgcttt ggtggttcat ggaactgacg ccgacctgaa 780

agtgacgctg cctttgtgct tgaccattca cggtcgcatt gcgagatttg gtccactact 840

aatctgcctc cctatactgg agcccgtcat ggttgggcag ctacgcttat cggtttcttt 900

gccctgttgg ctttacatta tggacccaac tgctctgaat atgcaacgca tcttccatgc 960

agtactggga tgacgacctc cgaattattt gatgagcgtg ttgtgtgtat gcggtgtcca 1020

gctcatggtt tttaatttta atctgaaaaa ttggtccagc tcatcctcat ctctttggac 1080

tctggtacag aataatgggt agccttggat gctttttcat cctgttacca ccagaattta 1140

aaaaaaggaa cttggtggag gggaccacgg cccaggccca ggcccaatga aatggtttgc 1200

tcatgcaatc ccgtagatct ccaacttcct ggtgtatttt ctttttttcc cttcaacatg 1260

gcgatgatct caccttcatc ttcacgagat atgctgcttc gtaaccatgc gcccccatgg 1320

cccatacctt ggtggttggt tgcgggtgtg agccgtctat ggctcatgtg ctacgtgtgc 1380

acacaactga ctgcgctcag ctttcaagtt ttttttttg tctcccacaa tgtattttgt 1440

atttgtagtg aagctccatt tactgagcgt ctgctatact gtatgattgg ttgattgcga 1500

caataatacc tctaaaatgg ttactcttgc tgtatactgt gatctagtga tgtcgatcac 1560

atgaacatga cggttagttt ttaagatcgt ccgattgtat cgattcggaa tgaatgcttt 1620

tggaagcgaa gaatggagat catatgagaa ttcctggtcg gcgtagcttc ataaacggct 1680

ttctgagtta ttataagctt ttatttttgt ccaaacaacc ctttcaaaca gttttatggg 1740

tgaaactcat gtttcatgct ctcataaagc aatgacgagg tgaaaaataa gagtagcttt 1800

tcgtagctct ctgatgtagg tgcagtctaa tgtttcgata gagctaactt tgattgatga 1860

actccacgtt catgatctag gctttgaacc aaggctgatt c 1901

<210> 3946
<211> 1689
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338568_G1, chr10:85315583..85317271, Cluster 24

<400> 3946
gccgtataca ctggcttcat cctcagcatt aactagtttc actcgtatat cagccttctc 60

gttaaatact tgttcatatc cataacttaa gtgtcaacta ttttataagg ctatctccaa 120

aactttactc attctcatcc tctatttcaa attactgtag gggcctaacc tacaatattt 180

atgattgaaa aaaaagtata tggtgttaaa cgatagggat acaaccttta tttcggttca 240

agccatacta taaagggaac atgatacatg taacttgacc taggtgggtc tagttttgcg 300

tgtgacggtg cacacttgtg aaagttagtg ttagataaat ccaagagagc ctacaaaaag 360

tttataacaa tctaactcga aaagtgggtg aaacgaatga gttagtcagc ttgcagcagg 420

accagacatg tttggtgttt caccggacaa aacaccagat aaaaagagtg tgctgtagta 480

tctgagagct acactggcgt gtttcatatg caccagttat gatgtaacgc acagacaaaa 540

aagagcttgc agaggtggac tcatgtagtt ttatatactc accaacatat ccaatgcaac 600

gccgaatatg gtacttaaaa gcatgtgagt tgtgcctttg aaagttgtgg aaaaaccaaa 660

tgtaagaatt tgggggaaga tggtattagc caggggccga cgtagccagg atttttttta 720

tagagaggga cataaacaat atttaataga ttatatgcag tatatatata catgaatgtt 780

tgatttcagt ttaacctact agactacaac acgcttttat caaacacaca cacaaacaaa 840

aaaaacaacc aacatttatt gaatcacaac cactgatttt atatacttat atatccatat 900

gtttgtacaa ggcccctgct agcctccctt tatatatgct atgccactgg tcggagttag 960

gtagctagac atcgtcgtac ataatactcc cactgttgta gttgttttgt ctctggtcca 1020

acgaaggaat taagcaggtt tcaacgtaca cgagcatagc atgcatgtac agtctggcgc 1080

tcgctcggtg ggatctctcc ggttcaccga cgccgcgcgc gccagcacgg cgccgttgac 1140

taggaacttg tctcactttg tgggtacggt gccaatggaa accattggac taacctagca 1200

gccactatag caggcaggca ggcatatagc catggcatta tattgttaac aaaccatata 1260

tatccgatga aagccgagtt tgagacgcaa agttaatcaa gcatggtcga acgcattccc 1320

ccggccgccg taatagtaat aagaaaccat atccgaacca atcatatgcg tgcagcgcat 1380

gtctctagaa gatttgaggg tcttcatcct gtgcgtcgta cgtgcttgtc ctacatgcac 1440

gtatgacgta tcttaattct taatcctata tatacagttt attatatcca ctaggttttc 1500

ctacaagtcc attgccgaga gctctagcgc gctccaatac ccatctattg ttttttttt 1560

ttttgaaaaa attctaacct cttttgacct atgaaaattg catagacgat tgacaacata 1620

acgagtttga actcattgtg aaaatgctct tgtctatagt atatatatat atatatatat 1680

atatatata 1689

<210> 3947
<211> 1628
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_34407_G1, chr1:209237032..209238659, Cluster 24

<400> 3947
ttttgtaaat ttgcatgggc acagtctagc tagcttcgcc catgatgacc caagagaata 60

accagcaagt agaaacggtg aatttcaagc gccgatcgtc cgcctcgtct cgtagagact 120

gatttctgca agcacgaaag aagatctgct agctagctgg gttgcagcaa ggttggagaa 180

gacacaaatc aaactctgtt tggaaagacc tcctgaaccg acacgttagg cctggtactg 240

gtagaatggg gaaaaggagg atgaatttga atgtgacata tatcgagagg accttcgggg 300

agccaacgat caatcaaacc aaaaagacgt ggaagtgccg ttgtagacat tgacacatag 360

ataattgacg atccagtaaa tgtaagacgg agagccatta gagggagtgt tcgataaaat 420

ttatctgggt tcagtacatt ttatgatttt catgtttttt taatcaactg catatatttt 480

catgattgtt tttacaaaac gtatctgtct tagctgcacg acaggtttat tgttggtcct 540

gaaaaaaaac cattgctact tgctctagcc tataatttta aaccataata atcttatata 600

tatatatata tataaaccat aatatatata taatcttaca tatacattat tatggtttat 660

atatgtgtgt gtgttaaact tcaaattatt ccactcatcg agaaacaaaa atcgtatttt 720

ttagactgca tttttctaga cacataagag attttgttga ctagactgta aataatgaca 780

taaagatata gagtaaccgc aatggagata gtctaaaccg tgctacggct tacgccaaat 840

ggtatgcatg agggactgtt tggggactgt atttcttaaa accgtagttt attatatgtc 900

atgtcataac tatactatat tttatatcag tccaaactag cacatgtttg gagacaaaat 960

attttagttg taatgtagga gaagagaaga ccgcagctgt atgcaaacca aatttttga 1020

tctatactaa agtttttta cctaaaaata ccgtggtagc gtgtaaaacc atgatttaaa 1080

atatagagtt tttagatatg ctcacaaaca tcttttagtc taaaatatta tggtataatt 1140

aaatatcata gtattgtttc aggaaaaaaa tgttgtgttt ccaaacatac tcttaatggc 1200

gacgaaagaa gacagctgct actctgcaaa tctgtagtag agtaggcaga ttcctcgtag 1260

gaccgaagca caaaaaacgt ggccgactgt catgcaagct gatgtccaaa accagtgctc 1320

gtacgtcgta ctgctagtct gtaactacaa aacgccatgg cttatagctg gagcactagg 1380

tgcctggccc ctactaggca aaacttgact ggagcagcca gtaacatata tatactgaca 1440

ttatatatag gctggtacca agggtatcac atcggacctg ttcatactgg tctagcttca 1500

gaatagatca gtaccgacgg atcggtaccg atggatcaat atacattata caggcttgtc 1560

agtaccgatc caaattgatt ggtaacaatt gttttcaaag aggaatggac aaataagcta 1620

ctgtcata 1628

<210> 3948
<211> 1983
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_345891_G1, chr10:126564625..126566607, Cluster 24

<400> 3948
cccgctgctg aggctcaagc gttactcctc cgtggtaggg ttggggagcg tagtaccgac 60

gtgcgtacgg gattggaggg atctgatggt aatcagagag gaattgggaa cgtatgcgtg 120

ttgatcatct gagctaaacg tacttgcctg gtcggggaat ttactcgacc taatgcagcc 180

agcagtccat atatttgcag ccattacgtg ttaggcttgg aatctagcga tggatttgtg 240

ggttcatttg aatttcacac ctcataggaa tggaggtact ctgcttgtga tccttggcta 300

tagtagccat tttcctacaa tgctacagtt tcagcttgtg gattatgtga attaacttag 360

ttttcaatta gcacaacacc tacactttgc tgcagatttg catgggtgat gcagtattta 420

taatttctat aggttgtcat aggaacatgt tgtttttgct tttataagca tattcaacag 480

ttccctgcaa tctaatttga aatctaggtc ctatgtgtaa aagtagagta cattgaccag 540

aaaactaaga gcgttacagt tttccatggt cagaaatata ttgtccattc acatttgtta 600

tcatactttt tgcctagatg acattaattt agcttcataa caactttaga taatatcttg 660

cttatgtcta gttgacatga atttggcatc aatagttttt gctcgaatca tttggtatca 720

taaagtagta aacaatgtgt acagttctgt tacatgcttg gatgcttcat tatttttgta 780

tgtaatgaca tatgcgtgag gaaagaggaa ttgtcagtta tcacttgatc taaaagtctg 840

ttacattgga ttctattgca actttacttt gtttttttatt cttgtcttgt tgctggttgc 900

tacaatggcc tctctcaaga ctagtaattt ttataatatt ttcattggaa agcatgctgc 960

tagatgccta tgctctaggc tgtcttggca ttttggcact ttgcacttac actttcctta 1020

tgctccgggc aacatttatg cttctattaa attgttttct atatttgttt tcatcataca 1080

aagaacttta taagaagttg ctgaagttcg tataaagata ttttctttta ctactagggc 1140

ttgtgttgct gcaaatgata aacttcttgt tatcggtggt caagaaggtg atttcatggc 1200

gaagcctggg tctcctatat ttaaatgtgt cagaagaagt gaggtatgtt gacatgcacc 1260

tcattcttat agctaattga tgcacattat gtggtcccta tgttttaaga tcaactgaga 1320

tcaattcccc gcattaaaga caacttagcc atatgttgtg catgattaag tctagtaaat 1380

aagcatctaa gcaccacaca cgctgcgcct actttcttca ataaataatg gcggacctaa 1440

tttcaccaga aagtggattg ggcactgtat ttttcaaaga aaacaaacaa ctgataaaga 1500

catttagttt tatttaacta tgaagctatc atatatcaca tatattcaaa cattggcata 1560

attgatgttt ttgagttgag accagaatca atccgaaagt actagtagtt tcactatttt 1620

cttagtaacc ttactatttg cactatttat ttatctttgt tattaccctc ttttttaaaa 1680

attacactct gcttgtgaag gttgtgtata gtaatgttta tatgcttgat gatggaacga 1740

cttggaagga acttccacct atgccaaaac cagattcaca tataaaaaga actgatatga 1800

ctaagccgtt ctttgtgttt tttttttgc gtacaactgt ttcaatcccc ccgtgagttc 1860

tttcttggtt aggctatctc tagcagctct cctatcgcac catttcgtgt agagaatcga 1920

tggctgtcct gggggatgtg actgtcgcaa tcttgtaagc tgtagcctct tctttattga 1980

gct 1983

<210> 3949
<211> 1699
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347126_G1, chr10:133583872..133585570, Cluster 24

<400> 3949
aagcaaccaa gcattgtacc ctttgcccaa cggcgaagtt ccccggaaac taatctgcct 60

cacgccctca cgccctcagc gcacgtgatc tcaagtctca acacatccct atatatgcat 120

aaacaatgat ggagatggag ctgagtccca cacggccaca tgggcgagaa tgcgtctttg 180

attatagtag cacaaagaag ggcaatcttt taatcaacag tactgggtgc actaattcgg 240

aattactagc agtagtatat tcctagaaca tgaggcagca atcattcaac tggaactgga 300

atggctgagg ttttgctggc tacagctcag gtcatcactg actgctgacg caagagagtt 360

tgttggcacc agtgactgac agcccacctt caacatgtgc tcgtcatttc ttaaagtgac 420

gtcgacgaaa tcacatcggt cttctaactt gttatcgata caaacacgat gtattgatac 480

ctcgcgcttt ttttacgaaa acttctaata ccgttttgtt aaagaaaaat aacattaaaa 540

agtgattatg aaacaatgca aacagctctt cacgctttgc cgctacagat gtcttgcatc 600

caaacacttt ggacagatcg gatggctttg tgcaacattg gtagatgaca atttggtgca 660

ttggctttct cacctgccgc ttatcaatcg ctccttgact ttcttgtctt cttgatgcag 720

tgttaaactg ttaatgcatg cggcagagga aaggattaag gatctgccgc tacagatgcc 780

agcgatgcta ggatttcaac catcatctct agaaatagag tactcgtctc taactattac 840

agctaatgtt agtttattgc ttacgaccta tgttcaaacc ccaataagtg catatgctac 900

ctagatataa agcaagtatt agcaacatta gtaggtggat ctaaatgtgt ctcgctaata 960

attagctagt taaatagttt aatattagtg ccaaacagac aggttttaac agacttatgc 1020

taataattag tatatctaaa catacccatg ctaataataa agccaataca tcgagtttag 1080

cccgcaacaa atacatcaca atttcaccgt tttttaggaa tattgctaca acctcctgtg 1140

catccttttt ttaaatataa tatacagtac aaaggacgta tcggttgttg gaatgtcaca 1200

gtgatcacct aatctgcatc gttttcgcgc aaacctttca tatgacatgt ttgtttttcg 1260

tgatgcagcg tgctgatggg ctgatggcag gcttgagtgc gctgccgttt ggcatctttt 1320

ctcgtgggtt caatttggaa tgtgcaaagt agctagtggt caggagcagg aggttccatt 1380

cctcagcaca aggaaaactc atgaaggccg cagaagtgaa agagtactgc agcatatatc 1440

ttcagtaagg acatgtggcc gagcaagagc agtttacatg tctaggctgt ggatccatct 1500

tgaggactcg gaactctcct taagaacagc agtattgtca tgccttggag tttctcctct 1560

tctctgaact tgaagaaaga acaatgcatg attcaaacag atcagaagtt ggctgctgcc 1620

agtgggcgca tgtggctgat ctgagattag cgctggaaag acgaccatcg tgaaaaagga 1680

atctagcttt gattggaga 1699

<210> 3950
<211> 1444
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347715_G1, chr10:136473247..136474690, Cluster 24

<400> 3950
tagggtttac catcaatttt ctcaccaaat ctcaggggtg gatctaggcc acttttgtgg 60

tagattttgg taatctccat taaaatgtat gcttgatagt tcttaaatga attgatgatc 120

cctattgcca tctctagtta ggagtccctt gctctatcga ggctagggtt taccatctca 180

ttttctcacc aaatctcagg ggcggatcta ggccactttt gtggtagatt ttggtaatct 240

ccattaaaat gtatgcttga tagttcttaa atgaattgat gatccctatt gccatctcta 300

gtcaagagtc ccctcctcta tcgaggccag gggtttacca tctcattttc tcaccaaatc 360

tcaggggcgg atctaggcca cttttgtggt agattttggc aatctccatt aaaatgtatg 420

cttgttagtt cttaaatgaa ttgatgatct ctattgccat ctctagtcag gagtcccctc 480

ctctatcgag gccagggttt accatctcat tttctcacca aatctcaggg gcggatctag 540

gccacttttg tggtagattt tggtaatctc cattaaaata tatgcatgtt agttcttaaa 600

tgaattgatg atccccattg ccatctctag tcaggagtcc cctcctctat cgaggctagg 660

gtttaccatc tcattttctc accaaatctc aagggcggat ctaggccact tttgtggtag 720

attttggtaa tctccattaa aatgtatgtt tgttagttct taaatgaatt gatgatacca 780

taacttaatg aagatgacac caatgattat tttgtctaga tccgaaatct caatgatggt 840

tgaaatagaa aaaacactca gattttaccg aaattctcaa atcctgaagg gtttataatt 900

ttaaattttt aaaaacaaat tccactgttt tcggatggtt ttcgatgatt ttaccacaaa 960

aaaatgttaa ttatttttg ggaaaaaatg acagaatttt aatagaattt tccccaaatc 1020

tcgttttgtg tttatttaga aattcaaaat tttgaacgat tttttagaaa aaaacaacac 1080

tgtcgggtct gttttcgtgt ctagtgccgg taacagaaaa agaaaaatat acctgcaacc 1140

ggcggttgac gtgtgagatt tggaactata ttttcgaccc gacggaaagg gatcggagta 1200

gaacgatcta taatttgaat ttggagggag cacttagtaa cagatagaaa caagacatgt 1260

ccctcactgc tagagactcg atccaccttt ccagccaaac agttaaattt tgtttctaca 1320

ggagtatttc agccaagcta gctttaattc ataccaattt ttactatttc tatattattt 1380

ttatctttat ggattacagc tgtaacagtt caaaacctta ggttccgtct aagtttactt 1440

taaa 1444

<210> 3951
<211> 1850
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348220_G1, chr10:138994614..138996463, Cluster 24

<400> 3951
gttcatacga tgattgataa ttaaagacgt aaaattgtaa atccaaagca ggctgcagga 60

aaaatcttct acaacttgct gtagagaatt tgttttccct ttttcttcac tggctccagg 120

tccaacaata acttatttca aatctttgtt ataaaaaata gacccaactt tgtataatat 180

tttataataa ttaattaatt ataataagtc atagccatgc aaaggaaaaa agacaatgtt 240

ttataataat tcaccataac catggtaatt tagtaaaata tgcatgaaat aaaggcaatc 300

tttgagaaac ctctacaaca atcatggtta actatgatat atacatgaaa taaggtaagg 360

ttctagaatc atctacgaca accatgtgaa gcaatgaaac ttagttattt atatatttgt 420

tgacatgata aactaggaac catataaact tagatattta ttgagacctt tataatatgt 480

acaagggaca cttaggactg ggcaaaaaaa cctaaactca gaatacctga aaaccgaata 540

gaccgatatt tcaggtttcg gtctttattt cgagtatgtg ttcccagaaa ccgaatttaa 600

tattagaatt tcgatttctt aattcggtaa cccgaaacac ccgaacaaca tgtcaaccaa 660

atgtctagag tccacagtcc atgctcggcc actctagact cctaggcagt ccattaggcg 720

gttagccgat tagtcacttt tagcccatta gacccattgc tcattacgaa acgctcaaga 780

gacctgcatg gtcacctgta gtcctggagt agtggagtta gggttggagt tcgactacag 840

cgcccgacgt cttgcttgcc ggtggccgcc gccccgtcac gcacccactc cgccgcccgc 900

gggtctctgc ttgcccgcct cccaaccaaa cgccacgccc gcaggcctct tgggcgcaac 960

cgcacaggtg actgtgttat gcacttctgc tctgtcgtct gcgtcttctt gagccttgag 1020

gcatggaacc tggacgcctc acgtctgtaa tgtatagttg tagtctgcat cactgattca 1080

ctgtacatgc tgaacctgca cgcttgatgc ttgatatatt tcgggcaaaa ccgactatga 1140

ctatgagttt cggttacctg gaacttcggt tctcaaatac ccgatgcatg catgtttcgg 1200

ttctcactgc taaaacccga tttttttta aaaaaaaaag aaaagaacca atgtcgggta 1260

aaaccaaatg cccagaatta gtgacactta tccataataa cacatcataa cataagtgtt 1320

agtattccga ttaggcgata taatttttat ttacttagtg tataagttat gatttatata 1380

aactaggttg gcttgccttt catacacgta taggtccttg catatatagt tggtgttaga 1440

gttaatctgt tttcatatta caaaacagat aatagaaaat aaaaaatgct atataaaaaa 1500

tgacattttt caatttttg tttttaatta gttttttaa catcaatata ttctaatatt 1560

atagtaatga tacaagtata tactaatgta gataaaaaaa ttaaaatact tacattaagt 1620

agaacaataa taaatactat agattgtata ttcatgctct aaactagagt tagtagtagt 1680

taatataaat acatatatag atactttata gttgattaat taagtattag gtgtgtgtcc 1740

gtgcgttgct acggagtgaa catgttataa taagatacat tgagatacag aagcattaat 1800

tatcgttcaa tgctcttgtt agcatctttt taaaggttaa gaatgtttac 1850

<210> 3952
<211> 2394
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349425_G1, chr10:145353829..145356222, Cluster 24

<400> 3952
ttatgataca ttaattaata tcactagttc atcaacatgt actctcacgc ggtttaaaat 60

tgtaggatat aagcactagt tattgtttgg ataatttata ttaagactct attacagacc 120

tctaaaacta atatatagtt atcaacaaaa attagcttag aggttcggat cgattaggta 180

atggaccatc taattgttag ttatacctct caaaagctat tatttgttag ctgctccagt 240

ccagttaaaa ctagctaaca acttgttatc taactaataa ttatcttggg aggtttggaa 300

cattcccaaa atatagtatt tatttatcat ctaacgtaat acacataata gatactttag 360

agtctatatg tacatgtaat tattaatctt tttttgcaaa ggactggatt ttatgtcttc 420

tcatcaatat tcatttttc cttttgcatt atatctctct atagtttgaa acatgcaatt 480

aatttgaatc ctatcgctaa ctaaggtggc tcttgtcgca tcatatagtc atgaatcaat 540

ttttgatttt ataaaattta ttcttattat ctcaagttaa gttaaaaact cgtgtgttta 600

ttgaatgttt agttaactct tgtttttaca cttctctaga acaaggattt taagtcgtca 660

gtacattcat aaatactaca atagcataag aaattgttag taacacgcat aatatcattc 720

aagataagtc atagagcttg aggtgagatc taggatcaat gtggtagcac aactaacctt 780

gatttttta atagtcaagc cttaaaatgg ctgacctttt cctttaaagt aatattaaag 840

agcttgaaaa atagatccat caatgatcac ccacagttct cacttccact taattaggga 900

atcatatatg caattatggc tatactatca atatagatgt gtcaaaaact cacttaaaat 960

atctaagtaa atctaaacta acaacctata tatagaaata gttgttatgg aaacaatttt 1020

atcttatgca acataacata tatatttatt gcccatttat attggcacga tgtgcacatt 1080

tactttaatt aaattttaat gtattaatgt tgatataagt aggcaatgta gaaacatata 1140

tatggtctat agtgatctaa acaattttat tgtagtagaa gatgttaata ctcgatttag 1200

atgtagatct gagtggtatt cgattttcta caataataga atgaaaactg agttatgtct 1260

attatttatt acaataggag gtcattggta attagataca aattaaggcc tacgtacttt 1320

agctatagtg tatttcttcc taatattgat gggtaattta aatatagagt catgggttac 1380

gtggtttaac cgttatctgg aggcacaagt gtccaagatt ttccaaagag ttcagaaaac 1440

tccgaatcca tggcttgtgc ttcccgttca ctgaactgcc ttgcctcatc ataggatttt 1500

ggttcaacta gcacttcatc agttttgtga gcagcaatac ctgcaatatg ccgtattgtt 1560

aaactactga actgttaatg ctgttcttca gcctagtacg cattcagtga caccttagag 1620

aacccctcaa atttctctca atctacctta aatcgaacaa gcccttacat ggctggctgt 1680

tggaccagca ggttgctcgg tgtggacttt gttctgcact ttctgaagac agtggaaccc 1740

gcagattcag attttagaag catccacaac aggatgatca gtagcaatct taattgaccc 1800

ggtgttaggt aaataatcct aaaactgggt tacctctagg ttatttgctg cctatatgga 1860

gtgctattgt tggattttcg tcggttaaat attgttcaat gagactgagt gatagtaagt 1920

agaatcgttg gctgctgtga ggtttttttgt ggtgtatcgt ttatttttgg atttgtaaat 1980

atgtgttttt agttcagctc cactactagt tttgctccga ccaaaatgcg agagtaccat 2040

gtcactgtat ttgaagacaa aattttcaaa tggaacaatt tcatatggca tgtaattggt 2100

tggatactac agcaatacta ctgctcagtt ggcactacag cggcgcctga catcactggc 2160

tttgatatag caaaactgta ttgtaggaaa ttgtttatca ttatatagaa taatgattac 2220

atatcttaaa aaacacagat tcagtgctaa aaaattccac gtgagtgagg tctacgaaag 2280

gattgatcaa tgtaagcctt taaccataaa aacatagatt aaaattccca cataagctag 2340

gtctatgaaa aagaaaaatc aaagcaagcc tttcacggta aaaacataga ttaa 2394

<210> 3953
<211> 3871
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349654_G1, chr10:146532753..146536623, Cluster 24

<400> 3953
ccctggatgg acagacctac tgaacacaac tgagaaaggg aaacccttga aagcaatagt 60

tctttgtgtt agaccatgaa ctctattgca ggtttgtgtg acctcgaagg tcaaaattga 120

tggaaatcat tcaagctaac atttaccacc aaacaccaag gtggccacac ttcctactat 180

tatagctctc ctatcacaag aaaatcccaa gcagggcaat acacattttg gaggaaagta 240

aaaaaataat tgatgtccaa gattacgtac tcggatctct ggatccacaa ctatgtattg 300

ctttaagagt ttgtcaccaa aagcacgaga aacagcaagt acaccaccaa catgccatgt 360

tcctatagaa caaaggatgg atattaggag aagaatcata ttccatagaa cttgaagaca 420

atacaatgac tggcgtacct tcccacatcg caaaacctcc atcatcttca atacggtgcc 480

gcgtctgccg ctcatcagtt tgatcaagtt tgtgatcttt tgaaacaaca atagctgcaa 540

atcaagcaga acacatcaag ataggaagtg atttaatggt gttacaaacg ctgaaatctc 600

aatggtagac tcaactccta gcttagcagg gcaaggtaaa caagggcaga attcagacct 660

taacaatatc taaaaaaatt ggaagaaacc atgtgtttta gcaagataag acaaagcaag 720

ggtaaaatac agacttcgcg aaatgtctca aaaaccatca tattgtggta tcacatagac 780

tctacaagca tgcattaagc aatgaatgaa gcaaagggta tacattctaa catcatcctt 840

ttttctaaat catgaagaga cttaacaagg acagatacta atagtcaaca tcaagagcgt 900

cgtaaaactt aaaaccataa tgcaatgcat tactgtaatt gtagtaaatt gatggaaaat 960

cactgcagat tgtaccctgt ttctgtgttc aattgtcagt aaagaagttt tagacgaaag 1020

caaattgtcc taggtaacta tattacgtaa aagtaacaag ggggttcaaa gaacaggcac 1080

gtgaagtctt cattaccatt tccttccctg catattatag ccctagagtc accaacattt 1140

gcgacaaaaa gacggtcacc aacaagtaca acaattgatg cagtttaccc acattgattt 1200

tgactactgt cagattctaa gaattcactg tcggtgcttt tataagcatc atctgcagta 1260

acacaaacat gcaagttcaa gctctcatga ttgtgttgtg ttcacataat ttagcaacta 1320

atgttagcgg aaaaggacat gaaagaatac ctatagcgac tttagccaca gatcggccct 1380

ccagcacgtc caggttttgg ggattttggg ttgagcaggg tcggaagccg ctcgagagga 1440

atgggtttca aggattcaga gcagggttgg cgctccctcg tcagattcag gcctcctatc 1500

tggcaaaggt aaacttcatg tattaagaaa cttttattta gaaaataaac tgctcgatgt 1560

tttttgtggg ttgtactcca tatatttttt attgttggat ttagattaat gcttggactg 1620

cgttatgcaa aataggcgaa catgtgaaat tgcacgatgt atttttagat ggaaaaaaaa 1680

aacgccaaag cgaatacgtg aaatcgtacg atgtactttt agatggaaaa aacaccaaag 1740

cgaatatgtg aaattgtacg atgtattttt agatggaaaa aacaccaaaa gggcattgca 1800

aaatggccct aaagtttgat aaattttcac agcctaaact aaagtgcttg cacatgctct 1860

ctggcttcaa gtcaccacga gagtgttgaa cctccaagga ggtgggatcg tgcagggcca 1920

gccagtggac aggacttgcg ctggaattct cttccaagtc tctcccgacg ctttcgtaag 1980

cacagaggaa tcttgcggtt tagctagctg cagcccaagc atattcattt tcaaaactac 2040

tagatcagga ggcgcacttc gtgcgcccta cagtaaccat agttatgata aggcatatca 2100

aattggaact ataataaaat cttaatctgc ggtaacaatt agacaaagca atatgaaatg 2160

caagagaaac ataattaagt atatctctaa agaacacagt accacgcatg ggatcatatc 2220

ataacgcttg atcagataga gacgggcatg aacattagac aagatttgct atgaagagac 2280

taaatatctg gcgggagagg tcttacatta gacaagattt gccatcaaga gatctaatta 2340

caaagaagaa cctacacaaa ctttaatctt aggaattcaa acacctagtc gttataagaa 2400

tctacataaa ctttaagctt acttttcct ggtcatgttt attcaactgt cccgctctgc 2460

agcctcggtg gccagcctct tgattattta cagaatgaca gcacatcctc gttgcttacc 2520

atagaccatc acctgcatac aggaaaggaa atcgaacgaa gttaatttgt ctttgttcgg 2580

cgatcagcag cattggctac aaaaggatta tttctcacta tcagggctgc tactgccgtg 2640

caaccttgct gccagtcttt ttggattatc atttttgact tccagtgaac aatgcttgag 2700

aaataattgc tgctgtaagt tgttgttcag tataagtcat ttcaataaca gtgtgtggct 2760

aaaaatatgg caaatggtca cgtctagaga aaaaaaatgg atttttcatg ttaaatatgg 2820

tgaatatgaa catatgtata gaactaataa atgcataaac ccaagtaaaa aacacctgaa 2880

tctaaatatt taaaaagttc catagtaaat caaatttcaa catactgcaa taagtctggt 2940

tgtaatagcc acaataatta aatttctaac tgcagctgaa tgtccaacaa attatgacct 3000

ttcctgctag gcatcatgga ataactatat tatagaaaga tagtcgctcg taatcaatta 3060

gatgaacttt tacatcaaaa ttgcattaaa aaatagaaca ctttaatcaa ccaacaaaga 3120

acataaaaga acaattaaat acctgtgcct ctgctctcag atgagtataa ggcaccatac 3180

cagtaagaag ctcactgtaa gttattgaaa cagagactaa gtctcagaac gtcatgacta 3240

atgatgctaa cataatactt cagtactgaa taaattgtca gatgtacaaa gatgcaacct 3300

agttgaataa tgtagcaaaa cgtcttgcaa gagcaccatg caaaagcatg tagagttttg 3360

attcatagcg aagctgggga tgtcgtgatt tgaccgattc ctaataagag gttatacaca 3420

cacacaataa ggtgagcaag cagctccaaa ttcctagtag cagctaaggc aaacaatata 3480

aaataaaagt tatgaccaaa acctgcttaa ggaaatcttt ctgcagcagg taaactgaag 3540

cctcttagag ctttctagga acacctgaca aataacacaa gtaatgagaa cctgaaggac 3600

gataaatagt gaagtgtact aatcagtaag catggccaat aaaatgagaa ataggtaaca 3660

cgaacctttc tgcagcaggt aaaccgaagc catatacaac agcataatca cataactaca 3720

acatctgctg ataaatagta aaacctttct cattcttgcc aggctccaca ttcaccaatg 3780

aagaagcaaa atttcaatag aaactaaaca aaaacctgaa ctaaacaaaa acctggaaca 3840

gacgcgtctg attggtgacc acataacaat t 3871

<210> 3954
<211> 1497
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38417_G1, chr1:230125298..230126794, Cluster 24

<400> 3954
gtgtcgtcac aacgtatgaa cattgtactc gtttatgtat atgtgtcatg tgcatagtaa 60

acattcactt gtataataat gataatccta aatctatacc actatataat tcatcaactt 120

taactttgta aaacccaccc aaccaaatta cctcatactt ataacatcca ctaaatccat 180

caaacaaatt acacccagac ttaacaaacc atcaaaacca acagctcaga ttaccgaata 240

acccactctc tcttactcac tcaaatccaa tgaacaatat tatttggatc atccctcgtt 300

cctctccttc atctgccccc gccgcccctt ttcccctccc catcactcac gccaccgctg 360

tcgatccccc ctcctctcct cgagatggta acgttagcac gggctatatg ctagtttacc 420

tttacgtttg tcctttatgt agggtgaatt ctaccaatct aaaacatatc ccctaaatgt 480

tactatgtcc ctctctttta taatacaaga gaggaaacat gaacctcata ttcctgtggt 540

taagacatat ttaccctatt attatcatgt tatttgagtt gtaccagggc cacaccctcg 600

atcgtggcaa agtgtaagag atattctttt cctagagatt atcatacttg tatgatatgt 660

cacagcaatg ggtgtcacgg cccatgccac ctagtatgac atagttggta atcggtgtag 720

ctttttgtac ttgataatac tttatggggc actttggcta taagatcgat gcacatatca 780

tatagtacct cgagcacctt gcaacctagg tcatgacaaa agcatgtttg ttaggcttgt 840

aatgtcataa atcacatatt tgatataata tacttgagat ttatctgtta agctaccact 900

atagagttat cttcatgcct ttagatgtag gatccctctt acgatggtcg tactatccct 960

ggtagaccag tcgcatcctt ccatcttgca atagaactat acttagttat gtagagttcc 1020

atcttgcaat agaattatac ttagttgtgt ggagttccct attaggatgt tactacgagg 1080

gctttttcag gtcccaaagg gttcaaggtt cggtgctcat aatccaaaga cgaggacctt 1140

aagaacctta ggtcttagga ctaatagagg acacctagag ggtgtttggt ttgagaaacc 1200

actccattca agatgagatg atgtatcatg agtctattac tcaaatttgg tgggataacc 1260

tcattactca tgttagtacc aactaactat gaggaatgaa atagtgatag atcaacttat 1320

tgtattccac aaactaaaca aaaaagaaga tagactagtt tattcctcaa accaaacact 1380

ctactagtag tgcctcgagt ccaaaggctt taatcgctta ttagtgtcct gaggcactag 1440

aagcctcaaa ggcttagatt attctattgt aggatgtccc gaaagactga tcatcgg 1497

<210> 3955
<211> 1606
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41528_G1, chr1:245883041..245884646, Cluster 24

<400> 3955
taacatggat agagttataa atacgtacat cagaaatcca ttattattaa cttatagatg 60

caaaggttta ggttagccca cgaactctaa aatttgattt atgggccgat aaacttttgg 120

agtggttcac caccaagtcc aaatcccttt ctttgaccct catctcggat tcaacttttg 180

ggttcataaa ataaactttt aaagtagttc atcataggtt tatatctctt cgtttgcctc 240

ttagagctaa catgtcactt ctgatttaag ggcaaaataa aagggtatag acttgcgatg 300

aacctcctat aatttgtatg caccccgaag ttaaatctaa gtgttagacc aaagggtcta 360

ggacctaggg tgaaccaatt taaaagtttt aagaacccaa aaagtcaact tttagagttg 420

ataaacctat aatcgaaacc tcacctttag tacatttacc ttatagggat attagtataa 480

ccgcacggtt tatgttattg cttgatcagt aagatatatc gggaaaaaca catgtatgta 540

ctatgccctc ccttatgtta gtgaattgat aggtttttgt tgttttaaat aactttgaag 600

agcagctata taacaaatta gttttctgtc aagtattaaa aaccaccacc acccttaatt 660

tcctacaaat taggtgttgt ttggttcaca taattgtaac gtgactggta atagataatg 720

ttaaatcata tttatttaag tccaacccta attagatatc acactaaaaa ttaataccgg 780

tctattcaaa cttattacct ctcgtgaata aaaaaaacac cttaagattt tcgtcgaccc 840

tagagttcaa cttgtaaacg gcatatcgtt gtatacgcca cttgtttcca ttatttttgt 900

aacctggggt gcgatcaatg tgtcagcata atagcgcatc tgccttatca gtgcgcgatc 960

gtacgttgtg ttgttatgtc tatccttggg atagaatgaa gtccataaga caataaaata 1020

catatataca tacatacatg tccgtacatg taagtggcaa agtcaaatgc atgagcaaga 1080

agacagaaca tgtgaatgca gttgctacac tagctagttt ataacaattc aacaaaatag 1140

agtatttgta aattagcacg tacgtattgc gctttgacaa ttgaaggacg aaagatccag 1200

gtatatatgg actcacgtca tcacatgagc gccaccagct catttgtcta gatctcaagt 1260

caaactcctc catcagccac gaaatttatt aggggcgaag gaaagtgtca tgccagatga 1320

ccatacaaat gaagtcaaaa catggaactg cgcaatctag ccgccagctt ggttggcctt 1380

aatattctag ttttttttt gtgaaagcta ggttgctgat gatatatcaa tttaattagt 1440

ttacgaatca cagccgcaat gtctatcgcc tggcttaatt aagttggcct tgcaacttga 1500

tggtcagaag tgacatatat taatttgtag aagtgaccat cttaagcaac tacatcttgg 1560

aattcaattt caaaggaaaa tttcctaagt ggcctaatca ataagt 1606

<210> 3956
<211> 1575
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41929_G1, chr1:247761446..247763020, Cluster 24

<400> 3956
ctagtttgga atggctagaa atctggcaga aaagttggtt ctcatgatct caacttgtct 60

attacatttg ttctctttat aatgccttct tggcattgtt taatttttct tttttacttc 120

atccatgaca gctttgtttc aagtggttat taggcttcat ggatatgtct caggagcaag 180

aacaagattt tggtatagtg ctgaagcagg gggcagaagt gatggatcaa aatgtgtata 240

taaaattgaa attgaatttg atgagtatat acaaattaaa atagaatttg atgagtatat 300

aaaactaaaa ctgaatttga tgagtatata aaaactaaaa ctgaatttga tgagtatata 360

aaaactaaaa ttgaatttga tcatgtaaca agtgaattgc attacaagaa aaatatgtca 420

agagttcata atacagagaa gtgccataga acatgaacat ataatatcaa tatggtacat 480

aatgccatta attaatgata gtaacatata gtaacatgca atagctagta atttattggg 540

ggaaggaatg gccaggtgat aaaaaaagag gaggaagaag gatacattgt catatattgc 600

agtagtaact aatggtgatc tattgctcta ggttttaagg atacccatat gcagtcatac 660

atagattctg ctcaatggaa cctaaaagtt taaaactttc ctcataaatc agcttatccg 720

tgtggttcaa cagataatgt ttagtaatgt atttgaattc catttagcaa gactcttcca 780

gtacattcac tatttttttg aggctacaca tgtataaact agataatcca ttcctaatat 840

aagaacctaa actgacacaa ccaatggaaa atagtaaatg ttaacatttg caagatacac 900

tttattgtgg acattcaaca attgacatca ctctatgcac aagagcaggt cctattggta 960

atagatttgg tgaaataatg catgtaaaac agatttgaac ccccttcagg tgaacaaaaa 1020

aatatgaaat aatgcaagat atgcagaatc gagttcggat atgtagttaa ccttaggagc 1080

aagcttgaat tctggttcta gttctatctg tatcccatgc tactaatgac taatataata 1140

cacatctatg caataacatt actttgcaag aactacattt gtactatgca acaacattaa 1200

cagttcctag agaaatcatt caatgttttc agttcttaca ttgttgcatt gtaaaatgaa 1260

tttagcaaca gaaaatttag actcatgact atcatgccaa tataaatata atgtccctca 1320

ggagtgaggc tactaaatat acaagagtta aatatcatga gttaatatca tgctaccaac 1380

atgattcatg ctactaacag gattcatgta gcttttgtct ttagcaattg catacacact 1440

agattaatgg ttacaattga aacaatatac tgaatgctac atctacatgc ctaagagcag 1500

atttctcatg ccttttgcta cattatacta gggtgggcaa ttggtactcg agagatagaa 1560

taaacttaat ttgat 1575

<210> 3957
<211> 1794
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42985_G1, chr1:253306878..253308671, Cluster 24

<400> 3957
catcaccacc tcattcctca taagctaata attaatatat acacgaggag taggttgatt 60

ctaccaaaat tgatggaatg aacttatgat gcatcacctc atgaagtata gagtgactcc 120

acaaaccaaa cacaccatta tcctctcagt cccctccgat tcgaatgcaa cggaacaaat 180

cttaagtgtg aatatatatg tgtggattgc aatttggatg tatataagga cagtcggaaa 240

aaagaaaaga taacaaaact tctcgaaaga ttgcatgcat gttgtttggc tcctctctct 300

aaagtttagt tcgtgttata tcaaatattt aatattaatt atagatatta aatataatca 360

taacaatatt taataaatct gtcttatttt ttagccttta tctatgtaat ttattttata 420

actagactaa atttaatata tttaattatc gtttaaatat ttaatgtgac agtgactaaa 480

ttttagttgg gaggaacgaa tagaatggta agactacgct gcaacgtacg gtctaaaaaa 540

aaacaatcgg agtagcaata ttactagtac cacaagttaa acacacaggc ctagctacgc 600

ctagtaaagg actactacta tacccagcca agcctatagc tagctaattt gacttcgttg 660

tgtgtgtgtg tgtgttttaa gaaaaagtgg cgagaaggtt tagatgatgt tcctgatgtc 720

gacacttgca tgccgcgcgg tgcggtgctc catgacgcgc gcgaaaaaga attgtttttg 780

cagctcgcaa caagcaaggt cgtgtcgact cgtgtgctat cccatcccag cccatgcatg 840

agcatgatac gctccgatcc ttttgtcagc atcaagtcga tccaaattca atctaccgaa 900

gctagctagc tagctacgag ccgtttattg gtgttaacta actgatctag ctagctgctc 960

tgcctgtctt gaaatgacga acgcgctagc tagaattaat caagcctgat tcgtcgattc 1020

cctgtcccac tactgctctc tgctgtccat gcatgcatga ttagagatgc atgcatccaa 1080

aactaaattg catatagact gactgatata gatcagagca gcttcccagt accgtttgac 1140

tgttggcaga gatgccttgt gttcctgcaa ccacttacaa ggctagctag ctgagacgtc 1200

gtcgtaacac actgctgatg attgggctgc tgctggcctg ctgctcatag tgtgcatgtg 1260

tgtgtgtgtt tcaactgtcc atgactaaac taaacatcat atactattct cgagctgtac 1320

gtgatgtgta ctacctgctg ttggtgtcgc ccccggccaa ccgaaaagaa aattcctggc 1380

ggtctgctgc atatgattcc gatcgacgga tgcagtgcag tgcagtgcaa ttggacttgt 1440

ttggctcggc tgtattgaaa atgctgcact ctgcatctgg ggttcccacg actagactaa 1500

tagctagatc agagcaaagg tttgcatgca tgttcagttt gttttctgtt ttcaaagatg 1560

ccatgtgtcg caatgacctc ccacatccag cgtatacgta cctacaaatg tgtgtatctg 1620

ccggtgtgtg aactgcgaac catatatata tgcccttgta ctattcgact ttcttcagtc 1680

tcctgtcgaa tcttgattgt gtttctgcat acggtttcct gaaaaccgtg ttctctcgat 1740

cgttgtcatc actgctaatg taagcagcta aactttagcc ttggctctcg ttgt 1794

<210> 3958
<211> 1534
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43764_G1, chr1:257462099..257463632, Cluster 24

<400> 3958
aaagtttatc atgcttacct tatttattgg aatttcattt aacacacctt tttattttgg 60

tttgttttta aagatggtac gtacgtgttt gactgcccat aagagcacta aaggatggat 120

ctacatcgca ccctcatagt ctatgctacc accttccttc gagtcggatg tggaggaggc 180

actattacac gtcacaatca aggacaactc tggtgatgcc aagtttgatg aatggttcat 240

agatccaaat gaggacaatg agatgcaaga ctatgagcct aagaacctaa atagaggttt 300

gcttgggtgg ttgagctgaa tgaggataac cacccgaaag tgtcaaaaca caagaaacct 360

aggtatggtg caagattcaa atggttgtga atattagata tttgatgaag ttaacaaccc 420

cttggaagga acagacatat caaataatga tatataggag gacccccaag agcccaatga 480

ggactatgac tctaacaaga tggtggagat agaagcctcg taagccctaa cacaagaagg 540

acctgcacca gaagacccta agcctaaggt gccccaccta aaggaccatg caccagaatt 600

acctcttaac ctaggatgga gaaggaccgt ccacaacaat gatggcatga ctttatagtt 660

cccacatatg ttttgtaaca tactcgtcga cttagtacta atgaacctcc aagttaacta 720

cattggaata caatactaac acattaaggg tagtaccagc ccaagtagat ggtgacgaca 780

gagatcacca gtgggacgag tatggcataa ggaatacaat gtccacacat tatgctctat 840

ccatttgaaa caactctgaa gcaagaataa atgatgctac caggatagcc atgttttcat 900

tcaatgatct gaatcaaggg tatatggcca gtagcatcaa ttggtactat ccgcaatgcc 960

catccgagag aagcatcatg ataatcgcgt gaagggtacg atagtagaag acaacatcta 1020

gatggacaca ctagatatct gaagcatcat gataattgca acccatccag gagaagtagt 1080

taagaagata tctaaagagt ttcaatgtgt ttcatccatt gagttggcag gaatttacca 1140

aattgctctt agaattgagg ttttctccac aactaacaaa agataaaact tcatgctcat 1200

gtgggatctg atcaatccat cttgtagatg tgatctcaag tattcatagc atgtagagaa 1260

ggaaaaaatg atcaaaatgc ccacgctgat tggagcacca aaacacaaaa aactggacat 1320

aagaagaaaa ggagcaaaca actcagaaga ttgaaccacc aagaacctag gaggtatggg 1380

cctccattcc cacaaacttc aatggttata gagtcagatt acatagatga atgatttttg 1440

tagtgtctaa atcatttgtc actatggaac aaagggtcat cagtaccagt tgagaaccgg 1500

ctataataat ggattcccaa ccaatactga gcat 1534

<210> 3959
<211> 1921
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46198_G1, chr1:270730961..270732881, Cluster 24

<400> 3959
ctgacgacat ctccatcagc atcaggcgtc agcaggtaat ctgcaagact ccgtccacca 60

ctactagtac tgctttgcgt tctaaaatat gaacttttga tagcaaatag catttacgtt 120

ctagaatcta gatagctagt agtacttagt cgtacttacg ttctgcatat ctaggtacta 180

gctttagata ttaaaataat ttatttattt ggagttggca gactgctcac ttatacgttt 240

ttgcctattt attattagat tggccattgg tcatttgctt caagacatgg caagcaacag 300

ctggagtgaa gaggaggaag agatccaaga ggtcaatgct caagcaaatt cagagcagca 360

gcatgatgga gccgtagagc cagatgttat tgtgactgtg tgagactgag gttcaatttc 420

taatgtgtga cagtatgaga ctgaagatgt tattgtaaat ttgttatttc tgaactcatt 480

gtaccatgta atcatctctg ttgttctgag ctgtagtaaa atcaatatta tattatatta 540

cttgatggca ttagccatgt acccccctcca gtctgcactg tgcagacatg cacacaggcg 600

ggctcgggcc atgattatgt attttctatc gggctacggg cggtttggag ccaaagtgtt 660

ttcatgttgg gttttgtgtg gcccggcccg acccggtaaa tgatcaggtc taatatcatc 720

catatatcgt cgtgtcatat cttttccact actgataaat ggtgtcggta gaactaatct 780

tttgcccaag acacacattt ggtttttttgc ttggtataga tctacctgta tttttgcttg 840

aatattgagt caatactttt atacagatag gtcaccattg agatcggaca caacgactgt 900

acaaatagag cacacatcat tgttactaag ttttctatga tacataatta actaagtata 960

tattgtcaca agctaaaaca catcgtcatc tcctatcttt caatccggta tcacagttgg 1020

caaataatct catttgattt ctagaaaatt gttgacaaaa caagtccttg gatttttta 1080

tcaacgagcg tcgaattatt gtaattcaga acatgatttc taagaacacg attattttga 1140

actatatcat tttaattttt aacgattttg taataaccac tcactcttca gtccgtgtgt 1200

agtatgatga tctgggttga aataaacgtt gttgtggtcc gagcttttga accatccttt 1260

attacgatga aagagttaca acaataatat atgtgattac taaacataaa aattaagtaa 1320

atgttaaaag attttagcta gagaataaat taatgtgtct cttgttacgt cacaacatag 1380

ttccaataat tatgctcttg ttaactttag ctaactctga acgcagaaca tttttttgc 1440

aagaggtcag accatactct cacgatgatt agattcaatg ttttttaaaa actgtcgtta 1500

tgtaaagtct tccaccgata tgctctaatg actccaaatg aaaaactttg ccaacaatat 1560

ctgcaatatc tgcatgcttg cttagttaaa tttaaataaa ttttttgctt ctatcaatat 1620

gattataaac cacataaaag gaagggtcat tatctagaaa tgtctcatta tatatttgga 1680

tgacctcata aaatagtata agatgatcta gatagggagg aaattgtatt agaatgatga 1740

atggctccat attagtacat ttccgcaatt tcaactatat actatgctta atattctgaa 1800

agttaagatc gccgaatttg gatcgaacaa cactcttttc aatatgtata gagtgtcgtc 1860

cggtctaaac tagcagatct taacttttga aatattaggc atagtctagg gttgacatta 1920

g 1921

<210> 3960
<211> 1846
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49165_G1, chr1:285097516..285099361, Cluster 24

<400> 3960
taatttatct agggaatagg gatggaagaa gtattactgg ctaaagcctg acctgtgtag 60

aataagggcc tcacaagaat ataatatcct acttgctccg tttcaaatca caaggtgttt 120

tagcttcttt agatacaata tattgctacg tgcttagatg tacattatat ctagataaat 180

agtaaaagaa atatatcttg aaaagccaat acatcctata agtagagtcg agggagtaac 240

atcttgaatc ctatgcgcat aaaactacaa ttaaatattt gtttgattca actatatatg 300

agctgtgaaa aaataaataa atgtgagata agtgcactct ggaaaagttg tagtctattt 360

agttaaaaca actgtaaaaa ctaccctcta tttcttgatc taccttgaaa catttctaaa 420

acaactttgt atttccatct attttggaaa aaacaaaatc taaacacaaa aaaggtctaa 480

gatgttaaga aaactgcact gcattaaagc agatgctttt ggtattatta agttgattgg 540

ttttatggct gtacaagcac tcttcagaag ctgaaccaaa cacagccgga atgtttgaat 600

ggaccgtgga aaaaacaaag aaattaagag aaagagagaa tggcataagg tatacttcca 660

taaggtctag tctcttaatt attagatatc cttagaattc cctatatagc aaggcaatct 720

atatgattta taggacccta atcctttatt gaaaggagtt tataggaaac cttttctatt 780

tcctatgatt ttctattcaa aataaactaa attatgtgaa atttccgtgt ttcaaatcgg 840

tgctagaatt tctctatttt ttttgtttca aggcgtgtgt ttgtgtgggg ttttttttctc 900

tctaaaaaat acaatagtcc aatttctttt gtcccaaaag gggagaggca aaacaggtgc 960

tctacaatat cgttagagca tcaaaaatcc aaaccagaaa ccactgtaac atgagtacac 1020

gaagacacca cacgcaaagg tatcttaatt ggttgagaca tataccgtgt gtttggtttc 1080

ttagatgtac gcgcccaggt ccgttgcatc tgttgactga ggaagtgcac ctgtttggtt 1140

ggctgtgtga tggagctcta aactgcacac gtggatacaa agaaagccat tttaggggac 1200

atgggttgca tccgcggaga tgtgggtaag gtctcgtccc gtatcccacc acatgcaggc 1260

ttggatgggg ctacacgtct gcatcgggaa aaccaaacac atagatagtc tcccctctgg 1320

acatcacaag tcctattaaa aatctctttg cgtggttaag ccgctttttt aatcatactt 1380

taatttgttt ttttgctggg ctcgacctga ttaaggattt tggaggcgtc tgaaccatcg 1440

taataaacgg ttggtgcagc tgcagcacac gcaacaaaaa gcgcccacgc acgggtgcct 1500

tggctttgac caccgccact tcgcatgcat gcagttgcgc tgccatgttg catgcatgtc 1560

aacgtcaaga atattgggca tatatatgag ctaacctatg aatccattta atgtccgttc 1620

catatattcc tctttgtctc cactacattt gcttttgttt tgtcaataac taacaacacc 1680

tccagctata tgaatcccac ggcgtatcca tgcatgctac tcgtgacttt tgggaactac 1740

tgaaaatact aataccatcc cttttcagaa aaaaaatgat tcagtgcgtt aggctatctg 1800

caaggatacc ccttatggct cccctaacta tatgtagtga aacttg 1846

<210> 3961
<211> 1891
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49365_G1, chr1:286368594..286370484, Cluster 24

<400> 3961

agtgccaccc tagaactagc tagttacatc aaacactgta gcaatagatg aggtcgacat 60

gtaggcatgc gttgcttgct gggacccact gaccctccgt ttttcgtggt taatctacct 120

ggtcctaagt cccgaagtcc ttcgtgttga ggtcttcgtc ttcgcctgtc ggtccatcct 180

ctagtctggc gtagaggaac gatctccttc gcagcaccca ggtcttcgcc agggtaacca 240

ccgggagcaa agcccttgag gtcttcaacc tcttggacca aaaaaccccg ctttgattca 300

gacccgttgc cgatagatcc caaatggcat cttcgaaccc ttcgtgtcat gctagggcga 360

cttctcgtgc acaacaaagt catcgccatt cgaatcttca tgttgagacg attttatgcg 420

ttcgcagaca aggtttgttg aggttggaga cggatgaccg aggtctggtt cgaccatgtt 480

cccagcattt cccatgaagt ggattgtagt ctaacagcac atatgctatg tatatatggg 540

cactagatca tccaggacat gcacaagagc gacaatagtt tttactaaag aaatgagagt 600

agaatagttc ctttatgata ggagaacaag aaagtaagaa agaagagggg agagaaaaac 660

atttgaagat gcaagaagcg aacatgacac aaagtgggtt tgtgttgttt aacacatgaa 720

tggtttattt gtgcaacaaa tatgatacat atttattttg gttaaatcaa tttgtgctaa 780

tacgattttt taagtttcca tgaatttttt agcttacctt tggtacccga tccaattttt 840

agcactacca atttgcaata ataactatgt tattttctgt tttcttgtat atgacatgaa 900

aggatatata tgcaatatta agtatattct attgcatatg aaagaatgtc taatgtttgt 960

ttccatgaac cttatgtttt atgttagaaa ggtgtatctt gcttgatgtg atatatttaa 1020

tgtaatatta attttaatca agcaaatgat gtgacaataa tatatatttt gggtatcccg 1080

atcaagttca agaagataca tatggaatgg gctcatggga tcggtagaaa acccatggag 1140

tcagaagcaa cgaccagaag gaaggcctat cagcaggggg ttccagaagg ttaaacatga 1200

cagagatctt aagagatctt atctagatca agttgtactc atctcatggt ggataatggt 1260

aatacagtag taaataaaaa ccaaggaaca aaggaaagaa gatgaagaat ccactttatg 1320

ttagtgaggg acaaattcat aagaaattaa gatgccattt ttgcaagaaa attggccatt 1380

tcaagaagga ttgcttgaac aggaagaaat ggttcaaaaa gaaacatata catcattatg 1440

tttttgtgtg cttagaatca aattttgttg aagtttatgg taatacctta cggttatttt 1500

gtggtgctac taatgtttca catattacat agggatttct tctgacccaa cccataagcg 1560

ggtgtaacca gttcttgtac atgggaaata aaatgaaggc atgaattgaa cagatcgaga 1620

catcgaataa tcctcgagac cggtctgaat gtagacttga aagcgtgtct ttgtgttctt 1680

gaatgttcta gaaatcttat atctacaagc tagttgtatg taataagctt aaagttcatg 1740

gttggtcatg gtatgtttca gttatataag aacaaatact agtatggttc tattatttta 1800

atttgatggt ttatatcatt tcaatcttga aggggttttc taaatcccta tttaatgttg 1860

agcatgttgt tggaaataaa tgtagtacgc a 1891

<210> 3962
<211> 2164
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50154_G1, chr1:291563015..291565178, Cluster 24

<400> 3962
tgctatgctt gtcagagggt gatgttaacc atgggctgct atgcttttca gtggtgatgt 60

taaccatggc tgctatgctt cttatgaact ttaacccccc accaaagtct gaaccacccc 120

ccatggaaac ccaagaagaa cattcatact gctcttttgt accacactag atagatagat 180

gcaagaattg ctgaggtgag aatgacaatg tactctccaa acttgagagc cacacattag 240

caaaagggag aaacaaaaag ccgccattcc atggtgaata catatatcta agtctaagcc 300

atgcatgcat ggttctccat tattacaaga gctactctaa ttaggatgca tgcctgccac 360

ttcttgcaag cctccaagga tgagccctgt accccactgc ccccccttgt cctggtttaa 420

agcaatggtc aaaaggaaag aaaaaaaaaa cttgtgtacc ctatatatat acactgaact 480

ttttggtatt ctattgaggg tgacactagc atttgtctct ttcttttgca tttgtttatg 540

cgcacgtagt agcttgcaag gctgggtggt gatcatcaga ggcagtgttt ttatatatat 600

tggcatcttt atggggaggg gttcaaaggc ttcatggacc tctaattctt ggggttatag 660

ggtagttagt acaagcatgc aaccgccaag actatatcca attccaagtt ggtagcttgt 720

ttaagaaggt gagatgcatc attgcttctg tacttgttca ggacataccc actagccaac 780

tctggccatc tcaatgtgcg gcaccaaaac acttagatcc aatagcgaaa aaacagtgta 840

aaaaacaaat cttatccttc agtttgttac tttgttatat atataaatat ctgaatgagt 900

aacgacaaat aggtcaatta atagttaaat taaaaaggtg ccaaatgcag cgtcgtctcg 960

agctgataat catgtggtct tacaagccac tatgatgggg tggtgctatc ttttagcctt 1020

tcttgacgtt ggcgttatct tgtgagaatt ccagatcgat atccttgaca atgtgaggac 1080

gcacgcatct tgatgccgag ctagggctag gtgtagctag ttccatcgca ttgtgacaga 1140

taatctctct gaaatcggat tcttctaatg tgacacaaag cagatcaatg ctcattgcga 1200

taaatagtta cggcgccact acaaaaatgg tttttagacg cagcctccaa ttccaaaaga 1260

ggctctttta caagggtgga tatatatgca aatctctcca aaaatcagac aggggcttca 1320

aaaacctttt ttttaaaaaa atataaatca taaaactgca ccaaaagaga gaaaataaaa 1380

tcctcgtgcc ctagctcatg gcagcaagcc tcctgtagca catttttgt atgaaataca 1440

cacggatgcg cctaaggatt gagaccttca gactcgtgtg gaactacttt tcaccagcat 1500

actgtatagt cacacatgtt tagattttga ataatatgta ctatatttaa ctttgaattt 1560

tttcccgcgt ctccctccta cgcgcaccgc cagaaaacta caaaattaag tacaaaacct 1620

agagttcaaa ccctaacctc tctctcccag gcttagcttc taactattgg aacacaaatt 1680

tatttgtgtt ctacaaaaga tagatattat aaatattgtg aatataaaaa tcatagtaac 1740

acaagggtaa ccgattgtat ccttttatat caattcacca attcttttg tatatctggt 1800

cactaaatgt tctcaaatga aaaatatcaa ctatatatag aatttcagat ctcaggcact 1860

agaactttgg tatagagaaa attgtttgac atattcaaat tttgaattta aaaatatgag 1920

aacttataat gaatatcact taaatgatct caattggaaa aggattaatc ccacacagtt 1980

ctattgtttt aatacaaaat ttatcttaat ccggctttat ttgtaaaagt tatgaactta 2040

gttacgcaaa aactattttt aggtgcgctt gtcctttaaa tttcatttta gagccaatcc 2100

aattagttaa ctatttttag atgcgtcata tttgcattgt gtctaattgg atctcttgct 2160

caac 2164

<210> 3963
<211> 2306
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52977_G1, chr2:6319459..6321764, Cluster 24

<400> 3963
cacagaggga gtataacgta aaccaacatg ctacgcaaaa gcagaaatac atataaaata 60

caaagtgagc agtgcaacta atggaaataa catatatgtg aaatagttgt gtccatcatt 120

aatggaaatt tattcttact agcaaatgtg tccatatatt aattgcaccg aacctaatat 180

atcttggaaa caaacttcgt attatcactt gacacgaatt ggcgagttgt tctaattcat 240

ataagcacaa gacataaata catgtcacaa tatatatgtc acatatgcca tatagatgaa 300

gtaaaaaaag cgagatggaa gaataaatga ccctttactt aaaaaagtat agatatatag 360

caaacatgag catgctacgc tatgaagtaa gctatttttt ttacagtggt gatttgtttt 420

tatttgtctt ttagttgatg ttatgtgttt gtactttaac tttttattat cggtgaaata 480

tatgtgataa ccaatgaagc aatataatta gccagattgt gttatttgag gactaaattt 540

tttattaatg gttataaaag tttacaacac tcacggattg ggctcactta tcgtcatgta 600

taagcctact tatttattta tttttcttct ctgctgccct tatatatatc ctttctccat 660

tctcttcttt cctagatagt taaattaact ttctttcaca aaaaataaat ctacccgcta 720

accaagtacg tctctatcta ccataataag catatagagg tggaaaaaga tgttgtgggc 780

atgttgggca atgtcttgtt gatgcttagg gggtgctcgc gactgccgct cctccaccac 840

cacttcacca gcttcgcctt ctcaatttct catgcatgtt ctagctagcc tatggtgtct 900

gaggttgcga tatgaaaggt cgatatagat tcatcaccgt ctgacacatt atttttaat 960

attagaatag atcgagataa aaagttgaaa atatgtacta taatacatgt catctaatgt 1020

gtgcatatgc aactggtaag caaaaggtta ccgactattc cactacttac atgtatgttc 1080

tagtaactcc aaacatcaat tgcattccgt tatgtttgta gcatgcatat tgcataacta 1140

atttgttcaa actgaggtga aagtttttta gcagccacat tattagcaat aactaagatt 1200

atgtttggat catctagagc aaatagagag cttttaagaa aagctatagc tgatccaagc 1260

ctgattgaat acccaaccat ccaatgaccc aacgaataaa aaagttatta ccctggcttc 1320

ctagttaatg caactaatta ttagctcgga ggatccatag tggtagtttt tttctaattg 1380

tttgggaagg ggaacgatat tgttatcacg ttttttacaa tataaacttg cattatatgc 1440

catttattgg cacatcagat gaatcacaca aattatcaaa tggatatagt taatctattt 1500

caggggcaaa gccagaaatt catgcatata gcaatcttac ttgatccatg gcgacatctc 1560

ctatgaatac acataattgc atattctata atggaaagtg tctagagctt tatatttttg 1620

tataaatatt aactcaacat gagtgtaaaa aagtgaatgt ggctctagaa gtgcttgcta 1680

ttggcatagg ttagcgtcaa aaataggaaa cgtatgaaga aacatatcta gagcttagaa 1740

agcacatgca tatatggaac catgattcaa gagttagggt tttggatact tacatgagtg 1800

ctgagtatca ccaattttga gatgcatatg gatgttgagt gtcaccaagt gttcccccaa 1860

acacttcgca ttacacataa tcttgaaatg agttatttga atggcgcctc atgtgaagta 1920

tttgaaggga actcatggta acatcagaca ttgttcaaaa ttgtatcaca tggtatccat 1980

gtggccatca tatattataa tataactaaa tgcttcgtga taccaagagt tctcccccaa 2040

acacttcaca attataccct ttattaagcc aaggtatcga gacgtgcttg tagggaactc 2100

ctagtaacac aaaatgttgt atagccttca actcgtatca catgacacat gacaaacatc 2160

tagcacatgc aaatgatttg agacaagagt tcccccaaac acttcacaaa agctcttgaa 2220

acaatgcctc gtgaagtgct tgcatagaac tcctagggac atcaaaccta gttcttacaa 2280

aacgtgccat gtcatcctta aatcat 2306

<210> 3964
<211> 2594
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54128_G1, chr2:12635610..12638203, Cluster 24

<400> 3964
ctgacaaatt acaacaacat aaggctcaca gttcatttgc tcaccctgat taaccttatc 60

cccaatgtag cccatcagtc ctctcccaac acaagaaact tttagatttc ttgtttctta 120

aataaatcct aaggtacacg gtataactga gagtgtcagc atttgtatac aggaagtttc 180

ggtattcttc tagtgagaca ttatccaacg tgtccttctc tggtacactt ccctttatg 240

ccgtttgcag caaagaaagt cggtggggac aaataaaaca tggaatcaaa cattgatcca 300

aatacaccaa gcataccatc taagtcttcc tagaatagtc tcttagcact ctcattgtgt 360

cgtacttggg ggcaaactca ctaattacgt tcaagaccaa acacccacaa gaagcttgac 420

taagataatt ctatccacct actttctcgc atccaccaca acgttattga gactcttatt 480

aatcaaaact ccaccatttc tatttgcaga tgtccctatg ctatatacca aagcttgaag 540

ttgatatttc acaagacaag caaaattcta accataccag taaaaacaat gaaattactc 600

taccaagcat tgagatccac tacacaatta aaaacacaaa ccccgtagtg attcttcgca 660

aatatattaa caatattttt ttcttaagta aatgcaaagc acatatgaat gaggaaaatg 720

aaggatagaa taactaaaat gagtctatgc ccctaagaaa aataatccca attatatgag 780

aattcaagcc tttgcttgca accagataac tgaaatcgca agaagcaacg gtgcatagct 840

aatgagcaag caccaaacga tgtcttacaa caacatctta actgagcatg tggtcctggt 900

ggtgtagacg tgatgattga gacaaaccaa ttttgctatc tttgaaatac cgccagagac 960

catgtatcca agtatgccat caacaacaac gagaaaaaat caagcaacat ggtgtacttc 1020

ctacttcaat gcagctacaa taatcagcga cctagatcca agtatgtttc tgatctggac 1080

tctgaaagtc tgaacaattc caagtcgtac tcttacacca ttcactcaat gccatcttgc 1140

aggctataag tcttgtattt tgagtgagca gtgtagtata ctaataaaaa aagcacaaaa 1200

aaaggaaatg tgttactgtc ttcctgggta tcctccatta attcagaaaa cataggaaag 1260

ctgctttcaa cgcaagctta taccttctgg aagcatattg ttacttggga gttgtggaaa 1320

catggattgg ctacagaatg caatagctga catgttgctc tgtatctgat tttatgttaa 1380

tgtgaataat tagaagagct tctattaata tatagaagtg gggaacagat tgcatcaacc 1440

aataaccagt ttatacagta cagtgctaca tcgttgtgtt ggggccagca acacatgagg 1500

aagatgttaa caagatactg gtaaccataa tatcgtcaaa gcattgttat actaaatagt 1560

ccacaaagtc aagacttaag cttacacatg caaggttaat aaagaagaaa ttttcaaaac 1620

aacaataatc atgcaaagtt gaataatttg ttgcactgac ctgtgagcac aaagattata 1680

tgtggttact ttcaggtaga gttccttcac ctatgtgtat tccccgtcag atgatttatt 1740

agtctttttt gcatccttct ctgcgatcac acatgccatt tggacagatc caccaccatg 1800

atcaaccact ccaactatgt ctacataaat ctttcccaaa tttcccaaca gataattgat 1860

agtaacctat aaagagagaa gagtaataca tattacttgt ttctggagtg aagtctgaat 1920

ataaaaggaa acatacaact gatttctaaa cacttccaca ctaactgtga ataaatccta 1980

aaaggctaaa acctatatct tactcgcctt gttgtattta aactaataaa cttttacaaa 2040

tctacaatgt tttgaaatca tactctatat ggttcttcag aagattgaca gatggtaggt 2100

acgtttacat gctagttacg tttacactat tttttgttca ccgccatctc atcatgtaaa 2160

cactaaaaat tcagaagtcc aaaattgatg tcaaatgaat atactcacct ctgctgtcaa 2220

tttttgtgca taatcccctc aaacccctat gacagcctca tcgacattgg ccacgtgtgg 2280

tgagcatgga ccccctcaaa acccttcttc ctctccagca ctatctccat agctagactc 2340

ctccgatccg gcgtgatatt attaggtctt tcaagttcat gttcaccatc cgaactttcc 2400

tgtaaagcat ccaaaatgag atccaatttg gccgtcctac agtaaataaa aaaagttctt 2460

gcatgattat cacctccaat ttggtcatcc tcattttcaa tctaattccc aatttggtca 2520

gtttctgcca aattggcacc attccctgcc ctgtccctag gaacctcgtt ccctcatctt 2580

gcttggacaa acaa 2594

<210> 3965
<211> 1747
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54829_G1, chr2:16394676..16396422, Cluster 24

<220>
<221> modified_base
<222> (1020)..(1020)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1020)..(1119)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1021)..(1021)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1022)..(1022)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1023)..(1023)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1024)..(1024)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1025)..(1025)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1026)..(1026)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1027)..(1027)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1028)..(1028)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1029)..(1029)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1031)..(1031)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1032)..(1032)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1033)..(1033)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1074)..(1074)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1075)..(1075)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1076)..(1076)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1077)..(1077)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1078)..(1078)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1079)..(1079)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1080)..(1080)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1081)..(1081)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1082)..(1082)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1083)..(1083)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1084)..(1084)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1085)..(1085)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1086)..(1086)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1087)..(1087)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1088)..(1088)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1089)..(1089)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1090)..(1090)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1091)..(1091)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1092)..(1092)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1093)..(1093)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1094)..(1094)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1095)..(1095)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1102)..(1102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1103)..(1103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1104)..(1104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1105)..(1105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1106)..(1106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1107)..(1107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1108)..(1108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1109)..(1109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1110)..(1110)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1111)..(1111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1112)..(1112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1113)..(1113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1114)..(1114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1115)..(1115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1116)..(1116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1117)..(1117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1118)..(1118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1119)..(1119)
<223> a, c, g, or t

<400> 3965
aggctgggac agctcatttg aaactacctg tatgtgatac ctacaacaac tcatttttg 60

ccattctttt caatttagtt gggtgatact tttaaggaaa tgtctagaaa attaagtaac 120

acaatgacat tttaaactac gtgtgtgtga tatatatagc ctatgaatac ctatttcagt 180

tttgcttact tcatattaat tgacagttgt tatttggctc atgaccattc tatttgacaa 240

caagagacaa gcaaatctaa tgtttacagt tttggtgtgt tgcttctaga aattgttagt 300

gggtgataaa aaaagtaaca aaaggttagc acataaagat tagatactcc ttgaaaaggt 360

tatattttac tctagattac agttaacatg tattttcgtc atctacttgc atagttcaag 420

agtttgtttt ttgtcattgc tgatttaaca cactactttc tattatccaa aaatagtatg 480

atggtgcatg atttggggcg cataaatata atcaatataa tattttgcat tgccatatcc 540

gtatttctct tcttagacaa cgtcataaga cttgattagt gctacttaca ccacctaacc 600

aactcagcta gagggccgtg ggctgtctta gatagagttt atctagata gtgcatagca 660

aaagctatgt atcttgaaaa gccaaaacat cttaacacat gaaatggagg gagtagataa 720

cactaggaat attaattggt ttgatattgt tatggttcac atcttttagt tggaaacaat 780

ccttataaac ctaacattga ccaccgcaac ctggagtcct ggacattcat tcacgtgtct 840

acttatgttg tttgaacatg gctacttata tgttgttcga acatgattat atttagtggt 900

accatagaca gatttagtag gtttggatgt tctaaattcg tccctctgtc gttcggacat 960

gattagatgt ggtggttgac agatacctgt agaacgaaat tcaagcctta aaatacttan 1020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1080

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnt gcatcaatca atattataaa 1140

aataccgaaa ttcatgacaa tttatatagt gttgatattt gcaatgttgc cctggttgat 1200

gtcacctttt atgcttataa ccattttgtc tacccatgac ttcctacaat atttttacat 1260

ttcttaattc ttgttttgtg gagttaccag ttcatttaaa gattatttgg atttatctag 1320

ctatttttga gcttacttgt tttctacttg tacttaaagg cagataagct agaggagaaa 1380

agaagtaaca aatttgatgc tggattactc agttaggata gcaataactc ataccctaa 1440

attccttaga ttgccacaat gagcctgagt gcaagaatgt ggtctgcaat tcgcgggtca 1500

gggagtcatc gttggcctca ttgacacagg aatagatcca acccactcta gctttgtaga 1560

ctatctatca actgatagtt atccagtacc tgctcactac tctggcattt gtgaggttac 1620

aaatgatttt ccatcggtat cctgcaatag aaagctcgtg ggggctcacc attttgtagc 1680

atatgcaata actagaggag tcttcaatgc gtctcaagat ctttcatcac catttgatac 1740

tgatggc 1747

<210> 3966
<211> 1534
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59466_G1, chr2:42961900..42963433, Cluster 24

<400> 3966
ttgaggctag tgttcctttc tttgtggcga ttactggaac gtccaagaag ctttgtgagt 60

ggtttgaacc tatctaatct aggaatggac aaggaatact cttaggactg atttagtgac 120

cagagaattg gaggggatcc atggagagga gatcacttgc tatttaaaat tgagggcctt 180

gtttgggaac actttatttt cttagtccca agataatacc atgattttta tgcataccac 240

agtattttat aacaaaaggt gtttggaagc acatctaaaa actctgtatt ttaaaccata 300

gttttaccaa taccacacta ttttggggtc aaaaaaactt tggtctggac caaagttttt 360

ggcttgcagg cttgcacgca gctatagtct tctcttctcc tacactacaa ctgaaatatt 420

gtctccaaac aggtgttgga ttggactgat gtaaaatata ccatagttat gtgttataac 480

atacaataaa atgtggtatt ataaactata gttttgggaa acagagttcc caaatgggtc 540

ttgaatagca agggatttcc tctctcatgg atcccttcaa ttccctggtc accaaaccag 600

accttagtgg actttaggcc ttgattgtcg tgtagagctt agtagtgaat gcttcagtct 660

taactaggtg gtgtggtagc acctcaacac cacaaaacaa tttgatctct tcttaaaact 720

gcattggccc caagtggatt ttggtgtatt aatgtcacac aatttagaat ctaacaagtt 780

ctatgataca tagttatagt tgtcaggcac acatgaaaag ttgtgtatac ttgtgcatca 840

aatgagagtc ctcaattgtt ctgaatttga aggcttcaaa ctcaatgcat ggaaggcttg 900

ttatattttt ttgagtttaa gaaacttgta tcaccaagac gtgtgcaaat tcttgttgca 960

aatagtgctc aagtaactca aataaaatat acttaaaaga gcactaaagc ttagcactag 1020

acacttagtt tagtgtttgg aagtctgcca tattggaagt cctgacccta gattggaagc 1080

tctgatgtat gtcaaaatcc tagaagaagc cacgttagat tttaagtcac tgccaggtca 1140

gaagttatga ccctctgttg gaagttctct ttgtctagtg taagaggttt ttggcattag 1200

aagtttcaag atttttagaa atcttgaatt tcgtagtaac agttagaatc gaaggtgagt 1260

ataaatatct tctcccctct cctttcaagt atcacctcga acatttactt tggccaccct 1320

caattcaaag ctcctataga gcattcaagt ctccttccac tttccttctt tctccccaga 1380

cttagatttc aaacaagggt gagcggctga gagaaaaagg caactaagct tcatcttttt 1440

cgttcaatgc tttagttttt catctagtca ttacacttta ggcatcgtcc atctctgtga 1500

tgcatgatta tcgctacacc acctgcacca atag 1534

<210> 3967
<211> 3278
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5983_G1, chr1:30281327..30284604, Cluster 24

<400> 3967
gtttgccatg aacctattca caaggctagc atccatagaa aacaaaacca atatatgtcg 60

tacagatcca tatgtatacg agtagtttgt tttcatcaat attttacggg gtcatgcacc 120

caaagtagta tatttaatgt tcatgtcatt gtatatttaa agggttatca atgcgtagta 180

ttgcatttgt ttttatcaca attttttttt ggaaatggaa acatcgttcc ggccttttt 240

atgtataccg agtagtttgt tttcatcaat aatttacggg gtcatgcacc catagtagta 300

tatgtaatgt tcacgtcatt gtttatttat agggttacca atgcgtagta ttacatttgt 360

tttttaccac atgccgttgt atatttgtgt tcatgtcatt tcattgcatt atatttgctg 420

gtacattatt tctaactgtt ttcatgtcgc atatcaatta taatagctct gcttacaatt 480

attggttctg taagaatttt tttatagtct attcagcatt cctttagcca tctaggacct 540

ttcatagttg atgaagtgtt aggcccactc actaaaacaa cactttcaat atacctattt 600

caaaggatga catattatta attttaggca gaggcaatta caaggatcaa gagaaacaaa 660

catgcactta cttcactgtt gttatcatac tctaactcaa gcaaaactct aggtgtaagg 720

accgttgaat ctctacaatc acatagagaa gggttctcaa tcagttcgtt ggtgtctttg 780

gtctccgcgg gatgtggaac ttattgttga gtgtgctcgt gtgaccaacg tccaccggtc 840

gttagaaaga aggcaccctt tgggtcaaac ttttgaggac cattttgatc cacttaaaaa 900

gttgcatctc tccaaatcct aaacaaaaca atgccacaat ctcattaata gtttataaga 960

aatagcaaga aacatcgaga cgacatattt gtaaataact actgatacat atagaagcgt 1020

cgggtacctg tgtctagatg cgtcgactga ttcagctcct cttttgattt gtttctggat 1080

ccgccaacat ggcatggcgt gaacaataaa aatggagagc acaacgaatg aggagtgcag 1140

ggtacacagc cgtacagggc atacgtacct gaaaatgaga gagccgcacc tgaacatcgc 1200

catggatgtg gcagcctcgg tactctctcc cagtgccctg tggcttgcaa attttctagt 1260

gagcgcgagc atgatgagtg ccgtgcccgc gcggcgcctg cgcgcgcgct gatgcttcca 1320

tgtgcgtgcc tcaatcatgc acgcacgcag acgcagacgc agatgcaggc aaccggaatt 1380

cccatggggg ccactagacg taccatccta ctcctacgtg tcatgtcact ggattagtgg 1440

ctatattatt actattcgtt tcgctttccg ccagttacct gcagtgcagc cagcggcgcc 1500

atttgcccgt taaatttaaa ctaatcggcg gcgcacttgc ctgagcgtca ggcaaggaga 1560

gtggggcggg gcacctttтc tttttctatt aattagctgg tgatgtgagg tttgctggtg 1620

gctggaggcg acagggacac cagacattcc atggcttcag atctggcccc aaaacaaatg 1680

caccaatcgc accgcgcctt tgtgctaaag caaccgggcg ggcaactttt tgtcaggtca 1740

tgtgtcgcgc ctgttcccct aaagataaac taatggcgat gtcgacatgc tttgcttagc 1800

tttagctttc tctctccagg aactttgact ggaagatggg ccgtggggcg ccccccccaaa 1860

gtctctgcgg gaggacacag gaattgcctc ttgaaattag gacgtaaaac tgctttggtt 1920

tctcctcgct ctttacggct ctgttgatca ccttgttcag aaaatggtga gagcaggggg 1980

ggcaggcagt ggatggagaa tagaaccgct tgtaccttgt actctagacg cactattctt 2040

taattacatc catccatcga gctgctgcgt tcattcaaaa ggaaaagttg acgcgcgcac 2100

tgtttgcaga ttccggatcc aataattcca agagggacag catgagtcca tccatgtctc 2160

taggttatta tagctcccct ccctttgtag ccgcctcgag ctggagagta gtgatcagcg 2220

tacgaaatcc agttgctcat tctctctgag gggcctacat gttccatacc atacgtacgt 2280

gtgtgtgcgt gcgtgcccac acacatgctt gcacgatgcc cacattttcc ctgcagctaa 2340

gcgctgcatc gccatcttcc tccggtcagc aacagctaaa aaacaccaac accctcatgg 2400

attagaattc agagccccat ttgccggaac gctggtggag gtgcgagaga tggagaggga 2460

tagcaaatta aagtagattg cccattctat caagaggcgt cgtctctgcc ttcgattatt 2520

attacgtgtt tgcgctgtgt atacgcatgc atgcacctca accgtccgga attctggatg 2580

atcggacaag acgatgagat ggttatctga cgacgtcgga atcatctcct tcgcggagac 2640

ggtcgataga tgtcctgatc gagcatttct cggtccaaga gaccgacgta tttgattgag 2700

ctcgaccgat cgatcacgcg ccggctgttc cattccaaag ccccatcatt tcggatccag 2760

atcacggccg gataggtgtg cagtccgtcc ttggtgcagg tcaggtcagg tcatgactca 2820

tgagccttca ttcgttcctt gcagcaagca attcatgtcc ctgttgcttc gaaggatacg 2880

caaggagata taatttgcag cttgacgata acccagaaag gagagagaga gtcggtcaga 2940

aatataatat atattgctgt ggctgacagc aacaaacaag attggcagca accttagacc 3000

attgcatctc cagatgcagt ctaaatgaaa tgtacactat cggtctgatt tgttgtctat 3060

atctacaagg catttgattc attgacgatg tgttcttttt tagaatgtct ttttttttgt 3120

ttcttgatgg tgttttgcta ttttttttgt tggatctgta aggcggggta tgcaggacac 3180

tgtagaaggc tacaacattt tgtttttatt ataaaaaaaa atctcatcct aaaccattac 3240

atgaattgac tctatatgaa cgtatgtttg gttatctg 3278

<210> 3968
<211> 1615
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_72848_G1, chr2:128584592..128586206, Cluster 24

<400> 3968
ctaaactaga accatgaacc acatagcata tgcagagaag taaaggaatt caacatataa 60

tacaaacctt agattttgtc ggtggtaatg gaacaaggaa ctacttttca caaaagatta 120

gctatataga atctaatagc ataggataag catgtagaac aatttataca acattagccg 180

cggttgaatt agcaggaatt tacaaaactt ggatataact tactttatat ttggcagcca 240

agacatcctt cacgattaca aaattcacgt ccatagagtg tttagttagc aaatgacctc 300

ccatggctgt tactagttct tcaatcctaa cctgcaagaa taaaaacaaa cttgagataa 360

atattaaagt attaactatc gaaaactgta acctgtaaca ttagcggcac tgatacatgt 420

accttctcag acttttcaaa gcctgaacaa agtgttttaa ccccatccat tgcaagacaa 480

cacgtataac tttgtttagg tagaaagcga cgttctttag cacaggaaag aatgcactgt 540

ggtcctgtgc aaattcaaaa acattcttaa atacaaaagt caggaactta ttagaagatt 600

ggctgttatg atttcaacca catagaaaat ttatgcactg caaaacaagt aatgttttgg 660

agtccaaata aacaagaaag cctaatattt tttcgagata aaaagataaa cagaaatgtg 720

atcatagctt cactgggcat gttctggaga gaaattacat agattgcatc aacaattttc 780

atgatcaagt ccctagcgac tcaaataatc ttccctacaa gtttcggcac taagcatgaa 840

tggtgcaacc aacttagaca agcaatatac cttaaacagg aaccttctcc gttctcccaa 900

gacattaaca aagtagagtt catagaaagc agtatattgc gcatgaaact aaattttcaa 960

ttgaagatag tcttaagtct taacaaatca aatgcagcag tgcagcaagc tctgtacaac 1020

ttgaggtaat aaataagatg tctatctgta gtgccccaag atcccatcat gctctagcct 1080

acccacacat agtacaaatg atatatacac aacccacacg agttttatct tctttccatt 1140

ttcacacaaa agggttgaca ggaggccatc acctaggatt cttacggctt tatatgtttg 1200

ttaagcccaa cattagctag caaagtgctg actactgcca ttcttgcaac tgttatcata 1260

ataacaaccc taataaagat taggttgggg catctgataa caaatttagc tccatattgc 1320

aaattcagca caattcacct ataaaattaa ccgagcagtt actttttaac aatctggcac 1380

actaatctct aagttagtac aagttttcgc gtatttaaca cacttaacca atataaccct 1440

accgttaagt tatggaccat agattcacaa attgctgaaa ttcgataatg cagcttccaa 1500

tcgtcacaac attgtaaaca atttagccta atttaacttg aatctggaat gattccagta 1560

gtcagaaaac aaaaaaatgt gcaaccatag ggcccaattc cagaactgtg cagat 1615

<210> 3969
<211> 1641
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81064_G1, chr2:177442956..177444596, Cluster 24

<400> 3969
ggattttgta taggggaaat tgttggagac aacctaagga ggttcgggtg ctgctgacca 60

tttcaattgc ccgttgacaa tggcaagcta caggcttcct tcagattcac gaagagcata 120

ctcaaatggt gaaacaatgt acctagaaat agttgatgta atgtcatcca tttatcgaat 180

actatacata aattacatga gtctgccgac tggataataa gtgtaggaaa ttggtcaagt 240

tgatttcaac ttataatctg ttgcaaaatg ctatagctgc ctacagaaac ataactagac 300

ttgaagacaa cttatcttgg aacccttcag ccacccaaag agtatcacag aaccacatga 360

ttggcagttg tccataaatg ttcaattcaa gctttgatgg gacaatcact tttctagtac 420

ttattttatc gtcccattaa cttggaacca aagggtgtat ttaattcgag aatactatgg 480

tatgttgatg ctaatttatt ttaaagattt tattatgttt taattctacc aaaggtaact 540

tagaattgaa atatttttt agtattatgc atttttaatt taaaccaatg ttacattttt 600

atatgcatga tgatttaaat ttcaagcacc accatctaag atctcaaatg ctttgaacac 660

aatctttaga cttaaaaaca ttaaatagat ctaattatcc cccttggaag gagaaattag 720

gcatgccact ggcattgact aagatagatt atgtcattga taactcgaag cttgttggtc 780

ctgtgttgtc aacagaagga atgccaggca gctaatagtg tagagttgac aatgatgtgt 840

cgtctcgaat gtgttaaggg tgagaaatca aagaagaaat gcatgatggt cattataagc 900

cctatcatat aatctataag gggagcaata ccagaatgtc agagtggcac tgagtacctt 960

aacaagattc aacaacaatt caatcattct tctaaagcat atgctagaac cataacaaag 1020

aaaattatag atgataagta taatggcttt ggcatgaggg aacacatact caagatgacc 1080

aatcttatta atacgcttaa atcttttaat atgaaattaa aaataacttt gttgtccact 1140

taatattagt gtctctactc aaagaaatta agacttatgt cataaactat aacatgagtc 1200

ctaaaaatgg acgatgcaca agttgattgc catgtgtgtc cataaagtgg acaaatttaa 1260

ggctatgaag actggcaatg tgaatctagt taagaattcg tcataagtta agggtcaccc 1320

cataagaaac aatattttaa gaagcctttt gaccctcaat ttgagaacca agataaaaat 1380

atttatgtct catcatggag gcttaagctc aaatgaatat ttttttcaaa gtcacataac 1440

aaggaaacaa gtttcattgc agaaaggaca ttctccatag atcacccaga agagataaat 1500

tatgacacct gcagatgatg ttgctagaat gtgcatcaga tgaaggatta tattcagttc 1560

ctcaaatgga tgaacaagaa caataagaat aaaattgcat tcatagatga actatgtatt 1620

tagatttgtc aatcgatact t 1641

<210> 3970
<211> 1437
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84980_G1, chr2:198861988..198863424, Cluster 24

<400> 3970
aaagttggcg gaagggaggg cggcagggaa aaaatatggc accatgttgg aaaggggccg 60

ggaaagagag tgtcgcggtt caccctctct tcctgctttg gagtcaatta ttccttcaag 120

tgccatcctc tctttaattt gtctgatttc cgatttgtcc atgcttggga aagaaagaaa 180

gaaacgctag gcggctaggg cttgcgtgtc ctttacatgt ttgaacgcta ctgctcgttc 240

gggggggctac cagcatcttg atggatgctt tttttattta cagagaagct acatctcgct 300

ctatatctct cggccgagca attcactttc tccagttttt cattccgttt gaacaccaat 360

agaaatagat taacaataag caatgtccat gcacgacctc attagttctt cgtcgattta 420

tgacatgttt gtttaccttc taaattatat aagttggatt atggtgaaag aatatataag 480

attcaaatat cactttggta acacaaataa gctgaaataa gatagtagtt tattttaact 540

tatttgtgat cacaaagtga tatttcatct ttctatcttt tttctataat ccaactttca 600

acttatataa tcggaaaata aacagggcct aaatgcaaca aggtgcaaga aaaagggcag 660

agacattagg gataagcagg tcaaagaact aatgattgta taaatacaga acaacaagta 720

gggcttcttg ccggctttga tctagtctcc attcctttcg agttcaaagc caaaggtccc 780

taactagatt cctgaaatat ggacttggag acttgggttt gggcttgaga cgggggccg 840

tagggtagct cgtagtagca caagcacagt tggccacctc tctctagggg gaacgccact 900

gccaactgaa gatggcaggg ttatggctag ctataggtag agctgtgcaa gtggagagac 960

ttaaaaagtt acagagtttg ctattaattt ggggtattcg atcaaatcag gtggttgaag 1020

ctagcaccca ctctcacctg atggctgctt tgcagaaaaa ctactagaat taacagcata 1080

cgacgtacat atccagtaca ccatctattc atatttcagt acaatcacgt atatgagaac 1140

taaacagaca tgtttgagac aaaacctcaa gtttttttc taatggtatg acacatataa 1200

acagtcaacc ataacgaaaa tatatttaca ctacgcgcat ggcagatggt atatatgaac 1260

aaaaaatcga caaacaagga tatcgaaatt atttgctatt aattatgagc taatcatgca 1320

tttgagtctg gttacaccat ataaacagat catctgcaaa tgattgagga gcacatttac 1380

aaatgaggtg ggtcagttgg ttgaggtgtg ggttacttca ttaggttttt ttccctt 1437

<210> 3971
<211> 1878
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85651_G1, chr2:203904620..203906497, Cluster 24

<400> 3971
aaaacgtagc gagaaaaggt catatttatc cactcgaggt cgttttcgtg agaaaatatt 60

ttggcaggcg gatatcctca acctcaagca ttcgatcgat ggctgcgtct tttcttccgc 120

cacttccact tgagatagct aggcaagcgc aagcgtgcga gtatttcccc caactccacc 180

catttccccc tttttctttc tctttttttcc cataaatgaa tccatgtaat cgagtggaaa 240

ggaatagtcc ttggagctag cagcctagca atcgagtggg tttattttag taaaaaaaaa 300

aagaatttca gttgaagctg acagagggag caaccacatc tgaaaataaa gctagagttc 360

accggaaccg taccctctct agtttctaac caaataatta gcgtaatttt cacaagattg 420

gcatggccat gaccatggtc ataccatatg gcatactatc agtttggatc gtgaatgaga 480

tatacgaatg ttttcttttg ccattgattg atcttactat tattaactaa agatcctcat 540

atatagaact ctccacgttt aattcttata tatacacaag aaactagtcc aatacagtac 600

gctgcgacga cacaatcata ctaatactca taaaaataaa tttagtatca tagtgaacat 660

atggttcaca tatcagttat taaaccgaca agatcaaata ttacacttta ttttaacgac 720

aagatcaaaa aagaataaga cgaaaagaca aaaaaaagaa tttaatatca tagtgtttta 780

aaagagaaca aaaaaataaa ttttagagat tctcgtaaaa tttacatact tttggcacta 840

gttcgataga ctcctaccat aattttaaaa ataaccattg gaactatatt gtactttcta 900

aaaacttgtc cattctttat tataaaatat aatataaatt atttttaaaa atctctactc 960

tttaaagcac tagtttcgtg cgtcgtgcct tacgtgtgaa gcgcgtaggt ctttcctctc 1020

cttagcttct tacctaacaa tgagtccaat aggctattag attatagatg agccatgaga 1080

aaccagtcaa gtccaacacg ataggaagtc atatgcaatg caacggaccc atgtagtccc 1140

acctcgctag ctaaataaaa accagcgacc aagcaaacta tataaaaaag ttgagctccg 1200

tttcaacttt tttttgcttt acaaactttg ctcctagcct cccacataaa ctatagcaag 1260

gagctgaaga gcgccaaaac aagtctaatt actcactcgc atcaatctac taaagacgag 1320

aagtctccca ttttgtctag agataattca ttcaaaagtc atctctaaat ataatttttg 1380

aaggcggaca ttttatttac ggagatcgtc aaaaataaca tgctaaaaat agcctccatt 1440

aatagaaacg aagaggtcat ttttggagag acactttta agcggccggg ctgtcacaca 1500

gaaatggtat aaggtctaac gagggacaaa agaaccatga cctagataat aaagtaagat 1560

tgtgcataac taactagact taatattgct attgaaaagt ttaaagatct ccaaaaggaa 1620

gttgttcctg tgtaaacgag agacttaata ttgctatcga aaagtttaaa gaactttatg 1680

aaccccaaat ctataataaa gctgctctac acggtagaga gttagatgaa tcttgatgga 1740

tccgaaactg acgaagctct aataaattgg tcatatatag tggctcacct gccggccgta 1800

gtagtgatag tgatatatac acacacattg atggttgatc ccgtacgtca tcagcacagt 1860

ggggatcgga caaatata 1878

<210> 3972
<211> 2099
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8897_G1, chr1:46922382..46924480, Cluster 24

<400> 3972
ctattagcat ctaatggatc taaataaaaa tatgagtacc aaaaactaag tgtctctaac 60

gcactcgaga agcgtttcaa tttcccatga atagaaaacc ggaaagggtt tgtttgggag 120

caagtgaatt ggagtgtaat aaaggagcta aaattcctct attattcaaa atttgaacta 180

gattgttcgt acattgctac tgtttttata tatcatatag gtagatcttg tttaaatgat 240

atatttattc aaacacgatt atatttttat tttcaattat tagtatacgt atacatttac 300

aaatctctcc ttaatataat ataactagac atgagttata gtgatagaag ccaagcgctt 360

tttaccaaat taatgttcga tggagtagac gaaatacgaa gaaactcaca cttaaatata 420

gtaaagatag taagggaatt ttagcccctt caaatctccc aaacaagaaa aaaaaagtct 480

caagtatatg gtgttatcat gttaatatgt tgggtcttcg tagcgttaag ataacattta 540

gatttctaaa gttgttcata gaatcaatat ttcattaaaa taaactctga cttgacatga 600

caacactagc aaagtgctcg tacatagata tggttttcat ttatacttaa ctattgaatt 660

cataaaaaac aaagatatat gtgttatgtt ggctagtgtc aggtggatgt gaacatgata 720

catgagttta gagcaaaaag ccttattagt gcataattta gcatttttag tatttattta 780

aaaaaaatat aaatgcggaa gagcacgata atggtggaat cggtgaacta aaaaagctag 840

taatttaata gtcctcgctg cgacatgtga ttctcgtagc gtttctggtc gagaacctca 900

cacgtgtcta ggttgccaat gcaatggttc cagtagatcc aatagtatat aattcatcga 960

cgtcttccta ttcgccacag acttgcagtg acacgcgcca atgcagatct actctgccca 1020

gggaagatct ggcgacggga ctgtctctct gagatttgac tcttggttag agacgattat 1080

atgtttcacc ctctatacta aaaaatacaa ctgtacaatc cgagtcggtt taaatgattt 1140

aagtttaacc aaactcgtac agtcgtacta gtaaatagta tttacatcta taattctaaa 1200

ccgatttagt ataaaatttt gtttggtatt taacttaata atatttattt agtattatag 1260

taaatattga tatttttatt atactgattt aagatataaa gtgcctccca ccgccggtcg 1320

ccgtcaacgg aggcggcagt gccgcccaga aacttgcacg taccctagcg gccaaagggc 1380

agatctccat ttctttatca cggtttcttt actccggtcc agcaggccac ttgccggccc 1440

gagcagcggc gctggtgcat gatgacagca caaaaaaata tgtatatttc atcagtccaa 1500

aaataattaa tgtttttaag ttctaggtac catactgttt taaataaaag agtcaaaaca 1560

aaaatttaaa taaaacgaac agtcaaataa aatatctaaa aatcaaaagc attaactaag 1620

gtgaagcagc acagatccga gatttctgag agagatcttt ccggccgatc gatgctttcc 1680

gtgtcccccc tgcccgccag ccgccaggtg tgcctgttcg cgtgcaccgc tgctgccgga 1740

atcagcgggc aggcgtgagc atgtagcgat ctcttccttt ttgttggctt tcttttgctg 1800

ccggcaagag acggcggctc ggggcggcgg ttccgcgtct gcttccggct gcctcgtttt 1860

ttatcctcaa caggccgggc accagcaggt tgcatctgat tttctggtcg tgcaagggac 1920

accggcacca cgcctggacg ccggccatac ccagtcatta tccaccaaat actcaagacg 1980

tgcgtgcgtc aatcgaacat caagcgcggt gttacatgca aatggcagcg ttgtggatgg 2040

cgttgttgaa tcgacaaaat tgcacgtgga tattggcaac tgaaaacacc actagaaga 2099

<210> 3973
<211> 1581
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_90016_G1, chr2:226636654..226638234, Cluster 24

<400> 3973
tagtatatag gtggagccat atatggggaa tggatggaga cgtgtatgta gggggggaat 60

cttttaaaga aagatagtaa aatatattag aaagtacaga taaaggatag aattaaagaa 120

aaatggttgg agataggcta aggtgagctg cctctgctgt gtgacataat aaataagtaa 180

ataaagatac aaaatccttt ctcttgttca acgtcggcca gcacgatcgt aggtttgaac 240

atggcaagtt aaattgtttc tccctacacc atttcaatct gagtctatcc actccttcct 300

tatatattct tccattcatt gaaactcatg tagaaataag aggtgattcc agttggaaga 360

gttgtattta tcacatgcat gagtgtgcat gctgatggca atatgtgcag tagcacctgc 420

taggaattgt cagctaaaaa gaaggtagtt tgtgggtgca ccttttggtt ttgttctttc 480

cttaggagct tgcttaactt aattaatctt agaggaagat ttttaattct atgtaaaact 540

gttcgtgaat ttgtataatt gaaagtatga agggatgctt ccggcttccg ttgtcctttg 600

actgaaaaaa ggtgatgcaa gtgtaggttg gggcgttggg cttacctttg agcattcagt 660

tcttgtactt taaatcgata tgcacagaaa atcagaaaat tggtttatgc agtcaactgg 720

aatatttaaa tgctgttgca actaaaattg tagcagtggg agatatattt gacaacaaag 780

atgataatgg cgagaatatt tgtaagaacc acaatattcg cgcaacaaaa attgtgtttt 840

gggaagcaaa cctgagccaa gtccttgcgg gcgttggaga agttttaagc atgatcagac 900

cagtggggat tcaaattatg gaggccagtc ggcagcagca gaacctacca aaatggtcaa 960

atatcacatt agaacaaaga aaacatacat gcagacgtaa cagttcatga caacatttat 1020

tattatatga aaaagattaa aagagcatat acagatagtt ttttcttttc ataaaatatc 1080

tgtatacaca gtcaaataag aggaacggct aaatctggca aaggcaaaat ccatcagggc 1140

atcccacaga acaattatca caaatgtatt accatattat gaaaaattcc ttaagagctt 1200

acaaggacac ctagatcata ataaacatat ccaaggacta ttatctatct aaaaatttag 1260

tgttaggtaa gatattcaaa tattcttctc ggtaagacaa gttcctagta gaagcatttt 1320

tgaaagcaaa caaagaaaca cataaaattc ttaaaccagc gtaagatcta agcaccattc 1380

agtatcggca gaaaccaaat gacagtcaga aaccagcata aaaacatgaa ctgtaaatcc 1440

taaaacaaag aaatgtatga caggtaaaag atatgttttc cttatgccaa ttaatggtga 1500

ttcgtagttc aaaccttgct gatagaatca tctgaatcat cgcttcatcg gtacaacatt 1560

tatggcagtc atccaccagc t 1581

<210> 3974
<211> 1831
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_91493_G1, chr2:233395855..233397685, Cluster 24

<220>
<221> modified_base
<222> (752)..(752)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (752)..(851)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (753)..(753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (754)..(754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (755)..(755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (756)..(756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (757)..(757)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (758)..(758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (759)..(759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (760)..(760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (761)..(761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (762)..(762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (763)..(763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (764)..(764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (765)..(765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (766)..(766)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (767)..(767)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (768)..(768)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (769)..(769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (770)..(770)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (771)..(771)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (772)..(772)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (773)..(773)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (774)..(774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (775)..(775)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (776)..(776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (777)..(777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (778)..(778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (779)..(779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (780)..(780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (781)..(781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (782)..(782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (783)..(783)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (784)..(784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (785)..(785)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (786)..(786)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (787)..(787)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (788)..(788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (789)..(789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<400> 3974
tgatacgttc ggttaccatt atttgaccat aaaccaccat tccagttcat taaaaactat 60

acataatatc ataccagtcc agtccagcta agaattattc cggacactca atctgaaata 120

accgaacatg gcctcaatct cgtctaatcc acattgatta actgccactt gagtacaagg 180

acttgttaga cagagaacca cttgctcaca gctcctttct aatcttgtat ctgaatcgat 240

ggtttttgca actgaatttt tagtagacga tcctgttaca caaaaaggtg ttacaaatat 300

tgacacctaa gtgcaatcaa aataatataa gaaagttttt cccccacctc tttgtgaaaa 360

aaaaagattg ccccttttt tttctaaaaa aaggtggttt ttctatcatt tagcccagta 420

tgaaccccac tttccccaaa atttagagcg aaaagtcgaa aaagggaggg ccccaaaagg 480

gcaggccatc aaaaaaaagg gaaaaaaaac ttttgcccat tgggggggt tctaggaatt 540

ccccaaaaaa aaaaaaaaaa gctggggagg accaaactgg ggggtttatt tggtccaccc 600

ccacatggtg ctccttcttg ctggggagct ttgagaaccc aaaccttcag cagggttccg 660

ctggtgaaga agggtggcgc tatacctaag ggtcagtctt taaaaaccct aaataaaggg 720

gacgggggt ccggctcctc cccctgttaa tnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 780

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn nttaatccac attgattaac tgccactttg attacgagga cgtgtagaca 900

gagaccacat gctcacagct ctttctgagc ttgtatctgc aatcgatggt tctgcaactg 960

aaattttagt aggacggata ctgtatacac gagaaggtgc tacaaaatat ttgatcacct 1020

agagctgcaa atcaaatata tatatagaga gagttttgtc accccacctc gtttgatgga 1080

tacaaaaaaa gagttgcgcc tatttttttt ctgaagaaaa agggtgtgtc tctctcattc 1140

agtttcagca cagtactgaa cccacgttcc ctagattcta gagccgaaag tcgagatagg 1200

aaggccccaa aagtgcaagc catcaaaaat aaggcaaaca aacatatgca cattgtgtgt 1260

gatctaggaa tttctcagaa aaaaaagata gagctgtgga tgatcagact aggtgggtta 1320

gttggttcaa ccccacactg tgcatcgtct tgcatgtgag ctatgagatg ccaaatcaat 1380

cagtcaggca tcagctgcgt aagcaagtgt agcgctaaac taaaggatca agtcgttaca 1440

aacactaaac taaaggatcg tgtgatctgc tactctcact tgttaaactt gcatttggac 1500

accgagaaca aataatcact ctgttttttt ttacacaaag gaacttttat ctcaaaataa 1560

aacggtgttg tcgcgaatgc tacttactta gcccatgttc caaacctatt aatagatagc 1620

agctaatgtt agctaagagg ttcagaacgg attagctaat aactagctgt tggttatatc 1680

tctcaaatag atattagttg ttagcaactt caatccagct aaaaccgctt gcaacttatt 1740

agctaactaa caattagctc tagagagtta gaatagggcc ttatttggct atggcactac 1800

acgttctgtg tgactcgcaa tgagtagata t 1831

<210> 3975
<211> 1719
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93248_G1, chr3:5772762..5774480, Cluster 24

<400> 3975
tatataaaga cacttctagt ataatgacat atcaagtgta aaaatggtta tgtactaaca 60

atgctagcat taaatcatat tcattggatc caccatctac ggcacacacg catcacttta 120

atttttttct ctgagaaacc tgcattgctg atgaatgctg aaaatacata ttaatctctt 180

gtatgcatgc ttcaattcct cgtgtatttt gaccacttaa acttgctggc gcatgcatac 240

gaaataggtg tatagtgtat atataatgac actgacagcg agctactgat tataataatg 300

tgtttacggt gggaaaaaca tgttctaatg attggttcac acacatacac acacctgatc 360

gaatcataca aggccatcgt cacgctgaaa tatttgaacg ctacatgttg aagaaaatgg 420

gggctgttac gacgtgtagt aggttaaaat ttttctcttg cgtaagcgag tagccagctc 480

tgtttgctga tgatttttt attgggtcat tttccacgta gatgttcgcg gcagggtgtt 540

gtacttctgc gtagacacag tagcaatgcc gtatagctaa gcatgtagag aatttaattt 600

ctggtgcagt ttgcatatag ggcatgcgca tgtccgggtg ttgagatttc ctgatcgccc 660

ccatatcgtt ccaagagggt taattgggtt gagttatggc tgatttttt tttttcgaat 720

atccttttga acacgcaagg agtacaagta gttccccgga tggtttgaat acgaggacgt 780

cagaacccac aaaatatatc tcattattac ctaatcagat aaactaccgt attatgccat 840

cgggattgat tgcattgtca tcgaacaaga tggtcaaagt aatgtgcata tatatattta 900

tttaatttgt attactagtg taatcgaggc acgccgtaca atacgtattc ggacctacct 960

atagctcgtt agaagggaaa tagtgtgaaa ccagatacag ttccacgata ccggttcgta 1020

attaattaag caggagagcc aatttggctc gatctgggcc aggtgtgaat ggtacggtga 1080

agatagaatt tccttccact caggtcctgt ttggtttata tataactatt ataacctgac 1140

gagtaactga taatgttaaa tcatgtttat tttagtctaa ccgtaataac cgacactaaa 1200

ttatcacact gagagttcta gcttaacggt ccctagctag ttcaacttta tgtctccatt 1260

tagaagatcg agaatcctga aatctcaaat ctagtttcaa gcattgtttt tgttgctcta 1320

ctccacgctt ttataaacca atggaggaga gaaaagatta catatattgg ctggactatg 1380

ggccctgatc atatgtggcc taattaacaa ctccttatgt cgtgtcatgg tatcaaggaa 1440

gattgttgca atggtagata tgtgtcatag gggtaagcat gtcctatcat atcaacggat 1500

actgtgtagt ccaaaccact actgtgtaat tgtgatgtag cagactgtac tttataatgc 1560

tttccggtac tctagcgtgt ccacacgtgg ctactgggat ggcacaaata atcgaatagt 1620

gatcttgagt actatgtaag tcaagacaaa agtgcgtcta tgagattgta ctgtcgcaca 1680

tcacatagtt tatcgtggaa aaaggagaca catagttta 1719

<210> 3976
<211> 1630
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93433_G1, chr3:6516051..6517680, Cluster 24

<400> 3976
aagctttaaa gtatcttatt ctgtctgaga aaaactaaat caccactttt atgtggacgg 60

agggagtact atactagctt ataccagcgt cctacgcccc taccgaccaa caaaaaagaa 120

atatcaaagc gaaagcagag tccgcaagta cccttccgag tttggatcca aaaaaacgaa 180

tcacattaaa ttaactctgc cacggtcacg agaggccacg catgggtctc atttactccc 240

cactgggcgc agggacccac gcggcgcggc caatcaggag gagcccatga cgcggcgtgg 300

gcggatcagc tttcacgcac tgaggcgcgg ggcccggcgt ccagctggcc cctgcggcgg 360

tcacgccagt cgtctgagtt ggcacgcagg agccgttcac gcactctgtt cttcaatgct 420

tctcgccctg tggtaggcgg gccacaggtc cacataacct gaaggcacag gatgccgaat 480

cgaagaaaaa aaggcacata ctgtattttt tttcttcatt acgagtacat atgttcctaa 540

aacgatgtaa tcataggtct gtataaagtt agactatctt caatttacct aaattataaa 600

aaataatgtc aacacatgtt actccaaata gatattttgt acagttcatg gatattcatt 660

tgcctaagtt cgaccaacaa aaggggaatg taataggtaa caaataacgt taaatcatgt 720

ttgtttaagt ccaatcgtaa tcggatatca cactacaaat tgattccagc ctattcaaac 780

ctgttaccgt tggtaatcga atgcaaacca ttaccgttac catttacgtt acattttgga 840

aaccaaatgg caccttagtt gttcgctaat ttatcatcga aatatgagaa ctgcgttctt 900

tatggacagg tggactacgc ggatattgtt tctctggttt gagcttcgtt gtggggtttt 960

atttcaaatt tgacaacatg acactatttt tttaattaaa ccagatcatt cttgaaatga 1020

ttgtttataa agaatctcta aattttctga aatatgttgc tgacgaagta tggaatgcaa 1080

tgtaaacaca cattttggt aacgatcaca ataaaagcat gttgtcggca ccgatattag 1140

ggcatgtacg atccacataa atgacttata tcttaagagt attttaaggg gtatgtcgaa 1200

aaaacaaaag atatatcttg gtgaaagaac atctttatta tagttctcta agtctaagat 1260

acagtttcac ccgtataact catataaatg agtcgtgtct tgggtagttc tagtgaatac 1320

gatacaagac ttaaatacat tgacttgtat gaacatattt ttagtgtatc tagtacttaa 1380

agaatcgtaa cgtagtatct aggttataca taaccttaga ggatattcat aactgtcacc 1440

atggtcgtga tgattatttc actaatacca catatctcct gcttgttttc atgttctggt 1500

tgacaaaata cataacatac actaaatgat ctttaatctc gtgtggttta gtaaaaaaac 1560

ttggatcatg aagggacatg gctcctgata ttgccttcta ccctgtcatt tctttgttgt 1620

catagttaac 1630

<210> 3977
<211> 1635
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93463_G1, chr3:6649638..6651272, Cluster 24

<400> 3977
tgtgtgtgtg tttgtgtata tacatgcaca ctgtaactag cagtgtcatt atcttatctg 60

ctggtttccc tactgatcct gctgctgcac ttgattggat gaaaggtgtc cccgttttag 120

gtcgacgtag ctgttctact tgaaggtcga ttacagtgtt tgggctgttg ctgatgcatc 180

catcatctta atctagctag aaaaagtaaa ttcattcatt cattcattca ttcattattt 240

ctttaatttt ttggggtgca tgtaggcacg agatggaaac tgtatcagta cagtagggaa 300

agcggagcaa ccagcagtag atagcgaact gccgcgtggc tcctgactat acaatacaat 360

aaatcaggta gtagatagta agcatatatt gataaaaatg caagtgtgtt tttgaatcct 420

catgagaatt aatgatcgaa agaattttca agcctcgttt catttggaat ccggtgggaa 480

agtggtaacc aacgtagaat tacgacgtca gttttttttt tgattcagta gcgagagtac 540

ttacgtctca acgaaccaaa caactcacaa aaaggaaata gcaaaccgag attcatctca 600

aacgtagtcc gctaaacaag gtagatacta taggtgtggt gtggtgtggt gtgccgagct 660

tggaccagga tattctagac cgaagattaa gaaacctaac tgatgtgata ggatgtgata 720

ataaacaaag cgacaatata aagtagttgg tgttgggtga agatatcatg tgtgtgtgtg 780

tataaataaa tagccgtctg gcttctgttg tgccagaggt tatctatatc agataactgg 840

cctaaaggaa cgcttattat gcaagcaaag cattgctatc aaggttaggt gccaaggtac 900

acaccatcgg caaaaaggtc atcaccgtaa caaccacagc aggagagagg tatctagtgc 960

acttcgtacc ctcctagcgg acgtatcatc atacacatcg ctatagcttg tagaaatatc 1020

ataccggttt ttctactata tatatatctg ttacccttt attatcattg ttatctcctt 1080

gtgtttcgtt ttcggatgac ttataatatg agctggatag ggtattatta ctcctatctc 1140

ggtctgctag acacctaatc tgccgtgaat tccaactttt ttgctagtgg cgttatcctg 1200

tgttttttat ggactttatt atatctttct tctcactcac tcattgagta gacccccaaa 1260

tagcaggtct ctctttagtg tttagatgac tagatttagc gagtggagaa caatgacgtt 1320

cgtgttaact cgcactaaac caaaagtaaa gagaaggctc caaaagaagg agtctcatcc 1380

agactaacaa aattgtagtc gcctatgaac cagatccctt ctttttttgt tcacctgctc 1440

tgtcctaaaa tagttaacgt tctagatttc tagatgccat gcttgatcat ttgtcttatt 1500

cagttttttt aaatagtaaa ataactaaga tattattaaa ctatctttaa tctcaactac 1560

ttattaaggt tgtaagctca acttcttatt cagttttttt taaatagtta acgttctgcc 1620

gttctgcggt tttgt 1635

<210> 3978
<211> 1841
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94635_G1, chr3:12877829..12879669, Cluster 24

<400> 3978
tggactctat atttaaaatt gatactgaag ctagtatcaa taccagtttt aaaacaacta 60

gaacaaaact tgttgaactg aagcccattc tctagtagtg catggtccat catcctaggt 120

aatatatata gcagtgttat tcgtcaccct agatgaaata aattacaaaa aaacttaaat 180

ttattaagtt attccggggt agttgatcac ctaacgtgat aaataacaag cacgcacaca 240

cgtacatata cataggtata acgctatttg ccacctaggg tgatgatcat acaccctgaa 300

ataacttaag aaatgagtta taaagatcat gaatagctta aatttgttaa gtcattttag 360

aataggtgac catcaaaggt gacgaatatc atttctctct atcaatcacg taacagcctt 420

ttatgcatgg tttccagaga ggaaatgatg acaaaccctt gcttgtttgt ttatttgatt 480

acacacttac acggcatggc tgggaccttt ttcgttccat gcacatatat atatatatgt 540

catgcggcat cattgtacat gttgattcgg actatactaa tggcggccta gctagggaat 600

ggtggggcct cccacgtctt agggcctcct gttaccacgt actgtaaaag agagttttag 660

tgtgaggcta tacttgtctg ttcttgcctt cttggagacc gtgacctcgc tgctgctctc 720

tttcttgagg agttcccatg tttgctctgt tgactactcg aacaattgac ttggcttttc 780

tcctttagaa aagtttaaaa tgacccatag atatatatgt agttctggtc cagccagcac 840

acactattaa ttgttacagt ggtcgtgtta ttaataatta ctgtacgtgt tgtagtagct 900

gtacagtttc aaaactgtgt aatatcaaaa ttagtgacga tcgatcttat atacacggta 960

tatacaccat agtaatttgt ttaagcttaa aaaaatgaca ccttttttgc ttggtttttt 1020

tggacacaat aaagaggtgt ctctggggta tgaacacaca cacactgtgt actgtcactt 1080

gcttggcctc agtgatctgc atgattgttg gccagactgg actgtggatg ccttttgcaa 1140

ctttttttta gttttgaaaa ctttgctgca accagcagct agctagtaat tacgtttgtg 1200

tttgagatgc atgtatgtac gtagatcatg atgatactga ttatatataa gcttcatcag 1260

ctatatatac gtacctatac atgacaaaga tgacaaaatc taaacgaaag ctatcatgct 1320

ctgtaacagc ggccatcatt gaaggccaca tgtgtacttg gaattatttt atgggcccct 1380

gttcgtcgac ttgcactgca aagtaatctc tgttacgact cgttacacat gcatgacggt 1440

cgacacaaat cgactcctgc tgtatccctt catcagctaa ctgtgtcgaa gggccagtac 1500

gtgtctggac gacagttcga attgattcct tcttagggca tttagtgtaa atttctccat 1560

tttcagcagt aactgtcatg gtgggattat tttaattgct ttattaccta ctgtatgcat 1620

cgatcgtgta aatggatcga aacattggcg tacgtgtata tcatatgtct tgttcatatt 1680

tttagtttcg taacgtatat tcttcggatt attgacgtag agtatggttg attcatgaat 1740

taccccattt tctattttga gttaggcgca ttacatacag ttgaaatgat tatgcttttg 1800

ttcgtactac tagaaccagg gaattcaaca tgaaaacttg a 1841

<210> 3979
<211> 1963
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94640_G1, chr3:12885415..12887377, Cluster 24

<400> 3979
ggttgatggc ttgggacaaa actagccaaa ccgtcaaaaa attttctttt gggggtgggg 60

gggatagagg tagtaaaatg caacttaagt acgatttggg tcaccatttt atttgtcttc 120

atgaattaaa cttgcttgaa ccagacgagc gggacgatac ggtcatacgg atgagggttg 180

acctatataa gccttcaaga taaaccttta tgcagtcttt taagccatca aattccttct 240

aataaccaca aagtaattgt atgggcattc aacactggaa taagagataa gagcctacag 300

taaaaattgt attttgcgaa taatatgatt aattgtattt tgagattata ccataacgcg 360

ttgccttgtg acgtatgtac cagctagctg ttgggatata taatgacgct gaaccaactg 420

gtgtttttgt gatcggatta ctatgagaag cgtgcgagag cttgcggcgg cttcaggcat 480

gcatgcacac ctttgaagtt aacttttgac gttttagcgc ctgaaaaggg ccgcgcgcgc 540

gcgtcaataa ttctgccatt gacgatagga tcgaattcca tcgtgtagct ataggtttac 600

gtgcgtttat aagtacatat aaacacaata atctcatacg attttttttc tatctatctc 660

tatccgcgta atgattggac tactgttttc agtctaccgt acgtaccagc aattacttag 720

tgcctaattc ctagctaact tccaaaactt aattacgtgt gtgcatatat atgcatcatc 780

atcacatcac gcagtactgt tcgtcacatt attcttatgc accgaacagt agctatatat 840

tttgtggact gattggacat gtaatacaac acagaccata tacatgtcac accaaacagt 900

agctataggt cgatggtcca tgtgaccacc acacggccct tcatgttggt cctcgagcaa 960

gctatcctta acgcatgcct tttcttggca ctatacatgc gttatttgtg cattatattt 1020

ggggggggtcc aaatcgacca ggtttgacat tcacctggaa gacaaatcaa tgcattattt 1080

gtgccaatta attgccaact aatatggaat gttatgctga aaggacacca tgtctttatg 1140

ccataattat cctgattaat agaataatat atagcacaat ctattggttg gagaatgatg 1200

acaacgcgcg ataggtcggg ttggtgccta atcacctgtc attcctacct atctatttag 1260

ggtgcgttta gttgcaatga caggacggga cagaataaaa cgattcatca aataaagttg 1320

tttggttaag aatcgggaca atactattac agtgttgtat cccttcaatt gaaaggacga 1380

gagagaacac cagggaacgt ccctgtcctg gctgtcccgc aacaaaacgc aagatatgtc 1440

aaatgtgcat ccacccatac catataacca gcgatgtacg tgtgtgtata tgtacagcat 1500

tcgtatttac cattatgaaa actatacaat ctttagatta ataataacag tatgggtgca 1560

tcgagtggag gatggttcat atcagacgct gatgtgtgtg caagaatcaa gatttggttt 1620

caccggtgag atgatgacgt tataatcttt ttaagtgtat ataagcagag ataaagagaa 1680

aattgtctac acacagtatc accaattaag gtacctatat gttttccatt aaaaaattat 1740

gccgtttagt tttctctatc aggtttagct catatggtgt atatagatat ttttccagtt 1800

caggttggtg aaataattga gtacctagct agatattcaa actcagataa ggtacatcat 1860

tcaatttaat ttgcgttaaa aataatcgtg acggttaact atatgttaat ttggtttgga 1920

agcaccctct acatgattaa aagtaaaagt catgtgtcgt ata 1963

<210> 3980
<211> 2376
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97755_G1, chr3:30049223..30051598, Cluster 24

<220>
<221> modified_base
<222> (1254)..(1254)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1254)..(1353)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1255)..(1255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1256)..(1256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1257)..(1257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1258)..(1258)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1259)..(1259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1260)..(1260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1261)..(1261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1262)..(1262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1263)..(1263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1264)..(1264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1265)..(1265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1266)..(1266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1267)..(1267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1268)..(1268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1269)..(1269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1270)..(1270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1271)..(1271)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1272)..(1272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1273)..(1273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1274)..(1274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1275)..(1275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1276)..(1276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1277)..(1277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1278)..(1278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1279)..(1279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1280)..(1280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1281)..(1281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1282)..(1282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1283)..(1283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1284)..(1284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1285)..(1285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1286)..(1286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1287)..(1287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1288)..(1288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1289)..(1289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1290)..(1290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1291)..(1291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1292)..(1292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1293)..(1293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1294)..(1294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1295)..(1295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1296)..(1296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1297)..(1297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1298)..(1298)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1299)..(1299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1300)..(1300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1301)..(1301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1302)..(1302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1303)..(1303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1304)..(1304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1305)..(1305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1306)..(1306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1307)..(1307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1308)..(1308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1309)..(1309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1310)..(1310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1311)..(1311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1312)..(1312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1313)..(1313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1314)..(1314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1315)..(1315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1316)..(1316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1317)..(1317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1318)..(1318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1319)..(1319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1320)..(1320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1321)..(1321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1322)..(1322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1323)..(1323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1324)..(1324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1325)..(1325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1326)..(1326)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1327)..(1327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1328)..(1328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1329)..(1329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1330)..(1330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1331)..(1331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1332)..(1332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1333)..(1333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1334)..(1334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1335)..(1335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1336)..(1336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1337)..(1337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1338)..(1338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1339)..(1339)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1340)..(1340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1341)..(1341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1342)..(1342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1343)..(1343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1344)..(1344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1345)..(1345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1346)..(1346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1347)..(1347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1348)..(1348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1349)..(1349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1350)..(1350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1351)..(1351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1352)..(1352)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1353)..(1353)
<223> a, c, g, or t

<400> 3980
catatgcaac atttccacaa gcatgcatga cactaccgca aaaatgatac ttatacaatt 60

tctaggatat tttgtttatc ttgaggggtc tactactcat acaatttctt tatattctag 120

ggagctcatg gcagattaat aatcttaata tatatatata gagagaacct tttattagtg 180

gtatacttaa tttaatttgt tatgaataag atatagattt ctttacagaa atcctgtgga 240

aatagtatat cttttaaagg tgtggatatg gttttatatt agggagaagg agataccgga 300

tacctgacac atcttgcatg tgattggttg gaggtttgaa gagaacggca catgatggat 360

ggcaggatgc atggggacgt gtccatcggg accagaggta acgacgttcg tctccaggat 420

ctagacaaaa aacacaatat tcctgcgtac cgtcggtaca ccgttagtac tacgcgcacg 480

cgcgtatttt atgtgtgccc gttgcactac agaaagtgaa gtgggttcga tgattattaa 540

aatcaatacc gagttaatta gtgcataaca gttccgtccc atccgtatgc tacggaatta 600

cggacgtcgt cccggtcccg agtcccgaca ggacaaaaga acagaggagg accaccgtca 660

tgtgccgccc ccccgtgtac gcacgcacgg cacgtacacg gaccacacgt ccctgcctct 720

cgctcgccca cccactcgat cagctggcca gcatgattgg tcaagtgtct gccaccatta 780

tttgcatcgc atgcctctct gctgttacat acgcgtcaca gaaatcagtg ggccatcact 840

agctaaacaa gctagctagt acgtagctgc atcatagtat atatcatcat atcgcatagt 900

tatcagcatc gtctgattaa taagatgttg atgtagtata ttccctgatc gatcaggtca 960

tgctactgta gtatctcaaa ctgaagcttt attagcatgc agcaggccac atgcattgct 1020

tgttccattt cagctgttta tttgggagga acaatataat catgcgcgcg accggtggag 1080

caagtaatca ggcaggcagc actcgatcag ttcagttggg gagtcacatt ggtggtacag 1140

tccgactaac taacctagat ttcggttccc gcacaacttc gttaaggtta tttctagtct 1200

attgtatatt tgacataata tccaaagctg tcagatcata taaaaatata taannnnnnn 1260

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1320

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnntgtttta tggtaacaac accatatcag 1380

gatggtgatg acatgcttta gctatagaat aaaattcacc catatatcca tccactatct 1440

atgatggctg agaccaaacc cgccttgcta gaactagcag atatctccat ttcgttcaga 1500

atcagtaaag catcgttgag ggggggggtaa agatccaatg ctaattcatt tcaggatcaa 1560

gttttccaaa agtacccttt aaccattagg aggcaactct cagcttctct ctccgttgcc 1620

ttcaagtgaa gcatcggcaa aacctgcatg aaacaagcat cgtccgccta ttccttgtgt 1680

agtccataag gaccagaacc atttcatgtt tatgtagatg tagtaattcg aagacgcaac 1740

ataccaacgc cagtaaaaac accatataag catgggttgg tcatccaaac agtagatctt 1800

tagttgatat aaatagacaa acgaatacga aaacaaacct tttatggtag caggtagtga 1860

tggcaatgat ctatcttctt tgaagatttt ctcatgaaaa tcactactaa agacattttt 1920

caactcgatg aatcaaaagc aaaaaaagca taatattaat tccatacctt cagtatttgc 1980

agggtcaaag ttgactgcaa gaacattctt ttgccacatt caactattgg aatttgatac 2040

gtacttgatg tgcttccaat ttaggattaa atgaacatcc tacaggctca acttcaacaa 2100

cagaaataac atcatatgtg ctagatctct actgttagaa attttaaaaa caagcattta 2160

ttttaactat atagaaaatt gcagacgaca tcaaattcaa gattttaaaa aatagaaaca 2220

tgcgtgtata catgtttatg ctccctttgc aggttgaact tccttactaa tatcactttt 2280

ctccttagcc tttacaacaa gctacataaa tccttctctc taaataatga cataaataaa 2340

tatttaggac aattatgatt ataccctccc cagcat 2376

<210> 3981
<211> 1190
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198387_G1, chr5:164712378..164713567, Cluster 25

<400> 3981
gaacatcctg catgcatata gcctggctgg tggcagcatt cttttcttca tgcgagccag 60

acccttttta tcaggaaacc aatcaaaccc tagacttctg cctggtgcac gcatgttctc 120

atgtcattta agaaatgcac ataattttgc cggttctgta cgattaggac ttttcattta 180

atttcgtaca tttttaccaa aagttagtca gattagttca aaataaataa aaaactagtt 240

tttccccaaa aatcataaga ccatttgtgg taaagcatta ttatatgata acaaaagaaa 300

actaaggtct tgtttggttg accttgtgag ttgtgaagct gcttttgttt tggtcaaaac 360

caaaagtcaa taaagaggag aaaagaaata gctacttttg ctctagtaca taatttatga 420

ctctttcacc tctactttta cttcagttgt gaaaaataac gatttatttt cctcgtttct 480

tgtgcccgaa agagagaggt gtaacccatc ctctataaca gtgtggcttt gacaacggtt 540

caatatgtat gtttggatgc aggcccaagg tcgcttggcc aaatattggc cttgacaaac 600

caatttggcc catgtttagt tggaggccaa atgttggcca tgaccaggaa attttggtcg 660

tgcaaatgta gatttgtgcc aattcttggt cataatcagc gcggacaaac cggctaccca 720

aatttggctt ggtcgtattg cattttaacc ataaaccaaa catccaaact tgaacccaat 780

tttggcttga tccaactttg gccagctacc taattttagc atttctctgg tccacaacac 840

aacaggccct agtgcgagcg tggccctggc acgctaccct gccttgacgc gtgtgaagcc 900

ttagtggcag cctcaaccgc aggtgtggat ccggcggcgg tcatggcgtg tgcggccctg 960

acaatggcca tggtgcaggc gcttccaaca tggtcatggc gtgggacagc atgcggtcct 1020

gtccccagcg catgtgttgc cccaacacaa gcatggctgc ggtaaacaac tttggcgaga 1080

ggaagatgga aatgtgagtc taacaagtgg gtctgcttat aagtgtgtga gagagaaagt 1140

tgagtggatg acatgtggga tctgctcgta agtgagctac aataaacacg 1190

<210> 3982
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10387_G1, chr1:55511371..55512457, Cluster 25

<400> 3982
tatgaggagt tatttataaa aatatgacgc gggaaattga tggggaagga atgagctaag 60

ttaggcatcg ttgattgggg ctggaactat tctagttgat caatattaat aaaaaaagcc 120

tattactcca gctggaactg ttccaaagaa ccgttctagg gcaaacgaag tcatgaccgt 180

gaggtactag ttggctcctt tcatcactca tttgctcctt catcaggtac tacttgtccg 240

catctggtcc ttggtcacca ggtacttgtt ggcggttggt tccttgtcta gtactagtct 300

gcatgtgttt ctgtttttt actaataaac aaatcgattt cttactgtgg gctttcagac 360

gcgatggcga gggagggctt tcagatacgg caaatcgatc gaccgacctg gcgacctgtg 420

agggcggcat ggccagcgga ctgaagggag agtggcacag ctgggtttgg cggccagcgc 480

tggctgggaa cgcgtgtgtg tttgtggggg gtggggtggg gggagaacgc gcgaaaagaa 540

ggcgcgcaga tcagtttcac ttgcatttga cgccgaaaca tcatttcggg agtttctgtg 600

ggcttgtcaa atgtggtaac aaaaaaaaaa tgtagcaatt ttataaatat ggcaacatcc 660

tttacagtac cactggagat gcattttatc taatgactcc ttaaaactca aatttagaaa 720

ccttttaca aaactactgg tgatgctctt aggtacccat gatcctaata agtatgagtt 780

taggcacgaa attaaactcg agatggatca tgtattttta aaacagatat attttatgtt 840

catggatata agtttgtgtt ggcaaaatcc agcgagtttg tgtccattgt tatctctact 900

ccagcctgag aggccaataa aaaccatcac tatatcaagc taccaaacta aaacgtaagg 960

aactaccaaa gttaacccac actagaaaaa gcgaccactc attgatataa gactagcatg 1020

gttgttttag agcaaaggtt ggataccaaa ggacatagct cggctgtctt agtgcataga 1080

cagaaaa 1087

<210> 3983
<211> 1012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10538_G1, chr1:56581445..56582456, Cluster 25

<400> 3983
actttatgtt atggtgatta atatatcttt taatcttcct gcaactcctg attatatcta 60

gctcttatat gagataagaa gaaaagaggc tacaacatca tatattcacc aatcatattt 120

tttggttgtg ttgcatcaca atctctactt gttaattctc tacctgcata ttttggcaac 180

acatatataa tgttgactcg tgcgaataat ggaactacta ccggtgtttt atgacttgca 240

tatatattag ctacactatt gcgagtggta gtactatcgt tacaaattta ctaaactatt 300

tctggattaa gctaaacttg aaaagatcga cctagattcc tattaagcga gagctagccg 360

tgcagggcaa cgcgcgcgga aggggtcgtc cgggaatctg ctcgtgaacc ggcatgcagc 420

acctgccgcg cagggacgag acgacgacga cgcgccttgt tgcggagtgg cagcggcagt 480

agtagtgttg gaataatgga ggaggagcac cgggcgcgac aatggcagat cgagatgacc 540

gggggcgcgg ctggcgggcg aaccagacaa tttgcgcacg tcatgtaggc aggcaacaca 600

ccaacagcgt tggacatgta gtgatgtagc agagccgatc tgctcctcct catcacccac 660

ctccaccttg cattgcattg catgccgaga tgactttcaa ctgatcgaga ccgactaact 720

agctcatata tatatagtca tgcatgatta attagttcgt attatcagca tgcatcaatt 780

ttgtctgtgt tccactgcac tatatatatt attacgtgga acatatatat agctaataat 840

ttaacctact atttcgtttc agcagttaaa tatttctaat tttaattaat taaataaata 900

tagtaaatat ttatagtatt cttagatata ttttttttaat ctttttttat aataaactta 960

ttagacttac taaaatttaa aaagtttaat gatgcgatat tatagcaata ct 1012

<210> 3984
<211> 1286
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10540_G1, chr1:56582868..56584153, Cluster 25

<400> 3984
aatgtgcccc cctcccattg ctgttggaac ctgttggaac ttcaaatact acttcgtccg 60

tttgaacttg tgtaagttta ttctattgca aacctagcta attttgaccc atgtggttaa 120

tactgattta ggataaaact aaaacatctt aaagtatgga aacgaagaaa tagtgttttt 180

ctctcagtcg tctctggtgg tccctttata tagattgttg catgcactat cgcatagaac 240

tattgcatgt acatctactt tgtgtgcctc ctgttctcat acaaagcagt gtatatcagc 300

aactgctgct tcacacaatt atatacacta tcgatcgaat tgtcttgacc caaagtacgt 360

gttgcaatat cggcgctccg gacctgcaca ctgcagacta ggcagagctg gccctaatta 420

agctcacagc agagaaataa gtaactttcc ctaacacgaa agcgttattt gctggacact 480

ttttcttcat aagatcgact aatggaatta tgcggttcca acggcagttg tgttagcgga 540

acattattaa aagtgcatag cgcattaata tcaaatcaac agaggatgtt caaattaata 600

ccgtttgatt cttgaagcgc tcttctttca tagaatcatg cattgcatgc gcattattgt 660

ataacaatac acacgcgtac tttaattatt tgcctggata ataataatta atcatcatgc 720

atgcatgcat ggtcgtcgat cgatctattt ctagagaatt ccatcgtcgc tgcttttgtg 780

tagctggaat tttgtcattc tcgtatagaa cagcatggga gttcaaaaca tatatatgtg 840

catgcatgtg ttaatactac acacgggagc tttgtttgtt cttgcaagct agctaacaag 900

cgatgatgag atgtgcatgc cgcagctagc acaaggctcc aaaggaaata gtttcacggg 960

ggagattttg cccctaggcg ccttgtctgc ttccctcgtg ctggcgccgg cccacacgtg 1020

cccatcccta caaatggctg gcagaaccaa aaagaaaaac aacaagaaaa acaacagcaa 1080

ttgtggtgtt catcatgagg tagcgtagcg ctcgtttgtt gtgttgcgtt gcgatgcggg 1140

gacagccgat taattgaact gccagtctaa tcggactgta tgtctgtgga cacagatttc 1200

ctttcaaaaa gaatgtctct gtgtggcaac tcatcgatcg atatagtatt actagctata 1260

cgagcttatc tgcggtcata ttataa 1286

<210> 3985
<211> 1206
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_111975_G1, chr3:124665764..124666969, Cluster 25

<400> 3985
ctacatgcat ccccaaatca taatcaacct tctgggatta aaatagtatt ctataaaata 60

tacgacacta cctcctaaca caaaagctaa tcaccgaaaa aaatgagacg atggttcatg 120

catcttttgt cagcactctt aatttgttta actttatttg tagaagttat ttatttttag 180

gtgtaggtag tattgaacat tgccgtgatc aagaaaaaaa tataactttc acgagtaata 240

attcatagta tttgcacaat ccatttgttt tgcagaaaaa atatcatcca cgatgttgcc 300

tatctactac ctcccatggc tcatgcacaa agtttttttcg ctcgtggatg gctttgacca 360

ggtcaacttt tccatgtggc ttggacccag cctctctatg gtcaacggtc cagtcaagcc 420

agcaagaaag atccaaaatt ccaaacgctc tagaaacgaa ttctcaaaat gcagtggcat 480

tgaaaataac aacatagaaa acgttgacag aaggttagta ccatattcaa caatcagata 540

gctcaacata aagttcgatc tattttatcc tattcatttc cttttgaaac aagctacttt 600

aaatcattat tacactaacc tgcttattac ttatctgcag cacaatgcca agccctgcac 660

cttgatccgc ttggtggtag cagtaacatc tgcaggctgt caactgctgc acgagtagac 720

ttcacatgcg atgttcttcc actgatctga cttgagcctc tctgtctctc ttcacactca 780

acgtgcgtgg ccttcgcctt cggttttgca ggcagactct ctgatcaagt tcctgtctcc 840

cagtgcttgc acggcgcaat tgcatgcgac caacatgcca acgcttgttg ggttcagagg 900

attgcttcat tccaaacttg cagttgccat ggcaggagct cgtggatgct ctttaggtat 960

tctggttcca tccatgatta ctggagaact taccaggtct tggcattttg gttcagctga 1020

tgcaggagtg gcggtgagaa cctctttggt cactccttcg gtcattagaa gcacgaatgc 1080

tgctgcaaca gaagacacac atgtcagatg tgagcaaaac aagaaaggat ggtatgctgc 1140

caatgctggt cgcactcgca caagcacata gctgccgaga taggagtgtg gtcacatcat 1200

ctgata 1206

<210> 3986
<211> 1269
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112423_G1, chr3:127119224..127120492, Cluster 25

<400> 3986
tgtttgattg tggttgccct ggccaaggta ttccatgtac tacataattc gttcattcga 60

acatcattat ttgagcatgc atgcatgata tcaaagttgt tcaaatgtta caaattaatc 120

gaattctgga aagtatagca gcaggcaggc cgcctagaga aagcaaatta tagtaattcc 180

agacgaagga agccctagat tttactctat acattctaat taaattatac gatgtttcgg 240

tttatttaga tacataaatt ttattatata cttatgtgtg tgcgaagtca gaacctctta 300

taaattagaa taataagagt actataaata gttatattca agggcaggaa ttctagtata 360

tcaattctaa aattattgta aatcataatt tgaatgaatg aggacagcag tagtaggtca 420

ctaagtctaa aactcaaact agctcattgg cacagattct agaaaatcat ctacaaaatt 480

cctacaaatg ataactatgg aaattattgc aagagcacga aagcagactc ctataaatga 540

cattcatagt catctagtct tgcaatcata gtagtggtca taattgaatc atggtaaatc 600

aatgtagtca atgtagtaac aaaatcctta gaacatcttg gcattaattt gttataacta 660

tatcaaacta tgataactac cacatattaa atcacggtaa atttcctaca ctatactaac 720

tgtttcctct agatatcatg gggtcaaatc ctattgactc atatgaatta tcacctcaag 780

ctattagaaa tgtggctaat atgtggctag ccataaaata actttatttt atatttatta 840

caacaatgtt tgtacttatt taccaaaagg tgaatattta tttatgtcac atgtgttagt 900

ataactcatg atgatatttg tcattatcat tgcataacga caccaggtta ccataggtac 960

cgaaaaggga catgggtgat ttataaggtt caggttatat gatgtgtaat actctacatc 1020

ctatttgtgt aaggtgaatt gatgtttatc gatataaaga agattacaag cttaaaacta 1080

agcacaatga ccacttacct ctcccttctc tcttggttct ggtgagtgtt ctagatttat 1140

tgggatctag ttcccctcta tctatgtttc ctagaatcga catatctatc ctaatgctct 1200

aaagccacaa attaggctca aagctcaaag gaaagcattt gaagccaaat gtcgaatcca 1260

gaattggag 1269

<210> 3987
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118979_G1, chr3:166779916..166781077, Cluster 25

<400> 3987
atattaccaa cttgaaaggt cgatttactc acaattgttg atcgttcaag attgccaact 60

tggaagatcg atttactcac aattattggt cgtgtgactt caacatatgt agccctttga 120

gcattttagt acatatctcc attatctctt aacttttgtc gtggatggtg gcgcagattg 180

ataagagcaa gaggtcttac ctctactagg gaactgcaac attagctggt agtcattcta 240

aagtgtcttg gcagtttgag tgcagtcctt tggtgtatgg tagacttcac attttggacc 300

tcgtgttctt tggcttcaca cttaagtttg aagggagtgg cttaggcaga caaagaacag 360

taaagtgtag aagttgttgc ctccaaatat aataacatgt gttactgcca tgctcagttt 420

gtccctctct aggatccttg gtaatcgcaa gttagtgaaa tgctggtaag gaacttggct 480

acatgaatgc cctctcgatc gtgtcatcat caggataggt cattcataca tggtgcttga 540

agctctatta ataagtggtg ggttacaaat gtttttgaag ctataataga taggatgaca 600

tctgtgtatg ggagcccatg gaaggcattg cattgcataa acacaacaaa atgttgcatg 660

gaagtggtcc tctaatggca tccacttagc accctccaca taacatgcat tctttaatgg 720

ctctagcatc ctagaagggg tggtagagct gtgaaaaatg attgcaccac caaaggtcaa 780

aattttcttt tggctttatt tatatagtag atttgggacc atagaacaaa agcatagaca 840

caacctgcaa gatgataatc agtgtatgtt gtgagcaaaa ggtatcgagg cgataggtca 900

catgttggac aactatatct tctctagaga gctttcacta tgatctttca cgatgtatag 960

tggtcatgct ggtgccatcg atggatgttc agttggtgca ctggtggttg gattaccgag 1020

agctatcttc tctagagagc ttttgctacg atctttccta atgtccagtt agttgtgccg 1080

gtgccattga tggatgttta attggtacgt tggtggttgg actgccgaga gcattttagc 1140

attcaaatca tgaaggtctt cg 1162

<210> 3988
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118981_G1, chr3:166782010..166783036, Cluster 25

<400> 3988
tatcatcgca tgctcaagga taagaaaatg acactggctt caaatttacc ctcaagtaga 60

ttctttgaat ggcctagagg ataacctacc cgagtccgtt caatgaacta caactatata 120

aaaagcactt gaacttgatg acatgaagca ctcgatgaaa aaagtacttg cgctcagact 180

ttaattacaa ctaaccttgt gtatgattct ctaattagat aggggctcgg gggctattgt 240

cgacaacatg gaccctatgt atcctcacta aagcaaataa tgacatccca ataagggatg 300

ggctagtctg actactcgag aggcccaacc gagcgggggt acctcatcta cttggtggac 360

aatgcatata catgatctat aaaaatcaaa gccattttta taaaccaact aggaaaccta 420

cttgtaaatt gatcaaaact tcatctgcac atcaagttat ataaggagtg gtagtgaacc 480

cttgatcgac gtcatcaatc caaaataggt cctcgagcca tagacacaaa accgtgattc 540

cttaatgaga aaccaaccct agtgcacaac acatagagaa taaaattgcc atcgcacatt 600

acatgtaggg cacctcatgc atgaattagt agaaaatttt ctctcatgca tgtgttacca 660

aactgatcta ctgcacgcga tacatcaatt acttgtccga caggtaaaaa tgacaacaca 720

tctaatttta taattaggtt tcttgtttgg aacctagcta ggatatttct cttttacatt 780

agatatagta atattctttt aataaaacta gtgcacatgt agaaaagaaa ttgtgtagaa 840

tttttttac aaattcttac ctaggtttgt aagctaagtg aagacctaga gcgatcaact 900

tcttaagtgt catggtttct ttagaaccgc acattccacg tacccatgca tactccacca 960

cctgaagaaa attcttgttg gatgtagtca tgtagggcat aataagaaaa aagtttccaa 1020

acctctt 1027

<210> 3989
<211> 1397
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120151_G1, chr3:174814975..174816371, Cluster 25

<400> 3989
cgtcgtttgt ctgaagtctg aactccatga aactctagct tacgtgtcta actaattaat 60

taaacgattt ttcagtcgtc ctgcgctgat gctgatcatc gaactagaaa ttggctgccc 120

gctttcggtc acatatgcta ggagtattat atactagcac gctcgtatat atattctctc 180

cgacctggaa aggccactca cgaacgcatg cgtacgtacg ccggtgtaaa gcgagattca 240

ttcggaatcc gaaaggccgg caccgcgcga attccctgtc agatcacggc ctgattatct 300

acacatgatt agtactgctc ttactacctt aactagtcga gagagagtgt acgtgcgagc 360

attaaggcta tgattgtttc ctgcatcagt gcatgcgcca ttgttgttgc ggcccatgtg 420

atgccgggcc ccgcccggct gaaacaattc gcgcatccgt ccatccatgg tacgactacg 480

atggcacaac ggtctctctc tctcacacac acacagcatt aaggaaaagc gtgattcttg 540

tcagcaacgg tggatggaaa atactaaagt agataaattt gtcatgataa tgttgatgga 600

atttgtcatg aacatgatta gtattgccct taccttaact gtcatgtttt tttctcaagt 660

attatagcat gcatcttggt accatatgcg agatgaaaaa aaaaatcaac ctttgagtta 720

ggtatgagat taaaatctaa aatgactacc tgctatattc atttagcagg cgaagaatct 780

acaacttcag gagtcttact tcgtcacaat aaaaaaaaca tggctaagaa cagaaccaac 840

aagcgcttgt cttgttccag ccagcaagtc ttctaaaaaa catcatcatg gcaaatatga 900

agtggattac taggttctgc aggaactgta gtaaccttat cattttctcc actcataagt 960

gtcaccgaat taatggactt ttaaaaaaaa ggcactctgg gttggatgcc taatctaaac 1020

tgaaagaact ggtttgagca cagaaacaaa gaagtggtgt gctttgtaaa atgaaaatta 1080

accaaggaag aaaaaggaga ccataaatga agtcgtcact atgtgttgtt tcgatattta 1140

ccctaaattc ccaatgtaac aaaagtttta tacgttgagt tccaacctta tattaccatg 1200

acaattctag taatttgaat acttaaaaaa aattctcaaa tagaaatact taatataaat 1260

aaaggaatag gaatacctca atgttttacc aaagtattct agagtcggca cagcccacta 1320

gaggagccgt tctggagtaa actaacgtga cttgagagga gctcaagacc actcctctag 1380

tcgtcatcct tttgccc 1397

<210> 3990
<211> 1115
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121023_G1, chr3:179522238..179523352, Cluster 25

<400> 3990
attcgagtga ctaagtcaag cagattgtgg cgtcttagct agaaaaccaa atatgcctac 60

tagtgcatag taaaggtgaa ggtggaagat agcgaaataa agattaaaac gtattggaaa 120

aaatatatta ggagaagagc aacgtgcata aaggtaaaag atatagagaa ataatggtag 180

atttgtattc aagaaaatgt attagggcaa gaggagcaat atgaattgga aagtgagaag 240

attaagtatc taaagacaaa atttgaacac aataaaatta tctattttgg aattgcggga 300

ttttatttta atttgtcgac gttttctttg gaacacaatc attttataaa agatatataa 360

gttttatata tgaatcaatc tagtttttt ataaaacttt attgagtagg agaaaaattc 420

tatattccaa caagacttaa ttttggttct tcgttttgtt aaaatttgat agccgtggtc 480

atatgtagta gctctcggat tttggaagga tattgcgaat gtgacagttt gcgccatacc 540

aagacaaatc tcatgaaagt ctctagagga cgatgttgaa gtacatgtga tcattgctat 600

ctcacaatca tgccctattc aagtatttag tgtaataaaa ctttgtagac taattctttt 660

caacactcta attgcctctt acaagttttg aatgagaccc ttgtgttagc ctatttcatg 720

tctacgaact atctctctta tttatatagt cattttcaag attctcatac atgcatgcaa 780

gtaggtgcat atgtttctaa tataattttt acactcaaat tttaatatga ctaaaagcca 840

taaatagcac gcataatttg agtgacgcta caacagtttt tgcagcagga gacatttgtg 900

attttgatca ccatagattt gtacttggag atagcaggct tgtgtggttg acactcgtga 960

ttttggccaa tatagaattg tacccggaga taggcttgtg tggctggctc tatgcatacg 1020

atgttttctt catgtcttgc ttggaactcg gaaggattcc atcatgcacg tcagggacgg 1080

ctgccacatg tccctttttat agaataggac atatc 1115

<210> 3991
<211> 1084
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121117_G1, chr3:180004736..180005819, Cluster 25

<400> 3991
ttacgccaca aggcgactgg tgcaacaaaa ctccggaaca gccctcactt tgacctattc 60

aaaagggttt taagaaaatt acgtggagcc gttggagcgc tacttttta ttggatttaa 120

tgtttttaag agattccaat atctatgttt tggaagctat atttttagga cttgttagag 180

ttgctctaag tgttgcgagt cgtcgttcta attctcacat atgtttacct aacaaaattt 240

aaaaaccccg tatcaatatt ttgtatgcga ctctgagtgg gtatcttaac gtgcaagtca 300

tataaagtcg tttctcttct ttagaaaaga aaaagtgttt ctccttgtca gcaagcaaag 360

gggcatagtt tacatgtttg atgggccata tgtcgaaagg catatgtgga ttcgatcttc 420

tttttcttaa agtgacattg gcatatgtcg aagggtttat gttattatgt agcttggtta 480

gatcagccct ttcaactttt caagagctta gctgtgcctt tgttagtttt tcaagagact 540

tttgctttat ctgacttgcc taccagtggg cccaataaca cacagtttct tcctcctgat 600

tttttatttt tttttcttaa aacatatatt tatactattt agtctctaaa ttctgtcaat 660

gcatactagg ggtcaatgtt atgatctcaa cgtggctttg gcgcttcaag actttggtag 720

cccgaatgtt caagtgtgtt cagcatagcg cctatgcatg tgtggcgctg cccacgcgac 780

gtgtgcatga atggatgcac tagctagctc cttttagcac acgcgaagga caacattagt 840

gcatgggtgg cactacatca ccctctcgga gctgttgaca tgcggaaaaa tttgatttca 900

gcagtagcaa tacaatgcaa actctcgagt tttacgaatg aggatcgtgg aagatgcagc 960

tatttcacct gctttataat ttagttcatg acatattttt tcgataaagg aagcaatgct 1020

attaataaca aagatcagta catcaagaag atataaagtc ttggccaact tccagcttct 1080

gctg 1084

<210> 3992
<211> 1364
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122327_G1, chr3:186221453..186222816, Cluster 25

<400> 3992

acgaaggatg catgcaaaca gggtcgaagc aaccaatatg gctctgtatt atttgagcag 60

taccttgact cggcttaata taaatactat accaaaataa tagttataaa caacaagatt 120

ttgtttgaaa gcaagaataa tagaaaagat tgagtgagtt agaatcccac actatttgaa 180

aagtaatgaa gagaactaag agggctagaa tcctcatcgt tatagtgtgg gacgacactc 240

aatctacttc atcactcttg ctcccagcgt ccaagcccca cgcgatgctt ttacacgaat 300

tttcttacac cagtgtttga ttttctcgcg tgctccgcca ctgcatacaa acgttatgtc 360

atggggtggc gagacactgt cagaacgatt cgtcgtccgg ttccttcaag tggcgcatga 420

gaaatcacat gatcgtagta gtagaccgtt tatttatgaa gatggcggta caaagataag 480

tgtcagatgt tgaatattta tgccaccaaa aatttgacta gcgagctcat ccatgcacca 540

tgctttctag tactggtccg aattgtcgtc tacttttaa actaaaccgc aataaaaata 600

aataaataaa tagagagagt agtatttata aatactagag acgagacgat gaaacatctg 660

gcgtctaccg ctagtttggt tgcgctctcg ttatctcgcc atgccatcaa atccatcatg 720

tacggatcta ttcgaggaaa tctgtcgtga acctcgcttt cgcccgtgta gctgcaccaa 780

aactgtggtc cgcgctcgat tccgcgggct ccagaggtgc acctgaatct ggcgcaaaaa 840

acaaacgcta gatcaggggt tgatcaatga ttagaagatg atgagtgagc cctacaaatg 900

atttaagggc cgggtttgcg gcttgcctga tagaagcttg caaaatattg ccttacccag 960

gttatgccct ttgtgtccca aattacatgt ttgggatgct gcttggttgc tgtctacgtt 1020

caaacaattt ttacatatat gtttgggaag gccaataaca aatcacgcaa atcctacctg 1080

ctctctgatc tcggacgctg agaaggacgg gcgagcgacg ccctctggcc tctagggaaa 1140

aagtccccaa ggaaaacact ctcccctcgg gagtactgta gaggaaatga ccccaaacct 1200

ctcggtctcc attaatcagt actccctccg ttcccaaatc tccatcgtgt aagccatggt 1260

cgcagtgacc aagggacaac aaagaagtgg tgatttgttt ttaatggccc gacgtccatt 1320

cattagtccc attaattata ggttaatgct gctgaaaacg ctgg 1364

<210> 3993
<211> 1259
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123810_G1, chr3:193999940..194001198, Cluster 25

<400> 3993
ctttaaatca actcttattt tgatttttcg aacttaaaat ataatttttt tgttggaaat 60

gctctagctt accgtttatg tgacgcgtta tctattattg aaaaacatat atagggccgt 120

ttggtttatt cctcatttaa aaaaaaactc attctacaaa cttattatta ttagccaaac 180

aatttcaggt ttttatattg aattttgtgc caaaatctcg caactcaaac ataagttgat 240

aattgaattt acattggatt ttgtgccgta tccaacttct caaaatctat aggtaaccaa 300

acaccaccgt actaatagag tagatagaga gctaagatgg tgttcaagtg tcgtgtcgtc 360

ctctgctgtg agaatgaggc cactatgatc gctttatcag ggattgaatc tatggtatat 420

tatctttgtc atgcgtctac gtgaatatac ataaggctat aaatttcaaa aatccaaata 480

acttatagat tacaataaag gaagcaaaca aggcaagcta aaaaacattt acgtctccaa 540

aacagtctgg accgagggga tcaacacgca ctcaagaaca taagaaattt tacaaaacga 600

tcaaacaaaa actacaacaa ccgaaacggc ttcaccaaat caccaaaagt cttcctccga 660

gtcatttctc tttgatcatg tgaaagctga ccgggtatcc aatttgttcc ctcgtccaaa 720

tatttcaaca acacctgcaa gaagctgaaa cacgagattc tagacacagt tcaaccaagg 780

aagcaaggat atgacaaaac tcttctcaac gaacattccg ttacagagtt gtgcatggta 840

tccacgcgac cacgccacag tctcggtccc aaaactaaga ccctgttcga aacctctaaa 900

aacaataatt agctattaaa aattaatttt taggtttcaa acaccatcaa ttaatatcgt 960

atggtggctc aactcagctc cagctaatat tttattagct gattaattat tagttctagg 1020

gttccagata tggtctaaag cacccaaaag caagggcaaa tctagcgcca catagtggtg 1080

cacaccttaa caaatataca catggtttta gaaatacatg gtcaaaaaat atttagctaa 1140

cggaaaacat tattcaaccc tgtgcaccag gtgaacgtgg cgtcgcccct gcccaaaagt 1200

tcatgatttt gttattttaa ctagccacta gtttgtttta aatgtattgc atacttttt 1259

<210> 3994
<211> 1032
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125311_G1, chr3:202448880..202449911, Cluster 25

<400> 3994
ttcagctgca aggtagtcat tattgaacta taatgcagag cattggagat gtctgcatga 60

acttatgttc agaatcggaa atgtttctga gtgcagagga accaaattct ctattttgtg 120

ctgtgactgg actgccaatt atgctgaaac aaaatttgct tagtaaatcg gcttttggtt 180

gatattgtag actaccttaa acttgttaaa ctattttccc tgctgttaag aagggctgtg 240

ttcacgaatc ttttgtactc ttggcatgtc tggttcaaaa ctaggacatc gtcttgaatc 300

catcttcatg ggtgtctccc aaacattatt tgttctgtat caagctttac agctcaagtt 360

gacaaacact tgcgagtcat gattttatac ggatgttgcg tcttactttt tttcttattt 420

gaaagttgga atatctgttg taagtagttg acatacaact ggttgagttg actgctgccc 480

atttgctttt cctgggttgg attatgtttg caacttttca ttcatgaact gatgggagat 540

gtaacctctg tatttccacc aaatggatca tggattggtt gtggtatgaa atcacagtcc 600

aataacttct ctttggcctt tcgtggggta tatatgatag aaaattgcca taaatatcta 660

cattcttttt ttgttagaac atcaaatatt ttcaacttgt ggttgtccaa gtagttagtt 720

ccctgtaatg tgcgtccatt ttcttgtctt ctgaatttca tgttgtaagc tggaacatgg 780

ttggtgactt atttactttg ttgtttcagg aacaaatttg gggttttcaa gtcgatgatg 840

catccacatg ttagacaggt ggttatgatt aactatgtag ctggtgatat taggatcgtg 900

ggtatccaaa tcctaagaga aaggaattag atgggatata tctgcaacaa ccagtgcaga 960

ttgttgtgtg attctcatat gtggtctgag ttggttatgt ggctagagta gcacctcgtt 1020

tgtcctacgc ca 1032

<210> 3995
<211> 1267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125625_G1, chr3:203849781..203851047, Cluster 25

<400> 3995
cgtcatatat tttttagtca tttgacacca catccaaatc atataggact ctttttctaa 60

aaaaacatat atgagtggaa ccggtaaaat ttctcgtaac cggtctgctt ttttatgtat 120

tatggtttaa aatttgaaat tttaaaaatg aaactttggt caacaaaacg gattttggaa 180

attacaaaat gaaaatatga tccctagttg ctcatcgctg acaaatcagt gcacaatgat 240

gcagtcttgg tactttggtt ttccacgtgt gcatcttctg tcgcacccat tattttctat 300

tttatatgat aattatctta ttgcaggtgg ttgtggccta cccgtgaaca aaaatgtcga 360

ctactgacta aaatatttgg tgtgctgtta ggttcagatc gtgtagtttc ctacgtgata 420

gcaactgcgc gattattgag ttgcagtctt gcaaccatct gcgatcggac ttccaatttc 480

aacgattttc cacgctatgt ggtagtcaat ttcgaatgca acatcatcaa tcaaccgtcc 540

aacccagccc gtggcacgtc cttttagact agctccacct tatctgaaat ccttgtgaca 600

gtgtctattt cacaccacac aaacattttt gctagggttt taggtttttg agattataca 660

ccgtaaaatt cctattgtga aatcaaacaa acttggattc agaacaaaga gcctagacta 720

tagtgttata cttcctctac tctaaattat atgatatttt gttattttta aatacataat 780

tatatatcca aacatataat gtatatgtag gtgcgtaacg aaaactatag atttcaaaaa 840

gctaaaagat tttataattt aatttaaaac gagaaatgct atttaactaa tgaccagtgg 900

aaaaaaactt taccagcttc atatgcattt aatattcagg taagtaacaa aaaaaataga 960

tgttaggcca tatgcctgtc tacaaccacc tttttttctg tctctgcaga acacgcacag 1020

gcagcaggag tgcaggaccg ccactcgtcc atgtcattcc gtggctgccc cggcccactg 1080

cagaaataat cacgaacatg tcgtcattca gatataatag gaacccaaca tgttttatac 1140

tgtatgatga taatgatagg tcgtaacagt gcaatcaaca cgggttatag tcttataagg 1200

ctccggttgc aagtggattg gagaggatta agtacttgtt cggatgcgtc tgtatcgaaa 1260

gatatta 1267

<210> 3996
<211> 1276
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125746_G1, chr3:204453165..204454440, Cluster 25

<400> 3996
ttagaattat aaataagggg aagataatcc aaccaacctt atctctctat tactttcatt 60

ttttatcctt gtaagatttt ctctctcctc cattctatta ttgagatcca tacatggttt 120

aggttctatg ataatctttc acctatgtaa tctaatcttg tagcttatga aacttattgg 180

aatggaggtc ctaacctcct aggttcttgg tggctcaaga tcttgtgtag ttttatgagt 240

tttccctttg atgccttgtt ttcaattgtt tttcagtgtt ttgctgattc agttgatatg 300

ggcatttcag attcatttcc tggccttcac tagttgctaa ctccttgaga tcatatatgt 360

atgttggttt gatcaaatct cacacgagca ccaagtttta ccattttatc gtttgtggtg 420

aaaactcaat ctagatatca gttttgtcaa ttcttagcga tataatggat ttgatgggtt 480

gaaactctct agatgtcttc cttgcctcct tgagaagcct tattctaagt ttcacaataa 540

tcaatttgaa atggaggatt tggagaatct ttggaggaac tgcagttaac gaaaacctac 600

taggttggct ttgacaccca ctcaggtcgc catcttggtg aggtcagccc tgcatcctag 660

ccaggctagt ttttggcaca gccaggaagc aggcttacca agctgaccct actttctggc 720

tatgtcggtt tttcctgtga tgctacagtt ttaccatgtt ttcaagttct acttctctac 780

ttttcatttt gtctgttctg gtagcttcct aatacatcca agaacttttc aagtaatcaa 840

accactagtt tctttgagtg atataagtgt gatctctctc tctctctctt tgtcttagta 900

ggagttaaaa gcaacacctt ttctattttg ttatgctttg attttccatt gttgggaggg 960

ctccattgtg ttctctagac atattggagg gcatcttgtc actagttaac tcaagagata 1020

cttgtgttgg agttttgggt tttagaagcg ttaattggga agtggtcatt ttggaagaaa 1080

aaatattatc tcccattcag cgcccccact cctttgtctc atgattcagt ccatcaatga 1140

gtggtcatta tggctgacac ctacaaagat caacaagtgt aagagtacat ggaggagtat 1200

accatgttaa ccaaggcaaa ctagcgatag actaagtcaa gatggcaaca ctagaggatt 1260

tagtgatcag gcagtt 1276

<210> 3997
<211> 1026
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125797_G1, chr3:204633725..204634750, Cluster 25

<400> 3997
ggctccttag ctgtttgcat gctcctagta ttgtccatgc acatagatgg tgtatacatt 60

attgttgcac cccaacactt cacgtttcct tcgatccagc ctccaatagt ggttgtcgat 120

catgcctaga ttcgtacttt tcgttctcct caagttgaat catgtgcctt cgtgtccact 180

ttagatcaaa ccatgcacaa gtaaagtttg gctaagtatg atttaacaag gatagaaaaa 240

ggaacaagta tgtcttaata gaactataag agaacatagg ttggaatcag tctgtaatta 300

gtaaattgaa attgtactct tgtagagtca atcatgtact tcacgagaat tataatattt 360

tcgaacgtaa cccatgagat atttgttttt atagtagatt actaattaac taaccatacg 420

ccttatgttt atgcatattt actatatatt cttatacatg catgtataag atattgtaga 480

caatagtaaa tctgcaattt tgatgttatt atgctagtgc aactccatta tgaattgtat 540

acaatgtaat tacaagaata aaaattttga atgcgtgatt actctagaaa catggtataa 600

ggtatatgga cactttaaat catgtgactt gtcagcttag agagtctcat aattgtttct 660

ctagcatcat gttttttcag aatgaatgaa tgtccggtaa taattctgaa aatcaatatg 720

taccgtgact agataggggg aaaagctagg atgcttctaa gaatgtttta aactaatttt 780

gcaccttgtt acttgtttac atgtagtaaa cttatatgca catgagatga ttcatgtaat 840

atatgcctta agtttcgaga aaaaaaatta tgaatgcctt aaaagaagga atatcctaga 900

attactccga atagtagaat tgtttgttat agtcattatt agaatcatgt atgaaaattt 960

ggctaccatt gaagtatatt gagactctgc atgtatgttt atctatatct atactaatct 1020

atctat 1026

<210> 3998
<211> 1255
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126220_G1, chr3:206608930..206610184, Cluster 25

<400> 3998
cggtctataa agagagtatg aagccacatg tcggcgtgtc agcttgcagc cttttggcca 60

gtcccagtta ttaactagta cgaccgcggg accgggtttt ttttgttttg tttttggtca 120

tgttgtgcag gtgcctgaaa tggatgcgtt cgttcgaatc tggccactgt gggggaacat 180

gacatgatgc tgctgcgata atggatggtt tctcgtattg ttttgttcgt cacctgaatc 240

acatggcaga gccggatcac agcgacgcag taatcaactg aaaataagag gaacgctaga 300

agaaaagtga tcgtcataac tcttggaaac agcctgtttg tggctcgttc tggtgctaaa 360

ggtcctccgg gatactacat atataagctc atgctacacg aagcttatat tacaacggtc 420

tgtggccctt tgcgtacgtt attattccat cgttggactc tcccaccagc ttccatggaa 480

tggaatccag cgcttggctc gtgctcctca tctccactgc gcgaaatatg catcctgatc 540

attgaataaa taaggtgaaa ctatcactga catttaacga tcattgaacg aggtcaaact 600

attagcattt tatcaaccaa tcctgacaga gctataaaga caactccctt gcagctttct 660

gatagacctt tcttttatgg aatacgcgcg catgaaacag agagatatat cattgtatta 720

taaggagaaa aaagagttac aaattcaaaa aacacacaca aaacacccca caccacctct 780

acccccacta acagtaacga gtcatttctc ataggatgta aatactccct tcattctaaa 840

ttataaatca tttagaccat cttaagtttt gcaaaaaaag aagataatta ccaagactta 900

cgatatcaat tagatatatt ataaatctgg tcaaaaattt tatcgtaagt cattgtaact 960

ccgtataatt ttcgtcaaac ttgagatggt tttattatat agtacactat acaataaatt 1020

aataacatat atgataccat acaaaactga gcgccacatc catggatatt tgatattata 1080

tacgttatta ttttattata taactttgat caaacgtgag atgatttgat tctaaagaaa 1140

ttatattgac ttataattta gaatggatga aacatttctc cctatttttt tgttttcgat 1200

aggagaacta cacgtcatcg cattaaataa aagaagaaaa acaatttaaa agtca 1255

<210> 3999
<211> 1064
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126599_G1, chr3:208455815..208456878, Cluster 25

<400> 3999
gtgctctgcc ttacaaggtt gctcgataag aaggctttgg ttggctataa ggtttataga 60

ccttattttg agtaccggta cccgacaaaa acggtctcac ctcgggttca ggggtttaat 120

tcgtttagtt gcatctttgc ttgtgatatc ttatttcttt atttttgttg attcgtacaa 180

atttgttgtt ttgtaacaag ccgacaatga acaaaaggtt ggaaaatgtc ttatgtccac 240

aacgattcca aactgtacac ttaattgttt cacagaattg atgaagacaa aatacctgcc 300

tacatggtcg tcctaggtga ttttaacacg aaggagaact cagaccaagg cgctcaagag 360

catgctttgc gatttgaaat gggttctcta gtgcctactg gttcatcggc gctggaagtt 420

tcgaactggc cccgggatct gcagtcgcaa atttcgaaga gatagcttga acccgagaga 480

gtttcagtac aagcaaagtt actgacaact aggatattca gaacttctgt aacagaagta 540

gcatacgcat atataacctt ttccacttac tgcttgctat tcgttgtgct catgatctgt 600

tttttagtaa tctaaaagtg gaattaagta tgtgtatgta tatattgaca tagcatgtag 660

gacccggaga gtgggacgtg caatgtttac ttgtttatac gagttcattg aagcagtacg 720

tgtcgtatta ggtttatttt gaatcaaatg ttacccattc cagtttgttt ttgtagtttt 780

acaacatata tggcatatat tatgaaaagg tatttttttgg taataaatct agaaacataa 840

gtattacatt gtgtgaacct acataatcct ttttttatat acggtcaaaa ataaagatgt 900

gcacagcatg tatgatttag gatgaaagat gcactagtat actaatgcgt aagtaaaaat 960

gaagggagta tatcaacgaa actgagtttg aggggcatcg aaaagggatg acaatgtttt 1020

cccctcagaa acagcgaacg aaaaaaccac acgagatcca taga 1064

<210> 4000
<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126657_G1, chr3:208765103..208766121, Cluster 25

<400> 4000
cttgtgcagc atggagttct caataattgg gcttacgacc aaggcatatt tgtcaggcat 60

gtcgaagtga caccaatggt ttgtaattct aaaagtaatt agagtttgcc accactagta 120

ataaatcata ggagatgtat ccggtaatgt gactgcatct tgctttcctt ggactaatgg 180

ccaccaaaga tgatagctat ctcattgtgg acctaagggt acttgccatt cgaatcagct 240

ccatcgctat tatcattctt gttgttgtta tcttgattat gatttgtatc ttcatgtttc 300

ctaggcaggg tgcccagtga atgaaatatt gtataccata gaaattctaa gttgtgtgct 360

tatgtaatgg atggaaagga cattgtctat caagcatatc gtctattgtt tctcttggac 420

gtttatttcc atagtctaca attgttatca tgacatatgc ttattgtttg ctattctaat 480

caaattgatg ataatcgtcc tatcctttga tgtctcttct tttatcttct ctagctagag 540

agtacctata gtcctttcca ttgcaactaa gattgtcttt tacatgttct tgagctctag 600

catgattgtt tgccatgtca aagaaatatt ccactatttt ggtggtgtta tggtgaggtg 660

ttccaacaag aatttgtctc ggagaccctc tttaaatgtg ttaatggtgt ggttttcatt 720

gacattgaga atttggttgt gtatgtgatg gctggagttg ttatgtaatc ttagagtgac 780

tcgttgggca attgttagac ttgatttaga ccttgtttcg tagttggtta tatgtgctaa 840

ggaaattgac tatgaatctc ttgcaaaagt catcccacaa gtcgatcgcc tcgtgaggaa 900

gattttgtaa ccatctcaag gcatgtgtta taagtataat tggaacataa gctaccatag 960

tgttgtggtc acctcatgtc gccttgacta ccaatgcata tacttggatc cacatgtac 1019

<210> 4001
<211> 1157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128058_G1, chr3:215407031..215408187, Cluster 25

<400> 4001
atatcaggca aggattattc aatttacaag gttgaatact cataataact tgcaatatta 60

acaaaccaaa accacatttg ctgttaaaaa ttgttcaaac aaaggctagt ttcaatatgt 120

tatgtttgtg tacgtatgca tgtcttagag atacataact ttaattttat ttatatagat 180

taccacgcaa ttagcaaact atgttatgtc taaatgtcta attatgtgta ctactttcag 240

acattagata gttaattaat gtatgtcccc tttccaattt tttattaaat gtgctttctt 300

gatgttaacc tatttagtta ctgacaagac atatcggttc actacatgga aacgtcacaa 360

ctaaattttc atggttcatc ctttcaagaa aaagtataat taacatattc ctttatactt 420

ttctagcttt acacttttta aattaatatg ttttctgtta atagtaccag taataataat 480

ttaacctcaa atacatctaa tatgcatatc ataagtatca actttaatta tgttgtgctt 540

aagatagttg atttgcaact ttgaatattg tctctatgta tatatttatg tgcatacaca 600

tcattgtctt cctttgtttc cactcccctg caagatcaat atcacaaatc tgatttagct 660

tcaaaaattc attgtaaact ttctcgaaac gcatcattat tttgtggtca ttaaccaata 720

ttttgttttt atggggaaac tttaggggaa acccctacaa caaaatttta ttaccaaaga 780

aattaaagag aaccatacac ctggaagaga gaaaagaaaa gagagagata tatgttacaa 840

gcagcctaga gcgtagaaag tcaagaatgt acagcggcag aggaaacatg attcattcta 900

agaatattca acttaagtgt gttcaaaaaa attctccttc caagagttga aagatggtac 960

ttctcctttg aaatttttc catttctttc ctttcatatc tcccaagcag ccatagagaa 1020

aactttcatg aagaacacaa agctaaatga atcatgtgct atatgccaca tctgaaagaa 1080

gctctacgag tgattccaac tgtaaggaaa atgaacccca attcatttta ttaagggact 1140

tagattgaag ctctccg 1157

<210> 4002
<211> 1101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129585_G1, chr3:223346622..223347722, Cluster 25

<400> 4002
tgtcatgcct agccacattg aaagactcta catgattgtt gtcttaacgc atggaattta 60

accattcatg gagctcacga gcgtgaattg attcacacaa gtcaccttga tgatgacaag 120

tctacgggta gcataggcct cccctatttt gatgctaacc acctcgaggg tggactaagc 180

ctcccctatt ttggttatta ttcattggtg tttctaggct tggttgtttg ttctgatgtg 240

ttcatgtcga tgttgcatag gatggagcat atcatggcta tgaagcgtca gagctacaga 300

ttccagtata aatttcagaa gcttgtatta tggggtatat ttggctccca atgtaacttt 360

ctatgaacat aacattagcc ttatgagtca tataaaattc catgtcatat gacttctaga 420

aatcaaactc aagattacat gatgtggagc cacctaggtg gttattaagt tgtcatctag 480

cctcttcgtg gtgttgttct ttagctaagc atcggtcgag tgcttcacga tgaagtctag 540

tgtgaatgcg tgattgtgtg tgttgcatgt tcttgagtgt ctgaatagct ttctccggtt 600

ttatctctcc aactacactt tgatggtcat tggatatgtc atcgtcttct tacttcatcc 660

ttagggttga tgtcactttc ccaaacaagg atctagtggc tatgatcgta actgcccatg 720

ctattgggag tgtagggctt gatggtcaag atagctaaga tagtgacttt ggcttggtat 780

gtaaattaat ccatggaaga gactacacta aaagaagtag aggtgttctt gagtaggtga 840

actcttagct aatggataat cttcccttgt gatgtgaagg taagtactag gccttgttga 900

gtgtttgtga gtgggacttc tttctcattt ccctcctcta gtgcaagagt ggataggata 960

agtcttgtaa ccactttatg gtagattgaa gttgtactct tgagtccaaa agggaggcta 1020

aatagacttc aactgtctta tccgatggct tggaagctaa attaggaaac ttgttcatgt 1080

ttgagtaaga cttgagcatg t 1101

<210> 4003
<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129663_G1, chr3:223674044..223675112, Cluster 25

<400> 4003
catcagtagt catccgaagc ataatctctg aatgcatggc tgatccggtg gctaactgtc 60

cgattaatat ctctgaataa cgctggacag tggaagaaca aaacctaaac aaacaatctt 120

atccccgtct tatctgcccc aaacatgcta cacaaaattg ggaaatgcct gtctccatca 180

atcatggacg actagcacgc actccgctca aatcttcccc gctttatcag tggatcgaag 240

attctgagca gaggaaaagc ggtggcagca gcaacagact gtagttcgcg ggacaggaga 300

taacgaaaaa tagtctcgtg catgcatgga ttcggttagc tagaacactg gtgttaggga 360

taggataaca atgattaaag ttgtaggcca cttcgcccaa tccaaagctt cgtctccagc 420

actaggcaca ggctttaatt ggttgccaga tttggcagtt cacaagcttc tttcctgatc 480

gttttggaca aacagtaatg taaggtcttg tttagatgta ctatatatat attcacatca 540

atctacgtat gatgaagtgg atttgagtgg acattaattt aaatttcact gtaatatgct 600

tcaacgcgtg tggattgatc cgaatatata tacagccaaa caagatctat gctgcactgt 660

aagacagtag tgtgtttatt ttaacagata gataagctga taaggctagg tatccatgaa 720

tgaaacgagt ccatgttcat cgcttcacct ccaccgctcg tttttgtatc atcagtaatt 780

aagaaatttc cttgagatca ttaatctatc ataaaagtat ttgtaatcga ctaaatttca 840

tttccacgtg gagcatggtc tgaagatata atctactctt tttcatacac aagctgttga 900

tataatctac agatttaatt taggcccgat acatagacag tcgtactgaa cctcgatttt 960

tccggaccat gtagggttaa ggtgtttggt tcaacctcca ctcatgcacg caaaactaat 1020

acacctttt tttttaattt tcctagaaat actagggaac aaaactaat 1069

<210> 4004
<211> 1314
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129807_G1, chr3:224473931..224475244, Cluster 25

<400> 4004
gagctccctc tctccatacc gaaaagaata agattcttat ttttcaatgc gtcaaataat 60

ctcaaattta atcataatag atatcatggg attggttata atatatattt ataataaatc 120

taatttgaaa tataaatatt gatactagtt tcaaaaccta attaaatttg tgattgttta 180

gttctccagt ggaagagata tcttttgttt ttgactcacg gagtaaagta cagtagaaag 240

gagaaaacta tggcctctct acaagcaata cgtgggatcc ttgtttgttt caaacctaga 300

ctaaactata tatgaggacg actaaaggaa attagaaagg attagagaga gttttgactt 360

gtactagttc tccctgatct tcttcttagt ttgcgcgggg gggggggggg gggggggga 420

taatgaataa gggcctcgaa agggagaatg agagatttga cggttgacgt gcgcggtcaa 480

ttaccggtgt gctacgcggc gcgcgacgta atgcacaaag cgttggtgtg gttcttttgt 540

gaaagcccgg cactctatgc atgtgttgtg acattttcaa tcattgaact gttatttgtg 600

ccgtttgatt tttttccgta ctgggagaac atgcattttc tttttctctt ttgacaattt 660

gctcagagac gttttcgacc gtatgtccat gaacagagac cggccaaagc aatggaaacg 720

tgtaatgcct ttttgtgcag gccacttgtt agtagtcgtt tcgcgctgcc ttccctgata 780

taagtaatgg aattaatata tccggatgct tctaagctgc agcccccgcg cgatgcctgc 840

aggctgcaga ttgctatcgt tggggttaca ttattaattc tagttttatg tcaagtcacg 900

ttttatttaa cgagattgat actcccatga aaactgcacc gagaattaat atcgtcctaa 960

cggtacgttt tcaattctat ttggctttcg agtcgtttga ttcaaacgtt ctagcaaatt 1020

ctatccagtg gctccttgtc tcaaaagtag tgtggatgga cattatgctg agacccaagc 1080

ttagcttgat gtgaggagtt cgaataatat tctgcatggc tcaatttttc aattgacctt 1140

tgggtctccg cttttcaaat tatttagagc tagtttagaa actcaaaccc tacttagacc 1200

ttatttagat actctcatgt tcggatataa attataaagt cgttacaccc taatatacac 1260

ctcaatacat atagattgag gtgaacgaga ttatccaaac aaagccttat ggat 1314

<210> 4005
<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130675_G1, chr3:228527780..228528870, Cluster 25

<400> 4005
aggtactctg ggtcattgga actatgtttg gtgcaacgac aaaagtggat atgatttcta 60

ctaggaaaat atttttggtc gttttgaagt ggcggtactt aacccatctt taattccaac 120

atagatggat gtggtgatag gtactcattg gcttgaacta aagtttgttg tggaagaaca 180

agttcggagg gttccatcaa atacatcaag tggaaaaaat agttgttgtt gactctgttt 240

cagaagtggt aaactctaaa cattttgatg ggggttgctc tgaagatatg gaagaggatg 300

atcttcttga tgattgtgag atgggtaacg ttggtaatat ggcgcctatt atgcatcata 360

ctaatggcca caaggtgaca gatattccta gttctactat tcatatgagc ataatgccta 420

tcgattccta gctaggtaaa ccggcaaatg tgtatccgtc caacagtttt gaaacacctt 480

tggtcgagga agctcttaag caagttggga ggttagatgg tgatcaatag tctacagtaa 540

tgagtaacca gaagctgatc caaaagaatg ttgtggatgt cactcctact aagaggagta 600

agcgacatga ggattcggtg gacgaggaca ctatggaaag ggacaaaaga ttgactgcca 660

ttaaaaaaac ttgatggaga aaaaggtaat ggttgtgtta attcttttat gtctttttct 720

aaatctataa tatcacataa tttatctagc ttgggtattt tgttaggtca caatgaactt 780

gatgtttcta actctataga ttcagtaatg cgtctagaga aggatagatt agaaaataaa 840

ggcgttcaaa tcggacaaat tagtcatgac agggaagagg gtgaggagtc ggatgatcat 900

gacgatatgg ttatgaatac tcttagggac cttagtgtaa ccttaatcga ggaaaccata 960

aattgtcatc cggttgaaga tatcttttg tataaagcac ttaaggttag aaaaataaag 1020

ggaataagaa aagagggaaa gggtggagta agtctaatgt ttcgtcatga aaggaatcaa 1080

ttgatatggt a 1091

<210> 4006
<211> 1291
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131858_G1, chr4:3029427..3030717, Cluster 25

<400> 4006
tgttgttaag caaattaaaa agcatagtat tgctctcctc ctagctctca cgctctctat 60

ctcgctgtgt ctccctctcc tccatttgtg gctccccgtc ctatgcccta gctgtcgtcc 120

tctccatcca cccctatgcc aacatgacta cctctgaacc ccttagcaag tctcaccacg 180

tacaattctt tttaaagaaa ggaattttat tcgttcaaat acattacatc gagatgatac 240

aagtctttaa aagttactcc tggcctctgc aacaagagca tagagctaaa aaggaaaccg 300

gacacacgca caattgcata aacaactgtt acttctaaat gatgttcatt ggaaaagatg 360

atactacgtc aatagaacac aatgagtaaa atacacatga agatctatat attttccgaa 420

ggttaaacct tgtagattac tattagtagt tcagcgaaat ttatggttta cttcccatgt 480

cttacataga aaagccctta ctaaatgttg actaatcctg gacagctagc acttctatat 540

ggaagaaagt actgcataga taactttgtg tcagtcattt gcacagaact ttgtgtcagt 600

cattttatat atttcacatg tagcagataa gctaagtatt catggaaaaa tataatttat 660

atattgtttg aaagaaaacg ttatgttgaa cattgaaact aagcataaag ttatcattag 720

ttatttctat ggcgccgaat agatatggga gaaaagatgg ctgtcttggt ccgtgggtga 780

gctcgtggtg ggcttcatca agttaagatg aagggttcaa tcgggccatg aataatcaaa 840

tggcagcccg ttagtccttt attccctttc ttttgtgttt gtttaaatac cgctaaatca 900

tctgcttgat agtcagtatg gttgcagcgg ttaattgatt agcaattaag cgatttcccc 960

ggccctccgc tatagtggat ttcaccgatt agtattggtc gtttttggct gtgctaatta 1020

gccctagagc cggctcaaaa ttcaatcggt ttaatttgct aacaaatatg ttgagaccaa 1080

tagagcccaa gtggaataca aattaaagta gtacagataa aagatctgtg aaattttaac 1140

agcaaaaacc gcttcagtga gtttgagata gagattcgac atgtactcaa gtcagtatca 1200

ggaaatctct gcaactttaa aaaaacaatg aaaaaaaaaa acagaagaaa ccaaatcact 1260

cctccgccat cattttggat atgaacgggt t 1291

<210> 4007
<211> 1339
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131865_G1, chr4:3040088..3041426, Cluster 25

<400> 4007
catgttgtca tatccttttt tgatgcagac ttcatagttt actaagcctc atagtgtgaa 60

atttatcatg cactacttta tgagcactgc ttctaacgat atctcctccc caattagcat 120

aaaaataata tttatgtaaa aacgatatgg tctttgatga tagagcatct catgttaata 180

ttctactcat gaatgatgat gtgaatggga tcagaccatc gctcgaggac acctaatgcg 240

ctatccaaat tcaggtgcat atcatgttag atgtcattaa cggaagtagt aatagcattg 300

gaattgatgt tatttttgca gttctgctac actatcattc aaggaacatt gtctaaagct 360

agaatgttca ctgtgtgttc atagtaagaa tttcatacat tcacatgctc ataacaccat 420

ccatagcctc aaaataaaag aaagataagc atatcttgaa cataatttat caaataccaa 480

gttacaaatg taccttgagt aaaactaagc ataactatat gaaatgaaca taaattagtt 540

ggtgcgacca ctataggggg ttggccaacc acccatatgg gcccatcagt atgttagttt 600

gccatgatcc atgtgaatca ctccaaagtg acccttcacc gtccgtggac caaagttgtg 660

tttcttctca agggtgaaaa aaatgaagta accaaacaag ggaatcataa cacatactaa 720

acaaggaagg ctttgatagg ccccacacca aggggatacc ataaaaggaa gtgagagggt 780

caatcgaccc cccttggtcg gtcgaacacc ctagtgggcc cactcaactc cactacctcc 840

agcgtgttca tatgtaagga aacataccct tggtgcatct ccaccattcc agccatggtg 900

gtttcatcca acggctcaag atgatgatca catggatcca tggccccact tgaagtagta 960

taaatagagg ggtatacttc cctccatatt cattaaacaa attaagaaat aaaataagct 1020

ctcaagctta aattagcttc actttatctt tgtagtggga tagtagtgtg ggcgttagaa 1080

atagagttga gcattgctta ggttccaaac tctagtcttc tggtatgata tagctctaac 1140

acctttaat ttttatttct cttgcccttc gatcatgtgg tgtccatgaa tatcacattc 1200

ttattttcct tctcatcttc cttatctacc ccttaccttt tctgcaagct tgtattttgt 1260

gtgactagtt aggtcaccta gttcttgggt gggggtaact cccttcaaac cacctctcac 1320

aatgattagg gaggcaagc 1339

<210> 4008
<211> 1261
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132203_G1, chr4:4194804..4196064, Cluster 25

<400> 4008
tccgtttttt actataaaag atgcaagcct tctaaacatc tctgattttt ttgacatacc 60

tggtaagaca tttctgctgt ttgaaacaaa gagataaaca gtggagtgat tgttccggtg 120

gtttttttt tgataggtac gtatcgtaat gaactagcta ccaatgtact gtcatgttga 180

gtggtgactg gtttactatt acagagccgc cgtcggtggc ttctatcacc ggcgccggca 240

actgcccatt caccacagtg acgagcgtct ccctgcacat gtgtgtcata ctgctcatct 300

agctcaccta catatatata catacatgca tgttcctaca aatcaatcaa accatgcaga 360

tgttgaatat atggcttgtt aaagattcag agttctcaga aactagcaaa cgcgtgcagg 420

gtcaattcaa agccatggaa aaaaggcatg ttgcttagtg ccgcagacga tgtgcttgta 480

tattcatggc gatgaggata tatgaagacg acagcagtga ccgaccgctg cagccacagg 540

ggggagaggt tccaggtcgt ctcaacagca ctacgcatgc aactctgact gcatggtttg 600

ctgtgcaaca tgtacttctt ctatacatgt gtatgccttg cattggccat tggcacacat 660

gtacagaaca gaaggtacta acgacgagta gtggtggcct ggccttttac cttggctgcg 720

ttgacgaaga actagacaac cttgtatgca tgtgtgccgc cgctgccagt tgaacacgtt 780

gatccagatc gcacatcgat cattaattgt gtgtcactgg aacaaccggc agcagattca 840

gcctctctgg ttaccctgtg ttttttttca ttgccttaag ccctggactg gctcgtcagc 900

tcgtggtata tatacgtata ctgcacaaca acttctactc cctctataga agaaaaaaaa 960

tacaattctg actctttaag gaaccaaata aatttaatta accaaagtta tataagggt 1020

accaacactt atgagatcaa atattagatc aatcaatgga cttacatagt aaagttattt 1080

gaagacataa ataatgatac tactttctac aaattaggtt aaatatacaa gaaaacactt 1140

ggctccaata tagaattgtg ttctttttgg tatggaatgg aatatttcac tatccaattg 1200

gatctaatca gttttgcttg acgatgcatg tcttactttc gcatacactt tgttcttcct 1260

t 1261

<210> 4009
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132378_G1, chr4:4791803..4792884, Cluster 25

<400> 4009
tcatgtggtc agtggtctag gtttgaagta aagcaccacc ataagaatgt ctccgaaaca 60

aatctataaa caaataatcg ctcagatttc catcatcagt aatcgaaatc cttcccgtac 120

aataatcatc aaactgtgcc ttattgtaat ctgtttgtat gaaccaaaga tttgctctag 180

gaaacttcct gcagctgcac tcatcttgga tatactggct cctatatatc agccatttct 240

cctcatcggt gctgtgtcta gtttgccaac ctttccttca aaaactaaac tatacatggg 300

gataccgctg tggtcgtgga tcgagttatg tgtgtcaata gcgttcgtcg gtcttgcaga 360

ttacagtcct tcgcggttct gttgacgatg ctagtggaaa ctgtcactga atacatgcag 420

gcgcagtggc actccctgtc cctggaggaa cgagagctga cgcgtggaaa ttaactgagt 480

atccggtacc cccaattctc taaagtagat cacagtgccc acagttctgc tacgtgtatc 540

ctgatgcctc gaaagcctag cctgcaattg gcatattagt tgccactacg tacagtggga 600

gtagctatac atgacagatg tttatttcta cctgtcctag gatcgtcagc agcttgttta 660

tatatatgct gagtgatagt ttgagagcat gggaattgat gggaattgaa ggggattgag 720

ggggacaaaa tcctaatttc attagcttgt ttatatatac ttagacctag tttaggagca 780

aggaaattga aagtgactga gcaagggttt gtttgggagt aaggagtgaa ggggagggaa 840

tccaattact attcaatttt gaatggaaaa ccaaggtaaa tggaaggctc ctcatagtct 900

atgattagtt ggtaagtact aggtctacac atctttattt cattacttcc attattacca 960

tgcatgatta tttaatgaac tattttgtcg taaagtgtct gatgcggtcg tcagggatta 1020

aattatgtga ataaaacatg ttcgagtaca tccacagtta gttaagttct gtgtgtgaag 1080

tg 1082

<210> 4010
<211> 1279

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132816_G1, chr4:6523543..6524821, Cluster 25

<400> 4010
tttaaattat ctacaagttt cttacatcta tccttgtcaa aattatttac actaggtttg 60

gaaattaggg gacgatatga ctattatata caagaatcat cggaacaaat cagtgtccag 120

aatatgttag agtattgcat cactgtcttt tggtcgattg ggtcgtatat tgtcttagag 180

cctattacgg ggtgcgtcca aggcatgtga tgatccttag actttatatt caatagtcat 240

tgtcaagctt aggttttggg tttcgcttta catcaatttg tcaatgaaca attattatta 300

tcagctgtga aaccctagtt tcaagtcatt aaccatacat ttatagttgt ctctttcgtt 360

gagctgcata ccttttgagt tattgcatgt atgctttgtt tcataggcta agattcttct 420

tctttgcagg gtcaactaga ttagtgacac agttgataac tagagtcatg gtgctatggt 480

tgtaaggttt tggtcttttg atttaaagtt ggatctttgt ggcgttccac caaaatgaga 540

gttatcgtaa cttgatggaa gattgggaac tccatcccat tagtaatggt gaagccatgt 600

tgtatctcca tgcaaacagg actcacattg atttatgtgt tgctactgca taccgctccc 660

ctaggccacc taaaactatt tgctctttga aagtttaagg atgagatagg gtctcaaggg 720

agtggataat ccacaaccct aagtcctaca cccctcaaga gaatctacta agagaaccca 780

tttaaaagga actatggatg gctagagaga gggattgaat agcctaataa aatttctaca 840

aactcaaaga cactaggcaa agtgtgttag taaaagagat aatcttaaca tccattaatt 900

gcctagccta gtagatacaa agcaaggccc atacctaatt ctagttgcaa taacaagtga 960

ttacgtactc aaccaaacaa ccaactagaa gaatcaccta gaaacttgtg aacctaagaa 1020

gaaaggaagt aagcaacact acgcagtagg gataagctaa gcaagcaact aaacaaacta 1080

tataagtaga gttaccaagc ataacacaag cacaatataa atcaaataat tgcaaagttg 1140

aaagtggaaa tcaatgaggg caagtgacac aaggaacttt ttactaagga tcgagtgctt 1200

gttaacaacc tatattatga cctttgttga ggtgggtcct tagatcacca cttcgctaag 1260

aatatggtag atatatcaa 1279

<210> 4011
<211> 1034
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133462_G1, chr4:9912310..9913343, Cluster 25

<400> 4011
agagcacgat ctaatacata ttggcatatt ggcatcgtat tcaccactat tgtaagcaag 60

ttattctaac tcgtataagc acatgtcgta aaaccagatt atacataaga tacaaaagat 120

atatagaacc taggtgcaat ttggtgtgag gtggttagaa gaagacaata gatatatgta 180

cagatataga tgagaagaga agagattaag tttgtgcaaa caagaccttt catgtacttt 240

tctccaattt tttctctgta gataaactat gtatagttag ttactacttg tttgaactac 300

tccctacaag ctataggcca aagtctttat atgtaaacgc aattaagtat gattctacat 360

atttatgcaa ggacattaga ctagtcttaa ataatatgcc attaaaagga tgtagacggc 420

aagagaagag tgaatatcat ataaaagttg ttctataagc ttacaattat tactagagta 480

aagttgaaat ttgtataaaa gctagcatcg aagcatatat ttgttctagc tctaattctc 540

aatatgtaaa ccttcctaac aattttagtt gctaatataa gtatctgaat agatttcaca 600

tatcttagca actacccaaa tttactataa agaaaaatac ttcttacaca aaagacctct 660

atactctata gatactcaag caaataaaaa cacaatgcta ataatatgaa tgcacatgct 720

agtgtgataa cttataaaac caaatcgggc aagagcataa atacaataat attatctctg 780

agatccggtt gtttgtcggc aacctatgtc ctcatcgtgg tgagtcctag ctagatggtt 840

tatgctctat ttggcatcac atgccaagca tataataaag atgatgtaag aaccactctt 900

agagatgcac tccaacaagc caactgtctc tttatagttg ctcttcgtga atctcacacg 960

ggaaatgagc ataagaggct aagagcccct caaacaataa tcatagttga caataatcac 1020

aaaagacgct ctat 1034

<210> 4012
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133947_G1, chr4:11835466..11836507, Cluster 25

<400> 4012
agcgtgcgag cactatgaga gaaataaagc gatgtgacta taggaatgga atctcaatgt 60

caagatttgt tgcctagctt gccacatttt gcctatcgtt ttctattgaa agctaggttt 120

tcaatttggc tggctagttt tagtcaaatt gtggtgcaat tagccaataa ccaaataggt 180

gttccttata ccatcaacat cgacgccatg aactatggcg ctaagatact ctaacgttga 240

ggccaatatc ttggcattag cgtcattgat ctataatatt acaacgctgg cctgaggatc 300

caaacactct gctagtttcg ctagagctgt aaaaataaaa tctctttcga aaaaggagtc 360

gaaatacaga aaatttggtg cagctctaga cgtagaacca ttacacgcaa atatcggagc 420

aaagaacaag aggcaccgta ggtacccagt ctcgaaacat ttgcatatgc tgttattagt 480

tttcattcca agctatagct atcacaaagc gaagcgagca agagcgcaga gtgtgtaata 540

attattggga tgggccccgc tgggaaccaa aagaaaaggc gaggccccac gcgggagaag 600

gacgtgtgtt tggtgcttcc tgtgatggga tgcgactctc gctttctcga gcccaatgag 660

agcgaaagaa ccatttgcag tgacataata tataatgaat tatatataga cacacataat 720

attccaattc caaacccatc cacctctgcc gctccaagtt ccgccccctc gaattgccag 780

agaaacagaa aaaactgatg gacgcggcgc atcaaatcac ccgctcactc cccgtacgtg 840

ttgttatacc attcgacgct gttggcgatg acgctttctg agattcgtat atttaaccac 900

gatattaaag cgacggacac cagattttat gatttgatgc ccggtttgtt ccctaaaaga 960

aaatgttctg catattagat tattagaaga ggagctacga aattgcgatt atctatcaaa 1020

ttttttcttc taacagattt tg 1042

<210> 4013
<211> 1144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134544_G1, chr4:14707946..14709089, Cluster 25

<400> 4013
accggtgtca ctaccgactc acctctccat ccgcctatcg ccgcctcctt tgagtatcca 60

tctatcctcc attgaatcca tgccccaaac caccctagta tcctaactct aacgtcgcta 120

aagcaaaaca ttgcaagaga tggagaatat gggcccaagc tcgccgggga tggggaaaag 180

gacattggat ctcacgggga gatagggaac tacaagttgg agaagggagc aaaaaatttg 240

gatgcaagtt cacttcaaaa taccaaggta tcttatctcg tttcgtttct ttatccatag 300

aggtggtcaa atgacatgcg aaaatgtgtg gctaggtatt gaaagaattt caagaattta 360

tttccacgca tatttttgtc tagtgaagat ttttaagttg actttagtct tccgagtgtc 420

cattttagtg gagcatgtgg ggaactgttt gttatattgg cgaaggaatt aggtttggac 480

tcagcaaatc gtgttatgta tattactgat gatgcactag tgtattattt caaatacttc 540

aatagaaatt gccaatagat tggcaaagat gaatttagat aaaactttct ttgttttcaa 600

aaaggaaatg tgtttctcct actttagacc ttaaaaatta gagacaacga acaatctgtg 660

catcacttta tgaaatgcta tccttttctg ttagacatac taccataaaa gtagtaataa 720

gacgtatcca atccaatggg cagggtaggc cctgatatat tgctttgatt ttggtctctt 780

gagtgcatcc ttatatttgg ttcacatcat gagatgacgt cttattgcac agtagacgaa 840

ggaatcttaa gcacgctaat catcaacacc atgtccattc caacaggaac taaaggcaaa 900

aaaggctaag cttgcccact agcgattgga tcccgaccac cactagcttc tttgagccaa 960

tctattgttc caactccagt tttaagggta cgactgccag acgtacatat agcgtgcaaa 1020

aaatgttttc accataaaat gcagtgttta tagggtagag atcgaaatac aagagatgga 1080

tgagtaagct gttgaatata gcctaagtaa attggcagaa tatttttctt gtgcagtttt 1140

ggca 1144

<210> 4014
<211> 1141
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1416_G1, chr1:7428017..7429157, Cluster 25

<400> 4014
tttaagaata attagctttt ccctcgccac ttaaccaaac caacgatgtc ttctacgatg 60

ttgatcaagg aggaatttct ttcatacgat cagacccagt cttctatgca attcatgaaa 120

aatcttggca ttcttgattt tattcctcaa gtaactccta ctttccttgc ttttggtctt 180

ggctcactcc ttcctacaaa taccattcgt ttgtgatgtg gccacaaaca tagtatagta 240

gagaatttgg tgttatcgca taaacattta agtaaagttg tggaccaact gtctaacata 300

gagggggaaa acagtgtgac ttgtattcat cgcccaatgg tactcaaccg atttcaattg 360

cttcacgatg tggttgaact cacttatatt tccccaacat tcaattgata gaagtagtag 420

ttctttcatt tcaggatatg tattatgtat atatagcttt cgtcctctag ttcaaacgaa 480

ctttatctca tgcttcgttt atttcacctc aaaatggcct aaagttcagt acgaactaat 540

agactgaaga ctagtttgga agggaaagaa aaagggagcc taatcttaat ggggggtttt 600

atgttccaat ttctaaagtt cacataagtt gaagacatat gggtaggcac ggagctcatg 660

gtactatttg ggaatgacat tgagattttt tgcatctttt ttttgaaatg cattgattta 720

ggaatgaaat tgagatagat gcaccaaaga gactgtcgtc ccacctaaaa actgatacta 780

tcttcctata atttggtttg tctgacaaat ctcaaatact aactctccat tttagagagc 840

taatgcaccc cacaatcata cttcaaatat ttagtgtgtt tcctctatac aagactagag 900

aagtgaggta tcaaaaattt ccattagcgt ttggctatgg taagacattc taaaagcaag 960

gaatcaacca atgggcagta gcatggagtc ttaatcatga caaaggatca agtgattttg 1020

tttatccatt aacatgttct cttcttgtag atcttataac aatgcaaatc ttatagtatg 1080

gagtttgagt gaagattggc ttgaggctga agttgagggg gttgtttctc ctcctcaaac 1140

c 1141

<210> 4015
<211> 1157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_143777_G1, chr4:68751867..68753023, Cluster 25

<400> 4015
tatagtggga cagggccact atgctcctag tttatttttg tttagattga ttccatatat 60

ggcgaagtgg ttctaaaaat aaaaaaatat gttcaaatgt tgaatcattt gtctcccaaa 120

aatctcccag acggaaccaa acactatctt agtacctcat ggggcttgta cctaaaatag 180

ttgtcacttt tcagttaaag aaagctttat tgatttcagg taataattaa atcaaaatta 240

aacaatcact ctaagatcat ttcttgacca ctacatagtt agggtgcaga aaaacgataa 300

ttattaaaga ataacactac taagtgatgc acctctatca atgtcagttt caaaagtaat 360

tggataggca caacaataat tggattcaga tatgtggcac taagcatttg atctttaatt 420

cttggagcac atcaacatga ggacatgtct aacatcaagt cagtgaaaac aacaaatcaa 480

ccaagtaaca atgaagaaca taaaggcagt aacaacaggg tgtcaagatc atcaagtcag 540

ggaacaaggc atggtagtaa cagtaggggt gtcaagaaaa acaagtaaca tgtatcaaca 600

acataacaac aagtgattgt actccaagaa accatcattt ctgttcattg tcatcaaagt 660

tttttgttcc aacaatttaa ggcaacaatc atagatatca ggaaaatact atttcatcac 720

ataattgtgt gccaaaagga tgtttagaag attacataaa ccatcatagt tcatgatgcc 780

actatcccca cacatcacat ggtatgacca agccatatga catacaaaat cagcaggtgt 840

attagaacca cctaaattag caccatattg ttcatgatgt cagcagccgc acacatcaca 900

tggtgagact aatccctatc ctatacaaaa tagcatgggt ttttgaacca cctgatagta 960

caccaaagta cagtttcgat ggtgtacata caccaatgag caaacacaat catagggaag 1020

tagtgttgtt caatgtatgc ccaatatcaa ataaaaacca ctgacagaaa gatagatcca 1080

atactgccaa accaaccaga tgatggtggg aggggaaggg ggagtgcaaa ttttcagacc 1140

tggtctgtgc ttgagaa 1157

<210> 4016
<211> 1313
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15558_G1, chr1:85999364..86000676, Cluster 25

<400> 4016
atgaccatca tgaaaattga agttgaagga catgctttcc gaagaaacta ctaggactaa 60

gaaaaaataa aacgctagta gatgatgtca caatcacaga tatagtaaat aagatctgat 120

aagcactaga tatataagga caagaatcta tccttttctg gtgtactaaa aaatctacat 180

agaagacatt catgtttcta gcaaaaactt tagaaccctt gactcggaaa ttagatcatt 240

tacctcaaca tcagatgaac catgcaaaga gaacgattct acaaacttag tgcaacaatc 300

ttccagctca acttcattta gcgactttaa agtttatgag atcaacaaga acgcaaaacc 360

caaatatact tttgaatgcc tgaagttctt caaatccact tttcaacaaa gtaattgcca 420

tatcaaccat atccaagaag taattaactt caaaagccat tccaacttat aaaatttctt 480

catgggaatc aattttatca aagtgtttct tccttttacc ttagtggttt atcggaaatg 540

atggttcgac acccatttca gatataatat tctttgatgt ggccatacta gaagcaaaac 600

cttcattcct ataattacca aagtaattca tcatatcttc tatttgctat aaggtagtgt 660

caatgcatat agatggtgat tgtaactttt tgctcatatt atttaaagca aataaaatgt 720

catgtcaaat aatcatacga agtatgaact caaaactatc aagtgcatgt agtgttcgtg 780

tattcgtatc cttgcgctgc aattgtaaat tgtgttggac ttcagtcccc agactccagt 840

agagagtggc atagaacaat tgacgaaatg acgatgaaac cataaagaac tgagagctcc 900

atagtttctt tgtattatcg tttctttcct ttggattcaa tggtaggaca ttggcatgct 960

ttagtttttg tccttttggg ggtttttttac tagacaaaaa agatactaat ataggaaagg 1020

tagaaggagg agcttatcag atttggagat ctacgacaac cggtttggtg gccctctacc 1080

caaatctagc cataagttag ggttaggccc tagttagggt ggtgtgtttg tgggctgtgg 1140

cgacaacgtg aggaccagga gatgggaaat tcaccatatc taaaacacaa gttacttccg 1200

aaatgggtcg tgatagcatc ttattgatca taaaagtttc ttattttcct aaaggatgtg 1260

cagtgcatag agttatttct ctctctcctc ttttataaca atatatacgt aga 1313

<210> 4017
<211> 1227
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155814_G1, chr4:151517609..151518835, Cluster 25

<400> 4017
caaagtgtgt tctatagcaa caatctataa attaaagttg tcatagtgtg gcagctttat 60

ttagtctctg gtgggttttc atagtattaa atcaaaagat gcatgcttca agggtcagga 120

cttaggacgt actggctagt tttacgtgca attagagttg aaaaacacgt gaaatgtttt 180

aagactcgtt tttgcgttgg gtcatactat ttggtgagat atgtaagacg agtattgttg 240

gcatgtttta gccttctagc tttagattac ttattcgttt ccaaaatgag tgtacctcct 300

aacaaatctt agatttgagt cgaatttata gagacggtat taacatttat atcactaata 360

taaatagatt ttaaaggaaa gaaatcgaaa cgtacactcg atagttctac agatggttct 420

ctagttttaa cctagaattc ggaacaattc agtgtgtgtt cgtcgctgta gatctagatt 480

ctagtatata agtgtttcga atctagatta tctccgagac tctgaaaaca atccgagtga 540

atgaagaatc agaatcactt cacgaaattg tttggattga ttgagataac tgaaagagtt 600

ttattataaa aatcattttt tataaaaaac acataaatga actatgcttc aaaaaagttg 660

tatttttttt gttgaataac aacttcaaca caaccatttt aacacattgc actaaaaata 720

ttataattta aaactatata tagtatcaag attagaattt gaaatcaatc ttgtggcgtt 780

ttgagtttca aagaatacaa cactgcaaag gttgcgtatg ggaaccaaca atttttcata 840

atatagaaag caaaacattt ggatatatag ttgataaaat ttatctgata ccgaggatct 900

ctatgaaacc aaacatgacg gaagtttctc cttagattca tgtttgtcac agattcaacg 960

gtcgttagac tatatccatc aacttaccta tccatatgtc aatattcaaa catcactttg 1020

tgaacaatgt agaacaatgt aaattagtgt tttggataac tatatagata aactgttgga 1080

cacggttaga atcggaactg gttcagtcct caagggccct atgtgtctgg atcaattttg 1140

aagtcaacta gactatggta gccacacaag ttgttccctc aatggagtta gagagccaat 1200

tactttaaac tgataatgac tcttttt 1227

<210> 4018
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156007_G1, chr4:152444201..152445296, Cluster 25

<400> 4018
ccaaaacaac ttataatttg gacctagagg gattcaaatt tattatagca ccatagcaat 60

caaatttatt gtagtagtta acgaccgata ttatatttat tccttgttat cgtcattgat 120

gatctcggcc attaattagg agtgtgccgt caccaggagt ggaggaccta aaagagggcc 180

actgcagcag cagaagggat cacacccgca gagaaaggga gtttgccagg ggagggacca 240

acattggagt aagggtagtt ataagcatct agatggctaa aagatcaatt gcctattttt 300

ttacaaaaaa caaatactag tacaaaattg attagtacaa ccgaggttat aattgaaaat 360

actttgcact agatgacaac accaacaagc tactagttag aactaattac acttgagagc 420

ttctaataga agcaactaac aactagttac taaactaagt taacctacaa tagtaagcta 480

cacaagcaaa tattacacaa ccaaccacaa gatacaaatg taaagagcaa ggttgaagtt 540

tgcaaactaa ccagtgttag taaagacaca agatttatcc tcaaagttcg gtatatttta 600

gataatctac atccttattt atgtgctata actagcacgg caagctctac ccaaaacttg 660

ggtgatgcaa gaatcaacaa agtggtgcac tccaactggc catgagcatt tcattagagt 720

ttctctttgc gatcttcgac acggggatga tcacagagac cctcacaaga gcttgactcg 780

agccgacaac aatcaccaat agcggttcaa cgatccttct aaccctaagc tggctaggtg 840

atggcaataa aaaagagtaa tataacaaga gaacaaccat cagctagcca gaccgcaagc 900

tactagtgcc acgagatgca agcataataa tgggttggtt ctagatgtat cctagtcgtt 960

gaggaggctt gtgagcagca acatagagct agctaggtca cattccgcta ataaaaccaa 1020

gagctttcat cgttccacac gtattatgta gcgaacggag agcttaattg tgcaagatac 1080

catgaacatg gacatg 1096

<210> 4019

<211> 1075
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157280_G1, chr4:158472395..158473469, Cluster 25

<400> 4019
tcagaaccta attgtatgaa tcatacacag ctgaacctcg aatcatatgt ggcaagaact 60

catttttct ttagatttta ttcgttatac gatatttggt cgtaaatgga ttatgatcac 120

atgacttgaa taagatattt ttcatattca ttgtttatgt tgtagctacg aaatgcttta 180

aattatgttg tgatttttc gtcgttgtgt tacaacacct tgattttaac gcgttcttta 240

cccatacacg tgtcgctgcc acgacctgct ccacgtggtc gagctgacac tcgtgtcgtc 300

gccgcatagg ctggctagac tgctcctgct atggtatgct gttccattta ctcctgcttc 360

ggtttggtaa gcaggaagtg gtcagccact gtcagaccac acacatatgg taggtgagta 420

gccaccgcta ggagtcgtgc ctcatgccat actttccttc ttcgtctgta taggggacga 480

agttacagta ggaagagaac agaggaggaa gaaagacttt ttgccaagag atgggtccat 540

gcattaaagg gcatgatgct tcttcaatct atttgagtac ttgtcccttt taatctacaa 600

ttcagttttt ttttcaatct aacatcttaa aggttaaatt ttaaaaaata gaagattatt 660

atgatagaga tgctctctta ggccgtctcg aaagaaatac ggtaaaactc gatcaatcat 720

atacggatgg agcacttttc ttcaacggct ttctctatat actccttgta tatggggaga 780

aagaatttct ctacttaaat tacatcgttt atttatgata ttaatcctat ttaaatcttg 840

taacatgata ataatattat agtagtataa ataatgtatg atttttaaa aaaagttaga 900

agtggtaaat aaatgttaaa taactaagtt attgtataca ggagagttgt atagttagaa 960

tggagagttg taaaggcagc atggttgaag acaccgtata tgtagagaca aacttttatt 1020

tgaaaaatac gtataagtgg agatttaaaa agacaatggt acaaatagcc ttatc 1075

<210> 4020
<211> 1057
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157716_G1, chr4:161161588..161162644, Cluster 25

<400> 4020
gttataagaa agaaagactt ataacaagtg actccgtgat atatactgat agcatcgtag 60

gtaggacgga cgatcatccc tgaaagcaag tcatcacaga cgatagctcg ccaagctaga 120

ttttcgtgct gtcgtacagg tctaaaagga tccttttgtt tgccttttc ttaaatgcta 180

ttaatttgat atcgcgagat cttcacggga ggacaggagg atagtctgct ttacacctag 240

gttaagagcg acaaaggctt ctgcaagcta ccagttgttg cgttgggga aagcactcta 300

tgtctctatc caggtccagg aacaaaaaag ccacgagagt catttccttt aaaaaaaata 360

agaagacaga tagtagtact agaagaaacc tggtgcttta ttttaacaaa atgtcctgag 420

aaagcagaag taacgagatg ataaatggag agctgaaaag tgaagggaaa gggcgttttt 480

tgtttggtgt gaagagtgat tctgaaccct gtttctttcc caaactactt ccaagaggga 540

aacccttta actccaaaca taaaaataat aataatattt gtgttatata attagtatca 600

ttgaatggac tatcgaaccc gtttttacaa tagctctatt agaggtataa atattattga 660

tattttcttt atataaattt ttaatcaaac ttcaaaggtt tggccagtat agcgatactt 720

attactagaa aaggaatgtt tattacttgg ccaactgtac tagtatcgta ccgagtagca 780

gcagctgtca tttgcttcga gaaaaaaaaa cagagagttt gcataaataa tgtcctgtca 840

cccaaaagac acaggacagg agtatgctat gatgatgaag ataccggacg gagccaggta 900

cagtctgtac gcattgcagt ctcgtatcgt agcgacagtc agcccggcca agaaagaaca 960

ccctggcgcc gcggctcccc agtccccacg ctggaaaggt tttgaatgag aggcaaagca 1020

aaggccccgc cccgcggccg cctcgccacg cacatgc 1057

<210> 4021
<211> 1218
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15964_G1, chr1:88514434..88515651, Cluster 25

<400> 4021
tgatactatt gattgagaat agcctaaata tggatcggtg atgtcaagac tcaagacaat 60

tggaacgtgg ttcaatgtgt ggaacatctg ttgatcacca tcatcacatg agtaaaagcg 120

accagctgct ggcaccttat tagctcgtta tcccgtggtc catgatatgt tggtgttatc 180

atttattagt caaaaactgt ttcagttcga gtatacactg tattatttct ctttagttct 240

caccggtgtc tccaatcaag atctttcaac gaaaataata aactactgtc tccaatcaag 300

attttattgg tactagaatt atcttccatt agtaattttt agccaacgaa actattagct 360

ttggtttatt caaatctcta ctattataac gtggaaatct gttctctcgt catcctgttt 420

gcacccaagt tcgctacaag cacaactaca tgccttacca cctgaacaca tatttgtttg 480

tgttatataa agagtgacat tataaatata tatacatact attaattaga aaacaaaaaa 540

aatataatca tattttaata aatatatcat ttaaataagg tatacctata tcatagaagc 600

ggtaaatata tggacgacta actagtatac cattcatcta tccttgttct tctatcgaga 660

tcagtgtatg cacgtagcca acaagaaacg gcaactgatg ttgccagtcc aaatggcatc 720

tggttcctgt acattttctt cagacgagac gtctttaact tgagagactt ggaaggcagg 780

attgcatgta taaaaaacgt tcacgtcctg tgcgtcaata gatgtggtca aatcacgctg 840

cgccccggc gttgctgcac caattaataa tcaacatgaa taaatatccc acccataata 900

aagcgacgga ccaagcaacc ccccgccaac tgtttaacta tagtctatag ctagactgat 960

ggagacgaac cgcgctaata aacgtttcgt ttcaaaagtt ccaaccacca ataatcccac 1020

ttataacgga tgaaacatgc atatggtcgt acgttcacat cagattaata agagattaac 1080

agtagaactg tgcacaatca aaaggcatgg gtccgagtac tgtacttcag ttgatgctat 1140

gacatatata taacaccttt ttcgaatatt ttaaaaatgg cttcatctct tgtttgcgag 1200

agacaactta ttactatg 1218

<210> 4022
<211> 1175
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_165424_G1, chr4:204679197..204680371, Cluster 25

<400> 4022
cgtgtaatat gctttggatt tcgttcatgt accggaaaca aacggaaagg tgacgcaatc 60

aaggagccag ccagatgaac atgaacactt gtatcccgtg attagaggga ttgtatctcc 120

gtgatgagga ggatttaaca atgtatcttt ttcattttca tagatcaatt aacaatcaat 180

tcaaaaaatc tagtaaaaaa gaattgatat ggatcagact tgttcgacgc aagcaggacg 240

gatgagataa acaactgctg tggtgccatt ttagtttgtt tttcctcatt aaattgacta 300

catatgccac gccatttttg taggtgccag gttggcctaa caggatagac ggactccata 360

taagtatata actaattaat tcattgtgtc taaatagacc taactaataa cttagttaat 420

tttagtagaa tatctgatca acggaagttt cactacttaa aagaaataag ctaataagta 480

gctagctaac aaaataggtc taaatcaatt gaagctttac atgcctcgtc cttaccaaac 540

ttatctttgt gtcatataaa taatttgatc aagttgatta tcaaatcaaa taaaaatgac 600

aagttaccac atcttggtaa atatgtcacg gactcacggt gatcgatcgg tgcgtaaaag 660

gtccgtatgg tacagcacag acagccgatt gctgaatttt tgttgcatgt cagatgggac 720

gtaggaacag cttgttcagg gatgagatgg agaatcccac tcagtcattg ccagatcatg 780

gcgcacgtga tctgcacggt agtggtgtgt ggtgaatggt gatagggacc gcgtgagaag 840

tgcgtggctg tgacgaggac cgagcgtggt cgcaaagagc tgccgactgg atgacagtaa 900

gaccctacgg ttggagactt ggagtaccgt cctcgatccg tctctatcga ttgtctagtg 960

atatatggta cggtttttat tggtttgtgt cattttcta ataaaaaata aaaaataaat 1020

cctggaactc agtctataaa tagaggagtg tttgattatt cacacaactc aaactttgaa 1080

tttctattcc ccctcctcat attcatctca tcctcatttc acctaagcta agcgttgttg 1140

tgatgccttc gtttagttcg gatatcgaca tgaac 1175

<210> 4023
<211> 1381
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172493_G1, chr5:727610..728990, Cluster 25

<400> 4023
aaagactctc tctttccttg agattcttaa ggtggacaaa taagcaagag agcacagata 60

gatgagacag atgttgtata tatagcccta tggcatggaa ctactaattg tgcctccact 120

caactttcac gagctcatca cacatgtcta gtgtcactag atcctcgcac cagatacatc 180

tagtaaagat ttaatggcta gtttttgaac tagccattat tgcactagaa tatggtgcat 240

aatgggtggt tcttatcaga catgtttggt ggaagcattg cctcaaaatc cacgacctta 300

agcctctctg aatttcctat tcaacgggga gttcggtgca ccaccgagca cattcgatga 360

gtgcattggc tcctccatac actttgcaag cttctattga gtgtcatgtt tagtgcacca 420

tgaatgggtg cacatttaca catcgatatg attgctttgt aaataagaaa ttgttcataa 480

ttgatgcaca tcagacatgt ctggtgcacc tatagcacca ccaactcatc ttattcaaac 540

actctcttga gttggatttg attccaaact tctctcaggc ttccacaaat ccatctagta 600

ctatatttta tatgtctgca tcaccacata tcactagact tacctaagta aagctaccaa 660

tccatgccct cattcatagt atggccagag aaaaaacaaa gatcctatca ctattctaat 720

tatttatcaa ctccatttaa cacttagaag tagacaatcc ttacaaatct ctctcatcat 780

ttgaaatttg aaatttaata cctatttttg gtgaagacac aagaatacct aaggtatcag 840

tgggaggatc attaggggga gcggggatga gtcctagtaa catagagtgt gcctaccaaa 900

tcatgacatc acaggcttaa cgacatgagg gaacttgtag tggttcccta caccctcttt 960

ttgatggtgg ttttttatga tgggtccttt tttatgtccg atgcatggag tttggtgcac 1020

acggatagta ttgtgctact tgaagaaaca caacacatgc atcaaatgtg ttcgatgagc 1080

tgttcaatct aagacatggt attctctgaa tgtacatttt caacgatttc tttgtgtatc 1140

ttttagcaaa acgagttctt attcaaataa gaaacaaaca accaccaatt aggactagta 1200

ttagtgacct atctcaaagc ctcaagattt aaaatgattt gctttatgct agttatattt 1260

ttatgaacat aagaaataaa gcgggagagg ggacattgtg tcatcactca atcaaggtct 1320

caactattag gaatgtgaaa tgctccccta tcaatggatg ataaaaacgg atcctcgaac 1380

t 1381

<210> 4024
<211> 1204
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172937_G1, chr5:3163315..3164518, Cluster 25

<400> 4024
gatcagaccc atgcagtggc aaaatgaggt atgtacgttt ggtttgaata atagaaatat 60

tttagataag gcgatgaatc gttagtttat tttgtaaact gagtgaaatg tttttattcc 120

ttacactact aataattatt agtttctaga aaaataagat ggctgtacat ccatcaaagg 180

ctagccttga gctttgtgca gtgcaagttt ttttttcact cgcctagaca acaagcccat 240

aacaatggtc atgaaaccaa gcggtttatc cggcttgccg gccggctaat tgataattgg 300

tgcctgataa caaaagtaaa acaacataat atataatatc aaataatatt gtatacgtca 360

gcatacatag gtctactgga gatagtttaa caaaatagcg tttggttgtt ttgatatcgt 420

tcgggacttg attttatgga tgcaaaagca gccaaaacag tctggctcct gataacaaaa 480

ataaaatcca tttctctaga tcgatgttta cgggatacaa gatattaaca tattaattat 540

gttgttagta tatgactaac atgattaaat acattgatat atttcaaagt aaattaagat 600

ttaatgggat aaaaataagt aatatacaac tgattcaagt aaaaatatat atcttaatac 660

ttattctcta acttaattta atttaatact ccctctattt caattcatat ttttttgttt 720

taatatcgtt agagactaga ttttatagat gcaaaagcag ccaaccagtc tggctcctga 780

taacaaaaat aaaatccatt tctctacatc gatgtttacg ggatacaaga tattaacata 840

ttaattatgt tgttagtata tgactaacat aattaaatac attggtatat ttcaaagtaa 900

attaagattt aatgggataa aaataagtaa tatacaactg attcaagcaa aaaaaatata 960

tcttaatact tattttctaa cttaatctaa tttaatactc cctctattcc aattcatatt 1020

ttttttggct tttttaccaa gtttgaatag cttcttttat tctaaaaaat ttataattat 1080

tatttatttt tattgtggta ttgtttaaca tatattattc tctatatgta tctctatctc 1140

ttctctacta taacaaaaca ccagtttcag cggtcattac acggatattt ttatgcctcc 1200

ggtc 1204

<210> 4025
<211> 1078
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173396_G1, chr5:5916546..5917623, Cluster 25

<400> 4025
tactcctatc ttgttttgtg ttgctaaaaa aacggcacgc cctatcttgt tttgtgctgc 60

taaaaaaaac gacacgccat agcgtcaggt ggtcctggtg tgccacttct cacttttcaa 120

gttttcatgg aggagggtcc tgacgtgttt ataatggcac gttgtcgttt cgttcagagt 180

ctggtggttt gccgagtctg gttgttgact tgttgttgcc tctccttaac ccttacctcc 240

aaaaaaaata atgtacctgc atctgtctac gtcagcgctt acggcagttc ctatgtcaga 300

agcataaaat aaggggcact tcagccgttg aagtttcgag ttctctactt ctctaccatg 360

cacctgacga ttcttcgctt ctgcttgtga gcaaaagctg ttacttaaag ctgagtaatg 420

accctgtgct ggtactctga tcgttctaac tagctgagag ttgggaccgg gttcagctca 480

cccaaaatac ttttttagt gcgtagactg tattgttcct agagtaaagt ttaaatacga 540

gaataaagat agataagcta ctagaaatag tctaagatgg aaatttcaga tgtttctctt 600

ttagggtcaa ttctctatat gtcattgaaa aatataattg ttctttatgt gtcattgacc 660

ccatatgtca tagacaccaa aaaatgtatc tatatgtcac ttagtgacat acaacgaatg 720

aatataaaat ctgaagatat actataaatt ttctttttt tctgttggaa cctgaacttg 780

ttcaactcct gtacggttct aactgcattt cttgaattcc ccttgcagtt tggaggtcat 840

gcctgtgcac ggtgcaagac gtgaggtcat gcatctctct cttatggctc gtgggcggcc 900

accacgtgag gtaatctgtg acctggattg cgaatgggga agctgcgacg aagcatcggc 960

ccaaccacca gaggctggtc aatgctagcc ttgctttcct tcgacgtgta aagaggtgtc 1020

gtcaccgtca ctgcaacgtg taaaatctag cggatcgtat gtgtgagaaa tttcagtc 1078

<210> 4026
<211> 1127
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174030_G1, chr5:9886806..9887932, Cluster 25

<400> 4026
aaggtataat gatatttaaa cgaaacctac tcgatcgata gcaaaatagc aaaacctact 60

tctcgtagtg gcaaaattat aatttttctc taattgagtt gtacatatcc ttagttaggc 120

aaccaacaaa gagagcaagg attggcttgc tggtacttgg gtagcatata ttgtgtagtg 180

taaatgatgt tgctcatttc gatcagagta atttggggac ctgtgttgat gtgcatcatt 240

ttttgaacat tgtcagtagt gtggatgtat tttgaacatt gacttagtaa aaatatatat 300

aattacatcg ggtcatcgta acaaacctta gctctattat tattgtgacc ggtgatagta 360

ggacgaagtg tgtaatggtt ccaaggacat ctaccaatca taatatatat tgtaagaata 420

taagtatcaa ttcagccata aatgtagttg catagactag ataagtgtgc cctgttattg 480

ccaagaaatc tggttttgtt ttgatccaac gatgttaatc gatagatgta taatggaaat 540

atggtgggtg ggttccttac atgcttcata attttgtgga ttgtaaaatg agtatttatc 600

acatcgggtt tgaatgttgt ttttttttctg gagcaaccct gaaaacagtt gatgtcatag 660

atctcatttc ccttctatga ttgttctttt ttttgcaagt ttgtatatca acataaatag 720

atcactctaa tagtttgttt aattgtcaga aacgtatgga aaaatttgat tatttatata 780

gatgaaaaag ctttaaaatg atctagaact atttttttac tatattccat accttgtctg 840

ttggcaacat tggacggttt ctctttcctt gtgattggtt gcggcacagt ggcatcctgg 900

cttggcttgg tcagtaggct ctatgtggct caacttggtg tttttgtttg gttagttgtg 960

cagactcgtg taaactagac atagacttta tttggttact tacactgacg tatattagag 1020

aaagatgcgt aagtaaaact tcaaatacta tatagcatga ggggtctagt tttgttcgtg 1080

aaaatcttac aaacataaat atgaaatcgg ttcgaggtta aatcttc 1127

<210> 4027
<211> 1157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174960_G1, chr5:15099173..15100329, Cluster 25

<400> 4027
ccctaggacg acatatggcg ctccatgaat ggtctcatgc atacaagaac caacgaaaca 60

ttgttgatgt actctacttt tagttagtgt taggttccag agtacggtgg gactcatcca 120

atccatttca aatttgttgt tgtttaaatt ggttctatat agaaccgttc catctcggaa 180

accaaacact agcttagttt ttgctcgtgt gatccgcggg tcggtctggt cgatgcgtaa 240

gggatgacca aactaaacgg tgcaagaaga tgcaacacat gctcaaacat tcgttcggct 300

gctgggtttc gcgacaacag ctactgctag ctgtcgcggt ggaaaagttt gcagctacag 360

tgaaagtttg cagccagagc gctggaaata tgcagccgac ctgtactgtg tatgaaccaa 420

acgtcatcgg agacgctttt gttgttgaag ataatgcatg gtagtctcca aatggatggt 480

attaattgtt tgagttggcc ccacggaaca gacggtgggt ttcggtctca gaaactccat 540

tgcacacagc acattcatat tcgccaacaa caatgccttt ctgttttgta ccggaggcga 600

tcgtgcgcag cagaagacat ccggatcagc agcaaaagac aaaaacagtt gtttaaatta 660

ctgcagctgt aatttgtaaa gataaaaccg ctacagaaat ggtataaact ggtacagatt 720

aattaaagcg ggcccagata ctcaagacga atttgaatac tagtttgata tacgtactgc 780

atgtttgtcg taggcactat atatatcgta cgacaacacc agaaaattga attcaggatg 840

atctcctata tatttaccga tagcagatag atagcacctt tctctctacc acttcctcac 900

actgtcacac acctgcttga gaatcggcta ttttgttacc gcatatgatt aaagtgtaag 960

catgcgatta actcttgatt aagaaataac ttttattcct ctcctattaa aacgtaaaaa 1020

ataatatgtt tagagttagc ttataagtag agctcgaccc atttacaagc tcttgagcta 1080

gctcgaaaac cagggattaa aaagtatgaa gatcatatat acatttatat gtatctatct 1140

gaagcttgaa aatacta 1157

<210> 4028
<211> 1086

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175599_G1, chr5:18782242..18783327, Cluster 25

<400> 4028
aacatcttat aatttagaat aaaaagaaga agagaaaaag gcttaaataa tacgtatagt 60

gctccactga acgtgtgtgc tgctcggcat ggtaataaac tgcctagctg cctctatgaa 120

tggggaattg taacaaaatt ctgtaacaaa cttctagaga aatcgtcttc ttcatagagt 180

cagccccatt tctctcctat tcatggctgt tcgctttaga ttaaagccga ttgtttagac 240

tgttgcaact acattttata aagacaaaaa cattatataa gtagtagaag tcggtacaga 300

ttaaaatcaa acaaactagt gagtgccatt atatttcgtg aaccaagcac tatttcaata 360

gatttcaagc gagaagcgac gatgaaggaa acactcaata aactgagagg actcgaagct 420

cggcggctga ccgatgacaa atagttcaga tctttggtgt tagagtgctt ttacaaggac 480

tagtactagc tgtaactcaa acagctcgat gcgctaaagc agatgagata cgttgtggat 540

tactaaactc gatttgagaa gctggctcat gaatttctcc ttcacaataa cgctatgatg 600

atgtttactt cgtcattcat tcgctttgtt acgggtcttc gagatgacat taacaacatg 660

catggtatcg ttgcatgccc atacattgtg gatagccaat gctttagctc tatgaggaac 720

cgaacaatac tacaatgaag tgctttgggt aggatttcac caaaggaaac tgcaaatctc 780

atctgattta gcagcacatg agtcagtagg ggggagatta agcaacaatc tcctcgtact 840

gaaagtgatg acaaacttca ggtaatgaga ttttcccgta agaagaacga catctgattc 900

aaatgctgtg acaaatgggg ctccaaccat acgtaatcgg gacaaattcc cctacatgta 960

caagaagagc tactacatgc aatcgggcct agattctgat gacattgttc tattccgaat 1020

gatatgacac cttagtggtg gagtgaatta gacaatctat ttctcacata ctgatgtctc 1080

tgtttt 1086

<210> 4029
<211> 1130
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176815_G1, chr5:24690969..24692098, Cluster 25

<400> 4029
ttgaggtttc atctcactgt tcacaaaact accatatgtt ggaaatgttg gtaacttttt 60

atttcataaa atctatttca gcacataatt tttttattat cacatatctc tccattggtt 120

tcataccgtg ctaatttatt taatattgtt gtggattcgt ccacacaaaa ataaatttct 180

aggttaggat ggggtcagca tattgttgtc gcgacggctt tgttcttagt gagccttagg 240

aagaaagttt agagtagttt ggagagaact cctatatcta gtatggtgtt gatgtctttg 300

ttggtttcgt gagttataat gcagagcatt tggctctcgt gcttgtgtga ggaacgttac 360

aaactaagtt cacatacctt ctacatggcg gccttgtccc catgtatagc caaggagcaa 420

gagacatgtt gttatatgga tgtttttatg ggatgtgtta ctcttgtctt tggacgcatc 480

actctacaag tgccttccta aggtatgccg cgatgaatac gtctgcttca tcatccctaa 540

gctgacccag ccatccttaa gttgggcgaa ctgtgggggt ggttgggtca tgtatgtgtc 600

caagttcctg tcatggggta cacctctaca atcagtgcgg gtatttttcc ttgtagtttt 660

ctccctcttg cttctagatt gtttagctct gttgactttt ttcacctaag tcagagtgat 720

tgggtaatga gccatcagag tcctttgcat tgttcctgct cctatcttgc gctagaggca 780

tgtgctaaaa agttagaggg tcacaaatgg tgtagcctta tatgatccct tttattctgc 840

tcagtctgta agggaagtgt gacgagtcta ggaagtgcga ctagcctagg agaaactcga 900

ctggcatgtt caagcttggg attgactagt cgaggatgga atcgatttgg gaggatctgg 960

gtcatgaggg accttggcca tggttgagtt tgatttggtc ggggtaacca atttggttct 1020

agcatggtga gaaggtctat gtcgggggaa ttttagtcgg gttgctacta ctgggatttg 1080

gttgagatga catgaccaag gacatgtcta gatatcgttc atgttagagc 1130

<210> 4030
<211> 1171
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177462_G1, chr5:28118926..28120096, Cluster 25

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(163)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (150)..(150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (151)..(151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (152)..(152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (153)..(153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (154)..(154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (155)..(155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (156)..(156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (157)..(157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (158)..(158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (159)..(159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (160)..(160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (161)..(161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (162)..(162)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (163)..(163)
<223> a, c, g, or t

<400> 4030
gtgtaaccaa acacctccaa aatcataggg ctcgagaatc tccagagcca gccccccccc 60

cccnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnngcattgt aagaactgca 180

agaaaaaatg taaaaatttg gggaggtgtt ttttcttctt aaatttagct cgcggacatc 240

taggggttaa tctcacatag accgtggaaa ccaaaatccc accaactgga ccagaatagt 300

gtggttttca aatcttcggc gggagaaggg ggctattatc ggggcacatt taatacccgg 360

gacgaaaggt caaaccttag aaaaggccgg gggtaatttt tagcggggcc ccgccaacac 420

ccccaaaatc ataggggcga ggatttccca aaaaagcccc ccccccccccc ccccccccct 480

gcttcccttc cttcctttct atctttcttt cttgtgaaac ccttttcctc gtccttttg 540

tcttcacttt ctctacgatg atgatcatgg ttcttgtttc cctcttagct tgttgctatt 600

cgtcagtcgt cacagtgtgg atgttaggcc attactgctg caaagtgcac ctctgtttat 660

ggacgaccat gaaatcatga ataccagttg actattatat ctatctatat ctaacagaaa 720

aaaaggtatc ccatttaaat ttgtgattta ttacgaaaat gtaacggatg gatgctgacg 780

ctctaacgca ccggccggca tatactatta cgttcccttt ccaagctaga cgagactact 840

actacgaata tatattctct cggttctaaa ttatatataa atcgtttgaa cctttttta 900

acgtacctaa tttttactgt atataattat tatacatgtt agtttatcta tatgtaataa 960

taacttttta acagctacca tgcacgcact cgacttgtac cagggttacg acgatgcgtg 1020

atgactatat tttgatgtga ttttttttagt agaattggcg cagctaaaaa aaaatcggat 1080

gtgcgtgcgt gggggccggg aagggatatt acacccagta atttctgcaa cacttctcaa 1140

aaagcatccg aatcttttct tcttacacca t 1171

<210> 4031
<211> 1276
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177464_G1, chr5:28123309..28124584, Cluster 25

<400> 4031
ggagagagac ctttttcacc gggcatgatc taatctgaaa tagcaaaact gtaccacaca 60

cagttttgtt tattccgaca ggccccgcga gaacgatata aattgcacct tttttcctaa 120

tgggaaaacc tgtgacgacg ttccacccct aaaactacga cataactttg aaaaggtggc 180

aacacaaaaa tctagctcac ttttttttg agccaccatg gaatctcgcg tgggttaaga 240

aagggacgtc tccatcgcaa cggagtgaaa gtgatgttcc ggagagaaag ctattaaccc 300

atgcgacgaa acgactatat atgatcgctc tttgaacata tgttcacaac atgttcgcgt 360

gtttcgaaaa ttctaggtta tttttaagat ataatattcc tttgtcactc tctggtcgtt 420

ctttggacag tattatttgt gagatgtacg taacataagc catcgttgca catccactaa 480

cacttttct tctccagtat gtagtccatg catgcatttg tttcgaatta tacgttagtt 540

taaattttca agatgcatcg ttttactata tgtatctaga catagcgtat atctagatac 600

atataattat gaatctataa aagttaaaat gtggtgctat gtaagaatgc atgccccgct 660

attgattcat ggccgcctaa gccactttct ctagtacatg tggtgcagtg ctcccactgt 720

agatccagtg tctagcaact tagagcctct cttgggggcc tgctacatgc aaagtgagat 780

cataatcatg cagctattgg gtttggccat ggttctatca aggccaagca aattagcaag 840

aaaggcttac aagacgatct atgaggttgg gtcgaacgct tccaagttcc aatgttgaag 900

cgttgagagt tctcttgtag gatgttagaa atgagtcacg ctggcaaccg cgcggatgcg 960

caagcccgct ttctaggtca tgtcgttgtc tttatcttgg tttatctacc atttgtccat 1020

ttgtgtaata tcaaatttcg aataatgtat atgccaggat ggccgagccc atatgattgt 1080

tattctgtag atcttctagg acgataatat cgtaaacacg ctgtctgtta ggtccttgat 1140

tacaataata ctcataattc caatgtattc gagaaaaccg ccctctttct agaacctaga 1200

gtgctcaaat tatactaaga aaaacagtgg tcaaaggcac gtggaagacc atgtcatttt 1260

tgactgggcg cgctag 1276

<210> 4032
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177471_G1, chr5:28190080..28191114, Cluster 25

<400> 4032
tccttacaga aatgattgag ccaatgcttt gatcttgatt acctgcaaga atttttttaa 60

gtgcctaact tttgagaaag taaagggatt taaattttag aatacaatta agttatttgt 120

tgatatactg ccgtcacaat tgcaggaatc tggtgtcaga aaaaagttaa tacaatttgg 180

aaaataaaat aatggaacaa catcgatgga aaaaaacata tggtatatga tatgtgattt 240

tcattttaca aaaacatata ggatttagtt gaaggacatg tttagcttta ttaaaaattt 300

cataatattc tctatagata tacacaagca atctctacct aataaacata attttgctaa 360

aagagttcat actgtaggca gatctagctc accccgctac aacaacaatg ggtttgaaca 420

ttatttattt agaggttcta ttcttgttca attgtaaatc aatgcaagaa aaacaacaaa 480

tttgtagtgc tcatttatga tcttattgaa aagttgagtg ttcatcatct tcttaatcga 540

ctgcatttgt ggcgtgaaca aaaaaagatg aaagttttgt gagagatact caattaggta 600

ctggggccta caattcataa atatgtcaca ctttgcacga ttttgaagca tatatttaaa 660

ccagtattga gaggttctat tcttatattc aattgtaaat caatgcaagg aaaacaacaa 720

atttgtactg ctcatttatg atcgtattga aaagttgagt gttcagtatc ttcttaatcg 780

attgcatttg tggtgtgaac acaaataagg atgaaatttt tgtgaaagat actgaattag 840

gtactaggac ctacaattca taaatatgtc acactttact ttacacgatt ttcaagcata 900

tatttaaacc actattgagt gtttcttgat ctccaagtct ttgcaaatcc aaaaatagat 960

agaaccaact actggagaca ttcaatatca tgattccatg gaatggaagt agcttctcaa 1020

ctggcaggtt tatag 1035

<210> 4033
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177647_G1, chr5:29064229..29065241, Cluster 25

<400> 4033
cctaaggtga tttccttacg ggtcacatgg gcacgtatga tatttgtgac tatagatatt 60

ggattatatg ccacatgggc gtgttgtaaa tggtaggcat catgtccctc tgtacattat 120

tgtatgttat ggtacatttt atgttcattc ttgtggctat aggatcgatg caggtacttt 180

atagtgttct cgattgtctt atagcctaac tgtgtgtcat cacaactagc gaggcatata 240

attttgccca ttacacattt aatatgttat aactaatact tatctagtaa gctatcgcta 300

agaaatactc cattggtcct taagatatgg atgctactcc tagggccata catctacaag 360

tgggcttgac aaatcttcta tcatgagaca tgtttacact tagttgacca gagccctcaa 420

actctttgag ggacccctat ctcagagggc tatatcccaa cctacttcaa agtatgaggt 480

caagaactct aggatcccca tacctaacaa agggccccga gcggctaagt acaacaagtg 540

ttcggtgtta gactacatta aacaattatt tccttattac cctaagacat aagaggccct 600

ggatatttat accaataagt gtctcaaatc atggggtgcc ccgaggacct agtagtacct 660

tgacacatga agtaccttaa ggaacgtcta tcaggtgccc agggcacgag aggccctagg 720

taattatact tgcaagtgcc tcggggcccg tgacaccctg atgacatagt ctcatgggag 780

cctagggcac aaggggctcc aaggtcctgt tttcgggtta gtgcttcgta gcacatgctg 840

acttggagac ttataatatt ttacccttag acttagaggt tatagagtgc ttatagctat 900

gtgctttata acagacttga aagaccaccg ggccatcaac agttaggtca actcttatgg 960

atgtccctat atgatgttac ttagagttgg gtctctcgtt tgatcaaggc agg 1013

<210> 4034
<211> 1283
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_177649_G1, chr5:29066463..29067745, Cluster 25

<400> 4034
cacaaccgag caaattccaa ggccgaaccg aaccccggct tgtctctatg cgcttgaacc 60

caccgcggtg acggaatcct tgtcccctcc ggccgagccg agcccggcag gacgcacgaa 120

agcacacgca catggatgca gtgaaaaaca gtgccaactg tgtagtagtg tacgtagtat 180

aatatgtgct cgtaaaagta cgggtttttt tttctttaaa aaaagagttc agagaaaagg 240

gaatctcttt taatagtaac aaacaaataa aaaaaactac tagtgctcct acgtgtattg 300

atgtattcgt gttttgtcgt gtggtcgtcg tgtaacctaa cctcgatgcg tgctatttta 360

atttttgcag gaatagaaca ggatgaacac gtggccgagc atgtttgcag tctcgaaatg 420

gtaaaagaac attatagtgc cagtatctgt accagaatag aagatgtagg gcacttttcg 480

catcgtaaac cggggaaagg aagtgtttgt aataaattaa actgtccgtc gtcagagtct 540

acgcgagatc tgctgctcta tttgcttatt agtaggttgt tatacctcca aactttcatt 600

gatagtaact gaaataataa acaatcgaaa tatttgtcgt ataaatttcg ttcaaaaaaa 660

tatttgtcgt ataaataagg tacctttgta ggctttcaaa aaaatccacc aaacaacaaa 720

ctcttctact ctctgcataa agatagcgaa gatggaagct caaaaaagag gcttcttcag 780

ttatctcccg tcattccctc ctccctaaaa atagaagtgt tgtatttcca accaaatgac 840

gtgctcctcc aagagagatc ctactgaaaa taaggaagat gctatatatt tttccagatg 900

aactagagct agagctcgag ctggagctgt tgatgcaaga gtcctaccaa aagaggccta 960

aatactcatg ttaaggctag cacaaacttg tgaactagta cttccttcct tgaacgctat 1020

actacatttg agtattttat tctttagtgg cactcaagct ttttaccaac tacatatcta 1080

tggcggatct aaaaacatat gctaaaaatc actcctcttt cttgttttct atattccgtc 1140

tcttcttctt ctaagcttaa gtgattaatt atgaacttgt aacagaggct tatgagcgac 1200

tccattcatc cgataaaaga tagcatcccc ctactaaccc agtgcgagat ccgcctctgt 1260

ctgacttaac atctttctcc ttt 1283

<210> 4035
<211> 1248
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_179383_G1, chr5:37948926..37950173, Cluster 25

<400> 4035
acggtggatc tttatgttag aggtgttaca tatttttccc aaactttagt tgactggatg 60

aagcaaattg tttggaggta ctgtgggaat aaacacaaat ggcacacatg gagtgcattt 120

caggacatac aacgggttga ttgaaggaag aggacctttt atttccattg ctgcttaaac 180

tttctagtga gtctgatttg gtatagggag gcttatatca tttacagaat gctgatgata 240

ctgtgatctt ccagaagttg gatgaccaga atatcgacac taagttcttg cggttatgct 300

ttgagaatat atctggggca aaaaaataat ttataaacaa agtttttgta ttggagtgtc 360

agaagaagag ttgtagtcat tttcgatgat aaagtgggag aatataatat gaagtaccca 420

gcaatatata taagaaggaa gaagtatctg agtgatgtag atttttataa aaggaatagc 480

agatatggtt cccaattttt tcagaggttt gcattggatt aaaaaactat tgcaaaactt 540

gggtgagtgg tccgagttta tgttttagaa aaattttggg tgcaacagaa caattagagt 600

gccaagaatt tggggagtta atggacacaa tggaatgagt gagggtgaac acataatgag 660

ctgagctttg gaaaaatctg gattgttttc tacatcctca gattacaagg cactggtttt 720

tttccaggaa ccataaatac aaggatggta aaaatgtaga agccaaattt gcccataaaa 780

gtaaggacct ttctgtgcaa tgtcatttat gatagaattt aataggcaga gaaagtgttt 840

aagaagcatt gcacattggc atggagtatt aagtgtaaac tctgtgagca accttataca 900

gcaggccatg ttatttcttg gtgtccaatt gctagcttta tgtggagtgt gtgcaaagac 960

gggatgggat ggcaaattct cctaagggtg tcgctggatg gctgagcaac ctgcttggag 1020

cagggcaaat gcctttagaa actttgaagg ggcatgattt taggcagcac tctatctcag 1080

tccaaccaac aaaatttgga gaagttaaat cattatgctg tcatttaagc atcagttatc 1140

caaaagactc aataatcata accaaataag agcaatatgc agagtcttat aacaaaggct 1200

aaacgcactc tttgaattta tcatagtgta tattattttc tcacacca 1248

<210> 4036
<211> 1178
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181591_G1, chr5:51861814..51862991, Cluster 25

<400> 4036
cagaaaagcg tcgggcagcg ctgcagagag attccctccg gcatggcatg tctgtcctaa 60

taactttgtg gagtcctcga ccacgctgcc atgacgactg tgcggggaga tttgtggggg 120

gaatccttgc tctcccggaa cacatacgag agttgttgat acggtgaacc gttggactcc 180

attcggagac tgacaacaca cggaagtccc gacatattat tgtcttgttt aattaaaagt 240

tcgcaagggt ctccaaaaat tatgtacatc tttaaataac tatctatttt tgtaagatct 300

agcgccatag cccttgctgt tttattattt ttaatactat atttgagttt ttttttaaag 360

tagtatgacc ctaaaatagt ttccaaatat ctgagagaaa cgcatctaaa atccaagttt 420

ggaaaattat tatatacgat caagtgaaat ccgaaggttc aatgacaaag caactactca 480

acattagaaa gaagaagata attcttccgt tctttattta aaaatgaact atctgggtca 540

actatccccc cctccccccac gggccacggt ggaggcccgg aggaacggca tcatgggccg 600

accggcccaa cgggtcttta tcctctccgc tcctttcgac attagaaatc cgtaacaatt 660

gttacaagtc tgaatttact aaccgtgaca aactatagca tggtttcttc tttcttgcct 720

accacagaaa gagaagactg gtgatctgag gaggccacga aactaaccga atgtttcgat 780

gaaaaacatt ttcatgattt gctgaatact gtatgcgttt cataagtgaa gattataaac 840

tttagaccta catgcagtaa tgaccattga atcttccctc aagcacacct ttgttagtac 900

atgcagagca agacatgatt ctcgatggtt aaataatcct tcatatacca ttgcctcaga 960

gtcagagcct ttgaacctac tcacatgagg ccatgaactt tctgattatt gaagtattgg 1020

atttgatcga agctgaaggc ttgggtagca tgaagaatct ggttcgtgct actctttgtg 1080

agcaattctt ggctcacaga atttaatata ttttccacaa tttatgatac gatctgtttc 1140

ggtttaaaca gtcattgtta ggtgggctga tcttcata 1178

<210> 4037
<211> 1181
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_18343_G1, chr1:102234784..102235964, Cluster 25

<400> 4037
tagaactaat ttaatgacat catactttat ctattataaa ataaggtatt cctccgttct 60

aaaatataga acattttgag gaatataagt ttaatcaaat ataaataaaa aaacccatat 120

tcatatttat agtatcaaat aaatattatc atattaatcg tgttgtatat tttttaataa 180

aaaactagtt ggagatagaa ataatatgca atcttatggt gaagcgagag agtattaatg 240

ttacgtactt tgtggttgtg ggtagaaaag cgacaatgac gtatcagaca ccctgactct 300

accgttgtct ctgtgccgtc gttgaatgta ggactcatca aacagccagc tgatggtgat 360

gtatcgtttc gtatatttat agcagcactg tagatcctag ctgggacgac gtggatgatg 420

ccggccgagt gtgcgtgcgt gagagcacac atatatacga tttgacttgg cgtggtgtac 480

ctgtgtatac tactccacct ctccattcta gaacgtcgtg gtatgtataa tgtatggcgt 540

ctcttggtcg tcgtcgtcgt cgtcatatca tgcacgtatg tgtaggtggg cggtgaccgc 600

cgccggccag cgaggtgagc attcaaaggg tcgacggcga cacggtgcag tgcagcatac 660

cgacggccac acgcgctcaa cctacagcta tctagcggct ggtccaactc tactcgaccc 720

taccagctgg cagcaggagg acggccagat ggacggggcc tccggcctgc ctgcctgcct 780

acctggccgt gcataatgcc gccccagccg aatatactcc aactaacctg cgcctggaat 840

gaacacgtct tcgcaaatag aaaaccgaca cctatattaa ttgccgaggg cgtgtacacg 900

tacgatgtaa ttgtccatgt aggacgagct tgcttgcatg ctttttctct tcaaactcta 960

accagatgct tctttccgta tactgacatc ctaaattata agatggttta tctttctaga 1020

tatttttta acaaaagata cacaattcag tctctatatc cacattaaat atatacataa 1080

ccaaaaggca cacgagctct tatattaaat ttcaatccct agctaagagc ataaagcaac 1140

aggaaacaaa ttgatcagct aagaaaaaaa atttaaaaga t 1181

<210> 4038
<211> 1230
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_185589_G1, chr5:80840622..80841851, Cluster 25

<400> 4038
gccatatgag tatacgaaag ctgatgaaag atagttagta aacatcaaga taagcatgat 60

gtatagttgt ttgcattgtt gcatctaacc ctcgtcatgg ctagaaagga taagaagtca 120

atttaatggg tagtggcaca tgaatacatg aaagctgatg aaaggtagct agtaatgtaa 180

ttatatatta gctaagaaga aaaaacaaaa agagttcgca tgggtgtatg ttttttgtct 240

tttatttatg ccatgacgcc tatataaatg aatataacta gcatgtctat atggttttgt 300

cttttatttg tgtcattgaa ttaatatgtc tgaggtaaat aagacttgtt acatgcccat 360

ctaagttact ctaccgcaca aaagataaac aaagtatccc taaccacaat tatatacatg 420

aaaacaatca acaaaacata gcattatatt actgttgtta caagtattag cgaaacaatc 480

gtgaaatagt catcatgaac tactcctatg tattagtatt acctatgctc ttctttattt 540

ttaaggacta cctctcatct cagtattact attagtaaac ctttaataca agtgtgacat 600

atatagtcat gcgcggttac actcaaccct tgtcgtggct agaaaaaaac aagcattgat 660

ttaatgggta gtgccatatg agtacaggaa agctgatcaa agacaattaa taaataccat 720

gacaagcatg acatataatt gtttgcattg ttgtatctaa ccctcgtggt ggctagaaaa 780

gacaaggagc caatttaatg ggtagcggca catgagtaca taaaaactga tgaaatatag 840

ttagcaatta aattatatta gctaataaga aaggaaaaca aagagagttc acgtgggtat 900

atgtttttgc cttctatttt gccacaacac ctatataaac cttaagacaa gataagtgac 960

atataacacc ttgtacaatc tatctgaccc ttataaataa gacaccaatt tgatgggcaa 1020

catatgagta tacaaaagag ttgatgaaac ataggtagca atgaaattat aacttggcta 1080

aaaaatggca agaaattgca tgggtgtgta gtttttgtct tttatttatg ccattgcatt 1140

gacctctcat cgcgatgatc tgttacatgc ccatctagac cactctagct aacaaaaaga 1200

taaacaaagt agatctaatt cacgtgtgtg 1230

<210> 4039
<211> 1093
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_187451_G1, chr5:92361897..92362989, Cluster 25

<400> 4039
aacatgtctt tgcacatgat caagcacgat atgcttcaat catgtttgat attgcgcaag 60

tagccaattg tgttgatact catacatata aatagacaca taatttagat tgaaatatta 120

tctaagtgtt ataagttttt agttgtctca ttaaaaactt ttctagatta aacatcatga 180

gaaaaaacta gaaagaaaaa gggcacaccc tagctcaaat gtttaatgca tacattacat 240

gcaattatgt aacaacctac atgctaagtg agccacacat taataatacc aaccccttat 300

gcttttatcc ttgcttcatt taaaaggatt atcccaagaa tggtggtatg gaatatataa 360

gccatatata ttggcctaac ccacactcaa catccaacac tacttcataa cacacatatc 420

cacctattac tgttaggatt gctagagcca gtagtgaatt tagttcattg ttgggttcct 480

aagactagga tattgacaat gattggaatc cattgaccca acagtaaagc tcattgtcat 540

tgtcaagtca aaccatgacc tagcaataat atatacctag taggtttagc catgagccag 600

cagtggtatg gaagatcaca ctatcagatc aatccataga ccaattctga taggccaata 660

gagtcatggc ttgacccaat agtaggcaca cgatgacggt gtcatgttgt ggatagactc 720

gacaatgtcc taactatagt gtaaaaccta gtccccttct tgttcctctt tccttctcat 780

accaagaata gtcatttagt tttccccact attctctcta gtgttggatc catttttcac 840

aaaaatgttt atgaacaagc ttagttttaa tggatggaca tgctctccta cattaagatg 900

ggtaagtagc ataccttgaa tttgtagttt gttttattgg ttagattgtt tttattctca 960

tgattgtttt ttcttcatta cagagagcat ttttgtcgat tttttatgaa gactgttgcg 1020

cttttgtgaa tctacgtggt acctatgaat ccattttatt tgtatctagt tttcttcatc 1080

ttgttttttg att 1093

<210> 4040
<211> 1076
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198016_G1, chr5:162749326..162750401, Cluster 25

<400> 4040
aggggttttc atttgtcatt ttcacatttc atattgctca ttcgcttcaa tgctccataa 60

ttcccattag tttctttgtt tgcattgtca ttaatgcagg aaaaatataa taagtgtgga 120

tgaatataac ttcacccata ggtgcgcggg aggttaggat ttgaattcag aaaatcttgt 180

atccaaattc cagaggacga gattaaaaga aatacccaat aggcaaggta ttactaagcg 240

tagtggtggt agaccagtag tgaaataggt tgaggtggta ttgaagcttt gaaaaggcaa 300

ggactaagaa tgccaaagaa gttggaaaag agattaatgg tgaattaagt tcattgcggg 360

ttgttggcgg tgtttaccca tgagaataag gcaagcacac tatggtagat atatgagtat 420

atgacaatac cattggccgt ttggggagat ggaagatgtg ggatactaat aggaacatga 480

tggttgggcg tggttgttgt tatcaagaat gggaatgtta aaagagggta gatatgttgt 540

tttagtcatt cctcattaca atttgcgaca aatatatact atatggggtg tttctatatc 600

cactaatgta ttatgtaagt ataattggca atattagagt tgggagtaca aggtatgatg 660

gaaaaattga ctagacaaaa tctatctata tatattaaat aaatccactg aaacttaggt 720

ttctctacgt gagtcctatg ttatacacct atttttatt gaaacaattt atactcataa 780

attttggtac tcctccgtag gtgattgagc caattggcaa catgtgcgat ttttcacaag 840

ctagcacctc ataatccaat atatacccga agatccctat ctgtaccagc atcgaggttg 900

aaaatctcgc tcgagattcg gggaaaccgt cacctttct cagtcccggt gcacattgga 960

attagttccc ggcaaaagtt acaatttttt gcttgaaaat ttttaattta aaaaatccat 1020

aaaaattcag aaaaaatgta tacaaaacta gaggttctca tgagtttaga aatata 1076

<210> 4041
<211> 1210
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198224_G1, chr5:163726769..163727978, Cluster 25

<400> 4041
tggcaacggt gacgacgaac catcggtgaa tcattccttt accttgtgta tcctctataa 60

agctggtctt gtaagggtaa tgcccaggcc atcaccatat tttgcttgta aatgtaatga 120

tggctcatgg aaccattact gttgaatgtg ctttgttcct cttttccttg tcacaattgc 180

ctagtttgta cttcgatttg gtaccattgt actaggcttg tgagcagata tgaaacccaa 240

atcagaccag ctttttccat cgacatcatg ttaatcaact aggattgtct cttttagtta 300

gtgtcggtag atcccttgat tagccccaca tctgattcat tctcctcttt ttgaaacaaa 360

atcatacata ggtcgtagga ctagccttag ccaacaaatt ccaaccattt gcagtgcgcc 420

ttggccatgg atcctttaga cacatttctt cactgtgact ttgagttcca agctcccata 480

ttcccaaacc catggtggta taaggatcta gtgcactagc ccatgtcctt ggcctgaagg 540

taagtacttc ggtcctcccc aaaattggac tagctttaat taatcgtatg ttattgtact 600

tctagttcaa ataggcccta gcaactggca tcctcctccc ttgttcaaag aacccaaaag 660

tctttagtat aaattgctgg aagatccttc taaaattatt tttgtggaag ttaatcgcat 720

tccctttgtt gctcaaacta atgactcgag ctaatggtct gactagctta gagcctggtc 780

caaccacatg gaaggatgga tcgtctatta tgagatggta catcaagttc atggcccatc 840

ctagcataat ataggacttg tcgattctct cttcctttct ctctccccca ttgtgaagca 900

tgtgaatatt ttgagaacca tcaactattt atggtactat accttaaatt tcttcttttt 960

ggtcatgctc tgatgacacc aactatgatg gacgtaacca tgataactgg gctggatatc 1020

agttccccat gccctatgtt caccccttgcg agctgcaccc acaagatagt tgacaaggcc 1080

accactaaga actagagtca atatatcaat atgtacgcca aaatcaaggg tctagtagat 1140

caccatgaac atattgcttt gctaaaccta tggttgatca ctttgtctta tgttccttgg 1200

ctctcactag 1210

<210> 4042
<211> 1140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199360_G1, chr5:170170196..170171335, Cluster 25

<400> 4042
ccactactag gggccccatg cctcgaggac ctcccatgac ccctgctagg aaaagggcct 60

gcaggcacta ggtaacttgc tactgatgca ctccaaatag gaacaactac accaagtcac 120

gatcagagag actcggtggc cctccggacc ccaaggcgct ctgatggttg aggcccctag 180

tgctctagga tcttcaaagg tgaaataata taagtcttca agggccctta ttccacgagg 240

cactaatcag tgatcgatac aggccctcgg acccccttgtg cttcagggcg ctcatgagag 300

taactcctca ggcacctcac ccccgaggtg ctcataggtc caagtccttg gggcctctag 360

tactttgaga tgttacaaaa ggctatgggt actcagggta gtccatcatt cgagcactag 420

cgtcacttag atgctcaagg acctatgtcg gcccttggcc ttctacaagt atctagcctc 480

gcatcgtgag accagcgagc cccaaaccct tatcgagtgt tgcacctcct agatcttgcc 540

ttaatctcta ctgttctcga gtgttgtagt gtaggctaaa cctgtcgtct atgccatgca 600

gtctacaacc taaaaatcct tgatttctaa caaaattcaa aagaatggtt ttgaataaac 660

tctataataa acacaagagt tacaacttaa cttggatata aaaacggtga ttctctagtt 720

ttgaattata aatgttttga cttctatgta tatatacatg catattgtat atctaagttt 780

ataacaaaag tatatatatc tagaaatatc aaaatatctt ttagatttgg aatggaggga 840

gcaacaacca ttaagttaaa aatctgaatt caacattagt atccatatga tgtcatgaaa 900

ttaatatggg atacaaccag agctaccata acgtatgcta attaagatta gaactaaaat 960

ttatctaaga gatctgaagg tgccgtgcaa agggagaaaa agctataaca tttatggtaa 1020

taaataagta gcattagata tttgatgtta taatttttgt atatttttg ttaaaccatt 1080

aatgctttaa ctttttgggg taaaataact tataatagaa ctaggtaggt acccgtgcgt 1140

<210> 4043
<211> 1265

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200944_G1, chr5:178815991..178817255, Cluster 25

<220>
<221> modified_base
<222> (173)..(173)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (173)..(272)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (174)..(174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (175)..(175)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (176)..(176)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (177)..(177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (178)..(178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (179)..(179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (180)..(180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (181)..(181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (182)..(182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (183)..(183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (184)..(184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (185)..(185)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (186)..(186)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (187)..(187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (188)..(188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (189)..(189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (190)..(190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (191)..(191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (192)..(192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (193)..(193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (194)..(194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (195)..(195)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (196)..(196)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (197)..(197)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (198)..(198)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (199)..(199)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (200)..(200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (201)..(201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (202)..(202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (203)..(203)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (204)..(204)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (205)..(205)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (206)..(206)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (207)..(207)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (208)..(208)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (209)..(209)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (210)..(210)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (211)..(211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (212)..(212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (213)..(213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (214)..(214)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (215)..(215)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (216)..(216)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (217)..(217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (218)..(218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (219)..(219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (220)..(220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (221)..(221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (222)..(222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (223)..(223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (224)..(224)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (225)..(225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (226)..(226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (227)..(227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (228)..(228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (229)..(229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (230)..(230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (231)..(231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (232)..(232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (233)..(233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (234)..(234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (235)..(235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (236)..(236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (237)..(237)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (238)..(238)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (239)..(239)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (240)..(240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (241)..(241)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (242)..(242)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (243)..(243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (244)..(244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (245)..(245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (246)..(246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (247)..(247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (248)..(248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (249)..(249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (250)..(250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (251)..(251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (252)..(252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (253)..(253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (254)..(254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (255)..(255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (256)..(256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (257)..(257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (258)..(258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (267)..(267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1138)..(1138)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1138)..(1237)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1139)..(1139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1140)..(1140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1141)..(1141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1142)..(1142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1143)..(1143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1144)..(1144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1145)..(1145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1146)..(1146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1147)..(1147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1148)..(1148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1149)..(1149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1150)..(1150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1151)..(1151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1152)..(1152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1153)..(1153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1154)..(1154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1155)..(1155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1156)..(1156)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1157)..(1157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1158)..(1158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1159)..(1159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1160)..(1160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1161)..(1161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1162)..(1162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1163)..(1163)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1164)..(1164)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1165)..(1165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1166)..(1166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1167)..(1167)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1168)..(1168)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1169)..(1169)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1170)..(1170)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1171)..(1171)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1172)..(1172)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1173)..(1173)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1174)..(1174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1175)..(1175)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1176)..(1176)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1177)..(1177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1178)..(1178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1179)..(1179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1180)..(1180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1181)..(1181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1182)..(1182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1183)..(1183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1184)..(1184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1185)..(1185)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1186)..(1186)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1187)..(1187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1188)..(1188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1189)..(1189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1190)..(1190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1191)..(1191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1192)..(1192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1193)..(1193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1194)..(1194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1195)..(1195)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1196)..(1196)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1197)..(1197)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1198)..(1198)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1199)..(1199)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1200)..(1200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1201)..(1201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1202)..(1202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1203)..(1203)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1204)..(1204)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1205)..(1205)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1206)..(1206)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1207)..(1207)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1208)..(1208)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1209)..(1209)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1210)..(1210)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1211)..(1211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1212)..(1212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1213)..(1213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1214)..(1214)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1215)..(1215)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1216)..(1216)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1217)..(1217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1218)..(1218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1219)..(1219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1220)..(1220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1221)..(1221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1222)..(1222)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1223)..(1223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1224)..(1224)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1225)..(1225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1226)..(1226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1227)..(1227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1228)..(1228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1229)..(1229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1230)..(1230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1231)..(1231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1232)..(1232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1233)..(1233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1234)..(1234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1235)..(1235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1236)..(1236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1237)..(1237)
<223> a, c, g, or t

<400> 4043

tcaatagtga tgatgataat atctcttaca caaagttcac ttgacgatga ttattgttca 60

tggtcgagct atatgaaagg gatgcttcta caagcccatc atcatttttt gcatactgct 120

tcatattacg acgaagtgac actaagttat aacgaaattc aaggcttata tcnnnnnnnn 180

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 240

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nngtcttatc gttctatcct ctttctcttt 300

tctcgtctac tagcatatca ctttgaacgt tatcagtttt atatggggaa cttgtgtgtt 360

atggaacaca attttaggtt tttccaatgt ggggatttaa ttttccatct taaatatgga 420

aaattttaac gtaattcaga aggcaaaatg tcgactgagg catgtcatac tcttcactgt 480

ccattcgccc tattcacaac cacctttttg ttgcacatca cttacattta ttcctggttt 540

atttcttctc tgtttcttat ttgcaaaaat attcttcttc tctgttacac aaaaatttgt 600

tttctatata cattttata agatatatta atatgtttct tgcatcagat tgtatgagga 660

taaaagaaaa gaagtgaaga taaggctgga tatctttgaa ggagagaaca cacttaaaac 720

atttgaaata attagttacc tgcctttata atattgacct tattcatctg ttcataaatc 780

acttaacaga gcctatgcta aatatatatg tgtgatggtt aaaactgagt gtcaacttga 840

ctggattgga ggatgcacat attcctcctg ggtgttttgt gaggggtgtt gccacgggga 900

attacatttg gattcagggg attgggggaa ggcagaaaca tacaaaacct gggcaggggc 960

ccatctaatg ggctatccgt gaacaaaagg caggcaaaga atgtgaaaag ggtcaccctg 1020

ggcaaacccc ccaggcaaaa tcaacttccc gggggggggg ttccccgggc gcgccggtgt 1080

gtttgggggg ggttcttttt ttttaaaaaa aaaacaggat ttttttttt ttttaaannn 1140

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1200

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnntca aggcgacagt agatcagaga 1260

ttcgt 1265

<210> 4044
<211> 1189
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203706_G1, chr5:194842834..194844022, Cluster 25

<400> 4044
cgctcctccc actttccttg tcacacgtaa ccccctgtaa cagatttcgg ctactttaca 60

acccccccccc ccctcttccc ttttttatgt ggtatcgccc cttctccaca tatgtctcgg 120

cctcgcgtgt actttcttac tcacgtagac atccattggg cccaccactt gtcatgacca 180

agcctccacc attcataggc taacaagtgg ccacttgtct tagtcatctg tcctagatac 240

acactatcac ctcagataac atttacattc atatgataca ctaccccatg tctattcact 300

cggctacatt gcgatagcaa ggcccaagtt tccattcagc catggctgcg tcactcgtgt 360

aggacctctt ggccaccctg ggttcctatg aatgaaccat atatgtgtag ttgtatttat 420

ttaccatctt accttctcaa gctttctaac caattattaa ccactaatgc ttacgaatct 480

attatggaga tctcactacc accttctatt tttacttttg tacttatttt ttatatcacc 540

ttttctacct aatctactca cttctccata ttgcttaata caattcattc attttttttt 600

ttttttcttt atccccaaac taccctctta gtaagtcata tattttctat tccatattcg 660

catcgtgaat aactcatata ttactacttc ctaatcttca tatcctttat tttcctcatc 720

ctactcttcc tctttctacg cattccaaat cattcctatt tgttctctgc tatcatattc 780

ttcacttaat tttctcttct cccctagatc ctctatttat tttctctttt aaactacatt 840

cttatgtatt cctctatccc ctcctctcta cctgctcgac ttactcactt cctctactgc 900

accgctttct acccccttcat actcttacaa ttttcattat atttactaac ttgctatcaa 960

tataactaac tatacctgat gtcttgaatc attacaaatg tgtacaacta atgagaagat 1020

catctacaat acattatcaa tattcgttcg ttgcactaga ttctctctct tattctacta 1080

tacatcatat gacaatacct tacttatccc ttatatattc atcaagtata tttattaaat 1140

tctactacat tttcacacat tctcttgctt ttacgtcttt acttatgac 1189

<210> 4045
<211> 1297
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204453_G1, chr5:199200274..199201570, Cluster 25

<400> 4045
taaaagatgc tctcttttta gtcgcccaat gtatatcgaa gttacatcgt ggcttgaagg 60

aggaaagtta ttgaatttga gttgtctctc tgtttttttt tttttgacaa agccaacaag 120

gggcatagag atattttgat ttgctagaga tttaagcaca cttaattctc tttttaatcc 180

atatgtattg agattaaaac gaacatgcca agaacttgat aatgtgttgg aagaggagaa 240

caaaaggtcg ataataataa catatcacct atataaactt ccataaaata gcgggtgatc 300

aattaatctg atagagatgt tcttacatac ccattattta tatgctgcat ttgtcgtatc 360

atggtatgaa tggtttagaa atattacatt acatatccca gcatcggcat tccggcggag 420

gtcgaacaaa gaatatagaa tttgatactt ttgtttgaat ctagaacatc caaatcccag 480

gatgattgtc gccatggcga caacattgtc tatctacctt taggccctat ttggcagagt 540

tttagctctt ttaaaaatgg ctccgacttt ggcgtctttg gaagaacagc tccctcctta 600

ggagctagtg cctcttacaa gtctgtttgg caaaatagtt acttctatat tttgttgcat 660

tcagcaaaac ttgttgcttg atatattcaa atttcaaaat gcattctgag aacatgcaag 720

tctagtctac ctggaacttt ctgaaccgaa ctgctacagt gctacttgct gctcgctgaa 780

gcgaactact tgctgctact tgttgtttcc tctacttcaa gtgaccgtgg tcagccactg 840

gtggcggcgc tggctgagat gcaaacacgc gcgtgggaga gaaaggcacg gaactgtgcg 900

ggagctagaa ttcatggctc cggctcttga ggtcaaaaat ggctacgctc ctaagacgga 960

gccatttcga agacgctatt tggaaaggct ccggcaagga accggagccg cctggaaagc 1020

cctcccaaac gtggacttag ctttgctcca tctcccatgt gaatgcacgt acggtgttcc 1080

ggtttttgtt tccgtgatac cgaaccgcgc tagctttaca gtcgtcgtct ctacgtattt 1140

atatatgatg atccgtgtcc gtggtcacaa cggcacgccg cgcgcgggca ttggcgctgt 1200

gtatatacgt cgtcgtctag gtcgcatcgc attgaacgta cagcaaaagt tggcaattaa 1260

ttactaccgt catgtggtga tgcacttcat taccttt 1297

<210> 4046
<211> 1220
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204727_G1, chr5:200670725..200671944, Cluster 25

<400> 4046
gacttgcatg gtgacttgga tcgcgcgagc tagctaggag ccgacatgca tgcatgcatg 60

aaaaagtcac tgtatatgcc gttcgcatcg aatcaagatc gtcatcgata acgacgtttc 120

cagtctcatt cagacatatg ctacggcact aactgacacg cggcaacgac ttgcattctt 180

caaccatcga ccaatgcaag gcgtgtattc tgagtggacc tgctgttctg ttcgaggatc 240

cggcagctag tgccgacata tattgcaagt gcgcgtaaaa catgacacca ccaaagtttg 300

cttcgccaaa acacggaagc gctcacagtc ctttgtagta gtagtagtac aacttatgac 360

cgaactagtc atgagtacaa aactttataa agggagtaca aaatttggat ctagtcatga 420

gcctagaatg agcaaaagta tgaagatatg atcgcgatct cctattattg gtcagacagg 480

tggcaagaag gttgggtgcc cgcccatggc atgcttttgg cgatccgttg tcaactgcag 540

gtggcaatac gaagatatcc tttctttata taaaaacatc atatgtgcac gctgtgccgg 600

catggtctta attagtttgg atcgaggtgt gtgtgtgcct tacattttga tgtttgattg 660

gagtaagtcg caatagatca agctctttca aaactaggaa aatcacgaag cctgaattat 720

atttagctgg agtgtttcgt aaccgattga tttattggtt ttatttgaat tcatgtttgt 780

tgcagagagc aaatttaact tgagtttgga gatcatgtat atacagtcct ttgcttctga 840

gggcgtgctg aggtccactt gcgcgtggct taaactttga cactactgcc tcgctggaga 900

gaaagtagag atggaccaaa catcggttat gttacttatg taatgcctcc gtcctaaatt 960

atgtaatttc aattaatttc ctcgaaaata acttaagact cactaaagtt atatgacaaa 1020

attagaatat ttggactatc catttttta aataacatgt aatttaaaat ggatgggacg 1080

gagagagtgc taaacaagat aaaattctga gaggatctac gcacggtcaa ttagctaggg 1140

taattgaaat atgcaaaatg tattttggtg caccgtctcc tagagctttc atgcgcgtac 1200

tttcccggtg ctcgctcgat 1220

<210> 4047
<211> 1205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204969_G1, chr5:201979084..201980288, Cluster 25

<400> 4047
ccgagaagat ttgtccaagg gtcaattcca gctctaaccc cattcccgct ttaagatttg 60

tccagcaaac tatttactct tcaactctag ttttacaaaa actgagcttg tctgaaatat 120

gtactactgc aggtgtctgt tttggtgggt tacagtaatc cacaagattt agttgagaaa 180

caaagagccc ctggggaatc ttctgcagag ttgattagtg ccttgaaaga aatcgatttc 240

ccagaaatta ctgcaaagtt tccatgcata aaagttggtg atgcatcacc tgttgaactg 300

tatgaggatt ctactaacat gaagtttaaa gaagctgcac tttctgaaaa gctcacaaat 360

ttcatccaag gctcagctcg aaatttggag tcagcttatg aattccataa tgactgtcat 420

ccattgaatc aaacacccac aactgcaggt gatctttcaa tcagtgaaga gatccctctc 480

attgaaccaa tagttgatac gaagtccccc gagtcattgt cagatgctat aacctctgac 540

aatagtatac tggataaaag tataaggtgc ttgcctggaa caactagtag gcaatatcgc 600

cagctagagg atggtggttt ccatacggta tcagctgtca agctacttct ttcgtatttt 660

tcttttgatt tggtaaaaac aggaaaaaaa ctcacctcct cctcttttat aggtccgcaa 720

attattgcag cattttcctc ggacttatgc agatctgcaa aaccctcaag gccccataga 780

atatgggcag tatattatgt tatctggtac tgttatatct tccaggtaat taaacattac 840

gcattagaga tttagagcta taaaatacat tcagaaggaa cataatgtaa gagaaaagga 900

gtggacggtt tagttcatca gatgaattgg attgttatgg agcaaggaag aagattttgt 960

gaaatatgca tggaatattt tgatataatc gcgtagtagc ttaaattgca tgggagtgga 1020

actgtttcct tcaggattat ttgggtatgg cctcgtcaag aatattaaat atcaattagt 1080

cttgctgcca actcctgtaa cttcaaattc attgaagttg gtcatgattc ttgtatcacc 1140

acttaattca agtaatgttt cttcaacagt ttttagctca ttttaccgcc tttgataatg 1200

aagca 1205

<210> 4048
<211> 1126
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205132_G1, chr5:203030337..203031462, Cluster 25

<400> 4048
tgtacgagtc attactctat ttagtcatag tattgaccac agtagtattg ctggcccctc 60

aattattgaa ttataagtat tagatgcaaa gcatatttat gatggctaag gattagatag 120

ttttaaatgt cacttcatgt tggggtgccc ttaggaaatc ctttttcgta gcataaaggg 180

gactaaaatg agtagcttaa ccttaggcac aaccaaaagt gttaggttaa tgcatacttg 240

tgaaaagctt gaactaggta gcacaatagt ggcttaaaaa ggataataat tcaccttgga 300

acctaaataa gttgaaattg attgagtgtc aatgtgaaat atattttgaa aacaacaact 360

taaaaagaca acaaattgct tgaaggccac tagatcacca tgtgacacta tccaccattt 420

actttagcac aatgcaagtc tttattggtc atcatatgat atggtaaatg atacaatgca 480

ctagcggatc atcttgtggc actattctag gggtaactcg aacttatgca actcttatca 540

taggtgatcc aaatggtgcc taggtgacgc acgacaaatg gttgatgaat catgacaagg 600

caaagaagaa atccaatgaa agtttctaga aagcacaaga tgatctaatg agtgcctagt 660

ggcttacaat ggattgatga tgttgtctct tatagtagcc atttgtaaat gtcaaaggtt 720

catgaacata gcgtgatcca atgtgagata atagtgcaat accccaaccc atcagtgttt 780

tggtttcgaa ccagtgtggc ctatgtgttg tattagatga aattagtatt gccttggttg 840

tctaaatatg ctcaatctag cttatattct ttggtgttct aaatgtaatt cctccaagga 900

tccaagttaa cctttctcca cgaagtgatg gcagaagtgt aatagatatt ctatgatatg 960

caagatcatt acatgtggga gtttggacat aagaaaattt tggaagtgtg attcatatgg 1020

tattcagagc gagtactctc actgcatgtg tgcatgcgtg tcacacatgg aggggacatg 1080

aaatagaaat tgtcgaagac gatgcaatgt gatacataat agtgca 1126

<210> 4049
<211> 1222
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208070_G1, chr6:679020..680241, Cluster 25

<400> 4049
gttttgaata agttgagcta ttatctatgc atatacatag ctagcagcat ggacaggagg 60

acagatatat gtctcaacat gatacaaaag atgatgtcca gccggtcaac agaacacaac 120

tttacaaaat attattcgtt ggaaatagtt atgaagaatg tctctctctc tttctatcgc 180

tatagagata tcaatcctaa actttagact tgttgtggat gtttgtcaac taattaaagg 240

acaacacatg caactgcaat gcatgattga tagtatatat atatatatat ataactgatc 300

tgatgatgaa tgtgggagaa tcaacctctc caacaagtaa cgcaaggtgt cttggttgcc 360

gactgcgacg ttccatcttt tgcaatcagc atttgccgcc aaaggaaata tgccatctgt 420

gaactgcttt ctgctccttg gatcattctg gccggtctaa agcaagaaaa ggaaggttat 480

ccctgctgat tccaacccat gcatgcatat ccttattttc ttcttcaaga attaagtacg 540

tagatgatga atcataaata tcatcatccc aaattaaatt aaattaaatg actagttact 600

cttgagacag ctaagctact agttggattg gattgctatg tatatagtgt tttcaggcgt 660

gcactgcaat attcttcttg gcaacgacgt gcatgcatcc gcctgccgct ttagtttata 720

ctcgtatctg cggctttcct agcttctaca cttgatgcac ctcaacatca aacttttttc 780

gcggaacatt acaaaaagaa atgagctacc cttccttagc ttccttcctg tgtgaacgaa 840

gctacttgat tgctaagctt cctgcagcta gttaacggta tagatgaaca cagccctggt 900

tgtgcggcct gaggcctggc taggccatgt caattagcct gtctttagtg gatcgggtaa 960

aatatgggcc gacactctag ataacaatgt ttgtagagta aagtttgtat ccgaccggct 1020

agtcgatata cctagtcatt gaaatgacat ttccaatatc catgctatga acaatgacac 1080

aatattcatt ctggacaagc aaatataagg tttaagacaa atacaggaat cctcgtagaa 1140

gttttatggt ttcatatgaa acatatttgt ttcatataaa gatcacatca acaggcttat 1200

agctcctagc cacaacagaa at 1222

<210> 4050
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208398_G1, chr6:2715270..2716306, Cluster 25

<400> 4050
gcgcataata aacaatcttc aataattaaa aaacctagtg tttatactta ttacttatat 60

tcagcactta acacatgtat cttaaaaaat gtagtaaagt ttatattcat atatagactt 120

gcacatccct cgtgatacac atgatacata cataccaggt gtataagcct ctttttttc 180

tcttttattc atttttgttg gagatgtccc gtgtcttgac agccggtcga tctcgaggtc 240

ataagcgcct gagcctaagc gctttcgatt tcacctttat taattacctg atgcataagc 300

gcctgagatc gaatagagga agaaggtgac gcagatagca acattttaat cttgcggtct 360

gaatgatcgg aaacgagagc gaaagttgag tcatcactcg gcaaaaaaag gagggtcaca 420

tctcaagggt aggtaacaga tagccttgct ttgctacata agaaagaaag aaagggtagc 480

atgctggctc tagatttctt ggagcacttg catgcagaga cagtgcatgc aaccctccta 540

gctagcttaa gcttaagctt gacctcttca agtgtcccat cccatccctc gcgtgatctg 600

aaaagcttgc tattttatct tagcagcagg catcaagtca gaaacgcgtg cgtgtgtctc 660

ccttttctgc tgcaacacca aggcagcggc ctctgctgtg ctggcgactc acccccttt 720

tcacggggat ctataaattg agaagatgac agacaacacg gcggttttcc cggatttttt 780

ggaggagctt ctgacttatt agaatgagta taatgataaa atgttacaaa atgcagaggt 840

gaagaagcga taataacgtg gcgttgtgcc gacctaaaca ctgaaccgag aaaaaaaaac 900

atatgtatat ctaaaaaaat ggatcagccc acgggggggtt gaccatcgat ccaactcgcg 960

taaacctttt tggacgggga tctatcatcg tgtgacaagt tcaggagatg acagcacagt 1020

ttacttccgg tgcggca 1037

<210> 4051
<211> 1110
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_20899_G1, chr1:119660926..119662035, Cluster 25

<400> 4051
taccgcgggt gcgtgcgtcc catacccata cggtgagccc gcgcccggcg tggtctacga 60

cgctgcacga gcgggtggtg gctccgctcg tccgcgcagg tcccgcggcc gcggctccgc 120

gcccgcgccg gcaagccggc ctcgtgaccc gcgattagcg tgttgatgca tgttgctgtc 180

cactcggggc taattaaaac tctacttgcg gtattttatt agtgctagag tttgataaac 240

aatccctaat cgcatctgcc gtgccgcctg tctgtttgcc cgcttccctc ccagcggctg 300

acgcctttag atggtgaatt ataacagaga tcaggtagcg aaaggcagct gattatgtcg 360

tctcctataa ctttacttgc acgtgatgag gccgccaacg gtcgatttcg gtcatcagag 420

tatatgcttt ctctaatcta tcgacatact ctcgcgtacc atcttaagta tcatgttctt 480

taattttgtg gccttgagta ctggaggact agactagttt gagaatgtta ttatataata 540

gacacttgaa ctctctttat tttctatgga aactacagga gtctttgatg cacttgaact 600

gtcaaagttc agaaaaaatt ctgaaaaaaa ttatacatat tgtcttcatt ttgctccctc 660

cgtctctaaa ataaatttca aggcttcaaa ttgtcccaaa ctccgatata ctcatttatt 720

tcattatagt tttcaacggt caatatattc atttatttct cttggacatc aaaatatcaa 780

aacttattgc tccagtttct cagcaaagtg gtgagtgcag ttacagtttt tttaaaaaaa 840

gatataatat gagcagtact gtgttttctc ttgtttgcta aaatgttcta aacctgttag 900

taatttgttc tctctggaca cggagggagt taataccatg tggtcaattt gtttccaagt 960

ggagttaata ccaagtgatt aatctgtttc ttctatgggc ttgtttgcga ctgctccata 1020

aactcccct acaaactcta tcgtgtggag acttgggacg aaggacgaac caaacctcga 1080

gcattctaca ctggttgcat actaaccttg 1110

<210> 4052
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_210852_G1, chr6:17976805..17977912, Cluster 25

<400> 4052
ccattagttt aggatatagt ggttgtgctc atggactatg tgcactgtat gcacggctat 60

accacacatg tgtgcgtaaa actgccaaag gctttgttga cggatgcaac gtattgccct 120

gcagcgcgct tcagttcaag gcaagttcgt ctctatacca cacgtaagta agaaaaagct 180

gagaatatta tcttctccat accaacaacc gatagcaacc tctaataata gccagttgag 240

tcgtcgactg aggcagaata ttacttgccg tatgggagtc atttttggga tcaactcgac 300

aacttactgc cgaaaataat tgtagctgtg gttgtggatg cacgtgtctt tgtgttcagc 360

ctagagccct agacgactag gagtccagtt aacaactatt cagcttggcg tgacatctgc 420

cagttcaact acctacatat gtgctaaatt aaggcgtgag gttgctaggt cattttcaa 480

cgggccgggt caattttaat gaaaactagc aatgtcattt tcatcaagtt gtaccattta 540

tttcactgag tgtaactttt ttgtattcag cggagaacat ttcaccgagg aaagaacatt 600

gaatttattg acccagaata tggattttta ttatgtaaca taaactgtcc ctgtataaat 660

ttgttgtttt taagaaattg tggattggtg gttcactaaa ggaatgcccg gacatcaaca 720

atcaatgagg ccttaacata taaagctaca ttcactttgg tggagtcagt agtatctcca 780

aatatttaat tttgtttgat atggcacatt atctcagcat caacaatcaa tgatgcctta 840

acatataaat gaagatgtaa taaatggatg aagaagatat aggaggcatt cattgttgta 900

taaaaagcac aaataatgta tacaatatgg tcttacaata tgttatttac tccttcctcc 960

ttttcttgtt taacaaacga ttacatatat atctttagtt ttgtaagaat acaagatcaa 1020

ggtagaagga gtacaacttt gtaggcagag cgtcgtttct ctctatttat agacacgtgg 1080

tacaaattca gagaaattac aactgcgt 1108

<210> 4053
<211> 1138
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_212844_G1, chr6:31429962..31431099, Cluster 25

<400> 4053
caaatgcgta aaactgaaat atgaaattta ccaatgaaga tgcatttgta ttttagacca 60

agatgataac gagtgccttt tgaacttgac ccttgattgt gagctatttc agctatataa 120

agatgagaag attgttgagt tgtccatgat atacattact tgtgcctaca agttgttccc 180

ttgagctctg cctccatagc tttttttctg cttacttcaa acttaagcgc ttcgttgcat 240

agccacattt caaacttttt tagatggctc tcatttagac gattgtttca gttcccactc 300

ctaccacttc tgtagccctt tagttggata acatgtggag aaaattgttg acagtccatt 360

ataggccaag aaaagtgagc cctagtatat aagaggcccc acctcagggc ctcgtgatca 420

aaagtcgaac tatttagata ttgagacaag caaggaaaat caatttggga gatttggttg 480

aagcatttgc ttaggtatct tctagtgaca aaaaaacaat agacatggat gtactactac 540

tttcactata tcggtgtgct cattttcac tacaccatgc gtttaatggt aacaatgcat 600

gaccctcact tgcatgtgat cttgattgag catggtagat atgctaatgt gtgccatact 660

aacatgccac taactagcta tataagtaac taactacatt atagatgaag ttattaatac 720

ataaaaaaaa ctcatcttcg ccggtacaga gggcgccatg gttagggagg gagagcatga 780

ttgagttgga gaaaaaatcc taggcaacac gatctacccc tgcaccacga tggagaggcc 840

cactgccacc acatcgacgt gtgttgggtg ggcgtgcgtg tgtgcaaggc gagggagcaa 900

gcgagggcgc aattggcggg gctggtcggt ggagacgcgg ggtgggcggg cgagcagggg 960

catggtcggt ggctggcgtt gctgggctag agaaatagtg gggtaaaaca tgtgagctgg 1020

aatagagaga gcaacgagaa ttaatgatga taaggccagt aaaaaaattt acggtgttga 1080

gatccacgcc aagatccatg attctactat accgaggtcg gcgtcaagat ctacgaaa 1138

<210> 4054
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_217438_G1, chr6:63962005..63963005, Cluster 25

<400> 4054
aagacaatgt gcactaactt aaacttgtaa ggtataatta tgtatctcat gtaatcttgc 60

cgacgcaaga acgctagtat tctcttcaat gcatagttgt gataatacta cattgttttt 120

attaatcgcc actaaatcta tgaagcccat attttaaacc ccctctttgc gatatttttg 180

gatctccatc ctagatgata tgaaatagta ttgcaaactg taaatagata taagtaaacc 240

attgacaaaa gaacacttac aaaagccagg aagtgattga gagaaatatc gagagccttt 300

cacatatatg atagttatcc tcgaattcta gtcacatgtt tttaacacca ttgaagtagt 360

cagtatcttt gatgagcaca ccaatacagt cctcttagca gcgaatttct ctacgtacaa 420

ctcatagaat atgtttatgt taaaactttt tttgagtagc tctaatctgg ctagaggctt 480

gttaggccta tacttggtag cacatttttt tttatcatac cggtagattt aaaaatgtct 540

ccatgttaat atcgtgtttt ggatagttta ttagaaatta attatggttt ttttatcgag 600

ctacatgtat tttcttagta tgtttctgat aatttttcc gataaaacga ctaatagaat 660

agctttgttt gatttttgca cggctcacaa acacagactg atcgccatat aagcgcctct 720

ctacatctcg atcaaaccgc cgacgaaaaa actccaccaa aatcctcata tatttctcca 780

gaaaacttaa atcctgatgc ttcctgtctc agccctcacc catcacctcg atacggttct 840

ttttcctgtc tcagccctca cccatcgcct cgattcagtt ttttttctc tggtcacgag 900

caaccacgtt gctcaagaaa aaaaaacagg agaaatcttt gaacaccact ctaattttat 960

tttacgtagt gtcttattta ttatcgcaaa tcgtatgaga g 1001

<210> 4055
<211> 1011
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_223677_G1, chr6:102242035..102243045, Cluster 25

<400> 4055
tcagatacct aaatgtattt ttttgaaaat agtctaaaat aaaaatttag gatggtgaaa 60

caccaatata caggatcaag taacgtctaa tctctactat ataaagcacc tgttttcaca 120

gtccacggtc acccttttcca cattcacaca tacctaacca atagacacct atattttggc 180

gttctattaa aacaaagtct atccacgtga tatatagaaa ccgtagcaat gtatagatat 240

ttgaatagtt taatactatt attgagttca tgagttggtc cccataaaat ggtcttcagt 300

acgacgcgca aaagtattag actgcacaaa caatacgact aatgaaatta tagccgcaca 360

tacatatata tatatacaaa gataagtttg aaaatttttg tttcatcatc ataagtcgat 420

ggtcatcacc aagcattgcc tagcatatat tggcatctat gtttcagctg caaactcggc 480

cttcaacaac tagttttcag aaagaagaaa aaaaaacttg gtcatcagga tttgccaatg 540

tcttactata tcgatcacta tcgacagcag gactacatta tattgccgtt taatttgtct 600

gtctcattga tgcgcaacct aataaagatc cattgtattt gcacccccgc cggccagatc 660

gatgacccag ccaatgactg gtttgacaaa atgtcgtcgt tgcatcaatc atccattaat 720

gtgaagagtc gtcgattaat aagtcatgat gtcaaaatgt gtatgcaaat tcagctcatt 780

actgtctaat actgttcgat caaaagttga tgaatgggca aataattcac cgaaatcatt 840

caagaattgg tgagctaagc attatcaaac cacaccgaaa ttcagtgcat gcaccatgca 900

tggtaccaat tgatgtgcta gaacgacaaa agttgcaact ctaaattttt ttaacccccc 960

ctagctaata ataacccacc aaaacatgca tgtgtccact tgggctttat a 1011

<210> 4056
<211> 1331
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224264_G1, chr6:105103048..105104378, Cluster 25

<400> 4056
agtgattcat gcatgaaccg gctctgtgag ttcacaactt cacattgaaa gtccaatgaa 60

ttgatataaa atttcttgac gggcactaaa attataggca aagaccaaaa ttgttggaaa 120

atcgtcaata ggcactaaaa ttttatctat tcaacattat aaattatcat aactttctct 180

atacttttt tgtcaaagtt gagatggttt gatataattt agaatcgaag agtattgagg 240

agagttttag gtagataaca aattttgagt cgtacgtcgt tacctgctcc tgctgcatgg 300

atgcctcgat agataattac taaccagtaa ttcatgtatg aagccgctgt gagtcacatt 360

acaagtcaat gtttagagct tgacattttt ctcgaattat aaattgatat aaaattcttg 420

atggtcacta aaattatagg caaagaccaa tgaattaatg gactatcgtc aataggtaaa 480

ccctaattaa ctatatatta actcttcaaa tataatgtta tatttgttat ctatcttaaa 540

gctaactata tgttctttgc atcctatttc cggtgaacag ttattttagt tagatttaat 600

taccgaacac aagtggttca aacagtattg ctgatgacta atttttttta caactacgta 660

tgtatatctt caaacaaaaa tgaaatgttg ggactcagag catatgaggt ggtggcaaat 720

cctttcgtta tcatcgtcat cagactcatc gatccgagtc actcttctct ttttcctggc 780

ctcaagagga gggctgatat tggcagtaag tgtttgagac ttaggggctc gatcaataga 840

tttttttag gaaatagata gggccttgtc catcatcgtc cttagtcgcc caactaggac 900

tctacagaaa aaatggtgtt ccagcatctg aataagtatg aagaatgatt catgcaagac 960

cgatgatttt aagaagggta taagcaagag agttattgaa gatatctcat ggcaagactc 1020

gaacagggtg taagcctcca tcaagcaatc ttcgggccag ttgtcgatgg aggtaaaaag 1080

acattgaatt tgggccttag tcttcgacat gttgatagac ttggccttgg atttggatag 1140

gtcctcgttt ttgccatatt cgaaggtgta gttcaccttc tcgcataaag gagagactca 1200

acattgagtt caggtaccgt caacatggac tgccatgaga cctgaagcct ttaactattg 1260

gattctgttc ataattgatg agatggtatc tatatatttt agcagagggt ctttcgtcca 1320

cttgtattga g 1331

<210> 4057
<211> 1022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224853_G1, chr6:108080863..108081884, Cluster 25

<400> 4057
aggttgtacc tgttttaata tagaagcaat tcacatgctt aaaaaataca gtcgagagct 60

agcgaaccaa accgtccggg cgcccttgtt gtcaattctc caaaggcgcc atagctttct 120

gtgttgatgt atcgagaagc ccgaagacgc acaaaagttg accacttttt ggagaggcga 180

aggacgacgc gcacgctaca caggtgtgtt aaaataagcg cttcaaaact aggggtcgtc 240

tggatcttaa gctttttaaa aaaaatcaga atttacttaa cgagctccaa gcaaccacta 300

aagctcggac caaatcgtgc caaaagatta gaaaatttaa ttagttggtc gtcattttcc 360

gtaatcccgt ggatgggttc aagtagcagt tgcagttgtt gaagtcgttc aacaagcctc 420

tccacctact ccgctcctct cccaaaaaga agaagaacaa agaagttcct tatagttgct 480

gacatgaaga taggtcacgc attagctaac acctagattg ttcgagtcga tataggctga 540

ggaacgcagt agagatcgag ggcacgtgtt gacactcaaa aacctttcaa aaattcgcag 600

ttaattcatc agactttcaa atgaggtgat ccatgtacgt atgttttcaa tcagctcgac 660

gagagaaatc caatgatgca atccattctg tcgtttgagg aagtcggcaa attaataaca 720

tccgacttag atggttcgtt gtttgagctc ggtcggccct ctggagtcgt tttcttcgtc 780

tcgattttaa acaaaggtga tctaaatatg ttttctagtc gccttggtga tagaatcatg 840

atgaacaaag catgttacac actttagata attttgagtg ttgacacatg ccccctggtt 900

ttttagtaaa gcttgtgtgc caaaaacatc cttgttatgg acttctcaaa gtgatgtcct 960

aaactttctc atttaattat tgcatctaca taaagcgatc aactgtcacc atccaaggta 1020

aa 1022

<210> 4058
<211> 1276
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225345_G1, chr6:110270602..110271877, Cluster 25

<400> 4058
gggtgtgact gatattaaga gttggtataa atgactttca aataatttgg ttgtataatt 60

tagacatagt attaaataat ttgactgtga tgaaaatttg attaaataca cgtgtgctgt 120

gctaaataca atttaaattg tgcagcattg aatgccaata attatactta aattaaaaat 180

gatttaatcc aatgaaatta agtttataca agatgaaata cctatttgta caataggaca 240

taatagaata ctacgattga ttcataacac aataatgtta gtctcaagtt aattctacat 300

gtagttatgg tcctaacaac ttctagaggt ggccacccta tcgttgactg tatcatagat 360

gtgcacaatc aaagtaaata aaaattattc tgtttttcca tactaagata tagcattttc 420

tatctattat atctaagaac atcttacaaa tcttaatata attgtctata gcaaaagaga 480

acccgttagt ttgacaagct atcgtgtatt atacttcctt tattataaat tatttttaa 540

tattttatat atagctttgt ctatgcactt agatagacaa tatatctata aataataaaa 600

ataatatatc tagaacaact aagatattta taatttataa tgaagagagt atttttaaaa 660

tatatcagtc tttattgatg gtgaaacata atttaggcca tgttttatga agtcttcgtc 720

taaggttgtc tctactgaat atctactgaa tagtggaaaa tagaggattg tattgtaaat 780

gacactattt acggaattaa gtttaaaata gcggatataa tagagaatgt gacagtgccg 840

aggggagttg acttccaccc attgctatag tagccgtggt agccagtgaa caaaaagaga 900

gaaaaacttc gtgaaccttg gcactatggc gttaaaaata caacaaaaga tgaagaaatt 960

ctatcgaaga cgactttagt cattggtaat attcaggtct catttgatat ggttctaaca 1020

actctggcgt ctttttatag tgtgcataga aactagtgaa aacaaaagca gtggcttcat 1080

gaacttctag tatatttgag agatgcgaga tacaaaagtt ccttacagta gctcatctat 1140

tgcatacatc atttataata aataatatga aactacaatc acgtagcaca tgctcctcac 1200

gctggattat tctatatttg cctactttgt tttaccttct ggcatgagaa tcggcttctg 1260

acacccaatt gtttcg 1276

<210> 4059
<211> 1121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228961_G1, chr6:129767249..129768369, Cluster 25

<400> 4059
tatactaatg ttctcggatg gaagccgtac tacagtagta gggtacgtgt cgttctaatc 60

ggtttatccc ttgaataata taaatcggat ggctgtcggc tggttttgca aaaggagtat 120

agccgaatga taacgatatt aacatttcta attcgggtac atctgctgca cgggtgtgat 180

tgtataccga acataaacat gtatgtgtgg tgttgattgt ctccacgtca tgttgacaaa 240

tgcagcatta aacaaatctg attatattct ttttttcct cataccaaat cctctgaact 300

agccggacaa ctcggcgaga aggctttgta gcctccggaa aagaccagac aatcacccaa 360

atgtgttcga ccttattata caaacaaaaa aagaagcaaa ttttactcgc gagaacacca 420

tttttatgtg acgtttgcta atgcacactg tcaatactcg attttgccca gaatcattat 480

aaaagaaatg gaccttcgtc gtttggcacg acaaccgata aaatatgcat ttagttgaca 540

ctttctctgt tttaaatcaa attctaatac gttctaactt tttaatatat tgtcttttat 600

gatttacata gacatgacct ttactccatc tgtcgaattt ataattagtt tgatttttta 660

ccaagtatga ccgattcatc ttatttaata atttttacga aaatatgaaa aatatagagt 720

tatacttaaa gtttattata tgttaaatga taaaacacta taaattagaa ataattatga 780

aatttttaa taagatgagt cagtcaaact taaagtaaaa gagtaaaata aattataaat 840

taggacagag gaagtatata actatgtagt aaaagctata tttagaaaag aaaaaatgag 900

gaagtatcaa cagagtgaag gagtgtgaaa ggtctacttt atcctccacc ctatttatct 960

tgttcttcgt ctctctccct tctatttcta tgctaggaga ctgagtacaa caatatcctc 1020

taatttcccc ctatactgta ctatgcagcc atgttaccca gattaaatac cacccctac 1080

ttttctcctt tccatagtgg ttcctctcta tattatcctt c 1121

<210> 4060

<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228993_G1, chr6:129875018..129876048, Cluster 25

<400> 4060
aatctacata atacttaata ccaaaatttt atttaatctg tcaaaggatc atgactgact 60

gagagatcta gaatctaatc gacttttta catctattac tcattttgct ctaatttttc 120

aatcccttat tgattgttgc atctcttgtt gatcctcgaa caacctcaga catgcatccc 180

aagttcttat gacaaaggac atgttccaaa ttggtgtaat cgatcttttg ataagtatca 240

ttaactttgg agttgcttgc taatgtttgg taggttgtgt gcgacctcga tatactaaca 300

cttgttggtg tgtgatccaa tttgatgtca acatactttt tggtgaatct tctcagaaag 360

aaggtcaata tgtgttcaag atgcataaag ataatgacaa taatgggatc ggtgatttca 420

tcgatgcctc caatgggaag aacataatcc atcctacaac tattgatcaa cttctaaagg 480

agctccacaa gatggtggag gagaagaaca ctactaatgc ggtggatgct ctagtgggtt 540

gcccaatgga gtaacgatga agtagtgtgg caatacaatt caagcacata aatgccttta 600

ctcttggagc tccaaccatc gctgcaccta aggtaacacc ccttgtaggt gattctcttc 660

tatggttact tttgagcaag tgcaaatttt tttgaaggaa tgtgttggtc acttattaaa 720

gtccctgcaa ggaaccataa tagggcaaca cagttaaaat gatgatactt ccccccttgcc 780

aatggataca atgggacaag aggagaaggg taaaaacaat aataaaggtc atgagcttag 840

ttacaatata aagggaaata atcaaataaa tagcatcatg gtcaatacaa ccttttcttt 900

tgttataaag ctcgattaca tgataccatt cggaacagac gctggttatc cgaagatagg 960

tacaacgagg gaactttgga gctaagcctt cgaaggtgaa ggaagtatat gtaagttgtt 1020

acatgtcacc c 1031

<210> 4061
<211> 1224
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229150_G1, chr6:130260713..130261936, Cluster 25

<400> 4061
cccacgagag gctctgagcc ccgttcatat tgctcgaggt cgaggaccct agggacccaa 60

ggccgataga ggtccttggg cagctaagtg tcccgcgaaa tggaagaccc ggtcacataa 120

atccttcatg ggcgccccga ggcacaagag gacccagggg cttaaatcct tcctgagtgc 180

cccaggacac gaggggccct agggacttag attgttctag atgataacat cccaaggccc 240

cgggccttaa tccatcctta catactggca ctaaattagg ctttaaaatg catgagtccc 300

taaacttgtt aatgcaccac tcaaggtcaa aatcttccta atccacatta acttgcttat 360

gtggcacact taataagttt agagacctat aggacaccat gagacaagtt gaagtactgc 420

aaatgcattt tattttgaaa gaaatagata gaacataaca tgggaaactt ctgcatgtac 480

gaaacaaagg gacatcgcaa cacgggaaaa attaaaggtt acgagaatta atagtacacc 540

tgtaaagtaa aaggcaatga agagttcaag ttgcaatcct caggtggatg aaagatttcc 600

atagggcaac tctcatcttc gcaattcagt tttggggccc tggtgttgcc acaaaatctc 660

attaatcatt caccaatgag aaaacaatga aaaaaggagt atttaacaca aaatctgaag 720

gtggtaagtt acatctcatc acgacttcca tttataagtg ggcccttag aacagctcca 780

ggtccaacct aaaaaaataa ttacttacaa attactacaa tgttcttcga aaggctaaaa 840

agtatcagac ggcctaactg caagaatgaa atattgaact ggagtagtca aagacctatc 900

acaaaacata tttcctatgt tatggttgta catgggtgca gcctcaaagg aaagcaagga 960

atagaatttt gattgcttca gttgtggaaa ccatctaaat tcaacatctt aacttagata 1020

tgtcaatacc atagcaaaga acactataaa ataaaaacaa acagccaaat cctgtaaaaa 1080

aatgccaacg agtgagcaag ttccaaataa taacttcgta acaggcctaa ctttatttga 1140

gaatttaaga tataaaacgt tccccaacct atttgaaacc actagaaatg tactaagaaa 1200

ggtacaaagg catgcaacat gata 1224

<210> 4062
<211> 1258
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229363_G1, chr6:131410069..131411326, Cluster 25

<400> 4062
atgtcgttct tcatgcatat atatggaatt tggtagatct gcatgaacag aatgtcgaaa 60

aacaaagacg gcatggttat ctgtgcaaag aaagaaaaat atttttaacc tagaaagtca 120

aaacaaaaaa taaatagaac ctatttttaa tccgtagttt acaaaaatct tggtagacct 180

tacaggaaca acgacaatat tagcatggat cgttcactaa tagcaaagag tataaaccac 240

cttaaacatt ttgcattttt ttgtcataat taaccgtctt atatattata ctattgaata 300

aaaaagaaat taatttacgt aatatgtttc tacatatgat ttttttgtt gttggtgaag 360

gatggttaat gaattccgaa gcacataatt tacgtaattt acatgcctca tatgtgccag 420

tcacaggtta ggacgattga acccatacgc gaactgcaca caccaattgg tgtaaatata 480

taatttttcc acgtcctttt tgctgcgcca tcatatgatt ttttcgtttg ctcgctggat 540

ttgtatacac atcaagtagt gacgattcac tagccatgcc atgccaaggc atgcaatgca 600

attgaacatc cagcgtgtat aaacgatcta cgtacgttca ttatattcat catactcatt 660

ttcacaagca aacccccga ggaaatagaa ataatggtga gtttttccat gcacacgacg 720

aatatcaatg caaaccccac tagaatgaag agggactctt gcctggtgtc cctgaatttt 780

aaatgtacaa actcaaagga ttacatatat actcatttat tcatctctca ttttagtaag 840

attgatacaa atcaagtacc agcaacatag gaaaaaattc actcgatctc ctgtatgtat 900

acaccataaa catgtgtaga tctagctagc aacgactata ccaaagctag cttgcatgtc 960

atttttgttt atgcgtatat atatgagaga cagtaagaag gtacacggtg agctaattgt 1020

ggtggccgat gccggggctc ggaaccgatc cctcgacaac ctccatgatt atccgcctac 1080

tacggttgtt agccatggcg atctcggcct tgtctttgcc tttggacagc acaagagtcg 1140

ttgacgaaga gatcgacgat gaagaggaac gagtgctctc cttctcctcg gcatgcatca 1200

tcgtcgtcct tgcgtgcacg agagacagtc ctgatgccaa cagaagcaag gataggac 1258

<210> 4063
<211> 1363
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229373_G1, chr6:131472162..131473524, Cluster 25

<400> 4063
aagcattttt ttcctaagat aatatcctcg gtcgatatat acaatttgaa ctgaaaactg 60

aattagtatg agcgtgatgt gaaacaaaaa aaaaggctga tggcatatga tagacatcgg 120

atcaggaata ataaaatctc aagaactctt gcagctcatg aaaataaact ctatatctac 180

cactcgaatt ggtagagaag gaaaacggag ttgaagaaca tagtctttct gacttcattt 240

cttgggtcca tcccaagata agacagtcaa ccatggcggc tctctattat tcagtttcgt 300

tctccaaaag atcactcgat gatctcctgc cctatatata gctagctgat tgtccactca 360

taaaagcgta ctcaaggaca gaccagaaaa actgatgacc taattactga accaccgtac 420

atctaatata cgtgtttaaa aattaaagga ccatcatctt tacgtgtggg ggtgcttcca 480

aaacacttca taaaaaagcc ttaatttaag ctctggaaga aaacatgtct gtagtctttt 540

tttaattatt atctcaacta gtaacttaat gctattatat ttgtcaaatg tgcaaataac 600

attattctac tgcgaccata tatgaacgtg ctagctatat gcagctcggt tacaaaaata 660

aattcacagt tatttaaaag acactggcac tatatattca gcagagacct gctggctgat 720

ataactgggt ataaacccgt cgcaaaataa atacaccttg ttcttagtgt ggcgtttgtt 780

ttctaaatgt tcaaaaacat atgcatcttg catttaatag acatatgcct tggatttgta 840

tataaaatac aatgttatct ttcctcatag aaaaaaaaag aatgaaaaag gtcgtagact 900

gctgatgctt cctcatatta atacatatat gcatgcgtag gttatggcca tgttgtgctg 960

ggtgcttgtt tagttttgct catcatcaaa ctccatttga aaactatgag ttggatcttt 1020

tctgaccctg ttatcttcaa gctgattcat tcaatcacat tatttggaaa gccacacaca 1080

cacacacaga aaggtccctc tcgctacgtc ataacacaaa aaaaaacaag gccaaagaaa 1140

aacgtcaagt gcattgcata tcaacgtact gatacaataa tagatatctc attatacctt 1200

tttatcttca gcattcagtg gagttcgatc tgaatttctt ttaaaaaaat atatattagt 1260

ggggctaatt tatgtggttc ctggcatgca tggttgctca aaatgcatca caggtgtcat 1320

ccgaaacttt tgcacagtac gtagtacaag cgtggtcgcc att 1363

<210> 4064
<211> 1107
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230335_G1, chr6:135487079..135488185, Cluster 25

<400> 4064
gcatagcagg gaatcctagt cgagaccctc tataatggtt ttgagtacat caaaatctat 60

ttcacttcca ttgcattgag ggctttgtct ggttgtagtt tgtccctgta gacagcgagg 120

atctggttgg aggcccccta catgatgcta aggtcctggt cagtgattgc attcgtagga 180

gccatctaca gtgccaacta agagaaggta taggctaagt aggttcccta tcacctaaag 240

tgaatagtct acatctaaaa caacatatca gtgtagtagc aaaataacaa agttggttag 300

gaaaggacag tgattataga tcagttgagg agaaggatgg attgaacaaa ctcttaagga 360

gcatgcataa accaaccggt taggctaatt ggttgagatc ccacaacccc cacatccatc 420

cacacattct atgattgaac atcaacccct tattaaccag tagggaaatg gtctgctagt 480

ttacatatca tggagataat agaaatatga aaagcattat ttttgccact gtcttggtag 540

gggcaccgag taatcataac attggtggtg tttctgaact tccaacatac ctggaccaag 600

acacaatcac ctagtgagat gatgactcca acattatgaa atactagcat caacacaaaa 660

gtgacttatc gagtcctttc actactttct aaaggcattg aactgcgctt gtcccaacct 720

tttagatgat gacttcaaca tcataaaccc taaaccatca gaacaaaagt gacttatata 780

gtccttttgt tacttgctaa agatttgaaa ctatgcatgt ttcaaccatt tagcgatgac 840

ttcaacatat tgatctaata gcatcagcat agaagtgact tatatagtca tttcagaaac 900

taatacttca ccacatgatc taggataagg acttagaaga ggtcttcaat aactttatct 960

taatggttga catttaccaa atgattctat attaagactt tggataattt ggtcgttatt 1020

gtagatgatc atgtcctgcc aagacgtgat gcttgtatgg ttaactagat ttgcagtgcc 1080

acaaccttga tcaattcaaa taccatc 1107

<210> 4065
<211> 1250
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230857_G1, chr6:138452338..138453587, Cluster 25

<400> 4065
atataattct cataaaatta ttatgtttca aagaaatcct aaatggtctt atggtaggta 60

cccgttgtgt atgtaccatg tgccatctct ttcttgaaaa aaaatacaat tctagattta 120

gattaagttc gtctaaatct atattaatat tattaacaat tgactctaat agttatagtg 180

taaagtgtct agatttagac atagtcaaac tcattaagtt aatttattta ataacgtttg 240

taaaaagtat ggagccgcaa acccgcattc tcatctagga ccatagcgta tttgaaaatc 300

aaattcgaag aacatccgtt tcgtggtcct atttagaacc tctttggaat atattcaagt 360

gttgtagatc cattaaaatc agctctggat ttcatttgtg tatgcaaaca cctcaactct 420

atcatatcta aagccatcaa aaaactgaat tttggaacca cattcataga ttctatgaac 480

ttatggagca cctcaagggg tgctaaaaaa tgtagatttc atacatcctc gtgaagttgc 540

cagtaattag ccaccatagc catcaataac acaactcatg cacgtacttg ttcacggttt 600

tcccttctat tccaatctcc ctcctcccaa cattgatttc cctaccatac aataaaggta 660

gtgcgaccag gaagccatga tgcatgtttc ctctctatcg gtgtacatcc tcagttgtca 720

atgattatcg gaggaggtag atctgacctt ctaacacctt cccacccctt tctttctcaa 780

ttccccaccg ggaaattggt tctgagggtt gggcttttca ggtttttgtc agtatagttc 840

gtgggtggca gaccgcagac ctcttttgaa gctcttccat tctctagtgg tccggagtgc 900

ggcctcctag tttggcacaa gtggggcatg gtcacctagc tcagcatggg tgggggtgta 960

tccatctagt tcgatgtgga tgggggcatg gccacgcagt ccagcatgca gacaatggtt 1020

ttccctagcg catttggaag aacgacgaca tttaggctag cattgcatct tgggatgcaa 1080

ctatagaaaa atgttggcat aacaggctta gaacaacatg agtgggtata gcaaggtctc 1140

tcccccaata cctccatttc aatgtagaac atgtgcttcg gctacaataa agagggcaaa 1200

gaaggacgag gtatgaatat ctcatacatt tttgttggat aaattttatt 1250

<210> 4066
<211> 1392
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233209_G1, chr6:149077983..149079374, Cluster 25

<400> 4066
ttctcacttg taatagtcct acaacattaa gagcttgtag atctttgcat tccaatgagg 60

aagactgaaa cttatgagag tgagtggcaa ccattgggag tagtaaaatt ggagcagatt 120

aaaggatcaa tggcgtcgaa gcaagttcta gggaaagggc tctctgaaga aagatgaagg 180

atcagttgca gaggagcatt tggaagcaga aaatgaaggc tatatgcatg aggaagttga 240

agcgccatgg gatttccctt tatagaggtc cataaaagtt gaagcaacac gagattgtgg 300

aatcttaagc cattcatgaa tggatcgagt tctgagctct aaactaaatc catgggcttg 360

agggttgttg aaatgagtta gtgactcagt caaagataga tttatttgat cataataact 420

taagtcattt cagaagatac acagaagagt ctcatttgtg tgattcaatg gctcggctaa 480

attggactca tgggctattg ttagttatat gtaccatggg tactaaacca agtttaataa 540

tcaaaagaag catatccaag agaagagata ggcaggcgct taggctagtc caaaagcaag 600

tacgagtgga agggactatg agctcggcaa agagcccata gactcggcaa taagtctggg 660

aggaagtcgt agccaagagg tttttagaag cgcgcaaata ttgcaaggat ctcaaccgaa 720

taagagataa acttataaac atagagttgg actcatgtgc gactccataa ccgactcgat 780

gtctaaacta ttgtccctct ttaggatttg aactccctaa acatcagaag atacaatgat 840

ccatcataaa catgatatag ggtattatat catattaaga taccgaattt ttataaaccc 900

tcgtgtctct tgtgcccaaa gtttcaactc ccgatctcat ggtaaacccc ataaattcgc 960

catcgaataa tcgtggacaa gtttatggaa ggttattttt tctcgttatt tttccttgac 1020

tactcaagta aaaaaacaga aaaccaagta aaacgataga actagaagtt gctttttaac 1080

aagcagccgc tttcgtttag aaccattttt tgtagcatct tgtaccatgc ttttggcttt 1140

cagctttttt gcttttcacg tggatgaaaa aaaatagaat tgtttgtcag atgttcaagg 1200

gagaaaaaga gagagaatat gttttaacta aaaaattttt tgcagcacgt acgtagctca 1260

cagtattttt ttatagctcg taatagattt tccacaactt ctaacatccg ccaggttgtt 1320

ttgagatcaa tgaaaattca tggcgggaat cctttacaga cgaccatcag gggaaaaaaa 1380

ttattgatgc tc 1392

<210> 4067
<211> 1245
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233287_G1, chr6:149334883..149336127, Cluster 25

<400> 4067
gaccctagca ttgacacgct gccatcctcg tggatctcaa taatgactgt cgcttaagtg 60

tcaatggact aggagtgatg actgaatggc caaaaagtga tggaaaaaat tgggatggga 120

gagtatatga ttagggtttt agctcgttat atgcaaacac tcggaggtga attgttggga 180

tgggtccttc atgggtcgac aatgtagagg gattagcttc ttttttgggt ccccactagt 240

acctcgtggg tgaaatctaa tcctcgcttc accatccccg tgagagggat tttcggtccc 300

atcctcactc tattcggggc gggtccccgc gagtgaaatt tccaccccta gctccatgtg 360

catacggata aagggagtcc aactccattt cttttgtgat ggggggtgtt gagagatttt 420

gtcctcttct ccgtagatta ttaaaatact taataagttt atatagaatc taaaaaacca 480

gtgcgctttc agatttattt gagttgtcac cccatgctag ataacatgag tatcatagcc 540

ttatccttga gtaaatataa ttaaaaaata ccactaacat ttatggtgtg caataagtac 600

gtaaaatatt tttttcgtaa taatataatc ctttttagag attcaaattg ttgataacaa 660

ttttacaaac cttgaccatc taaataaagt ttgatctgat ttaaacttat aatggtattg 720

ttttgggcga ggaatggagt tacgtacttt catactagaa tttggctttt taataaccat 780

tccccgtacg tggttcagag tagcggatgt gttaaaaagc aatcggcctt cggcattaca 840

aggggtgtcc tgtgtccatg gcatgggttt taatcactga cccacagtat tgtcccattc 900

tagcagctag gcatagctag ccttattaac atcagtgtcg cccgactttt ttttttcgtt 960

tgaaaccctt ctcgttgagt gaactttagt ttgtggttcc gccacgtcag tgaagaagct 1020

gtattattat tggttaatca attaacacag aactgatgga ggggcttatt attcatgcat 1080

ggcacacaag ttaattaagc agtgtgggtg caatcacaac tcagcacaac tgtcgtgcgt 1140

agttggtacg ctacacatat atatacggta gctagctagt atcaacacaa cagcttgcag 1200

gattattgtt gtgctattca tatctgtatt atgagttgaa tggtc 1245

<210> 4068
<211> 1110
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234611_G1, chr6:155434570..155435679, Cluster 25

<400> 4068
tgttagttta caagctagag gcaatgctat cttttccttt tatattcttg ttgaataagt 60

catggtgaca tcgacttgct ttagccatct tcaccacgtg catgtcaata atccgaagct 120

ttcagcttcg tccctgcagt tatgatggct attcattgtc cctaaatgaa tatatctttc 180

ggtatctgtc ctgcttcatt taaaataggc taaaaatggc tggttagtaa atattttaaa 240

aacctaaaag gaactaaaca gtcccttaca cgaagtaaaa gtgtgtttag aatgctaaat 300

gcattcaatg tcgttgcatt caatatcata cacttaacgt ttatatttgt aggcgatttt 360

ttcatttggt tttttagtaa agtttgttag cggttcttaa aattgtttaa ttgaatcgtc 420

ccagtactag taaatctatt taggttctta aaaataaata tcccaccgct tcctaatcac 480

aaaaccaaaa taatgtactt ctatatatct agataaatta ttgttacgtt agtgaaaatg 540

ttactgatta aaatcagtaa cttcacctga cctcaaattt aaagcataaa ctacataaca 600

ttatgaaact agcataactg gatcacatga acgaactttc ggatctaaag ttattaacaa 660

aataatgctt aatacttgtt gtcctatata gtgacgaaaa tcaatcaatc tctaattttg 720

taattaagca agatccataa aagattacta ttccaacctt ttttggagac taaattgatc 780

ccctaataat gatgtacatg gttctaacta agagtaccaa atcagtctaa gatcaaagta 840

tacatgcaaa taatgaacaa agcaagagaa atgagattac cacattaatc tagcataatc 900

aacactttaa tctctaaggt ttatgtgtac aaagtgctct ccgaaagcac tatagagttt 960

cccccaaaat ttctaaaagc tcgagattaa tctaatctat tagatctaat tgattgtacc 1020

attatagtct tagattagat ttccaagcca atacaattcg ggcagcccat ctcatcctcc 1080

tatcatatgg gattcgccta atctgttgtc 1110

<210> 4069
<211> 1106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235855_G1, chr6:161533082..161534187, Cluster 25

<400> 4069
caaagcagaa tcttgactgc actacaaaag cgctaactga agcacgaggg agaaaccgag 60

acttattgac aagttttgag gattcagcta aaaaaatcaa tatgcttgag gattcactta 120

acaggttagg tttcatttgt tacaagcatt tgtgatttgc tctttgcttg aggatttgtt 180

tcttctttac tcatagacta gaagaatgca cagcagagaa agactctttg ttggcagtag 240

aaagaaaaca aaacaaaacg accaaagaag aactggccaa tgcccagaaa acaatcgatg 300

aattagtaca tgagtcacag cagtcccagg aaataagaaa tcaattggaa gataccatca 360

agaggtctga tgctttttct tcagatgatg tgtccgaact tctttcttga tatcatcatt 420

acactgtgat agtgactttt cagtgcggtt ttgaaaggtt taaagcagaa tcgactgcca 480

gagacacaat attattatca gagaaacagg cacatgagac gaccaagaaa gttctaactg 540

aaattcagtc gagaaatgaa gagttaatca agaaaattca ggattgtgat aaaaatattc 600

ttgagcttca gctaactgtg gagaggtcca taatcgtccc ttattgtcta cctagcaacc 660

tctaggatat taattctgtc agaatgatac ctattttaat ttttgaatca actccatatc 720

tatgtcatga gtacaggctt caggaaaaca catctactac agaggcttta ctgttgagag 780

aacgagaaca aaacaatgca accatgaagg cacaagctga aactcaagaa ataaatttgc 840

agttactgaa caagcttgag gacgttgaga caaaaattgg tcttcttcaa ggaagtgtac 900

aaaggtactc ttaagtctgt tgttatattt gacagataag taaccctgtc ttcagtcaac 960

ctcattaata ctattagttg ttgattctat cataacagaa ggacaacacc ttactccttt 1020

gtttgacaag ctttgatcag caaaagtagg cagtaagtat tagagaagta tcgggatgga 1080

attccatagt cattagatta aaggga 1106

<210> 4070
<211> 1368
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237793_G1, chr7:3475803..3477170, Cluster 25

<400> 4070
cattatgttg ttagccttca tcgtcaatgt caaaggctag cctcaatatc caccttaatt 60

gtaatgttgg gggcctttag gcacacggag cattgccaat attggatgct tttatgctcg 120

ttatgagcta tactgtcagc caaagaaggt cactattaat ggtattgtga aggagggtca 180

gtttggcaac tactcgctta tgccttggtg gactcaaaag gggtaggagt acatgatctc 240

cttggctgac aataataatt gcatgaatga ttgggaccgc tactaaatct atgtgaagat 300

accaagggct acctctaagg attcaagagt ccaggaagtt tttagttcct cttagtgtcc 360

aagattgaga agatgaccct aagacacaca ttaaggctaa aagatgtgag ggatgtcaag 420

cttgtgaaaa agccttccga tacattgttc gttattacga agggcaagat ctagttgagg 480

atttcattac tatccagatt ttgcccttgg gttggttcac ctagaaggat cctacttttg 540

aaatggtgta cgtgacaata ttcgaagagg ttgatggtat acccttttcca ccctttagcc 600

ttagtaggac caaaggcgag acaaacatta tacttgtcgt gtgcgctaag ggctcaacat 660

gtgtgattct tagtgacatt tctaagagag agtatactac ttgaatttgt acggtgtgcc 720

atatgccccg actgaaccat tttttaactt ggcatgaaat atgcccctac gaggtctcgg 780

gaaacttgtg aagattgttt tggagaaggc caatggtgtg gaaaatgttg tgctaaaggt 840

tgactcaagc aaggctaagg caaaaacaaa aggttgtttt gagtgccctc gtgaagagaa 900

caaccttagg gggaggtgct tcagtgaagg tcattattgt tgcaaatgat gtagaggaca 960

tggataaggc ctttgaggat gattttggca aaatggggga atccactagg tgcatgcaac 1020

tgtagagttt gtagggccat ctatggtgac caaaggtatt aaacgattat cgacatatct 1080

atcacaaatg tttggcgtag taatatagag tttagtatgc caaacgatga tagtgatagt 1140

ggttctaaat atctattcgt ccaaagacta ccagataaga gagggatctt ggaattcatg 1200

accaacgtca gtcaacaaag gttatgcttt cgaaggtgga cctttaggct tgagaaaagt 1260

tctttcgagt aaggtggtgg atcatcaagc tttataggta gttatagtag ttttctctag 1320

tgggggattc tgactccatc acatggttgg gtgatggctt gaaggttt 1368

<210> 4071
<211> 1154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237867_G1, chr7:3659654..3660807, Cluster 25

<400> 4071

tatatacaat gtcaaaaaaa attcgtaaaa aacaggcata agtatacggt ggatatttta 60

gatatcttaa atatgtctaa tatataaaac actagtttcc aatgttgcac gaaggacgtg 120

ttgtccatat tttaacggta aaaagttaga attatgcgta aatggagatt caaaccatgg 180

ttattgaatc caaatctaca ttcacatcca tctaacaaat ataacacata tctttatttt 240

atactacata ctcaaacata accagaaacc gtagtccgga tatattgttt tgacgtttgt 300

accgagagaa atgtttacga ttttttgggg tgcatgcaac actttctagc tagggcacgc 360

gatcacgcga gggagggaag gattaccgta ccatatcatg ctagttgttg catttgtgat 420

ttgacatggg taagaaatat gctttgttta tggggcctat atattagcta cttcttgacg 480

cgcccaacaa aagggaagtc cagattttct gagatctagt agcgcatatc tgtcaggtca 540

ctaggtagta gtgaccggaa ttctgctcct acgaccctag ctccattgac atctggtcaa 600

tcatgaattg cctacatgac tggtataagg gccaatcatc aatccgtctt atacgatcca 660

aacggtttca tctccttgct agtggaggtg ataaatccat atgaagctaa aaatataata 720

gattcatcgg tttttagttc attgcaagga taacataaaa atagctcctt gcaatagtgc 780

aaaggagagt taaaggcgaa agccagaggt tttttaatac ggccttgaag cgggtggtgt 840

acctagggtt agcttgctat atataattaa atttaggcct cgtttgccat accttcactt 900

tattagtgaa tccatttttt attgcttcaa ttttatgagc tgccttagtg aatcttttgg 960

caaaacattt tttacatgtc aagcctttaa aacgggaacg tatcggatga aaaccaatca 1020

cttggtacaa aacgtgcaag cagttgtgaa atttttaaaa cattcctctc aacgtgcatc 1080

agtttcaaaa caacccttt caccttcctt ggtatatttt taaatacacc cttccaaccc 1140

taccaacgtg ttga 1154

<210> 4072
<211> 1356
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238241_G1, chr7:5532122..5533477, Cluster 25

<400> 4072
cacagtgacg agagattcaa gtgcatcact ccaatgatct ggagatcgaa ctggactcaa 60

gcttagggct ctcaagggta gtgaatatat attccggtca tgctatttat ttatttattc 120

tagtaaagta cagtatattt tttgttgttg ttcataggag tatatatagg aagtgcatgc 180

aaatgattgt acaccagggc cttatatctt ttattcaaaa tgctccctta tttgcgatta 240

catctttgtt atattattgg cgatcgatgt gtgaatgtgt gatgtgtgtc tatctcgtgg 300

aacctgatgc ctcagctctc ggaatccttt tgaacacgcc acattgttat atcaactata 360

tcattcgaca tgtctatgga gtgataaaaa accaattcaa agatcgatca caagtccacg 420

ccacgaagat tgaaagtgag attagctcat atttaacgct gaaagtaaag ctgtcctcca 480

ttattagata tgattaataa taagtcgaaa caagtagata cgaatcgagt ttgatgcacc 540

gacaagttcg tttaaaatct tattattata ccagagtttt tcatcagagc tgatcagtgc 600

atcctgcagg accaagcttt tgccttttgg ctctctgatt gtcaaatgtc ttatctaggg 660

ccagcaagac ttcgccgtcg tgtattatag gaatagtata atacagtata tatttagttt 720

tagtacgagt caaaatagct gtgcagccgt tttcttgacg atagaataat gatcacttta 780

tacatagtcc tgtcaactgc cgatgcaagt tgcccatgct ggtgaatcta tctagagagg 840

aaaaggtagg cacgcgcgca tgtgtattac tgaattggca cacgttgggc attgatttag 900

ctaggtcagg aaacaacacg ggaaaaaaaa agagattaag tcagacttct taacgtttat 960

tagtatgtac gtaattgtta acataaataa catacctagg tcctgtttga tcacatgagc 1020

tcacttaact ttaggccact ttatttcttg aggtttaaaa ataaaagatc taaaattcta 1080

ctagaccgat cagactatcg aagcagagtc tgccgatcaa gcaaaaaggt ttaagaggaa 1140

aaaaaaaatg ggatgtcaga ctagttggat gtcggactgt atgggtgtat atatgcaatg 1200

atcagcaaaa gctagtcctg acataataca aaaaacaata gtcattgtga ggtgtccaat 1260

ggtgtgcaat aatctgatgt tgttgttgtc agacacgtgt acagtgccta tggagggtgc 1320

aacgactata ttcctcgttg gagctataag cccccc 1356

<210> 4073
<211> 1317
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238965_G1, chr7:10180506..10181822, Cluster 25

<400> 4073
aaggtcatgc atggtttcat gtccgttcta gaatacatta ttacgtccaa gcccgaccac 60

atctccaacg ggttaattat acgactgctc cgtggagatc aaatccgctc ccgatcatca 120

caaataatca agagatgtca attcacgata taatatataa tgctacaccc acaccctaca 180

gtcatgtcac ttcgatgatg gatagcttat ataataaatg cattgcgtac tttggagaaa 240

ccagttttac ttcatagcag aagcagggtt aacttccatt tcttttagtg tccgaccatt 300

tccttaactc atcttgatgg tatcacgtgt ggggttgttc tgcttaatta agtcgtcacg 360

ctacctgacc ttcttgtacg agttagtatt gactcatgaa ttcggccact gtacacagtc 420

ctgcaaatgg tagtgtgtat atatatcaat gtgtcttgaa agaaaaaaaa acatgagtgt 480

tcgattgctc gagttttgga attggtctcc caaattcaaa ctatgcatgc tcccactata 540

tatattttgg aagaaaaggg cgtctctgtg tgcgcgctac aagttgttgg tggtaggctt 600

ggaaggcagc aggagatcac atcgctggga aacatgtgct aagggtaggc attagggaca 660

gagatggaca caggataaaa tatgactggg gacatactaa tagcgacgag taacgaaata 720

atagagtatg gacatctaaa ttagactgag tagaggatct tatggtaaaa ttctacactc 780

tagtacttag aacaaagaaa agaaattagt gggggcatgt gccatcgcta ggctctactt 840

gggtccgtcc ctgattagga atgttcggtc attctccatg tcaatgagag agctgggggt 900

ggaactccac agaaaacgtt cccacacttt ctttttcag ttttattggt atgctagctt 960

ctgcattaga ctaattacgc caagtgtatc cgggcatgtt gccagtgcgc gagtgacata 1020

ttcctacaaa ttgaaggcac actaattatg atcatttttt tgtctcgtct caaaattaaa 1080

ttcagctaaa ccatttattt catccttaaa ctatatgggt tagagggatt agataagatt 1140

taaaaagatt taaatttaca gaggacttaa tctcctgaat cccttccaat ataccctgag 1200

atttcacaaa acaaacatag ccttattagg catcctacta gagaccacat gatgtccacc 1260

ctacatggct tttcgaacat gtgccccata tagatcaaat ctaaatagta tttacac 1317

<210> 4074
<211> 1335
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239193_G1, chr7:11676321..11677655, Cluster 25

<400> 4074
tatggtaatt cccggtataa ctaatatttc cttttgttga aatcctaata cgatgattgt 60

atgggtcact acgcaagtaa ccaaacatac tgagataact tgacatgaat aatcatatga 120

tgattgtatg gggatgcact tgctatggat tttattattg gattgcaaac atggtgtttg 180

aaaactactt ttcttaccaa aggagtacac cattgccatc aaatgatgtc cacatttgat 240

ttttttgcta ttatgcctat gatgaatgcc atatttgatg tacagttgga gcaattatgt 300

ggtaattttg ttggcaatga aaggtttaca tgtacttgac taggatacca aacatcccct 360

actaggttgt acctatttat ttttattctg gtgcacattc ttcctagaat ctttgttgtg 420

gtgcacattc tccattctgc atcaatccct tttagctgca cattatcttt agtatctttg 480

ttctggtgct tgatttgtct ttgaaccact agacgactcc attatgtaca aatgatgatt 540

agctaagttc tgaggtgatt taaaaaatta tttacattct aggtatgtct tagtatgttc 600

tttttcgtgg tcgtggaact ggagtgtata cagactggac aatttgcaaa gaacatgtga 660

tatgcttcct cggctgctcc ttcaagtgct atgagaggga agaagaggtt gacgagcata 720

taaggcatta atagaatcta cattagattg taatagactt aaactcaaaa gtacggttaa 780

taataagaag aaattaggat ttaaacttac taatgccaaa tacattgtca ttgttatgta 840

gtttgtaatt atcatcatca tcatatgcta aattgtcatg taactcgata aaatggacga 900

atgaattgta ctaatacttt ctataatgca atggtaaaca ctttttattc aaatggtaat 960

cactcattct tacaaacaat agtgtgacac agtccaacaa aataaaaacc ttaactcaat 1020

atacacctac atgcaaatac ttagccaaaa tcttcaaaaa catggtccga caagctcaaa 1080

caaacaacaa ttcaacctaa gccaacctca tagcccggta gcaccacctt gactcagata 1140

caatcaaaca gacctcaatg gctatatcta gttaggctac gactgacctg gctagatggc 1200

tagccagcta aatatgtcca tagccattga tctactatca caccagtgca gggcccacct 1260

attagcagga aatcacctag gatagcccat gcaacgtttc tcgacaacag ttaaccttgt 1320

acctaggtct gggca 1335

<210> 4075
<211> 1265
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239625_G1, chr7:13988302..13989566, Cluster 25

<400> 4075
taaaattgtc taaaatggat tgtttttttt ggttatattc tccattgcaa tggaggagtt 60

gatgtacgat gaccaggcat atatacatct gtacagagag gaagttgaag attatattag 120

tcgcatgatc acaaaaacat gattgtatag cttggtgacg gtacaataat cttaggatat 180

atacgcccga ttgtagacat tattagttcc atttctttgg ccaagacaat aattggacgt 240

gagatctagc tagagagaga cggtgtgagt tttgggggcc ggggacagaa gtatatgctg 300

atgcatgcat gccagtccag gcgactggtg agacggttct agagatgtca gtagcgcaaa 360

gaacaaaggg acaggaacat gactacacat gagtgcttgt taaaaaaatc acgtccaaaa 420

ctggaatctg cggagcaaac tagaagcttt cgatttttga ttccctctgc gtccgccttc 480

gatctcgtgc atgctgcaat ttgtctgcta agctaaaaaa caattgtttg attattgtgg 540

cctagggcca ggtcgtcatt gatcttttgt tttatgtgtg tcaggtgtac gtgtgctctc 600

cagaggttac gaaggagcta gagcgagagc aacagaacga tgattcctat gtgcgtgaaa 660

tacgggcaaa ccgtgacctc gctccttaac taatatctcc gtcacgcact gaaaataact 720

caaaatatgc cacacctaag tttatataat atcttagcat gttgaatggc gaaccaacag 780

caataataca gtaccgcagc cacccatgac aaactggttt caattcaagt tattttaagg 840

gtctgtttgg aacgatttta cacgatacgt gcatagattt tacgagataa tgtaatagat 900

ttaatagaaa tccggcatag attttacacg atcgatgcgt gccactaaat gtatatatac 960

atgaatttat tcgtgtggat tttaaatatc aaacccggta tacacacaca aataacgatt 1020

taaattttga attaaaaaag atagttatcg tgaagtactg tacttgctac tcctgacatc 1080

atgttacttt agacgccttt cccacatata caaacatttt acgataaaat tggaagttgg 1140

aacacggttt cttggccggc gcgtgtttat cgtgagattt ctcgtgcacc cgagatgtcg 1200

cctcacgaga catggctatt ggctaccagc gacaagtgcg ggctgcctgc tatatatctc 1260

atgtt 1265

<210> 4076
<211> 1350
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239881_G1, chr7:15053774..15055123, Cluster 25

<400> 4076
taacctattt ttatctgtct aatctcatct ctcttccacg tcagcatgca tctcatttgg 60

tatttgcagg ctcatataag aacgtaggcg tattatatca tatatatgat tttgaacttg 120

tgctgagtat atatgtcgat gaaccgccaa tcaatttcgt aaaagattaa tatggatagg 180

cctaagattt cttttctttt taaataaaag gctttacagg tgtgcggggg gagaattgtg 240

cggcgtatca gctcgaaagg agcatggagg tgctattcta ggcccaccaa agccaattgg 300

gtcagttcgc gttgttggat cgtagcggag cacaagcaca gcctacaaca attcaggcga 360

gggcaggttt gaaaattgaa ttgtcgcctt caaagtggtt cttacctctt gtacaaatag 420

tgctctcatt agatttttt ttatatagct ttttgtaaat tttatcaaat atggaaaaat 480

atgaaacctt aaatatcgaa ttgttgtttg tggtaagatg gcatcatagt ccatgtaaga 540

acgaccgcaa ccgagagtga accttagacc tgtggtttgg tgtgagacag acgaaaggat 600

tttttttca tgtccgattg tccgagtaaa gaatcaaaaa atccttctct ttgtgcggtg 660

caactattcg tggatccata atccattgcc gtgcagagga ctgaacttac aaccttactg 720

tgaggtgaac tcatggtgtt gcaggccaaa cgagaagagt tgcatgcaga ttgaagtttg 780

cgtttgtcga aaatcaattg cagaaaattg tgctacctgg ggttctgttc gttggctgtt 840

tttttcttct aattgtacac gtaaagtgtt gtagggttga gattacgaac aagaggacat 900

gaataactct tctaattata atcacattgg tcaatcaaaa caaatataaa attaaactaa 960

ttggtctagc aaaactacca gtctctgtct aagttaggca actaaaatgc atagctagag 1020

agacctcaca tacataattt tagttagtaa ggtcacacaa acctagagtg agacctcgaa 1080

tggtgccact attcacactc atagaagacg tcggaccata ctattcacaa tgagtcaaac 1140

ccttgatata gagtctgacg atcacataga aaaggttcta gagtgagaaa cagggcatca 1200

gactagtcca acggtagatg tcacacaata caagcatacc cgatggtcag taatgtctag 1260

tgatgacata ttactgacac aatagccgtt caatagccgt tgagatgtgt tggaccctta 1320

catattggtc taatgataca caatgaggca 1350

<210> 4077
<211> 1095
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_240293_G1, chr7:17245125..17246219, Cluster 25

<400> 4077
actgacatgg tttgctccga gcacaaggac ttcttcaaca gtatttttg aacggaaagc 60

ttattacatc ctaaaattgc taacctttg tttttgaaag aaaagcttat cctgttcgtt 120

gcatcttgcc acatgttgag aaaaataact agtattcaaa ataacaaatg ggatttctcg 180

accttgctcc atgcacgccc ccccccaact tgtttgattt tcaacaatta caatggcctt 240

ttctttccct tgtttcgctg tcgctagtta tgatgtcgca tcacttcact tctgcgagcc 300

acacacaaac tggtgttggt gaagttgttt cgtgtgccgg gacagtgatg gatcacagaa 360

aactttgaac tttcttacac tagtctggac cagaccgatg gtgaactgat ggtgctgcta 420

gctaggggcc tgtcaatgct aagcatcatc accagcattt aattacctga ccagtgatta 480

tagtgagtga atcatgtgtg gattgcattt ttttttttg cttgcatgct aagccgagta 540

gtttgtgttt ccttgctatt acacggcgtt ctagaatcat atcaaagaat aaagaccttc 600

gctggttcac atctggacct ttcacttttt tttatggatg aatctgtttg aacctttta 660

ctcttctctg tttttgttct gtcgctgccc tgttgaaaga atataaaaaa tctcacaacc 720

ttagtcctta cacgtaaatg gtaacttaga agtaactata ttttctctat tccttgatag 780

atcaactcct agagtttcct caagtcgaac ttctttgtat ctgacaaaaa tctataaaaa 840

aagagcacag atatataaaa aaacttattc caaaaatata ttttattctg agtctaatag 900

tactggtttg atgtcataaa tctttgcttt tttctatcaa tttaatcaaa cttattgttt 960

ttttaaaaga aaaataattt attcagatag agagagtatg tacaacaagg gacggctatt 1020

cacttgtctg catctcatca gcaggacaac atttacgttt tctttgctat tacacaacat 1080

ccttcttttc tgaac 1095

<210> 4078
<211> 1114
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240299_G1, chr7:17271936..17273049, Cluster 25

<400> 4078
ggtttattta ttacatgagt tttgactaga agtttttaga ggccttagtt tgtaaaacag 60

gttgtctaat tcacctccct ctctgatgtc gagtgtccca agtagacctt tcgggcatcc 120

ttcaagatga cccaagggta aaatagcatt ggaagttaaa gctcctaggg caagacagcc 180

ttgtgaaata taatctcagt gccatatgtg ccctgtgtag gattatcatt cggtaccagg 240

caatcaggat aatactcatg tcaacatatt taatgtgatg gactaccatt gcgatcaatg 300

atgagcacta tagcaacgac aacaacatat gtatctacag tacgtgtcat cattcctata 360

tccatactta aatgttcttg tatatctaca accatgtaca agcaactaca ccgcttacca 420

actatgtaat atcagacaat gtgatctcta atacctgcca ctagtacaac caatatttac 480

cacttcaaca tgattaactc aacaatgtaa cacctccaag gtgtgtaaca tgtacgactc 540

catgcttcag acaagataga aatacttaag cctctgtcca gttgggcctg ctatccgata 600

ggtatgtaac tctctcatca cttgttctat aaaaaggata ggtagagcaa catagaaagg 660

gctctcgatt tagaggttgg ctatatgtga tctagcgacc acttagtcta gaattctcac 720

caagaccaaa aaggaaaggg agatctggtc agtcatctag cttgatgaat atcttagcat 780

gtaatcttct ttgcctcaac actcaccaat cttctcacac aacgaggaca tagagtatta 840

cacatatgtg gcataaatct ctattaaatt tctcatttac tggtagctag gcagaaccta 900

ggatgcagtg cgactccaat ctatgtccct catttgatcc tttactcatc aagcttctcg 960

tgtacctatg tgagctaaag aatgatgaga tacaaactca tgttcatcga tgattgtatt 1020

tttacgaggt atatagaagc gtgtatgctt cccctagtct ttgttggagc tcctttcaag 1080

gatgctctcg ccatggccaa gctcttgact aggt 1114

<210> 4079
<211> 1166
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_24242_G1, chr1:146744112..146745277, Cluster 25

<400> 4079
ctcatccact ctcaaaccct aagcatagct gatttgagcg gcgatgatgc atgatgacgg 60

cctaacgatg actctgctca tgctccactg ccacctgcaa ggtctagaag gggtgatgca 120

tatggaaata taagaccatg ctattgaggt tgagtttctt gggatgtgtg attggattag 180

ggattcaaat gatgttaaca aggttagaga ttcatgagaa gaagttgttt attcatactg 240

gttcgattga agattcatta aatcataggg attagattga agtagttgtt tattggtcag 300

tttccatgat tttacttttt tgggatccat ttagtttgat ttatttgttg tgttcttcca 360

tagtttagta tggattgttt ggatgttttg ggtacactgc aagttaggtt tcactacaat 420

ggggagttca tagcagggaa aaagctacat tactatgagg gtagtgaggc attttcttac 480

attgtccgag acaaatttca ttatctaaat ttgttggaca cttgaaggac aactacattg 540

ttggggaagg cacactaccg cactggttat ttcctataaa ggaggttaga aatggtttgt 600

gagcagtagt ggatcataag gcctgcatgg gcataaaaat gcacaactga catatatgtg 660

gaggttcaag taggaatgta aagtcagatg atgaggattc ataaggtgaa gagtgttact 720

atgaggcata tggaggaagg gatcaaggat ggctctaagg aaggtagtga ggataacttt 780

gaggaacaaa atgatggatt aaacattgat aatgatgttg ttgaagatgc tgactttgtc 840

ttaggtacta gccaattaga cataagacgg cgtagttaaa agttcataat gtaactaaga 900

ctgtgaggag gttttgtagt cctagaaaag ttcaagatga gtgtaataca attgttgcca 960

aaggtcttgc aactagttta ggtgctagtt ttgagtacaa tggatttatt cctagggatg 1020

atgagtcctc atgagaagat gatgagggaa ctaatcaaaa agtttaaata gtttaataat 1080

aaaatgaaat aggggagtct acatagttag atgatgtgat tgttgagggt cgtaaaaatc 1140

aaatagttga ttgaactatt gtacat 1166

<210> 4080
<211> 1020
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_251856_G1, chr7:95517569..95518588, Cluster 25

<400> 4080
tcaactcttc ttggaaggtt aattcaagtg agaagataga aagtgttaaa atacattatt 60

aaaagcaaca tgcaacttct aatagataaa atggattact catctgaaag catgtaattt 120

cgttccttac aacacatcaa atgattaaaa atataccttt gtttatacaa tcaaaggcac 180

gaagatgaag aaaatacaca acttcgtagt cggagcgatt tgattcaatc tccttgactt 240

tgttcctttt attagcttcg gttcaatgac gaggatggac gtgacaaagc tgatatatac 300

aaaggtcgat cctctccccc caacataccg gcaaatgcta ctatgattaa tttggttggt 360

ccttgggctg cgttttgggt ggttttggct cacaccagat gccctgcccc tgcgatgaat 420

aataatgtaa aaccgaatca gagaaatgtt tcgaaagctt atgacgatgc tgtagctcga 480

agttcaccaa cagcactgca aacgttcacc aagtccagga ttcgtgtctg caagaggtgc 540

tatggtttta tctatctgac gtgagagggg aagactataa gtggagatag aaaggtgtcg 600

tccagggatt aacaaaaaca acgcggtttg taagctagca tgggagcgtg tttttaaatt 660

actcacagac aatccatttc agttaacaca cgccgagagc gatgacaatg ttgtgagtag 720

gctaggctag ctatcagtgt attacgtcta gccgctatcg ccttttctca gctctcatcg 780

ggtggtgttt ttatggccgg tagaaaaaaa aaatagcagc aaatactaca tcaaaccaac 840

cattggtcgt cgttgtaaga gagacaaagt tcaactatcg gttggtataa atgtgtcagc 900

gtggatatga ctgacttttg cggtcgataa acaatttgta ctgatcgatg gcggatcctc 960

ctccatcgct ggagttgctg taagatgtgg tgtgtgtgtg taggcgagga ttgttcactg 1020

<210> 4081
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253521_G1, chr7:104869219..104870327, Cluster 25

<400> 4081
aatttaccat ccgatgactt gatctgaagt catctcgcaa ccttcgtctc tttgcaaggg 60

agaacactga agcaccgaca aaaaacaaat gtggttgaac tcgcaaaacc atcacagaaa 120

caagatgaat gctacaacaa taacaatttt gttgggggtc aaatgatgca cttgggcctt 180

gaagtggtaa aagatgtcac aagaaaacta tagcaaagga acattgaatc cttacatgaa 240

gtagtcaaca aagataacaa ctttgttggt attgggagag gagacatcat cctccccttt 300

tacagatctt cacttagtga gttccttcag catcaagaat cctttgtcaa caaggtactc 360

tgtatccttc ttgttagaga tcaacgaata gcattgtggg tatggataga actctgcttt 420

cttgctactt ctagtggtgg tgatgacagc gattagtagg aactattttg aggcatcttt 480

ctttggtata ggcttcttct gacccctcac cgttagggat ggaggaggaa gataaatggg 540

aggagaagtt tgatagactg gaaccggtag gtcaaagcga gtaagtggtg aatgactatt 600

gtgtggtggc aacgagaaga tgaagggtca caacctttag ttgcttatat aattagagca 660

tcgatgatgg tgggacttat gtgtcatatc ttattggtct gttaaacaac tcgtaaaata 720

gggtaaccca aaacatgggt cgataggccg atccatccat caattgacta gaaagaccgg 780

atggttcaaa aactcggatc aatatcctat ggacgtacta tacattttcg gtttttgaac 840

ttgtcgccct gtgccatttc ggcccacaaa cttttaaaga gtgttaacct agtccttaat 900

cgatggtcgg gtcttagtta agtccaaacg atgatctcac atgtcagcat atgtatctct 960

tttatctctc ttttccggtt ctgtctcacg agacaagcaa aaaagatagg aattagatac 1020

ataagctgac atgtggggtc gatatgtgag ctagacgtat actgtatgtc ttaggctatc 1080

ttcatcagtt tacctatcct catacttat 1109

<210> 4082
<211> 1064
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254694_G1, chr7:111415271..111416334, Cluster 25

<400> 4082
agcttcacat agatgtgcaa agatggctaa acgcgtcacg ttttaaggat agtttggttg 60

cactcaaatc caccctattc cacaccacat gagttaggag tgggaggaat tattatagag 120

agaaaactta ttcctacacg tgcctgccgt actcaacaac gcacaaacta tgccttctat 180

ttctatttta tgtgtagatt tgagatgaac caagaggatc ctccactccg gccgcagagg 240

ttgcctgcag acgtctccac tgccgacaaa acaagaaatt ccagccactg gttcccatct 300

tcgtgcatgc cccactatga atgatccaca cacgttgcca agtgaaaata tctttctata 360

tatgcatgca ctgccgagtg ccgggcattt tattatttgc aaatatattt aatatttcat 420

cgaagtgccg tccagttttc tatgacggcg accgccatat cagtctaaaa atggatagtt 480

tcttgatctg aatcattaat ttgtttgtca aaaaattgac atttctttca tggcaagcat 540

cacatctcct cgtgtggacg agttagttgt ctcgccctca gacatttctg tatctgtatg 600

tgtccggatt atatatggtg gtgactcaaa taaataagaa aagaatttgt atgtaagtac 660

ctgcttttgg tgcagtgtgg tggagtcggg cgtgcaagat tcacctgtta cggttcaaga 720

tagatccttg tgaatgtgtg tgtatacgta ttccatgccg gaaatcgcgt ccattccatt 780

atctaaaaga tttaaataaa tagtgtgcct ttagttttct tttcctgtta tttggggttt 840

ggattaggaa tagagataga catcatcaga aaaataatta catgaggtcc gtttctttgc 900

catgcaattt tggattcaca ttgttccctc tatttcctta attattaatt gtgcattttt 960

taagattcaa acttcatatt tgtcgaccca caataatcac cttactctac gtgaattttg 1020

ttagaaataa gtgatattga tgggattgga gtagggatgg attt 1064

<210> 4083
<211> 1254
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255556_G1, chr7:115700100..115701353, Cluster 25

<400> 4083
caccctcctc cagctagccg tcgttgaagg agggagcgct cgtgacggcg cacaagtctg 60

agatgctgcc gacctgccgt cgcctgtgcc acatcttggt agcgtcgaaa ccgccccagc 120

atgcagcagg aggccatcgc cccgtggtcg cattcgtgcc cacgtctcca tcctcgccgc 180

actcctccat cgccgcccgc ctccccgacg agcaagccga cgcagaacag agccgagccc 240

agccgaagaa atcgagtagc gatctcactg agttacccag gagcgatgtg ttctttggcc 300

gtaggatgcg cttccgtgcc acacgtcttc aatccagaga ggtgccttgt ttcgttaatg 360

tctctagata cgaagtctga ttgatataat tctaattaag ttaattgtgt agttttatct 420

atttaatttg ataaagtttt atgttgatca gagtcacgga ttttgaccat ctcattttca 480

ccgacgaaac aatgttcttt ctagaaacgt gatattaatt tggttttgca attatgaggt 540

gttataacta tttttgagct tccccaatca tttacccccc ccttacgtct ctcgatccta 600

cattatcagt gcatttaaca tggatttgca ataggtgatt atgcaaagac atactacaac 660

acataaatga gtgatggtaa gacgccaaaa atattggcaa ttcaacagat atatttaggt 720

tatggtgaca attatatgct ttggtagtat tcattgccaa ttctaattct ttatatttag 780

tatacatata tttcaagtat ttatatttaa gctttatatg aataaccata gcacaaccct 840

aaaacaatat atttagtcta tgcgcagagt ttatgtcata actatatttt tttgataatc 900

ccattatata tagcaaactg aaatacaaag accattccta tgacaaaagc aatatcatca 960

attcatcagt ggcacccccc aaggagaatg atgacaaata tttctatgat gtcctacaag 1020

atataaaatt agaaatggcc aaaaatcatt ctaactatat ccactctaca ttttgtattg 1080

tcttgaaaat agaaaagctc cataccatat ttcaagtagt actagaaaca cattccaaat 1140

cttcaaatat aacttttatt catactctta tacacatcta gcatttaatt gtcatgtggg 1200

agtatgaaat aaaacatgat acgatacata tatcttctat agtaacatga taca 1254

<210> 4084
<211> 1138
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255679_G1, chr7:116406027..116407164, Cluster 25

<400> 4084
ttttggggtg aagagttcac ggataggcca tccaattttg ggttaattcc acctgatgac 60

ttctagggtt gtcagaccta agggtttagg tttttccttt cctaacagct gatctgttga 120

gtaaccctat aaaatagttg atagatcatg cttcctctcg ctaatccccc atagaaggat 180

tatttttcta tgattttcat aaacaatatg gaattgatgt aaagagaaaa catgataaat 240

gaattgaagt gtaaagttta agaaaacatt tgatttgtat taagaatgga gtgaatcaac 300

aaatttgatt gtctccacaa attagatctc tcgaaataaa caagaacaac ttgaagataa 360

atctaaaacc taagaataaa gaaaagctaa actaaattta aaaagaaatt ctaaactaag 420

taattggtat ctataacatg tgacaaagga gcctatttat agatttcagg tggccgttgt 480

ccttaaccct aggttagctg acgttcccaa gctttaagtt tgattttacg gaccaaaata 540

cgccctggat tgtgtataat tctcgttcaa agtcgatgtc gtgacacacc aggacctgtg 600

tcatgactta ggagtcaacg tactcctctt gggatatctt caggggtatg tcgcgacacc 660

taagacagtt tcgtgatttc tctattctgc ttcatatgtt acgacattga gtattccgtg 720

ttgtgacata gtgaccagta tcggtttagt atgctttctg atggtctctt gcacacttac 780

aaaggttatt agctcactct taggcctcat tttacctcta atgtcataaa agatttaatt 840

tgcacatttt actaacttaa tgaaaactta cgaaaacatg actaaaacct aatggaaatg 900

cttgctttca tgctcctaaa gtgtagaaat tagtttaatc tgttacacta aattacgaca 960

gatcaaactc ctccacactt aagtcattgt ttgtccttaa gcaacacaaa caaaaacaag 1020

aaatagaaaa gatgtccctt aagcaaatat cataacaata ttgactttgg agcacatgac 1080

taggtatttc atctccataa acaactttag catgatgaat aattgactta ccactttt 1138

<210> 4085
<211> 1044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_260288_G1, chr7:141605159..141606202, Cluster 25

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (372)..(471)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (459)..(459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (460)..(460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (461)..(461)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (462)..(462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (463)..(463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (464)..(464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (465)..(465)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (466)..(466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (467)..(467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (468)..(468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (469)..(469)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (470)..(470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (471)..(471)
<223> a, c, g, or t

<400> 4085
tgtttctggg cattgctgct cttgtaattt ttttcagtac attgagtaca gctgtaggta 60

ctgactgctg caaagacagg gcctgggaca aatgcttgtt atgattggct gaggagggca 120

agggtcctag gatggatgac tggctttctt tagtcaagct aggaaaccac catttgacag 180

ataccatagt tcttgtctat tgctataatc ttaattgctt tggggagacc tgagatgaga 240

ccataaagaa tatgtaaata tgaacctctg agaataaggc aggaccattt ctcagacttt 300

ctcaaggaca cactggaaga cctgttcatg taggtcattt gttctttgat tggggtgggg 360

ggtttgaaaa cnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn naggatctag 480

agattcgtcg ttatcgttat cgatgactcc acagttgttc tgtcctgcat taacaaaata 540

caggtacggt tagagttaaa attgaaaaca tctgattact gagaaacgac aacgacatct 600

attttgaaac gaagctcgca tgctctggct tacctgctct ttgaatacga taacttttt 660

cctacggagc ccagaaaaaa aatattagga gactgactaa accgcttaca atagacaaat 720

ataatggttt aaattagact tatattaaaa catcaatgaa taacgaaact agaaatacat 780

aataaaaata taggatcaaa ttttagagaa gatttcacag ggctttatag gatctggaac 840

ggtagggtca tcccaccgct gtatccatcc cttcctcttt tttttcttct agaaaatatg 900

gagaaagact atgtactccc tttgtcaaaa atgttgccct tcaagtttta aatctagata 960

agtgcttgta gaaaatcaaa actaaagtct gacttttta gggcggagag agtatcaatt 1020

ttgttgccct tgttgttaaa cata 1044

<210> 4086
<211> 1242
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260978_G1, chr7:145287867..145289108, Cluster 25

<400> 4086
actcggtcaa gttggaaggt atgtagccga gccctctatt tcattctaag tctttacgat 60

tccaatactt taatcttacc tacaacttat aaagtcaatg gtgttaactt gagtagtcaa 120

cgctctacaa gctaataaag acaaatatga agacaaaatt gtagatatag ataaatcttc 180

gattgtttgc caaagtactt tagatcaaag caaagctatt gctaaatatt tatctaaaag 240

tttaggcttg gcacagaagg ccagagatct cgcccaagtc atagttgaaa aaagtcattg 300

ctacaaagaa gagtaagttc acttgttacc catcacttct agattccaat gtaataagtt 360

ctaactttgt cctatatatg atcaagaaga actcatggtt gataaagccc tcattaaatc 420

attggtgact tggctctaca actttgaggc tagaaaatgt ttgagcgatt tgtataaaat 480

tgaaagtctc cttgaacaac tctgtgactc gagtcgaacc aatatgatag aagcgagcaa 540

cctttcatta gacattattt tttcttagta tctaggttta gagctaacca aattcaagaa 600

ggttttatgg tagactattc aaatgataag attgaagata tactgaaaga agtcaagcca 660

gatgcatcta aagtagttaa ctaggtaaag acttttтcct taatattctt cttgtgatat 720

ggttgagttg aacattgtaa gaaattattc acacatttgg tatctttgta atatattgag 780

aatccatgta tgaccttgat gatatccaag tcaagtattg ttttggaatc aaatccatat 840

taaacttaac ttccaatcga gtacagtcct catagatgac cgagacccat ggactcggta 900

ctcctgaagc tcatatagag ttattactca tagatgacca agtttcacaa acttggtact 960

ctgtagctca tatcatgata ttttcataga tgaccaagtt tcatctagaa ctcatataga 1020

gatattatca ttgataaccg agccctagat ttctctagaa ctcaatattc ttggtgccca 1080

tatagggata atagagtgca tacaatttcg tccatggttc ctcacattat gtcttttaac 1140

atagcttaga atcactatca cccttcctag agggggctta cacccacctc ataaaactgt 1200

gtcaaagtac cttttagcat atgcaacgtt gatacctata cc 1242

<210> 4087
<211> 1308
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262950_G1, chr7:156485118..156486425, Cluster 25

<400> 4087
tgccacggcc cgacctgaca gaggcgactc atttaatagc acggttcgtc acgattcaaa 60

acagacccca tgctagattg ctagtccaga tcgaaaatcg tatcgtccat gagttgtttt 120

ctgggctagt agtgtcaggt tggcttgaca cgattatttt tttgttttta gattataagt 180

aatgtttaaa aaatatatac ttttttggt tagaggaggc ggacattgtt ccccgaacac 240

agacgaccag ggtttggttc tcggtctggt ggtgcgtact tgctttttt cctgcgtgtg 300

cacgcggagg gggaggaacg acgaaaacaa aaggttcgtg ctttatagtt gtagtaaatt 360

aatggaggaa attaatggag gcatggagcg tccactgtcc taatggacat gatttggctt 420

agctttatcc ttcaggtggt ggtttcggca cactacgttc cactcataag catatggata 480

tgcattgatc ctacctgcaa cacgtatgca gaagagggtc tgatgagctc gctagttcct 540

ctacacgtac ctaggccaaa gaaagtgtaa aagcctacat acaggggcct tcgttcgtac 600

tagtagctac cctggcatgc catgaatcta tgggattcag agagacagtg agcactgagc 660

atggctggct atccagcact ttgtaaagaa aaaggcgctt tagatgaagc tcgggtaatg 720

atgccaagag gcaagatgcc tataggcagc ttctaattct aaccatgcat gcatagcttc 780

ggtactaagg caaatggatc aggggctaat cttgacagtg acacgcccac agactaaaag 840

cattattatt tttttacaaa aaaaaataca aaggccctgg gctgggcgtg cattactccg 900

atcttccagg gagtaagcta tatatattga aaaggacgcg tgatattttc taggtttcta 960

aactataagc tagctaagct ttagctatcc atccgtccta ctgtctacaa tatgcgattg 1020

attgttataa tatatatatc actatcaaaa tgtctacggt tttcatttat aaatatacat 1080

tataaaacat aaaaaaacat gtatgtttta ttggctaaaa aaaaactcag ccggtgagag 1140

aaagactgcc ctctggacgc gaccatgttt agatctcttc ttaatttaat gttttgttga 1200

ctagatgggt gtaaaagtga gtttggagcc aacacctaga gttcaaaatc ctggtttgtg 1260

cataatttta gttttttaa tccctaattg aaatatagca gcattcat 1308

<210> 4088
<211> 1015
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263024_G1, chr7:156811923..156812937, Cluster 25

<400> 4088
aatagctaat tgttagctag atgctagtta agacattagt tagtttatta tcttaggatt 60

cttagctaat ttttagcaac taactattaa ctccatgaga tgaaattatc aaacaagccc 120

taaggtgatc agtctggggc acgattgtta ggtttggggt tttcagtcac ccaattatcc 180

agccatgctc tataaataaa gtcataaact atacacttga aaaggacgta caggaaagtc 240

caaccctcct atttttagg accagtccag cagtcctttt ccctttattt aaacctcata 300

tgatgtcgtt ttgcttgttc tttaccttcc tcaagcaaaa tgtcatgtga ttccttataa 360

gtagtccaga ctccaaatgg ttaatatata tcatcatgtg aaataagttt catatatgag 420

tagtgataac tgataccacc aaagatcaaa gttgtgtgcg tgtcaagctt tttgtttcag 480

ttctatctta tcattgttct catatcagtt gtggtattat ttatcacaat ctctccttac 540

taatttttca ggttaacaaa gtatgagcga ttcggagtgt gcaggagcac ctcaacttaa 600

ggtctctcca aagtcgaaac gctgtactga tctagttttg cgatgcaatg cgttgctgtg 660

tcctttgact gtgtttggtt ttggacttga caggggaagt acatggtctg ttcgtctgct 720

ctctattggg gaatggatgc ctcttctcat ggaacagtat gtgcttacaa ttgaagatta 780

ctatgtctat ctcttccccg tatgttcatc ctctacaatt acagaatata tgatttttat 840

tatttgtgct cagtttccag tgcacactgg gtaactatat atgttctata ccttatcgct 900

gtcgcttacg gtttagagct tttatatttc tttatgtatt ttgaaccaat ggcacacgaa 960

gctagagaaa tccaatgaca atgtcgtgct attacaaacc tgtgatgact gatac 1015

<210> 4089
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263516_G1, chr7:159151897..159152926, Cluster 25

<400> 4089
gagcggttga gccttgccta gccacgggaa cgggatgcgg tccggccgac ggccatcacc 60

gtctagttaa cggcttcaga cagcgatcct tttaataaac gtgatcaaga tttcagatag 120

tactcctttt ttccgtttta tttaatttat ctcgaaagaa atactccagc tgttattctg 180

cactggtggc gtgcttgctc cactccggat tctgacagag atactccctc gtccaacgtc 240

tcgctttttt tttggaaaaa actcgaagtt ttaaaattta actaaggaca tgtttagatc 300

tcataagcta aagcaaaatg actaaatttt aaccatttta gaagctaaag attcgtacag 360

aaagagctaa aattactaaa atagtaaaaa tatgtcgtta tagtcatttt agctaacttt 420

tagtcattct aaagcaataa ctaaacttta atcactttcc tttatctcat ggatctaaac 480

agaccatgag aacaattaac gtaagtagac caattctagc tattaacatt gtttttctaa 540

agttggttaa tcaagatttt tgacttatta aatattatga cacatgagtc agataatttg 600

aactttaatc aaaactatat aaaagaagca tttatgatac aaaattaaat cataaaatat 660

atttctataa tatatatgtg tgcgcgtatt cacgcccgtg cacgtatgcg tgcgttttat 720

tactatcgac cataaacttg gttaatctta aacaactaaa actggcacga gttttaaaat 780

tatatatttt ttatggagtg agtagatatt ttgttatctt ggacaaaggg agacaatgaa 840

tgatggttgg cacatattag gcgctgcgct gagttgcagt cgacctacca caatcacaac 900

cattctagag agaagacaag ttcgttctcc gcttaacctg ccatgttagt tttgtgaaat 960

agggagaatg atcaatctta tggcaaatgt gtctcgccct tgcattacga catgtaaaga 1020

ttgattatct 1030

<210> 4090
<211> 1058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265208_G1, chr7:168259790..168260847, Cluster 25

<400> 4090
tatgggggca gatccactgt ttcagtggat caaatgagct attggatcca aaatcatttc 60

ttgaaaaaat caaatccaaa tctagtttta gtgaatacag agttggcaga gttctaccaa 120

acaagccctt agagcttact taggagtgtc ccatgaacac taccgtggag cggtttcaca 180

aaaaacccgg agcttttaga gtatctaaag ctattagaat ggttcaaaaa cctacctttt 240

ttctagaaag agttggtgca gctatcccag tttggctaac caagttggaa gcaaagctaa 300

acaacataga gcggagcatc agaaatagga cctttagact catttttggc agttggagaa 360

aaatagggtt gacacaactt ggttctcaat ataagagggc tctccaaggt ggccacctta 420

tttctaggtt tattattagg agccccactt taaaccctca tcttatagtt tacatagttc 480

ttcccctggc ctagtgtgtg tcgaattcct ccccacccat ctgtctgcct tcactcctta 540

ccgccaccgc cctcccactc tttcacacag ttcttcccct acaaacatgc ctcatcccca 600

ttggcctgtc ccccacgatg tgtatcctac ccttcacgtg attcttcccc tccaaacatg 660

cttcctcccc attagctctt tgaaatggcc tatatgaata gagcagtgtg aataggataa 720

caaattattc tacaaactca caaaccacta aagtttgatt agtacaaaat agattataat 780

aactactttg cactaccact agttcaccct atgcaagtct ctaaacaatt atagtagctt 840

aatctttagc ctatgtttat taattaaggc aagttactag caagagatat caaacaaaca 900

caactatcgc tagttacaat cttcacaaag ctagttgagg acataccata caacatgtaa 960

aaatgaatat aattacaaga gtaagtatat tgagcaaacc acatggaaca agagattata 1020

taaggtatgt cctcgaggtt cggttacttg ctggcaac 1058

<210> 4091
<211> 1270
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265549_G1, chr7:170125602..170126871, Cluster 25

<400> 4091
ttaaaaagag ccagacagtg aacgccagac ttcagaacac cagatgtctt ccgcacctag 60

aatagacaat taaaaatgat tagtaacagt tcagccaaat aaagaggaag aaagttttaa 120

ggtggtggac ctcatcctcc ctcagccccc tgaagtgttg aagtgacaaa ttggaagact 180

gttgattttg ttgctgttca ccacataata gaaatgtcag catcaaaggg ttaattagat 240

ctcaagtata atatcacaat caccaaaaga tatccacgca tttgggaggt ttataatacc 300

tgggggcgtg gccagtgagc atgggttatg ctccatatta ttgtcttcat tccttgtatg 360

aggtcagtat gaaatagcag tttaaacaat aactgaaatg agatgctgaa agacaaggaa 420

cagagcaata atttacaaca actaatacat accgacagca agagtcttta tcagactttt 480

gtaatcgttg atttccttag tatactccaa aggttgctgc aaattcagca cagtctgcaa 540

agttcaccaa aaaaataagg ccatcaaatc atcagtcata aacaacttca atttgtatca 600

gacttaacct atctcaggaa aaaatccatt tattttataa gtacaacgcg actaagccct 660

ctcacatttt gttaacaagc aaagcttaaa taaattatct atctgcccat gactaagaga 720

ttagttatgg ttttcataac cggccaaggc tattgatatt tataagttgc tgtgtctttt 780

tatcttgaga aatttgagct agacagctat atggccaaaa aaatcaaata aagcataaat 840

ttgtgatttt ctcaggaaag aggagtgcag tcagccaaaa aagaatggta ttgctgcatg 900

ctacctccaa gagacattca catagcatac ctgtaatggg acttcaagct tcattctcag 960

attcggttgt tccttccctt cctcaccttc ttcaagcaac tatagagtga gaggagtaag 1020

gtagaccata tcagcaagaa aacacaagga gataacactg atgtttctgt atagaatcac 1080

acgacatgtt gcaatgtaac agtatatttt ctctatatgt tttcaatccc catttctttc 1140

aaacattaat tttttaaatt atattctgcg gtgtagcagc atctaacgca agtgcccaag 1200

tttgcatgtc atcagctaat aaattaggaa cacgttttaa aacctaatca accgaaagta 1260

tcacaaaaca 1270

<210> 4092
<211> 1300
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265834_G1, chr7:171715549..171716848, Cluster 25

<400> 4092
tggtgtaaca aaaatgagta tgctataaat gatcgaacgg tcgggctgtt ttgggctgct 60

atgtgaagag ctgctcctaa tattcttggg ccgtgcctca tctgctgcag ccgccctagt 120

ccgggccgcg aatccgcccc ctgcttggaa atctacacgt gaccaaatat aaatatggtc 180

attgagcaca gaatccaccg gacgatggaa tgatagcgta tacatgatga aatataactc 240

tggtcattat aaatcctttt ccttgatttc ttctattaac agataaataa taacatgtat 300

tcgaaactcg ccatgcagag cgtcgtgcag cagtgcaatc tttacacacc gccctattat 360

aaaagagaga tgcgagtgta atgaccgggt ttatatttat acatgatgaa atataaatcc 420

ggtcattata aaccctcttc cttccttccg tctagcagat aaacaatagt actactaaca 480

tgtacgtaat catcatgcag agcgttgtgc atcagtgtta tctttacacg ccgcgaaatg 540

ccaagaagtg gtcttttatg aataaaacac aaagtgtgcg agcggtgcaa acaggcccat 600

gacttctggg cccccaaaat cccgatcagc tactacgcta tactaggttt tttttatcag 660

gtgcatgcaa acttctgcac atctaggcct atctagggac caaggatcaa ctcacaccca 720

tcacccatgg ccggcgttaa cttccataat gtatacaaaa ggtcgttatt aagcgcgttt 780

ctttcccgtg agtcaaacat ccgtgaaaat agtgctgcaa cgtaacgtat ttaaaggcga 840

tggtcatagt tccatcagtc tttggcagtg aggtgcaggc agagcagccg cggatcttgg 900

attgaatgat aattacggtt atcaaatata gtttaattat aaaactagac aaagttatta 960

aacctaatta aacatatatc taacatttat aattgatatt aaatatttaa agtgacacca 1020

actaaacttt agcagagaac aaataaccct tcatcaacca atgacactcc tccatgtggc 1080

ctcgtgccgt ctacatggct catatcactg cctggctcag tgcttgaagg gagatccaac 1140

gtgtctatag atatatgtga gtgtatcctg tatacaatga attttttttc ctctccgaaa 1200

gtctcgtctc gttaccctac gtgtacgacc cagatcccag attcaataat caaataattt 1260

gacggaccat aaattttgag cgacgtggat aggctaacat 1300

<210> 4093
<211> 1193
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266070_G1, chr7:172807808..172809000, Cluster 25

<400> 4093
agagcatata agtctataaa tcgctataac attattaggt atatctggtg tagcaccaaa 60

taatgccaca ttggatatgg ttctcagaga gtgcgtaaat tgcgcactta gtactaacat 120

gcatcgaatg tgatcagcgt gtgcaccaaa tacccgataa agggtaacaa ctagtttata 180

gccattgaga ttatagagat agcagcgaac atatctgatg cagaaactag cagtgcacta 240

gacatgtctg atgctctcga ttttatccta tcaagaggta aaggttagat ttcaatatat 300

agactacttg gccagtcttg gtccacatcc ttgcactcga tacacttttg agcacatctt 360

aaagctaaag aaacacactt cacttacttg catcgtatcg attatttaga tgagatcgaa 420

gatcttctaa tgcatcacat ataattgtta tatttgtggc actagttgag tgacttgggc 480

tggttgtact cttattactc tttatgatta ttgttaccta gatggctcga agttcgtggg 540

atcgtcgagc ggctaataaa gattgttgtc ggcttcgatc atcgttgtga ggggctcctg 600

tgcttatttc ctatgcaaga ttggtgaaga gcaaccctag tagattagtg gcttgttgga 660

gagcctctct agtgtagttc ttacgacatc ctaattataa gcttggcatg tgataccaat 720

taatgtagga accacctagc tcgaactcac tgtaacgagg acgtaggttg tcgacaagca 780

acataacctt agagatatat cttatgccat ttattgccga atgtgctttc cacactgtat 840

ttacttttgc agttacattt atctaatttt tgtatgatat gctcagctag ccttgtgtag 900

actataacta gttataattg tatttgatta gtatcttttg ctaagtaatt agcttgcatt 960

gaccaatata aacaaaagac caagctatta aatttattta gaggcttgta taggtgaact 1020

agtgctggtg caaagtagtt gctttaatac tatttgttta ctaatcaaac tttgctctag 1080

tgacttgtga gtttgtaaaa taatttttat aggttactca ccatccctct agccatatag 1140

gtcctatcat gatgacatac gtagtgggta gtgcagtact gcaaacatcc acc 1193

<210> 4094
<211> 1278
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266241_G1, chr7:173529276..173530553, Cluster 25

<400> 4094
agaaaagaaa agaaaggaat gtccccaaat aaagaaatat attagaggag aaagaagaaa 60

ctaaagaacg gttgacggcc gacattaccc atatttatcg atccatgact tgacgccggt 120

aagctagtga ctgccgtaaa aggctaggat acgctgctgt ctatttcctg caggttagac 180

gataagcacg aactgagtga ccagtagcga cgatggtatg atgcgcagct gggaaagttg 240

ctggcatgtg cgtgaaaacc tgcattaata ttcaacacca cgtacgtacc tactactctc 300

tccgtctagt gacaagtgca catttagagt ttaaattttg ttgccaaaat aaatacatct 360

atatacatac tacaagacaa tttgattcta gttcttgttt ttctaccctt ctagacaaat 420

tattgtattt ttttatagaa atataattgt aattccttac taatattgat ctctttacta 480

aaattctaga agtacactta ttttgggcag atgcttattt aattaggaaa tgagctaaca 540

cctacctacg caacgtcgtc atctatcgcc gtcatcggca gtctcggcac tcgtcactgc 600

tgacaggtca aggcacatga acaaaaataa ttaagctctg atccatgaaa cataaacaac 660

tagcccatca tctatttatc tttagcttgc cacaatatat atagctgaaa attagtaaaa 720

gtggtatagc taggtgctaa tagtagctgc gaagaagaag aacgtactag ctatatggcg 780

taaactattc attcatgcat atatgtgacg aataacatta ttattaaggg tttaatatag 840

attggagaag ttttgtatat atccttgaga aggatgtcta tggaaatcct tagccgccaa 900

gtaaaggtac gtcgtacatg catatacgcc ggccgccacg caccatgcat gcatgcaaag 960

tctaggaaat ctatctatcc accagggcag catcaggcta ggttggtgat ttggacacct 1020

cgatcgctca ttcgctctag ctccatctga tctgcctata tgggtctcct tcgtcgttgt 1080

ccacgtatgt ttcgtcggac catcggcacc gtacgtgttg cactgtgaga gtctaggtaa 1140

aaagacgtat agctaagcta gagaagagta gaaggaaacc tcaaaggaaa tgctcggtaa 1200

atgcacacgt gtgtacagtg gcggggatac atatggtgta agggaggcta agaaggaact 1260

gattatcttt ttttctct 1278

<210> 4095
<211> 1184
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267002_G1, chr8:695694..696877, Cluster 25

<400> 4095
ttttatgacc ggtatatagt ggaatatttt cagtagcttt tggacaatat ttatgtctac 60

catttgtata taatggttgt cttagttatt cttattgttc tatttggaaa tctgccccac 120

gatgcatggt tcagtacatt ttcttgttgt tggtacaaca attgtattcg atgacacctc 180

aaatactcta tatgggattg tggtcgacta tgaaaggatg agtccctact attgttgctg 240

ctacaacaat catttgtgca taactcatgt agtttcactg tgattctggc cgaccacacc 300

agtttaagga cctgaacaca actttcattc catttggcaa gaaatttcat atgaaaattg 360

aatcattgtg aactagataa actttcacac aacatgcata ctagaaaaac gggttattct 420

gcattttatt gtaacaacaa ctactcaaaa aacagttaaa gattttgcac gaacacaata 480

ttgattcccg aacatattca aactcaacaa atttttattt aactaggacg acaccacaaa 540

caagacatgg taaaaacaaa ttggttgaac tctgcaacat atcactcaaa cccaaattcc 600

tttgccttag cttgaatatg cttcttcttc atagcaaagt aatcttggga atcatcatct 660

ggtagggtgc acatgtccat catcatgagc ttgtttgttt ccttgtctgc cttcagattg 720

agcaacttct tctagatttc aacttttttct gccatcatag atttaaaagc cctgccctct 780

ttttttggat gcctcagcct gagccatgtc gaagttcagt ctatccattg acatcttcta 840

caaaacttcc aaacaagatg tggattgaga agaactaggt gtgttgtgct gcttctttgc 900

attgtcccat cccattgggt gttcaggtag aggaggcatg ttctccccat cctcattgtt 960

ctccagacat ggggatctgg ttttgttggg gtagaacctt gctgccatca accaggatgt 1020

ccacttgggc ttgtttttta gaataaacca acaatgcatg aattggaaac tatttcctat 1080

tccaccatca taaaggctaa tcacagtgca tttgtttgaa taacacctac aaacaaaaac 1140

aagttttaga acaagtttgt tcatagtgca tttgtttgaa tgac 1184

<210> 4096
<211> 1094
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_267433_G1, chr8:3282549..3283642, Cluster 25

<220>
<221> modified_base
<222> (31)..(31)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (32)..(32)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (33)..(33)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (34)..(34)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (35)..(35)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (36)..(36)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (37)..(37)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (38)..(38)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (39)..(39)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (40)..(40)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (41)..(41)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (42)..(42)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (43)..(43)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (44)..(44)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (45)..(45)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (46)..(46)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (47)..(47)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(130)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<400> 4096
aaccaacgaa tcaagctgaa tcatcaagag nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn tgttggttat tccaaaacct aggtattccc agtctctggg tctcctcatc 180

caccaccatc caggtaccat attgtatctc cttctcccaa aatcatcgat gtttcattct 240

agatgaagat gacccatcat accacaattc acatagaagt gagggatctt ttcatatttt 300

acttgtagaa ggacatcatc cttcccctct agggagcata acaaagtgaa caagaggtat 360

ttaggcatct atattaactc tagacatgta aaaatatcct cctttagctg gtatggctcc 420

cacctccaca aagaccactt cccaacattg ttcactacct catttcaata caaatatggg 480

atacaatgaa cttgaaccca agccagcacc atgtgaggca tgatggtcaa aatcatttta 540

gctccattaa attcttctag catgagtcca caaccttgaa gatctacgga ccattcttca 600

tgcactttca atcccccaca caaaatacct acaccatgaa aaggtttttc taataggaca 660

aaaataaacc tcacagacag ggttccacac tgatctcatg gttgacataa atgatgcttc 720

actaaagtat tggactgtca atagcttcgc cactgctgtc cacttgacct atggatagaa 780

ttcccttatc tccctagcca aaagacaccc tcatgttcag ggtcactaag ttagagcgtg 840

tgcagcaact cattgacatc aaagtatgcc cctacgccct ccctaaaatg cctaatctta 900

aatcaccaac ctccatgcct gagtagtagt gctaaggtaa cccctagatc aacccaaata 960

agaagatggc atagagggga tgtggggggt cgacgctaaa gacctccttc gatgcaagtc 1020

accaacatag tcactcgaac cctaggtacg cacctaggtt gcatgcatag atgccatcgc 1080

tggtttgaat catc 1094

<210> 4097
<211> 1190
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267571_G1, chr8:4126292..4127481, Cluster 25

<400> 4097
aatagtatca gtggcacagg tggaaataca ctatcataac tcatgatttt tttgctcccc 60

ctcgttatcc cgaccacttt tgtcacgatt cttaatgtgt attcacttca ctgtatttta 120

gatttatcgt atcgtttgca tgggcacctt actagtgtaa aacagagagg gagtcgtatc 180

gtgtcctctt tgtttctttt ataccaatac ttgatgccta caatggtcgt ggtggagctt 240

ggctaggttt ccagcgacga cgctcgtggt tctaggggag ggacacaagt aggctagcag 300

agttcgcggt aacagggaca acttgtggca atagaaacca aagaagatgc agactgtggc 360

ggcttgcagg cagtgcagac acgagcaaca attcggtggc ctggctaggt tttcggccaa 420

cagtgggtta agatggctcc atctaatgag taagaatatt tcccctctaa tctagcttat 480

ttgacgagat atgattcatt cactaaccaa gaaatattat atatttttg atttgttgga 540

actcggtagg attaatctcg atgtcacata tacagtgtac aatgtgcgtt cggtttggtt 600

aatttatggc taaatctaat ggtggtattt gtgttctcgt gccgctcaaa tatgatgaat 660

gggttgtgga ctaacaatga tgttcactaa cgagtttgcg aaatgaattt gctgctaggg 720

tgaagtgtgg cagaaaccaa cttgtagagg tgtcggtatt tgacaagagc attagtctgg 780

aaactagagt ggaggatgat ttcacattgg gtgcatgttt tgacggttgt catgaaagaa 840

aaatgttctt gtttgttgat gtggttgaca aatctgttga agtagttact aactccggtc 900

acacagtggt tagtcacggt ggtgtggaaa gtacaacttt tgcatgttcc agtaatcaac 960

tagaaagtgc atctattgtg atagcttcaa atgttgatgt accactggtt gattgggatg 1020

ctcttgagat tactcttgtt atagaagatg agattggtta tctagttcct cttgttgatg 1080

aagacaattt ttatggacac attagacttt gagctgagta tgagagagta gaggaataaa 1140

atggtagact agcatatgaa gttgtatgtg taggtgcact tgatcttgaa 1190

<210> 4098
<211> 1158
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269644_G1, chr8:14951402..14952559, Cluster 25

<400> 4098
ttaacaatgt gggatgatga tcaaatcgac attaaaactc tagtactcga tgcgatttac 60

aatttcacgg ttaatatttt tttacttaaa atcatttaga atataaaaac acggtataag 120

atttagagtt atgtagttaa aaaagagtaa catcagctgt aaaattacaa gtgtcacgta 180

gctcaaaata tgatattgat gttggaaata acataaacgt tgaggtatta aatttgaatc 240

ctgaacacac acatattttc catttttttt gtcactgtct agttcagaat caacaatgat 300

atgtaaggca aacctactca ctggcgaatc gccgcactga ttactaatac gacgtggtag 360

tgctgataca aaatatagca cagccgatga aaacaaaaat attaagcact actttgcctg 420

tgcattacca gtcccacgcc tgcatgtaga agtagaactg aaaaccagaa agaaaatcta 480

attgcttatt ttgcctctct acaaaactct tgcattaggt tcttgttcca aactgcgcac 540

acctttttt tgttatgtta tcattattga gtaatggtag aaatgctgtt tggaacaggg 600

gcaaggtata tatcatatag gagtatatgc atatatacac accagggttt accatcccat 660

tttcaaccgg tttaccgcac ccttctgaaa acagtttctc gtcgaaaacc gccaataatc 720

tcgagcgatt taaattttca aatttgaatt tctggatttc gctatttctc accgaaaacc 780

gctacatcct gaccagtttt cgttcctttt tcaccgagaa acgtaattta gttagaaaaa 840

aataaaaaaa atgatagaat ttgtttgtaa atagttaaaa tcacggcggt tttcggtagt 900

ttctcgccaa gaaacacaga gaaccgagca gatctcgctg cttttgcggc ggtttatttt 960

tgacgtcggg tttggaacaa atcgaattta ttttttagac aaaaaatgaa ttttgtaaaa 1020

taatatattt ctgacctcct gataaccttt agtttttat ataatttttc cgatttttat 1080

gtttttttt aatttagcgc tggatttcga tttcgctgtg tactgataac gggaaaaggt 1140

agcggttttc gagattta 1158

<210> 4099
<211> 1235
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270161_G1, chr8:18206047..18207281, Cluster 25

<400> 4099
gcttgcgaga gtcaccgagt cctgcgatcg tggcctagta gcgcacgccg cacatgtaag 60

gtgtctccac tccaaagtat ccctaagtat cccacaagta tttgtttttc aattaaattt 120

aatttctttt tattctaata tttgtcggat atttatccaa gctttatcag gccgccgtag 180

cggtatttga tatgacttcc attacagata tgagctcttt gggaagtatc gaggtatcat 240

aggttataca tcgacctaac attgggttgt gtaagttttt gtaacgaaaa ctgctggcac 300

tggatctaca ccgaaatatc ccattctcat taattgatgc atagcttttg acgacatcct 360

agggacgttt tttttccaca aattgccagt attatatgct tttatgttct cttacatgtt 420

gtattcagga tatatcctta gagaggtatc ttcagcccaa gcaagcacaa gcagtgttct 480

gtgttgtcat ttctcgtcag atggaaaatt aattgctact ggaggtcacg ataagaaggt 540

aaaaagacgt gttgttgtgc ttgctaagct atttagtggt gataattatg gaatttgttc 600

aaaatcacca ttagtgctgt agtactaata tgtaattgct aattaccttt tgtatctcgc 660

aatgcaggtt ttcctgtgga atgctgacac tctgaaacaa aaatcaatgc tagaggagca 720

ttctctgctc ataactgatg tgcgcttcag cccaagcact cctcgcctcg ccacatcttc 780

atttgacaaa actgtgaggg tttgggatgc tgataacgta agtgttatta ccaatccaag 840

ttttcctgcc cctttcccca cgtgatcgtg ctcttatgct aggtgacacc atgttgcatt 900

gcgaaaatgt cagttaacac acactaatac tggtcattgc atttttttct ttctagctta 960

ggttctttcc tctacagttc aggcttcaca tacgtgataa ttttctctcg atgatcacat 1020

tctctgtcat gtaatagcag ttatggtatg ttaatacctc tgccaggaac attgcacttt 1080

tccacaaaaa atgtgtctct gactatggtg tgaagccaca aagaaagctg ttagcaaccc 1140

ctgttcatga ttgtattctg tgaaggccca atagcatctg ttccttaatg tgaaatgtag 1200

taaatcggtg atgtgcatca tgcatcatca ataag 1235

<210> 4100
<211> 1208
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_280754_G1, chr8:91606662..91607869, Cluster 25

<400> 4100
cgggcttgtt gcagaagctc tcattgactg cttcaagctg tataacatca tctactccac 60

tcaattaggt cgtgtgcaag cagttgtaaa tgtcattaaa gagagtgatc tttggttgct 120

cgtggaccat caatccttca actgccaact gcttaggtgt atggtggtga gtagcacttg 180

tggtggagtt atatgtgttg tctatttgac cctagaagat tgattccttt ttatagttgc 240

catcaatggg tataccgaat gtagtagcca ataaagatc taaaaatatg aacttaaaaa 300

ctatcatgga cctaaaaatt atgtggattt tgaaaaaaaa agatatacgt acttatcata 360

ctttcaccct ccatcttcca atcccttcac cattgaagtt gaggagcacc gaagcgagtt 420

ggtttgaagc agcatcattg ccgctgcttg gggacactat catcttgtag gagggcaaaa 480

tggagggaga gtaccatatg aaggaggaga accatattgg ggaggaacaa caaatgggag 540

agagaacaaa ggatgagcac catatcaagc accatatgaa gaaggagcac catatggagg 600

atgagcacca tacgatccat atggaggagc aatatgtgga tatccatatg ggtatgcaat 660

agagtatgga taaatgaatg atggaggagg agcatcagtg gtaggtgctt cagtagtagg 720

aggaacatcg atggtaggat cattgttgag agaaggagga acatccatgg aaggttgata 780

gggatacaaa ggcggaggat atgggtatga aaacagatgt tgtggagtga gagaacaatg 840

atgggcataa acatcctccg aacgatggtg tacgagagaa atatcatcaa acaatacctc 900

cccactccaa caggggtgtt aggaagttgt ggagataggt cgtcgatcaa gtcagtgaag 960

ctttgagagt tcagacttca cctaggatcc atattgaaat agagagtgga aggctatgaa 1020

ataaaggaag acaaatgcaa tggagagtga gaggtgtgaa tgaacgcaaa caccccctct 1080

atttataaga cggattctag ttttttattg ggggattaaa ctttttggac ttgaaatgga 1140

tcaaaacggt gtggaccaat tagaaacatg ccacatcact aaagccaatc tgtatcgatc 1200

ggtttggg 1208

<210> 4101
<211> 1310
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282661_G1, chr8:102732253..102733562, Cluster 25

<400> 4101
agatatccac ctttgaagtt tttggccccg atgggacctt gaggcttagt aacatttctc 60

gatctagaat tagatgccta ataaaaaaag gaaacattgc aaaatcaata gcaaatgatg 120

caaggtataa ctttattaca agtaatgaat caaggttgtt tcatttacat tagtaggatc 180

atcggttgtg ttagttggtt caaccgttgg atccctccct tctaggttta ggcaattcat 240

gatgatctgt attatagaga acttatgtcc aagaaaatag gtgataaata ggggaaaata 300

tacttataga gaaccactta caaaggaaca ataaagcaaa ctatcagcta agctacaaaa 360

aatggaacga acacaagcca ctatataata gaagaaaaaa gttctcattt cttatcttct 420

aaagttccaa tggaagcttt gtaagaacat gatcttgttg tctaattgtt gagtctccca 480

aagatgaaat cttggtcaag gttaaaggtg gtggtgatga tttctctagt tgtatccata 540

gaacttagtg agattgatca cagtgcttcc attacatgca accaatcata tatgttttta 600

gtcaacaatg gttattatgt tcttgtttat gttcaatgat gatggtggtg ttatgtgcta 660

tactcagagt tccttttaa cataagatgc atctttatgg tcatgatgct tcatacatga 720

caatcaccag aataaaccaa ggtgaatata cttcatacat gaacaaaata atgaaccttg 780

agctcatcgg aacatacttc atacataaac aagataatga accttgagcg tacatgaaca 840

agatatataa cagtcatcat gaacaagaac aagaacacaa aaatggacct tgagcactag 900

ttgtcaaagg acatgtgcat gatgtgacag gtgagcacta gttgttgggg agcacttttg 960

gtcagagatg gcgccaacag agggttgagt aatcattggt agtgagtgat gagcgatgga 1020

ctagtggagg tcggggacgt cgccgggaca gagcttgaac gagaagatga acatagtgaa 1080

catgagcaat tggggagtgg tgtctctgtt agaagtctgt atttataaga gaaaattgat 1140

ttagtaccat tatttaaaaa atggtactaa atgatctttt aataactttt gagtaaaata 1200

accagtacta aatctatcat tcagttccta cctagagggc tttagtactg gttatttaaa 1260

agaactggta ctaaagcctt ttaggcagga attcagaagg aagctttaat 1310

<210> 4102
<211> 1230
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_283454_G1, chr8:106768958..106770187, Cluster 25

<400> 4102
ttcgagttgg gaagtcttct tcagaaggac agattactca gtggtgatat ttataatgtg 60

gaaggtacca ttatgcattt caaccgtccg gatagagcac acaactttta gagaagtaat 120

gtacaacaga aaatgttgga tatttatgtt gggtgtccct gttaccctca tgaatgacat 180

gtgtatccat caggtcgtgg cttccttcag aaaatttctg tgttggcaca acaaccctta 240

gattagatca tacgttctgg tcaaatgtat gtatatgttt gctaatgatg tgcctagaag 300

tattcttctc acatagggag atgactccac cggattgggt tgttcttggt ccatacccgt 360

ctatatcctc accccagaag aggactgaag gtaggaaaca atgatgtaat aggtaatcag 420

gaagacagtg ttctcccaat ggtaaccccc accctctccc tgaggatgat gaagatgaga 480

ttttttttaca agctgaatgt gatttcatgg agaacatggt aaaccaaaat ctaggacaat 540

atagtgttga acatggggca tgtgaatggc tggcctcttt ggcctcagca actccacatc 600

ccccatgctc gtcctgctcc tctgaatcat aagaatcaac atcagctgat gatgtaccct 660

acatatagac aagaagaagg tgacaactct agctcctcat ctagcaattc tcttgcaaga 720

agtggtcaaa acaggctacc atactagaag gctggagatt cttctgagat tggctctttc 780

ccctttctc tggagctcca ttctccagaa atgtcggttt gggttgtgtc atttatatct 840

gaagagctaa agaggcttct tagttagact ctccctcatc tgagtggtgc ttcttggtgg 900

gccaatgcat gccccagctc acacaccatt gcaaccacta tgtctcggcc ttcgcttctt 960

caagatggca tgtgccaaag ttcttaagta catattcaaa ttcttggaca agaggctgaa 1020

atcacaactc tggctagtgc ttagtctgaa tccactatct ctgagactta tattcagcta 1080

tctattcccc ctcaaagttt gtacatcttg atagttttgg atggaaggag catgagctga 1140

ttaagtaaaa gcaagttgtg accaaagttt accagagaaa tgtggataga cagtctgaga 1200

aattcactaa gaaaagaagt cggatgatga 1230

<210> 4103
<211> 1383
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_287878_G1, chr8:130736121..130737503, Cluster 25

<400> 4103
gcgagaaaaa aattggcaag tgaggaaact tatgagctgg gacgatgcaa tcccggctgc 60

agcagcaagc atgatcgaga acagctacca gatgcaagtg cagaattgca gatgtaccac 120

cctttataat aaaaataaat tagtagccac aagttaactt aggtccctct caatcggcca 180

ggtcctccta tttttccttc tttggaacac atgagtttta catgaatcat gcaggaattt 240

cattttaaca tgaaagaagt aggaaacgga aaaaaatccc gcatttcaaa ggaggccata 300

gattttgttg agtggctgtc attttttca agcaccataa aactcatcaa taagattaat 360

agtagacttt atggcagcaa aaaaaaaaaa actttcatcg cgtcgcgtct ctccattctc 420

catctacctc ttctcgtcga cgccctcgcc attgacgatc aggaacctcc gtgatctctc 480

gtctctcacc acaaatgcag gtgcagctgc cctgtcctct ccttctagtt ctagttctag 540

ttctagacga tgaagctcac ctcgacctcg gacggatcat cactagtgtt ttgaatactg 600

gagaaacgta gctttcctct cgaaagaccg aaaagggcca tgcttttagt tttagctact 660

ccttttttt ttcgtttggc ttctagggag tgctacctca cattcatgat caccatcatt 720

acgttttggt gtcgctatga agcctgaata aagtaatctt gctcttggac ggcttcgttt 780

tgtcttgcgg attccacagc cacggtgctt ttgcatttgc atctgcactc acgtagtcac 840

gttgctattg ttgacacacc gatgggtttg ctgcataatt tgccacaatt tgttataaca 900

tgtgtttgat ttaaagctac agttgtcgca aaatttttct cttgctatgt aggttctact 960

catcaatgac tggtaaaatt gtgacaagat tttcttagac gtgataaacc atggcgcaac 1020

cttagacacc ttaagcaaat gtggcataaa attgtatggc aatttttagc accatagtta 1080

tagaaccaaa catcacttaa attctagtac cgtatattgc cgtaagtact ttgacattgc 1140

gcacgacgtt ttgcttcagc aaaccacttc cttttcttgc acgatcttgc tggatcgatc 1200

ggaagcggcg ttaaaacaat accattccga atagcgcata ttcccttcat ctttttttat 1260

ataaaaaaca aatcattttt tagagttgtc ttaagttaag tttttttaa tttgactgaa 1320

tttataggaa aaagtctact gcacgtctag atatacatta ttatcaaata tatagtaaaa 1380

gtt 1383

<210> 4104
<211> 1305
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_287880_G1, chr8:130739004..130740308, Cluster 25

<400> 4104
gtgcctgacc aaacagcagt atcatggcag gtgcaatgat ttttttaag acaccaaaag 60

ctaaggctgt caccagacgc gtctccatca ggcaggcctt gcctattcca gacgcagtca 120

ttagcctctt tcaaggtgct taacataatc taacactata gtaaagcctc gcttactata 180

aataagagcg ctgatctcat tgccgttcag acatcatggt tagtggtttg ttagtagccc 240

gcgatccatt tgtcagcagt gcacgtccct aggctttctt ggaacttcaa gctaagcatc 300

agtataaaac tgctcttgtc aatggttgaa tgatcaggac tgtagtagag atttcaaagc 360

gagagatctg tgtgctttag cttgccttgt ttcaggttcc atgctctcaa agaaagcgag 420

aatcttccaa gttccaaaaa aaaaaaaaaa tcaggcggct ttgctaatat atacacagaa 480

tgacaggact catccacagc aactggcaag aaactaacct gttttttctc caagaattca 540

ggaaccttat cttgttctgt ctctcttttg ttttttcttt ttggcctagg aggattggag 600

ccgtattact acgcgccagt gttgtcttat atttgtcggt tgcagcaatg aaatgaggca 660

tgagttataa acaagagaaa gagagagatg gaactttcag ctgcactggt ctccaaacaa 720

attaaggcag aaaggtgagg ttgatctgag atggtagatt gttgaatgac atgactggct 780

ggttggttgc catgataagt ctgcatttat actggatttt tatcttgcac cgccgtggac 840

ggtgccggtg gagtatgttc atctgatgcg ggacctccat tcgatcctga aaaaatccat 900

ctttgatgat gctgtctgga gatgcgaagg ctcgttgtga tttgacctct tgaaaggaac 960

gtgagaacgc gccgcaaata taggtttttt ttgcagccga gccgagagta cgtgttcatc 1020

gttgctggaa agtcgaaaaa tgaagacaac ggaggtctca atttcgtttt ctttttctat 1080

tttcctcttt ttaaacttta atttataaat agtgtcccga accctatttt acgggataca 1140

gtattaaaaa gttgtgggcg tgttgttatc aagatgagca aaacataggg cgtggcgtcg 1200

gttaggccct cgtcttgtag acttgacaga cagtggatgt cactgtcttg aagatatgtc 1260

tcgagagaga gagagagaga aaaaaaaaaa ggtagggcct gtgac 1305

<210> 4105
<211> 1322
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_289879_G1, chr8:142301707..142303028, Cluster 25

<400> 4105
aagtttgatc tatatttttt gcgctaacat ctaatttaga taatctaggt gactatcaac 60

tttttaccct aagtttgact agttctcctt attaaaaaat catcattatt attaagtttt 120

attgtgatat cgtttaacat ttaaaaaatg aaaacatcaa agccatactc tagtgaccca 180

aaaatatctc tgcatagttt ttgaaaacca ccagatcaat caaatgtgat taattcgatg 240

ctcatcaggc tatacattgt aagtaaattt tactgttgga ctccaatgat cagtttcaat 300

ttatgaatgt tgggaagtca tcgaattgat tcgatgacaa taatagagaa gcaccaaact 360

atgtgttggc aagatgttta taggtaatct agtggacatt ggactaattg gatgcctaca 420

catactgccc attaaggagc acccaatgtc tagctctcaa ggggcaaagt tataaataga 480

agttggtcat ttggtggcca actctatttg cactctaagc actatgacat ccttgtgagc 540

aactaagaac acctcactca tctctgtctt atgctcattc aaattgagat tatgagagat 600

ctattacatt tgcattgggt tgttgcatat aatggcacta gttgatcaat aaatctacag 660

ttttttttgtt attcttagtg gtttccacca cctgtatgtc ttgaagcagc ttgtcattga 720

ggaagattag tgactattct tcacatctaa ctagttgatt attgtgagag gttttgatcc 780

cacctcctag agtgtaaagg gatattctat tggaaaacac ttggctagtt ggagtggacc 840

atttgattga ttcttgaggc acccaaggtg tgggtatagc tttccatgct agttagcact 900

cgagtcatca cctggtgact caccataaca tggactaagt tgtcggcaag caaccaaacc 960

acatggataa atcatatgtt gtatctttcc cttgctagat tgatcaccac tctcacttat 1020

atttacattc atatctttct tatgagtgtt agctttttgc ctagctggct agaatagctt 1080

agtagtagtt atagtgatag ctaccttgct tagtagttct ctactatagt tctttctaat 1140

agtagactgt ttgttgttgg gatttaaagt agaaaccaat ctcttagaat tgggtaggag 1200

cttgcattag gtgaattata tatattgcaa agtatttgct agtagggctt tatattatac 1260

taaccaacct tagctctagt gatgtgtttt tgtaggtaaa tttttatagt atattgcaca 1320

ca 1322

<210> 4106
<211> 1355
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290360_G1, chr8:144717253..144718607, Cluster 25

<400> 4106
attgttacag caatcaatcg aaaaagccca tcacattttt tagaatgtta aaaaatttag 60

acatttgcac ttgcatctta gtccagaaaa atgatatata gacgtttatg acaatataaa 120

aagcaagcgt gaacataaca ttatggttac tataagcata aatatttaaa atgggtcagc 180

ccataaaata ctaacaacaa tcctcgtcgt ctttataacc ttttcttttt attattggtt 240

ttccctttg tgctctgttt tggataatga aaaaaaataa tctcagagaa cggatatata 300

tgaatgaatt gaatatacga gtagggcatt gcgaccacta ggccgcaaag cattgtggtg 360

tgtagaaagc tagacgaaca tgatgttgac gcaaggtgat acagcaaaga agacctcgct 420

aataaagttg aagtcatcgg caacgaggaa gacgacatgt ccacatcgtc attgcatgaa 480

atagacaatt ggcaatggat cggattggag ctgggcaatc agcactagag gagactaacg 540

cttcctgttc ggcaagcagt tgcattgggc tagagaagat gaggaagaac ggcgttgcta 600

cagaggggag aggactagct ccacctttct aacgaatttc tgtgcaaaag tgtaacctat 660

ttccctcaaa ctgtttccct tctttaagcc tatagttaaa attgctcctg agtagtcata 720

atattttatt aaaaatattt tctctcttta tacaaaggaa tatcgtccgg gatattcagt 780

ggaagtcgga gtgagggggt ccatgcatgc cgtgtaagac agtcagaaac tggtaaacaa 840

actagttaaa actactccta ttttatacag ataaccaaca cgatgtcacc tttttgggct 900

catgatgccg acctatacct tcttacttag aaaggctagc ttgtgtaatg catgcgaaat 960

gcaggtgaac gtcacataac aagaccagca gcactaagct aggttttgga gcatgcagca 1020

tggctgtggt tcagaaccac ccgacggacg gcgacgcttc ctttttctcc ggaacggcaa 1080

ccctgggtgt aacctttcgt gttaggggga aagcatgact tggcatcgaa acggcaagtc 1140

tgaagcctgg gaaccatcag tgcgcttgct cccagtgcaa atccgaatca cttgtccttt 1200

gtggctgtag ctagtggatg gacctgccac agctatgagc acgcgaagcg gacccgtttg 1260

atctcggcgc cctgagctcc aaacgcctag ggaccgaact ttccgcaaga ttactgtaca 1320

caagcgaggt gtctgccgaa aatctatctt tacgt 1355

<210> 4107
<211> 1197
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291057_G1, chr8:148250494..148251690, Cluster 25

<400> 4107
taaaaaatac cagtttccca aaatttagtc atatattttc tatatggtgt caaataaaga 60

tacttttata taaaaattgc agatctcgac aaggaaaatt ttttatcttt gagttttcaa 120

ttgaagtcgt taagacattt acaaataata taaaatttca gcagcatatt aatcatgtaa 180

cccttattgc cttaggaaaa atatatcttt ttggatgtaa tcaaatgaat atacatttat 240

ttgaaaagta tagatctaga acagatctac aacttttag gtttgatttt ttttatttga 300

aatggttaag atgctaaaaa ataatgaaac attcagactt gaggatattt tggactttcc 360

gcagtttggt accattagag ctaaatctaa cgaaaagtgg catgtaggaa aaaagtaaag 420

attagtggca tttgtgactg ctcaactttt tttttaatgg ctggtatgaa atcgcaacgt 480

tttatactgg cacgcaagga aaagcctcta aatccaaact gtaactacat ggtgtcttac 540

accaatccat actaacattc caaaaaaaag aataacccac cctcaatcca atctgccatg 600

cagaaaacaa accaccccag attttaatgt taatctagcc tgaaatgttc aataacccac 660

cctaacccaa cccaccatgt aaaccacctc agattttaac actgttttat actgaattgt 720

tcaatataag ggcattaggc ctacatatat acaatgatac aaaatagaga ccatgtacct 780

aacccctat tgttgactct ttccttgggt gctacactag cggcgcaacc gtggctaaag 840

agggagctag gaggttagct ataacaagga gtcatcctta ttcctcgtta gttagcaatt 900

agtttattct agttagttag tgaatcatct ttatccctag ttagcgatag gcttatccat 960

aatagttagt agatgaacaa ataaagctcc aatgttataa aaggggctat tgtgtgttcg 1020

taggaggcta ggagatcacc gaagaagtaa agcctcccaa gtttggtggg attgcttcga 1080

tcaccctgtc caacatttaa tttggcctta gtgacagcaa caacaccact tccaacctag 1140

ttccctattc actttgtttt atccctcaat cttatctcct gctacattat catctag 1197

<210> 4108
<211> 1060
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291315_G1, chr8:149444995..149446054, Cluster 25

<400> 4108
actccatggc ggatattgtt tcatctgata aaggcaattg cacaatacta agctctttac 60

ttagattatt tcaatcaata taacatgagc tattagaaga gaaattgtta gccaatttat 120

tataatggtc ttttagttca atagaatcca aggacctcaa ggttgtggag ctcatagaca 180

cccaactata cttttgaatt attcgagttc ttcaaatata cttttaataa actaattgca 240

atatcaacca taactaagaa ttaattaaaa ttaaaattaa aaaagccttc tcaacttcga 300

gattttcttt ctcataatcg gttccattat attatttgtg tagtgggcct atcgatatct 360

catgagaaaa cacaactgga caacatgatt atttaggctc acccttattc cttccaaagt 420

atcaaagggg agaagggtgg ttaagaaaat atctgcaatc aattcaaaat gatggcaaag 480

atactcatgt attgaaacat gtaaaattac agatgacgaa gtaaactaca tgctcacaat 540

aagctttgtc catttatatt gacaatgaag tatttatgat tactgtaaac aacaaaccat 600

attcatgtaa cgaatgagaa aagattcatt tatttatacc tttaggagct ctctaggaag 660

tagatactac atgcatagtg ttacaaatgg ttgatccatg taacggtaac actattcatc 720

tatttataga gttatctcat aagaaaaaac aactggacaa catgattatt tagtttcgcc 780

cttcttcctt ccaaaggtat caaaggggag aagggtggtt aagaatatct acaatcaatt 840

caaaacgatg gcaaagatac acatgtattg aaacatgtaa aataacagat gacaaagtaa 900

actacatgct cacaataagc tatccttttt atattgacaa caaagtcttt atgattactg 960

tagacaacaa accatattca tgtaatgaat gagaaaagat ttatttcttt aaacctttg 1020

gagctctcta cgaagtagat actataggtg tagtgttaca 1060

<210> 4109
<211> 1375
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293228_G1, chr8:159244860..159246234, Cluster 25

<400> 4109
gaactagtac taattatagt tttagtatcg gttttaactg ttgtctgctt tagtacccgt 60

tggtgtttcc aaccggttct ttgtaataac tagtactaaa ggctgccgcg cctataaata 120

cggccttcca cacattgtga aacccaaatg taacttcact ttgttcatat tcctggtatg 180

tcgtcgtctt ccctgctcca ccagcaccat ttttcgtacg tagggccgaa tgacgagcat 240

cgcagcacct ctcctccatc gccacagcca cgtgcagaaa aaaaaatcta aatctctgct 300

ggtgaaaccg catgcacaat cccaagcatg catgcgcgca gcatcgcctg tttcttaacg 360

ttcatctttc cctggtcatg gcgacctctt tgttttctga tgatcggacc tctcgaattc 420

catatatata tatatatagc atcatactgt gtgtgtgtgt gttaccagca accttgtgaa 480

agctacaagg aagacaagcc aaattaaaat aactgttgat tttatgcacg atcgcgagta 540

gctatatata tatatatatg cccgcgcgca tttttcccat caagcaagtt taagtacccc 600

caaaagctag actctttaag cttctagaaa cctttagctt tgacaaataa ttactactgt 660

aataattaag gagtatggtg cctttcttat ttggcgtgcc actagcttct ctctagattg 720

ctttttttt tcttcagata tgcttagtta ttaactatag taaagatgcc tcttaaccta 780

accatatgta ggcatgtagc cataagttta cacaaaaagt tgttgcatgg caagcctatc 840

gagcggctgc tagatcacac tacgtactag ctgactagct taatttcatg taatatcaac 900

acctaataac ttttgttgat tgagcatgga ccgtaccagt gaatctttga cagcaaacac 960

cttatcgatc tcagtgatta agagcatcaa ttatatgtct gctagatcac atcaattatt 1020

gtgctaggca accacctgca aaggtagtag caactaacag catgccatac atagagacaa 1080

acaaacaaaa tctacgtacc cgatcatgcg aagatctttt tgatgaatat ataggcataa 1140

gcctatctag cttgttcatt ctgcgcgccc atagctacaa gtgctactta attacaatgc 1200

cacagcatgc atgcaggtac gtggccggtt tcccaattcc aaagtcaaat tcgtcagtgc 1260

acaacaagtg ctgcgctgtt gcgacctttt ggctagagat ttgttttggg tgcgtgctgg 1320

ctgctgggtg caacagaacc gaattctctg accgtgtttt gcccggcaac atgtc 1375

<210> 4110
<211> 1120
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298800_G1, chr9:8445996..8447115, Cluster 25

<400> 4110
agctcatgaa ggctagtccc ttcactggaa tctctcttgg gatgatcctc tgattaggtc 60

catcaagctc ctgatcacct tcgacacaca tgtgaataca ttgagtacat ggaattcaca 120

atggctaacc tttgccttcc ctaaaacatc attcattggt accccatgct ttacatgttc 180

atgccatgcg ttcataaagg ctacttggtc ctcaaaatgt tgggttcaaa tggtgttacc 240

ttgatctcat gtgaatgatt ggaagcgttt gccattgttg aaaagctaca tgttggtcac 300

ctgtcaaggc tcctacaagg aaccataata ggaaaacaca attaaatcga taataccttc 360

tccccttgtc tgaaaaggca aggggagaag ggtgtcaata atacagataa gtaagataca 420

aaaatagata aacaaaaatc tattcccttt ttattagtag attacatgat tgtaaagtta 480

ccttcggaac acatgaaaga tgttcgaagg tgaatacacg aggagagctt caaatgttga 540

gcgcttcaag gagatgagag tacgtgagag tcaaaaagtg atccccgtgc atgggcattg 600

ttcacatagt tataaaggca tgacactata catcttagtg taaaataaca ttattgtctt 660

gattattatg tacatatgta caaaatctac gaggggtatt cttgtcttct caatcataag 720

aagtgtcgtg tatgtctctc ctagatacct ttgtcttccc aactctaggg tttatccaaa 780

gcttcatcag agtgcttgtt ggtcactctt tggctgaacg aaggcattat aactgggttg 840

aaatgccaaa gatgtcattt ccttctctga tctgtcgaag ctttttggcc gaaactcgtt 900

gcattatcct gaaatgagct caaagtaata ggattgatca gtttgaggac cttcagcaaa 960

ggctattctc caatacttca ctccatgatg atggcaagac tagagtcagt atccctagct 1020

ggggccctga gatcgtaacc gcaatactag tggtgccctc attggccctt atgcccctcg 1080

acatctcttg gagcagattg cactacccaa ggcctaactt 1120

<210> 4111
<211> 1301
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29984_G1, chr1:183816447..183817747, Cluster 25

<400> 4111
cctcctttgc agttgccata cctgaggtct acaacaacac caacagagca gagtagcagg 60

actgctgcag gaaagcacag ctcgactgct cgcacgcaga ggaggggagg cacgccggct 120

gtgcacaaca gggcaactcg tctactcctc cctccgtcca tccctccccg cttgcctgct 180

cgccccgcct cgtgatgccc ttttgccgcc acccccgctg ccaaaaagga cgcgtgcgga 240

ctgccggcct gccgctgcgg cgctgcccac tggccaccca agtgcgcaaa ttcgagcgga 300

aacacgcagc ctagtgtttt tttttaaaaa ataacattaa ccgctatcga aataaaatta 360

catgcattat atttttagac aagacaagat cactccacca cgccacgtca tgtacacttg 420

cgtgataaag actactacaa caacgtagat ccttattacc ccaggtcgtg gtgcacgatg 480

aggcatatcg tgtcgtgaca ccaacactca cgttggctgc gtaggactag gcaaaaaaaa 540

aaaaaaaaac gctacctatt atccaagccc aatttacttt tacccggatt cgatttacct 600

gaactcggat agtcggatac ctagaatttt agataaaggc tgtgaacggg tattttcaga 660

acatgattgt cattacctaa atcacacgac ccaataaaac gaataacccg aaacacatat 720

ccagctcttt tctcccttct atttgtctcc tttcattctc ttgtcacatg agctcaccta 780

ggtggctttt tttcactgtt ctccttttgt ccttttttgt cttatcctct atctgaattg 840

gttttggtcg tagttgtcaa cagtgtcatg tgtgatgtat gactctttcg tcccatgaag 900

atttcatgat gatttgaaga tttattagtt ttgtggtttg gactaggctt gtgaaagatt 960

ctgtgagcgc tattgtttag agtgttgttt tgaagatttt ataccactcg gatttagata 1020

gatctaaagt tgtatactgt tctagtgttt ccactatttg attgctctag ggtttgtgat 1080

gctcaagagt atccatggtt gtacgtaaga atgtcttcat ttgctgtaac tatagtttct 1140

ttgggcgtac tctttgagga tggtatacgt agttattgtg atatactatg tacagtgctt 1200

tgcacaattt gagtaatgac cttatgagag atacatttaa tatacgtgcg ctatagggtt 1260

ggtggagttc tttcaagttg tttgtaacta tctctatcga t 1301

<210> 4112
<211> 1103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300333_G1, chr9:15359557..15360659, Cluster 25

<400> 4112
tttaacggat gtagtacatg ctaataatgg aaggatgagc aggtccttat tcactacaac 60

ggaggacgaa taaagatgtt tatattcgtt tgttccccga cacccattcc taaaacaaac 120

catatactat gtttttttt tcaattctct ggcttctatc tgcacccatt attttatatc 180

caagtgtttt cttccttttt ctgaccagtt ctgcaatcct ccgctccaaa ttaggctctt 240

gcattcttta atttgtcccg tagtatacaa ttaacaagaa acttacgatt taacaacttg 300

aaaggcaaag gggagcggcc ctgctaaatt atccgatgaa ttacatgtgt aatatgacat 360

ctatacacaa tgcagctccc ctaaacagaa aacgaacata aattaatatt ttatggcatg 420

cagcaaatgg catattttta catatttacg aaaatggctt aatatattca attcccttgg 480

cagtatgaga tcttgagtaa actaatcagt tcatgcacta ccaagcaaca ctgacatgag 540

aaaaaaatgc ggaccatcaa tataataatg cccttgcata gttgcacaca gaataacaag 600

tgaaggaacc catgcatgca tgcactccgt agctaggtag cataaagatc ttgtggaaca 660

ttttgaagca ttattgtcct agacgaatta atttgtgaag ttaatagctt gtgatttcaa 720

tgcgttctag ctctctctat ccgcgtcttt gagcgggtct tctgattctc gttaattaga 780

gagtaacttg ttctatggtc actttaagcg acaatactca tttacaagat aattgtaatt 840

ttcttccagg tgatttacga taatatatca tgctaaaatt tgaggtggtt ttttccctgg 900

aaaactgttg ggttggcaac ccgtagaatt gaaactttga ttcgagccta ttttcactct 960

ccatttttg gcctaccacc aattcttact gtaacaccat agaacgttat cgaatctttc 1020

gtctcctaga tcatgagcag cagcgggcat gccagcaagc tccacacgct ggtcggccca 1080

catgcagcag ccaacccaca tgt 1103

<210> 4113
<211> 1198
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301180_G1, chr9:20328932..20330129, Cluster 25

<400> 4113
tatgataatc gtgatgcaca ccgtaccatg cagatgtcga ggcaactagc taggatgcac 60

gtgagtcatg acgacagagc tgagagcagg ttaattagtg atatttaatt tggtgaggaa 120

caatgttatt attagctaca gcagtagcac acaatgctat atatcaaatt aatttggcga 180

cgaggaatgt ttagctacat ccacgggcat caaccgtaca tactactagt agatatatat 240

atagcaaagg tacacgtacg tacgtgtgcg tacatatgcc tgtcaccttc gacggaggac 300

gttttttgt tacacaatat ctagctagga acaaccccaa aattgagaag ctaggcatat 360

atatatgcaa gctgcagtct aactagaaca tgcatgcatg acgaccgatc gacggtacaa 420

tgcacaagag atgaatttga gcaagcaaag caatgcaaca caacgcgcac acatcatgga 480

gaatataatg catgcatgcc taccggcggt ctataaaatt aattaccatc aattttgcgg 540

ttctaatcgg gtgctccacg cactactagc tactactctt gtacccattt cgatcgaggg 600

cgcatttgct ctggccgaca gttccatgtt gccaaattgg cctctaatat cacatccctc 660

actcaccatg atttttaggg catatatagg cactatatat acctatgcat ttcacatgac 720

catccactag ctaatatatt aattggtgac cgtccttgtt cccttacgtg ttcaagatgt 780

tcctcaacat ttgcaggaaa atgtaggcac gtaggacacc gtacctttgg agggacgacg 840

gcattgcaat ttgcatgtgt aggctaccta ttgactccaa gctaggatgg gtaattggga 900

gttccactcc agagagagag agagggggggt gagtgataga tagatagatg gatggatgtg 960

ccttgtcatt gcagtgttag cagttggtat catgggtggc tcttggtgct catgccacaa 1020

ccgacggttc agaaggcagt agctcaatat atatagatgt ctctaaaaaa tgtgaaagta 1080

ctgtcacaca agtagcagca tttgcacaga gagcaaagta attagcagat aattacgact 1140

ctccgccggt gtggcgaggg atgttcagct tgcttaagtt atcactagct agtcagat 1198

<210> 4114
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301187_G1, chr9:20342888..20343942, Cluster 25

<400> 4114
ttttgttaa agtattgacg catgacgaca ttgaaaaccg gtgctttata gtagtagagg 60

cttattagta gttgaacaca gtcgcctctt ttcccacgac agtaaaccga aagtaattct 120

gactctcaca tgataaaagg taaaatgttc cataaaaatc atatttaacc gctatatgtg 180

aatagtataa ctgcaaattc cgagtcaagc cgccaagtag ataaagtagt gataaatcct 240

acagtaaaat agatcctaat gaaaatccat caattcctaa tctcagtgaa aataaaaaac 300

atatatccat ttaaaatcct cctttaattg tgactttgtt ttgtgacaat gcaaataagt 360

tctaaattta acatatactt atgttcacca cacgttccaa tttcaagtgg atgatgcaaa 420

actacttgta caataagtag agctagattt ggtgttaaaa gtacatacca aatttatgtt 480

tcatccttaa attaaggtca actgttgaca cttggaagtt tggtatgtct caatctaagt 540

ctaacaaact aagaccttgt atggatgcat atgcatctat ctaaacccat gtgttagggc 600

aaattggtgt gtaagttagt ttaaatttca catcaacaca cccaacacat atggattgag 660

ttttgatatt aaggatccaa ataaacccta aggtgaaaag gaatatgggc cttgtccatt 720

tattcacctc ttctatggtt gtatagaaac tctagtccct attgtatcaa ctttcaatgg 780

tatagaaatt ggtttcaaaa aatccataga aaaaggaagt gatgcaatga tattttgcac 840

ctttgaatcg agacaatact gttctatacc attttctggt aacctccaat gaagatgtgt 900

tgttgcaata cataagatat gttgttggga tagtcgacag tcttaacact cgtggactag 960

ataatattgg gtgtcatcgt ggtaggacat cgaggtatag aaggtaccca aaagatgaaa 1020

ggtgtaacaa atagagcggg acatagactg attgt 1055

<210> 4115
<211> 1384
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301784_G1, chr9:23517262..23518645, Cluster 25

<400> 4115
aaaatcgtct ctatttgtat tttataacga ttatttgcta gaatcgatac taaagtcgtc 60

tctattttta gcgcgaggat tttgaatatc ggtatgtatc ttcaaccaat actaaaaagt 120

ttaatttttg tatcgatgca gtactaaaga ttttatatta gtatgggttg aaaatatgag 180

tcgatattaa tgttgatgga cataagctct gttctctggc aatgggcgtg gccgcgttca 240

ataagatcgg cggccacctg ttctacactg cgaccgctct gaacccaggt gtgctcggct 300

gagctgacac gtaaataaac agcgttcaag gtgaagatcg gttggtccgt tggtgggcta 360

gcaagacagg caggcctttg cagctgcaag cgcgcgcggg ctcgaccagc tgaacatatg 420

ctgtgattgc agcgggcagc ccgcccatag tcatatgaca aatgccgtgg gctgtgagtg 480

attgcagctc gaatgctcga tcaggggaca acgagcctgc cgttatgcga aagaaagaac 540

taattgagtc ggcacatttt ttttttgcta aaatcattct gggggacgaa cgctagcttt 600

ctattaaaag agacggttat gatgtcgtat ctgtcttcgt taattaacct tattaatagt 660

acggatccgt ctccattatt gaatattggt tatcagaaaa ctacaaacct aacactccaa 720

cactagttta tctctaccac tgcaccacgc aatcatccat gtttatatat aattatatgt 780

tacattttat atcaataatg catggtctta tattgggtat tttagctact agaaaattat 840

aactacagat ttttaaatct tgtaagtact atagctttga taaagggtgt atctccatcc 900

aagattgttt gaaaaaaaaa gatccaataa tatatgtgaa ttaaaacgca tatataagac 960

tccaaacgac tttaaataaa aaaaaaacta gtaatcagta agcatgtagc tcatatcggt 1020

cactatagca cttgattggt tgtctttttg gccgagaggt cgcatcatag aattatccgc 1080

ttttggccca gactcaccat gtgaaacatg cttttgtttg gtctatatct gagttcagct 1140

agcagcctgt tagatttgat taaagttagc tgttcggatt gttgtaactt taatccatag 1200

acaaaatact atataaatag tagaagctga taaagttcaa ctttttatac ggataccaac 1260

tgatattcaa gttccttgtg ccaaaaaata gagactactt tagtactgat tctagcaaag 1320

aatcgttaaa aaaatactaa ttttcatttc ccgtctacaa gtttttttagg gtttctatca 1380

acaa 1384

<210> 4116
<211> 1228
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_303042_G1, chr9:32314885..32316112, Cluster 25

<400> 4116
tacctcttgt tgctctagta gttgtcgggg cgccgtcagg ctatgctatg caaaaaaaaa 60

aaaaaaaaag agttgctgct cacgctaacg gattggtggt ggtacctttg cttaggatgc 120

aatgcaaatc ttaaggtgac ttcagaacct acgctctgag tgcttcttaa ttgtactatt 180

aattagtata atttcgctcc acaagatttg cgctagcttc tttctgatta ctactaatat 240

atttttttctt tggagaatat catttcgctg ttataaattc tttgtgaaag gccatcagac 300

gacgtacgca atcaacaatt tggaccatat atatgcgttc gctttttata attgcataat 360

atatactcta aaaaaacagt tgagtcacga aaagattgcg aagctggaaa cctcgatctg 420

taaaacttta tgctaaaaat tttggcgcat gacaccgact cccaatccga aaaagttagt 480

agtactgcta cgtggtcatc gaatttgagc ttccaaacta cagacgtacg gcacttaaac 540

aggccaacgc cattatctga tgcctgcgcc accaactaca tgcctgccca taaccgaagc 600

gtagcccagg cgcaggctga cacgaacgca gcggtgataa ggacagtcac gaggaaccag 660

ccaaagcata acaacaactc tcaaaaatct agccaaattt aattttattt cccaagggaa 720

ccttcgcttc ttcgaaatat acaagtcaac aaagatgatg gaagcagccg caatcattaa 780

ttacctactc tatgcaagtg ggatcacaca tttttggtcc attaaagttt gcttgagatt 840

ttatttttc cacaaatagg gacctttcag atgttaacct cagtaataaa gaactgtatc 900

aattctctct ggatacaaat aaatacgcag ggttgagaac ggagaaagat ccatgctcct 960

tgtagtctaa atttctatct ctacagtatc gcgtaatatt gaatatgtgt ttcaaagaca 1020

atcatgattc ataagaacat taataagttt ctagggtaag aaccataaca gaaatctata 1080

tttataaagg gaccgacata ctagataaga tcatctgagc agtcgtcgtc cgcctctctc 1140

tctagggtta tgagcactca agatgcggcc gttgtttttc tcgttgtgcg ctcaatgcta 1200

gcacaccggc gtcgtgatgt ttcgttcc 1228

<210> 4117
<211> 1359
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30584_G1, chr1:188108410..188109768, Cluster 25

<400> 4117
ttaacctagg caaaagagac tagcataaac ttcacatcat gatgtttagg ctggcgtgac 60

aggagtactt cctacttact cactttcgat ccctttttgc tttctaagaa attaaatata 120

cttaggttta actaactata gatatagaca acagcgacat cagaagcgaa cgtaaggaag 180

tagttcaaaa tttcagtaca ggcgtagaaa atcttgcggg ccagcatcgg tagatgggcc 240

ggtttgcggg aatacgtaaa tttccaacag gcaccgcaca acacagcgaa ggggcgacct 300

gtggcaggca cagtccaaac acgcgcgctg ctgcctgcat tcttcttcca tcttgctggg 360

ccagatccag gtatagccca actgtctaca agtcttttcc agcccagatc atacaaagac 420

aaagacaaac accgtgagtt ggaagccgaa ttcgtggaaa gtgcaatgtt ccttttggat 480

gatacgtgta taatatctcc ctcccctccg tgccaaagta gtcgtcgatc tctactattt 540

ttttcttcaa ggaatcaact attcttaact ttagttataa acaatattag tatttgtgtt 600

acatacttga tattattagg ttgaactgca aatctgttta tttataataa gtttatttgg 660

aaacataaat gttgctaata ttttacgcat acgccaacta ttttatatgg gagcaagtag 720

ggggaaaaaa tctcaacttg acgcacagaa ggcacgtacg cgtactcagc tcataagcaa 780

cacgctctct ctaaagtctg aataatatat agcatgcatg aatatgcatg atgactatca 840

attctaaacc tgataaaagc actctattac atcttaattg gtggaataaa atgccctaaa 900

taatcatata tacttttgtc cttggacaat tattgtattt tgtttttctc cttctttgtt 960

tgaacgcttg accactcaca tcgtctccgg cgggcgaggc aacgacgtgc aagagagacg 1020

cacgcagagg atcgatcata tcgatccgga tccacgacag acaaaaaaaa gaagttaccg 1080

cgcgtatacg tacgtcctgc cttgccgttg tcaaatagga gtactactat actacgcagg 1140

caggacagta cgtagggaca cggcgacgaa caacgacaac cgcacgtcct agctaccttc 1200

ccaggcagcc agcagcagct ccatcttctt ctctggctga tgcgagctag ctaaagcaaa 1260

cgaagccggc cggcgctacc gcagctagcc gttgtcgtag atgcgatgcg agaaagaaac 1320

gtctttttga cgagctggta gtcgtcgtca gctgccggg 1359

<210> 4118
<211> 1236
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_309774_G1, chr9:75762917..75764152, Cluster 25

<400> 4118
taaagcggcg actgcagaag cgcaacaggg atgtggggaa agtgagagag ggggccggga 60

gaaggttttc attttttat atcattagcc taacagtttt atatacgggt ccgatagttt 120

tctataattc taacgtgcta aatggggtta aatttgaaca tgtgatatat catattactt 180

aagagacaat gtagttttta tcatttttc caaatcctat attttataat ttttttgaa 240

ttttggacga aattttaaaa attacacgtt gagaaaccga atccggtggc cggcggtttg 300

ggtaaaccgc ccgataacat ctaaaacgga tcggtttttt taaaccttgc ttccatcgga 360

atgttgagtg aaatctccgt ccaattggac tccctcgagc ccccaacaaa tagatagaca 420

tgatcctgaa caaaagctgg cagcattaac gacacctaat catgatcaga gccttggagt 480

atctctagct atcatgcgct ggctgcgcgc gcaagtacga actaaccggc atattcatat 540

gattgtttcc gcccaccttc ttcccgtccg tcagatggtc gagctactat tctcatatat 600

acacgcgcat ctcacactgg cttgacatag gtttatttta acttgttgcc attatcccaa 660

cactgtgata tatatgcatg gtcagatctc gatcggatgc tttctttact gtacgaaagc 720

tcatatccat agattaagac actctccgtt tgacctaggt agactgcaag tcagcgtcga 780

tgcgctagac agacagccac gtttttttct gcaattcagt gtagtagcat ttgatgccat 840

taaacgctgg tatttatgcg tcgccgccct gattggctcg ctgttagccg tcgctagctc 900

gcgactgtga tgatggggat atattcctgt cgtgctatca aaactccgta cgacgacgac 960

gacctcggca aactaataac tggtttcctg caggcttgca tcaatggatc gatttgtcct 1020

gatagaaatg ggcgccccga tggtaatggt cacccgattg tgatgattcc gttattttca 1080

cttgtaattt ttggatatca gtttgtatct actatgctta aaccaccagt ttcaacggtt 1140

gtcctatctc tcgtgtcatc tatttacaaa aaaaagtcct tacatttctt tcaaaacaac 1200

tcagcgtaaa atattaaaaa aactgtgtag caggtg 1236

<210> 4119
<211> 1327
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_311592_G1, chr9:87447256..87448582, Cluster 25

<400> 4119
gaaaacgtag tttaattggt caactagtgc cactagaatg taagaactta gtgcacagac 60

actagattgg atgaagcaca aggaaaaaag atgagtggta ggtgttttgg atgttctaga 120

gggtgtttgt tcacttatgc aaagcgaggt ggccaagaca tggccaactt atagtttata 180

agaccatgag agctagccat tagaataacc gactgatatt ttttataccg tcggatgctt 240

cgatgacatt taaaacccct gccattaaat catatgctat gttatagtgg cactgtagca 300

tatactccaa tgcaccccat cacattactc tgatcctcat gtgaactctc tagctagaaa 360

ctagacatag accttgccaa tgaccagtgg agcgtgtgtt ctaatgacac tatttgtaac 420

atgctagctt ttgtgtgata aaagaataca aacatttttt cttgcagtgt gtgttgtggt 480

agttgttagg ccaaacataa gcaaactttt ctgttttggt tccaatattg aattcacaac 540

ttcaaaattg tattcaacac ctttggtgta tgatgttggc ctagtaaaca ccataaaaag 600

gtatttccaa cacaaaatgt tttttataaa ctatattgga ttgaattcaa attcacactt 660

gaattccaca tgcaaccttc tcaaaccatt ttccaattat tcctaaaaga taaaacacta 720

acttgctaac cttcccttca aacaatgttc atagaattaa ctatccattt cataagaatg 780

tgtgagcata ttagttttta cttggttttc atttaaagtt tgtcattctt taattcccta 840

agattaatag aaaaacatca ttcctatgcc taatcaagcc ttggacctaa acttctaagt 900

tctaacaagc ccgcccctct cctccctttt tttactttct tctcctgctc acctacctat 960

ctcgacctca tactccattt agacccatat cgcctaatta gcaatcgtac cagcccaacc 1020

cacttgctta cttccatagc ggcactctcg agtagacctc ctttcaatag gcactgcatg 1080

cctctccctc tagcttaaag gcccagatca tgttcccctt tggtccagcc taatcagtcg 1140

cttaccctcc tctctaacgg cacatcaggg cctagcggtc gtgtcctccc aaaaccctag 1200

tgcggacccc acctggccta ggctagaata gaatcctcat gattcatatg tgtgtatatg 1260

gcaaattggc gttcgctctc actccttaag tcttgttcgc tttcgatgtc cgcctcgtgc 1320

cccacct 1327

<210> 4120
<211> 1073
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_311776_G1, chr9:88594879..88595951, Cluster 25

<400> 4120
gtgaaccaaa cgacacctgg tttgattgtg ttgagattaa tgttgtattt agatacattt 60

ggttaatcac tagttgggga aaaatagtgt aaagtagtta tagttggcta acactagtta 120

aagaattggt tagaaaatta gctcttccat ttataggcac taaagctaat ttttagcaag 180

ccagcagtga gtccatatat caaaacatgc cctaattttg actagttgtc gtagatgtga 240

ttattcttga acgatgaaca atttggtcga tcacaacatt tgctccaaaa gaacacttac 300

caactattat atcatttgtt gcaagaatta tttgctccat aaataaaaaa tcaatgtatt 360

gcgtacacgt aattagaagg atgatataga tttatattgg ttcaggtatg tgagagtaga 420

tttcttgtct tatatgttcg atcaatttac aagtggcttg tggctactga tgtctactag 480

ttggctaagg tttctatgag cgagtattga atctaatgag atatcttgaa atactatttg 540

gggttgatgt aaaatatagc atggttatat gaaaaaaatg tagcattata agcagcgttt 600

tttttaaaaa aaaaaacagc gttaccctaa ctctctatca tcgaatcact attgttgcga 660

ttgaccgttt gcctaggtat agtacgtaca cattcacgaa agattcacca acgcgctctg 720

gttgctgcaa tatatagcaa gtcaagtgct tgctgcgtcg agcgtcgttc tctcgatcca 780

aaccaaaccc accgggatac ccaggttcac gcagccgcag tgaaaacccg catgaaactt 840

cgtgccggcg acgccgatcg agccaccacc agccatgccg gcatgccgcg cgcgggatgg 900

cactgccgga gtgggagaag cgaggcgccg ctgctcctct ttccctgggc aggaggcagg 960

aggagccacg agtgcgcagt actactagta ccaacctgca ctgaggggggg tggcgaggtg 1020

gtcagtgacg tgtgctgcaa agcccaagcc tcccacggcg tgcccacgag atg 1073

<210> 4121
<211> 1124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_311834_G1, chr9:88941251..88942374, Cluster 25

<400> 4121
atggttttat aaaccgtgct cgacccttgt ccaatcttag gcagttgcct acaagcaggg 60

caagcaatag aattacccag ctttggtctt cctacagtct tcgtggcgtc atctcatcta 120

tcgcagatgc ctccaagtac acccatgtat ccatccattg aggtcacatg agtgtcatta 180

gcttgcacag gtgctctaac aagcatttgt gggaagcgtc cactctcgaa gaccttggaa 240

aaacttggag agtcttttaa atcattgcat tacttaccac aattacattt gtgtaattta 300

atttcttaga attgccataa ttacactgga ttggaatgag ggtgcaattt ttttgtatat 360

atgttaggca ctcaagtaaa gttagggttg taattagaat ttaattatag caagcaaatt 420

tagagaacct caatttacct cctcttagca ccgatgcttt cagccactac aaaaacatct 480

tcatcactac cacccacatc cactcaggag tgataaaact ttaatctatg ttgaaaatat 540

ataaactaat agagatagca gcattctaat agaaaggaag aatagcaagt attcaaaaga 600

aaaagattat tttatgcttg ctacaaactc tggtgctact aaaattggtg atgatatgct 660

aattttgttc accactcatg atacatcaga gcaacatttt taggtactaa atttgaatta 720

cgtttgtcag aaaataatcg ttttggcatt gcttgtggta aagaaatgtt gactgatagt 780

gttttcatca tacatgtgcc ataaacgatg aataataacg atgctttcat tttagaacga 840

aataaacttt tgctttgaaa agatgtgaaa agttattgtc ttctttaaat actttaagtt 900

atatttatat taatattcta tatgctctaa ctagtttgga ataaaaattt ccatgtactg 960

aattgtcatg gttgtttagt catacatata attactggta aactataatt gtaaaaaaga 1020

atatatggta aatagatatt atatttttc aaatataaaa tcttctttta tatataaaat 1080

cttcttttat agtataatag tatgatcaat tagaggaata caat 1124

<210> 4122
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313911_G1, chr9:100663294..100664457, Cluster 25

<400> 4122
ccttcttacc aagacactaa gtttgtattt ggtctgcaga ccacatgaat ctatctgtgg 60

gttttacgat gggatatagt ctcaaactcc tattcagttt taaagtatgg gacagtcgaa 120

gttaattctt gttttgttaa aattgatatg ccaacatgag atagatatca gttttctaca 180

cattaaaaac accgttagtg tatggaggct cattgaccaa tgaaaaaaac tgatgttcaa 240

tcaaacttcc tatataatca tcatgcaatt aaactaccaa aagtcataaa aaaatcttaa 300

cttccttgtt tactttatcg atatctaatt cattctatgt taggagatat gaaaaagaga 360

aatctctatt atttttaat gattcatatt ggatataatt ttctattatt tatatctctt 420

gacatagggt ggattagaac ttaaaatttg atatattgat aaaataaata ataaactaca 480

tttatctctt gtttaaaaag acttttgatt gtttgactgt acaatgatcg cacaagaagc 540

ttgattccac atccgttttt gccttggcta atagcgatta ctgggtagaa aacaattatc 600

cgtcccatat aggccaatcc ttctaaccaa gtaagagttg agatggtccc atcctaaaaa 660

tattggatag attcatttga tcacatatat tctactaacc aaacacatac taagggaaac 720

taaatacaca tgaggatcca tagttgcaca ctcattgata aaactatagg tgaaaagaga 780

tgggctacat cagcacccac tccactccaa ccttctcgag gtgcgaaccg tctcctccac 840

ctccaacttg tcattagcag actcctcttc tacaccttct ccattttcta caccttctac 900

accttggtgt agctcttctt ccttttattc tagggtgggg agattcaaaa tacattactt 960

ggttagctca ttctccttca acgatctcct cctagaccta gcctcaaccc cattccatga 1020

ttccatccct agggcctcca agaaatgatg tctttgtgag tatcgaggtg aaaagacagg 1080

aagaaataca aaaccgtttg ggatggatcc atcgcttcta tcccaatgct cagttcccat 1140

gtgccctctt ctcctctccc atcc 1164

<210> 4123
<211> 1379
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315318_G1, chr9:107853354..107854732, Cluster 25

<400> 4123
caaaaaacca tacgtagcgc gcaacgctct cacaaataat accatccagc tatttaaaag 60

agaacgagcg atcgaatgat ttataaataa agattagact ttttttaac ttatatcttt 120

ttgaattttt tagataagat aaattgtaaa atttgttttt atgtgccgtc gtaggtcatt 180

gaacggtgga tgcaggatgc ttgagttgat agaaccgaac ggaactaacg ggggagtaga 240

acgaagcacg gcatgactga cttagggaag ggaagccgta tttcctactc taattgagag 300

ctaaagctat aaataggtag tcttaagtta tctcaaaact ttaatgcact ttataataaa 360

ggtatataac ttaaaaaaat tataataact taagggctta tttgggagca aaataattag 420

agtaaattga gaggttagaa tcctttacta ttcaatttta atttttaaaa aatagcaaga 480

gattcttgcc cacttaatcc tcttcaatat gcttactccc aaacaaacct taaaacttta 540

aaaaatctac atttaaaaaa aatagaatct aaacatatgc gctagctaat cgaacatgcc 600

agtgctactg cctacaattg gatacgtgta tccagccagc tactgctccc agtcccagag 660

tcccagggca agggctcaaa attgggccct caaatagcct ttgaatataa ggtggtgagg 720

atctaaaacg ccggcgcaca cgccgacacg cgacaacaaa ttcgtcgtca tacaagttgt 780

ctgacatctt cttcatgacg acttcgcctc taaggccggt ccaatgacgc gcgacagcaa 840

atctgaagcg catgtggtca ggcagcactg attgcttctc caaccaaggc attgcggccg 900

gcaacacctc gatcgtcatc cgtgtgtccg ccggtgtcca gttccgggct tctgccgtct 960

ccgcgactcc agcacttaag gtcgttgcgg cggcgatggg cgatgcatat ggcacatgcg 1020

ggcatgctct cacggtgcgg cgaaccacga caagctccag cggcggcgcg ggcagctagg 1080

ctcaccaacg acgtgagcgg ccgcgaaata cgatggctta tattagtatt ttgcacgggg 1140

cctgcatatt ttgcattttt tgccggacga gcctgactcg tgcgctgatt gcatgtttgc 1200

agtagctcga tcaggctttc aggatcggcg aatccgtttg atgataccta gctacgctat 1260

cagaatggtt gactgtgctg ggtggctaat tattactact acttcaaccc ataacactat 1320

caatttccat tgaaacgtac agtacccact aggaattaaa gggtcataat agtcagata 1379

<210> 4124
<211> 1054
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320130_G1, chr9:134081459..134082512, Cluster 25

<400> 4124
aagagactta gattatatat gagtggggtg tggccgtagg aaagacaatt tcagtatatg 60

aatagagatc gggacaacgc acgtttgctc acgatcgatc gtccgcgcgc ggatgttgtt 120

gattacctta tcggcatgac ggaggacggt ggcgtcactc ttgcttggct atatctgcgc 180

tgccaagtgc caacacgcca cccgctgcga ccgtccgtgt ccaatatgta gctgccgtgc 240

tggcatcggc ttttactgga ttattatttg ttgcaattgg cacggtagaa ttctgctgaa 300

tttttcgttc cgcccacgac cagtacatat catatcagct aggcgccgcg tgaaccaagt 360

atgaactgga tgccacacgg atcggagtcg acgctcaaat caagcaggag acaataatcg 420

tctttgagcg aacgttaatt tcagacctcg cattcacgtg agcagggaga cgggacaacc 480

agcagaaact accttgcagc tggtgcctat ttaactacaa atatgtggca aatggagacg 540

caatcttgga ccagaaagcc atttcttatt tacttctaag cattgtctat tttgacttag 600

ggaccgtttg catgggctaa actttttttt tataagatgc aataagttgg gttagtgatt 660

tttcttactg tgtgtgcctt gaaaagtctt tcttaaacac actctctaaa ttctcattta 720

cgtacgtacg gagtcatttc aatatagatg actctctata tatatagctt gtacttggtg 780

tttgccctag ctagctaaag tctattatta tgagtgcagt gagaggactg attaagaatt 840

catatactcc taccagtgaa atagatggcc tatgtactcg tgtgtcgtgt catcattgat 900

tattttagta catatatcat atgcagtcga gaggactgat gacgtgaatg gtagcaaatt 960

aaaattgcca cgtatactac acgtactcag tatactgttc cccaaagggc tgggccgatt 1020

taggaattag gatattggcc taatgattga ttat 1054

<210> 4125
<211> 1194
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322190_G1, chr9:144605601..144606794, Cluster 25

<400> 4125
gccgttgttc tttgctttga ggcaaagcaa agtcgagggg acaaagaaaa aggtcgccaa 60

ggaaccaaaa cggaacctga tccgagcaaa attaaagctg gaataattcg agcatggatc 120

ctgcaccgta agctgtcaaa acaaatcagc atgtgtataa tataatgtca tttggcccgg 180

gcggtgcaag tgataaaatt aagctactta tggtgttgga aacatgatcc tgatttattg 240

ctagttagtt tctcactgta gacgtgcttt taataatctt aataaatacg gactactcaa 300

tcgtatgtat ggaggtatgg ttagcttagg ccctaagttt ctgccacgtc gtgggagcta 360

tggacgggcc agccgtgtgc ggcgtgccgc gtgcgtgcgt gcatagctcg gagtctcgga 420

cagtcgaccg agacttcggg aggacggcgc ggtcggccgg acgtactgga cttgttaatt 480

atagtttgct attaatctaa tctaatataa tatccaggga ctgaagccat attacttgct 540

acgtcgccga cggccgacct gggacttgat ccggacactc aactcgtaga gaactcaacg 600

gcgctctgct agatttggac ctttgcgtac cacgcgcgtt gacgtgccaa gttttgtttc 660

ttttttttt cttaacggaa taaaggaaga aaggaccgaa tgtagaatac gcaactgctg 720

gtacaaagaa tcatcttggc ggaagaaact gtcatgattt ggtaattgtg aaaaaactaa 780

aatttatttc gttaaaacaa ccatggacta tgagttctat aagatcatga cagctcgtaa 840

catggatgac aaaagtctag aaaatatagg gtagaagttg attcggaatt aaactagagc 900

aatctataga cttttaggaa tctattctac ttaacaatga atctaaatta gctgaaccaa 960

acacactctc aggtctcagc gatcaattcc ggccgattat aaagcaacaa aaatgagatc 1020

ttatctatag aaattagcta atttgtattg ccccggcaca tggcttttac aaattatgaa 1080

aatcactaat tttattggtc tcacacgatc tataaaagtt actgattttt attggctata 1140

gacgaccgag gaaaattagc atcatcaaca cctaaaatta ggtcctctac acta 1194

<210> 4126
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322798_G1, chr9:147520058..147521291, Cluster 25

<400> 4126
ttctctgctg aggagagcag aacagatcat aatgaaggtg tggaagaaca taatagaatg 60

cattacgatc atgacaagta tggtttgcat gtacgtatgc acagtctact attgtaaata 120

gtagtattac atacataaac atatatgaca taaaaaaata ttattatgtt acttctagat 180

taaattaagc ataaaatcac ctagctaaat tcctaacact attgatatta ttttaaaata 240

aacctaccca gactttagaa ccgtagactc agtcaaaaat tgttgttctt cgagtgtaag 300

ggtagagata gtatttttt ttaaaaaaaa aatcaaactc ctagctccgt atattataat 360

ctctagtgga ctgatcgtgg tctttgtcgt ctaacatacc gcgcgtatac tgcactgcag 420

tactgtggta gcctcgtcac agctatacag gcctgattca gaagctctga caatgcagcc 480

tcgttccatg aaccctgtcc tgaatgtgct gcgctgccat ccgtcgcctg caatttccat 540

ggaaacgcca atggcatgaa tgcaggcaga cacaaccata cggggagaga cttgactgcc 600

gagtgccgag caacgagaag ccaaggaaca agtcgtagga aagcaacaaa ccagggcacc 660

tcagcctccg tcatattatt attatatcct ccgtccggta ctcctttccg gtcatctcgg 720

tcgccggttc gccgtcaacg tctggactat cgtaaacaga cgacggatag attcattcag 780

agtctttctc ccaaaggtgg cagtggcacc catctgctgc cgttgccggc acgcgggttc 840

taacgtgacg cacgccccgg cccccgaatg gtattcgtgc gagtcacgga tggatgatgc 900

taacagaatc ggagaaggac agcattgtgc gcgaggcctg ccgtcctgga cgcggtctta 960

ttagtcaaca ggtcagtgga gatagcgatg gccaggactt gacgagtacg taacacacac 1020

acaacagaca tgaccaattg atgatcataa gtaggtatgt tcatgtattt taacaacaat 1080

aaatctaata attagttgct atctaacatt agtgttataa atatatttag agacaacgat 1140

gttaatgata gccaaaaaag atattctatg ttggacctga tattcactct tgaaatcttg 1200

tctcaagtta gagcatgtcc aagaagacga agaa 1234

<210> 4127
<211> 1375
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325234_G1, chr10:4224509..4225883, Cluster 25

<400> 4127
tagtagtggc ctaagaatac ttggaaccaa taattttggg acctcgagaa caccaaaaac 60

caatgagcta tagctcccgt aaaatggtca aaacgtgaaa atcgatcgga gaccagttgg 120

catcaaaaat ctacacaaga aaattgacac gataaaaaca atatgcctct gagtgcctag 180

atcgttatgt ttcatatgtt gaaagaaaca aaaggctaaa gaatcacaaa cccaagtgaa 240

taaactcatg actctgaggt atttaagcta ctcacagagt cacagaaata gtaaatctaa 300

ataaacttta tttataagga aaaaaactag caagaaaata ttgtctcgac caaggtacat 360

catattaccc taaaaatgtc tagtactcga aagttctagg accttggaaa cacttgtaac 420

tattgagcta tagctcataa aaatgatcta aacgtgaaaa ctcgttcgag acccaccacg 480

ggacgtaaca aatctacaca aaaaatgggc ccaacaaaaa caatgttttt gagtgcctac 540

atcaccatgt tcggaagaaa gaaaaagtct ataaattata aacccaaaat ggggaaaact 600

catgacacca gttatttgag ctcctcacgg tgtggtaaat aaaaaacact cgtcattcgt 660

gagcagagac tagctagaac aatattgcct caacctagct aggtacatat tagtggccta 720

agaatgtcag gaacaatgtt gtatccagtg agatatatgt cgtggcttgg tctactcggc 780

ttgagcccat acatgcgtgc atgtgcgtag ttataattgg tgcatataat atagatctat 840

aaatttattc gatttggata gcctatagtt tagtttaacc taaattaata attaattggt 900

ttatttttat ttcactgggt agacctagaa cagataaccg cacagcaagt tatatattga 960

gttatactat ccgtagcccg tagtgcatcc ctcaaacttt agaggtattt taaagccgcg 1020

gtgaggttgc ccccaaaaga gcatcataag tttagaatag atcctcctag tcgtaaatgt 1080

acattgtttt ctctatttct tcctaaatct tttaaatatg gtagactatg aattaaatac 1140

agaattaata tgtacgtatt attttaaact atgataacta cataatttaa agtatattag 1200

gaatatggtg taccgtgtat agaggtgaat ttagagggag ccattacatg gagctaagat 1260

ttagaatgat ggaatctttt agaggacagt gaagaagtaa atgatgatat tgagaaccgg 1320

tgaagatagc aaatagtcga cgtatgagta tattaatacc ttcattcata aatat 1375

<210> 4128
<211> 1140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_326265_G1, chr10:9237317..9238456, Cluster 25

<400> 4128
aaactttcca taggaattga atcatataac attcttttgt ttttctccat tccaaaggag 60

gccttaacag ggctcctaca ttcatttggt catatcggct tctacggatc tcctataagt 120

aatcacgaac attgtcccta ctttagtact tatttataat catataagaa ccctttattt 180

tattgccatc acgttaacga gcaaaaccat catacaacag ttgggcgtgt caccctaccc 240

tcgccttcca cgtgaccatg tgtctatgtt tgttgggagc acatgtacta agaatgtttg 300

ttaagggaga gagccaactg ttgctttcac ttttggataa cggaaatgat gaaatcaaca 360

aggaacacat gcatgtagaa aacttatgtt gttatgttat gtataataca acttgtttac 420

aaataatatg gcgacacaca caaactcatg tactgaaatt tttaaagaca acctaaaatt 480

cttatgcaaa aaaagtatag taacttgtgt tttaattgaa taagtaacaa ccaaaacaac 540

atagtagttt ccattgtaga tggggtacac ttgtttgtat tgatgctatg caaaatatga 600

cctagtaact tgcttcgtgt ttctatggca acttgtagtg tacatctaat agcaacttat 660

ggaaatacat aacttgcgtc aattttactt gcacagaacc actacacata gcttgattgt 720

aagagtaaaa taacactaag atatatacaa tatgcatttc actatatatt gaacttttg 780

aagtgaaagc aatggtgaat cccaataaca catggcaccc aaagagagaa aagtgtacta 840

gtaagcacaa gcaagattga ttttatggtg ataatattgt aactcccatg tgctccatcc 900

caaacgagct aacccacata ataatgaaaa gaatgtcctc ttctcgggct aaagatttgt 960

aatggaacaa tacatagaat acatatcggt gtttagtacc gcacatacca ccatagggtt 1020

acccacgtgg taggtttagt tcatatagga cgcaacagaa gagttgtaat ggtgcgtagg 1080

atcgaggaca tatgatttaa ataggtttgg gcagctaaag tattgtaccc tccatcctat 1140

<210> 4129
<211> 1356
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33474_G1, chr1:204809622..204810977, Cluster 25

<400> 4129
atacaaatgg ataaactctc tatcacaaga aatttgacca accaagttat acttagttta 60

tatcacacat atatattttt ttctttatta tcactctagt ctagtgtagc acatggttag 120

atgtccaaat taaactcttg gcctatttca aattaaggat caataaccta ggttatgatt 180

tcaagtaaac aacctaggtt ttactagcac cgcgtggtag gcatgattgt ttgcaataac 240

taagggcatc cacaactttt aatgacacta tgtttattat aggtagtgac gtacccaacc 300

cttatgttta gggtcaacta ggaaattaga aaaaaaatag ggtttcaaat gtgttagcta 360

attcaagact caacacttag actattaagt taactgattt ttgtgttctt agagtccatc 420

atggtccata tagaaaccca ctggatccgc ctctggctat aggagtacat gatactcatg 480

gctcagagca caacgaagga tgtctaacaa gctgaccaca tatttaagct tctttgaaat 540

taatataatc ttgtttatta catacttttg atatatttga aagtctactt caaaccaagc 600

ttaacgagca agccaaagtt gaaagttgtt taaaatcaag tcatttttgt tttaaaagaa 660

aaaaggttat gatcatataa ctttgaaacg agccatcgag ctagctcaac aagcttttca 720

tccatctctc gataatgagt tgatgaagca tccaataata catcttcaac acattaccca 780

atgttttcat gggtccctag tatctccatc tcatcttaag aactggacac agtccacctg 840

tcggcgttgc tcatggtcaa gcaatgcttc acccgcgcca acatcgagga agaagaaagc 900

gacacctagg aacaagtttt tttaacatgc ctaagcactt gtttcgttaa gaagaagaga 960

gaattacata acacatcaac gagataatcc aaagcaataa gagaaagagg aggtgataga 1020

aaagggcccc taattcacag ccctaactgt gtgaacatat gaaaggaaaa ttgtatcaac 1080

acaatggttg ccacagtggg ataaattcat ggtggcaaag catccatgga gaagagacga 1140

gataagcatc caacatgaaa ggcgtcaaag catctgctag agacaaccat ggtagctaaa 1200

gcgacaaaac acatgtatat gaaggagcta tcatgttctc agcagcaagc atatgaaggg 1260

ataccaaagt aatgtcagca acaaagcatc tacctaagca acaacgacga taaagcatct 1320

acgaaagaag agaggcaata gaggagcaac acatcc 1356

<210> 4130
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337179_G1, chr10:78338114..78339165, Cluster 25

<400> 4130
gggtcaacta ccaaaaaaaa caagaaagaa tcttcagact ttgcccataa gcttctcaga 60

aatgttccag atacaaggta tcaaaggtgg ttagacagac cttgttcagt aaagcatgca 120

tatttctaca acatcatata gaaaattctg gcaaaaaaca gtttgtaaca gcgttttaat 180

aaccctaata agtagatatc attgattcag cttgtcttat aagttaatgg cattccttct 240

atgagactag agaaagaggt gatagtgctg gttgagtggc atacatgctt ctctagagaa 300

ggataagaac agactaagga aaaatagctt cgtatggaaa ttttatttat tatttactac 360

caaaacccat agaaattaac ctgaaaacca agtagccagc tcaactgggc aaaaggcaat 420

ttaactagac aggcaagaca gaaaccctag caggcaacac tgaccagtga ccacgggtat 480

ttcttactgg gctagccctg ctgcctatgt gaggtctagg tcaaggtcgc tatatttata 540

gcaagggcaa gcaagtaccc ttagaaactt tttgtaagac ttttttttctt acataaagat 600

acacaactct cctagtgttc gagaaaagaa acactcctgt ttctcttaaa tgatcctgac 660

agacaacaga aaaaatcaaa atcaaattta actgaaaaag gcatggagat tctttaattg 720

aaaaagaatc aaacagtttt ccttcatcgt taattaagta aatattattt atggttttat 780

gtgaaatcgt tgaagttaat ttatatgtca gaaatattat ctcctggcct cagattgcca 840

tggcgaggtt cagttcaaac ttggagtgtc aaccatgatg cccatcatca ttgaccaagc 900

aggaatgcaa catagggctt ttgagattac agctagagga accttatggc atttgggtgg 960

attaaattga tattaccgaa aatataaatg aggaaaatca aaagaaatga actaccagac 1020

ctctgtgtgt ctgttgctta ttgcgagttt gc 1052

<210> 4131
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338365_G1, chr10:84115225..84116250, Cluster 25

<400> 4131
tcccttcaga tgtatttcta gataggttag attttgttaa tcctttggct aaaagcccta 60

agtcatgtaa gtagaagtcc aggtcatgtt caaactttgt tcctattttc aaatgaaata 120

ggggaacccc tttctgttaa aaagagagag aaactgtagt tatatcatga tgcagtgtgt 180

ttctcattat tataaccgcg ttatggccct atttagatac ccagtcgatt ataatagtca 240

cattatataa ttatattttt gactcaaaca agattgatta tatgatgggt tttcataatc 300

aaatttcttg actactgtaa ttccataatt caggtgaaac ctacatgtta tagtgaatta 360

tgaatgttga tagaccaatt tgtttctaac taattgacca acttgtaaaa ttataattaa 420

gggataaaat aagaatttct cacttcaacc aaccatatcc agtcatcata atctattgaa 480

ccaaccactc tgattgctat aatccataat aatgtcgact ataatactca tgcttaatct 540

tgattataac gagtcacgat tcaaacagat tctaagataa gaaattggac aaatggatta 600

gtccccattg actaagaatt tttcggtgag tggaaaatca tatataccta cctgcaacta 660

gagaacttta aagaataatt aatttgttgt ccaacttacc cacttataat gaagagtatg 720

cttggcatgt agcttagtcg tgagaaagaa ttagttacca gtagttaaag ggtactctag 780

catcaaattg aagtttttgt taaacattgt actttttaa ggatcactta gtattgagtt 840

atatgtaacg agtagcccaa cgtaaaactt aagctaatag gaaaggtgtg caattcactc 900

taatatattt tagcactccc cctctcatcc taataccata ctaaattgca tttatcggct 960

agttcaactc aaacatgtcc aattcactcc gcgtttcaat aggcactcag tcatgtgtgg 1020

gagata 1026

<210> 4132
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338377_G1, chr10:84175750..84176790, Cluster 25

<400> 4132
gtagtgcgac atattgaata taattgtcca taaaaagata atttagcttt ccttttcttt 60

gggctagacg ggccatccca ctgggcttgg acccagcagc gaaaaagtgg gcccaatcta 120

tgtccaaacc ggagggctac ctgcccgttc ctgcatatat cagtgtagta gttctgaact 180

ccttgatgga gtagtgacgc tgtctgaaca gaactgaatg gtgcagagcg tcagtcacca 240

gcatcccatg ctgcatgaca caaccttgtc aatgccactg caccagctca tgcaacaggc 300

acgtacgttg agaaaagaaa tgaaagcaac acgcgcggtt ttaagtgttg tgaagaagct 360

aatagtaatt tttatagcat gtttgctcta aaaaaactta agtattaaga aactacacac 420

agttttagca aactctttgc aaggaactat atttttctg tattattcag tactgttttt 480

tttccttttt cattagaaaa ctatactttg gagtttcaag gagctggctc actcaataaa 540

ataaactcaa acaacatatc ggagcagact taaaaatgag aaaatatctc tacgtgaagt 600

tcttcctcaa tcacaactta gaaattgaag tgcttctccc gccatttcat tagaaattga 660

agagcacaaa tttactctct acaaaatgta tccataacgt atagcacaca actaccgtgt 720

tatatacaga ttgcgttggt ctacattcag catgcacaaa cagggtctcc atatgagtta 780

ccttttaaat atatattcta ctcaataacc attattcaaa tttaatttca agctaccaaa 840

atacgaaatg agacaaaaaa atatcaccaa tacatctcaa gagcatatca aaatgaaaca 900

tgcacacctt ctatagtgaa cattgatttt tctcgatttg atttgtggta ttaattcaat 960

ttttttacag aaatcggttt aatctagagg ggtctgtata ttttttttct cggttttacg 1020

aagatttttt ttttgtttca a 1041

<210> 4133
<211> 1157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_338613_G1, chr10:85506842..85507998, Cluster 25

<400> 4133
gaaaatgaag catccctcca aaatagacag gactagacta gttttttta caggacaccg 60

tcatgggtac tatttattat taagattatg tagactagat ttaattagca caaccatttt 120

tagctttatc catgtactac aaaaaaaaat gggtacttgt acccccaaag cttttcaccg 180

tgtacttcaa attattgtag gctagactag actcaacttt ttagtgggcc agtagtggac 240

atttgggctg ggctaggcct agcacggcgg tcttcaccaa ctatatatat aataataata 300

actcattgag ccgtccacac tgatcccatt tgcagtgtca ttatcgccac ggttgttaaa 360

ttgcgttgtc agatgatgcc catcagagat ttgcctgccc gagctgctgc tgtcagccaa 420

gttcattgga ccaaaccggc ggtgatgcgc ctctgatgca agtccataac agggttggct 480

taacactgat gtttgaataa agatacagct gatcaggaac caaccaagtg attagttcct 540

gcatggttta gcatcgtata tatcttgtta tgcccaaaaa aaggggggc agctgcatag 600

gcttgttacg aattgcagtg tgacagaagt gtaaaaaaac ggagtttgtt tttttttaa 660

aaaaaactac catcattgtt cctatccagt tacctactca atattcatgc actcgagtca 720

agcttgatgt ttcagtgagc agaaaataac atgaacttgc tcatatctcg tgtcctagaa 780

ccttccagtg cataaaagag gaacatctat aagcttcttc ctgaatttgt tgccacaacc 840

acaagcaatt gaataggaat catggtacca ccgacccatc cctgcgttgc aaatttgcaa 900

tctacaagct ggagagggag tagcgccacg tcgcttactt ctcctgcaca aaatgaccaa 960

aaagaaaaca gttgtgcttg gcgatctttc tcaactaaac actgtagtca ttaaaagcaa 1020

gcgactccaa cagagggaaa tcgcatcttt cttcatcacc tgtcacccaa ccccttctc 1080

tctctatttg tggtgacttg ttggcctctc attggtccca gcaaaaaagg agagaatata 1140

tatataatag catgagt 1157

<210> 4134
<211> 1285
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_340243_G1, chr10:94682449..94683733, Cluster 25

<400> 4134
aaattgttac agttatgagc ccacaattct ttagtgggca gcatgccaat aagcgcttgg 60

acctctacaa caatagcatc gacatggtaa caaatattgg gtggctgcat ggtagaagct 120

agatccatct gcgagaccaa gtgtgacaat ggtgtgacca tccctctgtt aaactggtga 180

tcccgaacga acttgcttat tctatgaaga tcatgagaga agcccaattg tgtctcttat 240

gttatgtgcc tgctataact tatccatgtt ttcgacctag gcccagcatt cctctaatgt 300

ctaactaatg tcgtgtagca tctgtcatgt gtctacaaag aggaaagaag aaataatgta 360

gtaggacgac atgcactgga gacctcatga tttgttctag atgtgataat tctctaatca 420

gtacaaacat atcaagtttg tcatcatcat agctgtctgg gctgggacaa agtgagtcag 480

ggtcatcttg gtcttctgaa agcagtagtg taagatcgta tagtgacaca taatcctcat 540

tctctttaat tttgtctacc atataagctt gttgaccgtt gttaaccagc atcattggct 600

ctttctgagg ctgagcatgc atgtcatgat catcagtaca agggtgctgt atttttctc 660

gatcaatcgc tctaattctc tccagtatat acctcacaag cattaatgtc ttcatagttg 720

atatgttcag aacttttgc agacaaagca gaaagcagtg ctctgagagc atttgagatg 780

gcttcagcat agtatcagat attttgtggc tacatagtag tgtttttggc cctaattaag 840

gtagatgctt agagttttat taataaggct tctgtccaca tagtgatcat caaatatctg 900

actgagattc ttccattgtg acgaaagact cccaagcgta atgctcaact gttttgcttg 960

caaaaggcgt tccatgttac cgacctgcag tgattgctca acccgagtat tctggatgtg 1020

ataaaccaca tctttgatgt ctccaaaaca caaagtcata ataacacatt caaatactgt 1080

gccatatctg tctagatgag ctcgtaggtt ctctgcatta gccaagctta ttatctcaag 1140

ggaagtgcga gtctccaaat ggtaaagctc gttgttagaa tcgatgggca cacgagaact 1200

tgaatcctct ggctcaacca aattcctcca atcgtacatg gattcatact ggccatgatg 1260

cccatcctct cttctggtcc cttga 1285

<210> 4135
<211> 1119
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_343764_G1, chr10:114202439..114203557, Cluster 25

<400> 4135
acacccaatg ttggaattag agcccacatc catgcatgaa ccatgccatc gtaggtccac 60

aaagagagtt atgggtttga ggttagagtt cgggagacat gagtcaagat aggaagagct 120

acgaccatgg cacctgaagt ggcatacgat gtgaagatgt gatgctgcca acatcccaac 180

accaagatag aaagttgaac tgcccacaca ccacgtcgcc aatgtctatg cttgatggtg 240

catctatctc taaggcccta tcttgtttca taattgttat ctatttactt tagctacctt 300

aaaaccaaac aaattagtta ttgacttaaa taaactttag ttagagtcta aattacatta 360

tctcaatgaa atagattaga taatgaacta gataatttag ctaaagccca gatttcatca 420

tcttattatc ttctcaacct tagctaataa caactgatac tatgtgatcg atccatattc 480

ctattgatag cgataaatca taagagtatc catatcattc tcatttgtat tagctagtct 540

attatctaga aaagcaaaac tccaccgcta ggtaaacttt agccagctaa aatttaggtg 600

tgtggaacca aacgtggcct aaatctggct ccacttttca tttccactat tcaaaattat 660

ccttttttatt actctttatt tttgtgagag agagagggac tcattaaata caatagtaca 720

gtgacttcct tacaattttt ggcacatatt ttttgatagc tattaaacta tagaaaatag 780

agaatttgtt agagacacga ggtatataaa gataatattt attaaatgac tccaaataga 840

gattgagatt ttagtgatga aagtccactc taacaccctc tttaactaga ccactaaata 900

ttttcatcct ctatttatga ttcttgcttg ccaaagataa aagaagagct catttctaga 960

gtgttgagca agatataaaa aaataggagt agatagatct aaaagatagt ttttttttatt 1020

ataataacta tcgagtaaga atttagaaca taattctagt gaaacagttg aagcaataaa 1080

ttcttggtgg tcaaatggtg caatagtata ggtctatat 1119

<210> 4136
<211> 1004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346796_G1, chr10:131978796..131979799, Cluster 25

<400> 4136
gtatgatatt agcgtccagg gaaggtcata ccctcagata tggtcaagac acatttaaga 60

atcccgatag aagaggttat tgtgggactc aactactggg accaccacac tgacaccctc 120

aatgccctgg gaggctagga cttcccctgg cctcgaccca gatagagatt ttaccctctg 180

aataacttga tagtgatgca cccaaaggaa taactacacc atcaaatcct attaagaacc 240

tctataggcc atacaataca actctctaag gtccagggcg ctcccacact tacggtgcca 300

atccgtaagg atatactaag gtatgggccc cttagtgtct tgagacaccc caactagaat 360

aatacaagtc ttcaggggtc cctcttgtcc ttgaatgctc atgaacaatc taagcctcta 420

aagccccttg tgcttccgag tgctcatgaa tccaagttct gagagtcctt tatgccccaa 480

ggcgctaatt aaggatttag gtgcctagga acctccacca tgcatttagg acactctgta 540

ttacttagtc tctaaggacc ctctattgac cccaaattct ttaggtccct aacctcacgt 600

aagataggta accacgacca cgagtcccta aggacccaaa aactcctatg ggaataaggg 660

acttcaaatg actaactgta atcctattgt aaaacagagc gatgtgtcta ggctaagaaa 720

ggcattataa cttcgagaaa gggatgccac atctaaaggc ctactatcag gtctattgtc 780

atagcatatc agatctctca tgtataacat attaaatatg tgatgtgtga tattacaggc 840

ctaacagatg cactattgct gcaacgtgag ctataagata ttgaccactt caatacatgc 900

atcatcctta tagccacgca tgttgatgac aatgtaccat gaagttatta gtactattaa 960

gtatagaagg ctatagcaac aaccagatgt gagtagtatt atta 1004

<210> 4137
<211> 1357
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348718_G1, chr10:141641606..141642962, Cluster 25

<400> 4137
taagggctat tgtccatatg tacggcccca tcaaataatt tttctaacac tctttttgag 60

cgaaacgatg aactgatgcc tcatttcgta agaaacttga taaaaactgg tagtatgaaa 120

aaagagtaca ataataatca tcattgacat aacaatcttt agaatcgcaa aattaagata 180

gtctagatcc aaacccgaac ttattgccaa aggcattttc ctctaaatct tgtaattctc 240

tcataaatct catactgaat ttgtgtatac atttactaaa aaaaagaaac agcagaagat 300

gtggaggata aagatgagta aaaggagaaa tgtattagtt tttttctaaa ttatgtaatt 360

ttttcttttg aagttttgca atttttatcg tttttacaaa ttatataatt ttatttgctt 420

gtatttatat ttcagtaaaa taacacatat tatattaact aaaagtaaaa cacgatgtat 480

cttaaaaaat agtcttgtct catttcttct cgagccgaat caccatctct gccctgcttg 540

ctgggctgcc ggagagcgcg tgaggtctca gacgagtggg agcgcacaga cgctgcggtc 600

gggtaagtta cctcagtttt catgcggggt cagcgggtat ggtgatccgt ctagtggccc 660

ggcggcggtt ctagggttag gtgtctggaa ggcgcccggg tactaggatt tgggcatttg 720

gaatgttgtg tagaaaggtt ggagcttctt tctgggctaa ccgcagcaga ggtgccataa 780

gcgctgaaga gcaagtagat gggatgagaa gaggaggata ccaaaataga aaattatttg 840

gtatcaaatc tttgagaaac aaccaaccag aaaactattt ggtatcaaat ctttgagaaa 900

caaccaatct acaagcaaat aattaatttg gctttgttaa gaacacaaga gcatataatg 960

tcggacttgt ttttcttgct catgtagatg tctgcacttg tttatctacc ttttgcttat 1020

gaacatgtcg attttgtaga tggatctcaa ggaaagcctc tccaaagtta agcagcagca 1080

ggcgagatgc cagccatctt tggcgagcat agctacttcc acctcaaagc caaagcacat 1140

ggcccaacca gtgcatgttc ccaatgttct tgcaagacca tcacaacata ttcagtttc 1200

aaatgataca gaaaggctac aacatattaa ttcgattagg aaaattccta ttggagcaca 1260

gatcaaactt gtcattgaac tactttacaa tgtattttct tgctatgcta aagatttttt 1320

taaatgtctc ttttcatatc ggagatatta aaacctg 1357

<210> 4138
<211> 1148
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348789_G1, chr10:142205892..142207039, Cluster 25

<400> 4138
gatgaacaaa gactattgtt acattgttga tggctagcat cttcatgcat atgcacttta 60

gatagggatg gttgattgtt gttgacatga agctcgtcaa gaattatttt ggaccatgct 120

agacaacata agttgagagc acattgaact tgtagcctag aggctattgc gccatctaca 180

agtttgttga tagtagggaa gttggattaa tagaggtgat tggttgttga gagactcttt 240

cttgcgaagt ttccatcgta gatctcgagt tatcgtcatg tgtcatctta gttgaaatat 300

gggtttcacc acttaggtgc caaagagtgg ttgtgatctc ctagatttct tctaatgttt 360

tctttgtttt tttctaacat tttttaagtt ctatccgttt acattgaaat tgatattatg 420

aatatttgat ttttgttctt ttgtttttt gttatgcttg gacgtttttt tggtctttat 480

tgatgtggag tgagttgttt tttttgcgct tttgtgttgt cttatatgtg agtttagcca 540

ttgtgcttgt ggtcgtgggt ggtgttaacg agcacacaca aatgtgcgac cacctgatgt 600

tgaggaacaa aacaatccaa acaagataat tgtggctata aattcaattg gatgtacttt 660

tatgtttgtg aacaatatat tctacggtgt atttgtagaa ctatactata agattataat 720

cgtttatcca tgtaacacca atttggtcac ccatcctccc tataaactct taaatttgta 780

tcagtgatta gtcttcgcgg atgaatattt acttccaatg aaagctacgt agtagcttca 840

cattgacttt acaaaaaatg gggccttctt tgatgaggct tcgtatgtac caagacttca 900

tgtagggtct tcattggtga agtttcttcg agtcatgttt cgtgtagaga gtttgaattg 960

aggcttcatt tgccttcatt tttccaggtg tagagtgaag gtgatcgaat agctttgatt 1020

ttttgcatat ggtcttcaca ctcgattaca ttgaaatgtt tgtcttttct tttctcatca 1080

ctcctattga tttgcttaag tgtggagtca gatttaaaat aaaatgtgaa acaaagatta 1140

acgattag 1148

<210> 4139
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35102_G1, chr1:213219863..213220879, Cluster 25

<400> 4139
caattcatcc gtaatttatt gatgtgggaa aatttggttg tgttgttatt ttttgttttg 60

atcgatgcac tttcgttatg tccaggtttt gtttagtgca tcttttcatt ccttatgtgc 120

aagttactat atagtcaatc gtagtgtctc atcatggtag tgtgctctta gatcgtaggt 180

tacgatcttc ttgtaatgac tattttgttt tatataaaaa atagttagtg tgcatatgtt 240

taaggatatg attttggtgt aatggtctta agggatcctt ttagtatgtt ttaatcaaag 300

tttgtagggt tatctctttt agaggtaaaa tacaatttaa taggttaaag gtttgtcgct 360

gtaaatttct agggcaccag ttcacctcat ctcttaaggc cattcaattc ttttatgaga 420

acttaagtat tgtttagaag catgtgtatc taccttaatc tatatgtatt aaagtgggtt 480

aagatagttt atcttcactt taatccactc taacacacat gaattaaggt aagtacctgt 540

gcatccaaaa caagccctta agtaatagaa cggtacacca accaaaatgg aagacaacac 600

caactatata tagggaagta actctactcc accccacccc tttcgtttag acttcccaag 660

cccacctaag atcttatttg tctacatttc tatctatatt aatccatatg cattaggata 720

gtatggtaga aaattagtta atgtgtcatc ccaatccatc ccaacacata tggaatgagg 780

tggataatag tgcaactaaa caaggcctaa tacaagtgcc acgcattgtg tttcatgcat 840

gtaaacaaat agcccattta gttcttgact aggagtattt aattaccaca agtctactcc 900

tggacctcca gtgaatggtg aaccttggtc actataagca aacacagtta actataacta 960

tgccactagg aatagcactg cctcaaggct actttggtac ttgcatgatt ttactac 1017

<210> 4140
<211> 1232
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37653_G1, chr1:226283617..226284848, Cluster 25

<400> 4140
ataaacttgt cacatcaggc tgaatgacat gtcagtgcgc gccaaaaaca ttggcacgac 60

taaatagatt aatctcaaaa aaaaaaaata aaacttgtac tagaaacatg catgaatacg 120

agacaaatga gaaatgtgtc tctagcttgt cgtgccagtc agcacatcat ttagatgttc 180

ttcgaaaatt gacatggcta aatagattag tttcagaaaa ataaataaat gattttgtaa 240

tcagaaagat aaataagaga taacgggaaa tatattcctc aaagatcgtt tgtgctgcac 300

ggcacggacg agaaacctga ggctgcaatc tttcgtccca ttccatttta ccgtacgtac 360

gacaaatacc ggcatagatg cacctggcac aaaagaatcg attcacgcac gcaggcaggc 420

agctggaaga taaaaatagc ggcctggaat tttccaagaa tatacaagtg ttttctgata 480

aaatagagtt agcggcaaga taaaaaaaaa catttgatgt tttcataaag ttggcaaaaa 540

aaaatgaact gtatattcgt agatcatttt tttttgtaaa gaatgcttct gtggtcgtcg 600

agggcgggca gcagcatcac cgactaaaac ttggcatttg ttaatcaggg tacaaccacg 660

tactccctac ggtgtactag tatgtatgaa taaatgtagt gtaaccaacg atgtcattct 720

aggatataaa aaaacagtat tgtccggttt tattcctgtc ttctgcatgc atagctggct 780

acacgtatac caaagaggaa gtcggaccct tatttaatat ggatacgacc gaaaatttat 840

ccctcaatta cttattcttt ggtatgcgaa atgctgtata aagcgacatc taatactaca 900

ctggaagggg gagtatcaaa taatggccgc atttaaggaa aaaaaaaaca aagtaaaaca 960

taacatgtga agaaccctag aactgtaaaa aaaaattaaa actggggtaa aatatcggga 1020

cacagtttta aaatttggtt gacgatgcta tccaacatgc gtcccgggaa atctaacagc 1080

ttgtatagtt gccggcagct gttgatgtag aaattaaagc cggagtcagc cgcagcaagc 1140

aagcttaaga agctcagcct gcacccgtgt ccaccgccgc ccgcaacttg tgtaccgggc 1200

agagcggccg accgcccacg cgtcccctcc cc 1232

<210> 4141
<211> 1060
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38428_G1, chr1:230173071..230174130, Cluster 25

<400> 4141
ttattagaca taagatttga caaatcaaca aatgcacaat aatggtagaa aatttagggt 60

aaaaatgaag atactacaaa aggatgattg gagcagctat agtcaagctt aaattgcatg 120

tggttccatt tggagttagt attagtgaca aaaatgctgg caaatgggac catatagatc 180

caatcaagat ttgatccaag tttgcttggg gataagtata agagttgttg ttttgagtgc 240

atacttttgt tagggcttat cttttattgt ctatacaaga gatatgcaac ttcatctgaa 300

tggaagccat gaaaattatc tccaatacca aaacagcaaa accctaccct ataagtgttc 360

tatcttgtga agcaaaggtc ttggtgctta tagtcagaca ttgcagttgt tgtgtttgtt 420

ataatgggta ttaacatgat tctgagtact tgattaaagg ggctcaaaat taatctcttc 480

ataattctaa agcccacgta cttctatacc tacaaaaatt gtgcttgaca caacataaaa 540

atgcaactat agaaaagctc aggtaccaaa tgatggtgac acaaaacacc aaaggataat 600

aaaaagtgct gactgctgag ctaataagga tagcaagaaa aaagatggag acttttatat 660

ttgccatgaa acaaacaata gttaagaaag aatgaagctt taagccagga gggatatggc 720

cacagccgta ggcatggctc acaaattggc ttacccacgt tgaaaatttg tggtccaata 780

catgtagccc taggcatggc ccagtgaatc tcccagccca tcaaggcagc agcctgctag 840

ccagtgtttg tcctacctgc agcctcgcct cttgatgttg accactccac tcactcttcc 900

gtacctgggc acaagctacg ctcacaggca ggtggctgca cccttcccta ctccacaatg 960

caaaacacta gcagaggcat ggccaaatca accaatcggg gatgactggc aggagacggc 1020

actgccaaat caattaatga gcatgccaaa gaggggcagg 1060

<210> 4142
<211> 1115
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38826_G1, chr1:232393534..232394648, Cluster 25

<400> 4142
tagattagat cctttatcat ttgctttatc tcttcaaagt tatctaacca ccttgggctc 60

ccatatagaa ggtcatcatt gtcgaggtgg ttaacgaaat cctcaaagaa ttgtgcatcc 120

ttggggtcta gagtagtagc cacctcacta ggatcctcat cattatcacc cctatcgtcg 180

accatgtctt gcacaaaatc attcatcatg atgaaatcat tctcgccatt tatgtggtgc 240

ctagctcatg atgaagctct tgctccatgg tctcattcac catcggcggt gatgttctta 300

tagatgcacc actggcatgt gctttgtcat aaaactccaa actgtatatc cctcgataaa 360

accctcactg gatcatgtga gatttgacat caccaccttc tagcaatcaa acacattatt 420

tcttgcaatg ataacatgga catatgattt catcactatt cacactcaaa acatgtgttt 480

gagtagtgtc aacaaacttt atcacttgtt ctattaaggg ttgtgatagt ctcgatatat 540

gggacgccca ttccgacctt tccatgctaa ttaaccttct atgtagcaga aaaatatgtt 600

aagaaacatc aaaatgagat tgattgacat catatataga ttatacaatt tatgataatt 660

aaaatctaca attaataata gaaacaaata aaacaccact tgagatatat aactgctatc 720

tacttgcatc atgtatgtat agctagctag agcttctctc catgtcacac aaacagatat 780

agaagtatta taaaggaaac tattaaaatg aagaaaaatg tacttcttcc ctccaccgta 840

gatctagatc acccaaaact tgaaaacaag cacaagaaaa ggtgtgtgag agttggtacc 900

aacatcctac gctgcccttc ttcaaataac ccaagaacaa aacaccccat cagaaatggt 960

gtttttagg ttggggttga ttctgtagtc atagatatat ggaggtggac atactaagag 1020

tgactgcctt tgttagtatg aaatattaat agaggcggtc gacgtaggtg aaccgcctct 1080

gctaatgaat taacggaggc agacctctta agaca 1115

<210> 4143
<211> 1224
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41055_G1, chr1:243460119..243461342, Cluster 25

<400> 4143
acttagagat gcatggacaa cttaacaagt aataatttta aataattgtg tgcacaccga 60

aacacatata gctaatgtat cctatagttt atgattttga gacaaacgtg attgcaaact 120

tatctgatgt attttggtgt acatgtctcc ataggcacgg aaaagaatgt tcaatctaca 180

tatggcatcg tcgccaatac ttgcagttaa gcaacctcca tctttaatct tatttttta 240

agaaacacac ataatataac ttatatcggg cctagaagtg tgtaacttcc cactatgccc 300

gatccgttcg aaagcccgga aacatccccc atttcctggt gatagtgtca gattacgaat 360

tgggccgctc aaatacatgc tacttgggct cctccggtgc tgcacctgcg ccgtaggctg 420

ctgtaatggc taccagtctc ttccctacta ggccgtgatc ccgtgacatg acaaacatag 480

gagcagtacg gagaacaaac ctccaatgtt acagtggaag gcccattgct tctcttccta 540

ttgctatact tatcttattg accaaataaa aaaagaaaaa aatcctggca ccaattgcaa 600

cacacattta gattcaatat atagactagc actaataaga cactagtaaa ggtagtaata 660

agacaggtga taataataag acggtggttt tgctgattat atatccagca ataatagggt 720

agatgatctg atgccatgta cagcctgtga gattttgttt ctgagacagt gacttgtgag 780

gatgaactta agctagtgtc ggaacgatga cgctactggt taatttaatt ataataacat 840

tcgtcgtggt catggacttg cgtgcattcg ctcttttata tatgtaaaaa atatataaat 900

aactgtagtg tgtcggtaga atgcagggta aagacgacag cgcgagacac ggaccgaaaa 960

cgattttggt cccttgacca tcgcacagcg ccatggagag cgaccgtacc gcgccttgtt 1020

ccattttcca ggacatggta cgacgacctt ggtcaaattt tagcaaagat ttctgtagcg 1080

gtgcagaccg tatatatgca gatcttttgt cggacagcaa cctcagacca aatcgcccgc 1140

tcaatcccgc aaaaacagta gctacgccgc gctcatgtcg gtcaaatcaa cccatgtctt 1200

aaatttcact aaattaataa aaat 1224

<210> 4144
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42318_G1, chr1:249453922..249454948, Cluster 25

<400> 4144
gctttgaact tatctctttt tgtaatacaa taatatatgt gctacatatc tttgaactta 60

aatcttttta tatattgcat attcttctac tgtcaatagt atgtagccat aaaccatgtt 120

aatatttgtt tttagaaaga aaaaactaac tgcatgtaca agtataaaaa aattggtgaa 180

aatttggcta aatttcaata attttgaggg tggccaaatt ttttaatatc aaaattagaa 240

acactcgagt cagagcgagg ttcaatcata tccatggacg actccaccgc accacgccac 300

ccgacgtctt tgcttgtttt cggtgaccga cagctactga aaagtgcatt tttttatctc 360

agtttctgca gctgcctgac cctccgatcc ggtgcgatgt cggatccaac tcgatcatcc 420

tcaccaacat gttcttacct ttttctatcg ctcttcgctc cagagttcca tgcggttcaa 480

gttttctttt ttttctacag tgcagtatta gcccaaagga tgatgcttct agtcacttct 540

gctgccaata caagtactga gtgtgtgtgg tgtggtagag taaactctgc tgaaagctgt 600

gtattgcaac tagcgtacag tatactacga gtatgtagta tctgataatg atttggtcaa 660

cggatgcaga aactgttggt agtggtaggg gcctggcctg cgcgctgcgc atggcatggc 720

ccaacgccgg tgaaggcaga cacatgccgt cgccgccata tgtgcatatg catgattcaa 780

aaaggcaatc aaggcatgtg atcattgtta atgttgtcag ttctgtggct aggagaaaag 840

gaggacacca gggcctggcc ggtataattc aaggccacgt accaattttt tttatctttg 900

ttaagaacag gtgatataga ttaatctcat ctattgatag tgattggact gttaacatga 960

aaaatggctt aataacggca acaaatgtta tgccagcata cgttggctgc acttcgttat 1020

atagcta 1027

<210> 4145
<211> 1163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4265_G1, chr1:22011779..22012941, Cluster 25

<400> 4145
gtcttacaaa gccctaattc aaaaaataga attgtttaat attgttgaaa tgacaaacga 60

cataaggtca agtctcaaga ggggtgtagc ggggaggtga tggtaatggt cagtgtctca 120

acaggtctga gatagctagt ggttcaatta tgtcctcaac tcctcataca gaaggaatag 180

cagcggcggc ttctagcctt ttgaactttt gaaacaggga actctgaaca tttgaccaag 240

ccagtcgtga ggtttcatgc atctactgtg ttctgtcatt tgttttcggt taactgttag 300

tatgagtgac ttgtcgttgt ccaactaaga accctgagct cagactccat ttcccatatc 360

ggtcgtgtcc atggaatgta taagtgatta atgttttgaa gtcttacttt atgcttcaac 420

aaggaaattg cataaatact tcactgcact tgacgatagt atttagtttg tacggagtac 480

atactaatgt ttttctctct ttgaaaatct acgaactgtt ttttcctgtg cattccagtt 540

tgcttgtttc cttagatttg gcgctttcac aaactgatat caaaattgtt gggactttct 600

gtgcaggggg tgaaaaggcg ctcaagaact ttccgaaaat ggacaggtat agatctggtt 660

caaaattttc atgctctccg catgcatgta agttggttaa aaatcaagca atggctcagt 720

tggaaaagaa atcaagcaat atagacatgg aacacgctga ttagcttgac agctagagag 780

agcaacgtgt agccaatcat atccaagtag gggatctaac gatcaatcat tcgatttggg 840

cgaattaaca gaattcatga ttatcggttt agttttccca aacgatgcgg ccgtgcaact 900

ccttttttt gttttttact ccagcaagtc cactaataat gcaccactaa cgcacacgta 960

cgcttgttaa tatatccagg gagacaaaac tatatatcga tcgtgtggac acctgtcgat 1020

ccggtggaat aagttgggca gagatgacaa caatataatg tgtgaggtcg aatgtcagaa 1080

ttatttgtgc ttgtccgttg agatggagat acgttagctg gcatggagat ttttcagtta 1140

ttcgggtgat ctttggtggt gca 1163

<210> 4146
<211> 1244
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_42935_G1, chr1:253145590..253146833, Cluster 25

<400> 4146
tgccctaaga gtttataaag gaacatttgg atccattaac atccctaagt acaccctctg 60

cttgagaggt tctatgagga caagcaccga accaacctgt tatagtaaat ttgggcaaat 120

ttatgatggt ttaaccatcc aacactcaca catctaacaa gtcacacaat ctgatgagac 180

acaatggtaa cgatttacta ctgtgtcaaa actagtcgtt tgaaatacta ttcggagcgt 240

atgattcgat ggtcattgtc ggatcagttc gatgcccatg aaaacatctc tagtcatggt 300

cggaagatgt cactgtttat agggtttgat gactcggtag aagaaacact aactcaaata 360

attgtgttgt atgaatcaac gctccttatc ggatagtccg gcgtgacctg aaactctcta 420

atttattttc gcagatcgtc aaactcaaca cattagcata cgacatctta tggcacgctg 480

aagtgtgagt tggtcgtgaa gaagacagag ttgatatggg gtggtggtgc tggtgtgcgg 540

gaggagtaag gagagatggg ccgaataaaa gagactttta aatatgtgct cttagtttag 600

tatcggtgca gtgatgctaa actatgagca aatatttaga aattcgtaaa aaagaagagg 660

ggcggaggtt ttgaaaactt ggtacgtcca cgatgttgac ttgccatcat ggctggccac 720

atctgatgct ggcgctgatg tggtagactt ttaaatatgt gctcttagtt tagcatcgtt 780

gcttgatatt gccactctct agtagtaaaa tcgtattatt tattgatagt agaaatgtat 840

aaaattgagc agcgatgcta aacaatgagc caagatttaa aaattcgtaa aaaaaaaggg 900

gcggaggttt tgaaaaccgg tcgtgatata tataatcatt ttcgaaggaa caaattttgc 960

atgtaatgat tggccgatgc ttaccttgca aggttttgct ggcttgctgc cggtgcagac 1020

cattccagct ggtagcaagc tgacgtgctg cactgcatgt gtgtcaagat tagtactctg 1080

ttacctttg tttctcgtct tcatccttcc agtcccctgc cctgcataac tgcacagtat 1140

ctgtgcagtg tgcggcccta tgtcagtatg taaagtgttc acgttttta tgggtcaagg 1200

ccttttgact acatttaccc acatatatat cattcttcac ttct 1244

<210> 4147
<211> 1283
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44637_G1, chr1:262145528..262146810, Cluster 25

<400> 4147
aagttcacta aattgtgttt cccataagaa acttgatccg tttcttgcac atttgacaat 60

ctgcagtttt tatattgaag tagattccct gtacttgaag atgttttctc ctgatcatct 120

ggtatgtcaa tcaaatatag gtgaaggaac tggtttgctt cgtctgcata gcacttatag 180

acatgattta aaaatataca gctcggacga aggtcgtgta caggtacatt tagtcacatg 240

tatgcttttt ccccaatcta tagcacccta tggatatgtt ttccttggaa ccttggttgc 300

ttggctatca cactacactt ctagttagtt ttcacctttg atattttccc acatgaatgg 360

ccaaagtacc actatgaaat tacacttacc tactttgtcg ctctttcatg aaattacact 420

taacctactt tggcaaattt ggaacactag gtttaattag aaattgcatg tggtcttagg 480

aatgactact ttttgtcaca gaaagcacag cattgattct ttcttggaaa gtcatctcgt 540

ataggctata ccggtcaaaa cacacattat tctttttttgt gcttatatca ctggagttgt 600

gactaatgga aaaaatacaa tctttcaagt tgtcccacat gaaaattaat gaaggcaatg 660

atcttacttg cctgcaagat tttatgttgc atttatggac taggcatgga tgttggttac 720

aaacttgaaa ttaccatgat atccctggta ttgtcttgta atgcatgaga aagttttgtt 780

aagatttgct caatgtggaa ggaagaggga aaataagggc aactatcagt taaaacaaca 840

tcccttattt gaagaagacc cgagaaaccc ttcccctcct ccaacccacc cactgctcag 900

tctatgattc tgcagttcat gcatatgtct aactgcaata ttttcttggc aatcaactga 960

tattcgtaat ttacatgttc atggtgtact tttcagatgt ctgcagcagc atttgcaaaa 1020

ggccttcttg atttggaagg gcagttgact ccgatactgg taggttgctt atgatctaga 1080

agagcaaata tttggaaggg cagttcacac atctttttttt ttaaaaaaac acacacacac 1140

actcacttta tacttcttca ggtatcttta gtaagtaaag actcatctat gctagatgga 1200

ctagaagatg caagcaccga gatggatgaa gctaaggttt gcttttataa tttgataagc 1260

gtgctatttt tttaaagttg cga 1283

<210> 4148
<211> 1196
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44900_G1, chr1:263429422..263430617, Cluster 25

<400> 4148
gcatgagatt atggtttatt tactccgagt taagggttta aatagatttt tgaccttgcc 60

ttacccatac aaagctaaaa aaagtatacg ctcagacaca atgcagagtt cacttcacat 120

aaaagttaat taaaaaacac gtaacctgat cattaaataa atctatgtaa acaagttgaa 180

cgtgctccct tgctccttac atgtggctgc actttccact ctatgtaacc gtgctccgga 240

gcttttccca agcttctcga ataagcataa tcttcttttt tctagaaaag aatatcctta 300

atcgattgcc ctttaaaaaa aagaaagaat atcctcgtgg agcataaaaa aaagaaagaa 360

aaatcacgag agctttttt ttcatgtgct tcaagtctta actaaagaag tgatctaatc 420

accggggtcc tactaatctc accaaacaaa aagaaatagg ctgataaaac catcacgtcc 480

catcctaggc agtgcacgtc agatacccag ctgacggtag ctaacatata cccgtacctt 540

aatcaccact tttttatgtg caagtgcaac aggcaacaaa cgtactgtat gagctcaaga 600

cctcaagtag gagtgcagtc gtaccgtgga agacatcatt tactcggcgg ccatcgaaaa 660

tgcaagctaa ctgcgctggc taatcagaga tcatcatcga agactactta aaaaagtgac 720

acacgaagga gcacggatcg gatggtgatt agctcgctaa taacccgcca tctggcagag 780

cacaagctta attaaatggg cattaaacct gccgtgtgga gacccgggtg ggattagcca 840

tctcgttctt gtttaacatt atcctttgga cgaaagttaa ccagagcgcc tcctctgtcc 900

cctctttcta tctccacttc tccagcgtca agctccgggc gtccctctgt cacttcacac 960

ttgacacgcc gcacagcagc cgtgaaaaaa aaagagcccg tagtgatcac ttcgcttttg 1020

tcgcgcacac gtctatccga tccgaagaaa atcttctctt ctctacccgc cgcatccagc 1080

cgtccacccg tccgcccacc cgtatctcac ggcccctata aaatctgtcc atttgttgaa 1140

taaactaacc catgctttat aatggtaatc agcacgtatc cctactacta attaag 1196

<210> 4149
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45356_G1, chr1:266031003..266032166, Cluster 25

<400> 4149
caaactgtgg ttaaaaaaat tcactcgtct atctcacgcc aaagcacatg tcgttgtata 60

tgggggtggg gcaggggttc cggatgttgt ctatgtgtac ttctatttgc cacatatact 120

taaatcctat atatttggct tcatcaacct tgtccgttgt gtgctcttat atgctcgtgt 180

ggcctacaag gactacatcc tatcagcata ttcacatgat atatgcatga atgctcctaa 240

caactaaaag tcttgggata gtttttaga tttagagacc ttcatgaagt aaaatgtaat 300

agatccttag taagatcctt aatataggaa aatgtacaag tgtacattga aatgacaaaa 360

tacagaacga atgtgcctca gcatgtctaa cattctttct cttctttttt tgacattgtt 420

gaagtgtaag catttgttat gaaattggtg atatccgctg gaccaaatca ctcgaattta 480

ttgttaactc tctttatttg ttcatgaccg acactatttt tggagtagcc ctaggttgtc 540

taccgcatcc tcctttaatt ctgcctaggt ttcttacttc aatggatcgc tatgtcttca 600

ttatgatact agtggattat ctatctcaca tgctagctaa agtgaccacc atgtactata 660

aatgcagtca caactgttgt ttactagttt ttttatggca gctgcctaat ttgattgcca 720

ttctcagtgt tcttggttgg tattgtaagg agcgagtgaa ccctgtcata cctgtttgat 780

gttttgtctc catatcttcc aaacgaagta gcaggttttg gaggagtgta ctttaacatt 840

caattgacct atatgatata gatttgtaca ctaaaaataa gatgtgtaag tggcgactat 900

taatgtaagc attggaaggg aaaagagcaa aggaatgata aataaaatta aaaaacaaga 960

actatgaaat gagttgtggc ataaaactac attagggaat aagccggata aaagtttttg 1020

tcattgcagc aggaggagaa atttgtattt taaacatagt agaaggtttt attgaagtgt 1080

ttagagccat agactcggca ttctgttcta ttggtagcaa agaggagctt cttccataag 1140

ctgctagggg aacggatcca ctcc 1164

<210> 4150
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45565_G1, chr1:267170834..267171876, Cluster 25

<400> 4150
ggcatttata atttatatat aattttagag ggatatttaa aattgtcttt tataatgtca 60

taagggataa tttagataca attttaggta ttatttcatg tattttacat agtggtggag 120

gtggctaatt tgttttagaa aatagaatgc ggctataata atcggtgatt ttagatacat 180

tccgaattat tgttagtgtt tttagagttc gttttttatg tgctacgtcg agtaagaatt 240

agactacata gagaccgttg gagtcacctc tgaataataa tgctgcaaca aatcttccga 300

atcgcattga agacaaacgg ttgccggttg ggcgtgcttc catttcttcc tgcttgtcag 360

ccaattgttg gtccacgctt gacaaaagtt tggaaaaaga aaaacagata ctgtatagaa 420

aactcggccg tgtccgaact ttgggagtcc agcaatctcc tgctattatg cgcaagaacc 480

gaaccacttc atttttcaaa aggaaaacga accttcccta tatttccgta tagagaactg 540

aactttggcg agtcaccgcg gtgagaccgt gcacggtcgg ctagccctag tgccaattgc 600

caaatttaat ttaggttgac cactatgatg accagtgtgt aagagaggct tccactggta 660

tacgtaataa gctggtgaat ccaaaaaaaa aaaatgacga gcgacatgtg ttttggaatt 720

caaacgactc cacgctgaag aaatgcactg cacatcagcg tatcgtctgc ctaatgaatc 780

atcagtacgt acatcaaagc aggtaggcag gcgtgacata tgcctcccgt gtcccgtctc 840

catgcccacg ctaatgtata tatggataat ggatacaatg ctaggcattt tatttgtgtg 900

ttcaacactt gaactcattt caatcgtcca caagctaaga gacaaatata attatttttc 960

atgtctgttc ccagcttcaa agcatggaaa ccaaagcggc tttaattcct cgagcccaac 1020

cccaactcac gtcatacctg acc 1043

<210> 4151
<211> 1208
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45923_G1, chr1:269130438..269131645, Cluster 25

<400> 4151
cgattccctc cgccagaggc ccttcatgtg ctggaatatt atccatgcat gcaagtgcaa 60

ctcacattct cacagttcgt ttcgcgtcag agcacgtgga tttaagacgg catcatttgc 120

tactgtaact atgaatgcag gcacgtacgc aggccgcagt cgtggcgaac tgccagagca 180

agaagtgaac atcccggccc gttggttcca tgtgcatgtg tcgccaaaac gtaaagagca 240

gccaagggac cataacaggg caggaaggcc aactcgtggc tgcgcacctg cacacaacac 300

tttcgccgga atgcagtcaa aacttttcat atatacattt tgatagaatt gtttgtttat 360

tataaataaa tactaaattt ataattaaaa tatggtaccg agacattaag taacacagta 420

agttctaaat tcaaatatta gaatataaat tatattctaa taggcattcg agtataaatt 480

atattataat aggctgcaag gctggaagtg gaagggtagt tcccttttcca ttgttgggag 540

aattactttg ataaattcat gtctttccaa ctcccccatt taccgtgcca atgtacatgc 600

tgcccaaaac cactattaaa aatcttgatg ctaaaaggag aaacttccta tggcaaggtg 660

gtggaaatag gaaaaaaaat accacctgat aaaatgggat agagtttgca ctgataaaag 720

aaaaggtggt cttgggatta aggatcttaa gcttatgaac atcagtttgt tatacaaatg 780

gtggtggaag ctggagacta aggatgagtt gtggcaagac attaagtatc tccatggtaa 840

atgcattcgt gatgtttctc ctaaggtctt cgattctcaa gtctggagtt atatgttgaa 900

agttaaaatg tattatattc aagggagaca tatagccact gatccgagag ataaaacaag 960

ttttgggatg attgctggtt gtttgaagaa cctttatggc tttatctatg tctctatgcc 1020

tgatttatat gatatctgta atgataaaga tatccttgtg aaaaatggtc gtgaaaaaaa 1080

atcatgaatc tggattttag aagatggctt tatgatgctg atagagcaag ttgtgactcc 1140

atcttagaca aactccaaga ttttgagttt acaaatgatt ttgatctggt tttctagaaa 1200

tgggaaga 1208

<210> 4152
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45926_G1, chr1:269141133..269142168, Cluster 25

<400> 4152
catcggatga gtgaaaaatt aaagttattg aagtcctatt tttctataat aatgaaaaaa 60

tcttaattta ttgagtgtaa tagcacctga tagtaaaatg ttggacaaga ttgaatatga 120

aaatattatt gaaaatttta ttttaaaatc actaaaagat taatgctctc taaataaaat 180

ttatgtaacc gatacaaaat ttagtcgtca ttatattatg tataaaagta tatatactat 240

tacttaatat ctttttgct atactttgca cgggggtccc aaaatgccgg tacaggatta 300

tccatacaag tacatatatt tttgtgctat actttgcaaa aggagaattt catattgttt 360

ccaatataac gatcgtaaat tttatatatt ataaacgtca ctcacaacaa ggcagctggt 420

agaggattac agacgacata tacaatacag tatatggata ataatatatg gtgtaggcaa 480

gatagtacaa gggattattg tgtcttcctc ttcctctccc ataccctacg cacgccctcc 540

ctattatcag gtgtattgtg cggtgtccta acggagccag gacaacctag ccaatcatgg 600

acgcgccaat aacgagacgg tagatgcagg cgttatccgg atcggatgcg cacaaaccaa 660

acctgcaggc aggcaggcag gcaggcaggc ttgcctgtac gtacgtacct taattgggcc 720

ggcccggcca agaacaataa ttcatggcac caaccgtgtc tttcttccca acctctcttt 780

cttccgcgcg ccacgctttt ctttggccac taccccttta cagtgatcgt gatcctaatt 840

ctaaaaaaca atggacgagc agtgtcctgg attaccgtaa tgcgctctga gcctctgatc 900

ccttgcttgc atggtatcgt atgattgtat gctttatcta aaaatacagg ctttagttag 960

acctaataaa ggttagtagt tccttgcaac tttgctgatc tcgagcaccc aatgatcgat 1020

cgacagtata aggccc 1036

<210> 4153
<211> 1297
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46194_G1, chr1:270722607..270723903, Cluster 25

<400> 4153
agacccacta aaccaaatca catcacactt ataacattca ctaaatttac taaataaatt 60

acaccaagat ttaatacatc atcaaaacca acagttcata tcactagata actctctccc 120

ttacttggat ccaatggaca ttatttggat cattcctcaa cgtctcatcc ctctcccgcg 180

accccacctc ctttgtgtca acgttgcccc cttcccttca atcgcgtcgc cgtcgccatc 240

gaggcatcga ctcatctcct ccctagaatc gccacgccgt tcggctgact gcttgctaac 300

atagtagcaa aaacaacgga tggtgcctga agctgcagca gcatgtagcc agccaaacag 360

cgtatgtaac gttagcatgc tactgataat aaaagggttg atagagatga actctccctc 420

cgaaagatct ctcatctata atttatttt gtagttcttt aaaaattatc attcttttt 480

aaaaaaatca tcccctatat atcttgttct ttatacatta aagatacata ttaaagacat 540

gttttactat atttttgtg tacgtatgta tttattattt ctttcaaatg tcttatatat 600

atatgtatta taattttgct taatttaata tctaaatcta aattctaaaa ataaatcaag 660

agacagagag aatgaataaa tgtcatttat atttagaaga ttctaaatga tatcgttgaa 720

gggaatcttt tgcaaagcga tgcgtgctct gctctctcgt tccggaccag tggaaccgtg 780

gggtagtgtt tttcctgcgg tgcaaggaga acggatcctg gttttttcgg atggcttgtg 840

taggtgctcc tgccaatgtt gcaggtttgc aatagcagtt gcaggttgcg tcgatgccct 900

gttttaattc agaccaactg taaaactgac ggcttgcaga aatgtttact tcaccatgaa 960

gtgtgaggca agcaaataat ctacccctcc cggtagcatc ctgcatccaa ctatccaaac 1020

aatcagatgt gcattttcca caaacttgcg atggtagact tgcagaacct gatcatggaa 1080

cggccgaggc aggataatca tcattcaaca aacataacag gggatcagcc attgaaatca 1140

aaactaagga tcataacagc tcaatggaaa gatggagcac tggcactgaa caccgaccga 1200

agtgaccaaa agtacgaaat catggcaatt ggttacagta actattcaat ttcaggcaca 1260

gacaaagctt cacattctaa gaaacttggt gcagaaa 1297

<210> 4154
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46249_G1, chr1:270986600..270987651, Cluster 25

<400> 4154
gcttactgac tatatctgtt tttttatata atggataaag tctggcttcg tatcttggaa 60

aaaaaaggaa ctagaaaact tattacaaaa gtttgatata acataaacta gatctgccat 120

catccaaagg cagttaggat ttacaaagtc ttcgtttaat tctaaccact actacggact 180

agaaaacatt tatagacttg ggcacttgct ggctacttga cctgtctcta cccgtctatt 240

tctagctaga aaataggttg taaagataag ctcatgtgtt ggtttcctta ccaactgtat 300

atattaaagt aatttgtgaa atacattcca tttatattca ctttactgac gactatctaa 360

gatcttaaac aaattcaaat gagaaaatgt atgaacaaga ttacaagaga gttttagatc 420

tctttgaaga ctgcaacttt agtttaggtc gtttcttcgt tccgaggtca ttcaaaaata 480

tttatcttag aaaccaaata tttgatgtcc aaatgttttt aaataaataa aaaaattatc 540

atctaaaaag tacatctgtt tccacaagcc tagccacagt tccttttgtt ttccttttca 600

ccagatcgtc tcggcatcca tcagtacggg catattccta ggcaacagta gctcttgcgt 660

agcgcacatg gtgaacgtta tgcttatgcc gttgcattcg tcacgcgagg aagattcacg 720

gatgcttcaa gagcgaatct accaaaagta agggggcaa aaggaaaagt tggatgatta 780

tggtcaagtc aaagatgggc tggtatggta tggtatggaa tggaatggac ggatattttt 840

ttatatcacc gggtttcatt attttggcta tagattagga ccaacaacga aactagcgca 900

tcaaatatat tcaggaatca cgtttagttg ggttggcgcg ttcagaatct gctctataaa 960

gaacaagtag tttaataaat tatcagtcta cctagtgtct tgcctccaac aaaaatggca 1020

tttcttccat tcacacaatg ttcccattta gt 1052

<210> 4155
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_46940_G1, chr1:274729222..274730252, Cluster 25

<400> 4155
cattaccata gtgacactct ttgcagaact aggataatat gttacaaaca aattacaaaa 60

aatatgaaaa tagaagtttt gtatctaggg atgcaaatgg acacttgata tgaattggtc 120

ttttctaggc attcaagttt atgtcatttc ttctcctagg caattatatc atatgatata 180

tcattagctt attttagcga gatcgtagaa aattgaactc tatgatatat atgtcatatc 240

ttaatagtat atgtcatgag ctccatatat cgccagttga acacatacat atctcagcgg 300

aatattttag agagtgcttg actgatataa catgacttca attttacaac atctagtgaa 360

aaggtctggc tttgaaaatg gtaagagcaa aggtttatag gacttgcata actagtagaa 420

aaaacaggct gtagtctcgg tttttcagtc aggactacaa aaccaagatt agacctttag 480

tcttggtcta gagaatctag actaaaggct ctgaggctaa aaaatgttca tgcccatgtg 540

gctcgtgaga cttggaccca agaccaatta ctaaatatag ggaaattaga aaaattaatt 600

aaactctacg atatctatat cctatcttaa tagtataatt gaggagctcc atatatcgag 660

gttgaataca cacacatctt tgtggaatac tagagtgctt gaataatcta acatgacttc 720

aattataaca tctatagaaa atggttggtc tagaaaatgg taagagcaaa ggttgatcgg 780

gcttacgtta ctagctagta tgaaaatgtg gttaatcctt tagttctgct cgggagaaaa 840

accggaaata aaaggtcttc caaggctaaa aaaaatccct cggcacccct atgactcgag 900

tgccccatac cttatgcatt gcctcactcg tagctttgca cccacctaca caactcatgc 960

atcattggat ggatgctttc cttttaaaaa ctgaggtctt tagatgaaat gttttcattg 1020

taaactaacc c 1031

<210> 4156
<211> 1128
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47452_G1, chr1:278174738..278175865, Cluster 25

<400> 4156
tgttacagtt ccacgcctat tccctatctg aaagctgtat atggaagctt ttagaccgtt 60

caaccttgat ctgatatatg ctcataaaca cagtaaggtc tgaagttcta caaagcacac 120

caccctagtt gagcgtatgg ttcgtttctt taatttgtct gacttttttt agaaacttat 180

ttattacgga atatatagag aggatagttt ctatatatga catatatata tattaattag 240

taagtataaa aactatcttg tatttttggg ttggaaccct aataaattcc ggttattagc 300

aaggtacagt gtggatcgga tatgttgaaa cgcatgcgta tcaatgattt gaccaagtcg 360

tttacgagag gtacggtttt acataatgaa atattatcag ctacggagta cgtactagac 420

acagtacaaa attttataat tcaccaccca ttagctaatt taattagctg tattccatgg 480

tccattctta cactgtgggt gaagtgagag gttcgttatg accccacatc agcgagcttt 540

cggctgtaaa cacgtcgtct agctagcttc ctacacctac acccagtcca cttcgaaaaa 600

gagggggggc ggggatgaac tgccggtgaa aagggcactc tgaaatataa atgaaaacaa 660

cggctttttc tatgagcttc gaggtaacat aaacaccagg ccgtcttgcc cagccgattt 720

ttggacaagc cattcatatt cagactcgtg gaagaattca gcttctgaca ggagccatgg 780

gttgcataaa caaaatggta tgatgacaaa ggaaattaat ttactgtcag taactcttgc 840

tctctccgcc gagacgaact gtggtccatt acgtacggac tcgatgcttc gaccggtatt 900

gaactataga tgtaaatgag ggatcaaaaa atctcggtgc ataatgcatg tagtgtggct 960

cagtgtcgcg gtctcgatcg tgtagacaat gaccttattt tcggcctcac ctcactttgc 1020

aactttcgtt ttcagataag aacatacata ctatagtctc tccaacgaat acggcgtgaa 1080

tctatgatcc ttaattaagg gtccaccaac catcctttta agtttaac 1128

<210> 4157
<211> 1324
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48100_G1, chr1:281299209..281300532, Cluster 25

<400> 4157
tgatatgact tcacgcttta ttctcgatct ttgtggtttg gtgaaatgat ctaatagact 60

tcataatttg aatgttgatg aagatgacca attggcttca atctttgttt acgtgaagga 120

tttatgtttg cctttcctat tgcttttgtc ttagacgaag ttgatcatga aaacaggcat 180

cgagtaaaaa acagaaggta agcgttaacc aactttgaaa tgctagggat tgcttttgtc 240

tgaggccaaa tcctaagtag taggctattg tattgtgtaa aggagataca ctcatagtta 300

tatccagatt acaatagagg taatcgaaga acaaatttga atgaattaga tttccacaaa 360

catcaaagaa caatgcctat caaacaattc agttcgttct gatccatcta aataataatg 420

gatttgaaca aggatggatc aagtcaaatc gaaggaggaa gaggtggaag ttaacctatg 480

ccgacagtct aagagaggaa atgttgttac caatcttcat agcgggcatg gcgccagcaa 540

tgagtaagag tcttggtcac tcgcgtaacc ttgatttcta ttccttgacc acttgttata 600

tggcaatgac atcgtcgctt ttcccttgca tggttagaga tatgatgacc gtctgcgcta 660

gctctacatc aaggccctga ccatccttgg caactttgcc gtcgttgagc tatagtctta 720

gcattcttcc atttttcatg tgcgtggagc tagttttctt agttccgccc gcgaacaaga 780

taacatatta acatgtgtgt tattcttgga tttgaaacta gaaaccaatc tgacttgagt 840

aaaaccttg attttggttc catctcggat gttgtgccag ttggtttctc gtttcactga 900

acccataaac agataggact ctctttctta ccacttatca tcagagacgg tgaaccacta 960

gacatcgatg atggcttgga tccctagctc aatggtggtg gcgacctttt gaggggatac 1020

aaaagccaag tcaagcttga tctcacctta ccaaatgagg cgcaaccatg ttgaccaatt 1080

ttcaccatat ttttggtcgc tagttgttac ccctttgttc taaattataa ggtacgttag 1140

ctgcttgaca taaggtataa taaaaagcag catatttaaa gttaaaacat tttataattt 1200

aaagtatata aagtaataat ctttagtcta actgggattt actcctttca tcaataaatg 1260

tttgtttgtc actatattat ttataccggt caatttttt taagtttaac taaatttata 1320

taat 1324

<210> 4158
<211> 1021
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49508_G1, chr1:287121910..287122930, Cluster 25

<400> 4158
aacggtcgcc cttggtagcc cctttgatgc gatcctggat ctgtcactat aaacctgtgc 60

caaacttatg gtctatgtcg tggtagtaaa tttaagccaa tatggcaatt ttatttcttt 120

cggtgataaa aaatatacaa ggtttcgttc aagtcctaaa actttcaaaa cgttattagc 180

gacttcgtat tcaagatgtg gtgacgtagt ataacagagc gaatgaatga atgatagtcg 240

attgggagaa caaatattag acttcgtatt caagatgtgg tgatgtagta taatggagcg 300

aatgaatgaa tgatagtcga ttgggagaac aaagattaga cctcgtttaa atgttatgat 360

tttgaaaaaa aatagtatta cgaaacttta aatttagaac aagggaggtg cacaatcatt 420

gtttagaaga aaaaaaagag agagatttag agtggagatt ctaaaaataa aagcagtttt 480

aataatactg cagcttcaaa actagaaaga tcggtacatc tgaagacctt agctcattct 540

ctgtgagagt ttatgtacat taaatatgtt gcgatgtcat tgtttttgat aatattatag 600

tatatcaaat gatgagaaat atgaaatatg ttttacaggg ataatcatgc gtacattgtt 660

tctaaggtat ttgtgtcttg tgatttagaa aataataaag ataaaactat gtattgtgtg 720

agactatttc atcatatttt caaacctcct taaatgaatg tgtcatccta gttaattgtg 780

ctaagaattt cattgcattt aaaaatttga tacaaatcat ctctcgacct ctgcaacaat 840

gagatgcgcg tagccttaaa aagaaaataa aaatgaaaga acattgcaag cacattctca 900

atggctcgca gacttatgac tagagcttca ctcatgtgcc tgggacaaga acctcatagc 960

cacctgctcc aaagattgcg aagcttatca ccatagaatg ttaatcgtgc ctctgtagca 1020

c 1021

<210> 4159
<211> 1338
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50926_G1, chr1:295789209..295790546, Cluster 25

<400> 4159
tgagtttctt cgtgcatcga ttactccagg gagtgcaacg agccaataaa ttttccatcc 60

tgtgcagaat atccaaattt cccctcaggc gcggaatatc agaaaaatag ggtgtggagg 120

attcaaaccc tactcacttg atataaagca catggcttct actactgcaa cccatgtata 180

tttgtgttat ataaaataga gatgttgtaa atatataaat atactaataa tttgaaattt 240

taaaaaaata cagttgtgtt tgaataaata ttttatttaa gcaaggtcta cctactatag 300

caatgtacgt gcaactaact atagatggaa acttgcactt tcattggtta ttttgtgtgg 360

agatttcaaa ttcgagaatg gtctctactt tattttctat agatgcaaag cacctgtttt 420

cggtagtgcc atgtagctgt gcttttcaat tttgacagag cttttagaca tctactgttg 480

ttgggtatgt acctttaag cttatgcgtc cgcgtattgt gatttgcttc aaatcgttgt 540

acaaagctag ccattagtgc tgggcactga taataaggtt tacaggtcta aatgtgatat 600

aatccaacta ggtgttatcc tttacactga caccgaaggc gctaaagaaa tgttccgtga 660

aatgtttatt aggacatgta atatatatta catgtggtct tttgaggggt ctttattgga 720

ctaaataaaa agaatacagt ttcatgactt tctatacacg ttctcttagc tacattgacg 780

atccaaattc taaggttgta ctatgcaatc ttttagtcgt ctcaaaaaac gaattagggt 840

tgtacatgac ctcatttaat atgggatata ctcggagtat ctgaagagct aattaaaaaa 900

tataagagac ggactcttcg tgaagaatct gcctctatac gattctccat acattttgtc 960

ttttaactgt atttatgatc taggtttaat tatcaagatt gtatcatgta aacttttagt 1020

agtctcttat atttggaaaa ctaaactggt gtctcaatgt tgttcatgct ctaacttcta 1080

ctgtgcccct ccttggcttg aatcttctcg cttcgctttt aagactacta tgttttgttt 1140

gctctcatta ttgagacatt tttcttcccg ttgatgacgg agtgacatgg acgttgcctg 1200

tccgtacgct cgcctccggc tcgccctcgc cacgctctgg catgcatgca tgccgagagc 1260

ttgcgactct ctccctctcg gcctcacgct agtacgctac aagagagcac ctccatgctt 1320

tccatacatg aaacaatc 1338

<210> 4160
<211> 1353
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52106_G1, chr2:2090071..2091423, Cluster 25

<400> 4160
gtgttagttg tcaaatgtgt cagagtgtca gtcgttagct agcttgttaa ttagcccctg 60

ttgtgttggg acaacgtact tgtcgggaag aaacggctgc aactcaagtg tgctgtgtgc 120

ttcgtcctcc catctcgatg cacgaggtcg cggcacctac cgtcgctcat cagttctcgc 180

cttgttttca tgtcgtgggc tatgctgttt atgtttattt ccctgctgtt ggtgctagcg 240

tacatagcag cagatgtacc gtcacttcat tagctttgat ctacgtactg tgtgtacatg 300

ctggggagaa taatctgagt cgccgccaca tctctttcta ggactgcgga cacacgcaca 360

tgacatcacc gctatttcta tcactgctcg tggtgctata gcacaccaac gtcatggcat 420

ttcatttcct catttgtgga taccgttgtc acggtgttgt tcaacaacga acttaagaat 480

cattggtgaa cgcacgcgat tgtgtatggc tacttccatt attatattgg tgcactcttc 540

tttcattatg ttgtgtgtct agtgacgaaa acgatccaca attctctatt taatttgtat 600

gctatcttag tcaaacaagg tagatatgtt gtgtacagaa aatgtattgt ttttatatta 660

attaataatg aggtatgttt attataaaga tattagagat ataactactg ctatttttat 720

aaattcagaa gaaactaatc ttgaaagaaa atctggaccg ctttaaatct tggattacgc 780

agtgttcttt ccgacaggca atgagacaaa gtacatgtgt cttgagcttt cagagcgact 840

gatcactgat gtgccatgga aaagtgacgt gatgcggtgt cgaatgtgtt cttgttgcat 900

gtctacggat ggcttttgcg agatcgacag gtgggtggtg gcgcagcggc agcgcagatg 960

acaccatgca gccagaaccc gcaagctagg tcaagaggcg aagggcaccg gcatgtgttt 1020

gcgcggctca gctagggtca ccctcgtgtt ctgttgcttg tctctcgtca tcatcgcctg 1080

ggttttcgtc ttgccggtgc aaacttttgc aagcatgaca gcatgtagag aaaaggtttt 1140

tattctaacg tctcttcaaa tagaatttaa gaagtggttt ttttttaaaa aaaaggaatt 1200

aagaagcgag ttcaaaaaaa acatgataga atttaagaag tgtttttta agaatcaaga 1260

agcgaattca aaaaaaatac agattctctt atagataccg tttcagaggt cttcgattga 1320

ttttttttc cttctctcga ataaaacata tac 1353

<210> 4161
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52584_G1, chr2:4311913..4312967, Cluster 25

<400> 4161
acctaaaaat attttatttc gttgaccact tgaccacagc ggataggccc acgtgctcca 60

caggtcatac gatctggcgc ggacccagcg cggctaacac cagaccatcg tcatcgtcag 120

tcaggatgtt cattcaaaga aggcaatgca gtatggacta tctgtgtgta tgtgaaccat 180

gccgacgatt tctatatggt tgtcacgagg gtgattacag aattattaat aatagaaatg 240

gtggatgtgt gaacagacct ggctgcccga acttttgggc tcttctcgag tgagagcaca 300

gactcgtgca ggcacggcgc acgaccgcac cacgtttttc ctcgactggc ctgcgttgcg 360

tgcgtcacct ccagtcagcg gtcaaggtgg aggagagatt taacttcttt cctctttatg 420

aaagcttcgc ttttttccca tttgcgtcgt gtttcgaaaa cgtgttcctg cagcgagggg 480

ggaaccggag aagagagata cgtgtggtgt gtctcttttt cccggacaga ttactaatcg 540

acgtcgtgac ggcgaagatc tctgaccgtg gagcgaagtg tacgctcgac ggctctcgct 600

cgtgcaggca ctccatgcat ctgtctagaa aaataaaaaa tatatcatgt ataaattacc 660

tacttaatag atcctagcta aaaacgtaca aatttaaggc catattaaga tctactagct 720

actaacaatt ataatttcac ctatctaact attagttggt ttaattagca caatcaacaa 780

gatagttatt agttggatat tagctaacaa ttggctatat ctttttaaat tttggattca 840

aaagtactaa ttattatctc catctaacta ttaggtccaa atggatccta aggccatgtt 900

tagatccatt aaccgctaac aactagctca tagtatcaaa catgctacaa gtctagtaag 960

tcaaattagc tttgttttca aaagatatat gtatagaggg tatcatcaat gactttaagt 1020

atgttatgta tactatgaac gtgtatttta gatcc 1055

<210> 4162
<211> 1148
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53452_G1, chr2:9103803..9104950, Cluster 25

<400> 4162
tatgatcaga taaaatattg ttttgtatgg taaataacac tgtttgtaaa gtaaagttta 60

aatatagata taagaatgga taaactgccg ttggatagcc taatggaacg gtactcgtgc 120

tagtccgacg tgtttgaggc ttaacccaaa catagcacga gctccatcat cttcttgagg 180

gtcgtgcatc agggcctaca tctgttgaac acctatacca cgaacataaa agtatttcat 240

gtgtttggtt gtccaagtga gcttgaccaa gctctaaaca tgcgttgacc agatatcggt 300

atgcgtttgg ttatctgaac ggaatagacg aagcttgcat ctgcgggtgc aatccaagcc 360

ataaaattaa ctgcacggac gatcccacgg aggaatttac agagacgtct atgctgacga 420

agtgacgact tctgttcatc agctttggtc agagctatta taactcaaat gtttttttcc 480

cttaacgtga ttctgacttt cttagcctgt ggtcttcgtt tttcttctgg catcagctgc 540

atgaatcttg ttgctcctga aagctcacgt ttttttaaga attcaggggc acacggtcaa 600

ctggtgatgg gttaatttgt gcaggagtca gtctggagat cgagctctgc atagggcgtt 660

tagaaattgg aatggtcgtt gtcgcactga ataacgttac aatttaccgg ttcttccgaa 720

gaatccatct tttccacatg aaatatcttc cttgacaaca acacgcctag acttttgtg 780

ctcctgatac aagagcaatg agcagacacc aacgaccgac cgaaaaagaa aattagtcta 840

gttcctatgc agaatggagt ctatccttct gtctggttgc tgcattgtgg tagactagcc 900

ggagtcaggc tctttatata taggctaggt cagtacatag ccttttgttt ggttgttcgc 960

attattgcat tcaggactac aactcgtgtt tgcttgcttg cttcagaacg tgtactaaag 1020

aagagcgcat aaataaatct ttaaatatta tacaacatgt ttggtctagt ttattcgtaa 1080

aatattataa acataaatat aataatcggt tcggtgatta aatagtttaa ttaaaatata 1140

taataaaa 1148

<210> 4163
<211> 1020
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54700_G1, chr2:15553284..15554303, Cluster 25

<400> 4163
aatactgtat ctaatgcatg gatgcaaaga ataaaagtga atcaattaat atgagtatat 60

aggaagatct cacatcttgt gttgatgttt taagtactat gtaagttttt attgatggat 120

aattgtatct tgtgttagcg gtaacatgag tttttgacaa ttgtccacta tggccctatt 180

gttgggatct tatttttagt agagatttc taagaaacaa tctatctaga taatccactg 240

gctagacaat ctaagtgtat tggtgatcct aatttttat ttagatgatt acatgtccca 300

agtgagaaat gacctgaatg cccctagatt gatggtgcct tattttgttg atgaataagc 360

atgatttgca ttattcgaac aatgtttcta ggttgtataa agattgtacc atttttcctt 420

gaaaatgtta gggtcttcac atttaaacac accttcaaaa gtatgctggc taattcaaaa 480

ttcataaatg tgtccaaaac aagttagtcc acataataag ttggcaacat tcactacaac 540

caaagttaat gcaatacatt catgcaaagt tttgatatcc atgtcatgaa atatgcctaa 600

tatcttgtat agcttggcca acttgatacc catctctcac ataactctca aaaattacat 660

catgcatgac attatcttta ataaagttac aacgagccat gtaggtagag gatacatata 720

gatatcgttg atgttacctt tattttcaca tttctatttg gaatcatatt cgaatacgaa 780

agatatcagc tatgtcgtat aggatatgaa tgagtatcga catcataaat atatgattta 840

ggtatttaga tacaaatatg gtatttggat agattcgaac taggatacgg tcaaaaaata 900

ttgcacccta tatatattta atcacatttg tttcttgctt ctctattgga taactatgca 960

attctaagaa actacaccac ttcaccttta gaaatgaaac ttaaaataac cctcggtcac 1020

<210> 4164
<211> 1028
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_5553_G1, chr1:28461718..28462745, Cluster 25

<400> 4164
aagcttcatg gtagtctttg gttggtgcaa tgactttcga gaaggtggat atcgtacaaa 60

attcaatata aatcttatta tcaggttctg gtacaaaacc taatacaaac ctggttgtga 120

gttccatcgc aagctccgct gtgcaaccgc gctcgtgtag ttttaaaacg cgtcgtattt 180

ggtttgctaa tctgctcata tatacaggat agcgccatgc aaaaggtacg cctgagccag 240

gctagttgag ctatcgtata gcctcctcag caagggtttt tattttaatc acctgattat 300

tctatataag aaaacatttt tatggttaga tatatacatg ctgaatgtta cgcttagcag 360

ggataaaggg gggggggggg ggggcatggg ttcttcgtta gcatcaaatt gggcgaggtt 420

caacgaacct gggacggtga tggcattgct tcaccaggtg ctaagggaaa gaaaaaaaca 480

atcaagaagc taggaaaagt cttggccacc atatattgct tgcactagaa caacaacatg 540

gataagaaac actgcaacac cacaaagtgc aagtgggagc tcctatgatg gtcgatgctg 600

ttttgctttg tttattgctg ctactgcttg tgatagtgga caggtaaacc actgttgtca 660

ttgttgggaa tatgggtatt gctgtgctac ctggccccac cacaacactt tatactatta 720

ttaggaccgt ttcactttat agagttttta atactcacct ttggtcatgg cggatcatca 780

gtcgccatgc gagcctttgt taatttttaa cccgattagg tggattgatc acttactaag 840

tactctacct ttctattcta aattaaaaag atattttagt ttttcaattt ttttaaaata 900

tacatcaaga cataatgcat atttaagtgt atattagaaa acaaatattt agagagagag 960

agaaaaacaa aatgtctcgt agctacggaa cggaaggaag cgtttgacat agtatcagcg 1020

aattgttt 1028

<210> 4165
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_557_G1, chr1:3049957..3051023, Cluster 25

<400> 4165
gaaaaaaaca gaccatggtg acaagagtcc attatgggct aatagatttg atccaagact 60

aaagagcaga tccagtgtcg aaggctccta catgagtgag ctccagtgaa gtgataaacc 120

gaggcaagct tttttctggt aaatgcgaag aggctacttc gaacacatga ttttatttaa 180

cttggtttgc atttttcact attgaatcta ccagaatggt gagtttgcct gtatatgagt 240

gatatctcaa aagactactc cactcatgtg gcttgcggtc ctgcagaatt tggtttctca 300

aaccctctta ctgtccatgc tagaggtttt atatatattt tttttatcac cttgggatcc 360

tttcccctgt acttttgtag ttatctaaca gaacacctgg cccacttgcc caaatacctc 420

tcgcatctta tgggtggcat aatgacaacg tcccaaagtt tgcctgaaaa cgaagggtgt 480

ggtacggatg gcagagatgg gcatcgatca aggcgaagtg ataaatcccg tcactttcat 540

aagaatggga aactcccagc agtagtgaat attttacata atttccatca cccatcaact 600

aacatactgt tctgagttca gtatgcattg tgaatacaac gaaatttagc aatctctctg 660

attgcggttt cggttgttaa ctaggggaga agtgagagcg tgatgggggt tagttatgag 720

gccatgtgca aaggaagtgg ggagcaacag ttggatgggg ggggtaacat gggagggagc 780

aatgtctgtc catgttacta agtgcatgta tatttgtgta tatagctttc agtcttggct 840

ggactcctct ggcaagggaa taacagccac caacttaata tccccactct tccactttat 900

cactttgatt ctttatcctt ttcttgttct tccgtttgga aaggtaacag cggggctaca 960

gtgatgcctt tctttatttt catttactga atttaggcac acaccaagta tttgcaatgt 1020

ccctttcata ttaaacccag ctgagtcagt ttccatgctt acggttg 1067

<210> 4166
<211> 1127
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55854_G1, chr2:21799115..21800241, Cluster 25

<400> 4166
ataaaataac tatattatga ttatctaaaa acaagccaac aatgctttta tttttctcct 60

tgataaagga gttgtaaggc gacattctaa cacctaataa ataaaacatg gaagtaagta 120

cgttatctac agttacaagt ctagctatag ccctaacaga aacgggccat ggcaacctaa 180

catgctaaac aaatacagta gcaagcaagc catagatgat atagatcgag tgattttatt 240

ggtcacgaaa atgagtgggg tcgcaaggga tgcatagtaa tccactgtca ctaaatccaa 300

aattgattac tgtaagcctg taattcagaa atcaggtaag ggcgcatttg gtaggcctta 360

acaatctaat tctaatccaa ccaattccat ccgcacgctg accgccgtgg taccaatgta 420

ccatcagtgg ttcgctcaag cgaagaagtg tcgaagccgc gatcgccaaa agaaccaacg 480

agtggaagca gagatgagga attgctgggg acaggaccgc tcttccacat gaaacccgtc 540

gattttcgct ttccagaatt gcaggccctt ggcggcatgg cacccttctc gttcactcct 600

tccacttggg gccatagctt gcctactgat tttttatctt agtttacata tgtgctccct 660

gaatagctct ataggtacga tatacatgta aaatttcgag ttcagataaa acaaactaaa 720

gtgtgatata tattccttac atgacataca acatatcgtt gtttcagtca aacttttctt 780

aaagaaagat acaaacacaa ataactaaac tattcagttt aaaaacatgc aagtttaatg 840

tatagattta taaacaaaaa aaatatttgt aaaatcatat taattcgaag ggtcttaagg 900

aaatatttaa gacaaaatta gtggccaaca atacacatca aaagaccatg taaagtcatg 960

tgggacaagt tttttttga ccccacaaag tataagcata tgcttaatct aaaacaataa 1020

caaaactcgc aaaaggcggc atccacaaga ccacaaatcc cacgggatag ctagctgtta 1080

ttgtaacatt tgggttcttt gctgctggaa aaggttttcg taaatag 1127

<210> 4167
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57037_G1, chr2:28623899..28625006, Cluster 25

<400> 4167
actttaagg agcgctctca ttagattatg ccacttttat ctttgtcatg tgccaccatt 60

gtgttcctta ttattgacgt tagtgacatt gcactcgctg ctcagtgctc acagttccat 120

tgatatctct attgacgttg cgttcgaata atggcaccat gtcatggtgc agccctccac 180

aaatcaaacc catgtgttgc ctaacatcct acactccact agcatttgct gccaaaacgc 240

tcatgatatc aatcttttgg aggtgtagcg ggactaattg gaaaccgact ataataacct 300

tcatggtcaa catctaggat caagggcgaa cgaggaacga tgaactttcc ctcggggtca 360

aataatcccg tggagacaag gttataaaat aattttaaca atggtaacat atttaagtac 420

ctttatgttt ttagtctcaa atattctgca aagttatttc aaaaatgcaa aaagatataa 480

cagataccat cgttgggata aaaacaaacc ataatgcacc atatttacct atataattat 540

ttatgcggta ctcattgatc ttctgaagtt gtattatatg ccattgcata aagttttaat 600

ttaccctgta taaattcgat tttcagatcc tatttttctg gatttttata attcaaatag 660

gtaaacccat aaagatgtac tattagcatt acatgttcaa agtgcttgtc taaattataa 720

aacctaataa acatatcttg tttcatgtgt ttatattaca ttgttcaaag tgtttgtcca 780

aattaacaaa ccaaataaac acctaatatt gttatgatga ccctttttatt gcaattgctt 840

tagttatttg tagctatcct ttataagccc atttatgttt ttatttaaag ctcatagtgc 900

ttacattttt aatgaaaatt acattatgtg tattacaaat gttccacgtt atatgttgac 960

catgtatatg tagcattata attgctactg cggatctaca ctagatcttt aacctagtga 1020

ctatcctcaa tatacatacc caacatcata aattggaaca aatgttctac atctatttaa 1080

aaaataacta ccactaaatc acatttcc 1108

<210> 4168
<211> 1404
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5976_G1, chr1:30249559..30250962, Cluster 25

<400> 4168
ctagtactag gtccacacta catgtacatt tggaagctcc ttctaatgac tcatgttgcc 60

tattggctcc cctattggca tctctatgtg atcttgacac ttgacagttt aatacatcca 120

tgactctccc tagttttctc attttctagt gaggtgtcca acctagatga catagaagtc 180

taggatgaag aagaactttg atagtgagaa ttcagtccag ccagcacatt gttagatatc 240

agtggcatga ctctcctgag gagctcatgc atgttgtcta gcccctccta gttcagaacc 300

cttgcgcttg atagcaaatg tagcatagag attatggcca tggcgattgc gttgggacaa 360

agactagaca actactacta taggatagag aaggcaaaag tataaagagc atttttggca 420

gaagtggatg attgtgcgag gaagcgtgag aaggaaagtg aaatcgtatg ctcgtattta 480

aggacctctc ctctctttca aattgttggt gctaaactcg aagtgtcaca tgagtcatac 540

aatttgggaa tcatgctaca tgttaactat gtgacacttt ggttgccgat aactatggtt 600

gaaatcctga gcacgcatgt gggcatgttt ggtcttgcat ttttgaaagg atagcctcac 660

ctgtaggact ccttaggcat gttgcttact ttcctttgat ttttcttcat tattttcttt 720

tttgttgcaa ctaccagact tcatgcctaa tgtgttgcat ggctcattga gatttgagag 780

atgtgagaca tgagcactac ctgatgcttc aacacttagg tagttatacg tgatggctta 840

caattggccc ctaaaccaag tatgacaaca agatctaaag ggaatacctt gggagtggct 900

aaggcatggt atgcactagc tttgcattgg tgggtctctg ctcgtagaat ggtttgttct 960

ctcctttgca cctgtgctta gcctaggcat gttgttgtta catcacctcc attttcttgc 1020

aaccattaaa tctaatagtg aacccccccc ccccaacatg atagatctaa tctgaggcat 1080

tctacaaaaa gattgctctc acctacatac ctcactaggc atgtgatgga cctgggagcc 1140

actatcagtg tgcagagaag ggcatatccc cagataatgg gattgcacct tcctagatct 1200

tgttaagata aagctcatac tagcctcgta tccttgaggg catgcccaat tctggctcta 1260

gggccctcta tgcattgaaa gcctgccatg ctagggacca atcccccaag tcggacaagt 1320

cttaggggcc tacatgctag ggtccacaag atcctttaac attctttagg ataccttagg 1380

ggcgatatag cactatacta agtt 1404

<210> 4169
<211> 1249
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59985_G1, chr2:46357032..46358280, Cluster 25

<400> 4169
ttacgttgga atacatttac tcgtgatgtt gaaataagtt tctcaacatc tactgaatta 60

tatgtacatt tgttgagcca gctttggtta ggacaacaag gatgccaatg ataaatcgtt 120

tgccataaca tcttgtttta cacaacattt aaactctcct tatgacagca tttgtgtgat 180

gaaattattt atacaaggca tcttatcaat ttccacacaa aaaatatttt gggaggcaaa 240

gttttgtcat tgtaatatag atttgagggt gaattgcatc accaataaaa attatttttg 300

ttgataaggg tgacacattt tcccacatat gtgatgatcc actagataca attataatcg 360

aattaatgag aacaattatc aatacaataa actcatataa tggagaaatg atggtcatta 420

ctatgtagcc tcaagtggcc atataattca tcactaacaa tgatgattat attgacataa 480

attgacaaca tttttcttca ctaatttgta tatttgtgta aaaacaaaca atgttagaca 540

tggacatcaa cactagtaag tatggttatt tatggggtga agatcatcaa aatagtattt 600

ataatgacta gtggcgataa agtcaccaat aggctccttt tgtggtgaaa aacataattt 660

tactataaaa ttttatgtca taaaatccct ttatcctggc agtgtcttct catcatgcaa 720

cacatcatgg ggtccttatc gctagatcct ccaagactaa gcgctagcaa ctaatactcc 780

ctactctaga acaagcacct taaaacacgc cacaaaccga gggagcatat gaaaagcatg 840

ataggagttc aatcttggga ggtagggcaa gggcctaact aggtacacat agcactaaga 900

cctagaacta catgatcttt agtcacttga ttttatgttg gtgtctgctc actattgtcg 960

tcacttgaca tatcgcgact tgataatggg ccatctaaat ctaagggttg gatggagcct 1020

ctaactcata tgccttttca tgaattattt tatggattat gtgttggaaa aagaccaatt 1080

tggattgagt tctatcatat aatggttgaa cactagactt agcttgtatt acgttatgga 1140

ttatataaga gggtatccat ccgtggatcg tgaggaggat tccctattag gtcttgtaag 1200

atggtctcaa tacttcatga aaggcggaag ataagccatt gacttgggg 1249

<210> 4170
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59989_G1, chr2:46362708..46363757, Cluster 25

<400> 4170
ttataatcaa tagcaattat agatctatgt caagtagtgt aattgttgat ggtgcatcaa 60

ccccctttg ggaggataat tgggataagg aagctatgaa caccaaattc ccaagacttg 120

cttcttttgc attgcattcg aacatatcaa tcaaggaagc tagagaaacc cctaatttat 180

ccaccatttt gtttctctcc ctgtcatctc aagcacacca agagttacat agcatgcaag 240

atttattggt agatacaacg tactctacta aagagaagaa tgtttgggtt ttgcatgggg 300

gagcaatata gttttcagtt cacaaatatc acaaacacaa acatgcagat acctaaactt 360

ttatagtatt tttttgaaat acggaagcgc aaatgcataa tgagaaccaa gttcttctaa 420

tggttgctac ttgttgatag gattaacacc aacgctactt cgaagaaatc tgttacatga 480

ccgtgattct cactgtgtac tttgtcagga tgtggttgat gaagacattg accacctctt 540

ttttagtgtg ctttggctaa acactactag agactactta acatccggtg gaacattatg 600

cccctccaag agagacgggt acatgctttc aaaaattcta gattaaaatt ctttctggag 660

atttgtatta ttgcattgtg ggagctatgg aagatacgaa atgggaaagt ctttgacata 720

catgaggcct ctcccatctc tagttacttt gtttcaaaga tgaagcttga ctccaaagcc 780

cgaggcttag gaagacggat caacctaccc tagggttgag tatacttctt ttgatcttgt 840

tccttttct cttggtggct gcgaacatcg ttaatcagta aactataatt tgtaagtgcc 900

tttcttttct tttaataaat tacctttac tatgggaacc tcacccatag tcttttggt 960

aaaaagccat tatgaggtgt tgaactttga cacatggttt gacatgcact catcgaacca 1020

ttcgatggta tgtagaggtg attgttgaag 1050

<210> 4171
<211> 1295
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62668_G1, chr2:60677047..60678341, Cluster 25

<400> 4171
tgtcggcacc ggatgaggca cgcggttggg ctaggataga ccaatccacg tgatctgatc 60

aaaatttgaa atttatctta tcggtctctt tcaatgactt ctaatttcat taattaattt 120

attactgacc tagaaaagat gataattggc tcaagggagc tgatcaatgc tactagcata 180

gaccaatcca cgtgatctga tcaaaatttg aaatttaatt tgttgttgtg cattttcaca 240

gcgactcacc aactatatca caacctcatt tgttataggt caagctaggt ggcgcgccaa 300

gaacccccctt gatgcctcta acactcagag gtagtcggag ttgctttagg agggacaact 360

gtagtagtag tgcacctcct ggctcatagt gtgtcatttt cctagatgat cgaccgcatg 420

attccagcga tgacacattt ctggcactcc cgatggacca gcaacattga ccatcacatc 480

gatcgatcta tgttggataa acgacattga atcatccaca tcgacttatc atcgtcaagt 540

ccttgatcac ctcaagtgtc ataccaaggg cgtaggatgc aagctaaatt tggttataaa 600

tgcccaaaga agtcagaaat cacaatcgag agagcaaagt cacatacctt caagctcagc 660

tgagatggct ttgagctggt tgcatagtta ttggattgtc ttttgatcaa ctctaagttg 720

gtggccttct ctgtttccaa gtcctaccaa atgcttttgg ccaattagag tctcttccaa 780

gttagcataa gaaggagata tttctctagt agactctttg agaactacct attaacatca 840

actttagaaa agtggattta tctaacaagt tgagatttaa gtgcatacat gatgatgttt 900

atgtaaatca atggaatact gcttggcctt ttctagttgt cgtctgccct cggccagatc 960

aatcatgccc aagagatgtt tgttaaaaca ccgagaactc ttgatacttt gtatcaaaca 1020

cataagtttt cacattgcat aaaatctcct tgatgtttga gtctacacca cacttgatga 1080

cattgaaaga acactaagta tatgaggact ctacaaacca aagtagtcaa atacagttac 1140

ctcttaggag ccttggagcc gatggtttga ctccgtggag ttgggatctt agttgaggtt 1200

gcactaggtt tagtggtatc agctgcaaga catgtattag gtttatgagt gggcttcttg 1260

gaggcggtac tctcggatgt gtgctttggc taggg 1295

<210> 4172
<211> 1294
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_63429_G1, chr2:64934670..64935963, Cluster 25

<400> 4172
gtatggttcg tgtaattcat attgtaatgc gtgcatcaat gttatcttat gagctatact 60

tatgtgaatt tgttatttct aagtttcagt ttagccctgc cagttgtctt gtgttaccaa 120

cttctaatgt taagtactga gtgtactaat atcaagcact aacactatcg gattgttcaa 180

cacagttatc ttagcctaga ctagatcaca tggatgccat gtggctttac ctgtgcttac 240

aataaaaaac gacagccatt tagtctaaag cctagagcaa gttggggtag gctaggccta 300

ctatgtaatt gatgtaaaca aatgctagat gagctaaact agctgttaat caatggattt 360

cctgaaattt attttcacca gttacttaca attcctgaaa aagaagtaag ataggatccc 420

cttccagtca ctcttcggtg actcttttta acatttttc agcattgtcc tcttttgaaa 480

catgtgaaag tattcacaaa tttaacatgt agaacaaaga acaattgcaa tgtacttttg 540

cactaaatcc tagcaacttt aatggccttt tactgaatta tagacttgat tgatccgagt 600

aacaactatt tatatttctc tctctcaatt ttaaagctca ttcttcatat agcatacgct 660

tatttacatt ggtactttat atgttatttt ctatagttac tttctcagca ccaccatcta 720

cgaactaaac ctgctcagtt tggttctgct tcctgatctt cttccacaca tagctgtctg 780

cttgacaaat gggatcttgt gacatatata agccaagcta accctacgtg cttccacagt 840

tccatatgtt gtgacctttg atccacccca agttgttagt gtgtcctgtt ttcgccaccc 900

ttttgtagcc acttattgcc tgctatgtga attgtgaaat gacctttttt ctcattgtga 960

agcgctgtct tgtatccaac acccatgttg cttgaagtca ttatattctt gtcttcttgt 1020

tggcatttac tttgttgtta gtatttactc cgtatatcct tatttttag cttctgtttt 1080

gatctgggct gctccttgct acccctttc acccagattt acaattaaaa gtcacgggac 1140

tgaatttctt tcttattaaa tcacagtcca aaatccatac aggacatata gataccatat 1200

aggtattgga tacagtttgt atggttctga tgaaatctgc caaggtgtac ccgagattac 1260

attaaaaagg ggcagacccg gtgccaggag actc 1294

<210> 4173
<211> 1012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6422_G1, chr1:33009809..33010820, Cluster 25

<400> 4173
acatgaagta tgggttgttg ttcgagccga tggaccagct tgcacctcta tcccatcctc 60

atcctcacat cccatgttgg agatatcgtt gtactcaagg taggtgttag gtgtctcaag 120

tggaagtaga ttggcacact gtcttagctc acatacctac aacttagcct cttaagttgt 180

catggcagca taagaacaca tccaaaatgg catgaaacca catagaaaac ttccccttct 240

tcgtgaaaag aagagcagga atgcaagatt ttacccgtcc gtttttaata aagtaagaaa 300

tggagatcct atgtttgagg tgcattgcat agcaagcgac aatactgctc catgtacaac 360

acttttgagg tctagcacta tcgcactgag cacaccacca ccacatgtac cgttcaacac 420

ctcaacctga gaaccacaaa tctactctat tcaattatca caactatttc tatacaaaat 480

atacatgcac taggagtctc attctatgaa aacatgaatc catttgcata ggtttggaga 540

gttagggttt ggattgagat gtgccttgag aatgaggatg gagggaaagg gtttgtcata 600

ggttcctccc tccattgaca atgaagatgg tgatgggtgt tgtagcccta ggagtcgagc 660

agcatggtga tggaaagggg tggctagcct tgtcgctagg aggatagtag ggagaggaga 720

gaaagagaaa gagagaggga gataaaatgc aagcatgaaa gataaggtca tggatttctt 780

gtgtataaag aaatatctcc cacacaggac aatcggaatt aaatgtttca ggttgaaaca 840

taaacgagtg gcattgccat gctgagccta acattgccac aatcaaagcg acatcattgc 900

tcatactcca acatcaaatt gtttgactat tctctttcct ctttgtatag atagacaagt 960

gtgcatactg ctcacatttg atggtcacta tagatagaca ctataattta ag 1012

<210> 4174
<211> 1049
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6935_G1, chr1:35881818..35882866, Cluster 25

<400> 4174
tcagcacaat atattgcaag gaagtaaatt actattgaga tatgcaaacc acatcataga 60

ggatgacaca agatattttt tccatggttt agtggcttgt taatcattga gtctatgtta 120

atgtgtgagt tataaggtta ccattactct tgttagctca aagcccgaaa tttatggata 180

cccatcaagg taggacccaa attgagcact aagctttgag tcgaatgaat caactaaaca 240

cacacaactt tagattctac tagagattct cttcgccttc ctttaatgga gatgagctaa 300

atagtccctc acaaagcctt ctctaaagca ccacataata ttatttcatg ctttagagat 360

aaaatcacca tgccacctag gaacttacaa gctctaatgg taacaagcaa ccataccagt 420

attatgacaa cctagtgcga cacacaatcc ctcaaacaat gaaccacatt agtggcacac 480

actcaatctc caaaggttgg cctcaagcaa taagtatggg atgaggtgtt atcaccaagt 540

gtatgttgtt agaatgcaca atatggccct ctcttatcat gcaccctact atatgtagaa 600

gagtacccaa aaactagcca agaccatgtt aaaatattat tcatatacat tttgtcattc 660

taggcccaaa ctgttcacca ctaaagtcaa ctagccattg ggttgaacca atggcaccct 720

agacaagaag tctagcaact ctgctcgcta aaaattagtt gacgaactgt ctacgctaat 780

aggcaagaac catccaccat tcatgtaata gcacaatgac acatcgaata caatctaatt 840

gattttcata agttgtttgg tagagaatct accaacatag gaccaaaata tctaatgttt 900

ccaagaaacc accaacccca agagcatcac ccctttgctt tggttcacca ctccacacca 960

caatagaggg ttccaaagct ttacaatgtt agtagcaata tgtccaaaac ctttttttcaa 1020

agtaatacca ccaaaaatag gctctcaca 1049

<210> 4175
<211> 1287
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7602_G1, chr1:39898906..39900192, Cluster 25

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (104)..(203)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (150)..(150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (151)..(151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (152)..(152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (153)..(153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (154)..(154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (155)..(155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (156)..(156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (157)..(157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (158)..(158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (159)..(159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (160)..(160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (161)..(161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (162)..(162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (163)..(163)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (164)..(164)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (165)..(165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (166)..(166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (167)..(167)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (168)..(168)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (169)..(169)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (170)..(170)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (171)..(171)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (172)..(172)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (173)..(173)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (174)..(174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (175)..(175)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (176)..(176)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (177)..(177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (178)..(178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (179)..(179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (180)..(180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (181)..(181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (182)..(182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (183)..(183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (184)..(184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (185)..(185)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (186)..(186)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (187)..(187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (188)..(188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (189)..(189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (190)..(190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (191)..(191)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (192)..(192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (193)..(193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (194)..(194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (195)..(195)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (196)..(196)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (197)..(197)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (198)..(198)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (199)..(199)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (200)..(200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (201)..(201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (202)..(202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (203)..(203)
<223> a, c, g, or t

<400> 4175
acctaacaaa aaccataagt caaggttcaa gcacttaaac ggttgtttc cacgtacttc 60

tatttaaagt taaatctttg ggtatgacga atctctagat tcgnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 180

nnnnnnnnnn nnnnnnnnnn nnnaggggggg gggggggggg gggggggtgt cacgggcctc 240

taggtacgtt tcgtccggga gacgagacgg gcgggcggtc catgctgcgt tccctccttg 300

ccgggcaatg gttaaatgct tgttgacaca cttcaaatgt ccgtaggatg gtctggccta 360

attcactgat atcggttcac aacgctagca cctgtgaaag atggttcgaa ccgatttgtt 420

tttaaatcga cttttgttgt acaaaattta gataacacga ccctctctgt atatgagtgg 480

atcatggtcg attgagataa gcaacatccg accgaacaaa aaaccaatcc accgcctctc 540

ttttgccctt tcaatattca tattgttttt ttatcgatag atccaatgac caaagatgac 600

gctctagact tgtcaatcga cctaaaataa accgactaca tccttgctct ggtaaggtcc 660

ctcctaaatt ttggctttga aggttacttt gctagtttac ttaaaaatct ttgttacgta 720

agcgcgattg attattcttt gatggttttc tcataaatcc ttttgttctt cactatgtaa 780

tatcctcgtt gtgtccatgg tgacctagat gatgtaggcc tagctggtgt gtgtgatcca 840

attctgcgtt aacacatctt ttgacagctc tgttagggaa gaattgtttc gcccctactt 900

cgtagatgaa cctctttacc ctagccatat tattcgttat taatccatcc ttcctatact 960

cgccattacc atcgtatctg ccctaaaagg tagatcacat ctagttctaa cctccttgtg 1020

accttgctta ctattgtgca atgtgttgct ataaaaatcc agctaggcac cgaagatcta 1080

aaatcatgga gtacctaggt atgacactat aaaactacta cacttacttt gcggtacagc 1140

ttacaaatgc atcatatgat ttcaataata tgtattgaac aaagcaagat acctactagc 1200

aagaggtagc aacacaacaa caattactac taagtataat cctcacaaat ctagttgagc 1260

aagtattgta caacaagtag attgatg 1287

<210> 4176
<211> 1247
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7686_G1, chr1:40202561..40203807, Cluster 25

<400> 4176
tgttttgtgg gcataattct tacataggaa cgtccaagtg caggagtttt tttggtgctg 60

tctaatggtg aatgttgtag cgatggaatg aaggagtatt gtgttggagt agactatgtt 120

gtttctttgt tgtccaaaag aagcttaggt attgttttgt gtcgaccata tgaggataga 180

caatacttga aatacttttg tgtcagtatg aaatgagtat tttgtgggag taaccgcaaa 240

aaatgtatat tttgtggaaa caattacaac gataccagta ggaattgtag ggcaacaata 300

tgatttgtaa cattgtcgaa gcaggacatt tcagttgttg ttctgacatc tataaaatga 360

tagaaaggaa aaataacact tttgtacatt gtgattgagt tgtaagatct acctgatttt 420

gtgtcccgtc aagttacact cggagcggcg atacccggtg gaatcatcaa ttgttgttct 480

accacactta gtgcaagaag gaatacacca attcatgttt ttaggaaacc aattgtagga 540

gcagtgcatt gaaactgttc catatgtaag aagtaataat aatttagaat ttatttaaaa 600

tatttaagca tagtttacct gtaaatggat tagagcgttg tgtgccacaa aaatatatgg 660

atccagtgct agcaattctt taagagttct atgttataaa acatgagttt catttgattt 720

tcctgggcat tccaatattt ttgggagctc caactctatt ttttgagtgg tgaatctaag 780

tattacgaag tgtgtgtgtg ggtgcaaatt aacatagcaa ataatatagt acatggaggc 840

aaatatttat gaaaaacaca tgtttccaag aatggacgga ggaaaaaatc tattgcaata 900

cacaaaagca aaacgactaa aaaacctgag cagcagcaaa gtgcatgaag caatcaaact 960

tacagtagaa gcaattaact tgtagtagca tgtccttgtt tacatcagca tcaagcttta 1020

tagtcgtccc ctcagtggta gctagtagta tgggttcttc attcgctttg tagggagctc 1080

aaattttata gtgttagtgc ctaggggact aagaaggctt ggatgtgttc tctttataat 1140

tgtctcgagc atctacatca tccttaaggt cacttcactg accataattt tttagtggcc 1200

agtttcataa gcttcttctt ttgccacctt tggaatttcc ttatttg 1247

<210> 4177
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_78771_G1, chr2:163932957..163933961, Cluster 25

<400> 4177
ttggttggtg gaacaagagg gatttgtggt cggttagatg ctgtcactaa aaaggaaatg 60

tttgagtggt cttggtcata agagatgcaa aaggtgttgg ctctagcgct aaatgtacag 120

taaccatagg tggagcgatg atgacctaat tggctgacac tgttagtata ggtggcataa 180

cgacaagtca ctatgatgga tggtatgtga agggtagtga atggtagagc ctaaggcacc 240

ccattgaagc atgtagtctg accttgaatt gctgtagaaa agtcaagcgt catttggtag 300

actagcaaat catactaata tagactccaa ccttataatc ttctagacta tatagttggg 360

gcaactggag tttgaagagc agttgaagga actatctaaa ctagtggtgc tactccagtc 420

tactagagaa catgataaaa gtatgcaaag ttttgagcat tatccatcag caacaactgc 480

tagaactagt cttaatgggt ctgaatggtc ttaaagagtg ttagtctgcc tttattgggc 540

atttgactat caatggtgct tgctcggcct cttatctgag ctccttggcc attacttgct 600

attgcttgat gcctagtcta tgctgttttg tggcaagcag ctttgggggt ggagggactg 660

tgctagcatt ggaggtggag gattgtgcta gaaccaacaa actttatggg gtcttggtga 720

aggtgctaga ggtgatagtg gcaacactac aatccacatt agagctatca tctataacat 780

atctctacac gaacaattct gaagctctaa atggactacc ccttgatggc cttgtcatac 840

tcttggtctc gccttagttg tctctaagag atatcgagtt catggtgact aagagcatga 900

gcacttagat gggcatccac tacaaattat ggtctataca ctccataccc tcttacaaaa 960

ttctcaagag tcatggccca ctacgaatga ttatttagcc ttaag 1005

<210> 4178
<211> 1321
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81992_G1, chr2:181837908..181839228, Cluster 25

<400> 4178
taaggatact tcataaccta gcatccgcct tgatggcggc aaacatgtca gggagagggg 60

ggctatctgg atacactacc agaatgaaat atttattctt ggttttggaa ggtttcttag 120

tcttaaacat aaatacatta cactgatcaa gcagcaggcc aacgacccga cactgaccat 180

ggaccagcca ccagccgaac gcggccgcgc tgtatgtttt gatcaaatct tcggcagttg 240

atacaataca atactaatct cctcggtagc tatgcctatt ttatcaagag taatggcagt 300

cagagagcgg ctaacatgcc atgaagggtc tctggtctac ctttggatgc tgatccggtc 360

ttgcttgcat gcattgtata tataagacat aaggcttttt tattattagt agctgtttga 420

tttttacaaa gtccaaaagc cattagtctt cagccaaaaa gtacgcatgc gtactataat 480

tctatatact tgtgcaacaa gaagctgcaa cctgcaagtt attatgcact agaaacctct 540

tgcaagcaaa gacatcgtcg acgacacctt gtttttcctg ccttttttctc ttttacattt 600

tctcttgggt tgcaacttgc aagcaatggc caagaaggca gggaacgttc cttgtcctcc 660

tcgtacgtca cgcacgtgtc caaagaaaaa catagaagaa aaagaaatgc tgagttaatg 720

gctaatacat ttacaaagac aaaagcatac atctacccaa gatcacaaat tcaacaccta 780

aagttcataa aaaagcgtat catatgtcac aaccaatctc tctttttta tttaaaaaaa 840

tgtttaacgg cacctctata atcagaaggg cgacaaatta caatcagttt tttagaaatg 900

ctgtattttt ataaagcgaa atgacctcta gttaagttgg ttaggtagtt accaaaatag 960

agaaatagaa gtgcatacta ttgagaaggg catgctgctt taccctcacc actaattgaa 1020

gcacagatca aaatttacca gcaacaagga gagaaaatca gggttcattt tagatccaag 1080

atgttatttt cttatagacc aatgacactg agagaaacca aatgcaggag taggtaagga 1140

atattttgtg agcatcatat ttggtttcat gtagcactcg aatacctgat tttgagatgc 1200

ataatgatta gcaactgcaa tcaaacttta gtcaaattaa gtagaatact taattccaat 1260

tagggagccc taattcatct tggtgcattc taactctttg aacatcttgt actaagaaaa 1320

t 1321

<210> 4179
<211> 1190
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83642_G1, chr2:190866264..190867453, Cluster 25

<400> 4179
tgacatgtac gaatcgaggt tgcgaattcc tccagcattg catcctccgt gatgtcacga 60

cccatgattg tggtagtcca gtgttaaggg gtcgagctta ggtcggccaa cttgccacaa 120

tcagcccaaa ctggtgcaac atcgttttgg aggaactgat cgaccttatt atcacccgaa 180

aaagtctttt tgtcccgtta gtccaaaatg gattttggcg cacaacattg tcaaactcag 240

aataacgcta gatttttttt tctgcctcag ctattctaat ctttaccttt tgttttctaa 300

ttaaattgta agttatgttt tagcttagtt tcaagttaaa tctatttaat tttaactaag 360

ttttatgaaa atacacaaac atctatagga ccagactata tacattagat cctgagatat 420

aatttgattt tatagacttt aatatatttt tctatgagtt tagttatttt taaaaaaaga 480

tacttattaa cgaaactaaa atgacccaca ctttagagta gaggcaataa tttattttag 540

ctttatctta agtcaaaccg gtttaacttg aaataattta ctaagaaata tataaatatt 600

taaataaatg ttctactgct ttcaaagaga acttatcata taattggttg aatggacgag 660

cttggtcgat ccgttcgaaa cgagatgcct catgcatacc tacgcatgaa gctaggagag 720

atgtttaaag ctttggcatc gcgtacacat gcaactaagc aggggctacc gtttaagtca 780

atgcaagtgg aaagtctgga taagcttaac caatcaaacg attagtgaat actaatgtgt 840

tgcccgagat gtttgtctac tttctacata aatttggttt aagttaaata tcttaacttt 900

ggagaaagtt gaggtgaact gagttttgga acaaatagag caatttttg tgtttgttta 960

ttgatgttca gatttcagaa atcgaatttg acataaaatt gcaatagatg gccgcgggcc 1020

cacgtcacgg ccacacggga gggccgcaac cgaacttcac actccgacgg aaccaattcg 1080

catccgcacg gacggaacgt ctgaacccca ccgccgcacc gcgcgcgtcc atcccccaat 1140

gcccccagca gcggcagttc gtcgggctcc ctcgccggac gcggcgggcg 1190

<210> 4180
<211> 1100
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8391_G1, chr1:44169956..44171055, Cluster 25

<400> 4180
ttaaaaacta gtaagtattg taatatatat aaaataagta tcgttaaatg tatataaaat 60

acaaacatta atacattttt tatataaatc tagctagtga aagttaagat aattaaaaac 120

tagattttat gctgcagcaa acattcagtg gccaccaata agtctcgtca tgcggacctg 180

gtgcaaactt tgcaatgccc accaaggcac caatccgaaa aatagttgat tcagatcctt 240

tatccacata ggagtgaacg attaggtaaa ctttgcaatg cccggggctt taactttggt 300

tagaacttag tagaacagag agacttcata ataagaaatg taaaagcttc ccacggtggt 360

tcatcttttc atgaagctga tggcagtggc aagctgcgcc gcgcgtgtgt atctggacaa 420

ccggaggagg acatcacgaa gatcaactca aattcgtcag taccacctgc agatctgctt 480

ccacttcatg gccacgtttt ccggaattct tctgaatttc tgataccgag cattaccaga 540

atgcgaccgt acaagcttgc gcaccccggc cctgaaagtg gagcaaaagc agcaccgagg 600

aggcatcgga acctggaaac tttcctgttt cgaccgctca atgtcaatgc agccctgcaa 660

cagctgggtg gctccatgca tggtgtgaag aaccaaaaca ctgctgcctt tttccggcct 720

acatccatga tccgccaaga tgtttctcga tggtggtaga cattttcagt ctttgcttgc 780

gagataactg atgacgctgg atgatgaagt ccactccgct gaaactgcaa ggtttgaagg 840

ctatgtgtat gaaggtgact ggtcactaat ctgcttttgg caagaagaag ccacatccca 900

cagcccggat gttgatctga tgcacaagtc agagtcacaa aacgaagcag cggcacaatg 960

ccagtctgaa aagagttcaa aattaggttg tatagcatta agtttccttt taggaccagt 1020

ccggctctag aaaacttaat agagttggtg ttatgtgcta aaaaaatcgt gaaagtaaaa 1080

aatttgaacc ttttgaaaac 1100

<210> 4181
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87009_G1, chr2:210723636..210724648, Cluster 25

<400> 4181
ttgatgacta caaggggtga agagtggagc taacatatgg taactcgagg ttgacaatct 60

atcatattgg gaagacgatc cttccaaagg tatgatcctc aacaactccg gtttgagagt 120

atatatcatg tccctggttt gaagagcaat ttgttatcat ccccttgatt ggaaagaagt 180

tcattttggc cataacatgt gcccatgtct tagagagcga aggtggtcga cttcattaat 240

tggaattttt tttggaagat tgcctagttg gaggaatgat attggtgcta cttataagtt 300

gattttaagt tcaaattttg atagaaaaca aaattactct agaggccatc tagagaactt 360

ttttctatat ggggtataat ttggaccttt tttagaaaac aaatatatta atatctacat 420

ctaaacaaat acatttgtta aaacacatct catgaacaat ttaataaaaa ctagatgctt 480

tgtacgttgg tcactttatc cctataaatt tagtgaaaat tagacaagtc taaactagga 540

gcttggacaa attcaaagta gactatagtt tagaacaaag agatcggagt agtaattatt 600

agaatgcaac ttgtcaagaa gtcaagaacc atatgaaatt gaggcatgtg gactagatag 660

ttgaaacgat gcgcaatagt gaaagccagc catgttggac cgttgaagat tttgctgtac 720

gactctctcg gggttgaccg gtttcaaaaa gccaaagaga tcgccgtgat ccttctcccg 780

atctactgta ttgtagttga gatttgagaa aggttccgcc tttttattaa atgcaaatcg 840

aggtaaaaag acgcgcccca gctgcatgcg acgatcataa cgtgccagtc acatgcaact 900

acagttatta gtcgcgcatg catggtcttg gtctaagctt tctttcggtt ttttttttt 960

gccgcgtatg tatgtggttg acgagagatc ctatggacct ctatttattt ttc 1013

<210> 4182
<211> 1181
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87130_G1, chr2:211245074..211246254, Cluster 25

<400> 4182
cctggtgatc acctaatatg cggcaggaag aaaacaaaag aatatgaaaa aggcggtgaa 60

acgttgcaat ctcatgagca cctagatcaa gcactggaat tagtgggcag tactggcgcc 120

tttacgcatc acatcgatcg gcacaacgct gtagaaatgt cggtttcctg tcccaatctt 180

tcagcacgta acgccacttg tcttgcactc atgttcccac atcagcaacg aattgagttt 240

aagaagctaa atttgcatat aaatcgcaac acaagccact ttaatgcgaa cacatctgtc 300

aggattcgat ggattggaga acgatgtgac atgtaattac atcggacgag atcaattgaa 360

cggaccaaca catggccggc cgccgctacg attggagaat gatggatctg atctgatgat 420

gtgtcagcta cacagttttt tttttcttta acgaactggc aatttcctac tgtttgctgg 480

ttctagactt ctagttcagt agttctgacc tctttggggc tattgtttcg ttgtattttc 540

ttcgcttggg tcttttctta ttctcagtac gatcggcgtg cgtgtctctt ccgtctaatt 600

tcgttcttca aaattttcat taaacaagac taaagtaatg gatggatcag agtttgttag 660

gaaccttgag gcagaatcta gtgtcccaga ctgcgtcgga tgatacgtgt gtgtgagatt 720

aacgggccaa ctaccccgtc ttcagctttt ccggccggct cacacgattc caacacgccc 780

gcatgccggt ggaggtaatt aagacaacta ataattaccc tgacatgaac acgtcgccat 840

tgcccattgg tcgacgacac tgcttggatt ggatttcgca cagttgtttg agttgttttc 900

accgacaagg gagatcaaat ggggaattag caacgtaact cactgtgatt ttttttgat 960

atatattcac tggggttcct cgtactgttt cttagcttcc gtacgacttg tacatgcact 1020

tttatacata ctgtatatat tttcccctct ccttggcaac agcaaagctt agatttttgg 1080

gattttgttt attaaaaaaa actaggaaac gactatggca gaagatgcta taaaaagaag 1140

tttggaaaag aagttattct tcagctatta gtactatcac t 1181

<210> 4183
<211> 1058
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89921_G1, chr2:226194062..226195119, Cluster 25

<400> 4183
aacataggat gtgatgtgat catggcacta ctgatgacgg tttgccgacg gccacgaaca 60

atcacgttgc aattcatccg agcgagccga accaaatccc atgaaaccga ctgcaaaaaa 120

aatgtagaaa atcagattgt tttcaacctg tgatggattg tttggcagta ctacctacca 180

acatgcaccg taccaatacg cgcggatcac accgccatta tacgcgttta ttttaatcca 240

ataacaatcc atttcggatg ccgtcagctt gacaggccgg caagttaatg gcctcctttt 300

gaattctgcg gctctatcta ccggtgaacg ttgttgtcca agatgcaaac taaagcatgc 360

gtataaagca tatctccgtg gttacatgta ggggtagatg tcgatctagc tcggatgtca 420

aataactcgg atcggctcaa tagaatacta agcaacctag ctcagctgga cttggttgct 480

agctagagca atctcgtttg acgcgtgagc ctaaggaaca aataaaaata tgtttgtccg 540

attattgtac gtgtttgctg ttgtaaagga cttaggccta acccatgtgc caacctctat 600

gtataataca cacgcgtgcg cacacacacg cgacagccgg aacctaatga aggtcaggct 660

tttctttcct ccaacgatgc tgaattgtac aagcaaaatt agaagagtgt atctcattca 720

tagagttaat cggatctgca cacgaagcat cacattcacg cgcacaagca caacttacaa 780

atagttcact acacaagttc aaaacataat cggatgttca tagagcacat gtcatgccac 840

agttaaccga tcacacgata atgctccaag ttactgcatt catcacaagt tgcccaatgt 900

aaaacacaaa taatagacga gatgttgcaa gctgcaaact aaacaaatta gttgatgagt 960

gaaataaaga agtggtgaac cctgaaacat aagcattgaa atggtgaagt gtttaatagt 1020

gaagtaccaa acagtagagg caaacaaatg gttaccaa 1058

<210> 4184
<211> 1116
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_90733_G1, chr2:229652370..229653485, Cluster 25

<220>
<221> modified_base
<222> (585)..(585)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (585)..(684)
<223> n is a, c, g, or t

<220>

<221> modified_base
<222> (586)..(586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (587)..(587)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (588)..(588)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (589)..(589)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (590)..(590)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (591)..(591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (592)..(592)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (593)..(593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (594)..(594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (595)..(595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (596)..(596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (597)..(597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (598)..(598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (599)..(599)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (600)..(600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (601)..(601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (602)..(602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (603)..(603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (604)..(604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (605)..(605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (606)..(606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (607)..(607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (608)..(608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (609)..(609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (610)..(610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (611)..(611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (612)..(612)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (613)..(613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (614)..(614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (615)..(615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (616)..(616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (617)..(617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (618)..(618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (619)..(619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (620)..(620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (621)..(621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (622)..(622)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (623)..(623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (624)..(624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (625)..(625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (626)..(626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (627)..(627)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (628)..(628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (629)..(629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (630)..(630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (631)..(631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (632)..(632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (633)..(633)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (634)..(634)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (635)..(635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (636)..(636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (637)..(637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (638)..(638)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (639)..(639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (640)..(640)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (641)..(641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (642)..(642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (643)..(643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (644)..(644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (646)..(646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (650)..(650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (653)..(653)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (660)..(660)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (661)..(661)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (662)..(662)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (663)..(663)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (664)..(664)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (665)..(665)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (666)..(666)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (667)..(667)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (668)..(668)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (669)..(669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (670)..(670)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (675)..(675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (676)..(676)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (677)..(677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (678)..(678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (679)..(679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (680)..(680)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (681)..(681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (682)..(682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (683)..(683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (684)..(684)
<223> a, c, g, or t

<400> 4184
aatacacacc acaatccaaa acaaaatcca acactacttt gatggaaacc tcaccgctct 60

tctttgatgt aaaagaagag gtcgattcag caatctttgt aatttgttct tgaattacta 120

gcaatgtact tgacttttt aggtatgtct aggacaacaa aagggtggtt tcttttgatc 180

ttcaactaca tgagagatct catgtacctc gttctcccta tatgaccaat catagaacac 240

ataatctccc tcatcgtctt caaggtcaat actgccaata ttctcaattc cggacaaaca 300

agggtatttg gaataacatg attatcactc ataggattcc aatgatttat tttatcatta 360

aaaatatcac aaacatttga ctaaggaaat cctaattttg ttatgctttc ttcttgaact 420

tttcacacct aaacatttga aaaacacaag aatatcaggc cgaccaacaa aactagttta 480

tatggtaaac attccatatt tgtcataaga actaggtgca cccttccatt tctttgccac 540

ttgttgtccc atgctaatta caccttgtgt gttgttctaa cccgnnnnnn nnnnnnnnnn 600

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 660

nnnnnnnnnn nnnnnnnnnn nnnnctttcc tttgcggctt tgcatcatct gtggtcccca 720

gaccattgct acttgtcgaa tatgaaacac atgttgtgtg ttgttctaac ccgctctcgc 780

tcgccttcgc atcaaccgtt gccaaattgt ccaatctatt ttcaatctat ctcacttgtt 840

cttcaattat gtctttgata actcaatttt tgtcatttga aaaaactttg tgatacctgt 900

ttggttggtc acttgctttg attactaaag gggacccaaa ataggacaac atagccagaa 960

ataagagaca tccgttcctt tcaatctatc taatgaatag attgaagaaa ggaagtttac 1020

cataataaaa aggccttcaa aatagtaaaa tagaaatgct cgagagagat tgttattgtt 1080

tgtgttccct tcatcaattt cccatagcta caatga 1116

<210> 4185
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95359_G1, chr3:17162365..17163460, Cluster 25

<400> 4185
ttccacaata gaccctacaa aattacatgc agatcaaata aatctttgta agtgttagaa 60

aactcttagt cgacacatgt gtaactcttt tccattcaaa atataaaaca ctcctaccaa 120

tatttgaacc aattatcaat ataatttatg ctagttctct ctcatcatgt tgttatttaa 180

aaattcattt tgaaaaatat tttaaaataa gataaagtta cacctttgac caagtcaagt 240

catggaacta cttttatctt ttctagacag ctataagtaa attgttttat atccatcaat 300

tatatatata tatatttcgt tcaaaataat atatattcat ccacgtaaca tacattcaca 360

aacaatccat ataagataaa ttcaaaaaca catatcatct acatcaaata cattaacaca 420

tactcttcca catcacacaa atcattcatg aactcatgat taaagtcaca taaatcatcc 480

acaaaacata agtcttcaaa tatcatcagt tgttcaagta ttaattgagg ttgaagcatc 540

ggtagaggac cccattgcgg tagtggcgac atcttgcgta taaggggaaa atgatgttta 600

ttcctatcta ctgtaatgta ttatgtgaat aaaatagatg aaacaccacg agtgatgtta 660

aaacctaaaa taataataga agatcagtcg aacttacttg caacatggct tgctattatg 720

ctatgaagtt gaagaaatac ttgtcactct attggtcata gtacaacgtc gtcatagacg 780

cctctcctgc tcatcacata gccttattac tttttgaatt tgaagcaact catcttgtgt 840

gttgcttcac cgactactag ctccagtgct ctatgactag ggaactcaat tatgagctct 900

gatcttccag gagtcagtca ctctattaaa cattgaatac ctacaacaca agtatttctg 960

aacatcaatt tcatacttgc attacaaaaa ttgacaaaat atagtaatgt acctttcgtg 1020

gctctttcca ccttcactag tgtgcatgac agaaggatca acgactggta gcgcatgcca 1080

aatgcaatcc tctaca 1096

<210> 4186
<211> 1065
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95371_G1, chr3:17190089..17191153, Cluster 25

<400> 4186
aaaggatgag aagaagattg tcggccatca agtttctact gagaaagatg aggccaacaa 60

gaataagctc aagatcacta ttggcacttc tctatgcaag ggatcaacaa agacgacaac 120

tctaccacaa gaaaaaatga agttgagaaa tcaaataggc cagtttttg aaatcacttg 180

ggtcgacttt aatagtccaa caactttgga agcgcattgt gcgtactttc agaccacgcc 240

atctagagat tggtatgtgg aagtttaata tgtctaagaa catatggaag gtggtgagaa 300

atcgttgcag ctttgacaag ctcatggaca aatataaaaa ggaatatgat ttgtcctaat 360

ggacaaatac caattctatg aatcgtcccc caaaaattag agtgttcacc tcccaagcaa 420

tatgatttgt ctaagtagat tgttgtagct tcgactttgg attagcaaag gaaagctcct 480

catgtctctc attggggtcc tctggtgtgg cttcctactc atccaatgtg ggggcctatg 540

gtgtgtgggt accatattgg caatggtgcc tatgatgcaa ccaatgcaag gagctatttt 600

tggtcctagt gtatgtcatt tggtgtttag tcctagtgta tgtcattcgg tgtttagtcg 660

attgaacttc ggtcaatcaa gatataataa tgacatcaag gacatttttg gctcgtgcaa 720

aggggaatac acaatcaatc aagtctacgt gcctaaaagg aaaggtcaag cagctgttgt 780

ctctacataa gaagttgatc ctccttctat tccaatcggc tttgtagaag tgcgagttgt 840

caaaattgat gagccaattg taattgagga tcctacttca gagaagtgcc cattgtcaaa 900

attgcttgaa taacatctgt taaattgttg ctgccaagtg ccgagatgtg cataccatga 960

gccatgcaga caagcaaaca tgttctcatg gctttataga gaatgttctc tctgtgaccg 1020

ttgaaattaa ttgataaaat ctgacatttt atttagccaa acaaa 1065

<210> 4187
<211> 1318
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98002_G1, chr3:31469379..31470696, Cluster 25

<400> 4187
acattataaa acaaggtacg ccacttgaaa caagaccaat gatttagctg caaataatgt 60

gcaagtttat aggtagtagt acaccataag tgtacatttg tcaagaaagg atgcatatac 120

aaattagttc tagacctagt tgtacctcat aaaaaaatgt aacctccctc aatttctaca 180

aataagttat acaactaatc aatcgtcatg agatctattt gtcccacttc catatattaa 240

cttccatgag atcaaggtcg atttccatga catccaagtc aacttctatg acatcctgat 300

caacctccat tgatataatt tcatcgagct caacaaacga ttcaccataa attagtttct 360

tctattggga taggatggtt ggaatgtcca ataatcatgt gtccgaagca ctactttagt 420

gctttaatga ggagaataag aagacatcaa cttcaaatcc aactggtgtt catgatgaaa 480

ggcatcgata ctccgtgaac acctagtttg ggacattgga gagagaaatc actaaacaat 540

catgatgtta gacaaatgcc aaacccactc ttctactctt tcctaggtca gcccaatagg 600

accctaaaat ggccatagat ggtgagacac atataatctc atcttgccat agcgagtcct 660

cttttcccca ctagctcata aaaagttttg gtagtaaaaa aagttcacaa ctagaaatgg 720

aaaacacaag taattatcca agagtgaaaa ctttttttgc caccagtcaa atgtgaggct 780

acgcgctgct ctttcaggat gtggtgaaaa ttgctttcgc cactagttac acaaatgatc 840

tggtggcgaa tatcacccta ctttgcacca caagatgcct agatcatatg cttaatcgat 900

agcgaaaact cttttcacta cttggacaat tgcaaaatgc accctcatag atctagaacg 960

tgtggtgata agggtgcgag gatagtgatt tatgtactac atgatcctca cacggtcatt 1020

gtgtctgcgt gtcatgagta agatgataag ccatttgtct attaaatttc ttatgctcaa 1080

gtagataact ttgcaagtgc acaaaatacc attgcagcac ttaatttgtt tgagagtatt 1140

gcaaagtatt gtatttttt atcctcatgg aaaggttatg actaatggta ttcataaata 1200

cagttgtttt ttattatatc acgatcaact accaaagtca tatatatcaa ctaccaaagt 1260

tatctttgat tatgactaat ggtttgagag ctgctaggca gttattcttc agtgcttc 1318

<210> 4188
<211> 1151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98088_G1, chr3:31914732..31915882, Cluster 25

<400> 4188
ttttaaaatt taattttgaa tagcaagaga tttttctctc tcttcaattc tctcgttatg 60

agtagtttaa aaacttaaat cctctctaga attgattaga ttaagagaaa atttaattca 120

ttttctctca aatctctaaa gttaaggaga tggatggtta ctttataatt gttgtcgttt 180

taaacttatc tagttgcttg gagaggtcga gctattttta gaatcagcct ggtccagtga 240

tgtctcatgt ctacgttatt tccgacgttt cgtaacttat tttattttta ataaaagact 300

atataactca ctggagatca tttacgtaac cacaggatgc cgcggcgcgt ggagcacgag 360

gattggattc gatgcggccg gccggcgagg gaggagtgtg acgtggcaac gacgacggac 420

gaggccggtc ggacgggcgc ttccgtgtcc cgcgtcgcta ctcgcgagga cgtatatgta 480

gtgccttgtg ttcgatcagc gacgtgcatg tagtgacttg tggtcgagtt ttctggattc 540

atggtacgct caacattggg ctacaaaaat actatcccga tagtagtatt tacaaatata 600

gcattatagc agttacatgt ttggactttt gttatcatgg tccagtttaa ctattcaacc 660

ctccgccgcc atcaagcgat aagctcccta agctaacact ccccacttag ctaagaatgt 720

aaaccccatt tcaatagaca ataggagtca acaaatctta aatttaattg aattcataga 780

gcatattatc tatatctata tctataatta agtttattgt aatttataat gtatctaatg 840

gtacataata aacattataa atatcaatat ctttttttaca tatatattta atcaaaacta 900

aaactatgcg attccgccga tagcgagact tatttttttt aatagagggc tagttagatg 960

tgcggatgtt gctatatttt ttttattttg gttaggtagt tgtgatttgt gaatattagg 1020

tttagagtca ataagtattg ttgaaatctc tatttatgta tttgttttat ttttatatag 1080

caaagtagta tgtgttacgc tcacggaaaa ttaataggca aaggaagaaa aaattatccc 1140

gcgctcactc a 1151

<210> 4189
<211> 1261
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98857_G1, chr3:36820181..36821441, Cluster 25

<400> 4189
atgggtaaac tgttagacac agtcttagtt ctatctcaaa ggtttccaaa ttgatctttc 60

agtttcactc ttctttgttc tacaaaccca tcgaataata ggccccgaga gcacgagctt 120

tgagaataag gataggtgaa atatagttat ttagaatatc tctaacagat ctcctatctc 180

atttcttatt ttattctctg tttcaaactt ctatctacaa aaagtgtcaa acaatgtcat 240

ttacagtttc gcgtctccta ttttacacac tccactagag agacttatgc attctgtttg 300

gttagatgga taagacaagc tatttttaga tctatataag agttgatggg ataaaaacag 360

ctaacaaatt gtgtatctta tataagaaac aataataact aactatacat taacaaatat 420

atagtgacac taattttgtt acgtatgtac taatttaata taaaatatgt tgattgggac 480

tactgctact accctattta gcaaattatt catatactaa ttattgtatt agcacttatt 540

aaaattaatc ttatcatcat aattactaag tgataatata acatgctagt aatttttaat 600

aatccttaat ttatttgctg ataatgataa agattagaga acatagatga ctcctcaaaa 660

cgtttttgta aaaaaatatc taacctacaa aaatactctt gtgtatcggt ataactctcg 720

cgcgaaccaa acactatttt tgactatatc caccatcggc gtctttcatg tcacatcata 780

tcagttagga ctactttagt gatcaagaaa gtggagggaa tctatgagga taaatctcct 840

agctatttaa tttttaatta gttattcatt ccccattgat ctcctccaat tccctagtca 900

ccaaacaagt tcttaaacta ataaaaaggg attatcaatt cacttatatt ctcttaaata 960

tagaataaga acgggctact ttggtgatta ataaagtgga ggggatctat ggaaagaaat 1020

cttctaacta tttaattttt taaatagtta gggatttatt cccctccaat tccctaatca 1080

ccaaaccggt ccttaagctg ataaaaaggg attgtcaatt cacttatatt ctcttaaata 1140

taaaataaga acgagcaaga attattttta tttattatgc taaccagaat aacatagaat 1200

aagagcgagt agagatgggt aattcgcttg ttggatgtat tctctaacag tctaggttgg 1260

a 1261

<210> 4190
<211> 1212
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_994_G1, chr1:5061072..5062283, Cluster 25

<400> 4190
tgaacctaga aaaataactg tagagaattt tgattattga acctgcacaa aacgtctgcc 60

atgacgcgat acaaagaaaa acacttagcc ctaactatac tagatatgtg gcagaagatg 120

aaaccaaatc catctatttt aatgtttttc tgtggttata taaagagttt atacatgcat 180

attcgttggc attgtgcatg gactgcacaa aaaataagtc ctatttatgt gtaccacaaa 240

atatgtcttg aatcttaata gcgcattcat ttgacattgt aattgttaat gtatttttt 300

ataaaaataa ttgaactata aaaccttgac ttggataata atctatattt tagaatggat 360

gaattaattg catggttaca taaacaatct ctagaatcac ctagtttttt cctagtcaca 420

gatggataaa aacgcctcta aaatggtcat gaaacatttt ttttattttt agatgtggta 480

agtgtttcca attgccccca taaacagagg atatctctac aggtcactta aaacaccaac 540

cacgactaga actaaatttt caaccacagt atcgtaatgt gacacgactc aagaaatagg 600

tgcaccacaa acaatatata gcttttaaat taaaatcaag ttggatggag acgaatttta 660

tataaaagtt acaaaggaaa aaatttataa gtttaatgtg gataaaatta ccatttgaaa 720

ccaattatta ggttccaaat acatgtttgt aagttttcaa attttgaatt taaagttcct 780

tttctgttga aatgacctca gattgggata ccaaagttgt actcctcaat gagattcaac 840

atttacaatt gatttgtaag accattcaag tttgtacgta cattcagtgg caacgacact 900

ctaacggccg ggaagagaag tgagaattta tcttttgatt cggttttctc tcttgttctt 960

gtcagcacgg actttgaatt cagtagatcc aaaactaact tacgagtatg cctcacaaga 1020

aacaaaaaaa gttgcatttt ctcacaagat tgagcgtcta cgccgaacca tatttcgtca 1080

ttttcgaacg aatgtcgcca gaagttctat cgcacacttc taagtcaaac catctaattt 1140

tgagtaggct attagaagga gtgggggggg gggggggggg ggaggggtac acaggctggg 1200

aaattttaaa ac 1212

<210> 4191
<211> 1048
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_99566_G1, chr3:41613326..41614373, Cluster 25

<400> 4191
atggcatttc aagtatgagt ggtgctctta agctctattt ttttttcttt ctcaaaaggt 60

ttagggataa actctggaca atcaataaga agatggttga tcctgtgtgt gcaaggcata 120

ccgctctgtt aaaagaccaa catattctct tgagtcttat cgatggtcca aaggaacgga 180

ccatttgaat cttaccaaga cataagaaat atgagggtgc tggaaacaag aatacaattt 240

tcacaaacag aatttggtta gagtatatgg atgcatgtca tcaccactgg tcaggaagtc 300

actctgatgg attggggaaa tgccatcatt aaagaaatca ggacagagaa tggaataatt 360

actcaattag tcaattggtt ggtcagctcc atctttaggg atcaatgaag ttggccaagt 420

tgaagctagc ttggctgcct ggtactgagg gccctgtatc tcattcgttg gttgagtttg 480

actacctaat tacgaataaa aaggtactaa ccacattaga gacattcctt tgctacttat 540

ttgctacaaa aagttgtagc ttgtaaagtt cggtgccttt tcacttggat aagccatata 600

catttcttac ctgtatcata attgattatt ttatctggtg aagaaaaaca cctagtgccc 660

aacttatctt agcagttcaa taattttatg aaccgaatgg tcataaaact catgacagta 720

cttgaagagc ttaacatttt aaggaaattg ttcatctact cagatttcat tatgcatttg 780

ttcaatggta gtggaaaagc aaacatgtgg aatcaggttc cttgggcaaa gtaatatcgt 840

tcatcaataa gggaacatgt gcaaaccaac ctactagtgt gaactgtgca aaccaaaaac 900

aagaatggag gtgggaagac atttttaaaa tattatattt taaatcaatt ccacatccca 960

ttggatattt tttaaaaagg tcctctcacc tctattgttg tgttggttta cacagtttac 1020

acagatatgt tccccatcaa ttaatcta 1048

<210> 4192
<211> 1081
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_197372_G1, chr5:158680601..158681681, Cluster 26

<400> 4192
agaacgggtc ggtatcgagg agcggcgaga taatagaggc aatgtgacaa tgtgtaaaca 60

cttagggtcc tagcatcctt gaagtatgtg tatgtgctaa agaaatagca cttggctcct 120

tggaaggtcc tagagacgag gactctgggc tcctcgttaa gggtgcaggt tgaagtggag 180

acccagagct actagcaatt acaggccatg aggagatagt atccctcatc caacattgag 240

tatccatggt ataggtactt atttataacc aactgctctt gttgtcttct ttgttgtatg 300

aactatagta actcaagcat atatctagat cagtagtgat ggtgaaatcc ctagtggaag 360

tcgatgccac acgtaaattc tttgtttggc tactcaatag aagaagattt atatacccac 420

accccaagaa acttgccccc cagccatcca tcaatccaaa gataacccaa attgtagcac 480

tagatgttga aacgagtcgt gttgagcaag gaacaatgtc tacactgaag atggtggcag 540

gacaggacat cgagcttgca ttaactagca aagtgattcc ttccatccat gcaagaagct 600

acatcccagt gggtgcggca aaagccacac taacacttca tgagttgatg cctttcttct 660

gaatgttcaa ttcaaatctt gcatgggcga gggagctcta gtctaagctg tatgaaaagg 720

ttggagactt ccatacaact gttgtgtgtc gagtagtaga aaccaacaac aaagtcattg 780

tatggtactt agagtagata gggacaacat gctattgtgt gccaagtagc aagaaacaac 840

aatggagcca ctatatgcta cttagattag ttggactagc ttagaccata gttttccaat 900

ggcttagagc tgaattggaa gatctggtca tgtctgagtt ggacttgtac tcttgtcaaa 960

ctaggtttgg accatggttg tttgatggct tagaagctga cttggaatac ttggttgtgc 1020

ccatgttgga cttgtactct tagttgaatt gggtttggaa catagttgtc ccttagctta 1080

g 1081

<210> 4193
<211> 1267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10631_G1, chr1:56896107..56897373, Cluster 26

<400> 4193
ttctaagtca tttgttgtaa aaaaatattt gagtcttgat ttttttttca gctctaaaaa 60

gtaacacaat tcaacatttc cttatttttc tcattcataa ggctagaata gttctatgct 120

aattttaatc tgtaggttta ttttaccttc attgaggagg aatctccaaa tcagagagta 180

tccatatgat tgatgacacc ttttagatgt tataaacgtt gatttggttt ttttaaggaa 240

acaacaaaaa ctcgtttata tgggagagta gcctgtagtt gtatcaactg aggtttaacc 300

gagtggggca agtcatccgt ccattctccc taaaccctgt actcggcaca ttaagaatgt 360

gtttttttttc ctttaccttt ggtgagtaga ctaaaaaaat caactgccag tcgaaacagt 420

atggaacatt tgtcatggaa atggccatag tttgaggttc tgccaactac atttcaagaa 480

ggtttcttgt gaatctttcg gaatttgatt gtgtgatcct tgagttcttg aatcttcagg 540

atgtctataa taattcttga aaaagagatt tccttgataa tcataattgc tgatggggaa 600

aagggtcaac cataattgct gccctgaaga taatataatt taatcctagc ttcgttagac 660

cttaataaca ggcacactgt acactgcccc tttgtcgatt tgtggtttca gaatagccat 720

ggagttaagt gtttattcag ctgtttactg tggttcctat taatatttct atcaatcggc 780

gagactccat atttctaggc aatttgttac aatttacaag gggccacagt cgaactgatt 840

gtacatgcta ccctacaatg tatttctcgt cctactctgg ccctgtttgg cattggaaaa 900

acagcttacc tgagaaactg gtgaagaaca gagtttagat tgagaagcag ttgaaatggt 960

aagctgatgt agccttgttt gatacagatt ctgtttaaac ttgtgaaaag ctctaaaata 1020

agccgtgcca aaacatcgcc tctgatttat actcatgaga taggcctttg ccggcgttca 1080

tttgcattgt cttcagcaca tggaatgacg ttcttttggc acctccagca gttaaatgat 1140

tacttctcaa atgatttttt tcacgttatc cagaactaat gtagtcttta gggcagttcc 1200

aatgggtagt ttccatagca ttaatcagtg tgtcaatatg ctgatgtggc attggaactg 1260

aggagag 1267

<210> 4194
<211> 1050
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10633_G1, chr1:56898426..56899475, Cluster 26

<400> 4194
agaaaattaa gaaagataac ttgaggaaat acatgtgcaa atgactagct tagcatgaag 60

agtcagccct tctttctctc cattctgcat cggaaaaaaa atgtggcata gatttaacta 120

gctagcacta catattctct cctttacatc gagaaaaaat atggcatgga tttaattagc 180

taccgaggcg gtcttagcat ctagctttga ctgatgtttg acgcatgcca aatcatatgg 240

cgtcatgccg tcatacagag aaagcacaat gtcttatcat ttggtgatgt gttttgatcg 300

cttagaaaat tgagcatttt aaagattaaa ttaatattct aaaacaatca ctatataatt 360

cacgcataga aaataaaaac atgattatat agttgattat atttatctta aataaactca 420

tcattactcg tagagtcgta gtagaggttg ctttagtctg atcgaagatg ggttcacata 480

gttgttgaag tctgtagacg ctgtagtaca tgttaactcg gtgcgtcgtc gtatgatcgc 540

tgcctaaaaa cccaatttgc cccaacccat atcagttctt cagcagagca aggtttcaaa 600

gacactcctc ttcttgtcgt catcatcaca ccaacgtcag ggttgaagga gcttgagatc 660

atacaacatc gaggactttc ttgtctaaaa tcctaactca tagtagattg gttgtttctc 720

gttcctttag gagagaacac cctctctatt atataggatg atagacacat gattattatg 780

cacaaaagaa taggaaaatg atctgatgga tcctgtttta aacttgtcac acaagataag 840

gcaaagttga aaacatgagt gaacctttaa gttttattct tggaattatt gttaacaaaa 900

gtatataata aaactcaaca ataggaaata ttgttaaaga aattgtacaa taaactctaa 960

ggcaataaaa atattgttaa gaaaattgga caataagctc caacaaagat ccacaaagat 1020

ctggaatgca caacatgacc tagtaccaaa 1050

<210> 4195
<211> 1159
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_110785_G1, chr3:117262010..117263168, Cluster 26

<400> 4195
tgagcttttc gcaaaaaaaa tagtcatggc ccctgctgcc ccttcccttt actctgtcac 60

tgggagtctc ttaacactct tatattttaa aaactatcca aaaactcttg gttatacatg 120

cccatggctt tgtcttattt ggtggattaa ttgtgaagaa catggagttt cgtatgtata 180

aaacccatgg tcacaattac aacataaaaa atctgtgaca gtcttgataa caatcacata 240

aaattcacca ttgagatcgg tctcatcgaa aaaccatatt tacacgagaa gcaagacata 300

cagaggaagt gttatgagag aagatagatg attggaccaa cattttatct gttgactttg 360

tccattgcat tgagtgtata gtttccacac atgatgtcaa gtttgtaatt atcatatcgt 420

atatcatgta ttttctaggt taggacaccg ccttatgccc tactctcgaa ccacacatac 480

ttcctttcct ccgcccgaaa ataatacaat tccaccaaaa caccaagtta aaatatgata 540

gatttatcta tttgacactg gaaccaaatt tagtctttct tctgtggcac tcaaaattct 600

gaacttttct acttggcacc aagttaaaat tctcttcctt agatggcact gtcatgttgg 660

ttttttctcg aatataatgt aagatgtttt atctagctat tttatagatg gtgtcatgcg 720

gaacaacacc gacatccgta aaagtaaata aaatatgagt tttaggagag agtaaggtgt 780

atgttagaga tatgttggat ctagtcatca ctaggagcta tcacagggta tttatagagt 840

ttaacgctat agtgtgtgta atatcatatg ttctattgct actcattgag ttaggaaata 900

caaatatgaa taagattata agctcgtaac ccactgagca tcacgaccac ctagctcacc 960

ctcttgttgc gatgagagtt ctagcctatt ggtcctaacc cattattctc tgtgcccatt 1020

taatagagtg aattcaatcc taggatagtt ggagacctct caacccttca tcccactttc 1080

ccttggaatc cttcggttga gtttattaag ggttgagttt attctaaatg ttactttatt 1140

cattttgtag agcaggaga 1159

<210> 4196
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_113785_G1, chr3:134772453..134773498, Cluster 26

<400> 4196
ccatcacaaa atggttgccg tacctgctgt ctaccttagc agaaaaggta gtagataaga 60

gatgagtcat gaaccatgat agctacagcg tgtggtctcc cgacccttct tttgatcact 120

gcacaaatgt attggaggca cccagaaata ataattccgg atcgacaacg cagacagtga 180

gcaacaggag agtaggctag tgatattatt gcttctggaa ccctagcctc tttttgcagc 240

aaactgattc attcactctt ttttgaccga actttctacg agagacatgc ttgcacaatt 300

cctcttccct gccggccaat ctttctttct tttctgcaac atgagcagtt cattccacta 360

cctctggccg gtagctttcg tgtatgatga cttcaaatag tttatcctta gaaatttcag 420

tctcctgctt gtgatccaag agtctctcaa atagtttatc gcgttagaaa tagtttggaa 480

tgaatctctt ttggcgtttt ctcagacatg ccatttttct aatctcgatt ttacaatttc 540

tcaaggacat ctggaagatt tgtttttttt cttgaatttt taaatagttt ttatttaaat 600

gaataaagtg ggaggatgca tattctaatc ttctaaaaag tgtgatgttg ctgaattggc 660

agtcagctgt ttgtcttttg agttttgcat atataatttt gagtttggct catatatagc 720

tagcagcctg tggctgtgtg ttcactgtat ctacaacaat gcatgtggct attggatgca 780

ggagagctct gtgataaaac taattatata tacagggtgt atgttttgaa taattttggt 840

catgtattac gttttctaaa catattgaaa atacaaattt gtttcccaat gtacatatat 900

ataattcaga aacatctgtg atatatatga ccggactgca tgcagcaaca atgctttttt 960

gcaggctgct tgaaatttta cttattcatg tgtagttttc ccaataaaac tcaatgagag 1020

acgagaaaga aaaaaaagtc ccctca 1046

<210> 4197
<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116545_G1, chr3:152171238..152172306, Cluster 26

<400> 4197
tcacttagac tcttaaagac cctttaataa actccatatt aaatgtgtac atgccctaat 60

acataacaag tactagtaag gtttatggtt tatgaccact gtatatagct cgtatgggct 120

gcgtgcacgc aggaagcctg ccacgccttt tgtttcttgt ccggaaatgt agcgtgctgt 180

ctcccgtcca cccatgtgtc ccacacaact ttactatgcg ccgggcccac ccctcattct 240

cgtactacag tacgtattat tgcttcgttc gttcacgtcc ccctcgcggc tccaactcca 300

aacctgcgtt cctggttttc gccgcgtgcg ccgcgtccaa atagccgcct tgccacacag 360

gccagcggcc agccatacag cccagcccca tcaggaaaat gagctagggg actggtcccc 420

ccaaatcttg gggatggaac cgagttgggg tctcaccaag tcaccagcag caagcagtag 480

gcagcgcaac atacaagcaa cgactgagtg tctttcatga ctgcgaaagg tcgctaacga 540

attctcgttg aatagtcaaa gtattctact aaagcccctt tgcaaccaac tagttaatct 600

attgaggcaa acacacatgc ttcgccataa aagctctagt gtgtcttttg acatgtctct 660

agaagatcgt gcatatcgac gtacacggta tataacactg tttgtagtat agagtttgaa 720

atgtgagata atgaatatga taagagagcc gctagagata actttatccc atacatgttt 780

atctttttct cttgctgctg cactaataag taaaaacaca ggatagttgg tcacagagga 840

ggaacataat attgtcacat tcagatcatg tataacctta tgtaatatat ggtttttga 900

gggatgtgta gagattaata aaaataaata taagagatgt gttctttgtg aagcacctgt 960

atctacacga ccgtttatac atattatctt gtaattgtat ctacgaccta aaggctcata 1020

atagtatcat gcagttgacc tccgaaatta aaggtaatac ataattatg 1069

<210> 4198
<211> 1003
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118877_G1, chr3:166428826..166429828, Cluster 26

<400> 4198
gctagtcttt ggcgacgtga cggtggcatc gcgatagaaa tttgtttctc tagatgtatt 60

ctattctgag cctgatttga gaactgtctt acgtgaacag gccaacagtt gcttccgatc 120

tatgttgtta catgagcaag atattagagg ctaggttgtc cacttacatg aataggatag 180

caggtcgtac tagcattgtt tatggttgga ctaaccaagc gaatattgtt tggaccggtt 240

aataattaag tattatttga ggaggctcca atattttagg gccttgagcg gccgcccagc 300

tcgacccctc aggtccagca cagagcacgt acatgagtcg tttggatatt tccaccacat 360

acatgagtcg tttggattct caaactaaac taattatcct agactagaca aaaaatgaaa 420

ctatagcaag caatttgaaa aagttgaaag cggagaatga aagaaggtag cgagtagtga 480

atgattgcag gctctcataa ccaggcagac aagtaaactg acaacaggac acggaaggaa 540

gcccactgtg gttctttctt ctctctccct cttttaaaaa aataataacg agcaagtgct 600

actaacctac tgcataaata tggtccccaa gataagcctg caatcttctc cgttgctttt 660

ctttcagaga tgatgaggat tcctgctaac tttaattaat tagtttgtcc actgcaaaaa 720

aacaaggtta ggttagctaa actaaactag tggacacaga cgctccttca aggtttgctg 780

gtggtgcaga acacaacaca acacatacat ccagcacact ttccaaaagc tcaaagagtg 840

accagacaca cactacacca tggaggaatt agtggtcagt tttttcccag caccccccc 900

cccctcctta attttctcta atccatctcc aaataaagag tggcgatcat catcacccaa 960

aaccagtcca ctgtccaccc ctggttccct gcccctaaag gcg 1003

<210> 4199
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121792_G1, chr3:183390948..183392056, Cluster 26

<400> 4199
agtaggataa aacaaacggg gctaaagttt ggtcgcttgg gagccaaaga ttcaaacaga 60

aagtgtagtg actaaattga taatttacca ttgtagtcaa tatattcctg tttgaatctt 120

tagctcctaa gtaactaaac taaactttag ttacttttat tttaattcct ggataacaaa 180

cggaccctaa atgtgtaaat tactaatact aaaatataag aggtgttaag caaaaagcag 240

tccagtctat aggctcgaac cggtttcaaa accagctcag aggctggttc caaaattggc 300

ctggcctaaa tctaccaagt ttaagtccaa ctttatttca aacttgtggc tttaaatttg 360

tctcggtgtc cctattttgt tgtcaacaca atggctatat gaaaatttta atacgtggtt 420

ctgagtcagg aactcaagat tcgtgcaggt acacctcaca tcattcgctc caggcgtcaa 480

aggccatgta gatgaacatg cgcagcgtgt cagagcaacg cacttgcgct cgccgaggcc 540

gccatcaggt catagtcata ctcgacagcg acaggaactc cgatctcaga caggggtacg 600

ctgtagtagg cagctcgatt ggcgtcgccc tcgcccggca cggggtcaaa ctctgatgca 660

ccgtgtgccc acacctgcgt gcctgtcctg tctgcctccg atcatccgat caaaagagtt 720

ccgtactcag ggagtctaca gacaggaatt tatctgactt gtcaacagat gccccttcag 780

acttcagggt acggaattct tgccaggtgt ggagccagaa ttaccctaca gaagggacga 840

acaattcacc cataatacag gtaaaaaaaa tacaggatgg tttctatatt gtatagacaa 900

catgctaacc aaagaaactt gcaccataca cttttatatt aattaaatcc gtgagattaa 960

aacaattatg cttgaatttt cctctacgag gaccggcgat taaatgatga gagctaatct 1020

ttgctgcaaa ttctttctca atacggatga ttatgtaact tcacagaaaa tctaccatga 1080

aatttgaaga acgcattatc tatttttat 1109

<210> 4200
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122927_G1, chr3:189359689..189360733, Cluster 26

<400> 4200
aacgaggtag tgaaagggag tcgtcggtgt ttgggcggcg cggggtggtg tcctatattg 60

ctttttaaaa atgaatcgga aacacacatc tttgttcgat ggactatgag tctatttggt 120

tcgttgccta acttggcata gtttacctaa ctttttttta agttagttct tcaatttagc 180

caattaactt tagttaagtt atatggtact tagccgagaa ccagccctat agctctcaca 240

actccatgga ctttatgggt gcctttgatt tagcattttg aacctgcttc tactttgaaa 300

aaactgatgc caaagtgatt cagtttttat gcaactactt taaaaaacaa cttgtatgtg 360

gtacaaattt aaaagctgct tagaccttgc ttttgttgct tagccaagtt cgttgcaaat 420

aataaagtgc tatagtagat gaaataaaaa atagttttaa taaaattatt aaaatagaaa 480

tgtaaaattg atttgtttgt aaaaatatca tgaacacaaa tgtcaaaccg gtttttaaat 540

tagatgtatt gattgattaa gagaagtagt taaacaaagt ttatataaac aatctacaat 600

ttgtttacaa tgaacaactc agatcggttt gaaccaaaca aatttcatct ttttaaggca 660

gcttttatac aactcagagc gtttggttgg cttgaccagc tccttttgc aggcttgctc 720

tggagactag agacataaaa aaagcccggt attagcccac gtagtcttct gtagtatttt 780

taacaggttg gaccgactgc cggccctaaa gcaaagcaca aaccgcgcgc tgcacaaatg 840

gacagttcag gtaaaaccca aacgcaagag cctatttgag gcctaaagcg ttttgcctgg 900

agtagatccg ttgggccatg aggcttgtta gacaggtccg gccctcgtaa aacattatac 960

acgtcgccgt ttcaaccaga gtgtctccga tgccaaccgg agcacacgtc ggaaggtatg 1020

atccggtggt gacagggagg atctc 1045

<210> 4201
<211> 1327
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123298_G1, chr3:191120255..191121581, Cluster 26

<400> 4201
tcggtataac ttggaacccg tacttgtgga ttcctcgacc ttctctttgt gcttttctcc 60

taagggcgct ttatctcttt gttcttttat cataattttt aagtttgagg cagcaatatt 120

tgaatcactc tggtagatat ggcatgcact tcactttggt ggtttctaag ttccataacc 180

atgacataat caaacaattc ctgcagccat gatatacact tcttctttgg tagtttgtgt 240

tccataatca tcataacacc ataaaatagc tcctcgaggg ttttctctac ttttggaact 300

aatatcttca ttttgttttt tcctcaaggg ttttctgaac taatatcttc atttttggga 360

ttttaataag gtgtttctct acttttgagg ctaatatttt ttagattctt ttaataaggc 420

gttgcttgat gtgccatagt ttcttaattt tatttttata ttttagttat tttgttctat 480

attgtttata tttacaaatt catgatagtt ggatagtata ttaattagat cgagtttgta 540

ttataatatt tagaaattat taattaattt ttataacttt ttgtgtgcct ataaaagaat 600

ttagagtatg ttttctcaaa attatagcat ctattttcca ttctctcttt tctcatgttc 660

cctttgaatt gtactgttgt acctatttga acgctttttg tttggttata ttgtgttgtg 720

ttgcagtatt ttttggatgc acatctctac tcaatagtgt ttcactacca gctaaaatta 780

tgtgaattaa acttgtggat gtaaggccaa agtcaccatg gaatgttcgg tgatttcttt 840

tctttcgaaa gaaaaaatgt ctagcaaatt gttcaaaatt ataagtcatt acaacttttt 900

acatagattt tgctattata catgtgtaga tgcgtatcaa atttgggaaa tttcatgtaa 960

aaaaattaaa aacaacttat aatttagaat agaacgaaga gagtaacgta cttgtgctct 1020

atagttggtc aagtgataat acgtccatgt ctgtatcctg agctagattt agcttttca 1080

tacaatggta caaagagtct ctcaattaac aagataaaat taacctgatt tataaaagat 1140

taggcttaca aaccttatag acacacgatt tattagtaag gcataaagtt tggggaaaat 1200

tcagaaaagg acagccaaga caacaaatcc taagcaaccc acatgcacac aaagaaaaca 1260

cacacccaag ggagcccatc acacatcatc gttgttgagc ttaccacaca tagtaaagca 1320

actccac 1327

<210> 4202
<211> 1135
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_123299_G1, chr3:191121635..191122769, Cluster 26

<400> 4202
cacatactag caccaagcct tgacctcaca ataaagtgaa agcattgtgt catcgttgcc 60

aagatttgtt gcacctagaa cataagtacc tccgacttca tcactacata tcacccctat 120

gagagtcaga gatgcatcgt aggaccacaa gcaagtcgca aacccgaaaa aggatggctt 180

gccaaaaact agaggcttgt agtttagcat tcaatgtatc atgcgaaaca acatccaata 240

agatggtgca tggcctctag gtgacacctt aagtaaggaa acaatgttga tcgtcactgt 300

catctatcta ggaaccatag gtagagttta ctcaaaagaa tctagaagga tgaggagatg 360

catttggatg acactttcaa ggaagggaac aatacccaaa gtgtcaccac cattagctcc 420

acctaatgcc atccagggct ttcgccaaac gttcctcctc ataaagaagc cacacaccaa 480

acatcggacg gtcctacaag caccaagatg catggttata aaccgatgtg tgcggccaac 540

acaacaactc cctcaaagct atgtgaactt gccaaccatt cacactgcat gtagctcacc 600

acatgagctc cataaaccac tgcatatgta ggccatgcca taacaaagac tctatgacca 660

agagccagga agttaacttc tctcatggat atagattata ataataagtt gatagatact 720

ataactctcc tttttaaact atacaataaa aatgatgtag tatatggttt tgtcaggttg 780

aaaaaggttg tccctccaac cctttctaat aagaaagaat agcttgggat gatttttttg 840

atgatgacga tgatactggt atgcttggag gtagttgttc gacctttcct cctaatcttg 900

atttttcttg gattgttcct actttcctac cgctaccttc tacaggcaac aagttctgct 960

tctagcagtg gtggtagttc taaacttgca acctatctag accgtgacat tttttattat 1020

ggaaacaaaa tgttcccgcc ttttgcaatc tcttgcatac ggcctacaaa tcaaaaaatg 1080

acaaacatcc atcataaaga ttctcagaaa aaaaacatcc atgaatcaag ctccc 1135

<210> 4203
<211> 1329
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_123868_G1, chr3:194356820..194358148, Cluster 26

<400> 4203
tagaaggtag gttgtgacct attttggtgt actttgtggg ctaaaattat ggtatagtat 60

aggtgttatc gggccacgac catgacaacg accctagtag ccttggtgct agatcagccc 120

ctggccacag atggttgaga acacaccaaa tcaatccacc ttaacttttg atggttctct 180

tcctagccta aattctcttt caagttctga gcacatgttg ttcatctagc tatagctgat 240

gccttagttt tgatggttca cacctagttt ctttggaagc tagtgcttat tgtcgagcaa 300

ctcatgtatc atctattgat ttccttgtaa gtctagccat ttgaaagtgt ctatatccgt 360

aattcggttt tcatgattga taatgacata atccttatga ctaacatgtt tttacatcga 420

tgttacttta atgatgttac aatgatgttg attgattggg taatcgtggt tttcatgccc 480

ctaatcacgg tattcatttc agttttaaag gatgactgca aagattaaca atcgacaggt 540

tctaagtgtc aatggtgttg agagacgctt aaagtagtga tatgatcttt gtttttttctt 600

tggttgtatt atgaacgggt agcttgacct agtgaagtct agtgagtgaa tgtgatgtaa 660

acttgtgaaa cctagcgtag gtagcttagt taaaacccaa gatggagtgg aaacaaaacc 720

caacacaaat gtggtttgaa atggatgaat tggtgctatg gtgcactcat agaacaagtg 780

gactagatgc ttactatgcc ctattttcat gtgaaagaaa agggactcac atcggtcggt 840

tggtgtaagt agacttgggc accagataag cacaccagac agggcttgtg aagaattgat 900

gtgattaggc acagtcaagt tcactcgctg gacatatcca gtgatgcatc ggactggtgc 960

actacatcat tctaccagag agcatggtaa agtgggtatt ttggtcttgt attgaccaaa 1020

catgtttgat aggcactaga ccaggcatca aacatgtcat attgttaatg tgtagtttgg 1080

aaactagtga ttgggacaat aagtacacat gttcggtgca gttccttgtg tgcatcgggc 1140

aggtctgtgc ccatgagaac gatgaatgga ggctaacact agctcctttg cttggggcta 1200

tatatacccc tccatctcat gcatttaaag tcttagcatt ttgaagttct acatagaccc 1260

tttcatgtct aagagaggga cttgagttag tggagtgatt tggatttgct aattcaatat 1320

taagtattg 1329

<210> 4204
<211> 1237
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124234_G1, chr3:196195342..196196578, Cluster 26

<400> 4204
ggtgtttctc atgccctagg tacctaacga tataagccct cagaatccca catgccatag 60

ggtagtgtgg agcgtgctta gtgcaggatc gtcccccaaa cacatgctac atgtggtttc 120

ttagggaccc gtagaggagt taaggatagg ctgacatccc agccccatct tagggataaa 180

ttatgtggcg agcccaccgg ggatagtacg acccaggtca tgggccctac atctaaaaga 240

cctaaaagtg gtcccataac tatatcttaa tggataattc tcgagtacaa cacattaaat 300

ttttagtggg caatattaag ggactaactc agcgtgtaga catgcaacgt aggtcctagg 360

acacttgaga ccactacatg gtgcatgtgt aagtcctgta accacacaaa cacgtgtatg 420

atgtacagag aaatataata aactacaagg aactatactg gcaaccaatc accccaaatt 480

agttggctag gaccccgcta ttcagtggtg taggttatca tacctacccc gaaagaaggt 540

gtggacatcg ctttgggaag gaacaactat aatagaattt caaatcaaat atgagcacaa 600

tattacaggc acacctccgc atgtgcatgg gggcatgtat acccaaagct attgtacaag 660

catagtttag tgtttacaac catatatgat taggtaatct tgcgtactac tagactggaa 720

aatcctcatg gttgtcatta aatagtacaa aggttctgac atatgataaa gggtactaga 780

aacattacta ggattcatta agaccccatc cttattttgg gtagaactat gactacatga 840

ctccatagga atgattacgc caatgcatgc ctgttgtagg tctcatggtt gcaagcctaa 900

ggcaggacaa aggctattga cccaacgaca agtagagacc atatatggta tacacatata 960

aaactatcgc tcttttagac tataaaaggg ggtggtagag caacattcaa ttgaagctca 1020

actggaggct gaacattcca caagtaatta caccaagatc caccaaaccc aagccaaggg 1080

agttcaattt aatctggcca tggcatcaat agttagagtt attatatctt gtctcaccca 1140

cttcctcaac aaggaggcac tgtagctcac tgtactagag cttgtaacct tgtgaatcaa 1200

ccatatataa tagcttgtga ttagtaagat gatgtag 1237

<210> 4205
<211> 1235
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125225_G1, chr3:201906051..201907285, Cluster 26

<400> 4205
agaaagaatg aaatctaatt ctattacaaa tacattcctt catttattat attcggtcag 60

attacttgcc ttgaagatca cacgaccttt cttcatgtct tcctggtaat atgtgggttg 120

acccatctcc ttgccaggta gtcggcctta tagggaaccc ttagggcctt tgtctatcaa 180

gcctctaagc tcttcatttt tgaactttga agcattctta aattccctag tcattgcgga 240

ggataatcaa gtagtgctcg aagtaccttt ttaagagaag ccatcaagtg cttttaaagt 300

ttgacctcta atggtgtgtg ctttcttgca aagcacaccc attgggttta gtctttcaga 360

ctagtgctat ttagtataaa aatcttgagg gtaattcttc taatcttttc aagaatttca 420

aaatcatttt ctaaggatat atatcacata gccccgagca taacacttga atacccgact 480

aggacttgac tcttagggtg ccccatgata atgatcaagg accactcatt agtgagtggt 540

ttgttccttt ttgcagccac gttgagtgta gggttcttgt actctacttc aacacgtttt 600

tgtcatgatg ccttactttt ggcgatgagt gtgctataca agttggcatg cactaactgc 660

cttggcatag aacatgaata ttgtccttat ccatgggcgt tgggctataa gtacccctaa 720

tgatttcaag actccactag tggtagcatc aattgaaaac tagtcttttg tcttgaatat 780

gatagtcccc gagatgccag agcccttggg catagtcaaa agatttgaaa tcttatcttg 840

aaactagaag aatgcttgtg atggggttta gtctaaaacc aagtaattgt caactgcagc 900

tacaagaact cttatgatag ttgaatacac ttgttcttct aggttactat gatctatacc 960

taagattgac ctatggtatg aagtagaata ttactagtgg aaatgatctg tacctaaggt 1020

tgacttatga tatgaagcag aatattacca gtggaactag aatatatctt gttagactgt 1080

caaaggtggc atctcaagct gaaccccttg atggttcttc caatttcatg cccaagagga 1140

ggtttgctca caatcttgct cttggggaac ttaggatgta aagttgtcct acttagacca 1200

aactctttga cagaccttga ttcactaccg tcgag 1235

<210> 4206
<211> 1311
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125809_G1, chr3:204648410..204649720, Cluster 26

<400> 4206
attaaagaac ctctaatcaa attactcttg aatgtgatgt cactcccaat tttaggagta 60

ttaagaaatg gttgctatat ctcaagttat attctcgatc ggtagaacaa aggtaaacgt 120

tcatgtttac aattggaaac tcacctacac atgatcactt gagaatacaa tggtaatgat 180

gcaaatcctc cttaaccatc atgtttgatg attgcaaata taacccttc atcatttgta 240

ttcagtgttt ttgaccattg ttgttttaac atggcaatat gtggacatcg atgacatcta 300

tccaatagag actcgagtcg tcacactcga acttgaagtg gagttcatcc aaggtgataa 360

atagttgtta gctttcatgg aacaatgaaa caaaattagg agtagaaggg atacatgtca 420

tctgaaaagt gggttagagc aactctagca cgacaccccc ttgatcccct atagctaaac 480

aagggtgcat agacttagaa tgcaacttca gtagggatcc tactaggtcc ctcaaatttg 540

ggtgggcacc taaatccccc tttccctcat ttggggatcc aggacaagcc cctaaaggac 600

aattttcatc agctttttg cgccaagctc attctctcct tgtctgcatg tgatgtgttt 660

tcctcacctc acacatgcaa ctaggatttt gtccctagcg agtgttggca tccaaccaca 720

catgacatga ctctcatggc ccacacgatg agacatccat aactcagcat gacctcgatg 780

gatagtgagt cctccccaat cctcgtcaat tctcatcaat agtggttgcg cctgacacac 840

cactctacgg tggtggtcac caacacccca atgcttatcc tcatcagtgg ttgtgcctag 900

ggctctcact ttgatggcaa ttgtgcccta ctcatggttt tgctcttcct cctccaattt 960

ctagtgtttc ggccgagaaa atcattgata aaagaatttg aggtatcatc ctgaattgaa 1020

atggatttga gggctattac tagagttgct ctaacggtaa ctcttatgca cccttaaaat 1080

gtagagcttg ttaattatga ttgtttaagg ctcatgatga agttgtttca aaggaaattt 1140

aaacttcagc ttttaatcta tgaatctata agaaaaaata ccgcctagca ataattattg 1200

gtgttaaagt ggcacagggc aatgtttttt agggttgtac tcatgtatac atagggatgt 1260

ataggagaat gatttgcatg gcaagtaaca acattgccta tatgtaactt t 1311

<210> 4207
<211> 1187
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127005_G1, chr3:210518942..210520128, Cluster 26

<400> 4207
agacagacta ctcttgctct cttaatatgt tgtacagatt tgaatatacg cacaagtcat 60

cgtggcagta atataaattt ttactccatt gacgagaaac gcgacagcgc actaacacgc 120

agcatttcag aaaggaaaaa cgtccagcct tctgcagtgt cggtaacata tgtgatggtc 180

tgatgggcct gttatacgta gcttggttca tttaacttat cttagtaatt tagattctca 240

tttatttcct tttttaaagt attttccatt attcttgtgc tttcatttct tttttccatt 300

tataatattt gatttcgact tctttcattt agtctttcac cttcttttaa aaattaatcg 360

ctggcagtga ttactaaagt acatgttgtg tggaacggaa aaaaaaacct gtgttttctt 420

ttactctcca acttgtgcct atttcaactg atctcatgtc cctgcacttt gtgcattgat 480

tctatatatg tgctatataa cgtaaatcaa tcaggttcaa gcagatgcgc aaattaatgg 540

tggaggacct ttgctatata tctgatctct ttgctacaag gccgcgaacg gagactacac 600

ggccgggcgg aatactgcac gcgctgattc gattgtttct cccacggccc acgtagaagc 660

attccgctgc cagaagccca gaacagccgc cgacttctgt ctactcattt ctttcccccg 720

ccaagctggt cggatgttgc agtacatgtg cagtgttcta ttggtttgca acgggtaggg 780

acaatgtcga caagcaattt ggcttctgga catgattagc cgagcaagga tatggtttgc 840

ggttatgcat gtcttgtagc atcaccatat actaggtacc atacaagtca tcgctaagga 900

ccgtgtgaca tcgtgagagt atagacaaca cttggggcgg tgcgcggact agtcgtggta 960

agtcaaagct gttggcttac atatgttctg tgcggtgcat accaaacaca ccacacgacg 1020

tagacaaagg cgcctgcgtg gtgttgagca tatacgcgca caaagtctag atgttacgac 1080

cggacggttc ggtcatatga gtgtgatagt gcgcaatcag attaattcag accagagtcc 1140

ctgtatcttc tgaggttatc ataatatctc aagagagttt gttagtt 1187

<210> 4208
<211> 1320
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128207_G1, chr3:216242543..216243862, Cluster 26

<400> 4208
aaagaggtct caaatttgaa tcataattat gacaacttaa taattaatta ttgatcgctc 60

ctattgcaca tgtgaggttt gggttgaact ggttagggtg aggctttatg accagtaccc 120

ttgcttgatc tttgcttact agacttatta tttatggttg tgtgctatag actaccgatg 180

cacatcttac tagttaagaa attttattta tctaatgtag catcatgtgg agtcctaggt 240

tagaaaaaat agtaagggga ttcactccct ctctcgtagc ttgatcatcc ttaaatcttt 300

actagggtca tcattctttt caaaaagtta ccacaagtgg atatcttaat aaggaactgg 360

gctatggagt ttattttcac acatgtgaca ttttaccaac gacaacctcc attgtataca 420

tagttgaccc aaaattagaa ttttctatgg aaagacaagg aagattctag ggaacatagt 480

ttttagtagt tcttttcatg aatctaaaag ggcatggccc cctacgttgt tttattagct 540

caaaacataa aactagtcca aagcgctaaa tagaatacaa aatagttaaa atagctaagc 600

aaacttaaga aacaaagaag gaagcaaaaa agataagaaa agataattga ccatgctaga 660

gttcatatcc atgatatacg tgatttagag aggcttgact tcactctgta ggatagaagt 720

gtcaattcaa tgaagaagaa tcttccacaa tcctacaaat ccaatttatt ccttcgaagc 780

taaggtcatt tctagtcgtc tagattgtcc aacacgtgag gattatagcc tccatgtaga 840

attatgattg taacaggttt tgaacaaaga tgtggctttt gggaaattgt tgtctattga 900

atagtcaatg ttgatgatat cccaacacat tcttggaaag tgacagtcat agaaagatgt 960

tgataggatt cttctactag cacaatggaa agcacacaat tatatgagtc caagtgcatg 1020

ttttccctcc ttaagagatt tctggtggtt agctagcctt tgatcaacaa caagtagaag 1080

accttgtgtt ttggctgata gtaattcttc ctcaacaatt tgaaggtagg atcaatctct 1140

aagtgtccca ccaaaacatt ataggttttg gatgacgaga ggactctaga acctcaagtg 1200

taccaaggaa tcattacaaa ggggcatcaa agcgattgtt tgctaaatat cctacaagtg 1260

gtggaaggca tctgaaaatg ttgggtgaat tactcttggt tgaaagcttt ctttactggt 1320

<210> 4209
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129054_G1, chr3:220518715..220519715, Cluster 26

<400> 4209
atacttcgtt acaacatttc tcgttaaaag ttggcaaacg atttgttcac cgcaattttg 60

gcacgacgac atgtacaagt gatcatcgtg ctgttaatta ttgctcaaca tgtccattag 120

tgttgaattg ttgattactt tactagtatt agtaaaaaga catgtttttt ccactgtgat 180

atagtaaaaa gagtggaaat gctagatgtg acgactgcaa gttgtaacct cttgacctct 240

tcctagaatg aggtgattgt actcaacatt gaccatgaac caaacacctg ccacatatat 300

ttgccaaatt cgtgatagct catatggtgc taaaccaaat agttaccata gttaaatcta 360

ccacataaag ttaggcatga tagcgaacca aacaccttat tcttgccgca aagatggctg 420

tcactacttt gttacatgcc taaccttggt tgagaaaact ttggctataa accaaacatg 480

tcatgaactt ctatagctca aattgtaaat gctaagcaaa atgtcagacc caaaggagac 540

gcaaataatt ctactctagc aagaaagtga tggagacgca aataatatcc tatggttcga 600

cgactcacaa gtcacatata tccacattaa ggtgaatcct agaatcgcca cttctctatc 660

aagactcaat ctcaaaaggt tgcctcctcc acttggaggc tggctatcta agtagactcg 720

atgactagac cctatcgggc cagtttgaca aaacatcttt tgctcatgat tctatgcata 780

tgatagatta catggagtga ataaaaaaat ctagtttttc agatatcaac ctcctagttt 840

attttagaga ataagcgaat aattgtttct cagtaaaaga attgtttggt agagcttctc 900

ttgtattgag cctggaagct gctctaccga aatagacctc aataccctg ttctactaaa 960

gttgctcccc gactgctata acaggcatga acaaaagaga c 1001

<210> 4210
<211> 1102
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129067_G1, chr3:220661794..220662895, Cluster 26

<400> 4210
acctaaagga catttaacca catgatcagg caaacatgtt cgaactatag gacaacatgt 60

ttaaacctaa aggacattta accacatgat caggcaaaca tgttcgaact ataggacaac 120

atgtttatat cactagacac taccatcttg aacccaccat aactcttgac tctggatgat 180

aatgaaagtg ttaggataac cactctaaca cactttctag tgacagttaa atcacttaat 240

tttagcttac tatgaaatca gcccaaggtt tcaacctatt cagacgagag aaaacaaatg 300

tattagactt ataaatggag gaaatgacag tagtagctgt agtttacaat tgatccacac 360

atcaagaggg ggcgacctat ttaacaagga aaacctcaga ttcagataga aaccatggga 420

ccaagccaac caaatcttct tccactatat atttgtggga ttatatcaag ttcatctgta 480

gatagcacta gataaaacta tacatcgtga tttatagatc ttggatataa acaataacat 540

ttgtggcagt tattagagtg gaaaggcctc accaaatgat gctcaaatta gacgcaccaa 600

taatgtggat ttgacaacat tttcctaaat gctaaacggt aaattgctag tcacatatcg 660

tttagctatt attcaagcta aatggactat taacgagcta catagtcaat taaataggat 720

aaacatgtga ttaaaagaga atgacatacc attgtttagc atttacacta tttatatggg 780

ctaaatgacc gttccaacaa acaatgggat ctaaaatttc acaatcttga gaacaaacct 840

tctctttaat ctccttttc ctctctttcc tatttttgg ttgtcttcct ttctctcaca 900

tacaaggagg aaggggttgg tctttactca cacacacaag gaatggatgg tctatactct 960

ctctccctta ttctggtctt catgaagggg aggaatgagt ggtggtggtg gctgatgttc 1020

aaatacttcc ttctcctaga agctaaggaa gcaaatgcta gatgcacaca aaagtttatc 1080

cacattccaa tgctgcacct ac 1102

<210> 4211
<211> 1132
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129255_G1, chr3:221624403..221625534, Cluster 26

<400> 4211
tgaataatca tgcattactt cattgcatga tcttaaaata tgtgtatggg gatagttttt 60

tttatcaaga gttagttttt ctttttata ttaaaatata aaataatata ctcagaacta 120

ggtcataagt taacactagg tgcctttagt attcagacaa agtgtgatga actccaaaaa 180

agtaatagcc tctccaatca caaatagtaa tgttttaaac attctctagt ctgcaaaaca 240

catattttga ctaccgtttt tattacattt ttaaccaaat aaagtatatg tttagacaat 300

tacattttgg tacaaatttg ctcatattat tgcaattttg aatttctaaa gtcgacacat 360

gaaaaacgat atggaaccac aattttgaat tactcattta gttgaaccca atacatcact 420

taattgcaat cagagtagtg cctctgcgaa accaaataca ttaaggttga ccaaatatta 480

aaatgcggcc atatggacta cgttctcttt tgtttaatta agtctttgtt gctgaattta 540

aattctacca cctaaattct aatagatagc gtacacaact taattctcaa aattggagaa 600

gttacctcct ctaaaatagc ttagagtggt tttaaatttt gtttttatta atgtggcaca 660

tacttagcat accgtgtcta catgtcattg gttttaaatc ttttaacatt tcactaaaaa 720

atttggactc agagaaatat gtcaaaatag attactcttc gttactgctc ttcaaaatag 780

gtcgcgtctc atttcattgt actcgttaaa attggtttac caaaataccc catctaatag 840

ttttgaggac tcacaagtgg gtcccattta tggatatgac caaaatgccc taagaagctc 900

tctgttagct gttactctcc ggggtaaaag ggtcgatgag cattttctcg gtgtctccct 960

ggatcaccga caaacctgct gccagggtcg gcactgaggg tatacagcta tgctaccgct 1020

cagaccctcc aagatcgata ctgtttgtct agcttatgtc aaatacatat atgttaccga 1080

taaatctcta ttcttgtttc tttgttacat ctctctgatt ttctggtaat ca 1132

<210> 4212
<211> 1211
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129586_G1, chr3:223350063..223351273, Cluster 26

<400> 4212
actgtggttg aagaagagaa tgcaggtcaa aaagcatgga tgatggctgt gaagtcccta 60

gtctttcttt ataggattca tataatacat ttgctttgta ttcatgactg aagacttcaa 120

cgtctgcatt gttttctaag gaggcaatca tgttttgacg gtgtctcatt gtggcatttg 180

catgaaaaaa tttggttccc acgccaccaa gagttgccca tttaattttc cctctttgtt 240

tccaataaac ctttgctgag acaaaagagt ttgcagatgt tgaagaagaa tatccctaaa 300

gttccactcc tgaattgtta ggtcccttgt gtcgattccg tcatatttca ggctagagat 360

tcaaaattta tcaaaattct cgatgataac gttcgatgtg gcctgataag aaattagaga 420

agctcgaatt gtcgtaatcc taatgagagg tccatgtagc atgtcgaggt tgtctgtcat 480

agaaacgtga cgaggtccat tgagcttttg attatttttt gataaatatt actacctagc 540

gcgccattaa tttgtcggta cctgatgaca aataagtcta ttgtagggtt acctagagta 600

agaattagtg ggtttcggta taagcaaagt tccatggtga atacaagata acgatttata 660

tatgttcggc tggataacgc agtaccctac atcccgtgtg gtataatgcc ctatgttagt 720

ttgttgatta tgttaccagg tagtatccct accaccatgt gcaggttgag ttatagtgaa 780

ctaaaaaaag ttttaatcta ttataaaaaa atattctttc ctttaataca actagatccg 840

tagcctttca ccttggataa catgccactt tgttccgtag ctagcacgat cggatcctgc 900

acagtcgctg gtatttcgga cggccaagcg cgacaagcca ccgatggcgg ccatggacga 960

gatggacgag cgagatggag agagaaaagg acgaaggaca aaaagaaaga caacgcaacc 1020

ttattttcca cttattaatg acatgatgta taattattac caattatata tatccatgat 1080

ttttttagag cactaattta agtgatctgt agattgtaga atctaacagg tagattcaag 1140

tttattggaa gatctggagt ttacggagct ggttcatttc actgaaaaag ttagaagtga 1200

atcagttctt t 1211

<210> 4213
<211> 1127
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129949_G1, chr3:225218263..225219389, Cluster 26

<400> 4213
aatcgtagat aggcctagga aggattccat ataagttgca gttttgtcta gatttttag 60

cagagagtgt tcttaacaga gacattctta atctgcagtg acatggaatg tgatatgcac 120

atattcccaa tttattgttt ggaagtctca atcctaccgt gtatctctct catcgtttca 180

taatgacaga attgtgaatt gcccaacatg ctcatgtgac taccagaacc caagtgggtc 240

aaactgcgtg aagtgacttt atctgctttt tactcttaat tcatgtcata tcagggtcct 300

gtttttatc tgtaaagttt ttaattagtt ttgttgtatt ttgtaatgaa atgtgtttcc 360

gctatttgat aaagtttcac aaagttacgt agtgcttcag tagttgaaat aataaccatt 420

ttattaaaaa ttttactagt attgtacaag aacaaaatag atatcaaata ggcccttctt 480

tacaatcttt aattcataat gtatgataca gttacaaacc ataatgtttt aacaactaac 540

atcatatatc cctcatgcat aaagtaaata tttcatgcag ggccttttga aaggaacata 600

gggtgaatat ccacaaagaa aaggtattat tgtcataatc tcaacataaa cactagtatt 660

atgttactac taacaatttt tatcttgttc tataacttta ccattcgcta cttgcatgta 720

taaatgattt gcgctagaga actccttgag tgataccttt atatttgtta tatacatagt 780

tacactcgct tctccatgtg tatctatatg attttcccca atggttgtgt aggcatatta 840

gctatttatt tatagaacaa tgtgtcttaa gaagcaaaac ctaagaaatt tgcctatgaa 900

attcctctcc atctttattg taggaagaac attgtacaac tttttatatg taaatacatg 960

ttgaatcaac ttctatcact catctaaaca attttgttat tatcgaaagc tacaattaaa 1020

tagactttaa cttaattaca atgaagaacg cgtgctggca atgagttgaa cgtcaagaag 1080

caagattgga ggttagagga ataggggtgc cctacctacg agtagtg 1127

<210> 4214
<211> 1015
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129983_G1, chr3:225330654..225331668, Cluster 26

<400> 4214
ctaacaagtt tggcccacat gcttaactag aaaaaagtgc aaaaaaaagc gagaaaaagt 60

acgccacatg gatgtgagac gaagttaggc atgcggcacg agtgtacttt cagtacaagt 120

tcatccatct attttaattt tgagggccag gaaaaaagtg caaaagttca ccacctgaaa 180

acgatggcga agaacgactg aaagttcgct ctcgtattcg tactacatgc tagctcagca 240

gtcagcagca gtgatttccc atgcattctt cgttgccatc tcctttagct ctattggctc 300

cggccgccgc cagcggactg aggacgacga ggacgacaat cgatatgatt agttagccgc 360

attgtttcat cctgaatcac gagatgcgtt gacttcgttt aagtgtatgt ttggttggct 420

gcactttaaa gacatgttct gcacgagtag atacaaaaca agacatttgg acactaatta 480

cctacatcca ctcatacggt cgaaacgacc acagccagct tcgcgagcgt ggctgcatag 540

gtgcgagaaa tcaatcagcc aaaatgagac tagctagcta gtatcatgac acccaccatg 600

cgtcataaag tgtttctgat tcctacgaga atcgatctaa gccagaaacg tttcactcta 660

attaaacatg tctcttttta tacacaccgc atgatcatgc atgtctcgct atttttgagg 720

taccagaact tttaggcgac aatctactag tataacaaat tcttccatct gtcccaattt 780

ataattcgtt caatttttt taaaaaatat ttgactgact tgtcttattt atttttaaa 840

tgaattgaaa aattcaaaac cacacttaaa gtattatatg acgatagatc atatctccta 900

gtaaataata ataataaatt atgaatttgt ctcaataaga cgagtcaagc gagtagtata 960

taatttaaac gacaactcac aagaaatact ttagtttttt atatagtgga acagt 1015

<210> 4215
<211> 1150
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130118_G1, chr3:225762963..225764112, Cluster 26

<400> 4215
ccgttttaag aaggaagctc tgttataccc ttgcgctatt gtgtgcagtt aacagcgtta 60

aatctaatag aaaagacaaa aacatcaatg cagtttattg ttattttacc cctcgtttcg 120

atgacgtgat aaaaacatgg gtaaaatcat aaatatataa tatagcgcga agtaaaatca 180

tagtaaatta tatgggcatt tttgtctttt cacatcgatt ttagcataat caaccacaca 240

taacggcgca agggtatgac agaggattgt tttaaaaacg aagggtaaaa tcacaaagtt 300

gaaaaataaa gggtaaaatc acaactacaa ggcctggaag gggtataatc acaattgcat 360

gtctagaaaa aggaaaaagc aaaacaagta gaagtgagta gggtcaacaa gattacaagt 420

gtgacgaagg acatttttat gttatccaaa tttatccatt gattgattac ttgtttttag 480

agctatattc attcatttac gtataaaaac tctcttgcat tttcttttca cttaaaatta 540

tctaaaacaa gatcatttta gtaacaacat gcattataaa aaacggaaga aatctattga 600

aaaattatat catgagaata taagttcatt taaaactata ttatcaatat ctctaagaat 660

attcgggact agttattaca ttgaatcgaa ggaagagaca tgaatcctta tcccagaaca 720

aaagaataaa aaaaggaaaa catttttat tataaaaata ggtgtttgga atataaggac 780

atgtaaatat gtttttctcg ctactaataa ataaggaatt gttcatctct atgtctacat 840

gtaggaaaac attttacaag gttaaaagat gtttaatttt tttattttgt aaagtaaaac 900

atgcctttct atagaaaaaa gaaaacttca tgtcacaaat caagtggtgt acatgatcaa 960

attcctgcaa ttctcatttg acatatgtgt caacatctag agaacattat accctccgat 1020

caccaagaca cattcaaata ttctggtaaa agaggctatc attgagccaa ttatatgggg 1080

acaaacaaca cctaggatac cattgctaga ggacctccct ctccctaaca taggagcccc 1140

tgacaggttc 1150

<210> 4216
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130457_G1, chr3:227490008..227491024, Cluster 26

<400> 4216
ggatcttcca agagtgccat ttcagcggca tacctcccaa tttgaacatt accaaagaga 60

cggcaggcac tcagcaagct cctccaaaca gctgccgctg gtttgattgg catcttttca 120

atgaactcct gagcagaatg taatttccct gaacgaccga ggagattgac cactgaagca 180

taatgctcag tgcccgggtc aataccatat tttgatttca tagagttaaa atggtgtaag 240

ccttcatcca caaggcctgc atgagcacat gctgatagca caccaacaaa agtcacatag 300

tttggttcta ctttggcctc tctcatcagc tggaaagcac aaagggcttc ttcagcatga 360

ccatgttgtg catacatagt aatcatggag ttccaacaaa taacatcctt cccacatgtt 420

gactcaaaca gcatccatcc ttctttaatg aagccacatt ttgcatacat gtctacaaga 480

gcatttgaaa catgaggatt aatgtcacaa cctgctttga tgatctgggc atgaaactgc 540

tgcccatgaa acatgcttgc caagttgctc gccacagtta ctagtgctac aaacgtgaac 600

tcattgggtg tcatcccaga gacacgaacc tggttgaaga gttttactgc ctcttcccct 660

tgctcattct gtgtgtggcc aaatatcata gcattccaga tggccatgtc cctgttttgc 720

atcataaaaa acacagcctt ggcatcatcc acaagggaag attttgaata tgcatcgatt 780

agagcacttc ccacatagag gtcgactgaa gttcctgatt tgatgatgag accatgaatc 840

tgcttactcc attcaataga tgatagaagt gatgacatcc caaggagtga aacaaaggtt 900

agtaggtttg gccttatgga gtaatatttc attttacgga atatatgaac tgcttctgta 960

agatcacctt gccttgcata gccttcgatc atcgcattgt aagagactac gtcatca 1017

<210> 4217
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130897_G1, chr3:229992101..229993139, Cluster 26

<400> 4217
aatacaaaaa caacgcttga agtttttctt aatcagttcg atttgagctt ggcaggccga 60

tatgaggatg aggcaaaagc agatatggat gcctacttaa ataaggcaac tacaaaaact 120

gcatcgctaa tagaaaaaca ggcagcaggg acctatacca aagcagtctt cagtaggttt 180

caggaggaat ttacagagtc tctagggttt atcattcaga aaaccgaaga cggctgcata 240

agtaaataca gcatcacaaa atatgaagat ccatcagaca cattctgcgt gacttataat 300

gcttccaata agatggcaaa ctgtagttgc aagtactttg aattctccgg tattctgtgc 360

cgccatattc ttggagtata cataatagtt gatccacgaa cacttccaac tgaatatttt 420

atgaaacgtt ggacaaggaa ggcaagagat gatgatgctt tgttagaaga taataacaac 480

aatactcatg atgaggatgc ttctcagtcc accacaagcc gctacaatac cctatgtgct 540

gatgccatca gatgtgctga gaaaggagct ggatcggagg cagtatataa ggcagcaaaa 600

gatatcttac agaaggcata tgaagagatt attgcttatg aaagaaatac tggccaggga 660

tctcaaaggg atgttataaa catcaacgag gatgtcacga ttgatgatgc aatgaatgat 720

aaatctatgc cagattctgg acgaaaggta cacctaatat cgaactgtaa attcttcagg 780

agaaccatat tcttgtcagc attattctgt gctatgagtg caaggacagt agatgatact 840

tatgagataa gttgtatgtt tttaacctgt tgagacgagc agagtgtgtc tcattaaaac 900

ttcatacatt ttcctatttt tactcctggt gctaactaaa tggaataata tagtatctat 960

tatgatcaac atagtcttat ataatttctt tgatcaaaag ctacacagaa agaatgaggc 1020

atttttgttt ccctttcag 1039

<210> 4218
<211> 1168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130967_G1, chr3:230520318..230521485, Cluster 26

<400> 4218
tctaatttga aaggtgatta taactctctg tcatggaaaa gtgtggatgc atcatgtcat 60

attagctaca atgaggcaag agctcaatgg aaggggaagg cctagcgaca actagtagca 120

agtccacatc tacgtaaaaa tatatatgtt aaagaagttc ataaggctag ctagaggatt 180

acttaaacta aattgtttga gaaattaaac aaattattga atctctctac ccgctaacat 240

agaagaagac aaaaaaaaaa ccatagattg gccttaaaat tgacataaat tgtttttaat 300

tatttgtatg gattacataa attttatttg cgtaattatg taataggatg tgttatattg 360

taataagtaa tgtgtttcat atcaactaaa aagcctataa aattaaaaat ggatgtcaca 420

tcgatgtaac agcagtctaa tgctaataaa tattgtacaa tagaatgttc cgataaataa 480

agtataataa caatgatcga cattacctga tataactgat ataatgcgcg tagtattaga 540

agaacctgga tgctcgactg ctccccaaca ggaggaacca acagttcctg tccttgtccg 600

ttccagccca gccacctgcc agcgcccact gccacgtggg acccagactg cgacgagtgg 660

gcccttcacc atgtgaccgg ggtcgcacgg acggatgggt ccctcttccc accacccgca 720

catacagctg ggcctacacg gtgcgcgggg cccgcagtgg gggtcgggtc agattggacc 780

ggtactggcg tgggcctggc cgggccacca tgcatgtgat gcgaggcgga ctggcatgcc 840

cagcccaacc atgttttcag tgagtaagag gtgtggatct aagtgcattt tgtttggtga 900

atttagtgag gtagatgtga tttagtaggg tggatcttgc aaaatataaa caggtggatt 960

atatagtgat gattacgatg atgaataaga ttattaaacc atcccaactt tttaaaagcc 1020

aagcttagtt tggtaattat ctaaatataa gtgcgtccat ggatcacagc ccccttttta 1080

ctgtccaaaa tctagattat gtgttcgttt ctagtttaca actcactctc tgctttgctt 1140

tagtgcttct catcagggcc gggcgaat 1168

<210> 4219
<211> 1027

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132256_G1, chr4:4482201..4483227, Cluster 26

<400> 4219
ataaaactga ggaagagaga actaccagtc catgacccat gaataaggga accttctgtt 60

tcataaagat tagaagctcc aaacttctga agctgttctt tccccccgaa agcaaggtag 120

gaaggagatc accttgcaca cacttgcatg ccttgccttt gacttaattt gtggctgggc 180

tctttcatgt tattttggaa agctaaagca actaattaac ttccatgatc atcagcttgt 240

gtggtattat gtctccgata tgatcctgtg caggttaagc agttacaact agtagtaaga 300

gtattttgtg ttgtttagac tctgatcact cagtgggcaa gtaagcctta agttaatttg 360

tttcagtagc atagtcaatg tacataaaat aactccacat attgtgatta tttactagaa 420

aacacttcca gtttaatttg gaatgcgatt tacttggtcg tttgggattt actgggaatt 480

aactaatgct ttatttaaat agttgtgtcc acgcaggtac catacccacg attattacca 540

ctggcttcgt acatcaggat ggatgaacaa gaaggtcttg ctgcttcaag aagtttgatt 600

gtccatccac gcccctaaac catgcatcta tatggaagcc tttttctttt ctgtgtgggt 660

acatagcttt agaaaggaaa agctgcagtc tcactctcgc tatttattct tccaacgctc 720

gattcttcct gtctctactc ttcctcccct ttcttctcct ccatgtctcg agggctcaga 780

agattatata ttaaccatct atatggatgc agaatatata cgaaacaaca gtactcttct 840

ctttattact cactccatcc gaatttataa tttgtttgac tttttttca acatcgctga 900

aaactattga tgaccaaagt ttgagaaggt ttgtgggatc ttaattactc aaaaggttat 960

ttttatggtt caaggtcgcc aagatatttg acaaaacttt atcaatcttt tagcacaacc 1020

tccacat 1027

<210> 4220
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132435_G1, chr4:4875769..4877145, Cluster 26

<400> 4220
gcaaagtaat ataggaaacc acgacatgtg tgatcagttt tattagtatt aatttacttg 60

taactatttt atggttggtc acaaggaaga acacacaagc aagaatgagg aaagagagag 120

ataaggtaaa gatgaaggta tattgtgcat gtagtgaggc cagtaccgag ggaactggag 180

atattatatt gttctgcaga ttagttgaca tgatcaccgt gcaaccgtcc gatatagtca 240

attaggatgg tgcagtgcaa tccacaaaca tcgccgggaa agtggtgaag cagttgtgtc 300

aaacggtccc aagaacctga tcgggcgcct acaccgagta gaatcgatga gcagtgcaat 360

agtggaagaa gtgtctatgt ctggtgtatc tcgtggagtg gagggaggcc agcacatttt 420

atcagatgga cgggacgctc cactagtcag ctgaaacatt gaattctgca gttacctagt 480

aaacatctga gtaaatcagt cgttgttgtt ggttaaagac atcattgttc atccgttacc 540

gccaaatgaa aatggtaaaa ctttatgacg ccaagcatag acacgtcaat caagtatcag 600

attgccacgc ctcgatgcgg cgcacatgcg tgtgggtgtg gcttcacctt ccacacattc 660

aacttctaaa taagtagcca ctggaatatg ctatttaagt tgattaccat ttttttcat 720

ttagtaatat ggggattaat gcccccaaca acatttagta ttccacacgg gccttggagt 780

taatcagaca aaaaaaaact catattacaa ttagagccaa gcaagctata tgtagagaat 840

cagtaaatat gtgaattaaa acaaaaacaa tatcacacat aagcaatgcc atcgaaattt 900

cttctctata ccgtcgcatg tttaattatg cttttactga gtgaaagtga aagttttttc 960

tctattcgaa atttcttctc tataccgtcg catgtttaat tatgtcacca atcgtttaac 1020

tcatgtactt gaggatgttg ccattcattt tcttttggca ctggtagttc tgtcgactag 1080

gattactaac agataggtag gtcgacaaca tcaatgtact cgatactctg gtttgtacca 1140

tgcaaatgtc ccaaaaaaag ggcatcggtg cctcacaata aaaaaacccc agtagcattg 1200

ctagcactat cagaggccac tccttgattt gtgcaatatt tgtctgaacc gcacgttgtg 1260

tatccattat caacttcatt cgagagagcc atggtcgtag gattaggaag catcgggaga 1320

aatatcgctg cttctgcata tagtttatag cggcagggtg gctgacttca tctgctg 1377

<210> 4221
<211> 1076
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132475_G1, chr4:4995914..4996989, Cluster 26

<400> 4221
gagtacctgt cagatacata tgcagtggta gatcacagat gagcggcagc gacaaaccac 60

aggacgttac atagatgttt ggccagctaa agggcatgca aagttctgaa cacacaaagt 120

ggatgtggat ccttgtaaga aaatgagccc agatacaggt tgccagcaaa tcagccctac 180

tcatcagaga tcactgttgg cccatgaatt tattcagtaa tagcagcgta ccagcagggg 240

gttccgagtc agtagcatat tcagcattca ggaggaggca atgaaaacta cacattgaac 300

taggcctaag tgggtctttc tgatccatta cttctgagag tgtctaccag ccgtttcacc 360

caattactac acattacagt ctgtgttttg catacccggt tgttgattta ctgtccataa 420

gcattgtttt actgttacta gtattgttga tttactgtcc attaggatgg cagaacaaag 480

cccctagctc agcaggtttt actgctacca taccactctc cacttcaagt taactgtggt 540

ccactccact ctcctcgctt ctgttactcg gcgtgtcata ttttctatcc acagctgatc 600

caggtccatc tttgtcgatg aggaacagca aattgaatga gcagcgccat tcaaatcata 660

cttgtactat actggcacat cattccatga tgtcctgcct aggactgatg attcgctgaa 720

acaattgata ttatttttca gtgtactgtg tatctcgtac gtacgtatac gtacgggtaa 780

aagctctgcg ggtactgacg ctctggatcg gatatactca tatttactca ctttgatctt 840

cgttctgaaa tcataattta ctcgagctgt tatttggtgg tagagtacat cattaatatg 900

gatgaaatac actccaaact atggagcata gatgattctg attctaaatg tactggatgt 960

ccttttttt tctctcttcc cgtgcttata ttcatcaaag tttgctgtat ttttcacact 1020

atgagctgct tgggatggga caggcctcta agaataaaat aataatagta agatta 1076

<210> 4222
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132477_G1, chr4:4998073..4999088, Cluster 26

<400> 4222
atggacactt ccaatgtaca aaagcacata ggttaatgca tcaatggtac aagataagcc 60

tgagattaac atagctatca ttgcactaat cagtggtcct gccaaacatg gaagaggtgg 120

tggtggtcct gtcccgtacc ccaacagctc catatgtacc tgctacaggg cataacataa 180

ttgctgggtg gtgtatcaga tttgtttcag tgtagtgtag tggagtcaat cagctgatgg 240

agtatctgat ctgatctgct gtggacgcct ggacctaacc ctccaccggt ttcagtggtg 300

gcggcattga ttattagtgt acatgtagaa acatttgtca tccacatgta ttataagact 360

ggcccatttt tattgttttc aaggcttcag ctgtccatca cttagtgatg ttcttttcta 420

cacattgaat tatacggaaa aacaatttat ttgtttacca ccttttttcc tttattgatt 480

taacttattg agattaagtt agagtaaatt aaaaaaaaat aagtgcatat cgatcttgcc 540

agaatacttc atggttttta ctagaagtta ctttgaactc tatgatttag tttgaaatta 600

ggcacctaat tcaccatcca tcctccaatc tctggcgctc aaggggcctt gcactagtga 660

taatctttac atagtccgct tattaggttt tattctctct ctctggccga tcattggttt 720

gtgttgtttt gtgtttttcg aatctaagaa tagtttgcat cgcctattac caatgtctac 780

tttgacatca accttgactc atcagcctca tcttcgtctt tggttttgtg gtttggcatg 840

gcctgtgaca ttttagtgaa tgtctccatg caccacttct acacatcttc agatgcatga 900

ctcaaacaat tagtttgtca tccagtccac tttctggagc atctcaacca caactcccac 960

catacataac cctaagcacc accctaacgt gtttagtgcc cctcataagt attaac 1016

<210> 4223
<211> 1065

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134853_G1, chr4:16127175..16128239, Cluster 26

<400> 4223
caaattttct caatatcccg agcagtcgag gcctatactt gtaggacaag acaaacttgt 60

ttcggaaata aatttataga gatgaaacag cctagaagaa gcaggtgtcg aaaaattcgt 120

ctagacgagg aacttaactt gacaatctag cttagcttcc tatgcttctt ctacctgtgc 180

tatttagcta tcaatttgta cattttttaa tctaattaag attacaagtt gatgtctgtg 240

tttccctttt tgcaaaaacc agtacagtct aatattgaag aattgtgata tactagtact 300

aatcttttgg caggaccagg ctatgctaac ggagggtggg tggatcgccg ttgaccgttc 360

aatccgagaa gcagtgggtc ataacctaat ccagtgctct tccacgtgta aagagcgggc 420

agagcatgca cgcccgcacc aaatccaatg tgcgaaacta catgtaatgg tatattttta 480

gatgatagga ttaagcgagc cgctgagcta gatcgctcga ttgctgtgac accgatgagc 540

caacgaactg caatggtgac atcgtttgat tgcgacggtt cgtatgggga aaaaaaatgg 600

gaccatcagg gcgttcagct tcctgctgac aattgtattt gtgagtttgg agctgcagtt 660

taaaggaacg caacacaatc ctttcgagtg gatcgacgac ccaggactga gggaagtatg 720

ggagcgattg cattagagca agattgatga tataacttat agtggatttt atgacgttgt 780

tatgttatat atacctatct aaaagtctaa ttatataata gtatatacaa tctcatttga 840

tatgtgatgt cttaagcggt ttctaggtgt ttattgaaaa aatacagtct atcactacaa 900

aggactctct atacacatat tgtatcttaa ttgcatttat gatctgaggg gtcggggttg 960

tatcattaag tcttgtagtc gtctcttgca cttgaaaacc cgatcccatg gactaagggt 1020

tatacatgcc ctaatccctc ttatgatgta ggttgtatat ttaat 1065

<210> 4224
<211> 1267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_135533_G1, chr4:19116477..19117743, Cluster 26

<400> 4224
gcctctcact gaggatgtcc gagtcttact tagatgcaag ttgattatct ccttctcagt 60

catccgaaat aaaaagtggt agcatgttgt tttgatccat ttggagcaag atgatacaac 120

cattggtaag aatgtcaata ctggaaagcc ttaaagtttt tggggtgaag gcttgtgttt 180

gagagagaag aagatggcca aaacaatctt atagtcgtag ctagatcaat gaggtcttta 240

aaaaagaaaa atgaagtggc agaaacattg tagaggttgg ttaggcctaa aaatggtgtc 300

ggccaggcga ctttggtcta agtagtgtta tagagctaac taggccaggc ataggggtta 360

gtggggccaa gttggctact aggctgacta caggagttgg ctagactgac tttaccacct 420

ttagtaggct caattcgtcc tagtcatata catatgtgcc aaagatatcg aagattagaa 480

tgtgtaaata taatgttgat aagaaatagg ggaaggttgt gaagcaccaa tgcacctttg 540

atagactcat aaaagaaata taggtagtaa aaggtcaatt ctacaaattc atcattaaaa 600

aagagatagt ctactcctct caagcaagat gaccaatcca agcatattgt ggtgtctcta 660

tcatagcaaa aaagttattc catgtgtgtc tcattgggtc ctctaatttc acctattaca 720

taagcaattt gagaggggggc tatggagttt ggtttcttta ccctccattg tcattagtat 780

atcataaaag aagtgcaagt catggttagg tgactacatc aagaactttg actcctcaag 840

aataggtaaa tgcacctatg caaatctatg tacctaagaa gcaagaggtg atttctgttg 900

ctactacacc aaaatctaat gatctgccat ttattacaat tggcttcaca aaggtcccaa 960

tcataaacaa taaagggtca gttacagttg aggatacgac tcctgtaatg tgccaagatg 1020

gatttgtaag tgttgttgga gatgttggaa aagcgaagtg tgctaagaaa gatactaaat 1080

acaagcaact catgtggtgt cctctagggt tgtccaagag acatcgacga aaattgtagc 1140

atgcttaaca caataaacag aagagggaaa gttggagaag atgaggggag aaatctttaa 1200

tgcagtccaa ccaattttcc taaaaaataa gcaatagagg aaaaaagttg aaggttccct 1260

tgcaaaa 1267

<210> 4225
<211> 1142
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13679_G1, chr1:75391509..75392650, Cluster 26

<400> 4225
tattttgagt aggttctgca acaagtataa tttgactgtt gactaggaat gtaattttga 60

gatcaggttg caaaacagta gcctcaaaag tcaaaacacg tcagatacac ttctgcaaac 120

cacgaaagct taagtagaga tgtgagatca cacgcaaaaa aaaaaaaaac aaaaaaaaac 180

tcacacatgg attcggaccg gacctaggag actatcagac tactgtgcgt taaacgggca 240

ttagtcatgc agcgttgatt ttattgccca tatctagtag cagtcttcgc agtaaaaaaa 300

cagtttacga ctagtggttg aaaagtgaga gagaaataac tgtctgttgc tagacagctg 360

cttcggctgg gtaaacaggc agccgaacaa tcttggccat tcctttatgg ctccgtgatg 420

tcaaagttgt tatccatttg gaggtaactt gttctttcat tgctttcttt gaatctcgtt 480

actgccaaaa ttctgatgat acgatgaatg aaaattctaa caatccattg ttaattgtgt 540

agacattcaa tttgggatat ataaatacat gtagagagag acttgagtgc aagtaacgct 600

ggtttagacc tattttgtct ttggattgtg tttgccatta gattttgtat acgactactc 660

cattatctct agccacacgc ctatttttat gtactgataa catcatgaac tagctagaga 720

tataattggg taagatcata tatattttac gcaattctat accatcgacg actattatat 780

aagcatcgtc cgactatctc tattaaccta acctgattta aaattgcaag ctgcatatca 840

tgtttgtagt tttcttgatg cttatcactt cgtgctagtg ttacttgaca attgcaataa 900

gtggcgaagt tagagcagaa ttgagagggc acacttgcct tgtagataca tgatttttta 960

tgtggtacat aaagggtgaa attttaatta aaaatatata gatttgcatt tttgggtgca 1020

acatggcgtc acccctgatt gcaatagata caaagttgta gtgggaacta cttaccgacc 1080

tttgtacaac tgacttcaac tatatactag caaaatatgt gtgcattaca atataccata 1140

tt 1142

<210> 4226
<211> 1334
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137708_G1, chr4:31249686..31251019, Cluster 26

<400> 4226
cgtgcctttt caagtggttg aaaaggattt tttggactgc acaacaccaa tcctgtaggt 60

accactgtag atacagagaa ttaaatttaa atattattgc tgaagataaa taagatatag 120

agaacataac tttttagaga atactgtaaa aaatataaaa tatttttta gagatcgaac 180

tttaaaggat gttgtagaca tccttagcgg catctgccga cacgagacga ggcagcaaag 240

catgctcgct gcaaggacga ttactactgc aaagttctcc atgctttcct ctgtacaaga 300

cggggtccag accacccca accacggatt gtcgcttttg gtggatcaat gaatgccctc 360

aaaaagttga tcatggactg gcgcgcggcg gcggtgagtg agtttactgc acggcctgcc 420

agtcaccaac gatggaagat tgcctaccta gagttatacg atgatctagt agagactggc 480

atacatgcat ggagatagag acacgccaga atgtgtgtac gccgcccgcg gcccgccccc 540

tttcttccat gtgcacggga gtatgtagtt gtaggcgcat accgaacttg ccgatcgaac 600

ataattcttc tgatccgaca attaagacta tgtttgggat agctttagct ctaaaaactt 660

tgatgggtta gtaaaacatt ttagaaaaca tttagataag ttatttcagt tattatttat 720

atttaaaata tgattaaatc tatttagatt gataatataa actacaactt aagattcaaa 780

aatatgatta aaactattta aattgataat ctaaactata tcttcacact gaatttgaag 840

ccatctcaaa catccctcac taaaggtcat gctttgccga attttggcat gatggcgtcc 900

atgctgctct ccagtccaca ctggggctgg agatgggaat gtaaagatac aaacgttgca 960

attaatcata cccgtattat tgagccttga catgaaagat tccatctagt attgcactat 1020

cgtactagca catacataca tacacgtacg caccaaaaca ctccggccgt cggtgtgcag 1080

tgtgaaccga actaccaagc ccgtacatac acactaacac tagcttctct ggcctctccc 1140

tctcactctc tcgaggacac aacagtagac gacatgattc tctttctctc tctccacata 1200

tcatccatga ttgctagctg cttcaagcaa caagcaagct aaggtttact accaagcacc 1260

aacgcaacaa gcaggcgaca tgatcccaat tatacatagc caagtgggct gtactatatg 1320

ggaccgatcc ctca 1334

<210> 4227
<211> 1151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137709_G1, chr4:31251094..31252244, Cluster 26

<400> 4227
ttttagtata gtaaggtaaa gagtcagatc tacgatgcga tggatttttc ctatcataac 60

aaactcgagt cattctatgt tcacgttgat ttgaacaata ttcaccaaaa cgattctcgc 120

ttataaggtg aaccaaagca tgcacttcgt tttttcttgg cacctgttca gctggttcgt 180

ttgttgtcta atttctattt aacgaggatt gaagggtgtt tttctttgtc agatcaagaa 240

tagccgaatc gttttgtaaa attaaatttg attatttta gaagaaaaac gtcttcaata 300

gaccaaaatg actgttcaga tttagtagct ttccacctct cttcattcaa tctctatttt 360

tgaatagctt gctttactca tcattcagtt tgttagttta caataatctg ctggaatagt 420

ctacttttt taaaaaaaaa ttattttaga taaatgctga atcttttgaa gttgtcctca 480

cggtatttat ggacgtgcac atgaggaggg tagtagacgg aaattttgtc ttcctatatc 540

caccgttcgt cttaatagcg tgttgattta cagtaatgaa ttgtttttt tataataaac 600

aatcggcaaa attcatattg ctctcaagtt cgtgtcaaca gatcaatgga tagcctttgc 660

agcgcctagt gtttttgtgt tgatcgtcca cttttaacgg cgcctccgtt tcaacgtctc 720

aactctcaat cgttgccatt tgccactgga cccgggctga gagggtacgt cagaggcccg 780

tcgttgcggg gttgcttcct cttactgggc ctggcctaac aggcgcaagc cgttacacgc 840

ggcctgctaa agtccgctgg ccggcgggac acggacacga gcacgaaacg ctgggccacg 900

gttatccgtt tccttttcag cgtgaggctg ggaccgtgac agtcggctgc agcccgttcc 960

ctccgtgtga ggtcggccca tatactgcat ataacttcag cctatttttt ctttaaaaaa 1020

agctgtgctg cagcatataa cgtcagatgt ttgtgccgca ctacaattta gtttaatggt 1080

taacaatgta actctcaatt tccttcaatc tacgaggcac attggcaatg ttatcaggtt 1140

catccgtcgc c 1151

<210> 4228
<211> 1038
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_138653_G1, chr4:37009178..37010215, Cluster 26

<400> 4228
aaaaaattgt tgacaaaggg tagttatcaa aacttgcaaa attgtaatgg aactcatcca 60

aatagcccat aaatcaaagg gtgcaaccct ccaactttgc taaccttacc ttgctcctct 120

ccctcccatt tctatccccc tcaccccagc ctgcatcgac catgccgcta acctcccatc 180

actagcctcc cctaatccca atcgaatgag gaattgttga cctcattatc ctcgttgcgc 240

accctcaact ctatccccat tatcccctaa tcccaattaa aggaataaag ctaggtccct 300

caaccttatt gtttgatcta tcgaaccaaa tgttacccca ctaccttgcc catcgtccct 360

ccaaccacta ccatcatcgg tctagcggct ctctgatgcc tcctcttcca aacatgtggc 420

cacaaatccc tctccttgac atgaaaactt caaaccctaa cccaaaacaa gagtctgtca 480

tacgtcctta aaggttgagg agatcgctta agaataggta accatcagat ttggcttctt 540

aatttctcct tcattccaat tctatcttac ttatttgccg gaggacctta aataaggcgg 600

agaacatcgg agaagaagag gtaactatta gatctcgctt cttacttcct ccttccttcc 660

aactctattg tacttatttc ttttttggtt ttggttgagt gagacatcaa atttatttcc 720

atttttgggg ctctcgattt aagctaggtc tatttgattc tagaaagagg tatgggtttg 780

atccatctta ttttttgggg ggtgggatgt ggggttagcg gggatagaat ggttctatct 840

tttgtgtttg gtgaggggat aataatgtcc atgttccacc tctagtctcc cctaatccca 900

atcaaacgag gaattgttga ccccattgtc cttgttgcgc accctcaact ctatccccat 960

tatcccctaa tcccaattaa aggaagaaag ctaggtccct caaccttatt gttcgatcta 1020

tcgaaccaaa tgttacct 1038

<210> 4229
<211> 1054
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_138700_G1, chr4:37326912..37327965, Cluster 26

<400> 4229
gccacggaca gctcatcgaa cctcaacaat atattatata ttttttttct gcattgcttc 60

ctactactta ctgtatctgc cagcgtaata tatcaatcta gcctttcatt ttcttccaag 120

gcaagtaagc acaaggaaat tgatttacta agctaaagaa aaagatttat tgggggcgc 180

ggatttggat ggaatgtgtt tataatggct aacggattgc gaacaatcaa gctatagcca 240

cacacacaga cacagaggag tcaatgtcca acagtagacg aaagcagaac aacgtgtaag 300

ataaccggat tagctgattg agatagggct aatggcaagc tttgctccaa ccctttctca 360

ggcatgttcg ctgtggcttg ctacgatttt aatctggctg cgactatgac ttttacaata 420

ttttgtcttt atagattgta gctgcagcca gactattatg catctatcta tgagtttaac 480

cagcaattga ggaggaattt tagaagaaaa aaaaatgaaa gaaaaaatgc atgcgtgcag 540

gagggatcat gggcactcca ccaccctgta tgcaaccaaa tgtttacttg tgggaagaca 600

ggcaaacaag caagcaggca aaacctaaaa agtaggctaa ggcatgatgt actttgagga 660

tgtgatggtg ggcaagtgga tagcttgttc actttctcct gcggtttgga gagaaaaaaa 720

aaaggtgggg gaaagtgatt agcaccagct tagtcgcgag tttaggtgga aatgcatgct 780

ccatggctaa ctgaggggac cccctccatc aggaaggaaa ctaacaagtg gcggcaacca 840

cgcacagaca gcttggtgtc gtagatgcta accctataca atacaagaca acaaaagcag 900

aagaagccca tcagctgttt tgttggtttc ccccagcttc atggcgttcg ttcgcttgca 960

cgcgtggacc ggataaggga cgacgtctta acttgtcttt tggtactttc tgtcgatctg 1020

atccaaaaaa gggatttcat tcaggcttca aatg 1054

<210> 4230
<211> 1393
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_143784_G1, chr4:68792934..68794326, Cluster 26

<400> 4230
ttactcacct ggcggtgtgg catgcatgca acttggccgc cttggaattc gttcttgaaa 60

aacaatgttt tgtttcctgt tgagcatgga ttgttttcaa ttggatgtac gtacgtgtca 120

ctaattggtt cctttctgtc tggccttttg gtggttatgt taaggccggg cgatagtttg 180

cttactgacg atgctacttt tgtttaggat agcatatagc acccttgttg aatatatata 240

cacactacct taccttctgc agaagcaact actaccacca ctgaggagac gctgttgtta 300

gctagcatcg tgtgatgatc ttcatctacc ctcacttgct tgctagcttc tggtttaact 360

attagagcaa atgcgtatat atacaatgat atacaggatg gtattgcata cacatcatcc 420

aacgaaggaa gctgcactgc aagcatatat gcagcaaaca agtcaaaagc gtactcgccg 480

gggtgtaatt tcgcggacct gcttcgcctg accaaggaag agatactgac aagacggtat 540

gtgtgtgtgt gtgtgcacaa caatcgtacg ttgcttccaa tcaatagggc agccagtgct 600

ggtagctcag atgttgtttg agtatcctgt gtatccatac ggtacgtgta ctgtccttgg 660

gcatacggaa gggggaaatg aaggatctga tgaagaccag aaaatgtgac tggttaaaca 720

ttctgcagta gctagctagc tagaggatat gcatggtacg tagcaagtta taattaacta 780

ggtttcaaac aaaaaaaact gtttccgttt aatcctttta gtatcacact gagcaatttg 840

agatatcgtg tgcccaaata atcatgtaaa tcaagtacca gtttttgggg aaaaaatgta 900

ctaatcagtt tgttgccagc gtgtgtacgt gtttcctttt atatattttc tatatatata 960

ggactaacag atccgatgca tcgttctaag tgcacgcatg caccttgatc atgctgttct 1020

ctctttgcat gcatgcaata ttgcgagagt gtttcggctt gttattctca tcaaactgaa 1080

ttgaatgggc aattgggcat cgctgtcaca atctatatat acattgctag tggattatca 1140

cacaatatat taattaataa taatcgctct aaaaccaacc accccaatta agatgcgagg 1200

tccctttttt ttttctcgca aacagaaagt gcacgcagga accggaaagg tcgtcaatga 1260

tccagtgatc gatatgaaac acagacaaag atgcatatgc tcccaaaaca cagcctactt 1320

gatcctcatc gccaactgtt ttttaccgca tttattaaat ggtttggaac gccgagatta 1380

aatttcatag gat 1393

<210> 4231
<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1450_G1, chr1:7557487..7558555, Cluster 26

<400> 4231
tttaggtctt atttggtagg actcttccat caccggcttc aactgtgcgt ctagctcata 60

tgaaaaaata gcttcttcca tagtttcaag aggagcccct atagaagcac ttcatttggt 120

tgtaaatgca gtttcaccta tttttacgag agataatgac gatatagaga gagagagagc 180

cgaagaagct ttttttgggc tcccggcttt actcggtttt taggacaact tattcctatt 240

tttatggaga agctagagag tacctcaacg tttggtagat tgtgtgaaga agctgtcgaa 300

agtatcaaag gtggacttac tagggagcac acttctgtat gggtgagcat gtgcttattc 360

tctcttcctc cagcaccttc tcctcatata tttttctttt ttatttctcc ctttcgccct 420

tttatttatt ccttattcag ttattctttt accttccgtt tctgtttcga tttgcatatg 480

aatattaaag tgtacaatct ataatcaata atttaaacac taacatttta ttataagaat 540

taaactaggt acggttacat tttaaccata tataatatta caaataatca tacacaaatg 600

ggtaatcagt aaaaactaat ttacgcagaa aataatttat ttctcctaaa acttttactg 660

ctgtaacttt tgaataatat tcgaaattta agcatattct aatcacatag gtttttcagg 720

ataccctaat cgttattact acctttgctg atttggcaac cgtcaattta accgacttga 780

atctttattt tttgtctgtc acaaagtcca ctgtactcgg ttggccctgc ccaaaggagc 840

aagtcgtgac tgactcttac cctaagcaca ccatgccagt ccagccaaca gccgtaagca 900

ccggcatgcc cttacaactt agctcttcct agcgcccctc accctcaagc ctcatcctaa 960

accaactcac caccttgtat ataactcctt tactgtggag tctctgtccc aaaccctaaa 1020

tcatttattc tcccttccct ggccatcggt tatgtgccct cgactcatg 1069

<210> 4232
<211> 1211
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14898_G1, chr1:82157015..82158225, Cluster 26

<400> 4232
tttggatccg gcacgtccag gtccagaagg ccgatggaat ctccaagcaa aatatgaaat 60

acagccgtgt tcgtgtatat ttgttcaccg tcatcaatat tgtgctggca ccaaagtgtt 120

cgtatgtcgc tacggtttct atttatactt aactatagaa tataaaatag actagagtgt 180

tttgttagat aggtgagatt aaatataagt ttaaacctaa caaccgggca cataaacctt 240

acaccaacac taaccccaga ggccataaaa tccgtctcaa accagaaccc aactcaacaa 300

agcctgcatc gaaacagaaa aaatcctttt acaactactc caacgagatg ttcacagact 360

tccactaaca gcacgacgaa tctgaccacg cagcggcatt cttgtcaata ccataccact 420

gcaggcttga tctcttccag ccacaccaag atgaagcttt tgaaagcctc caagctctag 480

ttgggcagca ataagatagt tctttgttga cggcttaatc tcatccaccg tactcttcta 540

tcactcgttc tattctgttg tgaacggaat tgctcagttc tgtggtaacc cagcaatccc 600

gtgtagaagc atctccatgc ttttccagcc tactttctga aaacaaagcc catttccgag 660

tttccaaata ctccaaaaaa acctgcagca ataatagtat ttaacaacca tgcttttatc 720

gctaagcaaa aacttcccta tttctactag attattacct acgttaactt gaacaatctc 780

tcagaccata atccaacaca gtatagcaac tacacagatt caaaaataga tgttgactag 840

atttacaaat agtacagaac aaacatctac tactaccatc aaccttcttt cttcttttag 900

tcaaattgtc tctagttaag ttaatactta agtaccaatg aggagcaaga gaaaggaatg 960

tactctagag gtattttgat tttccattaa gaagaaacat ggacgggttg aatgctctga 1020

aattgatgat tttataaagc cactgagacg agtacatgcc atgaagtaaa ttgccacatt 1080

agtgcatctt cttccctccg acgattgaac agtcaatgat accaaaccaa gaatttaaca 1140

tctctctaat taaactcttc tcctaaaagt gcactttacg gttttgccat cccacagcta 1200

tgctactata g 1211

<210> 4233
<211> 1401
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158487_G1, chr4:165694343..165695743, Cluster 26

<400> 4233

gtgtttggga cagtttagct tcacataaac caactaaggt tcataaactt cactgtaaag 60

gagctttatt ttaaagttat agagtttctg acaatgtttg gcttacagac cagctttaga 120

ttttaaaaaa taagatttta ctaggaaaag tcccttatac ccattttcgc ataagtatta 180

attgtggcaa ccggatgatt ttatgaacca ccaaaagaag actttgtttc aggacatctg 240

aaactcattg acttctagtt gacaaagcaa cgaaatcgag agaatctgaa atcaaatggt 300

cacaatctaa ggttcaaatg gccaagcact aagctaatcc gtgattatta tttgattgct 360

gcaaacaaag aacaacacca tggagtataa tatttcttca gcaacaacag aaagctcttc 420

ttgcctcgat gagttctggt agaaaaaatg tgtatctccc taaagcctat ctaagcaatg 480

attgttcacc tgcagaaagg attgccactc ccgcatagat gtcaacgacg cactggctgg 540

catcgcccct gttcggtacg atgaagataa tgttatctct ccggcaggcg gcagccctac 600

aactacaata ccttgacaga gccggtgttg cagaacgcat ctggcaggcc gccgacacca 660

actaacaatt agcgcattat agttggttca acatagctat acaagacctt ataacctttt 720

gttttgatag atgcatagct taagctctaa gtgcttaact gtggctgaac caacccgtgt 780

ttcagcggag gtagtttcaa gtttctacac atatgatagc tttattgtag gtatttttt 840

tgtaaatttt tcatttcatt gttcctttat atgtgtttta aaattattga taagttggtg 900

ccagcaacat actaggaact acgagatatg acttttcttt tcgtacatcg atggtcctaa 960

tatgattttc atttaaagtt gttcgtagac cacaagaagg tttatactta ttttatagag 1020

aaaatttgat acaaactttt gggagctaaa tagtgctgcc gctgacatgt ggttctcaca 1080

agtgtgttgg attgacatga catgtaaaac agtgaaaata agtaaacact agtttagacc 1140

tggatgagaa atccgttata attctcagca gctaaaaaat gtattttagg actttcgaga 1200

cctagataac acctctagac aacttttggg atccgctggt gtttcacaaa atctcttaat 1260

ggtggtgcat ttgtgatttt ctgtctaaag tcgtccaaat gccagtaatt attccccttt 1320

tttaaagaaa agatgtcaag actagtattt actatatcaa agcactagtt ttaatggcct 1380

tcccgcgtca tatttttaca t 1401

<210> 4234
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159206_G1, chr4:170922654..170923695, Cluster 26

<400> 4234
gcggaggtgt tggtcatcat cactcatcag tcttgaaatt tggccggtgg gccgatttct 60

ttttcttttt attattaaaa ggcaaacaac aaatgttaat tattagttgg attatataat 120

ctaaatatct aaattatgat aatctatagg caggttacta ggtatttata taatatataa 180

gatgaattat ataatattgg aaggaaaaat gtatctaata catcttgtat acttcttcct 240

ttttgtacat atacttgggc aaagctagag gaatctgagc tagtgctacc accctgaaat 300

gacttgatat tcgaatagga gggagtacaa gtaaggtgtg ttttaaagta cacgatggag 360

ctcgtcctga acgcgcgtgt cacgccacga taaacttttg attaattgga ttaagtttca 420

aaacaagaat gaaatatcga gctaagcgct agattgcatc gatcgattgt gacaagacag 480

ccgtcgtcat ttcgtgactg gatatatata tttagttttc aaagtcactg ctagatgtgt 540

acaaatgtat gcttttctca ttataagaga agtgagttta tttactttag cattactcaa 600

gggggcttcg ctgaaatggc attattaaac ttggctcaaa cgctaaaacg tcatttcatc 660

gtttaataag ttgaaaaaag gatcgttttg ctttgatttt ccctaactgt tcatcttata 720

ccatagccca gcctccaaca cttgcttagt atgcattaat gcatatcatc tttgactggt 780

cttcaggagg tcaacctccc gaacaacata acatttgtcg cgagccgcct ccttgatgcg 840

atgtgcaact tgccgtcctt gtgctgagac gtgtcgtggc ccagctcccg tgccaagatc 900

acgctcgtcg tcttctcccg ccgtggccgc ctctacgagt acacagggag gagggcgagg 960

tggtggtttg tcgccgccgc ggagaagcac gagccgctac gacagacgcg gtaccatcca 1020

tgccgcgaag agggagcaag ag 1042

<210> 4235
<211> 1239
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160592_G1, chr4:178592059..178593297, Cluster 26

<400> 4235
cggagtaata aactagcgta ttctttctgt gagcgactag aagaagacca tagcaaaaat 60

cgtgttgtat tttacgcagt acgaacacta atgctacgcg gaaagcacgt cggtgagcag 120

tcggcgtagc cgaccggtgt aatcaaatac ttgatcttag ctggatcaca atcacaatca 180

ggaggatctt gacttggccc agcaatcaca atcacgaggg ccttgacctg ttaggatcgg 240

atacttttct ataactagaa gacacctcct atgttgccgt gggattttat agcgttgcag 300

attatggaag gaggaatatt tctttgtttt tagatggttt tagcctgaaa tactaatgga 360

aaacaattat ccatctctag taaaacctaa caaaacgccg accgatcgaa gatatatatg 420

gataaagaaa atacatgtac ctgatatatg ataaaaaaaa agagtaaggc atctgattaa 480

ttaattactc acgtccagcc tatacaaaca aattctctgc agtttctcag atatgtttcg 540

gtctccaaaa aaatataatt tagattttat tataaaacgc atacttcaaa tttgttaaaa 600

aaaatgcaca tatagaacac acacaatgaa atagatatac tttttaaaat ataattaata 660

aaaatatgat aatacttatg taatatcata aatatgtatt atgcgacctg tagacaccat 720

atttaactcc cgttggatta acaagtacac taagcccaga tgcgaaaaaa ttacctcatt 780

attaatttag actctgatga tagaaaggca aatattttct agtttcagaa caagcgaatc 840

ctcagaactt gatccaacta acaggtatta ctctgcacca tactatgtca atacattatt 900

tactaacagc ctctaccagc atggagagtc tagtcacatt ttatatttct atagaatacc 960

ctaggaaatc aataaatatg ttccctggag aatatgatat tcttgatatg cagatgacag 1020

gcaagtacgt agtaatccaa ggcccggtga aaacggggta gcggcatggc aggtgtaccc 1080

gcagttcttc aaatctgaaa aacagataaa aaagaagagg gtagaagaca ttatcaagat 1140

gtcaaagcag tattaccctg gttagagggt agaagacatt atcaagatgt caaatcaata 1200

agcatcacca aaagttcagt tatgaattgt gggctttac 1239

<210> 4236
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161223_G1, chr4:183122297..183123408, Cluster 26

<400> 4236
tttgggtgga tgcaaatggt ggagccattc atgaatcttt atacagaagc aacagatgga 60

tcctatattg aaaccaaaga aactgctttg gtatggcatc atcaggatgt tgacctaggc 120

tttgggtctt cacaggccaa ggagatgctg gatcacctag aaagtgtact agcaaatgaa 180

ccggtcgcaa ttaagagtgg acagttcatt gtcaaagtga aacctcaggt ttagtattta 240

ccacttccag ttcttccaag ggtccttgtt attttactaa tgatttgtca gatttttttt 300

gccttcaaca gaaaaacaaa catacatgtt tttatatgat actaccttct cctgattttt 360

cattctgaca tgcatttttg catagctatt aacttcttaa attgtcttcc ttggcggtag 420

ggtgttagca aaggtcttgt agctgagaag atactcacgt tgatgatgga gaaatggcgg 480

caagcagatt ttgtattatg catcggtgat gacaggtcag atgaggacat gtttgaaaat 540

attgatgata tcatgaaaag aaacattgtt gttctgaaga caccgctatt tgcatgtaca 600

gtggggcaaa aaccgagcaa agctaggttc tacctcgatg atgcatttgg agtagtcaat 660

atactaagct tgctagcaga tgcttcggaa cctgcccatg taatagagtt ggaggatgac 720

ttggctacat ctgtctcatc catatatatt agtgatgaac cgccacagct tggtaataga 780

agggatgaag gatcttaggc ttgaactcct ataaattaca tgctatgagg attgagttgc 840

aaagttttcc ctgttgatgg atctcaagtt gtgggacatc caatgaaaat tgacagcagg 900

gctaaagatg ctttgcacga cacatcagca agctaattga ttcattatag atgatagtct 960

gtttctccag gtgagttggt gatcaaaacc tactgacaac aatcctaaat tctgcagttc 1020

agagaggaat attacataag caacttcaat tgcctcattc tgcacttggt tcgggaacca 1080

tggtcagttg ctgccaagaa aattcatcta tc 1112

<210> 4237
<211> 1124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_166986_G1, chr4:212311368..212312491, Cluster 26

<400> 4237
cttagaagcc ccagccttga tgcttgagtt gttgatcgtt gtattctagt tggttggttt 60

tatacctagc tttcacttaa aaaactagac cgacaacttt ttttatattt tcttttacta 120

aaatgtatgg taaatgtttt accgtccttt aatggaacaa aaaaaatgtg ccagtgattg 180

ggagctcgaa gtagtgcctg cctactctat ttggtattcg tcagtaatga cggaatccag 240

ctttatggca agaacaaaag ttaattgaac caaattggtc atctacatag ttcttcctgc 300

tttctcccct acatccatcc agcgagatta tttcgatata tatatctcga ccttctagaa 360

gaaacatgtg cgctagtcaa tttctagatc aaagagatca agtgcaagca tccgcgctaa 420

cgacccatcg aaatctttca tcgattggat ttggtcatct tctctagcat taaacaatga 480

aatgcaacac gttcctgcta acggcctaat tccaaacacg gtgcacatta ttcttaatca 540

tacatatatc aatcgctttc ggcagctatc ttgaaataaa gtggcggcat atatattttt 600

tttgcgtgtg tgtgtccata gagctttta ggtatgtgac taaacatcga agcaacacac 660

aaaaaaaaac tgggttgctt tcaaacatga cttaaacagc gaagcaacgt aaaaaaagat 720

tcaagctgct gggacataac atgtgttgga ctggtcaagg aacacagcaa caattaggat 780

ataacatcat atcatacctg aaagggatac atctgcattt gctcccttta gttaaaggat 840

tagatgacat gagcagaact aatctcttct ccacaaccat tacctagcat agtgggtata 900

caagcaagga gggagggaga gaaaggacat ttcagcggca gatggggacc aaacggaaag 960

tgagcaagat caaacgacaa agatctggtt tagcaaaagc tggattctag tggtaaaagc 1020

atggattgac gtgtgcgtgt cgccagtttg attgctctgc tagctagtca agggtctcta 1080

accgctgcaa gcattaagtc cagcgagata aaagtggata actt 1124

<210> 4238
<211> 1242
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170547_G1, chr4:230795288..230796529, Cluster 26

<400> 4238
taggtttttt gtcactcatg ttctgttttg cttctcgcag tttgttcggc gcggcgctgc 60

tatcctagat gacgagcgag gagacaattc cctccatgca ggctatagct agctagtgcg 120

gtccaaaacc ttttggattt cttctaccgt accatcggca cagcatggag agtggagagt 180

ttagtttttg ctggattagc tgagctcttt tgaagctccg atccttgtag gcggttagtg 240

aatttgggag gatcggagaa aagtgtggag gaaaaatatt gataacggcc ctatacgtgc 300

acatggctag atttcaactt ttaaggtgga tagagatttt ttattatttt caattatttt 360

taaaactatt tctaaataat aacatacaag attgtttttt aaaactaata tgttttctgg 420

cgccaaattt tctgacatgg ccaaacggct ctgccatgcc aacccatctg gcgcagctag 480

catatgctaa catggtagat cagctgcccg ctgaccagtg atataggtct cttgccgcgc 540

cattaactcg tcgccagcca ccaccgtcgt ccacgctcca tgcactaccc accatcactc 600

ccagccaccg cgacatctcc ttctatcccc ctaccaggca tgacctctcc gtctccgcct 660

ccccctctag gcgcttgcat ctcccccact ctgagttcat ctccccggcc cctcatccca 720

ttagtaaggt atattttgcg ttcttgattt atcatttata tgatgattgc tagttagggt 780

ttatacttta gaagttacag tcagttactt agtttaggtt taggtgtagg taagatttag 840

tttatgctag atttaggttt agttttcttt taggtttagt ttaacattag ttcttttatt 900

tttttaaact attttgacaa ataaaaccag agttagtatc tataggttct atgtattcag 960

tagtaacatg ttagattcgt tagaatgatt ttgaagacat gatacagttt gctaaaatga 1020

ttttgtagat ggattgttta gtctgtttta tgtaagatgt gtttgagaat atggtagatg 1080

aactagaaaa gttcgatatg tcgcctaact ttagtgaacg tttttttttgt gagtgaagga 1140

acaagtttaa gtatggtttc acattgaagg ggaggtttga tagtggaaag gttatgacac 1200

acttgaaagt cgtatgtgcg aaagattgaa agcctcaagc ta 1242

<210> 4239
<211> 1380
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171141_G1, chr4:234348886..234350265, Cluster 26

<400> 4239
cgagccgcta tagctagcta tatatttgct gttgctggaa gatcatgatt cgctgctgct 60

gatcggtagc aagccaccta cctacctatc tagctagcta gatcagtatg cagatatttt 120

tatttgaaaa aaaatcttcc ttttgctacc cgttatatat atatgagcat ttctttgaag 180

acaaaaggga aaggacaaag agaatttctc gcccaaaagt atatataata tagtccctat 240

aatatatata catttaactt taatagcaca tatatacaaa ctgatgaaaa cgtacgagag 300

tagtgttgcc tgatatattt attttgttct catacatggt atattaccaa caggttggca 360

catctaactt tcttaatcct ttttttattt acgaaagcaa acagatgcta tctaacttga 420

tctcatttga gataaaaaaa aataggaaag agaaggcaac cagctggtaa tggtatccaa 480

cgccaacttg ggctgaagtt tcttagaagg tagagcggta cggtggtacc tttaatttta 540

attttaatag caacacgtgg ctgatgatcg agatatatac cagcaactca tcatttttct 600

gcagattatc acccgcaact gttttcaggg cgtagattct gtgaaatgaa gaagcttact 660

accacacaaa gaaacttttt ttcgcattca aattttgatt tgaaaacatc agctggctgc 720

aaaagaccta gagctagctc ttgttcccac actctggtac caccacaagg aatctcagtt 780

cccaatatct tttttattaa taaggaaatg aatcgtccct aaaaatcaaa caaatgtgac 840

ctgcaagact cagttttccc ggcagataga ctaagtttc ccggcagatt atacagctgg 900

tcacacaaac ctgtctctga actctcgtcc tttctttctt tgctccgtgg aaaaaaggaa 960

aggaactccc tatgggccgg gggggggggg gggggggtgt agatagagca tcaaatcctt 1020

tgtgtcgacc gagctttccc tctcattcct tttccttcat gccaaaccag caggccgtga 1080

tcgatcgttc ttcgttcaag ggaccgacgc attggcccag tcgctagctt ggaataatct 1140

gtctaataaa acttgttata aggctatgtt tggtgtagcg tatgcttgct agctctccca 1200

gctagtaact ttccgtcagt agtagtggtt gaacttggct tgtggaatct ggcgatcgag 1260

ccaacaacta actagtcgcg gaatgttggg tgggtgctcc cgacgacgac ttgagtgagg 1320

atcacaaaga agcatgcatg ttcttgcatt ggcgacagat tttccaagcc tcagtttcag 1380

<210> 4240
<211> 1271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171635_G1, chr4:236480899..236482169, Cluster 26

<400> 4240
gatgtaaata aatgaattca agttaaggct ataagtacgg gttccactaa aaaactacac 60

cttttcttct cttttcgtta ggacattgct ttggcccata atatcatatt aatatattat 120

tctatttgta ttaataaaaa tataatatag gtatctctat tttgtgtaag ttaaattatt 180

ttaactttaa caaactctat aaagaaaact actaatattt actgtatata taaaaggtaa 240

agtataaaat atattttgtg attgacctaa cgatttttat ctgatggtgc gaattgtgtt 300

gtttatactt aggatatgtt ggctaagaca aggaaaaaaa ctttttttgt gagggagtat 360

ttttgcgat acaaaattat atcctaggca agctttctaa cgtgaatata atatagtgag 420

atgctatgtt cgtgtcatga tcactatgtt ttagtaaagc atgtcctgat gaaacgaaat 480

aaactgtttc aaattcaaat agagggaata tatataataa ttcagagata gtttatacac 540

atatatacta taattgttgc cctatatctg cagtttttta aaaaaaaatt attggagtag 600

gagtacatgc gaaggatcgt agtgggtcaa ggacaatgga actattcaaa ctacgtactg 660

ttcatcagca acaaaggaaa gggaggacca cgaatctatc catccaatgt cagtgtcact 720

ataccagcac gttcgcacaa atgcagagct cagatgagtt gagcatccaa tgatatgata 780

tgatgattat attgtaaaga tgggaaaagc gttcaacctg attatactgt aacagactaa 840

ctaacagaga caccacagat agcaagcaat ttaccggcaa gagataaaac tcgtttgtaa 900

tctatacaaa actagataga caaaaaaatg atataccaaa tagaagtaat tgtaaaaagt 960

aattgtagag tacaaattac acggcacaaa aagatggcac aagatttaac tctgagattc 1020

ggttgtttgt cgttacctat atgtcctcgt tgtgacaagt tcaagctaga tgatttatgc 1080

gtggattcgc atcacacgtc aaacctacaa taaagacatc ataagaatca ctctagagaa 1140

gaattccaac aagctactat atttactctc tttgcaactc ccacaagaaa taagcacacg 1200

agcctcacat gataacgatc agagatgtca ataatcatca aagccgatca acgatcttct 1260

gttgcctcaa a 1271

<210> 4241
<211> 1224
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172513_G1, chr5:934525..935748, Cluster 26

<400> 4241
gaatgtgtcc ggtgacttgt ttggtgcaca catgactcat tttttaccat taagaaagtg 60

gccatttaaa caatatcgac gtgtttggta cccctgattt ctatgagcgg ggttataaca 120

gctagatttc tttgagatgc tataaacaca tcctatggtt agctttggtc atcatcccac 180

gacctctagc acctatatac acatcttgag gaatgagaaa catactccac ttagtttgat 240

catatagttt atcacttgag tgagattggg gcgcttctag tgtgttgtgt tgtgttgtgt 300

agtgttcatg tgtcttatgg tactagtaga gtgagttgaa ctagctctac tcctacacct 360

attactcttg gtgattatct cctaaacgat ctaatgattg cgggatcatt aatcatttat 420

tggtgattgt tatcagctct acacaatatg atttacatca tattgtgtag agtgatcttt 480

ttcttgtagt aaatccttta cacgctactt agtgagaagt aaattggaac tatatcaaga 540

cataagcttt cacatatatt agcttgactc tagttgtttt gctaagtttt atcagaatac 600

ttgtgtgtag ggtattcacc ccctctagct atctaggtcc tatgacacga catcgaatat 660

gtgtatggta agaatttagt atagagtttt tagccacaac gccatggtgt atggtatgca 720

tcgaacgggt ggcaccaaac atttccagtg agagcatgta aactttgcac tttacttctt 780

tagctttata tatacctcat tgggtgccac accaaatagg aaacataaaa gagatggtaa 840

aactacataa ttcgatcctg aacgcaccaa atgtgttcgg tgacttgttt ggtgcacaca 900

tgactcattt tttaccatta agaaagtgga catttaaacg atgtcgacgt gtttggtgcc 960

cttgatttct aggagcgggg ttataacagc tagatttctt tgagatgcta taaacacacc 1020

ctctggttaa ctttggtcgt catcccacga cctctagcac ctatatacac atcttgagga 1080

ttaagaaaca cactccactc agtttgatca tatagtttat cacttgagtg agattggggg 1140

gcttctagtg tgttgtgtag tgttcatgtg tcttatggta ctagtagagt cacttgaact 1200

ggttctactc ctacacctat tact 1224

<210> 4242
<211> 1053
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173131_G1, chr5:4305718..4306770, Cluster 26

<400> 4242
taccgttaac agatccttaa cgttttatct tattcgattt ttagtataaa tattatttat 60

tttgtcataa ctcaatttta tctagaaata ctttaataat gacataccta ttttgtattt 120

tataaaaaaa acttatatac aaacgatgat atctaaaagt cagaagcacg gcatgtttgc 180

tacctaattc attccctcaa taccctcctg ctattcagta ctggcttagc cttagaaaat 240

ttatttacga gactagttga agtttttttt ttgttttttt aaaaagcatg ccctctgtcg 300

tggtgcctaa cttaacatta tattctaagt cacctgattc tatttatacg aatattagac 360

ctatttgcta ccgtctagat tttattgtaa attttcggct tggggttccg ttctataatt 420

tagtgcagta aaacttaact aaaatccata gcttgtaaaa cttaattaaa taaattaaac 480

aaagggtgca tattcatgta ggtttgatcc ggctcaggtg agctaaaatg ttaattcaga 540

ttgttggaaa atacaaacca gctaaaagct acgtagatgc gagatccaac ctccttccgc 600

ccgctttttg ttcagccttt ttttccacgg cagccccggt cgatcccatt tcttttcttt 660

tccacgccca atcctgcctg ccttccctct cgtcgcgtga cacacacctc cacgactcca 720

gcctaccttt gatttgccaa aggtgtgtgt gcatgggcct gacgcatctt gctgtcctgt 780

ctcttaccat cggcgtggtt ggtattgggc tatcctccgc tccgtgtagt ctatcttcca 840

aatagctgtg gctttaatat gaaaacagcc gatagagtta ataccaccg gcatactccg 900

tacagctgtg gccgcattaa cgcctgcctc gatcgctagc tatggccttg tgtcagcgat 960

tgctgatgca tagagcgccg cgcgccgcag ctcgccgccg ctatggcctg tgtcctggct 1020

gctagctgcc gcctctgacg acctccgttc aga 1053

<210> 4243
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174676_G1, chr5:13643721..13644746, Cluster 26

<400> 4243
cattacacct agcaaataga caatttatgt tttatctagt tagaaaatta gaggtcgtag 60

ttacatgtat attttaagtt gcctaattca ccctatttta ggcgtcgtgg tccctttagt 120

gcagctaaaa tagtcagcca ttttataaga ttggatgcat ggtacatgtt agttgatgtt 180

ggcttttaca atggtagagg tggataattg ttttagacaa catgaaatat gcagactatc 240

agtgaccatg gtcattaggt ctatttttag gatttattta ttttagcatg tctcacaaga 300

ataaatggga tactatatta ggtgttccaa atattaataa taagatacaa taacatggag 360

ataacaccac ccacaattca atggcatacg ctagagtcct agccatatat gtgtgtgttc 420

cttgttcata tatgtgcatc tatatatcta gtaatggatg tgcacctata gaacacatgt 480

ttatggttgt aataagtgac atcatatcgt tgttaaaaat ttaagattgt atgatctctc 540

ataatatttg gaacacacat ttacacataa caagtgtgat gagcaatcaa acatgattac 600

atagcacaaa tctagtcact agattaagca ccatcatcct aatatatagt gatgtattgg 660

cggtttcgat tgacgacatg agtatgattt tatttaaaga tcttggtgtt gtagttcatg 720

aagtgctaat tgcatgtcta tataagacat cccttaaggc ctcaaccggg aatgaattgc 780

caacctctcg tcgatagatt gcaacattgt ttagcattgt tcaatgattc tacaccaaaa 840

tgtagaatca ttgttttaaa cattgttcaa tactcctccc aactgtgttt caaacatggt 900

ttcccactat tccttcctaa aactactaag gatgtcattt ggaagtcatt catgaaaatt 960

tatagcttaa aatgtaaaag tcgttagtag gagatttcta attgcttgaa aatcataaat 1020

aagagt 1026

<210> 4244
<211> 1205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175817_G1, chr5:19908687..19909891, Cluster 26

<400> 4244
tagacaactt tagtggaatt agatttgcat gtatggcgaa tcgctacttc aaaggcaatg 60

ggagtaaact attttctcac ctatacccca taagagattt gataagaaaa taaactttgg 120

atgttaataa cccatcttgc agatcctcag cgaagtcctc accaatatgt cctgtataga 180

cggatataaa tataaaatat gacaggaaga tcaacaaatc atatttaata cacttcagaa 240

attgatactc catacagtca ggtacagtgt gcatgctttc agaagattta atctttgtat 300

gttttgacca ataattagtc aagaaacgtc tggtataaat atcatataag tacatttaat 360

aaatgacttt gcactatatt agttggtttt gtagctacaa agtacaaaca acattcttgt 420

ttgagaaaac aatattcaac tagttttaat tttaacaatg taaaaataaa acacatcata 480

tacatttttg gacagtatca tagatagctc aagaacacac taagaacaag tgtgtctcta 540

cctaataatg taaattgcca aatcgtgcaa tggctcaatc attagccttc aatcgagagg 600

ccgctgaccc cagttcaaac ccaggtggtc aaaggtcgtg tgtctacata aaggttgtgc 660

aggtgtcatc ttcttcccgg agttgagttt agtattttat ttagtgaact gataaagtga 720

taaatattgg catacacctc ataaataaca cagtagtaat tatagataca cttcttatca 780

acaaaatgat ttataaacca taaaggctga gttaaaaata ttgataaaca gtggcaaaac 840

agttgcacag agtaattcat gttaaggctg aactttcaga aaaaggtaca ttaaagaaac 900

aagaaacaag aatgcaatta cgttgtacgc ccctctttgt catcttcaat ataatttctg 960

aaagatcact atatacatct ctgacatagt ttctaacaaa tccttcaagt ttttcatcca 1020

attcttcgcc ccaaaaggac acacagcttt ccttatttga ttgtagaatc tcagcagcct 1080

gaaaaaaagg tttaaagcca tttttaggag tgcatcagaa tgataaaaat gtgcacatta 1140

catatcccca tacctttgct gccagccata ctccaagatc agatatgcaa tataagaaca 1200

ttgca 1205

<210> 4245
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1760_G1, chr1:8970263..8971307, Cluster 26

<400> 4245
tatagggaaa cagaattctg cagggacaag ctataggcac aagaatactg tatttggcac 60

ttcatacact cgaaagtcgc tccataaacc aaactaaact gtacagtaag ccttctacac 120

ggagaaacga ctagctgagg tttgattaag ctctataaaa aacattgaat caacctatat 180

gtgtgaaccc agaaaatgtg gacctatcca ttatttagtt gtggggccac catgggctgc 240

aacaagccgt ttgctgtttg tttacaattg tcatgcttcg ctacttgtat gctatatgca 300

aactctaggt gacatttcag tcagttgctg tttttgctac ttagtactag caaatcaaac 360

catgcaacga acacctcatc tgttgatgat gtgaatcatt gtgttctcag aagctttggc 420

atccattttt tgccatgcaa catctccctt ccccactttt aatatctgca cttgtgttga 480

aatcaatgtc ttttcattcc ttttcatcac ttactaattc atttcgattg ctgatcaggg 540

atgcttcgat gttccaattt cactgctctc aaagatcttg cgcgccatct ccagtacctc 600

acttatcatg ggatggtgcc tggctgcctg gcttggagca ccaggttttt ttttttgaca 660

ctgaagcgag ctgggctcct gattttatgc tgtagtcccc ttgaagcctt ctatcagtta 720

gactttcaaa cttctaagag ttgcaagatt atgctcgcct cttggcctgt tttggtccag 780

aggtcactgg tgaggtagcc ttgacgagga ccgtgtggag aacagaacag acaggtcgca 840

gcttgcctga gagcccccgt agggacgggt ggttttgtgt cctcttttg tatttgaaaa 900

aatggaatca gtttattgag gacggtgctt tctgggtgag tttagaaatg taatttgttt 960

gaacaatatt agctctatgc agtgcatgcg aatcgatggt tggaaccata cgaattgatg 1020

gctggaacca aatgtaatat atgtt 1045

<210> 4246
<211> 1272
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176023_G1, chr5:20978451..20979722, Cluster 26

<220>
<221> modified_base
<222> (974)..(974)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (974)..(1073)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (975)..(975)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (976)..(976)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (977)..(977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (978)..(978)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (979)..(979)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (980)..(980)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (981)..(981)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (982)..(982)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (983)..(983)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (984)..(984)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (985)..(985)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (986)..(986)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (987)..(987)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (988)..(988)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (989)..(989)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (990)..(990)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (991)..(991)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (992)..(992)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (993)..(993)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (994)..(994)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (995)..(995)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (996)..(996)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (997)..(997)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (998)..(998)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (999)..(999)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1000)..(1000)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1001)..(1001)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1002)..(1002)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1003)..(1003)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1004)..(1004)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1005)..(1005)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1006)..(1006)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1007)..(1007)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1008)..(1008)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1009)..(1009)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1010)..(1010)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1011)..(1011)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1012)..(1012)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1013)..(1013)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1014)..(1014)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1015)..(1015)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1016)..(1016)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1017)..(1017)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1018)..(1018)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1019)..(1019)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1020)..(1020)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1021)..(1021)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1022)..(1022)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1023)..(1023)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1024)..(1024)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1025)..(1025)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1026)..(1026)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1027)..(1027)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1028)..(1028)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1029)..(1029)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1031)..(1031)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1032)..(1032)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1033)..(1033)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1062)..(1062)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1063)..(1063)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1064)..(1064)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1065)..(1065)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1066)..(1066)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1067)..(1067)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1068)..(1068)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1069)..(1069)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1070)..(1070)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1071)..(1071)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1072)..(1072)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1073)..(1073)
<223> a, c, g, or t

<400> 4246
agtctcttga caccctcggc tgatattggt atactaagaa agcttaacca atcgctcgtt 60

tcacttgcta acttgatgac catattagtg tgagattgag aatgttataa cgcattgcaa 120

attttgattt acgtcttagt ggcatgtgtg gtctttgtga ccttgtattt ctttttactc 180

ttggtgatta ccgtcatcta gctagcttgg ttttttggaa gaacattgag aggatcttgg 240

tgattgttgt tgtctcagat cattgactat tgttagggtc tttgtgctca tccctttgtg 300

agaattgcaa agagtaacta aagtgaaatc aataaagttt tggtgacatt cttagtgttc 360

taccataagt gaagtggtaa acttatgact cacttctata aggacatagg ttgatgacaa 420

tgaatataac cttaaagaaa aatctatgta tcacttgtcc ttattggttc ggtatctaaa 480

cacttacatt tacttttcac atcatgtgct tatgttatgt tgttgctcta ctaattatat 540

ctagtgtagc ttagttttat tggtgtagtt ttacttagct atctcctagt ttgtttagtt 600

ggtaccttaa ctctagtaaa tagttcaata actcttctgg ttagctcact agttggctaa 660

ccatatacat gtcccgatga tctccgttat acacttggaa tgccttttta gataagatca 720

cttagtgaag ctgactaacg tcatttatta gggataattt ggatcaaatt tgtacggata 780

tgagttcaaa taccattact tattatcttt tattccaaat gcaaatgtta ttggatacta 840

taataaaaga tatatctcaa agttagattc aaattccaat atttacttaa tttaaagata 900

acacctaact atttagttac atatagtttc cccgtataat aaataagtat gaataatagg 960

atttaaaata tagnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnncagttat 1080

aaaatgaagg ctcgtttgag taatcgtatt tatcggaaca gataatggat ggaatggtta 1140

aatgattgga tggccaactt atataagttt agatgtattc gaaaagggca tctatattca 1200

caagaaacaa attagatttt gaagttctga tattcagaca tcacaatctt ccgtaatgct 1260

agccggagga aa 1272

<210> 4247
<211> 1056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_179377_G1, chr5:37922492..37923547, Cluster 26

<400> 4247
catagagtcc atcatcctag gtgatgaata acatttaggt gtgtgtctac ggcgacacta 60

tttatcactt aggcccatca cccaaatgaa ccccctgctt aatcatgatt gaacccgaac 120

caccagctca gccacacccc attaatcctg ctcatatgtt cctcgcccga cccacctgcc 180

cctgcaccta gcaaaaaacg cttgtggcgg cgcctcccct cgactattag atcctccttg 240

gcgcactgac ccgctacctc tcgtgctcga cttattacgt tggattgttg atcttgaatg 300

gttgaagtaa tcctttaatg tttgaatatt tctttattgt acattaaagt aaacctttaa 360

tggctgaagt aacccttaaa cggttcaaga accttgaata gctaaatatc tgttcttgat 420

gtacttgaaa caaatcttga atggctaatg taaaacttga atgactgaac taaatcttaa 480

ataactgaat atttggtgtt gtgcattgcg gaagatgggt agatcaactc ccgtaatcac 540

gtgtggctag tgcggttggt tttctgatgc ggttaattag tttcctaatg agctggtttg 600

gttggatctt tttgagtcca ggtgatggac cataaggttc agggtatata tggaatactc 660

agctcactcg agctagagtt ttttttcacc attcaacatt catgaagatt aaattatttg 720

cagcagcctg aatatacctg acttctgcaa tccgaatgta gtatttctgc aattttgtag 780

cacgcatgga ctatctttgt gtttctgaac tcgcatgtgg caggcataca aaggtttgtg 840

tatttttaat tgggcacaag gaccatgtct agcttctcat gtacccgcct tgctcagtga 900

tgtatctctg tttactactt agaaagtgta cttgttaact atcatgaaga tgctttttta 960

agaaaatatt attattgcac gaaattgagc aggtgttgac actatacata tccatggacc 1020

aaatgaagta tattgcaacc ataaaaaaaa caattt 1056

<210> 4248
<211> 1020
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_179775_G1, chr5:40234417..40235436, Cluster 26

<400> 4248
agcacaatat caatggcacg agtctatttt tatttttcaa atcttagtct cctccttgtt 60

ttcctcctaa tttgtttttc aaatcttagt ctcctccttg ttttcctcca atgagtttat 120

tttccaaatt ttagttttct ccttgttttg tcccgtgata tcttcacact ttatttttta 180

agctttttct gcctttgttg tcttatatga gtacttctat atagtataga tactatctaa 240

actacagaga gtatagatat tgaattcctc tctatggtca gatactatga tctagttatt 300

taacaacagt ggtgtctcgg aaggatgtct tacctaccct cgagttcaat ctcgagtagg 360

cgcataggca gggttctaat aaggtcatcc cctcctaggg atggccccat tccaataggg 420

tttcatccct ataatcaggg aaataggcag gaaaataata agtagaatca tctgtgaacc 480

atttgtgaca aaagtagttg tttccaatga cgggataaca tgagttagtg ctagccacct 540

acttatgata accagtaaga cctaatggga ggggcttctc atatgtgttt taattattta 600

atgcatatag tttactaaac aaatatgatt ctatcgaatt aaaaatgcct ttagtaaatt 660

acataagaac aatgtcgagg atattttgga gaactgttgg ctcccctgat ccttctttca 720

tagtccaagg tgaggaggtt acatgatgaa tatcgagttg gtaacctagt tgtatatgaa 780

ttcaactcta taattataat tgtatcatcc ttatctatta tgatctttc cttatctgtt 840

aaaatattaa tcatatcatt tatactgata agatctttgt catctttatc ctttttggaa 900

tcaacctggt ggtaagcctc cttgccatgg tgaccgagtc tatgggctct tagtcaagcc 960

cataggctta tccctacaag cccttctcgt tgagcatgat ctagttaccc cctggtgtat 1020

<210> 4249
<211> 1309
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_179978_G1, chr5:41550767..41552075, Cluster 26

<400> 4249
tgatctatgt agcttagggc tacaaacttt gaactaacta catggatgta gttatttttc 60

atgcctactc tgcatggatg aacataaaac atcatttatc tacatctgtt caatagaaac 120

acattggacg aatattgaga ttgatagcta tataaaagag tttaaagttg attatagttc 180

agagtttaga cagttccaac tttatataaa ccatatatgg ggtatgggga tgacattatt 240

aagattaaaa aaaccaaaat gttacatgaa actaagaagc aattaacaaa ttatagagaa 300

agccttgcat catattggct tgcatatgtt ttcatagatt ctttcacgac tcgcacatgt 360

atcgtggtga cgacactaga tacacaaggt gatgagaagg agtttcttca aagagcaaga 420

gtgaaatctg atgttgtaaa gcatgtctac taggtcatgc catcacgagc atagtaacac 480

aaagatttca taaaagttcg agccatatag tgtgtaatat catagaaatg tataaaattg 540

cacaactcca tagggaaagg gttattactt tagtgataag ctaaggcaag ctatgtatct 600

tgaaagatat atctcttttt ggccttggtt tgaaactcag ctttgaagtc tcttgtctaa 660

tggttgtttg tgtgaatcta aaattggaag ttgttatacc acccctttat agtctaaata 720

ggtgatagta ttgcatgtta tactttcgtg gtcctggcca agacatttag ggacctctag 780

ggtcattggg gactctcaag ggcactagga tgtcttgggc cttccaatgc tctcacaaag 840

ctttaggacg tcgggagacc tctaggtccc tcgggcactc tcaaggcatc gagtctctct 900

agggcccctc aaggcactag gccttatgag gcatcaaggc catctaggat cattggggcc 960

atcagggtgt gactggtgtc gatgccctat gggagtcagg gacatttggg ggccattagg 1020

tctgtctagg ggcttcatga ctgtctaggg gtttcaaggc catcaagtgt gccatggcca 1080

ttatcttgtt tataaatagt gtctgggtgg gtttacttgc cacctagatc tgttaatgga 1140

ggagaaaatg agtggattga tggaggagta atggacctct aatggatgaa gtaacaagca 1200

tacatcacga caattactct attctaatat cttcctgaaa ctcctacaat tgttttctat 1260

ttatagcaca caagctggca cagaccatag tgaactgaca cccctcact 1309

<210> 4250
<211> 1091
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_180888_G1, chr5:47574485..47575575, Cluster 26

<400> 4250
taactgcacc cataaataaa taaagctagc ttgtcgatta cacagtaaca cggcgtactg 60

ggagctggat gcatcgcggt gagctcatca gttagcaggt agctggttct agtcatgcat 120

gtgctcacat caaagccgcc agcccttat acgtttgttt atttaaaatc gagctgttgc 180

tgctgactga aagagccaaa ttaaactaag cttgtgacct aaccgctctg attggacggc 240

gcaacgaatt tacggtacgt atgaacgggt cggagatata tagataccga tcgaatgcgt 300

aggtagaact acgagctgta caggatggat gtacggtatc gagtctgtga cgctcagctt 360

aatttcatgg cagttgggaa cacatacatg agtagggcgt ggcacagcag tatttccttc 420

ttttcatga attctcgaga tcccccactc ggtttaaatt tgtaccactt caagttccaa 480

ttattttgaa gagtcgtcgt tcgtgcatcg cttcatatat tatatatgtg acgattggtg 540

tgtgtgagag gcgaaatggc attgccgtgt tgctccaagt aatggagagt tcaagatgct 600

ttttttaaag gtacaatacc attttccatt cgccacagac atgtatatgc cgcatatata 660

tacttacgtc aactcagcta taacaatgtt cttaaaaaga ggcatggtaa ttaaaatggt 720

atatggttgc tctgattgag tgggtcaact attagtgcat attgttaggc atgatatagt 780

gtaatgttat atgcgtgcct caataatatt atcccattca tcatcaggac cattgcctgc 840

cgagtgccaa ctacttgagc tggaatcagc tggtagcacg aagactttct tcagtaaaca 900

ttctgcttaa cctgctatta tatatggctt ccattcgatt ccattccatg cgcttgacag 960

ggtgtatgtc atgggctcaa ggctgtacgt atgatcggcc acgtactgcc tagagaaaaa 1020

aaaaagagaa agtgttgcaa tagaaagcta gccaatatga gtgatgagca tgcacacaca 1080

tcatgccggc c 1091

<210> 4251
<211> 1253
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_184489_G1, chr5:72683187..72684439, Cluster 26

<400> 4251
ggtcattcca tcaaatggtc tttgttgaac tttgcccatg aaacacagaa ccatcgaaag 60

agattttcat gcttctgatc taagttgttc acttccagtg aatccctttt gaattctgaa 120

tcgatgcaga aggttttcca tattctgaaa gagtgcacat aattaaagac aacacacgtt 180

cacgtgcatg cacgcatact ctctcacact ggcttaggct tagaacatat atgtattaaa 240

atttcatagg attatatgta tttgtagtct ctatattaga caaacattgt atatgtaaac 300

atacttgcaa gcttatggaa tggtgtatat acatgtatct gttgttaaac tcttggctct 360

tgctaacttg aaaagtttta aataacatga taacaggtat gtttctggag gtgctagagc 420

cttatatatt gaaggatatg cttggttctc tgccccctga ggtgagcagc atcagaattt 480

atactagtgc tagaataaga atccataatg aatttgcatg taatccaatt gtacttgtag 540

attatgcaag cactagtgga gcattatagt ggcaaagggt ggttgcaacg agttgaacaa 600

tgcatccttc acatggatat ttcttcattg gactttaatc aggtatagga agcatttgta 660

atttatttat gtgattagtg caataaattc ttatgtatcg tttttgtcct tttgcctata 720

ttgacttagg aaacagcatt ttaatttgct attggattta ttttggttcc atttcgtagc 780

ttgagctata gttgaaactt gccaacacat tttgtgctta tgttgtgtgc aggtagtcag 840

actttgtcgt gaacatgggc tatatggtgc actaatttat ttatttaacc aaggcctgaa 900

tgatttccgt acaccactag aggaacttct atcagtcgtt cagaacacca acagtaaaga 960

tgatgcttct agtgggtatg aaatattctg gctagcagca gatctatgaa gcaatacgat 1020

actattttac attctgattt tgtgaacacc attcctacat ataacatgat acgatatttt 1080

agattgtcca ttagttgtgg attgtgaatt ggccaagata ttgttaattc tgaaattcct 1140

ggtaaaagtg tttatagcga acaccgttgt tgctccttat ctggttatca tttttatttc 1200

agaatataac aaattaatct tgatttgccc cctcattctt ctggtacaca gtt 1253

<210> 4252
<211> 1139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_187455_G1, chr5:92365096..92366234, Cluster 26

<400> 4252
ctatattatt cacaatactt agagtaaata ttattctatt aatttgcatt accataacca 60

tgcatgaaga ttcttctata aaatagagaa ataactagca tgagaattaa aatctacaaa 120

ttctaaggag tgatgcatgc tactgacatt aaagcaagaa gattgtatcc atccttcaat 180

atctaaaacc ttttatgagc attttggtga aaatagccac aacaatggag gaatatgtgg 240

agaaatacac cttcttgaat gagtctgctc gggatggaaa gaatgggaat tttgtactgt 300

gtggctatca ctactggctc aagccatgag ccaacagtaa tatatcacta ccgatttaag 360

tcaccaacta gaaattatag tctcaatatc cctgtcgatt cttgtattaa actcacaatg 420

atatattact atcggtacat ggcatgagcc aacagtgata gataccttg ttgttggttc 480

tttaggaacc caaccatttt ttgattttta tgttataaac caatagtgat gattattact 540

gttagtttaa gaccaattag tatggatgga tagacaataa agattggttt tgtagtgata 600

attcatagag gaaaatgcac aaaaatagac atgaaaattt ttgaattaat gttagacctc 660

caccatttaa tattttctta ataatatggt tgtacgaatc aaatcgagct caaataattt 720

catgcataaa gtgcacatta agagatgaca agcaattagt tgaaattaag catattgtat 780

gcctcttggt gatttactaa atgctagggg tatgcacaat aatgtcacat tagctatttc 840

atgacgtaac aacatcagtg aaatatatat ggggatgtca ggatgtgaga caaatacaac 900

aatgatagag aatgtagtcc atctcttcac taaaagaagc atgtcttgga gatttgttgg 960

gtaaaggatg ggtgtttgtg atataatcag aatccgtggg cttaatactc tctaagaaca 1020

ctttgcacat tcaatactcc ttgccaagca atgttaaatt tatgattatt tgtagcatgg 1080

ttaatataat catgcaagtc gattaatgaa ctttatttat tagcctcttc aaattttat 1139

<210> 4253
<211> 1207
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_19015_G1, chr1:106899870..106901076, Cluster 26

<400> 4253
acacatctga ctgtgtaaga tcaatctata acatgaatct taaatgaagc aatagactga 60

tactacatag gataactagc atatcttgcc aataacaaca cttaatacaa gatctataaa 120

aacaaagcag aacactccac aaccccagtg cgatctacta gagaccacaa caaggcatca 180

tgacacttac tgtgtagaac ccttaaaaag gggtggcgat gcgcctaatg gatgaaaaac 240

acatgctgct tgggaacatt tgtcttctgt ttattgataa tgagaaatgt ccattttata 300

gttcatagac tctaaacatt agacacttcc taactaactc tatttaactg atacatatcg 360

acagatacac atccaattgg gacactttat tgcctccgtc gattggcttc taaatgttga 420

gtccgtcggt caactcccat tgcaccaatt cagctaggat ttagtggcaa cacatgctcc 480

cctagtttcg aatatctact tataccaaaa ctaaatcatt accgcaagaa aagagtctaa 540

gacaagacat tctcccttgt tgccctactt ttccgaagtc aggagtctaa gacacaaaat 600

ggcagtgatc aagatgatca acaccgcaag aaaagacatt ataagactaa tcgaagatcc 660

acaacaatat gcaagagttt aagacacaaa atggaaccaa gatagacaca aaatatcatg 720

aagaaactaa gaacataaga gaatacaagg tgctaagcta gagtgtcaaa tctttgctta 780

cattgttctt ctcacaaaag cataataccc atattgttca taggacatta aaccataagg 840

tggattgatt gactaaggat aaggtgttaa tgcatctatc aaacctatgg cccagacaac 900

attgaaccgg acaaagacac taatccataa atggcccact agttagtcta aaggatgagg 960

tgttggatcc cgactatagt ctggtggtgt ctgatagctc tcggataact atttgaaggg 1020

catcaggcat aaagtccata agtctgacaa gcatttgatt tagagacacc aagccattat 1080

gcaattagtc attggactat aatggctata attcaatggc tacaaacatg tggtgcaatc 1140

cgaaggcgtc agaccacaca ctatggccta atgatggatc attggatggt ctgacgatat 1200

gcatatg 1207

<210> 4254
<211> 1279
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199118_G1, chr5:168893221..168894499, Cluster 26

<400> 4254
agcatttcga cgcctctgta ataattcttt catgacgtgc aagtaagtac ctttcaagta 60

cgcccgtgct cggtgctcct cacaggcctg atacggcggc gtttctttgc cttcatggac 120

tgtggtccgt gctcattctt cttgagtgac ctatgccaaa gttcctagat agtagtagca 180

tataatttgg agacaaagaa agcagccctc tagttgtgat taggggcct caggcctgct 240

ctttcaaaaa gaaacctctc acggttcctg atcttattag ctctataaac acttaaaata 300

agcatattct ttgctttttt agctggtaga aaggaccgct aacttttgca caataggcat 360

ttgtggttgt tgctttgcac atcacacact gcttgtcaat caagatttat tccaatctgt 420

ctgaaaaaaa tctcctaaag caaatagtac accagttgat ttgaagctac aagaatgtgt 480

gtaccagagg ccaccggagt gtgcaacggt atcatccttc acagctgtcg attcttcata 540

ggccacgcat cgtcggcggc cacctgaaca ccacagatat acaggaggtc tcgatatagc 600

tccgattgct gcaacaggct tccaatacag ttttttact gtaacgtcaa ggcttttggc 660

tgctgcgtcc acaactgcag cagtgacgac taccgatcac aatcgattct tatatctcag 720

tggtagcacc tagcttgtca taaaggcgag cgaggcgacg catacccatc aaattgcaag 780

ggtcgttatc gcgagaaaag caaacacaca tgaacgacca attttctttt tataatggaa 840

agttttattg aaacctcaaa attaaaaaca atacatcaag atttttttccg cgactggcga 900

atacatgaca tagctacaaa aaaagctctc atagcacatg ttacaaatca ccaagctagt 960

tacgagtagg aaacaagaaa aaggaagaaa agaaagagtg actctatctt caacgcccaa 1020

aacacaccaa ctgagccaac aagagtagga aacaacatca caaaggttgc ttacaaagta 1080

gacaatgcca tggtaacaaa atatccaacc aaagaagaga tgtgagcaac cagtagcaac 1140

gacgacaaag catccaccag tgaagacatg gaaatcaagc gcccgccaag tagagggcaa 1200

cagctacaaa gcatccgcta gtgagtccat cgacagccaa gcatcagttg ggaaagaagg 1260

gaaggcgccc acttcgaca 1279

<210> 4255
<211> 1216
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199355_G1, chr5:170160267..170161482, Cluster 26

<400> 4255
caaacatggg cagcgatgtc ctcgcagcag gccccatggg ccatggccct tcttgcaggc 60

tttgtagcat gcactcaatt catcatgcaa tgtgtgtcca taaccctatg ccagtagttg 120

ggtggtatcg aaacttttat ttgctttgac ctgtttgagc tagccgccgg gatacatcat 180

gcatgtggct gtagaagagt tgtatagctg gctgcagagg ttacgatcga acatcagagt 240

tgaacggcga gtagtcaaat ttgctgctga ctgatccagg atcactgtca actagcgtgc 300

ttcttcccat gaaatctata cggcaggatt gaagattcgg tggacagaat tgtcttctct 360

agtcgagcta ctgtctatat catgcgtcct tgccagcgca agtaaactgt gggctgtaat 420

agcaagctag gataagcatt tgactattgc ttctgctgcc tttccactgg ttggtcccaa 480

tgtcaattta tggttgtaac gggtcctcgt tttgaaattt gaaccaattg attaactagt 540

tgcattggtt gcaccttctt cgttcaatca agcttgattt atttcgtagc ctgtgcgtat 600

ggatgttgaa cttgcagaaa ctagcagcgc ctcgttcagc ccggtgaaca tggcatctga 660

cgtgcgattt tcagaatatg catgctttga tgtcttgcta ggatgtgtca tgtgtgtgcg 720

caactgcgca cagtgcagct aagctagcat agttgcttaa agtcatctag aagcgacgac 780

aatggctgcg ggagaaatca agtgattcag gtggtatttt gcacccatga aacaaaagca 840

ataacaattc aaaactgtca taaactcgac caatttaata tgcttggctt actgatgaaa 900

tgattaattg taggatcctg cgtcctgcca caacgaatct gtgtgttgta tagatggtac 960

ctccaaaaaa aagtaagtac ggtgaaatgg aactaattta tataaaagca tacaaaagaa 1020

agttatcatg catggtttta cagaaaaaat atgtacacac atgaaacgtg accgttgctt 1080

cctgaaatgt atgaaagtta atgcagacaa attcagaaaa ttttgtcttt agaaaagagc 1140

agacattaac gcaaatcaaa agccaaacgc agcctcgatc gaggactgta tgtcaaaaga 1200

ggaggctcgt ttcaga 1216

<210> 4256
<211> 1110
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2003_G1, chr1:10580955..10582064, Cluster 26

<400> 4256
ttcacacagg tatgtcaagg tcaagaggac aaggatgaat tttggggtga atacctaac 60

ctagacacaa tagaagacca agatgtggag aaagaacttt gacatctgga aattcatccc 120

caccatcatg tgagagtagg agatgcattc tcccatatcc tcttgaggtg tgtggaccat 180

gtacgacact aggctcatgt tgttagatgc ctaaggaggt cgcacacatt gactagttcc 240

tactagttga ggattctcat ctaaagtaga ggtcatgacc atagtgatta cgctatgatg 300

gggagtgaac acatactaat ataggatgaa aaaggcaaga ggaaaaatga gcgttttagc 360

aagtgcaaca gattatgcga ggaagcaaga gaaggaaaag tggaaccaca tgtccatatt 420

taaagaccta tctctctcac acaacttctg ggtgcagaac ccaaagtatc acacaactca 480

tacaattcgg gagccaggca acatgataat agtggagtgc ttagactata gagcaatgaa 540

ttgaaacatg tggtatcctt gacacgtatg gcaggcctat accattagac agtttcaaga 600

agaatgtgat gagaacatca cacctttggt tataaacgtt gattataagg tgaggtcaat 660

cttatgtttg cataacaata aatctaataa ctggttgcta tctaatattg gtagttcaaa 720

tgtgtttaga aataatggcg atgataatca acaatggata ttctatgacc aagaccaatg 780

ccaaagtgca agttcatcga tgttgaattt ttagtcatta gcggctcgat agtacttcat 840

taggaatgtc ataactccgc catctgtagt gagtttgagc tagatgagaa cttaatggaa 900

atattatttg ataatcattt aaatggatct aatctcacct taatatcacg ttggcaagac 960

cttcaaacat gttgtcgttg gttctactag gtgctacgat gtagttgttt gcttgatata 1020

ttcaccctta cgaccctatc ccaagttagg acattcccaa taagatggag aacgcatgaa 1080

ggaatccttg gacaccctgc ttggcaacca 1110

<210> 4257
<211> 1238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201553_G1, chr5:183141550..183142787, Cluster 26

<400> 4257
ccctatttag atagaggcag caaagcatat gcaatgtagc gggtctgggg acgtcgtttc 60

tcggccacgt tctgcacgat gtttcagctt acttttctgc tacggatgac gaaatcaacg 120

ccgaaaacat tttgtcccct atcctgtcct ctccgtcagt tcgggcatca ctgaaaaaca 180

gaggcttcat tctacagaag agaaaaggaa tgaagcgacg ttttcactac gccgtgggtg 240

cttttatgta ccacggacct gcaactagta accattgttt tagaggacag agtaaccaaa 300

cctttatttt tctaccttca ttttttact atatcctggt agaagtagaa caagaaacaa 360

ggagtttctt acagatccta aacaaaccac taaaaccatg caggcttcac ctcgtatggg 420

ctgttgtgaa agagagagcg ggccagaggc ccaaagcagg tgaaaggggg aaaacgagcc 480

ggctgaactg gcatgaacac acgatgcacg cgacaaaccc gaaattcgcg tgtttttctt 540

ttcttaccca cgcgggaaac tgttcctgaa cgggcggatt ttgtgccagg agcaaagcac 600

gacggccggt gcgtgcggag tggtgactgg tgagcagtac agatgagtcc tgcccggcct 660

ctttttcttc ttcttttgcg tgcgctcgtg cagagaacct agcaaagaag agggcagcca 720

aacattttga tgtgaaattg ttggcagtgc cgcattttgt ttatcaccca aacaaaagaa 780

tgacgcaggt taaagcattg ccattgaacc aaacaaaaca ttgtcatgtt atccgtgagc 840

aagtttttt ttccatgggc aagccaaagt gcaagcgtat ataacaaacc tccaatccaa 900

agacggaaaa aggaaaaaca ggctgcgctt aacaaagcct atgcccacaa cacatggcga 960

gcaagaaaga tatatatgct gtatttgctc tgttagttag taatttttaa ttccgtaaaa 1020

agcaaattaa ataaatggaa aacataaatt aatataattt gtattttcct ctttggtcca 1080

aaaaaatcta ttttctatac gctggttaca taaggttctc ttttgaatgg ctacccttga 1140

taaatggtaa tattagaata aaaaaactac acacagtggg tatagctgaa tggtaaatat 1200

actattcgtt ccattaataa ataagtttga agtcggaa 1238

<210> 4258
<211> 1166
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_205629_G1, chr5:205732027..205733192, Cluster 26

<400> 4258
gagatccaaa tgggatgttg cactcatcac ccaaaaaatg atattagtag ctccatcgcc 60

caagactagt tcgttgactt cctagacaat tccacgaaac gattgtttag tgtctcgtgt 120

acctactcaa aaagattggt gtgtgaacga cgctggttgt atgtgttcct tcgttttgag 180

cattgtcttg cgaacgggaa ggtttaggta gcaaatatat ataacaccct acattagatt 240

gatgaatgta aatataaaga aattacgtgt ttagacatat atcggtatct ctccctttcc 300

ttttggttct ggtgagagtt ctaaactcgt ggtccctagt tcacctctat ttaccgtacc 360

ttttgtgaac ctaagtaccc ctcgtctaag agattctatc caaaacggag agatcgagat 420

cgatctttct ctatgctgat ctattccttt attttagagg tcaagaaagg gcagagtaat 480

acatggctga gtaatacatg gttgtgggtc ataggctcaa ctatttatat cttgtcttag 540

atgtggagtt atactcgtgc acaccttgga catgccatag tgttgagctc gtcatggtaa 600

aaggatagat acatcatatc agagtgacaa gtattggata ccatgccgac gggtacaaca 660

tagttggtaa acgacatagt tgcttgcact ttaactccca ctcttggcca agtcttcagt 720

gtacccgctc gtgcacacca gactaaatta tgctcggctg aaaaactcga atgtgtgtgt 780

attggttgac acatcccatg gcacattcga tgccagcacc gggagcacaa ctctatctct 840

atgcaagtgt gctaactctc aaatatttca gatagaatat ttttcacaaa aaacacttgc 900

ttcctatgtg tgtcactatg actaaatgca catgcatata gctccaacac tctattacat 960

cttgactagt aaaacaaaac acatagctta tacattttcc ttaagcccaa tagcccatac 1020

attttgtttt tctcttcttt ttcaaaaatt gagcacttga ccatcacttg tggccacctc 1080

tcatcatctc gaggagtgcc atcattgatc aatcttggtg tgggcttaac ctatcacaat 1140

cacaacacta gagtagaggt tagttg 1166

<210> 4259
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205642_G1, chr5:205772515..205773684, Cluster 26

<400> 4259
acccaccaaa gttcaaaacg tgcacaataa atttatttgt cggggagagg ttcaaaacac 60

cgacaaatct tatcctatat ggcaagctgc caataaactt aatatcggta acctatggtg 120

tttctatggt gaaaatgatt aaaatgaaaa tgatgttgaa cacttgataa ttttaaactt 180

atttaaagag caccagcgtc ttaaactcac atgattaact tcgattctag gttggtcttc 240

cacacagtct tggatttgaa aaaaccacca tttgacacgt tagttgtacc aaaagaaaat 300

tgcactgcgt atagacaaca tatacagaga tgaatacctt agggcacgta tagcgcggct 360

acaattccac ccatttcgca aaaaagcact ctcgcgacct gaaatgcgcg tgatggcatg 420

gcgtcgtctg ttgggacgac gaccacagat cgtgctccta gactagcaac gcgagaggca 480

acagggacag gggtagtgca aataacgata gcttgtgtta tccttcacaa atttaaaacc 540

atgctcacgg tgtaaatagg taacttattg tgtaactcgt ctgtttattt tgttgtgtat 600

gcattttcta atatacatta attaagcatg ctacggctta gttttgtatt agaagttata 660

ttcattacac tatatggctc tcttgacaag agtgttgata aatacttatg tggttttttt 720

taaaaaaagt caacaaataa tatatcgaaa gagttactca taagttataa tccactgcaa 780

tttgatctct ctctcgtgca tctactatat gaactaatgt attttaaggt acaggggtag 840

ttactatact actagtaggc cctgagttta ctatatcaaa catgcaaatg gcgcccattt 900

cccgtccgta ctaatcaatc gatcggcgtc actgtctcac ccagtcgcgt tttcccagtt 960

gcaatttgcc agctgaaaat cgatgtgcgg ggtagtccgg acgccggaca gctcggccgc 1020

tggcctgata cgtctctgct tcggcatcac cagagccaag cgactggtac tgaaacaact 1080

gaatatgacc atgaagaata atactcctac gagccatgag acaagaagag aaacaacatg 1140

ttcgcttgac ttataatccg cacaggtttt 1170

<210> 4260
<211> 1049
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207615_G1, chr5:215663837..215664885, Cluster 26

<400> 4260
aggtttttcg gggtggctag gtcacgggtt tgcccggcac gtcattgtgg acaagtataa 60

atgtgttata actcccacca taaccataag gagagtgccc tagaaggtct taatactcac 120

tggtgcttga ggttatgatc gctttctcct tagtgtttat caattgagga gtggcaagag 180

gatgtttgca tgccagctcc gacttgtgct gaaatttagc atgatcactg acccgcacat 240

gtgtttctcc cgattctctc ctttttctgt tacgctatat actctgatgt tattatgcaa 300

tgacaattgt agactaaaaa tttgatcaaa cacaaaccac tttattattt ttagagggag 360

taagtatgca aacataattt tccactaatg cggcggtaga agtacacatt aatcttaatt 420

tatttgatat attagatatt aataatcttt tatctataat tcagatttta gatactaaga 480

tcaagaatgt gctacaatta tatttttggg gacggagtga gggtgtccta gaggggggga 540

gggtgtccat cgttcgtgcc gttttttttt cgtgcgtata tttatttata atatgttccc 600

acgatggcat agggtcctat agtcatggac agtgtgttgt accctaggac gaaggcacta 660

gcctaccgat ctaacgagct agccagcctg ttgctcgcca tgattctggg atttgattca 720

taaaatgttt tctttcttcg tatttatttg tttatttatg cctagggtgt cattattggt 780

tgatggcata ggcagtacgg gtttgtttgg atggagatca gccagagccc agagctacct 840

ggataggcat ctaccacagg cgtttgtttt cggtcgcctt gggctcagat aaatgcctgg 900

ccggcaaaca gcccgacagg gcattaacaa gctcatcgcc gctcaacaaa tctatactac 960

actattaaaa atctattatg aacacgtagt gctaccacgg ttttaccctt tatactaaca 1020

catgttgtgc cttgtagacc cacgttcag 1049

<210> 4261
<211> 1193
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_220737_G1, chr6:84374461..84375653, Cluster 26

<400> 4261
agttaccttt ttttaggcta gctagggact aaaatatatg cgtttgtcaa tctaggtgat 60

gtttggttct ccatagattt tgatttgaga gaagatgcat ataatgcaca aaactcaata 120

caaaattata ttatcaagtt gtgttgagat tgtaagattg tgtcacaaga ctcaatacaa 180

aactcgatca gaccatgttt agttaataat gagattatag aacgagattc taagaagaga 240

aggacagttg caatgagtga gtagcatact agcatcgcat tgcattgcat tgggaacata 300

ggccacctgg tactgcaacc gttgagtcgg attctagtgc atcatcctgc actgcatgca 360

tcatgcaggc cctggtctgg tctctggtca ggactctagt acattctagt accagaggga 420

cctggtcacg tatgtagggc ggcggaccaa atactttcta tgggccattg atatatggag 480

atgcaggctg cagcacaaag caatgggcac accgcacacg cttgtatgtg tagattaact 540

agtaattaat taactatcct cggtaaacag taaactcttt ttagacttgc atgatcttgc 600

agggtaagtt cgtagtcttc tatatgtctt tctttcatga ggtgttgatc atctcgatca 660

ccgctttgtc ccgttccagc ttccctttt atatattcag ccttgccatg catggtcttt 720

aatggaggct aggccacgac acttgagttg ccatcactca ttgacactgc tacatatata 780

catgtggacg gagtgagtca tcaaaagatt tatttttgc tatctgcttc tttgacttgt 840

ttacggttgt gacggagttg tgtgcgtgac accctctctt tatgaccgat cgaggacgga 900

gttgtcctta tgattgctag ctagctgctt ttgtgatctc agcggttttg gtcgtcatgt 960

ttgtcgcgca tcatttcttc tgcgtttgtc caagcatatg tcttcaaact cgtcagtctt 1020

ttttcgtctt atttgtacgt agtatataat aatataacat agaatatagc aggtaggagt 1080

aggtgctttg cttgtgacgt gtgtaggttt cttccatgct ttccatgttc ctacatagga 1140

atatactata tatgaaatgt taagcatata tactgcacta ctgcacgccc gta 1193

<210> 4262
<211> 1023
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224042_G1, chr6:103863995..103865017, Cluster 26

<400> 4262
agcatatgat catgttttat acctagccac tcacactcgt gggttttggg ccattacact 60

tgtcacaact tctaaaccca ctcgaatcca ttgtattcga tactgggctt cttcgcgcgc 120

ttgttgtggc gtcgttcctt gcccacctgc accttcgtgc caacgcattc ccattcacga 180

tcaccaggtc acaggcttga tcaccatggt cactgacatc tacataccac caatcttgat 240

taagactgtc actagtatgt attgcgggtc agacgttgtc taagacattc caccctagcg 300

gcccaagctt ggaaggtgaa tggcgagtcg tgttagtgac caccaagaca agctaggcgt 360

caaagtcata cgtggataag tgcatctggc aacttcgcgc tatattatat caatgtcgta 420

ggaggtccgt aagaaattta catagcaatt aaataaacta atatgacaat gtatatatac 480

gaataaataa gagatatact cagatcctta taagatgaag tgagtttta tgacgacgaa 540

atttatctgc agtgcttcta agtaatccga tgcaggcacc gaggcaagat ggccattgga 600

agcaacgcgc ccagtacttg attgttttga aacggaacta ctgatatgtt gattctttta 660

cgttttttac acgctgatga tgagtgcaag caacaattgg catgacgcga ccgcacgcgt 720

tggacggatt aattcacgaa aacacgcggc gtatagactt tcacttgaat ttcgtagcgc 780

tttggagtgc atgtacgaca agggtacacg acaacgattg ccttgtttct tatctagatg 840

gagtaaaata aatgaaaaag gtcccaaaac agtgcatata tatcaataaa caaattagta 900

taacataaaa agtgtaatcc tcgaacggca aatttttttt gaaaaccggc tagagaattg 960

cctgttacat taaaaagatg agcctgcaag agctaaagta aacaattaca ccactgatga 1020

cat 1023

<210> 4263
<211> 1154
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224749_G1, chr6:107387911..107389064, Cluster 26

<400> 4263
aaagactgcg gttggttaat cggtcctgct gccttttttt ttaaggactc gttccagttc 60

cactctaaac tataagttat taatgttttt aaataaaaac atatttaatt tataaaataa 120

aataataata attagtgttg agaaaacaac atactctaag atatataatc aagacgtaga 180

ttcccacaaa aaagttttag ggctcctttg aattgcagga tttttttgg ttaatcggtg 240

ctgctgcctt tttttaggac tccttccagt tccactctaa actataagtt attaatattt 300

ttaaatgaaa aacatataaa atttatataa taaaataata ataataagtg ttgagaaaaa 360

acatactcta agatataatc aagacgtaga ttccgataaa aaaatgttag ggcttcttta 420

atttgcatta ttttttccg tttcatatgt ttttcctgta aaaataaatt aattcttgtg 480

aatttcctgt gttccaaaga agcctttaga gaagtcacgc attttcgaga cttgtgctct 540

cgagaaccta tatcaactct ggctaaaata ggggaccatc atgagaggac ctgatctcga 600

agtttcctca acctctaagg ctctctgtct tcgactccta tcagaatgaa tgagatccga 660

aaagtgtgat actctctaga agtcgagacg gctaccaaat ttctaggata tctcagtcat 720

cggacccgcc ccctcggacc tatgagacca ctggcctcga agccttcctg accaatgatc 780

gggtctcaag gcccttaata tacaaaccaa aactatttat ccaatcaagt atggaagctc 840

ttgtagacag aataatatgg ctagccttac ctcgagggta ggctggtcct aaaaggtatg 900

accctacaga ataatatggc tagccttacc ttgagggtag gccggtccta aaaggtatga 960

ccctattaca atgttcatct ctactctaaa cattcatgtg gcactagagg tctaaataag 1020

gctctcgtcc atcgtattaa ataaaatggg cgacattgcg attaaagagg tgcattgttg 1080

caacgacata ggtaccatgt gtactctaga tcactattca atatgtacca tcatccatat 1140

agccacgctt aaac 1154

<210> 4264
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225457_G1, chr6:110817029..110818078, Cluster 26

<220>
<221> modified_base
<222> (219)..(219)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (219)..(318)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (220)..(220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (221)..(221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (222)..(222)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (223)..(223)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (224)..(224)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (225)..(225)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (226)..(226)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (227)..(227)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (228)..(228)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (229)..(229)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (230)..(230)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (231)..(231)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (232)..(232)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (233)..(233)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (234)..(234)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (235)..(235)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (236)..(236)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (237)..(237)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (238)..(238)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (239)..(239)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (240)..(240)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (241)..(241)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (242)..(242)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (243)..(243)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (244)..(244)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (245)..(245)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (246)..(246)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (247)..(247)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (248)..(248)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (249)..(249)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (250)..(250)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (251)..(251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (252)..(252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (253)..(253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (254)..(254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (255)..(255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (256)..(256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (257)..(257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (258)..(258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (267)..(267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (273)..(273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (274)..(274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (275)..(275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (276)..(276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (277)..(277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (278)..(278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (279)..(279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (280)..(280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (281)..(281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (282)..(282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (283)..(283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (285)..(285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (286)..(286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (287)..(287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (288)..(288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (299)..(299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (300)..(300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (301)..(301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (302)..(302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (303)..(303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (304)..(304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (315)..(315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (318)..(318)

<223> a, c, g, or t

<400> 4264
taccaccctg ccaaacccta acctaatggc atcgaccctt gattcctcaa tccctcctgt 60

tcggttgttg tcgctcgctc acggcccacc catcccccaa gtcagttctc tccgcctttc 120

ctccctactc ccggtctccc gcttgacccc cgccgctccc ttccatgagt caccgcccac 180

ccgccccatc ccctcaaccc tcacctcccc gcatgaccnn nnnnnnnnnn nnnnnnnnnn 240

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300

nnnnnnnnnn nnnnnnnnaa accatatctc acaagtcacc aacaacatta aggtatatat 360

agtctcacaa gtgacaaacc caaaaaggcg tcttgatgct tgctttattg tgcatagcac 420

tatatcgtgc gtataggaca acactagtca tcaccctagg tgataatcat ccacctgaaa 480

tgacttaatt tttctatata aaaatcgcga ataacttaat aatttgttaa gtcattccac 540

ccgggtgggt gatcatcacc taaagtgaca aacaacatct ctctctatct atcatgcaca 600

tgtcctaaaa taggacaact aaaaccaact aaagtcagca acatatgtat gatttgaaac 660

tcttctctga tcttatatga attagcggtg ctcctgcttt tttttcaaaa aaaaggactt 720

tgacatgcta tcgatgtatg gccgagcatg cccttgtagt agttatttgg tagcatgcct 780

tatatgacca agtagtaggt gtacatgtag ttgtacaaaa cttcttgtaa tagtgtaaac 840

catatatgca agcatatgga gcagctgcat ccttagatca agcagcatca ctagtgttca 900

tgtgtgtgct ctctgatctc ccctttactt ttacccccag ctgtgttagt gggtaaatta 960

acaaagctgg tactaaagcc acagttgggc ggtcatcggc attgttaggc caacaccctc 1020

tcccccgtca accaccgcaa cgataaccgt 1050

<210> 4265
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226509_G1, chr6:117083703..117084707, Cluster 26

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (323)..(422)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (342)..(342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (343)..(343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (344)..(344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (345)..(345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (349)..(349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (350)..(350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (351)..(351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (352)..(352)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<400> 4265
tgttccagtg cggattttaa ttctaaagtt tagaacatgg tctaaacagg gtctaagaca 60

acttcaaatt aggttgatga tcagtaacct cgtaattacg tggcaccaga tgagaatacc 120

tatctataag ataacaccaa tgtacctgtg cctcagaaaa cgtcgaataa acaactaaac 180

acacatgggc cgattattgg attaatgacc aatcccatgt gcgcatggac gcaaacactc 240

gatctcaatc gccatttgga tctaatcaca cctccaaaca aaacatacag tatactatcc 300

ccggaccgtg cagcgcctac acnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnccccggcg tagccagcta gagggagagc aacgtccgat ttccacaagc caccgacggc 480

cttgccggac tcgaagacca cggggcggaa gccctggcga gcgcgtgctt gcatgccgcc 540

aggccgctcg gccggctccg acgatcgcca cgcgtttctt cattgtgtcc atttgcttcc 600

tgtatgagct gcccctcttt cacatttgtg aagccccttc gtgcgcgtga atttgtatga 660

gctgcgttga cgaagttagg acacaacgcc tgtgcaactt taatttccct acattttcct 720

ctcgtcccgt aaattgtggg tgaaagcgac agaaactgat ttttttgtag aggcggctat 780

gataatttta gatgcggttg acaaaacatt catataaatt aatgtacagc ttagactcaa 840

actttctaac cgactacaaa taagtgattt tcagtggcaa ttattatttt ttgagcgaac 900

gacaccagat tgtgctccgt tcctattaat aaagaagatc tacaacatgg tacacaaatt 960

aaggatttac aaaaggtagc atgagcgcac acgagcacgc agaaa 1005

<210> 4266
<211> 1271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226579_G1, chr6:117447924..117449194, Cluster 26

<400> 4266
gatggatcgt gtgccgcacg cggtgcaggg gtggaaggcg agaggcgcgg aaggagagag 60

gggcagaggc agaactacag tgcaccggcc tatattagag tcttatagaa tagtacagac 120

tatagttaca acttcatcct aatcctaatc tattatagac tgagtccaac acaactccaa 180

acctcaccga tttgattcag ctcaatccga tccgttcttt caaattccag cgtcctaatc 240

cagtccgatc ctttttttt agcctgagga ccgatcctac actgcaattc aagggcccta 300

acaattaatg ctaccactag tatcccaggt cgttaacagg gcattcgaaa gcaattatca 360

tgtacaagca gtctaccatc acgggagtag atggtaaatg tttaaataaa taaactacaa 420

gttacatcca ccagtttttt cagctgttgc aaaaaaaaat cgcgtgcaaa ttatgttgac 480

ttgaattaag aataatccca tgcatatgac ttcattctgt ggcattttct tcgtcccttg 540

gatcattata aatgaatgag ccccctcatc ttgaaatagt acagatacag accaccaagc 600

tgatacaatt gattgaaaga cacaaacaag aatactacat ttacatccca agtaactatg 660

gctagtgcca agtgacctgg agaaacagag ccgcagaact gtggaaacaa atccagtttt 720

gtcgctgcac actacagcaa ataactctat atttgtttgg ggtctctgaa gaatgcggca 780

atgaaccaca gccagcgagt ccggcagtcc ctgtacacaa tccctactgt tcccgtgttt 840

tcttggtcgt ctgaaagact gaaaccattc taaaggctag ttcagttaat ctctgaacta 900

atacacgaac actaccaagt accaatcata gggttaacaa gcagaataat acacttgtaa 960

catgacaaca aaatctctga aataacacag tttactagta aactaatagt acacagctac 1020

aataaaataa attaagtatt agtaatttga catccaagta gaacctatga aacccattga 1080

gctctgccct ctcctgtacg atctaagtac aatctaaacg gccaattcat ttctgatcgg 1140

ttaggggtgg atccccctttg atccaacaag cacttagact ttatttagat attttagtat 1200

tttccccggt acatatggat tgagatggat tggagtgtaa cttacaccat aatccatctc 1260

aatccatatg t 1271

<210> 4267
<211> 1163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226942_G1, chr6:119158207..119159369, Cluster 26

<400> 4267
gcctcaacgg ttgttcagat gttagctaag cactctattt tagtacttgt gtgcacgagt 60

tctgggagag cacgcctccg aaacgacagt cacccaaatg ttcatcgact catgtgaagg 120

tcaacaatca tgttttaaag tcaaatttct ctttctttac taaattttta ggaaaaaatg 180

tgtttttagc ataatgtgta tgaaagttca agctgcatcc tttagaaaag atgaatcagc 240

ccacaaagta ttactaatgc agttaatacc accaacatta aaccatgtga gaaacaaatt 300

tacattgtta cactacaact gtctgtgaag caaataaaat gcttacggca gtaaatatca 360

acatgaacgc acaaagtaag gtacatcagt actaacttag gcgaccacat tttaattagc 420

ccttgaccgc ctattagcgt cacggcttac tatgcatcag aagagcctga aaacggtggt 480

ccaaaattaa cgcacgctca tctgtaggag cacgacgacg agtattgctg aacgtgagcg 540

gctgccctgc caaccggagc gtgggatgtc tttgctcgtt cgttaccctt cctgatcctc 600

gtccgtgctg tactatcgag cagttgaatt cgcaattatg gcctgtggtt agcatcttct 660

tcaagagctt gcaggacagt tcgtggcttt aaagctactc aatgcaagat taattcgaag 720

gttacactta caccccagga ggacgaagca tattgctgct atgcatgcag aggtagacga 780

gcaaatgtcc tggacccaaa atcccacaga acacgggcgt ctctgcctct acacagccgc 840

catcaatcgt ctggcttctc aagataataa gattggtttc cctctgttct agaaacaata 900

tatagttcta tcacagagag cccatgtttt ggtaccttat aagttttgga tcaattataa 960

ataagaaaaa aaatattcga ataaatacta tcaaactaat tataaagtgt attttcataa 1020

taaattggtt tagatccata aatgtgaatt tactagaaat ttggccacca ctttaacgga 1080

cacgaaaaat gcataactac gttcctccct tcatgataga gagtatcaac tataagtccc 1140

tattgctgtc tactattata aag 1163

<210> 4268
<211> 1028
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230771_G1, chr6:138065453..138066480, Cluster 26

<400> 4268
caagacagaa caaagcttat attaattttc tacttgcatg tgtccatata atattgcttt 60

taggcaacta ttatcatttt tttccttttc tatttatagt gtgcgtactt gaatttatac 120

aacaatgggc gttcatatca tatctagttt attgatttat gcttccatat gcctatggct 180

ttctacacct tttattgtcc agacatctta ttatttggtt gtttaagaac aatattggtc 240

gcataacacc tactttagag gatccccccc acacggccaa tcacaattct ttacttgaca 300

accaggagct agtgaatcct actgaggacc aatattctat gcataatgat attttggatg 360

cacatcatca tatcagaaac atgcaaaatg ttagtggttt tcacagcctt aacacatcca 420

tatctcaaac atttgcatct gttatgactt cagctgtttc tagaaattct acgtcagatc 480

ctcattatgt tggcaatgtt gcaagggttt ctagccctgc ccttccacat gttggtgtta 540

gaatcacttc tgattataac cgtagccatt caacactgta tcttcaaaag tagttgggac 600

tgatgatatt ttatctgcat taattgtcaa acatgaactt atcaaaaagt ggttatctga 660

atacgcactt ctgattatat tttttcctga atacgcagca gttgcaataa gtgttgaaga 720

tgaagaatcc aagatctgct gatttttgt tttcctgaat acgcacttct gaatgctcgc 780

atcgtattcc ctggccctct tttgttttca gcaataacaa gcagtccgtt agacattagt 840

gctgcttgtt gtatgtgctc cctcccaggt ggacctccat ttcattggaa gggactcaat 900

aatggaagtc tggcctcgtt ctccatttaa ttggaagtct gacctcatcc cctccatttc 960

attggagcat ttcgaagttg aaataggcgc tcggctgcta caatcattgg tgaagtaggt 1020

cacgcttt 1028

<210> 4269
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231101_G1, chr6:139583116..139584148, Cluster 26

<400> 4269
tgtgttgtgt gttctatact tcacagttgc ttgatggctc attcttgttg aatgatgagt 60

gaacagcagc tttcctatgg cagatgagaa aaacagttct atgaccggtc ttggaggaaa 120

taaattggtg tagtagctgg gatactgtgg ttccgtgggt accagcagcg gtgttaaatg 180

cttctgtgtg caaggcaggc acataataat gtccagcaga ggcacctcac ctcctgtgtc 240

gtatgcttac gtaatactcc ctccgtccct actaatgata gtcggacagt gaaaagttgt 300

acgtaccagt agctgagcca tggatatatg gctaaaaatt agctctaaat cctctaatgt 360

atccatacaa gagagctaat aaagatggct gatcttgtag gcgtctttaa ctaattatta 420

gtaagctagc taaactagcc ataagtgatt attgtatggc gaaaaccaag gtgctccatg 480

acaaacagcc tgtggtattt cccttataat tctagtcggg gttatggccc cgtggtagtt 540

gtaccaacta aatttttttc tgtgtacata taggggttct cgggccagga agcacaggaa 600

gactagacgg gaccccatgg tattgatgcg tggtcccagc ccgcacagga agactcacta 660

gattggcccg ctagggcaga tacacataca ctgctacata tgttagcagt ttcaataggt 720

taggagtttt aaaggcaaag tcggttcatg cctcattttg acaaccttat tctagaatct 780

cattattagc caaacagttt ctgaattttg tattggattt tgtgtcataa tctcacaatc 840

tgaacataag ttaataatag aatttgtgtt ggcttttatg tagtatgcaa cttctcaaaa 900

tctatagaga accgaacacc actttagact acctctaagc aaggacatgt aaacagttct 960

gtactcttat gagggtgttt ggtatgacat gcttcactaa aaaatagttc tattctaggt 1020

ttttagtatg gtt 1033

<210> 4270
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233008_G1, chr6:148240776..148241782, Cluster 26

<400> 4270
aaaggcgcat aactattgtg ctatcttggt gacaagatga aacccacact agagacaatc 60

acagtcacca aaaagataag acagaaatca tgccaaatcc ataatatgtg gcatagatcg 120

tccaagacta acaagtgcta gcttatctcc tgaattcaat gtaaaaggaa gtcttggcac 180

atgttgcgac taagaaaaca tctgtcgaag cctagaaagt gatccaagaa ttgttcgcct 240

cacaaactcg agcctaagta ccaaatctga gatttgcgct aacaaataca gagaaggaga 300

ctatgacaat ggcatagtac atcgataaga tcaagaagtt tacatatgaa ctaacctcaa 360

tagggaagtt acttgataaa gaagagatta ttatatataa ggccttcgtt taaaaacgac 420

gcctaaagaa agctttggcc aagagaaaga catatgatac gtatgtatag tgaaatatca 480

atatgcaccc ccaaatgtaa ggtgttactt tgtaaaggaa aggagtaaag ttgtaattgt 540

atataagagc aactccaaca acttcttaca ttatagctcc taaaacaaga aaattgagat 600

cataaatcca aaaaaagaca atgtttcaat agctccttat aattttccaa aaaaatcctc 660

acgaggccag agctgcacag caagccacga ccgcttttat tttctaccat gccgcgatct 720

ccacatggca attgttttct accatgcagc aagccactgt tgaagcactc aaggcactct 780

ctttccttct cgttctggtt gcctcgccac cactagcacc catcatctca ctaaccatcc 840

accaatgtgt cggccatcca tctcaccaac cagcaaccag gtgtccggac gagggacctg 900

aggccaacgg taccggtacg ctgtgcgact catgtcgtcg tcactcgtcg tgctggtcca 960

agaaagtgga taaaaatgag tagaggtacg aggaggaggc gcgggaa 1007

<210> 4271
<211> 1328
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233639_G1, chr6:150883918..150885245, Cluster 26

<400> 4271
tgatattagt ctatataacc cattgtaagt tcccttaaca ctctccatca tgcgaatatc 60

ctggctaacc ctcaaacacg ggtttgattc aggtttgatc atgtcctagt tcgacatgtt 120

ggactttcaa tgtattttgg tccaaataca ataaaaataa gtaaaaacac atatgtcata 180

gttctaacta cggaccatat agcctgcttc gccacctatg aggccaacag aaatgatata 240

catgagccca taactcaaag tagacgatgc caaaaagagg aaaaagttca actaacgccc 300

ctcaactata gcagtctatt ttttcctccc caattaagct tatgaattta gactctttaa 360

cttttgaaac catttgattt ctcttcttaa acggtttcta ctgatgtgat ggtgcgttag 420

ccacaatagg gatgaaatcc gactacatta ataaatcaag aaattaagtt agacttaatg 480

aaagttgtag acacagtatt gttttttta aaacgtgacc aaaacaattt ctaccgaaat 540

atgcaattaa aaattctata aatccaaacc taccttaaag tattcataaa aaatggttta 600

gcacataaaa acaaaaaaaa caaaaaatag attgtttttt cctccaaatg cattgggggc 660

acaacctcca cgtcggttgt attgtaaccc aaacggtgat ctcgatgaca cgggcccagc 720

aaggtcttgt gggctgtggc atcgcctttt ggtaggtacc agcgggatct tgtatgtggg 780

gcagtgggga catttgcgtt gccacatgag gggtcgaggg ggatgccaat ctagatgttg 840

ccaaacacca accaactctc acgtgtcggt gtaaagagct cgcagtggct gtcactgatg 900

ctccggtctt cggtgaattt gcatactcac tgtcgtgaag tcccctgtat gtacagttag 960

atcctgtttg gcacggcttc agtttcacaa aattcgatga atttgatgaa tcaagtaatt 1020

agaagattca aaaaattgta gaactgaagt ggtaaactct tagaagacat gtggataagt 1080

aattttattt tttatttaga ttaaaaacat atattttaaa cgatttaaat ttatataata 1140

caaccacaac ttcgatattt ttttaatacg caaaaaatag ataatacgct attaagttat 1200

atgatacatc ttgttaatac gcaaaaaaaa tagataatat ttttatgtgg ggtttcgtgt 1260

gcatgtcgtg atgcttaagc gagatgttga ggagaaaaat atcatttgta ctagtttggt 1320

tatacggc 1328

<210> 4272
<211> 1174
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235294_G1, chr6:158644175..158645348, Cluster 26

<400> 4272
ctataaaaaa aacctatatt atacattctt atacatataa tcaaacatat cagaagactc 60

gtaggcttct ctcgtgcagt ggctttcttt tgtatctctc aagtcgaatt aacgtagtca 120

aaccaaccaa acaaattaaa ctccgataat cagatgcata cgtacacaaa caccctcac 180

gtacgtatat agctcggcca acctgtattg aattcaagct accaatcacg cgcctggtaa 240

cgtactggca ccacaccgct caaagttgga cacgacatac ctcatggttc actcggaatt 300

aagttgacat ggtgctaggg ccacatccaa ttgatgagca cttgaagtcg ttcttgtacg 360

acttttgctt tccagatacc acgctcaaac taccaatcta cataggagca aatataataa 420

cagattgtaa ttagagtgaa tgttgagatg aaggagaggc ggaggataaa caagttatgc 480

atgatggcgt cattaatcca aaatccaata ctgtcacata ggatacacaa tattaaactc 540

tctgtatgaa acaccatttt cagtgcgtag tatcatgctc tagtatttaa gaaaccatga 600

gtataataaa ttgatgcatg ttgtgttatg atcaaatgta ccatgagtat ttaagacatt 660

ggatacgaag gtagagcggt atctttatga tgatactata ctatcttctc tcacctcttt 720

taactcacat gttacatcaa caacttgtcc tgcatggcat atattaaatt actataatac 780

cacacaccgg gaatagccta aacttataac cagcttagac acataaacca agaaaattat 840

aaaatagata ggtaggacat gcattaatag cgaagatcta actacgatat agatagacta 900

agaggtagac tgcaaagatc tttataccta gcaattagct cgcagaagag aaaagtcagg 960

taagctaaca taaaaccaac atgtatagta ggctaactgt taaattgact cttgcctttt 1020

ttgtgcttaa gatggcaata tttaatgctt tcatgtgaat gtcatccagt gtggtcccat 1080

ctttgtgacc gttttatcaa acaacgtaac accacacaca tacacatgct cctattgaca 1140

taggactcca aaatttgatg aacttcgaag caaa 1174

<210> 4273
<211> 1228
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236506_G1, chr6:165138462..165139689, Cluster 26

<400> 4273
ctacaactac aatcctgatt gaacctgttg gtgcagtgac ttctctcgca attggtcgca 60

cactactgca taacctcaca ttgtctaagg atcatccaaa tcccaagatc cagtaagttt 120

attactgtat gtaccataga gataaaatac aggtgcatat aacgttatct tgcctccccg 180

cggagagcgt tgacgtcttc aaaacaccaa ttccgagaac gtagaataat attgctacat 240

caataaaatc cctaacatga cacaccttgt ttttgcaaat gaaactgtga caaaactcgt 300

accgagacta ctagactaga aacaatcatg agacacatgt catatttatg tccagtccag 360

atatatttcc attaagaata ccgcaataat agctaatcat ctgtacagcc acgtgtccta 420

tatattttat cttctatgtt aaacaaataa ctaatcatta gttgacaatg tacagtgacg 480

tggcttatta tatttatctt ctgtgttaaa caaatcacta atcagtgata ccaatttttt 540

ttgaactgaa cagaaactaa cagtcagccg aattatttat ctaataaaca accatgttca 600

ctcagcatga caatttaaag aactagcaat ggagactaac aaatgatccc cattaaacat 660

gtgtataact caaaaaaaat atgtaagaat aaaattaact ttgaataaaa ttaactttca 720

ataaaattat acctttcaaa tagctattag ttgttagcta tctcaatcta gttaataact 780

tattagcaga ctaataaata gctctaaaga tttggaacgg ggtcttaatt ctagctaata 840

atacagattc tattatctta ttatcttctt aactccagct aatgacatct agttaaagtt 900

taaatagagt ggaaccaagc aaggtctaga tatgtcgtcc catgtacacc aggtcaccag 960

ctatatatat gtaaatgtaa atataaatat agccggccgg catagtctcg tctcgcccat 1020

acatacatac acagtacact ctggtgtcgt gtgatcattg gaatcgaata ataaccccaa 1080

tcttgtccat gcagcatccg gataattgaa cctctcgatc tcgtcacgct acatgttgtt 1140

actgcatatg catggctggc cacagtaggt taccaataaa agttgcacag aagctacgcc 1200

tacaagagga tataattttt atcgattc 1228

<210> 4274
<211> 1100
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236517_G1, chr6:165160058..165161157, Cluster 26

<400> 4274
aactgatctc gttagtgtaa ataaatgcat ctaatgtcca ctaactgcca tcttgatcct 60

acagtcgttt tagctagatc caacactagc caccatatac gtggctgcgg gttggtcggt 120

atcatctagc tttaacgtcg attagttcgg atagttgatt agtcggtcta ctgatcgatg 180

gttcgatcag tatcgaccgt gttgtaggta gatcgatcgg tactgactgg tgtgttggac 240

ggttcaatct gtacggacct gaaccggtcg ttacaaatac gcctttagca tcgtgacgcg 300

ttcaaattga tctacctgtg tgccatttca gcttcgcgtt tttttactat tcaaagttta 360

aaaaatctca aaattttggg aaaaaaggtc aaacgatctt ttaacaaatt aaatatttac 420

cttcaagttc tgtaattttt atttatgttt tatagattac gcaaatttta tttatatttt 480

atgaattatg tagtttatat ttatgtttca taaattacat gtttttttatt taattaatta 540

tatatttggg tgtattaaaa ttttaataaa aatgacgtat tttatatcag ctaaaagttg 600

gtaaaaacaa aattgatatt ggcgctaaga taactgtagc cacacggtgt tagagtactg 660

tgatgtgaac agttgaaccg gaaagccagc tagctcatcc actcggccca tctggcgata 720

ttggtcttcc cctttcattt tgcattcatg gcttgggctc tccattacca aaactagccc 780

cgcgccctgg cccaagcgtt aggatccttg gcaagtgcag acgggctggc cttgctaaac 840

cggcaagaga aacttgaggc gctagggccc tccctgccaa catgacgatt tccccttcct 900

tttccccaaa atctcgaagt tactagttta ctactgtatc tatataccta tatgtaaaat 960

aataaataaa ctaaatcgaa ggtagtactt aattaacatg caagcttgca catttggcaa 1020

gacaagatga cggagtcaga ggaggcctag cccagcagcc agcacaagaa catggtgagc 1080

agacacagca gcatcgatgc 1100

<210> 4275
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236680_G1, chr6:166075014..166076054, Cluster 26

<400> 4275
agtcgaatgt cacacgaatg atgtcatggt gatcctttat ccagtaaatg aagaagtaaa 60

tttttcagtt tttagatctc ggacttagct ctgactattt gtctcaaacg tatcattatt 120

atgtttatga tgtcggagat attcttgata tcgttggtgg tcctcccatc gggtagtgtt 180

aacaaagcct ctaataatgt ttataaacat aaccgaacta ccataacaac tttacttta 240

caccaaaatc aaaattgatt tagtccatat cttcgtacaa aactagcctt acaaaataca 300

cctaacttgg cgtataaact ataaaacgga ggatgtcttg gtattgaatg tctaaggatc 360

aaatttgaga ttgaaaagtt gaatcaatgc attagataaa gtaaaatgga ctggtgagag 420

ggataaaagc ctgatcttgg agaagcctga tccaggataa cgaaccctga tgccattgat 480

cttgacgcca tcggccatgc ttagaatcga gatttatgcc actgagctcg acagcgtgac 540

aatatatcca cagtaacgtc tcgtgtgatg cttaatttat gacgttttgc tttataatct 600

tggcttcata tatcatcaca ctaattcctt ctactcaaaa atagatttag ttatctaggt 660

gttgaaactt attattttct tttaaaaagc caaactacga taaaattcgg ccaaggcgga 720

gggatgacgt gtacgcccgg ggcccggttg ctttgtgtct ttcaagtgtt ggtaacccaa 780

ctatagaggt gtgtgcgctt cttgtggtgt acagtgcttg ctcggtgcag cacgtacgtt 840

caagctctag gatccttgcg cgtatcacat gctctctcca catcgctcat aactgcgtcc 900

acaccactgt tttgccgtgt tgcatgtttg tgtttggtcg cgggcgtgcg ttaactattc 960

cactccagag tccagagtag actacctgct taactacttc aaaagtctaa tttcttttga 1020

agcgtaacta tttatatgat t 1041

<210> 4276
<211> 1226
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237727_G1, chr7:3168426..3169651, Cluster 26

<400> 4276
cctatcatca ctccaaagtt caatattccc tcttcttttg atgtccagtt aggtagggta 60

agttctgtgg ggaaaaagga ttttgttttg gtgcatgctc tccacgcagt gcagtgtgca 120

gggcagggac ccatctggcg gtggtctttt ttgcagcagg tgtgtgtgtg tgtggttttg 180

gtggagagag caatagcaat tagcaaatct gcaaacgtgc ctgccttcgc tttctttctg 240

gagaatgcaa tagcgcagcg cttagcttag cttagcttag gcaatgagga aggagtgagt 300

gctactatgt tgtaaagcct ttcgtgcact tttgagaatg caagaaatta aagcggcgct 360

agctgactgt gttttagtag catcatacgt accccgaatc ttaacagaga tcagcgtgca 420

ttatcagccg acgaaacaac caacaaggtt gcaggatatg tatgagaaat cagaggttta 480

gtaatccatc atcaggttga taaaaaatat tcggacttgg attcgaatcc catgcacggt 540

caaactaaag aaccttgtca acgagtcccc aagcagcagc agatgatggt cctaaaagat 600

ttcaacgggt atctgcaccg gcctgtcaga gcacaaatcg aagcctagcc gccactctca 660

cgccagcgca gctttatatt agctaacaaa tttccgtcgc caaattctgc ttttttttta 720

tcttcttctt ctggaaaagc tcttattaca gatgctaaag aaaccggcaa tacggtcagt 780

gcatgcatcc ccctggagca tggtaattga tggaaatcat gagatatata gggccacact 840

ccacattctc tttagcgaac tttacctttt ttttttttg cagaaattgt tgatcgagtt 900

gttgttgtta tttattaaaa aaaaacttta tcaagtagga ataagattaa gatactgtgc 960

atgcaaagca catattgtca gccaaatatt atgacatgca tggcatgttt tacactgctt 1020

cagataagga ctgatcatat atagtaggca cagtccaggt tggtgttggt tgcagacgac 1080

cgggcctctg ctggtccggt tgcagattat ggtatgcgat aataaactag tagcagatac 1140

atatattata tatgggatta tatatatgta ataggatggc catcgatcga atgaaatatc 1200

atgtgtgagt gtccatgcat atatct 1226

<210> 4277
<211> 1099
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238755_G1, chr7:8925671..8926769, Cluster 26

<400> 4277
cgaaaacgaa gttgatctct tactaacgat ctcctccaaa caaatggttc aagggaatct 60

ttgtccatca aagacatgcc aaacctaagt gacttgaatt cattatccac caactccaac 120

tcaaaagcct tagcatctac caaatcttcc tcggatctag tcgaagccac aaaaggaagc 180

tcctctgtac cagacacctt cacacaagcg acgcttgggc acattacaca aacttagaaa 240

gaaatcaaac ttcacccaaa gcttcatttc acgaaccaac aacaagacat ctcgtttaag 300

ggaaccgata gcaaataacg acccataggt gtggtatata tagatgactt cgatcaaaag 360

taactcttca ccttcatttt atacttgact tcggtcaaac ttgaccgtta aaaactttga 420

aattcacttt tcacactaca agaaccaact tcgacgctcg ggaatgataa tttcgcaaga 480

agaccttcga agcattgccc acgagaggct actgttgggg atttaacatc gtacaaacgc 540

aatccccgat gttttggagt catcaatcgc ttcctcctat tggatgcttg ttttcagaat 600

tggcttcata ctgagaaaag accaaggatg agacatgaag ccatatcatt cccatgcacc 660

aaaggataga cgaagcctca agaccaatga agtctctctg acgaagactc tctccctcaa 720

agatcaaacg aagtcattga gtgaacttcg ttgagaagcc aagttagaaa ggaaatagga 780

gaaatttgct attcacagga cacgaagctc tgtctatgaa gactgtgtgg tggcagaacc 840

atataaagca aatgactgaa ctgtgcttgc acggacaaac aactttaacc aaactagtca 900

agggtatttt agattttgta tacacaatta gtcaattaca aacgcaagaa catatataaa 960

taccctaaa atatattgtt cacaggcata aaatcaatat ccaatagagc ttattcttgc 1020

gattttggtg tttgagcaaa ttcgtttgcc cagactattt aaagtttcca ccaactaaaa 1080

acaggaggac aaagttacc 1099

<210> 4278
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239188_G1, chr7:11673369..11674395, Cluster 26

<400> 4278
tattaatatg ttctaaggtt tgttttcact ttctgagtcg taacacctat ggatttatcc 60

atacgtgatt tcttgtggca tagatctata tgatgacata actgtgatga atctttgttc 120

tttccaaaga tgggttaggc tttacgccat tgctgcatat gttggatgta tcttccatgc 180

accttcctgc ctttgatttt atctccatcc cctcttccat gctcgcattc catctagatc 240

tatcggtatg tgctagctag ggttggatag tctatgattt attgtgcata tttgagcatt 300

gccagtatgg tttatgatgt gtgttctcat actgataaag ttcaatgggt tttggagtca 360

tgggcactcg aaggtgcatg ctatttcctt tattgtagct gtgcttatgg tagttggagt 420

agcaaactat ttccttagtg catcatttcg cctctaattt gttctatctt atgacatcta 480

taatggatcc ataagaacat cgtcgtcgcc ttgttcatag gggggcaaca ctagtggttg 540

tggtggcaac ctagatgtta gttaggttta ggtctcgttg catggcatgt catcatatct 600

cttatgcttt tatggctgac cgagatgagt ttaggcagtg taacctaatg ttcatctaca 660

atttctccta tggctgaccg caatgatatt taattattat aatgttgagc tgagaccatt 720

caactctgct actctatttc ttctttgatg catgttttgc catcccactc tattgcttat 780

gttgtgggtg tatacaacta gggccgttga tggattgaaa gggaaccttg tcaatgttgc 840

ctaggagggt aaccaagcta ggggtacacc taggtgctaa tgggatgtcg ctaggtctgg 900

gttcatgcta ggccactttg ctgacctagt tagtgaaggg gtaaatactg acaaaaggtt 960

caaagaggtt catttacgtg atgtggctat ggatttagct aaatttgctg aagtgaatgt 1020

cactagc 1027

<210> 4279
<211> 1074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239618_G1, chr7:13982021..13983094, Cluster 26

<400> 4279
attatttgca attgattatc tgtgcattag ctccagacct cgactccaaa gtgtgctaca 60

cagtaccaaa tcctacagga acgagaatcc accatgaaaa attcctctaa tccattattt 120

gtaattgtta acacatctta attctctctg gaaagaatat ggacaaaata ctaagaatat 180

ttatcaatgt caaacacttt tcctggttat tagtgagttt ccctgcataa caacagcaag 240

tcaacttgac atacatcgtg cacgtcggac gtccacggaa tgaccgccgc aaccgcaagc 300

gagcttctgt gatctcgccg gcgcgcgctg atggcgatgg agccgtgtgt gtggatggaa 360

ccctcaggta taaatataat ttaataatat gataacaatg atggtttatt tgtatatgct 420

tacttgacta ataataacca ctctttcagt caattcgatc gtctacggtc aaattgtact 480

acagacaaaa atatattatg caatgcaatg aagttttctg tacaccgacc atggtacagt 540

caaactaaca aaaacaatat atatttttt ataaaaaata gataaatttt actatttact 600

ctctgtcaat atatgttaaa tcttaagttc taatcgactt aatattagga taaataaaac 660

aaaaaggaaa ttctaccatt atttactcaa ctcatatata tgtaggggtg gtatatatag 720

aattcgaaag ggagctaggg gggaggactt gattcaaaag cacgcacaag aaaacgtggt 780

gtgcgtccgt atacatgtgt tcaagcgtca aaaccatgtg cacggaaaac catgcacaca 840

cgtgaacgaa ttaatataaa tgcgttatct tttgttcctc aattaagcgt ccgtgtttca 900

cttgcatgca cattattatt aaaattcgat tacgtacata catttccacc cttcaatgtc 960

ctaaaagaat gccaattatg ttagacatca catgttgaca tgtagtctat tatatatcct 1020

tgcattatta cggtgatcca tgtagtacaa cttaatcaac ttttttttc atct 1074

<210> 4280
<211> 1073
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_248922_G1, chr7:75903441..75904513, Cluster 26

<400> 4280
atgcatggag gccagagcag agaaagggaa ctccctccct caaaataata cctctcgctc 60

gctctcacat gttgttgggc gaaatgtatc atgagaaaga gagaaggcca ggatcttcat 120

ggccccacaa gtcggcggag gattgtgtat tattgcactc ggtacctcca tccatccctt 180

aatagctact aggccaggaa gaagaaaagc agcatggtta tatggatcca cgagaaaact 240

atgtgttgca tgcatggtct gctttccatt cttctaattc ttctacactg tattagaaaa 300

tgggtcactt tatctctcct aaattttact aaatttatgt aataaagttt tcaatatcaa 360

atacatatac ctcagttaaa ttgagtcggt cgtgccgacc atacctttt ttttctgcca 420

tacaattaac tttcaaaagt acgcatatat ccctttgatt gcccctggat tactacagat 480

gttcttttta ttgctatggg tggattggat tagtcctttt tgctaaagta gcgtagctgt 540

agagtacgtc cttgagcgag agagcagatc attaaagcgc gttcgtcatt cgcgcacctc 600

gctccacacg tcaattgttc aagtacgatc gagtaaaatc tatatctttt acatgaatat 660

atgaactttt agaggagcgc tactctctca taaaaaaaca actttgggac catgtgtgta 720

tgattgcgag gtgtggacgg gtaaggtgct atcagttcca tatatcattc atttctaatc 780

aaacattcca tattttactc atctttacaa ctccatgaaa ggatctattg ttcacttttt 840

ttactatatg gacgattttc ttgatctgat attgtgtaca ccatagctag ctttgggggc 900

gtggtgttac ttatcagttc atttaaaaac tattgttttt ttttgtcttg actctccttt 960

agaaatcaag atttaaggtc atggacttaa taaacttgcc cctattaata cggctgggtt 1020

cttatgccct ggaaaatagt tagtgaacta ttcctggggt tttgttaagt ttt 1073

<210> 4281
<211> 1008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_251383_G1, chr7:92395605..92396612, Cluster 26

<400> 4281
catcagggca gtatggcgct tacattgaaa accccatagg gagaggtggc gatgcgccga 60

gaggatggga agcatatgct gcttgatgaa cgaatggctt tctgtttatt atgaccatga 120

tatgttacaa tatatgctca tctgtctaac ttaagctttc catctaatgt actacttatt 180

tatggtataa tgacttattt ctattataca catctatttc ccacctaggt cgaatacctt 240

ctcattggag tcctttggct agaaaaagga aacccaagtc cgactaagac tatgtgccaa 300

caaacgatca aaacaaagcg gtagattgat ctcaaagatc tatgcaacta gatgatgtgt 360

tatctagatg atgtgtgggt gtgagtggtt ggtggaatct ccttgagttg gaaaaaatct 420

gtttttctg cccaaaattg tgatttttgg acaacaattt atacaggtag ctcaaactac 480

atccgcttct acaaattaat ttctagggac gactcttgtt cccatccgcc tctagaggaa 540

gttgtagttt gagccacctc tataaattat tgatgtgtag agacagaaga ggagaggtgg 600

ttggaacaat agcctttata gcggcaccct agttgcctct aaaaatcata tctatggtag 660

tggtggccct acatggaaat cgagtcaaac cattttgtcc caagtgaata agtggtataa 720

acctaggagc attctttttg gtatgtataa tagccctaca acttataaaa agtggctacc 780

caagacatct atcatttcaa cactttgtta tttccatagg gttagccagg agtttcatgt 840

tttatacata ttaggctaga gagaattgac taactcttat gttaatgtct catatgaagt 900

gaaaggatgt tcgagatgaa gttgttttgt tgcttagttg agttcattat ttaataatca 960

aagtgtttgc tgtattaata gaatataata ttgccattta ggtgaatt 1008

<210> 4282
<211> 1366
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253522_G1, chr7:104879697..104881062, Cluster 26

<400> 4282
aaaacagttc ttttaggtaa actttggata gacttttaga tagaccgttg taaacggcct 60

taatgctaga cgttaggacc gtctcgtctc tgggtgtcat tgctcgtgca gtttgtgcac 120

gtatgctcca tatgttgttt tcatgtcctt ccacttgcat atggtccaac aaacagaccg 180

aagatgatgg ctctttatga acccaaccac cagcgacgaa aatactacta ctacacacta 240

gttagtacta gtattgtacg agtacgctgc gctaaagccg tgacgtatga acagcgggcg 300

agaagaatgt ccccacctat tgtaaccgta ccaactctct ccagcacaac cgtacgtata 360

cgtttacgta cttgtcgatg gcagtctacg tatattaatt actaattgga aacactaatc 420

gacagtatct gtggtcagcc gggaagtcgg tgctggttgg agtactgacc accagaactc 480

ctcctcagct cctctcatgc agcttagatc caggcaagat ttcaggttcg tacagactat 540

ctgacgacgt ttggcatgat ccccaagtgc caaaagaaag agagagagag agaaaggagg 600

ggagaggagc cacaatttta ggcggctgct ttcgatcagt agtggttgtt agatatatag 660

ggtatcatga gccatgcgct ttatctagat ggagaataaa ttcccctaac cccacctatc 720

taaatctgtt ctctgctttg cgctggaccc atattcccca tctccaaagg acacacaaaa 780

aacaccgtag gacacttaaa attgtttggt ttttttttt gctcaaagac acagaaaaag 840

gttggctttt gctacaggag acgggcacac tgttgaaccg tgttttttt cttcttcttc 900

gttgtaggac gcaattagtg tttactttag caagaacgga accagcgttc tgcttcaaaa 960

ggtaaaaccc ttttatggtg tttgtaaggt accgcgaggt acttgtgact tatccaaaag 1020

cgacaataat tgattctagc tcatagactc cgaccttatt tacttcaatt gtataaacaa 1080

taatggtttg ttttagccta cagcacgaca atcaaaggtg ggtaagttag atataaatca 1140

aaggggtaa ctttacttca tacttcacaa tgggtaattt aaacgcaaat ttaagggtta 1200

ctctgtatta tattttctat aatgatatag ttggataatt tacatgtaaa tttatgggtt 1260

ttttaaatta actttagcaa tagtaaagtg agcaatttag atacaaattt agttgttttc 1320

tttatattat ttttataatg aattatgtag gtattgaagg taccac 1366

<210> 4283
<211> 1400
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253717_G1, chr7:105913910..105915309, Cluster 26

<400> 4283
ctaatgaaac cgacattctt aagtatgtca ccgatgttct taatttagcc tacgttttta 60

caatgttttc ctatagtgtt agtttagcac aggcataaca ggtcgaggta agcacaagta 120

tagttggaca tgtagttagc tggatattaa cattcactta tagttagcaa gataaagagt 180

tcattcaata tcttaaacaa gagtatacca ataataaagc ttcattgttg ttataccttc 240

aaaagctctt aggtagaaac cattacacgt gcgagattac aaatggccga tccatgtagc 300

agtggtactg tttctctatt tatattgtga ggccagtata cattttgtg cgaagtcgta 360

actttcctac tatatattga gtcttcagaa ctagaagatg caattatatc ttttcatagc 420

aaagcaaaga cgtgtcggta cacatttatt ttcttctttc taacgtcctc gtttcaatcg 480

cttctctgaa gatagcttgg catgctttga agatgtattt ccttcggtga cagctcttgc 540

ctttggtctt tcagtgacct gcttctgtct tgattcgaag ctcttcccat atgcttgaat 600

cttgaaagtt tgtttaaaca atgactgatc tttggtgaga gatctcctcc tcgaccaata 660

aagtaacaca aatatgtttg tgtgtgggtg ttggggaggg aaggggggcag gaggttggaa 720

gctctgttcc tggaaccatc acttttgtgc gtcgtgcagt ggtgggtggg ggttggggag 780

gggaggggtg cgggacagcg ggaggttggc cagttcctgc aagtacatcc atcatttttg 840

tgtatgcgtg tatgggtggg tgtagactgc agaggagggg gcgggaggtt ggcctccatg 900

gcatgaagct ccgttcccgc aaccatccgg ttgcacatgt ttctagcttt acatcttttc 960

gaacataatt ttccatgtgc attcgtgcta ttggacggtc aacatggcca ttgaatgaat 1020

ccttactaaa caacatgcac ggtgatatat ttataaaagt tcaaattgcc catataaatc 1080

aagataatag ttcatactaa ggatcattgt aaacaaaaca agtcttttta aatcaaataa 1140

aatgaaagga cataacaaaa ataatatttc ctctataaaa aataaacgct cctaacttta 1200

atttgtgtgg ttgctagatc tgtttaaagt tgtcaagtta tgttacttat ttttgtaggg 1260

tttgccatca acaagtagac tagtaaatga gctggcaagt gcaagttttt tgtcaatcta 1320

cctgtccaca aatggtaagg tatttgacaa taatagatta tattcttatt tgtatgttat 1380

ttaatgtccc acagtgtgat 1400

<210> 4284
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254308_G1, chr7:108849140..108850176, Cluster 26

<400> 4284
atgtgaagaa agtatcccat atatgactaa gccctcctcc gaccaaaagc aaaggtgaaa 60

tcttttgtgt attgagcatt cataccttac gtgatgtggt tatggcatat atacatgata 120

cgtgagatgt aaggacattc attgaaaatt aaatgttttg aagctcatat tctaccactt 180

ttttggttac ttacttcaag tggtataaaa tggcttgtat tctaacactt gatgtgtgaa 240

gaagcttatt gagtttcaaa ccaaattaga tgcctatgta aatcaacaag ttaaagccaa 300

tgagaaggaa gctaatgaaa ttataatgta agaagatatc aagtgatact caactttaag 360

tgatcatctt catcaaaatg tggttacaaa aatcacaagc atattcaatg cacacccttg 420

gtagtaatta atgacaatgg gggagaagaa ctacaacata tgcataagaa gtggaggtgc 480

agagaaagat ttataatttg aaggggtaaa aatttcaagt aaaccacaca agtgaaccac 540

gaggctgtct catatgctta cttgcattat ttcaatggcc aaacaggtgg cggagtaggc 600

tcatgaacac tttgttgttt cattttgaaa tgtgcatcgc atatgcttac ttgcatccat 660

gcattaattg taacttcaag ttgtttttat ttgtgtgtgt ttgatagttt aaggaattga 720

ttggcgaaat tcaaatctag gatgtatggg ttgtaagtgg tagctagata ttagtgctta 780

gtttttttcaa gtggtaacta gaaacaaatt tcttataatg ttgatcatat gggatttcta 840

gagtttatgt atgtctagct aacaaaagat ggatttcaaa tgatatacat gctacaaaag 900

tttattctat acaccttagc atcacatgat gttcctattc ccaatataag tctgatttga 960

tattggaacc atttcaattc tagcttctcc attatcaaca tccatacgga cctttataga 1020

agatatatca aacctca 1037

<210> 4285
<211> 1092
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254692_G1, chr7:111413074..111414165, Cluster 26

<400> 4285
aaggccaagc gatttgaaag ttgcaaggtt atcgtctcta agttagtggc aggtaatatc 60

aaagttggtt aagtcaccaa gttaaggctc ataccttcaa tttcatgatt tttgacttca 120

acctcaaggg tcttggattc aagctcattt atcatctttt gaaccgtttc tattaacatg 180

atattgattg ccttctcttc tgctaagtcc ttttccatgg ttttggtggc ttgacacttc 240

ttttgagaca atatgagaag aagagacttc ccatctagct cgtttataat ttccaatcaa 300

caaataagtt agagataaga tgagtgtttc aatcacatgg tactaaaggg acataccttt 360

taatgcaggt agagatcatt gtcatgttga ttggccttct ctaaccatcg acaatcttca 420

cctatatcaa catgggctag caagtaatcc ccacacgcta ctataatagc tcggtaatct 480

tcatcagaca ctaggccttg caatcacgaa gaacctcttc aatgaggagg tttgggtggc 540

aagcaatagt tattgaacca aaacaatggg agttatgaaa tgattaattg aagcaatcat 600

acctcaaagg gtgcttacct cttggttcct taggggctgg aggagtactt ggctttgtgg 660

aggtctcgac cggtgcacca agggactcta caggcgcact agaggactcg accgatggag 720

ttatacaacc aacaataggg tcctcaaccc taggctcatt aggtactgtc gttggtgcca 780

gggttggggt tgaggcgctt ggaggagttc cctcaaaaac tttaggtggc tcggtcctta 840

tgggctcatc cgctagggct caatcactca agaacactag tggagggctc tgactcggct 900

agggcattag gaggtggacg agtatttggc ggaggtgtac caaccgagtc gtttagagaa 960

tcctatgatg tcctgaaatg ttaaagatga tgataactat gatactattg taccttgcat 1020

atcttcttat gttatttttt aggaaagcag aagagcctcc ctgaaactcg gccttagcaa 1080

cctaatcatc ct 1092

<210> 4286
<211> 1174
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256671_G1, chr7:121579719..121580892, Cluster 26

<400> 4286
atcttaattg accatactag caagttgcaa acaaatcgtt gccgcgaaag catactccca 60

catcagcgaa agtccctttt cagctcttgg gtcggtcatg gtcagtcagc cgtttcaaac 120

ggggaaaggt tggtccgtcc acaagtccta tcaccggtag tagtagcaag tagtaggtgt 180

ttctctgtga tgttctagca acacccctcg caattatacg taaagttcgc gaagcccacg 240

cggacccgat aaataaattc aaatccctga tcacgcgacc gtcatctgac aacagatacc 300

gcagcttgcc gcttgaattg catcagactc ttccacgaaa agctcagtga gatcaccgga 360

ctacaattta gtctgtcgtt ggattacatg cgaaaataca aatagttaaa aaaaaaacta 420

atacattcta ttcatcaatt gtctctacag ttttttgtta gaccataatt agcccgtgtt 480

tagatgttct actatttggc atgcaagacg tggactgaag tttatgttag ccaagttctt 540

ccgtagatat ttttggacca gagcaagtaa cctgctccgg gtccctttca acaactgact 600

tgctacagag tcgtcgtcag tgcataatga ctgtacttag gacgcaattt ctgtgtggaa 660

tggcaaatct caagggtgat ggcacttctt ccacacttca gcgaaggtgt gctgtcgttt 720

gatgtaaatt tcggttgcca gacatatgtt ccattccaaa actaaactcc tcgatcgaca 780

aaaatcacac aataaatttg tgggacttta cctaagagtc ttgttatagt actccggtca 840

ccttataaca cgcgagagct ttagcaaatc acagcctatg acttgtgtta aaatacacaa 900

agcagttaat aagcaattaa catatttttt tattaaaata aaaccatgac caatgactaa 960

tcagtaaaca aagatccagc atcacggacc atttgtcacg tactcacggt cgtgatgcaa 1020

gcgcccactt gccccccttac ttattcgtgt gccttcacag ccaataggac tccaaacgtg 1080

aattcacaac aatatatact gtactagctc aagtcctgct ggtccggtag ttgttagtca 1140

aactgaaaac caacatatat agggtctatt ggga 1174

<210> 4287
<211> 1080
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260141_G1, chr7:140683069..140684148, Cluster 26

<400> 4287
cccatgtgaa gaaaatccca gtttagcatc cttgatgaac cacaatacta catatcagat 60

catgattgct tggggtagaa ggttatcaac aataatatat aagcatcagc tatggtaagc 120

gggtgtgata agaatcaatg tggtataagg gcatatgctc aacttgttct tcatacagaa 180

atgccattat tggcgcaagg gcaacaactc aacattaaca aaaatagagt tcaaattatt 240

atcataaggg taagaataaa ataaaaccaa ctgaagttta catcactgac ataaggacaa 300

cagttcagaa ctaacacaaa tagaacacat atcattgaca taagagcaag aattataaaa 360

tgaactgagg ttcacatcat tgccataaag acaacaacac aacattaaca gaaatagagt 420

tcagattatt gtcataaggc caaaaattta aataaaatta atcgaagttc acatcattga 480

cacaaggaca ccaatttaga attaacataa atataataca tattattgtc ataagagcaa 540

ggattaaata aaatgaacta aagttcacat cattggcata agggaagtaa ctcagaatta 600

aattaaatta acaataagaa ccatcaaatt gatagcacaa tcaatcatgg ttcattcata 660

agtttaatta aacaagccat aagttcctta cagtcacatg acgcaaaatg aaacatgcca 720

acagataata gaattaacag ctaatagaag taccatggag aggcaacaaa tataaacgag 780

tagcctcatt ccataaagta gcaaaagata tgacattact acaacttggc aataggatag 840

gtgtcacgat agcacaagtc tcatcccaca aaagccagcc aaagatatga caatatcaga 900

gtttgccaac aggggagcca ccatgagagc acaagtatca tcccacaaaa gctagccaaa 960

gatatgacac cactatatct tgccaacagg gaacacacca cgatagcaca accttgaccc 1020

ataaaaggag catatattgc tctagatgtc accaaaagat tgatcaacct gccccatgca 1080

<210> 4288
<211> 1238
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260880_G1, chr7:144862586..144863823, Cluster 26

<400> 4288
aactagtaag ttttttttt tgcagtatag gagcagatcc ctcactagat cctaggatgc 60

atcgagcaga tgaaccatct tgttcacgaa ctaagagcaa ttccaaccca gaaactacta 120

gtgatttta tagctcgcac ctcactaaga aatcacttta gaaactataa gtttcaactc 180

tagttctttg ttgtggataa tggttttttg gtctttgtta cacgtgtaga cctgattttt 240

tatggaggaa accattttct cctcttttct attaattttc ttgacatgtc acaaattact 300

tatatggtag ctaaattaat aatatagaaa ctagatgacg tgattgttgg gaccagtctc 360

tcagacaagc tgctgaatgc tcaggctcag aatcacgccg aagcggagag aacgacacga 420

gtcccatcta gctgcttaga agtcacgcat ggtcgacaaa acgcgagcat gcgtcacctg 480

cttagacgtc acgcactttg gtcgcatgcg tacgcgtgag tgcaaattaa aaacacgtgt 540

caagcaagca attttagatg gcgagttgtc atggttcatg cataattgct ttggtagcaa 600

tttgaaacta tataacattc ggttttctat attgtgagcg aatttcagaa tgtgggtaag 660

aaattttctc gtctgtctca cgctaaagca caagtttaga tctcgtcacg atcatttctc 720

acatacacta cgatgttgtt atatatggat gagtcagagg tttatgagtt ttctcaacct 780

aagtgtgaag attttttttat taatataaat gtccgaggaa tatcttacct ccgtcagtcg 840

agtcgagttt ttacgttaaa taaatcgtcg ttctcacaaa agatgttagt taaaaaacaa 900

caactccggt tagttttacc aacatgttcg aagcatagct taacagaagt agggaagaag 960

cttaaacatc caattctgat tggtgcaagt gtggtgtggt gtgcacttcc tgctcagtcg 1020

aaatgatgtg gcttcgtaca gggccggatt acgctaagag aggcgagaac cagcaatggc 1080

caatggatgg tgtgattgac tcagaacatt tcctatttgt taagcctggt tgtcagatgt 1140

tgcggtaatt agtatacata ttatggtaga cgaatcttaa aaagtatcag cattaaatct 1200

tcctcgagcc gccatgacag attggttgaa ataaaatg 1238

<210> 4289
<211> 1343
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_261787_G1, chr7:150034345..150035687, Cluster 26

<400> 4289
tcgcatatat acgtgatttt tagctccttg caacttgtca tatctcgcta ctcgttgagg 60

ctaacaggct acggcggcct acactggagc tggaggtagc acggtcctag ctagactcct 120

agcatcctac tgcaagtctg caacgttgac gtgctagtag gctaccacag cgatgatgtg 180

aggccattgg taccgccgcc tggacagagg gtttcggata agtattggca ccagttaaat 240

ttgaaccagt gttaacacaa atatctcaca gaggtaggac aacgtggaaa gggcaagggc 300

gatcgatact cggcataaaa gccggaggct atagtagtcg gtgcagaggt attaacactc 360

taaatgacac ttttagaact agtttgttct taacgtctct acaaaacaca cctttatttg 420

tcacaaaata ctatacgttc attaatcatc gaaacccaac aagaacttag acgccagcac 480

taggcctcac aggatttatt tgtttttatt tttctaatat attactccta aaataggtga 540

tttgtcgaat tgaatagatg taccgtaccg tttcgtcgat cgtgtcacgc gtcaaaatga 600

tgggcaaaga gatggtatag acaagaaaag aaaaagagta gcaatcgtgt cgttgctcgc 660

gtgcttggcc atgcattaat tcccaacatc cgtttgcatg cgtatgccta gttgcgtacg 720

tactctcttc ttgtgttccg taggtacgtg ggcaatcgga cacgcgcgcg cctcaatcac 780

agtcgtcgtc atagggctgc tcttgtttgt ccatgcttcc accaacttgc ctttctgtta 840

gtattaaaaa aaccttgtct ttctctattg ttttagccat tcaattggat tcaagggcaa 900

tcatagacaa aaaaaaaact acaaggttta ctttaaaaag aaaaaaatag tggcatgaaa 960

ttataattaa gaaaaagaga gatagagaaa caagaaatga tctcttagat gagaaagcat 1020

atttgcatgt ctacatgaaa gccaagatgc gaaagaaaat atactaaata gacatattat 1080

acttggttgg acaaaatttg ctttaaaact attcattgaa aatatgagcc ttaagtggag 1140

tgtctatatg gctaaacaat tatagaaaat agtttttagg ttggactatc ctaattaagt 1200

ttgtcctcat gggacactcc caatggtatg actataataa cttccatgtt actgtattta 1260

ataaaatgac atgcaaaaca ttttagtggt acaataataa cattaaaagc gagagatgga 1320

aactacaaga aaataggtct ata 1343

<210> 4290
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262406_G1, chr7:153838176..153839201, Cluster 26

<400> 4290
ctccatatac aggagtagca tatatacgct gcctgagcac tgaacaacaa tctatatacg 60

tgtgagccct ggaagtgctg tttgtcaacc aaggcacatg ggcaccaatc atgccataaa 120

actgttgagc ggcgtgttaa ttggtcatat atccagcctc agcatcggtc ctttgggtag 180

taggctacat atttggaact tgcgtggcca ctcgaaatgc cgtagctgat acgttgctgc 240

cggtgctcat gaaaaagggt cgctctcact ctctatgaat atgtacaggt aactatatcc 300

agtgtttttt ttttcatgct tatatatccg aaaattactg cagctgtgtg cggattattg 360

gttcctcaaa gacaagaaga ggagccatga gtcaggttca ttgcatatgc atgcattcag 420

tatctgccgc tgcggatatt ttcgttaaga aaataatata ctgagcatgc ataacgaaga 480

tgtgcatgca atctctgcag gtgcccactc gctgaatcat catcagctga ttaattatag 540

gttgctgaat tgaatccacc ggcgaatgac tgaaattatg tgacgctgaa taattgaatt 600

gaaggggcat gcagacgagt attatatcag gcaagttgca ggcatgcatt acacttgcat 660

tggtatatac aaacttcccc atctatgttg tggcctgcac gttgtcgtat gcatggcttt 720

atatatacat ccaaaagttg tgtagtctgc tgcctgagta ctgtccaagc aatctttctc 780

atgggcatct gcgctacctc cgctataatc cttgatttgt ggttcgttct gggcgtacca 840

tcacggtgtc aactggcagt attccacact agctagccat atcctaatgc gaataattac 900

gtgtatatat ataacagaat atgacagcaa tatataaaga cagatgcttc catatatata 960

cgaaccattt ccattgtttc aaaaaaaaaa gaagctttga aatatgcttt caacttatta 1020

agaaag 1026

<210> 4291
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263018_G1, chr7:156806819..156807848, Cluster 26

<400> 4291
aagagtcttt tttggagcta aggctacaat gacaaagaag gtcctaacga gacaattgtt 60

gaagtgttga tcttagctcc tcgacaccta cctaccagga gcagaagcta catcgtcaag 120

catgtaaaat gggtgtactt gagccgataa ttcaagttta cataagaggg taccaactag 180

agtccaaaag tagggtggct gccaagcaaa ataaagaaag gagagggcaa ggggtgctaa 240

aaaggttcaa atgcagatca tgaaagaaca tacttttcta gcttgcctag atttactagt 300

gagtcgttca ccattgtact tgttttgtta gcttgttatt gttttaattt acatggctaa 360

gtttttgtgt atccatgcat aggacatgtt tgagaaaata aaggcagagg agcagaaaaa 420

agaaatatgc atgtcccgtg ttatctcata ttgtggaggc caatgagggt ggggagcatg 480

aggacaatac tttgctttgt gagttcattg atctagcaaa agcaaacaac cacaaacaaa 540

aggagaaata ggaggaacat gctttcttgt cttagtccgc tgaaaattct tggcaaacta 600

cttcaagcaa aaggtacccg aagctaacta agttgagcca agtcagagga gttttgtctt 660

gctaaatgac gatgagaatg tgtcctacac taagattgtt ctatcttctt atttgttaga 720

tatgtgtggg gttgaaccat ttttgtatca tctagttgtc attgttggtc ttcttgtgtg 780

ctcataccct ataaagacaa ccttacttcc atattacata gtacctcttg ttttaatcca 840

aatgcataac agtgtaaggc ttatgatgat gcatcgtgta gttctaaaga acgagcttca 900

aatcaaacaa tgcattgaat gccatcaccg ggctaatgat ctcattctga gggtcgcatg 960

atgatttcat acacaactgt aaccaagtgt cacaaatagc attatcaatc atgctaatgt 1020

ttctataatg 1030

<210> 4292
<211> 1081
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263489_G1, chr7:158992433..158993513, Cluster 26

<400> 4292
gtgcatcaac cctatggcca cacgtgcgca tgccaatgta ccatgaagtg ttatcaagta 60

tagaatgcga tatcgattac caagtatatc atacccaaca acatgggctc tagaggctat 120

agaactgaca taacatagat gttcccatag caggtatggt tgccactgaa gaaggacatc 180

cctaacacta tgcaacgacc aaaggcatgg ccctgcgtat gacttcatga ccaagatagg 240

attggatttg ttggctctta gctgaccaga cccatgatat ggctgacata taaactctct 300

cattccttac tctataaaag gggacggagt aaggaaggaa gggggtcatt tcgaaataaa 360

gggataatat tctcaagcac aacatctaaa ggcagacata aaggtgaatt aagaatcgat 420

atggctagca cactcactag aaccaactgg aaatggagag ctaggaggtt atggtattca 480

aatggttctt gagcttgtaa tcttcttcaa ctttatgttc atcaatcaat gagtaccaat 540

agtacatagg gtattatgca caatatgacc caaacctctt taaaccgctt gcttattggt 600

ttctgatcat gctcaagttc aacacacaac tttcatatgc cccgctctct aataactctc 660

ttcgttttgg taccttacat actctatgtc tatccacaac atttgctatt ctagatttta 720

taggacatgc tataaaaaat tatataccaa tcattggcca atgccaactc tattagatgc 780

taggaaccct attcctccat atctccccca aacacatcaa tggaaaattt gtgtcttggc 840

agcagctact gttgctgctc caagtgacag acgacgattg agtggcatca agggtgacct 900

gaaaatctcc ctgcatggga ttttctaaac acccttgtta atgataagct aagaatttgc 960

cctaacccct taggcacgat aagaagaaag cctcctttat ctatacgttg gataagatgt 1020

gtcctatctc aatctcctaa tgtaataaca tctttaccga ccatcccatt gtcccgtctg 1080

g 1081

<210> 4293
<211> 1144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264087_G1, chr7:161955679..161956822, Cluster 26

<400> 4293
cctcgtggat ctaatttttt aaaattttaa aagtgtctat tgaaagctaa ttccgttgcg 60

cggcctgtgt cagactggaa cggacatcgc actgttgcgg agtcttcctg tgatttttg 120

ctgcatgcgt cagtgctgca aatctctgcc tctgcatgcg tcctcttctt cctttgaact 180

ggaagtcgat cgccggcaac gctggctgca atcacatgat gaagattaat tacaagcgag 240

gacaatgtac gttgagccat taaaggcaat gagatctgtg agactgactg tgatccagtg 300

gcactgtggc agtttatgtg cctttctagt ctctacacgt ttaggaacag gacatatgca 360

acacgttgtt gagttaaaag aaaaagaaaa ggaaatacgg taggtttgcg tttggatcca 420

caatttcgtt tgcggtttac ttgcatggaa tggatacctt ttagtgttca gattgttttt 480

ttaaatgaca gagatacttc ctgcatataa aaaagaatgt aatcctagca cgtacattct 540

cgtattttta gtatcttaag tttaattaat cataaataaa aaaactattg atatttatgg 600

tatcaaataa atatttttga actaatcacg aaatattttt tatagtaaat taatttgaaa 660

caatgaatgt gaaaattttt tatacgggca gcctatagtt gtaaactttt tctagacgga 720

gaaaatatac aggtaaatgc gacacatgtt gttgaatgca tgccaccaaa taattaacct 780

gcagaggctt ttgaggaaag gaggacgaca agtccctgat tggattggag gcgacttctc 840

cctcgtcttc tctccgttca atctcaatga tcaacacccg atccagtcct tgatggaggt 900

atccacattc cctggcaatg atgttgaggt tgcttggttt cgtcgtcagt cgctgtacca 960

cctccctgag caaggataag aaactgggct ggcgtgtttg gatggcttgc ctagagatct 1020

cgaagcatgc catggtttta cataggttta ttacataaaa actggaagtt atattgacca 1080

catatatgca caaatagtaa ctagtgtgtg tgtccaaagt cgactctttt gtcagtatat 1140

agtt 1144

<210> 4294
<211> 1349
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264842_G1, chr7:166367512..166368860, Cluster 26

<400> 4294
tccaggctaa atcaagatta agctctgtta aatagctttt tttttactta gaagtaatta 60

tgtactacta actaagtaaa atgattatct aaactgaaca aagagctagg agctagaaaa 120

aagagagcgc tagcttcttc ggtttcacca ctgtacatgt aatccatcct ggagaatcgc 180

tatcgcttct atctaaaaaa tcaacttact acggaagatc tgtagcaaca ggctcttact 240

tttgcctctc ggcaagcaca caagaaacaa aaacactaat ccaagaagaa gaaaaaaaag 300

tctgcgtccg gaacggcatt ccgctgacgt tttgggtttc cacttcaagt aatccactga 360

atttcttatc cgcgtctgac ccacttgttt attggtttta tcgacggttt ggtgccaggc 420

acgctgttct cgaggcagct ttcgccatcc gccgatgagg ataaaagttc cagcaatgcc 480

tgtccagaag cttctccttc ggaacaggct cagccggaag tttccagtcc tggtaatttt 540

aatttttaat ggaacgctcc gtcagaaagt aaagaagccc gccatgctgt tggaattcct 600

gcagttccat ttcccggtga gcaatgtact gaacatgtta ttagttaatc tattagattc 660

cgattcgatc cacttcttct aaactttaaa gcacttcagt ttgttttgag ctctaaaact 720

tcaatacgat atttgctaaa gtacactgtg tatgttttca aatttgatgg gccaccttgt 780

gtagattttc aggtttgaga cctacattat ttgaactgaa tcagttcgaa gttcgaacta 840

cctactaaaa gctgatttgt tctacacttg ggcaccatcc tggtgtagaa tcccaattcc 900

caaccaacca accaaccaac cacagacctt aaaatagcag ggttgtggcg ttggcgccat 960

accacctcag cagagcgaat ctttttcctg ctcatacgtg agggcgcggt tacctccatc 1020

tttcccttta tggctcgggt gatgccatat ggacattcca aaattcttta tgttcaccgg 1080

atctggcccg atttggtcca caggctcttc agtttttat tccttatttc tcgacaaaaa 1140

aaaagtttag acagagagaa gagtatcttt gacaatattt tcctgagaag ggttgggtga 1200

acatgtcagg aggattcatt catggcctag ctcgcaggtt tgtggtgaga aaaaatgcga 1260

cataaaccta tcagacggag acatctacct ccgcgcacag cgttttcagt gatcagctcg 1320

gacaacaact ctttttgtc gcggattag 1349

<210> 4295
<211> 1327
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265274_G1, chr7:168653602..168654928, Cluster 26

<400> 4295
gcccttacat gcagccggtg ggagataaat cggtgtgttg ttatggccgc gtttccacat 60

cccaaaagcc acatgacctc catttttttg aaaccttcca agctcgttat attatattag 120

gttcagcaag atcgcgaacc atgaggttag ttacaaaatc aggaagcgga tccaaccaaa 180

gcaacggttg atgagtcatc ctgtttacaa caaactgagc aagagcatga gcacaactat 240

tacatgatcg ataacaatga caaatatcta atactgtaaa attagagtgc agtagaaaaa 300

cgactttcct ggaacaacca acctcccatc ggcatatcat agtcgtacga tttgagagcc 360

atcactaaat tagtagaatc tgattctagc acaatgtgag aaatccccaa atggattgcc 420

actctcaacg ctgcaagata tccctcaact tcagcttgaa tcacttcacc aacatgtggt 480

aaattccttg ctcccgcagt tagtccatgt ccttgcttat ctcgaatgat gaatccccat 540

gcagcccttt tatctttttc tataaaggct ccatcaaaat ttattttcag gtaatcttct 600

agtggaggta tccacctttt tatattagat tattgttgat gtagtgaaac acaaatatct 660

tcaatggttt gtgttgcccc ttgtgttttc aacaagatga ccatatgaat aatcttggat 720

atagagggaa gacgctcacc actattgatt ttatttctag cattccacta acaccacata 780

acatggatta cgtctatgtc gatctccttt gccatccgta gtaatagttg caccatggta 840

aagctatttt cggcttgcag cagagttagt cgtacttgtt ccaaattcag ttctcgccaa 900

cagtgtttca ttgtctttca tttcaggaac acatgacctc catcttcatc catccttcta 960

cacatgggac acaacgtatc tatttccatt ccatgcctat taaaatttct tttacagtgg 1020

taatctattg tggccaatca ccataaaaaa tgcagaactt ttggttgcaa cctctgtttc 1080

caaactcttt tctagaaaaa actggttaat tcattacgca atgaggattc tccttcatga 1140

gttcgttttt ataattttct gcctctttta aaacatggta tgatgatttc actaagattt 1200

ttcctctcat atcttggtgc catgttactt gatcttcccg gtctatgcat actggtattg 1260

ttagcataag tcatgcatca ataacctaga ataggtcatg tacaagatgt gtatcccaac 1320

tcgatca 1327

<210> 4296
<211> 1076
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265541_G1, chr7:170116236..170117311, Cluster 26

<400> 4296
caatagtatt caggttagct aaaggctttg caaaaaaaaa atgtaagtgt gatataagag 60

aactccagat tggtttgcgc gtagacatca atatatgtaa catacttgtc ggatatggct 120

gccagcagaa gaccccatgt cacgtgcaag acgttgcaga acacggaaaa gcaagccaat 180

gaacgggtca atgaaattct tctgtacttc tgcaagtgca ttgaggacaa acaatgaaaa 240

gctaatgatt gagtgagcat tgttgagctc aagtgctatc tgctgagttg taacagcagc 300

aagattcttg tgaatgagtt cttgaaccct ttgatgcaac aactttatat cttgtggcgt 360

tgttgctgct tcaagaggaa aagcactgaa caccatcttg agcaaggaac aaagtgactt 420

tccagcatcc agcattttgt tgccaaagca aggttccagt atctaaccaa aatgacccat 480

aaaacaaaag caaagcatga gaatgtcctg atcagtgaaa cattaattgc aacaaagaac 540

atgtcgagag aacaagaaca atctggagta acttacttga gaaatatgat tgatgttatt 600

tcggatgaag agacggggtt gtttctccaa gactttgttc ataacatcaa gtccttgtgc 660

gagggctgat gcagggtcct tggactgagg agtgggtgac agattcccaa gtaatttctc 720

cagataattg aatttaacat tggcatttgg ccagacttcc agagcttgag tcagtagatc 780

aagagcttgc ttgtacattg agctagattc cttatcctta ggctcaatca caagtgatac 840

ctgttcttca aatgaacaaa tttgttaata tatgcaactc ctatgcaaga aacaaaaaca 900

attttaatgc taaaactaca actgtgcata tgctgattgt ggaacatagt agcttcatga 960

caccactatg tgaccaatac tcagatgaga ctgatggaca attgaacaca aatgtcttca 1020

tccctaatga aatatgccaa aatgtcccaa ccaaaactcg accttcgggg gggggg 1076

<210> 4297
<211> 1263
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265658_G1, chr7:170830081..170831343, Cluster 26

<400> 4297
aaccacctaa tagctagcct ccagcctggc atgcatcgca tatgccaact caaactaatt 60

cactcatcat cctcactact tccaagcaag ctaagtagaa tccataggag tacaacatag 120

cacaactaag taaagtgtgc agcgcaaggt atatagacga cgactgcggt agaatgatct 180

cacactccac gccaactttt catccgccat tgctagctag ctgccctcac tactgccttg 240

gcttatatat gtacgtgagt tgtctatgca ctacaaccga gcagtctgac tcatcgacac 300

acaggtaaaa taaagggaga ttcaaactcc agtgttcgtt gttaagaagc gacaatgtat 360

gttaggcatt gtacacagct agctattgac atcatacttt cttgccttta tgttctcctc 420

gataagcaag tcatgttaaa agggtgcatg cccttgtgtc gatctgattt gagttttatc 480

atccttagat ggaaacaatg agaacatggc ttcacttgtt ttgtgatact aaatttatag 540

tttctttgat aaaattgctg ctatgatgct agactataca aggatgataa ttgatgcatg 600

atttattaac tcaaattcca caataactta acctaatgtg agttttcttt gtacgccatg 660

ccagacacat tacacatcat ataacttctt gttgttttta actttaaaga agtagtagca 720

taattataac agaaaatgtc tcttataatc atcatcctct ccctagtttg ttgtatacat 780

gtcttgcgtg tggctaaaca ctatgacaca agataaacaa aaataccagt tgtccaccat 840

aacaaatgac acacaacaca ctatcttacc atttgttgcc ttaagatata taccatgata 900

ttgttaggcg tacatgttat ggtatatttc tgcatgacat atactatgct tattttagca 960

atggtgcgtg ccaagaaaca tggttgcata aagcactatc tttagttctt gttactatgt 1020

gaaacatggg tgttgccgtg tacatcttga tctactaatt tagcataaat gtcttttctt 1080

atatatccaa aggataaaac aagttttcta aaccaaattt tagttatctc tagctactat 1140

ttagatatac atgtgagttg tccatgatcg ggcattgtat caaaacacat ccataaagcc 1200

ataagcataa gtatacgtta cgcaaaaaaa aatatacacg ctataatttc ttagctatgt 1260

ttg 1263

<210> 4298
<211> 1170
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266057_G1, chr7:172746606..172747775, Cluster 26

<400> 4298
aaagttacaa gagactacct tcttgacgga tgatgtactc cgatctctcc gttccatatg 60

cccctgatat gatgcacatc tctttggcag gaggcaacga tcgggccaac gtacgacgac 120

aactcttgtt tgcgcgcgcg atcgaacgga ccaaaactgg catgccagca ggctactgca 180

tgcatatgcg tgctctcgac gtcgacgtca acgggcggat atataccagc tacagcactg 240

tgcatgctgc tgacctgctg tacgtgtgcc ctgccgcctg cgcgtgcatg cgtttcttca 300

gggagcaggc cggagccagg gacgcggcac cggcacgggc atgcaccgcg cgcacggcac 360

ggcacagcac cctaggtagc tactatgcgc tcgtgaacat gcaggccagc cactcctatt 420

tttctcttgt atgtctgcat tacgaatcct atccttacta catattttct ttcatgcatg 480

ttctttcacc tttggattgg gctaccaata tgtgcatgtg catttccacc ctattttgga 540

tcgattttct caaaagcaga gagattggga gttaaagata aggagtaaat tgttggagaa 600

cgcttttcca gtcttaccaa aaaaagttaa gagtgagagt gagttttgga aactcttgcg 660

aagttctaat gtaaccaatt atgagaatcc acaaggtcca acccaactag tttgttcgtt 720

ctcatatttc cagttccatt tgaaataaga tctcaattta tcttaagtaa aagtatttta 780

attttaaacg agtttatata aaataatatt aatggttaca atattaaata ggtaaagtac 840

gaagtataat ttgatcaagg acatgttaat actctattat tgtcctaaaa caacaatatt 900

tttattgtaa actttaacaa taagtgtaac tattagattc atcgaaacta aggttttact 960

taataaaata gaactaaaaa attaatctaa tgcactaaaa tcgtaaaatc acaaagtcat 1020

aatccaaatt tggataacga ccaataagat agcaatgggc tggaatggat cgatcgcatg 1080

actgccccaa gtgtggtgca caaacagagt ttatgcatca gcccatttgc tatggggttt 1140

taggtctaat cccaatacat aattctccac 1170

<210> 4299
<211> 1065
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266674_G1, chr7:175536209..175537273, Cluster 26

<400> 4299
tagttgtgcc cataaattaa tatatgatga acaaaagaca tggggtgtta cacattgtag 60

ctcgaatctt tataaaaatt cttgtgtatt aggctcgtgc tatgctgtca ggactcactt 120

tttcttgctc ttctagcaat tctttctcat atacacatta tgtaccctaa tatctttgct 180

acgaaaatat tatttagaac aaagagagca ttaatatcta taatttataa ttattatcta 240

cctaatctac ttttacaata aacttatcta aagatacgaa aatttataat tattttatat 300

aaacctaatt aaatttaaga aagattaatc gacataagca ttgtgtagcg gcagtacaca 360

ccattagtac aaaaagaaag ggagagtaca tagaattggt aacaaaaata aaagaaaaga 420

aaaaagagga gagtacatga agagaggata gaaatggata gttttataaa atctaaaaga 480

atgtaaaaaa taactatgga cctgaccgag gcggacacac caggcaaggc atctttctgg 540

tgactggcca gggtgcgttg tggaccgtgt tggaccacat ttgccactgt ttccatttac 600

ctcctccctc cccctcccgg gcaaaaagat gagtgaggaa ttcattactg ctgctcagct 660

ctggtacacc aaacatcaaa tatctccgat acactggtga acaaagtaca caaaaatatc 720

tccgatatag tttcacagga aattagggct ttgccgtata cctatccatc actgttcgct 780

tgtgattaaa gtcaattatt tgaactgttg tacctatact ctataaagac aaaaaaaaca 840

taacaaccat ttcttaaagt gcaatacata taacgtgtat tattaatgtt attttgtgtg 900

aactatggaa tacataaagt gcaagatcac aaccatttct taacatgaaa gcacttaatt 960

tacatacatg acccattaac tagaaaccac ttggttcaca tgaccctcat cttatgtgga 1020

gctatcatcc tctggaggct tgtattcttc atctgaacta ctacc 1065

<210> 4300
<211> 1072

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266908_G1, chr8:396783..397854, Cluster 26

<400> 4300
gtccaacaaa ataaaaaaaa agacgtgtct tttgtctatc tataccaata tataattcat 60

cggtttaaac ttttcaaaaa gacacccaac cagatcaccc ccacgcccca taacttccat 120

taaatccacc aaacaaattg ctccattact taacacacca tcaaaactat caatctagat 180

cgttgcataa cccacccaaa tccaatgatt aatattattt tgatcacccc tccctcgacg 240

cgcgcccctg ctctttccaa atcgtagcgt taattaggcc ggagctacat gatatttata 300

tataataacc ttgtgccttt gagcatatag ctgtcgttaa tgagagaaac atatagtcta 360

aaaatttgaa tggtagagag cgtgtgttaa tcggtatcaa tggcaacgaa gaagaaattt 420

tgttaaccca aaaaagttgc cagtcacgcg tggatcccgc ccaccattgc acgcgggtcc 480

catgcttttc ctgacccacc actgttctgt tccgtcttcg caagggatga tggtataaga 540

taaagaagaa aagcatgcaa atgcgatgat gcgatgcagt catgcacagt tccggtgcac 600

ccccactaca ccaaatcgag gattcgtata taaaaaccct cgcaagcacg cacgatttcg 660

ccgtttggct cctgctccaa accgaaaagc ggtctccttt tcttttctgg gctgccagtt 720

aacgatcgcg tcagctttaa ctagcgaatg tgtgtccact gatcttggtg tctcaatata 780

tgaagaaact agtatacgtc attgaccggg gtaggaagta ggtgattggt ttaattggcc 840

atcgacttcc ttatcatcgc acaaccgata tatatgtata tatgacatgg acgcgggacg 900

gacggataag aaggtcgcag ccgagcgtca gcacacggtc tgtggaagca agtttggaat 960

tcctcctttc agcggcgggc aagagccaag atggaaacag gctgagttcg agaagatata 1020

gtacacgtac atatacggtc cactttggcc ggatctgtgt tcatttattt tt 1072

<210> 4301
<211> 1374
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268748_G1, chr8:10293782..10295155, Cluster 26

<400> 4301
gtcggccagg atcttgttct cgttggtgtt gtttgatcat tgcaagtatt tgatatactt 60

aatgacatcg taggatagta agtaataaat ctaaagaagt ttttaaaata ggttagtcct 120

tattattcgg tgcatatatt tatgtatata aattttgttt tcaccgaata tcgccaaaag 180

atggtgctaa aatcatgttc tttgtaccga tgctcgccgg cctttaaact aaaatctgtc 240

gccaaaagta tttattatta catatgtaaa gatgtttttt ttcataacga gtctataaag 300

attaagctgc ataaaagggt ttacttgcta tctacttatc ctttcagaat ctcacatatt 360

caccattttg taatctaaaa gagccaatag gtaaaattga tctctcatca ccccctcaag 420

ccagaccata attgagagta tcctgctctt ttagaaactt gagtggtaga tttataatgt 480

aggtatttcc ttttaatgaa ttcttgtcat gttccatcct gatcacttgg tagcttaaag 540

agccgttatt tccacagaag gcatttgtta tgaatctcca aatttaaaat agccagtacc 600

cccaaagcat ttgggagaca aagctttagt ttagaccact taatctgcct catatccttt 660

ttttcccttt aaaaaccaag tactaccctt ttttttctgt acctgagaga accaatggta 720

gctcgtcgtc aactcgacaa gtagcagccg cacgaattcc atttcctgat gacgtaccag 780

cctccgaagt gacagttcat tcaggtaggg gagtagtagt atactctagc agaacgctgc 840

aaggatgcat gtctgattgg gttacacgaa atgaatgctg tgtcgatcta gcgtctagtg 900

ctgctgcgtc gtactgtact acgtgagcca gccaatgcat gtagcggcag cagggatttt 960

caactagaga tgtcgggtgg ctaggctatg catccatcct ttcttccttt cagtagaaga 1020

gagagagaga gctcccatcc caagtccaaa caagaacagc atgtggccgg tcgacttgtc 1080

catttccaca ccaccaactc tcccgaaaac tggtctgaaa cgcgccaaac cgaaacgatc 1140

tcggagattg cccaaaagct ggccgaaaag ggagctcaat ttgctaaaaa aaaaaatcgc 1200

tcctcctgca gcttggttag tctttggtag gaactttggt tggagacttg ggagttgagt 1260

tggtgaaccc cacaaccaat tgctaagctg ggtctcctgc ggctgccata tggaaaccgt 1320

gcagaggaag ccctggttgc ttaggtgcgc gtggtctggt tcggttggac tatt 1374

<210> 4302
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269452_G1, chr8:13613785..13614824, Cluster 26

<400> 4302
agattactct cttgaaacat ttcttcaaga tgtagataat gtggtaagac attgatgaag 60

ggaaatatat atagggtgga tggtggtgag agggaatgcc ttgacgtagt tgtcggcgtt 120

gttgtccaca tggaccgcct acttggcgta cacgaacgtt tgctcttccg aaaatcaacg 180

caattaatat cttcctccaa tttagagggg atttgagtgt cctaattagt tttttttgt 240

tagacattgc accgtttgtt caacgctaca tgcctctata ctaaactcct caccaacttt 300

aagaaagcac ctccattgct agttattcct ggatggtgcg ttgtaccttg tttagccatg 360

caccggttag tatgggcgtg cttggttcct tcggctagcc tcgccttgca gagcgagaat 420

ctgaaactgg tgtgtttggt tggctttgtt tgattctttg gaacatgtgt ttggtagctt 480

tgcacgttat ttttcctgcc aatgtgagtg aggctagctg gggccctatt tttgccctgt 540

gtctacttgt tgtgccatgt gattatgaag atatggcgcc acgccgttca caataatgta 600

cttccgaatt ttgcccatag gtccacattc atatacatag atggacattt tagcaagaag 660

ccaacgttaa ggtgtgcata aacacaaata ttctcggatt ccatgcccta gcaattatag 720

gttgcacacc gtagcatcct acctcgtcac ttaatactac ttgtatatga ctctatggac 780

attatcctgt ttccacccat gagagatttg gactaacata tgcttataaa atcattcctt 840

gtgtttcctt acctcttctt ctacccatcc gtcatgtgtt ggaattaacc agtataaaga 900

aactatctgg aaaactaaaa gtgcccatgt gcatgtattt atttggactt ctagggcctg 960

aaagttaatt cttgtgttat atgattcttg ttatctcaaa atctctgaaa gaatctttat 1020

aaaggtttgc atcaagtaaa 1040

<210> 4303
<211> 1187
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270183_G1, chr8:18354268..18355454, Cluster 26

<400> 4303
atattccctt cttcaggcat tgacaacctc tagctccctt tatataaggg gttagagtta 60

caagtcgtta aactatatat ctaattggtt tacaatttaa gaacaaatcg cagagatcat 120

aaccgattag aactttattc tttgttcata agaaatatgt taccttgtac aatatctttt 180

tcagaacgta gattggcccc cgactagata cattattttt tgtatgctta tagtacactt 240

attacatact tcctataacc ctcttctacc accaacaaat agcacacatt tctatggttt 300

attatttatg ttatatagta tcatgttttt atgtctactt gagtatagaa attgaaaatt 360

accaattgtt ttatacgaat aagaattgtc ggatttatgt tttatttaac aatttttat 420

tgttagaaca aaaaatacag attatatcta tagaaaacta gaaactacga cgaactaaaa 480

ccataatttt aatataaata taaagtatat ataataaccg ttctttgcaa gaaaactaaa 540

attcagacat ttaaattttc agcaagcctc attttcagca agccacttat attttgtata 600

aattgacgga ggaagttgtt attattctcg attcggcccc ctaaacccta gcgtgcctgc 660

atggctgcat ccactccagc gccccgcttc gcccggtcat cgcctcgctg ccgccttcct 720

cgacccgcac ccgcaaaagc taatggcgta agaccagtcg tctcgtcttc tccgtttctt 780

ctcctcgaac tatgaacttg atctgtttgt ttctacctct gtttaattaa ctagtgtgat 840

ttgcggacaa ctagtacccc ttaagctagt ttcagtctta tgtgttgtgc atggttgagt 900

tcaagctgcc tcttacagca cgtttggaag gtcgaattcc agccagagcc agctagctag 960

gactaggttg catgaataat tttagatatt tgtgtgaacc cgctgtgtac gaggaaggag 1020

aaagggacaa tttatcaatc cagagaatgc agcagagcct ctcaaaatca tcggttccaa 1080

ggcacacttg ttgtctggag tttttattta aaccagagga ttctggtaaa catgatttaa 1140

ggtctaactc ccctgaaact tgtttggtta ggaatgcttg cggttga 1187

<210> 4304
<211> 1132
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_27175_G1, chr1:164635482..164636613, Cluster 26

<400> 4304
tcttcgcaca aggtaatctt ggattgcttc tcaaatcttc actcaatact ccaaaatacc 60

aaaactcaca aacaatatta gctcaagcca acaagtgagt ggatgttctc gatgatgatc 120

gacgaacata acagagcact tgaagcaacc aaaacctagt gtacgagtga gacttttcaa 180

aatccaaaaa gtgagatatc taatccaatg agaatgaagc aaaaacaaaa aaaaatactg 240

catcaaacta gtggttagat gtttaggaaa tcttcctaat gtatataaga accgaaaaaa 300

tggatcgcaa aacaagcacc caaaactccg taagcactca aaacggtgag ctgtctagga 360

ctctaggaca gcgtggtagt gctatgctca caattggcat cattgatcat tagcactagt 420

gggtgaagcc cagtacttct agtctgtgac actgttgttt cacgaggcag tagtgttgta 480

ctgccgcttg ccaacaactc gaaccaaagc tccaaaagac caaaatgacc caagcaaagt 540

tggattgatc tgaaatttta cacacaattt cacattaaag gtattaaagt atccataaaa 600

tttgagctct agaagactaa atcttcaact acaggttgaa aaatacactc ttaacttggg 660

ggtttcctca aaaccggtaa gagattggat tttcatgttt aagttgagcc taccaaaacc 720

acttggtgga atactccttg aaggtatttg catgtttcta tccaactcaa aaatccccaa 780

gaactcatat tcaacagatc aaagagagga ggttggaaac aaaaaatttg aagcaaaaac 840

ttcaagaact aaacagagca caaaatagat tttacctcac catgaacaac cgtggtaagg 900

ccacactttc taggcctcaa cttacacaga taaatatttg gttgataaaa tatttgtgga 960

tctcactagc agtcttgagg gagagatcta caagagagaa agcctgaaaa ctaaactatt 1020

tgttagaagc tagagagatc ttcggttgag agtagacatc ctcttattta tagagcttat 1080

tacatgttcc taacatatcc atggatattt ttgagctaga ccacttagcc ag 1132

<210> 4305
<211> 1346
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2719_G1, chr1:14162593..14163938, Cluster 26

<400> 4305
aatgtaaaca gtttcaaaat gtattataaa atctaagaac tatttagatt tttttgaata 60

tttttatat tactgtaggc aaatgtattt ttaagtctat agagatattt tcacgatatt 120

taaatattta atttactttt acaatgtaat aatattttta tctggattct tagaagcttc 180

gacacatttt ttatggttta aaaaacttat ttgatactta ccagaactga aaaaaaggat 240

gaaacagccc tcggaaccac cttaacctta agccaattag aatgattttg agagtatacg 300

ggatatgatg tctggtttgg aaactcaagt agaaaaaaat agaccacatt gatattccat 360

agagctgggg ttttttcttc ttcttctgag ttttactggg cttggcccta tctaaactgg 420

gacagatatg aatgttctcc gtctgaccac atagatcaca cagaacggcc cggatactgg 480

ctatcccttt cttgtttcca aaaaatgtct ttcctgcgca ccacatgtat cactacaatt 540

ttaatatatc atatatggtt tctgtgtata acacaaacca atataagtta tagtggttgg 600

agaagagttt ttattcttag agactatggt tcgaatccca atggacgcac cttgagcgtg 660

cgggaaactc tggcgacact cgctacgcat ggagagtttg acgacacacg atgaaactct 720

cagttttaaa ggtgtagtga aatgggacat gatttgtcca attccatccc cctatctcta 780

tcagctttgt gacggcaaat gtgacggtgg gttttccccc atccgaacca gatagcttaa 840

ttagttgctt aaaacggtga cgacaaggaa agtgtgccac cacaacggta caacttaacc 900

aacatgtata tatttttttt ttaaaaaaga agaagctgcc atcacacact agaaattact 960

aaagaccatc ctggtctcaa actatagcaa agatcaccag aatatatcaa atatctcttc 1020

ttcttcttct tctttttttct caagggcatg ttttgacatc cgtatatcca cgttaatcca 1080

ttcgtgttgg tatggaactt gctctaaaat catacgtatt caacagcatc aagttgcaat 1140

aatgcacgaa aggaaacagg ctctacatcc ttaaacatcg aaacaaatgc gcggtcttct 1200

cttctccggc ttgtgccaag ccaagcggcg ctcaagttgc aataatgcag gaaagggaca 1260

cgtcctcctc ccgtgtcacg gtgtcagttt tgcgacggac tcgtgttgag ctcgcacgaa 1320

tggtggcccg gccgatcgac gtcgcc 1346

<210> 4306
<211> 1172
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_271925_G1, chr8:29722852..29724023, Cluster 26

<400> 4306
ttcacaacaa ttagagtaga gattagttta ataattgtct cagttatcga aacaatatat 60

aaagttttca tctaacagac ccatcagctt gcatgttctt gccctccgtg gcctagtggg 120

tactaggcca cgggctcgaa cttaattagc caaatcaaag ttttagttgt ttaagtcagg 180

ctggcccccc ggccctggcc ctagctatga attatataat attggtgaat tattctggcg 240

tccgctcgct cttgtcgcag accaaagcac caacgtgtga ccttgctcgc cacggcatgc 300

catataatga aagtgaagtg agcatatgca tgcatgatgg gcacccccac tacactacac 360

acaaatatat cgagtcgttc ctagctttat tcgtaaatta aaacattcca ttcatatatc 420

tttatttgat gaataacgag tgcacagcaa aacagcgtaa gccagctact tcattcattc 480

aaattcacgt acactgccac ttgttggtct cttgatgcat gctgctcgat ctctacttta 540

cttcagcata tatactctat ctctctatag atacaaatat gcacgtgtgt gtaaagcata 600

tgagcgctca tgtgggtccg tcacaattac aaacatgaac aaaaacacaa ccgcaaacaa 660

attagagaac acatgaatca cacagtacat attaaaacgt agtaattgcc aaacatgcaa 720

attaaaaaaa gaaccttgaa actataatga atataacaaa agcaaaccgt actacaattg 780

taaaatccag tcatatataa agaactaaag tttgtcactc tactttagtc accctattta 840

cttctttata ggctaaaagt gactaaaatt tatttagtca ccccaaacca aacagaccct 900

aagtatcgca agagaactct ccgttctaac tcacattacc agatatatat ttaatttcat 960

agttgcaact ctggtacgtg ttgattgcaa tattgcaaaa ttgaacataa ttaaatagca 1020

acatcatgtt tgcatgcatg agttgccacg gcaagtcatg ttgtgaagac aacatttta 1080

cttctttggt ccatgtgtcc tacttttaca tttatacacc cgcgtatcac aacagtgaaa 1140

cgagggattt tcgacggcta gtggaagccg tc 1172

<210> 4307
<211> 1180
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_27955_G1, chr1:170531353..170532532, Cluster 26

<400> 4307
tttgttaggg aggtctcctc tataaatgtt gccctctacc aagcctttct cattcgtgag 60

caataatgga tgtgttgagt atgtgccact gagtgacaca ctcagactgt atactattta 120

aaagttttga gtgtgttgag tgtcattgca gcactgatac ccagacacca tactagaggg 180

tctaatcaga tttgtaatac tcaattttga gtgtatactt tatcgttatg catcatctca 240

ctgccggaca ttcaaaaaca ttcggcatac tcagtcggac gctaaaaaca ttcgacaaac 300

tctttactga aggtaatact caatacaaaa atttcggtaa actgagtaat gacttattta 360

tcgggtgttt gacaaaatac actaaacaaa gcgttgagca tcggacaaaa agtcggattc 420

ccatggtacg cgtggtgtca gtgtcaatgc gcacgatcgc acgtaagcat cacagttaac 480

tactgctgct aaccaattga aaccagtagc tagctccttg gcagcctaca tgatttagag 540

agagggaggg atctagcgtg cgtgtgcgtg tgcgtgcgca tgcatggttt ggtcgaccgc 600

ccaaaccact gagcccacgt acgtacggag tacgtgtcat tgtccgcgcg tgcagacaga 660

ctgcgacgtc actcctgttg gaattaatta tatggacttt tttctgcgtt gttcctccta 720

ataattgata aatcttaaaa ccacaatcat atattagtgc atgaacaaac gaacatgtat 780

atatgcaatg tctagacaaa attgggatag ataatgatga atagattaac agttgccgca 840

cctacatcag atcatatggg tacagtagct aattgggatg atatatggtc acacttctgt 900

gtaatgctaa aaaggccgat acactgtcat ctatcgtcta ctaattacga attcagtttt 960

tgctactcct atatatatac gtaagtttat taagagcagc agatgcgaca ctagataaca 1020

ataatccatg ctccggccgg ctgtgtgggt ggttgttagt acaccacaaa gcatatctct 1080

cgatctccgc ccaaattaga acaaaccacc aaaaaacact aaaaacggga gagagagata 1140

aagaaaatag tggtcacact gctccctcgc tttactatta 1180

<210> 4308
<211> 1182
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_280584_G1, chr8:90573737..90574918, Cluster 26

<400> 4308
atgagtgtca cgtggccatt tgacaaagcc gccaggagtt caaacgcttg ggacaaataa 60

ttcatcatct actccttgac cacatgtacg tattgttgcg tgcctgtaca gttgtactgt 120

tgccttctag ctagtagttc tgtattatca ttagtcctct ctcctacaca ttaacaaacg 180

caatagtact ctttattact aaaaggtgta gggaactaat aataattggt ttgtcttcta 240

ctccgtactg ctatatgcaa cgactattgg tttgtcttca tgagggtact gatccaacgg 300

ttctatgcct ttagtgtaca tgatgatgta cacataatcc tgatcaacca gatacctata 360

cgtaggaagc attatattaa tctagaaaga ttaatttcca aagcaaggat gtagtatcat 420

catctactac aatcttatga atcctaacgg aacttggttg atgtaagtgt ataagatgta 480

attaattgca tcaacacaca acgaatatca tactctattt taactaaatg atacctccca 540

tgttgctgca aaaaaaaatt gtaatgttat acagattatg gaagatttag gtatatcaaa 600

ttttatagtc gagttattgt gacataaaag gcactacggg tactagagaa aatcacagag 660

aggaggctta ggcctaaacc accgctggat caaggcgcta acatgcagat tgcacacaca 720

cgctcaaact taagctagtg cattttctat gcgcgctagc ttttagtagt gagagagtaa 780

agctagccga ctgtagttac tcttgaagcc caaactattg ctataatgat tgcacacaca 840

tactctattt tataatgact gtagttacgc ttgaagccca aactattgct ataatgattg 900

ttgtacccgc gtggatcata tagagtttgt ggtacaccta caatctttat gaaggatcga 960

atcaaacaac caaagtggat gaattagagc caataaaaat tatttgcgct caagaaattt 1020

tggtttgctt cctaatgcta cacccaaacc ttcaaaactc taaaaatcac tgttagtttt 1080

gtatagtaga gcattagcaa ttatctatta aaaagtttcc aaaaacccag tttaaacaag 1140

ggcattgtga agctaggtaa gtcctactag gagcaataac tt 1182

<210> 4309
<211> 1011
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_281475_G1, chr8:96048250..96049260, Cluster 26

<400> 4309
caatggttgt tggggttata tggtggtcgt gccgtactga tggaaataaa ctgacaattt 60

ttataggata aacgagaagg ttaagaatta actagttcta aattttaatg ttgttgttgt 120

tgtacactta gagtagtgat ataacccttt ttttctttgg tcgtactatt aaggggacat 180

gaatatgtag tttgacatag gcaactctag tatggagtgg tgatgtacac ttgtaaaaac 240

tagtgctaaa taaacccatg agggcccata caaagattga aacataacca aactcaaaaa 300

ctaattgaaa caagtgagtt agcagagttg tggtggcacc aaatgtgtct ggtgtgtacc 360

atacatcgag cccaaacata agcatccatc aaggaaatca ccaaatcgaa gtataaaaga 420

gtactacata ccattacaaa tgaggggagc tgaggaggga gtggatggcg gcggaggtag 480

gcgagttgcc gaaatcatag gtgacactac catctccaac cctactttcc tcacactagc 540

ggaagctgga agatggaggg agagagatag aggaagaaaa taggttgggc ccatgacatc 600

tttatgacct tgtcgtgccg gtctgcatgg catgatagct ctatcacact cgaatggatg 660

gtgtgacaag gtgggcccta ccttcgatcg caggaacata tcaatgtttc acgccactgt 720

ggcaccttct atcgtataag tgcatgtggc acgacaaagg taaattgtca ctccaacacc 780

attgtcgcaa ccaaaagaat caaatatgta tactatttct taggttagga ttaaaataat 840

gattataaac tattgatatt ttttttaaaa gtccccacca tgaccacaca ctcccccaac 900

acgactgata agctcaacga gaaggaagaa ggtcatacat tttttgcatt ttttattctg 960

tcggcgatgt gtgggctcaa gtgttattga gatacagata agtgttggat c 1011

<210> 4310
<211> 1306
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282341_G1, chr8:100955648..100956953, Cluster 26

<400> 4310
gaatggcggt ttcacctctc ttatggagtg atatgactga tagattaatg actgatagat 60

taatgagcac aaagttaaga aagattacaa gctcaagaat caagtgagcg ccatgacctt 120

ctaactctcc cttcccattc tagtaaattt ctaacctagt gacccctagt tcacctttat 180

atatgcatag atgttcactc ttttagatca tatggagtga cctggccttt tctcagagtt 240

cttttggtcc taaaagttcg agcctaacga tccctagttc acctttatac tcttttagat 300

catatggagt gatatgactt caatcgttac tatgccatct ttttatggac caaggggaag 360

agagatttac gtagcagtca gattatgagc ccaatcaact aagacccaac aaacccaaat 420

cttatccgga tcgtggagtc atacgcaaag ccaagaagag agatttacat actagttata 480

tcatggccac ggatccagtc aactaagacc aaacaaaccc aaatcttatt atgatcatga 540

tgtcatacat agagccaacg agagatttac atgccattca gatcatgggt ccagtcatct 600

aagacccagc aaactcaact cttatcttga tcatagttgc atgcagagcc acaccttcac 660

tcctagcaca attttgggat tttctgcttt agtggcagat cgacaatcat atttactaca 720

gggacaagta tgttatgtgt cgtggagtct atacgatggc tacaacatag ttggtaaccg 780

atgtagaaat ctttctagta cattagatag tgtagaaatc tttctagtac actagcacac 840

ccacacgtgg ctacataatc gacgcacata ccaaattata gccttaagag cctagttaac 900

taagttatga tgatagtgtg tctatcaaaa cataatattg cacattacat taaatgttat 960

gtgatatatg agattgttat ccaaagtgat aacgttatat tcgaagcgcc aacattatcg 1020

gtagacttta gacatgattc gaagcgccaa cattatcagt agacttcata tgtgacatca 1080

tgtcttaagg ggttgacatg cctttaatgg aggctagcta cattcctttg acttctagat 1140

gccattatac tttagccact ataaagtccc ttcatcgcat taaaggcctc aagagtctca 1200

aagcgagtct caaagctcaa tcattcaagt tattcgacac gaggaacctt agggattcga 1260

ggggtggtaa agaaccctga gcaactaata atgtatttct actcaa 1306

<210> 4311
<211> 1144
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282388_G1, chr8:101180764..101181907, Cluster 26

<400> 4311
ttatattata tatccatata tgttaggttt agtgtgaggt tgtattttgt tcataggtac 60

atttaattag agttgcatat gttgtttgta tatatgtgat gtggcaatat gatcaagacc 120

atatcggaag tggagccgaa gtacaaggag attatcaagg agtatgagga taaggtacta 180

ggtacccatc aatggtgttt cttaagatcc ctctgaattg ttagttgact ttgtctacaa 240

gctaggcaag ccttggtgca tgaaccatat tttcaagtac atatattaca tgggtgcatt 300

aagttgtagg agttagttga aatacgcatg catatacctt ttatattatg aaccatacta 360

gaataacata ttctgcatcg ttgttgtgtt taggaacctt tgtagcacat tggtgatgcg 420

tcgttactaa atatagcctt aatatgattt ggttaataat tggagaccat atgaggagtg 480

ttgtatggtg tggcaagttg gcaacaaggc aaggggtct tggttgctat ttctttgtcc 540

ctcttatgtc tatcaaggat tgttcgttag tagcgacgtg gcaagtttga aggtactaaa 600

cacataacag gggctgagtt atagttgaca aagaagctta atacttcttt actactaggg 660

gtcctaaaca atttattaga gtgtttctct caccactagc aaagttttaa gagacatgga 720

atgtcattgg taaaacttag gggaaactcg tcccagatag gccccctagg gtgggttcac 780

tatggtggtt agatcatttc aaaccttggt agtatatttg gaatgcttac cttgtgtcgc 840

ctccttcgag aagtacgagc atgtgttttg aattgcttag ttagacatgt atttattgta 900

attgccgccc tccttagata tgtataccac ttgtctcact actgctatca tagtaatagt 960

cgtaacatgt tgtggtgaga aagaatgaaa ataactgggt tgagatattt tgattaattg 1020

tccagtgctt gcaagtatta taggtgctta tctatactag ttaagtaata acttcatgtg 1080

actcctaaaa ctatgactat aagaatgcac ttctagtagt gctttactgc aaaagttaga 1140

taga 1144

<210> 4312
<211> 1185
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284058_G1, chr8:109954080..109955264, Cluster 26

<400> 4312
tacaatgacg cgaggccatc attgttggtt ataacccata actgacaatg atgttggtct 60

tcactgcagg atgctagtgg cacaaacact agtaaatgtt gtgaccatta actctctcat 120

aacccttaaa gtatggcccc aaacttaata ttagattttt ggcaagcctg tggaccaaaa 180

gtatggccct acatagaatc ttgtattttt ctgacctatt ttgttattat tacatttatt 240

ttatgttgaa acagagaaag aatgttgaac tatcccttca aaataatata atattccatc 300

cacctccacc aaaattggtt cactggacca tgtgaccctg tttagaaatt tgctaccatt 360

taatttctag tcattttaga gtagctctag ttcaacatgt agttacttta tattgtcaag 420

cagaaattta tttaaataac ccataatagc aaactacctc cgaaaaacat aaaactttgg 480

gttccttaac ttatgctacg tacaaaatga agaaaaactt ttgcggtcta taatacactg 540

aaaatgcatg agaattgtga aattattgga tgtctagtta gtgttctcta gaatggtgca 600

tccatttgtg agccatgttt gttccagctt tatagaaatg ggtttagatt ttttttccta 660

gcatgttcac ctgaagtatg gccactatat ttttattatc catatactct tcatataaat 720

ataaatatgt gtaccctaat ctagggttaa ggtgtccatg accatttgag acttcatcat 780

tatatatgta ctatccagta cttcacatgc aggtggatgc attctctttt gggatagttg 840

tgttgtgtgg ccgatcttga ccgtcgatga atcataagca aatagcaaat gtgtgtttaa 900

tgaatctatt attgcctcct tttactgtca tgtcaaatga aatccggtga atttattatt 960

cttttctatt tctggatgct acctggtgcc gacttttac tgattattgt cagtacgatc 1020

aattctagat tgatgcttac aatttgtaca tgggggagcc ccaatctacg cgctgctgca 1080

ctgcacaaaa tcgtcatcat tgacttatca ttgactgcca gtaccaaatg agttcataac 1140

ttcacattat agtcaatagt gttgccaaat tgtacaccat ggggg 1185

<210> 4313
<211> 1302
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284292_G1, chr8:111200552..111201853, Cluster 26

<400> 4313
agggcattct tgtaatttgg cacaaagatg tataccgacc tgaccctata aataagggaa 60

caatgcttct gctacaggga tgggagtttt gtgacttggt gcttgtagta gctaagatac 120

aatttatatg aagcatgaat atgattcagt aaaagaagcc attgttttag gataaacaca 180

aagagacttt gttgttgttt gtaatcagat atgaaatcaa tcaatatgat gaagcgtgtt 240

ctgttcttca ctaacacttg tttcattgtt tgtgttccat gttgattgta ttgaatcaag 300

tgagcatgtt tgtttatctt ccttctccca ctcgacacct tcggaggggа gaagggctta 360

aatccataac catgttttcc tgttgtgttt tttcctaaaa tctcgatagg ttcacaacac 420

cagttaatta gttaatggat gacactgtag ctatcaccta taagttttag ataaacaagt 480

tccaaataaa tagataataa tgtagacaac atgatatggc tgccatctac aagttctaag 540

ttctatgcac tacttcaacg caactaaatt tgagacacac cccttgaaca ccatacaacc 600

actacatcaa attgtatata taggaaaatg aacaacacat aaccattgtc tcttcatatc 660

ttgaaaaatc cctccatgtc tttgcactac ttccacccaa cccctaagtt gtcaatgatc 720

tggttgtata gttgttgaac cttctacctg ttcagcgctt catgcccttg taattttgct 780

caaagctgtc attcatgtca ttcctcaata gcatgagcct ctagtggaca ttgctcaaac 840

catcgtcgtc atcctcatcg tcgaaatcct cctcttcaaa atcattagaa ctattgtgtt 900

gaagaaggta cctacatgtt ggttacctac taaagtcact acgaataact ataattggga 960

aacacaataa aaagatgaac acttatcccc tatctctaag ggtttgaggg taggggatga 1020

aggggaaagg ggcaaagaaa gtagaatgtt ggaaacattg atatgacatt ttaacagtta 1080

ttgaatgaat ttcttcctcc tttttattgt gccttttttgt atacaggtgc atgcatggaa 1140

aatcacaaaa tggccaatac atataccttc gaaggcctct taggacgctc gaaggggtga 1200

aatatgacca ctcttctatt gtcacgagaa acctgctagg tgttgcctag tagccgacac 1260

atgaggagcc aacagctgcg ctgctgctat agtcgcccct cc 1302

<210> 4314
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284403_G1, chr8:111809526..111810531, Cluster 26

<400> 4314
ccccgatcta aaaccaaaaa actcgatcca accccaaaaa acgcaaccca acccgacacg 60

ttaaaaagaa atgaacaagt cgatatgacc tgacccaaca ttaggatcag gtatgcgtcg 120

tgctgaatag gccatgaccc gaccttaacc tgaccggaac ccaacccgac atttgaacaa 180

gtctaggttc acgtagtaca atttaaaata ggatgtgtga accggcacgt aaagctttct 240

aagtacatga ttcatataat atagtttaaa cgtacatgat tcatataata tagtttaaaa 300

taggggtgtg gaggttatct ccagcggatc tccctctaca aacagtgtca tctattgttg 360

tgcgtcctct attttgcact atttttcaaa gacagcctga tggaaggcag gataaaaagt 420

ttgttggagc ctaatgattt ggtttttcga aaaaatctaa aaaaatactt ttttattgta 480

tttgattttg cattgctttg acttttcaaa catttttttg ggttttggtt aaatatgttg 540

aatctatatc taaatttttg tttatttttt tttcttaaac ggtttctttt ttctaccttg 600

gggcccatgt tattgctctc ttttttcacc ccatacctta taggacaagt ggctccaact 660

ttacaaattt atgcccacac actacaactt catctgaagc aatctttata tagagttaga 720

gctatttggg agatgtgttt ggctagtaag gtatcttcag caagtatttg tttatttgcc 780

cttatcaaac gtgggtttcg gcagaatgcc ctcatacata cggatttggt tcatatgccc 840

ttctcaaacg gtgtctacca gttaaaatac cctttcatct attcatcagt ctaacaacgt 900

ctaaagttcc aaatctaccc tcaccatatc cccgcgcttc ttcttcttct ccatgtcgac 960

gtctccgtgc acacctagag gtatatggaa gggagccaac caggaa 1006

<210> 4315
<211> 1302
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_287165_G1, chr8:127109883..127111184, Cluster 26

<400> 4315
agacccatac aaatttcttt cattttagaa gcccacgctg gtagaagtgg atcagcatct 60

tagattgttc ttatatcttg tgtttagttt aaaatttaaa gacaaagtat gataggattg 120

ttccatactt tttaaggatg atagtgtctt tactagcatt tggttaagag ggttgaattc 180

attctagttt ttggtttgtt tggttggata gagtgcagcg gaacaaatgg attgttaaca 240

ccatcatcta tagttatgtt agtctcacat gtcaatgatg agccctatcg attgatctta 300

tcttcttcat tcaattccct gcatcaccac catctcatgc cccaccgata gcttataaac 360

tatgcaccac gccacttcta caaacccaca tcccaccttc gcacaagggc accacgacgc 420

caactctccg tgataccctc cccataccat gagcacttgc atgtagatac aacatcactg 480

tctggtgacc acaactcaat cagttggagc tctaatagta ggaatggagg aaggacatag 540

tcgtgagttc tcattgttga agaaagacat tgtgttatca aaggacatgt gttcttcctt 600

gtatcatcca atctagtcat gtatttttc tattcctatt tgaacaactt acatcctaaa 660

ataaataggt ttataaaaag atatctccaa gaattggtaa ttattgtttt catgcatcct 720

tgattagctt ccacattatg atatttttat aattattatg tttataggat aaattttaaa 780

tcttatagaa gttctttcta ggccttgcca accatgaact tgtgtagttg aaggagaggc 840

acaaccgaaa gtttggtcat tgccattgga acctaagaca cactgtccat gcgtggggac 900

agaaggtaca tagatggaca aggacaccat tcaagctcac ccgtggattt caagggacta 960

ggcaacccat attggatgtg aatattcctc ctggggatga tcccgtccct gctagtccta 1020

gaatcaaaca ccctcggaaa tgggctcggc ccataccatc tcgggtagtc tctaaaccaa 1080

acatacacat atgtatcttg tatttttctt aaactagact ataaaattgt ataagggata 1140

aataaagaca aatacaaaca taagaaatgg tttggataaa tgatacgaaa caaaatttat 1200

gtttaaaaaa catcatgaaa atccatattt ttctatttta gattcccacg tcggtagaat 1260

ccaacatatt ttggtaggtc gctaactcaa tcctgtgtgt gg 1302

<210> 4316
<211> 1242
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_289203_G1, chr8:138653549..138654790, Cluster 26

<400> 4316
gtccaccttc ctctcatgac ttgcgcagcc cctcagcctg cagcgcactc atgatctatc 60

gtcgttaaca cgctaacgcc caccactagg gccaccaaag ccgggccatg ccgcctacgc 120

gcccgagggg tcgccacgtg cgttggccga tccatgtcgg tcgcaccgtg ccgctatagc 180

gtgtccttcc atggccgcac gactagagga agaagccgac atttgttttt tcctttattt 240

tctttttctt ttttattaaa gaaataataa taataataat atagacatta atcaaatgaa 300

ttataaaaat attactacta ttttaacata ataaaatgta ctttttaaaa gaaaacgaat 360

taacatttat tataaattaa tttttaaaat aggttttcaa acaaacagaa ccaatacact 420

aaaataaatg catcaaacat tttattaatt tttaagaact attccaaaag ctatttaatt 480

tattttgtgt caaaaaatta ttgattagaa ataaatcttt ttcaacaaga atacaagtag 540

tttcgttgct acgttgattt tttatgtgat ggacttttg ggtgttacaa gtgtcaacta 600

ccacaatcga tcttcccgct tcttgtgtcc ctcagtccat caatcaacac tcttagttta 660

tcagtacgaa cccattgaca ttcaccttcg tcattgaccg tcttcaagct ccccacttgt 720

gcaccataag acatgagata tattgtacaa cacaccctaa attagttcac aaatttaacc 780

aaagttgatc atgtattaaa caatttaccc atcacattta aatatcatgt gcacttctcg 840

accatatttt ctcatcggca actcaccgta gcctgtcctt aaacaatgat ccacgtcatt 900

gaacccaagc tattctgagg ttgaaattca tgggaaagcc gtttccacga tgtataaaat 960

attagaaaca acaaacatgt ccgtgtctca tgatggacac gtacgtacat aatccaagta 1020

tcccctcgtg tttgaaaaac atcccggaac aaaacaacca ggggctcaaa tcaagtgcac 1080

cggaacagag tagtccaagc gcgcgcggtg ccccaaccgc aagaacgcga cggacgtgaa 1140

agtggcttgt ttgcactcaa tcatggagct gggaggcccc atgcacgtag tagctagatt 1200

gaggggttcg tctaggaaac cattatatta gcactaataa tc 1242

<210> 4317
<211> 1220
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293496_G1, chr8:160403177..160404396, Cluster 26

<400> 4317
cccctagtat gaccacgcag gtcggccagt caatttatta gtcacacacg tgatcgtcct 60

caagaatcaa gatcgcaacg gccgggcggc cgcttgcttt gcttgacccc gaaagcaaac 120

gcaccgttga tctgtgtttg tgacggacga gcgcggcgca aacaccatgc gcacaaaagc 180

agaaggagag ggccgcagag catcaacgac cggaccatga ctcagagtgt gtagatatca 240

agcaagcaag cagaagcagc caagcacggt ggagggcgac caaaccaatg cacgttcggc 300

aggcgacgca gaccactccg ctggtttcaa tttcaaccaa ctgtccttgt cctgccgacg 360

tggggtgcac cgtgcatggc gaccgggggt ggagcccgag ccacccatct gcatgctgga 420

gactcctcgt atgtgccgac ggtggcatgg cacccggtca atcacgcatg gcaggactac 480

ttagatacat ttaagaagtt attaagtaat atatcttttt cttataaaga tagaatatct 540

tctattccat gggtcttttt ttccttcttc agacgatgtg ctaaattaaa aattatatat 600

tttagaaaca taacagatac attatatata gatcttttag tttaatctca gacaaagata 660

attataaaac atctcattat acgattatat gaatatcgca tgtatactac ataaacatca 720

taaaatatat catagaacac catatgttta ctgttggata tcataaagaa acattataga 780

acaacacgtg tacactacgt gaacataaaa cacaatgtag aacatcatca atgcatataa 840

actacatgaa cattatccgt gtactgcgta attatgtaat taacagaaaa atatagcgac 900

cacatttata ctacacgaag accatattta tctcattaaa atatagaaaa taaaaggagt 960

aaaaatacgt aatataaaaa ataatcaaga aaaagaagaa gtcaaagtaa aaaaaatcat 1020

gtaacagtga agaataaaat atcccaccac aatagcgtaa gcacacacat gcttgcacaa 1080

acccatcatc taccctccta tctttactat ttttaggctt gcgtctagga gtccattcga 1140

acattattaa atattttaag agttataata ttgtatttta tggttgtgag ggtcatacag 1200

tcaatcctta atatgttacg 1220

<210> 4318
<211> 1249
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293951_G1, chr8:162552879..162554127, Cluster 26

<400> 4318
tgatttgttt gttgtgtgtt taattaaaat taaaaaaatg gatcagccta ggagacgaat 60

tcgccacgag atgatcggga tccgtggtcg acctgaccac tcgtagcaag cggcccactt 120

gcacggtttc cttcgttacg tgcagtgcag actgcagagg ccagagggga ggaggggtgc 180

ccgtggtcgt gggcgctgaa cactccagtg tctctactac tactagctac tacactagag 240

aggctctgcg gatctttctg tggacaacta gcttgtctac gcaaagcact taaagcactt 300

cgagtgttaa agtgcatttc atatttgact ttgtgtgccg tagctttttt cctgaatatt 360

tcttgaaagt tgaaaccttt gtagtttatt atttttgta aaatttgatc atgtatgtag 420

gtaaaaaaaa cataagcatt tatgacaaca aatttggata gaatgtattt tttatcataa 480

atccattagc acgtatttgg catcgtaaat attaatatta ttttgcatat gttacttaaa 540

ttcgagatat tttaccttga tgctacgttc caattacatt gcattttaac ttgccctaca 600

ctgttaatac ataagcattg ccctaactag aatggtctct ttctaggcca cggacaaaat 660

actattccta accgacaaaa ttttaggata ggagaattaa cagtaggttg tacggtgccc 720

ctccacgtcg agtcagtgga aaccaaaaaa aaaaacaacg aagtccggtt gcagtgcagc 780

agaagcaagc tgcaaagcgt gaattaatga cgactctttt tccttgcagg ggcgtgaggg 840

tgacttgtgc gcaaagcctt tatcactttt agaccttccg ttaattgtta taacgttaaa 900

gtttggtctt ttccaccaag aacttgctaa aattcaggtt attatagagt ttctctcaga 960

taaccggtta ttgcgtatga tttatactaa aatcggtggt ttagttcgct gcaatttgaa 1020

tagacatagt ctataatttt tttatcctaa gaacaaagaa gatgtgagac aaaatactag 1080

attcgatgaa atctaatatg tgttggcata aagacaattt accatttata agtgttcata 1140

tagttacaca ttgacaaatt ttttatgtgc tataatacaa aaacaaatta catgccagaa 1200

aagtaacaat ttaatcaaac tagttggttt ataacaatgg ttggttaca 1249

<210> 4319
<211> 1228
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295426_G1, chr8:169537160..169538387, Cluster 26

<400> 4319
ctccaaactg tgtaacatgg cataagtctc caaagatccc atatcttgga agtaagttat 60

gaattcatcc ttatatattt tccccgcgcc aaagtctcac ttatcttgca cctgattttt 120

aagttcttca tccaattttt catcagaagg ttttccatcc aaaactttga tcacagccac 180

tagcccaaca atctgatttt tgttctccgg tatgtctatt ccgaaaaaaa ccttgctctg 240

gtatcccaaa accaaacaac cagagcttcc cgtgagaatg acaccctgtc cccatatgtc 300

caaactcact acacttgtag cacaacatat cgtttgtgca tttagattgg tgatgaccta 360

tcctcataca acggaagcat ttgatctgcc tcttttgttc atccttcatc caaaattcct 420

tctcattatg caagagtttc ctattatcag aattctgacc ccccatgata gaagactgca 480

cccctgatct ctttctctct tcctcgctag tccgtctcct ttgctactag cctcaaaacg 540

ctcttcttca cgtcgacttg caaaaccacc cctaccaaga gcaaatgacg gacgacctcc 600

ctgcctcctt tccaaagacc accctgccaa gatttccagt acccgtgaca ttttcctgac 660

ggcgtcaccc ttgttcctaa agatccactt ctctactctc cccttcgccc ttctgaagtt 720

tggatatcaa atcctgctcc cttttaaagt ccagatccaa gagatcatcg tcttccattc 780

atttccctta ccatttcttc cagtgctcga tccttgttcc ctccgccacg ccatcccttc 840

tctgactaca tgtgcaaaga aacgctcaag actaggagga tgtccaactt gatgaacaca 900

acgagcaaga tgacctagac accatatttc atccaatctg gctaggaaga attagttggc 960

tatgctagct ttcctaggca cccaaaaaca atccaggtaa atgggcatcc acgaatgtcc 1020

aaatatttgg gccgaggaaa ggccctttcc cttgtgttcc aagtttcccg ctctgtcttg 1080

cctgccatca tccaccatgg atgaatctcc atcactatct tccataagat tcctatcacc 1140

atcctccaac atattctgat cctggattat gagctccttg ctcaaatcgc ctaaaacact 1200

tattgatcaa tcgaacaaac aattatgt 1228

<210> 4320
<211> 1310
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_297046_G1, chr9:1584311..1585620, Cluster 26

<400> 4320
agagtgtaga tcttcaatat tggtaagcgt gttgtatcct gcacatcgta gatgtgttca 60

cgtccaaatg tacacttaat aaatattaag aatataattc ataggtattc ttatgaaaat 120

aaagaaatgt taaagtattg ttatgccttt aacttagagt aaacatagag aaattaaata 180

gttctcaact aggattatat tacccgaaaa tgtttactta atttgcttat ccactattat 240

ttttagttt tcaattcaat tttaacttat ttttctttta caagaaacat tgtcagtttt 300

gttctccttc tgttgtttgt tacatctaca tatgcatatc ttgatgatga cttgaccaac 360

ataatgtaag ttatattcaa cccaaaggtg acttagatac tcgaatataa aacaaaatga 420

acatggaatg ctgataaaaa taaagttagt acaaccatga ctagatgaac cattgtttga 480

tcaacgaatg ttgacaaagt gataatacca acataataca atataaggat agataaattg 540

gtttgccatg gtctctagat ataaaacatg tggatgaata tggaggacaa ccagatattg 600

ctttacctta tcgataaaag ctaaataatt acaatcatgg tgttaaagtt ataagtggat 660

taagaatcat tgccacaacc atcatacaca tgatactagg ataaaacaag gttaccatgg 720

tataaatttc atttatcaca tgatgcaata tctatcaagt gtaaatacac atgcattttt 780

tgtacttatc catatgagct atatacctta cattgactga aaacataacc taaggattat 840

aaatgcatga gtattctcct ctagcatgtg ccacaaaaag agcctactag cacctttaaa 900

ttgtgtaggt aacattagtc ctaacgataa ctcaagctac cagagcataa aaaagttgaa 960

tactagtgga acaaggacca atgaaactac catttactat caaaattttg cacattgatg 1020

ataccaagag cataataaac tataaatgct aataaaatat tttaccatga taaatatata 1080

aaagcatcta acatataaac tatcaaaagg gaatgaatga gcattgcctc accatatcca 1140

tggctagaga atatagtagc attatatctc aagcttgcaa tcattttgtg gatattggat 1200

cactatttat cggccacaaa tgcttactcc atttcgtgga tattggatta ctatttttg 1260

atagggcgcc caatggaaag agcttacaga ttggtctcta actcaaagca 1310

<210> 4321
<211> 1222
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29860_G1, chr1:182792883..182794104, Cluster 26

<400> 4321
gccactaggt ccacaactct atgcatagcc caaaaatatt ttatacccta ttaaattctc 60

tatatttctt agtcaaaaaa tattttataa gtctattaat tctctgtttt cctatgaatt 120

agtccgaggt gtgatccacc actccaccat tgcagcacaa atcgcgtaga ccacatccac 180

aaattctttt atatgctcat caattttata tggtcccaat aaaatttccg tccaccgcgt 240

agcgaaaatt caccacactc tagcgacagc gtgattgctg gaccttctgt actggcagcc 300

caataagcat cccgccgtaa ggggcgcttg ggggccagca tgtcaatgtc agcgtttcgt 360

ttcacatttc ctcctgtcct catgtcgaaa tcgaattttc tctattttaa attgtcaatt 420

gaaacgaggc taaactcatg agttacttgt gcggcatttt gtaggctact tctagagctg 480

tacaatggga aggaccaaga cattgaaatc cattttagta tcctgtatat tgtcttccct 540

attaccattt tctgttcact aacaaacctg catttttta tacagtgtct tctaatttta 600

aatgttcaaa ccgtatttca aaatgtcact ttatttctaa atcattattt tagagagcca 660

tgtgttgtgt ataaaattcg cttttgtata tatatatctc tattgaccgc tattggggtt 720

tgaacagctg ccccccctccc cctcccagca acacgtacgc accgacgaca cggaagtagc 780

gtattggaaa cgaaaaatct aaaaataaaa atcgcacgtc gatgagatgg cgaagattca 840

gagttgaacg gagtgagaca gtgagtgagt catgcagata cacggcaaat ttccgtctcc 900

aaatgtctcg ctcatacaag catgcatatg gtatttgtct acggtgattt ggtagcctca 960

gctctcaaag ctctgatgca ctagctagta gcgttaggtg agcaggcaag tgaagctcag 1020

cttcactaac actaaacaac gcagagcccg cctgagcctg acacggatcg accagcctct 1080

gccttatcaa aaagcagggg gggggggggg ggaggggga agtgattgat accacaccag 1140

gacactaaca actcttgccg ttagagctgt gctagaagct taacaactca aataatcacc 1200

aaactattgc ctacaaattc at 1222

<210> 4322
<211> 1215
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299710_G1, chr9:11698851..11700065, Cluster 26

<400> 4322
agttatttta gcgtagatga tgggaaacaa attagatcgt gtgaatacac ttagatgaat 60

gatagacccc tcaaggagct ttttcctatt tttattatag cgtgtgataa aaaaagtctt 120

agtggcagaa gtccttcctt tggtgtgtat caaataggtg gaataggatt gttgaacttg 180

gttggattag ttaatttggg gatgaattgg gataagttta tttggggcgc gtagagatgt 240

atatttatat gttcgcttta tttatcaatt aataatgaat accccaatat gaatcaactt 300

gtttgtctat ggaagctaaa aattcctatt aaaattcaaa gtatcctatg aaatttataa 360

aagggaagtg tctctcactt aatataatat agaaaaaaag tggtgggaag gaagtgtgag 420

gtgcaattta tgtaatcaga atgtgaatat ccgacagttt gttattgcta tattgctcga 480

gctatttgga ggactatttt tagctcttaa aatatattga cctactaata ttaatcatat 540

agtaggatct tggaaaagta gcaatgagac tgcacacaaa aaggcttatg ataagagtga 600

caactatatt ttgccatttt agtaattatc gttttgccaa aacgatgttt tttctttaaa 660

ataaacagat accctctatt gtgcaggcca ttttcatggg aacctactag ttcaaattat 720

ggagatggat gtagaaagaa gaggctcata aagaaataaa cgattcttgt cattctttgg 780

aggttgtggc tatagagatc tttgcaaggg tggcggttca atgctagaat tccaatgtct 840

tagtattatt ttttgtctat aggtttcact ttctttccat gttacattta gttcattcaa 900

gttttgcatg gaatattttg taagaccata tgcaagcaac tacaaaaggt tggaatcgtt 960

ttttccattg tctaaaaaat tagacacaat ctatttattt agccttcgct tatatttgga 1020

tataaactat tctagcttat ggctagtgaa attggggttt ttggtgtaag ttgtccaagg 1080

agaccgatgt ggaggtgttt tccttgttaa cgcctattca agcctttgaa acacaaccta 1140

ctgttccaaa aacaattaac aaaaggggca tccaactaca ctaatacagg gacatctagt 1200

tatgcatgta attgg 1215

<210> 4323
<211> 1223
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29988_G1, chr1:183853497..183854719, Cluster 26

<400> 4323
aatgaacact ggtttttgca tcaattttgg gattggattc ctaggatttt ggttggtctt 60

acacatcaaa tttgtttatc tagtcgctca actacatgta gtgagtcaca agctcttaga 120

ccgattttga catatttttc atttttttgtg agctatagtt catgtcattt atgtgttttt 180

gggtgtccta gaacgacgag ccccatacat tttaaagcca cggttaaagc ttacatgatg 240

tacctcgatt tatggagcat ttttctagca agttttagct catgaaacaa tgagttcttt 300

ggatttctta caaccttgag gcgcttaaat atctagggac atgagttttt tttgggttgt 360

gattctaaga ttttttcttg ttctaacacg tgaaccatgt ctatcttggc acttggccat 420

aatttttttc tagggtccaa ttttcttggt agattttta tttcccatgc catcgggtcg 480

attgtcatat ttttagaaat tttcaagacc tatcgcttat gggtctcagt tgatttttgg 540

ggtcccaaaa ctatcaagca ccataccttc ttaaggaacc attagagata ctaggatgca 600

ccttgtccaa gacaacacta tgtagctatt tctgctctca aatgacaagt tatttgttgt 660

ttgtatcctt gtcgccacta gcaatcatta ggattttaca tcagtttggg ataatattct 720

agggaatttg gttggtcttg cacatcaaat gtgcctatct agctcaacca catctagttt 780

tagagtccca cgctctcgaa atgattttgg cattttaaac atttttcgcg agctatagtt 840

catggtattc atgtgttttt gggtgtccta gaaggtcggg ccccacacat tgtaaaggca 900

ctattaaagc ttacaagatg tacctcgact gatagaacat ttttctggct agttttagct 960

ctagagacaa tgacttttt tagattttct acaaccatga ggtgctcaaa tacctagggt 1020

catcagtttt tttgggttgt gacttcatgg atttttagtt gttctaacac aaaacatgac 1080

tatcttgaca ctcaggcaca tgttcttttt tgatagaccc atttttgtgg gtagattttt 1140

tatgtatcat acccttggtc caatttttca tgttttcaac atttttttgtg tgctatagct 1200

catatgtttc taatattttt ggg 1223

<210> 4324
<211> 1341

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300258_G1, chr9:14830501..14831841, Cluster 26

<400> 4324
tataacccat cgtcttaaat ccattattga gtcacagtga ttcaccattc gaattgagtc 60

catgttagca tcctcaccga cacacaaatc attgagtccc aattaattat tctatcattc 120

agagtaagtt cgtgctcgtg ttatcccaaa gcccagccca tattcccacc acacattagg 180

tataagaacg gtacaacaac ctttccttca tatgtagtag tacataagta attggcgcag 240

ccctcagcca agccaatcat ctcgccaacc cacatgcaaa ctaccgtaat aggaagctgg 300

agttaggtac gtacagatgc ccttccgcat cctagacact cctgttaagt tctgcctctt 360

ggacgtgtgt ttcctgacta atctgggggt tcaaagttcc ttgcttcccg tccaagttaa 420

aggagatcct gagagctgat cagccatgcc gaacgtttct gtaaccctgc attcacgcaa 480

tcccgttcgt cgctcactac atctgcgaaa cgtggatcac tattcacttg tctctgcggc 540

gccatatgag cgttaaagag agagagagat ggaaagcaaa cgaaagaaaa aaggcaaatc 600

caccgccggt ggagaaaaaa gggaaagtcc tagtcagcac ccacaattat tatggctcaa 660

ctgacggcta cggtggacta gcaataaagt atccgctcac atactacctg gccgtgctgc 720

tagatgctaa tcccctgcgt gccactctcg tcttcgttgt cctcgtgccg cgccgggttg 780

gttaagttcc tcctcctcct aatcatgcaa cactagataa aaaaaaattc tcgtgtcaat 840

tcgtacgtct gctggatgaa taccatttta cagtattttg ccccgtttga gatggaactt 900

tcacaaacaa acgttaggtg catgttgtct cttgtcactc attcagtttt ttcctcgtga 960

gttcgttctc caaaacatct gagtcaccat ctgtactctc tcttagctta gcgtacaagt 1020

ttatgttagc atttatgtta gtataatgct agcatttaat ttctttcttt cttttaggac 1080

ggaaaataaa ataagagaga gagagagagc atatgatcgg tagtattgtc caggcgcatc 1140

caccgacgag cggacgcgag gacagaaagg gactaaaaac aaagttagca ggacggtgca 1200

agggacacca cagacttaat cgaatctcgt aatacaccgc caataatata tatatcattg 1260

acctgcctga atgaacgcct ccgattagtg attgctactg ctttattact actgatgcaa 1320

gcttgacctg cctgaatgaa c 1341

<210> 4325
<211> 1285
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300405_G1, chr9:15911091..15912375, Cluster 26

<400> 4325
ctctatcaaa tctcataccc tagggtttgg acagtcagca ccgaaatgcg aatttgatta 60

tggattcgtt ctcgtggaaa tttggttagg gatttgttct tgtggatgag atcagaacat 120

acgattaatt tatcgaatga aattttgtgt tgtttttttt ctgtaagttt ccaacctttt 180

aaagttggac attttatagt catgtatatc aaaccgttta cttagtttta gtttattgca 240

tatgagaatt tttgtatgcc tatccatgtt tcaaattctg gccgacactt ctctgtaggg 300

ccaaagggaa aaggtgctga tgggcatggg ccacaacagg tcgtgcttgc tatgctgggc 360

tggtgcctac ttttccagct ccaacctctc caagaaacaa cctttagtta ctaaggttgc 420

acaatacttg taaggcccat aagcccatca cgacgtctga ctgccagttt cagcttctgg 480

tgcatcaccg ttttatgcaa actgaatttt cgtttagttt gcaaaagttt aggcgagtcc 540

taacagtagc agacgcaagt gtttcaacga gaccattctt gttgacacga acacattaca 600

cgtggtgcaa aattccttct ctgcctcctt tctgccacct tcggctagag ccctgcatgg 660

gggcatggat ttgtccaaaa gctgagggaa aaatgcctct tatcaaattt gatgacaatt 720

tctaagcaga gtggacgttt ccccccccaat aggaaaaacc atcagtggat catagaaaat 780

ctccttctca cctatatggc acaagtttcc catggtcatt gatattattt tattacgtta 840

cttatagttc atgaaccgaa ttacctatga gtctcttttc tccgttccaa aatgtgatat 900

agactttaac aagttatcct aggtaaaatt accctaaatt tagcgaaatt tatagaaatg 960

aataatactg cttatatgat atcaaatgag caccgctaga taaattatga aatgtgtctt 1020

taaaatttac cctttgatgg tgttaatatt cttctctttt taaattaaat ttggaacagt 1080

ttataactta ataattactt caagtagtac gaagtctctt agatttcatg attattatag 1140

catgattata gcccaatttg catcttttgt ttacattatt acacggttaa tgtaccaatg 1200

tgtcggtcaa tctcctggcc cgcagcgaag tcactccatt catttacaac cagggcacta 1260

gagtactaga cactagcagc gtgta 1285

<210> 4326
<211> 1292
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301172_G1, chr9:20313836..20315127, Cluster 26

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (575)..(674)
<223> n is a, c, g, or t

<220>

<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (577)..(577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (578)..(578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (579)..(579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (580)..(580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (581)..(581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (582)..(582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (583)..(583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (584)..(584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (585)..(585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (586)..(586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (587)..(587)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (588)..(588)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (589)..(589)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (590)..(590)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (591)..(591)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (592)..(592)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (593)..(593)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (594)..(594)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (595)..(595)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (596)..(596)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (597)..(597)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (598)..(598)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (599)..(599)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (600)..(600)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (601)..(601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (602)..(602)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (603)..(603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (604)..(604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (605)..(605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (606)..(606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (607)..(607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (608)..(608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (609)..(609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (610)..(610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (611)..(611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (612)..(612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (613)..(613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (614)..(614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (615)..(615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (616)..(616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (617)..(617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (618)..(618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (619)..(619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (620)..(620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (621)..(621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (622)..(622)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (623)..(623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (624)..(624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (625)..(625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (626)..(626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (627)..(627)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (628)..(628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (629)..(629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (630)..(630)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (631)..(631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (632)..(632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (633)..(633)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (634)..(634)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (635)..(635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (636)..(636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (637)..(637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (638)..(638)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (639)..(639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (640)..(640)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (641)..(641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (642)..(642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (643)..(643)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (644)..(644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (646)..(646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (650)..(650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (653)..(653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (660)..(660)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (661)..(661)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (662)..(662)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (663)..(663)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (664)..(664)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (665)..(665)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (666)..(666)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (667)..(667)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (668)..(668)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (669)..(669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (670)..(670)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<400> 4326
tatatatagc tagtggctgc acctgcactt acacgtacac cgccgccgcg gccggccgct 60

caggtaccgc gcgtggcctg ggcccagctg gccgacgacg gcccggccgg tccagccgat 120

ctcgtccaga tcctcctcga tcacgtgtgt ttatcacaca aataacatat actatatata 180

gcagcgttac tcgtcacctt attatgtcga gatgatcaac aaacaacttt ggaatgatct 240

agcgaatctt cattgattgt tgtcattcta gcatgtgtga cgtaccatca cctaattaag 300

gcgaagaaaa tcataaatgt atacaaagaa taaaaacaat atctacaaaa aaaatgttta 360

acatatagaa aggatgttgc cctaatggcc ttgtacatgc atatagcttg ttcttccttt 420

gtgtccagca ggcctacgcg ctcatgactt ttttgatgaa gtcttgggac gatggccaag 480

gaacgacacc gcctcccaaa atcgacagtt tcaacgctgg atcgcctctc tcgggaatct 540

tccgaataag aagaagaagg gtggacctcc gttgnnnnnn nnnnnnnnnn nnnnnnnnnn 600

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 660

nnnnnnnnnn nnnnccttaa tttcccttaa accaagcagt ctcaggttcc gtactcccct 720

cagggacaat taatggatcc ttttttttt tggtgaaggg ccaactaggc gatgattgat 780

gacaagtaaa atgtaattgt tttccacgga aggaatagta tatttttgtg gaggtagcta 840

gcgtgtgcat gggcgtgagg ggaaatgaaa cacaggtctc ttgtgcatgc atttgtacgt 900

gctaggctgg ccgctggcat acatatgcaa gagaaccgta ttctctgaac gtaggaaaac 960

gatacaacac ccgtcacact tcatgcttaa gctcaagcgt cgtcgatcga tcgagagcta 1020

gctagctagc tggcggatgt tccctttatc tacgacggcg actctctctc tctcgcacac 1080

acacatgtgc atcactttct ttttggcagc atatttgttg ttattaattg ttgagagaga 1140

cgatagagat gttgggttga tctcagagac tcagacggtc tttagtctat cctaacatat 1200

cctattctaa catatcctaa ctgaatacgc cttgattgaa gacgcaacaa cacgtgatgg 1260

ttgcggctcc ctttaacatc atagagatag aa 1292

<210> 4327
<211> 1121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301186_G1, chr9:20341475..20342595, Cluster 26

<400> 4327
gactaaaatc gatactgatg attttatcag tatcatttta gtgcaatcca tactaatgtt 60

ctcggatgaa atcattattc tccggtagtg tttgctaaat actcttaaat tttgaccaca 120

gatacaccct attatgtata tgtgctactt aatcggaagg aattgtattc cttttgttta 180

aacatcctag catgaaaaat ataagaataa cttattagcc ttaatctcaa gattaggaaa 240

ataatgcaaa cgcaagcaaa taattagtgc actttctctt gactcatgtt aaggtagagc 300

ttctgaacca ttagttgtgg catgcaagag tacccaaagc gaagccacga taccaacacc 360

tacatttgaa tgatgataag gcatgcatat cacttgtatc ataattcata atcatatatg 420

gagtagtgca acttacatct atatcaatgc atggagtaaa aaagacagtt gtaccttcct 480

tccaagtccc aaaagtactg catgcctaaa ttttctaaca aatcttgaga ttttttttt 540

aatattggca gcgagaatga aatctattag caagaaagag ttagcagcca caccatgtaa 600

ctaaaatgca tgtatttata gtatctgttg tcaaccctaa ttttggtcgg gatgcgatat 660

taggcaacat gaaaccgtcg gccagcaatt tcaccctcaa atagatagaa gcgtgcatat 720

ggaacaggag caccaaaaaa tagcaatagc aaatgtgcta atctaagtcc atgggatcct 780

tttatgaaat ttggaccgtc acgtgtgtta tcctctttct tgcgatcttg tgatgtccat 840

ttaggtataa acgttgcctt cctcggtgta gctggggaaa actggaaaag gtagtcgtcg 900

agttacctac aatgtgtcct ttggccatgc aatacttccc aaccatgcaa tacttacaaa 960

ctatgtgatg aaatgcatct cacctatatc tttgtgatgg ctctagttat gtgactttct 1020

tttagatcat atcactacag tatatatgaa ataaacaaat acaatgctcg cgcgttgcga 1080

cgacatataa tatttgatga atgactctag caatctattt g 1121

<210> 4328
<211> 1313
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301189_G1, chr9:20391876..20393188, Cluster 26

<400> 4328
catgagggta gtttagagag gtttggctca tattgcctgt aataccctat agcctcttgc 60

gtgtagatta atgaacacaa aggtgaaaaa aattaaaagc ttgagtacca actgagcatc 120

atgaccttct agctcccctt ttcgttcagt tctggtgaga gttttaactt aatgtttcct 180

caccttttatg tctgccctag aagattgggg atcctaaagt atagaatcct catgattgtg 240

tatgtcctcg attggaatcc ttttatacat tattctactc ttccctttta tagtccaaga 300

gaggattata tatttgatgg actataggtc ttgatcaaat atgacccaag aaccctaagt 360

ttatcctagt cgtggagtcg tatgcagtgc catgccttta gttgtcacgg tcttaaggat 420

gtcttgttgt aatggcccat gtatctgtta taggggcatg tatgtcatgt atgtcatgtc 480

ctatcgacgg acactagagc ccatgatgtc gggtatgata tagttggtaa ctggtgtagc 540

aatctatact ttataatgat tcttgatgca ttggtgtacc catatatggc tataggattg 600

atggcatatc gaatagtggt cttttgagta cgcatgttgt ctaaggcata gcaacagtgt 660

gtctatcaga ctctaatatc gcacatcata tttaatatga tgtatgaaaa ctttatttgt 720

ggtgtcggca acatgagact atcaataaga gactttaaat atggtatcat accttcattt 780

ctttgatttg tggattcctt tgtacttaac ccttatagga acctctttgt ccactcggga 840

ggctctagga cctgagggga tctggagacc tggccatttg attcatccga gatcgagtcc 900

cctggccatc tgttaataag agatctagtt tgagcgtgtg catgtgaagt agaactagca 960

catgtttgga aacggcaaag tttgtcttcc atgtattatt gcccgaggaa agacgtacga 1020

aagaaactga tctcatcgtc acggttcacg cacgtctagg ttcgatttgg ctcacaaggg 1080

attttattaa aataaatcca taatcctttt atccaaatag catgtattct agtataaatt 1140

ctaacaataa aaagtaacaa attttcttca tttatattag attattaaaa tccccttaaa 1200

acacaaggca acaaagttgt tgcttactgg tctctcaata agactgactc taacggtttc 1260

tctaaaccgt tccgtaccct atatagagag aacttctaaa taatagatag ttc 1313

<210> 4329
<211> 1328
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301264_G1, chr9:20821140..20822467, Cluster 26

<400> 4329
caagttagtt ttaggttctt catcaaagag catatttcga aggtaatttc ttaattacca 60

gtatttgttt gaacaaattt ttatattact gcatatcatt gactagtctg tgcatgagca 120

tatgtatgct gaccagtcct atagtcatac tacattattt tgattaagtg aactagaaga 180

gattgcaagt atgaataaga tcaatattgt gaggccagta ctaaaattag ccacgttata 240

ctctacccat actaatttgt agtctataaa acagaactgg tcatagtctg ttacattaat 300

ttacccctgg gaccttcttg cttactacgt cctaaccatt tatgaagttt aaacagtact 360

tcatgtgtat taatgtaccc tctagtgctg atttcttaag tttgaacaaa ctctatgcaa 420

atatggatga actaattaag aaaacctagc ataaaggcta caaacttttg ctggtagttg 480

ttctagtata attaagaagt catgataaaa gcatagaagt tttgctggta cttcaaataa 540

gaaggcattt cttatttgat gccccatcca ctggcctaag catctagagg gtgctgtaca 600

agtgccttgt acatggcatt tataaaaaat ggtaaagaaa gtaatgcaac gcgaacaaat 660

aattagctaa aagagcatca gtactgtagg acagatatgt aaggactaag gactgtacta 720

atgacatgtt tcatagccaa ccaaaaagac tggtgcaata aaatcgaatc gtcgatgatg 780

gatccttatg taaataacac taagaactcg atgcaattag acagcagttt gaaaattatc 840

attatggtta accgaagtat ttataacatg catcactttt caggaaactc aaaggaagta 900

agactgcaac caaaatatct gagtgcattc caagcttttg tacagcatat gttatttcaa 960

aaggcaaact atcatttgtg cgctcagcta catctgatat tgttgaaacg cctcgatcta 1020

tatcctcttc aactatttct tcacctagca ctagaagtct ttcctcctgt gcaccttcag 1080

gtaacataca agcacatata tcaacactaa tgtgtaatgt atatggtttt aacgtcattt 1140

tgcacaataa ttttggtttt aacagttatt gaactgaata tgatgagttc aatgctagtg 1200

taagacaaaa aaaaacacta gcaacttttg ttgagatagt cggtgaaaaa aatgctactt 1260

ttgtttttgc ctgcatagtt gaggttccgt atgtttggtt tctacagcct ggtgcatatg 1320

ctcacgct 1328

<210> 4330
<211> 1397
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313902_G1, chr9:100614450..100615846, Cluster 26

<400> 4330
gatgccggga ggcagattcc catttcattg tagttgtggt agacatagaa aaaaacccca 60

tatggcccat cccctcttgt ttttagctcc tcgactcatc tctagggatg aaaacgatcg 120

aaaatgatat catctatagg aaaacgttgg ttggaaattt atctgatttt ataattaatc 180

tacttattag tgactacaat ataatattga tagtcatttt gaaattcaga ttttaaatat 240

ggtaattttt ggaaacgata ttgtctttat ggaaacaata cagctgcgag gccttggtta 300

tgggattttc agttgtggtt ttcatcccta cccctctcct tctctagaat agattaatgg 360

cttatgctgt gtctagcggc atccctatca ccttccacac acgaaaatgt gtctctagtt 420

gtacacgtct ccaacgaaac atggatgcag atgtggaaaa agagatacca ccgtagtacc 480

acaaatctgg gtactcttct ccctctctca tattcaactg gaaacaacct ttttcgtatc 540

cgcattggcg ttttgatgga agcatactcc tcccattgtg acacgagcta tgggccacgc 600

tgaggaaatt gggaaatttc cgcattcaca tctagcttct gctgaaaata gccttagtaa 660

tcaaccaatt agttcacgct aagagccttt ttaagtacgg gattacagat gtctcttgtt 720

tcgtaaccat tacttctaat attgtactcc tccatagaga caaagaaata gtgtttggtt 780

gtgttgcttg acttgcttca gtacatgccc ctaatttatt ctttaacatg agaccatttt 840

ctatccaagc agttatttag cccattaaac atcatgtaaa cactacaaaa tggtatgtgg 900

ttttcattta atcatccgtt tagctcgttt aattggtcat gtagcttgtt caatgatcag 960

tttagctcga ataatggtta aacgatacat gaccgaccag ttgtggttta gcatttagga 1020

aaacattgta tgagatggct aaaaattcca tgaagagaaa taggtggttc ctcccgatca 1080

ctataaaaaa actctaggaa atttcatctg cctaggactt cgactagagt ggttcaatac 1140

tttaatgtca ccattgtcga cctctcatcc tctgcttcgg tgttcgtggg ccaagaggac 1200

gaaggtaaac tgacaaggat gcatcaatgg cctatgaaca tgaatccaaa ttcttatgca 1260

ccaaaaatgg gttaactagt agttggccct atgtggctca tatcaaatag aggctcgtaa 1320

cgactacttg tatcactaga aggggagaga gaacctaaac ttggattcct tcctcaacta 1380

tgtctaccag acgacga 1397

<210> 4331
<211> 1037
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31567_G1, chr1:194220847..194221883, Cluster 26

<400> 4331
gattcgatgg tagaggcctc aaactcatgc aggtgagagg cgaacatggc actaatttgg 60

ggatctagcg acaacagaga ggtctaggtt aagaatgtgc tctagaagac aaagcgttag 120

aggtaataag aactagaaac caagaatgtt aacaaagggc tcgtagaagt ccaatcaaca 180

catggaaagt ttttatagca gattacaaaa gctaaagcgc caccggattt tcctctatga 240

agtggtagaa aaagcagaag gaacgtagag ttgcagaatt ggaagcatca gtttggtaaa 300

gcaacctagt catgaacaat aagccaacac tatagactcg agggttgcat gacagagtta 360

gggacccggc cagaagatag aacgactcaa acacaacaag atcaagatca tcgagaagat 420

tcaatgtaag agtctcatat gcctgattca atgactcggt caaatgagac tcgaaggcta 480

atgtcaataa tatatactag gggtatctag atcaagttta acaagaagac atatatgaat 540

gggctcagtg gaaagcccat ggactcaaca actatgacta gaaggaatgc cggctactag 600

gatgattgta gaaggataaa catgcaaata tcttatcgaa ttaggagata tgatctagat 660

cttgatagac atggcaagat ttagatagaa aagtaaaaac acttttaacg ataaagttca 720

acttcatgtt agatcatgac agactcgatt atgttatcta ttatctgact aggatacact 780

tcctatgaac caccacctct ccttagtcta taaacgaggg ctagggcgcc tcatgagggc 840

ataagagatc attggaacat aacacaaaca ccaacaacaa acaagacata tggtattatc 900

tcattctagg agcccgaatc tatataaatc ttcgtgtctc ccatgccttt acctctacct 960

tttgatcatg tgacctatcc tataaattca ctatcgaaca atcgttgata gttggtttca 1020

attacaccaa aaatgat 1037

<210> 4332
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320572_G1, chr9:136028088..136029094, Cluster 26

<400> 4332
agtgtaggat tgttttgtag tctttggtcg tgaagccatc acaataatgc tatttctact 60

aggtatttta ttgctttact agtagacgcg tcttctattt tggcatttat cttgttatct 120

taaaaagcag tagatccaaa tctctatgta ttagacatat gttactatat atttcctcta 180

ttataaatta tactttaaat tataaaatct ttaaacattt ctagttatat tatttttatt 240

ttcataaaaa atgtattata tcttatagtg tatatctaaa tgtatagaaa atttgtttat 300

atagaaaagc taaaatatct tataatctgg aacgaatgga gtatagtata tacttacact 360

ctccataaca aaccttgttc aaattggaaa gagacatggc taccaccatg cgcttcaaat 420

cataggttat ttcgattttt ttagtattta gttttacttt tgctttgtta cgtcggtgta 480

acgacctatt ataagttgga acggatcaac ggagccagta ctcttctata ggatccatta 540

ccgtcgcccg caaatcctaa gagccattac caattatgtc attatcattt atgagcttca 600

catcatcgaa ttcataaatc atacacatag atggtgctac ctgtcataga cataagatga 660

cataataacg gagaactaaa actgagagcg gtaaaatagt aaatttctca aatccgaatg 720

gctatacata cctcccaaat atgtttttt tttcttgtgg gtactcatgg ctttgcatac 780

ctcgaagggg gcgaagaaat acataggttg acctaccaaa atttttattt tctagttgtt 840

ttttgtaaaa tattcacatt tagattcctg taagttctat tttgttttct agatctctat 900

catagcacca cgagttaagt agcgaggtaa catgttttgc atcgagatac acagtatggt 960

gatagatgtg tcactaatat gacagatggc gcagcgtcca tgtctac 1007

<210> 4333
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321200_G1, chr9:139189858..139190907, Cluster 26

<400> 4333
tatatttagg ccccttttgga aggtaggaat cgtccattaa tttcacttga accagtttaa 60

ttttcacacg aaaactgttt taaaggtgac cttaaatgaa aagaatctag gtcggtcagt 120

tttttttta tatttgtcat ttcaattact tataaacgaa aactgcagta tgggaccaca 180

acagaacagg ggaaaaacaa tttaacttgt ggtctgcttg cacagataat gtattaggat 240

tttattttgg tgcatgtttc atattgtacc atattacgtg agtatagttc tgaatgaaag 300

agatcctgtt cagtgttcac caaagaaata agaactctgc tgctaaagca ttattcttac 360

ctaaattata cagtcaaatt atctttccct tgcagtcatc caagttctcc atcaatgata 420

gctagggaga tgtaagaaaa tgcttagtag tccctggctt agtaactagt cagtgggcta 480

cataacatgt atttaattca atcgaatcac ccaaaacagg tattttcatg atgcaatatc 540

tgtgcatccg ctagcagatt taagactaag ctaggagcca ctcttttaca taaaaagcca 600

tgttaattgc aatatctgtg catcttcgac tattaattct ttgaaaatag gtatgataat 660

caatacattc agcttttgag aatcaagatt aaagagtatg ttatatatat tttaatgtag 720

atttgcagaa tgactaggtc aagaaaccaa caactttgga gtggttcagc tgagaaagat 780

gacattagag ctcatttgca ctgtcatgaa ttttctaaag cacggttgga taaatggcaa 840

ctaaacagct gcggttaaaa gtttgtgcac gtcacaatta acatcagtaa atcaagtttg 900

tattggaagc aagtgagcag agtgtatagc agatacgatg taccctgaca atccattgct 960

ttctcagatt tctctgcctc tgtttgcgat gaatatctga cacccaaatc ccttcatcct 1020

tacaatttct tggtctcaca taaatcgagc 1050

<210> 4334
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321482_G1, chr9:140594600..140595883, Cluster 26

<400> 4334
atgtcttgtt gcaatggtag ataagtcatt tcagagctat aagtattgga gcccacacca 60

tcgggtatga caaagttggt agtggtgtag ctatttgtac cttataagct tgctagcatg 120

cttgcacatt tatgcatcat tatagggatg gtggcatgta ctgcaagtgt tatttgatac 180

gcatgttgct tgtgttatgg taacaatgca ccttcttgat cgcaaaatgt agcccatcac 240

atttaatgcg atggatagga gccttattta gttcactagt atcacacgat tttcttgagt 300

agagacaaac gtggcactag ggttgtactt tttggggttg cgctatctca gggacaaggt 360

catccatatt ccttagcctg catgagctcc catacttagt tgagcgagga gctttatttt 420

tcacatgaag agtcctaggc ccaaggaggg acccaaggct cagccactag ccaggagggc 480

tctgaagccg aaggcatcga aggtctagtg ggccctaaag ggtgggagat tgaaagaatc 540

ctaggagtct aagatttccc aagggcccta ggggcgtagt aggctaggag agcctcaaag 600

atttaggggc gatattgggt cctcaacatg aggggaccca tccttagata gagctaagct 660

aggtcctttt gcggtgtggg cccataaggg cacatgggta gcattagaca gacctttacc 720

aaaattcttc tatcaaggtc tttggaagac atattggcaa catccgtggg tatggcctcc 780

ctcgaacaaa gtgggtgatg gtttgttatt ttcttgtgtt agtgtcatgt aaagtgctaa 840

agggatggat gtggcaccgt ccaaaaacat ctacatattt gatgctttag gtcagaaatg 900

ttagatgact aaaagaggaa tcagataaaa gtatcctagt gagggcttat gaacctatca 960

ctgactccat cgccaattgg acaacgtgat ctgatttctt gaaaattatt gtttgtccat 1020

ttttaaatat tttcctaata gggtttctat gtaaagtcat atttttaacc gaacattatg 1080

tcccaacata tccaacaagt tagattttgt tagccgaata ttctgtccca tcatccaaac 1140

aaccttcgtt agtagtctta aagagtgtca taaaagcttg tagaaattgc tattattttc 1200

tatgacaagt aaggttcttt ttatcatggt ctaaagttta gacattaaac ttcaaatcgc 1260

tctagataga cagtctaaag ttta 1284

<210> 4335
<211> 1279
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322188_G1, chr9:144603482..144604760, Cluster 26

<400> 4335
aataccggaa tatggtggag gacatatgga gttagctcaa caggtttttc ataagtcatg 60

gttgtttaac caaatactag attttaactt ttcacaattc acaatcttca acatttttta 120

ttgtctatac gacaactttt tcccccaaaa atcacggctt aaccaaatag agcctctgaa 180

agaacaactc gtagtgaagt gcacttttt tgcttagtga ctgtgactcc catgcacatg 240

caaaaccttg ttgtctgcat aatgaggtgt gctttgctta gtgacgcagc agcgtggtct 300

gatgatcgca aagaaaaaca caaggattgc gtcaaaaggg tcgactaggt ggaattctga 360

ccatgccaac acaccttcca tcgcacataa ataccaaaag aagtgcatct agcggtttct 420

tggccgtctt taatcctgct cctttcaatc cgcctttcct aatctttttt ttaccagccg 480

cctttgatta ttgtgatatt ttgtgtgcaa tagatcccta ctttatggtt attgtaatta 540

gatttcaaaa tctttggaac atacttatgt atagcaacat atctaacgta aaaagattaa 600

ggtacctaca tgctaacatc aaatcttgtc tgtcgaattc ataatctaag agtgagtgca 660

atcctaccta ggacagcgtg ccctattcta taaaaatgtg gagttagtat gagagaaatt 720

gagattgcat tcagtcattg atgatgatct aataaacaag atttgatgtt agcctattag 780

catcataata gttgttacac tatatataga tacgttgctc ttagggtatg gtgaaaacgg 840

attggataaa taatgtttcg tttctacttt taaatgtagc ccgctcgaat tcatatcgat 900

ggtcatcgtt acgttttgta tttagttttt tattattggc aaaccactct tatactctta 960

tcatcatctt acgaacccta ccatataaat tacaatactt atgtgttggt agtgttgcca 1020

tgccagattg attaggtaaa tatatatgtc aagtcatgtt ttcttgattt ttttttgtc 1080

aatgtttctg tttgccttgg gctattacaa tcaccaacat gttttcattc gaagttatct 1140

tttttttatc ttcattccta ttttgagcct tcgcaatctc aattttgttt tcgtaataaa 1200

atttaaaagt agtgaaacca aagaaggttt atcttggctg atccatccgt tttcattcct 1260

atatagaagt atatggagc 1279

<210> 4336
<211> 1388
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322198_G1, chr9:144617352..144618739, Cluster 26

<400> 4336
gatccagcga gccttttgct tcgcagggat agagctacaa tttagatata gggtgcacaa 60

tatatatgcg tcaacaaaaa aaataggata acgatattaa acatgaatat caatctaaaa 120

acattaaact taatattggc ttaaaaatat aaattgtctt tattattgtt attatttttt 180

ttcattccaa acaagtgcta attatttacg ttgaagataa aaggggtata gttcataagg 240

gtaaaaaagc agccccaagt gcaattgcaa aattatgttt ttttaacaat ttaaagaagt 300

aaaacaatct tgtaaaatta atggttcaca ttatatttat tttatctact aacataaatt 360

atataataaa aatataactt ggaaaaaata taatagaaat atgtatttta ttggtaacaa 420

gcttttgcta ccatagttaa aatagtatta tgtctaattt tttatgatta gaagaattaa 480

tgagtagcaa tacaatgcac tagtcaatat tatattgagg agcttcatgt gtccacttgt 540

atgcgtgtgt ctcttgctct ttttctaatc ttacagatgt ttattacctt cgatatcctg 600

atattgttac gccatgacaa ccataaacaa tatcctaatg acacaccttt gatatatttg 660

atattttaaa agtttatagt aagcatggtt aaaattagat aagtttcata ttaggaactg 720

atagaaattg tgtccgtgcc ataggtcgtt tgcctctttt tttattttga gagcctaaaa 780

tccgtctttt cgtttgcatt ttggcatttt ttttttctt ttcctctatt aatcaacctg 840

gtcggcataa gtacttctag gtggttgctg ctgccgtttt gcgtggatta ttgtatgtct 900

gcgtttgtgg ttctgcagca gtgcagctac agtccgcagc gctataaaag tagcaaatcc 960

gagctgtttg gcttttaaat cattgccatg aagctgacaa gtgatcaacg attaccatgg 1020

aatgctagcc acacacgtgg ttagtagtac agtcctgttc tgcggcactg ctcgtggtcc 1080

ggtccggctc gtagatcgcg aggtgcagac gcacatgatg agatgagatt cagaagtgac 1140

agcccagctc gtgcgcgctt ccaccgtacc gccactcgtg tcccgccgct cgtggccctg 1200

caaacgcacg acgcggatct atggacggct ggaaaacacg acaaggagtc tctgaggccg 1260

tagtgttgac gtggaaagtg gaaacagtgc aacgaaacgc ggaatcgcta gcattggatg 1320

tttctcattt tcttcgctag aaagccgcgc catcgtcttg ggagtttgga ctgtgctgtt 1380

ctggtttc 1388

<210> 4337
<211> 1125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323245_G1, chr9:149804443..149805567, Cluster 26

<400> 4337
cacagtggga agacttttgt agtctctttc taaaaaagag gggaagttct tctaaaatac 60

aatagagtcg gaagccagaa ggagcttcta ccaacttatc tctcatgttt ttatctttgt 120

cgcccacatc acacgaagct atataaaaag ctgcattttc aactaaatag agtacttttt 180

taaaggctct tcctacaagt aagaagaaaa ttatttttaa ctgaagctga cagatgaaga 240

gctctaccaa gacgaaccat agtgctagat tcattgtact acttggtttc agtttaatgg 300

agcgaaaatc taagtcaagg actaaagaga gccattataa gggtgttgag gcttcaatta 360

agataaaaac tagttcaagg tctgtctgtt gaacttcata aaagtaggtt gtagttgtac 420

aagtatcaca caactgggat agtgtgattt tataagtcaa agagacgcaa aaatgtaatt 480

aaaaaaaagt ttatgagaag agtttataac aaaactctaa aaaattatag tttcgataca 540

accatgattt aaaacactat aaaatttgtt atacctagat agcgaatagc ttttgagaac 600

caaataattt aataaaacta cagtatttct cttgtgcttt aaaagtactt gacatccaaa 660

gccttaactc gctagctagt gcttcacgta agataaaaac tactttattc acaaatttcg 720

acttctgatg atgatttgat tgcgatggtt atcggcatgc acgtactacc gagattacct 780

atcattctat gtcttgattc ttgcgaccaa cgtacaagtt gagatattca agataacgtg 840

gattttgttt ggtccaaagg aaaccgaaat tgtctaatcc gccggctggc ctcgccgcgc 900

cgacatgcca gccggcagag ggtagtgggc aagtggccga gcctcgttgc tgcaccttat 960

tacaagttgc ggatcatttg ctgcatgcct atcggtatcg cgcgctcaaa gtattgctag 1020

aggctagcta gagccttccg gatagaaccg gcaagcaagc accacatgga cacatggtcc 1080

cgttccgtac tcttttgaga tggtatatgc tctattccaa atctc 1125

<210> 4338
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323680_G1, chr9:151676935..151677979, Cluster 26

<400> 4338
tcgtatactt ctccgttgag cacatgaacg taggcaacag tttaatttct ggttgaatta 60

ggcaattgaa ttcctctcga aacgtatgac tggacttgct ttaatataat tataacttat 120

ctgaagtcca catcaacgga atattagact tagtataagc tcgttggatt gagatggcga 180

ctattttcta ttcagatgat gtcgatatca ttatatcaag tagctactag gtgtgtcact 240

actttgaata taatggatga aaagaaagtg tgtcatgtgg atgcatgctt cttatttttc 300

actttgatc tccaacaagt ctacaaacgg aacattcttt tactgtgctt gcgatattat 360

tatattgctg cttgttgtaa tggctgcggt gtatgtgact tgtttttcgt attctgtgtg 420

cgaggttaat aattcggtta ctaaaacgtg ggcactcggg gaattctcgg actactctcg 480

tgtgattatt attcacccgt ctagaaaaac agcttgaacc atggtatatt gttttaggct 540

ctatacgact tgttttatct cttcatcgtc aggtcatggc tgaagcttaa ttcaccattg 600

catcatgcat gagcatgagt tggacagcgg tggttatcat taaatttatc agcgtgagga 660

gaaaattata catgatatta ggctaacaaa gcatctttta agaatcataa tacatataca 720

catttgcacg gctggtctta ctgatatttc aatatgttat cagtcgtagt ccatatatta 780

ttattgtaca ttacgattct aacttttaga ctctagctag tcggctaatc atattaggtt 840

atctctaaca ggttctctat ctcattctta tttcaaacta cactttataa atgatatatc 900

aacatcacac gtccatatac acgttattgt tggagttggt cttagctgtc gacaacatga 960

agcccaacca aagtgagatt atccgctgat caggtaaccc taaggcctta ttaggcctta 1020

ttcgtttgtc caactgatca aaact 1045

<210> 4339
<211> 1378
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323682_G1, chr9:151678997..151680374, Cluster 26

<400> 4339
tatagtcttt tcatttgtct ttaatttata ccactttata ttatttttat agtatttta 60

tctctataaa ttagactata aattagagtt gcattaatct gaaacgaaca gccgtcatct 120

gctttgaacg cggactggct tctgagagac cgcccgacca gccccggctt gctttttctg 180

cggtttggca tggaaaaagt atggcgctgc cggcccgacc tggcgtcaac atttcaattt 240

cctctccttc tcgtttgttc gttgaaacaa aaaaaaaaag cttttggagc ggtgtggtga 300

ccgtcggtca tggaggacca ggaccaggac tcgttcaacc caacaaaggc cccgttagtt 360

tcacactttt tcatcttctg cccctagaag ctgctcgata ctatttttca gtctttttt 420

ataaaaaaaa ttagtgaaaa cctgttaaaa tcatcgtcta cacaaaatag accaagtcgt 480

agctatagta aaaaaatcat cactttgtac atcataaatc taatctctat gatattcaga 540

tccatagcta aattctcaaa aaggctcata aaaaaactaa acaaagcaga tccaaaagag 600

agtttctaaa tttagctcca ttggtctccc gccggtgtgt accagatacc aacattatat 660

tcaagacttc atgtcgagtt gatacataca ccaatcgatc acacttctca cagacgaacg 720

atgaccgtca gcagttagga attgaagctg tttcccagtc aaaaaggtcc tagctagcta 780

gcagtgtgac ggcggtagct gctctcgcgt tctgcactgc cttttcctga ctcgttctgg 840

atgtggtgtg gagccggaga ggaggaagac gacggaccgg agaccttgcc gtggagtgga 900

ctaatccgtg tggggcgaca ggaatcacgc aaccgcttca ccccttgtgt cgtgggtggt 960

caggggaac agactttgcg gtcaagcact caagccaatg caggacgctc tacggccggg 1020

tcttgtccac agtccacact ctaggtcgaa tcgagttccc atccagtcgc ggctgattca 1080

ggattttaat aaagacaatg tgacgtcaaa aaattgtcat gcacatttgt ttttacgaag 1140

ggcccataag aaataggtaa aagagttcga tatatggctt aacaatcacc acaaaaggaa 1200

agtcaacaac catccaaaac tattggctag acacagatac aaggaaagaa ctctattgtc 1260

aactaccaca actggagcac acagacattt attaagctcg tcacaactat gagggctaca 1320

gaaaagcaag cacacacaac cagaactaga cgaaatcagc aagaccatag cgaagaac 1378

<210> 4340
<211> 1204
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_324826_G1, chr10:1285784..1286987, Cluster 26

<400> 4340
tgcatgttgt ttagtcctaa ttacagatca atatgtagga cattagacga tcaatgcaag 60

aaatgaacaa tatcatggaa ttagatgcgc tctcatgtca gaagatggac aagaccagag 120

gagaccgact acctgcaact gcgaggctac caggcaagga gtatgtcact caagccttaa 180

ggccaggcaa aaagaaaaga aagaagaaaa aaggagctgt gtcatctctg cctgtcaact 240

cgacagctcc tcaccaaacc atatatatat gcagagatag ggcatgcatg acatttccaa 300

gggtgaccta tcagcgatgc agattgcaat gagatcaggt gcatggagag ccccccccttg 360

agcttacgct acttttcttt ttcctggcca ttgaaaaaag agaggaggag agagccagtc 420

ccagagcttg aagagaacca aaccatgctt tgctgggcta cacgccttct gttctcggag 480

ctgcggcccg tttctttccc atctttccac aaaatgaggc ccaagaggac gctttcacca 540

tcagaatcag aaaacactgc ttccgattcg ccaatcagaa tacatacaga tacagcagcg 600

cttgtcgacg acaaggaccg cttgagttaa ggtctgttcc acttccacct atttttaacc 660

catcgtcaat taatcattgc tcctggtaaa gaattagatc accaaaacac tactaagcaa 720

aagctttttc agaggtggcg gtagagagag acggttggct caggaaagct cctgcgtgca 780

ccgccgacgc agcagcggga gtggttgcaa agagagatca ttacctgata gatcagtaat 840

agaaaactaa acatagatct atattctatc atgtttgttt tggtctggtg ctctgctact 900

tattaatgca aattatctga tctcgtccat ctccacacac acccatcacc tccaagttcc 960

gattcaacaa gtattctatc aaccgtgttg agagggtaat tacacggaat aaatcttaaa 1020

caagtattgt aacaccgcct attcaatgat tgatttgttt cattgattta aatatgcagc 1080

ttgtggtatt atctaatcta tattgtattt gcagaccagc ttttttccag gtctcctctt 1140

aaactgttct atgtgtgaag cagcacttgt taattgtgtt ttttaggttc aaatttctct 1200

tact 1204

<210> 4341
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32613_G1, chr1:199997098..199998137, Cluster 26

<400> 4341
caaatcataa atctcataaa cagatttgac aggggcatag atctcatgca gtagcaacac 60

atttctcttt tgaacaacca atttctatgt catatggacc acaacccaca atttttaatc 120

cttagtatga tcaatgggca catgctccac cacattttgg gacacattat agagtatgca 180

actcctagat acttagagaa atcatcatat tatgacgact ttttttatca aagtcaatct 240

agagctcaac ataagaagaa ggtggtaaat aggtttacta tgtgatgtat gatagtcaaa 300

ataataagaa ttcatatctg attataaata ttgagaagtc gattactttg ttgaaaaatc 360

tatctattaa tggaaaagac atgggaaaat catatattga tattgtagat gccaaatcta 420

aacaagagga gttagaatgc cagaattcaa ggaagatttg acattgtgca aaatagaagc 480

gaatacgaga atcgcagttg acttattaaa gtggcaaaat aagaagttgc aagagtttgg 540

tgcaaaaatg ctaaaggaag ggaacttggc atgggttcct aatgaaaaca ttcgagctta 600

ggaagatgat tctcaatcaa gtggtgcaat ggaagcaaac aagagaagga gaaccaagaa 660

aagaatgcta aattagaggt ttgcgccaaa tcataaaaaa gtattggtca tagagtcata 720

tgtattatct ttctatgcct atatagaatt catccccagg gatgtgtggc tatcccacaa 780

cttcttattt tgacctttgg tagggttttt tatattatgg aggtttgcca aactattttt 840

cttatcaata actttctatt tcaagagccg aagtgttgta tttttgttat gcatactctt 900

gtcaataaat tcatatgttc gatactttgt tatcatcctt agcattaaaa atatagatga 960

ttaatgctag caaccatcct gctacgacat gacatatgca ttttaaaatt atctcatgga 1020

tgtgataaat ggttaatcaa 1040

<210> 4342
<211> 1390
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_326455_G1, chr10:10293215..10294604, Cluster 26

<400> 4342
tagtctatcg atgtttaggt gccaccgcta ccttccatgt cttttgctct tatagttcat 60

tgcgtgaagc tagaaaatat aactgtagat ctaaagcaga tgtatacgac taagtggagg 120

taactgcttc agtttaataa gaattcgatt gtaaagtaga aaaacaagga aaaaggtatc 180

ataaaggtcg catgaaccaa tacaggaaga aacatttgaa tacaattata ttgttcttgt 240

aacctatgat gccattggta aaaaagtgtt tgaggaagtc aaggatctta agttcccgta 300

tgaggtgtgg aagagattga aagattcata tgagggtgaa aggaacatgc atgtttttgg 360

taattaacac aactagtgga ctaacctcaa ctttaaatgt taaaaataag ataggttaag 420

tccacataaa gattgagcaa ggttaagaac catgacaatg atgcatggtg atagccacaa 480

aggataacca aatgctcacc atgaaaatag aaaggagaaa agcaaaatgc aaagactcaa 540

aatagtgata tcttttatat gaattaactt ttgctatagt aatttataaa tttataaagt 600

attttatagg gtatttatta tagctctagc catgtaaatc ttaccaaaag ggtggtcggg 660

tgagttgtgg cagcctttgc ttaccctcat ttatgttgac gtcattttgg caattcccta 720

ttcctataaa actctaggga agatattgag tggtgtctcc tctcattttt acaattgctc 780

tttggttgca ttttgattgg tggacaacca actctgaatc ccattgagaa aaagtggggt 840

gaggttgttt ctaataaaga aaaaatgtga tacgcacatg aaattgcgct atggttatta 900

ctgtcagtga cagtgtttta gtagacatac ataattaata ttagaattaa ggtatcatgt 960

gtagtaacaa cagaaactca aaaatcatca tggactgaaa acactacgcg ataaatcatt 1020

tttccttttt tgtcattgtg atgcacgaat caaatgcatc tttgttacca tgcaatgatc 1080

atttaaggta ttaacaagtt tgttgaagac ttgagactaa cgccaaattt acatcgctca 1140

catcaccatt ttatgtgtgt agccaaccta aattcgattt tataggggct tgaaactttg 1200

cttgggtcaa gaaaaaacct aaacacctag aaacgacatg taaataagga aaggcaaaaa 1260

tacgagaccc agaggaacct aatattttta tctgattttg tactgcatct tttccctact 1320

ctataggttg ctttttttta tcaaaattca gtggaaagct taacaatttc cattgaaagt 1380

cgcatttttt 1390

<210> 4343
<211> 1308
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33562_G1, chr1:205406430..205407737, Cluster 26

<400> 4343
tatgaatgct gctaatatct gaatgcagaa gtagctgatt ttattgaatg ttgttgctat 60

ccaaatgcaa aatgttgtcg ttgtttgaaa ctgttctcct aaactgaatg cagaagtgtt 120

catgctacta tccaaatgca taattctatc gttgtctgaa tgcaaaagta gttgaatttg 180

tgaaccaaaa ctgttttcac tagtagacaa caacattgta gtttctgaac caaaattgtt 240

tccctaaact gaatggcact taattttgaa ccaaagcata tgacaactag gaatttgcat 300

tagacggcta agaatttgta gcagacattt ataaattcgc agtagacaac tagggtcaaa 360

ctgtttcaaa tcagtgccat tcacaataca gtttaacata attggttcac atgagataaa 420

caagcataca tagcagccat tgaaacagac aagcatacaa gaaatctaac atagacatga 480

agacatgaag tttgacattg agaacctcac ataaagtctc acttacacaa ccttacatca 540

agtttcatat agatagcctt acataaagtc catacataac agacttacat aatagccatc 600

acatattacg atcccaccat tcttgtatat cccagacaat atcatcacaa aacccttcaa 660

tgctagaaag ttgagggttc tctagttaat ctagttcctg aaaaatccca ttccacaagc 720

tcttcgaatc acactcatcg ttgccttcga tgtaaccatc ttcgatcgaa ccatattccg 780

atgtgtcacc caactctgtt gagtcacaat ccaccgaaga atttctattt ttagatcttg 840

ttggcaaatt aaagatgttt gctcacacat tttaaagata tggtcaagat gattcatttc 900

atcttgtgac cttccacttt ttcagaaatg gagcacaaca tatacacatc gtgtaattta 960

gatgtttgat gcctcatcta ttgtatggca taatgcataa aaatcctaat cttgacatga 1020

ttgaagtaat ccatgctata ttgcaacaaa atgtgatgaa aaagttgtga gttcccgatg 1080

tacttatgag ttcccaactg ccacccatcc ttcccaaaac tataaaatga gagcacaccc 1140

ttgcatcaac cggatctcaa ataattgtat tgatcgattt ttactagaaa aaaacttaaa 1200

tccactaaga aaatgtgagg atctgaggac tcttaaagca ctccactata gtagattgac 1260

ttcgcctatg tgattggaga caatgattaa ggaaatacct cacatggc 1308

<210> 4344
<211> 1376
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_336221_G1, chr10:73280249..73281624, Cluster 26

<400> 4344
tttcccgaga ggtatgtatt tttagtattt cttgcttttc tgagtcggtt gcttgctaga 60

ttatgatcta ggtttttga atcagacccc aattgtctac ctacctcggt tcttttcctt 120

cttgcttgct cccagtattg ttatgctcta gatacctaca tacttctgca gatttggttg 180

ttcaatattt ttttaattat tttcacacta gatttggaaa ttgtggtagc ttgggtactc 240

tctatactat agtattacaa caaatccaca tgatgattca tatctggtta tgctggagct 300

cggtacaccg aactatgctt gcttattatt cctaggttag gtcttctggg tccttcctct 360

ctcactatcc cggatctaat ggttgttgct tgatttctac atgatatgtt atagaccaca 420

tattgtttca gtacttttgg ttttccaata tggtcttttt aactgtatta atgcttattt 480

aggtcatctt ggtaacttgg ttacactata ctttagtttc tagttacatc cacacattga 540

tggttgcttc tgtttgctag aggtcagtcc acccaactaa agagcccctt tgatagtttg 600

ttatctccta ggttaggtgt tcctagtcct tcatgtctcg gtttgccgaa tctaattgtt 660

cattcttgtt ttccttcttg ttatgctcta tgtccccctа ttatgtttgt atttttgctt 720

ttcaatatgc tcttttgtat tgtatgcatg ctaagttaag gaatgtagtt aggttgaatc 780

ttaaggatat gtagggttgg ttctcacttt cctcttgccc tttccttttt cccgccttct 840

ctgaatgtag ttttagcaga attcatgtct attgggttat cgcttttgca catgattatg 900

tttgaacaat tctattcatt attatgaaca acataccctt gtgaatgatt acatttaatt 960

aaaataaaat aataatgtac cactggagga gcatctatgg atacaacaac ctttggtact 1020

aataacaaac atgtacctaa tagtcacctt tctcgtcttt catgatcctt caactctaat 1080

catcaccgcc tgtaatatat actagatcta tttaatcttc taaaatatta actatttttg 1140

aataaccact acatctacat gtaaattact agcttactta tgcaagccca tagatctata 1200

tacagattag ccacctttga cattttttt tgaaaaataa agtaatactc aaagttgcat 1260

ctaatcaccc acctatatgg ttataaaaga ttataaatac tatctcctac atttttattt 1320

caaattcaca tcgaagggtc acatatgtat aatataaaag gatgaaaata catatc 1376

<210> 4345
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337132_G1, chr10:78133999..78135096, Cluster 26

<400> 4345
ttgatgggcc cttggtacca atgttttaaa tgtccggcta acccttggta ccaatgtttt 60

aaatgtccgg cttaggcttt tatcggcaag tttttagatc agctataaat gctatagccg 120

gctatagtta caagtcaaac catagcggtt ttagaaaaaa aagatgacat accttcatag 180

atagagcata taattatata aactatcata tgttcaatat ctaaatttga tagttcaaac 240

actagtttaa atgtttaata acaaattatg catgcaaatt caacaatact tgtaaagaga 300

ccgcctgtag tttattttgg tcctaaatgt ttcaaaggtt catcccagta aaagactaac 360

aagtttagta gcgctaaatc cagctaatat tatgttttta gcagactaag gacctccgca 420

aaggctataa ggcagccgct actagtcggc tatttaaaac actgcttggt actgggcagc 480

ggccttgctt tcttgtcatc aagcctgttg gcaattgtcc atacgtgact ttttttttc 540

tgcatgtgag ctgacctttt tctttggaat gtgagctgca ttgtgagctt tttgatccca 600

acgcaaatgg atgaagcaca attggcacag actggcatat cgctgaacta tgcgtcctta 660

ttattgttta aataaaacgc aaaaagtata acagcaagca ttagcaaacc caatttatat 720

tttttgtaa aatttagcag caaatatttt actctcttta tgccaaaaat acatgttttt 780

attttgttat caaattatct caagtctgac aaaaattata gatataatta ccaactttta 840

tgacaccaag aaaatatgtt ccatgacaaa tctaaggcct ttttagtagg gttagttgtc 900

catcggcttg aaacgtaaat agaccaaaat ggcttagaaa gccaaaatcg agcaaaaaaa 960

acacgaaatc gaaaccgctt taattgtgta cggggtaatg cccggtgaag gtggtaaggt 1020

tcttttcact aggttacgag ttcaaccccc tgatccttat gactcggttc tgttacgttt 1080

ggatttgggt aggtctct 1098

<210> 4346
<211> 1397
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337177_G1, chr10:78317753..78319149, Cluster 26

<400> 4346
aaaaagtatt tcagttgaca aaagtgtcat gcatggcaac atgatgacca cgtatatact 60

aatatagatg aaaaacaaca aacaaaacaa ggccaagcct agaatcttac aattccccca 120

gatgttatcc atatattgat ctgaactatt ttgaaatagc gcattcttta aactaggcaa 180

aaagtcaaat catcatcagt catgttagtt tttaattgca acatgaatac tgctagtggt 240

ttaacaaaca taataggaaa cataaagtta tctagtccag ttgtatagaa aaataggctc 300

ctcccaatat aataatggat atgcaggtgc atgcatgtag gcgactaaat taattttagt 360

ccatatgaga acataacaca agttaaagtg gaagtgaaat atttgtttga gtacttttg 420

tacacaacct accgccgaca gcaaacatga gaatgctcca acattttctg cgctactagc 480

attatacgcc cgtgcattac agtgaaaata aattaacatc cgactatttt agtacggcgc 540

tgatatcatg tttcaaggga gatagatagc ttatatactt tgtgctatta aaaatgatct 600

taaccattca tggttatcgt atcataattt cagtgtgcta aacaaaaatc gcagtatatt 660

tttttaggat agtaaacaag gtataatttc gttggcattt ccacaaatgt tagtttattg 720

tgaattgttt ggaacatgta ttattgacca ttttatcagt tcaccacgta ttgtttttaa 780

tccacttgag tgtcttttga gttcaacaga acggtcatga tattaagcat taacagccac 840

atgaattaag ccgataactc aataatttag gtgtttaacc aaaaaaacac attccataat 900

caaatcttat ggtattattt catccttcac ctcatattat tgtctgcgta gagcatgact 960

gaaaataaga cccttcatgg ttacattctt ctaattaggc caaagccaaa acttaaattt 1020

tggaccaata tcattatatg actaatttat tgaattccag agccatatga gcatttcctc 1080

attgttcccc tttccttctc tcttcccctg tcttaattta attattgcaa gggctacctg 1140

aatagcaacc gtcaaagaat gacgaggtag gacacaccag caacagctct catcttgtgt 1200

gatttattgg agatctgtgg aggcaacaac agactcacat acctacccaa ccccaacagc 1260

acagactcca aagagtaaca ataatggact taactacaac caacaacatg acaggcaaaa 1320

acatgcgtat attgcctgaa ggttgcaata tatttctcaa aaatattgat tgtaattatg 1380

ttacaatgcc cgaatta 1397

<210> 4347
<211> 1381
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33862_G1, chr1:206744763..206746143, Cluster 26

<400> 4347
tggttttatt atctctgtta cgaaaaagat acaattttta tagtatttgc attaggtcga 60

tttttcttaa gcatgggtat actacaaaaa tatattccat aattatttga gttactcttt 120

gtagaagtca aacattgaaa aggtctgttg atggttagtg aaagggtgaa taacataata 180

aaaatctata aacttaaaat actaaaaaat gtgttagtaa aagagtcaat cctagtagtc 240

tctacttgac tagcttagcc aatacaaagt aagcttcgta tataagtcta gttgtaataa 300

taagttaaaa aaacactcaa acaaacaact aaatctatca cctagtaact agtgagctta 360

caaagagaac aactagacta cactactcat tagaactaag ctagactacc aactaacaac 420

acaaggcaca agatatgaaa tataaatata agtgctgaga gagtgaacca acaagggcaa 480

gtgatagaga ttgtttcacc tgaggttcag ttgctagcta gcaacctatg tttctatcaa 540

gatggatact tagatcaaca cttcacatag aagatgatgt taggttgatc ataagcatac 600

tagtgtgaaa actgataaca caatatgttg taaatatgtg aaatgtacga ctaagaacaa 660

tgactgggta aggactaact atgggacatt tcatatttag ctagcatgca aatgaagaaa 720

gcttattgag caaacattgt tctatttcat gactttgtca aaggcacaga caaacctatg 780

accaactacc attattgaca aagagaagcc cccctagtat gcagcaacaa ggttaaatgg 840

agaggcaaca cgtgtcatct catgttagtg aaacctagtg gaataaagta tcacatgtca 900

ctgatcacac aactattgtt gtactaggaa gagtttccta cattggcctc tactatgttt 960

ttgtctactt cgagcaggta ctggttgtca ttggctctaa tggctaactc atccaacaaa 1020

ggtatgagga acatatttca ttcatgttat tatggcctat cgagatctta ttgatcctac 1080

gaatctaaca atggcatgaa gagctagtat aagctcatgc tagaacctcc tatgtgttgc 1140

tcatacatgg ttcatgtgct cattcatgtt gttcttgtga aataagccac atgagtgcta 1200

acctagggtc tccaatggtt ctattagcat tgagaaaaag gaggtttgtt acaaagagca 1260

ctgaaatacc tcaaatcctc aaaagatcca aaacactacc cgtaaaaccc ctagatttgg 1320

ctaaaagtga aaccaaggga agggtgatgg acatactaga gcttgctcct aagctaagac 1380

c 1381

<210> 4348
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344722_G1, chr10:119417784..119418810, Cluster 26

<400> 4348
tatgtttgtc actcgtgtaa acaagcatgt gtaggacgtc aactttccat accttcatgc 60

ataagaaagc tgcgactttg ttgggcagcg gtagagcata cgatcaatga tcgatgaaca 120

ccgctaacga gtatggttgg tgtcgatctc ggttgcttgc tatgtctaga aaaactaaaa 180

tatactataa tttgaactat taggagtcct aactattagc tgaaagatca tattaaacca 240

gattttaaca agctgtaatg tagagttaat agtttcgcta atagcaaagt attagttgga 300

ttttcctgct ctcagctaac aattagttgt atgtaggctg aagctaatat cgatgctata 360

ggggtacgtg ttgtagcgct ggagttagtg tcgcttccct aagtcaatta aagcctaaaa 420

ttagcaatat ggaggctaac aattagtagt atggaggcta agttgtttgc tagcaatcta 480

cgtctttgct gtcatgaatc taagctacct ggttaacacg ttaactgaca ttacacacca 540

agcccaacac tctagcattg taagaaccac actagagaga ctccacgatt ccactagagt 600

ttctttttgt gaatcccctg caaagaataa gcacaagtcc cttacaatca atgagtggag 660

ccgacaataa tcaccaagct gctcaatgat cctagaaagc ttcgagccat ctaggtggca 720

acaacaataa agagtaacaa gagtataact aactcaagca cttaatgaca atccaaaaga 780

tgtgagtgaa gtgtgttttt cagcccttaa gaggtgcaca caagtgtatg tggtggtcag 840

ggccgaccac aaggtatatt tatagacatt caaagaaatc taattgttac cctattgatg 900

aagagcatat ttgagggaca ccagacacga actagccatt actatgtgtc aagtgttcga 960

tgcacacact agacatagca cccgacacgt ccagtgtgtg ttagagatga tggacccaaa 1020

ttacatg 1027

<210> 4349
<211> 1008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346615_G1, chr10:130719580..130720587, Cluster 26

<400> 4349
agtaaccgtg ttagaaatct catttaagtt tataaaggcg agaaggcacc ggcaaatgtt 60

aagttggttc gcgtgccaac ctatacatct tgtgaaaggg ggtgcgacta atcagttatg 120

acgccttcga caatgacatg agagatagag tcaatctcga tcctctaacc gagttcatct 180

tgagatcaac ccgacaaatt tagcttgtat atataattta acaaactaaa actatatatt 240

ataatcatca atttcattag tataagataa tattaaaaag gcaccatgtt caccgagaga 300

ggactataag ttgtgagatt aatggtaaat tcatttacga tgatctaacc tctttatggt 360

aatattataa aaggattcat ttatgatgac ctaacctcta aattaaataa aagagttcat 420

atcatctaca ataataaata gtaaattaag agtaacaaaa taaggtaaaa tagtaatttg 480

atttccatca ctgtttagta aggggattag cgagctgttg actaggccag ctactagaaa 540

ttttacaaga agaaactgta ctacgtccga agtaattact ggagtagtta attagcacgc 600

aatggcatca gtattcatta cgtcagcagt atgtcgtatt tacgtctgca tgcaccgagt 660

gatgtgtttt ctgtaccttg atttttccct tgtagatatg ggacagattc tttatgttct 720

gcagtcatat acaagaaaaa ttacctttga aacattcaaa caaaggataa attccatgtc 780

ctacactgta cgtactcgtc tactcaggta actcgactag aatgcaatgc gggcggaagt 840

attcacatct tgttttggaa gaatgatcag tgtatactac aacatcttgc ctcctccttt 900

gttggttcct tctttctttc ttgaaacttg tactcttgtt tttactacaa caacatgtac 960

tgtatgttca ttcaggtttt ttttatttct gtatagagcg tatatatg 1008

<210> 4350
<211> 1214
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348776_G1, chr10:142097590..142098803, Cluster 26

<400> 4350
agagttcctg atctgaatgt ccatcagaaa ctaggaggag gggacatagg tgttagccga 60

gagagatcag atcagtacat atagatgaac aaccaagcag agtgaagttt gaaaaaaaaa 120

aagatgagat agagagtctg ttgaatatag cctaacatta agcgagcacg tcgttagtga 180

tcgagctact atagacctgc agttaacgca gacgtgggaa acggtggatc acacgttctt 240

ggtaggtagg tagcatagtg ttacgagtgc tcgtttttaa gctgcccgcc atctttcgat 300

ctgggactcc aacgtcgtcc agaaatttcc acgtttccag ccgcagtaca tcacaagaat 360

ctcgcttgtg acaattgaac actgatgaat gccacaccta gcgaaaccta cgcgtcagat 420

cagtacagta cagtacagta cagtaggcca gtagctcacc gagcgaagcc tacgcgtcag 480

aagcatcctc catggcctgc agcgtgcgcc aaaggctact atgcttgcct gcagccttct 540

tgttactgtt gcgaatcgat tgagaggctt tcagtcatat ctttttaca atggcgttca 600

gaggatctga gcagaccgtt tcttttctac ctaaagttag gatgagatga ctgctatgga 660

agtcgggaga tgccaccctg acctgctccg ccatggtttt ctatagggaa aggggcggca 720

acggagacgg aggtagagct acggcctacg gagacggtgg cgacagtgtc gagagctgag 780

tctcgctata tccgaagaca tcccatcaaa ataatacgat ataattagat taaaatagat 840

attaaaacat aataaaatac acaagtacca attgcaattc acgaaccatc acgtaatttg 900

tgtaaagttc aacacaatat ttcatatacg tctaatttaa atatttttc ctagatagta 960

ataaaacatc ttcacagcac aatagtacgg tctagaaaat gttaaaatta gatacatatg 1020

aaaaattgaa atactgtgtt gaactttact tagattatgt gacataattt agtgaattgt 1080

aataaaatat aaaaaaaact agatcttttg ttgtatagat attttcaatt agacgggctt 1140

cgttgacaac gggcgtgcgg gccaacaagc ctttttttcag ccgaggcgac gacacagagg 1200

ggcccggccc tttg 1214

<210> 4351
<211> 1258
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349552_G1, chr10:145951372..145952629, Cluster 26

<400> 4351
gttcagagtt ctctcttctc tctacatgtg cgtccacgca ccacgcatgc gatgcgcccg 60

gaaaacacac gagcagactg cgccggtcac cagtgcatca tcgactcgtc atctttctat 120

cgtggatttt ctaccatgga ttcatggtac tggtgcccat atatagtaca caagccaaaa 180

gttgctttta ggaccggacc cgtgtccaaa gccatgttaa gctgtcagtg tacaatgcaa 240

cgatcagaga gcacaggagg ttggtttgcc atgtcagtgt cgacggaccc gacagtccag 300

gtgccatgcg gcccacgcca atcgattgga ctgccgagcc agggagcagg ctttcgcagg 360

gcgtggccca taaacaagct gggtcctccg ttgccctttt tgtttatgtt gtatatattc 420

tcaacggcag tcacgtctac taatgagctc taaccagagt taatttatat atacaacggg 480

ggcatgggac tgatgtaata gagaagagag attcatttaa ggttgatgtc atcgtcattt 540

ctctcgttgc actcgtggtg gtgctagcac aacgacatcg cggcatgcgc cgcaacgcct 600

cattttcaca ggtttggata ccgttgagac gctacgaccg actttgtgtt aatcaatgat 660

aaatatgagt gcaagtgaat gtgatgtttg ttgctggtac aagaggatat acgactattt 720

tcattgtatg tattgtcacg ttcttcttcc actacgtcgc catctagtga taacgataca 780

caatccttta ctcgttgtta tcttggttga gcatggtaga tatgcttaat gtatagggta 840

tctattttct atagtggtat caaagtcatt caaacacatt ttttgataca tgttggtttg 900

catatatatg atatatctag tatattgggt tttacttttg ctttggttgc aacatgcgtc 960

gggacaaaaa atgatatggg tgcactatta ttattgtacc tcacacgatt gtcaatatat 1020

cactaccggc tagaatcacc gtcgagacca tcatttccat acaacacata tatcatttca 1080

acaacacata ttattattat tctgtcattt gtcattgata taaagtaaga atttcgaagt 1140

gtgcagcctc caacgagaga gcgaagcgaa taaatttccc tgccatgcag aatatctaaa 1200

acaaaaaaaa caatggaatg taggagattt aaaccctgat cacttggttt gaagcgct 1258

<210> 4352
<211> 1230
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_350036_G1, chr10:148830735..148831964, Cluster 26

<400> 4352
aactgtttca ttgttgctct tagtctggtt gcagctgctg gaacaacgac tccgtacttt 60

ttccctgctt aaaaaaacaa tgaatggtaa agattgtttc acagataact ttagtttgcc 120

attggatcgc caggctgcac aggttggcaa ggaccaacaa ggatcccaaa aggcactcct 180

ccctttgca ttggcagata ccaatgattt ggagtgcaaa aaataatcac gttttgataa 240

aaacttgctg gaaaatgaag atgcaatgat acgactacaa gacatgtctg atgtgcccaa 300

ctattccttg gctgcatgga gagggcagct gcgggctgcg gctctcaatg aatctcggat 360

caaaatgggc ttttgttctt ttgctgggct gtgggccgcc gttcatttaa attccaatac 420

gtgggagtgg gagggctgtg gatattggca gatcagacat gcctaggctt cggtacaggt 480

accctgtgaa ttaacaaaaa aataattaag ataacataac acacagttat gaatatgaat 540

aaactggaag tttacaacaa cttaaatctg gtccagtaca tactatatag acaatatata 600

atccatacaa atcatcctaa gttttacaat agtgttgtat gaagcatttg ttcttgatat 660

ttaattggac gggaaaaggg tttttttaa aaacgtttta gacatgtgaa gcgtgtctcc 720

attgatagga taataaggct gcaccaagag aagcgatggc agccaactgc caacatttat 780

ctatggttgc atgtgcgatc ggcgaatctt ctaacttgtc tgctctgcag tctgcacccc 840

tcccctcccc tagcttggag tggagatgca tgatcattat atattcttga ttgatggaaa 900

tggaaggttc gtccatccat ccatgatcca tctatgcgag tagcgagagt acacatcgct 960

tctctctatg ttcctccctc taaacttttt tttccttcct aaaatcgatt tctaaagttt 1020

gttttaagtt aaacaaaatt aaacatgacc gatttttaa aagaaaagtc tatgacatta 1080

aattagtatt attcagttca ctgtattata gtttccatta cgctttaacc taagatcgtg 1140

gagacaggca agataggaaa gtcctcaggc gtcctctctt atcacttcaa ttttaagaga 1200

taacattagg atagtcatgt tgtaactcct 1230

<210> 4353
<211> 1078
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35560_G1, chr1:215210246..215211323, Cluster 26

<400> 4353
taaaatcgag tagcagtttt agaactcccc gcaatacaat atattgatca tttgtttgtg 60

tgcttgtata aatggatata gatcgatttg cctactttat tttgtctgta aaagagtaca 120

aaaatgcgaa aggtaataaa tattgttttt aatttcaagg aaataaaata agaaatcaga 180

ttaccctgct atatactact agtatacatt cctaataata agaggtcgag taggcagcga 240

acttgagcgc cacaacaaag gactgtctat ttgacaaggc caggtatgga acaacatgca 300

tcatatatca ctgctcgtca ctgtttcatc gattgcctcc aggctctcta tacgaatact 360

ttctctattc tgaattataa gatgtcttat gttttctaat atattgcttt tatcatatat 420

ctagacatgt gtctagatat atatctaaac gcataataaa aactacttca tccattctaa 480

actataatac gtcttgattt tgtaatatat cacttttgct atgtacttag atacacaata 540

tgtctagata cgtacgtagt aaaagaaata tatctacaag cgttatcatc ttatcttata 600

atttaaaaca gagaaaatat gcatctagga aaccgaaaaa cgctcttata atttagaatg 660

gagaggtatt ttttaacata aacaacttga aaccaagtta aacttcttgt ttgcattgta 720

cgcaggggtg gaggaaggag ggacagaggg aggtcaagca cctcctatgc taaatgaatt 780

tctcttttat tcacatgata ttttgctata taattcagca aaaatattga gttacccccct 840

aataatatat cttttagcac ttggcccttc ttaacagtaa tttctgtctc cgcacctgat 900

tgtataatta catgccttcc atgcttttct tagatagcta gtctcgttac atacagtttc 960

aaagtgtcac tgcaagtagt ttttttacca ttaaggactt tgtgctagtg gtttactacc 1020

tcctaaaaca caatgaagat tatctagttt atcctaaggc caactaccct ccagcctg 1078

<210> 4354
<211> 1255
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35669_G1, chr1:215768681..215769935, Cluster 26

<400> 4354
ctattgtctt tgttagtaat agggacatat taaaatggat cttagacata gaaaaatgat 60

tttaaatgcc taagcataaa catgttcact aacttaatct tatggtaata gatcttagtg 120

acttactcgg tgccatatgc acgtacatat attaattttt attgctttct ttggtgtaac 180

agtttgatgt aggtaaagta gatgttttaa tcttcaattg tgagttagga ttttctcttg 240

ataacacaga gtctagtttt gaatctctaa cgacgtctaa ttgattagat atatgggttt 300

aggtggtgag ttgatcttga aatcactctt agtatttatt attgagtaca tatgctagaa 360

aaaattagag caatgtagac ctagagttgt tgcaattgag tgttgacatg gtagtttgca 420

catctatgat atagagaggt ttgagccgtc tgagataata cattacattc ttcatatggt 480

ggatgtgtag atgttagcgc acatagagct tacatactca gaagatgatt caactagcga 540

gtgaaattga gaacctagag actactggac taacgagtgg agctaagaac ctaaaggata 600

ttggacttag gtgcagtagc aacataaagt tgcccttgaa tgcaagacat cttccctggt 660

gtttcttatt actagttata acctttgtga tgttaacaac tcgattttat attgctatac 720

acctttttta taacacaaag gagatagtta catctttacc tagatgatgg gtcccgttta 780

ttaaagatat aactacttct atcttattgt atttgtaata tcgtacatgg tgcccatctc 840

tagtgtgcca cagtggtggg tgtgaagtgc cacaatcata ggtatgagtg cccacaccac 900

caagtatagt gtagttagta gccactatat agctacatgt actacatagt gctcgcatgt 960

acgtctatag cctacagcct taaacatggc tacagtgaca cttcctcagc acaacgtccc 1020

catgtaataa attgaaaaga tgatagcctt atctcatcta ctcgatacca catgctagcc 1080

tagttagggc acacatggtt ctaaggctat gtctcctagg gccattttgc cgggtggcac 1140

cttaagagag ccatgggctc ctacatcaac ccctttccta taggcccata gggatgctag 1200

gctagcacca agctagacat attatgggta tattgtctgc tgatggagcc ttaga 1255

<210> 4355
<211> 1071
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37254_G1, chr1:224441243..224442313, Cluster 26

<400> 4355
tggaagttgc gacaatgaag gagaaagaaa gagagaacaa aattttcatt ttccaagttg 60

gtatattggg ttttgtccaa cttctagttt tggtttttg gagcactcat ttaggtgctc 120

taaaaattca tggatttgac ccttagatgt ggatttttat gtgctttcaa ttttatggaa 180

ttgagccatt tagctagaaa aatagaatct gcaatacttt gagatgtccc aaacgtcgat 240

ttcttatact gcacaatttt catcatgtta tatgacacac aactaataac tgagtgttta 300

gaattcaaca ttcaattttt gtaggaaaaa actgaaagca tatacataat cgtttcaccg 360

tacatatttg ccttttttgtt ggttaaagga atgtctattc tgtcaaacta gaaagatcat 420

agttggaaaa ttctcaagac tatggattac taacacttga caggtagtaa actctaaggc 480

ccttctgggg cacatgaatt tcaagggaac tacacaagga atttctcgca ttataaatat 540

tttgttatgt gttggggtat gtgctataag catggtatat tgaagcattt tgaattctta 600

atgatgggcc tctttacaga gaacattctt attgttagag tatatatatt aggatatctc 660

tagatatgga agcatcatgt aattctgtct tgctttatat cactaaggga gggtatttat 720

ttcataagca atgtactcat gtataatcag gccacaaggt tcaccaatat aatccaccat 780

cacactaaag ttgttccttc tacacttctc ccatttgata tgaaagccat tgatgtagaa 840

ttgcactatc taagctactg ctcattatgt aaatcaaaat gttgcttttg atagattctc 900

tgacattaac atctagttga ttcccccttt aacccatctg atgtgttttt gtgagtgcat 960

caaaaactca tagtttatgt actaatgagg tagaggaggg atagagagta tgagtaccat 1020

acatttaggg ctaaggtgga tgacggtcat gattgtggtg gcagtcagat a 1071

<210> 4356
<211> 1375
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37282_G1, chr1:224504401..224505775, Cluster 26

<400> 4356
cctaactccc ctgctcgatg cccctcccta actcatgact agtgcccttg cctaattccc 60

ttagtcggcc cctctccaac aaaccacata tgatgctacc ccatgtccaa cacccaacac 120

tgccccctat ccaacacctg ccctatctga tgccacctct gctccaacca tggaaggaag 180

gtattgattc tccttcctcc cttttccatg aatggttgat caatcctcac cgtattgcta 240

atatgaattc tcttatgtgc ttgtcatatc tctgtacata gtagtacata acatacaata 300

ttttgcact ccaaaaaatg ggtgagaagg caatatggga tctaggacat gtgaagcttt 360

tttgtgaact atgtgcatca gaagttgtta ttgtgtatag gccactagtt catcttaata 420

aagtggactt gaaaaatatt gaagataagt tcacaaaaaa atcaagatga aagctagaac 480

atttccaaat gaagaataaa taggatgatc taaaaaagaa gttggattat tttttgtgga 540

gttaaaaatt ctactactag acttagatgg aatgagataa gataaatagt ggattatgat 600

gatagatggt gggaagaaca tcttgcggta agtggcacaa caattgacca ttttgtacta 660

gtatttatga ttgttgagta gtagcttact tgtgtatttc agctaatgga aggaaatgaa 720

agcatgtgca tttcaaaaag tgtggccccg caaacttgga ttcactccac atcatgtttg 780

gaagtgccaa gttatcaagg catctgcctc cattctagga gacttttcta gtaattcaac 840

taatgatgat gtacaagaga tggagaaaaa tcccttggat gcaaagttgt ccacgatgca 900

aaaccaaaat gataagaagc ataaggcatc ttcttctact tgtatggaag agaatgaaga 960

aaagattcca tttctacagt tgtacaagtg aacttgtacc aagatagaag gagtgtacaa 1020

gttaaccaca agtgttgacg attcatcggc tcctatgacc agccacattc ctaccattgt 1080

tgaggttatg aagatgttga gagaatgtgg tctgcaagag ggaattgttc ttatgcatac 1140

gtccacttta ctcatcataa aacctagaat tagagagttc ctcaactcat ttgaaacact 1200

tgaagggaga cttaattgat taaagaggga acaagagatg aagcagttgc cattaacttt 1260

atgttcaata tgtgttcaga atagttttgg tttggttatg tatgtgtgta atgaacaata 1320

ttggtttggt tatgtctgtg tgtaatgaac aatattggtt tgattacata caagt 1375

<210> 4357
<211> 1293

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38740_G1, chr1:231723149..231724441, Cluster 26

<400> 4357
ataacaatca tatgacactg aattttgaac ggattattgc aaataagtct ttgattaagt 60

tgcataaaaa gggaaggaca caaacatatt tcaaatttgg tgcaaaggtc aagggaagta 120

cccccaaaag aacattccat gtttctaaca aaatatcaag ggaatctatg ccccaggttt 180

cctcttcact ctggttattc agaaccgact tgacagcttc tgacgtcaaa gcagaaagca 240

gattaactgt accatagggc ctacaaagtg caagcatgtc catgttaaac aaaatagaat 300

agcaatctca ggttagctga tattgtaata ataaattgca tgaagtgtac aaaatattct 360

gaatatactc acaatatgca ttttcactat tacaaaaaga gccagataca ccaaggaaaa 420

tcagagatgt agcaatggta tcttggttac gttaccatct tacaaattgg acatagtagt 480

gccatattaa ggcccaattg actaatatgt aggaatacaa gggacgagtt accaaaaatt 540

aacctaaatt gtgatgtcca actagataat gtacaacaaa ctgaccttat agattttagg 600

aggttgtcaa aaagtgagcc agtagttaaa gatgcgattg aaagcaaggc atggcaacca 660

tctatgaact cactgcaaca caatgaatat ctcgctcatc agcatttctc aagtttttc 720

tcgggttaaa tcaagattgc aaagatggat cctgagagaa cctttcactt cccccatttc 780

ggattgatgc tgtgattaca tcaggaggtt caatccatag aacaacagca gataatatca 840

gcataaggtg tttaatctgt gcatccccat tatctgacaa cagaaagaaa agatgaaaga 900

ttacataaaa gagatcacat gtgaatcatt aatatgtttt ccatgatacg tcgaacttgt 960

aaattctaaa agaaaatatt cagctttcga ccttgaacag tctaatttgc aacctcaaac 1020

tatcagaatc gtccactgtc tcccacctac cacacatgca acccccaaag gtgtttttgt 1080

ctaacaatag caccaaactg ggcagttgtg ggtgccgctt ccttcaatca caaatatagg 1140

cccatcttag cttgctctaa gtcaaacttc ttttaaattt tgatcctcaa tatctaaaaa 1200

tttatatagg ttgacaacac actatcgacg tcaatagttt attatagcaa ctacttttta 1260

taatatataa gtcttttcat ttaaaatgat aga 1293

<210> 4358
<211> 1336
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_39472_G1, chr1:235761550..235762885, Cluster 26

<400> 4358
ttaatataca tatttagtat aaaaaccatc gagggtccac atgtgttatg ctacacttct 60

cctaatttga ctacatgcta gttttaataa tattttggcc atgtgcaata taattgatgc 120

ctagtagttc ttctgagcca acctaagaac cagacaccag catcagaggc tagagctaga 180

gtccaaggct acggtcataa ggctctaagc tacatagagt tgtcaacaaa agacatgtta 240

tatgcatcaa aaccaaataa caaattttta tgtcaagtaa atcctctcta tcatggtaac 300

ctaaacaacc gatgaccaga acctaagcac cgtgccagag ttcaaggtta tatggtcaag 360

ggttctgcct aaatagagtt gttaataaaa gatatctttt gcactcaatg aaaatgacaa 420

gtttaaaact tgacacaagc atttcgagta gtttactaaa ttgtatacta cccacttcat 480

tttatctata tgacaatatt tcaacttggt tactctagta atcttgaatg attgcaatca 540

cctcaaggaa acctgaagcg gtgattcctt gtcgagttgt gcatagtaaa atattgagtg 600

ccaagactca ggggctggac tttgcctaga taactcagct accagaagta atgacagagg 660

agtcagtgga tagttctcaa tagatagagt ccaacttacc caagttgata actctactaa 720

gtcagactcg gggctacatt cacaggatgc accagaggta catgcttatg tttttgaaga 780

tttatgatga caaagatctc tatgacaaca actctattca gcacgaaaaa tatcaacaga 840

gtccatgtta cctgagtcga caactctact acatcagacg tgatagtttg catgatagag 900

taggagactt ggttagaaga aaaaacaagc cagacacaaa taattcaata cattcaagaa 960

gattcaatag aagagtttca tcaacctgat tcaatgattt tgtcaaataa aacccaagcg 1020

ctactatcaa gaatctatac cagggtacct ataagaagga catatatgga taggactttg 1080

ggctcggtct agaggccatg gacatgagga gggtctacca tgagaaggat tccagaatac 1140

aaatatggta gttatcttat tggaatagaa gagataaggc aaatatccta aatagacacg 1200

acaagactct aacggataag gaagacaccc ttgtaatcat aagagctaga ttctcatacg 1260

actaggttac cagtttgaaa ttgtcctaga ctatgtaatc tactcatatc ctccatgtaa 1320

tcgtcctatt cttgga 1336

<210> 4359
<211> 1163
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41373_G1, chr1:245168493..245169655, Cluster 26

<400> 4359
aagatgataa tgaatgtatg tttaatttat taataattca ttagacagat actataacct 60

ctaacctcta gtattaatga tagtagtata cgcgtatttt ttttcttcgc aaaaaggtat 120

atacgtgcac tagtattggt atattattat tacgtgagag tcagaaaata ctcggtagat 180

taaaattaaa acaagactag cattgtttgc ccacccaaat tttatccacc gaggcatggg 240

ctgatgggcg tatgcgtatc ccggttccca ggatagaagg ctaggctagt aggctgtcca 300

gttgctgctg ggcataggcc tgccttgccg ctgaccacgg ttccaagcac gcactcccat 360

gtgcagcaaa accacgcgag caagcaaaag atttctcctg ccgctccgcg ctgggccgct 420

gcagcggcct ctgacatgac cggtagcaaa caccacgccg ccacgtcctc ggcactatac 480

ccatacggcc atacaatccc atgtttctac tgctcctcgc aaaagaaaaa aacttagttt 540

tatatcaaac aatttcaaat ataatcagtt tcataaaaac aagaatcatt aatcatattt 600

ttctagtata ataaatctat ttaaagttta gaacgttaat acatttttc ttcaaaacta 660

attagactca gatttatcta aatttatttt atttagagca ggatttagtg cagtttcaat 720

cgaccatcga tgttgtgttt agcatctgct ttccctctta ggtgtgagag tgtatttgat 780

acaattacac acaactttat tttagaaaac atatattttt ttttcaagca aaagccttat 840

ttgtgcgaat tttaacatct tcaagagtgc catgataaaa tctcatgcat ctatgaagct 900

aacgaaaatt atctaccata ccactgttta ataaaaaaaa tgaaaggatc ttttcccgac 960

ttcctataat ccactccaat ggttttcccc cgaatttgga ggaactattt gtccccaagt 1020

gtgctccaac ggttcccctc caccccccc ccccccgaat cgcgtgagtc ggcatatccc 1080

catctattct tgatgaatgg gggatccccc tcacaagccg ttgggtgcca atcccgcggc 1140

cgtagagcac ccgaagtggc aac 1163

<210> 4360
<211> 1102
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46400_G1, chr1:271772732..271773833, Cluster 26

<400> 4360
gtgcaccgcc tcaccataga gagcaaaggc cctagtaacc actttctcaa aaaagtgcga 60

caataaaagc tcaaattcag agtaacgaga aaatagcatg tgcagtcttt gtagcatcac 120

gtaagctggg ccactatttt tagcatcaat tttgttttgt tagatccact gccactgcaa 180

ataatgttta ggtctaatta tggtcctatt tgtttatgct tttctaggtg tgattcttgc 240

ggtagccgct tcctcgtatc gccagatttt tgtcaattct tcgattctca attactagtt 300

taattctttt tattatggac aatggtggga taaagataaa cgagtttatt gtagtgtgtt 360

tatcaggatt atatgatcct cacgaccacc gtcgccaaat aagctgaaac cggtgtttta 420

aatagcggaa tctaaaattt atctccaccc ttctcaaaca tgcaaatatc gggacaaatc 480

acgatagata tagcagaata tattgggcta aacagcataa atttccactt gtaaaaaaat 540

ataccgtctt tgattatcta aaaccttggc tgaaacagac agggtctcac ctaaaaaata 600

atttttaaac tttaagtcat ttagaagtta taaaaataag aaaaaagtat gttatagtag 660

tctagaatac tgactacaca ctatcacaag atatgatttt caacttattt tgcacaagtg 720

tagccgcagc aaccgcaagt ctccatatct agcctcgtgc gtgtcacctc ttactgccac 780

atcacatagt catatgtgaa ttttaaaaaa atataaatct gtgaacttaa tttatatatc 840

tagaatccaa aatgatctcg aacaaaaaca ttatcaattg caagttttaa actcatcgag 900

ctctacaaat ttaacgtaaa ctaagtcttg atttgaattt atttgaaaag gatacaattt 960

tttttgtgtc gtagttattt agtcaaccgc cttagggacg gtggagttaa ccaaatcgtc 1020

cttagaaacc acccaatttt aagatacggt tgatataagt ggttagcctt aaaaaattta 1080

gttttagtgt aagacttcat ca 1102

<210> 4361
<211> 1365
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46941_G1, chr1:274730495..274731859, Cluster 26

<400> 4361
acacattagt cgtgggtcca agtgtgttga atccaaggtc tattctctac ttatgcatta 60

aatttaaaac aaccagctta attaatttac atatcccatt attaaccgac gttaaataat 120

ggctgcttat ttattccatt actcatgcat cactttcaca gacgtgggtg atttgcaaat 180

tccatgcata tgcgaatgaa taggaaggat caagccacca ttcatggaag ttgatcccgt 240

gaatggaatg tttaaagggt cataatagat aggtctaata tgatttaaaa atttcacaaa 300

agccgccaca catgtaagtt tagaaaaata tgtggaaggg ttgatcttat attataccaa 360

ctgttgaatt tgaaatccat gaagccagtt gacatacatc caactggacc ttgttttgat 420

cacatctgca ccgttccatt gtgtatgcat cactttcacg cagcatgtgg ttggtttgca 480

aattgcatgc tgtggtaaat aagagatatg aaaccatccg tacgttttgc tgatctagga 540

gtatttttt acataactgg aaaaaaggta aatgtatttt tagaagatgt ttgtggttgc 600

aacaaacctt cttgtttaat ttaacaccgg ccatagtacc cccatacatt gacacatgca 660

tgcatgtaac ccaaagatac aactgactag tagcactgaa tattcaaaag agtgacatag 720

gaaaagaagg ctaattaaag ctagcttaag ctccaatcgt gttgctaaac ctcaaacaaa 780

aaatattaaa aaaaatctcc ctaacggtga ttttattgaa ttaatcaaag ataaatagac 840

cgagcccaat taaataaatc taacaacgct tctctttttc caagaatgga tgagctgctc 900

ggaccttcaa tttccgtcaa attatgatgc tatcatgtat agctaggggg agggggcaca 960

ccaaatccct ggaaataatt aaacatttaa actagtcgac acacatgtac atgccgtttg 1020

ttaatagtcc gtgttaaaca acacggctgc atgatttgtt ccatgaacat gtgcgcttgc 1080

attgcatgca tcactttcag acatgtgggt ggtctgcaaa ttccaggcgt acgcagatga 1140

gccagagaaa accacaccaa tcacctcgca cttgaattgg aattttcgga accaccacca 1200

acgaccgcat gactatgctg catggaactt ggacgatgga cactatactt aatataaact 1260

gcacgatcac cctccctcca catatgccac aacagagtta acaaactaaa ttaactcatt 1320

aatcagacga aactcttttt tttaaaaaaa agactagcat attag 1365

<210> 4362
<211> 1278
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47175_G1, chr1:276068687..276069964, Cluster 26

<400> 4362
gtcgaacagt ggcgtgaccg gaaaaagggc acgatcggga aagaatgggt gtggggggag 60

gggggcgga gccatgacca gtcgatcaag aagggcgtcg tcggaaaaat gagacgatgg 120

aatcggtaca tgtgtaatta gtggtactta tggatatctt tttcttctaa atttagtaaa 180

cttgagttgt tctcaaattc aatagacagt attatatgaa tcatctatct gatccctgcc 240

ttcccagcct cctcttcccc tcgtctcctg gtgtcgatca tttctttcca gatcataacg 300

ttagcacata ctatatgcta gtctatattt agtagaccaa gactttgtta atttttgaa 360

atatgaattt gaaattggtg aagctgtttt aaaccgatct tatatggggc agtggttttg 420

tcagcttatc gccaccacta ctccactagt cggtcaccgc gttgcctgaa acagcttaca 480

gctgtgacta cacgctggtg tgaaccgtta aggatacttc tttctggtgt cagcttattg 540

gtgttttcga tgggggggcaa aaacgtacgc tcaggaatgc aaactcttcg cttggctcct 600

ggctttacaa gtgggcttcg aaacagccgc ttagctgtgc tccagatgcc acacgacgag 660

agaggacaag caagggcatc gagagagatc tttcgtcaag caacgaaacc gcttccagat 720

aagaacaagc tcggtgcttt gtggagaaag ctctgcaatc aacaaggacc acagctacag 780

cctacacaga atgggcctga ttgggtcgtg ggctggcggc tggcccaacg cagcctaggg 840

ttttctgtct tcctgatgat gtagtatagt ttaaacagat attaatgcgg aagccacacg 900

gacacggtca cacaaccaca cggcaaaaac gatatgcagt atatattttt ttgaatcaca 960

tattacctct gtaataacgt ccatgaatat gggtcggtag agttctcggc acataaaaaa 1020

catgattata ctttttagtt ttttgtaatt ccaagtaaat aatctttatg tatgaccata 1080

ataaccatgt aaacacatgt tactttggaa attaagaagc aatcaaacaa gacaaaacac 1140

aaaacgacct tgctcaggaa gctcactagt ttatactgtc atatagtttt gagatggacg 1200

aagaaatcat ggcgattcac ctcagtagtg gtgggttatt ggtctctatg tggaaaaaca 1260

tgtttgactt taattcgc 1278

<210> 4363
<211> 1270
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47727_G1, chr1:279409592..279410861, Cluster 26

<400> 4363
tgtgggagtc aatgcagggt gcgcgcgcgg aggggaggga ggacttacga agaaactcac 60

gctttaaagg tgtagtgata tatggccatg tcacgtgcaa caactataag aacctcaaat 120

tctcgatgtc acggtaattg aggagattag cgaatcagat ggtatactta ccaagaatat 180

tatgtacaaa gaaatgctca ctttataggc gtttgccatc aaatgaacat ttatgtttat 240

gcttaccaaa ctatatttgt tgctacaatg atatgtaatt tgttaaatat ttggtatcaa 300

gatttatgag ttccattatc ctttgcattt tcttaattaa tatctgaatt gtgaagcata 360

attattattc aactggttgc aaaagtatgt tgagtttatc cactcttgat attatcagaa 420

atagtttaaa acatgtttca ataataatgt atctaaacag acacaaactg taacaacgtg 480

cactctacta gttccatgtc aaagacagtg gtatggtttc aatgaacatt ctggaaagta 540

agtttcacaa gtgttttact gactaaaatt gacttgtttg gttgacatgc acaagatcca 600

gaatacttgt tagctcgatc ttcaatctgg aattgcagga gattgcatcc agtaatgtat 660

cttgctgctc tggcttacat atcttgaaga tgctggaaga agacaatgga atgcgactac 720

tttcctgcaa ttacccttat ctcatatttg tcagatgttt aaaaaagttg ttaatgggaa 780

gaagacatgg attttacttt ggatcaataa gaaacacctg ctacatatag gaaacgttgt 840

tgccgttttc aggttgtgtg cagttcaagt tcagactact tttcatgtta tctggtagtt 900

gtttgaaggg tggttgttat ccctttacac gaatgactta ggctttgtct atttttaaa 960

gtaagtcatt ctgtacctgc agctctgtct cgtctcagaa aggtctagtt tggaactatc 1020

ctgaagacag atcgattatt gatatgcaag tgccttttt atgagttgcg tatctatgct 1080

tgtttgtggt gactgtgtct atgaatatgt ttccgtctat gtaaaccttg cacttttaat 1140

cttaactaca tgcatttctt ggctgcaagt ctgcaactac atgtcggttt gatctgttac 1200

cacttgaagc tgcgctatac ctccaacaat gtgtttgcta tggctttggg aaacaagaac 1260

aaattagcct 1270

<210> 4364
<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48077_G1, chr1:281172468..281173486, Cluster 26

<400> 4364
tcttcttgaa tgtgctctca aaaaattcag tgacatattg tttgagaacc tcagaatttc 60

agacaatgca ccatgatatg gactatcttc tccaaatctc aaacgaattg cattgccttc 120

aggccttaat cacaaaggaa gaaatagatt gtcactcaac atgtccccca gagtccatag 180

ataagtcaca aggtctagat ggatccacca acgagttaat taaaaaatgt tactcatcat 240

ttcccaagat ttttgcaatc tctaaacgct tttaactaga gtgatttctg tttgcatagc 300

attagcggat cttatataac attagtacca aaaatagata gtctagctag tgttttagac 360

tccagacctg tttcagtttt gaactcttct atcaagatca ttataaagtt cttagcgaaa 420

aagcttcaga gagtaatcca acaactcatt cacaaaagct agtatggttt attaagagta 480

gaaatattca agatttttt ctaaacctac agggctaaag taaattacta gaaatccatt 540

ctagaccacc ttgctattat ttttttcca attttaaagg atatctcttg ttgacttatt 600

tgggactccc cttaggccta acaaggccat taattgaaaa ctttcctttg tttaatcgtt 660

ataagtgtat gctagttagt acttcaactt tcttattgta ggaaggaaaa ttgtagttaa 720

caaacttagt atctttagcg atgctaacat tttcatgtgc accttccaca accattgtac 780

cgtaatacaa gttgaaaata tataaaatat tatttatggt gtagatcata aaaaacaacc 840

tagacaatgg tttgtgatct aaaggatgaa ggagagattt gggagtcccc aacattgaaa 900

ctcataatga tgtaagagtt tgtattaaaa ttttcaacag ggagaacatt ccttgggtca 960

acttgttatg ggagacatac tactcaaatg ccaaacttct gagtcatacc aagcgaaga 1019

<210> 4365
<211> 1077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4851_G1, chr1:24738743..24739819, Cluster 26

<400> 4365
caagagtttt ttttatgtac attgcagcgg gtgcagagca gaagttggcg ctccattctt 60

aaatgctgac ctctatttcc attcttcagt aatttgacca tcagtttgca attttttttt 120

tctgtagaca gagtttgctg catctgaaat aaacagctgt gctcttttgc aggaaggagg 180

atcttgaact tgttgattcg gttttgtagt tggcaaggaa tgagtcaaaa agcaaatgta 240

tatcctctcc tggtatagcc attatcaggc cctgtccctt ctggtaaggc ttgcaatatt 300

tcgtggatta tgaacccagg tcgctttgat gatatttact tgcaattgtt cataatcttt 360

atgtgggatt attaatttct gattttaata ctacctgaag tttcttcttg gctaaagggc 420

attgccataa tgccatttcc cttgtgaaac gatgggacct gttgtatggt ggatttattg 480

cttcccacta tattctcaca gtattgtata agaaaatttc tttatataat ctctttaaac 540

atgcacagga gtaaatgtcg tattgtagct ttataatcac atttgagcaa atttcatgtg 600

ttggagaatg tcatattgta gctttataaa catacttgaa caatcccttt gttaagtttg 660

tggatctcaa tttgtgctaa cttcccatca tggattagaa atcaaaactg aagtatgttg 720

ataaactgat caatggattg gcacctgtta aatgaactga gcaggaatgc atcgatacat 780

tcagaactgt cattttcagg tgcttggagt ttacaacgaa tgactatgta gaaaacaaca 840

aatgtacatc ctcctatcaa aataaaaatg tatacccgcc tagtattgtg tcgactgcca 900

ttctgccatc tgctcccagt cattatgaga cacctggtct gtcatggtaa ggctgccaat 960

ctttcaaact aagatctcct ctgatgatat ccgcttcgaa ttgttaatac tctacaatag 1020

tgtttggttc ataaatttgt aatgccattt gattacaggg gtaacagata ttgctag 1077

<210> 4366
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49383_G1, chr1:286504075..286505117, Cluster 26

<400> 4366
gatctggtgc agacagccta agaggctcca caatgtacgt aatgggaggc aagctcagga 60

accaggaagc tggatggtac ttgtccagtc tccttcctct cctatgcctg ccttggcctc 120

ccccgctcct agctgtttga acaaataaat gtccatgtgc taactactgc agacttttt 180

gtaggctaac aacttctgtt ggtaagttta tgatatctca atatttttgt tccgaaaatc 240

gcatctaaaa tgaaggaatc ttattttatt gcacaattcc taatttctct aaattataga 300

tgctatgaag ttttagctaa tccataagag atacattcgg ctactcctac atctgatata 360

ttgacattgt tacaagttct acaagaaggg aacagcttgg tgattaagca ctttcttcta 420

gaacttcaca caacatgtgc ggatgtgcta atagcttggc cgtttgtcat aattaagacc 480

tcattggtac tgtccattga ttgattcctt atttttagct taccataacc agatgctaat 540

gcaaatttca ctaacacttc gtgtttttc ttctaatctt gtatagtgcg aaaatcagat 600

tgctttttt tgtgatactt cccatcacta cattgttatt ttgtgcacgt attggaagca 660

attctaggct atgacccttg agatgtagag tcagatctca tggcttaaca atatatacca 720

gatgatcatc acaaccagtt cttgacctta gacagaataa ggcacaatgg tgtgaattct 780

cagtaaggat ttcttttatt ttttctctcg ttctatccaa aaaaggtgtc cggtgacaat 840

ttgagattat cgtctacttt gccacaaaat cttaatgctg ttgtcttttt ttacctaggc 900

agctgaagcc gtcactgatg tgttgacctt gtcttgtgaa tatttttata gtagtaatgt 960

aggtttttcc tgagatggac tagaatatac tattctttgg cttgagctgc ctgcttacca 1020

tgatgtctct ttccagagtt ctt 1043

<210> 4367
<211> 1020
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_49835_G1, chr1:289479301..289480320, Cluster 26

<400> 4367
gctacagaga aaaagctatc ccaaataggc cctttgtctg agcaagccgc ttttttctcc 60

ctttttttgc ttgagtaaaa tctggatgga ctgcatcaaa gatttcctct cggatcttcc 120

ctctcttctt cttgaccttc ttacatcaag tgcgctagag tttgtacctt tgtgtttttg 180

acaaacctga agggcatcat ttctgttgga agtctcaaaa tctaatatgc tactctaggc 240

aacatgatga ttagcaagac aacccttta tactttattt gcatcaaatt ggtctagttt 300

gctaatgaca atcggtcgtt caacttattt gattggaaca tttgtagagc catttttat 360

ggttacttgt gcatcgatct tttctacagg aatagtgaga acttcattgc ccctcgacac 420

atttgcttgc tctgctactg ccttatcctt ttcttggact tgattagtgg atttatctaa 480

aaccagctta ataggtattg tctatttgtc ttgttgggct cagctggccc tagcaaaatt 540

ggctatgagg gacaaatcat tgctcattgt gagctaaacc aatagatatc ctccaatggt 600

gagttctttg atgcaataaa ggataaggaa ttcacaatcc atctttacat gtgtgttgtg 660

ttttgtttg gagatagctc gatcgatttg agaaattggt cttgttaatt tttgcttgtc 720

tgggagtttt gggcttgttc ccgagcttgg aagatttgat agtgatattg aggatttctt 780

gattactaat ggacttttct agcaccacct catgatctaa gacttcctat cccttcctag 840

attctctatg ttcatagatt atcacctttt ccaatagtga aatcagcttg tcccaaccca 900

atcaagatgt ctggattatt tatttctaga cttttagcca tggaaggtgt tttgttgcaa 960

ggtaaagtat gtgctctcca tcatgcacaa cttgcatttc taattttgcc tcatttgact 1020

<210> 4368
<211> 1099
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49914_G1, chr1:290204166..290205264, Cluster 26

<400> 4368
accagttttt cttcactgat aagaacacca cttcagactt atcatttgca tgtgcagtgt 60

ttcctaattt tcccattttc agttagcgtt tccctttcag cttaagattg ccaaatatcg 120

tcatcgccta catacaggaa tattcactga agctgccgag caagtcgtgg gctccgacaa 180

tggatgagca atgttaaacc aatgaagcca cgggttaacg gtctagtagg tgggcagtta 240

tgatctttga gttggtttta tatggttatg ggataccaca gcggaaaacc tctcgtatac 300

tagcaacctc gtaaaacata atcactgaaa ctaaactggg ggggctagat gttttcactt 360

gccatatgaa attttgttgc aaagctgcct ctgccttgct gttgtgctgt ccgaatcaat 420

cttaaattat tcgctaattt tcctctctat ctttgccctc tttccagtgc tggggctgcc 480

aagcatttct tattttccct ttcaaataaa gtgcccaggc caggatgtgg ttcttgatcg 540

cttcaccctt tcaaaatgca agcggaacct tcctgcagaa atttcatgta aagcgtcacc 600

tacgcctttt ccgtacagaa agctttgcgt gtcccgtccc gtctaggcca gctagtagtg 660

tgttgtgtta ttagtgcatg cccactcatc gcaccaatcc agtatgggcg caactcgatt 720

ggtttgccta acctttgaa gcttatgcga ttgtggggtc tccggtaagt gcggacaaat 780

gcatggccgc ctccggatgg cgacctttga gaagaacccc acccactgat ggttgttatt 840

gtctgctgat cgctaccctg actgtgagtt cgtttgtttt cctgttgaag tcgtttgact 900

gcaatgcgaa ctctttagtt caggcaattg ttcttggttc tctgcacccg ctgagttttg 960

gccgtatggg cgcctaagta tactaccttt aaaatttctt tccttcctaa ttaaaaaaag 1020

acagcttttt ttaaagcaaa ctacatctaa ggccctaagc ttgtaaattt gtattggctt 1080

gatctctaaa ctcttaaca 1099

<210> 4369
<211> 1241
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50422_G1, chr1:293038936..293040176, Cluster 26

<400> 4369
ttataatctt acatatataa gtccacccca agagagggac aacggaagtt agaaatgtga 60

taaaggacgt taagaaaatg caatggagat tgaaacaaat tgaacctcca tatccatgaa 120

tagtgcttca gcaacaacca acactccaat aaggtaagga ttagagtatc tgagtctttg 180

taacacgcta tttaaattat cacttaaaaa gttatttggt aaaaatcatt atatatttat 240

ttttgtcctc tgattgtatt ttatatctta tgcacgcttt aaaaggttaa ctctattatt 300

tatctttggg attcatagct ctcatcacga aacaaaaatc tcaaggttgc tagcttgaca 360

cacacatcta tgaacctcat actgctagta agcacaaggg tgttccatct ctacatgaac 420

cccatactat aaattggagt gaaaacgaca aatctaaaag actcataaca tgtaaattga 480

agatctcata cgaaaacacc caaaaactat gttggtaaaa ctactaagcc catcacccaa 540

tagcaaaatt agcccctccg cgagtagcag atgtgagtat actttgttgc ctcaactcat 600

aaataagcat attggaaaat aaggtggcac taagaccaca acattgagga catacatcta 660

agacatgttg actcacccta gagtctatca aatcttttaa attctggtta cttagggtgt 720

gtggatcctt ttgatggttg ataagccttc tcacttttga gtggcataca caatctatga 780

tgaagttggt tatgaatccc ataacttacg atcccatgtg gtagcaccaa tcttcgacga 840

atcatagctc gtgcacaatt agctagttat tatatgacct aaccgggagg ctagcaccta 900

catggtgact atcctagcac ccttcttaca cctacatgct ctttgatggt ataacatggc 960

aaggatgtga tatatagagt gataaaaact agatggatag tgggggagtg attcacccta 1020

tatagatttc tttccaagcc ataagataca agagtgaagt taattagtat aagaggcggc 1080

acgaacacaa atattttctc tagcttgaat tcttagttaa ccaagtaatt tgctatatct 1140

ctaatttaat ttcacttaag cacataaaaa tgtcaacaac ctagacacac tagagagcta 1200

ataaaaacga ctagtaacaa ataatggtac acaatgttac a 1241

<210> 4370
<211> 1258
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52090_G1, chr2:2055193..2056450, Cluster 26

<400> 4370
tatttcttta tctattttag gtgctatatc catttttttg tgtatgaagg tatgattgtt 60

catatcaagt ttatcttcat gtgtgaatgc tgatcagcat ggactccatg tgtatcccac 120

ataaaggaat cgatcctttt tgcacctgta ttttttttttg ggaacggagc tccttttgtc 180

cccaaaatca gttggcatat atatttttat aaagaaccaa ggatatgtgt ctacatatgg 240

cccacaacat tgaagtatga acttgcaatt ctggtcttca aagctgacca gaccaatttg 300

gccttgctgc cagcaaattg ccaccttgct gagattccac accagctttt gagacaggaa 360

actaatttgt ttagtaccat atttttttgga ggccatcacc tggattagtt tacgcacatg 420

cagcatgatg agaacattct tagcatggta tattatttat taaaaactaa aaaaaggagg 480

aaatgttagc tgttctgatt gtgatgttga gctgattggc tgccccgtgt gatgcagtgt 540

acagaaagaa aacttatatg gataaccttg ctgactcgca cattgtctgc tggctttgat 600

ttggaaaacg ccaagtcctg tcttggacat taagatcttt gaaatgctca tcccgtctat 660

atattacacc aaataatcgt atcaacacaa accatatttt tttcagttgt agacagcaga 720

catgagacat gcccttatgg tacctttttа tgatgcagct atgcataaac agaatcctaa 780

tatcgttaga cttgcaccac ctgttttaag aaaatgataa agtcaaggct gtagcaattt 840

tattttctgt tcctctgccg aatcatcagc atctattgaa ttgtatatgc aattgtaatc 900

ccatttccct tcacagaatg ttagcacacc cacttattcc attcccccca agtgctacag 960

catgttgcta aaccaaatgg tggaaaccgt tgctgccata acccctgtca gcttttgtgt 1020

aaacttcata tgtaaacttg tgttacttgt taggttgccc tagttcaaag ctacacatct 1080

cagacttcag gtgcaccctc ccccagctcc ccctcactgt aaagcaatgt ttggttggtg 1140

ggatgatccc tccttttggt gctgtttggt ctgtctacgt caaacggggc cttgattcca 1200

ggcttacact ctttcttaaa gacttgttcg tcctcattat ccatgtgctt gtgtgcag 1258

<210> 4371
<211> 1334
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52826_G1, chr2:5576158..5577491, Cluster 26

<400> 4371
ttatgcttgc acacacccca tcagtcgaaa tcctgttgtt tttctttccc ccgtggggta 60

gccggctaat tctccgctgg acagtagtac agtacagtac agtgacagag gaaggcgggc 120

gggcgggcgg gcgagacatc aggcatgcat gcatgactgc accagacatg gacgccgctg 180

cctcctgcgt aaaaaggctg cgtaccgtgg acggacagat aaggttgagg gggggccatt 240

ttggcgtctc gtcgttggac agtttctagt cgactcattg actattgcgt attttatcat 300

agtaatacct ggcaaggtta taaaggcagc actcattagg ctctcgtagc ctgagccgga 360

gccacagttc acgcttcaaa ccgtaccctt gtcgacaggg agagaagaaa aaaaaatcgc 420

actgtagcac tttcaaagga aaactctagg acagcagtac tggtatttaa tatactttaa 480

taaatattat tagattcctc gtcaaagaac tttttacaat atatctattt agaatcatat 540

atgtcatagt tttttttcta agagtctagt ttactagtaa aatccgactc acatttttcg 600

aacttgggat gcaacactta aatagtacaa aaccttggta tgcagtattt tacattgtaa 660

gattcaaaat ttctaaagca gtatatatat gtttccagaa acttatagat atagaaaaaa 720

cagagagacg tatgcgaaaa ttcgataaag gtgtacattg gattcgcaag gctaaataca 780

tatttatcgt ggatccatgc agagtttggg taataaaatt agatacttcc aatcatgtgc 840

cacataatca cgtaacatta gtaatttaaa tgacattacc atgtccaact gatttaaaac 900

acaaactctt cttgaaccat atagtttgac aaaccaaata tatataactg gagctactag 960

ttatgaatca attaaaaatt actttgaaga ttcaacgtag tgccagtttg gctctagcac 1020

atctaaccag aagggctaag gctggcttca acaggaacag ccaaatccga gatcgagcca 1080

tttgccattt ttgggtagtt agtttaactt tcatatatct tcccatcctt ttttgcctag 1140

cctaaatggc tttgatgttg aagaccatat taatttgctt cagtggcact aggacaacca 1200

tattggcttt ggctgacccg ttagagttag cctaatgggt ggaaggggag ggaaggggag 1260

gatcgatggt ggcatgagag aggggttgac gatcacgatg atgatgcgag tgaggaggag 1320

agggtggcga cgac 1334

<210> 4372
<211> 1359
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54320_G1, chr2:13589934..13591292, Cluster 26

<400> 4372
catccggtgc gtccgcgtac gtgtctcggt cgaaaggaga tgttgaaagg gttctcggct 60

ggattagagg tcccaggaat caggccttgc caggaacctc tctcgttgct taacaaggca 120

gcaaagccgg ttgaattatt tctgggtcct acgaaatttg gcttgaatca attggcaatc 180

atcatcataa tagtctctac tctcttgtat atattattat cgggggattt tttagaacac 240

acgcacacaa aacatatatt aacggagtct tttagaacac atgcacacac tcacataaat 300

aaataaaaaa ctcagcaaac atgcgcaatt cgcattacaa cagtagcaga caatggaaag 360

acgttacgtt ggcttccggt ttctgcattt accatgttcc tactttggag aaggcagtgg 420

atcttggccc aggtcaccat caagttcctt cattctggaa cctgccacag tgcaacaagc 480

aagactccaa ttcgatgcta ctattagata gtacagtaca tgagcactag gtgaagacac 540

cgaaactgac gtggccagct tggtttggta gagaagaaag cagatgctgc tacctgcaag 600

tgctacccta tagctgctac tctgctctgc taccggtgca caaaaatggc gctaatcttt 660

tcgacgaagc gcgacaaaac cattcagaga tgctgcgttg ttcaagagaa ggcaaccttt 720

tggtgtaggg ccgaaattta gagcggaaga ataaacgtca ccagaagtgg gttaactgaa 780

ctgatctaaa atttcacata acaactagat tctactttag cttattttag tctttattta 840

tgcctaacag tgttttctat ccttgaataa aaagttttac aatccttgta taaaaagttt 900

tacaatccta aaagttttat ttatgcctaa catctttgaa ctataaaaga gggacggtag 960

cgcctattaa gagcataaac ggacaatagt taatagacac cgtaacacac atgacatatg 1020

gtattacctc atattgaaaa gcataatttt gtctaaatct cgcagtcctt tgtgcattta 1080

ccttcaactc ctcatctctc gatccaccct agaaattcac tgtcgaatat tcctcaataa 1140

cctagtacaa gcacgaggta atttagagag gttcaaactg tagtatgcat aatacgttcc 1200

catgtaagcg atggtaacat aaacgataga cgaacgatgt gtttaaatga aattaaacgg 1260

tctagatgtg tcggtctaag gaaagcgaag gataccaaaa cacaaaggtt ccatagactg 1320

tgtcgacggc tctaggaaat gtgacctgtt tgggtcgtc 1359

<210> 4373
<211> 1201
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54742_G1, chr2:15874928..15876128, Cluster 26

<400> 4373
atcatggatg gatatatgga tggtaatggt tcatgattta attgtttatt taattaattt 60

tagtttgata atgaatggag tcttagctta atataatctc atcattaaat tttatagtgt 120

aaaatccaca cctagatgga tgacgttttt tggggtgtta accagtgaac agcaatggtc 180

atatatgata tcaaatattt aaaacaggaa aaataagaac aatcaggtaa aaacatggcg 240

aaaattgaat aacgagtata tctggcaata tgtgggttct tgtttttagc tcaaacactc 300

caaccagaaa taatcatttt attttaagac agcttaatta tttaatcaag tgaaatggtg 360

tgggagacct tacttttgtt catttgtttc ccaaaaacgt acattacatt tttcaacttt 420

taagttacct ttcagactaa ttttcaacat ttatttctaa ataagtaaat aacaaggaat 480

ccaactttat tctaagtcta actatataag ttttaaagaa aaaaattaca gaagagtatt 540

aacacatcac atcaaaaatg taaaaatact tttgcattct caatgacacc aatttgatgt 600

cgcatgtgtt atctaccttt tctataattt tggtaaatgt taacatagtt tgacttgcaa 660

cagacttgaa tctcttgtat attcatcact taactcgtag ataacgtctt aattttagga 720

acaaaatgtc actaattttt cattttctga tttacaataa attaattata ttttagaata 780

aaccgtaatt ttattagaac tagaaactta aaattaattt aaaaaccaga gaaaaaacta 840

gaagcattag acattatcta gtttcaatat tttttatgta gagaaaaggc cgatcatcat 900

gttaaagaca acaacactac cttgcaagag gataggtcgg atgttggcaa cagttctcag 960

ttcgcgttaa gccaacattg ttttataagg ttgagggtga aaccacaatg tgaaaagatt 1020

attggaaata gtataacatt gtgtgttgtc gaggagcggt agtggattat acggttaata 1080

atgcaaccca tacgaattca tctgtattga gataaataat atagtatcca aataaagtct 1140

aatgaggttg gttttttgga gtattaatct aacagaccta aaaaccccta ctatgcgttc 1200

a 1201

<210> 4374
<211> 1113
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55154_G1, chr2:18077044..18078156, Cluster 26

<400> 4374
catctatgca ttacctcaca tgtcacatgc ttaaggggct gtaacacttg taattgtacc 60

tttaaacatt agaatagctg ttgctttcca tcgaatgatc gttaaaaatg gtgcgatcgc 120

gaacaaccgg ctcgttcatt ccattaatgc cgctggccgc accgttttgt ccgatgagaa 180

agaggcctgc accacgtgct gctcctgctt caacggctac tgcctactgg ttcgcggaaa 240

gctggtgcag tggagaggat ggtgctgatc ctttgtacaa gtactagtat ttccattagt 300

actcgacgat gaaatgatgg attgtgcacc gtgatgggcc gatcaccaat cagtgcctca 360

ttcatggtca tgtgtatcat aatttgttgc ttaatatagt tcgttggttt gcctggcagc 420

acatatctag ccatagtctt aggttgtcta aaaaaggaga ctctatatgg tcttctaact 480

taaatataaa gaagattgtc ttacgtataa cctttaacaa tgtcctctaa agcatcctct 540

ataactctaa gtatagaaaa cactcacttt atttttattt atcaattttc atactataaa 600

caacagaaaa ctaaaacata tataaggcat ttaatgatat gacaaacacg aacataacaa 660

aatttgaagc aaaatacatc tctggtataa gtctttgata tatagaggat gttgttggat 720

agaaatgata cgtagaagac gaaatctttt aaaataatct ctaaatgata taatagatga 780

tggatataga gattacgatt ggataaagcg atgaagaaat taagaggaga taaaagatgt 840

gtttcatccc cataagtgag aaaataataa cattattatg tactgtttgg tagagtttca 900

actaaaacag ttttagttat gacttttaa aaacattttt tgtttagctt ttgtggttag 960

aaaaacgatg tgaaacaaac ccttctaatt attcgaaagg tgaaatatcc tttatttttc 1020

tttccctcgt tttcttcatt cattttttgc tggctcttgt ttgtactttt ccttctctat 1080

ccaccttacc acatctccca cgtggccaca ctt 1113

<210> 4375
<211> 1372
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55912_G1, chr2:22038003..22039374, Cluster 26

<400> 4375
gtctcaggga gttccctgat tgctggcacc gtggcacgac ctgacaggac agcaccaaat 60

ggattatgga cgaacgtgtg ggcgctacgt cgcgggccac ttgctagcgg ctcgcacagg 120

cacagccaag agccaacaaa gtggcgataa ggcaaatagg gttcaatcag tctgccatga 180

atcgacagat tctgaagatt tgagaggctt tgattatggg taacgggtag cccggtctcg 240

atgagcttta gttttgatac tctagtatta agcttaatct atatatgttg aggtaaattg 300

gagtgtaatt tagtttaatt tacatcaaat ccatcttatt ggattgaact caatattagg 360

tacctaaaca aagcttgagg tgtaccgtgt accagcagtg gaagacgatt atctaggtga 420

gacccaatta acagtgaaag actgcatggt ccgtggacaa aaaaaaaacc gatggcgcgg 480

tgactaaaag aaagcacggg atcaaaagga caagcggctg gcctgcctgc cgtcgactcg 540

cgccagggcg ccccgtctca tggatcacag agccaaaagg ccaagtgccc gtgaggggga 600

aattttcttt caccagggga tttgagatga ttatataaaa aaatagttta ttttctctta 660

atctcttcca atatccccgt gatcatcttg tccataaatc aaccctcagg gaggaaaaga 720

ggcgaggccg tagacgagag ccgtgattag tgacacgaat gttacctgat tcggtcaggc 780

aattgagttt gagctgtacg ccacctcgcg ttttgggtga cagtgtaatt tatatttttc 840

atttgccctt tttatagcgg tgttgatggc gatctcgcaa agcgagatcg tacgttaact 900

ccttgacacc cacatttaaa tgggttaaaa acataaaatt atgtataatg ggattcaagc 960

catggttgtt ggcttgaaac atacgttcat ttccatctag ctaacagaac atatgcatct 1020

ttgtgtttta atattctata atcaagtata aataaaaacc gtaacaacct tgtgtgcact 1080

ttgcttgtgt ttcatttatc ccttttccac cttaacattg gattgctcgt gaacttactg 1140

gatttagagt actcgtacac aagatacgtt cccttctata atggttagaa attagaatta 1200

ctactaaagt tcagtagtta acaagtacta gtaaaaggtg gagcaagccg tacgcagttt 1260

tgaggccaaa agagaggcgc agcacggagt tccaaaaata cctacctcgc cgtcggcgcg 1320

gtcctcttca ttgatggtgt ttaccgagac accacaagtg agtgagctga gg 1372

<210> 4376
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56114_G1, chr2:23312326..23313437, Cluster 26

<400> 4376
ggataacatg agtttgcaaa agaacttatt aacatacatc cttactttca atattttggc 60

atcaagttta atggagctat ttagagctaa tactaagatt gcatctatcc ggtagcaaac 120

acttgattaa catgaataaa gataacaatt gtaaccatat caagattaag atagtcaaat 180

aaccatcaag ttccattagt taccaatttt ctcactattc aggagagaca ttggtttgag 240

ctgattgtaa ccaactagtt agaaatccat atcacacacc cgtacttcat ccatcgagga 300

cgtgttgggt aacctttac cctattaagc ttccgtggga ttgaactaga tgcaccacct 360

aagcgacaac cagaaagcca agacgctcag atcatgtctc cccatgatca atccacccca 420

atgatgtcta ttcctagttt aagattcacc ctgactcgag gttagattca taagttatcc 480

aaccattatg tgaaaggcgt gttcaatctc ataccaaggt tgagaatggt attatcctta 540

actgatacat gcgagatgaa aagacacatg ccacacctac ctaacaataa tagtaacatt 600

agatctcata cgatctctag taattcatta ccacacgatt cctgataaca attatagcca 660

accatgttag agtagtataa gtagccaccc tatatctcac aggctacaaa aatcatctga 720

cttctaccag tctaactagg gctaagcaaa gaatgaccta caatactagt aagagtgtag 780

gtatgcatat tatgggcaag gttaagtgat gcagatatca atttcaaatc aactcctaca 840

acttaatgtg tagcaaaaaa tatacttgag tgcatttta aaagcgaggt aggatgctta 900

gattgcttga ggcttaccta ggtttgaagc acaatgtgag ttagttagct tctctctaac 960

ttggatagca tctctagtcc ttgtgtccac tctagtcaat ccttccatct tgtggatcca 1020

tccaccaata caccaccttt tggatcaact tcgacatcat gttctccatt cctcctcatc 1080

atacatgaag cgtacatagt tgaggtacaa ta 1112

<210> 4377
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57316_G1, chr2:30127610..30128707, Cluster 26

<400> 4377
ggtatgacat aattggtaga cggtgtatcc ttttgtacct gatgatactt catggtactc 60

ttttgtgcac atgcatggct atagggttga tacacatacc aaatagtgtc tttaggtacc 120

ctacaaccta agacatggca acatcatgca tggaccgtat taaatatgtt gtactcaaga 180

aatatgataa gctaatgcta tgaactcatc aacatgcctt tgttgtgggc cctgacctcg 240

aggtcataaa acccttggtg ggcctaggca catccttgtg tcttatgaca tgattgtact 300

tagttgtatg aagtcctttg ttccaatagg gacttcgaga cccatatggt ttagagccct 360

accattctca taatgcaagg ttagggaccc aagggccatg agagggcact aagcatctaa 420

acgttgttaa atgctctgat ggatggacta ccttgagcat cgattacttc atgagcatcc 480

tagggcatga ggggccccag acttagattc atgagcatcc tacgacacaa ggggtctcaa 540

ggataaatta ttgtagctat gaatgatttg gagcattagg gctcgaacct tgaagtgcct 600

tgagcctagt gggtctcgag tctctagtgg cttcttacta gatttcatgg tgtagttcgg 660

ggtgctttga tatcaaatta gtcgatgtca agccatctat ctggtcggta tcaagggagg 720

tccttagggc attatacctc ggaagcagtg gccctagtag atgggttttg cgataacttc 780

ttatatcgag attcttaaat gtgtcttcgt agtagctatg agtatgacat tccccatatg 840

atgatgttat ctctttcttt acatgttcat gtaattttat tgttgtatcc aaaagccaat 900

gaaaattttt ctacatttag agttcctata gaccacgaat tttatgcaag tccaatgcta 960

tatttttct aattcatgta ttacgagaat tctatgtttc taagaggacc ttattttctg 1020

agcgtactta tgatttattt agcaagggcc catcattttt agaaaatgtt gggctatgga 1080

gtcatttgaa aaaatgct 1098

<210> 4378
<211> 1167
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57327_G1, chr2:30280500..30281666, Cluster 26

<400> 4378
taacctatcg accatgacgc tgacctccag actcaaatat ggattagttc ctccaaaatt 60

ctaaatatga aaatatagaa aattgggaaa ccccttcccc aggacgccga acttgctcgg 120

ctatccccta tcttatccac tatttaaact atattctaca aactgtgtca aacactatta 180

tttatagtac cgtgtcttcc attttacatt gatccacatt gatccactga aaccattctt 240

aagaccttat tgggttatcc caatttcacg ttgattgaaa tatattatca tatattagga 300

tgaattttaa cttgttgtag atttaaacca attcaatatc atataattca tatagattaa 360

ctgtaaaacg aaccagccct aattgagcgg tgacgagtag cgctccggcc gtgcctcccg 420

gaggctgcga gagttagttg aagcgttacg gtcgccgtga cccagccgag gcatggacga 480

cgagcccatc atgtaacagg ggtgactggg gcaacgatgc ccggcacaca cggttccata 540

caaagattat tagtgcgtac ggctccggcc catgtcacag ggatatatat ctcgttcatg 600

ccacagggat ttatgatagt tctgtctcgc tccatggaat ctaatgatgc gaattgagaa 660

tcatgagcac aggacattat atttaagcta aaaagatgca gcttttctca taaaatattc 720

ctagtggctc tgaaaacatg tagggagcac ccgtcctcgt tttcgaagag ctcccaaagc 780

atgcatgccc tggaatctaa tccacgccag tgttttgatt tgacctagaa aggagcgccc 840

atctgctagt acgtacgtga agtgatcagg aggctatcac gtcactgggg acgcgaaacc 900

attgattgaa caaacggaac aactgggtcc gttgcacagc aaatgtcatt gcatcactaa 960

tcatttgcat gggaatgatg ccccctgcta tgcacaaggc tagcaccact atcaattcat 1020

ctcacaaaaa tgctgtcggt tagctcctgc ctcttgttta gtagccaaac gtaaaagagg 1080

tgaaggatgc aaaaatgaga ctcactagcg tcaagactaa ctaaattaga tcttcagctg 1140

attagtttga ccttgttcgg ttacaca 1167

<210> 4379
<211> 1396
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57940_G1, chr2:33843760..33845155, Cluster 26

<400> 4379
gggccataat ccgcccgaga ctcttcatgt gtgttaatca acaacttagc tttgcaggta 60

gcctatttgt ctgcctctaa aaatattaac tagatatcct agtcgcctgc aaaagtaaca 120

actattcatc cttgattgct ttgtcggtgt aggggttcct aacgtgggtc ctcatcgatc 180

tctgtactgg tcaaagttgt gctacttatg tggtggatca ttcgtagagt tcatgcgttc 240

tatatggtcc catccatgta tagtgttatg gtgcatgaca caccaatctt tctcaagtac 300

ctctttctcc gattgaacct gaagttctca tatgaataac tcatgtcatg gtgcctcaca 360

cgctaacctt catgtgcatc tttctcctat tgaacctaaa attttcatat taatagctcc 420

aattgtccac atgttttatt cagttgtaac aaataaggaa atagttatct tacttatgtc 480

atgtctagct cgtggagtag tccattgatg agtttgtttg taacctttca aactgcctac 540

acaccctaca aggcaagtga acctccacca tgtgaaagaa tataagtggc acatctacat 600

gccatatgta aatattatgt tcattcatat ctttcagact gtaaggttct agctctggtc 660

gtgcccaagg taccaagtaa ccaaccagtg gaaacattgt tagattttca gtgaaacaaa 720

catgtcaact atgatgttaa gcgtaacttg gtgttgtgtc aggacattga ggaggtctat 780

gtactgcctg taacatcatt gcggcttgcc tctcacattt taccatcttc tagaggtaca 840

agcacactga acatgtccca tcttggtgat tctaggaatg caagtaaaaa acataccaag 900

ttaatatata ttaaccaaat gatgcaagtg attagaatta attatcatta tgaattactt 960

acactcaaac cacaaagatt aggccttttg aagggccaat gctcctagca ccacacttga 1020

accacgtaag aacaaccaac taggttggca ttatggttgg tgtttgttgt gtctcgatga 1080

ctgactatgt agagctatga gtaaatccat gctaggatca cgcttaccca actatattga 1140

tctatgttct cccactccta attaaggatt cataacactc ccctactgat catatcgcta 1200

gaagcgtcag cgaacaggaa aacaaccata aagtattaga gccacactct agtgtgtctc 1260

ttgacctcaa ccttggtagc tccttgcaca caaatagcaa attggtgaga aaaatactac 1320

tttacaacta tagaacatat tatatgtaca tcttacttac ttggatctat caacgccgac 1380

atctttgggt ggccta 1396

<210> 4380
<211> 1402
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59288_G1, chr2:41895967..41897368, Cluster 26

<400> 4380
cccacagcct tacaccatcc aaatgccacc gcagcactgg gtatagaggg ggaacaaaaa 60

tgcaattgac tccctgttca tatatagccc cagatgcggg tcaaaccacg atccacaaga 120

tctgtgggga tgcagacatc acaccaggga gggagcattg accgccaatc tgctgaccag 180

caccacaaga tcggctagag aaagttgacc tcttcagaga gagagagaag ctctgacaac 240

taactaacca aaccactgtc cggtggtcaa accagataaa gaattcaagt agcagacata 300

tttctgccgt gcggcgttga agtcgtcgac gacgcggtgg ctggctgatg gctgcattgc 360

agcaggagta caaaaacccg catgtcatgc gttatctcag cacactacgt gtttgcaaat 420

aatgcagaaa cctgagccgc agaagagaag agaagagaat gaggaacacg acgacagtca 480

ggtgcgagga aatcccaact acttgagatc tgcagcggtc accgctactg tcacgcgaga 540

aaaaaaaatt cctcacgctg ttgcgcaaag aaagcagcag ctactgataa aaaaaggagc 600

ttattagctc aaatcagcat cagtgactga aagcgaaggt ctctgtttta ggtcagtcta 660

acacaatcac agaaactaac taactttacg ggaactaaag tgttcgtaga aactagaaag 720

ccgcgtgttc tagagctcat aaaattgatt gtgatttttt cgtctgatca tataatatgt 780

tgaacaaatg ccaggcgaat aatcgtgtca tcgccgagta atggaggtgg tccaactatg 840

aagtaccacc caatatgatt ttgatgtggg ctactatagt agtttcggaa tcatcaggct 900

ccactccagc caatgtgtta acacaataat gatacgtttg tcggtttgtc catcagaaag 960

caccatcatc aatacggtaa cgctagaaag caaacacaat actgactctc aaggaagaaa 1020

ctgatatata tacacgcagc tggtgcatgg ctcgcattac attaactcag tagctggcaa 1080

ttttaggatt atgatttttt tcatgactcc aaatacccac catgccgaca tcaactactc 1140

tgcaaagttc ttaataatgt ctgcatgcct cgtcatcaga aagtagctgg atgaaagaaa 1200

acaccgatac ccacacagtc ccctctgccc ccacgataga attcctttca gtgttatatc 1260

catatattca aacaaatgac gatgaaccta aacacgtgca ttaattactg tataaatcta 1320

ataaaaatac taaaactgat ttttttaaaa aaaattggaa cagaggggag tatggtattt 1380

tatttcccgt gtgttggaca aa 1402

<210> 4381
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60846_G1, chr2:51236505..51237574, Cluster 26

<400> 4381
atcaaagatt gggaagcatg tgtcgtggtt atgcctcaat ggctccatgt agttgtcttg 60

gttttgatag aggtttcctt tatccaaaag acaaatcttt aagatgctaa gaagttggaa 120

aaaagagaat gaaaggatat gaagagaaaa aaaaaggtta taagcctagc ccaacattgt 180

ccctctatct gggcccagtt taaagaacgg aactaccaaa ctgtcacaag aaaagtgttc 240

gtaaccttat gttcctagca tagaaaaaga tgtttattct ttctttatgt agagagggaa 300

aaagaccaaa aggagaaaag ttgtgtatta gggtagtccc aactccaaaa cctaagtagc 360

tgctatatta tcaagattgt catatatttt ctattacatc tgtctaggat taatcagaat 420

aggtttccta aaaaactata gattctgcta gttcaattta gagtcacctc ctatcttaga 480

ttttctaaat tctagtcatc cttattacaa agctatcatg gtctcgcaga atctatagtt 540

gagagttgtt taaaccaaat atattttagt tttttcacaa tcatcaacac gtagtagctt 600

ttttcacaac ttatagttag aattatattt ttagaaaatt gaaccaaata gatcctcgat 660

taaatctgac taactttaga tatgataaat tatgacaagt taggcattca tccaaacgct 720

tcttaaattt cgtcatctct tctatccccg gcactttctc tcttcctcga tttcttgtct 780

ccgtatataa tttgcagcga tgctggcaat aggtgtggcc ttgtgatggg gcaggcacct 840

gagtctctgg gagcagagcg tggagggctg gagcccggag gtgcatgacg ggccaactgc 900

gggtggcggg tcggatgggc tgggcgcgac tggccagggc ccagggcgcg cgcacgatga 960

cacggtctga cgaagtgacg agggaccaac gaaagatata tggccctgca aaatgtgttg 1020

gaagaaatca tatgtgcccc ccaacgcgaa atgtggacta ctgacactac 1070

<210> 4382
<211> 1195
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_64722_G1, chr2:73292518..73293712, Cluster 26

<400> 4382
gtacatgatc atgttgggac gagggcatta tcctgatgac agataggatc cacatgtaga 60

gtatatatgt aagcttaacc actcctttga attataaaag ggaggggtgg agcaacattt 120

aagggtattc catttgaact tctaccatac catccaacac tagctaaagg tgatcaattt 180

gatctaggca agtggcaata gttggctgta gtccagtata ccataacata ctttatatat 240

atctaggagg tcctagcact ctctggttag attgcttgta gtctctctat catgtgtata 300

caccaatcga taatcaactg aagaagacgt agggtattac acacaatttg agccggacat 360

atacaaaaaa attgatgtgt tttaggtata aatttcataa ctctatagat tcgttctctg 420

cttcccttgc tatctttttt ctcgtgctct ggtaccaagt gtctttacta tgacacatga 480

atagaacata gaactcattt aactaaaaca tgtttatgtt ttagagaccc aaacaacaac 540

ctcaaacggc taaacaaacc atttatatac caaagctgca agccatatag aggaaaagct 600

atattatttg atgtgagcct gaacatgttt ttttaaagca aatatatata gtttgcgatt 660

tacatgtttc ataagtcaac gaacgaacaa gcagcgacta gtgggttacg aaatgtttgg 720

tgataactga tacccagatg atgatcctac gcagctagca tgatattgac gcttggttga 780

cgccgacata aatcatcgac ctctacttgg ttccaagtgc caacacattc tacatgtcta 840

cgctgcgtag aaccaacctg agaatttccc ttttcgccgc caagagaaga aatagaggtg 900

gacttgcttt gtcgtaacac gtcctccctc cgtccaaaag aaatgtaatt caaattaagt 960

tttcatgaat tttccatgta taaatacaat accatcagca atttttaaaa acaaaaaaat 1020

atttcataat taatctagca atatttattc gacaatataa atattagtat ttgctagctt 1080

gtatagattt tatcagattt tttttgttgg ttacgggggg agagggttcc cttcctgaaa 1140

attctattag gacccgttcg attgacaggg aatagaagac cggaattgtt ccggt 1195

<210> 4383
<211> 1228
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6937_G1, chr1:35883578..35884805, Cluster 26

<400> 4383
atggcttgtt accctgcgtc agaaatcttg ttgattggta agcacgaggg gtgattgagg 60

gctggtcccg tcttcgctcc aatactcata aagacaataa ttcaactcac caccgggtat 120

cttttagcaa acttttcaga aatgttttaa attttcctga cactcaccaa atgtatctca 180

ccgtttgaga tcacgagtag atgcggacca ctcaaatcat cacaaagatt tcattgacct 240

tattgatatg atcttgacat ctagagtgga gtgaatagtt tgtaaaaaat ccttctaaga 300

ccacaaaata ttggagcaca ttttgattgg tataatgatg acgctaatgc aacttcacca 360

tctttttagg gtgtaagttt tttgattatt cgttaaagcg cttgaataaa gttgtgtttg 420

caattagaat ttaattgata tttttgaaaa aaaataaatt caccctcttt tttatcacaa 480

tgatcctttg atgacatcga tggttggttc acttgaccga agcagtttca aggaggtcgt 540

ggcaacacaa gcacaagtgg gtgttctatg tggttttcat ttgaattttt ttgatgaaag 600

acattgtttg aacatgcaat gtatgttgtc aaacatccct aaaaataaaa tatgtctagt 660

gccactgtaa aatcgtgtct atttgctgga acacatcata tcaattattt tattattttt 720

cagaatttat gaaagaaata tggaaaacat ccaaactacc cttgtcctca aacttaacat 780

tggctcttca ctgattgttt ggcgtcatcc catcccatca cacaccatga tcgctgattc 840

atcgttgtcc ttctctaata aacaacgtga gcggtggcgc gactctctcc aggcttgcac 900

ggcagcacgg gcgacggtat ggccctctta gcttcacaca aggcgacacc cttgctcctc 960

aaccatgatg agatctagga taactttgcc gcataggagc tctgtgaaag agcatgcatg 1020

cgtctgtgaa gctggcgttg tagggctgaa actcccgtag tgtgtgcact gatatgatag 1080

ctccggtgga ctcaaggagc tagatagtgg tacgacatca atggtgcttc agcctgccaa 1140

cgatgctatg caggactaga tagagggtta cggtttaggg tttagggcca tagtatttga 1200

ctatttgtgt gtcctgagag tacaggct 1228

<210> 4384
<211> 1084
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_72781_G1, chr2:128186857..128187940, Cluster 26

<400> 4384
ttaactaggc tattatgatt ttcatgccac ttttgataga tttcaatcag cttcaaggtt 60

aagaataacc tagctgttag tgtcatttgt cattgagaga ctcttagagt agatttggtt 120

cttggttttt tctttggcta gactataaca gagagtatga atgagtacct tgacctccct 180

agttgatggg catgatgtag acttgtgaaa aaccataaca ataggtagct caaatgaagc 240

ccaagaatga atgaaaccca aagccatact cagagtgttt gaattgtaag agtttggaca 300

cattttatgg gcaccttaat tctaatgtgt tagagtagga gaaagcacta gagttatcca 360

ataatgcaag ctagggattg ctttgacaac cacattgtgt acttctagtg ctcattagat 420

taaacacacc aaactttaaa atagagatgg tgcacatgcg ttttagaagt gtataaggca 480

ccataattct ccgatgctta ctatagaaaa catatcgaag aatttaaata gagggtgcaa 540

agtaatttta gaggcgttga acataagaaa attctataat ggtcattgga gaggtgcacc 600

agagttccaa aatagagagc atgtttttgg tcacctttgc tcagtactca ctggatctct 660

ctggtgcatc aagggagaaa atgtatcaaa taattcataa gacaatgact agttgaaggg 720

cataaaaatc tctagtgttc taagaaaaac accaaaggtc actggtgcat taattctgag 780

tgtgtttcca atggttagtt tgaacggttg gcatatatat ctccatccat ccatgcattt 840

gagctttatt actagccaga aatagctaac tatgagagtg atttggctta ctaggaatga 900

ttggcctata agagtgatat agaaatttta attcaagacc aaggactcca ttagtactta 960

gagagtagca agtttgcatc cactattctt atttagcttg gttagattat ttggtgttgt 1020

tatggatctt agtgatctat tggtgacaat tatgagaagt caactttgtc tatacagttt 1080

tgct 1084

<210> 4385
<211> 1282
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7483_G1, chr1:39116077..39117358, Cluster 26

<400> 4385
aagcgaacaa tgctgtttca cgaggaaagg cgagaagacc ttttggtgtg tttatttgca 60

tacatctcca tcccgtatgc tgctaacaag gactgcaagc tttaaacagc gacttgctaa 120

ctgcaacaga tgcctatgct gtcgctgggt cggattctat tacggaccgt acctgatgca 180

aacgcgcggt ggatactgga tgcagtaccg attggtgatt gactgattgg tatcattcaa 240

ttgcttcgcc gatagatccg aggcttgcgt cctcttaacc ctgcagcatt tagtgagcca 300

cgtgactaaa taaagaacaa agctttataa cggcagggca ttttaaggcc agtcgagatt 360

tatcagctgg tgacggttct tcatctgtcg gtgggagctg tcggctgatg cttgatgctg 420

gcgatgtgtg tacacgatgg acctgtcaaa ctgttaacta ctgtacgctc ctatttaggc 480

gattgacaca tgatgttctc ttccgtcgct tctttttgag tcaagcaact ccagttagga 540

tgttctttct tttttatata tataaaaaat aggatgctct ttcatttcaa ggaattacta 600

ggtgctagaa aagaaataat agttctccaa aactgtattt tactgattgt tgcacagtat 660

gcccataact tacatgaaca ccatgcaagt aaaaatagat cccaagctgg tgcatggccc 720

acttcctttg agaagacggt cgatctcatc tgttcgttcc actgtttgcc acttcgcctt 780

caatctcttc atcaggctac agttagaatg atgtattaat gtgtggatct agaggctgca 840

ccggcagttg gctggctcac ctatctatca tggtggctga atgctgatcg ctatcaacga 900

gtgggttaag tcgtactgca tccatcattc cgtccggaga caataaacat attttcatcc 960

gtggaagtga atatttacaa attttatcaa caactagtca aattatattg gttatacggg 1020

tcatagatgc atgatgtttt tttaactatt taagaattat taaatcatat acaaatacat 1080

ttgttctaag tgcctttata agatgatatt tttcacgttc acggttgaaa aagtgtgacg 1140

taaagaagtg gccaagcatc acatattgta ttgtgattgt tttggttagc agtggcacaa 1200

ccggaagtag aacagtctag cctatttatt ttcttagaat cgtcgctatt tattagttca 1260

agatagaatt atactacctt cg 1282

<210> 4386
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_75406_G1, chr2:143524092..143525124, Cluster 26

<400> 4386
tgaaagggac atgttttctg cttccctctt tcctaatcga aaaaaatgtt ctatacgtct 60

ggtggtttcg tggtgaattg cagaattggt gaccactgaa agaggatcat tgtaggataa 120

cacttacagg ataaatttta tctcctccga tccttttttgc acatgtgatg tgtggaatcg 180

cacagcatag tatagagttg ttgtatgttt tcgttgatgt aagtatacac cagtttatta 240

gtgcttttca aaaagaaagt aatatgacct agggttaact tccatttttc tggaacacag 300

gttcagagaa gacttttagg aacccactat aaagtttctg atttgcactt ttgaagaatc 360

acccaattaa gacataaacg ttgctttcaa ttgctgttta attatttatg cgtgtgaaga 420

tgttggacca tacacaggtt atttaaccaa cacatcagtg aatagactta aaggactcaa 480

gattttaata atatgctagc tcaagcgatt tggataggga tactatcgga ttcgtgtagg 540

attaggttat gtatgacaag ccatggatgt tgactcatta acaggggaca gtagtgagag 600

accaaattaa gattaggaac caaaatgcta tactggtgtt gccgcctgtc cagttggtct 660

ggtcattact tcagtttctt gctgcacgta taattgggcg attgaaatga gcattctaga 720

atacactgaa tctactacac tgtcacatca aacaagaaga gctagtttca gcgtgtgggc 780

aagagcaact cagaatagaa acagctactc aagactcaag actgtctgac tgcccgtcct 840

ccaactctcc aaggctccaa gctatcggct agccctttgt tgccacataa ctctcaataa 900

ttccggtttc tcttctttgg ctccacttct cttcctttat ttgcatttgg atttttgga 960

tagcagttca tggccagcag atttgatgat gttcttctgt tttggatgaa gccaaatagg 1020

tcgctagcta att 1033

<210> 4387
<211> 1120
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_77617_G1, chr2:157288373..157289492, Cluster 26

<400> 4387
agcatagaat cggactttat tattatttat ttttacaata aattaaataa ggaccctaac 60

tcaatatgaa tcagattttc tggaagcaaa gtttatctcg cacaacaaag ctccaccgga 120

ggtacaattt tgactggttg gttggaaaat aaaaaaaaaa tacaatgcaa agtcaatctc 180

tcccgacaaa gaaaattgtt gaagatgcta cttgtaactg ctgtcaggtg aagcttcaaa 240

taacggcaca taccctcttt cgccgtgagt ttgcaaggca gttctaggag tggcttggga 300

tagacgtcct cgaggtcggc aaagtgctcc tgagcaaaac ctcctgtgtc ctcaggacat 360

ctcagagcta cactccaacg cttttgtgtt attgtgctgt tgggaaatat ggaattgaag 420

aaacaaagtt gtttttgatg gtgttaggct cggcttgagg gattttatag ccagtatcag 480

ggctaaagaa atgttgtgga gccaccgctg aaaaacaaca taccgctggg tgattgataa 540

atggtgttcc aagcttagaa tggtagcgga tacctatgtt cctcccctgt aacatctctc 600

ttgtaaaata atctagggcc cttttctggg tagcctgaaa accttcaata tattcgggtc 660

ggggactctc ttccccattg accattaaaa aaagaaatat ttagatcatg acctattacc 720

accctactcg ggtgggaaag ttaaggagga tttgttaaga ttttccaggt tgttgaccta 780

gatgggcaag tttgacattg tttgtgcaag cttctaagca aggagagcta gctaagaaac 840

ctagcaaccc ctatgtttaa tgacaatttg aatttttatc aatcctgtgt tctagcagga 900

tttcatccaa attattttag gaaagtttag agattaggtt taagcactag cccatgctgc 960

cctcataaaa agtcatggta agattattac aacacacaat catcaaaacc aatcaactaa 1020

tatgttttta ccttacatta tttttaaaaa gtcagctgtt ggttctaatg gacccatgcg 1080

gtgtgtttgt tgttagagta ttttttacat cgatattttt 1120

<210> 4388
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_79832_G1, chr2:170228185..170229224, Cluster 26

<400> 4388
catgtcaatg tgaggcggta ttgtacgtca atgtcaggct atccacgtaa acatagacga 60

tactgtagag aagagatgtg ttaggtatat acatagagat atatgtgtac ctgccaatag 120

atagggttta gacaaatcta tatttctccg tattcaaatt tatttcaatc tttcatcctc 180

tagtcttgtc tatgcccact ggaaaggaat aaattttatt caaactcgat gctttgactt 240

aaactgctac cttctattac tattttaccc taaaataaaa atattgcttt cacatcttag 300

taaatttaat tgaaacttgc taagaatgat tcattataac agtgcgcaac tatatgcaga 360

ttaacaagac tttgtctata catagaactt acattaaatc ttagaactaa agccttatat 420

tcacacttaa aagtttaagc aaaactaatc aaaattactt aaaaatttga gcaaaactaa 480

tcaatttttt agatgactta atatgacaac agactagttc atgcagatta taacaggtag 540

gttcaattgt gaaatccaca tctacaattt aaaatcttat gttcatatta taaaatttcc 600

aatttattca caaaatgatg gttataacgt ctatttcgtg cagactgtgc acctcagatt 660

taaatgtatg tctctggtca aaagatggac actaagagca tgtttggcat agctccagag 720

ctaaactcta aagaaagcta gataaaatct tatcaaacag tttaactcta gagttgttaa 780

cttcatggag tcttttaagt tgtattacaa aaaatttgga gtatcgcttt tgctattatg 840

aaatccctca aaaccaatta tatggagttg tgaataattt acccaccact aacattggtt 900

atgagaatag tgtttccctt tacttccttc cacaccagaa cttttcttcc ctacacctta 960

gttgtcgata ggagtagaaa ataaggcgac atcgaggagg tcgtcgactc agacgtggag 1020

ggcatcgttc tccatatcag 1040

<210> 4389
<211> 1105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81035_G1, chr2:177269865..177270969, Cluster 26

<400> 4389
gattgttgct ttggttgtag ttcagtgcgg tttggaagaa ccaataacgc gaccgattaa 60

atcatggtaa taatctacga tccagtgcat gcatggtgct ggattgtagt ataataggct 120

gcactaatca ttgcttagtt tgtcgtcccc tcaactcaac ctactgtgga cgatgcagtg 180

cttacatata tagtgctgga ttcgccagac aggttgtatt ggcatgttca ggcggtacga 240

ggtggggaag atcgatgtat gtacctttca ttttgtcgat gtctcgtgac tttgagtgca 300

tgtctctaag gacaaattaa agagtccctt caagatgatt aactgcagca agcaagctgt 360

gaatgaactg aaaaaacatt tcgagttgtt tctactgccc tagtatatga accacttcca 420

gctgtgtctg caaattcacg gtgttgttct cctcttttcc tgtatatttc tatcacttat 480

cacttatcag tagtatagta gttattagca ggtgtctact gaattaagga acaatgataa 540

tgactgacac ttggtcttgg tcctattgat gcaaacaatt cggtcctact tcctacagtg 600

accgaccgtg gacaatgaag cttcactccc acacccactg tcgtcgtaca tacagcaact 660

ggacaagtct gcacatggcg tttcgggaac cacgagaggg atcacaagaa gacaatagcg 720

agtacacgtt ggatccctaa gaaaggaagg caggccgtag tgttcgggac atgtcagaca 780

gcgtacttag ctgtcctagc tacaaaggtc aattatatgt gatgtaaaag cagatcatct 840

atagtcgcaa gaaacgaaga catatataat taattagtgt ttgtcaggat ctcgatcacc 900

gtatattgcc agtacgacgt cttgttattt tagctttgtt ctaagttaaa tataaaactc 960

gcctaacttt aacaaagtgt atagataaca ctcaaaatat tgtctgagga cgtatctatt 1020

gaacttagga tattatgcgt atttttctat aaacttggta aaaactataa gactacaatg 1080

atgtaactct attaaaaatt gtctc 1105

<210> 4390
<211> 1349
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83705_G1, chr2:191133087..191134435, Cluster 26

<400> 4390
gagatttgtt tgaagaagtt gaacagttga tgtgtgaaca tagtaagagg gtgtcattat 60

catgttaaac gaagacatgt gaatttctat ctctcccaca atgatagaag attaaagtaa 120

gtttctaact tctcactttg attcaacaaa ataacaataa atgattgtga aatatgatta 180

atgaagaaaa aatagattcc atgctattaa gaagctagaa atagaagaaa gtagatcaaa 240

aactctggac gttgataaga tgcatatata ttgttaattc ctatgataat agagcaacca 300

taaatgttgt tggtctaaaa atattatagt tcagctagcg cacggagaag gccataactc 360

tggacattga taagatgcct tctaaacatc ataacagaag aaattatcga ggactagcta 420

ttgctggtct ggactttgga ctcgtgctcc tagggtctgt gccccaggca tctaccttag 480

cttaggctaa agggcatacc atgtcggggg cgatctggcc actgacctat aaggttacca 540

catgctaggc cctcatgatg tttccagact tagttctctc gactgtctgt ggccactagt 600

aggacatcag atccctgagg ccttagcctt atataatctc aatggttgtt aaagaggaca 660

aatgaattct cgattcaact aagtatggaa gcactgatag actaaagaat atgcctagcc 720

ctgccccaag gacatgatgc ccccaaatgt acgatgctac tttaaaagtc tacacccaac 780

aacgatgtag tattggcact ttagattaga ctcatatatt atattaaatg tgatatatga 840

tgttgtagtc tgataggcgc actactacca cgacataggt agcagatgta cctaagacca 900

ctactcgata tgtggcatcg tctctatagc cactcttggg tgctatagat gtagggtact 960

aggaagtatt ataaagtata ggctgctaca ttagttacca attattgcag gtatgatttg 1020

gactctagta cacgatgcta tgatgagtca tacatgcctc tatgataggt tatatccgcc 1080

attgttgcaa gatatcccta acaccatggc atggtcaaag atatgacact atgtgtggct 1140

gcatgaccat gacaagatgg gagttgttag gtctctgttg agtgaggcct ataacactcg 1200

tgacatgtaa ccctctttga ctctttcatc ccttggcata taaaagagag gagtagagca 1260

acatataggg gaagaataag aaaagggcca atcctattaa ggttgaaaat gatcaactac 1320

taatgacagg aataaaggtg aactaaaga 1349

<210> 4391
<211> 1381
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_83735_G1, chr2:191375867..191377247, Cluster 26

<400> 4391
acagttttgc tcgcagctag gaagccctac tacagctgaa cacgtcgatg tcaccgaata 60

ggactgatga agacagatgt taaatgggaa acgggctgac tagtttatgc gagtagaggt 120

ttgctagtga atgtatccca caagcgtgag gaacacgggg tatatcaacc agcttgacaa 180

acgacaacaa ctgcaacagt gaagtaatta tgtcatccca cgggtatctt gtttatgttt 240

cagatgctag agttcatttt aattttgtct taggagatca cacttttttc tagtttaggc 300

taaatttact atttaaatcg tttcatcatt aatttttttc atcaggccta ttttgacact 360

gcgttttatt taaataaaat tttactgccc tttgctatga agagtgtcat tctggctgtt 420

ttaagtcggc taatttcaaa ttaaattaaa cttataaaaa acctatatta taccggcatt 480

tatactacca aataaatgct ttctggctgt tttaagtcgg ctaatttcaa attagattaa 540

acttataaaa aacatatatt ataccggtat ttataatacc aaataaaatg ctattagatt 600

catcgttaaa tacgattttg ttatattggt agcgttcgat ccgcgcgttg cagttgcagg 660

gtgtgaacct tcgctggaac accccagtta acattattga atatacctcg ctaataaaaa 720

tatcgaaatg atctaccata gctgaaacat taaattcata gtgttgtcta agaacactat 780

caaattaagc atccaggtgc atgcacgcat catcgtttac ttcaagaaaa ccatctgact 840

gccgttggtc gacattggac ttttattgtt tttttttct tacagactgc cacctaataa 900

taaacctcct tttttttctt ttcttttctt cccttgagtg actgattgaa gaaggaaact 960

ggccgaataa acaacgagct ctcgttaggt cgtgaggaga tgcatgcaaa ggttagttgc 1020

ccccgaggag atgcttatgc aagttccaga gtactctttg tttgctgcaa gttgttggtg 1080

ttggctttgt ttttttcct ttttcgtttc cgttccgttt gctggtagta ttgtgtgcgt 1140

gtccgagtct tggaggcatc aaggcaagcc cgttcttgca agaaagggca tcgtcgctgt 1200

gtttttttt ccctcccaa gtcttggagg cactgtttgt tggcttggcc agtactacta 1260

gcgcactcac gttgcgtacg atccctctcg tgaggtgtgc ggctttgagc cgtcagtttt 1320

ccacggccag ccccagcccc actcctcgcc gccgagacgg acggaaactg caaatcaaat 1380

g 1381

<210> 4392
<211> 1005
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84300_G1, chr2:194901373..194902377, Cluster 26

<400> 4392
ggcttatgtc ccttagttca tgtatagaca tcgaggatca cttataggta gctaggtgca 60

taggcttaga gcctttagca acacaagggt cacgaaagtt tattttggtc tagggccctt 120

agcagcgcaa gggccccaaa aggttgtttt cagccctcga gcaaagagcg ttagaaccat 180

tgcagagtta ttaggccctc gggagtatga atgtcccaaa gaggtgcttc catcttcctt 240

agttaataaa gtatgtgaca catctagggc ccttaatagc gcaagggttc caaaggaatg 300

tccctttggc actcggatca agggacatat ccaatagagc atccaatacc cttagcacca 360

taagggcctc gaagggacat cccccagtcc ctagacatca agagcctcaa aaacggggga 420

cataacgctt cgtgatatag catggattct tcctacacat aatcttagga ataacggtaa 480

acttccttct cccgagggtc atccttgctt atacttagcc atagactttc taaagtactt 540

ccagaacctt tttaatgcct ctagtattag gcaaggaaac caatgcaggc cattggactc 600

tggctagata gtagtgtaga gtgaagggca gaccaagcca aacttagtgg tccgccatgg 660

tagagaagat caatgccata gaactacatt tgaacctttt attggactat ttagctcaag 720

atcttgtaga taaacattga ttaagtttgc cccaagggct taccaactta gtttaaaaag 780

aatgtcaaaa ttataatact ctaaagtagg gatcaagccc ctggaggtgt gtagaataaa 840

ctaacagtag tctcttgcaa ggataaaata cttgacttgt aataaaaagg aaaggagata 900

cttatccttt gcaagaattc agccaacatg gaaattttct tagtgacctt aggtttttat 960

tcctgtagtt tcgtatcaca agatgtaaaa ttctttcccc gaggc 1005

<210> 4393
<211> 1082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85558_G1, chr2:203248643..203249724, Cluster 26

<400> 4393
gacaacccca ttaaaagttc gcaacacaac aggttcatgg tggacggatc atcggtgcac 60

ctgcatcacc gaagttaaaa atctgattcg agcctacacc ctagtacagg tgaaaattcg 120

catttgctct tgaacccact cgagacccat aatccagtag gcggcccgag acccaataat 180

aatataacaa atcatgtaac tatcatccat gatttataac tagaaattat caaaataact 240

agtacatata cgaattaaga aatattgtga gttcacacac tattataaga acaaaaaaat 300

ccatatcatt agccaaaatc aagctacaag ccacattata cacctaggtt actctagtgg 360

ctaacggcta aggcactaca gtgtggtcgt gagagacaca ggagagatag agtgtagtca 420

atggtgtggt cgtgagtgct ggtaatcacc atgtcatagc ttattcgtag tcgatcttta 480

taggcatagt taattcggat aatctattgt agagtatgta agtagaagaa ccaatagtct 540

agctattcat agtaataact ttgatataca ctcccatagc aatgaaagtt ttctcggatt 600

ttcttggcca tatgagttat tccttttgtt aaatgtggtt tcctcggact caatctttga 660

gaagttcctc ggcgattacc cataagtgga ggcatttcta ggcctcatga caactatact 720

tgtggtacaa acaaggtgca tccataatcc tctaaaattg tacttatttt gattttgatg 780

atcgaaattg agtcctcctt tcttattttg ttgtaacctc gtggtctgct tttcttttat 840

tgtatgtgtc attggggttg gtttgtgatc cattgcttaa cttacttttg gaaagttgtt 900

gctagattgc cttttctcct atagcatgct taccggtgac ttgaaacatc acattgagag 960

tgataggcat atcttagatg agcttctggg tcaaaccgtg atctctgagt cattggcaaa 1020

aagttcaaat aaatgccatt tcggaaatgt cggaaatgtt ggacttcact ctgcgccatc 1080

tt 1082

<210> 4394
<211> 1125
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86959_G1, chr2:210534485..210535609, Cluster 26

<400> 4394
gatggtgttt taggtcaggg atgttggcat gacccaaatg aaatccacct ctgatcaatg 60

aaccatgacc atattcgttc aaaacacgtg ggcaagccaa aaatgcatgg acccaaaggt 120

gtcaaaagca aagtttcagc ttcaatggag agagcttttg gctgaagaca aggcccaaaa 180

gaagctctag gaagagaaga tatagggagt tttagcgaag agatgacata ggtgacatga 240

ttgcacagtg aaaacataca cgtgatctct caaatgcgaa gcattacttt gtgagaagaa 300

gggacaagaa tgtaattata cgcaacgttg tataacggtt cgatgttata aataggtaaa 360

tggtgtaatt gtcttagggt caaccattct ttctattaaa tccaagctta ttattaaatc 420

tacatcatga gagagcttcc aaaggtataa tattgatgct aaagcttatg tttgcatttg 480

acaatgcctt tcatgttttc ttaaaaccct aagattatgc ttacttatgg taagcaattc 540

tcctttgtgt tattgtctat ttatgatgtt acattcttgt tcaaaaatga ttaaacaagt 600

atatttgaaa taaaacacaa catttacaaa tcatcaaagg acaatgtatg acccttgcaa 660

tacctcatct tcttccaaaa ttgtggatga gaggagaact aatgttgccc tattattatt 720

ttttttcaaa agtatgacaa gtaaccaaca acgagtgatg ttaggaggag gtggtggcga 780

gtgaggtccc actgtaatta tgtcattttg caattgcatc tttgttatat taaaatctat 840

acaaaatcta tataccttta aagcatgaat attgtcgtgt gtcatcctcc tagcgaatct 900

cgccccctcc aacgaaaacc ttgcttagcg aaagtcgcgt gcaaaaatgg agcgcaaaaa 960

tccaacacac tgggttcggt tctttgtata acataaatga acattagccg cactggttag 1020

aagactcagt tccctgaata taaataaata atatttattt attatatagt tgtgctaggt 1080

cgacactatg gacaaagaag acgacctagg cacgacacag ttctc 1125

<210> 4395
<211> 1222

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87332_G1, chr2:212377288..212378509, Cluster 26

<400> 4395
gtagtataat tattgtaaat tgtatggatt gattgtttca ggattccgat tccatcacac 60

gatcatgttc gtgcatttga gtaagcctat tttcctctca atctcctatg ttgtattcat 120

gagttggcaa agctcgttaa gttcactagc aaagccatgt tatgcatata ctcgtatcat 180

agaagtctaa gaaacatacc tataagtaca ctgatgacat ggaaggcaaa gttacttttt 240

attgatgaat gattcctggc caaaattgta ctatattaaa aaaacagggt gctgcaaatg 300

gaatttaaga aaatgtctca ccatgtgctt gttgttaatg atccttcatg atcaaatcaa 360

tattcgataa tatgttggtt tgggaacata aagttaacca gtgatcctaa gagttgtaat 420

tgtttggcta gctctacctg aaggatggct acataagaaa ttatgaataa aagaagtgaa 480

aaaaaccatt tggtattcta caacactcca ccaataggta atatctaggc ttattgattg 540

gaaaaatata tattggtttt tcaagttatt aacaatacga tactctgttc agaaggtatc 600

tgtatcgcat ttgagcttca gtaccacaaa tgactctgcc tatctgacct cgcaagtcag 660

tgcaatcatt accatcattt ggaattgttt aaggtgtgat gattgttacc agtgatggca 720

ttatttataa ctttgaaaaa ctagaaatgt tgtagatgtg gcactaaaag agttcacgca 780

ataatctagt ggcgtgacta ctgataattc tagagtacta tcaatgaaat ggacacccac 840

taaatgttgt tatttaagtt ttaggactac gcttttatca attcttgttt gagatgatat 900

aaaatcggta atacaggtac tacatgtaag aattcaaatt gatttccaat caaagtaagg 960

aaatttcttc ttataatgca gactatgaat gatttttatg ctacgattta ttttgcaatt 1020

cactaatata aattacattt tcctgttata gtcaaacaaa ctagtgtaaa tattacttat 1080

ggaggtaaga ttatatacta tgtataatat atagcatact gaagatcaag caacattcta 1140

agattagtag gcataaaaga gaaagagagc aaaggaacaa cagaaagttg cggacagaac 1200

gaaatcataa ttagatcgta ag 1222

<210> 4396
<211> 1263
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_88802_G1, chr2:220829652..220830914, Cluster 26

<400> 4396
gatcgcgatc cattaccacc cttaattaaa cacaacaact acagctaata accgcttata 60

atccattgtt aggattgtcc aattatgtat tggataatag ttagttgcta ttttttagct 120

tcaactaaca attagcctta gatcctattt agatccacta gcatctaata gttatttggc 180

taactaatta ttcattgttt ggagccatca ggtaaagaag tagatgcata gataataata 240

attttactat tctatttatt actgggagag tacgttgcaa tctacacctg gttgaggtag 300

ctaactttag tcatgtctgt ttgggtccac caaagtaatt tttttagtag ctaattatca 360

ggccacatgc atgagccgat gaaaaagtcg tgtgccagat ggtttcttgg atgagtgaat 420

ggctggcttt agccgaccaa atagaccctg ctgtgttaaa atgctgctaa cctcctccta 480

aatacattaa tcatttgttt aacccacaca caaatttgca tcgctggctg cagacaaata 540

aagcaagcaa attagtgttt ccgaggtccc tcagcgcgca gcagcgacgt gtctcctgtt 600

ctaaagacca ggtcatgcga cctgcatgca gttttatact gtatgagcaa acagaagaat 660

ctctggccgg ccggaacatg acgcagatgc tattattttc gtcgctgatg aatataaaat 720

tttattaaaa cattgcgatc ctgactatgc cgccgccgcc gctagtgcaa tggttcttgg 780

tccttctagg tgtcatgttc ttggtccata tatgctagct catgtgaggc cttggcgaga 840

gccacatgaa cccgtagcag gttaggtgat tagatcaggc actcatgccc agctagctga 900

ttggagacca gagaggatgg atatatagca gtttagctcg atcgattcag catcatgcat 960

gtgttcgagt ttcggtgttc agactcgata gatcgcacgt ttgctgtggc tgcattggca 1020

ggtggtgccg actgccgacg catgaggaag accgtggctg caaaatgcat gcagtggcca 1080

gccagagaca ggggcggccg gccggccagg cagcaagacc gtggcagcat gagcgtggtt 1140

atgacctgtc gacgtccatg catggaatat ctcatatctg aatcctcggc atgcacattg 1200

gttggaccgc cagcgaattc gccagtttgt gacaccgaaa tactgtccag atttttcttt 1260

ttc 1263

<210> 4397
<211> 1126
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93189_G1, chr3:5591520..5592645, Cluster 26

<400> 4397
gtacttttaa tataagcttc ctttatcgaa aaaaatgcaa acaatgaaac tgtgatgatg 60

gcagagaaag gaccaacagt ccttgtcaga tccagttgat acagtagagc attcctaggg 120

ccaactaaag cagaagcaaa ttaacaacta atatagatca aagcaattat gattacaaac 180

tgccagacac caaatatgta gatggtctgc actaggaatc aattaaagag cctaataaaa 240

ctaacaaatt gggaggcatt tggaccctca ttatttatgg cacacagtgt ttcactatta 300

ccatgttccg gtccctgcaa atttggaaca aggccacgtt ttcaagtgtt caccatctca 360

gtatgaccac gacatagttt aggagttagg acaccagctt acggctggca cctcttgctt 420

gcatcatact gcccaactat attgaaatag caatggattg catgatcatt gtgctcttac 480

tgtgttgcat ttatcactag gtcacatggc acctcaagtt aaactcgacc aataggatgt 540

gtaaacaaga tgccagtatg taacagactc ggtgcagttt tgctaaaata tttgttaaga 600

agtgtagttt ttatgaggat tcacaggtgg tgtggtgaag caacacgaaa aaattagatt 660

caactaagag ctagacaaac atggtcacta tcaaagtagc aatccatttg tcctgatgct 720

tctgaaagtt acaatgcaga cagcatcaca gcaatgagtc gatcataaac agtaaaacaa 780

gacatgtaac aaaaggacat gtggtacatg tagaggtgtt accatttcaa aagcatcaac 840

tggccgttta ctcttgagcc cagcatattt ggaggaatcc aagttatctc attaacatta 900

ctctggactc tggactccca tgatatagaa gttacaggaa atcatcaatg ctctgctgtt 960

ttcctggatc cacactactt ttcttgttca atctgaaaaa tgaaaatagt cagaaacaca 1020

ttaattgaat ttcaacagag attgccagca acatttccaa tttaacatat cctattgacc 1080

tgttcctgaa tcaatcgtgt cttcaacttc taggattcat gcttta 1126

<210> 4398
<211> 1362
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94570_G1, chr3:12608308..12609669, Cluster 26

<400> 4398
gcctcccgta gaatcccaag caaactctca aactactaag ttgaatagtg aacttcgctt 60

gtactcttac acgagcacaa gaacctatat tctactttgt aacatttaaa ataagcaacc 120

aagacttcaa cagcatacta aacacagagg actttcctgt agcagtctaa aatcctctct 180

caggctcgcc ggtgccaatc cattggaata gtagcctgtg aaactcctct gtaggctaca 240

agtttacttg tcgtaggaac gaaaccacga cattgagcgt tattaccctt gagacatcac 300

caccgtatgt aggctgatcc aatttacccg gttctaatag gatgacatgg ctaaaattca 360

acggtaacaa tggtacttat aggaattgtc taaatactaa attatgctga atacacaagg 420

cttaaattaa atcaacttta gagttaagga tgtaatacat aaaggcactt gacgaaacga 480

taatatataa atggcatagc atctatgact tataattcaa gaactaataa gcattgcata 540

ataaagggat tatgtgacac aaactcaata atctttcata agcccaacag acaggaaagt 600

gtgtgctcat aaccgatcga gagagcgcaa caatttaaat tggttttaaa actatataca 660

cagatgtata actttttttc acaaagagca taagatcaaa cctttggtag ctttatccat 720

gagcagcaag ggtttattca ttcctcctga cattttgata gctttgccaa gacacctgat 780

caggaacggt tgaaatatat aggcgtacta ggcactagct acacctcatc cgaaaccaca 840

tggaatccat ccgttgaacc catcaacaca tactaacata cttatggttc ccatatatat 900

caacacatac taagaccaaa acttgatagc tttagctagg tccccgtggg agaatttagg 960

cgtatgtaac agacatttta tacaaaataa aagtaaataa gattagacaa acctagagac 1020

acgtgaatag gcatgtttaa gattaaaatt tgatatagta gttactagtt agtaacacag 1080

gcgcgatact gccgctcttg cgcggcgctg tggcaattta gcatgcaact gcgttacttc 1140

cgcgtatcga cgaagtaact agaatacaca attcaaaaat tgttcaacag aaagtagatc 1200

aagtaaatta ctcctgaata cataagagcc tggttcacca cctctctata tatcagaagc 1260

ttaagcacaa gtagatcggg agcaaagtat agaatcacaa ccaaacataa acaaaacaag 1320

aatacaaaga catggtcttt atcctatagt taccctagga tc 1362

<210> 4399
<211> 1253
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97741_G1, chr3:29974995..29976247, Cluster 26

<400> 4399
ctctccagtt cggtaccacc attacctgga atcagcatca gcaataaagc ttgcaagtcc 60

agcatccgaa aaggtgtgga ctaaattccg agtccagcaa aatgtttgat gacttgaaat 120

tcttatggat gatgatgcat ggaggacgta tttcacgaag gtacctgcta attacatttc 180

aatgggaagt tataaggacc tacttatttc agaaggaaaa tagtatgcta acagcgcaat 240

aactattgaa gcatgttctt aaatcatgtg tagtacttga caacatttaa ccaacaatac 300

agataacaga ttccaacaga actaaaaaag agtaaaccat atggagaaac aaaaagtcta 360

tgcatgggta tatctcttaa tccattattg atttagtatt ataataactc atgcgatcca 420

aattaacaaa aaaatatcat taatttccac ttaccccagc gcacagatag atcaagccga 480

gtacaatatt cacacaagaa aaacttcaaa ctagtttttt gaaacaaaaa acttcaaatt 540

aagtgccatg ctgtactcat gaaatgctga ggagatcatg atgggataca tccctgtcga 600

aaccatacac aagcaagtgc agtccatgtt ccatgcatgc caacaagttc attcagatcc 660

agatggcgca gttctgaagt aatcaacatc agttcagcaa agtcatcaga agattggagt 720

ggtatcgaag tattgtctaa tttcatgatt gccagaacct atatagggta agtaaaagta 780

agtgccttat aattgtcact aatgttataa atatatacac gaagtgacat gggggtcatt 840

gtggacatga aattacccat tggcggcttt gagatatcag cgccagtttc aaagaccata 900

cagagataag agatttttt tatataactt cagaaataca aaggaaatgt gacatgagga 960

tatgtagcat acctttccat cattgaactc tattccctgt aaatggtttc aggcattcta 1020

tctccgggtg tgatttctga ctaattgtag caggtaaaga catgctgtat gtctattgtg 1080

gtgcactcat gaacgcttca tgtcagcgcc atttgtaagg tgcgtgttcc cacaatttaa 1140

agctcccaaa acatctctca agtgaatatt atgcaaataa aacaccattg aattgtagag 1200

ttcaagggga cattagctat aattgattgt tctgcaaatg taaaacagaa caa 1253

<210> 4400
<211> 1032
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_99591_G1, chr3:41739699..41740730, Cluster 26

<400> 4400
tctccatgtg cgcgtctcca cgccgagagc gacggcagca ccagcgaaca cgaagccgcc 60

cgaacccgca actggctgtt gcggttcacg ctgcacgcgg tcgcggaaat gcatcccaac 120

ctggcgaaag cgaccgtccc cggtccgtgt ggcccgccgt gctgcggtgc gaaacgtaag 180

cgctcgttgc ctgctttagc tctttgacac tgacgcctat ctgtagtcct gtagcatcat 240

gttagttgta tacgtttgtg atggcgacat tccaaactaa gagacgccga accaatccac 300

tgttatcagc aaaaaccaat taggaaatag cttgcacgaa cagtactatc tagcctagct 360

ttcgcgacaa ggacgcaaca aaaaaaaaca atatcatctc tatgcaatac tattaagtgt 420

ttttagctct ttcagaacat tctatttttc aaaaagaaaa taaactaaat tctctttaaa 480

aattatgtat aaatagggat tcgaactatt cttggttcca aaccgatatt catatccaca 540

taaccaacaa attacacatg ttttatgttt tacattctac acttaagaat aaacaaaaac 600

tgtagcaaag tatgggcact ttgctagtct ccactctacg agccccttta agcaccgagt 660

aacatttgga ccttatcctt caaatatctt tttcaaattt agctaagttt atacagaaaa 720

ttcaatattt ataaagtcaa atagatccat tacgaaaaat atagggtata atgaatcaaa 780

tgggaattta tttaatacca aaagtatcga ttaccgagca tgcaaccaga ccagtaaact 840

gttgacaaag taaacatttt tttctaaaaa aaattaaaac taaaacctaa atcatatcat 900

gacggcctta gaatctagcg catagagatc tactaacata gtacatatgt ttaaaaaaaa 960

aactcatgac gttttacaat tttggataga gatagtggat aattcgtgag cgatggctga 1020

tccagaagca cg 1032

<210> 4401
<211> 1498
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_106202_G1, chr3:85647138..85648635, Cluster 27

<400> 4401
ttttatcaat tttcatcaaa ttttcatatt tttaacataa taattagtca aacatgtact 60

gcgagcgatt gtaagcacaa caattagttg gcatatatac tcacaacctc gatccctcct 120

ctcttgtctc ttctaggttg acaacttggt atccaccttt gctaagggta gttcctttct 180

ttgtagtagt agcttctttt ttagtggcct gcagaacctc tccatgtggc cacctctata 240

actacttgca ctatcctccc tttctatact aagaacaata acaaaacatc cacattcttc 300

acttgattat tctccctcta attgattcca gttaacttta tctctagctc tactcctttg 360

tttgcctttc ttttccttct tagcattttt ctttgtcaga aattcaaaca acaactcctt 420

cacattagtt ggaactttat cacaaatgca agcaatgttt ttttaaactt aactatatgg 480

aatttgatct ttgtaatgcc acctgagtgc agctgctcac aaaaattgta cttgagatta 540

tacttcttgg tcttatctca aggaattcaa tacgtcaagc agggtctatt cttgaatcaa 600

caacttggac gtttttagaa atgaaagtag cttgggcatt ttaaataatc aaaacagagg 660

taatgcttga aacactacca cacacacctg cacaagaaaa aaacattttt tgtatcacac 720

aagagccttg catatgcacc ttgttagttc attccatatt gaaaatttta tagccatgtg 780

cagtgtgttg cacctagtca ctagttaacc acttcacctt tatcactcac tcatttaata 840

agtagtaaat actaacaact aactagtcat gttgtagtaa tatgtataga aattggtggg 900

acaaagtaac taacaaatct ggtccatact acaatatgaa atgaagatga acctaagtat 960

ctagcatcca tagagaagag atatgattag ggagattggg aaatggatga tggggagaag 1020

aactttcctg ctacctaagg ctaagacatg actgagtcat tgagagatga gaccctactt 1080

cttgctattc ctagtggaca cgtggaatat ggcaccatga ccaccccact ggctttcatg 1140

atctaaacaa cggcgtcaaa cataatctaa acaccaccag ctacaaactg tcaggaccaa 1200

gagcaaggcc aattaatgta ccatcactct tgtttcttga agggaacaag agactagaga 1260

ctaacatatg agagcacttg agacttgtat ggttttcatt aggcctatac gggtcatttt 1320

ttgcttgcca aagttttggc cttgctagca aaaactaaaa tagtggcgct atagtgggga 1380

tgatgttatg caatgagcgc tgctaaatgt tgctaaatag tccatctctt tcatatagca 1440

ccaaaatctg gagaagcata acatacattg ctttgaaacg ttattacaga tgttacta 1498

<210> 4402
<211> 3104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1075_G1, chr1:5522640..5525743, Cluster 27

<400> 4402
gaccataaga caggtcagaa tcgtgtttta tgagagatgt gttattttcg gttttatagt 60

aaaaacaaac ggatttttg caatattctg gaagacaaaa cacgcttttt tccaatcttc 120

gagtgctttc agagtaaggg gtgtttgttt tcacccaact aaagtttggt cattgttata 180

tcgaatgttt gaatgaaata tagtataatt ataaaactaa ttttatagat aaagactaaa 240

aacgagacaa atttttaaa aatctgatta agcatatatc tagtatccat aattaatatc 300

ggtgtgatat aaactaaact ttagtcggtg aaccaaacac tctctaaaaa cttattcagt 360

taggggtggg ttaaaataga ttggagagaa ttaaatcctt gttaatcgaa tttgaattgg 420

aatttttta attcaccttc tccgatccaa atacaaccat agagagcctg agtgcctgac 480

aagcggagcg tggccaactg atccaacaag cgagctcgtg gcccatgtcc cctttggccc 540

tttccgcgtt cagagcaaaa agccagagcg cagcccaccg acccaacaag cgcgctcgcg 600

tcccacggca atagttagga ggtatgacgt gttttttgg ttttgctttg tttgttcgct 660

tacatttcta ttttttgttt tcagttatat tttattttat tcatattgta atctttcttt 720

tatattttat tataattatt tggttatttt tatttccctt tttattgttt ttattgcatt 780

ctaattcatt atgtttattt ttaaccattt tcggaattta atttcttatt taatatttca 840

tgagaaacac atgatgttct cttactctat atttgtcgtg ctatgatatt tttttgttga 900

tttgtactat attaatgaga tattccatat cgtaccgtga gatgtgtgta tagtataaat 960

aggaattcta taatatatct tcgattattt atatagtatc catgagatgg ttgtttcacc 1020

agtatctatg tgatttttt gttacatctt ttattaattt tcatttattt tgctttttct 1080

atacgtacgt ttcatagcat ctgttcttat ttttaaaatc tttttcttct tcttcttctt 1140

ttatttttat atatttaatt atttgaatta tttattatca tttgttatga tttaactttt 1200

actttccata ttccataaat atgcatttga tatttattat gttctaatag tactacagac 1260

ttactccgtg gcctagccat aacgttaact ccagtctcca gtgccggccc gtgctaacag 1320

tgagcctgag ccatttcttt cttttcggat cactcagtca tgtttccatt ttgcaagtct 1380

gcctgtctcc ggtgtctcct catattctcc tgatgctcaa ttcaaggcac cacaaagcga 1440

acaagaagtc gtagcgtacc tattggcttt gcaatgtact aagattgtat ctcgaatctg 1500

taaagagagc tagagaaccg gataggaact taaaaagtga tttttattgt tgttcattaa 1560

gttaagacca aaggctactt aatttgacct tagttgaaat taattattcg gtcatgagat 1620

acagtaggaa aaagtaaaga caagaaagat gacaatagct tgcacagagt tgaagttcat 1680

gctaacagat agagtaagga tacaacaaaa ggaaaatgat tataatcaaa gaaacaaata 1740

aaactattta ttaagagggg tcaggggggg ggggggtatt aaaatactac actaaataaa 1800

ctagcttcta cggtaatgta acatgtagag tatgatactc tagcttctac ggtaataatg 1860

taacatattt agtatcgatt ggtggctaga gtgaagatat gtctaaattg tggctctttt 1920

gtagcataat gtaatatttt tttaaaaaaa gtacagtttg gaatcatcaa ctagtaccga 1980

acgaatcgta ttagtatcga gccacacaac cagagctaaa gaatgaggcg gttagtgcca 2040

ttagtatagt ccacgtagaa atctgatact tactatactg tctatagtag cgtgtatagt 2100

ccttgtccga tgtgacagaa agtgtgaaga cgctatagag ctttgtacca cagacacgag 2160

cgtcggcgtc gccaatctcg gcggcgagtg agctattcct atcgtatcac tcgatcggtc 2220

aggtttccat ctcgcagatc tatctgtctc tcgatgtctc ctctcctcac attctcccga 2280

tgctcagctg atgaattcaa gccgtcggaa agcgatgcat caaacgatag gccaccaatt 2340

gcgtttgcaa tccagccaaa cgtacgtaga ttgtacacag tggaggggg ggggggggg 2400

gggtgagcga gagaggccgc catctcccat tctccttaga gcgaccgacc gaccggcact 2460

gtaggtttgg tctctttccg ctctcgcagg tgtcgtcgtc gtcgtagccc tctttccgtc 2520

gtcgtcatcc cttgcagcag ataagctgtc agcgggcgtt ggagtgacag aagctacacg 2580

gaaaacagag aatggctggt ggtttatttc ggacacacac gcggattgtt tttccccgtc 2640

cgaaaccgaa aaggttgtta gtgaggcgac gagacgcaca cggatgaacc acagctgagc 2700

tagctagcta gtagtctaga gcatggagga ggagcaggtg gtggtgcccc agaatgggag 2760

ttaggttttc tgtgcatggc ggggccagaa tcctctctgg tttgcctcca ctgacatcat 2820

tcgatctcct tctcctccta tccaatccaa tcacccttt ggcggacgaa tcctcgatcg 2880

ataggcaagg atgcacacac cgcacaggac gcctcatcat cctacttgaa gacgctagca 2940

cgcaactgca tgcaagacgg caaagaggct ttgggccggg ctgctgtttc cgatgcgtag 3000

cgtgtgctgt ggtcgcacgc acagcactcg tagcagcagc catcagggca gccgcgcagc 3060

attcagtagc ttcttgtaga aacagagaga atatataggc agag 3104

<210> 4403
<211> 1500
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_113475_G1, chr3:132689686..132691185, Cluster 27

<400> 4403
ggagaaggca ctaatgcatg ccatggtgga ggaggcacca aatatcattt ctccacccat 60

tgaactagca atggagaagg cactaatgca tgttatggtg aaggacaacg ctgaagcaag 120

aagtttgatg actggttctt cgatattgag gatgaaccca tggaagactc ctagcttgag 180

gacccaaaca agtttgattg ggtgttttag ctgcatcgag agcaggagcc agaagtgtca 240

gcaaagctga tggatgtagg ggtggtgatg taagactcaa atgatttttg gcaccgaatc 300

tctgatgaag agaacgactc tttagaaggg acataccaag aagacaatga tgtcctaaag 360

gactaagatg aacccaacga ggttgacgac ctcgacaagc cgatagatat caatgagccc 420

tagatatgag ggcccattgt gctaggaatt ccctcaccca aagctcctac accaaaagct 480

ctcactctag aagcacctaa accggatgat ccaaacatga gaaccaccca caagataacc 540

ttgcactcga gcatcccctt cacctagggt ggagggtcat gcacgacaac aacgtttaac 600

cctaatgttt ccttgcatgc tctgtcacct actcatggtc aactacatca aggtgcagca 660

ccaacacatc cacaagtaat acccggatgg atggatggtt ttgatcaaga taaccaggcc 720

caatggatat gaatttcaaa tggtggtatc ctgacactac gccttggcca ttggaataac 780

tatgagtcta ggataaacaa catagtcaga ctagatacat tgttgtttta tgaccttaac 840

taaggctaca tggacaatat tatctatcgg tgctatcgat gatgcaagtc tgggcaaaac 900

atcaccatga tcaactttgg tgtgatggaa gacaacatac acatggaagt gttgttggaa 960

cacatggaag acaacatact gaacatcaca ttgtcctagc agagctagat agctcgagga 1020

tgtagaacac ttagccgtaa gctcatttgg ataatctagg gcaccctcag ccaatcggaa 1080

caacacacga cccatctgag tcaccgagaa gccccacgct tctctacaac catctagaat 1140

tcaggacata catatgagat cattagggcc atccttaggt tgtaatagag aatcgccaca 1200

caataaatat aagtgttgca ataatagatc atataattgt gaatgaatgc tttgatatta 1260

tgatcatgaa tgatttggtt ctttgtaatg attaatgttg agtcaaggtt ttctgccttg 1320

acctagtttt aaaaataata gtgtgttcct ctttataata gagctttatc atattttggg 1380

gaaaagcctt tgttcacact tatcttctct tcatccacct tatcactatc taaggtagat 1440

cgagtataca atgacaactt ttagagtgta tggactataa aggacatgga catggacatg 1500

<210> 4404
<211> 1642
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119570_G1, chr3:170779329..170780970, Cluster 27

<400> 4404
aatattgggc gacctagctt gatgacatga gggcagcgaa agcataaaga aaccgtttgg 60

gaaccgtcta ggccccctcc taaacaaatg ccgctggcat tatcatcgtc gctgactgat 120

cgagatcgta cgtacgtgga cgtggacgtg gtcatggagt taggttagcg agcgctttcg 180

ctggcttcct aatcacacgc cattatataa taataacgta caggatggac ggaagcagct 240

agaggtgacc ctttatctgt gatgaaaagc tagctaggaa gccatagata aattactgtc 300

gctcgctagc tgctatatat acttgagtgg tgcttcgtgc atacgtaaaa aacatgtagt 360

gctagctact ggtttctgga taagaacgac gtgggtatgt atggtatgac tcatcatgca 420

tgatgcctgc cacaccggcc tcctgtttct tctttccggc ttggctctct cattccgtca 480

tccgagacga tgttttcttt tttacttcct tttgcgaact cacgcgtaca cttttagcga 540

aagggtgcat cttcttttct tcttgcgttc atcacggccc cacgcaccgt gtatatatgc 600

ataataataa ttattatgcg ctagatcaga tacatgatga tcgagagaac gaatattttg 660

ccatgcaaac tatatacata tgctcgaaaa catatgatga tgccgtatcg tcgtccgatc 720

gatcggtcga aaaatacatg ctcgaaaatt aaacccacca tctgcttttt tagatggggt 780

accggccggg tacggtggct acgagcagtg tgcatcagca gtgatagata tgggtgacga 840

cagtgtaata cataaccacg cacacagccg gtacgcagca tccatcgatc ggcatcttat 900

ctcctagcta gtaaagcccc cacactttca accgcatagc tactagcatc tagctagcta 960

gggatcggac cacgacggag aaggataatg ctgaaatgac gatgcgcacc ttttgggatt 1020

tcgactaatc gtacaaaaac tctgtttatg cgaggattgt tgctttcgtg aaaagatcat 1080

ttaaccgtac aggtcccttc atcttcattg gcacgtaagt cttccgatat tcagactatc 1140

atacgacact taaattatcc aagaattaaa atttcaaaaa aaaagctctt agtaaaaaaa 1200

ctgtcgttat taaccacgcg aaagccggta tcaaccgtgg acaataatac gacttagctg 1260

cgtgattgga cgacagatcc agacaacacg aatgaacagt cttctcagac gccgtgttaa 1320

gacgttagtc tctattgttt tcttttccca gtgcgtgaac ccccccaaaa aaaactttat 1380

ccttatgtaa cacatctcac ttgtattaaa tagtttgacc actgaatcat ctcaaattga 1440

aaacgcttcg gctgtgcgtg aaggtttagg ttatgtcgat actacaattt tgatatatgg 1500

catgcatgac tccatctgag attgctaata ttttttttg aaaatattgt tttagttttg 1560

tatgttaata aattataata ccataaaata gatatttgag acgctaacaa ttttaattaa 1620

aaaaacttat caaatactct ga 1642

<210> 4405
<211> 1973
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120997_G1, chr3:179433351..179435323, Cluster 27

<400> 4405
tgtttctaca aaatgcagta aataatacaa cataacaact tataagttta tctccaagga 60

gtattaatat aatttatggt gaattatggt aagggatttt tttgtaaata ataaatagcc 120

cctatgtttt aaagtgtaag ttgttctgac ttttaagtac acaacttttg ttatgaattt 180

aatatatgtt gtatctaaat acatagttat atatatatat aatttatagt ctagaagcag 240

ataatattaa cataaatatt tggtataata catgcaggtt tacttgggct tcatggtgga 300

acctagcatt tgtttaattt taatttagct atggtaggag tgtgaaattt gaaaagtata 360

tggcctactt tatgattatc gaagtacatt tacaataaca tagatagata atttagatat 420

aattttaaaa gaggttaact tatattgagc tttataacgg catatgttta taatttaaaa 480

gtaactttgt ggttaatttg aaatatcatt tataatgatg caactgagta gtttagatgc 540

aaattggatt gctttaaatt attttataat acagatgtat gcaaacttgt ggggttacat 600

tatgtgtttt catgacggaa aagattcagt ggttataatt gatgatgatg attagaccta 660

tcaaataaag gtctggtctt ggtcgtggtc actctcacat atgctacagt gctgctgtgt 720

ttggggtggg tcagaggttc aagaatttcc tcgacccgcg tgagaaggtt ttttcttaat 780

ataatgtcat gggaaggtct tatcgagttt tttttagttt ttcaaaagat taggatttat 840

ccttttttcca aacttgtatt agtcttgata accgtttgga cctttgtatg gggtcttcac 900

aaaaatatta ttttcacagt caattttatg ggtagttatc aataacagag ttaaggtcac 960

actagaattt ggcatttaaa attacctctc aaaataaaat aaaatattta tggggtactt 1020

taaaagattg gtcgttcttg tcaaggataa tctagctaga agaaattgga atagtagtca 1080

attgtgtttg ttttgcagta agttagttag tatctaacac gttttctttt gagtgtcatt 1140

atggcaaagc cttgtagtgt gctgtacact ttgtattaag tatcagacct tcaaaaaaat 1200

catctgttaa ttcctcgtgt aagcaagagg ctaaaacctt agaataggag ctgcagtagt 1260

ttgttaggca atttggtcta gcaggaataa ttttatatcc aataatagtc atacaaaatt 1320

tttaggtgct cttcatggta cactagcttc gtttctaatc tctattacag tggatcggtg 1380

accataaaaa ctggttgagt ttagcatgct aatttttaga aaccagagca ctgaagtttt 1440

ctcttatcat ggatagcctg taagatttca tattggacaa taatactgaa cacttctttc 1500

tttagtttct acttgagttg ttttctgttg gattggaccg gcgcctcttt atcgaagacg 1560

tctgaggcca gaactcttgt gctataaaaa aatagtaatc tgatatcaga cgattttaag 1620

tagcatttcc ttttgaccaa tcgttttgag catgtcaata actagagact cgtgtctcag 1680

ttaattaatt tctagagacg tgtgtgcgtc tttctttgtc acgcttttct ctatctctct 1740

aaagaaaagt cgaagtagag atcgacattg tggggtgggt tttcttttac acaaacaatc 1800

atacttgagt ttgtcctaaa tcaaccacta ttaactttga cagattatat cagatctttc 1860

ataatttgat ttagtacaaa cctaaaacgt ctaattcatg tggatggagg gagtaatttg 1920

catctcttga gatttaaaaa agttgttcct tccaatggca tggcttcccc tgg 1973

<210> 4406
<211> 1700
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121279_G1, chr3:180760622..180762321, Cluster 27

<400> 4406
accaaaaaag aaaaaactgc acgagtaatt atgccttttt ccttcgacag cgatactatc 60

aaataatgct catttgccag tgcgatatgt gtacctaaca aaagttagaa gccatgttta 120

atttggccag tgtgccagcc atcgccgtcc acagggagcg aaacatcagt ttacatgcct 180

tcacatccag gcatgaggca tagatccacc gcgccgcgta aaatacacag attaatgtac 240

gtacacgacg atcgatcatc gtcgtggtga atggtgagat gagacaaaca acgtgtgtgc 300

tcgatgattc ctgaaaactg atctttttt tttcctcggc gttgcgtttg ctgtcgtgta 360

ttataaagtc ctcgttacct tgtgtcgtcg tgtcatgcat gtccctctcg ccctttaatt 420

ctcaaccact tttttgttgt tgctgtgtgc ttgcttaatt ttttttgatg attataatct 480

aatgattatc gtagcaccga tcatgataac gtttgatttt atcacctagg gcgtacgtag 540

aggaaaacta taaaagatga tattgatatg acgcgattat ttaatttaat ctctgctcct 600

tccattgcat cggcagcaga acttgcgtgg ttcatcctga ataagcaagg ttagccagct 660

actatactta cgtggttgac ttcgttcagc ttattctatt caacggcaaa agttgtacgt 720

cgtgccagag gaccgtgtgt tattgcttcc tatttttgtt gtctgtcgta ttagctcaac 780

gttgtggata aaagtcgctg tcacgtctcg ctcggattca cgtgaaacag ctagctccca 840

ccaattcgtg cacccgtagt acgtgcacac ggtaagtgca gtgagaacgc atgttccaaa 900

ttaactcacg tacatgcata atctaactca ccagacctcg attagcatcc agcttaatta 960

ctgctttgtt gtatctgggg cgggcgggtc aaaaacagcc tcgtaccagg aaacctccgg 1020

gacgagcaaa caaacaaaca aacgtctcca tgcaccattc atcatcacct aaccaaacat 1080

catcataccc gcaccactaa ttggccatct atatatatta ataatagtac cggtaaccac 1140

tgaccatgca tcaagcgatt gtacttagcg gtaaagcaac cccgtcccgg tgtcggatat 1200

tctagtatat gtttatagct atactactgc tactaataag gacgcaccaa acagcgtcca 1260

ggttcattgc attcgtaacg gacacacagc accaaaaata ttctctgttg ttccgttcca 1320

aactgctgac attgaccatg cccctgcatt attacattac atggcgccgc gcctcacgac 1380

atacgaggaa tgatccaaga aacttcactg gtcgttcagc ctgataatat aatatactag 1440

tagcaccgca gatccatttt tctcttcatt taatttggca tgcatcagca agtcagttgc 1500

ttcaccactc caatgttgtt attaagcggt tgaatgcatc aatttagaat cgcttgtttc 1560

ctaaaaacgt tgcgagttta aagtctgttt agggtccgtt ccataaaatt ctataatcgt 1620

gaacagctta aaaaagaact actgatttct caagtactcc taattaggta gccttgtaac 1680

gttaccaagt tggttcaaac 1700

<210> 4407
<211> 2112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121875_G1, chr3:183895670..183897781, Cluster 27

<400> 4407
acgcggtacg tgacagtcct aattaatctt cataaaaact aagataatat ctgtatcacg 60

attcacgagt gctttaaaga cggggaacga tcgggtccag gggctgacgt ttctatgctg 120

tgttttgtga gcacaatgga atacctgttc cgtgcggcgc tgcctgctcc gtatgtcaaa 180

tatactggtg tccgctggct ggacggactg ctgcttcgtc tctttgctgg aaaaaaaggg 240

aagatctgtt agctcggcct tctccatctt tcttggaagg tggtgcgtgt tacccgttca 300

gttcgctaac cagaggcggg cgacgacgct agcaacagtc cacgttttct gaattctata 360

atggttcgcc tgatgaattc aatagcctgt ccccttcga tgaaagcagc gccagcgcgg 420

cacagaatgg cagaaagtag tgagcagtga cattctgccg tcacccggag cagtgacatt 480

catctcccaa ctcgaactac tccggcagac atcatcaacc gtgtttgttt ggaagaaaaa 540

aaatgacaag ggcaacaaat gagggaaatg gttgatacgc tgctgagtag tagagagatc 600

gagacgagag aggaacaaag gggataacga gcgggtcaca tatgctagtg tctattagaa 660

tgatcctagt tcatcaagga cttctactga agcgtgcgtg cgtgtgtgtg tataatatca 720

cctcaaaagt aggataatta tcaaataaaa agagagtaag gactctgatt tgaggagctc 780

ttatttagag ttacccttt tattaattgg cccaataaat aatataggtc gaccaaatat 840

ttttttctgc tatcataagt tatgaatact attaacacct ccagaaggat gagatgtaag 900

acaaaaaaac agcacaataa cttgttaaga tagttatgag atgtaagatc tcaaagatat 960

cataaccacg tgtcgaagac aattatgcat gcatcaaata agataagtta gaagtaaact 1020

actatgcttc taattaattt tatttacttt cttcacgttc gaaaataaaa tactcttcgg 1080

tagtactacc gagaacgaac gtgcttaata agccatcatc aaccgtgttt gtttggagaa 1140

aaatgacaag gccaacaaat gagggaaacc gtgtttgttt gttttttttt aaaaaaaaaa 1200

aacgggagag agcaactgca atttgcaacg caaagacgta actgctgaca gcatacagcg 1260

cgcgcggtaa aaggactgta tgaggcgaca cgacaggtag gcgcctgcca tcacacacca 1320

aagacagcca aggcctacga ttggcacggc gtacccgatc gacgtgaaca ttatgttcaa 1380

ctctgaatga gtagtaaaca ctagataacg tacgagcgtt cgtaattaaa caaaaaacac 1440

acacacgcgc tatgtatgca cgataatgaa tcctactagc agacattggt tcttcggtcc 1500

cgtggaaact aagctaactg aactgaatcc caagacctgc ccggctgaca aggcacacag 1560

cgacgtgaac tcgacatgcg gcgcagctct tgctcttctc ttgtgaacgc aacgtacgat 1620

cttggttgaa aaacaacagc aacaaaaaga acaacagctc catttgctgt tcctaagaaa 1680

aatagggtgc cgatgaatcc tctaaactgc aacgccgcgt ggagtggagg gcaagaaact 1740

gcagggaacg aactgctggt ttttttttt gacaacgggg tataacaccc cctgtttctc 1800

attagaaaat aggtaacaaa ggttcattac aggcctactg acaaagacaa ccaaggccag 1860

ccaacaggag accagaaata aaaagctatg ctagacatcc taagcaataa cgaccacact 1920

cgatagagga aggaacgacc taacacgcaa cagaaacaca acgttctgtc cagaaatcac 1980

ttattataga acagcactcc tgaggaggca gaagtatcac acccagacga acaacacaaa 2040

aaagggatag tctacagaag atcaaactat cggcaatgaa ccactatcag caggcgacaa 2100

ggggctaact cg 2112

<210> 4408
<211> 1588
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125179_G1, chr3:201638606..201640193, Cluster 27

<400> 4408
agttatatga caaatatgac ttgtagggta acttacccga ggtattgtcg tgtgtatatt 60

gtcatagaag ggttcaccta ttttttttgg agatacatga tatcaagccc tatctgtccg 120

agcatgctgg caaagatgat gttaagtccc acactcccac actaccatca atgatgacct 180

tagtgagttg aactcctaca agtatcgggt ccaagattag gggatatcgc ccttgttcag 240

agaaactagt ccattgatta tcccttcaga attgaattgg gaccttgaaa catcacatgt 300

aagttgaagt tgcaggctct gttgccatga tctctcgaat agtaagcttg gtcggccact 360

tgtacattga tagaactaat cctccaaaga taatgttaag gacattgttg gtatgatggg 420

actctacttg ttatcacttg tcatagtctt tttctttgtc tagcttccct cttcctttag 480

acttgcccta gtctatggtg gggattaagc catggttctt tagttgttga cacttggtag 540

cgagatgttt attgactggg tggtaaggca tttctacagg agtaggtcgt caaaagattt 600

gggtctattg cctttctttg tcttgttcgt gaccatgaca aagttttcta gccccctctt 660

cttgcctgat ggatttcccc aatcatgctt cttgttgtta ctctttctat ctcaatgact 720

ttgatcatcg tacttgttgt gtatcctctt ttctatgtct aaccacatgt agaatatata 780

tatattagaa ctcattaata tgccatggtt gatttcgaat gaagtcttga catatgtact 840

tgtcttgttg ttcattgcca atgacgtctc tatcgaatat gtctaccact atgcattgaa 900

cgacaacaaa gcgattatat tggttgtgta tgctttcact atctttttt acaattctag 960

aggtcatggc gattggcttg atgatgccat actcctctta agttctccac ttatttttgg 1020

gctagtacga accatatatc aatagagttt attttgagtt gctcgagcta aattagtgga 1080

tcagcttcaa gtaccattag gaagtatgtt gcctggacat cgtcatctcc tccagctaga 1140

ctgacagcaa acgagtaaca tcaaatctag tggtttgggt ctttttttatt gtcatacttt 1200

ttgatgttat taggcttgaa ttctctcagc tacttgatca aattttgtct tctagagaat 1260

tagagaaagt cgatcactag tattccattg atattgtgtc taactatgtt agaggattct 1320

acatgatcgt ggtctcctca tatggagttt agttgttcac ccataccatg agctcgcagc 1380

aatttgtgga ggtcgcccta gtgcaggtta ggctcacaat gacctaggtc tctcctattt 1440

tgacattgac tgccttaagg gtggactaag ccttcacgat tctggtcatt attccttacc 1500

ttttgagttt tgttgtccgc tctagtgtgt catagtggat gttgcactgg actaaggttg 1560

ttattctcta tgaagcatta gagttatt 1588

<210> 4409
<211> 1959
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125429_G1, chr3:202759318..202761276, Cluster 27

<400> 4409
agttatttat tgacgagtta caacttgcct tctgcacatt agtcattcat atagttaact 60

agttaacaac tacaaaatga tcaactttaa tgttaccaaa ctgacttata cctatttgaa 120

tgtcacgttc actgatgttg aagttttctg aacccccaac actccctgag aacattcatc 180

accttcacgt gtggtagttt tgctctgtgc atcacgtcaa tcatttcgat catcttgagt 240

tcattgatct tgtgagtcat catctttttc atgatcctag gtgtttttgt tagttcatgg 300

ttatgctcta gaatgatttt ttttgaaata atacctgtaa gatttttaaa gctggtctat 360

aagccattgt ttacagtaca taacaaaaat aacaactctg tcattattta cctttcaacc 420

acttcacccc ctctagcgat gcagaccatg gtgctgcagt ttttttaaa gtttttacg 480

ttgcctatct gctcctaggt tgtttgttat tctaccttgg aaaacacact ctatttattg 540

cgatctacca ccattcctct tcctgtttct cctaacacca aaacctgctg catatgtcct 600

ttaaatttcg agggcttcca tagctgtact aaagtgcatc tccaacgtca ggacatattt 660

tttgtccatg cttgggtcat gtttcatttt gcaacgaaac aaatgatcat tcatttttt 720

tggaatgcaa catgttacac agttactggt tcacaagcag atatactcgt gtatcatcat 780

atgtttttgg ttcgaaagga aaaataactc acatgcatta taatacacct ggtggagtaa 840

ttagtgtttt caagagtaat gagtgtttgt tctggtacac ctagtggagg tgtcaatgct 900

gctatgtgtc tcaaatgatc tgttatccac gaaggactca taattgtgtc tagtgtaggt 960

gttttgggct tagcggttcc atgtttgttg catcagcatc ggacataata ggtgaggtat 1020

gtgcagtaac agtcctgtat acagcaaggg gcatgggtga tacaccaatt ggaacatcga 1080

gaaccatatt tcgttcttcc atttttttct aaaaaacatg attgtggaaa catatttaat 1140

catttatatc taaattatta agaaaatttt aacatattgt taactttcag ttacttcata 1200

agttctgaaa atacagtatt ccataccatt acagaaaaaa tcattcagtc attcgtgcta 1260

tataattaag gtattcatta taatacattt aacttactaa gtcattgagg aactagaacg 1320

tttagtcatt catactaagc cattcacaaa aaaacatgtg atagtatggc tcatgctaag 1380

tcatccattg taagttattc gagataggat gtagagatcc gtgtgatttg gtagatctag 1440

aactcatgca cgttgtggag gagaagcggt ctgtgggctt ggatgcggaa ggaggttgtg 1500

cggagcttgc aataggagcc gacgacgatt cacggggcgt agatccacga cacgcgcgcg 1560

ggggggggga ggggggggta gatgatgatg cacgatcggt ggcgtgtgtt ccgttacggt 1620

ggcggtagac ctcaatgcag gatgggggcg cggatccatg gcgcgggggt tagacgacga 1680

tatagatagg cctatatata atgtgaccag gataatgatg gcagagtacc agtcaatcca 1740

aaagaagtaa tattttcaat gcaagcttaa gatattatct caaatatcat gagaggaaaa 1800

tatgttaggc ataggcatat gtctaccttt ttttgctggt tgatgtttca ttattcggca 1860

cagtttgtac gatgatgaaa ttgaggacca atagcattat gttattattt tcttaggtgg 1920

ataatacaaa caatgatcaa agatgaacgt gctctttaa 1959

<210> 4410
<211> 1515
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127306_G1, chr3:211939600..211941114, Cluster 27

<400> 4410
atctccttta ggtgcttctc ttcacgataa ccttcatgac tgcaaacaaa cttccaaagg 60

tcagctcatt gtggcctcac cttactcaac atagcttctc acactaaatc cttttctaag 120

accgtgtttg ttatacaact aaaaccttc tttattagca aacatcttcc taacactttc 180

atatactcca gcaaagactc aagatccatc attttctcct gcatccatca ataacattaa 240

ataaattaaa aattcataga acaaattagg taaattgaac aaggtcatgg gtactatgga 300

gcatatggta tgtgcacatt catttggcat acaaaagcaa cttgcatgaa ccatactaat 360

ataaaccatt aaaacgaaag catggcacta taagtatcta catgaacatt gattactgta 420

taataagctg cattgaagca atttaacaga actaaaaatc tagaagaaaa cttatataaa 480

aagaatctaa aaatgaaata gaaccaaaca attgaatctg aaaatttaaa taaaatggct 540

aaaacaaaaa aacattgaca acaacaagga tttgacaaca tttaaaaatg tcagatgacc 600

taggtatgat aacatttaaa aatatcgcag aaggaaattt gggtaggcat gacaagaatc 660

aaatgaattg gacaccaagt gaagaagagc attctaatac aaaagtcatg aaagctaatc 720

atgactttaa ttagtgtttc ggaattgtag gaatggctac aatggttgtc caaaagtttt 780

gctccttgat gagatgctac aaactaacta caaaccaagt aaagagatac tagtgtagca 840

accagtagaa actgaaacat ccaaaataaa ttcagactaa ataatgattg atcttctaag 900

tgataagagg aattattgaa ggttccaaaa aagcaacata acaaaggcta gagcaaggga 960

aataattggg taagttgttc tgacaatcaa catagaacat agttagactg gaacaaaagg 1020

gacatagaaa ttcaaaccaa gagctataga actgaacttt ctgaacctaa tgtttaagta 1080

tccgaaggca acaactctat ctgcagaaca cgacaagcta agaaaagtgg ctcaattgca 1140

gttctcttgt tttcattcaa ctttactaaa aatttagata cttcaactaa ataaaagaaa 1200

aacatagaga atggaacaaa cagaatcatt gtttccttca agcaccaaac ctggtaagat 1260

aaagcaaatg caaacccaag acagaaccaa agacaaaaaa ggaagtccta cttaagtgga 1320

cgttctaaaa acaatactat aagatagata caagaatatg tacctttgg gaggaaaaag 1380

cagcattgtt tttcattgtc tttgaattca ttattgacga agtcgggaca agaatttgta 1440

ccttgttgga ggcaaagtcg ggatgccttt gtttgtcgtc tatggccgct tttagtggca 1500

gtttttgagg tcatc 1515

<210> 4411
<211> 1461
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129496_G1, chr3:222969899..222971359, Cluster 27

<400> 4411
tctaacaata gcatgagcgt cgcccacctt cacatcgagc aacaacagtc agcaactaca 60

catccaacat tgttgagatg tcgaaactcg aaacacctag atagctcaac catcattctg 120

tgatcaggga tccatcgcaa ccatgccctc ccttgttgat ccattcgttt ttcattgttg 180

atctgaccaa ctctgtgatt tattaataat agttagtagg tgccatacta gaatgtaaaa 240

tctttaaatg cttactcaag attatgttag catagattga gatattacag tttaacacta 300

atggcattta agggaatcat gttttctagg tggcagctgg ggaatatagg tttggatgag 360

tggctcgtaa gggtttttct caaaaatcac cttctccaga aatcatttag agttaaatag 420

acaatgtcaa tatctagaaa acaattttca ttagtgatct cttaaaagat gccctagaaa 480

tgatgccatt tttagactcg ggtttgttga ggcacagtct ctagagatta atttatagcg 540

acacacactt aactaagagt attgcctttg ttaaaaaatc ataatgttct catatcagat 600

cttttcaagg taagttttat atcaaaacag tatagctata tatgcgagct actcatttta 660

atctacatat aaatttttat ttagaatata tcatttagag gctacaatgt ttgttacaat 720

ttttccatat tttaaaatat ctttttcgaa cggtctctaa tacgaggatg gtctaggcca 780

agctatagag attaactaat atgatctaca attttgtggc tgacattttt atttgagaat 840

atttagatgc caaaatattc attttgaatt ttcaaacaac ctaggatgtt cacatggttt 900

atcctaaagt tgtagttttc aatatgatct atggaattat atttgagact gttcaaaggc 960

ccaagtgttc attacaacct ttcatatcta ttaataatat tttcattgtt ttatctaatt 1020

taataacatg ctcttatgag gtctatctct gaaaattgtt ccgaggctaa taaaaggaag 1080

gtggttttgg ccaccgctgc ctctcaacat ggctcattta gacaaactat ttgttctggg 1140

cggttgggtc tttgaatgta gtttttggtg tttgtctacc tctagttttt taagtcatga 1200

tatataccct cttcatttta tggaaatatt gttgttttct cctttggtac aagaacgcag 1260

aaactagcta tataaaatga ctatctcaac cttagttagg ccaccacaaa tggcttgttc 1320

taagctaata tttaaagcca cataaaggag agatgtgaaa aacctttgag ctcgccggaa 1380

tataagagct aggctctttt ctacatgtcc taatgtaaga cagacattac tcctctttga 1440

gaatatgtga atgtaaatga c 1461

<210> 4412
<211> 1417
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129573_G1, chr3:223295498..223296914, Cluster 27

<400> 4412
tctaggtttc aaggggacgg gtgtagctct cgacccatag gtcgggcaag gcgttctcta 60

cagggcatgg ttttgtaact gacccctgaa gcagttagag gtcgggcgat acaaagacca 120

tggtcagtcc gtcctgccct caatccttga gggtcgggga tcagtcaaga cagaaacacg 180

aggcatgact attcgcaggg ttgggagtta ggtaagacgc gttatttaat gtttatgttg 240

tacctaggtt attcatctga cacatgtgtc tttagccacc atgttgttgg tcttcttcct 300

ctcctttggg ttgaggcagt gcataagatg ttgctcgtgg gcggatggtg cggggcagcg 360

tccacatgca ccaaatgaaa catgctaagc caaacctagg atgaatacac ttacaaccct 420

tggatctttc ttagatgatg gatgcaatga ggaaagttac aacttggctt gctaaaagaa 480

agtcactgaa tctatgttcg cttctccttt aggttttgtg agttgtttca ttggctaggc 540

tctgagcaga gtgagtcatg aaactttctt catcagcttg attaatcgta gtaaagtcca 600

tatgagtcat gtccctaaca ctaactttat cattcatagt taattgtcat attagttttg 660

tcataaataa aacttgttta gttttaatag agaaattcta cgatgatcag ggtgcgagtt 720

gagacgccag tgataaactt gatctagatc caataagagt tatggtagaa gaactttgtt 780

gtctaagatt acaatttaac ctaaaaggtg gtagagaaac ttcacggtct aggatcatta 840

tctaatgtca aagggtggtc gatgaggtag gaaaccttct cttcatagta tcgaattgta 900

attcgaccaa atgtggtgat tggtggggta gaaaactata gtgggtgttt gtagaaaagg 960

gaagaagaat ttgctaataa caaagcaaaa gcaaccaacg ataaggaaag gtaggccata 1020

tggggttgat gtctgcttga tggatctata tgaatgagaa tgaccaagcc tctaagcttc 1080

cctaattcac gagcctttta ttgggaaccc aagcaaggtt gttgttcttg tagtgatcta 1140

taagtaattt taggacccat atgttattca gaagttccct atagcgtgga taccaataaa 1200

ctttgactca acaatactct cactagtctt ttttcaaaga tgacgagtct cagaagaaaa 1260

taaaattggg acataaatta ggagaaaatg attggggata tcccaaagta acagagaggg 1320

tttcccctaa aactataaga aaattttgta aaaatatata atattaaata aatatgttat 1380

taaaatatat ttcatgttac atctaacaaa tctctat 1417

<210> 4413
<211> 2360
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_129812_G1, chr3:224492734..224495093, Cluster 27

<400> 4413
tctttgacca tgagcagttt aggtattaaa cacaaagtag atagtagaga gatgctttga 60

aaattaagga cagtttaggt attaaatctt ctcacacacc gtcgtcacgc cgatatcatg 120

gatggaggga gcctaaggtc gctcaacacc aaacattgag ctgtattttt gtatttagga 180

ggagtacgtc ccgttaattt gtagacaagt gagtccaaaa taactttctc tacttaacta 240

aacttcacac cgtcgcacca tcaccatatg taggagtgag ccttttttaa gttttatcgt 300

aaatttaatg tgcctcggtc cataaactcc aaatttagtt tcagttaatt gattattgcc 360

tggcctgctg acttttcggt tccggtacca gtccttttga cggtcctttc atgttaatat 420

atccgtccct ttctttctcg atcaacacac atgttgttta gttatatttg gaccattgtg 480

ttttcagcaa actaaagaaa aaccaggttt cagattgttc caaaggagta ggtgttgaca 540

gtctccgccg ggtgatcttc gagtctactt tcctataggt aaatatatag gtagctaaaa 600

ggaacaaaca atacatacac gaatcgagtc aaatgtttga ttttcttggc tggtgaccgg 660

aaaagtgctt actcctttgc cttcgactga gcttctcctt taatttttcg cattcagcgt 720

gtttgattga ttgattcaaa ccggttattt gatccatcca gttcatcagt tatttgattt 780

caactgctgt atcgatccaa taagcctcat gtttgactct gatttgttat tatactagta 840

gctcacaaca acatggccgg tgcgttgcat tgcactacag ctaggaaaat aagtccttcc 900

tttcatcaag ttaattagag cgactggcgc gccatcatca acttatacta tatgtgcttg 960

acaaaaaatg gcttgaccgc tgattcatgt cattttcatg actatattct aggtgatttt 1020

aataaagcac cttacattcg catcttattc tagatgattc atgtttacaa aaaaaaaatg 1080

cagttttgtg gttaaataaa agaacaatag cagtagtatg agcttgtaaa tgtagatgtt 1140

tttttaaagg aagtgcctaa cgacgttgaa attctatgag gttggtttga cattaaagct 1200

ggtcatttgc atgtaaattc tatgaggttg gttttacatt tgcatgtaaa tcattctcct 1260

gacgagctga ggaggtagca gagggtagaa atggttacat gtagatcatg cggtagctag 1320

gcattgccgt catcgtcagt gactagcgag acggtagtat gtgtgtatat atatatatat 1380

gctcaactac tgctagtcgt tggctgtcta cgtcttctgg ttaaatttgt tattgacgaa 1440

ggtgacaacc cccctcgcag ccaatacgcg agtgcaactt gctccttgat tgattgattt 1500

ctactgcgat gagatcaccg atccgggcag gtgaagagtg gacttgaacg gaaacataat 1560

ccacgtcgtt aattaccaac ccaagcttct tcgccgtttc gacggagagc ctcacatgac 1620

tgcagcagct gcaggcccac gttatagttc acgtacatcc ccagaaccaa gcttccccag 1680

atgaaatcat gctctctttt tttattcttc ttcttcttct tggaaaaatt acagaataat 1740

gattattatt tctagcccga cggtgaatca tcgtaatccg aatgtgcaag ctgccaagtc 1800

atcgatcgga gctgctgctg ccccgtcacg atttggactt ttgactctgg tcccgcgcgc 1860

gaaccgtgag agaagaggaa cgggggggca ggaaaggatt gaccggcgag tggccgagtg 1920

gtaggtggtc aaaactttct tgtgtccaga ccacatgagg ggcgaacagg aacagatcaa 1980

cccggaactg cgagcagtct cttgaccaat catctcatcc atcggcgtct ctcgctcgcg 2040

cgctgcagca gcagtagtag gtgcaacaac ccgaatgaac attgtccggt cagcgaagta 2100

gtaaactgag catgacccca gtactagtac tgtgttactc tcgctgacca atgatcatgg 2160

tttgactgct gctcctattg gcaacaagta gagatacata agatgcgacg aaacggacag 2220

cgctggtcta aaagtcgtta gaaaaataag caattctagt attttaaaaa aaatctagag 2280

aaacgatata ctgacaatat atcggtgacg gcagatatat gcatgcatat accatcttaa 2340

cgcgacgaat acgtatgtga 2360

<210> 4414
<211> 1554
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130405_G1, chr3:227273997..227275550, Cluster 27

<400> 4414
gaagcaatag tgccgaaacc taaaaattct tccgcccggg acaatggtgc taatcacgtt 60

tgattattcg ctgctgcacg gaaccaccta ctacgctgtt tcaaactgag aggtattttg 120

gcgttttggt tgttacatac attgttttta tcatgtattg tacctattca atgtttagac 180

atactgtata tcaaaatgta taataaaaaa attatttatc tacaaaaatt aaaacatctt 240

gcagttttga tgattgaagg ttgatacatg gtaaatttat gtactacaac gaagcaaaga 300

aagaaaaaag agaacaaatt gttgtctaaa tttatgtact acaacgaagc aaagaaaaaa 360

gagagtacaa ttcaactaat atggtctcca ggtcgatctt cgacgatgcg gagcaaacaa 420

aaagagaaca attcaactaa taatgctttt atcatgtgac ctaccgtaag caccaccacc 480

agcagcatcc tgaactcact tttttaaagt agtgaaaaag ataaggacaa tgttctggca 540

tctcatagat gttggtggac ttggaaccac tgacctcaga tccgagagcc gtggttcggc 600

acatcggctg ctcccggctt ctctttaggg tatccaccta gattaaagtg gattgagtgg 660

attttaattc gtaacaaacc aaaaaatttc ataatttttt aaattcccta caatctatat 720

atggctaaga aatgaccaag caaggtctta gtttatggat atttttacga aaccttaaac 780

gcatactatg tgcctagtta gcaaggttat ataaacctat gtgattagtc aacaaagaac 840

atcaaaagtt tctacgcata ctagtgagca aagcacataa aagaccaagc aaaacacaaa 900

actagtacta cactaattag cataaaagtt cctatatatg gccttataga acgaaaaata 960

accaaacaca aactataaaa aaaacattct tagaaaaaaa aacaaataat cacaatcagg 1020

cgccctctaa tctagcatat aacctccaac catgtcttgc aaaggtctgc atagctacaa 1080

tctctaaaga tttacatatt acaagaacct cttgttgagc atcttctttt tgtaacaatc 1140

tccagaatct gaaccagaat gtttctctaa aaagcaccta caagattgat agaattggtt 1200

taaaagtaaa ggccacgtca tggtggtaaa gccaaataaa ccaaaacatt accttaaggt 1260

ttgatccatt gatttttgtc tcaaggtttg atggtttacc aaccacttga tccctatatt 1320

aaaacaagta tacggctgtc gtcgatactc ttactaatgg tgagcgcaca agctcactct 1380

ctccacacaa agtgtgttcg cataagagct ctactgtgtc gtttagtgga atccggatgt 1440

tccgaagtgc tgtattaaag gtaggttttt ttttttcaaa gggatagtgt tacacgtaca 1500

tctctcacta cggatggtta caatcgaagc cgtacacagt attagtgaga ataa 1554

<210> 4415
<211> 1548
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130688_G1, chr3:228641347..228642894, Cluster 27

<400> 4415
atatgctaca acagtaataa aagtatagta tttttacacc aacctcaaca taataactga 60

aggcgagctt gcatataagc agcaggatcc agaacgtagt atacctggtt ttatttaaac 120

aaaaatagta ttagatacag aatgataaga atggaaagaa taggtgacaa gaaaatgtga 180

tgtttactta agaagtgagc aagtgtcttc atacatgcct cgagcaacat ataactttgg 240

ctgattagga aaaaagattt gtgagatgtt atgtataaac agttctgcta agaacttatg 300

taaacaaaac cttacctgtg tccaccataa aaggaaccta ataatgcgag aatttgagcg 360

ctctaaggcc cgtcgaattg gtagaaacat gaaaaacagg gcactgaata tgtttggtaa 420

catgtaaagg gcaacagcat aattataaat tgattcattc tgcaaatttt gaatccaatt 480

gctgagaaac ttcacaaggc ctgtgggatt ttgaatagag cttgagtacg tagtaggaag 540

aattatcaac caggcaacag ctacagcaaa ttttaggata tatcttatcc tttgtgagca 600

ctccaggctc ttccaagctt tccagttgag aattaactct agcgtggctg aaaaggttta 660

aagaccaatt tcagaaatcg tattgcattt gaagcaaggg ccacagcagc aacagatagt 720

attaagactc cgcatacaag tcaagattaa taaaaacttg gttaaataat gcagtatgag 780

aaaaaaagta agataacaaa tgcataaagc ccctggagtc agtctgtacc ttgaaggaag 840

ttcagaaatg ccgctgttat aaagattgtc aatacatttt tgaaaacatt tggttcaaat 900

atagaagaaa gtgacccaga agggctccag gcaatgatta ccatggcctg caagagaaga 960

aaaacagatt atgtggcaca cactggaaaa atgaacacaa aaacttctgt gcagggacaa 1020

atgccaccat tacctggaac cccaatataa agaaggccca catacgatca aaacttctga 1080

acatatgcaa aaatgtacga acttcaacaa aatttgtttt tgatgccctt cttctcctaa 1140

tcacgtgacc atgttgctgt agaacagctg aagttagttc catcataaca ccatatatac 1200

tttattctga tcaaatttcc ttcagaaaca ggcatatgaa ctcaagaata agtaattgca 1260

attcaatcta tgtttctttg ttgctttatc taattacaca ttttgaggag cttataccat 1320

caataagaag caatcgctat atgacgtctg aaagcatgac ttacaacaat gccaaagaag 1380

ggacatctta ttccaaaatt tgctattttg catggcctgg gattcctttt cgcactcact 1440

ccccaaccaa acaatacaag cgagggggat gcataatgca cgtattcata tgatgcaact 1500

tcttcatagt gagatttgca tctattgagg aactcatgtg tctagata 1548

<210> 4416
<211> 1565
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130785_G1, chr3:229303481..229305045, Cluster 27

<400> 4416
aaataaacta gaccaaaaca acaatcaaat agaatagccc tatcctgaac tcatgctgca 60

agagaaaacg acaccagctg ccacaacata agtacttgaa ttagccctga ccgtattaaa 120

ggcagcaaga aaaccaatgc tctcaagatg ctttgcctaa tatataacga ctgttgtttg 180

aatcgggagc atcgtcgtag cactattcat tcatcaattt gccttcctgt ctttgttggt 240

ggagtatatc acatatatta ggttggttgc agggaactgg tgatttgttg agccgctata 300

tatgagtaca ccttttacat gtacttctga gatcattgct gaggtgtctg aagactgaaa 360

gctaggctgc gtccagtttc tgcatgaagt tcagaaaaga agggaaacat caggaagaac 420

tccagggaaa gataatattg ttgttttcca caaagatatt atgcaataca tgttgaaacg 480

attgaaagag acatgaagca cacacgaggc aaaagaaatg gccacacgga aaccatatat 540

agtggcttat ttgggagcaa aaggctattc aatcccctct aatccttcta aacacctctt 600

aggctatccc tactagtagc accctgttaa tcatctaggc gaagccaatg acctccagaa 660

ttgctggtgt ggtgtcagtt tatttctaac gggtacttga tttttcaaat tttgttggta 720

tcagttgaca ctaatgtcaa gctctacctc caccatatcc atctttctat ttatatgtaa 780

taaactctat tttacgaata atagaacagt atttttgaag gcggcaagaa ataaaaccaa 840

tgctctcaag atgctttgcc taatatataa cgactgttgg ttgaatcggg agcatatatc 900

gtagcactat tcattcatca atttgtcttc ttgtctttgt tggtggagta tatgtatatc 960

acatatatta ggttggttgc agggaactgg cgatttgttg agccgctatg agtagacctt 1020

ttacatgtac ttctgagatc attgctgctg aggtgtctga agactgaaag gctgcgtcca 1080

gtttctgcat gaagttcaga aaagaaggga aacatatcag gacgaactcc agggaaagat 1140

gatactgttg ttttccacaa agatatgcaa tacatgttga aacgattaga agagacatga 1200

agcacacacg aggcagaaga aacggccaca cggaaaccat agtggcttat ttgagagcaa 1260

gaggctattc aatcccctcc aatccttcta aacacctctt attaggctat ctctactagt 1320

aggtagtagc accctgttaa tcatctaggc gaagtcaacc tccagaattg ctggtgccag 1380

tttatctcta acgggtgtca tcaatactat aaataatatt taaacattat tttacacttg 1440

atttttcaaa ttttgttggt atcagttaac actaatgtca agctctagct ccacccgtat 1500

ctatctttat atttatattt aaactctaat ttacgaataa taaaatagta tttttaatga 1560

ccata 1565

<210> 4417
<211> 1668
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130888_G1, chr3:229982246..229983913, Cluster 27

<400> 4417
ttcgggacaa atatacccta aacctacgta acttaaagta cagatagatc tatagttgta 60

gaaaaacaat attatgcccg caattgttcc atcgtttgga ttggatcgtc caaccatgcc 120

agattgcatg cacgtgcgca tacataaaaa taaataccta acctgagttt ggctggtcga 180

cggacacaaa gaccaaattt ttcgtgcatg cgcacatgca atttatgagc cacgacatga 240

atacagtaca caacctaccc cttagcatct caaaataaat atacatctta catctcaaac 300

tatttcaaat ctaactggat tttaattgta taaaaattat attgacatct ctatctgtaa 360

acaaatttat tgtatgtaaa taatataatt gatctattta tccgaattgt gatgcggcac 420

ctatagctga acaacgtaca cgtactacag ggggaatccg aaatgtgtag tcacggccta 480

gcttcccgtt tcccctggac cgctgccgcg gcccaaaata gtgcacccac gtcccacggc 540

ccacgggccg aaatgtaagc acacatgcca aacatggcag ttgtttagcc aggagtttat 600

attcagtctt aaaaatagct gcatgcctgt acacagacca atacagctgc caaattacga 660

tactatattt gtaaaaaact tgacatccat gtacaggtac aagtaacagg agcatcttga 720

ttttttttc ctgggtagat cgattggtca tgtcaaagag gaatgcatcg attgaaaacg 780

tgctagtcta agctttgtta gcactgggtt tctggtgttg tcaggtagtt tattagtacc 840

atatttcaaa gttaattaag aaagtccatt ccactttaat aaagaaacag attccccatg 900

tttcaatatc ttcctcttct tttcttttcc cgaatagcac attttgtaaa gggcaaaagg 960

tagtatacag ctcttcagtc ctaccgaagg gctaacagaa tatcagccag ttagttctct 1020

ctttttgttt ccttttagca ttgattgatc taaatagcgg gctaatacat tcttcttgaa 1080

caactaatag tagtagaaat ttcatgactc acgacctaca cagaaatgat atatacaaat 1140

taagaaggat gtcaaaaatc ctaaaggtat atcgatcgat aacaactcta gaaaaagtgg 1200

gatcgagtcc acagtccagt aaaccacgtg aatcatggat aggttgacat gcagaggaca 1260

gttgactatt tagtacaatg ttttgaatca acaatgcttt gttgtgatac tttttaatgg 1320

aacttattct tcttccacta gagactttgc ccacctgcag cattactact ggagacagtt 1380

ggcaatttgc agtcacccaa tattggattc ttgcattgct ttgacaagtt tgctattgct 1440

gcccatatat tatttgtgaa aatatgttag ggtgttagct ctatcagaaa tatgtgactt 1500

gtatttacat tacattagag aatcgtaata caagtctata tcggttacaa tcaccatata 1560

tatcatgtta atcctcaagc ttttcatcta cacaaataga gaagtccggt tggattacta 1620

tgtatctaat aaaatatagc tataggggag ttcatttcta acaatcct 1668

<210> 4418
<211> 2442
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131859_G1, chr4:3031062..3033503, Cluster 27

<400> 4418
taatctatcg ccattttatt tttcacaagc taataattag tatacgcaca aaaaatttgt 60

taagttcacc caaaaaatca taggataaaa ttcataatgc accacctcaa tacaccatta 120

taaaccactt tgtgcatccc ttctttccac caatcttata tcatttttat atatacatga 180

tgacttaaaa agaaactgaa atcaaccact cttaatcaaa tagaagtatc tcaaatgcac 240

ctattcacca ttcttgtaca tatataccag tagttcctat tcttcgttgg acctcgcctt 300

cgccaccatt attgtctcca ttcattattt gaccatatgt cctattcccc gtactaccac 360

aatccctcat gaccttgtcg gccaaatttt tttttaaaaa agtgcctcta ccgccaagaa 420

aattatcctt ggctgtaaac catcaaataa attaagtcaa ggatagagga taagggaaat 480

tatttttctt ggtggtttta cactcaagga tgattttctc agaggttgac tcccaaaaac 540

aattaggacc acaaccaatt caccaaagag acaaagaatg ttctaacaat taagtaaatt 600

atatataggt agaaaaatag aaagagcaaa taaagcaact caataaaaaa acccttatca 660

tgtggtctag ggattcaaac tattgacatt aggtttgaca taaagcacac tacataccac 720

caaaccctat atcaatttgt gacttagtga attattattt ttcttttgta atcactttat 780

taatcttcta atgaatattg aaatcctaaa tgatttataa aaagtttgaa ttgaaaagtt 840

ttagatctca ttaagtacta tgactttggt ttacatcata tatccatatg agaccattta 900

caaattttca aaatagaaat aaactttaaa gttgtgagaa cttccttggt ggtttccaat 960

cacacccatg gaaatttgaa ttaccttggc ggtttcaaat atcactcaag gaaatataaa 1020

ttaccttggc agatttgaat agcaccaaaa ggaaatgaac actcaacttg gtggtttgta 1080

acaacgctca atgaaacatg gagttaccat ggtggttttt agactagcaa tcatgaaaat 1140

tagcaattaa catggaaatt tagtttagta gttaaaatat gatttttctc aggaccttag 1200

aggtatatat cccaagacaa gaatgctaaa cttttcttat caatatcatt tcatgtctcc 1260

ataaaattat tgtccctcaa ggtaattcaa gattgtagta gtgtccatac atcatctcac 1320

taaccaaagt actgagtttc tagtcgttgt ctatttccac taccctaact acaaaccatg 1380

caactttata gctagcactg tcacctagct aagttgttca actaagatgc ctaacactca 1440

ttatgttggt cgctactact caacttcatg gatgagtcac caagtgccaa ttgggtgcat 1500

gatataagtg atcaaatgat tgaacaattg aacatttgat ttgtgcttga gtaattaaat 1560

ggcttagtgg aatactggta gagtgtcgca atgtatgtgt gactaactgt tcaaatcact 1620

aagtgagttg ctgagttcct gagtgactat gttcctatat ggccaagtgc ataactatgt 1680

ggatggtcga gttacaacta gctatgcgat tatatcatta tatgttttac tagttaatat 1740

gtgagtctcc acatgcatat tttcatgctg agatggatct tagatcaaca ccagcaagtg 1800

ctagatctct caggttacca tggaccaaag aacatagtgg gtaaccaaca cttaggttta 1860

tgggaaaacc actaaatcgt agctaggtgt acttacatga caaagaacaa ctagtttcca 1920

agcaaactag caaagaatct aacaaagctc tcgcctgaaa gggaccccgt cgaggcaatt 1980

atggtgcccg attaccctag gttggacgat gatccttgga cacactctta gtcattggaa 2040

aaatgttagg aaaaggacta ttaaatataa agtatcgatt atgtgtccta ttttataggg 2100

agtaggggca atcttatccc attgaacaag caatatagta ttattattat gtcactttat 2160

agagttttcc ttagattgag ccaaaactaa ccatggccct caaaatttgt ctgggccaaa 2220

tttatttgtt aatataaata tgttcttgcc actttaagaa aacaatcaat ttttgatggg 2280

tgacacacat gataagtatc gatccacaac aggtgacgca tgggcttcat tactctacta 2340

acatcaaagt gaaataataa tctattgatg ttatattcaa ataattaaat aattcttcat 2400

gagaccgaat cgtacctggt tgtcgttgac ggatagagac ga 2442

<210> 4419
<211> 1409
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132782_G1, chr4:6429363..6430771, Cluster 27

<400> 4419
atcgaatagc gcgtgcctga caaagggcct tactagatgt tgatccaaga ggagattgta 60

gtcctcgcac cattccttaa acacgagtgt ttcattctcc acaattcttc ctcgaccttc 120

ttcaatgtta ccagattgtt ctccaagatt tcttatcaat cgttgtgtag atgtttgctt 180

ttagtgcctt atatacaagt gatatcaatc tctagaatac atttttgga attttactag 240

ataaataaaa gcataacatt tatgtttgta atactattaa gaacctaatt atcaaatgta 300

gtgatgttat cctattgcac ccatagaagt aaaacacctt atcattcata cattcatagt 360

tccaagatgc ttgatatata ttgttgatac atgcaaaata aagaaacaat gccacaaaat 420

agaaccacca ttaacataat atcattttat gtaaacaact aaaagggatt cataaatgca 480

tgcatacata ttgttacaaa cgaaacaaca agaatataaa ctctaactat tctatgaaga 540

aacacaatac atggcatgca atgagagact cgaagataag acccttaaga ctagcagatg 600

aaatgcaacc aaaattatta gagaatgtga gttctgctat agtgtcttgc atgggaggcc 660

cgagaaagaa cccaggttgc tatgctccac aatttcgcac ccacggctgc tggcatccct 720

gctactactg catgcctaca aaggcaatat ataacatggt accaatcccc ctagagttta 780

ggcctaggct ggctagtggt tccatgattt gtgtcttgtc gtagatgtag ggagaagaag 840

catgtgtata tgatgatgaa acgagttgaa tcacctgcaa tgaatctagg agggctcctt 900

gctcgatgac aatctcctag gattgtgctt tggttttgct catctttgtc tccactatct 960

ccctaaggct aacgagctca tccttggtgg tgccaccgag gcctaggcga cgtccatcca 1020

agctatcatc caagctatca aggtcacata ttcaccctcc tctaggtgac tattacgtac 1080

acaagtgaca aatattggtt gattactact aaagaaccac aaaacatagc ttaatagaat 1140

gtgataatga cattgtaaaa ggttcacttg ttggaggatg aggcttcact ttaaagcgaa 1200

tataggatgg catggggtgt gacaattcga ttaaagaatt ggatcattgt ttcaaatctc 1260

tatagttagt gtgtatttca agttgtagga ggaaagtagt ttagagatat attgttttaa 1320

ttttttggta gtgaatcttt gatatataga agtccccata tgttttccat ggttagaagc 1380

atatgatggt agcacaacga gccataaaa 1409

<210> 4420
<211> 2140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132843_G1, chr4:6639597..6641736, Cluster 27

<400> 4420
gctcataggg gataacaacc ttcgaccaat tcaaatagtc gatcaaattc tttctcaatg 60

tcacctccaa taaccttcat ggtgcctgcc aaaaaagaaa ggtaacacaa tacatctatc 120

aatcaccaaa ctaaccagcc aaaataagca aggatgcctt cgtccatggg agtagtagaa 180

acactattat accttgagga cctataggga cctcaatgtg aaggtcacat cctggagtct 240

tcgacttctc caccttgtcc acttgggatc taacaacact agcatccacg cttccatcat 300

ttaagccatg gctagaccat gtgactgaat cacacttccc cactaaaaaa atgctagaac 360

cacatgtaga gctaatgatc cactaccttg cttggatgag cttttctcca cctctccacc 420

ccaaaggtcc acctctagaa ggacaacctt catggattga ctatcactgt caacctcaag 480

atcattctat tacatggtag tctttgagcc aacaaattgc tcaacagcag caacaccacc 540

accaccacca ccatcttcta gcatactaaa ctacatattg cttcatcaaa cattagtggc 600

aaattggtca tcaattgcgc aacactttca accatagaag atgaccctgc aatcttagca 660

gcagtgcgct ctgagtggct ttcccctcac cttggtagaa ttagcctcaa caaccatatc 720

aacgtcctcc acatcatccc ttgaaggcct tagccctctt aaccaaggga ccatgagtca 780

tatacttcct ttttcttgca tctgttttac tagtgttaac cttagacgta gtagccttcc 840

cttcattgac cttcttggtg agagaatttg aaagtttctt gaagacctct tagggattgt 900

attttacctt aagatcttca tacacctaga tcaactaagg catgctgctg accatagatc 960

ctcaggtggt gtactctttc tcagagacat cccaagattt tcgcatgcct tcaacatgtg 1020

caaagataac aaaatctatt tttcctcttc tctgaataca tgcagacata tcctctcaaa 1080

tgtcatgtct tttctgatga acctatcaaa gggccagact agctttaact gctagaaatg 1140

cttcaaccta gtccttgact ctactataat gaattgcgta ccacaaggca tcttgcagaa 1200

ctcacataag tccatggagc catcttctcc atcttatatg ctaggatgaa cctaaggact 1260

tcccacctcc ttgaatcctt caaagtaacc ctagagatct tcacttaaaa ccaataccaa 1320

ttctagttgt ttgtccaaca attgtgctaa ggaaaataga cgtcacactt atcttgccca 1380

tagcagtaca tcgcaggttg aaggactagt taccaaacta attttctgta gccacacctt 1440

tgatagtaat tttctttggc tatcttgccc atagcagtac atcgcaggtt gaaggactag 1500

ttaccaaact aatttttctt agccacaact ttgatagtaa ttttctttgg ctatcgctaa 1560

agctcataat gtgcataaaa ccaatcaatg tctattttaa gtgggataga ttgtccattt 1620

tctttggcta ttttaagtgg gggagattgg ctattttagg tggggagatt gtctatttta 1680

agtggggtag attgtctatt ttaactaggg gagattgtct attttctttg gctatcgcta 1740

aacctcataa tttgcaagaa gtcaaaaact aatctttgaa aagatcgtgg atgacatagc 1800

ttacttctta aacatgattc cttttaagat tcaaagggca aaaccttgct ccattaattg 1860

cgatattttt tgggtcttag tgatgacctc aacggcgaca tgaacaacta caatgctcac 1920

cacccaagtc atatgtagtt tttatgtcat ccacatctat tataaattgg agccgtctat 1980

aaaaagatca ttgtagtagt gtgaggtgcc tatacacacc attattcatt tcacataaat 2040

ttatctttta tttgtcactc tataaccctt attttaaagc tttacttcta aacttagcca 2100

cacataattc acgtagacta tgcattttgt tttatatttc 2140

<210> 4421
<211> 1916
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132845_G1, chr4:6642692..6644607, Cluster 27

<400> 4421
gggcatgact gttctcatgg tcgttgtggt catgcctagg cacactcatg tatggaaggg 60

acactgggaa gtaggttgga ggttagtggt ttaaaatgcg atgaatgata tgcttgttgt 120

caattgatct tttgtgacta gaacaataac taggtgatgg taggcttcag ttatcatagg 180

atatgttata acatcaatat gatgaggcta actctatcct tttgcataac atttatcttt 240

tgttgggttt acatttaatt attcaatgcc taatttgcat gaaagttatg tttgtatcca 300

atagaaaatg taaattactt agttccatcc taatgaatac aatagaaacc ctaatactca 360

tgcaaaaaag ctacaactac attgtgctct tgtggttcaa attgagtgct taaagagtag 420

taacaataga tcaaaagatg aataggatga caaggtaaac tattatctaa taccacatat 480

gcatctcatt atcaacttat taaacataga tgaggttgtt tcccaaaagg tcgataaata 540

tggcctggat ctcatgggtg cacgtatgga actcattacg ttatatatat ttagttcatt 600

ggaattttcc cacaaagggg agttctttcc atttcagatt gatgatagtc atcgttgcct 660

taaacaaaca taatgctttg gcaattctat tttggaggtt ttacattctc gagaaagtaa 720

atacataaat ttaaatcctt attaccaata taattacttt gtgcctccat gacctaagta 780

gattgattcc cttgatccca taatgataat caaatttcct ttaggcaaag tgctatttca 840

caaactttgc cagcaactag tcaaactata aacaagttta caacatagaa cttgcatgac 900

tatatttgta ttgaaggttt ccacgaggtg atattgatta ttagcaaatg ataatatatt 960

gtacgagaaa ttaggagtcc atatgtactt ttaggacctc tcccaaaaaa tacacatatt 1020

attcaaggat gtaaggggca catgtggtag aggcaaaatt ggcctagcaa aagaagagca 1080

aaatgaagcc ttggctgaac atgtgatgct tttgttactc tacaccttcc tatcgttaca 1140

aaataagtaa tattgaccta gaaaaacatt ggatcaacac caacacataa attaactcaa 1200

tttgtagaat aaaacagaac ataattggtt gcctttgtaa ttttcatttt tcacctccca 1260

agaaacaaaa caaaactcaa tggatttgta gtcatgggag attcctaaca aaacaggaaa 1320

gggaaaggag atagtgacaa gatcatttag aaatacttga tgtggaccat ctctttatct 1380

ccctctattg aatttacttc catttaaaat gacaacaaca cataggtgca ttgttgggtt 1440

catatatatc atttgaagat ttggcatgtc attgcagaag agcaaggaga attttgaaat 1500

gccataagcc atatggcaca ctaatgacag aagtgcgcgt ggtgtgtcaa acatacttat 1560

gactataagt aagtatttac tttttatact tatgactata agtaagtaag aaatttccat 1620

ttttagagcc tagcaaatgc cgacacatta aataaatata atattgtagc catgctattt 1680

tggagaatta tatcttgagt aaatataaaa aattaaagtt ttagtatcta tagaagtatc 1740

tagaacataa aatttatctc taaccactac tatacatttt cactatagag gtggttggat 1800

aggctctata ccagtcgcct ttttttcatg aggtgcctct atgagtcatt atccataatt 1860

cacaaagcca gtatagaaaa atagcatcag aaactcttta aactctagga gaccct 1916

<210> 4422
<211> 1730
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133080_G1, chr4:7304311..7306040, Cluster 27

<400> 4422
cagctctccc tttgtataga aagacatgaa tctccctgta tatatagagg agcattgtgc 60

tcccctgtat gttaagtaac acatttttag ttctaattaa gtctcgtgac atcataacaa 120

tatgtattgt ggtactataa gcattgtgcg atttttttaaa tttcataaaa atgataaata 180

gatgttaatt aattgagttc taatgtatag gagaaggctat atagggggaa ttatgtattt 240

gataaattat gtgaaaatga taaattatgc ctttttttttt tgcatatttc tctctccaag 300

cagggtgatg tgaccgttgg acataaagat atctgaatgt ttcagatatt tagttaactt 360

ccattaacac aagatataat ttggatgatg cccatctttt tctgaaacat ggaggctttt 420

acatctacat gttcctgcag aaaacatctc aggatactgt tatggagcca tgaaagagtg 480

actcaacttc taacattcaa attctgctgt catctctatt gcagaggacc gtaaaggcct 540

tcactactta ataacattta taatacctgc tgtttcatca atagaggtgg tgaaaacatg 600

tgacactatc ccctaaaaca ctaaaatgct tagtgatttc tagagagata cggtccatct 660

tcggtgcatg tgtagtggtg gtatggtcaa tgagatctgt aaccttgtaa ctaaaaattt 720

acaattctca aactacgacc tcaagattta tactaatacc taagattatt ttgaggatca 780

agcttagttt tacactaatg gataatgggg cttctgttca acaacatttg ttccgattgt 840

tttaatactg gtactgatac tagatttatt accggtttaa aatatctagc ccgtatagat 900

aatattagca ctggttgaag caaacaacat gtactaatat taagtttttt agtattgctt 960

ggaggtttgt ccctcctttg tgagcagtca aaggttgaag caaacaacat gtactaataa 1020

atatgttttt cattctcgcc aaattaatta aatttcccgt caaaatcagt ttagcactgg 1080

ttcttctaaa taagtaaata accagtaggt taaagatcta gtaccggttc tttgctagag 1140

gtgtcccgta taagtacaac cattcttcaa acctttctca ttcatgagca ctgagtgtgt 1200

cactaaatgt tttgagtatg cgtgtcgagt gtgatgcacg tcttccagta tatattttac 1260

acactttaat tagcatgtta gattttgaaa tataaaattt ggaattctta aactacctga 1320

gatggcaaca tgatctcgat aaatgttgag ttctcaatat gatctatgat tttgtagcgg 1380

acaagatttt tattttaaac cattcagagt ctaaatatgt atttttttatt ctcatatttt 1440

aaaatttgca atggactttg gatattgaca taatagatac caaagttgta gtggtctaca 1500

tgatatacaa ctttggaatt gatatgtctt ttattaaagt tatctagaga gtaaagtatt 1560

ccttttaagt tctcatattt tatatttggc acgagtgacc aaggattatg ttaatgcgcc 1620

atctaaatga ttggcacgag tgatcaatga gtgttttact cgtacgtatg ggcggcatac 1680

tactctacgg attgagtaaa tcttaaaaaa aattaatagc ttttgtaaat 1730

<210> 4423
<211> 2331
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133408_G1, chr4:9643776..9646106, Cluster 27

<400> 4423
atatcattag gtatgactcc aagataccaa gggtactaaa gaaatatgta gagtagagac 60

aaagcgaagg atgtaggcta gaggccactg tattgacgtt gacttggcta caagcacata 120

aatagttaat agaggtttgg gtcacacgat tttattactc tatgtcctct ttgcggtgga 180

tgaattgatg gaagtggagg cgaagtttac atgatcagat gttgtctgag ctagaggact 240

aactagctac ccttttactt cggctctggt gaaagttcta gtcttaagtc ccaagattct 300

ggacatatcg tctaagttcc gagacctata attagccttc atatcctttt tgaacctctt 360

ccctttttac ttgttctgta ttgctttact cctcttttta tttatagaga cacaatgaat 420

gtccaatcac tcctacttat cgtactcgta gagccataca tcagtacacc ttagtcgtac 480

cacaatacac ctttactcct cttagggtcg tccttctgag cccgttccac ccatagcctt 540

cctgccccca aggcagtctt gcattggaga gatcgagggc cactgtgcgg gccccttgtc 600

ctgtagaccc cctagaccta tggtctcggg gggcttggtc tctgagttgc aagaccctga 660

tgatgtcaaa gctagtacga gtcaacaagt ctcctttatt ttgataagat ttgaaacggc 720

atattgctag tatcttgggc tatacatttt tatagacgcc cataacaaag taatacatgt 780

agaaaaatca aaatgttttg taataatttg aaatgaaaag agtatctact atgatagtac 840

accgtctatt ccaaattatt ctaactgttt tggagaggaa gagcatttta agtttgacca 900

aaattattat aaatatataa accatccaag tagcctacgt gaaactagca tatgaaaaga 960

taaacgtgtt gcattgataa ccgatgtctt ccgcacgtgt tgaagctaag catatgcctt 1020

ttcctcctat tattaaaaag gtcattctca ataatagttt tataaaaggt ttgtttttat 1080

taaataatgt attatactat tgacacggtg aacaatatat ggagaaagag ataaaaatag 1140

atttcatagt gtgaaatcat gcctacacta ttatctagat atattatctc ttacatatta 1200

tctatgaaac tgtaccaaat aaaactcttc actatgagag actgtatctc aaccaagatt 1260

ttatttttt ttcttgattg catggcatct taaaaagaac tcccattcta ataacaagtt 1320

gatctcttta aaaaataagt ccaaaaattc aaagtggaaa tcatatccta tacaaaataa 1380

tcatctcagt ctgttgactt catttgcatc ggaattgcaa cctgtaaact aacacaacag 1440

taagtgtgga aatccctatc agctaatagg tgacgggaat gaggctaata ctgaccgaaa 1500

ttagtaattt tagtaggtaa tgtgataatt ctcgttggct tctagctgac ttgtttttgt 1560

cgggaattaa ctaaaccccg tcagttgggg actggagcta agtaactctt atcagcctcc 1620

acgtccgcat ctagtttgaa caaactcggt tttggatggg tcggccaagt tacatcactt 1680

gtttttctgt caggactcta agtgaatatt ggttttaact gtcaggactc taagtgaaat 1740

attagtaata gattgttggc tttaattaat attaatgtct gtttttcaat atcggttaaa 1800

gtcatcaatt gatactaatc tctcgaccgt aaattagtat cggttgatgg gttcaattaa 1860

tattaaccgc aggacgcggc cgaggaggat gcgtggtgga tcggatgcgg ataggcgtgt 1920

gctgttgcgg cggtgctttc acggggaccg gcgacggatc ccacgtggcc gcgcgcgctg 1980

agccatatag ctggctagct gctgtagtgc ccgtagcgcc gaggcggcga ctgcgtgcgt 2040

gcgcggtggg ccagctgcac aggcagtact cccgccggcg tcatgaagcg ggaccgccgc 2100

tcgcacaggc gacgtacggc ccctcgccga cgccgaccag ccgggcgtgc gtcgtctcaa 2160

ccgttggccc agcgcggcgg ttgggcgtga ctgtgctatg gtcagggaga aaagaagaag 2220

aagaacgttg atgttgttgc ggtggggcgc acgggcagct agggggtcgt cggtggttga 2280

cacgtagtac gcgtgtgcat gcaccatcgt atcatcgatc tcactcgaca t 2331

<210> 4424
<211> 2852
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134993_G1, chr4:16797786..16800637, Cluster 27

<400> 4424
tattttctcc tccatgtctt ctatacttct ctacatggaa aacctgtaca taactcatag 60

aatttgttaa ataacatgaa attcgtatat gaattacatt ttttaacatt aaatgttggt 120

gggcataatg tgattttacg tatgaccgcc aacaaaatga ttatgacata cctaggcaca 180

gtactggggt agatttaagg tccctctagg aagggcagta gtatttctat ggttttgttg 240

ttatctacac gttgaaatcc tctacatggg catccgaata ccaaaatact atagttaata 300

atctctctga ggagggcggt agtactgcct ctatgactct attatagtat acactttgaa 360

agaactccta cgagcatttg aagaccgagt ctcaataact cggtcatcaa ccacttaaag 420

accctccatg ggcagtggaa ggctaggtcc ttgtaactca gtcattcgtt gaaaaatacc 480

ttccataggt gtagtaaggc tgagtcccca caacatggtt ctctctcaaa catccctcca 540

cgggcatggg aaggtcaggt ccttataacc caatcatcca ttgaagggtc ccctctgagg 600

gcatagaaag gttgagtctc catgacacgg tcatctctca aaactccctc cttaagaact 660

acaaggcaga gtctctataa ttcgctcatt tgtcaaaaaa gtttcttcgg agggaactgc 720

catcaagttc atataactca aacattcatt tgaaggctaa gtccacaata cttagttatt 780

tactaaaatt ccttcctaag gcaccaaagt gttgagtcca tgaggctcaa ccatctaata 840

tcactatcca tgagggtcaa gtaatgttga gttgtcaaga tttagatatc tatgacatat 900

acctatgatt ttgtgaaact caaatgttta caaggcacat tcgtgtaagc atcgcttctc 960

gcaaagcaaa catgattcaa gagattgtgg aaaatgttat cataaacaca agctagaaag 1020

agttgtatgt tacaaaaaca tacaagttgt tcaatcattc ttaggattac atcagaatgg 1080

aatcatagtt gaatatcaag ctaagatgta atatgggttg cagctggcta gacttccttc 1140

aaaactccat taatcttttc atcattaaag ttgtttgtaa gtccttcttg gaatctagac 1200

aattccatcc ctaggtattg gaacatggtg atgcctagag caaaggcact gacttcttcc 1260

aaatagatac ggttgaattc cttattctaa atagtaagat tgttcaacct ttggatgttt 1320

gatgaactag acgaggactt ggaaaggtac atgtagttca tcatggcttt gaaccaggcc 1380

ttgtagagtt tcagtagctc ttggagttct aaaatacaag gtttatttgc tcagtttatg 1440

aaattattca aaacaaggac aattggagcc ttactctgtt tatcttccta ggctaagtca 1500

ttagcctcca tggccaagtc cagcctcgca gcaagctctt cattgacaaa cctatcttgg 1560

tttatagtct tcttgaaatc aaccaagatc tattttagct tggcaatctt ttatttcata 1620

tttgccttct ctaccatcac cgattcttga gcctatgtga tagagtctag cctcttagtc 1680

aggtccttaa ccacctcgat catcatgtca atggattata agcaaagcat gtcaggattt 1740

gtcatcaaca aagtatgatc atgtacatta aagttcaacc aacttggcct cgaactagtc 1800

gcacagcttt tagaccatgt taactagccc tgagttgatt tccttgtcct ttttctaaat 1860

cttgccgagt ggactcaact atttggagct tcttatgtgt tgacatgagt agcatggatt 1920

tcttagttgt ctcatcgaag atttactctc aatggaatta taaaaaatgg gaatcttctc 1980

aataaattga gatccaagag catatccaat ggtgtttatg gaaatcagtg gcaaattatc 2040

tagccttctc tagctgttgc ctgtcttttt ccaggtcaat attcactagc aagtattgtt 2100

tgagtgccac caagagctct agttaatcaa tatcagacat aggggccttt atgtcgcaca 2160

agacctcctc aatgtttgag tctacataat agttggcaac cctaaggtta tatcgaatac 2220

acaaagactc tactagcgaa tgatgaccaa gatgagttac ctcttggctg tttagcaata 2280

gtatgagaac tcagcacagt taggggctcg attacagcca tcatcagctc agtcacaacc 2340

ataacaagag caacttaggg tttgactaga atgccactgc cttagtagca gccataatga 2400

gagcagcttg ggctagggaa gtgtcacctt ggcatcgtta tctcagatag ctgcactagg 2460

accaaaccct taggggctct agaggactcg accctagtac acttgttagt tgcggggttt 2520

tggcacggtg gcataggact tggctctaat aggtgtactg atagtcgagc ctgcttcagg 2580

ttgcatagag ttcaccttat cctttggtag ctctatggac tctctatcac atttcatatt 2640

catgcttaga atcattctta ttaaagaaat aataactatg ctctagtcgt atcttgcata 2700

cttcttgata tttctcttca aagaagtaga ggatctcctc tagagctcag tcttggaggt 2760

caatcatctt gggctttgga cctgacaata gagctagatt gggggctggt tgttgtcttt 2820

tttaccagtt ccaggttgtc cccttgggga tg 2852

<210> 4425
<211> 3570
<212> DNA
<213> Zea mays

<400> 4425
agattgttgg aaagttcatt aacaaagaaa ataatttgat cgttgagatc tcatagttga 60

ttacaaatgc ttcaatcatg tttttaacat tggaaacatt tttatggtga tcggagtcca 120

ccttcatctt gaatatcaaa gctaggtatg tcctaggcaa tcgtaaacaa gagggtacta 180

ctagataacc catgaaaagg gtgactaaaa agtgaaggga tgagcttatt gatgttgtta 240

caagcgagaa gaatgagagt ggatctaagg aggatttaag ataagttgtt tgcagtgtgg 300

tgggaagttt tattgcaaat gcttttggtg gtggtggtgt ttcgttgatg ttgactcccc 360

ttgattattt gatttgaaac ttgatgtcca ctaggtcttt gggtgtactt gaaaatattg 420

agagtcagtg ctagaatgaa agttccctta aagaaggtga aatgcctata atggcttcac 480

aaagaggact tggtttgagt cctcaagaag gtagggagat ggcttcaccg attgaagtcc 540

aagcaactaa aggtgacact tcattgatgt ttttgcaaaa cctaagcatg ctcatttta 600

gcaaatttag agctatagtt agcaaagatg ttccaagaaa agtccatgtt cgtaaaggta 660

ccattgttgc tttcgttaac ttcaacaaca atgttggtgt gtttgatgat gaggccgagg 720

aggcatgagt tggctggtta aatgattcta ccattgatgt tgacactagt acttgagttt 780

ctagttgact cgatgaaggc attactacta gtaaatcttc ttgctggctt agctttgaaa 840

ttttatttat tgtatgtgaa gctttagttg atattcctcc tagagttgac actgaggcct 900

ataaatgaca ccttgagttt tactagagtc aaggtgtgcc tcttgatgtt tttaaaatta 960

ttagcattat gttggacaag ttttgggttc ttttgaagac tgggaagttg aagttgtcca 1020

agtgcattga tattgccttc gtaattcctg atgctgaggc aaagcttgct gtgaagtaca 1080

ctctagagtt ggttgatgca tcttttgtgt tatcatataa ggtagtgttg atttattttg 1140

cactgatgtt actttggtct tttattatac ttaaggaatt cttttatgta gaatactttg 1200

ctttaatgag ggttgaggaa gtctatcaaa gccagtgttg aggcttcgac tcttcatgag 1260

aggaagatga tggaagaaat ggattcatta aaagctcaac tagttgtgaa aaaacaaaga 1320

atttcttgtg agaaactagg cataagatag aaactttgct acttagtgct tgtatgtctt 1380

tggaaagtaa agatggagag attaatcaag tgaaatgaca tggaaacgag catagatatc 1440

ttgagaagaa gttggacaaa aatggttcct actttcttta ctctgctatt catctttaga 1500

agtctgagta gagattgtta agacaagttt atagcgaagc tcgaagatgc ttgtcgagag 1560

atgggtgact ttaactcttt cttcatattc tttgtcataa atatgaagac ctaccaagcg 1620

tgttacaaat ggcaattgat taagctacat gtaatcgact aagacactct tctatctaat 1680

gaaagaagct aatgatccac tttattagca actcttagat gaaggataca aatttctaca 1740

tatttagcct ttgagcaagt ttttttgca tagattaatg agcttggaaa gaaatatttt 1800

cactagtact agaatagcgg tggtcgagag ccaaggctaa aatatagaag gtaaggtctt 1860

tgtaactttc ttgccttccc tgtttttttt gtttcctaat atattttatt acaactgctt 1920

gaagaggagc tagttgtagc cgatggataa taaaacaaga tggaagaatc tactgcaaca 1980

agagcgaggg aatctggaaa agtttttgat catgttgttt gatttgtttt ttaattatcg 2040

agggtcattg gtgtgaagac tctaagtatt ctaacttttg taaaccctat gtaggttcca 2100

cctatcaggc ctaggcaggg tggcatgaaa gttatgtcac ttttattgtg aaagggcaac 2160

ttcatggttg aacctttgtg taggattgaa tattgtgtta ataccaacaa acctttgttc 2220

gagtctttca tgatgcgtac gtgttgagtt ttgtgttttt aagtgatcgc attatgtgtc 2280

tttgaatata acattgagtt ttcttagact gtcacaaatg ttatatgatt gtgtttggca 2340

aagctaaaaa gttttatcat cgcattgttg accatggtaa gactattatt ggcaagcaaa 2400

ctaacctaga catgagatgg tagtaacaaa ctccattgga taaaatcttc atgtgtgtga 2460

acaatatata tcgggggtac ttataggccc ctatcttttt attacaatta aaaaaagtcc 2520

taattacact tgaactgtga agttacaagg ctaatttggt tagtttatgt ctttaccatc 2580

cactgagtct ttgttgataa ataacatttg taggtgtgtt ttacttcaag cgcggattca 2640

ttgacacctt cacttgaatg tagggagatg caacccttтc tattgaagct ttgttggtct 2700

tgtgccctca tgcaagctct tcataagtga aactttgcat gtattgaggc ttcatatcat 2760

ctcttcataa gttttcgagc gtagaatgaa agatgaccga ataacttcaa tctctgtgtg 2820

gtcattgatt tttttcaatg tgaagttgat tatgcttgtc aatgtaaaat aacaaatgtt 2880

tgttagtaaa ctccaaaata tggagagatg tgtttactta tggtgaaatt cctaatgata 2940

gccctcgcaa gcgaagtcct actccaaagg tctaaacccc acgaaatcat gatttctagt 3000

aaaggttata acattgtccc tgatctttag agttgtatat gtgactaaaa gatttcaaat 3060

tcataattat gaagtttgac agtcatgggc tatgaaagga atgtgaacaa ttgtcttggt 3120

tgaggtttcc tataaataca gtgaccatgg gttgtggatt tactggtttc ctctgcctga 3180

gtagtcttac tgctctgatg atcattgcaa agcttttatg tgaatcttgt cttcttatta 3240

tatttgcgat atctagagaa gaacttgcct tcacaacctc tgatggtcct gaaaaggatt 3300

tggcgtacat tgaggtttct aaattagagt tgattgataa tgaaactaaa tctcttaagc 3360

ttgtcatata tttgatggat gaggctgttc ttgtcccatt tcttcataca aggtcgctgg 3420

tatgggacca aggtcgtttg ctagggagcg aagtggtttg aaagccgaag gcaaaaacat 3480

gtttagtgtt caaggacttc tttattttca cacttcactt tcctatgtaa gatattatgg 3540

aagaaattct tgatgcatat aacatagaga 3570

<210> 4426
<211> 1584
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_143731_G1, chr4:68413262..68414845, Cluster 27

<400> 4426
agctagctaa tccactttcc tccttttagc gttatatctt ctacatgcat ctagaaaata 60

aaaacgtcga tcatttttt aaggtcaacg ggggacctgg ttttcattgc tttgttcttt 120

tcactccata ggggcataac agtttattac atagccagcg atgccggatt ggaaagaggg 180

gaggggggag tttgtgtgga tatttcagct tacatcctat cactcgataa caccactatt 240

caggcctctc gcacgtctgt ctctttgcgc ccataatgtc tgtagctcca attcacagct 300

tccatgctac attgttgaag agtctggttg atggaggtgg ttacttgtct gaacaccagc 360

gcattccggc gcttctagag ctaccaacag cgtagaacaa tgccggtcat ttttttagaa 420

gacaccctct agcgttgcct cctaaaatcc ttaatatata gagtggtgta tgttgcggat 480

ttacaacctt tattcccctt tcaatgcaag agtctagaat ccaagagatc acttctctct 540

ctctctctct ctctcaatat acatggatga gcgctggcgg cattgtttga taactcaggc 600

ccactagctt gaacagagcc acgtattgac ctattgagga aaactgcgtg catgctgccc 660

atgttatttc gagcatctca atacagttcc atcacaggaa agaggttgca tatccctatc 720

gaaacgaggt actgctgcat gctgtcatct tcaaacattc gacaacgagt ttttatttcc 780

tggaacgtaa aacgctcgtg tgcgcttgtc cagaattcaa tgcaatgtgg gaatcatact 840

gttcggtgtt cgcccgattg gagaagcaca tgtatctttt gaagaaaagg ctagatctgt 900

atacaggagc tagcgaggat tggttacggg tgcttgtccg agattcagag atcgacgact 960

ggcgcgcgtg cagtggcgta cgtacatacc atgggccaat cattctcttg tagacagtgc 1020

aaagccatgc atgtcatagg ctgctacaca gcacgatggg tcttggcact ttggaattca 1080

gatcacacta gtggctcata aacaatcaat actgattctt taacgtgcgt agtttcagaa 1140

tgtttcacct tgtcgaccaa acatgaaaaa tgtgttcttt tgtgtttgtg ttacttgttc 1200

taccagatat atatgctact gtctccgttt cagattttaa ttcttttagt ttttgtattt 1260

gcagtcaatg attctctaag tatagtagta cataataaaa actacaatac ttgaaaaaaa 1320

gccaaaatga ctgaagagag aatatatttg gaattaaatc tactttgtat agggagattt 1380

tttggcactc agcgtcgcca ccactcttag gtttttgtcc tgttctgaga taaatgcgaa 1440

aatgaaggct agccatttct gttattccta cctagcaaga ttcaacaatg aaccaaaatg 1500

ttattagtga tctttactga aacaaaggta acttttgttg taggacattt aagaaacgtg 1560

gtacacaaaa ggaaactaag aagt 1584

<210> 4427
<211> 1602
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_143779_G1, chr4:68779023..68780624, Cluster 27

<400> 4427
ctagtgattt ttgtttgatg ttgtagatat ttgtacatgt aaggagttaa gacacaagat 60

aaaaaaacaa ggataaaaga cacgcgaaga aacagtcaaa tgggtgctac atagcaacac 120

aaacacggct ggtggtacaa tggatgggac accatatgcg tgtcacacga gcagctacaa 180

taatagtaac aatgtatcca atgtcgtgcc ttgctgctgt ggaccactgg agtgcaaggt 240

gtgcacatga ggatttctag gaagtccaac cagacgcatc cagccagaca ccggagtggt 300

gcacctagaa tcctaattta ggagcttatg aaaattctcc aaaggtttta aatgaaaata 360

tatcctttaa taagattttc tccacctctc ctacaatatg tggtttctaa caaaaggaaa 420

agatccttat ataaatcaac ttatcctttg cataattata tacttagtaa tactcactaa 480

aatatttaag aggtttaacg acgcttctca aaagtgcaaa taacggatat agcgggctaa 540

ataaggttat agtgtataac tttttcctgc taaaacagct atagcgatgg ctatagctgg 600

ctatttaaaa ccctaatgct aacgaataag gcagagatcc taacacataa ggaagataaa 660

cttgtaatcc taggtcggat tcatataaag cacatatgga aattttaagt ttggattgta 720

tgcaaactat taagtgggtg aagtgaattt gcatattccg atatatgctt tatctacaac 780

taataaatat ttgagtgatc gaatatatca aacatgaata gaattataca cagatgtttc 840

aatatatata tagtaattgt ataaacaaat atatataatt tataaaaggg aacactacca 900

ctctctcgtg caaccactac gtatacgttg ttcttgcatt gccaagagat cgatgtgtag 960

aacagctgtt aaaggagtgc gcagtgggca cattttttt ttctcctgtc atcgcggcgg 1020

aatcaattta gttaagaaac taacctcata tgcagactaa aatcatgaag tatgtcacgg 1080

tctatccacg cgcgggtgca agtacaatta cgtttctaaa gaatgaacaa agaaaacact 1140

agtcaaaaaa agacaaaagg tgcgtgcgga aataattaat atatttgcaa gcacaatatt 1200

cctcatagga caaactagtt aaccgcactc agatactaaa atctctccgt tccaaaagtt 1260

cacttgatca cacaccaaga ccactcacta cgacatagcg gctttatcct actcgatcga 1320

gaataatggg gtcaacccat cctcatctaa agaaacacta aacaacaagc ggcgctgcat 1380

tattacttaa cctcaccgat caggccggcg acttgcttgt gaaggtctaa tgccccttat 1440

attctgtaag ttgtttaggt gagtctactc catgcatggc cggtgtcaga cgatcaacac 1500

agccagcttc tgcttggagg cacctggcag agctgtgatg ctccatatgc cttaattgcc 1560

tgctaataag actagcttca acaagctaag ggcatctaaa gg 1602

<210> 4428
<211> 1577
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14955_G1, chr1:82587234..82588810, Cluster 27

<400> 4428
tgctcctaac accctaccac gtacgtctaa ccgagtaacc gtcatgggtt gtgctaggtc 60

tgagggcccc aacattcgct aggggttgac ctagaggcct aagtccgcgg gtgttcatgg 120

gaggtcccca acccatcggg aaggggggggg ggctcccgag atttattggg agcacttagt 180

ttcctctagg gtcctaaaca ttcatggtta agccacacaa actacacaaa gtccaagtct 240

gagattacaa ggaacttatc gactaagcct aggtggtcaa gtgattttaa tcctgcaaat 300

gatggcatat gtattatttt ttatgaaaat aagggttagg ctaatgatac ttgcctttaa 360

aggggttggg ctattactct agttacccct atagtttccc ctaggacacc ttgtaatgga 420

ggcgaataag tccctaagac gaggataaaa atatatagtt tacatatatg gtattggata 480

cttaattatg tttgaaatct tcacaacaat catatgctct tttccctatc aatgctcaaa 540

gtagaaaatt tctcatcatt tagggccatg tgcgtgagtt agtctaaaac ttttattgtt 600

tctaaagatt gtattaagtg tggataagat ttattggtgt gttatgtgat tttgaccgag 660

tcacacctgt accaagtgct acctctaggg aacatcgtta atctgagggg gttgatgaca 720

tgtataccct aggacattac ctatgcaccc tagctaggcc attttgtatg attatcaata 780

ttctagttat gcatgcaaac tatgccaatt acaacaatat ataaactaac aaaaggatag 840

tctctttctg ataagcatag gccacagtcg aaacgactta taaccaacat tatattatat 900

cggtaataaa aaagattata tattgaatta ctaaccttag gggcaagatg agtgacaagg 960

ggcggtaatg ttgtccaaaa ccattaagga tgaaacttat gtaggtgctt tatatttaat 1020

gggttgggta atggtgtgcc atattttgtt tctagtctta tgttgttatg catcatggtt 1080

tgtagatatc attaacccag taggttccct cccatgtagg ggatagttga ttcatactag 1140

ctcaattgag gatgcattag aggatgagac ttctttatca agggttcgtg gcttgacatg 1200

gcatagatga tgtcagtgca aggtttgttg gcaatccacg acatatagga gagcacatca 1260

tctccattta tgacaaggtc tagatcctca atgtgcactt gctcccacaa aacatcttaa 1320

tatgctagta acatatgtcc ttgttgtggt gagtctctac ttgatggttg gtacactaac 1380

tagcatcaca atactagacc tatacttggg tgctacaaga accacgatgc gctccaacta 1440

gccatgattt cattgtagtt tattttcacg atctccctgt tggaatgagc acaagagtct 1500

cttaaaattg cttgatcaaa gctgacagta ttcaccaata gccgctcaat gatccacagt 1560

tgctccaagc aatttat 1577

<210> 4429
<211> 1743
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15098_G1, chr1:83385774..83387516, Cluster 27

<400> 4429
ttttgctgtg gatgggatat ggtgaggcac ttacaaacat ttagtagtgg ctccttagtg 60

ccttgatgtc acacacattg ttttatgttt ttgatttcat gttctatgag atagaggata 120

taattctata tgggatcaag gccaaacatc ggttaccctt tgatcactat ttgtcctcta 180

tcttctcctg attgagtaat catatagaac aggcactatt tttggggaac tcaactagat 240

aatatgtagt ttattggcat cagtctattg tcaatgcatg tacaagtggt ttagctctta 300

gatgcaaaca ctaggaaacc ataaaaatag ctaaggaaag agcaggagta gaacgagggt 360

attcatttgg ttgagtagtt agagctatag taactctttg agcgtcacta tgagactgat 420

gaaacttcat aaaaggagta tgaggtgcca ccacctatac ttctagtgcc accaccgtga 480

ccacatgact tagagttagg tggttctagt acaacactcc cacctttctt tctctatcca 540

ctaataatca gatggctacc ttgctcgagc atataataac acaaaaaata gttggccatt 600

gagtaacaga gacttgcaac tgagcaacta aggattctag ctgagtagtt atgcaaagag 660

gtagagaata ggaaggagcg gagaaattag gctgaggcct agcatcgtca gacctagagg 720

actcataccc tgctagggtt ttagggtttt agggtacatt tgatcacctg ctcagctagg 780

gttttagggt ccatttgatc acctgctact agcagatagg gcaagcaacc tttcctattt 840

caatcttagt ctaaagtaga taggagtgtc aacaccaccc ctttagttca gatgtcagct 900

catgcagcac tttagacctt agtggcccca gcgatgtagc ttgaagtaat ttagggctag 960

ggtcgttact attatgtgtt acaaatttaa cctatgaccc ttgacttctc ctcaccaagg 1020

catggtgcat ctttgggaaa tgctggagtg tcataagtta tcacttcttt agcacttttg 1080

acacttttat ccattgtcat gaaaccaact atgtcatcac ttagatggtc tatccaactc 1140

cttagtcata tcacaaaaga gatctctcag tcaccctagc tcttgtgccc tcattttagc 1200

tgctcctcta acaagcaccg acgaaaccat actgtcattg gttgtcatca gatcctccac 1260

aattggtcac accacctcta attgatcaac tagagtgtac gacaatagct acacgtcaga 1320

tcctattggt cagacaaagg actctttaga tacaaacaag gcacctttcc cataaatttc 1380

aaggttttag tgcatcccta catgacaatg tctaccactc catagaaccc ttagtttttg 1440

gctcttgacg tcaaaggggg agaggggaga gtttgtgaag catagggaga tctataattg 1500

ggatctagat ttgatatatt tgtgtgtcat ttttcatatt ttgtatgcac atttacttta 1560

tgcattgtat taagccttgt tcttgcatgt gtatgatatt ctacgacaat tgttacactc 1620

ttttatgttc ttccatttaa attttatgca aaataagatt atttaatcat gtactcgtgc 1680

ttaacctata ccttatggag tacacgacat ggacttgatt tttatgaact tgcattcaaa 1740

tca 1743

<210> 4430
<211> 2281
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_151807_G1, chr4:126002468..126004748, Cluster 27

<400> 4430
gtgtgataaa ttgccggaga gattatatat gttccttgta gtgtttgagg acgacccttt 60

cttttgggcg aacggtggat tgatacctcc acggaatatg gaagcaaata agttgttgtg 120

tattgtatga tattgtatgt atttatgatg cactatatta tgcttgctgg gtatacctac 180

attgctgttt gtgatgacaa agatggtata ttgatgtttc aaccaactac acttctgata 240

ggatttgtta aagaactact gtacttgatg actatatgta ttatatacaa caatgggtaa 300

gaaagccaac ctgatgtaga acacagattt ttttgtacgg agtaactatt tatgtagggt 360

tcatatatca agaatcagcg gtatatagta tgtttcatat atttgaatat ttctcataat 420

tatatgataa taaatctggg cacatgagaa tttgattgtg tatagtcgtt ccatggcacc 480

agaaatccag cacatgtaac tttggaagga aaaaagtgtg ctatatagtg catctgtgca 540

tgatacaagc acttctttta ttttccaaat gtatatgata tgtgccttgg aaccttggag 600

agtggggtgg gggcaggcat gttaaattac tgatgttctc tcaaaacatg tcacatttga 660

tttgaatgat aaacataata ttaatggcaa agtccatttt caccctcaaa cttgcgaata 720

atctgttttt caatcttaaa ccatgaaact gggtaacaaa caccctccaa ttgtcaaaac 780

aggacaaatt tagtcctcgt gttggttttg tatttttgta aaaataataa aaatctgatt 840

tactatctaa aaattcatta ataatttctt ttaaatcaga aaatcatgac actagtacca 900

attggtttat ttatttactt gcttatatat aggtatttag aattggttta tttctgtttc 960

tatagcttta tttcttgtat ttgcactcag tatttattta aaacaagtaa ataacactaa 1020

atatatcacc aacaaataga tggcattttt agaacgaaac taaagtagtt tcatattttt 1080

atggtttaaa ataaactaat atttgaattt atttttagta ttagaaaata gaaaaccaca 1140

ttgaccaatt ttgtttggtt ttgacaattg gcgtgggtgt ctgtcacccg atttcatagg 1200

tcaaggttga aaatcatact agcgcacaag tttgagggtg ttcatggaat tcttttctct 1260

cctcatgcca tgctgccata tgtgtttcta ctaggtagtt tgtatggtgg ctttcactca 1320

tatgaccatt tgaaactggt tacacagtag accacccttt atatctaaaa gaatcaattg 1380

gtgattttat attatatcag aatatcatgt aatttgatag tggtaacaac atgaagggag 1440

aaatttgaga ggatagttct ctatttctct gcttgcactg tgttactata tgtttcacat 1500

gttagttcca atttgccata tatctaacag ttgtccataa ggtcaccctt ttgataagcc 1560

tttggcagtt ctaagatagc actatttcat tgcacaccca ccattatgga ttatttttta 1620

agggttacta acgcggcctt tcccaagcca ttaaattttg aagtggttaa atataatttc 1680

tcagccataa aactaaccta attagtctag cgcggtggaa aaaaccatct gtgggcctaa 1740

attagaagct cgtgggatcg aatttttgtg ctcttttccc cacatttttt agatttaaaa 1800

gggggttcaa tataaaaatg ggagcaaaat tagaccatag aattggtgcc tagaaggttg 1860

agggattgaa ttcaagttcg tgatattttc ttctaacatt ttttaagaca tacaagtagt 1920

tcccattaaa aaattggggc aacatcaaac acgcagttgg ggatcgatcg gaattcggaa 1980

ggattgcaga atgaatgctc ctgaatggac cagctgacta gatggcaatt gaagttgcag 2040

tgctactaat gaatttatca agtcattttt actggagttt ggaacaaaaa ataccagagc 2100

tcatatattc cggtaattct gtccgggaat gcaaaaaaca tgtaaaatgg aactagaatc 2160

cctgagagat atgatgtatg ggtcatacat tgaaaatccc ttgtaatttt gagaacaggt 2220

aaacagaaat tatggggaaa ggtagccttg gtgttatcag atgtgttgac cttctagggg 2280

g 2281

<210> 4431
<211> 1584
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1554_G1, chr1:8020011..8021594, Cluster 27

<400> 4431
attaacagat ttaaacgaat actattttga tacggagtga gtacaatctt agaggattat 60

gcgacacggt ttcaacttac aatagaagtg tgctacaata tcaagtcatc aacagtatta 120

aaaaacacac acaaacaacc caggatgaac tagatggtta tgtaattaaa taagaagaaa 180

taggcatcca aatcgaagtg ggtgtgacaa agacctggat gtggatgtac agtgtacacc 240

cacgcctccc acacggtccc accaactgag cctagctcaa tttcttccta gagacactag 300

tggtttagac aggcaacata gagcaataat catagcaaac ttttgtttaa gaaactgtgg 360

ccttcagttt gcttatgtaa ctctacttgg aaaaatcaat cctgtagaaa ctacaggcta 420

ggagtgccag gcacaaaaca agccaaaacc tggaggccaa atattcaaac gttccaagac 480

taattgtgat ccaacaccac atctaattct gtaagagggc tgaaccagat ctaggagcta 540

gcccttaacc atccatattc atagaaagaa tttcaatcga ccaagttaca gcaaatccaa 600

accccatgct gcttcaatac tcgatcccaa agcttggaca aaaggtttct ctaaacttgc 660

taggacgata ccaggtgttt ggtgtggctt tcaaaacttt tggggataga gaaatttgtg 720

tcaaaggtta atttgggcac aaaccaaaca cacatgtgac aagctaggct ggagaaatct 780

aatgagtaaa agttcttgca aagaaactag agccagatta attctgtgga gacgtcaaga 840

taattcacat cacctaatac atcgattccc agatctattt ctcctatggc gcgattaatt 900

agttgtaagt tcaaactacc agctaaacac tgaaaaggta attctactga aggaaacctg 960

gtaccaaaag ctataaatct agacctaatt gtagtgaagg aagcttgaat aaacacgtaa 1020

gttttggatc aaaagttaca catccaagtg aacaacctca caggaaacta gaacagaaat 1080

atgtatcatt ggtatcaatg acgacaatga actatagaca cccacagcaa gtagatggtt 1140

ttaagctcat cagttttcaa tatattatgg tacagtacaa acaagatgct gttcttatcc 1200

tatattcaag aacatccccg cacattcaca attagggaaa aatcatataa tcaaacttca 1260

agagttatcc agtttatgtg cactgtctaa gattcatgtt gtcaattgac aagcattaaa 1320

catcacatcc aggaaaagaa cataacactg atacaatagg aagtttgtga aatgaagagg 1380

cagaggctgt aaaatttcaa ccgataataa tgcatgctcc agaggaggac aatgtcatct 1440

gatataacaa actgcaagtc atgatggaag gaagaacaaa gaagagatgg aaggactaag 1500

gagcaaggaa gggacttgtg gtcctacacc tactacatac agccatacaa aaccttattc 1560

taaaacaaaa tatagaacct ctta 1584

<210> 4432
<211> 1589
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15623_G1, chr1:86626219..86627807, Cluster 27

<400> 4432
tagtgaaaga gattaacctc tggttttaag aaagcactgc attggatatc ggcctagggt 60

taccagtcta acataagcaa accctgacaa ggcctaaaca aaaactaagc aaaccactac 120

aaggccacca aaccacaaga acattgaata gaactacaaa gggcattaaa tatctccgac 180

atttgatagc tccaccaagt ataggcttga aggacttcat ccaaattagc ttgtcttcct 240

tcattctaaa aaatcactac cggtctacca tctttagtat aatgttccac gtatgcagta 300

aagtcaatgc aacatatatc taagtcggcg cccttagaaa tcttttctca tttgccttcg 360

tgtttctagt agtctaaatg gcccaactaa aacctgcaaa gacaaaataa gcaatttaac 420

tggtgaaggc ccttgcccta tagccccaca ccagaaaaat gatcaactag tcttggacac 480

gtatcaaggt taaacaccac cttaataatg ccccaactta gtttagccag taaacaccca 540

aagaaggtga ttcatcgatt ctggcccccc acgaacacaa catctgtcac taactttcca 600

cccattttga tgatcccagc cagcctactc ataaccccca tcagatataa acctataaag 660

agatttatta gagaagtggc ttttattttc caagccccaa aacataatac ctatagaatc 720

catctccaaa taaaccacat tcaaatcctc tagcatctcc ttccataact caaactctct 780

caaggagagg gctcttcaaa gtctacatgc cattctcctt gtccccaaaa aaattatcca 840

gtgtacaatc aatgcctctg actaacatgt acaactctta atcagatatc cttaggggaa 900

gattgtgaaa gcatcgatct ttccaaaact gatagctaaa accaacttca actttgaaaa 960

tagcacccca cttgaaaagt tgtttcactt caagtagacc ctaccaaaac tgagaactcc 1020

ccttaactga agatgcaaat aaatgacatc cttccatgta cttcctgata attatttcaa 1080

tccacttaac aaataactat tattcataat tcttatactg atagtccaaa ctcccttaat 1140

tcttgggcct cctcgccatt tcccacttag ccatgtggta aatccacata acaaatagga 1200

tattattcat agttcttgta ttgatagccc aaactccctt gatccttggg tcgcctcact 1260

atttcccact tagatatgtg gtatataaat ttctccttgg tcctctacca tagaaaattg 1320

gctcttctac tacacatctt cttgtgtact tcacttgaat ctaataaaag cccatatatt 1380

ataagggtat gatcctcaaa caagagttgg ttaaaatttg tctcccacca gaggttaggt 1440

atttcccttt ccaacagtcc aacctatttt ccattttctg tatgatagat taaaagcacc 1500

aatgccttaa gtgcctatca ctaattggta tcctcaaata tttccaacga ggacatcact 1560

accagcaagg aaccactcaa ggatgtgta 1589

<210> 4433
<211> 2418
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_161085_G1, chr4:181996942..181999359, Cluster 27

<400> 4433
taacttgatt tttttgtttg ttatttgtga tatataatat atattcatgt gtactgatga 60

ctttatgaga actcttcaat gtcctaagtt gtggtgtcta atatattatg tttacatatg 120

tggacttgca caccacaata tgcttgcttc atttactcct agtatttctt gtcattgtcc 180

gacgagacac ctgaatttga tgatttcgat aggtacacat gtaacatgta catgcaacga 240

cgactaagag tccgttctaa ctacttcagt gtcaacacgt acattttgca agcatgagta 300

tctactatct cctgtagttc ttgcacatat ggtgtaacct caccctacaa caaacacaga 360

acatggcagg cacaaaacaa gattacaaat ttcgcacgag gaaaagaaaa ctatgttgcg 420

tggtagaact tgtcaatgat aagagaaaat gcatgcttat ggtaaatcag aatgtactct 480

gatcgggtaa atcggggtta cttgaacctg aattaccctg accgtttatt ctgggtacat 540

tatttcattt gatagcagtt ttcaaaaccc aaaatttgaa aacctgattt actctatcga 600

aaattttcag gtaatccgaa tgcacgctca gtgtccacta accgatttta tagtttaaga 660

ttaaatatca aactgcctat ataagtgagc tcgggaaata gctttgttct ttctggaaaa 720

aatggaaaag ttcacaacgc gaggaccgca tggaagacat atataggttt tgcagttctg 780

agaaatacga cccaatgaac agaccaatca tgaacaatac tactctcctg ctccccccgt 840

cctggacctg gtcctggacc tggaagagaa gatagagcta tccatgcggt gcattaaatg 900

tcggcgcaga acacattccg agttgtctgc caatctatcg agttactccc tcttctacaa 960

aagaatacaa atatattagg agtacgtgtt aattagttag catgttttat caatttctag 1020

tggatgatat ttatacttat agctctaaat taattcgttg ttaatttatc tttgtacaca 1080

acgaatttaa cagcttttgt tttatattgt aggtactaac agtttttat ccatagttgg 1140

ttaaatttaa acttgagata caaaacagta ccattgctag aatttctttc agccgtgtga 1200

ttactagcct actgccgatg tcatcagcgt cggcgctgcg gttgcagtct gcagacacac 1260

cgccgcggca agcgtttggt ttcgcgcgca tggcccgccg ccggcgcatg cgccatctta 1320

cacgtcctcc attccttggc tggtgacatc ctagctacca gactttggag gcatgcatgg 1380

cgacttggca aggcaataac gactcccaaa ttaaacaagg attattttgg aaaaatttct 1440

cgatgcaaag catggggcag cgtcttgatg caacgtacag gccacaacca gaatgcacga 1500

accagctacc ggtcacatca acgacgctga acactcaaca ctcaacacta ctgcactgtc 1560

tcgtcaatat caataatgca tgtatggaca ttgtacccgt ctttgtagaa agaaacatcg 1620

tactggtacc ataccatgca agcaccgcat gaaacctaat aaagctgcag caaaatagct 1680

aggcagttgg cacgcgagag agagagagag gccaaacaag tgtacgtgac ataaacgtac 1740

gacatggaca tgggaaagag agctagctag cacactgctg ccattgtttc cagctcagaa 1800

caaggatgag caacttgaat tcccgtaccg ttctgtgcgc ctgtaggcag cgttaccgat 1860

acgctactac gcttaccacg cacggggatc gcgtcgagct gcaggttcac agcagctgtt 1920

cttggagatc ggatgctgct gctagcatca tgtgggagat gcaattacag cactgcttaa 1980

acaagtacta ctagttgtct agttgctact atcgttggat aaatatgtca ttttttgtt 2040

gaatttagga ttgattggga aattgatcta tgaaggaatg ctagttgacc aatagcagct 2100

atggagaaca cgaacagcac atgtgtgcag cagcatgtca ttaatttatg acgttttttt 2160

taccgtgaat ctggaaatca acattattgt tttgttcaaa gaacaatcgt cacaggtaac 2220

tgaagaacaa aaatgagaaa aaaaaagtag taggcgtcac ttgaaaaaca aaaactgtgt 2280

gtccgagtgt ccgtcgtccc agccttgctt cttgttcact actactaata agagaagcag 2340

cgagaggatg ataattactg tatatgagac tgaacggctc aaccatcgta atcgtggcgg 2400

cggcggttgt tcttctcg 2418

<210> 4434
<211> 1621
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161342_G1, chr4:183933593..183935213, Cluster 27

<400> 4434
agtggataga cggcggctct aattacccta ctgaattata gggtcaaacg acatatgcaa 60

tatatgcagc agtcttaata ctagctagct agctatgcat gtgagatggg atgtttgttt 120

ttcttcttcc ctgtggcgtt atatgttgac acttatggtt tgttgattct tctctgctgc 180

tacaaggcaa caatgaacgg agtcatatga ttgggccggg tgacgaaaag gccttgggtt 240

cggtatctct ccaatctgat gcgaaattct ctcaagtgca gtgctagcgt ttgctgtttt 300

ctcctgtccg agatccaccg tatcttaatt aatgaaggtg ctcatgctct ctcttgtcaa 360

agaaattaat aaacagctca ttcgtaggct tgtcttgtgt tttctcccag catgcatgta 420

tatatactta gctagcttgt tcggtggcga cccactgcac ctactttaat ttctttagaa 480

tgctagctct tagaacgaag tgcctaaatc gaatgtctac tgcaaatcaa gttcatatgt 540

aggtcgtcat catcccatgc atatacattg gctcgaactt gctaagtcat catcccatgc 600

atatatatcg actgcccatt gctttttagc tggcaagcaa cctgtttttc atttgacaaa 660

agcgaacaca agtaactagc cacaccaaac ccactcagcc tagattagaa tctgcatgcc 720

tacggatcga gcagctgcag ctccatcgtc catcttcttt ctctttgacg acgcaactag 780

ctatagcagc tagccgacag tgtaatgcat gcattatatt attggtcaat aacgacagga 840

gaagtagaag agtaaattgg tcacctgatg cctacccacg aactaattgg tgatcaacac 900

caaatctctc tcaccacatc agcgacattc catctgtcta gctagcaata taatttcccc 960

tgatgagaaa atggaaacta aagcatgtcc actcccaagc ctttcagtac ctatagaata 1020

agagagaatg tgcattcaac ttttcctttt tattttggtc tagctaggtt ggcatcatcc 1080

aacacacaca ttgaaaaaat gtcgcatatc cctttcgagt ttcaacaatt ctagtactat 1140

accatcagtg cacgcaaaca tgtagctacc attctggttc ccaaaagcaa ctttgagtca 1200

aactgagctg cctccttttc cggcacaaac atataacaca ttaacagctc tcgaatttat 1260

gagatgcctt ctttgtttgt taacgctgtt gttcctagga agaagatgat ggtatttatg 1320

aaaatgacac agaatatctg gtatccctcc tcgacttctc gatcactgat cgagttctcc 1380

aacacatccg cttgacttgg ttaattaacc accgtcttaa ctcggccaac acggtctatt 1440

tcttgatgta tttttgcact tgtcgatgtc cttagatgtc acccaccacg gttattcctt 1500

cggcctcact aatccctgac aatccattgg cacggacccg tttgaccttc atcttcactg 1560

tggaccaccg cttctacact ccacacaccc atgcaccaca agccaagaga tataaaatgt 1620

t 1621

<210> 4435
<211> 1407
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16534_G1, chr1:91778759..91780165, Cluster 27

<400> 4435
tcgcaaagat caactaagag ttgatgcatc cttgaagttc acattggtat acaagtttat 60

gttcagtacc ttgacattcg taccaacatg ctcagcgacc ccatcatctg caatgtatgg 120

ctcgtcctag acctttttggg aatgtccgca acatacgatc aggatcacta agattcaacc 180

accatcacat caactttgca tccctcagat ctcatgacac cgactcgagt ttgcctccag 240

tattgactca gactcagact caagatcgac ttacatccta ctttaaccct agccccgact 300

cagactcgaa cgtggactca aactcagact caaatgtgga ctcaaactct gactcgaact 360

tggactcagg ttggtagtag taggcaatgt cgccgcatgg agtaagatat tgtcatcaag 420

aatccgcggg aggcgctaag ggcaaaaaac gagtacaaca tgaagcagca agagtacttt 480

gttaattaca ccgctcatta aaatgtatta ttgtaagtgt gattttagaa taattagtat 540

ttcgtccatt tagcactttt attactaata agtgtattta caatcactac tgcagcagca 600

tgcccaaaca aacatcttgt catagtggca accaccacca ccatcaatat tcctgcaatt 660

ctatcctttg agaccttctg gagctgaggt tcaatgaatt tcctcaaatt cagtttagtc 720

tagtcaatgc aactcaattt agtaaattct agacatattt agtcaatcta actgaactta 780

gtaaattata gctttatttg tacaaattta gtgaatgaaa ctattttggt tctgttctag 840

cttaacatac tcaatcctat ttatttaatc tatttaaact tatgtattct ggggatcaaa 900

agtagatatg acaaatatat atatatcaaa cctctccaat agtggtagca ttatcttgag 960

atgaggttag tttattagat ctcaataact atatttattt cgttacttat aataatataa 1020

ctcatatttt ttcctctaat ggtggaattt gctctttatt acaggatgaa cagatgaaca 1080

ggctactgac tttatcaata atatattcac tctcggatgt gggaacacaa gtccaataac 1140

ccttagttcc tataaaattt gctttttta tcagacttgc tttgttgttg tatttatgaa 1200

tgagattggt cattttaatg tgatggttga atgtgatgtt gaatagatga tatgtgtata 1260

cttgattatt tgaatgtgat agattaatga tattcgatgg atattcaatg atataaatat 1320

atacgtgatg ttgaatggta agatgatatg taatttgtat atggatatgc aaggaaatac 1380

aggagaattc tggaccctgg gtatgac 1407

<210> 4436
<211> 1556
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16718_G1, chr1:92808705..92810260, Cluster 27

<400> 4436
cggttagtct tccgtcatca gctcttcagt ccaagcctct cgaatgtcct tccttcactg 60

ttcccaattt atcggcacaa tttgaccccg cttaatttct ctatagtcat caaccacctt 120

agtactctac acctgtacac caagtcacca acacaaacgg agagacatgt tgctaacatg 180

ttcacgttag tgttagtctc agactcaacc aaagcctgat tatctcctga caatcattta 240

ttactggtcc acatatatta gcacataatt aatcatgtgt ttgcactata tactaaaggt 300

tatatttcct ggaccatgta tgaagacaga agacgcacag ttccgctgtc taataattgg 360

atccagacaa caagagctcc aagagtggat catgttttaa tttggttggt caggtgcggg 420

caatccagtt cagcctgcca gtgccagagt ggattgtatt ggggctgcgc caacgtcaag 480

tggaccgctc gccctgcttg agccagacat gcatgggagg caacgaccac tatagacgat 540

gatcatgagc atatattgag cgacctagct agttcatctc tattcatcag atgaaataag 600

ggtagatcca ggatcacttt ctttctcttt tttgcagtgc acattaattg ttggtcccca 660

caggccgcaa caagtcctat gtactatgtg caatactaag cttagttcat atatctactg 720

aaagtttatt tgtacttaag atatatgcaa gcttaatgct attagactaa caagtccatg 780

aacacatgct cctgcatggt ctagtcagtt aagagaggta agtgctagaa attaagggat 840

aaacttagag cccattgtta ataatgaaaa ttgcttacgt tttccctcat tactgcttta 900

tcacgcatgc taaatgattt tctaaactga acccttctga caaaggaaaa tataggtgaa 960

ctccttgctg caacatttgc agttacacta gctatacaga aatgaggagt ccatgttgcg 1020

acgactgacg gcaagctaga aagctacacc tgccctaaat taaaaaaaag gtaaaactaa 1080

gacagatgtg ctacgtgcca acaaagtaaa ctttcatttg cttcgtgccc gaccgaattc 1140

aacttccgaa acgtcatacg aattattaat tattgcaagt gtatataaac atgtaatcat 1200

gcattttcga gttcattgac cgcggcaacc acctcttgga gctcgccgtg gggtgtttgc 1260

atcttcgagt ttccctcagg ggtgccatgc gtcttcgagt ttactcgggc tcccaggttg 1320

aagcaaaaat tttcaaattt tttgactctt ttgtcagcca ttatatcgat cggttgtcgc 1380

attttcgagt tttccactca gaaatcagaa tgacgatttg acctgggcag cacttggatt 1440

ctactcaccg cttaatgtac actgctagtg ggtgatagca tacttactgc tgctctagac 1500

tacttggacc ctgtttttc attcgaagat tatataatcc agacatccag cttata 1556

<210> 4437
<211> 1465
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176374_G1, chr5:22634582..22636046, Cluster 27

<400> 4437
tttattgtca actgtttctt agctcgatgg cggcgcacga cacatcttca tccttttctc 60

aacatatatc atgtaaatag acgaagtaca actataaagt tgagttaata tccagtatag 120

gatattaaat catacaatat agtttattta atacgattct tagaatttat ttaattattt 180

atacgggcta agcccacaac atatctaaaa gaattatcga gtattaggca aactgatgag 240

gcaacacata atatatttgt ggagtgcaga tacactaagg ccttttcgtt tatctcgaat 300

tgaggctatg aactattcca gctaatcaat attatattaa tacaaataaa aatatcattc 360

ccgctggaac ggtcctagag taaatgaacg ataaaaatat catttccgct ggaacggtcc 420

tagagtaaac gaacgagccc attgaatgca tcagcggagt ttacaccatg agagctggtc 480

catgagcatc atggtgcaag aactgtggat aaacatcatg tcagtgtaag atgcaccacg 540

gaaaacgatc aaaattctaa ctctcctcat attttggaga tttggaggag agaaatagta 600

tgaaacacag agcttttaga cagcaagatt tctcagcaat atttcctcac gaatacaatt 660

aaaaatgaat cctcggcgtg aattgcagca ggcgccaaat taatagctaa gctagcgata 720

ctttcgctcc ctatttttct agacggattg taaactactc tctaaatagg caggagctcg 780

tgccggttcg ttaaaaagaa gacgtttaat tagtacgtgc gtttggacac gcaacaaaaa 840

attcagagta atcagagacg gcatcgatgg ccagagagag cccaaagcgc tagcgttttc 900

tccggctctt aaattatctt ttgattaccc cgactggatg acagcgaccg atagatggcc 960

agcatccatg aaatcagtgt gcacagccca aaccctgaat ctgaagcaag caagcaagca 1020

agccgttttc acggccggtt ctagctaaac atcaagtccg tttctggtgg ctgagatgaa 1080

ccagatctag ctagctccct gctgccttgc tgcagcaacg tcagcacccc gtaagaaact 1140

ggatgtagct acgtcatgca tgggcttcat tcgcgaggca tggctgccca attatggaca 1200

gtgaatttcg gggttggtag gtagcccttc atatagactt ggaaacgctt gacgatgcgt 1260

ctagcttttg tatgtttggt cgaccgaacc accatggtgc atgtcagtag aacggaagtg 1320

ccagtatctt ttgtgcgagt gtgacactgt gacagcagaa agtgtatctc ggaatgcttc 1380

gggcaaagaa atcgatcttg aagtgtagta caacatgcat ggatgctatg gcacaccgga 1440

caacactgtt gagtacgtag ttggc 1465

<210> 4438
<211> 2762
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_182110_G1, chr5:55196583..55199344, Cluster 27

<400> 4438
tatcttattc atttttctc actagcagaa tttaatggcc aaccatcttc gttgggctaa 60

tttgctattg ttgctactag aagaagccaa gctatggtgt gtgattgcat gtgatgggtc 120

agaagtatgt gaccaatttt tgtgccaaac attggtgaca tttgtcataa acacctaaac 180

aagacacatc aagtacctat gaatgccatt atacatgaac aatacacatt gctatcttag 240

tgctaccatt gtcattaaac cttaggctat tgcataatcg acgaagctga gagagtccac 300

ctttattgct ctagatacat catagttgcc aaggatgaga taacaaaatc catcattgta 360

gcatgaccat gaccttctct acttcccacc tatacagttg tttcacatgg atgagcatgc 420

atgttgatgc atcataaaga tgtgtgatgc acattgaact ctcattattg tcacacaaca 480

cccactatcc cctaagtttt gtccttgttc tgaactcgta ttcactcaaa cttgatttag 540

tcaacaatga taagataggt tcatgtttag gtctctaaac ctaacttgtc taaaggtgat 600

aaacccatga taggctactc caccattcat tgtaactcat atgccatctt tacacccttc 660

acatacctct cttcatatct cccattgagc tcacaaaccc atcaatggca tcccatggtt 720

ggctatgtac ataccataac ttcacgtcca tagaccctag aacaagacat gtctagagtc 780

cacttccata accctcaaag cgagattatc acacttttta tcggtgcaaa taccatacta 840

gatggtgctt actatttaaa accctacttc tatgatttga taatatccta tatggttagg 900

taaaattctc atttgtcgtt gtccctgacc cacacaatct ttggcaactt ttgtctctag 960

tcttcatgca tccatagttc tggaaaagca ctagacatcg tggtcctaca atcctccttg 1020

caaccctcgc atgttcaaac ttacaacgac cacacatgag gatgatacat gcaattatgc 1080

atccaagcca tatattctat atatttttat ttgattattt caagaaaata acggcacata 1140

atttatgacc atcatgttat ttatatttgg tttctatatt gtgtcatgac aatacttgac 1200

atccaaagag ataaatatta attttaggaa aacatttact gttataatta accacatgat 1260

tctagtaata ttgattttac aaggaataac cctgtccttg ttgaactata atatggtgga 1320

ataagccatc aggaattgaa actctcagtt tatcttactt tctaatagat gttggagagt 1380

gtaaccaaga acttttcttt atatttttc atagacaaag aaaagagatc acgataatgg 1440

atatggttgc acatatgacc ttgactgaga tatataatac atattctaga aatgcagtgt 1500

ccttaagttc ttatgtttga agtttgaaca gttatactaa cacatattag tttgaaggat 1560

gtatcaacca tattatcatt attatataac aatataactt tatttttcat ataaatataa 1620

tttatttaga agcatgtcta aaacataatt gtttaaatta attttatgtt atgatccacc 1680

tcttagtcta agtttgtttt tgttgcccat ttttgtctac aatttgattt caaatgacat 1740

ggtgcattaa catcaagcgt gccatcgttt tcatgatgta catccaagtt ctatgcaaag 1800

gttagtagct aatggtccaa cccaaggaat cacttagctc cccacattaa aatttgtatg 1860

tgcattaatt ctatttgtgg gttttgataa atagatgacg atgcatataa aaagctaaca 1920

acattttatg agatttgcag tttcatacaa ctgtgaaaag tgaacatgaa atgcaagacc 1980

ccttgattct aacttcgtcg aagataccat ggttcaactt aaaagagagt ttcattgtaa 2040

ttctttttt atattttctt aagcatacga tgtcgtacta ttgagatggc taaaaaatca 2100

ttacttgtag gtacaaaaat gtgctcaata agttttactc atcaacttct aacactttca 2160

aaactactcc aaaaagattc cctaaaaatc atccattgat agaaaaattc attgttattt 2220

tattcatata tttcttcctc tagaaaattc cccttcccct ttgaaatttc tagtccgtcc 2280

tcttcaaaaa atttggacag actctcaaat ttctaaacat ggtcctctag tgaagtttat 2340

tatgcacctc ggaaattccc cttccccttc agaatttttg atccatcctt tttggaattt 2400

ctaggcaggc tatcaaattt ctgaacgctg cttcactcta aacaccttcc cgtcaccgaa 2460

aattttgaag gggtgcttcc tagtcaacct ttgtgtacat tatcatgctt gctctttcct 2520

ctttccaccc aaaaaattct aagcctcact ggttagaatt tccaaggggg gtcaggtcat 2580

gttgcatggc aacaactctg tagctgagtt agagtattta tttcttttgc tctcttgcct 2640

ttttctctct ttataccgtt ttaatgcact caactaattt gagacaaaag aaagcactct 2700

cttttgctcc ctctcactct tgcatagatc ctggaccgag ttctttgttc aatcctggct 2760

tt 2762

<210> 4439
<211> 1999
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_185183_G1, chr5:78395457..78397455, Cluster 27

<400> 4439
ataggtagag gaggatcatc gagccacttt cgtgattgat gttgactctg gtcattgatt 60

gtaaggggct ataacgccat ctccatagga gattagcaaa gactaactct agtaatatca 120

tggcttgtta tactatctca ttagtgtgat tcttatgatg cctatattgt gggcttggct 180

tgttacaccg attaatgcgt gaatcacctt gtttggactc accgtataga agatataggt 240

tgtcacccaa gaaagtgaac cttagggata aatattgtgt cttctcttgc cccatgtggt 300

ttgaactcca aactatcatt gtaattataa acacttgtta ctagttcatc tacttattat 360

gtaatatttg ttcctctagt ttattaaata gcttgtcatt gtcacatata tatttcacag 420

gttattagtg tctttaggaa aatagtttag aacaaaacta taataggtaa ccgctttgac 480

attttcatac ttaataactc tagttaccat ttgtaagttt tctacaatag ttttaatgag 540

ttattcaccc cctacccagc tatgcctttt tcacttactg catgaccatt aattatgtat 600

caattatcat ggcaaggtta atacaagcag acatacttag ataagttagt tgtgagttac 660

acttgtggat cttagttgac gtagctagga ttacaagaca taattaagga atgaatacat 720

gacttagtcg gcacatacaa taatggtata taacctagtc agccataaaa aaagtgtaga 780

cacttttaag tgttaccaca aaagcaacac tgacctcgat gacagtgcat caaggtctat 840

cgaagaagtt ggttcgtgca tgagaatgtt gcatcctaag taccataata gcaaaagagt 900

gtgtccaaga tatattataa ttctagtgat aactactcta cttctgacat ggggcaacct 960

tgggtatcga ttagagttgc caagaagaac aagtgtgcca gattgaaact atatctagcc 1020

atcacaagag tccttctagc tataactgac aactacttgg ccttggacta aagcctataa 1080

catgattttt ttctagttgc aagataaggt ttcaactctt ccaactaagt ctgggcccaa 1140

acatctcaaa agctgacata ttcaaagcat aagacaaagt tttcaaataa agataacact 1200

agtggaagtc ttctacttgt gagaggatat ttatagccca acatccgtgg ataaggacaa 1260

tgttaacatg ttgcaagaag gcagttagtg tgtgcttgct tttgcaacgc actcaatact 1320

gaagctaaat catcttgaca aaagtaacac ataaaacaat acaagattcc ctatactatt 1380

tgcacatgtt tgtagaaatc aacaaaccac ccactgataa gtagtcctta accattgcca 1440

ttggtggtta cttttcacca cccttgagga tgtttaagac tctaaaaatc gatccctagt 1500

tgggtactcg cgttttaggc tttgtggcta tggaatatat gcttagtgaa agatttttaa 1560

atccttcaga agattgcaag aatgatttcc aatcttttta tgttaaatta cacaggggtc 1620

agggctacac gtaatggtgt gatttgcaag aaagcacaca ccattagaag taaaacttta 1680

agagcatttt atggcttatc ttaagaaggt aatcagacac cacttcactc aatttcgtaa 1740

tgatctagag attcaaatag actttagagt tcaatcacga tgagcttggg ggtttaatgg 1800

accaaaatac taagggttcc atataagccc aacttcccga caatgggatt gataaatcat 1860

atactgcgag aaagacacat accaatatat ggtcttcaag gatgtaatct ggcttagttg 1920

gataaataaa atgctatctt tgtaatagga ttagaactct tatatcttaa ctaactacga 1980

ctagatcaaa cacttgtcc 1999

<210> 4440
<211> 1453
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_197620_G1, chr5:160470784..160472236, Cluster 27

<400> 4440
gtgacctcat gactcaatgt agcttcacaa aacaaagaat cagaattttc aggcatcaaa 60

gtgagaaata tatacttaag agcatgctta aagtaaagag cttaagttaa acagcgttgc 120

catttgaata atttgtaatc ccactagttg atatcctgca ttacaaccag atgttcaggt 180

tcaaaaatat aacattataa tgagatttca aaaaacgatc agatacatac ttgtaggaac 240

tcaaagttta aatgcagtta ggaacactag tccacatttg agagcaacca tgagggatat 300

aatttccaat aagctaatca atgtgagcct aattgatgtc ctgcaaatat ggccacatgc 360

tggtgaatgc aattgattga tatttgccta acttaccatg cacaagctga acaaaaaaag 420

atccagtagc taatcaagaa agaggtagta gccacaagtg acaactagtt gaataatcag 480

tcagcaatca gcataagctt cagttcattg tcgcagaatt gtctgaacat caagacaaat 540

ttgcactcat tcaccatttt taggtaaaaa aaatgggaag gaaaaacatt caatatgaca 600

ccaacaccaa gttcagacta cggtgctgca aaatatcatt ctacaaagta caaactacgc 660

ttcaggataa taaatacaaa tacataacaa tatacattcg ttgtcctata taccaggagg 720

ctgtttaatt aactacaaac aagcttcatg aaacccataa gaaattctcc aaatttaaca 780

tgaatatcaa gaaaattagc catgtggtca ggaccctact catatatagc aagcatcatc 840

cttatattct agtgtggaca tcacattttc ttgcatattt ggaaaaaaac aatccctagt 900

aaggaacagg cgtggctata acacaccagt gaggacacgc cggtgacgtc ggctgaccag 960

agaactccaa ggatcttacc acttcccaac gcttggcagt cctagccgcc tccggcttct 1020

tgctctccag atctcggcag ggacgcacgt cgtcctctat cgcctcctcc tccttccacg 1080

attaaaaaaa agacaaacca tgagcacaat tagcaatcaa gtagatggga agagagagaa 1140

tggcctagcg gaaactctcg gataggccca gacgctgctg tcatcgccaa cgatggaggc 1200

ggcggcggga agctggccat gcggcaccaa gatctttctt cgtgctcttc ctcttgcaac 1260

tgcctgtgct ccagcctagg tgtaccattg ctgccgtgcc gagtctaccg tctacccatg 1320

caagcgcggc ccgtttggct atagaggcga catgtacgga gggggggggg gggggggtg 1380

cggagaagat tgtgagcgtt tgcattttgc cgatgcctag tcatagggcc cattcgttat 1440

ttaaaattaa tat 1453

<210> 4441
<211> 1523
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202179_G1, chr5:186492481..186494003, Cluster 27

<400> 4441
attaccatac taatcttgca taaatatcac cacaaagtgc tctccagaag cacaagagag 60

ttctcatttg aaatctctaa aactgtagat taatctaaac ttaactaata tattgcatta 120

tctcttcaga tcctatctcc agaaaaagaa acgaaactga ttattattta taaggccaaa 180

aagatcttat ttggtccaga gctaattcta ctcgctagac cgcttgtccc ttcgcgggcc 240

gtcagcccta gcctgggcca aggccccacg cgcctggcca tcccaccgca ggccgcgtcg 300

ggccgctgcc cgccgcacgc ccactaggcc gtcccagccg gtgtgagcgc cggcgccttg 360

ctggcttcgg ccaccagccg gcacccagcc tggtggaccg gcctcctcac gccagtggtt 420

gggccactcg agccgtgcga ccaaccaagc aggccgctta gctgctagct gggccggtcg 480

gctggcagca ccgttttctt cttcttcttc ttctgctttt ttttttcttt tccttttctt 540

gcactttcat gaaagtattc aacgtatgca accatcaaat gccccaatat ttggtccgaa 600

caccccgctc aaaaatctct ctaaatttat ttcagatacc aatttttta cctcagtccc 660

cacccaaatt tagtatggaa aactagttta cattattgcc aaccatgttt catctcaact 720

aatccataca aacgagtacg agcacaagtt cacgccttga ctcaaggtta atccttgcaa 780

taccactcac acggatgtgt tactttagta tcaaaccact tgtttgatcg catgcacatc 840

ttacatcaat atcaaaacca catatataat cacacatgta taacgaccaa aaatatatta 900

atcaatacca agccatgtca acctaacatg atgtttcatc acacacgatc acaatctctc 960

catgatgaaa gcattgacaa caccacacaa acattgtagt tgacattcat ttttcaaata 1020

aaaatacttg agattaaaat ccaaaagcaa agggggaaag atcatcaaca aaacatccaa 1080

aaaaaatctc cccctaaaat agtaaatgtg taatgttgtg cgatgtatgt aaaaaattgt 1140

ccatctttga cataaattca ttaagaatac aaaagagtta aacttccttc ttttcacaca 1200

ctttttaata atgatgagca tcataattaa tctacatatg taacaaatac tcatccaaat 1260

cattctaaaa tatattgtca ctttcacatc catacacaca tgatttcatc aaagtataac 1320

tgaaatctaa atgcaactag caatttattt aatacacaat atttttttct caactaactt 1380

aaaacttgca tatattaaat attttatata ccttatgtcc ttgaaaactg attgatttca 1440

tttttatatg tgtatgcgcg catatgtgtt aaatgtccac caatataaag ttgtaaaggt 1500

atataataaa aagcctctag aca 1523

<210> 4442
<211> 2790
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203810_G1, chr5:195471239..195474028, Cluster 27

<400> 4442
tgatctgctt catctttgct aaatgttcta ttactatggt gatttttta aaattgcttt 60

caatggttgt tgcgttatcg ttgttggcgt ggcttattta atgaaaggaa gagaaaggtc 120

tttattccaa accaattgat ctaggtagat tatgataatt atttattggg gctcaagtgt 180

ttgtttcttc tggctcgttt ggtatgacct ctgtttgatt tgcaaatttt ttgcatgact 240

tcgtagagac ggtttttgca ttggtggctc tctagcgaag tgtgatatga tatacattgt 300

cccatgcccc tgctatgtct cctcttggaa agcgagctgc tccaatggcc caccatgcga 360

agcccccgtc gtggcaacct ttgtaggatc tacgcggacc cttgccctcg cacgtcgcca 420

ccaccaccat gccctcaccc ttgcacgcgc gccacagacc cacagctgtc gacgatggtg 480

atgaagctga cggcgttatc gtggaggcct caagtgaatg gacaacagag aggttggggt 540

tggtgtggtc ggaagaacat ctaactacac tactttaatc atccaccaca actacgctac 600

taaaaacatt atccttctaa taaaaattta ctttttatc cttaattacg taaaaataaa 660

aaaaggaact ttttttctgg tgccaccgat ttagtaggcc tctcagtgct tctccccctc 720

ttggtgtctc tatttttta tccatccaat cgttcctcgc caaatgtcca aatttcttcg 780

accacagtat aatttctcat ccaacaatat tcatccgggt gaaagatcca atgaactact 840

accggggtaa ttagcataag gtagctctat gcatggatta aacaacacga tgagcgagtg 900

aaagagggga tgtaatcagc tttcagaacc attcattact tgtgaggctt cgttttgttg 960

tgtcggtagg caagcaccgc acggcataca aagtattgag ctcttcgacc cagctagttt 1020

tagtttgttg ggttcttcga aaggtttaac gttttgaccg aaaagttcag atgatttggc 1080

gtgaagggac aagcacatac taaaggcgca acatgaaagg gcgctcgatc tgagtgtttg 1140

actatatact tacaattctt tgacccaaac agctaactaa actagaaaat ggttgaagta 1200

tacttgtagc tgatacaaac cttagctaaa atgtgcaagt tgcaagacaa gtaaacaggc 1260

ctcgacaatg tgcaactagt caaagaagat gacacaaggc gtcgtctctg aagtctgaat 1320

gcactgaaac tgttgacaag cttgcaactc tggagcctgc agtggttcaa gtgacagtgt 1380

gacacggcac acacgagcga agcgacccca ctgatccaaa tgtagacaaa tagacaactg 1440

actcctgtgg cgactgttgg attgctacca tatcgctcta tcaggatccg accgccctga 1500

gacatgccag catgtaccat caaaaggtga acatgccagt aggctagctg ctccatgcat 1560

gcactgatgc accaggctct agtggcaagt tgttgaatcc atgcttgctg tattattcgc 1620

tgtgctatcg ggtactgttg gcacttggca gcgccgaatt tgagactcca actgtcatca 1680

tataaagtag gtggaaacgg gggcgggggt tgggggggcg atagatcccc catttgacct 1740

tttgccctag agatacctcg tgccttggat tctttcacct attatgccat tagcagacca 1800

catacaccag tgcgatcagt cgaccaggca ttattatcaa ccaaatagct aggtccagta 1860

atgaaaccat tagcagggca acttcaggcg caatcgatgc acaattgcag acaccataga 1920

ttcaggtcat cgcccaccat gcattccgtc ctgtagcaag catctcttac aagatactgc 1980

tgtctcactc tcatttgtcc ttttctgaaa tcttggtttc tgacaaagtg agcagtgcaa 2040

gttgcgagct gcatatcgct gaagcctgaa gggataggtt ggcttgatca cacggatgat 2100

tcttcatggc taggctggtc gagtggttgg tcaacactca actcaacctc ggactcctcg 2160

ttcgttcgtc tcacacccgt gaagcaacca gtgcaacttg ggagcgagtt gtcccagcag 2220

tagtttgcac ataatgaagt cattcacttt gaagaagttt caagcttggt tgctctttga 2280

gtaagttgtt atctaagtgg agttctttta ctgaatttag ttttccgttt gacccctaca 2340

aaaaaaaagc agacgccttt ctttctcttt agcactgcgc tgtgtgccgg gtttgcaagc 2400

tgtggcagta acaaattctt cacatttctg ctcgatttgc aaaccgtgac agtcccaaac 2460

tcttcacatt tctgcccaat cagcgagcgt gcaaaacgct gtttagccaa aatcttttgg 2520

ggcttgtttg ggctggaatc ctggcacagc gatcttaata cggtaatgaa acaatatggg 2580

cttcaaaagg cggcccaata aatgtcatgc agcaacaagg cataataatg ccacaatggc 2640

tggataagtt aactggttac tgcaaaactt gctgaaactt actagcagta tcggtagatc 2700

ttagaatcat ttgtcggcgt gctagcctcc ataaagtatc cacaaatgag ctgtatgcta 2760

ttggacactt cgtgctgtcc aacagcatgc 2790

<210> 4443
<211> 1494
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203853_G1, chr5:195664180..195665673, Cluster 27

<400> 4443
atgtgtgttg tcggcatgat ctagatgagt ggcgagccac aagaagcttg tgtgagagag 60

cagagagaaa aaggagagat aggttgcttg gagggcattt ttatcatttg ttaatttgtt 120

ggttgctatt agccgtgtag ctggtttttg ctgactagat aactaacgag tagttgggac 180

tttggataaa actttagtcc aaccgttagc tattctgttt agagtaattg acaaatttta 240

agtagttcca ataacactta cttataatag ataggttagg aagtcaacac atagagtata 300

aatagaaaca ctatatataa agtcaaatca taacattgcc ggtcgtagca tgcgatctac 360

aactccgaca acggttgacg gcaaataaat tagaagaagg aaatgcaaaa acaaaaacaa 420

aaagtcaaac tgttctagaa gggattggaa ggccttaagt tgaatctact ctttttagag 480

tctatatcac tttgacaact catgacgaag acggcagccc actagctaac gttatccgga 540

ccataaaaat cagattcttc ttgagtttct tagctgaggt tccttgctta attaaattat 600

cataatattg tttccgcaaa gatccaattc aaaagaaaaa tagacgtgcc gctcagtgtt 660

gttgaaatag cgacgagagc tgttaaaaca agaacattag catcagcgct gcgttgttga 720

agtagccggg ccgcatcgcg ccgagccttc atgattagct gattcgtcga gtgcagctct 780

agggtttatt ttcttagcaa tgtccatgga cttgaaaata gtgtacgtct agttttatcc 840

tcatgaaaac ccatcgttcg tttccctctt tttatggatt tagtatcttg ttgttatctt 900

tgtctgtgtg acatctcttt taatgagtgt gaaactcaat aagacctcaa ctaaaaatgg 960

ccgtagcgta gacattggag cagcctaaag cgcgaggtgt aattgggccg aaaaattacc 1020

aattctaggt ccaagagctg tctttgtatc agccaatacg cagtacgctg agcaccaagt 1080

agtcgcggcc caagctggca gcggaccccc gaacttccag cagtggaggc tttcagccca 1140

caacgtgttg gtctgctctt ccgttttttt ttttctttcc caccttatca aattgttgaa 1200

agaaaacttt gtttctaccg gcggttcaag aaagcagaca caactacaaa ataaagcgag 1260

tgtccatgtc gacaaatcag tagtgtagaa caaccatcag tataaatctc tacacctata 1320

aacacaggtt ttctagtttc tatcggcgtc ccttttgaga aaaaagcatt atacttttct 1380

gatttaactt gtgatccact gtcgttatgc gtagtcaagt gacatgggct taccatccta 1440

aataaatgag ttgtgagaaa actctgaggc ccaacacgac acaaacctgc acgc 1494

<210> 4444
<211> 3164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204260_G1, chr5:197877708..197880871, Cluster 27

<400> 4444
gaaccatcag atcagatgca gcacaacaca aacatccagc agtaagggtt agaaaagggt 60

agcatcctac ctgatagagt tgtgtgtgtt cttacaataa acggatgact gacatgcatg 120

gtgcttccta gttcctacag ttgatagagc tctgcatttt tttctcttat ggcaaaccga 180

ggtcatgaca aaagatttaa gtgtctaaga catttataat ggtagaaaca cttagtcgcc 240

cgaagacatc tactagtcgc taggtccata aggtctctgg cctcacataa tatgaatggt 300

cgagccctga gccagggcca ccggccctag tgaggcaaag ggacttttgg tacaactaag 360

tataaagttg tatgtgataa aaaaagatgt ggttggtccc actaaaaggc gttacaacct 420

taaaactggg atgccgtgtt tgaggcctat ggacctattc acctataatg tcgttacttt 480

ggataagact tctatatgac acattaacca tgtggtgtgc aatgttatag cttcataggc 540

gcacttttac catggcttag gcattagggt actccatacc actattatgt gagtgcatcg 600

acgctatagc cacgtatttg catgtcaatg taccataaag tattattaag aattgattgc 660

tacactagtt accaactata ttttacccga catcatagac tctagtgtcc atagaagcga 720

cataacatac ctgccactat ggtaggtata actgtaacta aagaatgata tctctcacac 780

tgtgtcataa tcgaaggcat tgccccatat atgatttcaa gactaggata agatttgtta 840

ggtcttaact gatcgaaccc atggtccaac caatatgtga acctctctcc tcccttgctt 900

tataaaagtg agagtagagt aaagtttaga ggattcattc gaaaacatag gaacataatt 960

ctcacacatg acatcaaagg gcaaacatag ggtgaaatag ggatagatag actagaactc 1020

acaccagaac caagtgcaaa gggggtcgag gaattcatga tgctcagttg gttcttgaaa 1080

ttgtaatctt cttgaccttt atgttcatca aatgatgagt ggcaagcgga tgtagggtat 1140

tacacacatt acaacatgaa catctctaaa ctatatatgt gctagttcat agccgtatct 1200

aggttcaaca tacattacct acgcccccac tatcaccaac atctctcttc ttttttatac 1260

tttatgtatc ttcctagtgt cataccccga tgatatttgt cactccaagt aggtaagtgt 1320

gcattttctc ttgaaattat tgtgttgtgc tatgcaagac ggctatggag agaccaacat 1380

gttaagtagt taattttgac acctattcca acaacttgga ccgcgagtca cgccataggc 1440

aacatcaaaa catcatgttg aagtattatc aagtatagat tgctacacta gttgccaatt 1500

atatttcccg acatcataaa ctctagcgtc catataagcg acataacata cttcaactac 1560

ggtaggtatg gctgcaatta aagaaggata tccctaacaa tgggacagaa tcgaaggcat 1620

ggccctatat atgattttaa gactaggata agatttgtta ggtcttaact gatcagaccc 1680

atggtccaac caatatgtga acctctctcc accattgctt tataaaagtg agagcaaagt 1740

aaagattagg gggattcatt cggaaacata agaacaaaat cctcacacac gacatcaaag 1800

acaagacatt agggtactat aactcgcaca aaaaccgaag tgcaaagggg tcgaggaggt 1860

catgatgctc agttggttct tgaaattgta atcttctaga cctttatgtt catcaaatga 1920

ctagtggcaa tcgaatgtat gatattacac acactacaac atgaactcta taaattatat 1980

atgtgttgat ctatagtcgt atctcggttc aacataccgc ttgcttacac ccccactatc 2040

tctaatatat atcttctttt tggtacttta tgtatcctag tgtcataccg tgatgacatt 2100

tgtcacgcca ggtaggggaa gggtgttttt tctcttcaaa atattttgtt gcactatgca 2160

atacgactat ggtgagatcg acacgttgag tagttaattt tgacacatat tccaacaact 2220

tggaccgtga gccacaccat aggcagcatc ataatatcat gttgtcctct acactgcaac 2280

ttctagttaa caaactagtt tcagtgaggc tgcatggcat ggttcccgta ggcctggctt 2340

tgggtcgtgc catgactcgg gtgtgcaatg ccctagggga attgcactag atgctctatg 2400

aaccttgaga ggcatgacct cttaatacga cgactgggca aggcgacctt caagcatgaa 2460

ggttcctctc atcactagaa gtatggaaaa acatgccttt cattccctcc aaatggttga 2520

tcgatattct aagaagtgtg gtctctctgt aaatatgttc ttcttagaat ataaataaag 2580

ttgtgcaaaa gtatgaaata gaaaatatgg acaagtgaag gtataagtgt tgaaaaaatg 2640

acatgaaggc tcatggaaaa atattaagaa atgatacaca tggctaaaaa acaataagtt 2700

agagaaggag atcataacaa cccacctcta aaaatcacat ttttagaacc ggttttctga 2760

agagagacat ctttataaat aggattattt aaagagacga ccattttaag agggccatgt 2820

ttgaaatgcc cattattgtg tgagtctgta accacaacaa ttattagtat attatttgag 2880

gtggtattat agtggtctag cactcaaaat acaaaaagat gtttattcta gcttaggcat 2940

cttatcacta tgtcaagaaa tggtcctcat tttaaaatgc ttaattgagt ttttataggt 3000

catagaagag cactatcagt gatctaggat tttctaaaat tcatccctcc tttagggtga 3060

tttcacatgc cttgtaatac aaagggtgac aggagtgtag tatggagggt gactagagag 3120

tgagttcaag aagctccatc gtctggctag gaaactctag ggtt 3164

<210> 4445
<211> 1413

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206705_G1, chr5:211469481..211470893, Cluster 27

<400> 4445
gatgtagtcg tgttagttga gctcatcaac ctccttgacg gtctcgttct caacaatgag 60

agtggaatca caagtcaacc catcactaat agaagatggt gttgtgctac aagagggtta 120

gtggccatga cagcaatagc agcaaagaaa gattcatcaa gaatatcata aattactctt 180

atgttgctaa ttggaataga ctccttttga gaaagaaatg aggagtaagc ttcctttagc 240

ttctcatgag tatcaattaa agcctcataa gtagcaaaat gctcctcaaa tatttgctca 300

agaggcttgt gcctcttgtg caactccttg aaattcttct ctcttcttat tcaaatcaat 360

gagaataatt actcatcgat gcacatacac acttctaatc caaaaaaaaa caaaattgtt 420

tgtactaaaa acaatccaaa tcatagttgt ctagaacctt gaaaatagtt taaaaagttg 480

gatgatgaag tttaaccttg agcactaccc ctttcacaaa acatgtagta gcaaaatgca 540

gaggaaatgg attcctctaa gagagacaga gagaataaag agtgagagct gacatgtagc 600

atgtacgagg aggaagaaag ctgccaacgt gtgagtgaga actgataagg gaaggagcta 660

gcacacgacc tctatacccc cttatcacgt caacctgtct agcatgatag gcccattgcg 720

cctgagtcac tagtagggat tccagtggac catgccgatt gggtcaaagt ttgacatcgc 780

tgaggaggct tttgttgcca acatgtgtgg cacgatagag tgagattgtc acgcgagacg 840

catcgaagtg accaaaaaaa gttagatgtg caaaacattt tttagagtgg atcattttaa 900

aatattgatt aaaaggaact aaaaatgctt gaccagcgag aatccgagct tatctcgtta 960

ttatggaatc tagcatgatg tcttccattc gatcgtattg aattaaaaaa atataaatca 1020

tcattggatt atattttaat aaggcacaat cttgacaaat tggtaagact atcagaagta 1080

ttgcttttat gatagaaata agagaattag gcacctctta ttcttctgtt gttttttcta 1140

tggttatggg gctagttata catggctttg ggcctttctc aagctcatat tattttaaat 1200

ttgtttagga ctaagatttt agggggttta aaaaatatga aattgtttgt tcttggacaa 1260

caagtatttt ttagttgctc agctttgtag gaatggcttg ttttattttt taaaaaagaa 1320

acacttatat tatccactag ttaggttctc atatgatgtt gtggtatcca tatatcatat 1380

aggcagaaca tgtttaaatg agatagttgt caa 1413

<210> 4446
<211> 1436
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_206852_G1, chr5:212034300..212035735, Cluster 27

<400> 4446
tgcagcaaaa caagcccaag ttcattatat aagaatggca tgattattag gaacaaaagg 60

ttaagcatgt ttacacaagc caagttcatt atatgtactt aaaggataaa aaataatcat 120

aagtaaagga actaaagctc gtttaacaat agtatggtga aaacatagtg aacaccaagt 180

ggcatggtct ttatataaca aaaaagagtg cttaccaaca tgtaggcaca catataatac 240

aatacatgaa agtaaacatg catgtatgaa agtgtcacac agaaagaaca agtccatatc 300

acaaactccc cttgaatcta tcatacctgc tccccgcacc tttggcgtta gacgccaaaa 360

tctaagggtt tgtaggtggt gaagggacag atgtgttggt cattgagacg tttagagtga 420

gctagaacgc caattgactg aacactgaat gttgaggatc tctttagacc cgatagaatg 480

tggattcagt aattattata attttataat atttaattgt ctcatgtaac gagtttatga 540

gtgttcacac atacattata ttaatttagt gaattagttt gttagttgta tggactctta 600

tgagattaga tatttatcat atatatgtag ttagatccag aaattcttag aatagatatt 660

tgtagtgatg tttagttatt aactcaaggc tctcgagcgg ctccgactgc aactcgttgc 720

cggagccctc ccaaacgatg tctgaatgat agctccatct agagaggtgg agcaggtttt 780

gatattggga gacggggcca aagaaatata atctattttt gataaaagga atagtagatc 840

ttttttatc aacaagatag agaggggga aatgataaaa ggaatagtag atctattttt 900

gattgattag atgttggata ccttaatcag atgcgatcat ctcatatata gaggtgggta 960

gtcttatcta agaaataaat ttaaaacatg tttgaaaact tttcaattcc taaaaaacaa 1020

cttagaaaca aatcggcaac aaaaaaagca gaaaaagtcg attttgcagt atggtactag 1080

gaggccgtcc tagctggtcc agaaggtggc ttggtctatt ttgcactaaa aagtctgctt 1140

ggccaggttt taaggatgtc ctaaccggct tcagcgaccc gacgtaacca ggttaattag 1200

gggccgactt caaccaagaa tatagaatta tctttgcacc cttgagtatg tccaatatac 1260

aaggggaaat attgatgaca tagttaagct gaagcatcag ctgaatacaa acttaaaaga 1320

gggtagcata ctgtatagat cttcaaaaca agcagcattc atgttctgtt ttgcgagaaa 1380

tacaatcacc tgtgtggtct gtggataact ggataccggc ctggtcttgc aggtaa 1436

<210> 4447
<211> 1611
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207338_G1, chr5:214350502..214352112, Cluster 27

<400> 4447
catgcattgt tctgcacaag tcgaagctca agtgacctta cataaataaa aaaaccatgt 60

aactaaatta ttaagcgtga tcgcccagaa taaattagcc cttagcttgc tactatgatg 120

tttagaattg cttcgatatc accattatta ttaattacag cagatcacta acgagtcaaa 180

acattgcagc agaaccctaa ttatatatct gtatacctcg tgatgcatgt tgcagcaatc 240

cctacctagt gatatgttgg tagatcatcc aacgcgcgcg gcgcctggta atcatccacc 300

tcccggccgg cccccaaaat tccggccgat cgagatcgat tcggggagat ctccgaccga 360

tcaacgactg gtctctctct ctctgcaatt tcccacagct ttattgaact gccctcttgc 420

ttgcttggat caattgaaac tcgatcaggt ccacagcaca gcctgctgca tgcatgatgc 480

agttcaagaa agctgtggaa gatggcaggg agggccatta tgtctacgat attaactgat 540

ccggggtgtg ggtacggtgg tgtcctagca aatctggggg aagctagagg agaagagacg 600

atgggcggtt atttataggg ccgacgacga gaagatgaca cgaaagggaa ggagccgagg 660

agtcgccggc cgcccggaat ggttgaacgg acggtgttag tggtgcggtg agaaggaaga 720

ggtcattgtt tttgaaagga aaaaaaaacc gacgaaacgc ctgtttgtaa aggaaaattt 780

agtcaattaa ttttactgct tatttagaga gttccatccc acacaagact caattttcct 840

ctcctttaaa aactatttat ttatgttgaa acttgtatca taatcaaaat taaaacagtt 900

tgacccaatt tcacaagacg tcaatacctc atcgtgcatg ctatctactg gtacgtacta 960

tacggaggta gaagtagtac atatatgcgt aggcagctga caaactgact cgtcaacttt 1020

cttttggcac atcaagccta gccaggccac accaccagca gccagcaggt gcacctgggc 1080

agtgtcattc aatgatttaa gtcaccgtct cctccacggt ccgcctgcga aaagcaatag 1140

taccattctg atcgatgctt cctgtgcccg gtaaaagacg acgagaaaac taaaactctt 1200

cttcattatc attggagttt atttttgttt cccgatatgc ataagtaata tgacagggac 1260

acctttttaa ccaaacatac acagacgcgt gctaaattat attggttatg tataattaaa 1320

tttaaagcac acatgtagca gtatatataa gttttaaata catgtagcga cacatttaaa 1380

tttaaaatac acatatttat cttatatcat gtatatttaa tttttaaaat atgatgctat 1440

aatatttctt atgcatattt aaattatatg tgtgtgataa tttagaatgg gattaataag 1500

aatttgtggt ggctgcagtt ccagcgttga tgtgtccatg cacgcatttg gtatacgatg 1560

cacgatgggc gtatcagcag tgagcagcaa gagcttttgc cgggcctgtg t 1611

<210> 4448
<211> 1487
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226569_G1, chr6:117431952..117433438, Cluster 27

<400> 4448
cctggcaagg caagtggaca caaacatgtg tggaatgtca atccctaccg tttgatgaca 60

atcatagctt atgtttacct ataatcgata atttatgacc accatgcact ggcactgggt 120

gagggtatct agattcaaag aatctagctc ctcctgcatc tataaaaggt acaaagaccc 180

tctgttagag cacttctttc cacactaata gcattatgta ctcctattta gtaggcctct 240

ctgtttttcc tatggttttt gctactagct atgacctttg gtatcccatt agacatcaat 300

atatgcaagc atgcaaaata ttctccattg tatcctactt tgggaatata tgcatttcta 360

tgttatatac atccaaaatc ttctccacta tatcctccat agggaaggga agctcgaaag 420

tgttgaaacc attgaacacc acacacacat ctgcctctag ttttggaacc acctaactcc 480

taggtaaaca aacttggttc cttactaatg gccacctttg aacaaatggg gtcaagagca 540

gcgtcatcca tcaaagatgt tccaaatcta aacgattagc tttgttgacc acaaactctt 600

actaggaacc ttaatatatg ctaaatccgc ttcaaaacca gcgtaagtta caaatggaag 660

atcttcgata ccaaacatat ttgaaaatac aaccagaagt tctgaagttg tgcaaatcaa 720

gaaagaaaac atgcttcatc aaaaaacctt tgctatgctt gggctaaata gcaagactat 780

tcgcacacaa aaaactactg aaagccacga cccacatgtg tggtatttat aggtatcttt 840

ggtcaaaatc aattattaac ctttcgttta taatttatgt tgttcaaact tgaccattac 900

aagtttgaaa ttcatggttc gctccttaac gacctattcc aaagaccggg gactattttt 960

actttcctca atatcatgat ttactggaat tcaaccacca aagttgagct tcgcccgcga 1020

ggggttccta ttgaagaatt cacctcggga aaacgtagcc tccaatattt tggagattcg 1080

atcacattca ctctatgctc gaaagcttca ccaacaaaga ctccatatga gtcatcaaga 1140

cttacaaagc ttcattgaga aaggacaaat ctccataaag tcaagcgagg ccactagata 1200

gtcttcacta gaagtgaagc tttgctcaca aagactaatc actgacaagg tttcaagagc 1260

tgatatagat aataattgtt taaatttccc ttacatgggt aaataattgg aaccttatag 1320

tttagggtag ttaggactgc acgattattt acgaagcgag cacctctata gataccctct 1380

tatatatatt gtttatggat agacaatttt ttatctaatt gagttgatag ccatatttta 1440

catgtctgga ttgattcgtt agctaacatg tataaatctg tatcgtt 1487

<210> 4449
<211> 1409
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229002_G1, chr6:129885902..129887310, Cluster 27

<400> 4449
acaagaacga ggagaccaaa gggatggaga aagatgaata gtagtgtttt ggttattttt 60

acgaactata taattttatt tttaaatatt tttatattta aaatattttg ataattataa 120

aagtttatct acttaattat atatatctgg atgcattttc acaccgtatt ttttaaaaaa 180

ttttatttta aattatatat tatcaataaa acgacgtgtt ttattttaac taattgacta 240

taaaaaactg atgtaacttt gaggtagctg cactagatgg ctgatgatgg atagtgattg 300

gaactggcgg ctgttgtgta gtactagtag caaagttcct gtgatgttat tacttaccgt 360

acttgggcct tacgaaagct atactaattg gttgttttac tatctgaaag cgtgggatga 420

tgagtttgtc tttgatgcac ggttcaaaaa attggaccaa tgtttgtaat catacgtgga 480

ccaatcaatg tttgcctggt tgggactttt ccacttggga gaagcaggcc ggaaggaggc 540

gtgaaccagg aggagcttcc gagcgctacc ggcccatgga gggactatcc gccgccggtc 600

cgcccacggg ggctccacgg cggaatcggg gaacggaggg gggacatggt tttggtgtta 660

gaggatccga ctggtttgct ggtgcccgtc agccgtggtc cggacggctc gcacggggac 720

tgcccgagga cggcaggcga ttaggataag atcaagcgga gcgggggagc agagaatcac 780

cggcacatgg cagggacacc aaggacgggc cgggcagatc atcaaaaccg aaaaaatatt 840

gggccgcgtc actcatgtca cgtgaagtgt gtgatgtgat tgggtagggt tcaccgtaga 900

cccgtagtac tagtacacgt acccctcacc tacaaacgcc gagaaaatcc aaattaattg 960

gaaaacaagt atagtgtaca tctactagaa gacaaatgta attttagttc tcaattaaaa 1020

taaatgtttc tagtgtacga atttgcgccc atttgagagg tctattctat taaaattcca 1080

aagcaaagtg actgttagtt tttaatccca cattgctagt tcaaggtgta taaattaact 1140

tatatagcta cgctcattcc catgtctaaa tatataaagt aataggagag agaatatgac 1200

tagtctcaca cgcacgcgtg cgtgtgtccg cgtatttttc acgtgtaatg ccgtatgact 1260

tgtgatgtcg tgtcatatta ttttggctat ttgtatcttt cattgattta aatttttaac 1320

agttgagatt taatgcagat tttattgtca taatcatggt taattggcca gttgccaatt 1380

aatgcagatt tcactttcac cgatccttc 1409

<210> 4450
<211> 3047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229023_G1, chr6:129956069..129959115, Cluster 27

<400> 4450
ttgccctata tcaccgtaaa aagttaagag tagtcgcaca aattgtgttt tgtaaaaata 60

ttatccatca tctctctcgg tgcgtgaacg caaggatgag ggttttggag acttgctatt 120

gcaatcaatg gtgcatgtag gcacttagaa tggggagaca gtgacatcag accacggtga 180

gaagtggcaa agaccctagc tcgaactaca aaatgagaat gcgctctcac aagtagagct 240

aaatgttggc agaccattca taaaggtgtc cgccggcagt ccggcaccat cccacacggc 300

atacgatcaa tcaagcaagt gcatgtgagt tacctcagtt tctccaagaa tgacgaacta 360

cttccaaata tacttaagaa agcagaggaa acttttatat ttaaacatgg ctacctcaac 420

tttcttagaa aaaagattaa atgttctcac tctagtttct tttgctcaca tgaataaata 480

gatcttcgag atctcttcaa aaagaacttc agaatttcta gtaggccaaa tccatttgtt 540

ccaacacgta ctattgtgct cctagtaaca cagtgcaatt ttaaccttgg aagacaggtt 600

gaagactgaa gagtgctggc actgcagcgc gcgggaaacc ggcgatgcat gatgtaaata 660

aacgtgcaca aaacgaggaa accaatcaca cagtacaaat gtttttcaga agaaaaaaaa 720

tagtacttca attctagtgc atgcacggtc acacatggaa tcttagctag gtcgagtccg 780

agagctctcc aatctatcaa atcagaacct aatcattgct gagacgaaat gcatccctga 840

gtgcatgcat ggacggatgg atggttgcca ggctcgtggt gtcttcatct gtaggcagtc 900

aggtcgcctg gtctgatctg gtcttggctt gtgctgaccc atctgcgtga tggcctgaag 960

gccgggcaca cagatccaag tgccaccggc cgggtgatgt tcaggctata tggatgcaaa 1020

cttgcaatgt ggttggtcta agattttgtt atctaattgt tgtgtgtgta tcaccgttcg 1080

ccaagtaaaa tactagcgca tcgtccttac gcgtagtcta agatgttatc tgctcgtgcc 1140

aagttgtcct acataataac taataacata aaggtgcatt tgattgcggg actgatagag 1200

acaatcaggg acgtccctcc tctcttgtcc ctttaatttt gaggaataat tggaaagaac 1260

actggatagt ctgtcccaat ctacgattct gaaacaaaca aacttatttg aggaataatt 1320

gcgttctgtc attacaacca aactcatcct aattatacca tcactattca ctagttacta 1380

atataatagc gaaagaatta cgcaaggctg aattttgcca caagcaggta tgcagcgcac 1440

acattgcagc atgtgctgtc aaaacgacag gtgtacgaac agaacagtcc tgtcgacgcc 1500

acttgtgacg tcacaaacag tatcagcgag acagcaactg aaagcatgca gggcgccacc 1560

ggccacttgc tctctgcgga caggaggcgg cccaccaggt cgccctcacc tcacgtgctg 1620

ggctggggaa cggggatcca gtcgagggac ctgcctgcct ccagcctccg atggctcccc 1680

ccgcccgccc gcccgcgcct cccggctcca ggtcggaggc caagcccacg ggccacggcg 1740

cggcacatgc cccctgccgc gtcgcgttcc ggaggcagct cagatctccc tgtcgcccgc 1800

caacggggac gtgacgagac gagaccactc acacacctca cgagtaccaa aataagtctc 1860

tgtcttgtat tacgataaat caaacaatca taatattaat aaatatatat gatactaaac 1920

aaatattatt attatattaa tcgcatcata tattatcgtg ctatatacta ctcttcgtcc 1980

tgtaatataa gtcattttaa aattcttgga gagtcaaaaa attttcaaga agattctcca 2040

ttaaaaatat tttcatacat acctgtcata aatctttatg attatcgcta tacttgtgat 2100

caaactttga ctcttcaaaa atcttgtaat gatttatatt ttttgataga agaagtgcgt 2160

atttagagat ataagtgtta atactatttt taaaaactta atcaaagtta aatacgtgat 2220

gaggggagtg tacgagtgag agaaaccctt gtcacttctc gacgtcccgc ctcggcttaa 2280

taaatctgaa atcgtggagc tcgtttgctc gatgtcttgt gcatatcgaa tataatttgc 2340

atgctccagg agtccaggtg ttctttcgtt atctaggctg ggctggggta ttctcgttag 2400

gtttcgaaca cccgtagggc aaagccagta ccaaagcccc tacatatata tatatatata 2460

tatatatata ccccctatat tataatacta ataaataaat acgggaagac cattcacgag 2520

ctgatccata gggttttcag ttttagtaat ttgccctagc tagttcaatt gattcatgtt 2580

ctagtagtag aattgtatat atcggtacta cgtagtacgt acgtataaaa tcagggctca 2640

aatcatggat cggttcaaat cgtcggccac ttcgactgcc aactcacact cccgttcact 2700

gaggcctact ccgtatagta tatatagggc acttgttatt taggagatgt ttgacatgcc 2760

tttgcttcaa cctagaacag ctctgctata aaactttaag tgaagctgct ttgctccgaa 2820

ttctagttta cattccgcat aatcagtggt agtatgtcta ggcagtaaaa aaagatactc 2880

caaaaatgtg ttgcagctct caaaacttca tgaagtttgc aactctagcg taagagtttt 2940

tttgttggtt ctggccaact ccccttatga tttgtttgga tactctagta ttgaccctta 3000

tccacatgtg ttgagctgga ctggggtgta aattagttta agttaca 3047

<210> 4451
<211> 1407
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230461_G1, chr6:136432538..136433944, Cluster 27

<400> 4451
gaaagatagc caactagagc acctaattga aggcgatggt tgtaagtgtg ggcactttca 60

ttaatctagt gttaacaact ttatagtaga atgaccacaa caactctata accagtacaa 120

tgttgtacaa agtaagtact aggtaaagta aatgaagaga attatattaa gtaaagtaaa 180

gtcttacaaa aaataaaatg atataagagc tataccagac caaacgacta gtttcgggaa 240

cttgagcaaa gctcactcta cttctaactc ccacactaga ctattctact aaagtttaaa 300

gtggaactaa actaagaact ttgcttcttt gctttcacaa atgaagagag gttgtaacca 360

tatatatata ctactctaag tgggcccatg tatacatgtg atcgtccttg tgagccatat 420

aatcaaacca ctattgatta aagtgtgtag atgttcccac gatgtgcttt catgcatact 480

ttcattctca aggtggtgga gctcaaatag ggccagatag gtcgtgaacc aacctagggg 540

cttgacctac cctcctctat gacttgtggg ccctcctttg ccatatgaga tcactaggga 600

ccttctatgt tgggtgtgtg ctaacatggg tacactttga tgtctgtcca ccttacatgt 660

gagtcatttc aatccataag tgttcatatt ctatcattga gagaaagcaa agcttcattc 720

gagtgtggag aatggtttga gagtgtatga caaggattgc aatagcttgg gaggctagtg 780

gaacccatag gggtggtcgg tcgacccccc tatggggagc ccacaatccc tatttctttt 840

attaagcttg aatctacata tatagaaata ctcgtgggca tgtgaaactt gttgtttcat 900

aaaaatatgc tcatgttata tttatcttct ttttattatg tgattgttaa cggtgctctg 960

agcatatgga agtatgatat tttcaccatg ctagggaagc agtttagttg gtggtaagat 1020

gtcaatggag aattctccgt cgaagatggc tccccatctc cacggggaga aaattcgtct 1080

catccttgtc ttcgtatagc gaatttatcc tcgtgacaaa ctggttcaca ttactaaata 1140

cagtatttaa agacatgtct aaaggagttt agcttgctat ttatactcgt ctatatgttg 1200

aatttttagt ggaattttaa catgacaaag gactatttta gagctacata attcagtcac 1260

gcagttacgt gaggaatagg gatggagatg gtttttccat ctcatcttca tgaacttggg 1320

gactaaaatt tttatgtttt attctgtgtg ggaattaaat tatctgtatc catatcatct 1380

aaggactaat ttagtggaca tgaaatt 1407

<210> 4452
<211> 1991
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230703_G1, chr6:137666663..137668653, Cluster 27

<400> 4452
cttatacatg agtggtcatt attccatgtt tgggatgctt gatgcatgaa taaggtatat 60

gtaattttga catacaaaaa acataatagg gattgtaagt taagctatat cttaagtggg 120

tttttattag gtatgttgga ctatccataa gaaagtcttg gtccattttg acataggagt 180

ttagcttgtc catgtaaaga gttgattgct ttgggcatta ggtgttggta catcctatcc 240

tatgggtggg tttgtatcta aaagacttag gctatttgga cttgttcaca tttttggtat 300

gtgttctcag attctcctat gtgagtctca tactctcaca ttttccacta ggctaggtta 360

gaactatata gagagctctt aggtctaaag ggaatatcta gatagcttat cagggtgtgt 420

tggaccatca cgtgtcaagt caaggttatc tagtgattgt gctcatttgc gtgattctat 480

ggacttctga agtatggatc aagcaatcta tccaatcagg acaaagaggg catgtatcta 540

atattctcta gactatgttg ttgaactagc tacgggtata ctcaaacctt ctatagcttc 600

aacaaaggct caaaggttct atagaaagat catacaagtt ttagaccatt aaagtgacac 660

taatgggtgt ccatgtgttc tagacataaa ttcacaaggc tatgtaggat ctgcttcgtg 720

cactcaaatc gccaatgagg tactcttgga ccatccgagg ggtttgggcc aaaagccatt 780

aagtatgtgg gggttttaat tggttgtgcc atctagtagg tgtacctaga cgtacattag 840

tattggttaa gacaccaagt ttcactttca tgcttgttga gagtggatga agttatgtct 900

tcatagggat cttattccta gagattgcta tagggcttta agacacatct aatgatatat 960

attgagtgga ttgtctaagt gtgcctagac aaagttttgt gtcatctttg gttatgctta 1020

ggttggagat aggaggcttg ttactaaggc ttctctgttg cccttcatct tcctcccttg 1080

atgcatctta agtctccttg gactcttcct tctatcccat accttatctt tccttgttat 1140

tccttagagg agtgaagtat gaaatcataa agtgggatag gtgttgtgat agtgttatgc 1200

aagacaaaat ccatgctaat atgtggggtt aggggagaag gagatggaaa gctctccatc 1260

tacatgggct gatgcgtcac tcgacatagt taggtcatca agcaccccta ctagaacatc 1320

taattgtcaa tattttagct tattggatta gataggccta tttagcaagt gttggaccat 1380

atgacgacca tagctagacc atttgatacc ctaaaactac taggtacaat tgcacttaac 1440

tttgcattag tatttttttg acatgctaat tctcataatg gcatgcatag cacaataatg 1500

caaactaggt actacataca tttgttctcc tacatttttg caatatcaat aagcctctcc 1560

aatgcatttg ggttagtggt tttgagggtc agggttcatg ctttgcttag cgcttttcct 1620

taaactctta ggcattaagt atgctcgtga aggatgtttg tcccaaagta taaatgtgcg 1680

agtggggagt caagatggtg tcgaatagga tgctaaaggt gatcgctagg aaatggtcac 1740

gaaaggggga gctcattcca atgggttagc atgaggacaa ggagtggtaa tagatctagt 1800

ggtgaggcca tagagatgag taaagaaggg caagaggagg gtacttgacg ttgctttaag 1860

cactaaggaa gaaatgcttg aatgaagaac aacagcaaat aatggaaacc ttggatcaaa 1920

ggcggtgaat atcctaaggt tcaaaaacca aatgtgtgat aggagggtaa aacagtctag 1980

tatgataatc c 1991

<210> 4453
<211> 1410
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231906_G1, chr6:142768513..142769922, Cluster 27

<400> 4453
ccaagttttt tccaagaaca ttccttgcct ccaacaacaa ctcaaatgat cagagaaaca 60

ttcgagttaa ctatttcgaa accttagtca tattaaacta ctaaccttca tggtcgacca 120

tgactcgaga ccttgttata tgttcgatac gttcaaacta gtatggttac aatgatatga 180

tccttaaccg acacaaacag gactaaaagt gcacctagga tctccatttt ctattgcttt 240

accgatcatt gacctccgct cggtttgcca ttattgtttt tcttcataaa ttatgatggt 300

aaaatcaata tgaaacctat tgtgagcaat ggtaagtcac tcatgtacta ccggaatatc 360

taagctagca tctacatgaa acctatcata ctaataagaa tcatagcata tgaacattta 420

tgcaaatgta atccaacaaa atacaacaac ttaatgaaca cattgcatgg taataagtgc 480

ttgaaaaaat atgggtcatg caccaaggct tggcttgggt ataaattgat tgtatgataa 540

ggttagtggg ggcttcaaga accccatcaa tgaggaactc ctattactcc ttgataattt 600

cctcatactc taggtcagtc ttcaattggt cctagtgggt ccaacacaac aatttgtgag 660

gcttgatatt catcacaaaa gtgcatacta agcatccaaa caaagatctc tatgaggtca 720

ttaaatccta gaggtggctc aaattctctt tcataatatc cttgtatggc tgtttaggaa 780

actccaattc tttccttctc gatggaatat cattccctcc tatttatagg ccaagacaac 840

aacaacaaca acaaatattt cacacaaccc ctattctatc atgcaataca acttattttg 900

tatgtcacaa tccacagtgc aaatttcttc atgcatcatt atccattgtg caaaagcctt 960

tgcgcattga aatccatagc atgtaaaaat catttgtcaa gttttattaa ggaataatcc 1020

cctactaaat aggtgcataa gactagggat gctacaatgc atgcctcttg gattaacacg 1080

actcattcct taaactcttt agatctaagg aacacccttg agaactttga acgtcttcat 1140

cattacgtca cccttggtgt ggtggtagca ctaggagaag gctctccagt taagctacct 1200

tggacaccta gatgtagcag gggtttctca atctaggtgt tagtcaaaga tttatgaata 1260

aaggggcatc gccattgggt gagtattgta ttctttttct tataattgta ctcatacgac 1320

accccaattc cttgatagtg atgacacagt taacacactt ggcctaagtc tcatcacact 1380

cgtttgtgct ttagaggctt ttgaacacca 1410

<210> 4454
<211> 2020
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232496_G1, chr6:146213259..146215278, Cluster 27

<400> 4454
gttgcatcga acatccatgg tagctggcat cttgcagctt gcagaattac agtattagta 60

tcagagaagg atttctctaa aaaatcattt aagagccctc caccactgct attacacatt 120

cacaagatat atggatgtga tatgtccttg ttgttaggct ttattcagca gtttacccat 180

ccacatatcc aaatttaaat cccgctctat gagcagtgca aaatagtatt tttggtgacc 240

atatggataa attgttggac acggtcttat ggaactctat catgtagcgg tcacttattt 300

atattgatat tgtatcttgt ttagtcgaca ggtgtaactc tgtgttaaat tgttgtttaa 360

ttcaacattg ggtttaaata gcgtaccaaa ataaaagttg gttactgaga tattttatct 420

cacacttgct ccagtaattg gtgcttgctt agaaggggag aggattagct accttcgtta 480

attaacttcg tatttaaaag cttaatgatt cgtttttgtt cattagaatt gagagggggt 540

gtttaaagta tgcttaatga ccgtattttt tgttggtgtt gaagtaactc atattcgcta 600

ctattttctt taacgttaat ttgatgcttt taggcatcta tatatctttc tttggtgttg 660

cttataaata tacgaaggaa ctactgtcaa aatgctcgtt tgagtatatc acgactgttg 720

tctgtgaatc ggacgtgtta cacttttgaa gcgccttttc cctgtactgt aaacaaaagc 780

actattggta caatcttgtg tttgttttat ttttttccc cctcaaactt gtacgtaccg 840

ctggatcgaa caactcgctg tgaccatggg acaaacggcg agcaaagcaa actgacgatg 900

ctatcgtgtc atcactcgac cagaaatcga tagtgacgat aagcagagcg acaaaggacg 960

cgacaacaga ccctgcaatg catgcaacat ggatctacca tggaattgac tgtgaaggct 1020

aaaaacacgc acatcgtatc tcggattgat ctatcgtaga ccgatcaccc acaccaccga 1080

tggctcactg aaccttgccg cagagtcgcg ccgcgcgtcg ccggccgatg acgtcgtcgt 1140

cgtcgtcctc tcctccctca tcaaggcgcc ccacagcctt tgcccgaccg accaaaaaca 1200

aaaccgatgg tccaaaaccg gatagtggat acgtgtccgt cgctcgacca cgtacaagcg 1260

caacaagtac ggccgagaaa ccgatggacc gatcgagaca cgcctgagcg ggagcgctcg 1320

gcgcttgacg ggtagtacta ctactactag tagaaccggc gattgaccat gaccaaaaaa 1380

aataaaaaat aaaaaacgtg cgatgccggc tgcccacggg atcgtgacgt gccttggcga 1440

ccgaatcgaa ttggaacctc ggcgcgcgtg gttttggttg ggcagagacg ccggattagg 1500

accgtccagc caatcaatca ggcgtcaggc aggcgacgat ggagctggcc gagcagacga 1560

gagcgcgtgg gatattcctg tgccgtggcc tcgtgacaag acgacgcgga cggcgcgaca 1620

aaaaaagagg aaaaaggcga gccccggatg ccggttgagg ttgagctatc ctatagtagt 1680

actgctgctg tagtactgta cttcacgcac cgctacgggc tggcaacgaa ttgatcacgt 1740

gcatgtccgg agtagtagta attttctgcg tgataagaag tacgaattta tcttttctct 1800

atatataatt ttttttatag attattcgat ttttttaatc ttaaacattt ccaacggcgt 1860

tctctatatc ttatttttta tatacatatc aaagacagat ataagagaca ttttgctcca 1920

aatttttatt taatcggttg tctaaaatat agagatggat ggagaagaaa gagagtctac 1980

atagaaagga tgtagtgtgt atttttttta ctcttgtata 2020

<210> 4455
<211> 1652
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232648_G1, chr6:146846269..146847920, Cluster 27

<400> 4455
aacacttcaa atgcatatag tgatattttt tatacatgtt aaccaaaatt tgtatttaca 60

attaatgctg gaaaacaata tttagtttat tttaaaaata aaatttcaaa tttagtgagt 120

tgtatgccat gtaaaataca tggatgtcac atcatttctt ttatatcatt ttttgtcatt 180

ttttggtgat tgggaacatg ggcatcagac cgtgtgattt tgtctgatga agagcatcag 240

actggtctga tgccactaga tgctctctag tgcgtttttg gcgagcatca aatcgtttgc 300

tggtctaatg ttgttggact taaggcatca gaccatacac aaaaaataga tgttgaggtg 360

acaatagtaa catttaaacg actagtacat gtagcatgat ctaagggcat tagaccctga 420

gacatgtcgt tgttgtgttc actattgatc aagggcttct taactagctt agaggcattg 480

cttttagcat caaggtagac aggctcattt tttgctcttg gcctcttaac gagtcaagca 540

ccatgttcct cagagtttat tgtgagagct catcaatgtt ggccatcaag tcctcccaag 600

aggggtgctt gcatccctag ctctccccat ctatgttaga gaaaggggag atggtgagga 660

ggttagaaat ggagtgggat aatccacaaa tgcagatcga cacttgatgg gtgaaaaaac 720

ttagcatgtg tgtgattcat tcaccaagtg attgcattat ggaaaatgag cattgagttc 780

ctcaactata acaaaagttc agaggatgaa tctagtgcga tctccaccga caagcctaga 840

gccaaatcat ggaggttaag tttgttgatt atcttagaat gttctagaag taatcattga 900

gttccttagc ctatcacaaa gctaggttgt agaggtgaag cttgctgact ttatcgatca 960

cgaagtatag gatcccaaag caaaaaactt ggttgttgat gaaagtggag acaagggatg 1020

gatgcaccac gaagagtctg tagtagaatg catggggtaa aaggagatgc cctagcttga 1080

ggtaaagtca acgatgccat tgttgttaaa gaacccatta ggaagagaag gcaaaagtga 1140

aggtttcaag agagagggag gtcgatgaga gagagagaga ccctatgact ctttgtggtg 1200

ttagggtttg tttagtgggc tagtcatggt ccttgcactt gtttttagag gtgggccaca 1260

tataagcttg cctctaaatc aattttgaaa gatatggttg cctctataaa taaaagagat 1320

tacctctcga aatgtcatgt attttggctg agaagcacat tgtttcctac cagtattaac 1380

aaaatcaata ttttcctaaa attaaatttg tagtaatgat agggctcaat ttaacctatc 1440

atgagaaaaa acactgctct aatcaaatgt gccctcaaga tttttctaat gttaacctac 1500

atagagatta gaaatctatg taggttacac aagtaacata tagctaatat aggaaggaaa 1560

aggtcacaca agcaaagcac atgtgaatgc aataaaagca gtaagtaaaa aactaaggat 1620

agataggaca aaccccaaga tgtgcaatga tg 1652

<210> 4456
<211> 1671
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232833_G1, chr6:147680096..147681766, Cluster 27

<400> 4456
gaaagaccac cctctttagt ggcatctaca atctcttgta catggcccga gtgacaaaac 60

cgagttcaag atagagcata cgtggtgaga tcttcgccag cagcccaagt ggtgcaccag 120

acatgacgac gacaacttca atgatgcaag caaaatatta tgtctcgact tggacggtga 180

ttatagatct acgtcatagg aaagtatgaa cacaccatgc tctattggct acgatagggc 240

aagagccaag taacaggtag cagcgactcc atctatacaa ggcttgctag aggatgatcc 300

aaactaaatt gtttaagcaa tctaataaat tgttggatca ctctacgtcg atatggatga 360

agatagataa agacctatga gttagtatta aaaagttgat aaagcaatta aaactagacg 420

agatgaagag gcagaggagg aaaggcgaag ataagaaata aatagtggtg tattgttatt 480

ttataaacta tgcaattttt atattttaaa agttttgacg tcttgatgtt tttataaatt 540

atataagttt tatttactta attatatact cggatgtatt tatatttcaa taaatagatg 600

aaagtatgta aaaaagttgt agctttagac cgatgataaa taatatgcac taaaatgtcg 660

tagtagataa gaggcaatgt agatgatgtg atggtaagta gaatataccg gtaaaaaatg 720

tattatacaa ccctgagtca ctagaacgtt aatacagtta aaagataata ggtatagaaa 780

gtcgtaaaga gacgagctcg tttgtctctt gatttttta tatttaacct tttaaaaacc 840

tatcaaaaaa tcgtttaatt aataccctat gaaacgtaga gttgaaactt gtctaaggac 900

ccacatttat tggttgagct accgcctgtc cccttctctt atccctgaca gccaacaggc 960

agtggccaac accaacaggg tcggctaggg atggtgctga cctggcagag gatgagatgg 1020

gatccacggc gctgaccaat actgtgcgag tttacaattc ccttctcccg aatttcggat 1080

atctcaggat aaaaaaggga gagagggaaa aaaaggctcg aaaatttgga gaagccctct 1140

tcttgtgaat atggttgaag tgtagctgga gattacgtat ttgtattttt tttaatagag 1200

agatggaggt taatggctaa ttataaattt ggttgctggt actaaattaa gaagtagaac 1260

atcacggtac tctacaggga agttcacgcg aattcggatg taaaaatatt taataaagtc 1320

tatgcactct ttatactagc tagaaggtag aagtggaatc ataatctcgt ctatttgtac 1380

gtaagctttt atcttagatc ttaataggac tgactatata tacgtagaaa taaagaatag 1440

tcttttcata tcttgtgttt atgtgtcttt actttcatat gctatgttga tcgtgagaga 1500

cgaaaagaaa aatgttctaa ccacttggga tgtacacgat aagcttagtg tccttcgccg 1560

atcttccatg ttgtcctccg ccgatcttct tcgtctacaa atgaaaaaga acgggtggaa 1620

tatcatatac ggcaagagta gattcagggg tggatgcacg accgaagctg c 1671

<210> 4457
<211> 1555
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_244428_G1, chr7:41046342..41047896, Cluster 27

<400> 4457
tgccaaacag agcaatgtaa acaagaagtc gaaaaagcta tcttaggacc tgttcggtag 60

ggctcttcct ctgctaactc tagctctggc tctggcttct atagtaaaca actctctcct 120

ttttttaagg aaaacctcta gaaagagcat caggtttggt tgaaaacaca acttctcctg 180

cgatgtggtg gttcacaaag agaaaaatat gggagagaag acaatagaat ctccttttt 240

gagctcctca ctattttaaa ggaagagcct atcaaagagc atctgtttct ctgtttttct 300

gtgctactgc agtactaatg catagtgatg atgtacctgg tttcagtggt cacaaaccca 360

gtaccctatg cggtatgcac tacctatatg gttctatctt ttatttgtag gcccaccgac 420

agcctctttc tctccctttc cccctccagt aattcgagga gaaaatcagg caaaccgatg 480

ccaagattgc tgctaattgc tctttccttc tccagtgatt cgagggaaaa aaaatcaggg 540

aagccgatgt catgattgcc gctaattaac accagcgtga aacaactctt cgatcgatga 600

tggaggcgat cacgttcacc acccccagga tttggataaa gaaacggaac cacacgagga 660

agtgcccctt ttgataagtt cgttaggata gcacggtggt tggacgacga cgaagaagaa 720

tcgctggccc atcttcattt gattctccct tttctcagat gtatggctgg ctagttcatc 780

attctctcaa ctttagtcat acgagctaac gagagaccaa atgcactgat cattctcaag 840

tgccaggaag gagaatgttt gaatatctca ttttttattg ttctaacaag aaaaagaaaa 900

tgagatctga ataatctgtg cactgtgcac ctcacactac gcacaaagta ctgaataatc 960

cgaatcatgt gccatgtgat ctgtcgatgc gaggaaccac tttatccaga agggccgggc 1020

taggaatgcg aagagtataa tggtatcatg tttttgcaag agcttctgtg ttgttcaccg 1080

ctgcattgca taaaatttgt agttttaatt agtggccagc ttatattttt tttgaaagca 1140

atttttgat aaagtagtat tttattaact tttcaagcat aaacgtctct ttttaaaaaa 1200

aatagagtgg actcagttaa ccacagcctc tgctgatctg tcccgaagcg agccacctat 1260

agaaatgcat ttgtagaggt gacatctatt ttcgtttgcc tctataaatg catctatatt 1320

ctgatgcgtc tcaaaataca tttgcctcta taaatggatt ctagagatgg ctttcataga 1380

gtacgtacac aacatgaata gttaaaaatt tccgccagct aaaataattc tcatcggttt 1440

ttatgtaaac cgacgagaaa taattaattt ctattaatta ttttttagct gatggggata 1500

acattaattg tcgttggctt tagaacatgt acaatctaga gaccttcgaa cgatt 1555

<210> 4458
<211> 1458
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_244439_G1, chr7:41068791..41070248, Cluster 27

<400> 4458
agtcctagac aaaaaaacaa ctaggagtgt cctagaggac cgtctggcaa cgcttcggtg 60

aaaggaccta attagctaga ggggaagtga atagcctaaa aatttgtaca aactttagaa 120

atactagtaa caaggtatta gtaaaaataa tagatcataa tatccttact ggcccctagt 180

ccatgtgcta tccttgttac caatgatgtc attatgattg tgttgcaact atggacttgg 240

ccacaccaat gatagaccat acataaaact ggtgcgtagc actgattttt aaccatcgtg 300

tagaggacct taagatcctc tttggtgaca catcatgtgt catctcaagg aaaaacaacc 360

aacatgaccc aacaaagaag aaaccataaa gttggattat gagtctttgt gatactatgc 420

tttccctttc catcattata ggcaatcttc ttccaaaagt ctaatgcatt gaaccctgtt 480

ggttcttttc tcaaagagca acatctatag aagtgcagtg tattaccaaa ctccagcaat 540

gtgatcaact attcaatgtt gaagattcaa aatttgatat acatgtctct cgtgacatga 600

agagtcatta gaaactgttt agtcaggagg acacacccct cctcaatttc ccataacttc 660

cctaaccaat ggtctagaag acaatggaaa attcctctag catacctgtg cgatcaaggc 720

taaatgagtc aaaatacctg gacctacctt ggggagttgc agggctttgg tctcgatttc 780

tccccatgga attatggcac taagggacat gaggatgggt tggtcggtag ctgatgaagc 840

ctctccgagt tggctgccac ttatggacat cctctcggtg gctgcctgtg agctttcgct 900

ttgtgaaaga gagcggaacc tactactcac aaccttcttg gctttgctaa agaaactaat 960

cctgcaaaat attgcccaag aagacaccca aagggaaatg gacaaacaaa taaagttagt 1020

gttagtgtca gctatcactg ttagcgttct tgtgggacaa gagcctccat aaaaaattct 1080

tatggtcatt aaggttaaga gaaaattatc ttattatgct taagcgacaa aattattaac 1140

taaattatgt tagtcaacgt ttaagcaaga gattatggag agaaatgagt ttgttgtttg 1200

aggcattgaa ctcagagtac atgggggtgc ttttattcgt gagggagagt gagaaagtag 1260

ggggttggtg gctagccaac catgtggtgg ggccagacaa ccatgttctg tagctagtcg 1320

ctcgtgggag agggacaaca cagcgatggg atgtggacgg tggcgtggcg aggaaggagg 1380

gtctgggtga caaaaggtga ttgatcgatc atagagtggg cctaggtggc tacacttgtg 1440

tcccccttata tatatatg 1458

<210> 4459
<211> 1715
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_252609_G1, chr7:99833057..99834771, Cluster 27

<400> 4459
aattgcctct aaaaatacat cctatttttc aagagactaa cttaagacgt caacgtgcaa 60

aaatgtatgc ttttttaagc ggtcttctaa gcctgagctc gcccgacctt ttgcctacag 120

gctctgcctc gttcgatctc tgaccacgaa gaggccaagg acccaagcat ctcggtctta 180

agtttcgcct cgctggaccg cgagggtgag gggccaaaaa cttcgcttga ccacccaagc 240

gcgagattcc taggtccaca ctgtcttaac cacgggtcac ttagtttctg caagcgatca 300

tcttagctcg accacttgta gaaattttta ttgaaaacga ctgacgtaaa gtaactgtct 360

ctaaaaatat gccctcattt ataagcggct aacttaagat gatcgcatga aaaaaatcta 420

tacttttcaa gcgctcttct taagaagctg catgggctcg cccgaccttt gctaagaggg 480

gttcaacttg tccaaccccg accatgaagg gccagggact cgaacatctc cggcttaagc 540

ttcgcttcgc ccgatctcaa gggtgagggg caaaaaaact tagttttac aagctatcat 600

cttagtctga ccgcttgcaa aaatgctttt tttgcatact gtctatttaa ggtgatcgtt 660

tgcaaaaaca cgtttttaca agcggtccct aagaacaacc gcttgtaaag atgttttgcc 720

atcatgaacc ctaacgtaga tggtttctat ttgactctag atggctaccc aaattttcta 780

cgctttcgtg ctttcgccgt catcagctaa tctgccatcc ctgtgccctg cagttgtcat 840

cttccaccct ttgctctatc atcctttcca ttgatgcaat ggctatcgta tcttcactga 900

gatcaaatca aagtatagca tgatgctcac ttggaataaa ctacaagaat agggatggcg 960

atgcacgaag cattgatgga agaacgtagc ccatgttaca tttttcttct ctctttattg 1020

ataatataaa actatatatt tatatcccaa agacttaaaa ctccaaagga aattttaata 1080

actacaacca tgtttacata atagttccta acatatatga cattgatcac acttaggtgg 1140

actctacacc gcacacaact caaacctttt ggccactaat ctgacccatc taggattggc 1200

gataacaata actttgtctg agcttttaaa atatatatta aggctcataa gttaaaaaat 1260

aacttttgta tgatccacca taatgatatt gccaattatt cactattact gctaatgacg 1320

acatagttcc attaaacatt accattaacc acaaaattta tttagcatca aaagcataac 1380

attgtccaag gaaaatattc attccttgat cttgatggct ataatctatg gagctttgtg 1440

tgatctttaa ttaattattg atgtaataaa ctattgacta acttttaaat tgattgattt 1500

taagcatcga aggaattaaa attttgatta tagcggtgag tatgttagtt gttttaatgg 1560

ctattcagta attgacctac aaatatgttt cctagatcgc tgtacatgta ctctctaggt 1620

tctaaattat aatttttttt tgtcatttct agatatattg ttttaatata cctctagata 1680

taatgtatat ctaagtgcgt agaaaaaatc tacga 1715

<210> 4460
<211> 1852
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253408_G1, chr7:104277641..104279492, Cluster 27

<400> 4460
ctgatgcaag gaataaacat gaatgtctcc catattagcc tttgcttgat caaaatccaa 60

gcacttaagc aacaagcctt tggtggttct ttgatatagc atgtatgcaa atcaaatata 120

aatacattct accaaagata ttaatcacct tcggcacttg gatggtaaat agtttataat 180

aggagtcctc caatcaccta tattagcccc caaactcatt ggaatacatt tggacatgat 240

ttggattcat ttctttcttt tgcatagtct ccttttaata tgaaatttat gtcccatgat 300

gttaaagctt aatgcttcct aagccactat gttaggctta ttgttctcat gctttgaaat 360

atgccaattt ttgtgatttc aagacattta tctagataga aattaggcga tccttcgaac 420

attaaaacat aagaatcata atggattatt gcaatattct caagcctaat agagaactca 480

cattcgactt gaatgatggc acaaaggcac tttagtcata ttttcacatt cataagataa 540

atttaaaaca cctatgtcat gccccgtggg ccttaaagcc atcaaaatag ttttatgtag 600

gctcttatcg tagcacgatg gttggaatta ctcactagct atatttttgc taagggtgaa 660

aggaaagaat cagtgatatg acttcattga agagtatgca taactagaga tgaattcaag 720

ctagacatag gtagagaata tgaatgatcc catgaccaat atttttcatg atttggtgca 780

aaccccaact tggcaattgt ttgttaaata ttcttctctc gtttgcttcc attgcaccac 840

tttcttgaac accatcattg tgagcttgaa tacttattta ggaacccatg ccaagaccta 900

ttatctcagt ttctctgcac taagcttcca gaacttttt tcttgccact ttgataaacc 960

aactgagcat atcaattttg tttccgggtt ggacaatggc aagtctttct tgattttgaa 1020

ctatctcacc ttcttttgtt tagatttggt acttataata tcaatagatt atcctcctat 1080

gtctttacta tgaatagtta gatcttttag caatgtaaat ggcttttcaa tagtttcatt 1140

tagatttgat cttttatcct tgtggttatc tttttcacat gataaagttg ctttgccact 1200

ttcttgtttg gttgaactcc aaactgattt tgatgaaaat gtcttttaca acatgatgat 1260

ctctctagat gtttagaaga tgcatattgt atgtaatgtt ctataaaata tagtggaaca 1320

tgtgcctctt taataaacta gccccaagat gaataaggat gaaaacatat gagttctcct 1380

ctatatgaca taaaaatgac tttgctttgt ggaaaatttt gatgactgaa cctttcttct 1440

tatatttcct tcctatattt agctagaagt tcatagaaac taagctttga ccttttactc 1500

ctcttccaat cacgaccttt acctacatca gctctatgga catacttatt atccccatct 1560

ttatagacat gcgacaatgg aggatcttga gtcgattccc cttgatcagt gggatcaatc 1620

acccttttcct tagttagaca gattctttct atccctctat gtctactaaa attgtgatga 1680

ccttcatgtc ttgtggaata tatctaattt gtagttcatg gataacaacc atgtgtcgac 1740

ttaagggatc cacatatttc tcttgggcat ttgaaccttg agctttgagt gaatcaacta 1800

atggtagcca attaaaaaca tattttgcat caagaccaat tgaatccagt tg 1852

<210> 4461
<211> 1481
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_26001_G1, chr1:157978947..157980427, Cluster 27

<400> 4461
tttccagaac agttttagga tctgatacct ttggcctagc acctacctca cagctcaccg 60

ccctaatctc ttcactaatg gcataatctt ggacagattc tgtggcatca ctgttttcca 120

ctccttcctg agagtcacca agactagaga tctattcttt tgtagtttcc tttcctttcc 180

tatcgaatct tccccctatt ttcctcatct cttcctcctc aaaatgtctc tatctttatt 240

agagtctttg ttagctagtt tatccacccc agaaacacca ccccggtctg ctccgtgcta 300

ttgaattcct tcggctaaga aattcagctc gtagcccaca ttgttgaaga agacttccac 360

acaaccttta attctggaag agttacaaca ttatattctc actctcacag gaccatccct 420

tatcaggctt aattcatcta tgcaatcggc ttccccatta gacttgctac ttctttgaca 480

atgttaacga ccctagcatg aactaggagg ttgaagatct taacccatgt gatttgtaag 540

cttgcaaaag atttgggatc cacatttgat ttagagatct tcactttgaa cctataaaaa 600

ggcatctcaa agctacttag tttggcatag ttatccaagg aagatatgtc taggaacgat 660

acgataaatt cacatttttc catcctcccc actccaaaat cccacttgac ttgaaccaag 720

ttattaagtt cttcttgaag cttctcttcg ttagcctctc cttctagaac atatatcatc 780

acagataatc cagttgcctg ttccttacct tctagaacat caattccaaa gaagccctgg 840

tccagaagcc caaaaccaaa tagatttaac ttcttcttcg agctacattt tgttgccatg 900

tgccccatct ctttacattt gtaacactag ggttcattca tgcaatctaa ttgatgatga 960

ccagttcaag tacatcaaaa acatttaatc tccttgatcg attcctgttg agtccatgaa 1020

tccttttcca tatccactcc tttttctgca atccaatgac ctgaccgctc tagaagcaga 1080

caaaaaccct tgctcccttt cactcttaac agcttgccta ccttcctgaa gatggtgaac 1140

atctcgacct agacccctcc gacctccaag gccacccctg gatggagcaa aagagatgtg 1200

ccctctctag cccctcttcc aagtccttga gtccctagag aatctattgc caggaaagca 1260

acacacctgc tcatataact ctgatccaac caaaccatac agacccctct gcaatttggc 1320

tctcatatct ttctccctta tttgctccga ctccaagaga tcataatcct ccatccactc 1380

ttttggacga caatcccaac tgctctccca ttgatcacgc ctgcaggcca tgccccctct 1440

ttcaccacct gagcataggt tcttgagcga ggaaaatgga a 1481

<210> 4462
<211> 2381
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265547_G1, chr7:170122541..170124921, Cluster 27

<400> 4462
ggcaaataga gaggctcaag caattcagaa acctcactgc cagttctgct tgcaagcagt 60

gataagcaag cctgcacgtt ctttctcaca accattgaag cgtttgggtt aaacaactcc 120

tgtgcaagga attcaacaac tccctgaaaa ctttgccgtc gaggttcact gtttgcttca 180

tctgcgttgt ttactactct aagtacttgt gttaggacat gatttgtctc ctcctgctct 240

ttgtttgcat gcactggtaa cctcttaaga acaaaaagaa gaccacgcac gactctgacc 300

tgaaaaatgc atagggtatc cacagacact ttaccgacca atgccccgag acccattaca 360

ccacccatct gagcttgcca tgtgctactg tagcaacaat gcaataaccg aggtaacaat 420

tcctcaaata cagcaacccg cacacttggg ggaggtgaat atactggatt taaagatgga 480

ctagagacta gcatgggggt gctaggacct ccccttagca taccagtgtg tttcatccgt 540

gcaagaaaga ttaatgtctc ggcaaaaata ttcaaagcag atagggcagc ttttgcatgt 600

tgacgatttt cgctggatag cacttcaact aaagcatcca aaaatattaa agggtccagc 660

tcccggagat tagatgaagt gttgcatctt gatcttgatc ccatgatgat agatgggagt 720

gaagaaccaa taggatgcat aaatccagat tggctggagg atggtgagtc aacatggaaa 780

agcatagcaa aatgccggca tatatcgaca acataatcat ccttctcatc atgaagactg 840

gtgtcagcat tagctgcaat gatagctaca agaagagtct tgaaaacaga tttttcagcc 900

agtagttgtg tttttgtctt cacacctaaa tctccctaca aataaaccaa agaaaacaag 960

catggtgttg ataagataac taaagcacaa gaacaccaga aagaaactat aagttcaaca 1020

atctatgaat tcattttgct gtttgctcag acaagaataa ctaaaaacta ggtaatatgt 1080

gatggtttat taaaagacat ctaaacatca ccgatcgcgg caatcattta tatcgtttta 1140

ttgagtaaca atgatctagc aatgctactg ttgcaactca caatacatgc agatagttac 1200

aaggacattc cagaaattgc aaccaagcca ccaaaaactc cacgaatggg ctgttagcat 1260

ttggtacctg gtaataacta acaatacaga gatccaattc tagtagtaca gatacaccac 1320

cgtctcaact ataatcagaa gaacggaaat tttctttggt tttacattaa tttggcaaca 1380

atcatcaggc tagaattata tcgaccataa tatacattgt tctactgttt ttatctttta 1440

atggaagaat ttactatcat actatgttga ttaaagtgat gtaagttggc atgcttacac 1500

tcaactgctt ggcagtcgat gatattgtac cctatggcct acagtgcagc gctcataaca 1560

attcatctac atgtaagtca aaacactaag ttcactttag attgatgaca acaaataaca 1620

tgaaatgtaa atcaagcaat catgatccaa gggtaaaatg ccaaaagaaa acagaggcat 1680

ggacagaaaa ttgctacttt gcccaatcat aaatttcgac attggcagag tctccaatat 1740

aatatgacac tttaacatac taactttatg ttaacagtaa aaaattaaaa aatgagctag 1800

tgcaagcttc caacttctaa taggagttag taaactacag taaaagcaat gtataaagaa 1860

cattaattat caatcacttc taccaacctt catatctgaa gcatcattcc gacgtcttga 1920

gggatccagg ttagagatta gcaatgtacc gagaacacca gggctcacac cctcgccagg 1980

tacattttcc ctcagattta acaaagaatc gaggcacacc cgaatgaatt gaagagcctt 2040

cttcctgtag aatgcttcca agccattgcc ttgcataact gcaccaacag cttggtgtat 2100

gcatctgtcc agaggaacca aaaaaggtgt cgcaggctca aaagtcagaa ctaaacgtaa 2160

tccatgctcc ggattttcct tggattcaag tgcaagaggc tcccgcaaaa atcgcctatt 2220

tcgtcccccc agcttcccta aaagttccaa agactttgtg ccccatgtgt atggaggagg 2280

ccttaaatga gaccataaag caagaatgac ttctgacatt aaatttgcca tgctaggttc 2340

caaaaagtca ggattcagac tatcaatcca gaactcaagt g 2381

<210> 4463
<211> 1800
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266047_G1, chr7:172721205..172723004, Cluster 27

<400> 4463
aaatacggta gatattcttc ggaaacgata cttggaaatt tcgtttttcg ttttggatgc 60

acaatttcgt tttcgtttcc gctttttat cgtttccatt ttcgtttttg cggttaccat 120

taccgttttc gtttaggcta aaaatcggca aaatctcaaa aatggtcctc gaaaatcgga 180

aattgtcatt tggttttcag ccctactcct cggtcaagcc acccaaaata catatgtcat 240

atacatgccc ttgttggaag ccggtttcgt gggaaatagt tcatgttgac aacacatatg 300

cctatgcatg agcgttgtgg tcgatccaag aagcctcatc ccaaaagcat aaatggatca 360

tggtcaacta gtataaatgg gttaaatcaa gtaggtcttg ttgattacgg acaaattagt 420

acaatttaga ttatgcataa gattatgaag atgagtggcg gatccaaagg ggggacttgg 480

agtgctcgag cccctacaac cataaaactt tatgggagga ggtgaagtgt agagtaaaat 540

agagggtaaa gaaggcgaag agagaaaaaa tgagtctcta tcagttcgta gtaccctaca 600

ttcataggac tgaattggat aaaatggtag atgttatgag agaagaaaag agaaagaaac 660

ttgtgttgcc tctatcagtt gtcaatagga aatcagcctt tcctttaact catttctgga 720

ttcaccacta attgagatca tagatttgaa tagtgattgt gtttggacaa tcactagatt 780

attacagtga gttattattg agcaaaatga gaaataccta ataatcaccc acaaaaaaca 840

agtctcgccc gaattatata gaaatattgt aattcgaggt tttggttata ataattcacc 900

ctacaatctc aaaaagggta atttaatctg tgaatagagc ccacgtactt ggctgatctt 960

agtcaccagc aaagcaaccg aggccatttt ggtaagaaat agtagtacat tgttctggcc 1020

ccgtttggtt cgttccttat ttgtaaaatc acattttaga atttcattat taaccaaata 1080

actcttgaat tttatattgg aatttatgct agaatctcac actagtaagg tcatatacaa 1140

tctaaacatt tggaccggtt ttccaagcat aagaaatacc taaacacgac tacatgaaat 1200

tctagtctct agatcgtaga tacagtcaag tcgtgaagac acaatataca tagagtcgtg 1260

cagagaaaga gaaactcttc gcgaagagtc atctcttgat ttcttttcac ttagctatct 1320

agacctctca atggctattc atttaattgg attgtacata ccctaatccc actataacta 1380

gataataacg gaagttgcat tggattttgt gtagtatcca agttgtcaaa ataaatcagt 1440

gggaacgaaa cgccacatac aggtcgagct cgacatggat gctcgctcga tcgcatgttt 1500

gacagggatc agcaaagcta ggacatggat ttcaacaatc ggcagcaggc cggggcctgc 1560

agctgtctag ctacctactg ctgctgcgtc atccatggcc gtgcacagta aattaacaca 1620

atggaaacgg agaaagggga aagggacatt ttgtatctgc atgcatatta tattctgaaa 1680

tgatatgtac gcgataaatt gtcatgtcaa acaataatgc atgcaatttg ctaatttttg 1740

gctggtaggc gttgaagcgg gagaatcggc aatttgacaa gatcgatcga agatgatgca 1800

<210> 4464
<211> 1954
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_267113_G1, chr8:1329307..1331260, Cluster 27

<400> 4464
tcttaaaaaa acccatcaaa tttacaagag caagttccaa accactgagc aagtttgcat 60

caaggactac aaaggaaatt gacataataa agagagcttc aaccatccta tggtaacctt 120

ttattcccca tttatgtttt tttttattta ggatgtggtg cctatttgat attctgtttg 180

tgccttttta tttagggctt attcagttag gggtggattg tgtctatttt atttaggacc 240

tggagcctat ttgatatccc gtttgtgcct tttttattta atcatctcta atatttctta 300

atccacctca aaccaaacaa gaccttaggg tgtggagact gtatgtgcct aacagtcggg 360

aaagagtccc tatcggtgtg tgtaagcttt tctttctttt taccttaatt aaaatgcata 420

tctcctgcca cttctttcac aaggcgagac tttttgagac ttgctaacta acatgatcat 480

attcaaggat tggtcactta acaacacgat tgaactgcaa ctccaggccc ggccctagtt 540

cttcacggga caatggcagc tgccctgcag agcagatatc gcgctcatat tttccgggca 600

acctgcacgt cattctccgg cggaccattc cgtcgcgtcg cacccagcgc atccttgctt 660

gtgttccaag ttggatacaa cgacagacga tcatcccgca caccttgatc gggtggggag 720

gaaatcgcgc tgctaagaaa acatgggaaa tctcttgggc acggcacgca cttgctgatg 780

cagaaccgtc tccgggctct gattgatctg gcctctttat cctatcctgc agacgttgct 840

tctgccagtg aaaacgcgca cgcaccaacc gcatctgccg gattttcttc agacacacac 900

tttctactgc atctgtccat agagagacga tgttaaaatt cacatttcga ggaaaacaaa 960

aaggtaatgc aggaaaactc ccaagtcaca gacgagaacg aacaccgcac atgctatctg 1020

gcacattttc tcgcgccaga tgctcattta ttaaacagct ttgaatacag acaacgttgt 1080

gttgctgcat aattaattaa agtacagacc agttagtact ttgtgcattg aacaaaaaag 1140

aaccatacca gtctcagcct ccaatgggtg agtgtctgca ggggattgtg gttggggcca 1200

ttgctatgaa caaggtgcga ttgaactgct cctgtgattt gaatttgcag gttagctaac 1260

taaagacttt gttaaccctc acctaaccca aaaaggaagg ttcagcggcc tcgatttctc 1320

aaacacggtg ctcctagacc tcccaggcac caagattatt aaggagttgg ggcccttatc 1380

actttttttt tggcacagct ctgaaatctt tcatccaccg tccataaaaa cgattcactg 1440

aaagctcgag tgctaactgc attatgccca agagctgaaa aatcaaaagc ccatacttgc 1500

tctgtttaaa acctctatag ctaatagtta actgatgaaa ttagatatag agatttcaaa 1560

cactcccaac caataatacc ccatctaatt gttagctaac tcacgattaa caattagttc 1620

attagcttct gtggttacta gacaggtttg ggctctcgac ttggagataa tacccagcgt 1680

catgtatgct ggtagctatt tcttctgatc taatgatctg ctctcttagg gcaactcatc 1740

cctcctttta tagttcaagg aggggacaat tacaaaagct catctggtag tgtaccagat 1800

aagattacat atcatataca tattaggaca tgtatcacct taaccaagtc taactaggac 1860

cctctgtttt atgtttacat ataggtttct ttcacccatt ggactctatc ttattacatg 1920

attattatcc ttagccactt gatcaccagt ttct 1954

<210> 4465
<211> 1528
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268682_G1, chr8:9911425..9912952, Cluster 27

<400> 4465
tttgctttaa caattatgat tttttatact ttatgagtta tgtaactttt atttatgatt 60

tgacttattt aaattttatt ttcttaatta tgtactcgga tgtatttata ttttaataaa 120

ataacatatt ttatgttaac taaaagtctg taaaagaaaa gctgattgac actgatgtgg 180

gtgtagcttg acaataaaac ggtacattgg agcgtcgtgg tacattagaa ctgaagatag 240

ttgatagaag aataaatagt atggttaata gttcatcgtg gtgatagata tgtagaacta 300

gcctagtatg gttttatcac gtcatcttcc ataccaccat taaatacatc caaggaagca 360

tatgttgcgt atgtacaaca ttaagtctat gaaacagttt ttcaagtata agggataact 420

aaaaggctac actacacatg atacaaccta agccactgga tcataaatgc agttaagatt 480

caacccatat agaaaatcat gtagagacga acttttggtg aagagaatat ctcttgtatt 540

ttttaattaa cacgtagaga catgtcaaag aacacaatat taagtagggt tatacaatat 600

cattaggctt ccaaaacagg aaagctcaaa ctgatgtcca atttgtagtt ggggtgcttg 660

gtctgttgct gttggtcagt tctagccttc taggtcatgt gtcatgtgac ccaacaactg 720

ttggtagtag tagaacggac gcgactcatt ccagccattt atggtttggc actcacccga 780

ccacatcgac tttcttcatt tgcaactgta cttgaatgga ttatatgttt tttcttcggt 840

tttctgatga gcgatggcca tcattttccc tgcccacatg gtcaaagccc tgtccacata 900

ataaatttta aacgagattg attgatggct gtcttgtgga agtactattt gcatcagcgg 960

catggaaatc ttgtccatcc tcgtgggtcc ttgcacaaga aagtgggctt tacatgttcc 1020

tatttttact ttagctttta ctctatttcc ctttttttca tgagagagga aattcctggt 1080

ttcaaacgcg ttgcttagaa ttaatcatat tgttcataag agtattttta ctagaactag 1140

agtgtcacat gtcacttcat ggcgaagcct ctatgaacat ctcctctaaa actaacaaat 1200

tcataaaatt tcaccactag cacattaaaa aaacgtgttg tgttcgatat gatgattcca 1260

ccactgggct aaggcctctt aagagtctgt ttagatgcat aatgataatt attagtcaac 1320

caatttttaa cttcagctca tctaaacaga agagctaata tgcacaacta tgcaaccata 1380

caccagaagt ttagagtcat ccgattcgca tccaatgcac atcagaggtg gatataaagg 1440

gcatcaaatt tattaaacct aattaagcct aaatataata tccataatta tattcaaaca 1500

tttgatatga cacgaacccc ttaatata 1528

<210> 4466

<211> 1751
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_280655_G1, chr8:91027974..91029724, Cluster 27

<400> 4466
aagacgcaaa aatcaacaga gagttcatga tagccatagg tttcacatcg ggggaagaat 60

tcatcctcag tatcttgcga ttcgtcaccg actcactcag atttcttagg cgcgtcctag 120

attttccagc ggttttgaaa ctacaagata aagatcatga agcttcgatc tcatctcaat 180

gagttcaggt caatccaatc ttatgacatc gactcggact tggacccaac ttcgacctta 240

actcagactc agacccgaat tcaactcaaa ttactgatcc gacccaaact cggacttggg 300

ctcggactta gactcataag atttacttga agagcgcttc gtgttcatag ccaagtcaat 360

gaaaggacat caggaggacc atcattctca ccctaaagaa gacaatgtaa ctaggaacta 420

aaggagtcat aaagacttga gagtgcatgg tagatcagtt catgaccaga tttaggtgga 480

cttttgtggc taattgattt atacaccatc gacataaaac attgtgtcaa agctaatgtt 540

tgaccaaatc acaccatttc tacccaagga caacacgcaa gcacataaga acctgaattg 600

catcaataac atgttagcca atgcggccat gtgtgtcgag gatccagttg catcatcgtt 660

tagccttggc caactcgagc tagtggttga accaactcgg aatgagccaa atctttcata 720

gggaagctag agtcattcac aaactaagtg cccagttcct accacacaca atcgccataa 780

tggggctcgg ctagggactt ggcctactta ggaccgaggt caaactcttc cacatgatga 840

gaaccattgt gccgagttgg gccaacatca tcggcaatag aaccaagaca attccaagca 900

tcaagatctg aaatatggtg gatatgaagc taaacgtgaa gactcaaact atgaccgagt 960

ctagcagaat caggctcatg aaggcctctt agtttctatt attaactaat tcacaggtca 1020

cctgagtaga gtcagttggc aaaaagaatt ttaagcctaa tccggttgag tcatatgatg 1080

gtcctaccaa tccatcagtg tggctcagga tctaccagtt ggatattaca gtagtagggg 1140

gtactcttct gttttggcta actatctacc catatatctt ggcactactg tgaggaagtg 1200

gctattcagt cttcctacaa attctgttaa ctcatgggag gatttgaaat gacaatctat 1260

caataacttc agtatgttca aaaggaggat gagtcactac gtaattatat taagaggtgg 1320

cacaatgtga aagatgacat atctagcatg cccaaaaaat agatatctat gtcttccgca 1380

agggtctcag gagctatctc ggaagcttgt acgatgacac cccaccactc ttgcctctct 1440

attttaagct gcaaacaaat acgctataag tgaagagatc attcaatgca tgtcctcgtc 1500

taaataaagc gaggatagaa aaaaacatga ggatgagttg ggtaatgata aggataagag 1560

aaaaaatatg gatcatcaac tcacaacaaa tgttgaacat aatgagtacc agaaaattat 1620

gggagggaca tagtgtgtat cacccaaaca actaccataa aactagaaac tatttccatc 1680

ttaagaggtt caccaaggac tcaaacaaaa agtataaatc aaaattccca atgccatttc 1740

aagatacgca a 1751

<210> 4467
<211> 1494
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_28113_G1, chr1:171550988..171552481, Cluster 27

<400> 4467
tgtggcccga gtgggcctaa tcgttagcat gctagccccc atgttctagc ccccctaacc 60

gtcaggacca tgacatccct tgtgccctag aacaactgac atgtaaggtt cactagctac 120

cctcgcatct tgaggatcct agccattaga accatggggt ccctcatatc ctagggcacc 180

taaccgatag ggcaccaaga cccatcgtat cctcaaccat ctagtagata tgtcctctag 240

gtcccacatg cctaagggtc cctcatgccc cgaaggtccg aagtccccag ggctccatgc 300

acccaatatg ttagatggat aatgccctag gcccccatgg ccaaggtcac ttagcgaagt 360

tagaccctag gctccgtaca cgtcaagaga ggtcatacac cttgggccca taagggtcat 420

acaaatatta ggggcctatc aagaaccata caaggccaaa acatgatccc catttggagg 480

atagttcaaa gaattgtagg atacaacgcc caaacaaaaa agtatatgat acaaacacat 540

taaaagcacg accgatgatg ttatatgtgt gctggcatat accctggtca atttaacact 600

tgagagcatt gggagcaaac atacaacgaa tgtataacct agatactgca tgtatggatt 660

acatgagatg tcaaaaatgt agaacgacca agataagtga gcaatgtggc catgacataa 720

aagtccatga caaggacacc gatacatgat aatgaaattg tataacccaa acggaagata 780

tctcatcaac aaaccacatt aaatgtagtg atacacatac tacacctgga caaacatgat 840

acctttagct tcgtacacaa ataaagtaca ataccttatg gcataaggac tgacacatca 900

tgatgggtaa gaggagtcta tgccaactag ataggatgac tcaagcataa tggtatggtg 960

aatgcatgat agcgagagaa ttaatgcaat gagattgaat agtatgataa tatgaagacc 1020

caaccccacg aagtgtgctg agcaagcatg ctagcatgaa cgtagttgtt gggtcaggcc 1080

catagaaaaa tgtgtttcta atgcctccca ccccttgga ctataaaagg ttattgtgga 1140

gcacacattt aatctaaggc gcatatgact aacacccagc tagacatgaa acttcaagac 1200

aaaacccttt gctagaggca agaagcataa ctaggtggtc atacagtccc ttattgaggt 1260

actatggcct cataactcga ggattataac agtgtgtgct ccaaacatat agaaatgctt 1320

acagaaagag gacatagggt ggcctgaacc tctatagatc atgtgtcatt atgcttgagc 1380

aactatgacc tagtaggtat attgcacaac atcgagactg gctccctgtt cccctagtta 1440

ttccattcag gcaccttggg taccctagtg ttgttatcat gacaaaagat cttg 1494

<210> 4468

<211> 1493
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_281269_G1, chr8:94705685..94707177, Cluster 27

<400> 4468
aagcatcaat tatacctact tgagtcatcg catgttgctg ttgtatgaaa gagtagaagt 60

agtcctattg cgccttctaa tgcttgtcat gccgtcttag cccctcgagc agcctagcca 120

cctccaagtc cttggtgggc tatcgagagg aaatgcccga gctacagaac aaagaattcg 180

tcctatgagc tctcacctcc attgagttag tcatttcatt gaaaagtatg tacctacaag 240

tgttttgaaa acacacttag ggcatgatca tattaataac acttgaaaaa ttgataagtt 300

attagagata actgcacatg catgtgttat ctctccaccg cttcagagct gtagcatcga 360

acaattcatg gtttgggcca caccaaacca tttcctcccc atgtttcacc tatacaatat 420

ttgtaaacaa agacatccat atattgtgaa gttgagctat ttatactttt gagccaaaac 480

tcaccagcga atctatggtc gtctggttgc atagctactc gagttataag gtttggtcct 540

ctgtagcctg ctatgtacac atcaataatg cttggatttt gatcaatatc gctgggcttt 600

tgactagtgc tatgtacact tcaatattga ttgagcttct aaatctaaag atattaacga 660

actaagacta ttgcatagaa tatgaaaaaa attcatcgaa ctctagaaat ataattaatt 720

gagaaccata aagattaatt atctagattt tgcaagtact tgatgcctta gcgatgatct 780

agatgattta aatcaagggt aataactgga attaataaat caatttagaa acaaaactag 840

acatgcaatt aataaaccaa agcgagagga acaagattac cacattaatc ttgcatcaat 900

atcatattaa ccatcaagat tgtgtgtaaa agtgctatcg taaagcacca gagagatttc 960

ccttgaaatc tttaaagctc taaattaatc tgtgatttta gatctaatct attgctgaac 1020

tctcttccaa actcgtctct aaaaaaacac tggcctctat ttataaggag aagagagttc 1080

aattttagcc cagtcaacct cttactgcgg gcgagtgcgt ccagcaccgc cctagtcctg 1140

agtcctcggc ctcgccttgc tgcaggccag tgtctcaccg cacctgctgg gctagccccg 1200

tagtataggc cacgcacgtc gggcctgcta ggctcacagg ccggctaccc cgcgctaggc 1260

tcccgtccct aggccaccct atgctagtcg tctgctcctt gctggctggg ctagatacgc 1320

cagtgattga gtcagcctgg ccacctagct gctagctggg cgcctgggcc ggccgactgg 1380

tagctttttt ttcctttgat tcttttagac gtctcaagca tgtcacaccg catgtaaccg 1440

tcaagtacat tgaggtttag gccctgtttg gcacagctgc tgcttgttgg aaa 1493

<210> 4469
<211> 1792
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284667_G1, chr8:113019212..113021003, Cluster 27

<400> 4469
tatagagaaa gactattgtg cattcgagct ttttatgtaa aaatcatgta gccaaactac 60

caaaagtcgt atttctttga aaaaaatata gtttaattta ttatttactc tacaatatat 120

caaataatat aaagaagtga aaagtttagc atttttaatc cttcgtattg gatagatttt 180

cttatttcta tatcttgtaa gatagaatga attagaactt ggaattttaa ttattggtag 240

aacaaataat gaagtacacc tatagttttt tgagattttt ttttttacaa ttttgataat 300

ttggttgccc gataattgca caaaaatttt gattgcgctt taatcttcca cacagccggc 360

gattgcacga cattttttca cgacttttga taaagtcaag attaattttg ataagcacta 420

aaatattaac cagtgcatgt tttgtatata taccaattgc agtaatgata gtgctaatta 480

atactttatt attacttagt gattattaat taattaagcg ttcttatcga tcttatgtag 540

tctcattcat ctaacattta tccaattaaa aaagataact actttcatcc atcgatctaa 600

ataaaaaatt acttatctta tacatctaac caatcaaatc taactaaaca aataatatag 660

gtatttgtat cccaaatcct tagatggtaa ttgatagcat atgcgccgcg gagacagtgg 720

tcgcagcgtc gctgtcctgc ggctgctact gatacactgc caaatatatt catgttgcct 780

tagctgaggc ctggccctgg ttgggtgttt ctttctgaca aaattaatag agccagctct 840

cttagttaaa aaaatatttt tatcttaaat ttcaggttta aaattttagc tctttttatt 900

taaaccgaag ctttagttta ttgtaattta tgtagacata tttttgtagt tttgttggat 960

atgttctcga actcgatcaa gagaccgagt ttagagtgaa ctcacgccct gatgcacaaa 1020

acttcatgtg gttgtggcct ccgattatat ggtactacaa taatcgagga agggaccaac 1080

atggaagcca atatttttcc cactatttat tttgtattta aatgagtttt atgtactagt 1140

gaaaaattaa gttagaaatg agaaaaatgg taacgctgtt gagaacgaga tggaatcttc 1200

aaagagttga gaactaacta gctatagtaa caataacaat caagtactag taatgatatg 1260

cacatgaatg gacacatgcg ctgtcaggct ggatcgcatg tgccactcat tatctaggag 1320

gcataggaat acaggattga cggagaaagg acaaaaacgc ttggattatg gaagggaagc 1380

tagcaggtgt gctgtcgcgg actcgtggca gatgcacctc tacacgtctc tgctttctct 1440

gagtttccgt gtgctatctg ctgtgctggg tcatcaaact cgccaaattt tatatttgat 1500

ccaagttcag aacgaacgac aagcagtgca agtcgatcga tcgatcccta catatttcac 1560

gtgaagagtt ccgtgatcca acaaaatgaa cacctccctt cttggaaata gtacaaatta 1620

actgttgctt ctcgtcacat cttccagtga atttgtcttt gtctgtgtgt gaccaaagtt 1680

gatgggggac ttaaaaaata gagaaactaa aaattagttc ttataaatca aacacccctt 1740

taaacttctc catcaactga cagttctcaa ataaatgccg taatatcatg aa 1792

<210> 4470

<211> 1831
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284668_G1, chr8:113021376..113023206, Cluster 27

<400> 4470
accttccttg cttgcaatct cacaatcatc catatatgtc cccacaagca aaagcagttg 60

atatatcttt cttggcagga acatgcaaat gagaaacagc taagcaagcc gattgggtga 120

cctcaaaaat cgtcgcatca tcttgcagtg aaacgtcagt ttgcgagctc acaccatctt 180

gtatatatca accttgttca actactggcg gctcttgcgt gcaagtgcaa ggcgtatacg 240

tagtggtgtg gttcacagac ctatgctacc tcttgcatgc atgttcttgc atacctggac 300

caaaagtttg ttagccaatg aattggaaac tagctagctt aaacactttg ttccacttcc 360

accacaaatg cacagtgaca agggaataaa ggtcagtgac cagcaaagaa gcatatcata 420

tcatatcaaa ttattagata catatatgat taagctaaga atcaacttta ttccttgaca 480

ccccaaaaga accacactgt acaagaggga tcgatgatat gcgcgcaagc attatgtaaa 540

actttctgct atatgagtta ttaccatcat ttttgcaaac cttgcgacac aaatcaggat 600

cataatcagc gcggcagacc aaaagaggat caaaaccata taacacggta tagtgtgata 660

gcaaaaccat aacagctact gcaggtactt taccatcgtc gtctagtcta gaggatgcat 720

ggccaaggct ctctgtactg ccagttaagc ttggaacata ccctttcgct ttgtgtgggc 780

tctctttaga gcttttggag ctttgatgga cagtttagct tcacatgtag tcttactcca 840

tctctttgga ggcttgcatt ggtgtgcttg tagtggtctg taagttggtc ccctcatatt 900

gcgtggaagc aggactagct agagactaga gtaagcattg gagaacatgt tcttttcttt 960

gttctgttct gtcatgcatg tcttggtgtg tcttttttcga tggagattct aatcttctgc 1020

gtgcgtgcat gccactgttc tgccataagc aagctagctt tgcttgctta cttactgaag 1080

cttttctagc tagggttagg ctgggtggca agggatatta tgtaggagta ggtagctttt 1140

gttcctcgta aaacagagcc gatactgatt ccagctcgaa actagaggca ataccattac 1200

tctaaaaaaa tatcactatt aaactaccat taccaattgc tttagtagaa ttgatataaa 1260

atagagtatc accgttcgtg gttttataat cgttttttt accttaacta gaatggacgg 1320

ttaaaatgta cgattagaaa taagtgatct tgttgttcct ttaaacgcac aagtgcatac 1380

acacacctcc ggccccgccg cacacgtaca ggggtgccaa gaacatgcgt ctcccagcaa 1440

ggggagaaaa gccaccgcta tcaagggtca agccccgaat gaaaaccttg cacgccatgc 1500

atgcaggcat ggctccgagt ggggcatccg gttcctgctt gtagagaaca aattgcataa 1560

ttaagagaga agacagcgca cagctggttg ggagatatat ttaatactaa taaggagttg 1620

gtatttttcg gttgctagtc tggggcagcc aatcgaataa actgtgtccc acggcgtgac 1680

ctgtatgcat gcagatgcag cttcgtcccg ctggacttaa ttaagctcac atggaacaat 1740

agttcattca tgatttgatt tgatcgacca aaaaggattc taaggcctac ttcagtagat 1800

tactcaaggt ttacccatat gcactgtttt g 1831

<210> 4471
<211> 2136
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_285865_G1, chr8:119750598..119752733, Cluster 27

<400> 4471
aagagagaag tggatcactc tggggaagga gacatgagag atgaagatga agtctatcat 60

caagatccgt gggaacaaca gaagaaaagc ctggacagca atggggacaa tgaatagaag 120

ggtcccattc aagtggaagg aggtgaagaa cataaagaga tcccgatcaa aagagaggta 180

tctcacaaac tcttgcctga cagagcttct tgtgatttct gccatcttaa gaattacttt 240

acgagagaat gtcgtcatcg attccatgtg aaacatgtgg ggcgatgatc atattgtttt 300

caactgcaaa aaatgcctcc cttggaatct aggccttgaa ctatgtgttg ctcaggtaga 360

ggatcaaagt tttttctata tcgaagaaac gatagacaat agaatgattg gggagagatc 420

gagcactgct atgatttcta tggtacaggg atctgtagat gaaaaacaaa ttgaacaaga 480

gtttgttaat ttgctttgga agaatgtttg gaggtggtct agtatatata ttggataaaa 540

taatatctaa tgagattccc tgaccctaag atgattagtg aaccgagata tttcataccc 600

ttggggatga ggaccgttaa agctcaaatt acaattggtc cttggtcacc tactgttagt 660

gctaaaagtt gtcttcaaag agggtggttc agaattaggg gaatccccgt tgagcagaga 720

tccattaaaa ctattgctaa agttggaaga cttgtgagaa aggtggttga aattgatgaa 780

aaaccaggct gtgaaatgaa tttgtaaggg taagaattgc ctgtagagat gtatgtgttg 840

ttcctagtgt ggtggaaagc tctttaagcc tattcatata tgacttttat ttcgaaagaa 900

aaattcagga tgaagaagcc aatgataacc ttgagactaa tattagagtg gggggtatgg 960

aacaaaaatc caacaagaaa gcaaagtttg aaggtaatcc ttggaatgaa gggagaaata 1020

aagggaaatg acaatctagg atcaacttta agcagcaagg ggaaaaagag tggacaatag 1080

tcttaggatg tggtcatact tcatcttata aaaggaatga tgagacatac acgcccacaa 1140

agaaagcagg ggcaaaagtg tgatgactat ggaaaaaaga catgaaatag agaaagttca 1200

aatcacaaac aatgaagaag atgaagagag tgatttgatt ggggatgagt ttctttatac 1260

tggtatttgc atgggggatc ttggcaaaaa taagagtttg gacattggaa agaaaacata 1320

agaggagaaa tgcaaatacc cattaatgta gaaagctact tctaaaaaag tattgtggcc 1380

attgaagaaa ttcaaactaa tgacactatg gatgggagtg atagattgga agctctggct 1440

ggaacacaag aaagttccat atttagtggt ttacaagaag ctgaaagcct ggatggagaa 1500

aatattaaaa aggatgggga tatagataat aagaaagagg aaaggaacga gagcagagct 1560

gctcctctgg gattgaaaga aggttgagtg agaggctcaa gaaagatgct ggcgtcagga 1620

tcgaggagaa aacagaatac tcgttgctaa aagaaatctt gaaggtatta attgtacctc 1680

taagagctat tttaatactt tttcttgcaa tgatattgct agcatagcca ataaaattgg 1740

aattaagata gatgaaaaca catttgagaa tgctgacttg agtaaagaaa tggagatggc 1800

tagactttgt ttggctcaaa agaaaaagaa actggaaaat gatccaatga aagggaaaaa 1860

catgatgaaa ataaagatga ttttgatggg gataaaagat ggacctagag tgaagagtct 1920

gaatcagaca acttcattgt ggtgcagtcc aggaaaaaga gaaaagaaaa aagaattaat 1980

gtttaaatgt ctcctatcac caaagggcaa attagttttg acccaaaaaa gaaagacaaa 2040

agaggcaatg ccaaaaaccc ttacaccaaa agtaaatatg caaatgaacc taaaaataaa 2100

gattccccgt tgaatgggat gttttggaat tatagg 2136

<210> 4472
<211> 2499
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291317_G1, chr8:149461313..149463811, Cluster 27

<400> 4472
tgataaggag ggtgacgata gagacaatat cctccattta atgacagaca tgatcgagat 60

gaagtccccc tcgagcattc gttgctgcct tcggaaccta catccacatg attcaaagat 120

tagcatatga ttagtcataa ccaagtagaa catgatcgaa atctagttgg accttctccc 180

caacaattta ttcatatctt gctacggtgg tagttgcttg tagtcgtaac tagctagagc 240

ttgtagttgt aactaattta gttacttgtt tttgtagctc taattgttct tactaaaagt 300

atactttggt gcttgtgatt agaactagaa aacaaagctg ctagaattgc ctgggaggtt 360

tgcttggcta aaactagagc tagtgaaagt agaggctatt aggatttgtt attttacaaa 420

tccccccttgc actagtgttg tgaattttgc aggaaacttt atataggata ttcacccacc 480

tccctctagc catttagatc ctttcaacca tgcttaatct ataagcccac tactatagtc 540

caagctttga tgaaatgaga atagatcact tcataagagg agtgaaaccc atgcaagaaa 600

taaccaaact aaacaaggta gttaactaag aaattaagct tatatcaaag gtctaagtat 660

actactaaag gtaggaacac ttgaatggag tacttgagta aataagaaag tttgtattca 720

aataagggaa gtcttactag ataggaaagg tataaggtct atattacctt ctgaagacta 780

cttttaaact ttgagcaaag cttaactaaa ctctacctcc cattactagc ctaactacaa 840

caaaggtgaa ctaaactagt ttccttgggt gatcttcctt ttcacttgaa gacgattgag 900

ctatggcaca aacacgctta tttattgtgt gtaggggcag gggtacttgt aggagtaagt 960

gaagaagtgg cggagacatg gtggggttag ttgacctatg gagaggttga tcgaccactt 1020

agatccacca tccttcaatc caattgctca tataactcct tgatggaggt tgataattat 1080

tccaatggta attggcttct gatcacatgt gcaaagctcc atgtgggtcc tctaatcctt 1140

ctattgatat gtttcaacca taggatgaat cgaccttgca ctaatgattg cattggtccc 1200

aaagtgtggt tcttctgaat ggagtggatc agtgacatgg gtgaggtggg gccaggttag 1260

gttaaataaa agaatacatt tgtaaccata ttaattgaaa acataatatc actatgatgt 1320

tggttgcacc ctaactttgg tgcaatgttg atggtcaaca atggtattta gtgaccatca 1380

acaataacta aacaattcaa tgagtggtaa tgactcactt gcatgagaaa caccctcttt 1440

gtaaagacac tccaatgccc ctatttgaaa tctctcatgt gtccaaactc actatgacca 1500

aacttcaatg ctaacatgtt tggttctact agaaggtaag gacatttttg ttgtttctac 1560

tattggttat gtcacttcta aaagctctaa tggaagtaaa aataatccac tgagctcctt 1620

ttctcaaaca ttttcaaatt actaactcca acatgtctcc catagaatga ccattacctt 1680

tagcatcgaa ttaggatttc acaaacatct taagttttct acttgataat gcatcacctt 1740

tcaatcttaa tgaatatgca aagttagaac acttaattga cactagataa atgcatttac 1800

gtatttaatt tgtccctatt tatattgtga ttatctaccc tataaatcca gccatattaa 1860

cttctctact gacctcatgg ctagtgaaag gcaaagccct atgcatatac ctttggcttc 1920

actttgtctt ctactccttt gcttctcatc cttgcttcca tatctccatc ttattgagat 1980

cttgcatcac atgatcatgc catcactacc atgacctaca tgtagctccg agtcttactt 2040

gtggactata cttaaccatt catttcacat gaaatcatta gtccacaaaa acccaaatga 2100

cactttcaca tttatagcta gatttctttg gatggcccaa gtgcaaaaga tgcatagcca 2160

tgcacgccat acactcaaag ccaaatatgc attctagtgg gtgcaaatgc acccacaacc 2220

aaaagaaaat ttagaggtaa tcattagata ttgacattat ctgcacctcc tcccaacacc 2280

atgcacccat caagtcagcc aacttgtgcc tattacagat aacatgctct agactctata 2340

tgcatggtag tgaggatgta gaagcttgac acgtgcctga atgctaggta caagctaaca 2400

aactcatttg tagatctacc atgacctact tggggtcctc acctcactct tgccttttta 2460

acaagaatgc aaggttgttt taacttgtag gtttcacca 2499

<210> 4473
<211> 1409
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291359_G1, chr8:149602183..149603591, Cluster 27

<400> 4473
cgttcggcac atcaacatca ctaccgcttc cagtccgatc ttcaaagagc acgtgccgac 60

tgaaagctac ggttgaatat ttcgcctctc actctcctcc agcgaactcg cctgcagcgt 120

gagggtgagg gctggccacc atgtatgggg catgtgctgt ttgtttatta cttgtttttt 180

agtttatcta ggcctataac tcgtggtttc agagcaccgc acctggccat catgctctgt 240

cacgtcaagt cacacgtaca atttgagtcg tgatttgtta aacgaagtat gtcgtacgag 300

tatatatcag ctagcagatt attacgtgcc cgtgccattc aattgtagga gtttattcat 360

tcccaactgg tatccacttg ccatttcttc atctgcatgc atgggcagcg gatagatatg 420

catacggaac tagtgttgtc gtttcgtttc gtttttgcg tcacagtgca tcaaagcaca 480

tttcctcttt aattaagttc gaaccaagaa aaggaggcct ttttaagatc gaaccaagaa 540

aatcagaagc aaattaatca acaagccgac ttatgttgcg accgattctc ctactacata 600

catacacata ccacgatgtt gtgattgatc aggaaaatta agactggtgt tcattcagtc 660

aattcaagca tcaggtgcgg cctgtcacac acacgtcgtc tgagcttcta gagatagttg 720

tttcagaaga gcggcaacaa tcgtgcacgg cggtctacgt ctccagcttc tagtagttta 780

gatttataca ttgacatttc tccgtggatg tggaaagccc gcactgctcg attgctgtgt 840

cttaattttt ctactacaat tgtatgtccc cggcccgttc ctctatagat gccattcgtt 900

tcctcatgcg ttgaagctgc ctagatgact tggataaccc cccaccccca acgtgaggtc 960

atcgtgatat ctccagtgac gaatcagaga tcatgcatga cagcatggta gctagcttaa 1020

actatcacgc acgtactctt cctgacagca cagtggcagt acgtgtactg ccgtactttg 1080

tcacttgtaa tgcgcttctt ctttttcctt atttctctat ctatctatct atctaatata 1140

taaagcatca attttaatat aaaaaaaata aaacattgca taatagaggt ttgaacattg 1200

gtggttggat tcacatttac actcacctaa ccaatagaat tgtttgaaca tatatatttt 1260

tgtttttatt aaaagaaagt ctactcatat aatatacact actgtacaaa aatggaagga 1320

gcaaatgggc ggcgccacac acgttcctgt cctagtaaga cgcacagatg cgtgtattac 1380

ctgcgttatt taaccatgtg gcatgtgag 1409

<210> 4474
<211> 1980
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292585_G1, chr8:155987550..155989529, Cluster 27

<400> 4474
atgatgggct ccaccagatc catgctagga gatgagcgat gggaactaac tcctctatag 60

gtgcagagac ctcgcaaggt tgagagcaaa ccagatccct ttctggtggc ttcttcccac 120

ctcatacgac cttatcctcg ggtgtggtag tgtttctagt gtggcaacct cgactctact 180

ccatcctcct tcatcgacat atatacctat tccatctcat atttgtcctt ttattgtttc 240

gccttgacct tggtgctcct caccacaaat acaaggtctc gtatgatacc caacataaga 300

cacaaatcca aggcctagtg cgatgtccaa cacaaaggta cgcaaaattg caaataattg 360

tttgttgtga tctatggatc acaaagaatg ggctagagtt tacacttttt ttgagatgaa 420

taaatgttgt tatgcattgg tctggagtat tatctaagaa ttgtataata acttgtatag 480

accaataagt ttcatattga tgtgttattt tagtacatgt tggttgttga gtccgtttgt 540

tatgtgagag taatctattt gaacatcatg tgaagactag cgtattttgg aactagtaca 600

agcctagaat aaagttgaaa tcaaaaatgt attgcaaata gaagatgtga atgctatcat 660

acttgatgtt tctaagagtc atggttttat ggtatacatt taatgttgca aacataaatt 720

tgcagaaata agttgtccta aagggaaaat gtagagcatg agaaggttta gttatcacta 780

gtaaaagttg gcccaagata ttcattagat tcctcaatac ggtagaagtg ctatataaat 840

tctatgccat atagaatttg tatattttga taaatttaag gatagaatta gattaccaaa 900

ggaggttgaa taagatacaa tatttttta cacaaagaca acaatggctt gcttcctaaa 960

tcttttccca atcctcgaaa acataaaaac tctcaaatga catgctcaca agccaacatg 1020

tggttggatg ctcttggtgc gcccgacaaa tatagataag cactcagaat gaccagaaat 1080

aagttcgggg aaaaactctc caaaatgcaa aacttgagct ctttacttca atggaaataa 1140

aaatgcctaa accaaaaata cacaacaacc aactagtgat tggatgattt agacaatttc 1200

ttagagtata agcaaactca agaatataaa caaatcgcaa aacggacacc tataagacca 1260

aaagtgctcg aaacactgag tgcttaggtt gtttaaacga gccgaatgca ggctccaaaa 1320

cgcaaagatg atccaaacaa actctatttg aactaaattt tttggataca ccttcacaag 1380

gaagtttcaa aggtgtccaa aagattgagc tctaaaagat ttgaacttca atctcagatt 1440

aaaaatatat gaatccaaat caaggttttc tcaaatatgg taaattggtt agatttccat 1500

tgaatcagcc caaaccagtt ggtagcaatg atcctaggag gtccttgcac gtttttgtct 1560

agcccaaatg tcctctaaga actcaggttt aaaagatcaa tcaaaagata aaaaaaagtg 1620

tttgggaaga aaacccaaga caaaaacttc atgcaatcaa agatacataa gagttgactt 1680

cagttcacta tgaaccacca aggttagggc catggttccc gaatatcaaa acacagatgg 1740

aatttttttt gctaaaacat ctacagatct ccctaacaag aggaatagaa gctacataga 1800

tgtctagttg tggtagccct ccttttttat ttatagaggg ttttatatac cctttagata 1860

tttagagcta aaccatttag ctaaggatat aatgatctaa gtctcaatcc aatgatttga 1920

tggtcatgct cccttcacgg atttaatttt ccttgacgtg acgtaacctt catgaaggct 1980

<210> 4475
<211> 1572
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_303519_G1, chr9:34637752..34639323, Cluster 27

<400> 4475

gttctactag gcaaggggca tttcattagg catcgacaac aaaagattga actctagaga 60

tacttatcta ggcaagatgg agatgagctt ctctctcccc tgatcttttt cgctagtgat 120

atccctctgc ttacatctct tctcccatca tggctcttcc ctctctggat ttcagctcta 180

gtattggttt gcaagctccc atttggcggt gtttggtctc tccattatct tttcaaatgt 240

tcccaggctt aaggagttct tcctagttgc ttcttttgga tgttgcaagc ttcaccttaa 300

tgccaactct attggcttga tgttacaagc ctcccttggc ggcataatta tcgggtttaa 360

tgtctacatg attggagagt gtgtctttag attctcgatt tcctccaagt tggttggatt 420

cttccttgtc aaccttcaaa gtatcacatg tgccgactat ctgattttat tccacctttg 480

aagtgataga ggtcctaatt gggttaaaga atacataaat tttcttgaag aagaatatcg 540

ttcttggtct tttgtctcta gtctacatcg tcctccgcct tctactaatg tacgtcatgc 600

ccctttatg agaaaagtcc taccttgat tagtcctcca ccttgcatca tttgtagagg 660

ctatcaattg tagacctatt attataggag ctaattgtgt gcctttgggc caaaaagtgt 720

ttggggattt gtcaaatggg ccacctttgt ttgcttctct tgatcagtgg aagatcttgg 780

tctttgatcg attggttttc catatgaaaa agcttcagag taattaatcc taagggattc 840

catcttctca aggatctggt ttgatctggg caagatttag cctacgcgta gcctaggcag 900

ggcttctcct aaagtggttg gtgctcacag atttctttgg attttgcact ctagcaggat 960

acatggggaa aacttgatgg tcggcctaca gactttcaaa atttcaaatg ttgtgtccat 1020

tgtctttgct caggccacga caagcagatc tgtagcggcc ctatcgttgt catagatgca 1080

tgagtctagg acacatttat gcttactact ctttgcaaga aactgtcgaa ctattttgtt 1140

caaccaggaa tgctggatta tgctacatgg ttttccccta gattactggt cccatgagca 1200

cattcaaaat gccatcgcca ctttcgtgag attgcttcat taggataatg acagaagatt 1260

cctaggaatg attatcatca aggctcgggt gacggttttc caagacatcc cacaattcac 1320

tattctttca gtctccaatc atttcagtgg aagatcatag actattcagt gtgaagttct 1380

ccagcaaaac atgttaatcg aacttccagc agatgaggac ctaatccctc ccgagaacct 1440

agatggccat gaacttcctt ttcattttat ggccttggac aactagtgga actgtcacct 1500

ttcaatctca atttattact ggtggatggt aatgtagaga atgtcgagca tgataacttg 1560

ctcaattggg at 1572

<210> 4476
<211> 1478
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320058_G1, chr9:133801668..133803145, Cluster 27

<400> 4476
ctatattagt ggcttcgcat gactttccaa agacatgtcc cttctcgatg aaactttgta 60

agtcctgagg cttcatatag tcttcataga caaaatttta agtaccattt cttcattgac 120

ataatttttg atcatagaca aaggtgatca agtgacttca atcttcatgt gaatttccaa 180

agatatgata gacaaattgt ttgtccatgc aaggggttat tttttatcaa ttcgtaaatc 240

cttattggtg accagtcttt acagatgagg cttcacttat ggctaagact acattagtgg 300

cttcatgtga ctttccaaat atttgaccat tattgtcgat gaaactttgt aagtcctaag 360

gcttcctata gagtcttcgt tggcaaactt tcgtaactcc cgagtattta tcaacaaatc 420

ttctgttggt agtatgaagg tgatcgagtg acttcaatgt ttgtatgatc tttatgttca 480

tctactagaa cgatatttac tctttggaag tatttttttg tttcttgttg atttccatat 540

tccatgttgt tctttctagt gattgttaaa attctgcatc cacttggtat tattgtgttg 600

acatttgcta ttggatgcgt ggaagattta ttgtcttgat tggtttgatg attgtttgat 660

gttgaggctt cttgctgagg caactagaaa ctagatcatt gaaaggttat tggtctccat 720

tgattttgca tgagttgaat gtgatcataa ctgaatgggg gtgatgggtt tgaatgagtt 780

gttgtgtttt tgctgtaata gaagggatag tacaatgggt gaggcgaagc ctgatcctga 840

atgacatgat tgactattat tgattgatat gttggttttg tttcctctta tacttgtcca 900

atgctttttt ggacacattg gtgtggtcaa ctcctttccc atgcatgaca tagaacatat 960

ccttaggtct tagtggcttg tgatcgctat ttgcctattt cgtccacctc tttgtcctat 1020

gtgattttat ctccggtgaa tgttctgtca ttatgttgac ttctttattg aagatttctt 1080

tcaacagatt ctacattatc attgtctatg tggtttattt gatgaaatga agaagcgagt 1140

cttggctcca aaccagctgg tttgggttga ctgtggtcat gtttgattgg agctcaagtg 1200

cttgtttctt gtttgacttg tttcctaagt attgtgtatt atttgaagaa tttttgcctg 1260

acttcataga gttcaaagac aattttagtg gctctctagc gaattgggat gcacatcatc 1320

ccatttgaag tcccttaatt gcgactgtga tgaccatgtt gtctcatgtg ttgggtacta 1380

acgatttgat tgaaataact ttttaaaaat gttgagttgg agattttctt gggttgttgt 1440

ttgtagttga agagatctac tattgttagc tatattgg 1478

<210> 4477
<211> 2395
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320524_G1, chr9:135813972..135816366, Cluster 27

<400> 4477
agaatcggat cgaaactcag ccctcttaga cggatcggat tcgaatacgg acagataata 60

tccgtaccat ttatatctct atatatcata tttgcattct tttatggatg gagaaagtac 120

aaaatatgag tagatcgatc atactctcta taaaaataac ttttgcaacg gtatctgtac 180

tagtcaaact ttttaaggtt ggtaaaatag tagcaatatt tatatctcta ataaattcat 240

tttaaaaaat aaatttaata gtatatatat taatactaca aagctaaaaa gaattaattc 300

gtcaaaaaaa ataaaaataa aaaacgacag acggaaccct ctctgtttgg taccaattaa 360

aatcgatgga aagtcacatg ttctgctgcc tcgctcgcga gtacacgtcc ttttcaacct 420

tctgcgcaaa cacgtacgta tatggatgga gaaattaaca accgctgctt tacgcctttg 480

cctcttcctc tgaatcagac agagtggtcc agtccactgg tccttgctag atttatgtgc 540

tcttgtgcag cagctactag cggttattgt tgttgtacag cctttactac ctcttgcatg 600

gttgttgttg tatatgtatg tacccccttt tctcatgtga aaaatcataa atttatgttg 660

tagggcaaga aacgatgatc ttgatcagag aaataaaggc tgaaaatgtt aagtttagtt 720

tgagatcatt cacagagggg ggaaaacaaa ttaggaggag tgaattgaag ttctggtggt 780

gccgctggtt gcccacagtg tcgtctgccc cactactaat agctgtttta atactgttgc 840

aaccactagt agagtatgcg catggttccg aatcacacag gtcacagtga tgcagagtcg 900

caggtgcagg catcctaggg tgacagttca ctaagtccaa ttaattaata aatggcatcg 960

gcaacggcaa gatactgacc atgccaatag agtctggatg tgtaaccaca ctttattcag 1020

caagtcagat tggagcgcat gtatttgtat aggctttgtg cggctgtaga cttgtagtgt 1080

actcggtatt tgtgctccat gctgacgtag tagtgaaaaa aaaggggggtg tgtttctagg 1140

ctgtgaaatg gccaatagga gcaggaggaa cggtatctat ctcaatgtgc atgcatgcat 1200

gaccagttaa aaagaagtga tggtcagata taagatagtt taatgacagt gtaatctcca 1260

tagtactata tcttctttac gcccaagcta gcaatggatc atttcgtttg gacgagggcg 1320

tcgaatatta cctgtcgcac aagttggagc tggatgattt attaacatat acacatatat 1380

tagaaaatga agctgatcgg catccttgtg acgtatgtgc ttgggtacgg ttagatggat 1440

acatagctga tcttcttgcc tggtactggt agccagtaca agtaccccgg cgaggggttt 1500

ctttaaggct ctggcctctg gtgcacaggt acaggtacgt acctaaacta cgggctaaaa 1560

gaatttgaga gtgcagggca tgcatgcatg catggtccac agtgtacgtt taattaaggg 1620

catgcatcat gacagtgcgg gtacctgctc gcctatttaa tttgtgataa ttagtctgtc 1680

cgagatgatg cgtacattgt ggactgaaac actgactctg catggctgtg tattgtggtt 1740

ccatggaagc atattattgt cctattgtac gtggatcgag actcgtacgt cgtcagctgc 1800

caaggtggcg tcggatatat agtattccct ttatttcgta ctactactac tataaagttg 1860

ccattgtagt ttttgtcaat acccagatcc agatatttat gtgataataa tcatattcta 1920

gatgactaga tattcatatt agttttatgt tttcaaataa ttcatcatga ggaaaatatc 1980

cggtgtacat atataatctg cacattatat atttggctag taaattatat atgtacaccg 2040

gaaaatatcc ggtgtacata tataatttac ccagatccaa agatttaaac tttgaaatct 2100

ttggctagta acttattcaa taacttttag ttattatagc acaaacttga tacaggtaga 2160

tttgtaatta aatgcactat cccattatca taaatttgta agtataaaaa cagtgtaata 2220

tagaatacat aaatgatcaa aatataaaag agaatagagg ggagtaatgc tggttagaca 2280

ttactctttc cgccactcaa taaattagtt gcatgagttg tctgaagtta acctctctaa 2340

gtttgactga atatgaagaa aaaaagaggt aaaacgcttt agcaatgagc actaa 2395

<210> 4478
<211> 1469
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32137_G1, chr1:197393129..197394597, Cluster 27

<400> 4478
cttttaatca cttcccattt gagaacattt aaggaccttt ttaaaaaaat acaaatttta 60

aaatcactaa ccttaaaatg atctgcacca aaattatatg aatttttaaa aaccagtttt 120

atactagtgg tacgtgattg gtaacctata tatagcagta gtaggcagta atataataag 180

gtaactgcgc gcatggtgaa gcattgctag cgactgactt tcaagttgtc tcctgatgag 240

gaatccaggg tggctccagt gtgccggggg ccatgcatgc agaggtcgat cgtgtgcatg 300

ctcctgaatt atcagcaccc cctttcctgt cgctgagagg gatagcttac ttgaaaggta 360

catttacttt taatctttct aatggcagca gcgagagcct tgtatgtact tgtggatgca 420

attatgcgaa taattcaaca aacaacaagg acactggttc tttttatttt tagataaggt 480

gcatgcatgt gagccagcat gcacgcttca cgccgacagc tgcattgttc actgagagcg 540

aactgtttgt cgtttttgt cctgcattat tcgtacagtc atttcggttg aggtgataga 600

atcatttgga ttatttttt aattagagac tgctattagt ttccttttag aattagaatg 660

aacaattcga tttctggtcc aaacttttaa ccagaagtag tgtgatttgc ttggaaaata 720

aaacaatgta tgcaatttca atacgcagaa caatgttttt ttatttgaaa ttatgaaact 780

tgcgcataac tgtgtttttc tttgctgatt aaggtcaagc caaaagttaa gatgattccc 840

tctagtcaac aaaaaggagc tcaaatgcta atgctaaatt aacaatgcac attctattta 900

tttagaaaag ttaaatacaa tgcataacaa aattcatttt tttcattttt ttacaaaaaa 960

atattgctta aaaacatatt ttatttacaa acatatttgt aactgtataa tatggagttc 1020

aataaaaatg catccgttct tgaaagagga gagagagggg cgggggtatg tttagagtca 1080

aaattaaagt atttttaaga tggtgaaatt ccccaatgtg gccctattgt tctctcattg 1140

cttatatcta acatcgggtt tctgtaggat cttcaagtat aagaatatgc aatcaaagga 1200

gggatgaatg attgcggaaa cttaaaagta attatatcac ctccttctaa ttataaaacc 1260

aattcattcc acttttctaa atctggatag aatacgtttt cattaataca gtactgacta 1320

aaatccgtaa ctccaatcga ctttaatttt ttatagatta aactagatac aattacataa 1380

ctaactcaac taaaatcaca ttgatgagac tcttggatct agagatataa aggaaacaag 1440

aatgttatga tagagtatga tgaaaatta 1469

<210> 4479
<211> 1546
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321905_G1, chr9:142915913..142917458, Cluster 27

<400> 4479
ttgaaatgat ttgctaatgg gtggtaccac gcgacaaaca ctagacgaaa tggagacgag 60

atacttgaat cgttgtatgc gctttgtgag ccaagcgcta cgtgaaagtt ggaactaaat 120

acactaccga cctgacctac tcgaggtggg gccctgagta accccgagac gaccacaccc 180

tcgccaccct ccaggaccag acctggcagg gtttatttta tatttacttt ggctattttt 240

ttaaaaaaaa tcatagtaaa tcacaaaaat ataaaaattg ccttttaaac ttcacatgag 300

tagaacaact tagaatatag gcccccatgg ccctaagaca ctccaaccat agagtgctct 360

tcgacttagt tctcctaact aattggagac ccctaaaggc ccctggctga gataattaac 420

gaggttgggt tctagggacc ctatggcccc cctattattt tttgccctat gcctcatata 480

attactgcac tcaggtcatg aggctcccta gggcccgtgc ctttagagaa gataaaggag 540

ttcctagttc aactaaacaa ggaagaaata ccaaagtatt tagctcgccc ctaccccaag 600

ggttgcacgg ccattgaagg tatggcgtca tgttgaagaa aagactagtg agaagagagc 660

tacatgggag aaaagtgagg ggggattggg tataatcata ccagaaaaat gtgaagaaag 720

caagacctct agaaaaatcc tgcaagacat taagtggatt tactgggaaa atactagagg 780

aaaacatgga gatagatcct ttggagaatg aggaggatgg tgacagagtt aactatgatg 840

ataatgagga tgatttgctt agttctcaag aggcagatga tgattttgct aaaaaagtgg 900

gaggcctgat gtaagattct caggggagtg agaatgttca aaaggatgag ggtggtttaa 960

atgatggctt ccaggtagca aaaggcaaaa aaacgggtag caggcagagg agtgaggagg 1020

agttcgagac tagaggcgta tgaagatgtt aaagtagctg acatggcgat ctccagggca 1080

aaggcaaagg atgtatttat tcacaatggt aaatcataca acccttttctt gttatgaata 1140

caaatgattg tactttgatt gaaattgcta caactttaaa cgtagaacta ggtagtcatg 1200

acaaggaaat aatagaaagc gttagcatga ttaagtccct agaagaggct aggcctagct 1260

tattgcatca gacagtgaat gtaaaaaaca atcaggatga acaactctca cacaacaagg 1320

atcttctggt ccttatagag gatgatgata tgaaggagct gctggacaac tgttctgata 1380

aggacagtcc tagatttata ccgaacaaaa ccaacagagg aaaacggatg cttaagtata 1440

aaatttaagg caaaaagaaa aaaaaatagc ctccaaactg tgagatatac atctaataat 1500

gtgagggata gcgtcatggg ttcttccttc cctatagggt ttcctc 1546

<210> 4480

<211> 1438
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323714_G1, chr9:151790100..151791537, Cluster 27

<400> 4480
aagttttcaa attagcccta aaccactgag ttgggtgcaa taaaatcggt gcacgtagga 60

gattaaaccg tacttgtgca tatcagtgtg gtgttgttac cactgacacc tgaatttcgc 120

gaatgcgtgc tgcatgttct ctcgtcttga gtttcctctg ctgccatttt cctgtgcccg 180

ttttctggga accttgtgca cacattttgc tattgaggca ccatttatta ttgttgttat 240

tattggcttc tgcagttcac tgttcacctt tacagtgtag ccgtgccaaa tcgatgtcac 300

aagagaaaac gtgatccgtc atttgcactc tgaatgacac ttatatagtc acctaaaaca 360

ctgttttata taaattgtac tatttacata gttgaatttg aatattagta caaggattag 420

tagactactg gagataagct tgcagaggga aattaaaata tctcggagca cgcatctaaa 480

aatgcatctg gggtttctac tcaacggcag cttagctgga acgcggaaga tgctggcaag 540

tgacaaatcc aacggtagag tggtcgggta gggccacgag acacatgttc tgctgacgat 600

gaacggtgag ggaagcaggc caggtcaacc cattgtgctt gcgagttgca acaacagaaa 660

aagtgaaaaa aaccaagacc atctcgatcg aatggttttg aatgggcaca agtgtgtgct 720

tcaccttcac gatatttcgt tcctactttt tgaaattcag taatatattg tacggctgcc 780

aatagattcc agcattttgc attgtttttg ttggcgcaga cggaagccaa acggcgattc 840

gctctcgcta agagaagtat cgattgcata agaaacaaag agagcaaagc ttgcttggct 900

tcctccactg aacttcttgt tccaattcca gtccaaaagg gtacgtagac atgtagtgga 960

ctatctatct atcttctgct ccctgcttgc agcttgcgtt cgttcctctg aacttttctg 1020

gctccgaact gtcaaagagt cgtcgaaatc taaaacaaaa ggccgtgcac tgcagctgga 1080

aaattactgg agctgggaat aatccacgat tgtttactag ctctattcca aattataaaa 1140

cattttagtt ttttggacat attattttca ttatatatct agacatgtta tatatttaaa 1200

cgtgtaacag aaaactgtag atctataaag aaataaaata tcttatagtt tagaacagag 1260

aaaacatata gtaaatttta actatttaga gtaccgttgt tacggttacg gcaatcagag 1320

tttcacacgt ctcttcattt catgtctgct cacatgcaag catgattagt gcccttagct 1380

gtcgcactct ggttaggcat gaaaaccgat gggatcggta tgaataatcc ttctccta 1438

<210> 4481
<211> 1670
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_323982_G1, chr9:152988435..152990104, Cluster 27

<400> 4481
caacacatat tatgtgtgtt gctcggagaa ttacggatga attagaataa aaattagact 60

aaaataccta tatcaagaaa taaattgtaa gcgtaaccca cgtgttgctg caagacttat 120

ggatgaatta aaacataatt agactaaatc acttatatca agaaataaac tataaacata 180

tcccgcgtgt tgctgcaaag aattacagat taattataat gaaattagac taaattactt 240

atatgaagaa ataaactatt ctaaattaat ggcagtgcca cctagcatac taatgacaat 300

aagtaaatac atgtgatagt aggttgttga ggtggactgc ttgtatatcg agaaagagtg 360

actaatgggt ttaggattat aagatataga gattaaagga aggctggtct agggtagctc 420

caaagaaaaa gtttagaaag agaagaaaac gattaatcct ttttgtaata taagatgttt 480

gaacccaatt gtcttactaa gtctattggt tttgttttta agccagtggt ggttttatgg 540

ctttctttaa gaaggaaaac aatataacaa agttataagt tcttggcaag gtcctatcat 600

tacaggtggt gattgtaaca cggttatgtg tactgctaat aagagtaatg gggtgattaa 660

ccataaatga cttaagcttt ttaatgatgg cattaataga tgaaccttga tcaagtacct 720

actaggacta ggatacccac aacaggaatc gtggagatcc ccgtcggcca aaattatccc 780

tatcagtttt ttgcctggtt gatgggaatg aggtacctac ttagactaat aatcaggtcg 840

acttcattat ggctagaatt gatagggttt tagtctctac ttcttggtaa gctacttttc 900

ccctcgctag gatgaaagct atagatagat taccatgtga ccataatcct ctatttagtt 960

gattctagtg ataatgcttt atatttcaag agaaggttta ggtttgagaa agcggtggtt 1020

ggagcaagat tcctttagga gtgttgtgga gaaagcctag gaggtccctt gcaatgttaa 1080

caatagttta gatatatggc aatttagagt tagaattttt aggagattgg ctagaggttg 1140

ggcctctaat tatgtggcaa ccattaacaa gactaaggtt cacgttgcaa atgagtatag 1200

tagattggag gtcaaaatcc tatgtttggt tttggtaatt gagaaaagta gtggtataaa 1260

atttggctaa gtgtgtcatt aagctaggtt agatccacac caatatggag agcaatgctt 1320

ggagatagat gaaggctgat caatccactt ggagcaagtt ctcacttgaa aaaagagaaa 1380

atgaaatcta aatgtgtgaa ggccaaagta taaaaaaagg attttgtttt attggtaaag 1440

atgcaataaa gtgtgcgatc gagtttggaa tagatactca tactaatagg gtagctctaa 1500

ttagcaaaca cgactctcta atgccactag gtgttgatct atgttgaatt ctgacaaacc 1560

ccaaactaag ggaacatcta gggcacaatg acgatacaga tgtgaaacaa cgtctcttga 1620

atgtcttgtc aatcgttccc tcacccccat ttgggtgggg tatttatagg 1670

<210> 4482
<211> 1444
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33618_G1, chr1:205711794..205713237, Cluster 27

<400> 4482
tatgtgtgcg gtgtgcctca aactgcaccc ttttttttatt tttcgaaacc ggtggatgtg 60

gattgttgac aataaagaag cctgctacta gatatggtgc actaaaatac aaagtttttg 120

cgtggaaaaa aagaatagag gaaactgcgt cgtcgagatt gaagcgatgt cttgacatct 180

tgtgataatt tatgctataa tatctatcag gcagcaacct cgaagttggt gtatatactt 240

gtatatggat atgatggtgc attcacagcc atgccgttgc cgtgcccccg gccgtctgat 300

gtccatgcat atagagtctc ccatgcatga ataatgcttg ctggcctggc agctgccgac 360

cgatgcaaat ctttgtccga tacacgctag cccggccggc catgcatgtt cccttgcatg 420

tctgatcatc tccatcttgg ttgcatacct gtacaaatat atatccctag ctagagaagg 480

aactggatgc gtacgtccat caattcaagt ccaacgagac ttcgagtttg atcgaactga 540

tgaccagcta cccacaatca tgaaaagtta tatctccatc ctacaatata tagctaccgt 600

tatggtattt atactaatca aactttacta aatttatcta cattttataa aaaaaatatt 660

tagaacattt agaccagtaa ataaatttat tgtaaaaata aatccaaaat tctatctaat 720

aataaatatt aatagtgcct tatatatatt tagttaaatt taaaataatt gacttctcaa 780

taaacaagaa catggaatgg agagagtatc tattattcaa tctacttcct ttatcccata 840

ataaataata aatgtacatc tcaattatcg aagagtcatt ttttaaaaaa atattcttaa 900

atttaattga atatatacat aaaaatacta ataccccttgt ttcgtaataa tcatcatcaa 960

atagatcgtg gaatgcactt tgataatata cttattcgga gatataatta ttgatatgtt 1020

ttcatataac tagttaattg ttaaaaaatg tcttcccaac aagcataatg cgtgtttatt 1080

ttaggacgga taagtactct aaaaaagact ctaggcatat ataaaataca ctacttctat 1140

caaagaaagg aaaaaaaatc ctacgtatag ttttggttaa catatctaaa ttaagtttag 1200

ccaaatataa aggtaaaaaa tattgtgaca ccaaattagt atttatctta tgataattaa 1260

atttaatgat acttgtatga tattataaat aaaataaaat attttagttt ggtgttgtgc 1320

tacaattata tgtatatttt ttttgtagac ggaggacact ggccggtttg gttgtaatct 1380

taaggggcta aaaattgcta aacctttttat ccacatttcc ccaaggttag acgcttaaat 1440

tgta 1444

<210> 4483
<211> 1835
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338612_G1, chr10:85504871..85506705, Cluster 27

<400> 4483

ggtgctatag atatatgggc agtgtgtccc ctggcgtcca cttctgcctc gtgcgtacgg 60

agtacatgag ataagaatac gattattggt ctgtatgatg ctgtgtatac acatacatgg 120

gatgcatgat aaaacaagtt catcatcacc gccggtcgtc cataccgata aaaacagcac 180

ggattctctc ctgatgccag cgtatagtaa accaaactgt ccaatcacgc tagctagctg 240

cactaaacta gctagtgaac atgcatatgg cctatatagt cttagatcct taattgatat 300

aaataaaatc cgggccgaag ccgttcgtgt caccggcggc cgctcccggc cggtcgatcg 360

accggatcaa agagctcatt gtttttgaat ttaaatctga tgagtaccac gtaagcatgc 420

atcgttttcg aatttttcag cacgcagctg tgtgggccaa attaattaac gctttgaatt 480

taatctgtca tctgggcata cagttggcaa ttggtatatg cggcgggggg gggaggggg 540

ggggggggg acaatgcaag ttgaagatcc gcccgcattt tatgacggtc gcacaggcca 600

cagcagactg cagcgatcga cgaacggtgc tgacatttcg ttggtagtat acgagatcta 660

tatatgacac gctccatgtt gctatcgtgt atggctgttc tttgaattga accgtgatca 720

acttgaagtg tcctcaacca tttgattggg tttgtttcca cgtacgttca tttcaagcag 780

cagcatcttc ttcttcttct tcttctttaa gatcaaagac tcaaccgaac tttactagac 840

acagcgtacg tttaggttta gacccccgat cctcactcac tgaggttacc agtttacatt 900

agcgcgaaag ttttttttt cttttggata aagagcgctt tattgaacat aaaaaaacac 960

aaaagtaaca ctgggtaggg tttagtgcct tagacccagc aactcgacac cctcagctct 1020

acgaccaatg accagccagt actgacagat cacaagccaa atttcatcaa ttcatttaca 1080

actaacaaca agaaagtgta ttagatgctg tctagaacct tacctcatta tcctagccat 1140

aataaaaaaa cgaaaaactg agagttcact agaggcaaca caccggcttt ggttttaggc 1200

tgatttaatt tagcacacta aggactaaat ttaattaagg ccgggtccgt tccgttttca 1260

cggaatcggt gcatatagaa ctattactag ccgaattgat tgtctaattt atataagatt 1320

ttatcggctg gaacgattcc tagtctattc ctgtagagca ctatatttcc tcaccttaaa 1380

cagatgacct tttaattttt cggaacaact cttaagctcg aaactcctaa acgtgtaaga 1440

cgtttttcat gctgtattca gtgtgaaccg atgtctcttc tcttctctga agaggcccga 1500

agccaaaaac atcaattccg ttatctagaa agaatgtgtg tgacttcgat aaacaagcat 1560

atatcacaca aagttaatga ttttttttta aaatctgtac gatatgcatg ttcatcaaat 1620

gtatctattt ggtccaaaaa gaaaaacccc cactccagat tacagtacta gcagcgacca 1680

gcatcttagg tagttgtact ttcacatcaa aagcacacaa cagttgacaa agggggggca 1740

tgcattgaac ttttggtgcg ggttagtttc tctcaaaggt gctcttaaat gtgaagagat 1800

gggcttgaca taaacatgtt tagacttcca agcta 1835

<210> 4484
<211> 1443
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338876_G1, chr10:86972217..86973659, Cluster 27

<400> 4484
gctatatatg gtactggact actgggatta gctacatatg caaatcatgt ttgaaaaaac 60

tgaggatgca ctgccgtgct ttctgagttg acattaggac ttgtttggca ggattatatt 120

cccctcaatc ctttcaaatt cccgtgcaac caaacaaccc ttaatggaca gaaacatatt 180

atatataaat atcatctcag aagcctatgg caaaccggcg actttacata atagcggtca 240

gaaaaagttt ttttatgtct ataaatcatc tacttagagg taggaacaaa ttgcttatta 300

gacgcagacg atattttcaa tcgatatatc caagaaatcg gtttctagaa gcagtcgtta 360

ccgctggatt ctaaaatcgt ctttttagaa attgtaaagc atccaaaaag tagcactttt 420

taaatctagg acagccccgt ccccatgcaa ggaacaaggc atgtggtttt tttgcttgca 480

gcttcgctat atatatgtct ttatcggact ttatttcaaa aaagttatga attagtttgt 540

gaccacgcca cctatgtttt gaggtgagcc acaatatcga catctaaaaa atcgatttct 600

agaaggttag tgttttaaat tgtcattttc cgtttctagg ggatgtcata ccaaccgttc 660

atagaaatat catttcttta gaaatagagg atatttttag ggacagtcga aaacatttat 720

ctctcttcag agacgaccca tctctggatc atttataaat gcagttcttg atgagccgtt 780

aattactgga aaaataaatg gtgtgcctat aaaaatcatt tctattgtgg tattaattta 840

catattagat tacctcttac tcacatgtag ccaagatgca tatagtaaaa acaataatcc 900

ctagatgtgg ctatataata atcttcaggg gaacttcaag aaaaggtata ttttttgtgt 960

gtgtgttttg aattttaaca ttttgcattg taaaatatgc tacatcttac gatttttctt 1020

cagaggaaat ttccaggacc tagtcatcta aacgcgaaat gggtgggcac gcacataggt 1080

tagagaaaac agctagcctc ctccatgatt gcaagtcaat gtggatgtta cttgattcca 1140

cacaccacca caagattttt gtcatgcatg attgatgaga agtcatatgt acgtagctac 1200

tgttaaccgc acgggcgaca ttctgcagca acatcgtttg tgttcaatgc agtgcagata 1260

attaagatag cagactgttt cagtcaaatt aaacatgtcg atggggagag gttggagaca 1320

ataattattg agtgaactac ctacttagct aggttatatt ttcttcaaga agagaagttt 1380

atttctcgta actttctttc gatcgggttg tcaacttgag aacggccgga catgctaact 1440

aaa 1443

<210> 4485
<211> 3650
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_342209_G1, chr10:105895859..105899508, Cluster 27

<400> 4485
atattatggg tggggttgac acatctcgtg ggttgttctc taattgattt agatttgttg 60

tcaatggaaa acccatgcca tgcaaaaaat atatccaact ctttactgaa atggtcaagt 120

gttggtgtag atgttgccaa agctctacaa agtggtggat caggatgtgg ctttggatac 180

caagtctatt aatactagat ctagaacaag attagtaggt gttatagggg gcttagaggg 240

gaggaacaaa ttaggggcta ctaggagagg aggggattag gatttgccct agattattct 300

tgcttaatcc caataggtac atcaccccgt atagggagga cccaacctaa tcaacttgac 360

ttccatgtaa atctaacttc tagaccctta ctaatattat tattcagtga tgcctaattc 420

acctatttta ggctcctatt ggaccttctt agccccaaca agtccctagc ccgctatggc 480

tatttaggct tgtgaccggc acccactttg ttatgaatga aagatagaga acacaattaa 540

ataagatata tcaacttagc tatggaaata atatagttta atgaattgat aatgatactt 600

taagaatcta aggacttcgg ttaaaaatgt gaaattttat taagtgcatg tgcattaaat 660

gggtttaaga tatttttgg tttattatcc taaaaatccc attgctttca tgtctcatac 720

actactacta aaacaatttg agagacatgc tagtttatta acataaattt acacaaaaac 780

gttatgtctc ctagaatacc taatgatttt ttgtaggtgg ttgttttatt tacaaagata 840

ctcactagtt gtccatctct cttacaaaga aggccgaaca agaccttatc actagtccaa 900

tcgacttcac ccagtctacc tccaaacttc attctcatga atgaagggtt tgccgaaggc 960

cgcaaggtca acgaaggaga cttcgctctg gggtggtaga ctattaaaaa ccatggctat 1020

ggatgtcgcc ctttcgctga gaactatgaa caccatcgtg gggtcttcat tctatgtgac 1080

atatagtagg aaaactccgc tagtggcatc taacaccaag atgctattgg aggacaagga 1140

tgtacctaaa ggcccgatca actagcgggt gagcccgaaa gttccaagga cttcaacctc 1200

atcactcgag caataggcca agtccctgat gggggctacg aggacttatc ccccttgga 1260

gaggtggcga atgccaaagc tatggtggca ccatggctcc ccaacttaat agagggccca 1320

actcttgtaa caatttagtc caaacactac tgtgtgtatg taaatgggtt tatgtaataa 1380

tatgcatata attattccta atgacactaa tgtagggcat attcctaaga tgtaacaggt 1440

atttaggggc aagcccataa ttttaggggg gttgccctta ggtcacccta taaataccct 1500

catcccaata gagtgtggga atggttgaca agacatttgt cttactattt tgctcttgtt 1560

ttccctttgt tcaggtcccg cttgttagaa gccaacatga gttgctttat tttaggacac 1620

aaccttgaat tattttctct taaaattggt gtataaagat gggcccgtta agaggtctac 1680

ttctgaaaat aggctgttga gggcaaagcc aaacctccta agaggtaatt tgtgacaagc 1740

ccattatccc acctcttgcc caatcctaga ttataaaaac tttacaggtg tccttcattt 1800

ctatctcttt ctctatttgc acactctttc tgaacattct cccattcccc tcaaagctcg 1860

catggccacc ctaaggaaag gttgtgctcc tcaatgacag tggttcgacg acctagagtg 1920

cattttgcat agttgggttg ctatggatct tacatagcgg cctatttgat ggcgatgtgc 1980

agttctggtg gaggcaacat atttagtgga gtatggtgga aatccaatgg cactactcct 2040

ttatgtgtac aaatctaatg gtgtgatgct tctcagtggt ggatccatat cgatggtgag 2100

tggatccaca ttaagcatct tctaagggca caaacttcta tggttccaat gagacctact 2160

ctaacaggtt agcaattttg gaggtgggct cagtagcggg attgaatttg actcggaggt 2220

ggatcttgca gccactttcg ttaatctcat ttggccatct tcgaagtccc ttagtgtagt 2280

agagagatcc atatataatt ccttatagaa caattgctcc atttaaaatc attgtctact 2340

ttgcctttgt tttgggtcaa acttctatag cctcgactat tcttagtgaa gagttttatt 2400

gctttatttc caaaaatgac atgtgaaata tgtaatgaac catccatgaa cctattattc 2460

tcaatgcata gtttgacgtt attctcgttc atacgttaat tccataattc atttggagtt 2520

ccaaaccaag ccaagacagt ttaatctcca tgaaatttag ttgttctcct tttccataaa 2580

aatgttttca tataaaaaca cctatatacc acacattata gagatgaaac ttgaataaaa 2640

ctctcactcg acgttaacaa cgccaaatta gttttgttaa attgttcatt tactttgatg 2700

acattggctt aatttaaact tgtagatggt aaaattgttt tctaacaaca tattgaattt 2760

aagtgaagtt tgactaaaca caaaactaaa aaataatttt gaacaaagac aatataaagc 2820

tagtctttgt gggttttaca acagttccat aatttaatgc gcttacatga taccatgtaa 2880

atgaagaaag tgatgataaa gttttatagg atgaaataag ttttataggg ataaaactta 2940

ttcacattgt ttgcaacaca tgtgagtctt agaaactgag acatgaaaca catactaaga 3000

ctaatctaat aattaataaa caatatgatc agctccttaa aactttgcat ctcatttgac 3060

catgttctga ggatgtaact cattgtctcc cttattcatt taaagagtta ttttaatttt 3120

tggggccatt aaatagtttt catataggta ctcacctgat ttagtacata tatgaattat 3180

ttgggccatt aacttgaccc tgttttgcat cttaattaca attttcgttc tcccaatgat 3240

tcttaggtgt aacacgattg cactacttcc acagggccag gcttactgca ggccaacata 3300

ggctatgccc tataggctat gcccctcccc ctgctttata tgattattct ctactgatct 3360

tgtttcgcat gacttcatag atttaaaagt attcctgaat tttctttgta atctagtggc 3420

atttgatgca atgccctgtt tctattttag ccctattatt tagttttaaa tgatatagtt 3480

cacatatatt tatttgatat tgactaaacc tgcatcattt aaaacatcaa agtaatttca 3540

ttatttttta taaaatattt tcatagtaaa tttatctgaa cttgaggata ttaattcatt 3600

tttatggtct tggtggaact tcaaaaagtt aactacatat agaatggggc 3650

<210> 4486
<211> 1601
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34501_G1, chr1:209996376..209997976, Cluster 27

<400> 4486
aacatgttct gaagctgctt ctagattata aatcggccat tcttttgttt tcaatacaac 60

gggatcgatc gtatccctcg ctcctggagc tgtacttgat gatggttttg ttgtttcaca 120

gatctggttc gtttggtgcg ttgggttata gtgtcaacgt ggaagtgata aatacatagc 180

atcttcttat aatatctgcc ttcctgggca tctcctttca gatttatcga cattttgct 240

cttcaagtgg acatggtggt tcttctagga aatataataa tgccttttgt ctctgtagtt 300

gtgattacct ccctacttga tgtatatata cctggagcag cgcggtggtg ttccaagagt 360

gttgtcatat atagtgcact ttgtcttaca cgtgaataat tttgtcaaag aaaaaggaaa 420

acagcttaca cgtgaataac gaggataacg agccaagtgc attttgtctt tttttaaatg 480

acataatttt atttactata gtctctttag attatttaat aactaatttt aaatcaagct 540

taagaagccg agttgaactt aatagtcatt caaaaataag tttttattct aaagaacagc 600

aaattcgact gaaggaacct taaaacaagc catcgagtca gctcaattaa caagtcatct 660

agccatatat attctaaccg aaagtagagc tgctaagatg tcagctttac gacgatagca 720

gctgccacac aaactactcc ctcactccat tagtaaggtt cggcacagaa aatgtgttgg 780

ctaatttttt tctgaagttt aactagttac ataagaatat taacaatatt tatatctcga 840

aataattttt ttatgaaaaa tgttcaatga tctatttaat gatactaatt atatattaga 900

aatattagag ttgtcgtagt aagattctag tttgacttat gctagagctt agcatgccgg 960

taagcacccg gtgctaaaaa taataattta ttctattcta ttctattcta taaagagaaa 1020

gttacgtgac gaagaagatg agattgtttt gttcacacaa ggggccccaa cttagcgtgg 1080

aaagtaagtt catacgctgg aactatttaa tccagatcaa cactagtgac atgtgccgca 1140

tgcccagttt ggcaatttct taatacacac gcacgcacgc gctgcgtctt ctcttattgg 1200

aaggacggtg cgcgatggag gtggggcaga gttgcagacg atgctgacag gctaaactat 1260

cgtggagatc aaagatgcag gcaacgtggg gtagccatag ggtgaaaaaa aatgataagt 1320

ggaggttcaa gatgcaatat aattggaggt tgaagcaatc taacgggtgc caaattttct 1380

gtcgaaagcc ccaacactcg gaaaaaggga aaaaacacag tccacaacaa aacgttagtg 1440

ttggcgctct tttcggccaa tcgcctaaca caccctggat cccgctcgta ggaagtgagg 1500

gcctaaggtg ctttctacgt gagcgcggac cgtccgcact aggtggttgt ctagattgct 1560

tacttcctac tagtcggacc atccacgatt tacaatctta c 1601

<210> 4487
<211> 1486
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348258_G1, chr10:139297032..139298517, Cluster 27

<400> 4487

cccgagtgat gggtattatt ttggttggtc tatggttctc atgctcttgg ttatggattt 60

tattttgatt ttaaaagatt gaagactggg ttaggggtgg actactttcc aagtaaaatt 120

tggagttgat aaactcttat aataagttta gaactttgtt ttccctttaa cagtaccata 180

tatggaggtg tgaactagta gcatgaccta gataagtata atgattagta agtttagtgt 240

ggtacacact atgtgtcttt tagtctacgt ggcatacaac ccctattttt tattgaaaat 300

gattgttctt gatctaataa tgttgctttg ttatgttctt ttcaaaattt tggcaggtct 360

cgaacaaact ccctatgctt gtttgagcta gagtaactct ccttaaatat ggagtcttgg 420

gtgccgctag aggagctcga tcgaaggaaa ctcctcatga atttccttgt ctttttgac 480

atcctaattg ataaaataag agtcggtatt agaaaagcta acaaagtgaa atatggtacg 540

cgcaaattac caacataatt gaaaagtgta aatattatta cttgccaact atcatcaaaa 600

tgaagatcaa tttgtctggt agcgaccgtt tggttcgctg tccaatttat catattttat 660

ctgacttttt tttagttttt cattttagcc tactaagata caagttgtag tgcggttatc 720

cgacaaccaa acagaggggg agtagctagg ttgagggaaa gagagttaat gtgtatagat 780

agaatatcta tggaatgggc cttgataaac catcttatca aaacaaaggt atgctcgtcc 840

tgatactgca aggttaggtc aggtacggga ctggtcactg ggttgtggca tgaccttgga 900

accgggccca tctaaccatc cgtgatgaaa acgtatgcac tgtgggttta tagaacaact 960

tattatgaca ggcgaagtag agcacgaccg cggtcaactc aattactagt cgagaccatc 1020

tgcactgcac cgttacgaca ggcgaagtag acggctgaat ccgtggatcc attctagtca 1080

cactctaacg aacaaaatgc cacccacaca ccaattctat tttaccttat attatctgga 1140

gtcggtcttc atggaatgga ttctccatcg gttagcacaa atttgatccc tacgcactgg 1200

tagttttttt taatgaacaa accccaccat ggatcgatga cattggttgg tggagcgacg 1260

ggggcacaag cccgcagcgc ccgacagcaa ggtccaagtt tcaacgccgc gtcctcaact 1320

gtcaccttcg tgacctcacc acacctccgg tccctcaccg tctccactgc cgaatactat 1380

atatatttat taagcaatat tttatgtttc ctgagaagag tcgaccactc ggcccgtccc 1440

gcgggcaggc ggaagaatat atgtgaagcg aataaacact gccagc 1486

<210> 4488
<211> 1909
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35554_G1, chr1:215196779..215198687, Cluster 27

<400> 4488
caaggttaag ccgggtcctt tagttagggt taaattgatt atcaataatt ttaattttag 60

agaaatgtta agcacatttt ttgtaaaaaa acaaataacc ggccaaaatc ggttaaccac 120

aatacatatt attctatagg agataatgca actatataat tatgttggaa agcacctaac 180

aagaaatgga acatacaaag aggaaaagaa acaaataatg cttctaacac ataaaatctc 240

aaggacatac atgttgatat gcaaataggc atgatttgtg tttaatattg aaggaccatg 300

acgcctaaca aagaggatga attaggtgat ctattttaca aactaagctc tacaaatttt 360

gcctaatcac aatctgtaca atacataaac tatctatgtg aaactacagt tttgattaaa 420

tgtgttgata tctttactgc aaagagttat gtcacgtagg ttctaaatct attaactagc 480

gtaacagcta agatgtacaa tataaaaatc catgacgaca attggaaatg agggcatgga 540

agggaggcta aacatggata aaacataaac attgttcaaa catatatcac acatagacat 600

aactcatata tgttgttatt tgaacaaaca ttagaacttg gtttctttga atgttgcatt 660

gtcaatgaca tatgttggtt ggttcgtaca aactacgtac tagctttaag ttcactacct 720

accactagac attaaaccta gttaatccct ttggactggt tgttgtcaca gttcatcctc 780

catccatcgc ataattattg catagtattt gctaggatgg tagaggcaac cacaacatgc 840

atcattctaa caacttcgtc ttcacttgtg atgcgtacat aaggggatgt agggctatgg 900

tttctaataa cttcactgca ttatatggac accttatcaa ttcaatctac aagtttgagg 960

atctactcaa atatatcttg gctatgagga gtggtgccgc tagcttggct tggtttcaac 1020

acaatctttc gaatctcagc agcgtgatct tccatctcct tgtcaaccca ttttagggtt 1080

tcatacaaag tggtacacat cacatttgtt gccttgcaat tcactaataa tttaggttct 1140

tatcaactaa aatgattcaa actaaggcca ctacctagtt taagaaaaaa ccatatagat 1200

ttatgcagga ctggtagccc aatacaagct tggacaaaat tttagatttg agtagttaaa 1260

caaggaagac aacaaagact ttagtaatgg atggtatcaa aatatctatg cggatttctt 1320

ctgtagaagc aggcattagt ttggaagcaa ccttaacaat ttgccagtac tgacaatttt 1380

tttaacaata gccatgaaga actagaataa atgctacaac tcaagacaac aggggaaagt 1440

acaacaccca aaatgttccc atcaattcat cttatccatc acgatccaac aaactggaaa 1500

tgtacttcgg ttgacacatg cacatagtta tggtaagctg ttcctttcac ctccttcata 1560

ctctatgaat tagcgtgaat tctatgaatc attaaataat tcatatagta ttagttatta 1620

ctatgaacat tgtgtgaaat catttatttt tagctactga tatatatgta gttcgaaaac 1680

atgattgcgt aaagcataac tacctggagt ggttacttaa acaatctaca aattgctaga 1740

accctaaacc cctatagaat aaacatagag agattcattc atgatggagt aagtaggagt 1800

agtttactgg acatcatgta aaccctataa acggtcaaat cgatcctgat ctactcttat 1860

tccctaacaa taccccttgtg tacgagtgct taccttcgac actcggaga 1909

<210> 4489
<211> 1453
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_37244_G1, chr1:224363481..224364933, Cluster 27

<400> 4489
gtcgatcaag tggtgtgcga cttgatcaga ctcggtttgt tttttattgg catagctcac 60

tagcatccag tacacgtcgt cactgtactt gctccaactc ctcgcctacg acaccttgaa 120

tgactacaag agtatgatcg tagcctgcac cttgcaattc ttacattgtt ttccgctttc 180

catacgttgt tgtgtgtctc ggtgtatacc tgttggttcc atgggttttc catggtgtgt 240

tgtgtggctt tcaacaaaag ctagaccatg gggtttctgg tctaaagaat atcgagtatg 300

aactcagaaa ttttaccttg aactaaggcc atttggtagg tgatggagtt ctattggcta 360

gatcacacat tttagagaat gttgttgatg actcaaattt taatttttat ttctggtcaa 420

caaactgtga acacgtcaca tgtcacatag tcatgttagc gaacagtggt tgagttattg 480

agatgaattc gccttttatc aactgatatg agcttaactg ttcacaaata agggtatgac 540

gttatgaaca tatttgtgcg tgtaggaata tatcctctcg tgcactccac ttataatttc 600

tagaattttc tgcttctttg gtctaccatt gctaccaaca atcatattat ttagtagtta 660

atggctaaat ttagcttaat tattggtact gttgtataac aagatatgca cattgtcgtg 720

tttgctaatg tatgtttatg caagtgtagg taattctgga tcccttccag cattgttgcc 780

taaccaggtc tgaaagctaa agcaactcag ggtgctaact ctggcagagt caactaatta 840

agatgcaaat tctgaaactt tgacgaaacc tataatattt ggaacaagca tctataccat 900

aacaatcaca caaagctatg attattatta gccatcactt gcagttccag gcatgtcaaa 960

tggtaggtac tcatcttgca tgtttgttat atatgttttg taatcctcct ctttgtttca 1020

gaatatgcct aaatgttcag tataacatag tttcatttaa taatatttta gatatattca 1080

aattttggaa tgtttgttgg aacctgagag acgtattatc ttcaaagtac catggattga 1140

tgatagagat gaaacacatg tcaatagagg tttttgtgtg caattaggta agtccatgca 1200

aggtggtctt cgctgtcact cattcatgag cttaagtgta gcaaagtttc tgtcttttga 1260

acatgtaata atatacttgt ctaaaattca ctttcatgat acaccatgct agctatttgt 1320

ttattccttg tttatgagaa agacagttac ataggttgaa gtaccactct aggtgaacga 1380

tttaagtgca tcagtgatgc taatagctta cggctttcct tagtcacatc taattttgat 1440

gtcatggacg ttt 1453

<210> 4490
<211> 1536
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38115_G1, chr1:228634017..228635552, Cluster 27

<400> 4490
ctacatctaa ctatatatgg catgtacacc accatactgc tgaaacaatg agagaataga 60

ggtgcgctat gaataatgaa tctaactata tacagcatgg ttttaaatac cgaacgagta 120

atctgcatat aaattttaac atttaccata tctgtatccg aatatagagt ccagttcctg 180

atacgcatat gtgatggata tcaatattcg acacatgact ccgaatttta taaagaaact 240

atatattctc ctcggaatat tcgttggtat ctgctccgat ttcaatttca tctctagtaa 300

taactatcag gtatagctct agagcgcatc gatcggctac caagcattgc agttgcgggc 360

atattattat taaagatatg catgttgaag gtagtgggct agtggctccc gctctctgtt 420

tgaaacctct agaactaata ctaaaattta gttgttagac tccatacaat ctcagctaat 480

atcatctaat atcctagcta attgttagct acctcacgac taacaattag ctctgtgggt 540

tccaaataag acctcgtcct gaaataggga ccctgctggc cgcagtgaag ggtaagttga 600

ggcttgtcat tacagagagc atcctttagg ctatctccaa caatttattc atactcatcc 660

ctatatttaa attgtattct acgaacaata caatctataa tgcaaaaatg ttttagatga 720

ccatgtgtaa actaatggtg acggtcttag agaagccata gaaaatctat acctcgctca 780

tatggagtgc aagaagaaga cacgtgacaa gagcgtggtc aagatgacat caaccaagtc 840

aaggagatgg tgtcgttgaa cttggtggag accgtacatg aatcaatatt agggatgata 900

aagatggcat cacttgtcac tcctctgagc tgtgtggaga gtttgttggt tttctcctta 960

aaataaacca aatatagggg gtttgggcct caaaatcata gaccgaggtt tgaccatttt 1020

gggtcttaaa actggggtgt taagtctatg aatgcatatg aaaggatgaa gatatccaag 1080

aggaaaaaat gtgtgaatta ggctaatcta atttttttgc aacaattaaa tcatatcgaa 1140

caacccactt catcccttgt gtctaagagt atttttatcc tatcataaaa gtcttgcacc 1200

ctattgaagg ctacatgtgt acattttgct aactgagata attaattcta ttattgttac 1260

tctagtgctg tgaatgagct agcttaagtc catatccaag attgagttaa aatgacaacc 1320

atagaaaaaa atggtgatga tcataaatga caaacaagtg ttcaacacga aaaggagaaa 1380

agaaaaataa aaaggctcaa agcaaaggta cacataggcc attttgtttt tcagtcaaag 1440

tgcaatagtg tgcaagatca tatttaagat agatagtcat actataaaga gaacaagctc 1500

aaaatgttta tttgagtgcc accacatgaa ttgact 1536

<210> 4491
<211> 1498
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40071_G1, chr1:238732456..238733953, Cluster 27

<400> 4491
atcgagagtt gtgttaattt gattgactaa agtttagacc atcttaaggt tccttacatc 60

tttgttgttg aagatggtga gtgacctaac aagatataca cttggataca cccaaaaatg 120

acaggttttc atatttttac taaggaatct tatttcctct tgcagaggac aaagattaca 180

acaactcaca tacccttgtg tgcttgctag ttacattttt tcacttagga ataaaatttt 240

aagagaatga acacaatgat ccaaagatct tcgacttgat caagaatggg ataactctca 300

caaagctctc taaagccata aagacaaggt cacaaatctt ggaatcactc tctaatcaat 360

attaagcttt ctataatctc acagtcacaa agagagagag agaaagagag agagagatag 420

aagttcctaa cagaataaaa aaactaaaaa attgttggcc ccagcaattc ctattgatat 480

ttagggcagc cggtaaaaaa taggtaatgg taaattttag ccaattcact caactattgg 540

tacagtggat ggaagttagc agaataaagc tgctagcatg cactgtaact tccattggtc 600

gtattagtag ccgattgaaa ttagccaatt cacgtcggct attgacaaag tggacgaaag 660

ttagcagaat aaagccgcta gctcgcactg taacttcgat cagccatgtt agtagccgat 720

ttttgtcagc ttaggcagtc aagaaaatta gctactaaca tggtcaatag aagttagtgg 780

aataaagtca tcctcctccc attgtcgctc atacaaatca ctcaccaaca cacacgacca 840

ggtggccatt ggttgctggc acagccgcat aggcgataca atgttgctac cagcccccac 900

cgcttagtcg tcgtcgagct gcttggtcct tgccacccat ctctcgctgc ccaaccacca 960

aagtgccact actgctgccg tggacctacc atggaattgt cgcattgtcg tcatgccacc 1020

tccatgtcga gctctcccac ccaagccacc gccctaccct tgccttgcta caatgcatat 1080

cgtcggtcgg gctgtgtcac tccacacccc gcactcgcac ctgttaaatc tttttactaa 1140

caaggtaaca catgctcttc attctttaca ttacatgcat ataaatgttt aattcccatc 1200

gatcatccaa tgtagtttat gcatgaagga tggcagaggt tatgcatcaa taactctttc 1260

ttatggttag aacataatta taggcgagca tcgttgatgg atatataatg gttgaaataa 1320

gagtggggat catttattga caatgccttt agtttttag caactacaat gggtattgat 1380

gtattgtcgc aactataaat ctaaggacaa aaggaagaat gaaactacac ctttgtacct 1440

atggtttcat gaaaccaagc tacacgatgg ctattgaaga ttttgtttca tgtatatg 1498

<210> 4492
<211> 1659
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42331_G1, chr1:249527981..249529639, Cluster 27

<400> 4492
aagcgggttt agtgtattaa ttagagacat gtaatttagg atctaataag ttttataagg 60

catgattaca attgttaatc ccaatggaga tttgttggaa acttgtgcag gagtaaccct 120

caatcacttt caattcaaag gcttcgaact caaatcattg gaggcttgtt atatctattc 180

ttttgttcag ggaagtccta ctataaagag agtgcaaaac tctcaccgcc gttggtgctt 240

aagtgctcaa caaactcatc taaaataaaa ctaaaataca ctcaagcgga gcactacaca 300

ctttgtttag tgtttggaat gtcacccatg tcgaaagttc taaccccatg ttagaagttt 360

cgacgtgcgc caaactccta ggtgaagcca aatgttcctc tgagtctagc aagttggaag 420

ttcggactct atgttggatg ttttgtcccg cgtcaactcc ttctgtccta gtccacaatc 480

ttcaagtgtc tttgaagctt cgaagtttta gagttagaag ttttaagaaa tttttgtaac 540

tttagacatc cgtagtaata gttaaaattg accttagtac aaatatcttc tcctctctcc 600

tatcggggac gcgccaatca tttgaccaac cttgtctgat gcttctcttg agcattcaag 660

tcttctctct atccccccctc tttgcttcca tgatctagat ctagaacaag gtgagaaaga 720

gtgagaaaag gacaagaaaa cttcatctct atctttgaac acttgagttc ttcatctaac 780

caatgtgctt acacatgtta ctcttagact ttttccctag cctgggcgtc ttcataaagt 840

gtaatatttg ttctttctag acagacacgg acattatact agtagtcctg cccccaactc 900

cacaattgtt agatgtgtat ataaactttt cattcctttt gtttgatact tccgagtttt 960

gtcttgcatg cctgtgacca aggctgatca tatcctgaac ataccaactt taccttgcac 1020

acacaacggc gcaatgcgtt gccgccgagc ttgtaccacg gagatcacgt cggctccgtc 1080

gaagagcgcc gccacctcga ggccccagcc gctagctcat ctgctcctgg tgactggtgc 1140

acaggtaact atagctccac atggatggaa gacgagaatg gcgagcggcg ccgtacgtgg 1200

cgtggccctg ggttcgttcg ttcgatgccg tggctggacc tggacactgc ggtccggggc 1260

acatcgatca gcttagccag caaccagagg actcatacgt gtcccgggcg gcagttccac 1320

gccacttgct tggacgtatt agctgccccc gcttggagct ttgcgcctac acgggcagtg 1380

gacactggcc cgtgatggcc ggttacgttg agtgaacatg caggaaccaa gcgcctggcc 1440

actagctctc tagctcaaca acacgcgagc aactgtgtgt ggactcctcc tgtcacagta 1500

ttactgttac tctattaggg catcatttat ttaatatccc gtttcttgag agatatagat 1560

gttaaatgaa aaatatacaa gactagtttt tcgtgaagat tatttatatc tatacacgac 1620

tctttataca tactgtctat gcatttatga tgtgattaa 1659

<210> 4493
<211> 2379
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42970_G1, chr1:253262982..253265360, Cluster 27

<400> 4493
ggatgaaaga tttcttcagc gactagctca tctctatgga tctcactcga tatgctagat 60

ggagggagaa aactaataag gatgaaaata aatgaagtgt aggagatatc agatccattg 120

gattagcgtc catttttta gtctggtttt ttagacggtt gggtctcact cgatatgcta 180

gatggatctc actcgatatg agaccggttt tcttagtcca tcaatccaag tttaagtgtt 240

cgtccttcac cactccttgt ttggcacata ccctcttgac cttcatcttt gatgttgacc 300

atcgtttttg tgttgtagat ctacgcatca caaaccaaga gacatattgc acacatcata 360

agtcgcgata aggttaatcc acaaactcaa tcaaaaccga tcattttctc gcaatcacac 420

atctgtcttg aatcccatga accaatatca accacatata tatccggata ctcacctttc 480

tcttttaata ctaccttcgt caatacaaca gcagttctaa tggaacgcgc cacccttgaa 540

tgcctggaca accatgaaga agtagctact agttaatcct tcaataactg ctaccaggtc 600

aattcggttc aatttttaca ataccgatat gacatcaaag tcacaccaca ccaccatcgc 660

cccggccgtc ggcatcgctg ttaattaaac aaacattccg atagcgagcg gcgaatctaa 720

agctggattt tccatccatt ggcgatcgcc atctgatgaa acggatggcc tacgcagagt 780

agtttatgat ggatctggga attcttatac cggattgtca ccgtcagggg tgctaaacta 840

ctgctgttgt ctctacccag cctgggccat gccccattct catccgttgg tttggtcctt 900

ggttttacaa agggagcata tacctgaaga atatgtgata gaataattca ggtacttagc 960

tgtagtgctg ctgcctctag ttgccgatcg atagctacgt gatcgatgat tgtgttggga 1020

cttgggaccc ccgatagtag gtataggatg atgattgcta acctgaattt aagcgcccag 1080

atttctactg cattgtttct tgaagtactc cagtgttttg gacagggatg aacatgaggc 1140

ctgcgtagag agacggcaag agtctgtgtg gacgagggca cccagagcat gttcttcagt 1200

aataattgcg gcactgccac tgcattgcga atctcctcag ccatttgaac attttgtttt 1260

tgcaaaacta ggcatgtcat atacagagta tatcacatct tggtggcaca agatcttcca 1320

ctggtttcag aacggatgaa taaattattg tttcatttca tttgttgatc ccaccccaca 1380

tgcaacagat catacgagag agagagaaaa aaaaacagaa ttggatgccg tctgttaatt 1440

aaaacttata taattttcta tacacacgca cacacacaga caagcctgac actgaaaaga 1500

tctcactccc gaaatattct ccaaagatta ttagcagaag cacatatgcg tgccgctgtc 1560

gctgtatagt gccgcccttt gaactagaaa acacgtaata atgcaatcct acgccagcag 1620

attttccat tcaggcaatg tcaggctgtt cgctcgatcc attctctgac aagaggctat 1680

ctcccttctg cttgggaacc tccaacgaaa catttcaaca tgttcgttgg ggactcttgc 1740

tgctgctgct ggcaactttg gaagcgtcga aatgctgtga tcttcacaaa cgaggtcaga 1800

aagggagatt gaactgtgcc cgtaaaggac acggacgtag ctatcgtttg gcagggtgca 1860

gttttggatt cggcaagtta aggccaaaca aacactgcac cattcctcct cctactgtaa 1920

tttctactgt caaaacatga atcgcagcgg gccgcagccg aggggccaaa acagatacaa 1980

attcaggtgg gtgaaaatcc acccaaataa tgcaaatcct aaatatatat accaagaagc 2040

tgcagtgacg ttcataaata ggaaagccaa cagctcaaac ccccttggc ttttgccgca 2100

ggaggctgca gagatcctgt tcgtgtacag tacaggtgtt tgattggggg gagaggatgt 2160

gttcctttct cgctagtggc tcctcgggga tcaaatcatc aagtctgttt cttgttccac 2220

ctccactggc taaaatttgt ttgtgtcaca gtctcgccat tttctgatct tataaacatc 2280

tcgaagaatt atttaataga gaagttgcaa taattaggca tggaaggcaa ttcagtaaac 2340

gcatgtgctg agtttagaga aacaaacccg agctacata 2379

<210> 4494
<211> 2255
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44370_G1, chr1:260510089..260512343, Cluster 27

<400> 4494
cgtactgcgc gtggggcaaa gctttgccct gaaggcacat cgtctcaact caaagatgag 60

gtcgagctcg tttgacttgc tgtccaatat acgtatgagt agtcgcccac gcatgcaagg 120

ctccccgata cctttcggtc ttccattgac gtcccgccgt gtaccatcgc tctggcccac 180

gatctcggat cggacgacgc atctgcaatt gcaaccaacg agagtgcgcg cgagatcgtc 240

tcctccctcc gattccatgc gtgcgtgcac ttcctctcta cgctagctca gcgaggacca 300

cgagtagatg ggacggtcct cctcctccct cctctcatcc gattcattat tccgctctgg 360

cacgcgcctt ccatcatctg cagacatgat cgacagagga gaggagggcg gagcaacgtg 420

ctagctagct tattctatca cagatatatg catgcatggt tggtacgtag catcatgtat 480

atacgagcat ttttttact ttagattttt tttctagttt gtggccatag aaaagataat 540

ataattcttg tatgctatca aataaagata ttatatacat attatagtta tcaaagagat 600

ttataacttt ctagtttaat gttttttttt atttcaggtc gctaagatgc ttcaaaagat 660

aatatgaact ttacatataa atgcatgtgg tcttagaaaa ataatagtga tttatacgat 720

gtcaaataag acactttaca tataaaaggt gtagctctta ataagatcta taaatttata 780

gttttgagtt tattcattta atattgttaa gctaattaaa aaataacata aactaattaa 840

aatggtataa actttcgatc gctaccataa taaccatgta caaccatttg tcatcgtaga 900

aaaaataata tttttcttgt atgacgatgt taaatgaaga tattttataa ataaaattca 960

tagttctcag caacatatat aagcgaaaat tatagttccc aataagatct acaattttat 1020

agttttcact tttacattta aaggttgctt acaaatttat aactttcagc taactacgta 1080

ctatatattc aaataatggc ggacgacgtt cctaataaga tctacaattt taattttgct 1140

tacaaatggc ggaccttctt ctagaaggga tatcttgtgg gctatttgat aatgctagcg 1200

ctagctaagc aagcagcagc aagctaagga ccaaacctag ctagctaact actatactat 1260

tcaaaacaaa taatgcgtcg ttgttgtcac cactcatcac cggccaggac aggggccggc 1320

cggggagctt agtggacact agtgtgtgtt gtccgtgctc aacgcccact gagagtacgt 1380

gctagagtca catcgatgga tctcactaaa tatttgagtt ggttgcattg tgtccgtgct 1440

tactgcgtag ggtagcaccg gggctgccac tagtgccggg tccatgcgta acaaacagta 1500

cggctggaga aaatttatag accgaccatc atttcgtgta gagagaaagt cttgccgctc 1560

atagtcatct ctcactatag ctaggtgtac agtggagttc aactcaagat ttcaaagtca 1620

gctggtacta actttatcat cctttttttg ggtggaaaat tcatgtagta tagacggcca 1680

cagaggagtc ataatgcact tccaaattta atttgttata tcaccctgcg gggcgtattc 1740

aattcggcta tctctatcag tcactttgtc ccagattaca aagccagttt cagcagaagt 1800

tttagctaag ttttatttat atttaatact gcgacaatat caacagacca agttaaattt 1860

atagagctac taatatttat tatatatata tatatatata tatagaataa aaagaatcgt 1920

cgttggatta ctatagaata tttttataat aaatttattt tgaagatgta aatgtttatc 1980

ctattttcta tcaatccatt cgttcgtgat ttttatcgct atggttgcat gttgttatag 2040

ttaccgtata aatcagtttg ctgtttcata ccacaccacc ataaagctac acacaagcgc 2100

accctacaaa cataatcatt ttttttaaat agtccaaaca tagaggttca cttatttatc 2160

ggacgagatt accttcatct atggtaagat ctacctctat ctatcagagt atgttcgttt 2220

taatctcaat tcatatgaat gagacagaat tgagt 2255

<210> 4495
<211> 2227
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44635_G1, chr1:262142880..262145106, Cluster 27

<400> 4495
tattttaagc tttcaattta caaatcgaaa gcaggattta atcattttgt cctttctttc 60

tgcttctccg taaacttttg gggactggtt agagctatgt tgggtatatt acatggacac 120

agaagttaag aagagttatc ttggagctat aacagtcttg ccaatttttc acctatcatt 180

ttcctgccgt aaatggaaga aagcagctgt aaattatctt gcatttggaa ttttggatac 240

ctgcatcttg caccagagta gtcttggtgg aaaatacaac tgcttgtgtt tataccctta 300

tgtcttgaat actggcttat gagcattgaa aaacttatac ccatcttctt gcatttaatg 360

acatatgcta ctcttctcat attagggtgg acatttctct ggcatttata ggaaagtgca 420

gctaaagcca ttgaaatgga taaaagttcc aaagcgtaat ggtgatggtg aagaggaacg 480

accgattgaa gccctgatga ttctgaaata tggtggtgtg ctcacccatg ctgggagaaa 540

acaggttgcc tcataatttt tacttcaact tttcacattt tcaaatttta aaatgttgag 600

tatttgttgg gactctttat ttctatgatc aagttaaaat aaattttgat gttcaatgta 660

gaagtagaca gttataaata acagaagaac aagatgccaa gggacctatt gcccttgtca 720

tatgttcctt tacaatggtt tctttgcaga gtaccttaga catggttagc aattagcata 780

tgctattcag ggtcagcttg tagagcacta gatcatacat atggaaatgg atgtcaacag 840

ctttactgct ttagtagatt ctatgtcaca ggctaagaga ctacactctc tgatttggag 900

gatgtcactg ttgaagggtg ctctcggtgc cagatccgag ggttgttggt gagggcctca 960

ggggctgtgg tcaggccaga gacacttgcc catggtggcg taggggaggg agattagcca 1020

gcagtgatag tagtgcctaa atgacagttt ttttccgtct tcccatgctg taccaatcag 1080

taattccttg tggtggcgtg ggggtgcatg gctagccaac acttgtatag tacctaacca 1140

attaaccatg ataggttttt ccttctttcc atgccatacc agttaccaat cagtattttt 1200

tttgtagata ccagatgtgc aggcaaacat tgtagtatac tgtatcatag tgatccagat 1260

aactgacact tacatcatgc catattgcca cttgcatttt gttcgacttg agcaaatttt 1320

ctgtttattg tgtttgttgc tgtcaaagcc tgcacaatcc attgaatcga ggggacaatt 1380

tagatatatt aacagtgcat agatccagga attactgaat tagactgttc atcaattgtc 1440

atttctgtta ttttcggaat atcttatgtg cagtggtcta ctttcttaat ttggctgcaa 1500

caaaacaaat gcattacatt tgtaatcaac atatatctac tgtaatgatt ctttttatat 1560

gttctcattc aggcagagga gctgggaaga tttttcagaa ataacatata tccaggttgt 1620

tcacatcctt gctgcctatc atcttgtgaa agaagtaaaa cagtagaact ttaacgattt 1680

ttttactaca atcttgtgct taccttatct ccatgggaga ttgctttctc aagggaaact 1740

tgtgctccga actccggaga aactgacttt ggagctactt gggtcccacc ccccttaaac 1800

ttgaaaagtg ccgtgtcggg tttctcatct taaacatggt gtcacttagg tccttgtact 1860

tgtgttaatt gtgtattttg tcaatgtggc aagaggtttg gatataattg catggcatat 1920

ataagtgatg gatgtgacat cttttagtca ttggagatta cacacggctt gtgatggccc 1980

aaaactgaca gaaggaacat gataattcca atttcgcttt agatctttac agacttatga 2040

aaatctctat cacctaatgt taaagtccag ggattccata tttagggacc tttagtttat 2100

gtaaacagct tttagaatct cacattttcc cccaattttg catctattag aagtctgttc 2160

cccttccagt gttgcttgaa ctcaaggatt atatataagt tgcttgtgat ttcacttcaa 2220

cttcaaa 2227

<210> 4496
<211> 1990
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45338_G1, chr1:265889938..265891927, Cluster 27

<400> 4496
acatctgatt attagtgatt gatgtgcgtg taaactgcac tacgtacgta ctggatcact 60

tcttcgttac aaaatcagaa tggctagcat cacatatagt agtgaaatag taagccttcc 120

tgacatttat cctttgcaat gaatagccat aggagctagt tgtaccaata gaatcgattg 180

tgaaagctca aagtatagta ttgtagatca aatcgatcga tgacatttgc agcgaggcgt 240

ctgcggaagc ctgatcaata gtttgataaa cagcgatttc catgttgtaa aacagtttaa 300

cgcagtccgg caggcaagca gagacagacg tagctgctag ccgtctagct aggaagattt 360

cacggcgcct ttcaaatcct aagcacaccg gccggagagg tgcgctggac gatgcatacg 420

catgcatgtg tgattcgctc gcagtcgcag atcgcagctt caaatcttga ctccactata 480

gatggtaaac tttgcgttga cgcgggcggt gggcctgaat tcgacagctg cttaacccta 540

gctagctgtg cactgtccac gcagcaaggt caggtcacgg gtgcagctct agaggagtgt 600

gagaatatgc ataggctttg actcgaagca tgttcagtta aatcaaaact tctgcggttt 660

attgaatatg tgtcattata aatgttatgt ttccggcata tatcatcgta ttcacgatat 720

taaaagcgtg ccattatagt tttatagatc tccattgcta tcttcaggaa ctcaagcaga 780

ctctatataa atatcatctc acgtcacaca ttttatttca aacttcacat tatgaataaa 840

atagtatttt acacgatcat atgcacgctc tactagaaac ggactcaaga tataccactc 900

acttcgccac aatacacgat cactgccaaa ccatatatca cagtgattgt ctggagccga 960

caatgtttgt ttttaccagt ccctaaatct gagatctaga aaatgttatt caccatgtag 1020

taaagacaat gtgtcactgc tagtttaaac tacaatccaa aagtgacact attaggtcaa 1080

gctataaccc atcaatgata tgtcactact ggcttgtggc ttaagctagc agcaacgtaa 1140

acatatcact attggattat ttattcaccc acaatattct ttatagttga atccacctaa 1200

ccactaattg attggttctc cacatttaga tccaccttac gacctctgat tatataaaac 1260

atgtggctga atgccagaca cataagatcc cttgtgcgtt gcttgcagtt gaaaaccaat 1320

atagtatgta atgcaagctc attgtttcac caattgtagt ctcagaatgt gtcgttccat 1380

gtgggaaaag gccctcaaca catacacctt ccatattcct atcaaaatgg tgcacagaag 1440

gtgctagaag attattcatg aatatgatga ggacatgcca aagacatggc acactagcag 1500

caatatagtg catgtgtgcc ccagttggct gttagttgac gttaagccag cgagattagc 1560

tcattactgc ttgcgggcct agtggctcct ccggtccctt gggcatgcta gccctttcac 1620

tttcgaggct ccactcgggt gaggtggtta catcaggtcg aagggcacgt gcgagctgca 1680

caagcacagg accccgaaat taatttatgg gatctctatt ttttattttg gccattatta 1740

gtcggttaca aaggaataag tagatgtcat gactcaagaa cactggtgct gctttgtgct 1800

ctttctcacg tcgattagaa taagattata ccaaagtatc taaccatttc ccgtcatcta 1860

attttggatt ggatgaatca cggacacaga acaaactagc gaactctagg attgactctt 1920

cctggcttgc ttctaggccc gtcgagtgag tgaaagtatg acttagctat attatacata 1980

taaattttta 1990

<210> 4497
<211> 1414
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_45372_G1, chr1:266084457..266085870, Cluster 27

<400> 4497
taaatataat attagtccca tcggatatgt aaatatgaaa tttcgataaa agattgaaat 60

aaaataaaaa aacaaggaga cgaggtgccg gaggtggtag ggggaggggg cgcagaatcg 120

ctacgcctac acgttttggt gcagaggcta ggagcacggt agcacgctgt gaaagtgcac 180

ggctgcatgc ctcgattcac gcctttgtcc tttgagagtt gagatgcaat atatcatgca 240

atgcaagcgg acgccggata tgccttttgg agatatgtca aagccgtact agattaacga 300

agtgtgaggt tcctgtgcac taataatact cccagtctca cattataact tattcttatt 360

ttttaccat caaaacatct taaatttgat caaatttgta tactaaatta ataaaatata 420

ttacattctt tattaattat gttttcatag tatatctgat caatgtcgta aatatttaaa 480

attatctcta tagttttggc tcttaaactt gaggtatttc tttattagtt tcagttaaac 540

ttgaggtgct ttggctctta aaaaatgatc aattaaaaca aaggggggca tgaagtttca 600

tccggttgtt gaggtatttc tttcggaaag aaggaatcac atacatgatt tgggttgtct 660

cagcaccata acattaatct tatgatctct agtatatttg ggaatctgat tgacctttt 720

ttctatttta ttcactacaa caacctcgtt aagatattta agattagcaa agtgccggtt 780

ttctttttgc ctctctctct ctctatcaga ctacaagatt acttggaacg aatcattaga 840

gaccctgatc cattccctgc tataccaata gcaaagtccc gagaagcttg cacgcgtggg 900

tcgtgagtcg gctctctttg gcaatcgcga gcttatcgct agcttaggca gaagaactaa 960

gctctcgaag gcattgttta tcttcggctg ctcttattta cgctaaggag cgcctgcata 1020

ttgctttctg gctactgctg ttatctcgtg tttgcagcgg ctgcagctgc aaacaattgc 1080

tttctccagc tcatcctccg ttagcacacc gtattgtact cagggctaag ctgagagctc 1140

ctgcctactc aatcatcatt taggacatca tcaactactc gtaattaagt ttaggtggaa 1200

taaaaactcg tcgtagttca atagccaggt gtaagaagcg cagtgcacgt agcatagata 1260

attcaggacg aggaccgacg gggacggggc cctgcctttc cccggccggc cgtacgggca 1320

caccaggcac ggggggccct tcctgccatc cgggccccgc gccccataag ccgctgcagg 1380

gagcgcgccc ccaccgggcc agcgcgcgca cgtt 1414

<210> 4498
<211> 1958
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45724_G1, chr1:267915738..267917695, Cluster 27

<400> 4498
taatgacgat gccatcggct ccccttcctc tgctacatct ttctggttgg ttggttgtgg 60

ttggttgatt tgggacaggg ggttcctggt gatactttta gcattacttt ttcagttaag 120

gtgcacttgt tctctcggat cagtgccatt gttgctcatg acgactctgt ttcagtatat 180

gaacgtttgg tatctataac atgataattt gccatgccta gaatactgaa ttgctatacc 240

attatatgaa gtttactgtt actgacataa ggagcttggc aaaaaaaaat gtttagaata 300

ttttggtcca tgcgtgacac cagttgtctg ttcacaataa gcatacatat actatttact 360

gcaaagctta gtttatggac attgtgtact ttatgtgaag cttagttttg gtccatatga 420

agatgttagg attgaacagt ctgtgctttt gcagtgatct agattaggag gatctctagc 480

atgaaattta tggcaggttt tagttgtaga atttattgag attatggatg gagatggacc 540

cagcagcgga cttttggggc ggggctgata tttttggcct catactatat cgtgcattct 600

gaaggaatca tgtaactact actgatcatc gttttttaag aaaaagattc ttcaattaac 660

aatttatatt aagatatatg tttagagtct ggactgcagt gaaatacgcc tagccgccta 720

atacagccag gcagttttgt acaaaatcat gtagtgttta ggcctttgag cactccaaga 780

ggtaacacct tacacctgtc agctgtgctt ttgattttgt gcacctttc agggttggag 840

aacagaaata atacctcgtg ccagtggtgc tatgtttctg tgtttgttta cctgtgggta 900

ggatagagtg ggtagacgac ccactggacc tgatattctg gtttagttta tcactgtaca 960

aacaaaacac ctccctgttt caaaacggtt caaatgtcgt aaaaggctcg tgctttgggc 1020

cgagtttgtc gcacccagat tgaattataa gacctggagc cgcaatgtgg tcctcctctg 1080

ctgtgttgag cgtgggatgt gtgtcgtgtt ctgttttcac ggggacccgt tttcacgtgc 1140

acgcctcggg cgttggccgt tgcgcgtccg aaaccaggcc agaaaggttc ttgctttctg 1200

ctcctccagc tcggcgtgaa cagccccaga atcagggtag agagcttttg aggccctgta 1260

ctgatttgcc agactggacg tgctcttcaa tcttttcgtg caacaatgag gctgacttgt 1320

ctctgtatct ctcgcaactt gccttacact gtgtcgtgca atttggatgc ttcgtctgaa 1380

gaggtctatg ggtgagatga gaaggtcccg cttgttttct tattaaacat gttacgaaga 1440

ttccatgagt tcaaatcttc acttgctgca cgcttcctac catatattca tatgtgattt 1500

atataccacc tgctcgcgac gcctcatgca tgggacaaga gccaatatat tatgcttgcc 1560

gtcggcatta tactgattac ctcatattca cactgttgtc tgttgttcgg cttaaaaata 1620

tcatcaccaa tggaatccac gctaatgttt tccttttttg tttttgcatt gcaaggattg 1680

tgatgattga tgctgaattt tttattcctc agcgtacaga acagcatcac gctatcaggt 1740

atggacaaaa ggtagcgaaa tatatacgct atgcactagc atatttatca tgttcaacca 1800

aaaaaatact gtatgagtag agggtcatga atcattacta tatgatgcac gacacatcga 1860

aagaagagcg cgtcgacata cgccctcatg taacagcaac aacacattcg tccgtgttcg 1920

tcaagctagt tgttgattga cactgtaaca acaacaac 1958

<210> 4499
<211> 1591
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46100_G1, chr1:270110971..270112561, Cluster 27

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (284)..(383)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (285)..(285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (286)..(286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (287)..(287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (288)..(288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (299)..(299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (300)..(300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (301)..(301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (302)..(302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (303)..(303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (304)..(304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (315)..(315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (318)..(318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (319)..(319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (321)..(321)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (322)..(322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (342)..(342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (343)..(343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (344)..(344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (345)..(345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (349)..(349)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (350)..(350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (351)..(351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (352)..(352)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<400> 4499
aaatttttt aaataactta tattgtagaa caaggggagt aagatataac ttttggcaaa 60

ttaacaataa tgtcattgaa aaccaaatca ttatgggttt tctaaagacc ccaggtaaca 120

taatatagga gaaacaattt actcctgcat acccccccccc ccccccccccc cccaaataaa 180

cacatttctt aacacactgt ttttaaaatg cacctaaatg actaagctaa cctactcttt 240

ctaatcaaac tatcttcaaa aaaaacaaaa ataacaaggc caannnnnnn nnnnnnnnnn 300

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnccccccc cccccacaca cacacacttc ttaacacact 420

gttttaaaag gcacctaaat gactaggcta acctacactt tctaacatac tatcttcgaa 480

aacaactaaa taactaggcc aacatgtcta atctaaacta cctcgaacac atgttgttag 540

aattttgtga tctagttttc ataagttcat atagagaaaa cttaacagat ctcaaaagtt 600

ttaatacttg tgttcttgct gggaatttga caacaggtaa acacatccct cgacaattca 660

gaattaacta acaaccatct gttagagctt gtattaatca aagcaacaaa agtgacagaa 720

ggatgaatta attgactcaa atgcgatgag tctgactttg gccccaatgc ttcattagtg 780

aagggaaggt gcacgtgcac gtgtgaaaca cttaattttt gaagcttcaa tggaaagaac 840

tacgaccccc aagccatcaa gcaaagaagt caaagaaagc tagacgcatg catggacatg 900

ctcgtgaaga ctgaccgtca atagagcgca acaaaaagac ttttaatctt atattttaag 960

ggtagtaaat tctttttaca taaattttga agatggagat ccctataaat acccctgaag 1020

gggtactgtt catggacatg agaaattgta tccaatacaa tttatttctc tactctgtgt 1080

ttcagttcat ccacacccta acatctagcg tccaacattt atgtgtgctt gttaaaatca 1140

cctatgataa acaaacaaaa tagctagacc cataacatca cctactatca caaacataac 1200

atctagacca atgaagaaga caagaccagg tgtaaatgaa aataacaact ttgataataa 1260

tgaaaaccaa gactaagctc aaacaaacca aaatcaagat gaagcagaag aacaaagact 1320

tgaaaatagc aaaaccactt ataaatcaaa gagacagaac tcgaagaccg tcagaaaaga 1380

gaaagggaat atcattaaag caaagaatcg aaaaagccaa agccactctt tgacgattaa 1440

atgatgaaat ttacaacatt atccaagatg acatactcga tgataactta ggctctacag 1500

caaaagcttc gcaaaaaaag cttacaacaa tcattcaact ccactgattc aacttccccg 1560

ttatcaaaaa cttgcggatg gtgtagtggc c 1591

<210> 4500
<211> 1691
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46714_G1, chr1:273339632..273341322, Cluster 27

<400> 4500
atcgagcggc tcctcccttt ggagccttca ccattgaaca acttgcccat gtgcccttga 60

caaagcttat attaaacata ttgatattta tgactctaat taaattctgt acaataaaaa 120

tatttttac aattagttta atgatactta ttttatatca taaatattaa cattttatat 180

agctttgctc aacatcaaag tgtttggtct ccaaaaaagg cattcgcctt tttatagatg 240

gtggaagcac tatttagttg ctaaaatcta aatacaccaa caaattgtct actactaact 300

aaaaagtgga aataaactac acaatttagt caatagatta ttagttgcca catttttag 360

tctattagaa caacttacta agtactacct ctatttaaat aacaaattta gagatattat 420

tggttaaact gcttaaaagt ttcatcaaaa tgtatatata tgaaaaataa atggcaatca 480

gctataatga tgcttatctg ataccaaata tatttatagt ttgtacatac agttagttaa 540

acttcagata tgttaatttc gtacaagtgc atgatcttaa agatgaaggt agtaaatatg 600

attcggccaa tataatacta gggaaaaaaa ctagtactga gtggttcact ttcctcgcca 660

acagctaata aactaatctc tgggggcaca catcttattt ttgataagtc aacttttcat 720

gtttgaaaaa catactacat aacaaatatt attaagttaa tgccaaagta ttatttctat 780

attaaatatt atatacatct tctttgccga aataaacgtc tctatggtat tcttatatgt 840

caactttctt aagtttaact agattgatgt gaaatattag taatatctac attctaaata 900

aattttatta caaacatata tttaatatac tataaatatc aatattttat atatatcttg 960

ctaaagttta aaattgttca gcacatcgtc aagcgcattt attgcggcgc agtacagtac 1020

tgatattagt acaatacttt ttatataaaa atctagtgaa atgggagagt aggtgctgta 1080

tgcattgaac gccatgtgat gtgacaactg acaataaatg ccggtagggc ttttatatgg 1140

ccatcattga tactggtatt cggactggac ggccgggtgc agacactgag agcctggtga 1200

ccacgtttta attggagcgt gtgaccattg cgcttgcgca gcgcagggaa ggaagactgg 1260

agacacgtcc aggtgtatga tgctgatgga cttttaacgc cattccggtt catttgtgtg 1320

tcataaacaa atgaagctag ctagctacat ttaaagccag ttccgggtgg cgccaagcca 1380

aagcgggcat cattatccag aggactagag gagggtggcc ctgtcgtgag cctgactggc 1440

tgatgagtgc ctgaccggct gacctgaccc tgactgaaaa aagttactag cacgagagga 1500

ggaggactgg aggaggaggg tggaccagag ctagctagct ctgctctctg aactgcgcta 1560

tctctgcact gccgctggac cactggctgc actgcatgcg taggaggaca tgagctgacg 1620

ggggcaatgg tatggcacgc agcaggtgca gactggggcg cggccagaga cggcagtgtg 1680

tgggtgaatg c 1691

<210> 4501
<211> 1527
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49154_G1, chr1:285053198..285054724, Cluster 27

<400> 4501
gaaaaacaaa aataacactg tttttgggaa cgggaggaat caggaggctt cattgaagaa 60

cattgacact gagtgcgtag acagggccga gtgaaagggt ctctctagta ggaccgacat 120

gtccaaactc gagatgaatg tgacaaattc agggcctagt agctataacg tatggagaaa 180

gtaaagaaga tgctcgtaga ctattgttct gttgtggttt agaccaatct tgtccaagga 240

tcatggctgt cgtggttgtc tgccttggtt tcaaccagca ggactgtcgg gtgcacaagc 300

ataattctca ttaaatttga agtaggctca cctcccattt ttgtttcttg ccaataaaat 360

catctggatt ttgttttaat ttggctcatt atcattttaa tttatgttga tagtttgatg 420

cacacccagc aaaatataat gttcatatac tcttgtcaac agacttattg tcgttggatc 480

ttcatatatg ccatttaatt attgtcttat tattatattt acactaaatt ctatggtctc 540

aacataaata gggatacatg tacgcaattt atttttgttg ttatttatgc ttgttctata 600

tctccacaca ccaccagcac caccacatgt gtgggggtta ttttattata tttatgtttg 660

tcctgtatct tcagcttacc tctactttat tttgggcttg atttggtaat tcttaatgca 720

gcgggtggaa ccagattaag gacatcaaga tggcattatt aatatgggct tgtgtatgct 780

aacgacaaat cagagatccc actttgaact tcccttacac cattgactca aagcaccaca 840

actccacaat gatatcagct ttcaatcctt ggcgtcgccc tccctcctaa ggctgcaaat 900

ggtgtgcgcg gctatatgta gctgctgcgc aaggacagat tggtagcaac ctagcagatg 960

cccggtgtct tcaccatttt catctaacat gagcatcccc ctgtgatctc ttcttgatcc 1020

ttttttccca tctcttaccc tcacaagtct gcactaccgt acgttcgctg aatatataaa 1080

atcaggagga gcaagaagag accataggta cagagttgtc atcaatccag ctgatcgagc 1140

cactaacaag tagtgtaaag gagtaaaatg ttctcagaac taggatcctg tggcatggat 1200

tcatggtgca tcactcacgt tgatagctag tgcagagaaa ctgcttccat gttaaatacg 1260

ggtagaggga ttcaccagga gtgagggatg caatagtagc aagtaaatta agcaaggaca 1320

aaatgggact cccctgcttt acttgaaaaa aaatatgagg actactagtt aatgcgagaa 1380

tgcgttgagt tccacgtcca tgacactagc gttccattga catctcataa agtagcttct 1440

ctgttaagtc gatccgctgt ccaatgaaga taccagcaca acacttctag tgctttattc 1500

ttccattatt gctggagcat ttggaac 1527

<210> 4502
<211> 1477
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_49374_G1, chr1:286433342..286434818, Cluster 27

<400> 4502
tgctagcttg tatgcactta tactgcctga gtacatgaac ctcatccatt caaatgtatg 60

aggtccatat ctgctgaaca tatattacac tcgtaatcta cataaccaca tgtaagaacg 120

attcgatttt ttaatgaaaa ttgtataaag tgagatgaca ttagttgtgc ttctaaatat 180

ttagaaaaca aacaaaaaat aaatcactga taaagtaaac aaaaaaggcg gtatacttct 240

gatcatagaa aaaaaactga aacgaggaac ccaattagcg gaggcccata ggaaccagat 300

gacagccaga aggtcctcaa caacaacaat tgaggaggct atggtggcaa gaacaccaaa 360

tcaagctgac tcctttacag atttatgcca atagatagcc aaatagctgg aaaaaaagag 420

atattgaggt atctagggat gactcaacta gcgggtttgg ttgacgaaga aagctgctaa 480

ggggggaaga agacccaacc aactgaaccg aagtaacagc ggaaaaaccc ccaaacctac 540

aataaagaag atgaaaaaaa cacaccaatg cagctcagaa atccaatctc caaccaagaa 600

aatcgaaggt aaaggctata atgtccatga atcatttggc atcagtccat aaacaagaca 660

ctaaaatact aactgtagag gtcgagtaag atctctttat gcaattctcc atgtgtacct 720

tcagtcacct atattatggg ttctggtctg atgtatggaa gtggaacaag aatatttata 780

tgcaaagcta tctatatttc agactgaatt agacgcgcac atatcttgca gctgttgtct 840

gattgcaatg taagagaagt tcttctatta tattcttcta ttatatttat tgttctaaaa 900

aatgcaaacc tagagcacta ttgctgtaaa aggtggtagg tacgttcttt tgtactaagt 960

taattacagg tattgctctt ctaaaaaaat gcagaaatga catttcatgc tatatcgaac 1020

cgaaaataga ccatcactga ttaaaaattg gttttacccg tatcttaagt ctaaatattt 1080

caatatcatc aatcaattct gaacatatat atgaatattg ctgcccatgt caggcctgat 1140

tatttttct ccgaatattt ctcaaatctg aatatttcgg gcagcaaggt cgtgacaata 1200

aagtctattt attgtgtgga gaaaaaatag ggaagttttg gtctcataaa acaacagtgt 1260

gcacttgctt tagacgacaa tgaatgtgta agtaggagct gttacaatca cagcctccac 1320

tttcaataaa aaatgtccaa taaaacagta ataccactac cacatatagg gtctccatat 1380

ggcactaagc agaatgaatt actaggaggg gagtctctat aagacaatgg gtgctcatgg 1440

atttggtgtt tgtggggtcg ggcacgacag tgatgat 1477

<210> 4503
<211> 1780
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50542_G1, chr1:293609087..293610866, Cluster 27

<400> 4503
aaggttccac aaagtgagac atttagtatt aaagcgaaac tcccactata accaacgtca 60

agggagagct agttggtcct cctactcaaa aacaactgag tgtgtaatct tcagctctgc 120

ttccatcagt tcaaacgcta caaataggat gtagggaatt atgcttatat gccttaattc 180

aacaagcctt gggggctatt tagcaggtct ctctaggagt gattctcctc ctcccaagct 240

aaacaactag atctcacaca aattcaggtg gggagcacac aagaatcact tctccattca 300

catgagtatg aaataacgat aaccatgagt atgtattcga aaaatgcaat atcatgctaa 360

ttagaaaata agtagaatga aaaccattat attagtttgt ctccctccaa aacatggagg 420

gagaggtcaa atctaacaaa ttaaatgtgt tgccattatg ttattctttc agagttgcga 480

taagtttcca atactcacaa tactttcttc catggcttgt tattgcatgt tcttttgcat 540

ggttggctag aagatgcaag ggcttgagac atcaaatggc atcacctatt gctattgcat 600

gttcttctgt atggttggct agaagatgaa agggcttgag acatcaaatg acatcaagga 660

caatgtaggt atgagacata gcatgattat gtcttgtcta gaactcgcta caagtgatgg 720

aaagcccttc atgacaaagg catgttagcc acacgatgtg ttgactacct taccgggcgg 780

cagatatttt atttatgatg tagcctaatg gaatgcaaga tcttgaactc tggattcaaa 840

agtaatagat ccttggtttc cagttagaaa aattatcgat tattagttct tagtatcatt 900

ttcctccatt gagcaatgta aggcgtattt agaatgtgct cactaaaata ttttttgca 960

acatgaattc tcttccatca tattgtcatt ttacaaaaac aacatcctct tataagtata 1020

caatctattg tacatggaac atacatataa ctagacaaat gccccgctta ttattgcaaa 1080

actcttttag aaataaagtt attgcatgta taagttaaac ccccatgttc ttggatcagt 1140

tcctaccaaa attaggtaag acgataaaag agtctaataa aaaactaata taattagata 1200

gaattataag gtgatggaac aactagcaaa tatggatgtc ttgttatctg gtaaatttcc 1260

tatatattga aaatagtaat tacacttagt caaggtgacg tggatatggt gcattaaaat 1320

gtttaaaatt agtgggatgg cgtgacattt agtaaaaatg atgtggatgg ttggtgggag 1380

atggcattga tgacttagat gttgagatag aaagattcta atgtttagtg ggacaatatg 1440

gtttttagta aaaattgatg tggatagtgg gtggaagatg gcgtgaatga cttacatgtt 1500

aagataaaaa gctagtagga tttatgttta taagagatgt agatatggat atatagacat 1560

agatatagat ataactaatt tatgataaaa agtagtaaag tatgactttt tcaatccaaa 1620

atacacatta cactaatgga caactggatt acatgatagg atattgcacg caaagaaaag 1680

gaggtgaatt gtttttctat ttgtgtttta gcaaacatac tattgttaga aagtaagtat 1740

tcttatgcac ccccataatt ctaaccttag cgtgttctaa 1780

<210> 4504
<211> 1635
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53950_G1, chr2:11548160..11549794, Cluster 27

<400> 4504
ccggcatgga cccactaggt atggcatgtc taggcctgat tagtgtattc ccaatgaata 60

atatcataca tattaatgag atgtcatata tgatttttt gctgatgtgg caagatattt 120

aattggaggg agagaaaaaa ctatatctta aggctattgc tagtatattg tatcttatca 180

tgacacccaa aactgacatg gcatataaaa ttgcataaga atataagata caactatcac 240

aatgcacgag catcatctga cctggtcggt gccacctaat ttggcataat ctccccttca 300

cccaagtccc cctacaatac gacacagata tgtacgcgaa atgcatgcaa aaggaacaca 360

tggatatgct ccagctagag ctagctagag ctaggcatat tattatgaga gacagagagt 420

agcatctagg aggacagatt tgcaaagcac atcgtcgtct cttgcttctt catcaagaca 480

ggcgaccgac ttgtgtttgt ttccaggact caaaaagatg tgtgtcgtca gtcacacact 540

ccacaacatc gatcacacta ataagcatgc acccatggtg gattcaatca taaaaaaggc 600

tgaacggcct catgcatgct tggtgtgagg ccagcttgct cctttgtaat gtttgttcag 660

tacaaattaa cacgctgagc tcataataat agccgccatc tctcgctctt ttgctttggg 720

aaaaaacata aagacaatat gagctagcac gcagggcata tgtacagcac tacagcttcc 780

tattttacat ccaaataaag aacgaatcac tcgagcatat atagcgccat tttctttttt 840

ctttttttt aaaaaaaaga atccgaatgt tgtagtgcgc tacatactaa acaaaaaata 900

aagtcgagcc taattaatgg tatagcaact catgtacgtc tagtatgccg cagtgcgcct 960

gtgtgccaca tcacgctttg taatgattca aaaaggaaat agaactatca accgtggttg 1020

taataacgta aaccatgcat gccgtttatt caaaatggaa aataaaacaa cgtacaaaaa 1080

aaacaagtaa tgattagcgt gctggaacgt cgtacgtaaa atacactgcc ctcatgattc 1140

caggcagcca cgataatcat gcaaaaccga caagtataca cacatgacac agaagcgcca 1200

ccagcagtac gtacgttgga gcttaatctg atctccttgt ccgttgagaa cctcaccacc 1260

ctaagtgatc cctgaccaag cgtgaatcga gctactttac tactgtctga cagcacattt 1320

ggatgaggat gagccatgag caaaagcaac atgtcgacgc gatggtatca tgctactact 1380

ccagttggaa caaatcgggc ctaaaacctc ggaatacgct aacgactaac gtgattgcca 1440

gagttccaaa cttgctttca cgctgtcatg catgatgcat cgcatccata gctacgacag 1500

gtgactgggc ccactcactc cagtcactgc acggcaggag tcctcgactc ctcatagtgg 1560

acgcaggtag gtgtactccg tacgtgatgc tgcacgcctg tacgcatatt gctcggctcc 1620

tgtctcgcta cccac 1635

<210> 4505
<211> 1650
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55916_G1, chr2:22041723..22043372, Cluster 27

<400> 4505
ttatcatttg ctttcgcacc ggccagaatc actccatcac gtgatcagaa agccgagcat 60

aagaacgaag gaatagagct ctatcaaaca tgtaataaga gatcaagagc cgagctaaga 120

atgaggatga gggatagagc tctatcaaac atacatacag gtctaaaagg ctaccacaag 180

tccttcggtg agctatacta ctacaacttt tggtatttat atctttcaaa tatatttttg 240

tatttcaggc actgacggag aaaagtacta aagctagacc ggcaacgtat cagcatcata 300

tccaacctga tctattggtg tacccgtaca accaaaatac aatggagctg attgaatgta 360

tgcccgctcg tgctcaggct ctcgggaggg cggccagata cacacgattt agacgtatcg 420

atgagtgcag gcaaaataac ttatctcttt gtgtagccca cgtctatcac acgtaaataa 480

ccaaacataa ttttagataa attcaatgta tgtggtggtc tagaatgaaa cgatacgatc 540

aaccaatcaa acataatata aaggtgagcg gactttaaaa atattctttt tcaaaacaac 600

tctctaacct cgctctagat atttttaaa aagatccttc cacctctatg ttatgtcttg 660

gactcatggt tgtacggttc caccaacaga tactattgcg tttgatatgt tgctattata 720

tttttagaaa gaatggagta ttatttactg aagggaggga gtactgaggt gagggagatc 780

tgcagtttcc ctcttaattc tcaacgtacg ggtacactgt cgacgcatct cagtaccaat 840

ctcagtacca cgttaatgtt cctgccgact gcgttttctt gagtactcct ccgttttagg 900

ctatctgagt gcaaattacc actattcaca atctagttaa caagattctt tactctatat 960

cataatcaaa tatcatatat tgtattcatt ttaatctcaa attattaaac ttatatatgt 1020

atacatttat ctaataatac aaagtcaatc aacttttggg ccgcgaaaag gacaggtagc 1080

ggagaaacgc tttatatggt gtactactac tattctcgcc gaaccatcca acgaaaagta 1140

ccgtagaacg ctacagtatt tgttctctct atctgcttta ggggaagttt tatgtatagc 1200

gttgtgcata accttaaaac aaaattctaa cacatgttct aaaataattg caactctaga 1260

tataagacaa tataattgta ttcttaattt tccccataac ataatgatta tatttttatt 1320

agtatgtata gtttttatta atattagtct tcgttaaaac tttagaggtg tatgtgtatt 1380

tacctttga gatagagagc taggattttt ttaaggccag agttggccgt gccgacgcca 1440

caggcccgag ggctcacgtg aacaactgta ggtacgaaag aaagtataaa caaaaacgac 1500

tgcccgagca aacttgagta gattcatgaa cgattgcttc agtcgcgtgc acgattcaat 1560

ctatcgcctt attcgggatc gatgattcac catgatctgt ccaaatccga cctctggttc 1620

ctcgtagcga aattccaggc atgcagtagg 1650

<210> 4506
<211> 2499
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56241_G1, chr2:24009027..24011525, Cluster 27

<400> 4506
catgtcatag aagtccacac gataaaacca tccatgttca ttatcggcag ataactactg 60

ttgtttgtgt aggatcgcta ttggagatgg gttgtgaacc ctgaaggttg cagtatgtgg 120

tcggctttgt ctgttggcac tagtcatcca cgacgatctg cacgagagga agagatagcg 180

gagcagctga gaaccacaca aacatctctt aaatctttgg tgcaacaagt ttctcaaatg 240

catacacaac agatgatgca aacactatgg atgcaagagg tatatttttg acaatttctc 300

ttttcatat ctttaagttt attttaactg aagaaatgat gattaatcta ttttgtagat 360

gtgcggtgga atcgttcctc aagtcggcat gcctcctttt gcgtcgtcgc ctatcatcca 420

acagccgtca cagccaagag gtgcatcaca ggcaaaattg tttctgtttc attcaatata 480

aggattaaaa ttgtaataaa aaattttatg ccgcaacagg gtgctgcctc agaagggcaa 540

gagcagcaga tgcagcggac agctccacaa ggtcctttcc cgcctccttc tcagctagaa 600

acacatatgt agtggatagc tacgcggggt gctttcccga ctcctcagct aggcacatcg 660

atgtagagta gtggactgct ccacagagtg ctttttcgtc atcttctcag ccagggacag 720

ctcactggcc gttcggaccg acgcagtggg gcgttggacc gcaagggttt tgtcggtgtt 780

cgacctccag tccaacagca gcactgccac acccatccct agaggaggta tgctacttta 840

gtttgaacaa attagagcct aaactgatat tttcaactaa ctttgtaaca tatcttgtat 900

tttgtagagt ttaacttctc gtcatgttac acctcatacc ccgagcgaga ccactctcac 960

attagtggga gtggctacgt gttacacgac actttaactt ctttgatcat ttgctttact 1020

tatttcgttt gctcgattgg actagtaatg attatgtgat tgtgaacttg tatttggttt 1080

aaacttggat taaagccaaa cgaacagtct atttgattta aacttgtatg atatgattgt 1140

gaacttgtag gttggcatgt gtgaaattct gtgataattg tgcactaaga atctgtttta 1200

acctgatttg gaggcttccc aattggggag gcagaaaaaa caaaaaacat aaaaaaggtt 1260

aataaattcg tcgatgatgg acaaatttat gaacatcgtg gcttaaattc gtcagtggct 1320

agcggattta tgcgcacaca tggcatcaaa ccggtaggct atggtgcagc cacgtagcgc 1380

ttaaactcgt gagtggccga tgaatataat gcaaatttgt cggttagcga cgagtttact 1440

tgacacgtgt catagagcca ccaccggttg gcgtcgccac gtggcatgta agttcatcgg 1500

ctgagccgac aaatttaaga taaagtcgtc gatctagtcg acgattgacg aatttaactt 1560

aaattcgttt gttcctggtc cacgaatttt attgttgcac taaacgttct cctatttttt 1620

tcattgggtt ttaagagttt ttttcacggc atattagtat acacaacttt taatttttct 1680

cacagacttt ttgaagtaag tttacatatg acacaactgt ccaagggaga gtgttacaat 1740

tcaaatccaa atctgccgaa tcgctcgaat ggccagttgt agtagtagtt aaggaggaga 1800

cttgggtatg aatccaccat catcccacgg ctatcttcag gaaacttgac cacaagttcc 1860

tctctcccct gtataaaatt atgtaaacca tgtgattaat aaaatcaaag attcattttg 1920

tcttcattta caccctaaca tggcaggccg ccggattcga tcgctggcag cccaacagat 1980

ccagtcgcct gtccaccagg tgaggagccg gatcaacagg ggagcaggcc agaacgacga 2040

atgagagcca actgatattt caacccggat ccacacacgg atttgtaaca acatccggaa 2100

aggatcctct gttttgatag acctatacgt actcctatga tacgcgtgca caaaatttct 2160

tttataagcc tatctcgagc agactcctat gatagaccta taagtatctt cattcatatt 2220

ttaaatttta aaagctgcaa cagggcatgc gaagagtggc taatgttcta gttccatgac 2280

agatgatcag atcccctcca tcaaatcata cacggaactt agattagcct ttgcagtttc 2340

cagtcttgca tacatgctgt taacttccag aacatacaaa taagtaatcc atatgcaact 2400

cagcgtcatc acaattgact gattagagag agcatattag tgaccctaag gactgattcg 2460

gtgaccaggg aattggagag gatccatggg gaggaatcc 2499

<210> 4507
<211> 1829
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_57380_G1, chr2:30560029..30561857, Cluster 27

<400> 4507
accaaatgtt taactgatgt agtagcttcc aaatgtgtat accaaagttt aacgcttgtt 60

ttgtgctcac caaatcggct ccagaccgaa gctaaacaca ggcgtgctca aggtagctcc 120

aaccacgacc actgtactga tgcttggtta ctaaatctag aaggaaaacc ctattcattt 180

gctaatttct tatggaactt tttttattcc acggtgcttt tcattatcac tcattttcag 240

cagactgatc accaacatgc gtatcggtac ccatttttat tttatttttt ttaaaaaaaa 300

acatcacggc attcctgcat agtctacaaa ctcaacaggt cggtgaagta agcactacga 360

cattggtaca acaggtttgc aacctccatt ttttttgtt taaaaaaact ctattattct 420

gtccattact gcagtttcag tgcaggccct gacatttgcg acgtgttcta cctatcttct 480

agtccgctcg agaaataggc atgtatggtg ctctatttca gtaaaaaaag gatgagtgtt 540

ggttctatta attataacag gtgtcacctg aatatcatgg atttccgaaa gcacagaaag 600

tggcagcagc acagagagtc taggggtggc acatgtccca tctgaaatgc caccacttcc 660

gcaatttgcc aaggatgatc accatttcca gacgaccaga ccccaacagc aacgaaaaag 720

tgaagtgtca tcacggacca acacattgac atttgacaat agatcactga aggaaaaaat 780

ggcgatgaga gaagaaagga gcgacgagag atagcttcgc cggcctccag acaaaaccaa 840

tcctcgccgt tcatcctgtc acctccgacc ggcacgtcgt cgacgggctt tctggcgctg 900

cagacctgca gatgggcgct tgttttgtgc tcaccacacc aaatcggctc cagacgaaag 960

ctgtcgagga aagaacacat gcgtgctcaa ggtagctcca accacgatcg ctgtcctgat 1020

gcttggttac taaatctaga aggaaaaacc tattagtttg ttaatttctt atggaacttt 1080

ttttattcc acggtgcttt tcattatcac tcgttttcag cagactggtc aacaacatgc 1140

gtatcggtac ccatttttt atttttatt ttttttaaaa aaacatctgc gagtatatag 1200

tagtagtgct tttaattacg tggagtctga ttggaagtgc tgttttccaa tggacaggca 1260

ggcacgcggg gcaaactcgc tatgtttttt tcttttctct tttctaacgt ctgcagtgga 1320

ggtggagcct gcccgagaaa gtagaaggcc tggctaatcg aagcgtggcg gcgcaattat 1380

ttgatttgat taggacgcac acatgcatga tggtgggatg ggatgaagct atggtggtag 1440

gtatacatga tgacacaaca atgagaaact cttgaccacc gtaagctaga aatactttta 1500

gacacaagat gtagaagtaa tcgacatgtt aatgcatgga cgtaatttgt gcaaaacaag 1560

agagagatga tccaattcaa ccgctgtttt agcagcgagt tgcattctca ttgatgtgtc 1620

catacggttt ggattacatt ttgcaaccat tctataattt gcaccggatg gatcggagct 1680

cacttttcc gttcagaatc aaattgtgag ggacaatcgc cttttgtcct tgagtgtgac 1740

tgccacttgc tctacatgta catatatatg gatgagtgtg atctgtctcg tgtgtgtagt 1800

tctgcatttt ctgcagtaca cgcagacga 1829

<210> 4508
<211> 1527
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5792_G1, chr1:29551320..29552846, Cluster 27

<400> 4508
ttatccaaac gtaccagaaa ttgttagtca tttagaaaaa aaaactgttg ggaaaaagaa 60

ttagtcttgt agtgacgatg gagccaacat ttacctataa attttacatc aaatgtcacc 120

taataattac cagcccgtgc agcagtatta gtctgatatg gtgtagtagt attggttaaa 180

ccaattttta tgcccgtcga aatacctgcc gtagcaaaga ctgccttcgc gtgttgtttc 240

ccctcctaca atatatagca tcttgcattg acatcagact attaattctc aaccaccata 300

caagacgtcg cagcacggcc attttagtgc accctacaaa ttaatacgat ggcatacagc 360

tatatacaca cacacacaca cacaccattt tttatagcgg tgatatattg ccatacacgt 420

acgtctagct gactgacacg tacgtgtcca agatgatttg caccatgatc aagatgaatg 480

tggacggcgc accaccaaat ccgatcgatc gatcatcaga ttcggattct tttcacatga 540

tcattggtgc tccaggctag gacaagagta cgtggttgta tcgagtgcgc tgtacatgta 600

agtcttgggg ccagcatcct tcaacacaca acatgagatg ccggcctttt tatagttctt 660

ccatgcacgg cgagatagcg atgcttcatg ccctgcagca ctggccctcc cttcccccat 720

attacctggc ctctgcatgc gccctctttg acaccaagag gggcatggcg accgtacgta 780

gacggcaaga ggaggacaca caccagctat ggcggtagag gggttgtggc tcattgcacc 840

gtgtggtccc cacaaataaa ccaacataat tgggtttctc ttttgtaggt tgcttggggc 900

acttgccacc tgggttgttc ccctcacttt tgacaataac gttgatgtgg ccagctacta 960

tacatatttg ctcccattaa ttttaatttc tcgtggagat ttcttgacaa aacctagctt 1020

tgctatatat acatacatac tactagacgg tgaacgataa taatggtcat gatctctgat 1080

gaggctgatg ggctcaatga tcagcttgcg atctaccaac cgccccccat ttaactgcac 1140

tgtactattg ttggttagtt gtccaatgac aatcctaaaa ccggccgtgc aaaaaggatc 1200

cgatcgatga tgttcactgc caaccacaat atatataatc tgtctttcaa atgccacatg 1260

catggactct tcagatcaat gtgttagctc gcgtcacgtt taataaaaac acaatcccaa 1320

ctatagatgc tttttcatgc gaaaaaatag tggattaaga ccctatttat tatttagagc 1380

ttttaggctg cttcgtcgtc tcagcgtaaa aaatcataag ctaaaacaaa tagataacct 1440

tttggtttag cttccgaaaa gctagaagct cagaaaaact tagtttatat gaaaagctaa 1500

aaaaagtttt gttgttttgt gagcatt 1527

<210> 4509
<211> 1776
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_5793_G1, chr1:29553171..29554946, Cluster 27

<400> 4509
tagctttttt ggatttagaa agctaataac atcatttaaa agttatatat catccgcttc 60

tcaaaattaa aagtccaata ccaatctttc agaaaagctc taaaagctca aacaaataga 120

ccctaacaga gacatgtgtc cttgaacgag ggccagagac ggtttagcgt ttgctcaccc 180

tccatgaggc gacgtagcct ttagcctata tcctgtacat cggatcgtgc taaaaatgtg 240

tgacgatgat tcatgagctt gccgagatcg agtcgataag ttaaattatc tgactagact 300

agttagcata cgtttcgttg tgtagtgatg tagttggaag ttgggagaga cgtgttccat 360

gcgctctcat ttttgcgtgc tctagtgcta ttgccgtagt tgagtacgaa gcaaaccacc 420

tgtagatgga gaaaacgttc taaaccaaga ggccgattta agggtatgat tttgttacaa 480

gtcaattcgg ggcgctatgc aagaaactat agcgctaaaa aacatgcgat ctactttctc 540

catttcaaat cataattaag ttcttttgaa tttttctata tagataaata gcaaaagcta 600

cccatctaaa agttaaaaca atttacaatt caaaatgaaa tgatccgaga gtacatgtgt 660

agccaacaac aacatacaat acattcaaac atctaaccat ataatcatga aaaaaatcat 720

cttccctaga ttttcctcta agtttctgat tagatccact agctaaactt agtcgataaa 780

gtttagctgc tagagactaa aatgtacaca atctctttag ctattttaat cttgctaaac 840

ctgtctaaag tgtgagtatt gatgaaatta cctaacgtct acctatacca ggtgtgcccc 900

aaaacaccct ggaagaccca ctctaagaca aaggcaccat ctaacgtggc ctcgatcagg 960

acagctctca accaggttgg gccccaacca aagctccctt gacctggtca ccctaacctg 1020

atcagaccca acagaggtaa cccctacttg gttacctcga ctaggttggc cccgaccaaa 1080

attcacaata catgattccc cgaccacagg ttggctccga cctcagtcat cctagtaaac 1140

cctaacatgg tcaccctaat ctgatcgatc ctgacctcaa atgccttaag tagcctcgat 1200

gtagtcacct cgaccaagat gacgccaaac tcagttgcca tgatctaggt cagcctaggc 1260

catagactcc taataagact ccatgtatcg gaggtgccat gaacctttgt gaaaatctaa 1320

cacatttatg atccctctga ccatttagtg cacacttttg actaaggcat gcgcttggtg 1380

aaggtaatta cagtaggaag gactctgagg acgacacctc tatccaacca ctccactctc 1440

cgaaggacaa caaagacatg cagactatga cgagcctcac cataggtgaa aggcagtcat 1500

acaccccaga gaagacataa ataaaaggag tgaactatga ggtaaaccac ccatacagct 1560

ccccatggat gcacctcata tggcctcgat cgcccttcta tacggaccaa ttacccctgg 1620

tccggtcaaa ccagagatga catgacctag gggttagacg ccagggatga tgggccttca 1680

agagcgtagg agacaactag ggacagattc agaaaaaatt atgagggact gaattaaacc 1740

actgtagtat aggagcctct tttacattgt atgtgt 1776

<210> 4510
<211> 1561
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62911_G1, chr2:61834417..61835977, Cluster 27

<400> 4510
gaaaacagtt cttttaattt atgcatcatg gggagccgtt tttcactctc ctactagaat 60

gagtccaagc ttaactggct ctctttcata caccatagca aatagctggc gcgctaaaca 120

ttgcaagtac taatgtattt gtgtgcctct cagggttcac cgtctcgatt cctctcgttt 180

cctccctgtt taccagtcct cttggcggga tcgagaaacc ggcgaaaacc ggacagattt 240

tgttgtttcc gaacggtttg gcaattcaaa ttagaaaaat cagatgtcgt tagaaaccac 300

ctataccgag cgggttttcg gtggattcac accgaaaaac tgtataccga acgattttca 360

ataacaagtc tacaattcat taacttttt gacactaaaa tatgattttt ttaacaataa 420

atatatttct agactctttg tacactctaa ttttaatata tatttttctg aagtatttac 480

aatattttcg aaaaatccaa ccacgattcg atgcctctat ggcccgagaa tgagaaaaat 540

tggtgaaaac cgccggattg cctctaacag taaattttct ttccaaaaag tgtcactaat 600

taacaaccat tggataataa cttaataagg ccctcctccg tgcaggcggt atatgtttta 660

tgttaataat ggcggtatgt gttctttgcc attgccaagt ggttaggtgc aactaattgt 720

gtgttcgtcc catgaaacag tcggattcct tgtcgtcgga gccagccatg atatcgaatc 780

agttcattat acgtcctgat agctgacttt tcggttaatg aaccaagacg aaagtatcat 840

gcacataaaa actgcacagg gtcaacatcg caacagcaat tattggagct aaacaattag 900

cctcagcaca tttttaacta tcgtgcaggt actattccta ctctgacttg ctgtgtggtc 960

tcttacagga gatgagttat ttcaacttgc caacatcagg aaccttattg gcaactgata 1020

gctagagaga tatagtttcg tagcaattat tggctatagt acagagatcc aagtcagaag 1080

aagcactttg ttcttgggtt aacatgctac tcagtatgat taccgcatag aaaactgaat 1140

gatttattga caataattat cactactata gaaaaaaaaa atgtctgtga tctaagacat 1200

acgcacgtcg caagtcaggt aatgcatttt tttgaggtgc tgctaggatt tcaacctagg 1260

atgtagggtc tcacacgttc tcttcttata ccactcaact atattgctat ttatgactag 1320

aaaaaatgtt ttcctataat tttaacactg gaagagtctt aggcatctat taagctgtct 1380

ataacaaatc atgtaaaata aacgatttac attgtagatt actatgttta taaagtgaag 1440

tttaaaatat atgataagat agaaaatgtg ataggatagc tgctccaggt aaccttagta 1500

acaaaaacta gtactaaagg agtcatttag tattgatttt tgtcactaag ggtaccttta 1560

g 1561

<210> 4511
<211> 1803
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62916_G1, chr2:61846832..61848634, Cluster 27

<400> 4511
tagtaacgac accacgctct aaccatggca acacctttg caagcttttt agccatctgt 60

tgccagagta gcgaagattt ggcactctct ggtagaagaa tcaggacatg ccacacaaga 120

aaacccatgg acagacattg ttgtcgtcag tcttcctttt ttttctctct ccattattca 180

tggtcagctt tggtatactt cttgctacta taggtatagg catccgctag tttcccgact 240

tatctttcac ggagtcgtgc acaactgttg tggatatgat atggtataaa tttatttcca 300

tctcgtgccg cttttactct cagtgctcga gaagacttca cacagctgaa atgtgtattg 360

cagaagatga tggtattgtt tgaaacttac gtatttttat gtttaactta atttagaaaa 420

tagttgagat gtcgtgctta cttaaacaat tttaattatc aagttcacct aaacctaaac 480

aactaatact caatcaaact gagacctcct agaagcagat aaagtccaaa cacattagca 540

ctactcaact agagcaaaac tacacaagct aaactactat agaggtaaac aacttgacta 600

aacaagttaa gcaaacctac tcggctacac gagctttcaa gcacgagaga acaactactt 660

tactagaatt taagctacaa tttatttgat ttaattaaat aaaatatggt ctacacccat 720

attaaattta attggcatca ggtggcaggt gtcgctcagc ctttttttt acaagggtgt 780

cgcttaactg attgtagtag tgacttgttt ttgacgtgaa acctaaaata ggtgcatgat 840

tattatacgg catgaaagat gcattgactt gcaaatgtat ggtgctgggc tacaatgaca 900

cttacactac agtgctttag accacctcgt ggaaggttca aattagtttt tcgcccagcc 960

gcccttagtt gtggcagcgg aattgaaaaa taacaatatt tttcgttaca aaatataaaa 1020

ccttcaatta ttatgtctga cttcgagcat acaactatca ggataacgat ggatatggtt 1080

tctttcttgt gacgctcaga attaaatagc agcaatcatt ggctgttgtt ttctttttta 1140

aaaaaaaatg aatgagtcag aggcttcaag gtcagaggca caaactactc tctcaaggtc 1200

aactctcagc ggcagcgttg gtttcctaaa agcagcttta ttaaaacact gttctaaaat 1260

aattaacagt ttagatgtaa aaatgtagta gaagtaaaaa aagacgtttt atataaaaaa 1320

tttaaaagga gacagataga gacgcattga aaaaaatcaa aagatgtagg aaaagaaaaa 1380

atgaattaaa aatgtgcatg atagttgttt tagtataaaa tttaaaacct gcaacactaa 1440

ctgttttgga actaatgaag cagtcagatt tacagtgcgt gcatccgtgc agagcatctg 1500

tacgatcgat ccactccacg aaaccgagtt cttatcttat actattagtt taagccatta 1560

tgttcttttg caaacgtagc atctgtcacc ttcacaagat taatactggg gatctaggat 1620

aaactgggcc atccaagaaa cgctttgcgc gcaaagaatt ctaatcaagg aagctacggt 1680

gacacattgc atgaatctag cacccggccg gccggccgat tcctattttc cttacaaatg 1740

atctcaccaa gttacatcta cttgtgagac ttttctactc agttgacaaa tttctattcc 1800

aac 1803

<210> 4512
<211> 2150
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_63432_G1, chr2:64937982..64940131, Cluster 27

<400> 4512
tcctgagtaa gatgcgagtg aaagagagtt gtgtccacca ccaatcgcct cctgcttcta 60

tatttggtgg aagttgaatg ccagtggctg gtgggcatgt gatgcatgga ccagaaggag 120

atgaatagtg aagcctgcgt cgctttcgtg gcggtcctcg ctgcacatga ttggaaccgg 180

tccccccttgg catgcttcct tggagccatc acagcggcca gcgcagcgca tgcatgattc 240

catcaaccaa aggggcgggc aggggacggg gggaaagcca accccggatt ggaaaatatg 300

cgtggcatct atctatctat gctgatggcg gatcgtccca catttagaca tcacttgttc 360

actgagtcca ccgccacgac ttctcttcga tgctatcacg agaggggttg gtttcgcaag 420

ataaactgct tcggatccga caaaatttat caattggtgc gttcgataaa aaaacaattc 480

gctgccataa atggcatgca ttttctatta acctagtcag agtttcaaag aaacggcatg 540

cattttggaa tggatggaat tctgacctat atgcttagtt accattgttt tcccccttaac 600

ccagtatgga tcaaactgtt ctcaacgacg ccctagaaaa aattcaggtg aaaaaaatgg 660

aacgctatgt ttccaacgca gcctacaaga tgcgtgttgg tgtaggttaa agttaaccga 720

atcgccaaca gcctatctat ccccccggcg gccgggcttg ttgcctttaa gggcatcatg 780

gccgagattt tctacatgag catattcgat atggttccgt cctccatttt caccggattg 840

ggtgcggctg agtgctcatg gcaacgagac gaccaaacat tctctcgttc cgggaatatc 900

acgagggcag gcagtaccga tgaaagtagc gtgtactgtg cttacctttc catgctccct 960

tcccctgtga gctgagtttt tttttggagc tctgcgcctg attggctaag gcgcgtcaga 1020

aacagaatct tttgatcttt tttttagagt tcttggaggg gaataaaagc aacccttttat 1080

gccctgccta ggcccagccg ccagaggagg ctgctgtgga tccatactag gatctccctt 1140

agggcttagg ttagttgcaa atgcgccatt atcttaatgc ctagggtagc tctccacaaa 1200

gatgccactt tcccatggtt ttcttcttcc catctccttt tactatttcg cactcttttg 1260

acatcacgga ccgagagcta cgggtgcgcc caaaacacac acacacacac atggtaccaa 1320

gtatctcaac cgtttaaatg gtgtcattag atcaggttag acagagatga agacaggttc 1380

cagaaaactt agcgaaatta aatgatgagt tcacactagg tgttcaccta gtgtatgtac 1440

aacccagagg tcctgggggt tttatgtaca agcgacagct aagagtggca caactctaag 1500

tttttagatc acaaatatag ttaaaagaca atatgtatgg agacgagtgt agaacaagcc 1560

attcgtgaag agactatctc ttgtattttt tttcacttaa ccttttaaag actcctcaaa 1620

agaccctata ttaaggggt gcttgggatt gctctaactt cagaaaattt gttcgagttg 1680

gtacatcagg tcgttatgtg ctctagaaaa ttgtggagct agggttgtga acctttaaat 1740

gacattcaga taaatcattt tatttatcgt ttttattgaa aatatttgtt taaactgttt 1800

aaatttatat tataaagtaa aactccaagc tggaatccaa acattatcta aataggttgt 1860

acatgtcctt ctatgatgca ataatgacaa tcaaatcttg agaagacctt tcatttggta 1920

tttataatcg ataacaacga tggccagaaa gacgaggggg acgggtgtca actgtcatgg 1980

gacggagagt tgcttcggtg aaggatccat tatattttgg tgttaaagta aaaaatttat 2040

tgcagacata tttagtagag acagtatatt tgtctgatct gtgagtaggg aggtaaatgg 2100

tatagacatt ttctgtccta ctcgaattcg atccatctat gagagctgaa 2150

<210> 4513
<211> 2225
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6602_G1, chr1:33840038..33842262, Cluster 27

<400> 4513
aaccatatga gtaatctgct taatatggtc taagccagtt gtgctgttgt gcaaagcgca 60

ccatagaaat gtatttagtt gtatacaata gcatgctaca tcatccatta acagggagtg 120

gtagacctac tttttatttg tataggggtg ccatagtaaa aatttagatt ggggattaat 180

tactaaatta gtaaaaaatg aagatgggat tactatggat tgaggattgc tcgaggagtg 240

aggagacgga gcacgccgtg agcaggacgc cgattgccac aaagaagagg gcggaggcgg 300

cacaaatgta gtcgtcgccg gcgtaggaca ccacaaatca cgcgttcgtg gcgaccctct 360

tcatgaggac gtccacgatg aaggcaacat agtgacatac acgcagctgc agctggcaca 420

acatccctag gatgctgagt tcatctaggt tgtgaaactc ggcctggtag cgaagcttac 480

gaagctgacg aacctcaagc ggcgatacac aagaacttaa ccatcgcctc cccacgggta 540

gctccacact ttcgggccta tgagatcacg acacaaaagt tggatgtgca gctccgtgcg 600

tgggacgtag aagcgggcat gcacgcacca ccggaggaga caaagggata tcgaggtctt 660

tgatggactg gcttagggtg tgtcatggcc taactagacc cctgtaggcc caccttaata 720

gaaattatga taagtaaatg taagtagcat aattttattt caaatcctct gatttcccaa 780

tggcatcccg gtgcaaaaca tagtgaaaaa acattaagtg gtagtatgta tatatgtaca 840

cataatataa tgatgaataa atagtgtata ggatatataa tatttatttt gaaagtatta 900

ttcttttagt gttatttaaa ataagatctt cagtgttttt tttgtatgaa accttatccc 960

ggattttaca aattgggagg cacggtgcaa aacatagtga aaaaacatta agtggtagta 1020

tgtatatatg tacacataat aatataacga tgaataaata ttgtataaga tatataatct 1080

ttattttgaa taagtctttc aaatttttaa tctaatgatt gtaatgcact acacgtaaat 1140

aagaaatcaa ttttttttt gataatgtta atattgttta aatcttctta taagtaaaga 1200

aatagcttga ttagaaatga gaagaacaga tcgatttcta catccgcacg atcctaggcc 1260

atgttttaac gttttaacta atattttatg caaaatagtt ttttttaat ttgtattaca 1320

tatattgcta taaattttgg ggccctagga ttttggggtc gtatgcccgt acgaggctat 1380

tactggtggc agtttgaaga cccacagcat cgcatgcttc tcctgccttg ccaatactgc 1440

ggcaaggtag catggcgctg gaaggggctc tgctagctcc gaccgacggg cggcaccgct 1500

tggatcggcc cgagcgcgtc cgcatgcgtt gcgtgtattt gggggttacg tttacgcact 1560

gcttcaatct ggtttcgaga tgacgcgtct ccgaggacga actgctgtga tggataaagc 1620

ctggctggca tgcgatgtcc cccgagtttg gacttgggct attcggtgac ctgttttcat 1680

gacaaggagg ctggtgggat gcagagctac tacactccag gtgtatcaac tgctgcgatg 1740

tgtggtcgtc gctagttttg gttgcagttg caggtgactg aagaagcaac gccgcacagg 1800

cacagccatc gagcatcgac atagcgcatg catgcatgca tgcatccatc ggtgccgacc 1860

gtatattcgg cggcatatgt gcgcgcgcgc cgctcgcttc gcttggcctg gcggctggcc 1920

cgcatgatga actccatttt ttttctttct ccttaacaaa acaaaaggaa aaattctctt 1980

gcgcgtgttc tggacaagag aaatacgaaa tatccatcgg agcctcctgc ctagtgtgca 2040

gctttgcatc gaactttcga gtgcgctccg gtcctgttga cggattctga tctcgttcac 2100

accgctttga caaggctcca aagatgcata tgacgcgatc gaggaatgac gaacgaagaa 2160

ggctcacgca ggcctagctg caaccacctg tgtagtatag tacgctgtac gcagcaagct 2220

gcatc 2225

<210> 4514
<211> 1430
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6665_G1, chr1:34292664..34294093, Cluster 27

<400> 4514
gaccactgtc tcccccatcg acatctccaa gtaggtgctt tggtggtggt gccatacgtt 60

caaaaggtct tccaatgttc ccacttcctt gaaaatattt gaaagtataa gaggaacaac 120

aaggcctggt ccagagctag aaatacacct ttccaaaagg attatggtca tttgaggttg 180

atgccacaaa aacataatgg aacaaggaac accatggcct cactccaaca aaagcctcac 240

aaagatggac aaagtggaga ggacaaggac aacattgggc ataaggtgcc caattggaag 300

accatagtgg tcaagaatac aatggaaaaa gtgagagaga gggaagtgaa ctctgactgt 360

aagatgatga tgatagaata tggtgtactc atcaacctcc tcctatggga gacataatgg 420

aaaggttgca agatgaatgt tacccgagag cggtggtggg acctacctaa gtatctctca 480

taccttgtct aaccatttat catttagaac acacgctcgt gggagatggt caaggatgga 540

atgatccacc ttcacgcacg gataagattg tagtgggcat ctcatgcatg ggaaagagga 600

gaaagatgac taggaaaaga agagactagg tcactacatg ttcacatgaa aagagtaagg 660

catcgtgtag agccatattt taagactccc cctctctcta cccactaggc atagtaacca 720

agcattgcat aacctgcata aaaaggtgag ccatgcaaca taatgggagt atgggagtaa 780

ccacccaacc acttaggtga ttacattgag aatcacatca tacgagataa aatacatgta 840

tcatatgacc ttgggtcccg agatttttct taggaatcgc aagagtgttc ctaattatct 900

cctcattcag aaaacataga taaataagtt tcctctgaca taatgatgag cctcttggtc 960

caagagttgt tatctactgc caaagggaac aaaccaagat gtctctaaaa ccaatgcttc 1020

gacttctagg ttggagttca taatgactga cagttgtcac tccatggtgc aatcataagg 1080

atcaaatacg aaacccaaaa gataagctaa atcatactat tagtctactc tgccatgatg 1140

gtcgcttctc ccaaactagt ttaatcctcc tcttacattt ggtagcccct agggctcagc 1200

taccataatg tccaatggct cctcagtgta acctaagacc gagcattctt aggatttgtt 1260

ccataaggca aataattgaa aaattggggt tcgcttgcag taacactcaa actgttgccc 1320

taagtgactc tatcagcgcc gagtgaaggc catacccttg gctgccacca atacacatgt 1380

aaggatctcg gatagggtga atcactttga aaaccaccat aatgggacca 1430

<210> 4515
<211> 1551
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6908_G1, chr1:35595791..35597341, Cluster 27

<400> 4515
gatttctata aatttacttt atttttact ataataagta tattattatc gtatattaag 60

agtagtaatt cacaaatatg tatatgtaca tgccgtttac ttactatacg ttttctagat 120

taaattgaat ataaaactga ctaaattcct gatagtgtca catatcatac gctgcaccgt 180

tgctagtgtg gcgaactgtg gtacgactcc ggcctcgtct tgtctgcctc atcctagctt 240

ccgttccgtc tggggtctga acttggccga agtaaacgac ctcggagtaa aaaggacggc 300

gagttgttat tagggcggtg gaaaatggtg gccgcgacgt acgagagcag gacacaccgc 360

aaagcactcg tgccgcgtca ggtcaggtca ggtcagagga ggaaaaaaaa aagaaagtgg 420

catgtgaatt gtggcacgcc cacatggccg gagtctgcag aaagtggaag gacacgaaag 480

aattgtagca gaagaaggtg aaaatgacca caggaccgga gtgcgacttc gtgccttcat 540

tctctgtgcc taggcaatta cttgccgtat aatattatat gtgtatgttg acgtggattt 600

ggctatccag gccactgcgc ttttgggatg cttcttttgt atcgaaggct ctctcttctt 660

ttacacacgt aaataaaacg gggtaacagc tctcttaacg ctgacatttc gaacgaaatt 720

tgtgaaaatc ggtaattccg gcggtggcca aaatatttct aaaaccgaaa ttaaaaaccc 780

ccggtcacaa acacataaat ataccagctt tgaaaaaaaa aagagtagac ggtttctgat 840

ttagttaaac agaaaaaata gacatctaac tttgggctgg agaggactca aatcaagata 900

gttagatgga cagctcgtac ttattatctt tcccgtcggc acttgtgtct cttttcatgg 960

caatcctgtg atgcaactgc tactctcacc aaggtagtac ttgaatttca agaggccgca 1020

tattatcata aaccaaacac gccagcacac acctggttcg ctgattgaga atacaggtgt 1080

cagtgtgcta cgataattga ttgcactagg agaaattgaa cgctctgact ttctgatctc 1140

ttatctgact atacatacac tcgctcgatc tcactactca ctagtcaaaa gcatgcctcg 1200

tagtgatcac ggatcagtgg ctactggcta atgcctatgt atctatcccg tccatcacgt 1260

tgacctgtcc gaaactagct gcgatggtga ctaaagacat gtctgcacgt ctctcgattg 1320

ttaaatttaa tataggcaca ttttatattt tatttaaata aattaaataa ttttagacac 1380

atgttaaagg cttcggacgc cttaagggcc ttcagcgttc gggtcattag gctgtcttca 1440

gcaggttatc tatcgtatct catatattat cttctatttt aaactttatt atatgaatat 1500

attgcaaaac agtgttttgc acacccaaaa acagaatcta ctacagtggc g 1551

<210> 4516
<211> 1524
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_79826_G1, chr2:170207958..170209481, Cluster 27

<400> 4516
agcggccatg agcctcagct agcgggcgtg atagtggcca agctcatgac atccatggaa 60

ccacatgcat tgagaggtca caatgaggag gaaaaggggg aataaagaaa taaaacgtta 120

attttgtgtc atgagttgta atggtgggta atttttccta gctccgccaa ctcaagtttg 180

gacgatcacc acttgagatg ctccaccgat ttggttaatc tggtgctaga tccatggatt 240

tggtggagca gatccaccaa tggagttagt ggagttacat atgttgggta aatttttaa 300

tccaaatcta gtttagatga atctagagct agcagagttg tccgaagtag gcccttagag 360

cccccaaatc cttcgacccc tctaaccctc attcttgcgg gctctagagg gagtttatgc 420

tcaaccattt ctagcattgg tcccatgtgt cactttagat tcaccccttg tatcgctcct 480

caatgcccat cctaggccca ataattcctc ccaacaacac ccgacgcgac ttcctcccca 540

aacactgctc ccaagctttg cggttccaca atagtttaat cccaatcaat gtcccatcat 600

gcctctccat cattcctgct agatctggcc tcctccattc taggcaagtc ctactcatcg 660

atgccccttt ttcctattct aatggctact ctcaatgtgg ctttcttgcc ttcctatgta 720

atggcttcta ttgtgcatga tctcttcctc cttatggctg gcgacacgac ttatctcgat 780

gccttaagaa gactcttcta gtgtggcttc tatatatgca tgttttccct atcccatgtg 840

ttcatacctt agtcgataga gcttggggaa agaaatttga gaatgaaaaa tgtatcttgc 900

atctcattct tagttgaaat ggatttgagg gttacttctt gagcagaagt aaaaaagatt 960

gagctctaaa atacaaggag cctctaaata caaaacaatg gcacaaattt gagggttcct 1020

actagagttt aacttaggag gggataaata cctagactat tggttgagat agttaagtag 1080

agaaaaaggt ttgttatagc aattcccctc atgctccact ctgcctcacg cctaacaaac 1140

acacccttga tgtcgaggtt tcaatcccta gagagtgacc tcccactcct acttcctaag 1200

tcacttaagt aataagatca ttcatatcga tctgttacca ccaatgacta attttattca 1260

gacgttgaca tgtcgtgtca agtcgataca atacaataca tgacgtgtat atgctcgacg 1320

atgtaaaatg ttgtcgtttt taacatacaa taatagacgg atgatggcat ctgttaccac 1380

cattgactaa ttttattcag acgtttcaag taatggtgga actcatttgt ggattgattc 1440

gtttgttcga actgacgttg gagcaccccg tctatttatg aaatacatta gcctccctcc 1500

ccaagtgaca ccatacacaa attc 1524

<210> 4517
<211> 2032
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83671_G1, chr2:191011811..191013842, Cluster 27

<400> 4517
cgggtatccc ggcgtccgga tcggcgtcac cacgtgagaa cggcgggggt ggccgactgg 60

ccgggcccgg gttgggttaa gaggattttg ttattctgaa atcggcggca gtcatccaga 120

cacgtcacat ggctgtggca tccatatacg aaaatatcta attatgatat tcgtataagt 180

taaagtagtt tagatttggt taaatttata gtgaataggt taacatttgg atttccgact 240

agatttatgg tgaaaaaaat atatttattt atggaggctc aagtgcccaa ataaaatgac 300

gcatttccta cggaggtttg ttttcacaga atttgagctc cgtcctaaat acagaggagg 360

aggaaatgat cttgagctat ctgaatgtcg tgggcagaaa ggaatagcac tgaatctgca 420

gctcagggct atgtgatcag ggatggtggt ggcgtgctat atgtcatctt gtgcatccat 480

ccaatttgaa gcttcatcct agaaacggac gctctcttga tcaaacgagc gcactcctca 540

caaggcttag cgtacgtatg gcaattgttt tgggtttttt tttctttttt actcgtacaa 600

aatgtataca gagttgttca tgatgggttg ccaactcacc ttggatacga gtgtgtaaaa 660

ggatctgagt tctcgttgtg ctcacttgcg gaatacatta gtgtaactgt tcctgatgat 720

ctatcagcac atacacagtg gagtatttct gagtcgtgag cggtgccggt ggcagccctg 780

acgatgacta attccgcaag caggtctttt gttttttttt ttctttcagg cgacaagcaa 840

gaggtcaaga agaattgcga atgtggcaag ctcagctctg tttacttgtc gctacatttt 900

gacaatagtg ttccgaagtc gtaccttatg acgttttgtt tgtcttttag ggcaatgcca 960

tttatctttc ttaactcatg gttagaaaca gataatttca atatacaaat attatctgcc 1020

taccacatct cttcattttt tttatgtaga catggttttc taccaagaaa ctattctctc 1080

gtccttattt atacactagt ttgggctcta tcatttcaaa tagtcatgtt aatcttgccc 1140

tgaaccatta tttaaccttg atatgaagtt gtataaaaaa tgtatattag catctacaag 1200

tctaaataaa tatatcatct aaatatattt catgaagaag tcaatgtgac tactttggtg 1260

ttatatatca tctacgacta aattaaacaa aaatgattta agacaaaaaa aacacacaaa 1320

tgaagttagt agcattaaat ctcgctcgct atgtttctat ctgcgtggcc gagtctaacg 1380

ttttactccc tatggtctca agtaaatcaa cttgtagtct taagaattat acaccttgtg 1440

tttgatatga tcttgtgaaa tcttatttga tgaaacatta tatcaaaata aaattggttt 1500

tgtaaagtga ttaatatgat atggaatgtt gtgcatatgt gctaatatat ggttttgata 1560

ttaatgtaac atactcataa gattgatgtt gtatggattg atcttgattc aagctgtgga 1620

cttgcgttca tattcattgc atggttttgc gaaagtgtag gtggtgcttg aatcaaaaca 1680

tggtcgatgt cgactgaaac taggttttcg gactaagttt atgatggaac taatatttta 1740

taggttgaag atgccgtgtg gaacattttt cattaaacac cgacatatat gaagattagt 1800

tgtgttgaag tcttgcatga aatagtttaa agaaaaaaag gggaaaacaa aaaatcgata 1860

aaaggggga aaaagagcca gctcccagct agcagctagt tggccacggt ggcccagccg 1920

actagcgctg gcctaggcgg ggcgcgggcc atgcggctgg ttagacggcc cacccggcag 1980

cccgcaggca gcacggcctg gctgtctggc tgttgattca tatatacaag tg 2032

<210> 4518
<211> 2721
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89054_G1, chr2:222316888..222319608, Cluster 27

<400> 4518
tctatgtatg aaatcgcgac ggacttattc tttagcttac aaatttgtat accatctaca 60

ttcttagttt ttctctttct acacggcaga cacacgtttc ttgatcaaac atttagttca 120

ggctttagtt taaattatgg tggttcttga tcatagtttt aaatatcgcg ctaaagttta 180

ctatagtttt ttcatagggt ctaccactat gttgttgata attgtttcgc tattctcttt 240

agtgatattt tacctttgct aaacactgct atttgattta gccaaaacta atcgaggtag 300

acatgcatta tttattctat tttactataa catatgcctt acctattaat aaataatgta 360

ataaattaca ataaacatta aactgttgaa tatggaatgt tgatagtatc accgagtacg 420

attgatatga ttgttaagta atgcacatgg aaatatattc ccctatatct tatatatgta 480

cttaagtatt tgtgttcata aatcatgtat tattaaaaat ttcatgcaca attgataaag 540

aattttcaca ctttctatac aaccactaaa tacatagctt tgattatagc ccgctatagc 600

ttttggagaa gatcactgct aaatatgaga gcctgctaat taaaacattg ctcttgaaac 660

aacccttgtg tcgtgaagtc atgaccatag attatacata agtttttatg ttatcagttg 720

gtaggatttt cctcaatata ttaagttcaa actcttatgc atatcatact ttttatttaa 780

ggctatcaca tctagatttt attggtcata aactacaatg ttaataatta caatggtata 840

aaaaataatt gagtgagcac catgtctctc aagtttgtac tagagtttga agtgaattat 900

aggaaggacc aatgataatg cactaacctt aagaatgttt taatgtttaa gcctaaaaat 960

attgtctagt gccaaaaaat ggaaaccaag gtgccattaa cctccttcac ttttgaacat 1020

acaagttttt tgatgtaaaa cgctttaagt gcagtagtat ttcctataat aataaagtgg 1080

ccacagatta tactatcaac aaagatatgc cataatttct tctacaaaaa aaatgtaatt 1140

tatacaccta aattaaaaaa aacttaccca aattatggtc atgtatatta acacaacatt 1200

aaataaagta atagcataat taatttgtat atgcatgtgt cacttaggaa gatttttcat 1260

atatgattac gaaagcatac aaacatactt ttacagctca cgcacgcatg cataaaaata 1320

tacttaattt atgcatacta atttatacaa gtgggtactt tagaaactca tacatgcgta 1380

atttatggtt atttattttt ttctatatca tcatatgttc taaatttagt tgcagacttg 1440

agggaataat atagtttatt ggttaataat gaaaaaatat ataatttaga tgaaaattct 1500

agtgattatt aaaataatct atcataatgg cagaactggc aatttatatg gaaattaagg 1560

ggttactttg gattatgctt tagaatggta gaactgaata tgtaattttg atgcaaattt 1620

taggcttact ttatattgtt tctcataatt aaaaacatgg gtaatatctt agaaaatata 1680

ttatatccaa ttggatatta ttatcagcag tgacgatggg agtctatcct actgatattc 1740

ctaggaattc ctaactttta tcttttctct aatgtgtcct atgagtatta ttttggagg 1800

gtccgtttag atatgaaatt agaaatacta agatatataa atgaaaggac aaacaacaaa 1860

aaacgcctcc ctagtggcac agaaaaaaaa aacatatgtg catgccatct ttaatcttcc 1920

tcgatgcaca ttattccatc aatctgaata gttactgaat gtatcagcac ggaacatgac 1980

aatgtcttct atatcttcta aatacgcaaa caaggaaaaa tatagccttg aataacagtt 2040

tccttagggg ctaatcatca tggacacgct atagaagcgg atgctcgaaa aaaggattcc 2100

tttcgggggt aaacaaaaga gaagaaaaca aataaaagtt atacgctgaa tctacaaagt 2160

tcctgtgact tctgaagtat aactcaagca agcacattac agcctagctg tagggcacaa 2220

gctttggcca gaattttgct cttgtcttga tggctttgca aaccatagag ccgacagggt 2280

ttatatatga gtagtggaat aagagtaaat ttggcatcta ggattagttt ggtgctgaat 2340

acacattagc tcagtcttac caatgatagt acatcgtcta tattgacgag tttacttgtg 2400

tttagtgcac gccaaacaaa aagataactt acttttagg ggcatttatg attataaccc 2460

tcactagtct tgaaattgtg attttatccc ttgttttttc aactttatac ttttaccctt 2520

cgttttaaaa acgaagcgcc gtcataccat tgcagttaac tgtgttaaat ctgacgcgaa 2580

aagacaaaaa cgtctatgta atttattgtg attttacccc tggttatact atgtactagt 2640

cagatgcaca tatattgcta cgatatcata caagtagaat ttgtttaata aaacacaaaa 2700

attatgtatt ctgttagtta g 2721

<210> 4519
<211> 1583
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92643_G1, chr3:2894257..2895839, Cluster 27

<400> 4519
tccccaaaaa agaatcaacc ccaacctaat atcccgacta ggtggaacct aaccaaactc 60

aaccttggta agccctaact gactccccaa ccaaagacga gcctagcaag attggaccaa 120

actatgatag gccccaccaa attcccccca atcggagtcg tcccaaccaa gagaaatatg 180

ttcatgaccc aaattgccaa ttaggtcaga tgtgacccca aaaacatcag aaatagtcat 240

ttcggtcgct ctgtctcgac ctcgagtatg tctagacaag ttagttcaga caatacatcc 300

ctgatagaac tcaacaaccc cagagaagtg taagatcgaa ggaaggggtg gtgcatttat 360

aactctctaa ccactcggtg catgcctcta accgagacgg acaacacctg gaaaatagct 420

aggtaccatg cagataactc cagactcact cctatctgat tgcctcgaaa atacaaggga 480

agggaagaca ggctataacg agatgtataa ggcaaaagat ctagaggaaa tcgttcgtac 540

gctcctcaac atactctgta gggccttgga catcttcaga actcaaccac ccacatgccc 600

aagtttactc aaagatggtg aagcaaacat atttatcatg gcacacctta ggaaggtatc 660

ggtaggacaa gcacccaaag gttgggttga cacatcccat ctaaagcgta catgtcataa 720

caagcctctc actcctctga tatataaaaa ggatccattt gttttgctcg cctctattct 780

tctcaaactc tagtttagtg gtatgtacat gtactttaat tttattagaa aacaaagcaa 840

atgtcgatta ttttctttta gctaggagta aagctgactt atgtaagata aaatgtaaaa 900

gttttcttaa tccaaccgaa gcatgacact agtcagggat ggaatggagc acaacactag 960

aacatataca tttcacaaca ttagtcaacg tggtgaccat cacgatgaag accataccaa 1020

attgatctag ctttagaata ataatcctat gtataaaaat ataaacttaa ttatgaatta 1080

cgttggaaat catggcacaa tttggcaggt tagtatgttg cttataaaaa aactacaaaa 1140

aatatcaaat gcatatatga ttatcacaaa gtcaattgtc tatagaagaa attaaattta 1200

taattaggtc acaagaaaaa gttatttggt tttttcttaa aaaacacaag tctacatgat 1260

tccaaatatg tgcatatatt tcaggtatat atatacacac acacactata ttgtaagagt 1320

gaaaaatctc aaaaggtttt cgaattcgaa gttactctac caatatatac acacacaatg 1380

caattagcta ctaaatttat aattaggtca caagaaaaat ctcaaaaggt ttttgaacat 1440

atatatgtac caccatgtta acaccatgtc gcataaaaac cattgcaccc taagttaaag 1500

cccagtatta ttgaaaagtg tgcttgtgat agttatatta ggggttaaaa gtgaacgatt 1560

tcgtagttga acgtcatcac aat 1583

<210> 4520
<211> 1731
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94574_G1, chr3:12612679..12614409, Cluster 27

<400> 4520
agctactgac gctagatcct aggaaagaat cctgaaaagc taggctacac tattaatatg 60

atttgggagg agagctagtt tctgtcgttg agcgtggact cgaggggttt tcacggctcc 120

tcgctctcga gcgtttgttg gtcaaggttg tttagtgttt gcagtctttg gtgagtttct 180

tttctttatc ttcgtctgtc tatctatgta atagggttgt gtggtgttat ttgggctcta 240

tagtcttttt tttttcttag agtgaaatat actctctgtt cttaaatttt tttggctgtg 300

tcaattcagt tctacataaa cttttaaagt atgtatttta aagactcgat atctgtccga 360

gtctctatta catctaatgg attgctatgg tccacatatc aaccgttgag gaaggaggaa 420

gaaggtttaa caaaccacga caactaatat atgggtccac aacaatctat tagaatataa 480

tagagagccg aacagaaatt gtgttcttaa aagacatgct taaaaaaatt atggactgga 540

ttaatataac taaacaggtt taagggccga aattgtattt aatttttaa atataatgat 600

acacaaatat ccagtgtatt caagaaaaga aaagaaaagt acaggaagat ggtttgaagt 660

ggtgtgtaaa ctttagctat ctcgaaaacc aattagacca gaagtgagct aaagtggttt 720

acagttttta tttctagcta tagccaaacg ataatttgcc ctcacacgtc atcttctttt 780

gcaggagacc ggtacaaaac cccccgtcgg cgaacatcat caccttcgtc tcagtgtcaa 840

atcgccaacc accgttgtgc acccatctcg tgccacctct ctctcgcctc tcccctcgtc 900

cccgttgcga gcaccatata cgccatacac cacaagtagt gtggcctcgt tcatacatcc 960

gccactttcc acctctatgc aacggtgtct atgtgatata catcatgcgc accgacgttt 1020

ggggattaag caaaaaaagt tctttttgtt aaattaggat taaactacca atgaaacaga 1080

cctatggtat aaagtttagg acatgtttat atcccatgtg ttaaacttta gcaacatgga 1140

tctaaacaga cccatattct ttaacttacc gaactaaatt ttactaattt tagatcgtag 1200

aatccaaacg gacccttgag gactatatgt tctttttttt tcctgatcat agggcgtatc 1260

attgtctgat tattgatgct ttttcatgat tgaatggtcc ttttctcgcc gtcttttccc 1320

cacataccat catatacata tacaaatgat atatagcacg cgcagctgca catacaataa 1380

tctctaaaat tatacacccg ggaaaagcat cacaaacttt tcgaaaggca tgcgaggagt 1440

aaaaaaaaaa aaaccaaagc actaccacct tgataacata ccatatacgt actcctaaac 1500

atggaaagaa gaatcaaccc aaatggcttg ctttgtctgt cccctgtggc ggttctctac 1560

acggttttca aatatattac aagataacaa cgtgtgcaaa tgatggcctg cgcttgcaaa 1620

gcagatatgc tcctcttttt ttggtgtgtg tgcgtgttag cttgttttct ctgctttatt 1680

ccggtattag gtagagatgc aagatgttgt gctcggtttc gtgagtcccc c 1731

<210> 4521
<211> 2178
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94688_G1, chr3:13086688..13088865, Cluster 27

<400> 4521
ataatcataa aacattttta tagtgtatga aacgtcaaca tgcaatttat gatccaataa 60

atttaaagcc acaatcttag actaatttaa atttaaacca taccacttgc atggctaacc 120

ctaaaactta aataaataga ataagacatg tccacatgaa tggcacatta agccatgtcc 180

ttaccataca acatgatagc actatttttg gaaacaaaaa taaaaaccta tcgactaggc 240

actttggaat aaggtcaatc ctagtaataa ccaaataaca tcaatcacac aaaaactcca 300

atcaagatta tcaacatcta tgttggagaa cccactaagg gttaatctcc cttgaatgcc 360

aagtctaatg catcacccca ttagtagcct agagtagttt gccaatgtgc ctcatacatg 420

gttatagtcg gtggtcttag taccacatta agtgtttaaa gggggtgagg gtcaacttat 480

aatccttatt gctctaaata tagcaccttt gtgttaaacc cttttacaaa aaggtgaaga 540

caaaagtgta agagaggtgt tgcatgtata tgggtctatt tcatatgagg agttgagctg 600

taagaagatt ttggacacat ggtgttagag atggtatcag aatatcaatc ttcaatgcat 660

gtgaatgtgt tgtactctta ggttgatgtg gaggggtaag aattatatat gtttaccaat 720

aggtggttct ggcatttgct tcatatgtgg taagttgttg agtgcgtcaa ccctaaaatg 780

gggtgaatgt aataccccaa cccattagta ccttgtagta gttggcccac gtgtgcttat 840

agttggtggg tttattgcca cctcaaaagt tctataaggt gaggtccaat ttataacctt 900

gtcacttcaa atgtatcatg tttgggttaa ccctttaca cgaagaaagg atgaatgcaa 960

cccattctac gtgaggagcc gggctattta gcagattttg aatgtgggat gttacatcaa 1020

ggatcaagct tcaaaactat tgttgccatt tttacacact atgaagattt taattcacaa 1080

ttgcatgcat tcaggggtgg aactagaggg tagtctgggt agaccccgac tatcctgtaa 1140

tttggtctaa aacaaactgc tactcagtgt taatcctaaa gaaacaaatc tatggaacct 1200

aatttaatga attaaatgca tcatgagata ttttgtttaa tttctgcttt gtattgaatt 1260

gatggaaact aatatatgtg gtaccgaata atatacaata ttgcatgtca atttttttgt 1320

cttctgatcc gaggtttaaa tcctaggtcc gccactcgta catttgaccc tgtgaatatt 1380

tttagaatat cataagtttt tttctagaaa gcaagtcagt actatagata aataaataag 1440

ggaaaccttt actatcttaa ttactatcct aactatgaac aagggtatgc cacataagag 1500

catgactatg gtgacattaa gggcattcat atgatacatg agttgtatag tgagctagga 1560

gagcaatgat atacgtacaa ctccaaaata gctttgtcta gagttagaaa gttaacaagg 1620

atgtaataac tatatttgaa gactatgaat atactacatc atggatgcaa cataaaactt 1680

gtttggtttg aagaataggg gtagaagaag acaaaccatg tgtgtatgaa gatatccaaa 1740

cattgtagaa tacaaagatt ggacatggtt gtcaccatat gctacctacc atggctatcc 1800

atgggatgtg ttgtctctca attgaactct caagtacctc actatgcaaa ggatcccctc 1860

acactccaaa tgggttgctt aaactattca aatgggcaag agcgcaagca tggctagttg 1920

gtggtgtatt catacccccа accagccaag taggcattac cgtaactcta ggcaaaaatc 1980

ttgactgtca gactgttcga agcccaagca tcagaccaaa tctcatggtc tggcgagaca 2040

caacaaaaac atatacttct tatgttagaa ctagccattg agttactaca ccgagtgtat 2100

ggtttgtcac ccactgtcga accaatctaa cgctcgtaac ctctctagtt gcctaacata 2160

ccatgttaga ccgttact 2178

<210> 4522
<211> 2457
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95651_G1, chr3:18637305..18639761, Cluster 27

<400> 4522
taatatctga acctaaccaa taagcatata attcttcctc ttgtggggaa ctttcccact 60

gaaccattct cctcaattaa ttcataagct gcacttcact tgggaatata ggttatgcgt 120

aagccttctg acaatgcatg atgactgcat gcatgccctc taccacactc acaggtagat 180

gagtaaagca gtattaagaa ggacttggtt gctaggcttt ccccgtagtg agacaaggct 240

acatacatct tgatcttgta tagaagaaga aaagaaaatc cggcccctac agtgtctata 300

caaacaactg tatatatctg ctggtccaat ccaaatttga ttatcctcac atatataatc 360

ctctatctct tcctggacaa ttcacggtta caccaagctg tagctgggtt caatataatg 420

cattattctt ccgtctttca tcatagatca aatagtaaaa tttcggtcac tcctttgtct 480

aaattttggt acggatgcat gttacaacac tgtatcaacc tcggtaacat tgcaaaagaa 540

ggatgtatat atatggcttg attggtactc agatctgcag gacatttgtc ctgctactcg 600

caaaatctag gacttttgat tattttatag agcctagcta cactgcaaaa ggaaaaggaa 660

gcgcaagcac ttgtcattaa gatagaccta aagatgctta agcctcgcag ctgctgaaag 720

catagctgct agaaaggcgg ttaggggggaa tcacagtaat ggatgcgtac gttttaatga 780

ttgaatggct gcaattagtt gttcccaggc ccacatgcat cactaatctg caaaagatca 840

tcctgcaggt gctcgtacag tcacccggct gccctagctt ccataatcaa tcatgtgagt 900

gttgcttgta aagcccattt cgcaagccgg cgtatttaag attggaggag aaaggcgcga 960

gggcatctgc catctgggga gaagaagccc cagttcacgg ttcctctaat gatgcgtcca 1020

taattgatta aagcgtaaag aaacgactat gccgattaac aatattatca agcaaatgct 1080

tatgcgccat ccagaaagca cgcaaatttg atatgtaaaa tgctgctgag tgctagcaga 1140

ttgataaata tttgcaatat gtaattcaat ttggccacaa gcatgagatc atcaatcaag 1200

actaaaaagt tttaagacga taatctttaa ttctaggtac caatattatt acggtacgtc 1260

tactacgatg cgccgaaaaa ttgattgaag aatgggctaa attgcgaaaa taatataaac 1320

tattgttctg tttgggaggt gagttaagca accacagcat gggcaaagga agatcgctcg 1380

cttaccaata tataaggacc tcactggagc tttcttgcac aacacctctc gcacgccgag 1440

agagagagaa gagaagagga gagatagaga gagagggaga gagagaggcg acaacaatgg 1500

ctggatgaag cgtccaaagg gatcgcattg atccatcatt ccttccattt tttcatgcat 1560

ggctggtctt cgtcgtctgc aaggacttgt cgatggatca atgcgatcct tttggaggct 1620

tcccctagac attactctat cttcctaccg cgcgcgcctg cttcatcggc agttgcatcc 1680

atcaaattcc ggcccgtctc tcgtatggct gttaatttcc atgtgccagc atcacaaggt 1740

atgcggttaa tttctcttgt ctgctgtgct tagtgaagat gttggctcgc tgacgatttc 1800

ttgattgttc tcgcttgttt cataacaaga atgactagaa tttcccatgc acgtaattac 1860

atttattaca tgctgatgat gatgatccgc gagactctct gaatacaata gacaagctgt 1920

ggagattgcc ttcaccagcc accaggtaga gatagctgtt gtgtgtattc tctgtcttca 1980

ttcacagtaa gagattgaaa gaatttccaa ttcgaagcat cgattgctgt ttaatttcat 2040

ggtaaatggg aaaaaagagg tggtgacctt tatgtcactg tacatgtgga tgactccagt 2100

gttacaccat gtgacttttt ttaggcaaac ctaactgttc tggctataga tatattccat 2160

atacactgat gttacaaaat ggaatatata gatcagagag aatcaggcat cttcagatac 2220

tttcatggta atctaagtaa gttggatagt gtacattgca aaccgaatta ctgatcagat 2280

ttgcatttta attggtggag tgcgtgcatc caaagtattt cctactaaca tgagtaatta 2340

acagcttaac atcttgcagc tagcatgact aaggtagatt catgaacata ctaatcttca 2400

atccctcact aatgtgttat gcttatttac aatataatat actgtgcaga aaattta 2457

<210> 4523
<211> 1776
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_95864_G1, chr3:19841579..19843354, Cluster 27

<400> 4523
aatctagtgc gcttgaaaga aaaggaatgc atcgagccat agaggccttc ccatgtttta 60

cttcaaggat atgacttcac ttgtatttca tcaaacccta aatcattagt aggctagatg 120

tcagaccgaa aaagcataac tgatattgag aaactctcat aaaactatat ccattgttca 180

tatgttacga agaaacacta gtcaagccta aaaagttgca catcactcat tttatgtggc 240

atacctaact tatctgataa gccaacgcta tggacttgtc tgtaggcctt taatgtaggg 300

tccaacctct agggaaaact acccatggtg ggctcaagca tatccttcta tcttgtgtta 360

ggattacact gttgtatgaa gtcccttgtt tttcacgtga ggcttcgggt atcaaaggac 420

ttagggactg gcatttctcg tgatgatagg tcagaggcct tagtgaccta ggccctcgag 480

gactactaga gagccccgag cacctatatg cttcatagtg tcctagggca ctagaggcct 540

agagttagat cacaagctct ttagggcacg aggggcccaa gaacatagat tattccaacc 600

aatgacattt cgcgagaact agaggccttg gaggccttag cggttccttg tgagaatttg 660

tgtaattact tcttcagggt gctccgacat caagttactc ggtgcccgag gtggtctcgg 720

gacattagac tctctccaac aattccccct atacatatca tattatttgt actttctaat 780

atatattact acctccccta acagattctc ccctacatat agtttgtctc caataaatcc 840

ctatacgcta tataactcag ttaagcaaca catatttatc atttttattt ttatttaaaa 900

atcatacaat gtttgtggta ccatagtaca tattcttatc atgttacatg gcttaattag 960

aattaaaaac atattaatta acgtataggg gaagtatagt gctcctctat ttatacagga 1020

atattcttgt gtcttcctat atatagcgag agtcattata gaccaaatgt ccttaaagcc 1080

tctcctatgc tggttgaggc tcctttaagg agggatgttg gagtaagcct tagaccctga 1140

cagcggtggt cccagcaagc gagccccaca ataacttcct gtactggaat tttgaatgca 1200

tcttaacggc taccggagat atagatttcc caagcgttga caaatccaat ttcattttaa 1260

atctattaag aattaaccta gtttggtgtg tacaactttt gtaacttata gatagaagaa 1320

ctacataaca ttgttgcatt tggactactc taggacttac cgtataaaag ctttagtaat 1380

cgagggtcat tttgtggtgg ctcagtccaa agctagcaag cagttctcag ctagaacaac 1440

aacaacaatc aatcaaacaa tagacaaggc ataacaagga aaataaatgg agtgaagtac 1500

accacatatc cctagacaag aaatttaggg acatatggtg tacttcactt agacttcctt 1560

caacagctcc taccgacctc tccctcccct ttccttgtag ttgtttggga gggggatttt 1620

tttgctgtaa gggtacatgc caatctatcc tctacgtgct acagcagtgg cggataggac 1680

tcggcaaaat aaaccgaaac ggaattaacc aaaaccaaaa ttgaattaac acttataaaa 1740

tttgattcca tgtttcagaa aaccaaaata gctaaa 1776

<210> 4524
<211> 2267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9687_G1, chr1:51404912..51407178, Cluster 27

<400> 4524
gtccttttt aaccttagcc taaaattagc tctcactaga attctaactc agccccaaag 60

aaagtgagga gtgctactta gaccacataa ccaactcagt tagatatgtc tttttactaa 120

cataataata tacatatata tgagtatatg gccatccgta tgtaccgtgt aaaaaagtaa 180

ttaccttata cattgcaaaa tgctacacaa tctctcccaa gtcaccatta tttatcagcc 240

gcagcttgaa acctgtggct attcgccctg gggcaccgca accggcagaa cggcagctca 300

gccccacggt ccaggcgttg gaaaactcca ccgcaccagc cgtgaaacca ggacgcgaca 360

ccggtcaggt ggtcaccggg tcagtcattc atgcatcccc cccgccacga tgcacggcgg 420

cacggaatca cccgcccggg ggtacgctcc ccatgcgccc gcgagagcga gatgtatggt 480

agcgtacgta cgtggttttg agctctgttt tggctccgat gtgtggaact aaaccgccgc 540

tggtcatcgg tcccgtccga cgttgcacgt ttaatttgcc gatatggttc atttgaacga 600

tggttttgtt ttacatacag acgatggctg gcacgtacga cgacttgacg atgctctata 660

cctatatagg tacgccgtac gcggtacagg ctgtagtaag aggtggaggc cgtctatatg 720

ctgtgtgcac gatggcgaac acgttgttcc ttctgtacgg tcacgtgcaa agtctgcgtg 780

ggactgtgag gaggaggagg agaaggaaaa aaaaacgcat cggttaatca ttgtgcatgg 840

ctatcagtta aatctcaccg tacctgcaat cattctccgt gcctaataag ttctatagct 900

aaattgtgtt ttctctccgt ttttccggca cggtgcacat ctttttgttg gtacatgtgg 960

ttaacgacag gcgggccaat gcaatacgta tggatatcaa tggtgaaatt tatttccccc 1020

cctattcaat atatgtcttg cagttgtaaa tcagaggcgc caaataaaca gagtctccat 1080

cttaaatatc atattaaaag gtccgacgaa ttcggtcaat taaaaaattt aaagtctaaa 1140

agacacttta aacaactaca caagttctat cttgatatgc actaaacttt tccaattata 1200

cataaatgtt ggttcaggta ttttggtaac ttgaaattta ggcataaaaa attgctacca 1260

accgcagtaa aaacgggttt acgccatgca tgaacaaaaa catggcaaat aacaaacatt 1320

tcgttgattc gacacgatgt tcataggtcc gaacctttg ctgcatgcaa aaattaagga 1380

attgtgtcac gcatgtcctg tcttttgcac aaacctagct acctctctgg ctcttgctgc 1440

atcgacaggg aggcagctct tgtccccaaa gaaccctcca gcggaggggc aacggagata 1500

gaataggaca gagtaagcca ttactaaaaa gtactcctac gtaccaccaa gcaaagtttt 1560

agcctttcgt tcatctcaat cgcgacgcac gttttcgaat ccaagtgttc ggaacactcg 1620

atgatcgtgt gtcgtggcct cgtataaatc agacacgatc acgtcggcta cgagtaaaat 1680

aaggatggcc gcacggcttt ctatccccgc ccccaaataa actaactagt gcagcaggac 1740

gctagctaat ggctgagtgg gagacacata ggttgagcgc gtgagtggaa aagcgagggc 1800

ataagcgtgt taatgttcga tcaggggagc acttgcacat gcacttaggt gtgggtcagt 1860

atttgtaggc ttcgaagggc tcagggtaca aaagccacca gtatataaaa taactcgctt 1920

caggtagttc ccgtcaggta cttttcttgt tccaatcctg gaggcggctg gagttcattg 1980

tataagcttc tagtttaatt agtgtgcttt ttttccctgc ctgaatacgc tttacattaa 2040

ggcgatcata tatatacatg ctgaataaac aatactgtat gtgatttttt ttccttttag 2100

agaaaaatgt aaacttaatt ggattccaca tgatggctac gaggtgcaaa gaacctaaac 2160

cggagcgcta taattatata tatatatata tacacactta gctaggtact ctgcttgctt 2220

tatggatgct taaataaggt acgttgatag aaacaaaaag aaatgga 2267

<210> 4525
<211> 1546
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9690_G1, chr1:51409760..51411305, Cluster 27

<400> 4525
tcccttatac catgatgatt acgaatgcaa ggccagataa taaacaacaa tttttttta 60

aacgtgtggt tggatgatgg gccatgcatg ctttggatgt gaagagcatc tgatctgggt 120

ggttcttctc tcaagcaaac gcgctggtga tgaacttgtt gaggcgtgta atgattgggg 180

attctgtagc gcaataatct tatcaacgtt acctgggaaa aaaaagatgt cgttagtgtg 240

ggtttgccct actatatata ccctgccgaa acaactagat taaaatagat cggagccata 300

ataatgtaac catggcatag aaaaaggaca tcaccaaatc gtatatatac acacatacat 360

acatataaag ttgctctgcg ctcgtcgttg tcaagcttgc ttgagacgat cgtcattcta 420

tccgcgtaac tgaaaattat tacggccttt caagaaagtt accaactacc aaaaggggtc 480

gatattttgc atcctcccac acatgcatat gcatgcatgc atggtagccg agatatcaaa 540

aattttatag gcgcgtcgat gtcagccaaa gcccaaagct atgatccatg ttgcagtttt 600

caaaaaaaaa aatgatccat gttgcaacgg tagtacaagt agttttcacc agaggccacc 660

aacctagttg atctcctatc atgatgagca cctcatctac ctagctagct cctgcatgct 720

tgtcatcaat gtattctata atcagagcat taatagatgc tagctaggca cgcacgctaa 780

tgctcgctcc ttaccaactt atttattagg gctagctcgc agtgtgtgca gaggcaggct 840

aatgcttgcc acgccattgc cgagtaccac ttcatctata tgttagcttc tcggtacgat 900

ctgtgtctaa agtattcgtg ccaagtgcat gcatgcccaa gtaggccggg agcagtagtg 960

tgtgatgcat acatgcatga ccgcaaatgg ctactatggt ccctactctc gcctcagacg 1020

attaagtagt gatcactgat gatgaagcaa caacactgct acgagtaatt atatgcatga 1080

ttagatgact gagtctctga gttctagaag cgcactgttc tctcatggtg cgcgcgcgtg 1140

cagcaggcgg acaacgatga cgatcgatcg aagccctgct catcgaacgc gcgccggcgg 1200

cggcggcggc ttagcgtgtg aacgattgtt tactcagctt ttttgaacgt gtcaaagggc 1260

acatatattc cgatgaggca ctgccaagag tggagcgcat gatgggaaac tgaagagggt 1320

ccacttgaca gccacgcacg catgcataga atacttatca gttttaattt gttggcggtt 1380

ctatatatgt agcttcttca catatttttt atataaaaat attttttttc ttttcttagt 1440

ttattttaca gcgaagaagt ctctcatcat gaactaaaaa aactgaattt gggacaaact 1500

catttagtgg cggaggacaa ccaaaaaata aggtatggct tggtac 1546

<210> 4526
<211> 1434
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97656_G1, chr3:29641768..29643201, Cluster 27

<400> 4526
gcatacacac ttatacatac ttatagatac acaaattgac aataaacttg acatgagtct 60

tgtgagttca cgtacttcgg atactggagg gtgctacctg aaataagttc aagtttggca 120

agttgccacc agaattccca aacaaaattt agacttttgt attccatgtt tgaattcggg 180

tatccagtta catgtttttc caagccctat tagtaggtat gaagcactca attaattggg 240

atttatttag tgtcccgtct attttctagg tccatgggtt gatcgatctg gtctatgtgt 300

tgttgcatca gctggagtta gaattgtgca aattatgcac tatgttctac tcaatatacc 360

atgtgcacaa cccatgtttg gaaaaaaggt acaaaagaca aactatatca atttgtccaa 420

tatatgctat caaaaataag aacattattg agaccatgtt ggtttcgtgc ctcatttta 480

gaatctcatt attaaccaaa caactcatgg attatgtatt ggatttcgtg ctagaatctc 540

acaatctctc catgcggtga taaaggaatt tgtattggaa tttgtgtagt atctaacttc 600

tcaaaatcca tgggtaacca tacaccgcct aaatgtttca tagtcaatac aagattcagt 660

atcataccag aacaagtcct ttatatttcc ctcatcatca aaaacatttt acatgaacaa 720

ttaggacccc tctcatgcca ttccttcata tgacgaataa ctagttcaac atcacctctt 780

cgaacttatg caaacatctc ccactcatct ttttacctag tgcttcatcc aaaatgaaaa 840

aaagaagtgg ttctaatgta tttgtgttga tttattgcat ctagtggcac tagtgatgat 900

tgagctatgg ttttctcatt actcttggtg gtttctgcca cctaaatggc ttggagcggt 960

agtggatcat cgagtggcta ttagttattg ttgtagcttc gatcaagtga ttgtaaggag 1020

ctcttgtgct tgtcccctta gaatatcata aagcacaact ccggtgaaac cgtggctaga 1080

tggagtgcac aatatgagtg gttcttgcgg tacccaaatg tttagcattg tcaagttagt 1140

taatgtgtga accatgaagt aggtgctcat cataatgact atgtaggttg ccagtaatca 1200

accaaacctc agggatatat tttgtgtcat tgtttactct gtttgctttg caactcactc 1260

ttgtgttaca ttaatatcta gttagtgtcg tagttgcttg tagtggtagc tagctagagc 1320

ttacagttgt agtcatagtt ataactagtt tagttattag ttttgtagct ctagttgctc 1380

ttgctcagta gttgttgttg tgtggtgctt gtcattagat ttacagaata agtc 1434

<210> 4527
<211> 1493
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98336_G1, chr3:33786120..33787612, Cluster 27

<400> 4527
atttttaaat ctctttagcc ttacccatta caacatctat aaatggacca tactgagcat 60

gccatcatca tcctcatctt tgtccctata accaatgttt cttcatgctt ggtacaacat 120

cccattgcag taagtggagg tgaatcaatc ataatgaaga ctattctatc ttattcttgt 180

agtctctgta ggaacaacac atgaaaccca ttcgcttgtg tccatgacca tcttgagaaa 240

ataataaacg gctttaatat attcttttga gtttcaatcc acattgtgta tcccttgaag 300

atccatctag attattttat aaaatatttt tgatgctatc ttttttaaac ataattttaa 360

aattttattt tcatcatctt tttcactatt ctattttctc ctaaatcata ttaccttcat 420

acatattatt ataacacata tgagaggatg atctcactaa atttgaaaat ttggagttaa 480

aaacagacca tggaattcaa aagatctagg taaaacaaga aaacattata taccatcctt 540

cataaagtgc atataactat tttctatatc ccctcaacaa tctacacaat aattctattt 600

gtttgtatac cctccttcat aacgattgat ttggatgtaa atacaatcac aaaattccta 660

tttgttttcc ctaaattata ttaccatcat acatattata gccagacaat ataagctata 720

atgaaatatc actatattat atatatctac ttaaaaagga tattacatta tatctataga 780

ggtgcacata tgagaggatg aactcactaa atttaaaatt ttagatctaa aaacaaacta 840

taaaatttat aagacataga taaataaaaa tgtataccct tccttataaa acccatattg 900

attatatttt ccaccttccc tcaacaatgt acacaatatt tctctaggga ttgatttgga 960

tctaaataga tcaaccacac aattcaagag atctaaacaa accaagtaac cttttgaatc 1020

atgatacatg acaggatgaa ctcgctaacc ttttttcaca cttaaataag tgaaaacttc 1080

aacaaattct taaaagcaat tgggtggcac taccctcct tgtagcttat ggtagcataa 1140

atagagctac tctctattct tggcaccagc tcaaggagag agagtttata aagcaggtac 1200

attagtattc gttgatgtct tgtcattagt accagttgaa gatactagcc aatactaatt 1260

atattagtac caattggtgt ctttaaccag tactgatgac ttgacattaa tattaattag 1320

agacaccaac aggtaacaat ttcctctaca aggaagtgtc agttaaaaaa ccattactgg 1380

catttgcgtt agtattgatt ctaaagtaac tgatgttgtc ggatggaagt ccctttctcc 1440

agcaaaacta ggagcaccaa cttaaaaact gtaaattaaa atcataatgg gtc 1493

<210> 4528
<211> 1399
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_99247_G1, chr3:39233978..39235376, Cluster 27

<400> 4528
gaaaactcca attgtaattt tggtaattga aataactagt agatcaatat ttactctagt 60

attctaaatg agctagattt aagtctgcat acatggatga gcaagattaa taactataaa 120

aataatgatg atggccacaa aggatggtca agtgcttaac atagaaaaaa aggagaaaag 180

caagatgcaa ggttcaagga aaaggtatat gatcaagaca caatagagtg cataatcaga 240

cttaggatag atggtcgctg ttaaaagggg attttaatta gacaacataa tcatcaagtg 300

ccacttaagt gatagaatca tatgtattgc atataagcct aaatgatact catgagagaa 360

attgaaaata gttattgaaa acactctcaa aaatacaaac tatgatctaa tatgcttgag 420

aaacatttaa gaatcaacac actttaagaa aattctcttc ttgtacattt tagagtgcac 480

cagacatggc actggacaca aagtcaagtt atatttaatg tacaattttc acccaaggac 540

aatggtgttt ggtgtgcaac gggcatggca taagtgacgt gtttggtgag acactagatg 600

gtccatcaga cacttagaga gcatgtcaaa cacacacttc atcattgtaa tataccatgc 660

atacatggct gatgtggcac tggataccac accagacagg gaactcatag agcaagtaaa 720

ttacaaagtt tcggtcgaac actcaccaga tgtgtctcgt ggtgtgtgtg atgagtgcac 780

cagataccta acatagttaa caactagttt gtacttgttg gagatgtatc ccttaggata 840

gcacctgaca tttctagtgt aggaacctac aatgcaccag aatgtctggt ggctctaatt 900

tatttgtttc aagaggaaac aattaaattt atttgttagc ttataaatag aaccattggc 960

tggccttagc tgatatctct agacttcata cacttgtgaa cacctcttgt agctagagaa 1020

atacatttca ctcacttgaa acctatagtt tatcatctgg gtgagattgg agcattcata 1080

gtgtattgca tgtagttgtt gtatcttatg gtactagttg ggtgacttgg tctagttaca 1140

cttttattat tcttagtgct tggcatacct agatggccta gagtttgtgg gaccattgag 1200

tgattattgg agattgttat cagatttgat cattatgatg ggaacttgtg cttattccac 1260

acagaagatt cacaaagagc aattattgtg gaatcatgac ttgcctctct agagtgatta 1320

ttatggtgtc cttattgtgg gtttggcata tgatgccaac tagtgcgtaa atcacctagc 1380

ttggactcgt cacaacgac 1399

<210> 4529
<211> 3903
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232228_G1, chr6:144719567..144723469, Cluster 28

<220>
<221> modified_base
<222> (2818)..(2818)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (2818)..(2917)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (2819)..(2819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2820)..(2820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2821)..(2821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2822)..(2822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2823)..(2823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2824)..(2824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2825)..(2825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2826)..(2826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2827)..(2827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2828)..(2828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2829)..(2829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2830)..(2830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2831)..(2831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2832)..(2832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2833)..(2833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2834)..(2834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2835)..(2835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2836)..(2836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2837)..(2837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2838)..(2838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2839)..(2839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2840)..(2840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2841)..(2841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2842)..(2842)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (2843)..(2843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2844)..(2844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2845)..(2845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2846)..(2846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2847)..(2847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2848)..(2848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2849)..(2849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2850)..(2850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2851)..(2851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2852)..(2852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2853)..(2853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2854)..(2854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2855)..(2855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2856)..(2856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2857)..(2857)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2858)..(2858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2859)..(2859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2860)..(2860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2861)..(2861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2862)..(2862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2863)..(2863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2864)..(2864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2865)..(2865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2866)..(2866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2867)..(2867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2868)..(2868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2869)..(2869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2870)..(2870)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (2871)..(2871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2872)..(2872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2873)..(2873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2874)..(2874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2875)..(2875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2876)..(2876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2877)..(2877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2878)..(2878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2879)..(2879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2880)..(2880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2881)..(2881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2882)..(2882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2883)..(2883)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (2884)..(2884)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2885)..(2885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2886)..(2886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2887)..(2887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2888)..(2888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2889)..(2889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2890)..(2890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2891)..(2891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2892)..(2892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2893)..(2893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2894)..(2894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2895)..(2895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2896)..(2896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2897)..(2897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2898)..(2898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2899)..(2899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2900)..(2900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2901)..(2901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2902)..(2902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2903)..(2903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2904)..(2904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2905)..(2905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2906)..(2906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2907)..(2907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2908)..(2908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2909)..(2909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2910)..(2910)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (2911)..(2911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2912)..(2912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2913)..(2913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2914)..(2914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2915)..(2915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2916)..(2916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (2917)..(2917)
<223> a, c, g, or t

<400> 4529
ccgtgtgtca gcatcacgtg cgcggcgaga ggaaggatga cgatggcttg gttgctcgta 60

gttgtagaga gatagaatga aagcttcttt cagttctttg tatatgtaaa ttcttgctaa 120

taatttttg ttttaaatat acatatatat taacgttttc gtggatggtt attgttgtag 180

tacttaacat gagaatgagt gcatggccgg aatgggatgg catgatgaac catttcaatt 240

tagtatcagc cttcggtggg aagcaaacca taagcgcgcg tacacatacc acaccacacc 300

ggcatgagtg caaggcatta acgactcgca atggatgtcc tgtcgaagcg agagggacgg 360

ggtgggtggc ctgggtccgg cattatccct ttgccgagct cgagcagatc aggcgaaaaa 420

aaatcggatg aggctgctcc ggcgcggagt cggccaccga agcgagtgca ggcgcaggca 480

gccagccgtc gtggatcccg cgatccgggc cccgggatct ccgctgccca catggcccgg 540

tggccgccag ggtggtggcc gcacggagag gcgtccggat cgggcaccgc ggctgccgct 600

gggaggacgt gggacccacc tctggacatc aggacgtcag gcgcatgttc tcgtaggcca 660

cgcgctgaca cgatcaactg ttgcggaaca aaaatggcgc tgtgtcacgt ccatcatcca 720

tgccgtcagt ataagcaagt actactaatc gagcgcgatg cacgctgatt ggcgaccgag 780

gtggtgctaa ttattggtgc ctgtactacc taaatggcta ctgcatggaa cggaatcacc 840

ggaggcaggc aggcaggcag cgatgacgag tcttaggcca gagtcgctgc gggcacctgt 900

cgcctcacgg gcgcctggtt gccgtcacgg gctgtgcctg ctcggcttcg gcttcggctt 960

cggctccgcc tgccgccccg cgcgcgctcg gatcggttgg tttggctgct cctatccgga 1020

acgggatgga ttccgatagg tggatgagta aaactaactg gagcgagccg ggaccggcag 1080

gcagaggcgc cgcgcgctcc acgtcgacca accagctcct ccagtcccac tagccgggga 1140

cggggaggac agcatccgat gtggccacac ccgcttcacc agccggccgg tgaccacttc 1200

gaccagcgag cgagccgttg tgtggctgct ggttggacag ccgacgcgcg cgccgggggg 1260

gccccgcttg ttgtatacgg catccatccg ctgccgctgc ggcgggcggg cgggcgggtg 1320

ccgacgaggt acaagtagca ggacaggagt gcaggatggc tgcgcggcta cctgaccgtg 1380

acccgcgacg gggacggggg ggaccccgtc gccgtcggca cagcgtcagg gcggtaacat 1440

gcgttccgtt gcgcgtacgg accaccggtg tcgtctaaca ggaagagctg tcagtgacag 1500

gtgcgtgccg ccgagtgacg gccgcgcaac ccatccgcgc gctcctgctc cggctagcct 1560

atccagtgcg gttcgtggtg ttcctctcag cgtgtctcgt cgtcggcccg gtcggcagcg 1620

gcagaatttc atttcagact gttgcctcgc cgaggattgt gcagattttt ttttgtgtgc 1680

cggccgatgg agagtttccc gtacaaaagt tgtggatgca ggttacacca tatccagtga 1740

atactcattc ttagccttgt ttacgtacta cggttccaaa gataggctaa cttaatactt 1800

ctgcatgaac aaccctcctc ccacacacca tctcagctca ctatccaaac ttcaatacgt 1860

tcagcaaatg aaaaacaaag tacaaacaaa cgaagctaag aataaagatg ttgggacgat 1920

taagttataa tcatgcattt acggttttcc acgtagacag gggtatatga tgaaaaagaa 1980

cattaattat gccaaaactt tagtggtact gaactagtat aggtattgat ccactgaatg 2040

attaaaaaaa aatcaacatc cattgtgcct cacaaagaga taggcaaaac ttcacggcaa 2100

agtaatatga tccagggcaa atatgtatgg cacattaaat gataactcca agtggatctt 2160

tcatgttctt tatcttcagt gctaatacca caagaatctg gactacggga gcagaccacc 2220

agtttcattc atatattttt tttatgaaaa aaaattatag tacgtatcag gggtgggtct 2280

gtgggtgggg ctacttgctg cactcaaaac gtcaagtagt tgtctagatg gcacatagcc 2340

tatcaactat caagttcatt acaaaaatta tatacaaatg caacaggtca atggaaggat 2400

catatttaag ctgggttcag gagcagtagt gaacaataca cacttttcag tccactagcc 2460

taacacttca gtgcagcagt tgacctatac acaatagcaa tgttttagtt caaatttacc 2520

tgaaacacag cataccactt gaactcccag actccagatt ggtggtctac cacatgtcaa 2580

ctgagttgtg ccagggttga catataaagc agtacacaaa atgtttcagt cataaatgtg 2640

gaaaaacaca tcatgcaact actaggattt tactaccaga tagatagtgg acacaaacat 2700

caccgagata cttccctgaa aaggaaagaa attgcaacat cacggtacaa gtaaaatgtg 2760

aaggacaaca acacgggcgt agaacatgga gagacgtctg tgtcgagcaa agtgtaannn 2820

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2880

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnaat atatagtcac actgcaaaag 2940

atatggacaa gttcaagtgt caactgatgt taaatggtaa ttaaacattc atattaatag 3000

gagagcaatg ttctacgatg tgggggtggg gggggggtgc tgagctagac agtcaaagaa 3060

agccctcgac aacctaaaag aactatgcgg tttttggatg acaactagca tgactaggca 3120

gccatcctgc aatggagatt gacgttgttt cctcaaaaaa aaaatgtagg ccggtgttgc 3180

atgcatggaa tttttttttg aactgccaaa tgccccttct gcctaaaagt ttaggcttta 3240

agcacaactg gttaagctaa ttaggactac taaaatgtag acttaaacaa ttttatgcag 3300

tacctgacag atgcagcttc gtgctcagca gctagcgtta gtaaagaagc atggatactc 3360

tttaaatata gctatttata gcatctaccg tctaggtgag taggcagaca ttgttcagca 3420

tttgagccct tggaattttc tagtaaaatg tcatttttat aagaattgca aaaggttcca 3480

cccatgcagc catgctgcac tagttcgaaa gagaaatggt gtgtgctttt tttaaggaaa 3540

cattttccag tagtcttcta aacaatccct cgaagctggt agccgaccag ctacatgccc 3600

aatcccaaat ttgtttttttc taacaaaatt tcaaaaatgt aactgaaaac aagatctagc 3660

agcaaatata actaaaaaac ctgctaagca gtaacaatag gactttaagc tctggttgca 3720

gtataaatat aatcaaaatg cggtggttat gtgatctgta gttcagattg caaagatttt 3780

caagctagga ataacgcctt gcatcatcag attcctttgg ttcaaacata tgataaacct 3840

gagataaaat ttaaactatt cttgttcttc ccacatagca ttctgggtaa gccattaaac 3900

ttc 3903

<210> 4530
<211> 1440
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_102780_G1, chr3:59321717..59323156, Cluster 28

<400> 4530
tccggtagca gtgattgaat aagacatcaa actggccgat cttagagaaa atatcgacag 60

tgaatatcga agtcatggat gcatgaattg actaaaactt tagatgcgtg aatatttagc 120

ccactgcctc tttgaatctg tttatagaca tggggtttca ctcatgtgtg gtgccaatgc 180

attattagag actacctttt ctggtccacc gctacaaata atgaaatgaa atgcctatta 240

ttagggccag ccggccacgg cacagccggg cagggagtac cgtgcagtca cgtgtaaagg 300

agggtggtag aaataaaaat ttgaggtcct gcttttaagg ttctgaacaa gtgtaatgtt 360

tgaagagggg acacttgtga atattatgtg tatttatgtt tgcgcgtgtg gacacgagac 420

agaaatctat tttccaagta atttttattt ccaatattaa atagaaatgg aaatgccgaa 480

tgcgtactat ttctttagga ttcatatata gatgcatggg ttgttggaaa attagttagg 540

tcgatcgtac tttcgtagga aaaatcaaag ttctagaggc tagctggaca agtctacgtt 600

gaaacgaaac ctctgaccag gcaccgacaa gccatgcaag ccgacatccg aaaaaatgtg 660

agctccaagt tcacacattg tcacaagggc tatgtagtaa gaatggaaaa aaaattaagc 720

gtaacaaaat catttggcta ataagaaaat atactcactc cttcctacac aagcattcaa 780

aaaaattaag gaatctcttt gccttaaggg catgtgtata acctagctag agagctgcag 840

gcataaaata caactaaaaa actatatgat ataacaaaat gtctttaaaa ttagtcacat 900

catacatata atttagaaaa atatgtttcg agagtcgtgt agagacggat tcttaataaa 960

aagactatct attgtatatt tttttcatct aaccttctag ataactctca agatatggag 1020

tactaatgag gttataagtg acctaagtat gtgcagaaat atgataggta tattgtttat 1080

cttttgtata ctttttaacc tgtattaata ttaggtaaaa atactaagta ttcatactta 1140

aataggcttc aagtttatcg gtgtaacaaa aataacggag ccgaaagcag caacattatg 1200

tggagtagta atcaattatt aaattttatt ttttattttg ctagagaaca ataaaagcat 1260

gaatatatgc tcacatatat acgcacacac aagagaacaa accttggggt agaggttcca 1320

cctgtagcca tatgatgctt ggtgaactgt tttaattagt ccaggcaatc acgattaact 1380

ccttagactc gctcgaagac acggcttaac acatctacta gtttcgtgcc tgtgcgttgc 1440

<210> 4531
<211> 1423
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10419_G1, chr1:55744952..55746374, Cluster 28

<400> 4531
ccacaagtaa acccatgcaa ctgaaagaaa tcacgtggtt ttactccatc tattatgata 60

acagaccaat aataaatttg tactagaaag acagaatcat ctgtcaaagg ctcaaaacca 120

cataggaaaa ggatgatgca attaggatat tatacaacat tctggtcggt ttaactgata 180

tggagctgac agcagaaatg cattcaaact ttaaaaaaat gcaagatcat cttcaacagt 240

gagaactaga tattttggta atgtcggtca caacttataa ggatgagatt attctcctac 300

aagacccaac agagatatgg catcaaatat caatagatct ggtaaaagta gaatctggag 360

aattttctag ttgcatctga tgatacggta attaaaatac ctttctagct acatcttaaa 420

tatcacttca gaatgactac tagtaggtac cagtagatca aaacgatatt ttagaacagg 480

ccaggatgga agcagacata catagcctat gccttactac agatgtgcag gagctggtgt 540

tacagtatat atcaaaaaaa agatggaagg ctaagcaaaa tcagggcact gtgttactga 600

aaacactagt acagactact cggtcaacag tctacacaaa ttaagtaaat tgaggtaagt 660

gtcagataag taaattgtca tatgtaccat agtgcacaga tactttacaa aagctcaact 720

tttatcagct gccatatgac tgctccaatg gttcaatggg tgtagtttaa cacaaaatca 780

gccagcctga tagtgttttt gtccagccaa acctactctg aaccactcat ccaacccttt 840

ttttctttcc cttccttcat ggcccccatg gcccatatct agatgtttat gatgtgacac 900

tagatataca tgttttgcac aaaacacatt gaatgcaaca ttgacgcagc aatttggata 960

tgttggtatt gtcagctaca ggctactctt gttatttaca aaagcaaaat aatgataaat 1020

gatcacattg tatgtcctat ggccaaacat actaggcaca aaagtaatga taaatatgct 1080

tcagtttcac aaagacattc aataagaagg tactataaat gttttagttg ggctggccaa 1140

ttaggctaca cgcacaacca aaacaactac agaagttact ggtgaatcac ccataattaa 1200

aaaaagacag cattatttgt aagtttacct gcaagaacag tgtaaataag cggctgaatg 1260

tcgagagcag tatcccagct gtatatgcac catagagttc atgaactgta tgaactatcc 1320

catacttccc aaactgggcc ttgtctatta tgccctttat gagctcatta ttgtgaatat 1380

ataagaccag ttcagaacga tctttttgtt tttgtttttg tat 1423

<210> 4532
<211> 1510
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114050_G1, chr3:136422551..136424060, Cluster 28

<400> 4532
gcgctcaccc ttaagtgaat gtgcgcaacg gcaaggggcc cctcaggcga atgcgcacat 60

tggagacaga gaatagagtg aatgaagagg gagagagttg tgcatggaga gagaagaatg 120

aattaaggtt ttctcctatc gataaaaaaa tctagctttt gtacttagta tttttgcagc 180

taagcgttgc atgagatagg atgacttaga tctattggga tactttcagc caaacatgtg 240

tagacttttg tggcgtaggc ctaggttgtg gcctagggag caggacaaca tgagggagga 300

ggttgttggg ttggggcatg tgggccgact aggtcatttc tggcaaaaga agagtgaaac 360

atacaaatat ttatatatta aacttgaaca ttgttttaag tccatgtttg ttggaagatt 420

atgttagtgt tatctgacat ttaagtttaa gtttacaact ttagttaact tttttttgc 480

aaataattat tttattctta gttaaattga tattaatcta tatatttaac tcaataatat 540

tatgagatgt tgatgtatag taaaataaaa agttttatta tgttctaatt cttcccaaag 600

gtgatttaga tttagaataa ttttcagtat tatgcatgct taatttaagc caactctaaa 660

ctatccatgt atatcgattt aagtttgttt atttattcga catcaccatc ttagatctca 720

tatgccctaa gtgtagtttc tagacttgag ccattaaatg gctctaattt ccctcttgaa 780

gggagaagat tgacatggca ttgacattta ttcagataga ctacaattga taattctagt 840

ttgtcagccc tatgttggca acagaaggaa aacctgagtc agataacaac acaaccatga 900

taatggcata tgatctcgaa catgttaatt gagagagata taatacaaag tgcatgatga 960

tcataagaag ctatattata gaatctatca agggaggaat cccagaatgc cagagtgcta 1020

tagagtactt tgacaaaatt tagcaatatt ttcactggtc catctaaggc atgtgttgga 1080

accataataa aaaagaattg ttactgcgaa gtatgatttc actagaataa gagagaacat 1140

acttaagata accaattttg ctaataagct caaatctttc gacatgaaaa taaagaatga 1200

ctttgttgtc cttgtccact tgatattagt gtctatagtc aataaatttg acaacatgag 1260

tcccaaaaag tggatgatag agaagtttga ttgccatgta tgccgagaaa gagaacatgc 1320

ttaagtccat gaatagtaat aatggcaatc tagttaaaca gtcacatcat aagaaagtat 1380

attctaacaa gtcttttaag tctcagttca agaactaggg taagaaactt atgtgtcatt 1440

agggaggatc aggctcaaat ggggggaacg acattttaaa atccacacaa caagaaagca 1500

agttcaagtg 1510

<210> 4533
<211> 1411
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_115279_G1, chr3:144086857..144088267, Cluster 28

<400> 4533
ctttttact ttatttttct ccaggtacct tgtcattata atggttgttc tttgttttat 60

gatatgatgt atttttctca tttaaaccat tgcaatcttt gagtttatgt ttacctagta 120

actgtggtaa cttcattacc actatcccta ttttattttt attattcatg ctagactaga 180

tgtatggttt ggcgtgcata atctatatac tttaattatc tgtgtttgct tttgtttgat 240

tgttacatgt gacttgaatt agcctgccta cagtggcttt gcttagaatt taatggtttt 300

gttgcaagtg acttcatttt gaacttaaat tcacactagg attagggctg agttacttgt 360

gtgaagcatt gtctaaatgg tcagtaaagt tcgtaaaagt gctgttagca tctagtatat 420

attcataaat tgcacggtta ggaccacttc aactattatt atgctacttt atgttggctt 480

ctgatttcga tgtaattcag ctctttagat gcacctcttt tacatagcta cattatatgt 540

gaattagtac tttgttttat tgattcacta atgggatcta agtttttct gggctaatca 600

agacaatttt ctctcctgaa ctgtttcaga acaccgatga gaaattataa agagccaagc 660

tccttccaaa ttgaaaggga ttcgtcagca ggtcacaact ttcaagaatc atcttctcca 720

aagatgtcaa aatcgccatc acttcagaaa acacatggct ttctcacatt ccgaacttca 780

gatgccaatc ataactcaca tgaatcacca aatattcaaa gccccccttc agagcaaatg 840

gcagaagcca ggctaccaat ggttgcatct gagagagctc catccatcaa aaggcaggac 900

agttttgaaa tgaaattgcc tgatcttccc aaaattgatg tcccgctgca tcgacagtcg 960

tcaaatacat cagacccaga atctccaata tctccattgt tgacttctga tccaaaaaat 1020

gagcgctccc actcaaaaac tttcagccgg cctcttgtca tctttgatag ttttcatgct 1080

gaggattcca agcagcagca cacaaaagca ccatcttttt ggaggcttgc agagcttagt 1140

tttgcggaat atttttatgc tctgttagga agtgctgggg ctgcttgttt cggttcattt 1200

aatcctcttc ttgcttatac aatatctctt atagtagtgg cctactacaa aataggggtc 1260

cgtgatgtac atgccgaagt gaataagtac tgctcattca ttgttggcat gggtataatt 1320

actgtactag ccaacttctt gcagcacttc tactttggta taatgggaga gaaaatgacc 1380

gagcgtgtca gaaggatgat gttttctggt a 1411

<210> 4534
<211> 1426
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117595_G1, chr3:158436083..158437508, Cluster 28

<400> 4534
catgcccaag tgggtggaaa caatcagcaa gacaatggca ttgctccatg agacctagag 60

ggctagggct agtgactaca tttaaacacc ccccccccc ccccccccg tgaaaattca 120

tcttgcacaa cctgaagagg acctcatgca tcctgccatt tttcaagccg tgaataatgc 180

tccgcattat gagccttcgc ctgacttgaa tgaaaattta gttattttgg aagagggtag 240

ttttgatcat atctttgaag aggaaagccc ccaaaatgat ggcatggagg ttgaaatgga 300

ccacaatatt cctgataata ttcctatgtt ggaaggtttt ctcccacatg aaattcagat 360

ggtagatcta atagaagatg actaggctca gctagataac aatcaacctt ttgatcacga 420

tgacaactta gaacttgata tgaaccaagg aaatattcag gtttctttat ggttgtacat 480

cagcataatg ttttttcact atactggttc taaaaccatt ggtagatttt tacaggttcc 540

ttttatctaa tcctgctaac ttcttatggg ctaagaaatt gttctcaagc aaagttcgtg 600

acttccttta tttgaatggg tagctatgtg gttcgcccta atgtcgatca tgtattcatg 660

tccatcagat gtttttaga atgtctagaa gatcttcaat caccttcgca tgctaagaag 720

acatcaaagg tacctctagt cgcatttggt ttatggagaa gtgataggct aaaaatactc 780

tcggtggttt tgaaggaaaa tcatacaaaa tgggtctaga actcctgcac tacctatgct 840

aaatcctagg atcattcaga atctgggaca cgtttttttgt aatctgtcag agtcctcttt 900

gacgaaggat aatctttctc acaataatga ttagtgttcc accaaaccta tggcacggag 960

gaagaaagaa accaagaaca agtctctttc aaatgatcct aatggccaaa gttccaagaa 1020

gcacaagttc gggtaaatta ttcggtgatt gatgctgctt gttggcccct ttttgtgctt 1080

tgggaccctt tgaatatttt gtaactaatg tatcttcttg tttggcgaaa tacgataata 1140

ctttctagaa ctactacata tgttgctctg aacgttgtgg cagaaaatgc cattggttcc 1200

aactttattt ttatattcta ttggatgtta ttaaattttt tgggatgatg ttggtcatct 1260

tcattttgtt tactggtatc gttggtcaga tgggatctta tcattagtat actttacaaa 1320

tatgcctttc tctttttat ggagatgtca ctggttccct atttcatagt tcttttgtgg 1380

gcatataata aaaaaaactt cacgctcatt ttgaatataa atcact 1426

<210> 4535
<211> 1667
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_117967_G1, chr3:160521637..160523303, Cluster 28

<400> 4535
ctgaggaacc gatcattacc gatcgtctat tgacatgtgt ggtcttttga ttggttaata 60

ctattttctg attggtcaat attgttttga agtctacaaa ttaaaaaaac aaaatttcaa 120

aaaaaaaaca ttacaagaac atgaaacaat agtagattgg aagacatgat aaaaataata 180

gtagacgtgt gtcttagtaa tgatacggct gccaaaggta actgataaag gacttctagg 240

gcaatagaga gtgaatccta acttcataaa tatatgtcta cgaagtccag acatcaagag 300

cctaacatgt aaggatttct agaggttcaa accactgtgt gcatatataa tagtaatagc 360

ctatgtcctc ttggtgatcc tagatcactg tgcatagatg gtatgcaaga ttataagcct 420

taacccagaa agacataagg cctctttgaa gaggagtgaa atgagacaag ctaaactaac 480

tctcattatt gctgttgtgg ttggattgtc ttttaactct tttggcttgg atttggtgga 540

tctttgtatg taagtaaacg tgtttaatat attcgattgt gggttagacc ccttaattgg 600

ctatgtatac cccatatttt ataataacag gagtgatttt atttcattga aagactaaca 660

tgatactatt gttacgtcgt tttattagac caaagctaat tattcgcctc ttaaagttgg 720

cttgggtcta atttgaatac caacagtggc agcataacca tcaccccttt ccttgtcaaa 780

ttacgaacca gctggtagat aatttggagg gaaaaaaaac aagaggggat cagttcgtta 840

ggtgacacgc cgagaaagcg aagtttacaa atttcctcgc cacgttctgg cattctactg 900

tctgtcctac taagcgaaac ggtgacacag ggcgaggatt agaccttgac gctttggaac 960

cacgtccacc cacgacgctg acttgcatgt tggcgagatg tgccgtgcgt gagatttttt 1020

gggcatgctg gggccacggg tttcttcaga gagcaacgtc gccattattt ctacgctcaa 1080

attggagtat cacaccccgg ccgattggca gaaacatgtg gatttttctt caaagctgag 1140

tatctgtagg atgtagctct aaaaagttag agatggatgt atatatcgtg tgcatttaca 1200

taactttgtc tatacatata gatattttaa tttagtttac aagctacata caccccataa 1260

ataaagctac atatatcgct ctcatgcgtg tcgcgtcctc ataggaggtg ctgactgctc 1320

aaggaatgat atatgcagga cgcacagtat acttacattc attgcaatct ataggctata 1380

gctagtgact ttctaaaaaa caagctaggc ataaattatt tatggtactg ttcatatatc 1440

tactgatata aagtaacagt ttcttcattc atacgtctat tcccctcctc cacgcgaatg 1500

cagcgagtgt cgccagaggt tcaaacgtgc tcaacaaaat atcaaaaaag gtgccctatt 1560

ttgggatcta aattgtggtc tctacgaaca aaacactaat ctctaaccac tacaactcat 1620

ataggtttat gctatacaaa gaaactatat atatatatat atatata 1667

<210> 4536
<211> 2013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121949_G1, chr3:184275101..184277113, Cluster 28

<400> 4536
gattcataac atacataagc aacaattcta ttgctaaagt taatatatca cattcaagag 60

aaaaaatcta acatgtcgat catcgacacc catcacttga ttgacatttg acaacaaacc 120

aaggagaatt gagataaaat actagacggc aaaagaattg tcgaaaaaaa tggcagctgg 180

agcactggag caggggatag ggtaagacca aatgactata gattacgtaa gctgggacag 240

cctttgtaat ggcaatcatt ttaagggtta tctcgagcca tccgtcttgt cttatattct 300

atcctttcta aattataaaa tggtttagtt ttttttctaa attaatgtta ttataagaga 360

tagttctact ctactctttc taaattatag gacattttat ttttttaaa tacattgtat 420

ttaatgttac aagacattat atagtctggg aagttataat aagaagatga tagatgttct 480

agttataagg tagactaaaa tctaatttaa atatttatta tatttatttt gaactcacag 540

aatcacctcc tatatatgta cgccaccgta agaggatgtt ttttattcaa caaatatgca 600

gacccgagtt taggttgtcg gactatactt ttacatggca attagagtca tggcgagttt 660

atcgtcatct ggctctacaa atcctcacat cagcctacct gtttaactgt ctccgagaag 720

ccgatgaaat ccaatcatgc gtagaatagg gctgctatct gcggcgcaaa gttgcttggc 780

ttcgtgactg gtggcaccaa ggcgttgtca gaaaaggggt tgaggtggac aatctaggaa 840

gctagagatc aataagtccc gggctatctc atctcattgc tacgtcatcc atagataaaa 900

cctaaataaa gatttaaggt gcctttgtct cgcaaataaa agcaagaata ctgttggccc 960

tggcaaacca tggagagttg gagactacca ccttcgcata attattcttg tatcgagtgt 1020

catggaatgc ttgagtgcaa taaaatggat gagggaaatt gcaggacgcc ggttgtgaga 1080

caactgagta gaacatatcg tggagacgat atcggtccaa acacaaggcc ttgtgaccag 1140

actctactag ccaagcctgt tttgagaaag atgccttgtt cgtgaattgt ccttacagaa 1200

ttgttcatcg ctttgctact gtaaacaaga agggacaggg aaagatgcgc gcgttgcaag 1260

acctggtact gcagcaaaca caccggctaa ttacatacta ccaacatcgc gtccaagctg 1320

ctacctaatc atttggcacc acatttacca tggccagtgt cttagagcta gagtgccttc 1380

atcaaagggc gtagcatcct agataatttt cagtccatac agggagtagt gtgaaccact 1440

ttcgcaagag caaaacacca atgttgttca taatattgga cattattgcc aaagcttttc 1500

agtccataca tgagcttggc ttcagacaaa gatggcatga tttggtttcg atcacctggg 1560

caaaaacaac atatctggtg ctgtaaaatg gacaacctag gaaaccaata caacaccgat 1620

ggaggtctat gtcaaggtga tcctctgtcg ctcatgcatg ctattcatat tggcaatggc 1680

aatggcaatg gatcccctac agcagacagt gtacaaggca acagagagaa gagagaggac 1740

tgctaactcc aattggggcc aatcctattc gcatgcggac taggctttat gctaatggcg 1800

caacattgca tattcgacct tgtgcccatg atctgatgaa cctacaacaa atattgcaca 1860

cgtacttttg gtgaaactaa aatgactgca aacaaacgta ttgcaatctg aaatgtatgg 1920

cattaactgt aatgtcgatg ggaaaaacat tgctgattca ttcagaagaa agactagtgg 1980

atatacctca acacagcgca gggacataca caa 2013

<210> 4537
<211> 1505
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125811_G1, chr3:204657622..204659126, Cluster 28

<400> 4537
ggcctcactg cacgctcgtg ttcatacttc atggacgtcc acatcctatg ctagctaggc 60

taggctaggc tagcctttgt gacgtatgcc gtgaagtgtg atgaaggcgg caacttcatg 120

cagcagggaa agctgtacgc cgcgcctatc gatcgatcgg ccatatatac atacgcctgc 180

ggtacatctc acgtagcctc gcctagtcgg ttgtctgtct attcctcgca cgcacgcacg 240

ccatcagctc attcatcgaa ttcgaaccat cgatgcgtat ctgggcgttg ctgtacgcga 300

gcaggttctt cggccccatt cggttctagg cttttgtagc agccaacgct ttcatagatc 360

catgctctcg cttgttaact tcctctacgt atgtcccagc cgaacctgcc tgccgcgcgc 420

gcacgtgaag tttgcggcct caagagactc gggatattat tgttaaactt gacatgtttg 480

tggatgatgc atgcatggag gatctacgac aatatataat ctttgccaag gacgacagaa 540

cacagaaggg tcctgatgaa actgatcgtg cgtgtctata tacatgcatg gccaaatgga 600

tctagctagc tatcaacgta cataccgtta ctgaagaaga aatggagccc gtacgatggt 660

gcaaattaaa ttacgctagg aatggataaa aggagaacac gagcgagatt catgcgatct 720

acagattttg tttctcaaaa aaaaaatctc tggtacagtt ttttaatagt caataaaacc 780

gattgaattt cttgcttgtt ttgtttatta tgcatgtggt tggcaccttc aatcccccga 840

tgagagagtc ggataatccg cggtacttgt ttgtcgcaac tcgaattagt gatagctccg 900

cctaaactaa tccctgactg aacggcaaaa accacattcg atctgcaggt gctagctccc 960

attcagacga ccaacttttt tcaagatgtc tggtctccct tgttgcagtt cagtgcacca 1020

cacattattg ttcactgaac gacgtgcttt atatcctttc tgctggtgat tgctaccttt 1080

gctatgccat atcagaatac ggtgtttgtt ggtgaacata catgtacgta cgtatgtatg 1140

tatagttcca tattcctacc catatttgtg attgttgatg tttatgtact tcttggattt 1200

aaagtacaat tttggtgtat ctattgcata ttgttttata gacaagagta atgaaacgtt 1260

taggtatact tgttacgtat ttatttcggg ctgcgtgttt ctgcagcacc atgtaactct 1320

ttacttggtc agttctgtat gccatccttt ttttgcttct tctcttgctc ctacatttga 1380

ctagaaacag cgaaaaatcg tacttgaaat tgaaaagctg cgagagtgag ttctgcaaga 1440

ctgcacatta tcatgtccaa gatagaaagc agagctgcag atttggtaca actgattcca 1500

agaat 1505

<210> 4538
<211> 2691
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126742_G1, chr3:209090560..209093250, Cluster 28

<400> 4538
tcactatggc tcgcaacctg ccccaaacca ccacttccaa tcttcgtcgt cggctcctca 60

ctcaagttgt cgcctctgac cttcatttgt gtctgtccac ccctcttatg aggagctcat 120

cgactcctac ccacaccatt gagtcatctt caataccaag gtaggcactg gacgacttca 180

ttctgaggcc agcctctaca gcgccgacac ctactagctc acgagaaatt acatgtcgtc 240

gatagtgaac aatcaccact acaagaagca tatggttatt tttggtttat cgatgcaaat 300

aaagcatttg tctgtgacca aaaaagtgac tttaaacttt atttgcatct gttaatatcg 360

ttaatgtagt caatatcatt ataacaattg tttgaattaa taatcattaa cgcaggcaaa 420

tgtcttaaag aactcgcccg tgttaaatgg ttaacggagg tcgcattgct acaatgcccg 480

cctccaataa tatattgatg atggtagcct atcttaatat ttttgtatca attaaccatt 540

ttgtggttta aatttgtatt cagtttgaat ttttgagatt tacacaaagg caatattata 600

tttagaacgc atagaatacg cacgctgaga acatatgtat atccatctat ctcatttgtg 660

tctcattatt atcctatcac aaacaataca agttgtgtat catatacgta caagttgtaa 720

tgttttatag cacgttactt tcttattata aatcttcatg atcttgtaat cacctaaata 780

tagcttatcc agtttttaat cttgttatta ttctcatgaa atatgggttc tctcttgtgg 840

ttaaagaact ttctattttg atgcatgcat tcatgcaaga tgaattcaca tatgtgcgct 900

acagttcttg ttatttgtgc atgagtgact tgttccattt tatactagtt ttgtgcattt 960

taagttgttg gtaagtgatg atgaatatat taatcgcttc aagttactca aaatgtagta 1020

tccacataat agtgttcttg gtggatgttt cgtgcactgc aagatacata acatacgatc 1080

gatttaaata tatagagatc atacatgata taatgccaca tacaactttt ggtaagtaac 1140

gagaagttgc atctaacagt tatagtgtta ccatgccttt tcttcttctc tgttctcaca 1200

ttgaggtatt agggatcctc aatgtatata ttgtatatgt tatttgaaaa tcatgggaat 1260

caatgataat tttagcatta aatgtaaaaa ataactaatg tctcttttaa gttcaatgcg 1320

ctctcaaggt ccttataccc ttcttttgga gtatcaaata ttcgaataca atggcatatc 1380

cataccgagt agaaatgtaa tctagtgatc catggtggct aggatacatt attccaacaa 1440

tacaactttc aaatgttgaa atataaaaag atgtgatcct agttgctaca taaaagttca 1500

aagcagtctt ttgacttact tgaagcagta gaggtaagga gacaccaata ttcctcgacc 1560

cacttcttat atatgtacat gtacgttgcc gccttatact taaatttgtt gtgtagagct 1620

tttcaggatt cagcgtcaac attagtaggg agtaaggata caacttgttg aagcttgtct 1680

tgaacgaacc aaaatgagcc ttcaacatca acatctagag attaaaacac aacagcgtct 1740

attgttttgg acagtcatca cagagagaat cctttgttgc ctgctttata tttttggaat 1800

tctttagcca ccataggctc ataaacataa tatcgccgtt gtcaaggcaa aggattaatt 1860

cttcaaaaag ctacgtgacc tcatggtcca ccaaggctgg ctcaccatga tcctcatcat 1920

cattgtcacc ccaccatcaa caatgtctta aacaaaatca tccattatga aaccttcatc 1980

atgatgattt gcatcaacat tgtgcatgtt ggcttatgat aatgagggtc ctcctccatg 2040

gttcacattc actgtcgtcg aaaactagtt tcctcctgca tcatcactca tatatgcttc 2100

accgtaaaac ctttagacca aataatttat catgaaatca cacttgataa agtgagattg 2160

cacctcacca ccttctttga taagcttgtt tttgcagtga gaacaagaac atatgattcc 2220

ctacaagttc acactcagag aatgctttcg agtaacaaca acaaactttg tatggtgata 2280

accttgatat ttggtacgtc cattctaaca ttttcatgcc agttaacctt gcaaacatag 2340

cgaaaaagat ataaatataa caatattaca tgcaaataaa aactagatgt gttttctctc 2400

tcctccatca tagatctggt tctatattta gatctagatt atctaaaact tttaaaagat 2460

aacataataa agatatatgt gagcgtgtag caacctcctc tgatgccctt taaggaatcc 2520

gaaagcaaaa ttgctttcca aaatagtgaa attttgtatt tataaaatca aactccaaca 2580

aaatgataga gtggtctcat agagaaagaa gatagtctgg ttaagattgt atttatacga 2640

agccattaac aaaggcaggc atcataagag agaccgcctc cattaatcgt c 2691

<210> 4539
<211> 1426
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126877_G1, chr3:209739084..209740509, Cluster 28

<400> 4539
aaggttcgcc agacaagacg gggacaactt cttttctgaa aggagcaacc taggataccc 60

ctcctcgtag ccaaaagtaa ctctaccttc tggtttgcaa aaatgggcac tgttttgatt 120

tgccgaacac tttctcccca aatcatagca tgggtttaga tcctcttcaa tttcaaatgt 180

tcaagtattg tcatctttaa atgctcttgg ctgctgagtg atgggtggtg ccaactgata 240

ctgatctaaa tttgtagtta acaattttta tccaattttc tagtatgcca tcagttgatg 300

tgcctaatgg tttttccgag tgctgcattc tctttagcgc ttgctggtat tgatcttgca 360

agcgtccttt tttaatgtaa tgatatgcaa ttctcttgca ttggctttgt attgcagtgt 420

ttgagaaaaa gaaaatcctg gaagcgttat ttaaagacta cagttgattt ttacttcatt 480

gcaggttgca gcatgctccg tgctcatgta tttctggtca tcactaattt tgggcttcat 540

catcagattt atgttttgta cattttaac cgtcagattt gtaacttcag aaaattctag 600

cacttgttca tatcagtatt atgtactgat atgttctatc gatctctgac tctgatgttc 660

cagattgtta cgagctaacg ggatgatgtc gctctcagat gaagatcgat ctgggttcag 720

aggtagactg gtacatagac ggcctgaagc agtgaagttg gtggtgggaa actgaagtga 780

agttgctgat gcgcatgtac catggtccac gagaaatcga gaacccctta acctttata 840

gttttcgact tactgaaata gccatgtaaa caatgcataa aggcctttgt ctgttaattt 900

gttttgcaat tttcatttga cgctaactaa aatccaaatg cttcagttga attatatata 960

tcccatgaca tggctatgac cgatgggtgt atttcttatt taccccctt ataaaaaaaa 1020

tatagttata gatttaagtt tgatcaagtt agtaaaaaac atattaatat gtgtctctca 1080

ataggtttac tataaaaata aattttatat ctaatctaaa gttgtcatct ctcgagtgct 1140

ataaaaatca aactagagag actctaataa gttaggattc cgctaaagtt gttattaaat 1200

cttccacgag gaataagcac aagagctcat cataattaat gattagagcc aacaacaatt 1260

attaatagct actcaacaat ctcataaact ctaggccatc taggcaacga caatcataag 1320

agatgatcgg accaagtcgc tcaactagca tcagaagatg caagagctct atgatctcac 1380

acaaatgatg atcaggagta tacaattgaa tggagtgcta aggtgc 1426

<210> 4540
<211> 1522
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128314_G1, chr3:216872602..216874123, Cluster 28

<400> 4540
ctttgttcct cttcctccat actcctacgt gagtggacac tcgatagtgg gttggtgact 60

ggtgcttcgc tagattcgag aggcacgcta caaaaactac taggactcga tgatagcatt 120

tacatagtta agaaggcgaa tattctatat ttttataaag tatatactaa aacaaagttg 180

attattacaa taaaatactt taatagttag taaatttcac taactctact aacatctaaa 240

gtaagtccct acttaattat agtagctttg attctatact agatcacaac accacacaag 300

ctactactag caccatttac actaaaggtc tactaacaaa agtaattaac aactaactat 360

ttctatatct acactactct agctagctaa ccaaataaat acaacacata agcaagtaat 420

tgaaatgtaa acaataagat tatagtgagc aaaccactaa ggataagagg tgaacaagat 480

ttatctctaa ggttcaattg cttgtcgacg acctatgccc tcgtgttatg gcaagttcct 540

aaatgatgat ctacgctaac tagtgtgaca agcttaacaa cttagatgct acaataatta 600

atcaagtagt ccattccaag tagccacaaa catttcacta gagttgctct tttatgcttt 660

tctcatggag acaagcacaa gagccactta aaattcctcg accaaaggta gcaaaaaaac 720

acaatagttc ttcaatgatc cctccaactt caagccaact agatgacaat aatcaccaag 780

agtaataaga ggatgatgcc ctcaaattaa tacgagtcct tcctctcgat ttgttgggtt 840

tagggtttag ggtttggggt cagccccaaa tttgagaggt atatttctct accaagaatg 900

accatgcccc tctcactttc atacaaatgc tctcatttct aggatcatct cgtactatcc 960

tattctatca tcataaccaa gcacacatta agtggtatat acttaccata ttagaaataa 1020

aatatgtagg gatgacttct ttgaaaaaac atccatgtct cattgttcct tgtgctcatg 1080

tgggcctttc atgaccacac aagataaatt ttagcatgat attccttctt tctttgcctt 1140

tccattatag agagaggagt agtagagagt ggcatgagat gcttgtggtt gtggacaact 1200

cgagttgata attatggtct tattgagtga ggtgtggaca atacacaatc tgcatattgc 1260

tgagtgaaat atcatcaagg cccctaagta tgttttgaca cattaatgac gatacaatta 1320

aaggtctaat gagatttgtt aagtgtgtga aagtcatatg tttagtttta gtaattgaga 1380

caactagtgg ctaacttata ctctattatt gtcattgaga tatgttaagt ccacaccaag 1440

gttgaacaag gtaatgatgg tgccgcaagg tgatcaagtg cttaattttt tgcgaagaag 1500

gaagaaaaaa ctaaatgaat gg 1522

<210> 4541
<211> 1727
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128380_G1, chr3:217146227..217147953, Cluster 28

<400> 4541
tcgtgttaaa ttttgtggct gcatatgcat cccgccgcac atatgtacgt atgcatgcac 60

cctttattta atataactaa ttaagtttat aaactattag atttaaatat gtttagtgga 120

ataaatcgta gagcatataa catgacgtga aaatctagat ggtagcacat gtgctatgat 180

atttgtacaa atagaatcaa ctggcataaa cacaagatac tttaagctag acgccatagt 240

ataaatcacg attttatata aaaaaattaa actagtttca tatttttaag ctaatttttt 300

cctacgaata ttctaagatt gagacagatt ttaggattaa gtgttcgtgg ttttgctcag 360

ttcaacggcc caaagcccat ggtgtggact ccagaacaat tgtgggcttg tgtccagcat 420

gctagcccac gtattagtct atagagttgg ataatttagt ccaggctgac aaaaggcccg 480

ctttcgtatc gcctcgccga aaaggtatgg aaaagaccag caacctaaat ggcacatgcc 540

tacgctctct gtagtagctt cgagttcttg caaatggaaa gtaatattac tagaaaactc 600

agcgcggctt tgcagcgtat tggagtcatg gttaatattt acgtacagca atagcacgat 660

caggagttca agtacttccg cagaatacaa ttctgtgcct tgatccaagt atatgtatat 720

gtatgttgta tacccaaatc tacatgcaca tatatacctt gacgggaact gaagccactg 780

aaaacccata ctgagcacgt ctaatggcct tagaagattc ccagtacact tccaccatta 840

tactagcagc cccgaaatgt tttgtggtat tcctgtgaga caaaggtaca gtaattaacc 900

tgccacactt gcaattagca gatcaagtat ttttcagact aagaatgcag tagtaaaggc 960

acatgagagt gaagctagta aattctagag ggaagttaat ctgcattggt ttcttgctat 1020

ttgcacttat cttatattag atgtggatga tatttttca gatgtaattc aatagctaag 1080

ttgtttctta tcggctaata gaaacgtaga ttaaggaata tactagctaa aggcttgtgg 1140

aaatgctagg actcactatc gcagtacagg acgggagtgc aggtctagct tgtggcgaag 1200

acggtggatg caggcagctg catcgctgct gcctgcacac gagaatgggg agggaagagg 1260

gggtcccact cggctcgttt atacctggtt ccgtcgccat ctcccacgcc accggccacc 1320

ctcgctagag gtgctggccc ccgtcacctc gccacaacgc cgatggaccg gatctgcatt 1380

gcgccatcca ggaggaggga agggacaggg gacccgcagc cgcagagggc agggacaggg 1440

aaaaaggttc aacaaatatt tgttgaacga atgatttaaa cttgaaaggg aggcttcacc 1500

aagctataaa tgtccaaacc ttttcctcaa aaaaaagggg aaaaggtaca aatcggtaac 1560

aatcagagag tcgctgtcta gagacacaca ggccacagca cagcaaaacg atgtttggca 1620

ttggcagtaa ttggtggttg ctgaaagagg ctctattttc aacatgtgct tagatgttca 1680

aagcatcttc caagaaacat cctgcccgac cacattatcc tggaaag 1727

<210> 4542
<211> 1621
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_12969_G1, chr1:71060280..71061900, Cluster 28

<400> 4542
cgacacattg tatgcaacct tagcacattt gcattggctt aagctttaaa ttttcagctc 60

agttgcctgt tcttatgttg ccaatcccaa agtagggatg cttcgcaact tgtatgcagt 120

taaaaagaac caagtgacag taagatcttc ggctttccag tcttgatagt ttgagtttga 180

gtgcctgcta aactatgcac ctccatgcat ttcggttaca tactgaatct ttcggcgtga 240

aagctagctt tgcatgaact tgcaccgcac tttacgttga tctgaattta tcatctcctg 300

tttctatcaa gcaaacctgt cgtctacctc agctccccat gttcagactt cagactgatg 360

aactcagtcc tcatatgcta tccaaattaa actcagacgc aataatggtg ctgcgatcaa 420

acaaaacatg tccctgtcca tatcttaagc atcgagacaa catgacgcta ttaaattaga 480

ccagtgacag tgaccgcgcg cctcgcattt ttcttccact cctcacaatc atccatgcca 540

ctggagcctt aattagcagc aagggagcga gcttcctgtc cacttgaaac ccaggaggac 600

cacatcgtct atgagaacca tacaaacaat ttccatatat aatagcctcc atgttgcgct 660

gggcgaatgc gagtttggca cacaatcaat aagacctcat cagctctgtg tgagcaacaa 720

actaaactat tcgagattct tgtgagggtg acgtagccgg gcaggaatat acccccatca 780

aatcccttgt gccttcgcaa taaaaatgga atttggtttc tgagcagcaa tcttaattta 840

tatcctgacg ttggcgatgc ggacgtgccc attgttttat gttttgatag tagggcgtat 900

tctgcaagta cctggaagag gaaggagata gtacttcctt ctttttgaaa caaacaaagg 960

gtagttagta ctttccttcc ctcatcgatt gatctggatt ttttttttg aaaaaaaacc 1020

ctgcaaattg caccactttg tcatttgtgg tgtggtttaa gtgtgtgtag tacagcccct 1080

tgcagcaagt acagaagttg aatcacaagg agcttgtact gatgaaacca gccagaacaa 1140

aaatcagaag cacgtccagt gaagaggtct ataagtaagg tagacagctc acacagatgg 1200

agtttaatat tttcctgtgc cattatatat gtttcttgga acaattcagc atgagcaatg 1260

agtcacacca catcttgtgg caagtagctg tccttagaaa gcactgcacg tatattattg 1320

actgaaacac tatagttaat tgtgttagtc aataatactg ttgtgtaaat tgaatagttg 1380

taaatgacct ttgtgcatat agtgaaataa aaggaagaga gagtgtggtc agggatggaa 1440

acacccgaat tatatgacaa atattttaac acagatgcat gaaatttggg ttgtttaggc 1500

ctcaagcact caagcaccac tctagaattt ttctaaattg caacatggta tttaggcctg 1560

attggttcta tatctaagat gtcaaaaatt gccacgtatt ttgggttgtt tagtttgctg 1620

c 1621

<210> 4543
<211> 1599
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_12998_G1, chr1:71217700..71219298, Cluster 28

<400> 4543
tgagtaatgc acgcatgcac gacgcaacgg ccaaaaaaaa caaaaagaaa gcatgctagg 60

atgcatgaag agcggtgtat tccgcttcta gaactttgta gaggcctaaa tattgtaccg 120

ctatgtcttg acagcctgtt aatccgaggt tatttgcagg tataaatact cattttaaaa 180

taaatccctc gaatgacagg tattttaagt ctaaacggtc ttaaataaaa aatatcaact 240

aattcctcta cttttatatt tcaaattata agatgtttta attttaaaaa tacaaaactg 300

ttgctataca tttagatata tgttatgttt atatacatag caaagatacg taataaaatt 360

aatatatccg aaaaaggtat ttttttttata atttttaaac agaaaaggca agaaattatg 420

gatcatgttg agagctgcaa cttcggttta cactgtatga acattagagg tcgtttggaa 480

aaaaaaagtt tcgaaatcaa agacatttaa agtgaatatt tgtgtcccta aacgacccca 540

gttaaaaata ttattaacta taaagttata gaattcactg aaaactacaa ctctggtata 600

tatcaatatc caatgttatt ttttttaaaa aaatgaattc taaaatctag cgatttaaaa 660

aatatttaga atatattaaa taaaaagata gcaatagaaa tacaatttaa gtataaagtt 720

tatatcaata cgacttacat ggtgaagtta tgtttttttat atataagaga aggggagata 780

acaaatgata gggagactag ggtcatcaaa gtcatccaag aaatcacttt gaaacggtca 840

aaagtttttt ctagaaaagt taaggcatac ttgttgtcca atcttgattt ttgaggggtt 900

tatttttcaa atttaagggc tagttcaagg gtggttcaga ctttttttt gtatgtactc 960

tctccgttgc aaaagccaaa aagaacccaa catgttaact ttatcaaata tatataatat 1020

caatatttat aataactaat tagtaacgtt agatagttct ttgaatataa taatttttaa 1080

aatgtaaact ttgcttaata tttttttact aattccatcg aacttaaaag aatttgatca 1140

acactcgttc tatagcgttt tttaatggag atggaactaa ctcgttggtt ggaccttggt 1200

aaacatctaa tagccggcat caccaacatc atcaaatccc ccaaccatgc gacggaaata 1260

aaacaagtga cagtgacatg tgccatcttc atccgtaaca tttttcttca agtttcattt 1320

ggatccgtca ttttcggcca tgtctgtact tgtgcggttg gacacggcac gggaagcttc 1380

ccataaacgc caggacacgc ttcacgcttg ccaaacgaac acgcatcact tggcaggcgg 1440

cacaggcgca gatgccgcgt agcaggggta gaccagctag gccaccacaa gatcagatct 1500

ccgatctttt cttctctctg tagccaaaat ttgcttcggc tacagggcac cgatagccgt 1560

gtttgctgtc gactggtcat tgtgttttcc aagacaccg 1599

<210> 4544
<211> 1459
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130348_G1, chr3:227056654..227058112, Cluster 28

<400> 4544
gatccacgtt aatgatgacg tataacggtg gtagaccaca gttttaatta aaaagtagga 60

ctttttttt ttgcaaaatg aatgatggtg gacagaaaac tggtagttta taggagcaga 120

tatgccggac atttaggaag acttatgtat gcgccgctgt aagcctgtaa ttatgggctt 180

agattatatt atcagttgct tgagccctga tctcgttgag tacttgagct ccgattgttt 240

tgcatgttca ttcacattca ggatgatgag gggtctctgg cttcatccta ctacctgggt 300

agaggcgtag agtagagcca gtgaaggctg catatggtaa ccaatcaaat agagatccct 360

aaagttaggg ttctatgatt acaaatttcg catggactaa atcaactagt accagtgctt 420

cctttccgta ttggaggatg gcacaataat atatataccc ttttatggcc gtcaccaagg 480

cgtgcctgcc tacgacgacc gatcgtgaaa actacaaatg cgaatggtga gtgcaggtag 540

ttgcatctgc gcatgtatgt ctatagtttg catctcttct ttcctacctt ccacaagcac 600

acctcactgt ccttgcaata cggaaagaaa ggaatcagaa gacagagtga agagctgcat 660

gatctcgaac aagaactggc caaagttctt cgacacgagg caactcgtca tggggcaaaa 720

acaaactgct ttcgagacca ttatcccaga acgatctacg cagaggcgga cttccatgat 780

ctttgaactt tgtgcgccct atcggaatca caaaatatca tctgttatct caaggtcaaa 840

agaacggtgg cgataatgtt tgtatctaca aaccagatgg caacgtgacc agaagggaat 900

cgctcttctc tatccatagc cccctatagg tgaaggacca gctgttcggt cccggaacat 960

atggccaagc agggatactt aattttggtc cctcatctat atatatatct atataaataa 1020

aatcgtccaa tataaccccc ctccctcgtc aacttcacaa ttcagatcca atgagcacct 1080

gataggagag cagcaacatc tccagaaaaa gagagagaca gcagaactta ccatgcattt 1140

ttttttcact tttactgcag aatgtccagt acaacctctt tgccaaataa tggagaaaac 1200

gatattaaca caacgcggtg atatcgacag gacatgtctc ctagacatat tttagacatg 1260

taactgggac gtgcttaaag cttaaaaggt gacgagacag gaggtaatgg aggatgtcca 1320

cggtgaagaa aaggcagatc atcgatcggt agcagacaag agaagaaaaa aaaagatatc 1380

ccaagcatcg ccaggtggcc tggatgggac tgcacactga aacacaatcg aaaacacgtt 1440

ctttgcgagt gtttagagg 1459

<210> 4545
<211> 1529
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130447_G1, chr3:227475676..227477204, Cluster 28

<400> 4545
tatttcggct aataaagggt gatcaaaagc tcgatggatc tcatcaagtt cctggcagga 60

tcaaccttca tgtttgcctc ctagatatgt atatggtaga catctctcga atgcttcata 120

gacaccgttt tgagaccatg gtggcctaag cttctctaac aactcactga gacacaatag 180

aagacctgtt cgggaatttc aatgaatatt tgacattgag tccaacacag gcaagaccat 240

gttctatgag tcagcctatg tgccatcata caactggtcc aaacctagtc taattttaag 300

tacaagtcca atttggacac aaccaagtct tctaagttag cttctaatcc atcagatagc 360

tatggtccaa gcctagttga ttctctctcg tacccaagaa tattgcttca atctcaaagt 420

tgatcacaag tcttaaccca tccactctca tgctagagga gatgtatatg tgcaagaagt 480

ctcactaata aacaaccaaa aaggccacac ccttactact atgacaaaca aaaaaatcat 540

acactaacca agaatctagc tacccgagag caacactgct tcctcccatg tagtctcctt 600

catgaatcaa ttactacact aggccagagt cactgtccta gctatctcaa tcatcgagcc 660

ttgtagtccc aaaaacttgg gaaactatga tcattgttag gagatcttca tttcaaaaag 720

atatatcaac cctaaggatg aagaagagac caacatatca aattattagc aaattgtggt 780

tggagataca tggcctaaaa agctacttgg acacacaagt ataagtacca cgtgcaacaa 840

cgtctttatg ccttactttg ttgtgaagta ctcaaccaat gcttatccaa agagcagcat 900

cataaagagt ccaagcaaca agttggcaac tatctaggta gatttgtagt gtgcaatctt 960

gactctaact tataagaagt taggggacac ataatctaca atactcttaa ggctaccatt 1020

atattcatag cacatgcgct atgttaggga acccaatcta ccttctcatt atgagatttg 1080

cttaagagtg gtacaacaac gacccttggg caatagagct tttggaaagc ctatgaagct 1140

caacccaagt atctgcagat aaggttagag acataaattt acaaactaaa actaataagt 1200

atataagagc attattcaag atgacttacc atgggaggag gattggaaac acaaaacccc 1260

ctgttctgtt gaggcatact cacctgacct ggtagaatat gttccatatg agtcaagatt 1320

tcattgcctt acaactctat aaaagttagt catgttgggt tatcgacttt gatgaactca 1380

aaaacaaagt ttctttatga tatgccagaa ggatataaca cctcaggaag ctaacaacaa 1440

ctccctatgc taccatccca gactctttta gcacctacat ttgctcaagg agatgctaga 1500

tagtactctt accaactcca aaaattatc 1529

<210> 4546
<211> 1978
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131891_G1, chr4:3113659..3115636, Cluster 28

<400> 4546
tatactgtta atttaatcgc catatatgct cgtaacaacc cgcttttatg agtagccaca 60

tatatataat gttgaagaga atcggtgcct agctagctag ccatatatgt agagtattat 120

tatatagcca ctttgattta aaataatgtt ctggtttaag atttatttat catagtgtca 180

tagaaaatca ctatcgagag aattgaggga gtggtgagct ctccaacaat ataatatagc 240

tgctatgcta tgctataata cgtatacgta gccactgctg tctctcctgg cccagcacca 300

taccgagaca gctttttttt catgcacaca aacgtgtcgt atctgatcaa taatcacacg 360

agacagagac tctgcctagc ttgacatcga tgggcaacga acatcatgca tgtgcgctcg 420

tggagtagct ttctttcttt ctttatgtcc tctgtactgt acgtgtgcgt acatgcacgg 480

tcgatcgatg caataattaa ttaattaatt aattatcata atatgagcgc ggacacagag 540

taaatccaag ctgccgctgt caccaccaca cacctcgaat ctcactgttg gttccttgct 600

tcttgttgtg ttttgtacat atagtctgtg agagctagct gaggaatacg atagatggtt 660

acgggaccaa acgcagcata ttccgacaac ttaacacgtc attgcatgtg atggagggac 720

cgatcgacga cgacgacatg gcccggccgg gtcacatcat attattgctt ggaccacaca 780

ataatattat ttatttgttg catatatatt attgtttggt ggaccacaca gatctaacgt 840

gcacgaacct gccagtatta tttatttgtt taggcgccct attggatgaa tccaccaacc 900

aacacactag gctccaacag agagcaacgt acggttggga tcttatttag gatggggtga 960

gtacattgtt tagtagccac aaatagtatg tctcagtacg tcttggtggt gtgtcatatc 1020

cacgcaccgt tcgttcacgc attatttttt ttcccaatcg ttacctacca cgcgcgcatg 1080

ctgtctcgat attcacgaga gtgtggacgg tggaccatgc atgcgtacat gtcggagtgc 1140

atgtagatat cgtcgtgttc gtgcatgtct gggcattgat ttttttttt tgtattgcta 1200

accaatcggt gttggaataa ttagcctgcc tagggtaata tatataatat aatgtcaagt 1260

cgacaaacat gcatggcctt gcagtggccg tggggccggc ctatatcacg tgtaccccgg 1320

ccgaaagccc atttcatatc gtacgtaccc tagctagtgc aacgttcctg ctactctgca 1380

gctagtcatc tctagctacc atgcatgctg agagagaaca aaaaaagttt tacggacgta 1440

cgtgcataat tgcataatat ataatcatct gacaacgtct cagctaggtg catgtgcgac 1500

aacctgcttg tctaattcct agctactttg tagcatatat atgcagagaa aaagtttgat 1560

gcgtgacagt tttcgaatct gtgatgacat gtaaaacaaa aacctccctc cctccctcca 1620

taattacatt tcactgtacc atatattggt cattcgatgc attatattat tacctaacgt 1680

gtcatatata caggttaatt aattatatag cctttgtatt ccatggttaa ttcgccgacg 1740

ccacatattt ccaaaatcga atagagaaat ggacgtgcat atacaacaac cctgtctaat 1800

ctctattatt acgaagcaac agttgtatca acttgttaag catataggct cgatggcgga 1860

gaggcaaacg gagaaaaagg ccatacaaat atatatgtgc tccggtgcaa ctaaagagcg 1920

tgggatcaac aattccatac aaaaagacta gctatattgt gcaccgaaag ctagctaa 1978

<210> 4547
<211> 2579
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132819_G1, chr4:6526897..6529475, Cluster 28

<400> 4547
acacaatatt tgtaactctt atttcaccat aaattatagc ttaaaggtgc catttaccat 60

agaaacatga aatcacactc atgcacatcc aacatatatt accatatcca tatatatgcc 120

tacataacgt ttggggtcac cacttgaaaa atattgatat atcatggcat aactacatca 180

acagctcttg tttggggcaa atgagtcaaa tcattttatc cgtttatttt tggaaaacag 240

aataaaacca aaacctagtt gcactaggat cgtagcccta acacaagggc tagattgtgg 300

catatccacg agtaagaaaa aaacaccaac acaccctagc acaagtgtga acagcagcac 360

taccacaaat atagcacaag aaattgttgg tgtgcatcgt cattgtagtt ccaccaatta 420

ttactcacca ttctagctcc aataatgaaa tttcactata gctccaaact ctaacaaata 480

aatctgaaga ttattgtttt tgagaatgta aactaagctg aagatataac tagatctctc 540

ttgtgcacat tatgatatga ttcaatttta gcaaaaggtt aaagtctaat aggaactaat 600

ataaacacat ggtcaaaatt aaatatctac atcaccacct tccactctcc cttttcacat 660

ttggagttgt tgataaaata caaaaacaaa agagggagag agatagagat acaaagaaaa 720

actagtgtgg tagagaaaaa taatggcgag gagaaaggag gtgggataga taaaacaata 780

tcgaatacac agaccattgg cttcttggat gatggttaag atatagctcc aattggttgc 840

tctgtggtgc caacatgaaa ggctataatg acacattact aatcgttgag tatttttttg 900

aggtgtgttt ctaatttttt tatggtaaat ttcttgggtt gttgagtggg ttcccaagag 960

acctttgtcc ttgatggaaa tgttggatct tgatgattct ctgcatgtgc cagcggtggt 1020

tgaaggttaa accttgctag tgtagcacca agcgatgaag cagaaatgcc acttacttct 1080

cctaatttga gatagcccca taataattgc atctatttaa ttcttgcatt tggagcataa 1140

gtatcatcaa tggaaaaaag agcaatttga gcatctcaat gtgcatacaa tgaaaaaaca 1200

aaagaacact tttacatttt aggagttctc caaatcacat atttgaataa ctcattgaaa 1260

tgataaaaag tagagttttt cttcactcaa tttgagtcta aaagcaaaat ttacatcatt 1320

tggaagattg tgtaattagc taatggaaga agcaaatcaa cccacacctt tgtcaaactt 1380

cacagaactt acgacaagag acaaggggca tacataaaga cttacataca cttgaggttg 1440

aagcttgcaa taatcctaat gaccaaaagg ctctcaagag gcccaatata taggcttgtc 1500

aacctcaaac tactccaaat gaagtgcgac caatacgagt tcatcgacac cattaacact 1560

caaaagctat ccaagggacg actggactct acaaggccaa ccaacccatc aactgcctta 1620

tacaacatgc atctaacctc ttgagcttga ccttaagtgt tgattataag atcttcaaat 1680

ctgatagttg aatagctaca tgaagcctga gcgactggga cttaacaatc actccaagcc 1740

atctttagtt ataagtacca ctcaccatct agggctataa atagggtact tgcctcagtt 1800

gtatttacgg agaagtgacc ttaagtgttc tcttcctttt actttggcaa tattttagtt 1860

tatttatttg ctcatgagta ccttatttgc aacagatagc ttgttctatt gattgttttt 1920

aaactttgct tggactagtt ggtaaatgta gcagttaagc atgttgttta ggctaaagct 1980

tagttgcctt actttctacc catggattgc catggttgac agtaggtgat agtagcaaat 2040

gtatgtcctt catattcact agctaacccc cctcctcgcc ccttttcaag actaagaaag 2100

tgtttatcac ctagagcaaa cacagttaga gttaatctct tctagcagat tagtaaagct 2160

tctaactctt catcctcctc tctctctctc tcttaccctt gtcctccgta gtcactaagc 2220

tacattcata tttagccact tttccttttt atgagcttgg accacacaaa atttatattt 2280

acgtgcactt ttctcgattc ccaaccaaga tttggcgtcc ttaatttttc acttacataa 2340

ttttctttcg ctcccaattg agattttgtc gtccattttt tacttgcatg atttttttca 2400

ccatctgatt cttctaacca tcatagttgt ccttgaacgt acctagctag atcaaagggg 2460

tggctatggc tggctagaag atattagaac aactccagca atagctctca aatcagggaa 2520

atcagggctc ctacttttg atttgagcgc ttccactcat tttttaggaa acacttttt 2579

<210> 4548
<211> 1543
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13570_G1, chr1:74632810..74634352, Cluster 28

<400> 4548
gtctagggca tccccaacaa ataacctgag tacctggggc cctccgtgcc ttggggcaac 60

aatggtagaa atacttagtt tttaggctct ttagtagccc caaatcccta agatctttgg 120

tctcaggtaa tatgaaaagt cgagccctga gtccactcaa gcttgggcct ctcataggaa 180

caaaggaact cttacaacag ctaagtataa agccacccgc aagatagaag taaatagcta 240

accgccacca aggctatgat ggcccctaga gaaaggatgc cacttctaca gtatgctcct 300

gatggtctca taagttcccg tgttggataa ggcttccata tatcacatat aatatgatgt 360

gcaaaattat agtctgatag gcacactatc ccttcaactt agacaactag gtactcaaga 420

ctactattca atatgtgcat cggccttata gctacgcatg ggtgtgtcat catactagga 480

agtattatca agtatagatt gctacttcgg ttaccaacaa cgtcgtacct aatagtagga 540

acactatttt caattgttac gacataacat acctacccct gcagtatgta tgactgccac 600

tggagaaggc tgacactata ccacaattga gggcataact ttgcatacga cttcatgacc 660

aacagaagat tagggttgtt gggtcttaac tgataggacc catggtgtaa ccaacttgta 720

acctctctcc tcccttagcc cataaaagga ggagcagagt atcgatccaa gagatatacg 780

agatttggaa ggtccaaaag ggaggagatc caatagaagc tagctcactt catataagat 840

aaaacatagc aacatccatg gacatgcata aagatgaact agggatcgat aagcgagaac 900

tctcaccaca accaagtgga aaagagggag ctatgaggtc atgatgctca gttgattctt 960

gaccttgtaa tcttcatcac ctttatgttt atcactccat tagtagcaat aggatgtagg 1020

atattaaaca ataaactaca tggtgctagt tcttggtcac gcctaggtcc aacacaccgc 1080

tcgtttacgt ccctattctc tttagatctc atcttttcga tacttcatgt accctagtgt 1140

cataccatga tggcatttat tgtgataggt aggggaagga cacttttta ttttgaagt 1200

ttactgtgta gcgtgactat ggggacacca acatgctcgc atgctagagc agtcgctttg 1260

gacaatagct ctaggaaccc gaaccatgag ccactccact ggcagcatca gaatctcaca 1320

cagtcttccc caccgctatc ttcggtgggg gacatgcttt ggagagggta tggtatgatc 1380

ccgaaggtct tgctttggct tatgcctagt tggaggcaca acaccctagg tgcattacac 1440

cgtaggcctc catggccctc ggatgagtgc aaccatacac aacatgacac tcctctaggc 1500

atgcgtcagg atcatggcaa ggagacctgc aagcattaag gtt 1543

<210> 4549
<211> 1671
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159834_G1, chr4:174008250..174009920, Cluster 28

<400> 4549
tatatatgaa aaagactttt ggtgccaacc atatctatac cgggaaattt tcggcggact 60

tctgtagcta cggaagtata cagataagca taaagtacca gacaccgata catgggagct 120

agcgagctta ctgctcacta gctgctactt ctacctagca acaatcacgt cacaagatcg 180

tcacacccat gggactgaag aagatgctgt caagtcatca gatgagagcg agagagactt 240

gagtgagtga tgagtgtgag gttgttgcca cccctgccta gtctccactg tcgctagctg 300

cagccctcca ccaccaccag caccgctgat gaacacgacc gccgttgaag tttgctgctg 360

ctgcagccga tcgaattcct tggagagaag agggatcaga atcagatttc agaaatcgcc 420

gacgggcggg cgggcgggcg acgagcgaga attcatcaga aattgggcat cgaaataatg 480

cctgaccaat gacagctaga tctatatatt aataatgacc tttaatttgt cagaaaacta 540

tgctctaata tacttacgta tactaggttc tctaacgacc aataataaag ctgagcacag 600

cgagagagaa agacactggt tgattaatag agggctagct acacctctac tcattcattg 660

tcaactttat acagtatctg ttatgagaga aaagctaaat aatctatagg tatatcaaaa 720

ggcattatta attgcaacga cgacacataa tatatacaca ttcttcttgc cgccggtgta 780

agcagaagcg tccgatccag cgctcgtgcg tgtccagtca cacacagctt cttgtaccat 840

gcatatccat cagtatctaa tggctggatt gaatttcctg gtcccctctg tcaagtgtca 900

agcagtagcc agcagttggc ttctagatta attttaagct tggagcaaaa gcagcacaag 960

gtagatcgat cagcatcatc ccaaaccccc caaacaaaat aaaaaaaaag ttagtagata 1020

acaagggaca catactatag ctactacccc tttgagaaag aagcttggcc aaagcaaaag 1080

gaggcttgtg gacagtagaa aatgctttgc cccaaagaca cctcttttcg gatttctacc 1140

tatctcgacc agaaaaatgg ggacaaaaaa atcgtgtgca cgacaaggac cttgcagcta 1200

gaaatagttg ggcagaaaga gaaaggaagg tcataataat aatacatctt tttttataac 1260

tattttcata tgaattatat agaaaaagaa ttcaacgcag ccacagaaga tgaactgaaa 1320

ttccgggaaa ggaaatctga atctgacgcc agtccaatcc aacagaccaa ctagagcccg 1380

accgcccaag gcctcctggg ctctccgttt gaaacctcat ttgggccgaa gcccgttagc 1440

agccttccta tcctatctaa ctctctattt taaaatttat cctataaaca gtgtaatata 1500

cagtacaaaa cagtgtttta cacgtctata tgagatagcc ttacaaacaa atagaatgac 1560

gtattgatac ttggaaagga cgagcaagga atgagaaaat ataggaggag aggactgagc 1620

tgctacccag ttggttcatt cgtcaggtgt gtgagcggcc gtacgtggga t 1671

<210> 4550
<211> 1593
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160840_G1, chr4:180375711..180377303, Cluster 28

<400> 4550
ctctgatttc aacctagtta gtgaaagagc aaatactcta agcactgatc atcacaactg 60

ctgcagcacc gaaaagggtt tgccaaacct tacttgttca ctacaacaac gactaactct 120

aatgaaggta tgaacagcag cacgtgctag ttttatctat gttcttgtgt cctaactaga 180

gcataatgat cttacaaaaa tgacgtatta gatccaccag caagcaagaa tggcgcgaag 240

atgaacttaa ccaaacaaaa cctagtattg cactcaacta gctctcttcc attctgaaaa 300

gggaaaaaga aattgaacgg ttgtgttcga cagtccaacg aagagagcgt agcaagccaa 360

actctcgcgc tccagcagag agtattcgca ggacaagcaa tggcagctac gacactaatt 420

atcttattat tacgtcgttc ccacgcaacc gaaaaaagtt gagtcttgat caaatgatca 480

gtacccccc ccccccccc cctgccccct gccctgctcc tttaatccta aaatagataa 540

ctttatagaa ttcaaatgtt taaattttgt tctaaagtac ttaactttct caaggttcaa 600

aaatacttgt attagagggg gaggggagt tgtcaggcca aaactatcag cgaattggca 660

ggcaccgcag tagcagtgcg gttatcgtct cgtctactcc tgacgtcttt gccgtggaac 720

tagaatagta cagtagtata cgtttatact cctcgcactt tgtcctccgg aatctattga 780

ccggcacgta cttcatgtta gatcttttgc atgtatacag cgtgtcaacg tttgtgaaag 840

cggtcttacc caaaatcagt ttttcgacat taatgcattt tatttagtct gctaaatctt 900

gtgcatatct cttcgcataa taagtaggac aatccaccaa acgcgcaata ctttgtgagg 960

gcggacaata attgcagtcc tcaccttcaa aggtgatgag gtagttaccg agtcacgctc 1020

catttcgacc atagtaattg aatccacccc ggtttttttt tagaaaaaat ggtttctaga 1080

tttggtttat acaaactagt tttttttaa aaaaaaaaac tagatgagca gctttttgg 1140

ttttaacaa actgataaac cagcttttag aaactgaata aaaaatgaca tgtcgggaga 1200

cattctagtt ttttaaaacc agttttaaaa aaatagttgg atctaaatag accctaagcc 1260

tattttcagc ggattactca ttcttatatt catattcaaa ctccactata tgtacaaact 1320

aatgttttga ataactatat aattaaaccg ctagacactg cctgagacta actccaacaa 1380

actatatgta ttaacgtata aaatattgtt ttatattata aactgttctt tttatctaaa 1440

gtagagtttg aaatatgagt taagtacgag tacgcaaaag acagtctaat aaactgctta 1500

ctccggttca cgtgccatat aataaactca atccgctaga ttctaccgtt gactcgtcgg 1560

tcacctcaga cgtggcttga tggagtttgt aca 1593

<210> 4551
<211> 1608
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162024_G1, chr4:187880006..187881613, Cluster 28

<400> 4551
agggtggacc aagtacgagt ttctgatttt ctaagttcga tgaactaggt gtttttacta 60

cacctcatac atacgaagat gaagtgcaag catttgtgta agtctctctt ttcactgtcg 120

ttcatttttt ttcctctttc acaaattcat cggttatata tatatttta acgggaagcg 180

taaaagtgac cattaagctt ggttatatat ttttcactgt acatactgac ggcattttat 240

ttttcttcag aaaccaatgg gcgcacacag acaacggccc acagcttgcg gtagtttttc 300

tccttcttcc ttctgttggt gtgactggtg gacggctgca gagagaatct agcagccaca 360

tgtgtgcgat tcagtgccgt tctagatttt gtttagcatc gttgattgac tccaggtaca 420

ctgcaaagta tcatcccatc catatatatg gtggttccta atcaaatcaa ggtcgccgaa 480

aattggtaac tccgtccttt ttcgctggtc tggcctaaaa aatccacatg caaagcagca 540

caaaaggttc tacacttcca cgcaaatgtt tttctaaaaa gataattcga cccatgaagt 600

atttcatgta cctaaactaa ataaagtaaa ctattatcga tctgtaccgt ataaagcacc 660

agtttcaagc gtcgtcctac gtcacctttc aggccttcac cttcgcgcta cccttcacct 720

tatgtgcggg tggggttcga accttaattg ttggctccac gtctcacacc tacctagcca 780

acacaacgca catattttta tgttctaata aatcaaagtc tttttatata atatattttt 840

atgtgatata tatagaaact gtagcaatac acgggtatga ccagtactaa tacaaagcaa 900

gggtttcgcc aacgaaatat caaaaaataa aataaaaaag aggaatgcaa ctgcccgaac 960

accataactc atgttggttt gtgttattaa aaaacgtata ttatatataa aaaccgtagc 1020

gatgtacggg caactaacaa gtgccgttgg tgtgcgtgtt tctaaaaaaa aggcccggtc 1080

aaacattacc ttgaacaaca tgctttttct tataacaaaa tggaggtaaa aaaaaggtta 1140

tcatgtcatg gaactggcgc gtgtcaacac cgatttaact gtactaccat cttcaaatcc 1200

cgaaagcagc aacacatggt ttaaaaaaac aaactaacta taactgtggt atatagaatg 1260

attggcttat tgtactagta tatgctaaca aggtttcgat atatggctgc gaacgctatg 1320

cgcccatagt tttcagccaa agattccaag gaaggacacg gttatcccaa ggcggcgccg 1380

atggttacga aacgtagtac aagggtttct tcctgcttta attatgtgct gcactgcatg 1440

tttgttgatt ccttgtgcca ttgctttagc cctccttttt gcacgtattg ttaatgtgca 1500

gttagtagta cttgacctgc gtggtttgat gcgcatgcat gcatccatgt ttgtggcagg 1560

cgaaacaagg cttggcatcg tttcgcaggt atcatgggcg gcatcgtt 1608

<210> 4552
<211> 1413
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164397_G1, chr4:199185401..199186813, Cluster 28

<400> 4552
tagtgagata tagctcacaa aaattggtga aaacttgaaa atttgtcaga gagcacaaaa 60

cataaaaaat ctacactaga aagtagaccc aagaaaaata acatgtgctc gagtgccaag 120

tttgacatgt ttgacatgct ggaacaacac aaaaagccta ggtttcacaa cccaaaaata 180

gaaaaaaaaa ctcatgaccc ggagctcctc aattgtatag taaatccaaa gaactcattg 240

tttgtgaaaa gatagtagct aaaaatatgt tgtctgagcc tagatatatc ctagtgacct 300

tagtagtggc cttagaatgt ctggaatacg atggtttcgg gtctaggaaa acacctaaaa 360

ctagtgagct atagcttatg aaaattggtg aaaacatgaa aataggttca agagcatggg 420

acataaaaaa atctacatta gaaagtgggt ctaagaaaag ctacatgtgg ttgagtgcct 480

agattaacat tttacatgcc aaaacaaaca aaaagcctaa aaatcacaaa cccaaaacaa 540

cgaaaaatag cgaatgtatt tgagctcctc atcggtgtag tgaatcacaa acccaaacta 600

cattttagta gcctacgaat tgtctgggac tcgttagctc tagggctgag aaaacacatg 660

aaacaagtga gctatatctc acaaaaattg gtgaaaacat gaaaatcagt ctgtgagcac 720

gggacacaaa atcctacact agaaagtggg ccaaagaaaa ataacatatg attgagtgtc 780

tagatttcta tgtttaacat acaagtctag aaatcacaaa cctaaaatag tgaaaaaaaa 840

ctgacgaccc tagacatttg agctctccag ggatgtagta aatccaaaaa actcgtttgt 900

gagaaaaaaa actagctaga aaaatgttcc cttaacctcg gtacatccta gtggctttag 960

agtgtgtttg gttctgacaa aagttacttt atgttgtatg ctataaaaag ttgtcgatag 1020

ttgtctgcta tgaaaaaact aaatgtcatt tggtttgaac tgctttgaaa ctaaagattt 1080

catatgatct gccttgagac tgtttatatg caaatgggca atgatgcaac attttcatga 1140

ttgttgacat aatttttatc attataatat tacatacata catatagcta ggaaataact 1200

taaaaataaa taaagaaaag aaaatatatt agataaataa aaaagtccat aggaaagaga 1260

aatgatgggt tggtacccct taaccgatga cacagctagg ggtaatttct ccaaccttgg 1320

tttgctgcca gcgttgaaga agtagtgcac tgcccacttc atgagtttaa ctacgaagag 1380

gcagatgtgg tgcaaaaagc agaggctaag tgg 1413

<210> 4553
<211> 1493
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_166984_G1, chr4:212309035..212310527, Cluster 28

<400> 4553
gttttgaggg tgacactttt cgtatcaaag aagaaggttc atcagttgtg gcgtttggat 60

gatgcatgtg tgtgtgtttt atttttgta acttgctata gttggtacca ctagttcaat 120

gaatgttacg cctagttgat tagttgaagt cagttttgag ggttacaatt atcatataaa 180

agaagactca tttattatgg catttgaaag atatctatgg gcttgtcaat ccacatgagt 240

agagtctcca gcttagcaag gtcagaaggc atggtgtttg ttaagggact gtttgtgctt 300

cactactaca taccaatatt ttctattcta aataaaataa ggaccttgag actttttttt 360

caaaaataga aataaaataa ctcaaccaac aatgatgtag aagctattta tagaggtgtc 420

tcactttctt ggtagagaaa cttataaaaa tagcctatct ctagaaatca atttttaaag 480

atgaatagaa agttggcttg tatttaagaa tgcctctatt ttgaaaggcg gcaagaaagt 540

ccaactgcct ctaaaaaatg gcatttttag agtttgccca ctctaaaaat agaggtattt 600

ttagagacaa ctaggaaaac caccctccta taaaataagt gctaatatat attttattca 660

aatcaagttg gatgaagaca aactttatat tatggttgat gtcatttcca tttcaaagta 720

tttatgatcc aaagattatg ttttcaaatt ttgaaattag aaatccattt ttctaaaaaa 780

aatgaaacaa ccatgaatat agacatgata caaaccaaag ttgtatcact gatcctacta 840

ggcaagatct aaatcgtttc agtttaaaca tttcccattt aaaattgttt aggtttctag 900

tattcatcat aatacttgct aaagtgaata taaaggaata atagtagcat ccatgagatc 960

acaagtgact ttaagatgca atgataaaga agcaacatat gaggacgata gtcatgagtt 1020

cgatccttgt gatgtgtttt tcgtaagaac ataccgaggc tgctagtcta agtttgatcc 1080

tcatgtgtac atgtgtattt tgcatgaaaa ttatatagct tctagcttgc aaccaaggat 1140

gggtcatctc gtgagttttt ttagagttat tcatttatta tttattttct aggtccaaat 1200

caaaagttat gtaaaactat ttagagggat agatcaaatt ccaactacct ctagctagaa 1260

gttgacgtat atggataact aatttttgac ccgtctctat aaaccaactt ctatagttgg 1320

ctaaatatcc acctcaagat ataaaataat ttagagagac acatagataa agagtaggag 1380

agcatgttgc ctttaaagac tattttatac taaaatagat catggtattg tgcaagcatc 1440

actccaaatc aacatttttt tggagttaca tgggattgga ggcattatgt att 1493

<210> 4554
<211> 1665
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_169239_G1, chr4:224950283..224951947, Cluster 28

<400> 4554
agttggtaat atatagtctt tttggccggg cttttgagct ttttagcttt agcttttctg 60

tagcttaagg tggaagccct agcaaacatc tatgtgaaaa tgacttcttc gagaatgtag 120

cttcttcgaa ttcagtagct ttcacgaact tgtgcgttga agccgcattt tggcttctac 180

tgccaaagag gtccatatac ttctaataac gcatccacaa tattcaccct tcccatacgc 240

tccgaaattt acaattagta attcagcatg gaaataccct acactagaaa accgatctcg 300

atgtctcttg tctccacgtc ttcaactcta gcaaggtaaa ccctagctcc ctaccatcaa 360

agtggctagg gccacctatg gcttgctgga gattggttgg aggtgctttg tggtgcgatt 420

agtatagggc atgcactagg tgggctacaa atgcagtttt taagagcata taaaatagat 480

tgtttgagga tgtttttat tctaattagt ttttaaagca tctagataac acatggtaat 540

tctctaagca cttgtctatg ttctaagaaa gaaaaggtag aatactttaa acaatacaat 600

gggcataatc caccaattaa acaattttca agtcaaaata cgctcgagtt ataaatgttt 660

caaccatgtt ctggattcac aataatgacc catctatgtt gcgatatata gtctaaataa 720

aaggtgagta gaaggcgtag aataatggtt tctccttgtc cctattccta atcattgaaa 780

aggttggcac tagtgagaat ccaacataag gaggcagtag aaaacatttt ggcttctcaa 840

cttatttggt agcagcaaca aagggctgag ttcccagcta taagggtaca attaggatat 900

ttgtttaatg ttaggtaaag tacatttctc aacctctaaa ttgcacatca ctccaatttc 960

aaccatgaac tagatatgaa tccagatagt tttctaattt aaatcaaatt aatcattagt 1020

gtttagatac caaatagatt tttacaatta tttttagaaa ctagaaaagg gggtagtttg 1080

ggaatcaaat tcatttggtt tagatagttg aaaggtgtaa gttaccggat tttgtaattc 1140

aggattcaaa accgaagatc agaattgttt gatttagata gctggaaggt gtccaacatt 1200

atggttgaaa aatatacttt atcctttcaa ttttatccat gtcaaccaac ttgaacaacg 1260

gtgtctcttg taataaggct tgtttattga ttatggcaac catagctaaa ctcatacata 1320

agctcaaaga ccttatcact ggttcaaatt aaacctaatg actcacggtt ttggaaaggt 1380

cttttgaaga tcaagaaaca atttctgaaa tgtggtacct ttaaagttaa agatggttgt 1440

gagactagat tcttggagga cacttggata ggttcgaaat cctcgggcta gattcttgga 1500

ggacacttgg atgggctcta aatcccttaa gtactaattc cctagcctat ataatataat 1560

caactatccc ccatgtggca gtggcaaatg tcttaaatca tatgccatta aatatctcct 1620

tctggcagcc tagtataacc tagtagcaaa agtcttccat actca 1665

<210> 4555
<211> 2806
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170300_G1, chr4:229402913..229405718, Cluster 28

<400> 4555
agtggcgaaa ttagctagac caatgggaga attaataagg gctcgttcgg ttattcagaa 60

ttcattctcg gtaaacgatt ctatctggaa cgattgttaa tttatataat aatcaaacac 120

ctagaacagt tcctagctag ctttgttctc gggtaatcgg ttctaagggc tggtttagtg 180

acaaggaaac caagagggat tagagtgagt tctaagagaa gtggttggcc ttgttattag 240

ttagaggctg atctataggg gtagctagct agatggggaa agtgcactcc atgttatgca 300

aattagtagt taaggtccgt ttggatgttg gtatttgggt ccatagaatt gaaatagttc 360

taatgtcaaa tctgagcggg ttttgaaatg ggcctgaaat ctaatactgg catctggatg 420

cctcaattcc cataattcta tcaatacgga gggtcgcggc tcggttttgg aacggggact 480

ggttagctag cttcaattcc ctgcggaaac gaccgacgtt tccgttcttc aattccggaa 540

ccgtccaaac actcgaattt tggtgggttg tttccaattc cgaacttcag gctttaatat 600

agacatccaa acgggatgtt atattaattg catttcatgt aatctagctg atggacttct 660

gctaaaaaac ttggtcgtcc acctgacctg ataaagcatt attagtgatt ctattatcga 720

ataatcctca gttattttta taaaatacta gctaaccaag ctgatcgagg caatcgagca 780

attaatgatg agctgtcggg cggttcgtct gctcgatttt gcttgcgcag ttaaggtgac 840

aggaactgct ggttctgagt tgccatccta tatatccgaa aatgaccgct ttttatgtag 900

caaatttgaa ggaaacccta taagtttgca tgaaatatct gctttgttca ggcaacgtgt 960

ggtccgtcca tctttgcttc aagacctgtg catcctcgaa gttttcgagg cagccaaatc 1020

attatactat atgtcttata tgggggggtgg taatggttga tgcttacgtg tcgtatatgt 1080

atgtctatgt gcattagatc aggacggatg tgtttagcct agatcggatg ctttgtgttc 1140

agaatggatg catgtctcta tggagggttc ttcctggctc tctttataca tccaggggct 1200

agaattctac tgcggtaggt taaaacaaac tataaataaa ttgtactggt ttattttcaa 1260

aataataata tcattaaaat tcaaggaaac tggacattac atgcaaacga gggtgttaat 1320

tgaggtacta ccaacaatat caaaatgtca ttacctactg cagtaggtta aaacatccac 1380

ttcccatgtc acaataatcc ccacatggag caggaagact agcaacgtaa cgctcaattt 1440

tattatttca tagtacaaca aactgaattt tagcaagcac caccatatta ttcccctgca 1500

aaattccttt ttccttatga cgcgaaatcg acatgatttg gccaaccata ttaaaatagg 1560

gtggtggcga aggggatatt ctccaaagag gtcccgtttt cggagagttg gcagcatggt 1620

gtttggccag tttggtgaaa ttggagaaaa acaaaacttg gttcgttgct tttacaggtc 1680

aacgggttga acctggaaat ggcgttgatg caggtgacag tgtgtggtta aaaataagct 1740

ttcgtcgggc tcctgtagaa agttgtagtc gtaggttgct tcatctctca gaaacatatg 1800

caggttagaa actcaggagc ttccatgttg cagatacaga ccccaggaat caaggatcat 1860

ctggacgtgg atcaattgca gccagagcta cgttctctta ttttatctgt ctagattata 1920

taatcgaaca aatttcgaac taactggaca aattataatc tcagacaaac aatcccttag 1980

tattggtccg cagcataagt ttctgctaat tggtttctct taacttttaa ccattagcat 2040

tacaatcttg tcagatggat ggctctctta ttatgtcgtg cttgcagaat tcactatggt 2100

gtgtgttcca acgattcatt aagtatcata cggggaaaaa aacaagattt tagaatggtt 2160

gtacaattga aaatgggttc acctcaccaa agctggcaac aaccataaca gaagagaccc 2220

tacactacac tacactacaa tacaagcaac cgatccgcag cccgggcagc tttcagggaa 2280

agagaagtcg agaagaccac atgttcctgg agttgcagaa gggacaagga acttggacca 2340

aaaggaaaag aaaaacgaaa agaaaggaca aaggaactgt tctgaacagc aattcaaact 2400

tttgcatgtt cagcatccat aatttgcttt ctaccggcaa ctgcagaata ttaggaggat 2460

gctcataaat acactctaaa ggaactccat aaactacacg atagtcagat ggctgggcca 2520

gaacgctgac cagtgaccac tcggagaaat tcaaaagtgc agctagcttc cttggttgaa 2580

ctcaatcggt gatggaatat ttgggggttc tgtttgtttg caaccggggg ccatcttcgt 2640

ttggttatta ttgcctcggt gtgcacgtgc ccagattttg tgggtcaagg aactgtagct 2700

cagttatggt ttcgtctagc cgtgatttgt ggtgctccac acccttgtag attcgaccac 2760

cttcaatacc tcattcgtat ggtcaatcaa aatatagttt tataat 2806

<210> 4556
<211> 2561
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173344_G1, chr5:5491325..5493885, Cluster 28

<400> 4556
acttgtcaat cactggcacc gtaccacaca tttttctaga gccacagctt aattaattaa 60

ggtctgcaca tcgcttttcc ttatgtatgc ttgcatagat agagaagcta acacagggta 120

ggttcctaac atgtgagtta aggatgagag gaaggtctca gaagttctgg ggtatctaac 180

ccatattatt gcataaaaaa tgttgaaatg gtgttgataa tacgatttcc aaaaatagat 240

catgatatat tattccaatc aacacacaaa aaactagcaa ttctacaaac atgcctcaga 300

tatggacatg aataatctca accatagagt gccttatcct agagtgtctt aaccctatat 360

atagtatccg taacggatcg tataaaatag tggatttgca ctgtacattt atattttcct 420

cctgcaaccc actatcctaa taaaacatac atttctcttc cactactacc acttacttta 480

tttctttttt cactaaatca gcccatatgc actatgcacg tcgtaggggg ctgttgtacc 540

cgctacagaa gggggacgtg gagtagcaac cgttgaagac aacctaagca taataacgca 600

caccctagcc taaacttgag agggagaaaa ctcgatctgc acggaataag acactccatt 660

acattgcatt ataaaaaggt tttttaacat atcgagaaat ctcccaaacc cctatcccac 720

acataaacat gggttagagc gtgagcgtct cggcttaaac atgtgctttt acatgagata 780

aatgagggta tttatttcac atcagcctaa aaattgttca cataaagagt caaaactaga 840

atccgacaag cgctacccaa accaacttgc taactcttaa acaactaacc aactcagtaa 900

gagactctta gaagggatga agggtgagca aatgcacaca ttaatattct tttaaaaaag 960

atctaggttg attataccag catatattaa ttaatatgag agttttgtgc aagatgcgct 1020

tacaatataa tccaatttct agtagacctc tagagactgg ggaaatataa tttatgtact 1080

actcattagc aacaagagcg tcgataaatt tttgctccag ctagaagact tccacatgag 1140

ggcttcatcg tgtatttgag agaagatgta ttctactggc ttctcttttt tccgaaaaat 1200

tatttcatca ttcaattgct tcgaaacggt ccacatggtt agaatagcca gagagtgcgc 1260

tgttttgctg cccttgctga cggctgacca agtccaacat ctattcatgc agattggatg 1320

tttcagtcca gttaggtttg tagactgggg ctggggcagt cgctccaaac tctcttagtc 1380

cttggttcga ctccttgtgg tcaagtacat gtgtaaggct cggctccgta tgtattggtg 1440

gggcagggtt ctgaggactt gacatgtgtg tagattaatt tttttatgtg tataaagtat 1500

gatacttagg aagcatccaa ttaacagcaa acaagtcaac aaataattag aaagaaacaa 1560

caaaatatta tatacctgag aacattcaag atgataattt cacagttcaa tccataaaga 1620

aactttagac tcattccgtt aatgaaaaaa aatataatcc ttgtttttta aaagttaaat 1680

aatttaaact ttaactaaag ttatataaaa aattaaattt attttataaa aaagtatgat 1740

gggattataa aacaaatatt tagagataga aaataatata ttaattactg taaattaagt 1800

gaaatttatt ctaactctat attacatata taaaatgaaa agtcaatgtt gcttaggtta 1860

cctaaccccc gcgtaggtga gtaataggca tatttccaat catgacttga tgggcaaagg 1920

tcatctcatt ctcatctgtc accaccagtt ggtcagcgag gaaagttgtc caggctgaat 1980

tcatgagtca atccacgcca gcctccaatt ttatatttct tcgaattgct atggccctat 2040

tattagttct gttgcaaata tataagatgt atttctttca agcctataga gtgtttgttt 2100

ggtcggcaga agtatccaga agtttaatta ccagaccaaa ataaatagga taggaaataa 2160

ttagtgaagg ttacttataa agttaaaatc gaacaatctt attaataccc taatttaacc 2220

tgattacact aatctcttgt acacaactta ataggatcaa ttattagtaa cttttgttag 2280

tagcttgatg taccttagtg ataatgatgt gtgtaagaaa ttcatatgtg gagaagagtt 2340

tttaagcacc ctgacaatac atgagcggtg acatgcagag aatttcgaag tggacgctaa 2400

acctatacat ggctacttac gacgttcttc agtagagtca acaagtaaat gatggtatca 2460

ttttcgttaa aggaagcatt ttatagatac caggaacagt acatcatgaa gatacaaagt 2520

cttggtacaa tttccggctt ctgtttagaa cacacaacca t 2561

<210> 4557
<211> 1838
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_173630_G1, chr5:7248126..7249963, Cluster 28

<400> 4557
tttgattata caatagcttt ttgccctaac ttaaagggtg tacattgaag gtactgatga 60

ggaaacaagg caacaagcaa caaagtggag tgcctagatt gatcattttc cggtgaaggg 120

gacatacatg atgcaatgat atgataagga cgtctgttct ctttcattga ttgctctaaa 180

ttctgcgcat ttatttttta attccacctc aggccaagtt taaaatgtgt cctgccatgt 240

agagttagtt tttcagtttt attaaaaata gcctaaccta tttttaattt ttatttataa 300

tcttttggtg cgacaaaatc atttgtacaa caagatttgt caagttggga gcaattttca 360

catgataaac ctatgactcc actgctgctg gtgtgacagt actgctctac cactaccacg 420

acactgggaa tggttcacaa gacacaatct agaaaagatt atatcttgtt ggataaaaaa 480

tgatttttat aggtttgtag attccatgac acctataaat ttctactttt aaattttgtt 540

atctaaggtc actaaaatgc tcgaagaata atataaaatt tcaataacac aataatcatg 600

tataagcatt tatcgtctta gaaaaacaaa tttcatagtg tcaaacaagc atatttttct 660

ataaatatta tagctctcga tgatatttac atctttataa ttttaagctt ttacatttga 720

ggttgctaaa atacacaaaa aacatataga gtttcatcaa cataataaac tgtataacgg 780

gacttatcat ctgtcaaaag tcatatcttt tatgtatgat atcaaataaa tatgtctttt 840

atattaaagt tatagctatt gatgagatct aaaactcttt agttttaagt tttttttaa 900

gattgttaag gtgctcaaaa cataatatga attttaaatg gtatatcaaa tgtgtatcag 960

agctgggtgt tgcacccaat acactggtac ggtggtgccc ttctaatgct atatcgtcaa 1020

cgattataaa ctagatatta aatccactca aggttagcga tgggacttga agtgagatta 1080

aggagcccaa caacgctaac ttgaacatga tatcaatatt ttttttaaaa aaaatggctt 1140

atgctaacct tcttcacttc tcaagatgat atttttttct atcaaaaaat tacatatgca 1200

gcattatttt ttcataaaaa tagagtgctt aatgttcata tgtcctaatg tttaggccaa 1260

gatgcataaa attatctaaa gtaatacctt atgtaaatca tcatcatggg gctataagag 1320

ttttttaaat gagttgtttg tgccaatggt atggtctcca atggtatata atgagttgtt 1380

aaaggaactt tagccattac tgctgaaaca tataaatacg atgggacaat tagaatgatc 1440

ggctattgtt agtgttgaca gatatacgtt aatattatac ttcttttcaa gagaaacaca 1500

cgtacccacc tccaacggcc aactgatttt atactctttt tcctcctcca ataactgtgg 1560

tagaccatac tacgtactat gttcaaaaca cggccagcag cagcagccag cagggaagat 1620

gggaaatcac gaactcaata atacagataa gaaaaatata atatcttcct cagccatgaa 1680

aaagacatcg gaaaaaattc agctagagat gaggcgtgcg gcttcttctg tttcgtagat 1740

gcgatgaatg tactgattta caccgcgtca tacaatatta tatgcagaag attgaacatg 1800

gataacaatg gcgacgtccg aacgcctctg ctgcaact 1838

<210> 4558

<211> 1537
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174367_G1, chr5:11886414..11887950, Cluster 28

<400> 4558
aaatggagca ccgccgccca ttcgccgagc ccagcggctg ggcctcctcg tgaaaagact 60

cccagcggac gatgcagtgg cctttcgcgt gaaaagagac ccatcggccg cgcgggaccc 120

ggcgaatttt caccggcgag acacctgggc gaacgaggtg atgccgcgcg gggaaactag 180

agcggcccgt gcgtccacgc cggaacagcc gtccgatggg ccgccggcgc ggatctggcc 240

gctccctccg cggtacgcgc tgtcccacgg ccacgagcgt ataaaggcgt cggaatcgct 300

cggttcggtt cggttcagcg agtggggtcg aatgcagccg ggcagtccct cggttctgcg 360

gtcggccgcg cccggcggcg acgcgtttgg ggcgcgcggc ggccggcacc cggcagcggg 420

ctttggcacg cgcactgggg tttgttcgcg tccgaaacgg aaatttgttc gaaccactga 480

tagatgcccg agcgcgagcg cagttgttcc cgttgttgtt taagatggat aggacaccgc 540

aatgttgttt atcttggggc tagatttgac gtggtttaga tttctgttct tgaatgagac 600

aacctgtgct cctctttttt tcacaagcct gacggtgtgt ccgtcctttc cgtttgatag 660

ttgttggtcc aaaaggaaat gaaaggcatt ttattttatc attagatgct catttattgc 720

attgtgttaa ttatagggta tgtacaacca cattaattaa agtgtctctt aaagtgttta 780

tataaggtta agtgaaaaag atcaagaaac aagcttttcg tgaagggtcc gtttgtttac 840

aactttctat actaaatgtc ttttaaatgc atttataatc taagagctta aggttgtatc 900

atgtaatttc taagaacatt tacaacccaa ataaatgact tatatcttaa tgtgtatcta 960

agggtgtaaa tgtaaaaaag caaaatagac tttaccttgg cgaaggaacg tttctagcac 1020

ggttctctaa ttttagatac ggttaaactc atgcaatcca gattaacgag ttatatcttg 1080

aggtttctag tgaataaaga ataagtctta gatacattag gttgtataaa cgagttttta 1140

agtgtatcta gtgattggag aaccatctac gatgtacatg tccatgccct tacatgtctc 1200

ttgtatttag aaaaaaacat tttgttgtct ttaggttgta catattctaa atatatatat 1260

acaactttat tcaatttagg atattttaag agttctctag aggtaattga aaaaaataca 1320

tttatggtct tcggattgta cataccgaga aatcaggtca tgttttaaac attagatttt 1380

tcccaaatgt tatgtctctt tttgtaaaaa taatttaatt tctgcgaaat atggccaacg 1440

agaataaacc aggactacca aaactttcaa gccacatatc cttaactgcg tgacgctcat 1500

ttcttaaggc ttgtttgggt tctctagaaa taattgt 1537

<210> 4559
<211> 1473
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176454_G1, chr5:23002094..23003566, Cluster 28

<400> 4559
caaagtccaa ggccacttta ttacctttac ctaggtgtta ggagaagatt tccagaaatc 60

tcgctgcaaa ctactacact ctttgttttc ccaccacgca atgagtgcac agaacctgac 120

aaacattttc ccaccaagct agctcgtccg ccatggacgt gtgacgtgag tacttattcg 180

atgcattggt ttcaactgtt ctcttctgtg caggaccgtg aatctaatcc tcactaccta 240

aacccccaa agcatggtat tctagggcga gtacaataac gtactactat cgtgaggtct 300

cgtaaggtca ttgcatcctg tgctatgtag catcttttac gacgtagggt tgtggcataa 360

atatgatagt acgaaatatt attttacatc agttttcact gctattaaca tcttcgtata 420

aagatatttg agacgataaa accaaactag actatataga ggacaggcta cgggtcccac 480

tttcgagacc ggtcaaatcc acaagaccct cttgattgct ggtttgatga acagaaatca 540

agagaggatt ccacagaaga gaaatttctt tgctattcaa ttttaaataa aaaatgaaat 600

cctctttcat gatcacttca tgatttctgg tcatcaaatc agacctaaag gtacagagag 660

tttaccggac ccatccacgc gtcaacacaa gggcgtcccc accacatatg cccttcgtat 720

caggcttcca tccgtaacgt ctatcgctag cctgtaagcg tggtcccctt gaagagcgga 780

cggcgtcaag gcataatgac aagcattagc ttttagcttt tgcacataag aaatttcaca 840

attaggaaag ccggagcttt aataaagcga atgaagaata aatacgcatg caggcacaca 900

aagctaaaag aaaagaaaag gacaaagaat catcatgttt ttattacaaa aaaaaatcag 960

gtcgttacta gactctaaat taggtgttca attgttcgcg tagcgcgcgc gccgaaaggc 1020

ttgaagagtt gcaagcgttt gcatgattta tgaagacacg tctcgcgacg gatttcgtca 1080

atcccagata gtataccatc tcgacatggg tacacatgtt cacaaaacgg agagtgggca 1140

gatagtggtg aaaatttgga gaggaccacg cttctctaac tagagatgat aatcatgata 1200

ccatgcaaga cattattaca gagaaagaat catctcaaat aaatttctcg acgaggatag 1260

agatacgcag aaacatctcc ccgggaggat gggacggatg cgtatgggga gccattccct 1320

accataaacc tacggctacg gtgtatcact ttagcaagtt aattgatatc taaaatgtct 1380

ttagtttagt gatatagaaa tacatttttt aaattttatg aacccaagtg acataccctt 1440

gactccttga gggccgccgt tacatttaac tct 1473

<210> 4560
<211> 1486
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_178199_G1, chr5:31876458..31877943, Cluster 28

<400> 4560
attccaactt ccaagcgccc ggtcccttct cgtctcatca actgaactgt cgtccttgtt 60

tgtttggttt cccatggcaa cttgcagtcc ggccaacaag ggccaaccgc cacgaaacag 120

accggccgcg gccgggctca catgccgcgt gcatgtactg ccgagtttcc tactgccagt 180

accagccgac aacccaaaag acgcagacgt ttacgcggct ggggttaaat tcttgtatcc 240

atcaagactc caagggaacg tttaaatcac gagaactatg atggattttt attggatttt 300

tacctgattt tatttagtag ggtgcaatag aggccgtatg atatgacaca cgcttgggct 360

ggaccgagcc accacgagag atggtgccaa gtctcctagt tcagtcactc tgataatggc 420

ctgagcctga ctactgtgtg gttcagtaca ctctgctcgc agtttcatag atattttatt 480

tggacggcct ttttttatg gagcccctag ctgagcggaa ggtgacaacg acggagatga 540

ccaacgtttg gaaactatac ctattctttg cagtcatcac atgcatggga cccagagcca 600

aatgtttgca atgtacccta tgcatggcga tcttcacaaa agaaaatgga accaattaag 660

tacgtccatg catgtaccat atgggtgatg catatgtgaa ttattaatag cataacatgt 720

actccctagc ttagctattt ttttgttctt atctcttgtc acacgagcat cgatgcagta 780

gaactagtgt ttaatataaa aaaatagtgt ctgaattaaa aaaaaaaaca tagttatatc 840

gtcttatata ttaggatatg gagagaataa cagaggattc catataagta ctttattcct 900

aaagcaacaa tgcctgccta tatcttcgac acaaataaaa aaaaaataaa aagccgtaac 960

ggaaaaataa cggatcatag ggtatcatca ttgcacgcag atgactagat gagttctata 1020

aacctggaca gcaatcgaaa cagacaagga aaaacgtgtt ttcgatggca aaggtgcagt 1080

gcagacggcc gcatctgcgg gaagtcgtag tacatgccag cgcgcgcagc acacatgtat 1140

tttccttatt attgtttcgg atccaaccaa attgcacgtc aacaaaataa aaatagttag 1200

gtcaaatcga acggccgatg acgctaccga ggaattgaaa ttctggtact ctttgcggta 1260

ccaaatttgt cattttctcc tatagccgag agagagagag agaaaaaaaa actgcaaata 1320

aacagtagcc gcactgcaca agctgctctg ctctgccggc agcgacgact aggagaggtc 1380

aacgccctct ttcacagcta acgtatagca ctatagctac gctatggagt gtctcgagtt 1440

gagtaaacta gtagcaggca aagccacaca attccaacac gacaaa 1486

<210> 4561
<211> 1415
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_179635_G1, chr5:39452927..39454341, Cluster 28

<400> 4561
aatttcgaat ttcttattgt gtccacttct tatcccatta gggcacattt aaatagaggt 60

aatttgcatc caaatttata gggtttagtt acgtttgatg gaagtgccca atttactagt 120

acagtcctct tacaacttat tcccttgtat tggtccgata atcttttctt gttcgctact 180

atatctttaa acaatgattg cttagttatt gatatgtgta acatcgtttt gattgttttc 240

ggcagctgca gttgcacagc aaaagcattt aggttgcatg agaactgaga accgcatttc 300

aaacagacat cagccgtaag gaacttcccc aaacgcatta acaaagtaag cattcttgaa 360

tcttgatgca ttgtcttgaa gtttaacaaa agacggatct ttgttggatg tgttggtgac 420

ggtacctcag ctaatgtttg gagtgactaa tgggaaccaa cttgtacctg gctgcaaaca 480

cattactgat cacaggatgt ataaattata attatggaat gcaaagtcga gcgtactttg 540

tggctgacag agcttctggg ttgcagttgc aagtagtgac tgggtgaggg ataggttttt 600

ttttttttg acatagcttc tgatgtgttg gcaaatgaca agaaaggata gagcacagag 660

cggcgtccaa gaggctgctg tatgatgaac agaaatactt aaagcaaagc acaagggagt 720

ttctcgccct ctctcgatta tgcccaaact gcatttgctc ttttgtccta cagcctgaac 780

tggaaatcag ttgacaagca caagggagtc tgagctattg tgaaatcgga catgtgattg 840

tggccgaagt tagggataca agaagttaac tcagggcaga aatctctccg atacaggcaa 900

agaagagctt ctctactgaa gtctggacat tgttttgtct cttttagtat gcgactctgc 960

acttcgatgg tccatggggt ccaaaaggaa atacaagctt ttgctcatag gaggttcaca 1020

gatcgagtca acatttcaag tgaacccaca tcttagccaa cagcaggtag actctttaag 1080

aatctggagt agcttttgct ggtgagccga agtgatagac tcaaagatgt ttagatcaga 1140

ttgtcaagtg ctccgaaatt agtcagttct attctatcat ctcaggccag agatgttttt 1200

ccctttgctg ctaaggctct tctgttgaag cagtatggtt tccttcggcc tttccctcgc 1260

cagctgcaag cacagtggtc aacccttttgt acttgctgtg cgtccgacga tgccaatggc 1320

tgccgccaag caagaaggca gaaaagaagg atgctgccat ggaggaggga gaaaagggga 1380

ctgaatcact gaactgagtt tcaatctggt aatgt 1415

<210> 4562
<211> 2022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_182684_G1, chr5:58756442..58758463, Cluster 28

<400> 4562
ccggaaggac tcagactcta gagacctaca actacgaaac gaacccggaa gtacgcagct 60

ctctcttggt cagagatcac tgtctctccg cttttgtcag gtccacgctt tgacaaaaat 120

ttttttttg ggaactcact caccaataat atgtactagc ctttggcggc catcagcagc 180

taggttgttt tcggtcctgc ctgcctgcta gtccaaggtc ggaaatggtg cgtgccactg 240

ccatccatct agtcaggctt ggacgccgct ttacgtgcgg gagacttctg ttgctgtgct 300

gtgcctgtgc agcaggggag ggggagagag gagcgcgtga gacaaatata tatctaaggt 360

aacactgttc attctagcac ttcacagcag tgtgtctcct atcactgtca ctcaacatag 420

tgaagcttca agagttcccc ttcaaaattc cttggtcagg gtgacacatc gttttcccag 480

tcttgtggtt ttggttttcg gtagaaacgc gtgggtggga acacaacaca cactgggcct 540

gggtgggcga tatgaaaaag aaaaacaata taatacagct cccaaagaac gtggacatat 600

attatagcga aaatgaaatg gcgcgccttc tataaatctt ttcccctcct ttcccgttgc 660

aagtatatgc gatgcgagag agatccgtat cagcgcgacg gatgactaaa aggacgtgtg 720

ggttaggaac ggtgccgtac tgtccgccat taaataaccg tggaccataa ctatacgatc 780

ctggccgggg aagaagagag attattatta ttattactat tattattatt attattatta 840

ttatataata taaaaaagcc cttgtggagg acgggtggtg ttttgcattt tatgactcca 900

attcctgatt ttttttatta ggagcaagag tccatgctga gcctagaaca gcaaaggatg 960

tgaaagagtg gttagttata gcaactagag agcacgtcga ctttagtggg gggccggctc 1020

agcatggtta aaagtaaagt gacgccttat agctaggtat tgtagtgccc ccactttgat 1080

tagaggtggc caccacccac gtgcggtagt agtggtagta gttagtcgca tgtcccagga 1140

attttgaact gaatatgcct aactcccatc ttaaactagt gaggatggaa attgaagcaa 1200

aggtgctata cgcacttgta gagtggagtg agggcaatgc atgcttcaag caaattttag 1260

aaccgagatg tcacgcatgc atattattgc atgcagtaca aattccaaga aatttgttct 1320

aaaaaaatag ggctcaaggt ggtatataaa agcaataggc ttggaacagc aattatcctg 1380

taccatgcaa aaccaaacac agcggatttt tttcccttct cttgtgccgt acgagagcac 1440

tgagcatgct gttggatctg tgatctttct ttttttttg cattaacctg ctcaggcccc 1500

aaagcagaga caatcagtct acatgtatcg acgtacgatg gcaccataat gaggcaagca 1560

caccagcacc aattaagacc aagtggtcaa aaaaaaaagc caagcaactt ttataataat 1620

ggtattcaga ttgaagtatt tgtatatggg tttctcaaca ggaagcacat gtacaatgtg 1680

atgcaaaaat tgctgcatac tagacaatgc aaaagccctt tgaccagcga agccctttga 1740

tcagcatgcc atgtcgtcga tcctgctccg tatgattgcc cacaaaaggc atccgatgcg 1800

cttcccacat ccagcttggc atgcaaaaga ggagcgcgga attattccga tcaatttatt 1860

tacaacggta gcacagcaca gtataggcat cacgcagtat agccactgcg ccatactagg 1920

tcaaaactca tatgccgctc ttggttgtag tagtacgtat agttatggag catagcatgg 1980

ggcaaactaa ttggagcact aacgcgcaag catcattttt ct 2022

<210> 4563
<211> 1436
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_182953_G1, chr5:60809529..60810964, Cluster 28

<400> 4563
caagcaaagc ctgcaacaag gtctgaaacg ggaacggcta gctagctcat ggagacatgg 60

accaaccaac caccaagaca agacaaaagc agtgggaggc agccaatatg gtctgctact 120

gctatatgta tctgtctgtc tccttctaaa gcgcccaagt cagcagcgga aaacaacatg 180

cgtgcagcag atgcaaccga aatacaacag aagcaagctt ttacatgtag gctgctgggc 240

tctgtctgac gtggtgcgtg tgcgtaaaca aaccggattg tctagtctct gaattccgat 300

gagaaacaga gaaggtgaca ggatcgtgcg gaggccatcg acgtcccagt cacgcccacg 360

tggtggtagg gacgacaggg agagaggaat atgtggagct acagtgaaca gatcagctgt 420

cacactcaca cacacacaca caaaatggtt gtctccatcg actgcaactg aacggagaag 480

ggcgcgatcc gtagtagtgt atcttccttt ttggatatgg ttgccggccg tgaactatca 540

gtctttaata atgcttgttt tttttgttcc tcgactcttt atttcacaga tactctatct 600

gctccaattt ataacccgtc tgatttttt acacccccga ttcctcttat ttaatatata 660

tatataatta ttatttattt ttactgtaat atggtttagc atataatgct ctaataagta 720

tgtattttga tttctatttt ttttaagaaa atgaataaga caagccagtt aaatttcaag 780

tacgaattat aaattgaaac ggagggagta tgtgctaatc gtaaacaata cttgttctcc 840

tataattaaa ttaatagatg tatctttctt tataaaaaaa cacaattctt tgaaacatgg 900

aaaccatgca aggtctttac acctgtattg aaaaacgtag taccaaaaga aaaacggtag 960

ttcattgttg tataacagta tcagggtacg taaaatacca aaaagatgaa tttacgagag 1020

agcaagacat agaacgacga ttatgttgaa cctagacaca atttggaacc aacatgcaag 1080

ctcatggacc ttgggacctg cagagggctc caagcaactt agtgttagtg tatgttctag 1140

gggaacgaca accccaaaca cctgaatcat ttagaagtgc ttcgaggcac atgaggcctc 1200

agggacttca tctcatgagc gccctaggat acgaggggcc caagagacct atactatcct 1260

agccaagaat gtcctaggac actagggcct caggccatag aatgccccaa ggcttgccca 1320

tgtcccttta tcaatcctta tggaactttg tagttatttc ttatgtgtgc ccgatagcaa 1380

gatacctaat gtcaagccca tgccctcgct ggggcaaggg gaggtcccta gagcat 1436

<210> 4564
<211> 2593
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_184746_G1, chr5:74911664..74914256, Cluster 28

<400> 4564
aaaaaacaga cccggctgga gtgttggact cgaactcctt tgattaggtg gagactggag 60

acattatgac tagatttggg cgttggttat ctcactacta atttcatgca tgagtgcaag 120

tgtcagcttg tcccataatt aagacctgga agcttgttca atttattatg ctaaacaagt 180

tggctttttg tgaggtccat gctttcttca tctgattatg ggaccctctg ggcgtacagt 240

tttgcagtac tgcctcttca ctggccatct taatcaaata atcaaaaggc caatatcaac 300

tgctataaaa tccaatgctc aatgatctta cgagcaatct gagacgcata catacgcggt 360

tcgagttttc acacattctg aaatacgatc gagtactgct ctagttggca aacagacaaa 420

aaccctgatt gattcaacaa gtctgcagcg aagccaagaa gcgtgttgct agaggcatga 480

ctgcgatatg gaacagcaga tttgaaacca gtgaacactg acgctttgga gagccagcca 540

tgtcaaaatc tgttgccccc ccttttttga tctgtacatc tcttcaacca cccaaagatg 600

agggataacg tgcagctttc gagcactgta gctcgacagt ggggcttggt tctctaggca 660

ttgcatgttg atgtgaaaga gatacggaca gacagacagg cagacatgga gcatgtaatc 720

aaacgaacca tctggagagg cggcgttcgt actctataag aaaatcagta tttgcaagca 780

gtgaatcagt taaaatcata ttggtttttt ccttgattcg agagaaaggg atcgccacag 840

gaggtctgaa acagaaccgg cgacccaagg atggagcaac gcattgacag tctgacagtg 900

ccgcttcggt cctttcaggg caatggtggt cacagtcacg tccgatatat ggatttgtac 960

ccagagaagc ttcaagcact ccaagaaaaa aaaagcttgg attgttgagc aaacacagcc 1020

aagtttacac gcacgcaacg taacctccgt ttccaggtcg cgaagagcga cccgatgtcg 1080

ggaatgcgct agctttattg ctgcaaatgc cacgaacagc ctctttattt tattattgtt 1140

ctcaagaagg tttaaagcgt tcttgtgagc aaggttatta cgtaactttt gttgtgcatc 1200

cagtcacagg ccatgatctt caccggctgg ctggttggtc tccagacgtg tctgcgtctg 1260

cgatagccga taggctcttg caggtaaatc cctgccccat ccttcggccc ccactgttat 1320

gaatgcacat tgcccccccac tgcactcata agactaagat ggcattgcaa ccgctgcctt 1380

tgcacacaca ccattgcacc cccctccctt tcttgaacac tagaaagcaa aaccctagca 1440

ctgaccatgg caagctgcct cgttcaccac ggaacggaac ggaacgacgc cttccatttg 1500

cgcccacaga tgcttttgag cgcctactag aatcaaacgg tccggccggg tctctgcgaa 1560

tttttatttt atttgaaaaa atcttcgtgc tttataaagc tttcgtgggg gagaaggagt 1620

ctgaatttcg tcaggatctg gtgcagttcc acgtggggat tgatttgaac gaccgtgatt 1680

ataaagcgcg gctcaccttt cgatcaacct agtattcctt gcttgcttcg gtttaaaacc 1740

caccctaacc agatgcatct ttcgatcagc tgtgggggga atccagttaa caacgactgc 1800

atctgaaatc tggggagctg tgcaaaacca ctggcggagc aatgtgactg ggaatccagt 1860

taacaatgac tgaatctgat ctggggagct gcgcaaacca ctggcggagc aacgtgaccg 1920

aacatgagcg cggcagcctt ccagtgcatc accggccggc cacatgtgga cagattagcg 1980

catgcgtaag tgcgtaaccc atgtccctaa gcagtattca agcggggcac acgggtacag 2040

cccgcctcgg tttctgcgct aaggaatcga gagaggtctt attcatttct tctcaggcca 2100

tatcccccca ccccgatcaa ggcatgtgta tctttttttt tacgtaaaat atctagcagg 2160

acatattttc gcgtgatagc ttatcgtgcg cacacgaatg accatgccac cgtgctttga 2220

ttgataggac ctgagctata cactgttaac aaattcttat aaacagtctt atactatatg 2280

ccagcattta gcgccctttg ctatgtgcta cataaaacct cgctctttat tctacgcgcc 2340

tttattccaa gtcttattcg gttacttgat ttcataattt taaagttttt ttttaaaaaa 2400

tctgcacaac ctttgcatct ctagctagga aagatatttc taggttcttt tggttacttg 2460

tgttgtacct tgctttttt aactcttaat taaagtcaga gctcctggca ttacgtctag 2520

gttcttgtta gcaatatctg tgttgtttgg gtgctcatcc aaaataaact cctcacagca 2580

gacaacctag cac 2593

<210> 4565
<211> 1689
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_185230_G1, chr5:78768369..78770057, Cluster 28

<400> 4565
actcttttt tttgcatatc agtatattac gaagatacta ttaaaacatt ttatgctgat 60

tgccgaacat tttagcttca agagtttata atttgaagaa attatgtttt tgagatatct 120

gaagcccaga gtgatatatc atatggacaa atgtgtaaga caaaaaggaa atagacgttt 180

gtaccaggct tttttggacc tggacctaca ctgtacctca ttttatcatt tttctggtag 240

ctgatctata tattctgcaa gtgtacacta tttatctatt taacttttaa tttgtgttct 300

tttcatttat aaacctttga agcttgttac ttatttttaa ttgcacatgc tgttctctta 360

ttacaggtaa atcagatgaa ctgtctttgc acagaaagct tggctgctct gattttacat 420

tggcttcttt acttgatttt ccaaaatctc ctgaagggga cgttatgtca ccttgttttc 480

tcggtccagc ggaaataata aatctagtaa ggaggtttag tagtttgatt atgcatggag 540

gaaattttga atgtgtacac actttcttgg gatgcacaat taatctatca gctgttctca 600

tcagacatag tcagtatgaa gctgctcagg tactatattt tatttttgga ctaaaattca 660

ttagaaacat attatgtttt atttgaatgt tgctcattct atatagtatc aggctatcag 720

ctatcaaata agctctgctt atcctcattt ttatctctaa cagaatctgc tgggaattct 780

ggaaacatac ttgaacaatg gaaaagtatc gcatactggt caagatgcag acactgcatg 840

ttcagcatat cttcatctca atggattttg ccttctgatg attgcacatg atgaagcaaa 900

tattattttg agagaatcca aggttcatga tgctatccga tgctttttca ggtactacct 960

tttcactatg cgaacttgtg gattgagcct tttgattatc atcaaacgac acttttctgg 1020

aaaccgtctt tagtggctgg ggacatcaat gatttatttt tcctattgtg atactagaca 1080

agaattatgt agcataaaca tatatgttat tgagctattg aaaacaaccg gacctgatca 1140

gtctaactgg ttatttaaaa gcctaactga cagaccatgt gcttgatcta cttctgttta 1200

agttaagtgg tagttgataa gatatggttt tccgtcctta accccgcatc atgtataaaa 1260

atcttcttta actagatata attactaggg aagagaagta cctcacagtc accactcacc 1320

agtaaactgg cggtcataaa tctttgtggt agcaccttgc aatgagtctg atacttattt 1380

ttgtaaattc tatagaattg taagcacaat tgtagttgtt actttatgaa atagcgatgc 1440

agagcaactc atctttgccc acaacatttg atttgctgtg ttttgaaaaa gaaagggatt 1500

gcacaccctt tattagaaat gacaagtaac taagtgagct tgttatcggc atatcattag 1560

gagatctgct tgtgtctttt gttaaatatc agcaagggat tttgaagcat gcaatccaat 1620

agtctaagtt aatgttttct ggtaggaatc acttcatttg atttagttac ctaattctca 1680

ggtcttgtg 1689

<210> 4566
<211> 1412
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196864_G1, chr5:155248977..155250388, Cluster 28

<400> 4566
ttgcggaatg gctctcgaag cacgatttgg gaggcaaact attggcagcg tattctccgt 60

cgtcgcccgt ttccaggtcc aggtgacggt gtcctccaca tcaggctgtg cagctgtacg 120

cgtcccggat ctgaatccat agggaaataa aatttcatag aatttgtttt tttttttgt 180

ttcttcttct tcttcctttt gccattccta acagctcaca gcatccgctt tcggtcgtta 240

ggaatggcct ccttcctcca tttgccttgt gtttttcttt ctttccaaag aaaggatctg 300

cggaccctct cgatttcctt catatatggc cgacaacacc caagtggcca accaactctc 360

ggtcgggtgc agcttacttg taaaatctga tgtttttgtg ctgatcgtat tttgtaactc 420

ctttctgaca attaatggaa agccttcgtc agagagatcg atatactact cttcctatta 480

tacttaagcg gttaccttaa ttacattggg atcaaactca gcaccactaa ttaaccagat 540

caattcacta tggactgaat aatatgcaag cggttttctg ctcttgttat attgtacata 600

gtatatcccc tcccacacac acgagggtcc atgtagcgtg gaggacacag tgtcgttttg 660

cacaaaagcc atgatcccat tggatctgca gagccttcag agaaagctac atttttgttc 720

ggcacagatc gagctgggcg ccttcttacg tcttaattgt gacagtgagc ggattacttt 780

cacacactgt ctctctctag gagtgattaa aaaaaactac tgtatatacg tatgcacctt 840

aaccatcatc ataaaaccag aatctggctt ttatgggaaa ttatttcatc catatatttc 900

tgtgaacatg tagcatagca tatgaaaagt gacattagca acaaaaaaaa gcgtttattt 960

ggcttacaca tactacacct atagtgatta ttcttggcat gattttctgg cgtttctgat 1020

ggacatctca agcgaaacaa taatatatgt cgtacagtga gatttcatgg tcatggatat 1080

atgcacagtc atttttctg ccagattcca tatggagatc tatgcatgga gaagcgactg 1140

taccattcac tgcgatggag cgtcattttg ctcacctttt gtgctgactt tctgctaata 1200

atagttcatt aagatgctat ttcataagat gacgacatct tggtgcttta ccaaactgac 1260

caaaattttg aatcaaccta tagatcatag ctgcatgcat gcattattat tcttgcacta 1320

gatcggcctg ttcatgcgtc ctctgaaata ggtggcgctg gatccaatgt tccgaagaca 1380

acctctgcaa tctagctatg attcaagaac ca 1412

<210> 4567
<211> 2004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199396_G1, chr5:170255348..170257351, Cluster 28

<400> 4567
ccgcgaggct aaaaaataat tggcataagg tctccaccct gacatgaatc caagatctca 60

tgcattatct tgtgtgtagc tttccaccac acccacgcaa taaatctcta ctatattaaa 120

acacatgttt ttctagtttc acttccactg tcaccactta aaaaagaaaa ctcttatatt 180

tatttgtatt caatccgctg tccctctaag tcgatcggac cacgtttaaa catttaatta 240

gtaaatagct aaaattatgt ataaatatag atttgaacct acttgataaa cgtggctaaa 300

atatcacctc ttaagacgct gtgaaccacg caaatagctg cactcaatgc agctttagtt 360

ttgcttcata ccacatagct tgaccatgca aattccagtg tcaaatcata tgcgtacaat 420

attaaggccc tctttagacc actatgacta ctttcttgtg tctagttttt agccagagta 480

atcaaataaa acatgctcga acattgctgc cagcgcttat tgcaagtttt catcatttgc 540

gaaaacatga tcgctctgag tagggatccc aagactagtt caattgaact aaaagagttc 600

ctcgaaagga gctatgcatg cagaagcaga agatcgaata gacttcatta gtttattaaa 660

cagaccttga cagtgtgttg gcaaattttg gtcacctgtt tgtgtctgat gaaattttgg 720

tgagctgaag cagtagatct tgtttcgggg tttcagagac aggtgtgtct gatgcatgaa 780

acaaaatttc cagcgaccat gcattagaaa atgaatccaa caaaagctgg aattcttaaa 840

ttttctaacc tgcttcaggt cgttcaaggc ttccattaat tattagacat gcccatagca 900

gctagaaagg aaaacgcaat atagctagct catgggacaa ttccatccca ctattcatgg 960

gcagtcgggt acaaccttgt ctctactacc atatttttag ttctacaact gcaattatgc 1020

ttagctttat tgtttgtcac ttgtagcata gtcggcgcca tatagtacca tgattccctc 1080

taagttccta gctcttaaag ctgtagccca tgcccttta gaacttaaat tagtaccatg 1140

ataccaacaa gaaatcatgg tttatttcta catacctagc tagctattgc tatgctgtat 1200

aagttcagaa gaattatttt tctcaatgaa atgttattcc tgaaaagatc aacctctccc 1260

cctgctgcac tgaatacagt attctaaata gtgggctagc tacgatattt agcgatcaca 1320

cttctcaaac agctagtagc aggcgaaatc gggctataat gactaaattg tacatattag 1380

caaatagatt taccatttgc aaatagttac atctagaggt agtagccgct atatatagcg 1440

ggaagattta gaacactgaa tatgctatca taatgtgttc gatagacgtc tatgatagac 1500

catgtaatag gatgtatcaa tcatgtatct tcgtagaaat tattcacact aagctaagaa 1560

atgggagaag gttaaacgat tacagaaatt aaagagagcg tgtaagacta tcccttaaac 1620

acaaaatcta attgaacctt gttttaagtt tcggatggaa cactaagtcc ttattaaaac 1680

tgatctcagt aaaaaaaatg taactctgat taacctcaac ctttattaaa agaaagacaa 1740

taaaattttt gaactaccac aactgaaatc atgtggatta gaggtctaga actcgatata 1800

taaaattagg aagcacatta tgctagatag aataagaatt gattaaaact cttatttcat 1860

gattaaacaa aatatgttga gagttaatca tatcaatcaa acttatcata tgaataactc 1920

aaagttctag cacaattttg gagagataaa aaacaagtct aaacttgaga acaagaaatc 1980

aatttaaacc aaaacctgga catg 2004

<210> 4568
<211> 3004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201054_G1, chr5:179660352..179663355, Cluster 28

<400> 4568
aactaatcat agtggggcag ggatagatta ttcaggagaa tattgcgtta gtggctgatt 60

atggtgaaag aaagatgtgt ctgatgtcgt aatgcagtaa catggaatag atcttttca 120

ctaaccttta agcgcgttta tgtactcatt gttaaagtag ccgcattgca tttccattgg 180

tatattacgt ggtgggcctg cataatttat ttatgagtta ggctatcgtg tacttcgatt 240

tatggtgaaa ataaataaat gtgtacattt gttgtaccta ttgagactag tctatgctga 300

tttaaaatac gttttcgagc ttgacgagcc tccttttttat ccattaccgg aggagatgca 360

tcataaggac ctatcgatta agttgtatgt tacaatttag tatggagtat cctgaattgg 420

aaactgtgag taatttttta taaaattaaa ctaaattact tactgtatct atttcttttc 480

ggactctatg tatttacaag tgttatttga taatttgggt tggctccttc tccattggat 540

gacatattga cagagctatc atttggattc ggggatgaac cgctcatttt ctttttaaaa 600

cagaatgggt tttgtattag tattagtgta ctgttgtttc aggtggacaa acaataaaac 660

agaaaaaaga tatttttct tgctttaggt gcgaatgtaa aataatggca gttcgtgcct 720

tcacatcata ggttgtttcc taatcatatt aaataaaaat actggcagtt cgtgccttca 780

catcataggt tgtttcctaa tcatattaaa taaaaatatt tgtagttaat gcctagttgt 840

ggtagtttgg gaaaagaaaa aaatgaagta acggtataac tgtagtatta gaagtttatt 900

aaagaaaggg tacatagttg taaatgattt caataaaagg aaaagagaat ggaatatacc 960

tgtagacaac caaaaatgtt tccttcaaca tttgtgggat gtagaagtgt aggtcagtag 1020

gaattccttg atgtgaaaat aaatagtaaa ggaatcaata ttcatataat tcaatgtgtg 1080

aataatctgc tactaatatt taaacttcac attcatactt aaaaggattg taactgaata 1140

aacccacagt aaaggagtta tgtaatttag ttattagaat agtaacaact gtatattctt 1200

tggaaaagtt gacgtctctt gtattgagca taagagatct tgagttatta gaataataac 1260

aattgtatat tcttaatgta ttcaatactt gagtttggag catgcgtatt cagtaaatcc 1320

ttttttaat ctgctgaaca ggcttgctgt aaagagatct tccagcacat atttcaagtc 1380

actaacaatg tattgtatac agtttgtaga ttttcaaatt gccatggtga ggatagagta 1440

aagtctccaa aaaaacaata tgcatatatt ctggagaaca aagattcctt gtatagagca 1500

acagatacaa atgaggactg taaatagatt gcattgaagc ccaaaacgtt gtcaacggaa 1560

gagatagcac ttcaaactta cttaggaaga gtaaaagagt tctcttagca attttaaaat 1620

atagaaaatg gttgtattgt aaacatcagt cccaaacaat aatgggccga tacaaaccaa 1680

aaagttctcg atacagtaac aaaaaacagt tcacttttga aatgtatgtt gatttgaagc 1740

ccaaatggtg tgaatggaag atatagcgct tcgaacttac ttaggaagga gcacaacagt 1800

ttctagtagc aagtgtaaaa tatagaaacg cagttgtatc ggaaaccttg gtcccaaaca 1860

ataataggcc ggtacaaaca aaagaatgat ctcgatgcag taacagcaat aactggtcac 1920

ttttaaataa tgagtatacg gctttatatg ccatcagcaa aatataacga tattttcaac 1980

ttacaaatag agaagcaaaa tagtaccatc taccatatac agaatggaaa ctaaatgtac 2040

aaatgaagaa gtaaaatagc accacctaga aaatgtcatt gtaccaatga attgaacaat 2100

ttttggatgt gtaagcaaaa caataacatg taaggaaaaa aatgacattc aacaactgac 2160

tttgaaacag tagtaagtaa tcagtaaatg agatttaaga caggagtgca atgacaatta 2220

atatgaagaa tttacacaag ctcaagaatt tacacctaaa tctaaatagc acaaatgaaa 2280

taaaagcatg gttttttgtc acaaacatag aaataaaata gcactatgta ggaaatgtca 2340

tttgatgact aatcacaaat tgagtagtga aacaacagca tataaaaaat agagaagtaa 2400

aacaatacta tgtaaaaaaa tgtgggttgt tctctttgaa acaatagtaa gtaatcagta 2460

aatgggattt aggacaggag tgcattgaaa aactaagcgg aagaatttac acctaaattc 2520

aagtagcatg aactaaataa aatatggttt tgtgtcacaa acagagaaat aaaatagcag 2580

tatgtagaga atttcatttg atcactaatc gcaaatgaag cagtgaaaca acagcatata 2640

aaaaaatagg gaagtaaatc aataccatat aaagaaaatt tggtttgatt actgatttag 2700

tcaattgaca aatggagtag caaaaatagc agcatgtaga aaatggcaag cgaccactta 2760

attaaatagt ttctagctaa tagttgtgtg catttatggg ttgtcttcgt atagacagca 2820

gtacgtagtc agcaaaaatg gattagaaca gaagtgagat aaatactgag ctgaacagtt 2880

tgttagcaca tttagaagag caaggtcgat aacatgagga gaggaggatg gaaatctagc 2940

cacggacgcg tcattggttt catggagcga gggcgtgtcc tatcatattt ctttctttta 3000

tttt 3004

<210> 4569
<211> 3043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203545_G1, chr5:194113935..194116977, Cluster 28

<400> 4569
acctcctctc atctgttaag atgcagaaac gatgcagtgc ttcatttcag tagttttatt 60

tatactagca agagaggagt ggtgggtata aaactcttac agaacccatc aataggtcgc 120

cgccctgatc cgtccggccc ataagtattg gcgctgttaa cgatttgaaa ttaaacagag 180

gacggccggg gaggaagcgt gcaccaatac tactactcat cagtaatcta cttgaactct 240

ctggggaggg tcagctgcct gtgctgtgtt tggctttctc ctcccaccga aaggaatgtt 300

gtgagaggga cagtagtagc aactttctcg attagcaggg cgggccgggg ggtagacaca 360

ggaggacgag actacactgt gtttgcgaca cccccatggt gtctgtgctg tgtctctctc 420

cattcgtgct gcaggagtgc aggggaccca tcccgcactc tgctgggtaa gtcgtttagc 480

atggccacga gaattttcct tcaagagctc aaggttaaca acggcagcgt caaatggttg 540

attgggggca tgagatgtca acctaagtgg ggtggaaaag ttttcaactt ggagttttga 600

caggaagaac caccctccct actctatcca catttacaat atggttgaga ccattattaa 660

caaacacttc agcttcatca cgccacgcct gctaataaag ccttctcaag tggttatatc 720

atacaacatg aggacccttc gcctttacca aagttagaga gacaaaaacg gggataggaa 780

gcattaagca cgcgcatcat atattctaac tacaagaggg cggagcgcat taggagtagg 840

ctctgtgcac tgcacggtgg tctgctggga cggcacggca ggcgggtaaa gggaaaggga 900

gttcctttgt ttactccaaa gttgaccctc agttgagatg tgtcaaccac tagaataata 960

taaggaaaag aaggctgcag ggaagggaag ggaaggggaa ggacagacag cttgctcacg 1020

ctcatcaatc tgagagatgt catgcgtgaa ggctgcccac tagtctagtg acccccaaca 1080

ggttggtgga cggtgacagt gagagaggtg gaaacaacac gcaccaatgg gagttgctgg 1140

tctggtgctc atttatatat atgcgacagg ctatgatatg gttgtagtta gttgtaggtt 1200

gcgtcgtgga ctcctcttga gccgctctcg atctgtcgtg aattcgtgat atgggtcact 1260

aataagtcaa aggcactact gataactctg cgtctgcgtg cgacgaagat gatagtcaaa 1320

atgacactcc tgtcacttgg aatgtcacag ggttgacatt gccctcctta cgatatggtc 1380

agaataaaat attattagtg gcttcagctt caccccccaat tatccctccg atccaaggtg 1440

atcttgtagg tactatagta cgtacaaaat agcaatgcac aaaatatagt ggaattgcca 1500

gctcgttttt tgtgaccaca atctctggct gtgctcctgt aacgatttcg aacaatcaat 1560

gccattggag tgctaccagc aacctcaacc aaagtttcaa aaggtaaaaa caatcaaacg 1620

aacttgattg agctgaaatt ttgctcatac attcacatgg aagttttaaa aggaggccac 1680

aaaacctgag ctacaaagga ctaaaagctt cagctataga ttgaaaaaca cactctcaaa 1740

ctaaggtttt ctcaaaaaat acacgttagc taataaaagt ctggaaccat tgttaaaatc 1800

atccaaggag aaaaactaaa cggtttcgaa agatagagac gagagaaaaa aaaacaactc 1860

tctagttagt ggaggtaaat ccgacttcag cgaaactgtg aggaagtcaa atgaaagttt 1920

ttttccccca aaaaatctgc tccaacaagc ccctgggctc acccatgggc ttttagacgc 1980

aaaagggctg tatgttggta ggactggatg tctggatgtg ggtagcttca gctcgcgtgg 2040

tagacgcaac gtgaggtgtg gcactgtgct tcccggccca tctaaggcga cagctgacaa 2100

gcgctgggaa atggacagaa tagcctcccg attcacgtga cagaaagaat cattgcacgg 2160

cgaaaaagaa aattggaatg cccaccctga aagagacgtc ctcaaatcta gtggtatacg 2220

agtagactcg actaaatcta aattctttat ttagatggta tacgaaaaga ccccaagaaa 2280

ttcttgtatg gctttctcga tctgttcctc tatataaaag aattatatga ctaaggggt 2340

gttcgaatac acgcatgaac aattttctat ttgccacttt agatagtggt cataaatctc 2400

agctcatgac aagtttcaaa aaagattcat atggaagttc aataaatctt aaatggaaaa 2460

aatatagggg cgagatacat acgcgttcat ccatccatct ctctatcacg ccagcctacg 2520

ctgtggcgct agtacgtact ccagggtcca ggccccctcg ccctcgatct cgtgcatgcc 2580

tgccttgtgt ggtgcccgtc acgctgtgcc aggtaggctg atacacgcac gcactgcacc 2640

gagccaaacc cagggaatct tggagtcgta gagaagatga actagctagg gccttgagct 2700

gagctagcca cccgtgaagc tagcggtccg agtccggacc ccaggcctag ctccttttat 2760

gatgatgata atctggtctc tcacttttat cgttagatcg ttactacact acacacggtg 2820

gcacgtacgg ctaggtctcg aacaccagca tcatatcaac ggcttcgaac ggtgtcacgt 2880

gcgtggccag catgtaaagc agtttataaa tcatggattg tgataaaact agactttcat 2940

ataatttaca gtggatacga atcaaaagat aataaggttt tgtgtagatg ttgttggaaa 3000

ccacctcaat ctatatatat gtgttaaggt gtaatttagt taa 3043

<210> 4570
<211> 1623
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204400_G1, chr5:198874826..198876448, Cluster 28

<400> 4570
caatcagccc ggtaatcata cataaaaaac cgtgagtata gtatactgta gcaattttct 60

acgaaattat ggtgataagt tccatacaga attatacaca aagtgaaagc taggaaatcg 120

gaatttacag aacaaaaaaa aagtcacggg ttatctggtc gttcgctgtt ctttttttc 180

tgtccgatga aggttgatta gtggagtcag agtcggttac taatgtctcg attatctaga 240

acaaaaacgt tttctccact actgggtttg ttgggcttac acagtgtgat aggccttcgt 300

tcttcgaatc agaaacggca tacctatacg atctggcgag tacatttgtg gtccatgggc 360

ccaacaaatc cgccgcactg ctcgttatcc ctcgcagcaa gttttcgcca aatctcggct 420

actagcccac agcccacccg gccacaacac aaggcaaggc ctgccatttg tcgtttgcca 480

gcccgtttga actgggactc tccgtcggct ctataagctg gcagccacgt tttgtgttct 540

atcttcagga cctatttgta tccttttggt gctcttctat tcagattcaa tataaatata 600

tcaggtgggg acccccgcat gatgaaaaaa tttgtaccgt aatagagtct agctgaactc 660

tgactgggcg atattacaca tatgctaggc acaccattaa agcagaagaa tggagagata 720

cagaacatga tgaaatgagc attgcattag acaatacaac atcatgggaa ggcacaatcg 780

aaattgcaag agtttgccac caaattagct gaaacaacag gtgcctcgta caaaaatata 840

ttttgcagag ataagcagac agggaaagtg agagcatgag cagtgcactt gtcaggtaaa 900

tggttgctaa atggctacgg tacggtaagg atgggctgta cataaagcaa attttcgaat 960

cggcacatgg gttgtaaata tcggagataa ctatgtgcta tgcaggtagg atttaaaggg 1020

gagaagagac gctaggttat gtcagccatg tacgtgagag caagattaag catgcagtat 1080

gaacattgaa tgtgttgtgc tgaaaattcc ttaatatgta ggatctagat taagcatgta 1140

gcgtggaaga actgggctgc ggcttgccat tagaacccaa atatcctcac caacactcac 1200

aacccccaaa atgcactgag aactgagtca aacatgcaga tatgacgcac catcaaaatt 1260

aaagttttaa aaaaaacaca agcaagcata atttttatca agagaatcag gttggttaaa 1320

ttctactcac tccgtctcaa tttataattc atttgaaagt ttgatcgact catcttatta 1380

ttttttgtgc gaaaaataaa aaagtagatc catacttgaa gtatcccagt aaagttaata 1440

ataattgtag ttttttagaa taagatgaga cgatcgaact tcctgtaaaa aagttgaacg 1500

gattataaat tgggatagag tgtgtatttc acaagaaaat tgacaacata aataaaaaga 1560

tttctgagtc ctcaacgtgt caaaaaatag gaaattcaca tggcctcgat atcggtgcat 1620

cta 1623

<210> 4571
<211> 1437
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205578_G1, chr5:205540385..205541821, Cluster 28

<400> 4571
gttggagttt tcgtcacgtc acccgatttg tttaagattt ttaccgtcgg ctgcgagcca 60

tcgatccata tcgtcctgtt cttcggactg tcttgctaag tcaatgatgt ctttcgccta 120

tcacggatat ggtcgctaat aaatcgcgat atgcagtggt attgcgtgct ttgaccggta 180

tctcatcaga cacgactact caagtgtata gtttgtatac ctctctaaag tatcctattt 240

ggtgcatggt gccacaccaa acatatcccg tgaatgcaca tattgtctca cgcgctttct 300

caagtgctat atcagatacg tccagtgatt gaatagcccc aaatagttgc cttcgtagct 360

ctctaggagc catgttcagt tcacaccaga taaaatggta ttaaatatga ctgatccgtg 420

tttggcggca catgtccgat atactgccaa tctaaacagg acatcatcat attggttaat 480

ttagttgtgg ttcaggggag gtgttaggag taacctggct gaatatgagt cagtcttggt 540

gtaacaagta gtctatctct aatagagctg taaatgacca agacacaata tctgtagtag 600

agttgtaaac ggcccagata gtcagatacc atgagtccat gaatgccatc gtgttgtatt 660

ctatcttcaa ctcgtatttg gccgctatat attaattagc gtataatacg ttgcaggaca 720

atgcatcgct tacattattt gtttcaaaca tatgtctaga ctgtgctcgg atactcatgg 780

agaattgcgg aagctagttt ttaaaagcag gctaagctaa gctgagaaag cgtttgtttg 840

gatattaaac tgtaatagtc agcatgtttt gtacaacaaa gctactatga taccctcgta 900

taaagagatt gctatggtgt ggtaggctaa aaaaagagag gcatgttggt taatttagat 960

ccaaaaactg agtttgttag cttgctggat tgtgcagatt tggatttcgg aggcttctgg 1020

attatataca agtcgactgc aagttgaatc tgtatggact actagaagct agcttccaca 1080

atttgctata atctaaaggt cccaatatta atggagtata ttattgcaac caaacacgaa 1140

ttaataacta ttccccccgtc ttaaatgtaa agtcgttcta ctacctaaag agccgtgacg 1200

atccgtttaa cgtcattgca atttccatca tgtacatcat tatttggaat aaaagaaacc 1260

atcacatctt ctaacaatta gcatgcatag ccatattttg atgcaatgac aaagaaaact 1320

gttttcaccc ccgtagagac gtgcctttct aaactgttat ctagggtagg actcgcgcgc 1380

gtgagtggat gtggcctaac tgtatggttt ttgcttgcgt gtcgtggagg gtcatcg 1437

<210> 4572
<211> 2511
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205579_G1, chr5:205554907..205557417, Cluster 28

<400> 4572
taatatgcta tgctcgatcg gcaatggatt ggagcccgcg gctttggacg tcatgctggt 60

gtcagcggga catcagcctg ccaggcgtgg tctgtgcagc ctgcacatgg ctgcatgcgg 120

tgggtggccc ggggaggcag cgagacagac agggacggtt ggacacggtg ggcctcgtgc 180

ttccttcctt ttgctcgcac gaacaggttg tagtactagt gtacgatcca aatttttatg 240

aaatactggc tgcccgctgg cttctctttt aatatcaatc gtcgctttaa gattatgtgc 300

tgcaacagtg caagtacaac aacaactgct cctatcagtc aacccctttt tctgacttgt 360

atatatagag cagggtgacg cgtcattgcc tttcgtcatt ggctgaaaaa atgcactaaa 420

atcctccatc tctccgaagg gtgtggcaca cgatcaagtc cgtagtaggc agcagcacat 480

tcacggttag ctgaacggca gcaggaaata aacgggagga ttttcacatg tatcttggtg 540

agaaattggg ccacatatac agagcgtttc gtgtgacatc accgtacgta gacacgtagt 600

atcatacgac aaaatttata ctgagcgtgc ggctgcccta cacgtaggct tcaacttttc 660

ttttagcctt tacgtttcgt aatgcaaacc cccttgttga caagtggcgt tatgaattga 720

accaaagcag actggacgta taatttgcat atctgctacg cggtctaatt tggacagatt 780

tagctaagtt agatagttgt ttgactcaca acagtctatc aataatgtgt tggaaaaaaa 840

aaatgctcac cgacacaaga cgtggtggtg cagtacgtag agagactcta cctatacata 900

gcattggcga ctctctcggt ttatgctctg taatataagc acgataagaa tccccttttc 960

tatgatataa aatttctgtc atagatcaac aacaacaaca aaacgtcaca aaatggtgtc 1020

tgtgacggta ttaaatatta tcacggattg agcgttaagg attatttacc tgcgttccaa 1080

aaaccatcat agatcatcaa agcaatttgt gacggtacca taccgtcata gtacaacaca 1140

aggcgtagct agtccaaccc aagtccagtc tctgtgtggt gaaaaataaa aaccatcgat 1200

gaattgacac atgatcaaca atgattatgt ggacgatggt gtagatgctt acacatggat 1260

gatgagatgg atgcttacac caccatccat cctagcccat ttttaaggaa tcatgaccaa 1320

tttgttaatg ggccaaaatc aagggtggtc catttatcaa atagcccata tcaacatggt 1380

aacatttgtt ttgcattccc ggcaaatcgt gtgctgtgat gtgaatctgt ccagcttata 1440

tactagtata gtaccgagcc agaccagcgt atgctgcgaa tctgtccaag agaaaaggaa 1500

aacgaagctt cattcagggg catcattcaa ccactaatgt aacataggga aaaaaaacaa 1560

atagtaggca gaatacaaga cttcgaaatg agcaaggaaa cataatgtct gactctggag 1620

ttgtcaacct ctgagtctag gtcgtagata gtgcctaacc tcaactatct agctagctag 1680

tgccatcatc ctacctccca ttttgactcc agtttacata atttactttt tgtaaagata 1740

actgtttttg tcttaaaata attatccata tgatacttat gtcgaccaaa gtttcttaaa 1800

tctaactaga tttataaaaa aaatactaat atatttatac gtgtaactaa aattattata 1860

aaaaatagat taaaagatct acataataat gttaactatt tactacaaat gttaatggtt 1920

tttatattta ataaaagcta caaacaattg gtttcttagg aaacaagaac atgaattatc 1980

atgaagtgta ttatacttaa tttatcacat gccgccctac tcttggtgac aaatattccg 2040

tgtgccccac gccgcccgga caccccggcg gccggcgcgc ttcgacgatc ggtgcctgta 2100

cgtccggcga caacacgttg acaattaatt aatgtggcga aaacagcatc agcagccggc 2160

tgggcggcat ggtcagagcg tcaggccacc gtgagtgagt gagtgagtga gaggcggcag 2220

gacagccgtg ccgaaccagg agatcgatcg tgtttcggtt tcgtggcaga acagctatgc 2280

catagacctt cgggtcgcag acaacgcggc aggcgacctt gcatccgcct ccccaacggt 2340

ggcagtcgtc gtcgtccctg gccagagaaa tgccagcagc agcagcccag ccatggatat 2400

gttgtgtgga tcgggagtca agctgctgct gctgcaatca ataatataat catgctccgc 2460

agattgaata ctgaattgtt caaggtcgtt cctttgcacc ttttttaatc c 2511

<210> 4573
<211> 1744
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205873_G1, chr5:207130789..207132532, Cluster 28

<400> 4573
aaaaaaagaa aaaaattgta tccccttaca cttgtttgaa agaaagtata cgtgtagatt 60

ttccccgact gtcgcttcaa acttgtttgt ttttactaat tggatgatta taaagggtga 120

catactgaca tgcagctctg acgtttagaa gcagtttttg aagaagacgg tttgaaaaac 180

ttgggctcca cggagttcag ccgttggggg accacttgac tcgggtttgg ttctcatcgt 240

tgcgagcaaa acatgtttcc aatttgttat cagagagatt catgctttat tttgttccaa 300

tgccccctgg atgacatagc gaatattttc attgctcgtt tgccagttgc ggacaccttt 360

gcttttcaga gtgcctttaa aatcgcatat ttattacata ccactagcac cattgaaata 420

taaaataaaa tatgtgctca aatttatgtc taaattacca acatctacta tcacaaaaat 480

aaattaatta acaaacataa agatctgttt ggacattttt catgttatac cagccccgga 540

ggtgcttgac ccaagccgtt tagcattagg agtacactaa ttatccaact ctcacctttt 600

tgctacagtc tttttctcaa aagcctggga aatggcctgg actccactct tttccatacc 660

ctttttattc acacatagcg atcgcaaatt caacgctgca tgtctttggc gatcggtgcc 720

atgtaacttt aaacagaaag aaaaagttga ttgttgctat atgtaccaaa tacgatggaa 780

tatatgctgt gtattgctgc caaaaggtga tgcgtttaat ttgcaggtag atagatactc 840

cgtgcgtgtg caaacttgct ggcttttgtg ctgttccaga ataatatgat atatttttga 900

tagagaactg tgtgtgcgtg catacaaaag gttgagtgtg gctgagctgc actgaaaaga 960

agataggcat gaaaagggaa ggctgagtac ctgcagcatt gttgtctgtc ttacctgtaa 1020

cctacagctt ttgcttttat cattcatcca cgttagcgcc tcttgcacac taaataacct 1080

agtaatatat gctcatgagc aataatggtt ggttcaccag tttgaacacc ggggaatact 1140

agggagcaca attaacctct gtaacgtgga cctggttcaa attaaaggat tatagctaga 1200

ataattgttg aagtataatt gaaatgccat attttatcat cttccgttca gtttaaactt 1260

ttgaattgaa tgataaacta agttatttaa ttaatatgta gtgcatactt aaataaaata 1320

actgtaccga tttattttca ggtctgatgc ctgtgtgtgt gaccttgggg gtacggtagg 1380

gttgacgtac aaagtgtttt ttttttcact tttcctatca actacttgag ctttttttccc 1440

ccttcttttc ttgaatattg gtcgttgttt gcaactcgca tgttgttatc aacggatgca 1500

tgtctatcac taccatacta gcattacagc catgaatgaa acaataatag atactattat 1560

ctgctctgaa ttattaatta taggctgttt tgagttttct agatatatag cttttgctag 1620

gtattaatat ggacaggata tttagatata taatagaaaa tgggtatcta gaaaaaaaag 1680

acttataaat tactaatgga aggagcagtg aagtacttcg gctgacgaac ttgctattgc 1740

aggg 1744

<210> 4574
<211> 2233
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206111_G1, chr5:208346123..208348355, Cluster 28

<400> 4574
taatttgttg gcagttcgat ctgttggaag accaaatttg ctttattcat tcacttttaa 60

cgagcgtgag agaatgctct tacttgttat gtgcttcctc cattttaaat tataagttat 120

attagctttc cgataatatg cttagaaaac tgtgaatcta aaaaagccaa acgacttaca 180

atttgcaact gaaggagtaa cttacaaagc atctgtgtaa atattgattt atcagacaat 240

gtcgatattg ctcactttat ttggacccat tctctcattt tatgaaaaaa attgttagcc 300

caagaatatg actgaaaact tggaccattc aaccagataa gtaaacttat aatataatct 360

ctgttggaat tgctgtattt ttttatccaa tttcatcatc ttatcgaaca attgaaaatg 420

gcattctttt cttctctgtg ccggcgacat aaatttcaga tactatccat ccagtcttgc 480

tgtgtatctg ggtagaattg cccccaaagc atgttggact tatgggcctc tctcatatac 540

tgtactccag catgcgttgc agttgttgct ggatagagct accaggctgg atatctggat 600

ctatcataag ttttatgact aggcccatga actttagcaa aaagctgcaa ctttgctcgt 660

tttcaatatc cttattagct taagatggta gatgatagag gggctggctt gttgttcctt 720

gtcagggaaa catcattagg gtttctatcc ctaccttaca tttcaagctc cactctgcga 780

atagtgcaga acattgtttt gtctgtctat atagctggtc tagtgacctc agccatactc 840

tttgtactgg gtgtagtcag cactagtact gtgactggag tctcagacct tgattattta 900

agatgcctcc atggttccat tcaagtattt tatgaaaagt tccatgtcat ggcatttcag 960

taacgatgtg atagtattga attccttggg tagatgagaa atggagtctg ttttttaag 1020

tagtcggact aagtttgtcc ttgtatgatg cagtattaga aacaagttac aattaatgat 1080

agacatatat gaaataacca ttgtcaatga cttctatgtc ctgttagtga gaagttcatt 1140

tttgaccatc caactattgc cggagtttgt ttttggccat gcaactctag actgaatttt 1200

tttggtaact aaactatcaa tacccgacaa atttgaccat ctagttggtt tcaaaaatgg 1260

ttttttgttt tctaaaaaat taaatactgg cagaaaattt tagctgtatt taattattta 1320

tacaaactag ttctagcaat gtgggcatgt ggcagtaata aaagaaacag gtttacaggc 1380

ggttgaatgt cagaacaata gaacaaaact gctgagagca atttagactc cggtgtcgaa 1440

acaagtatgt gcaggttcaa gttacagagc tatgcaaaac tctctgacat tagtttcttt 1500

tacccgtctt catgtaaatc tgtcgtatgt ttctttacat agattaattc caaatggata 1560

gatgagaaat accatattcc ataccaaatt acaaactaaa ggtgcaacaa gaaaatgttc 1620

ttatgacaca ggagcagaat aagattacta acacaaactc ttttcacatt ccatgatcat 1680

tttctactgg ttatacctaa actatgttgt cgcttgttgc caatttgcac gaggttaccg 1740

tttacataag ttatcccttt aggagcgcat tgcactctat accctcaccg ccaagcatgc 1800

actgggatgc atgctggggt atttgaaata ctgaatattg tacgacagat actaacagtt 1860

gtgctatttg aaatattaaa gcacagtacg gcctgacctg gatgagtttg tcttacatgc 1920

attattttca aagttccaat cactctgtac ctacatgttg gttttcttca gtgacgtgga 1980

aagcttaatg cagtgtctaa ccctatggca tcagccatca taaattagtt agtgccttgg 2040

tttgcttcct cgttccaaat gccctcaaat gtatgcccaa aaatattaat cattgatcta 2100

gcgtagaaaa aaaaagagtt gtaaaattga tacttgtcag tgtcaggtaa agctgtgttg 2160

ttattgctag agatttgaaa tgagtttgtt aatgctagcc gtcaatatct tgaaggaaaa 2220

ggcatcagct ctc 2233

<210> 4575
<211> 1447
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206522_G1, chr5:210600967..210602413, Cluster 28

<400> 4575
aagaagtcag tcgttgccac tgtacaatcc attattgtct atatttgtca agaatagtgc 60

agcgactgct taatttgcac atagattttt gtgaatcgcg tatgtaaggg tgtggtttgg 120

tacgaattcc gtcgacatgc atcgtgcgtc aacggtgctg gtaactgatt agcgataagc 180

tagcttccgg gcttcaattc gatgtcgatt tcaacttgcg ccacgagtac atgactgtgt 240

ttagaaaggt aaaatgccca aaacaccact tggttgctgt atgaaagaat gtttggcgaa 300

gtgcatgagt ctcaccgctg gttggttcat gcggtgagaa acaaaaaagg tggtttgatt 360

ccaaagatca gccgagaaaa actaagagcc atgtacttct ctgaacccta cacactccct 420

tgttccaact ctgtgagcct tacttgcctt ttgctaccta cttgcgtgca aaattgttgt 480

tccttcatct tcatatatat ggatgatagg gataactcta tttacttccc taaaaactta 540

atgaagaaat ataatgtaca tggtacgtca actcagatac caagagatta tggttccttc 600

tagatttaat taatacataa accatcagaa aagatgatac ttctaaattt gattaataca 660

taaaccatca gaaaagatga tacgtttttt ttctgagcat gtagacaatt gatgctattt 720

atttgtagta tttttgaatc aagcaaagtt tcagactgga tcatgggaat gggggatgca 780

agctaacgga taagatcagc aaattaaaaa gagcgatatt cttcctttcc aacaaagggg 840

aggagcattt tcgggcaaaa gaaagcaaag gcagatagat attccggaat agcgcaatac 900

tgaaaggggc caagaactcc gtatcttaag caacaatatt ttaggcagct agtagagcgt 960

tccaaaagct ctgaatcatt gatgctaatg acatcacctg ccgcatgtac gcatcggctt 1020

tcagctaaat attcgccgtt agccccatgt gacaaggtta gcattaaccc tccattagct 1080

gatctgatgt ttaataagaa agatgcagaa ataattctga gcacgagcag tgatatcaaa 1140

gtgcgtttct gttgcttcgt cagtgctgtc catgcatcat acacagagag aataatggcg 1200

cagtatatag cagaagtcaa gtcgcgggcg gttgtgctct tgtcgtcgta cagggaacag 1260

tgtggtggag gccaggaact gcgcaccgag gagcaacttg acagatcgta atgcttggat 1320

cgaactaacc taggtcgtat ctgttttcag caaggttata taattcacct tataggtggg 1380

tataaggcaa caattagaat aaactggact agggtagcct atatgcatga ttatataagc 1440

tgggagg 1447

<210> 4576
<211> 1414
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207772_G1, chr5:216610300..216611713, Cluster 28

<400> 4576
ttaagcctca tcatttcaat cccctagccg cacctttcaa aggaggatgc aaacataagg 60

gcattgctgg ggtatgccct ttcaaatcta aatctctgca caatttatat gtgtaggttg 120

attggcacac taatatgcct ttttttgaaa tgttcatatt tgtaacaccg caaaatctta 180

aatttgggtt taggggggggg ggggttaaaa agaatcaaat tatagtgtct tctcttaaaa 240

caaataagta ttaatgcact tctaatatgg ctacacatta atcgatgaat aaaataagat 300

ttggatggta tgctggagtt actctttgtg catttaaact acaagttcaa attccaactc 360

agtttggaaa atgatttgag atttgaaatt gagaatttaa aatataaaag aaatttaaaa 420

aagaagaagg tagcttaccg aatgggcttg ggcgcggcac ttgtcttctc ttctctctct 480

gtggctatgc gttggtgacg ttgcgggatg tttccaggca gattgccctg cccctaattt 540

gtcaatgact tgattcccat catctcggcc gacctgcaac agctattagt taggctaaca 600

acaaggataa taccactaca acaaataata ctgacaaaac taatgggacc aaaatttctg 660

aaacatggta gcggtagcgg gagaaataga aactatataa tttacaaaac cagaacgaac 720

tgtatctgta tatctatcta gaaattagga aggcaccaag tttattcaag tttctacagg 780

taagaactaa tggagtagca gttacattag catatgatgc aagcacaatg acttggtaaa 840

taaataaact aaccaaacaa aaatcgaaac acaagcccgt cggcctagta gaggagtatc 900

taaagcatgg cactggtact atactgaagg actactccag tttataacga agaaatgtgt 960

ggatgagaga tggtggacgg aagcaacaaa tcaggacaag gaccctaggt gctccgggct 1020

ggatcctgct cctgatgctg tggggaggcg gaccctccga gcttgcgatg gatgaaggcc 1080

ttggcacgct ggggctcgat gttggcgtag gagagcctgg cggcggcgat gatgagggcg 1140

gcgccggtag tggcgcgctg cgaacaggtc gccgtgtact cgagccgaac catgatgccc 1200

tgcggcgagc aggcgggtgc tctgccttcc gtaattgggc tcggtgaggc ccaaaatctg 1260

ttgggaaaca tataaacgat tggtgtatat atgcttgctg agattattcc ctcacactgc 1320

aacgacacga tcgggtgctc atcgtacgta cgtaggagta aactatgtgc atgtttttcg 1380

atgctaaata ttacacggaa aaaacataag taaa 1414

<210> 4577
<211> 2319
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225369_G1, chr6:110390761..110393079, Cluster 28

<400> 4577
ccgtcacaat taatacaatg gaaaaagcct tatccttatt gtttggttct aggtgattgt 60

cctaaggggg ggtgcacatg gcactgggcc gtatcggtcg ggacttgagg tcgctttgcc 120

cttggggaat cttgaaggat gactaagagg tctagttata gtctgtagct atagcgcccc 180

tagcctaggt cgaacaatga gctccattat cgacctagag tgacctagga gaacaagagg 240

gctctagagg ttaagatggc cctaagaggc tgggagtgcc ccaaaactca ggagggactt 300

aagaccttat cccaaggtgt ggatggcgct agaggctagg agacccacaa aggtctagag 360

ggccctagac ttaatcccta cagagtggag ggccctgact taattggatc cgagtaagga 420

tcctaggggc atggggtccc aaggacacac gattggcatc aatagggtca tcctcgagtt 480

tcttgctgtt aggaccttag ataggcatat tatcaatagt agtgggcact attttcccat 540

acgttgatag aaacccttgg atccatcata gaactaggga ggcctatagg tgggtcaaaa 600

ctcttttcaa gatgcctaac aaagtggatc catcatatgt cggaggatca ctatgtgttg 660

taatgataat gggtgcaggg aggtgacatg tcaattagct tccctaggat gagactaggc 720

taggaagagt gatctacaat ggtaaagaat gtttgcacca tagcttagct attcctatga 780

tacttctctg gaccttgttg ctatgctccg cgtgggagcc aattgttagt caccaccact 840

acatgtccgg atgttgaagc attggaagcg gccacatcac acatctcttc tttcgatgat 900

gcacctgatg ctttgggctc agagtttgtg gttatgaaga aaaagggaaa taacaaaaga 960

gaaaatcgta gggaaattta ttgtaggtct acagaggcct ctagacaggg cgcctttcca 1020

aaaacacact tgataaaacc agttcatcat gcatgtcaag aattctgtgc atgctaactg 1080

cattgtttgg tagtcgaagc actatgcaac catcatatca cacgtctcat gaattgtgtg 1140

ggtcgtgcga tgcttcaggt tttacacctg gcaattaata gagagagtca taacaagagc 1200

tttaagtaca ggtgtgtggt tttcatgttc gtgcttcctt gcgacccatc acacttacct 1260

agtactatct tcttcctctt gtcttcctcc tttaattaat agtcattgtc ttcccttctt 1320

gtcctaaagt gtgaccacca tggctgcgac ctttgctatt gacttgctac catgtagcag 1380

ggtccttaaa catgaaggtg tagataaggt gcatgaactc ctagggtagg ttcctcatag 1440

gactaactat ctaacaagga gatggccaac ccatgaagct agctaaagac atgaaacaag 1500

gtggtgtgtt ctctaagtaa aaaaccaacc gactaagcca gactaaagga aatactattt 1560

ctacaatatg attagaactc ttctacctta gtcgactagg actcgaccta tatgtggctc 1620

cctagactgt ataaagaaag gcatgggtac tcccatttta acacatattg tatatcataa 1680

tccaacacaa ggaaaaatga ccaactagac atatggtatt acaccattca ataaatggta 1740

ccaatatatt ttttctttga gtttgattta cactgaaacc tcccataccc taccccgggt 1800

aaccatgcaa cacgattatc aatcgtcaga caccaatatc attgctaacc aacctatttg 1860

aacgtctttc ggtccaagct ttacctaagt acgaagagga aagcacagag gtagaggaag 1920

gggaggagga gaccaaacac gaggaacaac gggaaggtcc ttaaagtgag atgcttgtag 1980

ctacacattg tttagttgca aggcagaata gcaacttttg tggacatttg acatggtaca 2040

gatttgtatc ttttgtggac atgttaacat ggtgcaaaca tgtaactttt atggatatgt 2100

tgacatcatg catgagagac attgaatgtg atatagactt gttgcttctc catggttgtc 2160

atttctcata tgtgctgcat attgttgcca tagtgctaca aaaaatgttg ctaagatgct 2220

accaaaacat tgccaaattt tcaaatattt tcatcattaa atcggatttg aaataattgc 2280

aaaatatgcc aaatatattt gactaaatca aatgttttt 2319

<210> 4578
<211> 1906
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229369_G1, chr6:131467872..131469777, Cluster 28

<400> 4578
gcctaatgcc acaaatgttg ttcaacactt agcttatttg tctctacctg ttctcgtgtt 60

tcttttatct ggtttctttc tctttttagc aaaccgtctg accgtctata tatcacggtc 120

ttagcaaacc gtgtgactgt ctacatatta cgacgattag ttgcttcatg actatgagat 180

taatactccg aactttgcag gtcactagtt ttgtgcccta taaactacca taaactatat 240

aaagttatgg aactaaccta actggaatcg catcgcctgg acttttacgg ataacaaaac 300

aataatgttg ttttagagta cgacagaaaa ttaatcaacc tctaatttct taaccaatca 360

agaaccatta aatgattaat attgcaaact attgcaggtc actagtttta tgctctataa 420

acgatctaaa tgatctaata taatataaac aactgaattt accaagtcaa tctagaatca 480

aaatctagac atacaataca atcaatgaac aaagcgagat gaacgatatt accacatctt 540

gcataatcaa cacattaatc tccaatattt atatatataa gctgttttat aaaagaatca 600

atgagttcct caagatctct aaaaatccta gattaatctt ttaatagatc taatctagtg 660

cctaaatatc tctcaaatca aaacaaaaca aaacaaaact aaaggaacga atatctccct 720

cgaacacgaa tttctcttgg accaccagcg gctgacttag gccgcgttct cccatcctgg 780

gtgcacccct tcacgcgggc cgacgcccag ctgggcctcg ctcctccacg cagcaggccg 840

cctttacttt cacgtcatag gtcgcgcccg ctccagctga cagggcgccc tccgcgccaa 900

tagtcctggg ccggcacctt catcttgggc cgcctgtgga atggccgccg agtgggctgc 960

cccaaacccc tctgttgtgc cgcacgcgca cagagagcaa ggccagtccg gttttggttg 1020

catccgccag ctcttggccc ggtgcttcac acgcactcac ggccgagtga cccagactgg 1080

caatcaattt tccccccttt ttacttttct ttttctttca ttttttcctc ttttttctcc 1140

tttctaggca tttcatatat atctacaaca cacgcgatgg tcatttgcaa cagtatgaaa 1200

catctcacac atcatctttg atcaagaacc tcagttaatt tgttcctaaa cttagtccca 1260

aaacttagtt ttggtacctc atttcctctc cacttaacac agaaaagtaa aacttagttt 1320

ccgtacctca cttagttttg gtacctcatt tcctctctac ttaatacata aaagtaaaac 1380

ttagtttccg tacctcatca cctctctact taatagagga aactagtttt catcgtcgcc 1440

accggcccat tttgcctcaa ccaacacctc gatatcaata atccatacaa ccgagtacga 1500

gggcaagccc acgacttgat ttaaggttaa tctaagaaaa aacacagcac caagtgtgtt 1560

acatcaatat caaaacatat atttgcacac atacattact tccaaattat gttaataatc 1620

acttgcaaag cctatgccaa ttttaaagca atgttctaat gttaactaac acaatatttt 1680

catcacacag gatttcacac ttctagtctt gccttgggac tcctattggt cttaagctaa 1740

ggtttggaat gatcgctaat agtgatttgt ccaaggagaa ttccataatt ctggttagga 1800

gtggagcagc ttactcatct ctatcaccat attcaaactc cattatgtaa aatagtgcaa 1860

aactgtattt taggtaacca tatggataat ctgctagaca cagtct 1906

<210> 4579
<211> 1903
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234257_G1, chr6:153805066..153806968, Cluster 28

<400> 4579
aggggaacat aaacttagat gccctgtaag accatatttc tagggtgttt ggttcccacg 60

tcctaaactg aagtttagtt tcttttagtc cacaaactgt caaacgatat aacaaaagca 120

agcttcttaa atagaaactt tagggactcc taaagtttaa aagggtgact actaagcacc 180

cccttcgttc agctacatat atgattggta gggacatgga agaaaatatg actttctaat 240

ataccattgt atcaagtgaa gcaaattgat ttacgatata agaaaatagg actttgtaat 300

atacccttgt atcaagtaaa aaattgtata attcatacta gattaatcag aagtagtaca 360

ctttgttttt catatgctcc tatcatcttt tttacctctc acaccattct tggggattca 420

tttgtacctg ctgttaaagt gatgttgtga tgattagtat gatgcttttg gtaattcttt 480

actaattact acccctcttt tggcgttctc acctgaggtt cgtagaagtc actgcaaaag 540

ggtagagaaa agaaagcgaa agttgccaga catcatcagc aagttgattg aggaattcat 600

tttgttacat cgacttggaa cggtagccac aacggtgcta atcagactgg catgacttat 660

gttagcggaa caatacccta tgctctattg ttagtttagt gtttgcaatt aaataattcc 720

attatcacgt aatagtgcct atttacccta tggcctgctt ctcttcttat atgatttata 780

gttgtcctct tgctattttt tctaaaaaac gtagtagagg tatgtatgtg cactctataa 840

ggctgtagct gaaagcagaa acttcacgat gccatatggc ctttttccc atgacacacc 900

caagatgtta gatctgttgt ttagcgagcc tgaaaggttg gagtatcctt ttctagttaa 960

ttatttaatc tgaatagtta atttatcgat ttatggggta acaatagaag acaacttaaa 1020

atacataaaa agttagtgta aaggactcat gttgctaaac gcgcggtaca cttgtttaac 1080

acttctatga tgtttctatt ggattgatca ttcttttctc ttatatgaaa gtttttatag 1140

aacattaaat tgaattataa attatttcag agcctacatg ttagatccaa cctaattatt 1200

tgaaaaacga gttttagttt ttactatata taaataataa ttatttatat tagtaaaggt 1260

ttattgtgac tctatcaata atcttgctaa aattgtccta aatcctagtt aactaaacct 1320

ttttatatct atatttatat ggttatgtat atcaatatat gtgatattgt tagcgtttgg 1380

gaaaggctat accttcggat gctagcatta cgtcttttaa atatcctatg agtagaagga 1440

atctcaaaga gggccagcta ataccagcca tgtgtctctg gaccctccat ctcaggggac 1500

catgcacaac tctagctaag tttgacatcg ttcacactgt aggaccaaat ctcaaggccc 1560

ttcggacctc tcgcaccctt cattacccca acctagattg ctatgaccat taggccatga 1620

gccaagttta ttgcttgtca tggcttgggt ccctatggga taaggtctat atttagacct 1680

cgatggtgtc cttcaagatg ttccagagcg aaacaacctt ggaagtagaa gcctctaggg 1740

tagggcggtc ccgagtggta tgaccctact acaaggtgtg cccctcctcg ggacaaccac 1800

atggtacaag acagtcaagg taaggctttt cccatcgtat taaatgtgat atatgatttt 1860

gcaatcaagg aggtgttcag ttgccttcat aaaaggcaac atg 1903

<210> 4580
<211> 1731
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236051_G1, chr6:162678359..162680089, Cluster 28

<400> 4580
atccctcccg tcccggctcg gcatactgtg cactgtaagt actagtcttc gacgcgactc 60

agggccgaca cgttattttg tccgcttatt tattattgcc agcaaaagca tatctgcaga 120

tggatccatg ggaataaatt taacgagcgt tagggtggtt cccacttcct cggcacgtaa 180

tcaatgtcac cgtcgtcttt tctccgtaca caagccggcg gggaccagtt tggccgggcc 240

cgggctcggc taatgctgca acgacgacca cacatagttg gatcagttcg gtttttgctg 300

gatcatacag agttttatat acttgcaatt attcacacaa gtgacccggc cattgtattt 360

gggacgccat ggcccactgg ccactggctt ctgcgcgtac cagccaatct ccacggctcc 420

acctgggtgg aatgcggcgt gtgggtgggt actttggtag tgtttgtatc cgttctatcc 480

tctttttttt tttttaatac tactaatcct attacatgag ctcgttttct ctcctccttt 540

gatagagcta gctggtaagg ccagaaatgt tggcggagca cctaatatcc cagaccatag 600

tttccttttt tttccccatt taatcagctt gttgttctgt agtccagtgg atttacgctg 660

ctagcgtcta gcgaactggc tattcaggtc ccgggcagga cgagatgagg actcgtggtg 720

ggtagagcac ccacccacca ggccaccagt cagtcaccac ccgcgccacg cacgccgtga 780

caaaatcgcg acatactgac cgtgaccaag ttgtatatta ttatatctca ttcctcctac 840

aatctggtca tgcaatgcat agagcagggg ctactctgct gcagctggct ctgggtgggt 900

ggtgcaaaca aagactagaa ttcattactt aaactgatcg ctgcgctacc ctgctaggca 960

gggatcctta aataaatatc gctttggtat tcgaccaacc agactttatt ccagttaact 1020

agatttatat aaaataccta tactattcat atttaaaagt cttttattat cgacccttac 1080

tgattacacg gtataaatat taatatttta tatatttagc taaagtgaag ttgttgattt 1140

cttaaaaaaa atcgaggaaa cttagttttt ttatactaac ttcatggttg gaagcaacct 1200

agtttttaat aatccaattt tctctagttt ccacaaactg gtttatgatt aaaaaaactt 1260

gttaatgctg ttttgaacca actcagtttt tataaaccga ttcgagctag gaaaagtagc 1320

ttcttggttt ttttttaaac taaatatcta gtttctataa attggagcat aaaattatat 1380

atttgatacc acatcagttt aaaactggat gcttccagtc cataaagacg gtataccaga 1440

gaggggcacc cgccctttgc cctttgggga tgtggagggg gcaaccgaag aacaagagac 1500

ccccttttctc tagtgcttct gctcgtggaa gcgactttat tttaaactcc cctcctcatt 1560

ctgggaaaaa ggtgtgattt tagtatagta tcaaatcaaa ttactctgat tttgaccaaa 1620

ttcgtgttgt tgtgctatca aaataaataa gtattgccaa attctttatt agatatattt 1680

tagtgttaag tatcgattac atattttcct attctttttt attttaaagt g 1731

<210> 4581
<211> 2372

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236378_G1, chr6:164492960..164495331, Cluster 28

<400> 4581
ctgcattagc gttaaccgcc acatcaggtc cggcatggag aacaatgtaa aagtggcaag 60

aggcgaccag caagatcctc cgaccatgtg gttccttttc ctgagcagca tgcatggatg 120

aatccatcgt agcgtgatca gtgagactga ggaataatct ttatgcatgc caatctttat 180

ccctcaggcc agctagccct agactagagg ctctacacgc tagtctgcat ttgtgacgtg 240

acaaggttcc ttggccaaca ctcacgtaaa ttggtgtcga ctggtatttc agttcgtctg 300

aagagcttat ttagacagac gatctagtga aatttccgct ctggtggctt aatatagcca 360

attatctcat gccacttttt taaactgaca aatttattta ttttggaact acaagagtat 420

gcatagaaga actgatttcc tacttatgat ggtgccatgc ccgattgata tgtcaccata 480

aaacttgcaa tcaattccaa ttagaaagta cgatgtcaac atttccacaa tatatgaagg 540

acgacgaagc taagcttttc ctgtaagtca tgtaagttaa ttaagtacct gaataagaca 600

atttatagat gcaccaatac actgatgaat atagctgcag gtatatcaaa ctggtacaag 660

accaacgcac gcatgcacgc acacatattt aattcttgtt gaaacaacaa atatacttcg 720

attacaagat ttatttcctt ttgtcatgat aagccttgga ccacagtaat tggtatctct 780

tactattaga tgtttacttt ggaatattta tatttatctt caaggaaggt gttagaaaag 840

atagaaaaat cataaaaatt tggccaacga tattattgta ggcacaatca tttatagccg 900

ttagacaaca tgcatataaa tcaaatatgt ctagcattac gaaaactaat taacctgaat 960

taacccttta gtccatatct aaattaccca ctttactgtt atgaaaaaaa tgtggcacca 1020

cccaaatttt acatgaaatt actaattttt gttgttatga gaaaaaaaaa attaaccaca 1080

tatcaaataa ataactcaac agtgcccata tacatgtttt ccagttatcc cactaagtat 1140

atatgtgtca tatagaccat gtttccttgc cggatagctt gggagctagt atgatattgt 1200

gattaagaat ggtctgacga tcattgaaaa tattttctta aactagtcat atgcacacta 1260

tccatggtaa tatacgaatt ttctagaaca aacaatcaca atccatatat atgtactacg 1320

taagctatta tactttagga ttttgaatat tattttgtaa cttatagcat atatccatgc 1380

ctatatttta atacaaacgt ttgctcaagt gttttaacgc tcaagtgtct tctgtagaaa 1440

aatgcattgc tcttttaaag ttccttgata gaggaaattc aaagtgtctt ttaaaactac 1500

ggtgcgaacg aaacattgtg aaaaggaaaa ccacatggaa taataatagt tttttttct 1560

ttccctaaac tcaagacaca caagaaaatg actgcatatc ttcctacccc acttagcagt 1620

agcaagtcac gcgtcctgaa agttgatgca atgcaaggcc accacactga aatgaattcc 1680

aattattaag aagtactacg atgtcaccgt tttaaacagg tacgacgaag aaagaggatg 1740

cttaaacttc ccctgcaagc taaggcagct gagtagtact tagttgatta agcttaatca 1800

catgcacgtt catacttatt aatatttaat aaccagctcg ttcatttcac gctaaaacga 1860

gcttggtaga cgcctagcta taggcatata attgttttac gtcagtctca gtgggcattt 1920

cattagaact ttattctcat taaatgacat gccatatata agcaattagg ataacatgac 1980

atgtaattta ataaagagat atatgagagc tttagtaaaa aaaaagtgca acgaaatgcc 2040

cgctgagaaa gcatgaaaac gtgcgcattg atctgcatat atatatagca ctacgcacat 2100

ttaatctgct gtctagcact tttaagcaca caccaacaca tacgttcgtc tcacgctaaa 2160

aaaaaacgag ctagctatac atatacttga ctagtttaat ttcgatccga acagcttggt 2220

ttgcatgcgg ccggcctcat ctgttcaatt ctgaccgtag tgcagagata tacagatcga 2280

tatgatgttc agctgtggct ctttgggtag atgcatgaaa tggagctata tacatgtgaa 2340

atgtgaaagg gttacgctgt cattttctga tt 2372

<210> 4582
<211> 1684
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236820_G1, chr6:166893312..166894995, Cluster 28

<400> 4582
gctttatttt cagctggcgc tgaatacaag gtaagactta gtggatggtg aaattttcga 60

aatcttgatt gtagtaggtt catttgtcat ttgtagccag atattttcag gacaaggtag 120

gaaatttgat gaaccactat tcctgctgtt tgtggttatg ttttactgtt accataaata 180

catctatctt ttctcttatc ttcaaccata aggcataaac ttcatgcact tcttacttca 240

aatttgacat ggaaatccat gaatgttata actgagtgct gctaggtcaa catatatctt 300

attatctcta caatgaactt gtgtgcaaaa gatgatgcta gataagacca tatcacccct 360

tcatctagaa tgctagatct agatgacttg aatgcatgcc atacatctag agcataacac 420

aacacaattt tgacaagcga tcaatacata gaattttgtt agttaattgg ttgctatgtc 480

cttttgtaaa tgttcccctt catcattatt cattaataat acatgtattc tattataatg 540

tataagaata gatggatttc catgaccaag tgcatgttca atacttcaat atatagatgt 600

taagcacttc tggtaattta ttgcacaatt ggataattag atttcacatt ttcagtcaca 660

ttttatttac tcacttcaat aacacatttt ttaattcatg tcttgattgc acttacataa 720

gcttgttggt gagttgatca ttgtaggaat atatctcttt ctctgtttag gtcatctgat 780

gattctagta tatgtttcct ttctccaggt attgaaaagt cttgctgacg ggttgatctc 840

aatcacagtg aagcctcagg atctacaatg tactttcttc cggtgtacag cgcgggaact 900

tctcgcttgt gcagttttga gacctgttgt gaacttagca aatccaaggt aataactcac 960

tggacctggt tcaaataatt atttttactg tcatcgtatt taaatgttaa attgacaggt 1020

ttataaatga aagaatcgaa tcctttgctc tttcgcatgc caataagttg gagaaaggaa 1080

ctgcagaatc cttggatgtt gtcacaactg ttaagcacag ggaaccacat atgccctctg 1140

ttgatgaatt ttcggcacta atagaccact caagttcagg tgttgagctc gttcaatttc 1200

gtcagggtca atcgaaaact gcatcagata tacaacctgg aaaaagtaca aatccatata 1260

gtctaaaatt agaatcctct catgcacctt tagtcagtag ttcacaccca ctggagtcaa 1320

caagtttagc ttcgtcttcc cacgttactt ctgataatgg gttttcgttg cataccaaaa 1380

gcagcaacag agcaactgca aatggtcatg gtagagagtg tgcacagccc ttgggtatca 1440

gttctgagcg tgcacatcaa gctttagcac ttgagcacct tgagaatatg tggacaaagg 1500

gaaagaacta caaaccagaa aatgtagaac atgtcgcaaa agtgtctgtt ggatctgctt 1560

ctctgggctc gacttcagtt cagcaatcag ttccttgcag cacttcagtt tgttacaatc 1620

aaagtaattc tgaaagacca acagcgtcat ctcagtcaaa ggaccagcat ttggtaagac 1680

actc 1684

<210> 4583
<211> 2468
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237950_G1, chr7:4033224..4035691, Cluster 28

<400> 4583
ccatgagcct agacggatgt aacctcggcg agttggtcag tttcaacggc ctatactgca 60

gaatggcaat gacgaagtgt ggaggcggag aatgtagaca tccagggaca gggacaggga 120

cacacgtacg cagaggaagg atcaccacct tgttgcttgt tggtatattt aatttactaa 180

ttctatctat tggggaagat tctagaggag tgaagtaggg tatcacacat tcaaacacac 240

cttttgaaaa gtttattgtg tatatattca gtagagatgc attaaattgt ttcaaaggat 300

cagtaccacc actacgtaca tgcttgtata tatacatggc actaaacaat ggtactctct 360

ttttatggtc ccgtattttc agagattgct ctaaaagtca gctatatatg tttataattg 420

gatctgtaga gacgggagat aaaattcaga cgcctttgga aatgatcctg ttgttagaga 480

caactagtac ctcctgttgt cagctatata tgtttctcgg attttaagtt gaactatccg 540

atcaagaata ccaccagacc gtacctaaca gcccacattg atagatgata agaaaaaaac 600

tgcaccattc tagaacaaac acacagtttt tgattcgaca tgccggtctt atcctgaaaa 660

aagagacaaa taacatttga ttgcacagaa agacccccct ttttgaccaa gggaaccagc 720

ggggaattcc ccccccccc ccccccccc ccatgtgtag tggcgcaaaa caaatgctgg 780

aggaatagga atactcgtag acgaaggacg acgtccatcc atgcgtgatg aatgccagca 840

gcagacatga ctgatggctg gagtttaaag agacggcgca atatgcaaga gctaataaat 900

aaaggtgcat gatctactac tactagcagt catatatata ttctgatgcg gcgcactgtt 960

ggtttggttt acacggtcca gattattagg cattttaggc tgcatgcttc catggctagc 1020

tccacaaaga agagcaggaa gaaggggaaa aaaaagatac aaaatgctag atgtcaacaa 1080

gcacgcacgt agcactctgg cagtacgtag cagcaagtaa tattgctgtt gcaagtgcaa 1140

gactactgca agcagtgatg agttgctagg aagctacgac tacgaggcca aataaaccaa 1200

ccaaaattaa gcactggcga cacttggacg gccaggagat aaggttcaga tctcgcacga 1260

tcgagaggca ggctcacaac gcatggccag atggtcaatg gagcgaggaa tatatgcaga 1320

gaggcaggcc atggagctaa taataatcga cacgtactgt ccccacatgt ctgccggcct 1380

gatgctttgc aacatacaaa caatatgacg atttgaccaa catatacaaa acaaagggag 1440

acagtcgatc gcagacacac tgggcggctg caatggaaag ttccggcctt tttggctcaa 1500

tcacctaacc tacctatcgt cagtgtttcc gaaacagttc gtcatatggt ggtgcgcccc 1560

cactactaca ctacatgcta ataagctgct tccactgaca gtgatgcagc gatcaacaac 1620

gcgagtaaag tccaccccat ctactaaatt tctaaatcta acctcgacgg tagattcagc 1680

atctagctag ctagctagca cacgtactag acctaccgtg tgttccggcc gccggcgcca 1740

ctggaaatgg ctggtgtgta catggttaaa tgatgaagat tcagtaatta agaaccatcc 1800

tgacgacgcg gatgatggca gaatgatgtc ggataccgtt tcactaataa aacaaggatg 1860

atgcttgtgt gttcagtgta gcggactgag aaagaagtac taaaccctac ctggtcgatc 1920

agatgaaacc caacactcca acagtgactc gctcgatctc tttccctccc aaagatttcc 1980

tcgctaacca caaatgagtg atccatgtta actcaagcac agtagctaaa attcagatga 2040

tgcctgaatt ttagcttcct ttcaggtgat ggttgttaca tatgatttat gttaaaattg 2100

tagcttttgt tagagaacta gctagacgtt ttcagttgta gtttagttca gaaaaataaa 2160

atacagatgt tggtgacaat agaacgacgc atgtatatat gtctgaactt agcacgatga 2220

ctgtaaaaag catagagaaa catgattcta taccaatgag aagaagcact atacccaagg 2280

gcagacatac tgctagtcga tgtagccgtc ctgcttaatg cggggcacga atgtagttgt 2340

gacgtggacg atattcattc tagaggttcg ctcttccaaa actcgtgcgc gcaagtaaca 2400

aaatgcagtg cttgaaataa cagcggaaca acaacaacaa caacaacaac aaatgtgaac 2460

atgaagcg 2468

<210> 4584
<211> 1921
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256644_G1, chr7:121399741..121401661, Cluster 28

<400> 4584
agagtggtag ctcaatactc tacggtgagt gtttacggtg ccctaaacct tttgacggta 60

taagattttt tttactttcg accacaaata taagcatgtt tagaaacttt tttttagcat 120

tgaccattgc tgtccacagt ggctagagtg aattagagga tagtgtaaat accttgagac 180

tgcataataa tattttgtag gtggtacata tatgataaaa ttctagtcta ttttatttgt 240

tcgtaatttt tttgtggatg catgcgcatt cactgtgcac tacctagctt tgcctctggc 300

tgtccaaaat atatatgcaa attgttaata tggggctgct tttactgtgt ccgtcatggt 360

tcacaggtca taatatatag taactctttg tattttaacc tgtatatttt ttataagtat 420

tgttagtcaa agtgcattat taaaaattgt gctgatgttc tagtggattt atatttgtga 480

tcaggaaata atattgcaat ttgcaatgac atgaacatac ggacgctaga taaaaacata 540

tgcttctacc aatttgtgag aaaaaacatc tgatggacct agaactccaa ggtctgttta 600

gagttcaacc ttttgttgaa cgcgggataa aacatgtttc tctacttctt ttatacttca 660

atacttcaat ttcaaactat atatatttaa acttaaacac aaactcatga gtatggcaac 720

ttgactatta tatatagact acacgcacat ataacataac tgacactata ttattgcacg 780

cgcacataaa tgtgagataa tgacaactta actactgtgg actacatgca cacactacac 840

acataaagtg agagaatgac aacttaacta ttatggacta tgggtacaca taacataact 900

tacactacac tacatgcaca cataatgtac tagaatgaca actcgactat tatggactac 960

acacacctat aacatgagaa aaataacaac ttgagtgttg tggacgcatt catgtacaca 1020

taacatgagg aaataacaac ttaactatcg tggatgtatt catgtgcaca tataatgtta 1080

tttatgtata catagcatga gggaatgaca acttcaatat tgtgaacaca ttcatgcaga 1140

gaataataac ttaactattg tggatgcatt tgtgcgcaca tataacatga gagaatgaca 1200

acttgacttt tgtgaacaca taacatgcat tcatgtacac ataacatgag cgaatatggg 1260

ggaataacaa cttgactatt gtggatggat taatgtacat ctaacatgag ggaatggcaa 1320

cttcagtact gtggacgcat tcgtgcaagc acatagcatg cattcatgta catataacat 1380

aagagaatga caacttcact attgtaaatg catcatgcat agaatgacaa ctaaactatt 1440

gataatgaca acttaactat tgtggatgca ttgatgcaga cacataagta taatgataaa 1500

ttaactatta taagtgtatt aatgctcaca cataacatga gggtgaactt gtgaacaatt 1560

ataacctaaa cattgtagat gcatttgtgc gcacgcataa catgagggaa tgaacttgtg 1620

aacacacaat gtccattcac atacacataa catgaaggag tattaacatt ccactagtgt 1680

gaatgcattc gtgcagggaa tgacaaccta actattgcag atgcattcgt gccacacata 1740

acatgagtga atgacatctt aattattgtt tatgtgctat tctgaatata taatgtgact 1800

attatagatg tgctattgtg aatacataac atgcatttat gtacacatga atatgaggct 1860

attgtggata tataaatgga atgaaaactt aactattgta gatgcactat tgtgaataca 1920

t 1921

<210> 4585
<211> 1488

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257371_G1, chr7:125400398..125401885, Cluster 28

<400> 4585
taatttagga cacatgtagc ataatcttag ctagaatatt taatttaatt ttataattac 60

agaagttagc acatacaacg cgagtagccg atcaagaggg ccagcgggcg gcgggcgcac 120

tgctgcagca catgcaacac cgcaaccaac gtagtccctt gattcgtgtt ttttacgtat 180

agttagttgt tctaaatctg atcaaagata aatcgcagat tactcaaaaa tatcttgaag 240

agcattgtgc gcatattttc ctagtttgta agagtatatt tgttatggag gaaaagcagg 300

aagcaaacag attgagagcc catagccagg agaggttttc tataaatctt aggaaccttc 360

gtgtttcatg cgcgcaacca acgggacggg atgccgacgg catcgatagt tccaagttcc 420

atgacatgtt cgatgaaccg taccagttca aaaaaaaaac acgtcatctg tcggcaggtt 480

gcctacgacg ataaaaaaaa tggcattgtc caatcacctc gaatccttga ccagtgaaca 540

tggaatgcat gctggggtgc ccttcttgcc cactccagaa aacaggacgc catctgtccg 600

gaatcgcctg cctgatgctc aactgaacag ctgacgctgg gattcaccgt aacgtcgttt 660

caatgtgcga gctagcggta gctgacgacg tcgacgtcgt gggggcgcaa gttggcgggg 720

gcgggggccg cgcgcgcgtc ggcctgtgcc agtgccaccg actccaccgc tccgccgtcg 780

tcgtcttgcg gcgctgtcat gtgagcacga ccatcgcttg tcgatgctgg tgcagggcgc 840

caactacctt cttcctaacc gtttgagata agcacaattc gtgagcagga atcgtttgat 900

cgtgatgtac cgatggtttg gaactttgtt taacgtttat agaggtatcg aaatgtcata 960

gcctgacgca tcaaacttta ttattttgcc aaaaccgcac agaattttcg cgttaaagaa 1020

ctcccatccc ccccccttcac gaaggattct agctttttta aagaatcaat taatttaaag 1080

actaatcaaa gttaaataga aaaatactat ggttataaat taaattaatt atgatacata 1140

ttctcgtagt aaatccagtt gggaacataa atgttactaa aaagtcgatc aaagtttatt 1200

ttgcacaagt ggtataattg catcattttg tggacgaagc caataatacc atgtatcaat 1260

acaaatcaac aaataactag gatataaggt acgaagtata gaggaaatca ccttggtact 1320

tggtagagat agaggatgga ggatgatatc aatttgaaat acatgactga gattgttgtt 1380

gaggtgtgtg ctacactggc ttcatagttt ggtgtgacca atgttaccta gcgttgcaac 1440

actagctaaa gagttgtttt ggatatctag tgatatgtgt gcgtacaa 1488

<210> 4586
<211> 2429
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260564_G1, chr7:143196414..143198842, Cluster 28

<400> 4586
cttggtttca ccaaatctga cggtgacgcg cccggtgcat ggcctccgga agatgtcaag 60

ttgcaggtga ccgttccatc cctcacaagc tactgacctc ctccccctct tccctctaat 120

gatatcgata gataggctag gctgggccct gccctgaggt cacttgcact tcgtccacgg 180

ccactgcttg aattgctcgc cctagctaca agcctccacg gaattgtttg tgatccagct 240

gctttcgctc gtgtccagtc ggtccggtca ctcgtggatg ttacaagctg ctgctcatgg 300

gccaccagtt gctgcactct tgctgtctgc tttcaagcca agtgctctct ccagtctcct 360

cccttgtgct ggatttcttg gcgagttctt acgctagtgc ctaggcgtag cgacgtgcgt 420

tgcgcaggtc gggcgacaga atcggggccg ggctgtgaaa cttctggagc ttttccggta 480

ggacaggagt gtaggacctc tttcgaacaa gctacgtttt agaatttaaa cacaaaatat 540

atgttccatc cgtcctaaaa aactggtctg tagtttataa caaaaatact atcaacaggt 600

atggttatat ataggaatat gtgaaaggtt attttgagga attcaataac tcttatttaa 660

tatcattaat atttatacat ttttaataga aaatggtcaa aatgaagatt gtttgaccta 720

tcatcggagt gagaagtata ccatttttag gacggaaaag tatacactaa gattgtctct 780

agcggtttct ctaaagggcc ccttgtccta tatctggaga aaattcttct cctctatacg 840

ctctagcagt gtcttctaga tatagatgat gtttctctat cctctctcta tatagattct 900

ctcttctatc tacttatttt atagcaaaac taaactattt ataagatatt tgagtgcatg 960

ataaatacat acatacataa atctagaaca aaatatgttt ttaatattat ttaacgtaaa 1020

gaggacggaa tatgaaggac gctggggaga aataagacat gagggaatgt ttttagagga 1080

gactgtaaat gagatatata gatgaggaat atagatgata tggttggaga tagtacaaga 1140

ctgtaaaatt gctatgattt tgacattgga actgttaata tattaaacca tttctatgtg 1200

aaactcttaa attccaaata gtcgctacac gctttgtttg agtacgcata cctatggcta 1260

tgttggcttt gcaaaaagaa acacaggcaa gtatgcaggt cgaatatatt agtactgtta 1320

cacattgtca tgtcgtgtct gattacggca acttattcta agagaggtca aaaggagtgt 1380

cgcttgcgaa gttggtacac tagagactga tgttgtttca ttgtttgtcc tttgatgatg 1440

gggtcgaaga atgatgcagc ctagctttgt tatctctgtc acggaagcca aattgttaat 1500

gccccaaagc ctagcatacg cccgctgaat gttcagcaga tgaaagtggc gtttggttag 1560

aaaattgact agaggtgtac aattattggg tgcatatagg tcaagatgct tgctatattc 1620

ctcttgtatc taaggacagt atgtaaggaa aatgcaattt taccactagc gcgtcgacgt 1680

caaaatatat atatgttcgt gaggtttaat tttatctata tattccactg attattagca 1740

ggtgattttt taattcagag ggaaaaaaga gacgtacacg cggaagcttt ttactctagt 1800

agttagagtt agttgttagt actattgcag tgtagagtaa ttttttaaa attgatcata 1860

gcgtggccat gtacaagatt ttttttgggt ttactgttgt gacgcagcat gcatgcatgc 1920

acgcattttt cttccatgca aaggcttccc acaaaacttc tgttagacag gtcagtaggt 1980

catcactcac tcgatcagtt tcggccaaca cgtcgatttg ctgcatatac acgtattggc 2040

gccacacgcg tggatggcat taatttgagg tataagctat ataaatatat ttttgttcca 2100

ttcatctgtt ccttgaaaag gcatcaatcc gatggggtgc gtgtttaact cgagcgagat 2160

tcatttggtg gctgcttagc atcatggctg acaggtgaaa cagtggagca agctaacaat 2220

aaaacctgcg tcagttgatg tgtatctggt catcactgtt tccgtcaact gaaatactac 2280

tacgaatgag tatctagcca ctcattgaca aatgctgcta acgtgtactg gcatgctcat 2340

gagatcacat cagcaatgtt ctggggtttg gtcacttgga gtctgccact gcaaatacct 2400

tcattagtac gtattgtgca acctgctgc 2429

<210> 4587
<211> 2640
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262409_G1, chr7:153849396..153852035, Cluster 28

<400> 4587
caggctctct gctacctgtg tgtagcgttt cgccttatta gctagatcca tggctagctt 60

atcacgtttc tgaacaatct ccttgttcca ttactgtcgg aacacatgac taacacgcca 120

attaagcggt gtctctggag tgaaaagaac atctatccta cgccgcgcgc ctactaaatt 180

ttgtatacat cacatgtgat ttgtattcga agttgatgtt aactggacgc ggaaaaatca 240

tgcattaatt aaatgttacg aagcttctaa ccaaaaggca tgaacaatgg ccagtggtgg 300

gttacatgtt acgaagcttc taaccaaaag gcagcacaca ataattaaac cgtaaaccat 360

tcaattaatt aaccaatcga caaaatccaa agtagctagc accgtttctt tttaaaattc 420

tcgatgacta attaactaaa gccggtggtc tgaatcttca ataagagtaa gtacactgca 480

cacatcaacg tgtatatata tagtcgtttg tggcggcaag tggagggaga gaagttgtag 540

aaaagcaacg aacacaagct gaaaaggcgg agattcactt ccatgtgcac agcattaagg 600

ttgttagaac atttggagta ctgtatcgta tcaaataatc cacgtctttt gatgttgtcc 660

tccctggcgt cattattcaa gtagctgaaa gctctatgtt cttgtaccgt gtacacacat 720

agatatattc ttcatccccc cccctctgat taagaattgc gacaagttgc atttttaaa 780

aatttcaaga aataattgat ccaaaagatt gcttgattgg cttgcaaagt caaagtttcc 840

ccaatatcat agtaataccg aaccagtaac ccagtcctgc agggtgcgaa aaacgtacac 900

tgcttcgatt ctatgtggag ggcaatttct agatacatgt caatatttaa aaaaaacaca 960

caaattgcag aagattaaac tagttgcaag aagtatcttg tcatttttt aaaaaaaaac 1020

atatcgatgg aagcggggaa aagagtagtt tatatacaga aaacagcaaa cggcatactc 1080

atctcgtcag tgatcagtca caagacaaga acaagaacat ctatgtgtag ctcacatgct 1140

tccctatata tccccccccc ccccctactg tatatccttt tccctttgg tttcctctcc 1200

cctctctctt actcggacag gaactcagta cagttggccc tgttggattg caatgttgga 1260

tcgtgttcgc cggacaacct accagcaggg gcgagaatca tcgtgatcat gtaaagcaag 1320

atatagttat atgcactgtt aagagctagc aaaccatgtc ggttgggtcc atcgggcaag 1380

aaataaagtt gtttttggcg cggcgcctct cgtgcttcaa ttcttcttca ggttccaata 1440

taatgtttgg aaaagcagaa acttggagtg catgcacaac cttttgccac ctttttttgat 1500

gctttggcat gtgaacatca tctatgtgca gctaggttgc aggcgtaatt tagttcgttc 1560

cccaaatcgt agagacttta gtttgcaagc cgaaacagat ttttatatat cacctcgcgc 1620

tcgtttattg ttttccgatt gtttcgttgc agccggtagg tatagtactg ggatgcatga 1680

tgattgatgg aagaacgcac ttgaatatca tttcgacatt atctgagaga aaaacgatcc 1740

tgcagcagga cgatactgcc gacgtgaact gcacacccaa ctagctagaa taaaaattgc 1800

atgtaaaagg gtggtggttc tccgttcttg tatatagaag agagatatgg gtacaacgta 1860

tgcatatgct gcatgcacca tccccaccca gttcacggcc gagcgaatga tgtgatagct 1920

gttatgttta atgcactcta actggaataa tacaattaga aaaaggcgta aacgcatgat 1980

tgctgcgaaa ttaaactatg atcgatttgg tgcgtagaat agtctgcaaa taaacaaatg 2040

tatagggttt gtatagaatc gaagaataat taaatataat atatggaaca aaccgatgga 2100

catcacagcg gagagtggag ggggccccag ccatggccga tcaaggcaca tgactgctag 2160

caaggatcgt ttagatgaga tacttgatta atttagaatt aaaccttgcc cttgtagcag 2220

atccacgata catgcctgcc ttctttacga ggcctcccac tagtctgacg taccaaagca 2280

gccatctcca tctctccttc atgctcagcc caccggccca catccgcgcc gtgactcgtg 2340

agtccgaaga gttgggttcc gtgggctaca cgggctcgaa ttctgatgga ctgcgttgtg 2400

tgtgctttcc agctaagccc actaataaga ggatgggtaa tgggttgccg ttgccattac 2460

ttgtagtccc tcttttagcc atcgaagaaa aatgatcgaa tatgtctgtg tctttgcacc 2520

aatgaatatt ttcagcgata ccaccagcgg agcggatgcg gaggcacgga gctgtgcttg 2580

ctcgctcacg cgtcaaaaca gagccgagcg cgagggagcc caagggagtg gagccagcag 2640

<210> 4588
<211> 1515
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262547_G1, chr7:154433807..154435321, Cluster 28

<400> 4588
gtgaaaacat gtactactac taccactgat aaatactcct ccatgcatct ttttcatatt 60

ttggaagttg tttggatata tctggcatgg gaacttacac tactagctag tgtgtatgaa 120

aatgacgacc agccagcttg gaagcacaaa tatatgtgag tttatgttat atcgattcgt 180

tttcgtaaga ggattatctt cgtttttttt tctgaaattt aatatcttcg tttattctat 240

tgaggagaca gccaactgga ggctggtgga acagcaataa tcaggttata ttctcgctcg 300

gtcggacagc atgcatatgc gcgatcgagt ggcgatgata tgatggaccg gtgacatggc 360

cgtggaaatt aatgaatcct ccgtggagat agcaatcgag tggtgtttat tttagtccaa 420

cggaattttt cagttgaagc tgacagagag agcaactgca tctgaaagta atctagctag 480

agttcaccgg aacccttttct accttgtaac caaactaacc gtaattttca agagattgag 540

aggaaaaaat aattttcttg ggacacgtag accgcggagt gtctatctag ctctccgttc 600

gccagtgatc acggcgagtg ctccgcacta cgccactaca ggctgaaatc aaacaaaacc 660

tcagctgcag agctgcaatg ctgcagtgga tgcggccata cggatttgtg atccgtgagt 720

attgtgcgcg acaactgcgc gcggggcgac cgaacagatg ctgccacagc tcaacagctg 780

tagtgagcta gtgatcgatc catggatcgg acgatcgatt actatatcaa agttccaagc 840

tgatatgata ttataatgct ccagctttta ttaatgcacg gcatcgtgat ttgtgacgtg 900

cggattggac gatcgatccg tgatgcacgc acgtaaatat atactccagt attcgaaacg 960

gaattctatc gtcgatcgtc gtcgtctacg ccatctctat ggagcggatc agtactgcag 1020

ggccgcacat gcgctcgtcc aataggcctg atttggcacg caagttcgcc gcacctcgtg 1080

gccttgatcg gcgtctccgt tgacttgttt cgcccgccgc gtcccgtccc tctcgccgtc 1140

ggcgtcgccg actcgccctc tctgctgtag tgttatgcat gatcctcccc cgccaattta 1200

tctgccgtgt atggcgcgct ttgacatttt agatgaaccg ccttaatttc ttgaaagaac 1260

gggtaatata taataactgc cgttttttt cccaaaaaat gaagtgattt aagtttttgt 1320

cctaagcacc aacacgtata aacaccaaac tagtttcatt aatccacgac aaaatttata 1380

tgcgatggtg catttttttt tacattctag atgttaatat atgtttataa acatgatcaa 1440

tactcatatc actgtctcag cttgtcctct tattgtagcc taagctcgct ataataagtt 1500

gctctagctt tcacc 1515

<210> 4589
<211> 1594
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263490_G1, chr7:158993547..158995140, Cluster 28

<400> 4589
actaacaatt gatctttgaa catgggaacc acaaacagaa catgctcgtc ccaagatgtt 60

cagcagaact caagttcaag ctacaaggaa gtagagcctc atcacaaagt cacactgacc 120

ttataagata ggatagagtg tcatatgtag cttgggtagg tggtcaaagc aaccaatgag 180

gacatcaccg aggatcatga gtgtgcccta aggggcccac gtagccaata tgtcaataaa 240

cttggcaact aatgcctttt gtgttttagt ggtcttccat caactagctt atcaactcat 300

tgaacaatca tcctatcaaa atccatgagg cctcaatgat cagttcgtca caacatgatg 360

gactatctgt catgacacca atggatttac aacatgcaag tgtagagaag cctctttcac 420

ctatctaaaa atatgagatc cactataata atgttgtcct atctacatct aattttaaag 480

tcaaaaactt cttcattttt aatgccccat cgacctcgtt caacccttttt tctcttcatt 540

atttatatat agtatccggt aaaaaatatc aaaatcaaaa tttagtgtaa gtggggtctc 600

aaacgctaga cctcgtgatc aaaaaggtac ttgcatgaca atacgctaag ccaacactta 660

tgctctttaa gaaatcattt ttttaaataa cacaagatga tccaacatca taccaaaacg 720

tcccgcaacc accgtgatgg tgccatggtg gccatacatg atacatataa ttcgattatt 780

gcaaaactca agtgttgtat tgttatgagg aactccacaa ctaacatctc aagttcacaa 840

agaacgtaaa tacgcttcct agctaactaa tcgctcgggc tattccggtg caaacatcta 900

ctcttcttcg atccgaagcc actctttccg gattcaaata tggtgtcatt tttcctacac 960

gcctaaatct atattatcca tatcctcgac tacctttcac tttccgataa aaaattataa 1020

atccatatct tcaactgatg ttaaaaaact ttatatcttt aactaatatt aaagagcaaa 1080

aaagaccttg gtctagcccg cttttgcatt ttatattttt acttttcaaa ctgtcctcgc 1140

gtccttcata tcccatgact tgaactcgag cagggtaaaa aaatctcgaa tgagactcgg 1200

cgaaaaccgc caaaaaatct cgttctcgat gttggacgcc ttcaaaaaaa ccgtagattt 1260

tctcattatt tcgttttaat ttttttattc caaaatatat atataaacta aagaatctca 1320

ggagtttata aatatatttt tattcaataa ttcatgtatt gatattaaaa acaaatttga 1380

tttactctag acccgttaac taaaacccga acccatatat tctctcccac caagaaagca 1440

gcgaaaacca tcgagaaagt ggtgaaaaca gccgagaaaa atgaaaaacc aatattcaaa 1500

tttgaaaccg ctttttcgct aaaaacccgt tctcgggggt gagcgaaaaa tcactttaaa 1560

acagggtgat aaaccctaga cccgttgtaa caac 1594

<210> 4590
<211> 2200
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_263579_G1, chr7:159412201..159414400, Cluster 28

<400> 4590
attgttaact tctcctgtta ttacaactac atacaataaa acccaacata gcacatcaca 60

tggtgcaatt tttttcttag aatatatatc aagtgcagaa acgatatcag gtatcgacat 120

ccacatgatc cagtgaatca atctaggtaa tttcgtggcc cgcacccctt gctatgtgga 180

cctaaccaaa accggcgagc gacctcatgc tcatggcata tgacaaggat atatacgcat 240

ctctaggata aattatcgtg tctacacgta catgtcatta gggtagctag ggtgatgacc 300

ctagcacaca ctcacgggca gattaaaaag gagggcgacc aaagccacgc attagtatat 360

atatatatat cgtgcaacac tcattactta tttgaccaca tggcctaagc aatgactgaa 420

gacgattatg ctcgtatggc tttgttttct atgctcctca tgcaacacct tttgtccctt 480

ctcaattagt catttcttgc ccctttttca gatgtgtgtc ttttattggc cccgcgttgt 540

ttcacctttg gtatattcca agcttttagc tcttagcaag tctaacatag tgtgtagttt 600

gggcacttac cgttcactca tatagtcagc aaaacactgt tttacacaat tttacaccgt 660

atattgtatt ttttgtaaaa cgtagtttaa atataggtat gagtctaaat aagttgctgg 720

agatggtcgt aatggatgta gctcatgcgt aaaaatgtct tttgtgattt tccttgttgc 780

tatcaagttg aaatggcaag taatagcgga ctctgatctt gctaggcgtc caggatatat 840

acatattttc ccccgttgga gtttgaactt ttttctattc acgtcatgcc ttttcttttc 900

tttttctgtt tgctagctag ctcttgatgg agattaaact ttagtacagt acaaagcatg 960

ctccttttt tctcgaaaga aataaaaaga acattctttt atgtcctcct cacccgtttg 1020

tatcttttgg ttgtctttgt ttgttctttt ctcaacccat gtttatttgt ctcgttttaa 1080

tttattttcc acagtatata tttgtcaaag cttcctgctt gtttcactaa tatccccatc 1140

cgtattatat aaacagactg taattccaac aaacgaagca tatgcgtgta tcacaataaa 1200

aaatatggaa cctcgatctt cttctcttct gaaatagata aataatagta tacgaactac 1260

gaagtgaaat tttgttgttt tctacgtaac tcctcggcag tttaatttct gtaaatttca 1320

attaagcagc cccagatctt cctattttaa gaaacatgtt gtcttcaatt actcagaata 1380

tccttatgtc atcacattat tcacctacgt gcccatgagt ttgagcattt ttttacggac 1440

ttagacatat cattctaatg ttttttatta gaaaagtggc cggcgtatat atcactgaaa 1500

tctacttata tactccgcca tatataagat gctagttagt tgacttgact acggctccag 1560

aaacaattaa acaaaaaatt tatataatta ggccgatcaa taaaatactt gaaatctaga 1620

accgtcttta tttgtctgtt tcttggacag taaaccagtc aataagacat gaggccggga 1680

ggtgattact ctatatgata gttggattga tagggataca gtattcaata atttcgtgta 1740

tcactagcta gatagctaaa ggatacgtgt atgctccttc tatctttaag aaaatcgtac 1800

tgtactataa cgtcacttaa aaaatcggag gcacgcttca tagtttatat ttaactgcag 1860

cgcctaatgg tacaatgatt ccacataaaa atatggttgc caattccact aggcctctta 1920

tatactacta ctagtattat attcaaatct caatgtggca tggatcctta cccgagaaat 1980

accatggatt cttcactagt gtccaattca gacgtagcac taactttata ctatttttag 2040

ggctacccca ttttttaaag aattttaatt ttttagttca ttttcctttc tgaaaatgga 2100

gttgccaaat taggtcttaa tgagaaaaga atccatggtt ccacttccac ggttacatgg 2160

ttgtcgtgtt tcccataaaa aaaattaaat tatatataaa 2200

<210> 4591
<211> 1523
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264693_G1, chr7:165461331..165462853, Cluster 28

<220>
<221> modified_base
<222> (623)..(623)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (623)..(722)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (624)..(624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (625)..(625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (626)..(626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (627)..(627)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (628)..(628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (629)..(629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (630)..(630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (631)..(631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (632)..(632)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (633)..(633)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (634)..(634)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (635)..(635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (636)..(636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (637)..(637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (638)..(638)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (639)..(639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (640)..(640)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (641)..(641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (642)..(642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (643)..(643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (644)..(644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (646)..(646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (650)..(650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (653)..(653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (660)..(660)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (661)..(661)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (662)..(662)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (663)..(663)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (664)..(664)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (665)..(665)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (666)..(666)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (667)..(667)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (668)..(668)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (669)..(669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (670)..(670)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (675)..(675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (676)..(676)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (677)..(677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (678)..(678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (679)..(679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (680)..(680)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (681)..(681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (682)..(682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (683)..(683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (684)..(684)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (685)..(685)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (686)..(686)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (689)..(689)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (690)..(690)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (691)..(691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (692)..(692)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (693)..(693)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (694)..(694)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (695)..(695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (696)..(696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (697)..(697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (698)..(698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (699)..(699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (700)..(700)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (701)..(701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (702)..(702)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (703)..(703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (704)..(704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (705)..(705)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (706)..(706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (707)..(707)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (708)..(708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (709)..(709)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (710)..(710)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (711)..(711)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (712)..(712)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (713)..(713)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (714)..(714)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (715)..(715)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (716)..(716)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (717)..(717)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (718)..(718)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (719)..(719)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (720)..(720)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (721)..(721)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (722)..(722)
<223> a, c, g, or t

<400> 4591
cgattcagtt gagcatactc agagtcgcta ctatcttcaa agtcctgtaa tataggggca 60

catgctcaac tctcacttgt tcaaatggta ttgtgtttgt cctaccacta ccccgttcct 120

ggaatagcaa caagtgcatg tgcttttcat tgcaagatgg agcaacactc acttattcaa 180

attgtttctt tgcttcaact ctagcaaaaa aaaggcaaat caatggtgtt cttttctctt 240

catggtttac tatgcgaaac taaatcacta ctaaacacaa attccatact accatttcgg 300

aaaccttaaa tcgaaatgca cttgttgctt agttgatggc tacctgcatg ccctctttcc 360

aaccggcgaa tgcccccatc tacctagttg ttgccctaaa atggttgaac actgcattgc 420

aactacaagc agctaatcat caaagtaggg gaggtcgggg tgactgggca tggcgggctt 480

ggcactatgt caagccgtcg gtatggtggt acagacgcta cacctcactg gcatttattt 540

gtggatgctg gatgtggtgg ttgcgaacag cacaggcacg cttcacacca cggcacgtga 600

attggacgaa tctctagatc ggnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 660

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 720

nnggacatga ccgagttcag cttgattcgt tattagtaga ttctgtgaac aagccacaga 780

ggtgcgtgta aatcactgtg cacggcgtct gctggtttcg agtcgacgac cttcgtgtca 840

gtctatccgt tccgttccaa tctactactt gctgtcgccg tcgccgtggt ccaaccaact 900

gttccaactt aacgcgcgct cgcgtcgagg tctctcacac tctcatcatt ttcttgtaaa 960

ctataagagc gcgtagatac tatgttacgg aacattagat acatataaaa aactacctca 1020

cacaacctta cgtattatat gagtgaaacc gtttatactt agagaaccgt actatagact 1080

ttccttcacc aagttacacc tctttttttt tgcgcttatc ctcttgatac accttaaaat 1140

acgagttatt tatattgatg tacataccct aaggggctgc taaatcatag catctgaatt 1200

ttgctttgtt ctctaaagaa caagcagcgt ccatctaatc aaaatcaaac atttaaaatt 1260

caacctcaag cttgagggca aacactttgg ttagttcatc tttactttca agccatttgc 1320

aaagtaagaa atgtaaagtt gtaaactatt ttgatttttt tttgtaaata catataacta 1380

gatgcagtat atataatttc aaggcacttg taaagttgtt agacttctga ccggaggcct 1440

aaccgagcca gtacgtaggc tgcaactccc tcatgctcaa tttgctagtt tttctttttc 1500

tcagcctaga tcgcacggac ctc 1523

<210> 4592
<211> 1483
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265326_G1, chr7:168908139..168909621, Cluster 28

<400> 4592
gccacttata ttctcattat ctatggaaga ctcatgaaga gcaactctag tgtaatagtg 60

gcttgttaga gtaccctcat agagtgattc ttataatgcc ctttttggga tgggcttatt 120

acgctaataa acatgtgaag catctaaggt tgggctcgct acaccaaggg tgtaggttgt 180

cgacaaacaa ctgaacctcg gggataaata ttattcccat ctctttccca tgtggtttgc 240

attccaagtt ctacttgtta ttacatgtac atatcatatt tcattcctta cttcatattg 300

tgtagagtaa cctttttttg ataagtagtt ttctagtttt tgtttttatc ccctacatgc 360

tactaagaaa gaagtaaagt agaactagat caagacatac acttctacat ataagtttta 420

tcttgtctct tgttcacgtg ataagttttt gttagattac tttttatagg ctattacctc 480

tccactttag ccatctagat cctatcaagt gcatgttagc gagacttctt cgttcttcag 540

catatatgtt ttatcttgtc tcttgttcgt gcgataagtt ttttgttaca ttaattttta 600

taggctattc acctcttccc tttagccata tagatcctat caagtgcatg gcagtgagtc 660

ttctttattt ctctcctgtc caacgcaaga gtagtagaga caagtcttga gactgccatt 720

tgataagtag agacaatatt attaaccttg aacatgagtt gaagttgggt tagaccatgg 780

ttatctgatg gcttggaaga caactccaaa aactcagtag tcttattaga gacgaactca 840

atctatctag gttgtttcct cttccaagtt ggactataaa tagaaaattc gttaaaattc 900

ttgacgagaa ccttcatcat gttaacatga agagctaaag gcgtttggtt ctctgtacta 960

tccataaggc aattatggag tttatcgaag tcgtctgatg tgcataccta ggaaccgaag 1020

atgaaagttg gaaccgacaa agttacttgc aagacttgaa attcatgaca ttatatggtt 1080

tatcatgaga aacaataact gcaaaagttg tgtaatgctt tcgtcaatca tgattatcca 1140

aaggaaactt tataagaaac atatgttttt tgggccccca gtacctgggc cctaggcgat 1200

cgcccctccc gcctaggcct agagccggtc gtgcctgtgt tggctcctaa tcttagctag 1260

acctaggata ccttttggcc gaaaggctcc acaaaggaag tattcggcca caaggataga 1320

catgtaaaat agaagtaggt ctttgcatcg taaataagta atagattaga tgaaaatata 1380

agttagaaag tacttatcgc ttcaatccct caaggctata tatattgtaa caagtacgat 1440

cataataaat agaacgccat tcgttcacca accaacgggt att 1483

<210> 4593
<211> 2235
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265542_G1, chr7:170117589..170119823, Cluster 28

<400> 4593
aaatgtccca accagaagtt tggaatatat cgcatatacc acaaaagcaa gcaagcatcg 60

taacacacaa ctaaaggatc cctctcagct agatgcttaa aaggcagaat ctactgatgc 120

agttcagcat gtatttacag gacaaaaggt aaacgataat caccctaatt aggaaggtaa 180

tgatcatctc ctccattgct gcattaggtt tatactcctc atcaggtaga cctgaagatc 240

caggtgtttc aatattaggt atagatgccc cacccggcga cattacacaa agaggttgca 300

aaccaggctc aactttcact ctcttactca aatcatcagc aaacgacgga acatcagagg 360

agcgttttgg atcaccacca ataacagaag gattaagcat gtcacctaat tgattctggc 420

tctcactttc ctgcgccact ttcatctcac tttgtctctg tctttcccat gccactacca 480

acccagcaag ttcaattgca agccttctat tttccgctgt tgtgttgtat ggtaatccaa 540

ggcgactaag agagttgacc atctgaggaa caaagtgggc tctgcaacta tagaagaggt 600

ccgcatggcg aacaataagc tggaatatgt gaatcatatt tggaattgaa tgcccttcct 660

ctacgagaac tttcttggtg tatctgatcc atatcggcat gcggctatca ttttttcag 720

gaggaagtct cctaggtagg gcaggcatga ggatatcgag agcttgcttc accaacagct 780

tgttttctgg ttggcatgtc cgtagcagag caatgaagac ctgggaaaat gatatggcac 840

accttcagct ggatataaga aaatgaaaag gatacaacat gaatgtaaga aaaatttatg 900

ccacaatacc tgtaaaataa tcttttcagg agcttgatag gcctctaaga aatgacaaac 960

attcacaaag gcccactgtt tgctcgagtt atcttcacgc ttgagatgat tccaaccaaa 1020

ctttatgagt tcctttcgat ggtgaacaag atcagtctgt agatacttca aaagtaatgt 1080

agctagctga agaagttcta tcctcaatgg ttcgtcgtat tcagcgctga cctagagaaa 1140

tgaagaaaat gaatattcat catccatgtg ctatgagtga aggtaatttg gttgcagaca 1200

ggattcatat cgttacctct tctggaggat caagaagctt ctcaacaata gttttaatta 1260

tagtaggatc aacaacttcc caactttgtc cattttgaaa tgaatgagct agcattggaa 1320

gtataagaat ctgcatggta acaactaaat gatcttgtcc atattgtttt gactggaaaa 1380

tgttcagaaa atgattaagg atagttttct tcaaattcgg ggagtatcct tcagcaacct 1440

aaaatgaaca tgtaaagatg agacaagcag tcaataaata cacacaaaga tcctcatgaa 1500

ttagaaacaa gaaatggcat tacctctatg acataaaatt ccttaagaaa gctataatct 1560

atacgactgc ggtacaagaa tactgataac atatcaaaga gtgcaccaac ttcagttcga 1620

tcgtgtctta agtaattcag gaagcatttg atcagcctct tgctttccat cacctgttaa 1680

gaaaacaaga tcattaccca aaaacagttc aatgctgcca aatacagtgt tgaaagaatc 1740

tagtgcagat attggcatga aagcactaaa gttccatgag aaacaatagg tattagcatt 1800

aaattagtaa agtataagtc cgatatgtca gactccatac atgagcactg tacaaactgt 1860

tatagcaatt ttgatggcta cctggggtaa actcaaatcc tgctcgttct gcaacctcgc 1920

aagtcttgca ggtgatttcc aagcaagtag caaggtgtca aagacaaccc ggttgttacg 1980

gagccactct ggcatcaatt tcacaagggc tgagacaagc tctaatccat taaagtaact 2040

ctcagaagta gtaaccatgt ttgatgaaga ttgtacagta atactctcag atacagcccc 2100

agtaagggct tcatccttta cagaagataa ttgagcagca gatgcttcac tttgagagta 2160

aaactgagaa aaggcacttg caagtatttt ctgaggtgac cttgcaagtg catcccttag 2220

gtccccagta tccga 2235

<210> 4594
<211> 2098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267599_G1, chr8:4352996..4355093, Cluster 28

<400> 4594
acgcgcgttc gtgccacgag ctggttcgtc gaaaggggcg tgcgttggtt gctacactgt 60

gtcaaaataa ttcgaacgga cttcaaagaa ggctctcgtg cctgaaagta aggaaacaat 120

tcgaaataat tccaaagtac ctgctcttga ctcttgtcat tgttttccta tatactattc 180

ctcgcccttc ctcactttac ttgtataact atatatagtt cacaattaac acaccaccat 240

catgcttcca aaaagaaaaa aaaagagggg caaagttcga acaggcctcc acattgcttc 300

caagttaacc aacaccactt ttttttttt ttcctaatac agctgaaaca atgatttcat 360

gatcagtcag cgagagttcg ttggcatgga caattaatta aatggcacga ttgtatcact 420

gttcagagag ccgattcatg cattatttcg atgctgcttt caccaaccct tatgcgggtg 480

gtggccagat ttcgagcaca tccttcgtat ggaatatgcc ggtacggtga tttgcaggca 540

agaatcagtt aaaaaaatgt tttaggaggc gcaaaagtgt gcgtacttgt aattaccacg 600

cgtcgtcgcc cagctgggta actttagtta atgttactgt ctttaggttt tgtttttgtt 660

aatcgatgat tgatgtttac ttttgtgatg cgtgcctaga atgaagatcc ctaagctata 720

tatatatata tatataacct tgtagttcca atttatcatt agaatcagcg agtacttaaa 780

tgaacccccc taattagcat agaaggctca aaggttagcc taacaacaac ggattattag 840

gcgtaacaaa ttagaggcta tgatgatgcc agttgcactt agctgatcgt ggaagggaga 900

ccgctccttt attgactgct ggagactacc cttggcttcc aagagatgat gactgactgc 960

tgtttacaac agctgaagcc aaggtcagat tttcagaggt ccttttttgtc tctacgctct 1020

tctagaagat taacctcggt ttacgtaatg taatctgacg cgtgatgaat gaagcagcaa 1080

cataaaacgg cgccattctt ttctctagag agaagtatat atgttgcctt agggtccctt 1140

tagttcagtc atgtactgtc acaagcctag agtcctataa ccaaatagat acaagaggca 1200

aatagattct caaaaatccg ttgtatttta aagatctgaa gctaattcaa acaaacccta 1260

atgtagcaag taacaataga aaacttttct taggcgcatt gcatttttct cctaagttct 1320

tgacagccgc attcgataat ttctagagtt ttgctgcatt caataatttg catgctagtc 1380

cacctactct tttggaacat gtgagttcag tagaattatg gctgcagcag ttgcgaggaa 1440

caatatttgc aataaatcct tttgagtcag gaagacaagt gggctaatca tatcttataa 1500

tcataattag taacatcaca gctaagtagc tagctagcta ctccatacaa acccaataaa 1560

tccaaaattt ctacaaccct aaattcctgg atgaaacctt atttaggtgc accacagctc 1620

aaagggctag tctatataga agtatatata tagacatatc agcgtagcaa ctacatgcat 1680

gcatgctgca tgcatgtgtc ctgactatcg taactaacct gcgtctgctt ccgtctggct 1740

gggtcggtct tttcttttta cctgctccac cggcaactaa tgagcattat tgggcatatg 1800

gatcgagtct gggtgaccac gctcttgacg tctgatgtgg gcgtcgatca taactaacct 1860

aaagggtcat gcagtcacct agacctagct tattagccag ttaaagttat actatgttgt 1920

taatacttgc atcatgcacg tttcccatat attttattat cttatattag gtccatctta 1980

tcttcttcag ctcttcctcc taatctgatc ttccccattg cgcgttcgcg tgagagaatc 2040

actctctgca aacaatggct aaaagaccag cttcatctct cgtttttta acaacata 2098

<210> 4595
<211> 1774
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_281441_G1, chr8:95782536..95784309, Cluster 28

<400> 4595
acacctctca gctcctcgga tatgtcaaat gctaaggcaa cccctagcac aagcatataa 60

attcaaaaca tctaaacgta cccaagcaca agcctatgac ataaagctca cttttagaaa 120

catttggata tcgatttcat atttttagg ccatataaaa tttttaattt aatatatttt 180

taaaaaggaa aagggagaga aaaacttagg ggcttacatg tgacacatcc tgatttgcta 240

acgactcatt agtcatcaac aggtggagct acgggtcaat gatcattgat aggtttgtcc 300

cttgtcaact atcaactttg ataaatcaat ggtcaacatg gattaggcct agtggacaag 360

gtcatgggtc agatatggat ctttgccatg tagtaagctc aaggtgcctc taggctatgc 420

ctatgggata tgttcacgac gaactagggc actgtcacac gtgaatgcat gactcggtcc 480

atagttgact aggtctatgt agttattatc tttctcctag ttcatgctac acttggtgcc 540

agagaaccaa aaataggaga ggtgcacaca tgctctcctc cgccaggtgc ttgacatggg 600

tagtagtggg ctcactcatg aggaggtcac ataacagggc tactatgggg ctcctatggc 660

cccctaggtc ttctagggcc tccttagtct caccagctcc ctagttatag tggcatgacc 720

ctttaagctg tgtgttggag tatttgtgag gccaataatg tcgattgcaa ccaaatttgg 780

tgtggatgct ttgccaacta tgttgtgggc atcttataat gtgggtatat gcctatgtag 840

gtctaaaagg gttcaatacc agtggtcttg gtatcctaag cacacaatag agtctactct 900

atggttaagg attgagtatg gaaactcatg gcattagtgg ccatggcagt gcaacaagtt 960

gtgcaacaaa gttgctaggg ctcttcatat ctcagtgatg gtctagatag gttcaagcgg 1020

cctaaggtaa acgactttta tgtagggtgg aaggacccta ataataactt cttgggaaga 1080

gggtttagag cctagtgggt gtgtagtcat gtgtgcaagg gccctagggt gaccatagat 1140

caaccttggg gctcctcaat cgacaccaag caggtatcca tggatgtgtc cactttggtg 1200

aaattgcgga aggtgtatgt ggctaatgag tatgcggttg tgtgcactat ggtacaatga 1260

tcattgttgg tccctcctcg acgagcaagg tagctagtgt cgatgagagc tatcttggca 1320

taatagtggc atgtcgcgcg atggtgtgaa ggttgtaggt ttgggcgccc taagaaccct 1380

cttagctaca ggtaggtcct agtaacattc catggcgaga tatagcctac catggtaatt 1440

tagaggcctc ctccaaccta acttagctag aacctggatc attgtggcca tgttttggtc 1500

aaggtggcat gcatgcacat gtgcgagcat cattctaggg tgctaggggc cattatggga 1560

gttgctagca ttagttttat gatgtgtgtg tgttataccc agtgctcact aaggccaggc 1620

attggatacc ctcaagttga gagaacatag tgtctggcat ggtagaatct cactataggc 1680

ttgatggggg taagataccg gtgcgatgat gagatgggtc cgtggaaaat agatgtaggt 1740

ccgtgctggg caattacatc aaagtattgt ttca 1774

<210> 4596
<211> 1576
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284623_G1, chr8:112702528..112704103, Cluster 28

<400> 4596
attgttctga tatccaccac gatattacgg aatggtgtgc aattgatgtg tccctccact 60

tgtagtggct taaggtgaat tatggagtct tttagctcct gcaatacaac tatctaaggc 120

gcaaaatcaa catgggttat ttttgcatta gttcccaaga agtagttgtc gggcggcaaa 180

tgaaccacat agacatctat tctatttgga gaagactcat aatcaatcaa ctactgttct 240

ttatcacaat ttagaagttg tgggaggagt aggggcatca acgcgtacca aaacactcaa 300

aggaacatct gttgctactg caacatggaa atctagcttg aacaaattat gaaaaccgac 360

cacgccaacc aaatccggcc taggctagtt ctagaaatca gagataggtt ggttttcctg 420

tctcactcat tttctctatt cttcattgtt tgagggaaaa tcaatgcatc tcattgaaga 480

tccctttca catcttgtat tagatttccc ttttaattta ttgcattagg cttgatgacg 540

cttgtgttgc tttttcttgg tctagccaga aggtcgccac tttggctggc aatatctaga 600

gtctcttttg ctacctacag cctcatgata attatcacta acacccatgg aatcatgtca 660

tatcccaaaa aaaaaatcta atttgggtta tacatacaga acacttaata aattaagtga 720

ctttgacatt tgtacaaaac tttccaatat tagtttaaag tttcttttga ttagttacga 780

taaactaatt cttgtttaat ttttttctaa attagaccag tgaacttttg gtagtgtgat 840

gtttgctttt gattgtctaa tatgtcgagt gtgcaaagtt ccaaaacatg ttcgtaacaa 900

cgatcttctc tctctacttg tttatgaatt gaatctaatg tccttgattt tttatctttt 960

tcttggagct tccaaatatc tttcctttgc attacaaatt ttaatcattc atcaacctat 1020

ctctaaaagc ttatcagaaa ttttttagtc tttttggtat cttattcttt taccactgag 1080

cgtattctaa tttttgagat atagtcaaat atttttttca tgaactctag ctagatattt 1140

tctgtgagtt tctcgtgttc tcaaatttat ttggaatttt ttattaattt ttagagcttc 1200

tagagcattt ttcgtatcct cgtatgctaa atctaaaatt tctagaatta ttttaattct 1260

gaaatttaga aaatcttaat ttagatagtc cttattgtaa tctaacttaa ccaaaaaacc 1320

atcatatata tgaccaaaat gaccagctca atgagcttgt tctagatctg atatcctttt 1380

ctatgagatt caaacttagt cgtcgtcgac gaccaaaata gcccttcatc ttctttagct 1440

ccgccagaag attgttcaag atctatttat atttagcttc attgaaaggt atcatcacct 1500

tatttttctc attatttttc tcatgagctt cgtagcattg tttctagata tcattctgac 1560

cttcgcgtca tttata 1576

<210> 4597
<211> 1443
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_289201_G1, chr8:138651641..138653083, Cluster 28

<400> 4597
ataatatttt aaattgatac tgaagttagt attaataccg attttaaaac aaatgtccgt 60

tctccggctg tgaaaaaaat aaagggagaa aaaaaagcat gcgatgcatt gattggttct 120

gctggtgcct gcagcgtaca ataatgcgat tcagttggtg ttatctctgc acgatgcgca 180

agcgactatg tctcacttac ttttgatcca acacaacact tgatccagat tgcagagcag 240

gcatccatag ctgcagcgat gcaaattgca atacgttcat attcttttac cgtcctcctc 300

gactgaattt catatacttt catatgcttt catgtttata taggagtgag tatgcattat 360

gcatgcaagg ctgtgaaagt ttgtatggat actgtgcgat cgggggggaaa acaaacatgg 420

ttttctaact agcaatctgt agtagtgcat tctgaggccg gccgggtgcc atgcctatgc 480

ttccttgctt ggccgctcct ccgtctccat ctgaaaccaa tgatctgagc atcttggatc 540

tgcagctagt aaagtcctat acgtcactgt gctggactac acaatttgtt tgtctgtgtt 600

tgtgggggga agagagggag aggccacaac taagaggagc ggtaatgatg acatataatc 660

tgctgaaaac acaaggcatc atgatcaata gcaacctgga agtagcggta ggcaatcaat 720

cactcactga ggaaccagct agaactgccg atcgattaaa gtgacgggtt taattcgtct 780

ctctctgtga ttaccaatat tcgtccgttg tttctcgttc ttcgtcatgc tgtcctgatt 840

gatgttagtg atttgctgtg agattcaagg ccggccattg ctagctcagg gtttgtcagg 900

caggcaaatg gacacctggc acatgagctt acctcatgca tgttcagatc aaggctagtg 960

atcgggtcgt tctcactggc ctatctctgc ctgtcttgat ttaatcatga tgcttaccaa 1020

attaatgtgc taaatgaccc ggccgggacc tcgcggtgat gatgcttctt cacatgcaag 1080

cttttgtggc tttcagcagt gaccacttgt ttaaattagc cggtttgttt ctgggtcctt 1140

tttagtgtca acgcatgcac ttggcaatcc tactgatgat taagcgatga tcatgccata 1200

tttaagacaa cattctgccc ataaatatat aacaaatgag tcagacaaat cagtacttta 1260

attgtttgaa aatactacca ctcttgagtc ttggctgttt tagggaaaaa aacattggat 1320

gcacatgttg cccatgggct atgcaaggat cgtgagcact agtgaggttc tcggtaggaa 1380

atataatagt actgagcacc atatgcctgg tcgcctggag atgtcggacc gtccgggcca 1440

agt 1443

<210> 4598
<211> 1557
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293498_G1, chr8:160407257..160408813, Cluster 28

<400> 4598

gttagccaag aaccaaactg actctaagaa tgccctcaaa ctcaatctag attcttcata 60

taacatcctt tggctgacgc tttttacgtc tttcagcctg acgcaccagc tacatatttg 120

caaacccctc gtatttcagc cgaaggtcgt tagacgaaag acttggatta aatttataca 180

tatattgtgt acgaaagtag tgcatgtaat tgattaatag ttccctaacc tctgacctcg 240

agtttggccg catcctctcg ccaggctcgg ctgtctacac tacgtactgt gatgtgtgat 300

gttactgtca tgcatgctgc tccgcatgag tctcaactct caagccatgc ctgctgcccg 360

ctgcctggta gtagctgaca ctgacacgaa acacaagtgc aggccccgac gcatcaggga 420

tcgggaaaat ggacatcgat gcaggaaaga aagagaggga gaaggctgaa aagggctact 480

gctaaaggag aaagaagttc tgcttcccaa agaaggctac tactgtcaaa ggagaaagaa 540

gttctgcttt ccaaagaaag aatatcactt tcactggttg acttactgtt cgtcgtccat 600

acctcctccg tttcgtttcc actactctcc catagctact acacgaggca ctatattata 660

tgccatcact attcattacc ctagacgatg attattcacc ttgaaataac gtaacagatc 720

tttattaatt gttaagtcat tgtatggtgg ataatcatca actattgtaa cgaattatat 780

agagagatgg tgtaaaagga ccttttgaaa tttgcgtgtc aagtgtgaac ctcttaattc 840

tagggggcgt ttttcttctt gtcaaacgga tcgggcagtt ggactccccc ccccccccc 900

ccactaaaaa aaatatctat caactcaaca gtttaatctt caaatcataa atattggggt 960

actaagaagg cggccatttt atattatgtc tagtcctaac tatatttttg ttaagaattg 1020

ctcttttatc atatatctag agttctagac ataatgcaat atacaataaa aaactgtaat 1080

atccagaaaa ctaaaacata ttataattta gaatggatga agtagtattt agtccaaaaa 1140

taaaaatggt ttggatcatt tatcaaatgg atatcatttg aaaaaaaatg atgatagttt 1200

aatatttttt acttaaaata ggtacgttat gatttataga gaatgattaa gttttatttt 1260

ttaaaaaaaa tatatataca gaggaaaacc acgtctgaaa ccacaaaatg cccaatttgt 1320

ctatttttat taactccatg gtcaaaagta tctttttcg tttggttgcc aaatcgaact 1380

ctcgtgtagt tcagtggacg aataaaagtt tttatgaaaa aaaaacactt tacatttttg 1440

ccaaaaactt ataataggaa attagaaact gaacgtagca ttttcttctt gacttcacac 1500

taatccttgc attttctttg aattatttca agatttactg atattctttt ttttata 1557

<210> 4599
<211> 1617
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293619_G1, chr8:161167294..161168910, Cluster 28

<400> 4599
ctcaacagta tatctaagta gtagtccacc atccattagt caactcgtgc ttgagtacta 60

gtcgcaccac acccttaggg atcaagatgt ggatcttgta taccaccacc acacccgaga 120

gcaacaagta tagataaccc attagttatt cacctttatt tgaggactac cagtgatttg 180

ctagttcaag agctctatta agtgtcactt gagtagtgtt tttggccaag agaaacctta 240

gagcatcata tggtttacac attggttcat gaggactttg gctcagccat gagtcatagt 300

ggtatcaccc ttatacctca tagagtatgt ctcctagagg aaattgttgt tgccagagga 360

gagcagattc atcccgcctt gacttacctg ctaagctcga cagatctttt gggatgatat 420

tggttgtatg ttgaggtcta ggttagatag tttatgcctc actttggact tagcttaacc 480

atgagtactt caagttcact ttctaagcca gtataaacaa actctatgcc aacactatta 540

gagagagact tgggtttata gagtaccact tgtattcata ccttatgcta tgggactatg 600

gatccaccca aatgccccca cgataaagag ctcctaggga tagcccacat ggtaggttgc 660

ttcatgccac tgttaagaga cgactctaga tgcgcctcta atgaacttat acttgtgcat 720

tgtcttctga acaacatcat gtggaggacc ctgcttccaa ggtgtgaata caaggagtag 780

tgactaacct ccaataatgg cttcttagtg ccctcatgtc tcaatcccgg tttggcattc 840

tagatgtgat catctcagag atggaggaca caatagcaga gggtactagg tcacatagct 900

agctttccta tccccattgg atcttctagt tgcttatgag ggagtcagat agttagagca 960

cttaccctat tagagagttg gatgagtcac ctacataact caccatctat ggtattgcat 1020

ctatagtagg cgaatgctaa ggggctagag tgttgagata ggtacatcga gaaacacgtc 1080

tagtagacac gaataccatt gatgagtagg atgatgccat catggctatc gagcaatcaa 1140

agcttgtagg acttttacg ttgtagtaga acatgactgg cagttctaac aaggactatt 1200

ggctagttcc acaaatgcta ccgagatgtc atgactcaaa ggacaaatga cccaacaaag 1260

gacgacagat caagcttagt tgtctcttag ttggcaacac caaccaccta tgctctaatt 1320

tagattttag caatactttt agacataacg acaatgtcag gccaaggcct aggagcagta 1380

gagtgagtgg atgctcacta tgtttgagta aattcggcaa ctctaggatc aaattccagc 1440

agtagctcct agctacttca ggcaatagca ctgcttcgtt ggtggtgcca cgatgggtgc 1500

ctgcaccggc acccctcccc tcaatcaacc aactacaatc tcgaatcgaa cctaacaaat 1560

tccaaattta ccaaatcgaa aatccatgta actcaatcga tgaattgaca gtctatt 1617

<210> 4600
<211> 2579
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294090_G1, chr8:163294540..163297118, Cluster 28

<400> 4600
gttttctttt ggtgttatgc caaaattatc tcataggatt tcagtgagtt tgtccatggt 60

taatgtagtc ttagtttctt caagttttga cttgtacata ttgttccact ctatgtcttc 120

cagttctatc tcatttgccc ttctagcact aaagggttgt tcttcttcct tgggacgtat 180

aaaatacaat gtagagggag ttccttgcct tgttatggtt agtgttgttt gcaatgatat 240

ccctctagaa taaagattgt ctaagtatca tatacaaagc aatcttccat gttaccgccc 300

attagataga caactatagt ggcttggctt taaaatgaat atcaactgaa ggaggcttcg 360

tcagaggaat caacacttat tttgtccact ataagatcca agggtaattc ctatggagga 420

gtactcaacc tattttacca cttaattaat catgttatcc ataaagttga gaagagcctg 480

ttgctggtga atcataacgt gaactatgat gtagtggatc tcatgtatca aaccttcgat 540

ctgttggtca aagggcatag ttaagttgat gccaccaaga actccttcta atgggtaacc 600

attgagcctt atggccttct tgctagtgca ctcaaaatat gcaatgaact tggttttaaa 660

ctcatcaata gtttcgtcat aaaccttctt atgaggctca ttgaggtttt cataggtggc 720

tagatctcta gctttcttcg gtgggctctt ggagaaattg ctagacatgg tcgagctgat 780

tgatgtcttg tgttgtcgca ttggacatgc caaaatcatg ttgtcatgga aaatcagttg 840

atatgtaatc gttgaccatt aagttaagag ccaaattgat gttatgatcc tcactttaag 900

atgcaagtct aattctagcg cactccttca taattgtgag tgtgccacct agcttaacca 960

agtagccatg aaggatgtgg tgatgaatct ttgaatcccc ctacaaacaa gacaaaacaa 1020

aatatcaaat atatagcctg ttgatcgagt gtatcattaa ttaacatgaa gtagaaatcg 1080

actgactaaa gccggttgtt gtgagtcgac acattgtatt gaatggcgta aaagcctatt 1140

ttatacaacc tcatagaaat aaactttgct ttatctaaga cccaaagtag gccaaacgca 1200

tataactgaa caacagaaac taagtaagac cgaagcctaa aatcgataat tcaagctcct 1260

agaacattta gatctaactt aataaaagag tcaattacaa cactagatca tccacttgtt 1320

ctcgactaga ctaaatcata tagatattaa gcaaacttct aataaagaag tcaattagaa 1380

catattttct ctattagaca taataaaata aggtatatga gttataaaag agcaaatgac 1440

cttacttagc atggattaca acagaacatc gtgattatga ttgacgagcc tatttatata 1500

cgtacaacat aagataaata tttaaatatg caacaaatca agaaataata aggcataaaa 1560

atacatctac tcaaatctaa agcatgctga taactagcaa catctaccat cgaataaaag 1620

catgaaaata gatattgcaa taacaaataa gagttgatgg tagccctgac ccaattgaca 1680

tcacgtttga gctcataaca cttacttgga ataaaccatt aagatagggg tagtgatatg 1740

ccaaaagatg atgaaagagc attgtctgta ggatgttttt cctctctctt attgatggca 1800

taagtttaca tatacatatt tatagttcgg agttttgaaa ttctaagaaa tatgtaacca 1860

actaaaacta ccatttacaa aatatttcct aagatatatg gcatcaatca tacttagatc 1920

agattttata ccgagtacaa tcctttctcc ccttttggct cactgatccg ggatatcttg 1980

gatctagcac caacactttc ttacatttca accatcattt tagaagtcaa ccaaaagtgc 2040

tatttttgga gtaataagga ttataagtgg ctatcacccc ttctgtactg ttacaacctt 2100

aaatttcaga ggatgtatta aactcaccaa ctataaccac acgtagacca actactaatc 2160

taatataggc taataatgga catgagtatt ggactcatca tctagtttta caattttact 2220

atacaacctt cttaaagcta cgtaacacaa ctctaggctt taagtcttaa aaactatatc 2280

caaattatta gacattttat gtttcttaag tcttaaaaac tatatccaaa ttattagaca 2340

ttttatgttt ctttgtagaa tatattgtag atttatgaac tcgatactac attatatgat 2400

tatatcctac cttaatcatt ggtaccaaga acaagtggat gtgaatcatg gtaaagattt 2460

aattctggtt atgttatctt ggcatcatgt tcattggatc atgaatactt tttacctgat 2520

gcaaatttga gtttttggaa atttattatt atccatccac tgtgttaata aatttcttt 2579

<210> 4601
<211> 1673
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295327_G1, chr8:169067487..169069159, Cluster 28

<400> 4601
tgagcccgcc caggccgtgc tgctgcgtga atccgtgacc gtgatggatg tagtgcaatc 60

tgcaatggta gcacggcgcc gacgcgttat gctatcatta cttacctccc gtcctcagat 120

tcctcccagc agtccccagt tctttgatac gtagaatctg gatgctcgat tgcgtcagtt 180

cattcccctc tgatctgagg tgaggttctt gatcgagtgt aaaaataaaa taaaaaatga 240

agcctgacca gacagttcgg tccctactat tactgcttca ccttacaatt tgtctgcctc 300

caaaccagca cggtccccaa cgatgggatc agctccctcc tcctgaacct gaagcctgat 360

ccaatttctc tcacaccagt ctctttccag actgatgtta gcgactactg tacagtgttt 420

ttttttagct tgcaaaggtg gcaatctcgg ggaagatgtg gcaaattgag tgacgagttg 480

agaccgtcac caacgcctga gcctcgagga agcacggcgt ggcggcatgc tgtgccattc 540

aaacaaagag cttatggttc catgttccag cttgcaacaa gttcctacgg caaaactcag 600

ggttagctaa tgccagtagc agtagttggg ccggaacaga ttccctgaaa cctgcaacgg 660

cccacttttc aggtggtttg ggcatttggg ctctcttcaa gtctggacga actatcacat 720

cacatcagtt gaggaactag tacaactacc ttctcaactc tggctcagtg gtcagtggcg 780

gagagtcgga gacagtgggg caagacccat acctacaatt tctatagact ttttttttt 840

gcaatcgatc tgcacccttt ttttgtctaa acaaatttca ttcgcatgga ttgttgcaca 900

gagggaccat ttcccttaat tttttgtacg ccatctcaaa ttttaatacg aggataacgc 960

cgatcaattg ctcgctatac aattcacgta agttttccgt ggtgaatggc agctacttct 1020

gtaatatatc tacctaacat atgaatccgg cttgtgaagc tttaaaagct tacgacatat 1080

gaatccggca ggcggcagct acttcatatg ttttggttcc cttgcctttt tgcaatcgat 1140

ctgcaccctt ttttttgtct aaacaaattt cattcgcatg gattgttgca cagagggacc 1200

atttccctta atttgttgta cgccatctca aattttaata cgaggataac gccggtcaat 1260

tgctcgctat acaattcacg taagttttcc gtggtgaatg gcagctactt ctgtaatata 1320

tctacctaac atatgaatcc ggcttgtgaa gctttaaaag cttacgacat atgaatccgg 1380

caggcggcag ctacttcata tgttttggtt cccttgcctt ttggtaacga agttataaag 1440

ccgaagtcga agctaaaagg ggataattct tcaaacaacg cttataatca tcttttatta 1500

tcacccccta gttccctacc aatttttttg atggaatttc agcaaatcgt cggatatatt 1560

gaagtgcttt gtcatgttcc atcgcatccc atgtatcacg tcttctcccg taaagaggtg 1620

tgcaagcaac tgattgttgg tataacttag ttggagtgtg ccatttatac atg 1673

<210> 4602
<211> 1566
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295866_G1, chr8:171634029..171635594, Cluster 28

<400> 4602
ttaccgtttc tatagatttt aatgaaattt gtgatatttt gattttgggt aaatttaagt 60

ctttatatat ttagcacatg taaaaagcta ttgtaataat agatattcgg tactatgact 120

tcagtagttt cgcttggaag ctggtaatta tgaaagtgtg cttgtaaatt ccagattagg 180

aagttgcttt ggcgacgact ttagctagga caggggtgca acgtgcgcac gtgcgtggca 240

gctgagagat gcctcgtcag tgtcaaccat atacaatggc taagccgtac tagtggtagg 300

tttcgttact ttgacaatag cagtagtaag gtatgctatt gtacacaccc ttccaaaaca 360

cccgaagtaa attgttaaaa ggacatcgtt cggtttgaac tgtacatttg tttagagtat 420

atctatatgt tgaaccataa atttttgtt gattttcgaa gtcacaaaca ttctaattgt 480

attagtccct ttttttctt cgaagttctc gtgcagcttg acaacatctt aatttacttc 540

gtttttgcga gtgaaatata tatatgccaa tttgattttt atatcgtttt gcacaccgtt 600

tcacaaaaga actaacttga gccttgagct acttgggacc ccaagatggg cagccaatga 660

tgagaccaaa caccatgaaa agcatgcaga tttgtttaga cctggattta gcctagttaa 720

gctacatgat tagggtgaag tagccataat ctgcaagttg atagttgcag ccaagtaaat 780

taattataga atatttttta taataacttt atttagagat gttgatatta atactactta 840

tactacttat attaaattta gatgaccttg agctagttta atttttacc gagcgtacca 900

cttcatccaa gaaagctaca atatcagcct attcgctgct taaagttaat attttaaaat 960

aaatttactg tggaaatgaa ccatatactt tattaatatt ggaatacgtt gctaattgga 1020

atataaattg gcgcacggat cagaaggaac cgatgaattt gcctccctct gtccgtgacg 1080

tacgctgctt aaactaatag tccaccgcct tcactttgac tgcctgcacc ctgctaccct 1140

gcagcccctt gaccgagaca ggattctctg tggccaactc ggcctctcag gtccaccgct 1200

ctgacaacta tgtgctttct gttcctcgac tgatttctag ccttggacta aaactatata 1260

aaaactacat attctctatt cgctctgaca actatgcgct ttctatattc tctacatttt 1320

tttaccgact ctactgatct aaaacgagaa ttactgccga gcgtacagcc tactcacctc 1380

gtcgaagaaa gctacaatta taatttaaac aagattgttt taatgttaat tatccaattc 1440

tatatgaagt acgaaattat tgatgtgagt gcgtcactaa atcgaaatcg aatgcttgcc 1500

ggactgctct tttttctcga atccaaaagg agctgcttct gaagtttatt ttcatccaaa 1560

aattga 1566

<210> 4603
<211> 2276
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_297578_G1, chr9:3478745..3481020, Cluster 28

<400> 4603
ttgtttctag ctttatgttg agttagaaac atcataaatt ttgaattgtg gtacaaggaa 60

catatatgta ctcatgatat tatcaccttc atccttgtga ctagcagttg aacactgcgg 120

aaattctaat cattgaggct gcattctcag actaaacatc tctttttgct tttagtctgt 180

cagtgacctg ctacctttct catcgtcttt tcctttgaga ccactttgtg aagtttacga 240

cctctctttc gagaatctct ttgctcaaaa taagggaaaa gcttaagatg aacggaaaga 300

aatccctgta cagccagaag cccataatgt tcgcagtatt gatgtactat caacattcag 360

tattgcttta tttttattat atctacagtt aacacttgca tgcctattat tttattgtag 420

catcaaatcc ggcaatgtcc caagcccatg taattattgt cgtggactgg cgtatggatg 480

cataaagtat caaaaagaaa agaattattg ataagatcgg gggcgtaggc gaagttcggg 540

ttgtagaagt tacggtttag gggccctcaa tagagcaagg ggctccaatg gtgcttgttt 600

ggtccctggc tctatcgaat agcctgagct attcatatat gcaatcttaa caaaagcgat 660

aaaattttat tgtgtcgaag ttaggtacag aaaccaacac acgtatagtt tagatatgtt 720

cgggttgtag tgtgtgtaat actatatatc ctctaagtat tcattgataa acacaaaggt 780

actcaagaat taaatatgtg ccatgatctc ttagctcccc ttttgtcttt ttgtctcgga 840

cgatgcaaca ggggcgttgg acaccgatga cagcaattag ccttgacctt tcttataaca 900

tgtagccttg atgtgaaacc atattttgta atatatataa tatttttct tttgcaactc 960

tgctcttttt gatgtgttag ctctagctcc tcaacgtcac aagaggtttg ctttgttcat 1020

ctcatggtcc ctggcccctt ggcatgaggt agctaaattc ggggatatta gcacaagaag 1080

gtccccaaca cagttttgag ctcccgaacg acctaaggcc taggagccat gaatgatgta 1140

ggtttcgagg cctttggtca aaatagggcc tccgatgggg tcttcttcct tagccccaaa 1200

tttggtctag gagccaaagg agcaacacca cgagtcatag ctaggacctt agtagtgcaa 1260

gggccctagg cgtaacttgt agccgccccc ttaggattcg tgtatgttac gatttagggg 1320

ccctcaatag agcaaggggc tccaatggtg cttgtttggt ccctagggcc tcggggggat 1380

caagatcgca aggggagcca ctggctctat cgaatagcct gagctattca tgtatgcaat 1440

cttaacaaaa gcgataaaat ttacctgttg ggagtcatcc tcatgctata cttatatatg 1500

cttttgactt ataaaaattt tctttgggac ctaggtaatg ccttaggaag gaggtttcta 1560

gtacgaggtc ctgactaaat gatgacacaa aggaaggcca aactaggcta gaaaaattga 1620

cccatcaggc agagtggaac aatatcaggg cttagccctt gctaggggtg ctgcttacag 1680

acatctttgt caaaccattt acacagaagc atgctattag attccaacct gtctaggctt 1740

attgtaggat gcatgaatgt gtagaggttg aactccctaa aggaataaca gaaaaactta 1800

aggcaaattt tcataaccaa agagtacttg gcccatgagt agttggtagc atgccatctc 1860

ttgcctttgg ggctcatgtg ccaacaccac aaagtgccca gaggaggtgc tccccaaaga 1920

taggcctctt tggatcggag tggttcctac tccaatgctc taggagttcc caaatagaag 1980

gctccaggaa actaagtgtt tctaccatta taagtgtcct aaggcatggg gaggggata 2040

ggcacttcaa tttatcatga gtgccttagg gcacgtgagg gccctgagga cttagaccat 2100

ccttgcggac taagcctagg ggcatggggg gttaggtaaa acatttagtt tagggtacct 2160

tgaggcacca gggcccctag gtcttaaact ttccttgtgg gttagttctt ataagcacga 2220

gagtgccctg aacttagaag tgccctaagg tcctgggtct tgggaccctc agttgt 2276

<210> 4604
<211> 2308
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_297768_G1, chr9:4300609..4302916, Cluster 28

<400> 4604
ctaacttaga attctggtgg atacttcttc catcatagtg gaactctcca tctttagata 60

caacttccct atagttgact aggttagttt cctttcccat ggaaaaatag acaccttatt 120

ctgtgtcttc ctagtagtcc ttgggatgac acatctcata ccgggtagtc atccctattg 180

gtcacctata aagattccca tgaaaaacca gaacatggca acacaattaa atcaacaaca 240

ccttctccac attagctcac tcacgcagag atggtgaagc atagtgataa gattaaatga 300

aaacaaatgt tatgtaaggc aagacaagtt atttgagcta aagaactaca gattatatct 360

cactatttca ttttaccgtc tccataaata caagcttatt acaatatacc tttgaagcac 420

acaaagaaag ttctaaggtt gaaccattca gatagcttca gagacagtgt gttgaacgtg 480

aggaaagcac atggagcatt aagaaaaagg tgtccatttg catgggacta tacatctatt 540

tataggggtt atcggtgtac aacttcgtac ctattaggga cattgtcata ttttcctcta 600

caaaatgtgt tgtgcaagtt tcctcaatca tacttcgctc ctgcaacatc aacggtggca 660

tttgctcctt ctagaatgct ttgtccgaac tatggtgacg aagctgttac ctccttgatg 720

atgaagttgt tactttgttt aggtaacaga gttctcctag atgaagctta cataactaat 780

cctgaaacaa atgtggaaat gaataatact cattagtttg aggacatttg gctagaggca 840

ctcccccaac agtccctacg gggaatccta aggatcttgg tccatcaagc ccccaagctc 900

ttcatgattg aagtttgaag tcttcttgaa tatctgagtt cttgtcgagt agaatcaaac 960

aacattcaag tacccttctc aagagaaacc atgagaagtg ttcttcaaat ctttcttcaa 1020

atggtgtgca ctttttttgt aaagcgcatc tagtggggtg cagcccacaa gcctcgtgtt 1080

gtttagcata aagagcttgt gggttctttt tgcaatcttc taaccttaat aagtccattc 1140

aaaaacattg aatccgtcca ttgagaacat atgtcctata gtacctagcc taaaatcgag 1200

tactgagtat atgatcttga ttattagggt cttagacatc cttaggggtg ttgaagagta 1260

aatgtctctt gacaacgatc aaatactgct tgtcattgag tggtttgaca tatttaaatc 1320

acataacaac aacggttaaa acctttaatc atgtctgcta tgatggtaga gtaccacatg 1380

gcgatcttac aagcccatca atgataacta tattccaaaa acttactcaa ctaatcttga 1440

ttgtaacaat atccatgatg cataagccct caaacataga tggagtacct aaactgattg 1500

caatattatc ttggtagagt acttatttgc tagtgtaact aataagcaat aaagtcaagt 1560

atttttcgct tgtgttgatt gtgaactgac caccacatac tcatcttcat gccaataaca 1620

aacccctcaa ttagatgcgt ggtaaaagat atatccatta ggttttgtaa tggtaaaaat 1680

tctatcgttg gggttgtaat ggtagactcc atagaaaata cacccttgat tccttttatg 1740

aatagataat ctcatggtaa ataatattca ccttccatcc ttgcctttta gtcttttgta 1800

cccctctccc tcttgtgtgc acatccttcg tgtcaccaag ccctcttgtg actcccttta 1860

ctgaatgaga gtgaaagtcc atgcatacat ccacatgatg ttaaagaagg catggcaaca 1920

taaagtacaa gatgatgaag atgggagaat ggcataacaa atgaggtcac ctaacccctt 1980

cattgtctag gagtccttga ggatgaagta atcatatatg cttgccctag tatctgatgg 2040

ggtacttcgg gagaaagcca tcggagagtg gaaggagcat gctaaccata tcttccattc 2100

tcctatgtcg atggagatag ttgtttgtac gtacctttc gagtgggctt ttcgggctac 2160

ctgcctcaaa ttttcttaga ggcttactac attattactt gatcaccctt gaccatctca 2220

accccaactc tatcgtccct ctcaatcttt gtccatttct ataaagtttt ccttagagaa 2280

cctctaaact tttattcttc aattatct 2308

<210> 4605
<211> 1656
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_298665_G1, chr9:7775580..7777235, Cluster 28

<400> 4605
ctctctttaa taatttttt catgtcatta tacttccttg tatggtagca tatttaataa 60

ggatgaaaca cagatgaaat ctccactggg aatagcctaa tgataacaga ccaagcaaga 120

atggcacacc aagcaaaaag cggaaccatt aatgttgatt ccatatagaa gggcagcact 180

cgacactgcc tcagtctcca ttggcacata gatgcacacc tttacttaaa caagcaagtc 240

aaaaccgatt tcattgtatc tgttaatggt gcttaaacca aacaaaaaac aaatcgattt 300

gcatatcatt gcaattaagt tgcattacaa aaaattgaac taaacgctat cctgatacaa 360

ggtataggat tagttgatgc aacttatcaa attgattgga tatgttagga agatagattt 420

tccaaaatag gcatgggatg tctgtaattt taattgattt aactagcatg agcatgagat 480

gaataattga attttaccat gttatgatta gatcgatgac aatcatatca tacatttatg 540

atatgataat ggttttacat catatataat aagtcaattt ggatcatgat catgtgttgc 600

aatagaaaaa atatctaacc gccttaacat aggctgagtg actaacaact aaagtcaagg 660

tggatcgaca agcaatactt tatccaatgc agttctgcct ataataaatt caagtttccc 720

ctttaaatat aatggatttg agtcttaata gtgactttgt gaaactgtaa acatctataa 780

cataagtttt tttatctcac ctgtagagtg ttgacatcag agtaatatta taatctagca 840

actcaaacca cttgcagttg aacctataac accaaacaaa tatgaaacaa gaaatatcta 900

gttatagact tactaatttt agctactact ttttttgcaa gtcaaagaca ttttatcaaa 960

ctcactcaaa acctttatgg aaaatcaatg taatattaat gacaacaaat agtgtcaacc 1020

ttttaggtct gacatgctat tggtcataaa gtatgaaagc tttctggaaa agtgcataca 1080

gaaacattta gcttgtcctt tgatttttcc ctactgttac agttacattt agcttgtatc 1140

cttgaactag tcaaagaaat accttatttg aatcagattg ccaatatttt ggcattgtag 1200

gcacttgaga tatgattcgc ccaacgattc aacagtgtgt gaagcttcga gccaccccac 1260

gggccacccc actccatggt gcacatagaa ccgctcttct ccacatagga ggcatccaaa 1320

cgtgttgtga tatgttacaa ccacatgata tatggagaat aagttgaagc acatgccaag 1380

tagtttgggg agggcagaca tggttgttag tgtcatagga agtccataac tccagctacc 1440

accaagaagc attcaaggat cttggtatat aaagttttca aagagctcca cctactagga 1500

ccactactcc taagaggtca ttacactggg ccctacccta actttatgta ggatagaacc 1560

ttgaccctct tggtaacttg atctcaagac aatccaaagg aatgacagcc acaccaccaa 1620

gtccattaag gaccattatg ggaccaatga cactct 1656

<210> 4606
<211> 3090
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_302113_G1, chr9:26622911..26626000, Cluster 28

<400> 4606
tgctcatcat ctgccgtgta cacggattgt gcacgctgaa ctacttacat gtcagattaa 60

taaataacgg gtcgatctag ttaactaact actccggcgt gttaacagtc tcccggatac 120

ttggattccc tggcaaggaa ggaagtctag tacgttggtc agacagacag ctagctgtgg 180

gcaggggtt aggttgtaat taggtcacta cctgctgcct ggaattgggg gttaacatgt 240

aatagtcagt cccttggagg gagtgttagc tcagatgggt ctagcaagca accatataaa 300

gcagaatgat catgtgctca caggccacaa ccatcgtcga tctcactgaa acacatgcat 360

gtacaagaca ataagaagac aactgttctg cagttaacta agtttgttaa tggataacaa 420

agcacatcaa gctgcatata ttattctggc acattcagag gttatggcat accagaatca 480

ggtagcttgt gcctgttttc aggaacaaac acagacacag atgttgagga ctcggaacag 540

tttcctacat ctgactggaa ctgaatccct ctcctctcct gtgctaaaaa caactgttgc 600

tgccagtaag gagtaggacc gacatcgaca tgctccgaaa caaactaata gctgacgaat 660

tgtcaacctc accaccgcaa cagcccttgc ttcatctgca cgcacaagct agcatcagag 720

ttgacttggg catgcatgca cggaaacctg cactcaatca aagacagtta ggcctgcaaa 780

tcaactacaa tgctgaagga cttggtttta tttattttta ccacagcctt attactgaat 840

gaagcgcacc tcgctatcca ctgagagaaa actgtcgcag agcggcacag ttgtgttgtg 900

tgtccgtctg accatcatcg atctcgctgt ccttcagaaa gcacttcaac gtacttactt 960

gggttgagag ggatacataa tcatccaaac gagacctaga aaataatcca aacatagtac 1020

gcaaaatcta agtcgttttg gattcttgcg ttacgcaaaa tctgagccgt tttttggatt 1080

ttttggtttg atatatgcat ggtgatttgt atgaaacatg catggaccaa taatgcaacc 1140

atcatcgtcc ccgcccccgg tttcagtaga ggtggtgatg tcaacagatg catgaaccca 1200

tgcaaccaac aaagcccggc tggccggctc cgcctaacta cctagtacag attatgcgaa 1260

aaaaaactgt cttaatcttt gtaaatacaa aggctagcta cacaagtttc atgccacagc 1320

acttgctagc ttgtcggttt atttctacac caccgtgaca caccgtggag atctggtctg 1380

actgtgcact gcaagttgac catctatctg atcgaagagg aaaaagaact gcatctgccc 1440

ttatatacag tcagatttcg ctcttgtttt ttgcagctat ccattcatta agatccagtt 1500

cttatctaat ccgaatcaaa taatgcatct tgcggtctaa attaccctgt aacccaagat 1560

gtcttctttc gaaaggagaa gggaagcaca tgtaaaccgt gatagtaaca actccctgtt 1620

ttttttttgg gtcatacgga gggagcaata gatttctttg atgacgtgca tgatgacaca 1680

tgtattgaca cacctgatct agcgatctgt ttcccattaa acaagcaaca cgttgatcct 1740

atacatatgt aactgatgat gtcaacgcga aggaccggag cagggaactc ggtctccaac 1800

actcgttgtt gactggccca ttgcatatta ttatcatatc ctcctgatgg cgtctgcaat 1860

taatagtaga acagtgtacc ttccaactgg atgcacatac tattgtttaa tcaagctgtc 1920

cttcaggtaa ttaaacaaca gatcgatgca tatatgcatg acaagcacgc cctgattggg 1980

attcattgtt actttaacga catggcacag atgcgtgtgt atgtagagtg aagcagcagc 2040

ggcgacggat cggaggggag agatctacgt agaaactttg acatgcagag atcgatcaag 2100

ccacaccaaa ttgcaacaaa ctagctacag ctcgcctaac ggtgacatgt ggtggacaat 2160

tggatcgtgt aaagatctgg tccccatttc tttatcagat tctgtttact aactgctacg 2220

atataacatt atataatatg ctcatcaagt tgcagttaac taacatgtct ctccctgttg 2280

gtcttggaag ttctgagaag tcacttctaa aaatacgact acatacggtt ggattacgct 2340

aggttatatt aagagactta ttaagttaat gatgtcctat aatagcgctg cacaactgtt 2400

catcctcttt catattttcc attacttgac ttaaccgttt ggaaatatga tctgtttgaa 2460

tcattctctc tcagaactga ttacaaaatc cagataaatt tcttctttta tgtttctgag 2520

tactaatttt ggctatgatt agaaaccggg aaaaataata ttattcccaa cgacagatgc 2580

atggaccaca aaagcaccca aagatatata ggaaagtgaa agtggtgtat ggtttatcac 2640

aattagaaag ttgttccgcc acattttcaa tactgttgct tcctgtgata cacatcaatt 2700

aatgatgagc tgaaaacgat tgtttcattg atgaacctat ctatatatag ggctgtacaa 2760

gctgtcagta tcgagacttc ctttttctgc agttaatcct tctccgtcga gaactggtta 2820

ttactgccaa cctctcttca caaacgcaga ataactaata acacaaataa ttctacagaa 2880

gaaatctaat gaaacgttca tatcgcatta ttctgcagtt aatcttttct ctgattagca 2940

tagcatagct tgtaggtact aactgtacag ttgtgtgtag gatttgtcat catctgtgag 3000

aaggtttcgg tatatattaa ttagtgtaca atggtacgta tctatagacg caaaggttgc 3060

cacttgctaa cagtaatacg ctgccgtcgt 3090

<210> 4607
<211> 2402
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31177_G1, chr1:191863907..191866308, Cluster 28

<400> 4607
catcggtgtg gtagataata catataatgc tatatacaga gagagagagc cgccgttacc 60

tagcaatagc aacctaatgg ttctgtgagc tactagctcg ttccatgttt tattcagaag 120

caacccttcg aagctaccta gctcccagca gagatgtatg tgctcacagg ctacaacact 180

acaccctgtc aatgcaaaag acgagcaggc atagaataag gcattgcctt gccttgccgg 240

cacgcacggc catgaccaaa atcgtacgcg aaggcgaggc catgatcaca tgcatgcatg 300

gctgtgtgta cagcatcatc tagcggctcc gcgactacgt ataatatcgg tcattgagtc 360

gtcgcttgca cacaacgttc tcgtactaaa acgcatgcat gcataattaa acgacgacgt 420

acgatacata cgacagacgg ggacctcgct cgatctgagc ttttaatatc tgccttgtat 480

aatgacagca ggggcccagt atagttaatc gtgaccgttt tggctcttcc ttctcgacct 540
acactgcccg gccggccttc tctgccgttc ttggattatt gactaatcca gccgcggcga 600
cggtttgaaa gattcatcgg agctgtgctg ttgcccggcg gcggcggcag tcgcttgaga 660
cggctggcta gctccggacg atctgtctat ctggaaatag ctagcgccgg ccgggcgtgt 720
ccgcgtgtgt tcttaactgg tttggcgatc ctccaggtcc actgacggcc gtcggccggg 780
ccggcaagtc taaagaccga gcgaatgaag tcgcaattgc agatccggcc actgacgacg 840
acgaccacca catgtttgat gtttcccaat cgaatcatca gctcatatat ctctgcacat 900
ctcctcctgt acaccacgtt acttcattct gctctctgca tgcgtgcatg tgaggctctg 960
tgagctagct catcatcatc atacacgcgc attccacaag ttcagatcca agaaattaaa 1020
ccctcctaga tagcctgctg gttcaaggtt catccaatta aaatccagat ccaagaaaac 1080
cctaccctag tctagtacat accctccctc gtaggagtag gacccgactc ggtagatttt 1140
ggcatgtgga tgctgctgta atggtcaccg cgttcgtcat cattcgtcgg gattcgcgga 1200
cgggtcaacc gtcaacgctg agttgccccg tcgctgccgc cgttttttt atttttattt 1260
ttataaaaaa aagtttaact atatttatac acttgtgtat tttaaatttc ttgtttgagt 1320
tgtggtctcg acttcgatct acgcttcata tctcggcgtc atagttacga tgatgaggtg 1380
ctgtctggtt catttcagag agtgattaac gtaacgttaa tggatcccac tgttattggt 1440
tccggtgcaa cataaagcga tatatgtttg tttagctaat gttatgtatt aacatttgct 1500
tgggagtggt aacgaaagaa aggaaatatt cgaaaagaca tggatgcgta tccatttacg 1560
gtgtgaataa tccttacgga gaccaaacag aaaagaaagg gaataggtac cactgtaatt 1620
ggatcacaga caaaaacatc taaccaaaca ggctctgaga tgtttgccat aaggtctaac 1680
ctagcgacga cgcgaacaat atctaagatg ccatagatct tggcgacgtg aacaatatgt 1740
agttttctcg atttatattt agacccgtgt gttgttgcat tttgctaata acaacatttt 1800
ttatgcaacg gttatgctgt ggttagggat agtaatgggt tctaaattta acactataaa 1860
attttcaaac taaaattatt taaggttctt aatttattgt gaataaatat ttgaatcgtg 1920
atcccttatc acttctagtt gtggcactaa aggtgaccga tcgatatgtt tacaggtcca 1980
aagtatatag gcaaacgagc aatgccatgc ggatgcaacg caacgaaact aggttttgac 2040
tcagtgcata aatcgttcca gtgggtctct aacatggtga ggtcgttcac tgtccacaca 2100
gcaacggttg gtcaagttcc attagattga ttacatgtcc ccgtgcatgg tgaacacgga 2160
ccataatttc cacgagcttt tgcaaatgtc caccctgatc cgtttaccaa aacaaactgg 2220
ccgcctggtg ctaattaatt tccttccggg gccgcgcctc tgtggcacgt acgtacgttc 2280
tctcgagtta ggcatcgggt tccagctcca ccaccgcctc aatttgaaga agaaaaaaac 2340
tagtgtgggt tttgagatct catctgagca cgtttactgg acctctctaa cttgataagc 2400
ta 2402

<210> 4608
<211> 1430
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321106_G1, chr9:138747451..138748880, Cluster 28

<400> 4608
ttacactcga ggacccagtc ccaaatcttg tatgcaagac aagtgaaatt cactctactt 60

aatacatcat ctggaaaatt gatcagacaa acaggaataa tcaacgtttg gagcatgctc 120

gattgctcga ataaacacga aagagtagag tctctagtaa gcttggccct tgagtggatt 180

gaaaagtgaa gttgtgtttg gttttaagca acaacttaac cttatctaga acttaattac 240

atgaaacact acaaaaatga atggactata tatttgtata agactacatt tagtttcagt 300

gtaactgtgt aataagcatc ccaaaacaca tatttaacac tgtataatga agttacacac 360

gtcatatcca attaagagtt caataactat acaacgttat tttattacct agaatgttac 420

cacctaagga acaaaactaa gggcccttca ggcacagttc ctgtccggct ctggtttgcc 480

tttctcaagc ccttttttctc tctcttgcta aaatgaacta gtagtcaatg gaactgtagc 540

aggagcctga gctaacagaa accatgacat gcaggcacta attaatctag cacactcaga 600

tctgactatc actgaggcta gttctagtcc agccgacttt taccgaccac cacatcggat 660

atcaactgca ctaccgaccg tgttctcaac catcgtcagt ccttatcttc cacaacgttc 720

cagtagacag tctttaccgt cagcctacca ctaccccact gccatatcaa cttttctttt 780

tacaaacttc aatttaaaat gaaacatgac attttattga aaataaacgt tcatcgagga 840

cataattaaa caaataaaat ttaaataatt cataaaaaca actaaaatga cattatctga 900

aaacaataca taatttaacg aaaataaaat ctaattttca tggcgcaggc cctagatatg 960

atgctccatt aaataattta gagatggtaa tagaccaaac tagcatagat tgtggcctca 1020

cattgaagga tggttgcaaa gttcgtcggt gcttcggggg tgatggttga tgctacaacg 1080

aagacccata tcgtagtcgt ccacatcgta taatcctcca cactcatcat caattattat 1140

attgtgcaga attatacatg catacatgat cacaacaaat aattggtgga aaaagaatga 1200

cttagactag cgagaatata gaagtgaacc ttgaggaccc caaatgttct ctctacatcc 1260

ttttgtgtgt tcgcatggca tatagcaaac atcctatgct ttggagtata tgggaggaga 1320

atggtcttgc aaatgttctc tctacatcct tttgtgcgct cgctaggtcg ttaatttttc 1380

ttcagctagc gaggtggtac tatataggag cgctatgata tatgtgactt 1430

<210> 4609
<211> 2230
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322066_G1, chr9:143885067..143887296, Cluster 28

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (361)..(460)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (459)..(459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (460)..(460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1397)..(1397)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1397)..(1496)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1398)..(1398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1399)..(1399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1400)..(1400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1401)..(1401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1402)..(1402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1403)..(1403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1404)..(1404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1405)..(1405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1406)..(1406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1407)..(1407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1408)..(1408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1409)..(1409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1410)..(1410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1411)..(1411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1412)..(1412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1413)..(1413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1414)..(1414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1415)..(1415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1416)..(1416)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1417)..(1417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1418)..(1418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1419)..(1419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1420)..(1420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1421)..(1421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1422)..(1422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1423)..(1423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1424)..(1424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1425)..(1425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1426)..(1426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1427)..(1427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1428)..(1428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1429)..(1429)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1430)..(1430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1431)..(1431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1432)..(1432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1433)..(1433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1434)..(1434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1435)..(1435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1436)..(1436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1437)..(1437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1438)..(1438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1439)..(1439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1440)..(1440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1441)..(1441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1442)..(1442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1443)..(1443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1444)..(1444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1445)..(1445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1446)..(1446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1447)..(1447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1448)..(1448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1449)..(1449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1450)..(1450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1451)..(1451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1452)..(1452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1453)..(1453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1454)..(1454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1455)..(1455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1456)..(1456)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1457)..(1457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1458)..(1458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1459)..(1459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1460)..(1460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1461)..(1461)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1462)..(1462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1463)..(1463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1464)..(1464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1465)..(1465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1466)..(1466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1467)..(1467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1468)..(1468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1469)..(1469)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1470)..(1470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1471)..(1471)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1472)..(1472)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1473)..(1473)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1474)..(1474)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1475)..(1475)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1476)..(1476)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1477)..(1477)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1478)..(1478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1479)..(1479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1480)..(1480)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1481)..(1481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1482)..(1482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1483)..(1483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1484)..(1484)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1485)..(1485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1486)..(1486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1487)..(1487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1488)..(1488)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1489)..(1489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1490)..(1490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1491)..(1491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1492)..(1492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1493)..(1493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1494)..(1494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1495)..(1495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1496)..(1496)
<223> a, c, g, or t

<400> 4609
tcaaaggatg cgacaacggt tgatgcgaaa attcgagcgg gcgcacgcgg ggcgagcaag   60

gacaggataa aaaatttaga cgaggtagag atgcacgacg aaacttaggt gattgatgag   120

tagcgtttag gatgatccat taaagaatag tcgtcagatg ggttttagga gagagtagac   180

aaatgatttg atccgggacg ttaatttttg acagcaggat ttttttgaga taaaacgcag 240

agtgtattta gcaggagcat gagtgcgtgg gatgaatcaa tgttgtgtac ttagcttagt 300

cgttgagata gtgatgaaca acaaacgaat caagctgatt catcagatag atctaatatt 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn aaaagaagat tcagagatac 480

gtctccatgt tagaagatgt tcgtagcgat aaattctaac agtatgaaaa aaactggggt 540

gagtgtacag tacatgcatt gtgaacatct atgctgaact ataatctaaa aaaaactagc 600

ttgacaatag gaaacacgtt ttgaacacaa gctaatcaaa ggccccccat caaaataatt 660

tgtcataaat gggcactcaa tcactcatac attattggat aggtctatac tctggagaag 720

agcaagacat gcatggtgga gggagccggc atcatgcttc agaattcaga ttgcgacaat 780

gatcgatact tctattgctt gcaggacctt catccccaaa acgcttgcgg cggcaaaaca 840

gagccccaag aagcaggatg gcggcgccag tggaggcgtg agtctatcta tggtctccgt 900

tcactatttt aaaatatgga aaccgaggca ggtcttcggc tttccggttc caagaagagg 960

aggaagacga ccggccgaag tcgaaggtga cgaatgcgtc gacggaggag gaaacaacgg 1020

gaagatgaac gaagaagata taaatgaaaa taaacaaatc atttttttat gtgtaactac 1080

tgacggggga taggtaattt ttcactgact tcatcaaagt gaaatttgat tgaaacataa 1140

tttgaggaaa tctacaaaaa gaaatgggtg aatctaaccc atagatttat taatttgatg 1200

aatctggatt tcgtaaattt aacggtttgg ctaatttatt atagagtgaa gttattttta 1260

tgaatcctta agcttgtcgg ggttatagta ctgaatagaa cgtaaactgt cacgttagcc 1320

ttaagctgat ggattctgaa cactacgggt gctctcacaa gccactatcg agtagcgtgc 1380

atgctcaagc ggcccgnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1440

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnngcga 1500

gcaaaatacc tcctttctag gctatttagg gaggatttgg gatgagccgc aaacaacata 1560

ccgcgccaca cgccgggacg cagcaagttg tgcggccaaa tcgccccccgc accttaagaa 1620

gggggagggc gactcggtgt cagcctccaa acaagacctt taagttttaa aaggacggag 1680

cggcgggccc caccaactga aacggtttcc gagaattact cctaactagt agagtgacaa 1740

aatcacagcc gagttctgta cggatgattt aggatgagct ggatctgttc aaagagtatg 1800

agtcgtatat attcgtttgc acgttggtgc taagctttgt agacagcgga aaacagtggc 1860

tcggatagcg gcagccgcta gcgaacaagg ctgagtgacc gtgacaggag gcatcaggca 1920

gcaccagtag tcgaaaggga gaaacggcca tgggcaaaaa gctccacgcg cggacaaggc 1980

ctccagctca gcacgccacc aaaaggcctg catccgtagc gaccagcgac gacgacgagg 2040

aaaagcagga gcgggacggg agggcaaggg caataataat ggaacggcac ggcgcccaga 2100

gtcgctggct gtgctgcccc ggccccggga tcagcgcaga tggtccaaaa gcgcgggagg 2160

gcggggaaga gaacgaaccg ttgtgtggcg ccgctgcgct gtggccgggc cgtcctctcc 2220

tccacggcct 2230

<210> 4610
<211> 1668
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322501_G1, chr9:146078534..146080201, Cluster 28

<400> 4610
gaaaagaaac agcaagagcg atcattttgc tttacttcgg ttctcttctc ttagagagga 60

ggtaagtgaa gaagcacaga taaatctacg ctaacttgct tcaaagcaag ggagcttgtg 120

ggcttccagt gttcttcaac ctggattcaa gcaaagaaca tggagcctga ccccgctccg 180

gtctagggca tagcctagaa aagtgaagta ctcctagtac taagacaata ccgtagtatt 240

taagtatata atggtatttt agaacaaaag gtatttagta acacatctaa aaactctgta 300

tcttaaacca tggttgtaac aatatctttt agtattaaaa aaaacttagt ctagaccaaa 360

tccgtttgct ttcaccgttt cacgaagctg cagcttctcc tacactataa ctgaaatacc 420

gtgtctttaa ataggtgttg aattggactc atgtaaaata tatcacagtt atgtaatgac 480

atataataaa ttgtagtatt ataaactatg gtttgaagaa atagagtttt ctaaacaggc 540

cctaagcctc tgacctctgg aatcaaatag caaacccctc acataaaatc cgtgcggaca 600

gattagaaag aactagtctc aaactttcaa ctagcttgta cactgacagc agcgctcttc 660

tatctgacga aagaacggcc tccaattttc acctgcctac tgttgctttc gcgctaggct 720

gaagtaaacc ctgattacca tatgattagt aagtcttagc taacggtccc tttctggctc 780

atgccctttc gttgcgtcta gctttctctt ctttccacaa aggagggaaa aaaaaaacac 840

gcagtatctg cttcgctttg ctcgacccgt gcccagagaa aaagaaacct gctcgctttg 900

cgttgtctgc aagcctccgg tcgatttggt ctcgtccaag gacaaggaga caaagctgca 960

gccccggctt ggcctctgcc ggagcgcagg taaaccgtgg gcgatgtcga tccgctgctg 1020

gggtagaaga aaacgacatg ctaattacct cgctactgca ctgcactggc ttctcactca 1080

gctcggaggc acacgcgcgg gcacacacac tgatgctgca gtgacactgt ggagcagcac 1140

acgggtgaca gacacagaca cgggtctggc aggtagttca ttacgggtac ttgggaagta 1200

aactagcgcg cagatttcgg ttttaaaaaa attaggtcta ataatcagca ttctgtctca 1260

aaagtctact acgttatttc tccccggacc accgctttgt tatttataca ttactcttat 1320

cattcaggat taatagcgaa cgtggtatct gtcagagctg agtcatcgaa taatgtctct 1380

gctgatcatg gaaggggtg atacgggacc gattggtttt ggttgttgtt gttgtgagtg 1440

gtaacctcga gttcaaatca ctacacgatc gctagttctt ggagtctgga catgcttcgc 1500

tttcggtatt aggcgatgca ctcctttcct tcactgatgg atcaagtaac gcggacagat 1560

gcctgtactt tgacgacgtt tatcggtctg acaagcacac ttcggtcagt gggacaaaga 1620

tccagtactg ggctgacact gacagccact accaccgtca cagtcaac 1668

<210> 4611
<211> 1620
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_329058_G1, chr10:24655409..24657028, Cluster 28

<400> 4611
aaagctcctc ttaatttagt accgagcgtt gtaaccggaa ttaaagattg ctgcctttaa 60

ttattagttt tagttgtcca gcaccagctg agaattcgat attgtagcag gcttgttaca 120

gcggtagtga tcatccattc tccagtaacg gatcattgga cacgatggtt ggtgggtttt 180

ctttcttgaa acaatgagat aagcttctag gtcgactcgt gtaaaaaaaa aaaaaaaatg 240

aaacgcgtcc agctgaatgg agccaagctg atattattac gagtcctgct ctggtaaacc 300

actaccccat tctaaaatgc atggaccagt agagaaccaa cgtgctcgtc gctatcgccc 360

gcgcggttaa gtttaccaac caacaacttg ggctactcta cgtgcaaatg gcatgcatgt 420

atgcatgcat tctacggttg cggaagttga gacctcaaac ttaggttttt aaatggttat 480

ttaatgttcc aatatttttt atctcttcat aataattata gaaaacattg gtttcgattt 540

tttagtctat agtaaattta tgaatatttt gatgatgtat tttttagata tatatacaag 600

tttttttgt ctgtgtcgta tttggactga cacggcacaa tcattggtct atcgtgcttc 660

agaccagacc gagtctagct tttaatatct aggtacggca cgatctagct taaaattatt 720

tcaggtcata ctggaccgaa aatgttagcc tcatggatcc agaccatacc gctacggtac 780

ggtacggtcc aactttcagc tatagagcca tgcacaaagt aacaaaggct gggaaatggg 840

atgggaaacc gggcatgcgt ccccctgttt ctgatcaaat cataacatct caatgctgtc 900

caccacccgt atggagctgc catgggaatg ctgcacaccg gccgcgtgaa gaccgcagcc 960

agagcacatg cgaatatgcg atgcgaggga cacgactcaa caagaacacc accgaattct 1020

ttttttttc cggcaccgtg gtctcgttcg tctaggtaac acggtactac aggtcatgcg 1080

tcaagaacag aggttaggct gtttcgagcg gatctcgtgt aaaatattat ttttactcta 1140

aactgcaata tttatatagt aaagtttaaa ataaaaaata agatgcaata tataatttct 1200

aagctaatgg agatagtctt agataatgta agatgacact gtagagcatg gcgtcaaaaa 1260

taaaggttaa aactagcatg attgacgacg tgatgctaaa atagcaggcc acgttctaca 1320

ttgctgagcc ttgatgccgt aaattatggt atctttttaa atttagttag ctcaaaatat 1380

tttattgtgt cttaaccact tgaatttttt tactataatt ggacactaaa gttttataaa 1440

actctagtga ataagttata ttaaaatgcc agtggataag acataataaa tatgtagagg 1500

tagctaaaat aaaaggctcg acactatacg atttattgtg ccgggacttg gactcacact 1560

cggtgtcaca gaccatgata tcgagccatg atgccgagct ctagccacgc atgcacataa 1620

<210> 4612
<211> 2637
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_336223_G1, chr10:73286071..73288707, Cluster 28

<400> 4612
ccttggtgtg cttgtttcaa actttttgg tgttttctgg tgatatagac ctagatctgt 60

gacagaggag agaataatta aatctagatg gttatcttgt tggttgtatt tatatgcttg 120

tacattattg tttttgtgag atagagaaac tagatctagt tcacatcatc tttttatgtc 180

attcaagtat tttttgtttg tgttggaaaa agagaagata atgtacacaa tttatgcatt 240

cctctcattt ggatgcatct taatatattt tttcttccca ctacatacaa ggtattcatg 300

gaaatataag aatagaagta caagaaggcc atcatggaaa gttcagaatg gatgtacaag 360

atatcataga tggcacaccc ttttatgaaa ccagtgataa attttgttga tagtgctcaa 420

aagaatgatt tgagtgtgaa taaaaaatca atcatatcac catgtactca cttcaagaat 480

gagcatgtct ggatgctgga tggtgtttat gtcaaatctc acttgatcca atggggtttc 540

atcaaggtat acacaatttg aaattttgtg gcaaaggaaa cataagtgat gtatctaaaa 600

gaacatcatt aatacatgta gaacatggat gtggcatcac aatgatggat tgtggtggag 660

agggaacctc atcagccatg catgacattg atggcaacaa ccattttatc atgatgaacg 720

attttgttga agatatggat gacgtcagtg gtaatgagga tggtgaggtg gctttggttg 780

accccaatga cataaagttc attgaggagt ttgttagctg ccttgccaac aatgaccttc 840

tatatgggac cctaggtggc tagacaactt cgaagagatg aactaggtga taaaggatct 900

gatctattag gatcatgccc cttttaattt ttaagtagat tacctaactc aatcatcttc 960

cattcattat tagattagat aaaccacgca attggtcatc ttggtacacc acccatatga 1020

tgtactatgt ctaaccttca ttcaaggtca caaatgaaag gggatgttac aatacacatg 1080

tagatcatat tataaactct caagtatagt taagtttaca aacttgttta acacttaatc 1140

catcagatat aaagttcaaa cacaaatcct aacaatataa gagatcaagt agaagtttta 1200

acacatggtt ttgaaagatg attgtgcatg ggtgtgtctc tactcacaca tttataagat 1260

gttggtctct ttgccactcc tactcctcct aggactccac gacataaaga aaccatagac 1320

aagtgcaaca ataactacaa aagttaacca atcacaaggt gagtactcaa ttgtacttta 1380

caggacttgc ccgataaatt caaggaggaa tatgcatttg gttagtatta atgaatgcat 1440

ttttttgca taaaggcatt ttatacaaga atcataaatg tgagacatat acaaagcatt 1500

ggcaagcata gcaaggtcca cataaatgag caacttgtaa tttggatctc aatcttctat 1560

tagtccttgt ttcattgaac tctagtttgt atatagaagt acaaaactta tagcattaca 1620

aaaatataac actatagagg ggtacacatt aaccccacca tatgacttgt tgtacataca 1680

cgatacattg atgtatcaat tgttcccaaa tctagccatg gatgcccatg aatgttgaaa 1740

ggtaccaagg taatgtcacc catgccgaat ccataagata accaagcaca aacaagttct 1800

tagcgtgtca cactcatata tgacaaatag tttgtatgat caaattcacg acatactacc 1860

ataaatacat gatccttaac cagttggtga gctacaccat tcaagatctc accagttggc 1920

gtgccccaac ccctcaccga ctattcatct tctcatcatc atctcaatga agttttagat 1980

cttaaccctt ttatgtggat ttagtggaca agaatgtcgt ataacatgtg agtctttaaa 2040

aacccatcat cgtctcaact tctatcatct aagtaaacta agcatgagtc aaatgagtaa 2100

tgaatataaa taaccaacat ctaagtggtg cagaaacatt caaggtatga atatctcaag 2160

taggaaaact taggaattct agtcatattg caactcagca atgcaatatt ttaaccacaa 2220

tcatgttatg cgattcataa agaaaaggat tcataggggc atgcctttaa tttacttagt 2280

tgatggactt ttgacaaagt aaaaggtgga catctccttg gtttcaacct ccttagagcc 2340

gtcattatct aaggaatgca tgatgcaaaa tgattacaat gcataagggt agatgatatg 2400

aagtgatatg caatgatata taacataaca tatgctacta atatagtata ggtaacatgt 2460

gtgcatagtt tactatcatt gtgttatcca cttgctctac agatggtctg tcagatcatt 2520

agattgtcca tcaaatcaat atctttgagc aactccagaa attacaagtg ttgctcacta 2580

cagatggcac aagcatttca gacttttga tagttggaac ttggatagtt ttatcga 2637

<210> 4613
<211> 1593
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_338621_G1, chr10:85591341..85592933, Cluster 28

<400> 4613
ttgtcactcg gggcacgcag ttgttgatac gtcgtctact agctagcagc tatatatatg 60

aattttgcct tcgtgaacat ggctgtcctt tttcgttttt taagagaaac atagctacct 120

agcttaattt cattgctaga tggctttgct cttttgtttt tttcactcaa aagcagctgg 180

ggtatatata ctttgtcggg atatgtgttt ctctttagct tcagccttta cagtaaaata 240

cttgtgacgt gcgcgacgac aataacgttc acacgtatcg tctgcagctt tgcgtttgat 300

tatatagcta ggagccaatt gaagaggcac gttgtagtac ggcactataa taagctagca 360

tccccaattg tcagtgtagt aacctaatcc taaaaagtac gttggcgcct agctagcttg 420

tccctgcagg aaccttatcg acgtgtttgc atgaacccgt ctagctagta agtagtgttg 480

gtgaatgtgt gagcatgcaa ctttttctct ctctctcttt ctttgcgatt ttgaatttat 540

gggtctgatt aacaaacgtt tttttttcc tgggaagaag ggggagggaa agtcctgctc 600

agcctttacc gctaattact agttaccatg agtccatgat gatgatgatg ttatattcgt 660

ggaaagctta attattagct gtgcgtggac tagtgatgac acacgtacac gctatcgaca 720

agttaagtac gtacgtagga ctagaagaac aagtaagtaa cattgatctc gtcgatcgat 780

cgatcgccaa tcaaaacgac cacgtgtgac gaggacaaaa gcaagacgca tccatctcca 840

cagttaagtt agcagccgcc ccccagttga cacaaacatg tactacgaca aaatagtttg 900

gactatcgga atctgagatg agttcgtttg ttacgttatt cctccctccc tgccgcaaga 960

atccacgtga tgagcactag tacatactag tagtagtagg tagtagctaa taatgtattg 1020

tcgtatactc ctatatatat agagagagaa gagatggaat aaacatgcat tagttaccat 1080

gatgatgatg atgctgctgt tgatgaagaa gctgtagggg ccgggagtgc gtgcctactg 1140

tactttcgaa cgagaaaaaa aaaatgcatg gcagcacacg caaggaaagt gaagtgcatg 1200

gaataaaaag cagaatgcgc cgcccggccg gctgctatat ggggaccaca cacagagatc 1260

gatgcgtgcc agccagcgtg tggaagctgg agccggactt tgggagtggt tgggagccgg 1320

gcttgctgct gtgtgctcca tctggacacg ggataaacat gttgcgtgtt gcatgctgga 1380

gaataatcat ctctgagtag ggatacattc atttgtaatt atatattctt ttatatacat 1440

tggagaaaac cccgctacct tttccaatct caagctatcc catgccttca tcttccacca 1500

agtactttgt cactatcggg gttccaccac gagatgacca atcaacgtgg ttaattaagg 1560

gactcaaata aggctaaaaa cgatgatgta cac 1593

<210> 4614
<211> 2846
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3430_G1, chr1:17682971..17685816, Cluster 28

<400> 4614
tgacatatca tattctagat aaccaaagat ttataatagt aggatttaaa atatacgaat 60

aatgacgtgt tcgggaatta tgacggtatc aattcagaag aagaaaaaaa accttattta 120

ttattagtac atatctaaac ttttccctag ctgtaagaca aaggaacacc aaagatcgtc 180

ccacgagacg atcgatcagg gaatgaaaca gcaaacggcc aaaaagacta gtacggggta 240

agggcagctt attagctagc taggttcggt ggcaatggag ttgcatgcct tcaaggattt 300

gtttttaggg aacccggaac cctactttac cactcagcag ccacgcgctc actctcctgt 360

agactgtagt acatcatgtc gccctcacct ttatttattt atttatttta cctctcgctc 420

actcgctttc gtcgtgccaa tcgtgcgagt tctagatgag ctgggagatg atgagatcga 480

tcatgagcca gccgatcgga tcagaccggc caacgaccaa cggcggagtt cttcgatcgc 540

cttttgtgtt tctcgtacac tggcgcccaa aagagacctt tagctcagct gtaacctaat 600

aattccaaat gccccgcgtg tctcctcaga gggcagaggc acatgattgt tagattgaag 660

acgcatgcat gccctttgtt cagcgttcta cattaatttc atctagctat atttaactgt 720

tggatttatt agtttgacct aagcttattc agttaaaatt aaataaattt ttaggtcaag 780

attaaacgct agacgcaaca gagactgtgt acaagcacag cgtcggcaga ccggacaaca 840

accacggcgg tatatggtgc tggtggactg gtttaatcac tttgagctga ttaatggcag 900

gggttaatta tggatggtgg atgaatttca gtgtggtttc atgcacattt aaatagtgca 960

ctacgtacat cggatttttt atgacatgtc atatatagca tttaagataa ttgagtttta 1020

tggaaaaaat agtttcatgg gatgaaacaa tgccaactcg tttctaaagt cttgaaaaaa 1080

accgtgtgaa acctccattg gaaataattt atttcatctt catgaatttt actggtttct 1140

agtattggcc aatgaattgc agcatttagt tgatatgttt gtctatgtga aatagtgaga 1200

tgaaattttg cattgagagg gcattacttt gtttcattct tagtttcata ataccttga 1260

tggtgtggca gtgttggaaa gagagtgcca agaaattgct attgagaata gcctcttgat 1320

catggttatg gctgtggtta gtaactccta tgattatggc ccccgttaat acactaactt 1380

tcatgtttaa ttatagttgt atcacgtact agtaacttct gtgtttatag cagttgttat 1440

tagtaatcga cctcgcgaat gagacacaga ccgccgcacc ttcttatcac actgttgagt 1500

tgcacacctg actacctgag cttctccgtt ccaattcttt gtgcacacgg aggattgcaa 1560

gagcaggcat ctacaaccac gcccggccac ttctatgaca catatatgcc tgagtgtgcc 1620

ggccaattga ttttttagga gcgtctaacg tgagtgctcg ctgctgatct aaatcgtctt 1680

cttcccgatg ttctttaacc tgcaacgtct ttgctgcgtc ttcttcctgg tagtggtaca 1740

catatataca tgaaaactgc accggtgcct ttgacataga tcttctatat aagtcgtata 1800

catcgatctg ttattcaata gaacatttgt cgtcagtgta tttgtcatgt gcatttttac 1860

tatttctgca agcagtaata tttcatacct acacatattt gccgccataa atttgctata 1920

acgtttctaa attaaattaa acatgaggaa taactaacac taataagcct aatatagctc 1980

cgaaactcac ctggtatata tacagtgaaa tacatacgta tataaggttc ctttttcttt 2040

caatcctttc gaaaagatgt tgtcggccat ttacccaaaa ccaaggtcca ttattgcaca 2100

ccacatctaa gccaaaagag agtatagaac cggtagcgtt tggagtacga cgtaggatag 2160

ctagcatcat cagatatata aagtgcaagc aaagcagaac gaagctacta gctgacgatc 2220

agcattttcc tttccacacg gcaattaaag aagacgacca ttaattctcc tttcgacgaa 2280

acaggcaacc aaagcatata tatttttcac caaacagttc tatagtagca tgatttggta 2340

gaaaggcagc agctagcagc agaggagtat cagaagtggt gtgcaagcga tttttacgag 2400

accttagcag agccccagcg tgtgcatgca tgttccagat tcacatgtcg atcgaggtga 2460

gacgtaacgt cgtcgtcgca aacgccgacg atccccagac ggctcttgaa cgtccagcat 2520

gtatagtact cgtctgtgac ttgagtagta gacgggtcgt ctgtctccca agtcacagat 2580

gctgacatta ttacagtgga gtaaagtctc tctgtggaag tgccggcggg cgccgggtac 2640

gtaccgaaag gaacggccgg gcaaattaaa aggagtacac gaagaagatg atgatgaaat 2700

aaaggaggaa acaaagcgga accaaagcgg ggagagagag agaaaaagca aggattctct 2760

gaagcattag cattatttgg cggcccaacc taatcggtcg ctttgccccg tttgctaaaa 2820

cgcgtgcgtg tgtgtgcatt cttcct 2846

<210> 4615
<211> 1775
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_343542_G1, chr10:113172063..113173837, Cluster 28

<400> 4615
atgaatccca cgtctatata ggcatgttgg cggtggacct gacggagcta atgcatctca 60

ccgagattat tctaacccta tatctaaaac acaacaaact catacatata atatgtatgc 120

ttgtttgtac aacctaagta ctagatgtac ctatgcgtca ggttgtgtag aaaatgatgc 180

atcatttagt tgtgatatgc cgatcttcta cattatccaa gtttcatcgt tgtcttatga 240

ggtggagtcg tgttttgtta tccctatttg ggtcctgaca acctatctag gacatacatg 300

acactttcca tgagggacat gtgctcatgc aagagaagca gaagtcgtag gagttctttt 360

tctgtcatgt ggttgtcatg tggtcagcag agagattgaa gagaaaatga ctagacaaca 420

ttgggttata ggatggctta cttaaagaga gcattcatgc agctaaccat attcttttac 480

aaaccaatca ttggtcgaag tggttcttcc acattgtgca acatatacac attgataaag 540

tgatgatcta tcataggact tacattgaca tcttgttatt atgctgaaag gtgaaggagg 600

atgcatcaaa gaacatgcaa gttcctcatc cttcttacat gtggtggcta gaggagacat 660

tgtctttact ggtggatctt catgtgtcac ttggggctct tttgtgttta cctcaaaggc 720

aaaatagtta gcataatttt caatggttat ggtaaaggtg gagtctttaa ctatcacttg 780

tgtatttgac atctcttcgt cattagatgc atcctcaata gaggtgatgg tctgtagtaa 840

acatccatgt catctgaaca gaggaagatc ctaaggtcac ttccatggct cattgcatgg 900

gtatttttg ggtgaaactc tatgttagat gcctttgaag ccactatatg gtgaacttgt 960

taaggacata gtcaacaatt ttagaacatg gattgttatg caacaaacaa ttaggagcaa 1020

tacaagtcac atcaagataa gcgaggattg atgatattag agagtgtcga accagagaac 1080

aagccaaaga gcttagccac aataggaacg aaagaatgct ctacacgtag aatctataac 1140

taatcaaatt gttcatcttt cctctatctg atataaccat atgaccttat aacacaatac 1200

tcttatagtt attttattat acctttgtct aatatacttt aatcacgaac tgcaccatat 1260

tttgtcatcc atattttagt tttccaatac accacacctc catttgcgtt aatctggcaa 1320

atgatcaatt caaactcttg catatatgat catctcttcc tatgtataca tggtgtaaat 1380

agtgacatac attatgcatg tattgagata gttttcaatc ggtcagtgct cggggaagcc 1440

ataccettga ttgtcaccaa gacacattca agaatcttgg tataaaaaga taccaccgag 1500

cccacctact aggatcaccg ctcctagaga cctatgacca aaggacctag tcccagccag 1560

gacatggctt tgatatgatg taacttgaca ttgaggcttc ccgaataaat aactacacca 1620

taaagtcatg taagaagcca ctaatggacc caggacccac cgggcctcag agcactccaa 1680

cgcccaaggc ctctagtgcc ctacgacgtc cctggctaaa atgatctaag tcctagggcc 1740

ccctctatcc ctagggtgct catgagtcaa aattc 1775

<210> 4616
<211> 1825
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347272_G1, chr10:134048269..134050093, Cluster 28

<400> 4616
ggacagcctt atcttttatc cgcctgaaga tatatgtttt gagctaccaa cttccaatta 60

aaacagcacc aaatgccaga gctgaagcga aaggtgagaa aatgcagaaa taacctctat 120

aaattagcgg acgttatatg taaaaaatca ataggattgc aacattctga aacaaatccg 180

cctgaaccca gtaattaggt aaagtcactt ggaaaattag cgagaaatga ttgtttttta 240

caaataaatg caaacctaaa acgtgtttac aggtactgtt taggggaaca caccagctta 300

gtgactacaa gaaggaacgc tgtattcaag cctgatgtag ctagaggctg cggctatatg 360

acttttcttc ttcttcttct ctctctcttt cccatgtatg gtcttttatg tttgggatta 420

aagattaatt ttgtggccga gactgtgaat gtgagtttgg gtttacttgc ttgggagtgt 480

agagaagctt ggcttggact gattcctctc ctaggagaga ctgtgaaaaa gaggcatgtc 540

aggcgttaga cgatcgagac atcgggagta ttattagaaa ctgctctgaa agtgagtagt 600

aaacgtattc tctgatccaa ccggccctta tcggcttcgt tcctttcttc caagggaacc 660

tcgacgagct tttccgagaa cgcgatctct gtagaaagat aacatacgag gatagcacca 720

atgatctgac ggcttgaaag agaggccagg cgacgtcctg aatagtcaaa gattcagaga 780

gcataaaatg attagcctgg agctctgaaa agatatactc catacagacg aactagctag 840

tactgcatga aagcatcaag agcgtactgc tacaagaaac agctttgcgc gcgcaacgac 900

gcaacataca atactccaga aaaaaaagag atcggctgtt aaaaggttgc aggaacaagg 960

agcagcagat atcgatcgat ccgcctgatc ccgaccgtat gcagcgccgg ccggcacagg 1020

gacaattcgt tcgccttgga tgcctcgtag catagcatct gctggcacta taaggggttt 1080

ttggagaaag aagagcacgc acgcacgcat atgcgtactg cgtacatagg ctgccactaa 1140

tgatggcctc gaaagaaaga tgaggcgact ctgcaattgt taatccttct gttcgttgta 1200

ggggttgcac ggatcggaga tggaatcatc ttactaatca aaggtgaggc ctaggttatt 1260

agatgctaca ggtgtgtagg cattcttgat ggtccctatt agcctgcctt ttggaatagg 1320

ggtacgtata caatgcacac tatatcgtat actatatatt gtagccaaat taactgggca 1380

tatgggcatg ccactttcac aaacaggtcc atatgggcat gccactttca caaacaggtg 1440

tagatgtaat taagatcaag atgcatgttg catattgtaa tgtgttgaga tttatttagg 1500

ctctaggtca gagatgttgt ggattctgta ttgcaatgca gtgcttataa gtagacgtgt 1560

gagggatatg tatgtagaaa gtgggcaaga gtggcactta gttgatagat agatgttcat 1620

tctctgtctt tctttatgtg ttttttacta gatgagtttc actcatttct gaaaatcaca 1680

atagtattac atgataaggg atttgcagca acttatttct ctaactaaaa gatatagtat 1740

cgcttaagca atggagaata gataagttac caacaatgcc tttactcgac gggggaaaaa 1800

atccttccac attttccagt gaccc 1825

<210> 4617
<211> 2157
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348656_G1, chr10:141346633..141348789, Cluster 28

<400> 4617
ataatctgaa ttatataaac tcggaaggaa agaaacaacg gctttatccc atctataatc 60

tgttctagct tctctgtttc atcatatgct gttgtttata attttgaaac catactagtc 120

atgcacacat acagtttgat caggaataaa tttagaacta ttaactgaaa taccaaacac 180

gagtatggat gttcgactca tatctgcctt atagaaaata ctagcatttt ttatcttcca 240

aataaaattg cagggataaa agggacatca tacaggatcg gtgaccaatc tttgggcagg 300

gtaagcacta atcagcacgt gagatctaca ccatttccta gaccaatata tagattgaca 360

aacaaacaat atgtttaaga atttaggtga acaatcgaca cgtcatcata gaataattga 420

gactgatttt caggagaaga tagatcgtcc gacttgttga aaaacacgcc acacgcactg 480

tactagctac tagttagagt aatataggga ctgatgcctc ccttcgattt tcttccatcg 540

tttcatttgt ctgatgccat gtccaaatcc ttagttccga tttgaatgca ttttgtcatc 600

gaagtcatgt tccattttcc tttcggcggc cgttgtgtta aacccttcta ccttgtccaa 660

ccggtaaaaa gaaccggagc agaagtcgtt tggtcaaggg tatattcgag atagttttac 720

cggcctcatt ttcataaaaa atagctctat ttcataaaaa agttagttaa atggataaaa 780

tctacaagat ctagattcca acacggcaac acctagtggc acttagatgt taaattgtgt 840

aattaagttc ctatcttaat attacaatta tctattctaa atctgactgt acactttatt 900

atgtctcgat cggcaaaata aaacagcgta acttatatat ttgcttataa cacattctta 960

ctcttttgtc tttccatgtt aaggattaaa ctatcgtttc taaccatcac tgttgttggt 1020

aataatccac aactattatt gttcatcctt tatagccacc aagattattt tcaaagttac 1080

tgttcactct taggtgtaga cttaacctag ttcattaaaa cgctgcagtg aaatttagtc 1140

gactaattat ctcagttatc aaaatgatac gtggaacttt cacctctaat ctatccatag 1200

tgtttttat agtaaatctt agattcatat ctacagtact tttttatagt aaatctcagg 1260

tttattttag atttattagt gaagctactc tatggtagat ctgaaaaaaa aaatctagat 1320

ccctttttta aacgacaaag cttttaaaag tagaaaaata gcttaaattt agaaccactt 1380

ttaagtgctg tccacttttt aaacgacggg agttccaaat aagaagtagg cctaactgct 1440

ttcgaaagcg gttggaacgg agctaggaca cccaagtctg aacccccacg agccgtagcc 1500

gaagagcctt ttcggtagga aaacagaggt aagaaaaggc gtagccaaaa cttacagaca 1560

aagcatagcc aaactaagcg cacgttcaaa agcattgtaa gtacgtgtat acaacctaca 1620

gaaaaggcgg gcaagtgaat tgcatcgttc gactttgaaa aaaaaaagat cgtgggatgg 1680

tggtgggccg gttggaattt ttcgcacgta ataaggcaag agcaagatca gcatatcgac 1740

cgaacgtcca aagcgacgat gcgctggtag cagcactctc gagacgcttg tagaatgcag 1800

atcgttcgtc atcaactttt atatattcct tctcccagcc gagagaaaaa ataatactac 1860

ttggggaagc ttcgatcttg atgaaccgga ccaatctcgt gatgacgtgg gtgtggattc 1920

cggaggttgc tgaacacacg cgtcgcactt gtcgtcgcgg ccgggtcgac tagagtacac 1980

gtgaaacgct atccgctgtg gctttctcac ggaatcgtcg ctgtggccgg ccactgtact 2040

gtacgctaaa ataagaatgt cttgcccgta agcatggttt ctctactaca tgaagcacgc 2100

gttattatta gcgcattatc ggctgctaat aacaggtcgc gactcgcgag tggttag 2157

<210> 4618
<211> 1866
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349951_G1, chr10:148595097..148596962, Cluster 28

<400> 4618
tgaatgttgt ggtcccattg attcaaaaat ctcagatacc gcatcgtgac gagcacaaat 60

cagatgtcta ttgcataagg gacgtgttaa ctgcaagaac acattatcaa agaactatga 120

aagaacagtt gagataaaca taaagctttt ggggttgtca cttgtcacat ttcatatttt 180

gcaatgttct cacatttagt tggtgtcaac tgaatgatac accatgcaaa catttttttg 240

aaggcataga tactagatag ccttacccag tttctaagca atctagaccc aaaagatgtg 300

catgtattgt tcataatttg gaacagagac ccttctgttg taccatctga gttgttcctg 360

aatacctgaa aacacattag ttgttactcc ataaattgaa caaaagcgaa gcagcagttc 420

ccgagaaaaa aaaactctac gtgtcctgtt gattatatgt atgggagaat gaaattattg 480

tagtttgctt cccaacaaaa actatccacg gagctagagg tcaagaacag acctgagaaa 540

gaattgtaat aaatatcaaa acaggaactt ttactttgaa agtgctgcaa aagactacct 600

caagttgttg aagagcattt gctgataagg aaaattctgc atcagcagaa aatggaccgg 660

aatgaagaac caaagcatat tatcctttcc atgccaaaac ctttgagata ccgaaccgat 720

aatgctaatg cttgaacaac tagctctggc atcgccatga taccctagtt ttgaacaaac 780

ggtagttatg agacatcata tactacatga tggacaattg atgtctgagg taggatgata 840

aggaatacac caaaacgcca ctaagaatag aatagaaagg ctaacagtac ctcaatccca 900

tgaaaattgt tgttatcatc atttgtttct atcagcttcc tatcatcttc agccctagaa 960

gcattgttta cagacttttc aaataaagtt atcagttcag ccaaagcagc atctttgcca 1020

aaccattcac atgatacacg ctcaacccgc acattagagg tgggtcccac atatgccatc 1080

ataatctaca caacaagtag atgccgattc agataaatct gggagagaaa tatttgctcg 1140

attggcaaga ccttcaagca gagtatacat aaaaggaaag gaagaaggtg tagggtaact 1200

gggtaagtag cacattaaaa tccaccatca gaagaaaaca tttcttgatg atggacaact 1260

ggatatgaac ttggcatcaa ttgtaaacaa caggaaattg caacggtggg ggcagaaaag 1320

gtgtgctata catactacta aactacacta cagtgaattg tttgtgattc ttgccaatct 1380

tcaaacaaca atagcatcaa actcaacatg tagtgtcagt attcctgaat taaatgtcca 1440

tataacatgg catcacaact attaagctat aaatcagttt atcaaatgga caagatttta 1500

gttaaaactc tgattatttt cctaaataac tgcaggcttc cattaaaaaa agcaaactgg 1560

ccatgaaaga taagtgacac acaaactaga agaaccaaca gaaatatata accagcaagt 1620

agaggtcaat tatactgagt aaaacatcag ctacagctat catgtggata gaaaaaaatc 1680

taagaaacct acaacataac atgagcgcat gatggtcagg gtcaactaac tgataattct 1740

tgtcagctgc cttaccttct ctgtggcaaa agagagtggt gtcccgagga tgacctccac 1800

gggcgccaat ccaagcagca aagcttcgag tccgctcctg gagtcgctgt ccaggaactc 1860

cccgtg 1866

<210> 4619
<211> 1635
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37353_G1, chr1:224921504..224923138, Cluster 28

<400> 4619
aactgttatt acgtagagcc cactgcgtcc tcgctagctc atgatgattg attgaagatt 60

tgcgccgaga cgatggtggc tggaataacg gagtatatta tgcaatcatg agctccaatc 120

tgtccgtacc gggagccggc cacatcggca ggtgtcccat catcatctgc taaacaagga 180

aagagaggtc gcagcagggg ccgcccggca gtactgtggc tgctgtgaca ctttgatttc 240

ttttcaggaa aaaaaaataa agccctttgc agccctcgaa attgggatat tggtccccat 300

ctcggggatc gtgaatatgg ccgcacttgg cctcgacggt acgtgccttg tcacgagaca 360

taaaacaagg gtcgtacagt aataaatcta gagaaactac ctctttccct gaataattgt 420

atattcttac ctcagatatt catatataaa agaaatatat ctagagaacc tagctttgtt 480

atgcacttaa atatgcattg tatttagaca catatatagc gaaaatgata tattagtaaa 540

gtcaaatcgt cttatagtct agaaaggaga gagtaatata caagaaaaaa aaaatacttt 600

gattataact ttttccttgc agtcatgcct aaacacattt gttaggggggg gaaagagaaa 660

gtatacaaca tgtgttttca gtgagcgcag cctaacagag aattgcatta catcagtttc 720

agcaggaggt tttatatgag ttctatttgt atttagtact atatataaca catcagaaga 780

tttggtaact ttacaggtta gttacggaga aaaaaaagat agagatattt tcgtaggatt 840

tcatccgaag aatttgttgt tgtggctacc acatataaaa gccgacatga caaatcttag 900

taaccgtgtc ataaaactct ctcaaactgg tcttttcgtt gaaagcgtac gtagtatcta 960

atcaataata aaaccaagtt gtcagccgct aaactggcgg caacaaaact gaagcttcaa 1020

agtttttgcc aactacgtac attagaggtt attgtaaaac agggtatgct ataaaaattt 1080

acatcgtccc tctataaggg catttctgac cacgtggtgg agagagaaca ttaaaaaaaa 1140

acagatagct agtgatgagt tattaatcgc gcctagttgg cacgattgcc catgaatcga 1200

gtgtctctga ctgtgtgcag ttgacaattg caagaatata acggtggtga gctgaggtcg 1260

attctgactt ctgagtagca gttctttaag aaaagaagtg ctgagacgta cgcaggctag 1320

ctagctgggc agagacgacc aggcctggct tcaagcaggt aatctgaccc caccgccgtg 1380

acctagtaat gtcttaatcg gaggaggaat aatgagcgag agtgatgagg ccctggtgcc 1440

ggcgtgcaat gccagtgcac aaatgcatgc atgagatgag agagagagag agccgttggg 1500

cagggagagg tcgggtgacg acaaataatc tctaatgcgg aagagaccag aggtgtaact 1560

gtgtaagtat atgtactact accaccagga atttatattg tttcttttta gaatttatct 1620

tcttgcattc aataa 1635

<210> 4620
<211> 1411
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_37883_G1, chr1:227246991..227248401, Cluster 28

<400> 4620
ttccattttc attcatgtta ttccgcatta aatgaagaga gtttttgcca ttagatagtg 60

tcatgttagc gtttttatga caatacaaag agaagaaagc gcatatatgc actctccaat 120

atagcaaaat attgtttttg aaacaatgta ttggagctat tttatctaca aattgtactg 180

cctccgctaa aattattagt cactctttgt tttctagcat gtatctagac tagttacacg 240

acagaattat atatctagaa taaccaaaat gaattacaat ttagaataaa ctaccttctt 300

tctcatgtga cacttctaaa acatgttccc tactttgaat ggcataacat ttagtttcaa 360

cctctcggct agcaaaacat ttcaaaatca acatgtgttg gtttatttca tctatatttt 420

ttcaataaca attggaaatc aagccacata tgtagtgtta caaatagcaa caacatatgt 480

gaattggttg tgttcatttc ttacccgagt atcactgaat ttgtttattc ataccactga 540

tctaactgat gtgatgatcc tagctaccgg tgtagtatta tgtgccacca acaaataaat 600

aatacagttt caatcactca acataacatg gtgttgtggt accagaagag atccatggtc 660

ccactttaca ccaacttccc caatcaacga cctacatggt tgtaacaaca taagatggga 720

ttgttggatt gatctcatat gtctcggtca agggatagag tcaaactgac atctagcatc 780

ttgattagcg acataacaat cttatagttg tgactccttt tcacaccgca taggttaaat 840

agaaaaaggg ctgacacaca aaccaatgtt tgtcgtaccc tctctcaaac acacactcta 900

aagtctaata tgtctctaca cgtagtgaag gaaagttcat taacatcaac cttgttgtcc 960

ttgaagctga ctctacccat cctaataacg tacccacaag cacacctttt tatgttcatg 1020

cttctagtgg ctaggattta tgagcaaggt ctcaaaagtt caacattggt gctagagcca 1080

tggtttaggc tcaaacgcta agcctagatg ttcacaatct ttggtttagg ggtaaatcta 1140

agaaaagccc ccttaaaggc ttagactcat caattagcaa agcaagtata aggagagatt 1200

gaacccttac ttagttttcc tcgaaccccc aaaaccctaa tcctaactcc taaccttgag 1260

cacacaaaga aaggaaaatg gagtaatatg gcttacttgg ccgtcaacgg gttatgaaag 1320

agggttgcaa ccaccaagct tttgtgtgat ggtatgcatg ggccttagag agccactaag 1380

aggtcactca atggtcaccc taaggtgagc a 1411

<210> 4621
<211> 1539
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38789_G1, chr1:232183138..232184676, Cluster 28

<400> 4621
cctttggaag gaattttagt aaatgattga gcatcaagga ttcaacttct aaattaatga 60

ttgagtccca tgaactcagc gttcagtgcc cacaggggga cttttgagag atggccacat 120

catgcggact cgacctttca gtgcctgcag aggggctttt caataggtga ctgggtcaca 180

aggactcaac cttctggcgc ctgcaaggga cttcaagttg ttgaccgagc cataggagct 240

cggccttcta gcgcccacat gggaacttcc aatttgtaga cgacaataga gctctacagg 300

tagtgttgca ccctccctag agggatcgat aaccagggtc ttgtggactt ggtattctta 360

tgcccatgca gggactttca atgtgcatac gacaatagag tcgtatgcgt actactatcg 420

ccctccttag aggcacctta aatctaccct agtacaatgt ccaggtacat cgtcagtgta 480

tgcagtgtct ggtaccctta gagtgatgac caagcctggg gtgataaaag taagggttgg 540

ccaactctat cgacaactag tcagatcctt gaaacataga ggaccatgta cccatagcaa 600

gtggccacca tgaacctata tagcatagga cacctgagat gttgggggct actgatgatt 660

atatattaat tcgacatata gagtcattga aaaagttgat attaccatat cgacctgttc 720

ttgaattttt cttgaaggac tatcgattat gtaggaagcc taagtttttg taaggtcata 780

agtcacttga ctggaaactc tcttaggtgc ctctctgtca gtatgctttt ctgaccaagg 840

ctcaatgtaa aggttattta attacaaaag caacttagtt gttcatagct tgggcatagt 900

catattcatc tcgtaattgg ccaaaaccct aagaaaaact tgtccaaagg aaattttata 960

accatccttg tttgagttag tcctattgtt gattctagac aggttggact cggtatttaa 1020

ggaaatcaag aacttttttt ggcaaatcct tttagatggt aaaaattatt agttttgtga 1080

tgacattaat tatggaaaat ggaagatgtg tccataatct ttgaacctcc tcttgcttat 1140

ggacaagcaa ccgatgtcga gtcttttgct ccacatttgt agtgacatgt ctgtctatct 1200

ttcttttctt attgttacta ccatgaggct caattcttag ttctttcttc tatttgtccc 1260

ttagatatga aagttggcgt tgcagtactt ctcttttggt gtacttacta gcaacttgaa 1320

acatagaggc aagagtgaca tgagccattc aaataagctt ctgaatcaag ttatggtttt 1380

aagtcccttg tggaaattac agatagttgc ttttcagata tgttggaaag gttggcttca 1440

cactacacca tctctcaata taaccgcaca aagactcatc ctccatctag ataactcatt 1500

tgaggtcata ccgagtcatg actcaatcat gggtcatac 1539

<210> 4622
<211> 1786
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3976_G1, chr1:20416144..20417929, Cluster 28

<400> 4622
aatagtttgg ttgtcacaaa attctaactt tagagtcgca cgggtaaaat caaatatgga 60

caatagttgg atggccaaaa atcaacttat ttgtaaatca agaacatgga tggattatgt 120

cgagactgta agttagacga ccagtggcct ttgccactac ggcgtgagcc ccttcgctac 180

atcatcatgt tatttgtaaa gaatagtgta ggccaaaatg gtgccttcaa agagaactgg 240

aaaaaatata tataaaccaa agagcaacga cttttccatt aagataaaaa attaccaatt 300

catctcgtcc tacttgcatg catgtactat aactgagtaa tggatccgtc gtcaattcgt 360

catctcgtcc tacttgcatt caactccaac aaattaggga gaccaaccca aaagagtttt 420

tagggtgaaa aatcatcttc cgaagcctcc aacagctccc ctttcacttc tcaatttttc 480

tgtgttccca ataaggagct cgaaatattg gcgagagagc tgcccccaat ctcctcagtt 540

ggcgcgttat ttcctcgtct ttagcataaa tatttaaaag ttcatggaaa gtttcagcat 600

ttgtgacacc gtataaacaa gacaacgacg taactgcatg gcaacatggc tgcatcgaac 660

ctttgaccag acaatcagac attaaccgaa gttcagagct tgttcatcta ttacaaaaaa 720

aacgaaacaa aaaaaaagaa tcgaccagta ccagatggat ccaaatatgc tgatgtatca 780

tgtatagata agattttggg gaagtatttt ttagtgaggc cccaatacat agtgtttggg 840

aatatttttt taggggacga gttgctcata tggcagactg gggagcgatc tggaaccgtt 900

tcatgcagat gtgattgcct ctgcagagga gcaggtgatc ttgggattta gaaggtgata 960

ctggagacag atgccgcaat ggtggttcag gcagtctaga aaattaaagg aattgctaat 1020

gccgcaatgg tactggacaa gcagtctagg aaattaaagg aattgcaaat tgctaatgca 1080

ttatactcca gttctcatgt agttgctctt agtccacgct cttgtaattt tggtagccca 1140

tggtgtagca gccttagggg caactgagtc cggcgtccgg gtaatgtctc ggtcttggac 1200

actattccaa attgtacgta tccatgacct ggtggccgaa catttggcct cagtttatgc 1260

gtaatggaga tttccatgat aaaaaaagtg agtaatggat cgatccaacg atctaacaat 1320

aacagacatt aatgcacaat ggctaatttt tgaagagaat caaactacat ctgagggaag 1380

cataaacttc tggatgatga gattcagtac agaaagccaa tgtaaataaa atacatggat 1440

tattaatggt attatatagt atacttctgg cagaccaaac ctctagtaaa cagactacag 1500

atgaagatta tcgtcaaaca aacaggttgc atcagaagat catcctctat agcactaaca 1560

ggaggaatat cttctggaag ttacattata atactcagta ccaaattcca tccgccacat 1620

caattttatt aaccaaagaa gatacataat caggcaacct ctttatgcga gttaatacaa 1680

atatagtatt tgcagacata caagagccaa aatctcggcc atcgcatctt ttgaggaaaa 1740

tgatctgagt gtttttcac cagacacttg ggctaagtcc actgcc 1786

<210> 4623
<211> 3429
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4162_G1, chr1:21696963..21700391, Cluster 28

<400> 4623
ctctttgatc tctcctgtga catctactac tcacctgtat ttcagtttta cagtttctag 60

ttgtttatgt cctctaacaa aattaatgac tacagatagt gtgctccact gtttattttc 120

ctgttttcat cctttcttat tacaccatca cccggtgaga cataaaatca accggaatac 180

caatgaagaa tcttgagttt tctaaccggt aattaatttg tggtagtttg tagctttgta 240

tttggagtta gcgacttgct aaaatccaag cgcctgaact ttagtttttg ttttcaggct 300

atgattagta catataattc ataatgaact tatgttttcg gaaaaaaaac atagaaacat 360

ttatgagcgg tgtcatatat ttgtgaacga atgtactaat agtttttaat ccacataaga 420

acatttttt tgtacgacat attttattat agaatcatga cgcgtcgtcg gtcgtcgcta 480

cgggacagtg acatacatac gagcaggggc gccagccagg cacgtacacg ttacaagtgt 540

acgttttggt tagctagcct tttttccggt gggtgatcgt gttctatttg atttgagttt 600

gatacagcag tggacgcgcg cgcacaccac ctgtaattat cgtgcttgat ctagactccc 660

ccatacatac gtgacaacta accgacacgt acaatatagc tagcgtcggc ggtgttaggg 720

agtaagctaa gcaactttag ttgctgaagc aaccccgctg tacgtacgtg cgcgaattgg 780

tgtactcgtg aatacataag catgccgtca cggatagcta gcgtagcatg caaaacagtg 840

atccaccaga tgatgcgttc attgacgaag cctctcaact catcatcagt ctcagctact 900

cgatcggtct actcgtacta tattacgtac cacttctaac aaaaaattga ctcgacacac 960

acaaaacgcg cgctaccgcg cagcgcgcgt caactgcctg ccgatcgagg gccgatcaag 1020

tcagagtcac tagcgacata gggatactag ctagctagct gaagcacgaa cacggacgca 1080

ccgaccatct gtcacgcgtg ataaacggga caacaacaac cgcgacacgg ctgatgactc 1140

gtcgacccgc gaggagaggg aacgtgccac taggctactc cgcgtcgtct ctacgtccgg 1200

ccggtcctcc cacgtccgag tccgaggacg ccggacggtc gccggtggac gacgtcgacg 1260

cgcgtacgtg cgtggccttg ggactttggc aggccgcctg ccatttcccg tgtgtgctcg 1320

cgcccgtgca gtgggtcgtt cgcggtcgtg tcgttggcgt tgcaggtgct ggctgccgca 1380

gcatgcttta acgacacgct gccccgtcct cctgcccccg caatacatga cccagggcgc 1440

ggtgccgccg agtttggtga gctgtatttg tccaattaca cttgcccacc acaccttcgt 1500

cgtttgcccg ccatagaata cgtacattga tatcctatac atccatccaa gagatagttt 1560

ttttttcatt taatatttgt taaaagtatc ctaagacacc acataagtat atagcataaa 1620

ggtatatata tttttaagaa ccaaagtatt ttaaatttaa ctagattatt taattattct 1680

aatgccacac taggcctcat ccatgtggcc tgttctagaa tgcagagagt ccatagtgat 1740

cgaccaatgt ggagagttca tagtttactc aataaattgg catgtgatcg attgacgttc 1800

aggctaggcc tcatccatgt ggcctgtttt tggtcggaaa ataaaactac tgcctcgtgg 1860

tttccaaaga catcgccaat gtggttggtg tgcgccctag gctaggcccc tagctagcta 1920

gacacccact tgatcatcat cacaacaaat ttaaaataca cttagtcaag gtttgtacgt 1980

caacagtagt agctgttcaa tttgtattgg acaacagtct cagactaagc agccgagtgc 2040

tatattttgt ccttaatttt aatttatacg cgtctgtgct tcggcgcaac gagttagcta 2100

gacgacggag catcgtccac aaagacagtt aaattcttaa gatttctcac gagacctctt 2160

atattattac atcatgacga caatgcaagc tcatcttgtc gggcaaataa atggtcggaa 2220

aaaaaccccc cattcttttt ctgaattact gttactcaac agacctctct cctacgattt 2280

gacttcctct tacaaatatc tctagtgtga tgcctgctgg acctcacaag acgctctcaa 2340

gaaaagcagg ggcgttagga aggttagacg ctaagcaagc acgcgattag gaaaaaggaa 2400

agtgcccgtc tgaggacgac tccttagcga gaatactata gtctcgctcg ccatgagaca 2460

ggtcttgggc aggcatgaca taagactata cgagagggat tgttgtaggg agctaagcta 2520

acacagctgc aaagtgcagt tcgaagctac tgtttaccta aaacccaaga aataaggggc 2580

gaaattgacg ttcttattat atgtgctgca cgcaacgaat aattaatctc ccggtttctg 2640

ttagatttag agcatgcata tatagaatta atgcatgggt tgatgcttta tatattgctg 2700

tccatgaaga aaccacaagt ttatgaattt tatttccttt tcatatacag cacacagtca 2760

gttatcataa ttctagcagt catgataaca cttttctata tacggtgatc ttttctcatt 2820

ggtcagatgt aactggtgag ttttgtgtgt gtgtgtgtgg tggcaatata tgtgctgact 2880

ttctagggtg atcctttctc gtggcatggg tcacataagc aatcatattg caaaataccc 2940

gataattaaa aaaagtagtt gttgcctata ttaaagagat cgtccagcac acccaccacc 3000

tgagaattcc cgagattcag tacaaaagct ccagcaagag aactcaccta attaaaaaaa 3060

aggccagctt tcccctgttg ttttcttttc gggtgcaatc cacgcctgta ttttattatt 3120

cgtgcagaaa caagaagaaa tatactatat acacaatcat aatttagcct gtcatgtgtt 3180

tcaaggtact cttgttgtag gtcatctttt ttttccggaa atggagttct gttcatatcg 3240

tttttatatg ttatgtgata tgtacaacaa agcttttgtc aagggtatgc agctctggtg 3300

ggtcatccat cgagggaagg ttgggttctg attaatgatt atatatatta ttcaataatt 3360

gtgatgttta atctaagtaa gctaagaccg gttcaggaat tgagattagg gatgttttta 3420

gttgcaatg 3429

<210> 4624
<211> 1915
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42908_G1, chr1:253009382..253011296, Cluster 28

<400> 4624
ggattaaagg agatagatgt aataaacgtg taacctacga agtgatagac atacgttatg 60

ttgatcactc catctttcca tcttcttgaa acttatgcca ttacatcgtc ctttcttcgg 120

caagatgaga cgtatgaaaa ttcatcacat gatcaacctc tcactactaa gtcaagttgc 180

atctgaatct ttccattcta atcttctcca tggggtgtta ggaaaggagg cctccaaaat 240

catcgtctgc atctgctcgg tgtgcgtgcg attaggtttt ggcgagtcat cgtgtgactg 300

ctcgctgatc agattagaag attaccttct tcctcttttt ttctcgtgga tgtctgatct 360

tcttctttat ggatgcaaat atcttctcga acacataacg atgaggccat gagggtgcat 420

acagttgtct cctttgtctc gcctctctga gttgcagttg gtgtgagtta ttacccgtag 480

atgcaaacca cataataata atctaggatt cgagaactct tcaactcaaa ttcagaagaa 540

gaagaaaaaa aaaatcagat tatactcttt tgaattttga atatacgata tctgtggaat 600

ctgattagtt agcttgttct aaatgtttat atattcaaaa agaaatcgga ttgttctagt 660

agatgttagt gtttggtttc cttggtgaag atttcctcgt tactatgtgc agatatgatc 720

tggagggcac ctgatgcgtg cttgatcata tcacaaacgc ccagttgtcg gcagcttctc 780

ccctctccac tccaaaaagc atattctctt ttgtctcctt tagcagcaaa agcaacggtc 840

ccaatcagct cttgtataca tttcaatccg attatgaccc accgagccat cccattcgcg 900

ctactaatat tttcaacaaa gagagatcca gtgctgtctg ctagctgcgt gtacgccttg 960

ttacacttgc ctgctagcta gtcgtcgtcg actgtcggtg tatagttgtt tattgtttag 1020

acattttagg ttagtgtctg atgagtaaat aagctgaaaa ccagtaatgc aagtcgtgtc 1080

ctttttatgt ttttttggt gtgtggtttt ggaggaagca caagcacaag cacaagggtg 1140

tctgtagttg atgggaaagt aacagtttga tactactggt gtgatggggt gaatggtgat 1200

gccccagcta atcctgtccc aagaagacac aggaacagtc agacgcatgg gggaggggag 1260

ggtcttggga caaaaagcct gagtgcctga cgaaagccat ctttacataa acaaacaacc 1320

cacgcattca gcaaaccagg gaggagatga gatggctgac tgactgctgc tttgagtaaa 1380

acgctgttgt tgttgctctg gattgcaggc aaagcaaccc agaaaaaata cacgagcaca 1440

acctttttt cttcttctta ttcttcttct agttcagttc agtgccggat ggatggacaa 1500

ctggacatgg agccctgccc ttgaaacaaa agtctctata ggtatagaga gcaggtaaag 1560

ctgcatttgg ttcttgacag gacgtgcggc gagtgatttc agctaccag gagtacgggc 1620

gagatcgtca acccaaccgt gcagtgcaac aatgacggac ttgctagggg ctacagttgt 1680

gccgttattt ctggagtaca gcgcccgccc aactggaacc gcagggccca catattgatc 1740

tcgccgtata taacgccact acactacgac ttttgacctg attggtcgta ataatcagcg 1800

aacagtgatc tccatgaaca aattaatacg cctgcctcgc tcacgagccg gccaaaaaga 1860

gctaatcatt ctcgcctcac gcctatcatc acttcatcag tcactcgctt ccatt 1915

<210> 4625
<211> 1558
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43621_G1, chr1:256656896..256658453, Cluster 28

<400> 4625
aaaggctctt cctcgcactc gaagggtctc tacagctctc aaaatgaaca acaagacttc 60

aaatagacaa actataagag tatagatagc tccaatgcaa gaaactagat gttgtccctc 120

cactcagctc tcatggggta ccaggcatgt cccatgcaca ccaactctat gcatcggaca 180

tgttcgttgc aactccaaga gaaactagat gttactatac tggtatctag tgctttgttc 240

agtgcatcac tagatatata caatgggtat accactcaaa agtatagttt gtaaacctct 300

atgagtttgt ttgtctagtg ccatatttag tacaacactg accatgttcg acgcatgagt 360

aatgagcctc ttagacatga tttataacat tttccaggtg tcatatctag tgacatatcc 420

agtgccacac cggatatgtc tggtgattac ccattgtctt agtctcatat acgagctctc 480

tgggtgcccc gtctgatata atgtatcgag tgcacaccaa tatgtcgaag ctaagccaat 540

tcttaacctc ctgttcagtg gcccctatct aatgcccacg gtgggtaatc actagacacg 600

tttagtgcta ctgcaacatc gccaagtgct tgtttcaata ggactaaata caaaaaaaat 660

tggctaccta attactgatc atctagatgc catcctatca caaataaatg tcctttattc 720

cacatcatat ttatatttct tgctcgttta gatttgaatc attagcacaa aacttgcaca 780

tgagaatgat gtgcatataa gttaacagat tattgtgaat tgtggttcct tatggttgga 840

cgcgctcacc tgaattggtg tcctcgaatc aagatgtatg ctcatatatt tttttaaaaa 900

aattattgta tgaatataca actctattta tgtgaattgt gatagagcct agagaacatg 960

ttcatcaata ttgagacatt gtgataatgt caatctcaat atttgtgttc ctatggaatg 1020

atttgtatat gtgattttat aaatgtgagt gtgcatgtgt gtacaagtaa aatacatgtt 1080

catagtaaag aggatcaagt atatatttga tagttatata gcatttgcat tgttttttag 1140

gccacctgaa ctcctagagt acaacatagt taagtcgtga acatagacta attatataaa 1200

aaaagcatct actagcaaat aaacactaaa acaccaaaag accgtatatg atttgaataa 1260

ttctcaacta gacacaataa ggtccatgat tttagatgaa aaaactagag ctattttcat 1320

atttttcgag gtaaaacaat ttttctataa atctatggta ctaggattaa ataaaatttg 1380

ggctttttaa ttgcataact ttttagaaaa aaacatttgg atatattttt tgaaaaaaat 1440

tatataacat tttccacaaa ttatatttca tcactcaact attgaagtac taatatcata 1500

tttacctcct tcgtggttga tacggtgtca agtgtgctgt ccactaacac agtacatt 1558

<210> 4626
<211> 2739
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46397_G1, chr1:271763515..271766253, Cluster 28

<400> 4626
tttctctatc cggtttaagg ttcgtattcg ataatattcg acaaaacagt aaaatgacac 60

gcttttatat agtgtttttt ttgtctgtgt tctccccaca gctcatatat agctctcgtt 120

tgtactccta acctacggag tttctctgca agaactaaac catcttatcc tgaccatctc 180

tctcgcgctc tctctctctc tctctctcta gctaggtacc cacaaatggt gtgacaaata 240

taatacggcc ttattttgca cggtgggaaa tgaacctctt cgcgtgtagc agtcaaccct 300

ggaaaaccat ctcccctacc atttttcacg ataaaaacac ggagcaccct gcaatcgagc 360

atgtgaaaaa ttaagatttc gcgtgcgcca tcaagccgaa ctggcagtga gctgagattc 420

tgcgttgacc actcactgcc cttccccccc gccgaccagt gcaaccagga atcgtcggac 480

agtgctgcca cgtcaagtcc agcgacccgc cgtgcaagtg cgaagacatg catgcatcag 540

ccacccgtac caggtaccac acacacagac acacaggtcc gcagacacga ctgacagctg 600

caagtgtaaa ttccaccgga taatactgcg gtcgctttca tccctctgtc accgggataa 660

tattttactc gatctaccaa cctctaggtt cgctggacaa accccgtata tatataaatg 720

gtgcatggtc ctaaaaactt tcatatctac gtactaaaaa ttttcgagat catatttaat 780

gtggatttgt ttgctcggaa tgtgttatta tgacctcact tcatattatg tgtgttgtag 840

taaagatgaa aaactaccga atttaaatta ccaggttata gatctataga tacataatgt 900

ctctatacaa cttaaagagg aaatgtcttc actctacaga aaatcaaaag gaaacgatga 960

tgaactcgtg acagattgta ctgttgcttc attgacacag agcaaaggaa acgatttttt 1020

tagaaaaata ggaagccaag agggaccatc gcccacagcc cccacatata tacggcgggc 1080

ggtgggagcg agcgggggag tagggagaca tcgcgtcgca gtcgtgcctg atcctggtga 1140

tcacgggtat catcaagatc aagatcaagc tcagccaaaa gataagcaat caaaataaaa 1200

agagataagc taataatcgc ccccatactc tcatccatgc atgcatgacg acataggacg 1260

gagcacgtag tacatatata ccgctggctg tactaataat aacactatta aagcagagcc 1320

gcagtcgcaa gcgtcgtcaa gggttccaag tatagattaa gggaaaagcg cgtagacagg 1380

tcggtctatt ttcggccctt ggatggagac caggaggttg cttgagcacg tattaatgta 1440

ggaggagtac cgtacccagc agctggtgga tgacttggac acgcacgcac gggacggcac 1500

gatctgggaa gcttcgaacc aagcggagga ggatcggaga ccgtgtcttg gccaccaccc 1560

atatcgggcc ggcctggggc ctgggtgggc gactgggcgt tctcgtcatc gaaaaaaaag 1620

ggcaaagtcg gtggacaaaa ctgtgtgctg aaatgtgcga agtgcgacta gagggatcgg 1680

tccccgtcct agccccctct ctcgtttcgt tggtatccgt ggcaatcctc gccgacaccg 1740

gaaaattgag tactagtact cctacaactc gattttacta aagcatacta cacgggagtc 1800

tgacgttgtt ggtgtctttt tttcccctct ccattcgttt gaccatttgg ttttttaaa 1860

taaaaaacta gtacaaggca atggtaaatc acttttgctg acattcttcc cgctttactt 1920

aactacaagt aaagtaggaa tgaagcctgt accactcttg gaggaaataa aaaaaaatat 1980

gcttagagct aaggaaaaaa tttctgcaac actcgctcgc tcaaggccgg gctactcaag 2040

tttgcctcat tcatgtgtcg ttagacgtct tcggtagaat gcgtaaaata gtaacgtgaa 2100

actgtagata atactgttta acactattta taaagagaga atttgaaata gggaatacaa 2160

tatgagataa gataaggatg tgctcgagaa agtcttagag cttagacccc ccgtagaggg 2220

tcacgagaca aaatagcaac ccttgtttat ctacaggaag caaacgacat ctttaatgtt 2280

gtgttagttg tcagttttgt aaccaccatg agctttagct aacatatgta tttatattag 2340

cccagcaatt tacgatatct gtgtgttatg aaattctgtt ttccaaacag tctaagcttt 2400

cgattctatt ccttcatgta tcgtctacca ttcttatata tgttttgtat tcctctattc 2460

cgaacacgtc gacgacggat tcggccgcgc tccagatagg tgaaagaatc gggtagggct 2520

cgctagtcgg cagtcgctac tcccggtgat gtcacgggtg cgtagcttgt gaccggccat 2580

aacattcaaa ttttaatgtt ctgctctgac gaaacaaata gtggtgtatt gcggtgaata 2640

atgttcttca tgtacgtaat cctgtacagc agcccacgat atacaagttc ttcgctagta 2700

ctgaaaacgg taaaagttgt gcgtagcagg accggcgtt 2739

<210> 4627
<211> 1565
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47886_G1, chr1:280084463..280086027, Cluster 28

<400> 4627
aggatgggtt gcttctgaag tctgcgctgt ggtgagaact agagttctgt tatgaatatg 60

tcccatgtag gctggcactg tataagatgg attgatgtaa gctggaggaa tgtagggcca 120

aaatattgag ggtcctatat ctttagttgg aacatagcca gggatggtaa caacgcggga 180

cagggtcggg ggagtgctcc ccgtcccctc cctaatcccc aaaatctgtt ccctgccccg 240

acctcgatat gcttaatgag gaggatttat tctcgtcccc aaacggggac ccaatcccca 300

cgaggaacct atggggatta attgttgagc ataaatatta tgatatcaac aaataaacca 360

tgttatcatg taggcgagcg acaactgagt gaagaaaatg agggttatgg ttagcgagtg 420

ggaatgttgt atctttatac agggtcacac tgagacgatt tgttagattc aaccttcata 480

tcttgcgtgg ggaggatctg actcttaact cgggttccca tcaaatcctt gtagggaaaa 540

ttcatcccca cccctgcctc gttatgtttt ggatccttgc cccatcatcc ccacggggaa 600

aatttcagcc acatcctgcc cccatgggga aaatgtcgtc cttaaacata gccataagaa 660

attcccatag tgctgagtgt agtagtcctc ctactgccac tactcatggt aactctccat 720

aatcctatga ggtcatgaag ctagtgcatc tagaagtgat ggaggagcta gaacatcaag 780

cataatatga gcattcatat ctctaagcat cagatcatgt atcctggtgg cctatctagc 840

tctcactctc gcttggtgcc atctcattta tgtcactaac tctcctgcac aacctgaaca 900

caatgttata catctttctg ataggagacg gtgaattgtc actgtgccta gaagacctct 960

gcctctaagt acccaactgc tatgtggaag ctacactagt agtcccagtt gaaagtggag 1020

ttgcataagt agatgctcct agtgcgcttg gcacaatagg attctttaga caagtagtcc 1080

ttagtggttt atactcaaca tccttcaagt cttatttgta atattttaat catcaacatg 1140

gcatacggtg catagccata attctataat caaaactcag taattgactt tatctcttct 1200

taaagaaaat ggaacacacc taaaggagtt gttgtgggtg tcatactgac gaacaaattc 1260

tttgtataaa aattgatgtt ctcattatct ctatcttttg gtgtgagtgt ccttataaac 1320

attcaattga gagatgtgaa tagaaggaat gcatgccttt gactataccg aagttacctt 1380

gcacatttgg cagatacttg aatttcattt gattcacaag taaatggctc tcactatgaa 1440

tcctttgctt gttgaggtct ctcctatcaa attaaaacat cttgctaaac ctctcataga 1500

tcacttggtg ccatgtaccc tcaatcatcc aatgcataac ccgcttcttt atgtctccat 1560

atgag 1565

<210> 4628
<211> 2498
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50325_G1, chr1:292524386..292526883, Cluster 28

<400> 4628
acatatattt ttctacttgt ttcattctag tgcctagcgc gttatgggca aagttcctat 60

aaagtctaac acgtataaat tacaatagta tctatctgat catagctagt acgaaatcta 120

tttttaaata tactgtatca gattagataa cgcaagatgt aaatcccgtt ggaatatacg 180

gcacacggat atcttcatat atcagcgtac gttcgttatg aaaaagggta cttgaggacc 240

tcctggacag catgctacca aatctggacc attcagttcg ttgcaagatg aattttgccg 300

atgaaacact actgggtctg ggaccgacac acgcgcacag gagtcgtggc acggacctaa 360

caccatctat tcagttgaag gtcacgcagc acattgcttc agttaaacgt aacgaaaact 420

tttaggtgag cgtctcctgg gcgtcaacaa cgtaacttga ggcacaccgt gggtgccatt 480

tggtgtacct aaaatgctgc gttatccggc gatacgaccg cggacgatgg acggatgaaa 540

agctgaaagc gacacgatcg accaacgacg cgcgtcagta acatagtttt ttttttcgg 600

agccaacgtc tccgtccaga agattttgga gagctaaata gttctacatt tgattgtaat 660

ttttcatttt tgaaccacta tgttatatat aaaatcaatt caattcaaac aataagttag 720

gaagcgaacc gtacctcaga accaaatgct acctaaatca cctaaatcaa ggggacttgt 780

aacacaaaaa aggcctggtt ttcttttcct ttttcttctt ccgtgtgtct tgcaagcaaa 840

gtctatgttt agatcatgcg tggctgaaaa gagggtttaa aaggtacggc gccggggcag 900

ttggccaatg aatatagggt atatagcgac accgtgtgtt ttgcgtttgg tgagggtttg 960

cagttggtcg tccatgctcc atagtagtga ttaattagcg cagacgatta aaagccagat 1020

cccattaatc atcgtcgcag gcccgatcga tccttccatg cgtcgttatt attagaaaag 1080

taataatgga gctgctggat gtcctggata aagcaggaaa agaaacggaa ccgacgattt 1140

gaagccttac gtcagcttga tacccgttga tgcatgtcgg atcacgcgtg tacgtagcta 1200

atacactctt ggtcgacaca tgatcctaaa tacaataaag accgtagctc aaattgatat 1260

agagagaccg gtacggaggt agttatagga tcgacaacat catctagaac accgtacgcc 1320

aaattttgat gtggtagacg tgacgaacag caagatagag agagaaaagg attaaaaaaa 1380

gctaacagat gtatttttga tctgttgaat gttggatata tcgatcgatc gtgatctctc 1440

taaaacatat agaggggcta gtagtatata actcaaacat gttttttaag ttccccgcat 1500

aaaaaagcga cgagaaaacg aattggtttg gaaatctgga gaaaaaaatt ggtctactga 1560

actttccaag ttgattaggt cggatttcat ggggagcgat agagaatact cttgggagag 1620

catatattcc attgatcact tttgggagag catatatgaa tttccaaatt ttgccatccc 1680

tacttggctc cctctcgtga ctctgttgta taccgtgtat ccttccttgg cagtttgcat 1740

gtacccctc tggacagatg tgggcccccc agatgcgttc agagagattg cgaccatgtt 1800

tggattggat atagttcatg cgcatattca ttttctagat caattacagg agtttattca 1860

cccattgccc acattccata tgtttggttg ccccgtgagt tcaaccaggc tctccacata 1920

tattgactag acctcgttct gtgttcggtt gtctgtgtac gaaatagacg acacttggat 1980

gtgctgatgc aatcgaagcc aaatcatgca gcatttcctc catccgtgga gacacggttc 2040

ggacgcgtat caaccagtca ggctgcaacg acgaccaacg agacaaccaa tcacatggat 2100

tgtaaagtgt ccaccatcta ataaaataat ttgcccattc ttcaaattaa tggtgtgtat 2160

ctccctgcac gttggtcccg tggtccgggc gctacttcat cgacgacgac gccattcgag 2220

tttccctatc gctagccatt cgatgttctc agtctactga acttactcga tgcaaggttt 2280

gtttgtttgt tgctgatgct ggacgcggtg aaaagaccta gcatcctggc gatttctgaa 2340

cgggaaggtt tatgtgctgg tgacgctgca ggcctagcat atatatatgc tggcagtatc 2400

tgaaggtagg caaaaaaaaa aagggacgtc gcattgaaat tttaagcaac acaattgcgg 2460

cagcatgccc gtcgtctccg gcgagtgctg gcagttgt 2498

<210> 4629
<211> 1443
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50411_G1, chr1:293001006..293002448, Cluster 28

<400> 4629
tctctaactt tctgaaactg ttaaaatacc taacactaga tgtaaaggaa ggaagcgagt 60

aaaaaattaa aagggaagaa ccttaaagag gatatacaaa tgaaagcaac ataatatgca 120

ttaatctgac ttcaaatata tgatgatact tttgtctcaa taaattctgg aattatgtgt 180

ttttcttagt ggtaccgagt ttatgtgatt ttcctgaatg ttgtgtgatt tttttgggtt 240

tctgtgattt tctcggtggt gcatgagagt tttcctataa ttttttgggt ggtgtgtgac 300

agttttatag atccaatata aaggggaata ctataagaaa tgttgatgat gtatgagagt 360

ttttagatcc aatctatcaa ataatactat atgaaattgc tcgtggtgta agaagaaaaa 420

tatgctatat atatttttt actaagaaca tgactttaga ggattgatta tggtaaaaga 480

gatgcttgat tatgatagat ttaaatgatg atagaagaga cgatttagac tgattacaac 540

gactttatat gattgattac atgatgcaag aagaaacaac tggatgatta attatgatat 600

aagggatgat caattatata caagaagaga cgctttagac gatcaattac gagacaaaag 660

atgattgatt atgatacaag agacaatcaa atagatggtt gattataata aatgcaagaa 720

gagacaattg attacaacag aagatgctgg tcatctgctt tttactatga gtccaacttt 780

agacgacttt gcttacaata caactctaga cgactttgct tagaatacaa gatgctagat 840

atctgcttta tgatgagcct aatacataga tgctagatat ctataaccca atatccaaat 900

ttaaaagact cttgtttaga cgactgggct tacaatacca actttagacg actcttctta 960

caatacaaga tgttgtattt tttacgagaa gtctaacttt agatgactat ttttaatggt 1020

gagtcgaatg ttctattttt acgatgaatc ttctaatttt ttattatagt ctaactttag 1080

atgactccct ttttacgatg agctaaatga taaatatctg tttttttat gatgagtcta 1140

gcttttaatt tgtcgaacac taaatatatc tgcttttat gatgagccaa ccttttacg 1200

atgagctaaa tgctaaatat ctgtcttttg tgaaaagacg atgagcataa atttcaattc 1260

gtcgaatgct aaatatttgt aacttttgaa atgataatca tgtgcttttt atgatgatcc 1320

taacttttga tttgaccaat gctgatttta cgacaagact taaatatctt ttattttact 1380

ttgcaattct gattttacgg ttttttcaaa tgctaaatat gtatttcttt acccttttac 1440

tct 1443

<210> 4630
<211> 1511
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52428_G1, chr2:3591506..3593016, Cluster 28

<400> 4630
gatatatact cgtcgtttc agagggaacg cagaggtcag aacacgtacg ctagtatagt 60

atagtatagc caccaaacat cgcagcacgg tttccgggga ttccctttta ccgtatacat 120

cagatacagg actatggctc tatatctgtt cacctgaagt tgtattttca tattggagtt 180

tttttaataa aaaaaatgca acagacaagg ctcctcctgc tgtcctgcag agctcaacaa 240

gctaccaatg caagtatata catacaccga ctgtcctctg caggtggtac tgtctgctct 300

ctgttgtaca tacgttaaca agttgatgct ttctgtttcc gactggcctc ctacatacga 360

cgacaacttc cgtttcagaa ggaaacaaaa caagcgcagg caggggccta taaacatttc 420

tttcattacc aggatatatg attattatta ttattacgat aacgacacag ataacccaga 480

tgagttaggg ggtgaaccag agaagcattt gcttgggttc tttgcagttc gtctcacctt 540

tgcagttcgt tctctgttgt cctaagcttt tctcatcaag ctttcaccga ccgggggatg 600

ggatgggcga ccatcaccat caccatcatc atcatgttca cgtggactct ttgcggtggt 660

ggttagttac tggtggtacc aaagttagtt tttatggcct gcggattaaa ttatgcaggc 720

tcgactcgac tcgagcacgt aggtgggtga gtgaggctag ctaaagtaca ctgttcatgt 780

cctaccgact actagtactg aagctgacac tgaaggcatg catgcctcgg tagttacgcc 840

ccgactcatg ccatgtggac tctctctctc tctctctctt gcacacaagc ctccagaatt 900

ctttgagtta cgaaatcata aaaggcccta gttaaatgcg gcgctaatgg agtcctacag 960

attactaaat gcataaccgt ttatcaacca acctactagt tggactagga cttgtaagac 1020

gaaaattctt ttatcacaga cgcgaaacca aaaaacaaat ctgaactagg actcgtattt 1080

tccatgaatc atgcgtgcat ggataatgat gctcttatat atgcaccgac atgtccgcgt 1140

aagcgacaag tgtgcaagca taaccgtttc tactactgat taagcaacgg ccaacgcggt 1200

ttcttatgag cggtgacaaa atatagtgac ccggcgcacg tttggacata tccacgtggt 1260

cgaaaagtgt gacaaaggac gctactagta ctgaagtgct ttaaatgcac ttctaaaata 1320

aactagtcta aacaacacgg tcaatagttt agctagctat tagctatttt ttaggtggat 1380

acatccaaac actctcgact aatagtcctg catcctcatc tacgcattag tttactataa 1440

ttggttcaac ccagctaaaa tcaattagta gttaatcaac caattttagt agcacttttt 1500

agccaattta a 1511

<210> 4631
<211> 1641
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53483_G1, chr2:9270275..9271915, Cluster 28

<400> 4631
cgtgagtctc tttcggagtt ctctctcact aacatcgtca aaaaaaaaaa aaaaaaccat 60

ttcactccaa ggattcaccg cgcgcaactg tcccggctgg gcggggtagc ttcggagcat 120

cgccttctga cccaaacact ggccgcgtga ccatgtccat gagtgagcga cggtccacat 180

gccgagagag actggatagc actgctgctg gtggtggaag tggaagcgag gccggcagag 240

tttcgccgtc ggcgcttcgg ccgtgcacct agcgcatgta cgggaatctg gcgcaatgca 300

gcgtgcatgg cgttaaagtt ggtgcggtgt ggtagtggta gctggccgct gcccgctggg 360

gctcttttgt cccggcgtgt atgtgcacta gtgactagtg agtgagtgac agtgcttttt 420

aagcctttga cgatgacggt gcgtggcagc gtgggtatgg ttcgttgctc ctgctgcaga 480

gttttatcag ttgcttaacg cgagcggaag gacacgtgct cttctggctg cagcattcgt 540

gtccctttc acttgtcgct cagtaatggc ggctgattag tggccaaaaa ctaaccacgg 600

gtataatatt gtgctctttt tctatcggtt atttttcaga gcaatttatt agactggttt 660

tcagcaacat cttgcaaaac gagcgcaata tatctttaaa aaaaagaatc agtgcttagc 720

tagtcactct tccttttttg gggaagatgg actgtccccg ggagtcttgt gattctttct 780

cgcttgtttt tatttgcttt gttgtggctt tctaaaaact agaagacgtg ctcgtccgac 840

aactcatgtg tttacaacca gttatgatgt cctattatat ttataaataa gaacttttaa 900

aaaagagcag actttgtaag gtatagagtc gtgcacgtat atatactata aaaagaatac 960

aatactttta ccagatcact taatctgaga ttatttttga agaaaccgaa ccaataaagt 1020

ttcatatgct ttccaaaaaa aatattaaac aatatacatt ttgtgtccac gcctttctca 1080

gcacaatggt ctgtaagatg ccaataaacg aagagaatat gacaacatat caaatagcag 1140

tgctcttcag taagggaggc tagaatgaag tcaaacaaat caatagcagt catacataac 1200

tatcaaagaa tcaaatagcc taggttcaag atggtggaat ccagacagtc cttttgttga 1260

agcaagtgaa gcctactttt gtgatttcag accataagta gtgtaaacat ataatcagcc 1320

caaacagtcc tttttgtcag agcaagtgaa gtctactttt gtaatttcag accataagca 1380

gtgtaaatat gttcgtctct ataattttca acctaaacac tgcggacctt tttttctctc 1440

tcccaatggt tgtttttttca tatcacaaac aacggtttca ggccacaaga aggtgaattt 1500

agttaccttg caaacaagaa ttacaaatca cgcaaacaac ttaatacaca catcaattta 1560

acttactgaa aatgacagca tatggtcacc taaaatgtta agcatgctat gtattatgac 1620

attatgactt gatcggttgc t 1641

<210> 4632
<211> 2104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54083_G1, chr2:12246102..12248205, Cluster 28

<400> 4632
gttactagta ctaggagcat atatggctgg ctcatcgtcg aaacggaagc agagagatat 60

atacagttga tgatgatgtg gtcttcgatg tttgtttgtt taattccctc tggtctaaaa 120

agcacggcaa ccgagtcaca ccaccctcta aaagaaaact ggaaagtgac agaacctcca 180

acaaaaaaac cactacgtac gtggcagact agcagtccgt gtctactggt actcctctga 240

caaatccatt gtagttaagg tttatttcgt ttaataaaat ggtactcgac aatatataca 300

gctctgaaca acctctaagt ttctattaga tgtttattat tacactgcca aagatacgat 360

atttatgatg acaaatatgg ttgtgttgac ttgaggggac aatttactca ctacgtggca 420

aattatatct gcttggattg cacaaacaga tctcattcaa attgtgcagt tttttaatta 480

ctagtggcga atgtacattt gtatatacta atgacgaata taaggtatgt atactttgac 540

tgtgtgaaca aaagattgaa ctcgtaagcc tacaaccaca aacttcacta tcacaccaaa 600

ggccattttc atcacttcta aaaaagggca tcttaacaaa accacatatg ttcagtaggc 660

tataaattga ttctacacaa catctcttct atgaaagaaa atattgtcta agctttacaa 720

ccaggacaat tttttatata tatagtcaat gtgtgattgt tgcgtaataa catgttctat 780

tgccgcactt acgataaaat ccatttaata gacaggtgat tgattgtgta gtgtagcgtg 840

gcactggttg gctaagttct ataacgcggc agcaacaata accaatgcca aaatcgatac 900

ataggttatg ctatcatcta agctttttaa ttatcatatt ttttttaaat aaaaaacaat 960

atatgtacag atacttctat agatggtcct taagaaagat aaaagttaca ttttgtgttg 1020

tccagtaagt tattctaaac tttagctaca agatagcttt tgtaaatcag gtttgaatgc 1080

ttggaagtac tgctcataga tttatcttaa aatataactt atagatatgt attttctata 1140

cttcatagat atactatgat aaaaataata ccattttgga atagttcact tttagacaat 1200

cttaagacct caattatttg tgattcgagg aagtagatcc atcaccatca tggaaaccaa 1260

tccattggat tacatcaaga ttttgttata gtctttatga cacatcaatc ttactttatc 1320

aatgcaagac ttttaattaa gttacaacat tattattttt aatactaatt ttcactattg 1380

ggtacaatac aactttgatg aactatatca acaggtagtg gcatgtgccc ctaagagtta 1440

aattgcctaa caatggaccc taaacatacg gtgaaggttc tatgcaagca agacaaagtt 1500

attagctagc acaataagaa aatggcatgg taacgacaaa aatgctatgt aatcgatgta 1560

aaatggtcgt gggaccacat gttctagtgt tgcagcttac aacaaaaagt catttgccaa 1620

acatgtgagt gattgtgtag cggagtgtgg cgttgattgg ctaagatata taacaacaac 1680

agttataggt accaaattga tacatagacc atggtattgt ataagcttga taatcatcat 1740

gattttatta aaataaacaa tatatatgct tttctaaatg gtcctgaaaa agaaagatta 1800

tgttgcattt tgttttgaca agtcaatgat accaaatttg gatacaagaa ttaaatgctc 1860

ggtagtgata tagatttgtc taaaagatag cttagaaata tacattttct atactttata 1920

gatatattat aattaaaatt agtaccaatt taaaatattt agattttaga aatccttaat 1980

aatttagtta tttatgattg gaggaactag atttgtcaca atcatggaga ccaatccact 2040

atactatatg aagatttagt tctagatttt ttactcacca accttaaagt tattagtgga 2100

aacc 2104

<210> 4633
<211> 1730
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56952_G1, chr2:28124484..28126213, Cluster 28

<400> 4633
acctagcata cctttgactt gtagggccat ttgtttagag atgacagtca aacctatggt 60

atgtatgtct atggattcca catatattag gtgtagacgt gagtgtcaaa ttagatattt 120

agatctatag atagatatag tacggtgtta aattaaatcc acgggtctat tgtgggtgtg 180

gattttgatt tttttaatga tgtgactgat ttaaaagcgt cacaatatat aatggaatct 240

cttagttgtc tcttttaatt gtaaaattga tacagacaca cccaatattg tacatgctct 300

taaaaataac aaaagagcct agagatatat tttattaacc ataggtacta agcaaaagtt 360

ctaatactta agtatgtctt tatattcagc ccttttagaa gcacaacttg atagagtagt 420

aaatactgta agtttcagag aggcaaaagc agtttcaaaa tctttggcgt ggttccgagt 480

actttatcag acatttagac tgataataga agtttgtttt cctttgagtt gaaaggcgta 540

tataaatcgg agctgaatta aaaagagtga tcaccaaagc atgatagcta ccgtagtgct 600

gtagttcgat gatttggtcg ttatctgaaa gctgcacacc aaccatgcat gatagatagc 660

taccgtagta ctgctactgc agttcgatcg ccaaggcaag aactgaaaaa cgagcaccat 720

ctgactttta gtagcgcata agaaataaga catgccatat ccattggaaa acaaaaacaa 780

aaaggtagga gcggattgga ccgttctctg cggcagtttt tccagtaatt ccatggtcaa 840

aagaaaggac aaagctccga gatgaccaca gttccgaaca cacagtttcg tagcgacaaa 900

acccagaaac aatgggctaa tcaggaaatc aacgagcaac ataagctagt tacatgtaga 960

tgtacgtagt gtgattcctt ctcacttgtt tgaccgaatc agggcggcag cttcgtagaa 1020

gaagatgatt ttggtcgatc gagcaggtta taactacact tgtagctgac tagaacagtt 1080

gcagctgact agaaatacag ctctggtgct agtagtttga cacaagtttt ttatgcatta 1140

accaccagct cacgatgatc aacagctagt agctctggtg gtagtcgtac atgcatgtgc 1200

tagcggttga tcatcatgag ccatgtgaac atgtgatcca tctatgtaac tattaatctc 1260

tctctctctc tatgagttga acatatcagc tacaatctaa actattggta taacccgtac 1320

aaaccaatat aagaataaag agaccttgat gcgcggcgtt ggtgacgccg tctatgtaag 1380

aggcaccatt gacacagcaa cgaaccgcct caggaataca ctcaccgaca acacacacgc 1440

cagccactcg atcgagttac agcctttctc tccaacttct gttgtcggac cgcagacggc 1500

gctccgtctg ttttcccagc agagatacac agggtgacag gccggatcaa tgtactccgt 1560

ctgttttacc acccagagaa tgtcaagccg tgtgcctcag ctattttcag caatcagacg 1620

tgtaaactgc agctggaaaa aaaggattgc agggatcagg atacatataa gatcagtatt 1680

cagtagcaaa agccaaacgg gctgaggtct gaaacccatc gcatctccag 1730

<210> 4634
<211> 1709
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58275_G1, chr2:36084154..36085862, Cluster 28

<400> 4634
tgagttttaa gtttaaaagt ttagttaagt tttttgctac aaatatttaa tttgaaaata 60

ttgaaggatg ttgatgctaa gctatttaaa attgttgttt tgttctaatt ttgtataaag 120

gtgttttaaa actagagtaa ttattagtat tatgcatttt actttaaacc aacattgaat 180

tttgcatgca tgctaattta ggtttgttta tttatatagc atcagtgtct aagataaaat 240

gtcctaattg ttgtctcttg actagagcta ctaaaaggca ccaattatcc ctcttagagg 300

gacaagataa atatgacctt ggctttaaca gagatagact atctcattga caatccaaat 360

ccgattggcc tggtgttggc aacagaagga gtgtctgagg tagaaaataa tgttgacttg 420

ataatggcat atgacctcaa acgcataaag taggagagat caaataaaaa gtgtatgatg 480

gtcataagaa gcactggcaa cgtgtgcacc ccaaaccagg tcagtagcac atggtgatga 540

gtccatccat cacatttatc acgaagagca atgttgtgat caaagtcatc attgtagcca 600

cacctaaggt cgtaggtgta tccgcaagca ctatgcaata tatgtgcctt cataagctac 660

taactatatc atacttgttg gcatgggcaa tcataccttc cactgtgaca tgtcacactc 720

gccactatgg cacacgagag gcaccctctt tgtacggtac aacaactata ataagatagg 780

actagttgga cctatggtag gtagggattg ttgtccatgt agggatataa ctctcttgta 840

ccttgtgata ttaaaaggga ggcatagaga aacattgaaa tgtcttattc tctcttaggc 900

ttctctctgg gcgtgaaggc tagagggcaa tcaggctcgc tctgtcgctc gataaacatt 960

gcacgtggaa gctagggcta ttctcactgg ctagctcgaa catcatctaa gtatgtaagc 1020

tctatcggta ctcgcatcta atcatctagc acacaaagga tgtagggtac acttaagagg 1080

cctaaacctc tctacattgt acatgtcgtg ttgacactat attctagcag tcccaggtct 1140

atgccctctt tgagtgtgtc tctaattttc tatgttgtca catcccaatg acacctatac 1200

tcaagaatta aatataaaaa ttatcctcca cttgagctat cattcatcca tttgcttacc 1260

acattgacca tgcataattg agggtcttaa acacttctat ctttgagcat gtcaaccttc 1320

aacatgtgat ttctgttgaa ggtttcatgt cactttcatc atttgatttg atccttgata 1380

ttagtgtaac ttttaatatc ttgattagta catcaagtaa atgtaagtct atttcttttc 1440

caccttatct aggttctatg gtcccccaag ccattgcttg ccctttacgc ttactcagtg 1500

ccttgaagac gtttcattgc cattttcact ttctcaagca atcatcttgt tttgcttcaa 1560

attataatta agcatataat gaatatcatt ttcatttgca ctattctatt ctgcttgaac 1620

tagattgttt tcattaataa gtgatttaag cattgacaac taacaatttc catcatattt 1680

gatttgtatc atacaagctc ttatagttg 1709

<210> 4635
<211> 1539
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_61504_G1, chr2:54760511..54762049, Cluster 28

<400> 4635
cttttctcgg tccttctctt ctcatccatg gtccccgtgg gacaaggcag gcaggccccg 60

tccatcatcc atgaacccga tggagctctt gcctgcacag cgtcctagct tggcattagc 120

agtgccaacc aaaccggtca ttaattttgt ttcatctcag tgtgtattta attttgtttg 180

tcgatctaag tagtaggagg agtacatagg tagctctaga tagtctagtc cacttttaac 240

tttaactgct cgtcaaccca agttaggcct atctgatgag tgtgcgtaat atataaagca 300

caccgtctat ctagagagag aggaaaaaaa tcttacgttt cagttgacat tatctttaac 360

tgatatacta ccaggttgcc aagagctagg tatcttcgct ctaaattaga agacgtcctg 420

atttttaaa aacgattagt tttttcttct tcttctatac attagattta tacataatac 480

aaataatata aaatctggag gaaaaaaatt ctaaagtcta atattttgaa acaaaaacaa 540

gtacctctta taatttagaa gaactgtacg agtatcagtg cgtgtcttgc ctatcgtaaa 600

tactcctgct ctactcctca tatataccat atataggacg gttttttat atgttttttt 660

tgccattccg gaaaagtttt agggacagat ggcaccggaa taatgaaggt caagcaccag 720

ctagctgtca ctaacgcatg gtttgaaaag acccacgcgg caaaaaaaaa gttttagatt 780

attttgacct aataatacga gtcaatctga aaagcgaagt tacggggcag atgtacatgc 840

atgcagatca gaggaagtca cggtcgaaga cgggtactca gatcacgatc gaaatcagat 900

cattaaccat gctatacggt gcatgtcttg cctaacggta acggctagta cacaacaaca 960

gtcagtaaaa aagcccgtac gttgtagggt ttggttcacc ttttgaccgg ccatcgcctt 1020

caccttacac accttcaggc tttcatctac ggcctacggt ggcaggtggc gatcaatccg 1080

acgacgtact ggtaccctac atagttttat ataaactctg tctgcacgta cgcggcccct 1140

ttttctcgtc gatgactgct catgttgagc acagggagga caagagccac gttaccgctg 1200

atgaaagcgt gctttccttt ctcgtgctgt atgtactagt acgtactacc gccaccagtc 1260

caccacgcac tggttggtct tcacgtgtca gtcattatca cacacaccgc actactccca 1320

ctgcgttttg ttcctgcagt cagagaagac actagaaata aaataccaca gcaaacataa 1380

gtatatactc cgtatatctc tgacatccat cgatataccc atgtgagcat gtggccacca 1440

aggccacacc gccactccga aagcgattat atctcaactc aagtcgaccg agagcggcat 1500

ataaattcgt gcgaagatat acgattagtt ccggaaaaa 1539

<210> 4636
<211> 1561
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85971_G1, chr2:205933532..205935092, Cluster 28

<400> 4636
gatacatgga ctcggaattg tatagtataa tctcttaact ttttgttatg tttaaaaaaa 60

cagatccgtg gtctcaaggt tgtgtgtatg cattaagtaa gatatattcg aaccaacact 120

tatctttctt agaaaacgcc acaggatata ctactcatca caccaaaaaa tcaaattttg 180

tttgatgact tgaaaaaatt atggccacca tagaaaacgc atgacaaaaa gacaaaatga 240

agaaaaatgg acttacaaca aaatatcaac tccaaaattc aaggaaaact ctggggatct 300

aaaaaatctg cacgagtttg aggttgtctt cacatttttt ttttgctgaa ctgcttaacc 360

tcaagacaaa tcgatccaac ctttatcgat gcatctgaca actacgagct cttcaagact 420

ttgattcgtc ctaacacaaa ctttgtgatg acgtcacgtg ttgccttcca ttttggatag 480

agcttcaatt aggttttgaa gccaaaaccc aaaaaaaatc gttcatattg ggtccaaaat 540

cactgaagtc ctcatgatta gtctatttga tatgttttct ccacgatctt gagttgttga 600

cacgtggcat ctttggtcct caaatgttcg atcataaagt tccctaatgt ctttgctgga 660

ctttggtcaa ccgtcgtctt gacttagtca acacatttcc tactcctcat atacttttgc 720

accccattta gatgtaggca ataaaaatta tagctggaat taaagtttat tttcttagta 780

ttggactata actagaagtt gtcactcaca attcatagcc tagacccact gttttggctg 840

aaattataat tccaattaca tctaaacaac agtacccttg tacttgacga tgttcctaat 900

tgtcgctcgt atacggtcag cgtgtcgggc tctttgattt ctcgctttaa tcctcatagc 960

gtatgagctc ctagttatcg acatgaacat gtttcgtcgt ctttttgtac tccgcaccca 1020

tgagccataa aatcaaaagg catattacat gtatcacaaa taccattaag gttagtcaat 1080

actaagcata gatcaattat cttatttgac gatcacctat gctatttaaa cacgcaccca 1140

cgtcccacca gccgtcgtga ggctgctggc cgtaaaaagc gccggtgcag ctggaaaagg 1200

gacgccacgg ccactcattc acacttcgcc gtctcgctac gtccgtgagc cggcggatcg 1260

cgtcgtgcga cacggacacc gactaggccg tgcgtggcct ttctcttttg gcggagcgat 1320

ttttgccgtg acactgactg cagcaccagg gtccaggggc agcagcatac atgatacatc 1380

tgcgtcgctc ttatggcatg catgacggat aaacttgcgt gcgctttatt tggcgaccag 1440

cctacggcct acccgagtac agtacccatg cagcagcata acgacaagga gaaaccccac 1500

ccgtgacggt ttgtgagccc ggcctgtcca gcgaatcaca gtgatggaac gtagtagccg 1560

g 1561

<210> 4637
<211> 1931
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86326_G1, chr2:207693337..207695267, Cluster 28

<400> 4637
tttggtcttg tttgatagag tttggcttct acattgacat catagcatgt gaaatttatt 60

atcttcagtt acgtagaaac tacatttgtc agctgactgt agcctataaa aaattgtttg 120

tctaattttc gccagttgac tgtaaccgat gaaaattagc ttattattat ccattaattt 180

gtaagaacaa aggctgacaa agtttatcct atgccgttga aaaatagcga atttccatgg 240

gtagcacgta attttcaacg gtctttgatc ggcgaaaact attcagatta ctgttgtgat 300

agttttaatg gctgatggtg caacgagaca gttttaaatg gttaaaaaaa atatgtatct 360

acaattgtca caaatgtcac actgaggttg aaaagtttat ttataggaat gggttatggg 420

tgacgtggaa ttatcgacgg ataagttctg aaaaatcctt agcgactaat cgttcgtacg 480

tctgtaactt ctcctgtaac tatagcttgt attaccatta ctatttacat tatatttcgt 540

gaaccaaaca atacctaatt caagcgcaca ccgcggccca tgaacgctga taaatctcat 600

actacactct agtggatatg atgcgaaaga aataacagaa attttcgcaa ggagagcaga 660

acaactcctt gccttttctg aagtgccaaa ttattcaagc tggagcagaa catcttgtcg 720

gacaggttgg tacgcagttg agcggagtaa cccacctgct ttttttttaa tccatctcct 780

tccttcttcg actgtctgct aactggagat gtgggttttt gcgcaaagac cattcaagta 840

ttgcacgcaa agacgacgag cgaaagccga gctgccagca gaaagtaccc ccattgttca 900

gctccctgaa ccaccttcct gatgaacaaa gctgaagttg gtgagacaga gagagagaga 960

gagacggtgc tgacggaaga cgacgtcgac gcgtgcagtg caaaagtgca ctactcggtt 1020

cgttccagag cttccgccag aagagcaagg gggagtaggt ggccatgctc gagcctttcg 1080

tgatgtcgtg agggtcactc ttcctctcga accaatccgc attcctcctg ttcagagaca 1140

gctagcgtcc aggaaactga tggtattggt aggcagaacc ctccaccaga catgaagggc 1200

caggcgtcgt gacctcgcct tcactccagt gttgtgtagc atagcatgca tgccctttgc 1260

tgatgatagt ggcaagccta tgcctacccc aacttgacag gacagctcgt gaccgttcca 1320

cttgcacggt gatctgatcc cgccggcgcc actcgatttt ttttttgaac accatgctcg 1380

atctcctttt attccccgcc atcgttattg ctaccatccg tcgcaaatct tgctcagaaa 1440

tgtgattctg gacctaaata agattattat ccgacgtccg tacgaccact tcaaaagaat 1500

caattgttta aatatttggt gacgattgta cgtaaatctg gtggtaataa taggcagggg 1560

atatagttta gtttattgct tgttccccat tcgattctgc aaacgcaaat ggaggattta 1620

cacttggttg ataatcgaaa tttcagaata tcaagtacaa caaggagcgc agggggggcta 1680

ggtggggcac ccccaacaat atatactact aatcccttat cagctcttta atattagtgt 1740

taagtagctc atttatgaag gttttccttc ctcctcgatt gaagaagaag ttattaggac 1800

atgtatgacc cacgtaaatg acttatatat taagagattt ctaagtaagt gtaaaaaaat 1860

acaagacatg tatctcgata gaggaacgtc tctaatatgg ttctctgtgt ctagatacag 1920

tttcgcccat a 1931

<210> 4638
<211> 1476
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86453_G1, chr2:208219015..208220490, Cluster 28

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (390)..(489)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (459)..(459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (460)..(460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (461)..(461)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (462)..(462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (463)..(463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (464)..(464)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (465)..(465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (466)..(466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (467)..(467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (468)..(468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (469)..(469)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (470)..(470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (471)..(471)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (472)..(472)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (473)..(473)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (474)..(474)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (475)..(475)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (476)..(476)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (477)..(477)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (478)..(478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (479)..(479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (480)..(480)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (481)..(481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (482)..(482)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<400> 4638
agcgagagtt ggcgcacggg aaccaaagat ggcccatgga tggacgcgcg gaccctagct 60

ccggagattt tttgcaggcg gtctagggtt tgggggcgtc gccgacatgg ggcagggccc 120

gggggatgga tggaaggttg gatgtgcgag ttaagggttt tcgtgaggac cccccgaaga 180

tgagaaaccg gagattcacg tggggcgtat gacccttgtt ggcgccggtg aacgggggct 240

gctttgtctc cggcgggcac gggggggact gtctcgtgtc cttacggttc gagggcggtg 300

tttcccccgg ttgccttgaa cggcgtcttc tgctttctcc tggggttcct gtaaaaggtc 360

gggggcgttg ggggcttaaa ggcttctgtn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 480

nnnnnnnnng ggccgtctga tgaatcagct tgattcgttg tggacctttt agcactttgt 540

gtgttttttt attagaacag aattatatta tatgttgtgc acaggaaaat aaccattcat 600

tttactgcag atggcatatc acagggagat aaaaaaatgt gctgcatctg taaattttct 660

ttattacttt gatgcctatg atttgactcc tatcatgtat ttttatcctt atattttgac 720

agttgttaag catgctttta gattatactc ccttgttgct gatggtaata ataaaaaaat 780

ctgtctgttt cctttcagac ggtgcaccca agtaacccaa cattttctc tgcagattga 840

cttggataca attgaagtta gcaatctgaa tagacagttt ttgtttcggc agagtcatgt 900

tggtcagtca aaagctaaag tgagtttcac atatgactag aataattatc catgtaccag 960

ttttcttgt aatcacccaa tcgttgtttc ttttttctta ctctgtttta caccgctggt 1020

gttgccaggt tgctcgggat gctgtattga aatttaggcc aaatatcaat ataaacccat 1080

accatgcaaa cgtgaaggat tctcatttca atgttgattt cttcaagcaa tttaatgttg 1140

ttctgaatgg tcttgataac ttggatgcta gacgccatgt taatcgcctt tgccttgctg 1200

ctgatgttcc tttggttgaa agtggtacta ctggtttttt gggacaggta aggcaaccca 1260

atactgcagt tgtagtctgg gctgtttttt tttaaaaata tagttggcag ctctattgcc 1320

tgatttgttt caaaaagaag tatatgctta tagatttatt tcatattgat gtattctttg 1380

tgattttagt tcatactgat ggcttataac tttattttat ttgtacgaag catgtgaatc 1440

ctgaggtgtt tacttacatc tatcagtaac aaatgt 1476

<210> 4639
<211> 1672
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87395_G1, chr2:212795401..212797072, Cluster 28

<400> 4639
gcggttccga cgtaaagtta ccgctgtgag ttaggattat gatctttacg tagccctcaa 60

gcccatataa ccatatcact gaatgcataa tctataacat tcgagaggag catgggccac 120

catcaattcg aagcagagca atgctttagg aagaagtcaa ccgcttctca gaatttgccc 180

ggacgtttcg ttgaatctgg acagcgttat tagttcatta cgccgtgagt acacggcacc 240

attttcaatc tgttccattt ccttttttcag gttcaggccg catttggcga cccaagacga 300

tatgtctgct gtggctgtct ttgtctgtcc tttctatatc gccgtccgga tttcggtcca 360

aatatatcgc ttgtgttagc cattaacgca tgatctaaaa gtcaggcaac gttcttatcg 420

tcgtctccag gtgtcaaact tcatttatga atccataata ctaattgact agcgtcaacc 480

tgattctaaa actgttgcag ctgagctgat tgactcagag agaactgcaa tcgtctggaa 540

ttgaaggacg attcaagtcc acaaataaag ccagccagcc agcaccagca gcagcagcag 600

gtggtctgaa actagttcca gggtgatcgg cggagatttt aattgggttt gcagtttcat 660

acggctccag gaatcgactg actaacgaac tgaatgaatg gtcagtagaa gcatttcagc 720

gctattactg tcactcgcgg agtgtgcaat tcgtcagagt tagttgttcc ttcatttgcc 780

gccgcaaggc cagagcaaga cagcaacagc taacgaggtc aacacaaaca gcgcgctgaa 840

tgaatgactt gaccattaat gcttcaagag aatttgctga tagtgtagtt tgtcaagcct 900

ttttttaat atttcgagac tgaatttttc gagacaagta cttatgaacg aaacatgata 960

tggaatggaa gacatggcat agttggactt ggacagccta ataagccaag aagcaggttt 1020

ttaagtggtt aagcatagta gaaatccaag ctggagctga agaacttgtg gagaacaggc 1080

tcattacgat tacagcaagg cgataacgag ctcactacga ttacagtaca gcagaaagca 1140

gtaccgttgc ttcgtcatcg aggagaacag gcccaattat tctgaaagcg atgagtcgtg 1200

tggtcttcgt ggacctcttt gtcctttgcc ggctgcggct cgccatcgtt ctcacggaga 1260

agatgctgac aggaaggata tagccgcgta aacaaactca tcgtcaaatc aatcatcaat 1320

ggcgctcacc aggtcatcca acttgccctc aactgctgca ccgattcttg tcaaatgaag 1380

atgcagggaa ccaatagcaa atcgagtagt ctggtaattt taactctgaa tctgtggttg 1440

atagtagaac taattataca tggtgagcat ctccttagaa acagcagatt gcagcactgt 1500

ggttgatgag tatcagtcaa ccaattctac tacagaagtt atgtgtcggc gagaagaagt 1560

ggaagttgag cactgctgca atcactgtca gtcaaaaaaa cttactcatt gcggtttcgg 1620

aactggacaa agaaaaaaaa aacagataca gaataaaaaa aggaaaaaag ac 1672

<210> 4640
<211> 1442
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_88529_G1, chr2:219800649..219802090, Cluster 28

<400> 4640
atcaattcgc atgagttggc atcatataag cgtggcgttt taattgtctt tcacggcaag 60

acaaatgacg gcaatttggt cccttcgatc tatctatatg tcgagtttca agtgatgcaa 120

aatagataac gtttctgtgt tttagatatc atgtttagct atttgatttt ttttgtttct 180

ttgtgtaaat aataaaataa acgtgccatt gctatgatat ctctattgat aaaaatacgt 240

tctaaaaata aataatattt acacaagaat gttgataacc tgaacagtca aataaggtgt 300

ttgaaaataa ataaataaac gccatgtatt gttagacgga tgtgacacat atgctatgca 360

aaactcgtat aatgttatgt ctgtagcttt cattccagac gagaacagtt acaaatgatt 420

caggaacaca caaaccaaaa ttggcggtgt tgaaggaaga atcctcgcta tgcatgcgcg 480

gcagaaatgt ttagtcagta gtgtggtcat caggatgtga tttagtaagg gccggtggaa 540

tagattcttt gcacatcatg catgacttgc atataaaaaa aagcaccctt ctccggccgc 600

agagttcgtc gtcaaactca aacgtaatag catctgaaaa agtcagaagt cgtccctgca 660

tcacggtgcc ggccggaacg gctgctactg tacaccgccc aagcggaatc ttcctctcct 720

ctgcacagca ctacatagta tagatagtgc attatttaca catgattttc tgaaggaaat 780

caactgcatt gatcttccta cgaccaaaca aggagcgttg gtatgaggcc catgcatgtc 840

gactttgttt gaacgaatgg aataaacgca ttccttcaat ataagcaaag tacgtacgta 900

catgtgggga gaggaagacc aagtcgtttg gagtatgcgg ctgcctcacc ctctgctgca 960

acatggtccc tgcatcttac caaaggtaga agatagatcg attatgaaga aaccaaaggg 1020

gcgagagtca gagaacctcc ctaatgtaca atataaggac cgaaggtata tcacaaaagg 1080

tccccaaggt acgtcgtcta cgtcagagga gtagtaacct tcgagaactc ttgaaagtta 1140

tcggcagtca gcacgggaag catggaaaaa gtccaatatg ccgagcaata ctgtggacat 1200

cttgtaaatg tagagtctaa cgtacggttg taagtgtgga agttgatact atttttttca 1260

accttcttcc actatcatat atgccttcgt aatacttgtg aaaggctact gttctcttga 1320

tccttaaagc cagcatcgag ggtcttggag gaagcttttg ccacttcaac agtttggctc 1380

tgtcatcgta aacactctac gagatccaca agcctctatc acaaatgtac gaacacctag 1440

ag 1442

<210> 4641
<211> 2056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92391_G1, chr3:1563312..1565367, Cluster 28

<400> 4641
tgtgtcatga tgaggtgagc gtaacccaat cacacgacca tgagacatca gtgatgagca 60

gccagcccac tactacgtac aaggcgtaca ggcagcaacg cattatatta cgagtccctg 120

ccctcctgct actggctccc aaatctgaat gcatgtctaa actaatacta atacaatgcc 180

ccccctgtta gtttaatttg cattgggcac cacttgcatt ggggcattaa gaaacctcct 240

gacattgatg tggagatggc cggggtggtg tcatgctagc tgttggattt gtcgtttgcc 300

aaggggatt acattacatt acataataca ggctctcttc tcctttcctg cctgccttgt 360

actcctattg tcttggtggt cacccatcct ttgtttaatc tcatcagtat gtaccttcct 420

agtctagcag ttatatatat atagcctcaa ccatcataat agttgggcag gtttatgcac 480

taagcagtaa gtactgtgct cattactgca cttattagct cagacgaatg gacaggttca 540

tgcatcagca gcatctgatc tgggggaaca aatttgacct gctaactgtg ttccataaca 600

agacaagcgg ctgcaaacac cagagacgac aatcctacaa tttaatgtac aaggctactc 660

atttcatttg cctgtacaaa ataatgtttc agtaacattc agcaagcaac taattaagct 720

tatttattca ttcagcttga aggctagttt agtcggttgt ttgtcatgga tattgacgac 780

tcgatcggag tcttggcaag gaagatggta ccagtgtcgt ctacttttc taagctttga 840

ggcaaagcat acatcactat atatatatgc atgcaggcag gcaactactg gctaacgaat 900

agagacaggc aggcaagtaa attaataaag cttctgttgc ctgtagctgt aggaaagata 960

tatagtagct agggggggta aggtaaggat aggcaggcaa cgaatatgcc atgcaacttg 1020

ctgttaatct tgaccggatt tctttggtac gcagatcatg ctccatccat ccgccggtga 1080

tgatgcttct cctctcctac atacctagcc gactttagac agaatgtata tcccatatgg 1140

ttatgatagc agagatcaca ttcttgatcc aaagcagcag ccacttactc ccaactgtca 1200

ataaactagt ttgtaatccg tctcgcgcgc gacagaataa catggctagc tagtgtgatc 1260

catcgatcaa ctaagcgatt ctctcagcct cagcctcatc caatgacctc cctctagcta 1320

gctcatttgc aattcacttg gcttccttcc aagccttcat taattaggtg ctgttgtagt 1380

acatatatac tagcattaag aagaagaaga aaaaaaatgt tctctgtagt ggatggggac 1440

ttgaaaatgc atgtaaaaag aaagagaagg agcaagcagg ttgggttatt aggctcctct 1500

aacctaatgg agaattggat ctctgacgga cgaccactaa tggacggatg gcttcaggcc 1560

tttggatgtg cgtgcgtcca cctgtcgacg cgcagtggga tgctggctca tcatcatgtt 1620

tatatatttc attccacaat ggcggagtat atttctgcgc gccagaataa agcgaaagac 1680

agacgccttt tatttattta cttccttgcg ccttcaattc attcgcctct gtttctgcta 1740

atatatttta tgtctttcca ttgattcctc tctctctctt tttttgcctt ccattcagct 1800

caagtttatt tatcatatcg tcagtagaga agtgtagacc ccctcacagg cggcctcagc 1860

agtggatgct gataagcatg gactgggcca aggaaaacac cattggctgc agctgcagtc 1920

cctgcaccaa aacgaccttc ctctatggac acctttttct tctgctataa actaactgcc 1980

aagaatataa tctgaatgtt ggatccagca atgtgtgcac ataaacacac agtcattgat 2040

cggtcccggc tcctac 2056

<210> 4642
<211> 2096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94104_G1, chr3:10077794..10079889, Cluster 28

<400> 4642
ttcgaccact tctataaaaa aagatattaa catatatttt gtatcaaatg agtataactg 60

gatcagttat aagatatatt tttttataat aaatctatat aaagatataa atattgatat 120

tctcttctgt aaaatggatc aaacttttt taaaaaaaag gtatgactaa gcttgaacct 180

aaaattgtaa cgattcgagg agttagttga ttctaactct gatcatcagt agataaaaca 240

catcaacata ttttatatca aacaaataac attagattaa ttataaaatt atatattttt 300

atagtaaatt tatttagaaa catgaatatt tttttgtaaa atagtttaag ctaaagaaaa 360

tttgatttat cttaaaccta ttttttcgga taaaagagta tgtattacat tggactattg 420

tagactacac tggactattg tagcatgtgc ttcatgagtt tacggccttg gggcaaacaa 480

aagttcagaa aacgacttcg tagctactca aaccacagtc tgacaatgaa ctgaaatgat 540

ttggtattgg gatgtcaagc gaagacgaag ccatcattcg cctattcgcc tttagaagaa 600

cgaagagtgc accatcggtt tctcaactat agaacactta cttctagaga agccttctat 660

ttatttatta aaaaaccttc tacttctaat gtgcataata aaaaatggtt aaaaaacata 720

tcatcgaaga taagagttgg tcaaactttt aaaactattg tctatacaca ttgtaacttc 780

tgaaatatgt agttcaaaaa atatgcaaga tttacatata aattgaattg aaaaatgctt 840

gcatatattg tatcaaaaaa ttataatatt ttaagaatat gttatagaag atattaatag 900

tcaagatata cattggaata ttgtatatat taatttgtgg caagtatttt ttttatcata 960

tacctttgtg aggaaataga agtgatgaac tacttttgtt attttagttt gagaaattgg 1020

aggctagggg gggggggcaa gaggtttgtt tgttatctat caccttctta cacattgcat 1080

tgttgttttg cttaagggga tataatgtgt tgatccatca ccatctcatg atatgtattc 1140

attactaaca caagtacatg aggatatagt cgtcacaata gcattgatag atgaaattat 1200

aatgggcgac cccactaaga taagtattac ttaaactagc accaaatttg ttttcatgaa 1260

tgcacttaga tgctccaaat aaaataaaag tataataatt tccaatgcat gagctacaat 1320

tataacacaa taaatatcac catcaatgat ataacttgaa atttcatgtt actatgttga 1380

tgtttaagat ttgctactag acctttagtc agaggttgaa actaccctaa agattagtta 1440

tacacatatc tcatgtagaa gtcgaaatga aattcctttt ttaaaaaaac taaaccttta 1500

gctcgtatgt tgatgttaaa ctcaaacatc accttatgta aaataggtga ctgatccaat 1560

ataaaatgag tggagcctag tcgaagacaa tcaagtttct tgtgcaaatg ttcatttgag 1620

tttaaaactt ctgtttagat gggtgctcat attttagcta actagcatga cccttattta 1680

gaaggtgaaa gaaactaaac actaagtcgt catgttggta catttgcaat gttcgtagct 1740

ttgtagtggt tagagcacct ccaaagatca agctatctta acaacttata tcttgcctac 1800

atcatctaaa agataacacg tcgcccagct attctaacta tactacctag tccctaaatt 1860

acatgaacca aggacaataa tgaatccaat gtattcattt taccaaccca cttccttctc 1920

gatctcgcct aatccaaaga tagtaatagc cctactcgca tcgtactacc accaccgttg 1980

gccctattgt ctagtaagtt accacaacaa gctactacaa cccaccactg ttatggatgc 2040

tattgcagat ggagcttgcg ccgaccatcg ttgtgactcg ctttggatgc taccca 2096

<210> 4643
<211> 2260
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94402_G1, chr3:11626065..11628324, Cluster 28

<400> 4643
aaggtccgtt tgtttgagct ttctaaagta gattcgatga aaaaaaaaca gaagtctcaa 60

ctaaatgggt ataatagtag aatacttttt taagaaataa acacatttct ccggttcaat 120

ttagagtcac tctgtacctc atatttttta gattcctgcc atccatcatg ctcttacaaa 180

atctacaatt gagagttgtt tcaattaaat atattttagt ttctcgcaaa tgtcagctcg 240

cactcatttt ctcatagctc ataatagacc ctaaagaaac atgtgttaac tcttttcgct 300

caagttgata gagtggtgat tgggttccac ttgcacatct tttgtacccc ttccatgaag 360

gaaacgtttg gcacttatac ctcatcatat cggtggtaac agattattct gtttttactc 420

ttttctaagg gaaacatact atttagtata gtttatctac tgagggaaat ggtgatggaa 480

gcttttattt tgcctacttt tgttactaga ataaaattgg tccagtttat gagaaaaact 540

agacccagat tcatacaact agtaaggata tgtcatattt ctctagacaa cttggatgaa 600

acaacaaaca aaggtaactc caattcttat ggaaagaaac taggggaaga aacttcataa 660

gcactgcttc atgaaaacaa tttgaatagg ataaaccagg caagagaaaa ctttagtaga 720

ggttcctcaa ttcgatctgt taaactgaac aactagtgga tcaaagatga ccccgcacca 780

aaacatgctc atgaaaacaa aaatgacggc atatgaaaca accccaaaaa atgatacaac 840

aatagaataa caacccataa cttagtcatc attgcctaac ttgttgcaag catctcactt 900

ctagccaaag tgcgacacta gacaactgtc ttgtgaggaa cccgactcat aagatctaga 960

atttccaagc caatgaagga acccgactca aagaacattc aaccatatca tagatttttg 1020

taaacaaatg gcaataaaaa gaactaatga tatttctaaa acattgtagt gataagttgt 1080

atggcaagtt aaaaggacta acacagaccc cataattctt caattgagag actcttcgac 1140

tagttaaaaa tattgaaata agattcatat tttaacattc tctctattca ttttgagttt 1200

atgaatgtgg taatatcaag aaggatcaat agtaagtgtg ttgtgggtat ccatgtgacc 1260

aaggacatca aacataaccg tagaaatcac aggagagaat ctaagttcta tcccttcatg 1320

tgctaaaatt taagcccgaa gttacgtggg aatttctagc aatggttctt ttgttgtatt 1380

tatttttgtg gttattccaa cgtatttctt ttagtgttca ttatgtagaa ttagtgacaa 1440

ctttctaggt tttggaaatt ctgagtctag tcaatttttt tgagatataa ctacacattc 1500

acaataaaaa ttagttgtgg atgggtagga tgtatatacc ccaacatcat ctatcatctt 1560

tccctcttga ccaaacttag gacaacaacc ataactctca tatgttcacc ctctcaactc 1620

tctatctttt gatttaatat tcttgagtga gatctagtca aaacttgtga ttatctccaa 1680

gagcctaatt ccattcttga gcatgcccaa cattggtcat ttggtctttg atttgttact 1740

cttgagttct ttgaatccta gatggctagg aatcacactg aatggatcta gaaggcttga 1800

gggggtgaat tgattacaaa aaaatctcta taaaccacaa cactagagaa aaatattgat 1860

tggtacaata aaaagctcta ctagaaacta ctttgcacta gatgtaattc agtcaataca 1920

aggccctaca caattctact agcttggttt ctaatttaga gaacacacca cacaagctaa 1980

actaagaagg gctacattag agagttgata aaagcgagta actaaagcta gctactacta 2040

caactaacct actctagctc aaggaaataa ctacgcacac aagcaagtaa gttcaaagta 2100

aaaaaatata tatctatgta gaaggcaaac cacctaggac aagtggtgac acaagatata 2160

tcctcgaggt ttagttagtt gtcgacaatc tatgtcatta ttgtggtgag tcccaaaatg 2220

gtggttcata agctaactag catgaaaagt gaagggacca 2260

<210> 4644
<211> 1431
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9680_G1, chr1:51393269..51394699, Cluster 28

<400> 4644
gtataaaagc catcatttga gtggccaggc ttttataccc tgttgtggac gcaactgagt 60

ggcacgatct aggttagatt atgtatggcc atatggctcg tgctcgcaac aattacaaca 120

cgtttttttt ttgaagcaac agagaagata tttatttccc ccttttttaaa tcgagtaatt 180

gctaactaca ggaattaaga ggtgaccaca gaacatggcc acttaaccag caggggtcag 240

tgggaatgga aactcttgtt cattagctag agaagaggca aggctacaga cctgttgagc 300

tccggaacag ttgacttgtt tgacgcatgc agactagact aaagcaagcg gttaagataa 360

ccgaatctta caaccgcgta tgctcctacg tcacagtaat ctctccgtac tgaaagcacc 420

gagcaccgtc aaagtcctga caagactgaa ctccgtcgaa gtcctcacaa gtagtaatct 480

tgtcagtgga gtgtcctgcg caattaaacg cctagctact gtgtcattca attcccgtgg 540

aatatatcgc gccgtttcac actttcactc atgatttgtc cagctattaa atcaattgat 600

ttcgtcacgt ttttttactt gctagaagta gctgcgctct tgaactcctg atccacaaag 660

agaacaacaa tgactacagt tttgagagag agagatagga accgttcatt aaccaatggt 720

tgattagtag ttttggcaaa aggggagggg cgtcaacata tgcatttagc tggtcacaac 780

agtgcacatc gtttgagttc agagtttggt tgacagaaga agtgaaatct atatcaattg 840

catcataggt agagtacttt agctaggaag ctccagagaa gccatggact tgtgcttgaa 900

gtgcctcatg ccacttggag taaactctag gccgggtgtc tacccttgaa tagcacatgc 960

catgcacaca ttaatctgca tagtagatta attagtttgc ctcggcgaca ggaactaatc 1020

attgcctaaa aatgggcaag aaagtagtaa acaaaggcga agtagtacat gcacaactat 1080

gaaacaagac aagagcagtt gtggactcga tcagtaatgg acatcataag cactgagttg 1140

tggcctcatc agacttagca gttagcactg tgaatcactc acaagtgtct atagtaaaaa 1200

aaacaacatg ttcaaggaaa acaaaaaaaa ctagcaaagc agattggtaa caaccaaagc 1260

caaactacaa ttagtctaat cacattgcaa agaactagaa gagaaataca gccaagctag 1320

ctagaagttt ggagaagagc caaactgttg tgacgacgac cacaaagcta caaaagaata 1380

tggcaataca aattatggag ccacctcatc atacttcacc tttccatcac a 1431

<210> 4645
<211> 1681
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97648_G1, chr3:29610313..29611993, Cluster 28

<400> 4645
tacagtttcc ctcgtgaatc gtcatgcacg gttgagacgg aacggacaca gtgcgctggc 60

cgcctggcgc ctgtcccgtt ccatttttgt cgctatcaca atcaagcttc cgttacgatg 120

tgggcctcca agctgggctg cacgtgggca cgtggttggg ccaaataggc ttgcactcta 180

gttgggttgc atatggttag cccgactagg ctcccacttg atccagtgtc aagtttaaaa 240

ttttcttttc aaatcttttt ataagggatc caggtttcgc tttccctact tctcctatat 300

ttcaggtcat tagtttttta attgatttca tgcaatattc ctatacgaat caataagtat 360

aagtaactat tgcttttatg attatgattt atctttgtat tatgataaat tattattttt 420

tctttctcca actatagaga taattgttaa ttctctttgc gccaatacga ataagatttt 480

gttgagtttg taattttgtc taatagatat ttttgttaac gaaaccgaaa attatagatt 540

atgcctacgt aaactggatc tgcagaatat atacaactac tatcatcgct cgaaaataaa 600

actcaaactc aaacaccgaa aatttaacaa atctctttgt ctggtggcct tccgtacttt 660

taacaaagtg catccatgtc tttcaccttt tggacctcag agtttttct tcttctaacg 720

aacagcagta ggtcagacct gaggtcagag tcaaccacac gtttttttcc ctactagaca 780

gaaaacacat ctcgttttcg tgatcgtggc cgtacagtag catagcagaa caaagcggtt 840

cattatattc catgtctcta tcctcctccc gaatgaaaga acaaattaaa aatcgtttta 900

aagaagcgag caaactaaac tcgtgtaaag tagactttta gcgggccacg cgtccgcata 960

acaataatca ataaattaag tttacaaagt cccaaatagg acaatagttt cctccctttc 1020

gaaaagatag aaaaaaacgt gaacaagcga aactcgacta attgtttcca tcttttattg 1080

acgctgctat gtatataagc cgtacgtaga tattgttgtt tattggcacc tcatgcacgt 1140

gggtattata tatatatata ttatgcacaa aacgcaggat atacagatgc agtatggact 1200

taattgatta tccactttat tttatcctga attatcgcgt gcgttgactt tgattgagta 1260

tatgtttagt tacaaacaca cgatgaatct agactaaata agcggataca aaataagtta 1320

ttttaaaatt atttacctat atctacacat accacaaaaa tgaccgtatc tagttaggct 1380

cgtgtcggac taggtgtatc agcgcaatgc gcaacaaacc aatcaagcgc tatatggtgg 1440

gtttgggtcc ttgtggcacg ctggcagctg ataaggtgtt tcttgctgga gcacggcggc 1500

gactctaatg tgatccgagt ccgccgtccg gccgccagat aatggacgta tactgctgcg 1560

cgaagacgac caaggtaaac accacgtggt tcgatgagtg tgtatgcatt tggaaacgtt 1620

ggtgaaagtg aaaacgtgaa agcactgctc gcgtcatata ctcatatgtg acgatggacg 1680

g 1681

<210> 4646
<211> 1173
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_244324_G1, chr7:40299412..40300584, Cluster 29

<400> 4646
atgcaaagtg tgcggctgct acgccctaat tgtaaattta tccctggttt aggaaacgtt 60

gatgcccaca aaactaagtg agtgggcagt ttatcggtta ccatcactta tcagctgccg 120

acaaaaacag aagaggttgc ggagtaacga tttccaagag ctacttggac cggcctctac 180

cttttcggtt gagatgtcta acgccaaaac aaaagaaata ttattatctt tttaagatga 240

tggttgggta cctttcgttc tttctaagac gatggttggg cggcgcctcg tcaaaaaaaa 300

aaattgtttt tttgaggaaa tttgtgctac tgtaccgaca agtgcgtcaa gtttccgggt 360

atcgtgaaag ggcatgcatg gttggtccga gctgtctcac gtgggtttgt gctgttcttg 420

ccaagttgcc aattgccacg tacggctgtc agatgctgca gctacttcat gtatctccgt 480

atatttagaa gccagctagt tgtagtttag ctaacctaat aagattcatc tggaggcggt 540

cctaatacta cacattaatt atagtaatag cgactatgtt gagtaccaat cgatcggtat 600

cggttctaat aattaagatg acagttggtt catgagttgc tgcaaatcaa atgccttcca 660

ttctctatag tacactaaaa tctggatttg atgatgtaca tagatgatac ctgcgaagtc 720

actgacagtc ggtcaaactc acctcaaaca ggctttatta gcatgagctt atttgctaca 780

cctcagtttc actggtgaag cagttctttc tttggtttcg taaaacagtt tgacaagcta 840

aaatcgtttt aaaaacgttt ggtaataaac atagcagtaa gaaaactgaa aaaagctagc 900

atttctagct tcacctaata aactgtgtgt gtatatgtga aaaagctgaa aacaatttgg 960

ggctgttgca aggttgccac tgctcggcga tacgattttg tttttaaact tttatttctt 1020

aaagtttgca tgtatgctct ttttttaaa aagaatggac acatagtttg cccctattct 1080

agtatcagca ctaaacaacg ttaacttagt ccgcaaaaaa aaacgttcat atcgttgtac 1140

cattacccct ccttttataa gtatttaaaa att 1173

<210> 4647
<211> 1291
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_101090_G1, chr3:49544684..49545974, Cluster 29

<400> 4647
tttataagga ccttattacc tttgagttct tgttggataa ctataagaca aaggaaatgt 60

aaagacacac tagaatctag aaataaggag tgatagttga cttactcttc tttgccaagg 120

cagtgtcctt agctttattg ccaaaatttg atttcttagc cagaactttt tctgtggctc 180

tatcttgatc tacactattc ttttaagcag tcaaacattt ctccatatta gcacccttg 240

tcttctaata ttactttgaa gaccctagag taccttaggc atgatgccac tagcttttga 300

aagctataca caaaagtcag atatttgaaa cataagagac tcaaaatcaa ctagaggact 360

tggctacata ccttccaact cgaccgaatt agcctcaagc cgatctcgta aggactcgat 420

tgtttatttg ctcagagttg tacttcttat cttgttcaag gttgagccta gtggactcac 480

ctgtttgcaa tttcttctaa gttagcattt gaagaaggga ctcctcttct aactcattta 540

ggatctccta aaggcaatat tatcaaaggc agagtttcac aagataagtg gagacatact 600

aacatacttg ctacaatcga gggaactcgg ccacatattg agaggctttt tgaagctgac 660

gtaggtctcc agctaaatca atatttccca tcatgtgctt ctagaacttc taagagagct 720

aattttgagc tatctctaag atgagttccc taatgtcttg atggccttct ttaattattg 780

gtctataaaa ttcacattgg tcatgaatta cgcaagaaag aaattcaaga tgttgattga 840

aagagacaat taccaatggc ttgttttgtt agggtttttt cctgtacttg atggggcaac 900

aatagtttat gcacctggta ttgcttgttt aggattgtct tcacatagcg ttgtaggctt 960

aggatgtttt cttcagggac caagtcctta ggggctccga tggacatggc accagttggc 1020

acactagtga ccaaatactt ctcttatagg acaaaacata tgttatcctt tggcaattct 1080

gttgctttgc taacaagatc aagaattaca tcacactctt cttatgaaag gaatattgga 1140

taaaaagaag atgtaccttg ttgatcactt gagtctttct caggtttaga actagcgatt 1200

gagtcatcaa gagttttgtc ccagtgatag agctatagaa aggtcatcat tatcgttgtt 1260

gtcagcgtag tctactctga gttgtcccct t 1291

<210> 4648
<211> 1260
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114499_G1, chr3:139156010..139157269, Cluster 29

<400> 4648
ttgctactcc atgattcgtg aacctgttca tgtgtacgat gatgagccgt gaaatactac 60

tcctagtttg gattatttcg tctcattgtc tcggcattat gataaaaaca aaataataaa 120

ataaattcaa acacgaataa aactaggcct gcaactgcga ggcgtgttat atttcagctt 180

gcaagatgta tctataatat gccaatcata ttttatttaa atagacagac ggacatgttt 240

ggttcgtggc tcctgtcatg gtgatccact gtgcctcttt cagatcccgt gagatttttc 300

tttgatcata tatcctgagg tggtggttag ctgaagatta cggttatcat caacacctct 360

tgatgtttac ttccatgaga ttttcttaat atcatttctt tctctgtttc tcacgtgaga 420

tttgatttct agtctctgtg ataatcgatc agggggatca tcgcatcctg gctgtacatc 480

ttgctggcac ataaaactaa gcctgcaaga cgtgttatct tgctccagct tgcgatatgt 540

atccgcaata ttgccagcca attatatttg ttgtatttaa atacaaggta ttcttgtaaa 600

gatacaaaga caaagcaaaa ataatcaata gacgtcagac gttataagca tctttttttt 660

ggtacctagg caagcacata tacatgacca cgtctaactt aacatccact ccgatttata 720

cgtgcatatc tgtgccactc gatttatacg tgcatatttt tgtatgtgcc atgtagacct 780

gctcaaacat tgggttagat caagatcggg tcgtgatagt ttcgtacggc tcacggttga 840

cccgtgttta gtgtcgggtc ggattggccg taccaccctg ttggacatgt cgagacaggg 900

ttttttttgg ttgggtcaga ttttttcgga ttgagtcagg ttttgggtta aaaactatgg 960

catgtgtccg acccgtgaat tattgctggt cagaaattac ggtctctacc tgtccgttgt 1020

attgatcggg ttgggtcgga ttggattgat caaatcggac gaccatatgc tcgggatcct 1080

gctaggtctt ccaccttata tcttcataaa ccttatcaac aaagcaatgc aaccataagt 1140

taaaagtgaa ctcagctgat tagatttttt tggaatctat ccatctaact ttaaattctc 1200

aatgttggtc acctatctgg ttctctgtag gagaccaaaa caacacaaca caattaagcc 1260

<210> 4649
<211> 1034
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114666_G1, chr3:140143407..140144440, Cluster 29

<400> 4649
catttttat cacagatttt ttttattaat tctaattttt gagatctagt gttttctctc 60

ttgattctac ttaccggcta ttataacagt aatatatatg aacaatttca atcagtcaaa 120

ggcgcatgaa aatgacgtat tgcttataga aattaaatat taattatttg tctgtctcta 180

actcctgcag attaaacaaa gagaactaac taattgccat ggacaacaca caaaatcata 240

gctaattaat ttctatcagc tacattcagc ccatggaaat aagtcggaca aatatatttt 300

ttccacatca caattaaact catatccatc catatcacat acattcacac atatcaatcc 360

acatcacaaa tcattcatac catattttga attcataaga aaacttcaag tagcattagt 420

ttttcaagtc taaaccgtct caaataacat aataagtacc aataactagc atcaagtcgg 480

ttttgtcaga tttttaaagt tctcattgct acctagagtc ctgttgaaac aactgtttaa 540

caagtgctac taattatgga ggagtctgaa aactatgcaa attacaatta cctaaagttg 600

aactataatg ggtactatta gagtacaact taattgacta tttttgctag aatttaagct 660

aatctgccta attttgtaaa attaaccaag ttcatatata attgagctaa gttggctaat 720

tttttgtttg ctaaaattaa gctagattag ttacttttt attagatttg aggtaagttt 780

gctaaagata cgatttctag atgtccaagc attggtggag aaccctattg tggtagtggc 840

gtggttgtgg catgtggaat acaggaaaag tgatgtttat ccctaggcga tgcaacactg 900

tgtgtgaacg aaatagataa aacaccatta gctatattga atgctaaaaa tgatagttga 960

agatcagtca aacttggttt aaacgtcacc tctactgttg tgttatgtag ttggaaaata 1020

cttgccgcac tgca 1034

<210> 4650
<211> 1244
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11552_G1, chr1:62898778..62900021, Cluster 29

<400> 4650
atgaaacttc tagttcatca tttaggtaaa attggagcac tcctagtata tttcatagag 60

ttcttgcatc ttttgacact agatgagtgt cttggactag ttatactccc attactcttg 120

gtgaatattg ccacctagat gcatagagac tagagtttat ataatcattg agtggatatt 180

gaagattgtt gttgtctcca tcattgttgt gaggggctct tgtgctcatt ctccatgtga 240

cattcgcgaa gagcaactat agtggaatca tgacatgtta gagtgcctcc gtagagtgat 300

tcttaaggtg tccttattac aagcatgttg tgtgatgcca attagcacac aaatcatcta 360

gcttagactt tccataacaa ggatacacgg taagcaaccg aaacttgagg attaatattc 420

tctcatctct tgcctcatgt ggtttgcact tcatactatt tttgaaatta cttttactat 480

ttgtattata ttagtctatc tagtctcgta ttctttataa tgaagtttca tctcttgttg 540

agtgagtagc ttggctagtt ctatacaata ccattttata gctactagtt tcatcagaag 600

atagtttaaa gtaaattagc attggagcaa ctaagatgtt ttcatatatt caaaccttga 660

ctctagttat aactatgatt tatgtagaat aagtttataa gctattcacc ctcctctagc 720

catcttctgg tggcgtactc cggtgcattc taaaccatgt ttctttgcat attttaagct 780

tctttcactt tgatgtctta aacttcttgc ttgtcgtcta gggtatcaaa gcaactcctt 840

ggtccctagg gttttgatca catgattatc atcgtggcct aacctaagca tatcctcata 900

tccaaaagac aaaaaccttg tatacccatg cacaacatta gtccacataa tcattctatc 960

actaaatcaa caaaagcact taatggctct aactaggtgt tatttattgt atcgatactc 1020

caaaactgtt gtagaccatc agaggagaca aggataagta gtagcttaag aagtagacaa 1080

aatgcattta aagtctaaaa cttcttgtaa aaagtataca aaataaacta acacaccaac 1140

acaatatttt catattctat atttattaat gctaaaatag taaccatttg ataatttaca 1200

gaaaataagt acaaccatcc ttcatagtgt gatcgtgtct tttc 1244

<210> 4651
<211> 1020
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_116936_G1, chr3:154555229..154556248, Cluster 29

<400> 4651
gatgtgtcca acagtctatg taaatagatc aaagagtttc aaagtatgtt gaactagttt 60

gtcaatgacc attggaccat acgatgtaac tgtagcagat atggttctcc ctacaaggtc 120

attaccagtg gcgtcattag accaatgagt aatggttcaa ccacctctat taagtgagca 180

tagaggtttt tttcgagcgt cagactacgg ggggcgtcaa accatgtact cggtgtagtt 240

actcaaacaa ctagttctga attctgacat aggaagtaca caattacaat tgtgtctcta 300

tatacactag catataggtc gtgctaatgc tatgatctta gggagaggag gagagtgtcg 360

cgggggggagg gttgagagat gaggaataat tcaaaataat attatatatt agatttgagt 420

gggtaacgga gatgaagtta ttcagtgctc tgaaccgttt attttgatga tgcattaagt 480

ttgagtgtaa ttcgtttggt gaattagtga agattatggg tgtgagagta atttgattcg 540

gtgaattttg caacgtttaa attgctagat tatatggtgg tatggataat accgtgaaat 600

ttattagacg gagcgaaaaa gaaaacaaga gtaaatcttt tttttaaaga aaaacggacc 660

gtaaacccta acaactaggg aagtttgcta cttcagaatg aaaattgttc tccattcaga 720

agcactagtt ctcccttgtt atttgcatcg tggtacagtc ggcagcaacg atggggacag 780

ctgagtacca catgcgtgca tagcgatcac tgagaatagt tgagaagaaa caagcgatgc 840

aggagccaat gatttgtgct caaagtacaa atgacaagaa aaaagaatgg acatttctga 900

aaccacaaca gcaagatcta ggactactac tgtcctttct tttcctgaga caggaaaaca 960

aatctaatgc cacactagtg atctcttgat gattattggc atggaccccg cgatcccaaa 1020

<210> 4652
<211> 1103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119517_G1, chr3:170452128..170453230, Cluster 29

<220>
<221> modified_base
<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (316)..(415)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (318)..(318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (319)..(319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (321)..(321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (322)..(322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (342)..(342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (343)..(343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (344)..(344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (345)..(345)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (349)..(349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (350)..(350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (351)..(351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (352)..(352)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<400> 4652
taggctcttt tttttcatcg tggcgacgtt gtttcaacga catgttgaag ctgcaaatgc 60

tgagatttaa cctacctcta aagctgcgct tttgcttggc tagactctcg atagcttctt 120

atctcgactt cttgttccgc tgaatctaat gcacttcaaa gttcatgaaa tccacactgt 180

aggctgcatt cctggagctt gttgctatac aagctggact gacaagccct tgccgtccag 240

ctacactatt cgctacttac taactgagca atcatgaact tatttttcag ttccgtgtgc 300

attctacgag caacgnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnntggtt 420

tttgggttct atcgagaatc agcttgattc gtatattata agatatattt gccatggtac 480

cttgagtagg gaacgaagta tactactgct gtataagcaa gcaaatacat gatagtgtgt 540

gattagtgag gctaagctac gaagcttccc ggatgcagtg tagtgatgta caatgctagc 600

tcgggcgcgt cttgttcaaa ctgctacgtg tacgtgacat acttactgac tgtgtatttt 660

tgctcttgtt tccaatcttc gcaactacca gcaactgcaa aaaaaaaagt accgtactag 720

gagtactagc taactgtcca ctccacaaac gaccgaacaa aaggcctctg caagtttcta 780

attcacgggg atggtttcag tcctctgctc cgaagctggg gggatggatt cctggtaggc 840

gtcgaagctc ctaaagtact gggacgctgc acgcggtttt agttctggtg ttctgctcct 900

gtcatcctgt gattcagacc cctctacatc ctaatgcgga ttaggtcagg ggcttcggga 960

cggagaggag aggcgatggg agggcggata agagtagtag aacccaattt gaagtacgca 1020

aacatatgga ccccattctt gaccggtggg aaaagcacgg cccaacaacc cacccatccc 1080

catccatgct gcacacgcgc ccc 1103

<210> 4653
<211> 1251
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120292_G1, chr3:175543055..175544305, Cluster 29

<400> 4653
caaaagtttt atgttgcttg tctatttcat cacaaattga acaatgacaa ttaaaggtta 60

ggtttcattg ttgttgatca gtttttgcag acgcataaaa ctatttatcg agacgagcaa 120

catgtccacc tcaaatcctt cacctttgtt aataacaatt ttcgaagacc aacactatgc 180

aagtctttaa aaataaaaca caaaaaataa aaaaaaaaca tttgtgagcc caaacctact 240

agtgacatcg ctaatgaacc catcggatcc attgctgccc tcaccaaata tattgacaac 300

atcgcttgat tcattatcgc cggtgccctc catgaacacc acaacgtgga ggatcccact 360

accatcttca ccctctagga tcccaaatag ctgccataag ggaggccatg acccatggca 420

aggatactgt cgtactatcg cttggaagga gttgcgaggc taccctatcg ttgtctccat 480

gtgagaataa gggatgcaag ttactagagt ggaaacccaa taaggtatga tggaccacga 540

tttccatgga tctgactagt ccaggactta ttaacagata cacgtttctt aagaggttca 600

tatatgttct atttttatag acaaacattt taagaggcat gtttttctaa ttcgattcaa 660

caatatggca tctttttggt gcattcgtaa aaaatgatcg cctccttaaa tcatctgata 720

ttttggcaaa cacaattctc tccttctgta atttaattcc gcaagatagg catcttttg 780

tctatatcag aaaaaatagg tcatctccta aaatgattct ttggtagtgt ttgacaatat 840

ctcttgaatc atgtaccaaa attacaatca gtttgtatta taatattttt ccaacaaaac 900

atgatttagg ttagatatat ttcgtaggaa ttgctaaact tcaggcgtct aaattttagt 960

tttctttaag caatgattat tgcatatgtt tgtattgaaa ttgtagaatt aatttgtttt 1020

ggtatgccaa tctataacgt tcactttcaa gaacaaaaaa ctcattaaaa accacaaaac 1080

ttataaaata tgatttatgt tgacacaaag ataatataaa tttataattg tttatatggt 1140

cagataagga taaaaaatgg gtaataaatt acacatgata atatacttac cctaattaat 1200

gatataatgg cgttgtctag aatatacaaa aagtgacatt ttattgagaa a 1251

<210> 4654
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120787_G1, chr3:178302126..178303168, Cluster 29

<400> 4654
cattctgaag cgtcgatcat tagggtttat ggcccctatt cgtgaggacc caagggtccg 60

cacatgtcag aatgcttagc aaagataatc cttaaggact tcatacatgg caaacatgac 120

tgtatatcta gggccatgag gatcatatgg atattgggcc ccattgtgaa ccatatgaag 180

ccaaaacatg tactccacct taagtgtggc atgaagatgt gtagaaatac aatactaggt 240

cagctaggta tatgatacaa tgtatataag gtgtaacata tgatgtagat gatgtgtgag 300

ggcgtgtagg gatgctccta agacaacaat gcaattgaga gcactaggag taggtacact 360

aagattgcat ggccttagta atatgcgaat aacacaagat tggtctgaaa agaaaaagga 420

aaggcacaag tataagcaac atggtcataa cagagaagcc catgacaaag tgcaccaatc 480

gaggaagggg tatggtctcg atagtgctag ggatggccac aggaggccac attaaataca 540

tcaatacaca tactccacca cctgcacaac acgataccca tagcattatg cacaaatata 600

gtataatgct tcgtggcata ggaacaagcg taatacgata tgcaaggaaa gtctacatca 660

acaagactaa acaactcgaa caaaatgata tggagaaaag tatgaagaac attaaataag 720

aagtgataga ccagtatgat gtcagaagac ccatctccga aaatgcatca gacatgtctg 780

ctagcataag cagagtagtt gggtcaagct catagagaaa tatgtatgta atgcgtccac 840

cccttgaact ataaaagaga tgttagagca cacatttatt catgcacata gccaatcttt 900

agagaagata cttcaaagca agatctatac ctaaggctag agtagagtta gcttgtcgaa 960

gttcccagtt tctcatgagc aaaccatcaa cctcacaact gagcattgta acagtctaaa 1020

ctccgaagtt ttagaaaccc gat 1043

<210> 4655
<211> 1239
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_121306_G1, chr3:181073724..181074962, Cluster 29

<400> 4655
gatggttact cttgccaccc gcttttgcaa ttaattgata ccaccatatt gacgatagca 60

catatataat ttgactccat ctttaagatg tcgtacaata tatttaaatg gacatgacgg 120

tgcgataaac ttgtagatct atttaaatgg tagaaatttt tttagtctca tgtctagctg 180

tgatactaga cctctcccac caattttggc tcttgcagtg ctgtagcgat attgtagttg 240

gagcagtgag agagaaaaaa aaaaaaacta gcttaaccga ctgtgtgaaa aaaaagagaa 300

aaaaataaaa ctactgaaaa gcagctatat atcactaaaa atcggaaacc tctcccaagt 360

gaccctaaca ttaactagca agcgacaacg cgacaagcaa attcgaagcg accatttcat 420

gacgtgacac gcgccttgcc gagtacggtg tacacacatc atctttgtgc gcttggaatt 480

gaacacgtcg ccatccaatc caagttgcca tgtttgccat cacgtgacca gttaatccac 540

cgctaatcga gatggtaaac aaacacgtcc ttggaatctt taggaggcca ctaatgtaac 600

ccgaagtggc ataagttaat tgtattattg ctcgctagct gctagctgcc tagctcaagg 660

cccaccgctg ccgttttttt tttctctccc ctaccaactg ccatgatgat aagagaggag 720

ggcgataggt tgctttagct ttcctctgct tgataaataa accagtaacg tgcagcgctg 780

gctaaacaag ataagaggag ggccataccg ggggcaagtc aaagctgaac ccggccacat 840

tgtttacaag ttttgtgtat ccatgggcgt acatgtttga ccttgttgat agatctcgca 900

tcccaacaat cgaacaatag gggagcatat atagtattgt ttccttttct ttgttctgtt 960

ttttgaacgc aaaacccttt tctttgtttg aaagactgtc tatatatgtt gtatagtttt 1020

atgactgtga atcattactt agatgtaagt ccaggagcta tagtactgct agcttgtttg 1080

aatcagctat agaatgtatt ttatgaagac aaactaaaaa ttatgtcgct ctcgtccgaa 1140

tagtccatgt tattatgcaa ctaataataa cccaacggca taactagata ttgtaatctc 1200

ataagctagc ttcctgcagt tattttcata ctatgtccg 1239

<210> 4656
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125141_G1, chr3:201559653..201561029, Cluster 29

<400> 4656
ggaggaacag acaagcgcag ggaagccaaa tggccatctg aggcatcgcg cacgaatatt 60

ccaagcttgt cgttttgtaa cgggaataaa aaggtccagg ctacaggccg acggattatt 120

caatggttta gatatatagg ccaacgtttt ggttatctat gcgcccagcc caactgagta 180

agcgacaaaa cagcatcgga ctgagcagca tgacatgata ttcctcgtcc ttccccctcgc 240

ctgagtggtg gttggttgcg agctgtgaca cgataacgcc agccgccaga tgggacatga 300

cgagcatttt ggaaggagaa gatgtcaatc gcattactcc ggatctaaga ccaaaattga 360

gtgagggctt ataagcattt tttttgtcta atccgcgagt ggtgaatcca gaaatggttc 420

aagaaaaaaa aagagctaaa taagactcga aatcgtaata gctatgtaag ttctgtttga 480

gagagcttca ttttaaaaat ttctctattt taatttgttc tatccaaata atttcagctc 540

caagagctct agcttaaaaa attgaaacta aagactaatt ttataaaatt ttcgaagctc 600

cttaaaaggt gcttcaaaat tattgttttc gtacctcctt gtgaagttgc accaaccacc 660

gtgttattag ttacatgacc tatccatctc tttctccacc cgctaatcat caatgataat 720

taagaaaact catataaatt aaatgtatta tagaaactaa agtttatgtg gaagccaaat 780

aattttgaac ctgccttgtc aatctgttga atctgtgctg ctgccctcct gcgagatcgg 840

cggtgcggcg gtttcgaagt cgccgtcacg gcctcgcggt cgcggggacg ggctgcaacg 900

actcgcgagt cgcgatagca ggaggctctg ctcgtggtgg gctgcggcag acggcagggg 960

ctcgtgctag agttcaccag gaatcatggg ctgggctgaa agatctgctc cttaagaata 1020

aagcccacgc gacggggaag ggctgcagcc ccctggatcc ggctgtgcaa aacggcataa 1080

ttccccttgt attgcaaact ttggtgaaaa tgtccagctg agcatgactg catgagtgta 1140

ctaaatttta gtcactcaat ttattccatt ttcgtccata aattgctaaa tatagagact 1200

aaaactctat ttgggtttcc atatttagca atttatgagc taaaatagaa taaaatagag 1260

gggctaaaat tatttcattc aaaccaaaca ctccctaagg ctatcttcaa taagtactta 1320

tatttaaact ccaaagtctc aaaaatatat gttttgtgta atttactgga gacggac 1377

<210> 4657
<211> 1339
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_125555_G1, chr3:203488520..203489858, Cluster 29

<400> 4657
aacagtctaa cagttaggag aacgaatggg caggtcatat gacagatcgg cataattttt 60

gggtttcagt agggctctag ggtatgttat gttctaagct ggcaagttca attgattcga 120

gttaaaagcc attttatttt agttgtatgt agaccacatg aattaccaaa aaggttcaaa 180

gaataaggca gtgagttcac tggaacgggt ggaacttaaa atcctggtta atcacttttt 240

gtttaagatt atttcttcat acatttgagt cacaaaagat tttatcttag tttcatataa 300

aattgtatgt taattttata tactcattgc tctcattccg taaaatatgt tctgagcaac 360

agataggaag aactaaggta ttcctgaggg ctggtcaaat ggctgatctg gatgccagaa 420

gaacagagat gcgaaacaat gcagcaaaag gcgttcagag tcaattccgt actcatgttg 480

ctcgtgagca gttcctagta ctacgggaca catctattta tttgcaatct ttcgttagag 540

gtaaactctt tccgtatagc cctgggtgta aaatgcatgc ttatggagtc atagtggagc 600

cttgtacata tactaagatc tttattttca attacagcca gattggcatg taagcaacat 660

gaattcctga gacaacaagc agcagctttg agaattcaga aaaatgcacg atggtatttt 720

gcctggaaaa cttattacca actacgattg tcagccatta cattgcaggc cgggctaagg 780

tccatggcag ctcgtaatga gttcaccttt agaaagaaaa ataaagcttc agtccatatc 840

caggtaggtt agcacttata gcaattcact gctattttca cttattatac tgcagatgga 900

tattaatctc ctgtcagaag tcgctattat gtgttctcaa ttttttttat tctgtttgaa 960

ccatcaatat gagattcctt tcctgcagtc ccagtggcga tgccaccgag attactcaaa 1020

ttatatgaat ttgaagagag ccgcactaac atatcagtgt gcttggcgaa gaagggttgc 1080

taggaaggag ctgaggaagc tcaaactggt acttgaccaa ctattatagt attcattctg 1140

taaaatttct tctaagtttg ttatgggatg catgcttttt aggctgcaag agatacacag 1200

gctctaaagg tggccaaaga gaaacttgag gaacgtgtgg aagagctaac aagtcgcctg 1260

gaccgcgaaa agaaactaag ggtcaatact tggtcttgaa caatatttaa atacttgtta 1320

tgtgtgccta ttcttttaa 1339

<210> 4658
<211> 1044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126831_G1, chr3:209536268..209537311, Cluster 29

<400> 4658
aattctaatt gaaggaatac ttgaacaacc atgtatggaa ttcgtatggg gccaagtagc 60

agtaaccttt tggtacttgt ttacttctta tgttttcatt gcatacctca ctgtgttttt 120

tgtggcatga aactattttt ggttttattt gtaggggaca attctaattt agatgggagg 180

ctaaaatatt caagttgtct actaggatgt agtgacacta gttgtgaatg aagggttcta 240

tgtatgctga tagtagggta tgtttactcg gtggaacaat agtatttgta ttaggtgatt 300

gaatactttg ttcttttggt taaacaaatt acctattgtt aaagacaatt attgtttcat 360

gtcatattat gtgtcctaaa acttacatcc atagagtatg catccaaaca tcgatgctta 420

ctagactact atgtttgagc gaagcaacaa acatgaggta tgtattattg tagaacaaat 480

ggggtattat aaatttagaa ctcaaattga tctcatagaa aaaaattcag tacacaatga 540

cattgataca ataatattta aagaaatggt tcgacaacaa gtacttgaaa agtctaataa 600

tgcatacaca taggccctga tacattggta aacaatcaag atgcccctcc acttgatcct 660

cctgcactca gacttgaagt tgcaatcttc ttatgcttgt tgatgtagta ctccctaccc 720

atggtggcat ttttttgaca tccattgtca tgccctctcc tcaggttcct ccttttgaag 780

cttgagcatt ctttgatgga tctcaagatt tgtcttctac atacatatca cttcttgtag 840

ggctagattt tagtctgacc ttgttgtcat gatgcttggt tcctcctgct tgttgcttcc 900

tgcctctctt cataatctct atgctatgtt aatgtctttt gcagcacctc aatgcacgta 960

gttgaagatg acaagttgtt gttgcacata tgcttctttg cacgttatct tcccatcgtg 1020

cgtgcaattt tgggggagta gctc 1044

<210> 4659
<211> 1362
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127732_G1, chr3:214191122..214192483, Cluster 29

<400> 4659
agcacgctag ccatgtcttc tatcaggctg agtcctcccc tggccctcgt gaagccaaga 60

ggtaagtggc ctttgatatt tgattgcttt atctaatcat ttcaaaattc ctattgctct 120

gattcatcaa tcattacttg cactctagac cccttattga aaagtccttc ctgactgtaa 180

ggccccagtg tccgatgagg actattgggc cattgcgatc tcatacgggg attacttgtc 240

gatattgata tagttgaaga tcatcgacac gtatagcatg ccaagcaaca cattgagcaa 300

ctccataaaa attataaggt atgctccttt tcttctattt gcccaattaa tgttattagc 360

tggtttctaa cctctctgtt ggtaggtcat cataaaggag ttagccgaga agtcccttct 420

tctcatgttg ttgcataaaa aaagtcaagc tatcgagact atggagaaat atctttccaa 480

ggaaagagtc gccattatcg agttaatagg acatggttaa aagatgtgag atgatcttga 540

ggccaaagct cttgagctag agtccaaaaa ctaggaactt gagggtatga tccttatctc 600

agcaacttcc ccactctcaa gattatatgt ctctgaattg gtaattataa ctttgcgaca 660

tacaaatcac ttggacttac tcctaaggtg gccaaggaca tgaccaaaag gctaagttca 720

tctattgaag ctagggacgt agccctagct gagaaggcca agttgataca ttaaatgatg 780

agttggaaga ctatttgggt gagttcaaga gaaccctcga caagaagcgg gccactaaga 840

tagccataaa acataaggat atagttgaat aagaatttat taaccataac ttgatgtttt 900

ttgcatagag tagagaattt ataaagttgt ataagcatgc ttaaaggcga tgatggtcct 960

cttatatagt tttgatggca caaaggactg gtcggtggtc cagaagttga ataaccttct 1020

ggagcgcatc aaaaggttcg gccaagatat catgcaacag gccagcgttt taacgcgaac 1080

acttacatag tctcattatc ctaatctaga tgtgtcctag gtcaagaagg agtcatcgtc 1140

gactactcaa acaaaaatct cctagagctt actgaaaaga gcaagtctat gatggccagg 1200

atcatcttgg atattgacat ctcaatttga tgtgtaaaag gatttaagac cctaaaacac 1260

cttttaggaa tatttgtgat atatagctca aaattaaatt ggaattcacc atttgtcttt 1320

agttggcact tgtggcatct gtgttgtcaa ccatctcggt ag 1362

<210> 4660
<211> 1240
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127954_G1, chr3:214894678..214895917, Cluster 29

<400> 4660
tttatctcct catcaccccc tacctagcta cgtatgatgc taaccagagg ttaggaccct 60

cagttcaaaa catcaccgta gtgctcacca ttatcgttga gcttgaggtt gtgtgtgacc 120

agagcacacg tcgaccctct ttgccctttc tcttctcttg ttcatagtct ctatggttag 180

cacttgcaca cctagctggc ttttggacaa ttctaccctc acagacatca aaatgatgca 240

tgttgctacc atgaactagt cactgagcca ccatgcacgt gaccagaaca ttttatagtg 300

cactcaagtc ccaaaaccta accctagacc tttatagcta ccctttagat ccctagccaa 360

gctcagctca aaccactacc attagtaatg atcggtacct cggtcatcat caccgctgag 420

cgaccattgg tgttgttggc gtgcttaatg acctctattg agccaattaa ccccctagat 480

cagtgtgaga ggggatgaag agtacatagg tgctggtctc actatcgaca acctcaccac 540

caatgaaatt tagctggtca aagccatctc ctgcctatgc atatgatagt ggggtcaggt 600

tgaccaattg ccctatggat aagtgcctct atgtgcatag tccaagtgtg taggtttagc 660

tagggtttag ttttgttgtt cattttatt gtggaataaa atatgttaaa ctttaaaatt 720

cataactgga gctacaatag tctaaaacac atgaaaccaa ttttgttagt tttgttatga 780

tgtgctctac ttgtgaaaaa cataaaactt gttgattgag gattgtttat aggatgtatc 840

ttttctcaag aaaaatgcta cttaaacttg ttaaatatgt acattaagtt aggaatgtca 900

taaaatataa aataagttat gttaacttta ttttgccatg agcaagctag gaaaaatgat 960

gaacttgcca ttggagcacc ttttcattgg ttgtatatat ttattttggg tgattatttg 1020

ttatattttg aaaatatgta tgggagttat atatcaaaag ttgtgaaact aattttcata 1080

acttcctgat aacatggtat atgcatgaaa agtatgaaat ctattgtcta acactattaa 1140

gtaggccaaa ctatttaact tgtttaaagc ttgttatttt attactacta ttttatatat 1200

ctaaaacttc tgaacttttg tgtgtaaact atttaccaca 1240

<210> 4661
<211> 1308
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128128_G1, chr3:215776953..215778260, Cluster 29

<400> 4661
atcaacaaca agctcaccaa tagtttgcct ggcttatttt cctttctttg tatgttgctc 60

tagattggct tgataatttt taggtttatg cctctcagca actacctctt ctggtgtctt 120

cagtagcatt gaactaacta atcttgaagg cttctgagtt gttggtttag gtgttgtaga 180

aacaacgaat gatgtcatgg gtagttgagt acttttcttg tttgcttgct tatactttgt 240

cctagaactt ggttcaggag ctcattcctc ttcatttgct tattcacctt cttcatcttc 300

cacattgatc acatgcacaa cccttggatc ctttctcaga taagcaagta cctccttgga 360

aactaattca agaactcttg catatttaac tatatcactg gaaccccaca ataaggtgat 420

tcttgagtct tttttaattc ctgctaggac tatcttcaga caaaaaggca ttgaagaaaa 480

tccttcttgc tagggtatga ccgccaccca aaagtttcaa cctagatctt gtgatatggc 540

ctttctctta cgatcaatag tttgtacaac aaggtcaggc ggtagtgcta atattgcctt 600

ctatgttaga aatgaaatat ctggagtggc tcaagaagca gaggcacctc ctccagtagt 660

gctgccagca acagatgaag ccttaacggt agaatcatct cctacagact taggcatgat 720

cttttctata gcttctacat gaggcatgag catggcgtta gtccacctct acagaaaagg 780

aattggttca gaccaacttt agactttaga gttttagttc aacttcaaca ctggaaaaga 840

gaggagtgca gggcaagatt tcatgcaacg tcgaaagata gaacataatg gcatagggac 900

tcaccgtcgg tggagttgct cattgtcgag gaggagaagt gtagaacagg gacacatggc 960

atttgttgcc gagaagaact actatagaac acactgctag ggaacacacc accaaggaga 1020

acacataggc taagtgtgtg gtggctaatg atttgtttat attccaaacc ctaatggtct 1080

agaattaagg gcttgtttgg atgcatatga attggaggga attgaggggg caattgtata 1140

gcaaaggatt atatgcccat caatcctatt caacccccatg catccaaaca agccctaagg 1200

gcctcactag gattaccagt ttatattcga acctgaccgt tctctccctt ggtcgggtga 1260

ttagactagt tgaacaactc aggtcgtact tcctaatcaa tgctgcta 1308

<210> 4662
<211> 1272
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_12883_G1, chr1:70716035..70717306, Cluster 29

<400> 4662
aaggtgaaag tcaagtttct ggtaagaagt gaatgtaaga tacaaagaag caatcaacaa 60

taaaaaaaaa tcaaaattat tgtccatgta cctactacaa taatggtata gcgtgtaatg 120

atgtgactat agtcagatca cacttgattg tgcgagtttt tgtaaatgac tacacagttt 180

atattgatca tggtgaaaca acagttaatt aacataagac atgagaagca taaactatag 240

cagaagagat tgatgcgctt atagatggat tttatagaga agtgttattt actagtgccc 300

ataatttttt tgtgttggta atggtggtcg acctactaag gatgaagccc atgggagcaa 360

tggtggtgtt tgggtggggg gcgggtaaac ctagcggcaa taaagaagtg gatgatgtga 420

ggaggacaaa attgatggtg attatttgaa ggaaattctt taggccattg gacctgaggt 480

gatactcaag agcacagaaa ttctgaaaat tttggaagag ataaaaagga agcgaaggag 540

agtttgtatg gtgtcaaaat atgttcttat acactagaca atgctatgtt ttgtgcttgg 600

attgctcatc ctaaagacta agtatggttg gttgtcctgt tgttccattt atatgttacc 660

tctcttgcca tggttgctcc cacaaccaaa ctcacttctc gtcaacacat acaaagcgga 720

aaaggttaag ttcattaaca atgggggttg aaaaaatcca tgcattccca ctattattta 780

ccgtggaaat atgttcaagt cactagataa ttaatccacg tatgatgcca gtcgctatat 840

gaacaatgac ctttacaaca aggacaaacc ctccatagga aaaaagagca agaagggtgg 900

ggaaaaggcg gtacaagatt ctcaacccca agagaacact cttataggca acaatgtgaa 960

gcagtggata atttttgcct tggtaatgta gtacctacca atcactgatc tctttgagac 1020

gtatgttggg gagaaggtcc atggttgaag gtccatacta acgatatcaa agtttaagac 1080

atttttcag tataaggcca aagaacatac gaagcttaaa acaatgtttg tcttttagaa 1140

aagcttgagc aacaggcaaa gccaaagaat ataagaagtc gaagtgtatg tgaagacaaa 1200

agctacatga agccaagctg aagcaagcag aggtgaagct tcagtgtctt tagaggggaa 1260

gtcttgttgg tt 1272

<210> 4663
<211> 1116
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_129653_G1, chr3:223658880..223659995, Cluster 29

<400> 4663
cacctatata catgacctaa ttgtatggcg attcaaagtt cctctaaaga tagaactatc 60

ctttgaattt ttgagatatt ggaaaaagta aacttcatcc ctaaagtaga ggaattagac 120

cataaatcaa tacagctggt tggcacactc aagcaaccaa acaaccaagc cctagagttt 180

acatagcaat cctaaaaaca aaaggccatc catgagagac aaaaaataaa ttatcgcgga 240

ctctataggt tagtgaacac ataggtgatg agtgacttat agacatcatt atgctgcagt 300

tgactccaaa agtggaacca atttgaccct cttaataaga cctacaaaaa tgttttaggc 360

ttgcaaatat caaacacaac attgtttctt gataaccaaa tagaccaata aaaattgcag 420

ctcctattag taacaaaatc ttattttctt accacattat ttgcaccaac caccaaataa 480

gttcttcaca tttaaaggtg gaattaatgg tctagccaat ttaaatgcaa aagtgaacta 540

acagtctacc catggctata ccccttatct aaattttcta gcatcctaat acaagattga 600

actagagagc aactggggct ccgagctagt gagaactcat ctaaaactta ttataggttg 660

ggtcaaacaa actaagctac tagagcacat gcaagcacac gggagctcct actcatacta 720

gtttgaaaat ggtaaactag taagccatca cataaggcac aagctcaaca atacaagctc 780

attatattgc aatgaagtaa acctatgttg agatatagaa accatagtta agtagatggc 840

atacgatgtt tttcctatgg ttcaatgact ttctgatcac ttagtacata ttgaggtgag 900

ttctaagatc gttgttactt tcattagctc caaagcctgc aagcttcgaa ttatgccttg 960

aggtaggctc caatgtgagc attaaatctt gagcttgaca aatcaacttg gcacgcagat 1020

aagcctcgat gatttgcctt cctccggtta ggatgagctc catagctcct cacaaagcct 1080

tctctagagc tttatgattt ttgcatgttt aattta 1116

<210> 4664
<211> 1182
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130353_G1, chr3:227078554..227079735, Cluster 29

<400> 4664
tcctctcccc ggccctcttc gagatcacat cgttagcccg agctttatgt tactatttgt 60

aaggtgaaca ctattgcttc tcgggataat gacatattag aactcgttga ctacttgcaa 120

gtggaacaag tgggattgag attgctactc atttgacgga tctgaggacg ttaaaaggga 180

aggtcaatgt tgcttccaat tgcttttgat gttgacctaa gttgactgaa actggcttta 240

gaacctattt ggatcagcta gagcttgtta ctagttggga caaagaaata gctcaaattt 300

agttgagttc tctaacaatt aatttaaggc ttttggctga aaaattagtc tacatattag 360

tcctatataa gttttcctct atttggatga gctaagatta atttaggata ttttttagct 420

agccaattga caattaactc ttggtatcca aacagccctt acttgcttta ctccattcta 480

ggttactacg tgacctccct gttctagatg tatccctatc aatgtctaac ttctctcttc 540

tatatagata acatgcgttt ctggcttcca gatatgcaat tttcttctct ctttctaaag 600

gtgcgcatga caggtccata atatcatgtc tatggataga aagttgacat tccgagttgg 660

gttttagaaa tgtggaccat gccagtttca gtccacatgt attggaagtt gacttcccca 720

gtttagtttt aatcttttgg atactcatag tttgattttc gagatactag ttctgacttg 780

gtcgagtgtt ttggttggaa gccagcataa ctaggtaaaa agtgaaattt tatgaggaca 840

aaatcaaaga cacaacaaca cttccattca atttcagcgg ccagggcttg accgccaaaa 900

gtaatccttt attttcagcg gtgtaataag tcgacgaaat ttacctatta atttcagcgg 960

tgcaggatga gccacaaaaa ataagactta atttcggcgg actggtatgg ccaccgaaaa 1020

gtaacctttt atgtatatgg ccaaaccctt tctctctctt ccctaattct cccagcccga 1080

tctagcgcac tagctcgcgc cacctccacc gttttgacag tgccgccgcc gccgactagt 1140

ctacgtcgtc gccgtgccgt cccgaccacg ctaccatcgt ca 1182

<210> 4665
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13066_G1, chr1:71571371..71572482, Cluster 29

<400> 4665
caatgtcagg gagttagaca gtccctaagg agacaaatag tcacataatt atgtgtaggg 60

gaagtgttag aatgagcgat tcagaagtta tcttatgagt tttagaacat aactctagga 120

gttatatgtt tgatggatga gaagttacct gacttttgac ctcccgtgtc ctcttagctc 180

tcacgtcctc tgacctcccg tgattgctta gttctcctag atcgactata taaatttcat 240

catgtcatct gctcttgggt tgccttttgt ggctgttcaa ctattatcca agtactccat 300

tttagtactt acacgtacgg gttctgggag acccgtcctc taaaatgaat gtcaccctga 360

tcacctgctc aggtgaagga caacaatcgc gtttttgggg agcatcagtg acacaatttc 420

ttgctttcat cttctttatg gtgtcgtgct ctatcatctc caggtcagtt tggtgttttg 480

ttgctgatcg tcatagttat atacatgtac tacatcaagt gggatgacta cgtcgattgg 540

caatatgtat attcataggt atagatcttt cttttaatgg taaacaatca tgttactctt 600

aactctgttt atagtcatca tgctaagttt acatttgcat ctttctattg acatgaactt 660

ttttgtatat ctttttttat taaagtgcaa ccaaaatgcc tagttttcta acatttaccg 720

ctctataata acaaagttgt gcgacactac gaggtaatat gtttcaccat tttctttgtt 780

gtacctgagt atgactcatg atccacgagg gccaagaagg tacaagaatt cctattctac 840

gagttcttcg ctttatgatt aaatagaagt aacttagcta ccataaaagt gaaggctctg 900

tttggcacat tacgtttttg agcatttgat gaaataaata agttaacaat attttcacta 960

tttatttccg ttttactctt atattcataa ctaaagtctt gtgtgtatgt agtggcggat 1020

tcagagacag attaaagagg ctgaattatg cattgaggag gctaaatatg gccacaatgc 1080

gaatgaatgg agtcgacata gagaggatga gc 1112

<210> 4666
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130666_G1, chr3:228440422..228441460, Cluster 29

<400> 4666
gacccatcct tggaatagaa aaatgcccgc tcggttttgg ttcaccaata gggcatcaga 60

aagatcctta cgagagcaaa ggtaaaaaaa ttaaagggag aacgacaatg tccttcccaa 120

aggaacaaaa atattgaatc ttagggtttg gtctccaaac ataaaagcct ttcataggtt 180

taagaattgc taaatttcag aatttagcct ttacaaataa ggacccttcc aagggcatgt 240

attaaattac tttagagtaa acaagattgc taaatcgctt tagaggaaac aggattgctg 300

agtctaagga cttgacttct acacaacaaa atcccttcag ggggtaacag attgctaaac 360

cttcaattcg gttggtggtt ttgttttgaa agaattatca ttcaattctt tgaattcgtt 420

caagcatact atgaatacgt ttgtataaat ttgccttgaa gaattagtcc aacaatttct 480

taccgagtcc cataacttgt tgtctaagtc ttagtccaca caactcgata gaccaagaaa 540

ataacttgga attcttcttc aaagtctcac tcacccgagc tcatagctca gataagttag 600

acttgtgggc tacatttaca agatgcacca aaggtgcata cttatgactt gtgaataagg 660

aattaaaggt tttatgttat ttaaatccaa gaagaacgac atagccccac ctacccaagt 720

ggataactcg accacattag gctcgggggg ctattgtata gggatcaagg gtacccaaag 780

ggcattgatg aaggaaatat tgatccagga ccaagttgta cataggtctc aaagtcgaat 840

tatgaaagaa ctcaacccac atgacatggt agatctacac atcagaatat atgaggaaag 900

aacaaagctt atctttgcaa caaggtcatg atctgatata tgcgaaactg atgtgtaagg 960

atagaaatag atcttacagt ttctaagatg attagttttt tcggtttcca tctatgcatt 1020

actagatact ttccttgta 1039

<210> 4667
<211> 1366
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_131346_G1, chr4:596191..597556, Cluster 29

<400> 4667
ataattaaca ctttagataa gaatataata tgggctaatg tttgtgcata ttttttttac 60

agagggtgta ttacatctcg tacgtccaga tggatcgatg gagctagctg agctgcgcac 120

atgaacgatc attctcacgt tccatcatat catgcatcat gctagctgcc ttgctattgt 180

aaagcagctt tcagttcaga gtacacacgt acgtagtcct ccagtatagt agtgtagggt 240

ccatctataa tatatatcgc tgtggatcgg agtacatggt cacagtggtg acggatggat 300

gtatgtatgc atgtgtgaca gaggatgaga caagcaagca agaatctttg ctggctcatg 360

tgatatgatc cagccagcag cagctagcac tctgatcgat taagaaacta cagccggcca 420

gtacgtactg aatgcgatcg tcagtagtgt gcatgcaaag ctatacatca aacagtgcat 480

gcatgctagc tagctatata tatgtatcaa cgaacgaatg gaaacaaaca acagcggggc 540

tgcagatcga tcaatatcta catgccatgc catcaggcaa gcatccacag cactagctag 600

ctatctgaga aggaaggaat ctcagatcga tcaaaggatg catgcagtca gtcgtcgtct 660

tgcttactac gcaacagcta gcgcagcaag cagaagggaa tatatattat gcatgcgccg 720

gcctgtatgg tgacgtacgt acgtcagtca ctgctgcata aacagatcga gctagcaggt 780

taaatattgt acttatatat agattattag gcaatcaagc actatcactc tagcagaaag 840

caaggacgac caaaggcagc aggtaattaa ggacaacaca agagacagaa tttcttgaat 900

ggattaatgg atgtttatag ttcagctagt gtcgctgcag atgatcagca tcaatcagta 960

cataaacata tatatatgta gctacctatc tgtatagcca gtcacatgca tatggaggca 1020

ttcgatcggg caaagtgaca aacacacatg gcacaagcat cagctttact attatgatcc 1080

cagcgactag ttgcattgct agctagatat atagcagtcc atatgcctac atcgaccaag 1140

cacggccaga cactaattaa taataagcat ctagatgatc aacttcattc tctattgaat 1200

agaccctatc tgggagtgct tactgtgcaa ccagtgtata tatatctata tataaaggag 1260

tagtaaaaca aatggctatg ccggtaaata aaatattatg gaagatcatt tgacctctac 1320

aagtcaagat attttcctgc atcgtattaa aagaggcgat tcgaac 1366

<210> 4668
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131696_G1, chr4:2474947..2475981, Cluster 29

<400> 4668
ggtactccgt accatgcatg tgtgcgtgta cctttggggt ttacagaaaa tgttatttga 60

gccaagtcta gattctctaa catggactac ttgttgaggc gttgggaatg agaaggtacg 120

gtaggtgatg tggaaacaca caccactatc ttcacttcac atgcactggc actgcactcc 180

ccatgcatgt ttttggccgt ccgaaatttg tggtacttac actgaagttc agaaaaacag 240

tgtgtcatgc ttttagcagc cagacagctt gttggagggg aggggagtag aaaccgtatc 300

cgaattaaag ccgcaaagaa caagtaatca gaattcatcc accggtaaaa caaaagtttt 360

actgcatgct ttgaattgtc taaagcaggg gtgcatcaac cttcagcatt tagcggccgg 420

ataaacttct ttaattagtc acgtgattag catcttcttc tagaccaaaa actaaccagc 480

tggttgttgt gtgtgccggt gctagctgaa agcattgctg gaattcggtc gtagcaggag 540

cgagtacact agctacaccg ctaaatgctt ggttaacatc ctttttcgct cgtctcttcc 600

aagtggtcct tcactcattt cacgccatga atgaatgaat ctctctctct ctctctatcc 660

aaaaggtaaa ggcgacagtc tccctttttg acagtacatc aacaacccaa aaggtaataa 720

aggcgactat ttactttatt atttcgatca aatccattta ctactacttg tgcgcatgat 780

tatagcgccc ccccgggaaa gtgttggatg cagaacacaa accacggatt ctatttggtt 840

agctgatcca aaataaagat gggcaaaaga caatttttg tttttcctac gacgatgaca 900

catcgtcttt tataaagcac agaacagaac cgcgcagtga tattttcgta gagttaggag 960

aagggaaaaa attgttcatc aaattaagtg caatgtcttg atagatataa ataaatcgga 1020

tctattttgg gctgc 1035

<210> 4669
<211> 1167
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132401_G1, chr4:4820825..4821991, Cluster 29

<400> 4669
ctcatggaag ctacaacttc tattgttgca cgtcttaaag gggtgggtgt aggaagtatt 60

acggtgcatg tgcatccatg tcggtctaca ctgttaaaaa atactatata ggatgataag 120

ttatatttgg atagatattc caattctatg atgtactaga atctagttca actccatatt 180

atatttatct aggattctta aaatcagcct gatttgtatt atatttatct aggattctta 240

gaatcaactc ttatatacgt aggtcaccct tagtcattgt tatttatcta atagatcaac 300

acgcatcaca cacactccaa tttgaactgt cggcaattct tccgagcatc tactttgcat 360

ggtaattaga gccatgacga gttaatcttt atctacctcc atgaacactc tccttgacct 420

aaccatcttt gagaagctgg tggagtccaa ccatgcgcta tggtatgcac atgttaagag 480

tgttattcgc tgtgcaaagt agctcaactt cctgatcgat ggtactaagg caccgacgac 540

caaaaatctg ctagaagagc gacgacaaaa aagagatcga ggtttgattc actaagaaga 600

gcaaaaaaca ttaatataca gttggtcgta acaaatacca aaaaggttaa tctatttatt 660

tatgaatagt ttacaaagat aaaatcccta gatgattaga tggcagcagt tggccatcat 720

ctaaagatga agaatttgta gagtacgttc tcatgggcct cgatgacaac tatatcccac 780

taatatctgc tttctatgcc aggaagaagt caatcacaat cagcgagcac tttggttagc 840

tcttgaattt caaaacctat gtcatgctag tctctaatag tagatctatc aactgcacga 900

gacgaggata tggtgctact taaggacagg gtagtgttca tggacatcta ggtggacatg 960

atggttacag taggcgcaca accctagcag ctctaactag aaccatagta aattagatga 1020

gcaactcgtt tccaagtttg cttaaccccc ccccccttcc aactactaag tgttgcacat 1080

gtttgatgga aaatttatcc tagatcaaaa acttgctacc tcaaccacat gttcttatca 1140

gatgatctaa gctaacatgg attctaa 1167

<210> 4670
<211> 1093
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132449_G1, chr4:4902728..4903820, Cluster 29

<400> 4670
agatttaagt cagtgcagga aaaatatatg atgtaagaaa ttttcaaaac cctagatttt 60

ctagctcggt ggacacacaa gttgtggtac atggacacct caaagatgtc aaggttgtgt 120

aataaatcca tacattggtc agagccgcac cgagtcaggt agtgattaag tccatcatcc 180

tctttgaact aattaacccc aaatgaattc aatcaatcgt aaaaagaatt gatgttctat 240

aaaagaataa gaggatttac atacagatat catattgagc tttagcttca ttgtatccat 300

tggcatttgt atcagtttta aatggcacca tacaactaca tgctgagagg ccttataata 360

ttttattttc ttcaatagtg aagatgttta cctacttgtt agtctaaaga taatttacaa 420

aatcaggtga ctatagatag ggtgaatgtt agccaatcaa aatttatgct ttacataatc 480

ttgacatgct tcccaaaact tagcataagc catcaagaca acaaaaataa caaatgagta 540

tgtcacaaga caaacaatgg ctaaatattc ttagaggtga ccggcaaaca aaacaaagta 600

ctcaaaccag taagaaacta aggacaacac caaaagccta tgaaattgaa aaacagtgat 660

cacaactcca agcgagataa agtaagagca cacacgcaag ccactcaaac taactattgg 720

ttttatgact tggaaaattt gttgagcaac ttataaactt acagagctat aggaacaaaa 780

gaattgaaaa aatggatacc taaaactcaa taataccttc caaagtacta gaacacaaga 840

aagttggcct attcaaggtc agaagtaggc ctaccaactt tgcaatccct aggtaggcaa 900

actaggccta ccaagatgca aacctggcgt agtctacagg tcgacctagc caggtcgcta 960

ggtcgatatg gcctacttca ggagactcag taaccccaaa tctaactcct aaaaggtgag 1020

atatattcaa acaaagtctg attgatctca aattttcacg agatgtatct aaggatgttt 1080

tgagactatc cca 1093

<210> 4671

<211> 1133
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132684_G1, chr4:5974788..5975920, Cluster 29

<400> 4671
aaaatagaaa agaacggcgt ttggtatctt tccatcgaag gaattgtgag agagattcag 60

catctctaga ctctagttgt ctccattggc acatttggca tggtcccccg tcagctggat 120

cagatccatt aacagtactg tcaggtccct aaaccctaag accgtgtcta gcatattagt 180

tatataaaaa aacgcagttt tacactatat atgtatatag tactatttac atagtaaagt 240

ttaaattata aggtgagata gggattaaga taagatagct gttttccaat ctccaatggg 300

attcgtccag tgaatttgtt ttgtttgagg catgcatata aagctgctcg atctgaatct 360

gagagagaat taaggccacc aacagcgctt gcattggcag gatcatcact tggtgcaaat 420

ggtagcatgg aatatgagaa catgcatgaa tagagctagg aggggctaaa ttatgttttt 480

aggccctgca ctgcatattg ttccacggtt caccattgtc gtatcctcta cataaattat 540

aaaaatgcta aaattacgtg gaaatggaga ttcaaactat gattgttgtc tctaaaccca 600

tattcacaca cccgtatatt ctataatcaa gtataatgga aactgtagca atgcatgtat 660

attctataat taagtataaa taaaaattgt agcactttgc tatttgatta tatgagtgaa 720

atgacttata taacgtgcta tttgattctt taccataaaa ttttaaaatc tcgcttcaga 780

gaatcgggag aaaactatct tttttttca gctctcgatc tcttaattcg ttccggaacc 840

actttataca attaccagag aatcactttt gcctgaaaaa ttgctaggca aaactgttgc 900

tagattaaaa aacaaatcta tctcaaaaga ggcattagcc cctatttcac tattacggca 960

tatgatcagc acgtggatga aaacaaaact gtttaacgta ctgattcctt tgtttcggtt 1020

gtcataaata attgaaaata gttataaatt ccgtatcgtg tatctatatc tagtatttac 1080

taaagagcca aaaatccagc caaatttttt ttgtctccac gaccttgtct agt 1133

<210> 4672
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132781_G1, chr4:6428209..6429250, Cluster 29

<400> 4672
tcaccctcta ttgctacagc ggttgaaaca acatgagcat gccactggat cacggtgaca 60

atatcattcc ctactttcat gtaatataaa atatcatttt aacaaatatt ttgtttgatt 120

gtttgtacaa gcagttgtta ggtcaaacct aaattaaatg atttcttttt ctctctccat 180

tttctaggac atcaattttc ctcaacaaca acaacacctt taatcgacga ttgtacgaca 240

atgaatttat ggggtaggtc acaagattga attctgaagg taaagacatg agagacacga 300

agatttaggt aggttcggac tctcaatgcg agataataca ttgcgtccta tatgaggtgg 360

atttgttgtt gtatgttctg gtcattagag agttccccta cctcgccttt tatatcctaa 420

gaacatatgg tggttatatg gtagacattg agttggttac taagttcatg acagagtcaa 480

gtcgattacc gagccataca tgagtttaac tctatgtttt caagtttacc tctgactccg 540

ttgagatctt taccatatct atgtttctag aatcccttgt gctatctata tatgatctta 600

ttgttaaatc cttaggctca tggctgagcc catgagccct tctgctcagg ctcttcttca 660

tggagcttga cttggtacat attattgata gtgatccctg agtaccattt agctcattca 720

ttgattcagg aaaatgagac tcttatgaat cttctagaat gaccatgtaa atccatcctt 780

gaccgagtcc ttgactcatt ctagcggccc ctgagtctat agactcggct cggagcttag 840

gactcaattt atttattaat ccaacatttc aaattctgta atcccataaa agaaatccca 900

tgatgcttca acttactcag gccaacaact tcattctccg ctactaaaca ctccgcccag 960

ttgatccttt gccttccatc ggagaacttt tgtctaaagc ttgctttcat cgtcattaat 1020

cctttaattg atctgctcca aa 1042

<210> 4673
<211> 1386
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133810_G1, chr4:11273636..11275021, Cluster 29

<400> 4673
cctagtcatt aaccgatcta attggcgcaa caactgtcat attgtgcata ttcgtttgga 60

tttaatccat atcgtcttct actgcttcta taacaatatt tttgtcaata taaattacag 120

ctacaacaat tccaataact gactttaatc tgaagcgaac aacgcgaaat ggtggggtca 180

aataatgagg ggctacatgc ggatgctgaa gagcggagtt cgtgagatcg ggtgtggact 240

gtggagcacc gcagcgcggc cttggatctg gccttgttaa ttgtcatatg ggtcaagggc 300

tcaaggcaag ggctgaagct taaaggttgt catatggatt ttggactcgg ttgatctctc 360

tgggaattag gcccacgggg agcccaggca gccccccttgg atctggcctt gttaattgtt 420

cattgtttcg ttcttaacat tttaatttgg tttataaaat atatgtgttg cttcgtgcaa 480

gaaaatcttt ataaaataca ttttttattt ccgaatacca tagatttcaa ttactggagt 540

ttttctttgt ttatctcgat atatatttta aataatggag catgacgaca tttcctttat 600

actccattca tcagccaaaa gtttttattc caggattcaa attttgtccc acgtatataa 660

actcgactgt atataccttt tctctatttg accgatccca catatgcatg caaacttttt 720

aactatagct gcatgcacaa ataactaagg tcaaaggcaa ttaaccatct aacaagtaac 780

aagccatctt taattcttta tatagaaaat gtctaataaa taaggataac atattaacat 840

ggtaatttga gtcccacgct aatctgtttg agactgtctt gaattgtatg gtttttagga 900

gtggtagtat aatattaact aaatgtcttc ttgataacac ttcattccta agacgaaatt 960

ttttcctaat tattatggtt ttgttatgat agtataaatt cctcgaaggt tatataattt 1020

gaagtggacc caagcgcaat caacattctg caattgtttg gatcaactcg ctaaaattta 1080

gttcctacac aatcctttta gttgttccaa cctagttaaa ctcaactaaa acatgagtaa 1140

tgactaaatt acccttctgt tttttcatgt ccatataatt gcgctaaata caaataagga 1200

gaacgcgata aataaacatc aattaagtaa agaatccaaa cgaccccaac taaacattag 1260

ctggtcaaat tagtttatta aagtttacct agactgaatc taaatatgac ctttgttagg 1320

atatagagtt ttatgtgggt taaaggatac tcctagtcaa acctttaaaa ttgattttta 1380

ttgatg 1386

<210> 4674
<211> 1281
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136152_G1, chr4:22861731..22863011, Cluster 29

<400> 4674
aagtcaaaat tttgtaaata tttgataagg tttgtgatca tataaaattt ctctaagctt 60

ttaaaattat aaaaaaatga caaatattaa gataaaaatc caaatcaaat atttagagtc 120

catgaatgta tctttagaaa cgtcaaaaaa tagttttagc cctagaaata ggaaaaagtt 180

ctagaaaaaa tctagaaaat tctcaaaaca ttcaaattga ggtagaaaaa tgtttaaaat 240

tttgcacggt aaaagtgtaa gatgcaacta gcataaatgc aaaatatgtt aatgataaat 300

gcatttgtgt tggttgcgta ttagtttttt ttttttgcaa caagtttca aaatatgtat 360

acatattaga atgtttggga attttctagt cttttggtta tctttccatt ttgctagaga 420

taattatatt tttgaatcat ctagagacat tttcatgagc tctagaatat tttattttga 480

tttgtagcaa gctaatatgt aattctttaa aactttagaa agtttagata cattttaagg 540

cttaaaaata ttatcaacta cttaccaagt attttaacta aaaagcatta aaatcacctt 600

caaaattact ctaaaataga atcgggaagt aatttaaaat ataggggtta aggtgtatag 660

ttttaaagtt aggggaaaca aatcaaaata caaagatata taactgaggg aagtaaagat 720

gaacttttc ctaaatgttt aagcccggct cacattttta atcggtcagt caacccttc 780

aaaagctaga aaaggacaaa tattaatata ttttgttttc gatttttgag gaacttttt 840

tgtactttag cttggtttta ccatcaaacg tatgcttggt atgtactact ttgtccggtt 900

taaatcataa gacgttttgt ttttttaggt atattatcct tactatttat gtagatacat 960

tgtatattta agtgtatgac aaatctatgt atctaaaaag gttaaatatt ttgtaattta 1020

gaacgaagag agtatttaat aagcaatctt gagaacaccc tagctcagtg tgatatgcag 1080

tggttttaat ttgtgcgaac cttggacgcc ctagcgatag gtttttcaat tttgggatta 1140

gaattttcca gccactccta aattaccaaa tttcacaaat tctggttgaa gttttgtcaa 1200

aaatatttaa atataaacat gtggcattat ttccctaaaa tttttagatc tatacaaaat 1260

atgagtatga tttatgatta c 1281

<210> 4675
<211> 1313
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136275_G1, chr4:23408285..23409597, Cluster 29

<400> 4675
tgtgtgaagg gaagttggta tagttcgcaa gaaggcttag gcattgacat ggatctgatt 60

gttagcatct tgaaagctca aatcaagcat aaaaaggtca tggctaaagc aaggtttggc 120

aaggaaggac catgcgtaat gcaatataga agcgcaagct agagactcgg gacacaatgt 180

cccattcagg cggtgaatag caagcagagg gcttggagcc agtgcactaa ggcaatggtg 240

aggagaaagc tagaggctca agacatgata gaccatcaag gccatgaagt gtgagtagag 300

agtttggagt tgagtgacca aggcaacgga gaagagtagg cgaggttaag gttgatggac 360

ttgaaggcta tgtgatggtt tgagtaatcc acgacatcta tgtagatcaa gcaaacgatt 420

caatgaacat atcaagtgac ttaatgatga ggacatcaca ccttcaagca caagataact 480

aaactaagaa aatcaatatc ggtgtccaac tcatccatat catgacggag gcccatctcg 540

actcattgga gcccatttta gattccagga gcagtcccat gtaaaattga cacccatgga 600

gcatatggat tctattttta acgatccaca tataaatata atttgataac ctaacaatgg 660

ctttagctga cttagaaaag aggacaacca gctcaaagaa gctgatcagt gcgaccaaca 720

tgggtcgatt cgtatgatca ggttagaact tgaggtttta tttgttgttg tgcttctaca 780

aagcgattta aatttcacaa cacaccctct ttgactggta attgaagcgg tgacattgct 840

agattgatta actctagcac ttagagacaa tcatagctac attcaggaga ggcaatcgta 900

gtagtagtgg atctcctcac tccatgtgtg ttggtcattc agacgaccac ttgctctttt 960

ttgcgacaac aacaacacac aagataacaa gcatgatcgg aggacaaggc aggcaactag 1020

ctcctcatga agacattatc agattctacc aataatatgg gcctttgata ccctcactgt 1080

aagaggaaat gtcaaaccaa gctagggtag gctaaatagg ccacatggga gacctaactt 1140

gattggagta tctcaacgac ttggtagaca agacatcgat tagatataca tagatctcaa 1200

tcaatatgta aagaactaac tagattcgaa catattcctc tttgtaataa attaagaagt 1260

aaattagatc caatcaaggg tcttcgatgt taaccctacc tatgggcttc ata 1313

<210> 4676
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_142143_G1, chr4:58513916..58515037, Cluster 29

<400> 4676
cagggcattt ttactctttc tacatttttc cccaaacgcg cagaagagct gtgaattatt 60

atattaagaa cagaagttcc aaaatagact gttacaaggt atgtagttcc caaagtgcag 120

tggaacacat gaaatggaaa attaaactca ataaattgca gaaccagtag gacaagtgca 180

attgaaaaat gatccacgta aacatcttaa atttgggaag taggcactct gaaaccagat 240

taatttatac ttagctacca gtttgtgcct tccactaata aaaatctaac catataactc 300

ttgaacagca tgtgagattg aaaattcagg tttcgcactt agcccaatta gacaaataac 360

tccgcttagc ttttgtgcag tagagcagtg gatccaaaag tgagaattgt ataaaaatat 420

gactagaggg gtaccttaga taaatagtgc attaaagtca tcttattgtt acgagcacgg 480

gtgtcactaa gtttaagcaa gctatccaac ctgaaaccaa cagcagaacc tacaaaaaac 540

gaaagggacc atactgcatt catgaagaac aagagaaaaa aatataattt gcagatatga 600

cacaagaaaa aaaaggtgtg gcaaattaaa ttaagtaaat acaacttgtc atcacaacaa 660

attcaccagg caataactaa acatattgat ccctttaaaa taaaacagac catatgatgt 720

tgcaccacca tttatgaaga aaatattaat tactaattag gcttcacagc aggatggcga 780

ggtacagtta gtagcatgta tcaagtcaga ctaagcttca tttgattagt gttcagtcac 840

cacacaaagt aaaattgttg tcacttagca tcaataagac caatattcct ttttaaatga 900

aaatataatg atgcttacta atggctagtt atcaataatc attgttctat gggttatgag 960

cattaagata actcactagc caattatcac ataccctcaa ggagaaaaat aatacttcac 1020

aaaatatctt gaaaatacaa ttaatggaat tttacttcta cataatgata actcaaatat 1080

catgcatcag tcttcactga aataacacat aagggcttgt tc 1122

<210> 4677
<211> 1081
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_143849_G1, chr4:69399630..69400710, Cluster 29

<400> 4677
tgtgactggg attcctccca tcctgtattg taaagaaaaa caaagcaggt gcaataaatt 60

atgcagggga tgtcgctaga attaaaagat taggagcccc aggaacttat gctgttctcc 120

atgaccatga taatagagac cagatactag actttccctt gatccatcca atggcagtaa 180

taggtctcta aatattaata ggtcgatgaa gcatatttag aataaaagct aggaaaatta 240

ctcctggtta gtgatcaatc gcgagaaatc ataggtgtct ctagaatcta gactaatatt 300

tcaaccgtgt aatttcaatg gtttgccata gacagcctag tactatgagg gatgcagaac 360

ctgatctaaa tgaattatgg aaacattaat tattgcagat gcatgcaagt tctcactaga 420

ggaacaaatc agtcactgca ctgtgaagca aatgcaagac aataaacttt aatacaaaca 480

tacaatacca aacttgtttg gcatatgaac aatctaaatt ccataaaata ggctcagaat 540

ttgtattaaa atcctagtca tcggacgtgc aagaggccat gagattctaa ccctcaaagt 600

atgaactaaa tagacagcag gagcaaaggg atagcgataa ttaccttgtc aggaatgtta 660

gggtcagctc cagcctctaa ttaacaagaa cttgacaatg tcagttaagc catcatacat 720

caacagcctc cgttaaaatg actggaccac cgggacttac aaagctcaca tcagcaccag 780

cctatagaat tggcaagaca aagcttaggt agctctagag ggaacagtca aatgaaccca 840

tgataatagc ccagattcta ctctatacag atttcttcga aagataagga gaaatcgagt 900

taagaaataa ctggacctca cctcaaccag tagcttcgtg cgttttaagg aacgtgcacc 960

acgaggagca gtgtaaagaa ctgattggaa actttgttgg gctgcaaagg caggaaaaca 1020

gttacgagag ctgatcagat caagggaaat aatctaggaa aactattctg ctgcaccttc 1080

t 1081

<210> 4678
<211> 1179
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156385_G1, chr4:154271892..154273070, Cluster 29

<400> 4678
atttttaacc ttaaaaccaa acatgttaag actaaacttt agtccctaga ctaaaaaaac 60

caaacatggt ctacattaca tgccacatcg tagaaacaat tacatttttt tctattttct 120

gatagaaata ctggcctgac gcatcgtggc ttattacctg aactggttaa ccttgccggg 180

agtaatctgg cttcaattga attgattact tcgaacaatc catagatgca tgtgtcaaca 240

agaatgcgtt gcacctacta ccaatgccga ttgacatcga tacatttctg cacgcatgat 300

acgatcgacc acaacaccgc aacacgctta cgcgaacctt ggaaggttgg aaaggccaag 360

gcggaatcca caagtaccac cgtggttaat taatacacta cactagcttg gaaggttaga 420

gggcggcaca cgcacacacc gcgcgcacaa gcttgctcta gcgtgttccc gcgtacgttt 480

tattttacca gttttccgtt gctcaaagca tccaataatt cagcctttac gctttttttt 540

tcctcagtgc atttcatgct gttgttacca tttccttacg ttttaagcca tggcgtgtca 600

gaatatgcag cttttcgctg ggcgcgcggg cagaaaaaag agatcccatg ccatgcatgt 660

gtgtgtgtat atacgtgcca ccttttttcgc ccgttccaaa gcaacaaaaa taaaacgaca 720

gcagtggccc gtggacagcg ccgccttttt cttttgggag atgaggccag agggcaaatc 780

tgcgttctca ctttctgctg atctgatgcc gcctgcacat cacaacttct ggagtacttt 840

ttttttaccg cgtgtcgctg ttcaagctgc agcctgcagc ggcgtgcgtc ctttattacc 900

caccggatct tcgactatac gtaggttact agacgcgccg cctaccttta gttgtataat 960

gaatgtaatg tttatatctt tcagcaagta atcacatcat tttcatatac tccctcattg 1020

ctatagccaa acagcttgga ttctacgttg gattttgtgt ctagaatctc agatctttcc 1080

ataagctgat aaccagcaga tttgtattgg atttaacaat taattttaga tttgtattgg 1140

attctacgtt aaatatatat gtggtagttg agtacataa 1179

<210> 4679
<211> 1284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157316_G1, chr4:158723140..158724423, Cluster 29

<400> 4679
tgtgcccagc cggttgttgt tgatcgacag cagtggcgga cttcaaaggc gatccacaac 60

gccgccggtt gttgttggcc gctgcatctg tatcgtgctg ataatcgatg atgcggtcgt 120

ctgaagtttt acttgcggcg taatttgcgt atgaacagtt atggatctat ggaagaaccg 180

atgcgaagcg agaagcttct ttcgggatcc tctcgtgagc atatatgaac aggttatgga 240

tgttgttgtt gactatggtt ctctctctat atataatata tatatagaga tctctatgta 300

tataatatat atatagagag aggggctgac ttatttcagt agaaaatagt tttaaaacat 360

ggtgggcatc tttctgattt ttcaaaaccg acttgaaaat aatttaattt aaaaacgcaa 420

caaaagtcgg tatagctgat cgttaaagtt agctagaccg catttgacat agaagccaaa 480

gccaaccact actctagctg gtttgacaca agatgttggt ccgacaaatt ttgagaatct 540

gatcgatctg accgaatttg atgatcaatc tggccagttt tgctttgatg gtacccagtc 600

ttaacgattt tagtagccgg actaaccagc ttctatgccg gtgacacaag aggaaagtta 660

gatggagaga gcagaaaagt gtagaagccg cagaaggata ggccggccgc atgcaggccg 720

aaaggaaaag attctagaaa atcatactat tgctgcatgg ctctctttct tgtacaccag 780

cttttcttgg acctgaccgc atgcaaggca taaaggcgaa agcgacctat cagcgctgtt 840

acgaacggcc acgacttgtt gtctcgaccg gccggctgct gtcttctggc tgctgcaggc 900

ccaggccaga tggacaagca aggtgcaata cagttgagct gatggttttt attccctcct 960

cgcgtccatc aatgttcgta taaaaaccta tcatatgcac agacacatta aaaaatccta 1020

aatacaaatc ccctttcaac ccgttaagcc attctcagtt atagttttat agaggtttta 1080

ttcacattaa taaataactt accatataag caaatatagg atgacatgtt atgatttaat 1140

gaatagagat attagagagt ttcatgggat taaactatgt atacactgtt ttcaagaaaa 1200

atgttgacat gacagccttg aaaacagtgc gataaagcta tccattgaga atgcccttag 1260

ccgtcattct tcgtcattct tcct 1284

<210> 4680
<211> 1392
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162355_G1, chr4:189183951..189185342, Cluster 29

<400> 4680
gttatttttc ttacacacca atgattccct catgttccaa ggctaatgga tggagctatc 60

aattgatgcc atagccatgg gcaatagatg tgagatccaa aatgggtcaa gtgaggcttg 120

gaacccaagg cattgagttg ttctttttta gtaattttat ttaatattgc ggtgatttgt 180

caatgttggc cttgggctag agataaatag ttcattgatt gaaatactag ctgaatttag 240

cctctaggaa ggctagaggt taagctaatc cacttttaga gctaaacact ttttgcagct 300

attagttgaa tttagtacac taaatgttct agatagagct ccatttagcc cgcaaatcag 360

gcgaggggaa ccaaaaagga ctaccaaact agctgaccaa agataatcat ttataaattg 420

atgtgtttgt tagactatca cttgttagtt ggtatttata gtatcttgtt catcttttt 480

gtttagatat gtgtaaaatt ccctgatgtt taacatgttt tttgcccacc cgctaaatta 540

tttagcgcac taaaggtcat agcagactat ttagaacact gaataccagt ctattgtttt 600

ctcttgtata gaacccgttg gccatacaaa gtatgcaaac taaattatag ttggactcta 660

aacaagagct tgttgtttga ttaaaattct aaatgactgg agttttttt ggacatgtca 720

gtttggacct atagttgtat actttgaaat aacatttgtt tgttcacttg ttctataaag 780

aaattatgta agcttagagc ctagactaga agtgcatttt ccttgtgttg gttgaaactg 840

cacctatatt tttactatca tcaattctaa tgtattataa caatatagta ccatcatgag 900

cttttccaat tattctagaa aacaggtcat gttcctctat tatccattta aggtttttaa 960

aaagacaagt aatcagtttt gatgtaaagt ttgcaagaac ttacacattt atattattta 1020

tttgataggt catgaagcat aatactaata aaagtattga ccaaagaacg caaatggctt 1080

cttcaaatgg tcatgtcata cctaatgtat ctcaaaatga ttcaaagctc gagctctttg 1140

gttttgattc tctagtcaac attttgggac tcaagaggta tggccaaatg ttctactatt 1200

ttcaccatat ttactagagc cagggtgttt ttggtagcac tttgtgtttt cttttgttaa 1260

ccacttgttt tttaatgaaa tggctagaaa cctaaggcca tttattttac tatactttta 1320

aaagaacata ttagttatct aattggttat gaacagtaaa cgaatcaagc tgaatcttca 1380

aaggcaaccc cg 1392

<210> 4681
<211> 1309
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164114_G1, chr4:197801589..197802897, Cluster 29

<400> 4681
ataacggggg acagacagag ttttccccac caggtatctc gttaacatat agagaaaatg 60

ttaacgaagg ttgagaagtg ctagcttctc cgtgtgcatg tatgtgctgg ggcggcttca 120

gtgacgtgaa ttgttgatgc tgctgctccc agcagccgct gttactttaa cccagcttca 180

tccaaacctg attggcaaaa acacactcta gctttgatag tgagtactgt gagtgatttt 240

ttattcaaaa cggcccggtt ctttaaataa tgatttagag aaataataat agatatggtt 300

tcgatggggt tttattatgc attattagga cacctttta attgacaagc aacagcagcc 360

ccctcatgca tgatgagcat ggatagatag gttttggcca agtcatgaaa aggtcgccgc 420

ctgcatgagc tgcagaaaaa agacagggga cgtggatgga cctccattgc tgttgctgac 480

aatggtaatt tggctcgtcc tcacgctgtc tctgaacatc tacgcacctc gtctatgctc 540

aggagtcagg cctgtcgtcg ttctgactct gacgacgttt caattcggac attctgcgac 600

gccaactttt gctgcatcgc gtcactaaca atcaggaagc agtgctggtt ccgaggcgca 660

ggaccgctgc tggcgcgttc atcgtcccaa tgcaaggaga ggagggccct gcagacctcc 720

gatcccgtcg aggcgttacg taccgcaggc aacgcatgca tgcatgcatg catggcttct 780

tcagttcagg cagggatggt cctgatcgtg atgcatatat ggccgcgccg cccagcagta 840

atgatctttt ctctctttct ctctcttttt tttctttttc atcggaagta gcacaaggaa 900

tcagttaaag ttgttctttg cctttacaat ttgcagtgtc ggcggcttcc acagttgaaa 960

taccgatcgg taaccgatgg tgaggaccgc caaaatttct tgtacctctg gttgcaggtg 1020

gaaacgggtt ccagcaaaaa aaattcacaa atttcgtttc aaaatttaa atttcaaaaa 1080

aaaaactggg aaaatttcta ttaaaaacta gacggtacca gaagtcagtt cagaaatata 1140

ttttttgttc aaaaaatcag cttttggcaa attaaacaaa tcagaaacaa acattgccag 1200

tttaaaaaaa acaattcaaa gctttttttc gttacaaatc accaaaaact gctcagtttt 1260

accgattttt ttcttaccaa atctcgtttt ttcaaattcg caatcagaa 1309

<210> 4682
<211> 1029
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_164340_G1, chr4:198929409..198930437, Cluster 29

<400> 4682
tattttatta gaagaaaaga taattattag tccacaaaca cgtcgaggta catggagcca 60

tgcaataaaa ttaagtggca aggaccatga agcatgggca gatcgatagg gtttattggg 120

gtctgtcgac cccgacaaaa aaactcttca ataaattact gtcagaattt tattaaaaaa 180

tcccatagtg aaccccgatg aggtttttgt ctagactcaa agcatatgaa agcctttgct 240

ttcactgccc atgggtgctt agagaagtta aatgtcccgg tttagttatg atcgataaat 300

aaaaaggaga aagatcattg caaatacgat tatctagtgc cactaggtca tatttaacat 360

tgcatcgagt ggagcggtac gatgcaagat aaaacctttg aaaaatattt tgagaatgct 420

aactcattgc taaagggtgt gatggccaac catagggata cctattggca ttatctattt 480

gaaaaggttt gaaattaagg agttgctcgg tgtaggaatt ctaccctcac cggagtttaa 540

gtggctttgg ggttcgaatt tagtctggtc acctgaacat ggttttcaga gctatttgga 600

cgtcatcgaa aagctgcagt ggccatagag cttacaacac aaagcttaca cggtggtttt 660

caattgaggc aaactttgcc ttgtggtggt aatcggaaat ggtgcatact ttggagcttg 720

gttctgatgg taggcatgag aatttccaaa aacctccatt ggagccattg gagcttagta 780

catgatttca cttctagaga tagtgttttt gtgcgcacac agagctaagc tcaatggata 840

tgtttggtga tcaccggagt gctagcatcg gggcatagag accgtcaacc cacccgtttt 900

tgacattgtt agtgactgct gggtttactc tagtggcaaa ttccaataag gccaccacat 960

gttttcaatg gtgccatagt gtgtccaata agtaggtaaa ggttggtttc ttgaaagggc 1020

tataaataa 1029

<210> 4683
<211> 1231
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16730_G1, chr1:92854860..92856090, Cluster 29

<400> 4683
gttttggcag gtttcttgta cgcgcatgat aaaccttgtg tgtcatgacg ttgtttgact 60

caagcattat cggctctaga cgacataagt gtggcttttt gtcgtggttg ttgcattgag 120

ttggaacaga taatatatgg ggaaatggga aaagaccgga gaaaagcatg ccaaaagatc 180

aataattttg tggttggcag taaagaatta ggtgactgcg cttgtagtac ggtggcacat 240

gaaaacccac tgaagaaatg gcatgcagga ggtactgaaa atatcagttt caattgttcc 300

ctgttccaca cgtccagtaa taacagttct acgaccccgc acataaaaca gactacttaa 360

aaacatatga caattctcct aataattttt ttctttgata attgaatggg aaatactgct 420

ttggtatgcc caatatacca tcagtaattc aattcatatt tactttaaga acattacagc 480

acaagaaaga aaaattaagg gcaaaagcta ctgaaaatac tttagaattt actttaagaa 540

cattacagca caagaaagga aatttaagcg taaaagcttc tgaaaatact ttagaatact 600

aaaaggaaaa aaatgttgca aaacgagcac aagtataatt cagcaaacaa cttagtcaga 660

aagaattggc tacatgactc gatctgcaag ctctatacca atgcagtaga aacatctact 720

caactatgta aagattgtgt tttctcagag caagtatgaa accggttagc ctcaatcact 780

tactaggtat ttgtcaagac tcaagacgag tctcttatca gctagtggag gaaatgtagg 840

ctaagaatcc caaagataga agggaatttg atggctaatg tgttattttt tatggaatat 900

ttagaaggaa agaaataaaa taatttttca acgttcaaaa tgtcagtcac tcaatattgc 960

attcctcgtc aaagaagatg tggaccagtt caagttggct tcaggctcct agggcgtcag 1020

ctggtgttta gtggtttatt ttgttttcta tttctgtttt gtaagaattt tttctttgtt 1080

ggagtgacca cttgtctcga gctgagatgt ctctgctagt tgtattttgt ttctgttttt 1140

atcccttcta ataaaaattt cggcaactct cttatcgttc tttaaaaaaa aattcagcaa 1200

acaatgtcta ctgaagtcat tcactctttg g 1231

<210> 4684
<211> 1375
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_168236_G1, chr4:219828775..219830149, Cluster 29

<400> 4684
agataatgag aaagagtgat accaaattac tcgcccattt tgccttattt ggacttgtgg 60

agccgctcta aaagactctt taaattataa agatttgtca agcctttcta gctttaggac 120

cactgaaccg agtcaacatt gacttgataa gggctttatg aacattgaac tcctcttgat 180

acatgcaaga caaatgaagt attttaatgt attagaatcc aaaaacgagg aataaaagag 240

aacttacttt tcttcttcct cgtttctaca attttatctt ccagttttgc cttctcagtg 300

gctcgcagag ccttgaccac tttgaatcca atgccactag cctgtaagct gcatgcatga 360

gtcaagtatt aaaagcacag aggacttaga acaaaatcga gggctcaaat atgtaccttc 420

caactcagtc atgtttttct caagcttatc acgcaatgtc ttgagcgagt ccataaggtt 480

aggattatat ttcttctctt gcttgaggtt aagccgagta gtctcaactc cttgtagttt 540

tgtttgcatc aacataagaa gaggagactt ttcctcttat tcatttaaga tctcctaaag 600

ggcaatattg tcaaaagcag aaatctagaa aaaatagtga catgttaata tacagatgaa 660

gtcgagtaaa cttggccacg taatggagaa ccttctagag ttgttggcag tctttggttt 720

attgatcata cccatgacat gttcatagat tttttgggag agctcattgt gaccagtctc 780

caagatgggt tccctcacat ctcgaaggac ctcctcgatt atggggtcta caaaagtcta 840

tcaattatga atttttcaag aatatcttca agatatcaat agagaaaggc aatcacctat 900

gggttggtta gcttctggca gtgccctggg tatgggtatc ctcaacaacc aaactaggtc 960

tgcctacgca aagagggaag gctacgggcc ccaccttcga ggcaggttag gttgacaaga 1020

tcacccctct gaatggacaa ggagaataca tgatcggaat ccccgccatg tgtcgaccca 1080

tggcccccct gccacgtacg ccttcattag gcttccttct gcaatggccc tcgctaccta 1140

gtagcagggt ccaattgcga cacgtggcct aatcgacccc tactcatggt ggggtttgat 1200

actgccatgt ggcttcaaag tcccattaga ggcctcatac cccatccaag agggcttcga 1260

acccccttaga gggctttcta cactaagtgg ctccatatgc tctcgaaact tcatcaaggc 1320

cctagacccc atggtaaact ccttcatacg agcactccac caattgctag gaagg 1375

<210> 4685
<211> 1364
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170176_G1, chr4:228846678..228848041, Cluster 29

<400> 4685
cggatattcg gtaggtatat taatcacatt atcttctttt gtgccaacat tcaacacata 60

gccgggcaac gagtgatcga tattcatagc gagagagtca acaatcgaaa gattggacaa 120

aatatcgttc tcggacatca tatttttcac ttggaattat atcgtcccct ccccacgact 180

gtatctgcta ccagtgacaa tctagagaaa atataaggga tgcatctctc ttgtaggtat 240

atagagatga gatgtaagtg atgcatatat gatgaaattt tgactattat aactgttttt 300

tatttcaagg gtgtacgtgc acccaaaagc taccatgttg ctttgcccca tgtgtgatgc 360

cttaaaaact ataggcagat aataatcaat atgcatgaaa agccactttt aatataaaac 420

tatgtatgat aaatgacaag taagatggct agataatggg tgagtaggag tttgctaaaa 480

actcttgcaa gattggccac tgtgccaaca tcttccacaa aagcccaaac tatatgtaaa 540

gtacatacaa attaactaga gtatagcagc aagaaacata ggaaaccaca caacagacac 600

acactacaga tgtttcgtgt tctagcgtgg atgttcacac gctagagtag agcaacaaga 660

aacacgagaa aacacacaac aactaacaca aaccacaaat gttccacgtt ctagagtgga 720

ggttccacac gggcagttcc aacaactcaa accaaaagag aagagatgaa atctctacca 780

aatcgattca gattaagttc aaacttgcca cacgagtttc ttgtggtgtt aagatgatat 840

cctcaaagca ccaaacctag gaacaacttg aatcaatgag gatataagaa atcatcttcg 900

gtttgggggt tttctcaatt tgaatcaaag tgatgtaatt tcgtgctcgt gagaaatctg 960

ccaaaaccac atggtagata agttccttac aggtcctaga acgaattcaa ctagctcaaa 1020

caccttaaa aatatggaac gagaaagcca ccaaaatctc aagtgaggga gaccaataga 1080

ggaaaaatca aaactaatag aaacaaatga caccgacaca aaaaattcag aggacaactt 1140

atttattgta gcaagaacaa gtttgcacaa ggtttggtct tacactgatg tacatagata 1200

tatgcatgag gctctcatgt gtgaatatct tgcagtatag aaaactagat ctagtaacac 1260

ctaaacaaaa gcatagaaaa taaaataata aagaggtagc tagcttgggg gcgattctcc 1320

tcttatttat aaagctatta cacatgttca tgtccgccat taga 1364

<210> 4686
<211> 1189
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172034_G1, chr4:239234280..239235468, Cluster 29

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (645)..(744)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (646)..(646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (650)..(650)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (653)..(653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (660)..(660)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (661)..(661)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (662)..(662)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (663)..(663)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (664)..(664)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (665)..(665)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (666)..(666)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (667)..(667)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (668)..(668)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (669)..(669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (670)..(670)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (675)..(675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (676)..(676)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (677)..(677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (678)..(678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (679)..(679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (680)..(680)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (681)..(681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (682)..(682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (683)..(683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (684)..(684)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (685)..(685)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (686)..(686)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (689)..(689)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (690)..(690)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (691)..(691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (692)..(692)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (693)..(693)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (694)..(694)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (695)..(695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (696)..(696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (697)..(697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (698)..(698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (699)..(699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (700)..(700)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (701)..(701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (702)..(702)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (703)..(703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (704)..(704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (705)..(705)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (706)..(706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (707)..(707)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (708)..(708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (709)..(709)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (710)..(710)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (711)..(711)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (712)..(712)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (713)..(713)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (714)..(714)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (715)..(715)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (716)..(716)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (717)..(717)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (718)..(718)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (719)..(719)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (720)..(720)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (721)..(721)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (722)..(722)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (723)..(723)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (724)..(724)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (725)..(725)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (726)..(726)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (727)..(727)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (728)..(728)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (729)..(729)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (730)..(730)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (731)..(731)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (732)..(732)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (733)..(733)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (734)..(734)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (735)..(735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (736)..(736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (737)..(737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (738)..(738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (739)..(739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (740)..(740)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (741)..(741)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (742)..(742)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (743)..(743)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (744)..(744)
<223> a, c, g, or t

<400> 4686
aaatggtcta tagctcgtga gatcatcgaa tggccattga agattgtcgt ctgctccgac 60

cgttgttgta agaggctctt gtgattattc ctcatgaaag ttcacgaaca acgactctag 120

tgaattttgt ggattgttat aaacaactat agttagaatt gtgggttgtt ggagtgcctt 180

cttagcatag ttcttgtgaa accctcgctt tttgcttggt gtgtgatgtc aattaacaca 240

tgaccaacta gtttggactg accacaatga gaatttagat tgtcggtaag caaccaaacc 300

tcgtgatata tatttgtgtc attccttgtc acatgtggtt acactcctta atctcgcatt 360

tacatgtatt atgtgctata cagttcttac ttaactaaca ctatatgtat taaagttgct 420

aataaatatc cgttaatatc tcgttccagt aagtagcctg cttcttttag tatttactaa 480

atatcaagct actagaataa tctagaggct tgcataaagt aaactagagc tagagcgagt 540

atatgctctc gtgacatctt tgttactaac gaaattttgt cttagcaata tttgtgagtt 600

tttagagcaa catttatagg ttatgacgaa tctctagata ccccnnnnnn nnnnnnnnnn 660

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 720

nnnnnnnnnn nnnnnnnnnn nnnncagttg gagtattgga atcgaactcc ttgattaggt 780

ggatacgtta tgactagatg gggcattgat tagctcacta ataacttcat gcatggatgc 840

aaatgccagt tttttccata attaagagat ggaagctatg ggagcatttg catatttgtg 900

ttattataaa tgcacaatta actaattgtt acagactagt agtacaaaga gaaccatccg 960

cccatgaaaa ggtacctaac agagttacta cttagtagct ctggtcttgt ccaattgaat 1020

ttatgcagaa caagttagct tttttgtcag gtccatgctt ccctcatctg attatgggac 1080

cctctgggtg aacagttttg tagtgttgct tcttcagtgg tcatgttatc acataatcaa 1140

aggccaagat ccattgcttt aaactgtttt gcaacaatgc catatatac 1189

<210> 4687
<211> 1115
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173102_G1, chr5:4141901..4143015, Cluster 29

<400> 4687
ttgatgggtg tttagtacag ttctgtccat gtcattgctg tttgtgtttt tagttcagaa 60

catatctgta gaagctttgc aggattgtgg atagcattgc catctaatta atctgtggaa 120

taattcgttg gtgaacatgc aagggttttg gaattgaatt gtgttcatat tatggtcaga 180

tttgtcattg cccccgttac aggaatgagt ttcctgttgg ttgtttatga tgtattttgt 240

ggctcatcat attctctttt atcaatcttt gtactttgac acagatgcat ttacttttt 300

tcgggtgact taaaggcgaa gctgatgcat gtttacattc attctactat ctagctcagt 360

gacctgatga taactttaaa ggcgaagtcg atgcatgttt acgttcattc taccatctag 420

cttagtgatc tgatgacaac gttaaagatg aagttaatgc atgttcacaa tcattctaac 480

catctagttt agtgacctga tgataacttt aaaggcaaag tttgtatgtt tacgttcatt 540

ctaccatcta actatagtga ccatttgatc ctccatgcat gcagaaaaag gatgctcccg 600

ccggtgagaa gcgtgagccc gtgaaatcac acctccgcaa cacgatcatt gcgccaaaga 660

tgattgggag catcgttcaa cggcaaaacc ttcaaccagg ttgagatcaa gccctagatg 720

attggccact acctcgcaga gttctccatc tcgtacaagc cagtgaagca cggtaggccc 780

ggtatcggtg ctacccactc ttcttggttc attcttctaa agtgagggct gaatatggct 840

ctcatcggtt ggatttttt ccatgtagca tgggctgcca aattaaaccc ccctgtagac 900

ggactatgca atgggtgtac cggtggtgaa ttcactgtta tcttagttta tgacgagcta 960

ttttgattgc atgaaagctt gcgtgttcgc ttcgttgtct ttaatacctg actgctgctg 1020

agtcgttcac attgcgtttg tgctactgaa acgcgagagt caatagtgtt ttttatgaat 1080

gttagaactg cattaaattt ttttttggcg aactt 1115

<210> 4688
<211> 1096
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173460_G1, chr5:6337681..6338776, Cluster 29

<400> 4688
attttctaag tataagctca agagttcagc aaagacatca acatattgaa atctacgatt 60

gctagctagc attgtgtgtc gagactggtg cagagctgag tcaacaatgt gttgatgcat 120

cttcgctagc aaaaaaatat atattaagaa acaacacgac agtacaattt attttgtttt 180

ttttgtataa gaaacaacat gtggtggcta gtactatcat atttatgcct tctaatagcc 240

attggtacct ttaaatgttt catgggttct tgctcagatc caacataatt cagaaatttg 300

tgagaacagt taaccactgt gtgaatcata gtgtgaagac gaagcagagt gcctacctct 360

acctgtacag tgcaattata tataatatat catttgtact gacggtttta aaatacataa 420

tcattttatc ctatggaagc ttcatccatt tttctatcag ataacagcac aatgttatgg 480

gaaatagtat tcacgattaa tcttgtcttc atgcgcaaca ttaaccgact ttgtttgcac 540

taaaacagac agttgattgt acgagcctta gacgaactcc tgtctaggac ctcctattta 600

tggattgaat acgacctaac ggtggttgat gcggtagttt caccgccatt tatattttat 660

cgagagaaaa acgcattgct ttccgcgttt taatcacggc aaaaaaaacc tttgagttga 720

atgtgtgtgt gtgttttttt taataagagt tcaacgtggc ttgttttata tacggagcat 780

ccttgtgcac gcacacagtg cagctctgct ggagaattcc gcaacaaaag tcgtttccac 840

acgactgtgc acgcgttgtc acctttctgg atcaagcaca tacgcgcgtt gtcagtccat 900

tctgctccgc accacggaat ttctattcca tgaaggcttg agtgcctgaa aacagcaagg 960

gatgtttcgg gggaacaagt ctactacaga aatgatcgtt catcctttca tccacgaacc 1020

aacactgaca tagtgacaga ctaataacat ccaccacact caaataaata ctaaacaaat 1080

acatttgcgc atgcga 1096

<210> 4689
<211> 1330
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_173599_G1, chr5:6941738..6943067, Cluster 29

<400> 4689
tcggatgttt ctatgcatat ctatgttaaa gtattagatt tattatataa ttcgtatgtt 60

ttagaaacat ccctatttta gaggataatg gttggtacat gaaatttcct agggaaatta 120

atgtagcgag tgatgtaaaa tcgtcattgt ggaaatttta cctccgaaaa tcctaaggaa 180

attctagttc tttgatttga taacatgtat gacaaataaa caacttgatt gttgctcatc 240

ttgttttaag cattgatgtc taaacaatgg aataggtcta ggagggcagc ttgggcagca 300

cccaaaagcc tgcccttgcc aacactgctt attactcatc catgtttctt tcatcgctag 360

agtagtcaat cgaaagccta acaggctgtg aggatggtga tagaggggggc atctctttcc 420

gtggcgttcg attcatgtta ttcggtggag cttcacaatg cagtcgtgac ttttcagcct 480

tgttgcaagg gctgcaaggg gtgacatttc tacgagctct tcaaatgcga cctataatag 540

gctatccatt gttgtgtcat ctgtggttta taaggactat gacaaacgat aggagtgagc 600

tctttgtaga tagcggcttg cctcatcctt ttatcttgaa gcttcatggg cgtgaagtgt 660

agtgataata gcaaaactcc ttgtcttggt gcataaacaa ggtgtcgcga cgtgttctag 720

ctagtgttag gcaggaggga ggcgacactt gttgttcgat gcagagtagc tagtgatagg 780

taggagggat gcgacccttg ttgttcgatg catatacgag tgtatgatag gtcacacatg 840

ctttgtgatc ttgtgacagg tcacacatgt atatgatctt gtcggtgcgg caacaatctt 900

tttactctgt ggtgaacttt tgtgaccatt tttttagcag tttgtctcac atgacactgg 960

caagttggtg ttgcaatggt gatccacata tatagctttt ggaggtccaa gtctgggaag 1020

tgggtgactt ttaggcgaaa gctttacata ttgaaactag caatggagac atcttcaatg 1080

tctccctgat cattggaggc attactttga gatcttgtac ctctagggtt ttggtaaaaa 1140

aactcttgag ttccttcgat gttggtgaca tatgtggata ccatttactt ccttggaggc 1200

atcgccaccg tggttacccc acgtcctcta gagctctttg ccgatttgtc atggcttgcg 1260

gggtcgcttg tttgttgttg ctacggtggt ttgtagatga tgtttttatc ttggtggtca 1320

ttgttgttac 1330

<210> 4690
<211> 1348
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_174710_G1, chr5:13819965..13821312, Cluster 29

<400> 4690
gggggacgtg acaaagggcg ctattcctac acatgatact gtacctgcac ctgctttgta 60

gggatccgta gacacgcatg accattgatt caggtgcgcg cagatctaca tcgttaagca 120

ttaaaacacc ttgtcgtctc gatctgcaag accgcaatca cttgggcatg cagtgccagt 180

gctggcagca atgcagcacc cgtcctagct tcacccattt cttgctgtag ctgtcagctg 240

caggggggag caccaaattt aatactgatg caccagccct tgactccttg gcaataaccc 300

ctgtgcaggg ggagaaaaaa ggaaacccag aaagaagaag gccacatagt caacgaaaca 360

tcggcacctt cataaaaata aaataaaaac ttatatagca aaatatctgt ttttttcact 420

ctcttttaag tatttttgtg agattaacta tactgtgaat aatacaacag ttttatttca 480

gtccagctgg acaaaagata ggcaaaactc aaatcgagac attgttttaa aggaaaacga 540

agagataaag cacatccaac actaacagac cacagttttt tttttctaac ggtcaaaaac 600

ccgtcaggag aagacgaaaa accaacacaa aatatatttc tgacggccgg cggtaaggtt 660

tttattactt tccttcttct ctgaccaaca ggatctcatt ttcatattca gatgctgatg 720

atttctgaaa attttagcat tgagtttgga ccaccactga tacttatcct gagaaagcat 780

tgccaaaccc accctaaatc tattgcgaag ggaacaattg gcctctgtgc gcgtccgtcc 840

gcaagtacgg accagagggc ccatctgttt aaggatccaa taatagtcct cagctttgcg 900

attgatctag gagaaatgat atggtatgaa agaaaacatc attcctccaa tccgtctgaa 960

gtctgatgca tcacgcattg tctgaaggct tgaaacaaat taccaggtac aattaatcgt 1020

gtgtgcagta gactttacat tccgtgatgg tgaggtacgc agacagggca tttatttgtt 1080

gatgtgcact ctaaaccggc gtacagtatt tctcttccta gttttggtat tttagctgga 1140

ttgttttaga tactgcatat tgtgttttcc tctgacactt atccaagaaa aaaaaatata 1200

agtatgacat ggttcctact ctttttaatc gaatcaaagt aacctatgca caaaaaataa 1260

acagatctaa cattccttat agaaaagatc caagcagata aacatagctc caggctccag 1320

cggttgattt gtacgcaata taatatat 1348

<210> 4691
<211> 1053
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175491_G1, chr5:18206928..18207980, Cluster 29

<400> 4691
ggccactatg attttcatta atcaccttca tgtggtatga tacaaacttt gtgacatgtt 60

cttttatgag ctcccatctt ccttccaaat tacacagagt ccggattgga caagatggcc 120

ccttgagcct cttgtattct ctctattgct ttccaaaatg aagccttcct ctgccctgta 180

catgcttggt cataactttc attacaaatt atttaattga tcaactacat ctatgatgtg 240

tcacaaaata taacatacaa aggaatataa taacctataa gtaagtctgt gctcacatta 300

agccaacatg aaacaagtgt ccagtctgaa gatggagtca atgtacagtg ccactatcgt 360

ggtggagaac cacttccgga agaagccgct cgttcgctcg gaattctcct tcccgcggat 420

gattggctac cacagtgcat ccgggttcgg agcacaccac acatatccgt agattgtttc 480

tctcctcatg ttcgggcact agttacaggg agtcgttgga gagttttgga caacactgtt 540

cacattagac gttcgatatg ggaagcttta caggcataca ttagagacaa ccttatagct 600

gatttggtga ccacggaatt ggaggagatc cattggggag gaatcccctt tctagtcaat 660

tcgaatagga aggggatttc tctcccatgg atcccctcca attccatggt caccaaatca 720

gtacttagta attgacaaac acaccacaaa ggactctttc taaaaaaaga gaactccaaa 780

accataagaa tatgagatta cttttcttcg tctcaatgaa gttttgaatt tttaggaaat 840

agttcgttca ctatactata tccacacgat actgttagct gattgtttgg ttggttttga 900

tgtcacatat ttttttccca gtaatgtcgt gtccaacgac tgtatggatt gctcccccta 960

tcttgctatt acatatacga ataccccgat ctgctccaac aactcccccc cttcacagtg 1020

acggagaaaa tcacctctgg gggctcgttc ggt 1053

<210> 4692
<211> 1109
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176562_G1, chr5:23474943..23476051, Cluster 29

<400> 4692
ggccttcacc tgccagtcta cctccactgc atttcatatc ttaataaata cataacattg 60

cctagattgt cctgtactgg agcaaaaaca cacacagcct tttattgttt ggatttctag 120

aattattcga caatataact gaactttaaa tccattaatc aattagtggt ttgattgcta 180

aaaatcgagt tggtgaaatt tttctgtgta gattcctgta tgctactatg gtttgtgaac 240

atggttgctt catacaatca acacaactgc ctctaactct aaggacataa atgcaggatt 300

aatggtggta tctgaattga aataagctct cctgactgtg tatatgagaa actatgtaca 360

caatttgaag tcatgattca ctgcttcatg tacttaggaa aacagtaggg agtctggtct 420

ttgtacttgc tattatgttt ttttttgcat gttaaaatac caaagtatta ttgggccatg 480

aaatgcaaat actatcattt gtcttcccag atgaagttat actaagagat aagtttttta 540

gttattcatc tttcccattt atagcctcaa acactgctgt ttttgaaagg cgaacactct 600

ttgattctgt gtcaggatac aattgtaagg tggtctgctg ccaagggaat tggtaggata 660

actgcatgtt taacacctgc attgtcggaa gatgtgctat catcaatatt gcaacttttt 720

tctcctggag aggtctgtgt ataacttatg gactttgcaa catcctttga ttgtttaatg 780

agatatctcg gtttatctta agcttggcaa acttctagtt tgctcagctc tgtatcacta 840

ataaaataac ttatgccttt tgaactttga agggtgatgg ctcctggcat ggaggctgtt 900

tagccttggc tgaacttgct cggagagggt tattgttacc ttctagcttt cctgatgttg 960

ttcctgttat aataaaggtg aacaagtagc ataatagtac cgaacgatat cctttccttt 1020

ttttgcaata ttgcttaaca aaacagaata tttctgaata ggtagctcat gacctgtttc 1080

catgtcgttg attttgttag atgcctatg 1109

<210> 4693
<211> 1140
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1814_G1, chr1:9227254..9228393, Cluster 29

<400> 4693
aaccaccacc accacattat attgctcttg ctcgtagtat atatatgcat agataactct 60

cgcgcactcg gggctgcatg catcgttgga cagttgcggc accagaactt tcccgatcca 120

tccatcccac acgcagcaaa agatctggat ccaccaccat cgcgtttgtt ttaatatata 180

ttatacgcgc gccagaatgc taattgtggc aacggccggc gtgctttgct ttgggtttgg 240

tacaatcagt ttgcctgaca aataatctat ctgaataaac aaattaaggg ccagcagagg 300

ctgacggagg atgcgagtct atataggacg gctcttggaa agaccaaagt ctcgtcgaga 360

cgtactaatg ctgcattatt cattcgaccg aggattgggc aatgttgctt taatttgttg 420

tacgtcctct tcgaccccgg tcgatttcta gaagggaaac atgcgtttgg gaatgatgca 480

tagacatcag cagacatgtg gcagctactg aatgaatgag ctccttaatt ggcgttggaa 540

gaagagaagg aagttaggac cgctcactgg aattggaagg tgtgtggtcg tgaaagatga 600

accgaaatgc cgcgttggcc tcacttcgtt cgtaatgcat gccaaaattc gtcttgttcg 660

tttaggtatg gtcaaaaatc gtctgccacc gcgcacgcct atttcgttta ggttacaaag 720

atgatcatta tagaccacca gtggggatct ttaattccta gcttgtgcag tttttgctac 780

ttctttaatt attcttttga atggtgttgt gttttatctt atacgtacgt gtggatattt 840

aagacaagat attatctaca cattatctta gcatatatcc ggataacaaa aaccgttcgc 900

gtagacatgt atagttcgct aagaaattac cacacatcga tcaattgaag aaacggaaat 960

aataaaggca tccttctgat gctcattttg attttgctag ctagtatatg ttaataaaaa 1020

tcacaatatg aattgtttta taacacaagg aggctttaat ggtctcgttt ggttctgcgt 1080

atagtcagat ttagggtgaa acaagaaata gattcattcc tatcaagcat ctacctttt 1140

<210> 4694
<211> 1015
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_182959_G1, chr5:60937585..60938599, Cluster 29

<400> 4694
taaatataaa gtacagagcg tcggttcaac agctcccatg ggaagtcgtc taatatgaca 60

actcctatgg gagaccgtct aataggacca tgggtctggg gtgtgattag atcctaaatc 120

cgtcgttcca catgtataag aggcaacgat agcatgtgta taaccaaagg acccgccgca 180

tattctctac ttcataaaac atcactttct acatggttct atggtcacca tgttccgcat 240

atgtgtttta ataaaataaa attcgctcat acaatatata aaatctgtag taatgcacga 300

gcatgtgatt agtgtttttt tggatgggat tacctttaaa ttcacaccca tgcaatgcac 360

aaccacatga ccgcatagag ttgtctcatc agcgagattt ccttattttt aattcctctc 420

cggttttggg ttttctaaaa ttctaactaa ttaatatcca ctatacctac ttctttttgt 480

actaacggtt tgtataccag gctgcactag tagtatgtgt gtagacatgg gacttaggga 540

accaaaggac ccatcatatc ttctctacta tatataaaac atcagttcta acgattttat 600

tgttcaacag tcattctctt actatatata aaacatcagt tctaacgatt ttattgttca 660

acagtcattc tcttcgttgc cgctttatgc aaaaggtaag ataaaaattg gttgttggat 720

ctacactcat atctacctaa ccaacataac atatattgtt ttacgtttta ttataacaaa 780

gtccatcata taaaatacgt agtaatgcat gtacatctga ttagcaatga aggtagaaaa 840

gaagttaagc agagacagag gaagaagatg atgacttgat gagtccctag taatgcacga 900

catctgacta gaaatgtatg gagagtgtac gtgtgcgtac tacctacttg gccttggccg 960

gccttcacaa gtctacgcct gtgctatacg gtgggtcagt tagtacacct accgt 1015

<210> 4695
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_195101_G1, chr5:146387353..146388505, Cluster 29

<400> 4695
attgtcatgt actcttacat ggaacttatg ctttcatgtc tatttactat ttcttttatg 60

catatactat ttgtagtgta gctcatatta tagtcttgat gagcttgcgt atatggcgta 120

agccttttgg gtgtgggcat gtagaaacat gagaaaaaca tgaccatagt agcatgttta 180

gggcgactta ggtttttcca tgtgaaacta gataaggcct agtttaaaaa actgattaat 240

gatccaattg aatcccctct ctctaagtgt tcagaatata gtgtccctac attttggagg 300

gaacttatca tacctttttac tctctctctc tctctcccct cccacacaat ctcaatcaac 360

atcactctct cccctcttta tttctctctc acatagaatg gtatcaaggg tagcatggtg 420

cttaggtgtc tacacgtggg aagaacaata actcggtatg ggatgagcaa agcaggggta 480

gcacaggaat gcacatgttt ggatatgtag gagcaaggtg atgactagtg gtatacctat 540

tagggtgatt gaatgtgtat gtggtccaat agatttagca atgaccatag tgaagatgag 600

ataaaggggt gtagctgcta tgaagatgat gacacaacaa atacaataac aggatagtca 660

gcaaatagat gtggaggtaa gcaattggtg aagtggcacg agtatgatgt tgtggcgtgt 720

ggatgaaaat gagaaagtgg cagtagttgg tgtacatgtt taggggtcac aaggttgcat 780

gtggtcgttg tggcttgctt ttttgtgaga caaaaagcaa aggagctaga tgtgtgtgca 840

tgtgtgtgtt ggtggagggg tatgcaatag cacaaagcag agagccagac aatccaagga 900

tgttgtggtt accaaccata tatagagagg agcgtgtgac gatggttgat gactcatcca 960

taagtactca agaataagac aagtctagtg gtgttggtat gtggtgctat aatttggtaa 1020

gaaagttagg gaggcaggag ctgacctata gataggcaag gaaggttgat gcttccttga 1080

ggaggaggta gaagttcaca agtgggcctc tttggcacat gtatgccaca tttgtgaaac 1140

catctttacc cta 1153

<210> 4696
<211> 1300
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_195115_G1, chr5:146421565..146422864, Cluster 29

<400> 4696
aagactatgt gaccaagggg agaaaactat taaccatctg cacctctctt gtttcttcac 60

tagagaggtt tggttcaaga tttttaggct ctatggattg catctccttt gcccctaaac 120

ctgaagacat ctccttcttc tattggtgag cacaagctga agaaagaata gaggggctga 180

ctagaagggt ttcaattgga ctatttggaa gatgcgcaat gaatgtgttt ttagggcctt 240

tcccccttcaa tggctactat tttttcctgt ttctgtgaag agacagattt atggttgttg 300

tgtggtgcca aaggtctttt gttcctatca gctagtgttt ttatggacct ttttgtgtat 360

tctaagttct ggccacaatg agttggccct agagttaagg acataggtct attagagact 420

ctataatgtt gtttttattt attctaatga tttgcagctc ttgggtattt ttgagaaaaa 480

agtaactata ccttattaac gttggttttg gtagctgacg taaaaaattt agtatttacg 540

acgatttcta tctggataac gtaaatatta tttatgccgg gtacctatgg ctgatgtaga 600

ttacttatct acagtagcta gccgatgtaa ataatcctat ttatgatgct ttattagtga 660

tgattgcaaa ccgacataaa taataaaaaa tgacgtaaat aactatttac gacgttgtta 720

gccatattta aaatggttct cggccaaaat agattggcca aattcatgtt gtgtggggaa 780

ttagtgtttc aaacagtaag gaaagacaat gatctttgag ggccaagggt ttctggagga 840

gtggagggtg actaacaaac aaagagacaa aagccttcgg agaagagtta gcgcattatg 900

gtggcaacaa atgtgttaca tgtaaacaca agatttgttg agaccattgg aaatagatgt 960

gaaggacacc atagcatgtt gagaatgtca agagaagact tgtgggcatg tacaaagacc 1020

cctagaggca tgatttcagg gacaaagttg tgtttagatc tgatagaaag tcaaaaaggc 1080

cagggaataa tctaataata ttccatacgg tagacatcta cctaggcgca ttttgtaact 1140

tcacgagtaa cttatccata aatagtagta gatgaatagt cccatggcct ttatatcaaa 1200

aagatccctc caaaggtatt attttcattt atttattcta taaatgtttt tatataggtt 1260

attccatcat ttaccttctt ctttaatcaa atgcttgtta 1300

<210> 4697
<211> 1121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_195118_G1, chr5:146425877..146426997, Cluster 29

<400> 4697
atgccgacaa tagtagtgtc caatctagtg acccaactac taagttcaaa tgtatcaacc 60

tacctcagaa cttgtgtagg actgtcttgt atcattgcat aactttgtct caatggattc 120

ccttaggtcc tcttgatata tagctttttc aatatccaag actgttaagg cataactctg 180

tccaatcaca aacctatcac aaaaacacaa cttttgttta cattgccata ataggaacta 240

agaataatgc aattatgctt ttagcttaac atctcttgtg ggggtaatct tgcctcccca 300

ctaaaaatga taaagtccaa gttgagaaat tcatatatag ttggagttta acgttgccaa 360

tccaactata gatttaggaa atcattggcc atgaaactac taatattgat caatttaatc 420

cattaagatg gctttagata tggttttgct aatgtggttg acatgtaagt gtgtgtcaaa 480

aatggcctta ccaacaatat ttctaggtga ctttagtgat tgaatgccaa cacggctagc 540

taaatgggtg tgttaaccat gtgatttgta ggatcataat agggatgaag ttaaaagaga 600

agtcacaaag aattagcatg aatgaagcta aacaagttta aatgagagtg taacaccaaa 660

tattcttata agttataaaa tattctcatc acagtgctaa cgaaatacct tagcaatgga 720

tgctagaatt gaagaacatg tgaaaaagga cccattgaag tatttaggac aagaatttaa 780

gaggagaaca gatgatatta ttcgattaac cggcaataaa caaaatattt gtatgagtgt 840

ttaatagtag tattcgagaa gcagaagcct ccttgaatag tccaagtatg gataagtgtg 900

catgttagac taacaccaaa cttgttttat agagatgcat gcatggtaga atctccactc 960

atttggactc ataagttagt ccatctataa ttgaagttga atgagacttt tgtgaatggt 1020

ctaatgttag ctccattttc ttattgtgaa aaaataatga actagaagat tttaggttca 1080

ggataaacag agaacctaat gattcaaaaa tgttagattc a 1121

<210> 4698
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_195885_G1, chr5:150608771..150609932, Cluster 29

<400> 4698
tcttttggtc actatggtgg ggttaagtct tctagggtgt ttactacctc attagaagta 60

tgatccttag tttttggagg cttttgctat gttttatcca catgcgataa tggtccaagt 120

ggtgtgagtt ttgttaatac ttctagctaa cacctaaggt gttacacctt gcacattagt 180

ggtcggacat aaccgtagag gaaatgcatc aaagcaagca ccggcaggca acttttaaca 240

attctccttt caaaagaatt tttttaacaa ttcccacttt catggatgtt aggacagatg 300

acaatttcat ttcagattat ctctgctctc acacatgcag ggcattggtt gatcactgtt 360

gatgcatatg tatatatagg gtagattctg attaaattcg gttaggtggt tagtgtacta 420

gtacagccgt cactatcaac accacatata caagcaagct actccgaatt taatcaacag 480

agagtatata ttttggcaaa attgtgcatg cattcctagc ttctacacat cacagagaca 540

cttgatcgcg cgattatctt gatcaatttg gtgtcgcttt gattgttttt aaaactttct 600

ggcttcgagc agatcaactt cgtgccaatt tttcaaataa aactttctgg cttcttccca 660

cagcagatca gttgcaaaat acgcatgcac gcatctaaat cttactctga cttataccgt 720

aacacacgct gaaatatcta caaaatatac taccggcctt tacatatctg ctaattgtgc 780

tgtgcgccaa aaattttgca tctgtttcat atctttttat ttttctacaa actaattgtg 840

catctgccac tagagtgcgc agatcctttc tgaaagattt gtccttaata atcaaccaga 900

gccatgagtt tcatatcttt ttatttttac taagtggggc cgacttgagt gtgtgctgac 960

aactgtcatc acacaatcat gccgttgtga acaagctact aaaaggaaac aggccaaatt 1020

aattgtccca cttgtgcaag caccggcaag agtcaataat tctcacaggg aatattcgcg 1080

tgtatcaaaa cgacccttac tagttactac tgcttagaca aacgtaagag taataagtac 1140

tccaattaat gtttcatctc ta 1162

<210> 4699
<211> 1151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196799_G1, chr5:155102379..155103529, Cluster 29

<400> 4699
tccagggctt tcttttcctt tctcctccaa ctgaacgacg gaccctagtt accagatgct 60

ttttccccag cgcgctcgct gaccaatggg cccagggacc ggggatctaa tcctcgacat 120

atgtgataat ttgtattatc ataagtgaat tgaatccagt aaatacaata tgcagataaa 180

tgaattgaac aaatatcaca accctacatt gattcataac acattttgta gtcaatctcc 240

attcaacaat agttttctag caataatatc agtcatacat acaactagct aatttataca 300

tcaacgtatc aacctcactc atacatcata tcctaaagta tgaaatagtt tgcactctga 360

aagaaaacat aattgatagt ttgtaaccat aacaaaatcg attattatta ggaaaattat 420

ttaagtgtgt catagttaac atatacacac atgaatgcgt ccaaacaata gcataatata 480

tcatatagta caatattttc aagatatatt ccactaaagg ttgtacaaaa aattaaattc 540

caataaatgt aggtgatcta ctccctctca tatccacttt aattgtatta ataatctttt 600

gtgagagaag acgaaaatgt tacactacta ataatagaag atcacttata tgtgctttta 660

ggggatgaga ataagaagta tgttggagat gctctaacat gttccttatt aaaatgtgtc 720

cccacatcca ttatttattg cttatgtcaa ttcttaaaag aagcatcctc acaaaaaggt 780

tctgaagtag ttaagatgat ttttataagg gctttatgac acctccccat tttggtcatt 840

aagctacatt gcgttcttca aatcatcata aacaaagtga attattgaca aatacctccg 900

tagtcatgag aaaatcatca tagaaggcta gatctcatgt atatgttatt atatttttac 960

catttgctat aagaatatta gattaaggtt aataatacaa cgtgacaacc ctctattggt 1020

tgtacataaa cttacatcta atccatcagc ccattcatgt agtatttagc tcacctatga 1080

agaccttgtt tctctcataa aatttcctag ttcttgtgaa taaggtgacc cacatattaa 1140

atgagcatgt t 1151

<210> 4700
<211> 1054
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196884_G1, chr5:155411629..155412682, Cluster 29

<400> 4700
atctattgaa caccacaatt ttttgggtat gcacaacgcc acgtgtgggt tacccaaccc 60

accccaaatg ggtatgggtt ctgatggacg tgatctcata gatattagaa acctttatta 120

gatcaactta ctagagaaat ttctagatac caattgataa tatttctaga tgtcacttga 180

ggacattgtt ggggagaagg tccatgttaa cagaagtcat tgttcaaaac ctttttttctc 240

aagtgaaatg cttcaatcaa ggatgaagtt tggacaatgg aacaaaactg aagcttcagg 300

catgagcacg atgccaaaga ttgcaccaag gcaaaggaaa gggagccaga gcttaggcat 360

tgcatttgaa gatggtttag atgaagaatg tttcgcggaa taagataaga tgtacatggc 420

atgatagtgg tgtaaatgaa ataattgtat tttgtcgatt aggaagggct attgtgcaat 480

aggaagggta gaattgtaat ttaatatgaa ggtgtatact ggcttgacca gatgaacaat 540

gtcattgcta tagacatcga ccattttgtt atcttgcact tatagctcct ttctcgcgag 600

agaacttcta aaggtgagat gtcggacctt atttgaatag ccccttttgt ctattatatg 660

atgcccaaag tagcctatcc attaatcttg atcatggtgt atataatact atttgctaat 720

gttgattgcc ttacatgatg ttgatctaaa catttaacct tactctttgt tcatgatttg 780

agtattcttc atacatgtga aaagtagtat caccttcctt cccttcagct tctacgaagg 840

cgagaaggga tgagcgaaac aacagagcaa tcattcacat gcaattaaaa ctaaccttcg 900

caagtagact atctaatggc tccaaagttc tcaatattta ccccttcata catgttagtg 960

atggacaatg aagctttgtt tcgtcccttc ttccctcctt tggagagaga agaagggtcc 1020

ttaatttaat ggtgtttccc tatagcaaca atgc 1054

<210> 4701
<211> 1141
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_19848_G1, chr1:112616488..112617628, Cluster 29

<400> 4701
ttttagaaag gagggagtat tatcttacag tacaatacgt gtgtaattca agaacaaaca 60

agatgttact ttgcatgtct tttataatgg tattatggca tatgtgagca atttaaaaac 120

agactagatg tttcattgca ttatctttca tataaagtta tatgtgggta atttatatgc 180

acatttggga tattattttt aattatatat agtaatggca tgtggataat tcagatgcaa 240

gtgttgtagg ttttttaaat tatctttaat aatggtagaa gtgatgagta atttcgtctc 300

agagctattt gtcgataatt ttttagaaaa aaaaatatat ccagtggatg tttgtttaac 360

agtcatgatt tgggtctatc aaactaaagg taaaatattt ataaatcttg tgagaatttt 420

tagtatttat atttatccta gcattggagg agagatgatg catatgcaaa tttatccaac 480

agatcatgcc tatgcaaatt tatgcaatgg gggatagatg gtggacaaat ttgcataaca 540

atatctcttc tgtatgcgtt tttccctctt gcgaatacat ggcctgtcgt tggagacagg 600

ctaaggtatt gatagaacaa atcagaactg cctctagcta gggtctcagg ctatctgatg 660

gctcgtccct tctccggtct tttctcaaac agctgagctg agcctacatg catgtgtatg 720

ctcatctaga tgaaccaaac agcgagagct gagaagactt ggaccaatgc aataccgaca 780

gcatatgtga cttaatctcg atgtgtttca caaggacatg aagcgggtcc ggtttaaaag 840

ttgatatgta tgttgttcct aaagtgactt gatatagctt tgctaacata aacactgtac 900

gctcggactt aaagcttagt cagcatacat tctgtttttt ttctttttcg gcaaaagaag 960

cttttattac tttctcaact tcttgcaaca cactttgact tcaacaagat attttatcta 1020

agaatacgat ggaaaaccaa aacataactt tttttatata gttcttgttt gagaaatttt 1080

attatatttg aatattatag ttcatatatg ttttctacat gtttaagcaa cacaatgctt 1140

a 1141

<210> 4702
<211> 1198
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_198567_G1, chr5:165644645..165645842, Cluster 29

<400> 4702
agtttgagca gcaactcatg tttgcttaga accaggaagc gacctcaaca aagtagagtc 60

aaggtcaagg agtgagccac acctgttgtg gccatggacg aggctcgacc agaaggcacc 120

acaagtgttt gagagtctca gtcatgacct caagttgtag attgatgagg ccaacaactt 180

gatcactgat atgtaagctc atatcgatca atgagctaca acaagaggga gacgacgact 240

atggatggga atacgttcta cagctagaag aggagatgga gcccatggac cagagtgaat 300

tggagcataa atatttacca ccaagttgac tcgagtgaat atgactctag aaggttctag 360

tatgcttgtg gtatgtggag atattggaca atagctaaat atgtctgaag ttaaccataa 420

tcgttggaag ttgaatgcta accatactct aactttcgac agaagatagg ttccagaaga 480

aatgggatga aagttataac ttctaacaac tgttgttgga agttactaac ttccaccgac 540

ctaagagagc caccataagt taatatggtc ggaccactaa ctttcaatgc atggtggcat 600

cgtcggaagt taggattaac tccaacaacc caccataatc atcaaaagtt acatatccta 660

tatgaactta tgattccttg gaatgacctt agtggacatc tcagactata acaagggaca 720

taagaagcaa ttaagaccta ggctataaat aaaatgtcca cacaattcta gagctataag 780

gagaagtttt ataatgaata tgtcaagaag gatcatactt tgactttcat tgccaattac 840

aaaaaggtta agggaccact agaaagattt tgtgaggtat aagactccag aagagggtga 900

ggcacaagtg agacgaaatc aagagaatgc gagacaaaag taataccatc atggattagg 960

agcaaataaa tacaagagtt ccattcctaa gtgggaaatt atggagagaa ctaatttctg 1020

aagcggtcag acttgctaca ttggattgac ctaaacgctc aaagaagtgt ttttatggga 1080

atgaggaaac actttcccca acgaccatga gtgtattttg gggaaaaatc taagaaatga 1140

cacaaatact tcaagcatta taaacattta tgctaaattt tagtccctat ctaatcta 1198

<210> 4703
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199110_G1, chr5:168846417..168847561, Cluster 29

<400> 4703
ttaggtattc caatttatct tgcgacggat gctacaaaat caaaatgcac gcatctcaaa 60

aacaccgcga aaacccaata ttccagtgac cagtgtgtgt gtgtgttttt ttaggataga 120

tacatataac ttgactaatt atcggctcaa acctgtgaaa atacatcttg ttaataatta 180

tttaaattgg agtcagagaa tatttgtctt agatgaacat tggccatcaa cataaatgag 240

ttgctgaaag taatgtcttt ggactagttt tgtagctagc tagtacgatt aattaaatat 300

aggcaactaa agtttagatg agtaacctta gatcgcgtgt gctgtaaaca tatggactaa 360

tactaagaga gactaacaac taatttgact ggattaaaca taacagtcca tcttttaatg 420

aatatccatg acttagatgc aacaactaat atgcaatcag accttatacg caagctcgct 480

ttgcacactt tgcgcataag gccggattgc agtgacctag ctaaatatat atacaccact 540

taccaattta ccatcaacat aaatctgaat tgaattacaa cacagagtaa cattttaatg 600

ccatgcgaat taaaatcagg tcaaaaggcc ggtgtgacaa tgaagcagag aggacggggg 660

gtttgaatac cccaaactga tgaagagtaa cattttaatg ctttgcacgc atgcatgttc 720

cgtcggagta tatatcaata cttgaatata ataataatag caccaagtat tcaagtggtg 780

tcgcagaaga gttcagtgct actgctacat cggctaggct acacacacca ggtagctcat 840

ccccccttgtt ggtaccaagc tagcagcatc atatacttgg catgcactgc agagctgagt 900

agctacggct tgaccgtgca ttggagctgc ccgagacccg gccacgttcg gcttgcgtag 960

cagagatata taattggtga tctatctagg cggatctgct cctccatcct gctgtccatg 1020

ataattcttc ctgcatcatg ctgcctgaca cggggcctca tgcatgcaca cgctgatggc 1080

tggttaattt ttctcgctcg cccgtacgtt ggatcgagct ggtacgtact acggtgccca 1140

accgg 1145

<210> 4704
<211> 1031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200594_G1, chr5:177245829..177246859, Cluster 29

<400> 4704
tttaaatagt atatcaaatt tcatttttt gtaaaaaata caaaaccacc tttaaaacca 60

gcacaaagac cagatttatc ctatttcgat aattggagag tgtcaccctt aattatgttt 120

atcatcaagt caaatgtatc atgctttgag agaacaacag tgatttaaca tgcctgcccc 180

caccctcctc tccaatattc gaacttccaa gacacacata tcatatacat ttagaacata 240

aaaaaacaaa tttttgcatc atgcactata taaacacttt ttccctttcg aagttacatg 300

ctggatctct gatgtcatgg cactatatag aatcaaattc tcatgtaccc atatttatga 360

ttatataatt aagagaaata ttcaaatata tgaaatgtac tagcgtttat tctttgtatt 420

aatgctacat aaatagctag cctgtaccaa caaaaaattc tgtgtgttct acatgactac 480

atgaggtaca catagtcaac aggtacagct aattctttaa caagtcctat cagaagtaac 540

gttggttgaa aaatcaatat accatctttg ttattaggaa gagcaatgaa ggtataccca 600

gcaagcataa tatagctgga ctcaaaaaac gtggatcacg aatacataca ataccatgca 660

atacacaaca acttatttgc cacattcgcc tcaacgaaag ggtcgcctgc aaacactacc 720

aggaataatg ccacatccac ggtggccgat gctgacgata taaactctca cccgatttaa 780

cacatcccta agaataatgc tatgcggcag cgtgtgatat gccctaaaag agggtttcca 840

taaatcaacg aaaaaaatga gaaaacgttt ctagacccac cacatgtata tatatcaccc 900

atctatctaa aaggcaaaaa gaaaagttgg tttcccgcac gctcctaatt cctaaatcgt 960

gaaagcacat taccataaat ctggtgctgt gaaactgaaa tcccggtcta aacatcaaga 1020

aggcaatgca a 1031

<210> 4705
<211> 1257
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200751_G1, chr5:177763061..177764317, Cluster 29

<400> 4705
atcaaccaga atcctggagg agaaagcaag agggagaatc ttcctaaaaa agaggtatct 60

cagaacattg ttcttgatcg ccctagttgc tctttctatc atcttaacaa tcacttcact 120

agagaatgca gacacagttt tccttgtgaa atctgtggtt gtgatgatca tgtaatttat 180

cagtgcaaga gatgtgttcc ctggaatatg ggctccgaat tatgtgctac acaagtagaa 240

gaccaaagtt ttttcttcat tgatgaatca attgataata gaatgataaa ggaaaaatct 300

agtacaactg tgatctatgt agtctaaggg gaagttggag aaaaagaaat tgagcttgaa 360

tttcctagag actattcact ccatctaggc attgaactta tcctttcagt gtccctagat 420

aatgacctat ctagcatgag ctcgagactt tactgagaga gaaagggaga aagggttttg 480

agaaaacatt gtagtagccc ttcactggcc ctttcagtat ccctagataa tgacatatat 540

atcatgacct cgagacttta gtgagagaga aaggaagaaa gggttttgag aaaacattgt 600

agtagcccct ttatttgagg gatttaggtg agtttctgag ggattaagaa aaatatttag 660

gaaaagggat ctgttggatc tatgtttttg catcttagac tcctttatgc aagaatatag 720

ggaaataagg tttcttttgt taatctagtg aagtttttgt aaatttagaa ttgatgccta 780

gttaggaggt tgccacaatg aaccaaacaa gccacctaca cataatgaca tgatgttgta 840

ctaatgatat ccatgatcag tcatggaaaa gacttgcttg atttttagt ttcatgtttt 900

actgtctagg ccctatccac taagggctaa gctaagtagg aaataaaaat cttcattcgc 960

ctaattctct attagagtta tgtgtagcta aaatttattc tctaggaccg cattggataa 1020

atttttgta taaagcgact ttgcatagaa agtgcatcat gataagctat tttccaattc 1080

acaatctctt aattaattta agaaaataac ctcacacaaa gagcatagaa ttgctattta 1140

gtaaagcagt tattaaacct aaaagatgac catttaatta ctatttagta gaaaaaatgt 1200

tggcaagata cacctagatc caatgtagag gatgttatga gaattcaact agagaca 1257

<210> 4706
<211> 1156
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_200835_G1, chr5:178358389..178359544, Cluster 29

<400> 4706
ggacgtgcaa tgtatggcgg gagatatatg agctccggtc tggagagctg agtggacaag 60

tgggaaagga gcgccaagtg tggagaagct tctattggag ctctggaagt gtcttgaagc 120

ccaaatttca caggcaagga caccggacag cgacagcgtt tatgtccact ctcttcggtc 180

aaagtacgta aatgcccctc acgtcacgtg gaccacacca tggcatacag tcgcgtctag 240

taccgtcgtc attcaaggct cggcccgatt ctgcttcgtc cactaaacgc atcgagtagg 300

ccgggccggg gaaggtaaga aagcagccca taatatatcc acgcgaccac gccgtctatt 360

tgtgtagcaa gcgtggccga ctacgagctt gggccgaata gagagacccc gtgtggacag 420

gataagttgc ggtgaggcat tggtggtgcg gtacgcaatc aagaggagga tgagaggcta 480

tctatataac gaggggaagg taagaataca tccgtgccaa taagttaaaa ataaataatc 540

ataatcttaa attttaattt catctaatat taaaaactaa ttatattact atataattta 600

gtgttttcag taaataattt gctttctaag acttctaaca aatcagaata aatatattaa 660

gatataaaat atagtattaa tatttttctc aaattttaat ccattttatt atttaaaata 720

tatttagtat aaataaaatg ttcttgcgac aatattctaa tttgtataag attttaattt 780

gcttttagta tgttattgtt tctttatttt taagtcttgt ttgtttagtt aaaattgaat 840

ctcattctat caaataaatt caattaaaat taaataactt aaactcaaat ttattatatt 900

ttttcaacgt gcaaaaaaaa taattgttag aattagattc taaatattgt ttagatgata 960

aaaaattcaa atataatatg acactagcaa aacacttact ctctctcgcc ccattaaatt 1020

ctctatattc aaaaccaata caacaaataa acatgtcata taacatctaa cagttagtta 1080

ccaattgaaa tcaaaattca tttaacaata aaaagagagc acatgaatag tttacaacaa 1140

tcgatcccgt atcatt 1156

<210> 4707
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201194_G1, chr5:180570374..180571607, Cluster 29

<400> 4707
ctgttaaagc tccagaatgt tccattaaaa catggcacac ataatgtttt gatgaaactc 60

tagtctcgat aggtcattcc atagatgatg tgcggtgttg gcagatgctt tgtgaaagaa 120

agtatgtaac ttgtgcatat tttctgtctc tatgtgttct tacggacaat tttttgtatt 180

gattgacgat ccatcaatac acttccactg tagaattatt caaggcttat atggctttca 240

tccaacattc atagtagctt tgtatattta ttgtggatgt tgtatataca tgacatatgc 300

aatctttgca cacttattta attatgggac taccattgct caaaatcttc atttttcca 360

tttgttgttt tgatttctaa ttcatgtgtt tcttttcttt tgtagggtga gcgccatgct 420

ttgccttaga gatcaggcac caaagtaggt gtggttggac atgtccaaca atcctcacac 480

ccatgacgat gatgatctca aggatgggta tcacacacca cagaagaagg aaccacacaa 540

taaataattc aagagctcca agtctctaac tccgcctaca aagttagatg acgacgagga 600

tcctttggat gagaaggagt aaaatagtga tgatgatgat atcgacaaca acttaggagt 660

gatggtgatg atagtccaat ggatgatgat ggtaatgatg aggagggtgt ttgtgtttgg 720

tacaaatgag aaggtactag tgggagacat gagaatttca caaggcttcc aatgctaggc 780

actatgctag ggataaggat tcttctacat gacacttcca ttcatttcat caatattgga 840

tgttctaggg tgtgttcatt gagaggccca ttctggtaaa gcaacaacag atcatcttgt 900

cctatttgga gaagtttcca tagatggcaa tcttggtaca tgcttttagg tcattggatg 960

gagagaggct atggattttt ggcagaatta gaatgagtgg gtggttcgac atttatgtca 1020

ctttggaggt gaagatggac aaggtgaagt tgtcatgtat gattggtaca aagaggttca 1080

tggtgatgtt tgaggagcca acaatagcta gcaagtttga ctctcttgag ataaataggg 1140

gttgtgatga cgatcacaac cttgcaatcg gacgagactc acattttctg ccctaggata 1200

ggtcatatgc atggggctaa ctatggtttg agga 1234

<210> 4708
<211> 1362
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202131_G1, chr5:186244975..186246336, Cluster 29

<400> 4708
attacgatgt gttacaaggg aagtaccctt gtctctcttt atacagtaca gtgggcagac 60

atacaagtcg agtactagtt gactaaaaca taagacttct aatcctattt agaaatagtc 120

tttcttttaa cccgactaga tcaatagctt cttaccttag agaacatgtc atcatgttct 180

gtgtctttag atagcttcat gcactggctc atctacttac catgtcgtca gtcttatagg 240

ggactcttag gatatgagat cctcaagctc ttcatggttt aactttgaaa gtcttattga 300

atctctagtt tactgccaag tagaatcaaa cgacatttga gtactcttct taagagaagc 360

catgaagtgt tctttggatc ttcctctagt agtgtgtgct ttcttgcaca tccattcggt 420

gtagccatcg agcctcttac tgtttagcac aaaacatgga ggtcttctct acaaatcttc 480

ctatccccaa agaatattct caacatattt taaagttatc tgaccaggat atatccgccc 540

catgagccta aaaccgacta tgttgtagtc gattaaaggg tcttgtacat ccttagcaaa 600

ttggccaagt aatccacgag acaatggcaa ggatccactt atcatcaggt ggttttgttg 660

ctttctatag tcatatttgt gcattgtcct tcccttatcc ctaccaaaag caaaagcatg 720

caagtcaaaa taaagttgat gacttttgat gttgaccgct ctgtaaaact tgccatccaa 780

tatgtgcctg gaacttcaca tgtccattgt ttattatcat cttgtgtgag tgttgggata 840

taaataccat atgatgagct taatgcatat atcagtggta gccataatcc atagttggct 900

tatagcttgg tcttctcaat cttgaatatg atagtcttag tgatccctaa gcccctcaat 960

aagtataatc aagtcctaat tatggggttt aatgataatg accatgtaat taaagaacta 1020

atgtgatttg ttgagtgtaa tgataggaca aagaaaaaca gaagaagaca ttaatagtgg 1080

tggaatcccc aaatctgata cgaagtttat aattatgttt acatttttaa attatgcata 1140

tgtatgttgt attatcaatg ggaattcaat ctacatgttt gcttgcaaga acaatgttca 1200

tattccacat gcatattcca taacgcctag aaacctaccc ttaaaatttt agacacattt 1260

ggatttctga gcttatgtgg cactgttgca ccatggcact accactcgtc acctagtagt 1320

gctagacatt aaagtagcta ttcgggcttg taagtgtatt ta 1362

<210> 4709
<211> 1315
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203335_G1, chr5:192883437..192884751, Cluster 29

<400> 4709
gattactcca gtgaaggatg atttagaatg tctaagaggt tgtgtcatct gcaagtgctg 60

cttgatccta gccagtacat gtagccctta ttaacctttt atcttaattg cataagtggt 120

gacccttcca ttttgtaaca aaaaaggggc agcctacaag gtttcaaggg tttacaaggc 180

tcaagtaatg tgtaacctct tgtactaact ttaagagtta gcttgttcca catatgtgca 240

cagcaaactg gatgagatac accaacaaga taaaacctag gattatgctt tattatttca 300

cgattttaac aggtaccaaa acaggaacaa taactctata cagattcatt agatgaaaaa 360

gaaaataaga gtcaaaaggt taggatccag caacagcaaa atataacacc acaacacaaa 420

ttccttggtg gcgcaccaca tgtaaaatat aaaaaatttc aattgcatgt atgaatattg 480

aataacattc gcaaaagaag taacacctga acttgaagct cctgggcaga aaaattaagc 540

agactaccca gtaatctcct cttgaaaatt ggtaatgctt cttcacgcct taaaaagaac 600

aaaatagcac aagatatcac caacctggta ttgtcattac atacttctta acagaatagg 660

aatatgaaaa tcaagaaaaa agctatcagc ttgaatttga tctaagggaa aaatacatgt 720

gcactcttgg gggaacaaaa aaaaacatga taaccgataa accacaaaaa ctacatgcct 780

agaagattaa agaaaaagcg cagggtgcag aaactacata attaactaga aaacttggta 840

agcatcttat tgtttaccta attctttggt caccggtgct agttcctcca accattgaaa 900

gccattctgc acaatgtatt gttgcctcta cgtcctgaaa tattgccaca ttacaaaaag 960

tatgaggcta caacaaagta atatctcaaa taagagagag tgatcccaag cagaagatac 1020

cgcaaaaagg aagtttggct ctataaaata tgttactttc tgatagaaac aaataccaaa 1080

atatctcacc ttccacccat ctttttttcg cattgaatgc tgcagcacaa caagtagaag 1140

attgtgtact acgtcttcaa cctcacatat gcttatacca tctgaatctt tgttgtcccc 1200

catctgcaca ccagtttata catcagaatc tacagaagtg aacagacaaa aatggagaaa 1260

gtagagaata caactgtgaa ctgtggactc ttaatgtaag agcattacaa aaaaa 1315

<210> 4710
<211> 1162
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204093_G1, chr5:196921517..196922678, Cluster 29

<400> 4710
tattattgac acttattagg ccaactacga aagctctcct taaacctccc tcaaccgaac 60

ataggcggag ctttaggggg attttgtctc caacagctct tcctatttac agggagacaa 120

gaatctctct gtgtatatag ggggatcact atgctcctat atatgttaat taacatgtat 180

gtaaccctaa ttaatccatg tgacatgata gcaatatcta ttatggtaat acaaacactg 240

tacatttttt taaaaaaata aaattaataa atatgtgtta attacctaag ttatagtgtg 300

taggggattg ttaaagacga actgaatgta ggaaaagagt attttaaaat atataataaa 360

atatattaga tatagtacaa ataaggagag atgtatagaa gaaattatcg gagagagcct 420

catgctgcaa ccattgcacc tccggcactg gttggtggcc catggggtcc acctatccac 480

cacagccaca aaggacacaa gctgacaagc ccacagccat cagccgtagt agcttagtag 540

cagcagggtt cgtcatttcg tttttactgt aacgaattta gtttttccct ctaaagtttg 600

acttttatat ttttgaatat agaactgaaa tctaccaaaa aacacgatcg aaagtaaacc 660

ctggtagcag cccagtacat agttttagga gtagcacaat tacgtagtat tgtataatta 720

cgtaggaaat tgttgttata aaattatgta agaacttaaa tatttctatg tatgagtgtt 780

ttctgtgcat ctgttttatg atttctgtaa atattgagca aataaacgga atgagcgtga 840

ggtggagaga aaatttgggt gcctcgttga aatattagta ccagtgtccg tatgagagac 900

agtacaattg ggggtgtaat gccctcagta ctgcttgcat attaccgttc gtgaatccgg 960

tatcgatggc atttgccagc ctactgatga cactttgtcc ggcagtatac caaaacatca 1020

tcaattgcta atttagacat tgatttgaaa tgaaagagtg cttccataga acgttattat 1080

tattaggcga attatgccga cgctagtggc aataatatta gtccggtgaa tttggtaata 1140

ataccaactg tactagtcat ga 1162

<210> 4711
<211> 1363
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204767_G1, chr5:200897100..200898462, Cluster 29

<400> 4711
catgagcaaa ggtatgattc agcggtgtgt taatttaggc ccccttcggt agagctcctt 60

catgggttcc tccaacacct ccttaaaaaa atctaccaaa gaggaaactc tctaaaatgt 120

acttttcta gaaaagaggg aggagctcct ccaaaaatca acaagtgcca ggagacagaa 180

aaaatgagct tttactagct gctcttccat gtttttctgt catcggtgct aaaaccaaac 240

aagatgatgt ttctaaattc ttccttaaaa taaggagaga gttgttttat tagaggagcc 300

agaactagag ccgaaggtgg cagaggaaga gtcctctcaa atgggtcgta aacagagact 360

acaattgaaa ggtgtgttgg agcgttgaaa atagtaagat gaaaaggtgt acttgaagcg 420

aaagaaaaca ataataatct acgcaagacg cgccgccgca taaaagcagc tacggctgca 480

ccgggcaaga gccgaccaga acacgcgggc ccaaatctgc agcccgccaa aacgctcact 540

acgaaccgcc gatcaaagcc caccactcca catgctgacg gcatccgaat tttgaacgaa 600

ggcatgcgcc gaaataacaa atggtcaatt tactctagta gaatatcatt tttctagcca 660

cagtacaatc ctagatttaa gttgaaactg ttctgaaatg aatccgatgc tgcagcagaa 720

ctattcggta ctgcaccact cctgcacatg tgggggcttt cactgcaaac acgcacgatt 780

cagctctgag aacagtaact acggcaccgc cgctactgtt cctcctctca tggccgttga 840

gacgccgacc gagctcgtga acggcaccag ccgagactcg cttcaaaaga ggggactcgg 900

cgcgaaccgc gacgcactag tttagtgcat cactgaaaat tacagttcca actgctctct 960

ctctctcact ctctctctct cgtttaaaac tacacaatat cttaatatct gtagatacat 1020

agtatatcta gtatgattta tatctaagta cgtaattata gttataaaat ggtgtaaaac 1080

tataatttcc cttcgagaaa agaaaacgtc gacgcataaa tagataaagt atacaaaata 1140

ctctgagacc actttgtgac tctaaattcc accgtaccaa gaaaaaacaa tctgcttttc 1200

ttaaaaaact gccatacaaa aaaatttaaa ataagtttaa aaaaactgct tcaacggatc 1260

ctatgtctca atacttttca tgtacctttt ttgcccctca attgcttgaa aactctcctc 1320

ggccgccaaa agacacggga gcaggagact ttttttaaa ttt 1363

<210> 4712
<211> 1337
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206512_G1, chr5:210496603..210497939, Cluster 29

<400> 4712
ggtatataca tatatatgat tttctgtaca tcggttagtt cttatttcag acgtcagtgc 60

cactatttat gtgatcatga tagaaagata atgtgaacgg ccatttatat cctcgttcat 120

taattagtga tgcccggtcc caggcagaga tgccaacaac attgcccttc gctttgtgct 180

ccggtccttt ttgaccaccc cacccttgcg gcctccacat atctatctca tcatcatatc 240

tggagcaggc agtcgccgta cacagccggt acgtgtacct gcttcgtctt tctcctttcg 300

gccgcaccac caaccacgag agcctttgga atcactctac tgtcgccgaa ctgattagaa 360

ggttccgttg atattttctg tcctgccagg gtacgtggct ggactagatc catcatccag 420

ctcttacctt cgactcttct cactcataca tacgctcctc agaaaacgaa ggtgatccgt 480

acattcatga aaacgaaacc tacagtttgc tcagcgttgt tccctccatc gttgcgctag 540

acaattttta gtttaaagtg tttttattta cctaaagatg ataaaagctt tgtcgaatat 600

tacactcact aaaaagaacg tataacaaaa ataattattg tcaaaaagct ctttaccaag 660

ttttcttttt gtgccgttca ttggttttta tcgagtgccg aaaacactgg acaaatgaaa 720

aattgataaa aaaaaacaaa aaacaaaaat cacatcgtcg cgtaatatgc gttggcgtca 780

taagatctac cacgtacatg aaaaatctta tactacagtg ctgctttatc ttgctactat 840

aagtgacgtg acaagaccta gccttaaaaa aatcataact cttcgatatg acccgacctt 900

cagaaaatca taactcttcg atacgatatt ggatggagac gatttatata tataaattat 960

agtctagatc tacaactttt ttagttatga ggtttttcat ttgggtaagt taacatgttt 1020

aaaataataa tataaaattt agaatcacaa taatcgcgtg ttggctcttg tcgcattaga 1080

aaaatattat ctcaaataaa ggtattcgca tgccaaagtt gtagttgtta atgagatgta 1140

caatctgcaa aagtgatttt agccgaattg gttaggtagt ctatgtagca ttcttcatgc 1200

cttgagttcc gaaatccagt gagagcaaat ttcaggttaa ggttaaaaaa aaatcactcg 1260

ctggttcatg tgcacacaag atggactgca aagttaaaaa aagatcattc actggttcat 1320

gtgtgggctc cgattga 1337

<210> 4713
<211> 1218
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207208_G1, chr5:213581602..213582819, Cluster 29

<400> 4713

acatatatgg aataatataa tgcacgggtg gatgtgcttc tttgattcct cccggtgtca 60

tgtctggtat ctccgaattt tatatacccc tggcaggtct ccatcaagcg caattccagt 120

gacgtgatca atatgcacca tgcatgcctt ttagttaatt cagcgttcat ttgctcgata 180

ctctacaagt ttttgctagt aaaaagcagc tttgagagcg acacttgcat tttatttctt 240

tgtagatata catgctgcat ttaaaaaaaa ttgccttttt tatataacta tatattcagc 300

ttctttctta tcagatgtaa agttgacaag gaatgaagaa tagaggtgta gttagcactc 360

tgttaattaa ccagtctccc tcgctgtgtg ctcagctttg ttattggtcg tgatcgtgag 420

gccttgtcac gtgtcctttt ttgtcgatcg aggaatctga gttgagtcgt cgtcggccta 480

ggctcgccta atcaaaggca aaagaacctc ctttcagttt gtcactgcta gtaagtttaa 540

tttgtcatta gatagatagc catgtggtat agatactcta caccacttta gaaaatatag 600

ccagagaacc ttaggtatat atatattaga acacagagct ttgttatttg gtatagtaag 660

gtcattatat tctggtttat attacatata atggcaaggg catatgtatg atgactgagc 720

tgagggagac gtgggatacc ctgaatattt tggctttgcg gattactttg aagtagcaat 780

taattgacca ccttttgcta ttgcttcttc tatctttgga gtgatatatt aatagcaaaa 840

cttcagtccc acaatatata tacttttata tatattatgt ctgtcctaat gcaaagctat 900

ttatgtcata taattaggtt cgacaaaaga tataggag aaaatatcaa cacggaggac 960

accaaattag tgtagttggt tagttatgaa atatttttac aatatcttag atatttggga 1020

taagctaaaa taatttattt gggataaacc caaaagtagc tatattttgg gacaaaggtt 1080

atacaaattt atttggacat ggcaacgaga gtgctatcaa taaccactca atgaagtaag 1140

attttgcaag ctacacaata aattaaacat tcttgatttc tccaacataa gttgattgca 1200

actcatatgg ttatcatg 1218

<210> 4714
<211> 1107
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208074_G1, chr6:683199..684305, Cluster 29

<400> 4714
gaccagcaga agggtttgac cctccaacca acttgatatc aggggcactt tgaagcaata 60

agccaataac atccacacaa gtcatgtaat gagtcactag gggggcgccc tggggtcgtc 120

tgaccatggg gcacctttgc acttatggca ccagtctaca atgatggatt atggtctagg 180

ccccaatgtc ccatgacatc tccaactaga ataatctaag tccccaggac ccctcgtgtc 240

ctaaggcgct cagggatcaa ggttttagag ccccttgtgt cccagggcac taatgaagga 300

tttgggtgct agcttggatc cttctgtctc cgagggcact caacgacatt tagccgttta 360

ggatccactg ttggaccgtg ggtctctatg gtccttggtt ttgtttaatg tgttatgcga 420

tgttacgtgc ctaacatgca cactatcgcc acgacttagg ctataggata ctcaagacaa 480

ctatctagta agtgcaccga ccccatagtc atgcatgtgt acgacaatat accatatagt 540

attatcaatt atagaagtct acactagcta ccaattgtat catacccaat gacacacaga 600

ctggatatga gaaaatgaca tatcatatct gcctcttcaa caagtatggc aattgtagaa 660

gaaagacatc cccaacactg tgccatgact gaaagcgtgg ctctatgtat aactctacaa 720

acaggataac aacaaagttg atcgatctta gcaaaagtga tctaaggtcc atataacgta 780

tgttctccct tacactataa aaaggaggag tagagtaacc tttaggataa acaactatat 840

tggctagaaa atctcacagt aggttccacc caggtagggg ctccacttag ggattgagaa 900

tctctacttc atagaggatt cactctatat agagggcatg cattaagatg gattagggca 960

aatatgctag aaccttcatt agaaccaaga ggtaaggagg atctaagaag ttgtagtgct 1020

agcttagttg tgtaatgagc ttgtaatctt cttcaatttt gcgttcatta atcagtgagt 1080

agaaagagga catagatatt acatata 1107

<210> 4715
<211> 1100
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208312_G1, chr6:2064668..2065767, Cluster 29

<400> 4715
catatgccat atttaaccgg gcccctcaca caacactttt gttagttagt gtttagttta 60

tgtcacttaa aggatgccgg ccggccggcg gaaacgatcg aagctacaac ccaacaaaga 120

gcatggcatg tcctactaca ctactactac actgcactac acataaagct aggaaagaag 180

ccgtaccgta ccgtaggtgc ggccggccag ccagccaaag gtacgtgcca gcatgcatgc 240

atgcctgtag tgttggagca ggccgatgca cgtctgtata tatgcttgct tgcttgctgc 300

tggtaataaa cctagctcga ttgctagctg tgggacacac tactgctgct tatatcacga 360

ccagctcgat caatcaatat gcatgcatgc atgcttatca tccgtagtag ctagtaggca 420

tgagcatgat gaagctgtcc tgtcgactgc cacaaagata caaagatcct cgttccactg 480

ggtcccactg ctgttgtggg gggtggggcc tacttcgatt atggtgtgcg gtggcacttt 540

ttgctactgc tacacacata catacatcta gatctaggat gtgtttgacg ttataataac 600

agaaccagac gtaacgagac catccctcaa ataaggttgt ttgatttatg attcgggatt 660

aagataaaat tatactagtg ttgtcatagt tgtcccttaa aattaaaggg acaaaagagt 720

atgtcatagg acgtccctgt tctagttgtc tccagctgtc ccgcaaaaaa acacacctta 780

gtcactctaa taaccactct actctgcccc ctagctacca ctacaatata tatttttag 840

agcaaattaa atggaaaagc cagaccattg cactagtatt gtcatcatcc atagattcta 900

tgtgcatggt ggaagggccg ccatatataa aaatatacta cccctctttt ttatatttaa 960

cgccaaataa tacaaaaata aagtacaaaa cgtcaagtaa aaaaatacgg aggttttaaa 1020

acaaaaatgg gatcaaacat caatgttcct tttttgtgca tgatatcatg catatatata 1080

taccctatcg gaatttcgtt 1100

<210> 4716
<211> 1013
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208314_G1, chr6:2076960..2077972, Cluster 29

<400> 4716
agctctcaaa tgtgtctatg catatatgcg tgcatgttcc atgcatgtaa cacagtatat 60

acttgtaaat atacgttcgt tcgtactggt tgtcaaaact agttattttt gtcagaattc 120

agatctaagt ggccttggtc taaccttaaa tctctcatga cagaattaac tttcaaccaa 180

aagtttattc acgtaaaata aatggacatt atgcgcacat gcatgttgtg agagtttaag 240

agggatggag tgaggcatgc gcccacacgc aaaacataga agacacagat gttatgactt 300

atgagaagga aaaaaaatga aagaaaaaaa aatctccttt tctccttgtt aagggtgatc 360

tgatgaccag agaattggag gaaattcata ggaaacaaat tccttgctat tcaaaattga 420

atatcatttt aaatagcaag tggattcctc ctccctatgg attttcttca acttaatttg 480

tggtcatcaa accagctcta agatgtactc ctttctatca taaaaacaat aattaagtga 540

aactttataa attttatcca acagttagtc atactctgtg gaatttaatt tagagcatac 600

aacttaaatc aatagatttg ttgttaaaag tttctctaag atctaaagga gatcgaccac 660

gtacggacat ggagtagtat atatgtatac agatcgatcg gcagccgagc atgctgcaga 720

ggattggagt ggcctgcgta tatatactga atatggacgg caggcgttgc tcagcgaagg 780

ccatgcgtac gcattcatgt gtagtgctct agctatatac aagcgatcga tgtcttctcg 840

atctaaggca tcatgcatga ttggctcctg tctgtcagct ctctgtagtc ggtgcagcag 900

gcatgcatgc cctaccacag ataacgtttt ctattcagat agataccttg gtcctcttta 960

tttcacctgc ttctttaccg gatcgagaac atgtacaaac aaataacgta ttc 1013

<210> 4717
<211> 1017
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_209926_G1, chr6:13814458..13815474, Cluster 29

<400> 4717

agtagatgaa caccttgtgt ttgatctaaa aagagtagtg gtttaattag ttagaagaag 60

accagactaa aaaatgacat gacctccaaa accatgatct gtaattttgg tatgggtgta 120

tgacagcata tgcctggcga gagcaagctc gcatcgcata ttggcttggc tataatcatt 180

cattctccaa ctgtgttaac ggcagcgtgt ctcggaaatt gtgacgtggc aacagtattc 240

cataggaaag aaagggatgt ttttctgttt ttcaaaacaa catgcctgca tctctttcct 300

ttgtttgggt ttcctttgaa tttcctaaaa aaaatactag gatctaaaca gccccttact 360

atctatccaa tacaagcata tctttgttgt tgttacaact ttctcccccc tttcactttt 420

ccctcataat ttttatggtt tctatctcct accaggggaa acaagaattt tcctgacgtg 480

caattctcgc caggaaaata taaaatacta tcaagaaaac taaaaatcaa tatatttgac 540

ggtacaccgt caggaataca gcgacagtga aataaacaaa tgtgacggtc cactgtcaga 600

aaaattgaat tttattttcc cgtcgataaa gaaccgacag ccaaattata aattgtcagg 660

gatatgtatt ttgttttgtc ggtggaaacc gacaacaaaa tcataagatc ctgacaggat 720

aaaagaataa taccccctgt cggtttaata accgtaaaaa aattcaaata tcatgaaatt 780

tcacgtttcc agcagtgtct cttctgaagc tgttattata gcttcagcat gtatctactt 840

ttttatccga acctaattag tctgaccaat cacaaacaaa attagatgtg ttgggttgca 900

cacaaaaaga gatgtgctgt ggtgctctga gttatgtgtt ctggccactt cagctttctc 960

tgaactcgca ggcagatcta gtctgcattg cgtgggctct gatttaaggc tgagggg 1017

<210> 4718
<211> 1077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_210189_G1, chr6:14689121..14690197, Cluster 29

<400> 4718
ctgaggggt tcgttcctgg gcctgttggc ctcaagggtc agcccaatgc ggttattggg 60

ctgcttgggg tacctagggt acagatacac gacataagtc aaattaaaat atagatagca 120

tcaaattagt acttttaatt tcaccatatt ggtatgctag tttattcatt ttaaatttta 180

gaacttaata ttttgattta aggcaaagat taattgggtg aaagtagctg taaaaattcc 240

tgcattttgg aaaagcgatg tgaaccctat tacattcaat cctctgatcc aaacaacatg 300

cgacactcaa gaagactagc cttttgaaat ttatttgaaa tactctagtt caaaccggcc 360

catatctctt atccaatgca tcctcttttc taccatatta gtcgcgtcta tgcctctctt 420

aattactcat ctatttagca attctgtggc atattacttg tcatgaattg agcttgtgtt 480

tgccagatct acatctcatg ttactagatt tgattccaag tgggctaact aagctcattg 540

ttcttgttac tattgtatct catacaaaaa acatagtgaa tcatggagta tgatggccgt 600

gcatagatag tgcggttagg cttcatgact ctatgattgt gcacggccac actgatgtca 660

atgaacttaa tgttgaagaa tatccaaact gaggcagtgt catggtagta tcgtagacgt 720

agtcgtttga caaatctcat gattgttgta tagattaatt tggttataga gctataagaa 780

ttagtaccta tattatttgt ttgttatgat aagagatctg atatgtacac aactttatta 840

gttcaacttt tatttgtgat gctatcattc ccctacctat atatgtacat tatggatcaa 900

ttgaaagttc tctttataga tgacattttt cgttgtattt tctcttggga aacgatctag 960

gtaatagatt tgatatgcta gttagtttat acaaacttga tgcgctaatt gatttaaggt 1020

atccaaatcc ttgagattca tggagacttg ataaaaccgt cgatggatcc cgctaag 1077

<210> 4719
<211> 1090
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_219916_G1, chr6:79217557..79218646, Cluster 29

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(164)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (148)..(148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (149)..(149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (150)..(150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (151)..(151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (152)..(152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (153)..(153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (154)..(154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (155)..(155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (156)..(156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (157)..(157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (158)..(158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (159)..(159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (160)..(160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (161)..(161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (162)..(162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (163)..(163)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (164)..(164)
<223> a, c, g, or t

<400> 4719
tccatcatgg acccggcgtc gaggttgagg atacggggga aggactgacg aatctctaga 60

tactnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnngacaag tttgtcacca 180

ggcaccaacc tgacctcaag tcacgtgccg gcaactcaac agaaatgatg ctctgcacat 240

gcattgagat aaaaagcatt tgtatcatcc actgtctcat ctcctattcc aaacttcaat 300

ctttaaatat tatcttctac agtgtcacat tccctacttt aaaaggaccc atcgaagaca 360

gtctaagagc atgtttagat ccatggtgct aaaatttagc actgcatttt tagctaaact 420

ttagcacatt gctaaaagat gctaaaagtt aagtgctaaa ctttacgcta aatttcaaca 480

ccatgctaaa gtttagtcca cgggatccaa acactcccta agcatgcatg catgtcaaag 540

gctccgtcca gatcgatctc taatctacgt tttaagatgg cccagttctt cgctattcag 600

agacataaca tgaagttgac tgagatttgt agtgtagtat atgtgtgttt tgaccaggtt 660

catgataatg atggcgacac ggtattataa taagattagt tttgacaaag ccttgtttca 720

tattcgacat tttaaacttt tgaccaacac aaactcaccg cccctctgta ggaatagcgg 780

tggctcgggt tcgggttggg tgctgtatcc gcgtacccga acctgaaacc cgaattttaa 840

actcgaagcc aaacccatat tcgggtggat tatcaccctc gaacccaaac ccgacgggta 900

acccgaaacc caaaaaaata acagaaatac catacacaac ttagttgttt caaacagtaa 960

ctcaacattc aacaagtcca caatatgaca ataaacacac catgtgtcca tgactctatg 1020

tcgaaaataa acaacaggtt gagcatgtga cgcatacaca ctaatacaca acagccagcc 1080

atacaagcag 1090

<210> 4720
<211> 1230
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222415_G1, chr6:95373987..95375216, Cluster 29

<400> 4720
catgtgtgca cagatgtgat gatatgaaca aaatacattc ccgagttgat atgctggtgg 60

gtccatgtgc gaaagtcttt cccaattgaa gatgccataa aggcagcaat aatttccctt 120

agctttgcct tgtagtgcga atgtaaaccc ccttgtccct tgcgtgggtt taactaggaa 180

attagcgttg ttgttgaaaa ttaaaattcg cttctacggt ccaagctaga ttatcagacg 240

atcttcttta acagagtaaa ggctgcctta aaatatcgta ggctatacta tttaaagatt 300

gcagtttgaa ataaaagtta cgataattaa cagagtaaag gctgccttaa aacggtgcgc 360

aatgcaagat cactttcctg gattccttgt gcatatgcaa atggtggcgg gagtggccat 420

cattaattca ttattaactc gctaacagtt ggcgccttgc ccgccaacga cctcataacg 480

caccggttgc aaggtcaaac atgactagca tcgtatgcga ggcacccagc cacccactgc 540

tgttaacaca cgaacatgac agcgtccggt tgctgggaga ggcggtgata gcacaggtgt 600

caggtgatgg tgtagagaac tgaagaagag atcctggcct cctgggcagc agctcgagca 660

gaccaagcac gcgttgctgg agcagttttc gatcggtttg gtggaaatct gccgcaagcg 720

cgctattcaa gaaaatgcag ctcgtccttg atttctggga ttttatctct tcatgcacgg 780

aatccaacta attgacgaca cgtgtttaat ccaacgaaat tacagaacta tgtacatctg 840

tcctaattga gtttttttct taatttttct gcagaaccat gttgaaattg cgccccaccc 900

cgaaactgga ggcaacatga agaagacaac tgagatattt tgtggtatga tgcagataga 960

gccgatgatc aaaatattta aacactgtca cacccgatga gttgagctgg gctgcatcga 1020

cacgtttttg gagggacctg atgtgtgccg agctctatga ctgaaattac ttctcaaagc 1080

ttgccttacg caagttggaa cctgtagcgt tttgtttgcg tgacgcaagc aagttggtaa 1140

agtataatat aataatttat ttatgttggg cagcacgcat agatactgtc actgataagc 1200

aacatttgta aagcatcatg gatgtaaagg 1230

<210> 4721
<211> 1009
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222483_G1, chr6:95732110..95733118, Cluster 29

<400> 4721
gaaaactagc aaaagtcggt ctagccgacc actaaaatcg attatgccat gtttcacaag 60

agaaaccggt atagtagaga aagctaacat ggtcggattc taccaaaata tttttgcgta 120

tcaacgcaga catctatttc ataaacatct gaatctgatt atgttatgca gatgaattat 180

gaaatgatta ttaacctacg attgcatgaa atgcctgggc aaaaacctta acgaacagca 240

tgaccagata gaggcagata aaacagaaac gatggcctta tcagaaagga acaacagaag 300

aacagtcttt ttcaaaggga aaaggaactc aagcgatggg atacatgacg gaaatttcct 360

ttgaaatcgg cctaacaggt gcacgcggag catataccaa tagaaaaaaa agaagggcag 420

tgccaagtgc caactaaaaa atcgaagata tgccgaagag gaatatggaa aggccaggca 480

aaaggaatat tttaaacctt ttatgctggt gaataagtat tccacagcaa gtttgtttta 540

ttttcaaca aaagaagggg ctccttttat gacccgacgg ggacgttcaa gctcccgttt 600

tttttaaaaa aaaaacaaga agataccccct atagcatcag aaatgcacta acgagataag 660

atggaacatc cgtatctgaa caaagacaag ataacagatc gatgcctgca ttcaaatggg 720

ttatttcttc acgatcgttg aacaagaacc tacatatgtt gatgtatcat catcattttt 780

ggcagcatta atctagaatc taaggtagcg tttggttcta gagagccaat ctgttcccaa 840

attgttattg tttggccata tagaatggag tggttgtaaa aatagaaaaa ttatgctcaa 900

atattgaatc atttggtggc tccttaaaat ccgttccatc ctaattaggt ccggatccaa 960

acactatgtg catgattggt agcctgtccg cgtgattggt tggctcgcc 1009

<210> 4722
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222870_G1, chr6:98101744..98102805, Cluster 29

<400> 4722
agtctacaca tgggttgatt tatttcttga aaagtataaa tgatggattt tcaaaactat 60

tggagactat aaaggaaatt gcagtagata tggatattca tctagagtca tgaacaaaat 120

gaaaaataat aaggacaact tggtgagtgt gcaaatgatg cttctattga gtcacaatct 180

ggagaggagt catttaggat gaattatttt atatctatta ttgatcaagc tataatttct 240

cttactagga aatttgaaca ctactagggc gtgaaaaaca ttttgtttct tatttacttt 300

agataggtta cgatccacat atgataagag attaatgatt gtttgtgtca atcctgagga 360

tgcacttaag agtggagaat ataaagatgt tggtgggaaa gaaatgtttg gggaatcaat 420

tctcatccaa gattcactca tggaatctat gtgtcctctt aatattttga agttaaaaca 480

tccattttat cttgatgtta ttattgcata tatgagtttt gttaaccatc tggttatcat 540

tatacgtgcc aaaaggaatt tctctaaact caagttgttg aaattctact tgagtcatac 600

tatgaaacaa gaaacactca atggcttagc aatgatgtct ttgaggagat taactatgaa 660

gatataatta aagattttat ttcaagaaac gctaggtgaa tgttgctttt attagaacat 720

aaagtcagta atatctttgc tcatgtagca ttgatattta gtctatttct atgtattata 780

aggatataaa atgatatgcc caaattgtat aattgttaaa aaaatgtata ttacttctct 840

atgtttttta taattttaga accctaatgt aaataccatt atgtgcccaa atttctagag 900

acaagcatta ttagctaaca ttattaacta gtgttgtgga tatagttcaa agaattaaat 960

gtggactttt atgaaagcaa aagggtgatc cgaaagatca acacctcaag aaatttattg 1020

aaagagtcat tgaagaacta caaggtcatg taaagagtcc ca 1062

<210> 4723
<211> 1297
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222883_G1, chr6:98133606..98134902, Cluster 29

<400> 4723
accagctaag ggcaactcaa gtaaaagcat tatttgatac ataataacac caacttaagt 60

aaaagtaatg tttgatatgt ataatatttc ctcatgaaca tctttaacca agacattaaa 120

atattataac ataagaaaga aaaacaacaa gggaaagcac acaaccattt ccctagtata 180

ttcaacaata taatgatgtc aaatctatga taaatgtcca ttccaagcta acatttatcc 240

tattcatgat attaggactc atgatttaga gtccacattg aagcttgtca taacatcaaa 300

agagttaatg ccaagtggaa ggtgctcgac atcatgagat gcaacaaaga tgctataaac 360

ttttttgca cgcttattcg acatctcctc ttccaaattc ctcctaagca cagcaacttc 420

cttcttatgt gcgttctggt gcccaccacg agcctgtgga cttttaaaag tcttattgca 480

aaatgaacag ttgtagagtg tttccaaact ttgtggttgt gtgtgaagca ctgtgttagg 540

ctctactatg gacccaaggg aggctaagcc ataggtatag ggatatctag gattagcttt 600

atcaaccatt ggattgtggt gttatcttcc tatcccttat ggtgaggtag ctcgaaatag 660

agaaagaaca atattttata ggcaacttga agaagctaaa ataaggtaga agttaatgtt 720

atgcaattga aggttgtttt catttggtga catgtatagc accaatggca taaacactac 780

cacataatgc aatcatcatg gatcaaaaaa gattatagct atatatgtca atatttaagc 840

actaccaaac tatatgtcac cattaacata agatttaaat tgacgaatga tatcttttgg 900

taggatgtct gaggtgttat attatgcttt gaaatatcta tatatttcca aaacataaat 960

atatgctagc attgggtatt aacatcacac atacttccta gggggcatga attactagcc 1020

tcaaagctat atttgtaact atatatagat gaagcagctt ttgaagtagc acaaaaggca 1080

tgagagatgg caattagtgc actgagtaag agtcatctca catgtgttga cactgcaaag 1140

gtcccacata aatagagctt gagtgcctgt atcatggagc tccacaacta ttgatgaaca 1200

cgcaaaaaat tgacctagcc agttgtgtaa aaaaatgcca taaagacctc taaatgcctc 1260

ctcggaagac ccatcatcga gatgaaccta ttggtgt 1297

<210> 4724
<211> 1158
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226716_G1, chr6:118100474..118101631, Cluster 29

<400> 4724
ccaaatacat atacatatat gtaatcattg ttctcttttc tttgttacat ctctatgact 60

tcctggcaga tcagtgatgt ctatatcgat gccttcattt ctttgagatc gctcggttgc 120

ttgatgacga gtactaaata ctgatcgacg taggaaggac agaaggtgat gtgcactgtg 180

cctgtcatgt gactgctact cgcatagtcg tgttgcttaa ttctagccta ttatagggct 240

cgtcccgaca actcgtattg ttactcctag tttagttcgt tgtactttgt ttctagacaa 300

ttttctctag tgtgtttaga tttggtttat tgtgcttttt aatgtttagt ctaatttgac 360

aagataaaag tgaaatactc tctctcaaaa caaatgcaca gttatattat atagtttgta 420

taattttgcg actcataaat accggtaacc gtgtctccgc tcatatcaat ttgaatgaac 480

tcgtgtaaat tagtatctta ttttattctt cagataccat ttttttaaat agtagtctcg 540

cacggtcaca ccttcctata gggtctccgt ttaaattttt gtttaagacc ctcgaaatgt 600

ccggccctgt ctactttact aggggcaaat tataaaacaa taaaatacaa ctcctagttt 660

agttcgttgt actttgtttc tagacaattt tctctagtgt gtttagattt ggtttattgt 720

gctttttaat gtttagtcta atttgacaag ataaaagtga aatactctct ctcaaaacaa 780

atgcacagtt atattatata gtttgtataa ttttgcgact cataaatatc ggtaaccgtg 840

tctccgctca tatcaatttg aatgaaatcg tgtagattag tatcttattt tattcttcag 900

ataccatttt tttaaatagc agtctcgcac ggtcacacct tcctataggg tctccgttta 960

aatttttgtt tgggaccctc gaaatgtccg gccctgtcta ctttactagg ggcaaattat 1020

aaaacaataa aatacactag gaagagaaga aagacaaaag aatatagatg agatggagga 1080

agaaaatagc tgcagatttg tgaaatccag ccaatctctg aaattgctca ttgtggtctt 1140

tctaacggga attgctca 1158

<210> 4725
<211> 1043
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227576_G1, chr6:122597352..122598394, Cluster 29

<400> 4725
tgccgacgat aaaagtttga tggtaatagc gcgagattct caggagcttt ttttgttgtt 60

gttgtctact ctcggtggca aagctaaact gaaccaaaga agggtgtata tactttaata 120

gtctatggta ataacttgta ggtgttgtat atatgatgaa atttgggtct aaataactag 180

ttttgcaaat ttttgtggat gcatatacct aacttcgcct ttgctcatgg gagacatatg 240

aagcagatgg aaccatgcgg tgatgatgag tcttaggcaa ccacgagcag cccacaacaa 300

tttggtcgat actctaattt taggtaaggt tttctccgct atccctttca gcaacatact 360

ctaaagtgtc ttctatatat atattctctc atctcattta tcaattttaa tactttaaac 420

tacatattaa ataaaactaa caaatacata tgcacaaaaa tcgagagcaa aatatgactc 480

taatgtaggt acgtacgtat gtattttaat ttagaaaaag caaagtgatt tacaatttat 540

aattgaagga gagtagactc taattcaaca caaatgaagg atcctatttt tttgtgtttg 600

gttaccagtt agatttgagg atttccttta tggatgtatt ctcgcttggt ggaaggaaca 660

ctaacgcggc tagatcatct cttttataca atattcgagg acttatatat gtgtgttata 720

tgtccaaaag cgagtaacgc gtgttgcact actggtactt tgctgctcct gctgcttttc 780

tagtgacttt tagtgaggca gtcaacttcc ttgttggtca ttattttagc tgctgaacct 840

caagatatat attagggcac gtgcaagtgc ttcgaaggac gcatacagac agcagaagag 900

acaattgata tattatgttg tctgtgtact atttatttat ttgctatctt tattgctcta 960

tgttgatcaa gcatatattg gatgactgac tagtactgtt gtgtttctag cgaaggaggc 1020

ctttcacttg tggttgcctc gta 1043

<210> 4726
<211> 1137

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228897_G1, chr6:129485700..129486836, Cluster 29

<400> 4726
caagtgatag gatgccctct tgtatgacca aataacacaa ctaaacattt gaaccagaaa 60

ctcaagagaa taatcgaatc actctaaacc ctaaaaatat cgttatcaac cccgtttgaa 120

caaaagcaag agcacatgca caagacaccc aaaccaacta gcgatttgat gacttagaaa 180

agtttctaag caacttagaa gctacaagga catatgaata agaaaatagg ctctagaact 240

aaaaatcacc ttcaaaaggc taaaaatata ggaaagtcga cctagctggg gtcaagagtt 300

ggttaggcta gtattggaat gcatgggaat gtaaacccag cctagtcatg atgcataccc 360

atcctagact agaggtcaaa ctagtgagga tgctaggtcg gtcctacata ctttggtagg 420

ctgaatagtg tgaaacccat ttctcaaaag gtgaaatcca ttcaaatgaa gtcaaattga 480

gctcaaattt tgtgaatatg tttctaaata tgtatataaa ctatccccaa aaggtaaact 540

cgtaagctta aggaaacttc acagctaaaa aaactctctt caagattatg cttttcccaa 600

ctttcctaaa aaatctccaa acttgagctt gtgaggaatc tagtcaaatg gaattgtagg 660

aatgtttcat atgtgccata gctcattcca acccctaaat caatcccaag gtccctataa 720

aacttagtta ccaaaaaacc caaataaagg gtgttcaggc aagagaaaac caaagagatt 780

taagaactca aatcaagaac ttagatcttg aatccacaag gacaagagga ggcaagggcc 840

tccatttcca ccaaaatcat aggatataag attcaattac acaaatgaaa ggttatgtag 900

tggctaaatc atttgtggat cttctataac aatatagagg aaggtaaaac ctaatagaga 960

gataaaccat gataaataag gagctaaggt cagttgaatc aacctctctt ttatttatag 1020

tgctattaca tattctcaac ttgccctaag ataattggat ccaaaccact taaccctaat 1080

gatgttatgg tgcaactcaa gatatgtaga tttaatggtc atgggatctt catgact 1137

<210> 4727
<211> 1315
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231460_G1, chr6:141046724..141048038, Cluster 29

<400> 4727
aaacaaatgt gtgaagtgtt gcaatataga ttgtgtggct atgatctttt gtttcaacac 60

ggaaaagatc gtgtagtgga gcaaggaaat tggttgagag caatccaact agagattgac 120

catgagtgct cactcccaac ttcctcaaca gagacataag gtctagtgga tatccaaact 180

cctagaaata taccttgtta tgcctctcta tttggtttgc ctcaaactac atatttcaat 240

caactatttg tacttccaat tgtatctcct tggttgtgct tgtctgtggg tgtatgtact 300

acttcaataa gccaaaaaca ccttaacaac ctatatacca tatttcattt gagttgaagt 360

ggttttatag gacttccata tttattgtgt tattcctaga agtcagactc gagactgcat 420

gctatggagt tgcctagatt gtatcgatag tatttgagat ctagctctct gttgtcatta 480

cgatgtttct agacagcttt gtttttatca tgcacctcac agtaaaagtt ggacgtgcat 540

atgttgcttg gcacattgtc tattcttgcg ttacttattg gctttctcgg catatatctc 600

cccaaccatt ttgttcttgt catcggagat gttagcttcc tcatcgttct gatgtccttc 660

agagagcatg aaaacctctc atccatgatc aaagttgtat gtgctactat gagtgcaagg 720

ttatgtggtt gtcacttctg taatactgaa tacggtggtt ttagcatggt aaggtaatga 780

atccatgtag gcgactatgt gggaacaact agaaagaatt ctagagtaat cgaacaccta 840

gctactgtat tttcttccct tccaacgtgg tgatgaggac taagccttgc tgagcaccta 900

tcaaagggat tttttctttg tctacatcct cttctgttac aagagtggtc ggaatgatac 960

ttggcactgt catttgatag atagcggtag tattctccaa gccaaatggt aatcagacta 1020

agcttagagc acaattgttc gatagcttag aagacgactc gaaaaatata gtcatgttga 1080

agtcaaactt gatctatctg tgttatctgc ttatctggaa cagactagaa ataaaaaagt 1140

gtcaaaattc tcacgtgttc ttccaatgca ttttggcgaa gagttggaga aatttaatcc 1200

atcatagctc caagaggcgg atgtagattt tgtcagagtc attcaccatg caggcttagg 1260

aaacaaagat gaaggttgat cctgccaacg tcatgatgat cttgtggcct atcaa 1315

<210> 4728
<211> 1074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231468_G1, chr6:141058536..141059609, Cluster 29

<400> 4728
tctcccccca cgccaccgtt gaaccttctc ctctccttcc cgataatcgt agcgttagca 60

tatgctatat gctagttaaa gatgttgtct tcttatgtta tttatgtggt agcattgaca 120

gagacatcat tactcattag cttagatttt agattgcact ggtttatgta tgtaacttaa 180

tataatatac aaacaagaaa tattacatta atataattgt ttattttaaa agacatatat 240

gagacctata aggccgaaga gagcctccat gtgaagtgga atatcaaaat ataagaaaag 300

tgtacacaga gtttttatca caataatgat gatttttgc tatgttttat atataaatac 360

ctgcaattga cacaaattag tattggccga agatatgtta caataaagac cttggcgccg 420

ttcacttatt cgtgacctgg gcgagtatgt tttttaagtt atgttcaaag cactactaaa 480

cttagttact taacattaaa cctgaatact atgtaaatat tatcgcgcaa ccatatatat 540

atatatatat gatcctctat ctttcacttc taaaatattg ccaacaagta gtggtactac 600

aaactatagt ttgtttggac ataatacaag ctagctaaaa gctgtcagcc tgtcacacat 660

agtaaaacat agcggcatat agggttcggg aagactgctc atccatcgaa gaagaacaga 720

cagaatcaaa tggtcggagg ctcttaattg cacaccgaac cccaaactct gacatggatt 780

ccgtagaaaa caaaccatgt tttgacgctt tccatactgc aagttaacta gctagaggca 840

caccatgtag ggacaacaac acggcatccc tccgctcgct agctagtgct gtgcaactgc 900

acaagccgct actcggagct cgtggtcatc cctatgcaca ctgcagccct gtctggttgt 960

gcttggtaat tccggcctct tagataatct ctagatcttc gtcaacgcaa atctaaatat 1020

ttattctatt tttagttaat taaaaatggc tattctctag ttggttatcg tttc 1074

<210> 4729
<211> 1106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231493_G1, chr6:141165394..141166499, Cluster 29

<400> 4729
tgtaattaat tccattccat cgcgctcgat cacgcgcata gattcatttg atcatcacca 60

tccgaagccc ggctgtgttt aatttcccca tatacggtac gtttaatttg agccccatgc 120

acctgaattt attttaaaag cgacaacgaa cgcgccggcc ggtctatcaa atccaaataa 180

atcctgatca ttattgtcag atggaagaag atgatcctgt gttcatgcgt acgtgacacc 240

gcttcagtaa gtcactagca cccatcgact tcatcgtttg atagctacgg cagcttgttg 300

agatatatac attggagagg gattgcccgg atggagactc caggaactca cctgcaggcg 360

gagtcaagaa gccggcctgc atcatcgatc agatgtctca gtcggaggat aaaccacgaa 420

cggactctag cagttcatcc agctctccta atcctatata ttacacgtaa ttttaaaagt 480

aacaatgcaa aaaaacggcg acgaatacgt agagccgcac aaatatatat aataaccaca 540

catttacaca cgcattaaag tgccacatat aaacgatttg tctatggcta gctgaatgaa 600

cttgaaaacc ttgagacgac atcttgtttt acagctctct tttttagcgc gcgccctttt 660

cttgtcctgt tgttttcgaa ggcaggcaat tgtacttttt tagataatgg gaaaaaatgt 720

ttcagcacgg ccgtacagat tgaaaattaa tagagcatac atcataaaat agaacattct 780

taaaaaaaca tgtcctcgag acaagcgtcc tctaatctgg catattagac ctccatccat 840

gttttacaag ggtctccaat gccaccgtct ctaaagatta atataccata agaatctttt 900

ggtgaacttc ttcgttctgc aataatctca ataatctcaa ccaaccagaa tgttcccctg 960

aaaaaaaacc cagaaaaact gatggtattg gtttagaagt aaagactgtg tattgcgaca 1020

aagccaaata taacaaaaca ttgccgccac tctgattagg agtacttttc tgtgtgttat 1080

tcccttaggg cccgttcggt ttacag 1106

<210> 4730
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231928_G1, chr6:142926983..142928000, Cluster 29

<400> 4730
tctattattt tattatcgat gttttgtctt ttgttatggg ttccagatat ccattatact 60

tcttaagctt gcatttttg ttttattgtt ttaatatgtt ggttcgtgat ggcacttcaa 120

atggtcagga gaactttacg attcctgcta caaatttagt tgataatcct catattcctc 180

catatggtat gctacatatc gtaaaggaaa catatatatt gttattagct ctgttatata 240

ttttatgaac tactttgatt atttgagtta tgcaattgtg tttgtttttt gctgcttgtg 300

ctagaagatt tcttgcttct tttaatgttt gaggttattt tatcatttgt tttattttac 360

tacaacattg attttcattg atgagtgttg cttggctata acacaaatat aaaaaactga 420

agaacattgt ttgatctatt tcacgccttt catacattgt aggttttgtg tactctaagt 480

ttacgcatat tccaaaaatt actaaggaac cggttgatag aacaagttgg aattgtagtg 540

gagattgttt tagctctaaa attgcttgtg tgctaagcgc aaggactctg atctacctta 600

tgtatcaatg caaaggagaa gttctaagcc ccaatggttc taaacataat agtattgtct 660

tcaaacaatg gaagggttgg aaggaaaaca tgattggatg ttttccttgt ttgctggtta 720

aacatagttg ttctattgga ccccttttc ttatggattt ccctttgga agtgaaacta 780

atctaatctt gattctcatc ttttggatgc atcttaactc ctttttctt gaacacattt 840

gagagttgca tatcattaaa taaagaagag gaaaaatgga gaaaaagagc catgagaggg 900

aaacaataga ccaacacact cacaacagcc aaccataata ccacctccta accacgatga 960

aaggtctgga gcaaggacaa gcccttagca cccgccaaac accaacctag agcctcat 1018

<210> 4731
<211> 1129
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232797_G1, chr6:147525090..147526218, Cluster 29

<400> 4731
cgaaagtggg ctgctctcag actccaagac accttgtgag agaggaaaaa atgaagcaag 60

tattaaatgt ataacttact atatcatagg agagttatta tatgagcata cctttagttg 120

gctatatata tataacatgc caatattata aacccactat gagctatatt attaaactta 180

ctctcatatg ttgttcattt aatgcatcca acacaatact gaaacaacaa gtcaaataaa 240

tctctctgca acctttttctc tactgtcagt ataaggttag ctcttcagtt tttctatgca 300

aacattaact aaagctagta ttattttgct gcggcatcta ggagggtata tatgtcggaa 360

tggatgagtg aaatccacta ggattctttg taacaaaatc tgcattaaat cttctgaatt 420

tgacgatagc tcatactatg tccatgcaat attaccagct agcgaaatcg aaaccaatgc 480

cacagtgacc ttttagacga aagaagtggc aaacaagagt aggacctaaa tcagctatga 540

catacacagg gggagcagct gtgttggtac tggtagtagt gtggagtata tacacggtcc 600

ctctagcggg ctccaagaag cagaaggaaa gggactgagt ggtggaatta aagagggata 660

gggactgggc aagatgagtc ccgctttggg cggctgcttc ttccaggcct ctgacgtgga 720

cgatgtctac ttctaccatc cttctcgatc acttcgttcc ttgacatttt tttcattcac 780

actacgaaat acttgtacat atgttcctta acatttctgt tttagatttt gtttcccttg 840

tcgtctcttc ttcgttaatc gttctggaac ccgtgctggc acggtttatt tgctcactgt 900

caggagagtc agatctagaa gcttgcagga tgaagaaacg acagaagaat aaggtcaaat 960

tccttgagag atggagaagg ctgacaactc gcgaattgaa agcacacatg cacgcatggg 1020

ggcctggcag ctcatatatg tgtcaagggc ccaggggtgg tccatgcatg gaggcaaggc 1080

acactgactc gttttagcaa tgcactatac cacaacaagt caacaacca 1129

<210> 4732
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233982_G1, chr6:152922095..152923239, Cluster 29

<400> 4732
tctcatgggt tgcctactat ccagaaagga atcttagttg tgatggaaaa gatagaatct 60

caggacagag agaactttga aagaattccc gtgggcagcc agcattcaga agtgatggat 120

atggaggatg gatcaaatgt cttttcagaa aaaaagggaa taactgatga gtgtgaatgg 180

aaagctgcag cggaaaattc tggatgttat gaagctagat gtgtggggtt agaaaaggaa 240

atgagctagc atggaaaaaa gaaaaaacag cttgggtaaa ggaggtttca gcagggctaa 300

taagcaaaaa atggtggaac aatatgagtc tttagtctct caagagcatg gtgatctaag 360

ctgcgagctt acgacgatag aggatgggga taaatttgat attgactcaa aagatgacag 420

ggatgggagt ctgctagaag aattagctaa aatagttaat gagattacat cagaagatgg 480

agagcaagat tgggttgcgg tgtctgacgg aaaagggaag aaaaagaata gagtaaaggg 540

tctagtgaga gcgactagag cgagctcgag aactgtttag gacggagtcc ctatcctaga 600

aaaagctatg aagagagcgc aagagaaaga tatcccaaaa ggtacttctt cttcaaatca 660

ttttactgtt ttgaataaga aaagaatgca aatttaggtg aggacatgag ggatatatgg 720

atagtaataa accaatatga tgaacagata gatgttttta agtctgagga aatagctaga 780

gctgcgataa ctgaagcaca ttttaaaaga agttccctag tagtacctct gtgattatgt 840

atgatgctat gtcttttctg tagagctgga gtgtggttct taggccagaa gatcaaatca 900

agctggagga gattttggag ttgacgaaaa gctatatgta gaattttcag ccatcggtgg 960

gggaatgatc tgacgttatg gtaatatgaa tgggccgatt tatcagtctg cttgcagtta 1020

gtgtgtcgtt tgagagagga ggcgagactt tggcagcaga ctgttctggt tttgttggta 1080

tattttgaac cagtttaatt atgtccttga tgctcgtttc tcagtccgtg gcgtatccct 1140

gtaaa 1145

<210> 4733
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234327_G1, chr6:154088274..154089299, Cluster 29

<400> 4733
cctaatcgct tccctttag cgatgcccct aagcacgcca atttcgaagg tctgttactc 60

aatatttagt tgtggagtaa caatttgctt ttaagtactg atttgtcctt tctttttctc 120

gttatatttc tgattcttaa ggtcttgctt ggattgcaat tgctggctgg gaaagctcaa 180

acattgcagg aaaatgactc caagttcttt gtaaaaggta agttaaatcc tctcaaacct 240

ttgtgcacat tttctgatgt caatgcctat atttcagttc atactgtagt tttctcaaaa 300

tggaccatgg actgtatttt caaaactttt taaatttctc atctacaatc agataaatta 360

ccataattgt tttttcaatt ttagttgcac attgtgtcat atggccaaca tctgaaaatt 420

atgtttctgg caacacgtag tatcgtattg ctttaatccc atttcccctg cagatcatct 480

tgcatcgata tttttgcttg tgtattcatg gcaaaggctc gagttagatt gttggcctat 540

actgcttgag gaggtccaga caaagtatga gttgaatgct gcaaaggtga ctttttatta 600

ctgtcaagca catttatata tttttgcttg atttttggtc taacagaata ttgttatact 660

gcacagctgt ggtttccatt gcgagcctta cttactcaaa cttctggtat tccagtggat 720

gatgatttgt ctattatcag aaggtatatg catatttttt tctccccctc ctagaaacat 780

atatttttc taatgcaagt gttctgcaaa ttcagtgttg aggaatttgt tcaaacatca 840

agtcttggag aatacaagag acgattgcat atcctctttg ccttccatgg tgagatttct 900

gctggtgcta gcttgggtag ttattcaagg tgagatcaaa acacaatcta tattatttgt 960

tttgtttaag atagttcagt atatctgttg aaattatttg ccttttccac tataattatt 1020

ttttct 1026

<210> 4734
<211> 1031

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234981_G1, chr6:157150877..157151907, Cluster 29

<400> 4734
gtgtttacat gagcactatt gttccattag aacgagatcc tttgtggctc attcccctat 60

agttgtcacc tataggtatt tctacaagtt gaactaatgt tcattaggtc tatctaacaa 120

tgacaaaagc aacctgaagt ggactatata tagtggaatc gaactaattg tatgttacat 180

ttgaccaaat ttataagtgc agacatctac cttttatgtt attcgagtta aacatgtgtg 240

tcgagtatgt gagtataaag gtagacgtag ggttgctaat agatcacgat ctaaatgttt 300

ttttacaata agttaggacc caccataaga gagttaccat aaagggactg atacgacgtg 360

aaccaccgcc tccctagttt cctcagggaa gcgacgacgg aagggaggag gtccctccgc 420

gctgctagca cgcttcgagc catctccttc gtccccgaca cggcggtgcc ctacagctgc 480

aattctctcc gcaagagcct gccacttctg catctcaagg cgtctggcca ggaggaggag 540

atgcgggagt gcttcgtgca cacgctggaa gaggagttgc agagctctac gtggatctac 600

cgcgcgtgag acaggaggta ctttggtgat tatgttcttc gtcagcacca tcgtgttgtc 660

acttaatttt gagattttgg gaacttgcca ccggggcgcg aagccagggg gtgggcgggc 720

cttgcccccc aaccctccac atataatatg aaatataaaa tttctttggt caaaataaat 780

ttctatatct aagtaatttt ttttttgcat gtttgaagca tcaaattcat tgctaataat 840

aaatttgata aattttagtc taaagttgtc acaggatata gttattgtcg tgtgacgaat 900

ttactgtttc accttgagta tacaatcatt tagagtcaaa taaaatggag gtgcttaaaa 960

caaatgtctt ggaatcagat ataaccctct tgagggagct cgaatcggct cagtctcctc 1020

tttatcgaaa c 1031

<210> 4735
<211> 1330
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237768_G1, chr7:3376588..3377917, Cluster 29

<400> 4735
tttaaaattt ccctccatat ttaactgtac attctgccac cgtttttgca tatatgtagt 60

gccaaaattt gtatattgtg atacacacga tatttaaata tttctatcag tatacacaat 120

agctattaac attgttacat gcatttaaac taaaatacta aacacaatca acatgttatt 180

ttcactttat agtgattaga gagaatgata gtttaacacc ataaagcttc ctacctgaag 240

tgccaccata tataagatag aaactagagc tatcaacaac aattttggga gcacatctcc 300

tatttaaaaa gcaatgagga cacaacaaca tatagaggga tataaattgg accaatagca 360

ggatatatca tcctaatgag caggttatca tcaaacaaag tctagatgga ctttacagca 420

acaaccataa accaaagggt aaggttgacc aataaataga gactctataa aagatgaaat 480

gaacatgccg agtttactgc tactttctca ccattcaagc aaaagccaca taaacttctc 540

accattcaag cagaagccac atgaacgcct agaaagataa aaaagggatg tgagatgtaa 600

aaatatcgac aagtaaaatg ctttaacaag ttatttaagc tacaagttca ttaagcatcg 660

atttaacctt taattatgtg aaaaccaaca ataggcgata agataaatcc aacaagtaat 720

aaaaccacat agataaatat aaatcataac caaaccttgg ggaaacatag cttctcataa 780

actctcccaa agctttagtc caaggctatc atgtctcaga ccaaaactat aacgcatata 840

caatgcaaac gccatgtctc ctacattcac acccaataag gtatatgaac ctacatcgtt 900

atgctcaaat aaatgatgtt gtaccaatac aatcgtggct agcaagcagc gacataatcc 960

catatgctaa tgaatgaatg gaatgtaata caactactat attaaggaac cataaactac 1020

atataacacc atgaccatcc caccacggga caataagtct cattccattg tgccaacatg 1080

agtatcatca aatatttgtt cggaaacttt tgtttaagaa agtctccttt gtcatggtgt 1140

tgacttggtc aacaacataa caaagatgtc attgtaaaat aatttaaaat catgatatgg 1200

atatagagtg agaagggaat gagtttgacc tagcattaca tgccacacac attgcacaaa 1260

aaaatttaaa aatattttta tattacatga aaacacgaga tattacacca aacgtggcac 1320

aagtgaagca 1330

<210> 4736
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238023_G1, chr7:4571896..4572950, Cluster 29

<400> 4736
gcttcgtgta ccgttgctca ctgcgggtag cctgagatca taaaagcatg tctagctagt 60

cagtttattt tatttaaaat aggagtttaa agggatcgga gggatatttt tatttagcta 120

cgaagttgac ggagctagct agctagccgc atctggtctt caacaatggc ggacgagtaa 180

aactggctcg gctaccaaat attacatttt taccaatcgg caacggttgt tggtgtttca 240

tcgaatattg tcatgacacg gctcttcaca cgatgaaccg gctcgatcgg gtacacggta 300

gtcgcatgcc aatttcactt tctacttctt tcgcaaagac acgaaaatgt gcctttctac 360

ttttcaatgg aataaaaaaa acgacagtag tacagtagac agtagtccag tggtttacct 420

attatatact ccaacacagg aaaggaaaaa aaagcccata tatagttgta tgtacgtact 480

gctaattaag taaagaactc gagaaaatct gtatgatcga atgagatata tagtgatgat 540

gacatgcata tgttgatcga tcgtttggta cacgattttt taatcttaac aggtaactgg 600

caggcaatat atgtaattgt tcatcgtcgt cggcgttgtt gtgccaacac ggattcatta 660

gattttgtcg agtttgtgat tttatctaat aacaggccgg cgctagtttt ttattctcga 720

aacagaaaaa tgtagattat ataaattgta gaataatcat cctcctctcg tgttaataat 780

gtctctgctg agtgccgact ttagtttcca ggagattaaa tttgtcccat cggttgttgt 840

tgacgttgtt tcctgctgta catgcacgca cagttagtcg tggctagctc ttgtacggca 900

aagggataaa acgaggccat attgagtcgc aacagcaagc agtagtaacc attcaaaagc 960

acgagcgtac gtaataatta aaacacacag agatcgatta ccatttgctg agaaactaaa 1020

ggtaaattgt ggcggcgcgc ttttggacgt ggcgg 1055

<210> 4737
<211> 1153
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254232_G1, chr7:108495487..108496639, Cluster 29

<400> 4737
ggttgccatc cttatctcgg tgtcatgtac caaagcaccc aaaaagatag atgcaaataa 60

atataaatat gcaggagagt aggacagatt attcagaggt cagtacatag cgccgcaatc 120

ttctactagt gcagtactat tatatagcat gggcaacatt ttggtacgtt gaaactttga 180

ctgatgtcat gcgagatttt aggggttgac aaatacactc ttgttgcccg gccggacagg 240

aagcttctta attactaccc tatattataa attataaagc atttgatttt ttttctttct 300

aaatacatta tttttgtaac gtatctaaac atagtgtata ttttgtaata aaaaattata 360

tataaaacaa atcaaaacgt cttataattg aggataaagg aagcacaaga gaacaaaaca 420

gtcacagcaa ctttctttaa ccctcgaatt cttcttttta caaggaattt aacgctcata 480

ttctgttatg ctgtataaaa aaactgtcgc aatgtaatgt ttttttttgtc aacaaaattg 540

ggtgctaggc attatttaag aaataaaacc atcaatctga gcacgttttc aaaatacagg 600

gtaaaaaaaa gcatcactgg ttcaaagaaa gtcaatttca tatgccacag ttctgacttg 660

tataactgaa acatcaaagg ggaaaaaaac ccagactatt aaatttgagc acgtacgttc 720

tgaaatctaa caagcacgtc gccagatcca tggaagacaa acattcaaac agtaagtctg 780

tctctattca agacttcaaa ctgcgttgaa caaccacctc gtctgttgac tggcttttcg 840

aggaacgtgg tcgcatcctg atttctacgt tccattctcc cccctcccct cccctcccct 900

cccaaaggca ttccattctc cccctcccc tcccctcccc tcccaaaggc acgaggatct 960

tttccttatc cagctctgaa aactgtagtc tgaaatctat ctgaacttga agaggtcttg 1020

cggactagaa acttcagaaa ccgaacgtgg acaattttgg ccagagcaag cttacattat 1080

ttccaggaga cgaactaagc acgttgcctt tttgttacaa ataaacataa aaaaaaactt 1140

tgcagaatct aag 1153

<210> 4738
<211> 1142
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254377_G1, chr7:109344215..109345356, Cluster 29

<400> 4738
tctcctcgtg atcacttaac ttaattctgt cttttggtgg gtacccgcac gtagtacgtg 60

acaagcagat taataggcac acgcactcga atggctgctg cctgctgccc cgttaatctg 120

cggatctttg tcagagccaa gcaatggctg tcggtttgct ttgctttgct ttacttttt 180

ttttctttcc aaaagagcca gagaaaaaga gagagagagg tcggtttctt ttgttagatg 240

caagaaaagg aaaagggaga gggggatttt catggctcat cattggtgtg tgatattaca 300

tatagagagg cagccttgtc aacgggggat gacgccgcat ttctgctccc ttttcctgca 360

tttccatgtc acagtatctt actagtagct agtttccctc cgaaaaaaag agttttcttt 420

gtagtagtag tagtagtggg ttggccagga tgaatccacc gagcatggca cggcggcatg 480

ccaaccactc ctgcacgact tggcgcggac gagaacaacg cacaccaacc aactgccaag 540

cttatatata tcatctgaaa atggcgatgg gtgtcagggc cgtcaaggag aagacgagaa 600

acagcagtag ccagtagtac tgttgcgcgt ccaagaatgg agaagacgac gagtgtgtgt 660

tgtgttggcg gttaacgtga agggagaagc agcaggagta gctgttaatg gtctcgaacg 720

atgatataca aggcactgtg atttgtaatg aacgagagct caaactctga accctccctc 780

cctccctgag aaatgccttc ttctcgtccc catttctggc ttctttcctg caacttccat 840

ttctagagtt atccgtccaa tcccccattt agaaaaaaaa atacattatt agaaaagaaa 900

atgttatgga tgatatataa aataaggata ggacactgat ccgaggtgta atataattgg 960

gtcacttcaa gacatgtcct gtatttttt attacaaaaa ttataaaata gagcattgtt 1020

ggagttattt tacaagttga tccatgtttt ttaaaataga gtgatgattt aaggcactgt 1080

tcaagatgct attattattc tctagtaatt ttagcatagt catacgagca agatccacaa 1140

tt 1142

<210> 4739
<211> 1097
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264700_G1, chr7:165482331..165483427, Cluster 29

<400> 4739
catgagtggg gattatacta ttcgagaaga tgccaatcgg aaaggccaga ctgacttggc 60

aggggatgca tggacagtgg acaccatgca atcagactgc tcagccctca gctgtactaa 120

agaatgtctt tagcccttaa tattttgatc gttagcagtg atgcatgttg cttgacctgc 180

tgacctttt ctgtgggcag tggtattctc aactcaaaca agtgggttgt tgatttttt 240

tttaataaat ttttttgta cctggtcgct tggaaccatc tgccgatgct atgccacata 300

attttaaatg gcgggagatg tactactgta ttagtagtac tgtttaggtc ctttgttctt 360

gagaaactta acctcgtgaa gaacaccatg catgaccccc tattttaaac catggaaggg 420

atgagatcaa aatattcttc ttccactagg ttaaatagtt tcggactttg gcctctgtgc 480

tgtgcaggag gacacgtgtg ttcaatctat ggcatttagt ttgaagggat cttgtcaccg 540

cgcgcggatg aatttcagga acacgacctg attcgctgtt gacttttagg aataatagca 600

tagcttatat caattcacac ataagcacat catataatat ctcgtgtata taaaaaaaac 660

tagaagaaaa ataaaaactc taattcgtac catcatgagt gcacgattgc actcgatcgt 720

gttcggtttg gttttgttgg tccgtccgtg cgcgactaca acgcgagtaa tgagttcatc 780

attggagttt agcgatgctg ccgagacacc aagtagctct agtactcgtc agttgatcga 840

tccaaatcct ggtgttcacc tactttctac tttgcagaaa caaaaaaaag aagaagaaaa 900

agaagaatat aaaaagatga tgaaacattg cagtctcatg agcacaacca gcagcacctc 960

tactctgctg cttcttaact ctttgagagg aggctattgg tatttggtat ttctcgggtt 1020

gggttgggtg ccgtgcccgt ttcttaatta tcctaataca accgacatct cttgcgtccg 1080

atctgtttca aagaaac 1097

<210> 4740
<211> 1121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265765_G1, chr7:171477307..171478427, Cluster 29

<400> 4740
tgctaacttt ggcaacaaat atgaacttgg caatatcttg ttgtcattgt ttagtggttg 60

cttctatagt gtcaagcatt agaggtttgc aaagaaaaga ctctacagtg gcgagaagcc 120

tgacaatgtt agtggcactg gagttgaggt accggtgagc ccactaagat tatcattatg 180

atgcggatca ttgaaggttg cctctccatg gtcctaatgt gaagctgagg gagtagtgtg 240

cactcaaggg tcacacttct aaaagtccta gggacacaag cgttgtggtg cctctaggat 300

gtggcatact cccgaatgag catgagttga agtgtggtct acagaaacaa cacctcgtga 360

ccccatcgaa ccatgtcttc ctgtaggaga tagtagatga taagaccgag ccggattaca 420

atgtcatttg tgttgcgact catgatcgga gttgtgggag taggtgttga aggctacttt 480

gttgttgagc agatgtgttg gtgacaccat agttgcataa cattggaaag tgcaccaaat 540

cctagaaaag aacccactgc ataacttgaa aaatatcatt gtagtacgac actaggatat 600

cataagtatc aaaaaagaga aaaaagttta tggatggagt gaggggcata ggctagtgac 660

atgctgatcc taaatgcaac ctagttatga gcacacatgt agttaataga tgtttgagcc 720

acaagatgct taataaccta catcttattt ggttatggtg gattaatgaa tatgaccttc 780

tagctctata tttttatttg gttttagtga gagttctagg ctactggtct ctagttcacc 840

tctgcttatg ccctttacta tctttgaatg aatcataatc cttagattgg acccaactaa 900

attcttgaac ctttcttcta tgttgctcta ctcatttgtt ttatatctaa aaggacaata 960

gagtgatata agaatgctag gttgcaggtc tgccccgaca gaggctcaac tactcatatg 1020

ctatcacaga catggagtaa taagcaacga catgccctag acatgtcata gcccggagta 1080

cacaccatca tgtacaatga agctggtatc cggtgtagta g 1121

<210> 4741
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268153_G1, chr8:7309043..7310092, Cluster 29

<400> 4741
tagtcttaca ttttcacata ctagaagtag caacatgttc acacgtgctc ctcaagttct 60

ttgttgatca acaacatagc aacaacaata gtgtctctat gtatccacat gtgtggggat 120

gaaatgacac attgttggtg tgatagcaac gcccatgtag caagagaaat gatggtattg 180

tcttgggtgc ccgtaaccct agggagataa gcagcgacta agatgattct cttatctcta 240

gcgcgatagc ctcttcttat atatagactc atgctaatga gtttttaccc taaaggatta 300

ttaacatttt aatggatcat gattgcctct tgcacatata ttcaatatct aggtatattt 360

tggagaaaag gtggaagtaa tagttaagat tatcgagata tcatattgat accctcatca 420

aggaaaggat gggctagagt agaggtttac cagcatttat cgggaaccca aggcgtaaga 480

gaaagtgatg gcccttattg aaaattatat ataaccaata tgaaaactgt ggttctgttt 540

gggtgacttc aatgaaatta tgttcataca cgagaaggga ggtggtcatt caagagccaa 600

aatctgcatg gaactgtaaa aaaagcactt gaggattgca atcttgatgt tctagatgac 660

ttggctataa catcaccacc atgtcatagg atgcataaaa atgttaaaaa gagttgttgc 720

ttgtaatgaa tagcgaaggt gttttccact ggtatgtgta atcaatgaca actcatggca 780

ttcaaatcat taccactggt acaaggttta caaaccaata tctttaatta ttaaacctat 840

agatgttacc ccgcgacgag cataagagca ctagtttcca gtcaagggtg ccgccaaggg 900

aatagaataa gctagaataa gaagtgtgcc caatctagaa tctaagatca caaaatctct 960

tcatttccct tcatatgcaa gcctgattag ctatatcacc tgcactagtt attaaacata 1020

tatttcacag acacgcgcgc gcgcacacac 1050

<210> 4742
<211> 1213
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268404_G1, chr8:8401663..8402875, Cluster 29

<400> 4742
atttctggt atactagtcc tgtatctcta gccttgtagc aatgatgctt tttgcagttc 60

acttcagttt ttaaaagatg ataatgggcg attgtgcact ttcttgtcat tctgatgggt 120

tatttgcaga taatttgcta ccacagtgct ccaataattt ttaacacaaa tagatgggca 180

tctgagtcaa gaggacatgg catgctcaca agcatgcatt aaattcatgt gatttttct 240

caattgtttt ctggtacaat ttgcgaacag gggagaaagc aaattgaaag tagtagtgct 300

cctcacttcc ttgtttactt taatccagtt cttaatggca aggggtggta ttagtttaaa 360

ggtcgcgctc aataatcaca tgggattgga agtggaaata caatagaata ctagatggtg 420

tcgaagaatc cttggatttt attctgctgg aatgctgtcc cagagaactg gtgcaatgca 480

tgctcacgta ggtgcacatg atacacccca tgtttactga ttccttctgg attcaccatt 540

gtcacattag gcatatcaac gtcgaaagca aaagatcctg agaactcatc tttcaagatt 600

catagcccca tgatcattca ttgtttcacg aatttctgga tcctgattta attgtttgac 660

ttactaaaat gtggatccca ttgtcaacaa ttaaagtaat gaagttacca catgatctgc 720

ttctgatagg actttggttt tgaaggattc taatagaagc ttgtagatcc taggaccaca 780

ctatagtttt ccttcatttt tttacgagtg atgggactgc ttgcattatg cgcttcagtt 840

cagacaccga caatttgcat gacacagcta agatctctct caccattatt ataatataat 900

ttagggatta tatgagcatc tcacaacatt gtttaccata tcctactaat gggggatgta 960

aatgacagtc agttttcaca tgttaggcat ctaatgatgt gatatcatgt cgtgtgatgt 1020

ctacatataa tttttgtggt aacatgacct agaatacatc tcgcatttat catcccattt 1080

tgttggcatg tctttgttca gtacccaagg gaaattgttt tctattcaat attttgatta 1140

tttacaccac tagagaaagt gtcatcggta tgaaaactga ttacaattat cagattccca 1200

accgatactg agt 1213

<210> 4743
<211> 1050
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_268875_G1, chr8:10801591..10802640, Cluster 29

<400> 4743
atatgtgctg gaataaccac cctttgaaca cttcctacag aagacatata tgaatggtat 60

gtattgtttc ttgatgctaa tgccacccaa tacactctat tagaggagga tgactgagat 120

agtgtaatgc caaacttaga tgatctcgga gctaggtata actgggcatg attcataggt 180

ttgtagcact gagtggagtc gtataaggat caagaagata ccgaagaatg ttctttgttt 240

ccctagtggg atgggactat gcaataggag accaccgacc atccaaaaac tcaaggagta 300

tgggtacctc aatatccaca acatcaagct agggcatggg caagactaca agtgctccat 360

ttactcccac caattgaatt acaaaaacaa tattgtgacc aaactgagga ccactcgctc 420

acttgaatgc tcttagagat gatgacactc tagtgcacca tctcttgatc tccaaccact 480

ttttgcggtg gtctttgtga gaccaccata tgcaagagag acccacaaga taccaactca 540

actgactcag ttaacaaaga gtaaaatttg ttatggtgtt tatgttaagg gcgagtgaac 600

tcgcaagaac tatggttgat ggtgtaatgt actctaagtg gttgtgagtc gagtgtgtat 660

ttgtgaatta ttatgtgctt ttatgtcctt gttcctttta ctcatagaag tagaaacata 720

tgcaaattgt acccatttca tgtaagttga actattttat gtatgaagat tgaaatggca 780

atgttaagtt gtgtttaatt atgacctatg ttattctttg ttcatgatac attattgtat 840

ggaatatatg atccatataa gcacattggt tttattcctc ctatgaacac atagttctta 900

ctgggtttaa agcgttttgt gtaaaacata tctaatggaa gatgtgtctt ggacaaatgg 960

ttgatacttg catgttaaga tcatgggttg ggggtaggag gtgaagccca aaacaatcct 1020

tctccatcgc cttcatagtc agggcttatg 1050

<210> 4744
<211> 1012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269454_G1, chr8:13632279..13633290, Cluster 29

<400> 4744
acttgtcggg cacgtatcat gctgccatct ttgctctgtt gctccttgta gtagctacta 60

ataaaagcag gagcgtttct tgtagtagct tgcctgttgt gttagtaggt tgatcgatca 120

cagatatata tatagtactc cctcaatcca taaatacttg acgtttcaga caggttagcc 180

aaaattaagg taagtataaa tgggctaaat tgtccttagt acaaattata caccgaaaaa 240

aacccgtcca gagcttgaca agggggggcaa aaaataagtc accaaattat agtttcactt 300

tgaactaact gcgtcaaata ttttaaatgc tttccattta tactactggc gtcaaataaa 360

aaaatatcaa aggaagtatg ttttggctgc aagtgctatc tgtcagttat ggcttatcaa 420

caatcggttc ctagtcagta tgattctatc agattcatac gcaatacatt gagcattgtg 480

gctataagaa accagacggc tcccttataa aaaaatgatg atgatactgc tgatcaattt 540

atgttaacta cacactctag cagacgtcac attagccaca caaaatgttg tggaacacaa 600

ctgtttaccc agtctgccag tggagcataa gatgctataa actgctctag aggtttatca 660

cataaaggac actttgcaat agcatataaa gatccagtgg tgagaagcca aaggtcctgg 720

actcctggtt agacgcagac tctttgtaaa aaaaaattac agtacaaagg taaggccttt 780

ctcagttatt tctttcttag acctcatcgt gtgggaacca ccagcacaca gtcctatcct 840

tttacaaagg tccagtgcat gaactggata aatagttaat attttaagaa actaaaatat 900

aacaaaataa taatggtcgt cagatactaa ggatcatatt ggtgatcttc caccctgctg 960

ctctgaacat tacgtagcca aatagttcca ccagaactat tatggattgc ag 1012

<210> 4745
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_271143_G1, chr8:23994258..23995264, Cluster 29

<400> 4745
agtgaccgag gtggtggggc cgcagagtag tagtgacgcg cagacatttg cctctccacg 60

caggcctgcg gaggcggagc agcgccacac gcccgtcgtt gccaatcatc ttacgtttgt 120

tcagatttat ataaaaaaac cataaatttc attatcaaat aaacggtgct gtatttttac 180

agtacactta tttatatata tttttctata aaattagtta aacttggtat ggtttgccta 240

tggaaaaaaa aaactagagc tgcatcgttt tctgttttct cgcttcgcat ggctgctgta 300

cggcccgacc cacccaccta gcaaattcta gcccgataac gcaccgacgt cgcagtaaaa 360

tgggcctaac gcacagctgt taagtttgat cctgttgggc cagatgcgat ataagtgttg 420

tacatgtctc tctgcccttt tgtgtcagga aattattgac ttttttttagt tttgttacct 480

tccttagttg tatttttttct ctctgtttcg tccttctgat ctatagtact agaagaacaa 540

aactgaaaag acacgactaa gaataaaatt aaggacacca gcaaaacaaa gaaccttaaa 600

aaaaaccgtt ctcttttaac acttcttgcg caatgttgtt tccacacggg taagtaatat 660

tgagatgtac tggtaaatat gaaaaaaggt tataaacatt catgggaaaa gagaacagca 720

atgatgtata ccaatttata tcttacccgt cctataagac tgtagcacta tattttattt 780

tattagattt gatctgattt atttatggtg gccatgacat caacaatata aattgatctt 840

ggcaacaata tgacaatctt attttaaatt tgcatcgaac taaaatataa gagtggtaga 900

tttccccccct cctgtaaagc atataaatat ttacaataaa attatcttaa cttgagcttt 960

catattacat atgtggtggt acaattaaat attaagtacc ataactt 1007

<210> 4746
<211> 1216

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_28294_G1, chr1:172859837..172861052, Cluster 29

<400> 4746
ccgagtcact caagcatgcc tagcgaggac cgagcatgca tcagacctgc caaaaatagg 60

tctgatctat cttgtgatac ttgacccgtt aaacactatg ttgtctcaaa tactatgaat 120

tgaaagaagt gaattagatt caactttagc ttacaacgac aagaatgact taggtagaat 180

atgtaatgcc ttgaatatag ttagttagaa ggaaatggct taggttcaat tttgcaatgc 240

atgaatgagt tagatataat ataaaaatat ctttataaac tatgagttgg aaataatgaa 300

ttagattcaa ccgtgcaata ggaggaataa cttagatgca aataaaatat cttaagcatc 360

gtgagttgaa gaaatgactt aaatgcaact ctaagttggc aggattgact aaggaaaagg 420

actaaataag ataaaataaa taaaagtaca aggaatgact taaataatat gaaagtggat 480

taaaattagt tgaaaactaa taaaaggaat gaataagata aaatgaagga caatcggatg 540

aaataactta aataatatga aataacttaa aatgacatgg aatgacttaa atgatatgta 600

atagtttaaa atggataaat atcaaatgaa attacttaaa agtgctttag tttaaacatc 660

aatcaattag caaagtacat tgtaagatgt aatgtctaaa aacacatgaa ataacttaca 720

aatagttgga aaattaaaga aaaatgaatg agcactgagt aagatgaaat gtctgaaaat 780

acattaaatg actttaaatc agttagaaaa gtaattaaaa gtattgaata agataaaatg 840

gctaaaaaat caaatgaaat gtcttaaact agataaaagg accgaaatca ccattggata 900

tctgaaagtg attaaaatga ctgaaatcag ggtgagttgt cctaaaccaa ataaaaggac 960

tgaaacccca gggttcaatg tcttaagcca tttaaaataa ataataatag tgggatgtct 1020

taagctaatt aaaatgactg aaattagacc gtgacatctg aagacatgtt aaaaggactc 1080

atatcagagc tgaatgtctt gaactagatg aaatgaccga aatcatagtg aaatgttcta 1140

gagttgttaa aattaccaaa actagagcgc gttgtcttaa acgggctaaa aaagctgaaa 1200

tcggaataga gtctcc 1216

<210> 4747
<211> 1281
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_283802_G1, chr8:108818330..108819610, Cluster 29

<400> 4747
gaccaaatca tttatgttcc caagaaagca atcaaaaaat tgttgtctag tctcaaggtg 60

gttgccaaca ttgttgtggc ttatcattta ggtgtgcatc ttagaatggt tatcattggc 120

cccacaacaa tcttgtgagt cggtatgttg cacatgtgcc atgtagcact cccaaagagg 180

gagaggcaat catggttctc atcttctgag acatagttct caaggtactc tttgtacttg 240

gtttggtcga tgatgttggt gaagctctta tttaggttca atgtagtgag attggcatca 300

tatgcatcga gcttggtgtt agttggtgtc tcaatgttag tgtttctatc atcaagacta 360

tggatgcaca caattatgat gaatcgattc acatcattgt tacaatgtcc ctttggctag 420

tcctcaacta tgagggagct aagattgagg gtagccatcg tagcttagca gaactaatgg 480

tggtaacttc gctttgcgtt cttgaacctg attgcgaagt aggtaaggac gtggtgggaa 540

aatggtgttg gatctatgtc agggacccaa cacagatcta ccatgagcat gcatacttta 600

tctaagatga agtcgtgact aaactaggtg aaggtctcat gagcataaag gtccatgtgg 660

tggcctaaag aaaatgggcg aatttccacg gaatccttaa gcccaataag gaacatgcag 720

atggaaggtg actcctctag catgggtgcc ttgagttcct acagatgtag gatgtctcta 780

aaacacaagg aatctatgga caaagtgccc tacctggtgt gccaaatgtc atgtgttttt 840

acctcaacaa caaatatcat gtataataga taggaaataa gaaggatagc atatggcagt 900

ggcgaatcta agggggggcta gtggggctcc agcccccatg cgcttgagaa aacaatggag 960

gaggaaggga gagggaggaa gtagataagg aaggaagata aaggaagaag acgaggaaga 1020

gaaaaagagg aagaggtgga aaaaggaaga agaaggaaga tgaggagaaa aaggagataa 1080

ttaacctcca gccctccctt gagatgaatc ctagatccac cactcgtaga tgggacacaa 1140

ctttatactg gttgggtatg tggtactcta tatctagttt ggattagatc tatttatctt 1200

gcatgattaa gttacaaggg gctgctcatt actaatagta tttgtggtat agtctagaac 1260

tatgcgaggt actaattagg g 1281

<210> 4748
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284615_G1, chr8:112683279..112684365, Cluster 29

<400> 4748
attgtgtggc tccacattat attgatagcg aatcctcagc cgctacatcg acctcattat 60

taataatgat ttgtcagttt gcttttgcct tgtgttgtct attgttgtgt gcatgctgtc 120

cagtcccgaa ctcaatttat tatttcatct ctggagtggt tcggtatatt ttaaatttgt 180

caagctgtca taaaaactgc cacgactata tatgtctgga tagttcttat ttgatttttt 240

ttctttcatt tccaacaaaa gctgatcgat gtccctaggc tatacccggc caatagcaat 300

ggtgtagtca aattcacgtg ttttgaatca atcaacactg attctgtcgc gctgtttgaa 360

ccgaaaggat ggtttacata gatagaatac actaaacctg aaaccgccgc ccagtcatgg 420

aggcggtagg agcaagtcgt tgtctccctc gccgtacagc taatgcaaca caacacttgt 480

ttcggtccag ctagcttggc ctttcccttc ttctagaagc cgcttcgaga gctttctctg 540

gcagtgacag tgacagtgac agtgacgcct ccagtttcgt gcgtgcaatc caagaggatt 600

agcaacttgc gccgccgcct ttcaattagt gctaaacaga acagacaatt aaaagaggtg 660

gcaacacttg ttggaagagt gacagagaaa cccagttggg gcaagatgca tatggagttc 720

ttattatgct ggtcagaatt cagtcgccat ccccgtcatg gtgtcagcat cctagcttct 780

ttccacacgc gaactcatca ttcagatatt tttctcatca gttgtgccga ctacaacccc 840

aaagaattcc ttttcttttt ctgttctaca agagagaatt catggcctag tccaaaacca 900

aaaacagttg aatcaatatg acttgtacaa ctcatcatta ccaaccactt gccggaatca 960

gcgatggtat tctaggaagt gatctctctc ctcgttcccc gtcgtcacct atccctagaa 1020

tattgaagct cgtcacggtt attacttatt actacacttt tggaaaagca caaattgact 1080

tgcatta 1087

<210> 4749
<211> 1291
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284639_G1, chr8:112760617..112761907, Cluster 29

<400> 4749
ttgcagctga agctcaagct tttttttaa aaaaacgcat tccttttctt tttcgcctcg 60

tatggtcttc ttttacacta gaatcgcttg ttgctcaagc atgtatgtag catgtcatta 120

aacgttataa acctacctct ctcagacaag aacacatgca aagtaaatcg gtgggctggg 180

cagcaccttt tcctttagaa tgcaaattag aaagaaacca ctacgataat ttaccagtga 240

ggacgaaaaa acttgtagta ccacactaac actatctatc tgcgcactac tgtcagcgtc 300

ttggcgcggc cgctcgtaat taatgtaaat gcttgactac tattcatgtg aaagcataca 360

tgcaggccag ccaatattcg tccaagcgat ttgcttgcag catgctttga cttttacgca 420

ggggagattt cccatgcagc cgtacctcgt taaagaaata ggcaattttc agactaatcg 480

agataaaaat catgatggtc tgagtgagat atttacagtc ctgaatttga aaacatgaac 540

aacgatataa taaacaacaa catgattata gattcaatca catgacacat gtacctttcg 600

ttcggagagg gaaacaccat tgctaccggt ggagatgcca ttactagcgg tggtatgaag 660

tcgtcgatca gcgatggaaa aagagctcta aagagctgac aatatacaac cctattaatt 720

aagagatgtc ttgagaggtt tttacagggt taagtacaca caaaaaatta agagatggct 780

ctttacgtag aggctgtctc ttacgacttt ttatacatat tatttcttaa ctgcatcaat 840

ggtctagaga atgttagggg tgctccttag ccgaaggtcc taaaagcatt ggcttaccat 900

ttatctatga gtccattcca ggtttaacaa ggtaaaatgc cgaaggctac cttcatataa 960

gatgacaagt agttgcctca gttgtggaga cgaagttgtg atcttccatt taatggcgtg 1020

cacgcacgat aaagaagcca acgagaggag gacgaaatcc ccaagacttg tttggcaaga 1080

ctatgaagga aaaagacaac gatgccctaa cttcgcttca tagctcatat gtataggctt 1140

gaggatataa ttgtaatttt tctgaagcag tactacacga ctataaatag gggcactgtg 1200

ccatgcatac agacatattt tgccagagtg aattgtctcg cttcgcatgt gaagctatgc 1260

ttcctttcca tcgccacatt acgaattgta g 1291

<210> 4750
<211> 1073
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_291970_G1, chr8:152690458..152691530, Cluster 29

<400> 4750
agtaattacc tttataacca aatcatatgt gttgtttctt tcaaatcaaa atcgtgcata 60

atatcattct tatacattga gcggcaacac atgagtgaaa actcaacaac atctatctac 120

taatttatat gatggcatag actaatctag tctcaatcta taaactagat gatttctata 180

ttcgctaact attaagatat caattataaa accacaaaaa atattgcaaa ttaaacaaat 240

ttgaacttta tggcaggtcc tcaatttaag agcctatttg acagtacttc ggctctgacg 300

caggaggaaa ggtagagtct tggcaaacac atttttttaa ataaatggct tactttgaaa 360

agtacataaa agctagagcc atttttatac tacggtaaat aagctataaa tagtagctac 420

accgattcta gctctggcat tttaatacag gaagatggct ctagctctaa gatatgttgt 480

ttttatcaaa tgatttgcca aataccttca actctaaaaa aagttgattt tcggagaaat 540

ctagaaccat aaatgttttt agagccctgc caaacagact ctaagatcct aagacgtacg 600

cttctacaaa catgtacgtt gttgttctcc tttctatttg gtacagctta actttactgg 660

taaaacagtt tatctcatct ttgagtaaaa aaagagcttt acgaatgaag atgaatgtgt 720

cttgatgaac cctttggtaa agcagcttgt ttcattagat aaaaaaacga tcgcaatgct 780

ctttcaattt tttctcttct tttctttcgt atttcttcgc atctctcctt gtcctttccg 840

gccgcctcat ccatccattc cacgcgcacg cggcacgcct ccgtgtcact agctcttcgg 900

ccatctagca ccttcgcttg gcccgatgtg gccctccaca cccatcataa aatgacaagt 960

acgctcctct tcgacatacg tggcccttcg atcagtctga cgagagtgcc cctctggccc 1020

tctctgacgt ttgtgctccg acgaatgtgt gtgagtgact gcatgacatg tcg 1073

<210> 4751
<211> 1377
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292717_G1, chr8:156668436..156669812, Cluster 29

<400> 4751
gtcgtctgaa ggatgacgtg acctattgtc taggacagtc ttgttgacgt agccctcctg 60

acgttgtctt ctggttcatg catggacgta cgctcggtat ggaggatcgc tccatctgcc 120

cggtaggcgg ggttactgta gcgactctcg tggcgagttt tcctgtagca ccatctagag 180

ggactcatgg gttcatacat ggggaaacta gatcttcaaa aatcttgatc ttgcggtacc 240

acaaacatcg aagaatctag atctgattca gggtctccag gcgagttggc agtagtaccc 300

cgagcgctaa aagcagacat atctcctaat gcgaaactca tggttaccat catatctcga 360

tcagcttgac gtcccacttc ttagcgtgcg aaccatctag aatttttcag cactgaattt 420

atggggtgaa tcgcgagatc tagaactgaa agtaaagaca taaagattta gacactctta 480

gtctctcgat gtgagataac acactttaag tatacatcgg tgatgcttac gagtttgaat 540

gaaatctgaa tgcatgcact ttgaatttat tattacaatg tgtgtgtgag agactaggat 600

ggagcatgct gcatgtgtga cctctgcgca agcagtgtcc tacatctaca tggactgtct 660

ccactctctc catgattttt ctgctccagt ggcctttgga tcgatcgtct cctcctccta 720

cagcggcatg gtgcgcctag cagagctagc tgtacactgt ctccgtgggc cgtgggccca 780

catgaagcaa cattactgaa gcacgacctg ccctttctcg cattatattt acattcagtc 840

agtgcaagat aataatatca atactgatat atagtatata tacagaatta aacgggaagc 900

taggtctcag catatccacc gactagcata gcatagcagt agggaatagc aacgagctag 960

gtagcaggcc agcaactata tatgggctta gtcgtctttt gcaaattaga atacattatc 1020

atctggatct ctctttctcg ataataatgc tcccttgttt aagctctacc ctgtttttct 1080

gatacagtca gttccatata tatatatata tatataacgc tttgggccgg ccatgcatgt 1140

gtgctgtttg atgcgacgta gtataaattt tctctgattc aatttcaaca aacaatgagt 1200

gagaaaaggg agcaacatca ttgaggcttg gtagaataca ctgttactta taggtacact 1260

gttgtgtgtg tgtatatatt cttgtacagt acaatgattt tcaaccttaa ccggttacaa 1320

tttaaggacc gtaacgttta aggtagccgg ctatactata taatttttag cctaata 1377

<210> 4752
<211> 1075
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293613_G1, chr8:161151747..161152821, Cluster 29

<400> 4752
ctccttttat agtccaaaga ggggcggcat ttaaaggata tgtatctagg tcgattagaa 60

gacatggata gaaattgagc ctaactaagc ctatcctgaa ttatcgggta gcttatattt 120

atatgtacaa gtgttgttcc catatctatg ggattttacc atatcttctt ggatgccaat 180

ctcatctcct taatctgaaa agacctttc catatttctc tctttagaat ctccctacga 240

gtagaatctt cctctggtca cgtgagtcga ttccctaggc tctcaaccaa gcccatggac 300

ccacctgaca tagatttctc tagtgagatg tacttggata cccctagtat atatctctaa 360

cagttacacc taagtattat ttggtcgagt cgttggctta ggtattcaag aatcttatct 420

tgaaacttct tgtttaactt gaccctattg tatctgagtt gttttacctc ctagctaagt 480

ccccaaccct caagtctata gactcgactt ttactattta ggactcaatt atttcattgt 540

actggcactt caaattcaga caatttgtat cgctttggct tccttaacca tttaaaggta 600

aaaaaactcc atgacacttc aacttctgca acttgtcata aaaggaacta ccccatggca 660

tttggacttc atgggctagt tgttcatagc tttacattct agcctacacc tgcatttgct 720

gccacatctt ccctagtgct cttctcatcc tagccttttt tgccactgcc aaattcaaaa 780

atcatagcca tgcccaccaa atgtttgttg gaatgtctca accatctagg aatatccttt 840

gacctagttc tccattactt cttgcagtct catgtctttg ttcatgtaat ggctctttga 900

ttagacttct ctccctccct ggtctcataa gatttttcct ccttggtctc atcaacaact 960

aaggtagtaa gttatcactc tctcacttgt ctttttgctt tctccatcag gtatactcat 1020

ctttatttta tgtttcttac atacattctc tctttcacac aacatgttgg tcagt 1075

<210> 4753
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293828_G1, chr8:161865122..161866243, Cluster 29

<400> 4753
gtcagcattg gtgattcagg ttaaacacag tttaacattg ttccttcatt attgggtatt 60

ttttggtag atgcatgaac tcatattcag taatctatgc gccgaatgca gtattgtgag 120

attcttgtaa aatcttagtt gaaggtgagg aagtgatcca ttttgtattt taatcccaaa 180

gtaacaagac tgctttaatc cattttaaag tattaaatgt aactgatgaa gctttagggt 240

acagctatga atttagtttc tgtttagagg aaattagcca ttgaaaatgc tgtgccgtca 300

tctagatgct aatccaattt actgtaggtt cttgaatgat atagtttaaa tgctaatcca 360

atttactgta ggttcttgaa tgatatagtt taatagttat tttttctcta atatagaaat 420

agacctattg taataagggt caaaggggcg aattctagta tctatttgta aacatgcacc 480

caagaggaat ttcttgttta tttgaaagcc acccatcatc agtaaaagaa taaattggga 540

ctgtgtactg ctacaaggcc aagttgattt ggctagttgc tttacttgag tgtctacaga 600

tgatgtttgt tatatttgtt gatttgctgt taaaggacaa agagttgtgt ttcacttcac 660

aaatcacaac atcgaggtat gggaggggtt agggaattaa gtggtttagg aatcgaaggg 720

ctgtggattc ctgtcctgta tgttgtttta tgttttgaca tgcataaatg aaatcctcca 780

agcttgtgtt tttcagcaga attttggttc cttctagcat gaaaaaaaca ttgaagttct 840

agctctaaaa taattttagc aagtgacagt tagttacctt tactggtgat aacttttact 900

catgcaaaaa ctagttagcc gcttcttttg gtgcatgcaa gtgctgatta tctgcttttg 960

ctggttgcgt cctcatatct tctgtcattt tttataatgg aagacatatt tgtcgtggat 1020

cacgttttgt taccgcttac cagaatcatg gtgctcaatg tttgcaacgt ttcgtttgca 1080

tactagaaaa catgatttcc atctatagtt tctccattct ag 1122

<210> 4754
<211> 1113
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295106_G1, chr8:168014501..168015613, Cluster 29

<400> 4754
atactatgag ttttttttt tgttatttgg tctattcaga tattaaagat taagaaccaa 60

accctaatcc gtactcgaaa catagtaaat gtaggaatcg aacctaaaac taaaaactcc 120

aatataccgg caattcaata tatgtaggtt gagtttaagt tcgaatttgt ttttcaatta 180

aaaaaatgct cactcctaat ggtaggtagg agagtccata tcaccgagta cgacacgggt 240

ggtagacgtt aaagaaaagg tgccaaaaaa aggttattag acaatctaat tttacaataa 300

ccctatatat tttttcctgt caaaacgtac ctaaataata accaaatgta cacatgtgca 360

actaagtttt ttccctacaa agtaattgtt gttgtttcca cggtgtaaaa ggtgttacga 420

gatctagttt ttatctatca aatagactat gacttaagag gtatttgttt gttattataa 480

tctgtccaga ttatataaac caaaatattt tgaactaata gttattttaa aatatattgg 540

atcatatatt ccaaacaaac atcctatgag ttagttagaa agggaaaaca cgtagccaga 600

gaatcccgtc gacaaaagac atttgtttcc tgctgtgttc atgcttcatg acggcgcgcg 660

ccgcgcgcgc gcacacattc acaccctacc aatcttttat caacatggtc ccgatttttc 720

tctgcagcga cgccgccttt cggttccgag agcaaaactg gattcttcaa acgcaagcac 780

aatgctttcc caccgccgaa aagcaaagca tacttgttgc aggactggaa ccacagagat 840

ttgatgctcg ggggaaatta agaacgcggc gtatcgccgt agcgaccgat cgatcggaaa 900

actcagtgct actgtcggct gcttaacttt acacggccag catcttgggc tcttggcaac 960

atgctcgcac agcgctgctc aatgttgacc gctccatgcg ccaggcctcc agcgttcgcg 1020

tgcgctcgca gcttcagaag cagagctgcc cggtgcccgc tgcccgctgc cgtgccggtc 1080

caattcagag tcggagcttg agtacggcca tga 1113

<210> 4755
<211> 1103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295605_G1, chr8:170257902..170259004, Cluster 29

<400> 4755
cgtgttgaga ataaccgaat aatgtttatg cttcgcatag ttgttctcac ccccaagatt 60

tggagacgat agggagaagg gtaaaattgt tcttcaagtc ttcacacttc ttttgattgg 120

agattgatga gatataagaa caaggataga tgataaccaa atgataacaa gaaatatcaa 180

gtgtgatctt catgccttcg tcttcccttc atttgagatt aaggccggag gtgcaataac 240

ataaggatca tgtgttagca aaagacgatg aggaagatat atatagaatt tgggtcttca 300

attcttcaat gccttgtcgt ttgagcagat gttatgaggc cgacaacagg cattacccca 360

cttaattaac aagagcattg ccacgtccaa cgccttgttt ttagagcccc ctcaaaaaaa 420

ctcaaggacg aagaaggcac acgcacacaa cacaccaaac aaggcaagca tgcatcacaa 480

cctcgacgct aggcgtgctt ctgttcaagc ggtagtcatc ctgaaaggta gattatggat 540

gatgaaggac catctaacat ttgaacaagg taagattaca aaacctctaa ttttaaagga 600

aatgctgata gaatagagga tatataaggt caatgatata ataaatacta tctcaaagga 660

tcttatatca aggatgggag acaataggac aaggatagaa gatatacaaa tcaaaggtca 720

aggattacaa aggttgtgcg gctacactag ctaccgacta ccagcaacaa catacttgac 780

ggtgtggact ctcaactttc cactatggca cgatatgctc gacactatgg cacatcaaag 840

acgtgcattg tatacgactc cacactacag taagatataa gtagttgggc ctctgctagg 900

tggaacctgc tgtataaaca gaaaatataa ctcaaagagg ctctcagaaa ggtagtacct 960

ttagtatttg ttttaaattt tcccagtttt acctagaaaa ctatgtaaag ccgaaaactt 1020

tttcaacaag aaactgtttc atcaggattt gtttcgacgt gatttattta atagaagaag 1080

ctgaaaaaaa aagttgcctg aaa 1103

<210> 4756
<211> 1263
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_296698_G1, chr9:335896..337158, Cluster 29

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (831)..(930)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (891)..(891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (892)..(892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (893)..(893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (894)..(894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (911)..(911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (912)..(912)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (921)..(921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (922)..(922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (923)..(923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (924)..(924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (925)..(925)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (926)..(926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (928)..(928)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (929)..(929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (930)..(930)
<223> a, c, g, or t

<400> 4756
actaccatag tgacagtaag agtcgtggat gcatgtgtaa ttttaaaata atcaagggga 60

aaagaaaact taggcaaaag tcattactac acactacctc taggtcccga ataagagatg 120

ctccctatta gagccagcga gcatttttct agggaatgca agcgtgcggt gagagcttga 180

cacataacga gcattatgta gtgtatgagg tgaaactaca tttttcttta tggtttcttt 240

ttatatggta ttatcaatgt atttagacat atgttgttag tgaatgtatt cactaaaaca 300

tcgaaatcat aataatatgt tcaactagat atgggtttca tctatgtaaa taatacatgt 360

taaaggatat ttatagaagt tcttgctttc ggtattgctt atacaaagcc taaaataccc 420

ttgagttgtt agactacaat cctttgtcac tgcaagggtg atttagtcat ttcttcttct 480

ctctctctct cttagtcatt agttcttatc aacagtcatg gtttataggc gaaacttcat 540

atcttgtgag tttttcttga cttataaaag ggagtcttgg tcaagaaagc tttgtagatc 600

ttgatgtttc atttgccttt catagaaaag tgatcaagtg atgtcacacc tcacttcggt 660

atttgtagaa atgattcagt agacttcatc tttgaatgca aggcaaaaag tggttgaacg 720

gattgataca cattatagtt ttcatgaatt gaaacatgtg tctcctcttt gtcatggctt 780

tatgttagta caaagttgat ctgaaagcaa atgccgaata aagaaagagt nnnnnnnnnn 840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 900

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ggccggagga aatcagcttg gattcgttat 960

gttatataaa cttggttaac acagtctaat aactaaaaga aggaccggtc attgaatagg 1020

gccaaattct taaacaaata cataacaaaa aaatatcgat taacatactt tattagttga 1080

ataggtttgg ctctattcgg ttcattggtt tccaccccta tttatctcct ttttcctcta 1140

actttgagga acttcactag gaacattttg tttcacctcc tacaaattgg aaaactaata 1200

agtaaaactc catcaatagc atttttgtt tcgcaacgtt aaatcaaatg aaatcatgaa 1260

ata 1263

<210> 4757
<211> 1012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_297221_G1, chr9:2265090..2266101, Cluster 29

<400> 4757
taaaggtgaa cactctctca tagtactatc ccgttaggta aaggtgaacg agcaaccgat 60

cgagctataa aaaaggtcat actcgttttc aacttatatc ctttttggc taagataaag 120

tgtaatagtt attcttgtgt gtcgtaacac atggatatta tactagccac aagtaaaatg 180

gaaagacgag aagcaagcat agtcctaatc cgtttatata caatttttta ttaaactgtt 240

atccgtgtat atatatatta ttaaataatt atttttagtg tagacctata tacataaaag 300

ttttatttta taattattaa tatttaaaga ataaagaatg ttttcctgtc ttctatttat 360

gatttttcta tttttatcta cttgtaattc tattagaaat tcttccttgt aatcctatta 420

ggaccctata gtgtaaccag ctagaagact tgcctcctag actgtataaa atagaagtgg 480

gcttcccatc aagaacacaa cacatcaaaa tccaacgcaa gataataggt ctggccagat 540

atatgatatt acgctcttca acggtttgaa ctagtataaa ttgttgtcta tatgttcacc 600

atcaagtcta gcctacattg aagccaccca attcctactc tagataacca tgtagcatga 660

ttgccgatca tcatacatcg acagttggca caataggtag tgattttcgg cgaaaggacg 720

gacaaaagct tgatagacct caatatatac atcacgtttt tggggttcaa attttgtatt 780

tgcttgttgg atatatacaa cgagcttctt taccaaacta catggtcgct tcgtggaaac 840

cacaaagaac gaagtacccc tagcttttct caagacacga tgtacgagtt cgtcaagaac 900

ttcaatgaat tttcaatctc caacttcgaa ctagatagac aatcaactca atctacatga 960

gtcctagtca gatacaacca agcttttcga gtcggcttcc cagctgtcga ac 1012

<210> 4758
<211> 1068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_309261_G1, chr9:73020525..73021592, Cluster 29

<400> 4758
acacaactct tctatatatt gtcttttaac tacatattta taatcaagaa actcatagtt 60

atatcatagt cttctaacta tttcttgcac ttgaaaatac cgatttaaag gatcggagtt 120

ttggatgccc taatgctact attagaattg actgtgcgcg ctcgtcacca agctagctag 180

ctgaattgcg gcaagggtag ctttcgagga tcgagggagc acacgtacta cccatgtctc 240

gaggtgccct gtgccaagca actccaaatc tatctctcct agtctggccc aatggcgatt 300

ccacaccgga gcacagggaa tagttagcac agggagtagg ctctagcaag ttgccatgct 360

caatctttct tttcgaggcc tttaattagg ccaatagcca cgtcaccgtc atgcctccta 420

gattccgtcg cctaatttag tataggacac ggaggattgg cgttgggtgc tgtgctgcaa 480

aaatctccgc aatggatcac cgtctgcact gtgcgctggt agtagtcact ttcaactact 540

ttgcacctct tgcaagtccc tggattattg taacgggtca tgaccttatt atcttttatt 600

tttataaaat aaaatacata tattacatta gtaaatcgga ttctctagat attttaagag 660

cttatacaac accatattaa tgtgatctat tgagaggtgt ttaaagacaa atgaaaggaa 720

caaaagatat tcgtaaagag tctgtctcta tacgactatc tatagatatg atctcttaat 780

tatatttatg atcttaaagc ttatagttgt atcatacaat agcttaatta tctcttgtac 840

ttagaaaacc gacacagagg ctcagagtta tgcatgctct aagagagatc gcatgtaaaa 900

tgtacaaaat tattgcaacc cgattcaaca ctgcccattg gaaagattct aaaatgacgg 960

aaggggtgtt ttggcaattc ccaagcgaca acaaaactct tcgtagggtt tgaacctagg 1020

agagatctca gacaatggag cagacatgga tgagctcgtg agggagat 1068

<210> 4759
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_309318_G1, chr9:73255026..73256156, Cluster 29

<400> 4759
agggtaacca acccaagtta ctcaactagt tccgcaagat gcaagaattc tatgcaatgc 60

attaggactg ctctaatctc actcaaaaga tgaactaaaa gctactagtg agtcgagtgt 120

gttttcttgc ctcaagaggt tttcacaagt atatggagtt gggagatgct agccaaggct 180

gatcacaagt gtaaaatttg ttccatacat tttggaactt ctaaatgaac tagcttgaag 240

actcgcctcg atgttgtcat agggtgatga gatatagggt cgttgtcttg ctggaaccag 300

agtagaaatg tgtgaggaat tgctcctaca tctaccccat tgatgtgatg gatttgggct 360

agagggatgt gtactagctt aatgtgtgtt ctgatgacaa tagagaaaag agtcgaacct 420

ttatgtgttt aggtgatgct ggtagtccga attgatcctt gtattgactc atgtgtttga 480

tggtgctggt gtcgttgcta ctactaaatt tggaaaaacc aggcaccttg attttcgatg 540

aggtgacatt tggtcaaact cctccagata aggctttgca taggtgatca cctttcactt 600

gggcaggatc ccaaattgat ctttcaggta gtccaatagt tgctcctgca tgctggcagc 660

gttggcgccc caaaaaaaat gtgtcttggc tactgagagc cggcccactg tcgtacttgg 720

tgtgacactc aagtaattca tgatcatcaa tcttgttttt atcattatct agttgctgag 780

gttgttgctc gagctcatga agtagtctag tctgcacatg aatcacccta ctagttggtt 840

gtcgattgat gggatctcat gcggcatcct aggatgatac atgatgcact ctacctatgt 900

gcctttaggt gcgttgatat acattggctt catcagtcga gtatcgaaca acttcttgcc 960

ttgatacaac tcaaacgtgg tccctggtac agtgtagtat ctggccaaaa tggacttgtc 1020

actcgtgttg tgacccctc tatgatgttg aggaggattt ttgattgtcg caccatcact 1080

taatggatta tgtagttcat ctcctaccag agggcagcac tacactcctt c 1131

<210> 4760
<211> 1208
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313744_G1, chr9:99702731..99703938, Cluster 29

<400> 4760
taatgctaat tagttcatta aacaagataa atgatcgaat aaacagtata aaaaagtcga 60

ttgaacacaa atgtcgtact actgtataga tagcattgtt gtggtgttca aatgggctaa 120

ataactattt atgctaataa ggaaacaaat aagttgagac cctcatggtc cttaggccag 180

ggagcataat tctatcatat taccaagtta aagtatctta aaaaaagtat taatatctct 240

ttgctggaaa ggtgaagaac cactctagtg gactagtaac actacattgc aaaatttagc 300

tcccggtcgt gaattcagtc ttaaaaaatg tcgaatattt ccgatctctt gggcagtgca 360

cctcgctcca tagctaggac caggagtatt taataagtac aaggcgtagc atatcgtgag 420

ccaaaagttg tggttccttc tgacgatctg atcgcatcgg atcatccgaa ttccgaaggc 480

agtatcagac gtgacttcgt gttccgtttt tgcctcccgt cgttcgaatt ccgaaggcat 540

attctaaaaa cctatttaga atattaaagt ttaatacaca tataatcaaa ctttaattag 600

ttgtttgaaa cataatatag tacacatata tatattcatc ccttaaagat taagctaagc 660

taagagtttt taagattgat aaagtcatcg caggtcttgg tcactctttt tattcctaga 720

aggcatcaaa acaaggcaac acaattaata aagagagaga gaggccttct ccttttttcaa 780

tttatctcca gcttccgaga tgagctgatt aggagaaggc taatgagatt gaaaccttaa 840

tgaaattgag aacacaaatg cacaaaagag atcctcggag ttgtaccctc ttattattct 900

cttcttacaa atttacaaat gaatacattt ataccttcgt aagtacaaga agcaatctat 960

tggcgaggat taacttaact ttggaggcgg aacaatccgg tgctacatga ataagtcacc 1020

ctgtgcatag acgttgttca cctatatata tagggataac tcggtatacg gtgtagaatt 1080

acaattatag cctcaaatcc tatacacatt actacaaaaa ttgccaaaga cattaacgta 1140

atttcttctg aagcagcagt gggtctcagg gcctgcaata gttacaggaa gcccaagcca 1200

ccccatgc 1208

<210> 4761
<211> 1221
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_314275_G1, chr9:102369751..102370971, Cluster 29

<400> 4761
cacccacaac cctagggaga gaaacgacga tgacgactag agcgagtctc tagcatgtta 60

tgcctttcat atatgtagac ctcttctaat gggcttttac gctaaatgac tattaccatt 120

ctcataggtc atgattgcct tttatacata tattcaacac ataatcccca acaaggttct 180

acttgaactt gattattcct ccatgtatta actttgtata gaataaacaa agtctttctt 240

tgtaggatct ggccaccacc catactttga tattgggtct atagatcgag ccttcctcgt 300

aggatcaata gattggtcgt gaagttctac tagtagtttt gctatagctt tctcaactaa 360

ggaagaatga cctagagcag ttgaggctac ataggaatta ccagttgtgg caacaaagtt 420

ctctaggatt agaaattatc atttccaccc ttgcatgcta ttattctata tccacttcta 480

cacatgaaga ggtattcagt tatacacatg aataacatgc aagagagcat agcagcaaca 540

acaagaaaaa aggggtacat gtgtacatag gagtagcaag ccaacaacaa gcaccaaggg 600

gcagagggta gaacaatagc atcacgcaaa cataaagaca acaactaaga aacatcaata 660

agataagagc atacaacatg tagtagatct aggcttccgg caacatcaag catgacaatc 720

aaaggcaaag aaagaagatc gaggactgtg aaggtaagaa gtagtgaagt acactcaccg 780

atggaggatg agctcaaaac tagagaggca atgagggagc ataaggcttg gtgtaatggt 840

gtgcttgtgc ctctcccttg atcctatttt gtgtgttgtg tataacccta ttagactgag 900

aagccagaaa cccagcccaa tttttctctc ctaagcccac ttgagaatcc tagagtggtc 960

gctccaccac ctaatcaaac gattaatctc atttactcga tgaccaatca aataaatgac 1020

caggtttttg gtcgaggtgg tagggtcagt agtcttggat gggtaggaga accgattagc 1080

tcgagtaatc atgactaatc tgatgactta taaacagtga gcatgactag taaagataag 1140

taaaaaaagc taggtcttta gttttacaca acacaaggac taaaaggttc tagagaaact 1200

tggctcattg tctcgacaat g 1221

<210> 4762
<211> 1265
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_314282_G1, chr9:102382498..102383762, Cluster 29

<400> 4762
cctttgtgat ttatgatttc ttattactct tgatgatttc tatcacatag tcagtttgtt 60

gcttgtggag gactgttgag aagatcttgg tgattgttgt agtctttgat tattccatgc 120

tgaggaaact ccttcactct ctcttgctta tccccgttgg agaatcacaa agagtaagtc 180

tggtaaaata aacagtggtt tgaagaggtc cttggtaatc taccatattc gaagggaagt 240

gtggtgatat aaggatccac cctaatacaa acgtaggttg catataagca accaaatctt 300

ggaaaaagtc tttgtgtcac tttcccttag tgattcgctc tctcaacatt tgcattataa 360

tccataagtt gtgcttgtgt tgttgcttgg tagcctaacc tagctctagg aagtagtgta 420

gttgttactt tcattagtag cttacttgtt gctagatgat ggttttagtt gcttgattgg 480

ttgtgtgttt agttattgtt gttgcaacta tacttgtgta agtttgtatt gtatagccta 540

tacaactagt ggatattagt atcatctcct ttaccaacat ctttgcctag tgtttgtgaa 600

cttgtagaaa tttaattagg ctattcaccc tgctctagtc gtccatagat cctttcaatc 660

actgccgcat caaatggttt actcacaata atgaccactt catcatcatc ggatcaaatg 720

atacactggt ggtgaagtct cttcatctct aaatcatgtg tcggaccaat aatgatatct 780

actttatcac cactagatca tatgttggga caacgataac gaagtttgtt gctgccaatt 840

tttgaatcag tggtgatgac cttagttatc actttatact ttcacaagcg cgtacatgtt 900

ttgcatacat ttaagccaaa aacattatgg cattctatat tgaaacttta attataagaa 960

ctatttattt atgagaaatc tattatacat gtatttttct gataaaaatt aacatcttga 1020

tcagtaggaa aggttagggc agcaacaaag ctaaggtcat taatgggttt gattgcaata 1080

atgggacgtg atgacatagg acgatcaatt agataaggtt gtttggttta gggccagggg 1140

ttgggacaga accatccaag tgtcgtcccc agttgttcgt tggaattgga tggaagagag 1200

aggacacctg gaggttgtcc ccaactgttc cagttgtctt gcaaccaaac acaacccaaa 1260

ggcac 1265

<210> 4763
<211> 1015
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31763_G1, chr1:195177058..195178072, Cluster 29

<220>
<221> modified_base
<222> (304)..(304)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (304)..(403)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (315)..(315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (318)..(318)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (319)..(319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (321)..(321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (322)..(322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (342)..(342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (343)..(343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (344)..(344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (345)..(345)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (349)..(349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (350)..(350)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (351)..(351)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (352)..(352)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<400> 4763
tactattctt cttgggggat gagcatagat ggacgaacta gtacatatat agtagcattg 60

gaaaaaaaaa tcaacttcta gggtttcaaa agtattattc tagaaggaaa tagtgaccaa 120

agatacaatt cgaagaccta ataaaagact aaattaataa gcactgtagg agtattgttt 180

ttatggaatg cgtatgcatt tttctccaac tccaacccca acccctatc ccaagtcccc 240

caactgtatt gatgacttgc gagtcgtgag tcttgcgttg caaatgatcg aaggaagtgg 300

ccgnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnagaatcg tgagttttgc 420

gtggcaaatt atcgagggag tggcgtccca atgatccggt atacaaaaaa gtcgggccgg 480

gccaaaagga gaccagcgaa cagaccaatg attgaccctc cttttcttcc aatcaggagc 540

acaataaaaa cctctttgcg caaaataaat aaagcgaaaa ttaaaaggtt agagtcgatg 600

ggtccaccaa gcactagcta gctagtgtgc cactggttat attagtggct actgctatac 660

aagctgtttg tttggcgtcg ctgtccggcc attgctgcct ggcgtacaca tttttcgcat 720

cacgctagcc atagccagag gcgagagcct gagtgcaaga gaaaaaaaac ggcgttatgg 780

attttttttt tttgtttttg tggttgtagg gtacgggtgg cggtgaggtg gatctggtgt 840

aagcatgcca tcactgcatg catcccttac tctttttctt attttctacc tctcgcttaa 900

tttatagctt tgtgatgttc tttatataca gttttcgtcc aatacatgtc aaggcaagaa 960

gaagaataag aagaggtggg ggagggaggt ttgtagctag gctagcgttg ctggt 1015

<210> 4764
<211> 1198
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319482_G1, chr9:130826353..130827550, Cluster 29

<400> 4764
taatcgttag aaactatctt cccagcctat gattgctaaa gcagtttcta tatagagaac 60

aatttaaata cacacacaaa aaaagagaga gatgagctgg ggtagcgaca aagtggcctg 120

cgcgtataca tctgtcctct cactcgcact acagtacatc acatgcaaac acattcatat 180

agttgcatgc atgctttata tcaataatac caattgataa gtaataggtg tcatatttgg 240

taacaaaata atctaggatt ataatcatta gaatatatac atattaaact agatatgtat 300

ccatcatcct ttgtttggag ctttttttcta gattaggctg gaagttcaat aataggtttg 360

gctgcattat ttgatttctc ttttcctcca acatgtggag gtttttgatg gttttttttgt 420

actcctacgc tgtgtgtgga atcgcagaga cgggaacttt tgaaggttct attatctaaa 480

aatgtatcca tcatccactc tctctctctc tcggtaatga taaacgataa tgcgtagtaa 540

ttaaaaataa attcagtaga atagccatgt cagtacgtcc atctctcgct gggtctgtac 600

tttagacgca cgtacagtac ctccatatat gccacgtaca ggagaactcc aaaagtcgtc 660

atctacaatg aaaaagagtt aaataatgag tttttagtta aacaaatgaa cacttaatta 720

tggctacata tatataatat aaatttgtac agaccactat gaaatcattc atacaagagt 780

ttgtctaaca aattatttaa gtacctaatt ggaattccca aacttatgcc aaatatgttt 840

aatcaagtct aactgaagtt gcttatgagt agaatgattc tgaagtctag cctttcttta 900

tactgtagta tttctgacat catatctttg ggtaagctcc atgagtgatt attgtagcta 960

cctgtactac tgttgatgtg attgcttcct cgttcaaatc cgtaggaatc tattccatac 1020

ccttttcata ttcctcaatt accatgccgg ccggacgacg taaaatgcaa aagcgagatt 1080

gcagagtatt acaaattaac gcacattcaa tgccctagct ttcttattat tgtctgggga 1140

cacaccatgc atgcacgaac gcggatgaat cattgacggc tgctgcagca tgttgagg 1198

<210> 4765
<211> 1058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319986_G1, chr9:133500567..133501624, Cluster 29

<400> 4765
cggtcccatg atgtagccca ggaaactttt atgatcctta actaatatat taggtgggga 60

ctctcgtccc catggtggag gaagaggtgg aagctctggc acacgtccgc gtcatcgtcc 120

tccttgcatt cctgaagagg ctcgaggtga gagattcaca tttgacggat ctcatgtcct 180

tttttagacc ttctgttttc gtgtacgagc tcacattaca ttacccgttg taaaccttga 240

cgtacccatg aaactctttc tgatccttaa ttaatatatc agtggggact cttcgtcccc 300

tcatacgttt gtctgctttc aaaaaaaaac atttcactac tatgttttgg tatcgaagat 360

tttgttaggg ttgcgactgg tgcggaattg tgttcttgac ctgcacaaca tcggggtcta 420

tggtttaatg cgagtgaaca tgtcactatc aaaaggaatc ctcttggaga tagagtggct 480

gctgagaata tttctgatga acttcatcaa tctaaattgc atcatctagc tctttggttg 540

tagaacattg cattaggtta ggttaggcta ggctttggac tatcgactac ctttgaacat 600

cgctttttac cgtcactctg ttggggcgga cttttgcatc cttctaacgg ctctagtcct 660

attatgaagg cttgtgttac ctctttagtg gtcaggatgc ttctactaat atttttcata 720

tacatatatg gcttcggcta ggtaatattt gatctcggcg atgtaccatg ttgtaatgaa 780

attggaaatt tctattaatt cctcctaata ttattggtta aaagtcaaaa ataatttcat 840

atgaatggat aaaacaaata ttcgaaatga caagatgatt aggtagaaag aacctatttt 900

tactaaaaaa atacagacgt tcagcaagat atggtggcat cgacataaag tgacgaagga 960

cccgctactg tccggccata atatttttcc atctactgca ggatttcttc ctcttaactt 1020

atttgaatta gatggcggca atgcgtgcta tttgatat 1058

<210> 4766
<211> 1062
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319990_G1, chr9:133502710..133503771, Cluster 29

<400> 4766
ttttgcttga tgtgcttata tgttgcgtgc acaaaaactg taggttcttt gttgttggaa 60

ttctggtggt gatgcagaca ggctggtaaa ccaatcaggg caaaaataat cagggccgtt 120

agggtttgtt tactttgcaa aataatcagg gcaacctagg aggcgtctcc ttcagagccg 180

ttagagggtg tgttcgttag ttcgagaagg tagcagcctt ggcagagatt ctgcgcttct 240

ccaccaagaa agctgaacat gatgctgctc aactcatctt gtgatgcatg cttatcttat 300

tgaatttgtg ttaaataagc ttgtgagtgg atgatttctt tggttagcat tagtatgttt 360

ttggtcttgc tcactccccg ttgaatgtag cttttgattg tttgggaacg ctatctgaaa 420

ctgtgaaccc atttctgaat ttagcaagac attacctttc tcagatcagt acatagatta 480

cagttccatc aaatggtgac atatagctgc atatttggta cataggttac agttccatca 540

aatggtcaag tcagtaagta gagctctttt acttgctctt gtagtgttgt ctgtctattt 600

ggagtagact gaacctgaag tcatagcctt ttttgctcat gctgttcaga atgttcagct 660

tggtttgcta cttttggtca gtgccatata aatttttgac tatatatttt ttgttttctt 720

ttgacaaaaa agagctgtca gtagaacatc accagtagtt tctgcatgtc cctgtgcaca 780

tgtttccacc cgtttgaacc aaagttggtt gtggccttgg tcaggatata gtatgacata 840

aatctgtaat gctatcgaac ctagtatgag gcatcacatg gtttgtacaa actacattaa 900

tcggattaca tgtcttgatc ttggacacat actttgcatg tgcccttaat gagcttgata 960

gtttcgatgt actcctagcg cgctgcagat atcaggatgt atagccgcca tatgggcctt 1020

cactgatgct ggtttcgttg gcggtagagt ggagtagagt ga 1062

<210> 4767

<211> 1146
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320608_G1, chr9:136142400..136143545, Cluster 29

<400> 4767
taagacattt tatatcttat tatatattat ttttattatg tgcctagaca tattgtatat 60

atcaaagtgc aaaatgctag tatttcatag aactatgacc catttaaaat atttaataat 120

tacaaacgct tgtattaaaa taaactatgt atgatccttt agccctgtat aagtggttga 180

tgaaacaact gtatgattta tatggttggt catgtctatc taccttgatt ggctgagaaa 240

atggtcaagg cgtgccacac atgcagcgtt gcgcagcaaa ggcgaggcat gacatcacat 300

gttgccactc acgttagata gtcatttaga agttgagcgg agacacacaa actactgttg 360

gagttagagc acatgagttt ttaaaggtag tcaatgtata tgtaaataaa cattctagac 420

acacatacag gtacattcaa ttttgtcctt aatatatatc gggcccgagc cataaaaatt 480

taacgacata gcctatagta ccgagcccga gataaaaact ggttattgtt ccatcatatc 540

tgaggtgtat aagcgcaatg ttttcggaaa aaaggggggaa aatggaaaca atcagaatag 600

acggcatgga gaaacgtaag tattgggccc gtggcggtgg ttgcaaaact tggcagacta 660

gccaccgtaa aattgatggc tgatgggggt gggggaataa ttgttatttt gccctaacct 720

aaccattatg agaaaacaaa aggatgacgg agatgcaaac aaacagaatc tgcagattcc 780

atcatccggg gcgacctccc gatccaggga tcgtgttggc cagctactac ccgccaaagt 840

gtctggcaag ttgcaagggt catcagcagg cagggcagcc accgtcagca tcacgcctta 900

atcgctgatt gaaggctttc ttccccgtca ccagcgaggg ccatgatatg ccgtctccga 960

aaggacgcgc gctttccgac gacaatccaa agggctagct ccaatttgag gtgattgatg 1020

tgtattgaga ctcattcaaa acgtatatgg gacttcacat acaacaaaaa atagtttcct 1080

ctgtcgattg tccaagtcgc acagtttttt tttccttagg agtttcgtga ttctatctat 1140

cactgt 1146

<210> 4768
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321028_G1, chr9:138251380..138252510, Cluster 29

<400> 4768
tatgagagta ataaaaatga cgcaattctc cactgagact aggtggagga ttcaatcgcg 60

gcacccattt ttttcttgaa gaaaaaaaga atctgtgtag agtaataatt cgtaccctgt 120

gaatctcttg taaaaagcta gaattgaagt gcttctaaac cagcccggtc cgtatacaaa 180

gcaggcccgt agtaagacct gtcctactcc cttcgacgtt gctttgctcc taaccacatt 240

attccatatg ggcctcctgt cctcaacaca ctggcccatg aactcttttc agatgatagc 300

gttgtgccgg ttcttcattt ctgagtctga ctttcgcatc aatatccagg ctgtgggact 360

gtggcatgcg acgtcttctt gctaagagca cattagcgag gggtatttat ttttttgcca 420

tccttactaa taagtggaac caactgagtc actgacacct gtctttaatt tgtcattctc 480

tccgtaagga tggcaaaata tcagattgga ccattagctt catagccttc tgttgagcct 540

tcaaactgcc ttcagtttca gtagattgga ttccatccag ccttatcagt tatttcgcaa 600

ggattggatt tgtatagcac aaagaaacgt cttgtatcga gaaacatctt gatggatgta 660

ggctggaaaa ggcagcagtc tttttggttg tacacttcta cactacacac catggagcca 720

cccagttgtg cactcttcca gtggttcatt catcttcgaa ataggagaaa gctaccaggt 780

tcggacatct ccaccagtag aaccacgttc aggggtgcgc aagccttgtg ccgtcacaat 840

cgggtaatgt tcagtatcag aaattcagaa taatagcgga aaatgtgacc atggagtgga 900

agcagttcta caggtggtac tgccgcattt gatgtgatct tggccacttg gtgctattta 960

gatcagtgat ggatgtgtgg acggtaatgt aatcagctac tattgttagc agttacatgg 1020

aaactgacaa cgctatttgt tttgttttgc tgggaaactg ggagtgcccg tttcgccctt 1080

ttctcttttc tgttttgctt aggattaaaa aaccggttat ttaaactggc t 1131

<210> 4769
<211> 1286
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321139_G1, chr9:138907975..138909260, Cluster 29

<400> 4769
aggtacacaa aacctattat aatccaacgc aagacatcac gcttaactgg acgtaagata 60

ttatgctatc taatggtcta aaccaatata aattgttgtc tttacagtca ctgtcgagga 120

tgccacacac cgaatcccac ctattcctac tcgatgtaga tccataacaa aattgacaat 180

catcagacat ccatataatg tctctgcata tcaattatgt aatgggtaaa gaatatagat 240

ggctaatatt tgttataaga tttagtcttt tataatatag atacagatag aaatacttct 300

aaactagtat aaattgttat ctttatattc accatcgggg tggccacata ccgaatccca 360

cctatttcta ctcgatgtaa atccataaca taattatcaa tcatctgtgc aaatcaatcg 420

tgtaatggta ataaagtggg taaggaatct agatgactaa tatttgttct aagatttgct 480

cttttataat atagatatag atggaaatag agatagaata aattacgata ggagactcta 540

cgcaaaaacg acacgtacta tcgtgagtat gggctatgta tgtataaggc tctctcaacc 600

tttcggcctg ctacaagcac agttgatcca ttccgctgag aaatattacc cactagtcat 660

taaaatgtat tctctttgtt ctaatttata ctctctctgt accaaaatat aactatttct 720

attggactgt agggaaaatg tgttccttgc attaaaagaa cttgtttttt tgcataattt 780

ccgttaaatt cttgcttcta tagcatagcc ttaattttta tataggacta acacaaaata 840

taagtttaaa acaaagccat tgactccacc atattagtgc acttagattc cgtttggatc 900

agccgaattt ttgtttttag ctttttgtaa gatttagtat gatttttat ggattagata 960

gaactttcgc agcggctata gtagttattt attttagttt atctaaacag gatcttatgg 1020

acacataggc aagatgtaag tgtaaccata tctcatcgtt aaagatggca atttttctgg 1080

ttggcaggtc ctcgcgtgga cccgacccaa atagagtggg gacgaaaatt ccctcgcgat 1140

gatggtaggg cgaggataaa atttccccgg tggatatccg atggagacac taggagttag 1200

gctctttcct tatgtactct acgaaggttg aatccaataa ttcgtctcac tacatcttat 1260

ataaagatgt aaaatcatca ctcact 1286

<210> 4770
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_321754_G1, chr9:142181371..142182440, Cluster 29

<400> 4770
ggacaaacat tgtagtgcag atgagtagat tatagtcatt ttgctgagta atttgggtga 60

gttattgcaa aagaaaggat atctttctcc tgtatttagt tagaccagtc tacatgttcc 120

tgtaacagta gcacatcatt tgtagttctt gttttgctag tataatccaa ccaactttta 180

tttaagtcct ctatgactaa aaaacttctt gtatctttgt tatgtactat gaatttatat 240

ttatacatct cttacattgt aattttatca atattttctt gtttattggg ttgtggtgtt 300

tcaattatta atgtttctat atgtttttt tactattaag attaataagg gcatgtctaa 360

tgcagtggcg agagctctca ccgagtcagg tcatgggttt gaagcggtct atcgttattt 420

gtggaggaaa gcttgtcttg gtgtatcctc tctttagacc tccctcaagt gagtcctgcg 480

gcattgagta tgcccttatt attattaagg ttgagtacat atctctaaca acttttaatt 540

attagactgt aagcttaaag aagtgtctat tggaccctaa atgtgtggtt tctcatcact 600

cactcaccat ataaccttaa tgtttgatag ctatttacaa cttagtgaca ccttctatca 660

tcctaacatg cttgatttgt gctccctgga ctaagcagat caacttttat gtcactctat 720

gccttcttta tccagtttgt cttattgttg agcaacggat gcatgtcaca aactgtatat 780

cattccccac aaagtaagaa tatgaccaac atttcacatg aacaatggaa gcatccacta 840

tgttcacttg tcacttatgg cattatcttg agtaaaatat atttactgtc cttaaacttg 900

tcgtcatgtg acaagttttg tgcgtgtaga agaaaactga acaacactaa tctaatatat 960

atcccgaacg aattaataga aacaacaccg ggtgagtagt atacattttt tgtgtgaatc 1020

aacaaggtgt gttatctgtg tacattatca agtaagcaaa tttaaagtgt 1070

<210> 4771
<211> 1152
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322570_G1, chr9:146411900..146413051, Cluster 29

<400> 4771
aacagagcac aattcatttt gttactatta aagctcattg aaaagggcaa ttataaatgt 60

gatacttata aaaataaagg gaaactaaag cgcatagaac acatgaactt gtttaagata 120

acaggttaaa ataagtgaca attacctcgt cgacaaatcc tgtaaggatc ggaggttatg 180

ctccacgtat ttcaacgaaa aagcagaaat aaacagaacc tgaagcatat gcaacttata 240

agttcagtcc gtagaatgaa attgtaatca tcgcacagct tgtagtagaa cactagtgtg 300

aatgaagaac atgttcaaaa ggcagcgcga ataaacaaca ggctgaagta aatgcgaatt 360

acctcgtcga atgaaaaaca gtaagtgcga ttacctcgcc agtgaaagct ctaaggatca 420

gagacattat tcctcgtgtc tagatgaaat tatgtcacaa agaagatgca gccacaaaac 480

attaaaatca taatattaac tcttctacac aacaatagta atacaataaa tttctagagc 540

gtgtttgaca tccactattt tgcagaagtc agagtgaaga caactgaaag tcagacgctt 600

tccttagttt gagcagttct ttccttagtt tagtgctgcc taatatgttt ggatggggag 660

gagtatttct tggaaacttt actggctttg gtgaaatctg aagaaaaggg aatcatcccc 720

gatatcatcc accaggtttt ggtgacgtag ccagttaaac cttcacgaat gactcacccc 780

tagaatcatg tagctcgtgt atcgtagcct taggccatgt tgtttccctc ctagattaga 840

ttatataagt tggattctag ttagaaagta gaaaggtaaa ataccacttt aagactacaa 900

ataagttatg caataacatc ttattttagc ttatttgtga tttcagagtg atattttacc 960

attaaccttc ccccataatt caacttatgt aatctaggat gaaacaaaca cactcttatg 1020

ctatctccca acaacttact catccttata tttaaacttt actctgagaa tagtgtatga 1080

gtgaaataca ggtgaactgc tggaaacagt cttatatggt ggcgtgggta tgtatgttta 1140

tgcgaaatgg tc 1152

<210> 4772
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_325528_G1, chr10:5621757..5622780, Cluster 29

<400> 4772
agaatggaat aagtgcatat ttatttcttg tcaagcttgt atatacctat ccaaaattaa 60

caatttgtca ttgtttgcag tagaaatatt ggaagtttta tttcagtgat tggctctata 120

gacctagtct cattggtcag tgtccaagca aaagaccaaa aaacaaggac atatcgtagc 180

cctgccaata ttgagcaaat gtagcgttga agcccactac acctagtttt cttggagctt 240

ggaataattc attggtgcag ttatatggtt gattatacct tccaacggac ttgaaattca 300

acttgtagca tatatcgact ttttccaaca gaccgctata aaatgtgact aggagatttt 360

aattctagac gtgaattcga tgatacaatt agatagaagc aagcaatgca atggaagtta 420

aagtgtagat cggcttgtgg ctagttttgt taagctccac aaagcgaagt tacgttgtac 480

agaaatagag tttactttac cctatatatc acgatacaat gagtggtatg gtagggagat 540

gcaaagaaag tgggttgccc agtagaaata ggataaggga ggcagaaaaa gttaaaacac 600

aactcatgaa ggatctcatt attggactat ctaatgagtg tttaatttat tgtatttctc 660

cttataggta gtaaacaaca caatgagcat ggcactatgg tggcccattc catgtttggt 720

aaaaggaagc ccaagaagca ggaaaatgaa gatcccatgc atttggagaa aaataaggca 780

gggataactt gaggcaccca gggcagaggc tggtcgggat aggggttggc cggggtgact 840

gagggaggcg agggatgcgt agtcagcaat tgggagcagc gacaagcggg gattggagca 900

acagataagc gggcacgtgg gaacgatgtc cacagacaat ggtggaatcc tatatttttt 960

gtcgatcgtg ctagtggtcg acaaaaatta actaagatcg gttgctaaca tggttgatgg 1020

aagt 1024

<210> 4773
<211> 1164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33369_G1, chr1:204085193..204086356, Cluster 29

<400> 4773
acacatgtgt ttggctattc atatgtttga tttagtgtac gaacatgtca cgtttgtgtg 60

tttcttttgg gatcattgga ttgctatatt aggtcacaat acaaaagggt gtcggggctt 120

cctagcccta attcccggat tgttattttg tttatcctgt cgctgccatt tctccctggt 180

tctctatttg ctggtgtgga agatcttcta catgtcttgg gaaaccacgt gagtttatcg 240

gagctaatcc cacctctgct ctgctcgtgc ccccctgtat gattgtgcct agtgatccat 300

atcattctat ggccatataa tagtgggtag ggatcactat cttgtcttgt gtcgcttgtg 360

tgtggatgtg tgactgcaca cctcacctga tatgttgttg cgagctggca gggtcaccac 420

tggcttggtg ccctagtgcg gcagagggct agggcatggg gattctgatc gtatccatgg 480

gagatagcag tttccgattt caattggtac acaattacgc gaacatcttt gtgttttgtt 540

cgtttgccat aacctttatc ttactagtag caataatctc gctataacga aagctgtaga 600

gctcttcaat atctttcgaa ttaatatcta cataactttt tcgttctgta aatcttgagt 660

tatgaaattt cgaattcaac agcagtttct gtcacagttc ggtttaacag aaatttcaat 720

tgagcagctg caatgtggag ctcttttgag tgttttagaa tccgattcag gggaacccat 780

aactgaaaag gatgtagagg atttcatgag ctttacaatg agtatctatt tacagatttt 840

cattgaaatt tgtggaagtt atgggattct gaatttgggt gtctcatcct gtcaaaaaat 900

tagtttcagc ctgtattgca gcatcacttc gagttttgcg acacaattta aaatttctta 960

gaggcagact cgatcctgac tcttatggag tgttgtgtag tgggattttt ggcctttcca 1020

aggatggctt aagccccatg tttggataag tggtctggaa gactttctat tacaacatag 1080

ttgttagtaa tagcaggatg gacctatcat ctttttctga agaataagca agatagatgt 1140

gtgaattttg gttctggttt gaat 1164

<210> 4774
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33376_G1, chr1:204099143..204100175, Cluster 29

<400> 4774
tgtagtacta aactagaaat gcacatatga atgtgtggtc tggcacagtg actagtcaat 60

acattttgaa aggctaacaa cggagaccaa aaggagttga atgggtgtgg attctaattt 120

ttccaaatct gatggctgtc ccaaatcgaa cccaaagctc aaaaaaaaaa tccaaatcta 180

tcgacatgat aacattcaag ccaactacta acttgagacc ctaataaaac atctttaaaa 240

atgccccaaa catgaaaagt caaacggatg agaaagatat caaaacgggt gaaaacgcta 300

tccgacagga aactatgtag cagaactagc ttgaccagat tactactcat ccacgccaac 360

tttatcaatt tactgttcac gccaaatggt ctacaatccc atcagcccaa aaactccctt 420

cctaaaggtg attttgatgc aatcaaactc taattgatcc caaattttat ggagatgttt 480

cttggaatat tagaaggtaa ccccaaggat caacagaaag caacttggat ctaaaaatcc 540

caagaaaaat agggttttct cccaatttcc tccacaagtt ggatctacat gttcacgagg 600

tttctgccca aactgttttt gtggggatgc tcctcaaaag ttttagcaca tatacatgca 660

ctaaaaccat tcttagaaac acagaataac atgatccaac aaaacactag agacgatggc 720

gatagggaga agaaaaaaca aatccaactc aaagtaagaa tatagactca gatctcctat 780

aatgattgtt ttatttctgt gatcaaacaa gtctgcttct tatagagcaa agattaaata 840

gaatagagca ttgcatatat caacaacaaa aagagagaaa cgcttaagct actgcaacta 900

gagtcttcta ctaaaaatga aatctaaaga catagctagt tgaggcagcc tcctatctta 960

gttatagagt tattacatat ttctaacata cccttatata ttctggctga accactttac 1020

ctggagaaaa ata 1033

<210> 4775
<211> 1275
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33378_G1, chr1:204101099..204102373, Cluster 29

<400> 4775
ctgtggttta tgatgaaaga gacctcgagc aattggtata gggggtacag ctcctacgta 60

catttcgcac agctttggtc tttgtactgc accgtatgca tgaagctata tatagcgggc 120

tcacggccaa tggaggaact gaactgattc tcatctggaa aaaaaaaagc ttgctcagat 180

gacgatgaac tggtggtgga tcttcttgtg gtgtaccttg tgatctagac atgcatcatg 240

tgttgttgtg tagctatgga tagaatgtct ctcctctggt ttccttcggt gcctagctgg 300

actgtgtctg gtacttcaca gtaccgccgc gtcagtattc gtgccatcat gcatgtgcca 360

ttatttgctc tgcacgcacg catcatccat aatctataca catagatata tatagatgta 420

gagtatatat atactgcaat aatatatatg aattccaact agctagctac caataagtgg 480

caagtggggc atctgaatca gctgtgctta atctaaattt taggtcttta aataagtggt 540

ctaaaattag ctttaacttc aacctatata tatcatattt aaagtttttt ggagtttaaa 600

actgcgctaa agtgctctgg ttttttaga gctctaaaat ttaaaggagg ggatgcgaag 660

gatctgaatt gccatcttac caacttttgc aatcattatt ccgtacgtgc gtggttgtat 720

gaattctgtc cgtatgagat caatcgatat aatactccta caacgtttgg gtatatattt 780

cttttgttat cttattggct gaaagctcca ttggctaggt tattaacgag ctttgtgctg 840

ctgctgagct tattatagaa atagtagtat gtttttcctc cgagagccat gcatttatct 900

gacggaaaag gcatccgcag gtcgtcagtt tttcctacaa gctaagtgcg gcacgtgcat 960

cccgttatcg gcacacaatc atataacgaa tgatggacaa aagatcgaac ctatatatat 1020

atcaatgaac gatatcctga tttcgttcca tagaagagag acattgtaac attgtttttt 1080

atctaccaca atggttttct cgtatagatt gtttctacat aaacttctcc atacgcttgt 1140

gttcacattt ttgttccctt cgaaatttct cttcttcctt ttgcctttcg tggtgttcta 1200

aattctgaaa acaaccacag agagaatgaa agcataacgt ctgctaatgc agttactgtg 1260

cacgtccagt taaac 1275

<210> 4776
<211> 1068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_336861_G1, chr10:76518104..76519171, Cluster 29

<400> 4776
aatgggtagc tactaaaatt gaggagaata agatgatagt agagactaac gatgatagtt 60

ccacttggct tagcgtactt cctagcatgt gactacctct ctagacaact cttagatttt 120

gttgtttgac tccaaagggg aagaagagaa tatgcgagat aggggagagc tagtgggagg 180

aatttggatc ttttttgtgc tctctcatgc atcacattaa cattatgcat tgtatttatg 240

tttatttact tgctagcttg taccttatga tactttgtga catttatgtg ctctctttta 300

ccatgtacca tgtcatgtat gttgctcgtt tttcgtgctt ccattacatt ctatgtcaaa 360

cgagtacttt gttttgtagc atgcttattt catgtacttt gtgtaggtga tgtgggttta 420

gctcgcatga cctcacccta acccctgtaa gacagaggtg gaagttttcc aatatactaa 480

aagctaactt gtgtattttg gtcaacaaaa atccaatcca acatctaggt acccgtattt 540

ttaatggaag aaaacatttt cgctcacctc taaaaacaca agaattcgtg atttctgact 600

aaaatttcga accatgcctt ttcctatagg aactagagtc ctctattttt tacctgcaag 660

aacccttcaa tccaaacgag ccctagaaat ggtcataaaa ggtgtaacat ctcacaatag 720

aactataatc attcatgata catatggaaa gtgatagcat aacctctcat gtggatatgg 780

taagaaatgg accagatgat acaagcatat ttactggtgc aaaagatgat actcaagtga 840

tattttcctg atgccccctg ggcatacttt caaatgataa tgatcaattt aggacataca 900

tattcttcct cggaaaagca tagtgataga taataggggt ctaagagggc aagcctcatg 960

gttaacatct ttgcaggaaa taacatcttt ggttggtatt ttaagaaagc tatctagtct 1020

tcttaaccat ataaaggtga ttctacttca tcaattgtcg tgggacaa 1068

<210> 4777
<211> 1161
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337393_G1, chr10:79147059..79148219, Cluster 29

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (488)..(587)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (489)..(489)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (490)..(490)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (491)..(491)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (492)..(492)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (493)..(493)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (494)..(494)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (495)..(495)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (496)..(496)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (497)..(497)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (498)..(498)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (499)..(499)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (500)..(500)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (501)..(501)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (502)..(502)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (503)..(503)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (504)..(504)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (505)..(505)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (506)..(506)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (507)..(507)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (508)..(508)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (509)..(509)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (510)..(510)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (511)..(511)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (512)..(512)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (513)..(513)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (514)..(514)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (515)..(515)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (516)..(516)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (517)..(517)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (518)..(518)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (519)..(519)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (520)..(520)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (521)..(521)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (522)..(522)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (523)..(523)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (524)..(524)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (525)..(525)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (526)..(526)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (527)..(527)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (528)..(528)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (529)..(529)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (530)..(530)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (531)..(531)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (532)..(532)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (533)..(533)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (534)..(534)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (535)..(535)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (536)..(536)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (537)..(537)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (538)..(538)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (539)..(539)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (540)..(540)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (541)..(541)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (542)..(542)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (543)..(543)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (544)..(544)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (545)..(545)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (546)..(546)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (547)..(547)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (548)..(548)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (549)..(549)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (550)..(550)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (551)..(551)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (552)..(552)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (553)..(553)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (554)..(554)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (555)..(555)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (556)..(556)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (557)..(557)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (558)..(558)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (559)..(559)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (560)..(560)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (561)..(561)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (562)..(562)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (563)..(563)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (564)..(564)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (565)..(565)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (566)..(566)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (567)..(567)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (568)..(568)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (569)..(569)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (570)..(570)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (571)..(571)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (572)..(572)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (573)..(573)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (574)..(574)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (575)..(575)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (576)..(576)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (577)..(577)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (578)..(578)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (579)..(579)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (580)..(580)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (581)..(581)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (582)..(582)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (583)..(583)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (584)..(584)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (585)..(585)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (586)..(586)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (587)..(587)
<223> a, c, g, or t

<400> 4777
cacgattttt tagaaatacc tctttagata tctcagtagc ttctgtatta aacaccattg 60

cacatggtct tagtggagta tactttagga gtaaaataca aggtcaaagg aaaactgcat 120

ccctttgtct tgcagacgtg ataagagtga tgacgtcagc ttcgcatttt tgcatgtgtg 180

tggtgggctt taattttaac aagaaaaatg gcaaaagacg ctgctttttt ttgtccattt 240

gagtgattat attccttggg ttccctttcc tttcccctgt ttctcgttta agtgtctttc 300

acaattttca tatagattat ttttgttttc cccatatatg ccttttcacg ctgcttaaag 360

gtccgtttgg atccgaggaa ctagatttta gtcctttcat ttgaatacta attaggggt 420

ggaggttatt gtactaatgt tttgcccccg cctgttctcc ggggggggcg agggcttttt 480

ttcagaannn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnagg ggaaggactt 600

ttgaaatgag gggtagagtc tttaaggggg gacgaatatt ggatttgtgt atataaagtt 660

ataggagtag ttataaaaaa acaggaaaac agggagagat aggaggacga ggggggtca 720

accccgaaac cggccccccc cttagaaagt ataaagtata gtttaattat ttagatttat 780

agctatattt tttataccac tatataatcc actactttaa ataaatctag agtcatccca 840

acaaataacc tgcggacgta gactaccctc tatgcaccaa gaaaattaac acattaaaaa 900

acgaataata tcttacttaa atttcccttt tatcttatcc actcacatcc aataaatgat 960

attcttagaa tcatctctcg tatcctcatc cccacgctct cacctcacat gccactgctc 1020

caccttcaat cttcccttct ttcatttttt ttattttctc tctctttctt tatttttctt 1080

atttccttca ttttctttat tttctttctt ccctgccttc aatcatgtac aatgcgtcaa 1140

tcacgtatgc tggcgtcaat c 1161

<210> 4778
<211> 1267
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_341139_G1, chr10:99585828..99587094, Cluster 29

<400> 4778
agattaaatg aaaagtgtga gttaggaagc ccttatcatt tcaaacctat aaggctatac 60

aatgaaacga atcacgatca taatagacag aaagggttca tcaaacggtg ggtgtttctc 120

atcctcttgg tgtatgacca ccctttctcc aagagtttgt caaggtaagc gacatgctgc 180

tatgatgtga tctttgatca tgtcagggtg gcatggtgtc accaccttac tctggttgat 240

cttatactaa gtggtgttat tggcaagatc tgtgagttat catgtgtagt tttaatctat 300

ttcctctaaa cttcatgtta ttagattgat cttacaccac cacatatgta ttcattgacc 360

ggatgtgcgc tagcagggac tgaagttctc ccacccattc cctcgtccaa acaaacatga 420

agtcagccca aattgctcac tggagctctc tactgccgtc tgagtactcc tggttcaccc 480

atcacccaga ttttatgctc agcgagttta ctatgtccaa taatggccta gcagcaaacc 540

aaagacctgt tcgaacctca tagtgtccga cgtagccatc acatgcgatc cccgtcgcgg 600

aggacgaaca ttgttgcgtt cccgccaccc gcacatcgct tctttaatct gagatgcaca 660

cgtgtaatcc aatggtctga gtccaccgat acaaccataa aggttagcac acggtcaaat 720

agcactaacg gcgtgaatct ttcaaaaaag tccttctttt ctttgaaaaa taatccatag 780

tccacaactg ttcattctaa ggaccagaaa tttacctttt taaccccaaa ctctatagtt 840

agttagaaat ttacccttga tagtttaaaa cgaataaaaa tcataaaaat ttatttttaa 900

cccaaattaa gtgtttttttc tcaaacaaat tgtaaaattg tatacaataa ttctaggact 960

attttaagcc aagtttttat gtttgatgta ttttttctta tttttgtacc catgttgttg 1020

tatgcgcatg agtagactca gaaccttgca actttcctga aggccccact tttgaggccc 1080

caactttcaa aaggttcacc atgagacttg gggaatggct catcatgtga tgcaacgagt 1140

ggttttcagt ggttatttta ctgtaacggt tcaccatgag acatagtgaa tggttaattg 1200

tgggatgcaa tgatcgttga agttactaga ttgtaacaaa gtttttcatg aaaaatgttt 1260

tagaaaa 1267

<210> 4779
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_342369_G1, chr10:106938675..106939710, Cluster 29

<400> 4779
cagggatgat actaagagaa aggattggga gaatgacgga tatgaggaaa aacctaaaga 60

ttccaactat gactgatccc gacaatgtta gctctagaag acctctcgac gttcatggtt 120

aaattgttct ggccaattga gcagagtaat atggccaata aatttcatgt ccactccggt 180

cgagtcatat gatcgtcgct ctaatccatc ggattggctc tagatctacc cgttgtctat 240

cactacagca ggagggaact catcagttat gacaaattat ttgctcatgt gtcaaagctc 300

tatagtcaga agtggctatt gaaactccat gcaaatttta ttgattcatg ggaatagatg 360

aagtgacaat tcatcaacaa ctttaggatg atatgcaatc atgagaaaac tcagtatgac 420

cttgagcagg tcacccagaa agaagatgag tccctacaca gttacatcaa gtggtagcat 480

gatgtaaaga ctggcatctc tagcatgccg gaggagacga ccatctatgt tttttgcaag 540

gacctcatgg accgagagtt gtctcagaaa ctcatgcgta aagctctaac cactcgagct 600

tccctcttct aggttgctaa caagtacgtc atgagcgagg aagtcttcaa gcatatatca 660

acatcccata aggacaaagg aaaaatagag tgaaaggacg atctagagaa gggccaagac 720

agaaagcgca aatcagagta gcaagtcgca atgattgttg accaggggca cgacaacaaa 780

ctactcgccc aaacaggaat aataaattcc aatagatcat ggagggtggt gtatttgtca 840

tccgaatggg aagcacatga ctcagaattg tcgacacatt aggggttttg tagagaatct 900

actcaaagaa cctaattaaa cctcagactc agaatctaga gacaagcaag aaaaatgact 960

tggacatgga tgacaaggac aagttcctag agctgatgca agacatcata tacatcattt 1020

atatacataa tttggg 1036

<210> 4780
<211> 1207
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_343303_G1, chr10:112311727..112312933, Cluster 29

<400> 4780
tatatgcttg ttgtaacatc tttctatcaa tttgcagtgc attgagtgtt gatgtgaaga 60

tgatgtatgt ggagcttctt ccatcgctgt gcttcggata ccttctatcc atatatgttt 120

tctttgatta ctattttatc catgtgaaga taattgttta gttaatgatc ttcttctaaa 180

aatgatattg gcaaataagg ccaacttgtc ctctaccctg gacaatctat gaggatgatg 240

cttactcttt agaaatagtt tttgctttgc taattgtttt tggtattcta tgtcttttcc 300

tccagtgatt cttaatatcc tatctttact cggtattatt gtattggtgt tggctatgga 360

atttctgagg atttgttttc ttaattgctt taatgataat tatttgccac taaggcttct 420

taccgagctg gctaaatatc agattgttga gaggttgttg gcttcgactg attttgtatg 480

agatgattca ttacaatagg gtcatagttg aataagaatg gcaaatttaa acgtgttgtt 540

gataggtttt tttttgtaat agaatggtta gtataacaga tgaggcgaag atagatcttg 600

aattacatga ttggtcactt ttggctgaga gattgttatt gtttcctctt gtactttgtc 660

gatgcttttc tttatttta ggaacatttt aatgtgtcac ctacccctt ccatgcatga 720

cacagaaaaa aattctaggt cttagtagtt ttcgtccgct agttctacct catctctatc 780

ctttgtggtt ggatccatct atgataaatg ttttgttgtt gtaatggttt ctttttatag 840

ttgcttcagc agttgtcgtt gcattgttgt ggttaatgtg atttgtttga tgaaaatagg 900

aagaaggtat tcactcgaag tctattggcc taaaccgatt gtgattattt gtactcgtac 960

tagggagctt tgtttcttct tcaactcttt ttctatagct tttgtctaat ttgcaaattt 1020

tttgcatgac tttgtagagt tgggggggta ctatttgggt tgttctctag caaaatgtga 1080

tgcatatata tataaagccc cttaattcaa cggagtttat cttgtgcctt ttgcttaatc 1140

tcaggaggag agagtcttcg tcggagatgc ttccttaatc ttgaggcttc atctgtcctt 1200

cagttta 1207

<210> 4781
<211> 1089
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344431_G1, chr10:117772948..117774036, Cluster 29

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (389)..(488)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (453)..(453)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (454)..(454)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (455)..(455)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (456)..(456)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (457)..(457)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (458)..(458)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (459)..(459)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (460)..(460)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (461)..(461)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (462)..(462)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (463)..(463)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (464)..(464)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (465)..(465)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (466)..(466)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (467)..(467)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (468)..(468)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (469)..(469)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (470)..(470)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (471)..(471)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (472)..(472)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (473)..(473)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (474)..(474)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (475)..(475)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (476)..(476)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (477)..(477)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (478)..(478)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (479)..(479)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (480)..(480)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (481)..(481)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (482)..(482)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (483)..(483)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (484)..(484)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (485)..(485)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (486)..(486)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (487)..(487)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (488)..(488)
<223> a, c, g, or t

<400> 4781
tgtgcgttgg caaacacatt ggagcgcgat aatattattt ctgcagtgct tggtgtaagc 60

ttccttctat ttatttttc cttcctagat ttgtttcctc tgatacattt aaaagtagag 120

agaaaaaggt ttgcctccat tgattcagtt ccaccgttac agttaatcga cccctaatcg 180

tttcatgtgt acctcctagg aatgtgcatc tctattttct acctttcctt ccccttcttt 240

ggtaccatag acttatagac accatgaatc ggttttacag ttcagttacc tcactgtcac 300

tagcccaatt gttcatgcac cataactttt tcagttttgt cagctagcgc ctacgaataa 360

agaatcaagc atgatttcta ccgggcgann nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 480

nnnnnnnntt gtgcttcagc agttcaaata ataatcatct caatgaaaat ttttaccgac 540

ataagtatta ggtgcaccct tctttaaaat tgtaaattca tattgtatga tatagataca 600

aaccacgttg ttttagcaag taacaacaca tgtccctcat gcatcttgac agttacctat 660

tcattgaagc ttattattat ccgctttata tgatcctgtc ctaggttaca ctaagaaagc 720

cttatcgtaa aattgtttag ttacttgaga taccggaaaa ggacatattg ctccatttcg 780

gaaagaacat aggatatctc tccataaaga aaaggtacta ctatcatttg ctcaacataa 840

atactggtac tatattacta ctttcaattt tcgtcaagtt ctacaactat gacacagttc 900

tgtctgtttc tcctggttta ctgaccaaat acaaaatcct gagtttagtg aaatcacaaa 960

ctaagcattt ggattttcat tttcacataa atttgtatac tatccgcaag agaagaggcc 1020

tcttatcgtc tttttcgttc gttcggtgcg tacctatata aatgatttgc atgggagaaa 1080

ttcatagtt 1089

<210> 4782
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346833_G1, chr10:132194845..132195871, Cluster 29

<400> 4782
gacatgtaca atcccattaa atatgaggtc tcgtaagggg tcgtaagggg gttaaattaa 60

aaaatacaat agactcgcga agagcacgtc tctacaaatt atccgtacat attttctgtt 120

aactacattt ataatctaag gactcagagt tatatcatat aatctcttag ttgtctcttt 180

tacttgaaaa actgatccta tcataatcaa aaactaatcc tatcataatc tcggggttgc 240

atatgccctc agtccgatca acaaaacaac cattaaaacc tttcggtgta acttttttaa 300

aaatacatta ttttttaaaa aaaaagagag gtaaatccat actccagcat attgtgtata 360

taaccgaaga ctattttgca atataaataa caatgtttac aaatttaagt ttgaaatagg 420

cataagatat gagagctatt gttgatagcc ttagggcatg tacaacctat atactatatt 480

gcggctttta ttttttatgt ggagaatatt ttagagggtc cgctagactc agcctaaatt 540

cggattccca cgaggttgtg aaccaaatag gaccttagag catctccacc atattgaata 600

caattaattc tcctccaaaa ctactaataa aaataattca gtaaaataat tcctcttttt 660

gtcaaactac ctatagcagg aaacatgaat cgtctttctc taatcttttt ctcacttatt 720

tttcaaatga gaaaaccact tcctcgaaga aacgacattt gtgtctcgta gtcgtaactc 780

gtaaggacac tccaaaccca ccggccggga tgacgccggc ttccctgctt catacccgac 840

ttctctactg tacactccac caccagactt ctctaccatt tcactctaag gacatgttta 900

tttaattatt taagctcttg tgtagcttat cggcgtgaag aaatagaagc cgaaacatac 960

aactagcttt ttgatttatc ttctgcattc tagaaagtta agagatgaga aacaattaag 1020

tttatat 1027

<210> 4783
<211> 1340
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347678_G1, chr10:136277537..136278876, Cluster 29

<220>
<221> modified_base
<222> (1096)..(1096)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1096)..(1195)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1097)..(1097)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1098)..(1098)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1099)..(1099)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1100)..(1100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1101)..(1101)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1102)..(1102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1103)..(1103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1104)..(1104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1105)..(1105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1106)..(1106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1107)..(1107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1108)..(1108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1109)..(1109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1110)..(1110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1111)..(1111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1112)..(1112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1113)..(1113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1114)..(1114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1115)..(1115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1116)..(1116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1117)..(1117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1118)..(1118)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1119)..(1119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1120)..(1120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1121)..(1121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1122)..(1122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1123)..(1123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1124)..(1124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1125)..(1125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1126)..(1126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1127)..(1127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1128)..(1128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1129)..(1129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1130)..(1130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1131)..(1131)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1132)..(1132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1133)..(1133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1134)..(1134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1135)..(1135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1136)..(1136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1137)..(1137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1138)..(1138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1139)..(1139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1140)..(1140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1141)..(1141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1142)..(1142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1143)..(1143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1144)..(1144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1145)..(1145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1146)..(1146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1147)..(1147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1148)..(1148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1149)..(1149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1150)..(1150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1151)..(1151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1152)..(1152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1153)..(1153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1154)..(1154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1155)..(1155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1156)..(1156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1157)..(1157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1158)..(1158)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1159)..(1159)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1160)..(1160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1161)..(1161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1162)..(1162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1163)..(1163)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1164)..(1164)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1165)..(1165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1166)..(1166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1167)..(1167)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1168)..(1168)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1169)..(1169)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1170)..(1170)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1171)..(1171)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1172)..(1172)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1173)..(1173)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1174)..(1174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1175)..(1175)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1176)..(1176)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1177)..(1177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1178)..(1178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1179)..(1179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1180)..(1180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1181)..(1181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1182)..(1182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1183)..(1183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1184)..(1184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1185)..(1185)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1186)..(1186)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1187)..(1187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1188)..(1188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1189)..(1189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1190)..(1190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1191)..(1191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1192)..(1192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1193)..(1193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1194)..(1194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1195)..(1195)
<223> a, c, g, or t

<400> 4783
gaagagtcgc ctccgtagta ttgtgaagcc gccagatgcc cttcggttgg ctagaccgaa 60

cagaggtttg gtgagggctc ctcctttggt gcgccacgaa gggtgatagg acttctctct 120

cggaatgtgg cgaagtctta gttgttgtcg tccggtgcga cccctcaatg ctggacccgc 180

ttgatcggag tctctgcacc agcgaaccta cgaagacaat aaatggtggg gggttccgtt 240

agtttggaac cagggcgagt ttggactccg ctcaacatgg tcttcgcgat cttctcccta 300

acagtaaata tattggtgaa ctgctcgata tggtctaaga gaagaagagc atgaagcaag 360

caagtaagtt ggtttgttta tttttgatgc ccctttcagc cagcgtcagc aacatttata 420

tgttttacaa atggccttcg gctcatattc tctactacca gcggcccatg gcccaatatt 480

cgaattctcg cctctatatg gtattcccac aattctcctc ttcttctatc tgatgatcct 540

catgtatgac actccttgcc gagctccgtg caggcactcc tattcgtcgt caatgactca 600

atgccgatct ctgcttcgca cgaagaagac aggagaccca ccgctgtcgc tcatgtgcct 660

gctcctcacc tttgtccttg gccgagtcca cgccaacaaa accctagcaa ggtttatgaa 720

tcctaccggc ttgtgatgta atttttatt ttcactatgc aatgctattg cctatgatgt 780

cattgttatt ttttctttct actatgcaaa cgccactgcc tatgatgcct aattttagtg 840

ctgagcaaat gactgcttgt ttaagcagat gattttgttt gagaaaatgc tgaattttgg 900

caagctcgat ttgttcctgt tctgtgtaag attgaacaat tcaatttatt gaatggccat 960

agctcatatg tttaggaact acgcttgagt ttgatgtcta ggctgaaagg tatttttatc 1020

ttcatgcttg tcacaggctc acagccacct ctggactgtt tacgttgttc atttggtttt 1080

ctttccagaa aaaaannnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1140

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnttcca 1200

agtgggcagc cgataagaga ttcgtctgta ttatattgat tagctggaat agttctgggt 1260

ctcaatccga aaaacaaacg ggacctaact atatttgaga tgtaatcaac tgtatgtctg 1320

ggatgcatcc tgcaccctga 1340

<210> 4784
<211> 1097
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348043_G1, chr10:137926380..137927476, Cluster 29

<400> 4784
tagcccgtgt gtcctattag ggatagacta agtgatgtaa ctctggccta tatattgtac 60

cctatttccc taattaatca attattcaat tatcctctag caaaaattgt tggcatgata 120

taataactta tttcattaca taacatttgt tttttagttc tcccaagttc attgtattgt 180

ttttggtgaa tctatcttgg tatcaggtgc ctgaagctgc atcctctact gccaaaccat 240

ccaatccttc tatcgttcaa acttacatgt caattttctt taggttagat tccttcaatt 300

gtttccataa aattaatgtt tcaagtgctt aaacactatc ttaatttttc agaagtacat 360

tgcaggaagc atggaatttt tgttgctaga caccctctcc gtgtgttatg tgtgtcattg 420

cttgtccctg tcctcttatg cattggtctc tttcgcctca aggttgaaac ccgaccagaa 480

aaggtactta atttattgca accattaatt ttcaacaatt gctgtcttct catagtaaga 540

cctacctttg gtgaaatact cataatcagt ttgagatctg taattaaatt tgtgttttgg 600

tatttgatat ttattacttt acccattcgg tgcaagtatt gcacatttct tctgacggtt 660

actactcata catttgcatc ctgtgacttt ggagcatgaa aaatgaaagt aacaaacatc 720

acaagtaatt tatatttttg tgtgtatgtt agattgatcg cttcactctc ttatttataa 780

gactagtgac tagatgtgca tttttaaaaa ataaaatgga aaccactaat atccctctat 840

acaacagtgc ttttttgata ccattgtatc cttatgttag agttgttctc taaatggctg 900

tgatactttt tgcatatacc agaacttcaa tagtgcttcc catgtgctcg gcgaaggccg 960

acatggcgat gcccgttggg tgccgttttc ctctgtgtgc atctatcaat gaaccttccc 1020

attctctcgt cgtggatctt ctgggtgaaa acctggtctt tgttggatgg cgttgtccgt 1080

gttgtgtctg gtgcatc 1097

<210> 4785
<211> 1161
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35744_G1, chr1:216287083..216288243, Cluster 29

<400> 4785
gtttccacat atttttatca gctctagttt tagttctata taattatagg ttgtccaccc 60

ctctagtcat ctaggtcgtt tcaatggtcc tagatggcat gaccttggtg ccgagtgtgt 120

ctctcatcag gatggcccta tggtgtggac cagtcaagat aaagctttgt ctatcacaat 180

aaatgtgata aaaacattgc cgtgaaaaga gtagactatc atcatgccta aggacacagg 240

tgtacttgtg accactgttt gttgcacgtc attgtcattg ttgtaacacc tcaggtgtta 300

agcaagtcat ctcatagcat atgcatatag taatcttctt ttatcacaag tggcatgaaa 360

agaaaagttg agaaaatcct tggttaagcc ttgaacctag ttaaaagcac tagagaggtc 420

acaacacacc aagttcatgt tgaagaaatg gttgaattgg cctccaaccc ctagttaact 480

taataagctt agaagggtga aattttagct aaactagaaa ccttggctta aaagcttaac 540

taaaagtgga cccaacataa gtggtagata attttgtggg gaataaaagt tgtaataagc 600

ccaagctatg aaaccccatg gaaatactca aaagtgcaaa ccaaagtgaa atccaaaaag 660

ggaaaaataa atttcttcta agtcctaaat caatcctgga gcaaaaacct ttcatcttca 720

ttaacctaca ctcacaaaat caattggtcc atcttatgaa acttgtgccc aattatgtga 780

ggaacatcat acaaagagtt ggggagcagt taaattgatt tcacacagtt tcacacgcag 840

tttccacagc ctttaagaca aaccaaagtt cctaatctaa taactcttta atctaacctc 900

taattaactc gagccctgca taaggtagca agtgtataca acaagcaact tatcttatgt 960

ggtgatctca ggtagatatg gaaagatagt tggcctatag tcgtttgaac acgaatagag 1020

gcaagcccgc cacaatgcca catgttccat ggcgcgcgtc accccacgct cgcgcactgg 1080

ccatgcgttc gcgcttgccg cgccattgtt gttcctatcc gtcgcgctca cgcctttata 1140

agcccacctg tgtccgacta a 1161

<210> 4786
<211> 1273
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3640_G1, chr1:18822280..18823552, Cluster 29

<400> 4786
tttcatcaaa acataagtct caaagataag ttcatccata gtcaatataa actcgattgt 60

catacaagct cgtacataac ttgtactcat acaagtcata aatggccaag tctaatacac 120

aaacgagatt atataacatg gcgatcattc gagctatgag tgttaccttc ggaggcaaac 180

aaattcttca caaactggga tgctaagtca gtatcatatg gagtataata cacaatgtgt 240

taaaaacaaa caagtacaaa tctcataatg acaatgagaa gcgataaaca tagtagcatc 300

caaaattaca agacacaacc cctccccttt gtctggttaa cattcacttg ccaaccattg 360

tatgaatcac tagtacaatg gccaaaatct atcttcatga tctatttaaa aacaaccact 420

atgtcattag ttgtagacat aaatagttat agagtcaaac atttgatcgt cgcctaaaaa 480

catttctagg ggtgttacta taaagataaa tgtctttaaa aatcttattt ttagggtcga 540

ttgttttaca ataaccattc ttataaattg atttttagtg tcgattgtgt tagggcaacc 600

acccttgtaa atgggttttc atgggtggtt gctataagga aactgctctt ctaaattaat 660

ttttggtggc aattgttgta tgacaatcac acttgaaact gtttttatcg acggatgtgg 720

caatgcaatg actattaaaa acatatttta aggagttgtt agcttaagaa aaccgtccct 780

agaaatatat ttacaagtgt agttctacaa attaatttta aacttttgaa tcccaccata 840

tttgaaatca tgttttccca cacaatttta gagcctatta caacagattc aaagtaactt 900

catatatata ctagtgaact agttagtaat acagttttga tttataaagc atttatatga 960

tactttagtt taatttacat tatagtactg agtagtgggt tctttctaac cctcacacac 1020

ataataggat tggactaagc attacaataa cataagacca tcctatgtgc tagtactatg 1080

catagcacta agatactata gtccgatgtt gcctgtccta tgcccataag aacaatcgat 1140

gctcatgcaa tgagcccagt aaaggggcta atggtagttt atcctcagtg gctattaagg 1200

gagtgatttg ccaaccttgg ctagtgctta gcacctttgg gacttagtat ccatgcttgg 1260

tttgcaacat tgt 1273

<210> 4787
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38138_G1, chr1:228725929..228726929, Cluster 29

<400> 4787
tagagaccga taaaaccgat gttgattata ttcttcgtcg atagatttc aaacgcctcc 60

cgagaagatc tctcaaagat gaacacgtag aggttgtccg gggatcagcc tagaacaccg 120

tcaaatatca tcaagagaca tgaccgacaa caggattaag tgaaaatgat aaaagagata 180

gtagatgcat ttttaattca ctggatgttg gatatctcaa gcagtttgat catctcatat 240

atagaggagg tggttcttat ccatatagga aacaacttca aaacatgttc tctaagtttc 300

cacatcaaaa attgatttaa aaacggatcg gtttgaaact ccagaaaagt tggcctagcc 360

gactttgaaa attagatgac tagaattcat gggagacatg cactgtagtt ggtctagcaa 420

taggaagtcg gtctggctag cttttgaggg tggcctggtt gactttgaga acctagcttg 480

gtcgggtttg gtggctgccc acaaggatga agctagaaaa tttttaggag gggcccaact 540

aaaccactac atcgacataa tctgactaaa ccacacacaa taaataaata taatagtata 600

aagtaatctt atattgaaac atcgataaaa cgatgaaaat tataatatac ataatggaaa 660

atatagcatg caatttatcc ataccaaaag gttaaatcac gaatagacag gggcaagaga 720

tgtgtcagtg ctgcagtagg ccgataggcc gcaacaacac aggctatagg gcacatgcca 780

catgtgtgta acggcgtagg acagagagcg tcgtgcggga atggcagtgc agtggagtat 840

agagagagag agagagagag ggagtggcat gcaggggacc aggagagagc gatgtgatgt 900

gcagggaact ggagaattgg ggataagttt gttgttagta ttaagctttt gatggtaaga 960

tctaaaatta gtggcccaat aatttttac atctcggtct t 1001

<210> 4788
<211> 1234
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38330_G1, chr1:229696005..229697238, Cluster 29

<400> 4788
ctgatggtta ctttctttta tgtaccacaa cttatagtgg ttcttagtgc cttcttcctc 60

tatcttgtac acaactctag tgttaatgct ctagccattt gtcgaagcac cggaccatat 120

ggcaatctaa tgttcatcga gtcttggtcc atgtgtgcta ctttagtcac tacaacaatc 180

atttgtttta tctggtggtg ctattctatt tgttaactga ttatttttgt atgatttgct 240

tatattcttc acacgtccta ctccaaactt catttcttcg ataccttggg ctactcctgc 300

atatcgtaca ggtccttaac gaatgcttga tcttccttga gttgcattac ctaagtacat 360

cactttgcat ccataagcga tagcactagt atctaatata ctagcaaata ctattagtcc 420

tattagcgat gttatgacat aatcactaaa gacacaatta tcttatttag aggataattc 480

attcttcata gatagttatt ccttgttata ataggggttt tccccttttcc aatcatgcct 540

ccatattttc cattgcaggc aacttttttgg atgtcaaaat tgtcaagata aaatcaaaga 600

ggaaggcaac taacttttta ggcggtataa tcagatttaa cgactactat tttgcctata 660

gtatatgaaa caatttagga tggaaaaata catcttttta attgaaaaat ataagttttt 720

tgtcctcttt atccatctcc ctctatcaaa atgaccagaa aagacatttg aaatggttct 780

tatccatgtg tttaatctta tccgtctctg ccctgcttcc atgtgggcaa agacctatat 840

agagaatact agttaggttc ccatacattg ctatggtttg catttatact tcagtatata 900

gtataaaatg cgaagacgtg tgttctgttg gctagataga tgtgaacgtg ggttaatttg 960

aaactggtag tagagaaaga gggtcttgat cttgataatt tatccataat ttctagttta 1020

ttagtttctt tctaataaca caaagtacgt gcacatgtat acttcacttc tcccctaaaa 1080

tataaaccac caaaaaaatg ttgcccctat atcagtaata agctctgcta caacttacaa 1140

gtaatctgtt atttttatac atttttgtta taaaacaagc aaacatagtc aatttatgta 1200

tttcacctac acatttcatc ctttcataca tgca 1234

<210> 4789
<211> 1269
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42957_G1, chr1:253200259..253201527, Cluster 29

<400> 4789
tagaaaaata aaatctctaa gaaaataggt tcccaaacta ggtcttacat gttacttttt 60

accgggaatt gctcggtcgt ctctactagg aatgcgactc cgttttcaca tcatcatttt 120

aaagattgca catatgtctt tctttttta aaaaaaagaa cagtcagttt gtccttgttc 180

tcttaactta gctcacaaaa agatgtttac acccttatac agttgcccct cagtttgtcc 240

ttgttctctt aacttagctc acaaaaagat gtttacaccc ttatacagtt gcccctcagt 300

ttgtccttgt tctcttaact tagctcacaa aaagatgttt acacccttat acagttgccc 360

cttcttttat ccatagtttg cagatttgtt cctactttgt tacaaaattt tggaatataa 420

ttatgacata aatctctcaa tagattttga aaatcaataa tccaatttta aattttaaaa 480

tgtttcaaaa ctaatgaaaa taaagtaaac ttgatattaa attttggcaa aatgacaata 540

ttttaattat gattttgaat atattttaat tataatttaa cactacttta agaacatgtt 600

atatacaaat tcagactact gtctgaatga ccacgcatat cacaccatca agaaagacaa 660

aaaaacattg tcatttgtat atatgaaatg ttctcaaaat agtgttagat cataattaaa 720

atattttcaa aattacaatt aaaatatcat tgtcaaattt taatattgtt gatttttaaa 780

atttatgcta caattatata ttgcgaactt ttataccaaa gtgaggagaa atttacaaat 840

aattaataaa tagagataca atgatgcgga gtatgttttt tttttgcaga ctaagttaac 900

attgtttagt acctgtttct ttaaaaaacg gggggcatat gtggtgtgca aactttaaaa 960

acagaggtaa acatagagtt acacatcccg agtaaaggca accatgcaat ttccttttgt 1020

gtatttatcc gttggcttca tacagacaat ccccgagagg ttgaatccac atgatttgat 1080

tgcgggacta tcctcgaggt atgaatccat atgatttgat tgtggggcta tactaagagg 1140

ttgaatccac atgatttggt tgtggtggtt tcgcagcggt tgacataagt ggccaatagt 1200

tatttatcta gccatatgga tggcattcga gtctttaaat tgatagtcac ttgagtgtgt 1260

atagtttaa 1269

<210> 4790
<211> 1068
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43176_G1, chr1:254263332..254264399, Cluster 29

<400> 4790
atcttgaaat attttagaaa attgataaaa aaagtatttc ttttagttaa ttatttcagc 60

cacaacccaa aatagagatt taagggtgtg actagcagag gggttttctg catatagatg 120

tgattatcaa gctgtagagc gcttatggag aagaaagagg caaaggtaga gaaaaaaagg 180

tggtgtgtca gatcttgacc aaccgttaaa gaaaattcaa gagtgtccca ccccttaaa 240

acacctgact tgtatatgga cagatcattt attttggttg aataggagaa acgagaagtc 300

atactatact atatatgaca agtaaatcaa ttcagatgat gtgcttgcca cgctagaaaa 360

caaatcaatg aagtactatg caccaagaac tgaggtagtt agttaatcct cacaagggaa 420

taattgttaa tgcgcgataa tggatgcatc aacccgttct gtccctcccc tgctacatgt 480

gatcgatcga tagatccatc catctagtac gtgcgcgtac gcccggccgg ggacctgtac 540

aggaaggcaa cgatgggcaa ataaaggtgg cgaacattca agttagtttg tcagtacaca 600

tgcatgcatc aggtcgtcac gtacgtaggc cgggggtcga tgtcagtacc ctcatgcgtc 660

caaattactc tatctggctc gtctttatgc tgtacgtgca tgcataattc gcttgtcgat 720

aatttaatgc agttatatat gtgtgccctc gaggaccaga cagtaaatgc atcccaaaaa 780

tgatcaaaca ataagttcat tagtaaagtt tgcaaagaga aatatgaatt aggtgtagta 840

ggggcatgcc cctgggatct gatttcctag tcaagaaaga tgagtagtca atgcaccaat 900

tcgtcatagc taccatggcc atggttcaaa gccatccgat ctgtacaatg tttggatgca 960

agacctcagc ataatgcaat ttttcacatg gctcaacatt acgctagaag acggtttttt 1020

cttggtggtg ccgattcttt taactagtgg aggggctact gatgacgc 1068

<210> 4791
<211> 1084
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43836_G1, chr1:257670456..257671539, Cluster 29

<400> 4791

ctcactgtcg tgttgggctt gggtagtttc tcatagccta ttgtcaggtg agaagtgggg 60

gagaagaaca tatatatcct tttcgcacgt gacacattac acacgaaatt ggtattttta 120

aaggagtagc gatttaaaac ttgttaggga tttacaaatt tgtgaatgaa cagacccgat 180

aaacaccctg tagtggttgg cacttgaaat tttaacaata acaccctgta gtggttggca 240

cttgaaattt taacaataac actttggtac aattaatgat caataatgca gggtgataga 300

ccgtctaaag attcaatgat gccagaagga aaaactaata ggttttcaaa tatatgccat 360

tatgaaaatc gaggattgta aagatgtcat tataattcat gatatctggt ggctagctac 420

cattatgaaa tcagaaaatt tggtctatac cattatcaac gctcgcgcat gtaatgtaca 480

ttaatattgc ccctttttac ccttcttcct cgctgttgtt ctccctctct attcttcctc 540

cctatttccg aaccctctct gtcttaaaac accgttgtgc tgaaggtcag gccagtacac 600

tggttggtag cgaggaaggc ggtcgaggca gcgtcgtggc tgagtcaata agggcatttt 660

cgtcttctca gatgagtttt gtacgtgtga gcgtaaataa tggcacagac caaaatttct 720

gatttcataa tagtagacac tggatatcat gaattataat ggcatcatta gaatcattga 780

ttttgataat ggcatatata tgaaaaccca aactaaaaat atgtcggtca tagctgaggt 840

tgttattttt cgagaagcta ggtgattttt gctgtctggt tttttgatta ataattgtcc 900

ttcttgatga ttttccttgt ttcgtcgttg tttttgagtt gtctcttcat agagttttta 960

gttgtgaaga ttttttggt ttattctata taacaggggc gaggccagga tataagatta 1020

ggggatcaaa ttagatgaga gactattgga aggacttttt gtactccctt tgttttttat 1080

ttga 1084

<210> 4792
<211> 1354
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4427_G1, chr1:23055512..23056865, Cluster 29

<400> 4792
tatggatagc tcgcctgtcc agatagcata gcatagcatt acttgatcga gaccctgaag 60

atatttttc ctctctctct ctctctctcc aaagaatcgg aaagatagca tgcatatatg 120

cagctggcat tccgaaggac tatatttcgg aaaattaaaa gcctgacagt gctagctatt 180

atatatatcg gtggaatgaa atatctccga gatttatttt ctgtttgttt tcctttcctt 240

tttaatcgtt tttgtaagct gtagcgcgcg ggcgtgcggc atcgtgactg agtgccctca 300

gcaaatccct tgccaatgca atttctcgct ctccctgcct gctggttttg tcgagtgtgt 360

ggtatatatg ccgaaagcac gcacgcactg cccgatcaac atatatcagt tagttaaccg 420

atcatcaggc gatcagatcc aagctagaaa agatatacgt actatgggcg tgcgtgaaag 480

atgacgacgt cgactcgatc atatacatgc atgtgcgggt ggtcgactcg agtccattga 540

aaaatcacaa gaaaagaaga atgtgcgata cacactcgta ttgatctacg tgcacgcgga 600

tcattggcct acaatcgcgg taagcataat tattagttgc atgcatgctg catgacatga 660

cggctagcta caagcacaag cacagcccgg caaaaaaagc agcacctgac catgatgatg 720

aggattcatg tagtcacttc acacgttgca acttgcaagc aaaacttggc tgcgaatatc 780

ttgcgaccac gacaccatgc atgccggcct cgctggctga ttattgacaa cttaggtacg 840

gtatggaagc tggggagaat aatccaattt ttttttggct ctaacgctta aaactcaggg 900

aagcttggga gaataataat ccattctggc tgtttacacg aaagtcgcga cttccatcta 960

aatgcgtcct agagctagag gagagcgagc agagcagcgg tattggatct tcatctgaat 1020

ccttcatact tcatatatag ggtagaagcg tcttgttgct gacaaatata ttttctatcg 1080

tactaagaaa cagcgtcgtt atattctata ataaataggt tttagaataa tataaacaat 1140

cacatcaagt tgatgacttt aacttcaatg gacacattct accacgataa ctttaaccat 1200

acgagcaaaa cccagttatt tgacttctct tctgatttcg tgtaccatga cctatttggg 1260

actgcttctc cccgccttat tatggcgaaa acaaaagacc acgaaactaa acctgtggtt 1320

gggagggtat gaacataccc ggctatatat acaa 1354

<210> 4793
<211> 1088
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44624_G1, chr1:262131118..262132205, Cluster 29

<400> 4793
accgacatag tgtttattta agcgaggtac gttgtgagtg tggtgttgtt tgggtttcat 60

actcttaata taatgataca caacttttt gcatgtttat ggaaaaaacg aggcagacaa 120

gtttgccatt ctaccttgga atttactggt ctaaagtatt ataattgctt atcaaacact 180

acatcacaat gatttcctta attaatccaa tgtgttggtc tagaaaagat gtggctcaat 240

gtattaagat ggcttatttg ctctcatttt ttttcctttg aacaatttgc atgcttaagc 300

atctggagaa gtatggaatt cctgtgccca gttatgctct tgtcaataga gaatatccgg 360

accaagagct agactacttc atcgagcaag aagattttgt tgaggtccat gggaagcggt 420

ttttgaagcc ttttgtggag aaacctgtca atggtaattc atctatacat aatcattgta 480

atgtctgcta tttgctttat tggatctgaa tgctgttcct cttggtaccg taatggttgg 540

tttgactgca tgcaagatgc aactaatggt tttttgtgtg gccgaggtat gagagaggca 600

aaagggatat ctgttattgc actacagata attaatttct gttattatga tcaaataaat 660

gtattctgat tccccttttt ctgtgttttt aacaggggat gatcaccgaa taatgatata 720

ttatcctagt tctgctggtg gtggaatgaa ggaattattc agaaaggtga acttctgact 780

caaaattgta gtcatttggg agcagtttgc tgagaaccag ctgtagtgtt ctgcatttgg 840

cttactttaa tggcatattt gccattttga tttctaatgt accaattgct ttgctacttt 900

agactacaca caaaagtcta aaggttcttc ataataatga tactcccttg gagttttatt 960

tttgtcattt aaacaaatat ctctaatttt tctttattat tagtacatag gaacttgtaa 1020

aaattgagac atcttgcttg cttcatttat tttggaaatg acctatttga agactaacac 1080

ccactata 1088

<210> 4794
<211> 1194
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45301_G1, chr1:265751503..265752696, Cluster 29

<400> 4794
attttaatta acatatatac attaagcttt gtgttgctgt catctaccca tggaagtgta 60

acttcttcat ttggttcact tcacaaaacc gctgcagctt ctatcttgag tcggaataag 120

ttagttctca gcacgtttgg tataagccga aagttgttaa tgccttggca ttggccatga 180

ccattattat aaatactcaa tcaactcagt tttgcaaagc cagctgactg ctcagatcag 240

gttgaagttc caagctgccg tccaagggta agtaatccga catactcctg ttatagctgc 300

tcaaaaggca tacagctgtc caagggtatc cggaaaaaaa tagcagtacc atacatatct 360

gacctgagca atgtagtacc agaggttttt tcagaacaaa aatagcagta cgatacatat 420

ctgacctgat gaatgtagca ccatagctga gctctggagt acatggaact gcatatgaat 480

gctgctgggc ctgttcctcg tattgcagta tatagctgac atagtttata atttatgtat 540

cccactggca gtatgccaca cctacctctt tcctctctgt tcttctgtcc gcccacagca 600

aggcttctgt taaaacaaag gttatgttct tttggaacac gaaaatctca gacaatattc 660

tgttcgttct ggtatgcaga actatttatc attggattaa gaagaatatt atataatata 720

ttcacaccac ttgttagaaa attctatatc tttgcaaatg catatacata ttttttggt 780

ttttataaaa atcacttttt accagatgaa gctgttagtt aattgattat tgctaatggt 840

tcatgttaca gttggtaatc tagtattaaa ttaatagaag caaaccatgt acaaaagagt 900

aaagcatcca taagaaaatg ttatcgatgt gatatatgag ggtggatgta tcaactatgt 960

caacatttag caccattgtt tatccaatag atctaaaaag atgctaggta ggttttgtca 1020

agcttcaacc atatataaag gttaaatgac tattctaagg gcaaaaaact tggcataata 1080

ctactttctt aaccctgtag ccaatcactc ggctcgtttc aatggataat aatggttaat 1140

gaagccttcc cctttggcta tctccatcta cttactcatc tccatatcta tatt 1194

<210> 4795
<211> 1067

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48250_G1, chr1:281773421..281774487, Cluster 29

<400> 4795
taggtctcaa aaatatcatc tcctgtcctg cctataatca ttttttgag gtctactttc 60

agggaacata agtcaaagaa tttgcttgat tttcaagtat tatgcccaga ataagcaagc 120

aattgccatt tggccccgag agtcgttatc gatgacacat ggagtgatga cgcagggttg 180

cgcttttgtg tcagcatggt tcttttgggt cttctctggg aattttgatc ctctctctct 240

ctgtctctct tgcattttag gcatgtcgtt cgtgatatat ataatcaaag aggtaggttt 300

ttctgtaggc aaagaatttg atgagtggaa ttaatttgaa aatcgcaggc tcatcgtttc 360

ttttctccct tccccatcat gctagctgct tgtgcacgcc ccatgatttc agaataatta 420

aggtacgcgc catgcatgtt gcaggtttgt ttttgtcgtg ttgaaactca aggatgccat 480

gaaaactcgt gtctgctgaa aaaaaaaggt gttcagattt gcaatcaaag taattcaggc 540

acgagaatat gacatttttt ttaccaaaag agagtagagg ccagaagcaa tgccaataaa 600

aaaaaaagga gacaagtacg catatatacg tattatttat ttgccatcac tcgcattctc 660

aagaaccgtt tagttcgtct taagaaaaca taaataaaaa ctgtactggt ttggtttgca 720

ggtgaaactg gctttgtctg tataacaggg aaacggccac ggtggtacag cacttgacat 780

gacaggaggc aaagaaaagt ggcccatatg ttttagcggg ctgaggtgaa ctgggccttt 840

ccaggtttac tggtctactc gaccggcctt tccaggttag atgagcattg caaggcccaa 900

ttgccactgc attccaggtc ttctttgttg tttgtcgaca aggttcaagc gagtttttcg 960

tgtttctgct tacctctgcc ctttgcttgt gagcagcaga gacagagtcc gggcgtgcat 1020

cgatgcaaac ggccgttcca cgtcaggtac cagctggttg gtgttac 1067

<210> 4796
<211> 1146
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48569_G1, chr1:282736519..282737664, Cluster 29

<400> 4796
gatatacgtt gtagtgggcg ggcggcgatg cgattgagga aatgacctgg agctggaggt 60

ttaggttgtc tgcactgggg actggatgtg ctgcgctacc cgagatagtg ttaccctaag 120

ccaaaaattt gttgtagtcg catgccctat cactaacgct attttgttgt aggagcgctg 180

gaacgataga tgtagtgttt gtacaacagt aacactatcc attgcttggc aacggccacg 240

ttctcgtgcg ctcgaatgga aggagagagg ggtagcagct gaagatggtt gaataagata 300

tatggcaatt agtattaagt tctagatata gagtatagtg ggtgtagaaa attgtgtcgt 360

ataaaataga atcttgttga acaatatgaa atattctttt tagagtatag atatagagta 420

agatgagtgt gtgaattatt tttagagtat agatataaag taagatgaac tttaggggat 480

gtgctctagg cattttacta gtagaagaag acgccaagaa aatattcgtg acagagattc 540

tactttgatc taggacgtat cttgaaaatg ttgtatttat gaataaaaga aaaggcattt 600

gtttaattaa gctatgatga taggatgaac taagtatatt ccgttgctat tttaattgag 660

ggcctatttg atttagggtg gctaaacttt agttactact tacccctttg gcacgactct 720

ttcggtagct ttagcttgct atcaaacggc cacaaaaaac agcttcccat cgagagcctt 780

ccaagagcca gaactgtttt cttactagaa gccagagtac aaaaaaatat gcttctaccg 840

gctcctctta cccaaccttt gataaaatta ccgcccctgt caccatccac tcgaataaaa 900

ctctagagaa gccattttgc caaacaaaat acaaaatggc tctagctcct ttaaagaagc 960

caaggagcta aagccagagt cgtttctaaa ggagtcagag ctctcgtaaa gggggtctaa 1020

attttggtca gggtgactag aagtccccca actaaagctt agtgctctag ttgttgagcg 1080

gtaacaaaaa atgactaaat tagtattttt actgtatcta tcctttacct tcttccatac 1140

gtccta 1146

<210> 4797
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51796_G1, chr1:301147604..301148633, Cluster 29

<400> 4797
cttttacacg aacaaagcgc tactaatcgg ccggaaaaca tggcccttat agtcagtcat 60

cttcgatggc cgatgacctg aggacatgcg tcacggggtg attagcctct tatgcattgt 120

ttattcaatt aaatatgcta gcacatctgt tcagacttca gacacatgtt ttatcggcaa 180

agtgtgcctt ttcagttagt agctggaaat taattttcac aaacaaatag agtatagctc 240

tatttccatc tataattttg ctttaatgtt attcaataaa attgaagaac aacattggca 300

cattgatctt ggaaagttgt aagtatgttg gcactcatac atatcgctta gatatattat 360

agctatctag atctaaccat gagccacctc accaaactaa cccgacccga ctcgtagaga 420

aaacccccgc ccaaccaata caatgggcag tgcgaacatt agtttttgac cccaacaatc 480

tacaggtcga accggatata atttttgatc caaaacccaa tcggtcccaa aaaaattcta 540

acccaaagtc aaaaatcccg acccaactcg aaaaaatccc aacccaactc tgacatagaa 600

gcacggacga acccaaccca acccaacact aacacaggtc gggtacggac cgtaccgaca 660

atccacgact cgaccttgat ccgactcata cctgacgttt gattagatct atagctacct 720

cactgtacat cctggaacct gtaacatata taaatctttt gttattagaa accattaaat 780

atctaaaggt tttttcaagc aaagtataac aggttacctt ctgtaaccaa aatattgaaa 840

ttttgattag ctacaggtcg atgcgcagaa tctttttttgg ttcttcaaaa cggacctgac 900

tatttttca ctggaaaatg gttttgttca tgatattgca tgctttgcat cactgtttgc 960

agaaagtcaa atgcaccaaa tgtgagggta cgtacagaca caactgaggg tacatacaag 1020

gacatgtcga 1030

<210> 4798
<211> 1278
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53537_G1, chr2:9428951..9430228, Cluster 29

<400> 4798
gtataaacag aaacaagcat caagggagaa ttcaagatgg gaaaaaaata atatcacaac 60

agaaacatgg tgggctactg catagcattg gtccatctaa gcccaattgt gtacttgggc 120

cagcccgggg ctccttaacc acatccacat gtgttcagac ccatagctac cgctctgacg 180

ctctccgatc ggctagaacg ccaccccagc ttgcgcaacc aaggcccaac aaaagcatac 240

gtatttggca gtgcaccttc tcaagtctca tcaaatttta ctataaaatg ttgggttagg 300

ttattgatgg taatcttgtc agtctctatt agaactgtga gcgtgagatg gacacgtgga 360

caaagcataa gcgacatgga tcttggtttg tagatttgac tactgctctg tgagtgtggt 420

tagatctgct agtctgcggt gacgggttgt tgtaagtgag ccgagatttt ctttttggcc 480

tggacagtag gtaaaatggc tttggatgca taggttagaa tatcatagat tttgcggaca 540

ttacagtcct actctttcta gtttctgatt ctgccgtgcc ttgtagctat ggcaatcagt 600

agtttcagat ttttggtcgg tgtcaaaatg catgccgcct agcgctgcac ctgcaccagc 660

accacctcta ttcctcctgc ttcccagcga aacgcagaga tgccgtgcat gatccacatc 720

catccacaaa acttgcggca tccggaaaac tcggcccgtg gtgcggccgg ccggtgcggt 780

gagaataaca aatgtccaca aggcttttag cccagccaac ccattggaaa gcaagagcag 840

caagggctaa ttaaaggaag acaaacccaa acagaaaaaa agactcatat aactaattaa 900

atattttatt tgaattatac ctattggaga tagttactct gggaaatgac acgaatccta 960

agtaaatttg agttccccaa cccactccaa tttcatagga gatttgagtt tccaaactta 1020

tctatttttt cctttgtacc tcctctaatt cagaatgaga tttgaatttt caaactaacc 1080

taagggtgga tgacgattca tatcgtgtgt agtactagta caaagtgagg agtaggttct 1140

cctatttaaa aaacgtatca cgtgcaatcg atacagcaaa gacacaaaga tagaggtaga 1200

atcacctttt aaaaaaaaca gagagaggtg gtagggttat tttaaaaaac aatatttcta 1260

aaataggcct tatatccc 1278

<210> 4799
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54009_G1, chr2:11767362..11768403, Cluster 29

<400> 4799
gtacggacat tactcgtgta tctcaatatg cttttggaag aacataaatg gcccacatga 60

gatattttga tattagctta gcccaaccca gtaaagttgc gatgcgcaat gtagcccatt 120

tatctctgta tggataggcc taacaagcct tcggagttga tttcaagctc cttgcctttc 180

tccataacca taacgatatt acaaaacgtg gagttaacat tcctgttccc gttgccgacc 240

taaacattct ttcttgtccc cctatattga aacatggtac attatatagt catattgtac 300

gctttcctct gtatagaatc aagtcttgtt gaatgcctaa atcaaaatac agtccttata 360

ctatatccaa cgaaaattca agacatgtaa ctcagattaa atctagcttt gtgctaatca 420

aacattacga gtcacgggag tttctagcac cctatttta ttgtatcata gtatcctgaa 480

aacaatacac cacaaagtgg ttgtaattca tgttttgatt agcaaccact ttgtaccaca 540

aagtgtaaag caattcttgg tgtaatttat gggaggtgac gttcatgctc ttgggtctct 600

taatcgatca cccataaaca atgacgtgaa gtctttccat tctgcagata aagtttttgg 660

ccaagaaccc tttaattctg cgtccagtag tcttaaccaa ggtggtggca cccttgtgag 720

gtacccagag ttgctctaca gtatttatgc aaaatgttta aaattaaagc taatacgaaa 780

aatgatggaa tgttacagtc gctcagtcca gagtcaaaca accacgtctt gattgctctt 840

caagattggt ttagatcaaa cgagctttgt caaagaccgt cgattggaga agatattact 900

cacatgtcgg gcaagaagga ggtatctgtt gaagacactc tgagagcaag ggtcagcgcc 960

tagcggcaaa gcgcaatcta gaaatcagtg agtgctctct gtttctttta agcctaaagc 1020

tattgcaacc aatcttgaag cc 1042

<210> 4800
<211> 1036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54249_G1, chr2:13293855..13294890, Cluster 29

<400> 4800
tccttccgct atgattcctt tcgtttttct ctcagagtct cagtgcagca tcgtcactcg 60

caagtcggtc atattgtacc gcaggaaatg tggcacacgt ggacacgtgg ttcaggtcca 120

acgtcttttt attagtctac tctttacgca attacgcgta ttcccttggt cttctgtctt 180

gccttcagtc gatccatttg cattattgtt gatgcgttgt gttttcttta attatcgtct 240

gcgctgtgtt ttgtttgcat gattgattag tgtacatctc tttcgtcgag cccaactgca 300

gtctgtagtt gttgggtcat tgagtaactg cttcgatttc aagcatttat atattattca 360

ccagcttctt atgcgtggtt gtgcagtcat agaatcttat tctcggtctc ctcacgaaaa 420

ccattggttt aactctactc tatatatact actccgtatt atgctactag cttgtagcgg 480

aatttagatg caaattgagc tagttgcttt aaattatctt tcatagtgga attgaagagt 540

taattctgta atttatatgt aggattaggg gggtttgttt tacccttta ttgggtaaaa 600

tatacttttt tagcatgtaa ctcataacat agtccgattt tcaacctttc taactataag 660

accagataac tcacaccttc tagccacaga aaccgaaaaa atttagtctt ctgactggtt 720

ttaaaagtag gtttttttat tttcagaaaa acaacataat aaaaactggt ttgttcttaa 780

aaaaactcat actaattagt ttatgttaaa tcactaaaaa ctatgaaact agttctattt 840

ttgtttaaaa aaatatcatc tatatgttgg tgctatattt agaattgttt ggatattact 900

tgtttttata taaatagcga gtgcgaccac caacaataaa gcaattaatg ggaaccaact 960

ccaaatacca tatgttacaa tacaagtaaa gaacagtttt agggggggaaa attgtactag 1020

tttcacatcg tcacgt 1036

<210> 4801
<211> 1139
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55499_G1, chr2:20015329..20016467, Cluster 29

<400> 4801
tctacgttta atttttggaa aaggtgagaa ccatagtaaa aaaatgaacg aaaagaggag 60

acacgtagct agctcaaaga cgcgcggaga gcggtgtgtt tgagcatgcc gtgtttcata 120

aaaaaacatt aaaacaacac gatacaaaaa atgatttact tatttagttg ataatgtaca 180

tttacatctt gcaagagttg tgaaagtgtc aagtaattcg aaagaagtat gtgttcaatc 240

aaaatctcag agatatccgc atacaactat aaaaaagatg gcatttatag atgggcctac 300

gggctcgtct gagagcccaa agacccgacc cacacaatgc taggaaagtc tcacgggcaa 360

ggaagtaaga gaaagatgaa gttgacaaat aggaagataa agttgacaag gaccctattc 420

gattaggata taagattaat atttatgtaa atatgatata attacagcga atgacttcat 480

gataagttcg gtttccaccc ccatcttgtt tccgacacaa attcctattc tatgaacacc 540

gtcccttgtt gtactataaa aggagggtca tcatacctta agaggacaaa tcatcttatt 600

atattgcata agcaatagac accacgataa acaggacttg agtgttatct cacattgaaa 660

gaccgacctg tataaatgtt atagtctcca atgcatttat cttaagttct cgagcacatg 720

acctacccca taaatccatc gaataatcct cgatagttag tacattaggt aatagaagtt 780

gtgatgatca tcaaagttct gttggcaacc atcggtttca catcgggaga tttaactatc 840

tttggagccc tgagatttcc cgctggctcg cttcaaaatc gggaagacat gtacctgcta 900

tatccgaggt agttcaagac aacccaaaag ctcactgtaa gataaaaggc accaccaata 960

aaacatgacc cagaccaaag acgactctga catggtcagg gtcgaccaac gttgcctctt 1020

gtgatctata ggcctggtca tcccgatcaa agctacctca ggcccggtcc aaatatataa 1080

ctatactctc aagttataaa tggtgcttaa ccaaaaccct taaccaacag acttacttt 1139

<210> 4802
<211> 1266
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55532_G1, chr2:20114719..20115984, Cluster 29

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (810)..(909)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (828)..(828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (829)..(829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (830)..(830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (831)..(831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (832)..(832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (833)..(833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (834)..(834)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (835)..(835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (836)..(836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (837)..(837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (838)..(838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (839)..(839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (840)..(840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (841)..(841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (842)..(842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (843)..(843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (844)..(844)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (845)..(845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (846)..(846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (847)..(847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (848)..(848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (849)..(849)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (850)..(850)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (851)..(851)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (852)..(852)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (853)..(853)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (854)..(854)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (855)..(855)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (856)..(856)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (857)..(857)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (858)..(858)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (859)..(859)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (860)..(860)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (861)..(861)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (862)..(862)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (863)..(863)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (864)..(864)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (865)..(865)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (866)..(866)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (867)..(867)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (868)..(868)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (869)..(869)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (870)..(870)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (871)..(871)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (872)..(872)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (873)..(873)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (874)..(874)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (875)..(875)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (876)..(876)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (877)..(877)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (878)..(878)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (879)..(879)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (880)..(880)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (881)..(881)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (882)..(882)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (883)..(883)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (884)..(884)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (885)..(885)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (886)..(886)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (887)..(887)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (888)..(888)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (889)..(889)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (890)..(890)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (891)..(891)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (892)..(892)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (893)..(893)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (894)..(894)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (895)..(895)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (896)..(896)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (897)..(897)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<400> 4802
atgtcaggtt gtttagaagc tctgattcac tataaagttt atcccgagc aagagtacga 60

acctaatttt agcaacatat gttttctggg cctcagaaag ttcacttaaa attgttcata 120

aaatcaacac gtcatgttta acccatttta aaatttatgt gttaaagtgt ttcgctaata 180

aacacaaaag tggctactga tataggtcaa gaattctttt aactcaccaa ggcaaagaga 240

ggatggagat ctagatagtc tagttgatag ggactttcca agagcaggag ttttatatct 300

tcacccttcc tctgccttgg tgagttaaaa gaaatcttga cctaatatca gaagttactt 360

ttgtgtttgt aggcgaaaca cttcagtaca taaattttaa aatgggacat aaattttaaa 420

atgggactga acaagatatt gctgaaattg gattcaaatc cttaatcaga atgaaacttc 480

acagtgaacc agagctttta aacaacctga cataatggct agttagtcta gttgatttaa 540

ggttaataac tttgaacctt aagaaagtgt ttatcaatag taataatatg gttccaaagg 600

ttgttgagct tccctttaga ggtacaaaag ttgagcctat aaaaatcaat ccttgtgatt 660

atgaaccgaa gcgtcagtca actaaagaaa ggaaaggatt ggctacactc actcttcaag 720

ttatgatgaa aggtctgtat aataaagtat gtttttgta tttattttat gattctttat 780

ttatgctaat acttaatttc aataaaaccn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 900

nnnnnnnnnt tcaaaaaaag accctgaagg tgatgattta aaaaaaaaaa gtgtcaaaga 960

ttacagagaa aggtttgttg gacattacat gttgtagaaa gattagttat gatatatatg 1020

attatatgtt ataaaacaga tcacacaaat tttccattgt tatgataact aataatacaa 1080

gtctaaagtt aagatatgtt gtatttgtta agtcaggtta aattgaacat aacaaaggtc 1140

aaactacaac atgttgcgcg agatattata taacatatta cagagatgtc accaaaggag 1200

ccccaatcat ttaacatacc tgatgtgtta ccgcttacca ggtttactag gttagtattt 1260

gattag 1266

<210> 4803
<211> 1333
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5836_G1, chr1:29692148..29693480, Cluster 29

<400> 4803
tatctcgacc atttacccat acacctacct acatcccaaa gagcataaat tttattttca 60

ataagtagcc ataaagtacg gatctacttc gcacgcaata tcacaagaat ctgaagaggt 120

gactggtgca gaaaagggat taggaagggt ggattgcagg gagcaggact aaagacgggc 180

agggaaacgc tagctgcgct tctttttccg gtatttatgt gatggaaggg gcgttggcat 240

ggtcagaatt ccacctagtt gaacctttg acgcaaccct tctgttttcc tttgcgatca 300

tcggaccccg ccgctgcgtc actaagcaaa gcacacacat cactatgcgg acaacaatta 360

aggttttatt ttgcatgtgc atgggagtca ctaagcaaaa aggtgcggtt cactacgaga 420

acgactacca aagcctaact agctgtcctt cagttttgat ttgtccatgt acagggcacc 480

gcgcactgtt acttcgtata tgcgtgctag ttggtagccc agctgatttg acaccagaca 540

ctttcatagt ttcattccac tcaggcgtgg ttattagagg tttgtgtcat ggatgtagat 600

tacggagatc caaaattgta caaatttaaa gcggggaaat ttaatatgat tttgttatgt 660

ttctagcagg ccttttttga tcgtacgtca tgaactcatg atgcttaaaa aaaatcgatt 720

tgtcatcttt ttcttttatt ttatgcaaaa agggcaaagg taatatatac acgtacgtcg 780

tagccacgta ggggtgatat ggaaaatttg gatgcatagc tatcgtatcc aaaatatgca 840

aaactgatac cgagattgtt tatgcgttaa ggaacgcata caaaactgat accgagattg 900

tttatgcgtt aaggaacgca tttcggtcca cttagtatat gtattaataa gactagtcac 960

ttgtcgctct atatgcatga aagtttctca aaagcatgag cttacgtagc agaagcatcc 1020

tattccgtga acctttccac ttggaggcta agtagtgttc aaccatggct catgatttgg 1080

tatcagttag ggttttttag agaaagattt gctactgcac ttgtccacct ttctgttgaa 1140

tacacttggc ccatcctttt tcttctttgt ctttctggta tctagaaagg tgaaagaaag 1200

aaaattagaa tctttatctt catgcagcat tagccccaaa gaaaggaatc aaggaaccat 1260

cgaatatggg cccacaaaag tataaaacgg aggaataatg tagctgtgaa aattctcaaa 1320

tgtatatgct ggt 1333

<210> 4804
<211> 1044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58634_G1, chr2:38109081..38110124, Cluster 29

<400> 4804
gtccttcaca aggacaaaag ggctcccaaa acgactaagt ataggagcac atgaaagatc 60

aaagaatata attggtccat gccccaaggg cagacttatg cctaaatgta tggcactaca 120

tccaaagttt gttgtcgtcg acatcatggt cctagaacta tttgtaaggc tctgtatttc 180

acattaaatg tgaagtgtga cattacgatc tgatagacac actagtaccg tgacataagc 240

ctcaatcgta ctcaagacca gtatatgata catactattg tccctctagc catgcttgag 300

tatactagag taccacgaag tattatgaag tacaaactac tatatcgatt tccaattgtg 360

tcgtacctca tggtgtggac tctagtactc gttgatacaa tagaccatgc ctacttctac 420

aacatgtcat atctatcgtt gtagcaagac gaccctaaca ttgtagcacg accaaggcat 480

gccaccatgt acgactccat aaccatgaca agttgttggg tctttgctaa gtgggactca 540

tagtctatcc gacatctaac cttgtctcct cccttgttct ataaaagaga ggaatagagt 600

agtgtagaga aaaaaatgaa tgaggccaat ccaaccaagt tatatggaca gacataaagg 660

tgaggtaggg accattatgc tagaactctc accaaaaaac atatggtaga gctaggaggt 720

catggtgctc atatgatact tgagcttgca tttttattca cctttgcatt ttcaatccat 780

gatacacaaa agaacattga gtattatatg ctccaaggac taaacctctc taaactgcct 840

ttgtggtggt actaggctgc acccatgttt aacttacatc caacctacac ccctactcta 900

tccataatat tttttcatat tttggatatg ttcggtaccc ctgtgttgtg ccatgatgat 960

aagctacatt ggttggaaca tccattctcc tactacaaca tggaagcatg agatctttca 1020

aaacgacatc tataagcaag ggca 1044

<210> 4805
<211> 1354
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59569_G1, chr2:43696810..43698163, Cluster 29

<400> 4805
actctacgta ttttgtgtga aatttctaga cgtgccatat gaaatttcta cgttctaaat 60

aaaacattag tatttgtagc cacccaacgc tcaaaaattg cagagagcga atgtcacaag 120

aaacctatcg tattttactg tatctaaaag aggctctaaa gaagtgtcaa cgttaatatt 180

tatggacgaa ctagaaaaaa atagatcctt aaagtttcta caataataaa aataaccagt 240

actataatca tctatgttaa tagctattgg atctattata ttttataaat aattgttcat 300

ttatgttatt ataaaatatc caataaaact ggttaaagta atatacatgt gatgcgtatc 360

aagtacacct gcatggataa gcaataatta tatatattat gtttcaacaa tcataaaaat 420

ttatcccctt ggtgactcaa atatgaatga tactaacaac tcatactaaa ctcattcaaa 480

actatactaa tatccatgtc atataattta tataagttgc cacttcaaat aattatatac 540

attttaacta aaaagctcaa catattttga tagtaaaatt ggaagaacgt aaaattgtaa 600

gaattctaca tcctagtatc tgagatttgt ttggattaaa cagtgactca aacgctaaaa 660

tattaatgtt ctctttaggt ttgcactgct atggatcttg aaagatgtag tgcaagttga 720

agtgactgtt tgttccgtcg tacaatttag gaatacaatc tatcacctaa aaactttatt 780

ttttatgaaa tacaaaaaga tttaataaat gatacaatac atataagagt tcaacttaaa 840

ctaaaaacaa aatgtatagc aagtagtttt ccctaaattg taaattgaca ccttgacatc 900

tctaactaat gaggacatca cacctatcat tacacccata aaagtttaaa caagatgagc 960

tcattcctat gtttgcacaa caacatatat aactaagaaa ctattgttac ctaatgtcta 1020

catattaaat gtgttttaga gaataattta agaatgctac aaatcttgca ttggagagct 1080

tcttacgtgg cctttataac ttatgggaca tggacgcacc accagggaca aatttagagg 1140

ggtttattaa atgcattgaa agagataagc tttccaactg cactagtacc caatacccat 1200

gttaaaattc tacaaaatca aagcactagt acccatgtta aaattctaca aaatcaaatg 1260

aaaattgttg gaataagttg gcattcaaat ttttgcatta taacatgtta ggactcctta 1320

ggaatgtgaa tagagtcctt ggaaacccct taga 1354

<210> 4806
<211> 1219
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59928_G1, chr2:45971409..45972627, Cluster 29

<400> 4806
tacatttctt gatatgtcac atgtatgttg ctatctccat gtccgtggca tatacttgtt 60

ccctggtttg aagggcaact tgaaacgtaa tgttattatc tccatgttca tgtatataaa 120

aattaaagtg tacggaagat atgaagtgta atgcagtata tattgccaaa acgacgatac 180

tctcccttcc cttcgtttta agttataaag atatgttata ttctagaact ctaggcatag 240

tttttattat tatgtgttac agtgtatatt taagtatata atatagaaga cgcaattcta 300

gagagaagct aatttacatt ataatttata atttaggacg gacgaatctg agtgctatat 360

atatatgcaa cgcaatgtgc aacaggttaa aacagaacat tattaaatcc ctgctgcgtt 420

tatcttgaga acccaagcac cacgcattag tttatcgctc aatcaagcct gcactagcgc 480

aaacgcaaaa cattagaatt aacttagtta taaaaccaaa ccaaagcgaa cgaagcacaa 540

acccctcctg aagcagtacg tgagtgtcgg atgcactaca aacttcgtcc taatcctccg 600

gactttacct gcccaaacca cagcttcaaa agctaaaact cccctcatcc taaaccaaac 660

gtcgtctcac cagtttcccc cggtgtagtt aatctaatcc ccatttggca ctcactagct 720

agctagtgga acgatctccc atggccatcc atctatctct cccctccact tgtttcctcc 780

ccagtgttct cgcctttata attgtccagg ccgggggggca taatgcagct agtttaagac 840

gctgaggacc cccaaattgc actagtttgc ttccaaatgt ttgtctttgc ttagagagtg 900

cgtgtaccgt ttgcgtcttc ttgtgaactg aagctgcttt gccaaatgct aaccagctgg 960

atttagcatt gttcttgtat gcttgtttat gaccactgta gccggaatgt acccacggta 1020

atgtttcgca atgcagggaa ggcccaggaa tatttgggac atgcttctga tgagagttac 1080

tgtgtgtgac ttttctctgt ctagttttgt atgccacgtt tgcacaaaag attgagctgt 1140

gtttaggatt attgctagtc aacaagaggt tctttgggac cacaaaaaaa ggtccacatg 1200

aattgtattg gaattctca 1219

<210> 4807
<211> 1041
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_60452_G1, chr2:48832628..48833668, Cluster 29

<400> 4807
gttagattgt ttatgtggat tagacacaca agctttgact agcttacagt tacgttgacg 60

tgtcattatg tcgagcaatt atacatgtcg agagcaatta atatatcata aggcgaacag 120

taacctgatg aagcttgttt ccaacgcagc tacgatcgat cggtatgcat acgtaccggc 180

cgttttcctt taggtatgca tataataaca acaactagtc agtaagttta gctagccagc 240

ctttttatg tcatcaagat tagcaccaat taatcggaga taactagtca gtataaaaaa 300

acgtcatcat gtgactctta agcaaccggc ttgaggttga ggtttcagta cccccaggga 360

gttgagtgct gtactcctac tcttgtatag tcatttaaaa ggtaggtagg tatcgtatag 420

tatagtctag gctagctagc taggcggctc aacttcttgt cacctcatgt acgaaaggga 480

acacatgcat gcatggccca aggcctgcac caggattgca acagcatcag ccatcagctt 540

catttgtttt cttccagaag ctcattagca gagggctagc tatatatacc atgcaatgca 600

tgcatacaca gcacatctga aagtaatata aggaagagtg ctgtcgtcga ctaattatat 660

taccacctaa agctaactac tacttgctag aatttccagc atgaaatgga ccatgcacgc 720

tggtgtcctg ctaattaata ataccctat acctgtagta ggagtggatc ttgctaatgc 780

tgcgacagaa ctcctcatgt gtcatgcagg cgtcacaacg ccagcagcat gccctcttga 840

ccattatatt gcttttgccc tttgctagct gctatcactt gtaggcttag cttgtggcac 900

atactaacat atacacgcct cccccaccaa actaaaaagg tatcagggag ttcagtggag 960

ctgtgggaaa gtacagatca gggagagcat cacttgggca tgaagccacc caacttccat 1020

ttctataagc cattttcagt t 1041

<210> 4808
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_6518_G1, chr1:33452129..33453134, Cluster 29

<400> 4808
ccgaacagca ggcagcaggt gtacaggcta caagataaca agatttcatt attttcacgg 60

gaccagtagc ttcagcaagc gtggagtgga atggattaat catctggttc gcttgcttgc 120

tcggtgatcg atttgaatta ttttgctagg cgacggaaat caaagggtgg tctcagtctg 180

tctcaatatt aagtaattgt tcaccaaatt tttggcttgc aattaaatag ctcgtttgaa 240

gaaggacaat ctagcaagtt tttgagagag gcttgatgta tactcggtga tgtgatcatc 300

gattgactct atccaattca agcatgtgtg tgcgcaaata aagccaacct ttctgttctg 360

catgttagaa tgacgtgaat aatcatacaa tcaaaataac tcagtagtta aattagaatg 420

aaaaaaatca tcccatactt tctatttttt ttatctcagc agttaaataa ctaaatagac 480

acatatacat aatatatttt tatgttgttc tgtgttgtaa atgatttttt ttaaataaat 540

ttataggagt gttcaacaat gtcatcatga tcccaaaata ctgtaaatgt tgtaaacttg 600

taaagtcaat atgtatttat agaactgtgt aaaaatcatt atttttgtt aaactcctaa 660

taacatgtat attaaattag aataaaagaa atcaccttgt actttctgtt tttttaactc 720

agcggttcaa taactaaata gacacatact tttatacgtt gttctgtggg tgtaagtaat 780

ttttataaag ttacaggtgt gttatataga cgcgcacgtg ctcaatctgt tgaacactcc 840

tataatttat agaatttatt tacagcacaa agtaacataa aagcgtacgc gcctatttag 900

ctatttacag ttaaaaaata gaaagtatat gatagctttt tttattgcaa tttgaagtac 960

atattactgg gaataataat tttttttttg agaaattcgg gggggg 1006

<210> 4809
<211> 1071
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7377_G1, chr1:38215539..38216609, Cluster 29

<400> 4809
gtgtgagtca atagttacaa cttctgatat cactaaggga ggtttggacg ctgaaacaga 60

atcatgcaaa tataagttta aacaaaaata ttatcagaga aatattatta aaagaaatta 120

cagagaaaaa aaactaactt tcagaaatcg gatcactatc cggtcggatg gagttaatga 180

taggttcatc agccctagga tagattccac tttcagtcat tcaacggttt ccaatataag 240

catgaagcat caaatatatg gatatctttg ggcggtgcac tttacatgca caagaaaatg 300

acaaactgtc tgttacacac aaggtctacc agtgcgcccc acagggatga aactaaaatt 360

atgttctctt caactactat gtaaaggtgt gtttgttttc ctcgtatatt atataagtta 420

gattacaacg aaaaagtata aagtcaaaat attattttat gatcacaaat aaactaaaat 480

aaataagtat agagtaattt atttcaactt atttatgatc tcaaaataat attttactct 540

tttactattt cactgtaatc taatttatat aatctaagtc cacacccgag tctccagctc 600

agataccata actatgggac aataattttg tctgcttttg tttataattg atttatttat 660

aattgtcgta cagggcggat tttctaacat ttttgatcgt gctagtctaa aatcatgaag 720

cgatggccat aataaccaat aaaaaatcaa accaaaatgt ctaaagagac cctcacgtct 780

ttgaacatta attcgatttt gagagcatat tcgagaattg taaagaacaa ctctctattt 840

tatatcctaa caggaggaaa actgcccttc agtagtttgg taaaaagatt ctcttaacca 900

cgaaaagttg ccaaattgtt ttctctaact ttaagtttcc gtaatcgaca aaaaacttca 960

tattcgcgct ctctcatacg tgtagtgtag accaagtaaa ttgaacctag ggttaatttt 1020

tttaaaaaaa agaggaccac ggacaagaga aacggcaaga caaaaaaact a 1071

<210> 4810
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_7575_G1, chr1:39766063..39767102, Cluster 29

<400> 4810
caactcgtac accaaattca cgtgagggga atgactcagg gcatggttgg agcccgtcta 60

agtccactct ctttgttatt atttatttga tgaagttgac ttttttctaa aactttaata 120

gttcagttta ttcaaaaaat taatgtaaac atataaaagt ataataaata ctaaacttaa 180

cttaacttaa caataggata cacaacaaaa aaatagatga aacctacatt ttttgaataa 240

gaccagtgat tgaagttttt ttttaaaaaa agtaatcatg tcaaataaaa aagaacaaag 300

cacagagaaa ttatttgtat gcatgttaaa attttgaatg tgccatgtaa agtgcaattt 360

catacacgac acatttgctc tttcagcaac tgttttgttc ttggtcgttt agttttcttc 420

tcataaaatt tatccggtgt gcttggatac tcactcctcc actgaaattt aggggacgct 480

attcattttc agctcctgta atttaagagt aaatttgtga tttcatcaac tctactctat 540

aaactttatt atagaattac ttcataaaaa ctcaagagtt ttcatctcta tatttttttc 600

tactatagag tgttggttac ctactaaagc tcctacacga aaccataaca aggcaacata 660

gttaaaggat acaccatttt ctcttcatct tggagtgtcc gaagataaag aaagaagaag 720

taaaggaaat aaatgaaaca tacataaaaa taatcaacat aaggtttaac atggaataaa 780

caatgaatat tttctttcat atttttcttc tcctcccttg gataaaagtt tataaagcag 840

attacaaagt atacgccatt ttcccttgaa tattatagtt cttcatacac taagctatct 900

gaaggcaaca ctgatttagg gtgatagaat gctcaatcct ataataatag tgtctgagga 960

ttgtttggtt gttagttaat agggtagacc gtgagatcaa gtactaaatg caaaacacac 1020

atgagacaca aagatttaga 1040

<210> 4811
<211> 1252
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7677_G1, chr1:40177663..40178914, Cluster 29

<400> 4811
ctatggggaa gctctaatca cccattcact aatcagtgat attaactgtg aagttgatcc 60

ttttcaagtt taattaccag ataacaatgt gcattacagt attacaaata ttttatataa 120

tatttgaagt ctagaaagtg atgtataaaa gtcaaatacc tcaatttaaa tataaagggg 180

agctgaaaat agggggaata ggagaaatat agggatgaat gaaagaggga gatgcattta 240

aaaatgaata gaaaatataa atagggggaa ataagagggg gaatggttag aatcagtaaa 300

cttttgctct ctcatctata ggttagtgac ttgcatggcc aacttgttta taaaagacat 360

ttcttgtttt ctgcttataa aaatgctagc gaagttagaa ttgcccataa gaagtgcaaa 420

tgccttatgg tagtactaat agggtcactt tctttatggt tgtttggtga ccaaagaaac 480

ggaggagata tatggaagat gaattatctt tctattcaaa attgaattga atagtttgaa 540

tagcaagggg attcttctcc tatggatctt ttttattttc ttggttacgg agaaactctg 600

cacatatgcc tatgtagtga aaataaaata atatttaaac taggctataa atccataaag 660

tcacctatcc caggtaaagc cctacttatg atttggtcta ataactacta cttatagaaa 720

ttaatctgtt tagtactcac cctggtagct agattaggta cgataacgac tactctccta 780

actgctacta ctcttactta ttgaacgttt tctatttact accctaactt ttcatagtat 840

tttcttgagt cacaaccctg ttctcataag aaaggaatgt ttttcttggt tactgataag 900

agaacaaata agaatggaga gttatcgaag tgttctgcta ctccataatg gcatatagga 960

aagccaaaga aagaaagttg aacgtattat cgaagtgctc tgctactcag ggtctatatt 1020

aacttgtagg atgagtagta actacctgta ttcgtatatt gaaaaaaata aagaaaattc 1080

cagtgtcgat taccgtttct ggttcaagaa aagggaaagt gttcagttga taaaagaggg 1140

gtttcactca ttggtgtaat tccgttgcat cggtgagtga gaattggtgg ctaatgctag 1200

ctgcttgatg cattataaaa ggccggctag ctatgggcca ggtttttttt at 1252

<210> 4812
<211> 1086
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80375_G1, chr2:173766773..173767858, Cluster 29

<400> 4812
catgtcgccc ggccggggct atccatcagg ctagggtagc cctgcagccc atgcatgcgt 60

cgtggtcgtc gtccatcgct tctctcatct ccctcgctca tcttttcctc gtcgtcacct 120

ctaggctcta gctagcgcag ccagcgcggg gccttttgc agcatgtctt ttcacacgca 180

tctctgtagt aaaaaaacca aaactacgta gtcgtcatcg ccaaaggcat gcatatgcat 240

gtggcggtaa aaaagaaccg atccatcact ctctttctca gctagctagc tgcatgcgac 300

tgtacgtgcg agctgatgag cctgcaactt gtgatcactt tgcgtcagct gccaaggtat 360

acagtccgcg gcgggatata tatattacat gcatacggtc cacaagctag cagctagcta 420

ctacatatat acatatatat agtagtacgt tgcttacagt gcaaaaagta agattcgtgc 480

atgagaaagg ggcagtttga tgcatgaata attaaagtga gcttatagat gcatgcatgg 540

ctacttcttc ggtgccatgc atgtttagaa ctagtagcga tagagagtgc ctaataataa 600

attctgatgc ccggccggtg gagtggtaga ttataataaa atattagagg ccaagtgtga 660

tatcatttgt attcaagaaa tgacttaaac ataatatgga ataatttaaa caacatggaa 720

tgaattaaaa cagtaaaata tcaaatggaa attagttaaa aatacctcag tagtctaaac 780

ataagtcaat taacaaacac caagtaagat gaaatatcta aaacacacgg aataacttaa 840

tttagttgaa aaaactaaag gagaattaga aagcaccgag taaggttaaa atgtcccaaa 900

tacatgaaat gatttaaaat tacatggaaa actaatttaa agcattgaat aacagaaaat 960

accagaaaaa cagatggaat atcttaaact agctagatga aaggaccgaa atgagagttg 1020

aatgttttaa actggttaac atgagttaga actagagtgg gttgtcttta actagatata 1080

taaaag 1086

<210> 4813
<211> 1196
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80592_G1, chr2:174604366..174605561, Cluster 29

<400> 4813
cgattaaaca aagtgtgtgg ttgcaaaaac accagggacc aaatatatac aaggaaggat 60

tgctagggga gtagggaatg agtgatggca ccatagagta tgcctactag gtcatgatac 120

tacaagccca atacataaag attttataga ggttcaggct atagagtgcg taatatatat 180

cctatgtctc ttagtgatgg tggataattg catgaagggt gtacataaga ttagaagttc 240

taagtcaggg gaactagaac tactacttag gagaaaggta ggctaaagaa aactaaacta 300

actccttgta ctagcttgga tggattgttt tcaagtctct tggtttgagt ttggtcttat 360

gaccctgaat tgaatgttgt tctaccaacc gtttcatagt ctaaaggagt agtagtgttc 420

atgtatatac ttcatgtggc ctcgacctat catattgcca agcaatcatg ttctatcatg 480

tgattgtatg gtatatctta tggtaggcat gctctgatgt aatcatgtca ttatgctctt 540

gacgcattaa tgctcctcat acctttttgtt acaagcatgg ttcttcgtac catcctacac 600

atgtaactag gatcctccta atgcttggac aagtgggatc tcctatctaa attttatagt 660

gtattctaaa ctatatgcat atagtggctc taagtacacc tgcccatcac gcgtgtcagg 720

gcagagggca tgctcataat atcacattaa acactaccac tgtcaaagtt atcccttggt 780

atgataaccc actataccga ctacctaggt gggcattaaa acctacgaca tcgacctttg 840

cattgtggtt atgatgttcg catgtgatag gctaccgata atgctcctta tatctcatcg 900

tactactagg tatgacatgc acttattttt cgagctatag gaccgttgtg tgccctacta 960

gttatgttcc gtgtctacat gccttgttag ccctgttacg ttgtccatcg catgtataat 1020

gagttaaacc caagacttat ctattaagat atcacattga acaatattca aggcatattg 1080

atatcgagcc catgtctcag tgtcatacta tcctagtggg ccctccacac cattcagccc 1140

cacaacatct cgatgtggtt actaagtcgt tgttgccttt gggtggccaa ttagtc 1196

<210> 4814
<211> 1074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80792_G1, chr2:175680605..175681678, Cluster 29

<400> 4814
acatcatgtc caccccaaac atgcagaagt aactgaaaag cttggccaag aagggtgtaa 60

ataacatggc cagtgcccac taatacccac gaaagcttct ctctcgtcag ccgtcattcc 120

gtcaacacgt ttttcgaggt cccatccgtg aactcaagcc accacctggt cctctcgact 180

cgacgcgtca aggtcccatt cagcttccac gttgctgcgc caatggggag caagagcaag 240

agagctctga caagagtaca agagcgatgt accaacaaac tatcacttct cgtggtgtgt 300

aaccaataca ataaagtcac catcaaagtg gtatgaatag atcctctacc tgatgcgcgc 360

gttactcact tttagaattt cactctataa tttcattcta aaattccatt atcggccagc 420

cagctcttag attttgtgac agaatcgatc tcacaataat aatatctata taagccgata 480

gagagatttg tattcgtgta gtctctggct tcttctcaaa atccacggag aaccagttcc 540

aaacgcggta tacgcactca tgataagtac agtaaagatt caaaatgctc aaaagttatt 600

agtgttctct gataaataat ttcgtgattt tcagtgtttt ctgcccttgt ttggtaatgg 660

tacgtactag caacttattt tttttctcca ttttgtgata aagagagacg gtgcggacca 720

ttccgttata ctagcaattt atttgctcgc acaactggca aataaaccaa gctgtgctat 780

ggaccagtcc tcacacatta attatttctg acaaagaaac gaactggtct catgcccgtc 840

aaacgagtag tagtagtgag cagtgggcca gtggccatgt cgtttacacc ttctttggcc 900

aaacctttc tttggttatc agcgaccaga ttttgtgcgt atctgtatat ttgtggtgga 960

cagggcgtga agcaaactaa gatatcgtgt tttatgtcga gtgatcttca gagatttagc 1020

aggattcaac acatacatat atagtagata ccagtataat gtcccatata tata 1074

<210> 4815
<211> 1086
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81339_G1, chr2:178801933..178803018, Cluster 29

<400> 4815
attcactacc gaaatacctt tatcttttga tctcacgacc tacataatag attcacttgc 60

aaaaaatcct tgatagttgg cacgctctat aggagaagtc acactaatta ccatagagat 120

gatggtatcc atggttttcg cacaggaaag aagtcatctt cggcaccctc agattcatcg 180

tcgacctact tagaaactcg ggctcatcct aaatcttttg gcgattctag cgccccatgc 240

tcaagtttct aaagatccaa tatacacttt gctaaactag ggttgatctg gccttacgac 300

atcgacacgg acttggactc aacttcgact tggaaccgaa atcgatctat gacccaattc 360

ggactcgagc tcatatagta catatgaaga ttgcttcata ttcatgggag gttctagagc 420

actgagtaaa tgaggcatgg tcatctaatt taaaagtccc tactcaaaca cttagattac 480

tgagtccacg agacaataat caatcagagt tttgagtcct aaaactcgtg catcaatgaa 540

aggttttcct ataaggactt cgagattact aagtgcatgg aacttagtca tctctatgga 600

tgtcgatttg aagttaaaaa tgggcttaac tctgaagcta atactcaact cgagtgcatt 660

caatacgacc atatggaaat aatgatgagt ccatatatat gagtaagtta tctatgaatt 720

tcggaagcgt tgagtttgag ttcatgtaat tcgatcatgt atacatttta ggaatatcga 780

gtttatggaa cccgatcatc tacaattttc aggcgtacct caaagtttga gaatattcga 840

actgtttttc tcatcatttg actactttag gtatgatgtc acttagtggc atatccagga 900

agggatggaa ggagtggctg attttctagt gactagtggt gaaagcagca taagctagta 960

ggagacttat ttttactcta ttcttcctcc tccttccttt ctctctgaca tctatatctt 1020

tctccaattg aatatggggg tcatttttct tctttcttct atatttttct ctacttgcga 1080

cctcta 1086

<210> 4816
<211> 1280
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81887_G1, chr2:181189844..181191123, Cluster 29

<400> 4816
ttaatcgcat tggttggtag tcaaagtatt gcacaactga cttatcacat gtcccatgaa 60

taatgcgggt catatgatgt ttggggttcc acatctgaca attgagttag gagagaaagg 120

aaaaaagtta agtatgggtg tgtcattttt accttcttgc tttctcacat gattcaccat 180

gcttgtctat ttctttgctc cccctcgcct tcctcctcct aagtcaggta ctatcattcc 240

ctcttgtcta ttcaacacga tcaccattgt tattgcatta gctattgacc tcctgccgtg 300

tggtaggatc ctcaaccagg aaggcatgga caaggtgcat gagctcctcg ggtgggtcag 360

accatcgacg tccaacaatg tttgcccaac gatgattttg gcatggactc cctaggagga 420

aataggagag tacatcatat tctactctca tgtaatggtg ggaatggact tatcattgtt 480

gaggttcttt atttgtgtcc tcaactttta caatctttag gttgggcatc ttaccctgaa 540

ctccgttctc accctcttgg actatctagc taccaacaca ctaaatattt ctagtcacaa 600

gatgtgtaat actctacgtc ctctttgtgt atggtggatt gatgatagta gtcatggaga 660

acattatata ctcaaatatc aaccgagtcc gatgacaatc tagctctccc tttccttttg 720

ttctagtgag agttctagat tatctggttc ctagatcaca tctagctgtt tcttgaattg 780

agtttgaatg gtttatccaa attgaaccct ttctatgcta ctctactact ctcttttata 840

ggttaaagga ggagagagtg atacatgcat gttgggcggc gaccattgtc taacagagac 900

tcgcctatct tgtcttagac aaagtccggg tgcatgcctt tatcgtgcca taatgttaag 960

attgttatgt tgtagtgaca tatatgttat gttgtagtgg taggttttga agcccatgcc 1020

gtctggcatg acatagttgg taaatggtac aagtggttgt actttataat gatttgctcg 1080

tatgctagta cattcaggca tgggaacaca gatagtggca cacattgcat ggtgcctcag 1140

gtattactac tactacacat tgttgtggct acatgaatgg tgacatgtat atattacaca 1200

gtagcgtcgg atatgcctgc gacctccgtc ttggttacag tgcaccacct tgaccgtcat 1260

atctcccatc acctatatgg 1280

<210> 4817
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82331_G1, chr2:183612510..183613579, Cluster 29

<400> 4817
aaatgtgggt tcagatatta tctaacatga atacaaattg aatatagttt gaattatagt 60

aagcattaat aaaatattca catatctact cattttagtt gataacaagt cccaatttgc 120

cttgcctatg tactttgaac aacaaatcta tatgactaga tcaaacacat gtagataaat 180

atagaccata aaaccatatt ttatccaaaa aaatatttca ataatatcat taggaggata 240

tatctagacc cttagacata gggtagccgc ttttcttggt ctattggggt taatgtttta 300

ttagcaggtt agccttcttc aaatgctata aaaagttaga acaagctata atgaaagtta 360

ttcattagtg gttttataga aagcatgaac atttttgatt aatcgtgcat gaattctttt 420

aatagtacaa gattcgtgaa cacaaataat taaatacata tataagatat agaagaatat 480

gttttcatgt ccattactta acattcatca tatcagttgt gctaagtgat attattaaca 540

ctcaatattc aactgttcaa taactatcct atgatttatt atattattta ttaagtagag 600

aacataaagg agagacatag attatagttt tgtagactaa agaatgcaca tatatacctt 660

agttaggatt ggagtgctaa aattatgttg cttctagatt aaatagtggt gtttagcgga 720

gctaaaacat tagaagtagt aatagaggaa caatcaacaa taatatgatg gtaggccatt 780

atgaaaaatt atagcgtatt atttaaaacc atgattggga tgctttcgta acataactag 840

gaaaccaatc ctagtaaaaa aggaaaccaa cttgtaatct tttcctttag gtaatataag 900

gaggggcatt acatggaaac ccctctatgt cccttgatgt ccctcaccca agagatacat 960

catcgtctag tggcacccct caatgtcatt caatgtcttt gaggttcaca acatgttctt 1020

tggtatcatc tagcatctct cgacgtcact tggcatccct caccattatt 1070

<210> 4818
<211> 1029

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82579_G1, chr2:184973075..184974103, Cluster 29

<400> 4818
tgctgacctt gcaacgaaat ctaaaatata ttataatcag actatgtatt atataggtat 60

aaatcgttta actcactcgc ccataagtag aactaatgag ttcgaatcac atacaaacta 120

tggacgatgt aacctatata ttttacaatc gaatttcata tctcatcgtt agctagattt 180

aagctattat aattcgtatg cagtagtcca agtcattata tacacaaaca tatacataga 240

gagagagaga gatttttctt cattattgta agtcttggtt agcttaatct gatgtgtttc 300

ttttatttat acaagaagag ggtgatctta ttctataata ggggttaaaa attcttgcaa 360

aactagttaa aatacaactt aaatgtgtaa tggcccgtaa aaactggcct agccataaac 420

cggttttcct atattagcac caccaaaata tattttcttc atttagattt taaatgggat 480

gagcttgctg atcgtgaagg cttccctgca agtgaatttg gagcacgaac aaaagtgaaa 540

taaacacgat ataaagttgc aaggatatat gaagtatatg agtttcacaa ggttttaagt 600

ctttattcga aagaactaat caacatagat gaacaagata aaaacagagg gctaatgttt 660

cacctgactt gatcttaaca atacaaatgc agtgaatgtc catttcatga gaaaaacaag 720

attggaacaa aacctgaatc ctaagagagt cagatggata tttacagaga gccttgagta 780

tcatccccat tcccatgagg ccatgaacac atcccctaat aggctctaag atgataaatg 840

ggccaataaa ctaaaagacg gtgtcatagc atcttggaaa attatagatg atgaattgtt 900

tcgacaattc atgttgacac ggtatgaaat ttaacatcaa atcgaagttt ggttagatta 960

tcaagttatc ttttcatgca tacgtagatt gtcaaaaatg aaatctatat gtgtattgga 1020

cacatcaat 1029

<210> 4819
<211> 1124
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82751_G1, chr2:185841006..185842129, Cluster 29

<400> 4819
gacgatagtc aatagcagcc tgtaatagca gaccttctag ctgttgcatt atgctggttc 60

taaccctcgt gcctatatga accgctagat cagctattga tcgtatgatc aactctgcta 120

ttgaccatcg tcagcatgtt tgaattttat aattatgaac atctcaatca atttagtctt 180

ttcaatttta gcaaatttta aactgattgt cctgtttttt ctgggatatt acgttttgca 240

tatatgggat atcttactta agatcaccta atttatacag tccagtcggc gacaccacac 300

tgcagtactc ttgccatcct atagatttta ttctgccaat taaaagtact tatgtattac 360

tccctccgtt tataattcgt ctgataaaat tataagtacg gttttgaagt tttcatttat 420

ccgtaaaaaa atgaataaga ccagaaaatt aaacttgata aaaaacaaat aaattataaa 480

ttaggagaga gaaagtagta atgttgcctt gtcgtgttgg ttcttggttg gttcaggatg 540

taaaatcatg tagtctatac catattaaag tgtcgtcatg ctcttcacat ctaaatagca 600

aaaatgataa aattatgtat aaacgaagat ttgaactatg attttattag ctaaaagcct 660

atattcatac tcatctatcc aacaaaacat atataacttt atgttttata ttctatactt 720

tattataaat agaaaccgta cacagacact tgaacagctt ggttctctat atggtggctt 780

ggttctgttt tacctgtttt tatcacgatc gctattgtca aattttgttc caaattagat 840

cgttttcgtt tgagtcctgt cttcgttcct gtttgctatc ttttctgttt tcgattttat 900

ttcttaaaat aaaatgtaaa aattgaatat agagtatata actgttttta ggaccatatc 960

taaccgcttg gtggtcgagg catgagtgca cgactcctgt acggaactcc cctattaccc 1020

aaggctggtc taatatattt accggccggc ccgcttaggg cagagcccat gtatggtgaa 1080

tggatgggtg gcagataggc ggagtcattt ggccagcctt gtgc 1124

<210> 4820
<211> 1401
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83650_G1, chr2:190924313..190925713, Cluster 29

<220>
<221> modified_base
<222> (1251)..(1251)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1251)..(1350)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1252)..(1252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1253)..(1253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1254)..(1254)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1255)..(1255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1256)..(1256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1257)..(1257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1258)..(1258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1259)..(1259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1260)..(1260)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1261)..(1261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1262)..(1262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1263)..(1263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1264)..(1264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1265)..(1265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1266)..(1266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1267)..(1267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1268)..(1268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1269)..(1269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1270)..(1270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1271)..(1271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1272)..(1272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1273)..(1273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1274)..(1274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1275)..(1275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1276)..(1276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1277)..(1277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1278)..(1278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1279)..(1279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1280)..(1280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1281)..(1281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1282)..(1282)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1283)..(1283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1284)..(1284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1285)..(1285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1286)..(1286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1287)..(1287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1288)..(1288)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1289)..(1289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1290)..(1290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1291)..(1291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1292)..(1292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1293)..(1293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1294)..(1294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1295)..(1295)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1296)..(1296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1297)..(1297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1298)..(1298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1299)..(1299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1300)..(1300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1301)..(1301)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1302)..(1302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1303)..(1303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1304)..(1304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1305)..(1305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1306)..(1306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1307)..(1307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1308)..(1308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1309)..(1309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1310)..(1310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1311)..(1311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1312)..(1312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1313)..(1313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1314)..(1314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1315)..(1315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1316)..(1316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1317)..(1317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1318)..(1318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1319)..(1319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1320)..(1320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1321)..(1321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1322)..(1322)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1323)..(1323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1324)..(1324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1325)..(1325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1326)..(1326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1327)..(1327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1328)..(1328)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1329)..(1329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1330)..(1330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1331)..(1331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1332)..(1332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1333)..(1333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1334)..(1334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1335)..(1335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1336)..(1336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1337)..(1337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1338)..(1338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1339)..(1339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1340)..(1340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1341)..(1341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1342)..(1342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1343)..(1343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1344)..(1344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1345)..(1345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1346)..(1346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1347)..(1347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1348)..(1348)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1349)..(1349)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1350)..(1350)

<223> a, c, g, or t

<400> 4820
ccttgactat gcaaattgac aaaataacca aaaggatagt tgcagtctag agaggtaggc 60

tctaggcata tggaggcaaa ttgacctttg gaagtcttgc ctagcaatcg ctcccgattt 120

cccatccaag agatgtgggt tttcatgagt caaactttaa ttcaggacct gtttagttta 180

gttccaccgc tagaagatcc aggtcagatt tgttaagaag tttgtagatt aaattaaagt 240

agtttaaata gtaatatcta gaccaaattt aaaacaaaac agacgatcta aattctctct 300

atgtatgtta aatttagctt catgattcct tgaagctaca aattcccagc tccaagagat 360

ccatcttttt ttaagattgg tgttcttgcc cctttgaaag ctaattgcta tctggccttg 420

tttttttca actttgcgat ttagctattg attcctaggc tctgttagct aaagattgaa 480

aaacaaatca agggaaaata aataaataag gacaatactt actcatggtc ttattctaac 540

cctcgtatct tttgctgatg gttgactaat catgcacaac ttgttaaact tttcttatat 600

tctaaatatt tgtaaatttt gttgtatttt ttttaaatgt tgttcatttt tttgatgcct 660

aaacagaggt ggaaatagta taatactaaa atacgtaggg gcaaattcac gtgataaaac 720

caatcatttt tagttaagtg gcactattaa ctcatctatg taaaacatgg gtcaactcta 780

aaaaacagtg gcaaaatcat aaatttaaaa taaatgtggg tgaaatcata attaagattc 840

aaaatagggt agaaacattg agccgtttat tttggaggct atgccaaatg gagctttatt 900

atgtaaaact tatttttttt tcaaaagaac ttgcacgtca ccatgaaatt caactggtac 960

agattatatc ctacgattta tacattagat taatgtggtc taaatatatc taatctaaac 1020

tacaagtaga atcatctaaa tattcttaac atatctccga ttttagctcc aatatttgtt 1080

ggggatataa acctccaact aaaaaacatg tttctaagtt gaagctatac aaaattgtcc 1140

ttactctctt tggcttagat tttgctacat gaatgcgctc gtcacaagaa aattcaacat 1200

caacaatgta tatacacaat ctaatagaca tttatttgca aatcattgta nnnnnnnnnn 1260

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1320

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn tcaagtgaaa atgttttatc gtaatgagga 1380

tattaataaa ctcactagtc a 1401

<210> 4821
<211> 1059
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8554_G1, chr1:44936295..44937353, Cluster 29

<400> 4821
agttgtcctg cgcaatcgaa tgtgttgtat tttacatgcg cacaatgcat attacttgcc 60

tttacatatg caatgtagcc aatgaggcaa tgagggatct agaaaaatta gctagacaag 120

acatctccta ttatctttca tctctaaaca attattttaa attttcatac caaattgtag 180

gagagagact ctataatttg agttagtgag ggttcgattc catcgcccca ctctcatgtg 240

ggatctgtac ctgcatgtag ccataactgc tatatctttt tcctttgttt ggagctatac 300

aagaggatcc taatgttcac tacaacaaaa tgcattccac aagggattgt aatgcatttt 360

aaaaggccat cgtcttgcct gtctcaacta tatggttatt agaaataaaa actatagagg 420

cggacaaaac atccttacag tttaaatgga actacatcta caaaattatt gaaacaattt 480

aaagggatgc cacattgcga agctcattgt tgtctcatca ccgagttgga gctacctcac 540

cccactaatc catagagttg agcaccatca caaatgcacc aaagccccaa gccgaatcgc 600

catggatcaa gtgtcatgta tctgctcccc ccaccatgga tgttgtggat gagccgccat 660

ggatgttgtg cctccttgtg aatctgctag atgtgactac tatcattaga tataaagagt 720

atgagggaga gagaagggtc atcatagatc atacctcaat aataccactc actaagggtc 780

tacgacctac gtgcgcctcc atgtaccgcc atcacaatca caagcatgag atatagtaac 840

attgtaccat aggaaaggaa ggatatgcat gcttgccaaa ggggaggtgg ggtgtcatga 900

cccaaaggcc gctccaaata aatctttgca aataaacatc ttgaaaaccc caaaactaat 960

cattagtccc ctaccttgag ccctagactc tagtggaccc tagatttttt tgtctcacca 1020

gaccctagca ggaccatatt atcgccatgc tcagtgtaa 1059

<210> 4822
<211> 1387
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_858_G1, chr1:4553282..4554668, Cluster 29

<400> 4822
ggtgatcata aataatgacg accgtgtgaa tttaagacac tgtgctccat catccaagcc 60

tattagtgtc ttcatgtttt tttgacagat caagggcaga atgtttctgt ttggcactgc 120

gctggctcta gctcttagcg actcttgcca gttgccacga agccttacca aacatgacct 180

cttctagctc ctccttatag tttttgcctt aaattataac aaaattgcca ttaaaactgt 240

ttatatagaa catctttcaa aatggctcca cctcttcttt gtagagctct tgggggctta 300

agcttccacc tggcagtgga ctgttctgta gtagtcatat gaagcctttt tttatcgttc 360

atccatataa ctataagcca gtgaagctac tgctttctac atcacccgtt caccgacttt 420

agctttattg gttgctatag caataaacta gagctggcta aagcttcact aaaaaaggat 480

gttttcaaat gggaattgct ttggcggatg tgaaataccg tacccaccag aggattgctt 540

atatttgtgt ctatattttg aatgtcaaga atgctaatat agatggaagg aaggagcatt 600

tgaatgtgaa tgggtttaac ctttttattt atatacattc ccacagtatc aagttaactg 660

ttgtcctcca aatttaattc taatatattt tagacatgta caacctagat tatggtacgg 720

ttctccacgc aataagaaac tcattcatac atcatattgt atctaatcct tgtatcttat 780

ttactagaac cattcaagat agagacattc atgtgagttg tatgagtgga attgtactta 840

aagaatcgtg caagagacat tcctttaccc ttttttgcac ttacccctta gataccctt 900

aagatacgag tcatttatat gggttgtagg ttcccttatg catttattca tggatcacta 960

atcatgttgt tgtcagaagg gggaaatacc acatactaag gccacctcta gcagacttcc 1020

tatatcacac tctctattat ttcaaactcc actatgtaaa ttgtatggtc atatgcatga 1080

tttgctgaac acggtctaaa taggtcatgg gtgcgaattg aaactctcgt tttgggactg 1140

atatgatctg ttatatatca cgattacaac ctatttatag gattgtttca cctaagctca 1200

ttttaacata agacattttg acgatatata aaataacacg aatggactca aagggtagtc 1260

tgggtaggta agccctcgac taccctggaa tttggtccaa aaataaacca ctcatgttta 1320

gacccaaaga aataaatcta tgtaagttgc aacctaattt gatgaattta aatgcattat 1380

gagacat 1387

<210> 4823
<211> 1127
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_86705_G1, chr2:209231588..209232714, Cluster 29

<400> 4823
ttgggttaaa gcccaatctg gttctcgtta acaagttgta gaggatacat ccaacagtag 60

gctgaccccg cagaggcaac actagccact cttacgaaat ctcttgatgt cggacaggta 120

gattacgaag agaggaagga actaaaataa gtaaacttgg agagttagaa gctaaattca 180

tctggatgta atgataatta aagagatagg tcacaatgcc aacaatataa ctaaatagct 240

cacaaataga aaaattaaaa tcaacaaaga agcctcatct ggcaagttga aagtgcaaaa 300

gaaaatcaaa gaaagggtga atcaacatct tcatcaagtg agagtgaaaa tgatgatgaa 360

caatttcaag agcttggtga tgttgctcta tttgtaaaaa agatattata aggggttcaa 420

aaataaagga tatagagttg taaagagaat gtttctcaat aaaaaaagag aacttataat 480

tgtggaaaca tcaaccaatt catagcaatg tgcccccatg agaaggacaa caatcagaac 540

aaaaagggaa ggaagaagat gccatgagct aaatagaaga attgaagcca tgccaaacac 600

cattataaat ttaatgtaaa aaatattata gaattgacaa tagtcattta aattgttttc 660

aacaaatgtt ttaaaattgg ttttagcttt acgaaagaag ctgcttcaaa gcagctccac 720

caaagaagtt gcatctccaa agaaaccagt tcattgtcga gccaactcta attacaaaat 780

taacatccca tgaaaattta aaatgcacat gtaaacatgt attcaatgac actaaatttc 840

tataacatgg ttcacaaatt ctgaagatgt ttaggtaatc attagaaatt gaatacattc 900

ttgaatcttt ggttgtgtgt gcaatatact ttgaagttcc ccaaaaacct ataatcatca 960

aagacaatct tcagagtagt ttataatgaa gcttctcgca aacaattctc atcatgaaat 1020

aatgcctgac tttaggttga agcataataa aaattgacag cacatgtgac attgtctcac 1080

atacaaaggc gacacatagc cgacaaggct gtctaacaac aaatcgt 1127

<210> 4824
<211> 1344
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87837_G1, chr2:215993442..215994785, Cluster 29

<400> 4824
gattccactg atattatatg agggaacctt attgtgacca atttatgaca tattgattgg 60

aattgtgttg aaatgttgag atgatgtgtg tggatttaga ttgagatgca ttgagttctt 120

attgtgacaa ttttatgaca tatggattag aattctccat atctaaactt attaggactt 180

gtagattgta atcctgctag gacttctatc ttatagttct actaagactc ctatattata 240

accaattaga atacttgtct cctaggttat ataaagaagg gcatagcttc ttagactggg 300

gaactgcaac atattgcatt tcataatcca acgcgaggca atttctttgc caaacttaca 360

cttttcagtg gcgtggacca atataaaccg ttgtttttgt gttcaccatc gagtttgtct 420

tgtgccaaac ctcctaaatc ctactccgag taacaccgta acgggattgt cggtcatcag 480

acatcgacaa taattgtatt tgatcataga agaagtaaaa aattataatt tttgatcgac 540

tattagccaa atcctaggaa aatttagagc atgaaacatg tatcaatctg tttatgctta 600

aagtatgtat aagatagtgt tgtttttaag ccctttatat tataagctaa gggaaattaa 660

tggccaaaat atgtttggct tgcctctttt tttttctcta gtccaatacg tattaccatt 720

tttcgaactg aatgaataca tgtcaaaacg ctacacagca atacaatgca tgtgtttttt 780

ttattagaca ccgtagcgta tatgactttc cttttcacga gtgcatgcat gtgcttgctt 840

tgcgcaatgc atatgcatgt ataagacgtt gtccgatcga acgaacgaac tagaaaagaa 900

aaaaaagaaa aaaagaactg tctccggtcc tttgcatgcg tgtaataaga agctagccaa 960

gtttttgaaa aaaaaagaga agaaaataaa tgaagtggtt agatacagac aaaacattgt 1020

gaaaagtgta tgtagaagct agctagtcgg cactctttct gatgcccccg acccatatat 1080

ttcgctgcta atactttgac gtgttccctt tggttccatt ccatgcatag atgcatgcat 1140

gagtgactct cacatgcatg agcgaggtga gggtccagca gtgggtctcc cctcccctcc 1200

ccggcccggc ccctagctct tttgactcct ttttcagctg tggtttgaac atataaagct 1260

tgggcatgag ccagacaaat aatccatggc gacgacaagg accgatcata tcatgcatgc 1320

attatcccta ccaatgcaat taaa 1344

<210> 4825
<211> 1175
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89386_G1, chr2:223715413..223716587, Cluster 29

<400> 4825
gatgggagaa aaggaaatgt aactcaatag ttgtagtgtt gcgtaggttg tgtagagggt 60

tttgaaacat gtgcaggtca tcattttaga gactgggaac agagtgatat ggtctattca 120

attttaggag caaccaaatg agacattttt tgaaactgat tcaatttgag ccaattcaag 180

ggagcctaag aaacccttag gaataagatc agaaatgtgc ctcaataaag gtaggataga 240

ggtgtaatga taagttaggt ttcacaaaat gaagtaaaac caagtgaagt tctttagtag 300

atgatcatgt agcacattgc tccaaatata ttttctcctc taaaaagaaa catatactaa 360

aaccaaatac tgaattaaat cattgaatag catcatgtca cttgcattag tggtgcatca 420

agaaataggt caaagtgggg gctgaattat ggattagaga gtctggagat ggctgcgatg 480

cgaatgaacg gtgttgtcac ggagagggtg cacaaattac aaacatgttt gggttgttgc 540

gtgccaacac atgggggatg gcctgattaa cctatagcat gctattatgc acatgcatct 600

tataactatg agccttcttt ccatgactat gctaaaatta ttgtaggata ttaagttcta 660

cttaggctgc tggattgggg atgcaggacc gctaccccag tcctggatca acccctactt 720

tcattgccac caggcttgtt acagtcaata agcgatttaa aggaatttaa atctccaaga 780

acaattcaat taataaaaga aatgaggtgt tgaactaggg gcacaaattt aaaagtccta 840

tttgtataac catgctacag gatatgcctt tttacttagg taagaggggt catatacatc 900

ggtaactctt catttaatac atctagcttt atctatggtg atgaggaatg ccacatggat 960

gcctagtcaa tggtgagtga ctaaggtttt ggcaagctgc taacataatt gtgggaggtg 1020

caaccaggat ggcaatggac caaatgagag caacaagatg ttggcaaacc ataggaaaaa 1080

tcagggttga ctggataaat tttatgtata atgcttattc aaagggtaat agtgtgccat 1140

atggtgcccc acatcactat agggatagtt ttaca 1175

<210> 4826
<211> 1027
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92543_G1, chr3:2583385..2584411, Cluster 29

<400> 4826
agcccctcga tttttggtac ctcgtcttca catttcctct tatcaaagag tcgcctccga 60

tagcgaaaca taaatttacc gtgtcctatc gtggattaac ggctcttcct gttgcgtggt 120

ttccaatttc tttctcctcg tctcaacata gatttttttt tatctatttc taaaataaca 180

ttattatttt tataaaatta tcacgttgga tcgtcccaat actctagcat gatcaatcgt 240

gtcggccaat cactgactag cgaggctatg tccacagatc atgtatataa ttatataaaa 300

cattatttta tttatttaaa cattagttat aaatatattt tatatataaa tgattttaga 360

tagatcgaat atgttataaa acattagttg aatgcagtag catgtgctct atgtttgggt 420

tatttattta tttaaacttt tgagttgaca catttatgtt tattttaaat ttggttagca 480

tttttaagct ttagtttatt actaagaata tttagtttta gtttagttag ttttaaagga 540

ccaaaaacaa atatataatt aatcggagag ggacatcagc cgatgacaaa aagactactc 600

caagaacaaa gagtgcaatc cattcaaaat ctgagccaat ataaaaaaga gacaaagaag 660

tggtataaca agaaaataaa ctaagggaac tatcacctat atgctttgtt ttaaaaataa 720

aaattcagca aataccctat tggcaagttt caacaaaaaa tgggaacgac catatcttat 780

aacaaaaaca aattgaccat gatcattcca cttgagaaca cacgagtggc aaaaaaaaaa 840

aacttgacga cacctagaac attgaggtat tacgaacata ttaacatttg gactactaca 900

ttatagtttt caacttcaaa gcgaatataa aaatgagtta acatttgtac tattacatcc 960

tagttttcaa tttcaaagca aatataaaag agttccactc ttcttccacg cgacggagat 1020

ccttcac 1027

<210> 4827
<211> 1131
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92579_G1, chr3:2642438..2643568, Cluster 29

<400> 4827
gtcaacaatt catacaaggt ttgcgcaaca tctagcttcc tacgcaagta gttgtacttt 60

tttcaactat tttatatctt tgtttgtgat gctcatgcag ctcaaggaag ctatgttatt 120

gttctaaata aaactcaata tgggtggttt caagttcatg cattgttggt gcatgttaaa 180

ggatgagatg ggggttctgc aaactttgag tccaacaagg acctaagtga caagcaatgc 240

actcatcaaa tgttgcccca agatttcaag acctctagga agggataggg caaaaaacaa 300

aaaaaagcaa tgttagttca tcatcataaa catagtgctt agaggtgctc cggaaaatgt 360

ccatggacca tcatgcttac gaagagaggt aagagattac cgaaaaagca agaagtgaca 420

ggcaactcca aattttagag aggaaagaga cagcaaaagc ggcgagaagt gaaagacaac 480

ttcaactcat agagaaacag acaaccgcaa cagaggcaga tttacctaca agaaatgatg 540

atgaggaatc agcgggagga caaggaggaa aggtttatgt gttctgatgt tgataagatt 600

ataccatggg tcagggacta ctacatcagg aaacagaagc aaaccagtgc taaatcagct 660

aacgagggaa ctccctgaaa cgaacacaaa gaagtactgg tcattgtcga caatgttgtt 720

tagggtcttg ataaatgtgg tctttcactt ggcgaactga gtttaaaagt taattgtgtt 780

gtcctggtct ttgtttcaat actattgtca tggttgatct agatttggat tggttgagaa 840

caagtaatcc attcgtttgt ttggttgttc tattgttgga gaacttgaac gcttgatttt 900

gcttaagaac ttttgaatta tttgttgatg tgtgcacaat atttgttgat gagatttact 960

atgtggtgcc attgtagttg ttgaacgaat gagagttact ctgatcattt cttttatcac 1020

aactttcttt cactccattc aagagacaga aagacaccca caaatctatt aactaatgct 1080

gtagcagttc gcaaacatgt tcaagtgcac aagtatcctg gtccgcacga c 1131

<210> 4828
<211> 1354
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93761_G1, chr3:8324807..8326160, Cluster 29

<400> 4828
tgggaagatt ccacggcaat gttgagaatg tgaaattaca acatatttcg aactgcagtg 60

ctaggtacta tatgttacaa agaggagatt gttacataat atcagatagt ggatgcaact 120

gcatgaacat aaggatcaaa tatgaacaac ctattaatga aaaacagaaa ttgaaggtta 180

atggttctgg atggtaaccc agattgtgtg tataattctt cctagttgaa caataactta 240

tttcgcagaa tatgtgttaa ctgtcaaaga tacaggttac gatattcgga tcttgaggtt 300

cggagtaact cagagtatga atacaattct ccacaggtgt accaaacatt attcatgccc 360

tgttcataag acagacgtca cagaccatat gcatatggga atgtctcaaa ttacctccag 420

cacatttttt cgtcaacaac gaaaggcagc catagcttga tgaagaaggc tgagattgcc 480

ctagatcagc ataacgtgca tcagatgtct tagaaacaga ttgaaaccta gcacgaccac 540

gcttctgtgg cttccttgaa gcttttggtg aatcattgct ttcatgatca ctgttacttc 600

catcctgtag ttcagaacag gatgtccttg tgagtatttt caataaatgt catagaaata 660

cataacacga ttttaaagtg taaacaaaga ctactcaagt agcatatgcc actacataag 720

tagacctacc attctgcaac cacatctcaa ataatgaatc aatgtctcag caagtgtcaa 780

atgtttcaga aaccaattga aatattattg ctaataaatg cacatgcaat ctgataactg 840

ccaagcattt cggtatatct acactgatga atacctcaac aaaatataat tctggatata 900

ttttttctc taacaggcag tagacccgtg tatgagtctt tttgtatatt aaaggagaaa 960

gggtagaacc cacacagaac acagccataa acactcaaac catcagttat tcaacacaaa 1020

cacaactgag attgaatcga aaataaccat gaactaaaaa cctaacgcaa gcgcttgaca 1080

ggttggggat agcggcacag caccatcgaa gacaacagtt ttgatttctc aaattgtagt 1140

tctgggtcta agaacttatg cttgatgcca acttagttac aactttccca tggactaata 1200

atcaaataat ttagtatatc agaaacactc tttgacaatg cattttactt gatactcaca 1260

aaaaggtaat caggaaagat attacttgct caagctttaa ctttaagaga tgcaggtttt 1320

cgaatgtggt cattcaacgc ataaagttct ataa 1354

<210> 4829
<211> 1074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94324_G1, chr3:11228087..11229160, Cluster 29

<400> 4829
catttacttg tgcttatttc ctaactttta ggcaaagatc ctgcctagca tgcaaactta 60

aaatatgtgg tcaataacat gaaaaggata aacacacaaa atttatcaat tacttatata 120

taaacaatgt ttatcagaaa tcacatgaat attcttttga agaaccaaaa agccatctaa 180

cctatatatt acaaattaaa ttgtgtataa catgttacat gtcacatgcc ttgataccga 240

cattggaata tgtgattcat acatgttgtg tgagatgcaa gaccacgtgt ataacaggaa 300

acagtgggca ggttgtctgg gacttttagg ccaatagaaa tgtggcgaac ttaattaatg 360

cgctaatcat ttctctaatt cccttatggt gccaggtcaa aggacaagcc tgataaagtg 420

gtaagagttg tctcactgaa tcatcatgtt gcgggttcga aaaaacctct ctgtatttag 480

ggaaatgctt gtcttggttt atcaccattc tctagactcc attaatagga atctcgtgca 540

ttgaatgtat ctttttttat tgtgtcaggt tccaccggta caagggcatt atcaccttga 600

tcatataaca taaataggat gataaaagat aggtcagatt gaaactgtac ttgctgtagt 660

ctgacatggg caggctaatg gaacagagaa gccatttagc aagaacagtc cagatatgac 720

taatataagt acgcagaagg tatatgaagc agatatatct atctgaagcc tgacaccgac 780

tcatcaatat gccactgctt ccctaaggca aataattgat aacttgcaga aattacataa 840

gaacagctaa acacaaagct gtaaagaatg cctattgcac aacaactgtg cgtgatatgg 900

ggacggatga ccatattatc actataagca tacctgatgg caggacatat ttcccatgct 960

agcccagcag tttttggtat tcaattcatg tttactggat ctggacctga gttgactaca 1020

ctgcttacat ccgctttatc caaaatttcc aatgcaattg tgatttaagg ggtt 1074

<210> 4830
<211> 1205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94618_G1, chr3:12782680..12783884, Cluster 29

<400> 4830
tccaatttct gcttcctgtg cacagccatc ttcatcatgc ttcagtttta tgaagtacat 60

agctaccaag gcctcacctg attctggcca gagtgacttg gaagcaaatt attggactca 120

tcaaataaat gcctatctga cagcccttca cagagaaaag catacattag atgtcaggtc 180

ttcaaaaacg acttcaggtc gaggtcttta cttgtgcttt ctgcaagctg cctatccatt 240

tatctttata tgaccctcaa acttattgct ccatctaatt tcctgcagta gccatatcat 300

ctctgataag ctctgtagca tctgttttgg taatgcatcc aaaacttggt acttctgcag 360

cagaatcttt ggccatgctt ggcacatcgg acccaagatt gggtatgcca ctttttgtag 420

ttatcctctt ctacagcaag attctatgca gcagcggtaa attttcagcg gaaatctcgg 480

tgagcaagtt catgttcctt tcatatttga atgcaaataa tgaggaacca aagcacacta 540

ggatgggctt ctaataatca aatctaaact gaaggacact gttaaaaatt gatttttaat 600

atcaatactg tggccttgca aattgagaat ccatgtttgt aaaggaaata ggatctggat 660

gtaagtttgt agaaggggtc ataaactcat aataacttat ttctatgaac gagaagtaga 720

aaaattgagg actactagtg catacatact tgtgatggag gaggctctgg tgacatgaaa 780

gggtacctag gttcagtccc ttaccgctgc tgggtggcac cacattgttg gcagccctta 840

cctccattag gcccagcctc ttccccacaa ggccataacc acctcctcac attgtatatt 900

ctaccagcca ttgtctttaa gatgcgcaat agttgttctt gctttcatta accaccagtg 960

gtacaagtgg ttgagcatgc tgaattgtgg ttccagttat ctgatatgta cctaactgca 1020

agtgctaatg ctgttttgaa ttttggaaca tgctacattt aactgcaagt gctaatgctg 1080

ttttgttttt ttggaacatg ctacatttct gttttgcctc aactgcaaaa gcaacacaaa 1140

catcgtcata tattgcaaaa agattagagt atatgtcatg tcttttggaa gaaaacacgg 1200

cacca 1205

<210> 4831
<211> 1065
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94752_G1, chr3:13522195..13523259, Cluster 29

<400> 4831
gatggtcagg aggtcgtcgc aggcggggat ggatcacagg cggaggggaa gtacaaatgt 60

ggaagggtca ggggcaaggc cgagtcattt agttccacct attagttgct gttatctgat 120

ttggtccaac taatgatata ggtatctaga gattcagcta attaactata catatttaga 180

tccaagagaa gtagttatta gcagataact aatatctgca ccgattcaaa cagggcctag 240

ttaaacccgt agcttgtacg tccggttgcc gtttctttgt ccatagatca actgagagtg 300

agatggcgac ctagccacag cttcaatttc tctgtcgtgt gtatgttggt gtatagaagt 360

acttttagat aatatactga agcaactacc ctatatcgag atagatgaga gcatcttgaa 420

cgtgtattac ttgcatggag tatctcttaa agtttctaca agatatgtct tcgtgtcctt 480

caatacatca tctacatgta tctttttaaa atagatagag gaacgagagg agagtagact 540

ttgagtaaca cttaaaactc aaaactctag gttttgagaa tagaacacta ctagtacctt 600

atactgcgtt tgttgtattg aggacaaaat atgttggaga cgattaacct cacaatttct 660

ttttagcttt ttatcgatca ttctgttgac ctatatgtga gcagcataat ttgaagaata 720

attaaaaacg ggtcaactca ctcgataagc aaattaaagt ttggtgtctc tcatatgtat 780

tctacctata tcacggaaat ttaattattc tttgcctgcc gtccactgtt aaccgcgcca 840

ttgtctacca agtcactagc tgtttgagtc tatgtgacac aagaaaatta ttagacatcg 900

ttatcaagag tctgttgaca tttgatttgt gtatatatag tatttttatt tgattttgca 960

tgatatatat gtttcttcgt gggtcgcatg caataagaat atgtggggaa tgaatggttc 1020

cttccggacg tgctcatatg cttggtactt cctcctacaa ccagt 1065

<210> 4832
<211> 1128
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97232_G1, chr3:27463016..27464143, Cluster 29

<400> 4832
atgtgaaggt aataccagtg agccgacact ctgcatcacc agtcgaaaat aatgcagcgc 60

ttgcagatag aaaaaaggtc caaagtgatg gtttttctag aatcgcaaga attttatagg 120

aattcaattc aattttacga cgtggacaag acatggcgct ggcgccgtag cctccgacca 180

aaagacgcag cggaagcaga tcgaaagcgc tcctgtgccc tgtcccgccg gctggcctgg 240

catacgacca ccggcggtca tctcgtctcg gtcgatggca gtggtagcct ggtaggggac 300

cggccgcccg gcactggcag tggcagcaac aactactggt gtatcatatc atcgaccgat 360

tgcccatccc atcccatctg tttccacttg tactcttcct cgaccctcgc catgaatatc 420

ggccgccgtg gtcgcgtgga tcgatcacag gtcatctgtc atcaggcaga gcatcagcta 480

gctgggacat accatgtact gcgagtctgc tggaccatgc atggtctgtg agcatgcaca 540

gaaagcacag gagacctaga gctagaggca gcccagctac cgcctaccga tcgatcttct 600

ccatcggctt gagctcacgc acacgctcta ctccatcatc caaacaaacg caatgcaacg 660

atgcaagcgc ggccggggcc gccagagctg cagccgcgat gcagtgctat aagagacaac 720

ttcttcttcg acactagtaa agtttctggt tttttattgg ttcttaaaat attaatattc 780

tctacttgac gttgaatgta aatttagttt tctatacaac actactctaa cctaatggtg 840

ttaatttttt atatgagaaa acagttttac agttgttaaa taaatatctg aataattatt 900

tatatataaa tacttgtaat atttttttata aatattcata catcagtatt atcataatac 960

cattaatttt tctttcccat aaataattct ttagatattt attcaacaag ggtataagaa 1020

ctacgttagt gttatataga aaatcaaatt tatatttagt atagaacata aaagatttat 1080

accccactta gatgtagata ttgatgcacg aaattggaat tggaataa 1128

<210> 4833
<211> 1345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97235_G1, chr3:27465834..27467178, Cluster 29

<400> 4833
tatgggtatc tatatggcgc tcctcaatat ggacatatgg tgctcctcca tacaatgctt 60

catacggtgc tcctcctatg ttccttcccc catttggtgc tccttcccca catagtgctc 120

ctccttcata taatgctcga ccttcatttc atcttccagt tgacacggta gtgctcttaa 180

gaagcaatag tgatggctct tcgaactagc ctgcttactt cggtgctcct taatttcaat 240

aatgaaggga ctattgaaga tagaggacga aataatggca agtacacatg tatttttctt 300

cttcaaattc acatattttt aggtccataa tagtttattg agttcataaa atgtttaggc 360

ccatgcatgg atactacact tagtggacct cattagcaac agtacgaagg gatcaacctt 420

atggggccaa atagccaacg cctataactc caccatagag gttccttgcc atagtacctt 480

gaagcaacta aaggataggc agtctacgaa caactgaaag atcacctctt taacgacatc 540

tacaaccgct tttacgtggc ctgatctagt gggcagatga tgctatacta tttaaagcaa 600

ccaaggagag cttctgcaac aagttcggtg aaacaacttc aaggttgagc atatgtgcca 660

cgctcttcgc catcacccta agtggtgtgc aaggcacagt gatgatgact ctagtgatgg 720

aagcaaaaga tttcgtctga acatggacct atatgataat tatagctcca catcacaaga 780

atgtgtggac gcaccacacc ctattgacta tgacaaagaa acaactcaat gaaagaagga 840

ctcaaccaca agtagcaatg agtccccatc catagagaaa ataatgtttg tacaatgctt 900

gccagaggat tacacaaact aaactatttg agcaattcaa taaattgatg gatccctgct 960

tacatggaca aagacacaaa aatgacccac acattggcct taaaagtaga caaagcaact 1020

aaaattagat gaggacgaag cgatagaaga gatggaagag gaatataaga aaaagtaata 1080

gtatattaat tatttttgtg aaatatgtgt ttttaagtta tgtaatttta attgtttcta 1140

taaattatgt aaattttatt tacttcatta tataatcgaa tacatttata tatatttata 1200

tttcgatgaa acaccatgtt tcatgtccac taaaagcctg taatagaaaa agcttcataa 1260

catgatgata aaagctatgc actagagcgc tacagtagat tagtgttgtt gacgatgggt 1320

agcaacgcta aagtagataa acact 1345

<210> 4834

<211> 1295
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9843_G1, chr1:52338033..52339327, Cluster 29

<400> 4834
ccgtccaaaa tatatcaaat tggcaacccc cgtcttatgc accacctgag gcttcggatc 60

ggagcttgga tactatactc cacaacaagg tgagtctcaa aaaataccaa ggatttgttt 120

attctgataa aaaatcatgg catgaaaaac aatttattta tgtcacaata gtaatcgagc 180

taccaatttg acattctata ccctccacgt ttgtactagt tgttttaaaa tcaatattga 240

tacaaatacc aacaccgact ttaatgtgaa ctccgtgaag agtacattag tatcggttgg 300

tgtctctaag ctaacacaaa aaatagagac acctttagta tagtgtacac gttctaacaa 360

agaaaaggta ctaaaagact atttttcatt cttgctagaa gttttgggtt cccgcctaaa 420

ttacattaat attggttcta ataaagaact agtactaaaa atgaagggtt tagaacctgt 480

tctttgctag aatctgcaat aaagatattt tggttcctac cataacttta ttttcccgtc 540

caaacgtctt tagtaccggt ttttagttag aatcggttct aaaattcccc cctataaatt 600

ctttccctga gtctttctca tttgtaacca ccagtatctt gagtctgagg acaacgcatg 660

caacatcgat gcctcgtccg gtcgtccctg atccctatta tacattattc ttatatatct 720

ttgctataga gttcgaattt tttacacact cgcaaatgag tttgtccatg ttttttgttt 780

attgtacata acacttacat cgtttatttt ctataggaat catactaaca ttgatctcgt 840

tgaaattgag gagaacttga atcatgaact aacccttaga caggaaataa gaaaatacgt 900

ccaactaacc actagccctt agttgaatat atcttttaat ttcttgcgct aagggctagt 960

tagcactaag agcatcttca ttttggtgag agaactctgg ctagagacga agaaggaatt 1020

gtgtcagaaa aaggaagtat ggtctaagaa gggtggagac gaaagaagaa gaaactgaga 1080

caaaaatagg gtcaaagaaa gatttaagat aaaaaagaaa ctttcttgtc tatcagtact 1140

aaaagtatat aatactccct ttcgatttaa taaagtgtaa gaataaaaca gaactacatg 1200

tacatttagg tatatgtccc attaaaaaga acttttgta cattttaatg tgcatatatt 1260

aattaaagta atatccatca atatcaattt gtatg 1295

<210> 4835
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98623_G1, chr3:35425481..35426535, Cluster 29

<400> 4835

atctgttgat catgtattca tatagaagag gacgtttttc ccccaaatct tgtctacata 60

caacttcaag ttcatttgaa tttgttctaa ttatttataa tcttaacccg tcaaacaatc 120

cttctattgt cataaatcag aagagcaaat gatttactat taaggtgcag atgtgattga 180

caaatatacc agattaacag tgcacgaact atcatcaaga acagataaga ctgcatctgg 240

tggggtcctt ggactccatg caaacagcga tgtttcaacc tacaattcac acgagattaa 300

atgtgattgc tatgtactca cagccaaaca gaaagaagat cacctcttca gcagtccctc 360

ctccatggtc accattcagg gtttgaccat gatcacccat taccaaaagc aaagtattct 420

catgggtacc accaggtttg gatagacttc tcaatgtgtc aataacaccc tatagaagaa 480

aataagaatg gactgtagaa cattcagaag attggaaaat aaatgtggag agcatagata 540

agataatgct aaatgcctcc taaaaagcac aagaagagaa gaatagtata tgcatgagac 600

aactgacctc caggatctga ttgtattgct ccaacttctg gatcatcggg gttgagtcaa 660

caccaaatat atgtcctgca tggtcctaaa caaagttgat ctcacaagtt tccagctaaa 720

gataaaagga tgacaaatag caggtaagtc caaattgaat gcacaataac ttaccactcc 780

aagaaaatgt gcaataagaa catcccaatc atttttgtga agagatggaa gcaagtgctc 840

aattacacca ttatctacct ggcatacaac cataattgat aattcagtca aacttaaaag 900

aaagaactaa gaggttcatc aaaaaacaag aacaaggatt tgattgacag aatctcatac 960

tgtgtcaagg tctttaacat taaaggaagg gtatgggaat gacttgttga agtgttcagg 1020

gtacagttgt atccatgtat catcccccat catga 1055

<210> 4836
<211> 1275
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_157315_G1, chr4:158710709..158711983, Cluster 30

<400> 4836
ggaccctata cactgaagat ctgccttgac tatggctaag gctgaggccc accgagcagg 60

ggttgctcct aaggctcatt ggagaggaga cagttccaca ccacgagttt gatagaacag 120

tctagaacaa cccggggccc tataggcagc tccaaccata agcgcttcta gatttagttc 180

tcatggacgg ccgaggtccc ttacgggtca tcggatctct aataaggtcc tcagtcttat 240

tagagaatag cgtggtcggg tcctagctag ggcctctccg gacttaaggc cggcctcctg 300

atgagaagat aaatgagttc ctgatgggaa gcaccagcat atcagagaac ataacttatt 360

acgatttttt tttgtttgtg cgaggagagc ttattatttt gatggctagg tgtagtcatc 420

aaggtagaaa acgatctttc attagcacga acaccttact gtaaataata agtagtcgtg 480

tagaaaacat ttgaccttca aaggctgcaa cgagtaaatt aaaagaaaca tgcatgtgca 540

ttattcaatg tttcaacgaa aacgtggaac ttgatttta ttttgcgtga gggagcttaa 600

ttatttctgt tgatgtgtaa acacgttgga aatggggccc ccgaaccaca cgtcatactt 660

tttttaatta tttttgtagg ttgctatgct gagctagtag ctgtttacac ggcgtctgtt 720

attctgataa ggaactatat acaaaaccac acatgcacac gtggtcaagg tagtgactaa 780

tctcgcctaa taccactgac aaatcatctc tacttggttg tctcgaccta tagttgctaa 840

aatccatgtg gctaaacttt agttttctct gagttgacga ttaattatta catatacttt 900

atacttgaac tatagttacc tgcatgttgt aaaattatct aaaaattcac gtaggtcaaa 960

tgtggaagaa gtgccataga aaacaacagt cccatattgt gcatcggcaa tgaataatac 1020

cacgtgctac cgaacacggt gaggattact ggtcgttcgt cccgtgatca agctggtagg 1080

tggtatatat gcagctctta tgaagttgtt gagaagattg acgcagtgat ctatcgtcaa 1140

actgaaacgg agacgggcat cactgcacct tggatcgttc gtgcgtttcc atttccattt 1200

ctctgctgcc cgcagccagt gtgcagccgt cgtctgcgca agatagacct ggtcatccgc 1260

tagagcgagc cctgt 1275

<210> 4837
<211> 1231
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_101003_G1, chr3:49233414..49234644, Cluster 30

<400> 4837
cctggagttg gattttgaac ggctgacaaa ccaaacaagc ccggcagcgc gaagcaccat 60

tttcagctcc gactccgaga gcgcaggagc accgagaact cgcggagatc tcagactggg 120

atagtaagtt ggcgtgcttg gagaccagct tctcaaggac ggaagagcac aggttgcaag 180

ctcattcttc agggactagc tagaccatgg cggcctttga cgccacagcg acgttggtgt 240

ttggttcctt ttcggcaaga cgggaggtgt ggtcagggta tacaatttcg ggaaagaccc 300

gacatttcgg gaaattcagg aattttaagc caaagttaaa caaatttgaa agttctaaaa 360

ataattgctc gaatttttat gtaaaccttt tagccatcct acatcataaa aaagatataa 420

tgaaaaacaa atagtcttat atatggatcg taacttacaa gatcttccat tgtaccaaga 480

ctgcctagat gtcattctag atgcattcta aaatggtaca ccagcatatt ctacaatata 540

ttaaacagtc tcaaatatta catatcacca atataggtgt tgaattaata tcaattcatg 600

ttcaaaatat aactgtccag aatcaacaaa atataaagag aagtagatgc actaaaagga 660

tgtcattgcc aaccttagag gcctgcatga ccagcagtag tatcacttcc acatcctaac 720

aaagcgctgt aaattcacaa tttatatgct atgtaaatat gatatagtga tcaagtacag 780

tagctaaaat gcatgataaa tgttatagac atgtacagca gccaacaact aaggttaaat 840

tagttcaagg ttcaggagct agctaccgtt ttagagtcca ctaacactct tgatatgagt 900

tggtttcttc ttgcacaatc ggaataacac taaaagtgcg acggtctgta taagttccaa 960

tggctaaggt caaagccgat agatattaac taattgacga tgacggccac cagaaataaa 1020

attaacgtat gacgacttac cctgacagcc gtcagaaata gataaaaccg ggtataacgg 1080

atccaagacg tcgtgcgtgt ttcataataa tgcgcatgga cgtctgagag ccaaggcgct 1140

gccgccagaa ctcccaccac cgcgcgttct cctctcccat cgccagcccc cgctccatgt 1200

gctcgcgccg ctcctccagc gcgcccggga g 1231

<210> 4838
<211> 1099
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_101094_G1, chr3:49568015..49569113, Cluster 30

<400> 4838
ttgtttaatt ttgtcattgt ataatccatg tgattgatcc tatgattaga atttctacaa 60

tctcctaatt gagcttctat ccttgtgatt ggtccaatac cttgtaacaa tgcttgtcta 120

attttgtcat tgtataattc atgcatagtg ttcttagatg gtaaaaatca agaggatgat 180

gggtatcgat ttgtagagca tcacatctat gtgttgtatt taaaaattat gttgtttttg 240

ttaaaaaaac gatttctgct catactttgt tgtggtgacg atgcaatgaa taaagtgtgg 300

aacaacttgt tgtatactta agtacttctt ttaatgtgat gtgaacttgt tgtgagttgt 360

agtaaacctt tctatctatg tgatcctaga tgaagtacaa atttagtgat ttgagtttat 420

tatctaacta atagtagtaa tgtaagactt cttagttatt agctaaccat tttaaggagg 480

agatcttgac aagtgttgtc caagtttgat gtatatggtt ggtaacatta ccattacaaa 540

tagcattcca ctataaaaaa agaaaaacta gtaaacctac tagtagcaag tataactcta 600

tgctcttcag atattaaatg agaattacat ttctactaac aacaaagtcc caatctatgt 660

atgcctcatg atcaaaagaa caaacaaaag caaacatttt aaattgatct gcttaaagaa 720

gggggcatta ttaccacaat agatataacc tcccatataa caacaatgtt ggcgttatgt 780

ttcccacacc aatgtgttgc atgttggatg acatgcatga gaattaccat cattattata 840

ttgtcatagt cttcatcctt caaatcctca ttggcaacat catcgttgtg tcaatgtcat 900

tgtggttcag gttgtcattc cttagcatct tcagtttcat tgccaaagtg tcaagagttt 960

acatgataca tgaagcctcc catcagataa tgtgcacttg ttgttaataa gcttttggag 1020

catgaccttt cacacacact aaagttagtg agagaaactt tatctttggt ccctttactt 1080

gacattttag tagaaaaaa 1099

<210> 4839
<211> 1047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_108231_G1, chr3:98463023..98464069, Cluster 30

<400> 4839
tttgatcttg tttcagggtt agccaaatga tcttcggtgc cacagttttg tcatcacata 60

tgactcgaga agcaacagcc ttgtcactac tgtgggacca agagacactt gactccatgg 120

agacaaacga gagtaggtta gacgtgcacg actcatctca tttgagaaaa gacaaagaag 180

ccctcgacaa gttccataga ctgtgtatag gaagccaagg taggtgtgta taccacatgg 240

agttatatgt tgccatgact ttataaatag gtccacatcg cccatgcagg aaaaacaagt 300

tactctcaat cccctcggaa cactcctcct ctaaagaatc ttaagagtaa ataccttctg 360

gcaacactca atatctcaga ggtaatgatg taatatcttg taatggggag aacaatgaaa 420

aggaacaatg agcacatctt atgattcacc ttccttcctt acatttttct ctttggttgt 480

tcgtgtttgc ttagccttct ccgtgtggtt cttcatctct tcatgtgtgg aaatagggag 540

aaggtataat gaacttaatc gtgttgccct tttttggttt catataggaa tctaaatagg 600

tgactaacaa ggatctttag taccgtttga tgttttcaac tagtactaaa tatttaagat 660

tttgtagaac cagtactaaa tgtgtcggta ccggttcttg tatgaaacaa gtactaaatt 720

acataatatt agtaccaatt agggacatca accggtacta atatcttttg tatggatatt 780

tagatttaaa ccggcatgaa gccggtctca ataccgattg ctttagtctc aataacggtt 840

ttaaatcaat cggaacaaaa gttattggac agaaacctta ttctcgagtt gtggagatct 900

atgtcatttc ttaatccttc acaatggatg caagtttcat gtttttataa ctcttagtgt 960

acgataaatt agaatatgaa aattgatata ctggcagagt aaatcatgaa gtaaattgat 1020

ttgagaattt ttgtgacttt tagtagt 1047

<210> 4840
<211> 1114
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_10919_G1, chr1:58722074..58723187, Cluster 30

<400> 4840
catactatag acacatttaa agctcccatc tattttgtgg cgcttatcag atggtagaca 60

catcatagaa cacacaggtt cataggtggc atacacaaat ctcgcataac gtagaacaca 120

tatctctttt cacctaattg gcttcaaact tatcacaata aaaaaataat aattatttat 180

cacaataggg atcacataca tcacaatagt acctttgttc actacacatt ggctacatat 240

atcaccacat cagctacata ctagggtaat tcacacagct gatttggagc atgagaataa 300

gctagcaagg acaacatgaa catatcgtgg cacttcatac agttgatttg tagcatcata 360

ataaactcca agttgaataa tcttgttctt catggttgat ttggggcata aaacatgcct 420

tttatattga tgatctgcaa cacaatgagc atggcaatct tctctttaat tacctccaag 480

ttgattggaa tggttagaac tttaaattct tgtatgatag catgtagcca taagaggagg 540

catcatccat aaacacataa acatagatac tatgtaaaag atagcatcaa tgcctcatag 600

ctgagacatg ggataaacct catagctgag acatgggata aacttaaaac tacattgaga 660

aaaaaacaaa aaacattatt gtctatgttt gcagactcca ttataataag ctcaagcact 720

caattgatcc atgtttactg attctagggt tatatttcac aaagaaagaa tcaaaacata 780

aaaaatgcat aggtaaaaca tagtctgatg ttatcgagag cttcaagccc aatcaatgaa 840

ctcaagatgc tagtacatgt tttgctctca ttctcaatta gaaatctagg ataaactgaa 900

aacaatattg aaagataaac acaaaattta taatgaacga aaataatgca aacaaatcga 960

ttgtattaaa ctaaaagcag atagctacat agtaattgag aacaaaacat gaagaaatta 1020

gttgtgccaa ctaacagaac ttctctaaca caatcaacaa aacggaggaa gtccttcatg 1080

tcatcgtgta gtcttattgg ttcatcgatc acaa 1114

<210> 4841
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_111678_G1, chr3:122510643..122511675, Cluster 30

<400> 4841
tcacatctac acactcgatt gaagactcca atatgtccat atttttgtt gggttgcagg 60

ttgtcgttgc gtaacaaaat tagagtactt aaagtaccaa aagacaaagt ttcaagagag 120

agtagagagt agatcgacga tcatataaac ctaggcacga gtgcaagcca tcacatgaca 180

gttagagtgg tttgggtcgc tatgtggata agaccctgtg tcctcttgct actcatcggt 240

taatgaacat aaaggtaaaa aagattacaa actcatacac aagcgagtgt caagaccttc 300

tagctcaccc acctcttggt tatggcgggg gttctaggct aatagtctta atccaccttt 360

atgtttgctt tatgtttagg gaatatttct acagaataga tccaatcagg cttaaaacag 420

tcccttgggt ctaaccaaaa tggttctccc taactgttac tttgtccctc atgtttatag 480

tacaaggcaa gagagaggtt acatcagcct tagattccct tgactatgct caactacctc 540

attattatcc tattctagga gtcataggtg ggtagtcgtg gcaaagtatc agagatgtgc 600

atcactaggt ggatttcata ccattcgata tgatatagtt gatagcgagt gcaacctttt 660

gtacttaata atacttcttg gtatgttcgt atgcgcacgt gtggctaaaa gatcaatgca 720

tgtaccatat agtggtcttg agtactctat agtcaaactc acaacaacaa catatatcac 780

acatttaata tgttgtacct tagacttatc aagctaacga tatcaacttg tcactagggc 840

tttagatgcg aggccctgac cttagggttg tatcggcctc gctaggtcca gacacaacct 900

tatgtcttga gacaagatta cacttagtcg caccatgtcc cttgtctcta cagagacatt 960

aggccctaaa gggttggggg tccggccatc ctcatgattc aagaccgagg acctcaatga 1020

ccttaggggt tgt 1033

<210> 4842
<211> 1079
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112289_G1, chr3:126507172..126508250, Cluster 30

<400> 4842
agattaatcg ccttgtcaga cccctaggtt gagctggttg ctcgactaga aaacatagct 60

atgtcgaccg aggcccagaa ttaatttagg tcttgcctct aatttcgtgc ttttggggta 120

gcctgttaga catatcccaa atgtacatgt ataatatgaa cccacatcaa agttgttgac 180

aatacctccc aaacaccgca tcgtttcacc aactgtcatt agagaaggat taagtggttc 240

cttgatcaat tgattgtcca acccatattg acgggcattg cgtcaacatc aaccccacat 300

tattgttcat tgactttaat accatctaag gacctcctat atccattctc cactaaaacc 360

tcaggcaatg tcacatttga ctattgaact accattttgt agcatggcaa atagccctca 420

ttgcgcaagg gcatcaacac atagtgtgac cttctcttcc cactatcaaa cctcctcgtc 480

aatgtgaaat cttgccatca aatatttaca ttacccacaa acaaaaccca atgaagctag 540

gtgggatatc aaacatttta agttcatctt ctatattgtc aaacacccaa tcttctacct 600

acaataacta gtcaaactaa caataccaat ctaatttaac taacaatata agcaatctaa 660

ctcaatatac taatgtaatc taactatctg actaatttag ctaaatcaat aaatcaattg 720

tacctacaaa ttctaactca ctaactatca ttaacttaaa aatgatcatt gaaataacaa 780

ttgcaaaaag aaagtacctt gctaaagaag tggtaatctt tggggatcat attaacaata 840

caacgactaa gcaaaggaat aaggatgtat ctgtttagag tctacaaaga ggtagtactc 900

ggaagggagc aatagagtga ggtgccgcga ttgaggcaaa gggagggagg gagggaaagg 960

gaggaggcat atgggcgagc aagggtcccg cgagacagga gtgggcgaca acataggtgg 1020

atgaaggaga gaggaggcca tcatgcagct ttgtatcccc tgtgccacgc caggtagga 1079

<210> 4843
<211> 1063
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112470_G1, chr3:127299319..127300381, Cluster 30

<400> 4843
aaaatcaagt tcacactacc aagaaaaaat aaacccgaaa actacaatga gatgacacat 60

cacttatgtt agtggtgtac aggagacaga taaaatgcat ggcacatgtt tctggcagat 120

ccacttatca gaaggaaagg tgttcccagt tgcaaggggc agaacaggtt cgaattcgta 180

tccttgtttt caaataaaag atatatgaga tgtgagaaac ataacctttt atttttctga 240

aggatacatt atcaaacttg tacagtgtca tatttttcca tttttctttg aaaaaaagga 300

aatacttcat ggttcttgca aaaatgcttc tttggcattt tgcatatgca gggtactgag 360

cacttgctct taaccactca agttgaatat tacaaaatca aactacaggt attaactagc 420

aaatatcagc tagattgtga catgtatcaa gaatagacat attaaacagt tatactcctc 480

ttaaaattta caaatatcaa ctattactct gcttttaaat atataatgtt taggacaagc 540

taaatagttc aaaaatgaat tgattatctt gttgtataaa tgacatatat ttaaaaagga 600

gtacaaatgt ataaaaaaaa taaggcagat gattatgggt gaccctgatc actatatcat 660

atcaacatga tattccatta tcaacttgct taccaatcaa ggagttccag taacatgtca 720

gcaaaaatct aaatcagttt gaagtcaccg ggcttcaaat aggaggggc ttagctatag 780

gagtgcaggg tagagaatcc aaaataactt caggagtcag gacaaacaca ccaggaccga 840

aactcctgat gacttcgtat gttaaaacgc tgggaacaaa aacagatatg taaagccttc 900

aagttgaaat ctaagtagtt tcctggagct ggtaagagca aaatacggag attatataag 960

cacagaattt gacactctta attgttgcag gtgaaaatta atagtgagcc atagccaaca 1020

acccatgttg tctgttgtca cttgtcagaa gcactttaga tga 1063

<210> 4844
<211> 1325
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_11276_G1, chr1:60873275..60874599, Cluster 30

<400> 4844
gaagatgaca catggttctt tgttagccta agaggccctc gatgcctatc caaaggtctt 60

gcatcgtcta ttcagattct atggcaaaat cgaggatgtc ataattatgc tcaagtagat 120

ccaactatgc acattgaggc catatgggat cataaccgtg aagggaaagg ctatcgatat 180

gatggagaag cctgaatttg gtgcacatgg ataagaatga taaccacttg tagtagttgg 240

gatattggaa ctccaagatg atcagttcat gtgtcttgcc attgacaagt gcctgttatt 300

ggtgggggca cctctgtgcc attgtcaagc tcttaaggtg gtcatgtcaa agtccacata 360

gttggtgccc aagatgtcat agtttgtgcc caagatgaca ttatagtaga ttaggtaggg 420

aggaagcata aggatttaga tggctagaag gggtgaatag tctatagaaa tttctctaca 480

atttataaat caccagagca aagtggttaa tgtaaaaggt ggtcctaata gacactacat 540

gcacttacta tagttcattt taaggaagcc ccctacacaa gtctagtagc aggttgattc 600

tatcctaatc acttcaatac acaaagctac tagctacaca actacacaag atagcaacta 660

gcaactagtt acaactaaga acaattaact acagtagtgc tactactaac acgagatacc 720

attagtcaac tacacaagca acatgcgcta cactagtaat aatatgaatg aaatacaaga 780

ctagcaattt tatagaactg agcaagagag atggcacaat catcttttct tccatgattt 840

ggctacttgc cgacaattaa tccccattgc ggtgagtctt atagtgaatg attcatgcac 900

tcactagcat atcaagttag actcacaact tgggtatcgc aagaatcaag cccacaagcc 960

gtccttctag ccatgagcaa tttactacaa tgtccattca cactctgcaa gatgggatca 1020

agaacctttc acaatcaact tgatcgaagg aaaaacaatc accatttccc ttacgaatca 1080

tcgaagctcc aatcatatag atggatgcaa ccacctagag taacaagaat gcccaagctt 1140

caacaatcac tagtgccacc aatatgtaat caaccaatgc aatcatctag taatgattca 1200

atctctctca aatgtgtttg taagtgaaca agagtgggag gcttttctca cctctagaga 1260

gatgagggag atgaaacaag tggccaagat agttcccaat ctagtgcaaa catctagttt 1320

tggtg 1325

<210> 4845
<211> 1051
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_112804_G1, chr3:129291536..129292586, Cluster 30

<400> 4845
aacatggcat ggatgattga cgccggcgca atttgtggtt ttggagacag aggtgtgagg 60

tcattttcgg atatttcacg ttctattact agtaccagtc acaattatct atactagatt 120

tagaattaac aactaaaaaa tggtccaccc attacgtaag aggcccaaat ccggccattc 180

aagcatggaa tatccagaga ggtgcttgca gcggccattt ctttcacaca atcgtaagct 240

ccatccaacc tgatctgctc acctggtgga ttaggaaacg ttttttttt ttgggggtta 300

gattagagta acccactctc tgatgtgtga caggtctccc ccagggacga cgtacgtggg 360

gcccatgccg gcgaaagagc tttcatgcct atgctctccc cgtatcattc ccccgccgat 420

gccagattcc agcttcgaag aaatctgtct aattatactg cgtacatagc tagtttgaca 480

actttatttt aaacttttt ttagaaaaat agaaatccct ttaaaagata agcttgacaa 540

actaactcta aatacttctt gtgtacgtaa tgaagccact aatatacgta gctaatgcta 600

ataacttctt gtacgaaatg taaacgtgtg ctcctttgat cctagaagga atacaattct 660

agcttgcaac tcgtagtcaa tctattctca tcaatgaata tgtccattta gtataacttt 720

tcaggattat aattattgat gctgtttttt gaagaagaaa aaaaaacagt gaaacttaaa 780

atactgtgac tccgacggaa tcttgaaatg cattctctct ctctcttttt ggcaatgatg 840

ggagtaacta tattagttct agcaatgcat gaggggaaaa tgtaaaaggt ctctaaatac 900

tacgctacct tcttccaaaa agggtgtaat tttggaccaa ctttaactag gtgtatatat 960

agaaaatggt ttcaatattt aatctccaat aggtttatta agaagttgtt tttttattta 1020

aatctaatta tctattacgt atgatagata t 1051

<210> 4846
<211> 1357
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_114856_G1, chr3:141446391..141447747, Cluster 30

<400> 4846
ctcttctatt caatgtataa ggactaccca tttcgagttt ggttgagttt gttatccaaa 60

gggcaactag aagggaataa aacttatatt ttctttagaa ttttgattat gatgcagaaa 120

aatatacttg tagagaatct tgagacacga ttgtcctaag agggaggctt gtcacaaccc 180

aatcatgatt agaacatttt catcaatatc atgagcatca tttgcaaatc aatttcattt 240

ttgaaacatg catatgcaca aatctgcacc ttttggacat tgtcatgtcc ctccaaacag 300

tacaatgcat actcgaatag ttcctgagaa catggctaca gacttagcag tttttcacaa 360

acgcgatgtt cctatggata gattggtgtc cgtctgaaca atccactaga tcataacatg 420

aacaaaagtg agtttcccac atttagacac ctctagccaa tgagtcacca acaacacact 480

cccttgctat ctcacactca ctctcatcgc cactctctct aatttatccc tctcactctc 540

tataaaacac ccaagggcat gaagaggagg aagggaggat caagggtaga tgccagcaat 600

atgaccatgg ggatgaagat ttaaggaggc gataagtgtt gaggattgga gagggaagag 660

ccctctctcc ctggttagaa gaaaatagaa gggatttcaa ggagaggtgg atccaacttc 720

tttcacttac caagaaactt agcaacaagt tctcgaccct ttggtaagtt gattttgagc 780

ataacttcta gatgcataga atatcaaagc tagatgttca tcatctagaa aacggatcca 840

ctgaactttt ttttgcatca gaagcaatgt agctagattc agctagatag atatgctcta 900

taaaacctta gacccataac acaatttgca catgcataaa ccctggagtt gaattccatt 960

attgtaaaac acatcaatta tgttctcgcg gactatttgg agggacacca aatagttcat 1020

gataacactc actctacaca aacacttagc ccacaaaaca catgttctca tggattgtct 1080

agagaagcac caaacaccat gacaaaattc aatttttaat cccaaggcta cctaatttgc 1140

acttacttgc ttatgcactc tagaagaaca ccagatagtc caaaaatcac aaacttagaa 1200

attttaaaaa tgttcatgtg gacaattata gccacatagt ccatgatccc atggacttct 1260

agctagtgat cactcagatg gcactcaaga acatttataa catatgttta gctatgcttc 1320

aacacatatg ttacatataa ttgtagcaca tatgtta 1357

<210> 4847
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118636_G1, chr3:164964057..164965089, Cluster 30

<400> 4847
gggttcacac aaccaccaaa ccgatgtcag attcccaccc aagctagacc cgacctactt 60

aacatcacaa ggggttggct ttatttgttc catgggcccc aggatatgag gtttaataag 120

tttgaagagc ttagcataga aaggtcccaa agtagttttg cctcaaactc taggggtctt 180

atgggcctag taactaagag tagggcaatg taggttttgg gccccctata atgccatgga 240

ccctgaattg atctttccct tggctcgatg ttgttctagg gccaagtggt ggtatcatag 300

tcataaacaa tacccttggc gccataaggg tcctaagcac attttgtcaa atccccccctc 360

aagttctatc actattggga tatggggccc ttgatagtgc aagaagctcg cataggactc 420

gcatggccct taggacaccg atagcatcaa ggcccctaag agggcaatat gctgcataag 480

tagaagtata ggttattcct acatgcaatc ttagagaaag caataaaaat taccttatca 540

tcggccaccc ttacactata cgtatctata agtttttat gctactctta gaacctcttt 600

aaggcccagc tgatgactta gaatggtggt gtcacaagag caagcccatg tgtgatggag 660

caaaggaagg gcagaccggg ccgagaagag tgacccacca tagtagagca aatctatagc 720

atgatttgac tattgttggg gtactgcctt caggcatatt tatcattcca tttagcacag 780

ggacatgctg ctagaaacca acccatccta gcttgtgcaa agatgcaatg actttgttat 840

acaagagatc aaaagggttg cattttaatc taagagttgg acccccaaaa ggtatggtaa 900

aacaattaag gaaattgttt cataagtaga gagtacttga accatgattg gctatttatg 960

agtatgccac ctcctgcttg ttgagctagt gtgctagcac cttgggggcc aaagaaggag 1020

ttacatgagg ata 1033

<210> 4848
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_118819_G1, chr3:166096609..166097643, Cluster 30

<400> 4848
aactcttgcc tattgtcccc acctaatggg agcataccta acatcttggt cctggccatc 60

tttaaactaa tctatattga aagaactaat caactaacca gactccccta actcatagaa 120

cctatcaagg cttgacctcg gttcatactc ataggcttgg ccctaaggtc aactaacact 180

aacatatttc acgatagaat tgaaagagca tgtaagcaac atatcattgg tggtaggtaa 240

gaaacaaagc aggtggataa ggactgaact aaacgagctt tgctatctat gaattgataa 300

aagatttgtc aggagtaaaa tagaagagtc acgaggtcga aagcataaaa tgaaggtata 360

tgacagatga gagtgagcaa gtgtgattag gagtcaattt gttgaacgtc gattgagcac 420

aaacctcaat gggaggaaca atgggtactc tctgagagcc aactctgaat gagtcatttt 480

ggtgaaaggg gatatcaaac tacaacacaa gtactagtat ggttctagat ggcacaaaaa 540

tgatgagtag caaggagcta tgagtttgga aaccctagga ggtgtggaaa ttttgaagtt 600

tagggcttga agcatagcac taaagggagg aagtagggtt atatagtgga cgacatggat 660

gtaggtgctg gggcttgggc atagggagcg cacatagagc gatgggttat ggatggcaaa 720

gaacttagct atgaggaagc agatggaaga tcacatgcac atgatgtatt gaaagcagcc 780

tatgtgtggg tgtggtggtg cttgatagtg tgatgaggag cgtgtggcaa catggagcag 840

gggcatggta tgttggtgtg ttggcatggt tgagcgatta tgaggggcgc acaacatgga 900

gagaacaaag cgatgaacat gcaatgaagg agctagctca acgggtgagg tggttgagga 960

gaaagataca catattgtcg tgaattgaaa gaaataagcc catgatccat gtcatagaca 1020

tgtttattgt gctcc 1035

<210> 4849
<211> 1108
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_119177_G1, chr3:168441109..168442216, Cluster 30

<400> 4849
gaacacaaca tgttgcctga acaaagagac aaaacaaaaa acaattttac aaaggatctc 60

cgctaaacag caggatcctc agtaccggag atcgttttag ttattttcaa ttgatgagaa 120

cgattgcctc cagaactcac cacacaattc atttagcagc aacctgtcaa acgtttcttc 180

ggctgccata tcctttcttc ctcttctaaa gccctctcga gtctcgaaat actccctatt 240

gacgaagaag tgttctctga agatgaagtg ttgctaatct gaaatactgc agtcgatatt 300

cagataaggg cggaaggtta ccaggttgtg aggtgtaata gtaggagatt gtaataatcc 360

agctagacga gtgtatgggc cagctcattc gggtggctat aaatatgtaa actgataatg 420

gcagaaaggg atttttgct ggagagaaac ataagcgaaa tagaacgagc aatgaacctg 480

tgcttaccta ttgttcttgt tcttgaacgc tgcgtcttcg tcaggcgaca gacaccgact 540

cacgccacgc ggtggctcat tgtcggcaaa gggacgttgc atccgccttc cattggccgc 600

cgccaccgca tcctcgcgcg tggcaccaac accacgagtc tgcaatccgc cgtcgctagg 660

ccgaacacct gtttgatctc agtacctatg tctttacaat atagccagac gtttttttta 720

attagatttt tgttacatta gttaagatat tattttatat ataatttta ggattcatgt 780

aactgtagta gtagaataca ctcatcaact ctataggatg cagagtgaac aacctttgaa 840

gacaccgagt caaactttag attaatcaca acatataccc tagctaaata gaaattatac 900

agcttaatgg tatactaaca attacaataa cagtataaca cttgcaatat agacactttt 960

attatatcac aacttaatta gccaagagtt caaatatttc attgtaatct acatatgttt 1020

aactctacgc gacggaatgg tatgtgtgtt gtgatgatat atcatggcaa gcggtggcat 1080

ctttttata tagacacaca tgatcaat 1108

<210> 4850
<211> 1243
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120380_G1, chr3:175969663..175970905, Cluster 30

<400> 4850
aacataagag taactatctt gatcggtggg ggaaacttct atataatcaa gcttctcgtg 60

caatcatcgt gcaatgaaac catgaaaagt cataaaaatc tttaaaatat tatatgtact 120

tcgttaaata ccaaaattaa agtcttaatt aatcctatat taagatatat gaaaaagaga 180

aaatgtttcg ttttaaaccc tatgtattgg ctagaatttt ttgtttttat atcttttaac 240

acaaaatgaa ttagatatta gaatttaata tattgataga gtaaataatc aactatattt 300

ataatggttt taataatttt catatttttt agtagtttaa ttatacatcg actacacgag 360

aagcttatat gttttaattt attggtcgtt ttggtagttc tagatacgta acttttattt 420

tatatataga catgtcatat atctaggtgt gtaacgagaa agtaacctat ctaaaaaata 480

aataaaaaat ataattcaga atagacaggg acgatactgt ctaaagtact atgtcctcga 540

gattaagaac acatactaca caagaagaac aaggcgtaat tatatttaaa taggggtata 600

aagcttttgc agttatcgat agaagacctc gggaaataaa atggtactaa tgggtaagga 660

gaatgctaga aagaatttag ttgaccaagg cagatcggga ccaacgctgg ctgatcatac 720

tgcactgcag tacccgtgcg cggaatattt tacagagggt caacgcctcc tctcacgacg 780

gatagcgtag gagctagagc tctgcgtgca tgcgtccggt ccgcctccca ttgcatttta 840

tgcttgccat ccactgctgt cccgagctga gattgtaatg atcgatcaac cttgggacct 900

aacctctgaa tcgatctcct ctacaaaaac cgggctgggg ggcacgcaca tgggtttgga 960

ttctcgagag agatcaggga cgaacaagcc tggtggccca tgatccaaga agcgatggct 1020

gcaatactca tggcgaccag ccgatcaata gcgccagata cctcccactc acagtaatcg 1080

atcgatcctg tcctcaccct ctgtgaaaga aaaaaaacta ttttgtactc tcaaaacagt 1140

tttttctccc ttaacataac tccaatacca gaaatagctc ccgcatcatc tttcaaaact 1200

gctcacttag tacatgtttg ggaacaaggg gaatatactt aac 1243

<210> 4851
<211> 1240
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120772_G1, chr3:178264201..178265440, Cluster 30

<400> 4851
tttattgaaa acactttaaa aaatgctaat gctctaatat gtttggaaaa acttttgagt 60

tagatcgctt ggaaggagat ttgaaaaaaa ccattagtgc agaatttcag agtgtgtcgg 120

atgtgtccgg tgagttatag aacacgacac tagatatgag agggatatag aggtctcaac 180

tctcaagtgt tcacgagaga tcccttcaat tgtgagtgtc tctcaacatt cactaagggt 240

gctcccaaag gtatggagtt gtgggtgttc acgtgagacg atgcatggga gataataaaa 300

actttgcttg cttccaagaa cttcacccaa accttataaa caccagcact tgcaaaagga 360

gatctcaaaa caagaacacc acaaccaatt atggtttgaa gccttaagta agttcttgat 420

gtagatatga atatagcaag atactcggaa cgtaatctgg ataaaagaaa gttcggaaga 480

gggaaaataa agaacttctc taaatattgt agtagtgtca ctctcctcac aggtaatgat 540

gtgacccgac aatatcgctc cctggtataa tgtcgtggcc caatagtgtc gctcctacta 600

catggcagtg tcgctcgaac ttaccttcac atatttagat gaaactttga ggctgccttt 660

ataaggatga tttcaaggtg ttttaaaagt atgaacatag agagatcaaa ctgaagaatc 720

agatcaaaaa atttaaaccc aaaatgggat tttctcaaaa tggttcacaa gaatggaaaa 780

ctatgttcct gataaataag cccataccat cttatggcat tgattttaga aggctttcca 840

catctctatc catgtcaaat gctctcacaa actcatattc aagaaattga tcaaaaactc 900

aaatcaaaag agttcaagca aggagtccaa atcaataatg agagcagcct gatttgcaaa 960

cgggtgatat tagaaaacca ccatggttat ggccacactt cttgaattca aaaacataga 1020

tgaaaaatat ttcactaaaa catatatgga tctccctaac gaaggatgat agaaaaacta 1080

agtgcaaaac cttaaaacta gagatattat tggttgggac agtcctctta tttatagaaa 1140

acttttaca ttctcaaact acacctagat atttagagct aaacctagcc gggtcttaat 1200

ggtctaactc cttgtacgat gatttgacga ccacactccc 1240

<210> 4852
<211> 1011
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120843_G1, chr3:178559442..178560452, Cluster 30

<400> 4852
ctccaaccag tctgtgtact ctagtggata acaattttca acagtgatgg gactggacta 60

aggtggagga tgaaatactt gtaagtatac atatagcttt atgagttcca caccttttaa 120

agtggagaat agtttttaag ttcataaatt tataggtaca tatgtggtta atgcacaccg 180

ttgagcccat tgagggcact gacaaaaaag gattgacctt ttagggtcaa atagcagtca 240

catacaactc catcactgaa cttcctcacc accatattgc caagaaattc aaggaccgat 300

ggtccatgag aaactgaaag gtcaacctct tcaatggtat ctacaaccgc ttgtctgtgg 360

cttggccgag ttgatcatat gatgttatgc tgcttgaagt ggttgcaaca atagaatcaa 420

actgtcttgc cctattagct acgatagggc aagactgcaa tgcaagggta aggggtgcat 480

caatgaatta gcagagagtc ccatgccgag aagaaagcat ggcaaataag attcgcaagg 540

ccaagaagag ataagccaat caaaattgta caagcacttc accaagttgt tggatcaatc 600

cactatcaaa atggatgatg acatgaatag actccacaag ttgaccataa aaattgatca 660

caccattgaa actagacaag taagaaaatg agaaagaggg agagatgact acgacaatga 720

ttagttttat tttttacaaa ctatgtaatt ttaatttttt atgtttgtca cgttttattt 780

actttatctg aattatgatt tttttgttaa agtatgcact ctatttttcg tagataaagt 840

atcatgtttc gttttaaata agagtttgta aaagaaaagt tgatatgatg ctgaggtgat 900

tgtaagctag cgataaatgc tatatagagt gctatagtag ttaagcacta acaacggtca 960

atagcatgga cgatgatagt gatagtcgat caatagcaaa tgtgacagac a 1011

<210> 4853
<211> 1007
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120847_G1, chr3:178567899..178568905, Cluster 30

<400> 4853
gaagtgggca tagactttag agaactcatt gagagcatat ggtgtatata tgtcttagtc 60

tacaatcaac ccacatccac gttctcaagc tcttaggcat agaaacagat atatctcaga 120

gggacaactg aggagagtag gaacaaaatg aggctattca tcaggttcac cagtttgagt 180

tttagtcatc aggttcacca atttgagttt gagtagatct ttgagcacta gtataagaca 240

attacttatg acaaaggact acaagtttcc accacctata cctctagcac caccacagag 300

accacatgac ctagaggcaa gtagttctag tatagcaccc ccacatttgg tacattcttc 360

tactgaccag atgaatgtct cacttgaaca catgatagca caatagcaac agacaacagt 420

cgagtagaag agacttctag ctgagtagta gaggatacta gcctaggagt tatgtagaga 480

ggaagagaat aggaaggaga gacattagtc taaggctcaa cagcgtcaaa ccaataggat 540

gctcaccctg tttgaccatt cgagctcggt aagatcagtt ttagtagcaa ctgctagcag 600

atatggaaag aaattgtcta ttttaagcac attctgtact agataaaatt gtttgtcctg 660

tcccatctag cttgtaaggt agctccttta gccctttata cactagtgac cctataaaga 720

cagttcgaca catttcagag ctagggtctt tactagttag tctcactaat tcaccctacg 780

acacttgaat tctcttcatc aagatagtgt gcgactttgg aacatgtggg agtgtcaaag 840

actatcactt ccttagcact ttcgacattg tcagacatag ttgcaactca actgtaccat 900

tcactcaaat ggcttatgct tctcttagta tcttcagata gctcatgtgt ctcccattct 960

agcagctcct ctgatagcac cggtgagatc ctatcactct cagtggc 1007

<210> 4854
<211> 1127
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_126886_G1, chr3:209803507..209804633, Cluster 30

<400> 4854
tctttggcat taggtaagtt ttctgaaagc caaaaccagc actggcccca tgtcaccagg 60

gatggcattc atttttaaac atttagcaac acattcccac aacactcttg caataggaca 120

agtaaaaaaa caagtgatta atcgactcag gtagaggaca aaaatggtag gacatatccc 180

caacccactt tcttctaagc atattatcct tgtcaacaat accttatttt ctagtaacaa 240

cataaaaact ttgattttgg agggattttc cctttccata tatgtttcat atatgaccca 300

tatgtagcag tagtaatacc agttacatag atttgacatt aaaattcctc ttcttgtccc 360

acttccaata aatcatgtta ggggtagctt ggaaatcaaa ctctttgagt ttctcaaaga 420

tgaaatccca ttttgttctg tcatcaccat atagccacct tctgaattca atctacatgc 480

ctctttctaa cacaactttc actaaaattt ctttatcatt acaaatctca tacaagtcag 540

gttcagaaac acataaaggt tctttaaaaa gccaacaatc ttcccaaaat ctgatttaac 600

ctcttgattt tgtgacaatc tatcttcctt tgatattgca cttccttatt ttcaacaaat 660

cactccaaac ccaagaatca gatatcttgg gacaaacatt gtgaacacat ttgccatgaa 720

gatattttta tagatgattt cctgccacat tccattttcg gtttccaatt ttccaccata 780

acttgcataa cagactcatg ttcagcaact ttaagtcttt aataccaagc ccacctttct 840

tttttcaatg caaacccgct cccacctgat cagatggtat tttttcctat ttccacctcc 900

tttccatagg aaggattttc ttttgatatc aagtctttta actattgttt tgggtaacag 960

atacatagac atatggtgta tgggggttag ataaacaaga atttatcaaa gttattctct 1020

caatcataga aagggaactg cccttccacc cttccaatct tttagcaaaa ttttcttcaa 1080

gtctaaccca gtttgcaata taaagtcgac tagggctaac atgcacc 1127

<210> 4855
<211> 1126

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127097_G1, chr3:210974803..210975928, Cluster 30

<400> 4855
aggagaagag atagatacca catgccgtct cataccatag tttttcctcc gtcgtcccat 60

gtcaccccag tctttatttc tagattgaga ggtgatgcga catggctacg gcttcaattc 120

aactccctgc agcttcatcc aacataccac actttaccga tcgagatttc tatgcactcg 180

tcgtcttggc ctttccgatc ccaaggcaga agctccgatc cacgtctagc taccatatac 240

tatctgctgg tgtatgtata gctagttagt aagctttgat cggtccgggt ttttcattca 300

tccatttgtt atatactgtc aacatacgta cggttgcata aagaggtcat gcgctattct 360

gctagtactc cataattact tgaatcgaat caggccataa ttaatagcgt cactacatca 420

tgcgtttttc atactagtac gtcgtactgt atacatttac gcggggcggg gggggggggg 480

gggggggtc ctatgtatac cagatcacgc gacgacgact acatatagca actataccag 540

tatagtggtg gtggggtacc agatcgtgtg ctacgtacgg ttggtgttgt cgtcggaaac 600

ggccaaaagg gcgtaccgat ggatggacgt acgtggacca gctgatatga gcgacgacga 660

aatgaatacg tacgaaacag gccgccgtac gtagcagctt gttgcctgct gctcggatcg 720

atcggccggt ctacgggtcg cctgcaggct gcagtgagta cgtactagcc gcggttagtt 780

catgttgata tgcatgaagc aactaatcct ttgtattgta gtcattatta cacactaatc 840

tgtattgtca ttatatatag caacatcata tgtgtccact tcatatagtc atagacaaca 900

cgtaacaccc atcgtgtcat tcttatttgt acacgcatca tgcttgttac tactactatt 960

tctctttact ttaaattgca catactaata ataaattcca cttgaactga agagagggaa 1020

aaagggtgcg tttttaatat attattaatc tttaattctt tagtgtagca accatcgtac 1080

atacatatat tctttatgat gataaaaatt aatttatcta attata 1126

<210> 4856
<211> 1391
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127455_G1, chr3:212742313..212743703, Cluster 30

<400> 4856
ctgaggtaca acttgcaaat gcaccttatg attctagtaa ttgttttgca tgtcacatga 60

attctcttgt tgatgttgct agttatagca ttaagggttt agagcttagg gtttatggtt 120

taaagtataa cgtcctggtc gcgacacaag atatggatgg ttagttagtt ctatcaaaag 180

taatggataa cttagaccaa cacatgaact tggttgtggc aggttccaca acgtagacat 240

cttaggcttc tagtttcttc tttcttttgg tatcatatga atctggacca ctaatgatga 300

ccatgatatc ctaattatgc tatggtaact tgccccaacc tcatcatcac agttgtcgtt 360

cttatcggtc ttgatgttct ttggctttgg ggtctcacaa tgaggctcct ttagcacctt 420

ctaggcaaaa tccctaatgt gcaggctatc ttgtgttttg tggttgcttt ggggacggta 480

gatgcatcgc ccctccatga tggatttgta cttgttgttg tagtcctcaa tgggggggcgc 540

attgccctgg cattaccgag tcacatgctc aacattgttc actcggtggt cgggcctgtg 600

cttctagccc ttgtcctagt ctaactttcc cttgtccttt gtcgaaggag tcatgcgatg 660

catcacctcc tcgcttaggg agtatttgtc aatcacttgg aaatggacaa acatggttgt 720

cggggacttc tggatcaact cttgggatag ttctgtgttc tggagaccct tgcggaatat 780

gcaaactaca gtttcctctg gcatgttgga tacatcaggc ttgacatctt gccattgctt 840

gatataactc tgaagagtca catcctcctt ttgggtaacc tacttaagat catactatgt 900

tttttggttc actagtcatg ctgaaattag cgatgaagag gtgttttaat tcatcccaag 960

agtagatggt gttgtccagg aggctaaata tccacttttg aatgttggat ttgaggccca 1020

tgggcaagta atttgctatg atcgtggaat cccctctagc tactatgaca aagaattggt 1080

atgcactgag ctagtctggt gggttggtac gtccttcatg cacctcgacc agtggtggct 1140

tgaaattctt aggccaactg acccaactca gcggcttcgc aaaagctttg accattgatc 1200

cacaaggata ctgtgtacct gatctgactg gacctagggt gaaacatgtt agcatgagtc 1260

atagtatccg accttgtagc tattatattc gtgtcatggg tgctgtggat gtctttaatg 1320

ggaaccaatc ttatctcgtg gaggagtccg atctcggtga aaggtcagag acggtggtca 1380

agtcctatct t 1391

<210> 4857
<211> 1330
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128678_G1, chr3:218487650..218488979, Cluster 30

<400> 4857
cgttaatccc aaacaattaa atagcctcaa cattttgagg gccgtgtcat acactgttga 60

gcatttttt agcggaataa aaaactagtt acgtaatgat gtatacatcc taatgtacta 120

ttgccatcaa gacagttctc aaattgcctc gcgttgctac ctcgaatcga cgaatcctca 180

atagcagcaa ataaaattga cattaggatg ggcccatgtc acgaccacaa gaggatgaat 240

tcgataatga ggaaattaaa aacgtgctca gaattattga acacgcaacg cagcaaaaca 300

attataaata tttatattag tactaaaaaa cacttaatgc gcggtggtct tgggtatgac 360

agcgtatctt ttttatttta atctttttag aacaattcct aaaaataata ctacagtgat 420

ttttattttt aaaagccacg caaattttta tggtgtggct aaacaacact aacacgctaa 480

ccagtcaaac gtgacatgtc tgctagtatg gaagtgattg acgatatgat aaatgttgtt 540

gtgcattcta tctgacgcga tatgtctatc agcatggcag gtcagccaaa cgctggtcga 600

taaacgttgt tgtgccacct tgtctgacgt ggtatggaag attatagagc ccctgctcgg 660

ttctcgccct ctctatcttt tttctttctt cctctttttc ttcttcctcc ccaaccaacg 720

acattggtct ttcctgccac atcgaccacc agctcaagtt gttggttccc catgctcctc 780

tcgcctaaga ggaaagtaat attcttctta tttcttgttt ctatggtgga tttaaagatt 840

agccttgatt gctagcgttc gaaggaaaag tatatttggc tagagatgta aagtatttta 900

ggtagatcga atgcattatg aaacttcgat tgaatgcgtc cgaatgtagt tgcatgtgct 960

atatgtttaa gtcaattagc tataaatttg agttggtgtg tttaagttta ggttacattt 1020

ggtcaacata tttatatttt agtttgatag ttataatgct taggcttaat tttagtgtat 1080

ttagtttgtg agtataggtt atatgtctac atgtacatta atttaaaata cttagattgt 1140

tgtataaaga caaagaaact tgtttttttat aatcttatat ttagatagat ggaggacatg 1200

tggtgggaga agtggcgaaa acagggccat ctgatttata cctgaatgaa tcttgcgagg 1260

atgaacctat acctttgag ctattggtgc ctaactatga ctgtgatgag ccagaccaca 1320

atcaaggcat 1330

<210> 4858
<211> 1046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128772_G1, chr3:219177759..219178804, Cluster 30

<400> 4858
ctgtttctga gtacctgtca accaacaata aaagataaac aaaaatatgc cctcaaataa 60

aaaactaaat tagtaacaac tgttaatata aaaaatccta aatatccata aaatatgcac 120

acacacgcac acgtatatac cacgtataaa tgttactaaa ctatgcactt ctaataacat 180

caatgcatga acaactaact taaagtaacc acgtacaccg catgtacgtt ttatctaaaa 240

tataatgaga tacctacatt gatagtatat tcctgtacta tatgcatggt gtgtgtacta 300

tatttttgt agataataat aataccacac attattcttt gataaaaata atcaacgtct 360

ctagaaatga cggaggttag tgagaactga aaatcaaaga tgactataac ctcctagtgt 420

tggagatttg tttggaataa acaatgatta ttaagtttaa atattatttc ttcaagttag 480

caccattagc ccctcttgga tcccactttt aagtctacca ccaatcttga gcaccatacc 540

atcgtggtaa taaagtacaa tgtacaacta agattcttgt tttttgacaa agatacaaaa 600

gaagggtctt gaattgaagt tacattaacc acaagaggca agaaataata agattagtaa 660

aaaatagagt tatgacatca taaagcatgt gctataataa gcctaaaaag agccaccata 720

gtttaagtta ggtcttcaac cagatgtata ctgaagatac catgcagaag gctggaaaac 780

ctatgacatc aatggaaaat aaacatgcat agcgacatag tataaagtta gtaattaata 840

aacttaccct tacttattag agattataaa gtatgtatat ttatatcgta ttttgaaact 900

aatataaaat agagtacatg gataaatgat ctcattaatt agttgcaagc aacaaaaatg 960

aacttgtaat ggttatgcct tttagattac agtccgtgta gtgcagcatc acacgttgat 1020

tgattagtag ctacaagaac aaattg 1046

<210> 4859
<211> 1133
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132051_G1, chr4:3469313..3470445, Cluster 30

<400> 4859
ttaagcagag ggaacctatc taacctgaac tagttagttt attttaactt gtgtgtttgg 60

cacatcacat catataatcg agaaagaaaa aaaaaaacag tagcctgtcc accaacgatg 120

ctcgctgcga ggactgaaga ggacgtggaa ggacaaacac tgtcgttggt gctgctggct 180

gctgaggtat taatcatagc acgtacgtac gccacactga cagtcgtagt tggtcactca 240

tatcctgtcg cggatcggag gaccatgcac actcacccac gcatcgtcat tttctgaggt 300

atcgatccat tggacggtta ggaggcttct tgtgtaattt tccccccccc ccccggaaac 360

ctagcaataa cagtcttgag cgagacactg taaaacgtgt tgtaccatat atgacaagat 420

tttggttcct atagcctcta acagtattct ctgcgttctc taaatataaa atacattgtt 480

cattctctat agacatagac tctctaccat ctcttttatc tattttatat tcaggaccgt 540

atcagcaaat tctgaagcca tatacatatt ctaaaatggg gcctctctct tactagtcaa 600

ggtcatcgga catcggtgaa cgaaatatca aaaaactaca taatagggcc tctcttacta 660

gtcaaggtca tcggatgtct gtgaacaaaa tatcgcaaaa ctacatgcag ctaggaatga 720

caatgaaaaa ttctccatgg ggaaatggct cctatccttg tctccatccc atatatctat 780

tttagattgg agagagcata agccgagcct gtttggttgt agtcgtccca tatatatagc 840

actcaccact cagcctagac agcaacctta gcctcatgcc tctaatattc atgttttgcc 900

tgagcttaaa accaaacatg cctttacata tcccaagctt ctgcgtatag actgcctgga 960

tgcgtggact gttaacaagc cagaactcac aaaaagcaaa gaatatccaa agctacgtat 1020

aggatgtgta tatatgtttt ctaaagctat aaaattgtag aagttttttt ttaattctgg 1080

ctcagaaaag taaaagaatg tagatttgtt tgaccggatt gatggaggga tta 1133

<210> 4860
<211> 1022
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132651_G1, chr4:5878155..5879176, Cluster 30

<400> 4860
aggatggtga gactgtctgc tttatgcaac aatgttgtga agggctcttt gaagcagttt 60

tgtatgatgt gcgtggttgc atccatgtag caaagcatgc agcatagaat agagtgaagg 120

tatggttgta ttttaggtaa gaatattttg taagttccta gtccatttgg ttagaggatg 180

attgttttct ttttttgttg cgacttctga cttaaagtgt gggtactccc tctgaagttg 240

agacattagc attgcaagca gctacattgg gcactatctt agctggtggt acttgagtgc 300

ataagttggt cgagggctag ggttcactaa gtggaaatgg gtttggggta ggtttgatgg 360

tgtaggcaag gattgtgatg ccttttggat tatagatctt gatgaggtca ttgttggttt 420

caaatttgta agtagtgtag ttggttttga ctagtgccct tgttgtgcaa gttcccacaa 480

caaagcctct acacgaggtg ttggctgtga tgcctttcat aatgaattgg tcgaatgttt 540

ttatttccta accttcatgg gcacacatga agtcacatca ccatgttcgt actttactac 600

cttttggtgg tgtaaggttc gctcatatta taataagaat gatgaatcac aatagttttg 660

gagtatattg tagtatttct tggaatatta atgacatgct atttgagata tttttaggtg 720

tggatgtgag gatgttgaag tcagagatgt gagcatcgag gaatctctta ggttctttgg 780

atagagagaa gctagcaatg aggatgagtt gagggtgcta aaactggatc ccgttgaatg 840

caacaatgag gaccaaaggt atatttatca ccgacgagta ttggaggggg atttgtccat 900

tatgtcgcat gagcctagac tttgggggca attgatagtt attgatggac tcgaggctaa 960

tgatttggga aaagatcttg gcaaggcttg catgattcat gcaagggttt gggatgataa 1020

aa 1022

<210> 4861
<211> 1357
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132688_G1, chr4:5992740..5994096, Cluster 30

<400> 4861
caatacaaca acaaaaatcc tctaattggc catgtttgaa tgaaatcttt catttatgcc 60

acaaccaaaa aaatgacatg aaaaactatg aattttaagc catgggagaa gacaatacct 120

attgttgggg atgttgttgc tacacgaacc actaccatag cataagttgc caccatagca 180

ccaactcgtc attagagcaa gtagccgatg aaagcaatca ctgtaggcca ctggaggaaa 240

cctccacaaa accaacttga aaccacacta catgaactcc cattggaact aggtggttgc 300

atgctagcat ggtgaaaggg tcatatgaat aatcaaagat ccaataaaaa gataagttcc 360

caattctatg catacaaaat cttgtagccc aatggtaagc caacttggtt ctaaactagg 420

tagatgtcgg gtttgattcc tgtacatggt acacctttag cttttatgac aaagattatt 480

atgtgatagg tggggcctga atagtaaaat tgtatagttg accaaatttt gaatcatcat 540

tctcaaatca tcatgaataa atggatttct agtagtgata gtgaagctcc aacataaagc 600

acaccttcat aattaggaga gacggttggc aactagtgag cattattggt ttttgcagca 660

cttatcatag ttaatgaaag cctttgtggc cagtccaact ccatcactag tgaactctta 720

gcgatcgagg gagcatatcc tttgtggatc tcctaaatgg atcaagggtt gcactttctc 780

aaacgactta acaagatata gtgtcatttc atgggaattt gtccttcctt gcttaagctt 840

tacttacctc atttatgctt atgttttccc attacgtttt caagaatagc ttaattagta 900

tagtctattg gattggtaca ttttagtggc aattttgtgg gggtatgtag agacactaga 960

taaactgttt gttactcatg gagttagatt tttattttat ttatgtagtg tgaaatttac 1020

ttagatctct ataggttaaa agcctttaa tgatgcaatc catctactcc acccttgatg 1080

ggttaaaata ccctcaatat ctagatcatt tcatgaggct ttgttgggag ggtcttcctt 1140

caattaaggg gtcctttggt atggctctag cagcgactcc tgctatggct cctttagaag 1200

ctatacttaa cgatagtgta gaaaaaataa ctttatagtg aagttttga ggagttgggg 1260

ccattttaca ctatggaagg tagagtaata atttgtagct ttttcagagg agcaggagct 1320

agagccctac caaatagggc ttcaatagta gtagaat 1357

<210> 4862
<211> 1294
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_13288_G1, chr1:72797659..72798952, Cluster 30

<400> 4862
aagaagattt gagtttctaa gctagacaaa tgaaaaatac actagcaaac tatgtcgtgg 60

agaaaataaa taaattcaca aattaaatag aacattttct ctaatcacca aagcagtgtg 120

gaagcacgcc caataatgta aacatgcatg gtacgtacgt agtcaaaaag cgtgtgcgat 180

ctctattatt atattgttcc acacacgcat tatttggatc ccatgcggaa aaggtagaac 240

cgatctcgac agtttttctc gccacctctg ttacgggcgt gcatgctgca tatttttgct 300

gtctccaaca gcgatcctct gctatgcatg cagctcatca aaccatgatg cgagtgacgt 360

gtttgttggc agctgtgtaa tcgaccgttg agatgcgctt gtcgacagca gcccttgaac 420

actgtgccgg cactgccacc ccccacgcct gattgcgatc gttgcttgca agttgcaact 480

ggtgcttcac gacagcagag gagccgatgg cgatgaagaa gctaaggcta cacgaaactt 540

gtggcttctg actagctcat tggaagctag cttcttgttc ttctatccaa tctttttac 600

tctactatat catctatacg catgtgtcct tttttgtgtg tgtgtgtgtg tagagagaga 660

gagtgaaagt gagaacatac ttccatatgt ataacgggcg gccagcattt ctgattgctg 720

ccatatacag tactctcttt atcctgaaac atacttctct aaggcaagcc ctacgttttt 780

ctacaaagta cttataagat atagtcaatt aatatacttt ttaccgaatt atattccgag 840

atgaatctac ttaattacat cacttttatt aggttgagac ttgagaatgc ttatggtgat 900

ggccagggta tatataatcc cttgttgact acccccttccc ttgtgatcat aatgacgact 960

cctagagagc ccttttttt ccagaccgta atcgatctgg caaggcatgc acgtcaggac 1020

tgcactgccc tggttattaa ggacgatgcc aggttgatca atgaaacatg atagggttat 1080

gggagttcat catcaatggc ccccgttgaa tggcgcccgg gcctggagac agacagcagc 1140

aacgcatgat gctggtaccg gttcatggca tgccacggca tggcaacaga catggagaca 1200

catcctagcc gttcccaggt acggagatgc aatccgtgtc gctgaaggct gaagcacatg 1260

agacgtctcg tcgttcacac gttaatgtag acgc 1294

<210> 4863
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133665_G1, chr4:10654326..10655365, Cluster 30

<400> 4863
aaatgaaggt gcaatatagg atggggaaat agttatggta ctcttgttta atgaacaaga 60

ttccaatctt aggacccacc atccttaatg gatgtgcata atatgcacca tggtattctc 120

tctcatagtt tttttccata acttgctact tatttacttg cccttgagag gcgagcgtga 180

gcttcttcct gctcatgatg ttcactcaag agttgaatat atgtgtcatg agaaggcatc 240

cttccttgtg aaccatcatc aaagtgatta gaggacctag atgagatccc tcatgtagca 300

ttttcacctt ctttaccacc ttcttgaaca agttctcatc cagcaaaaga gacaaaacaa 360

gaataaagct tgcaccacaa aagtagagtt agtagttagt acaaagacaa tcactcttgt 420

cggtcgtggt cgcctcccca aaccattttt gtgagtagtg gcatagagac aattctcctg 480

ccactggaat tttgccctat ttaccatcgt aaatatccta ttcacttcta ttccactcgg 540

acggaatttc ttacctttca tgctatcacc agtggtgtag aagggtaaga aaactgcaca 600

tcctaaactc tttgatgcca ctatcaaaga catgtaagcg caataaattg catccaagtg 660

gcattaaagg gattatgaca tttgcgatgg caaataaggt attaggtaaa attgcaatgg 720

cactaagaga attgcccctc aattttattt gcttaccaat tgtgttcaag ttttagaccc 780

tatttgatat ggcgtagtct ctggcttctt gagccatatc aaacgggcca tataaaagat 840

tgctccttgc aacgagtctt aaggagccga agcatttttt ttatataaaa actagttaaa 900

atgtgttttt ctcacctcca tcataaattt aatacaaaac tgtgacttca acctttttct 960

aaaggtttct ttaatctgct tcagctctat cagaatgttg ctccacatct ttttaggatg 1020

agacaaaggc ttagcaaatg 1040

<210> 4864
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_138642_G1, chr4:36914148..36915269, Cluster 30

<400> 4864
ctgtcgtcgt ttgcgatgaa gaaaagggtg gtgcaccttc ctctgtctat gtgaaagaat 60

attggtctcc tctgtctatg tgaaaaccca cgaagcacac tgcatctaca aaagacagcc 120

aagtcaaaaa tcaggggttg ttttgttcct ggtgttagtt catctgtagt aatcaagcaa 180

aaaactatgg gcaacaatac aaaagctggc acgggcgtgt gcctggtgac gttgccgtct 240

caagatggct ccgaaagagg tgagcgtggc tacagatctg agctgcagct tggtaggctg 300

ggcgctttcg cctggttgga ggcttggagc cttggaaggt tctcgcgttg gacaggtagg 360

ctgctggctg ggcacacctt tgctttgcca taccatctct gagaatcctc gtccattatt 420

atgcaccccc ccccccccccc ccccctcgc gttgcagccc tttctgttcc cgaccagaag 480

ttatttttt taaaccatga gtcatagacc tcgtgatagt cccggagaga aaaccatgct 540

gagtctagca tgacaaatca agtgtttgag gtgctgagtc tagcatgaca gaaggggaac 600

tactgttgtt gttgatgttc ttatattact ttacgggctt gtttggaaga aggttcaggt 660

cattttcggt agatcctata aaatagggga catagaactg tagataagat attttatact 720

gtttgtaaaa gtgaaatttg atggcctaat gaaggggatc gagagaccaa aaattccttt 780

actatttaga ccccttcctt cattagtctt gcttccaaac atgtgttccg gattagctcc 840

aaaatgttgg atcttgtcac atgcccacta gtttcgcttt ggtgtccaac aaggccacgt 900

tcgatgcggc catcgaagag gaagacaatg aaagaatctc aatcaatcac tttgtctttt 960

tttgtacacg taattccgaa aaggcactgt aacgagtttt gctatataat tccccttcgt 1020

tgcaaaaaaa agaagaaaat gcaacattgc gcaagtagct ttcaaggtga atccacatac 1080

atatacttgt tttacataaa ataattatga ttactttgga ag 1122

<210> 4865
<211> 1118
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_14644_G1, chr1:80769231..80770348, Cluster 30

<400> 4865
ggcaacaaaa ggctgagtcc atgaggcttg gtcatctact agaaagttga gtcattaagg 60

ttaggccata aactaaacat cctttcaaaa gtgccagtgt accaagtcta tgaattgctt 120

catgataagt acactcaact ctaagctaat accagtctca ggtgcaatga ggacaatcat 180

gcagaaaagc taaaaataat catattacaa tatcatacaa ggcattcaat gtttaatagt 240

gtttgacaca attacatatc aaaatttta catgtggtcg tcaacttggt atgatatttc 300

gactgtcgtt ggttagactt ctttcaaaag ttcttcaatc ttgttgtaat catagtcggt 360

ggcaaacctt tcttggacct tagtaagctc catgcctgga taacgtgaca tggtaatccc 420

taggctaagc tacttgcttc ttctatgtga gcttggtcaa tctcacatat tcattctagg 480

aggctctcta gtttctgaat gctaaataag tcttacccat actttgtacc tacaaccgag 540

tcatcataat ctccagtcag gctttatgag ttgttaacac ttcttgatat tccacaaaac 600

aagatagtag ttcaatacat tggactctac aagagagaaa taacaaaaga cttactcttt 660

ttctctgtta ggaccgcgtc cttagcttta ttggcccagt caagcttctt agctaggtct 720

tccatgaacc tctttcttga tcgatctttt attttcttga aggtgaatag agtcttcttg 780

atatcaagaa tttgctcttt cattttggtc ttcttggctt gcacacccta gactacctca 840

ggtgtcatac aactagcctt gaagactata gataggactt aaccgtcaat aacataagag 900

attgggattt catatgaagg cttagtccca tactttcaag ctagttgtgc aagtcctgaa 960

caatgcaacc ataagatatt atacttcttc tcctgctcca actttagtcg agtggccatc 1020

gttcgaatca tcgattcgaa ccacttttct cttcctcaac taaggaggac ttgaatttct 1080

ggtggcatgt ggagctttag gggcttgctc tacaagtt 1118

<210> 4866
<211> 1254
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15153_G1, chr1:83641282..83642535, Cluster 30

<400> 4866
cacacgtcat agagggtcac tgtaattttt cacgagtgtc aatcatctca tataggcg 60

gatactgtcc caccctgcac acagacgcca caatcattcg tctaatctat tacacaaatg 120

aatttaggaa gaacagttgt gctctactaa tatcaagttg ctatgagcac tacttttata 180

ataagtcaaa ttcttaaaca ttaaccaaat ttacaggaaa ttgtacgaaa aactataaca 240

gcaagttgct tttattaaat tctacatgaa atgactttca taatgcattt gtttgaactt 300

tgatatctta tattaaaaaa acaaatagtc aaaatcatag aagcctgact tagataaaac 360

tgaaattaat aacatatagt ttgaagcaaa agaagtgcat agtatggtcc tctttataga 420

tctatacata tagaacggtc catactccat atatatatta atattaagat aatgacagtc 480

tagctagcaa atatatgtca cactactgtc cttcttatgg tagttaggat aaagtaaatt 540

aagcttcagt ataatcgcct gtctccgttg gaagttgcga tttgttggtc accatacgag 600

catatatagt taagttccca ctttgtaaat aagtacacga tcctattata tgtatccatt 660

ccaaccctaa caaaaaggca gtcgagcggt acccatattg ggggaccagt aaacgcaaac 720

ctttaataca atgcattggc tccaatcatg aaagatggta gtaattaata tagagaatgc 780

actacatgta tacatcaaat ataatcgaca gcagagggtt ccgtgtagct cgaaaaccac 840

tcaaaaaacg cgtttccgat agtgacggca tctctagtgt taattacttt ggtcttctgc 900

gtttagttct tggttcggaa atgcatgcct tagactgtag agctctggag gcctggtctt 960

cctaatgttt gccgaattaa tatttacctt ttttcagttt tactaagacc gatgaacata 1020

ttcacagcaa tggtttatta acaatataag gtgagcatat gcatgaataa actgtaaacc 1080

aaccatttag ctcaagcatt tctcctatac cattttcttt tgcagaactt cctttgtttt 1140

atactaggat tgtaggaagg ggagaagcta cgtttgtagc tgtgggtgca gatgcaaccc 1200

cagaatacaa catcagtctg ttcggttatc ctggacaggc cctgataaag tttc 1254

<210> 4867
<211> 1251
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1531_G1, chr1:7956846..7958096, Cluster 30

<400> 4867
tataactata tatattatac gaaagcaact gtttctagaa aaacaaatag tttgttttta 60

gttttaccgg tttgattggt tttgtgcttt ttttagcaga aacattttcc agaatttaaa 120

ccaaacgtag ccataagcat gtactccact cttcatcaaa tggaactgca tctaaactat 180

ttaagcaggt actcttcaat aagatctaga gtgggagtat gtcattatta aacccaactt 240

catcaattgg acctgctctt cccctgcctt ttctaagtta tatgctcgcc agacagaatt 300

caaacataag atcatttagc cactctttat ttttttttct gtatacaaag tacacaaaga 360

ataaaataaa ttcaagtggt cacgagacat acacacacac accagtagtc catcttccat 420

gttgctgaag agagactgag tacgagtatc tctgcgtgta ttaattacgg ccagtactgc 480

ggtgcagctt ccaagctcta caaattgtgt ataaatgctc cagcttctct ccccctctgc 540

ctcgttctca atcatgtctt cctgctacac actgtacgct ccattcaatt ccaaatcgaa 600

gttatcagtg gatcagcacg aggtccagcg tgctccaact tctttatgct cagaacatga 660

atgaatacgg gctgaatagt atatacatgt acattacatt gtcttagctc ctgaacctat 720

tacacttttg aatattacac aacacaaggt gactgttatc ttactgacac tgaacttgaa 780

ggatatcaga ataatttttt ttatcagccc aatattatat atatccgttg tcattgccca 840

gcaacatcag gctaaaaaga gcaaagaaag atgaatcgtg acacaggtcg gtgatcgtgc 900

tgaatatggg tgagtgagag caagcatgta gacagtttga gaggtttgga ccgcgcagtg 960

tgcgcaatac actgcatttt ctttctacct atcgattgat caacacaaaa ttaaaaatac 1020

aagttcaaac aaacacttgt gagcatcaaa acttcatagc tccccctcac attatgattg 1080

atggtcgtaa tccaccttta cgtctaccct atgtgaatag ttttttttgtt gcggagtgtt 1140

taatcaggaa tgagacagag actaacttgt tctccaccct agtttaaaac gttactctag 1200

tactctactc atccctttta ctccttttac ggtgcaaggg aggagagatg c 1251

<210> 4868
<211> 1155
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155922_G1, chr4:152072737..152073891, Cluster 30

<400> 4868
aaatagtgat acaaatggtg atacaaatct catataaggg tgtcacacat aagtacgaga 60

actcttcgaa gcctatgtag ttgagggctc taggtcgcct ttggcaaccc cttcgggcag 120

tgttagaagc ctaggtcgat cattaaggaa gccatgagaa ggcatgccta gggaaggcat 180

gatagcagca aatagcactt gatagtcaac atcaagctat agaagtggca tcaaaggggg 240

gttgcaacct tgttgactcc aactacaagg caaacgatga tcggcatcac catgaggaga 300

aagaccgaag cttagatcga gaaaccctag gagaaaccat ttgattgatt tgtacaatca 360

ttgtccccac ttatataagg gagggcatgg gctcccatag ggggcaaggt caaacaatca 420

aactagtaga caatcaatca actcttgaag aagggagatt gaacccaatc aaaaccctag 480

agtagcatag tgcttcctcc tacatccatt tgtctcaatt tcaccattgt aaaattcttg 540

agcaatcata acatgaagaa cactactatt ggactaagcg cttaattaaa catctgaacc 600

aatataaacc ccttgtgttt tgagtgccta aaccaccaga ggtacacatg tcgacccatg 660

tcgaacaacc taattactac catgattaag aacccacaac acctatcaac atataaatag 720

tgtatgtagg gataatactt atgtgctagt agcggaatag gaatagtgat gaaccctatt 780

tgtgttgtca gtctactacc agttataaag tgctaatgag gttccacact taggagccgc 840

aaggatacaa taagggcacc tccaacaatt agaattacat accagctcta tgtctatggt 900

tcatatccat ttcaacaaca actaacttag gcctcctttg gttctaagca tcgccattac 960

tagccttgcc atgacctact agcatgagca atgagaagct cgcctaggca agtgaccatt 1020

ttggctctcc cacacaagct agccaaagct tattggcata aactgcaata caagaaacta 1080

aatacagtct tgcttagaat tctcacttgg taaaacaaca cgttatcaag agaataaacc 1140

aaacaaaccc ttaca 1155

<210> 4869
<211> 1196
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15703_G1, chr1:87159222..87160417, Cluster 30

<400> 4869
gtaagaggcc cctgccttat cagccatagt tcttgttgtg cttacatgga tattaaaggg 60

ctctatgcga taatagttta ttactatgaa actgtgataa taagcaacat atctgtggtt 120

catgtttatc aaagttccgc tcacttaata tgcgtgccat atttttgaat taaccagcag 180

tgtcttatct tcgacgcatg gttaaaggat tataatgaag catacagact tgtctatgac 240

ttgcagagtt ggcaccatca taaaaaacat gtatcataaa aattgactat ataagtattt 300

tgatcacata atataaatgc agatttatgg tgatcaattc ataatgtgca caactgataa 360

tggtggcaga aagcaggccc tggtgaaaaa aactgtggtt ctgaaactag ccaattatat 420

gcagttagtt aagccctata catgcatacg ttattactta aaacagtgag tagaaagtat 480

ggtagcccta tcctgcatga cctgtgatgc tgtaataaac tacacacaaa atatatatgg 540

aactatattt aaattactgc accacatctt atctgtttgc attgtgaatt ttgatactct 600

gttatcattg gatgctattt tcccacattc aggaaagtgc agtaatgtca aagtattaaa 660

atgttacatg ggaagtacaa gtatgggtct cagctaatta caccctgacc actatttttt 720

tagaaagatc cagctggttg aaaagtgagt gatggcataa aaaatctagt ccagcaatat 780

ttagaaattc tgatacttga aaatttcatg ggctatagga tactatgaag gctagccatc 840

agtgaccaag cccaaggtct gctctgatgt ccaaacctag tcctcaagcc cccaatattt 900

ggcgtagcca gcacactgtg cttgcatccc tctgctctcc accccactgg atcctcgacc 960

gttcgctatt ctgtccattg ttgtaacttc aacactattc atgtatcgtt cttgtgttct 1020

tgtgcagttg agtggtgatc aaatctgaag attcctttat ccctttatgg attggtttat 1080

tccttttctg attttctgtc cagtattcgt atattgcttg gatttattat cctaggaatt 1140

cgttctgttc ttagggctcc tctcattgtt gtgaaatcaa aaccgaagat ttcttc 1196

<210> 4870
<211> 1188
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_15794_G1, chr1:87770334..87771521, Cluster 30

<400> 4870
acgagtcacc ccgcgagcgc gctaaccatc acaccctgat cagtccacac accgtaacca 60

ccccacccca caatgtgtta ttcctaacac attctgcgga atgactgaaa ccataatgga 120

atgactaaag ttataataga atgattaaaa ctataacgga atgactgaaa ctatatcaga 180

aattcagaat gaccgaatgg gtgaatgcat aagactctaa tggaatgact gaaaaatgta 240

atagtaaaga atggcggaag gcgtgacgaa agccgtaatg aaatgagcta caactatagg 300

agaattattg aaattataac ggaatagctg aatgagtgaa tggttgagac tgtaatgtga 360

ccacttaaat tataaccggt aatggattgt aacagaataa ctaaaacggt aacaaaatca 420

gtggaatgat tgtactaaat aacataaaag ggacccacct aataaataat ggacgtaaaa 480

aatcgtcgcc ccagtagaac caaagcgggt taatcggatc tgttctttgg tctagagtgt 540

tgattccatc gactggttga ttggctacct gattaattag tttggttaga ccgcatgtcc 600

aacaaattaa atagagtgtg tgttcgtcac tttgtgtgaa gcttaacgat attcggtcat 660

tccctttaag taattactag cttcacctaa ggtgacgaat aacaccgcct catatatatt 720

atgatgattt gagcatcatc aattctacta cagacttact agaggtaatg aatatatgca 780

tgacatatac aagtaatcat tcttaggttg tcaattttac gccgaatcaa aagttggttc 840

atcatggcat cgcggccggc cggccgtttt tcccttgcgg tactactttg gatgaaagaa 900

gaaaccagtc cctaggtatt ttgaacttgg gaaagaagag aaaggacaac tacaccgtag 960

tccgtgtcga aatagggtac ctgcggaaag agggtttgcg ggactgtgca catgttgttc 1020

cttgcatctc ttacacagct tcggatgctg atctgacgta cacatatgtt agccggtggc 1080

tgcggcgaac gatattgacg gaggagggtc gggccctgta gcatctctaa ccacctgatt 1140

ggatggctgt gcctccatgc gcgcagactg gggtcgtcct gtccaacc 1188

<210> 4871
<211> 1177
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_158526_G1, chr4:165978050..165979226, Cluster 30

<400> 4871
aaaggtacgt agtatacaag aatggtgagc attgccgcgt tgttggtcaa gctcctacac 60

ggatttgaag cagctagcac ccacacacac acaaacacaa tgacacacta cgcaatcaaa 120

acaaaaatat atcttcggtt tcagtttgtc agagcccgcg cgtgagattt tctgtcgtcc 180

tccgagtgcg cagacgaaga ccagaggttt tcaaccccgc cgacggtcca gattttaaat 240

tagccgggca gcgttgacct agctacaagt aatatcaaca gggaaaggta ggagatagca 300

tcatccgata gcaacagagc aaggacaaaa cttctccgtg tgtactcttt ctctctttgt 360

tttccccccc accgttgtgc aagtacaggt ccttttcagg gtcaaaccgc tgtgtggata 420

tagacgacgc ccggcgcgcg tcatcgatca cccgctccga tccgctcgta gctatagctt 480

tcgtccaaac tgcaagtaca ggtccgtccg tgcatatctc tttcctttcg tccacatttc 540

gtgtcgtccg tcggcaagct atcaaagcga gtgtaaagtg gacttatttt ttcaacgaaa 600

ggaaacacct ttcctccgcc atatataatt aagatatttc tgcaggggga gaattaatta 660

cgtgaggcga ctataatcca tgtgtttttg ttacgttctt tactcactga aaactgtacg 720

tacgtgcaca atcgcatagt tatcgaatta attaattgtt gaatgttcat cgtagccgtg 780

acatagattt catgcatgct tgttcagcgc tcgatctgtg attgattcgg aggtatatat 840

gttctccata accatgtacg tgtgcatgta ccgagaatat ttgttttttt atgaaacttt 900

cttagttaca tttttataca caaacaatta aagagttttt tttatctttt ctttacaaca 960

tctaaataaa attacttacg ttgtatcctg gcatatagat ttttttttt agtttacgga 1020

ggtgggtgct gatatttttt ttttggcctg ctatttaaat ccatgcgtat tattagttaa 1080

aaaaaaataa agcacttgca taacggtacg gtgttcgaca ctgacataaa gagacaatag 1140

cgttcaggtt gccttgtgtc acagacatat acgtatc 1177

<210> 4872
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159200_G1, chr4:170810930..170812051, Cluster 30

<400> 4872
tagctacgta ggtcggccac tgtggttagt cccaatggct gatttcttgg tacgtacgta 60

cacgcgtgga ttgaccaact tactcctact gtgtgtgtgt gtagcggtgt tgatcagcag 120

tagatttcct gcagccacga gttgtactac aaaacaagct cgtggtattg cagttgtact 180

aaaaaaccct atgagcatgg gatgggaggg tttgactatc caatgctaat cacattgcag 240

taattaagat agacatgccg ccaaatactg cagcgtttct taatttattt cagacatcgg 300

ataaggacaa tgtcacagta ggttaatctg taggccgggt tagtatcttg ggactccaaa 360

attttcattc ggacatgcgt gttgttactg aatccattac aaaaaaaaag gaaggctaat 420

gtgctactga tatctagcta gtaaatcaac tcgtgacaaa actcagctgg ctgcactagc 480

agctaaggct cttgatcgac gccgaagaac aggacagcta cctgttcaga tgttcttcta 540

aagctagctc ctgcctgcag attaagcaag caagctacag acaacagact aatcttgatg 600

aatgctagta attaatctcc gcttgaagac ggaatgctat agctgattta acaactgagg 660

gtaggtcagc gacttttgtg agcgatcgac gatccacccc gctagctaac tttatcgatc 720

catgcaaagc cgtagattga acgcgtgatt aatgtggctt agaataacac gatctacaca 780

catgcatgat ggttaggtag cctaggatgc taatagcccg ttattaggcg gccggcccta 840

atatatatat agcttgttct tatcactact gtcgtcgcaa gaaccacata ctcgctagct 900

agctagaagg tcaattgcat actatgcatg gtgcacaaac gatatggaag atgacaagcg 960

gtcgaattcc ttgaatttgt gtgctacact acactacact acacgtattt gctagctgtc 1020

ctgtcctcgg atcgaaagat tgcagtctca tgctgctcga tcagaatgcg tgccatatga 1080

gtaagaaact aaaacagccc ctcaagttca gatgtctgtc tc 1122

<210> 4873
<211> 1325
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159235_G1, chr4:171128300..171129624, Cluster 30

<400> 4873
aacctttact cccggttcat tggctcatgg cgaggtgcta aggacattcc caatggatag 60

ttgcactgtt ttcaatgctg ccatgtcaac atttgtttac gaaacagtgc atgcggaatt 120

tcatcccata aaactctctc atctcccatg aaaatctctc atatctctct ctttgtcaag 180

ttgcatatca tctcctaata tgtgctaatg gttcatttgc acatccaacc aactatcaac 240

catgtattaa ttcaccgcag ctcttgactg aatccaaaca tcccagctaa ttaataatta 300

tctagctgtc tattagcaaa tagagttgtt gttatattat acatataatc agtctactag 360

ggaaagacaa ctccgagcat tatacttaag atggaaagac ttcatgcaga ccgagaaaac 420

agttgaacct ctagctctgt cttacacggt agcatcgtca cccatgtgag tgggacggtc 480

cttagacatg tgctttcaaa gtgggacaag cgaaatcatt ttgcatccgc ccaacaagcc 540

ccctcatggg ggtaccaaac ctaggtcacc atggtgctac tagaatgtct tgaccaaaca 600

gcctagatgt cattcatagt ttttttaat agttatagat tactcacacc aaagtaaagt 660

attgattttt aatttgatgt gagtgatcta tacctattat taaagagaaa gagggttcta 720

tcaaccctct atttttattt cccacaacat tactatcatt aaaatttatg agatgaacat 780

atcggatttt tagaggcaag caatgtccca acctcaagaa catgacctct attaattgat 840

cattccaaat taaaggcgag tggattgact atcttgggtg ccttaggatg cccatatttt 900

gaaatatatt tttttaaata aataaatgag ccaagcttgt tgcaatcacc gctggtgcca 960

ttgctcctca agctccaaca caatgtcata agtacacttc aagggcttga caaccaacat 1020

cccattcatg ccagtcctaa ggagatagtt catgagccaa actttgtcga cctcatctaa 1080

gagtatctct agatgactag aggagggtaa atagtctaat taatattttc tatagaacac 1140

gatacttagg aaaatagata agatgatggt cctattaagc actatgcatg cctaactagc 1200

aaacaaggca aagcaagagc aattccgaca caattctaat agtaaagcta acaacaagca 1260

aaggctaaac tcaagcactc ctacacaagt ctagtgagca aaggtcaaga acaatctaac 1320

actag 1325

<210> 4874
<211> 1259
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_159501_G1, chr4:172449374..172450632, Cluster 30

<400> 4874
ggtagaacaa acacaaaaca aaaccaaagt ggaaaccacc ctagaaaact tgttaagtca 60

gtttgaaaac tgatttagct gatttttctg cacaaaccgg ctcaaacatg tttatgaacc 120

gacttagttg gtttcagtaa ccgatttatc tgatttttc tacacgttag cccgagacct 180

cataaaacgg tagtttaaat ccaaacaaag tccaataaac cctaattata ggggtgttgt 240

aaatcttttt tcaaagatta gcacctagaa ataacaaaac cggagcggat agaaattcca 300

tctttggaaa tcagtttttc tccaaattgg tagaaatatc aaatcttcgt gctcatgaaa 360

tctaccaaat atgctggcta gagaccttgt tcagatgtca tagaatgtgg agaacaaatc 420

taaaaaagtg gaagatctta gatcgagaga ttcacacaaa aactccaaaa gaacaagaga 480

agggaagggg aacaagagaa ccaaccaaga actcaaattt tagagaacaa attctatata 540

ttgccaacaa gaccattttc tttacaaggt ccaacatcct tcctcttaca actgggacaa 600

ttagatagat gtgtttactt tcccaactgt agatctcttc ttagctatga agcacactgg 660

atagtcccaa gcagatgaaa acctatagaa ctacgaacca caacagatag ttggtctggg 720

tatctcctcc tattatttat atatctattg cacatttttt tgtctagttt tatatatttt 780

cttaaatcac ataaccctag gggtataatg gtctaggtgg agttccttgc atccgactat 840

cacaaatcct ttacgagaaa gttgactcaa cataagctct ctaacgatat catgtaccac 900

ctcgataacc atccttgggt tttgacgtcc aaacctgata aacctactgc ttacgatttt 960

aaggttgaaa ccattaaacc caactagatt cacatatatg gtatgctttc tccatgatcc 1020

caatgcgtat gaccgcttat ccttgatctt ctgatcacca aatcctcacc cactcatttt 1080

aattggtcaa ccaccatctt gtcttgttca acatcgtctt cacatgcaca cttgcttgtc 1140

ataccatcag gtgttgactg tccactacct acccatccac tagcctcggc ccaagcatcc 1200

tcattcgtgc tccaccgctt ccactccatt ggcatgatct cgcttgacct tatccattg 1259

<210> 4875
<211> 1024
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160936_G1, chr4:180891487..180892510, Cluster 30

<400> 4875
tacgacatcc aaggtataaa tttgtatatg cctaaacgca cgattatggg tgcctttgat 60

atggctcttt agacggctct aactcaagct tatcgtaaag ttgtatcaaa cgattatgaa 120

aaacgacggc tcgccgataa accctaaaaa aaatagagtc ttttttgtt gagagctaga 180

gcactaaaaa cctggttttt atcggctcca cctatatttt tcccatacat aattagaaag 240

aaacgcggag agaatctatt ttatcaaaca agtagcaaaa tggctccgat cccttaaaaa 300

atctagagtc cgaactgttt ttgaggaact agagctcggc ccaacggagg cctacatgtc 360

aaggaccctg cttctgactc acatgttagg aaccgtctgt tctgattctt cttgctgtca 420

agtgttgtct aataactata ttgtactaat ctactagtac agaggaaaca gcttaaaaag 480

gaagaagggt caactaacat ataattctct gacacctaag ttggccactc agcagctttc 540

attgggcaat atctgttcta gcttttacgc tgttaattac taatctgtct ggtactcctc 600

accaaaagat gtactaatca tgtaactaaa ataataaata atgtgcgtac ttgcagcaac 660

acacagcata ctgacattgg taatcctgtt catgggtcgg aaagatgggg ataggatagg 720

taggtcaggc ccgtccaaaa ggatgcttag aggtatcatt aaactgaacc cttgctcaac 780

tcgcagacac tgctgcgttg cgtgccatgc gtatctgaga tggaaagacc caaagaaatt 840

ttatctgctc acggactcgg caccgagaac ctgagatctc cagacccccg tcgcaatcgg 900

ctcgagctcg caaacgcgcg gtgggaaaaa aggaggtggg aaaaaaagcg aagggatggc 960

aaaaccatcg ccgtgtaaaa gaacgcggcc gctttccacg tcgcccgccc aagtacccat 1020

cgtt 1024

<210> 4876
<211> 1243
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_161049_G1, chr4:181779582..181780824, Cluster 30

<400> 4876
ctgacaaggt gcacacaatc aaatctttgt tagaaattca gtaaagcact tagaccaatt 60

aaaatatgca tagcttctga taagacaatt atcacaatgt tggatgcatt gatagaacta 120

gaactcaaat atcttgagaa tgaagctaaa gcaacaagct gtctaagaaa tagtggtttc 180

acttgcagaa tctccacatt ttggtttata tgtaacatat gtatctttaa ttgcacgatc 240

tcattttgta atatacgaaa gagtttatct aagaaccaca gatcaattta attgaagagt 300

ctctgccttt ggttttatct gattcacttg aaagctaaaa cttatttctg caaccatatg 360

aaatttgcat gcctcaaatc acattacaca ttgaaaagca accatcataa aattagactt 420

gaatacaatt aggtgaataa atgtgaagtc atgtatgaca aattggtacc ggtaccaatg 480

tgaaccgagc agtagcttgg atggttagtg ccaccagtta agaggatagc cacccaggcc 540

cgaacctagg gctcaccaat ttgcgggtac ttctcaagga aagtggttcc agggtactcc 600

tctatcttat aattgaaaat gcctagagga attctctccc agtggtcaag aaaaaacaat 660

agaaacaatc tactgctaaa aaggctccat gattaagttt tgacagatga agaagaagaa 720

cggtccaatg gagcaatata aactagctaa aggctatgag gacataatgc acgcatccac 780

atcaaaaaaa ctagaccagc ctaggaggaa ctaggtggaa agtggcattt tattatcatt 840

aataagaaga aagcacacaa atttgcctcg acgacgacta acacttgaac atgggtggtc 900

tgggtgtaca tccacctcaa gctagctcat ctcccttcca cattatacgt ttcatacagt 960

tttgtatcta ttgttaattt cttattatgt cttacactat caaaacaatg attaggcgca 1020

agaaacaaat gttggtgact atgtcctgcc aattagagga ttttggcatt cttgtgtcat 1080

cttgccttct tgatatttat ttatttcttg atatttcatt cttgtacctg taggtttggg 1140

ggaaaattgt gtttgtgaga catgcacggt gttcagcctc ctacacccta agtcgcatcg 1200

agggaaacaa ccatgtcaga cagtcaccac gatcgacgct gac 1243

<210> 4877
<211> 1078
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162129_G1, chr4:188388281..188389358, Cluster 30

<400> 4877
agtttggtga caaatttgtg ctcctggcca ttgccatgat atttgcttga cacctagcag 60

ggtagtgatg gaatctcagt agctgttcca acaaatggta gtaatattag cttaaggctt 120

tctcatccct gaaacagatg gtttgcattc attttactag taactgattt taccaataat 180

gtttttttt tggtccagtg agtactaaga ggctaggcta ccaataatga atatttggcc 240

acattggtca gtgtgttgtc tggtgcctgc tggcttgtga gcaaagataa ccaatgtttg 300

tgtttctcca gtgaataact tttgactagt aacctgtaca aatgtaccat gaatgggtaa 360

gaaatttgtc ttacataaac acaaagcaaa ggtcgcttat cagttactta agtgcagatg 420

gcgatgttta ttggttgttg tcataagcga aatacttggc attttaccac tgagtttgtt 480

gcctctatta tggcatccgt gcctatggtt tatgggtcta tccgtatcca tgatttatgg 540

gaccgatggt aaatttttca aagcccactt ataataatta taaaatagca aatcgtccat 600

tataagctgc tatttgacaa ctcgtttaag tttgagcata ctgacggcag gaccactctg 660

gcaaccaacc aaccaaccaa cctgcgtccg tgtccgtact gacgggaaga tcagtgtggg 720

ccagtgcagg gaggcaattt agatattcat atcattggca gcaagacttt ggaaggaaga 780

ggcagtgccc ccaaagaatc tccatggatc aatgtgtccc ccctcctcct ggttgcgtac 840

aagtcatcag tatccaagca aacaagatag tatagttcgt cctctgcttt gtggaggttg 900

acagggattt ggttcatgga ttgggcagtc aacagtgcaa tgcttcgata tatcatcaga 960

tgtcaaatgt taaccccatc tgacggcaag ccacagggtt tcagcagaga gcaagtgtct 1020

gttcattcat atgttcaagc aatctttgcg tgctaattgt taaattgcat gcagtctt 1078

<210> 4878
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162534_G1, chr4:189908021..189909107, Cluster 30

<400> 4878
cacggtagga aacgaggagc aagtactcca actctaaccc aaaatgtttg agatcaagct 60

cgaaacattt ctggagatac aacaaccaaa gaacaagtgc gtgaaacgga ctcattttca 120

gcacagaaca gcacgggaag gacgacggcc attaacctag ctccctcgtc ttggcaaggt 180

cgttatccct ggtaagcaat ccatggttag acagtaacca tatgaaaaga agtgaactct 240

tggtggtatt tttaggtttc cagacctaac ctaactgcca taaacaggga aaactaaact 300

cccccacagt tatttattgc atacaaggac tctgcatagc acatacacca tcagaaaaga 360

aaaggtccac ataatctgat catactcatt attaagatac cttcaatcaa gctatctagc 420

ccctagctca tatctatgta attctctgaa acgtgtcttc taaaagacaa cataagagtg 480

tgaccgtccc aaaccctcac taattgttct acctccttgc tcattaatca catacaaagg 540

taataatagc caggcttgta ttacatagcc ctgaagaggg aaaagcatca atgaactcag 600

tttgtattga tcactggaat caaatacata ttaggaattt aggatcctta gttttgtact 660

taaagtcgac acaaacagtg cagttgacat ctaaatccct catgcactta aaagtgctaa 720

gttcaacttg atttgaatct gcacaaccga ctccaataaa taatatccat gccgatgatc 780

tgccaactta tttccctact ttttttttc tgatatagat tttttagaag ccgcctccgt 840

aaggataagg ccagtcttag acaaactcca gcctccgttc aatatttata aagacatgtg 900

tccttcgttt ccatcaatta attatatata gaggcggttg tctgaagaca catgactatt 960

gattaattaa aaaggcataa ttgtcgagat gttcttctct aaagttgact attaattagg 1020

tgggcaatgg aaggattcat ttctagggca cattagtaag aggccaatta aagaagtagt 1080

tgtgtaa 1087

<210> 4879
<211> 1047
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162630_G1, chr4:190382541..190383587, Cluster 30

<400> 4879
agagcaggga aggagggtaa tccatggtgc atatgtgtgg gactgtgggg ttcattattt 60

ctcaccctgc aggctgcagc caagctcttg actttgaccg tccttgcggt aactctggcg 120

gtacatcgtt tacaacaagg tagaaaacga aggcagacca agcaagtgca acaactcaat 180

atgcaaataa aaaaagtgta taggggtgcc agtttatata tccacgtgtc cgcgtcaagt 240

gcatgttcat ctgttgctgc tagctagtta gcttatctct acgtgtgcga acgtaaagcc 300

gacggatcat gtgattgggc gtcgtacgag gtctgcgatg catgcgagtt tatgtgcgga 360

cgtggacgat taattattca acttctcagt aagtactgta cgttacgttt gccatgttta 420

taagcaaagc taggaggtag cagacctacg tacgtcgtcc gacgatccct taactataga 480

ccctggatct aataatttac tgcaaaacca ttcagttcgt tcgtcaaaaa caaattgcaa 540

ggcaagctaa atgttaggta ataaggtatg ctgtttggct gttcagtata tatacgatgg 600

acctttttg ttttttgttt ttgcttcagc tcagccattt cttttggttg tgtgtgattg 660

ctacgtgtgc gatggagtct accctctagc tagctagcaa taatgttcat aacaatcaat 720

ggtcacattc atcctttgat atatgaagag acagcaggag gggcctcctt atttcattgt 780

cttttgatga aggctcttga tgaaatacac ttccctttat ccatcaggga aacaaaaaag 840

aacaccgcaa aaacaattac tcactaatga ctgtaatatt aatgattgca tctattacta 900

taaaattagt aagtgtatgt gcatgcacaa aaaaaagctg catgcatgcc aaaaagacaa 960

aagtctagcc atgcatgtga gtgggcttct aataacagaa gaaagcactg gtctaacaat 1020

atgtttcggt ttagccgaac cacgtca 1047

<210> 4880
<211> 1058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164764_G1, chr4:200741378..200742435, Cluster 30

<400> 4880
atagcatcaa atcattgatc gttagtataa tggttggctt gtaggcaaca tcggactaat 60

gggctctact attcaccagg gaggcccatt atcaagtgca tgggaacatt taaatgtagg 120

aattagatgg tcctatgtgt gtcatcagat taatccaatg gtttagggag ctctctggaa 180

actttctcga caacatcata ttacataggg cattagtgtg atgaccccat cagactataa 240

actccactaa ccattggcta atccaacatc tagtatctaa caacatgagc tctatgaata 300

ataacatcag actaatggct acagaggatg taaaacataa tatatatagt ctggtgtatg 360

gagttatagg tcattggttt aatattatga ccccataatc ttcctagtga aaggctccca 420

atggctagct catttggggt tataatatat atagccttgt tcttcatcca aattaagttt 480

gagagatatc tagtacattt atattgagtt gttgcaccta gtagtactag tggttgagtt 540

gagacgtggt tttcttgtta ttcatagtgg tcatcaccat gtaaatagct tgaagcagtt 600

tggtagtcgt tgaagaggag tgatgattgt ttttgtctct agtcggttca tattattaga 660

ggtattgacc ccatcttgat gagcgcaaag ggacactcta gtggaattgg ggctaatttg 720

agggcaccat tttgaatagt tcttgtagta ttcttgatgg gtctagcttg tcacactagt 780

tagctcatga accatgaagt ggaggctcaa cataatgagg acgtagtggt acggaaccga 840

acctcatgga tatatcattc gttttctcgt ggtttgatgt ttgatcatta ctctcgtgct 900

cactttcata ctttgattgt gagtagtagt agtcatttgc gctgagctag agtgatagtt 960

gtagtgatta gtttagttgc tctcttttt atagctctct agtgtagctc ttgttgatgt 1020

accttgtgtg ttgttatgaa ttagactaga aatcaagc 1058

<210> 4881
<211> 1000
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164837_G1, chr4:201483459..201484458, Cluster 30

<400> 4881
ttcttcagtg agcacgtcaa gaggaaagaa atcaatttag acttaccggg tgtacctatg 60

aacacacata gcaacagcgg atcatccctg tgaaccattt atgattcatc actgcaactt 120

ttttcccaaa ataaattgat gttatgcggt gtcacctgca caattgcaca tgaaagattg 180

catgattata cccatccatg tgcatgcatc aagaaacagg caagtattga atcatgcaat 240

aatcatgtgt gcttcttttt gtgcccactg gccactaccg actttgacaa attgaaccgt 300

aaattatgca tccacccgtt ccaccgtaag gctatagata ttacagctat acaattttca 360

tagcagtgta tcatgttatt gctgttgttg tttcagtaag aaaatgtgag attcatagag 420

agtatgacag gtatgaccag agaaagtaaa attcataatg atcataaatt tattgtccag 480

ccaatgcacc gtcggaagtg tacataatgg tacttatgtt ggaaaaacat ttctacaagt 540

cataatggct ggataaggat ggtactcatg ttgcaaacaa gggcagagcc acagttcaaa 600

caatgttctg agtttgggca aattacttcg taaaacaatg cctgtggaag cgatgatcct 660

atgatttcag caagattatt atactatgac atcaatgcca gattttcagg atccattgca 720

gctaaacaaa aactatgcaa ggcataaagt ctgaataaga atactcattg ttacttccaa 780

gcttctaaaa gcacacagca agatccactc ggtcacgcaa ctcagtgatt gtaaagcttg 840

atcagcctga ctatggagtt atagataagc tagaaataga tagcaaactc gtttatgtga 900

ccaaaataca ggattatcat gcaacgagca gatgacccta gaaaccaaat cagaacatgt 960

tcaggcaagc aaaacatcac acacttacac ttacagccag 1000

<210> 4882
<211> 1071
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_168586_G1, chr4:221756139..221757209, Cluster 30

<400> 4882
aagcattcaa gggtttttaa tgatcctaga agatcttact tgaggtgctg accattaatg 60

tttgtgttgc ctaagtccta gccatcatcg tttgtgttgc ctaagtctaa gccatcattg 120

gatgttttta tacatacata tggcccatgc ttggttccat ttttctcata gggctcatat 180

agtcagttgc gtgagccata caaggtttgt caacccttt taggaggtga tatgtgttaa 240

ttgagtgcca acatgatgtg ctcccaagtg taagtgtgaa acatattagc acaattggcc 300

aagagagcat ggtcgcaaga ccccaagggg tcacctgctc cccaaatgca tcccctcgat 360

cccaactttt ggtggaagca aataatatta taatttgatc atcttggaca tcaattcttg 420

gtcaacagaa atctaaacag taagaaaatg gaccatatgg ctcattatgt ttgttttaat 480

gtttgatgga caacatgaca tttagactat tgtttttag tatataagat ataggtcaaa 540

ttgatgtaat gtgaacttag acttaattga aatggtaatc tggattataa acatcgcatg 600

catgacatta taagaatatt tgaagatcta caaggcatgc tagaagtcaa agacacaaag 660

tggaagtgac atagatgcaa ataccatgta ggaacaagtc aaatggcatt gtatgggcat 720

cactagatta ttttggtgtc tacaaggagg caacatcaga ccatgtagtc aatagaggct 780

gagatatggt ttcgacgctt cacccaatta ttttcacaat ggagcaaaat aaccactaga 840

ttatgtcagt gtcaatagtg tacaccatat tagcataagg tcaccaccaa ataaattcta 900

gagagaaaaa caaatagtgg aataatatgg tgatagctct agaccaatgg cattagtgtt 960

gtgaatacaa ggagagtaga gataagaagt actcactaga ttgctctgtg gtactaggag 1020

tttgtgcact caagaatcca ctagtccaac aatcaaaaaa tgctagttcc a 1071

<210> 4883
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_169839_G1, chr4:227657142..227658167, Cluster 30

<400> 4883
aaggcgtctg gtcatcctag ggaccccggt gaaaagaaag tttgaaaatt ttataataag 60

gtccctagca gtctgtgata taatgagatc agatacgctc atatattatc gttccatatt 120

tgttttcatt ttttttcttc agaatcggat tgtatacagt attattgagt tatatcggat 180

aagatttaaa taaatatcga tatcttaaat atccaaattt ggatatacgg atacagatat 240

agatcggatc ttgtatacct ggatctggat actgatcgga tcttagcctt cttagacaga 300

tcaaatttaa atacggatgc acacactata aattttgagt ttttgagata taattttgaa 360

attaatattt ctaaaaagaa aagatatgtg catttcaaac atggttggcc tttgcactga 420

tcgacggttc ctatccggct atccgtcact cgtcttctca tgggtccaag tccattctgt 480

gccctctttt taaatttgtg tggagattga aaataatgtt tttgagaaaa atatgtatca 540

ctcgccttta gtgttcagtg gaacttttga ataggataaa atagagagaa gctaattaaa 600

agcaacacat aaatataaac cagattatct cagaggtgaa ggacagaacc cacggtttta 660

aaggtgaggg agacttatta gtaatttctt aaacaagtta ttgatttgca gcttacatat 720

ttattttcga agtgctttaa cgagataaat accaaatcgc ttactgttgc aatctgagtt 780

ttttttgggg tgggggaggg ggttcaaatt ttagttttat aaagtttgtt aagtcatact 840

tactgatttc aagaactaaa aggatcttaa tcataagaat aacgttgaca tgatagtgtc 900

tgagattata tgatgttgct catagtatta tattattatt aactaatatt atttatagtt 960

gcaactatca caatctactc cctccgaccc ttattttaag atcatgaagc tataattatt 1020

tttaga 1026

<210> 4884
<211> 1121
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172794_G1, chr5:2340977..2342097, Cluster 30

<400> 4884
tacaagcaac aagctgctaa gctagtgctt tgcactggct gctcgatcct tgccaagttc 60

cgacgacggc tggcgctctg gcgtattgag taacgaaagg cccacggcca caccgcggtg 120

agagcatgca gatagatgta ggatcgtcga gtttccctga agaaatgtca gtattattat 180

tgcacatgcg atgttgcacg ccctcgcgac ggcggaggag gaaagctatt cgttccatac 240

acattcatca gtccaatttc gcaagacggg tcaacgggaa agcgatgata caacaagcat 300

gcaatcctgt ctcgagtgga cactgacaac gtaattactc gctgaaaagg caagtaatct 360

tcaaatttca aagaatcgat ttttttttat taagaccaca tttcacccct tcagatcaca 420

gtacaacaca acactaccac catcaaaatc gaatttggta tctctagcta gctctcaaac 480

atgagttact tacgctgtga cgatttgatg aaatccatgc tggaaataga tactagcaga 540

acagattggg tcagaccggg gcctagtgcc tttattccct ctccaacggg gggagactgc 600

attggactgc gggaaagcag acgagagaac ttagattccc tccgacagcg acgggtaaac 660

aaacgagcta gggaagagat gacgtccatg catgcatgaa atatccagag ccggtgaaga 720

caaaaaagaa attagcttca ccaaaatcct agttctcaca ttaattgtgc gatattggac 780

cgatgacggc cttgttgctt gttcatttcc aaatgacgat atgcgcaaag ggactacgta 840

cattttgtt ttggaatttc ctaaaaccgt tttgttgacc aaagtatgac ttttgtattt 900

ttttcaaatt ttaaaccaaa atacaccaaa aaaaaaggcc aaaaaaacgc atcgtcccgg 960

ttggaccgac aaaaaaatta tacttagaaa caggactctt cgaccgaaaa gtttaaccta 1020

gggtgcaact tagaatgcac accatggtag atagatagta ctatattacc acgcatgcaa 1080

tgcaacaatg actttcttga tgtagagagt aattaaagct c 1121

<210> 4885
<211> 1092
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175269_G1, chr5:16845915..16847006, Cluster 30

<400> 4885
gtagttgcag tgataaaaac agtttttttt atcaaaccgt tgtgactagt tcaaactcaa 60

gatagtttga cttaagacga ttctggtagt ttttttaaga caaagagagt actcatgtcg 120

agagtacatc tagatcccta agtgaatttt taagtaaaga tggcgatgta attaagggat 180

tgacatgttg taagcgatgg aatgaaataa ggcaacacaa tgacgaccac aattcaaatt 240

ctagcggcgt atggatgaat taaggattta attcttactt ctgattttga atatgagtat 300

aaggacagtt agggccaggg gacacaaatg gcaagcttaa agaacacttg aaaaggtggg 360

aggggtattt ataccacacg tccttcttcc ccaacaatgg tctactcatg tgatcatatg 420

gccaacaaga gggttctgcg tggcccacca gccaggacct tggattgtcc tcttgattga 480

cgcagttccg cggagttgca tccaacaacc tcctctagct ttgagttgct tgcaagatca 540

atcatagagc tacattccat gaaccaatca tcaagactca catagcttat tacccatcat 600

atattcaatt tagtcaaaga tcattacatc acatctaaaa gaaaagtagt gttacaagtt 660

ataagataca aagtggaaca atttggactg tttttttaa actcagtcac acatccatca 720

aagtattagt agctttgggg gacgaccatc ttatcacctg ctaaagcctt cgagcgcacc 780

caggcttatt ttaattggat tgatcatcct ttatccatct tcaagtcgag ctcatcaatc 840

atcatcatgg tgtggaagta accatcttaa gcatcttctt agtgaaaggt taatccactc 900

gttatctcag ttaacaaaat taaatatagg actttcactt ccccacgttc aaatttagt 960

gacaccaatt atatttaaaa attatatcaa aataaccagc gcaactgtag tacaagtcag 1020

atgtaaagta attaaaattg agatgtgaga gataatattt ttatccaaat tatccatgca 1080

aaccctgtca gg 1092

<210> 4886
<211> 1145
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175514_G1, chr5:18372583..18373727, Cluster 30

<400> 4886
taaaggttac atttggggta tttgtacaca ttatatttat gcatacatat gcatatgtac 60

taaacagcaa ggacagggat ggcgatggca gcatatgcta caactttgtt tctgttccca 120

tgcatgcaaa gggaagccct accacgacgt ggctacccat gccactcatt ggtgcaccac 180

tgtttgctag tacaacaacg tacaaacaca caaacgctag atgcatggac cggcttctga 240

atccagctag ctggattgtt tctaactagc tagttaataa tgtaggtcaa tatatagcta 300

cgcatgggga cgggatcagg agcttagtta attaattatg tggtctcgct ctaatagata 360

gtaaccttgc tttgcactac aggctactgt acacacttta tacacataca tacaacttca 420

gctagcgcaa cacatgcgat gagaaatgct ccctgctgtg tgtcgtcaat gggttataat 480

tcgtagagag atgtcttaag tcaaaagttc gaaactttgg tcaaatatct agaaaatcca 540

caaagattta tgacatcaaa ttaattagca tcgttagata caacatagaa tgtattttca 600

taaaatattc atgttaatta tgtcatactc tttcctataa agttagtcag gactaagaat 660

ttaacatggt ttgacttgca cggtttctaa aaattaaatt tatttacttc atggaataag 720

aaatgtgtgc atgcatgggt gcatggagta gatttttgtt ggctagatag ctccctttca 780

tttctagcta cggaatctcg gttaaacaat gatacagtag gctgcaagcc atggaataat 840

atgatcattg gggtttgggg agggatggga agtcagccct agatgtctgt gagatccatt 900

gatttcagtg caatccatag aaccgttgct aatgactagt actagagtac tctatatact 960

agctagctag ctcccttata cgtactttga actccggtgg ggattcatgc ttcaaggttt 1020

agctcaacaa cgtaatttat ttacttcagg ccaatttttt tcctgaaaga tatgttaact 1080

ttgctgcggc tctgctaatt cttctagaga agatttttt ttcatttatt aaaagaaatt 1140

aaaaa 1145

<210> 4887
<211> 1129
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_175995_G1, chr5:20809267..20810395, Cluster 30

<400> 4887
gataaccaat ggtatgtgaa acattttgaa tattgataat ggtttcttaa ttccacggaa 60

tcaatccact tatttttatt atctcaatgt catatgataa ccaatggcac atgtttgtcg 120

agttttaatt ttagccattt catccccctt tttcaaatga atccatagaa agtggattgc 180

tgatcatgta ggagtgatgg agtatacctc acgttgaagt ggggccatgc ccataactaa 240

atatggacta gatcgaggta aatgtgcagc atagtaatct tgtgttatat aggctggtct 300

aactggtttg ggacaaaagt tagatcagac aacttcaaat aataatcgag agaattcatt 360

tcttagccct aaaacaaacc ttggttcttg gcccaaaaaa ttaaaaattt tcttacatga 420

catcaatttt atttttatg tccgtcctga cactttcttt agtttaaagg gctacgaaag 480

atcaaatcag gctaccaaag aaaagtgaat gcatgcaagt ttggcttgct tcccaatgtt 540

ataccctaat atctaaaatt caaataacaa acaataaatg tgaaaacttt ttaggacata 600

catgagtaca atgtaacaaa tggatcgcaa aacgagcatc gaaaagtctg aaacgactca 660

aaactctggt tattttcagc atcttgaatt ttaattatag aatgcaaaat cgatacaagc 720

gaactctgat tgagttgaca ttttgtacac accttcataa gggagtttat aaggtgtcca 780

caatttttta gctcaaatga gtttaaactt caaagtcaaa tcagaaaact cgaacttgac 840

ttggatttta gctggggaag agcaaatcta ttagaaaact tgttcactaa ttggatcagc 900

tcatactata ggttgcagtg aatacaggac aatttctaga ccaaagatta accccaaaac 960

acttcccaag caagtgaagg caagaatcaa atcaaaactc aaaagggtgg agaggagaag 1020

aaataaatca aaagcaaatt ccattagatt taagccaaga gggcaacgtg tggttccagc 1080

cacaccttcc tcagaattcc ataaacttag atgacgaggt tcaacttgc 1129

<210> 4888
<211> 1133
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_17645_G1, chr1:98315398..98316530, Cluster 30

<400> 4888
tattagttac attaatgttt agtacttcgc caaggtaata catcaatcat ttcatttatt 60

ctagctaagc ctaggggctt tggcatctca ggtataatta tattcaagga cacacgagta 120

ggttttagaa ttaagcccca ctagtgggcc agaaaatctc gcttaggggc aaccatcgtt 180

gcaacggata tgataaagtt ttcacccgtg ttcgtgtgta attcaaaggt gccaaaccac 240

tcatatacaa gtgatctctc atttttgtct tggacaatta ctctttatga ccccccctgag 300

gatgtctaat accctaagag ttgttttcgt atatcaatta cttggtttta ggctcaaggg 360

gtgcgagaca tatgtccttg gtggatgcat tcaatttttt gaataaggat ctattaaagt 420

caaaagatta catgaaaggc cctcaaactc tttatgttaa acaacacgag gcttggggct 480

acacctaatg gatgtgcttt ataagaaagg gcacaccatt tgaaaaaagt ttgaaaagca 540

ctttatgact tctatcaaaa caatactcag atgttgcttg caagaagatt ttaaagttca 600

accataaaga tatcagaggc ttggaaaact aagatcatgg ttttccatag ggccgactag 660

cctgcaagaa gatgagtcaa ccatggacta ctagaaaggc atgggacaag ccgacgtggc 720

ttccagtgag aaaatcgacc tagtcgacta aaggaaggac aatctttata atagtattag 780

aactcttctg tcttagttga ctaggactat aaccgtgtgt ctaccctagg tagaggtaca 840

cctatttaat ataacataaa caataattca acgaaagact atccaacaca caagacatat 900

gatattacac tatttagtgg tctaaatctg tctaaattgt cgtttcatgt taaccattga 960

atttgtttt tcgtcgacac ccaccaaatc ttaccttgag tgacctcata gtaagattgt 1020

tgctcatcag acatcgacaa tagctagcca ttacaatcag atcatggcgc gacgtccatt 1080

gtactctaga tacaccagtg ccttatggta gtttgttctc tatagcatga gct 1133

<210> 4889
<211> 1218
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176592_G1, chr5:23569646..23570863, Cluster 30

<400> 4889
tttgaaaact aactcccaac tacactagag ctaaaataaa tgaagagagg gttcttatgt 60

tatggcttgc ttgctttcaa gtgaggagtg gagcatctat ttctagggga gtagagttga 120

aagtaggacc atgaattcat gtgacaccac ctctctaccc ttggatcaaa ctatatcatg 180

aagcatgatc aggattgaag ggaattgtgt ttctttgcat gcacaagaag ttgaggtggc 240

ggagtgtcct agggggggtcg ggcgaccctc cttggggcaa ctgatctatg tcaatgatag 300

gtggggcctc catcttctac aaggtggccc tccgagtgaa gtcctcatta agtatctttg 360

cctcatgttt aattgtgcac tgatgctctg gatgttggtc catggttatg catgtgtggc 420

tacatggtga ggtctctcta gattaaaaag tatgctattt tgttatccca atttgtggtt 480

tttaaacaac aactcataga ggatgtcaaa atacaagtgg atctacaaat gatattttaa 540

aggtgactca tattcccaac cgcctttgga aatcaaatct gtataggcga ttgggtgagc 600

caccttttag aggcttccca actgcctctg caaatcccct agtggtagtg cttgttggac 660

ttttaattat gttggctttc aaccaccaag aggaacccac ttgaggacac agatgcactt 720

tcttggaggg gggtgtacaa aactacatat gtgtgtgtcg gcctaggaaa aactggtttg 780

catcaatttt ggctgcttga acaacaaaac ttgaagaaac cagttgatgc tagttttgca 840

gggcctatgc acctttctat gatttagttt tatttttgta gggattttaa taagagttta 900

ttcacttctc tctatgcatt gactcactcc tttcacatat cggacataga gggactaaat 960

taagagcatt accggaagta aagatctgca tatgaatgaa ttgcatcact ttttatattg 1020

catctcttta ttatattagg tatataagga tatggttata gaggtacggt gagtcagact 1080

tcaccataaa catacctgca aaaaattttg ggttgcgaag tcgttagagc gtcttcaaga 1140

atatttcttt accgactccc taaatcatta tttattaagc acttgaaaaa atcattctgt 1200

atgtatcttt ccaccctc 1218

<210> 4890
<211> 1053
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_178298_G1, chr5:32249494..32250546, Cluster 30

<400> 4890
ggataccagg ggccttggtc gtaacaattt ctcgagcctg gtagactttg tgtctcttag 60

tgtctcttta taaaatttag tggtgttgtt acctattttg atgttctata tcgaattatg 120

gaatgtcaag ctccttgggc ttagatctag gaaagtcccc aagggatggg cccgaagggg 180

atggtggtcc caatagatgg gtctagctat cgggaccttt ggtggtagtc aaagggatat 240

gtgttttggt ggtagccagg ggtatgatct tctccggaag atgagagccg ttaaaaaaaa 300

aactagttaa ttttcgtggt ttaattttaa agacctagat accgatgaaa aatacctaat 360

ttttacgtgc aatgactact tttcgtagat ctccgaccga tttaaattga tcagagtacc 420

gtcgtgatgg atcaaactca taagaatact actacttaca taaccttgcg ctagaattat 480

aagtattttt ctagtatatc acccagctgc gtgcgcggtg cgccaacaca ggaaatctct 540

aaagatatct ccgatcattt gtcctcgtta tcattacaat cgttagtcat catcagagat 600

ttgaaaagca ctaaagttct tttttttttc tttacgattg tcaacgtcct cgtcatggcg 660

taggtacgta cgatgcaagc tcatcagcac gggtacatct acattcatgt gcctgcttct 720

ctgccgcccc ttttcaacgc ataaagctac tacagtacgt gtgctgcagc tccaagagaa 780

aggaggtgaa gtgtgatctc gtccaaaagc ctggattttt ttttttggca ggcaccttga 840

aagggaaatg aagttgtttg cagaaataaa accaacacgc gcgtgcagta ttatttgtgt 900

aaaaaaaaga acggtagttt tcctaacaat tgagagtaat cttcttcttc tttgtttcct 960

cttaaattac agagtggtgc atgaccacac gagctgacgt gtccgggcaa cctacggcta 1020

cgtacgtgag taacacaaaa taaatcacgt gct 1053

<210> 4891
<211> 1192
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_180080_G1, chr5:42230076..42231267, Cluster 30

<400> 4891
atcgtccgtc gtccacacag ctacctagag ggtatagcta ccagctgtag gcgccattca 60

tttcgatcgg cggtcaccct ctgttccctt ccatgaagct agctagctac cagtgtgaaa 120

gaaagaaaga aataaacgat acactagtcc tacgagcagt ggccatatga tccgaagcta 180

aaagaaaacc aaaaggaaaa gaagaagaaa aaaaaaggaa aactgtgggt gatatatatt 240

ggcttcaccc ccaaggaaga aatctagaga tatgaagcag gcttaaagat aagcaagaat 300

cgagaagcaa gcacaaggag gctgagggcc ttttccctgt gatggagttg acagccatca 360

ctaccaccac tatggctcta ctatactagt gaccggaaag agagaacccc cagctgtgtg 420

gcgaaaacta gcaccatcat ctcgttcctt tcttttctct ctctctctct ctttctttat 480

ttctcccaag aggagcagta cgtatgtggg cccggtgaac gaatttctct ggtttttct 540

ctgaaccaca tgataccctg atgaatagaa aacctgcaaa aaaatctacc ccctccgagg 600

gctccatttt tcttttcatc tccggctcaa agggagaggg ggagaaaaaa ggtagataca 660

gaagggaaag cagcaggctt gcattgcaca ggatatatag tgattaaata gaaaaaaatg 720

gcgaaaattt gaaaaacaca aagatatact agtagctgat gtgcttggga acaagggact 780

gagaaaaata attgaagaac acgctctccg ctttggtact tggtatcctt ttttgttttg 840

ttttgttttt tgggggttcc tagggcgtag tacacatata tatgtatgct aacaacaatg 900

cctttgtttt tgtgctaaat aaacactgat gaactgtaca gtactacatg acgatctatc 960

aaacttggga gacagaggca gccccacagc agctttgggg ggtcctccac agcacatgct 1020

agctgtggtt tagaataatg ctaaaagcag ctttagggca agcaaactgc tgctgctcca 1080

atccattgca gtcccttccc ttttctcttc tcttcttccc atggatggat aggttgtctt 1140

gagaattatt caggtactac caggccaccg gtgtgtggat ggggttaagg gt 1192

<210> 4892
<211> 1270
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_182885_G1, chr5:60246368..60247637, Cluster 30

<400> 4892
agacgttgcc aaacaaaccc tagagatgtg aaataataag gcttgtttag cttagcaaat 60

ctcttaacat gtggctagtt aatttgtcgg acatatgtgt gcatctttcc ctacctgccc 120

aatgtcaagc ttagcaagtc tctagatccg aaatttttac tcaccgtcac tggccgtcgt 180

ggttagctag ctatctcacg gggggaaaat ttttttcttt agcaacgtgg ttacacacgc 240

tgacacgcat ggcgaaagca gaagggacaa acatagaaac cgatagcaag cagatagctt 300

cagagatcac tactgttgga aatatgaaga gggggaggaa aagacaacac ctttcccacc 360

gactggccgg tgggccggcc gggctgcgat tcacattcac atcttgactt gtgtggctcc 420

gcgaaagagg agtacttact ttttcttttt tgatttgatt tgatttgatt tgaacataac 480

gtgagcctga attcctgatg ctgcgagaga tgcatgtgat gatgaggttt gaatgaaata 540

cgtacgccag cacagcctcg ctccttcctt caattccgtg gttacgcgtt tagccaaaga 600

cacgaccaaa aagaaacaac aggacatggc tgtctctctt tctttttcct tttttcaaga 660

gaggcccgaa ggaagagaga agacctttat tacctgtatt tatgatgaga tgcagcagta 720

ctatatatga tgtgtgtcgg agtgtcaaat tactactact ttctgctggt gactgatggg 780

aatttggaat tagaaggggg tcacgtgatg gcctcccgct ttaatttcac tattgttgtt 840

gttgttacaa cattttattt gggattctat atacatgttt cattccagat gaaaaagacc 900

agcagctgca tttatttatt tatttattac tcgccgcctg ctgcagatct catctcaatg 960

ccatttttt gtggacaaac tagcaaacta tttattattg ttgttgttat taaagttatt 1020

attattatta tatcctgccc ggcccatctg gctttgttgg tgtctctttt gcagaaaatc 1080

cggcgtctct gttacctttg agcccaaagc ccagcccgtc tcgttcctcg gtccgagcag 1140

cctctttatt gttttttttt tcggacaacc ggcgcgcatg atgagccaat cgattagatt 1200

cctcggacgg acgcacatgt ctagcactcg gctatttcat tttcaaccaa atatttattt 1260

ggaaggtgtt 1270

<210> 4893
<211> 1168
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_19093_G1, chr1:107289432..107290599, Cluster 30

<400> 4893
tacaagtatg taggctgaaa aaaatgtatc tggatctctt gctcgagctt gcctcacccc 60

tccaggcaaa aactggaaca tacaatgttt ttggtttatt tgcttgcttg cttgtgtcgt 120

ttccttgctg gcttgagaga gccaatttgg tttgcccatg ctggcaaggc taaccttgct 180

agtagaggtg aggcgaggaa attcagcaag gcaaccgaat agccccaaaa tgtcccatgc 240

aaaatgcccc tttgttcctt gaatgaaaag tgccgcataa gccaattaga gaagttgagg 300

gggttgtcat ttaggacatc aaatacagat attttaggtg tctgttattc tcttggggaa 360

catagaggca ctctgttcag tttgtccacc gatgtaatgt tctaaactct ttcttctagg 420

cacaaccaag gagatcacgg agtccatctg ttcagcctgc ttcatatttg ctggcatttc 480

gatctgaaac aactatgctc ctcttaagga aagcacataa agacaaaacc cttggagttg 540

tttgtgttcg agtatgttct ttgacactta cattttcttt tttttcttat atgctctttc 600

cttatggagg attgacatcc aattgtttat tttaacttag gcatcgaagg tattgcaaaa 660

actgttggag cctgagccat ttttagacaa atcgatgtat actgatgtca tgctaccaaa 720

ccaagtctct gatgaaattc ctaaaagcga tgctctcagc ctagtacatt ctacagacta 780

ctccagtatg tttggagagg aatttagcct gtcagagaat cagtttgatg gttcattact 840

gaatattttg gatattgctg ctgtggaaga aggcattctt catgtactat atgcggctgc 900

atcacaggtt atctatctta tcgttccatc ttcatatcgt ccaccatata cgtaccattc 960

tgtttgaaga tactaatgtt ttcttggttt ataactatag cctatgctat gtcgcaagct 1020

tgctgaaact acttcagaca tttggtctgt cttaccactt gtccaagctc tacttccagg 1080

taatgactgt gctgtataca tgttttcttt actactcgtc attgaaatat acaataattt 1140

gaatgattag aatgttcact atgggtag 1168

<210> 4894
<211> 1074
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_194905_G1, chr5:145220061..145221134, Cluster 30

<400> 4894
catgcgtacc gtatcgaaag gcaagagatc tgtgaaaaat taactcaaac ttgacaagta 60

ttatatttgg ttatggacat acttcctact ttttagtggg gtgaggtggt acagtatgtg 120

ttttgttcat atgtacaggt accaaactca tgagtttagt tctactcatt tggcccattt 180

taacaatcca ccatggttgt cttgctaaaa agcaagttca taaggttatt aaaattgttt 240

tcactaacaa tcatagcttg tttcccatac tctaacttct cggtataaaa aatttaaatc 300

aaagcaagcc actactacat gaatcttaac acaatcattt ttttgtttat caaggtaggc 360

aaagcatcca ccttcatcca aaggcatgtg ttaacgcagt tttaaaggtc cccgttaatg 420

tcgttaacat aggtgatctc cttataacaa ccacctatgt tagcaaccat taacgtaggt 480

aggcgtattt agaagtccgc ctttgatgat atattaatgg aggtcaccca tcttatgtct 540

ttctcaatta attattttag tctaaaaaga atagtttcat gctatttgat tcaaattcaa 600

tttctatatt catgatttca acacagacaa ttcgttatta ttatcatgaa caacacaaat 660

tacatgtcat atacatatga attgttttgt tttatggtct tctaataaaa aaatcttcac 720

catcttataa tcttctagct atagcttgtc ctagtttttt atcttgtcgt acttctcatc 780

caatgctagt tttctctcgt gattgaagaa cttttgtcat acccaatttg aaatttgata 840

gcctacccta aactattata acagttgtgc taatagttat cagcagccta tgcgtactct 900

cggcctagtc tgaatgggca tctcgctaaa caatgtgtat ccctatgcat tctctttgcc 960

tagttgatag gtcgagagta tgcatactct gggacgagag tttgcatagg ggtacaccaa 1020

tccaaaaagc cccctatata tattttgaaa gttgacagac tactcagacg ttga 1074

<210> 4895
<211> 1188
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_197700_G1, chr5:160826767..160827954, Cluster 30

<400> 4895
aaattacata gttcataaaa ataaccaata caatattatt ttttatcggt atctttctct 60

tccatcactt tcgcgtcttc ttcatcatct aattttaatt acttgatcaa ccttttatgg 120

ccaacttatg agctattttt atgtcattat ctatgccaat tgtcagcggt atagagatcc 180

atatcgaaat agactagtag agcgtaggag gctacaaata gagaagaaag tgaattagag 240

agtgaggagt gtgaatcata aacaacctcc tttgtttata tggtagattg gttaaaattg 300

catcaaccaa tcagaatcta tcaagtcaac aagaggtggt caccgatgga ggttggtact 360

aatccacttc atccagttta gttctaccga ctagaccgac cggtcgatag acccaccact 420

cgtttgatcg ataaacacag atttatcact ggaccgaact aactattgat agagcgttgg 480

gtatcgacct tccatgtcgc aacggtaaca ggctggacag tcgttgaacc tagcttaagg 540

ctatttttag catcctttta tctcatcctc tatcttacta ttttaatctt tattttgtaa 600

acaatacact ttacagtata aaaatagtgt tttatatgtc catataaatg ctagtcggca 660

ggacgaggaa cgtccaatgc tgtccaatcc cagcaaacaa ctgagcagat cggggatgag 720

atcccagctg ataggactcg ccatgatcag gtccccccctg acaagagcac agcagataag 780

tggataagca caccggggat ctttgtctcc cgaatgccgt cacatcgctt cattgtcgtc 840

ccaagaaata ctgggcccgt cttgtctccg ttgctagctt ctctccaaga catgaaacaa 900

taataacaca tttccacgac gagctggttt ggtacggctt cagcttggac tatcactctt 960

gatggtagat tcgttagagg ggctgaagaa gaagccacat tcaggggtgt ttaggataac 1020

tctaatttta aaatgttttt aatctaaata atagataaaa tgatttacta aatatcttgt 1080

aaaggcttgc aactctatct ttatgatttt ctgtagcctc taataacatg tttcatcaac 1140

ttcaccattt ttttagagct agagttgtct taaacatgac ctaattga 1188

<210> 4896
<211> 1197
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199079_G1, chr5:168529907..168531103, Cluster 30

<400> 4896
gaaataactt aataattttg aattattttg tgatccttat aagtcatttt agagtacgtg 60

atcaagggct gagctggccg tgaaaggtca tgaatgagcc tcgcacatgg ttcggtcttc 120

tcggatcgta cacgggtttg gtaggacaaa cgttacagga gcaggccgca catggtcagg 180

tcttactgtc aatgctcctt gagatccatg tcccaaatct ccgtgacaaa gaagatacat 240

accacccctc aagtaaaaca aaacattcat acagttgcag cggatgtcca gatcttgatc 300

tggttcattt gattaatcca ctaaattttc cgttggcatc agaaatgtgc gtcatcgtcc 360

ggtccacgtt gcgtccatga tcagtcagcc ccctgattgt ttaatttatc tgatcaatcc 420

aaaggaacgg atgacctgca gtcgtgcacg atcaagcctg atccagttgg atcaattttc 480

cgttgccatc agaaaggcgc atcatcgttc agagggatcc agttgcgatg aggatgcagc 540

ttcagcgttc agaggcggat cagcaacagc aataacaaac tgcggcgctc tcggttttca 600

aaaccctggc caattcatct atagtctagg acttttatcc ctaatccatg ttttcatatg 660

cttcctattt tgtatggatt cccacaattg aaaatgttaa gttacaacaa tctagacttt 720

ggcattagct agtacttcct ctgctccgag ttataagcac ttttagcttt tctagatgtg 780

ttattatctt ctatttcagt gaattggcac tgctgctgac attttctagc caataaaagt 840

atatggccaa aagcgagcaa cagcgtcata tttcaaatgt gcaaaaaaaa acatcaagct 900

tatcagccag aagtaaccaa ctaaacaacc aaagcagagc aaacagggat tcaaatcctt 960

aatgagttca taactactca tagagcaatc ttgttgaaaa aacggtacac aattcttcag 1020

attcaagctt taaatagcaa gctctagtta aggaatgata acttaaaaca acatcatgcc 1080

tatgaaacat cagcaaaaac ccagcaagta atatgactgt acaaactagt aagatataag 1140

tgtgattatg gccgcttaaa aatctcaaca catagcctct gtaacaaggg cgtccaa 1197

<210> 4897
<211> 1400
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199812_G1, chr5:172584020..172585419, Cluster 30

<220>
<221> modified_base
<222> (30)..(30)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (31)..(31)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (32)..(32)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (33)..(33)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (34)..(34)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (35)..(35)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (36)..(36)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (37)..(37)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (38)..(38)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (39)..(39)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (40)..(40)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (41)..(41)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (42)..(42)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (43)..(43)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (44)..(44)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (45)..(45)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (46)..(46)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (47)..(47)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(129)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<400> 4897
caagcttgta tcttccggcg gtcatatccn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnc attttgtgat tacagacgat ctgagattcg tctgtcctcc ccgaccccgc 180

atattctatt ctattctatt ctattcagcc ggttctcgct tgtcacttgg catgaagaga 240

acgaagcacg cagacttgtt cgctgccaga gacttttttct tcacccccccc gaaccaattc 300

ttcaccaccg ggcgttattt gttcgctgca gcttgcaccg gatccattgc ttggtcagag 360

caggtgagcc aaccacgaaa gtcactcggt cgctacgtgg atgtacatat attattatca 420

taaaaaaaac taactgctag tctgggttag ctcgcctaat aagatgttag tattagaaaa 480

ttaggttatc atgggcaaca ttgaaaagac tacctagggg cctcacccag tttctaagaa 540

actagtttat aaaaattgag atggttgcaa acatgtcagt ttatgtctca gtttgtagaa 600

aatttgattc tcattttctt aaaaaccaag atgctggtat ctcttggcta aacaatatat 660

aaaattcaca aaatctgggt ggtccaccca caactagcta ggggcaacat tgaaagttaa 720

ttactagtgc tttcaaaaga agtcaccagc agctaggaat aattcgatga ggtgaaatcg 780

attctttttt ttcctggaca atatatttac cgatgatacg gaaagagttt aatctggaat 840

caaaacgact tgcagctagc tgagtagcat gcatgcatgg tgttcatctc ggagaggatt 900

cattattacg tacgatcgac agaaattaaa gaacgtggag gagctataga gagggaggga 960

atatgcatgc atgcatgcat gaactcacaa taatgtcctg tccaagcggt ggcgtttctc 1020

tgcaacggcg caagcgacga agcccctcat cttgatgcgc caagaggagg tgtagctagc 1080

tagctagctg agatgaacaa aatcctcggt gtcgcctgat gatcttgtgc agcaacaagc 1140

agcaggaaag gcaagagaag gcgagctttg tcgatcgtcg tcgacgatca gtagactgac 1200

tgtatgtatg tatatatatg gtcccttgat cctccggcaa gctatagcta tatatgtgga 1260

tatgatcaac ccttgtatgt atatgagaga gagagatcga gttcagctgt tgtgatgtat 1320

atatatatgc ttgcaacaca ggagtctccc aagtggcacc aagcagcagg ggaagagaga 1380

cctgagagga caaaatgcat 1400

<210> 4898
<211> 1042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201729_G1, chr5:184053105..184054146, Cluster 30

<400> 4898
ggacacctct acctaccaga ttccctccac gctttattaa aaggaattcc ataatatgtc 60

tccttgatat ggtacgtaga tgttaacgct tttccttata aatttattta aatttggtat 120

agtttaacct agcacaaact taggttactt atattccgcg ataaaagtcg tacgtagtat 180

atattagccg tgaacttatg tggacctaaa cggattcctc aaaagagaga ccagtttcac 240

atggcgaagt cacgtatgca ccactgcacc agagcactcc ggagtactcc agaatatccg 300

cgtcactcca taatccagtg cgatcctttc tttgccccgg ccaccgatgc tgaaacgcta 360

atgcaagacc gcgacatcgc cttagcactt cactcatctc catctcttac cccaaatttc 420

actctataaa catcgccgta gcatgcagca caaacaatat tttctatgga tatatacctg 480

atctgttgga ttatagtctt agactatcag ttactcattt tcatatctca ttactctgca 540

aacattaccg tccacctggc tatgacctta gcctgtcgtt gcagctcctt gctccccggg 600

cgtgtccctg tccatggagg gaacacacct gttggcgtct tcggactcga gatgtgcgtc 660

ggagacccag cagcgcgtca ctgtatcggc ctttggtggc cttggccggt ttatagctag 720

acacgtactc tgcattggag aagggcggtc ctctggattt cttgtacgtt cacatcttgt 780

tcattcagat ccagtccttc tagatgcagc agatctgctg ccgtctgaca agaacctacg 840

taatcgcaac aaacaaaaga tgtttttaca cgcgaaagca tttacgtttt agttatatta 900

acgacattgc tagattatta tggctaatat atattttata gaggtaatat aaggtagatc 960

atgataatgt tgattgattt aaagtatatg gattttattc cttatctaag ttattcattt 1020

tcgattttaa aggatgatcg ag 1042

<210> 4899
<211> 1052
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202022_G1, chr5:185658716..185659767, Cluster 30

<400> 4899
tcttctattc tacttttcaa attgttggtc catgccattg taccttgcat actagttcca 60

taaacctgca ccatcctttt ctacctccac catccctgcc aggattgcag tggcaacgta 120

cggcggtcat ttacccatgt tccaaccgac ctgatcctac catgtgacca tacacgagct 180

ggatgatatg atatggaaat gacggccatc acgtaactac atccagagcc ttgaatcttg 240

atctcttcga tcaaagcatc tccttttcac caagtgttac gatcaaagga tggcatggac 300

caacaatgga tcgataccct ttcaaaaaaa tcaatggaat tggtaaacaa gttaataaaa 360

cgaggaaaac tggaaaagtt gagttggaag aataggttgg agacgactgg gatagatcca 420

ataagaagaa cccagctagg cagctaagct aaaaaaagaa gaggaggaaa cagctatgaa 480

tggtacggca cggacacaat aatcttagga cagtggcacc accgttcatc caaggtaacg 540

ctttggcact tccaatgcta gtaataatac cagcagctat aactgatcct gacttgcatc 600

attgtacatt caactgaatt aggaggctta ttggtcgtcc aaacagctcc cgcaccttcc 660

aattcgaagt ttcttgttga gtacagcatg gttgacttga tactagcatc tgtaatggaa 720

ttccacaagc tgagtaggct aaaaatatgg aactgccttc tgtgaatctg aaactaaatg 780

gcaatagatg gcagttttgt tcggtccacc ttcagcttct cctatcacct ttccttttt 840

acacctttgt actgtagtac atgaaaagaa ggcatacgta atcaaatagt cactctaaat 900

aacaattatt gctaattacc actgagcata tatgtttcgt tataaccagc ctatgaaaca 960

ataacgtaat tgtggtatta ccaagtgtga gataatatca agtttagaaa gtatctggga 1020

gagatgaggg taaacttgtg cgctcaactg ca 1052

<210> 4900
<211> 1059
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202127_G1, chr5:186233325..186234383, Cluster 30

<400> 4900
actatacttc tatcattctc tcccaataat tgaggctatg tatatctgca tcttccagtt 60

ttctatgtgt gaatgaaatt attaaattgt gtcgttgctt taaacataca ctccccgccg 120

gtcacgaata actgattctt ttgagtttgt ctgaaggcaa ctttctaaaa agaacacttg 180

atgaaagttc aagacacaaa tctactcata catattgtgc actattcaaa ttcaacatgc 240

aaaagacatt ttgttgtcaa aatttagaat gtatatgtat gactttagtt catactactc 300

catttatttc tcatacaagg agtaatataa ttcccggtac agctacacat ggtgttggca 360

tggacaggaa acatatcata tttgaattat cacatatgga ggaactttga actttgtagt 420

tttttctatt acagattgat aacagcttaa gaaagtaaac accaaaatat cacttcactt 480

aaatatatta ttatgctcag agaaaattta tagaccttac atattattta gcatttaaat 540

atgcgtacac ataagaagct aaaacttgtc ggtcaaaatc agcaaatagc acgaattaat 600

aaggaaaaac agtatataat ataaccatat cataagctta taataaagtt gacaaaactc 660

aattattaca atctaaatat ttgatttaac cgaggtcaat taccatgagt acaagaatca 720

ataccttgct taagttttcc cttagtcaaa gaaaatagtc acatttgata gataatatct 780

cttccaattg aaataccatc ataccatata aagtagtgct accacatttc tgattatagt 840

ccaagcaatg agttatagaa agataaatgg aagtttattg tcaattttga ggtaaaccat 900

tggcttaata aagcatccag agaaatacaa ttttaggctg gcgttactct agtttgtgca 960

tacatgatcc gggtagccaa ttgttgtact ttattttaaa atcatgtaac gacgggctat 1020

gtgaaatgca cttttaccgt gttcaatata tttgatact 1059

<210> 4901
<211> 1345
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202629_G1, chr5:188899619..188900963, Cluster 30

<400> 4901
accacttatc gtgttcctct atttttagat caagacatag tcatatattc gtttaaaaga 60

gtaaataaat cagagattgc tacctataaa aagtcgttac gttgttgtca agggacagag 120

aggatctaga catcacatct acgggtttat attacctgaa cggaggtaaa atgagatgcg 180

caaaagaaaa ctaaacgacg ccgactggcg actgcaatca gagcacaaac catacgtatc 240

agcctgacga cggcacaaag attttcgtcg ttctttaatc ctcgtgcatg tcttttccat 300

gataaaaacg tcctaccgca ctcagtgcag gaaacttcta ttggcgcttc taattatttg 360

ttaccagtgt actactagta attactaatt agagccagta acacgcgttt ggattcagat 420

agcagacacc aagaccggct tggggccttt atttggtcta aaaacatcgt ttatgtaact 480

gtaagtaaca gttgtgttac tttctggctg ctgggagcct tttgggtcgt gtccagtcca 540

ggtgtcctcg tccaaatgca agcagaagtc gtccaaaaaa tttgtttgtg gacgggtaaa 600

actgagctgt ggcatggcgc gcacctgctg gtcgctgtta ctcctctgtg acttgagagg 660

tacataccac ccggtacttt tgtaagtacg ccgagatata gtcgttatac tgacgaaggc 720

gggataattt tttttttag gaaaacaaga gtagtagtat atatagaaca tctgtccgtt 780

tcaaagatta ttactgtaat taatgagttc ttgttcacgg taagattaaa cgttctgcgc 840

gttatcacac taagaaatac tactctgggt ggtccgtata gagagtactt actctagtcc 900

agggcaggtt ccttattcaa taattcaaaa ccatctcatg catgcacgtt tggctagctc 960

ttacgtacgt cacgtactcc taataagaaa tacagtacat acagcagtag ttgagggaaa 1020

aaaaaaacag attcctagct acgtacgtag tagagtagtc acgtcagctc tttcaggtcg 1080

tcgcaagcag tattcagttt ccagtgcgaa aagcaaaacc aaacagcttg actgacttga 1140

gagatgctcc atcctcgatc ggtccagcca gtccacgtcc cgccgtctcg tagcaaacag 1200

cctatacggc catgcacatg aataagcgct ggatcgtatg ttctcaactt ctcatgccat 1260

tagaacattc acacaattct cttcttatta acaactcata tacgatagta ccgtggtttg 1320

tttcactgtt aacccacgtg gattc 1345

<210> 4902
<211> 1045
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203182_G1, chr5:191987118..191988162, Cluster 30

<400> 4902
ctaggcaatg gtggaacgtg gcacgttcat cgagacttct ttttattgag ttttcttgtt 60

ataccctcaa cttgattatt taatcactaa tgtaattaca tattgatatt ttatattttt 120

atgaataaaa caataacaca attgctatat taattttaat ctaaatattt tttaaaaaat 180

attattatca tatcatttgt atgcaactaa acagtatatg tatccaatat acataatttg 240

atacatgcaa ccaaacaaaa aaccctagca tgagttcaac ctagccctac ttagccaggc 300

tcactcatac gggccagatt atactcatat acccaaccaa ttaggctcta gtaaactaga 360

aaacattagg ctagaactct cactacatag ggcaagagaa ctaaaaggta tgatgttgat 420

acttgagctt ataatcttct cgacctttgt gttcgttaat tcatcatata tcaaagaagg 480

tattacatgc tctacaagct ctctaaacta tactcatgcc agtacctaca cctagattta 540

acatacgttt ttagtacatt aagtactcga ctatcataac atgatgataa taagtatatg 600

acaagttgtc catatattat gttatgctgt tgtagttccc aaacatgcag gtccgattct 660

agcgatgaga cactatcact cttgagccct tagagcctca ccaaagtctc ttaaatttaa 720

aatatacata agtataatct cattatatat tttatagctt tctcgttcat cggtttgaat 780

cgtgtcggat caaatctcga cactattata aataaattgt gcatgggagt gacctgctaa 840

atacgactca tttagttatc tataacccga tcgcggggca ggaatggtgt ggtgggtact 900

gggcctttca gtttcaggca tgctacgaca gtttgactgt tcggcatgag gagtgtgtgt 960

cggccacttc acttctctcg agagtcgagt cgctatgtat gaattgcatg ccgataccac 1020

cgggccgctt tcgccagctt ttagt 1045

<210> 4903
<211> 1385
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204305_G1, chr5:198303967..198305351, Cluster 30

<400> 4903
cttgggcccc tgcagaatca ctcccagaat agtggatttg gtctcctggg tcgagtttcc 60

tggagctaag catctttgct gccggtacca caatagatct gctggctttt ggccgtcagc 120

aggagcagaa ggctgttttg atggtacatt tgtttgatct ctagtcttaa agccaaaggt 180

caatgttctg tgctgcaaaa ggtgcactgg actttcttta tttcattatc aatgtcctag 240

ttctgtagag ggcacatgtc tcttgtccct ccgtacctat ttaggtatca ctatagattt 300

ttttttttcaa attaatctat aatttttttaa taatacttct atctctaaat aaagttatta 360

taaaataaat tcaacaatct atttaataat actaattatg tgttataaat aacatattta 420

tttgtatatt taattaaagt taaatatatc tgacttctca cagtacacat ctgtaatttt 480

tttagttcat cttgctccag tccagccata ggcccatagc cctggggcct gggctaggtc 540

ctctatctgc ttgcattgga cttgagaaaa tatattgcca ttgcagaact tttagcctct 600

actcccatgt tgctctattc tatattaata tatggttatc ttaatccagg gacatggcga 660

ctaacagaag tccaagattc ctttctcatg gatggatggt cccaattgag ttggacgttt 720

tcggtgggaa gcggacaaac caaagcaggt tcccgtttga cacctaaact ttcttataca 780

aaattacttc ttgcaagacc ttttccaaca taacacttac atataaatct gcatccttct 840

aaccctaacg ctttctagtt gtctgaattg tgcccatatt ttgaagcaca tgaaagtcta 900

ttccttgtca tgggagcaat caagagattg cttagatcac tagctcactg ttgaacgttg 960

attggttggc gcgagctttg cttcgatcgt gaggagtggg tgatttgatc cattcatcgc 1020

ttgttctgag cattcgggga ctaggttgtg gcaagacaaa atctgattgg aagtattgat 1080

acaggttgtg gcaagacatt tttttagttt tataatccct ttctcgagaa aaaaagaact 1140

acgtgttctg cacgtgacgt acgacaacaa aaaaaactgg tgctttatag taatagaaga 1200

caaaactata tctaattcat tctctatgca ccccgcagct ccttgctcaa accagagcac 1260

tggactgaat gaacaatgag aatagctaga tcgaactcag caattgatat ctcttaaaca 1320

tagttggctc taagaaaaaa ttctgagagc gctgtgaagg ggcgtggcca gggggtgggt 1380

ctggc 1385

<210> 4904
<211> 1119
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204363_G1, chr5:198786109..198787227, Cluster 30

<400> 4904
tcatctagga aacaaaactc cctagttggc caagcatgga agcgtcagta gaatatggca 60

tacactagac ttggtcctac aaccgagtag ccccaaggag tatggcccta gaaccacatc 120

catctctact caacataagc atgtggtgtt ggtgatctag ataaggctct tgtatattat 180

attaaatgtg atggatggca tttcaatcaa ggagcgaggt aagttgtaga catgacagag 240

ggcaacatgt gtacctgagg ccacggtgta atgcatgcca cttacactgt aaccacgtct 300

gaatatgcaa acatacctac aagcattata aggtacaagt tgttatattg tttactgata 360

tgacataccc agcggcgtgg actttagtac ttgccactat gataggatat atgtgccact 420

gtagtaagac atgttgaaca ctatgacaca tataaggctc accacaatgt atgactatac 480

atctacgaca atatatgagt agtttagcct ctactgaaca tgttccattg cctaataagc 540

atgtatcact cgccccttcc ttgacccgta aaaggaagag gtagatcaac gtagaacatg 600

cttttcactt ccttgctacg tacatcctga ctcccaactt acaagataaa catagtcgaa 660

ttagggactg attagctaaa acttcaccat aaccaaaagg atagggagag ctagatagtc 720

atcgacttag tgatatctaa gcttgtatag tcttcgtcat ccgttaattt tagcaagatg 780

gaaaaatgct atctgataat tccttatctc aactcctaat ctttctcact tgaaaaagtc 840

aatccaatta caagaaaata tagacactca tatatgtcga ccaatctgga catggggaaa 900

agaaaaataa gtaggacatg ttctcaatgc aaatgaaaag agagagagtg ttaggataat 960

tcgataaagg aaaaaattct tgatgtaatt ttttttctat atttaggaat gagattctag 1020

aaactattgg aggaatccaa caaatatgct tcaacttttt tagtcactta ataaaactta 1080

tcgatatacc atttttaacc attggagatg ctctaaatc 1119

<210> 4905
<211> 1122
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204855_G1, chr5:201405973..201407094, Cluster 30

<400> 4905
tcaattgaca gttcacaaac aaaacacatg atttcatgtt ctaatgttgt tatctacaat 60

tgacttgttc agtcagggtc aacaagttca acattaattg tgcttttaga tgttagctgc 120

aatccttttc ttaattatca tggtactcca cataaatcca aacgaaaaaa actcttactc 180

tgtttctcaa tcttttgttc tacttgaagc ttctaatgta atatgcaaac attcattgtt 240

tctgctgact ttccaaggtc tctgtataac tgtagtctgt aagcaagata ctcaatacaa 300

gcatacaaaa aaggctaact agttaacatc tgataatttg aaaatgaata atgatattta 360

agaataattc tcaataacct gaaaatcata tgcttttgaa caacttgcaa aagagagaag 420

ttatatggtg ctcacaggtt tagtctgttt tgaaacagag ccatattaag tccaatagaa 480

aaggtgtaac attttcctag agctacatca aaggtactaa acaatagaga caaataaaag 540

caatatactg aaaattgctg ttagtaacca gaagacctgt tcatatgaag ggctaactcg 600

ccaaaccaag ccaagcccaa gctttattgg gactagccat actaagcttg aggctaggca 660

gagatcctag aaaaccccat gtattagttt tggataaaaa ttatcagcgt tttccatata 720

atattttcgg aacggaacgt gaagtgcaaa acattttatt tgttgtttct cgtaatatat 780

tggtaaaagc taaatcatga tgggcctcaa cgacaattaa atcaagtgac ctagaaacaa 840

ccaaaacatc taacgatgga tgcttggata atcaaagtgc aagggaaatg taagagttat 900

ggagcacaat gagcagggag caacataatg tgagaggctg agtatcacat catgcatttt 960

tttgtctatg ccattctgaa taaaatgttg tgcagcatgg ctggaagact aggtcatgct 1020

gacatatatt acctttgaaa tggccctagg cccctgcttc ccacaactag aaggccagac 1080

tcttcacttc gctgtggata acctcttttg gatccccgtg tc 1122

<210> 4906
<211> 1081
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205268_G1, chr5:203944023..203945103, Cluster 30

<400> 4906
ttagttttga tgacgtgtag gacagtgtgg acttgtttat aggttttccc gtacaacatg 60

gcatgtcgac ctgttaactg gcgggaatag gggatttatt gaggagtttg gtgccaatct 120

tagctgaaca ctaacagggg gcgacggtga ccgggtcgac gaagcgtggg cttgggtgca 180

taggaagagg agcgacagtg aaatggagtt gtcaagcgca cggtcatctc catggtccaa 240

gggaatcaga tgcattagtc gtcgtttgga gttgaaagaa ctgttggtcc catacaccga 300

ggggtcgttc gaccatgaac ctgcagtgtt ttgctattgt ggatctaagg cagcaaagct 360

gacatcatgg atcgatgaca acctcggcca aaggtacttc cgttgcaggg gagctcgggt 420

aagtgtttcc attccagtaa tatatattag ggtttatggt taacaatgtg ttattcattt 480

gttttgagtt tgattttgat gaagtcgact agggaatgtg tctatttcat gtgtattaat 540

cgtgagtaca cacaacatga aagaggaacg ctattaaatc tacacaatgc attgaacaag 600

ttgaagcatg aagtagcaga tctgtgtttg aagctagaag atgtggaaaa gattaatggt 660

ctattgatga atcaggttgc ttccaagtct taaccattgc aagaaattct gaaccacaag 720

accgagggga aagaagtgct aaagcacaag gctactgtag gaaggtcatg cagttattca 780

cgttgtgttt ttgtagttcg tgttatggtt ttggtgtttg ccctcctgtc aggtgcagtt 840

agtctaggat gaagtccata ttctactgat ggaagaatgt agcgaagaat tggttaatgt 900

gtattgtgga ttttagtttg tgtgaacggt ggaatacata aagtgcagga tcacatccat 960

ttcttagcat gaaagcatta aaggccacat cacttagttc acaggaccca ttaactaaaa 1020

tccacttggt tcacatcacc cattaacatc acttagttca catgacccat taactaggaa 1080

c 1081

<210> 4907
<211> 1055
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_206682_G1, chr5:211353348..211354402, Cluster 30

<400> 4907
aaacttaaat ggcaactcct ttcctgcaat gacagagata aacttgccat gtaaccatta 60

aggaagttat acggattgcg atgacaattt tgcatgttgt tgcaattgat gctagtatat 120

ataatcgagg aataatagta gaaaattttt cgtagatgca tttaaagtga agaatttgaa 180

aactacagta tcttttagag aacacttact tttttgagtt taagtgagat aaaattcttt 240

gcacggacct caatatcgaa gtcagctgcc cctttccttt ttaaatttag aaaatgagct 300

tgttttttat gagttccagc agggaatcat aatgatcata tatattgttg agagaataat 360

attatgcaat gaaaatatcg cttgcttcaa attatgttta aacggtgtac tgtagaggtg 420

gcaatggcgt tttttttgc atgttgttgc aattaatgtt ggcatgtata atcgaggaat 480

aatagtagcc gaaaaaatag cattattgca gggagcacat agcgtaattg tgtggaagca 540

ggtacatgta catcttccag ttgttgttca cttgtaggtt ttgcataaaa actaaacctc 600

ttaatagatg cactaaaact gtaacttttg agaataacag tattttgcat gggggtttta 660

cctgttagga ccaaggggcc aaactgatat acacggattg taatctcgaa cactaactcc 720

tttcctacaa tgacaaagaa ataaacatgt tatgtaatct caaaggaagt ggtatataga 780

tgacaatggc aatattgctt ctttttttgg catttaatgt tggcatatat aatcgcacaa 840

tataagtgga ttcgtagata cactaaaatt ggagtacttg aaaacgacag atcagaaagg 900

gcatcatagg gccacaactg agatttcggt gcctaaggcc taaggcgaac ataaaaattg 960

aacctcctat aagtataata atttttatat acatatatat atatatattc ttatattata 1020

tcgacaacaa ttaatgttgt atccaaatat tataa 1055

<210> 4908
<211> 1018
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2085_G1, chr1:10895950..10896967, Cluster 30

<400> 4908
tttgaaataa caattgttct agccaaccat tcaaaaaacc caaatctcat acaagtgatg 60

cccatgagcc aattaatggt tgaatgttct tagtgatgac caagtaatac attaggacac 120

tcaccacaac gaatagtcaa atgtaacacc aaaactttcc caaacacaaa aatggagttc 180

tccacttcaa ccgtaatgaa gtaagaaact aactcaaaat cctctaaggt aattggtgat 240

tttaggattg agaaaagttc ctaagcaata ttggataccc atggaacaag tgaaaaaaag 300

aggaaatcaa gaaaacaatt caaaaatcaa gaaaaatata tggcacgaaa cttctgcatt 360

tgagcgtgga agttccatgt tttagcgcgg aagttttgcg taacctgttt tcaagagctc 420

aaaccaacaa aaaactcaaa acaccatcaa acagagtcca attaacctta aattttacac 480

atatgtccat taagtagctt agaagttctc cataaaattt catccccaaa gattagcaaa 540

actctcgaga cctaaagaag tatgtaatgg gttggtgttt tccaatcttt tctcaaaatt 600

tggctaaatc atactcgtga ggaatctggc caaacaattt ggtagatatg ttcctctaag 660

gtacttgcat gtttctagca attccaatcg gtctcaaaac tccagaaaca taaaatcact 720

caaaatcaaa gattaagatc aaatctcaag aacttagatt taccatgaat aattgtttta 780

tttcttgacc atacatctgg ttctacctga agaatggtta cgggaaaaaa acacacaaag 840

agtattgttt tcccgtattg tagatctgaa caacagaaaa ttagggaact agagattggg 900

aaatctaaat aatgacaaat aaatataaaa atggaagaga aggctagttg gaacaatctc 960

ctatcttatt tataagctat tacaagttcc taatatgatc tttaatattt tggttgaa 1018

<210> 4909
<211> 1279
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_209241_G1, chr6:9154541..9155819, Cluster 30

<400> 4909
agcctcgtgg tcttagtgtc ctgatgcctg tatagggact ttcaatgtgc agatgatatc 60

agggccatat aggtagtact ccaccctccc ctaagagacc taaaatctat catgttgtta 120

catccaacta cttagagcaa tgtgaacaac atctagtatc cttaaagtga caaacgacta 180

tgggatgtga aaataagggt tgatcggctc tgttgatgac aaacttggtc atttatgtga 240

tgttgtaaca tcgttacatc aagccatgga ttggaaaaaa gcatactgat aaagagatgc 300

ctaagagagt gccaatcaaa tgaattatga ccttctataa tcttatgctt cctaggtaat 360

cgtgagtcct tcagaaaaaa tttaggaaga gatcagaata gtgatgccaa ctttttttta 420

ataactttaa ataaaatagt gatgtacaat tattgatagc cacgcaacat ctcggttgtg 480

gtatggcaac tgagatgatg agagaagctt aaaagtaaag gaaaactttt acacatggtc 540

gccattgaca tcaaaacttt atctatattt gaggaaaact ttgtgaccat cctagtctga 600

tttactcatg tcgttgattc tagatagata taactcaaac ttcaaggaag ttgagaactt 660

tctcgacaaa tccttgtaaa cggtgacaat ccttggtttt ctgatgactt tttttatgta 720

agatgcattg tgcgttcatg atcatttgaa actcctcctg cttaggtacc aacgactgat 780

gtcgagcctt ttgctatgct tttgcaatga cctgatggta tgtctttatt ttcttattgt 840

cactatcatc gaattcggtt cctaatcctt tcttctctgt ctttttggga tgaaagttgt 900

cattgaactt ctttgcccac tacatacata tgaacaattt gaaacatata ggttagggtg 960

ataggagtcc tttgagtgag cttctgaacc aagttacagt aattaagtcc cttttagaaa 1020

atacatatta atatcctttc gaatatgttg gaaataatat ctttcatgtt acgatgtaat 1080

cacacaggga ctcatcctcc atatgggcaa cttgttcaag atcatgttga gttattgctc 1140

ggtctcgatt catgctaaag agttagttct tcccatgagt taatagactt agccaggagt 1200

ccgaacaacc acttccaagt agaaaaccta aaccatgaag gaagataatt tgccatgatg 1260

gaagagtttt ctcctacta 1279

<210> 4910
<211> 1103
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_209973_G1, chr6:14026105..14027207, Cluster 30

<400> 4910
gcctgatgat gcttgctcgc gctgcctata tttatacaca tgagcttttt gctgtttagt 60

agtagtaagt aatttcattt ctatcaccat tcgttttaaa atatatacac tacgtggttt 120

cagttttgta ctttgtttta taactcgacc gtatctacaa tactatagac atatttttt 180

atagtttatt ctaacatgca agttatccac gtcattcata ctgagtatcc gtatcatctc 240

ttactaatag ccatgtcatc ccactaaatt tcaatatctt aattgcaagt atccatatat 300

attatttcac ttaatttcat tccccgtagc aacatgtagg tatcttctaa ttttatataa 360

atgctcaaca cgatacacgg tccaacgatc aaaaagatac gttgacacag tgtcctagta 420

aatcgatgca aagcactcgg accatgaaat cacattcgag aggggtcaag agaatagcaa 480

agtcaccgtc aagtctttat gggcttgacc aaaacacaac gacgcaaaac tatcagcgcg 540

ctggtggtaa gaaaatcaaa gcaagaagcc tagagttact tgaaaaatga ccgataaacg 600

atagacaaat atggctaata catgtatcgc cttttattaa aacaaaatag ttttttttaa 660

tttattagaa caaaatagtt gatggcttca cattgttgct tttgtcatgt gtttaaaaaa 720

aacacaggag ggcatatgtt catagcaaaa gggatcatat gaggttatat atatttactt 780

gggaggtcaa gatttcggaa gttccaagtt gcacaggact cccaggtctc aggagtttgg 840

ttgtgcgtca gaagttttta agctccctat cacagtttag atattctcga ttccaaccta 900

gcgaacggac gctagatcgg ctagtctagt cctctcagta gcaccctcgc ggtgcgtagt 960

ttgagcccta ggtgtggtgc actcgtgtgt tcttttctga ggatttttca cgtgtgaggt 1020

aaaaaaatca cctcgtttgc cccacgccaa aggacaggtc taaggcctac attacctttt 1080

atcttctacc ttaagctctt cca 1103

<210> 4911
<211> 1166
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2144_G1, chr1:11133608..11134773, Cluster 30

<400> 4911
cttgtaagat attcctacaa actttgagag aagtggctgg gtcagtgggt cttcatgttt 60

ttattgtgtg ttttcgttta actcctgcac cagcaacttg taaaacgttt atgattttac 120

cccgctattt taaaaatgaa gttacagttt ggccttcact ctcaacgccg ttagtaatta 180

gtgattaaaa ataaatggat gaaaggtacg gagtaccttc cttcagtttt gtatggacgc 240

aaccccaata aaggtaaaat tataatcaca taatataaga gaggtaaaga cacaataaat 300

tgtatgaaca tttttgtctt ttcgcatcag atttaacacc tatacgtaac ggcacagaag 360

tatgacagat cgaacttcgt tttcgaaatg aaggggtaaa atcagagagt tgactataga 420

gaagtaaaat cacaattgca tgcctagagg ggatataatc acagatgccc ctaattaaaa 480

tatgcaaaag tacatattaa tttctgagca tgggtgatgg actaggatgt ctaattcgtt 540

ttgtatctgc tcaatgaaaa agatgccatg cttgcacagt ttaagcatta ccatatccac 600

cgcccctcac tggcatgaac catgttctcc agctgcgcat ctcaaaaatt atcgatcgtt 660

ttttagcaga ttctcacacc ggatccaaaa tctctagttt catatcagta tatcacgttc 720

actgatttgc cttggaatgt caactactca ataggagaga agtgtcaact actgccgtcg 780

aacaagtcac agagactatc gggcatggca acaaattgtt aaagcagaca ttgaattgac 840

cgaaacaaaa gtcaaaggga aataaccaag tgataaggag attccgagcg ttttttttg 900

ttctaattta gtttttacat tgatactgat tttgttctgt attcttggca tccatgacct 960

atatgtcctt tgagtgagtg aagaggcagg ggatacttgg atggcctaac ctttaaagac 1020

gggataactg gcgaagcata tattcagagg tcttatcaca atcccggatg atagcttctc 1080

aagtcagaaa ttacgagacc aaaagagtag cggtgagttg ccgcgtgtga aggtttacag 1140

cagtgacttg cagtgcgttt agttta 1166

<210> 4912
<211> 1226
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_221239_G1, chr6:88082289..88083514, Cluster 30

<400> 4912
ctactaatta ttagttttga ggtttggaac atgacttaaa atccatcatc agacattctg 60

taactttact cttttgcatt aaagttaaca tgatgccaaa tcatatttac aaagttttac 120

cttaaaaaca attgaaggat accgagttca caaaattgga gtgacaatga ataatattag 180

atggcaaata aaattaataa cacctcaatt cagtgtatat ctaatggttt aacgcattcg 240

tgtgacatta gtcaaaatca ttgcaccatg cacacagaca aagtaaaacc aatacttcaa 300

tatttatatc tgtgtttgta tccatatcta tatctatatc catatccata cccatatcta 360

tatctatatc atctatcatc tatatcttat gtatatatct atatatcttg taatttttaa 420

tatccaataa tatcttatat tggcatgcat attgtccacg ttggcatcca ctagcacatg 480

cggttatttg tttattcaat ctttttttcac atcattaatc aacatcattt agttatgtac 540

atcgaagtcc acatcatcat ccactatcat gcattatggc atttccttat ccatataagt 600

aaatataagt gatataattt atatatggtc catgcaacaa tgtgtggggt atctttgtag 660

ttgtttttta tgtggtgaga taagtaagcc tttgggttag attgttaacg accactaatt 720

gatagttatt gtctcacgca tagaacttgg atgtacatcg tgaaaacctt gagcatgcct 780

aacgttgaag caccgtgatt atttaaaatc aaattgctga taaaaataat gaggtaagat 840

ctaaaacaag catagcataa gaagtggatc gtcacaacac aaaattaatc taaaaacaca 900

tgcattaaga catgtttcta aataaaatat atttatgtat gaaaaagtag gacaacatta 960

ttgttatata gcaataataa catgactgat gtatccgata aatcgatatg tgcaacgacc 1020

ataattattc aaacataaaa agtcaacaag aacattgcat tgctatatta ttacgcgttc 1080

catgtctcaa tgaagcatac ctatgcaacc atctttctga caaacacacc atatctctgc 1140

cacatatcag gtgcaaccaa atcaatagtg gtgggaggac ctgggcgctg gctgccgacg 1200

ccggtggtgg tgaccgacaa tgtggc 1226

<210> 4913
<211> 1060
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222501_G1, chr6:95938400..95939459, Cluster 30

<400> 4913
gaaatgcagg tccctttcgt caacaaaaag caggatcagt agaaagcgtg gctgggtcaa 60

aagtgctcag agtgggtccc gtccagtaac aagttagatg tctggagcag gctaaccatt 120

ttttgccgt agtccagggt tgctgagaca aaacaaacat gtcagtgtaa agcattacaa 180

atactctgcc agtcctaaaa caaatgcaca tctcgcattt atataaatca actaatttca 240

agtttggcta gatttataga aaataatatt aaaatttgtg tatccaaaca ggcttactaa 300

aaaatgtatg gtttgattaa tttgatggtg tatatttgta tcatgaatat tgatattttt 360

gtgtgtcctg tatagaaagg acaggctcag tgctactgac tcccactgcc ccacatgaac 420

ataagtctaa aagaaataac cgaggcatgt tttatccttg cattttgtag aggatgcgtc 480

cgacctaaaa ccttttctca ccactatgtc aagcctatca ttttttctgt gtcattgtat 540

attctaagaa gataagattt cagaatggcc gtacctccat cctgattgtc ttttatatat 600

aatgactaaa acatcaactg tattttcgtc aggactgttc tactagctcc tacgacatac 660

tccgtataca attgcctggc tacaggtgat ttcagattga actgtattgt tggcacttat 720

tccaggcagg ctctgagcct atctccagca gatccactat ttcaaactcc accctgtaag 780

ttccgcatct cctattttac cttatctact agagagtctg acatacatag cattattcaa 840

taatgcgttt tttcaaaaac tattattcaa gcatggaatt ccaattatta caaggcaaag 900

cttgtgcttt aatttgttcc tccaatacaa tcgacggtct agagagtaga aactcagata 960

ccatcagcac agcagatccg tgttgggcac taggcttcac gggaaagaca accaagtctt 1020

atcttaaaaa caaagggact cgtgtaccgt tctgctgatt 1060

<210> 4914
<211> 1193
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224270_G1, chr6:105129546..105130738, Cluster 30

<400> 4914
aatggttata aagagctagg tgggtgagtc tagatgatgc ttcttaatta gactgaatta 60

gtcgaccatc tctttttaag tgttctacta acaaagtcat atgaggcttg gtagctaaat 120

gcatcaatac tatggtcatt cctggtgata tcggtcaaag ctagatttgg ctcaagaagc 180

ttatgcttga aatggataat attcatctta taggtgtctc agctacctgc ttggctactt 240

agaaagctag aaacacaatt atggtttaag aatcttctga taaaatctcc aaatgaagtc 300

atatgtcaag tgtgtgcgct catgattcat tgggtaggtt taagcaaaaa ggaccttcag 360

gacttgctgc aagaaagcgc taagctgctg ttgagagatg tgagtgctaa actagagaac 420

atggttgatg aacaagagga agataatgat gaggaattgg gaagaaacca gggtggtcgt 480

cagtgaagcc tgttttcgag tggttgcact cataattgtg tgtgcttctc tttcatgcga 540

cttagatggt ttctgtgtgg ctagggtggc attgatgttt gtttgaaagt tatgaaactc 600

tgtgatgggt aacactgctt cctgcaatct gtgtgtcagg gtactgaatt aggcatgtgt 660

gcctatctgg aaaactgttg tcagtccagt aggctcttgt catcctcccc cctcgtgctt 720

gcgttgagtt ttgctcatca ccattggttt tctttgcttt tctgtaattt tgttatgcta 780

ctctagtctt tgttgtattt caattatgaa aataatagaa atgggaaacc cccttataaa 840

aaatggaata caagtgacta ctgcacgttt gatttgtaga ggcaactgtg atgagtggtt 900

ggtctagtca tgagtcacat cttctatttc atctttagaa attagtgatt tatatagatg 960

gttgcacaac cgtctttaga aactggattt gtagatgtgg ctagggacca acgactgcct 1020

ctacaaatat atttgtagca tcgaatgaga tcaatatccg cctctacaaa tccattttca 1080

tctaaagtgg gtgggatcaa cagccatctg tatgaatctt cttataatta tatttttaga 1140

ggcgagctat atttataatt atattttcat tccacatatt atctactcct ctc 1193

<210> 4915
<211> 1207
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_226145_G1, chr6:114937682..114938888, Cluster 30

<400> 4915
ttagatggta aaagacaaag ccaaactaaa tacaccctag ttttagtcac cctatagttt 60

aggagggaag ctttagtcat aatgtttggt agtttaggga caaaaaagag actaaattgt 120

agtcactaaa ttctagaaga tgtgaaccaa acggggcctg gccttgatat ggcttgtcga 180

gaagccagag ttggtggccc tcgatctaat taagcaccat atagttttcg ttaaggtgct 240

aactcactct cacccaagtt tattttcccg ccagttgtct gcttcacttg ttaattgcac 300

cccaattcat tacctgaaag gcccttcccc aacaaatata attgatgagc catctatatt 360

tgataccgtt tgctaggaag caggctatcc tacacccggc ctgcttccgt tgatctgaag 420

ccgagagcgc gcgatcgtag aacagcatca tctcgataat cgcgtcttaa cctgcccgtg 480

ttgcgatgtc tagatcaatc atcatttggt agggatgctc tagctagcta taaggtatgt 540

agtagtagtt ggcgtttttt tttttcaatg ctctgtcttc ctctgattag tatatgcggt 600

agcttaatca tcagccacta gtctaatatt ctgtcatgtg ctatgtgctg ctaattgcta 660

gctactcgat actagtatgt atatagtata tagattcaca accatgtgct tgtgctctac 720

taataatgct tgatcggggg aaatctaatt gtaaaatgga cgggaaaatg atggtcaact 780

gtcggtagta gccgtaggca cgtaccttcc tccttcagat taacagcaac tgtgtgtgtc 840

gtcgtcggtg agaaaacctc gtctccccgt tcttgaggct cgagaatcag caagagatta 900

ttcctgcgtg tggcgcgtgt attgagtatt gaccatatca aatcaaatga aaagaaaaat 960

acacacagga agctggtaca gcactgtgcc tgagcactga caggacacca cacacacaca 1020

gacagcatct cccgaccaat tctttttttt taaaaaaaac ttgcacatat atatttttgt 1080

ctacgaaacc acaagagaga gagagcgagc ttgctgatgc agacgcgatg tcagccacgc 1140

agtttccctg gagcagctgg ttcttttatt tttctggtgg aagtcactcc cgcgcccggc 1200

ccccagt 1207

<210> 4916
<211> 1070
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228255_G1, chr6:126086868..126087937, Cluster 30

<400> 4916
agggtaggag gtttgttctt cctgaagatt tgatgggccc agcctacagg ggatgggcca 60

ccacacatac tgcttggaaa ggtgatctct taggcaatat ttttctatgt gcaccgggaa 120

aagcagtgat ggcatctaac atcccccaaa ccgtccctaa tcaagtcaaa ggggaaagac 180

atctaaagca tgatttttta ggatgttcca cattcgaatg ccagacttgt gctcacccga 240

cccctgaacc tctaacatgt tctgagtttg caaagtggcc aagggcggca cataaaatgc 300

aggacatgtt gaagcattaa actttggata cattaaatat tgtatgggta aagacgcctg 360

aataccagat ttgagaaatt tggaatttaa accccataaa caatttttca aaccaattga 420

actcatcacg acatataatc aaaagaacca aatttgagga atcgaaattg cattttctta 480

attgtcggtt tggctgccaa gacaaaagcc attaggctga tgctttttg gttggagact 540

tcataatcaa tttttagcga agactaccaa tgaagtgctc ttagaagaga atttcctcgt 600

tttatttctg aggccaatga ctgtccaact atcttcttcc tcatgatacc aaagaacaaa 660

ttctttttcc aatcggggcc atcattcctc caaagataga aataaacctc aaagatctta 720

gagatcactc tcatgagagt aagtactaga aaccctagtt ttttagaagc cactgcaaaa 780

caataatgca gatctgattc ttccttgaca tgaaatcaag caagagcccc tccagggatt 840

gcctgaagca ccctactcac aaaattctcc aaatgcccga aggtgtgaca acgaaacact 900

acccagagaa gaaaagatcc atcaagaaat ggtgaggtat gatgcaaaac agatctaaat 960

ttgtgtaaca cttccttata taaaccaata ccgtgagaga agtctaggtc cgaagagcag 1020

agagagcgat gctctccacc tgccatgaaa gcagggagga gaagaacata 1070

<210> 4917
<211> 1378
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228739_G1, chr6:128792164..128793541, Cluster 30

<400> 4917
ccaaagacat gtcttctact tcactttctt ttccttttcc tagtaaggtt tttagttagc 60

ttcaacaagt tttgtcccga tatatattgt tcagccttga tacattaatt ttggtatcta 120

tgccctgaac ttctaatgtc ttgtttattt ccctagttag tagcttgggt aggtttatga 180

tccagcgcag aggcggatct acgatccaga cgttcggtat tcaaaatcac attaggtgct 240

caaaattttg aagaataaag aaaattttcc cttgtcaaaa atgtacgtat agtgtatgga 300

aattgttttt gtgtgaatca tgggtatttg acataatgcc cattatcctt ctgtgcctgc 360

ccctgatcca gcgtatgatg gcaacgatga gtaaatagtt ctaactttta tgaatcatgg 420

gtataaagaa acttttatga aaagttctat gtgtagtctt gactttcccc acacataatt 480

gggttctcaa gactgacctc accaaacttt ctatcccaca ttttctattt cgaactccac 540

tgtgcctaca gtgcgtgaac agtttcgtgc aagtccatat acatggacct cgcaggactt 600

gcaaacccca cacgtagaac aatggtatgc acaagtattg ataccatcgg tgtgtgcaaa 660

tgttatacaa accttgtcac aaccaaaagc aatgtactaa gtagtataat caagcgcttg 720

caagcactaa gccatactat atatgcacct aaacacttta ttggctagag cttcacagga 780

atgaatctct atccaagagt atattctagt aactcttaac tacactaaaa cgagcaccaa 840

ccatcaaact aactgttgct ccaatttgac tatttatgtg ttcgatgtac aactagactg 900

tcaggtgcgt gcaatcgatt cagtgtcatc atcaaactca atatctcctc aggtcattta 960

atcttgtgaa tcgttagacc atccaatgca ttatgcattt cctttaccaa gctcttctaa 1020

tcactggacc tttcaatgtt cactaacatt cttataatcg gaccatctag tgctaagagt 1080

tgtgcatcat tgcttggtct tcatttttca ttactttcct caccaatttg ttcggtgcat 1140

gtttctccat tgtctaggcc atcaacttct tgaaaattct gaactgtggt ttattcagtg 1200

tgatgtctta ggtcttctag ttggtattct aggtcttctc ttgtactctc gatcactcct 1260

ttgaggtgtt tgtttaccaa gtccattact ttcatcattg gaactaaatg aaatatttta 1320

gcaagctata ttagtcacaa tggttatgtt gtcactcaaa taccaaaatc tcatacaa 1378

<210> 4918
<211> 1254
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_232553_G1, chr6:146570672..146571925, Cluster 30

<400> 4918
tctttttta atcgactatg attccacgac gccagaaata agaaagaatc cgtccttaac 60

aagatagcca cgcaaggaca ttcattaaat tcagaatcta ttaattacaa ttctagcgca 120

acagtaatct ggatggtttt tgttgactaa agaccaataa aaattatatg ctagccacat 180

aaaatagtta attttgatta gaattttcgt catcccctta ctcttgctct tgcagattaa 240

tagacgtaaa attagctact ttttgtggcc agctaaagga aattaggtta aactagcatt 300

accagctgca gattaataat ttattttcat ccgcaacaca catacatatt catatacatc 360

cattgataac acatattttt tcatccacat caaatacatt aacacatatc agctcacaca 420

aataatccat accatattta taaattcata gaaaatcttc aagtagcatt aactgttcta 480

gtcaaaacct tttgaaatag cataacgagt atcaacatgc atacatccaa tgagttttaa 540

ttcagattca tcagatgact aaaattctca ccgctatctg gagtagtgta gctaaagact 600

tggttgataa atgagttaga cccttggtgt tagtgtgtcg aggtgccgct atttatggag 660

gagtctaaaa gctctacaga ttagaattag ttcgaattga gttacattga cagctagata 720

gagttcaact aaattgacta atttttgcta gaatttttag caaaattgac taagttatac 780

taaaatgacc aagtttcgct aaattgaact atattgacta gttttttctt agaattaagc 840

taagttggct aattttgcta tatcgactaa gtttagatag aactgagcta agttgattat 900

ttttagctac aattaagcta aattggctaa tttttattag aatttagcta cgttgactaa 960

agatgtgatt acttgaggcc aaagcatatc gataaagaat cctattgcaa tggtggcaat 1020

ggctatggta tctagaatgc gggaaaagtg atattaattc ccatctactg taatgttgtc 1080

tatgagagga atagatgaaa catcattagt tattttaata gctaagatga taatataaaa 1140

ttagtcgaac ttacttaaaa gtcgcatgtt gttgtgccat atagttgaaa aatactcatc 1200

atgatgtcgg tcatagacct aacgttgtcg gtcatactct cgacattgct tctc 1254

<210> 4919
<211> 1081
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233740_G1, chr6:151556987..151558067, Cluster 30

<400> 4919
tcttaccatg ttgctgcggc ttgctgtagt tttaatccgg ctgcggctgt gagtgacttc 60

tacggtattt tgtctttata aattgtagtt gcatctacaa cagtcagtag ctatggttta 120

cagaagtatt gcagggtgag aagatgatag actaactcat accttaaatc aaacacacta 180

ttagtttact tgttggttac ccatcaattg ttttttttctt ttattcttag ctggcaatgc 240

acatatgaac tgtattgatg gatattttac ttcacaatga tgcatttatg tacatgcggt 300

gctgctcatt agtttttcca gggatgttcg tcatcctttc tacggcagta cctcacttca 360

agccaagtat gtaaaggctt gactctttta gttggtgagc caactttctc gagcttcatt 420

caaaactctc ttctattcta ccagtactct ctccgtttcg tattacgatc cattctagct 480

tatttagaga gccaaagcat catagattta atcaaaacta tagagaaaac tgcaaaattc 540

tcataacatc aaatagatat agttttaaaa tacaattaat aaaaaatcta acaacactta 600

tttggtgtca taatataatt attttattat ataaaatttg gtcaaacttg agatcgtctt 660

gattctccaa cgatttcaaa attttaattt gggatggact ctgaactctg gtttggacat 720

cctggcatct gtttatggta tccatagttg agaatagccg gtgcgctttc tgatgatgag 780

ctctctgtta cattgattca ttaacgtacc cattcagtgc agatcaattt tgagctttag 840

accagggcat ttttatatgt taaggttggt tggttggtgg ttacacttga gaaatcattg 900

tccagctgta cctctgcgat gtacttaagc ttaatatcaa ccaccagatg gccgctaggt 960

acttgcgtct ttactctcca ctgtgatcca agctgacaga aaagcaaaag agatcacgtc 1020

tgtgaaacag caagccttgg acatgtaaac cttttaccag gtccataaat ctgaatctgt 1080

c 1081

<210> 4920
<211> 1085
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233864_G1, chr6:152291962..152293046, Cluster 30

<400> 4920
tatctcttcc cctcttcctc ctgatctcgt aactcaaata atggtaccat cactcacact 60

ttgtcgacaa tctcgttgca ggctcgccag atctaagttc tcaattgttt tgaggtacgg 120

atccaagttt tttagggttg tttgttttgc ctttttttgtc acctcatccc actccttttg 180

cctcatttga tgttctaaga tgtctatatc actgcaattg agagcttggg ctcctatatg 240

agcatcaacc gaggactagg actagtatac tctatattct ctagcggtat tctcaactgt 300

gagggaccac tctagatggt ttgtcagcag agagaatata tacaaaagat agtgtgcata 360

tgctcttggc tatgctacag aggaaatgtg atggtgcact agtaagccaa gtagaagctt 420

aagcgacact tacatggttt ctaagatgag caagcataca aaagagttct tgaccaggag 480

taattgtgtt taaattggtg atatggcacc tctacgtgaa gattctctac atggtaatga 540

tttaatttcg aaataaaagt tattactaaa actaggtggc atgtgttatt gtcaaatccc 600

aactgaatta aaacaacaag agaatcgact attgggctta acgggccatc tacttttggc 660

cgattttcta gtgcgacagc tagcccgatg ggtagtggac catagataga agtaagttta 720

gggttagtta gattgagagg atgtgccttc caagtctcta gactataaat atgtaatctt 780

tcctaatgaa taatcagaag gtgcccaagc aatacatgtc tctcatctct atggcgcatc 840

gccactcctt tataaagttc ccatggtaag tatcatgatg ccttaatgta gtctcccatg 900

gaggcattag ggatatttgg tgcttcatct tgccttgata aatcttgtgc taagcattgt 960

tgtcggcaag atttaccaat tatctcatgt ggtaccaatc tactatttct cttacgcttc 1020

atgctatata taggtttcac atggctaaat gtgtattgct tgcccggttg ctataatcca 1080

cggtg 1085

<210> 4921
<211> 1339
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234535_G1, chr6:154988195..154989533, Cluster 30

<400> 4921
ttcaattctt cacatcaaat tttctacgca actcagtgta acatcttgag caaccaggat 60

ttatacggtg gagctcccct cagatagaat aaaggcttat ttctatgcac gtcaaagcat 120

aatcttgcta ttttttaaaa catggtgctg cctgccatcc cttgcaaact ggaccttcag 180

gatctcaaaa aacacaaaat gttgccatat catgggttta cattgcaatc gtaaatgaaa 240

ttggggtttg gatctcaaac tctggtgatg gttgtgcaat ctagggcttc agattattgg 300

ggaagatgaa tcagtgcaga agcaagtgtg ctggaaagtg taataagtcc gtggaagatt 360

aagggccatg gaccgggtat atttataagt tgtaactaaa ggccaagcac tacgggccta 420

aaagataaga agctagagca atgtgaatat tctttgatat gatccttatc ataattatga 480

tgaatctgag atggatggta caaccactaa tctacaacaa atattggata catataggaa 540

gacaaaagat agctaagttt cttaattgtt ctattagaat tgtctaaata tagatcatgt 600

atatgtgttg gtgcatttgt gccttgcttt tgactcttaa gttcctaaat tgttccacaa 660

attgtggctg attttacatg ccatgtgctc taagtccatg tacccccatg acgagggtat 720

gtgatgtact catatcaaaa tcttctaatt gcaacttcat aactaaaaat aatagcatag 780

ccttacattt aatatgccac aacttctgct aattaagtgc caactcattc tcacaaccat 840

atttacacaa atctaggaag aagacaccga aagtgattgt gatgagatga atgacgtggg 900

agagctttga tccgtgtgaa gagtatttat atgtgggaat gtgctctcat gttaaatttt 960

tattgccatg gtgaactttg gttattgtgt ggtttgcaat ataatttgat ggctacaaca 1020

tgaactaaat gttggtcatg gtgatctatt gaaccactaa actttaatta ctgtctattt 1080

gtatagtcta gagcatatac ctagtcatgt gcttgtgatc agtttgtaga attgtgaaac 1140

tcatttgatt atttttcatg gttaaaatta tctacgaata gtgcaccttg tgtgtgtgaa 1200

gtgtgcttca acatatttct tagctaatga aaaattcgac ttcaaccttc tttttagaag 1260

aagcatcaag ataggtatat accaaattaa aaatgaagtg tgaactatga tgtgcgcttg 1320

tgcaccgatt gtgtagtgg 1339

<210> 4922
<211> 1156
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234892_G1, chr6:156757203..156758358, Cluster 30

<400> 4922
tattttcata tgcttagttt ttacgtgagc tgtgtgttta gttatctgca attctgcata 60

aaaaatttat gcataaggca ttggatattt ttgttttcaa ttaaagttta cctatgtgat 120

ttacagaaac cgtagcaacg catggacacc ttaactagtt taaaattaga attctgcatt 180

tgtatattct caaagaatag aagaagaaaa aaactcacca taccttctcc ctctagatct 240

tgtgaggaga ctaggagaga agggtctaac aatataacca agttatcatg ttatcgttct 300

tttgaaattt tgacatgtcc ctgacatatg gtatatatta ggatggtcga cgatacactt 360

caaatgtttt ttcacaatat ccattcgatg ttatcttctt tcactactag atacggatat 420

tatggaagtt catccattcg aacctggaat tatattcccc taaatttgta atattcttct 480

tctaaacgta cgatattttc tgtgacaacg gatttttttg ccccaaaacc taaaatatat 540

ttgcggggcg cgcggtagaa ggatgacgca cgaaaaaaaa actcccattt taaaggcgct 600

caatttaaat atagttaaat taaaatttaa aggtgtggag atcgtgtata taccataccg 660

tgcactcaga ctctttaaac tttctggctc ggccactttg tcaaatgatc agtaaaaccc 720

tatctcggta ctggtcgtcg ggctgtactg tatatatgct tcaggtaagc aacgcctaat 780

aacgctagtc aacgcctcga tctgacgtcg tgagcgtgtt gactaactgg ccaaaacaaa 840

tccactgatc gaccacacgc ggtttccagg gattcgatcg gaccttgact tgaaaagaac 900

tggacgagga cgataatcag gtcaaatctc tttcctgaga gtggtagtcg cgatcgcgga 960

tcttcaagga cgattacggt gccgatttga cactagcttc ttgacttgag tgaaggacta 1020

tcagcaatgt gtttaagcta ctgtatccta ataattgctt tgccgcttgg tcgacgcgtt 1080

ggcctcaagg ccattgttgc agtagtagat tgtgtactca gttgacccta taccatttca 1140

ctctcctctt aattaa 1156

<210> 4923

<211> 1069
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235172_G1, chr6:157981285..157982353, Cluster 30

<400> 4923
actatatgct tgcatattag tcgtcatctg ttgtactata tgtcgccttt taatacagca 60

taatgtagat cagtggtgaa tttgtctcgc ttaattctat tctctactac cggttgttgt 120

tttcaaacac cattccccaa aatgtgtgga tggaactata caaccaacaa aacatgattt 180

tgaaccaact catgccatgc cataccctac agccatccaa acaaaaacca tgtacgtacg 240

tacgtacgtc aggtagccaa acagttaacc tgtacccgtc aatcgttttc tcaacctgga 300

tgtcatcctt tttaggacat gtacaaattt atttaatatg cgatcttttg taaggtctct 360

aaggagttaa atgcaaaaaa tacgattctc attatgcata tatcttttag ctgcatttat 420

tatcaaagtc ttaaagttat atcatacagc ctcttaaccg tatcttgtat tttgaaaacc 480

gaatcaaaat gtcagactcg tacatgccct aatctctttc catccaggtg gcacgtccca 540

ctcatctctg tacgcccaat cagcactgct cgtatttcgt aacacgtgct tcatctttca 600

caacactgtc tgtattttgc aacacgtgtt catcatcatt agcttcgaaa ccgcgtctcc 660

aagccagaac catgtatgag attttaggtg ccatagccga aatcttatat aaaagcattt 720

aacctagtat atgcaataaa tatatatatg tgcatgtata taattacaat cacatatttc 780

catgggccaa aaaacaaaca taattagcta gctcttgcac atgttataca cgcacacttg 840

tctcgatcat tgactgtgtg ttccaatgtt tacatgactg tctagttctt tggcgacgtg 900

gcagcgacac cgtaacagga attaggtgtt tgaatgtatt atgttctgaa tcctgattta 960

gaacatgact tacatgaata ggtcagcagc cacttctggc ttatattata tgagcaagat 1020

agcaaagatt aagttgccca attacataag cgaggtagca ggtggtagc 1069

<210> 4924
<211> 1167
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236255_G1, chr6:163916055..163917221, Cluster 30

<400> 4924
tgtttgctgt caaaattata tatgcatgtt tttcattttt cgtttggtaa attgcagagg 60

caagtacttc ctcgtctgct catgctgaag atgagaagaa ggctgatcga ggactctctc 120

taatgggtcc tcccataagg ccaggcattg caccaaatgt caaatttgca gaaaattaat 180

ttagcggttc acagagaatg cttgactaat aaatccttac gcctcttgtg tctatatcag 240

ccattttcac tgtaatgctc cgtgttcatc tcatattgat tcttaattat cacgcaggtt 300

tagggttctt gtattttgag ctttgtttga gcacaaaaat tgtgtatctt tagtgcaatg 360

cgtgcgacac atggactgcc aatgctatgg ttggattttg atctatagac gatgtgctca 420

ttgggcatgc agttagtatt agggaggaac aaaagagcaa gtatttgaag aagggaaaaa 480

aaagagagaa acagagacgg tcttgctcgt gaagggttat ccttctagtt cttaccaccg 540

gcgtaaggct gtgtttgtta cgcaaagcaa aagctagtgt atataggttt tgcctggcta 600

caacgctaat gtcatgcgtg tgcgcaactt ttatactata cacacacata attccagtat 660

tcttgctcta cttatatcaa aagaacttta ttcacatcat atatcgtagc agaggtagat 720

tccaaagtct cacattctca cgacaggaaa ctcgaatttc attacttcgt agtcgtagca 780

aaaaaaatgc aaccaaataa actatcaaat atattttaaa accaattcaa acaggaatcc 840

atagtctagc cttacaattg aggggaaggg agcattcctt gatctagttg gtcatatgct 900

atttattagt ccatagaatc aacactgttt ctcaaattca aaaccatgca tcaaactcat 960

acggtttcac ttgtaaaatg ttggaaccac caccatcatg aacgattgca caagacactt 1020

ctatgaattc tagaattata gcttcaggtt aaggtctagg tctcgtgggt cctccgataa 1080

gttttcagca tccttccttt tcaagtcaat gtattcatgt tcctgtaagc attagaaatt 1140

tagaacacga ccattatcac taagctt 1167

<210> 4925
<211> 1271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237414_G1, chr7:1571165..1572435, Cluster 30

<400> 4925
acatcactca acacaaaaca agccatggat aagggatctt gtagggacaa aataaatatt 60

gaacgcatgg ttttgactca ccgcgacttt gtgctaacac caaagttaga tggatttcgt 120

tagaatttca tcctaaatga gcatttatta gtaaaatcta accatgttgt tctagacccc 180

ctttaacaaa tgaccaaaaa agaaggtgcc actcaaaatc aaaatcttcg tttggtacca 240

tataatgttt gatactatta ctaatgggta atcttgctgg cgcaactacc aatgcagcaa 300

gaatgggtga tcttatcact aagatgagat aattaattat taatttttag aatgaaaaaa 360

tctacttaat ctcttttgac tattgctggt tgcttacttc accttcttac ttataaaacc 420

gtttgttccg cccataaatt attgaaatgt ctcaataacc ctctgggtag tttttaaggt 480

gatttcgctg atgtggcata tttaaaagtt tacataaccc caaaaaaaat caagggttca 540

taacataacc cggtcaatta caaaacatga tacaataacc cttaagtatg taatagtgta 600

caaatgattc ttcctagatg gttttatatg gtcgtttgga tatcatattc caccacattg 660

gtggcctaac tacccgtgtt tgcacgtagg tccactgtct gtgtgcaagc atgggtttta 720

agctagcgta gtgggatatg catggtgttc aaacatccct acaacaccat ctagggtcat 780

ttcaatacta ttagatgctt ttagcgctat aatatcatat tttataatcg aggtgttgta 840

ttgtcaaacc ttgatacgtt acacggctat gtagacttta tgtcacatca ctgaaatcac 900

ttacaaaacc gctttagctt tattcaagat gattttaaag tttaaggaat agaacatata 960

ttttaatagt tgagaagatg aagtagacgg gcaccagtag tttgagggat tacatagact 1020

ttttctcttt aaattatctt acatatgtgc agtatatggt ctattatctt aaaaatgaat 1080

ggttctttaa aaattaaagc gagaacttta acaattttag ggcaacaaaa gtgaggccaa 1140

agacaggtgg attccatcca cgaccccgcc ccaccatatc gccgccgccg cggtgaggtc 1200

gtgacgcgtc cggtgatcgt ggcgccgacc aaggacctga ccatcgttcg ttctccgcga 1260

ctaatgaggc g 1271

<210> 4926
<211> 1056
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237682_G1, chr7:2911427..2912482, Cluster 30

<400> 4926
aagtcaaaaa tctttactta aattttccac ccacatccaa tcatatatgg tgtaggaatg 60

catcttcagg cgaccgaacc gcttgcttta tttaattaga tgaggccaca cactaactcc 120

cacatgaagt tgtccaggat taaaaaaaca tgatatgcag ctgcctgata cagtacgtta 180

ctgttttaat ttgcttgtca ttttgctcat gttaattggt gcttctgttt ctgcatgctt 240

agcagctgcg tcgtaacctt gatggattat gtgtagtgaa ttttttgga aaacaaagct 300

gcaagtaacg tcgtaggcaa gtatcctgat cctccttcac tcctgagctt gatgagctct 360

ggttcccttc ccttctctgt ctcgtgcgcg catatcatat ggctacaaga gtcgagactg 420

cattgctcat cagaggccat gcactattat atgaagtgga ctcgatccat tcctgataga 480

tgattgtggt ggtcctgttc ttgttcttgg gttgcgcctt agctagtaca catgctggcg 540

gccctaattg gatgacagta cgacgacgat ccggcgacga ccgatccctt ggtgcaaatc 600

ttgccagcgg aagagctcag ctggcagatc gatcgaccat agccagtcaa ctgaagcaga 660

tgagttgagc tttgatatgc atgtgcgcac ttcatatcct tcaatgcatg cttgtatttc 720

actaccttag tcttgtatat gtgtttataa ggataagttt attctctata aatttcgaac 780

acacatatct ggtactcttt aactggcact ggcttcaaat gaagaacttt ttatctacag 840

agctgcagta ctataacttt tatatagacg accatatgtc agtatctgag attgtttgat 900

agttttaaac ttcaaaaacc aataatttac aataatattt tagcacccta aacaatgtca 960

actaaaagaa tatttcaact tcaaagctgt atgcaccaaa ggctacattt tctatataaa 1020

ctttgtattt attcaagttt gtacaaaaac tatgga 1056

<210> 4927
<211> 1299
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_238472_G1, chr7:6920098..6921396, Cluster 30

<400> 4927
gttatccaga caccaaaaaa gtactgaaat tttacagact tttttttct gggcgacgga 60

gcctacaaat tgggccgtga aacaagtact agcaagagtc cagccactag cacctgcacg 120

ccaggctttc cttgagtcat tttccgatga tgaatggtga ggttgggctg ctgggttgtg 180

gacttgatgg gctaactcga tccgtcgatc ggtacgcaag cggcagctgg tgtctctggc 240

ccagtctgaa acgtgaaggt ggctgtgaac tgaacttgac cccttgtact actactacta 300

ctacataaca tgcagtacca ttttaaatct aagatgtttc actgcacatt tggtctggaa 360

cggtcgatgt gtttgtgcaa ttaagagatt tgctagagtg ctgctcactt tctagatttc 420

tacaaaatcc gttgtaacgt cacagatact gctgagatgg agacgacggc aacaagagag 480

tgctgaagaa gatgattggg agagagatgg caacaaaaaa aaatatggtc aaaattagac 540

attgtacttg tacatgtagt gtgttagagc atgtttgggt cctttagggc cagttttggt 600

tcatttagtc catagactaa agtttagtta ggagattaaa atttgagact aaaagtatat 660

tcaaaacaca ttaaatgagt ttagttagga gaccaaaata tcctttagca tcctctcgac 720

attaatgtaa ttgaaacaaa aaagggacaa gatttagtct ttttttagtc acggactaga 780

cactaaaaca gtttagttcc accgtttagc aatttatgga gtacaaatgc atagacaaac 840

caaaccgggc tttagtgatc gatgtctatt aagcgtagtc gttttttttt tgaacgagag 900

aaactgcccg atgaaacttg ttttgaaaca cacctttta cgttttgatg attgatatgg 960

ttcagagtga agatagagca tgggtctttt caactgttcg ctttcaagag gatgattgct 1020

gactcgtcac tagttaccaa gttggccatg ttttataatc tggatgtgca cacactgacg 1080

ctggtggggt accaagctaa cagtgttgtc cttgtttctt gtcactccaa ggttccaagc 1140

tctgaatccg tccgtccgtc cgtctatcca tccaaacaag acaaaacaat ccatctgctt 1200

ttcgccctag ctactttctc ttcgccctct tcaacctgct aggcccccat agctccagtg 1260

gaagcatgga taagcctttt ctagtttcct tccatctct 1299

<210> 4928
<211> 1307
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_238665_G1, chr7:8360975..8362281, Cluster 30

<400> 4928
tccgggggtc attccccccc accgtaatat ataaatttgt gccaagagta attataatca 60

tgattagtgt ttgtttatgg atcagtagtc ctactttgtt ttaattgatg ttgataagag 120

taagattaat tataaaataa acatatttgt taacaaaata acaactgcta tgaaaagatt 180

aataatgttt gattgccatg ggaatattat tatgccattc gtattactct gatgttgatt 240

ggttagcaat catcgttcca tccatcataa tcagggcaaa attccattgt gggacggggt 300

tgggggctct agttccttca gacctgtaga tggcctctta atatttatct agaaattttt 360

tacatgcatg tatcctgagg aaaggctaaa cctgtataga ggttaacgaa gtccccctag 420

atatttatac tagtttctcc actgaccata atgcgcccca actgagcgag ggctagacgt 480

cttgagctgt cactagggaa gagctcagtt actaataagg acatgtacaa ccccattaat 540

tatgaaattt cttgagagct ctttaggggc taagtgaaaa aaataggaga cactcttcgc 600

gaagcgtcag tctctttacg actctctata catactccag gttatattat gcaatctttt 660

agctatctcg tgtatcttaa aaaaccaatc cagggctcta agttatacat gttctaaggc 720

gataatgtct aaagtttcga gccagagtta ttgtatcctt tactaatgac catcatctcg 780

tttatagcgc acaattataa tttttgattg ttttcttttg cccctaatta acctacaagg 840

gctattctcg aatatctcga gtttacatga cataacatct caaaggtata gaggcctttt 900

acataccacc catttttcgt cgtgggcctt tatcaagacg tggtgagggc ttattaaggt 960

tctcttcaat atggtggtcc tgaggcatgt ctctcctgaa ggttgatcgt ttctagcaaa 1020

gaccttcaat atggtggtat caacaaatgc ccttagggct tatgtcttgt catctccgat 1080

ttgtgctctt atgatcctga tcctggtgga ttgggtgctt ttgttatatg ttattatttt 1140

ttaaactaaa tggataagat aatgatatgt tcattcgtac gatgattcaa ttcgtagctt 1200

aaaaataaac aaatgcaggc tttaacaatc tcatgagaaa ggaagcaata ttgacatgac 1260

catggaaccc ctatctcatc tgtctatatg ttctatttac cacccta 1307

<210> 4929
<211> 1072
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_240136_G1, chr7:16188524..16189595, Cluster 30

<400> 4929
cctctcatta gctccacggg ggagaaacta tcctcacacc tgtcccaaac aggtaggatc 60

ctcatggccc ccgctcccat ggagaatttt gccatcacta gaactatggg gcttcaaccg 120

atagagtgtg acaaaaacaa aaaaacaaaa ttgacttcac acaacccaag cccaacaaca 180

actttcgtcc cttctcccct aaccataatg gcatgtgctg atgtgtaagc ttcgacttgc 240

ggcccatggg acgggaaggg cgtgccggct atcgagactc gagagtcgtt caggctccgg 300

gccttcaggc gagcagtgcg tcaaacatgc tgtaatcctg gatgaagcgg tcgaaattgc 360

tagcagtatt tgcggcaagc cagaaagcaa atgatacagc atgccaatgt aatttggaat 420

atttatttga tcgattgtcc gattcaaaat ttcatcttcc tagcaattaa tggtgacgtc 480

aagcattctc tggtgataca tcgcccacaa atcttcataa ttgatgacta gtgtcttctc 540

ttcactaaaa aggccccttt gggataggga aatgttgcat gtatagctgc acgatgctct 600

agaatggtgt cttgtagata taattatcag gaacatcttc tttcttgaag atcaactcat 660

ttacaagcat atacaacttc tcatgagaat accttactct gtcctcttcc caaaactcga 720

gatgttcagt aacgtgaggt ctttgctaga agaagatacc atactcccaa aactcgagat 780

gttcagtaac gcgagcactc gagatgttca gtaacgtgag atcgctggtt ggagattact 840

ggtcctttgg agaagaagtt ggggcatgtg accaattttt tttgtcgttg catggggaca 900

ccttgtaaga ttatattttt ccaatggtag acaatgaatt gcttcatagc ttcctagttg 960

tgtgattttc tctggtgtgc ccatctctta agtgtacatt agccaattgc tcgtgtttta 1020

ctatggttgt tatataacat ataaataggt attgactatt aagatattca tt 1072

<210> 4930
<211> 1085
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_242736_G1, chr7:30501305..30502389, Cluster 30

<400> 4930
taattacggt acccgacaac cttaataatt gattatgtac acatgggtac tcgattttta 60

gcctcgagtt gtgggatatg tgtccttagt ggatgtgttt gatttttgg caaaattcaa 120

aagaccttta agatctttat gctaaacaat aagaggctcg aggctataca tattggatgc 180

acttcgcaag aaagtagaca acatttgaag aaaaaaaatt caaggagtac ttcatggatt 240

ctctcaagaa ggtacttgaa tgtttcttta ttctatacaa taatgaccta gatattcaag 300

aatacttcaa agttcaacca tgaagagctc agggtctcga tggaccaata tttgaagggt 360

tccccatatg acttactact cgataaagag atgaacatgc ccacgttttg ctgggaagac 420

atacaacaag gtggcatggt ttctacgaaa actaaaccaa catagtatac taaaggaaac 480

acaatctcta cgatatgatt acgatttttc tgttgtagca aactaggact agaatcatgc 540

acgtgccatc tgtactatat aaaagagata gagatactca cctggtaaca tctcttatta 600

tgcaatccga tttacaaggc atatggtatt atactattca acaacttgaa ccaatctaaa 660

tctttgtttt gtgtttacca ccaaatttag tttttcatcg aagcctacca aaccttatcc 720

aagtaactcc tagtaagatt gttgatcatc aaacaccaac atgtacatag caatcctaac 780

cattaatcta aatctatttc caagatcaat cctcacataa aagattttgg aattaggaca 840

catccaactc cacaacattt gtagtaaaag caacacaaca catatatagt taccagaaat 900

caacaaacca cggggcggtt taaagccatc atgatttagc aatccaatat ccaatctaat 960

ggacaaccaa ctctagaatt gaacatagtg cacgaatcaa atacaaaccc tagctaagat 1020

ccacacgcaa accttcacaa gaaacgaggt tcaagatgag ggcacattgg cataccttgc 1080

atcta 1085

<210> 4931
<211> 1329
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_252525_G1, chr7:99302389..99303717, Cluster 30

<400> 4931
cgattcccat cctatttctg acagcagaaa gcacataatt tttccctata acaacagcaa 60

ttatgttata attcatccgg cagagtatgt agttcatgcg aaccaagtct tgtgtcttgt 120

cctgaatttt ctatggcaat attagtcccc ttcacccggt tcgtatttga agttgtcaaa 180

catctattta atacgttacg ttgcacacaa aagaaagaaa cggatgatct tgtatgaaag 240

atctgttggg agatgaggac tctttttcta taaagtacaa ccttttggat tattaatcta 300

aggaacacgc caaatcattt tatattgacg ttatattatt gaggctggtt gttaacgggc 360

tattctttgt ggagctttgt cttttgattc tggggaaagt ttccacacac tgttggatca 420

ctgatatcaa gagttcattt caatccatca ggattcagga accgtggact ggtacatact 480

agagcaacag agctgacaac aatttatctt ggggaggtca gtttgtacta actttgtgac 540

tactttagaa ttttcttggc tattcttttg gaaaatatca ccttttgaat actagaaaat 600

ttctccttcc gctacatggt agtacgatac tgccacagca tacacagcgc aatagctcaa 660

tgagcgcctg aacaaaaggg cacttttttcc cttgagaatt aaacaaggat taaactaatt 720

aaacattccg atccgatcga ttaaatacct gtaagaaaaa aactaaaggc tgctgtgcat 780

cacgcatagt catagattaa gaaccaagcc atgagatcaa cacctaatat acgtgtccca 840

tttcttactg gctaagtctt cccaacggcg gcatgcaagc aaggaaggag aacatatgga 900

acaccatttc actaagtaag gccgtcaaat gagtcaaaga tacgagctgt ttgtgtttaa 960

tagttgcgcc taactttact aactaatagc tagaaagata acggccggcc gaggagacat 1020

gattatatat tcctcgtgcc catttgcatt gcatgcgatg ccgctgtcac gttgatttgc 1080

caagcatgcc tgccggtaca ggtacagctt tcgtgccaag gctccccaag aatcccgcga 1140

tgttgatcgg tggtactacg gcacggcgcc aaagggccaa ttcatcgcaa cgtgttgtga 1200

ttactcacgc gacctaataa taatcaattc atagtgcatt gttactgtat tagacgacct 1260

gaaaaggcca agagacgatc aaacaataca cgcacctacc acacgatgtt ccgagaaaaa 1320

gtcagccag 1329

<210> 4932
<211> 1290
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_252636_G1, chr7:99952232..99953521, Cluster 30

<400> 4932
aagccgagaa tcaaacctag ccgagttaac tatgagtcga gtgagctgag tcatgactca 60

tgactatttt atccaaccat atacgttctg aaattcggag cccatgcagt caaagccact 120

gggctccctc agactcgcag tgcgcaagca acatcatttc cgacggtctc gcgtgtcatt 180

cgcaagggcc tattatataa ccagccttga gcccactact ttgatgggcc tagtatcaac 240

aacacaacat atagtattta agaggtaata atgcaaatgg aaaagtctgt cttatccctt 300

aaactattga tcgagtacaa tttacatcac ataactagga aaccaaaatt ttagactcta 360

atttctcaaa ccattcaatt tacctccttg atcattttgc acggcctagc catattggct 420

gacgttgcct agccgggata gatataagtt ggattttcac ggaagttccg gaagatcaat 480

tcaaaattat tttaaaaatt ctagaaataa ttttcaaaat ataaaaatct cgttttagaa 540

aaagcacatc tatgttaaaa tactaaaatc ttatttaagc ttataaagtt tatagaacat 600

ttgttttaaa tcaaaaaata tataaaaata gttttatctt atataaaatc atgttgtaca 660

ttttttccca tacttaagtt aaatggatct atcgaatcaa tatggtcccc taatatctaa 720

aactaggcca aatgaacaga ggatggcacc ctaaggcaaa ttcttgcaaa acgcagtgtg 780

aatcaccacg cagacattgt gcaaactgca gatcatgttt catcaatggc acgccttttc 840

ttaaccattg agagatgcat gagaaaaaaa tacagtattg taaatagtag gccacgacat 900

ttggtggcgt tttcccctaa aagttgtagt gaaggatatt aaactaacat gttttatgga 960

atatatgaaa aatgcttaac tatttatata tgaaaaatgt aattaaggaa aattttatga 1020

gcttaaatac tgaaatacag atcagcttgt ttgcttcctc gataactttc atcgtcgtag 1080

gttagcgcac acatcaggag cacatgacca agcaagaact gcaatttgga tgagcttgaa 1140

atgagagttc ttgtgtccct aaaattatgc tctatataat ggttcttgct caaaacaaac 1200

atagatcatg attttttaa atgtgagata aagtaatttt ttctatggat tttctaaagt 1260

tatatcaaat ttaagtattt ttatcaagta 1290

<210> 4933
<211> 1145
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_254925_G1, chr7:112626986..112628130, Cluster 30

<400> 4933
cacctatcta gatatgttct atagaacctt agaaacaacc cacaccaagg cacaagcaca 60

aaccctagca tgggattcca tttttgaaga ctcaaaacac atgaactgtg ttcttgcaga 120

ctctttgtga gaacaccaga tagttcatga gaacatcgtc tcagcacaaa cactcaacct 180

ccatagcact tgttcccacg gactgcctaa agaacactag acactttagt aaaaaataca 240

aacccaaggc tacacaattt gcacctactc actcagacac tccgaaggaa catcaggcca 300

tacaaaaatc acacacttag aaaaaacacg aaatgttccc atggactttc cccaaccatc 360

caatgtacac ctcaactggt caagagaaca tcactatctt ctattgcact ttgcaataca 420

tcatatatta ttgtagccca tatgttatac atcattgtga agcatgtctt gtaatctagt 480

tcataacatt gtactccttt tgcatcatgc attcaatagg tcttaaaggt cctgaagaag 540

tcacaaccga ggaacctcta ccctagaagt tgtcgatgag ccaccactta aattaataca 600

aggtatgaac ctaagcatct gtaatttttt gtagttcgca taatgtgctt aaaggtctag 660

tataagcatt actatgttac tatatgacta tcattcctat actaacctac ttgagctttc 720

atccttatac ttgatccaat gtcgtgtaac attgcttgtt tacttttgtt gtcgtgtatt 780

ttattagacg ataaaagtca ataatgtgat gggtttctca tgtctcgcac atgtactttg 840

tgttttcaac taaaaaacat atattggtca catgatctaa acttgaccaa gatgatgaga 900

ataaatcaag ggctagagag gtgttcatcc atgtaaagat aggcaaggta ttgaatggtt 960

tagttcattg gggcagttaa ggaccatgaa tctagagtag taagaaatga ttgttgtttc 1020

tctagactaa aatctttgaa ccaaggggag tcatcgaact aaccaaatga ccataaaata 1080

gagaaacgac aatggtagtg aatcaaagag agaggacaaa aacttcttta gacgtagtcg 1140

gggtt 1145

<210> 4934
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256401_G1, chr7:120098498..120099584, Cluster 30

<400> 4934
gggtggggca ggggttttag ggttttcttg actagcatga aaatgtattc ttcttaatat 60

aatgtccgag ggttgtctta ccccacacat gttgattttc taaataaggg attagatggg 120

gctttacctt gtttatatga gtttatttct ctcttgtttc ctcaaccctt caccgcctct 180

tcctcctcct tcatttagtt tgttctatcc ttgctaacct catgcctggc gatggcacat 240

gtttcgatgg gcccaagtga tgaaataaga gggcctcgac aaggactggg agaacctttg 300

ctaggtttct tcagcattgt caggccatgt tcaacttgtg gttcactcag agcaactccc 360

atgagaagat gacagtgact atgtgatctt ctatggccac cttgttgcca aggttcactt 420

ccccgattct cgtttttcat gtgccatctt taggtattgt ggtatcaagc ttgggctcct 480

tattgttagg gttcacttgg tgcatcattt tctcatttct agttgatttc tcttgttcaa 540

tgtgaccaat cgacctctgc ttcatcttga gagatttcat ttgccctagt gtcttttaga 600

attgtgatta cctcaatgtc ctatggaata tcttcaattt ttaatgcatg cacaataacc 660

tttccttcac tagatggctc tacatctctc tcctaggcat ttgagcctta agctttgagt 720

gaattggcta atgacaatca attttaaaca tgtttgccat caaggctaat tgaatctaat 780

tagtatattt attgagattc aaaaaacatc agttgtcctt tatcaatggt tgattggatc 840

actcgacaga atatattaga gttagaagta ttatgatcaa atcaactatg ccacatgcaa 900

tgtgtaagct cttcaaaatt ttagatagat agcaaagcag tatgatcaat gattctaata 960

aaactatcat ctagcaagat atcaaagaca tggttacaaa aagtaagtca aaggtgcact 1020

ttaatttctt tagccaattt tttgagtcat ctttaaagat aaacaaatga acgaatcgga 1080

cttaaca 1087

<210> 4935
<211> 1321
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_256591_G1, chr7:121179703..121181023, Cluster 30

<220>
<221> modified_base
<222> (728)..(728)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (728)..(827)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (729)..(729)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (730)..(730)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (731)..(731)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (732)..(732)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (733)..(733)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (734)..(734)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (735)..(735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (736)..(736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (737)..(737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (738)..(738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (739)..(739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (740)..(740)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (741)..(741)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (742)..(742)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (743)..(743)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (744)..(744)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (745)..(745)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (746)..(746)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (747)..(747)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (748)..(748)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (749)..(749)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (750)..(750)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (751)..(751)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (752)..(752)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (753)..(753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (754)..(754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (755)..(755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (756)..(756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (757)..(757)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (758)..(758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (759)..(759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (760)..(760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (761)..(761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (762)..(762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (763)..(763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (764)..(764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (765)..(765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (766)..(766)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (767)..(767)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (768)..(768)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (769)..(769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (770)..(770)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (771)..(771)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (772)..(772)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (773)..(773)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (774)..(774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (775)..(775)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (776)..(776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (777)..(777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (778)..(778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (779)..(779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (780)..(780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (781)..(781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (782)..(782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (783)..(783)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (784)..(784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (785)..(785)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (786)..(786)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (787)..(787)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (788)..(788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (789)..(789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (790)..(790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (791)..(791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (792)..(792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (793)..(793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (794)..(794)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (795)..(795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (796)..(796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (797)..(797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (798)..(798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (799)..(799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (800)..(800)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (801)..(801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (802)..(802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (803)..(803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (804)..(804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (805)..(805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (806)..(806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (807)..(807)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (808)..(808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (809)..(809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (810)..(810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (811)..(811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (812)..(812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (813)..(813)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (814)..(814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (815)..(815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (816)..(816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (817)..(817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (818)..(818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (819)..(819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (820)..(820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (821)..(821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (822)..(822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (823)..(823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (824)..(824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (825)..(825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (826)..(826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (827)..(827)
<223> a, c, g, or t

<400> 4935
ctgctacgct gcatttcagt tatcgcgccg tgtagaatca ttgcagacca ttacgtaaaa 60

cggtagactt ggcgaccaag atttacaccg acagaaatta ccagctcttg agcaagtccg 120

tcccggttca gtgcagttta tttgtggcag ctgagaaggg tcaggcggga gtcgggacaa 180

caaggttcca gttccagttg ttgtcccagc gcgggcgcgc ggcagaaatg ttgcacgtcc 240

gaactgtggc agagagacaa atctgcgccg gccggcggtc tccttgcctt gtcagcgacg 300

ggggtacgcg tacgctgcag cctatactcg tacgggtttc atatgatccg caggccgcag 360

ctcagtcaca gacaggcgcc gcatgtgtca aaacaggccg ttgcgcggtg cgcgcgcggt 420

aggggcgtgt gctggccccg ccgatgtcgg gcccgagcgg taggggcgtg tgctggcccc 480

gccgatgtcg ggcccgagta acgcgcacac cgtctctccg tagcgcgtgg ctttcgttcc 540

agaacagatg aattattata ttgggccgct aattgttcat ttgggccgca tcttagctgt 600

atggctggca gagtagcacc tatttttcgg agttagtgca gcatcggagc atcaatatct 660

cttttactcc ctattttcct ttcttctatt tctacttttt aaacgaattc aagcttgatt 720

tccttcannn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 780

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnctc gtatactccc 840

ctattttcgt ttcttctatt ctacttttt aaatttttta aattttgttt tatgccgatt 900

tttattctta tttctatttt tacattaatt gatttcttta cttctccatt tttttatttc 960

tcgattccat tatcctctac ctttttatgt tttggtgtat ttttttcctt tttcctttct 1020

ctttttacat tttactctaa ttattttagt ttttatttga tagacagagg agatacaaaa 1080

gagggtgacc agtggttcat gcatacgtct gattatacgt gtggtttttc tgttttaata 1140

aatacgatga ccttgtttta agggtatccg tttagtctag aaaatatagt gctactttga 1200

gagctatttg tgaagtaact ctcacagtaa tatattttag attgttcatt tagcatactt 1260

caaatgtcaa gcggctcgag tagacagacc cttgtgcacc agttgacgta gtagttgcta 1320

g 1321

<210> 4936
<211> 1186
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257069_G1, chr7:123596924..123598109, Cluster 30

<400> 4936
ttttttaagc cgaccaaata ggccagtagt ctcggaaaca gaactcagca tatgggatta 60

ttattgcact ctcagcatat gggattattc cagtctccag attgctaaac cctacaactt 120

catttttttt tcggaacgga cttcgttttg ttgttccgag agccgtcttc cttttgagtt 180

cctccgaagc tccgccaggc ggccaagctt aacagaaaaa ggcccaagag gcgccctcat 240

caacactgga aacctagaag ggcccaaaac aatcggctcg gtatcttagc gtacaagggc 300

tgggcttgaa caacacaaga gtttatccca gaatcagccc atgtgcttct ggtgtatata 360

ttgcttatag acgatttcac attttttttt tcacttccaa atgcgtacgc atcaacgcct 420

cataaagtca tcataattcg gaattcctcg caaacaaatg ttagagtagc gctatgtctg 480

gtagcgtggt agcgtacggc atccaatcca ccggtgcggg cagccgtaga gcacgagtat 540

cgcagacatt atttctttgt agatcgatcc aagtatccaa ctgtgagcta gcttgtcgtc 600

tttggttccc cagcgatgct ctttcgaccg ttcgcaggtc aaaagaacgt gatccgtccc 660

gttcgcagtt ttgtaggaca ataccgtagg tagcagcttg tccttgctga aaggtcatta 720

acatattatt agcacctagt ctaaccctat aagatcagct gcatgatata ttttttttc 780

tattcgtatg gctgaatcga gacaccgtaa ttgcatgcgg cagctaaaca caacaaagat 840

tagctgtatg ctccccgctc tgtcaaaaca aatatactta aaagttgtat gccaattaaa 900

atagatcata tctgaccaag tctctagtta acagtattta tttttatgtc tccaagtcat 960

tttattataa aatggtaatt aatctaatat atttttttcta tttttctgag catgaattga 1020

ttaagattta taattaaata cataaacttt aaacatttac gcgttttctc ttgaaatcaa 1080

actgtctgtg tgtgtggtgg tgggtggggt ggggggcaaa aggccccttc caacattttt 1140

ttaacgccaa caccctaaca cctcccacag aaactaaaac taagca 1186

<210> 4937
<211> 1057
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_25741_G1, chr1:156213342..156214398, Cluster 30

<400> 4937
aacgtcactc acgctaaatg taagaaaatg gatgaggaga gaatggcact ctccaacatg 60

attcaaatag tggtttgggc ttcacaaaag ccaaaacata tccagctagg gagttcgtac 120

aacccaaaac atggagagtc gatgactcca atttagacgt tgaggggggag attgttgctg 180

gtgatgttga gatttcaaca cttaaactca tagctgaagc attagcagct ggtttcaagt 240

taggttgtct tcaacaagcg gaggaggaac ttgcttctat caaggttggt tcaggttctt 300

ctcatatgtt gatttggaaa aaatacatat ggcatagaat atggttcaaa caatgtgagc 360

gctccatttg tgattttcgt aattgaggct actagtaaat taacctctac tctaacattt 420

gtgaatgtga tacattaaat ccacatctag gattaagcaa gaatgacgac cataaaagag 480

gtgatggcca caaaggatat gcaagtgctc aacgtggaga agaggaggaa gaaaaagaaa 540

tatacaagag cttaagacaa aggtataagt aggatatttt attttgtcgg tcaagatgcg 600

gtagagtaca tgattagatt taggacatat gtctatccta ttaaaaggga agcttaatta 660

gacaatttgg tcatctcgta ccactggata ttggaatcac atgcattgca tatggaccta 720

agtgatgcat atgagagcaa gcgaaaatat ttaacaaaag cacattgaaa aacgctaagt 780

atatgttcca atatgtttgg taaaacattt gaagagctag tgcgcttaaa aagggttttc 840

tcagtagttt tctagagtgc attagacatg cctggtggtg tactaggcat gcatatacac 900

caggtacgaa atagatttat acttgttgca ccatttttta gtcgagcgcg caccagacat 960

tttggcacca aacgcttaag ctatagaatc tgacatataa aatacaataa aaattgtggt 1020

tatatgctag gttttttaga ataacggatg agttcta 1057

<210> 4938
<211> 1224
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260269_G1, chr7:141543404..141544627, Cluster 30

<400> 4938
attcatcttc ggtaccttga gatctgccgc caattcactc aaaaatctcg ggctcatcct 60

tggctttttt gtgactttag cgtcccatga tcaagatcat aaagatccaa ccttcatcgc 120

actggatcta agccgtcctg atttcgtgat attgactcac actctaactc tacatcgaca 180

ccaacttgga cttagactca agtcaaactt gggcttctac accaacactg actccaactt 240

atactagtgt ttggacttag attcatatga tcaatttaaa gaccacttca tgttcatggc 300

ttactcagta gatggacacc aagatatcca tcattatgac cctaaagatg acaatgaagc 360

caagagttga aggaatgtag aagacatgat atggcaggta gaactgttca cgactagatc 420

tagatggtta acttccatgg tcaacaagtt tatactacac atacatagat tgtcatatta 480

gcaaagcaat tgtttgatca actcacacca ttgatgctta aggacaatgc ataagcctat 540

gaatacctaa attagatcaa caacatgtta gcttatacga ctatgtgcac taaggctcca 600

actccataag aattgagcct tgatcaaact gaaccctcag ttgcaccaac tcgagaagaa 660

ccataacact cgtaaaaaag ctagtcattc aagtatcgag tccttggttc tcacacacaa 720

tcatcatgat aggacttggc cagtagctca accttctaag gactgagacc gactcctcca 780

cgaagacctc agaccaaatt gataaaattt tatcaaccat aagaccaaaa caattatgag 840

cacaagattg agagcagatc tattattgga gagagagaag attcaaactg cgatcgagtt 900

cagcaggatc tgactttggg acatttgtca gttattttca aactttatcg gtcgtttaag 960

gaaagtaggt tgtctaagga acttcaagcc taccccaatt gatccatatg atgatcgcac 1020

caatccatta tactagctca tcattcacta gttgtctatc acaacagtag gaggggactc 1080

tgctatcata gcaaactatt cacccatatg tcttggctct accattagga agtggctatt 1140

cagtcctcct gtgaatacta ttgagtcatg ggaagatttg aaacatcaat tcattaacaa 1200

cttcaacatg acttgtgatc aaga 1224

<210> 4939
<211> 1228
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_260988_G1, chr7:145378953..145380180, Cluster 30

<400> 4939
tgatttaaaa ttggagagaa atgagggaga attgagagtc tccaaatgac gagttatgca 60

agtacgaata gtccttagca ccgatttgaa aactcaaatt tcattcaaat tggagagaac 120

tgaggtagaa ttgagagttc atacttaagc gaaagcttta tctatattct agcccttagc 180

tacatggaaa gtgaagccct caaatatcaa acccttttta taccgggaaa ttttgatttt 240

taggtcgctt gtcattgcca ctcgtcaaag tacctcgata ttcgttgcac tcacttattg 300

acctatcttc ctttgatcca ataattcgaa ataccaattt taccctcctg atacccatac 360

cttgcgctgg agattggaga aacaagcact actgaagcac aaacatcatt tcttaatccc 420

tattaaacat tttcttctat agaatcttgt tcatgttatt tggttgtctc aattttagat 480

cagctgttct tagaaatctt gacatggact accaacgcca catcacaaca acaaatgaaa 540

cctaatttat atcaaagtga gctccctcga tcgtgatttg tgaagatgta ggacaactgc 600

agacattacg cacatgacca tgccatgggg ttcttgttct tagactccac aatgtaagtc 660

tacatcatta gatgcactgt tgctagctta ttataatgct ttctggtgag caaaccgtga 720

catgattttg accgacttct tgtaaacatg ctacatattt tgactaacag caccaggcca 780

ccagagagcg aactgttgcg ctccagtagc gattttgctc tagtctccag cagaaacaga 840

gacgaacgtt cgtgtatcag taggataaaa atggcatttt gaattattgg atccaaggaa 900

aacaggtcaa tagttgcagc ggggtatttt atcaactatg tgttgcttgt ggtgcaatta 960

agcgagtgta atgaatgcca gggcatttta gcgagtggca acgacaagcg atctaaaaat 1020

caactttccc tctatattgc tctacatctc ttttttaata cagaggtcca actactacta 1080

ttttttcata attgttgtat catacacaag tacaacttta atgtgtcaca gcaatgagtg 1140

tgacatgcca ttgtggcaag tatgattgtc cataccatag agtatggtgt agctagtagc 1200

tattgaaggc atatgtacga catagtgc 1228

<210> 4940
<211> 1366
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262375_G1, chr7:153721227..153722592, Cluster 30

<400> 4940
tgacggttaa tatatggtgc caacaacgaa gaggtggagg aagcgtttgt ggtagttgta 60

tggttgattg tgcatttaaa cggtaagact tatcttattt agttgttagg cgacatctag 120

ggaagaaaaa tagatttaca cgcatgaaac tcatgcttta aatgagtaga gattatatgg 180

agacgaaaaa tagatctaca ctcatgaaac tcgtgcttta aatgagtaga cattgtgatc 240

tcgatggtgt tgtgttctgt atacataatg ttgaagcaag ttgctatagc tttcctagct 300

agctaccttt tcatgccgct gttgtgtgca cgagctttat aagaagtgat gtgcttcaag 360

ggagggcaaa gggattccgc ttgtctggta gtggtagctg cttctaattt gtttgctcga 420

tcgatctctg atatgtagct ctttcggtag tggactagtg gtagggctag ctaagctgtc 480

aaggaaatta gttattaggg caggtacaac tctattaatt aaagggtctc taagtattaa 540

atataaaaat aaaatcttcg agaagagtct gacttttac gattttctat acatattgtc 600

tcttacttgc ataatgttct agtgatttat gattgtataa tatagttttt taaccgtctt 660

ttgtatttat aaaaccgagc aaaggccttt aggttgtaca cgcccttact tagcgacact 720

tctctaatta aagcgaaggt gcattatcta tgccactgca ttcaagacta gctgttaatt 780

aacaaatctt ctgcccgttg gctgctgctg gttaaaggta tgtttggaag catcacaatt 840

tttaataaga aactaattat atcgccaatt ttttgaaatt ggtttataaa aaatactgga 900

tgtgtgtgtt taaaaccagt ctgttgaaaa ccaatttcta gctttttcc acacacaaag 960

acgaatctac cgttacttta ttttaaaagc aattgattca attattcctt ttatctttct 1020

ttgctaccaa ttttaaatat agattactaa caattttaaa tatagattgg actcatattt 1080

ttgtaattta acttttacaa taataattaa acattaaaat aggaaagact aggtatcgag 1140

gggatcacat gcataaacga cctagaagca gtgtcaatca ccgtaatttc caacgaacca 1200

aataaggaca atacataatt ttttgtcagt caaacactag tttcaactag tgaaggacag 1260

ctttctggtt ccttagaaac tgagaatccg gtttctaaaa gttgaagtga atataaattg 1320

gtctgttttt ggaagcatca tagtttttct ataaattaat ttctta 1366

<210> 4941
<211> 1205
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262690_G1, chr7:155221353..155222557, Cluster 30

<400> 4941
ctatatattg gctcgtttta tcgaagctct agctctagaa aatatgtgga tttcctagct 60

agttaccagt agcttacgaa attttggatc tataaatgca tgttaaacat atttacaaga 120

ctcactttat tatttacaat ttagattaaa taacagtatt ttaattattt taatttagtt 180

taaaaactat acatctaaaa taaatcttag ggtcagagct ttatcaaaca tgtttattga 240

agttatcatc gggtaaccca acacatcgac aagcaaatac aattaggact aatcactatt 300

tgattaagtt tataataaca tcaatattta tattccggta gataactata aaaatatacc 360

ttgcaactac tcttgtttag tatcagacat gtaagtatgt ttgtaagatt tggttaaact 420

taaaatattt tgctgctcga aaaacaagaa tttataatgt tccagagttc aaacagttta 480

gatctatttt acacattaag tgaaccacac accatcacta actcgcttat acttttggtc 540

tcgcttcgca tcaaaggact cacctgaggt ttatattttt aaaacctttt taaaacagta 600

ttttaaaaat aaaacatatc ctaaatatat atctaaccct ttttggtaat gctagttcat 660

gtgagtcaaa aaataatatt gtcgtgtgag cgacacatat tggcaagata aattccccac 720

actaggaggt atacctatat catatttata tatagggatg tcggaacaac aacatggttg 780

tcacgggttt tgattctatg gtgtgtttat gcaagaaaac atagagatac ctaatttatc 840

ctctcttaga tgtcttaatc tgattatttt aaaaaaaaat agtcacatga catatagaag 900

cagagctatg tgactttaaa gagaggagta tcacccccta aaatttcatt gtctatatac 960

attctagggt agaaatagat ttgtaactga tgtactttat tctctagttc caagatacag 1020

tgggattgga actttgttga tatttgatag tacagtatta tagcatgata taatcctatt 1080

ctgatatgat ggatacaaga tgggtccgtg ttggtccttc agttcatgcc cttgatggga 1140

gcacacaatt tccgacctct gcatgaaaca atggagtaaa cattatctca acctctattt 1200

gagtg 1205

<210> 4942
<211> 1104
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262866_G1, chr7:156080560..156081663, Cluster 30

<400> 4942
tatactttta atgtgtttgg gtaaaaaaga ttagagtgct attcaaacaa ttgtcgatac 60

aatatcaccc ttagaacata tatggttgaa gtacatcacc cttgggctga ctccaacata 120

gtacatataa gagcacctaa acaaattgta gatatctaaa taacattaaa ccgtctctga 180

cagggcatct ataccttata cacattttag acgtgatgtg ggagaatacc taaatatgga 240

tgatcatctc ctcaaaccac ttgaatgcct ttttggggta tccggttggg cactacaaca 300

tttaggtttc gttactcgac tgactgcata acccaaactt gtatcgagtt cccattttta 360

cataccattg ttggagttag ccttagatgc tagatagtcc ataagttgaa tgttattgct 420

atttagtttg tttaagtttt cagattcatt gcaacattca cctaaattag gggcatatat 480

tgacacaaaa ttgtatcaac atgcagtttg gacaatgtta ataagttcct tgcatcaaaa 540

gaatattggc aatatttggt gaagtgagtg aggaagaaca aacaaaaagg agaaaaacga 600

catatgcatg aggaaaccgg ccatgttggt cctgtgcgac ccccactgga tctattttgt 660

ttcaaattag tcttggatat aatttggtgt agaaaagttg gaaaatacgt tttggagttg 720

tttattattg tgataaaatc attcgtcatt ctatatgtaa gaggattatg gtcgattgag 780

tatctcaact ttcaatcgtc acaaacattt tcactacacc gttttctcct ctctatacca 840

tgttgttcat cacattttct attgagactt agtggtactc tagatggcct tgacgatgcc 900

agagcaacct tcacatgctg ttttttttcga gatgttcgat agtttactgt ataaaaaaca 960

agatccatat caacctgact aacccttcga ccgattgtgt cgctccacaa tattctcatt 1020

aagatttgtt gcaaccatag gtatgctaat acttatggtt tattattgtg taatccggaa 1080

tatgttgtcg tttaatagat atac 1104

<210> 4943
<211> 1084
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262911_G1, chr7:156282344..156283427, Cluster 30

<400> 4943
ggcgtctgaa tcagacctac caactaccat cgggaggttt aatgggcatg ttcccatgat 60

caataaaaca tgtgacgaaa gaactgatta caaaaacatc gtatgaggtg tactctacaa 120

tctacatcca gggtgcaata ttagtttagg atttaagatc cactggatgg tttgtggtca 180

cactagttta gatgcaactc tgaacaatga catgtttcgg ttgtctattc cttttagtag 240

acagcaagat ccaatggtgt ggaaaattct gatatatgtc aattcaccat ggtcctgaca 300

atactttcat agaaaaataa acccctacaa ctcctaattt acccgtcaat ggtaatcgtt 360

tctcaccctc taaactgaac gatatcctgt tgggcagatg aaaatctgac tgactataca 420

acatgcatag tgttcacgta tacctttgg tggattccaa gaacaaaaag gttcagatga 480

ttattcgcac caattggagc agaaagctgc tacactgcta ccttgtacgt gcttgggaat 540

gattacgtgt ccaaagaaaa agtgggtatt aaaaagtatg cagatttccc ttttaaaaat 600

gcagtttgga aattgttcgc cagcagtttt gcaggtttta atggaaaact acaaatcaca 660

ttacttttta gtaccagttg tacaagttgt caaagttttc agtcaatgtt tgatgcaaga 720

ttagatccac cgtagagcta ctctacggtc gagcaactgt ttaaaaacgg ttttcattgg 780

aatcataatc ttaacttctt tttgatgatt catgagtcca agggtgcttt tggccacagt 840

tttttcatgg aaaattttac cactaatggt ttggtgtatt tgaaaacgga ggaatgactt 900

catctttatc tttagaaata aggttccttc cttttcttct tggcgacgct gcttcaacga 960

tatagtgaag ttgcaaatgc tgagatttaa ccactctctt aaagctagtc taaactctcg 1020

atagctcctt tctttcttgt tttctttgat cccgcttgta ttttttttcat ctcaaaaagt 1080

ttca 1084

<210> 4944
<211> 1293
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264061_G1, chr7:161808156..161809448, Cluster 30

<400> 4944
ttgtactgta gtattctgtg cacttgctgc ccgagaatat gccttgccga attaatcatt 60

gacgtgagat aatgaacagt tttggaatga accatcttgg tttttatcta tcttcactgc 120

gctcatttct tgaaattgag ctgaagtgat tccttgacct tgaagaatgc atttgttccg 180

gatagcgata ttattcctct gtttttcaag taccaatgca aactagtatt tccactgaga 240

ccgtgcacaa atccagtcca tacgtcggga tcaacaactg atccatcagg ttaaagagca 300

gaaatgctat gaggctggtg ccaatgcagc ctgtagtcat gttgtgtaaa aattatttaa 360

tccccaaatc catcaaggca ggagaaaaaa atatactcaa aatacgtaaa gtcagtttct 420

atacaacata aatcattgtc cattgcaata aaaaaaaacg gtaacataag aacttataga 480

tgaagacatc ttgtatcaat atgagaaatc atctattagt attgaagcat caaacatcat 540

gtagtgtaac atctcaattt ttctactgca acatgagaaa ttatctatta aaacaagatc 600

aggtaccaca acatcacaaa ctaaccacta tgacataacc cccatagttt ttctaagccg 660

agcatggagc accgtaccca tagaaatagg attggttttc aagagcgtag tttaaaagta 720

agcatgtgaa atgctatttt cagagctgct tgcacccagc atcttctgta aaaaatctag 780

gcgcaattca aaatgcactg cgtaaaaagc aatgccaggc cacactcatc tcttcagcgt 840

ggggcctaaa ctctctctct ctctcctcca ttatttatag tcactttatg gtggttctgg 900

cagtctggct cagcctttta tttgtgtttg ttgtttttct ctcacttttg ttttctgtgg 960

ttcaaactct tccttttttct catgtcatat ggactggaga agccatgctc cgcgcctagg 1020

cacaccaagt agagcgtggc agtggtggca cacaggtgag cagcaaggcg gcggtggcgg 1080

acaagtgtgg cgcttgtggg ccagtgtggc tgcgcggcaa tggaaggctc gtgccggcca 1140

acgagctcat atcttttctt ttttttcgc tcaaaaatta ttttgaggt cagttgctta 1200

aaggtctgtt tagaatctct aaaaataata gttagccgct aaacagtcta actaaagcct 1260

cagcgaaatg ttagcttaga tcccaactaa caa 1293

<210> 4945
<211> 1084
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264654_G1, chr7:165316738..165317821, Cluster 30

<400> 4945
gttaccaact taaaactacc tatccggacc ttaactaaaa caagccctaa atccgaacta 60

gaagtaacta aactataact aactctaaaa ataattagaa ctaaaaccta aaatcgacta 120

agtcatctaa ctctaacgaa aactaactaa gaataactaa tttaaaatga aacataacca 180

aatctaaccg taaaaataac tacaacttaa aaaaaataaa tttactaact aatccaaccc 240

taattaaact aaccaaatgt aactaattaa agtaataaac taactaaata taaacaacaa 300

caaaaaacta aaataaaaaa gtagatgcag caatagctgg ccgagtcgac gtcgagggtt 360

gcgtaggcgg gtttgaggga agcgtcgtct gaattcagcg atcaacggca atgagagagg 420

ctgcccactc cgcagtttgg tttggtatag agacggtgag caaggccacc ggttgagaga 480

gagtgtgcgt gggagagcga gaggaagata gaggtagcta gatttcgtag ggcttatatc 540

tatatttttt ataaaaaaaa caatgctatt gtttattaaa aacagctcac cagctattcg 600

gctgcctcgt ggtcgttcct ccagcgaagg agtgtagagg tagagccaat aggggcacta 660

catgtggtag tagtaatcgt cagcaaatta agaaacggcc aagagtccat tccgctccga 720

attatgcaaa tgcgtgaatc tgacatcgta tctataccgt gtacaaatca tggtttcggt 780

gaggaggaca tatatattcg ccaccacgga ttattccgcg ccccggccct tttgtgctcg 840

atatggattc gaagtccaca tcacctagac tagaggggggc cgtgctgatg tggatccacc 900

agagcagcca ccatgggggg aactagaact aatcagcgtc agcgcctcac ttttatctat 960

gtcaccaccg ttatcaaacg cggtgataag accaaaccca aagattctcc gcaaattcac 1020

gcgatatatt tggaaacagc caaggtgctt ccgatccatg ccaagcctcc cccagtcgca 1080

ccaa 1084

<210> 4946
<211> 1106
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266136_G1, chr7:173036894..173037999, Cluster 30

<400> 4946
atatttaaca aataaattag aatattttgg ttgtattgag agagtgcatg catttatctc 60

ttcgtgacct aaacaaactt gtgaagcaca gtttcgatgt ggcctttcaa tgtggcctaa 120

acaaacttgt gaagaataca acaaggtgtt ataaactcaa aaaggcatct attacattta 180

atgggaacta agtttaaaac aaaataataa atcatcaagt gaaatcgact aggacttgcc 240

gtaaaaaaca gctacgtcat aagcagtaag taaataacct cataatatag caacactaga 300

aaattccaaa accataatgt tgtattatcc aagattttgt attgctcaaa tgatattaaa 360

tacatgtgca tgctcagtat aacttcattt gaatgttcat ttgttggatc atatgaacct 420

cttatgcaat tctatgcata aatacttgtc acaacaaggt ggtggtgatt ggcttttgta 480

tccatatgca atttgtatga tgaatcatca tgaatgcata atatcttatt atagtacaat 540

gctgccttat tagttaccca atcgaccata taaatttcga tgactgaagg atgacaatgt 600

catcaacaag tctaacaaga attactcgta atgcaccatc aatgagagac attgcataat 660

tggaatagag ctaaaaacat ggacacattg ttccacatcc atcatctaac caacaaccca 720

acatcgagca taataaccaa tataggtcca aaccaaggca cgattcaatt gtaaacttac 780

cacgagcgat aaaaaattaa aacaagttgt tgttttgttg tgcctctttt tattcataaa 840

acatattatc cttatgttat ttttccttta tcaaataact tgaccacatc taatcataat 900

agggtgaaaa ttttaatgaa aaaagcgata tatagaaaca tttaacctga agattcatag 960

catcgaataa aacgatattc ctacatacat aagtagacca cgccctaata taaaagaaat 1020

aaaatatatt agacatgcat tgaaggtagt ttaacctcga atgatgagac ctaatgttct 1080

aaaaatcact agtacataga aactcg 1106

<210> 4947
<211> 1287
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266169_G1, chr7:173218722..173220008, Cluster 30

<400> 4947
cctgcatact agctagaggg gaatggagtt gagatgatta ttaattaatc gtttgagatc 60

tgcatagatt agcgagatct actgcccaac taacctgtct tagacagggt ccaaccacgc 120

acgtgccacc ttcactcgtc gttgaactga tcaacagatt ataatcatca gaaaaaagaa 180

atttatgcct tgagcatttt tttagcttgc ttccatgcag cagctagcct tttgtgttgt 240

acgcatgcta gatatattgt tggtggtgta gcatataaaa tcttcctttg cacttctttt 300

cattagagtg atagattatt tcagttgggt tcctttctcc ctagtctcta gtggtggttg 360

ctctagtaga ccaaaaaaat gggttctctt ttcatgaaag ttctttttt tttgctcaat 420

gcatgcatgt gtcgagtggt tgagatatat ccattttaat ttctctatgt ccttcgttct 480

gttcccctaa aacaattgca tgcactacta tatatacaat taatgtgtta gctcttggtt 540

gctgcttagc tactagtcaa agtctttgga gtgcaggact tggaagtgga cgagagtgtg 600

agcaatattg aactcgggct gacagccaat attgatgcct ttttctaact tgtgtgttgt 660

cacgagcgag gggcctacgt ggatctccat aggtccaacc aagcaccgat gcagaaaaga 720

acagtggtta ttagttaatt acccgactag tgacaggaat gatctacaca aaaccatatt 780

acaatatgat atatataatt attgtatcca aaagcgttaa agagagttag cgcaggccac 840

aaaaccgccc ggcgggttgg cgaaacccgt gtactgatcc cactataccg atcatagtgt 900

agtgttcact tctatttgca gctaactaaa gtgcaccatg aaaataatcc caatatgata 960

taattgtttg cacttatttg ccctataaac aaacactgta ctcactactt acacctacgc 1020

acaatcaccg ctataaagca cacctagaaa cgacaagatc accatggacc ctttcttaat 1080

gttgtggttt ttttattgat gtttaatttg cactactctg aaacatgttt tcgtgccaat 1140

gcaagttgag gattataacc cgaatggata aattccacgc tgcaaatgga cataacacga 1200

ccaatataat tgagctcagt tcactgtata ctttctgtga gctaattaac acacacatac 1260

gcacatccac tgtacctagt catgcat 1287

<210> 4948
<211> 1198
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267464_G1, chr8:3490636..3491833, Cluster 30

<400> 4948
ctatggaaat actgttgatt actctttcat tagtggatac aaaactaatt gttcaaccaa 60

cactccgaag cagctaatat atttactttt aatactgtta atatatttac tttgatcacg 120

aataagtgct gttttaagag gataacggat aagtgttgtt taggagtata acacggtcac 180

agatcgcaag cttgacaagt agtaattttt ttacagtaac tacacaaaac ggtatgaaga 240

agtaatttca cacaaaatta taaggtatga agaagtaatt acaccaacat agcatcctct 300

aaatcgactt tgggcgacat ttgtcattga tgcgacaagg ctttcaggtt tcagcaccag 360

acctgcacac ttgcatcttc ccactatcac ggtattgttc ttccaagctc agaaattagt 420

agtagtaatt caaataaagt tattactacc aatattcaat cattgaaggc acacccacca 480

gttttatttc gatcctgata cagatatttt gaatgactgt ttggttgtcg agattagatt 540

tcgattaaaa ataatagaaa aatatataaa taaaaatatg ctgatgataa agctttaaac 600

cttttgtggg tgaataacaa cttaaataaa tatagctaca ttttaacttg ttgcacttaa 660

gacagattag ctgaaaaatg actgagactt caaacctttt gagtttagac cttgcttgct 720

tgcactgttc cacattcgta gacagcacaa ggtgaatcat actggccgtc gtggccgatc 780

tcaggtttga aatgaatgca tgcacctgga cgtgttggag gcttcgttca tgtctacagg 840

ctgctaggga ggtacagtga acgcacttgc gtgctctctc tccttcaaag ttttgaaagg 900

tactccgcgt ttgttcggct tcagagttcg gaccgtgcca tgctcgtacc ttgccgtcat 960

cacggcagta ttcagtgagc agagcaatgt acatgtgcgg cggtctgacc gcacgcatgg 1020

cacttcttgc cgcgacgtgc tgctctcgcc ttcccatgaa agtagaagcc aagggttgat 1080

ttttaagtca atcttctatt ttctatacat aactactgta ttattgcgct gccgtttatt 1140

ataaatcttg aatttattta atttaaggtt caaccaatct ctactatatt atttgaac 1198

<210> 4949
<211> 1281

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_267652_G1, chr8:4598251..4599531, Cluster 30

<400> 4949
attgatgtaa aaatgacata ttttcatata ctcaaaataa tgtcacaaca acataataaa 60

aggaagatgg tcatatcatg agcatatttt accaaataac aagttctaca tgtcgatggt 120

gtatttcttt gtagaactat ataaaatgga gaagataagc ttatgggccc accataaggg 180

ggtcaaccaa ccactctatg gtgctcatag ccctttcaaa tttgacatgg tccatgtgaa 240

acactcctaa gtgattctca accattggat gcaatgtgtg ttttctctca atggtggaag 300

atcaaaacac atggattcga tggcccacat ctcagcaaaa ccaacatcaa tgtggaccaa 360

aaaggatgta cacccactca agaccaagct aggacccatc gcataaaaga aggtgggcac 420

acattgcata gaggtgggaa accaatcacc ccttggtttg acaaccactt aagtgcccct 480

aatttgcttc actaccttca agtatggagg catgcatagg aacacacatt aagaatatca 540

tagtccttga tttaaagtca gtttgattta atggcataaa atgatgatca catggatcca 600

tgggctcact taaactagta tcaacttagg ggtgcactcc ctctccattc atgaactcaa 660

acttcaagtg caaagtagtt ccattctatc ttgtagtata agataattta gcgtgggagt 720

gagaagtaga gtgagctttg ctcagatttt cggattcgac cttctagaga gtttggtata 780

tatcttatac ctttccattt ttagtattac tttacattat tcaatatatt attaattttg 840

taccttattt agtatttact tcatgcaaca ttaatttagt gctagtgttt tgtggttaac 900

catagcttat ggttgtatgc ttgttagatt aattatcaag gaccctaaca tagtcacatg 960

tacattgatt tgtgtataca caattagagt atagagagat agtgtaaaat tgttgttcat 1020

acttgacttg ctagtggtta ttgcttatcg catggattgt taaagtagct cgcatgtggt 1080

gatagcccta tcttgtgttt atattccgtc atgtgttata ggaaggttat taaaatagta 1140

ataacaagtc agccgctttg agtaagagtt ttgtgctctt actatatcat ctaccgcctc 1200

atatacttgt tgtgtggaca caatctcctt atttacatct gtgcaattaa gatagaacca 1260

tagaaatata gttggaatga t 1281

<210> 4950
<211> 1294
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268260_G1, chr8:7743810..7745103, Cluster 30

<400> 4950
caaacatgat taaaagccat cgatgaaatc catccaagga gatctcaaac cttgtctagc 60

ccctcttcgt tcaacactct cacttgtgga agttggtcaa gagccgaagc agcaaccact 120

atgattaaca aggacatgaa aaactatcat ggaggaagga aggcaagagg aggaagttga 180

tcaaagagag aaggaggaaa gggaaaaaag atctccaagt ttgcatgaaa aaggtaaaaa 240

tatcgtgcag aagcctattt taaacctttc tctcccccac acagttcata gtgaagaacc 300

caaagcatcg cactaccaac atgaaaaggc gagtcatgca acatgataga tgtacaaatg 360

aaaactatcc agccactatg gtcatcacac ccaagtgttc caataggtca aatctgtcat 420

gcgtacttag gactcaagcc ctagttcaaa atccatccag tattaccaaa taaatctctc 480

cacttaaaga ttagtagtga ttcactttct tccatgtaat gattggattc tgagcctaag 540

gtacaccata tcatttcata aggaggacag acacaaaaac atgattctac caacacttca 600

acttctaggt tcaaggcaac aatgtctttc aactagcccc acacatggaa caacgacacg 660

gtctagagat agaacacaac taatagcaaa atcttggtat gaattaactc tatcgtgatg 720

ggccacttat tcctagccta gttcaatccc ccttatgctt aatttccact aggacctggt 780

tatcacagtg tttgtcgatg cccctgatga tgagatatgc agtcccaact accagtccaa 840

cagtggacct aggggccttt ttcagtgtat ggggaaggac ataccaccca atgctaccaa 900

aaacacattc aacgatcatg gtataggaag ctattgaggg tcccgactac taggattatc 960

actctcgggg catcatgccc taggatcacc cctagtccta tctagggtag ggattaacat 1020

tgggtaactt gatattgggg gcactaaaaa agaataatag ctacaccaag tcccgttaag 1080

taataagcaa cctagggcac actaggtctt aggactctac atggcctagt gcctccgaac 1140

gtccctagct agaagattat aatctttgag gggcctcgtg tctcgaggca ctactaaagg 1200

aactaagcca tgaagcctct catgctctgg gatgctacta aaggagttaa ggtgtctagg 1260

gtgattcgtc ccctaggaca cttaacaaca ttta 1294

<210> 4951
<211> 1113
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_269942_G1, chr8:16774996..16776108, Cluster 30

<400> 4951
tatcttaatg tctataacaa gtaaacgtaa tgttaaatgt cctaaaggac gcacatttgg 60

aattgtcact gaaattgtgt caatgtcctt aaaggatgta tgtttggaat cacagttgca 120

agtggtatta ttctatgtga gccgtcccac tccagatgga gatacattaa ctatgccaag 180

atttaccaat actactagct aggaattcca atcactctgg tctagccacc tatattctct 240

tgacctttgt ttgtcaatcg ttgagttgtt ttatgcatgt gtggagatat agagttgcaa 300

atacgacaaa cttatggcgg cctctgtttg tatctatcca caaccaatct aacatgcatg 360

tataataata attcctccta tacatattgt acaatccttt gctaattgta tattatcgat 420

taggtgcatg agttagatgt acgtatatat atactactcc aatgacgtac aagagcgaag 480

ctatataccc tatatctggg aaggagccat gcgacgaaga caaataattt ccctactaat 540

aatgcaaaat gcaacttgcc tggacaaatc atgcatatat gcggctgtga cgtacgcacg 600

tgaattaata gtccgccatt ctgcagcctg ctggcctggg ctgctcaagt gcatgcatgc 660

atggtctggt tgttgctgta atgcatataa aattagccat tgatctctga cggcagtggt 720

actaaaccat tattagcaga cagattagta ggtgcattgg atgctcaaca tgtccactag 780

ctagctagct cgacagcgaa tggctgacat atgcgtcgtc ctttggtctc atgctgctgc 840

tgctgctgca tgctactgtt gggcatattg cagacatcac aaaagcttac tagctttggg 900

tgtggtagtt ggatttgctt aattaaatat ctgctgcatt tgtctagcta ccaaatgctg 960

agaacgtacg acgaccattt tctgcacgaa aaaaacagtt taggaccacg atcattgcaa 1020

cagtttagct gttgaggctg cgaagttgtg ctggtattag ctgcattttg attctacttg 1080

ttctcttctt gtctcattta gtttgttatt cta 1113

<210> 4952
<211> 1232
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270586_G1, chr8:20674363..20675594, Cluster 30

<400> 4952
gtgcctgcta cgcaccactg tgatcctggc cgactgacgg aaagtagtgc agggtcaatg 60

gattttaaca ccagtttttt ttttttacca ctgtgaggcc tataaagaat gaaggacagg 120

caatttttt ttacccttgg agtacagcct atattcctat ctgaaacaaa ccattcatcc 180

aggaatatgc attcgtgcat gaatgttact agcactttgg cattaaaaac atccgtgtgt 240

gattttatag aatccgctat tttagcaccg aggctgcgta gattcatgaa tctgggaacc 300

gatgcatggt ccacgaccac gacctcaacc tgccaacttt taagtacacc gcgacaggac 360

ctgccatgca tgcagagaag atggtagtgc acgggtgacc agaacttggc cagtcgataa 420

cacttgcttg cccggctgcc agtaatacct aatataaaaa ttatttataa tccaaaagta 480

cctaatcaat tataactctc cacttcgcat tatacacaat atataaatta atttgttgcc 540

acgaatcacc cgcccaatcc attccagtct ccaaccacgg cgcctgtcga ctgtgtattg 600

ctctcagagt ctcgtgcagt cgccttccat caaatccaga tctgtggtcc gtccctttct 660

cggaactgca cccgaaacca aaaacaggcc gtcgtcgctc gccagcctgt cgcgtcgcgt 720

cgcgtcgtat cggaaataca tctatggaag ctttcactgc ttacctactc tactgtctac 780

tccgtggtgc agctaccagc ggaatatgtt atgtgtgcag cctagctact tcttgcacga 840

cgtactagtc ttcacttgaa cggatatatg tttttcctac gttttttttc tcaaatattc 900

aaccgcctac tcattctatc cctcgtcgtc tcttctattt taaacttatc tatataaatt 960

atatattctg aaatatttta cacgattata tatataatcc actagagaca atataattgt 1020

aaccaggcct ttttcatatc atatttatca tctattacta ttttacctat tgaaaaacaa 1080

tgtcgtgcac gaagcccctg ccacccgcca cgtctggcag agaactatta cttgtgctac 1140

taccatagcc tctatggaaa cagacagggc tatgtgttga ggcgtagcat tcactaaatt 1200

cgatccctta aaaaaatatt ctctttcctt ta 1232

<210> 4953
<211> 1360
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282499_G1, chr8:101771408..101772767, Cluster 30

<400> 4953
ggaggagtgt tcatggagac agatcgagcg ggccgctaac gccgcacggc aatcacgttt 60

ctttttttaa agcaaaccag cggcgtcagc cagcaaaata ctactagctg attaggtgag 120

gtggcgagcc agggggtggt gataccgtcg tctctccacc aacttccagc tactaccaac 180

aacctgccgc ccccgtcccg tccggattcc gatccttcca ctaccaccac cacccccgat 240

cgagctggtt cgaaacaagc cattgattgt gcccatctat cctagtagta gccagcttag 300

gtcatagatc agctacatta atctcgatcg gttgggaagc tagagctata gaatgtacca 360

gacggcagaa gcaaaggtag gtaggagtag gtacgtagcc cccgactaga tgtgtgtgag 420

ctactgagat gaacgctcat ctgatgaatc taactaatca cgaggtacta cactactact 480

actaccgcca aactgggtgg ggggcaaatt aacgtgcggt gcgttgcatg ttgacaactg 540

cgagtgttca tgcacgttca gagaaaaaac caataaatta gtgctctttt agtctcaagt 600

tcataagggt ttataaataa tccaatcata tccccatata gatccactat agctatacta 660

ttctacgatt aatgtgacag tatttgttac aaaatacgta aatattagtg ttgttgttgt 720

tgtttcacat agttagttaa attttgggtg actatgcgtt tccgattttg tatcagttac 780

tctaccgatg tatcaaattc taattcattc tatatcaaaa ggttttaaaa gtatcatctt 840

aaaatgcttc cggttagata tagttttcgc ttggttatat ctccctacga taggacaaat 900

tagaactttt aagtttaata atctactagt agagtaaaca ataaaataat ttataacatt 960

ttttaataac ttttagtaca ttgaatccta gctaaaattc cgaggctgat tgatctttct 1020

cgatcggata tacatttgtt ttaagacgga agtagcagta gaggtctttt ctcgcaggta 1080

gggaagcgtt gtgagtcgac atcaccaaca aattcttgtt ccaggtaatt aataagatcc 1140

acggcatgtg cccgatctct aggggaacgc ctcgcgcacg aagcaaattt gagcacgctg 1200

cgcgtcccca aactgcgacc tgcagccagc tgccagccat atataactgc aggtgctcgg 1260

ttcgttcgta cagtactgaa tgaaatgatg aaccgagcag ggacaaagtg ccacgatcga 1320

atggcgatat gattattttc ataatcatca attgttcata 1360

<210> 4954
<211> 1133
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282620_G1, chr8:102452216..102453348, Cluster 30

<400> 4954
ccgtagggac ccagaggaca ggagatggcc ctgagcgtca agtgctatta agtgctttga 60

gggatagact atcccaagaa cccaaaaggc cttagggact tagatttctc atgaatttcc 120

tatggcacaa gggcctagag acttagatta ttctagccaa ggatgccata tggcattaag 180

gccctgggcc ttgaagagtt gaagtgcctc aagccccgat ggccccaagt tctcttaatg 240

gcttcataca ggattttgtg gtatatttat tcctttgggg tatcctaata tcaagttacc 300

gggtgtcaag ccattgccct agctaggacc atggaatgta cccacgatat gaggccttga 360

gagcggtggt gccaataggt gggatttctg gtagctttct ataccataat ccttaaacat 420

gtcttggtgg taggagacag tatagccttc cccaaacact gacaactatc tgttatgaag 480

tagtaacata agcaagactg agttgccttc tttaaagtga gccaccttcg tagttgggat 540

gactaggggt ggtcttaaca tgagagtttt atttgcattt agctatatag acatttttga 600

tgacatgcca atatttttat gaggaaagag aagaagtgag tttcacggga atgaactcta 660

gtaggacaat tatcaactct acatgagtca tcatactaat tgtctatgat acaatagaac 720

aaaactttcc attaagagag agagagagat gagctcaatc caggttttat ttcattgtat 780

gtaacatgac aatcttgaaa acaatgccat gaaacttttt attgagactc ctcaagtcat 840

tctctatgga gagtttcatt aaatttttat aaaaaataga atgcaacaac aatcacactc 900

aatgcatagt tttattcttt tattttatag acatttaatt atatgaccca tcttgaattg 960

ataactgagt taagagagtt tcatctacac aatttttttcc atcttaaaaa tattgccaca 1020

tcattgaaaa tgcttatgtc gttacttatt aaatacaaac gaaactcttg tgaaactcca 1080

ttgagaatgc cctaaatttc gatttgtatt cctaaagcta atagttagct cct 1133

<210> 4955
<211> 1159
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_282945_G1, chr8:104269278..104270436, Cluster 30

<400> 4955

tttagtatca taacttgata ttcaatttgc tatatgattg tagtatataa attatataat 60

attaaacata taatttaata attccttatt tgtcatatag ctatgaaaat tattatttca 120

aacactttat attgtcataa catcgggttc accaaaatga gaaattgtat tttatatggt 180

tcttattaaa cactaattta ttatagtaaa aatagattac ttcaatatct tgtgaattga 240

taagcaatgt cttgattaat tctatcataa taattctagt gatttgatta ttattcaaat 300

gtgaagaatg catgtggaac cattcagaaa ttacagatca tatacatgta aatgttaatt 360

tgttttagtt ctttagtacc aattaaacat aattgttata tggaaaatgc taatgatgta 420

gtttatttat aagttgttgt tgtatcgttt tttatgcaag attttatact tactaataat 480

atgcaggtca tgactcctga aaacaaagat gccacgccat ctaaattaaa cgtttgatga 540

ggacacttga tgaggacgtg aaggctaaat taagtgtgat atacaagcat tatatagaca 600

gtaaaagaaa cgagtccttt tgttttgtgt ttgttggttt aaattattcc tgaggtactt 660

cacaaagtcg acctgaatat tgctccacat gtttgtgttt gggttttgtt gctttgtgta 720

tatggatctt tggctttatt ctagtgcaaa taatgtaaag ctaagttatt ctatggagtt 780

taacattgat aattaaacac tagaatttta aacatgcata ttttttatta ggcatgtgaa 840

tttttacgcc aaacgcttgc atttgatttg atttactctg agaaaactag gtcttcactt 900

tatgtaccgc agctagtctg gttgcaccaa ggtatactcg atacctgttg agcgtagaag 960

ttgaaaaggc ttatatagca taacaaaaat tcctcatgtt ttttgcactt agcaagctcc 1020

gatatagtgc tgatcgcccg aagatcctca atatagatga tttctactat tcaaaaatta 1080

aaggtgaatt cagcagtagg ccaatgcaag tcccaagtaa gtggtcaata gcctgcagga 1140

cttttctgtt cgacgcgca 1159

<210> 4956
<211> 1392
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2877_G1, chr1:14811335..14812726, Cluster 30

<400> 4956
ttttataata gagcgtcgac tcagtcaagt tattttaagg tttaacctaa tttatatgaa 60

attttagtac ttataaataa aatgagtatt actaaattct ccattacaaa aaatactttg 120

tagtagaagc attacatatt gttaaataga tatttgatac tttcaatttt ttttaaatca 180

aactttagaa aggtgtactg ctaccactct tctgctacta ctagataagg tcttctgttc 240

cggtggacac ttgtctagtt gtcctgcagg aggattccca tctttctaca gatgccgccg 300

atccaagcgc ccgccccctc ccgtcgcttt cttcccacgg ccgttccttt ctcgcggtcg 360

gtactccacg agggcaagaa aaatattaca taccaggggc aggagggacc gggggaacga 420

agaaaaaagg accgaccagc gcggcctcga cgtgacccgc gcggctcgat cggacggtgc 480

agactcactg acaggcgggt cacgccgcgc gtgtcaggat atgctgcgcc cgcatccgca 540

tgcatgggtg tgtcccgttc ctcccctgag gcgttacacg tgtcgtaggt agggctggta 600

tgagggagtc cgataatctt ctttttattg aaacggagtg tgctttgttg ttgtttgtct 660

catatcatcg acagtgtctg tccttgactc ctttgtcttc tttattaaat actaggtata 720

catcgttaca agtctcatca attggacatg aaacataaaa caacatagca acgaagacga 780

atggacttag gccccctttga cgcggatttt tttttctcgt ttcctctgtt tttcctgtaa 840

aaataagcga ttcctataaa atttctgttc cattgttgtg aaatcaccat attccaaaga 900

aagttttttt ttttacagtt ggacatgaaa gaataaacta gacgaaaaat caggttgacg 960

ttttttttgct cctttaccac taggtataga tgaagactag tctcatcagt cctgtgactg 1020

aagatatctt ctacgttttt ttttcttcgt tatttaaaga aatctgggtc caggcccagc 1080

gccaaaaggt tcatcgtcag cttttgacac gttgaaataa aaaaggtagt ccttgcgata 1140

cattatgttt gatgtacgcg ctagctaaat ccgccgacca aagttgatat tgcttataat 1200

aaaaataatt aaacaagaga gacacggcat agcactagtt aagctgacac atgcctgtct 1260

gaccataaag ccaataatcg tgtcacgttg attttaaact gccgatccag tccaataatt 1320

ttgagggttg ttgaggaagt cgatctccac gatagggagc tcaaggcgac aatatatagc 1380

cgttattttc cg 1392

<210> 4957
<211> 1101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_287841_G1, chr8:130505529..130506629, Cluster 30

<400> 4957
acttttaaca acagtctagg cttcgacccc agtagggtat tccgagtaga gttcgtcaaa 60

caacaagtga ttggaagaga ttgcagcggt gcccaatttt aatctgaaga agttggtgag 120

cctttgtgcg aggtcatgga gatgtcgtcg acaaccagac gttggatttg attgtggtgt 180

agtctgatgg agcatctggc atggaagtag tgagtgcaag cgtctccctg cttcagagct 240

ttggactttg ccctctggcg ccagtaggta gcatggtcta ggacagcaga ggacatgcat 300

gattgtaaaa aagttaaggt tctgtctagg gtatgttcgg tagagctggc tgaagggctc 360

ttcaatacac taaaaatgtg gttctcctgg atactctagg atgaattctg aaagaagcaa 420

ttttcagact aaaaatgaat ctctgtaatt ctcatacata caacgactgt gtatagtaaa 480

tccactgaac agtaagtcaa gagatgatgc ttttttttcac acaccaagaa ttattatttt 540

tagaacataa acatatatgc atgtatgtat ataggtgggt atataagcat ttatgctttt 600

ggttgtggaa aaggagggag tggagaagat gcagcctagc aacccgacca ggcggccctt 660

ttcctcccct gtgcagtcca ccttctcctt tggctcggtc caatccattc ctcccagatg 720

aaaatatgtt tcatggagga taacaatgaa tcaaccattt gcataggcta gggatgaaaa 780

tgactcatat tgaggttaac aaattcatat gcttaccatt tctccaatga aaagggaaaa 840

aaaacaaagc gaaacaccaa atattggttt aattaccttg gtggggaaca gctaagacct 900

ctactgcggc tacgatgcat gtatcgacaa atttcagcaa gtttttccta cctttgtcgt 960

ttatgctctc atttcttagc aatctcaata gttgtgtact ttttaactgt aaaaaaacaa 1020

caaaagatta gtatgctgag actactaagc tcaataaaga tctaatatgc agatccaccg 1080

acggaagtag gagttgggtt g 1101

<210> 4958
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292046_G1, chr8:152893610..152894615, Cluster 30

<400> 4958
tgatgttctg gcgagaaaaa agttgacaca agaggctttt ataagaaaag ttgaaacaag 60

atggttgcca attgtttcta tgcatggata atagaagtta aaaacacaaa tctatgaggt 120

gcatttgaga tgttaaataa tgtatggtag cttttagaat cttcagcacc tgttagactg 180

atacttatgt cttaagcata ccaccaacct ggaaataagg tgcattggta gttcaagaaa 240

ctgacaagtt ttgccatgaa aaacatgtaa aaaattaagt tcaatggcta taatagaatt 300

tgtaacgaaa gaactcttag gtattgtttg gttcacgaat tgaaacataa tggtaacgct 360

aatgatttac actcgaatga cagcggtaat aagtatgaat aggccggtat cagtttacag 420

tgtggtattt gatgaagggg acctgcaaaa atgcaaatta ccaaacattt tattaactgt 480

ttgaatttgg aggtgctatt tgtaggaact gaaacctcta tagaccttag ttattgaagt 540

cttgaagccg actaactttt atgtgccttc agcttcaaga ctactacttc tttcagtcat 600

ttgttttggt gcatctttat ttaccctcaa accattttga taaatgtctc tttcagcata 660

tataccaata aaatatgagg ttgaactatc aattgtgttt tcactataag gacaatccat 720

gtggtgacgt gttggttacc gttgtatttg taccgttgaa tccaccatct tgttctcagg 780

agtgaatctt tgatcaacac aattggcagt gtcatggtct cagggtttgg gtaacttcgt 840

gctatgcttt tgaacctact ttatggctag agctattatg gatttagggt actataaagc 900

ctgtaaaatt accatagttt gaactaagtc ttttttatct actggagtac aacctttgcg 960

tctagaaata tttggtgcca tggtagtaat aagatatata gaatta 1006

<210> 4959
<211> 1213
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292063_G1, chr8:152968655..152969867, Cluster 30

<400> 4959
tcctagagga tctaattgat tatttgtatg gtgtctgtac actgtatact ttgataattg 60

ttgtggacct acggtttaat atattgtata ttgatatagt gatttgaaat gaaatgccct 120

gctgtaaaat tctggctctg ccgctgacct gcaactgatc caaacaaaga ttataccgag 180

agactttgac gtgctgaatg atatggctaa ctaagataat atgaatgatg cgcgtggcaa 240

ggctcagaca aacttgtgtc tgatattggc aggcggtggc tgctcttgct gtagctatag 300

cagtcaagtt tctttcatct agtgtgacaa agtccatgaa gcctaccaat gcaagagaaa 360

tttttagagg gttggtaagt ctaacacact accagactac ctgctgctgc acgggttggt 420

agggccagta agtccaacac aaaaccgtct cctgcctggc tgtgctgata atggtatgga 480

tgtggagata accaatactt tgcgaggtat ctctttttat tctattatta ttattattat 540

cgctgatgga gtctgttttt gtttcaccca tttggaatca gcatgtaaaa gtacgagtac 600

atgctaatta ggtgctgcct aaaagttgag agagagagag agagagagag agagaggtac 660

cctggcattt tatttatgga gaagtacgtt tcagattgtt gggacagcct atattattac 720

gcatgtgatg tgcttttctg tatcggcgat ttatttatct agccttacta agttgcagca 780

tctgtcagcg tatagcttga caagtctttg tgtggaagat tatgaataga gctcatatca 840

gttcattact tatgacgtac ggaaacatga gttcatggtt catctggtcc ataatgtgct 900

gttatcgtct gaaaaaaata taattactca ttgaatacat gatatttcgt ttacttgttc 960

tcatactgtg aaaaaatgat aaaatacttt acattaagat aatcttgtca acccgtagcc 1020

gtagacaatg gacacgatga gtgtaaacaa ccaaacggcg actggctctt gtaccagctc 1080

agactgactt ccaggccatt cgaccaaccg gcgcctgact ttcagggcca ggccttgttg 1140

caggtgaata caggcagagc agcttccagg caggttagta cggcaggcaa aggttccatc 1200

caaagtagcc cta 1213

<210> 4960
<211> 1026
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292506_G1, chr8:155535786..155536811, Cluster 30

<400> 4960
cattcaactt ctcaatacca gaccaaatgc ccatatccat ttggaatatg tttcctatag 60

ctggtccaaa taatttagaa taatactggg tagcatgttc tagaatgttt tcattcccaa 120

ctattttcct atcactatct tccaggaaaa ctatattatt tttcctcctt ctcccgtttg 180

caatacgatg gaaaaaatca ttattaccat cccatgcaac agccaatttt catgggacct 240

ttgcttccaa aacatttctt cgtcatctag catcagaaag ttttctctca atagggaaca 300

cctcaactca agctgatgtg cgtctaagtc atcaagctcc tctttctctt ccaacaaatt 360

aagctcaaat gatatttggt ctctcctctt tttttcatcc ctttcatatt ccaatcctag 420

cctttaagat attgcttgca atgcttcaac ttctgctgga ttttgtccaa attacttttg 480

gctctacatg gtttattcta gatttcctca gtaatatttt tgaactcagg atgagataac 540

catccaatct cgaaatggaa ggataactga gtatggttca ccattttctc agattcaata 600

atcaaaggat tatgatcaga taaacttcta ggaagttttt aaattttcac aaaaggaaag 660

atattctccc agcttctact catcaaggcc ctgtccaatt taaccatggt agggacttcc 720

tgattgttag accaagcata tccacctcca gccatatgga tctccattag ttggtgttta 780

tgaatcaatt cattaaaggg tccagaataa ttatgcaaac atgatcttta ttcttctcat 840

atgagaatct tataatgttg aagtcgccct cgcaatgtaa ggctcattgt tgttttcaca 900

gaactcgtca agctctttta aaaaaagatc tttgaatctc tcgtgaactg gaccataaac 960

caccattaaa ttccatttac ataaaagaga tttgtccccg taagtaactt gcaatgtgtg 1020

tgaaag 1026

<210> 4961
<211> 1194
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292896_G1, chr8:157742025..157743218, Cluster 30

<400> 4961
ttatacgtaa acaggttcat atctccacgg gaaacaccaa ttaagatgtt taagagacga 60

taattatgta cgtatagcaa cctcaaattc tcgatgtcgt tttatagtga caagtacgag 120

agtccacacc atcgaataca atgtacttga ttagtcgttg taacctcaca tccttttat 180

aatgtttgtg ggtacgtagg tctacaaccc atgcatatca acaatgtttg ttatgccaac 240

atgcaccatg caatgttagc cgtcgacctc gtcatatcat ccttcgcagt aagtgtggta 300

gactagagct ttatctcatt tgtctgacac gccacgtcag tttggttaga agagcaagtg 360

ctgcccgagg ctgtgacata aggaatgtaa gggtttgcaa ggccacaggt cctgcttgat 420

ctgaggcttg gccctaaggg cgaaggtccc ctagaatgcc aagataagcc cacttcagat 480

ctatcttctg ttgatgaggt tttcaaggat gctttgccaa aatttaacaa tatgccttct 540

ctcggtgccg acagtggctc actggccctc cataggccaa ggtgtctaca tgtgggacca 600

atattgccac aaacacctga tatggcagac ctgtcgtgat gtttatgctt cttatgttgt 660

cggtgcctgg ggtgacgtaa caaccaacaa accctggcta agtagtggcg cacaggggat 720

ggcagagtaa gtcgtggaag cgacgaccca ctgtggcaga agtggtagat accatggttt 780

agccactctt agggtgatgc ttctaggctt ttgttgttgt atgcattgct ccgcaaagag 840

gccagctgtc agacaccacg tcaacctgac ttgtagttca agcatcatgc atagccatat 900

cgcacgattc tcgaaataca agagtcgcac gatgtttcag atgctatgtc caataaaagc 960

aagagataga tagagaaggg cgtctttaat ctcaagcatc atgttccatc ttcttatcct 1020

ccaatactcc acactacatt accctatgta agctcgtaac ctaataataa tgtgtattac 1080

gacagtaaat atattataca ttttaaactt agaaaactgg taaaaaatct taaataggcg 1140

agttatattg tttaggggag ccagatcgag agaatggttg gagacaacat gttt 1194

<210> 4962
<211> 1138
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293703_G1, chr8:161529052..161530189, Cluster 30

<400> 4962
agagagctag ctggtctcga ttgttccacg gatcgggacg accacgccga cgatggccta 60

attgaattgc gcgcgtacgt agtttgtagt tgtactaccg agtagtagta tagattatgg 120

gacgaagcga catttcaaag ccactagcta ctaccatcga tctgatgagt ctctctgact 180

gtgtgtgggt ggccgccact gaactaaaag gttcagcatt catcatatag atatagtcgt 240

gtcaacaaaa gctagcatca tctcagtctc agtagtttta gttaccaggg caggagtacg 300

tacttttccc agttggaaac cttatggtta ctagctacat cattaattat atagctgttt 360

gttgagccac ctgacctgct gatacatgca tgttaataac tattatactc atcctggcct 420

tgcctgcagt gtggtccgga ccattcaact aattaatgat gatgcagatg tctcgctact 480

cccttcctgt gtctacttca cctcttgctg atgtccaata actagtacag cgtgcatgat 540

atccaataat tgttgggttt tcttcaattt tcgtacggtc cgtcccacgg gaacattact 600

agttattagg gcgccacctc ctcgtagatc tgtgagtacg gcttctatat gctataccac 660

acgagatcat ctatcatcct agattacttc atgcattatt gacttcgtct acatatctat 720

ttggttgccg gtacgacgga gacacggtta ttgcataaac agatacagaa caatctattt 780

taaagtaatt tgacaatatc ggctcgtaca ctgaaaaggt ttgggagaag ctggcgcgca 840

gcgagccaat ataatccctc cgatagtgta tgaaaagttt taaaaaagta gtagaacata 900

tagcgtgctt ttgtttgttt gcttatttgt ttgggccagg aataaacttc aaatgacaga 960

ttccatttga aacctgaaca tgtagcgtgt aagactgtca ggctgcgctc tgcgcaggtt 1020

cttaccagcc aaacgaccgc gaattcgatc tgattcctct cacacgatct ctcttccgtc 1080

gaaggtgaac aaggtcgacc aatgaatagt gcacctaatg aatcaatttt atgaaact 1138

<210> 4963
<211> 1322
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293837_G1, chr8:161897471..161898792, Cluster 30

<400> 4963
ttggaatcac caggaggggg aggactgcac agtgtggata taggactagg gtgcatgctg 60

ttggagacgg aggcggtggc agtccgcagc attggcactg tgggccgagg ttgaggagcc 120

cctcaatgtc cagcgctgcc aggaggccat tatggcctgc ctgcagcaca agatggctaa 180

tgtcaaaatg aagctctgcc aaatcctccg ctttgtctac gagaagatgg tgcttgacgg 240

tgcttggcac caccgagatc tagtagttcc ctcttctttg cacagcgtgc acatctgctg 300

gtgtgactcc aggcaagggc cccctgagta tcggctgcag ttactctacc ttggcatcac 360

gaaacccaag tctgtggtga tcacgttggt tgtgatgtga ctccaacctt gagttcactg 420

ccacgagccc atggtaggga gtactaccac gatgataagc cggaggaaga ggatgtagtt 480

atgcttattg actgcttctt gccttgtcta tttttctaga catagaaagc agcagggaga 540

tgtgctttca taggcgaggg ctagcattgc ctgatttagc accattagga gcaaaagtaa 600

tggagtggta aatttgaaag tctcgtactt gccatggtat cttacagatg ttgattgatg 660

gtatttctga aagcgattat cttttgatgc tccggaacca attttcctta gttggaaata 720

aaatatttaa ctatccagat tttctttggc agaatacaac taggccaaga atgataagta 780

agtttgactg tgattacttt tcacttatgt ccgtgtatag aagctagtaa tggagccaga 840

taacttaatg tgtgtaaaag cataatgttt gcaccataaa acattagcta tttttaatat 900

tatttcttgt cattttgtt gcctgtaact tttctatggt ttttatttaa tatgccataa 960

atattgctaa gttgttacga tagcatctga tgaggtgttt gtttcctgtc agttttttt 1020

tcatatttgc ttcgtaagtt tgctaacact tgctaatgcc ataacagagg gcgcaaatgg 1080

aatcctctta ggcagaggtt agatagttat gactacacag ttgaacagca cgtggttggt 1140

tccctgttgt ttacaccaat cctacttctt atacctacaa cttctgtatt ctatgtattc 1200

ttctctatct tgacaacaac ggttatctgg gtgtgtgtga tgctggaaat tgtcattgct 1260

ctaatccaat ccactcctta tgctgagtta actctatggg tgatgaggag gcacagattt 1320

cc 1322

<210> 4964
<211> 1306
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_294168_G1, chr8:163897444..163898749, Cluster 30

<400> 4964
tagaattatt agaaaatgat acagattaaa tccaaacgaa tagtctacta cactatgtaa 60

atagtactac ttctaatgca aaacaatgtt tcgcagaact atatacacaa tatgcttagt 120

agtatatagg ccaagtatat aggccaagtg atggcaacgg gttgagtatg gtgcatttaa 180

atgaatacct aacttacaac atattagtta ttgggtagaa ttttgtaccc gtacttacat 240

taaaaaagtt atatccatat ttgcacctgt cgggtaaata ttcgtgagta tcctatgagt 300

ataagcattt tatatggtaa tatataaaat tttatacctg tatcatatcc acgagtaaaa 360

ttttatactt gtatgtatac tcgcaagtag aactacatac gcatacctgc acccgtcgaa 420

tacgatacag gtagtatcca taccagtaga tacgattgcc atcccgcgcg gtacatgctg 480

caattttccc ctattcctac gttttctccc gtgaaaactg tgaactgcat gtaatttcta 540

tacacttcca ataggatacc cgcgtcccta aagtcatctc aattttgatg tgttaagtag 600

ggtcacacca ccatgtatat atagacaatg aaaaaatatg tataaccctc tgacttttaa 660

aggataatct atctcgttct ctcaccttta aaactgattg tttaacaccc cagcttcaca 720

aaactagaca aataaccaca tgtgcagttt tagttgatga ttttaatgac atgacactga 780

attaagtggt ctaaatttca tcatcaaacc ctatgaatag tagcgcatct taccaatgag 840

acgagtctcg tgatctgtga aaacagatta aagagttcta gggtgtctct gactagtctg 900

acaacgagcg ttagaccata taatgcagtt atgttagggt tttctctata ggatcgttga 960

accctatgga tagtgataat gtcataccaa tgagttggtt tgaggaccta tgttgagtga 1020

ctagagagtt caactggcat cagtctggtc tggtggtttc tcacaatagt tctaatacaa 1080

taagtacaca attgtcgtta tgactcattg gatcatgtga tttggtccga cgggtgagtg 1140

acgaatggtt cgacgatcat gatttttgt caataattat tgtaacaact aattgtccag 1200

ttaagggcta taaatatccc caccaactga tctatattgg tactcttgtc taatttaatt 1260

gtcgaagcaa tacatattga gtgtgaaaaa aggtcattgc ctattg 1306

<210> 4965
<211> 1014
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294176_G1, chr8:163915963..163916976, Cluster 30

<400> 4965
accaacacaa atatcacgcg ttaactgaac agatggtgta tcctatttgg ctcgacaatg 60

ttagatgctt ataagttgtt ttggtttttt ggtatatcaa ttttaccgtg tatttagata 120

taatgtacac aaagatacat agcaaattct atgtatagag atgaaatgac ttatgatttg 180

gaacaaagcg agtatatagt tatcttcaat cgttgcccaa taatatctac tcacgtgatc 240

aaagctatgt attctatctt cttgaataaa tagattccat gactaataat ttgtccacga 300

ataaatcaat acgtaggagg ctgaatagtc taccaactta tttgttatcc tccaagtctc 360

tccaaattta ctataccccc tccctctttt ccaccaccac tgcgccaaaa ttccctaatt 420

taggtttagt ttttgtaatt ggattgggtg tagtaaatgc tataattagc atgcaatttg 480

aatagtccac aactacttta gttaatgaaa agtagtataa actttttct atcatactat 540

tctattctaa acatgctaga aatctatttg tagatagaga gggcttatgt atctagaaaa 600

ggtagaacga cttataaatt aaaatgaagt aagttgaaaa tattcattaa atcatacatg 660

tttatgagat cttcaaatgt tttacattag aaatatacca tatatcttca atgtttccaa 720

ttagataatt caaaagttat tttgtactag ttttgaggtt tgaccaacat tttcttaaac 780

atcatcttta tttatgtagt gtttcattag catttgaccg aaatagggat ctactccctc 840

tatttcaagt ttaagatatt ttaggttttc tagatatata tcttttgtta taaggttaga 900

tatacactat acctagatat atagttaaag aaatgtgttg ggcactcagg atcggggtgc 960

ccaaagaaag accaagagac tcctcaagaa cgacccatcg accaagtccc tgct 1014

<210> 4966
<211> 1227
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294684_G1, chr8:166564209..166565435, Cluster 30

<400> 4966
tagaattttg tatttaattt ttgggtgtac ttgcgtcctc ctagaaataa tctagcctca 60

ccactgccgt tttgtccatg ttgactgaca gtcctgtgtc gccatttcgt ttttgacaca 120

cggttagata ctagaactaa cgcaaggagc gtataaagaa ctaaaggtaa attttaggct 180

aaacaggtaa gtttaaagct ccaagggcaa gtcagatttt ttagaggcat ggaaggagtt 240

ttctccaatt gcctggatga agggactgaa tgagggtcac ttgggcttta gtggatttct 300

atatttgtct gttgtttggg ctaggccatt ccagtcccag catgtccacg gctcttctcc 360

agtcttcccg cttctgagaa tttgggcatt gcatcatcgg ctcggccttc ccgctgttta 420

gctcactttg atttcagtca tcgtaacagg aatgttcaga tcgtgtctcc aaggtttcgg 480

gttgcggtgc cactgttgca ttctcttcta ttgcaccact gcattgatag attttgttgt 540

ggacttattc gactattatc aggtctgagg ctggaggcct gggacctgga ttcgtgtgac 600

caagttcccc cgcggcgact actttcagat tgtatgcgcc tttaaacaac gaaatatttt 660

atatgtccca tgtcacttag taaattgcat acacaacttt acttttccat tttccaccat 720

tccaagacat gtacacggtt ggcttcattt tttaaattcc gcatgttgca gatttcttcg 780

atgcttcgaa tcatcacaaa tcccttctga cgagctgcac cttctaccat accaggtacg 840

gctacccaga tttacaaagt gcactggaat ttaatatgct cttttgaata ataagttcca 900

tgctaaaaaa acaaaaaaca aatgaaacca ccattcatgt ttcgttacag aacatgtgta 960

tatctatgtc tgttgttgtg cacacgtttg catacaaaat atggccacac actaaagtac 1020

ataaattttt aatgcacaga atacacgttc ttaaatacaa agacgcacga cgtagtaatc 1080

tatacattca aaaacatttg cacacatgca tgactggtgg catggtgcca cgtacaaatt 1140

gccatctgca taaaaaaaag caaataacta acctacagta aaacagttta tgtatgcatg 1200

ttattatgtt aaaaaaatac agtaaac 1227

<210> 4967
<211> 1022
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298733_G1, chr9:8185153..8186174, Cluster 30

<400> 4967
taggtactgt ccgtaacaga gtcagcggtg gagtggccga acgggtgggg ctccaacccg 60

gcctcgaccg cttctgattc catggagccc agcccggtag atcacgtatg ttggagatca 120

tggcctctca aatcacattc ttagagcccg cttctgatac atagatcatg acctctcaaa 180

tcacgtatgt tggatccatg gaaaaaaaat caatgacctc acatgtcaca aatgggttgt 240

gccagaagcg cacggtagga gcacttagag aggtcattct atttgttatt ttatggacta 300

aaagttacta aactttagtt tagaaggtgt gaaccaaaca ctcccttagc cgagcaatag 360

cgaaaaataa attgatgagg gagtgaaaag tgtggttttt ttgctaaaat ttgagagtta 420

aacatctttt gcaatttgtc ggtgcagttt ggattgtatc cgcattgctt aaagatttca 480

caatctcgcg atatttctca tatgttcgag gtttggctca gagaatatgt cctttaaatg 540

gtatcttgac ctttaaaaag ttataagtgt gcacattctt agggagtctt aagcttatca 600

tgtgtgtagt ggttttatta aaagaaaata gagtcctcga tgaaaagcag catgtttcaa 660

ctttaagaat ttaatgattg gtatcatata cacgggtatc aagttcaaat tggtatcata 720

tatattggca tcaagatcac ttaatatctc ttacatgctt tctccatgca ttgtatatat 780

taaaatcatg tttgttttaa tttacccttc tactattgat aagttttact tttatgctaa 840

tatcaataga atatcatttt catcatatgt attaatgtat ataggggggag cttaattaca 900

atataaaagt catttttgt gaccaatctc ctatgaaaga actttcatat tataaagggc 960

ggaataaagt tttaaaagtg gcaaaatgga tataggatca caaaatttgc ccattcctag 1020

tg 1022

<210> 4968
<211> 1008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29890_G1, chr1:183085045..183086052, Cluster 30

<400> 4968
ttccaaataa tccacacagt gtacatcacg atccctgcaa tataatagtg ctctgaagat 60

cattcggtct attctgtaga gtttcaatcc accagtcaat ttttttttg tgacgtggac 120

cattttaagc tcactcaagt ccaaccgtaa aacctgaatc cgcactcaaa aataacaact 180

ttaaaaagtt gaaggacaca aaacattagc ttgagccatg ttttatctct gcgaacgtac 240

atctctacta gagaccgagc cagcataagt cgccgcaaag cacacacgct tctcgcaatt 300

tacatgtgca ttgccacgac catgagagac agaacagcag ggacagttta gaaagtgagc 360

ctagcttaac tggtttgatg ggaggtgatg tctgtcaccc aactacttag gttcaagtcc 420

catcgatctt agcataaatc taggtgccta tttctactta attatcttct tgatgatgat 480

tacaataaag aaaaaccata tggttctttg taggcctctc tcttgggggt gggggacgat 540

attgatagat gttgattctt cagtcaatgc aagcacactc aatgaagtgg ccgtatatat 600

atttcctgca tgccgtcaaa cgttagtgtc gccttcccaa gaaaacaaat aaactataat 660

tattggcgct ccatgatata tctagctagg atcatattgg tgttaaaaaa ttacttggat 720

tcgaaatcta tccagatttg ccaatgcaag cgcacgtact actgccgccg tagtggaagg 780

caacttttt cacaagattg atgacaccat atacatatgt gagacgctaa ttaccgatgg 840

ttggagatta gtcatcgatc gcttccatct cgatccatat acatatgtgc aatgtcgctt 900

cgctttgtca gagagagaca gccatgtggc ttcactatcc acatgattgg ttgattggtc 960

ggtggcgtcc agacccacgg cgtcgcgttg accgcactga gctcgtgt 1008

<210> 4969
<211> 1110
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299630_G1, chr9:11458477..11459586, Cluster 30

<400> 4969
cgacgtcacc tcgaccccaa cataatatac acaggagcac gtatattatt aggatcgtag 60

gcccacggca aaaggataag gatgaggagc agggaggagg gtttgagtgc tgctcaatca 120

actgttgtag tggttgatgg ggttagctag cttgtcacct tttagaccac tcgtcctacc 180

gtgccttcag ctccaatagg actacatgaa caagctcaaa agttgctttc attgtgtgcc 240

agatgtctaa tggtgggcgt tcgtttgcca agacaaaaca ggatagtgta agtggaaaat 300

actatttctt ttttttaaa aaaaaattaa gcgttatggt ggcgtgtagc attttttttg 360

ggtgcaactc tagtgactat ttctatcttg cactgtagag ttggtagcaa atatcctttt 420

ttttctttt gccccccaag ctctctcgcc ttctgttttg acgcttgttt ggtgtatcca 480

acttcgaaac tggcatcatc ctaataaatg caaaaaaaaa acatacagtt atatgccaag 540

ttgccaaccg atgcagggaa ttactgcctg cttgtcttgc cgtttcgccg cgtaaagaat 600

cgcttccaaa aagtaaacgc atctagaacg gcgccattcc tgctgaactc gcttcgttcc 660

cttggcacca cgtgagagtg agagtctaga cgtgtacgaa tgaaaagtct gcaggtgtgt 720

tgcgctcatg tggttcgaat tgattcgcaa cgcaagatga tggttgcttc atattttgct 780

caaaatacgt acatgctctc tctctctcta actcattgtc cctgcaaaag taccatcggg 840

aagttttttc ctttctttct gaatcttttt tccagagggg gcctaatacc agcaggtaga 900

ctcaccctca cccatgattc catgaacagt acacaaatgc acaccctatc ttgtactacc 960

tccctcccat atacactagt ggacatgttg cttattaccg ctgaaaacaa agatttagca 1020

cttcaaaaaa attgtcgttt ttttaagatc ttaaggttac ctgatcggat tttcatttgg 1080

cttctgcggt agtagtttat tccaaacgtt 1110

<210> 4970
<211> 1009
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300039_G1, chr9:13762956..13763964, Cluster 30

<400> 4970
taacagctta tgcaagcaaa tcaaacatag acaaactgca cgcgcgtaca cctccactaa 60

caattgattt tagggtggtt gatttataag catgtgatag ggcatttgag ggtaagttgc 120

aaacatgcga gattgatcaa tgaccagttc ccagcgaaga cttttggttg attttttttt 180

ccaacgtctt attttgagaa tctggactgt aagaaaacgt tacgtgcgga agaagacgga 240

ggagtctata gtgtttagga tataagaagc gacgttgttt tatacgattt taactaaagc 300

tacgattcgt ttagctacca aaagctgatt attttaagct gattatttta actagtagat 360

catgttatgt gtttctttcg atgctcagtc agccatgtca ctgcgggcgt ctgttctccg 420

catcgcttgt cctggtgctg ctgttttatt acttattagt acatctctct tccggtttca 480

aaggttagca aacctcgggt tccttcatct ccttgtttat caattcgtcc ccttgttgaa 540

tttcctcttt ttttttttg caagctcgtg tcgtcgtatc tggaagttgc agggaataga 600

tgcacggtga agggcggtcc atcttggcac ctaacacatg cgatgcgccg gttgctgcca 660

agtcacaagc tgatgactgt attccatgta gtcacgtcag tccatcatca ccggcagcat 720

tttcgcgtgg agggaaaaag atacgtttgg tttcgctagc tgactaaatt ttagttcttg 780

ccataccaga tatttggttt aaactttata gctcctatca tattgaaagc cgtcctaata 840

ggcattcaaa aactcgacgt ggccgttaaa ctttagtcct tagaaccaaa cacctcctaa 900

accaatttct ggcctttgta gtagcttcgt ttctgagctt tcaccgttag aagcagcacc 960

cctagaatta gcctcgctcg attgctccta gtaggatttc atggaactt 1009

<210> 4971
<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_302154_G1, chr9:26957871..26958889, Cluster 30

<220>
<221> modified_base
<222> (685)..(685)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (685)..(784)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (686)..(686)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (689)..(689)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (690)..(690)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (691)..(691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (692)..(692)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (693)..(693)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (694)..(694)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (695)..(695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (696)..(696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (697)..(697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (698)..(698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (699)..(699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (700)..(700)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (701)..(701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (702)..(702)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (703)..(703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (704)..(704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (705)..(705)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (706)..(706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (707)..(707)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (708)..(708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (709)..(709)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (710)..(710)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (711)..(711)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (712)..(712)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (713)..(713)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (714)..(714)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (715)..(715)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (716)..(716)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (717)..(717)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (718)..(718)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (719)..(719)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (720)..(720)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (721)..(721)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (722)..(722)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (723)..(723)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (724)..(724)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (725)..(725)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (726)..(726)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (727)..(727)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (728)..(728)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (729)..(729)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (730)..(730)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (731)..(731)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (732)..(732)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (733)..(733)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (734)..(734)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (735)..(735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (736)..(736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (737)..(737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (738)..(738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (739)..(739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (740)..(740)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (741)..(741)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (742)..(742)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (743)..(743)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (744)..(744)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (745)..(745)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (746)..(746)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (747)..(747)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (748)..(748)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (749)..(749)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (750)..(750)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (751)..(751)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (752)..(752)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (753)..(753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (754)..(754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (755)..(755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (756)..(756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (757)..(757)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (758)..(758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (759)..(759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (760)..(760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (761)..(761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (762)..(762)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (763)..(763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (764)..(764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (765)..(765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (766)..(766)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (767)..(767)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (768)..(768)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (769)..(769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (770)..(770)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (771)..(771)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (772)..(772)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (773)..(773)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (774)..(774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (775)..(775)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (776)..(776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (777)..(777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (778)..(778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (779)..(779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (780)..(780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (781)..(781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (782)..(782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (783)..(783)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (784)..(784)
<223> a, c, g, or t

<400> 4971
agatctagag attcgtcatc atcaggttat tagttactaa taattattag gcccccgaga 60

gtgctcactg ctcacccgaa tgtagcattt aggcaaatcc aacccagcac agccaagttc 120

agtttcttcc acatctccct ggatacaaaa cagatcccaa caatcgattt ccaattctct 180

cgtttaagaa ctgaactaaa agctaggcag cacacgatga cgatgtgcag taggaatcaa 240

tcaatcgagg ttggcagcta gcacctagat cgatctccct gcttgcggct acagctgatt 300

catggagaca gcaaaaaggc attcatctgt ctgagtgact agtgctgcat cagatggcca 360

tgcatgcatt atccattagc actggaatta gtggtagcca ggcacgtcaa caagcccctc 420

taaatcctct ccctgttcat catagaatta gaagcaagta gctagggtct agcccgaaag 480

gacaaagaaa gagatcaaat cgctttgaaa tttcgcggtt ccagtccaat ctgaacgcac 540

caggggtcaa tggagatgca gactgcatgc aggctgtcta ttggttgagg ggatacccgc 600

tctcttgtct ccgataaaat caattttaaa tgctatctct tcgctcctta ttccaaactc 660

catatttgaa tatacatacc aaaannnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 720

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 780

nnnntactgg tcctcgggct atagctagct tagctgctgc tagttccttc ttttcgtcct 840

agactagata gaagagacgc cgcagccgcg gaggcgacgg tggactacga gcacgaagca 900

gctagcaatg cacgcccacg gcaaaaaagg gtgggtgtgg actgtggaga ttatatattg 960

actcagctcg aaggaggaga aaagtgtacg cggcgtacgt atataagaat tactctatt 1019

<210> 4972
<211> 1040
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_302339_G1, chr9:28402467..28403506, Cluster 30

<400> 4972
cacagaaaca gcacttaaat cataatgctg tttagttgac taaggaaatt gttgttcacg 60

caacaaacat gactttgcga tccatgtcac aacttgttta taaaatcatc atagggcatt 120

tgaataacct gagaacagct tcattccctt tgcgaacaac ttccttgcta attgcaccat 180

tggcaaccta atagaaaagt gagttaaaca aaagaataaa aaggcattac ccaattgtca 240

aatatatgaa ggaaaatctc tcacagcaat aaaataaggt agcagatcgc cagtggactt 300

ggagattaca gcaaaatact tctgatgttt ctgcataacc tgtagttgca attctgatta 360

aaaaaatgca gcacactaca atggattatt ttttctaaac aagattacat gttagcagct 420

tataagttta gtcattgaac tgtcaagaat tgaagaaaag ttagcttcta ggcatccaca 480

ataaaaggct gtacataccg taatcagtac atctttagga agttctaaga aggaatcatc 540

atatcgacca aggatgggca caggtgcctc cacaagattg acaacctgca taatgtggtt 600

tgaaataact taggatgaat tacactttct gccaatgaaa attaagataa aaataaaaaa 660

atggaagaca tctacctcct gcagcaagct atcaggcgca atgaaatcgc caccaacacc 720

ttgagccaat acagtagagg catgtaagac tttttccttc cgctcctgca gtggaatatt 780

ttatggaaca ttattacatt aacatctaga gtgctggagc acttgaaaaa ttacgaataa 840

atccaccttt ttcctgcttc atgcaggata ctaaatttga ccaagaccaa aagttcaaac 900

ctatatttta atgacaaata ttgcttgaga tttgatgtta agaaacctcc aaatcaaaca 960

ttatttagtt agggcagatc cagtgttgga ggctcctaca tgagtttggt ctggacaaag 1020

gataaaccga ggcaagccta 1040

<210> 4973
<211> 1390
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_303348_G1, chr9:33729390..33730779, Cluster 30

<400> 4973
gtcaaaaatt atggctcata tgtgatccgt gaattattgt cggtcaaaaa ttatgacctg 60

tactcgcctg ttaaattagt caaattagat taggtcggat ttttttgga caagtcagat 120

tagattggtc gggttaagtg actcatgatt agatctaggg aagagggcct cgcgtccctc 180

cattgggtgg cggctgagtg ccgtccttac atccaactat aggtgacttc catgtgaaaa 240

atttaaaaat ataactggtt cataccgtcc agtgaaaagg cgctagacac atatttttgt 300

aatagtttag tttcaatata tggttttaaa gttttttaaa tgtaaaaatg aaaaggatac 360

ggcaattgtg caatcagtat gtgagcgcgg cccaacttgc ttctaacact gcagcccaaa 420

ccccaacaca tgtacggtac cagcacctgc ttgggagagt tctttagcat tatagaactc 480

ccaacactgc gttttactgg aatgaagctc tgaaggcgtc gatctctaaa ataggactgt 540

tgtggtcgtt ctattcgccc ttttggaagt gaggtctgaa tctggcggag gtgatggtga 600

ggtatccctt tcctctgctt tgtcatccta tctccggcga gaccgtccct gcctgggacg 660

ggcggccggc tcccaccagc ccgaacatgg tgttcgttgt cgttgactcc aggtctgcgc 720

cgtcttcgcc gcgggccctg ggatctgttg cccctgccct ccctgtgcgg ttcgaactca 780

attgcactag tctgcgtgtt tcagtaagga cgtgcaggtg tttgtatgtt gcttatacag 840

ttatactcac ttattggttg agccaaaaat acttcacttt catgcggctc aaccagtttg 900

tatgaattct gaaaagtgac catcttgagc atgttatgga aactaacagc ctcttgctta 960

tgcaaacttc atcgagagac tggtcaattg aactaaacag gtaagtaaac tgaatgtggt 1020

ctgtaactgt gaaccaatgg agcagcacca caaatatact acagaatgtg gccatccaac 1080

cacaaatcag gttctgtacg ggacgtgttc tcctgaagca ccaattcttt ggcaagaaac 1140

atggcccaag gtcagccaac cacttaacag atacatgaaa ctgtactgaa accaattgtt 1200

atgtgttcaa ctcactgctt gatagtaata cattgcaggc ttctactgac aaactgaaat 1260

ctcatgtctg tggaacttcc cagcaaactg aataaataaa atagaccgac aaaaactggg 1320

cacaaaaaca gacttgtagg acaaacacac taccagctgt ttccattaca ttgaatactc 1380

caaaccattg 1390

<210> 4974
<211> 1008
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_307208_G1, chr9:59843915..59844922, Cluster 30

<400> 4974
taatactgat gcagtgactt tatgtgtccc ataaacacaa aatggacccc gccactcccc 60

aagtcctaca tcaagatgac aatagagatc tgatctttga attcctatag aaaactccac 120

caaatattgt atttcataat tgtgataggt ttaatttttt tgtacaagaa tgaaatggtt 180

aaaaaaactt cttcataaac ttatgtggga ccgggataaa gatttttctc ccgcatgagg 240

catagatgga aagacatttt gacggggaat aattctctat tgacattcta gatcccacat 300

gtctccactc aacacataga tcacatcttc ccatgctcac gtcttgatca agggcacaac 360

aatcttatgg ttgtgatcca ttacacacct tatgaataaa tacatggagc atgaatcggt 420

aggtgaaccg acgtttgtca tagcctcctc ttccttacaa agtcataagg ctcgatcttc 480

ttgtaagcat ggttagtgga aggaaggttg tcaccgctac ctcaccgtct ttgaatcgag 540

agttatcata ctaatggcat catccttcaa ttctgaaagt ataatatatt agtttctatg 600

tatctagtgg ctagagttat gggtataaga tcctagatca tctaagagtg atatcaaagc 660

atgaatgttg cctagacatt aaccatacat gtgcaaaatc ctttggtttt agggatgaat 720

ccgagaaaac ccctaaaagg ctaggatccg tccattagat agcaaaaccc acaaaaggct 780

tggatccaaa agagtttcaa aaatcttaaa tttagtcaac aacaatagtt aggagtgata 840

aaacaaaatt gatatacaca aaaaaattaa ctcctaaaat ggtagtgaca tcttcttccc 900

aaggctggat gcaacgggag gtggtatcaa tcgcagggga aagtcgatac cgacttgtct 960

aattctaata gtggttggtt cggctagtcg gttggtgggt ctatcaac 1008

<210> 4975
<211> 1101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30777_G1, chr1:189484672..189485772, Cluster 30

<220>
<221> modified_base
<222> (962)..(962)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (962)..(1061)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (963)..(963)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (964)..(964)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (965)..(965)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (966)..(966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (967)..(967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (968)..(968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (969)..(969)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (970)..(970)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (971)..(971)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (972)..(972)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (973)..(973)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (974)..(974)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (975)..(975)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (976)..(976)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (977)..(977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (978)..(978)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (979)..(979)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (980)..(980)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (981)..(981)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (982)..(982)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (983)..(983)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (984)..(984)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (985)..(985)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (986)..(986)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (987)..(987)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (988)..(988)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (989)..(989)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (990)..(990)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (991)..(991)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (992)..(992)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (993)..(993)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (994)..(994)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (995)..(995)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (996)..(996)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (997)..(997)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (998)..(998)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (999)..(999)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1000)..(1000)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1001)..(1001)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1002)..(1002)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1003)..(1003)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1004)..(1004)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1005)..(1005)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1006)..(1006)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1007)..(1007)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1008)..(1008)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1009)..(1009)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1010)..(1010)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1011)..(1011)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1012)..(1012)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1013)..(1013)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1014)..(1014)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1015)..(1015)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1016)..(1016)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1017)..(1017)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1018)..(1018)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1019)..(1019)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1020)..(1020)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1021)..(1021)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1022)..(1022)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1023)..(1023)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1024)..(1024)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1025)..(1025)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1026)..(1026)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1027)..(1027)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1028)..(1028)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1029)..(1029)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1030)..(1030)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1031)..(1031)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1032)..(1032)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1033)..(1033)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1034)..(1034)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1035)..(1035)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1036)..(1036)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1037)..(1037)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1038)..(1038)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1039)..(1039)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1040)..(1040)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1041)..(1041)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1042)..(1042)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1043)..(1043)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1044)..(1044)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1045)..(1045)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1046)..(1046)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1047)..(1047)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1048)..(1048)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1049)..(1049)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1050)..(1050)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1051)..(1051)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1052)..(1052)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1053)..(1053)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1054)..(1054)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1055)..(1055)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1056)..(1056)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1057)..(1057)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1058)..(1058)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1059)..(1059)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1060)..(1060)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1061)..(1061)
<223> a, c, g, or t

<400> 4975
atcggtcatc gctgtgctga gcagagatcg acgttgatac gcggctgcag ctttctcagc 60

gaatgcgtag agatgaccca cacatgtcct gaagttccat ggattgtccc cgggattctc 120

gcccatcgct aatcatcgag ggttgcggct gacacagttc gtgcactggg ggcgaccggg 180

gcatgatacg aaggattttt tgccttggac ccgaccacaa atccaaatct tcctggggcg 240

tgggctgctc cttttcttcg ctaaaacgtt taagcaaaac acttgtctgt gctcattaaa 300

ttttgactct gcggtgtaca attattacaa tcttggctct tttcgaccca cggcttccga 360

ttccgtcatt tcctgctcgg tcggtcatca gcataagtca taaatttttg atagctgagt 420

tagttatcgc tatgatccgc acaacaatac aagggcagtg ttttttattg ctgaacgaga 480

ctcgctcgcg cttatgccct gcttgaggaa acttagcaat tcgcgcattg tgcgttcccc 540

ggatccagga gaaatgaaga cgacttgtca atgcaggtga gcagccggaa ttccaacttg 600

tctgccaccg agtattgcaa aaaagacagt tgccaacaca gaagccattc aacagttctg 660

atttttctgc acctaacctt ggggcaataa cggcttatgc taccccttata ttcagaatcg 720

gctcatcctt atggcatgta ccctgcggga ttataacaat gaagccgggc atagaattca 780

gcgcctctta gttttagacg gactactgac ggatatcttg taagcttgcc catactattc 840

gaatgcgccg ccctttttaca gtttgcatcg tagcttatca gacttgttcg tttctgacgg 900

attccggggg agaaggtgct atgaggggggc tggaatcatc ggaggacaca aatgaacagg 960

cnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ngtttatcct ttagttctat 1080

ctagaatcag cttgattcgt t 1101

<210> 4976
<211> 1356
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_311494_G1, chr9:86534936..86536291, Cluster 30

<400> 4976
ccagcagata agactgaaaa cttcagtcaa tagatacgag aagttactat tgggggagcg 60

cctttaatcg atggtcttta tagttttgga ttatttctaa atctgttgta ggactcacaa 120

tataagcttc agattaaata ccttcgtaag ggatgagacg atagcttcat cagaataaag 180

cagtcggagc agtgaacaag aaggtgaaag aaggctcgag tgacgtatat agtacgtctc 240

taatggggaa ataatataat gtcctcgatc gatctcgtag aacatgagtg tagagtttaa 300

tacacaaatg taatttcatg tgaagttata cgtagtgttg cccctataac tagaggtaca 360

atactcatac atgcagacac ccttttagg aagtaactag tgttttaatc ctcgagtcgc 420

tctgtgtcca aagccacagt aagtaagcat cattccgaag gtagctttgt aattatatgt 480

aaggaaaggc aagatagcaa atgaacaaag catatatgga atgaattgtt tgatattata 540

ttctcatatc ctgcttcatt atgtatttat gctcatttaa tcttcttccc tcagattgat 600

acatcattat aagtgggtca atgagagaag aaccgtatta ctttaattgt gtttccctat 660

tttggttctt cagggaaaaa tcttaatagg tgaccaacag ttacaatcag gtcctcaaaa 720

acataattga caatctccta caatcagatt ctcaaaaaca taattgacaa tctcctcgcc 780

tacttcacat agacctattc cgatggtgtc aaatttacta tgaaaccaga gacactacca 840

aaagaggtca atctctccac accgttggag gaacgcactg ccactctcca ttaagaaatg 900

aactacatca tcctccaaga catggtgagg cagtcagagg tcctactcaa ctcttaggag 960

ggagttgtcg tgggagtggc taaataattt tggctgataa ctacaccgcc cttgtgctca 1020

cttttgggtc atatcagggt gagaataaat tcaataatcg gccaatggag ccaatgcagg 1080

ttagttcccc tgagggcacc agggtggata tttctcgtct accgcactga catgccacat 1140

gaggccttcg acatacattc taaaggcttc gtgtgcagac tgtgctacag accgctaaga 1200

gaagggaaca ctccccttag cagccaacac ataccaccct agacaagggc aatgctaacg 1260

agcaggagct gctcgagtgg cagataaaat tcggcaatgg tctggctctt agcagtcagg 1320

gcccattttt ttggaggcac caacaccgtt agcatg 1356

<210> 4977
<211> 1335
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313549_G1, chr9:98899117..98900451, Cluster 30

<400> 4977
gaaaaagaga aaaattattg ttaaaaagtt acaactattt gctcagtcct atataaaact 60

caactgtggg acatcgacag agcatctgat accatcaaaa gttagtgaga ctgtgagtgt 120

tacaaagggg agaatcaccc ccctttgtgg aggcatataa ttggcatcaa taatagccaa 180

atttgtttca ttgtagctga caagcacttc tacatgactg gcaattactt ccaagtccct 240

tccttttat gtaatgacac atctacagtc atgccagtca aatttgcatg tttctccttc 300

agtgcatctt ctgatactga cggatatgag tgctcatatg ctgtaaaacc aatcaggaca 360

tgcttcttgg caaaattgtt aagctatttg gcggattcaa ggctttctgt aaagcattgc 420

agttccttgt ttcagttcat actgtaactg caaacagtgc agatcatatg taatgtaccg 480

agtgttgatc acttaacaga cctgccagaa aggtaccagt tagttgaaga gaagcgcgaa 540

cagagagtcg aagagaagcg tgaatccaag caatacacca aagccaatcc agtatcactt 600

ggcttttcga aatattccat gggacttgag gataagcaca ccacgtggtt cagtcgagcc 660

tggaaggatc ttctgccaaa tttgtcccaa gaactcgttc accgagacag cattttgcgc 720

atacatcatc ggagaggtcc agtatccccc aaatccacca tttgttcatg tcttctggaa 780

gctaatgaaa ggaaggggca actagcagca aaagcttcaa aatgagttca aaaccatgga 840

acaggatgac ggtttttgac ctctataaag agcaaatcca cctaaaagca taacaattaa 900

aattgcaaat gatccaaaga catatgcagc aaacatgttt cttactgctc ctgcagtgaa 960

ccggaagagc gaagctgcca tctgattagc tgctaagaaa agcagatact gcttgaaaag 1020

cctaaggata gtgaaactct gtcggtttgt cataaaaacg agtaagaata ccaaatacaa 1080

gttattaaat acttagggac acgattattg gaacccatct gattacatct ggatcaaatc 1140

taatggcata atcagttatg aaaatgaacc caccaacctc aagaaatgtg atggggatct 1200

tgagaattca tgatggtaca gtgcaagtcc aaacaggata gaagagaatg gagtggctta 1260

aaaatggtga gtaagctccg agaagccatt gaatacgaat atgagcgttg taaagaagag 1320

tgcacactgt taagt 1335

<210> 4978
<211> 1033
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_314268_G1, chr9:102344239..102345271, Cluster 30

<400> 4978
agtagagtaa gcatggaact atacatggct ccttgttttc ttgttacttt ccaaaatgga 60

ctggcgctaa taatctagca aaaacagtat gcttccaata aaaataattc ttataattgt 120

tttgaagtac aaagttatgc ttgcaaacaa taaaattgta ctatcttgtg agcaccagct 180

agatttgctt ctaccaaagg aaagctgaaa atgatacgga tggtgtatct agggtctgga 240

aagattctgg taaaccctcc attatattat cattctcgaa agtcccacta aaagaaagca 300

aaagatcgtg cattaattat gccatgctag ttttttcaaa taacgaaatt ctaaattgat 360

aaaggagagt ccgttgcagc tttttattgt acctgtcttt tttttcactc gttctttcaa 420

tttccatttt cccgagctcc tacatgcaaa catactgtag tgcgtgggtg tataaacttt 480

gaggagtact ggtgccaacc tacctactta ttattatata aacaacatga gagacaagca 540

agcatccaag gaatcaaatg caagtaggtc atgacatggt tctctctttg aggaacagat 600

taagaagcca tgcatgcatg caaagatccc aaggaaatgg agagagaaaa gaattcaaga 660

agaagatggg acctgccaaa agggaatgat cttttcacag agaagaacag aggagaggca 720

gggaacacgg ccaggagaga gaggagggat taaggccggg gcaggagcaa gctggccacc 780

aaaaggggtg gcctggtttt gagaaatccc atgattttgt ttgaggggac aggagacagg 840

gattagggtt ggcattgatg catgggatca tgccactgcc atgccctccc aaagacagct 900

taccagcata tctggggcat agcacagaaa acaagaaccc agacccccttctccctgggc 960

aggagaggag acacacctac ttttttttcct gccaagggca cattagaaaa acactagtag 1020

gtgtcttagc atg 1033

<210> 4979
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31481_G1, chr1:193491124..193492206, Cluster 30

<400> 4979
gcataatagc aaaaaaaact agcttagtcg gtctcaaaaa tcggtttagc cacttttaca 60

acacttggtc taagttgact atcaacacaa aaagatttat aatcattaga aactttatac 120

aattcatgcc aagaaatcaa acatgtccat acaaattatg tttattatat ttataaattg 180

ttttcacatc aatatatacg gaaattagat agagacaaag gccaaaaatt catggggttt 240

cgattggcac atgtggctga tgaacacacc ttgtcctctt gccccctcct cattcacctc 300

gcgccccttg cctccatcct cgttcacccc gcgccccacc tcccccaccc ataaaactcc 360

cagatccact ccaccttgga ccagatcaac acaacaagga tccttcatcc aacaaatgcc 420

aatgtctaat gattgaagat cttactacgt ggttatccat tgtaaagttt agtggtcttc 480

gatacaaaac ggaagtcgat gataaacatg acataacgat ttagaccgct gaataatgta 540

gtaccctaca tcctatatat tgaatttttt aatatgaact agtacaagag tatccctggc 600

tctttttata tagtctagag gacttctact cctagttggc tatgatagta gagtcctaat 660

cctattacaa agattgtatt tccataatca actaggtcgg tttacttgac gtggaagcca 720

aacctccttg ttccatgtat tcctagcagt ctataggttg gcccatctcc ttgttgggta 780

gtcagtccta tgaggaatcc ttagggtctt ggtccatcaa acctccaagc tcaacatggt 840

tcaaatttaa agtttacgga atcttcaaat tattgctaag tagaatcaat tagcatctga 900

gtaccaactt gagagaagtc atgtaactct ttgaatgatc tttctaatga tgttgagcca 960

tctcatcttg tttatgcttg ctatacttat tgatttgagt ttatctctca ttcaatcttg 1020

ttgctaactt tctttttgca catattattg ctagccacca aaaataagaa tgtccgaatt 1080

ata 1083

<210> 4980
<211> 1030
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_314844_G1, chr9:105186625..105187654, Cluster 30

<400> 4980
agtctaattg ttcctttatg tttgttgcac tgctttgagc aaatcatctc actagttggt 60

atatgtgttt ctcgtgtgag tattgacctt tgtttttcag aggactatca gggttagttg 120

agatcgaagt catgattgtt tttgaacaaa aaaaaattat tgtctctcat ttacccccctt 180

tagtcctcta gtttggtctt tcaacatagc tatcctagta aatcaaaata ctaaaaactt 240

gactttgata ccaaatataa gcaaaaatag ttcgctaaaa cttaaagaat tgtgatagct 300

agcacaaatt gatttaacca gaataaccat cttttatgtg cggagcataa agaaataatc 360

gttcatgtgc taaacagcgc aaactcacgt tgcgccatgc ttgcttcttg caccttttgaa 420

tttgtttatg tctctccctc tctgccttct acctgtttct gttcttttga tgatgaaaaa 480

ggtaatctgt tttatggtgt attttgattc acagctaatc cacgaaacac tctgataagc 540

actgccgcct tctatatatc tctctctctg ttgtcatacc aaacggtgct atattctgac 600

cgagtaactc atatttgcat acatacaatt tcatcttgtg caataaacaa cagccaacgc 660

ctatagtcat gaattaaagt cttgttaaag caagcaacag cgctcttgtg ttttacacca 720

tgccatgcat gcgtgacgca cacatgcatg ttcatgtaaa gcatgtcgat tgatgttgct 780

acttgcctac ttgcatgtct aacatacgaa gttacaatta tcaccacctg taccgttcga 840

gccacatatc agttaaccca ttaatttaga gctgcttaga taataattac tttatcttat 900

attatagaac attttaattt cttgatatat agatttttac tacgtttaaa tatacattgt 960

acctagatat ttagtaaaaa tatcttgtac tctaagtaga agggaagaaa tacatcctgt 1020

tcgctggtta 1030

<210> 4981
<211> 1012
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_315280_G1, chr9:107626730..107627741, Cluster 30

<400> 4981
aataattagt caaaggataa aatatctcag accgagggag cagttggtaa gatttaagca 60

caatatcacg gttcatgact tacaatatat atgatagcag aacagagctt tcagagtttc 120

ataccaaaat gtaaggacga agccacaaat ttcctgtgtg ttatactact attccttaac 180

ccttttgacc aaaatgctta aaaggacaac aaaactaaat cgaagttgca ggcgtcagga 240

gattaaggcc ggtcatctcg ttagtgtccc agtgtaaatt ttttttacag caatcagaac 300

atggagaata aagtgagatg agctccacat gggatgaagg acaagcacac tccaaaacct 360

aagcagccaa ctctagctag ccttcaagat tctcactggg attgcacaca tttgtagact 420

aattaactag tctgcgaggg gcctaaaaac tactacttaa ttcgctcctt ttgataagat 480

tgctggaggg tgtctgttgc atgaagacgc aacacacagg gtccagtcca gattattacc 540

tctctaagca gttgaccagt caaaaaatga ggcagtgtgt gcatcaaact acacgtacgg 600

acagttggtc cttgtttcac ctttgccccg cattggacca aaccatcttg ctcacacaac 660

tatcgatgaa ctggaaacca cgccagctgc ttcacgcatg gctgccgttt tttcctttct 720

gtgcctgtcg tccccttccc ctctcactgt ctcacacaca gatcctagca tatctctctc 780

ttagttaact agacacaaca gctctttcca tggacacaga gacgagcagg acaacccatt 840

gactagctac attgcattct tcgaacagtt gtttccagag gtaaagtacg gagagctgaa 900

gaaaaggaaa tttactggca agtgtaagaa gtgaatcaga ttatactagt aattctccac 960

cgcccaatac caatgtgcgc tacaacttgc aatgctgcaa agaattaatt ag 1012

<210> 4982
<211> 1263
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31611_G1, chr1:194459328..194460590, Cluster 30

<400> 4982
ttattcattt tctgttctgc cttatggaat catttgtaaa attgtattcg caaattgcta 60

gtatcaggac ttggaatctg aacattatat agtaaattca tatgttaaat atataggttt 120

ttaattaagg actagtgtac tttgtgtgat ctctcacagt atactattct tgctttccct 180

ccagtttcct gagaatggcc agccagctga aggctcgtta tctgacctgc taattatgat 240

ggatcaatgg taatgaaaca tgtgaacttt acgaaacaac cattggttct catcgaaaat 300

gatctatgct gtcttaattt ctacctaatt atccaagtaa ctaaaattca ggtctatgga 360

agaaaatctg aatgggctga gcatggctga gatagcaggc ttggaggaag cattgacagt 420

cgctctggca gttatcaggg tgatattgtg actctagata catagttctt ttgatctcat 480

accagcctag gggaactata tgaatttgca gcattagcct acattctaga gaaatgttca 540

tacttgacac atgagatttc tgagagcatt ttaattcttt tgcagaacaa gctggcgatg 600

aaggtgactg ggtgcgctgg gcctaaacct gaagcacaca cgctctttca gcggcggtaa 660

gaaggaagta acaaaactgt attatactag catctagctc tggttctaca aatattggta 720

attctccagt actgcagtac atgaacatat aaggccatat attcaaagag gtgatggttt 780

cttactgtca tgtaccgcgt gtttaattca tactggtgac tggaaagagg aggaggcagc 840

tctctaaagt cacaactctg aacgtatggc ttttaattgt ctagcagacc agcagtgcct 900

aagcttggtc gtggctttct tgatcacaaa gagaaagctc tctgaggaat aaggaggggg 960

ggcctcgtag acaggcgttg tgtaactggt tctgatggca ctacagtata taatttctct 1020

caaacatttc caccactcta ctgtatgcac agggtgtcat tattcctcag cttctgtatg 1080

aaaaggtttg gttttaccca tatagtatga taataacact gtgaacagag gctgtctagt 1140

attggtagaa gatgcatgaa catatagctc cggtgcaact gcactagggt ctacatgacg 1200

ctgaacggtg ggtggactgt gtctagcggt tcactcatat ggtcacctaa agtactgttt 1260

tgt 1263

<210> 4983
<211> 1002
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_319479_G1, chr9:130823425..130824426, Cluster 30

<400> 4983
gaccccagca actgacctac ctacgggcat gcctatgtgg accaacaaaa aaaaaagcgt 60

tctgttctcc caaaccggac actcgtgtga cgacatgatg tattttctgt cccattcctt 120

ctgattttaa aatctccata tatagagttc attcagaatt cgttggaagt ttaatttctc 180

ttacttaagt tttgagaaaa atacattagc atataaaaat ttccatcaaa aaatattttg 240

cgtgaagagc ttaattaata gactagtttg gtggctggtg tgtaaatgta cgttggtgtt 300

tttttatccc tattgattta gccaaattaa caaatgatgg agttactaat aaatagtatt 360

tcccaaggtt gaaaatagtg ggctatatag agctatagtc tttcggagga ggaggatcta 420

aagctatgat atttcaattt tagacgatat ctcagctata actgctatag cctgatttaa 480

ctccgctaaa tgtcatagat ttagcgctta atagcgtgct ctattactat ttttcatggt 540

ggaccaaaaa aattaataaa tgtaataaag aagatgagga atcattgata ttaatgaatg 600

taatgagata acttcgtcac ttttgattgt tcccacatct ccgctttcca ggtgatcgtc 660

gttggctttt ctatttgtgg aaaaaattct ggccatatgt attcttttac ggtgaagcgc 720

tgcagcaaga agtgaaggct gggtggtggc tgacgctttg gctactgtaa ttattattaa 780

ttgcaattaa tgaagcactt gaatcaaaaa atcacacggg gggcacatgt gtcaagaagc 840

ttgtattgct agtttgtctt acaatgcatg gccagaacga tcaattgata cggatggagg 900

gagtaactag tttccggtac gaaccgtgtg tactactgta ggatcatttt tcaaagggat 960

ggcaaaagct ttgtcgtagt ttttattaga gcaaaaaaaa aa 1002

<210> 4984
<211> 1084
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32914_G1, chr1:201953122..201954205, Cluster 30

<400> 4984
gaaaaataga acaaacagag ttggatgtaa ggagtaatat aggacaatat ataatcaaaa 60

ttccccccaa gctaccaagg tgttaggata cccaagacat ccactttata gtgttctcta 120

agtgtttcac taaaacctca cctaaatagt gaccataact tatgtgtaag ggaactcaaa 180

attagttata actaatgtat aagggaaaat catatgttag ggctataaaa cacttgacat 240

tttcttacca tgtatagctg tactaacata aagcacaaat attaatatca atctaatacc 300

tcaaatttta taagctggac catctaaaac acttagaaaa aactttactt tccttttaac 360

aagagacgtc aacaagagca ttgaatacta gaaatgaaca atatatagaa cacatatatg 420

tatggagtca caaccaagga tagtgataaa aaacacttat atataagtca catcatcatg 480

tgtatcatta ctaggaaata gatttgtgct tgataatggg ataaagcatt gcacatatcc 540

cctaaactag cattacaagg tttgatagat ttaaggaata gacacatagg acatgaaaat 600

caacaccttc taggatccta gtacatggat cccaatatat gttgtatacc ctttcaggac 660

attggactaa gagaaaattt ttatgtcttc cagagaaaac atattgcttt ggccaaattt 720

cataagcaag gcacatgcat tcaaaataga gggtacggat cccacaacat attcaagaag 780

tataaatgct tgaatccaca catcaaattc aacttctcca tgaaaaacat atacccaacc 840

tgctatagct atatgtaaat ctatatctac aactaacaat atcgaaagtg gtgggagtcg 900

cttctagaag catcttcgat gtgtttgaag tctatctgta ttgaccatcg tccgtgatga 960

ggtctaagac acaagatggc gtaggcatgt ataccaagca ccacaatcta cctaggggat 1020

atgttgtgct agatcatatc gctagagctc gttcggttcg caatctagct agaggatacg 1080

ttgc 1084

<210> 4985
<211> 1248
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337903_G1, chr10:81823675..81824922, Cluster 30

<400> 4985
gtcgtcgatg gatcagtcgt gttcagacac cttgttgttc ctatagctct cgttgtctat 60

agtagctact actagctgct gctaggatcg gagggtttgc actgccgaat gctggagcac 120

tgttcactgt gccctactgc tgctgctctg ctagctggcc tggctaacgt cgttgcacct 180

aacaattaat taatgctcat tcgatcgaga aatatggagc cccaaatcaa tggattacta 240

taatagcttt cgtcaaaaaa aattgtgtgc tatctcgctc gttgttcttg cattggttgg 300

acaaggaatc aaattacagg gtgatcgagc gctagctctg tacatgcgca tgtgcacaca 360

aacatgcatg ccgcgttgca ttgtgtatgt gtgtttgtgt gctggtggcg atcgatcgat 420

gtgacttgcc gcagggaaca ttcttcttgg gcgtggtagg taggtggtgg tgcaacaagg 480

gccgcgcgac caacaacaac ttgcactggt cgatctccac gacgacaaat taatttcatg 540

cttgggttct aaggaaccat gcatgcatat gcgaattcaa acgcatgcat tgcattgcat 600

gcatgggtac ctgcatgatg catgcatata tagaggcagc atatatgcat gtgtaacagt 660

tggaggatcg gttttatatt agtagtacat gatgcatgga tcgatcgatc aagttgtgca 720

tatacatata gtatattgat tattaaaacc ggcgcatctg cagtactacg actcttgttg 780

attagtgttt aagcaagagg tatgccgttc ctaattaagc aagcaagaga gtataccacg 840

accactacat gcatgcatgc ctgtgttgcc gctttgctaa gccatctcgt ttagcgctaa 900

ttaatcaaag tgcatgcgca tatgttttgt tatcttctct aataagccag tttccaataa 960

taatataata caccaagagc tgttatatat atgcatggtg tgatatatat agatgttaat 1020

aattaattag ttatgtgttc atgcatgcgc aacaataatg gttacaccga cagttcttga 1080

gaggaggcaa aatcacatgt acatgtacta gtgttggtgg gcatgcgcag cagcttgttc 1140

ctaccactga aagaatattt tatatatgca tatccatagt tcgtacgagt gcactctgag 1200

tgcttgcact tgcatcgtta tacatgattg ttaccaaagt ttaggact 1248

<210> 4986
<211> 1336
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34027_G1, chr1:207513113..207514448, Cluster 30

<400> 4986
aatatctcat tattctcggt gatgttctca atttagatct attcttgcaa ctggactggt 60

ttagagtggc tcaaccgccc ctggtagcgg ttgaactggt aatatgaatt tagtttgaag 120

tttttggtga agagcactgc agggaggtcc agtgcataga gatacatgag catgtaagaa 180

gcagaagcca cgagttcaac caattactcc ctgaagacac caagagccaa acacatgtag 240

aggtgatctc caaagatgca gtcctgcaac ctgatgaaca gcaagggctc aaaagcataa 300

caaaaaaaat agaagatcat gtcagatcat attccagcaa agacgagcaa caagctgaga 360

atataagaaa gatagaggga gatccgatca aaatgtatca atgtgaatct gatagaatta 420

cagaaaacgt tatcaaacta tatacatgca atgctaacca ttcttttgac attggtgaaa 480

cccctcatga atgtttgagc ctcaagaggt gcgtaatgag ctctaaggat cgtgcactgg 540

ctagaagtaa aagctgcagg gctaccttta tggtgattcc aaatatttgg tttgatgttt 600

ttgagaatac tagccggaca ccacctgatg aaatctttag gtatgctccc agaaggcttg 660

ataaggtcag gagaagcctg tatgacgaca atggtgattg cgaaaataaa gacttcaaaa 720

cctctccggt gattcctaga aacaatgatt accaaaataa agttttcatt gacatgagca 780

ccagtgatga agtggctaag gaattgagca ctggcaacca agaacaagaa actcctgtca 840

atggcattag ttgtgtcaca gaggtgaaag agaatacaga agatcgccaa tgtctacttg 900

aagagttaca agtacaagta attatggtaa gagtggattc ttcgtaggtt ttccttccgt 960

tcatgatata cctccaggat cactcacagt tttgtttaaa atgtactaga aactaggcac 1020

caacatcctg ctgtttactc tgctatgttt cttactatgc atgcctacaa tggaaacatg 1080

agaaatataa ttgactgacc agctcaaaga ttgtaattcg tagatgtttt tttttctgcc 1140

taacgtattg attggtttgt ctgacaaagc tggtttttca taacttcgtt tgtttaattc 1200

aagcagcagg tcgatagaga tgagaagaca ccctccacaa aaaactagta gagacgttag 1260

tgtagattca gcactgagcc ccttcaaatc tccttctcat ccgacagttg attttgagaa 1320

gaaacagcaa caggtt 1336

<210> 4987
<211> 1006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_342226_G1, chr10:106080986..106081991, Cluster 30

<400> 4987
gttgctacct caagatgaat agaatcagca atagatatct ctgaacatta taatatgcac 60

tattcttaga acgcagagaa aaccaaagca aaacaggtta attcaatatt gggatgaatc 120

atgacgtaat gcacttttca tggctatacc atatacctgg acaggcacga ggcaggagag 180

cttcatcagc acctttgat aaaagaagga tcttaccagt ctccccttcc tttaccacta 240

cagacattct tttgcgatca gaagtgaatt ccaaaatgtc caacaactca taccaaaact 300

tagacccatt gaaacaaatc tctgaagaaa caaaagggaa ttcaatcaaa cagcttaatg 360

gaattgtaat aatctcatca caaaccgatg aacattcact aaccagctgt aatggtgtct 420

ttactgatga gcatcatatt cagctttgct gcagcgttaa ctaaagcttc ctcatcttgg 480

gattgtgctt tgtatgacac agtaccatca ttgctgaaag tatgaaaatt ttataaataa 540

cagcttaata ccatgcagag taacgaaaag aaactgtgac ttgccttttg atagggacca 600

ctgtattgca aagagccata accaacagaa atttgatgac atcaggatca ttacttgaga 660

ccgcatttac aagtctgaca tctaagttga gagaattgtc agtggacgaa aaacagcttt 720

gcttctgcaa cagtttgggc ggcacattta gagcacaagt tatttactaa taagtaataa 780

agcaataaca atatcaagaa tggtaactca aaatccatga ccgctgcatg ttgtgaccag 840

gctggagaaa caattgatca tttactcatg tgtatttgct caacaagtat ggtatatcct 900

cttccagaaa gtaggctttc aggattgacc cctcaactgg aaaatttttc cttcaatgat 960

tggtgggcca aaacaaatga aatagcagat ggtcaagtct agaaag 1006

<210> 4988
<211> 1011
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34244_G1, chr1:208593038..208594048, Cluster 30

<400> 4988
cccctaatag ttaaatttat ttaaatagaa tagaattcaa tatttataca acgaacaagg 60

cctcaaggag ttgggaccta acaccggtct gaatcattcg ttattcctcg tcgagtccaa 120

cttttgaagg ctcgacgggg ttagagaaaa gggccacgaa aagccaagca aaacccatcc 180

atttttctct cattcacacg ggcatcatag attagttagt tcggcagaaa cccaacaatc 240

attgagcaga gcaagcaaag cagcacggca acgagcacca catgatcatg attgatgatt 300

gtagctccgg aacgtcctct gtttgttcaa tatgccagta ttttattttc agagaatatc 360

cccattacca gcgatttatt cggtggttaa gcttgatcag tttattcaaa tgggcctatg 420

taattatgcg gagtctacaa tgacgagaag aaacaacgaa gaattaaaca agcaagcacg 480

gaactgttca ccgcctcatg ttaacacatt aagagtgaca tgtaatgttc aaactcttct 540

aaaaaaacag aggaaaggta aaactaataa aagacgatag actatgtact catgagccat 600

atccgatggc agatcaaact gctgacgctg tagaaagtca gtatcatact gactcttctg 660

tgaagtgaga agtactcaca acgcattact cctatggcat gtacatcagc ccaaaacgat 720

tacacatgta ttcaaacact cttttatttc agaacaaaca aaaaaaaaca atgttctttt 780

cctctacacg aaggaatatc taattagcaa agacgtactt gcgccctttt ttcgtccaat 840

aaaacagaca tgtgcctatg ttacttgcaa ggtaaaaagg aaaaaaggag ggaagaaata 900

atgcagatac caagtagttg taactctaca gcaatactga atagaaacct caagtcctag 960

ctctgtaata ataatgcaac tggaagggtt gttggccagg gagacaacta g 1011

<210> 4989
<211> 1112
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_343300_G1, chr10:112308207..112309318, Cluster 30

<400> 4989
tctttgagct ttgtttgctg cttactacag atctttgctc cttcgatttc tagaagccct 60

ttgctcctta gagattttct cgttgcttat tgtagatctt tgctctctag gtttctttag 120

aaacattttt gcttcttaga gatttattaa ctgattattg caaatctttg cttcttagtt 180

tttagaagac atttgctcct tagagctttg tgaaggtaga gttgtttctt gactttgaga 240

tgaaggtgac acataggctc ctgaggattt ttttcattct ttgtgaaaat atatatgctt 300

gcctttaatg tttctgatag gcaagcatca tttttcgttg caacgaatgt tgttgctacc 360

tatatagttt ttcgatattt gaatatattt ttggtatact ctttgacgct tcatgttgat 420

agtctttggg gaacaattct cattttttatt taaagagaat tacaatagat tctaccttat 480

taaaaaacac tcgccctgtg aaggtttccc ctgagtgcaa aaggagtgca tctcattaaa 540

aattgattta aagttaaaaa ttgggtggta tcttcataat gcttcaatgg ttcaagtgtg 600

atcaagtttt ttgtcattca tgttttctag atgaacagat cctagcgtgt ttgttcttgt 660

gataaattat ggcccttcca atttttgtta gaacttgctg acatagtctt catttctttt 720

tctttttaa acaaagtctt caggtgataa tttctttgat tttattttct tattgtacca 780

ttattttgcc tctttttat agtttcttgg attttgaatg gcttgcattc tttaatatgt 840

gtttgccttg tgcacatacg ttatgcattt aagcaattat ctatatattt cttgattgta 900

aagcaaatca tttataactt tgtaatctct tgcatggtgt ttcattctga cttgatatgt 960

ctcatcttag gttcataatg ttcaaaagat aacccatgat tggtgctctt caaactttgc 1020

atcagattat gagtatttcc tttggtgttt gttgtttttg cttgatcaca atatgattta 1080

ggaattagaa gaaaatatct agagatagac tt 1112

<210> 4990
<211> 1172
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_346775_G1, chr10:131894204..131895375, Cluster 30

<400> 4990
agataaatta gttggttggt ttcataattt cttagataga gaagagatta ttataattat 60

tatattaatt agatataggg agaaaggtag acagggccac aaagatatta tgagaaattg 120

aaaagtagct aagagaatac cttagttttt ttaacgttgc agatataaaa atgtagacac 180

ccacgacaca cacgtaaacc tggggatgtt tgcttctgat taaagttagt tgtttagatt 240

gtcgcaatga tgtggtcttt acttttaaac caaatccatc aatcatgcaa gttcttttta 300

gaggaacatt ttggtttata ttctagagat tgttgcagaa acaaaatgct caacacgaga 360

ttcttagagt atatcaatct ttagagatag tgactatgga gatctttgta agacatggtt 420

agaggtcaga tgttaaatta gaggacactt gattgtgatt atatgttctt tttaaggttg 480

tttctttttt atggggtgtg tttggtcatt tttcgatctc tatctatggt catatgtagg 540

agataaaaaa agggtggaac atttttttgtt tccatgtaaa aaaacaaacc gatcacacca 600

cagaaaccct aaccagctga caaacattca attggcttgc cgtttttttg gttgacactc 660

acgctgccag gttattttgt actatgtagt ttctcttttc tatgatcatc actttgtact 720

gatcttcttt ctttttaagg ataaggaaat acgtatttca catgtagtat aaaaacattt 780

gttgacatta ttatgtttca aaaatacttt cacagtgtat tgtttacatt taaaaattaa 840

ggtacgtatg acctgaaaaa tactagtcaa attattgttt ttaaaacgaa gacgttgcct 900

gaaaatatat tagtaaaata cccgtagtgt attattagag actgcgacga tctcttgttc 960

aacttatatt cagtacgtac gattagctag ggattgtacc cggctacatg tgcaatgaga 1020

aatgaagact tgtcgttcaa cgaactgtat aaaaatccta gcactactgg tatgtgaatc 1080

ggcacttgca gccatggctc gtacgattcc cgtcgctgtc cgggtacaca gttgaaaagt 1140

tggcaaataa tagcggcacg tacagcggct ag 1172

<210> 4991
<211> 1084
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347362_G1, chr10:134589491..134590574, Cluster 30

<400> 4991
ttcttgtatt agtatctatt ttaaagcacc caaaacaaat gttctcggcc ggaagccttg 60

ttctctagta gtgtgtgaaa tgggctcatg ctcatcccat gtattgccta aatacgtatg 120

gactaacagt tgtgtattca ctactaaagg atcaaatata acgacgaaag ccaagtggat 180

gggaggcaat aaaaatattt gaaataagca atgttggctt gattcccgaa aaatgagccc 240

aaaccccaaa gacaccaaaa gctcgcaaaa aatccaaaat caagaacact tcagtcgatt 300

gatggctaaa tgtcttaaca agttcctgaa aagactgtca aactagcaaa acaaatggaa 360

agcaaaatag actttggtaa gtctgagaag aagcaaattc gagactcctc taaacagtgc 420

gatagtgttg ttctcttggt tgatagtacc acaaactagc agtgtcacta gcaggtagtg 480

ccactctatc aaaatttgca taatgagatg gaacattatg aacaccttaa caagggtgat 540

ttcgaggtgt tcccaaaata taaactaagg aagatcaaat cgaaaaacac taaaatgaat 600

tagggtttat acaaaaaatc caaattgtgg taacttaagc acgagatgaa tcggcgctta 660

ccaactgtta gtagtgattc taggagtgtt acctatgtct cttaacaacc caacccctcc 720

ccccacacat actcagattc aagaattcat tcaaaatttc aaacaaaaaa gcttcggaga 780

gaaaacccat gaaaatgaat tcaaatcatt caaattggga tagaaaatta actaggagaa 840

accgtgtggt tagggccacg cttcccaatt cacaacaacg taggtccaac aattcgaaag 900

cacctaagca tatcctgaca aatcaaaata gagagcaaga ttcaaaataa aagatagaga 960

gatggtttgt tagttcggtc cttccttttt atttatatgt taattgtata catgtcactt 1020

aaattttaca aaattagatg attagttcat tttgttgcca tggagcggca tagaaatgaa 1080

ccag 1084

<210> 4992
<211> 1032
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347368_G1, chr10:134614549..134615580, Cluster 30

<400> 4992
atatatatat atacacacac actggtttta gtcagagcaa ggcatatgta gacgaatcaa 60

actatatgct cttcatatca tcaaagacca ataataaaac caatacatac atatagtaag 120

ctttttttag gtggctccaa attcgagaga gaaattattt ggattggcta aaaaataaat 180

aatcaacctt aactcccaca gcatgctgca agtataggct cttgctcctc catcctagaa 240

tgtgctggag cacggctcct cgtgaagcac caactttctt ctatcgatct cctgtgttct 300

cactttgcca cataggattt tagtgacata aagccatctt attatacttg ctctcagtat 360

caattatagc ttggtgttgg agatgtgtat gctgcacatg tttgctgatg acgatgtttg 420

tagctagctc tgaattactt tagtttgttt tcctgagaac atagagaggt atcacatggt 480

tatttagcac agtaatcaaa acagaagggc cactactcag agcatgcatg cgcggtttgt 540

tttcttttgg aaacagaact caaaatatat agattactgg cgacactttt ctatcacttg 600

ccaaacttgt gcggagttta ttaatttccc gcggggtaaa ttattggtgc tgagttgtcc 660

tctgcgtgat gtaggaggaa gcagtttatc aacagcgtca agctcaatag gatatctatt 720

attacaagtt tagcacgtgc agcagccacc atcactccat tttttctcat tgatttcgac 780

atgtccatta cgcaagagag cgacgctata gatcatccca tgatcccacg acggatgtga 840

attccccatc cagtgccaaa ttttctgctg cgagataaat attcgtgtat gtcaagtatc 900

gctccttgtg gggcctgcgg attggcccaa cgggcctggt accttctatc atcagagatg 960

gacgctggga gacacagctt catgtacaaa atagatacta caacacggtt tttctaaatt 1020

taaaacacac ct 1032

<210> 4993
<211> 1035
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349019_G1, chr10:143382169..143383203, Cluster 30

<400> 4993
aactgttttt ttttgcccct gaagaatcgt tttctcgagt tctcgtggct tatccatcct 60

tttatctgtt tctcactttc tctgttcttg gaagacgcta atttcagctc agttctctgc 120

aaatttctct gtaataaagt ttatatagct atgtagttag aatcacacta aacactgtta 180

actttagcaa atttcttaga atatgttaat cacgcattca cacacccgtg ctactaaact 240

gctattggta gctaacaaac catttggtgg ttcacggcac tggtcatttc aattcctcgc 300

actagttcag ttgtaagtga gatctcatga gctcgaaaat ctcaatcctt ggatgtttac 360

agacaacatg ccattgttca cttttaattt aattttagtg ttctgcaggg atcagatatg 420

agcaataata atcttgaggc agtgacactc cttataatct tccttcgaat ctccagagct 480

tgtgagtcat ttagttatgt ttatatgtgt acttaactat tcccatttat gttttaaaaa 540

tatttttggg ggtcttactt acctgctatt tagaaatctt gttgtaaata acttcatgtg 600

ggacagtacc ttactccatc ttccccttac tgacttgtaa gttcatcctt accacctact 660

ctatttacaa gtttacgttc ttaaaccaac atttagcaat ctttgcagaa atgtcaaaaa 720

caaccaattc accggttgag tacctgataa actaaagggg atcgataatc tccaataagt 780

acctttactg caacagttgt ggtgactttt atttgacaca ctatgttttg tataaaaccg 840

gctcagggct tttttaaatc ctagatccgc caccgtccgc aagggtgaag cagctgtcct 900

tcctaaggtt atgccctttg ttcctagttc ttctctgctt tagtttatta tgtatgtcta 960

aaggtatttc tttttcaaat ttagttgtca tcagctgttt gaggatttgt taaactgctg 1020

gtcaaatttc ttagc 1035

<210> 4994
<211> 1126
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349021_G1, chr10:143383745..143384870, Cluster 30

<400> 4994
gtttatcagt actgggaccg tccactgccc aaggtaatgg tcctggtgtt gtgcattggc 60

gtggaggagg aacagcgatg gtagttcacg ttccttttt acctttagc agagcaaaaa 120

ggtaaaaatt ctgcaagcac ttctttagtt aaatgtggaa taagcatcct ttcatattct 180

ttaagggagc tgtatatatg cttacaatct gagcacagcg atgtgaaata tttgcacttt 240

gactgaggta ctaaaactga agtgtcatag catcaagggg agacactagc taaacaaacc 300

tgttgtttgc ttatgtaaaa tatcatgctt gttttgtatc tattggtagt tcataatatt 360

atcttatata gaaaatgcca aagtttgtat tgcaggtcca ccgtttcatg attttcattt 420

accgacctcc tcccaacaaa atgaagatcg gttcagtctg gcatgatttc tctagcagaa 480

tgccttgtgc atatatatag cgaccttatt ttgtgatcgt agcgacgtag catgctgaag 540

atccaagctc cttttcgaga aaaggtctgg tctggacatc caagcagaga gtcttgtaca 600

catggttgac tatttcagag gcacactcag gtgcacccgt gtttgtacat ggagcgcctg 660

attggctaat tggatgagcg tcgcgtggct ttacgctgca gctgctcgtg cagtctctgc 720

cttgtgtata taggaaccaa acactgtcat gcgtcataaa gattaaagag ctgttttgta 780

tgaaatacat gctcagatgt gatacctggt gacgaaatct cagacatcga gttggcattg 840

ctaaggaatg aagccatatt atattactca gcaagtcagc aggcatgctt atcctgccga 900

gatgagtggc attccatggc catatcacta taatagcact tataaaaatt aatcttgcta 960

tgataattac taaacaatgg tataatatgc taatatttct tgatttttac taatattgaa 1020

ttagaaaaat ggatgaactc gtttttcttg acaggtagcg tatgagagaa tatttttct 1080

gtcaaagata tttacattca attcatctac gaattaaata ccgcta 1126

<210> 4995
<211> 1271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38141_G1, chr1:228742913..228744183, Cluster 30

<400> 4995
tatcctcaaa ccactaggag ctttcattaa atcaaagtgt gagggttaca atttatggta 60

aatattccta ctaggcttaa tctatacacc caagataatc agtaaattaa gacttgtcat 120

ttttaaactg atgtaaatgt tcattaaatt gataatagga gctatgatta cattattaac 180

cataggattt tgactaagtg acttcagtgg gttagggtga ttcgtattat accctactga 240

agcttggttc actatttttt cataatcggt ccatgaattt tgatctaaat taggagcaaa 300

agtggtcatt gggatatatg tgctaactct acctaaattg gccttatcta ttttgattga 360

caaagaggcc aatttaactt tttagctacc acataaaccc ttgattctca taatagttat 420

aagacatgcc atattgaagt ttcttaagag cagattcttc aactgataga caatataatt 480

tggttatttt atgtcatagc cacattaaaa agttgtaata ttgttattaa taacaattgt 540

atgaccttgt aacatcttag aatagttagc atggatagta caaggatcaa ttacctcttc 600

atcaaccttt acactaggtg tagtggatgt ataaacaaca acattaccga agtcaagctc 660

acaaaattga gtcactttat tccgttgatg tttggtacaa ctctataaga aagccttcaa 720

attgatatca agcttgcctt gaattttatg atgaagctca tcaggaagct cttcaaatga 780

tgttgagtgg ttgatgttct taggattgaa tggatcgatg tgaccatccc catctttaga 840

tctatcactg cctagcatgt tgctagtagg ttggatctag atagtcttct tcttcttccc 900

taatgatctt gtcaaaaagt gtgttgacat tggaagagat acagatccca caccagcaag 960

ggctagcatg cccgcaggca acacaaaacc ttaaacatag tgggccgata aaatcgatct 1020

agagactgat ctagccgatg ttatcatatt ctttgctgat agacacttga acgcctgtaa 1080

ggctacctag aacagagcta aatctcattg ggagatgtga taaatagcaa gatagaatag 1140

aaaaagaata aatggtagta aatgtatttt tgatcgattg gatattggac acatcaattg 1200

cttatgatcc aaaacacatt ctccaagttt cccacattaa aaaccaattc aaaaacaaat 1260

tggtttagat c 1271

<210> 4996
<211> 1100
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42549_G1, chr1:251107923..251109022, Cluster 30

<400> 4996
ctattttagg acggagatag tatataatta ttattgttag atagatctta aatacattta 60

tgtaaaaaat tcttatttaa aataaaatga ttgctaatat ttttttgtaa atctaactaa 120

atttaaaaag atttgatcaa tacgttttca tagcgacagg cagaggaagt acctgtccgg 180

gacagctcac agctgcgagc gagcccttgg cagacaatca gagccttata cggttcaatc 240

aatcggccgc actgatgggc gctcggggtg caccacttgg cacgcagcgg agacaacaca 300

cgctctgttc tgttgccccg tctgacgaat catgctacga gagtgactga atcgaaaaca 360

ccgggcttca ctctccagcg aagctctagg aaatgattgt gccaaaatga ttgctagaca 420

gctaagggcg tgactaatca gtcttgtaaa tgtacgagat ggacgtggtt aaggctaaat 480

tagtgtaata atatttcatt tggcatctat gtaacatatc ttaacggtta acgcgcatgt 540

tactgtgtgt tgtcccagtg ctttgtcgtc atctaaagtt ctaacccgct caacaaaaca 600

tcatcaggca catgatccgt acagacggtt tgccgcagtt tttattaaga gagggagaaa 660

aaaaaacaaa tcaggtgttg gctctgtttt cgaatggaag tgactatgct gaaaaaaacc 720

acacaagtgc gtcttttatt gacattccaa tttgatggaa aatatgcatc acatcatcat 780

catcatcgtg tactcagtgt ttccagcaat ggccaggaaa tatcagttaa atacagtgca 840

cgaaaacatg ggctgaagaa cagctttgct tcgggtcact gttgattgta tcatggtgga 900

gacttttgtg cgcatcgaag ttaccatagc ttccaatcga gcatcatatt tcttttgtcc 960

tttcttgtga gatgaaatca ttgatccatc cttcaatcag gaagaagaat gaatagtaaa 1020

atacgtcctt cacttcacaa tgatactcga ttcgtcaata aacaatagtc gtgcttaaga 1080

ccatgactcc acacacacac 1100

<210> 4997
<211> 1105
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42894_G1, chr1:252790785..252791889, Cluster 30

<400> 4997
caacctacta atccataaat caattgtatt acagaagcta aagtacatgt gcaagctaaa 60

cgctcctcaa actcacctca ataatttatt aaaattgttt tatgataaaa ctgaaaaatc 120

gaagctgaaa ttcaaagcct tcctaaacaa gtcctaagtt ggttactcct cattttcctt 180

cttgttttcc ggaagaacaa agaaacatca tccagctcag ctttcaatca tgcagctact 240

tttcctggat aagaaccaag gcgtgccgca accaaaaacg tgtcgcgggc atgggcgcac 300

cgcgtgcagc gtgacctccg gagcattttt tccaataatt tttaactatt tcaaaaaaat 360

attaaaaaac ttttctagag ctaacatatt tagctatgtt gatctgtcaa accattatta 420

ccacactatc tcatctaaca tggtcacgca gcatggtctt ccttgccacg ccacggactc 480

tagggagaaa cagatcccac aatgtaccat atttactcct tacttttttt gttccccgtt 540

tcttctctct cccaacaagc gctagtagcc ttcttcgacc acatcattca cgggacaaga 600

agtcggtccc tcaagcttca ccgactaagt ctgtggtcag cgaatcgtgt atatggttgt 660

gcgcacggat acatactcat ttctatccct aataaagata atggggatcc gaaagatcaa 720

tatctcaaaa aaaaatcatt agaagactca ttgatgatca gactatacaa gagtccaaca 780

cacaatatag aagaagcaca gatgaagaca cacaaaggaa caaaaataaa tagaacactc 840

agcgacaaca tacgtgttta gagaagcacc ggatagaagt gttactatgg tgaagaaaga 900

gctacttaga tagagtacac tgtacacctg acacacatat gcaccagagg tcacactaga 960

aggggcagtg gatacagaac tccgagaagt ctgcagtgta ttttggagat ccacaaggca 1020

tcagatgttt cttgtgtgcc atcggatacc ccactcgaca gggtactcaa agagcttgca 1080

caataagctg agaaaagccc taaca 1105

<210> 4998
<211> 1093
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44776_G1, chr1:262937616..262938708, Cluster 30

<400> 4998
aagtactaat acactaattt tttatgtatt tgagaaaatt gattttcttt agtggcacaa 60

aatctctcca agagagaaaa gaatctgaac tgtgtcagta ctccagtcaa ggccataccg 120

gctgctaata aggaacggca acatttctga ttttctgcac gcggacagcg cagagcggaa 180

gagattaaaa aaaaaaaccc atttctaaac acttgagtac tgcatttggc tacgcatgca 240

cctttgtgcg ctcttgttcc acgtgtaaac tcacgccaca gcttgatcgt tactcaactc 300

aacgctcata taatcgagga tttgtttgcc cttattcagg agccacataa gaaaaaacag 360

caacaagaaa agctcgtata gagtgagtgg aataaacata cattcagcgt ttttctgaag 420

tttttgaacc attgaagttc agtataaaag tagctatttc taaataccat gcaaattgac 480

aacagaggga gtaatgtctc gtcagataac aacggcggcg gttgcttcag ggagacaaga 540

caagcaggga ggcagaggca cagtggatta ttgtcgcata ctcgcataga taatcctatt 600

ttatctgatc gaacacaggc taggtagcca agaagagttt ttgtgtctat ctttttaag 660

cgaacgaaaa taccgaggag gctactacta cagtatatat gtttggagtt cgttcggatc 720

ggagttagaa aagaagatgg taataagatc taagaagctc aatcttgcac ttattatttg 780

cttagcagct agctaatttc cagacaaacg agcaatgcaa cacgcgttgg tggacgtaaa 840

acagaaacga tttgaactga tcttaaatga atataaatga catcaaacgg tttggcgtcg 900

ttggctatat atttctttaa ccgaaatgtg tttgtccacg tatagtaaaa gacgtatata 960

tatgataaat tcgcgaattt tgataactgt tctactcttt ctaaacataa caaattaatg 1020

gtaagaatct gcacctctat aaacacatga aatgtgtcta agaatggttt ggtcactcct 1080

tagatttggc tac 1093

<210> 4999
<211> 1291
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44932_G1, chr1:263606719..263608009, Cluster 30

<400> 4999
gacaaacgtt tgtaaaaact atatcgttgg gtctgtacct gagcagggga agtgatcgta 60

gcaatatcgt tgttgttggc ttatatatat gtacgtgacc atcagtgatc tgattttccg 120

atattataat tcaatatttc gtttttagag agcgctttta aattttgttt tgaggaaggc 180

attcaagtta tgatgaatcc atcttataaa aggtcagtga ctttgaaccc atgtgattcc 240

tactagcaaa ttaaatgact agttagtatg ccatgtgtgt gcatacttta gttcttgcat 300

agagtagtgt agagtttctt ttttcaatag cgctacccat tttaactttg atgaacacac 360

aacctattat tttgagctac aatataatat aaattattga tcatgtataa aagctctagt 420

ttttatttct ctataattag tctccttatt tttttatgtg gcatgagaca gaatgatttt 480

tatataccaa tttcaatttt tgatgagcag atgtatttgg tacctatgag cctattattt 540

tttaagccat agtattattg cccatgaatg ctccaatttc atgtataact gttaatttaa 600

taaaaacata ctattcttct gtctaatact tgtgcatttt attatcatct tacttcaact 660

acaatgcaaa agacttggct acaataagct gaaagactcc aagatctaag gattctaata 720

cgagctagca gctttcatca tgttggagat gttgagtgaa aaataatctt tctcacttga 780

acggttgaag gacaagaaag actatgattg agaaactact ataaaatgta caataaagta 840

atatttgtaa tacatataat ataaaactta ataaatttat gatgtatata cattttatt 900

gtaacatata cactagttta acatttgtaa tataattcct gatggattta ttatatacgt 960

gagtctagta accatatgaa atataatgta aaaaaggatc acacaaaaat aataaagtga 1020

aaacaaaaca actagcatga gaacccatat atcaagcaat ctaattatca aaatgattga 1080

aaagttgcga attaaaatga gtagaagtgc gttatatatc aaccgtaaag cacgaagatc 1140

gcatgcttat ccgatcctta ataatccaag agcttccttg aacattttgg tgaaaagtta 1200

ccggaataat agaagaagtg gtcgtatcct actatccttg aataagtgca ctcaggatag 1260

gagagaggag accgtgagtt ttgtactccc t 1291

<210> 5000
<211> 1175
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45163_G1, chr1:265010149..265011323, Cluster 30

<400> 5000
acacataggg agaagagaga tgtctcataa gtagagataa tgtgagttgt gagtgaagag 60

aatataaagg atgcttgttt cttatataga cacaagagaa actcgtttca ctgaacctgg 120

acggcttgtg gtgcgttgat ggtcatcaat tcatcaacag ttataagtaa cgtctcattt 180

atcagttact ccttacatta gcacttactc ctttcttatt acccaattaa actatgtaac 240

gacaaaacat tcatctcatt gcagcaaatc acattcaatc atattgtcag ttcatctatg 300

tcgccacaca acatgcccac gacctcgcca aggcgagcga gtgtgcgtgt gacatgacag 360

ttttttttcca acttcacaaa atgtgtaaca atctattttt aagttggtaa aaaaattctt 420

ctgcttttaa catgggacta aattatctta tttcttgaca ttattatgga ccacaaaaaa 480

tcaattgaat taaatagact agcacactta aattggacaa cataacctat catccatgaa 540

cctccctcat cctactttgc ccaaccactg attccattca ttgtggctga tacatagagg 600

aagaagcagc ctcccgaccg tcaagcggag gtttggtggc gatggaaaac attagaccct 660

ctttggtatg gcttctccaa ggcctcttcg aaaaaaatca acaggagtcg ggagccagaa 720

aaagatgctt ctaccgactc ctcatgtttt tctcttcgtt gggcccagac gcagtaggat 780

ctacaggagg agctacactt tcaaccaaat aggatgcttt ttctagagct ctccctgaaa 840

ataagaatga agatgatttc taggagaagt cagagccaaa actagagttg gaagagaaag 900

agtcctacca aaagggcctc aacttgaagg tcacgcgatg gtgctatagc aatgttgtgg 960

attagatgct acattgatta tcaacacaag aaatttttag gtggaattga tggacaatag 1020

tgtgtctgtc cacttccact aatgcgtaga caattctaat agtttagtag tatagagaca 1080

aatatgaaat tagtgtcagg ttgaaaatta tgatggtcat ataaccaata gattaattag 1140

tagaagataa aattattgga ggttggctgt atgat 1175

<210> 5001
<211> 1058
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_45300_G1, chr1:265750233..265751290, Cluster 30

<400> 5001
tatggaacca aacaatagat gggcaaagaa tataggatga ttgtgactgt tgacagtgag 60

attatagtgt tgatttatat acttcacttc ctatttaaca ctttctttcc gggtgtccag 120

aacagacgac aaatcctcca tctatatttc tcaaaaacca tatgaatgta acctgcaatt 180

tcacaaataa aaaaacaatg gtgatgcgtg ggaaagccca cctattgtct ttatgtcgta 240

gtccttcatt ggccacctct tcgctaccat aacaaggaac tgcagttgac gtgtgaccgc 300

gacagcaggc cctagcagta atagtaactg ttgtgcacgt aaattgtaca tcgattaaaa 360

tccaccccac gccatgaaac atctcaaagg tcacatgttg taccgcaagg cttaggataa 420

acagtgtgtg cacatgtatc tagtcttgtc attctgaagt agtagtactt tgaattttaa 480

aaaaaaatta aaaacgacca aagaagttgt atctatgcaa caaggcatat tcgtacgtac 540

cacacatcaa tatcaatacg tacattgagc agcgcacagt gccgaagaac tgtgcgttct 600

gcagccagcc tatacacgag cgtgatacca gctgcgcctg cacacacccc cacttgaatg 660

cagtatatat agcgcggacc accgaaggaa acaactcaat ctgcagaaga acggagaaat 720

acatagtttt atgttacaca aaccgacaac aatgtcaaat tattacctat acatgaataa 780

tatgctggca caagatgtat atttcttcat ttcgttgttg agaagcacaa atgatttatc 840

agtagattat tagtactccg atccctttca aatgttagta gtggaaaaga tctaaaagga 900

taaaacgata tggcataaac aaaaaacaag cagctgctag ctagtgctta gtacactctt 960

tcactaagcg aaatatcatc ggtgccatat gttataaaca aaaaacaatg attcagaagg 1020

tctactatat atcatgatac aagcaacgcc tagcagtc 1058

<210> 5002
<211> 1065
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47530_G1, chr1:278620163..278621227, Cluster 30

<400> 5002
cttagtccta aatagatttt aaacataaac aataaagcaa cgtagcttaa aaatgaaacc 60

ataataatgg agaataggtt tgtatagatg aaaatgcaac atgcagcccg atgatcaaac 120

atcctgacgc cccgccggcc cgccccgaca cgcacctttc tttcccgtgg accgagagca 180

atgattccca cgtctctcta ctatgttcca atattgccag caaaacctgc gcgctatgca 240

ttcgtagtgg agctgctgcc atttgggtcg caatggtatc tcaattctca actgctcgac 300

tatacgacta gctgtactac acagacggaa caaggtaatg cattcaacaa ctccaaagtt 360

tatgaattgc ttttcatgtg tgtggaccct tgaaaacgat ataagcaaat ctgtctagta 420

aaataattat atacaacacc ggaaattact agtgagaaat gtaatttcgt aactgtcttc 480

atgtgcgggc acgacccata atgtactttt ccataattag agagaagtac atgagagaca 540

cgagcgacat catagcaagt acgatagttg cttttctttt ttctttttcc ttttttcgtt 600

ttgaaagtga cgacgggctg ctttgcatag gcatatgcca cgaattttac cacaagaggt 660

tatatatact aacaatataa ttgttggtca cagctctgtc ctaacaaaat taaacatgat 720

tggtttattt tactagacaa ttcatgatca cgagtcccgt aataattacc aaatgcacaa 780

ttctctacgc atgccattgc atcaagcctt caagggtttc aaaatcacct atcaagcatg 840

tctttgcacc actaacaaga tcatcggcat cgcacaactt tgattccttt tcttgaaaca 900

gttgcatcaa cgttcatttt tgagtgtctg gttggttgtc tatgacccat ccaggcttat 960

aggatgcaaa aaaacatgcc gattttgaac tttttgatga agtagtcaaa catgacacac 1020

aacttgttcc acaagtgctt gatttccgga taaaaaacta gctta 1065

<210> 5003
<211> 1021
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47683_G1, chr1:279181565..279182585, Cluster 30

<400> 5003
aagtcatatt ggatctaata tcggatccaa taatatgtga ctcgtgaacc cgcaattgct 60

agatatgaat cagggttaat aaaccgagtt ttaccccaaa tccatctaat caccgaaaac 120

ggtaccatct cgctttcaac ggttttcgaa tttactgaca tgtttctatt ttaaatttta 180

aaatggtttt cgtgttaacg ggtcaagaaa cacggttttc ggtatttctt ggtgaagttt 240

ggtgtacatg ttttcagatt tttaaaatgc gaactttcgt tttctcgatc gaaatttatt 300

tttcctcgac gaaattcgtt gtttgaccca aaaaaattga taattaaaaa tatgaaacat 360

accaaattac tcacgaaaat atatagtttt tatcataact tttaccttgt tttttaaatt 420

ttgagtggaa ataaaaaacc ggcccaagaa tccggttctc aatcagtttt gtaaaccctg 480

agatgaatgt gaccgttcca aagacgatta cgattttaaa tttatattaa ctaaatttaa 540

ataaaaacat ttaagattta tgcctttaaa taattttata attaatctaa catgcaacct 600

gatcaattgt gctacgcagc attgtggcta tagttgatgc agccctccac aggattctaa 660

tacacatgca tatattttcg ggccaccaac agtcacagca gggggaaata gcagtcgagc 720

tgagccatac tagtggtatc ataaatgtta gtgttttata gatttgatta aaatttaaat 780

tgtttgagct ttgatggaca atattaaaaa aaataaaaat gagattataa ttctttttat 840

gcagaggggc tatatgacaa atgattttta ggaacctaaa atgatatatt atatacataa 900

tatatacatt agagacaatt ataacttatg atatgttaat tggcatatag gtataaaacc 960

attaatgtga gtctatatat acgaaaaggc tcacgcgtca ggatcgaatg attgatccta 1020

c 1021

<210> 5004
<211> 1363
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52483_G1, chr2:3878376..3879738, Cluster 30

<400> 5004
gggtttgctt ctgtttttca agtgatgact agtttttgta gttaggggtt gtgtgtacat 60

tattgattgt tgttgggtaa tcacaactta tttgttttaa ttccttttta cacatatgcc 120

aacacagaaa aactgtagat tcatgagaag cgggttttca taagatctat tatttattta 180

tatataatat gaaaaagggt gcatgatata tataccatac tttcaagtta ctgttaccac 240

atgtttctaa cattttaatg catggttgcc cacaattttt tattttgcat atatatatgt 300

aacagctatc tagtagtata aaaacaatat gcaaacaatt tctagcagat atatatgtga 360

tacaaagtac cagtacagta atagagtcac aaaataatgt caaaacactt gtctacaaat 420

atatatagtg aattaaattg gcatctgttt tttggtctcg tagaaccgat tataaccccc 480

tacacaggag gaacttttg agcggatgta gagaacaggg agctttccgg accacctttg 540

agcaatcatt aattatgggt aaaattgttt tcgatccgga tgagaaacat gtggccttaa 600

acaacttttg catctaataa aaggattaaa ggaagcatgg tgtttttaac gattcatatg 660

ccacttttgc atctagtttt tgagcaaaaa aaaatggaat accttgcatc aagtacttgc 720

gtagctcgtc agaactaacc atgcatgacg tgcaatctct gctcaagtac tacttgcgta 780

gctcgacaga actttaggtc cttccctttt ctttcgtttt actgtctggt tttaaagatg 840

tttccttgat ctgaaacgaa actcttcaat ttcacttgcc tttgttgcgc atgaattaat 900

ttttgttcta cgtgaatgat gaatttgttt tatgtagaga tctctgacaa taggtcgtac 960

gaattcctac actccaatta aaattctttt tgcccaaaac gtagtagaga tctatatata 1020

cgactatacg ctacagaata atgtttgcaa gaaagagtgg atccacaccc ttccgaaact 1080

gagaaatgca agcacgggtg taccgtgggg ttttcttttt gaaagatgca agtacgtaca 1140

agtatgcgtc gggccctata tagcatctcc aactctactt tttatttatc aaatcaaaaa 1200

ataatagaag gttctttact ttttgatgct agatataaaa ataataattc aacatgatct 1260

cagctcaagt ctattttacg gaggtccatc tttttcttta gctacatcta ccaaaatgtg 1320

tagggagctc tttaattttg tccgagaaat attttcccac aat 1363

<210> 5005
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52560_G1, chr2:4255817..4256899, Cluster 30

<400> 5005

aagagataaa aaaattctat ccattttctt tgtttaccac tttctaacta atttaggcct 60

attttggaac gcatgaattt cacagtattt ttatagaaat catttcattt tcaaaggaaa 120

actacaagaa atggaaaaaa ttactcacgt cctctgtctc accttatatt atatattcca 180

aatttacaat ccatactcat ataaatcaga acaattcgcg cctagagatg gtgaataaaa 240

tattcaattc caatatattt tgagtaatga cctacgtcac gtatgcgaag ccgactcatg 300

acccacgcta atacaagttc gaacaactca catccagcga tacaaccgag tacaattgtt 360

atacatattg tgtttcgttg taacacacaa gcacattttc tagtagctaa taaaatcaaa 420

agttcaacac aaaaaataca ggttcattgt tatgtgaaca agatgcaaca cattgcatga 480

tgataaaact taaggtgagg tttaagggta aatacattta aaaaaaccca tataggcgca 540

atcaaacgat gaaaacacac atagagtaat caataaaatc atcacaatgg gattgagatt 600

atatagtacc aaaattggtg ttgtgttaga aatgaatgca catagtaaag ataactagtt 660

ttgattagtt atacatatga atccatataa ctttcagtaa tacttatatg acgtaagatt 720

ctataggcca agctgaaaaa cgagttagcc ggctagagca tctccttcaa cagagatctc 780

caatgtttcc agtaaagtga tacgaggtgg ccaaataata ttattatttc atagattatt 840

agagatactg taatagatca ccaataatct cttccaacgt acatcatcac gtgggaccta 900

tgtatcagac tataattgat ttattcattc tctttttttt tcctttcctt tctctacact 960

acatcgcagc atcagagcca tgcatcctgc ctcgtccctt cccttgccgc cttcgtgcct 1020

gactcaagcc atcaatcaca acgctagtct ctatccccat gacatatatc acagctatcg 1080

atc 1083

<210> 5006
<211> 1195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5278_G1, chr1:27087332..27088526, Cluster 30

<400> 5006
tgtgcaggcg tcaaggtgtg caacttgtgt tttatccaat acaaatgata ggatacgggt 60

ctatcgagcc attgtcaaca gaaacaagag tcatgtgtcc gtccgcccca cccgggaggt 120

gggtcttcca ctagtgtcat ggtaaagatt gcatcgagac gaagcaaagt cgtgaagagc 180

tcgtgactct cgaatgcata gatcttgagt tagatcattt tatccttggg ttaagtggtt 240

taaccaagat atataaatat aagcgtgagt tgaaaatgtg taattgatta gataggagga 300

tgcccaacca gcccatctct tcaattttca ttttctagcg caagagtcta gttgtagtag 360

ttttgatctt tcatttagtt ttaactgttg agatccgaga gtgattgctc tgctctgtaa 420

ggttttctct ataagtttca gatctggttg gtgttgaaat taagtaattt ttcctctgaa 480

ttgaatatga gttcctttac taatgtttga ttcatttttt ctctctggtt tccctctctt 540

cacttttta tggatttgtg ttccaatatt tttgggttgc tttggttgga tggatacggg 600

tcaagacctt tgaaaatcat ccctatggaa atagtttggt agattactcg cgagcacgca 660

gcttcatatc ttttgaagca atttttttaa aaaaaaactc atttttgagt tcttcgagat 720

gttgatgctc tgatgatatc attccaacac tcctagtgca aagtttgaaa tcaattggaa 780

ttgatttgaa taagtttgga tcattggatt aaattttcta acgtgcagtt tgtcaatacc 840

gtatgatccg gtgtgaattt ctattgatcc aatacgaata ctctaggatt ttgagcttat 900

ctttttatga gatattctat atggtgctgt gagtgtgtga ttcaaaattt ttatgggttt 960

ttatactgtt taatgatgtt ttaagcttgc tgaaaaccgt tggactgaat tctcagggag 1020

gtccgatatt catatcgaag gatccgatat tgcaccctga gcaggttcat tttactctgc 1080

attttgtaag gccttttttgt ggttctttcc cttcccaatt tcaatctttt tcgctatgtt 1140

ctctaagctt tttagtgcat ctagccatca attagcatat cgatgggttt tggac 1195

<210> 5007
<211> 1098
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53540_G1, chr2:9438225..9439322, Cluster 30

<400> 5007
tttcctctgg ttattcttct atctacctcc cgaaagaaag atagggcagg atggatgatg 60

tcctgacgaa gaatgtcggc ggacaaggcc aacagtaatc agtgaaggcc acctcccccc 120

ctggcccctg cggcaatcat ttcgaccaga gtgttttctg attttatgtc ccctagaaag 180

cagtgaacca ggaatcggct gtgcaatgag ccatcacttc agtcagtttt cctcttcctc 240

agttgtcacc atggaggata atgcatttct ctcctctagc cttcttctct tccctccacc 300

cctattttgt tagtttttt ccttcttttt cttcagaatc tttttcatta ctactgctac 360

tacccacacc catctgctcg gtgcaaaacg aagtaattag ccgtttagag aggcatgtat 420

tagtcggtat gcgcatccca atggacgcta tttaagcagc gtcaacaaat atttgaaaca 480

cttaaattaa acatggttta tttttaattc gaatatattc cctttagaaa tacttttttt 540

tcttaaacat tgtttgtttt taattccttg aatgagaatc catcaatatt tttttcgagc 600

tatacatttt tttaagatta tggaaaccaa attgttcccg cattttgca atctcttgca 660

tacggccata caaatcaaaa catgacaaac atcttccttc tgacaatcac aataataaag 720

catcaacaaa tgaagctcct tctattctag cattagactt ctggcttgca agctatacat 780

gagcatgaat tatggcattc tcctaatttc cattgcataa tttgttctac acttgagtta 840

ttaagcataa agcgtataca tctgtcttca attgctaatc tcgtctatgc agcattgata 900

agctttctta ctggatccaa gtggttatag aatcagtgca ctagcagtct acgaccagat 960

catacatttg tcatttgcac ttacaaatcc atcgtgtctg tcaactatga gcagagccag 1020

agcttggttg ctgtcaaaca gcatcgaccg gctcgttgtc ttctccacgc atcacacctt 1080

ccaccttctt caaccaat 1098

<210> 5008
<211> 1138
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5385_G1, chr1:27632759..27633896, Cluster 30

<400> 5008
gtctttacta cggccatggt cttcgtcgct gttacattga ctgcgagggg acgacgtata 60

aaaggacgcg tgacgaagaa gaaatatccg cgccgccgag gtcccctcga tgcgtaaccg 120

agaaactctt ccgggcactc aaccgatatg gtcattaatt catagcgaca tgtaaccaac 180

tgtaataact ctaaagtggc gatttcttca tgctacaaca taatcttatg acgaaatggt 240

caaaggcgaa ggacgccgcc ggtaagtgaa agagacgggg aagggtcaac acgaacagat 300

ggacgctact caatattatt tgctgtctct ggctctatcg cgccataaat cgtgaaagaa 360

acggcgttag actgtcttta gtagaaatgg taaaataagg ggcgcaaaac tacgtaatga 420

agtttaaaat aagagatgaa atgagagata agacagggga tccgctgctg aagataacgt 480

cagtcagctg ctcaagatag cgtcagtcgc gaacgacagt gactcattag ctaacaaaat 540

aaagtaatat caacaaataa atgtagtaaa agaaacatgg tagtctgtat gagaacactg 600

atgacgtact aattgcaaaa tggtgtggca gtttggatct tgaatgaatg aatgccgatt 660

ttctctgtcc gtgacttcgt ctcatactca catgttccat taacattcca gacgttgact 720

gttacggaat agggacgcaa tcgaggcgag ggtcgtgaag acattatgta catattttag 780

agtatgcacg ctttgcaaag atagctcact aacacatcga tcctaatcat taacgtatca 840

aaagaacttg tgtatacatc atatatgtaa ggatcacgct tctctaacat ttttttactt 900

gagttaaatc ctaattacag gttcaacttc accgaatggc tagtaggtga taaagaattt 960

tacaccatag tttagtttct aaccctatat tagcatggca atttctgaag tagattgctc 1020

aaataaaaat gcaaaatctt gatgtttttc cctagatttc aaaaaactca gcactcttta 1080

ctaattctca ttaaagcacc tgcacaaggg tgtcccccta gtccatgcaa taaccaag 1138

<210> 5009
<211> 1004
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54534_G1, chr2:14880540..14881543, Cluster 30

<400> 5009
tcggctagga cttgattatt aattttattt aaacatatcc cgtgtgcgct agcaattagt 60

actattgtag ctatgattac gtttttattt atatatggtc ggtacgttct actcaaggcc 120

gcacaatgtt ttgggacgtc gtaatactca atattttcat ttctaagtgc aagcagttct 180

aggaatctta acgcagctta agcaggagtg gaaaacgtgc gtcatgtccc ttgaactacc 240

gtttggattc aattatggcc aactttggtg ctaatccatg ctttgattaa acctagattt 300

gctgatcaaa gaaatcctcg tggatcaatt aattctttgt ggtgttgtgc attttcaatt 360

atttctggca gcgtggaatt aagtcgtaga ttttttttg ctccttccag tgcgtttaaa 420

agattcctac aggtgaaaca cagtgtaacc atcaatataa agagtcgcat agatcgacaa 480

tatatgatag atataataaa gaggaatgct atttttactg acttgattag aagtgtcatt 540

ttcttaaaat aattgtaggt aaaaaattct tacattgggg cgtagaaatt gtgacacaat 600

gggataaaat gaataccaat ttaggacggg gtaagtatct atttagagag acatcatgtt 660

tgaagaggca cctatttctc aacacctctt gatcaaatct taatttgaga tcatcacaat 720

aaaaaatatg cagctgaaat ttctcagaaa atccaatagg gaaagtttgt ggagtacact 780

gatatgctat ttgaactcct aaacccaatg ggaaaatgag aaaaatgcta ggtcatatgt 840

atgtcattgc tcaatttacg cttatatagg tacccttta tgaaagggaa accttaaacg 900

agtttaacga gcaataaatg ttatttgtaa agcgccatgt ctttggtatc ccattaaaaa 960

acctctatgg gacaaattgg agatacgtcg tcctcaaacc ttcc 1004

<210> 5010
<211> 1000
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54899_G1, chr2:16866058..16867057, Cluster 30

<400> 5010
aggaaggtga cgcccgacgc acctatattg tgcaagtcta gttttattct cgttgggaag 60

cataacgctg tctatgttcg aggcaaggca tcctgaaaaa tgcgttaacc tttccttact 120

gcacaatttt tagttcttca ttcaaatgcg agattgacgt atatgttact ggttgttgtc 180

ttgtcctgca gaactcgtta acttttcctt agcgtacaga ttttattctg attttcagtc 240

aaacgcgaga ttgatgatgt acctgttaat gttttttttg tgtttcgtcc agtgtttaca 300

attactagtg atcaggcttg ttttgcatat agaatgcgta cacattccca agctttgttt 360

ctgatttcga gattgatgta cctgttgacg taactgaatt aactgcttgt gcggatgttg 420

attcatggat accaagctgg cagtagttat ttaatctaac ggttcttact ctgagattca 480

aactgaatgc tgtgatgctc tccatattac aaaccgtgga ttacgcaaaa tgcattaagg 540

atgatgcggg attgaactgt tttggaattg ttgttagcat cttaaagtat ggtgcattct 600

ggttactgtt gaaatgcttg gattattgtt ggctgttaac gctgcacaac tgtagcacgt 660

ttttgtctac cattcccgtt gctgtaagaa aaatatggaa tataggaatt gaatactcct 720

gttatttctt gctcagtaaa tcaactgtgt cagggaattt ttcttgacgc tgtaattcta 780

gtttttttc cttcttatta ttgtagatgt agttcatgtt caaggtaagg catacttaat 840

attttgttga actgcatggt acacgtttta tgaagcttgg aatttgtaat acgttgcttc 900

ttgcattagc aggcagtgtt tgagcttgac atttggcttg atctgattat tcttcattac 960

ggatatattg cattggcatt aagctcattt agttcgaagg 1000

<210> 5011
<211> 1147
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55050_G1, chr2:17551154..17552300, Cluster 30

<400> 5011
ggttggccgg cgggtcacaa aaatgttagc agttgggtcc gaatcgaagc ctgcactaga 60

atgtcttttg agttctaatg gaagtcatct ggagtcagat tactcttttg cctgaaacac 120

tagaaatcga gaccaagggc aaggagatct caatgacaag actattctta gatccacaac 180

tccaaaccat taagtccgcg taccttgaag aatacgattc tcttttgaag acctagacaa 240

agtacacagt ggcattcaag agcgtcacat cttagaacaa gaccaggcat ttcagattgc 300

tacatcttga cttgttcatt ttaagaaaaa attaaaaata aaacattctg gtacttaaaa 360

tcttaaaccc ttagaaatgg tcatgacctg taccattctg tctaatttct tcaatagact 420

tgtactttct gtctaattta ttttataagt aactttagtt tgatatatgc ttctcgcttg 480

acagatacta taaggctact aagaaacatg agtgaaattg cacaagtaat agtagcaact 540

tcatgagaca tcaaagtatc ttcttcagat gcctgcattt ttttgttgtt gcgtagatga 600

tcttgatttc aatgttagat atactgtctc tacagatact gccttcataa tctgaaagca 660

catgtaaact ctgacgctcc gctaattgcg agtggagtaa gccaaatctg taccaaagct 720

agctagttat tttgaaaata ccaaatctgt accaaatctg aaagtacatg taaactctga 780

cagctccaca acgcaacgcc caccaccatc agttcctggg ctggccaact cctttccgcg 840

cctgagtttt gtggcgcgtt gtgttaatac ggggtatcaa cgattccagc atgtgtagaa 900

gtgaattttt tttctttaaa aaaaagaaga aagaagaaag aagaaagaag aaattttgtc 960

cggtaatggg cctaatggac ctgcctggct gctacgcatg ggccgacaaa gcctaaaaaa 1020

tcggcatttg tatccaccct ttatttttt gacgttaaaa ggagagaggg ttacaaattc 1080

cacacgcacg agctcatcac gtagtcttcg gtcattgcag gcgtatgaaa aagtagttcg 1140

tatcgta 1147

<210> 5012
<211> 1067
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55527_G1, chr2:20105996..20107062, Cluster 30

<400> 5012
ttatcctgga ccctactctc atatgtaaca gagaggacgt tttttcacga aaggtatggg 60

aatcaatcaa atttactcac ataaagggtt tagacgagag agtcatcggt gttgcgcgac 120

cttcgtcgca tccgtccctc acattggtgt gatgttgatg atggagctag taagcagtat 180

ctctctgaaa ccttgctccg ttgaaaacgt gcacaagttg gagcgaatta ggttttcgtt 240

tgtacatctg cttggtgatg ttgtatgcaa cgttctacga gctttatcga ccctccgacc 300

tcttcgattc gttaatgatg atagaagcaa acttcgttaa gttgtaatta acgatgagat 360

ccttcttgag tttagatcta atctactgta tgggcatgat gccttttgtt atatgtgatg 420

tattcgtagt ttatttagca gttgctttat gaacgaagtt aatattcaat gatgttaagc 480

atatggattt ttagtagcat atataagaaa gcaaatttga tttttttat aaaaaaaata 540

gttagagtat agctttcaat aaggtcctcg aaaagtacca ttcatgcgaa tatacagcta 600

acttaaacat aggtttttcc tttaaaaaaa catttccgtt ttgttagtcg aagattaaaa 660

ctaaggaaca tttatttgtt cattgtacca ttgtactggt ttcttcacaa aagattgtac 720

gtacgcattg acatcctaat tataagtact cgacgggctc agtctcgcca accatccctc 780

ttggtcctga aaaagaaagg ttccgcgcgc agcaacaggt cgttctgacc cggtgaaggc 840

tgaacgttcg gcttctgatg atccgtcgat cttattcgcc ttgatgcagt ttgccgctgt 900

taaactagtt agaagacgaa gtcagtcttc ttctggacaa tagaatagaa taagccatcc 960

gaatacatta tttccgaacc gatcaataat aacgcgcgcg atactatcgt cgtcacaata 1020

atagtgcaac tggagatgag cgaggagagc aacaacgcat ctgttta 1067

<210> 5013
<211> 1306
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55608_G1, chr2:20567830..20569135, Cluster 30

<400> 5013
taaaaaatat tactacacat ataattaaac atgttgacta ctgtggtgta gactgtttat 60

gtaattgtga taactaagac ctataatata ttattattaa aaaaactttt tgaatgaaat 120

atgcaataaa caccatagtt tgaacctaca catggataaa aaaattacga taattggtat 180

gaacaaaaat tgagagccaa aatatagatt cattctgttg taaaaagaat acaacaaaag 240

ctgaataaat taaactaagg tttcaaaaat ttacaaaggc gcaatgcaaa tggtggaaga 300

acacataaag aaaatggtaa atttatcata atcatgtata gattatagag tatatatcta 360

gatccaaatg gacattgtgt taataaagag agagttagag caaagataat aaatcttgat 420

tagttgtaac tgatgataag ttatttatta attttaatac ttatgtaaca tagaattgta 480

gaccgtgctg ggacatgact agtggtcata attttactag tgcttgaccc taaacatagt 540

gatgcatata tgtgcagagc tgggtaagag taatcccaat aataataaat taaccaagtt 600

gcaaaagtca tgctataaaa cagttgtctc ttatttatca atttctatta ttaattttac 660

ctatgtttca ccttctctgt cttaatcctt ctcatattta tttaatttat ataggtttac 720

cgttacacat gcttctgtat tcagctttgt tgcttgtatg agagccaagc tctcatctct 780

tctgttctca acattagcat ttgtttgact ataagccaat tattatactt gtaatcggca 840

gctaagctcc atggcggcta agctcgatta gcttctgtaa attcaattaa gacatgtatt 900

gaccacggca tatatgggct agcggtcaaa actttactag ttgttgaccc cagatatagc 960

tgaaaattat gtttgaattt gaacgtgcct tagttgatag acagatatgg agcagaaaag 1020

attgtggcgg cttcttctct ttaattaatt tactcatttt ggtgatgttt gtgcagcaat 1080

ttcataatag attaaattgt ttatagctat tatccaagtt acacgagtca agctataaaa 1140

tagtggtttc tatttatcta cattttatg tcgatatttt tcgtgtctta tcttttctct 1200

tctaatcgtc ctctgttttt tgaaagaacg gcaagagaat tgccgaaata ttattagaag 1260

ggaaagaaag caaaagacaa tatctctact acttacccgc gcacag 1306

<210> 5014
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56725_G1, chr2:26877962..26879044, Cluster 30

<400> 5014
gatgtctaga ggggggatag actctattta aactttctac aaactcacaa acactgggaa 60

aaggtgttaa tataagagaa ttaagcgata aaccaaataa gcaactagag gctatactaa 120

acaactaaga agctagctat aagaacaact aaactacaca actaacaaga gagctagcat 180

taacaagtaa agacaactag agagctagag ataataagca acaacacaag cacatgatat 240

aacttaaaat tgcaagtgtt gaaagagtga accagtgagg gtgtttggga gaaggtctat 300

ggtagaaggt ccatattaac caaaatcatt attgaaatat tttcaggaaa gggacccaat 360

tcaaggttta ggtacaaaga gaaaaaaagc ttcggatcaa gaagtaaccc caaagttact 420

gtctaatcta cgaagttggt tgctaaaaag ccaaagtaag tgaagaacta tcaaacatgg 480

cgaaactatg aagcatagct gaaggaaaaa tgaagtccta gtgcattcga agttgccttc 540

aggaaaggaa gcagaacata aagttaggga gaagaaaaga cgtgtatgcc acgtctttgt 600

tataaaaata cacaatttta ttctcttaag tatcatataa tataaattac attcttgtaa 660

ttccataaaa atgtatattt gtttgaactt ataaataggt gaacaatttc gtggctatag 720

agttcaactg ttccataacc caacacttgt aatagctttc ccaataaaac ttttgaaggt 780

aacaacaaaa agttttgatg tatttcatca ctataaattt tcatttcata acgatcaaag 840

caaaactttg ttgttaatag aattaaatgc aacttgctga ctctacaaag tatgcctcac 900

ctcacgccat agtatatttg aatttgatat tgatagcatt atctcgttga gttgattaaa 960

tgtttcccta accatccttc aactcttcgg taccttcaaa ggagagaagg acataaatca 1020

atactcatgt tgtcctattg tgtttcttct tgaaatcttg ataggtccac aacagaggac 1080

aat 1083

<210> 5015
<211> 1099
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58498_G1, chr2:37421561..37422659, Cluster 30

<400> 5015
cattgttgag atccacagta caaaagatca atattatgcc tatgtttacg ttcttataat 60

catccctatg taagaaccaa atctttagtg aataaataaa gcaatcattc atcataaatc 120

tgagaatcac ggtgtgatgt tgaatccttt ttatttttct ctcccgaacc ctcttctatt 180

tgatttcagg tgatttcatc ttttggagtt tttggggctg ttgtgcttgg ttttcacgtt 240

ttataattgt aatcggttct aattaattta cctccccgcg ttggtttttt cgtccttcat 300

tgatttgcgg ttgctttcct cacaattgct tggacggcag tagtaaataa gcggacttct 360

ctatcaaacg atagggattg gattccttcg aagttcctac gaaagtactt cgaccaaaac 420

gagcccttaa taactagtat aagtagacta gattctaatt tacaagggaa aaatatattt 480

tttctcaaaa gatcgtacaa ataaaaatat gtttaatagc caaggttttt gtgagcaaag 540

aacagcttca atacatccgc ttttaacctg aaggaactgc atgcgagaaa gaaagaaaga 600

gaaaaaaaag gctcactgct ttgagaacga ggaccagcac ttccggtggc tagcggtaaa 660

agtggtgctt tcaaaaagga cacgggaatg caacagacag tacctttcaa gcgcgttgta 720

ctcgcactcc ttctttccgt cctaaaaaat aatacagtat aaatctatgt agctctattt 780

ttatttttg ttagttttg ttttttatt aacattaaac tatcaatatg tatagcacaa 840

actatgcata cgataaaata actattagca atatttttac gtaaagtgga tgaactttag 900

aatagtttgg tctacgacgg ttatttggta atcccgatgt ttttagggca tcgttgtgct 960

atcgcgttgc ggttatgcgc tagcttttgg agtctagttt tgacgaggaa gtatggaaag 1020

ttggcgccag acgccaggcc ggggctctga cggagacatc ccttttgccc cgtttagccg 1080

cgctacgcca tgggccatg 1099

<210> 5016
<211> 1019
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59237_G1, chr2:41738652..41739670, Cluster 30

<400> 5016
tgttgtatat gtgaaaagct tgtttagatt ttagcaatta agtgacaata tttgtgaact 60

aatatatttt gtgagatgaa atgtgataat tggtccacaa aagtagaaca taaggccatg 120

atgatgaaga ttgcgatgat cgtgattgtg caaaagatcg agaagtgaaa agataaagac 180

gaaggatgac acataaagca aaggtataat gataaggatt tgtctttcat cgtccgtgtg 240

gtgatcagtg gagaggaaaa actagattga taggaaacat agtcatgcta taaagagagt 300

gaaatttggt tgctaatgtg attgtctagt gctaaagtat tggtcatccc gtgaaagatc 360

tattggagtt agccaattta aaaggttcga gaagaaaact tgatggagga tttttaccca 420

cactggagtc tctgatgata attggagttg ggtcttcgaa tcctagagcg ctgaatcggc 480

tcgacccaat catccatcga aatcctccgg taaccaccaa tgatcaggtc atcggaggtt 540

agagcattga cctaacatag ttgaaaacaa tggcatagac cctaacttct agtgccacta 600

gagagcagac attgaagctt agactttgat agttagcaaa gtttagaaag catgtgggaa 660

tttcaaaaag gccactatca aagttgtttg ttgatcccac cgaattgcta catcgaagga 720

agagacgatg tttgtgtgtg agggtggggt ggcagtgtat tcactagaac tatctggtga 780

gcaccgaata gcaagcacca aaggttcgag catacaatgt gtagttctaa catagtgcca 840

tcaaccattg aagaagttgt ggtggtggac tctagtgacc tactagattc tcctataaca 900

ccaaaaaagt tgccccaagc ttccaatgac tagtgtcatg agagggccta tgaagtgtgt 960

ggccaagaaa attagaactc ttcaacttgt tgacacacac aagagttcaa gaaacacct 1019

<210> 5017
<211> 1014
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_625_G1, chr1:3358192..3359205, Cluster 30

<400> 5017
acccctaatt cagttacact aatttacacc ataacaacat tcatcttttt ttgtttctct 60

acgcacaggc ggtcctgttt aaaccaagat cttttgtgag atgatgaaga gcattgcatt 120

ttgtgttaga accaaatata atataaatat gatagtcaag atctgcatct agttagcact 180

aaacattact tggctacatt tgtcgaaagt aaatcttttc cacttgaact agaatattca 240

ccttatattt aaaatatatt attgggaaac tagtttttct taatgtgtat cctggtgtca 300

ttcttatgtt gttaatttat acaaaactat agataatgat caaagttaaa aaaaggtttg 360

aatgagtgtt aggacaaaac tatataggtg attaccacgt gtttggatca tctagaccta 420

aatattaagt ggagtaagtt tagtttagtc ggtgttgttt aattagatct tggactgaaa 480

gtgaagtagt tctcttgcaa aagggctcat gtgtttcttt taacccatat tggtccatat 540

ttgttaagca ctaaactcat ggctagttcg gttttaggac ctacaaatta gttcactttt 600

acttcatcta tttgggtact aagctgtgct tccagttggg ttataggaac tggggtatcc 660

aaataggctt gcccttaaac tggggtgtcg gggttaacct cacagtatga aaccaagaga 720

ggagaaatgg agaatagagt aggaacttca atatagaata ccttctgcag agtggagaac 780

gagtgttacc cactaggtga gtatgccaag ctgtgcatgg cccacatctt ccaggccttc 840

agaacacctt ctgcagagtg gagaccgaga gttatccact aggtgagtat gccaagctgt 900

gcatggccca catcttccag gcctttagac cagtaaaggc ccaataggca aaaagggacc 960

actgtccaaa gacgaaacca gagaaggcct tcacagtcgt tttttaacga accc 1014

<210> 5018
<211> 1002
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_62533_G1, chr2:59728024..59729025, Cluster 30

<400> 5018
aaataagaac catccattat agtagtctcc agctggaatg ccaaccataa tggataagcg 60

gctaagggca actccacgtc tccatcaacc ttaatcggag ttcaaatgat acaagtgcca 120

atcttccaaa caaggaaaca actgagaatc taataatcac cattaaactc tggtgacaca 180

catacgtaag ctagtaaatg gaatccccaa acttcttgcg ctactcctgt actccacagt 240

aattcatcat tctagggaaa tatcagtgcc ttatcctgga caaggtcctt gaacaacctc 300

ttcgtggtaa tatgatagaa acacaaaaag tactaaacaa agtcaataat atttcattta 360

gctagtggct gagcaacgag ccaaacatca acaaagaact gagaggagaa agaacaagag 420

cttgtttgga ttccctccct taaactttag agctctaaaa ttattttagc tccgttttaa 480

ggtcaaaagc tctaacgtga ggttggctaa aatttagagc taactttaga caacacatgt 540

ctaaaaactt tagctctaaa gtatagagaa ggagatccaa acaggtcctg ttaatataca 600

ccttgcatct tacaatcaaa agaaacatgg ggcatctata aggagattgt attgatgcaa 660

gccaaataat cagcctgacc tgatgatctt gctgttgtac ctgcaaagct ccagttaacc 720

aggatcaaac agcatagagg cataaagcag cacagcaagg ggggctgccg cagcccacct 780

gaaagtagca gttctgatca taagaaaaca gacgaagcta acatggctct tctggaaacg 840

caagagatcg ttaagaaaac acatgaagaa gggaaaaaat gtctcaggga aagcatactc 900

aaaagaatct acacaccaat gagcacacga actagaatct ctaagaacca agaaggtaag 960

ctaatttacc acagattttg gaaagtcgga agcatgatac ct 1002

<210> 5019
<211> 1151
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_64279_G1, chr2:70724847..70725997, Cluster 30

<400> 5019
tctagtgata taaaagggat taggatatac attttcttta atctttctat gctactgacc 60

atgacatgga agagtttgat cgagtggcat agagaagatt aagacatttg cgttgacaaa 120

taaggcgtac ttgcaaaatt gcattggcat gcagcgaatt ttctctagaa gaaaagagga 180

gcactactcg ccggtgtagg aggaagatgg gaggcgtggc aaccgtcgtt ctcacggttg 240

gaggtgagga ttgatcaagg atgaggtttg gaggggaatg aagacacgac gggtgagaaa 300

gaatatgcgg cgtgtaaaat cttggatagg taacgacaca caccacatgc atgaacagat 360

tccactggca ggtttgtaat atatattcct aggcttcggt tcaaaaccat gccgaattca 420

tttattgcaa gtatttggat ccatgcatgc agtataaacc caagtacctc catatccagt 480

cagtcctaaa aaaatgtgta tatataccat ggacacgcca gcatgaagaa cagggatatg 540

caatacttgc tggcttttcc ctggattctc cgcctttggc acattcggaa ataatagaga 600

tcgtgacaaa gtagatgcca cgtttgggtg ccaaagatgc cgctgttttg ttgagagctt 660

cctttgggca gaaagacatc caacttgagg agttgctcct atcggtctgc gcatgcgctc 720

ccccttttatt ctctgcctac aaggacatca atcttatcta tatatatata tgcagcttct 780

ttctgcgtgc acgtccaaat atattactct tgaaggaaat gattagttcg acaagtgata 840

tggatcggat caagaactaa cggggtgaca cttgttggtt aaacggactc tacgtacttc 900

taaattggag tataaaacaa accaggtgat ggacataatg ttaggagcaa ggtttttaaa 960

taaccgaata tagcggtcta tatatctcaa tatatccttt tagcagtgaa aggttatgtt 1020

atttagcccg atatattcca aaatattctg ctttatcgcc atttatctgg atatttgcaa 1080

gtttaagaaa tatggggata cactccgtat cccgatattt aaaacaccgg ttaagagact 1140

ataattcgat t 1151

<210> 5020
<211> 1261
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_66070_G1, chr2:82637181..82638441, Cluster 30

<400> 5020
taagaagcat taacttgttt gattcaaggg ccacagtatc tttatgaaag aaaaggcagg 60

tgaatgtagt atatataata aaaaaaacca ggagaagaaa agagccggcg acatgcaagg 120

aatcgtgtgt gctttacacg aggaaaggag agcaaaccgt gctgcccagg acatggaaca 180

cgcaaggaat tattgtgcat gctttacaaa atggaagggg caacctgtgg tagccgcctt 240

ctggtacatt ctcaatcttg tctgcgcacc tctggtaggt ctccttgaat tttgtgggat 300

tcaagttcag cttcttctgc tgttcttatc cgactaaatt tgtccatccc acataaatgt 360

agaataactc aataacattt atagatatgg tgtgtgcatg taggttgtcg caacagaaat 420

tctcaactga tggatggatt agattaatga ttgcgctgtt gctgttcttg cttggtcttc 480

tacggaggaa gtcatcatgg tggtcatgcg ggtactgctc ttttgctttc tccattaatg 540

ttcaagataa aagttacatg gttttctact tcaatttcta tctagccaat tctggtggga 600

cttaatatgt gggtgaaaat tagattatat gtaacatctg tgaagctgca aggtgaagtg 660

cagaaacttt agcaatccga attaattgtt tcatgcaacg gttgaaggta tcagacaaat 720

aggatgttta taggatggag ttctagccgg tcgtatttaa aagattgaag caaaccagga 780

caaacatcac aagtacaaaa gcaattttag atctacatag catgaacatg atggttcttt 840

cacattcttt gaacttagca cagttctcgg aatagcttac aatgtacgac aaagcttgcc 900

tgtaccaata aaaaatgtga gagacttgac ttcctctaaa gcaaccttag ccatctcaaa 960

ctcataagcc atggaagcaa acttatttta cacattaata agtttttca cacaagcaac 1020

tcattgatca cactaagttt catcaacaaa tatggactgg attttagcag gtcaagtcct 1080

tttatggtat tttcaaattt caacttgcaa taagatccaa taaagccgaa caactctttg 1140

tcgtattgat aaaatatgaa aacctatgta ctctgttggt cactcaagct aagtagcagg 1200

tccttacaca taccttcatg aattacatca tttgccattt ttccaccttt gaggtgttca 1260

g 1261

<210> 5021
<211> 1039
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_76729_G1, chr2:151687911..151688949, Cluster 30

<400> 5021
ctaattaggt gaatggttaa aatgcagcat atgcattgca tgccatatat cagaccttat 60

aaagcctttg agatgaggtt tatcccactc aaattgatgg gctgatacat gcatgagttt 120

cacttttac tatagttgtt cacttgagtt gtatatatgg tggcatcgat gccgacaaac 180

taaactccca cactcatcag ttaaccacct acaagcaaca acagtcacat atatagtagg 240

gatataaacc tctgccttct actgttatta gaagcttcct ttacttgttt gacaagctta 300

gagtgttgtc atgattccaa cctttagtaa tctaatgtgt gtggaaaacc atgccctaaa 360

caatccactt atatatgtcg gccgtcggct agcttgagga aacaaatgtt tcagtacgtt 420

gttgtagcac taagctccga aacacagatc aaagtctgca atccttttc tttaaatatt 480

aatctgaagt tgatcattaa ttcactaact aaggactaat ggcgcccttg gaaattcatc 540

aattattatg gccgctgtca acatggacta gcaatacatc gtccctttat atgtctaaac 600

aatctcagtg aatttgcaga gaagaccaat cgtgagcttc tgaaagcgac ttatatgaca 660

tcatatgtat atataagctg tataatcacg tcaatgtttt gagtttatat attacccaac 720

gtcaggaccc atgcttggag tgacgctgtt ggggttacat gagcttgttt gcgtcagtat 780

gctgcatgat ataggagtat atgatagtct aaacttttta gtctcaatgg ggcatgcgca 840

tgcatgacca gaataaatat gtccaggcag agtttgatta gacatgcatg tgctaattcg 900

atatgttaga cactcctagt tcatagtata tataagggcg gcacttagat cattcatttg 960

gtcaggcatg ctatcttgtg ttgttattat ttgtagaata acacaattgg gcacttacat 1020

tgagcctctc gatatataa 1039

<210> 5022
<211> 1374
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7969_G1, chr1:41374531..41375904, Cluster 30

<400> 5022
cagtcgcttc cctgaccttt ggcctcgcct gttttacgag ggtcgagggt acagcccagg 60

gatgtgcgtc tccaaactcc caaagataaa atagctgctg tcgtgttcga tggacaaatc 120

gcatctcagt aatatactcc tatttttgca tccaaatcac cgcttcttaa cagaggtttc 180

acacggtttc aatactttga aaacgagttt gatatcattt ctcttgaata ctatgctatg 240

cgatctaaaa ttataaatgt cttactatta aatatatatg aaactgtcat aaaattatca 300

gtgagagtac ccgagtccag ctctgcagcg tggtcgcgtg gagacagtct taacgaggat 360

ggggccgagc cggcctgatg ggccgtctac tcgtttatat tgctccatct cctgtcattg 420

gtgggccata ttcttgcgca cgaacgtttg ggccgaaatc gtttactgaa aaaccttgtc 480

tgcttgcgtt acagtgtgct gactgctgac tgatctgtcg tgtgcgtgca catttggtag 540

atttatgaac agtctgaagc acacaatcaa aatcgttttg cactcgtgta tacggtcagt 600

ggtagatctt gtatatgatc atataaaata ctgttttgca gctatatgat tgtgtaaaac 660

atttaagctg ttcaagacat ccttaacact gtatcttcag gaatgacagc ggcatgaccg 720

catgagatga tttgaatgcg agaaagggca agacaaacaa acagtatact gatatatcga 780

ctcctgaacc cgcagagacg gttagaataa ccctacaggc tacaggtgac gttcacccca 840

tatcaaatat ttgaatatca aatactaaat ggggtcttat acgttcaccc catatcaaat 900

atttgaatat caaatactaa atggggtctt attgtgtata ctctgcaaat tattgggttg 960

aagatattct atcatccgaa acaacctatt cttttctaga attctttttt ctctcaacct 1020

tcaagagacc tctctttaag atttgaggta atcataagca aaatattgat ttttctacca 1080

ttgtatttga aagattgttt aataggttta gacaccagaa ttaagaaata gtgaaaggtg 1140

atctaggtgg ccagaaactt tcttttagcc agctcgcttt gtgaaagcaa gaatgcaatg 1200

ctcgttttgg ggagggatta cactgtgcat gtttagttca ttatcatgtt ggaaatgatg 1260

agggagcaaa tagaagtgaa gtgtacatat atgaattgaa aagttcagat tttgtgtgga 1320

tgcatattat gttgctgaaa tagaaggcag tctctagcag tggagcaact ttca 1374

<210> 5023
<211> 1249
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81774_G1, chr2:180531111..180532359, Cluster 30

<400> 5023
gcttagcaaa aaaacaagaa aagtgtcaag tgttactttg tactattttt gagattattc 60

aacattttta ttaccacttt gtgagatctg tttggaatat tgtgcctttt gtatttggaa 120

ttcaaccatc cactagcatt gctaatatat ttggttattg gctaaatggc ttgtctcttt 180

agttcagaag ccaaatttgt tagggtcagt tgcactgtgc tatgttgggt tctatgtttg 240

aaaaaaaatg atatagtctt tattctttaa caacaccaag tctgttatat attgtaggta 300

atttttagga ggacatagta gattttacag tggtctctgc actctgctac acaagaaaga 360

gtaataacta gcgttcaaat atggatgcac aaacttaaaa ataatgacca tcgcggtctt 420

caaaaagttc gagtggagct ttaggaacta aattgagtcc taattcattt tccaagctgg 480

tagtcgtttg gcttagatgg gttgaacttt gttgctttta tttccttctc ttggatataa 540

gagtttaaat ttcatcgctt tgaattatat ttgactttta gttgtgtgcc atctacggat 600

ggtagatgct gaaattttag ttccattatc taaaaaaggt tattcttaaa cagccatgga 660

tatttggcta ttcatataag tcttcaggac taccagtcta ccaccacgac cagatgttca 720

gtgaggtgga aattttggtg ctccaaagtt aattacacga taatgattta gggtccttgc 780

aattatttga tatatttaac ttaaaatcct tttcttgcgg aagtggtcat tatagtagtt 840

cctctcacgt gtcctattcg aaattgatta tggctccgac ttcgtttttt ggttgattaa 900

ttaagatgca caattcatga tggcaagcaa taatcaaatg gcttttcgcc ctttcccaac 960

cccgagttaa attaatgtca catttttcgt tggaacctaa taactgtgct tgtgtattat 1020

tgataacgaa aaaactaagg accactagta tgatctttga taataataaa gtgagctgag 1080

tatcagatag ttgaaagccc catgttggcg aggtttaaag cgatatgttt agttttggta 1140

gctgagacaa ccagtagatt aatctttacc ctagtgacat tgctctaatt tatttgacaa 1200

aacgtttgag agttagtaga gttagtatgc ttgcgaatag acgagagta 1249

<210> 5024
<211> 1075
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81803_G1, chr2:180666182..180667256, Cluster 30

<400> 5024
acttatcaat aacttaatag catatatcaa gtataatgaa ataaaatatt tataaaaaaa 60

tacttacatt aaaacaacca catacgtaga agcaatgggc acatatatct agatgcctcg 120

attaaaacat gtggcatggc ttaccatagt catagttagg catgggtagc tcaagagagc 180

caagtgcatc cttgcaatac ctgtctgagt atgaatctta cgacgaccct attttggtca 240

tttctactcc gctacatgtc atgtatctat actaaaccaa agggttctaa gaaaatgagt 300

cattttgcct tataccataa tataagcatt ttaaactatt gtagacatat tacaaataac 360

taactaattg caaactctaa atattagaaa taaaaaaaat ctacaatgaa caaacaaatt 420

taacctacat taaatctaaa cataataacc aacattataa cacaatcata aaacacgtgc 480

acaaacacat acacatacaa atcaaggacc gaaactaagc acctatttgt aataaacata 540

atcaatctat gtaaacaact tggcttatac accaaaatca aaattgattt ccccatatat 600

acctagaaaa ctatgttata aaatatacct aacatagact aaatcagtgt gtataaattg 660

aagaggtgag aaaggatacc ttgttcgaaa aaaatccaca gatcaaacta atccaagctt 720

ctaaggttga ttcagcatat tggagaagct tggaaggttt gagagaggga gagatgtgaa 780

ataaatgagg ccctcctaat ccatgaactg gctgaggctg tttaaactgg agtttagttt 840

tagggatctt aacactgacc ttagtgtcac tcgatgtcac gtcataaata caatggcgtc 900

catactattt atatttataa tataatactt ggccgccatg atttatagtg ttgatgctat 960

agtcacaatg tcaaaccctg gagtctaaac atgataataa tttcactaaa aatgtgaaca 1020

tgaatttttt tttaaaaaaa cacaatacaa atgaaatctg catgttttaa agatg 1075

<210> 5025
<211> 1395
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_81882_G1, chr2:181176157..181177551, Cluster 30

<400> 5025
aaataaatat ttaaatacct atttatatga ctgtagaaaa atacggacaa ctggctggta 60

aaatataagt gtagaagaga aaagctgacg tgagtttgtc ccggccgttt ttaaatttta 120

gtctacagtt ttatacggct ttatacacta tactgagcac gacctgacac tatatggcta 180

tgtgctgagg ctaccgcctc tattatgttt agaagaacag aggcgagagg tgatatgacg 240

ctgacataga ttagatgatg atgacagtcg gacattgaag ccatggaaag tgcttgcttc 300

gcaacaactc taccgccaaa aaaagggact atagactaat ctgacggcca gagctggggc 360

aggcaggtac tactctgtag gcaattaggc agcgacgctt tgtcctaagg atgtttttag 420

cgcttaaaag ggcaagtgag aaatggcgct gctctgttcg gcctcgtacc gccggcactg 480

tgcgtgatgg gatggtatat ggggagggag gcgatgcttt ttgtcgcgct gggcgggggc 540

tccaaaggct gccggccgcc attgacgctg aaaagggctt gcccggccgt gacaagcaaa 600

atcatgcagt ggtagctcgt gatggcaata gcggcctagg catggcgctc tgacagcgca 660

ggcacaagca gggtgaaaaa gatgtgtgtg ttttaaaaaa atttcgagct gctttggtga 720

tcttttcttt cctgcccaat tcccaaagaa cgcaatcgat ggtgcacctg cgttgcttaa 780

acaaacacat gatttcctcg aacgcatgat acccaccaca ttgtggtgcc acacctcttt 840

ttggttcttt ctacagagtc gtcaattata acatatacag gttatatatc tgctgatggc 900

cggctctctg cattctgcag tgctacctca taatttacat aattattatt attattatgg 960

tttgcccata aaaatgaacc aatgtttttt gtcccttccg ttgagtcatc aatacgctca 1020

accgaaatag tgcacgtctt cgcacaacgt tatctacaga ctagtgtaca agaatagagg 1080

gaggtcgtaa tctaaagaca tgttgatgct agataatgtc tcttggttca ggtcacaaga 1140

tatataatac catacatcgt cttactgtat agtaaattaa taatagcagt ggcaaagatg 1200

ttatacgcgc ttagatatca actgggcata atgattattt agctctccca tctattttag 1260

tcagtaagag ttctagacta agtggtcaat agatcacctc tagctatttc ttgaatcgat 1320

agcgaacgtt cgattcaaat ccaaaccctt tctacgttgc tctgcccctc cctttcatag 1380

ctcaagcata catat 1395

<210> 5026
<211> 1316
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83029_G1, chr2:187356423..187357738, Cluster 30

<220>
<221> modified_base
<222> (898)..(898)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (898)..(997)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (899)..(899)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (900)..(900)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (901)..(901)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (902)..(902)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (903)..(903)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (904)..(904)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (905)..(905)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (906)..(906)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (907)..(907)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (908)..(908)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (909)..(909)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (910)..(910)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (911)..(911)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (912)..(912)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (913)..(913)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (914)..(914)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (915)..(915)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (916)..(916)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (917)..(917)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (918)..(918)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (919)..(919)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (920)..(920)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (921)..(921)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (922)..(922)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (923)..(923)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (924)..(924)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (925)..(925)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (926)..(926)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (927)..(927)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (928)..(928)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (929)..(929)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (930)..(930)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (931)..(931)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (932)..(932)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (933)..(933)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (934)..(934)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (935)..(935)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (936)..(936)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (937)..(937)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (938)..(938)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (939)..(939)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (940)..(940)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (941)..(941)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (942)..(942)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (943)..(943)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (944)..(944)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (945)..(945)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (946)..(946)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (947)..(947)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (948)..(948)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (949)..(949)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (950)..(950)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (951)..(951)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (952)..(952)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (953)..(953)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (954)..(954)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (955)..(955)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (956)..(956)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (957)..(957)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (958)..(958)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (959)..(959)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (960)..(960)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (961)..(961)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (962)..(962)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (963)..(963)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (964)..(964)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (965)..(965)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (966)..(966)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (967)..(967)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (968)..(968)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (969)..(969)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (970)..(970)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (971)..(971)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (972)..(972)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (973)..(973)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (974)..(974)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (975)..(975)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (976)..(976)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (977)..(977)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (978)..(978)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (979)..(979)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (980)..(980)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (981)..(981)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (982)..(982)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (983)..(983)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (984)..(984)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (985)..(985)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (986)..(986)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (987)..(987)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (988)..(988)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (989)..(989)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (990)..(990)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (991)..(991)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (992)..(992)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (993)..(993)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (994)..(994)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (995)..(995)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (996)..(996)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (997)..(997)
<223> a, c, g, or t

<400> 5026
catgttagta agaagcccga cgcatattcc gagcaccacg tacaactata catttaggaa 60

tcacatggtg caggacttac aactatgcat gttgcagtgc atcgcttgtc ccaacgatgt 120

ggcgtttttg gtaatgcatg taatacactc cttaaagaat attgtttttt ttaactttta 180

gataggcacc ctgtttgact atttttattt aaaaatttat tatctacaaa aactatacaa 240

ggtagataac taaacacgtg atatgtaaat ttaaatcaaa tgtgtcgtgt gttttggat 300

ggagcgagca ccggggtgtg ctcggctctg tcatcactgc aggatcaaaa gtcagaggag 360

aagattacaa ggcggtaaaa acaaaaccag tgtcaggctc ttcagcccca tgttggcctt 420

ttcctatttg accgacctgt gccttgtgtc ctgcttgttg cttcgagctc caactccgag 480

gcagaggcat acacacacat ttttttgaa cgtaaggcat gcacacacat gacccgagcc 540

cgaggttaat gcatcgtcgg tctgaacgct tagcttttt gaaacggaac aggggcgcca 600

tgtcgtcatg tcgaggaacg ggttggtgag acgtgctacc gtccaagccc ttttgagctc 660

ctgttcttga gtcaacaatg gcattgggtc actgacatta ttatctacat ctattcacca 720

tttaacatca tttttcctct actaataaat aatacatgtg cacaaacttt aagaaagtgg 780

gctggcggct ctcaatctgg cgcttccctg attcatccac cccttcactg ttgtgcgtag 840

ggggagttga agagcacggc attacggtcg aagggacacg ctatattgct acaaggtnnn 900

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 960

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnntta tgaccattac actcatttca 1020

ctcagtaatg aaatgatcca ggcacaactt agtaagtggc cggcggctgt cagtcagccg 1080

ttgcactgat cgttacgacc cttcctgtgt gtgttagggg ggatctgaag agcccggcat 1140

tacagttgaa gggacaccgc tatatgctac tatgtagcag agggtgatag gcgcaggtag 1200

cgtagacact gttgcgacta tgagaggcag tttgttgatc gatgggacac tgtttgcatg 1260

atgcgagggc acacatcata gccaacttcg gagtttttag cctatgcgca attgtt 1316

<210> 5027
<211> 1166
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83243_G1, chr2:188813881..188815046, Cluster 30

<400> 5027
tagatactag gttgatgaat gattatttgc ttgtgaaatg gatttgaaaa atcacccaag 60

ggtcggaaaa catctggtat aaacttgtta atgctaaata tatgctagga cacaattttt 120

tcattccaaa tgcaaagggg tatcacattt ttgtcaaggt ttacataaag ttgaacattt 180

gtttcaatgg ggtgcaatga acagagtcag aagtggggaa gagaccttgt tttggaaaga 240

tatttggttg gaaaggtaca attgagaata aagtacccaa gatttttga aatatgcaag 300

gacaaggagg ccctagtata atgttttgat gagaagggtt gaagtttgga tttgaggagg 360

cctctcactg attcatcaaa tgggaggaac tccattgtga gcttcagggg cacgatattt 420

ctcaagagag ggatgttgtg atctggagtt tagacaaatc acataggttc actacgaaat 480

ctctctatag atttaaaact gatgcaggta tcaggaataa aacctataaa atcatctgga 540

ggagtagggt gcttttgaaa ataaaggtgt tttgtggctt ctatacaata gaaaaattca 600

agctgctatg gtttaaaaaa aggtggaaag gaagtgttgt atgcagtctg cgttgtgggc 660

aggagtctat tgaccacatt ttctttcatt gtactttgtc caaatatatg tggatttgta 720

tgaaacaaaa tatcggacga gagtggtttc ctaactccgt tgaagaatta tttgaaaaca 780

gggatggtat taaacctcac atatctcaat cccttcatct atttctgatc gcatgtgtat 840

gggctttatg gcgtaatcga aacaagatga cgattaaaaa gaatttccct agcagttcat 900

atgtgatcct atatgatgct atatcattta tgcagaattg gaggttgctg ctaaaagtgg 960

aggagttaaa ggagttggag aagatttcgg agaagatgaa gatctagttg attaacttcc 1020

agccattggt tggggaggtc tatgacattg cggtgatatg agctttggaa agagaaggca 1080

atttgagttg ttttctggta tctatgagtg tggtgttcag tcctggtgtg ggatcagaat 1140

catttgatgg gctgtgcttt tgttgt 1166

<210> 5028
<211> 1365
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84502_G1, chr2:196145025..196146389, Cluster 30

<400> 5028

aacattgaga ggcaactcat aacttcacaa gggctacaat ttgtatggca ttatctattt 60

tgcacatctc tctattctgg atgttggact actaaactgg tctttgtgtt gtttttaaat 120

cataactcat aagtgtgtgt ctgtggtagt gtggtgtgtg gactgtgaat ctgtgatgaa 180

aacaacttgt gtgatggctg atggtagatc aaaacaattt gtgtggcggc tgtacttatt 240

ctgttattca gttgttctgt aatgaaaaca gctaatctat gtgattgtct ctgtgtctgt 300

gtctgctaat ctgctctctg ctgtagactt agtgctgtgt ataggttgaa gtggtgaacc 360

gtgaacaata ggtcaacagc taagtgaatt tatattcagt actcgctact catttactta 420

tctgccattt gtgttagtgt ctcggtttgt aactttgtat attgcacatt tgcatttaca 480

gagttgtagt cttgcactgt gatctgtgaa gcgggctgtg aacagctcga taggcctagc 540

gggcagctag gtcgtcgtgc taaacaggac agcatggccc gtctaatggt aattgtgacg 600

ggctatgggc caaacgtgcc aacccgatag gttaggcgtg ccgggcctgg aagtgagccc 660

acggttagct tggcacgacc tattgtacac ctatatatgg aggctagctt ctatttctat 720

gtccttttt aggtggggct ttaattgagt tttttcttaa tataatatta tactttgatt 780

tttctcctac caacctagtt ttttgtgcac tcgtctgttt tggatctcaa tctgattccg 840

taatccagcc ttttatcttt tcctccccat gcaggtcagg tcctctcttg ttcacagcag 900

cagatggtcc tgcagcagga actagacgag aatcagtgcg tgcagcgtgg ctggaactct 960

tcgttctttg cagtatcgat atctgggctg ttcttcctgc tttcctttgt acccgtcact 1020

gccaacatgt tcagattggt atgggtggtc catcattgat ccctggatta gatatggttg 1080

tgttcttgaa gtcttgttcg gcactttgga atgttttccc gggctggttt ttctccccat 1140

atggattgag ctaatccgct caatccaaat atttcaccca atctcttgtg gggttaaatt 1200

cctaaaccaa tcaaccaatg tttgttattc cacatgaatt ataacccaaa caactatgct 1260

tattcgttta ttccatgtgg atcaaaccca aacttatata ccaacaaaag ccaataaatc 1320

caacaaattt aagtatataa aatgtcatct ttccaaaaat ttaaa 1365

<210> 5029
<211> 1249
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84852_G1, chr2:197956701..197957949, Cluster 30

<400> 5029
aatgtccagg catacacaaa tcaaaggaaa tgagtcacca ctttggatct ccttctagat 60

attatgtatt acatgagtca caagtttggc tgcatcatag tgggttaatc acagatcttt 120

gttggattcg tatttattta gtacattagt agtggcatgt aatgatttgg agataaatat 180

catggaaaat atgtgacttc aacatggaat gctaaggcat ctaaacccat aatttattgg 240

atgaagccga ccataagttg tgtaaacgat gttcaaagtt caaaaggagg tgcatacatg 300

caactactat aaccaaacaa ataagaaaga aagaacaatg atacatatgc tctaagaaac 360

ttagaacttc agactcaaca tgtggctcaa aacaattcaa taactagtgt tccaactcta 420

gagaaataac ttgatgtcgt tgcccctatt cactagtacc atgaactaag atattcaatg 480

tctataataa actccattgt cctacaaaat aaggtgatga atagtgtatc tatagcacct 540

aacatgtatt tgaagtccac attggtccct ccgctcaatc aaccagcaac acataaccaa 600

gaaccaaaaa atgatgacta atactagtag cgtgatgatg acatcactat tgagcaattg 660

tgagattctt ctttacgaaa taatccatgc tgaactggag catactcata tccttttgga 720

tgtatcatga tgcataattc aaaggcaatg agtcatcact ttggatctct tggctagata 780

ttacgtaata gatgagttac tagtttggtt ggatcataat gggtgagtca ttgatcttag 840

ctggattcct aatttgtaca tttgtagtag cacgcaatgc actattgata tatgtcaagg 900

aaaatcatga tcctgtcaca gaatgctaag ccatttaaac ccacagctaa caacaggatg 960

tggaaccgat gataatattc aaaaataagc acatacatgc aacaaataat aaagaaataa 1020

cgacgataca tgtactccaa gcaattaaga atttcaaatt caacatataa ctcaaaacta 1080

tatgtcaacc aatggtccaa ctctagagat atagcttgat gttgtttccc ctattcacta 1140

ggacatgaag tatgatattc aaagtccata aactccacat atcaatgata accaaacttg 1200

ataaagacaa ataataaaat aacatccatt catatgcaat gtgatacat 1249

<210> 5030
<211> 1014
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85008_G1, chr2:199168550..199169563, Cluster 30

<400> 5030
aggtccgtgt gcccttggac gcagggaagc atacaaaggt tgcaatcacg gcggacggac 60

gaatcatccg tgaacacatg cgtcgccgtc atgtcggcga tcccatcttg ccttcctctg 120

ctgcaggtgc agggctcctg cctcctgcgg ggctgctgct ggccctacta cctgtgctcc 180

gcagtccgca ccaatcaaaa ttaaccttgc aattatttaa ataattgatg gtagaagaga 240

tcactccaat caacacttga tcgaagtgta gtacactact gtacactgct gctactccaa 300

cgcaactaga cagtcacatg cgttcatgtg ttgttgtgtg cacgcatggg cgtctctatt 360

ctactgttgt tagccactct cgtgatcttt gtcgtggagc cacaattaag ttctgcatca 420

gaaccaaaca aaatcgacca cctaattacc tgattcgatc ctgctgctaa ttagctagcc 480

agagtgagct agcgaatcta gcgatacact taattaatct gtcacatgca tggacgagag 540

agtctggagt gcaccaagga agtcagatac agataatgag tagtgggggt aggagagcta 600

gcatagcaaa gcacttttct gaccattcag catgattatg tatcactcga tatccatcca 660

ttttaagtga attctatatt atttaagtta tcgtatacta ttttaactca tcacatatta 720

cttaagtcaa tccatctgat ttttagctat tgtatcttat ccaatccttt aattagtttt 780

caaccgtttt tcaagtcatt tcatgttttt ttagtgattt cattttaaa aaaaatagtt 840

ttttcaacgc attttaagtc atttcgtata ttgtttgtag aaatttcatc ttactcgttt 900

tttgttagtt gtcctctaat tttccaacta attttaggcc attctatgtg ttttcagaca 960

ttttatctta cttagtgctt agctgatatt taggaggtgt ttgaatgcgt taga 1014

<210> 5031
<211> 1029
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85014_G1, chr2:199177989..199179017, Cluster 30

<220>
<221> modified_base
<222> (37)..(37)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (38)..(38)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (39)..(39)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (40)..(40)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (41)..(41)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (42)..(42)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (43)..(43)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (44)..(44)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (45)..(45)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (46)..(46)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (47)..(47)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(136)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<400> 5031
gcgcgcgcct tttgtggcgg gtcctctgct cacaaannnn nnnnnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnatat atatatatga attaactagt tgaatggagc cgtgagataa 180

gacacatgga agaagagcgc gcgccttttg tggcgggtct tctgctagca ataaggcagt 240

aagctgatac acactcactt gttgcttgca gaaagagcca aatggacaaa gaaaaacaga 300

tgccgttagc tagtacaata aaatagcata tccctcgctg tttattactt ttttttctct 360

caaaaaaaaa agaatacgta ctactactag tattaaactg acctcacaga ttgcaagcca 420

gactaataaa ataacaaatg ggctaagacg tctctgaaca ttcagatttc agaggggggg 480

aggtaacatc cagcaaccag gcccaaaact tcctgttact cttttgaggc ccagtccaaa 540

gactccccca gcggttttgg ttggtgcggc agaaaataaa accgcgcaag cgcactgggg 600

ataataaaac tgatatccag atcgttggaa ccagtgcttt tggttccgtc tggcaggaaa 660

taaggaacat gaaccctaaa ctgtctctct tgcgttacca gatggcaaat tagtggtctt 720

tgtctcttct cttgcgtgca ctatcttttg agggcgttcg gttcggccct tttggcgcgt 780

tgtttttctg cttgctgttt tggtcggtcc gcaacagcag atcacggtca ccaggcgctg 840

tttggttcta gaaaagcaac gttaacagca aatggaattg ttcgctaatt accaatttta 900

cctggttcgg tcgctcagtg tgagcgtgaa caccttttga tcactgtcgg gcgctatttt 960

tcatacgtat cccgccactt atttcaaacg tcactgtgtc tacaccagta taccttgatc 1020

actggtcat 1029

<210> 5032
<211> 1402
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85384_G1, chr2:202149229..202150630, Cluster 30

<400> 5032
ggtgcttttg cccgtctctt ttcaatcagt tcaatggctt atatcatcaa aagactggag 60

agcctagaga tctcttattt ctttcatgtc gttgatttat attttatttt tatttccgac 120

tccatccatc ccgaaataat aaacgtattt tagtcggaca aaaatggctc ttaatttctc 180

atgcagttta atgtgctgtt tgctaaaaaa aatcaatatc atcttagaga cactttgaat 240

acaaatatac tgatacaggt attatgtttc tgaccttgac gatcataact tgagcaatgc 300

ggagagtagt aagtaacaag ttggctgaaa gaaattgctg tgttgctcaa tctaacatcg 360

gaaattgata gtgagagaca cgatcgacac acagtcaagg taatctaaat atacctcaca 420

tattagacta ttgatgatct ttaatttgct gtgctagtcc taactaaaca accgtacgtg 480

ggccctccat ttaagtagat gttgatggat acatacacga cacatgccga gaagatttta 540

gggcaggcta aggctagcac agatatctct gggccatcgg ccatgtacac gtgtccactc 600

gagcggcatg agctttgaaa cgaccacaac gatctacatt ttaaacctcc aaaattctga 660

agaggctgcc agtcgatggt tggcaggcaa tacacgtcaa ggcctcaagg gaccttgtca 720

tggataagct aagctagcta ggatgatcgg aaggaagacc ataaacaaag atgggtcgat 780

tcaaacccgt acatctctga ttgtctcctt acttattaca aaagaaaaga tttccggaaa 840

aggacacgtc ggattgtgac cttacacttt ttgaccccac cgtctatcta cctccccttt 900

cccaaaaatt aaattcctcc tcctgcaagg cgctctcgta gtctcgtagg cccccaccac 960

gagatgcatg ccaacccgac gactccgacg tcagcgttcg tcggttttct atgtcatatg 1020

tattggtcac actaattatt gttttttttct taaggtcaca ctaaaattcc gcacaagtat 1080

ctttcttgtg ttattaccat tggggtgtcc gtgtcctgct gcgaaaacaa tatgcggatt 1140

tatgtcgctg cccgtgcggt gcgtagattg gttgcgctct gcaggacagt gactacacgt 1200

cgacactagg tcactaatca ccttgcttgt agaagacagc ggggacggag atcgattcat 1260

gtggtggcta gctgtgcaac gcgaggcggc gtgtcgccct cgctggacag ccgggctaga 1320

cagcagcgtg tccgaagttg agagcctgat taattactac tcatgtgaca tttgttgtaa 1380

ctagctacct agcaacagca ac 1402

<210> 5033
<211> 1149
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_85488_G1, chr2:202913228..202914376, Cluster 30

<400> 5033
agactcctcg ttcaacaatc atctcgttca gtttgttatc ttctaaactc tggctacgat 60

ggcacacctt ccacgtgata tttgtggtat gttttgtaaa tagaaaagga agtttcgaca 120

tatttaagca aatccaaacc ttgaaattta catgttattt caatctattg ttccaattat 180

agtgtcacat caaagacaat cagcctttgc tcagttgcca tcttagagag gcatggagct 240

ccaacttcca acacttcatc atcaaatcca tttagtaagt accaataaac acacaacaat 300

atcatcggat gatggagtgg agtggctttg atcaaggaca ccttggattc cacatgctct 360

gatggccaaa gaagcaagaa tttatggaga catgtgcatc agtcccggtc catgatctag 420

gaccatggaa tttccccttg tacaacttac gagatttgat tttaagatcg attcatgagt 480

tcaagctctc aacaaacttt aaaattgtca catgaataac acaagatcat taatttggat 540

atcgcataga atcacactaa tccagtagca gtagaattca tagaactata tcaaagctag 600

cacaacatca ccgaaaaacc taaaactttt ccaaaaaatc agagattaaa taaattcgct 660

cagtttccct tgacaccacc acaatctaaa atgcgagagt aaatctacaa tgccaaagta 720

gggcatggct atacatgtat aaaacaagct atgctgggat gggatacacc aaaaagagga 780

tcatagtgag acctatgtat ttattaccta cttggtggag gatgttgtcg acactcttct 840

tgtgctacaa caacttctcc accagcagct gattcagcga agggattaga tgcttcgcca 900

tcgacacgag caaggtcttg cgctagattc aatttccctg acactggtca aatcgagatt 960

ctctatgtct ccatcgccgc taaaaagaat gtgcgttcaa aaccagagca gaatgtgatt 1020

tttttatgtt tttgtcatcg ctaagttcct aggtacctaa caaaggaatt gtaccgagaa 1080

cctattccca cacgaaaccg atggtctgtg ggggatacct aaaccatcat ctagaaggca 1140

cgaacccta 1149

<210> 5034
<211> 1385
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8561_G1, chr1:44952618..44954002, Cluster 30

<400> 5034
aaagagattt gtttccttag aaccctccat ttttagagat gcacgatgtg tgacaaagag 60

aagtggtgaa aacagcttca tcccagagat ttatatctag acacatcttg caaggatgca 120

ctaatcgcat cttgtgctac tagtgcctaa ttttgactat ggggagctag ctcatggagg 180

tatccagaca caactgttcg ttgcttctgc acgtgtggtg gtttcaatag aagtaatttt 240

aagtaaatat ttcgtttgtt gctccttgat atgtgttact aaattactga taagttggtg 300

tcatcaacct gtttagcacc ataagagatg tttttaatgg attgatggcc ctgataagtt 360

tcttgcaaga tagcaacttt tcaatgactc gtggagagag agatgaccgc atgagcgctt 420

tgagctatgg atttcacctc ccttcaatcc ttcgaaatga ctgacaagga caagaccaaa 480

tccaccaata aatgatttga gaaccctcct atgtatgaca tcatagatcc aactgtcctt 540

gcacctatag gttcacttga gtctgagtgt ggaaacaaga ataaagtaag ggcatcttcg 600

tttctcttgg tcactgtatt tttctacatg gaattaataa tatgtcctca tttgtaacat 660

ggatagtgga agtgccattt cagtgagtgg gagtactgac ctaaatccta ttggttggag 720

ccaaagctaa aggaggagaa ggagaaggag catattgtag ccccttagtc ctatgaaaat 780

gtggcattga agcctactaa gccctaattc cttggaagct tggaataagc tattgatgcg 840

ggtaatgaaa tgtaatgcaa tgtgaatttg aggatacaat cagatagaag caggtaatgc 900

aatgtaagtt aaagtatgga tctgagctcg gcgataattt cattaacctc cacaaagaga 960

agttacatta tcatgaacaa gaatgggatt tacttcattt gatacatcta agtacaaaat 1020

ggttgatata tttgcgagat gcaaaggaag tactactaac tagaaggttg aggagtatag 1080

ggtaagggag gtggaaaaag ttgaaatgca cctcataaaa gatcttattg ctagactact 1140

tagtgagtgc ttggacaatc taattgtttt gttaccctat tttaatttta atgtatgtag 1200

ctaacttatt atatttttct caacctctcc catgaaccgt acttaatgga gtacgaacag 1260

acatacatgt gactaatata tcctccattg gtcctggtaa tggtcatgtc cctcttctaa 1320

ggtaccttgt ccataatcaa tatcctactc tttggagtca tctgaatcat tgctattatc 1380

attag 1385

<210> 5035
<211> 1044
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_8699_G1, chr1:45744843..45745886, Cluster 30

<400> 5035
gactcacggg tcatctatga gctacgcatg atataagtga gctatacaat acaatcaact 60

tggacaaaac cttcttccct catcccccaa aaggtgatat gaacgaatat tttgttgttt 120

agtcactttt ttgacatgat agcaaataat aacttgtatt gtttatacaa tataaaggaa 180

aatattatgt tgtcgatgtt ggatattcta actggccaag ctatttgcat tgttacatag 240

gttaaaggta tcatatgcga gtgtggcata ggggtagaga tctaaaaaca caaaaggaaa 300

atgtcactca catttaccat caattcgaaa tgttattggt tgatattatg gagtttcaaa 360

gtgaagtggc aaattatata caaggtgccc aattaccctg tgtggaatca aaaaatggtt 420

atggtttctt gtatggtctt gccaatttca ttcatgagca taatacactg aagattcaga 480

ctttgctcat tttgatcatc atccacattt tatttcaaca ataccaaaaa ggtacaaccg 540

ctaagcagta acacggatgg ttgtactacg aaagccaatg ccaccagccc accactatga 600

atgtatatcg tgataaatgg gtcatcattc ttgctcttgc atagaactag catataatga 660

aatgctagtg taacttgaac atatttcaaa caaacatatt tatgtagaga tattgcaacg 720

aatatgggtt cattatctat ctcatgcgcc aattttataa taatcaaagc taattttgag 780

atattgcatt tggactataa aaactacacc aattcttata cattacaacg tgtttgttac 840

aaaaaaaata atcaaactga tttccaagtg cacaagtgga aaacccccat cgaattcttg 900

gttgtgaatt tagagttgct ttgtttgtcc tgctctagaa tagcatcgcg gatctaagct 960

aaacatgttc tataataaat ctatagatct agattttaat tttagttaag acttaggagt 1020

gtttgttttt tttgctgatt aaag 1044

<210> 5036
<211> 1001
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89120_G1, chr2:222671921..222672921, Cluster 30

<400> 5036
ctctctctta tgttatgcaa acaagatcaa tttttagagt tacatgacat gaaccaatca 60

tcatgacatc acatagctta cttagcttac aaccaattta attgaagaac atttacatca 120

tagttgatat actaaaaata caaatagaag gtgaaactta acccaactta acaatttgaa 180

ccatcattgt aatttcttaa catctcttga tttataaaca ttgaagtaac tttagctttg 240

gggtacattc atcttgtcac ctgctaaacc tttggttctc ccaagcttgg ctcgggttgc 300

caccaagtct aaactttcgt gagtacaatt atacttagag aacttaatct aacatagaag 360

atatatgttg gatgcaatga aattaataga tgtttataat ttgaaaaaac atggcccatg 420

ttatgtaact gatatgctca tgagattaat ctaaactatc aattcataag tattaagtaa 480

tactttatca agtattcctt atttcgcttt aagctaagtt ccattccctc actacattaa 540

gtctataaga acgaccaacc aaaaggattc ctcctaaaaa tatttggtat taaaaaaaga 600

tttctataaa gttatacaac tgtatccata tggaaaccgg gggtgaactc cgaaacccga 660

ttaacaaaaa ccaaccaatt tatatgatta atttatacaa gttaaagtat tcctgtcact 720

aacggtgaca cacccacact caaactcata taaactcaat agtctatcaa gtcacatgaa 780

gaaactcaat aaaaccacat tacaaccaag atcatactat attaagataa tatatgtcac 840

atacacaaag ttttcaactg aaataatatt actaatttag ttcataaata attaatacaa 900

ggaccaattt caaatttaac aaattgaaac aaaatagctt tgatgggatt acacctataa 960

attggacaca ttcctatctt agatgatatc ctccaacaaa a 1001

<210> 5037
<211> 1016
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89505_G1, chr2:224123716..224124731, Cluster 30

<400> 5037
atgcacctgg actcctcatc taataattaa taatagttca actattttgg catttggtat 60

cacagaacct ggtccctaaa tagtaggtat attttcaaca aaattgtagc tttttggtaa 120

caagtgccta agttgttcta tgtgtacatg ccaattatta ctcgttaggc caaagtagtt 180

atgtgacttg atgtattggt tctgtacaac aaagctgaga gtaacagtat aagatttgtg 240

ctttaacatt tgaagcttag catagtttag cggaaggcaa aaaaaagtaa tcatctctca 300

ggaaagcact ctgaactgtt agaagaaaca tcctgctcgg taaattcacg aatatgtgaa 360

atgacaatag cacccgaatc aaaatgtcga gccttggtct tatccattgt aagtcgagtt 420

ttttatttat ttaagaaaca cttctatcca aatgtgcaaa atggaaatga aattcattac 480

acagcatgcc taaggatctg cttggaccaa tgcacttaaa tttaatcatc tacagtttaa 540

tcataggcca tctaaacggg taaaatagaa ggtggactac tatttggttt aatccaattc 600

agtccttcac tcttccagtt taagctgctg ggtatatcaa aagtatttga taataatagc 660

atatctcttc tatatattcc tataaaacat tagttttcat cgtttctata gtttgtacca 720

tcgtcgtgcg tcacacacaa agcgcgtaaa tccatttctc tcacatttgt ctcacgaacc 780

agttttcagc atggtagcat aaatctaatt ttctcccgtg ttagatctgt tcctgtctcc 840

ctcgccaaca tttttgggaa aaatcattat aaaatctcaa ctaacctatg cacttcggaa 900

ctagatcctc ttctgtgcgt gaacagggcc cacgcacagt ggtccaactg ccttccaaat 960

ctcatttgat ccctacgcac ctcattatat tccccacggt agagcagtca cacctc 1016

<210> 5038
<211> 1083
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_9017_G1, chr1:47824757..47825839, Cluster 30

<400> 5038
attttcacaa acaataaact gtcaggtttt gatggaattt gagctaaatt gtggcccagc 60

atactctgcg attcgcgaga ctggcattct tccttgagta acaaagctaa tgttttagaa 120

acttgcttgt aaaccttgaa tgttttgtca ttctccttat acataaatgt tttagtttta 180

aagcattctc ttagtttcta gactgttcac gacctgtagt gataaaaaat gttgatagag 240

cttgtttgaa tctaattctg tgccaaacaa agcaccatag gaatatatat tgtaatataa 300

ccatgctcac gctaagcgaa ggatcaatac aggcatgtca tatatataac ttatatacgc 360

caaaacaccc ttgtgacatg gacatataac tgcaactatg atttagtctt aaatatgagt 420

gcatgaaaaa caaccattta tgtgtctgaa ttttagcttg tgacttctgt tgagttttaa 480

ctctagacta tctcaactta cttgggtcta aaagacttta ttgttgttat atcaaaacag 540

cttgtctggc tccttgtttc ttgttttctg tcctaatttg tttggacaaa cttgaatatt 600

ggcttttggc tttctatgaa attcaacggc tcttggaccg tactatggta agttgacaat 660

gttttatctt aaaaagatct ataaataaga gacaacatta ctacattgga tatattattg 720

ttattggaag taatgttaag cacagctaaa aaaactatga attaccatgg tctatgttta 780

gggacggagt tttatataaa ctgttgctct ccatattgta tccctaatcc ctatagtttt 840

agctaaatgt gaagatcagc tatccacata tagtttatat atgtttaaaa gttattcttt 900

tttcatcagc tatatgatgt attggttgca tttatctctt gtaacaaaag ataccttcat 960

acctattcca agcagtcata ataaagtaaa actgaaataa atacagaaga cttgggctac 1020

aaaataacct acaaattatt atgcatgtta ttaggggcta aaacacaaat ttagtgagga 1080

tat 1083

<210> 5039
<211> 1320
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93308_G1, chr3:5978831..5980150, Cluster 30

<400> 5039
acctctcctg gacgttatta ttccttacga gtggtataag atgtgcacaa acaaagggaa 60

tgaagaacga cttatttgtg tgggttgtat agatgaaacc gtatcttaaa cttgctaaat 120

acgttctttc ggcaagatac acatctctta tatctttttt aatactcctt agtatttatt 180

tgagaagagt aatggagggg attaaaaaga tcaaaatctc ttacactaat caattttgaa 240

taccaagaga ttttagcttt gtcgatcccc tgcattacat ttagtctcaa aataagccct 300

tacgatacga ataatttgcg tgggttgtac ttgtacataa caacggcaag gatgtgcacg 360

cggctactaa gaaaagcaag gagctacaag attcaattcc atggcaatag cacaatcgcc 420

agccggtcaa aggtggtcca gcactccgtc tggcacacta ctagattagt gccagcccgg 480

cgtgcccata ctcaacgcaa ggttgctctg acgcggacgt acgtatcttg tagctccctg 540

ccttgtttcg agcaaacaaa gacgcagagg gtatgtagta ggggcttagg ggggcacgca 600

aagcacgtac ggggccccga cagtcacgaa tcgcaaacca cgattgcatt tgtgagtcct 660

ttccagccgt ccccgtccag gaactccatc tctacccatc gacgttgtta tcacgtggaa 720

gggcaaccag ctgctttagt atcttcttcc accagaacta aagtctacgt accgtttaca 780

tataaggact actagtggac aacttcattc ttttccaaaa aaatagcaat agaacaactt 840

cattcttttc catgtctcaa ccacacgcac taaagtaatt tgcttttaat ccacgtgttt 900

ggatatctag tttgatgttt tttgacaact aaagatttgt tcgttagaac tcagctttga 960

cttctcacat ggaagcatct tctatagtag acttagagtt attttttta aaaaaaacgt 1020

ttgccaaatt atggatgttt gactcctttc gaagatcctg ctagaagaat ttgtcagctt 1080

gcgcaccaga catatttaca attacaccaa ggcatgctca acactatttg ctacatatga 1140

ctccatggct acaacaatgt ggaggttatg ctaggcagta ggcatgtatt attctctctc 1200

tccttctatg agctataaaa tagaggggt agagtaacac gaaaataggc tcagccgatt 1260

cggattcaag gcttcacaat catctatcac ataaatttaa tgggtcaata taggttggtg 1320

<210> 5040
<211> 1324
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93934_G1, chr3:9108482..9109805, Cluster 30

<400> 5040
tatatagctc gttgtaacgc tacaatttta aaagatggaa ggaaatgata gacgtcaact 60

gcggcacaag tgagaaaggg agaagtgtca ttgggcagtg aggttaggct gggccagcgg 120

ggtcgcgaag ataggagtag gaatcaagga tgattcaaat gatattcttc attgtaaaaa 180

aatatgaatt atgtaacttc tagttttaga tattacgtga ttttgtatgt gttacaaatt 240

atgcctactt tatttacgat ttataaacta tgtaatttaa ataagagtat gtgaaaaaac 300

tgaagtgatg ttgagatggc tatgagctga cgataaatat tacgcacttt agtattgcag 360

taaataagga ctaacaatgg ccagtacacc tagcgcaaaa agggctggaa tgaatcagcc 420

caaaccaagt ggaccaatgg tgtagctctg acgttgtagc cacgtcagat gcatgtcaag 480

cgacggcgag ttttagaact tctttcgaca gctaatcaat ggattattag gtaagaagag 540

gcacggtgtt gttttttgtt ttcctcgtgg tttaaacttt actgggtgtc actatctgat 600

gtcaaatttc tcgggggggtt atttacaaaa aacaatgcgg tgggtgattt cgtcaaatgg 660

gcaatttaac aacgtgttta gggctgtgtc gttgcccgca agtagggcca ttagcattat 720

gcaatgctgt cacgggaaac ggcggttttg gcagcaagtg caacaaacac atacccccccc 780

acccaaaaaa aaaaaaacaa gtttgctgtg caactaacgg aggagggcct acagactaaa 840

cttgattctc tgcatcatgc atgactgaga gtcatagatt gaggttgtta gcaactgaac 900

aaacgcagtg tgtagagcag acagacaaaa ttatgagagc aagtcaaaca cggaggctta 960

gaggaaaaaa tgagcagcaa aaaaaaaagt cctgaggggg ctgcacaggt gtctgtcaac 1020

acaacacaaa gggtattaaa aaattgtgat cgcgttgtcg tcggttgttc aggctagcac 1080

aatcagagcg cgccgatcag agcgcgagtg tgtctcctgc acataattcg gcgaatgcta 1140

ctacccacca atccaccaca tgggtagact agaataacca cgtgtcacag tcacagctca 1200

agacaaactg ctgttaaagt tgtttagata cgacacgatg cgtctgcctg cctttgaagt 1260

ctgcgatgat ccagacgtgg cgctcgtgcc gatcttggga tatccggaag cgcgggagcg 1320

cagc 1324

<210> 5041
<211> 1002
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93986_G1, chr3:9332720..9333721, Cluster 30

<400> 5041
agctaatgaa atcaatagta gtctaccagg taatatttag aagatttatt agcaggttta 60

tttgaatccg ctgatattga tttttggtcg ctaactttta gtgttagcag actcattgga 120

ttcttctacg tacgttacaa cctcgaattt gttggtgtgc tttggaggct tggacagtgt 180

acacgtcatg aactctgtat agtttccaaa ttgtcgatcc gggcccggca tatatgtgag 240

agatcgatct tgtaaattat agccacagtg tctttggtga tttgtacgta gctggaatta 300

agtagaagaa ttgttaaaat ggtaagtact agttattaac ttgccttgaa atgaactagc 360

tgacattgat ttgtcctggg atcggaggag agacacagaa acctaaaaga gttagcaaag 420

acagaagttg ctaggaagct tagtgatata catacataca tgtacaccag tggcttgcgc 480

gcgcggctgg ccttggcaat tgccgtcatg gattatttgc agtagtacct gtgtgccaca 540

ttggtttgca tgtgacatac atgtacccca tgagaagacg acgatccgtg attaattagt 600

tgagcgcagg tggtcatcat caagcagctg cgtcctgcgt gtcacatgca tgcatgggcc 660

caccaggagt gtccgccgct gttgaacgtt ggttgcgtgc atcagcaatt agcgtggcgc 720

cattatccat gattacctag gaaagatcca ggccatttcc agctttaatt tcctttcccc 780

gccgcccacc ccctttcgct ttatttttca tcgccagctg cttgtgaccc ataaaacaat 840

taatggagtc tgatcctatt ttaagaccag gctaacatcg atcgatcctt ggtggccttt 900

tacaccaatc cagggaacgt accttcatac attctataag ttataaaaca ttttagcttt 960

tatatatagt cattttacgt atcttttata aactactttg at 1002

<210> 5042
<211> 1196
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94358_G1, chr3:11449779..11450974, Cluster 30

<400> 5042
atatatatac ggatccttgg tcttggttgg tacgtaccaa cgacatggat gcgtatcggg 60

cgacaatgat gaggagctac acacatgcca tgcatgcccg gccggccatc gtgcgcgcag 120

agatagatct ttgtcagctc atcttgtttt tctacgcgcg cactcatcag ttggtagcac 180

agcaatagta gtaccgcgcg cgcggatgat gtgcacgcat catcagaccg cctcttgcga 240

gatgcatata tatcgaggag gtacggtgcg tgaggggcga atgacgaggg cggccatggg 300

agtcatgtca tgatgaggca ttgaggcgcg cgctcgctac aagctgcttg ggcggcgggc 360

cggctggcct gcatctgcat gatagccaga gccctgcctg aggcagaagc ggaggtggaa 420

ggcacaggca ctgttggctc agggtagtcg ggggcgaaaa caggactatg gacacctagg 480

ttgcccaagg cccatggccc atttttaact cttttaaaat attaaaaaga tatataattt 540

atctgtctcg ttctaatatt atttatatag agagtattct aaatcttgat ctacgttatt 600

tatattactc cattttaagt attcgttttt ttgcgtgtgt gttagctatc ctatctctag 660

atttaaaata atcgatgaag aaaaataaag gtattgcttt ataatgtttt ttttatgtta 720

tctatcttta cgtttcatcg ccatgtaaat tttgaactat atttttccag tgttgctttg 780

tgttgtgaca agtcaaccct agttccacca ttcatgttag cacgggcgag tccaggattt 840

tcatcttggg tattccagaa atctaaatag attgaaattt ttttggacag cctaaatata 900

ttatttatca tctataatat atgataactt tgcgatcctt aatctggtaa aaaaatcata 960

gccattttgt cacgtcacaa ttaaacaaaa acaaaaaatc atttagcata cctaggcgtg 1020

cccgttgtgg attgacaaca gtttgccaga agcaatatcg gaaagaggtt cgcgggaaat 1080

cgtggagaat agcgttgggt gcagccaggt atcgaactat cgatgtggac agagtgtggc 1140

ccgaacgatg aaggaagaaa gacctgtaaa ataagaaatc agtctgtttt ctcttt 1196

<210> 5043
<211> 1271
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96196_G1, chr3:21677509..21678779, Cluster 30

<400> 5043
attaatggct tgatatctga tagagtgacc attgagtttt ttgtgtatag agagtcacct 60

atggctatag gcccctcttc ccaagattga tcgacttgag ctcaatgacg agtgggtcca 120

agatctatgt gtttaacttt ataatggagc ataacatgtt ggagtgctat ctcttgctgg 180

tgatggtgct gatgaatcta gatgttggtt tgatttttt cttgaacttt taatatgtac 240

atatatgtag tataatacct aggtgtttcg attttgattt ggactcttca ttgataaaat 300

atcgggtgat gaagaccaat atgttagtct caggtggtta ggtttccttg ttttcaattt 360

tcatttaatt tgggtcttga aatcttgatt cctcgatggg ggaggcaaca tatggaatat 420

ggacttgagt tgaatctttg ttttttgaca tattccatat gataacctga tagttgtgtt 480

tctgtaagac agtttggttg agacccttgt aaggacaaag agtgcaatac gagcaacggg 540

cgataacaaa atccgcgagc aaaacatgga cgaatatggt aggccaaaca caaactggca 600

tatttttgc ctatttaata ttaagttgta taaggagaaa aagacaatat attcttagca 660

taaggagaac aacaaaagag gaccctatcg tcagtcaaac catagataaa gaatacgttg 720

tccacataaa gcatttttct ttgcaacaat tgagtgtttt gagataaaaa aactactcat 780

tttcccactt acatctaaaa tagaatggtc tcatcaaatc tctcgctctc tagcttattt 840

tcttgccttc attctccgct cgcacagatt gaatggtgac aagctgcacg ccctcatcac 900

ctccccttct cgcacaactt tagtgactcc ccgaccatca tcaaccatag cttgacatta 960

aaatccatca tatgtgcctt ctccatcttt agccgagctc cccatttgcc accgcctctc 1020

tctctctctc tcggctttga cgatagccca ctaccttcga tattacctaa ggacgtcatc 1080

acactaaccc tgtggagctt gctatgctat cgccatgatc ctcgtccctt gcccgtgtcc 1140

aattgtttcc ccctactacc caattggcaa tgccactatt gccttgcacc atgtcttagg 1200

tgaccctaga gtatagatgc acatatgggt cacctggtag ggcacatgcc cactaaagta 1260

cgacacagat t 1271

<210> 5044
<211> 1180
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96614_G1, chr3:23686416..23687595, Cluster 30

<400> 5044
tatccagagg cttcataaac tcccgttctt ttcatataga gctactctac ggtgaagttt 60

atagaaaaga gtttgtggac cagtactaaa catcctttta atctaaagat atttatttga 120

catcgtaaat attgatattt ttatgtataa ttagccgaac ttaaaaacta aatcatgaga 180

tgtactagaa ttacattctt tttaggacga tggagggagc atgcactata tcccatcaaa 240

atgatgggag agagcgaata attttagcat tgatgtctac gaattaattt ccttatattt 300

caatatcata cttttatgga tggggaaaga cagaagggaa aaaaaattcc ggcatatagt 360

tgattccaac ttgaagaata gcttgacaag actcatggtg ctttcaagct cactgtgcta 420

gtagacttcc tcttaaaggt tgtgggacat ggcttctgaa agaggatgaa gggaaataaa 480

agtgtgaatg tgtgatcagc cgatgaaaaa gagagaacct gattggagag tatgataagt 540

tgaggtggac tccgagcctt taaattaccc tctttatttt ttttaatcta aaatttgtgg 600

gtgaatagta acgtacctct ataggtactt caagcaattt gtttatagct aggtaaggac 660

tagctagttt gtaaacttaa atcattttgg tgattagagg ggattgaaat ggaaatgaga 720

ggatttgagt ttccaaactg gctctaaaga tgttgcccta tgttggatta ttcatgacat 780

catcaaatta acatataggt tgtaatgaga accaccttga cttaaggtat aatatttctc 840

aactaaatgc atgttgaaga cacaaatgct atttagaggg tgggaactac gaatatgaat 900

ggaaaattat agagcaagta gtagtaactg tatcacaatc aaatatagat tattataggg 960

tacgtacgta tatatctttg tgttgtgtgc tagaaaataa aaaagtacat gttattaatt 1020

ttaggtatta cataaaagcc ctgttagaat aatacatctc tgattataat aattagaacc 1080

aaattttgat attttttat tgcagcagag ccagagccag cgggtgagtg ggctccgatc 1140

cgtggtcgct gttgcgttcg gaggcagtca ataatcggcg 1180

<210> 5045
<211> 1087
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_99888_G1, chr3:43362827..43363913, Cluster 30

<400> 5045
tgccgatcgt ctttttcaga gggcatggac gcatacgagg gcgtacgtac aatggggaat 60

aaatcccctc ctcctggctc gatctctgcc ttcatcacgc cctgctgcct gtgcctgctt 120

taccgagcta gcaagcaagc cgcctctttc acgtcgacac ttggacggtg acggtcaact 180

ctaatgacat caaccagttc ctgcatgcac tagctgcttg ctgcttccct ttattattgg 240

ttagttccct gtcaccgttc accagcagcc aaagccaaag catgcacctc tccggacggt 300

tggtgctggt taccaaaaat aaacgcccgg accccggacc aaaaaaggtc ccgtgcatgc 360

ataattgcat atacatatga catatccatg agggcaatgt actacgtact cactccattt 420

taatggtggg ttaattatta ttctagctct tttggagaca acaacaaatg gtctcaaatc 480

taaccaaaac tataaacaga gcaagaaagg tttataccac ccagatacgt atactcgctc 540

cgtcttaaag tagttgtcgt tgtggtgtat acgccacgat cgaagtttat cgaatttgac 600

ttgagtttta gaaatgttag aaatatgttt atctttaaat aatactagtt atatatatat 660

tacaaatact aatatttttt ttctatataa ttggtcagag ttgaaaaaat agttggctcc 720

tcaaaaacag tcgaatggtt cagtatttaa acataatgtt tttttagagt cactttgtct 780

tatatgaaac caatccaaac aacaataact tcgtcctacc atactcgaga aaacaaacgt 840

cacctagtat tgtgttccct tccgcctagt agttgtagtg tttatgtact cctagttata 900

taacgttaca gtaccccaga ccggcggatt tcagttttca tcctcgatgt aatctccttc 960

tacacaatta ggaaaaaaaa actctcagga cacgcgtttg gaagcaagga ggtaattaga 1020

aagtgatttt agccccctct ctaaatacac ttgctctaag ctagctgcac cctactcaac 1080

ccaggcg 1087

<210> 5046
<211> 1459
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_137489_G1, chr4:29898267..29899725, Cluster 31

<400> 5046
acagaaggat ctatttagca gcaataattg acagtatctg gagacctgca ggtctccttg 60

atgccatctc tttgctcgca tcctcctcca cggccctctc tcgaagatct ggccgctgtc 120

agtactcagt agtgctgccc aagatcacct ccttggtcga tcgatgctgc ggcaccaaaa 180

ccagacggtc aacgatgaat gaatggatga atggagaggg accaccgctg ctgggccgtg 240

ggccacatac ggcctccatg tttcatctga cctgacctga cctgacctga cctgacctga 300

tacgctctga gcccagatat aacgcatggc ttggcttcta ttgcaaggta ggagtagctt 360

ctccagtcac ctacctgtct gacctttggc aacagaagca gcttgcaata caagcctctt 420

ggcactactc tcgctcggca cgcgcgctcc ccctgcatca tcaccatcac cagatggccg 480

gatcttcccg gccggcgacg gacgccagcg ccacgatgtg agtgcaagcc ctcgctctcg 540

atctgcttgc tgcattgcat tgatcatctg ccaggcagac cgccggcctt ggcgcacgtt 600

gctgattgat tttgcatact gatgtataga tctcggccta catcagcata tttagaacct 660

tgacacaaca tcttctggtt taaccgtacc tctcttttaa ttttcccccc tcgctccgtt 720

tcgttttttt aggttctata tataatatct gtttagccac tatatatatg caactttcta 780

cctattatta atttcgccac ttctaatatt tagttttcga acaaatgtgc attttataat 840

ctttcggaat ataataccaa aggccggccg tatatgtata tgtatatgca tgcatgtgtg 900

tagcaacagt gcacacggtg ctccttttaa ttcatgttaa ttaataaaag caagttgcct 960

ctgatgcatg ttaaataaag caagttgcta cacacagtgt ggtcttagtc tgttagagta 1020

ggtcataact ttatgagggg tcatatttac caccagaagg tgattgtgga tattgcaatt 1080

attgtcattt caagcacatg gtatatatgc tatgcatgtg ttcacctcca attaaatatg 1140

gtaaatgttt catcaggttg tccgtacaca actagatgcc aaattcttat tgatgatctc 1200

cataattagt taattgacat tcatacatgg tttgaggtta ttcaaaatat atatactttc 1260

ctatgttcta taataaataa gttcatgaaa actttcggat agactaagga cgttgccccc 1320

caaaaaaaca tggatcagtg tacttttttac tttacatgag gatatctctt caacttggta 1380

tttaattaag ccctctttgg tagggctcct ttaacgactt ctttaaaaaa atctactaaa 1440

atggacgctc tttgatggg 1459

<210> 5047
<211> 1402
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_107176_G1, chr3:91450971..91452372, Cluster 31

<400> 5047
gggaagaaaa cacctgagaa ggaagcatca ataaactcta caacgttagt gttgatttca 60

tagtaatgca gtgtcttact ctcactatga gtttaatata atgaaattta ttattaatat 120

ttttttggc aaatcacagt ttatgaagat gaagtaagaa ctgatcaatt tgaaaaaaaa 180

gatcgaagca attcaaaaac aactaatagt gttcatatat aagctaaggt gtgccctcca 240

gagcccctct tcagcaacag ttcgatcgaa caacgaacta aagaccataa taggccatgc 300

aactagaact aaatattgat gtttttagtt gtggttgtcc aaaatcaatt gaggatctgg 360

tgctgttact agttctcaac aagcactaag gctctttcta cagcagtaca aatctgagtc 420

tatagcatcg aaggaccctt ggtttttgaa aaggtagtct gccatacatg ttttttttct 480

ttgagctttt gaaagctcag ttacatgcat gtacatctcg tgcatctcta tctcttgtgt 540

gcaaatcaaa ttgttggtta aagattgtat agtttaaaaa tctcttgata tatgtgtgtg 600

atgtacagtt gatcattaaa ggaaaaaaat cactacacca gctgcgctca tgggttggat 660

tttggggtgg gcagctagct ataggagaac aaaatgatgg aaactgaaaa atgtgcacag 720

agatcgctac aaatcgcagc gacggcgaca cacaactctc tgctggcgag gcggcagggc 780

attatgatat tataattata attacagcaa gtggctggct ggcgcctgag actgacagca 840

acgtgtgccg acccttgcga tatcgataga tgcagcctct gctgcttcct tctagaagct 900

aatgaaaccc tgcagcatgc aatcatgcac gtgtatatat tgtattgtat acgtatacac 960

taggagtgta cagaccggcc aagacataca cttgtctagt acgtctgtac gtgtacgtac 1020

caccgatcgc gatggtgaca agtgtgtgtg tgtgactgac aggtgtagag tctccgagtt 1080

ggggaagaaa ctgcctagga agcagcatgc gttgtccgtg acaaaaaaga tgctgtcatc 1140

gagtcgcggt caaccggccg ggcctattaa cgaagcagct actcctggga gcgcagagat 1200

gaaagggaga ggtagaggcg ccgtgctcag tcaatccctg tcactgtacc gtgtacccca 1260

cgtgtggcat agaagtgggt tggcagcgaa atctaggacc caagggttta gctctaaact 1320

ccctatatat ttctctatct taaatataga gaatattttt tctatatacc tttcaacggt 1380

attctttaaa gtctctttta aa 1402

<210> 5048
<211> 2597
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_1197_G1, chr1:6066921..6069517, Cluster 31

<400> 5048
gtataaaatg tctatcatcc catgggattt cattttatac ctacactaaa catatgggca 60

tggcaaagca tacatatact atgtcaaata ttaaaaaaat aaattgtgaa aagtaaccac 120

gactaagaaa aatataagtt ttgtccaaaa gaggttgcaa aaacagtata actggggaac 180

atcaagacac tttaccagat caatgcaaag tttacacacc ttgtccaaga tttagtatag 240

cagaagtgat aaagatactc aaaaccttct tgaaaacagc ataatcaaaa atactggcta 300

gtgaacctcc gtcccaagcg agaattatca taacctacat gaaacaatca aaattaaatt 360

aaaaacctca aataacagat tagctataca acatccagct aagatgttaa gtaccttcct 420

gtagagtgtt tattaaaaaa tgcactgaac ccttcaaacg tccaaaataa tgcagcaaat 480

gcttattgca gaagaaggta aatataaata aatacctgaa gagctaaaat aaagaagctc 540

cagagtctgt caaaacttct gaatatgtgc caaaatgagc gtagctcaac gaagttgacc 600

tttcccttct gtttgctgat ccttgtgctc tgaacagctc attacattag atgttgctag 660

cccaacaaaa acacgaagat accatgatga tatatggtaa aatcctaagc taaaaaacat 720

aatccaactc acttcatttc tttcatcagg ctgacaaaag aagtcagcat cagctcgcat 780

aggccaacca agccgaaagc agtcagcaga cctgcaattt aacaatataa aatctaaaga 840

gcaaacaaat aaactaagaa aaaactagta ccagaagtac tcattaagat catcatagtt 900

tctccactca gaatgattcc ctttctctct tttgctcctt tcagcttcct gaaaagttgt 960

agtgaaaaac tgaagttcag caccagaaga agaataaagc tcaaccgaca caactgaata 1020

acagtcaaga gctgagagca aaccaccttt gctatggtat ggtaaatcgg tgtaacaact 1080

ttcttcagaa aggcttcttt ctcaccacca taggccggct tcacatattc acccgtcaag 1140

gcactgacat ttccagctaa cataccatac atttcaaatg ccatctatga caataaccag 1200

aactgtcagg accatcttcg ttacgctttt aacatccaag acaagtactt gcaaaacaaa 1260

tgtatgactc atgcattttt cttaagaaca aatctgtagc cttcttaatt cacctattga 1320

actctgagag cattccatgg atacaatatt aatttttcgc ataaaacttg atagggtcca 1380

ttatatatgt ccgtaataga gcgtatagtc acagtagatt gtgctaaaat tttaatatta 1440

gctaccttta aaatgtcgta tttaccaaat tagttacatg aatgaactca tccagttgat 1500

gccgctcgag tgttcaaaat ttaactattc atccttaaga acatttctta agtattgatc 1560

ttaatatgct tatttattta agaaagaaaa aatgaattaa tgtaagggag ttcatgtgtt 1620

gtttagatcg tacatgatga tatatgtagc aaatgcactc tggcataaaa cgcaagtttg 1680

cagcttcacc ccaaatgaga aggtacaagc ccatatacag taattttcgt tgttgcatct 1740

cctgctgaat tgttggcaac ctattatcaa gacagaacaa agaataaaca atgagaaggg 1800

ataaagcaat ctactagaac aggtttcact tccttttta aagatggtac tactttggtt 1860

ttaaacttca gtattgggta tcagtgctta attttcctac ttgttacagt aagaaaatga 1920

gagacgaaaa caactaatgg ctataccccc tgggttcaac tgatttggaa tactcactac 1980

agatggggac ggattcctca taactcaagt gaaaaggttc cttctggtgg aaggacacca 2040

gcaggctggt caatgattat agagggattg ccatgccaat tgcaggggac gaaagaacct 2100

tcctcctttt gtcagatgtt tggaataata cccacctggc aactgagttt ccaaggcttt 2160

tctcttatgc cagaaatcga aactgcactc ttcagcagta tctggcaagc actgatgttc 2220

aggaaatgtt ccacacaccg ctttcggttg aagcagttga agaatataat ttgtttcaga 2280

gcaaaattca ctctcttgta agcgggatgc acggaaatga ttcatggctg gttgggggtg 2340

gctcttttga aactgagaaa gtctacagac ggaattttca atgcatttgc ccccacccac 2400

ccacccaccc ccccctcctt tcaaatggat atggaaatcc aagatgtgca agaatgatca 2460

aaattttcat ttggttattt ttcatggata gacttaattc tagaaatatg cttaaaagaa 2520

gaaatttccc ggtggaggga ggtgactact gctgtgtcat gtgccgcttg tggtgtgaag 2580

agacaactta gcactcg 2597

<210> 5049
<211> 1478
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120131_G1, chr3:174701574..174703051, Cluster 31

<400> 5049
tatgtaagaa atagatggac aatctactaa tcttatacca tagaggcagt acgaacataa 60

atgagtgaaa taatgttttc gttatcagaa tgcaaagtga gtatgtgttt agtgattgat 120

cattgtttaa tgagttggtt actacaacta gagagaagat atattatgat gtaaatgagg 180

atggtatctt agttaagggg atactttacg tgggtttgaa agacttgatt ataagccagg 240

tgacctcaat tacctctaag gatcaacgga agaattaagt gaaatcggca atgaggactc 300

atttctaatg tttgaacatg gttgtacgta atgtgttcaa tgatcccact cctcataggt 360

attcaccaaa acaaggtaat caaggaccct atgacccttc attacctgac cataaaatat 420

accacatgca aaaaatcaat tagaatatgt tatgctactt gtcaccatcg tcgtccttgt 480

tcaaatcctt tactacaatc tggttcatgt tgctagacac atcttcctcc atctcatttt 540

atttcaattc taggattcaa ccttaaaatg atcaatagcc tcacatatct agacatcatt 600

ctctgcttgt tgtagttttt gtgtgtagta ctctgctcaa ctagatcaac aagctcacga 660

agtctataat tgcccatctc atcctcgcca ccacatgggt ttccacaatc cgagacaagt 720

agtgtgagta gcattctctt tctttcactt ataccttca tcttttaaac ttgacatgtt 780

ctaccttagc ggcacactca tcgtgttgtt ctttccatgc taggagaaat acaataaatt 840

agacacatac atgaaaataa aaataggata acataataat tatatagtcc aagcactcac 900

taggtaatcc aataacaagg tcctttatga actgcatttg aacttttttc accttgtcct 960

cttctcctcc gccttttgct tggcagccca cttccttttc atctcctgaa cataccaccc 1020

atttgtattt tagccaaaga gatttagatt catataccca ctcatcaaaa ttacacttcc 1080

aatatccatg ttgcaaacaa caacaaatta ttaattttaa tcaaacaaat acaaggttta 1140

agagaaacaa agatgtagtt acttcattct tgtcacgaca ctcaaactca agcaaacccc 1200

taagtggaaa gacaaataaa tatctacaat cacatgaagg agggttctca agtcatttat 1260

tgacaacttt ctcctcattt atcattagta gaggattgtg gggggaggtg gaacctacca 1320

ctagaagtgc tcatatggtt ctctctctct ctctccattg gtggttgaaa ggaggtacct 1380

taggataaac ttataagatc attgatccaa ctaaagaaaa cacatcttat ggtccaaaac 1440

aaattgaccc caccaactta tatatactaa taatctat 1478

<210> 5050
<211> 1553
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127733_G1, chr3:214192517..214194069, Cluster 31

<400> 5050
tgttggccga gttacatgga tatggaatca gttgtccttt aagggacgct atagaataca 60

caacctatga tcaagacttt agtcatctgt cacccatgaa tgggacttca attgagtgac 120

cgagtctggg gactaagtga tctggtgccc atggattggt ctttctatca gagaactgag 180

ttttaggaac tcataaattc gatgcccatg gatgggtctt tcattgtgca tgcgacaaca 240

gagccataga ggtgatattg catccaccct taagggacct taatccatcc agactcggta 300

tctaggtacc attttaacaa ggatgatcaa atcccctcaa tatccttgga gtgacaatcg 360

agtgggataa agtaagggct gagaaattcc tttgatactt gttatgcacg agcaatagta 420

gagccatgga ggtgatacta caccagggac tcggtgatct agttcccacg aatgagtctt 480

tctgttagag aaccaagttt tgggaactca aaaaattgat gcccatagat gggtctttca 540

atgtgtagat gaccgctgag tcatagaggt aatattgcat cctcctctga ggggccttaa 600

tctgtctaga ctcagtgtcc aagtaccatt ttagtgggat caaatcccct caataccctt 660

ggagtgacga ccgagtggga tgaaatgagg gctgagaaat tccatcgaga cttattatgc 720

atgagcgaca acaaagtcgt agaggtgata ttgcatcctt catctgaggg accctaactc 780

taccatagaa aataagtgat attttctgtg atgaactttc gacggaggtc taccaccgaa 840

aatctgttat tttcagcggg agacatttac tttcaatagt tttgagctac tgaaagtttg 900

caaatttcct atagcgattg tatttgtgtt tctaatgtct caaagaacac atctatcaaa 960

aggtacattg tttataataa gcctaggttg atattgattt attgaaagtg ttatgtgtga 1020

gtaactaggt aaaccttggt ctatatgatt caaaagaagg atgtgtttgg gatccaacct 1080

accaagttat ggagaagatg ttgatatgta tcttgagtac ttgggttttc cttttcgaac 1140

ttgtactcag cctcctcatt tctcattctt gaaggctcct catgcacagg ggggtgaacc 1200

tctccttatg taacccctag caagggccag ttaggaatga tcttgattgt ctcctcggcc 1260

ttccttgata ctccccttgc ttgtaacccg ctcctccttc ctcatccttg cttgatagat 1320

gatcaaagtg tcagggtagt ggaagcaaga aatagagagg agagagtgag tgaaaaagag 1380

aaaggagaat aagagagaga ggggagatat agcctcatgg cagcctttgg gtcatggaga 1440

gttactagat atgacttaca agtaggggca atggtgatta cagtttgaca tctcaaaatc 1500

catgtatggt tgtgtatcaa cgaattgtcg atcgtgcggt gatggagtat ctg 1553

<210> 5051
<211> 2532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127734_G1, chr3:214194103..214196634, Cluster 31

<400> 5051
tatatcctag aacatacaat tttgccatac aagtttcaaa atgtaaattt tatgcaaact 60

atgatcatgt gcatgctaaa ccatgatcat gttgtgtagg ctaaacttta aaccgctaac 120

acattaacac cacattagtg caaaatcatc ttcagatagt gcagttgggc aggggtgtta 180

ctttgcatgg ttttatagtg caaattgcaa tgactttgct ctttcttctt tctttttctc 240

gataaaacaa taaaggcttt gtttggctaa gttctagctc ggtctatgaa gtaaaggacg 300

aactctgcca agccaggctc cctgccattg aaattataca atttgggaaa agttcaaatt 360

attgtgaaaa aaattacgat ccttgcacat aggatggaat cttgtacctg agggtccaca 420

tgacattgag gattctgctc aatgtcgtcc tagaacatgc atttggatag taacatgtgc 480

aaccttgtga ctcttgtcaa acaatatttc gagtgtagct gctaaaaatc tgtaacttct 540

agtattatct tatggctcca attaatcgtg catgttcctc aatcatttgc tcgttgtatt 600

acatttttat caactgactt gcaagcgtgt catggttatc ccattatgtt tagtgttaag 660

gataaagcga attaaaaaat gtgctaaact aaactaggga tagaactaat cgtttatagt 720

tcagataaaa cttccaaaat attatttcct ttgggttgaa ggtcctcatc tttaatgctg 780

gattgcaggg atcatatggt catgcaatac tagtgatcag gtaggatata tatatatatt 840

atatgtttat taccaaactc agattaatga gcaaagcatc atgtaatact tgacttgagc 900

cgtttatgtt tctttattat gcatggaagt tggaaggttg aattgttttc ttcaaatgtt 960

tgatgtctca ggaaagcact tgcaagtttc tctatatgga tttgagaagc actaatgaag 1020

tgacatttca atttatttgt gctatgatga ttaattcata tcacaatagt tggaacttac 1080

ataaaaactt aaaaggaaaa caatagttgt tattttgaaa tgcatggtgg ttcctttatc 1140

ttttaggtgt atttaatgga atttattgat ttgacgtact aaattatgtg tgtttggtca 1200

attcttgata tttgatactg atataccaac aaaacatacc ccctctgccc aaaaaaatat 1260

agtgttctag gattgtccta agtctaacat ctaaagtttg tcaaaaattt atacataaaa 1320

gtatcaacac ttaggacacc aattggacac caattgatgg tacaagtttt ttaatatcaa 1380

ttggtcaaac ttacaatggt ttattttaga aaaatactag aacatcaagt ttgagggagc 1440

gagtactttt gaagtgatag gtagattaat gaggtgtatc tatgttatta tcaacccctg 1500

tttccaaata cttgatactt ttcaccactt tttgattaca aatatttcac actagcccac 1560

tataaaagta ctatgtaggt attctagata attttatgag ggcatttcag tcattggtca 1620

aagtatcaag tatttggaaa ctaaggctgg tatttttttt acgtttgtac aataatcctc 1680

tctagaaagg aaactactaa aatcaaaaac cttctaacca acaaggcctt ctttaaccca 1740

taaagggcaa aatctttgtt gggatggagt gaaaacatat ctaatcatgc tactcctttg 1800

tatcgtgatt agtactttag ggcaacattc ctttgtgtgt agtatgtatt gtatgtatgc 1860

tatatataaa agagactcct gagttggttg catccattct ttgcatatgg aattgttagt 1920

ttttatttgt tcgctatctg taattttctt ctagtgatga catatgtatt attgtacgat 1980

atactcaaaa acatgattag taaggatttg actgctagac actttagctt tctccatgat 2040

ttgatggatg catatagttt ggatgatggt ccagaggtcg caaactctat tttactacac 2100

taggcttgtt ggctagagag tgttaaagat agaaggttat atgaaatgtg aaagaatcat 2160

gcacccttat tttgttggtc ttagggttac gcccgctaat cttagaagtt acctaacatt 2220

taaaaggctt gggccacgtt ctctaatatc ggcaatgttg ttagccgaca tataaatcat 2280

tttcatgtac atctctatat atttgtgtat ggtcataaga gatcctcgtc ttgcaccact 2340

ttgacatggt atatgaaagt acctttaag gtactaagaa ccttggatgt cacctagacg 2400

ggttaggtga atatgtgtta ataaaaactt taactcgatt gaattttctt acttaactta 2460

gagagtcaat tgcagcaaaa taatgtcctt attcaaatga tacctgcact tcacaaacac 2520

ttttaacaaa ta 2532

<210> 5052
<211> 1452
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127989_G1, chr3:215044614..215046065, Cluster 31

<400> 5052
agaagtccaa gactataaaa tatacatttc atgataataa taaacggaag ggaattgttc 60

acccaagcag catgtgcttc tcatctcctc gacgcatcgc caccattttt caaggggttt 120

ttaaggtaag catcatactg tcctgatgtg atctcttaag gtagtatggt gttatcacct 180

tacaagatct tcaatctatt tttgttgagc tttatgtcat tagattgatt ttacatgacc 240

aaatgtgtat ctctcagtcg gttgcgagac tccatgacat atggctacaa catgtgtatg 300

cggcaactca gaagtatgat acacatctag cactctacgt tacatacttt agtcgcttat 360

ttattctaga tggatttctt tggaaagttt ggtgcaaacc tagtcacctc aagagcgtac 420

tggaaaatat ttagtgcacc aaaatttaag attcaaagca aaatgatagg agatggcatt 480

agaccagact aaacagatct cactgatttg tcagttccac tgcctcaaac atgctttagt 540

cgcttattta ttctagatgg actccattaa aaaatttggt gcaaccctag tcagcttaag 600

agcacactag aaaatattta gtgcaacaaa aattaagatg caaagaaaaa atatagaagg 660

atatgacatt agcccggact aaattggtct cgccggtttg tcagttccac tgcctcaaat 720

cggctaggtc ggtttcactg ctgttacccg tcgacaacta tgctagacct aaggaaacca 780

gtcagcctga ttttcctatc ttttttaact aacttggttt ccaaattgat ttcggatcta 840

ttttgaacgt gcaaattttt gaaaaatgtg ttttggactt gtttttttt ggataagacc 900

accttcctct atataaatga gaagattgtt gccgattgag tattccaact ttcaatccta 960

aaaaaacaca atacatatct cttttgccgg cctaactctc tctatattat tgtttgtcat 1020

gtcttctagc aagatttgat ggtgttcttc atggctttat cgatcttaga acaacctaga 1080

tgtgctcctt cccaatgggt tttctcacca gttattcgat agtctactaa gtgaagaaca 1140

tgttcaaaat cagtctaacc aacttcttgt tggttttgtc gattcaccga gattgtttac 1200

aaccgtaggt gtgctcgctt ttattgactt gtgacctaaa tccgtatgca aggaaataaa 1260

agagcatata aaagatagga tgaacccagt taaagcctgt tattgtacaa cttagctaca 1320

gattgtttac atatcttatc taatagccaa gaccatggct caaccattaa taatatgggt 1380

taattagaat atgtcactcc aattttaaga agttagaaac tagtttcatt tccataccgc 1440

ttcatgatgg ca 1452

<210> 5053
<211> 1544
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_131632_G1, chr4:2065875..2067418, Cluster 31

<400> 5053
tgctatgaat ggaaaaatat ctaacatatc ttttcgtaga gctattgtcg gggtgaaact 60

ggttgtgtgg aataatttat tatatccaat ggcaactgct catttaggtt aatcgagaga 120

caaatttatt taggggcaca tagagatgga ctcttctcag atcgctcaat ataaattggt 180

caacttgtcc caaactattc aaaaccggat atcaatctag catgccaata catcacaaat 240

agcatgcgaa gatgttacgc tttacaatgg tcgaacctat ataaattgtc gtcttgtgtt 300

tactattgag tttagattaa tgtcgatgct caccaatctc tacgtactcc ccttaagcct 360

gcaatatata gacgacgttg acagtcatca gacaccacca atagtatggt tctgacaata 420

gtatttacgc gcatcacgtg atcctcatcg tcagaaatgc tgaatcttgc ttcaatataa 480

tggcagaggc atctatttta aattaaatac aaaacacaat cttcagcact gaacaaacga 540

cgacgcggga atgtgttttt ttcttctttg tttgctccgc atttattaac gttaacgttg 600

tgggttccag aatcgatggt gttaatgcag ccacagttct cgtacatact gcgacactgc 660

aaggtttgtc cgtggttcgt agttcatcct gtcaaatcaa aatcacatct catgactgag 720

cctgtcgaat ctggagaaaa ccgcatttct cgcagcaagc aacaattaat catgatacct 780

actgttgtat agcatgcacc tcgattcata tcaaggttac tattagcttg gaatatatga 840

ttaatgcaaa gcaatgcaag cggatcggag agcatatagg agagaccaca ccacagcccc 900

atatgatgga tgtctatcgt tgttaactag aggcgtgtcc aaatcaaatc accgtggcat 960

cttcattaat ttgcaaggga cagagacctg ctgttgcaaa tatattgaca cgcaatcaga 1020

tgcgacagtc gtctgaatat atagctatcc ttatatatgt ggatattctc ccaagttggt 1080

gccatgtcat ttttgtatca tgcatgtccc tggctggctg catcgcctct catgtgctgc 1140

caggaaaatg acctgataat catgtattta atctggacgc gttattatac agctagcgtg 1200

tagtacttat gatggaccat gtaagtgtaa gcacagcagc catacagaaa tcgctgcaca 1260

tttcaactaa agcccaatta aaccctggcc gccaacaatt ttgtcagtgt atttgtttga 1320

agttgtgtgt gttagtgtat tttttttata aatttcataa aaactagaca agtttaacac 1380

aagacagcta aaaactcgca atttttatgt agttagcaag gttgtctgat caaacaacta 1440

ggctggatgg gctgatgtag tgggctgctg ctgtcactcg ctgcatgggc cttttctgaa 1500

tttggccacc gtccacagaa acggccaaaa aaagcttacc tttt 1544

<210> 5054
<211> 1505
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_133658_G1, chr4:10641655..10643159, Cluster 31

<400> 5054
agaaccattt cctttctctt ttagcagcag caaaggtgcc atatggcaag gacacttggt 60

cgcacaccac caccacaaag ctgccggcca gaccaagctc catgctcttg tctccgtcca 120

tgcatgtgcg tagcagcagc atctgccgca gcagaagacc aaggcttatt caaattgtta 180

atcactttca cccatgaatt aagcgatagt gcggttggat actctcggca ctgccttttt 240

gcttacttga tcaccactct ggttcttaat ccagttgtcg gatgttgggt gttaagagtc 300

atcgacccta ggccaacata tgcatgtagt atgctcatac actaatactc tagctacgta 360

ctatagctgt cttctcttct tggggtttat tagccaggtt gttaggggtc attacagcct 420

tacaggtagg cgttgccttc gtcacaagct acagatcatc atactatagt agatttcctg 480

aaagattctg gcgttgaaat cgggactcgt catctcacta gctcttgagt cttgactgag 540

tcgaggatgc tgatgtgagc ggttagcaaa tgtttgaact ttggtactga caacgctgca 600

gctgtgttag cttatctcag gacagctata tatgatgtga aggatttctt ttgattgtca 660

cttctttttc tatcttattt cttgtttaaa tggccaataa tttcggctca aggcaacatt 720

gaatggtgca acgtctatta tatttgatat gatgttcatt tgatatcaaa gcaaggtatg 780

gccatatggg catacaagca cttgcaagaa catctgatcg accatgtcca ctaatctcct 840

tatcaaccat tcagcttatt ttttattaaa aaaaatatta gcctgatcca tgtttctata 900

atagaattct cttggttatt tctttttttcc ttttttttaa aaaaataata ataatggagc 960

tgcatgctgt cttcgactga aaagccttgg cagagtctat tttaatatcc acgaacggct 1020

agtgtaacta acttgacaga gcagccagtc atccacttgc aagtactact tgaagccaca 1080

catcaacgcc agcgggcaga tcatgagatg gccacagctg cgcacccgtc aggacaatct 1140

gctgcagttc tcccacatcc gtgctgttca aattgagttc ttctgatgac tgacgaacaa 1200

acaacaaaat aaaaaacacc agtttctaaa tgctgcaatt atgtgggggc atacgtacgt 1260

gttcacctcg tcgtccacta gaagcgctgg gatcgtatcg acaacttgat cacgagttca 1320

caactatttc agtgcataca tacatagata tccttgctgc tgcaatctgg agcaggatgg 1380

gacctaaaca gaggtgcctg gggttcatcg tggccctgta ccaggagacc aaggagcacc 1440

aagaataaaa gtggtcgctg tcctggccta acactgcatc cccctcatca tgcacatgat 1500

atgag 1505

<210> 5055
<211> 2160
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134374_G1, chr4:14027375..14029534, Cluster 31

<400> 5055
aaagagtatt taaatggatc tattggagct atttttatca cctaaacccc ttacataaga 60

atatagagaa aacttgacct tcaggggtga agacagccaa cagactatag tccttccatg 120

aggagtcaaa ctcaatacct cgggtgtgct attcagacaa cataactaac tcagcagagc 180

ccctttcgct gttctacatt cttatagaaa cataatattt gtttgatgaa ttaaaatcac 240

ttcatgaaac cctttcacta tctcactaga ttcttaaaac taaataaaaa ccaaggataa 300

atcatatttt gtttgtttct ttggactagt gaaaaaaatt ggttttaagt tgttcttcgt 360

caaatgtttc ccaatgaagt gtttggcagt aattctactg attctactaa tagtctaaaa 420

catcgtttgt tgccaaatac acccttaaaa taacatatat gcattcattt gaacacatta 480

tatatatcaa cttcaatggt gtctttccca gggaatttag aggcctagac taaaactaat 540

tctaaatggg gtagtcctaa ctaagtacca aactaaagca acaataacgt aaactataat 600

gtgttacata gaaaaaacat tatagactaa caaaacacaa ataattgatt agaactagac 660

atcaattaca tgtcgtcttg atgtacccac cgttcacgga agccaacaag tatcaagcag 720

aaaccattga tcatgatgtt agattatgta ttagttagac ttagctttgg tcatttagac 780

ttgatacttg acacatgttg agaacctatt gtagttttaa aagaacaaca agatggcaac 840

aataacgaac tctatggtgc tagactaaaa actatgtagc ttgggtgagc ctgcctcatg 900

tctggtgcac acatctagtt aatgaacttg ctcctatgca gactgatggc aaaaatctaa 960

atcaaagctt tggtcacatt gtggtgattc cttatccaaa acaatatatt taccggtcaa 1020

acacctcaac cttgatgagg gtaagatgtc tagaacaatt tgtgtgacaa caagatgtga 1080

gaaatcaggg gaaaaggatg ttagatttaa ttcactagtt agtggttcct ttgccaacgt 1140

ctataaccct tctgattgtg tgcaacttga tatagctaac aactctataa gtagggagat 1200

atttcaaaat tttattccta atgacgattc attggtatag gatgttgatg ctccagtggt 1260

tgtatgatct gatgagcagc acccaaaata cactcgactg tctaaaacca atgaagtaga 1320

agggaatgag tctgataggt tgggcttggg gatgaggaaa ctaccataca tcgatgtcac 1380

tatagagaga cagaatttga tgccaacaca tatgttggaa aatagctctg aatctaatag 1440

cattgcgcat caaacttgtg ctttggagac cctagccaac aaagtaaaat tgccttcatc 1500

tatgagggct gagagacctg caacaccaat atgtctggat gtaggataga actcatagat 1560

ttgttgttct ggttttgaca tctataatca ttttccttgt ttacaaatag atacatcttg 1620

ttgtaacaag gatgagaaat ttgtggtgca gggtgagcaa gtgggtaaga taggaacgag 1680

tgaggaacta aagctagata tgtctcctca ttctgcccag aacaaaagta atcctaaagg 1740

tgtgcttaaa tatgctcctc ttcatgtata taattcatta gatgcacttc gtcgtagcct 1800

acggtgcaat gtaccaatga ctaatggatc ctccatagca tatatggatt cacttgagaa 1860

ggcaatgaat cttgctactg ctcgcaattt ttatgtgaat ggaggatcta gttttgttgt 1920

tgggcacaag cagtattata catctccatg cctaagacct caagcaacag gtaatgctca 1980

atctctaggc cattttacaa tagataggtt atcaagtcat aacatcatta cgatcctatc 2040

taagataggg attaaaatag gtggaaatag gctaggggtt gaagaggtat ttgaaacatt 2100

aagacaagcg gaaaaagata gggaaaggga aatatataat ccaaacgata attcccttct 2160

<210> 5056
<211> 1769
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_134885_G1, chr4:16309854..16311622, Cluster 31

<400> 5056
ctagggtttc atgaacaact tgtattgttc acatatccaa tgcggtgtct agtgattgcc 60

cacgcatgtc agatgcttag ataaattgtg ttttgtccta tattgtgtgg ttttggtttg 120

tcatgctttc tattcaatct cccacttgct caaccatatg ccaccatttc tctctgatgt 180

gctcaccctc actccatcat tcctatatct catctctggc caccatgcac tagtccccaa 240

gtttgtgcgc tcgctttttg ctgcttgtcc acacccтttt gtagcacctc tatgccactg 300

ccagtgccta agctcatagt gcctactcac tattacatcc acacttatgc tctaccattc 360

atcattggcc acttgaccac ccgtttatgc atctatgcca caccgtgcac catcgcttct 420

tcgtcgtcct gtgctggcac aaccaatacc cacatgccca cactgcccta caactccctg 480

ttgtccaaca accatatcct tgttctgtgc aaaaacccta aacctttтac tacatagagt 540

ttttccctcc aagctcctat gcatctacac tatgcaaatc tcacattcca ctaagttcct 600

caaggtagat cctaacttca ctctttcata ctttttcata ggttcctaat tctgctaggg 660

tttgtgtcta tccagacctc actacacatt tcctacctca ttttgagcct taattccacc 720

aagttcatat ttttacttca tctctctata tttgatcata gtgtcccccт atcgaggtga 780

tttctagtgt ttgactatta ttaatcttaa ttcctcattt ttgatgctca ctctcatttg 840

tcactacttc tagttggtga tttagtctgc atgacatgca tcctttgctt ttgcattttg 900

ctagttgtgt taaaggtagg aaattcactc atgtctcctt tattatctca tattgctttg 960

ctccaaatag gaatttcttt tcactagaat atattgctta tgtataccct tttgccactc 1020

tcatcaagcg tgttaaggat tgttgaactt ggggccaatc ccgcaagtat ggaccaaggc 1080

caagcctcga gtggttttgt atgatagggg gaatttagta tcattagata gtttagagtg 1140

tcaattgtta gtgcaatggg tctatgtggt ttgttagctt agtcattaca attagtcagt 1200

catattggta gtatgactag gaccaagaga ttcaaactat cttatttagg tgaggacaac 1260

aataaggagc tatcatgacc tccttgcctc gataagagca aggctatatt ttgcgaacaa 1320

caacacaaga agaacaatga ctcattcgtg attagtagaa ggcaatcact ataacagcca 1380

ccataaagca agctgatatg catgggagtg gtggtcccat atgaatagat tcagatgcac 1440

ctcccaccta agcaccacca atagttgcta taccacttca accattgaca tgctcccatg 1500

ttcccgttta cccttcatag ggataacctc aggcacaaca gaggactatt tcaccaccgc 1560

caccacaacc tatccatggg agaaactagt ttgagggtag agcaggtcta ggacaaccca 1620

tgattattgg accttcatag agccacaacc agttgagttt gtcactttag gcatgtttcc 1680

atttcctagt ggcttctata gtagagagac catagttaga gttctttttt actactacta 1740

tgtaggagtc atcttataga gcttaatta 1769

<210> 5057
<211> 1426
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_135845_G1, chr4:21325508..21326933, Cluster 31

<400> 5057
tcgatgaaca agaatgtgag acggttacag ttgcagggac cgctctgctt gtatcaacca 60

caaaaggaag ccgaagaaaa aaaatacagc aattacggac attcctcagc cacacttcca 120

gcgtgacaga aggggaaaaa ggagaaaatg cgaaagatgt tgtaaatacg acatagggca 180

caatgcggca acatgtgaaa aatcacagca gaacattgtc attgtcaaaa gaccaagagg 240

gaggccaaaa ggcactgaca gtgccaaaaa tgttgagaat gaaaatgcac ataaccaaac 300

agaagattgc acatcggctg atgacgacaa gcttacattt ttagaattaa atagatagag 360

aaatgaaaaa tatttaacct gtaacagtta ataaattctc acttcttatg actgaatcta 420

agtaatgctg cttgggtgaa tcagctgagg tggtaaacat gtatgactga atgcctgaat 480

ctaagtaatg ttgcttgatt tagatcattg tattcatgat tgaatggctg ggttatgaat 540

tactggacga ttgaatgttt gaatgtctga aacacaaaaa caaggtattt cgaaaacaca 600

taccttaatt aacttactga tcaacacttg ttataaatag aaaaaagaca aaaaaatgta 660

atgactgtgc agaaaaaata tcgtaaaaag catataaaaa actaactata tgttaggtga 720

taatgaagac atatataacc tttctagatg attgggaaat atctacattt gcaacatcct 780

tcagaatggt agagtccctt tcaacatcag acctttctct ctggtctggt tgatcataat 840

ctttaaagtg ttgcttaata tgtcattaat cttagctgaa gtatcctggg aaaatgaaaa 900

aaaagcatta gatacgaatt aacaaaaaat aactccaata atatatgtga cttataaagt 960

tcacatgtaa tgaagaaaag actttctctg cctggttatc atcttgaaca tcaccctcgt 1020

cgacattaat acccatctga gtgtcagact atgatcacat aacaaaaaac tataaaaaac 1080

tgaacattga ataaagattg aatggcttaa taataaattt agcgtaatgt tattcagtag 1140

cttacaaaat aatgacctag atatcgaagt acttagtaac atcgaatgaa ttaaaaaagt 1200

atgcaaagac ctgaactgag ggtgttgggg catatcagca tctggccatt gatgtccaac 1260

actccctccg cgagggtcta ggctcctatt tacatcatga acattaacgt cggcaccatc 1320

aacccccccc ctctcgatgt catatggtgg gcctgcactt gtgcatcctc cacatcgtca 1380

ttaacattga cactatcaaa catcctgtcc atgtcatcat ggtagt 1426

<210> 5058
<211> 1932
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136219_G1, chr4:23157143..23159074, Cluster 31

<400> 5058
tagggatgag atatggttcc tagtattgcc actaacagaa gactaggaca cgaaacccta 60

gaaaccctta gaaccatgtt atttgtactc ctgttgccct tcggtatata agtctagcat 120

gtgtttctat ataagaggat caatctatca agcaataaaa ctcgacaacc ccttgatcag 180

tggcatggaa ctccccatac atctctctct tttcctattg tgaacccttt gatggagcat 240

tctaacacga ataacattat tgttgaatat aggtcttaga cgctccaacc aggataaaac 300

ctttttatg tttttagtgc ttaagctacc aaagatctat gcatcgaccc atgtctaatc 360

actcatcact atcgtagaat cgagcccatg tggtcctttc tgagcactat tgtgaatgct 420

tccttctcac atcccttcgc acagatatcc ctcgttaaac taatgttcac tagtcgattc 480

tctatttggc cttatctcca aactagaaag aactattaag gagcaatcaa ctttgaatcc 540

accatatctc cttggatcaa gaataacttt acagtgaagg tggttgtgga gatagtggtc 600

tacaacccat ggtttctagg tggcgtcggt gagttaatgg tcgatggctg gccaaaaaac 660

tcaaccacca cctattccta gttgacgaac tcctatcacg attctggtcc acactccctt 720

caaactgaat gcaacctagc ctcgtcccta cttgatggat tggaggatga gttctttctc 780

tatcgtgcag acaagcgcag ctttgaggcc gagtagtctt ccatggaggg tgtggccctg 840

gcgacgggtc gagatcaccc taccacatgt ctgcatcatg tcgttccttt ctcctcaatt 900

ttaaggtaaa atgtcaaggt tttgttttgt atttttctat agctataggt aattattata 960

catatttaga tagtttcttt atattacttg gaatgtcatt aattataacg aaaaataata 1020

atataactgt tattgttgtc cattgcttag acagtatgga gtcgatgaat atgtgttgta 1080

gtgttttagt tgttgtttct tttcacaagg tcttataaga attaaaaatg atggtccaat 1140

tactagtaca agagaaaact tatctgtagt tattattaaa attaaaaatg tcttccattt 1200

ctcaacttgc ttatctatct tactagtact agagtaaaat tactcttatt ctatcctttg 1260

gttcttcact tctcgttgtt acctttctca ttttgagttt gaagctaaaa aaattgttgg 1320

cttcacacag ctcgcaactt cattgtcatt gtatcattca tgttatacct agtcaattga 1380

gttgtgtgtg ccagtgtatg actggcctta tacctttctt aagctcacaa catgtagaaa 1440

aagacaccat gcaatttaag ttaggaacat atcaggtata aatcatacac attgatgcaa 1500

ctatacaacc aatacacaga cttggaggtg agagaacctt ttaaaaatat tttgaggaga 1560

tggaagagtt gttttgaaac aaaatagttt ttaaaaggtt ctcttacctc ccagttttat 1620

gtattggttg catggttaca tgttcccatt taacttgtgt taatttcctt cgtattagca 1680

taacactacc atttattatg tctcttgaat tttatttgat aaggttggtc aaatccaatt 1740

aaatccatta aaaatagtta gatcattatt tagtttagta aacacgtcgc aatgcatttg 1800

catgtttcat tatcgtaatt ttgatgatgg aacccatgga attgccccaa tagccatgat 1860

aatccctgca gaggaaatgc aagcactatt atggctaatc tctgtttgtt tggctttaat 1920

ttgtaccagc tt 1932

<210> 5059
<211> 1437
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136909_G1, chr4:26808685..26810121, Cluster 31

<400> 5059
ctaaggacct accaagtggt cttagggttt agagtcccct acaatggcac gattatataa 60

atatataaaa acaagagagg ttgtacaaag agtggtggag gaaaaaaggg aaggggatca 120

aaaaaccaaa cctcaaaaac ctagactagc cataaccaaa ggagagaaga aagatgagga 180

agaagagggc agggaaaacc acaagcagga cgcaagctaa gagggctaaa tagcaaacta 240

taaggcaggt agccataaat tcactgaagt cttcaaatta gtgacctgta tgttgctctg 300

taggtgaact cttttgcatc acctcactag catgtcaatt gactagagat gtaagaaatg 360

gtttctgtag agctttggat tgttgaatac tcagcttgtt ttatgatttc aggattatta 420

atagtagtgt ctatttggtt taggtcccat gaaactcaag cttttgagtt gcatatcatt 480

atattaagat ttaagaagaa aaagaaaggg gattggcctt gtacaaaaat ccattaataa 540

aatgcctttt aattcattaa taaaatgcct tttaatacct taacctttta attcttctct 600

agcaagtgtg ctcacctcat caaggttaaa taaaatgcca tctaagatag gactagaact 660

gttgtggtgc tctgatcttc atttccattt ggcacgtgac attctctggt atgagtctgc 720

atcacttgta tgcctagtat agattgtttg gtggacttga gaaactgatt gtgcctactg 780

cagtgtcatt gatttttagg ataatataaa tggtttcttt gtgatgtttc tctagcatta 840

acattgtgct gatgtccttt gttctaggca atacctatac tacatgagat tgtgcgaatt 900

gcaccaaatt tgtcagattc atattatcta cttggtagca tttatagtga gattggtgaa 960

ctagataaag ccataaactt cttgatgcta gctgcatatg tttccccaaa ggatgcatct 1020

ctgtggaaga aacttattcc cttggcaaag tgagtttact tcattgacct tatttttttt 1080

gaaggagtgt attgatgagt ttgcttgata gatttttgaa agaaatcttg catacaaagt 1140

taaacgagat gaaattgtca tacattgctt gaatgtggat gcacttgtca tcaaaactgt 1200

gatttcatac aaaattgcac atatttagat tatttattgc aatataacct ttccatatca 1260

gtgcaatgct tgttaggtga gttacaacaa tttaatagat ttaattgtgt gggctaaagc 1320

ccttgtactt agtcgtccta ataggcccaa tgttaggcgt ggcaggttgg cctcattggc 1380

ggcaaccccc tatacatgag atcaagactg gagtccccta gggttgggac tcttctc 1437

<210> 5060
<211> 1747
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155031_G1, chr4:146991391..146993137, Cluster 31

<400> 5060
attgggacct ctcgcctccc agagcatcta acaatatacg ccctcgaggc ccctcgtgtc 60

ccgagacacc taacgatata agcttctacg gcctctcgta tttcaaggca cctgacgata 120

taagccccta gggcccatca caccccgggg catctattgg tataagccac cgaagacact 180

catgccctag gtataagccc ctagggcacc tgatgatata tacccctagg gctagtggac 240

cccctagagg aaacaaggaa tttgagtgat ggcctaggcc tatcttgtgg ctaaaagatg 300

tgataagccc accaatggta gtacaacact gagacgtggg cctcacacct aaatgtcctg 360

aagactatct cgtggtgata gcttgatgga taagtctcga gtacaacaca ttaaaagcat 420

gatgggtgat gttacatgat tgaatcagtt tgtatacatg caacatagat tgcagggcac 480

ttgaggtcac tacatagtgc atgcacaagt cctataacca cacaagcaca cgtatggtgt 540

gccaaaaaaa ttaaatgaac tacaagagac tatattggca tataattacc tgagtccagc 600

aagcttgggc ctcagaagta gaatccattt tcataggtta taatacctac catgatagtc 660

gatatggtga tcgtcttgca aagagataac tatgacatcc ctcgcactta atatgagcat 720

gacattatgg gcacgtcttc accctaacaa tgcacatagg cgagaaatgt acccaaagcc 780

actgaggaaa catactttag tatttatcat cctatccatg tagaagatct tgcctgatag 840

aggattcgta gaatccttat agctggtgct aggcagtatg agggccccgc atatgataaa 900

gggtacaagg aatcataata ggatccatta agaccttgtc cttactatgg acataaccac 960

aagtcaacac ctcaatagga atggttatgg tgatgcatgc ctattgtagg tcccaagaag 1020

atcacaagac caagatatga tcggggttat tggcatgatg atagataggg accacatgag 1080

gtgtatacat gtaaaacaat cgcccattta gactataaaa gggatggtag agcatctttt 1140

aattcaggtt tagaagatct aacttcccac aacaatccag agcaagatct accaaatcca 1200

gactaatagg gttgaagaca atccaaccaa ggaaacaata gcaagagtta gtctagcttc 1260

tctcattcta ctcctttctt tgtggctcta tgggtttggg cttgtaatcc tgtatgccat 1320

ctacatacaa taatctgtgg tcaacaagag aatgtaggat attatacaca ctacagtcta 1380

aacctttata aaaatccttg tgttaggctc ttgatgtaat agatatactc tatggtgtta 1440

ggactcattt cgtgctccct agcaatccta gtacctttgg taccctgatg tctttgctac 1500

gatatttggt gttgtcatct gggaccttgg cacccgtagc agggttctgc ctacatgaca 1560

tcttctacct ttccatcacc cgaggtggag tttttagcca ccaactagag ctactcaaat 1620

agagtttcaa catcgatgtc ataggggagc tggctagagg caaataacca acataacatg 1680

gcaccgggaa atactgctcg atacatagga tgaatctcca tggcttggtt gaatgtaaac 1740

agtaggg 1747

<210> 5061
<211> 1647
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_155162_G1, chr4:147743673..147745319, Cluster 31

<400> 5061
tgtttatcat agccgataaa aattaacgag actaatttca tcggctagcc atagttgaca 60

acacttaaaa taatatattt gattagcttg accacaaaaa ctgatggaaa ttagtcaatt 120

cctgttggct agggaagtcg atgcaaattc ctaattttca tcgggtgttg ataaaaatta 180

gctagttttc gtgcattaat ctgcaagaac tagaggctga tggttaatcg ttatagggga 240

atttgtatgc ccttagctag agatggtaca acctttctc tttggaatga tgttcggaac 300

aactttctgc caaaagttga attttcccac ctattttctt ttgctaagaa gatggattgt 360

ctctggctga gttcttagaa aatacgaagg ttgaagaaaa tttgcatacg cctttatgtt 420

tggaagctag tgatgactat gtcatgttct atgagacact caccgagatt caagaaacaa 480

ttaatgcagg gtaaagacag atggatatac ccctggagta ctagcaatat gagttcaagc 540

caaatttata agcttaacta tcaatgcatc aatcctcaaa gtggagttgg tagtcaaaag 600

tttacagaaa tattaaagta ttcacatggc ttgcattaaa agatagattc aattccagga 660

acattctaag gaaaaggtgt attgtggtga atggagatta taattgtgtc ctctatgatc 720

ttcactgtga ggagaccacc tatcatggat tttcaattgc cctttcaata atgcttcctg 780

gaaccatatg ggtatttact aggatcactt gttgaatttc ttcccgatca gtgtttcaag 840

agaacacttt aggtacaagt tcttcatgga aataattaca ctctcgacat ggaaaatttg 900

gaaacaaagg aatgcgacca tatttagaat ctgttccctc ctcttcttgg aggcactgct 960

tcaacaacac gttgaaactt tagcttcgta aagttgttct ggagtttaga tcaaagattt 1020

ccctatggct tgattcttta tatataactt cttatttctt attctctttc tccctttctc 1080

ttgcttcctt ttgtttattg ttgttttctg ttgtttctat tctgatttaa taaaggtctt 1140

tgctgtgtag gggtttcctc tacagtttta tcatcaaaaa gcactagagg ctgacgaaaa 1200

taagtctata cggtttgttt ttatgggtct ctgattgaca aaaaaaatta tctagagcta 1260

ccttatatca ttatctacgt tttggaaaca aaaagacaga agttttgttt aatcatgcaa 1320

ggtagacaag taattttgta caatcaacct cagcggtatg gaaccagtgc cttcggctat 1380

caaggaaaat agaaaatgaa ggagaaacct taaagctaaa aagcttaaag acactttatg 1440

tcactatatc tgcgtttttc tagggacatg aaaatccttg tactccctcc atctttttg 1500

aacgtaatgg ctctgcattt taattaagaa gaagaatgaa attcacccag ttttaaaaaa 1560

atttgggctc gaaacctgca caaagagtac aagcaaccca aacaacgaca gcccccacac 1620

aaaacccatc tagagccatc gatgctg 1647

<210> 5062
<211> 1408
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_156199_G1, chr4:153326460..153327867, Cluster 31

<400> 5062
gctcttgagt tgcaatggtt ctctagtgcc attgagtgtg actaactttc cacatgaatt 60

atacttagcg atgtgttgat aatgcaatag aaaagattta gaaagtgttt gaaaatgcta 120

actcatctgc actagaataa tagttagtac aaaagctccc ataatagaat tgttcacaga 180

tgttcggact agggctcttg ttgcctgatg attggatcgc caattggtct gagagcatgg 240

gagcttaaca ttttttaaat ggacatgagt gcataatcag atgtcacgtg tatacatatg 300

gaggggaggg gagtatgcat ggggattatt ccacccctag gcatgttttg gaggtcccag 360

tggttgtgaa agccctatgt ttgcttttat taattagtat aactagcggc ctaacttttt 420

actaagtgtg ttatgaagat aggttaggtc aacaccaaaa tgatgagcaa gagtttgagt 480

aggatgaagg gtgatccatc caaatggagt aatctcacac tcggaaaata agaaagagga 540

aaacaaaacc ctacagagtg aaggcaaagt tataaactaa agaaattgtt ttgcttacca 600

agacacaata gattatgtga tcgagtttag gatagatagt tgtactatca agaggacatc 660

tcaaaatagc aaacacgatt atctagtttc actaggtgtt gatttatatg cattttaatt 720

agtacatgat tagtaagcaa gcaaaaatgt ctttgaaaac actttggaaa atattaactc 780

agtgcctaca tgtttggcaa aacatttggg ggtggcatgc ttacaaagtg agagatgaaa 840

ggtgatgctt atgcatttct gcactcacca aaggtctttg gtgtggcact agagtactta 900

gtggatatct aagcagtacc ctaacatgag tgaagttgta gtcgagcata atgccttcag 960

gtatgcacta gacatgcccc accaaacagt tccaatgtgg ccctagccga gcatgatttt 1020

caaatccatt ccttggacat gtttgatgtc gcatcaaagg ccacactaca tgattcaact 1080

agacagaatg taaaatagag acttcggagc taacacacgc caaagtgtct agtgtgcacc 1140

aaatgtgcac aaaaacctct aatagggaaa tggctagttt tcttgttgtt ggaaactaat 1200

ggttggaagc atttagtggc aactggagag gtttcatgtg cctataggca ctatgacaag 1260

tgggtaactg ttggattttt ggcaggctta tagatagccc ttatgtttat ccttgaccac 1320

tctgtcagac cttctaacac ttgtgcgccc tttttgagag ctcagcaaca actccactaa 1380

atttcatcca ttcaatttat atttggtt 1408

<210> 5063
<211> 1405
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_16922_G1, chr1:93921072..93922476, Cluster 31

<400> 5063
tgcttatggg ttgattacaa gatcggtacc gagtcaatta cttaatacga gttgtgattg 60

agttggtctc aaaccatgta caagttgtac cctatccttt tacatatttc ttccttatct 120

aataggcatt taccatatct acatggatgt aaatcctatc tcatgatcta gtaggatctt 180

tacgtaccat ctatatcttc ctagaacttt cttgctaatg gaatatttcc ctgactgtgt 240

gggttgagtc cctagacact tggccaagct catgaaccaa cctattatgg ttttcttaac 300

agatccatgt gtaggtaccc ctagtctatg tccttagtag acccaaggct tatttggctg 360

agttatcaac ttaggtagat aagactcttc tcttgaatct tctcgtgtag ctaaatcttg 420

ttgtttctga gttgttgtct cttctagccg agttcttaac tctgtcatgt agctcgcatg 480

tcgatagact catcctttta ctatttagaa ctcaattaca cactagacca atgcttcaaa 540

ttctaaaatt tgtgtagctt tgacttttt gttagctcta aaaaagaaat tccgtaacac 600

tttaactcct acagttccat ggtgcttcat cttttaccat tagttataca taatatcata 660

ccatgacttt tgggcttctc tagcccatct gttagtagcc tttgctttct tgcactcatc 720

tgcaaccacc gctttgtgtt ctaggctctt gcatttgatg ctcaagcctc atgaattcga 780

cactctagtg cttgaacctt tagtaattga tcgagcctta gggacttaac atccaaatga 840

atgtctgagc cacatgaact tggcgtccgg tgctcatggg gggcttttga gttgttctca 900

aaatgacttt taggagatca aagcgtatta gggactcaac ttctatatgt ctgttaaagg 960

tctcttgatg cccatgtggg gacttttagt acacagacga caacaaggcc acatagctag 1020

tactaccacg ttcacatagg aattgataac taagtcttat ggacttgata ttctgttgcc 1080

catagaggca ctataaatgt gcatacgata gtagagctat ataagtagta ttgtcaacct 1140

ccctagaggg accttaaatc accccagtga tgtgtatagg taattagagt gatgcatgta 1200

gcacctagta cccttatagt gatgatggag catagagtgg gagaagtaag ggctgaccaa 1260

ctctattgac gacaaatcag atcacagttg tgtgatgcta catcatcaag ccttgatcaa 1320

ttttttctg acagatatgc acctaaaaga gttctagtca agtgacttat gaccttctgc 1380

aaactcaggc ttccacatta attgg 1405

<210> 5064
<211> 1688
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_170476_G1, chr4:230364812..230366499, Cluster 31

<400> 5064
gtggctcgtt gaccaccaat ccttcaactg cttaggggta cagtggcgac aagcttctat 60

ttgtagagtt gtaggtgcta gctatttggc ccctggaggt cgatcccttc ctgttgttgc 120

catcaatgag atctaaaaca tgtggaccta taaatttagg aactcaaaaa actattgtgt 180

acttaccagc ctttttccc tctttgtcca atccctttga tgttggtgtt gaggagcaca 240

tgtaagtaga ttagatcaaa gtgacatcaa tgtcgttgat tgggggcact attgttcatt 300

taaaaggaca aaatggacta gcagatcacc aatcgggaga gagtatggag gatgagcacc 360

atatgaagga gcacaatatg gatacccata caagtttgga ggagggtatg gatatttgaa 420

aggtgaagat ctagaggagt gtgtattaac gatatgagct tcaatggtag gaggagctgt 480

gatggtagga tttatatagg gaggaggtta agcacccatg gatggttggt agggatatgt 540

aggaggatca tatgaatata gagatcggag gttgttgatt tagggaacac agatggacaa 600

aaacatcctc ctaacgacga tttatgggag aaaggtcatc aagaatacat gttccacatt 660

agtaggggtg tcacgatgtt gtggagattg gtcattgaac aagttggtga aagtttcaaa 720

gttcgaactc cgcctatgat ttatattcaa atagagtgag aggctacaat ataaagaaag 780

ataacgaatt gaagaattga agagttgggg atggaaataa actcaatcac tttccttctg 840

tttattggac agcatttttt ttatttaata atttttttac ttcaaacgat caaacaaacc 900

aatcaaaaaa cgacatgtgc aaacaaatta aacgaacata tcgattggtt ctacaacacg 960

gtagtcagaa ccgatcagtt cgacactaac cagcggttcg gccacgccaa agagacaaag 1020

atcaacgtcg accagcgtta gaaccagctt taggtgtcga acggtggttg cagacccccc 1080

aagctcatgt atcgtcaatt ccggcgaagt ttttttttttc ccctggtacc gttgattatg 1140

cacagttggt aaggacgaag taacagaaca tacattggtg gcccgtggcc aagttgattg 1200

gctctatctc tgaggctaac ctctcgaagg attcaggaag ctgcagttct tacctcttgt 1260

tgctttgatc agtttgcttt cgggtagagt tttaatcgca gagccgtgtc tcagtgtcta 1320

tgaccggtga tattgctgtc ttcttctagg tatcgttgtt ttcttgtgat gcttgttcag 1380

tttcttgccc accagcggta agcctagtct ttatgctagg gctagcagat cgtgtataag 1440

gctatacaaa acaatgtttt gcttgtagac tatagtattt aagattagag tttgaaatga 1500

gaaagacgag taagctgttg aagatagctt aaataataaa tatttgagca atattatgtt 1560

ttataagata gttcacaaaa caacatttca atagaaatga agttatatcc ggcctctaca 1620

cgcaaccttg attgggtttt tatgaattat gacgaagtta attcagctag acaaccgatc 1680

aaaatcta 1688

<210> 5065
<211> 1629
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_191534_G1, chr5:124224112..124225740, Cluster 31

<400> 5065
tttcgatgaa caaaaaatat ttcaatgtta gtcagaagtt ccaacaatca atgaaaagtc 60

aaacccaaac cctctccttt tgtggctgtt aattctatac cttgtgaaac ttccctacac 120

ctctctttgt aggattttgt gcttagtgga aaatccaacg ggtgtgttta gtaagattta 180

gaatcatgag caaaatatag caagccaaaa catctacact tgtagcattc aaagatattt 240

tgaaaagcat ttggtactct tggagaccaa ttccaatctt tagcactaga tgagacgaat 300

tgtgtactac ttgatgttgg catgcaagta gatacaacaa tataatggta tataatggtg 360

aaccacacta aacaagaaat ggtttgccac agaggacaat cttaaaatgt tgcaaatata 420

tggctaaatc aacatggata gatttagcaa caagaagaat cataattatt agcccatgca 480

caagacaaga gaaagtaatt agttttatgt aatggcttac ctttctgatc actttgttat 540

atctcactgc tagacaagtt aaaacatcta atatgtgtcg caccgctgat gccactttct 600

tttctcttaa tatgatacaa taaccatatg tttgcttcct aaaaagacta gcaccaaaat 660

ctcaagacac gatttggatg tatggacaca tgaacaatca aactcgacaa agtcaatggc 720

atgtgtgaat gtgttgtcca tgtatcatat ctgaaccatg tacacattcc aagtttcgag 780

gttaattcat ggatgtgtga atggcatggc ccatgggtac tgtttgcaaa gcattatgta 840

aatagtgcat tgggtcataa cgctgtggga tgacgacgac caagtgaccc attgcctgta 900

gatcttggca ttgatctcat tgcttttacc tacagtgttg tcctctacag gcaactggct 960

tgctagatga tgctgatttg gttcccagcc tcagaaactt ggatgtgaag gatgagtctt 1020

tgtcaacatc tgattcagga tgtgaaggat gagtctttgt caacatctga ttcagtctca 1080

tctctagagc tccagttgtt tgtatcgaca acgaatgaca cactgaaatc aagccggtcc 1140

tctattgctt ttgtttgata acgatggtgg aaaaatagat aaacggatga aataaaacag 1200

catacatgca tgagtataat atatatcagt gtatgacatt ggaagttaca tataatatat 1260

atctcgctag catacatgag tactcgtcat gcataagctt cattagaaag ttgggaaagc 1320

tagcttatag atcatctata tttactttaa ttagtggtgt gggaaaaatt tagtagaaga 1380

ccattacaga ttgccatggt gttccctgct ggactcatca accacaattt catttctata 1440

tttaacatgg atgttaaatt gaaaaattga aatctagtaa gaactacgct tgcataaaaa 1500

tcttacagca tgatttgagt ctcgtctcgc acccgagtga gcagaaacga caggactcat 1560

cgtggacgtg gagtcccctt cggcactggt cacagtgaga cgcgccacgc tttccgtgac 1620

tcgacacta 1629

<210> 5066
<211> 1555
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_195117_G1, chr5:146423865..146425419, Cluster 31

<400> 5066
cgagatcctc gggcgctttt aatttgtgct gcttgcgact tttgattttg tgaggaagtg 60

tagtcgtaac tacatgtagt ctagcgtttt tttaaattac atgtagtcta gcatattgca 120

tgagattcta caagtaaaat atatgtacta tgttaattat ggcatgagag ctttatttca 180

acatctaggt catcaagtta ttgttgtatt ttttttaaat aatagatgcc caaatttgaa 240

atggattgtt gttcatggtg ttcttcaatt tttttagcag attctgagta tggatagatg 300

agaatttttc caccaaacat gagctaatat gatggcttcc acagtatggt tgttagattt 360

tgttgttcta tgaccatgct atttctagtt aaatcaacag accccaaaca ttcacattaa 420

tgctaggagt aatactttca cctagagaat aataagaggt ttcctcaacc taatatgttg 480

taattgtgta caaatattgt gaggtcaatg agggtggaaa gtgaggtata tgtgtatcaa 540

gtggactcga gacatgtgtg agcacaagtg tgtaggtgtg acattgctga atatgatgag 600

tagcaactgg atgcagttta cttttgttat taatgacctc atgcaaacat tcaattaatc 660

ataattgatg ctacttgatt attatgtcta ttagcatgta attgttgttg attgattatg 720

actaccatca tgtaatttat attgatcgat taaaacaatc aacatgaaaa ccgacatggc 780

tttactatct ataatttcaa agttgatgct ctcatgtgta tcgagtgctg acacatgaga 840

gatatgcaaa tcttcctatc ttggtagtat acaactcttg agacaccaag acactgccat 900

tgttctatct attgtagtag cattcttgat tcgttgccat tgaccttcta catgcacaaa 960

acaaggaatt agacctttga accatttatg ttcttatggt cttactcatg ataagtgaca 1020

acacatgttt ttagggagcg cacagtacca ctatttctat ttaactatgt ttacttctta 1080

tataaggtga atgtgatgca acaaaactat tcctagatta attgatattg actacatcaa 1140

caaggtccca tcaaattata gattgatgtg ggtaacaatg cctacaggac tacctacatg 1200

tgtactactg ttgactttgc tttcatcctg ttacatttac atttttgca ttttgtggct 1260

ttaccaattt tagtgttgtt aagctagcat ggtaggtgac tataggttgt aaaacattca 1320

agatggtaag ttaaaaacac ttaaaattag atatattctt tgaggttgtt ctatattatg 1380

ttaattgagt agagatcagt atgattagac tattaatttt tagcatgttc cactacaccc 1440

tctctctatg aacagtaata atttttcacc ttcacatcca ttggtctacc taacaactat 1500

ggtaggggta atacctccac tatcaagcaa ggtgttgtca aggcattgtg ccaac 1555

<210> 5067
<211> 2011

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_196784_G1, chr5:155024413..155026423, Cluster 31

<400> 5067
tctatcaatt caatatataa ctaaaatatt tcatattaca ttcaattcat caaataccca 60

ttgggtgtgc ccctgactaa caatactcat aaagggataa aatgtgaagt aaagaaatgg 120

ggttgcaaag ggacaatgtc taatatttat tcacttttt aagatacaat taaaaataaa 180

attaagagaa aatacaaata taaaaattgc aaacaacaat ttatacccct gtcattttat 240

agagtagcat agtactctgc cacaaatgtc atgtttcca ttcttgaagg ttgatacatc 300

taaagtttat tatttttct catggtctta cttataatat atatctaaat ttggtctctc 360

atttttcaac ttcttttatt ttctattttt gtcgttcgta tccccttcca attgcttctt 420

cgatggcttc ttaaaaataa ttctctaatt tacatttata gcgaaaagga aaacctaacc 480

cttcaatagt tttttaatcc aaacacccta attgaaaaat ggctgagatg ttgttacatt 540

aattttgttg tacaaaatga ttgcgataaa cgaggaaatg gatggaatac atgtcttctt 600

gttgtatatg tgtaaacatt tttatagata accaagcgat ttgcttcgaa ttgtatggta 660

tttctaccta aatcaaacat tcaaacctaa ggtttgacac ctttcatgtt ttgtccataa 720

aattattgtt tatagtggaa ggatctttat atcttttata ctctaactat gagcatgtac 780

ttatggttgg tgggtgccct ccactctttg aggagattgt ttgggaggac ctcttccacc 840

accatattca ttagatctcc atttgttgtc ttcagtgcat cccaatgtga ggtagggctt 900

cgcgacatct tctgcacctg tttgattacc accttgacat acttgagctt tttttggtct 960

ggcatcttca ttgctccata agagcccgtt attgcatcat ccttttttgtt tggcttagca 1020

gttgacctct tatttcccat tgtgtagatg tatgcaggaa tcttccctcg catttagtaa 1080

tgggggcatg agttagggct tagtggtata ggaaggtggt gagcaaagga ttgtaatggt 1140

atgggtgaac atactctacc tcgaattacc tattcataat tgaaaattaa ggagatgcct 1200

tttcttataa gaaactattg gaatctgaat atgcatatta tttacatcta cgcatgccaa 1260

tagaccgtga caaaagataa agggtggatt ttactacgta tttaattgag gtgtccatta 1320

ccatctgacc atcaattttg tggggccaaa gtgaaagaga caacattcag acatacccgg 1380

atcaattacg tatcagttat attaatggat cttagttgtt agagccaaga ttacaagtca 1440

aaattaaata aatagtacat gacatagcca accacataca acaaaggtac atgacctagt 1500

cggccatcag aaagtgcaaa cacttttaat tgttaccata atggaaacac taacctcaat 1560

gacattgaat caaggtctat caaagaggtt ggtctaataa agacaatatt tcatgctaaa 1620

taccccttagc acaatagagt gagtaggcct cctcttgggc atagaattgg aagaaccaat 1680

aggagattct agctgagatg tcaccttcga tagcttacta agatatattc tagtcttgtt 1740

aataataatt ctagatcaga ccatgggtta gcctttgata caaatcaaag taccctataa 1800

gaacaagtgt agcagactaa aactctatat ccagacatca caagagtaac tatagctaga 1860

aactactcag ttttggatta aaccctatca caacattttt tttcttctag ttagaagaca 1920

agattttact cttctaacta taccctaggg gctcatacat ctctgaggcc tcctttggaa 1980

tgcaaggttg gtaaaatata gggataaaat t 2011

<210> 5068
<211> 1577
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202145_G1, chr5:186260686..186262262, Cluster 31

<400> 5068
ggcttaaaat tctgatacca tcttccttat taagtcctta tgtcgatcta tgtacatact 60

gccatgtcac tacgatgata ggaaagagca tattaacaaa cttgaaaata tttttatttg 120

atgagaaaaa aagaatgaac tatacaattg tacatactaa cctagggaat tgttttaata 180

gttctttatc ttatagtcgt tagtgttaaa aaaagaacat gtggcttcaa tgtacatagt 240

aagatgagaa acaatattat ctttcattgt tatatcatca ttggacattc gagctgcaca 300

ttctacaata gcttccatca gaaccttgtc ctccatttat ttcttatttt catagaagaa 360

acctaaattt aagaaatacc caacttttat gcaacatagt cttaagcttg ttatcccacc 420

ttgcatctat gattctccaa ataggaccat atcttttctc attcctattt agacatgttg 480

caatatctta cattgctttg agaagatcac ataaatgta ccacattgca ggaatatcac 540

tatctacttt ttggagtaca tatgcaagtg gctcaaaata atttataacc tctaccattt 600

gtgtctaata cgtgttgttc ggtaccaagt catgtgcatt ctattctgta atcttttaa 660

accaagaact tttatctcat tcttgtgatg caaataattg attcagttca ttttgtttat 720

catggagact ttacaagttt aagtaactag agataaatcg aataatatca gctattcggc 780

tctaagacac gcctttggtg tattgaccca tgaaggctag aaatctagta cgtgcataaa 840

ttcaatttgt gatagccttg ccaccttgaa taatgttatg cactaatatt ctctagcatt 900

agatcgatac aatatgcatt catgtggtcc aaatatgtga gaatatttta gtttgagcaa 960

ctttgatgca ataatattat ttgaagcatt gttagtgacc actagcacaa tgttttcaaa 1020

aaccgttgtt aggatctaga tggttagaga gtgaatagac tataaaaatt tattctataa 1080

aactcaatat tatcactaga gctaagatga tgggtgtgga tgtgtatact tgctctagct 1140

ctaatttact caatactagc ttctaatcaa tctagcaatt tggtaaaatg attctattca 1200

atgcaacaag ctacttacta gcaagagata aagatcaata aaaatataca taaggctaaa 1260

tataaaaaga tgatacaagt agatatagtt ataagaatat aatagatatg gactacaaac 1320

catatgggac aagagatgac acatgttata tctttgaggt ttggttgcat gcccgcaacc 1380

taggctctcg tagtggtgag tccaagttaa atgattcaca tgctaattgg catcatacac 1440

caaatccata ataaggtcac tgtaataatc actctagaga ggcacttcaa taagctataa 1500

tttcactata ttttcttttt gaaaaactcc cacatgccac cttataattt cactatattt 1560

tctttttaaa ataagca 1577

<210> 5069
<211> 1418
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203332_G1, chr5:192879863..192881280, Cluster 31

<400> 5069
gaaaaaattt aataaaagga aactccagaa tatgactgaa cactgagaat gagtgggttg 60

tgatgtatac agaagtatca gcactagcac tgaagctcag gagcgagggc aggaatagat 120

caggccccag gctgatccag tgttgatacg tgttcgagtg atcaagtcat ttttaaccat 180

tgatttttgc atatttttt gtggattcga ttgagttttt ggccttggac cagcactgca 240

gccagtgtag cccactatcc ctggcccagg ttccaccact tccgaaactc gtttttccta 300

aatattcata aacatcatgc aacatagaaa aatggcattg gagagaggtc cccatggacc 360

acttgtcagc ttcacactgg actctgtttt tcaatttata tgaggtgtta ctgaactctc 420

ttaattgttt ttttttcagg agtaccctgt gaagtaggga cttcgataat ttgaacagca 480

gaaaattacg atatctgcat atccctttc atgtattgat tattgtggct acaagacagc 540

gaataggttg tacctccaca aaagtgcagc tggacgtttt ctcatagatg cactggagtt 600

accaccaagt cccagcatgc ttccagtttg acagcctaat acttctgaaa tcacattctt 660

catgctaatg ttcctcatga aaatgtcatc ctccccactg tcatcctccc tcattgaaac 720

aaggatcaac cggagcatgc aaaaaaatgg ctgatcacta tctaacaact gattaaaggc 780

acccataaca cccatgccag gcccaaatcc aactccacta tcgaggcaac caccaagtcc 840

agaatctaaa agaagtgcct gcagcatcgc tactgacttc tttaccaatg gaagttcaat 900

ccagtttcca tcggagtcct tctcaagaac ggacttccat gacacccaac cactcccccc 960

accaccaaac acattagatt tgggagggat gcatacacca taccacaatc gggttctgta 1020

cttccaccct tctgaaagat ccgaaataca gctcccataa gatacaaatg catgtctgac 1080

agatccataa ggctcagctg ctgctgctgc tgttacacgt tccatcactt cagcagaaag 1140

ttgcccattt gtatctaccg tagaagcaag aacctagata ttttttgaaa aaagacaata 1200

gaatatcgta agataacctt caaaagagaa tacgaagagt aaccagaagt aagtgaatgg 1260

ctaccatcaa tgaagtaaag tcattgctgc agtaaacaca gtattctttt ggattacatt 1320

tatgcttgtt gagttccaaa actcagtgaa acagagtagt caatgggcaa cacagaaaaa 1380

agatataaac aacaaaaaaa ccagtgatgc tgttagaa 1418

<210> 5070
<211> 1549
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203339_G1, chr5:192887359..192888907, Cluster 31

<400> 5070
gaggaaaagc ttgcccggtt tatcccttcc ctagccccac tgacaggttc gaagcagcct 60

ttccgtccca ctcatgtggg agccttcggc actaggtttg tcacctttt ttgaagagca 120

tgttgtagtc aaaatcaggc aaaagttcag ttaaggcacc ataaattcct ccttagaact 180

tcatagttca tgcactattt actaaggtag cacatttgag tgtgatgtaa tccaaatgtc 240

taagccatga aatgtgttat gaaactatga agatccaaaa cttgggtgcg ggagaaccaa 300

ttattgccat atgtaaacat caagatgaac atgaaaaggt gttgggaaaa cttttgcatg 360

agtagtttct gctttttttg cttggataag ggtattttct accttacatg tggcaaataa 420

taatgtaata ttgtgctaga ctgccagttc caagtgcagt tacctggtta ggttgtgggc 480

agtctacaat aaatccaacc aaacaacgaa catcatcaga agccaatgta gaaggtgctg 540

ctcctatcaa cagttcaata acaaccaaaa gctcatcgac cagagcattc acatttccca 600

aaggtctctc gtttccagta agtgtgaagg tatcaattga atctgcttca tgaactaccc 660

agtaacacct tctgcaccca tcaagaagca tttgcagtgc atttgcatca cgcatgcaag 720

tagattctgc aaaaaccatg tctgcaagtg aagaaagaag ctttttctgc aaaatatagt 780

tgcatgaact ccacatcttc aggtccaaca gcaaagtgct aaagagctgc acctttgac 840

tatgatcgtt tctttgagac tgacacaaag atacaattgc agtaacaagc tcttcatcac 900

tcagtatctc tttctttcca ctttcaagtc tggatagtgt gtccaataca taatgtaaaa 960

cttgagatag aagctctggt ccatgagtac ggcataactc ttctttattc ccaggatgtt 1020

gaacagccac agaaatgatc ctgaaaatag gaacagaaag agatgcagta gcaagagacg 1080

atgacaaatc gccaagtata ggttccaggt tatccatctc gacattgctc acaatcagtg 1140

gtaataatgc cataggacca ccataagcca atgcccataa agattcagct ggacggacac 1200

gattagagat atgaaccatg ccaagaactt ctgcaggtct tcggtgagta cctaagattc 1260

aacgtaaggt atcatcagca gtaatacttc caaaccagcc caagcatttg tttgttatca 1320

ttgcacaaca tatgttttag cacccattga ataccctggt cataagggct aacagtctaa 1380

caccatatta ttaaaacacc ctttctttta attaacaaag gcatgattga tgcagggctg 1440

tggaagagaa ttttaataca gtgtgatagg taatagccca agaaaaatat cacggtatgc 1500

tcagaattcc agaaacattg catcaggatg accagtaata ataaagctc 1549

<210> 5071
<211> 1471
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_203476_G1, chr5:193646716..193648186, Cluster 31

<400> 5071
atggcgcgac ctgctgtggt cgtatggagt ggaccactta aactagctaa tgaagaagaa 60

taaatggtta tgggcgtgtg ttacactaat tactctcgta acttaggtca ttagctccac 120

tcagagcctc taacgtgaat agacaatgta accatctctc atcattcttc tcaattgagc 180

agcgacgtag cttcgtgtct ggatcctatg cacacaggag agttgtgaga atgggcctcc 240

agaatcatta tctgcatcag agaaatctgc tgtcaaagtt ttggaaagtg tcgccataat 300

tgctcggtaa ttcctagtgt tgctacagat cgccatgatg gttggtcaag taaggtgttg 360

gtggagtcaa gacacatcca tgacaatttg cttgtcgagt aagattctat acttatagtc 420

tcgtacccac ccacgagtta gttatcaaac aatagatata atcatttttg tgtgctttta 480

gcactagcaa aaataaagtg aaactcgcgt gtagtattaa gtaactatac ccatatatat 540

ggttggaatt ttgtacccac accaatcgag tattaatacc ctaaatttaa ttgccattcc 600

tactcatatt gtttgaatgg tcatgggcat ggaacttcac ctatgacttc tagctcatat 660

gccacccctt gatgtatgcc ctcaagacga cttaaatgta ccatcaactc ctccccaagc 720

acagttagat gccatcacct tcgatgatgt tgggaccatc aacagttgga tacatatcca 780

cgtagcacaa cttatacaac tcaaagagag gttcatccca tgtaaagtgt gaccaagaat 840

aaacgatggc aatatgtaat atgacattta gattcatatg ctgcaactca agggagattg 900

tattacagaa gtaaccctca agaaacatgg tgaatgggaa tgagaatcca cacttgaata 960

acagtgcgaa taccacaatc tttgtggcat cgacaccatc tcgttcgtcc aagtctagga 1020

tgctatctaa tcaaaccatt tcactataat tatcccatca actccaaaac cttatcggtg 1080

atagttatgt ccactctacc actataatca ttagatgttc gactacaatc tcattgatgg 1140

gttcctttac aatgaatatc atccaaccat aatagatcta gggctaaggg tgtgcatctg 1200

gatctagagc aatggaagag ataagtgtgg gctaggaatt gagtttaatt tctatgtatt 1260

ggaatgtcat tggtggagca ctcagggacg atggaggcgt aagtaacaag ccgaagtttg 1320

attccttaag aaacaagatg tgcattaatt ttggaataga tgaggtatac tttgtgtcaa 1380

ttagaattgt gttttttcat gcacaatttt agcattatta aataacactt tgcctttatg 1440

tttctgttca tcacgatttc accaaatatt a 1471

<210> 5072
<211> 1845
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204555_G1, chr5:199708581..199710425, Cluster 31

<400> 5072
atcgtgtgtt ggtaaaccaa accgctaatc tcttcatcgt gttcattact catacgacct 60

cttccgtagc acgtgtgatt attcgttgcc gatcgaatgc cgatcgatgc acatatatgg 120

atatgggact gtcgtttcct gtggaaatac atatataggg ccaagcatga cgaccaagta 180

gagcgatgat ttgtcaatgg tttggcgtgt acaggcgaga tcagtcactg ccttgaccac 240

gtgtgtgtgt ggttttgtag tctctttctc tcttgtatct gatgaagaac agacgccgtg 300

taaacagctc accaacctgc aaagttccaa attacgacgt atcactgtat caggtaacgg 360

gctagccccc ccattcctaa gttacatcaa cataatcaag ctctccctca cacaaataag 420

aatttaaagt tccacgtttt ctttgaaact ttgaataaca catattttct gtgactcgtt 480

gcagccttgc gggtcaaatg gtttctatga ctgcttatat tattatctaa gtttcatgcc 540

aacgaaacaa tgttctatac ccaaccatca aaaatatata ataagctctc gctccttgca 600

acggcgggca atgcaaggcg gccagcggcc tcaccgcgcg ccgctccttc tccgcgcccg 660

ccgcaacacc ctatccgcct gtcttatccc cgtcgttgta gtcaaaaccg ccgcccacgc 720

tggggctgcc gctccgaatc ggtaccgctg gtgatgtttc tgtcatgtca ctcgccaccg 780

ttcatatgca gaggcataca atttgtaggt gccgttttcg gacgtgccat ggtgtagcgt 840

acttacctgt tgtaatgtag gcttctgcga atttggtctt ctagctcccg gttgactcct 900

taaaaggaac cacggtcctt ttcgttttac actgttccag ttactagaat tatgtaattt 960

aactctagca taattacgtt tagggttcag gcttgtatga ggcaacttct gtgttctgct 1020

gcttctgcaa ggctgtagct actgaacaag ctacagcttg aagctaatct ggttaagtgg 1080

ttttagaaga gtagataaag tgcatgatgc taatttatct ttgtatattt gcattgtacc 1140

agatacaacg gttatttttt tttcttgaaa agtcaaatat cttctggtca ttctactcat 1200

gcttaaaagg aagtggagcg attgttgatt gtgatgtttt caggctttga ctactcgtaa 1260

gaagccgctt ttgagatata tagcaagtta tctatatcca cttgtcctac atggcaacga 1320

tgcttgaaat gaggcagcta tcagcacttc atttgggagt tccggagttg ggataatttt 1380

tttttatgat catgttaggt gcagttttag ctgactctta ccggggaagg tacatgacga 1440

cgacaactaa cacttgtcat cagcgttata ctggcagcca ttctctaccc gccaatagtg 1500

gagacgtaac ctgctattct cctgctgcgg taatagtgag aaggcgggca gctctatggt 1560

gcaactatat gtgtactatt taaaacactg cttctcaata ttataagctg tcttcgcatg 1620

gttgtgtcac agaattcatt tgtcgagcaa gctcagcagg tcctctgtca ttgtaggaga 1680

tcacgaagta tttacagatg aaatcccaaa ctagggagaa gaaaattaac tgaaatagat 1740

ttactgtttg aatggaggaa aagtctcagg ctggacagat tggggctcca gccattgatg 1800

ctgtccggca acagcaggta tcacgtgtgg tttagatggg ctctg 1845

<210> 5073
<211> 1631
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205145_G1, chr5:203114345..203115975, Cluster 31

<400> 5073
ctgacgagaa agacacggga gggagtgctg tagcagcacc ttttgcacca gcacataata 60

aataaagttc aagaaggtta gctcatcttg tccatgcgtg cgtattgcca tcattttgtt 120

ggcctgacgg cttgtgttga tcggcgccaa cgtgtgttgt cacagcaaca gctgcgagga 180

gtgcgagcgc aggcgagaag atgtgctgct agcggtgcac gagcacggcc cggcgagcaa 240

acatgcggcc agtggtgcat gggcgcggcg ggccgtgggc ggtgcgcggc acgatgtcaa 300

acggtagtgc gcacggcaac agagatggag ggcgcgggat aggtcgatag aaatgatgtt 360

ggtgtctttc ggtgtctcca ctccaacacg ttcgtggatc gtttcttgag ttttgatatc 420

tctgatttct catttctctt caataaatcc attgcaaaat gcttacttga cagaataact 480

aatactacat agaaatagaa acaactctaa attcggtatt aggatgccct tagataaaaa 540

taagaattat gttttcgaga aaaccaatat taggataaaa tgtgataagg ccattcacag 600

aggtaggttt cattttgtgt ttccaatata ccacgtaatc aataaagaaa tgtaatcttg 660

gttgaagtag tctttcacat tggagagttt tatttagcac ggtttcatag ataacatgag 720

acaatatgtc tatgttaatt gtgtagatat ggtttcatgc ccatgacagc catttcatct 780

cttcattaat tacttatcac atcatccaaa ttgctgatat ggtataccat ttaataaaaa 840

taaaactcca ataaaaacta tcattgagaa cgacctaaat agatgatgaa aagagaagac 900

atataattgg tcaaaaaata aacgtgaaaa ctattaaaat atagtacctg aataaattaa 960

tacacataga aactacatgt agtttctttc taacactagg agtagcaagg ttacccaaat 1020

atacctcttc cctcctaaaa tagacaactt atatctagtg taaaaagaat tacagtgcta 1080

gcatgctaac atggaatttt atccatcgga tccacatgct tcattgcttg ataaattatc 1140

atctaagtct catacaaact aatcagttct ttagctatat tataatttca taattgtttt 1200

tttaccttaa atcatcattg gattatcgtg ttacttgtga ctcctagagc cacttctatc 1260

taaaggaagc attagccatc tttgtcaacg taccaacacc aatctccaac ctttttcaat 1320

tataccatag aaccaccacc ataatgtcaa tgagttgcta atttcaaaca ggctacccat 1380

gtcactctac cacgatatca gtcaagatgt aattttctac ttgcgactag tttctcaaag 1440

aaaaacaatt tgtaccgctt gtcaaactcc catgcacaag catggagaat caatggatca 1500

cttgcacgta agatatcaaa agctagtgtt tttgtgattt gttgtaatat cttgaccaga 1560

ggcatgttta ttcgctagaa caccataata aaaatccatc aaaagtaagc aatggtcgtt 1620

ggagtcggca c 1631

<210> 5074
<211> 1653
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_205998_G1, chr5:207671400..207673052, Cluster 31

<400> 5074
ctattacttt tagcctacgg gagggcaggg ttgcaggcct gacagccccg acaacggcat 60

aaagtccaca ataagctttg ctattagcct tgttttaatg tataaagtag tcgacgatgt 120

agtataatta atatactttg tcatgaatat ttttttatga atttgctagt agtaattgaa 180

tgttgttcct tgttttcaag gttcaaactg cacatcgtcc accacgtgag aaaccttcgc 240

agaaaaaaca attgtaggcc atgcatattt gcaaataacc accgagaaag acgaataatc 300

tctcaaaggg ctagaagctt atggaggagg agatatttgt agtttagata tagatttgac 360

ggtcttttat ttttaacact agcataggtg agcgatttac atgcagataa gctatattat 420

agtaaaaaga taagctattg gttgaccgtt gacagtcccg tctcatgcaa atttggtaaa 480

agacaccgtg gctattagga tataggttga tttctagctc aggaaaagaa agaaataatt 540

tgaagtactg tactattttt tgcctctggc cctacactcc acgtgagtga ttctctgtaa 600

actagtacta tttgtttggt ggtattttta gttagattca ctccaggtaa actggatctg 660

gatgacggtc caacgtttga agaagctagc tcgatggagg aaaatcacat cttgtccaaa 720

agtgaaataa cagtaccgag gttacgacgc gtgttccgca cactgattgg gcgtggtcaa 780

attgccgtgt agaacgggca tcagcatcac ggtagtgtgt cgtcggcagt cggcttcaaa 840

actttcgccg ttgcttcctc cattgttccc acccccctatt attgcacacg gcggacacac 900

acatacatgc atggcggtgc gctgttgctg cattatttgc ttccatagct gccagagttt 960

ggcgccgcgg gatgtttggt accggcagga tcttctcgtc tttgtgtttg tgtttgtgtt 1020

tgggtcgagt gtttttattg gaaaaacttg aagggatagg atcgatgaag tgtaacacca 1080

ttagctacac ctggttccca gtagtcattc tctctccatg ccacgtattc ttttcctttc 1140

gccggccaag gacagctgcc acgctcctcc tcccggccgt aggtccttat atatatactc 1200

tcaaaatgca aaatctaagt ctctaaactt gttaatccat cttatatagg tctagatttt 1260

catatgccct ttcaactatt cacttgtgtc tacctttcta ccataaagac tgcacttcta 1320

ctagttaaac gccgattttg cttactatat aatgcatggt tggtaatatc tgtgtagaac 1380

cggaagaaat cggctgaact atcagctgag ccgtccatga tagagggggt aggttaggga 1440

acacacgacc tctaaaatta aatttacttg tcgaaagatt gccactcaga tagagtagtt 1500

ggaacaaatt aacgtgggca ctagaaatcc cttcgttccg ggctggcgcg ccatcttttt 1560

tggtcggaat gcacaccggg cagctggaga atgcacatat atgcgcagcc aagcagcacg 1620

ggcagggccc aggtttctct ttcattcatg aat 1653

<210> 5075
<211> 2042
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_208867_G1, chr6:6612407..6614448, Cluster 31

<400> 5075
tggctagaaa acacctaaaa tatttatgtt tttttatttt catggaagca tattgaaaaa 60

caacattatt gaaatgaata tgacacaagt attataggaa tgtataatag ggtccctatt 120

ggtcaatagt agatactttg tagccaaaaa tggttatgaa gcaccatatc gccatatgta 180

ggaatggaca tgattcacca gtagttcatg gaacatctga accatacata ggtgataggt 240

ttaagttaaa catagctcat gtcaaagttg acataaattt aaagtacact taggttcaat 300

atggtggagg gctttgtggt agagcggcac ttaaaggggt ggcaagatgt gattgttgtc 360

tatggagtac aatagtgggg aattggaatg gtgcagcaaa gtttgtaggc gtcaaggcat 420

gcatttcggt gagttggcta aagcatggag ttggtgtatt ttgcatagaa aacaactttt 480

tccaaaaaac atcaattcct taaacagcta gagatgtcaa attgtttatt atttctacta 540

gtatttttgt ttttctcaaa aatgtaatag agtcacataa atgagccatg ataaataata 600

tcggccattt ccacttccag cccccaaata actaaccatt acatcatttc tatttcttta 660

caaaccagct agtgaatcac aacattctag taggctccct atatccatga atactataga 720

aggaaacata tacacagtga tgaggaacaa agatcaatgt tatttttttt tgtttaggta 780

aagtgaaatt gttttgcagt ttgcaagaag ttgcctttca tgtttggaga gagatgtgga 840

atataattgt attaattagc ttgtacatat ttgagaacgc attggacaat caatgatgtg 900

gtaagtgtag attccctgtt atatggacaa gttcacccta aaaacacatc aatgtctcta 960

catgaccaat aaaattctct ttatacttgg aaagtatata taatgaaaaa acatattaat 1020

catctatgaa acattgggca acgacacaaa tctatgaggt tgaacccact agtaaataaa 1080

tgaattttac taatggtaga aattaatctt tagtcatttc gttagtcaat gtatggccaa 1140

tatatagaaa tggtgcattt ccacttgcaa ctatgctaat aggggcattt ggactaatag 1200

ttgcattata ctaatcacat gtgtaaagca ttttatactc aagacatcta tgttttgtcc 1260

atgatattat tgtgataatg aaaagaaata cttattgcaa gtccacgacc acttgaccat 1320

ccaatgattc atgagtgatc ttagaaatac atagaggaca atgtattgtt tggcacttgc 1380

aaggtagttc catggatcaa ggattctcta gtagtcatat cagttaggat ggtgaggaat 1440

ggttctatgg aaattttgca agtttaaaca acaaggatag atcctttggt agtcaagatc 1500

tcagtaatga tgacctagat aacattggtg ccaacaatgt agtccatatg gttgagaaat 1560

ctagatgaga tggtgcatga tgtcttaagg tttaatttta tgagtacatt gatctaagtt 1620

caaagagttg aatatgttaa tggtagatgt gaggaccaac tctatttgag ctacaaggaa 1680

aagtacacaa tgttctgcac ttctcacaag ctattctagt tgaaggaaac acataattgg 1740

attgattgaa gcctccatga gttgccacat tttctgagga tacatgattc taaagaggaa 1800

tgtgataatc aagaccacat atttggccaa gaaaattgtt ttccctatgg gattagatgt 1860

taagaaaatg catgcttgtt ggaatggcta tgtcttgctt agtgatgata caaacaaaac 1920

aacgattgag tgatgagaat aggaggtatt taatgggcac aaagaaggac acaagattga 1980

tgttgatcta tagcatccat ttgatgttga tcataagtgt ggtgccattg aagtatgttt 2040

tt 2042

<210> 5076
<211> 1840
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_210085_G1, chr6:14332995..14334834, Cluster 31

<400> 5076
ataccacttt agtggataca catgtggtca aatcctttgt tgtgagatga gttttgtgta 60

actaaggatc taacccctta tataatccat aaatcttctc aggaattcca aagttaggcc 120

aaatcttttc caaaagatat ttacccattt cttgttctaa gtagctcgca ctaataacaa 180

cattatcttt ggatgttgat cccttaagta gtaactgcct atcttttaat ccttgcctcc 240

ttggtaacaa cacctccctt aggatgagaa tcctggtttg actccaatga tcatgttgat 300

agctcaatcc caacttagtt aagttctcct ttaggttctc ataatccatg tagatgttac 360

tcttataatc catgctaatg tctcacttat atctaataga atcatatttc caagttctga 420

caatacgaac tggtcattcc aaatccttgt acttactagg taaacccaac ttgctttggt 480

taatctgatg ctagaccatc acctccgtct tcatgcaaag acacattcca aaccaagaca 540

atgtgcataa cactagataa tcaactcttg cattccacta agctgaacac gtaggtttta 600

cttcaacctt tcattaactc ctttaaactt atccaaaaac tatttgttgc aacatacttg 660

ataccttctc caataatccc acaacacatc ttagtatcca tggaactcca agtttacttt 720

atccaagaga gaacttcctt caaccaaagt ccaattatca agctaggtat agtatggatg 780

cttctaattc ttcataaaac aaacttagag atatcaagta tctacttgca tcaaaatatc 840

tccttgtcca aagtatgtgg aaaattgaac tctcttatga taatatcttg aattgaagac 900

caatcttgat gaaaccataa cttccttgtg gttgatccca ctagctaaca aactttgaat 960

aaacattcct aaccttgata gtagattcta agccataggg atttccatca tctccaatag 1020

aaaccataca taactttctt agctgtatat gtgataaact tattcccatg gttcaaacct 1080

gctggtgtag tcttattttg ctaacttcct tggatctgtt cctttatgaa cactctgttc 1140

tcactccagt tattgttgac tcaggctttg attctcctcc gcaatcttac agtaccacta 1200

ttagtgtaat gttccaatat caccaatatc ataacaccct tcacttagta agggtattat 1260

gagtcttctt ccatataagg accatattta attcctatag tggtgaggct tgattctcat 1320

attgctactc ttgttgctga agctatagct gagatgaatt tagatcttct tggcaattgg 1380

tttcatgtac cggtgcttgc tccaaagctt ataaaatttg gtcaaggtgg atcagaattg 1440

gtattactcc ttagacacca agtaagtcac ttctccaaat agcaaccatc ttgtttccaa 1500

tatgttggac ttaaggtgta actattctta tcactcttaa tggtagacta gtaagaaata 1560

gcagagaact catctaggta gacaagcttg ggcttggcta ccccccttga aagaaaagag 1620

ggaaactagg gaaccaaagg gtagcagact ctttcttcta atgttgatta gctatccgca 1680

tgaccttctt agattccaac aaactcactt ggtatggtct tgtcattttc atactcttaa 1740

tccaacgtaa ctatcaaggt gactcttatt tccaaaatat tttcttccat aaattcttca 1800

tcttccattg actaaggtaa gattaggaat tgcttcaatg 1840

<210> 5077
<211> 1743
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_221034_G1, chr6:86566443..86568185, Cluster 31

<400> 5077
ggttagttct tcaattcgga cgagttaacc aaacaggccc tcgtgaattc tgcaccggat 60

tcttccagct cgacgaagct gaaaatgtat cccacttcta cgcattataa atgttgtcat 120

tttgttgttg agttcgagct gttcttctcc aaactgtgag cggcagttct cattttctg 180

agacacctcg accgctctcc gagccgtttt gccttacgtg tatcctactg tactaaggcg 240

agtgcagcag gcgccaaaaa caaactgccg acgaggcagg atgagtaaaa ttaaacaacg 300

gccgggtggg agccaacgcg aaagccaaca acaggcttgc attgcagcag ctcgatctcg 360

atcgaccagg ggattcctag ttcaccaggt ggcctgcact gcacaaacgc aaacagaatc 420

ttgagcgccc ccaaactttt ggcagcagga tgcatccaca tgcagatggg tgtatgtata 480

ttcatgtact tttgctctct gactgcatct tttaccagct ttctcatctg gttcaagaat 540

ctctcgatct ctcctgtgtt tcagtccgtg tgcatattaa cacacggatg gcaggactga 600

aaactagggg atggaaccgg gagtactcag ctgctcttga tgtggggcgt ggggaggctc 660

cacttcacgt gcatggcgat gatatcgatc ggcatcaagc tttacactag ttctgatcct 720

ggtatggtac gtacggttca ttttttaaaa aatgtcgaaa aaagaagcta aagcagtgcg 780

ttgaataaca gagggaaaat gaatgggttg atgaagtggc caaacaacaa ctaatgcaag 840

attattgtat tcgcatacgt acgtatatgt actagatatc tgttttctct cgatatatat 900

tcttccagtt cagtctatgt gaacaactca cctgaagctt gcaacaagca cagtccaagt 960

ggagtagatt atattagcag gcgatgatgc aagattcctt ccctgcatca tgtgcatgca 1020

tgctaattaa tcaagagcag cagatgcaga tggacccaaa ttaacaggcg gcaattggca 1080

gcacccaaag ctagctatag cccaatcagg caattagttt atcctgaata tgaaccacca 1140

cgcacatggt ccgattagtt agaatgtcaa cacggctaat cgagctagca aacgtgaaat 1200

ctgcttgcag gtagctgcat tccgctaatg gtccgatgga atcgatgtat cgatgcatga 1260

atggatgcat taattccatc ggactattgg cggaatatgc agctgcaatt ctaactaatt 1320

ttcctgtttt tctgcctctc ttatgctctg tgttcacatg gtagagcagc tagctaggag 1380

gttagatgac gagtacacag tttgtcagtg ttgacattat tatatttcta atgaaagctt 1440

ggcactttgg ctcctaaatt aataagagtt tttccttcca tatcaaaaag tgcaattcat 1500

gtttttttg gagaaatgat acaaaacaaa taccatcaga ttgatcatga gatgtatttt 1560

catactaagc ttagttggtg acataaatat cagcaccatt tgttattgac ttgatcaaag 1620

tgaaaaataa ttctctcacg caaattgtgt agttgcattt ttaaggggac agagagagag 1680

gagtatactc ctagtaacta agtttatgta tgtatgtatg ttgtataatg atcctgatat 1740

cca 1743

<210> 5078
<211> 1560
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_222830_G1, chr6:97879578..97881137, Cluster 31

<400> 5078
tatgtacgcc taaataacga cggagccagc ttttatgttc gatggtgtgt cggtgtcatt 60

gtattataaa cagtgtttaa acattacttt tacactatat tttcgaaaat catcgatgtc 120

accaatgcca aaggtagctt tgcccctgcg cctaaagccg actctagcag tttatccaaa 180

gtttatttat aaacactgtt ttgtaatgtt ctgtattgta gaatgtactg tttgtaaagt 240

aaagattgaa tatggatacg tgtatgagta agctgttgaa ccagtgcgtg taatgcagtg 300

cacgctgtaa gcacgatgca tgctttaaga tggcgacttt tgggcggaat cctgtgatcg 360

tgatctctct ttgatcagag gtctatagtg ttaggcgaca gctatatatg cgtgtagatg 420

gacataatag atatagatat ttatttattt atttatttgt acgcaagcct agcggccttg 480

ggctgacagc acgcactgaa ggaaagaatt tgaaaggagt ggtcgtcttt ctcatcaact 540

agatttgtac atggaaaaaa atctttcttt ctcatcaact agatttgtac atggaaaatc 600

tttaattgcc tgtgctagtg tgctagttta gtttagttta gtttaccaca actaaaacgc 660

tatgtgtcac catgttcgtt ttttgtaaca caacaaaagg tgtataaata ctctataatc 720

tttgcgtgtg atatataata aacttatcaa taaaaatatg tttgtttcct ccatccatgt 780

atccaaagta attaatggtg gctcttattg aataacatgc atatcagcat atgtcccgta 840

atatcgtgat ctagatttgg actttcaaga aatgagccct tcttctagtc gtcgtataat 900

cactaaggtc cgtgagtctg tgacgatttt gagacaagtc cgatcgggag ttgtctagtc 960

tcatacattt ctttaattaa aggtaaagtt ttagccgcta aaatgatgct acatagctga 1020

gcgtccacca caaatctaag ccataaggct caagtactta caaccactag cataattatc 1080

tgtgttaacg ctacggccgg cgacgcgagg ggaggaggga gcggcgacgg cacgagtgag 1140

agggaggacg atggtcgcag agtatgaggg gtgtcgaact tggagaggac cacgagcagg 1200

gaagccggtg cgtgtgaagc ccagcgacgc cagcgtctgc gtggtcttcc gcacgatgca 1260

tgacgcttgt ggagaagacg atgctcgacg tgtcgagcag cgtctgtgcg tatgccgctg 1320

catgcgagac gtccaggtgg ttgaagaagt ggtctaggtc tgatgccgac accgtggcac 1380

gcccttgcgg ggcgcattcc accgtggccg acaccgggag ggagcgtatg gtcgtgtgtg 1440

tgggacgttc aaggaaaagt cgcggcgagt gaggagagga aggatgatcc aaataatatt 1500

ggctattgaa attgagtgat gaggagaggg gaggagcagt ctgaactctt ggttttgaag 1560

<210> 5079
<211> 1495
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224918_G1, chr6:108334737..108336231, Cluster 31

<400> 5079
agccaacatg cgcttttggt ccctgctccg cgcttggtga catgaacgca cgtgaacttt 60

tggtggtatg tgcctaatgc tcacttccta gtggtcatgg ttccatccct tgccctttca 120

tttttttgc tcgccgcggg aggaattatt cacatagggc acgcgggacg aatgagagaa 180

ttagatttta tttttttct cgttgtgtaa ggaattattc gcaagggcac gtgggaatga 240

atggaagaat tcaaattcgc acaaggcgtg cgggagtgga acaagcacgg gacacattcc 300

aaggggaggg gaggggaagg gcgacgcacg aagaaactca tgttcattta tttaaagatg 360

attatttttt ttattttcaa agtattggtg tgtgtgtata taatataata tctatctttt 420

ctgtaacacg aacacatgtg agctctggtg gtagttgtca tgcgcttgct ttccagcaac 480

cacggtttga tccctcgccc tcccattttt tgctcgtcgt gggaagaatt atttgcacag 540

tcacgcacgc acgagggaga attcaaattt gcacaaggac gcacagggca tgcacgcatg 600

cggggagaat tcagattcgc gtagggcaca cgggtgcggg agaagcaaag aacgacgcac 660

gaagaaactc aaggtgtagt gaagtgaagc gggagaagcg aagaacgaca cataaagaaa 720

ctcaaggtgt agtgaagtga agcgggaaaa gcgaaggacg acacacgaag aaatccgtag 780

tgaagtgata taagggtttt tgcaaaggtg ttgatgcacg acgatgtagg gctttatagt 840

aatagagata tagttgtcac taatttttct aatagctcaa ttctaaatct tttattatat 900

atttgataat tttaagtgat tttaaataaa aaaatactac tatttgaaaa tttacagatc 960

ttgttaaata ttacaacttt catattaaac ttatctttat tcaacattat taatcatctc 1020

aaatatgatt caatatttag acttataaat catcacaaat ttaaaagccc tcactataat 1080

gtttatatct ttttaaactc tatagttttg atataaaatt tatctcgatt cgatccctta 1140

aggaaaaaat atgattattt tcgcaaaaaa aatctataac tgtcgattga tgtaatgaac 1200

taatagttat aggccactgc cgattaaatt catgaaccga ctttatcgct gtcaattttc 1260

taaaatagtc gtagggatag ctcggtggcg aagatctttt ctggcatagt taaagattca 1320

caactaaatt aatggacaaa aactaatgca ctattttgat gtagaaatag atggagagat 1380

gagcacgagg gtgagcaggg atccaaaacg cgcttctaat taatgcaaat tcagtgcaat 1440

tttgatgaac gaaccacgac ggagggaaac aaaattcata ctgacgttag catgc 1495

<210> 5080
<211> 1996
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_227700_G1, chr6:123454350..123456345, Cluster 31

<400> 5080
aatgttaccc tcatttgact gtggatcata tatatgtgtg tttggtggta taaatattat 60

tgcatacaaa gttgtatgtc gcactatccc tttaaatagc ggtacaatgc ccacacattt 120

ggtgaggttt ttcacgatct acaagcatgt ttttcattgg atcgctcaac atccgaagat 180

gtcagagcaa gaacattctt aaactgcctt caaacatccg aatgtatctt tgtaatctca 240

tgtgaataaa gaaaagatgg gacatgaata acattatttg tgcattctta tacttttgtg 300

ttttcccata aaacgccctt atttgtctag accttctcat cttgatttac gcctgttatt 360

tatgagttaa tcaagagaga aggcaccata ttactttaat tgtgttgccc tattttggtt 420

ttctttaggg atctttacat gtgaccacca gtaatactaa ttggatttgg tagcctccac 480

aaaccattct tgtgggttat aacaccaaac cattaatgtg ggatgtaaca accttcgtaa 540

actttcttgg agagcaactt gagatcaagt caagctggaa atgcaactaa aaagtgatgg 600

aaaacataaa tattcttaga ttttttgtgg ataaacttta gaaaacttgc actaaacttt 660

ggattggaga actcaaattc aaaatgcttc taatgagagt gtttgtgcaa ttgagctctg 720

ttgaggcttt ttatagcaaa ggaaggtggt gagctggagg agtcataagg gtcaacaaat 780

ccatatcttc ctcatttaca acacttcttt gatggcatac acattggatt ctagatagct 840

caaaatggga gaaaatgaga tgggatgtgt agggttaggg ttgtagttga ccccctttca 900

acaccattct cttcatttct gaagtgttca aagcattgga ttcttggtca agttgaaagg 960

agggagtgtg gttggttgga gtggcattgt aggggtggtt caatgtctca tcgtgttcca 1020

cttattacct catcttccat gcttcgtgac tcggctctaa acacaataaa atgcaaatgt 1080

ggtagttgtt ggatgagaca cggggttggc taacacccac tactaccact ttgctccaaa 1140

attttgtgaa accatttttt caagttttta tacaaaacag gaaaatagtt tcccaaaaaa 1200

ataatcatga caatttaaaa tgaaagtgtg attagaaatt aaataagaga tacatatcga 1260

tttacttttt ggtgagggct ccacgtttta agttcttaga gtagaactta tccttgtagt 1320

tcattgttct ggtgcatcga ttggtcctat agatgggaac gagatggttg caccttattt 1380

ttagccaaat cctagtaggt ttgggttgtg gttgtggttt ggcgagtttg accttcttta 1440

gaggttggtt ggttcctcct tcgtagtgtg gatcatggct tcttcttgga ccaattttct 1500

ttgaccttct agttacagtg attcatagga ttgaaagagg caaaaggaaa cttcttcttt 1560

gcacaagaag tggctttgtc tagaccccac ataaatgccg gtaatcatgg ttttgaggaa 1620

atgcctccaa aggatgacat gtgtgtcttt gtcatttcac atattaagca tggcaaatcc 1680

taaagaggct tcaccgcttc actaggatgt atagtcactc aagcaagcaa atggttcgac 1740

cggttagcta catatgaata tgagttgtaa acaataaacc ataaaaaaat ctcatacatg 1800

ttgatgtgaa aatgtcttac tttcacatac tcaatacatc atcaataacc ttagaataaa 1860

aggaagataa gatatcatga gcatatttta tcaaataaca agtttcgcat gtaccttgat 1920

tatttatatg caacctatag caaaatggat agaaatgagc tagtgggtcc accatagggg 1980

attcttggac cacccc 1996

<210> 5081
<211> 2437
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_228913_G1, chr6:129533015..129535451, Cluster 31

<400> 5081
aaacccaaaa catgaaatag agaaacaaac tatattgtat aacttttttc atgtccatga 60

atggtacaat gggggttcat aggggacccc atctttgtaa ttcatataca aatacttaaa 120

taacgtcaaa ctatgacatt atagtttcaa gttcgctaaa ggacaatttg gttaatatcc 180

atatttatta gtcattgagt ccttattgat gtccagtcta tgcaagcccg tatatacttc 240

caacaaggaa tctttatcat ctttgcttga ttgcttaagt acaaaactct tttttattga 300

ggcttcatag gtcatgtaac ttcatgtgaa gtcatagtag ccgaagcttc acgtatcttg 360

gggttacata gatgaagctt catgtatttt gccttcggtg acgaggtctt taagcgaagg 420

gcagaatctt ttcatttaag tgaattgatt catttctttc ttatcacttt gttgctttat 480

ctaatgcaaa gttgaatata gaagacaatg ttaacaacaa aggccgttag ttagctccaa 540

agtatcaagg gacacattta cctatagtga aatccctaat agtatcccct tatgagtgaa 600

gacctattcc aaaggtctaa ataccataaa gtctttattt ttttttgcaa aggttataac 660

accatacttg atctttggag ttggatgtta aagagagtaa taataaattt tgaatttgta 720

atgttgaagt ttaactatcg tggttaaaaa ggattgtgaa taataatttg attgaaactg 780

cttataaata tcgttctcac gggttatgta ttttactagt tttccttgtg ctcgagtgat 840

cttgctattc ttgtcacgag cattgcaaaa aaaaattgtg aagtctttct tcttggttgc 900

gctcatgata tctagagaag aacttgcctt cacggtctct tctagttcta agaaatacct 960

gactgacatt gaagtttccg aaagagaaac tggttgatga agcaaagtct cttaagtttg 1020

gagcatttct aatggatgaa ttagaaatac cttcacagtc tctctatgtc gcgtaatttt 1080

gttcggtacc ttatttgcca tcgtaaatat cctaattcct tctataccat tcggatacaa 1140

ttttttatcc ttctatacca tcgccgccaa tggcatagaa ggggcaagtc acttatattc 1200

cattggcgat agcatggaag aataagaaat tatatcgagt ggcatataag cgattaagat 1260

atttgcggtg acaaattagg aactgagcaa aattgcagta ccatacaagg aatcatctca 1320

atttactatt gatataatct tgagacgtgt aagcgtataa tagttctcat gaaccaatct 1380

atgagatcac agcatcaaaa atgcagcaga agagaggctt aaagctggca caaactgaaa 1440

gggtagcgat ttactaactg aggaagttat gcttgctgaa tactaacagt ggagttaata 1500

tttagaaagt acaatcattg gcacgatgca caattttcaa ggctttcacc acatcctgat 1560

ctggatctac cgacccagac ttgttcacct gctccagttt gttccttgat gcatatggca 1620

tcggcagcta ggtttgttgg cgaaatgtca atgtatctgt tctttgcgtg gtgctaagct 1680

tgtgcatgct acgcgtagat caggtaatta aaatctacca gtcgttgaaa ggcatctcga 1740

tccatatggc atatttttct ttgaattttg ttaagcaaaa gcgatcacgt gagaggcagt 1800

ggacagcgaa gatacttgcc gcgtgactgc atccacccaa caatattcca ttttttaggc 1860

tcttgtagcc gtggcgtggc tattggcaat catgtgctcc atctttggct cggggagtag 1920

ctagctagat tttcttaatc ctacaaacca aaagctaaag cgagttttta cgcaaggaga 1980

agcaaagcag gtcggcaaaa ttcaaaatga aatgggggaa agagagaata tgaataaaaa 2040

actgaaatat tcaaaagcta gcttgcaagt aacagtaaga atgtacatat gaaatattga 2100

gaaggagaga atctacgcat gatgggcgag gggaggtggt agggtcggag tggtgtagaa 2160

cacatggaga ggttaaagac acggagaatg atacagcacc caagaggaaa agggcaagtt 2220

atgatgtgag aaggtgaacg tggaacagat agacacgtac tctcttgggt tatacaaatt 2280

agttctctta atcgtaaaat aaatattatt atgagatcca tgtatagtta ggttgctcca 2340

aaaacggtgg ggttgagatg ttttctttta aatcttgtta tggtgtttgg tgtacagggg 2400

cggatccagg agagggggggg gggggggggg ggctgcc 2437

<210> 5082
<211> 2505
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_229557_G1, chr6:132194295..132196799, Cluster 31

<400> 5082
gaaacacgga gcagcgcgac ggcacgtcaa gattaaacgt ccgagaaatg gcaaacaata 60

gaatatgggc cggccggctt taactccagc ggcacagtaa acggttggaa aaagaatcgt 120

gttccgttcg gcactgattt ttatatttgt cacgtttaga tttatatttt ttagataaat 180

ataaaaaccg tacaaaatag gatgagaaaa atgaaaacgg aactaaaacg gcttcatcat 240

atcatgatca tcttcgtaca tcccatatta atacaagatt ataccgtatt caaatacggt 300

atatctcgtt tttttatgtt gttatcgatc cactactgtc gtgcccacac ggtgtatcct 360

atatctccgt atacaaaagt atgtcctgcg attctgtatg caagagtaaa ggatgacaag 420

gtcacagaga aggaggggca tatataacca ggataatgag gaaaacaaat atattgaccg 480

tgacaatgct gatcttttg agccgtagtc gtagggtatt attttcagct cgagttactg 540

tgtcatgtgt gattgacttg tataaactat cggtgtgctt gtgttgtgtc tacctaatta 600

attatacgtt gatattgact tgttacacgt atttatagat ctattatcaa tctatcgtta 660

tataattatg ttactcacat taaaacatta ttatcatata gttgttgttt actggtgaga 720

ttatgtatga tatagacggt gttttcattt taactttcct attttcgatc attaccgatg 780

catttttttc cattaggatc ccgcgcatct tgtgtccaaa cctgtttccg acaatttaga 840

ttctgaatca atttttgatt aaaatgtgag agtgaaaact gattcatctc gattgatttc 900

atcatatccc tgccccccggg cgcccttccg gactctggag tcaacgcgtt aacgggcaga 960

gtccagcagc aggacgagga gaggacaagt gccgcgtcgc gtgacggcgt gagatgtgtc 1020

ggtgtcggtg cgcggcgaca ccaaccgctt gcggcagctg ccgcagcacc gaggaagcaa 1080

gcgcgtggcg cccttgccct tccgtgtccg cgctcgcatg gtcgcaacgg cgataacgcg 1140

gcttcgtcca ccggtctgaa cccaaccgtg tcggtcgcag gccccagcca cacgaaccgc 1200

tcgatctgct ctttatttta cttgggtgtg gtagaggtgc tttcaaacgt ccacggcagt 1260

tcgggtgccc cgtcattttt aggcttatat ccttttgtga tgtatttggc acaaattgga 1320

tttactagta gaaccaattt tttaaaaaaa tgcaaacagc tttgatagta aaataaacca 1380

ttttcgttat tctgtatggc aaaacaaact ttacctgaaa caccaaacga ataaaataat 1440

tatactaccc ttttaattta gttctactgt tcttttactt tttcgaggca cgacctacgc 1500

ctttttggca gtttgattgt ccgccctaac tcatccctat ataaaacgag gaaaaaaaac 1560

ttcgcccgtg atgatgtttc aaaacagtac gtttggttaa ggaaatagct cacgacaact 1620

catgaagctg ccggtaaaac tatgccaaac attaccctac ttactattga acaaaccaga 1680

atatgatgct ccgatcctcg tcatttacaa ttaaattatt acttcctctc cacccccaaa 1740

atgatttgtc actgtgataa ttcatgtcaa tcaaagtttc ttaagtttgg ctagaaaaat 1800

atatttgtta tgaaaataaa gtcaaaaatc tatctaatgg aacaaattat atactatgaa 1860

tatcaatatt gtattattat tattattatt atgtattttt aaagttaaaa tacatcaagt 1920

tggttagctt cttggcagtc aaccaagata gttagcgtct tggctggcag tcagtcaata 1980

accatacgtg acacgtgaga tatataacta gctcccggct aaacaatgtg ctgcctatct 2040

gcaattagat aggcaccccg caccaaccat tagttgttgc atagttttat cttgcaatga 2100

gtattccacg ccatgatatt cctgtgggca ttgggcaagt tgaatcgtgc ttagctatgg 2160

ccacctatgg cacgttttgg agtgcttata tatatgaatg catgtgtttg tttggtctgc 2220

tctgcactag ttgcctgttt tctttttttct tttcctctct atctatctta ttataagcaa 2280

aggtatatat aaacaaaaca tgggcgctta atcgattcat cgtttgcgcg tcatcaccct 2340

catgtgtgat gtgtcggtgc aagtaggtgt cagttggaga tccaaattta atcgtgcgcg 2400

catgtataaa tgtggaggtg tgggggggtag cagtacaagt tatgttcggg gtatttctct 2460

acactgggga tgtcagacac tttttatttt aagtcaacgc gttaa 2505

<210> 5083
<211> 1919
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233896_G1, chr6:152500935..152502853, Cluster 31

<400> 5083
ggtagcgatc ctcaacccga aaacatcgtc cccaacccgg atatataggg tcattttcgt 60

tcccaccgtt taaaaacatc tgataagtag cgtaccatgt tcctcgattc tgttcctcga 120

ccctatcgac ttgggaactt tgtgactatg gttgtacatt cccttagaaa attctttggt 180

gatgataaat aagagagccg ttagcattta gcagctgact gtaccagttg agattagcaa 240

tcaccggttg ttcaacacga tcattttatt acacggtgtt gtttccttat tgttgtttat 300

gagctactag gtcttttgtc taatgttgtt ctgagctatt gaacgtgtgc tgtaagatcc 360

acattttcat agttttgatc aagtggtgca ctgctttgtt cagaaatctg tatatagggt 420

tatcttgctg caacatttgg agcaactcac gcgtcttgtt aagctgtgcg tagcagaccg 480

tttaaaataa aagatttaca ttgtagatta cactgtttgt agagttaaat ttaaaataga 540

agatatgatt gggggatgcg ataagataac tgctggagac aatggtttcg agttgagtgt 600

tcagtttact aaatcccatt aattcgaagt ttgttttgct ttatgaagct ttaccagacg 660

tttttaggat atactatttg gttttacaag cgatttgatg ttttttacat ttatgatggt 720

tgctaatgca acctaggatg ttccgttggt tgattggatg cataattgaa ttacatggta 780

tcacttctgt agtatgaatc tactccggcg gatggattgc ctgttccccg gattcacctt 840

tgccagaacc aaacattact ttattgtggt accggtagaa gtttagttgg ctttattact 900

cggtatatga tgatggtgga catgtctccc cgcatcttag ctccggtgag tgtcctagct 960

ggtgtacacc tggtggcttt gagggatctt ctggtcgccg ctctagtagt ctagtctttc 1020

ggctgtttgc cacagcatgc atgcattcgt atgcctcacc tgttccaact tgcaagagta 1080

tagaggactg gcgaattgga gccgtatagc tagtcagatt gtggttagaa aattttatgg 1140

ggccacgggg atttattata aaatagaccg tacccattgc gattaatgac cacccaggtt 1200

gttcaccacg gtcacttcat tcctttacat ggtgtatatt gccctatttc gttgggcatt 1260

ggagtcaaga cacgataaat atgatcgcgc tccgagggca tcctctaccc agtctgtcag 1320

cttgtttgct aagcgtcaca acgtatctat ttttttatta ttttttttatg actaagttta 1380

gtttttttaat tcgaacaact aaagctagat atattgtgac gccttagtta ggaaactaaa 1440

tatgtcctaa tccgactgcg gctgcgattt ttatagtatt ttatctctat gtattacagc 1500

ttgcagtaat ctgaacagct gtagcaattc gaacaggttg cgtaaccagt tgaggttcaa 1560

ataagccgct gtctcattta gatgtcctga gttcatacga gcgcaacaaa ttaatctcag 1620

ctcacggggc cgtcttggtt tgtcatgccg gcaagaccat aagcatggat gccaagtgta 1680

tataatctat ctatttccat gaaactgcgt aggcctttcg gctttagaag tccgtacact 1740

tgttcgctgt ccaatttccg tagaagtgta gatcaacgca acgtggctat atagtctaga 1800

agtcgtgtat atatgtgtat gttcactagt cactgtcaac agcgacctcg acaagtatac 1860

agttacacac aagggaagca gcagattccg agaaggcacg gtgctcactg caagtacta 1919

<210> 5084
<211> 2499
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234323_G1, chr6:154083849..154086347, Cluster 31

<400> 5084
tctgaacccc tgcctcacca tataaaacgg caccgtagca agcaagagtg accacaaccg 60

ggccagacct tagatctgtg ctttagatgc ccctttgcac agttgcatat ataggtaagg 120

aaaaagatga tctagggttg gtttatggaa gtataaccac cctaagatat caatttttag 180

aaaacgataa cgggctcaag gccttgactg tataccagag gcaccccagg gtctagccta 240

ccagttgttt aaaaaaagga ccccaatgag tgctaagccc atgagggcat gcccaccatg 300

gggttgtaga agcctggagg aggtgccaca cactggctct tggcaccggc ggcctgtggc 360

aggcaatgtc gccagaggtg attggttctc gggccacatg tggatggatc tggttcacag 420

gtttgaagca ggcggaccgg accctgggac aacttctgca gcctggcaga gccattggca 480

gattggttcg gagttgtgct tcccgcttgc ttgcactaca tatctgcacc tctgaacagt 540

ttaggttctg tgctaggcaa ggaatacctc tgatgatgtt gatagttaca cttgttatat 600

ttcttctctc tggcagaagt ttgtatgtct ggttaattgg aggttatctt cagagaatgt 660

actggctact ggaccaattt tgtaatgcga tctgtttgtg cttgaaatgt gatggagaac 720

tggtgggctt aaccttgtgt gctttttgc aggttgtatt tcgtcctcga caatctaagc 780

ataagagtct cattgctgca tgccttgagt ttgaggaccg cctgtctgag tgcaaggact 840

tgttagctag cttaacttgc gaaggacttg ggcaactaga ggttgaccga gtgtgcaatt 900

ggcaggtgtg atttgttggt actgattttg tgtcttcttg ctgggagcct attggcctat 960

gatcatttat tctttttta ctgctggtaa ctgcagctgt attgattagc tttgcaatca 1020

tcctgtggca gataatatcc atgaacttta tcaagaggct gacagaagat tatagggaat 1080

atgttgattt gatccagcca attcaagttg ctgtatatga aatgaaactt ggcttagcaa 1140

ttgctctatc tggttctctt cagagggagt atttgaagaa gattaaagaa gatgatatta 1200

atagagttct tgtatgtcta gttttgcagc catatttgaa atataaatta ttcttctact 1260

aattatcatc aataatactt ttaaatatat gcttatttag ctatagactc tggtattggt 1320

ctaggttaaa tttgataaat tgccatagtt atgtgttggt ttcgatgtta tccgttttac 1380

cacatttgtt tgtagatgtt gcaaggaagc aatacaatgc ccttggctag tgacgatctc 1440

tcattgactt tataatgcta atatttcttt cattgtcatt tcctttgtgt agggagcaat 1500

ttatgctttt atgcagtttc cctctggatc ttttactgaa agggttgtaa ctgacgtgac 1560

tgatgatctt acaaattata caatcactgg ccaactagga accctaaaca gttgttctgg 1620

agatgtagat atgttgaaga agcttgctgc tatgtcaagt cagttgaatg tttgtaaagt 1680

tgctggcaaa gtggtagttc atctatttct acttgcttat tcaatgtcgt tagcttcttt 1740

aattatatgg atttatttct ctggaggtgg ctttcagcaa tattttgtgt actatttgca 1800

gaagtccctg tccgagatgc ttgcttcagt gcatcatatt tttttagtaa gaacagctga 1860

ttgtgtcagc tgttcccttg tcatggataa gtcatcttat gcggtatgca ttttcatata 1920

catatcattt tgctttgtac tgataagata aaccaaatgg gatttcttac cagtttttct 1980

ttccagtcat tgaaggatac ctttgatcat tttacaagca tgtggatcaa catgaaatac 2040

cgtttgaagg ctaaagaaag cgatgattct cagtacttca agttcaaatc gcgaatgatc 2100

agtatagacg acatctttaa agatgtgccg ttgctttctg atatggaatc agaagacagc 2160

attttagata atgaagaaaa actagagcat gaatttttca aaattacggt attgccctca 2220

tgctagttct ttgtggatga tggtgttgca tattgatcta tcaattttgc atattgatct 2280

atcaatttta tttatttcag gaaagtattg atgacgataa tggtgttgtt gaagacaact 2340

gggatttgat accagagtct gctcttaaat gtattgtgac catacatgac caattgtttg 2400

gttcgcccga tctttttgag aaggtataat aaagttacaa tgaaatgcca ccttttaggt 2460

tgtaatgaaa gaaatcatct ggtatactcg ttttgcatc 2499

<210> 5085
<211> 1572
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235394_G1, chr6:159220514..159222085, Cluster 31

<400> 5085
tagatccatc catgcctctg tccccttggg tggcaaactg ccaaaacaat ctttttttaa 60

tagtgtacta tatatatatt tgataagtta actaatatcg aataaatatt attagataaa 120

tcatacaata tgtgtgcaca gtagacttgt tttgaagata ttaatactca caaataatct 180

agttgggtta aaattgattg ctcctaaaaa tgaggtgcat acgtgcgact cttttctgga 240

cagagtgagt tagccaatgc aaaaatggtc gtcccgacgc acactaatga aattttcaaa 300

cgctttgaga aaaaaacgtc catacctgta gttttcattg atggcaatat atatccaatg 360

tagtgagcat ttgatgggat atgaatgacc agcagctggt ctagttggta tggacggtgc 420

gactacgata ttccactacc atgggtgagg tccctttgct ttagattgtt atgctcatgt 480

ccctttccca gggcattttt gtgttgcttt gttttatacg atctagaaac ccccatacac 540

atgaaaagct aaagtcatat tgttataata atacacagta ttttttttact atagtgtgtt 600

ttttggccca tggcatctgt taattttcgt aatcatttca tattcttcaa tatggctaaa 660

acaatttttg accatgtata aaaaaacaag aaaaaaatag tcaaatgagt agggggggata 720

ccgtaatata tgtgcatcga ccaattttat aaacggccgt gtaatcattt tggtgcttga 780

aggttgtaac cctatgcttt cactcttgat taacgaaagg tgtctgctag ttctcgtcaa 840

gtttttttttt aaaaaaaaaa aaccggatgt ttttatatat agcgctcaaa tctctggtga 900

taactttcaa cgtggaaatg agtagccaac cttcaaatta actagttctc accaagagac 960

ggcaaggtta ttagttttca ctacggttaa atgcttaggg ttattaacat gtccagaagg 1020

catgtcataa tttatgtgct ccttttcaat atccatcagc tattacatcc aacaaatatt 1080

ccggtgagaa tagcttctgt gtcaatctgt catctaaata aaaaaagatg atttgacacc 1140

catattatat tatattcacg cgaaatgacg gccggccaac tgcatatctg catggctttt 1200

gcccaaacaa ggaatttgaa aggaaacaca acggctacta ctatgtagtt aaagaaataa 1260

acagcagcca ctgacattct tggcagttat tcccctcatc ttttgattgg ctaagccgcg 1320

ctcagctttg gaatcgttag ctttttttctg gtagagtcgt tagctagtag gcaatattct 1380

cacaccacca gttggatccc agcaacaaag gtaggcatgt agctggacgt actgaacgcg 1440

cacgcactga cctgaccatc tataatttat gggcaacaat tcttttgttt ccagataagc 1500

ctatacgtgc tgctgcgcac tgtgaatatg tatttaacca tcagatatat ttgtgcgtac 1560

gttgcaacca aa 1572

<210> 5086
<211> 2339
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_235416_G1, chr6:159241162..159243500, Cluster 31

<220>
<221> modified_base
<222> (353)..(353)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (353)..(452)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (354)..(354)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (355)..(355)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (356)..(356)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (357)..(357)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (358)..(358)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (359)..(359)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (360)..(360)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (361)..(361)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (362)..(362)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (363)..(363)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (364)..(364)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (365)..(365)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (366)..(366)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (367)..(367)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (368)..(368)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (369)..(369)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (370)..(370)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (371)..(371)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (372)..(372)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (373)..(373)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (374)..(374)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (375)..(375)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (376)..(376)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (377)..(377)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (378)..(378)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (379)..(379)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (380)..(380)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (381)..(381)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (382)..(382)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (383)..(383)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (384)..(384)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (385)..(385)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (386)..(386)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (387)..(387)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (388)..(388)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (389)..(389)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (390)..(390)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (391)..(391)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (392)..(392)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (393)..(393)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (394)..(394)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (395)..(395)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (396)..(396)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (397)..(397)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (398)..(398)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (399)..(399)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (400)..(400)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (401)..(401)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (402)..(402)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (403)..(403)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (404)..(404)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (405)..(405)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (406)..(406)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (407)..(407)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (408)..(408)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (409)..(409)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (410)..(410)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (411)..(411)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (412)..(412)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (413)..(413)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (414)..(414)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (415)..(415)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (416)..(416)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (417)..(417)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (418)..(418)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (419)..(419)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (420)..(420)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (421)..(421)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (422)..(422)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (423)..(423)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (424)..(424)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (425)..(425)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (426)..(426)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (427)..(427)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (428)..(428)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (429)..(429)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (430)..(430)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (431)..(431)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (432)..(432)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (433)..(433)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (434)..(434)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (435)..(435)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (436)..(436)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (437)..(437)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (438)..(438)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (439)..(439)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (440)..(440)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (441)..(441)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (442)..(442)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (443)..(443)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (444)..(444)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (445)..(445)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (446)..(446)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (447)..(447)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (448)..(448)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (449)..(449)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (450)..(450)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (451)..(451)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (452)..(452)
<223> a, c, g, or t

<400> 5086
atgatttaga ctcaacggtt gctaacccgt cgtcttacaa acccttctta ctagcaaaag 60

cttaggattt tgtggtggta tcatcctggg taccaaaaag tcaaaaggaa gaccacaaca 120

tgaaagcaca tctcgtcaca caaaaggaaa gcaccagggg agccaaatgg gagcatgaga 180

ccaatttcag aaaaactcta acaaggagga aacaaagcta accagcaaaa gcgctccctc 240

atggataccc ttgacaacac ccattgttga tggggaagtg tggtgaattg gtgagtgatc 300

accgcaagaa caacatgtag ataatcatca caaggggtct tcttgtttag gcnnnnnnnn 360

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 420

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nntccatgca atgtcaaaat tgatttttgg 480

tgtaggaggc tcatttgaca acgacaccat tactggaagg gagtggggga ccatcagatg 540

caaccatgag aaaaacccta ccatcagcct cagtaatagt gtctgatggt gtgataagtt 600

aaccaacaac tagaggagga catttgaaca tgctggagga gtgttgattt ttatttggag 660

gttgtggcgt cctatgtgct gcacgccagc acatacttgt cttaacatgt tgtcccacac 720

taaacgcatt gagaggcgcc aatgacactg ccaaggtgct cccagatttg gatctaagcc 780

cactcaataa agacatgact atcctgccta gtagcgacaa cattagtcac cggagttgcg 840

atagggacca agggagatac aacctgtgtt ggatctgatg gttgtagaag gtggagtttc 900

atgccaaaac caacatcaat gatagggacc acgaacgaga gtgggtgtaa gagagtttag 960

agttgttgaa tggtgatgtg agagaagaaa gaggagtgag cgaaaaagtg gtcaacaaca 1020

atgagaaacc ctagtcggga aacccatgca ttgaagatct catctagtca ccattgccta 1080

tttttataga ccgcaagcta tttctcatgc ctaaacttgt gctttgaggt tggcatataa 1140

tcaaattatt gcaaactaag tacacattta tgatatataa taaattaggt ctagttttgc 1200

acaagtaatc ttgttgtgtg gaaagtagaa agcataaagt caaaatatac accatatgaa 1260

agcattgaag caaggaaatg taagaaaaat gtttttgtgt attgaaaatg aacagataaa 1320

taatactaca ttttatatct ttgttagtga accctgactc gcatgaaaat tcatgacaca 1380

aacttttcaa acttcgatcg ttaacaaact gtttaccacc acatgcatgc agtgcatcat 1440

agaaaaacaa gtagaacaaa gcaacaaaat aagtaacaaa taggtgaaca tgctcaatta 1500

tggataacac aacacatccc attgtccata gcgaagttga ggagcacaac cgtgcctcct 1560

caagacacat gataccgtat ggttttgttg agcatcatga tttagactca acgattgcta 1620

acccgtcatc ttacgaaccc ttcttactag caaaagctta ggattttgtg gtggtatcat 1680

cttgggtagc aaaaagtcaa aaggaagacc acaacatgaa agcacatctc gtcacacaaa 1740

aggaaggcac cagggagcca aatgggagca tgagaccaat ttcagaaaaa ctctaacgag 1800

gaaacaaagc taaccggcaa aagtgctccc tcatggacac cctcaataac accccattgt 1860

tgatgggaaa gcatggtgaa ttggtgagtg accaccacaa taacaacatg tagatgatca 1920

tcacaagggg ccttcttgtt taggcatgga tctaaaacaa caaacaaacc tactagtcgc 1980

gtcaaataat ggaggcattg accataaatt tgcatacaac acgagttcct cgatagaaag 2040

aggtcacgcc tttcaagcca aatcgaggtg tagaagcacc tccattgcaa ttgtcaattg 2100

gatcttgggt ttaggaagct catttggcag ggacaccata ctggaagggg gtgggggacc 2160

atcagatgca accatgagaa aaacctacc atcagcctca ataatagtgt ctgatggtgc 2220

aagaagttaa ccaacaacta gaggaggaca tttgaacatg ctggaggaga gttgattttt 2280

atggggaggt tgtggtgtct catgtgctgc acgccaccac atacttgcct caacatgtt 2339

<210> 5087
<211> 2332
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237332_G1, chr7:732000..734331, Cluster 31

<400> 5087
tgaacatggt gatcgtctct tttattttat tttctgttcc tttctttttg taaacaaatt 60

atgtgagaaa tgcagcatcc atccatcgat ctatccctct ctggggttga tgaggagtac 120

atgtcgtgcg accgtccagc tactacccag aggccacagg gacagggacc cctattgatt 180

agttggtcac catagcagac gtccaatccc gattccaatc catcactctg aatgaacgaa 240

tgaaatgctc ctgtatagta tagtagtatt gtgtacatat acgtacatac gcattatata 300

tatataatgc atgctactac atatatacta aaataatgtg aatgtcaacc tcgctctggc 360

ggcggctaaa gtctcgctcg accaccaccg taccaccacc accatcatca ggaggaggag 420

ctagctctag ctaggcgtgt agctcgctgt accatgcatg ctcatcgatt tgatgcagca 480

tttgcattgg cctcctccag attttatttt gctgcctatc cgagaccgag tcacatctcc 540

atccggtgca tgattggaca ataataatgc acgaaaaacc atcgcatcca tccgagatat 600

attatataat ctaatgcgtg tggccgacca aaatgtgtac gacttgtgcg tgtgtgaaga 660

gtctcacgtt ctactgatta tattcttgta caattatgtg catgagatta ctgcgctcca 720

attaaacggc cgcccttaaa cttaggttga acgcggctag agaggtagag acgactgcga 780

tcgagatctt tccagcaaga ctgtgtcgtc tactagtcct tcatatatac caatgcaaga 840

aaacaaacat tgcatcatgt gttcaaacac gactgaaatt aattactaat ttcagtcggt 900

tatggtcagc cgatagaaat tatccagaga ctagttttcg acggttaacc ataaccgacg 960

gaaattatta gcctagtgcg caagttaact gcttgtatct atcaacaata tctatattta 1020

tagacatcca tttgtaacag atcatatatg ttcatctaca tcacatacat tcataaacac 1080

acgtataacc gttcacaaca tatatattca tccacatcac atatatagat agattcacaa 1140

acacacacac tgcacacata tatattcaca caaaaaatac ctattaactt tattttagat 1200

tcttcatgat caccccacag taacgcacgg atatatagga tatcttgtgt agatatttga 1260

agcgcggtga ctggaaataa taccctccg gcctgcatag tgggacactg actgtacata 1320

gaatgaagat ggcgagcgat cgagagtgat gcatgcgcct ctcctgccga cacatgtagc 1380

gactacatgt gatggctcgc tcgagtgcaa aagatctcgg tccctcgctt cgacttttat 1440

ggatcatcca gaaagcaaca agggccgccg ggctctggcc gactaaacaa gtggatacca 1500

agggatcacg tccccggccc ctagcagagc tagctctgga tcggagagat aattaaacag 1560

agacatgcat atatatatat atatactaat taactgcttg atatatttta tagatatatg 1620

tcctacaatt aattaatgca acagaattga catttgagct ttatttatct ctatatccag 1680

ctgctaggag agttgccaga catatattaa ttggagggag taacttgtat atataaatat 1740

caaaatatat gtgatgttca tccatgatca aatacaatta actaatggat cacatataat 1800

gaagaaacct agctatcgtt ttacaaatgc cacctaatat atataatata tataagatgg 1860

atcgaccggt aatatatgaa attgatggga aaaaaggttg attgccagtc gaacatctag 1920

ctagccattc atggtaaaaa gttaagtttc tggaagcaga tggctagcta tatatatgtc 1980

acactcacac cacacatagc tttcatctgc acaaatccag cgaacgatat cctccacttg 2040

ccgacatcta tatatcgata gcccagcaac atatatatac cggcagctgg ttggcaacat 2100

ctatgatatg aatatatgat cctgctagac catctatgat ataatgatta ttgtcaagta 2160

tatgtaagta tatatatgat taatacttat tctatataat attggatgtt gttatatata 2220

ccatgctaaa gaatatggga ttctttgatt ttattttcaa tcgtcaagta agatttttg 2280

aactatatct tcaattaaat ggatatataa acatatatac ttggataatg ag 2332

<210> 5088
<211> 1541
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_25099_G1, chr1:152119972..152121512, Cluster 31

<400> 5088
taaagtttag cacatgctaa aatttagagc atgctaaact tttgctaagt ttcagcactc 60

gagggctatt tagataaagt gctaaacttt aatacttggt gtacacgaga agcacgtgac 120

cacactagtg tggcaaaaag tacagtgcta aagtttagca aaaaaaaaaa aagaacaaac 180

acatactaaa agtagcagca acatcaatta taatgcgcct gaacaggcac catagggtgc 240

gtccaacacg gaacaacacc taagcatgca tttatttagg atagtatagt cattatgtat 300

agtaattaat gcactttagt caggtttaaa cactcaaatc aaacggctta ttttaataat 360

taaattttaa gtttagttag gtgaaaaaaa aacaaacggg gtactagccc gtaggcaagc 420

aggcatgcat acatatcgat gtgttctgca gtgtcgacgc ccgtgcctct ggccctctgc 480

acgcgagcac tactcgccaa tccgctcagt ggaggacata tgctgctcgg atctcgatcc 540

atagacagtg gagcgtggac tgcattgcac gcagggaaaa tactccaaca tcgaggatgt 600

tagcagctaa acattatgaa ccatgaattc aattaaagtt tctaattcct cacaaaaaaa 660

gaaagagttt ctaacaagcc ttgtcaattt tatccagggt ccattgaaca actagacccc 720

gtttggttcc tttggttcct tttatcctta aaatctagat attatgaaga atctggattc 780

tagactttca gaatttggaa gtctatttta agtctatttg gtacatagtt cttcctcaag 840

tcctgcttcg gaggagccac attgcacctc tgcgggctaa aggccacgaa acgggctttg 900

gcccttatat atttgtacca ttatataatc catgagttta aacattgcta aaatctaccc 960

aaccaaatta catctacact gatgacctct cctacaccca ttcaataaat cgcactcata 1020

tataacacat ctttaaacca actgttcata ttactagata atatctattt tactcaatca 1080

aatccaataa tcaatattac ttcctcttcc tcccgtcgtc aacctctacc tcctctccct 1140

ccctgcacca ccgcgctgcc cctctgagac ccagtcggcc cccttccctc tgtagattcg 1200

ctagctgcag gcctgcagca acacgccaac gcccagctct gcttgcagga tgccatgcca 1260

tgcctcgatg tctgtagcct gcctgaccca gggagtgtac tagtaccggc ccgtgcgtcg 1320

gtgcgtgcac gttctcacgc acaggtgaca agtcaggccg gccaggacta ctgtcgcgtc 1380

accggagttc gtgcttttac aatattgatt ttctccggta gcgacggcct tgtagattgt 1440

actagtggtc gccagtggag tacaaaaaat gtcctcgagc tttatgcatt ccagaacaaa 1500

atatatgtta gaaataataa ttatgtatta gagctaaccc t 1541

<210> 5089
<211> 1751
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253939_G1, chr7:107258070..107259820, Cluster 31

<400> 5089
cttgctctta ctgcttcagg attgttagat cgttttatga ctcaacttct tatttttta 60

actttgcaaa acgatatctt ttctgtttgg agtgaattgt catagtcttg cctaatgggc 120

ttagatcctt ggttaaattc catttgtgtt caagaagttc ccttgaaact ttgggcatgt 180

tcgctggttt atgtgcaaag aagtccatgt tgtgcatgag gacacaagtg agtgcatatt 240

cctatggttg gttgaatttg gcctgatagt tactactttg gagagatcac atacaattaa 300

gttgatcttt tcaatggaat ttccctagga gatttattgg atcctaactt tttatgatgt 360

atttctaggc catcttgctg tattttctag gagagctcag ctacttctta tgcctatctt 420

aggaattggg ccatagccgc aagctgcaca acctcaatgt gaaaaatcat aggactgctt 480

tgagtcactt ctatttggga gtacacattg ggtctaggat ctaatgtact ctattctata 540

attagcttct atgtcaaatg tgatgggtag agttacttgc ccaaggggta tcatcacctt 600

cctaggtaca atgtcgttga ggggtttgcc tattattgtg tgaagattca tgataacaag 660

ttccaccatt tctaatgtgt gggtaaatat aatatagagc cccacatcac catctatgag 720

aacttcgata agttgaactt ctactactat tgggtccatg actaggagtg ttaccttagg 780

taaaataaac tagtccattg atactccctt gagaattgaa ttagaacctc aaaccatctt 840

aagtaagtta gagttacgag ctttggagcc atgatctcat ggagggtaat catggtatgc 900

gacttggaca ttatgtgatt actctttcaa agataaggtt gatgacataa ttggcccgct 960

aaaactctac tctttctcgc ttgtcctagt cttcatcttc atcttcatcc atcttacctt 1020

ttattttagc catgtcctag tatatggtag ggtttaggcc ataatttttt tagttgctca 1080

catcaaacga ctgaatgttt gctaaatgag tgatatgggc atcgctccag gagtaggtca 1140

tcaaaagatt tagttttgct aatttttttg acttgttcat gactgtggcc gagttgtcaa 1200

actccatctt cctacctgat agcttgcttg atccttctaa taatttctac ccttgtcatc 1260

tcggtggttt tgatcatagt acttatcatg tatgctctct tttgcctttg tctatttgtt 1320

gatcatatct cagaaggtgt caatattttt agctgatttt tgaatgaagt atttatagag 1380

ataattgtct ttgagtccat tgccaaagta attaatgatg tccctatcaa atatgtctac 1440

caatgcgcat cgattgttag caaagcgcct atattagtca tgtatgcttt cactgttctt 1500

ctacttgtag ttctaaaggt cttggtaatt ggttgtacaa tcccatacac cccaaaacgt 1560

ttccataatt tgttgggcta gtaccgacca actatcaatg aagttcattt ttagtttctt 1620

gagccaaacc agtggtgatg cctcaagtac aattgaaaag tagattgcct tgacaccatt 1680

gtttgctcta gtgaggctaa tgatagatga gtaacaatgt atccactaat ttgtgtcttt 1740

attgccatca t 1751

<210> 5090
<211> 1445
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_255452_G1, chr7:115285222..115286666, Cluster 31

<400> 5090
ctgagatgat tgcaaagatc agatttgact atttgagaga catgcaaatt atttgaaata 60

agtgtcatgc atctttttc tccttctaat ggatggtctt ttgtgtagtg ctcactcact 120

agtttagaat ttaatgttag atgtgcttta ttgttttttt actgtgcttc ttttcaaagt 180

gaatggacct agaacatttt ttattatcta aaacatctta aattatagat tcttttgttt 240

tttagataca tagtttgttg ctacatactt gaatagaaga taaaactaaa tatataataa 300

aaattatata ttaaaaaaca aaatgatctc aaaactagaa cgaagaaaaa gttgtctgaa 360

cgaagaaagc ggaagcctca cgctgctgct cgtgctctcc ctccgaggcg tgtgggcatc 420

tcatggcccg tgggcatcca cggcaagcca ccgctgtccg ctgcatctgg gtcagttcat 480

cggtgtgcga cggggcggca tcagctaacg gtgaggcggc gtcggcaagc ggtggctcca 540

acaacacggc gcggcaagaa gagcgccagc aactccacgt ctactcccac ttctccgtga 600

gctccaaccg tcagttgcgc caccgtcgtc tgcggcaccc cagcggagat tcccctcgca 660

cctgcaggct gcagcaacca ccaccatcaa ttgatggttt ctggcccaga cacagcggca 720

gcagtggagc aggtcactca ccgcaaggaa atcaagctac caatatgtgg tactctactt 780

ccttcttgtt gaattaacca tagatcatga atttcaaatc ttgcacacta gtctgtaaat 840

tttgtttaac gactgtggag gttcgctcaa catggcctat agattgctcc ctacactgtc 900

agatttttc atgaagtatg aactattgac atgtggggat atatatagat aggcactgaa 960

ctatcttaat gttagtaaat tgcagatttg tgtgtgataa aatgacctgt ctaaatgtca 1020

gtaaattgca gatttgttct gtcgacatgt gaggtactga gctatctgaa tgtcagccgg 1080

tggtgttaga cttttcatga attgcagatt tgttttgttc tgaatatata gatagataga 1140

caattgttag aatgatcctg ctgcacacct gtcaatgatg ttagtttttt catggagtat 1200

tgctcaaagt ttggagtcag cagtatttaa caacttaaat tgtaaacagg atgacacttt 1260

ctaaccaaat tctatgtgtt agaggatttc ttcaaggtcg atttgtaaat ttttataaat 1320

caaaatcaat ttccggtgct gcccccacct acaggagaaa attttcatct tgtttgggct 1380

caatccttta atatataagc attttaatat atgcgtatgc actgatgatt agggttagca 1440

atttc 1445

<210> 5091
<211> 3297
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_257043_G1, chr7:123484031..123487327, Cluster 31

<400> 5091
cactgcgggc gcttgtagcc gctacatgca ggggacatgg cctcttgcgg gaggcactgc 60

aaaagatcta aagtaaccct tcaatggttg aacatttgtt cccattatac gttgaggtaa 120

acatttaatg gctaaagtaa atcttgaatg attgaagtaa attatgaatg gctgaatatt 180

tgttattttg tgtattgaag taaatattga atgattgaag caaaccttga aagacagaaa 240

caaacctaga atggttgaag caaacatgga ttgcaagaat gtttgttcct cctgtacgta 300

gaaataacca tttaattgct gaagtaatcc ccaaatagct gaagtaaacc ttgaatagtt 360

gaatggctta atttggtgtt gcgtgttgtg gatggagggc atatcagtcc tgttaattgt 420

gtgcggctgg cgaattagtt ccttgatccg atttagttct ctagtgcaga tcccgttaat 480

cgcacacgac taatctggta aattacgtgc gattggtgtg gctagcgttg gcacaattaa 540

ttagtttgac tgatttgtct ggacctttaa gtctaggtga tggaccatga ggtccatcat 600

cctgggtgat gattagcact tatatatatc cattcacagc atatatattc accacatata 660

tttacaaaca catatgtatt catccacata aaaccacatt atatacattc acaaacatat 720

ctatccgtcc atatcaagtt cattaacaca tatccatcca catcacacaa atcatccaat 780

aaatccatat cacataaacc atcaacatca aaactatcat ctgttgttca attattgatt 840

agtttaaata acataagaag tactaatatt catgcattca atcagtatga actcagattc 900

gtcggatggt tagaattctc actgttatgt agagtgtaat tgaacatttg attgataaat 960

gagttagacg cctaggtgct gataattgtg gaggatgagt ctgaaaacta aatcttgaat 1020

gactaaattt caccgtaatt aagttagatt gattattttt tctatactta agctaaattt 1080

gctaaattaa ataagtttga tagaattgag ccaacttgga ttttttttct agaagtaagc 1140

tgaattggtc tatttttat tacaaatgag ctacgttttt tttaaaaaaa gtaacgatta 1200

aatattatat cgtaactagg cttaacaaac taatatacta aaaacgcaca ccgattacta 1260

aaccagtcac ataataataa atattcacta gcttaataca ttcaaatatc gtgggcgacc 1320

gatgaaaatt gtaatcactc tgctttgttt ggatggaggt aggaacgtag aaaagacggg 1380

atagacatgt ggtggacaat acagagaacc ggacggagat ggtgaccgcg ctgagacgct 1440

ggcgacgcgt ggaatggacg tggcggcgat gtttagacgc aggcgttgga gcgatcgagg 1500

gtgagaggga tcagggaaag ccatagataa agagcacacg ttggtcgtct ccgacgaaaa 1560

ttgtctagtt ttcgttggcg cgctggatgg gtaccgataa aaattagtcg aatttctata 1620

ataaatttaa ctaaaagtct atgaggaaaa ctatttcggc tttccctgtt ttaatttgca 1680

agtcgggctc gggcatgagc cacttacggt agcctgtaga ggcagcaggc cagcagcagc 1740

agcagcagat tgggaggcag gcagaggcag cggcaagtgg tgcggggcag ccggcaggag 1800

gaggtggcga gcggggccgg gacaggcagg gtctcgtcct cggcgggcaa tgcaaggaga 1860

cgacgcaact tcgcccatca gcctgcccct gcctgcctcc cgggggagga cggggacgtg 1920

tgcatgctcg ccggccccag ctcggcctcg tgagtgaact gaaccgtcca gactgatggt 1980

ttccggtcgg tacggtgtca ttcgatgtcg tgccgtttcc tggggcactg attagtggtt 2040

tttgctccgt gcgaacaagt tggcatgata catgtttggt cagggtcggg tcgggtgtac 2100

aaaacgagag acatatgcat gcatggtgcg acgactcctt gctacagtaa attctctctc 2160

caccgttgac ggtgtggtcc atggaccagc actaaaaacg ctcacatgta cagacgatac 2220

acgctgataa tttgaatggc tacaggacac taggctggta agattgacaa gaagatcagc 2280

ttgttaggtg tcgtgttttt ttttttttgt atcactacta gcatgtaatg tagtaatacg 2340

tattggctag tactgaataa gaagtttcgc ggcggggggt ggtgagtttg caagcaaccg 2400

gtctagattc tgactcgggg agtgatgctc cgccagaaaa tgttctgacc ttcaacatgg 2460

atggtccgcc agaaaattaa ctagatttga gacgaactga ttcccaagtt tgacctcacg 2520

aggttagaca ccaaccggta actaatctgg ctggcgtcgg tcttgtctgc aaaaaaaaag 2580

gtcagcagca cgcgaggcgc gcgtgatgtt tgacaataga gaaaggagat gaccctctcc 2640

tcacctgtta tctgcctgcc ctgatgactg tacttatgag cgtagatgaa gtggcatgaa 2700

attaacgatc gacacgactg taaggacatg tataacccca tttctcaaaa aaaagaaaac 2760

aacatcgaag agcaaaaggc cacgccgtca ccgtcaaagc gcggagcatc caccgtggga 2820

cgacggaggc tttgtgctgc atcattgcag aatccttaac gatctccaaa ggcgaaagca 2880

aaaggggtc cgtcacgaga ccatggcgag agattcatgc cggggccggc cgatcgagcg 2940

cgtaggtact cgcccgccga cgccgacgcc gacgccgacc gcatccgcat gtcacggtgt 3000

gggcagaggc agccaggcac aataaccact ctctggtctg gtgtctggtg ttcggcagcg 3060

aggtccgtcc gtcccgggtc acctgcggcg gggctccgac gcgacggctg cctccctctg 3120

gtttggccac cggtcagccc gaggcgcgcg gggcattgat ggcggcgcgt gcgcaagtct 3180

caagaggcgc accgcatccg gggagaaaag attttgccgc cgggtcacgt cagagctcgg 3240

atccatcgca cgggcacggc acggcacgcg gcggggctgt ggaataaatg gctccgc 3297

<210> 5092
<211> 1555
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_25738_G1, chr1:156210440..156211994, Cluster 31

<400> 5092
caagagcctt tcctgcagtc actactacac aacgtacttg tggactatca gcatcagctc 60

gctcgtggtt ataaccgacc gtgatagaaa ccgccggtga taactttaat atatcatcac 120

ctgttggttg gctctacaat taacggttct aacaataaac tgtaatagta agccttcgtt 180

acagatttgt aagctaatac ttatgaaaat aatgagatga accgggataa aagattattt 240

cagtagcatg cactagcagt gtggtcggtc agtttgtcgc ttcctttgac cagaccctgc 300

aactgctact agccaattca cccgccaaaa caagttctcc gatcgacgcg ctcaaccaac 360

tgccatgtaa attaacaact tcagtacctg tactgagcaa tctagtactg attgacaaca 420

aatcatgcaa ttcagtgtta acttgaaccc taatttggac acattgcgcg catctggtgg 480

tgcgtatcca gaactcgtgt gtcatgttgc taactatcca attaagcatg atccatcagt 540

cggtctacat gcataccggc cagctgcaag cacatggctg cgcgcgtttc gtcgtgcctc 600

tgctgaactc acatgcatgc atgcctgcca acgcgcatga tatatgggtt aaagagacaa 660

atatgcggtg caggtcatgt acatgctttt attatattta ttagcgtatt aattaggtgc 720

aagttaacgt gtaaactata tttttttaa aatcgcgtct ttttcgttcg ttaagttttc 780

aacatttagt gtatatatgt ggtacgttca tatacgtact catgtgcaaa agttaagcta 840

caaaccacag gtagaccaat ttcatatgtg tgtagtagct atataagaca aaaaataggt 900

ttttatcttg tagcgcatag aaaccttaaa tttgcaattt gtgtatgttt ttttttaat 960

ttggctttgc ttcttaactt ttactatacg tgagtacaca tgcatatgga tgctctgtga 1020

atataatatc ttttgaataa tccaagtacg attttgaaat gatttgtgta tgtttatttg 1080

cacctaatat atggtcgtct acaccacgta tttccctggg ttcggagaga ctcatcacaa 1140

gtgccacaca gcaaaaggca gatcaactct ctcgatccca taaagataaa ttaaaaaaaa 1200

tgcacgcttg ttcgttagaa ttacctttcg gctgcatgtc ggcacgtaca cccaccgatc 1260

caaccaaatg cgcatgcgct tcattaaccg tcgcagctga caccatgatg aggccccacg 1320

tcgcgctgag tgacacgtgt cagagagcca gagagtagtc acttgaccgg ccgccgcgcg 1380

gtcaaatgat gacgctgccc ggatccctat gcgtggccgc cgttggttcc cttctcgtta 1440

gactcagagt ggagcggcaa atggtttttt gaactaataa taatctgtca gggtcaggct 1500

cgtctgacac tccgtcacat ggcagacaca aacaatgaac taaatatcta gcagc 1555

<210> 5093
<211> 1809
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262649_G1, chr7:155053755..155055563, Cluster 31

<400> 5093
acatgcctca acggaaatgg ttacactaat gcatgcatga tgcatgttgc aggtcataag 60

atcacaagac ctagtcaatc tggggtagtg ggcccaataa caggtaggaa ccacatgtgg 120

tatacacgta taataccctt agggtggtag ttatacccag tagtcgatac catgttcacc 180

ttgagaagag ataattatga tggggctaac aataaatgtg aggcgaacgt tgtaggcatg 240

ctctcgtcct aacacatgca aaggggctag gcatacccaa agccactgca caaagcattc 300

aagtgatacg agcatacctt agcatttatg tccatataca ttcaagtgat tgcctaccgt 360

gggattgaga gaatcttttt gcgtgacatc ttttttttc tgtatccatt tttttcttga 420

tatttgcagt gaaagagatg ttcatatata cgctagctgc tttgtcgtcg aaatgtcagt 480

tcgtcagtca tttgccaaac tttatcttca tgaacgacgt tagtgcccgt tcgggcgcgc 540

atgcactcgt acatgcaagt gcagcttcca cgcgcgcgcg ggcaacctgt gacttgactc 600

atcgtggaga aaaccaaacg agtcatgcat tgcatggtgg acagagcacg ctcgacgaga 660

cggctcgtcg tggatctaaa aagtcaccaa accacgacga cgacttgacg actgaatatt 720

aatttccaat gttcttcaac gcatgtggaa aaatgcctgt gtgctgcata ccatcaccag 780

caacgacgac cgcatttctt agtccaagtg agcgaggtcg aggaggaact acagtgtacg 840

tctatcgtac atggaagatt atgccctatc gctctcgctc tgacaaaatg aaatcttggt 900

cgttggtggc aacaggcggc aacttctgga gacgaatcag ctgaagcctg aaggggactc 960

atgtggagta taatttggcg tgccgtgatg ctgcattgca ttgagccatg catatgcctg 1020

gtgctgctgg tgggatgaat tccacccgac agatgttgcg aaccaaatcc taccattata 1080

taatgtgtgg tccagcagcg aaaacatcaa gatgtgatat ccagtggacg acttgcaggg 1140

gatgtatgta tatgaattga ctgatagatc agctaagatt taagtacatc taccatccga 1200

ctatatatat tattaacgtt gctctcacaa attgcgcagg caggtgtgtg gcaactaacg 1260

tgcatgtata cctgaatgaa tgcacgcgcg aacgggcaat tgcaattagc atggggtcga 1320

ccaccaacat aaaatttggt ttgaataaaa aacgtgcaaa gcacgttctt ggaaaatttg 1380

tttagcaaat agcaacaaat atgacatttc gataaagcaa tactacaagg acattaaatt 1440

ataaattaat ttttattcag ttctaagttg aactcgccca atttcaacta atttgtgtta 1500

gtaattttat gggtttggcc catataaata tttcaataag tcctattgaa taagttatgt 1560

gttatggcgg ttaagtacaa tatgataagt taataggatg gtaacatagg ttatctagct 1620

ggaccatatt tgtctatctg gatttgttgg taaagtgatg aaggtgtgcc acacgcccgc 1680

acgcgtgacc tccgacccaa ggcgtgtcgt ggtacgacgc tcatcgctat ttggttcgcc 1740

actacttgcc tctgctttag ttgttagaca agtgccatca ttctagttcc tgcgtgcacg 1800

actactaga 1809

<210> 5094
<211> 1507
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_262781_G1, chr7:155756569..155758075, Cluster 31

<400> 5094

cacaactgct cggtactgat ttgatgacgt tatcgtattg tttctggtgg atttatgagg 60

aactgcattg cacatatcta cttttatcga ttgtgatctg tgacatcgag caacacaccg 120

catggttcca ccgatgtctt aagtataggt ctctctattg gatttttttt atgttactgt 180

tttatatgtt caataagaca ttgccgttgg taacgatcaa tatgttcatc ttgtttacca 240

ctgtagcaat taaatgtagt ttacagcgta tgtattatca cgaatttatt gttattatta 300

ttctagatta agttaggcct gaaaaaagac gtctaaattt ctagcaacga tttagaacgg 360

tgggagtata tgtctaaatt tctaacaata atttgaaagg ggcagagtac ataacaccga 420

tctgattcaa ttttgggcca catatattac ctttaggaag cagagaagag attatttgat 480

agtgtagaac ctttttgacc agtaaaaaat gatcaattac tgagtattga cgttgtgcat 540

gggggggcaaa accgcgaaat ggtgcctttg gggggctttg gccatctcat tgttgaattc 600

tccgcttgga gaaatgcaaa accaatcaaa actgcatgat taccatgggc acccaccgtg 660

cttattttga cttgtttcct acgttcaagg gcccacacgt gggcatggct ccttgcacct 720

ttaatccgtg cttggttcca tgcatgcatg catatgcact gtccttgtcc agatcgatcg 780

tcttgctgaa actttattta taacagcaaa ctacgccaac gtacgatttg ctccgatcca 840

tggaacacca tcattctgaa aatctgaatg accacagcta gtacatgcat gaagaatgcg 900

cgcatgctcc atttcagtca tgacctgttt gataattatt tagatgtagc tctcggtctg 960

tgtgctgaac gtatataagg ttaatttgcc catgcatatt agataataag ggtcagacaa 1020

gttctcttgt tacggcacta gctagtagtg ataccaaatt attcaattgc ttagaacata 1080

ctcgtgcacc ggccgtactg tgaagtgcgg ggatatgcac acgccacgca agggcatctt 1140

tatttgttaa atacagtaac tacagtgatg agtgattatc ctagactcca agctggacga 1200

cttcagcgtc atctcttgga ttctgcacag ctaaacaata taacaataca ggctatagct 1260

agctaacacc gtacggcgta cgtgcctgtg aggattagaa gagagcacgc ttgcagtcaa 1320

acaaaaagcg attagaacag cagcatgcat ggtggaatgc tgcatgcaga tgggcaacac 1380

tactaacaca tgaagcagtt agcactttct ccagtaaatt gtcgtctctc tgacggtttc 1440

agcactgacc aaccctgttc aagcacacgg tgagagtatg gaagtttccc atttcgaaat 1500

gccaagg 1507

<210> 5095
<211> 2534
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264925_G1, chr7:166756199..166758732, Cluster 31

<400> 5095
gagagactgg agaccagtct tcacactaga ggtgccaaag tgtgtcgcac tattttatgc 60

aaccgtatcg acaaacaaaa ctggcattat attggtgcat gtcgtggaac gccaaatctc 120

tctctcgatc tcgcgttagt ttacaattgt tcagccaacc gttgcactag cacgtacgcc 180

catgtacata tatatgcaac gtacgtagcg tcggccagga tcggttgcaa tctagcatag 240

tgacactttt cgaacaacaa ggaagaaacg acaggcactc gatcgtgaac acttattata 300

tattaattag tttgggagaa atttctatag atatacgctt tatataaaac cgcccaagtc 360

ttgtcctgtt catgcagcag gcgggtagta tatatatcct gtcaaaagat gcagaagcta 420

gctaactagg catgcatatg attcaaactg catgtgtgtg ccggatcaac caaatcagtc 480

tactactgtt ttaaagctat agctctacct aatactacag tatataaaca aagagttcga 540

tgcatacaca caaatccaaa cctaacctgc tacctttttt tattatatat attagcttgc 600

aagagacaaa ctctccactt tgtatgtatg atacacgcca ctacttaagc actagctaat 660

agccatgtag cattgcagtt tgcatgcatg cttgtccaag ctacaatgaa aaggtatcag 720

tgatccatgt gctcaacaga cagtgaaccg ctgagttttc ggttttcggc acttaagctt 780

gtacgtacaa tctacaagct tcattcatcc ctttttaatt tgctttggag agaggagatc 840

gagagggagg gagatcgaca gtgattgcaa gagagtaggg acaagaggca gaggaaaaga 900

aaaggcgcgg cgggcgagcc cacgcacgca tgccaaccaa aatgtgaaca aaaccaccgt 960

acgtacgtgt ctttccatat catccaatga taaaatccag tcaccttcca ttacacaaaa 1020

ccactgtata cttcttgggc atgcaaggca agctgcctct agctttattt atttctgatg 1080

caatgcaacg acggccttag cttgcttgct ttctgcactc ccaaacaaca ctactctcta 1140

tgctattgtt gcatgcatcg catctaccta gatcgatgaa aaggccatcg atcgagcttg 1200

cttgtaatta tttgagttga ttgtaactgc cagcggcagc tgtcagctag ctttgcacag 1260

gtagcagttc cacttccgaa gaaaacaagc tgtgtacagg gacctcttcg agaggttcgg 1320

tgccgacgtg gcaaatcgtc gccaagacat aaacaaatgc agatccggta gaagctagca 1380

tgcatgtcgc gtacgaacgt agtattcact acgtgcatgc acttacggca aagcaattaa 1440

agtgggcgaa aatgtttatg gccaacacgt atgattgacc tggatcggtg actctgcctg 1500

cgcccgtgcg tggtctcctt tccacccttg tcgttgtcgc gtccggacac ggtgggctca 1560

tttggtgggc gcactacact actcgctgat gaaccacttc gaaactgacc gccatgtgtg 1620

tgtgcgcgtg caaccgttgc ttcgagtttt cagtttttt gtactagtat atatgtgcca 1680

acaactacct gtccatttca gcctatattt aacttgcatt atttgtcacc atcaaattac 1740

tttagcagtt ttggttcctc gttttttttc ctataaaaac tcgtttatgg atacttatat 1800

tagcaaaaac aaaatctaga atcatactgt atctgtttgg gccgcggcac cttgtgcttt 1860

ttcccccctt ttggcgcatg cagcgtatat ataggactga acgtacgtac gtacaggcag 1920

catcgtctgt cgaagaattg ccattggatg gttcaaagaa gtgtgtgtgc agtgcaggga 1980

tgatgtctca gaaattaaag atcgcgagat gtagggtctc caatataaat ttatgtcaac 2040

agcaacctat aggtcacgac tcacgggtct actagtcatt ggcgcggctc attgcattgc 2100

atatgtatat atccttctct cgtcttatcg tcacacacgc tttccttctc cgttagccaa 2160

ggtgactgac tgttaacatc tcaaataaac caaaaaaaag tgacggttcg taacttgtct 2220

tcgcatgcta atatccgctg agaacgacca ttattgcaaa caggagtgtg gcggcatcta 2280

gcaccaggaa agggcccggc cggccaggca caagtttgtg ggcagggccc gtggttttgc 2340

aaccggcttt tgctgccatc gatccttgca cgtacctcca cctccaccca catctccaaa 2400

ttgatcacag gtctatgaac tagtatatat tcgaagcaaa aaaaaaaagg cacgacctac 2460

ttacaataca acatggtttg tctcatgctc gtgtcaagac ctagtccatc aatgtatgag 2520

gtccattgtg ccta 2534

<210> 5096
<211> 1791
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266142_G1, chr7:173057422..173059212, Cluster 31

<400> 5096
aggaaattac gcttctagga agattcaacc tatatggaag tcagttaagc aagtttcagt 60

ctagaccaaa ttggaatcgt atttaacatg gattcacaag gcactttgac cccctaccca 120

tagagcaagt ccactctagc ttatccatct aagcagccat ggttggttga tggcatccta 180

tagatcaaaa aataaaccat tctactattc ataaagttag aacatattat tcataaagtc 240

taggatccaa aaaattgaag gaaactatta acacaacaaa taaggcacct accaattcta 300

gattaaatga ccacctaaca atgatattat cgaatcaagc cacaaaacat aagtgatact 360

tatcatataa ttgttgactc gtgctacaaa ctagtagcaa tatatctgtg tcaggtcaag 420

ccacaaatag acaatggtac tttagtatca ctaccaggtt ttatgttgac ccaaaaatgt 480

cctctggtat tagatccacc taaaaaacaa ttggttgatt tctacaaaac taactagaat 540

tggatactag aatagtcata tgttgtagag tgagggttgt actaaaagct cttatgtaat 600

acagactaac acacaattga cactcttatc gtctccaatt tatacaaaaa acaaataaac 660

acatggaata taaatcaatt ctattataaa tgatgaagtt aagcttggaa tacatttaga 720

aatgcataga tatataaatc tactcaaaat aaactggatg aaaaccaaca tatcgtatat 780

tttcatgaag attataatac acgattgttc atagaaaggg acatgcatat ttatatataa 840

tgttatttaa agtaacctcg aggaagtttt ctaatccata agaacatact tgtatcttat 900

gtatccaagt aatccaacac acaatcaatg ttacccatgg tagaagagaa aacacataac 960

acacaaaatg atgatccaat atgaaacaca tgcacaattg acactcttgt gggatcaaac 1020

ttagacacaa aaggttaagt caaatttatt tagatctcaa taaatatgta tgttaatggg 1080

tcattttgac caactagttt caagagttgc aagtttctat tgattggttg cttgtattgc 1140

ttaatgggca tggctcacgg gacgtactaa gccatctcag ccagactcat tggatgcata 1200

tgcttacttg attaatatgt tataagtgtg tgatcagtac atatcaagtg ataattcatg 1260

cattttaaaa gtttaagcca taaaggataa aacatgaact tatacttgta cataataaat 1320

cagtgtcatg accttgtatt atttttatct catgcaacat atctttgcac aagcaatcaa 1380

acatcttttc ttggccaagc taagagatac atgcaaccaa aagtggtact attatatgca 1440

ttcagtgtgc tccatgggac ttgactctct tagatatgag ccaagcttga ctcatgcatg 1500

aaccaaacat cccctagaag ccccaaaaga tgccctaagg agcacccttg gttactagta 1560

tggcaatgtg ttctcttcat ttatgaataa ttcttggatg cggtgtttca agtttggttg 1620

aatatgaaat atgttttatt tttcatatca ttagctcaaa tatctagttc attaggtgtt 1680

atggatgcaa acatgcttag ctaataaggc acccaacaat agctaaagga cggagtctaa 1740

aaacatatac cagttgaggt tgactctagc gaatgaagcg agacttgcga t 1791

<210> 5097
<211> 1442
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266608_G1, chr7:175167816..175169257, Cluster 31

<400> 5097
aattaaagaa ctaacctcaa cagtaaaaaa atagacagac catgataaat taggtagcaa 60

atcaaacaga tccatactcc tctgtgacaa aaacaattag cgtcctcatt tttagtaaga 120

gttaactaaa tataaaaggt actatagtac atgattagta tattattaga taatttttgt 180

ttacttttac aatagactta tttaaagata taaatgttga ggatatagat gttgaaattt 240

tgaccgacac agatactatg cgacaactat ttagggacgc gggagtacta cgttagcatg 300

catagatttg tgtcgatctg acgacgcatg gattgtgagt ttgggaactg gccggctttt 360

ttaaaaatat ataaaatctt tcgtgaggag atgagttcag tttgcttgtg ttctgaatga 420

acgatcattc agacgcgcgc gaacgttcga gagccgcttt tgtataatga agcttttata 480

gtgcagcgtt gacctaagac ctggccaatg gatttgcctg gtctctctct ctctctgttg 540

tagttgcgac ctactaacaa tcatacatta attcatagct agtgcccata aacaacggtt 600

agacagccgc cgcgcgtacc aattgatttg gtcgcattct gagaaatcta atccggcaat 660

tcaaattcac ccacctctct cacccactgc tgcttgctga agaagcatgc atgtgagaga 720

cttgatgcat gctagcatat gttactaatc gatggatcta tcgtcatatt gactgttcaa 780

atttgtagtt ctagatttta ttcgcatatc atatgctgtt tggatgctga ttatgagcct 840

aattatgaac taagcatatg acttactcgt acgtgagacg aatatattaa aactaaataa 900

tctgtaattt gtccatagca tatgtgatga tcatatatta cataagctta acgcgtattc 960

gtcttctgaa ttagccatgg ctaatgtagt tagttttata gttagttaat attcagttct 1020

cttaattgat atatttgatg actaaatttt agtatgcagt tcatccatgt acttctcttc 1080

cacgcgaaac aacaccatca cattgaagca atcaagcata cagtgttctg catcccccaa 1140

gaagcatcct gcataaaatc gcatgcatgc agtactcttt ttaattagtt tgactgaatg 1200

aacagagagc agcagtttcg ctgatggaga ccgggggacg attccaattt tgtgcgcgcg 1260

cgcggccgat gaattttcta cttcagtact caactcagga ccctcatctt ctgctacctc 1320

caaatgtgta ttgtcgttga ctagtgccta gtggtgactc tgatgagacc gtacgtcccc 1380

ctcttgggtc tccaccggga gaccatggaa aagcccaagg ccgaacaagg agggagggag 1440

ac 1442

<210> 5098
<211> 1853
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_266867_G1, chr8:77903..79755, Cluster 31

<400> 5098
atatgctaga cagcttgagg atgaggtaat atattgaacg atcggcgaca agacagggtt 60

ctcatatttg ctttgttctt ctttacaaat tttctcaata gcaatagacg ggtacttttc 120

aactaaaaat gtcctgtttg agaaaaaaat attttatctt cagtgcccta ttttaaaatt 180

tagaatgcaa ctcataaaaa acagcttcaa ctgtacctat tttacagttt aacggttgta 240

gcttaattta tttcaagtcc ctaaatactt taaataatat agtattgttt ttagggcatt 300

atttcgaggt attttattgg agattctctt aagagaaaaa tattgtattc aagaaaatta 360

aaatgtttca acttcatgag aaaaatatgt tagttcaaag gtaaattatg gataaggata 420

gactgagtca tcaccttgtt acagcaggaa gattgaattt tttatgtcgg ccaaccaggt 480

aacgaaacct atggttctgc caagactttc caaaagcttg cctataaaga tcagtaagtt 540

caggacaaat actgatggcc accgttattt ctggccgtcg agaatgactg atagacggtg 600

tagtgtataa ttttaactaa aattccaaat tagcgaatga gatgacgtgg gccaagcttt 660

ctatataaac tttggatcgc ccaacctggg tcaagcggag cgctgatggg ctgaatttgg 720

cccgctgttc caccttcaaa ccgagattcg atgtcatttt acctgtctgt catccgaatg 780

attttgcatt gttgagtttt cgttcaagta ttgcaccaat aggaaagaga cgcatcacaa 840

aataaataag atagaagaca acaataaatt aaattacata aaatttgcaa ctcaaaataa 900

caacaagcaa cctaaataaa agagcactat atataaatat taacaaggaa aattaattag 960

attttgttca acactaatcc cttacatgtt gtaatatact agtaattagc gcgcacccag 1020

ctcgcgtaga aaacattttg ataatataaa tgataacaga aatataacta aactaccaag 1080

attcgctaag agattgatgt tgcatagatg accatgggcg tcatcgagct attagagaag 1140

cagatagaat tgttaattac acagattata ttaatgcatt aaacttaatt atgtttagag 1200

aatctataaa gtaaaaataa acaacaatgt tgcttttggt aaataagcag aaagatggaa 1260

attaaaacct ttaccatatt gataagaaaa ctatagctaa ggaatcaaga tgaaggagac 1320

tgatgtaaaa tagtttaaat gcatatttaa tgtgtcacag attttattac gtagatttta 1380

ttaatgcatt gaacttaact atgtctatag gtgcatgaac ctgtatacct ataaagtaaa 1440

aatggacagc aatattggtt ttggtaatta ggcagaaaga tgaaaattaa aacatttacc 1500

atatttggcc attccatctc acatattttc tgtaggtgca gtaaatgggt tctataatgc 1560

ttcagcgaat aagtagaaag atcgaacaga atgactgaaa aatgctcgca catagttcag 1620

ctcaaattaa catgaagatt gatacagcaa ataagcagaa agatgtaatt taaaatatgt 1680

agcacatttg tccttaccat ttcagtaatt taactggaaa atggaataac gacctcatat 1740

tagtgagcat gaacttaaaa aattgtgtat gtgtagatgc ataacaggtt aggagattat 1800

atatgttgcc gaatgtaagg catgtaaggc atgtttggtt tgcttcttaa ttt 1853

<210> 5099
<211> 1465
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_268403_G1, chr8:8399227..8400691, Cluster 31

<400> 5099
attcaagaat ccttgcttgc acacacaata acagccaaca ctcaatacat gcttgtcatg 60

agctcgcacg gcagcttaag acccgtaacc tcccattctg ttacattcct tgtgctgcta 120

gaacactgaa gaccatcatt gaagcaggac tggaaaatgt gaaaccaatt ttgtccaaga 180

tccgcgagtt tattcttcac atccattcaa accaggagat gatggaggat tttaagcact 240

ggactgaagt ttatcaagaa ggttcatgga aactcccctt tgaccattca gcaaattgga 300

acagtgatta taatatgctt gatgtggtaa agaaggtaat gtatagtcca ttcatgtata 360

tttggggttt gctactgtac tcccaaataa ctgtgtttaa ttaattcgat tgtatggtca 420

ttatcatcta ttacgtgaaa tatatattta tatgattttt tattttataa aataggatac 480

ataaggaaat tttatctcta aaaaaccttt cttttaggtg catgcatgat ttgttggatg 540

taatatcttt ttattttaga actttggatg acatggtata ttttaatttt gcatggttag 600

gctgtgacgt gacaattttt tttaaagaag tgactgatct ttctgtacac taacatgatt 660

aacacggcat gtatatatgt tttggccacc actttgtacg ttagcatata taacatgtac 720

attttgtatg ttaatgatga tttgtgtgtt tttgtgtaaa tatttaccac gttaaaacaa 780

aaaatatatt aacataacat tgtatacatg atgaaccgtt tgaaaaaatc ttttaaaatc 840

ctatcataat tggtatgcaa ctttgacctt gtagcatgat agactcatat gtgtgtgaac 900

agagactgta gcctccaact catgatcatg atgtgcgtca acactatggt gcacttgacg 960

catgcacacc gatcaatttt aggaaggaat tgatgtgcgt gatgtgcatc acgccaagta 1020

gattaaggag gtgggcgtga ttacctgatt tttgttttct gttttttcta actattttaa 1080

ttattaattg ttttgtgttc taaaaatcaa ggacctagat ttatttgagt tcttaccttc 1140

tcaaaagtaa tgggagtacc atagcaaacc cctgtacatt tttaccatgc tgatgctctt 1200

cagttctgta tactcttttt ctttatatat tttaggctcc taacgcaata gagaacacca 1260

tcaagaaggt tgaagagatc ttcgtaccaa gggattgggt tctgactact gcagagaagt 1320

cagtgatcga tgtgttgcac tcataccttg aaccattctt caaaactact acaaaccttt 1380

gtaattgcaa gctaccaact cttgggctcg tcttcttctt catggaccat gtcttcgagt 1440

tgatcaatct gtgtcatggc agcag 1465

<210> 5100
<211> 1491
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_2792_G1, chr1:14400844..14402334, Cluster 31

<400> 5100
ctatatatgt ggctcaacta tcttgtacac taaatcgcct attcatctca catgaaataa 60

attagtctgg cattcaatta tcaaagccaa atcaggtctt tcactccaga gctcctgctt 120

gactagttgc cgctcttccg tgatgtttgc cacctcttcc acccccagac tgcagtggta 180

tactttcccc caatctattt ttagtgctaa aattggggct ttctcaaatt gaattatttg 240

cttctccata tgcgcatctt actgtaatac gcggtggtgg cctatgaccg ccaggatgtg 300

tctacaacgc agtacctatg gctataagtt gcagcttcct ccacaactgg taggccaatc 360

tcccccatgc aggcgcgcac aggagaggga aggctctcac gcgtgagaaa ctgagaatcg 420

cctgcgggcc gcgaatggcg agcgagcacg gcttgagaat ctgacgatgg aggaagcttg 480

gatagtggaa gggtattttt ggagatcaat ttgtagatgc tggtggaagc gttttctttc 540

ctatactggc cttctcgaaa cctgtaggag ttgctctaac aggtaagcat catcagcccc 600

tccttgtccc tcagtttgta atacagcaat ttcagatatg gacatagaaa aactctaggt 660

ccaccactga tagtaatcct ctaccatcaa aatatatttt atttgttttc gaaaataaat 720

aagacaatgt taagagtaca tgtagaacct tctaaacatc tgaacttcag attcaacacc 780

aaatcaacat gatgagtttc aacatgtgag ttaaatgaca aagtgggttg ctttagaaag 840

caacacaagt tacctagtta gggcttaagc agacaattat tttttgggta gtgatttaca 900

aaataattta ttttccgatt gcaactatgt gttacactca attttaaaaa atatgtttta 960

taatcagacc acacatcgaa gtacaggtgt gtattatcga ggtacatgat tatttcaata 1020

tttgagagag ccttttcaac ttggtacaat tgggacaccc aaatggaaag aaacagtatg 1080

atcaaaggac ctgaataggt gggcacaata actgaagtta tctggccaat tattaagtaa 1140

cacttttta gaattcctgg ggcctggtca gcatgtacga ttgaccataa attgttctgg 1200

tcagcatagt tattgacaac tccggaaact atctgataag acatacttgg gacctgtttg 1260

tttgagatta taaatatgtt tagattataa ccccaaacaa acaaaccctt catattccta 1320

aaacaagtct aaaatttaat taaatatata ataaatgtta catatgctat ttgtcaccta 1380

ggtgcgactg ggtgaagctt cacctaggtg acaaacaacg ctggcctatt aaatatttat 1440

aatatatgat taatattctt agatagatcg ttgaaatcaa ttttacaata a 1491

<210> 5101
<211> 1752
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286489_G1, chr8:123307173..123308924, Cluster 31

<400> 5101
tccctccgtc acaaagcctt cacttggttg agttagactt cgcttttcct ctgttgtgac 60

ttgtcctgtt catgttataa atgaatcgag cgagggggtg ggcgaccttc actccaagac 120

ttaatataaa atgttgtaga ataacatgga aattagtttg ttactatcgt ttctggttgc 180

aacacaaccc attaggacca agaactcttt gaacatccac tcataattca ttacctttc 240

atcacgcatt aagactcttg caaaaatcgg agtgtaaaaa atattaacat tgacaaagag 300

tccaaacaac attttgtata agttcatata atatgtggtg tcaattttca taacattgca 360

aaaaatacta caattatgtt agttcttttc gcttgccaaa ttagggtttt tttgatccat 420

gctatgaaga ctaggcccaa ctaaattttt ggatatttat gtgtcttcct agtacatagt 480

gacctactat ttaaggtatg tagaccatga tccaaaatat aaatgccatt ttatgcaata 540

aatcttgctt agcatcatat tattcttata taagtacttg agcatcgatc catcttcata 600

tgagaatttt attatttttg ttcatcattt gtagttgcta tagattttgt ttgtgttcct 660

tttacatgta ttgaaattat attatcatca tcaatgcaat ggagaatgat cattgtctca 720

tggttaaaac ctttgttctt acttttaatt cgtttttgaa aaccctacat gacaaaaata 780

catttaaaaa tttagtgatg gtgtaaatta ctatattcaa tgttatggtt gtctcatatt 840

gtatcattaa tagccaaaca taattatcaa cctctacaaa caacatacct cataggttaa 900

taaccatcat tgttcttgtt aatgtttcct ttaccaatac caaatacaac ctacaatgag 960

taatgttttt agaactatga attatctttc aaatcaaatg ttaaattagg agtggttaaa 1020

taaaaaccta caattatacc acctatacat ttgaatcata tcactttctc attgtcctct 1080

aaattgttcc cattctcagt gttgctacaa cttgcatgtt ggtgccacct ttgatcctcc 1140

ttaaagaata agaaaattag ttttattttt cacttgtaca atgatttaca ttatgcacaa 1200

tgtgaatgtg aatactaaaa gtgtggacac aaataaatat tcaattacct aactggtaca 1260

tatggtcgtg tagtaagatg aatgttaatg taaatagtta cattcaattt gaacctttta 1320

ttgtatcctt gtgcatttgt tgttgcagca tttattgcct tatgctcatt attgtcaatg 1380

ctagtaagtt gaaaagctta gtcattattt tatgtgcctt ttacttcttg aattgacatc 1440

atctcctacc ttgaccaaat caatagttaa gtaaaacaca aatattctag tgagtccatg 1500

tgattccttt tggttaggca tgctagtttt gtcggttaag caccatatac cttctgaagt 1560

tatgaaatgc cacctccaaa ctcgagtttc taacatctcg tctttaattt tctttttaat 1620

aattatccct attgccattt tcaaattcat aattaggtaa gtaatataaa caaaatatgt 1680

ttttttgtaa atccaatagt tgcataagca taactcttgt gtgtgactgc aacaagtttt 1740

ccctcttcca ca 1752

<210> 5102
<211> 2850
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_286490_G1, chr8:123309122..123311971, Cluster 31

<400> 5102
atcttgatta actcttttca tctccattgt tagctctaac tagcgcggca attgctccct 60

ctatcctaga aacactcaca ccacaaggta attctttgac aaaacaccct atacctacac 120

aatcatatag tagtacttcc tctatcatag aaacactaca tttctagcat agtgcttagt 180

aaaatcatct tttgtttgac ctgattttat ataaagggca acaatattta tcatactaat 240

taaataaaca tcattagatc cgtcatggaa tatattttct atatcgtaca tatttgaaat 300

tctaaatgat actattttct accccattct gaattgaagt cattttaact ttttatatta 360

acaatttact atgtattcaa atatagcata tatgtagatg cataacaaaa ttcatacacc 420

tataaaaccc tgagtaacct atatttgaaa ttgagggagt aaaaagttta tcaaacttca 480

tatagtttga cttagaccaa attcagaatt tcattctttt ttagatggag gtagtataaa 540

aatgatttta aactatcaag ttttacaaaa aatctttcta tacttatatg aaaacctaga 600

gagggagaat aaataatcta tgcacataat tgatgactat actgaacaaa atataacatc 660

actatatata acatgcaata tacatcccac ctatctatca cacccaattc aaaattgtat 720

gaatcctcat gatagacata gcatatacta caaatagatg taggatgaag tatttagaag 780

caggagcttc agctaatatt tgcactacca ccaataattg gcattttcat cgagaattct 840

atagtagggt caacttcatt gagaattctt tagatgcctc tcttctcttc aattggttat 900

tgttgtcagg aaaccttgga aaacataagt tttccttttg actcctcctg agagaccaac 960

tcaacactag aaatttaccc aggaggaaaa taagcaattg gatgattaca gttgtgtgct 1020

atgtaataac aacaaatata atttggccat ttttgttgtt aacgtatgat ccctttttag 1080

gtgagcttta tatgaatcca aaaacctaaa tcaccaaata gaagtgatgt ccaacctatc 1140

ggttctccaa tatctaagag caatgtgtac atcaaccata ttgttctaag tgtgatattg 1200

gtatatcagc cattgcttgg ccatcacttg gacttctctt agataaatga ttaccttaca 1260

acgtcttttg tgaagtaatt cacaacaacc aacatgaagc aatacccatt tgatgacatg 1320

aatgtgtccc ataacaaaac ctttccatga tcaaaatcca agcacttaag aaacaaagcc 1380

ttgattactc tttgatatag cttatgtgca agaatctaaa cacattgcgt ccaacactgt 1440

aatgaacctt agcacttaga tcataaacaa tttataatgg gaatcttcca tttatccaaa 1500

tcaaccctga gctcactcaa gaaaactttg aggtgatttt gagcatcccc taaaaatagc 1560

cttgtttgcc tctggtagta gtttggctgg ttcatcttgc acacctaaag ccaaattagt 1620

agactcgacc ttactagttt ttgaaatcag cttggccaat tttggcatac aagtaacaat 1680

tgagtgtttt taaactagct tttccttgaa tcaaaattta tacccactaa tgttgtagtt 1740

tgatacttgt tgaaccaata tattaacctc actggtttca tgtcttggaa taacggaatt 1800

tgaatttggc aaaatatgta gtgatgtcaa atcatttatc aaaatgcgca ttatgtggtc 1860

tttcaaaata ttaaatcatg catgcaactt gttgtatcat caataaagaa ttatcaaggt 1920

ctctatcatg tttcaccttc atggattata atatttctaa ggtgaataag aaacattcac 1980

aatgggcatg aaaattattg caaatataat ttaattgtct agcatcgcaa acaccaccac 2040

tataagaaat aatgattatt ccaacacctt aggctccttt gtaagcttat taattacttt 2100

gtcacatcca taagataaat ttaaaattcc tctatcatgt catagacttt aaagccatca 2160

aagtaaattt atgaaacttc tcctcatagc atgatagttg cgagcactca tcgactatga 2220

ttttaagctg acaattacaa aaaattggcc atatgaattt atccacatga gcatgcacga 2280

caaaaatgca atatttatct cttaaagtag taaattattg ataagcaaaa taatttgaca 2340

accctccaca gtataaggag acactccacg catcaatata aagatataat ggataatcaa 2400

atataccaga ggatggattc catgacatag gcataggcaa aaaatggata atgcaatgac 2460

caataatttt gatgatttag cacaagcctc caacttggga atcgtttgtc gaattttctt 2520

ctttccttta attttgttgc acttttttact tgagcatcat ccgtctaagc ttgggcacgc 2580

cttttatgaa cctgcaccaa gccctttttgt ttcaaaattt tctaaaataa gattcaacat 2640

cttattttct tgtcactttg gtaaaaccaa atgagcatcc tagttttatt tctattttaa 2700

ataatggtaa atatttcttg attttgggca ctctcatctc cttttgttca gatttagcat 2760

gtagaatgtt aacaaatgat tttcctatgt atttggcatc gatatctaga tttttcaata 2820

atgtaattga ctttccagta gttgaattta 2850

<210> 5103
<211> 1776
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_2883_G1, chr1:14816487..14818262, Cluster 31

<400> 5103
agtctctttt tctatggcaa atttattttc ccgttgtgtt ttagtctttg tgaggtttgg 60

acatgttgtc tactggtttg gagacctcca gataggggggg gacttgttag gctcttcctc 120

ggtactgccc tttgtagctg ggctctcgaa gaccctcatc tattcaaaaa gattctcatt 180

atggttagtc tgagaaccat cagatcaaaa tcttcactca tcggcaagag tattagttca 240

gctcactaaa actataagag ctatgcatat gcaaaatgaa atgaccgaga gggaatgtag 300

cacaacggtt tctctagttc aaatttttt tcttgtttgg gaacaaattt ctataagccg 360

cctcaattta tttaactact ctatatcagc cttaaattaa ttttcgtcta acataaacac 420

cattttctta atatcaaata atatgattac gtgttgctag gatactaagt ttgttttaga 480

gaagtgctac aaaaggagtt taaaaaatat gctacgaaaa ggagttttgt gtgtatttta 540

gttaaaccaa ggcacgataa taaaaacaaa caaacgaagc aaaagctctt agaatatccc 600

tttctacgaa agaattggca aaactgtaat cctttatata actagagggg aagactttct 660

tatagcttat ataactaaag tgagttaatc aattaaaaat ggagtagcac cacttcgaga 720

aaggatttta gaaaaaaaag gaaatgatct cggcagtttg tggagattgt agctgtacca 780

ctacacccat tataaactct atttttctaa gtgggcaacg tctttctcat aaagaaatca 840

accatcttgg ccactgcgtc atgcaaagat ttgcaggagg tgttcattgt tattactaaa 900

gcacaacctt tttcttcata agttgacaag atattctatg tttcaaggcc tcagacacta 960

gaaattagaa atttaaatat gacataacaa aactagtgaa tgaccatttc tttcctttgc 1020

aatggcgaat ctagcaaaat aggttaggta gtgcttctcc tattatcttt cacctcctac 1080

caacttttta aggtcccatg catactaaat tatagtggag gcttagaagg acttcgaaca 1140

gttgtaactt tgcaaggtag cgacggctta aacccacata gccccggccg gtactgcaag 1200

ttgcaacttt gcaaggaagc cattcaccgc ttaggtcttt ctaaaacctt gctttgtctc 1260

tgttatttgc tataaacctt tctgtggtgc attatgagaa cttacccaaa tgttttaacg 1320

gctaacaaac attgtgacac aaaattggtg accatcatga gaaagcatat acgccttttt 1380

ctcagctgcc atcttcaact ttatggttga tggaactccg gagctaccaa ctcgcagttc 1440

ataggttgtt taggctccag ttttctgtgc tgtctcgcaa aacaaaaaac ggaacatgtg 1500

ccctagccaa agtagcaacg aaaaggtttg tcagatgaac agagacacga aaaagacgta 1560

cgcacggaac ctcagggacc acgaccacct tccccggtcg agcctgtttg tatttatatg 1620

agatgtaaca gttctccatg atgaagtgac agcctacaaa gaaacgagaa caatcacatg 1680

agaaacaaat aatagctagg ttgttttcca ttaagaaaca attaaactag attagtcacg 1740

gagcaaccaa ggctgcatac aaagagaaac aaccat 1776

<210> 5104
<211> 2344
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_29158_G1, chr1:178391463..178393806, Cluster 31

<400> 5104
ttccttttta gataacaaga ctaggtgtct acttccccac ccaagttgcc tggggccaac 60

attcattaaa tgtacattaa tctgattact aatataatgt actaccaaat gcaagttcct 120

cctatagggg cctatgcaca ctaaaatatt atccccttac ttcttattta aatatacttg 180

gcataccatg gtattaactt aaagcatata tgtgtttgat agactaggga ttgcaccaag 240

tatcctaatc aagggcaaat aggcaatgcc ccaagaaaga caagtttcat ggtacgatct 300

aactctgcat gataaaaccc cacggcttgg ctgaatccat ccatctatgg tgactcttgt 360

tatgaatgca gcttggtcaa atcacacagt gtgccaaggg ttcttactag gccccaatat 420

agttttcaag ataccataga gtaggacatg ctacacgtat gactcgatag aaagaatttt 480

acaatttttc taaccagcaa tagggaatat gaccaaaggt ggcccaaagg cttttccgct 540

tggctaagta ctcataaaca gataagtgtc tcatttattt tagtacccac attggggacc 600

caattttgct tgcgcacaaa atcccctaca acaagcttcc aaaactagta gacggctaga 660

aaccattatg tagttgaggt cataatagaa ctttagtaaa gtcaagtcct atcagctcga 720

gacccttatt tgtatacaaa gacaatgcat atacccttat ttatagtttt aaaaacactt 780

gactgcctag gcttgaccta tagtttcctt gagatctaag aattagattt tatgtagcct 840

accatgaatg ctcgagaccc cagaaagatc tatgtgcccc tgatgtgtcc caaaagaccc 900

tggctatggt tgagaaatcc tactagcacc aatgacctta gacctctagg ccaaacccta 960

gcgaattcag gacccttggt cttggaatag ccaatggtag ctcaaatgta aagacagggg 1020

aaactaccac acttgacaaa taccaaacct ctcgtcatgt ggtgaaaata gagtttgcag 1080

ggatgcctac aaagaccatt gtcctcctag gccatgatcc ttttgagttg gactgcccat 1140

ggcatatcct atggcctagc cattctagac taatgtttga aagtggtagg tgtagaagca 1200

tgaggcggag ccatacaatt gctaaaccat ggcatgtacc tattcaacaa tgatgtgtgt 1260

cattctcgtg tggcctgtcc tccttccaac accaccccat aagccttaaa ataattctaa 1320

ggctatggga tactgaagaa gtcactcaaa atgccaatac tgagcgatga ggagcctagc 1380

ttgtgcaatg agcactgaag gtctcgacaa acacctatgt tggtgcttgt caccatgtta 1440

tcatggacca tacacccttc aaggccctag acctagcagg ttctagtgac aactaactta 1500

ggacccccga agtctatagt ctagctagca cttaagcgaa ccttggactc gcttcaaaga 1560

ataatcctca ttgatgttta cccaaggaga tgaaaacaat acacttgttg tgtccctaat 1620

gacatgtacg atagatattc attgtatcac atattggttg ggaagggctt gatggtaggt 1680

agggcccaac ctaacttaat gccctaggga catagctatg accactcagg ttaggccttt 1740

tcacgcttag ccacacaaac acaaatccta tggcctcact atttcctctt ttttggtata 1800

actctatgac aaaaggatta aatgacacct atataagttt ttccttaaga atggactgtt 1860

aggacaacat acctagggca tgctccccca actatgtttc catgggggtc ctagccaaat 1920

aggcttggtg tgtcaagtag aggcctaagg agtgagtttt tgattgacta atggttgagt 1980

aagatagcat agattagggg caagaacttt atggtgttga aaatctccct ataggaagga 2040

tacctataga aagataagta ccacacttcc attttacata agttattatt ggtcaactaa 2100

tttatccttg caaaagctca tcattagctt gccctgcaca cctttggaag aaacagatcc 2160

ttgctttaga gtgttgtact ttcaaccttc tgtttaaaca aagttggtga gcctttatgg 2220

gagccaaagt tgaactagtg tatgccagaa agaatctaag ctaagtagcc tcacaaaggt 2280

tcgaaggtag tgacccagta atggctaaaa catggtatcg agctgctcta ccaacgtgac 2340

tcgc 2344

<210> 5105
<211> 1508
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293827_G1, chr8:161863392..161864899, Cluster 31

<400> 5105
agcgcccgca gtttggcgcc tttgaccttc aatactgggt tcatgattca ttcctcttcc 60

tgtccttgga tggcgacgtc gttactggga cccacacagg cacaaccaca catccactga 120

gctgttgagg acctgaggtg agcatcactt cgtgagcttc tctctcgtct tctcctgctt 180

ctatctgaaa ctctggttgc ctctcctatt tggtctttag atattgatga aaatgagata 240

tgatgaacga tatttatgta tttatgtgaa ctgtgaagca catgctagtt gctaaattac 300

aatagacaga gtaatagaaa agagatgcat tgttgagaaa ttgatgtatc acattttctc 360

tttgtttatc aatatagact taatcgttga ttgatgattt acaccagtac aaattgatac 420

attgcagtac agacttcatg ctagttgtta attgatatac agatatacta tatctcttgt 480

ctcctcttta gcctttgatg cattgttgat gtcttacatt tttttgtctt ttggttgttt 540

aatagccacc aaatttatag ttgtttacca aaatatttct tgtattgtac agaattatta 600

tatataataa attaataata gacttggctc ttggtaccca aagttaaaat tctggataag 660

ccactgcagg catgaaaggc tatgccccat taatttctac tctggtgtgc ttgaacttat 720

gtgtgttgct tgaatactag atctatcaat ctacttcaag aaattgtata attattaggt 780

acctactgtt gtaggggtgt tgtgaaaaac aattggtcga tcttttcatt gtttgtgctt 840

actagtgaat agatacttgc tccgatgcag tcctcatttt gcttaaggct tggttctgag 900

tggatagcat tggttacaac aaaacaattg gcaacaaaac ccaacttaga ggcggctagc 960

attttggggc gacctcaccc ctcacattac ctcattctgc accttgctgc gtgatgggcc 1020

tgatggcact ggcacttcca ttgcaccctg cagcgtcatc cctgattcag aactgacacc 1080

ctgcagccta cagattgaga aggggagcca atgaattgca ccagttccct gaccctgagt 1140

ctgcttgttg ctccttgacg gttcatccac acctgtggtg gaataagcat cgcccacagt 1200

gagctttcct cttcgttccg tactcttgac attgacaaaa tttccatttg tttctataaa 1260

atggaagcaa aattgttgca ctgtgtgtta aatgggaaca caatttctgt gggtgtgata 1320

aatagaaaca aaactactgt gggtatgtta aatggattgc cctggttgta tacaatggtg 1380

atgatttttt ttctttttgt tgtttccttt tgcgcttcat aacttatgtt ttataaatgc 1440

acatatgcaa acctctaggt tggttttgtt accattttct tttgccgtaa ttgatggtat 1500

tcacccag 1508

<210> 5106
<211> 1435
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295655_G1, chr8:170459341..170460775, Cluster 31

<400> 5106
taacaaccat aaatatttca taaagaaaca acacaatata ggaaggatgt ggagcatgct 60

ttctgggtcc tacaagcgaa gtatgtcgtg atgaagggcc ctgttcgggt atgggatcaa 120

gtaaacctca aaaacattgt tgactgtgtt gtaatattac acaacatgag tatcgatcac 180

gagagagaca tggatcagct tagcttaagg actatgatca agccttaggc ccatggtatt 240

tcccccaaca aaaacaagct agaagttcaa attttggtta aaaaatactt gtgcattcaa 300

agcagggaag cacacaataa cctacaagcg gaactcgtcg accatgtttg gaatcaattt 360

ggtggacaat aggccagtca atgtaattac ttctacacta acacatgcaa ttgttatggt 420

ctgaatttga atttgttttt ttgtaaaaca tgatgcaggt agtgttcatg tactactact 480

tggatgggaa actagctaag atgtagatgc tcccattcat gttgcacatg ttcggagtca 540

ttgttgcact acaacaaagc aaagtacagc agatgcatct gttagttgat gttgtttgtg 600

cacttcttca gcatgttgta cctactgggc aagtgaaaca atgtactgaa ttgtatgtgg 660

caatcactgc tcttgtatgc ctgccaccct tgcaactgat actcccatgt cgtcgtcaaa 720

ggatcgctcg cctttataat ctcgcgccca actatgatta tgccactccc ctatagttta 780

tcacctgaat gcgctaaata gggtgaaaat aagtaaccaa attctcgaaa atgctaaagg 840

caaaaaccct caactcaacc atatatcgag atttgaactt ctcaaaagga gaatagtggt 900

tacatcaata tttgtctaag atgcgggatt tactgataaa atcccattac aaaagtcaaa 960

atgttgttca tcaatattta caacaggaac ggtgtaatct ccatgaacaa cataaaaaaa 1020

ttgacttcca acaaaccatg tcataaacaa tcatctcttc taaacactaa tgatcaacga 1080

tagcatggtt caattatatc aaagttcgac aaatatgcaa agttcgataa aagtacttaa 1140

cacattgaca acgacatagt ttaattacaa caagtttgag taatgctaaa agttcgataa 1200

aagtactcaa cataaccaac ttcaacatat tatcataaca atcatcattc ttgaccatta 1260

ccctcactgc tggaggtcct gatagcaatc ttcttttgtc tctcaatgta atagccacat 1320

acccgaggtg gcagttttcc aatgttttgt ttatctcatc ttcctccctc agctgcaaca 1380

tcctctgttg tatctagaca ttgcgctata ttgcatcgac tttccttact tcaag 1435

<210> 5107
<211> 1745
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_298133_G1, chr9:5661645..5663389, Cluster 31

<400> 5107
atgctataat cagcattctc ggtaactaag catacgaaca aagatctagt tcaaactaga 60

tatgtggtaa catgtaccta aactattata aaccttatgt tttatgtgcc atccttctag 120

tttcctatgc atagatatat tgatgcatat tgttagagta ataaatttca acaattggcg 180

tgctaggtag tggtattttg catataaatt agttgtctca aatgggtcat atattcaact 240

tcattaatac tggcaacaaa atcggtttta gcaaactagt tttcattgtt gactagctca 300

gggaacttgc acctgcaggg ttcgaaacca tccacgcaag agggggagta gtcgcttgcc 360

atccgcttgc taaacgccga gtttgaagat aaaatggaag aagggacata caacatagca 420

accacatcaa ttccacgctc agaaggccct cactacattt gggcaaaaga acctccttca 480

ctaagccttt tgtatcacgg aagatcaagg ccatgtcctt ggcacagttt tagcatcgct 540

acccctatac atcccatctg gcttctccac tggacacatg gtagcttatg cttcttagct 600

ttaccaagcc attgatgacc ttagcaatat aggttatgtt atcatcaagg atattgacat 660

ggccctaatg gatgtaatgt tttaccgata gagaggccta tgggcatatt ttctaccatg 720

tttctaattg aggaggttgt tattggtttg accatcaatt atgtggtggt caatctagag 780

taaacacaca tagtggatac ttggaactat tacttgccaa atacatagat aaacaatact 840

cgagcaagac aagattgcaa gctttttcac ttattcctga ctatgtcgag gggctcgagg 900

attgcgtata ttattaattt taaggccata tgactaagtt ttggggtgta gttaccacta 960

tgtgtgtata agctcaacag gtggtactct gtcatagtgg ataggattaa agtttttca 1020

ccaccattta taagtgattc acatgtggca aaccactcaa tgacaaatgt tatttgatca 1080

ttgccatggg gtggtactct acaaaatgtc taaggatgta taagacccca ataatcgatt 1140

ttgtatattc gggtactcgg tttttaggct cgatggcatg agacatatgt ccttagtgga 1200

tacatttaaa aacttttgaa taatagacac attaaagtta gaagattata gaattgaccc 1260

tcaagctctt ggtgataaac actgaggctt ggaggctaca cctagttggt acgctttgca 1320

tcaaagtgca cacctttga agaagattta aagagcactt catggcttca ctctagcagg 1380

tactcaaata cttcttgatt ctacatagag ataacatgga ggtttaagaa gacttcaaag 1440

ttcaaccaag aagagctcga gggcttgatg gaccaagatc ctaagggttc ctcattgtgg 1500

tgtgaattcc atgacaaaaa gttgtgtgat cgacacacaa aaatgctagg aagacaaaaa 1560

agtggtgtga attccatgac aagcaaacta agttagtcag ctataggaag gacaatcatt 1620

ataatagaat tagaactact ctatcataca cagataggac tagaatcatg cacctatact 1680

caggactata tagaggtagt ggtactcccc ttgtaataga tcatattcaa taattcgaca 1740

tatgg 1745

<210> 5108
<211> 1501
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299825_G1, chr9:12377823..12379323, Cluster 31

<400> 5108
agagttttcc tagcaactaa gtatgacgtt gaggacgaac cagtagatag ttttcccttc 60

cctaaaagga ggttattagt tgttccaaaa aaatatagag ctagaattgt gaatctttag 120

agaacattta ggtaaatcct tttgtatatt atttgaataa aaaatatttg tataaattat 180

aaaaatttat attataaaat acaacttcaa aatggagttg gaaccaatcc catcaacatt 240

gacaaatatg gtggcaagaa ggaccagaat aaatggattc aatgctactc gcttgacttt 300

atggattaag tgcgacaaca aaactagtaa caataaaatt tccacgctaa taagtctttt 360

tgtaatatca actttagtat caattttagg cacaaattaa ttcataaaga aatagaataa 420

catgacatat gcgatcgaga ttaacaaaat tatggtactc ataattaatc tagagtttat 480

cacaaagacg aacccgcagg caaggactag tgaatagaaa attaaggtat gaatgtatac 540

cttgcaacag ggtcagtgtt gagagcacca gatgcgttgt tgccaactaa agtagccata 600

ctatttagtt ggcctcaaat ggtgtagcca tacaagttgt tgcaaataaa tagttgatga 660

tatacaaacc ctaatgaagt agtcattcac gacctctagg aagtagacgt atagtatgaa 720

gatgctccca aacagagtcg tggtaataga gatacaaaag tgtagcaaac aacaggacac 780

agaggaaaaa agtcagaaat ctcttaagca gagtacctag agagcataag agaagcatgt 840

ctcttatata gacacgggat aagctcatct tactaaacaa gaacgtcctc cgatagagat 900

gtaatcagat tgaatacaaa cgaatattat tgaaatcata tttatttttg tatttttatt 960

cggattcaaa ttcgaacaga aatctcctag gtaggagtac ataaagagca taagagaagc 1020

atgtctctta ggttgtcttt tatcgatcgt gtaaaatatg gaacatgata ctgtctgcaa 1080

agtaaagttt gaaatagaaa aaataggtga tgtaatagtg gatggagatg accttatata 1140

gacacacgat gagctcgact cactaaacat ggacgcctct tgcctctggt gtatgttgat 1200

gatcatcaaa ccgttaaggc atgtacaacc tagagcccat agaacaattt tctaaataaa 1260

agagacagct aagaaactct atgatacaac catgcgactc tagatcataa atgcaattaa 1320

tagacaataa gtatagcgtg aagagacggg ttcttcgcga agagcatgta tcttgatttt 1380

ttcccttacc cacctagaga cttctcaaca aacgcatcat ttaaaaagtt gtacatgccc 1440

ttagcaacta cagccggacc atttacacta tagttacccc ttttctacca aattaaactc 1500

t 1501

<210> 5109
<211> 1605
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301076_G1, chr9:19950415..19952019, Cluster 31

<400> 5109
gtggcggctg tccaatgttt aaggaaataa ccttgtcgac gatcatgcgg ctgctagcta 60

gctaggacct atagtgtctg gctcacatga ttaatttctt gaaatattag gcggtttagg 120

tcaccaacag ttttggcaat tatatcacga aatagggttg ttagatcgat cacgcggcga 180

ccacaacgac aagagagtgc aggtgatcga aagcgtcaac tcgacgtccg aattgtgtca 240

tgcttatgtg tggcgccatg catgaaataa ttaatccaac taacgtatgt acggccaatc 300

aaaactagct gtcgtctttg ttgccatagt acgtagatgt agatttgtgc ttttgctttg 360

tcctcgctag tagttttaaa ctagctgcgt gtataaaaaa aacaattaaa tagcatatat 420

ttttaccgaa caaatagcat gtgatttgca gtgtggtcat tcatgcatgc atgaagcatg 480

catgcagcat ttggcgccga ggttttcaac catctggtct cagggtgcct aataatccaa 540

tccacatggt gagactgctc actgccgttg gttgaaataa agagggaggc taaatctatc 600

agaaatatcc agcagcggct tccctctccc tccgtcaact ttcgtggtcg attcggtact 660

gcgagagtcc tctgtcctaa ccttgaactg tgagcaagcg gtatcatcca tctctctctt 720

tttttaatgg aattacatgg agatctacat acgcgtgcgt gttgccgtat ttgttatgaa 780

agtgaaacgt ctgaattgct gttgaactac gtacgtacgt gcaagtggtg tcgcgtggtt 840

gtagacttgt aggcacacac atgcatgcat gacaagattt ccttcctagc agtaataatt 900

atcagagggg ccaacgattg ttctaatatt tctcaagttg aaaaaaggca ctccatttag 960

ttgtgctggt aagaaaaaaa atcaaaaaaa atctttgcct cgaaatttcc tgtacaccac 1020

cgagtctata tatagtctgt gttgaattgt agaaaataac caatgagttt ggtctgagaa 1080

ccttgagctg tgtagtaggg aggaggtcgt cccatcagca tatatgcagt ctgaatctga 1140

atttcgattt gggcagagcc gcataggacc gcatactttc tgcggccggg tacaggcacc 1200

tctcgcctcg ccgtgccacc gcatccactt ccatggtgtc aataaaaaaa aaacttctcg 1260

tacttcttgg caaggtcata tatgatcgag gagagctagc ccattttgaa cctgcctttt 1320

ttttctatgc atgctttttc tttaacaaga aattaaaccg atgaagcatc gctgtcacaa 1380

ataaactcgt tggccttgaa gagaatttag cgccttctat ctcagcattt ttttttcttt 1440

ctaaaaaaac catcagtatc tgatctctct actaacctcc aagctacagc acaaaaccat 1500

gcagggcttg tttcataaca tttgcatgag tagactaggt ctactaccaa gacttggctg 1560

aattcatagt ccaacgtaca gaattcatcc tatatataat ataaa 1605

<210> 5110
<211> 2254
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301773_G1, chr9:23465509..23467762, Cluster 31

<400> 5110
tgtcatttga tttaattggt aaataaataa tgcatccgat cattttaaat taagtccaac 60

tcccgggaat acagaggaat tttaatttcc tccccggcc ccttctttat atataatcgc 120

gttaattagc tgaacgcata caaaaccaaa gatgactcca aatagtagct ggcttgctga 180

ctcaagacga cctcacaacg ccatttattc gtgacgagct agagggtagc tcgttggtgt 240

cggctagtac actgggttca ttggcgtcga agaaacggtc aaattacttc tttttttaa 300

aaaaaaagag aggtgatgca taggaaacta cgtactctac agtttactat gggcctgctg 360

gtgtgcccac cgaaaccagt gatgttcgtg ccgtgcgtct tcctgcttgc tctggtggta 420

cacgtagcca gtacacagtt acagatgttc ctgttctgtt ctgttgtgtt ctgttctgtt 480

ctgttcttca gataccatac tgtatctcat atctacaccg caggcgttat ggccgtctgg 540

accttcttct tcaggcggca tcgcatatat gaatgaatga atcatcaaca aaactccagt 600

acataaaaca acatgttgtc atttaaagct cgctcaggaa atccttgatg ccatccacaa 660

aactccagca cataaacaac atgttgttaa cgatacaatt gtggctaaaa agactccttg 720

tccttataat ttgccattta tagggaattt cgtgtgctta cgatttgcca tttattggga 780

gcccggcctg cctgttgccc cgttggctga tgctgacatg catgcccttt ccaagttcca 840

atcatattca agagaagcat gccagatagt aagcaggaaa ccaatcgatg agccagcagc 900

agtagcatgt cctgacagtc aggttcttgt tcgttggtgg cgacatttaa tttggcagtt 960

tttttttgt tattataagc acggccatcg gcgtttatta ggtacttctt gttttctctg 1020

atttttgtt aaactcgcga taatttagga cagagtgatc atgcatatat acattgatgt 1080

atctgtgtgt gtatatatat actagctagt accaaacaaa cagaggtttg ccgccgtctg 1140

cattgtcagt tccttgcacc tgcagcagga ctctctctct accaaagcaa agagcgtgac 1200

agatcaacaa aacatgggca tcaagcctac gatcggagat ttcctaccag atccaaccct 1260

acaagattct tccatatatc tcagtcacat catcagcaga agtaaacaaa taaatgacca 1320

tacacatata tatatttagc ttaattaggt gacaacgttc ccatgcccaa gctcaagtag 1380

gaaaggaaaa cgggtggcaa ttagtacctt gcctacacgc tagagcagga gcagcagatg 1440

ctacaaactt gcaatcatct cccgatgcaa gcttgttgcc gtcgttcacc ggcggcgacg 1500

attgggcaag tccgatcaac aagcgggcca cattgtcggc tactacaccc ctatgaacac 1560

cccccacccc ttcacatctt tctaaaaaaa aatgtgagcc gtgtggcttc gtctatacct 1620

gtgtggctgt gcataatgaa ttggttgccc cggacagggg taacaaggct agccaatagc 1680

tagccactct caaaacacaa aattgaactt gtaaagttca taattacaca gaagtggtta 1740

cgcgctgaac ttgtgtacgt attctttaaa cactttctta tgacacctct tgctgccaaa 1800

aattgtatac tacataagag aaaccagccc catgacacaa attataatca catgagacag 1860

ttgccatgaa ggtctacaca aaaattataa ttacaggaca tgagagaaat cagctacgct 1920

aacttttgct agattccgga ccgtttttt tttaaaaaaa acttgtaaaa cgcgtattaa 1980

agttattttc tattgagata agggcaccca tatatatatg agctgattaa gatatctaac 2040

attcaattca tataaaaata catgtacaga ctttttttctc tattagtgag gtgcgtcagg 2100

gcgtaagggc ccctaaggac ttattaccca gggctgaggg attcgtgcac ttatcagtga 2160

cgtgctccgg gtacaagagg tcctagggcc tatcccacta tgtgacctag gcataagagg 2220

tccaaaactt atctttgagg tgcgtcgtgg caca 2254

<210> 5111
<211> 1511
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_307528_G1, chr9:61813546..61815056, Cluster 31

<400> 5111
cacaatcgcc agcaggagtt accaatacta tatatatata tatatatata tataaagaga 60

cagcgcagaa taaacaacag ttgttaataa ccacgaggcg catcgcccaa gttcttggat 120

atgtcctcgt gtggctataa acttgatgca gtacacatgt acttgcatta cttttgccgt 180

ctgccaccgg tacaaagcca gctaaacaga cactacctac aagtagcctg tccgctcttg 240

tatttcgttc atgatgaatt agtattaccg gctggaaaca gaagcatccc tttcagttct 300

gaacgcaaag atgatgcatg tttcacacct aacttaaccc aaaacatcac acacagcttt 360

tttgctatac caaaatagca caatcttctt ccaaaataat actagcacac gtacacgcca 420

caaacttttg ctactagaaa tgaatatgaa aactgaaatg caaaaacaca caaatctctg 480

gatcactgat ctattcacac aaacacatct agtcctcagc tcgcccactc catccagcaa 540

tcctggaatg gaatggtacg gacgcagcac cactgcacca ggttggatga gggtaggttg 600

ctagcctgga gccgtacagc cttacaaatc cttcatttca tgcgtatcag cagcctcagg 660

gaactggaat ctgagaaaag attgaaggct ttattgctct cgcttcatgt cacagctgtc 720

gggttcacag caattttcca gcgtcctgtt ccgaggacag ctgagcagcg gaagcatcct 780

catcacctcc cctcatcctc catccagact accacctcgg tgccccggtg accaggtccc 840

ttgcttgtcc ccggcaaggc tagctgcagc ccaccacacc taccggcatg cctgttggcg 900

ccgccggggg cttgctctga cttgttctgc cacttcgcca cctttggctg acgggagctg 960

caaacctaga aatacgtcac gtatagtact gaattaacta attaattagt gtcttcgtca 1020

caaactatgt gaattaatag aatctgatgt actctttatt caaattgtaa aatgttctcg 1080

cttttctaaa cacatttttt agaaagagtg taaatctaag tgtagagaaa aatatatatc 1140

cggaaaaaaa ttctttaatg cagcaggtga taacagataa atgaatctgg tggagattaa 1200

aaaaaagcga tcatgaattt tttttactag ttgctagata gcaatgtaaa aaaaatcgat 1260

tgttgtcatg tccccttgat aatgtagttg tgtttgacac atttgcctgt ctagtaggtc 1320

tcaaggagaa tttggggctg caagcactct cacggagata atccgcagaa aaaatttcca 1380

gaaaggactc catgcagtta cacatcaaac ttgctctcac aaaatcacaa tattttggtc 1440

atacaagtcc gtgacaaaat ttttcttctt cttcattttt taaactatta ttattattat 1500

cgtatatata t 1511

<210> 5112
<211> 1825
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_309307_G1, chr9:73229774..73231598, Cluster 31

<400> 5112
cagtgtgctc gctgaccgat gggccccaag gaccaaagat cttatccccg agactactac 60

taaatatgaa ttggaatgag tattttctcc ctagtgtatt gaatgaaaga gagtactttt 120

agtggagagg gagtgatcaa agtggtccat ggatccatgt gaccaccaag atcacttgat 180

gttgttcttt tttgcatgct tccttgcatt gagtgttgaa ccttatggca acatctttgt 240

gagtgtggga ccttgtggca ggtggggcta acccatttgc tataggtgga gccaccacct 300

tgagtgtgag accttgtggc tgcatccttg tgattgtaga agatgatgtg caaagtgatg 360

gacgtccaaa tatatttggg ggtcgagcga cccccaaaag tagcttgtgg atcttcccct 420

ctagtgtggg tcctctttgc ttgctcttca ccaaattaca gcgcatgtag ccaaaattca 480

taggtcagtc gattggctaa ttgtggctaa ataggaccat cttttgtatg taaccaccat 540

aggccaagac tatcataagc caatagatca agttaggttc caagcatggt tttttgtaca 600

ctctatacct acatccaaat agaggacatg tacaaatgga accatgtaac ttgaacaaaa 660

tttagccatg ttatcctcat gtccttcaat ggtgacactt tgtggatggt tttgagtatt 720

taaaaccatg aaggaattac cgtcaacaac aatgcatgat gataatgaga ctcattgcat 780

tatcgtgatg tgtcaacaac atgtgtcaaa cacaagggct accacatcat ggcgatggtt 840

tgataacata aatgggttac taatgagtgc ctcaacaagg attgaggagt gcccttgatg 900

aggatgatat ctatcattta caatggatga tgagttaaca atatgagcta caacgagttg 960

acaatgcaat acatcgagtg aagaacacga gcagtagtgg gtcgatgatg cgaggcaata 1020

gtgacgaagg ccactatttg ggtgatgatg agggtcaatg agccccgttg atgatcaata 1080

ccatgggtcc atgaatattg ttattaacaa gggccactat gggatgacga tgatgagtta 1140

acaacatggg tgaatgtcga gggtggttgc atcatggtga ggacgacaaa cgtcgagtgg 1200

tcgatgagtg ctctcaatga ggattgatga gtgccatcca tgaggggtag caatgagtca 1260

ccgacatatg ttaatgatgg gttgatgatg ctcgctaatt ttgttgagga ttaatcccca 1320

tctcaagctc ctgggattga tctatgcata aagacccctc cctgtgtgcc aattgttcga 1380

attatttact ttgataatat gacacaacat atcatgtaga ggaaatcaga aggatagcac 1440

atgcttgttc atattcttga gtttacaagg agatataaga aaatctgagg agatactgat 1500

cgggggctcc ccacactttc ttatatagtc cacttgtagg gttatagata gagtcctgat 1560

aatacatgtg gatttcctag tttgttatga ggaaatcaat caattcatgt tggtaaatat 1620

tgtctttcaa gtagacgagg tatcctgtct aggttgggct ccttgcatag tcaacttggt 1680

gaatattata ccatatgggt tgtttttctt acggtgagat acccttgatg caaatcatca 1740

acacaagcca tatgtcaaca ctcaatgtga ccaacttgta ccttgtacta tctccatctt 1800

aaaaatctca ttctcacttc ccaag 1825

<210> 5113
<211> 2141
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_314277_G1, chr9:102371773..102373913, Cluster 31

<400> 5113
tttaggagga gaaaatgtta cgagtagctt gcctaagaga taactactct atccggttca 60

ataaagctta caatttaagt ttttttagga gtcaaaattt taagtttaat cactacataa 120

taacagttga aggacagggc tcatatggtg gcgagaagcc tttacactac actacctatg 180

tttaattaag tctctctgcg tagagattaa gctcgtctca attattcctt tcttagatct 240

cactgtggga gctgttagca caccgaacgt ttcactttgt actaatattt atactataca 300

tgtctgatat taaataagta tattagatca atatagaata ttttcttata gtaagcttat 360

ttagagacaa atattaaaag tatcttatat aaacttcacc agtcaaattt acgaaaaaat 420

aatttgtgta aatatacttt ttggacgaag cgagtagatg aatgtaacat ggagtcattg 480

gacagatatg ttatgataca gtgccacaaa gggatttcat agaaacgtca aaagttgaca 540

aaaaaaatga atgtaatgta gggagggatt atttcataca tccaaagcca aagccaaagc 600

caaagatata tacgtaggag gctattgcac tataagtttg gtttagcacc aatgagaaat 660

atataattag aacaaaattt aatcttggtc ccccctataa atactcaacc caatgctaca 720

aatctagata gagggcatcc atcatttaga aagcagcaca cgcagaaata aaaatatgaa 780

tgaaatggaa cggagcaagt caaatcagtc cccaatctat agatttatcc tagctataga 840

taacatatat attcacagca tcataaaaaa aataatacag aacaggcatg ctccaaaagg 900

gcagctaaca gaagcatcat gaagcttaaa aggcatgtcc atccacaggc aaagtgcagg 960

ccgcgcatac actgaacttc cagatcaggc tttaatgctt cgcttgatct ttccctacaa 1020

ctagtcacgt aatctattga attttgatgt gataagaacg gaactaaagt caaaaagacc 1080

aatgcgatca accaagccat cagtttttaa ttgacaactt accaagattc ctttatccca 1140

ggccactttt atcgattagt taatcttttc gatgctaatc gtagaggcaa ctatcattcc 1200

tacacttcaa atcttctttg gcctttcttg atgctctagc tgtgagaata tatttgtgta 1260

aaaagtgctt tggactttta atggctgtta cttgaatgga acaaggcagg gtccaacaaa 1320

ggatgatcat gctcaagatg ctctggatca aactgatggt gacattaagc tttgtaggct 1380

tagtggaaga agtagagagc tggaaaccag cagcacttag ggtgcggcat cttggaaggc 1440

tagctgcggt cctcctgacc tgtctatgga tatattatta gaacacatat tgcaatagta 1500

atctataata aaatgaaagc cctcatcaaa aagcaaagtt ttggtcaact catagcagat 1560

actgaacttc gtataaacta tgagactttt caaatttgaa tagcagcacc gccacaacac 1620

tagcaccatg tctatatatt actgtatcat gtaataataa taatcccttg aactcgaatt 1680

ttgctttaat ctagaaaaat aaattgggtc aaagcgaaac atgacaatat gaaataacta 1740

ccttgacatg taagttatga tcagaaagga attttacata tgctctgagg agaatggtga 1800

agtcttgcac caaaatcctc caatccccac tactaataat tactggactc ttgtgcatga 1860

gagagatgcc ttagttactg gactcttgtg cacgctctat tggtcaatag aaacgtaaag 1920

gatccatcca cttaatcgta aactctggag actatgagtt aatatttgcc gctagcaaag 1980

ttaaagatca agacctaaag aaaatctgca taaagtaaaa agtaacagga gatcctggta 2040

ggtcaaaaag caaactccta attgagattt ctcatatcac cagatataag ccaaaaagaa 2100

attacagttt cagctgaaaa tttatggacg tagaacagct a 2141

<210> 5114
<211> 2123
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320295_G1, chr9:134846186..134848308, Cluster 31

<400> 5114
ttaatggata agtctcaggt gcaacatatt aaatgtgtaa tgggtgacat tacatgcctg 60

gcaagcatgt tgttgtcgtg acttaggctc tagggaagtc aagatcacta tgttgtacgt 120

gcattaaccc taggttttag aataaaagtc aaaagtttaa ttaattatgg cataataatg 180

accctgatgg gtaaaatttt atctctttct ctagaatgtg tgcatgagta gacatgactt 240

ttcaataaag caacatgctc ctcatagctc ctagggccct agggtttgaa taagagctag 300

cgaggcacct cacactatca agagccctga atcgaagcaa atacgttcta aataagctaa 360

tatgtcataa tcagggcatt tgcattgcta agagccatga ctacaactac tagtgctttc 420

cctttagccc taaaacatat atgggataat gtagaagact cttcatggtc cataccatct 480

aaggaccaaa aaacataagt caccttcagc tctaggagcc ttaagccact cgggtatcat 540

gaagttactt catggagctt cctaagctaa gatccctgaa cataactacc ctcatggcct 600

aagacctaaa gggatcacca tacaatgagc aaggccaacc cttgtggggt tgaggggcta 660

gggcaaatac aatgaaacaa aataatagat gaatatcact aaagggaaaa atattgcata 720

tgtcacaact atattacaaa atggctttaa gccaaggtta tagagaacaa gggaagctcg 780

aggctactaa tcatcattgt ggtttaacgc tcttgctcta atatcaaggc catgctttgt 840

attgtcaaca aagtttgttg cttcatgaat tcatcgactt ggtgctacct ctatagtggt 900

ccttaccttc tctttagctt gctaggggag atcctccttt agacctttgt agatgtcttg 960

caataagagg tttgtgttca atctctttta ggtcactaag atgtcaaggg acaccttgag 1020

agatagttat cgactctctc aagctagctg ggtgtagact ttgccctaaa gctcgactac 1080

ttggtcgcaa tctacatgaa tccaaggaag gagccctcat gctttccata gtatgggatc 1140

ccccttcta aatccaccta aggtctatgc aaatcaggat cttcacttct tcactaaggg 1200

catcacatgc tatggtattt tcctccttcc ctgatacctt gattaggtgg agcttgtcct 1260

cttgatggtt catcttatcc tctaagacct aagagccttg ggaggatccc atatatgctt 1320

cctaaaccac catcttcttg ccttgagcct taaggttttc ctcttgccga cgataatccc 1380

tcactctcct ttttaggcct atattcttgt cctctaacat cttttgagca atttatagtt 1440

cttgggacta gtaaaagaga gcttattctc ttgagtcctt ctccttgaag gtttgctctg 1500

cctcttataa ctccaagagc ctcttggttg tctctagatc tttagaaatc aatgtttgtt 1560

tttgggttcc tagggcgata gatatggact caagctcttg atggtggagc tctaggtctt 1620

cattgttctt gactttggta ggttcccact cagactccta gttcacctgc cctcaaattt 1680

gggctaccaa ctcctcaatc accttgtcca ctatcactta cctctcgtta gttgcctcaa 1740

gtcgggtcat tgcctcttgc tacggtgcag caacatctcc caaatttctt tgccatcctc 1800

ctaggcttgt actgcaatgg tatggatatc ttaggcctcc tccttggcct tttgggtggc 1860

ctattccatt tccctccttt tgaggatctt gaatacaatc accgcctaag cttctttgat 1920

tgcatcctat agataggccc atgtctgggt aaggaggtct tggttgtccc taagcatcca 1980

acattccatg ggcaccaatg cccagacctc tttggtgggc aactatgctt ggtccaaggt 2040

actgtcacga agcaaatgtt gccatgaata cggtccacaa tttgctaaca tgtcactgct 2100

ctgcataagc gtcatctaag gct 2123

<210> 5115
<211> 1702
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_320988_G1, chr9:137993795..137995496, Cluster 31

<400> 5115
ttacaagagg tggcttgata tgaattggtt cagatgcacc tcccacccaa gcaccacaat 60

cagaggccac accgctcaaa tggtcgacat gccctcgtgt ccacatataa ccttcagata 120

gttagtctta ggcatagcct agagctacta caccaacaga gacacatgtt aatgagaggg 180

gtgagtttga agtggagcag gtctaagacg tcccactatt gtttgatctt catagagcca 240

tagctagcca tgtttgttga tatagacaca tcacaattgt caagtagttg ctagagtaga 300

ggggccctaa atcaagagta ctattcagca acaccatatt gaagttcttc tatagagctc 360

agttcctaga gaggattgct ctcaaggact ataagacaca cttacattta agcatttcaa 420

ttcaagtatt tacattcttg gaattgccat gctagtatag ggttggattt tagggtgtaa 480

aactctttga catatcatta gacactcgag taaagttgtg cttgtgatta gggtttagtt 540

tgtgcaagaa actttagaga atcccaattc attccccttt tgggaatctt gattatttca 600

agagatacaa ataccctcc acttctattc caatagtgta gtgaaggtgt ggaagttcta 660

cccttggaag cggaacttat gtgctttgat gcagaactta tgtacacacg cacaaatctt 720

ttgcactagc cagaacaagg aaattaggct tagttggctt tcttttggct tttggggttt 780

tttgtttgag taaagcacac ccatagaatc tttcatttgt tgtccccact tatagtatgg 840

tggttcctat agtcaacttt agaatataaa ataaagtagg ccttgaagga tccaaacgtt 900

gcttagtaaa taattatggg gtctcaacta ttctcataca cctctgcata ttatttgcat 960

gcccatacta gagaaatctc aatagatcct taattacatt gtcatcaaca caccaaaacc 1020

cacttaaggg ttgttgacac ttcttgtggc aaataggtcc aactgcaagt gcatgattgt 1080

caatgtagct ttcacccata agtattccta cgtatctatt tccaaaggga acatgaatgt 1140

tcttactaag aatcaagacc atcttatgac aataagttgt ttatgacatt ttgggtaaag 1200

aggaaccata aggtaatggt agttggtgga ggaaagaatt attatgattg ttcacttcaa 1260

tgctctattt tgttcaaaca ttgtgaaaga taacttgtgt tattacaact ttaggcccta 1320

tactttaaga acttgcctaa acacgcggtg tacatcacag actagatagg gctatcacca 1380

ccaactaatt accacacatc ccaggaacaa gctacaaaca caagtaaata atagtctaag 1440

caccattctt acactattga acactactct aatctaggta tgaaaggtag actagagtgt 1500

ttagagaact aagtaccagc aaacaatagt aaacacttaa ttaatcaagt accttatacc 1560

aaaaagaatc ttagatgtag ctcactagaa ggaaacccgc attcataggc gagatacaag 1620

gtggagatgg tgttgacaag cctaacactc ctctacactc cccctcactc ttttactttt 1680

tatacacttg tagattggta gg 1702

<210> 5116
<211> 1606
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_327541_G1, chr10:16507191..16508796, Cluster 31

<400> 5116
aacacactat atatatctag tgaaaacgtc acagatattt gcacaataag ttggatatac 60

attcagcatt gcatcaagta cgtttttctt tcagagcata agtgccacag cactcagtca 120

ttgcatgaaa taacaatggg cccaggaagt ggatccaaat aaaaaattca tgcttgtaag 180

ctgcaggcta tttaaatatg acagactttc tagtcgggaa gcagtgtact tgcttgtaaa 240

cagaagagga cgatggaggg ggaaaaggga tggaactgcg accaaaaagt ataccccaca 300

tcccatatac tgtcgatcgc ttgtacagca agcacatgat attatttagt tctaccgtgt 360

cctagtccta caaatgcttg ttcaatcctg cattcatttg acaacaagac ctctggccgt 420

gggccgtgtc aataacaact cacgcttgaa cacaccgagc aatcagattg gatagttggg 480

atggaaatta tggcagtaag tttacacttt acacgaaaca gattaagaga agatcaggaa 540

acaccatatt aaaattattg catgcttttt ggttcgagaa cgaattgcat ccggtttcat 600

ctaatgatgt tccctgacca catggtgttg attatatcag gcaagaaaat aaattggaaa 660

ccggtcgaaa gtcgaaacta aacctcaggc tcgagcgagt tacgatgatc atcgagaagc 720

ttcctaccac agcaagcacg caccctagta ccctacggac atacaaagat tcaagccagc 780

atgcaatcaa gaccccaacc cacaccaccg acgatcgatc tacccgcctt ccataagtta 840

aggcccaatt aatctgagca agcgatcaca gtaaacaccc caaactcagc aatcaatccg 900

cagaggaaca cacatgaagc gattgtggag gaagaagacg gcttgcagtt gcgacctagc 960

tatagctagg tgcggtgcat ggataccttt cagcggagga aggggacgag gaggtccagg 1020

aaacaagtcg gatcggctcg gcggaggcta tagtggatcg gaatgcgtct cgcctcggcc 1080

cagcaaggat gaaaccctag atcatgttcc gccggccaga agaagaacgc cgggacgcgg 1140

agctagcttt ttatggactc gtttcgtgtc cagaccaaaa gggagagctt cctccacttg 1200

ccgttgacag gttggcttcc ggaccggaaa ccttttcctt ttgtttacgt agatatatcc 1260

tttccggtag ggcttatccg cttatatggg gctaataacc ggctaattaa gcttccagag 1320

tgtccataaa taaaagcccc tcgaatatga tcttttaaaa attagtttat agctacccta 1380

tccatcttaa attacagaaa tttttaggta tacagatttt actatttatt cgaatataca 1440

gtatgtctag ataaatggta cggtaagaaa atgattatct ataataactt ataaatttat 1500

aatctagaac ttataaacag tagatgagtt ttaaaatgtc ttgtaattta tttagaactg 1560

atggacctac atttaataga gagaaatagg attataagtg tgtgta 1606

<210> 5117
<211> 1745
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_328032_G1, chr10:19242320..19244064, Cluster 31

<400> 5117
gtctaattag ataaatcatt catatagtgc cacttggggt tgaaatcata tgcattgcat 60

atatgtctat gtgacgcatg tgagagcaag caaaaatgct tatttaaaca aagtaggagt 120

tgaaggtgta atgaagcttc gatacttcta gagtcgactt tgaaaaaata ctaggagaag 180

aagacattca gggagaggaa aagatgtgca tgacacttca aagttgaaaa aggacatggt 240

tgcacctcct cggttattac ttcatatgaa gatgtatact agcgtgaccc tataaatagg 300

taaaatgtgt caatgatata cggatcggcc attttacaat attgtgccta tagcaacttc 360

ctcccgagag agcctacaaa ggtaatataa tgttgattct tatttgaata tccctttta 420

tctgttatat gatatctgaa gtgacttgtt cattgttcct agtaatgtcg tatacgaagc 480

tattttgtca atgtcgattg tggtatgtaa tgttgatcta agaatttaat gttacacttt 540

gctcattatt tgaatgttct ttggacatgt gagaagtgtt gtcattattc ccccttcatc 600

tccttcagag gtgagaaggg ctgagtgaaa ccgctaaatg accattcata tgtataaaaa 660

aaatatgaga ctcttgcaag cagtaaaccg ttcaaacgac atcggaattt tcaccagttt 720

ttacatgtta gcaatggaag atgatgattt gtttcatccc ttcttccctc cctctagggg 780

aaaaaaggtt tcttaatcta atggtgttgt catatttttg ttgtttttag aatttcgaca 840

ggtccccaac aaccaccaaa gccaatcgcc tttggatgcc acttatttcc aaagacctgt 900

tgatgaagaa agtactttgc atacgcctct agaaatcatt ttactagtag ctagtgcatg 960

acacttattt cttgatcaag catgttttga atattgactg attattttgc gacaagcgtg 1020

catgtttgga atgttgacaa agcacgtacg ttttgaatgt cgactaactt ttttttgtaa 1080

gtttattaac aaaatttctt cgcttttgaa tgttgactac aataatattt agtgataggc 1140

caacgtttta agaactaaga cgtttatgtt caagtcacgc cgttttcaga tgtcattgtt 1200

gaatggctgc taaggtacgg tgcttcattc gtagcataca ccgccatgtg tttggaaaac 1260

cgatccatcg tcatgcccct gtgtctgcgt cactggctag ccgattttaa tgatcttccg 1320

gcgtttagta gctcctccat tgcaggtctt cgttatcaaa gcgcatgcat gcaagacttt 1380

aatatgcatg gagggctagc tctctctctc ttgtcaacgc gagactttaa taagagtgct 1440

ccaaatctat ctgatgtgta aaatgtgtta ccaccgaggt acgttaggtc acgtcaataa 1500

cgacaaaact gagagttgtt taaatcacac cccgtttcca aatatcgtca ctgttcaatg 1560

gcttctatgg ccctccgtcc ttagcagccc ttgcgcatgc gcagccaaga aaattcgtaa 1620

ttgactattg cgtacagcta gcacatggtc atgtcctcca ttatattgca agtttgggac 1680

tactcgcaag attctccaac gtagcttctc gcataatgta cgtacgtacc atgttagcat 1740

taagg 1745

<210> 5118
<211> 2910
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3282_G1, chr1:17006636..17009545, Cluster 31

<400> 5118
gcaaggacat catcgtggcg ctcatcctcc gcccgctacc cctaagacgg ccacaacatc 60

cgttgtcgcc tccaacgaac gtgctttaac ttattaatgc cttctttgat ctattcatgg 120

atccgctact gctcggcgcc acgacttata gcgcaaagcc gtgtaacctc ggtgcaaagg 180

atgtcgcccg ctgcccttaa gacggtcacc acatcgattg tcgccctcca tcaaacgtgc 240

tttaatttat tagtccctct tttgatttat tcgtagatcc actactgttg gacgtacata 300

aagccgtgta accttggtgc tataggtcac tgtgtcaacc ctcagggttc aaacacgata 360

ttagtgtcac caaaagatac aaacgtgaag ttttaattta aaaaaagtta aatacaaaag 420

aagttgggtt agaggaacac tttgcacagg ttcagcatgg gcctaattaa atcgggcaaa 480

taaagttatg ggcccagtag ttcacgtctt gtacgtattg agcccaacag tattattata 540

ccatcgttat tcgtctagtc tagtagaata gaaaactgta aaactctaat accatgcatc 600

tcccccgccc ccttttttc ttccttttg aaacggtgtc tgatcagtct ccaaagtcta 660

gcttgtacac caagtcagtc gtacatgtca atgcaagctt acacatacag tatacatgta 720

atgtacaacg tacgcaccag taccatggag ctagcatgtg gcctttgaaa ctgtacaggc 780

gtggcttgca aagttgcaac cggcaaaaga ataccaatct gttgcctttt gcaaaccaca 840

tgatctgggc acaacgccca cgcacttcta gctagctagg tgcagaccgc tgagtcttgg 900

tcaaggctcg attggaacct accaatgacg acgaccaaac caggcaagca cagcacagca 960

cagcacagag agatatatat gctgctgcgt tcttgacggc ctgaaactac tggatcaaaa 1020

attcaaaacc ttgtgcgcaa caaaatgcag caggtagcta gctgtttcgg tatacacaca 1080

cggtgttctc tagtttcttg ccaaaaaagc aacgagaacg cattctaact aacattctca 1140

agagacgaag cacaataagg ggtcgtctag actggaactt ctgacgacga tgcatctaac 1200

gatcggccgg tcgcgacttg gactactact actggcaaat aaaatatgct atattactag 1260

ctgactagtc gactctccat tccgtgtgca tatatataca tttttatttt ataaatatta 1320

tttacgcttg tgtcgtttgg cgcaaaagtt aattgagatg ggctaccggc cggccggctg 1380

gcctatatat tcgttaacta gctactcacc aaaactgcca ggaaatgtcc aagatatgaa 1440

cacgacgcgt actgtgtaca cacctaatta ataatctggt cagcgcgctg caatccaacc 1500

acgtacgtac gtacatatat gttccatttc cgcatgcgcg cggcggtcca agaggggtcc 1560

agtagtgtat gtagacggtc tcgaagactt caaagtgtaa tttctaccaa cattacatta 1620

cattcacgca catcattcgt tcaatgttcc aacaagggtg aaaaatcaca ggctactagc 1680

taggctaact gttgctagat agataataat aataatagaa tattgttaca cgcatgcatg 1740

gatgcatttt ctagatttct ctgtacgtac tcgtttagtt acctcagcgg ctcagctgaa 1800

tatggggtct tgacgaatga cgcgtgtgga gacgcgcatg tacaatggag aattcagtta 1860

gagtggaaag ctctctctat ttttctttgc tgcaggatgg gatgaccgat gatgttggta 1920

gagacacgta cgcgcctcgc aaaccaaact aaagaagaac acggacacta ataatagaaa 1980

agaaatgtag gcgaaactgg cactaagctt aatggtaatt cacttagaga attaaatagt 2040

gcaaattagg ttctccaata acagttttgt tattagttaa tgcaacagta gtcaatgcaa 2100

aaaaaaagtc atatgcattc agggagtgca taatgcgcat gcaccattag tttataccga 2160

aaccattatt gcacacttat gccatacgta gctaggttgc tagctgttca ttttctgaca 2220

aacccaaaag ctagagctgt gatctctacg actaaataaa cagacgagag caacttgttt 2280

ctctctgctc tattaatatt acgtgtgtgc gtacgtatac gcatctaccg ctaactcatc 2340

tcgatcactt catgggaaga tgggaagcaa tgcagttcaa gtttcgtgga gaacctaagc 2400

catggaatcc ggagtacagt atatatatat atgcatacac tatacagaaa caatcattag 2460

tttatagttt ttctatgctc aaatccctac ctaatatctg cagtgcatgc aatctagcta 2520

gaccaataga accggaccat gtgtgtatag taggacacac agagatgcgc ttcgctgcat 2580

acgtctctca gccccatgtg gccctgcatg tgtgcatatg gacacgcaga agtcaaacct 2640

taaaaaaatc tcttgaaatc aagtcttttc agaatatacg ttcaataata gtgttgctga 2700

tcaacctact taatattctt tgcactgtta gctatagcta ctaccagcaa atagaccagt 2760

cttaattggt ttcttcttca gttcataagc gcgcgcgtac atacagtgga cttagatata 2820

ctctagctag tagaccagca ataatgcatg accaaatgga gtggttataa taaatcgatg 2880

tcgtccctgc gtaatggtaa tccatgaagc 2910

<210> 5119
<211> 1637
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33889_G1, chr1:206874615..206876251, Cluster 31

<400> 5119
cagagagatt gtagataacc gtagcaatat acggtatcta gctagattct actcctgcga 60

gccaaaggaa gttactttcc tacgattaat taatggattg ccaatctttc tttgcttagg 120

atcgacttgt aactgctctt ctgttcttta tctctttttt tatttctgaa ctcccctccc 180

tccctgctta gctctttctt gttcctgtac tgtctagtga gttgttgcag cttttgttta 240

attctcagta gcggtttgcc cctcatgttt tctcaaataa aatgttttca taatggtcta 300

aaaacataaa tattatatca tgaatctata tttttcttga aaaataatgg ttaaaagtat 360

aaatatttga tttacaataa acctaatacg atatgcacat aaaaaacgga gtatctcttt 420

gatcgtggat ttttggctat agatatcatc agaacatata tactcctcgc aggtgaccta 480

atttattata actttattcg taaatcttct ggatttgtcc taactcaaaa tatagctgta 540

agaattaata tctagtaact gtatatagat tggctggact cgctgcacct attggctatt 600

gctgtagcag tagctagcta ctgccatttg catcgtaatc tgcattaggc ggcttgcagc 660

gacagccgca gaaaaggacg gccgaacagg cacgacttcc ataaaaaatt aacattgctg 720

taaccattac caaaactagt tttataaaaa aaaacatata actcttttct ttaagatagt 780

actataggag taacttcgat cgctaaccag atgaaaaaaa gattctggac ttattacaga 840

tataaatttg atttgtattt tggatcggaa caagaagtat ataaactgaa ggtggcgcta 900

ctactccgga aaagacgaca gggaatcgga cgcacgggca ggcacacgac agagattctg 960

ctccatgtcg atcgtccgtc gtcgtcgact ttacgatcca agccaagcca agccctcatg 1020

catgcaataa aaaagaaccc catgtgcatt aaaaagacta cttcatgttc tccccctgtg 1080

tgctgctcca ctcgatcggc agcggcgcga gaaccagaat tgcggacgct ggtttggttt 1140

ccacttccgt ccgctcaccc gcaatcagct agctacaccg aacctgcccc cgatgcttgc 1200

ttgccaaatt ggagggcaac tctcacctca cctctaatct aagctaaagt tattggctaa 1260

accgcgtagc taatcctagt ttatgcagcg gtggttgccg atttcagccg cgctgacgaa 1320

ccccagccgc ggtttctttc ttccttcctt tccccctttg cgccactggt agccaataac 1380

acaggcgttg cctggtgtgg taatggcacg catgcagcta ctgcatgctg gaacaactgg 1440

gggattactc aaaacgccac taggttcgag gtgcttggtt tatgctaggg gcgcatcgcg 1500

ctgacgacag tgaaagctga ggccaccgct ggttcgtccc ctgcatgcgc tgcaacatgg 1560

gattttaaaa attgatgggc cgagtgatct cgtccgtgca tgtagcccgg taataatcat 1620

aaaagcacat gtttagt 1637

<210> 5120
<211> 2407
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_343273_G1, chr10:112131085..112133491, Cluster 31

<400> 5120
tctgccattg actagggtgc atggacatca tcttcttctt tggttggggt aacctacaac 60

tagatctagg gctgctataa tggcgtgtgt tgtggactct ggtgctcatc acccttctaa 120

atctatagca ggaactatgt gtagtggcgc tagagcgaac tagcacaact tctgcaacta 180

tccacaatta ttacactagt gttgcatgtt gatgcatggt caatgcctag atttaggttg 240

cagaacttgc gactggttag tgcacaagtg cattatgcag atacacacta tgggttagtg 300

ccaccaccaa ctatggtatt atgatagcat ttgagagtga tgctacctaa gaggggtggg 360

tggcgggggt gttgaaagat attttgttaa gcttggtaac atttgtagat ctcgtttcct 420

ttctatgaga caatattgtg gagagggttc gtgcacatgt ttgttaggac ctagatggct 480

agatagaaca tggtaacatt tgtggatctc atttcctttc tattaggcac tattgtggag 540

atcatttatg cacatgtttg ttaggaccta ggtgactaga tcggaggtga atagcctata 600

aacaatttct tacaaactca tatttataac tagagcaatt ttaattagta taaaaggtgg 660

cgcgaaatcg aatatttgat ctatctctac tttttaatat acaagccttt ctaacaatta 720

tagttgctaa gtttctagat agatataaca caacttagca agtactcaaa tttactataa 780

aaattgctac aaatatacgc ttctctatag atacttaagc aattaagaca cgatgcaaga 840

atatgaatgc aaatgtgggt gtgatagctt ataaaaccaa actgagcaat agaatgaaca 900

taatgattta tcccaaggtt caattacttg cctacaatgc caaccctata ataaaggcgt 960

cttaagaaca acactagaga gcactccaac aagccactat ttcactagac ttgctctttg 1020

taaatctctc gtggggaatg agcgcaagag cctctcacaa ttaattgatg atcgaagcct 1080

acgacaatct tcaattgccg ctcaacaatc ccatgagctt caagccacct aattgatgac 1140

aatcatcaag agtaatagaa gtataaccag cccaagtctc tctactagca ccacaagata 1200

caagaattgt atgtgatgca ccaggagctc tgtagtctca cccaaataat gatatacaat 1260

atgtagaact gtatgcgatg cactaggaga tctctagtct cactcaaata tttatctaaa 1320

tatgtaagtg agtagagtgt atttctctaa tctcaaaacg tgttcacaag tatttacatt 1380

gcaaggatgc tagccatggc tggccaatgg gtctatttgt agccccatat tgaaatccaa 1440

ccatcacatc ttgatgggat ggactcggtg gcatcggatg tgcctggtgc accattcatt 1500

tctgcatcgg attcgtctag tacctttcta atgtctataa ttccattggc tataaactag 1560

ctgttatcct ctatcaggta ttcgatgcac acactggaca caaaaccgaa tatgtggtgc 1620

atgttagatc tgagtgcata ggttacatga ttttgagtgc tctatggtgt gatgtctagt 1680

gctatactgg acacttcata tgagtgttag agcagcgtac aagtttgcaa gctttctgaa 1740

tttcatgttc agtgtgccat catgtgctgc actaaacatg ttcaatgagt catatctaat 1800

gcacaccgaa cttcactttg ctttgctgaa aatgatgtag cttgtgttat ctcgtgttca 1860

gttcatatat ccggtgcacc acaggacaca tctagtgtat gctaaaaact tcatcgagag 1920

cactttctca tctcttctca agcatgctaa ctcttaaatc tataaccaaa cacattagat 1980

catagttagt atttttcaaa atgttttcaa taaacatttt cacttgctta tacgcaatat 2040

gcattatttt ggcacctagt agcaatagat gacctaattg tctaattaag cttccctctt 2100

aatagtacac ccatctatcc tagatcctat cactcactct attgtgtatt taccaacaat 2160

ataaaatgac atacctatac ttttgcctgg agtcttttca ttttgctttc cttcttcctc 2220

tctgcatgtt gagcacttga ttattctgtg ttcatcacca tcctttctat ggttgccatt 2280

attgtttaat cttgtatatg gaactaacca agcccattga caacactaga gtagaggtaa 2340

gtcaacttag ttgtctcaat taccaaaacc actcatagag ctttcaatat tgctatggtt 2400

agtggtt 2407

<210> 5121
<211> 1641
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344271_G1, chr10:116777365..116779005, Cluster 31

<400> 5121
cggtgtatgt ctacaacttc actaatttga gttttattac cttgttgttc acatggaata 60

ataaccaata atgggattga aacataaagg catgttttgg taggtttttt ctacttgccc 120

tttcatgatc cttttgcacg aggtaaatgg tctagcatat tcagacaact atgtccgacc 180

acaagtgctt ggtggtggga tgctagaatc atggcactag gaggagacga cacaagaaga 240

atttccatta tgaaaatatc tagcaacatg atccgagtca catggcactc attcgagatg 300

cattggtatc cttttgaggt agagcaaatt tgaatgaagt gcaatcaata ttaagggaac 360

ttgagtctag cctcagagtg taggatcaaa atgtgtttgt tatatctaca aaactgtagt 420

gttcctccat cgagagttag agaggaacac gagcagtcta ttagtttgaa tcctactaga 480

agggagaacc aacttatgtt atgcatatcc aaacttcttc tcaagaggaa gtaatggaaa 540

aatagaggtt gtgattgaat ggtttaaaga aggggatcac aacacattat tttgaagcca 600

aacgtcatga gaaatcaaaa actatctctc tcaaaaggca gatggaacaa tgaatatgac 660

tcaagaacaa tttgaagatg ttgatactac tttttataaa tatattttca tatcccaata 720

ttatttagcg cctgacctaa ttctagaaca tgttctaaaa atgttacgtc taagatgaat 780

gagcggctag tctgccccca cttgactgta ggggtggagc agacaatgta cagttatggg 840

cgcaaacaag gctccatgac gagatggctt accgctagct tctattagct acattgggat 900

catttgagca caagtatcac tactggtttt ttggaatttc tgaatgatgg tgtagtgcta 960

gaggatgtca acacaccact atcattctaa ctccaaagat gaggaaccca tatgatatgg 1020

agttttggcc tatatcttta tgaaattaat gtataaaatt tgtatacatg tgaaattgta 1080

tttatgttta gagaattctt gtgtttgtgg ccatctctca tttatacatg aacttgtata 1140

atgcaacatg tatgcacttg atattgactt atatgtgcct actgttgaaa cttgttattg 1200

aatcatattg tatttagaat ttatacgttg gtatatgcta agtttattta tctcatttgg 1260

gtatcaatgt gatttatctc aatttttatc gtaatggttg ttgggggaaa atgcctttgt 1320

cgaaggccaa aacattatgt cactaatggc tttcaagtat gttttaggtg cttcagaatg 1380

ggaatgaggt tgaactttgc ctgaagtggt gcatgtacca acacgaagct aggaagcttt 1440

ggcttcatga gattaatgcg taaacaatag caaaagaaga gagcttcagt tccataggca 1500

catggatgaa ggtgaataag aagggtctag aagcttgacc aacacgcttg aaaaaggaag 1560

gctgatgatg tccttacatg ttttatagtt catatgtata ggaactgagg acacaattgt 1620

aattttgtac gaagttatac a 1641

<210> 5122
<211> 1532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_344414_G1, chr10:117723530..117725061, Cluster 31

<400> 5122
ctgtatataa atatgtgaaa gattagatga acaaggattc ctgaacgaca tccaataact 60

acgtctttga ttcatagcat attggtgata attaatcatc atattctagt tttcatttag 120

caagagtaat tgtgtacaca tgtttacact tgctgcagtt ttgtggaggt acggtagtag 180

gtttacaggt actaatcctt tttttaaaaa aaataaaata aaaggaatta tatttcagtc 240

tctgcgggag ttttgttttg cacactagct ctcaaaaagt gaaatcgaag aaaaagatga 300

ttgactaatc tatgtagcgt ttcaatttgg ttactatgag aaagccagtg ggagcaccaa 360

cgtctcactg gattcagatc attctacaaa acaatctaca tcgtgttcgt cacccccttga 420

gggccgaaac caaaccttgc aaggaagaaa ttcgattttc ttggcggtgc aagggagcct 480

ccaagttacg ctatattcac ttatctgaat gtttttctat gtggtcagtc aaaacatcaa 540

cttatctgaa tgttttgatt tattactaca tatatatgtt acctgcaaag gtttcggggc 600

gatgtgcaag tgtccacata attaaagtta tgttttgttt ttgttgcagt tattcagtca 660

atcaccatat agtcattaac agaaacttaa ccagtgcaga aaaatcaccc aatagatttt 720

aaaccatctc tagtagaagg gtccaaacca acataggtgc cacacaagcc tccaaggaaa 780

aacttgagta cattgtgatc tacctccagg agttagcctg gtcccatctg gctacctcca 840

ggagttagcc atagcttaag cttttcctgc atgttcccat gccggctgct ctttgagcct 900

catctctttc tttcccagcc tcaccaacgt gctgcgccat tatgcgaatg tgtatccgaa 960

gaactttaga ttcaccgtca ggtgattatg caagacaaaa aggaagagga aggagtgctt 1020

aagaatggta ggaatgggag gcatcataaa gcaccgtagg ctcccctcttc aaagtcagag 1080

aggagacaaa cacgttggct ttccatcatg ttcccactcc cactactctt aggccttctt 1140

tctttctctt cctgactcgc taagccaaca gctactacag aacgttctga gaggcctgag 1200

ctgttgaaca attcctctgt atatatagta gacgtcgacc agcagagtgt ttatagatcg 1260

tagaaatgaa tgtgtctgtt ggatagtgta cggtaaacac aagtcaatga caactggcac 1320

atgtgagtat gtgatcctat atatacatta ttatgtcgat gtaaacactg gaggatgcca 1380

tttttgtgga tgaggtcagt ttcagtgggg atttcatgtc ttaattctca aactattata 1440

tgttggagac agtgtgaaca agtttaattt cattcccatg aaactcattt caactcataa 1500

aactttcatc atctctttct tcgtttatat ta 1532

<210> 5123
<211> 1541
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347091_G1, chr10:133405487..133407027, Cluster 31

<400> 5123
aattacggta gaaaggtcaa aatcgatcca catatccaaa caagccctga ataaatatgt 60

tttttttgc agtaaaagcc tggagaaatc agaaacgtag tcggccgggc cgacaagtac 120

tatgcaatac tagcgtgagt tttgtttttg ttttggagct agtgggggtg gtgcattgtt 180

tatgcccggg aatttcgcta cgaggaacag gaaccggagg ttgggttggg ttgggttggg 240

tttggacgga tcatgagaag tcagtcatgg agccctgcgg agataaggcg atggatggaa 300

acatgcacgc tggacgcgac gcagcgaatc caacacgcaa cgaatctacc tcagtctact 360

gctgtctgct cctggggcag tcgtttttct ttatgcttcc tttcgtaccc acagttgttc 420

acgtgagccc tccggagtcc ggccccgcgg cgtcggcgcg gcattgaatc ctgtacagca 480

actgcacggt ccatcaaatt ggaatcttta cttttgattt aagcctcatc agttttataa 540

gctttaactt ttttattgca atgctataat aaaacccttt ttttatagac actatcgaac 600

tttctctctg cctccctcct ttcttttatg gtttgccgag ctcgctgccc caaccccaac 660

ctcgctagct gcctagctct agggtttcaa acggtactta aatttggttt tgaggttccc 720

cgttgtaaat acctttagac tgacccacta gtaaacacct atttcaccgt ctataatatc 780

aaaactgtgt tttacactac acatctactt tattcatacc ggcgaattca aagaacttgc 840

tatgtactca acgaaccgca gcctggcagc cggcaggagt acggatggta cattttaata 900

tttgatgcgt cgagacagtg tacccgttga aaaatgaaga cgccaattgc agagcccaca 960

ttagtactcg aaaatatact ccctttattc taaaaaacat gaaatatctt aacctttata 1020

acaaaaaacc aaaacatgct ataactaaaa cgaaataagt ataattataa catgttaccg 1080

agtcaaatca tattattttt ttatcaattc cataactata atataataca tatattataa 1140

ataatatcat tacattcttt ttatcaaatt gggtttgata tattatatct atttgaggtc 1200

ataaatgttg gtctaaaaga agataaatct aagattatat cttttcagga ccgaaaaaaa 1260

acctatttgc atcattgccc ccctagtttt aagaatagaa ccaagtgcat gctatatgtg 1320

tacccataga tcaaccacaa acatatagag acaaattata gaggatataa ttcatagaat 1380

tttattacat cacgattatt tttcattaca agaataccaa aagtattagg gggaacatga 1440

aagattacta gctctccagt gaacatccac catactccac acggaacatt gtctagttga 1500

cgcaagatta aaagcatcac aatctgttac ccatccgagt t 1541

<210> 5124
<211> 1669
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347485_G1, chr10:135335487..135337155, Cluster 31

<400> 5124
gtggtcagtg agaaaccatt caaacctaac acgacacgaa gccaaataca atacaaaact 60

aatacgacac gatgccgcac acaacacaac actcgtataa agtaccaccc tgctagttag 120

acgaccaaca gactgaacga agctatataa aagagggtct ggctcctttt atttgttctt 180

gtgtggggtg gcaacgtaat tccttgcttc gccagctgac gaacaacctt gcaaacaaaa 240

aagacaagga ataagtgcat atattgactg actctagcta gtctgtgtgc gttcgttgcg 300

tcaacaagca gcatgtatat tatagtacac gtataagatc gcagtaacgc caataatgct 360

gcagctgcat gacactgaca cccccacgat cgaccaacag ggaagctacg acacattcgc 420

attagccaac gaaagtacaa tttgtttgac aagactccaa ttgactaacc gagtaatcga 480

ccttctcgca tagcatatac tgcgggtacg cctcggctac ttgcgcggca cgaaaggaga 540

agttcatggc agaattcttt ttcttcttct tctcgttgta tatagcaaca tggttcgacc 600

ccggccgatt gcgttgcgtg gctgccaagg tacacgtata catacactga tacacacatt 660

cgcattcctt ctggggtcat aagaaaaaga gtctagctat cataaatgtt gacctttgct 720

atgataatgt gatataattt cgtgagttat tatgcatttt gtcatgtttt aattatatat 780

ttttaataca attatatact gaacaagttc acgttgtttc ggacatgtgc agcagataat 840

aacgtacaga taaataaatg agatgtcata aagagacctt agaacgtact gaaaaatagt 900

ataatgtgac tctctcctct caaccacaca aaaaaaaaca agtgtttaca gcactacgct 960

acttttgtct cataataaga actagtgacg gccttgactg acttagctgt tcaagtctta 1020

cattgtgagg tatggccact ggcgataagg aatttttgta gaaaaaaatg acggggcagc 1080

ctcgctcgct gatgaacggt caagttgaaa atgacgagtc atcgctcgat ccgctttagg 1140

acaaggcatt aagtagaaat gcagctacat atatctaccg tttgcaagta tttcgtttag 1200

tttcgttcca agtgcaatct ccttacgtgg cgacgacgga catctcttcc tccttgctca 1260

tcgccaccgt tgtgctgcgc tccagcgaag gtacttcctc ctcttcgtca attcacggtt 1320

gcacgctatc ttcaagcggc gggccactcc gacgccgcga agcacgtgac actccgacgt 1380

cttcctcatc tctcttgcta gctgccaaaa cttgccaacg cttccttcca ggtaggatta 1440

gtattgcgtt tcatttttt ttctctaatt ggtgtcacac gtcgtatctc tcagttcgag 1500

ctaggattaa tattgtgttt cattttccc cactggtagt ctggtgcctg cgttgcttat 1560

ttgaagttct tgacgaggtc aatctggcta tgccaatcga aggtcaccct aaatccacgc 1620

gcaaacgtag taacatcatc tttttttctt cctcctcacc tctacgctc 1669

<210> 5125
<211> 1623
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_347526_G1, chr10:135621975..135623597, Cluster 31

<400> 5125
ttagttggta tcacgtagac aagttttaga acagatcaaa tccaccaaaa gtcatataaa 60

tatatagtgg gtctgtgcat ttgtccgatc gacaatgcta tagtcaattc tcaaactgat 120

attttacgtt ggggtcattg gtatcctcaa gagcttgaga aaattaaata taatgacgta 180

atcactagct agtggcatag atatatttga ttcagattaa ttactaactt ggaagaagca 240

acggtggatt tttaatttgt ttcatcaggt attgaggacg agactcgttg ttttttagtt 300

ttgctgttag atatattgaa gttttaaccc atgcgtgcgt gctacaacaa tcagttgttg 360

tacttttttgt tgtactgctg cacaaagatg tatatgttac tccgtacttc ttttctttga 420

aagacgacca gaccaacaca tgcagattat atggtacgta tcattttctc aactgtcact 480

gtccgttaca gtaacatcac tttcctcttt cacgtcttca ctcctcatgc cctccaacat 540

caacacagta agctgtgccg gactaatcag ctctcgacaa gtacccaaac ccatgcagcc 600

gagacagcag tgcccgctcc gaaagcaaac cggtactaca gccgagacgg ctcgtcccac 660

gtgcccggtc acgtgcggtg aagtgcggcc agcgccagcg tcagccccag cccccaggcg 720

caggcggtga gccggtgact cggcgtggct gtcggccatg gccgggcacg tcaggagctc 780

gcctttctcg ggaatgggct gcgctttgcc cgtgagacga gacccatgcc atgacgacgc 840

gaatccttct gcaagtgggc ccacgctgca tgcgctgcac atcgccaaag ggaaccctaa 900

ccctagggat gctccaaaat tattgatggg aaaacgaaat tattaattgc agatcatgcc 960

tccaccactt tggtatttct ctccctctat ccaaaaaata aatcaactca cgagaataag 1020

attaagtcaa cctatattaa aattcaatca tttttatagt aagatatagc aatatttatg 1080

ataccaaata agtagattat aaatatgtat tcatggtact actaattaca cattaacata 1140

tggatgttct tttctataca ttaagttttt taaaaaatga cttaagacaa ttttagaagt 1200

taatttattt ttgtattaaa agagtattca tattgcggtc tagcagtaat catatcctag 1260

aatcacccta aagaacatct taaatttagg ggcaagtctt tctatcccta aatctagtgt 1320

gttttgactc ttttctctat ttttttatac tttaaactat gaactaaaca caaaattaat 1380

atgtgagtac cattttagac tacgataaat acatatggga aaaactaatt tacaatttat 1440

taggaatatg gtgtattgtc tatagaggga tggacttaga ggtaactagt atgtaaacta 1500

ggatttagga gggtggaatc ttttagagga tggtgaaaag taagatttaa acggatgaca 1560

tagagggaac cattgcaaat agtcttacag gagcaagagc aaaaggacga tgggaacaat 1620

cag 1623

<210> 5126
<211> 1574
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34764_G1, chr1:211422531..211424104, Cluster 31

<400> 5126
gtcttgagta cactgtaaac ttccatctat ggtgtgggta catatacaag attctatctg 60

taggcatgag tgctagtatt gcctttcctc cattagtgct agaaatacaa agaatttcac 120

ctattctagt aataattcaa atcgcatgtg cgagtaccga tggatatatc atacgcaatg 180

catccagagt acaatatctt aaccatggta taggtacatg tataaaattt tatccaatag 240

acaatttgcc attgacggat atttactcta gtcgtttctt acccgaactt cttccatccc 300

tacacttatt ttagatgtat ttttgttcta agctaaaaac tcataaatta gatgttttgc 360

tagaaagaat cttaataagt tatttcgatc tctcaatata gcatatctaa tgatggatct 420

ttgttgagat ttgttttatt atagttgttt tcactagttg atgaacaact aaagaatctc 480

cctaaagaat aaatggtaca cttcacttct caatttgata aagctttgca gaatgtgaga 540

acaacaaaaa aagtgggagc ctcagagatg ttttaaatgt gactctctta atcataattt 600

tcctaagtgc ccaaactttc tagtaggata tataagggat gcatataaag aggagagcaa 660

aattgaaaca agtggtaaga agaagcacat ttttaggagc aacaagaaga aggaacactc 720

gaattgcaag gtggtgtatt gtgttctttc tattcttgat tcacaaggaa agaaagagct 780

taggaaatgt ctaatcttag acacacacaa ttttttttatt gaggttgtga tacctttcat 840

tgtgcaaagg gagatgcaaa cacatttcgg tgatagaaac acaactagtg caaaatatga 900

atcttccata agaataattg tgttatgcct acttgtactt tcaattatgt gttttagtat 960

tggactttaa aatgtttcat agtaacccca ataccaaggc ctcgatacct tctagtgcta 1020

tgtaggtttt tgaaagcaaa aggagaatgg agaacttaag atttatggat cttggtcttt 1080

ttctttatgc gattgttgaa gtaaaaatgt catacttata catgttcaaa ataccaccaa 1140

catgcctcaa aataaaataa aatgagcatg catgaggata ttttattcaa ataacaaagt 1200

tcacttgtac atggagtttt tctatgtagg aagtgaaatg aagtaaagta tgtccaaggg 1260

gaaaaaccct aggatcgatc gacccttggg ggatttagtc gacatgctaa cacccctaa 1320

gctctcaatc taggtaacaa tcctccaaac agacttatgg atagtcccaa ccattagaca 1380

aagtttgtgc tttctcttaa tgatggaaga taaagtcaca tggattggag gcccataaag 1440

tagagaactg atgtgacaac atggccccat ctacatatac ctctcaatga acatgtcaag 1500

aggtccaaca ccaaagggga gagccctcac atgtcatatg attgaccaac catcccctat 1560

gctcaactac cttg 1574

<210> 5127
<211> 1424
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_348686_G1, chr10:141534551..141535974, Cluster 31

<400> 5127
cctaatagta cttcgttgaa tgttgcattg gctatgtacc gaaaagttta acagtacttt 60

gttgagcgtt gcattggcta tgtaccgaat agtcagtctg gtcttcttct tcttttaaca 120

ttctcaatag gctgtcttca acagatcgtg tttacaatcg tacgaaacac tattttaaat 180

ttgaaataga aaattagata ggaaatatga tggataaact gttggagaca acattacaaa 240

ctaaaatcaa aggtctgttg ggatgcgagt ttacaaacaa agaagaacca gcagctaccg 300

aaacaacata ggtaccagta aaaaccagct tgccaaacca tggtcaccct aggaaacatc 360

tgttagataa ctccttccac cttcataatc ctggatagtt ccacgttctg ctctgcaaac 420

tgtccgtgtc acgtttaatt tccgtccata gattaaatgt ctcgatcggc aaggccggct 480

accaaacaaa gataattcag aggcacgtac ggtgctgtac ccgccagcag ggatcatcgt 540

gatgccaatg aggaatccac atgacctgca tgctgtcgac caggagaaac cctctgttca 600

aactccaact ggttattgtg tctatcatag tttacagagt atagtactcg aacagcatgc 660

taatggtatt agttagatct ggatgtattc atttatggca tccacgcatg tctcgtggct 720

gatatggtta agagagtgct agagtaatca gatatatgca aattattatg cttgagagtc 780

gccatatatg acactcctat atatgttagt attggaaaaa aaacagaaac tttgtaggga 840

tgaccaggtc agaatgaata ctactgatgt atgtagcaac attatgaagt ggaaagtact 900

tccacttgcg cttgaccagc gataacagtt gggtttagcg acgatagata gatgctctgg 960

ttagtgccga tctcaccgga gcgtatatag cttaagtctg tcatcacgtg cctcaccaca 1020

aattgcgagt aatttatgac aaaaaaaaca gcccggaaat ggagccaaat gtggctgcac 1080

attgtattgc ttaattggtt tggttgccgg tcatcatcac agactgaaaa cacatggcca 1140

agatgtacct gcattgttta ggtgctgatg tatgtttgct aaaaagatga ccggcttcga 1200

tttagtgttg attaacatta tcatgaatta tgaattgtgg tgtgtgcaac atatgtttga 1260

tgattacttt gctagtttgc ttgaaaactg gtcgttcttc gtcacataag tgtgattatt 1320

atcagtattc tttagtggtt tgctcgtaat ttttttgtt cttcgctatg taagtatgat 1380

atctttctgt tttctcatcc gtggcgatcc gattaattag cttt 1424

<210> 5128
<211> 1459
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_349362_G1, chr10:145011025..145012483, Cluster 31

<220>
<221> modified_base
<222> (1123)..(1123)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1123)..(1222)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1124)..(1124)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1125)..(1125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1126)..(1126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1127)..(1127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1128)..(1128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1129)..(1129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1130)..(1130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1131)..(1131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1132)..(1132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1133)..(1133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1134)..(1134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1135)..(1135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1136)..(1136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1137)..(1137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1138)..(1138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1139)..(1139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1140)..(1140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1141)..(1141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1142)..(1142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1143)..(1143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1144)..(1144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1145)..(1145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1146)..(1146)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1147)..(1147)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1148)..(1148)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1149)..(1149)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1150)..(1150)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1151)..(1151)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1152)..(1152)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1153)..(1153)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1154)..(1154)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1155)..(1155)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1156)..(1156)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1157)..(1157)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1158)..(1158)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1159)..(1159)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1160)..(1160)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1161)..(1161)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1162)..(1162)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1163)..(1163)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1164)..(1164)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1165)..(1165)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1166)..(1166)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1167)..(1167)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1168)..(1168)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1169)..(1169)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1170)..(1170)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1171)..(1171)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1172)..(1172)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1173)..(1173)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1174)..(1174)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1175)..(1175)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1176)..(1176)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1177)..(1177)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1178)..(1178)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1179)..(1179)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1180)..(1180)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1181)..(1181)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1182)..(1182)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1183)..(1183)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1184)..(1184)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1185)..(1185)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1186)..(1186)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1187)..(1187)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1188)..(1188)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1189)..(1189)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1190)..(1190)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1191)..(1191)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1192)..(1192)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1193)..(1193)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1194)..(1194)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1195)..(1195)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1196)..(1196)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1197)..(1197)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1198)..(1198)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1199)..(1199)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1200)..(1200)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1201)..(1201)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1202)..(1202)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1203)..(1203)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1204)..(1204)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1205)..(1205)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1206)..(1206)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1207)..(1207)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1208)..(1208)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1209)..(1209)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1210)..(1210)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1211)..(1211)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1212)..(1212)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1213)..(1213)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1214)..(1214)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1215)..(1215)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1216)..(1216)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1217)..(1217)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1218)..(1218)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1219)..(1219)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1220)..(1220)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1221)..(1221)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1222)..(1222)
<223> a, c, g, or t

<400> 5128
aatgcaccac atgttcccat tggtcatcgc agctcagggg attagtcatg ctgtacatag 60

atttagaccg acttcttttg ctttttttaat attttaatga tactgtatgg gcactacatc 120

ttgagtatta caatgaacaa acaacagtta tgcgctccac tccatttgca aagaagataa 180

atccgtagct tagaaaacat atctcgttcc tcgttaaaca aatcttttgg aattaaaaac 240

agatttggct attgtaaaac atagaatctt tgctcgtaga gttggtgtta attgtgagac 300

agcgatgaca cccatgtgat gtacagcagc aatcagcaca ttgcatacta cacatcattt 360

tacagcgcca gaacggttga tgattttgta tcaacgttgg ttggtttttt ttatcgagtg 420

tcatgttttg tccctgacga cgaggcgagt gttgcaggct ccgtcaccag taagcgcatg 480

aaggaatcct atttttatca actcgtaacg acattacgcc aactatgcat tcccatggtc 540

atgctcgaaa tattcaagca tcgtccttct ggctggagct ggatgcatgg tgtgcaagtg 600

atgacctggc caccttcttc cctgccctct tcattcacgc ccgtgtacaa gacatcagcg 660

tccacgaact catcgggcag ggactgccct cgtcgttcca tccaaggaca cctctccccc 720

tcattgtaaa acttgctgtc tgggatccta ctcaccgacg cccctgatgt gcgacactgc 780

tcggctgcag accacgctgg acgtctccaa atgaaaacaa tctactcatg atcgtgtaag 840

gggttctgct ggtatccgag aaaaaattat tggtcaacca aaaaaatatt attctctata 900

atcatagtaa atcataaaac tgttgtgtct taaaacgcag gtcataacat caaactagta 960

aacttgtgca gactcatggt tttagtacaa ttttatctta taccgggtac atgctctaac 1020

tccaaccctt tgacacaata tcctcattat cattgctatt ttcggagaag aaaacctctt 1080

ccttttttca actaccaacc tgaaactttc gggtctgcaa atnnnnnnnn nnnnnnnnnn 1140

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1200

nnnnnnnnnn nnnnnnnnnn nnaaaaaaca aattatcata taaaaaaaca taataaaact 1260

caatcccttg acacaatatc tcaatatcat gcaacttcga gaagtagaag tctcttcatt 1320

tttcaatagt accaactgaa actttcaggt ctgcaatata caattcaaca aataaagcag 1380

acatcaagta cccgctttat gaattcaata tcactacctc acaactatga gtaacgaatc 1440

aagcttgatt tatcaagaa 1459

<210> 5129
<211> 1461
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35693_G1, chr1:215897305..215898765, Cluster 31

<400> 5129
ggtagtgaat gatacgtact gtcgggttct ttaaacaaac taaaggtcct aaaatatacg 60

ggccaaatta caactcattc aatgctgatg atgcgacgct tcttgacctt gacccaggtt 120

ggatgtttga agtcggtgta gcaatgtcaa tcagaagata agcgacaaac acgcgtttaa 180

tattgacatc cggcccctat atatatatat atatgtccac atcagcactg cccacaataa 240

acatcagcca catatcagat tgatgtggta ttggttatat gaacctcaga gatattttgt 300

aattgcagtt agcctcaccc tctgccgcct cagcctgatg tggtattgtt ttgagcatgc 360

gaaatcaaat atactgatat atacaggaag aaattttgga aaccatcgaa gaaatgtcct 420

acttctctca tgtatttttt acgctactcc aacgaaggtt tggaaaccat cgactgatga 480

tacaggatga aattttggat cataattaat tctcagtact ggttaagtta ctgatgcaag 540

catgcatgat cagtaacata ctgctattag tattaaaaat agtattaata tcagttgagg 600

actccaaccg atgataccaa cgcctgaaat cagaagttaa cgcaaagttt tttttagcga 660

agcgcaatgc ccagatctct cgctcgctcg gtggacacca tcgtatcgat attgacctat 720

gaaagcatgc atgctctcgg tgacatgcgc agttagctac cggaggagta caactacgtg 780

tcacaagctc actgttccat caatcatggc atgcaatcag cttcaagccc caccgtcaga 840

tcgtgggcac gatgaacgaa catggacggg gaccctccga cctccatgtg tgtgtcatgg 900

ttgccatgta gctttcggtg cgagctgaaa tggcagcgac ctagctggga cgacacgtgt 960

ggctccgctg atgtcgtcaa gcacatatat acctctagct actaatgcat agtatgcccc 1020

acccaatacc catggtccta ggaaggaggt gacactgaca gtgatggcgc agccaatcgc 1080

agggttacac acggtgcatg ggccatgcac tggtagtact acgtatggtt tgctctaggg 1140

gggtcccctt atatgttagg tctattatga acactagtgc ttgttcatcg aagggaacag 1200

tatggaccgg cggcacgatc gatcacactc ccggcatttg gttctagagg cttccattgc 1260

gataaaggta gctttgcaac aaactttcag aacctgtacg tcagaaccag tacagcacgt 1320

acaagaaagg atcgatctcg tattaggtga gctgtcactg gtatgtagta gacaagattt 1380

tactgttggt tcaaaactgc ttgtttttta cttgaaaatt taaaagtaat tagagtcctt 1440

aaaaaccagc ggccaaggta t 1461

<210> 5130
<211> 2077
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38329_G1, chr1:229692052..229694128, Cluster 31

<400> 5130
ctaattggtt gtttcatgtg acactaagtt taaaagaaat ttcaataatt tctaacaaaa 60

agataaggga tgtaggagat taagcatcca gaataccttg tatttgatat aaattttaaa 120

ctctagatcc cttaattcta gaatagagat agtaaccaga ggcattctac catgtctatc 180

ctcactaaaa gcatcaacaa aaaatggtat attctagaaa acaacactac aaaaaccata 240

actaatcaca attgagagaa tagttgttgg atacaaaata tttgttaatt tatcatgttg 300

gcaactataa aaataatgtg tcttgcttta aattacccaa atttggcatt gtaaaaatat 360

ataatccaaa atatcctacc atctatcatt aaattagcca tataacaaag tattatgagt 420

agattaaagt gatcacattg ctatatagga agaggagggt gtgtgctttg attagagcca 480

cttaatacta tagccaactt tgaacatata aaatcataca taataactca aataccatct 540

agatatgaaa atagattttt gtatgtgtat ctctagtaca aaaaatgcac cctattatat 600

aatcctagaa actaggtatg tagtctagga aagtaaagac actcaaatgg agtgcataag 660

taaataaaaa aatgtaaata aggatatata atggaaaatc aacaaggtga atttttacaa 720

agatatcgga aagtttgtgc tttccaataa tctttgttgg aatctctcgc aagggctaat 780

cttacaatta aactgtcaca aaatggaata tccttgaggg tcgaaagctc ttaagaaaac 840

catgcaaatt gtcaagaaaa ctacttttgc tggacaatcc tcatggaaga accaccgata 900

gttgagagag aaaattttga ttaccttggg gtcaccttaa accaacagta atgaccatgg 960

ccatcaacgt tgataaatga tcacataggt ccaaaactgg tggtcgtagg agctccaaac 1020

caacaatgat gatgtttcta tagtagtgaa ttactcccca tgaatttgaa ttaccttgat 1080

gatttttaat aacactaaag gaaatttaaa aataccttgg ttgttttgaa taaaacccaa 1140

gaaaataaga aataacttag tagtttgtaa tgacattcaa ggagacatgg aattacctta 1200

gtggtttgga ctagcaatca agagaatatg aaattacctt ggctatttgg gttagcacta 1260

aataatatgc aattaattgg aggttccatt caatcaccaa ggtaatgata catccttggg 1320

ggtttaattt cacccataaa ggaaattgtt gaccatcaaa aatattacat tttcttgtag 1380

tatttggcaa atccatggct ggttagagag ttttccccac atgatagcat gggccttttc 1440

cttgcatatc cctaagtgct atttttgtc atcacttgat agagctttgg ccaaaaccct 1500

aagatcctct cctcctacgg acaataccaa tgatcacttc acattcgtgg ttggacaatc 1560

ttgcaagacc tataaggccg ttacgacaaa tcttagtttg tgcaaacaca aacataaaaa 1620

gaggtgttca aacctcttct aaatgtaagc taacaactaa agcaatgtgc taagcatcct 1680

aaactactgg caatcaaact ctaagcatga gctagtagtg gtagtattaa tcttcaaaag 1740

cactccttgg atagtgaagc tctcaaatat aatctatgta cactttaggt agcatcgaca 1800

accaaataat ggtcagtcaa agtagggtat agatatgcca actaagcaac tcaactagct 1860

attgcaacca tcaataacat tttctacaat tattggttga taaccatgcc acaacatggc 1920

cttgtgaatt ttgccactaa ataaatatgc atcactaatg cattgtgcca ctaaactagc 1980

cgttaataaa catgacacaa catggcctag tgaattttgg aatgtttgtg cctcctgtgc 2040

atcatgttgc acatctctgt ttttgctaga ttgtgat 2077

<210> 5131
<211> 1701
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38820_G1, chr1:232342175..232343875, Cluster 31

<400> 5131
cgatctgata tatttagttt tgtattttta gcgcaaggca aagtcaaatt attatgtata 60

acataaaaat agaagtggaa ttagtataag tcaacatgtc gcaagtcata agtcatgcaa 120

ataaacacac aaaaaacgtg aaatacttgc gcgttgcttt agtctttttt cttctcttcc 180

actttcgacg tgagaataca atatttaaca tttttaggac ggagagcttc gtttgaataa 240

ttgtagctta ggttttccag tttcgctata aacacaactc tagcaaattg ttaaggttct 300

aagaacgttt ggtttgcata taaactacag cttctataat actaccgatt tatgcacgtg 360

agtttccttg tcctttatat ttcgtgcgag cgaatcgaag tggcatgtta tgtaactagt 420

ggtatgatag ataatttttg tgcaacttcg tggggatgca tcttatgagt agcttaaaat 480

tttcataaaa ctaacctctc gtttaacttt tttaaaaaag ttagagctcg tgaaggtaga 540

cctgtttaaa tagaagaagc tagaatgaac ataaaactat tgaacttaaa ccctcctaaa 600

cagcccttac tctcatcatt catacatgta catgtacctt taagatttat ttgtataatt 660

tattattaag tccaataaac tttaacacgt ggtgtctgat caatacctat attcaacgac 720

tcgtttcgga gaaaacagca tccaattcgg acacacgcat tccagcagtc aggtgggagg 780

aatcaatgca agcctgtgac tgatgcctga tggctcactg ccacagcccc gtccccgacg 840

ctactagcag catcggcgtc gctggatgca gcgatcagcg ccgctgtcga tcgtctttct 900

tctcctcccg ggcggggcgg ggcggctggc cgatggccgc ttgcaacgac cagctagcgt 960

tgctgttact acgtccgcgg cagcagcggt cgctctgaga agagttgcat gcacctgtcg 1020

gagttgagga acgacgacgc tctcgcgacg ggaacctaat tggcggcggg tcgacaagat 1080

ctgctgtctg cttttcagcc aagcaaaaaa ggccactcca tctagaaagc caagcaggag 1140

ttgcgcgatt cccagagcga acgaaaacgg atgcagattc atactaactt cattcactgt 1200

gaacttcctg ctacagcagc ggcagtacac agtttgctat tgggtcagat ggagatggct 1260

ttggttttta acgtacacat agaagaagaa gaaaaaatga gctgcaaact ctttagctga 1320

acaacgttgt catcaataat tatcgctaac acaatcctga aaagaaaacc catctcctcc 1380

aaaattgact cccgaaagct cgtgtcgtca atcatatata gcaagcacgc ggtcggtacg 1440

tcggcaacgc tcatctgtgg tggctgcaac tgcaactttg gccaatcaac cgaccgagcg 1500

ctctttgtat ccgtcttccg aacacgacga catgtgaaag acaacgacga aattcattaa 1560

aatacaaaac gcggtatgta attggcctcg tctaaaattt cattcaaaat tcaagaccaa 1620

ttagtgagtt catttcaccc ttgtgcctaa gaaagtgttt gtacctaatg atcaaaagtc 1680

ttgcgtcata agacaattct a 1701

<210> 5132
<211> 2164
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_39389_G1, chr1:235188648..235190811, Cluster 31

<400> 5132
ggcccacgat gcattgaact caaaattgat gtcagcccaa caataacttc atcacaaata 60

taagaataca tgtacaaaaa ttgaagtttc tggcatgcat gatctagttc cagcacataa 120

ttgattgtca tgggtacaat aggtgcagca tacaatgaac gaataactct tgaagaaaat 180

gtaaatatat atccaagcta taagccaaca gcccaacaca gacctgaaaa gttttcccaa 240

ggcccatgtt atgcgccaaa atgcacccaa gacctttatc cctggatttg acctttttaa 300

cagattgaat aacattttcc cacataaacc ttattccttc aacctgtgat atcataaact 360

ccagtcagac tcagatatgg gttctctgta ctgatattaa ttgctgttgc aagagtaaca 420

gcatagcctt tgcaaacagt taaatcccca cattaagtca gcatgtgttc aggattaatt 480

atgaacatga ataagagaga tcttaaccag gcagacctga tgaggcttca gtttagaaga 540

catgctgctt ggaatcctaa caggttcctc atcctcctcc ctggcaaggt tgactacatg 600

tccatcccca gcatcctgta aacagatttc cagtggagtt tcaaagggat ttccaacatt 660

cttgctcctt aacttggtgg cagattgctc ttgcattgac ttcaaatggt cttgccttgc 720

ctacaaaata atgtaacagc ctagataaga cagcttcaaa caacactata catcaaataa 780

agacacaaga ctgaaagatc acaaaccttc tccattgcaa ttttacgctt tgtttcttca 840

ccaagttctg tatcatccat aattcttcta atactcttct tcatttttg cttgctgata 900

acatgttcaa ggaatgacca ggagctaact ttggcatgct aaatgaatta ggggaaaaga 960

tcatacctaa caggaccatt attctctgat ccagaaagct ctgcattgct agtctctgaa 1020

tcggaagatt ccacaccact gagggccttg tcacattcag aaattaagag ctctagttga 1080

ctgggtacac agcagcaaca ctgccaacca gtggctttag cttctgataa gcattcttca 1140

cctaaattcc ttgacaagca atttgtacag aaaagaagct tacaagaact acaactttga 1200

atcagttcac tttgtgcaca ccaagtgcaa taactaccag atacaggatc ctgcccaaat 1260

gtgaacagca tcaagaaatt attaatgccc agttcatgac atcaatagtc agacctaatc 1320

ttgtataaag ttcaaatgta tctactatta tacttaagga ggtaagcatt cacctcaagg 1380

cgattcttct ctatcacaag aaatctgcat gatccacaaa caacaacatc caagacaggg 1440

tggcgatgca catcagaggc attcagcatt tcagagcaaa tagtacattt gaaagtttta 1500

tgcaaacttt tattagggag cttagggctt gggaagagat caagatcaat gatatcaacc 1560

acttttcaa attctgttga actaccttca ccatcctttt gtaaagcttg tttgctatct 1620

atctgcatat catcatcgct ttcaactatc acagttttca atctcttctc attatcatca 1680

tcttcacatg tatgcttcat atctcaatag aaactttgtt ttcatcagtt ttgagttttt 1740

tagatgaagg acagtcactt ttagcaccta aaacgccatt ttctggtaga ggaggcttct 1800

cgtcacatga tgagaccaaa ccaaagttct cctggaaaca ggaaaggctg gattaaatga 1860

aagcaattca cccaataaat caaagaccaa tcaataatgc atatttataa caaatttagt 1920

tgacaaaaaa acagagtttg aaaccattta actttaagta attaccttac accagtctct 1980

catccttttt cctttcaaac ggcgctgcag gcacttcatt atttttgcgt catcctcttc 2040

ccttacctat attaagggta gaatttagtt tacgattaaa ggaactgcac aaaggaatcc 2100

cctatcaaga aaagcttatc ttttgctact aggaagtatg aacccaacag ctaaacagaa 2160

gcag 2164

<210> 5133
<211> 1460
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40026_G1, chr1:238519661..238521120, Cluster 31

<400> 5133
tgcgctttca tccttgtttg gtgtaaaagg gttaacctaa tgatgctagt atagactcga 60

gaaggtttat atattggtct acacttactt tgctcagtaa tagcagtgtt agctttgcac 120

tctaatttga aaagggatgg agatttggga acaaattgaa caataaaata ttttttgata 180

tcttagtcca atatcttatg tgttgatgca tccatacatc tacttaccct atttcctatg 240

ctggcctact gtatttggat ctttccctct accactagga ggattttggg caaatggaat 300

tattagcctt taatagcgca aattgagatg ccaccacctc cttacattgt ctctctagtc 360

tcttactttg ttaggtcgcc ttcaccttct gctcaactat ttttttttatt tcccacacag 420

tgttgctcga catcgccatc atggtcgcta ggatttggat caagacatta gagagggaat 480

gaattgggcc tttgtaggca tgctacaaca taggggtgca aaagttggac ccttatatca 540

agaaattgag agcaaaacta tcattaccta gtgtatccta gcaactctat tttagaaact 600

taacaaaatg taacaaacat agcacgctaa gcgaacaaag ctttggagca atgtcacaaa 660

agagaagctg agattttagt ggcgtgtaag ctaggaagcc atggcatata aagaatatgc 720

tcatggggaa aaaaagtggc caatacgaga cgaatattgt gtcatgaccg agctgatttc 780

ttcaacactt tccaacagtc tcctaaacca taaacattag agttttgact gctccagcct 840

ctggcgggcc tagtagctcc tcctatccct attattgttt gtgatctcca agaaggcaag 900

aactcccttc acgccttcac taactagaga ggatcgtcca cctctttgaa tacaacaggc 960

aaccaagtga ataaaccgcc ctttcctaag agactaatct tgcacatgct gccgttggtc 1020

acccctgcgc acaactgcct ccagccagag tataatgaca ttttgttggc acgaggagca 1080

tggagtggga gaagatgagg gcattgccat gtccatggcg gtagtgcaga ccggcgatat 1140

ttcggtcgag ggtgccagat ctgtatgttg agaagggtta aaagcgcaaa attaaacaaa 1200

tagatcgtag aactaaacaa atagattgat gtccactcga ggtgctctta ggaacgcagg 1260

ggactctgct ccctctagtt ctacatttat ttttatcatt gtggtcttgt ggacaaggac 1320

aatattgatg tcaaaatgtt agaattttga taataaatat cttttaaaaa atattgaatt 1380

taaaatgact ttatttggta ctgtgtcaga atttgttcgg atggctgaga gtgacgttag 1440

aaattaatta atttagtcct 1460

<210> 5134
<211> 1463
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_4065_G1, chr1:21012801..21014263, Cluster 31

<400> 5134
ccaacgaacc ttagtacaaa gaggtcaaac aaattataaa ttaggatgga ggtagatttt 60

ttatcactat tttgatagtt tagaaattat attcataact taacactaga aatattacgg 120

aaatataatg atgaaaaatt aataatacct ttttctaaga cacaatcttt gcatagtgaa 180

ataaattata aaaagtaagg tgtaaataga cctaacatga acaattagag ggagcaaatt 240

gaaccacatg ttagtttagg attatcagga tatataccaa actcaatggg agtattttgt 300

acttttaat attcttattg ttttcgtatc tattttcttc atgggacact atcaatggct 360

agtactccca tcactctaga ttataaatca ctctagattt tattgctata cagattttgc 420

tacgattcta gacgtacgta acaaaattga tataaaaaaa tcaaagcaac tcataaatta 480

caaccgaggg agtataacat ttgttttaaa taatagcaat aataatggta ttttacgagt 540

acatagtgca ttataagtaa gtacataatt tttatatttg ttttaaatat taaatatttt 600

gttacactaa acgtagaaca atagtccccc tgaaccagga acattgtaat tctcaataaa 660

aaatggtatg aaatcacaag taattgtttt tcatgctcca acaaaagcta ataaagagta 720

cacgcttcat tatctcatga aaaaattgaa caaactgact gaaggcctag cgcccacact 780

ctgaacaaac cgaaagcaac taactctcaa gacacggtga tggcatggag ttacagtttg 840

taaacaaata aacaatccca ataaacccaa accttcaaac cacccaatca tctgttcata 900

gggttgtcct tttacagttt tactagggag taacgaagca tatttcatgc ttctttgctc 960

tatgccggtc gaccgttccg cttaagaaga actagaatca gctaaagaga tcgaaaatgt 1020

ccacgcttta gtaatccttg tcgtttggat attttggaaa gaaacaaaca agcagagttt 1080

tatgggcatg agcaaacgtt gcaactatca ctttagacta ggatatgcaa gaaaccattt 1140

gtcaacacaa atatacaatc tcaggcattg gtattctagt ttttttttc attataatgg 1200

taccattgat accttagttt tcatacatgc ataactatat ggcggctctg caaacctcaa 1260

ggcaatgtgt gtttccttct ttaaagcgtt aatcgtgaac tcttaaccac actgcatcgc 1320

aacctgcctc aagcaagttt tttgcacacc gtttgaacac catggatggc gttgtcatta 1380

ttgctattga aaatgtaggg cggcctcaga agacaactgg ctttgtgagg tatgtatgta 1440

ataaacatat atagaaacac agt 1463

<210> 5135
<211> 1457
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43222_G1, chr1:254524911..254526367, Cluster 31

<400> 5135
cattaaggta aagaaaccaa ttcaattttt actaaggttt cataggcaaa taaggccaat 60

ttgcaaccct gttcaaaacc caaaccggtg tggtggaaga aggtggtgca acttatgtgt 120

ttccatcttt gggattggtc aatgcacctg aataatgaac aaggcagaaa agttttgttt 180

taaggacttc taactttgat ccctcgccaa aaggtaaatc agtagttatc tcatatttcc 240

ttttgaattg catttgcatt cagcattttt atttcgattt tttcttgttt aattttcaac 300

cacaaattaa ctctttcata aatataatat tgagagaagt tcttcaaaaa aatctaatat 360

ttttgggaca atgtgggcac cggacccccc atcccatctg ccaaccacta tgttgattct 420

aacctatgtt ttcagctaag ggattgagtg gggaggtaaa aggtagcaat tggaggcaaa 480

gtaaggggtc ctctaaccct tatattgtca aatctagcat gtgcattgtc ttcttttacc 540

tatccagtac tgccatgcac tactcaaatg aagaagaaga taattagggg ttggtcgacc 600

cccctactat tgcctatccc atcttatttt ccctaaattt tggtacataa catccaatgg 660

ttcatgaacc aataaattgc agtagaagag gcaatggagg gttaggtgac cccgtatggt 720

gcacccatca ccccccttcct ctattatata aacaaaacta gtagaagatc aaatgcatac 780

atgagttaat aagaaaatca ttaacttcaa tctccatttc tatcccaagt tcttgtcaaa 840

aattgatctc tagtttagtt ctttggttag tcgcaaagga aattcaaaaa agtagttgtt 900

cttctcatgc attattaagc ttgtattggc tcccaagtac tccccaaata atatttgtgg 960

tgatccttaa actcaaaaga atgatttatg gagtgtcact atccataaga atggtgtgtg 1020

gaggtgacca caccccacaa gaacgataaa ctttgcacta actactaatc aataatgtta 1080

cttttgatgt gcaagtttca ttcttgtcct ttttcttttg taggatgaag aacctattta 1140

agaagatggt taaaaagatg aaggatgcta taggaggaag ctcatctagg tgctctcatt 1200

gttctgatga tggctcataa gggtgggtga catctcatga caccatgcct tgccaatcag 1260

gatcctgaga ggaacataag gaagcctatg tttgtccctt tagggaaact gaggaaatac 1320

caagtgacga agaaggcttt aagggacaat aatatggtgg gtatgcaccc atgtcaccaa 1380

gtgttgaaca acactatggt gagtacaaga aaacaccacc aagtgaagac caaggtgcat 1440

actatgcacc tccgaca 1457

<210> 5136
<211> 1754
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46475_G1, chr1:272054111..272055864, Cluster 31

<400> 5136
attttatgat atacttgctc ataagggata tttagtgttt gatcctaatc taacaatttg 60

tgcatcttag attactttct actggtgagt taggatttac atcatcttag aaacctaaca 120

aatttactcg atctattttt tactaggtca attttggact gtgcagttca tgttcgtggc 180

agtgccgctc taagaccgat agtgccagac catcacacta tgtagttcat gtttgtggct 240

tgtgttgcta atcagtttta gagtgtcatt ttttacatgc ctatccatcc cactctaggc 300

atagtagatc cttgcaactg gcttttaggg ggcccaatag tctaccatgt gtgttgatat 360

tggggagcac ttagggtata tggacacata ggctcaaggt ccttagcaat gcaaggtccc 420

taaaaggtta tttttcagcc cctgagcata ggatcatggg tgagttctcg agcccctgcg 480

agtatgaaca ccacaaaata tgccacaatg tcccctaggc gatatagttc acgatgcatc 540

tggggacttt agcatcacaa aggccccaaa gggatgtccc attgacccca agaccagagg 600

attgagccaa caatgtgttt tgggctctta gtatcgcaag gaacccaatg ggacatcttc 660

gacccctagg tacgaagagc cctatgacca cgagacacaa cacttacaga ttgctcgaat 720

ttctcctgca tgaatttata agaaacaata gtaaaattcc tccttctcat ggtgatcctt 780

actttatttt aagttgtaga ctcttgattc tacttctaaa acctttttggg ccccccctagg 840

tatcaagcta aacaaattag tgtgtatcat tagactctac ttgagtagcg acatagagtg 900

aagggcaaac caagctacgc ttagtgaccc accatgatag agaggatgaa taccatggtt 960

tttctattac caaggtacta catttgaacc ctttatcaag ttacctagct cagaagcttt 1020

tcgatagaca ccaaagggct cactttcctt attaaataaa aggttgacaa tactatgttc 1080

taaagtagaa attaggatca tccaaaggcg cgtaggacaa gctaatgaca tttttacaag 1140

gataaagaac ttgacccatg ataatttata taaaaaataa atgtgaaact tatattttcg 1200

taatagtcta gtagaaggaa gattttccta gttacaatag gtttttgtcc ctgtattttc 1260

ttattacaaa tcataaagtt attttcttct agggctaggt gcatattcct aaaattgccc 1320

tatatctgcc ccaaaattgg cctaggcttg gtagataaca aagggaacat gaagttgact 1380

agaaatcttt ggaaacgacg atagaaagag gaagtggcta ggccatggag tgacctgcca 1440

tggcagagct gactcctacc atgggttagt cattctcggg ctattacctc aattagatct 1500

atgtcatccc ctgctcaagc attagccaac cgaacacttg atccttaagc tcctacctga 1560

cacatcaagc ctatttaacc aagagtacaa agaatggaca aatttctagt atatgcccat 1620

ggcccaacag ggggaacaat ctttaaatac gattgataat cacaagtgta taatgatggc 1680

ccttggttaa catatccaag ataatcacaa gtgtataatg attgcaccta taattcacaa 1740

aagcatatac caaa 1754

<210> 5137
<211> 1760
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48666_G1, chr1:283177442..283179201, Cluster 31

<400> 5137
tttttctgga tacatcacat tttcttttaa caatcaagcc ccccccccccc cttgtaatgc 60

gtttttctag ttgcactttc tctccctttc tcagaaagat cttatgaacc taagcttgtt 120

aaatttctat taggtagagc agttctattc gctagtctgg ctatgttatg taaaatgtac 180

caacatagat tgctgaatga tagaattgct tttagattgc tatgacctca gattgctctt 240

tctgtattag tgatgtatta taatattttc atttatttgt tgcaggagcc tggttcacat 300

gatatccact ttaattctgc aaacacgaca ggaaacagtg aagaagggaa caatactgga 360

aagaaaagag atgttttcag gccttctgtg tttgatagaa tatctggcca ccgtgaccaa 420

tggtgcaatg aagacaccag actgaattca gattcccatc gaaatcaatg gagggaaatg 480

gaaaaagaac atagtgatat gaacaaagtg gaacagcact gtgatgaccc caagcaatat 540

cttggtagcc agcggagtcg aaaagagcgc tgggttagta acgaaagaaa ctatgaccaa 600

caccatgaga ataattggaa ttctcgctgg ggtgcaagta gtaaagattc tcaaaattgg 660

cgtgaaaagt caacagattc agatataaaa gatgattact cctgtgaaaa agtttttct 720

tacagtacat gccatgggaa agaaaaggat ggtaccaatc atgagaaggt taatgaaagg 780

gacagtaata tttctcgatc gtggaactcc agctattttg caaaccgtgg tgcaggcggt 840

acatctgatc atctttttac ggatccacag aagttatctg cttcatttgg atacagtagc 900

tataggcagg aaagtgatag cccaaactct acaagttctc gcagaaggtt tacatctgtt 960

acaagcagag tcaatagtcg gtcttcacga ccattccatc ttggtgtact ttctgagagg 1020

cctgttggtc catctagtaa ctctgtgaga tatagcagga taaagttgtt tgaaatatat 1080

agaacaactg atgttagaaa cttcacaatg ccgataaatg atattggtaa caatgagata 1140

tcttcgttgt ggcaagaaga tcctatggat cctttagctc tcattgcacc taatgctgaa 1200

gaagcggtaa ttttcacttt tatgttgtct ttactggcat aagatcttgc aatgatatga 1260

tgcccttatc tttttagttt tgcttgtgtt aataggtgat tttgaaagga attgaaaaag 1320

gagatatcac aaacagtttg gcacaagctt gcaaagatgg ttctgatgac aaaaatattc 1380

caggcgtggc agcattagaa caaatgaaat taagtgagaa gcagctcctc ggttttgcta 1440

tcaatctgca gaagttcttg aattatgtgt taattggttt ttgcttcgct ttatgcaggt 1500

ggaagagaag atcaaacagg aaacaatgaa gaattcaatg gtaaaatgac cattgatatc 1560

agaggtatgc gataaatctc atgcatatat tgtgaattca acatatttgt ttagtatcag 1620

catcatgtgt aacggtttcc aacgattgtg taacagtatt tattctatgc actttaaata 1680

cagtcatttc ttggaactta gatgtattcg tgttaataga catggttatg cttgagaatg 1740

gttaactcct acagatttac 1760

<210> 5138
<211> 1757
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_52566_G1, chr2:4268150..4269906, Cluster 31

<400> 5138
ctattgtctc ccggtttcca agaccacgaa agaatgtgtg gtgcataaaa aatcaaggag 60

aaatagagag aaaaagagta agcgacatta agaaaaaatg tctaggggga taacagaaaa 120

gtgtattatg aggtgagatg gtgaagtatt ttggagacga aatctgaatc ttataaggtc 180

aatcccactg agagttttat atgtgtttca tctgttttta ataggctact acatatgtgt 240

ttttttctg atatatggca acatttttta agaaaagaga gtagaattga gtttcttatc 300

atggttacca acttttcata agtcataaaa ttaaatattt acaaaaacaa tagaatgaaa 360

ctatgcatcg atgaccatgt tttatttcat tctacgatga tgtgaaactc tctactaaga 420

agaataacgt aagctaggca aagtatttcg aaaaggaggg attatgtcaa ccataattca 480

taacataaaa taacatagca tgcatcatac tttcatagtt atgtctaaac tagggtataa 540

acaatagcat acatcattct ttcatagctt ttttccaaat ttataacagg caccagtaga 600

aataaaaata atgatcggta gacatatatt tacacttgtt ctcttatcca ggcatcggta 660

caaataattt cgatcatttt ttaatatgtt cctgataata tttactgacc tttcatgcta 720

tggtttaaaa aatgtcagta cgaatcggga agatagtgtc agcttttcag aacatggggc 780

cgatcgaatt gaatcattga attgaaaatt aagaaggttg tcaaaaaaaa ctcataaacg 840

taaagaagac caatatatta gtgcccaaat ggtacgtata cgttccggtt aatcttttac 900

gtagattcta gtagtaggag aggtaaaaaa aagtgtgtgg caactgtttt gagcgtccag 960

gatttcccgt tagcatgtaa ccatctgcac ggcgcgcgag tacaagtcct cgcagcaatg 1020

ttcctgtgct gctgcgtgat tgcgtccagt tccagtccaa gatctcgtag gcggtgcagt 1080

gcagccgtcg agaccgccgg ccgccgtcct tcttatggcg acgcgcgaag agaggggagc 1140

agcaggagga gtcgccggct ttaccaggca ggcagaccgg ctttttttga atcccagacc 1200

ggctttttt gcgggagtac gtacatgctg cacgcatgca tgtgtgtctc ggcccggccg 1260

cgcaactcga cacacgtcac tttgctttgg ggcaagcact gtagcacacg tcaccgggct 1320

cgggcattgt ggaattaggg gccctgtggt ccatggactc cgcccaggat cttctgcgcc 1380

actctctcct ccatccaccg ccgccgccca cacagcactc ccaccagccg cggttaatga 1440

cagtcgtccc ctttatcatc ataagtttta tatctaggac atgtttttca gcaagaatag 1500

agcgagctag ctactgttta agtacctctc ctatataaaa gctgttgcta gcgctcacta 1560

tcattaaact ttagatgtca ctataacttg ggatatgaag gacttgttca aaaagggaca 1620

taaccgacag tttcttcttc ttctaaaaac tctttaattc tcttaacatg caatgtaagt 1680

agtaagcatc ttcgtcggtc acataatgtg tcagtcatac ttcgatccac ttagtgattg 1740

cttgatgtgc accggga 1757

<210> 5139
<211> 2226
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53270_G1, chr2:7934241..7936466, Cluster 31

<400> 5139
atatttcctg ctgttaacta gtagtataaa ggagaggccg agaggaggtt ggtggcgttg 60

ccttctagct cgtcgtgtgc tgccgccgac cggtcggtgg atggggccgc gccgtcgctg 120

ccgtggcgag gtgaccgagt ggatgaggca atagtatagt aacatcaaca cagatctgtc 180

tccaagaagt caaataccaa ctcgttccat ttcttattta aatcagcact aaatattgtt 240

tgtcacacag gagcaacaaa atgccactgg cttgcaaact tttggtctgc aaacataatg 300

aactcaagcg tgcaaattct agaatgtgca ttataacaat cgatgaatga ggggagcctc 360

aatgtaccat atatattttt actcacagct taactgaggc tcccaggtct ctttgtaagt 420

agacaaaact cagattaaca atgaaaagac actagaaaac catagggggg gggcatgaat 480

aacttgattt ttttagctgt atagagattc ttactgtcac agataaattc cttctgtatt 540

gttgttgtct ttcgtaactt aaaacctgta tagatcgaca gtaggatacc gacactactt 600

tcttgacata taactggttt catataggat gacatatttt tatggatatt gctatctgct 660

agtataagct aacagagttt gactttagta tggatctaat ggaactattg ctatatctgc 720

gataagatag attgatcatg gcaggttcta gaacttggtt tgcagttcat ctgtgtgtca 780

gaggtgatgt ttagtaccgt gttttttttt atctcattaa cctgatacag attcatattt 840

tgctgtcatc ccaaggctct ttctcgactg aatcttatta ctaatcttta cctcggaatc 900

aataatctgg ggccaaaatg gagtgaaagc acacgagggc acgcacgttg acgaacagtg 960

agcagagcag acttttctcg accgagtttc actatcttat cactgatctt aatcacctcc 1020

gaatcaaata atgaaggccg gccggagcgc tctcatatcc tatccaccta gtcctcgttg 1080

tgtgcagcag ttttcctctg acgccgtcat gcaggttcca actactggga aatttcctga 1140

aagacctgct gatatatata tactcagcga attctacggt acgcctgcac tttcaacgtt 1200

agcttgcagc aatgacacgt ccgagaagtg tcagcgtttt ctggcaaaaa ataataacgc 1260

agcagaggtc ggggccaatc ttccccaaaa aaatcgatat ttatgtctct ttctccccga 1320

ggtactattc gattcattct ttatttttgt atacatcaaa caaattacta ataccaccat 1380

cgtatgaggt cggatgactg ggcgttaata agatacttac gggcctcaat aatttccagt 1440

tgacccaatt taatcgaaac gggttattga tgattggtgc gtctaccttg agaactttct 1500

tcttggagaa tatagtcagg ctgactgtgc gagggagtga ccgaagaata taaatttctg 1560

gttgcccaaa cgagcagcta tcgagacgat tgatgattga atggcatccg atacgactag 1620

agacgaacat agcgctccga tgcagcagca ccgttcgtcc tagcttccac gtcggtaaaa 1680

aaaacttggt cgtacgcgtg tccaccgctg cttcaatctg aggcgtacgt gtgtcgggtg 1740

gctgctcata tcctgcagct ttagcttccc aataaaagat taaaaaaaag tgatgacgct 1800

accgacacca caaacaggcc gatctagaag tggccacttt tacaggcgag aagtgttttc 1860

tatacttccc ttcgcattcc gccgtaagtt gtagcttcct catccgtttt gaatcagcca 1920

gacagggaag caacgacgct gcgcgcggct tcgcttttct acgagcggtc gagcggccac 1980

agtggacctg catgtgcctt ttgttgctca gttcttcaaa aaaaaaaggt gtcatacatt 2040

tttctaaaaa agagatgatt tattctttcc ccgttaaaaa ggcgcacctt tacgggtgcg 2100

ataatttcct agagaacaga aagatttcac gctaaccatt cttagttggt ccctgccgga 2160

catgaataat atgatcaagt ttttactatt agtctttact acgtgagttc aatgatcctg 2220

gccaat 2226

<210> 5140
<211> 1648
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54088_G1, chr2:12281008..12282655, Cluster 31

<400> 5140
aaaattatac ataataggaa aggaccagtg tcccttgatt ctattaggct tgggttgcgt 60

cctttaatct tgatagtgtt gttacctatc atatacaaac ttagggttgc gccccataaa 120

ctcgacaatg ttgttatctg gcatgtaaat catcatctta tatatatcta tataaataag 180

tatagtaaga tagccttgtc ttgtgccact tttaagactg gctcccttta gaacatcctt 240

gcattgcgct actagacaaa ccatgaaatg agcaaaacca atgaatcgaa atcgaacccc 300

ttcctgtgat ctgactgcat ctctattccc taactcaata actaatgtac tagcctattg 360

tcgaccgcca acacccatgt ggcaagatta agcgcggcta aaggacatga tgtcaaaatc 420

tcatgattta agacgtactt ggcataatcg atgttcatga ggagccgaag gcaacgtaca 480

cacaagcgac atacttagtg ttggtgggga agtggaggtg agctcgtcga tgatgagcac 540

ctctaggagc gactagagga tgaggaagat aatgaattga gggttcgaga gcagcatgtc 600

accgacgaac atctggatgc atggttgcat agattagcat ggatacacag aatttagaaa 660

ggctttattt gttttctcct ctccctttaa taaatctagt gacacatcag caaaatagtt 720

ataattaata tattgtacat taaaaatatc ctaaacaaaa aaaaaatctt ccatatggcg 780

aagctgatta caatagccct agcaagaagc caaaaggtca aatgacgcat acacatagtg 840

taaaaatatt attacctctc caatggtatt ttataaatgg tcaaaaaaat ctagattttt 900

cccaaaccgt atgcaataca taatatacat tccatcaaca cgaaataaaa tagagcgagg 960

cggccgagtt aatccagaat cgcatccctt aggcactgtt tgttcattgt tcttcatagt 1020

cgcttagcct tacttccacc agttactaac tactgtaaac ttccgcgtta tttcttggca 1080

ctgttctcat gttctcgcat tgtttaccca acccgcgtag ttgccgtgtg catgttaggc 1140

tagtagtatc aatatcatgg tgcggaggat gcacgcttag ccgccggtta gttgcaccaa 1200

taacaataat atagattgtt ttttatgtat taatcattga aggggctcgg aattctaata 1260

attgcttgct tggtggtatc cttcttataa tctacgctac catgtacgta gataattttt 1320

ccctgagcag gacctgaaag ttgctggctt atgtgctttt ggtatccttt tgttagtggt 1380

tacattagct ctgttttgtt agtgcctaga ttagggatct catatatata ttgtactact 1440

agcatcttcc cttttgcgct gttgctttaa tttctttaca ccgtgggaga ccgttcgagg 1500

agaaaattac gtgtgtgatc ggttgcttgt actagtttta gactgcattg taatctacct 1560

tactatataa tacatagagc ccaagttctg ctttaaggac tgtacaaaat atcacggtct 1620

gcataaggtt atagatgtta gaatataa 1648

<210> 5141
<211> 1515
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54581_G1, chr2:15009782..15011296, Cluster 31

<400> 5141
ttaagagacg gattcgatct acgtgaagag cccgttttta tatgactctc catgcatatt 60

atctcttggc taaatatatt atggctaaag attgtatcat gcagtgtctc ttgtatttga 120

aaaaaactgg tccaagtact cagggttgta catgccctta attactgtat tatctttgga 180

gtttccaaga aacacatgca ttgatgccct cccttggttt ttatttactt atcatattaa 240

cttttatcct aaacaaacat ttatatttta agctatcaat tttaaaaata tatatttgtt 300

ttgataatat aaaatttatg ttttatgttc actatgaaaa aaatctttga taatatacat 360

agaatgtttg ttgtaaaact tcaagaattt tttaaaatga tcaatcaaaa ctagctagtg 420

atatttgact taggacaaaa ctaatgtaac atgtaaaaga acgaagagag tatattgaca 480

aatttttact ttttggtaaa acgaggtcgt cactgtctaa agtgtagtat aattttagac 540

caagttcacc agactatata ataaattatg tactcattct gttctaatta tatcagtttt 600

accttgttct aagttaaatg tctcgatctt ccactaagct tactgtaaaa ttgactaaat 660

catctatata attgaattag ttttattaat gaattcttta atatgtcttg atattgtttt 720

tttatcccat agacgttaat aatatgttta taaaaaattg ggggcaaact taggctaatt 780

gaaaaaggcc ttagttgaaa gctaagccga atttgtgctt gtcagactct ctgaccactg 840

cccaaaaaag aaaagctagt gttctgtaat ttgtaatcgg atggagttct ttttttata 900

tagctgggaa atgggcgaag tgtgtgctct gactacaaga tgtatttgtg cttgtcagac 960

tctctgcagg ccgtttttc ttcagagttt ctgactatcc atgcgtgcat gcatgcatgc 1020

caacggatca catcaatcag ccaaagtaga ggacatttca tggtttgatg tgatccaagt 1080

tggaagtccg gtctggaatc tacagaaaca tttggggagc aattaatgaa tccctgccac 1140

tgcatgctgc atatatatct gacctcagta ggcaagaggc accttccgct ccgcacctct 1200

gtttgaaacc agctacaaaa atttctctaa tcttacacga aacagaagta tactcctatt 1260

ctgcttctca atcgatcggg gctattaatt gcgaaaggaa gactactttg atagttggct 1320

tggcttcagt aacacttttg cattggaacc cctctggtgg catttataat ttacaagtcc 1380

tgcagggtgg atatatacca aatgtcatag gtttcggaaa attggccagt ggccttgcat 1440

tgacgcgggg ccaacggccg cttagcagaa ctgtcatgta tctactccga gacacgattt 1500

gggctccaat cgtaa 1515

<210> 5142
<211> 1537
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_54669_G1, chr2:15493592..15495128, Cluster 31

<400> 5142
gaagcgaagc gggcgcaacg gatttggagt ttcgtccacc gtctcgcggt cgcaggtcca 60

ctgctatttt ggcggatctt cgggaaaaaa agggcatttt caacgataaa tggcccgaca 120

gaagatcttg ccgggccccc gctatccacc agacggcaga ctgccagtgg acctcagcgt 180

gttgcgatgc ggagcggctg gcctgcaccc gcacccgcac gaaatgaata cacgggttcc 240

gggacgagca accgcaacat caggaggaaa tggacctggt gcgttcgtcg cgcaaccatc 300

agctggtcta tggatgcgtc agatggcaac tgcctgacag ctacagaacg tgtatagctg 360

tgaccacaag cccaccagat tgtctaataa agctggtaaa tgaatcatat ctcgaccatt 420

attcaaagca ctagtatttg tgggatgggg cttgccgtga aagtggaatt tagacgtttt 480

gtacccccat gtttcaagga tgtggtcaaa cagtcttgca tgtcttgttg tatgacttgc 540

cttttgatgg tagcatatga ctatgctcta cagagagact agctagtacg ttgccaatat 600

tttaaaattg tctctgtttt gttttgtttt tttaggggag aatatgttta ttttagaacg 660

cagtactgag ttttgcttag caagcccatc gtctttcttt gaggccatta gttatttggg 720

ccgagtgcat ctataggccg aactaggaaa aactgatgac cattaacccg cagatcggtt 780

gcacttgtac tcttacatgt ccatggcttt gagaagttga aaggagagaa aaaagttcat 840

tttaatttct ttaactatca tcaacttatt ttctataaac tacaaaatgg gacatacagc 900

ttcggtagtt ttctcctttt tatatctatg cagtaaatat atgatatgta tgctttatta 960

caacgttttt tgcagtatat ttaaacctat gccgtatgtg attaaattgt agttgtagtt 1020

tctgaggtcc agttgtgtta cggactaata attgaatgct tgagtcgtag aaaaagtttc 1080

atgctcattc aataatgtat gactaagtta tagattgatt taggtttatg cttactaaac 1140

aatttttcat taaaaagtca cagatgtgta aaaaataaaa tatatgctct ccatgttatt 1200

ttactattgt catatgttag ttctacataa caacatgatt atgttaaatg ttcataagat 1260

aacaatgttg ttacatataa catgagatat atcttaggta tcttatgaac acgtggcata 1320

accacgctgt tagaaaagaa ctaagatgca acaatagaac attacataga gatttttta 1380

ttttttaact ttttaacaaa catgaatcta actaaattta taacctagtc acaatttttt 1440

tttactatag ttagaccata ggaaaaaact cagtaaggag ggaagggaag gaaagaccgt 1500

cctcccggaa gaatgcctga ggtcgacaat caaggtt 1537

<210> 5143
<211> 1744
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55227_G1, chr2:18358510..18360253, Cluster 31

<400> 5143
aaagccaact catatcgaat gtttcatttt ggtaccgacc atatgcacca atttcatgcg 60

atcaagtgta accggtcgat cggtgctgat ccgatttttc aatggaccaa ttggtatgac 120

cgtcatcggc tctagtgcgg ttagtgttga cctaaatgat cgataatggt cttttattta 180

aaatatacat agtacaaaat tataaatcag aaaagatcta ccatacgact cagatcactt 240

gtgcattagt caaatctaaa agattataaa actttttttt atttatttat aaggtaaata 300

attaaataaa tatatgtttc atcttatatc ctagaaagta ataggtaata atgaccatct 360

gatcgaaata aatagacggt ttatagttat ttaggtgtat cttagtaaag ctataacgta 420

aaaccttctc actctttaga tgctgctcca ttttaaattc attaagagaa aagatatgtg 480

agaagagaag gagagagata gacgaaggaa gaggtgttgg atcttcaaat aaccctaata 540

accactatat tacaaatcaa taatacagat tataccttca attcgatcgc tacacgatca 600

tcagtgaagt tctgcgctag ggcagcaatg ttcgtttaag cgagatcgat ggcgacggta 660

agctttccat tgttgacagc cttctctcga gatcgatcca gggttgaggt ggtgaataga 720

gacgacatgg tgaaccttgt gtttagccgt caacttccat ctctctattt ataggctacg 780

ctacataagc ccatcaacct tgtcttcggc tggacacctc aatcagggca cgaggtcaaa 840

gacctagttc gctgttagac caactggagg agaccaatta caataagagg gagggtacat 900

tactccctct cttgacaaag ccgatcaaaa ttcgactaca gacagaccac atccatatct 960

tgttgtagcg tctgcccctg attacatggt gcaaagcgtg aggcgctccg tgctcgtgta 1020

gtgtcaactt tcagcttctt catctgatca aagcctatta tttcttgcca tctgcctccc 1080

tgatggaggc tggagtggcg agcgggtttt cgcacgccaa atactatgta acagtttcca 1140

tcaaggtata taacttctct gtttgcaggt cgcaccaaat taacagctac atacgtacct 1200

aatcactcgc gcatgcatta ccatctgtag cattatattt ctagtcgtcc ggcatcatca 1260

tcaagtattg ggtagggaat ctcttcatca tcatgatgaa tgaatgtgga attgtggatc 1320

cctcatagtc actacagcgt acagggctcc agatgaacac agagagaata tatacttcac 1380

tattgcaacc aatcaatgag tattttcctt acacacatgg agatgtgcag cagatattaa 1440

acagagcaac attttatggc gggtgttagg cgtgtgcttg cttagtcctt accttcttca 1500

gaaacaacag tcaatctata tctgctgcca tgcttgcacg tgtccgcaag tgacgtggag 1560

ctctataatg gacaccgtac caaggagtag gccgcaatcc attatcctct gtgttctcaa 1620

aatatcactg tctgttcaat ctgcctgaag aataaccaac agtacttgag ataagtgtaa 1680

tgtgaccaca taacagcaca cgtaagaagc aggatttgtt gagaaaaata tatactcact 1740

tagt 1744

<210> 5144
<211> 1396
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56084_G1, chr2:23115758..23117153, Cluster 31

<400> 5144
ccaaaacaat caggtgatgg aatagtgttc acaaattgaa acgggatgac atctttttc 60

ctgatcagtt gcgtcttcta gtcatacact ttagtttcta cgtcaaaact cgatgattca 120

tgtactctca cagctagaaa attaggtaac aattctagtc aaggacatag ccggccgtcc 180

agctcgtttg aaatgcatta ttgaggtgag cctctgcttt gtttttcgg agaactccac 240

cgaatatttc tgtgtacgaa actgttcttg ataacaacgg cctgatagcg agcatatacg 300

ttcagtatga cgcaacaaca acggcagtta taaaatgaac cttacattca catatcaaaa 360

gcacgactgc acgagcttct aaaagctaac tctacatgag caaacgaaga tgccctttta 420

aattccgtgg ttgttggtac aaagcactac tacaaaacaa ggaatgctat tgcctgttgg 480

tagcgaattg tggcaacaaa acatccccct tacgttacca ggtacagtca gtctgtcagt 540

gttcatattt tgtggcctat ttagcgaaac tctacctcag catttgagtt tgtttgagaa 600

agcaattagt aaaagtgggc tatttgaacc aaaatagcta ggtgcaactc aactaataaa 660

tacccttaat atttaagtag ctcctgctcc aatttctcga gctagagatg accaactaaa 720

aacagggcta gacatctacc taatatatta agcccttaac gaggtccatg gactctgtga 780

cgtacccata tacaagcact aaaaccatat attcaggact gctaaaacct ttcctgatat 840

tctaaggata cgctagtttg cttctgttga atgagacttg ctgcaaaaag tgacgagaaa 900

aaaggtttca gaggacatgg ctcagccagt ctaaccatat cttatctagg gaaattgaga 960

tgtagataca atctggcaac ttacagaact gtcggtggct cctttccgga cctcgttctc 1020

atgtatgcga acggtacgtc ccaatttcgg tgttcaatga ggatagattt tattattatt 1080

tttcagacct gatatagaca aatgttccgc tttggaagga aatgttgctg tctcgttgcg 1140

gctatagtgt taacgtgcgt ccagagaata atatagtgca ggtttttaat agatgtcatc 1200

tcttctctga gaccgccggt agttagtcat tgataaacac acgcccaagt caagaaaaca 1260

gggcgaagag aggaacgaca gttccagcct ttaatttgaa tttcatccgt tggatcgcca 1320

ttgaacttcc gttcttatgg actttgttcc gatccgtcgt taactataga ttcgacactg 1380

atgagccggt ccagta 1396

<210> 5145
<211> 1444
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_56088_G1, chr2:23125193..23126636, Cluster 31

<400> 5145
atcgagggcg gaggcatagt tacacccgta gtccacacta tcgtcttaat acgtagtaga 60

gataaagaag agataagact attcactgtg gggattttgt agcactcttt ccaatacctg 120

acacatcatc caaagtgtca tgaaactttg agtgaaacaa tgtctcttaa tgtaaaaatt 180

cactttcact atttcatctt ggaaacgagt taacattgtt tcatctccat gaaactaatt 240

ccatctcgtg aaactcaatt ctcttaaatg ctatgacatg tcaaaaaatc taatgtgaca 300

tgacacacta ttaaatatgt atgaaaccac catgaaacta ttattgagaa tagcctaagt 360

atattctcgt caaagtatgt aactgaagct taacaaattg tatagataaa aatatcaatg 420

tttataacac taaattacta tataaaaata tcatggcaaa tttaatgatg tgtattaaat 480

attgatttat ttttgataca tagtcagtca tatttaagat attttaattg gacattaatt 540

tgtggacaga aaatatttta tgctgagtgt ttctttttgc tcgaagatga tacctccctc 600

atgctttta gtcgtaggct atgtaataac tcagcttcat tggtatagtg ttagtttttg 660

ctcgaaagca gctctagggt ggagatgaat tggttttgat aaatcgtttg gtgttagttt 720

ttagggtgga gatgaattag gtgttagttt ttgggggcaa atgcgcccat ggccccattg 780

ggacccaccc gcgtcagacg aagcggggcc aagctacatt ttttggcatc tctctcctca 840

tctctttcag tgcgatttgc ggggcagcgg agggcagttt ggctggtgct cacgcgaagc 900

gctatcaaac atgcccagga caaaatgcct ccgctaaatt ccatctccca tgttgagttg 960

gttgaaagaa agtcaagggg actcattttc aagagcatgg aagaatttgc atgggacaaa 1020

cctcacgatt cgctaaaagg actgcatgga agaatttttt tgcctccaat gacgaaggtt 1080

ttagaaccac ttggtcatat atagttttct ttccattatt gcttgaggac gccacacttg 1140

aggtcagttt actgcaattg gttgcagtag tataattaaa acaacacaag gtcggttctg 1200

ttatcacctc caatttctga ttcaattact attatatatg gagtatatcg tggtgctttg 1260

aaacccacca attgctgttt atatatatgt atggtgctgt tgctccgctc gacatctcac 1320

caacccggcc ataaacgttt tagatactaa ttacatgggc ctttggtgca tttttctctt 1380

cccgatttaa aaggtactta aattacccat taggtagtac acttcctcca cttcataagg 1440

cata 1444

<210> 5146

<211> 2101
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5825_G1, chr1:29672869..29674969, Cluster 31

<400> 5146
ccaaacgact catggatatt tatagtataa ggtctataat ttgagctctc aaaatgaaac 60

tgaagccact catggctagg gttagtctag atgctagcaa gaaaactctg atccatgtat 120

ataagagaac tagtaagtag ttgagcaagt caatgaaaat atgacaaatg ctactctatc 180

tcaaccaact aactcaatca atatgcagaa gctgatggtc ttgtggtcct taggtgctat 240

cctcttaggt aactaagctc tatggaagga ctcttgtata gtagtattga aaaaaatact 300

ttggcactat ggtccgtcta ctctggtagt cactggacaa tgaaacatgc ctaaaatgat 360

gaaccctgtt agatgtagcc ctatgaaggt ccaacagtaa gggggtcatc tgagacctta 420

tccacctcaa actcacccct ctctcagata ggtggttgtg gtggcggtga agtagtcctc 480

tattgtgcct aaggctaacc ctctaaatag taaacaggga cacaaggatg tgtcgattgt 540

taaactagta tagcatcttc tggtggtgac taggcggagg tgcatctaaa cctatccgaa 600

tggaactacc tctcccaacc ctcttacttc acgctatggt ggttgctaca acaatcatct 660

cctactaatt gcgatcaagc ctattgtgct tctcgtgcat caactcgata attatgctct 720

tgcccttatt gttcctagaa gtatgtaatg actcttgcta tttgtcccca cctaatggag 780

gtggtccaag tctcttggtc tagccatagt agttatctaa ttgactaacc gccgaagcac 840

taaccaacta taatgactaa actaacagaa aattcatcac taaaactcac ttctctgacc 900

accaaccatc tatggattgt ctagtgacta ctgaatttac cctgccacag tgaacctttt 960

gagccttggc ctcatcctat aatcatggga ttgtctatga gtttaacaat tcctaacatg 1020

atgtacaata aagtcaaaag aatctacata ataaatatag tctaatggta ttatattcct 1080

ttttagagca aagcaatttg atataggaga ggagaaaaga gtgtcttttc tacatctcat 1140

gtgactatga agagcaaaag caaaaaggta catgccacat aaactgaatc actaactaga 1200

ggcaatgata gaagcgagtg aggatcaaaa tgtgaattga gaattaataa caaccataga 1260

ctagaaatca ccacagcatg aggataagat gatcaaatgc caagacatga agtcaaaggg 1320

caaaattgga ggatttgggg gctctcaagt agtatagtgt atggtagtag aggtttaaag 1380

agccacaaat cctaattgag ttaggaaccc taaaataatt attaaagagt aaaattagag 1440

tttggcttga ggcccacagt ggaatcaaag ggaaggaatt tacacaaaaa tgaaaacctt 1500

gggtttgcaa tgtggaaaca attgtctgca taatagtaag gatgcacgaa tgggcatagg 1560

ggtgtgaagg atgacataag catagagcaa aacttaggtt aggtggcata gggagcattg 1620

tgcaacatgc atcgtagagg tagcacactg cataacaagg cgcaagtgta ggcgagtggt 1680

gtgaggcatc aaggaaatgt atcttgacaa gtgagagcat agtgcaacga ggcaggtggt 1740

gtgcgagaag gatctcttga gggaggaaag aacgatgtat cgcatttttc gaaggagctg 1800

acaagcggaa tttgttagca tgacccacat gtttgagaac ttaatgtgca ctacacccaa 1860

acaacgaata tgtctaaagg accattagac acaacaccac atatatgaat agtacgcacc 1920

attcaggaaa ccctaggcac caaacacatc tagtgaaaac actagtcatg tctggtgcac 1980

accatgtgca actgtggttt taggatgaaa taagtaccca accttcaatt aacatgtcta 2040

gtgaggcata tggtgatttg ttcggtgcac aaaaaatgta aaaaaataat ttctcatgga 2100

c 2101

<210> 5147
<211> 1657
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59242_G1, chr2:41741369..41743025, Cluster 31

<400> 5147
attagaagag aagaatgtgt gctagtttga aaggctatgt gaaggaatat ttagggagtt 60

gttgaaaagg agctagtact acttgatagg aagaatccaa tcccaagata agttgaaaaa 120

tctagaactt aatgatcaag atctaaatgt tcgatatgaa ttcttaatct catggtattc 180

gagtgtatga aagacttgga aatgtcacac aaggcgtgga agacttggga aagcatatga 240

ggaaacctta acgataaagg atggcaagct atatatcttc aaggacaaat atgaaaaatt 300

caatatgcaa ggggggagag tgtgtcttag atatcttcta gaggctaaat gccattatga 360

atgaattgag ggcctaggac acaaggtcga cgattaagac ttctcccact atttcttgag 420

gtgtgttccc aagaaattca agatcattat cattgtgatc ttgagaggag gattggagct 480

tctcactcct acacaagtat tggtagagat cattactcat gacacttttc atcatgaaaa 540

atagagttat gagcaagaga aggacaagaa gagcataaca ttcaaggtaa gatctccaat 600

aacaataaga agatttagga tgatggtgat gataaggatg agatgaagtg atgattaaga 660

ggagatggcc ttctttatgt gttgttttgg caaaatacac aaaggagaga gaggctttgg 720

tagaataaaa ggccaatcat catcatggag atcaaaggaa gatcaaatat gttatgattt 780

ggggggggct agccacattg tagctgaatg ccccaaaaga agaaggacaa gtattctaag 840

aagggaaacg ataaaaaaga tgatgacaaa aaggatgtat tcttcaataa gaagggatac 900

tcatattttc tgagttagat ttcaatgcct caacatcaag ggcagatgat gatgaaggtc 960

atccaagtct cttatcaaga acaccatcaa tattgatcca acactgttag actaattggc 1020

atgcctcatg tccaagggcc ctaaggtaaa atatgatgaa agtgatgata tctatagtga 1080

tattggagtt tataaagaat attcttatga caaccttgtt gaagttctat aagagtctca 1140

atactttatg agctaggaga tagaaaatag gaactgaaaa ggagatcccg agcctctaga 1200

caaacccttt gagaagctag accaatcatg aggatctttt agaaactcat ggtaggctta 1260

aggaagctta aaactctatc tttgagcata atgttgagtt ccatccaaaa gttggtatga 1320

gtgttacatg tgttttactt gaaaaatcca acatgtaccc ctattgtgac taaccccttt 1380

tgtagcacaa gcaagacttc tatctagggt aatgaaattt acatgtgatt cgtttctcac 1440

tatgaagaac aacacactca agaacgaggt ggatgagctc acacatgcac taagaaagtg 1500

ctatgtgggt gaggcaaggt tgcaccaatg cttggtagcc taaggttctc cttgaacaag 1560

gaaggcctag gctatgttat agaaaaggaa aaagtttttg ctcctcacaa acaaacattt 1620

gtgaagaaaa tgacaattat ttttacaacg aacaagt 1657

<210> 5148
<211> 2584
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_64548_G1, chr2:72212566..72215149, Cluster 31

<400> 5148
attaattggc atcataaaga gacacaccta tatttagaaa cgtttttctc gagatcgcaa 60

aattttgcta aataaaggta taaaacctcc tatgcgtctt gatgcatcaa gggggcaata 120

agtagcttcg atatgagcaa ttaggacacg tataggggag ggacactaaa accgatctct 180

aagcataaga gacaacttta ttatacaata tagtatttat aaatgtagtc tattaatgaa 240

atgaagaagt gaatgcgcat gtagagcatc aaatcaatat aatagacgac atatttgtac 300

aagtgaagtg aaagcgtctc ttactacttg gcttacgagg tagagacagc tccacggttt 360

tttttataaa tacccattaa acatcaatgt acgtgctctt atcagtataa gcatactgaa 420

acttgggctg gattgcagga tttgcatgca atgcaggttg cgtggttgat gagggacgat 480

aataagcatg gcattaatgg cagagtagga cggcgttagc tgctggcaat ggtgagacga 540

ggcagcaggc aacgacggtg ttggcgggag gggcatcgac aactaaccgg cgcgcggcgc 600

tgtcgagagg acgatcgacc ttgcttcaat gctgcgaaat gccacggggg gtcgcagcgc 660

agcgggcaag cagcccagat catcaagcaa ctccgccata attgaatctt agtaccagta 720

cccttccctt ttcctacaat tattgcccga tcgttctagc tacgtgcacc taagatcgac 780

caaaagtagt gtacacctta ccaaaaacat cgatgttgat ttctccaaaa aaaaaactaa 840

tctcgaacat ggttagccca taagttaact agggataaga ttttaaacac taaattagca 900

tcattatata caatatttcc gtaatatggt tatttagcat tacaagtagt tatactcatt 960

tataaatcta gtcaactata taaaaataac ttagaatagc tctaaaaaat ggtttattct 1020

caaatttagc ttgatagaat attgtttaac agaagcggcg cctagctacc atagcaacca 1080

catgcagaaa gacatacata cacacacgta tctgtgtgag tccagggggg tatttaattt 1140

attctcatat ttagctaggg agctattttt ataaaactat aggaagaagg tccatttttc 1200

ccaggaaaaa ggtaatttga aaatggtttt aaagagcttt tatataggac aaagacaaat 1260

taaagagctt ttatattact gaaaattctc cctagaaaat tgaaaaaaaa gagaggctct 1320

ttgacgtgct cttcttataa aaatggagga tctcctaaaa aaccagcacg agctaggagc 1380

tagaaaaagt agcttctacc ggctcacatc ttccatgttt ttctcttcac gctacatcat 1440

agaagaaact gtacaaggag ttatatttca atcaaacagg atgctttttt taaaactctt 1500

cctaataata atgagggagc tggttcttta gaggagccag agctaaagct gccagaagaa 1560

aagccctacc atacggagcc ttagtataga tagagtttct atctttcggg tggaggcttt 1620

gtgtatatca gtaagtgtta tgtttcaaca accgagaatt acatattgca ggtgagagga 1680

atatataatt caggctgccc ctgcctgcag aaactttggc atcatctgca cacaacaagt 1740

gggtctgtct cggcctagac agcaagaact gcacgctcca ataatgagaa gactgaagac 1800

agaagcactg ctcttctttt aagcaagcat agtacttgta gttgtatata tatatgcatc 1860

taggtaaaat aacaagttgt gtgctttgac ctgggtcatc actggcctga tggagccggg 1920

cgggcgaccg gttctgttca accacggttg tactaagctt gttagctagg ctcctgctgg 1980

cctccctttg cttcaagagg ggaacaagtg tgtgcacacc caacccaacc ccctagctag 2040

ctaacccccc atgcatgcat gcatgcatgc acttatcttc ttttaataaa gttcatcatc 2100

tatcccagtg gatggagtgc attgttggct gctatagctt accagcaggg gaggctacct 2160

atccttcatc agctagctag ctagctagtt tcagacaaag ggcatgcatc ttctccatat 2220

atatattaat acaacatgga ttagaataac atcttgccaa gatcatgttc ctgttccccg 2280

ccggcccact ttgcgtagct ttgccaaaac tacaaaatgt gctttaggtg ggctatagta 2340

ctagtagtaa catgcatgca tatccatgta gcggcttgtc cacatctgaa agatctcact 2400

tgcacagcac ttgtatatat atcgtctata tagaatatgg tggctgacat ccacatctaa 2460

catgcatgca tatccaagaa gccattctat atgttttttt aattgcttac tgcatcttct 2520

tgcttcagct aagaacctgc ttgtaacagt agtattctgt atctatgtgc cgcccaaatt 2580

ggta 2584

<210> 5149
<211> 1534
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_64549_G1, chr2:72215217..72216750, Cluster 31

<400> 5149
gaatttgtac taggaatatt gtattgaata tgtggatcgc gatcgtcttg agctagaagc 60

tatagcctat atagcttgct agacatgcac gggaatgtca attagttctc gctagtttag 120

atagagattt gagaccgatg cgcgcggctg gtttcgtttc gttgagataa ctcttgcgcg 180

taccggccag gccagctgtt gctgtactcc tgacaataac acgaaacctt tttaactgaa 240

aggtttgggt tcctctactt tgaatcttgc gacagaaatg tcgaattgag ttgagcaagt 300

ttcctgtgtt ttgaacatat atatgctcat tctttcaaat tcgaggaatt gtaaacatac 360

ttggttagaa tctggaaaaa attacttagg ttagaatctg gaattccctc gatcatcgac 420

ttggatctgt ttgtttcagc tttactactg ttcggtttag tagatggaca acaaataagc 480

tgaatttta aggagtaaac gatccctcgc aatccaaata agctacttac agtactatac 540

atcatcatca taatctgcaa taaaatatgt actttgttgt catagacatt acataggagg 600

agtacgtcaa ccacatcaaa cactgaacag aaaagctaag attggtcaaa cagtcacaac 660

tgagaaactc ttggagagcg agactcatca agaatcaact tcaataattt ggataacaaa 720

agaaaggcac agctaaaagt agttaaaaca aacgggacct tatgagcatc ctttcggcta 780

ctatggatca ccgccacaac atcaacatca acaatgtgca gcccattcga aggtctttaa 840

tttacatgga acagatggat tattttaaag ttttttctgt aagatttact tcatccgttc 900

ggttctccac aaaaaacacg tatgattttt gctatatgac tagatatata cattatacag 960

tcaaaaccag aacaactttc gatttacgat agatggagcc acaataatgg cacctactta 1020

cgctaattcc acaagcaacc tcgatcgatc ggcggccggc tctgtacaac actggcactt 1080

tagcagggtc ccatgtaaat taaaggcgga aaaacaaaaa accaatgcaa caggccgacc 1140

acacacataa agcacgcaaa agggcaaaat taaaacaagt agggtcccat gcatatttgg 1200

gtagatccag gtcgttgtat actgtatgcc ggcacgaact atgcgcaccc aagtttttct 1260

ccggttaacg ggcatgttgt cgtcccttcg tcgctttggt gtggagtaga tcatcgttgt 1320

catcgccgtc gtggtcgtag atttagggct agcccatgcg ctgtatttat tagtccatac 1380

attctaaaat aattactagc ttcgtttttt aatatttaaa atctcactca taataaatag 1440

aagataaatt tgtatcatgg atcttgaact atttttaaat cacaccaact acctttatac 1500

tttatcttac gtttgtatca ggaaatctgt tgta 1534

<210> 5150
<211> 2912
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_76564_G1, chr2:150794711..150797622, Cluster 31

<400> 5150
aattaagata gataatctaa acaaaccctt aaagttatat ctaaatcagc attcttgcca 60

tgattaaaaa taaactaaga tatcctataa aatctacata taaatttgct acatatgtca 120

tcataaaaaa tagcaataaa gtgtgtctat gtatgtttct aaattatatg cttctgtcac 180

tactaatacc gtcctagaat acaaatgtta taacttctaa aatctgtact gaaatgcagt 240

gcattccatg tagtgttact catatttggt aaagtttatt ggaaacgaaa ccaaaacttt 300

acgcagaatt tttatttaag ttacttaagt gtttccttaa gttgtcttaa aattttctat 360

aatgtatata ttataggaca aatgatgtgt aaaagataat ttaaaacaaa catacatgtc 420

atgcattctt gcaaatcaag catatatgca tgcatgcata catgagccat aaatattaaa 480

tttctaggaa cccgtcaaca agaaaaatgt tcctttagtg attcatataa tgatgacact 540

aacaacttat ttaaaattat agtaatacaa tatctataaa aaataataat gattaaaatt 600

ataatgctcc atcttttcga aattattaga tgttttgaat tttctagata tattgctttt 660

gttatctatc tagatataat gtatatctaa gagaataaga aaatctactt atctagaatg 720

gagagagtaa ttattatgta tgtttgtact ttagaagaat ttatagattt tggttacaat 780

actatatata tactgatagt atacttgtaa gagctctttc tataaaaaat actactacat 840

gttaaattct ttgatagaga ataaaatcaa tatcttaaac accagagaag gtcaatgcaa 900

actgaatgtt gtcatgccct tcttgggttt tgaattttgt atggagtaaa caacaacatt 960

tagacttaaa tattaatatc atccgaagat aagaactatt ggcttctcct agatcttacc 1020

tacatctagg cctaggatga aaacaagaag aattaatcgg gataacccct cttccgcatt 1080

ttatttcaaa aacaggataa aaaattgcac tagcaaatga cgaaaataaa tcaaaacgaa 1140

cagaaaaaat cgaaatgggg cataaaaatg ggaacatcac cgaataaagt atagaaataa 1200

agtagtatta cgatcaatta aaaaaatctc atctagacat atgtaagcaa taaattataa 1260

tataagcata tggttaccaa acaaaataat cgattatgga ttagtttgtt gcaatgtgac 1320

aaagttgtct atgatttatt tattatatta tataaaacga gatattatat gtagataaaa 1380

acaggatatc ccgactaaaa atgaaaaagt gaaaatggta ggaagaacac ccgtactgtt 1440

tctgtcccat tttcaggata tccataaata cgagtttaaa tgcatgaatc aatgtagaaa 1500

ttgaagcgga acagaacata ttttattccg accattctcg cccctagctt tgctcatgtt 1560

gagcgatgtg gttcatatgt aaatgaacat gtatatacca tcgtcattat aattaaatag 1620

tgcatcttag acatagaaat cgatcgttat ctttaataat tgagttttga ataaaagata 1680

cagtaagaac aagagtttaa gctaatagac ggattaaaaa attctagtat ggctaataat 1740

aagatcaaaa tttgaaaatc aagatctatc atgacatcac gagatcatga acaagagcca 1800

ccacaactca aaagtaaaag attcagctag atatgcacac taaagaccat gaacggacta 1860

gccccatgca gaaacaagct agctagctag tgttcctcaa acttaattgg cacgttgctg 1920

atgggaatat ctgatatctg catgtatgac tagctagacg gccggttgaa atgtagctgt 1980

cagaaaactt agctttcttt tgaccagacc gaccacacca tgcatatgca cacgaaatca 2040

gccattgaaa tgcagaatca tagaaacgct tgtatacatg caaattgttc cctgtcagga 2100

cgtgcttttt ttcaggagca gacgaaattg aaggagcaac caagcaatat atgcatcaaa 2160

gatgggttgg tacgtggcct ccggtttctg actgtttgtt tcaatacata tacaaatctt 2220

ttcatgttac ttcttactac gtattaaact agatagatta attaaagccg cctccggttt 2280

ctgactgttg ttttaataga tggctagaat taaggctagg agaagctgga atgcatcatg 2340

tgtcagcagg atgtactgga gctgctgcat gcggtatcga cttgggattt gacgcgcgct 2400

gcttgcactg actgctagct ctaatgattg gctgattgct agctggtagc agccatgcat 2460

ctagctatct ctaatgggca gagtgcaggg cgtgcttggg gagcataatg acatgttaac 2520

acgcccagtg aaggacttaa ttagctagct ttatttattg ggcttgcagc atctactgta 2580

ttggtattcg agaccgtcac aagtaatgct aattttaagg atttgtgaag tcagccgtgc 2640

gtcacactct tttgcggtga cttaatatat gttctatata ggacataaat acctgctcca 2700

ctagtttgtc cttttgtata tgacaaatgg cttttgtttg aaatatatag tcctataatg 2760

aattattcaa caattagtgg caacgaaaac ttggcctgac tttgtggtcc acaccgtcat 2820

taaaaatcat attaattact ttgagtttgc atgaagtaat taatcgatgc tcctaagcct 2880

tttctggtgc aggtttcacc gtttcattat ac 2912

<210> 5151
<211> 2090
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7782_G1, chr1:40558657..40560746, Cluster 31

<400> 5151
taagacagag atatgaaaag aatctgagtt gattttcgtc ggtccaagtt gagagctcga 60

tgccttggca aacctaccag aagcgcgtag tttatgccta gtttggtagg tcaactctct 120

tgcacaaaac actcacgcct agttgaaagc ctatgacgtg atggcccata tcatattgcg 180

caagtgggga taaaagtaaa gtgattagtg atctgccctg gcgctgcatc gagacgtgac 240

ccaagtctat gtgtgctgtg ctaacggtat cgttggcatt atagtttcat ttgcttttgc 300

agtcaacgtc actgactatt taagtacgca gtacacttct taacaccaag atgagcaaat 360

taaattttct ttgtgaatct tacgtcccaa gtaaacttgg tgtgtcgtgg tttgtctgtg 420

ctcatggggg ccggtccggt cttgttaaag actgcagcaa agcgccgcgt ggtctaacag 480

agctctccat tgggcctttt tgctgtaatg ctagcgtata ttatgaagaa tagagcagat 540

agtctactct gtaagctcat aaatgagtca gttatgcgcc tatcttcgtc tttcaaagat 600

cttatagtgg atgtgtgtgt gtaaaaagag atgaacctac atgtacgatt gactacgtct 660

attgtgtgat ttatgtgaaa gaattatttc tacgttattt tttaaagaga caattaaaat 720

aacatgttta tatgctcgtg tgttgaaagg accaagatgt tggagagagg agtgaatgac 780

taatctaaaa ttttcatgaa attaaatact atcacagtcc attttatccc ttatgtcgtc 840

tagaagtgtt tctatcctac aacaaaattt tgtaagctag atccaaccct atattagcat 900

agcaatgcta agaatataaa gacatgaatg taaaattgct caaatataaa tataaagaag 960

aagggttaga aacattggac ttttcgatca gatgtaaaaa gcttaaacac aagccatgaa 1020

gcttcggtgc tcaattgttc ctctactacg ttcgatcaga tgtaaatgct tgaatacaat 1080

ccatgaaaca tcagcgctca attgttcctc tactacctgt gacaactata tatatagtgt 1140

cttcgtggag gcgtaacatg ctacgttcgc tattgaacct ttatcctaac tatcttagga 1200

tgtatctata cttttgaacc tgtcagtacc tattttatgt ttatatcttt ggaccttcat 1260

tttattagta agtatgtttc tatttcgtat gttggtgcag ataattatcc gtggtaccag 1320

cctgcgtgca ggggcgcgct taatcattag tctggctggt tttacaggcg ctagcttttg 1380

cgtttttccg tccgaagatc agacgtgaag gtggtctctt gcacctcaag attaggcgat 1440

tagcccatcc agcaaggtaa ctctgggcca tgatcccaca gcccatacac caaatcaaaa 1500

gccacggtcc gtcagcccat acaccaaacc aaaaggccgt acatacaaag cgagcagagc 1560

ttttctccgt gatgctatgg aaactggagc ccacgaagag cacaactgtc tggccctgcc 1620

catggcagat ggcagcctgt tccttttacc atggccatga tatgggtgta gtgtaggtgt 1680

aggagtatat acgattacaa gcggtcctaa aataaatata caagtcattt tcaaggactt 1740

attaaaaaat ttaaatttta gccatatata tatatatata tatatatata tgataatgca 1800

ttagtattca agatgatatt ggattaagca tacggcatgt ttttattata aacttattta 1860

gagatataaa tattgatgct attttatatg tttagttaca ttttaaaaaa aaaataaact 1920

ctttaacaag tgaatggcgt gtttaattta gcatggtaga aataggagta cgagcactct 1980

ctccgttcga aaatagatac atatttcgct tgccgaggaa acaaaacaat tttaatttca 2040

accaattata cagaaaaagg atactcgtgt aataaggtag tctcgagcag 2090

<210> 5152
<211> 1603
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_80882_G1, chr2:176354432..176356034, Cluster 31

<400> 5152
gagcgtggag gatcttatgc catcgcagca ccaactatca cctccgaagc aatgatgtac 60

tttgcaacca accttcaaca tgagccacaa tccgtactag tgtggttgca tggtcaactc 120

caaaataatc aaatagagca tatttgagat ctgtaccaca tgaattatat tttatttta 180

ggaattatgt gattttattt ttttcaagta atgtatttaa atttgtttta taaattatgt 240

aatctttatt ttaagtaatg tttttaaatt tttttatgaa acatgtactt tttattggtt 300

tatttatgtg tctgatgttt ctaataaaat gtcgtgtttt atttgcaata caaatatgta 360

aataaaaact tgatgtggcg ttgggatcac tataggctga tgataaaggt tatacattga 420

aacgttatgg tagataaagg ctgacgatag tagatagcgt agtcgttagt gttagtgtgg 480

tcgatagttg aaagaccact tgcattggat cttgcatgaa agagaatgag ttaaggttgg 540

ctccaacgat tcctggtgtt aggatcctta ttagtggaag gtcctcaaaa agcattttcc 600

catcaatcac tcataaacct atccagttta acagagcgaa gtgacaaaga tcgccttcag 660

acaggacgac gtaaaacaaa gccacgacct tcgtctggat ggtatgcaca tgcaatccca 720

aagccttcca gagcacggtg taaaccctcg agacttgttc agcaagacaa cgacgagaag 780

agacaaaaat acccctgatt aatcttgtaa ttttagccga agtttcacct tacgactata 840

aataggagta caatgtcata tatagggacg acttcttgag atcagagaga tctgctacgc 900

tctacctaca aagtagtatt tttcctttca tttcatttaa tcgtttgtaa agacgaatgt 960

atatttataa tcattcagta taatgtaata aacgaaacaa tgttatcaca taattatttg 1020

agtaatctac atcgtttttc acttttcaca attcgtttat gtaaaacata ttttgggctc 1080

tcatcttctt cctttaatta atctctaaat aaggagttaa ttaaaggata gagcttaaaa 1140

atcgatactc ttgtgttatc ttatttttaa tatcttacag gaaaaaaaca agtgaccaac 1200

acccgatata gactataggt cccctaaccg gatgtaaggg gactgtatcc cccaacggtt 1260

cacggtaaat gttacatgta tgtattgaaa gaaggaatct ccttgtatat atagggagag 1320

cactatactc cccatacagg ttaattatat ctttttagct ctaattaagc cttataacat 1380

gctaataatg tgtattatga cactacaaat attgtatgtt tttaaatttt aaaaagcgat 1440

aaataggtgc caattatata agttgaagac aaactatatg taggggaaat gtttttgcat 1500

atatatagta aaatatatta gaaagctcga ataaggtttt gtgaggggga atagttggag 1560

agtctaataa tagtgtcgcg tatgctacgg atatagatag ggg 1603

<210> 5153
<211> 1859
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84983_G1, chr2:198864994..198866852, Cluster 31

<400> 5153
aaatgaaatg caactaattc atatgaacat ataccgatga gtataaaaat agagttcagt 60

ctttttcctc tctgctttca atttagatct tgatcaaact ttaaccatga atttttagaa 120

cccatattat aacctaaata gcatatcttt agcacacatc ttagacctaa cgctgtgctt 180

tcatcttaat caccaaaaac taaaagatat gtgcacgtgc acacactcgg ctggattaac 240

cggatactag taaatactga attcatagtt ctttagtgag ctgctgaact aggtctcgac 300

ttgccgtggt ctgtatgtca gtgtcacaca agcaagcaag gtcagagagc gcgggtttgc 360

aacgaatgag agatagaggc cacacttccg ttcagagcca gtgtcgacga caccgcttct 420

tgcttgcgca atgtgatatc gatcacgcca ggtcgagaga tagagcgcca tcgtatcgat 480

cgatcttttg caccaggtgt ttatacaatg aagaaggcat atatattata tatacatgta 540

tgtcgacgtc catgagcatc agcaaagtat gtgagtggct ctagtggccg gccgtgtcgt 600

cgtcgtcgtc gttgcagaga catcgcaacg tcatcagtgc actcggcctg tcgctgccca 660

cggtgaagcg atggtcgccg ccaccacgtc tagctctttc agtgacagca aatagctaga 720

aggcataata cagcctttgt tgtatttgtg tcgcatcatc attaggccta taattggctt 780

aactcgacag tggtaattgc tgatgacaaa aataaagacc tatatatacc acgtacggag 840

gtacgacagc tcgaggagtg tgcccgtacg tatggtatga tcaatctatt tatttattta 900

ttccttatta tttctctttt ctatatatac gattgtttcc tttgttcatt tctgtagatt 960

ggtttatcac tagctagagt ttgcaagatt ggtagggtag ggtgcatcgt atatatactt 1020

caggaaaaaa aatcattata tatattggcg gctttgaacg tcccagagga gccatgcatt 1080

cttgtaattt tcttttcttt ttcaagggtg attgatgtga aagaatgact tgtagggact 1140

gacaactcga atgcaattcg tcccaagaag tgactggtgc tatgcatagc gccaaagttt 1200

ctttttaaaa agagagactc aattgttgag aaccaattcc aattccaacg atgggtctaa 1260

tcctattatt ataggaaata atgcatctgc aactgcaatg tactacaatt atctaggcag 1320

ctagctagtt ggctagcaga tatgtgtgtt tgctcaaatt tggagacatg cgaggaactc 1380

tcttggcatc tacttcctcc aatcccatct taaatataaa aaactaactc aatctaccta 1440

ctaagacaaa catttttta ccataacatc aatatctata atttcttaca aattgaacaa 1500

acaagtttga cattactagc tagctagatc ccgatccctt gttattgaag acaatatatt 1560

ttaaaagata ttgcctatag tcgaagttcg agaagtttaa ttagagaaac taaatggacc 1620

cacatttaca atttaggaag tagtagaagg caaactcatg gtaaactaat gaagccatat 1680

agacaaacca tagcttatct tatcctttta acttaactat atacatatac ttattagaac 1740

aacccttgt gtttgtagtt caactttatt gttttatcat agtttatcta aaagccaggt 1800

acgtactgtg caatactaca aaaaatattt cacaacattt tcaccaatag ttcattaaa 1859

<210> 5154
<211> 3137
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_84984_G1, chr2:198867463..198870599, Cluster 31

<400> 5154
agtttgacta gctcgtgaat tatttttaga ggtcgttttt gttagagtcg tctctataaa 60

aaatgtattc gctgctaaaa aattgtttag tattgattgt tagttgatat agtagagatt 120

agttgtgata atgataatga attgtcgcta gatggtggat aacttttact agcacggctg 180

actttcacca aagttgggca aaactggttc aaaaacgttt gtgatgagct ttgtgtggtg 240

gtggtgtgct atgtctctta actcctagta acttttaaa agttatcagt acagagctca 300

tctagtgtga attataaaat ataaagattg gttgcctagt ggaggttgac ttggttatct 360

acttaggtcg tagctaattg gtgcacgaca tgcggattaa taactcaata tatagcaccg 420

tgttaacagg ctattagctt ttactccaaa ttcaaaggga ctgaggggat taattaagtc 480

ccttacaaat caaaatcctc tttaatctcc tctagtccat tattcaatcc tcatggctta 540

gaaataaaac gaacaggcct caacaagaca tgaataagga agtcaagtgt agtagctaat 600

agtagattat tgtggccatg atggtttcta cctgccgata taccatatag ctagcgttgt 660

tagagaggcc attccattaa gtttgacacc tcttggattg acccccaaat tagtggcggg 720

agaaatttaa aagtgtttgc ttttgatgac aattaatggc gtagtgtcgt acatgcatgg 780

ttggaattta gttaggaacg tgtgatgcca tgcacgcagc gtcatctagc atttagctaa 840

agttggctat tggatgaagt gatggctttt caggctttat cgaatgtttt ctatattttg 900

cgaagtgttc aaagcagttg tgtccgatag tgtaccattc catcataatc taatttatat 960

aatctgggaa tgaaacaaac gcacccttaa tattgaataa cgagacgatc gtcgaggaag 1020

acgaacaaga catgcatgat cgatcctaaa agcagggcac gacgcatata tatattaatt 1080

aattgtgagt gacaaagtgc aggctcctca tagcgacagg tgatcgagta ttattgttgt 1140

gcaagggttt aggactctga atagctagtt attggaggga atataatatt aatttggccg 1200

cgcgccgtga gaccgtggct aacgatgggc ggaaagcaat caacctcgat ctaatcttaa 1260

gagatgagag gcaggcagga aggaaattaa aattaataaa ggtctgcttg aacgctgaaa 1320

aagcacgctg atcgatggag tggagagaga tgtgacgaga ttattgcatt gtctacgagg 1380

agaaggccga cccgatcgat cgaccctgag cctgaggtgg tgttaaatgt gtggggagcc 1440

accactcccc cgtcaccgtc acaaccacca acccacatag cctaagaaat gcccaggaat 1500

tcatcaggct cgctctattc attagcaaag catcgtcgta aggttttaga gttttagcaa 1560

ataatagctt tacaggtaaa gtttctaaaa aaaaactgtt ctcacaatca caagcaggga 1620

tagatgagag atgaagatga aaaatagaca ggtcgtgggt ttggagatga agacgaaaca 1680

aaagataggc cgtgggaaag agcattatgg tcatttaatt acgtagtttt gtctatcacg 1740

tagtttttt ttggccaaac ggttttatta attagaacag tctcagcttt actgttagag 1800

ccgtttcgtt gagttaaaac taaaatttgc tggttcatcg gtggaatctg aggtaaacaa 1860

tactttagct tggttgtagt tgtagcaaat aatattctgg ctaaaggaga gagagagaga 1920

gtaacaaagc gatgatagaa aggaaggtag ggaattgaac gttggagcaa ctttttaaat 1980

atatactaat caagtggact caaacaccca ggtctatcta tctacatcgc tttatattaa 2040

ttaatcatcg ggtccttttg gaggagctga gagtgagagc tagctagcgc ctctatcgag 2100

cgcccataca tacgttgcaa ttctcattat tcaagtcaag tgttgacaaa accgcgcgat 2160

ggttatagtg ctcaagcttc gtcatcggtc gctttgcaaa cctaatcgcg atgattggtg 2220

caaaaggaat gttggttggt tggttgatgt gaggggatgg atcggatcgg atcggagagc 2280

gtgcgcgtat gatgatgcat ctgagtagtc cagatctatc tcattctagt agtgcataca 2340

cttccaacta ctagtactac tactaatcat gaatcgctgg cagctagcag caagccagca 2400

gcgacaaatc atgctatagc tagctaacta gagctagtag tcaactgtaa cactcgagcg 2460

cgcgcacgcg cagagcgatt taatttactt gctttaattt gtaggtggtg tagattcact 2520

aagccagcta tatatatagt tagtagtaag ctagtataga gcctgagcat gcatatcttt 2580

tgcgtttcaa tgtcacagtt tggtagtagc aatatatata gtttatttat ctaattaagc 2640

ttgctgctcc agtactcctc gcaatttttt tggatggatc ggacaaaaca gtgatggatt 2700

gcagatctgt gtgactggaa cactagttgg gaacacggca cacctatacc tacttacttt 2760

tatttgctca atcaacacac aggcagacaa agaaaattga aatgaaaggg acagcctgct 2820

agctgtcccc ttattacaaa aggaattcgc attgtcccgg gtgaatcctc tatatatcgg 2880

cactctatgt tttgtttctt ctctgccctg ctcgaatgaa ggatagatag taaggtggta 2940

cgacgatgtg acactaacgg ttcatttaac ttttctgaag gtaattaata agcagttccg 3000

ttcaggacag tgacgtacga tttggatgca tctatcccag atcgcttcag ctcatcccgg 3060

cccgtcatgt tcacggccac acaaacagac tcgggtccca tccttaattt tatcactgtc 3120

ggaaaataaa aaccgtt 3137

<210> 5155
<211> 1425
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87353_G1, chr2:212460892..212462316, Cluster 31

<400> 5155
acaacaatgt acatttattt tcttactttt ggatgtgtta caatttgtca attttgtagg 60

cttgtgtagc aatgtgcccc agtgtattga tcagatttag gcgtacgtgt tgaatcattg 120

cacataaaat atagtgaagc ggggtaagaa tatagaacag tgcatatata aagtgtacag 180

ctagcacttc tgaatttgtt ttatgggcca cgctgcctag tagtgggctg ggaagcttat 240

taatgtcgag atcaggccaa aagcatgtaa atttctttgg ataggtggta tttggtgggt 300

cacttcgtac ccaatcagat tccacgatca acatggtagg aacagacaag tacatatcac 360

atgattctga acctaattcc agggacgcaa tgctagctgt atgccacgct acagtgacca 420

atcttcataa aggtgccaaa gtgtcacact attttatgca aacgtatcga catatataac 480

tggcattgat gtcgtggaac caaatcaatt tacaattatt cagccaaccg taccaacaag 540

gagacaccaa tataatgtac aatctacgat agattgcaat ctaccatata gtaacacttc 600

gagcaatata taattaatga agcaacgacc gacactcaat tttctgttta ataatttagt 660

ttaggaaatt catatcagat ttatgacgat atgcatgtac gcgtatgata ttattattta 720

taataataga tgatgacaca tatatgtgaa tcataccgat caaaacatga acgactaaac 780

tgaatttcac agattcaaag attaggaatg tgcgcaacaa cacggaggga cacatgctca 840

aaggtggcac tgtggctcta atcatgtgag ttgacatcat gcgttgctcg aagtcattga 900

ccatagttaa tacaagtaga tgtttaaagt gttgtctctt cggcgcccat cagaaagaag 960

aagacgtacc agggaagaag aagacccaca actacaccat aaagaatacg agcataccag 1020

ggatcagtga gcagtcacga caaaaatttt taaaaaccta ctcacctaca cattctgcca 1080

ggtgtctaat aatgcagata tcaattctag aggcttgctc tcccaactct cagtacaagt 1140

aagcatagga tcatgaggaa gcttcattgc aactcgacca agaagagaga ggagtgggga 1200

atttcttatg tgttcgttca gttcgcgtaa gctagaggct ctcgatgagg ataatggtag 1260

gagttattag agtaataacc tatgtgcgca ttccttagct tgtacgtatc ttacggatca 1320

gtcaatcgtt tactctcctc aagagatctc atattaaatg gggttttgca cataccctaa 1380

tataacattt gaggcatagg ctgataggcg catagcgtct cctct 1425

<210> 5156
<211> 1912
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89367_G1, chr2:223642259..223644170, Cluster 31

<400> 5156
ctgattttga ccatgaaaat attaattaat tttagcagct agctagttga ggtactcaca 60

agtgtaggaa attaaagtat atgagcacat tagcttctta aattggtctt aataatgtaa 120

attaaaatat gttacccaga catcacaaag atgggaatga ctaaagcggc cccttaattc 180

acattgaaac tggcctgact acgttcaagc tattcatggt tggtttctca ttacaaaaat 240

ataaagatat tgagaatctt gaagtctcat aaggatcata ggccaatcca cggaaatttt 300

agcatgcatt agatctcctt gttctatcat tcatttgaag cctccaaaga aacagccttt 360

ttcttgaata ttcctatgtt gtgtgttctt gtatcatagc actggcatac aatgtgactc 420

tacaatgctc ttatattttg ccttcacctt catttagaaa gagccctacg gtttggataa 480

tttattccaa tggaacaaga acacaggctt ttgaactttc ggtgaaactg cattacctca 540

acgtacacct tctaacgagt tagcaaaatg atgttccatg ggaccatgaa aatgttgtgt 600

ggattctgag ttgtcataat tgaggaccag caccatatga caattgaaac ctcatcacag 660

agccagaagc tcaatcgtaa gcatcgatca tcattttgtg cggtcaaagt gtcaaacgat 720

caagtaatat accatgctac caaaaaaacg ttcttatgat tgtccataga tcttgtgatc 780

gcgtcatcgt tatactatat tgacatatga cagaaggata ataactctta gggaaccact 840

tggcactttg tggtggctat gtgtgatgat ccttgaccaa tgataataat gttaacaccc 900

tccaatgatg cacagataga cagaccacag gtccaccact aacacatctc ctagtttgag 960

aagataatat tatgtgaagt acaaaagcaa aatcttgtcc tgaggaccac aaggcactgg 1020

tgagctcaca ccatctccct gcctcccatt gggatgcatt tctattggtg tttggtgtac 1080

tcaaaacccg atgagttaga gaaagatttg cagagtacag gcaacttttt ggattaaaaa 1140

cttgcatcgc acaccatgct tgcatgtcct tttaactacc tagtaggcta ctagcttggc 1200

tgctttcaaa gatcaccatt tgtgaagatc atttcttttt cttgtgcgga accagagaat 1260

tgaagaaatg ttgtttcatt gtttgaggaa acgctacatc cagcaaagtt cacatctgat 1320

ttaaaatttt gaaggggtta tatacccaca atttcttatg aaaaacgaag ctaaaaatga 1380

aacttccgtg taaaacctgg cctgattatg cacagccagt aggcagatga ttgcaggcta 1440

tttgatctgg aactgccaca catactgact agtatacatg taacgtcgca ctagctagca 1500

actagtccag ttctgcctga gcacagttgt tagttgtctc tgaaactaat cattttgaca 1560

ggacgggcac ggtgatcgga gggcaccaga tccaagaacg ggggtggtcc tgaaactaac 1620

aaaaaaaaaa gatggcatag aagagaagga agcgctgaaa aaaaaaagag taaacgatta 1680

agaacagggc aagttgtgct ttgcgaaggc ctacaagatc gccacgggag acaggccaca 1740

tgagcgcaat ctgtcccctc cttagacgag cctaataagc ctcacatggt gcaatgccta 1800

tgcccataaa caaaatccct tttcgcccta cgcaagggtg gccactaaac taggccccgg 1860

aatccttcct ccaaggagct gcacatgagc gctgcacatg atggatcctt tg 1912

<210> 5157
<211> 2094
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92607_G1, chr3:2752578..2754671, Cluster 31

<400> 5157
tagtggagcc gtgctttctt gaacctggat gtttatattt taccgaattt attttaagaa 60

agatattcca aacgaactaa taatttgcta aatttatatt gcttaagtga caataaattc 120

cccctgagaa agcacggctc atgtcgtatt ggcatctatt tatgccatgg tggttgccaa 180

ctttactaag ctttacaaaa gaaggaatta tatagaagca agcaactata gtttcataag 240

acgaatatat taggtgggtt actggatgac cgctatatgc atggtttcta aaaccatata 300

gttgcttcta taactatagt tatagaagga attacgctat atggttatag aagcaagcaa 360

ctatattttt aaaataaact aattaggcca tatattttgt atagtcttat tttacaaaat 420

atacaatcat ttgaaagttt ctaaaaatct caaaatatat ggtgtcgggg ataaactaat 480

tagtttattt ttaaaacaaa acttgttcat tatactatta tacattgcat ttggattaat 540

aagagaacca tctatgttaa tagactaata atgaagacaa acgttttacg acaatcgtct 600

acgttaacca actattaaca aaggaggaca cctaaaagtt cgcctctatt agtcgatcaa 660

cggaggcagg gttgctaaga cgatcgcctt cattagtaga catattaata aaggcaatca 720

cctttagaac acccatctct attatcatag attataagtg cacacatagg agatttctat 780

acgctcttgc atcattactg taccctcttg ttcaagtttt aggtgatata gttctaggac 840

tagatctttg gtggaggaga gaggaaactt attttgttca tcatttatat atatttcttt 900

gtaatactac tataattaca tatttgtaat tgattattaa tggaggagga caccttataa 960

ttacacagtc tgtctcagtt aatcaattaa caaagaatgt gctgctaagg cgagcgcctc 1020

tattaatggg cccattaatg aaattggtca cccttagaat gtccatcctt gttaatactt 1080

gattataaat ataattccca acaactcccg ccttctttat ccatgagcac ctccttttt 1140

tgattggttg gagatctaga actctgaaaa atcaccgttt taggtactcc tcgaaagagc 1200

acacgatggg agattcctat acactctcac atccttattg tttcctcttt ttcaagtttt 1260

aggtgatcta gatctagaac tatatctatg gtggaggaga gagaaaacac gttatgttct 1320

tcatttgtat gaattttata atattgttat acttatctta tgtttttgtg tgatatagag 1380

aagctatatt gctatctaat ggtgtttttg tctatatttg tgttatttac aacaaattag 1440

tcattaaagt gattcaagtt agtcttatta atatttttcg ctacatgtat acaaggttaa 1500

ttggcacgga aaggtaaaaa tggatgtact atacttcaag gatatcataa ctcttcaggc 1560

cagatgaaaa agtttggcga tactgctcaa aggcaatgct ttgcgtgtga attgacaagg 1620

aatcataagc aagtcaggct tctagatggc gtcaaggcca atctcacttg attaggtggg 1680

gtttcatgaa gtgatacata gtctagaagt ttcataggga aggagatgag agtgtgttgg 1740

tgcatttgga ggaaatttct tgtagatagt gaatacagat catgaagggc ctcattatca 1800

ttagtcaggc acaccattga tgtcaagaat gatttcacct tgatggatga ttttgtccaa 1860

ggtgtagtcg acgacagagg tgacaatgat gaggatcttg gtgagccgtc cttggtgaac 1920

cttgagaatg cacagttatt taaagatttt attaaccgcc tcaacaatga tgaccttcta 1980

tttggaagcc catatggtaa ctagagaaca taaaaaagat gaagtatgtg gcaatggatc 2040

tgctctataa ggactcttca aagcaatgga atatgttgtg ttttgatctc tgga 2094

<210> 5158
<211> 1709
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93120_G1, chr3:5348393..5350101, Cluster 31

<400> 5158
tttcaatgtt ttgaatcaac ttttgtacca tgttaacata tatatacaac cattttatat 60

ttttagcata tacgcaaaat atgtccaaac gttagattaa aaataaaaaa acaagctact 120

gctcacaaca tagtagctca cctcattcta tagaggttgg agttggcatg acagcgacta 180

aggacaaaag caatgcaata gccctaggat aggagggata gaaatctcta ataatcacaa 240

attaaaagtg gtttctaaaa aaactaagca tgtaaatctc ccacgtgtat ggatttgata 300

ttttgaatca gctttcttac tatgttcatg tgtgcaacta tatttacatt tttagtgtat 360

gcacaaaccg tgtctaagca ttagactaac aacaattaat ccacaacaag ctaccaccca 420

taatacaata actcacctta ttcagcatat gttggagctg acatgtccgc gactaacgac 480

aaaacaaatg caaaaggcct caagatgaga gggatgagaa attaataata accataaata 540

atatatttaa tgaaaaaata atcatgtaaa tctttcacat ttaccatttc gacgttttga 600

accacctttc acgccatgtt cacgtgtgca accattttag atttttagca tatatgcaaa 660

atatgtgagc attagactaa tacaaaataa caaaaaaaaa acaagctacc acccataaca 720

caatacctca tctcattcaa atgaagttgg agttggcatg acggtgcata acgacaaaag 780

caatgcaaat ggcctcgaga cgagagggat gtgaaatcac attattaatc acaaataaaa 840

aaacaagcac ataaatatct cacgtgtatc agttcaacgt tttgaattag ctttcttacc 900

atgtccacat gcaaccatat ttacgtttct agcatttgcg aaaaacgtgt acaagcatta 960

gaccaataaa aactaataaa aaataagcta ccagccataa cacaataatt caccttattc 1020

aatagaggtt gaagctggaa tggtggtggc taatgaccaa ggcaatgcaa aattctcgag 1080

acgagaggga tggcaaatca ttaataatca taaaaaataa aagaaaaaat aataatgtaa 1140

gtctttcgtg tgtaccattt tgtcattttg aatcaccttt catacgatgt ttatgtgtgt 1200

aactatttta catttttttg aatatgagca aaatgcgtcc aaacattaga ccaataaaaa 1260

acaagctacc atcaataaca caataactcg cctcattcaa tagaggttgg agctaccata 1320

gaggtggcat gacgacaaaa gcaatgcaaa gtgcctcaag atgagaggga tggaaatcat 1380

taaaaaacac aaataaaaaa gtaacaaaaa tataagtatg taaatctccc acgtgcatca 1440

tttacacatt ttgaatcacc tttcataata tgtttacgtg ggcaaccatt ttatacaaaa 1500

tgtgtaaatt taatcaacaa caagtcacca cgcataacat aatagctcac ctcattcaat 1560

caaggttgga gctggcatgg cggcggctaa ggacaaaaac attgcaaaag gcctcaagat 1620

gaaagggatg gggcatcatt aataatcata gagaaaatgt cttttctaaa gttgaacata 1680

taaatctctc acatgtatct attcgatgt 1709

<210> 5159
<211> 1506
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_93765_G1, chr3:8330951..8332456, Cluster 31

<400> 5159
gcagatctta agacatttca gaaggctaaa actggttctt ggaatttttc caagcatgta 60

tgcaatggat ttaacaaatc aatggccaaa ggaactggct aacaagccta aatgcttgaa 120

atttccaagc atttggttgc atcagacaaa agattcctta actcctcatg gtttataaaa 180

catatgaatt gaaggggtat attatgagaa atagataagg gtcaacgcat attatcagaa 240

gataaaagaa cactagagac aaattttatg tcagtaacga tctgcacatg aaaatatctg 300

cttccctcca caaagttgtt gtacagatat agtttatata acacatagag gatgacaaaa 360

aggaataaac atagcaataa accctcgggt gcaacatgca acgttaatag cttttctgct 420

gcaatctcag catttttttt tcaccttctc actatcaatc tacaattcta cattctctag 480

acctccctca atctatagtt aggacctgtt gcatctgtca tgggaatggc attgtaactt 540

gtaagcagta taacatttta tgtatttgtt tacacattca atagatggca atgtacaggt 600

gccatttaca aagcgagtgt accaacagta aaatcaatga tggaaggttt taagtagggt 660

agaatcatga atagtagtac agtttttta attatcatcc acagcacaag taataagcac 720

ttcccttcca tggattaggt gcagtgacat taagggatgt tactacagat ctaacgaagc 780

aattggattt taaatttagg aataggataa ccatgtgact aattgaatac aaatagcata 840

tgtgcttgcc tagaagattt cttacttctg tagaaggtga taacatgatg atgacaaatt 900

atttaagagg tcctcaatcc acatagtgtc tttaaacact ttttggtttg ttagtttcag 960

tttgctttta gaacggacag gcacacacaa cagatgagaa gaacagaaag tttattgttg 1020

tcacattgtt acaataggga agacattcca catcgaggta caggtactta ggactaaccg 1080

tggtgccttc ctagcatgac tactcccaac aaccagaatc atcaaggata aagtgttgcc 1140

attagattta gccccgagaa tgagtatcag cttcagacat gttaatattc aaaatataac 1200

agctaaaatc tttttacatg cactattctc aattatgtca tttaggcact tccaaataat 1260

tttcaaatca aagacagaca gataggttag aaattgaatt tgaatgagaa aattcaaaaa 1320

ttacagcaca attacttcta ggttctaaca catttatccg ttttgagaaa ttctttagat 1380

ggagatcatt gaaatctaat gcatgtaaaa ttttcacgca atgttcaaaa ggcatactat 1440

tctcaattat gccaaaaagg tgatttgcta ccttgtgacc agaagaaagg ttctaaattc 1500

taatac 1506

<210> 5160
<211> 1813
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97394_G1, chr3:28213745..28215557, Cluster 31

<400> 5160
tttctatatc agttactcca tccacaaatt aaggtcgtag aaggccttta tgtatggtat 60

atcaatataa agacaaaaac ttgtttaatt tggtccatct cgttggaggg tacgtctgaa 120

tgggctatct cgtattattt aatccgtccc cagaagagat gttggcaaat catttaataa 180

atgttggttt ggccaagtga aatactctac aaacagttgc gttatatttg tgggaatttg 240

cacgttacaa ataaatgctt tgcatttccg gatatatact atatatggat gaatgaattg 300

ggggctgagg gtctattata tttgtgtgtt tccaaagttg tctctttctg ccttttgaat 360

tttaacagtt ggagattttt gttattattc gctttagtaa taaattaaaa ctgcaggtcc 420

gtaatacacc aaaaggaaaa aaaaagggaa aagcttatca gtacgtaatt tctagcttag 480

tagatcactc cctcgtaaaa actagtttat ttggaccata tatattgact gtatcgtcta 540

ataatgagtg atcgattaca tgtggttcca aattcttatt agacacagtc gcatacagct 600

atgagcaacc aatccctagc cgcgcacaag aacatgcata tatatgtatg tacactagtg 660

tgttaatttc aaagttggag ctgagcactt tgatgcagta catacacaga tttgtttaat 720

ccttgcactt agctggccga ggccatatat caaattaata caccgctgct cgtcagtcac 780

gactaggagt cgtctaatat taaaaacgta ctctcatctc ggggcaaata tagtattacc 840

cacatctgcc agtcaaattt gttagttaat tacccttcct ttgggcatat atacatttat 900

atatacaaga aagtagcact cgattccatc gcggtgatta aacaacgaca taagataatc 960

ttgcattgga gatcccttga atgctgaagt aagtatatat atagctagca ggttgattat 1020

taagttgtga cgttgcgtac gtacataatg acgatcctag ttgcgcacgt tgggacgtgt 1080

agtacgatga gtacgtacgt tctcatacgt acgtagatgt ttgattagta gaccaccaca 1140

tcacatgcgt gggctagcac atgcgctgtc acctcacctg cgaattgaat gaagtttgaa 1200

tcttggagga tcagccaaag atcgaatacc atacatgcgt gcgtgtgcgt gttccctaat 1260

tagtcgtcgt cgtctcaact tgttttgcaa tatagtggca tctgcacgat acctaacgaa 1320

ccaataccgg cccgacctac tgcgaaacgt aaacaaagga gagatcccgc aagtcttctc 1380

acacaagcac tcctctccga tccaaacgac atgaggatgc agctagctag gcctgcctcg 1440

caaacgaatt aattattgag ttgatatata tacacacact gtacctaata tattcatagt 1500

gccagattgg ttagctatgt aattaaaagt tttgggcacg gtgcgtgcat tatatatgca 1560

tatgctgcaa gcgtacgcgc agtcgcgcag acacgggagg cgcgcgcgcg cgggggggga 1620

cggagtcacg gagggcagat cgatcgatag catgtcacgt cacatgcgtg gctatctatc 1680

tatctacaga atttgaagtc cagcaattgg cgaacgtgcg agatggacag tggcagtcca 1740

gtgcagtgca tgcacgtgct acctactacc accagctctt cgaccgacaa aaccatgtta 1800

gcaaccattc cta 1813

<210> 5161
<211> 2031
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_97861_G1, chr3:30551813..30553843, Cluster 31

<400> 5161
ctactcctca taagaaacat aaggatatat tatatggacc atttggtcat gagcagaaat 60

aaaatagctt aaaaatattg atgccacagt aaaccccaat tattcaagta cctaggttac 120

aaatggtata caactccaat taaagatcta ctgcatatat catcctaaga taatggtaag 180

atattatcta catctgcaac ttatttttgc cagattattt atgtttagaa cctctggctt 240

gtccattgaa ctctgctgta tttcaacatc attgttatct ctcatattac agtagggttc 300

agccctacca atttcataag aaaagaacca acaaactcaa tcaacgagta ggtaagaaaa 360

gaagtggaag ttccaacaaa aatagagcta ttgtagaaac acagtccatt tttaaaccaa 420

caattacaaa aggaggaaga aggcatacgg cgatggaaat tttttaaata tttgcaggtt 480

ccatgtatct tctgatagaa atgatgtatg aacttggtcc tggaagaaga ggaaaaaaac 540

attagaaaca cctagtggta gctataagtt actcacagga atagttagag ctcatcctgg 600

atggaaagta ggtaactgac tgaactgaga gtgggaaacc cacccgcatg atcattccac 660

ccagcaaaat cagagctgaa tcagcctaca aaagtgcaca acattacacg atcaaagggt 720

actagatagg tgacacataa tgtaatgagt taagattatc tttgtaagat ggtatataaa 780

cagctttcaa atcatctaat ttggcaaatg tcatgtcaaa taagcacttc caaaaaattg 840

attaagatac taataatatt tgcagtcctg acttgtcctt tccaaaaata tatattacgg 900

gagatggata aatcgtgttg agatcgcagc tccagatcaa gtttacagtg ataaaagtac 960

tgccaaactt tcagaatgaa gttctgaatt ccaatctata gaacatagat tcagtgaaaa 1020

ctttaattgt attctagcaa ttatggtgac atttcactag ttcataagat accataagca 1080

taatgcaagc aattagtaaa gaataactgg gaaatacatc attcaatttg agagactaaa 1140

atcccgaaaa atggagatac tggaagatgt aaatagagca gataactctt ttctttaatg 1200

gccaatttaa tttataagtg tttcattaat attcaaaaaa cactatccaa ccaatagttg 1260

gataccattt cattagaacg agtaatgata cgacagaaaa aaaaaagcaa tgcaacaaca 1320

taaaaaaagg ccatatagtg taatttattg gtgctcacaa ctagatctat gctgcttaac 1380

aacggaaatg cgtgaacaag ggaattccat atggcttgcc aacaatcttc aacaattgac 1440

atctgcaata aacaggtaac ttattggatg acaacatcaa ctttaacttt aagttcatga 1500

tggattacaa aaatgccaag acttgattag gaaaagcatt gaggtacaaa attcaacatg 1560

ataaaaacta taagcaaaca gcctgctcag tactgcttga tgtggctgca atactgagtg 1620

cacccaaaat atagaaaaca gtaaaaaaaa acaggaaaca atttgttttt atgagtaatt 1680

atgttaaact agagccacta tggttatcca aaatttaaaa tgaaccagtt ggaaagcagt 1740

attttcttat ataataaaga actagtccca ttcacaacat gtatatacag actaaagcta 1800

tgtctgctga ctgtccaaga ataataggtt ccttcaaaat tctccatagt cttgatggcg 1860

tggtgccaag caaccaaaat cattctttta gctagatctg gaatcaaagg caaaggggta 1920

catagatagc tggagtgtga gtgacctggt tggtgcatgt gactcaaaat gtatcaggca 1980

gtcacttaaa cttcaaaagt agcacctcta atgtaatcat tagtccagtg t 2031

<210> 5162
<211> 3580
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_31764_G1, chr1:195178584..195182163, Cluster 32

<400> 5162
gatctagtgg ttaggaatat tgggagattc aaaggatcca tcataaaggc cctctaatgg 60

taaaaaaaca ataattggcg caaaccacct aattaggtct aaaggtcaca tgacatccat 120

aaaactcatt agatccagag gaccgatgct catattagtc ctagacctaa ttaattaggg 180

ctaatatatg ctgaaccgaa ggtctattct ctatcagtgt gttttgagga ttaaaatgac 240

acagtttatg aatagaggtc cgacctgcgt gacacatcta gagacaagct agtgtatgca 300

gatcgttctt acactgtacg tacgtaccta aagaagtaag aataaaaaaa aacctataat 360

ttagaacaac gggtgcatga aacatccaac tttggtgttt tcgtttcctg gatttgttat 420

atcggactgt tgtcccctct gccgaggcaa cttcgaaagc tacgtcttgg atacatttct 480

gcggcacttg aggaggtaac gtgctttcag tgaattcttt gaacaaaaaa aaaaaaatcc 540

ttgtcactct ccatacacac acacacacac atcacatata cacaaaaaat taaagcggaa 600

aaaaggctga aattggttgg tcatatttat cgtggcgcgc gctcgtcaac agaggataat 660

tcgttgacaa cggggaggag attttgtggt tgtttccacg acaagttggt taaagaaaag 720

ccgccgcgcg cgccgtgaaa accatgcaac gcggaaaaag aactactcgt atcgtctatc 780

gaagagaaga agtcacatgg aacaagttaa cccgtgttga ttgagaacga aggagacggg 840

gagaagaaaa aaaaacagat tttgacagcg caaattaaag agacgcgtca cttttgtttt 900

atatgaattc actccgcgcg cgcgtacaaa ggaagccatg tatttgtcgc acgaaatcgt 960

tgcgaacgat ccatctagca ctccgtcccc ggatgacacc agcaagctag ctagctgaat 1020

ttacatggta gtctgatgtg attgtttgtg cagctaggga cagatctaaa tttttctctt 1080

ctttttatct tagtcatttc acactaaatc aaatagtgtc ctgcgccata gatccgcatg 1140

tggactcgta ttattgtacg tgtgtacctt tagcagtttg caacttccgt tcggcctagt 1200

tgcttgctgg agttactcca agattagcat taacctgcca cgctaatggc gacgtgtgga 1260

ccaatcacca atgtgaccga tttgcttgct actagcttgt ttgcatgctt cctatagcta 1320

gcttcttcct ctgtgacata ctactggttg atgtcattgt tcatgtgtct aatgcgtgca 1380

gcactggcca cttttacacg tttcgttttg gtgatgatat aatggtgtta gggacaaggt 1440

gagcaaattg cgccactata ttagttgacc tcgatcgttt gtgtgagacg agagagagat 1500

catgtaggtt gcagccctgt acgtacgtac gtacgtaatg tacgtatgca catgactgag 1560

tagttccgtg tgtggtttgt tgctgcattt ctctctcgtt cacggtgacg ttgttctagc 1620

tatagctggc gtgagcttct tttattaata taacaggcgg ggtacggtgt tgctgaatga 1680

ataatacatg gttttctgta ttgctgaatt aatatagcac atggcgatca tgcattatat 1740

ttgatgacga agcttttcag gccctgttcc aaatgtctat agctaattgt tagccagctg 1800

ataatataag ttgttaactg gttttagctg gatatatttg aggcagctaa caatcactag 1860

ctatttgaga ggtatagcta acatttagtt gatccattag ctaacccgtt ctaaacctct 1920

cggctactaa ttgttggttt tagaggtttg aaacagtgcc ttgattaact cacattggac 1980

accttctttt tagtatatat gtgaatgaga tgtcgtctgg cgccggcatc cagaacttgg 2040

tgcatggccg attatattag tgtggtatat atactaatgt gaaggtagta caggtaatcg 2100

gtgcatgaca aagttggggg tttaattact agctagccaa taaggtggca acaaggtttc 2160

ttgaccgcgc ccccccccc ccaaacaagc ttggatgttg ttgtgatgac atgtgcacgt 2220

ttgacgacgc aagcacaccg ccgcccaaga aacgaaacac cacaaggatg gatttcctat 2280

atatgtgtaa atgtaataat gtaacgtaac ccggtcactc gagagcagca aacaaagaca 2340

aggacatata tatataatgt agtaacccaa agaagaatca gatgccatct agctagtagg 2400

ccacatataa aggagctttg gcggcgatgc aattgcaaag gccccggcgc gcgcgtgcgc 2460

atgcagccgc aggtgctcaa aagagaggag gaagacacgt acgtacgaaa gagagaagga 2520

agcagcatgc atgctcctag ctaagctata taggtaggaa ggaagaaacc gatcgatgga 2580

cgatggatca tgagcaatgc agcaaggaac gaaaagccag ctaaaaaagg ggagatcgag 2640

gagggagaaa aggcaagggg gacatatgca tgcagcaagg tgctagctag ctctaccaac 2700

cagccaaacc aattgagatg ccctgcaagc aaatctgcca tatcactgca cttcacacac 2760

caccactgac actggcttgc acggcttcgg ttattcaatc cagtgccaga ggtgatagat 2820

atagatgctg ctgccttttt ttatattatt tatatatatt tgcatgcctg cgtgtccact 2880

gcattgcttt gcttcatgcg ttaagaaaag aaaccccacc atgcaagcat cttggtcagc 2940

cgtcagtgga ggccggtcag ttgcgttggt ttggtctgcg tggctgagga tcggagtagc 3000

tagcgccaaa tctgccgggc gaaataaagc tgactgctgc tgattagttt gcgacaaaaa 3060

aaagccgaaa accacgcctg ttaagcaagc ttggtatctg ggctatagat agcttcagcc 3120

gctgttacta catggctatg gcttcacgtt tcccgcgcgc gcctcattag cgtccggcaa 3180

ggtttctttt tttaggttga tgcgcgcaaa gtatagcaga aagataataa agtcagaacg 3240

tccccgtttg gcatgcatct tacagtaccg gccggtgttc acggcataat atataggacg 3300

tccctctact ttgtattgat atatgacgtg gtttgtttat gtgtgttgct tacttgcttt 3360

agacccagat tgtctagtac tctcttgggt ttttttttcac cgttttagtc caaaaactag 3420

caaaaacaaa tatttaataa cgaaggtagt agtaaattgg gtctagtgcc ttgcatagtt 3480

gcatgatagc atgtaattag gccatgtttg acaggcatcc atatggctcc ggctctatgc 3540

tatacttaat agcgcatcca taaatggatc aaagaagggg 3580

<210> 5163
<211> 2376
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_113176_G1, chr3:131333147..131335522, Cluster 32

<400> 5163
tgaagtcaat tgtgaccaac ttatgatgtt tccttttgtc tagttcaaca tatagtgtat 60

ttaactccat aaactgtttg aaatgcaaag ttatgattat ttgcttcatc tagctttaca 120

tgtggtctac attgccaaga gccacgaaat caatttctag tggtgaatgg tgttctcgac 180

ctcctctaga aacacctcca tactctaaag gcatgttgga aacaactacc actagaaata 240

tgatttctaa atgttgttaa cgttcatatc cattgttgaa atatatgaaa tttctagggc 300

aattgaaaat ttgaatccac tctagacatc gatttttaga ggtgcttatc tctaatcata 360

tttttataga cgattcttat aaagacgtct caaaaaatta aaagatgact ctaaactaac 420

ttatgtagtt atgttttcta gatttgatga ccttgacagt catcactcta aagcttggaa 480

tgggaaatgt cttaagaaaa tttaatggtt agaggagggt gaatagccta actgaaattt 540

tctagcactc aaaaacacca ggcaaaggat tagacaacaa gcattaataa ctctactttg 600

gtctagctac atattgcaaa cctaaaagtg agtagaacct acatatttct agagatcgag 660

atataagcta agcaaagctc agtgcacctc tctggctctc tgatgggtct ctagagattt 720

ctagcgagtt ctaaaaccaa ctcaaaaaag catactctct ctaactatgc tacggtgcaa 780

accttcaatg ggatctatga agagctcctc tactacattt gaatatccca cgcgttatct 840

gcttgtcaca atcaaactcg agtgacctat attctttgat ggcatcgaaa gttagggttg 900

ccattgctga atttcgatgg tgcttgaggc agtgaattaa gctctagtac tttagtcttg 960

tcatcatgct agtagtacat gttgtgcact atagcactta atcgaggacc acaggaaagg 1020

ccctagaata accatattat cttcattagg gtaatgaaac cataggatca agtcataggg 1080

ttaatgtcgc gatacaacca tcaaaattta cataactcaa aaatcataca ccacattgat 1140

taaaagaata ttaaacttat aaggtcaaat taatttaaaa acgtacaatc tgtatttagt 1200

taacccaatg aaaactagct aattagctat cccatggtct agtttcatgt tcactaataa 1260

tgacacgatg agaacagtta gagctttgga ggaatgtcca ttccaacata tttaaaagtt 1320

taatagcagt gcaatgacta tgatggcact cagaagactt attccaacat aatcatttag 1380

gggttgaaaa ggagaattat taggtattgt aaagtttgtg gaaagcatgg cgtgaattga 1440

tgtatgacat gctatactca actatatatt tactaaattt acatatttaa ggaaaaacaa 1500

gtgatcatat gaaaaagtca attattttta cacatcactc tcattactat aaatctagaa 1560

gaaacaaaac aaaatcatcg tacgaggatg ttcatgcttt tggaaaaaat tctatagagc 1620

tgcacatcta tacccacatg gagaccaatg gtgaacctcc atatccatga ctaaatatgg 1680

gtcgcctcta ggttccaaat tttctttagt gtggctctat agaccatgaa ttgtacgaca 1740

atgacatgag gtacttgcct ttagctatcc acactatatc ccaagataaa tccacgtgat 1800

tagtgagtca ccattatgta ctcatcttgt cactcccata cttattatat acatgagtat 1860

ccaaaatatg ggttgttagt actagtgaca aacaatcata gtgtataagt gattttgaag 1920

ggtcatgaaa acttctagaa atgccttaca taacatcttg cctgtaagag atgtaaccga 1980

gattgctgat aaatgttgat aaaatgagtg ataaggagat atagatcttc tcatctttaa 2040

tggagagctt gttggataaa caaagagtgg atttgagttg tatgaacatg tatttataca 2100

tagggtaggg tggtcatttc taggttttat cggttagtgt gttgcgagac tatccacatg 2160

tttgctaggt tacaggctta gtgttcctat ggatagtctt gatgttcttt tagattgttt 2220

gagacaacaa taaatagttt aggcgaacaa tacatggatg aatctagggt tgtattagct 2280

ctgagcgatc atggatagtc taggcgcccg tctaaacagt ttgtgagttc gttagtagaa 2340

tgaaggcatg taattcttta tgctctgtgg ggttgc 2376

<210> 5164
<211> 1562
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_120279_G1, chr3:175532613..175534174, Cluster 32

<400> 5164
accaaacgta cccttactcc cgctaaataa tcattcaaaa ttactctact gaggaatcaa 60

ctttcgagtt agagaattag aaagtggagc tatgccaata aaggaaagtc gagatgaact 120

tgaaaataaa gcagttagaa gctcaaagct tgaaaattaa tttttgaacg aaaaacctaa 180

aaggtaccac tcgaacaaac aaatcattat taaaatataa aggaagctaa cccagttacc 240

cttactgcta atttaggtac agtcgccctt aaggagaagc tcatcatgaa cacgcttcac 300

caaagtctgc tcgtcactct tcacacagca gcaggtcttt ggaccgtggc cgtggcgtgc 360

ctgtgacaga ctgtgttgca aattttcctg ccgtacccgt acgggtgcgg caagcatgtg 420

cccgtgtcag tgataacgcg atcctgccat gcacgctcag attacaggac aagcgtgcca 480

ctgccatgca agtagcagtg gtgtccaaat gtcaaaaggt ccacgtgaac agggcaaaag 540

gagacgacga tgaaagacct ctccggacat ggcatctgaa cactctctct ctctcttggc 600

accaccaact tggaacgttg aattttgagg cctgcatctg catgcctcgt aatgccttct 660

tgaattctca tgatgcattc ggatcaaacg acaaacggtt ttttgtaatg tgtgtgtttg 720

gcagacgcgc tttaacatcg tttccgagga aaacgcatcg aacctcgctt cgtgttttga 780

cgaccaaaag caaaaggttc acaagcccga gatctgaact ctgccggagt aggaatcatc 840

agatagccaa gatgcctttc ctccttcagc tttgccttag gatccaagtt tctgtttctt 900

tgttttttt gggggtaat gcgtttggcc aaaactctgc agttcctttc tgggacagct 960

ccatttgttt acgagacaac agctctttga attattctct gtcttcgttt ttttttgaat 1020

atctaatagt aatattgtac atttggtctc cttttccctg gagcgaagat tctctgcacg 1080

cttattgatg tagcagagcc agcaatgtca aacggtttga caaaagtggc tactttgcat 1140

gcctcctcgg caaaaggcca aaggatattt gaccttggca aactgaattt tcagtcagag 1200

gcgtgcgcat gcccgcgcct tgaccgctaa ctattggcat ttggcagcag atggtgtaca 1260

gattattgtt ttaaattgaa gactgtgctg ttttagagtg gagtttgaaa tgatagaaaa 1320

tgaataagct gttggagata aggcgctaag gatatccaca cacttgcagc tgtttataca 1380

tcttcaaagc tcaagctctc taactctacg tttaatttta actaagattt catttctttt 1440

tttaattatg tagcatctta gaaacagaaa tataaaaatc tatcactgtg aatggcctta 1500

gggcatatgc aacctctcat ttaatatagg gtttcttgat ggtctctagt agttaataaa 1560

ga 1562

<210> 5165
<211> 1465
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_122041_G1, chr3:184634286..184635750, Cluster 32

<400> 5165
ttcatgcatg ccagtataag ttaatctgca atatgcatca gtcacacgta gttagttact 60

ccatcaacag ttgccagtta cctgtgaaac agcgatgtca tcctttctta tttgcaattt 120

taataatgca tgaatggctc attagctcca gattgcaagg ttcttcatgc tatctttgac 180

acttaaccat attcgacact agtgcactga catcgtaagt ttactttata tgtctcagtc 240

caagcagatc tcttatgtga tactgattag tttcagagtt tgtaccttcc tgaacctgtt 300

tacagagtct gttcaatgct gaacttgtct gggaaatggc tttgaagttg tatacttgcg 360

agttaaaatc aatcacatct cttatgtgag tcttgaaact tttttacctt gccaatcgat 420

aaattgcaga atcgaaatca ctactgtcat tatatctggt tcctgggtta gtgtgctaac 480

ctgacctact tctattatag atgtgtgctc catgatccga tacatatgtg cttgtaattt 540

gtaaattgtc aagtctgcgg cagtgatata tgataatgtc actgggaggt gtggggaaac 600

agttttggtt cccactccgt aggtcaggtc agcactgccc actggtccac acatttcttt 660

tccctttttc tttatgtctc cttgccttta acatgatgcc tgcccctgct gtcttccttt 720

tgggcaatat agttttcata atcctggatc tgtgttcctg gtcattgatt cattgggtca 780

tactaaagtt tcttggacta acgaatggat ttataacaga attttgaaat ggcatgtgcc 840

attcaccatt aaaaatgata aaataaataa aaaactagac agttggatta agatacatga 900

tttcttcttc ttctagggtt tcaatttcca acatccaacc aatttatcaa tttctcacta 960

tccggtgcaa attttaatgt taaaaactat tgctatttga ttctgttttg tatgtctgct 1020

gttctttaga acttcctaga tctgcatttt ctagcatcag acccttttcgg tacacaattg 1080

ttgcgcgcct ttcatggtgt ttggcctttt gtagatcaat atgagctgtc tgcaacaata 1140

attctctgag catcacttgc cccacgatct cctagccata tctatctcgc ttagcatttt 1200

catatcattt ctgctacagc atttcaccaa caactaccgg gatattttta agaatatgag 1260

ataagatttg gtgaagagca tggatttatc tgatattcta tatagtaggt agtcttcttg 1320

tgactagcat gttctttgta taagaatggg atgtacagtt agcacgggga ttattctaca 1380

tggccaatca ttctttgtct gctagttcac tagcaggggt ggatctacac cccgggccac 1440

ccagcccgtg gcctggggct tgatc 1465

<210> 5166
<211> 1776
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_124736_G1, chr3:199256789..199258564, Cluster 32

<400> 5166
cgatataaag atgagccatc aagatggtca gccggacggg aagtatggca agcgtgcgag 60

tccggctgcg atggagccgg gagaaccacc ggatatgtgc gaacctgaag cggcaaacgt 120

gcgagtctgg ctgcgactgc gatggagcta ggagaaccac atgagaggca tagtacgtgc 180

atggcagagc tatagttttt gccaaaatat ctgtgagtca tggctaaaaa aaagctgcta 240

tgagatccgc ggtgtgaaaa aagtcaaagg ttttttttta ttgagcagcc cagccgtgac 300

tttttaggaa aactgattga gtggccgatg caatcgcagt aatcgcatcg tgcagcgcag 360

gcaagtctac gtgcctgacg gtgcacgcat taccagtagc taggcgacgt gacccttttc 420

aggctaccac cagcgtactc cctcgtccaa aaaaataagt atacttccgt aatttgagtt 480

aataaatcaa tattagtata tatattgtat ttataagaaa agaagtaaaa aacaactaga 540

atttagacgg ttacattcct agatgtatac ttttttaaga taaaatttta agctctatgc 600

gtgtatttat tatagaacta agaaagtatg tactcctcag tccataaaga atgcaatttg 660

agcacaatct catattttag cataaaattt aaccaattat aaataaaaaa gtcgatattt 720

acaacattaa ataaatacta ttagattagt tacaaaatac atttcatagt aaaattaatt 780

tagagttata gatataaata ttattttgtt tctaaaattt tgaccaaatg taaatggtac 840

ggacctacat taacttttt tgacagagaa ggagtacacg cttcatgtac cgtacggtga 900

atgacagcac gggtgcacgg tgctggccac tggagctgca tgttcgccac gatccgcagt 960

gctgaattaa aggtgcacca tgtacctccc gttgcagttg ttgtatgtgc tttaatatta 1020

gtagcacgtt taggttttga gtttggtcca gtgttaagat ttattttggt tggcagacca 1080

taaaatagtg ttaggatgtt acttaagatc acttctagta aaaaattata taacattatt 1140

tctaatatag gataaaataa aacatagatg aagcacctac atttaataca atgttttatt 1200

gtctgtatca tagacaattt aatgactcgt gaagaattat taatcacgcc aaaggagata 1260

aaactcactt ttgatctctc tttttaaaaa catgatcata tctttaaaaa accatctata 1320

tgggagccta ttaaatacaa atgaaattta aatagaactc caataagact agtcattagg 1380

aaagaaatgt acctgcttat tcatagggca aaggagcatt ttcagaatgt tgtgccatct 1440

tggttagata gctagggcgt gtaacttttt cctctctttt ctctccacca ttctccttct 1500

tataaaatgt ctaaacaaca tttttcattc attaatctat ccagtagggg agtccacacc 1560

ccctcctgtt accataaaaa tatatacgac cggacttatt atcaatctaa tggcattggt 1620

cgttggtcta gattgaggtg caatgttata ggtttgcact attaagatcc aaaagtttct 1680

cgacttgtaa gtttaaattt ttccaactta atatcaatca tagatgtcct aattaaccgc 1740

cctgcccgac ctcttcgggg cttcagactc aataaa 1776

<210> 5167
<211> 2276
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_127873_G1, chr3:214647707..214649982, Cluster 32

<400> 5167
aaagagctac aaaaattgat ggctctagtg ctataggtaa gtcaaccaac aaaggaggag 60

ctcgagtgat atgagtgatg gacattagac tagcggggca acctggtata gactctatag 120

ccctaaagta cacaagactg tatagatgga actactggag tttgtagggc agctggatga 180

gccatttgta ctggctacgg tggcattgct actctggttt gctataggaa gtgctagaaa 240

atgcaaagtt ataggcaaga tctgctagca actgttgttg aaactgaccc taacatgtag 300

cttggcgaca ctgtcttatc tgtgcttgac ctcacatcat agctgatcaa ccaacatttt 360

tcgctgctct ctaggtaacc attgttgctt tggtacaatt tgttgttgtt gttgtgtgat 420

catatgctct aacaaagttg tcatcccatt gttggttgtt atcgacactg gaggaggtgg 480

tgttgtgcta gatccactag cctagagtta tggagccttg gtggatgtgc tagaggtcaa 540

ggtactagca cattgtagtc cacgtcagag ttttcatcgg tggtatagtg atgttcaaat 600

aattgttgac ctcccatatc gcctcattat gctcctggac tcccctcaaa cctaacaagg 660

taagatgatc attgttccta gttctaccct atttagggag gtcatccctc aaataaaatc 720

atcaaatcct ctttcatttt actatacaag gaccgataaa ttattttgat tattcatgag 780

gcccaagagc caaattatat ttcactcaaa aatgacatct ttgacttcta cttcaaagaa 840

gctttgtgtg atgatttcat tttctatttt tgtcacgagt ggaatgtaat ctatatgatc 900

ctcatagatt attataaaat ggggctcatg aaaaataaat atatttgtat aaagtatttg 960

gtgataaaca cttttaaatt aggatcatag tgaattgtgt cttcctcttt atcctttagc 1020

cactaattgt aaatatttcg tatttgcatc tttttcaaaa atatttaacc tttgctcttt 1080

ggtagtattt taccctccc tcctcctaag ttgagccaac cttttgttta gtgcatgctt 1140

tagatttagc ttgacttctt ttagttgtac aaattcagct ttttgtctcg gtcatccaat 1200

gtatcctgca ccagcatttt ctctttcttg catgaactaa taatattttt gacccaactc 1260

cttaagtatt ggtgaagatg tctaatttta gcatacaaca ttctgagtgt gtgtgtgtgt 1320

tgtccctctt gcactttgat ccatacctct ccctgaccat ttgaaaaaac ccttccttga 1380

atagctaatt gaacatataa tataagtgag gatatcctat gttttggcac aaaatataat 1440

ttcttgtgtc cattctcata gacacgtcat cttgaacttg tttttggatg atgcagtatt 1500

aagaaacagt gttgtttaga aaaaaaattg ttttggaact aaattttact atgtttttaa 1560

tatttttagc tcatattaac tagcaagttt actctatttt tagtgtatcc ttaatttaca 1620

gagtaaatat aatgagaaac ttttagcaaa ttttatatta aggtggaata aaacgaaaag 1680

aaacaaaact ataattttat agccatcaca tgactttaga ggaagatcaa taataagaac 1740

caactacttt gattataagt caaagtcaag ctataagagt tcttctcttc tatttattct 1800

atttttttaa ttattactat gtggcaccat gtctgttatt ctgttttctg ttttttttfc 1860

tcgcatataa ttatatccgg gtcgaccact gcagagactc tcgtgtccaa cttgctgctt 1920

gtttgctttt ccccccccttc tctttcatag tataaacaaa agttattgat tagtttggct 1980

ataagttaat tgtcacagtt tctcttatca ctagcctcgc aaaaaacttt gagatttgca 2040

gtgtcccatg agtcaaagga tgaaaggacc atagatcata ggtgaatgct cttgaattgg 2100

taggctgaca cgtagagcag cagtaatgct ggcccagact ctcgaggcgg tagcccggtc 2160

ctcgaatggc gccaattgct gcaaatggaa ccggaaaggg aagagagatc taaccaaggg 2220

caccaccata gagttatcca gcggcatgag gctatccgca attatgttct ctaatt 2276

<210> 5168
<211> 1854
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_128823_G1, chr3:219486370..219488223, Cluster 32

<400> 5168
cctgcagggc gagcgaggta cctgccgtcg cgtccaaacg aacatccaga acgcgacgcc 60

gacgccgacg ccgacgatcc ttggaccgtg cctcgtgctc gtcgcataca gttttttttt 120

gttccgtgtc tctcggccta cggaaacgac tgtgctgcct cattgttctc ttctcacata 180

tagatagaaa ctacaataca cctgttcgtc tgtgtccaag tccaatcttg tacgagatac 240

gtactactat agctaaccaa ccagccaacc gttttttttt ttttgtattt cagcggttct 300

gttctcttgt accgacgatg acggcgacac gatgagcaaa gcaattcacc ggtacggtac 360

aggagagcca atgctagcgc tgtgcatgga gccatgcatg gaggaagttg tattccagct 420

ttcacgcctc acgttctgcc cccatgaatc ctgaattccc tgagcttcct tctcccagat 480

ttttcttttt ctaaataaaa agaaagaaaa ctgcagacgc attcggccaa caaggggggc 540

ccgtctgtcc ttttcgtgac acggaccgtg cctatatccg ggctcataat tcgcgccatg 600

acccgccctt tttattataa aaaaacagaa accataggcg attagaattt gagcatcaac 660

atgctttatt ttattttact acgactacga cgagctagcc tctagctctt ctcggagcgt 720

gtgcagaact gtgtctgtgt gcaatgactg ctgacgtgta ctcgtgtctt ctacaacgcc 780

aagcaattac tcctaatgat tgttgttcgt gtggatcttc ctttttggta gtcgtcttgc 840

tgcgttggga aaaaggctga ggctgggacg atcatcatca taatatatct aatcttcatc 900

tggccggatc gatgccaaag cacctgcatg agagctagaa ataaagccag atcaatataa 960

tagcgtaaga gattcgacat atgaatttta gaggaaaact gacataagat tggattttcc 1020

cctctgtgtc tatataaagg gaaatatgtg ctgacggcgg caccaaataa ttacataaat 1080

agaatttgaa agtcactagc taaacgaaag ccccccctccc cccgacgaca tgactaaact 1140

accgtcatgt cttgtcgttg cccagatgtc gatgcagatg caccctacgt acgtgatgac 1200

atggcacacg gtaattgttt atatatgctt gtcggggtgt gcttgattgg ccgtgtgccg 1260

ctcatgctag atgcaccaag caagttagct aggctccgat tctccatgca cgctcccccc 1320

aaccaaatct ctacgttcgt actttctatt catataaaaa tacctgcctc gctcgcaagt 1380

attctctcct attcagctct acttttatac tttaaatgca ctatttaatt tttatacaac 1440

atttttttga tttttatata acaaaattta aatgtattat ttaaattagt ttaagttaca 1500

cactaatcca cttcaatata tacggattga gcttaatatt agagtacctc aactaggtct 1560

agggtttttt tctgcaagac tgagaagagg gggagtgagt gagtgaatga atgggaggtg 1620

aactattcag ggaatcgttg gagaacgcgt gatcacgagg acccgaggag cggaatgaag 1680

gaggaaacca gaaaaacata aatagaagag ataaaaattt taagcgtggg agatgaagtg 1740

gcacatgcat ggcatatccg gccccttgac gcttgtccgg attcgacccc ctagtagtag 1800

tagtagtaga ataaaaccac agcaggcagc agacagcgac gacccaccgc tttg 1854

<210> 5169
<211> 1768
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_130824_G1, chr3:229596781..229598548, Cluster 32

<400> 5169
ctcgaccctt caatagataa tgggtataac cgtacaagta tgtaatccaa tcgtaccttt 60

taaacttgga cttcgactaa ggaccttgta ttcgtttata ctgcactaac cagtcatacc 120

aaactatgct tggctaacct ctgtaatata tcatttgatg atatactatt ttatttcaat 180

ttctcaccat gtgtgcatgt cttgagagta tccttcgtag gaacatgact caattaaggt 240

aacaatgaca ccttaaccaa cttatattgc tgagtgtttt ttgctcttgt gatttacctt 300

ttcacaaact tgaccaaaca ttcacctttc aagttatttt ttttaaatta acattcgcgt 360

acaacttgcc accaatttga gtaagaaagt tatcacaacc ttcaccacaa caaaagcatg 420

acccaaaggc tatacatgct tggccctgac caggtaactt aatttttatt ttattttatt 480

aaatcccttt ttcttactaa catgcatgtc accacaccac gagtatctct taactcctcg 540

agctaaccct cccatataat atattttcct tattatatgc atgttgtcac cttatcaact 600

caaataagtt agcactccat caaatagtgg tttccattaa gtgtcaaccc tcatcacata 660

tctgtccaat ggctctagag ttcgcatcag ttagtactct ccatcaatca gtggttctca 720

tgaagtattc aaccttcgtt agaaatttca acgatcctct actagtaaat gctttcacca 780

gtcaatggcc tttgttaatc aatggccttc atcagttaat gatctacact agtcaataga 840

tctcatcact tagtggtcat catctataat tgtttatctt cagtcagtag cctttgttag 900

tcagtggcct tcatcaatca atggatttca ccattcatta gttttcattt atcaacaacc 960

tttgttagtc actggtcttc accgatgagt tgacttcatt agttagtggt gttcgtcaat 1020

cactaatttt cattagttag tgccctttgt tagttagtgg atctcactcg ctagtaggtc 1080

tcattagcta atgtttttta atcactctat ggtttttttc attagtcagt ggtcttcatg 1140

gaacatctat gaaccctata gcactaacat tattcctttt tataggttgt attgttaaat 1200

ttccctttt aggttttata atatgtatca atccaatgtt atttgagcta atctttgcat 1260

gaaactaatc gtacaagctc ctaaatggca gacttttgta gctattcaaa aatataaccc 1320

tctcattcga gggcattatt ccatatgagc aatcatgcag agcttatctt ttgttaaagc 1380

ataactatca tttttgcagg gtgcatgata agtttagcct atttaatatt ttcatgcaaa 1440

tgcactcatt agcataacca cacaccacgg taacccgaca aagaactaca tgcattaatg 1500

catcaggacc atcaatctca aaaaaagttt caaaaatctt gagaggctcg ctaaaagctt 1560

caaaaatctt tacctaataa agacctatcc ataattaggt atcgatgcct tcattctaaa 1620

aagcttaaaa acttcacctg acaaagacct acccacaata ggcatcaaga ctcatgaaat 1680

gactaaccat cctttgcaac aagtagaaag ctaaggtttt tctaagtgcc cacatcactt 1740

cactccttta tccttcttag tctccatc 1768

<210> 5170
<211> 1716
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131035_G1, chr3:230970738..230972453, Cluster 32

<400> 5170
tggcgtttta gttctggttg ctggttcagt attaaatacc atagctagtt ctcagcggat 60

acctggtgac aagttctagt agtgttaaga actatattta tgctaataat gttatgtatg 120

atcaatttaa acattcagaa agattttaat ggtcatttgt caaagctaaa aactatcttt 180

tacagtactc aagaaagcat gcagcagttg atgtggttcg ttgacacaac gcagtcccat 240

gtatgcttgg tttccttcct agctgtttga acaagcgaca gctagtaatg gattattgaa 300

ttgtctttca gattctgttg gacatagtac tcaaagctgt atagattaat taattgcgac 360

gacaagcatg aattatatat cgtcagattt ctggtggaat tcgttgaaac cattgcccac 420

aaactgacaa cattaaaacc atgctcgtgc atttcgtcgg ctaggtttcc ttactacgta 480

ccctctgcgg cttgtacaaa cgatagatat gttgtacttg tatgtttcag tctgattaaa 540

aatcttatta ttgtttaaat atagataaga ttatgaattg tctcttatga gttgtctttt 600

taattgcact agttggatgt ctagaactgt tgcctcaaat taaaattcat gcattagaaa 660

agcaaatctc gtacgtatag tatatatcat attgaattgt ctttcaggtt ttcagttgtt 720

ggaaccttat ttgagtatta atctaattta agaagggttt cgcgctttaa agcatgaatt 780

tcaaagttgt atagtgattt aatttttgtc ctgtactctc agcagcagca gtatagatta 840

ctgccaacac aaatcttttg gtatttgtag cgataatttg cgtatgtttt tggtacagat 900

agtgctggct aataaagaac aaggacttgg ggtttgtaga aagttggcaa cgagcttgtt 960

gcaatctctc attcagagat gacaccaaaa ggtgcgtgct tttaattgag acgaagaata 1020

aaataacgat cctcttttt gcgctttaga tctccgaatc gacattgcca tgtatctgga 1080

tgcaatgggg ccgggtgtgg aaaaagctta attaggcagc aggatgaaag cagacgataa 1140

gcatctctct cccctgcagg gtcattagtt tggcgctttg gaatcatata tacaattaat 1200

aaagatattt aatcgatctc gtctcgccca acatctgatg atatttaaaa tatgcttgtc 1260

gtttcgttcg tagataaaaa ttgacggcat gcatatgtgt tgaaatctct ttctccccat 1320

gactgtctat tctttccacg agctatgtaa tctctgtgtg gttgattgcg tgtgcttttg 1380

tgtgtttaat ttacgtctgc cttttgccct atctcaaaag aggagaagcc ccatactact 1440

ttcttcttaa aagatgtatt gctggctctt ttttttttt ttacagattt acattcaaag 1500

agtttggcgt tgccatgtta gtggttagca aaatccaacc ataccaagaa aatctaaccc 1560

tacccaattg acacatgtaa catgcaagaa gctagctatc cacataattc ccttgatctc 1620

actcattagc ctgaggtggc acccggtcaa caggccgaca ccaactcctt ccctcttcca 1680

atctcttgga attcacacac ccacggaccc acccac 1716

<210> 5171
<211> 2036
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_131459_G1, chr4:1266570..1268605, Cluster 32

<400> 5171
gataagtgct ctgcacttga gacctttta gccagctact tgttgaaact gctcctgcaa 60

ataagtaagg taagattttg ttctaattga gcaataaggt agtgcataga ccacaaagac 120

ccaactattg ctgctctctt ttactccacg gcatacaact tggagaaaag ctttgatacg 180

gataagaatt caaagtttct ttcctttctc ttctgttaag ttaaatagtg caagatgcaa 240

aaaggaaaag gacacatgta ggggctacct acgtctacat atatattgaa ttcacaaatg 300

gacaactcag caaaagacat cacatcaagt aagccgaagc aaagcagagt agcggattat 360

ggccatggtg ttttacttat ctaacaacag ccattataaa caagaaaaat tacactttgt 420

gatgcaatta tgattctttt agatcaggga ggaaaccaaa gtaccagaag gtcacaagac 480

tgatgcgaaa aaagtgtatt atgtatgccc atttagaaac taagaactta ttatgcagca 540

tgttacattt tgaaaagaac tattaacttg ccatgtatcc ttatacaggt gtattagcaa 600

actcaaaaac caatgaggaa actgagacaa ggcaaactat tatcaataaa taatccaaaa 660

tcagctacgt tgtccatggc aatgaacacg agcaagagtc ccgaataaga aataaaacac 720

aggaagcgtc cctgaatatc aaggctacaa caaccagaag ggacatcacc atgtaaattg 780

tgcaaaggaa cttgagtcct gccacggtaa cgggctgaac atgtcaaact gatgctacag 840

agtagtgcag tagatacacc agatacttcg acaacccact gtcagcacac actatctgaa 900

acaaaaatca aatggagcat accaaacatg tggttggtta atcttgtaat caatctctca 960

aactttgact catcaagcaa aagttgttat cttgttccct aatacctaaa atagtttggt 1020

aagcatttgc agatactaat agcttaatga accaaagaaa gttctgtgac gtcaagatac 1080

aaagatctgg atggggtggg ttaggcgaaa cttatagaat caagaatgtg ctccatttat 1140

ctctagatat catttattaa aaggaggaaa attatatgtg acctcggaaa tacttacact 1200

agatctctaa agttcactca gtatgcacta catagattca ttgtgtctgc atgcgtgttc 1260

acagccaaaa cttaactcaa agaataaaga gggccaaatg gaaaattggc catggtacca 1320

catgtttggc gtcatatact agtcgcctct ccactaagca ccttgcgagg gaattcatgc 1380

tacattatgc atgaccaaac ggcctaacat atgcagcaaa aaaatttggc aaggcattgg 1440

aatgctggtc actggtcccg tagcagaacc taagcagaaa cactatcacg catttgatct 1500

gtttgttatt aagtaaacct cctgcctccc tccacttcat accacacctt tacattgtcc 1560

tgaaaattag tctacctcca agtgcagtgt aagagaaaca aacgcaccgg tttctggatc 1620

cgcacaatga ccgtgattgc aaaagagact ccaatcaatc aagaagtaag acacgtgata 1680

agaaaaatgt attaccggaa tggaaatgga ggcggctagg accatagacc atgtccacca 1740

gattgaacaa atgaatcccc ttttttcata actagcaata cccaggtacc cttcattaaa 1800

aaaaaaaact caggccctcc cacaaagaaa ggggaagaac aaagatttcc cccaattcac 1860

attctttctt tccgtcacac tcacctatcg gtcccacact gccgatccgg gtgagcggcc 1920

gcgcgccggg ctgcattcgc cccaggccgc ggcgggagaa ccgccgcttt cgcgccatta 1980

tcctgcaacg gcggcggcgg cggggaggac cactaattta gtccctcatt tttcat 2036

<210> 5172
<211> 2593
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132055_G1, chr4:3509312..3511904, Cluster 32

<400> 5172
atgtactacc cgagctaccc cttgatcaca taataaggca ttgatctcta tacacagatt 60

taaataaaaa tgagacggtt gtgcctcatc agataactcc ctagtatgtg cccctagtaa 120

ttacaacata gtgtgaatat aactagtttc aaaatgattt gagacatttc aacaaaagtg 180

ggtttctttt gtcaaagata cctaattaat gaatgttggt cataaggact acacacatat 240

gattctcata tgcgccattg tgaacagtga atataaacgg atccacccta aattaaaggt 300

tgtgatttag agttatttgc ttgctgaatg acctcgctaa tgttggccat agacaagtct 360

aggtatgatt tctctctatg ctattgtgac gattgaatat aattgggtct aagaagaatg 420

taatgatgtg aattaaagtg tacttgttga attacctcat aaatattgtt cctcataggt 480

aaggatgagg taagattccc cttttcaccc cctagtctag gtatgatttc tctctatgct 540

attgttgaat taaagtgtac ttgttgaatt acctcatgac ctcgctaatg ttggccataa 600

atattgttcc tcataaatat tgttcaccaa tattgccaaa ctgagcactt caaagttaaa 660

atctctaatg ccattatcat agattcatta aagaaagtaa taatccatta ttgtataaag 720

gtcagttaga tccatgcatt tataattaag aattaggctg acactatcaa gtagctacca 780

tgaccatagc tacgatacaa agactaatta gttctacact tagttgaact gctttgtcaa 840

aatttaatgg acccttgttt gtagcaaata agttgcaccc ctaattaatc tttatgagat 900

caagatcaat gtccatgagt tggtaatctt gcataacata ttggttggcc tctattgtat 960

ccattgtaat atctatctca tatatagcat tctcctctac atccttgccc acatccattg 1020

gtacactaca atattctagg tcaacagttc ttaccctaag cactgatttg gtgaatcaat 1080

gtgaacatta agaaacacaa gttgaattca tgaagataaa gggccaccaa ctctaaaact 1140

agattaactg ttttcatcta tagatccaag aatagtacta agctaaggtt agtgtcttct 1200

agaaccaaga aacatggtgc gaatatatac aaactaagat gtaattagca ttaaccattg 1260

tttgaataca acattgatca tgtgttgtag atttatctat cggtgaggag gaagatgatg 1320

ggcagagaca agcagagatg gtcactttag cctgccacca tcatgttgtg gcaaataaga 1380

gaatggacga gagagaggtg tggtatgtag ggaatgtaaa tagagttcca caacatattt 1440

ttgcttgtaa caggccccat aatgtaggga tgaatcttgc taatgttagg tagacatatt 1500

gatgaatctc actagctaga gcatgattat taatgtatga gactgggcta atcaccacat 1560

gaaccactgt atttagttca acaattctga catgcttaag tttgacacgt ttctgctcca 1620

cataactatt tttgtagcat aaatgatgat actgattatg acacatcaat agttcaacaa 1680

ctcaaccaaa agtaaagata ccctgacaca cacttggttc tattttagcg agttgaggat 1740

ctatccaatt aacatgcaaa gaactaagaa aactataaat aggtaaccac aatttgtttt 1800

catataccaa ttctttcttc aactttcttg aacctctgtt catgtcttta atctttgtca 1860

tctctttgac ctccaacatg cctttgtcaa atgatacaaa attgaactct tcctttgctc 1920

taacaggcac attcaccttt agatacaaca tctaatcaca tccatctttt atttaagtct 1980

taaaattttc cacatttagg agcaaatcac tcatcacaaa tcttgtgggt ttctaaaaag 2040

caaattctta aatagagcac acctctaaga tatccataac caatacccaa taaaaagtaa 2100

aaaataaatc atgttgtcca tgctctattg catctatgat agccatgacc taggttcata 2160

tcactcaaag aaaaaataga tccaccttta gttcatagtt gcacttagtt gtgggctggt 2220

atgcataggg gtcatcatca tatgggacaa gtggtccctc gtgttgaatc cttctctgtc 2280

agaagagtgg gtccttctca tgagcctgtc ctttgatgtt gtaaaaccag atgacgagtg 2340

tgagctagat tccaccatgt acaactctag atttaatctt ctagactcta agatcacatc 2400

aaatctttct ccaagctaga acatgtttgt tccttctaaa gtttttattg ttccctcaaa 2460

acatagctat aaagttaggt tctttgttgg gtcaaggcat atttttattg caaaatagcc 2520

taaaatgggt aggagtaagt ttcttggttg aggttgtaca aagcagccat aaaatatact 2580

ggccgacaac tgg 2593

<210> 5173
<211> 1782
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_132208_G1, chr4:4201770..4203551, Cluster 32

<400> 5173
ctccgttgag caatatcatt tcattatgca ttgttttcac gtgcatttcc ttctaaagat 60

cttcatcctt cacattaaca actaaggaca aaagtccata ctcctaactt gtattgcctt 120

aattttcaat gccttcagga gatagaaatc aaatatccaa cacctagaac gaaacaaata 180

tggcctaatt atggtagaaa aataataaca tataaaaggt tcctatcaaa taggaaagca 240

acactcgctc tctcctaatt agtgagaagc aatgcaatat tttgtcaagt tgcttatctt 300

atctaaaagt tactttaatt ccttatgttt taagatggat ggagtattgt ttatgttgcc 360

cattctccac ctaaatagtt tttcgtattt catgtgcctc cttccacggg gagcaaggtt 420

ggttttctat agaaaaatgg aagggtataa gggggagtgt ataactaaaa agtgaaataa 480

taacaataat aaatataaaa ttaaaaagaa aaagacacat cataaacctt tgaaccattg 540

gcccttccct tgggatggaa gaggattccc accaccaaat tgcgattgca ttttttgttt 600

ggaacaaaac ttgtcacata taacctcatt ctggtactac aaaaataatt tcaagagaca 660

ttggattgaa ttgacaaaga tgggtgcatt agtatattgc ctctaagaat gatctaaggt 720

ggccaattgg caaattcaaa ctctataaat catttttaga gtagacccct taaaacatat 780

acctttagaa ataactccac ttttagacat ccaccaaaga ggaccacctt gtaaaagaaa 840

tgcatgccct tttagctatt aaacccttag aataccacat tatgtttctt ttttatccag 900

tctcatctcc ctctcaagaa gggaggtcaa ttaggtatct aatttcaaac ataaaaccaa 960

gtttttttta tagtgcactc catttaactc tcactcacaa agagttttac aacctagagt 1020

tgatccaatc aagtataacc gataaataat ttaggaaggt aattaagaga gcttctacac 1080

atgaggaaga ggatctccac attctctaaa cactgatatg acaccactcc acatcaagag 1140

tgtgtggtca tcaccacgaa aaccaccaca actttacttg aaggtcatga agatgttaag 1200

aactctactt cgctaggata caggcgcaag tcccaatttc tcaaaagtct cgagctctat 1260

gacccaaatc ttatgaaaat gtactcttta aagtttttt atgctagatt cagtgcagaa 1320

atcatttctc aaacttgtaa taactttgtg acactccaac atactcaaca ttatgatgca 1380

accacatata tctatgcacc actaggtgat ccgttgagtt atcctagaat gcagcatctc 1440

aagattgaat gtcataaata tgtattttta ttataggtca aaagtttttt agcaaatgtt 1500

ggttggaatt aaggagaaac cataaatttt acttttgat ctattgcttg gatgggttaa 1560

gggatttta aatttgtgtg cctagttcag caacaatgcc caattttacc cctctctagt 1620

agtaatggat gaggggtcct tactactaga gagggcaaaa ctaagctttt ctttttacta 1680

atagagagta gcaatcctcg tgtgtgacag aaacaagtag ccagagaaca acgagcacag 1740

tacagggaga aacacaatcg agctatacac attggtgttc tc 1782

<210> 5174
<211> 1509
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_136109_G1, chr4:22625708..22627216, Cluster 32

<400> 5174
aacagtgact taaatcagtg tcatatctta aaataataaa tttaactcat aaacaacagc 60

tccaactatg atggataggt taaaggcata taactatcct cctttgacgg aagtatccta 120

gattaataat ttgtctcacg taaggaaaac ctgagttaga gaaagtgtat cctacctaca 180

tgctattaag aatgtaggag aggatggtaa tattacaaag ttattatgag aggagctttt 240

caaaatatta gaggtctgaa taaatcagac atattgcaat gtgtgactga ttttgttaaa 300

gacaataact tggatttcat aggtttacaa gacactaaga aagaaaaaat catatctcct 360

ttatacaaat ccaagtttta aatgggtgtc ccttcctgct aaaggatctg taggggcat 420

tttgttgggt ctaaatatta acaagtttga gatggttaac taggaatatg gaagctataa 480

tttgtctatt aggattaaaa atatgaggga tagttttgag tggaagttga ttgtagtgta 540

tgggtctcca taagatgaaa gaaaagggga gttcattaat gaactacaca ttattatgga 600

ataatggcaa ggttcaactt tagttggaga atactttaat ttggtaacca atgccaagga 660

taaaagtaat ggcagggtga accatcattt atctgacttt tttgttatta gataaatacg 720

tgtggtatat tataatataa aatctcttct aggtctttca cttggtctaa caaccaagaa 780

aaatccaatt atggcagcca ttgataaaat ctccgggtat atagaatttg ataaaaaagt 840

atccatggcc aaaatgaata ttggtgccaa atctaggagt gaccataccc acttgctttt 900

tgattttgta attaatggaa atagaaacct aagttgttta agtttgaaaa atagtggttg 960

gagcttccag aattcagaga gttggtgtat agaatttggg aaactaccta tgtcttggag 1020

aatcccatag agatttggca gtttaaaatt aggctcttaa ggaaaaagtt gaaaggttgg 1080

gattcgaatt ataatgcagc tataataaaa caaaaggcgc ttattatgga atatgataga 1140

ctagacattt ggcaagaata aaaaatctta atcctaatga taaggaaaga atgagaacaa 1200

attctgagaa cttcaattta tttggtcttt aaaatagatt aaggcaagac aacgctctag 1260

agaaagaaat aggaaatgag atagaaatat tgttttcttt caagcagtag ctaatcaaag 1320

gactagaaag aaacatattg ttgtattaga gggccctaat ggccatataa cagagacaaa 1380

aaacatgttg aatcattcca taaatgttta caagtctttg tttggttatg aagaaaatat 1440

aggccaaata ttttcgaggt taagatccct ggcctcaccg aaaacatttt gaggccaggg 1500

atcataacg 1509

<210> 5175
<211> 1467
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_145661_G1, chr4:81598790..81600256, Cluster 32

<400> 5175
ttaaaacgat cataaagtgt atcagatcaa tcttatagta atgataggtt agtttagagt 60

catgtctttt agtatatatt attttcaaag aaaaaaaaac agttcaacaa aaatgtaggc 120

aagtggagca catgttgcag caatttgacc tcaaattaac ttaacagcat atctaagtaa 180

tgggatccaa ggtctaagtt gtcagctaca acctcatgct ctctgcatga atatgctagc 240

acccatttgc taaaatgttc ctccttttag ctgttcggct gctggctgaa cagctgctcc 300

acagccatcc ttcacacatg gccagctgcg gcagcataag tacagccgaa cttctctcca 360

aggacgcaat agagttgtgc gtcattccaa taaggaaaat gcaaaagaga agcaaaaggc 420

ctactcccac acacccacac aatgacacaa aagcttataa tttgctgagt gagtattctt 480

agaaactgga ggctttggct gtcttaataa gcaacaagag aaatgcctag atcaagggaa 540

gtactttggc cctgaactgt tttttttat caaaaaccag aaaccgcagg tcagtttaaa 600

atcagcaaat ctctcctgtt gacaaccatg aatacagctt gtgttctggt aaacaagtgt 660

tgccgtcagc tccctacaaa tttatgcaga agcagggtgt agcaaaaaaa aaaagaacga 720

gagggggcaa caaactgaaa aaaaacactg ccatgtgata gcagaggctc tgcgttgcaa 780

gcagtcaaac aacaacaaag ctgccatgca ggtaccttgg atgctggttt gatccataga 840

taacgatgat tgcagtggaa catctatgtt ccccttgaat ttttttctat gctccaacgt 900

gcttcatgat aacacctggt gaaaattgca gggaacacca gttaaaatcc aagtactggt 960

ccccagacac ctaaaactaa aactagtgca gcagcctaga atgtggtgaa tgtatccaaa 1020

gctaaagaat tattaagctt ctaaaagctt gctatgcact acagcagcag tatagaagaa 1080

tcggattaat gactactaca agcacttttt ttcatttcta acccattttg ttacctttcc 1140

tagcttgacc actgcaattc agcataaaca atactgctac cataataaca aagggatcaa 1200

ttgagatgca gaatatggca tccatttaaa atgtgagcaa caaatgtgta cgacagcatg 1260

gaatcttact tggaagtttc aggttatcac gcacacaaca aaactagggc ctccatcttg 1320

ccatgaagca taaaagagtc ccaagttcca gaaaatcgcc actatccaca gcacatatgg 1380

gggaaaatac tgtttcactt tcatgtattt atggatcagg agtgaagcat cagggcaaat 1440

ggctcacata ctactcccaa gtgaata 1467

<210> 5176
<211> 2392
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_145798_G1, chr4:82361512..82363903, Cluster 32

<400> 5176
tcaatctata tatattgcac ggtgttcata tgtgtatggg acgccatgct ttgtcctttt 60

cacatacatt ttaaatgtct caggagtcaa ggacatgtct acactgatat acacagcaca 120

tcagtatcac atgctcttca ctctgttgtt tcacccattc agaaagatga gtctaaaaat 180

tgttttccag aaataatcaa tgtagttatt ctttactcca attaactata gcactatata 240

tagttgggct tcatcaagat caaatatttc cgttataggc ttatagctaa cagagaatat 300

tgccaacttc taactgaaac taactgaata atgggaacat attattcact acccttcagc 360

aaacaaaagt agtaatcctc cgaaccatga tcatgttaag ttgacctgtc tatgagcgag 420

aaattaagca tggcgattca gaattcggac tagtcaattg gtatgccaga tgcaaaagaa 480

tagatgggag agggaaatag tactgtttga ttgacagcaa gtaaagaaga agttgtgcgg 540

tcaatcattg aacgtacggc atgtaggaac ttgcatatga aggagaacac acgtggggta 600

cggtatacat gcttgcccaa gcttatatat actgcactgc caattttagt ccatcagtat 660

acacctagac aagaattact tgattatttg taccacctgt tgagtgaact aaaagtatgt 720

gatgatacta atacacaagc atctacattt ctttaaaggt tttctaatag ttgattattt 780

gtgctagcag gggtaaaaga ctgaaactaa aattgcccaa aacaatcaaa ccacgagctc 840

gaagctaagt tttgcaacta gactatgtaa aaaaactcta ctagaaggtt ttgtggcaat 900

acatgtctgc attgaaattt gatgttggaa cagcattgat ttgttctgtc gtcacatatg 960

ttatctagaa gcatgcatat atgcaagctc aagcatatgt acgctggtgg gaagccaaaa 1020

ttcagatata cctctcccac ttcatttatt ttacactcag atcatatata gtctctacta 1080

ttgaaagcgc tctagttaaa aatgacgagg acaaataacc gcagacatat ttgcattatt 1140

aaaaaagaac aactcagcta gaatataatg atgaggttct ggcatattat tattgatgag 1200

cagttttaat agtcaaagcc atccagagcc gaagcacata agccaaatct agattattaa 1260

tttgaagaac tctggtataa taatataatg tatgattgat gtggcttagt tttatatgtg 1320

tatgctcttg tttcctgttt ctattgtaca aaaggatact tttttgtaca atcatgtctt 1380

gtcatgcatg ttgatttatg gaaggtgtta tctatatact tgttattcat taatcttgga 1440

ggataaaaat attgattgtt tcatgtactt aactgtgtgt tatcatattt cttttctgca 1500

tagtatatat gcatactctt ttttgattga tttacaacat gtttccatca tctagcatgg 1560

catttttttt gaacaattca aacaacaaca tgtatctata tatacagatt cctaataaat 1620

gatattcatt ctgatcatgc tatgaattag tttgaagctg agatccacat aaatatataa 1680

aataacggaa aacaattcag agttattctg agaagaagtt gttgtgtaca tacttgaaca 1740

taaacaattg attcaaatat aatttttcct tatgcagtcc aaaatatttg atttaagaaa 1800

ttaacataac cttcttgttt ggtatgattt atgggatgcc gatattattt tgttgaaatt 1860

attgttttta aaggtcgaat taagcactct tcagactaac taatcaagat aattaatgac 1920

atatttatct gcttcatata tgtttataat ataatgatac catgcatatt acctctctct 1980

cttcaagctg atatcactaa caacagagaa tggtatgtgt cctgctgtaa tgttaagaga 2040

tttggtggac ttgaactgtt gtcatgcaat aaggatattt ttaacaattc ccaacagtca 2100

tgacgatgta atctatccaa gaatttattc aaaccgacat ctataagaga aataatttaa 2160

gctatctata cttatcataa atctagtata atataatatg ttcatgggac atgaatttga 2220

tcggttggtc atatgcattt ttatgctctg caagagtgta gaacacaaca taaactgggt 2280

cggatctgga agactaattg taatggtcaa tacaattggt ttggatctgg aagcgtaatt 2340

gtaatcatta tcgttgcaca catcgttttt ttaaatgttt attgtagttc at 2392

<210> 5177
<211> 1880
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_160138_G1, chr4:175985783..175987662, Cluster 32

<400> 5177
ttggtaatcc cataacagga ttgacaatca tgatacatcg ataactggtg tgttaggtag 60

aagctttcaa cgaaaggacg gtcataagcc caatggacct taggatcgat gtcacattct 120

tggtgtgtct agcttttgtg ttcgattcct agatctacac ggtggatgac ttcagcaaat 180

tccatggtcg ccttatggaa acgatcataa accaaacatc cctaactctt cctatgacat 240

gttggacggt cttgttgata actttggcca attttcattc tcttgcataa actggatgga 300

gagtcaacta aatctttgta actcctactc atgtacgacc aaacttttcg agatgacttc 360

cccaacatca aacaactacg gttcaagtct agtcagactc actttcgcac ttaagggtat 420

cgcttcatct taccaaaaaa tgttatggtc tattgatgca tgaaccacac cactgaatat 480

atcgatacag aaaggtgaca actcttacta ctcagacaca acgtgcgaag tcggtaacga 540

atttcatatt ctatacgaga atgggttcca cataattgat aactagtcga aatcagcttc 600

gattagtcat attcatcaac aacctcctac tcaggtacaa caagtaagtt gatgctcgag 660

ggctcccaaa tccaaagaca ccaggtatgt atcatggttc ttcaacccaa ccacgaacca 720

agctaagatg ctttcacaag tattctattt gtgccatttc cgtcttattt ttggctaagt 780

tggtcttcaa tgagcagaaa gtcacaggct aatgcacata acaatcacac tctggtgcat 840

gtatgccttt tatttataat ttaagtatct atgcgataca ttttatgttt gaagccttgt 900

tcgcaacaac aaattccgat ataatccaat gctatatggg ccacgccttc acatgcctaa 960

catcctacac acgatggaat gctctagata acaaggtgtg tagcatgaca agcaattcat 1020

aagggcgaaa caacaacaag gataaaagca acaaccttac aatccacttc aaatactttt 1080

atgacacaag ttatgcacaa cgagctttat ttgtgatgat gacctacatc atgaacccaa 1140

tgctacatgg gtcacattgt cacgccgctg acagctaaca tcctacacat gggggtatgt 1200

tttagtcaac aaagtgcata acacaatgaa caactcatag agagaaatta acatatggtt 1260

tatcatgtcc ttatgttatt ttgtaatatt ataagtactc actgatattg tcctcgtgac 1320

ctaggatgta catcaacaag ttgagctacc tacaaccatt caagtacgcc ctcaacatgt 1380

tatctcaagc taaacgtgtc atcctcaaca acattgctaa taacaatcgt cgagtgcacc 1440

ctcaacaaga tacctcaagg tggatggtca agtaccacaa catcacgaca ccagctaagt 1500

gctcacatcg tcctaagtac cacattggtt atacaaaact cgagtactta taccgattaa 1560

gtacaacact gacatgacat gagttgagta ctcacaaggc tagggccata gctaaaacag 1620

tgggagccaa atacaagtgg ttgagtatag cgatgtcaca acactaacca attattcaca 1680

tcgacatagt ttcacattgg ctagacaagt cagtactcac acaatgtggt gtcaagatgc 1740

cagtagagta cgagcacaca ttagaactca agcatctatg cttcacaaaa actattgtaa 1800

catcagtgtg tgatttaatt ggtatttaac tattgttcca caatggttct aaggtaaagg 1860

cacaatctga ttttgcgcga 1880

<210> 5178
<211> 1756
<212> DNA
<213> Zea mays

<220>

<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162305_G1, chr4:189109561..189111316, Cluster 32

<400> 5178
actagtagct ctctgctatg agggcatctc agtggatcca tagtcccata gcgtaggcta 60

tgaagacgtc tattgaactt tgtaaaccca agtttctctc cgacaatgct aacataaagt 120

ctatgtggcc tacctttgaa ggtaaactag aagtattcat agttaggatc gatccaaaca 180

aaggcataca actctctaac ccataacata caggctagat cgtcctaaca gacttgccaa 240

tcctggcagg taagtaggtc gaaacgaatc tactctcctt caacaacaaa atgtcctctg 300

tgggtcatac cctatgaggc ataatggtta ttcggctatg agtcatggct gggtgaaaat 360

cctcatgaag tagaatatag aagccatcta acattatagg gtccctctca tctagaaacc 420

actactcaag tgccataaaa agcatagctc ctaaacttga gaagcactag ctatcttagg 480

ttaaggtgaa taacaatcag gtggtatgga cctatagttg ttgggtgtgt tagtggtata 540

tgagccggtc ttagctcctt aggttgtggt gtgactagta ctcgagcacg agtggatcta 600

tggatggtcg actacttttt tgtctcccgc tattgatttt tctgtagttg tggttgcacc 660

aatgtaacct caataatatg aatgatccca ctcctaccac ctcaccctat ggccctgttg 720

cttaggcaac atctagggct ctctaagcct ctttgttcgc tagcttgtac ttataagcac 780

tcttagcatg aactgccttg cacttgtctc aggtagaaca gggtggtggc catctgtgat 840

ggttattgtc acccagacca cctccaacat tcttagtgta agccatctac tatgtgaaca 900

gaaacacaaa acccactaac tgatagtccc ttgagactac taatttctca gaattatgaa 960

cctttagagg ttggccctca atccatatct agaggcttgg tctcatgttt aatgctcaga 1020

tataactgtc acatacttcc ttgactgatt gacatgctat ggaaaataag agtgagaggg 1080

tgatagatac cttagagatt gacaacaatg aggaggaaga gaactctgat caagaggcca 1140

tgcgataagc aaagatgcga gattgcaaga aatagtaggg aatcagatca aagaagggtt 1200

cttggttggt ggagacattt catcaaacac ttggagtgta tagaagttca cacctaagta 1260

aatgatgttt gtaaggagat gaacgaaggt ggaaaagacc tgctaattgg ggagagggtc 1320

tggtaggtct gtcggtgagg tttggtcgat gctgactcag tggtgagatt tgttggcact 1380

gactcggtgg tgagatttgt tggcactgac tcaatggtga gctgggttag tgttgactca 1440

atggtgagct tggtcaacac aggcataagg tggagctagg gtatctgatg agcagtagag 1500

tacgtgcagc tataggcata gtgatgcaag catgggtgaa aggtcatggg catagtgcaa 1560

gcttgtcaat ggcatgtcac agtggagtgg gtgtgtaagg agatgcatca tgatggagag 1620

gaagagacta tgagtgagag agaagatggt tgtgagaaaa gagagtgagc atgaccttgc 1680

aacttaggga aagaaaagag tgcttccaag ccctaatcag gtcattagac taatgtcata 1740

ctttagacca atgggt 1756

<210> 5179
<211> 1590

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_162512_G1, chr4:189811524..189813113, Cluster 32

<400> 5179
tcataacctt gaggaggcag tggcttcttg gaaagcaagg aaatcaagtg gttgattgcc 60

tgatggatgt atcatgggca ttttgttggt ccagtcttag ttggcccccc tgtgtgtgcc 120

agttcgtggg tcgcctctgc tacgcatttt tccaggggga ccatctctta tatctgctgc 180

atcctcatct tggtagcttt caatctcgtg atggttactt ctagtgcccc accatcatgg 240

catttccatg tgtattcttt ctttggtagc cccatgtttt gcatccatgc agcgattctg 300

caatgaaact gctaggttga acatcaaaag gtaaaagttg aagatttcta tgaatatctt 360

acatggatga cgtgattaaa ctgtactttg tagttgggac cctttgatat atttttttct 420

tttcctcggt atgtgttaag taggttgggt ctactttatc attatggcag tcacatgacc 480

catttgcgct gatgttaaga taaacaactt ggtgttcaaa agtcttaatc atgtaaccct 540

gggatagggc tcaactttcg ccactaagga aagaaccctg gcacatggct tgtgctctag 600

acttcttagt aagcagacag gaaatcttgt cgttgatacg gtagttaacc tacttgttta 660

atcatcatta ccgcagttgc cacaaaatcc cattcagatg aatctgaaac ctgcgcagtc 720

atctttccat taatcaatct aatgctctgg gaccatgttt ctctgttctg tatctatatg 780

tagcaaatga atacctagct ctcaggatac ttacagtatc ccgtggtctt taagctaaga 840

actaacaagt ccttgctact gagctacatg gaacactttt ttgttaagca tattatagac 900

acatcatgca tatatttgtc tctatctttg atgtgtttca caaaccgaag ctacagtaac 960

ccctttggct tattaccctc ggttaagaac taatgtttcg caagttgatt ctcctctagg 1020

tgtatacttc attttattga ctggctgtct aagtaataaa ctgttgttag gcccgtacca 1080

gctatttttt tgccccttct ttgcataggc aacaaaagca ggagacagcc ctctgttttt 1140

cttttgatac atgctgtgag gaatcttcat gcttattgga gttttgcggc cttttgtgtc 1200

gaaccttgcc ccttagacca tcaacttagg cagccttttt cttagtatcc tactagggca 1260

attgatccca cttgcacact taaacttttg ttgcaccttt ccttccccag ggaacaaaaa 1320

ggtggagacc ggctttaaaa gattaggaca tgaaaatccc caggtgtcag catcgcttat 1380

gcggtatgcc cccatcattt cattaaaatt gaaggtttgt gattttacca tgtaaaatac 1440

cagtttacca ctatgtctac gtattcctta tatgccatta ttttagggtc atttcatttt 1500

cttcctttga ttatgcttct ctcattgctc ccttagccac ccaaaaagtt ataagcacaa 1560

tactttcgtt ccatttattg tgatagttcc 1590

<210> 5180
<211> 2062
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_164120_G1, chr4:197812707..197814768, Cluster 32

<400> 5180
cccattgccc agcactgcac tgcaatctat atacatttca tgtatggctt cttgtaaaca 60

gcacgctgaa caaacaagag caagcaggtc tccgtgacac tcttgaaaag ggcaggcagg 120

catagaaaat cgacatgacc ggccttgtgc tccaaagtgc atgacaaacc actcttttct 180

tggaagtttt tatagggaaa gaaagaaaga aacatggagt agtgcctcct gaactaccat 240

ggtggcagtc cacatcctgc gggtagaaag cgtgctggtg atctccatga gattcaattt 300

ggggatccca tttaatctcc gaccgtgttc agagatgatc atcaaccaga tcgaggtctt 360

ttccgatgcg gatcaggtcg aagtttggat atgtgctccg cgtagcaatt gcattatgag 420

attgcccgtg caaaattatg aattatgatg ggctcctaac ccgctttgcg gctaatcatc 480

agttgcatta ccacgtggag aacagaaaag gagtcaaaat aattagttga gatgtgtgtg 540

cggtttgatc cttaaacttt ggcttttcac tcgtatctca tggcccagag ccagatccct 600

tgctttgtcc tgctgcgtgg ttgtattgta tgtggagctc ctaaatctcc aaaagtacca 660

tgtccaaatt gaagcattat tgttttcagg caaagttaaa atgttatgta cagcaattta 720

atttttccta gatattccat tgaagttcca ttagtttgag ctcagcctgt tcttgtcgtg 780

tcctgacaaa aaattgaagc ttgggaacca tgacatagac tgaggcagac agaacacccc 840

aacctcagca atttggggca gtagttgcca ggccagaaac cttgggttgc tgtctcttct 900

ctctactccc tagtatccct ttaggtatag cactttggaa gcaagaagtg actgagaaac 960

ctttaacttt ctgcagctac ctttagctgt tgcattttat tagtagtaga atgtagtaaa 1020

tagtaatcta cccatatata cagaagcttt ttgattgagt gtcatcttta cagaagtcac 1080

caggggtaaa tcagtaaatg ctagtcacta gcaaatctgt ctgtacaatt tttatcagtt 1140

agctctacca ttttaggtgt attaacttgc aaaacaagag gttcgcctcc atcagccaca 1200

gtagtttata ctgaaattta tatactgcca caacagcggt gctcggcgca actgaaattg 1260

acagcgtctg taaatatcta gtaatgcacc ttctgacatc agtagtactg ctcggcaaag 1320

aacacgttgg aagaagcgtc taatgacagg ggtaattaaa tgtcaatcct tctttcatca 1380

ttgtttaacc tttctgcagc ttctttgcag cagaatgttc tgaactgaca agaggccaca 1440

tttggtaaat gtaataccca ccatcatagc ctgctttttt atcactgtac gtacctgcag 1500

gaactcatca gctggatcta tctacctatc gatccaagta cacaaaacag tttggttggc 1560

catgttctgt gaaatttttt aaattactac aagatcaggt cagatcagat cttggcagca 1620

agcagggctg gaaaatgctc tggtgtcagg gaactaacgg aagaatgaga tgtaaaagaa 1680

catgcatcac agctagagca aggtacaagt ttcaacttat ttaaactagc gataagtcct 1740

cccttacaac ttaaccatgt gtacccccat gttgtgatca caacacatca ccactactcc 1800

actaggccac agcaccttga tgggatctaa atccaaagcc ctctctgcat tcccatgatg 1860

cttccatctc tattacttaa accttgtgag tgacacctaa catgtcccct aaactgtttg 1920

ccgtcgctca cgcggtctca ttttttttt cgtgcacttg tggtctgtct gttggatgac 1980

attgacttgg tacatactac tactactaac acaaagctaa cttgagaaaa cttcatcaaa 2040

ctgatgttta aaagtttaaa gt 2062

<210> 5181
<211> 1658
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_166843_G1, chr4:211484673..211486330, Cluster 32

<400> 5181
atgcaaaggt aacattatgg gatgctaaga tacaaattaa atgatctcaa aaggattcat 60

tgatgcatag aagaagctta tctagccctt gccaatgtca ttattgtggt attatagact 120

tttggattta attaactttt aatactattg gtagttcata agctaattgg actttgtgct 180

gcgagcgcat aaggacaatt gtagctttca cctgagagta ttctagggta tcgtgttttc 240

cacgagtaag catcgtggca gaaaatcaat tcatcatcaa ccaagctata tcagaaactc 300

ttacattcta actaaatgaa aagataaaga aaccaaacca tgtgattaaa cactaggtaa 360

cagtagtggc aaaatcaata tgggtagcta agaggacaat gaggcaatat ctatgttctt 420

gattatcact tctaaactat ggagatccta atagactaag ttagattaaa gtgttgcttt 480

gctatggata aatctttata taatagttta tgcttacttc ggccaccgag ttgtaagagc 540

cccttctggg cactagagtg ttgataaccc agatgagaaa tgtaggcttt atagagaatc 600

agctatagta gctacatgat catgacacga acgacatggg tggaatacat agggtatagt 660

tccgttgtaa ccaagtggac ctacataaat ctagggtgtg ccccaacagc acaccaatgg 720

acccaaattt gaatggggtt gtgtgtttcg cagggtaaac agccagccta agcatagaag 780

tttattgata ctctgatgga cgagtcatag cagcatgtaa gacttaaaca cgttaattat 840

aagcatgcac aaggtcccat aagcacgaca aactaaacta ggctttaact cacaaatgaa 900

atctaactaa agtctagaag acattcaatc actatgattg tgcattatct caatgaaaga 960

atgtaacact cgcatgaagt aaataaagaa ttcatattaa agatgtcaag tcataccaca 1020

aaataagata caagaggact tataccaaac tccttgtaat gactttagaa tgacaaagaa 1080

tagagcctca actctaactc ctaactaaac attaatttca gagtggaagc accattcatg 1140

gggtccctcc aagtgaggga gggaatagag ttacatagtg agtcgtgttg tgagactgag 1200

ggagtgcctc tatttatagg agtgtaggtg acttgggaga gtggagatcc acccttggtc 1260

ttagggaata ttcccctcct ctttgaccat gcatgcaagg ctgcatggga gtgaaacatg 1320

tgcttgttgc ttccatgtgg ggctgggcag caaaggatag ggttgaccaa ctttggtgtg 1380

gctagccgac ctacatgtgg ggacagtcgg ccaaagtgag cccatgtggc catattgggt 1440

ccggtcggcc tgcatgtggg gcacgccagc cacagatctg agccttggtc atttgttgac 1500

ttctacttgc tccattttat gtatattttt gtagaaattt gagcttctcc ctgcaaaaca 1560

cttaaaacaa cacaacttgt ggattttatt agttcaatgt gtataatgca tagaatttcg 1620

ctcataccca tatttattca ctgagttgtt tgcggttg 1658

<210> 5182
<211> 3110
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_167152_G1, chr4:213367964..213371073, Cluster 32

<400> 5182
gtagcacctg tacctcgaac catgctttcc acatggagat tctctggcgt gcgccgcgtt 60

ctctttgtcc cgctgcaggg gccgtcgtcg cggcacggcg cgcgtcgcgt ggctcacacg 120

gtcacgcggt tggtggcccg cgcatggggg aaggggaagg caggcaagtg gcagcagggt 180

gctgttccta tcggcgagga gattcgtcgt gcgttttgcg gctgtgcaga tgaggatcag 240

gcgaatcgca cgaacaatca tgggattgtc gtttcacctc atacgcaagg gttcactata 300

cgtaagcgaa tcgcacggat gatcatggcc tcgtgttctt gctgttctac ccacgtgatt 360

cgtgacggga ttctcgatcg gatacaatca cgggtaggcg tgttgcgtag taccatacat 420

gctttacaat ttttctttgg ctcaagtacc taatcgagag attcgattaa gaaatagtag 480

cagagaaaac atgccacact gctctagaca cttgtgtttt gctacggctt cagggaggcg 540

atgagggtaa caaacaacaa tgggcattgg ttaagaataa ggtagaactt acctggtgga 600

aatatcattc caatattgtt tagaaagcca atccaagttt ttccagggaa gaggacctac 660

atgatgccat ctctttaata ctaataatgt ccagtccaag tcacgagtca ttgcaacatc 720

aactctggga ggaattaaat atttgattga acattggaga ctgattgcct tggaccttag 780

cttgctaagc atgttagcag gaatctacca agtgcagcaa cttggtagtc attttgtttt 840

cagtaggtag gcagataggt catgcaagtg actttaacaa agttttttt ttgttggtta 900

ccatcccttt ctgcttattt gtagccgttg aaaacttgaa tctttttctg ctgtctggct 960

aggacatctt ttagtttcag gtacagccca gtattctgaa agagaaatca gttgaccatc 1020

cattgccgcc cttgtatcgt gatgtgctgc ttcggtaacc aaacctgatt tttcttgttg 1080

ttccatgtgc taggatgaaa acgaactatt cgccacagtt gccagttgat tttacttaca 1140

tctaaacagg cacaatttgc tctttaccta gccaaaatac cagttgtatt ctgctgctgc 1200

tttgccactc taacattttg gacttgatgc tggaatcttt accattattc cattagcatc 1260

ttcatactgc attacgtcat tggtggggcc atgctgtaat cttaattttc tacccccttag 1320

aaaatttgtg ccgacagggg aaaaagccga tgtaatcatt tgcgttttga taaactaacc 1380

actgaagtcg caacatagaa aatagcatag cctttaacat gtgtcaatct agacttgcct 1440

tttgtttact tagagtaaga agactagctt cttgaccaag aaccatgttt ttattttcaa 1500

aagatacagg caccgtgctc agcctgacag gctgtctgca tgatttcaac tagttaatct 1560

atagcgtgta tctttttcat ataaactgaa aggagactgt ccaggtatcg gtatggtcat 1620

ttttctcat tttttcagtt cttcatcgtg taatttatgc tgtattagga agtgtatatt 1680

ggtaatcaaa ggtgatatac tttaaggaac cttcagcctt gctggtgata aggagatcac 1740

actgagctga tgctcagaat atacgagaca gcagtttggt atgctactgt tgtcttctga 1800

cttctgctat cgctagagct gcttctcaca actgaaggca tttgattgga acaattccta 1860

atgatctttg tacattactc tcgctaagtt aataagttgt gtcacgttga tgaacattct 1920

gacaggttta gctcatatgc tcaaattctt ctctcacttg tttcaacttc ttatttcatt 1980

ctctgtgatg atcatcagat cctccaatta tgactagtag tctaggagca aaatgaattt 2040

gttataaaca tttgtgaatg gccaagccca tcaatatctc ctgaaatttt atatactcgg 2100

attttaaatg ctttctttcc ttttccagtt gcattgcttg ctagctatga ttaggatgat 2160

actgaggtgt tccacctgct ggccttaact catctgatat cattgacaga agacatatgc 2220

cgtgagcatg ataagctact aagtgccgag gccatggttg gctaatggac cataaagtcg 2280

tctctatcag tttcagggaa ttcattagag ccctccatga tgaaacctgg ggcatatggt 2340

acttaaatgc agtaaggttt taaatagccg gttatagtga ccaagatata tccttttttt 2400

agtagcaaaa agttatgcta tttagcccga catatcccgc tatacccaga tatatcccga 2460

tattattact tttaagaagc atggggataa atctcttatc ccgctattta aaacactaaa 2520

atgcactaaa gcatatatat atatatatat atatggcacc atatcagtta cttcgtcttt 2580

ctggcataac ctgcacgctg ttacgcttct atatatttgg ttttgaaggt agttgtgttc 2640

tgtaattgtc tctatttgtc aatttcattt tagaagtaat tacttttctt ttttattttc 2700

tattgttgtt aaattgtgct ctgaaatctt ttttatgtta aacatgagga gaatgctaaa 2760

ttgccaaatg aattcataat gcagacttaa tctcttgtga tgtgcaagtt ccaccatgtt 2820

agcttgtcct tctgtaccaa aaacattttt gactaatgct ttatttattt tgtttagggt 2880

gaacaatgta tttgagggaa aaaatggaac cgttaattct gaaggttctc tgcaacacat 2940

cattagtatt tgaaactgaa attttgaatg agttagtgga aaaactgtgt gtcactagtt 3000

agatgcccat gtattgctac ggtttcttta aatgggatag ttattcaaac acattttaaa 3060

cctttacaat aagcattcgg aaatcttgag cggcttgtgg ggatagtggt 3110

<210> 5183
<211> 1890
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171120_G1, chr4:234205444..234207333, Cluster 32

<400> 5183
attgtaaaat gaaaatgata tgttatacca caccagtgta ttgtaaaatg gtaaataatt 60

tcacaatata ttgtatgaac gaaatccaca aattactcac atgtatagta ttcaagtgac 120

actatacatt ttagaaaaaa tcttgatatg gaaagtaggc atccaagatc ctttgcagga 180

gacataattg ctcatgttaa ctaatatggg acgaaataga gaacttcaaa tgtaatagag 240

gatgaaagtg gaactacaaa acaatggaca cagtggcaga tctagaaaca tatgctacaa 300

ggggctcata ctccttattt tctacattta gtccctccta agcttcaatg attacaaact 360

tgtaggaagc ttaggagagg gttctatact tacggcgaca gtaggagggg gtcgagcctc 420

agccgacttg gtgctagttc caccttgaa tggaaaggaa cttaacagct aaaggggctt 480

tagtattgtg gccttcgtgt gaacatttca tggcgcacat catgacaact ggcaaaggat 540

ttatcttaca aaatattagt gttccattgt ctacagacaa caattatgga gcaaccttag 600

tgaaaagggt caaaagaaat actcaagcac cagtttccta actagttttc atacaagttt 660

ttgaaatgtc tatatggttc tttactactt agtcacacta gagtgccggt gacccacatg 720

gcctctagtg tcatcgttgg ctctagtgta gacatgcaaa ataatggcat aaaggccatg 780

attgttctat ggtaagctta gctcaagttc aaaagaaact gatagctatc ccttaagatt 840

cattaggctt gtttaatgca tggagacttc ggagaaaggt tgatagtccc ttaaccaaaa 900

tgggatgacc tacatttatg tcacaaagat cggcatcatc atcaagtcac aatgatcttc 960

gtagcatagg tcattcttaa tcttctaccg cactacacca caatgtatct cgctacaaac 1020

ttactttgac atgataatta caactttgtg gcaattgcaa aggggattca actttgggcc 1080

acattaggta agcctcaaca tggcaggttt tacgacctca tccatcctta gaccttagtc 1140

cacttgttat agaagttgac atctttactt actacgagaa gcttgaatat cccaactatg 1200

gtggcaaaga caacttaacg aattcaattg acccaaatat aagtattttt ccaacgatag 1260

acaaaggaag gcaacaaggt cctctttgtt gcatacacat attgtcggca atacccaaca 1320

gtggtacatt aaatagggaa ttgtgtgtat actctcgaaa gtgtggtttg gtatagaaca 1380

caacgcactt gtcaattgtt ttgtcacacc atgaaaatgt ggatttgtct acaacacatg 1440

acacaaatta aaaatatttc tacccgtgag agagagctag gtcataccac ctatcgaatt 1500

ataccattag agcagtgcgc tcgaggtctc cctttgtctg tccatgttcg aatcctacta 1560

caacttattg caatgaccag gggtgtcaac actatgtggt ttgagttttt taggttggtt 1620

gttaattaac attatgccct taaaggcaaa ttactagcaa ttcatcgatg ttagatctct 1680

caatgaagca caacgacaca atgtcccgga tgcgttagtt gggctagtct tttccatgga 1740

aacgccaccc ctctccctat caacctccct ctccttggcc aacgacgatg gcatgagcaa 1800

tttgaagcca aagatgttga ccaccggatc catgagcaat ccacaaaaaa ataagttgaa 1860

tcagtgtgag tcatacaagg gagcgcccat 1890

<210> 5184
<211> 1945
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_171577_G1, chr4:236208415..236210359, Cluster 32

<220>
<221> modified_base
<222> (600)..(600)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (600)..(699)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (601)..(601)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (602)..(602)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (603)..(603)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (604)..(604)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (605)..(605)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (606)..(606)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (607)..(607)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (608)..(608)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (609)..(609)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (610)..(610)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (611)..(611)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (612)..(612)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (613)..(613)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (614)..(614)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (615)..(615)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (616)..(616)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (617)..(617)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (618)..(618)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (619)..(619)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (620)..(620)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (621)..(621)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (622)..(622)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (623)..(623)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (624)..(624)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (625)..(625)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (626)..(626)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (627)..(627)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (628)..(628)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (629)..(629)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (630)..(630)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (631)..(631)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (632)..(632)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (633)..(633)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (634)..(634)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (635)..(635)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (636)..(636)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (637)..(637)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (638)..(638)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (639)..(639)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (640)..(640)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (641)..(641)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (642)..(642)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (643)..(643)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (644)..(644)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (645)..(645)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (646)..(646)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (647)..(647)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (648)..(648)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (649)..(649)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (650)..(650)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (651)..(651)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (652)..(652)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (653)..(653)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (654)..(654)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (655)..(655)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (656)..(656)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (657)..(657)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (658)..(658)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (659)..(659)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (660)..(660)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (661)..(661)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (662)..(662)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (663)..(663)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (664)..(664)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (665)..(665)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (666)..(666)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (667)..(667)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (668)..(668)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (669)..(669)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (670)..(670)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (671)..(671)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (672)..(672)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (673)..(673)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (674)..(674)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (675)..(675)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (676)..(676)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (677)..(677)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (678)..(678)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (679)..(679)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (680)..(680)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (681)..(681)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (682)..(682)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (683)..(683)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (684)..(684)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (685)..(685)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (686)..(686)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (687)..(687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (688)..(688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (689)..(689)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (690)..(690)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (691)..(691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (692)..(692)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (693)..(693)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (694)..(694)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (695)..(695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (696)..(696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (697)..(697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (698)..(698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (699)..(699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1685)..(1685)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1685)..(1784)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1686)..(1686)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1687)..(1687)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1688)..(1688)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1689)..(1689)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1690)..(1690)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1691)..(1691)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1692)..(1692)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1693)..(1693)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1694)..(1694)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1695)..(1695)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1696)..(1696)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1697)..(1697)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1698)..(1698)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1699)..(1699)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1700)..(1700)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1701)..(1701)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1702)..(1702)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1703)..(1703)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1704)..(1704)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1705)..(1705)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1706)..(1706)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1707)..(1707)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1708)..(1708)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1709)..(1709)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1710)..(1710)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1711)..(1711)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1712)..(1712)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1713)..(1713)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1714)..(1714)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1715)..(1715)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1716)..(1716)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1717)..(1717)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1718)..(1718)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1719)..(1719)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1720)..(1720)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1721)..(1721)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1722)..(1722)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1723)..(1723)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1724)..(1724)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1725)..(1725)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1726)..(1726)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1727)..(1727)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1728)..(1728)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1729)..(1729)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1730)..(1730)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1731)..(1731)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1732)..(1732)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1733)..(1733)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1734)..(1734)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1735)..(1735)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1736)..(1736)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1737)..(1737)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1738)..(1738)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1739)..(1739)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1740)..(1740)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1741)..(1741)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1742)..(1742)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1743)..(1743)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1744)..(1744)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1745)..(1745)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1746)..(1746)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1747)..(1747)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1748)..(1748)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1749)..(1749)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1750)..(1750)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1751)..(1751)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1752)..(1752)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1753)..(1753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1754)..(1754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1755)..(1755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1756)..(1756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1757)..(1757)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1758)..(1758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1759)..(1759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1760)..(1760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1761)..(1761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1762)..(1762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1763)..(1763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1764)..(1764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1765)..(1765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1766)..(1766)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1767)..(1767)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1768)..(1768)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1769)..(1769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1770)..(1770)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1771)..(1771)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1772)..(1772)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1773)..(1773)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1774)..(1774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1775)..(1775)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1776)..(1776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1777)..(1777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1778)..(1778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1779)..(1779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1780)..(1780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1781)..(1781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1782)..(1782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1783)..(1783)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1784)..(1784)
<223> a, c, g, or t

<400> 5184
cctacttcga tgaatcagct tgattcgttc atgccttgtc agcacctctc gggccaccag 60

tcgggagaaa aaaatttagc agcgctgggc tttggcttct ggcatggtga tagcttgtag 120

ttgtaccatg tgttgacgct atagcaccgt cggttgacta gtctgttctg tgggctgtct 180

gtcaccagac tgagaaagca aggacaacac tctgcaaaca taagacacgc agacgcagac 240

gcagacgcat tcagcacagc ggattcaatt caggcagcta gcaagcggcg acgacaaaac 300

ggcaacgtca tgagagccac agcccacatg agagagagag agagagagag agagagacca 360

tggccatcag tccatcaatt atatatgctc ttcttgcacc cacatcatat gacaccacca 420

ccatgcacac acacgcgcgc acgcgtgtac tacatctccc ttaagcttct tcgttcagtt 480

tgctgtgctc tcctccaatc cttgccccca gctaccacca gggccatagg ctattgcttt 540

tgcatactgg gaagcctgga acactggccg atcggcccct gctattgcca tattccacan 600

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 660

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnna gaaaccgatt ctagagattc 720

gtcctgccag cctgatctga tctgaccacc gaaacctagc tagctaccaa gccttgggtt 780

gctgtagtgc aggtgcggca tgcagttgtc aacaacagcc tgatctgatc cacgaggaat 840

tgaattctca cacgtggatg gccttggaga gatggactag ctattctctt cggccattcg 900

gccatgcacg cacgcatgga gcttgctgga tgcaatgcat atgcatgact ctccgtcatc 960

agatcatgtg gcagcttcac tctctcacca ccaccaaatg atcaagcgcg cgagcggatg 1020

gagttcccgt cggccgtcgt ctagcttagc tagttccctg cgatccctcc caaacaatct 1080

cttactatta ccgtcgtcga cccaataacg tacaatttcc tagctctctt gcagatcttg 1140

tcgcagtcga tctcatgcat ggcgtggtat tttcatctct tcatcaactg tttcatgcat 1200

ggcgtgtgcc ttcttctttt attggaacag ctattagcgc gcgcttatta tagatctttt 1260

tattggaatt aatggaccaa ataatgtttt tgcccttgca cagaagtttt ttggagtgtt 1320

tcttgcccaa aagtcgtcgt caaagcaatt gttggtacta cttcattctt tcgtccaaat 1380

taactcctaa tgaacattgt gctagtttct ttggggccgg ggcatctcga ctcctgttca 1440

agctgaccag atcatcccca atataatatg gtcatgcatg aaaggtaggc cgacctgcta 1500

atcgcttctt gcttttccat tgattctgtt tgctcagaag atcttgttgt gtaattgaat 1560

ttctccttcc attggatgct ttatttctgt aacgtaacac cgctgtatta tatatgctag 1620

agcttgcttt gcagacgttt ttttgttctg gccaagagca acagctttc ttcgaaaagg 1680

cttcnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1740

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnngtgttt tacattttgg 1800

ggtccctgca tatacaaaac agtcatccta atattagtcc cccacaatca aacagaacgg 1860

ctttaaagcg accattcgtg tgggtatggg ctcacaaatc gtcaatgggg gacacttttt 1920

cggggaggat tgtctgtaac gatcc 1945

<210> 5185
<211> 1452
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_172954_G1, chr5:3322061..3323512, Cluster 32

<400> 5185
aactcgagac gacgccccac tttatatctt tttaactatt gattgaccta tttgtcgtta 60

ctcatgcagg tatcttgtta ggggttaaat tgtcaaacaa aaacaagggg aatcagactt 120

aattcatccg actaaacaac aattgttcgt tcgatgagaa accagcgatc catatcagat 180

agccatacaa cttttctttt ttcaaaaaaa attatactcg tatttttat gcacgaaatt 240

ataaataaaa ttttgagtgg atatgttgca aaaaaaaagt ttgttagtaa acatatgtag 300

cattatttat atataacaag atgaatgatg aatttttac attgtttttc acaattgaat 360

taagggtttt ggtacatata gatatgacaa acttagctcg tgggtagttc caaacaagaa 420

cagacgtaat gataggttga acataaaagg ggtttagagc aatatttatt ttaggctcaa 480

tgataggtta aacatgccac aagaaatcac tctaatatcc accaaaccca agctaaatga 540

gttcaattca atctgaccaa ggctgaaata gttaaggtta gtatagcttt tagccaccaa 600

aaccaagcca agggagttca cttcaatccg accaaggcaa caatagttaa ggttagttta 660

tcttgtatca ccccactcct caacaaggag gaactttagc tcatcaggtt ggagcttgta 720

accttatgta tcatccatat agagcagtct atgattagga atagaacgta gggtactacg 780

cacaccgtaa ccaaatccct ataaaaattc tcatgtgata ggttcttgat gtcatgacct 840

taatattgta cggtgttatg actcattcct tacttcccta tcaatccttc ctcgagtacg 900

tcttggtacc ttgtgtatgt gctacgacaa tgaaacaacc ctcaagttcg aaagtgatgg 960

tacaaaagac gcagcggaat catcttcacg acgtaagaga aaggggaaat aatcatacta 1020

cacctagtag gcaaagtgta aaagaccata tgtttagaaa taaatttttg atgaaaataa 1080

atcttaaaat tatttaaaag gattaaaaaa atttaaaaaa acgagcagag catgctgcag 1140

tttgacttct ttttttctt cctcatagaa aagctttgac tttcttagca ccatccttaa 1200

cctctagaac acatcatgtt gtgcaagtga agtactatgt atctgtgact attatcattc 1260

atcagtggca tcgaagcggt tggtcatggc tggtggtgtt gcctgaagaa tctattcaaa 1320

gaaacgaaac agatcgaaga agaagaaaaa aaggcacttg cacaattggt tcgttctcgc 1380

tgccgtcaca agattctagt aaggtgtggc ttggttgacc ttgagggcca cacactatct 1440

agtacgttct ag 1452

<210> 5186

<211> 2269
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_176011_G1, chr5:20915478..20917746, Cluster 32

<400> 5186
ctcagtctac ccaggaacat cggaagcagc aatcgcaacg ccatgacaag ctcaataccc 60

tacgggagaa tcaccgggcg ggacttcgaa gcccaacagc tggtaactgc tctgataagt 120

tctcaggtcg agaacccagt ttctgttgtc tctattgttt gttggtgtag gtggcatagg 180

taagactgct ctagcacagc atgtgtacag caacgctaga ataacagaga gctttgatgt 240

gaggatgtgg atttgtgtta cttctctctt ggacgagttg agaatcacaa aagaaatgct 300

ggagtcagct tccagcagtc ggtttaggca tggtggcata gcaaatttca atagacttca 360

agtcgccttg aaggcaaggc ttgcttcaaa acgtttcctc cttgccttag atgacgtttg 420

gaacagtgac aacaaaacaa tagcaataga acaagagaac tggcagaagc tgctagcccc 480

tctgaaggac ggagcaaagg ggagcaagat acttttgaca actcggtcaa gtatagtagc 540

agagatgcta caatcatcct ctataattaa tctggagacc ttgcaagtta atgattgttg 600

gtccctgata aagacttatg tgtttgatga gacaaaacat accatcgact caaaactgga 660

gaacattgga aggaaaattg ctgagacact cagtggcctt cctcttgccg caaaggtggt 720

agctggacac ctgaaacgta acaacagtgt agatgagtgg aaacaagtct tgcagagaaa 780

tgcagtatgg gaggaaatca tgccaattct acgaacgagc tatgacaatc taccaccaca 840

gctgaaacaa tgctttgcat attgcagcat cttcccccag aaactgggaa tttgaagctg 900

agcagctgat tctgctgtgg ttagcacaag gttttgtgca cccagatggt tgcaggagat 960

tggaggacat tgggaaagaa tacataaatg atctatgtaa taagtcattc ttcacgatac 1020

agaagaaaga atttgtcagc tattatgtga tgccacctgt aatttatgag ctcgcaaaat 1080

cagtggcagc tgaagaatgc ttcagaatag gaggtgatga aaggacaaga atcccatcgt 1140

cagtgcgtca tctatcagta catctagata gactttcagc acttgatgac acaatcccat 1200

acaagaatct acgcactctc attttcctta ctagcagaac agtggctcca attaatgtct 1260

ccatccctcc agtggctctc aataacataa gaagcctccg tgtgttggat ttatcctgtg 1320

catgatggga cgatttcctg atagcatatc aaattgtgtg catcttcgct acctaaatat 1380

ctcatctact accattgcaa cagtaccaga attcttgtgc aaactctacc acctacaggt 1440

tttgaattta tcaggttgta ggcttggaaa attgccttcc agaatgaaca acttggtcaa 1500

tctacggaat ctcacagcag ctaatcagat tatttcagct ataacagaca ttggcaggct 1560

gaaatgcctt cagaggttgc caactttcaa ggttaccaga gagaaaacac aaagtatagt 1620

tcagcttggg tacctactag aactccaagg atccctacag atcagaaacc ttgagaatgt 1680

cgaagctcca attgaggcaa aggaagcaat gctttgcaag aaacgccagc tctctgtgct 1740

gcagctaatg tgggcatctg atcgagatga ggtaaatgga aataaggaag aggatgtgct 1800

agaagctctc caaccgcacg aaaatctgaa gagactagac atcgtgggtt ggatgggagt 1860

caaatcccct aattggctta aaaatgaatg gttaagcaat cttgagctta ttttcctaag 1920

tggctgaaat gcatgggagc agcttccacc acttggtcag cttccctcca tccgaacaat 1980

ctggttgcag catttgaaaa tgttgagaca gataggccca gaggcatatg gcagtggcag 2040

ccaaatgaag ccattccaat cactagaaga gctggtgctt gatgacatgc cagaactcaa 2100

tgagtggtta tggagtgacc agacaatgag gaatctacag aatgtcgtga tcaaggactg 2160

caataagcta aaagcgctgc ctccagtgcc tcctaacctt acagagataa caaattaaca 2220

attgcaagga aagggtattg ggtgccatac caccatgatg taaagttgg 2269

<210> 5187
<211> 1726
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181114_G1, chr5:48831931..48833656, Cluster 32

<400> 5187
ccatggagac tggagaggtt taatattaaa gaaacacaaa ttcctccttc caataatcag 60

gaaattaaca attgtccttc tccttgtaat atttttgttg gccataatag cgattaagtc 120

tgaaacgcta gagaagattg actacgaaaa catcattaaa gatttcaaat aaagattatg 180

taaccgcgtt atgatgctga atcataatgt ttgtataaat atatacatgg ttttgctagt 240

tttgtacaag gccccctgca tgcctaggat ccaaacatga tattaatttc gtaagagctg 300

taaaattgaa attttcataa aaagagctga aatgcaaaaa aaaaaaacgg tgaaaaagtc 360

ccgtccggcc ggtttttctt aggcatgcac ggtgccatat gatgcggtag gactttgtac 420

gttgtgtgcg cgatcatgta tttgcagctc aacgtgttac gtagccggaa aattaacctg 480

gaagcatgca tgtgacatcg ttgatgtcat tacattcttg cttaggtaca tatatttttg 540

aattgggcca gaccgaaatc tgagacggga aaacgtgtac acgtcctctc tccccggcca 600

gcagcatata tgcgtgtggt ccatgcctgc ctcccaaaaa gaccaaacaa ggcgaatata 660

cctgtcggcc ggctatcaga gtggtaagga acattttagt ctttagatat atatactttt 720

agtcttggta accaaataga gtaggtagag actaaacttt agcctaaaca agcccttaag 780

aaattcgctc ttaatttata tatgaaagta ttattactac ctcctaccta cacctttgg 840

tgtttcattg atgggcatgc atgatgggct cagcgtccac cgttccttca attctcttac 900

agctgctgca ctagtctgca ccatggatta ggaattgtga cgatgttgac gatgcagcag 960

ctgcagtagc atgcaccatg tgtcaccatg catgcatgaa tacgtactgg cactctgcag 1020

gcaaccatac cggcctctac tcgtccagcc aggggcagca gacgacgtgg tgctgcacgt 1080

actgctgctg cgtgtacttg cagcgagctc tcaactactg cgacaacaac gttactcatc 1140

ttttggaga ggtttcaagt ctagaggcct ctataggggt gataacacat ttgattttta 1200

tccaaaagag aacatagaat attcgatcca ttagtgccgc cacagtgctc gtactgaagc 1260

cgagaacatg cgctgataaa tgagacttga gggatgtaca gtcgcaagca ctgcagcgac 1320

gtattacatt tgaaaacgac gttggaccag catgcgccgc actaagctat taggtaggga 1380

aggcactgta catatacata cgagcgaatt attggagaca cgtgtgtaca taatctcacg 1440

atgaacgaag gccagcgcaa tctatctggc gggcggccgg tgaaaactgc atcagcatgc 1500

aatgtccaaa cggtatatat atatatatat agtaccaacc ctaacccatt tggaaccgtg 1560

tccgggccat gtttgggcca ccattgccga cacgcctgtg tttggcccag cccagccctc 1620

gccaacagtc gtcacgacca cggcacggga agcaacatgc tcagcacggc agtcggcatc 1680

gccttttgct ccatgccccg acgcccaacc tcacagtccc cactcc 1726

<210> 5188
<211> 1752
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_181825_G1, chr5:53519652..53521403, Cluster 32

<400> 5188
tggccggcac taggcttggc cacgtagtgc tccgaggatg ctaggttagt actcaggtga 60

gcctacttta cgtttgtctt gtgctgataa agtcttgaag gatattttgc tagtgagcat 120

atggcttctc caaagcactg acaataataa gaaacgaaaa taattgctgt cgaggaaaag 180

aaagattaaa tttatctttg tatttcgaat gatgatagta caggtagctt tcttggcccg 240

tccatcattt tccgtccttt tggagtgccc ttacattcat ctattcatca ttcattatcc 300

atctgtcaaa tttttgagac ggctccgtca caaaagattc gaaagcaaga gtaggaaaag 360

gatgcctgcc attcggagct ctccctgcac taattaaaaa ctctgtccca aaatcaaaga 420

cgtatcaata tatttatata tttatatata agtttttat cttttctaaa tatattatat 480

ttaaatatat atcaaaagga ctatatgctc agaaaagtca aacatttta agttaaatga 540

gggagtgctt tattggaaaa acatcctagg ttgaaaattg aatagctttg gtagatgata 600

gttcaaggtt gcaatatgaa tcccctccgt tctaaactat atgctgtttt atcttttcta 660

actatatact ttttattata tatttatata tacatcatgt ctagatatat aataaaacct 720

atgatttaga aaagctaaaa aagacttgcc atttaaatca ggagagtatt ttttgaagtt 780

tagaagttga aaaacaattc aatgacgatt tataaaatgg atttcccacc ctttttaaat 840

ttttattgt ggccctttt aaatttaaaa acagggagac ataatttcgt gagtattggc 900

cgattaataa ggtgtgtcat ccacctaact gtccaatgta gatgagatat atatcttctt 960

ttggtcttgg aattaaagat aagtaggtaa agttaacacg agatgagttg ctccttcttt 1020

gtcaaatgaa acagatgcat ggcttgtttg agtcataatc ttgcctccag aatctattag 1080

actctggtga caaatacctg tcagaataaa agaggcaggg tttttatggt acgaacatgc 1140

cttcttagga cctcgcaaaa aaaaaaggtg ttcgcttcac actgtttttt ttattatgtc 1200

gacttcaagt gtgcttatat ttggtgattg ctggtctggt gatgtgagaa gttgagtctt 1260

tttcttttgc catttttga ccaaggagct ggtactgccg caagtaccaa ctaccaactg 1320

caaaaaggga tgcttaaata ttggcggggt ctattatctg attagaactt ttcagctgtt 1380

ggaatgacag tctaacatat acataagctt cctgaacaaa acatataaat cgtgttatgc 1440

agacataaaa aatagggtta agttttcctt taaagaaaga acaaaggagg gttaggttga 1500

aataaacatg aaacaacaga cctggtgaat atgagttgct atggcattga tttgataaaa 1560

aatatccaac atggaaataa ttggaataat ctaatttttt cacaacaatt aaatcctacc 1620

aaatagccca ctttatccct tgtgcctagt agtactttct atccttcaca caaaatttta 1680

cacaccaact tgcaatcata ttctagcatg acaattctaa taacgtaaaa caagaagaca 1740

attgcacaaa gg 1752

<210> 5189
<211> 1794
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_199880_G1, chr5:172917373..172919166, Cluster 32

<400> 5189
agtaatgtaa aatcaggcta agctcaagct cagagagtaa tgtaaaacta tgaagaactg 60

cacaaaagga ggatatatta gtgatcactg aagaccatat attttttttc taaaaaattg 120

gtacaattca tcccacacat acactatcag caactgaaca ttattatgct ataactctag 180

cgtaagaatg tctgaccaag ggaatgtggg gaaatcaaat cgtgtaatgg gctcaattga 240

gccctatgcc gaaaatatat agcccatgct gctgtcagca tatcgaaagg ttgcagtcct 300

agaatgccaa atcagacttg agttttgata cgggttccca ccatgcaagc tagagctagc 360

ctagtggcga aaggatggtg gttgaaagca agtatcatga tgggcttgat tgatggaaac 420

ggaggcttgc tttgagcacg gttacaatca tgtcaaacat gcattctgaa tggatcagtt 480

gtcatgtgca cgtcgtaaca gtgtagtgtt taattaatat gacccttttt tgttttctaa 540

gtgctaaaga ttctacgctt gtggtgcaaa aaaaaacccg aatggttgat aataatggag 600

gatcagttgc atggtgaagg aggatcaact aaagctcttt tctctccacg cccccaaaaa 660

aaggttctag cttcggacca ctcttcacga ttcagaaata attaatggag aaaccatgta 720

ccatgttaca ttacaacttt tacatgttct ctcagttttc atgtacacat ggaattagct 780

agcaacacac tacttagggt ggactttgaa gcacaagata agctctattt atctgcaaca 840

taccaaatat aagtaaccag ttaactctga atgcttccaa gctctgactg atatttttat 900

ttttttcatc ctacatcgat aagtttgagt gtctgacagg attggggtga cgtgacagtg 960

catccacaca cgatttagat aatgtcatgt caccattgta ggcagatcgt ctgtactttt 1020

tgacaattac aggcattcag tccatttctg ggtttccaag atgtctattc ttaacatgtt 1080

taaagaaagt agccatatgc ctttcagaaa ctttctagag acatgaggca tgagtttggt 1140

aaattttctc caacacaaaa gccaattcta ataaaccaat aagcctttgt taattgtccc 1200

tttctttgat atactggcta taaacacaca gtgggtttta aaaaatcacc tgttgttaga 1260

gaagttcaat cataaagttt gtccgtcgca atgatttacc tctcaaaacg ttgactgcta 1320

aactccaaca gcctggatgg aattcatgca tgggaggggt taggagggta cctaataagt 1380

tttgatacct gttgcacagg cacaacaaac agcacactgt atgccttcga actgctatag 1440

gcaaggatct gtttgtggtc ccatgaatga atgagcgttt ggggtcttaa tttgcctctt 1500

taaccaccca taaaaacaaa cacatctgag ctatgtctta aaagctatct cagtgcgcaa 1560

cctcctagct tatatataag ctgtattcct ctttagcaaa agtcaatatg gggctgtgtt 1620

gctaactgaa gctagctagt aggtgagcta atgtaaaatg tataacttca aaagttgcta 1680

actttggaag tgacttcagg gggggcctac ttgggagtta ggcatgtgtc ttcttcaaag 1740

tgatgtgggg gtaaatgatg ttaatatgga gcatctccac tattgattat agca 1794

<210> 5190
<211> 1917
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_201017_G1, chr5:179270896..179272812, Cluster 32

<220>
<221> modified_base
<222> (1750)..(1750)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (1750)..(1849)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (1751)..(1751)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1752)..(1752)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1753)..(1753)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1754)..(1754)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1755)..(1755)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1756)..(1756)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1757)..(1757)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1758)..(1758)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1759)..(1759)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1760)..(1760)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1761)..(1761)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1762)..(1762)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1763)..(1763)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1764)..(1764)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1765)..(1765)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1766)..(1766)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1767)..(1767)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1768)..(1768)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1769)..(1769)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1770)..(1770)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1771)..(1771)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1772)..(1772)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1773)..(1773)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1774)..(1774)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1775)..(1775)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1776)..(1776)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1777)..(1777)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1778)..(1778)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1779)..(1779)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1780)..(1780)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1781)..(1781)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1782)..(1782)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1783)..(1783)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1784)..(1784)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1785)..(1785)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1786)..(1786)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1787)..(1787)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1788)..(1788)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1789)..(1789)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1790)..(1790)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1791)..(1791)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1792)..(1792)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1793)..(1793)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1794)..(1794)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (1795)..(1795)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1796)..(1796)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1797)..(1797)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1798)..(1798)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1799)..(1799)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1800)..(1800)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1801)..(1801)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1802)..(1802)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1803)..(1803)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1804)..(1804)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1805)..(1805)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1806)..(1806)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1807)..(1807)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (1808)..(1808)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1809)..(1809)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1810)..(1810)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1811)..(1811)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1812)..(1812)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1813)..(1813)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1814)..(1814)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1815)..(1815)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1816)..(1816)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1817)..(1817)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1818)..(1818)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1819)..(1819)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1820)..(1820)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1821)..(1821)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1822)..(1822)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1823)..(1823)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1824)..(1824)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1825)..(1825)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1826)..(1826)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1827)..(1827)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1828)..(1828)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1829)..(1829)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1830)..(1830)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1831)..(1831)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1832)..(1832)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1833)..(1833)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1834)..(1834)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (1835)..(1835)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1836)..(1836)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1837)..(1837)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1838)..(1838)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1839)..(1839)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1840)..(1840)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1841)..(1841)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1842)..(1842)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1843)..(1843)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1844)..(1844)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1845)..(1845)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1846)..(1846)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1847)..(1847)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1848)..(1848)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (1849)..(1849)
<223> a, c, g, or t

<400> 5190
caactgcata gatctggaca atttttaac atcaagggaa cttctcaaca gtaaacagga 60

gtgcatcatt cagcatattt ttttgcaggt actaaagttt agtgtactca gaaatgttct 120

tactgaagat gtcagcagcc aggttggctt tcttaattgc ttttgcagca ccaagtctgt 180

gccctcccta gtaaaagaaa aggaagagta cctcagaagt cggaacaggc atactttaat 240

taagaatatt tgtaggcacc taggttacaa aaagacacgg tgggatactt acaaccaagc 300

aggaggaggg cagtgaagat gagtcacatt gagattgtta acattcagga ctccagacct 360

aacatgagat gtgcgtagaa gaaaatcact gaaatctaat gcgcttaaac cagtggaaga 420

gttatcttgg gctaaatttg gcgatttgaa aggaccatag atggaaattt ctaaaatgaa 480

caatgatcct taaaggtgaa ttcggagata cataccagcc atcatcaaga tggaaggcca 540

attgatatga acaactaggg ttgaagtcta tcgacagaat cggacttgaa acaatgtttg 600

attgttcctg aaaaatatca atgccagaac aatggtttgc aaaaagatat gtttcagaat 660

cagacagggt tcccgatttt agtttatgag taatgcaaaa aaaatatact ggtttatatc 720

atgtaatctg ctaaaaacaa atatatttca atgttttcgt tgaaaatgtt ggaatataac 780

aaaacgtggt tggtgtttca gaatgttacg ctaaccaggg acactctaaa gagaagaaaa 840

tggcaggggg gctccagatc ctgtttctat gattgtgagg aagaagaatc aattcaatac 900

ttttggatg tggggcttaa ctgtgcaact gaatctttct gggtagtatg atatttggat 960

tgatagctgg tttctatggg gaaacagttc catatagata tagttagccc agctggtgtt 1020

tgctggccga tagggaaaaa agcaacacca tgcatatact atgaaaacaa aaccatcaaa 1080

tctcccaccg agattatctg ctagagggca ggattaaacc ccaggataaa cattttcgag 1140

aaggggcagc catgttgcat gcagcagtgc tgtttccatc cttgacaagc aaggcctcag 1200

cagcataatg caagcaaggt gctgaaccta caaggtgaga cctgacagtt gaagaagata 1260

atattaaatg ggagatcttg ttggtgaagg tcagctagta cagaggaaat tgcatccaaa 1320

atccaacaga aaatggtagg attgtaaact tgtgttagta gattttcctt ctctgtggca 1380

gtttttctgc gtgggagtat ggtaatccaa ggtgttgctt tgatgtatga cttgaaatat 1440

taggtgatac acatacttat cacaaacttc aaatgatttg tactcattac catggtaaag 1500

aaattcagaa gccgtccact atagattatg gttttggatg ttaaaaatcc aaaaaaaaaa 1560

aagttttcaa catcagtcca agtgtaagaa gatgctttct gcagagatga gtagacacta 1620

acaaaaacgg attaaggagg ttcaaaaacc taggttgaat ggacataaaa ttgtattctc 1680

agcagacaaa aatatcatgc attcgaaaat tcagaaggac tgcaacaagt atgtgtcaag 1740

caatggaagn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1800

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnt cagcgccggt 1860

atagagccgt cgtgattatt tcggtttcga gaaaaccccc ccctctaggc gactttc 1917

<210> 5191
<211> 1413
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_202250_G1, chr5:186876677..186878089, Cluster 32

<400> 5191
aaataacaca ccgtgctaag ttcgaggacc gctactgcat cttactccta cgaaacacta 60

tagttcttac ctctcagccc atctacatgt tccatacaaa cacgtttctg tctgtaccgg 120

ctagtgcttg agaactgcta atgtcgttat cgtcaattga tcctttggtc caaatgcagg 180

cagctgtgtc tgactgagga ggcctgacgc ccaacccaaa tggtctccag atatgtaaag 240

cggcaaacac ggtctctaac tctgtaccta ttgacttggt tgcaagggag tggcacactg 300

gtccattcta agctgcattg caggcggcga tgactggcgg ctcgtgcgtt cacctaccgg 360

gaagcactat cacgcacgag cagctctcga aagccccttt tgacgcgtct acgtattaca 420

agcaaaccac ttgacaggcg tgctctgagt gctccatctc catgttttgt tgatctttta 480

ctagcctttc tttttatctt cgaaacatga acgtggaaca tgttcaaaac aaagtttgag 540

tgccgcttca gttgagcttt tcaaattaaa aggtgggcag gtgcgatgga tgaagaaatt 600

atatagtaga agcaacgcaa ttaagaacaa caagtggagg ataaggttgt tttgttggat 660

tttttaccct tccactccgg gcagcgtttt catacccctа caatcattgg cctgcccacc 720

agctccaaat tagtgtaact tctgatgagt gtgaagcgac tcaaaaagaa aggcaaagaa 780

taaagataaa gactgtatag tggtatggtt acaaaatagt gtaggaatgc actacttttc 840

tcctgaaaat gataaaaata tagttccatc gctagttaat aaactactta aagttaagtt 900

agtaaactac ttaaagtttg acttgattta caaagagaag tacaacactg atttagtatc 960

aataataatg ctagtgtttt ctttctataa atttgagcaa agttaagttg gatgtttcca 1020

actacgcgtc tacgccacgc tggaattgca ttttcttttg cctctttcgg aaagagttgt 1080

tagttgtatc ttttccagac aaattgaaag tattattgtt gcactacgaa ttacaaaggc 1140

cgagatatca gagcggctga atggcactcc caatatatta accgaaaaat taaagttggt 1200

tgttgcgtaa gatttcagaa gctttcatgc aacacgatgc atatggtgcg agacccatta 1260

cattcatcga cgtaaaagaa tattctgtaa cgacacgagg cattgtacgt cggtaacgat 1320

aaccacgtgg gggatggtcc gattatacta ctctttgcag gttgcttatt tttacctagg 1380

taatttgatt tgcgatcatc aaccttgtgt agt 1413

<210> 5192
<211> 1462
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_204442_G1, chr5:199122195..199123656, Cluster 32

<400> 5192
ctctcttcta gtcacatgcg tatttgccct agcgttaaga catcgcatgg tagtgccgca 60

ctatagtttg gccttctttt gctacaccaa actacctaga accattctag ctgagccatt 120

tctattattt gccctttagt atgaaaccct acgacgagct ctatctttgc gatgtggttc 180

aagttcttgt agagctatgt tcctttgtgc atgatatctg gtatataagt gctagtggtg 240

gttacattgg ttagaagaag ggattcccca attgatattg aatatgtctg acacgatagt 300

accatgcatg atgttgtcat gttactcagt ctgagtccct caatcgatcg agtttgagtt 360

ccttgatccc accactcagt gacttcattg ttggagtgtc ttaggtaccc ctggtttata 420

tccttaacac attgctctca ccaaatatcc gctatagagc aaagcgattg aaatagacaa 480

aaaagaacac ttacactaac aacatggtag ccgatgactt cagccaacgt cgaatccccc 540

acctagagga tgtctcttcg tattgtgcaa tgcaaaagaa tcgacacaaa cttctaagaa 600

cttcatgccc cttgatggga aggtgtccaa tgttctagta atcaaagcca catgccatct 660

ttgcactata ggagactcct agaaaaccag caatctagta agactcttcc ttggtctgat 720

ccatctcccc taaagagcta gaacttgagt acagttgtgg ataaccatag tcgtgatgtt 780

ttgctcccaa cttcaaaccc ccatggccca aattaaaatt ggacatctac catgtcatgg 840

gcgacacaaa tagacccctg ccaaaatcta gacttgccct tctcttgttc cctttaaccc 900

attaactcag catacctctt cttcgatgac tttttcgatg ccaaattttt atgacattgc 960

cactagcatc tcacatcaag ggctcaactg attaggcccc cttcttgacc taatgttctt 1020

tcacgaaatt ttccaccagg atcaccgttt attcatcatg gaaagtatca atggtgatga 1080

gtagtattat tgagtataga ttgtgagaag tatgttggtg actagtagat ttactctggc 1140

aatcaggact agtaagagaa ctttgaataa ggaaagtaca acatgagacc atcgttaact 1200

cctaaccaca tttaatatca tttaattcat gtgcatatgt ctacctttt aaccataaag 1260

atctcctatc ttttgtactt tgtaccttga ccacctaaag gttaaattgc atctaagtag 1320

tacttctcgt gctataaact aaataaccat gacctattgc tcgaccaatg tcatatataa 1380

taaagataaa atgcaccttt tagcaacatg gataaagggt gttagagtat ctaactactt 1440

ctcaaatgct ttagttttcc tc 1462

<210> 5193
<211> 1827
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_205142_G1, chr5:203106065..203107891, Cluster 32

<400> 5193
tgagagagat tggacaaacc gaacaagccc gggagtcgta gacactagac ctgcttgctc 60

atgcgttgca aagttgctga ttatttgatg agggaaaata atcaagttcg agccgtgact 120

gccgcgacag cagcttcacc gccgccagcc cgccactagc agtaggtcgc ctgcgggctg 180

cggggcctaa ccgaatgcac gttttcttct gggccggtat tctatctagg ctgggtgcat 240

ctccgtggat cggcccacaa atccaggctg tggtgagcac cgtggcatcc tcagcagccg 300

ctagaccact gcttcatatt tcagcatcct cgagtaattg atttattatt tactccaatt 360

agggatgctg gatccggtag tatatacgag ttcatttggt ctcagtttgg cagttaagtg 420

tatgatgcgg gagaactcaa gattttatct aggttgcctt ggtgtgtgat tatgcaccct 480

caaattcaac acctatcaat ttggctaaga tggtctcact gggaaatttt atctaggttg 540

ccacggccga gcgtgcgagg ggaccaggcc agggcaagca cgagcggctg accaggggag 600

gatgcacaac tgaccaaggg tggcgcaggc taggccggca gggccacaac gacgtacacg 660

gggtttgaca aggggcagtg gacgatgttc cttcgccgct gctcgatcgc taggagagag 720

agagaagaat catgagaaag aataacagac cattttttct ccttaatcag tgataccgta 780

gatatttttt cttctcaaca ccaccaaact tagatttagt ggagcatcta ttgaggtgtt 840

ttactaattt agtgaatcta taagtagatc tatagatttg gtggagcaga tccaccggtg 900

aagctgatgg agacgaagat gcttggctaa aaagtttaga tggtgaagct atcatgaaca 960

ggaacaggaa cctattgatg gaagagttgg agtaagtgtt tacgtagccg gcaaacatat 1020

gtattattag ccttgacctt tctaaaagtt ggttttcatc attgaatgct agtttcatga 1080

ttacggttcc ctttccaaag cacctcctgc ttgctcatac tttactgccc caccatcagc 1140

agtgctattt gttcatactg ctcctcatc agcggttgag cagcaaccgc aggtaagtgc 1200

atggtgtgga ttcaaatgac tgaggccaca atagtttgga agatatataa gaggaaataa 1260

cagggatttc ttgcaagttt gaggcctcct caccaccact cttgttgact tctccgaaca 1320

ataattatat catctcaaaa ttgaagttgt tttgacaata cacgtgtaat tgttaatgaa 1380

tattaggact caagtagtct gttgttaagt ttcgtggtta tatcaaattg aaaggtacca 1440

tgcaagacct taacatcttt ttcgtacgtt ttcataacag agacatacat tgctatggta 1500

cattgatact attcagaaac atagaatctt acgtggttcc ttgtttaaga agctgcaacc 1560

ggatactttt tcgcttcatt gtttgaacac acatatttcc gatacccatc gtagctacat 1620

tcaaattggt ttgcttaccc aacaccaaag ttcagtgtca ggcttcagtt ccattaggct 1680

ggttctagtc cgtaaaatat tagaggcacg cggaaaggta aacatctatg tatcactcgg 1740

tcgttaccgg taattactaa agattactat ctacttgctt atctacttct ttgtcgcaga 1800

ttgtatccct gtatatccgg agtcttc 1827

<210> 5194
<211> 1587

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_207448_G1, chr5:214908748..214910334, Cluster 32

<400> 5194
tcaattccaa atcttgtgca aactttaaaa atcaaatctc gcccttcata tttggagaag 60

atataaaagt tctatttttg taccaaaaaa tccattccta tcaattatgg aggatataaa 120

agatattttg aagttggtct tacgatacat atttcattaa gtgatggaag tttatttcaa 180

accaaaagac caacatagag gggagaggga ggacccacat tggtatttcc acatggcaag 240

atcgttcaag actccatgtt atatcatatt ggtatttata ttatatttat ggtgatttgg 300

atggcatgca ttatttatct cagtacttgt aatttacaag gcttagaatt aggtctacag 360

gtatgtacaa tgtatattaa tgcaccatgt gttaagatgt gtctagggag aaagtgtaaa 420

aaacaaagac accatattat tatcaagaca cacgcctctg actcggtttt ttaagcttaa 480

gacatagctt cattagtaca atacacataa ataagtcgta tcttatagaa tttttattga 540

ataagacata aggtttagat acatgcactc atacctagat atgtatatat taactatgtc 600

ttctacttaa gaaaccatac cacggtgttc tttgaatata tagctaccat aaattatacc 660

atcgtcccgg caaactgata accattcatt ttgcatacat caagcctcta gttgatagaa 720

gtctccactc accacatatt aaattgttta gattaaccag tagctgaaat aaaatataca 780

ttggaaatgt tttggctgat cacaaggttc aaataaataa attaaaggct agctaataag 840

catatatata tatattatta actagttcgt catttgatgt ttacatatca gcatctaaaa 900

ctgtactcaa atacaaggga ttctagcctt ctaggggaca gaaagcagtt tttcattaaa 960

tacttttcct tttatcagcc aatcaccatt aaccatattg atgataaaat ttgattagga 1020

tgcgttacct atagctataa gagggtacat ctaataaagg ggtttatcag gtccgtcgac 1080

ccgatgaact ttgtaaagta aattactatt caaactctca aaactctata tcatgtgatg 1140

aaattgatcc tgataagttc aaatgatgtt cttagctaga ttcaccactg cctatacata 1200

gctaattgat tgttgtaatt agaagcacca aattgcttat aattcaatct tgaactgaaa 1260

gaaaagagag caaaacaggc tgcagagagg aacccgccag ccccaaaaac agacagaggc 1320

acgtacacag aaaacagggc tctaacaatc tgcatatcgt cgccatatat ctcttcaatt 1380

cctcatattg gctgcatatc gtcggattgt tagcggcaga tccaccggca gctgtgcatg 1440

cttggctgca gagcaaaatt gcagaagcta ctgacgtaga ttttcgggtg gacgatttac 1500

tacgttgacg aatttctagc tagtagcacc aagaaaaaaa atccttaact agataaggta 1560

aacttagttc acgttcaatg catgacc 1587

<210> 5195
<211> 1426
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_224876_G1, chr6:108117521..108118946, Cluster 32

<400> 5195
ggccatatct caaacatggt agtatgaaac ttagaacttg aaagtagtgg ctgcatccat 60

aaggaatgat acatgcttca aacttagaat tcgttggtgg catccatcta ttattaattg 120

taaatctaga actatcatgc tatctattaa ttatgctaac tatatgtcta tgtgtgtgct 180

tttgaaatga attattttgt ctatgtgtat gttattggaa tagaccatgt tttttgaaat 240

gagcttgtta ggctatgcca gaaatgatca ttagaggtgg ctatggtaca acagtaaaaa 300

ctattgcact atcaagcttc atgtgcaatg cccgcacaat caaactatca aaagtcataa 360

aaaaatttca actcaatata ttaaagttta agttataatt tcctatattg agagaaatat 420

ctactcaata tgaagaattt aaaaatttag atttttctgt tttttacatc tcttgacata 480

agatgatata ttgctagtgc aaataatgaa gcacatctac aatgtttta tgaattttct 540

tttaagattt ttggtattgt gcttgcacag aaagtttgat tgcacaataa tttttatcgt 600

gatacagcaa ccatctttgt aaaactaatt tacatagagg tagctctcga ttgcagccac 660

ctttgtgaat agatttatag aggtggttgg tattttcaga tgtcttgatt tactagagat 720

ggctggactt ctgtctcaaa aggatagaga cgattaggac agacaatcac gtctatggag 780

gcatctcaac cgctcctacg gttagaaatc ataccggcga ttatcaaata aatatttaaa 840

caatagtaac gaaaaaatga atctaatacc accgactact tttggtattc ttcttcaaca 900

aacaaaacaa aaaacataaa aaatcgtagc gcatcagaga gtgcacgtgc atcagaggtg 960

atggatccta atcattttga tgacaactcc tgtataatcg ttttaaaaaa gatgccaaat 1020

gcttctttcc tcacgcacgt gcggaggaca tacttcgttg tgcacacact agaagccaaa 1080

aagattctag acaaactcag atgttgccgc ggcggaagga gtaaaaactg agatgttacg 1140

gttttgggtt tcggggattt tcacgctttt gggacttagc catttctaac agtctctgta 1200

tctgaacttc tatctcactt tctatttcaa tattcacaat atgtaaaata gtattttaca 1260

tggctaggcc taaggaaact tgtagggagg attggctata gtagtagtcg agacggtggc 1320

cgaggacaag gcagtgaggg cactgctcat tggcggtggg aggagctggt tagacggtgc 1380

tagacatccg cgggagaaga atgagagaag cttggtatta ccgtga 1426

<210> 5196
<211> 1849
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225100_G1, chr6:109066256..109068104, Cluster 32

<400> 5196
aaactacttt agccaattcg ataggcgtgg aatttttcaa agtcataatt ccctcatttg 60

aactctaaat tggatgttct atatatgcat tttcattgta ttgacaagat aaaagtaata 120

gatagaaaaa attgaaggat aaaaacatgc gataagggag agggtgaatg agagctaaaa 180

aaactttgca caagacaatc ttgacttgct tcccaaatca tcacctaatc ccccaaacac 240

caaaagtcat aaacaagata cactcaagcc aacaagtggc tagatgttat cagtgatgac 300

caatgaacac aacggagcat tcaaaccaac caaaaccaag tgcacgagtg aaagtttcca 360

aattctaaaa tgagctatct actctaatag gaatgaaaaa gaaccaaaac caaaaatagt 420

acaaccaact aatggtttga cgctctgaaa atgtttctag ggtatataaa aacccaaaga 480

aacaaacgag tcacaaaata gatatctaga actccagaag cactcaaagc ggtgagctac 540

ccaagagagt gtgacagtga tacactcacg atcgacacta ctgttcctag acactactag 600

atgaatcctg gtactattgg gcctcgacaa tactgctcca cgcatgttag ttccactctg 660

cttgttgcga ccagcccaaa ccaaagctca aaaggcaaaa atgattcaaa caaactacga 720

ttgagctgat tttttcatac actttcacat aggattttaa aggcgtccac aaaatttgag 780

ttcaaaaaga ttaaggccca taggtcgaaa aatatgctct caaactgggg ttttctcaaa 840

attagtcaag aggttggatt ttcgtgttcg agttgaatgt accaaaacca cttggtggga 900

atgatccttc gatgtccttg cacatttcta tccaaccaaa aagtacttaa gaatgtagat 960

tgaaaatatc caagagagaa gattgagaag ggaaaatcta aagtaaaaac tttaaaatct 1020

caaaggagca ctaaaatgga tttcacttca ctattaacaa tataatagct agcccaatcc 1080

actcaactag tgccacaagt tgtaagaact atatgtgatg gactaggagc tctctaatgt 1140

cacttaagtg acgattcaat ggatctaagt atttggggtg tgttttgtag atctcaacat 1200

ttgtatacaa atgaatgggg tgataagatt gtggccaaag tcaaccatga gtctatttag 1260

agccccaaag gaatctaacc cttaccttct taaagagcat atttctagga cattagacat 1320

gtctagtgca ccatcgatat caacatcaga tacatctaat gttgctccaa cagatataat 1380

tccaattgct caaaactagc cattactatg tgttaggtgt ccaatacaaa caccagacat 1440

ggcaccgaat aggtctggtg catgttatag ctgatgggcc caaaatacat actccttgag 1500

ttccctatcc catgtgacgt ccagtgctag cgacggaaca tccagtgagc actagtactc 1560

tagaaactca catcatatga gacatatttg atgcacaccg agcagcgata tgtgaggcta 1620

aaaactgtta agaaaatagc cttgtgttcg gtgcaccacc gctcatgtat tgtgcatgca 1680

aaatggctac accgagagca ctcttatctt tttagagcag agttggcatt ttcagagtgc 1740

tttccataaa gattttatgt tattctctga atgtatcact tagacctata tgtgatgcac 1800

ataattggaa cacatagtgg cactggatga ccaaattatc caattaagc 1849

<210> 5197
<211> 3860
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_225104_G1, chr6:109077261..109081120, Cluster 32

<400> 5197
tcggttacca tggtttcatg cttccatttg agctggaaat gtcaatttaa accacacaat 60

gcttcatatt tacaggacta aaactctgtg aattggataa ctatgagtga attggattat 120

agatgcacat aatcaaaatc ctacattacc attctcacat attttccatt caagcaaagt 180

tcaataacat aaatttgaag aagcaatggt tcatacttgc taatagatat aagctaaaaa 240

ttgttgatct attagtgttt tagtttgagc ggtattttgt aatgttaatt tgatgtgtca 300

tgcttcatct tagtaattgg actagaactc tgtgtgcgaa ttgggtaact agttataaat 360

tgctccttta atctttatat gcttaccatg tgagagaaat ttgtacgagt ttgactgtca 420

gctcttttgt ggaaactttg tattgattta aaaaaatttg gagcttcgta ctaatggaaa 480

tccttttttg aatagtatgt gtgaagtgat ggatggtcaa taagctttgt taattgtttg 540

gtattccccg ttcatggtgt gtagttgata ttttgtacca tcaatttttg catcacaacg 600

gtagcaaatg aggttccatt tgttttcaca agtacacatt tcatactaat gaaaattttg 660

gagcttcata ctaatggaaa tacttttttca tgtgaactcc atttgtgttc acacgtacac 720

cttcgaagat acagcgtgtg gattacagac atattgttga aaataacacc atagtttttt 780

acattacgtc cacatgtcta ttcctattgt gttactaatc atatcatgtg aactcatagt 840

atgatgcgga tcaatgaaag aaatggagat atgatattga tagaaaactc cattcatttc 900

catctatatt ccatttgatc ttaaattctt taagtaatct atagtcttat aatcattcgg 960

gccttttctt gttatcagaa ttagagaaat gattactaca ccaatgcatt attgttcttt 1020

tattttcatt tgcatagtta ttttgagtgc caattgatct tagtaactta gagttatagt 1080

ttattattta tgctgtcatt taactaactc aagtttgaaa ttcataacaa tgagccatgg 1140

atatgaattg tacaaaattt agtgtgactt ctcttccaac ttcaatttct tcatgtcaca 1200

ttcattgtgc gagatggctg acttctgtgt agattattgg ttgtttctca catactaaaa 1260

tgaccatact cttttgaaga tatgacatgc acatcaaaga aaatattatt aaaattataa 1320

ttgttggatc ttttgttacc gttctaaaag tcaaaccttg tagcacatcc tttttctaaa 1380

ataaaaaatt attatggaca tgctaaaaat attaaatgca aatattatta ttggatttac 1440

atcccaaaat atccgtatgg ttataaattt ttaatggaag ttatagtgta agagaagtta 1500

tgtattttca aatagaggaa gtagcatcaa caatgaagat ttcatgacca tgactcatca 1560

ctagcaacca tataataagt atatgtccca aaatggttag aattaattat gttggattcc 1620

agtttgaata tgtgaagatg atttgaccaa atagtcttat cgagtttggt tccttttttct 1680

ttgtatccta aaattattcc aagcatatct tgcaaataaa tattttcata gtttagaaag 1740

catttaatat gacattaaat attttctaca ttggtaccat ttcaatatgg caatcttgat 1800

tttcatacca gagagaatgt aaccaatata gcatcatctt tatactctat aaagttagaa 1860

agttgcatat agttggtgac actataattg tatgcctagc aactagcata ttaatgttag 1920

catggcaatg aaaaataatg actagatgtg atgctacgat gggtcataat gcatccttct 1980

agtttaagat gaagtcacta aatttagttg taataaggtt aaagcataaa acttatatgt 2040

gcgtcaatag aagtttaaat cttgttatta tttagagtta ttttaaaatc taatggctta 2100

ggtacataag ttttgtccta gttatcatgc cccataaaag ttttaattaa gccatgaagt 2160

tggatccatc attttgatgt gtgcactcaa aataaatgat acatggatgt aaaggtccta 2220

aagtttttaa aatggtacct ttctcgggta gttgataagc aatatgatgg cccaaaatga 2280

atattggtcc cttgtttttt gctaacaaag catgacaaaa ggaaacacaa caatcaataa 2340

ggatataatt caacgctttt gttccttgtt ctttaactcc aaattctatt gattgaaatt 2400

cctacgggtg agtttttaat aatctaataa actttccatt atattgtgct cacataatgg 2460

atggttataa ttggtatatc atcaaaagta tattgctgga ttaagcatat gtgcatacaa 2520

tttattgtat taaaatttag gaagacaaaa tagatttata aaaaatatgt caacataaag 2580

tttagatata tatatatatg tttttgttat gcaaagtaag aatagatcta gttcattact 2640

aagctcatta tcctttgtaa agcaatgtta taattagtat gatcatagga ccaagataac 2700

tagacaggtg gatagcctat aaaaacatct tataatgcca caaaatacta gtgtaaagtt 2760

agttggtata atagatggac cagaagcaaa tacttcttct agctctattt cttaataaga 2820

aagtctctta aacaattcta gttgctataa cactaagttg ttttttttatc aagaacgcaa 2880

aataacaact acttaaatac actagagagc taacaaaaac aactagtgac aaatataagc 2940

ttttctgatg ttccccaagc aactatcaca agagagaaga atatgggtgt aaaagcaaat 3000

gtgatagtga tgaaactaaa tcaggcaagt gaacgaacac aatgatttat cgttgaggtt 3060

cggttacttg ctaacaacct acgtatttat atgatgagct caaactaggt ggtttacaag 3120

ataattggca tcacacataa agcccatagt taggacgtcg taagaaccac actaaagata 3180

cacttctact agcacgatta cactagagtt tctcttcacg atctaccatg gggaatgagc 3240

acaagagcct ctcaaaatag atgatcagag ctgacaacaa tctctaatag ctgctcaaca 3300

atcccatgac tttggactgc ctaggtgatg gcaatcacca agactaacag agaataaccc 3360

gtcccagccc cttaaatatt gccacaagat gcaataacta aatggtatga acttggagct 3420

ctccaatcta acccaaacga ctataagatg caagtaggtg gaatgtgtat ttatccatag 3480

tgtataggat gccaagatat taaccaaggg tgaccataag gtctacttat agatccataa 3540

tgaaattcaa ccattacttc ttaatgggat gaaattaggg gcgttagaca tgtctgatgc 3600

accatcattg tctacacatg acatatctga tgcactctaa atgactataa ttccaacaac 3660

tataaagtag atgttactac gtatcaatta tccaatgcac acattgaaca agtctaatgc 3720

ttgttagagt tgatgtgtgc attttacttg ctctttgggt gccctatcta gtgcggtgtc 3780

tggtgaaaca acgatgacat taaagcaaat gtgctagttt acatgctctc tgagtcccct 3840

ggtcagtcca caatgtagtg 3860

<210> 5198
<211> 1533
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_230858_G1, chr6:138463391..138464923, Cluster 32

<400> 5198
gaatccatgg tttggaattt caagaatgtt atgtgaatca tggtcacgat gatgctattg 60

attggactga tgagtacatg agattacttt gtaaattctt ttccaaacat gatagaaaag 120

ggaatcaata aaacactcat ttgaatgtac taggcttcac cgatgtattg gacatgtttt 180

ttcattctac ggggtcatgt tgagtaaaag gcaactaaag gataagtggg acaagttgag 240

gggttctatg actacacaag aaaatcaatg aggacgcaaa ctagacaagg ttggaactag 300

gacaaaggaa ccatcaacat ggaccctaag tggtggaaca agattaaaaa tgtgagtgta 360

ttattacatt gtcatgtata tttgtttatt ttatcatgcc atgtctattt gttctcactt 420

tgacttgctg taggaaattc ctaaagttgg caagctcaag aagaggcctc tccaaaatga 480

agatgtcatg acagtgatgt ttggggacaa cactaatgat gagacattat aatcctatga 540

ctttcaatcc cataattctt ttagatgatg atgttatcca tgatgaaaga gagattgagc 600

aagccactaa agatcacata ggtaacaaca ttgtttttta taatggggat gaggttaaca 660

aacttactac tatcatggga aatgctgaga aaaagtcttg gatgattcta gataagctta 720

acaagaaacc taagtcaaga acaacacttg ttatttaaga acacatttat aaatattttg 780

gagtgcttcc ccttttgtat ctagtaggaa aggtgggatc accattaagc aagtaattga 840

acaagatgta actcgtggta ttgggtataa aaatgatgag cattttgtgg caaccaattt 900

gtttttcatg aaagaccaaa ggaaaatgtt catgatgatc cccattgatc aaagaatcaa 960

catgcttacg aggaagaaca atgaaatgta tagaaagtga gggtttaatt gtgatttttt 1020

atgaacattt ggacatgttt tacttacttt taatgatcat ttggacatgg ttccattact 1080

tttaatgata atttggaaat gttgtcatta attttaatga tcatttgaca tcttaccatt 1140

tatttgttgt tgccattttc ttgattgtgt ctacatgtca ttttttgcat agttctagcg 1200

atgagagcgg tgaaattttc aatatctttc taggtgattc tacgctttcc caaatagatt 1260

gtgatgtgta catagataaa aacccaccaa cgacatcaac cactcatgac acggggtttt 1320

gttagagaca tgacacaatc taggaatgtt gtagtcatac acacctcgaa tccgccccat 1380

ttcaacccct agtgtcatgt tcgatggcgc actagacagg ttcgatgatt ttcaacgagc 1440

agtgcataca aacaactact ttagtaccaa aaatgaaaac gatgtgacat ccagtgatac 1500

acctgacacg tccaatgagt gtaaagtgtg tcc 1533

<210> 5199
<211> 1685
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_231458_G1, chr6:141043953..141045637, Cluster 32

<400> 5199
atgtttttct ccatacatgt aataattaag tttcactttt atgagtgcac gaggctatct 60

tctacccttt tatctcatcg taccttctat tttaaacttc acactataaa caatgttatc 120

aacgatacgg tgcggctata tgcatgatcc cttgtgaaga caactttagc ctaggaatat 180

aatattcact cagtttcaat ttacaattcg tttgactttt tcacaccaag tttgactagc 240

ttgtcttatt aaaaaaaatt cacagctata taagtatggt ggtgtttggt tacccacaaa 300

ttttgagaag ttggatattg cacaaaatct ggtgcaaatt ccattatcaa cttatgttgg 360

gatatatttg tgagatttcg gcacaatatc caataaaaaa atcagaaact atttggttca 420

aaatgagaca attaaatgag ataatgataa tgaggcacaa accaaacaga gagagagaga 480

gtaatataaa atggtggaca tgagagtaaa aatatcatat gctaaacgat attattgtaa 540

aaatacataa taatcatgat ttttttaata agacgacccg accaaagaga gagagagaga 600

gtaatataaa atggtggaca tgagagtaat gtaacccaag tatgtaactc catgcttatt 660

taacaaaaca cactcctctc tcgctatcat ggtgatcggt gagttttaaa tttccaagca 720

tgtcttaagt gcaaactata tttggactaa gccagacaat tttttggtcg tttctgctat 780

gactatggag ctgattggtt tcctggatga ggccgaacta ggctcccaag atgcagcacc 840

tttatacata ccatgtttgg tttctcaggc tgattccaac gatgcaaaca actcttgttt 900

ggctgtagct caacctatct caaatgatgc aaaagtgaca agtaaacagg ctcatgggat 960

acaagattca tctgtgtttc tccagagcat ggctcgcatg ggttcgcttc aactcagcca 1020

ggccacaaag atacgaggca aggtgcctcg tccgggaaac caatcaagtc ctatattgct 1080

ggcgaaatcc atgcgacaat gttgtaaagt tgtttgaaga ataatatgct tttgttataa 1140

ttaaaccatt ttgatgtttt atgtgtgttt gagttttagt agcatggagt tcaagttcta 1200

gcattgtagg aatgcaatga taatacatga tgttaacaaa gaataatcat tgcttaaata 1260

ttaactaata aaatatgaaa agaaagctaa agttataaca catagtggga tttggtttag 1320

tagtgaaagt gcatctaaac tctaagtggg tttgaatgga ttaaataata atgtgaataa 1380

aggataaatg catttcatgt gatttgaaga tattgtccca attttgaatt attgtaaatt 1440

tgctcaaatg aagcaaatgg catacaaatg ggaaatgagt acatgggata ttaattaaat 1500

gcataaataa caagcatgtg atgaatatga taaaagaggc atggtttgat ggttatctgt 1560

tgatctctca tatgaagctt ggtcacatag tacaatatgg aaatcagatt gcataactgt 1620

taaattagca agcacgtttg tcaagtgaac atgagacata agtaatcacg tgtggggtga 1680

tctta 1685

<210> 5200
<211> 1626
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_233381_G1, chr6:149682738..149684363, Cluster 32

<400> 5200
gttcgtggta ttgtgttacc atctgctttt atacccttt atctggcctc tgaaagactg 60

aagggccatt accggtgatg gcatatacta tttgatgatc tcgctcatct cttttggcga 120

ggaggcacgt agtacagtgt ggatgactgg aggccaacgg gttgttaacg gagacggatc 180

agacgactag aaagacagag tgaacaatag gaccaataaa tctttttgc agtctcgttt 240

gtctcctcgt tgctacaccc aaacctccaa aacactaaaa tacatatagt tctgttttaa 300

tttattatat tttagttttt tttttaaaaa aaaatagacg gcctaaacaa tgatatggtc 360

tacatcaaag ttacaggtat ggctgcaata tataacttag tggctccaaa tctttttttt 420

aaaaaaaata gaccgtttgg agtgcaaata tttattttaa atcctcacgt tatgaaattc 480

agatattttt tttagaaaac cttgaatgca tggagacatg ctttatgtca aatctgtaat 540

gtttgaagac gcttcaactt cgtagttgtt ctttttttta ttgggattat ttaggagcgc 600

ctatatttag taaaacatgg tataattacg taaataaaaa agtacggagt ccacgagcta 660

catgtggcaa aaccatgatc agagctattt tagatatgca actcattcgt tttttaaaaa 720

ttatacaata ttcgagtttg agggtgtttt ctagatcgaa gataagttta tggagacaaa 780

tcagactctg ctcaaaaaac gaaaccagcg ccaacagaaa gcaagtgatc gaaacgatgg 840

cggtgcccag gtttagatcg aacactgcga cgcggttagg gagagggatg gagaaagaaa 900

gaaagaaaat ggaaaggccc tgaaggtctg aaccaggtcg agtagatatt tcactggaat 960

tgagcagaca gcaacggtct tggtttctcc ggggctctca ccgtaccgtt gctgcatcag 1020

cgttgcctgg tcagctcagg tcagggatag cgctagctct ccattaccat gagaggacct 1080

gtcagtctct gtgatatcta tggtgtgagg gggatcggaa acaaagagaa ggacaattca 1140

tcacgttgta gttttcagtg tcgtgcgaat ctagcgacag atgtctcagg aaaatacaag 1200

aggcagaaag agtgatctgg ccggcctgga tcatcctgca tatatcatac aagcaatcat 1260

aatgtcggta ggccccccta ctaccacgga catatgtgtg tgtgtgttcg tatttattca 1320

gtgtaagaaa gtaagtaatg cagtagtcat acgattgtca gtttggattg ccggacagta 1380

cgtagtttag tacgtatgtc catgcatcgt tcaatggtag actgaattta gattaatcac 1440

gaaattataa caagttatat gcactaatta gtcatcatta gtttttgcta ttagactata 1500

attagttgat atccaagagc cttttaatcg atgtttaaaa tatagactag taaaccttaa 1560

ctatccaaac aggccggact ttatcacatg gaagaaaagt cgcaaagacg gcgtccaatt 1620

acgtct 1626

<210> 5201
<211> 1538
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234322_G1, chr6:154082237..154083774, Cluster 32

<220>
<221> modified_base
<222> (48)..(48)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (49)..(49)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (50)..(50)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (51)..(51)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (52)..(52)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (53)..(53)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (55)..(55)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (56)..(56)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (57)..(57)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (58)..(58)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (59)..(59)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (60)..(60)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (61)..(61)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (62)..(62)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (63)..(63)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (64)..(64)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (65)..(65)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (66)..(66)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (67)..(67)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (68)..(68)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (69)..(69)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (70)..(70)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (71)..(71)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (72)..(72)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (73)..(73)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (74)..(74)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (75)..(75)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (76)..(76)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (77)..(77)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (78)..(78)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (79)..(79)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (80)..(80)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (81)..(81)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (82)..(82)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (83)..(83)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (84)..(84)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (85)..(85)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (86)..(86)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (87)..(87)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (88)..(88)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (89)..(89)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (90)..(90)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (91)..(91)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (92)..(92)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (93)..(93)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (94)..(94)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (95)..(95)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (96)..(96)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (97)..(97)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (98)..(98)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (99)..(99)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (100)..(100)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (101)..(101)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (101)..(147)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (102)..(102)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (103)..(103)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (104)..(104)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (105)..(105)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (106)..(106)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (107)..(107)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (108)..(108)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (109)..(109)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (110)..(110)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (111)..(111)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (112)..(112)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (113)..(113)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (114)..(114)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (115)..(115)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (116)..(116)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (117)..(117)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (118)..(118)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (119)..(119)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (120)..(120)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (121)..(121)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (122)..(122)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (123)..(123)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (124)..(124)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (125)..(125)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (126)..(126)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (127)..(127)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (128)..(128)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (129)..(129)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (130)..(130)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (131)..(131)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (132)..(132)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (133)..(133)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (134)..(134)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (135)..(135)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (136)..(136)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (137)..(137)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (138)..(138)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (139)..(139)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (140)..(140)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (141)..(141)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (142)..(142)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (143)..(143)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (144)..(144)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (145)..(145)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (146)..(146)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (147)..(147)
<223> a, c, g, or t

<400> 5201
atatgggcca atgttaatca atgaaaaacg tggattcata ttttcatnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnttc ttgaaccact cttctccatt gcagaaagaa 180

gatctggaca ctgtttgtgc tctgttatca tcttcaagct gtagagtatt ggcttcgctc 240

tcagagtcag ataaactcgt agaatccttg cttatggact tgtattcatc ctactcccgt 300

ggtattcctt ttttatctta ctccacagga ttagtttatc atgcaatgtc cctaaagtcc 360

tgtaattttc aaaaaaagtt ctgtaattta tatttatggt tatatctttg ttatcatcct 420

acactcctgg taagtaccca aaattgttgc cttgttggta cactatattt attgaataat 480

tcagtcatgc actactcttc tgatttgata ttactggatt tagatgtaag catgggttat 540

cctgattgat taaagagagt acctattaca aatctactgt acttgtttct ccacaccatg 600

cagaagggtc tagtttatgt tgttttgttg cttacatttt ctgttgtttc tgattgtttc 660

gtcattttgt gcagactctt tgttgcatac cggagctgct tgggtccgta ttggagagtt 720

acgcttccgg ttattgttga gctcatacag tccagatcct acatttaagt ctagatacaa 780

gcattcacat attttggaaa aaattacact tgtgaagctt gaggaaaagg taaaacatct 840

cttgttacct tggtgcatgt cttgaaatct gtattccgaa ttgtcagttt catatactta 900

atgagatgca aggaagaaca ttttttttctt gaatacgcat gcaaacaaga acatagattt 960

acagtggctt gcatcatcaa ttgagctatg ttttttcgat aaccagttga gctatgcggc 1020

atgtatcatc aaattgatat tcatcttttt aagaaagaaa gccaactctt gcgaagaaaa 1080

gggaaaagac tgtcaaattt atagcagctg tgtttttaca ggttcgtcat gattgtgagg 1140

aattagctgg ttctaactcc cctgaagata gccatgacaa cgagttattg caattgctgg 1200

aaattaaaga gaaagacacc cgtgcaaagg tcttattaca attttacatc atgcacttac 1260

cgtttcttct tgttcatttc tgcattcttg tatatcttca atcaattaaa tatgacgttc 1320

tagatagggg gcaaatcgtt tgttttctgt taggttcatt tgtctgaaat ggcgagttta 1380

tttgaccgga ggtagcagat attaattctt tgcatcttgt gattctacaa aagcttcttg 1440

tatttttgtt gtttatttgg tgaaagcaat ggaattgcat gggaaaacaa tagattgacc 1500

ttggggctgt gccactgcag agtacaggtg catataga 1538

<210> 5202
<211> 2006
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_234819_G1, chr6:156394190..156396195, Cluster 32

<400> 5202
cctgggtgcc tgcagcggaa aagatggcgt cacgtcaccg tgcttttttg accttggtcc 60

gcggcggtag gacggcggcg gtggtactgc tgttgcaggt tcggggcctc cgtggggttc 120

gctgctcaca gcctcactct ccgtggggta ctgacgttga tacaagtgac acgcgtttta 180

tctatttcag ttctataatg tagtagcatt taaaatttat ataattttgc actgagactg 240

gtaacaaaat attatatatg ttctattttt ttaaaaacaa ttaggagtag ctgctacctg 300

ctagggctat tgctaccgca tctttgatcc cccctagctt ccagatttgt tgccgtgtgc 360

ggccacgccg agtcgccgac ggtgtgcaac tgcaacccca ggcccaggcc agggcagcag 420

ggcgcggcgc cgctgccacc atgagcctag gcgacgatgt gacgaacgcg gatacgacgg 480

gtcagggtca gggcagagga aacagcagcg ccgggatgga gagacttgag cggggcaggg 540

caagctgcag aggaaaggaa acagcagata cgatgttcgt cacgtctaac atgaaacgac 600

cagaccacac aaaaaagagc cacagctgtt tggtttggtg ggttagatgc agtagacata 660

atttttatag aacaaaaacg tcgacgactc tgtcctgacc ttttctttag attatatgct 720

ctttcattga caggacaaga aattggaatt tgaagcaact tgttcttttt tgctaaatag 780

catttaagct ctgtacaaag taacgacatt acgagaacat atacattcct cctgcattta 840

gtttcatgaa gtggttacat ttttgttgtg ttactcattg ttgtctgccc ccccccccc 900

ccccctaat tatgcataat tactcctctg cattcccttc cttctatttc agacggattt 960

tccataaact tccaatttgc ctcctgttct tgtgacctca gatgttcatc tctacaactg 1020

aaaatgaaat gaaatgaaat tccattagct tgaacacttt tataataatt tgagctatgt 1080

ggactcttgg aaggattaat cagcgctgtt ttgcacaagt tatttatacc atgtctagat 1140

acagacacct tcattcattc acgtgtattt aaacttacag ttcttctgat gtgtgctgca 1200

atctatattt gtaacagtta cacactatta aagatcaccg ctgaaatact acttgcaata 1260

gagggaaaca ctttttaac aaagttcagc agcctccgat tacattattg gttcctcttt 1320

cattttccca agttttttt cataatcctt tacaaatgcg tttgtacata tctaatctct 1380

acataaaatt tctatcatac aatatcaata caatggggga aaaagacaca taatgtaaca 1440

aagtaaacat gattgttaca taagacaaat atgccctaaa tcggtaatag caacttatag 1500

tttattcttt caaatttgta ctatgcaatg acttcctatt gcttccgtac tgcatgacta 1560

caactagaat ggtaatatct catatatttc atattgcaac aatgtaatat ctcctatatt 1620

tcatattact taatgcagta tttactcatt tgaacctata tattttggat gatgtacaac 1680

tttgagaata ctatcaaaat tgtgtgtata tatatcatcg tatcgatgtt tgacaaacca 1740

gcgtgtgtta gccagtccta cattttaac agaataggac gagttcacaa acttgcccga 1800

tgccgctttg accgcctgtg tgggcccttt ttgttctcct tgggatgcac ggcccagcta 1860

ttttttttt gggttaaggc ctacctacta cgggacgagt tcacaaagta gagcaccccc 1920

gaacttttgg ttggagagtg cgtggtgtga caagcagttt gacgtgttgc tggctcgagc 1980

cgtctagcgt aaccagatcc aagatc 2006

<210> 5203
<211> 3692
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_236832_G1, chr6:166964338..166968029, Cluster 32

<400> 5203
ggtgaaactg aagaaagcag cagaaaagcg ccatcactat acagtcattg cactttgcag 60

tcaattccat tccattcctt ccttgaagag taaagagaag aaactaaacc ctcggacgga 120

cggacgaccg ggtcgccatc gctattgact gccagccatt ctgccatcga cgtcaacaca 180

cgagacagca gtacaggaga tggaacgacg agtaaggcta gacgtgctgg aagaagcaac 240

aagacggacc agcagagact agtaagagat cgatccagta gtctcgacta ctactactgc 300

tgtatatggt tggttgacgg tgcatgcatg aagcactgtt atgtatgcaa gagtatcttc 360

agtgatagcg cgatggaggg ctcaaaaagt ctcactgttg catgcatgca ctgaacccac 420

accatccaca atgcaagcaa gcatatttcc ctgttgacct cctagtccta gctagctagc 480

ttttccagca ttgcttagcc tggtagttaa actaaacatt aattcatcag atgtactggt 540

tcgtacggca ctagatctga tactatatat ataatttaca attgttaatt aagtgctctg 600

ctgatgagcg cgctagctat ataggtgtgg gtcatcaaat caaagcaatt aattaatcaa 660

cagagctcca tccgatccgt acctactagc aataaaataa acctcctgat gaaaccaaag 720

agagagatca tatatatatg tcagagatcg attattattc aggtcaaccg acaaaactag 780

tgttcaagtt cagacctctt gtgtatagcg agctaagatt tgacttttg ggtctgtgcg 840

tggtggttaa tgttgtggca tagtactcga tcaatgtttg tcatcatcag aagccaattg 900

attccagcaa aatgacaata ccgagaagga tcagaattga gagctagctc tagctgtttg 960

gagccggggg gttttttttg tgccaaatgg aataaaagga aatgactcca cgctgaggag 1020

gccccttag atcgattatt ctctcacaaa gttttcttcg tttgtttttc tgaggtgcct 1080

agaaattaag tttttataaa gtcctctcag ttcatctctg tttggcgctt agaggatttt 1140

ggttcgagct cttgcttcgt tgcgatcgaa ttaagttgac agctcatccg cttttaggtt 1200

ttggtgtgat tattattatt gtcatatgct actagtcatg catgcatcac cgagagagac 1260

tacccattgt cattgtctcg gtggtaatta tgagatttgg aatttttag agtttgttat 1320

ttctgcatac aagtatatgg aatggaaaga aatttttgta attagctttt attgacccgc 1380

gttgatggtc gggtcatcag gcgacgacga ggagactcga tctcgttgta aaggtgacgc 1440

gcttgcttgc tgttgtgtgt ggaacggaga ccgacgacgt tggttaattc aaaagggacc 1500

atgccttttt atttttatat attcccgtcg tcgtccacag gtggtggtgg tggtaccggc 1560

cggaacgtac gttgacgacg acaggcaagc aaggtcgttt caccggccgg tcatcgtccg 1620

gcgtgtcgac gacggtccat gcacggacgc gccgccgcgt ggtagcccag ctggtcgctg 1680

cgtgcacctg gctagactgg aggactgctc tgctgcagga gtatgtgaaa gtctaatgca 1740

agcgattcgg gcaaaagaaa gcggttcggt ccgtccatcc acacgtgtat gtattattat 1800

tgccaccaag acaagaaaag aaaatttgat ccgctgagcg aacgaaggag actacagtct 1860

tgttcagcta catcgatggg acagccatga gagaagaaaa gttcataaaa acaatgtggt 1920

atatatataa taatatgaaa tgtgcatgcg aaggggggaaa attaaaccta catttgattc 1980

aaagtgctgc ttgcattgta ttgttgcgcg cgggttaatt agaccctaac ctaagacacg 2040

tacggcgacc gcgacaaacg tcacatattt gtatgtgtct catcacgtta acttttgaca 2100

aggccgcttg tattattaat tgttcgacta cttgctatac tccgtccctc ggttaaatca 2160

aatatttgta tgcgttataa gttttatgtt tctagaatat gtaatgttgt agagattgtt 2220

actatgcaat gacaatataa ttgatgatca ttttgagaat gaagatccca aacgccctct 2280

attaattaat tattaccttt ttttcatctg tagaattaat acaaattatt cagtgtttca 2340

gaatgtcaac gtgaagaata agatccaaac atataatata tggcgttgtt aattattatg 2400

tgtcccttca acacttgaag agccaagtgt tccttccttc aacaatcaca cccacggtct 2460

gtgactctgt ctagctagct actagaaaat aaagaatcta ttacaatcca caaattaatg 2520

ccagaatcta gtagtatata ttttttccac tcgcccccac acgcatagaa aattagcaac 2580

agcagagctg agacgacagc agctagcagc ctagcatgct tgttcccccc atgcatcaca 2640

cacgggggtc agatttgtgg aattcaaatg tctgcagatg atgatgaaaa tacgtacgtg 2700

ccaataatct tgcattgtca aatgcgtgta ctacagttag tagtctgatc acaattcaca 2760

cgacaccgta ccgtaacgtt tttttcgtgc tctcttttcc tttattttgt gatctcagct 2820

gatgaatttg aaaacatggt tgctagcttg tggtcgcaca tgctaaaact tttccatttt 2880

ctagaaggaa aaaaaccatc atgtgtccac acccgtcatg gaacacacta gtgttcctat 2940

actgacagct atagaacgcg cgacgacatt ctcgcgcgcc cccattacgg ccatgctatt 3000

attaccgcta catatatata tgcatgcatg catggttccg tacctttga aatgtcggat 3060

tacttttact gttcgaaaaa gccattagtc atgtagttaa ctacattgag agaaaaaaaa 3120

tcattcggag agatagatca tagtatgatc tagagcatat ataggatttc tagatgcatg 3180

agcccatata ttatgcgcta gtaagataaa atcatggttt caactttcat aatcgtattc 3240

cactcaacgt acttgattag atagcacgcg cgggcacctg tacacgtacg gcggcgacga 3300

ggctagccgg agacgaagaa gacaaagtgt gtgtggaagc tttggcttcg ggaacgtcgg 3360

tggggtatgg taccatacca tatgtcgttc cgacgacggc gaaaaagatg gcagctagct 3420

ttgcctctgg gtcctgtggc cgtgcaggag aagatgcatt gcatttgcag atacgtacgc 3480

cgtgaacagg tcgtcgatcg gatagacaat agctaggacg acgaacggat catgcatagc 3540

ggcggctagc ttggcgtgtg tgtgtgtgca tggacgacag gaattaattc ttagaggcag 3600

tgccgcctca ttggactgac gtacgcctcg ccaacaccgc cgtccttctt gcttggcaag 3660

catggagcct cagagcgacg acagtctacg tg 3692

<210> 5204
<211> 1480
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_237697_G1, chr7:2969309..2970788, Cluster 32

<400> 5204
ttcatctctg aacaggggag gggggcagat ttactgctag gagccggacg attgctaaag 60

ctctgacggt ctgcaatact ccctttgttt tcatttcttc agaagatcac gactgatgta 120

aaaaaaatac taacttgatt gcagtggcca acataagtaa catttactgt ccgaggaccg 180

atatgctata cttaactcgt tcgtgatcct atctagaaaa tgtgccagag gaggagtcca 240

agtgtgcaat gtttagtctc tccaaggtct cctctccaag cctagctagc tgctagttaa 300

ggttcccttc tattcttgtt tattgcaggg tcaaaacaca cccgcagaat ccaatgccta 360

gctagcttca tctaaaccaa aggatggatc gagcgcggta gaaggagaca aaaaaaatat 420

atacatctcc tttattgcag tgtgcatgca tgcaagtaaa aaacacaaaa ggccaatgct 480

acgtgcgccc tggacctctc gttctttttt gggtgtgtgc acgctcgtag ttgtagagag 540

aggccaggat gggttcttca gtagacatta cttatctcct ctgctgacta gcaggtccta 600

gttatcagag gcctttctct agtgcgcttg cagaccgata aactccaaag gtcgatatct 660

tatcctcgac aagacagttt tttttacatc tagcccttta aatatagtcg aagacacaac 720

tcaaatttaa ctaaaactaa aacttactct gtagtcccaa ttaaatttga gtgttataat 780

cgatctctaa tcgtttgttt ttccttgcta aagtttagta ttacattttt ttgctaaatt 840

ttagctaaca aagaaataaa ctggattgtt aaaagtattg tgctaaagtt tagcatgtat 900

tggcacttta attccaccaa agatgctaaa ctgcgctaaa agtggtttct cgacccattt 960

ctctctcccc cacactcgca agctactttc tctctcaccc ctccccacgc tcggccaacc 1020

acgttcgtcc accttcggca gctactaaaa gagatattaa tgtactaaaa tttagcattt 1080

gtattcaaaa cagatctcaa atgctaaagt ttagcacccg tagcattatg aaaacaaaca 1140

attcctaatg ctgttctgct tagtatcggg tcaaaaagct cgaagcggaa aaaggccagg 1200

caaacaaaag gccgggtgat cagcaggcta actaaaaggg cggcaaacaa aaggggcttc 1260

aggccttcag cttagcacac acggcagaaa aaggacagtt ttttttcccc acagaaaggc 1320

gagacgcact acaataatag accgaccgac gggggcgttt ttagtcggtc ggtgtgtaat 1380

ttggcacaaa atacgcatct gttgacgcaa cgggagtaat atatcttctc tacatcagag 1440

agtggttatg aacttataac cactctctga tgtagagagt 1480

<210> 5205
<211> 1474
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_239030_G1, chr7:10553403..10554876, Cluster 32

<400> 5205
aatcagcaat catcacggct ctaattacaa tcgattctaa cactagaacg caaatctacg 60

agtctgggta aaacaatcct tagccaaccg cgccgattgt tgcaaagccg ccataattat 120

atgctacaag tcttgcttct atagcatcaa tgaatgatag tgaatataac atgcacatac 180

caaaaaaaac agagtttggt tttcaaacac aatatcattt cccttaagcc agatgctcca 240

acacaatgtt gttgctctag aagagccaac gactttatat ttttttatct tagttggcca 300

cccatcctcc aatcatgtag ttgacactat aaggtttatc tagattaaga gcacccctac 360

acggctacac ccaatatatt gtgctgcacc gaattagtta atgctttgtt agaataacat 420

ggtacttcaa caaaccgaaa gataggcaca ataatacaat acaagataac gtttggtacc 480

tgggaggcct tgccatgctt tcatgggcca cacgcatgct ttttttttca gcattccatc 540

aatcaaagtg cttgggttca gcacgacgga gtgttcctta aatgttgacc cttaagtgcc 600

gtggaaacgc tgaccacaga cagcagcatc gcaagttcac gactagtgcc aaccacccca 660

gggagactct ggtccatgct tcataggtat attcaactac ttacttgata gttcactgcc 720

actgcacaag ccaggagaaa caaaggaaac tattaaaaag ttaacttaca gtcactaaat 780

gaaacagatt gcgtatctga aggaaaaaga tacagtagat caaacttcac gacttcaagt 840

tttctggtat gaaaaagctt cataaacatg ccagttttcg ctaaaatcgt gaatccatcc 900

aagctccaga tcagtagtac gagattaatg cagccaccca caggggcaga gcctcataga 960

cgccatatcg tacaatacat tagttaccca atacctctgc aatacataca ataagctgag 1020

gtctaataat ttagttttcg ttaagcccta gtgtttcatg tgttcaagtc acagtgttga 1080

catttcatca tgtattgtcc ccttctcaat gttgctgcta cgacttaaat tcacacacca 1140

aaaagaaaca tcacttttac tgccccccac ggataaaccg aagtaacata acacacaatg 1200

cagccatact tgttttctcg aaaatcgtga atccatccaa gctccagatc agtagcacaa 1260

gaataatgca gccacctaca ggggcagagc ctcatggagg ccgtactgta caatacacta 1320

gttagctaaa tacctatgca atacaataag cttaagttta ataatttggt ttccgttaaa 1380

ccatagtatt tcatgtttaa aatggcagtg ttggcattcc aatatattgc ctccttctca 1440

atggtgctac tatgacttca attcacaaac agat 1474

<210> 5206
<211> 1671
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_241104_G1, chr7:21129878..21131548, Cluster 32

<400> 5206
tgtgcattat gcccatgtgt gttgtattgg aatcctcaag gtcgagctca atcatcttgg 60

tttcctccaa gggcatggct atggtcgagg tcacaacatt cttagatgat tagggattat 120

gtaggttaca accataaaca catgactatg tccaacgtgc aagccagatg ccttgaattg 180

gagggttgtt atgcatgctg tgtggatatc actagtggta tgagaaacag taggcacaaa 240

atctagaaga ccatatgtgc attgtgttag aagggaggag gctactccta ctaccctagt 300

agataggacc ttgagcatat ggtattggtg cccccgcatt tgctctagct tggtggacaa 360

gttggagtta gtaggctagt tcatatagga tttttcacca aggagatgca caactttatt 420

tatggtgagc ttgtggttac atgtgtacac atatgtatag ttaagttata cataaaatct 480

tgatgtaagt catagtcaca cttgtggtgg gttcggtcaa ccactactat agaaaaaatt 540

cacaacaaca ttttcatatc aattttctaa aaaaactatt agagataatg tttcatgttc 600

tcaccttcaa ttcatgcatt cacttctagt ttgtaacatg aactaatgat gaaacctcct 660

tagaccaaaa cactcgcctg attaatagtt tgagtcagtt accatgatgt tcattctata 720

gttgtgaact agatttttt gtcttatgtt acttttaacc ctcaaatata ggttcgatta 780

gagattgatg atgtcacaag caggcaaagg ctacattatt gcttagagag catttaaggg 840

ggttgtgggt aagatttaac ggtgagttat gatgtgaagg ggagcttcaa agtgagaaca 900

ttagatactt tggagatgga gataatgtat tatttattgt tgcattactt gtgttctaca 960

gagccaaact atagtcaaac ttctcttatc actagacccc cttttatttt atattttcac 1020

aaaaaatatt ggttctaaaa attttacaaa gaagcaaaag catcaatttc tttgtttgga 1080

aactctagtt tgcttcaaac acatatagtc aggcatacaa ctctactatg ttgttaccat 1140

atatattaat atatttcact ataaacccat gggtctaaga tgtatgtgcc atgcttgcat 1200

tgttgccaac cgtattttaa caaaggcaca attaaagtgg gtttagtgat ttctagaccc 1260

gatttcctca aagtatgagc taatcctttg aattccccta acgttcaaga agtcttaatc 1320

cattactatc aacacaccaa ttattataat actaaggcca ggtacacgta gcaaacatca 1380

taacctacct caaaattaat agtaaaacct cataggttct ccttatttcc tttttagata 1440

atggaatgaa tttgattcat cctcaaaata gaggaatcta gccacactca atacggaata 1500

ggttcacctt caaatgacca tacaaccaaa acctgatagt tcacatgaca atcctaaaac 1560

aaaatgctat acatgagagc aaaaaaggta attatagttg actctagagt agcacatgga 1620

aaggtgatga gcgacccaga ggcatcactg tgttgtaacc aaggttatat t 1671

<210> 5207
<211> 2612
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_242556_G1, chr7:29546984..29549595, Cluster 32

<400> 5207
aacaacctgc ttggctgcca tgtcagcata cctttgtgtt tctgcaatct gaggaagagg 60

taatgattta gcaatactga tatggtcatt aatattcatg attgtctttt atcaaagaga 120

tttttaagag aacaaaattc ctgtgagttg ttatactaca aacatgaaag ggcaagtacc 180

acaatgccaa gagcttgacc agcatactca gcaattggat caccaaatag tggttcgtca 240

ccaaacgtag aggatgatcc aatatttagt cctccacttg gaatatcctt tgcggaaaca 300

aaagagatga tcttctctga tgctaaagag gatttgaatt ttatactttt gacataagca 360

aggggttgtg tgctgtaaat aaattctcca tagaggcaat tctttggagc aggaatatca 420

tccacatata ctgcctcccc tgtattacac aatagaaaat taaaatcttg ctctgcagaa 480

agattaggag aatatgatga taacaatact aaaaactgta atgtaaccac agaccagatg 540

cttgaagttc aacaccatac ttcttaattg gttcaccaac tggtttatat tcgtcactag 600

aaaatgtttc tcgacgtgtt gataatggca gattacgaac atcatctgta tctgctgaat 660

cagtagaact gctggccaga gactttccag gctctgggat gcatttagaa aatggagata 720

ggaaactaaa gagaaatcca acagctgcac tgactctata ttcaggatgt gatgttccct 780

ccattggtac aaccgtttct ctaagtaatt gaattgcacc aagtacaact gatgcagtga 840

gtgatttacc agtaaggaat tcctccaccc tcgttgctct aatagcatgt tctgttccat 900

atgcaccaaa agccaaccgc agattactca atacaagagt atctgattgt tcatccaaag 960

aagcatgtcc caggaaagca caatttacat atgaaacagc attgccaaga ggacgaggcg 1020

ctgctctgta agtttcaaat agcaaactta tatttgcccc ggaatctgaa atccaatttg 1080

gaataaatat gctcaggagt aaagtagtag catctatagg aggctgctct aggaactctt 1140

ccaaagtaat ttgtctccgt tctgcaacaa cctgaagaca aacagttgca ccagcaccaa 1200

ggagtatggt tgcaatgtcc gatggaaatg ggaatttttg tgccaaaact atgtttcctc 1260

caatactagc cgtgttacga acaaaaggtg tagcaacttt gctcatgtgg ttcgcaagtt 1320

ttctgaaaac tacacttccg tttggagagg atatagattc acattcttcc tcaagtatct 1380

caatggtcct agagattgat gtagctactc caatttcaat tccagacccc atccttacaa 1440

tatttgaaag ttctggaatg cctcctatgt caatatactt actgtagatg tcttgatcct 1500

tgtatccagg tacaccactg ctagtatttc caacaaccac tttgactgag tcactaaata 1560

aacaagaatt tattaactcg taatattctt tgatactttt cggatgatac caaccctccc 1620

cggaggctgc aatacaagga ttattcagat gatcaagcga ggattttaac tcagttttta 1680

gaaagtctgg gaaggtgcag actccaccac caagggtgta acttggcaat tcactaacat 1740

ctgggttcct atcacctttc ttccagaata tattaaggcc caaatcctcc aagtcaacat 1800

ctgatgcaaa acttttgcag gcatcaacaa ttggacgata accagtgcat ctgcacaagt 1860

tgccagagaa agcctttcct gcttctgata cttttagttt tgagaagccc tttggtggtt 1920

caggcctctt ggatttgtca gctttgataa gggaagtgaa aatagacatg cacattccag 1980

gagtgcagaa gccacactga gaggcatgaa acccagacat cctttcctga acagcatgaa 2040

agccatattg gctatcaccc agaccctcag tagtgataac cgaacagaaa tttatagtgt 2100

aaagaagtgt caggcatgaa cttgctgtaa attcagtcac ttcatccgtc tttgggttat 2160

attttgctat aaggacaaca caagccccac aaccacctgc gataccaatt agtgaaaaca 2220

agtcatacta aatataccac aaagatgtgc aagaataggc tgactgaaag atttgaatct 2280

aactgactaa aatatgttgg gatttcattt gtctggtaaa gattctctat tccaaacctg 2340

aatttaaacc atagttggtg atttagatat aacaaactaa ttcaatttac aaatcttaca 2400

attttaagga ctgccgtcaa tctctcatgc gggtacaaat atctacatgt tttgttttca 2460

taagatactt ttgaaatagt attttagtgg ccttatcatg aacttttaag agccttgcca 2520

aacaacttct gaatacctgc aatatcacat taactaggca gatagtccgc tctctagatt 2580

caactccctc ccaagtttac tggatcgaaa aa 2612

<210> 5208
<211> 1594
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_250162_G1, chr7:84695979..84697572, Cluster 32

<400> 5208
gatagtcatc tctaaaaatt aatgatttta agagatacat gactgcataa acaggtaaac 60

ctatacgtat tggttctgac cgactcccag tcaaggatga aaatcccaat cgagattcgg 120

cgataacccc ccttttctc gttcccgatg catagcgaaa tcggatccca ataaacaatt 180

tcgattttct cgtttgagtt tgttgaagtt caaaaaaaat cagaaaaaaa ttatataaaa 240

aactagagat tatcaagagt ttagaaatat atatatatat aaaatatatg atttggtatc 300

aaaaatattt tttctaaggt aattaacatt ttagcgaaaa tcactctaaa tacattgaaa 360

accacccaag gttagcgaaa accgtttttc aaatttgaaa tcacaaccca ctcagaaaat 420

tgcgaaattc ggagaaattt cgttcaattt tttgatttcg ctgatcgctg agaaaaagct 480

aggaaacgag atggtaaacc cggtcacgat tcacggatag tttctacagc agtgcggcta 540

tcgagcaaag gcgagtagaa tataattttt tttaaatgcg gccggacata tattatttat 600

tttactcgtt ggttccctca agtaacatgg taatttctgg taggcagtac tgtagtacgt 660

tgcggagcga aataatgcat gagccaggaa aaggggaggt gaaacattga aaaaaagaaa 720

agcatctgcg tgccgtgccg atgccgactg catggcgact ggcgtctggc gagcgaggga 780

gggaaggggg tgcatgctgg tgggtgatgc gcgcgactgt gtcgtacgtc ctcggaagtc 840

gtgtgagggt ggggcccacc ccatctggga ggcacgcaac gcaggtggtc ccgtgcatga 900

gttgtgtgtg ccgctgcccc ccccccctg tccctcctag actctaccgc tctagtgtgt 960

atatgccggt ccattgtccc ctcctggcct aatgcctcca acgcctacct cctgcaaaat 1020

ttaccgctac acctccggcg cctcgcctgc atatgggcct cctcgtgttg tgttgtgcca 1080

accaaacgta tgcatgtact ccaataatgg ttaccaagtg tcatgtcaca aacaagcata 1140

catccatcct gcaaaatttc gagagatcaa agagtcttta agttagggtg tggaattaat 1200

gaatgttgag ccaatgagtg acaggtttag aggtacctat attttatggc aggtacatgc 1260

atgtggacac gctcaggatg gtgaagtgga taccagcagg ggatctaggt atattttggg 1320

tcctctgtcc caactctccg gtcatttttt ccaacaaata ttgagatttc ctttaaattc 1380

agcatcaatc aaaacaaaca tgtagtaacg aaggagaata tcaagtgaag tagtactccc 1440

tttagcctaa ttagcgaggg gcaatgtagt tttattttgt ttgaaactcg cttggatacc 1500

atgtatttcc ttcagaactg agggggtagc atatacacta ggaattgaat ttatctcatt 1560

atacatagag gcattgcaaa agaaaaagga gggc 1594

<210> 5209
<211> 1594
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_253933_G1, chr7:107241727..107243320, Cluster 32

<400> 5209
cgataaaggc atatatgata atcaaattaa cattagtttt acgatgtgaa ggcaatctaa 60

aaatctaaaa tgatacaaaa agtcacatag aaaagagggg ggggggatgg tttgcattga 120

gtctttcacc ttctttagac attctatttt atatgaaaaa atcatggtac taacataaat 180

gaaggagaag ggaggatata aaacaatcct aaaaatatat aaccactcca ccattctgat 240

tcatacaaaa aataacaatg ataacataaa tgaaagagag atggaagata agggaaaata 300

aacataaata tataaatgat actagagatt aatagaggga ataaataaca agacatacac 360

taatttaaat aaccctctaa catctaacca atcaatttta tttaagtatc aatacaaact 420

aagaaacaat aacaagaata tgacataaac attaatctag gtgtataaag gctattaaag 480

atcatataaa taattactaa ttagaactaa ttttatattt tccttgatta acaggactat 540

gtcatttgac gacggtttat ggcacaacct tttaacatgt catatctata agctacaatg 600

catttttga tatttactaa attgcatcta agtctcaaat gagttataat atatatatat 660

accattaaaa gttttcatga aaatggtata cataaatata tattcttata tcacaagcat 720

ataaagaaca aaggcaagat actttgaggg tcatgcttag gtcggcacaa tatgaagaca 780

tgttattgtg tcattggaca tgtttgtgtc aaagtaaaga cttatcatgt cgtactgaca 840

cgacctaatg tgcttcgtgt gcctagaggc gaccacccaa atcagcacaa agcacaagag 900

acgccctagt cccaccacta ctcattaagg gcactccaac ctagaaacta cctagagtag 960

ttggctacct atgttcatta attagggtac cacctagtca aaaaacaatg atgtcattga 1020

aattataacc cgtctcagtg agagtttggt atataagttt catttgcatt taataagttg 1080

ccacataaac attttatgac atgaaaatgc ctttaagaag caagagcata agtcggtttt 1140

atatagataa aactctcttg gcatgattat caactctata taagccacac aattaaatgt 1200

ttatgaaata atagaatgaa gttgagcatt gaggataggt gtttcatctt gtttttattc 1260

attttacatg atatagtagt cttaggaata gtgccataaa aactcttcat taaaaatgga 1320

atgaggagag agagagacaa gaaaatggtt ccttagataa aaaatatgtc tacatggaaa 1380

cgaagatacg aatagatgaa gcgataagca tatgacggag agaaaatgtg ttattagata 1440

aaaatatcct caagaaacta cctattgatt tctatatatg tatattgtct ttatgattta 1500

tatagtatag aaactatgtt tgtaggttgg aactacccca atgtgatgt ttggatcttt 1560

gtttttatat atgtttgaat aggaaacccc atga 1594

<210> 5210

<211> 1595
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_264246_G1, chr7:162674152..162675746, Cluster 32

<400> 5210
tgtaaagcgc gtgagctgta aatgtctcgc acttttgcat agctaccgtc cgtccctact 60

acttggactt cggtgaccga agctgttgtt gttttttttt gttacaaagc tcgcagcctt 120

acagtgagga tcatctctcc taggtcctag ctagcataga aaatgtaatc cacaagcacc 180

agccaagaag ccacggtttt gtggattatg cgattcggtg gggctcgtgt ttttggagta 240

ccatcaactg cttcgactta attcacgtgc gcgtgggggg aaaaacacac ttggaacaag 300

tagtattttg ggagtatcat atatagtgac gacaggtggc ataaggaata tgaaccggcg 360

cgcctttaac tttcgaaaac ccggaatata tctggtgtca ctatatatag catctcttgc 420

atggttgcta cctgcatctg gagatgatat gcttccgcag taggcaccga aagacatata 480

cacagcagta tattttgttg gcatgagtga cgtgcgttaa aacgatcgag ttactttcca 540

ccgcaattct tcgcgcacgc gtgtcatgcc gtcgattagc atcttgtaaa taataaacca 600

tcctgaagta gtacaatgac tgacggtggt atgaagaagt ttctgtccac gcacatcttc 660

cttaattgtc tttggatagt catcagaatc cactgatttt tattcgatag agctcgaatg 720

gaaacagcta tatgtaaatt caaaggtacg cacaatattg cacgtttatc tatatgttgt 780

ttttattccg cagatcttta tttctataga gtatagatcg agaacgtaca ttctgttgac 840

gcgtgtccac acgcactgta acggtcggta cgatcaacgt ttgcaacagt atttgctgcc 900

tgaccggcgg atgtagcaaa tggcttcaaa atgtattatt tttccagtca accaaataaa 960

aatataaaat cttagataga gttaacacag gtgatggtgc gggtataacc aataattaga 1020

cgatacgagt aagagtatat ataggtacat agatgtgcac aagagtcgcg caaaaaaaaa 1080

gaaaagaaag aaaacgttct gcagcatgca agagaacgaa actgctgggc gctggtaaaa 1140

ataatatttg cagtagtaca aatgtacaat atgtacattg aagtacaaac tgtgagtacg 1200

attactgaat gggccggtgt gatgcttact cttttagtct tttggattcg ccctattgcc 1260

agttaagaag gttcaaggtt gtgtggtcgc attctacaaa atgaataact aacgaatgac 1320

gacgaccgcg accaagtaat aaaacaatta ccaagtgtcc gcgtgtttgg tgatcgacca 1380

gcaaagcaag agccgcgcgc tagcgttgca ttgggcaggt accaaaacgc gcgcctttta 1440

atgtcatgca tgtgtgtatg agcacgttaa ttaacttgac ttcccatatc acgtaccttc 1500

catgtaagta ggacacaaca catgacacaa gttacctcca tgcatgcacg accacttgtg 1560

cattgactag ctagggctcg tcgtccaacg tatag 1595

<210> 5211
<211> 1973

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_265384_G1, chr7:169163740..169165712, Cluster 32

<400> 5211
ggcaaataag gattgctccc taaaaactgc acagatcctg aagcaacaag tcagcaataa 60

aatgaagaaa tgtatgagta gtcaattcat ttacttcatt cctaccacat atgctttaag 120

gtttaggtgc atatgtaaga attttacatt gaggaccata tagatctata ctttgtacat 180

accgtacttt attctttatt ttttatcaca ttagtacaac gttgtattat atctgaataa 240

ttcaatatat gtgcctactt ttttttaaa aaaagataaa tttagtgttg aaggctccca 300

ctaatgtggt tctcaaaaaa ggataaaccg atacaagcat ttcctttccc cacaaatgcg 360

gagaggctgc ttgaacccat gacatggaca actctcaccg ggcccacgct tcagttttta 420

tgtgtattac atatttattt ttttgggagt ttgaaggggg tgggggaga gggagatcat 480

gtgcaaattt gagttggtta attacttaat caatatcttt ttaatttttt actttcatcc 540

tgcctagttt cacgcacagg aacagcaaac catttctatt agaaacacat tagcttgaga 600

taacctatat gccgcctcac atgataaatc agagcactat gcatttgtgg gcattttgca 660

tctatgcttc aaggagacaa gcacatctac attaagaacc atacactacg accttgattg 720

attagaaagg tgttcatcgg ttcgcagtaa attttattat tattagcaca gaaaggggac 780

caacagcaaa atgtggtggt cttcagttta cgtggtacag gccacttgcg taagcaggaa 840

agccagctga agcgtctcag agcagttgaa ggctctcatt atgtgttgga accaccaccc 900

ccactgtacc agatattata ctcactgact gcatcttcat ttcctttcca tttgtgatac 960

acaacacatg agcctgttcg tggagaataa ttccttggaa atgcttattc tgtccacctc 1020

aataaatcga tgcctcgtca caaatggccc tgaatgatgt atagctagca cttgcttttg 1080

ccgccccagt tctgtagagg catgaaacat gcacgggcat ttccttttgt cttggcttcc 1140

tcgtgagaaa ctatagcgat ggaatccaaa aaacaaaaca aaaaaactcc atggatgcta 1200

atttgttttt gttggagcag gcaggcaggc aggggagctg agtgagacta tgtttctttg 1260

actggtagtg ggactgcagg gtggccttta ggtacggtgt cctcttaaag cggagctttg 1320

cataggagct agctactacc actaccagta gtactgtact gcatgcatgc tttgataccc 1380

cccttgcaac taaaatcaac actacactac actagtctct ctcatatagt ttacccttgt 1440

gtccagcttt tttgaccagc tagcacactg tcattccact agggtaaaag gaagaggccg 1500

gggatagcgt caatggccgg ctggcatttg ccaagcctag gcatgattag attccgcaag 1560

aaaagccagg aaatgtctat cagtgtgtgt gtaccgtata tatgcccatt gctttgctaa 1620

cctactcgat cgtgtaaata ataaactagt aaaagaaaag ctggatcgat gatatattta 1680

tttcttttgg aaacggatgc aggttcagat ctgccaagca gtcaatacac actagcaaac 1740

aacaggatga aactgttgtc gtgtatgagc agaagagaga gagaggtgag aagagaaggc 1800

cagggatcgg agacggagag gcactgctgc atgtgacacc atgtggagca acagagttac 1860

agaagactac cagacagcca aagaagagcc cttggccatg cacttgtgac tctctgcaca 1920

cacacacaca ctctctctct ctaggggaga agagaagcag tacgtaactg tgc 1973

<210> 5212
<211> 1765
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_270967_G1, chr8:22828975..22830739, Cluster 32

<400> 5212
gaaatttgaa atttttttt tcacacggtt tctaggtggt gaagcaaact tacctccgtt 60

tcaccaaatt ataagttgtt ctaacttttt agtcgaaacg tttcaaaaac aagcaaattt 120

aacaacctta gataacttag ataactttaa aaaaagttat ttaacaacct ttatttaaca 180

gcctaacgtt tgttctataa ctgtttttt atcaaactta gatgacttta taaaaaactt 240

agaatgacac gatacattat ataaaagcct ttttctttca aaatgggtca ttgctgatgg 300

gcttgtggac cactgagctt tgtacgtggg ccatcatcta agaggttagg tggatcgatc 360

taggagttcg aggcgtcacg agcccagccc aacaggcccc gtttgggtag gtggacgcat 420

tatatcatac actttgtttt ttttatgtat ggttcaatta aaatctagcg attttacgct 480

ccttgtcgcc gtatcgtttg gtgagacaaa taaaatttct caaataatgt taataaattt 540

ggaatataat agcatgtaat atcatgtaag tcttgggctg caacagcagg agtggcccct 600

ctaatcttcg ctcctaatga ccgggcatgg aattggtatt cagaactggc tcttagttga 660

tcttaggcgg tgtttggttc actgaaatat aacgcaaaca gattatatgg agtaagggac 720

accgatattt ttgttgattg agctctttcc agtaataggt actactatcc gattttaatt 780

ataactagta actattacca ccggtaagag atctgattac catcctctta acaacttctg 840

aattaaacaa caccttaatc ttaaggaaaa tatcagaggt cgtggtttga ttcgacccat 900

ttccattcct agttggcgtt gatagcttgt taaaagtata tatgtcagat tgtttatcat 960

cctttcgcat catctcagtc tctttagact atatggccgg tagattgtgg atatagccgt 1020

tcaaatcatt gttttgcact atactatact gtttacatag tactagttta aaataacaaa 1080

taaggacgag taatctggtg gaagcatgaa ttgggctgag agacatgaac cttcgttcca 1140

tcaggaaggt attggaccga actagtaaca atgagcatct gcacctaaca ccgatagctt 1200

tcttgtcgag tttctacatg catgcatcct ggatcattaa ttgttggggt gagattccga 1260

aacatactca ggtattacta tagcagctag ctagggtgca atgcatcacg cacatcagca 1320

tccatccatc aagcattcag ctaataacgc actgcgtcct gcaaaagaaa ttgtgcgatc 1380

cattccatgg atgggtgtcc ggttgaaagg cagcttttgc tttgcagggt ggtgtggtgt 1440

tttccgtttt gctgcgacgg gacgggagac acggatcaga tgccaaacaa ctgttactat 1500

gcttgctatt aaactagcta gtcgactttt tatactggtc ggtgatcacg acgtatatac 1560

gtccacaccg atcgatgcct tgcctgctaa ttaataagct cccttgttgc taatctgaca 1620

catgacccct atggtatgtt ccggtcttca gacatctact gctttggtgt gttgacacag 1680

gcaatagaat ctttttttt ttgtaggaaa tcgatcaact cgctaatttt cagcatgcat 1740

gtgttagcta tcgaacataa gagct 1765

<210> 5213
<211> 1614
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_283161_G1, chr8:105321958..105323571, Cluster 32

<400> 5213
accaaatcaa ccctaatggg ttctgcatca ctttctactc cgctcggaac acgtttcgtg 60

atgtcgtcgt tcatggtgat gcgtattatc atgcatgcat gacatggttc ttatcacttc 120

gaagcagcat ggctttagct tatctgacat gcaccatctt gagaccaatc taatcttcag 180

ctagcgctga agaaccgtgt agctagcgaa ggttattatc acctgtggat gcggaagaaa 240

caacgctgcg ctattgctac aaaaggtgac tactccacag accacagggc tctgcttcgt 300

cattagatgt ttcggatacg tctcgttctg cagcgctcta gctgcaacct tttgtttctt 360

ggcatgtact ggacctttg tttcagtatt ctgaaagaaa aaaaatacac ggaaaggcgg 420

cgggtgcagc agttgtgtac gtattcaaga agctctctac tgcttcaatt gattaattat 480

tcaagagtag aagacgagtt gtacgtacag agtccagaac tttatcacct gatcagacat 540

tgggccggga aaaacaaagc ggttccacta aacatctgtc gacatcgtct gtcttgggaa 600

taacaaaaaa gcaagaagaa gaagaaggag aagaagaaaa acaaagcaaa ccggacacaa 660

gagtggtgac ctcgcactca ggctgtattc aaataattgt gccatatatt ctccaaaact 720

catgtggtgt ctgctacaca tatgataacc tcagtagagt gctaaaagca ggatgacaaa 780

gcactgataa taagggccgt atgccaggta ataatcttgt ttagattcct tgctccaaaa 840

aaccagaaac gatgcggcat gggcattagc aggatttttc atgtcgtcat gcagccggca 900

atatatgccc aagtgccaaa acatgttgct gaacgcatcc ccatattgca ttcccgattc 960

ctgtaaatcc aaaccgccct ttttttagtt gtagatagag gagttcggga gattgaccat 1020

ggttgttgac acccgggaca agtgtatata gaggagtaaa tcttattaac caagtcaagc 1080

ggagatactt cagcacttgg tgatcgggtc attgggaact agaggtgaca tgtgttgtgt 1140

tgacatcatg gagggagcat agaggatatg ctactctaga gtgatttcgt ggtttggacc 1200

ttaaaatcac tatggacggt tttttacttt gggccttaaa acttgattgg agtcatggtg 1260

gaaactagag aggccacgtg gcgtcatcgt gaagtttgca tggacacgaa gcaaagtcat 1320

aaagtcaatg gtcatcattt gcatcgatga agagttgaac cattttgcct ataaggttaa 1380

gtcgtttagc ataaaaatat ctaaaggcta agttaggggg tgtgaaatag gctccctaaa 1440

aatggtttat gccttttaac caatcatcta tccaccattt ttattaccta tacttgagtt 1500

tatgtgttta tgtaggatcg tatgatgcta caataggcaa tcagaggggg taaatgattg 1560

caaaagatta aaaatattca tctcaccttc tcctaaccac aaaaccgaaa tatt 1614

<210> 5214
<211> 2201
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_284976_G1, chr8:114821864..114824064, Cluster 32

<400> 5214
ggtcggcgcg tatctttccc ctgctccctg ccgctgcaca aacgtcgtgc gctcgggccg 60

ccttgtttcc acggacttgc caggctcgcc tcacctccgc gcctccgccg tccaacggcc 120

aacgcccatc caaaatgcgg catctccgcc agcaccaaca agtagcatgc aaaagctctg 180

ccaggcccgc acgggcctcg aattaatatt ttgcgtccta ctagtatata tattttctat 240

atttctcccg tacatacaat cctgtcctct gtcctctgct ctcctccgag gaagacacat 300

accacaccac cgatgtccga tgcgacgagg gagcacataa taaaaaaaca ataagacaat 360

aaaattaaat aaaattataa acagagaaaa ggacaacgtg aaatacccta ggccgtgatc 420

ttggcggctg cggcgcgtcg gcgatcggcg ggggtcgccc cgcggccgac gacgtcatgc 480

tggggcggcg cggggagatg gggtacgagg aaggggagct cgagctggag gagggcgagg 540

cggcctccgg cggcggccgt gagctggtta ttcccgacgc gctcacctgc atcgtaagaa 600

cgttctctgc tctcctcctc gtcctcctcg tcgtcctatt gcgtgtgaga gtgtattgga 660

tcaatggctg atcagatgtc agtatgcgaa tgcgttctcg tgccgaggtg attagtgttg 720

ctgtcgcagc gttgcgattg ttttttttgtt ttcttttgcg ttacgggtag tatgatatac 780

aagtacttgt taccaatgtt gcagagattt aggtcgattt tgcagtgtgg ttgaggtaat 840

cactgattga cacgaatgca tggttgtttt ttttatcaat gcaacatcaa tgcttcaatc 900

taacatggtt acatgaatgc tgtggggagg ggggggggggg gggggttacg attctgccgg 960

ttcattgctg gcctctgtgg gggattcgaa tttggctaac ttgttagctt tacctggtaa 1020

agtatcggag ccgacatgag aatgcaacta tgcaagacta gttggtagtt acttctgcaa 1080

ccgttgagta gtagtactag tttgcggtga tttcttgtac cccttgtgtg aattatgaaa 1140

ccttctcaat ttcagtgcta gatttagcag gttactggga caagtttgct ggtgattggc 1200

agtagtatgg tttgtactgt tggttcacgt gcacattttc tgttccattt gattttggtt 1260

attttctggt tacctgtcct gcttggtgaa aactctgcta tgttaacata gatatgtatc 1320

cgtctgcttc cgttctagtt tcatccctag gtaggccctt gtactttaca atttataggt 1380

tggacacaaa tcaatttctg ctgttgagat cagtgcctag aggcaacata tagacaaaat 1440

ttatcttcta ctctgatttt ttctttgaaa ggacttccta gctgacatac gtggggaggt 1500

aactcataca tgtttgtatg tattcaaggg atttaatata tttgttatat gatagttctg 1560

gggttacctc gatgtaagtg ataatgtgta ttttgagggc tgaattattc cttctaagct 1620

tatgcttcac cgctttctat tgatagtttt acacccagaa agagtgcatt taactttgtt 1680

gttccatacc tgtctatact tcaaaaaaga agaaacggct ttctcctttt acatacatgc 1740

tttatctttt tagtatacac tctcatagta cagcctcatc cttctggatg atcagccttt 1800

aaacttttac ttataactat gttctttgtg ctaaaagact aaagcgtgct gtattattca 1860

caggatgaaa gaatccaaaa tgtgttgggt catttacgca agaaatttga aggtgaaata 1920

actcatatga atttgggtaa gaggagtaaa aattgccaac ctgtttgctc tgtacagtta 1980

ttgatgttat attggcttat gtgaaaaatc gttcacacta cataggttcg atgtatggat 2040

gccatggttc gttcttgcca acatacccac gttccccttt gggctttcct caatatagga 2100

acactgcaga tccaaaaaac catggcagtg cctcgagatc cctgcatgta ttaacagagg 2160

tacactttac aaaattttac atatattgac ttactaggat t 2201

<210> 5215
<211> 2046
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_289913_G1, chr8:142359125..142361170, Cluster 32

<400> 5215
gccctattgt attattttca tctctaacaa ttagtcaaaa ttaattatag tgatgcgtaa 60

atcttcggct tattgaagaa gaaaaaaaaa gatttgcaac cacgtgcgct tacagctgcc 120

tcggtctctt gagatttgag aatgcgcgct tcttggttgt tactataaac ctagctgttt 180

ctcgcatttg atgctgtcat cagtgacggc gtcaaaaccg ttgcttgact tatcgttatg 240

accagccgta gacggttaag gatctgtccc cctttcggat cattattatt acgtcgatta 300

ttgtgcacaa ctgcctgtca acgcgtgcca ttgtttctct aaaatgtcca tgcttttggc 360

ttccaggcca aggctggcag ctagagacgg agttgagaat tttatgcgcc ggactgatgc 420

gttgaaatga aaacgcggac gatctttgat ttggctgtcc tgaaaccgaa tggacccggg 480

aggaaagttg cttggatttg tggacgacgg gacgggacgg gacgggacgg cggcggcggc 540

gcggcagtcc gttaggcacc aggagatctt ctgtgtgcgt gtttttgtca ttcatagatt 600

tttgagaagt tacaataaaa tacaatgtaa atcttgttat cagttttata ctgacacaga 660

atttaatcga aaatttttat actgttcggc gagattgtaa agacgagatt ttaaaaaatg 720

aggtacgaaa cagacggacg ggcgacgacg acccgaacga gcgtggatgg gaaagtgagc 780

cgcacctgca cgcaccgcac ctactgtctc gatcgcgaca ggacactgct tgtacttggg 840

gggttgtagc aatggcaatt ttctcgatcc cgtcgcagtc atgcctgctt tctcatcttg 900

agaatggaag aagaaacata acgtaacgat actgtttttc tctccctcct tcctctttta 960

aataaataaa atgagatata actaaacagc taataaacag gatcaatgcc atctttttgt 1020

actgtgatgg ctcagtattt ccagtcttta gatttcctga cgccacaggt gtgtaatgta 1080

atggttgcta ttctgtactt aggctaggac tccatactat gtcagaactt aaatgcagca 1140

ttgcattcct ttagaagtac gtgcttcagg aaaccgatag gagttgcaag aaatgcgaca 1200

cttggatagg aaaccatttg catctagcag attgatcaat cgttcccttg cttgtcatgg 1260

aggcttggtc gctttcatca tcatcagatt ccaatagaca cagagtatgt caaaccatct 1320

tcagaatcta ctctgtcaaa accatagtat cctgctggtc tatcatttc caccttaacg 1380

actgctcatg ggctaacatt gctctccact aactctaata cccgtacctg ctagaaagaa 1440

tttagctcag atgagaaatg aaaacgctat gatttttctt ctcaaacacg tacaagcagg 1500

gcctctgtat catttcatta aaaaaagaaa agagggcatt cagtctctca caagcttact 1560

cgagaaggat acaccatcag acatttcatt aaaaagaagc agcagctcgc tgcaaggaca 1620

tggcctcttt gatgagaaaa agcaactgtc aaggccggct gctccgtaag cactgaattt 1680

gtttagaaaa ttacctcagc attttctagg acaaagtctg ttgcacctgc tttcttgaga 1740

tctaacaaat gcgagagatc ttgaggtcta tcgtatattg gaacctgttg aagcacaagg 1800

tattggcaat ggagtgttcg ttaatttgca tgtccttcac tctctctttc tctcgaactc 1860

taaaaaatag tgttcttgca caatgctgct accgtagtgt cgccggcagc tcagccgacc 1920

cttgtggtcg gcagctccaa ttactcccgt ggggttggct gctcccctcc ttcttgtggt 1980

cggctgtgta attataatac atcctagaat taatacacct cacactcttt ataggattca 2040

tgaata 2046

<210> 5216
<211> 1514
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290371_G1, chr8:144727088..144728601, Cluster 32

<400> 5216
cactagcctt gtagataaat acagtcggca aagtagtacc aagcactcag caaaacatcg 60

aattcggtga tggtatagct gcatggcgcc gccgccttcg ctttccccca cgtgttaaaa 120

cagctcaaat atgacgctgt cgttgcacag gcttggccca gttttgtgcg tattattccg 180

catgctttgt atcgtcggtt cgtcacacac atgcataaca cgctccactt gtctatatat 240

gttatgctat tattatcatt ggtcacttgt catcatgtaa gaccaaggtc ctagaagatc 300

atcaacgtca cctgttgttt gcttcctctc tctttttttgt tgttatctct aacagtatta 360

tatctctttt gtctcttaca gtatttacga gagacagtgc gagaagttag acggcatgct 420

aggagatcag gaggttagat gatatactac ggcagtctct tgtgttgctc ctgtgtcctg 480

ctagctagct agcttgggat agtgccatta ttgctccata tactcatgtg caacctatcg 540

tagatttata cttgatcttg taacaatttt ttctttattt atgcctgaac cgcatggata 600

attatatagg aacacgtccg taggtgcatg gtgactgaga atatagtcct catcatatct 660

tcatctctag tttttccccc ggtactactt gtttggacgc gtgcgaaacc gatgcaaatg 720

gtttcacaag cagactggaa cggcctctag tgttagatga tgctcagtgt caggacgaac 780

taactcagga tatttatttc taaactagct catggagatg gcgtcgttgt cactcgtcag 840

accgttgcaa gagaagagta ggaggcttag atactcgtgt agttgggccg gagcaggctt 900

cataggttgg ctcagcccat gcggcttact gttcctgagc gaggtagcac tgttgtaaat 960

aaacaaagat tccaaactat ttatccaatt cctgtccatt cctttctatg tggttctcta 1020

ctacttcccc gacaaccgct agtaaatcgt gcataccgcc agtaaatcgt aatactattt 1080

tgcacttata ttgtactgtc tataaagtgg accagtttga aataagatat gaagacaagt 1140

aaactgctga agatagccaa agaccatatc aatcgctagc cagtattggt ggtgcagcat 1200

atactcagtc tgatcaacat gactccaaca aatgagttga actaggctcg gctggtcggc 1260

cccgtcagta tcgatcgtag tgggattggg tcagtcggta ccgtccgcga cgttgggaca 1320

ggcaccgtta tcgaccataa gcagtcgaca acaacggtag gtagttgatg tggaatcttc 1380

taattggtca agactctttc atttatttga atttacaaga aatccaaaaa atcttgaatc 1440

taccctataa atagagggga tgtgcttggg ttcattcatg cacattccac tccgactcac 1500

aagccctctt ctcc 1514

<210> 5217
<211> 1830
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_290654_G1, chr8:145975797..145977626, Cluster 32

<400> 5217
gcaagctttg gtagacaaat tgatcatcgc ccaaggctta ggggcacaac catgatgctt 60

agatccccga ccttgggggа gcctaggcca agcccctacc cctatgtcca acctagcact 120

agctcatggc cagggagagt cccaagacgg gcccgaaagc tagctccaca accctcgaag 180

tgcctctact aaagccacca aggcacaaca ccgtcttttc tccatttggt tgaggcgatg 240

acgaccactt ctcaacaggg tcacacaaaa aggtgtgaca aaacaagaaa atggactcac 300

cagacccatg gggcaaaggg ccttaggccc atatgatagt agattcgagc aatgtgggtc 360

cttgcataat aaggaaacct caagaaagca cacctgagga aggaaacacc atacaagaca 420

acccctcatg gtcaagcgcc aaattgcacc aaagacttta ggaagtggtt gtgacattat 480

tagtgaatgt caacgcatcg aggcgaatct ttaggtttga gaaccacaaa aatcaaagtt 540

aaaacgtgaa agatatgggg aaatcaagtt tagggcaaat tttaaattta aaataaaatt 600

ctagggattg ttctgtgaat atctaaggac acatatgtaa ttaacattat aaacacgagg 660

tccctcatgt aaattaggtc agctaagatg gcatgttaca tttattaaga gctcaggatc 720

acaatcataa aaattgggac tttgttgtaa tttattttaa attgcatgag atcgtaacaa 780

tagcggtggc aacccgtggc atgatgaaat gatgccgacg ttaagcaacc cctatgccca 840

aaagcccaat ccaaagcacc actcgtgctt aggctctatt gggaaaacac agagcagttg 900

aacgggtcct cgctagagtt tgggtgatgg tggagggacg atgcaccgcg actcaacaag 960

ctccaatgag caattcttcg ctcttcggct gatcctcgtg tcctagaatg caaagtgcta 1020

ctcgcgaact cctcgcgcga tggtgatgct cctactccac ttgacaacgt cagaacaata 1080

gcatgaacat gagacggcta tggtggctct ctcggctcga gctctcacgg cggtggcgct 1140

taacactcag ctgcagggct acttctcatt ttgcaatggt gcgagtgggt gtcgtggcgt 1200

agcttatata ggacaggagg cccgttctag gcagggaaaa gtggcacatg gtcaatagtg 1260

agagggagtc aaactcagtt gtcgagtttg agtcggtttt gaggaggaag acaattttaa 1320

cgaaccgagc ccacaaacac gtgaatgatt gttctcgcgt gtaggggcgc taaaccggat 1380

caaaaatgta tcctatcgat tacgccattg atgttgccca cacacgggaa agggtaacca 1440

gtcgcggtca tgggccgacc gtgtgtccca atcggctgag aaaggggaa caactgggtc 1500

gtggagccaa tgtttgagcc tgagtacaag ttttttttt cttttcagt tttcaacttc 1560

aaaatccaaa ccacaatttc aagatcaaat tcaaactcag actcaaacaa taaaaacgat 1620

gctcatgcat gtaatgcaca agtatacttt tatatttcta ccatttattt atttgagaaa 1680

ataagttaaa tgaataatcc acacaaagct cttattcaaa taaatctttt ggagaattta 1740

tttattttaa aaatatgaaa tttaagtgtt acatatttta tcatttatat ctgctataag 1800

aaattagttt acaaagcatt ttaagtagtt 1830

<210> 5218
<211> 1417
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292759_G1, chr8:156914760..156916176, Cluster 32

<400> 5218
ataataatag caaagttgtt attagtttat ggatcatgca acccaagcaa ggacgtccta 60

tgcgatgcat tgctagtcac tatccggttg cgaggactaa ggagtgagtt ggtcattgcc 120

attgctaatg ttaaactctc atgtcgctct cgctcttgct ctcactcaat cgtccatata 180

accaccgatt acttaatttt cctccatttt tgtattttct ttcttaactt tgtttttcca 240

tctcatcaat tctatctttt ttcaagatat aaaaaacaaa agaaccatct tttctatgga 300

atatttcata caatcgatta tgttttactt aatgttggag acgaagggaa gaacaatgca 360

taatggccca aattatatat aacttaacta ccaaaatagt gactacctta acttgtactt 420

gaagagtaca aaagatgcct acactatcac ttaaatggac ttgccatcct tagggaggaa 480

aacaaccttc catccaattt ttttctcata tgatttgttt tactttgata taaatcaaga 540

aatttaaaaa ttcctcgacc tttagggtga tggttcccta gcatccacca tgtggaaggg 600

ctaaaaaggt tttatttcac actataaaat attgatcaaa attggtaggc atttattact 660

atagaatttt gaaacaaaaa taaggaacaa ataacatgca acctcatttg gcttgtctgt 720

aatgccaaaa aaatatgtga tgatcaaccc aacttttgtt aaaaaaataa tgagtaacaa 780

taaggaaaac gtatcaccaa attcaaaatg tccactgctc ccatggtagc ccgtgatttt 840

taaatctaga caacttttga ttgttagtta ccaatggaga ggcccatcat atgttaccat 900

ccataaaacc atatattctt caagggtctc atatcaccac acaaaaaaat tacatgaaaa 960

agcaacataa gttttttatt aaagaaaaaa ggtttaaagc tagtgtagtg gcaatatcgt 1020

agcacacttt aattctctct cctttgtaaa ctatgtcaca ccttcatttt gtatgcactt 1080

ctcttcatca tcctaagata tcacaagatg ttaaacattg ctagaataaa tccatcatga 1140

tcaatttcat atatgcatgc ttgattattg gttgacacca cgcttgttgg taaatttcat 1200

catattgatt gtgcgataga cttgcatgtt tcaaccagat gaagaaaaat ataacatact 1260

tgtcaatcct cccgtgaaat ctcaccataa gatcgagaaa acattaccac tacaaattgc 1320

atgccagctt aaaaggcaaa agaaaatgca gtagaaagta ccaaacttat accatcttgt 1380

taagaaaact ttggcagcga atatgtatga ggtgcat 1417

<210> 5219
<211> 1610
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_292938_G1, chr8:157885366..157886975, Cluster 32

<400> 5219
ctcggcccca cacgaccctc tcatttaaaa aaaatagaac catcatcgta tattaaattt 60

agagagagag agaaagagta tctctcgtag tggagactgg agagtgagaa tggtagtttc 120

ggcgagtgaa aaagaactgt tatatcccat cctctatttt aagttttact agttaaacaa 180

tatcatttac agtataaatt ttctatttta catgatacag cgttaaaaat aaagtctatt 240

agatgctgtt ttttacataa agtttttat aaaaaaaaat ccatgaaggg atcttcttgg 300

gacctcttac tgcctgttcc tatgctatgc catctaatat tacctaaaaa ctaatactaa 360

attatttttc ctaacacatt acgttaatta actataaaca ctaaatttca aaaggggac 420

attcattaat aactacacca gatttcaata tggaaaatac ttgtccaaac acattacacc 480

aaatatgtga cgccatgtct ctttctctct ctctcttctg tgccactaat ttacagtata 540

cttgttaaag cgactataga ttatattcat ctaataaaca agcatgtcaa cttttcttaa 600

caacccatgg aaaataggag agagctcccc gtgagtttga tgatgcgatg acccgctata 660

tatagcgaca atggtacgat cgtatattat tatacacaaa ctaataaaaa aaactcggta 720

ttgccatcta gctagctagc tcctctctgc aatgctgaca tggcttgcct tatagacaag 780

cgcctgcgcc cggctataga ctatagtact agtactgctg gcctggctct cttaattagc 840

cctgtcacct ccaacgtgga ctagtgcagc tgggctcgca cggggagcag ggctgccggg 900

cacacgccgg cacgcggcgt ccccgttcct ccacgctcgc cgagcgtgtc gacaccctca 960

cgccagaggt ggtgatcgcg caccactcac accgagatgc gacggggtag tcagtaatca 1020

cggtgcttcg tttttttta acaaaaaaag aatggcagat taagataagc cctagctagc 1080

ctgagctagg ctagatcccc ctggtggctt attgttagct agctccgtgc atgactctac 1140

tattggctac tagaatatat atcgctgtag ctaggaacaa taatactaaa ctgtgttggt 1200

tagtgcacta atagaattgt catgtccaac cccatttaat atccaatttc ttaaagagtc 1260

tctagagagt taaaactaaa aaaatacaag agacatactc ttcgaggagg gcctgtctct 1320

acatggttat tcataaatat tgtctcatgc atttatgaag tgagtaattt taagacacct 1380

cattgtatta tgaggtttct taggtgtgtc ttatgcttag aacatcgata gattagagtc 1440

tatatgttgt atatgctcta atatacggta tcttgaggag cctctagggg gctatttaaa 1500

aaagagatga actcttcgtt aagagctcgt ctttatcttt acatgattat ttttttcata 1560

ttgtatttta actacattta tagtccgagg gatcaacgaa aaggcacata 1610

<210> 5220
<211> 2239
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_293246_G1, chr8:159302144..159304382, Cluster 32

<400> 5220
tagcaccaaa ggtcccgcat ggcggaccgg taaaggctcc tctgcttctt tcctcaagtc 60

tacgtagcga gagagacagc ctgcctcgtg ccttatctaa tggcaaaaat aggggtgaga 120

tattttgtat agcggatgtg ggactaggaa ggcagcagga acactagtct cgttcagcaa 180

tgctgtctag aaaagtgaca atgtatgttt agtagcacat cggtcggagg ctgagggaag 240

gggttgggaa taatgtagcc tcgctcaacg attgtgtcta gaaaaaatgg caatatctgt 300

ttggtggcac atcggtcgga ggctatgtca gttggaaatg gtacttttg aaattttgac 360

aggtcaccac tcaaacagac ttgcttgttg gaaaatcaag catgagacat gaccataatg 420

tcatttgtgc ttttgaattt tgatccaacc tttgcaaatt agtcagcacc agttgatagt 480

attgatgtga ggagcgcgag ttctacttgc ttcttgtgtc tgtagacacc gacccgagta 540

tccgtgaaat acatgaagca tctctgaatc agaaacacct tacttgagtg ttttagttaa 600

ggctaagtgt tttaattccg taataataaa gctctggact tcagttgcgt tattatgcat 660

ggcgaacagc cgaacacaaa ttaaagtctt gttcgtttgt acgggattgt acctagaatc 720

gttaattcca gctgctcaaa atttatatag aaattataaa agcaatcagg ttaggatttg 780

ttctagtcca ccgtttctga agaaccgaac ggggcctaat acaggcttct gtcctaatac 840

accagtatgg attgcttcag aagtggtaca acctcaggtg tcactaccag ttttagctct 900

cgggccttcg tatatagagg atatcattag tgcccgatgt tatcgacgac cactgctagt 960

gttaagttat tagtaacgat tgaagactcg ttagaatata gattgaccga ataaagttgc 1020

atggctaggg atgtaggccg cacatgtctt tgatcattat gtcaacccaa agcttactaa 1080

aataatttag aacggcatgc cacttaatta ttttgagggg aaaatattga acaacacttc 1140

tatatatacc gagtaaacca accaaaaacg caataggatg gttactacag cctaggatgt 1200

ttacagagca atatagtcta ggagacaggt catactttgg tatatatata cacaacttgt 1260

atctacagta catcacctta gaaagtcaag agagaccatc attttggttt gcggcaaatg 1320

catgctgatg ccattttgtg cgtacagata ctgtcatcat tacttgttat taatctgaag 1380

cagatgcaat agtactacta cacagtacag gccacctact tccactagtc aaaacatgaa 1440

ttgactcata ttaaagagca tatcacccct gtttacttct attgaatcta cacagtcaat 1500

gtcaaaacca tatatataca tgccaacaat ttgattgctc tcatctccct ttgttgtggt 1560

acccaattga acagtcggtg tctattgtcc tctatcgcca tagcttctct tgttactact 1620

ctagtgcgaa caacatgcga atgcagctag ccatggatgc taggaaaggg aggcattagg 1680

agctacatcc gttaggtcag caacaaatct agcgttccaa gacattctga catgtctcta 1740

gccacttgta ccgaaatcaa tcgactgcaa ctctcctcta gttatctatc tgatacttac 1800

agttgttgag agtcctatga gccaagaatt gaacaaggtg actagatgtc caattcaatt 1860

ttctttcagt ttcggcagtt atccgttcat ttcctgacga ggttgataaa atataatcaa 1920

gattacacca aataatatag cagaagagac acggaagcaa aggagcgaag ggagcaccga 1980

agtgcaagaa actgcaacat ggagatgatg aaacaaacaa agaatgtcac aagttgatca 2040

aactacctcc aaaaatcatg atattttgtg tagggtttta aaacataacg ataaacactt 2100

ctaccaaaaa acagcttaat cggagaaggt tggaaaacca atctacgttg gtttataaaa 2160

ccggtctagg ttgattttta tattgtagtc catagagaaa aatgtttaaa gtcgatcaaa 2220

cgaatatgaa aagtcttct 2239

<210> 5221
<211> 1736
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_294905_G1, chr8:167299767..167301502, Cluster 32

<400> 5221
tgatacggag ggagtatcat attgttgtct aattcagtct aagttgatgt atctctataa 60

tctctgatga ggactattat gtgaaaaaca agagatctct caactaacaa cttgccgact 120

ttagttaaag attagaatta ttgattttta taggccttca aagaaattta tggaacctaa 180

tatgtaactg aaactacaca tgaatagtac tatgaaaatc aacattatac tatatttatg 240

tccaaataat ttaacacagg cttactagaa ttttacataa taacattaag acatatgaaa 300

gtcacggaag ttctttcttc cgttgcagcg gacggttata aattataata gtgagaagca 360

cgcagatgca aaaggaagac aaagagggtg tagtagataa aaggaaaagg aggaggccag 420

gactggataa ggaaaaatca cttgccaagg gaatggagga agcctgtact gatcagagcc 480

catcgtttca gtttggaagg gctggaaaca aatgtgctcg taggcttgtc gcaggaatat 540

aatgcttatg ggctcgtctg tgatgtagcc cagatcagcc cagcggctca actggtttga 600

agcacggacg agatgcgaga gcacagttag gattttaaag tagcattttc atttttaaat 660

ttaaaaatat tctaaatatc aaaactatac catggaactg aaagattgca gaaataagtg 720

ttttccatcc ccctaatggg ccacagacac ctaattgcat tttttcaaac ttttttcgca 780

gcgggatctc aggacccgcc actcaagaag tgactacggt acctacccgg ctgcccccaa 840

gtgagggctt gtttggttat tttgaatcca tatataagtt atttaatcac gtagttacgt 900

taattgacat tgtgtattgg ttatctttta ctagatagag tatatatgag gttataaggt 960

acgaaatttg tgtaaaagtt taataacttt gaaaactaaa ttggagcata gataatagga 1020

cttctcaatt ctatatatag atgaattgtc acatgtaatg atcgtatgga tgtctataca 1080

tgagttttga attaatatat agatggttgt agcgttgttt taatgttaac tcggagacac 1140

agttcttgaa cgtgcaagct atgactattt ggttaggcat gtggttattg aagcacatac 1200

acaacactaa gcaactttgg agggtgattg gtatcttaca atacttgtgc agatccacaa 1260

gaagcatgca ctgtagttga aggttttcca agtggtagtg aagcaaaacc acaaggagaa 1320

gcggatggag aatattattc acttcactct agattctagt acaaactaag aaaaataatg 1380

ttcacttcac actatatcct agtacaacaa catagtcaca tacaaactta gaatagaatg 1440

caacatcata cctacactcc acttcctagc aataatcctc ttcacctaaa tgataaatcg 1500

aatggttttc tcaatcctcg aaaaagggat ggatatggaa tcgtacccat ccggtaattc 1560

ttggattgta tggtgtctgt aggccaaggt atcgaccttc accatgaagg cggttaccaa 1620

gatgattgcc aataagatta gtagtgtgtg gggacatcct attagattcg atgatgagcg 1680

aagttgtatc tagtatagag gacacattgt accattgtca gtacgccgta attgcg 1736

<210> 5222

<211> 1632
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_295705_G1, chr8:170777807..170779438, Cluster 32

<400> 5222
attgcagcag tgacgccgca cagttgcatt gatagtagaa ggcaggagcg gagcagagca 60

agagcatctc ttgtgggggg aaggggtgtt gctttttctg aactgcggta ggatagcagc 120

tggacagtgg agtcaggttg cacttttgct ttgtactgtg ttgcctgtga gatcttttgt 180

tgacagtgtt ccataatgct attcccagga acgcgcgagc gtgatatagg ggggttagtt 240

tgtggggctc gataataata taagtgctaa aagcaccagg actagagcca gcgcgatttt 300

atttcctgcc cgttcaaatg gacagataaa agaaaatggt gttactgaat attgtggagt 360

ttccctttgg aaaagttgga gcatgctgcg agacaaatgg aggaagaagg caagtgaacc 420

accgagattc acgtggaaga tggatgtaga agctcccgga agctcggatg ggactgagga 480

acaacgttac aaccctgttt ggtagtgctc tttctctacg agtttcatct ctatgctcta 540

cgtactataa gaaaacaact ctctccatat ttttaagaag agctgtaaaa aaagcacact 600

gtttttcttt gaaaatatgg tgtagtgacg ataaagagaa aaacatgaga aaagagtcga 660

tagaagctct tttttctggc tccttctcct gctggatttt tagatgagct cttccctctt 720

tttaggaaaa gcccatcaaa aagtctcaac tttggtaatt tttttcaaaa agtcattgaa 780

ggaacttcag atggagccct atcaaaaagg gcataaagtt ctgcgtctct gcctcggaaa 840

atgtattagt gtctgagagt aatttcttta agtgccgttg cgtttagtag ccctcttctt 900

gtagctccgg gagctatttt acaccttcac caaccaaacg gggtcagaca acttcgctcc 960

gcctgattct gtattttccg ctctctgtag ctgtacgaga ttaagtgaac taaggttagt 1020

tttaatggat tttttttta gaaaaagtcc aaattactcc tctttgaatt tacataaccc 1080

tttaaaatat ttttttagtt tagcttaccc cctccgtcta tttaagtcgg ttaaagttca 1140

atccaccatt taacaaattt tgtattttat ttctttatgt acaagagttt tcagttcatt 1200

tttttattaa tagctaattc cataacttag tcttggaaat atattataat ttttcataag 1260

tattctaata ggttaaggat tagatcacaa aaataatttt aatgttacaa aaactaaatt 1320

taaaatataa aaataacata tctttataat acaactacgc tgttcacctc agaaaatata 1380

aacttagagg aactgcgcaa atgacgttgg gctcgaaggg ccctagccac aacaaaatag 1440

cccaatggaa ggcgggccac caagggagga aggccatttg atcggcccgg cctcgtttca 1500

ccaacaggtg ttaaattgcc cggttttatt tctcgcacaa agacaatggt acacgcacat 1560

ctctctgtct gaccatttat tgggtctcct tgtacctgat caaaaaaatc atgagcttac 1620

gatcgaacca ta 1632

<210> 5223
<211> 1532
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_299895_G1, chr9:12798664..12800195, Cluster 32

<400> 5223
gattaccgtt ggagttcgtc taacttaatt gaccatgcaa ttcaatatga tactgcagtt 60

atccgttatc aggttcaagt cacggtgagc atgattaaat aaaataaacc atacctaact 120

tttattttga gcccgaaaga agcctataca tcacgggagt attgatgtat acgtgaattg 180

tcacaatttt tctcatcggc ttgagctttg ggtccaactg ctatatgggc atgcaaactt 240

cctaaaaatc atttcccaca aagctaattt cgatctctcg tgattgtgat ttaccaatta 300

tttagcatgc cattgtacaa acttttcctc ttagggttag tttagttatt cttctccacg 360

acattatttt agcttgtaga ggatttaatt ccctttaata cctttcagct atcttccatt 420

gacctccaat gtaatcccca ccaaactgaa aaaagccctt atggattaaa ataggaagaa 480

aaaaactaca accccgccca tccataccca tcttcacaac tcagtttgtt tacgacttca 540

ataacttctt gtaacttatg cgtatggtag ccgactgaag gagaactcct atgttgtggc 600

acagttgaag gcatggatct acatacatgt ccatatatat gatagaaacc aagtatttat 660

caaaaggagg tgtagaataa catttaaaga aaggatggtc gtataaaaaa aatagtttgg 720

ttgttcaatc gaggacttct ctcctagtta gatagatatt cgccacactc tattatagag 780

ctggtataaa ggtggattag gataaatagg ctagaaccta cgccataacc aagagatgag 840

gggagaaccg ggatgttatg atgttcggtt gtgctatata taagcttgta atctttttc 900

atatttatgt ccatccatcg acgagaagaa agagatgagt tgtaacggca tatggtgtat 960

tacgtacact gggaccttaa cctcgtgtgt tggttttaag tcatgcttat gttcaacata 1020

ataccggcct gctcccttgt ctctcctaaa actcacattc ctagtgtcgt ttcgcaacca 1080

cgttcggaat agagggacca tgtacaaagt ataccatctc gaatgaagaa aagttctata 1140

taattcaaat tgtcatctgc caacataaac cagcagatcc tagacgtgtt cattattccc 1200

aatggaatgt cgtagcagag caatttcaag ggccgtgacg ctggagctca tgattagcga 1260

tcggatagga caaaaagcat tcgatctgga agcaaaacag atcgcgtcgc gtcaaacacg 1320

ctgttccacg tactactact atagatcttc ccgatcttac gctgatataa ataccgacag 1380

tgcatgcagc agctagccta gctagcatct aaaaaatact gccagctggc cccataggcg 1440

ccacgccacg catgtagatg tagtacgtac agttcccccg acgctctcaa aaacattcaa 1500

aaatcgtctt ggaaagatgt taacatatat ag 1532

<210> 5224
<211> 1810
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300038_G1, chr9:13760837..13762646, Cluster 32

<400> 5224
tttaagaaaa ttgtatcatt ttacgtaaaa ttggatgaag atgatttttt taatacaaaa 60

aatgtctctc gacgagatac acaacttcct tattttgagt ttttatttga ggttattaag 120

atgctaaaaa aacgacactt cctcaatata ttaatcgtgt ataagcgctt atcatgttgg 180

aaaatgatat cttttcttat accctgtaaa atggatatac tttttatatg aaaattttag 240

ttgtcactgt gattttcaac tttattgttt tatttttatt tttcgatcga ggttactaag 300

attttcaaaa aataaaacat aaagttttag caccatatta accgtgtagt tgtgtttatt 360

atcatagaaa aaaaacatat ttttcttata ttatatcaaa taaagacgct tcttatatat 420

aagttgtaga ttaaataaaa gctatatata tctctcgatg atatctacaa cattcatata 480

agaaagtatc atcgtttgac ccgtaccaaa aagatataat tttcataaga taacaaactc 540

ttgtatgtga ttaattaata tgatgttaaa actttatatt gtctttttg agcatatttc 600

aaataaaaaa taaaaaaact atagaattgt acgagagcta aaactttata taaaaaaatc 660

atctccattt gacgccatat acaaagctgc aaaattgtac atcagatcga gaactaaaac 720

atttatttt tataaaaaaa tatctccatc tgacaccata ttagaaagat gtgatttttt 780

ttgaagacca taaacgcttg tacgcgatta atatattact gaaaaaaata atttgaaaag 840

aaataatttt aaaaaaaata atattcacat gaagatatta taggatgtag ggttctgcag 900

ctcaagacag aataaaggag attatagggg tgcagggttc tgcagctcca aaccatttct 960

gcacaagcac ggtgtttgtg ttgaaacctg ttgagactga aaacacgagc tcgtagcttg 1020

atatcgctat ctgcttgtcc aaaccaaaca tacataggat cgtcatgtca cggctgggct 1080

gagctgaggc tgatcgaatc tgcatcgggg gatctcgcgc cagacgacga ctgcactggg 1140

cctctctgca cggcgcgcgc cggcctgacg tggcggcacg gcagcgtccg gcgttccggc 1200

ccctacggcc cccactggcg catgcgtgag ggtgagagag agagaccttg ggaggaagag 1260

ggagatccga gggcggatct ttggccggat ctcccgatcc gcagccctgt ggctacacaa 1320

accactctgt tcaacagcac gccagcacca ggctgcagat agcagtagca aacatgatac 1380

tgtattatag ttctattctt tctagagcgg agtgagtatg tgtgtgtaaa acatgttaag 1440

aatatagatg ctcatacgca tatataatat acatgctcat tcatactggg tttgtttgat 1500

ttttttttctt tgcatttgtc ttagcctgta ttagacctga taatgtagca taacccagac 1560

cagcacaaac aaatacactg tcttgttatt tggttatcct gcacaagcaa aacacgtaca 1620

cttggtacaa ttttatttga ttatttgtat ttcgttgttg cgtgtagtta tctctgtgtt 1680

ctaacacaga tctcataatt ccattagagc caaagcggtg tgacgagcac ttcatttttt 1740

ttagtgcgtt cattggcatg tgcgaatcta cagtgtttca tgaccaaatc tggcgtacta 1800

tagtaatgtt 1810

<210> 5225
<211> 1541
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_300478_G1, chr9:16480265..16481805, Cluster 32

<400> 5225
gatcgacatt atcggtgtcc gagagaaatc agacactcga atactggtag gacgttgtct 60

ggaacttcat caacaaaaga tagacccata gtcaacctaa tttggtgcta ttccaaaaca 120

tcctaggacc ctgtgcctag gtggccaatc ctcgtatcgg tcatgtctca agacactaca 180

aaccatattt ttacataagt acgcctccaa cgctccccag gtcactctag tgcacgacaa 240

acctaacacc acatgcgtct ctgactagat cagtcgtgtg ccgtcaagtg attgagataa 300

ggttttcacc cttagcattt atcgtgaggg gagacaatac catcagaaga catcaatgta 360

gttatgtatg aggctacata catacctaca aatactacac agtgcccatg gctacaatgg 420

ttaccaatta cgtacgtcat actcgatggt ggtgtgaatc gtcaatgtag gcacgcctga 480

tgacgcacgt gtaccgacaa acattgggca atgtgtgtgg ctgtgattac aaagccacca 540

actatattgt actcaatggc accggctctc gtacctaaca ctatagcatg tggtacctat 600

ggtgtaatcc atcatgaaat attgtaaatg tttacatttc ttttgtatat gcttttttt 660

gtcaaagtta cggaaaacga gctacatatt gcaacatagg aggaggccga ttctgacact 720

tgtgaaaggt tattatattg ctcttgcatt gatcgagtat aagacttata attgtatgtt 780

aataatgttt cttaatgaac cattgatcct gagtctatct acatatcttt tgacacgcag 840

aacacacacg cacattcaca ctgacctcta gctagagtgt agaactgtag atggtagacc 900

gacctacaaa caaactgtac gcatatacgc gcacactagg cgttcaatta agaatttccg 960

aggggattat ccacgaaacc acttgcttag tacactagta ctcctgctag tcgatctgcg 1020

ctgcggctca caagcagact ccatatcggt gtagtcgtca gtagtggatt catttcggtg 1080

ccggttgttg caccaaacaa acaacaacga aagccagcag catcagctca gctgagtttc 1140

cctgaaactt cggaggtgtc actcgacagc gacagccgta cgtacgcagc ggtacatgag 1200

ttccaagttc ggagaaactt ccaaaaggat ttttttggc gacaacgaac atagaacatg 1260

atgcttgtca gcaaggttat atatatatgc taccttcttg acaaggtaca tcttggatgc 1320

ctttgtttcc atgcacgact tgctagcttg acctatgcaa gagactaggt ctgaagctag 1380

ctatatatca agctatgcat gtatgcactc cagcatggtc catggagctc atgcgcgttg 1440

gttattacct tttatcttat ctaaaagaaa gaaaagaatc attccattat ctcagttgcg 1500

tagaggctgt ttgatttcat actttcagcc cgtcatcgat t 1541

<210> 5226
<211> 1608
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_301721_G1, chr9:23274613..23276220, Cluster 32

<400> 5226
cataccatgt gcacaaagag agaaatttgg tgtgcaaagt ggagcactta gctgatgcac 60

tagatatcaa taatgtcgtt gtttcttctc tctttgtgct tacgctgtca tcagaggtgg 120

tgcttgttta acatgcattt tcagtgtcct tggctggctg ctgctgcggc tagctagcag 180

gagaaaaatg gacgaagaag caagcaagca aatcgtcgtc cggcctatgt caccaataat 240

cattaggcta tactctggcc ggtggcaggc cagagtgtcg tcaagaacac acctccatcg 300

gtgccggtga acttaaccac cgtcggtagc tagcatgcac tcgctctttt ggttccgcca 360

gcagcaataa tgcaacgaca agtacgttcg tttttcacgt gagatggatg ggtcagttta 420

atttgcaaca tatatatata taataattcc tcgtcacttt tggtagggga acagcgacag 480

gaaacgatcc atgggtcgcc cgctgctcgc tttcgaatct aaggtgctag gttttgttat 540

atgcaacaag agcagtcgtc cagctcaagc agcacattat ttcctagtct cgagacaggt 600

taactacgag ctagtagact atattctctc tgtgatttgg tcttacaata tacgtacctc 660

gtggtacgtg ttttattaag acaaaaaatt aatataagca gttgcgacac aacaaactct 720

gataagttaa agacactttg aaccaaaatt ttccttttt tttaccaacg gttgtgcaca 780

atctcaaacc aactagaaca ataagaaaaa gcaagagggt cgagataagt attgatatgg 840

caccaaccga tactaaagga ctttttattc tatatattta taaattgata ttgatggttt 900

tatttcaata tattttgatc aaaaaacaac aaatataagt agagatatat agatcatgtc 960

ctgggccagg tggcccgaag catgtatccg gtacatattt gatccggtct aaaaataata 1020

attaagacga aagacaaaaa aaaagtaaat ccagtagggc acgataacat tttagatctg 1080

ttcctgatcc taagtaataa tgtcaagatg aaggagtagg tagtaagagt tgtaattatt 1140

gttggtcacc atattattgt tagctagggc tgcagcaagc aagtgcccac acacagcagc 1200

aacatctaat ccgaagtgct gcattgcgcg cgcctttctt cacagaaatc atcatcctag 1260

ccttttaagc tagagtacaa ggaccacatg tttattttgg accataagtc aggaagagcc 1320

gccgtacaca gttgcggcgt gcgactccaa gttcaaccat gagcttcaca cgatcatcat 1380

agagcaaatt aaaggcttaa agccagccgt ttccaacaaa tgttgatgga tgtctctctt 1440

gtataaatac cgccgttttg ccttgttttc attgaaagtt cttgcgcagc ctcaagttaa 1500

ctgttttttt ttttgcgtag gtcaggtatt ttcatggtct gtatttgact cgtggattgt 1560

tacatgtcaa aaactatggc tcgtacctac ccgtcgtatt gattggat 1608

<210> 5227
<211> 1619
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_303342_G1, chr9:33708848..33710466, Cluster 32

<400> 5227
tagtggctcg catgtcatgc tctagtggca ggtaggaaaa tccatgacat tgagtatggt 60

gtatcttata aacgatgtag ttgcacatgc ttttataatg cttgtgagta cacttgtatc 120

gcttggcatg ctacacaatt attatacccg cacactcctc atagtggccg catgtccact 180

tgagggcttt tgtgtggata tggtgattct tttaaccata actcgtttat cataatagat 240

acgatggacg agaggtttat cttacttgtc tggtgtcata tatcatcttg atcagggaag 300

ctcatggaat gagggccatg tcacccaaac gacgtcttga gacatatcag agacctttgt 360

ggtgccttgg aactatggtg ttttgaggtt ttgacctagg atggagaccc tagaatctgg 420

acaatttgaa acttggccct tacggtggag gatctcggga gttctaggct tgcttttagc 480

cgggtccacc atggatttgt tttctcctat tgaaactttg aaggatactt tgcaagcatt 540

caaatatatg aatttccttg aatgttggta gaggttcaaa tcattgtata gtggccagca 600

aaaatgtttg gcacagttat gcagtccttt tccttttgct tcaacatatc gttctattta 660

atatagattt tgattcagat agttcaatag gttaaaaatc gtaaaatgaa gcttcaacaa 720

atttaatgtc tggttcaatc ataataacta tggtcgaagc ataacgacac cactgctccc 780

acatgctgcc tagggcctat accttatgcc cctacttttg tgtgctagtg acactatgtg 840

aaggaacaac ttcggccaag atgcaatagg tggagcaacg agaacacaag tgcctactta 900

ggatactttt tattttgtcc caaaactact tgggcagtag ggtttcttga gctatgacta 960

ggtcatgaac ctagactaga ggcctttggc ctatgttgat ccatgtatgc cagatagaca 1020

tgtctcatat taattgtcct ctcaactgct cttttatttt gtcatacatc ctatgtgttt 1080

agttctacaa aaatgataag attctgaggc gaagactaac aagaactgac aatggcaagc 1140

ggatatggtg aggggttatg gttaagggtt tagggtttta gggtgacatg tgcaagtgta 1200

catgtgttac tagcattaga aatagcagat tgtggagagg tggctctaga caattcaagg 1260

agtcaggctg cagacaaggg gtcatctatt ggatgagagg ggattaagag ttagtgtttt 1320

gttattataa ttattgtgct tttgaaatta tttttaaaag gctaactcca attttaagtg 1380

gtggtgttca tgttggaaag cattcgaagt tagcatattt gaaaaacttt tgtgggaaga 1440

tctatggaga aggtttttac tctcacaaga tttatctggt gtcctggggt caccgaaaaa 1500

agtagttgac acccttcgat tggttcgagc gtcgctcatc tcactaacat gtggcccatc 1560

aaatttattc attgcaacca atgattgaac accagagaaa tagagaatag accacccct 1619

<210> 5228

<211> 2412
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30422_G1, chr1:187264718..187267129, Cluster 32

<400> 5228
atgttattac tttttatata aaattagtta aacttaaaag taagatttaa tgactatata 60

cccgttcatt tgtttaggga tagaaggagt acgaccaact agtccataaa agacagtatt 120

gcataggatc tttatactcc cgattctgtc taacgaccaa aaaatgcgaa aaaagcaatc 180

caagacttgc catcaggtaa agaatatcaa gtttacactt tgaatgaaaa aacacattat 240

tgagaaattt taccgtgcaa aaaaaatttc tcaaccagtt cgaatcatat caaaattgtt 300

ccaagctcat ttttgcaagg caaaactttc tacaaacatg gtttcttcat ccaggctaca 360

aatttggcgt ttcgtatatg tttttttgtc tcagcaagag gaacaaaagc aatagtggga 420

tccattgtgc attttcacat agttccaaaa ctagtctatg ccaattcctt atagcaagta 480

taggattgct ttctttttta tatagtttta gttgtataaa cccacacaaa gccttgcttt 540

gccaattgtg attgcaattt ttagggttta gatatttctc tgttatgtct ctcaaatttt 600

cacacccact ggttataaag gaaatagaaa cttggggaaa ctatggatct attttatact 660

cgcgtcaatc ctattaagaa agtggggcct ctaagcttga tttcgataga ggttttgttc 720

ttgtatagcc ttcactttag acttttctat gtgaatctca tccttgggtt tgctagctat 780

tctaccaata agactctata gtctccttca cttgctctgt caattgtgca tttatgcctt 840

gtatggtccc atgagcatcc aagatggggt tgaattgggt gtatggttaa aaaaattcaa 900

acctaggact caatttaaaa caccattata aacataaact agtctagtaa gaggtgcact 960

taagattttt actattgtgg tctaacttgt gctttagctg acaaagagtt ttgcaactta 1020

gagacaatat tatcaactat tctaaagcta acataggaag gtaaatgtca cataagcaat 1080

gtatgggagc aatcaataaa tatgctaagt aaagagctaa aaataaagag gcaaaactca 1140

tgttgatgcg atgatttatc ataacccttg accatgttgt agctctatgg agatatgtct 1200

tggttagcaa gactcctcta gtcatagtgc tgtctttcca cataatgctt ccaccaacca 1260

aatgttagta tgcgagtaac atagcctcac cactaccacc aactcttcta aacaccttga 1320

cgtcatgtac actattgagt ttctccacag aaggtaggga tctcttttcc cctacatatt 1380

aatacaatgt ttctccacaa caagaataga tggttgttgc cttgaagaag ccacactttc 1440

actatagggt cacaaagatc tcaagcactc tagtttacca aaataaatga acacgatatt 1500

ccaacactca aaactataga tctctaaaac ctaactgtca tatgaacaca ctttagtatc 1560

catcatagcc tttgatgtga tcttgaatct cttcataaga taagtttagt gtataaaaac 1620

ttaccaaaac ctgtaacaac ctttgagtac tttaaacact caagcaagtt aagaaatgta 1680

tagtcttcac ccttaaaacc attggaaaaa ggtttgatcg attttatgca tactaacata 1740

ttatttgttg ggtggtcctc gatactgtat ctaattgttg gtcttgacca ttgccaccac 1800

ttttaccttc attgaatgat ccatgcatca agttgctcct atggtgcact atatcaattg 1860

gtgatattga tggtctaggt tttcaactat gctagatctc tgatatgcat aaaatgatcc 1920

atcaagcatc aagtgattat tttatttggc atatcatccg gcgggcagta ctttcctaac 1980

caacttacta gactccacca ctttggcata tcatccagcg agcagtactt tcctagccaa 2040

cttactagac tccactgtac gaactagcgg gcctaataaa gttatctggt gcatgctcta 2100

gtgaggaatc ttcattgctt cttcagtatt tcaacttgga ccttgataaa aaagtaacat 2160

tgcattctta ggacctattg cgacatttca aacacatgtt tagttctagg cttgtgttgc 2220

catctcaact accaaaagca aaaagatatg atcatgggca cattagcctt acatgctcat 2280

atatccacta cttccccccc caacaagtag tcgttgaacc gccaaaatcc aggaggaaga 2340

atcaaagaat aaaaatatta gaaggtgctt aggacatttt aggaggccat caagtagtgt 2400

acttgtttca aa 2412

<210> 5229
<211> 2462
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_30845_G1, chr1:189791722..189794183, Cluster 32

<400> 5229
ggtgaatagt gtgaggggac acaacatatg tcactatgat ggtggggcca ccggccaggt 60

cacccaatat agttagcatc ccattccata ggcttgacaa cctattgtag atgtcactaa 120

tgtatatttg gtgtggggca catgccatga tgtccctagc tatatgggac acccatgttg 180

tatccttggc tttctccttg tatgggtgag agaccgatgc caaaaggttg ttttatctga 240

tgagtctgcc ttgccatagt cgaagcagtc ttcttatggc tatgctaatt caagttatga 300

tcgctcaatc agacttgtcg agcaactagg ggctagtttg cctatcttgt cgtttttcac 360

atgtaactaa ggtgcttcat ttggtatctg gtggtggcac acacgcgcac ccactaggta 420

taacccatga ttgaggccct ggctaactag tagagttagt cagaggctaa cccaaattag 480

taattatggt gtttagtggt gggtttaggt aacccaagtt ttagatacta gtcagttagt 540

tagtactctc attatcgagc acaagggcgc ccacgatagc gattttcttg tttgtttgaa 600

aaagaatagg cgtttacaaa caatgcttgt aacaatattc ttatcaaagt ttctcccgca 660

ctacctcaat tgtatgagca aagatgagaa ttcccccatg atgagcatat gagcattaag 720

tttaccttat gacatataac attatattaa catctagttg gtactacatt ttgtagtaat 780

ttatgtggcc atgaaatatt ttcatatcag agtatacgat atatgcacat agtgaaattt 840

acacgtaaag aagatagata tgtgtgacaa attatccata tcttgtctat tctttggact 900

actatcactt atatttttaa gtcttttgac atttttgtcc tttgactaca tcactatatg 960

aaacttacat ggaaaaggaa ttactccact aattcaacca ttacatatta gaactccttt 1020

gacactatat cacaataata gcagcacata catcatgtta aatacgaaaa atttaggaaa 1080

ttcttcatca tcgtgctcga gaatcttgag ctcctaaact tctatacatt ctagagtata 1140

catatcataa tcatgactct agtcttcata tcttattctt ggaggactct atcttgctta 1200

caagagtgaa cttgattcaa ttatgtagaa cccctacaac aaattatgag aagataaaat 1260

taatcgttct attattgtaa aaagggcact acccccgagg tccttatatt gaaataacta 1320

gttttaaatc tccagtggtg tgttaaccaa agcaaagttt gcacctagga ggtgcaaaat 1380

gtttccatat tgagttacaa agtcatcacc tttgtgggta gtgaaagcta gcatttaagg 1440

attccttgtt ttaaggattt tcctaataca tctgactaaa agtcgtgagt ttggagttaa 1500

agagtggatc gagttcacta tagaggcatg agaatgaagt tccatcaatt ctcgatatga 1560

aatgtttcca tattgcaatt gcaaagtcac catcttgtga gcattaaaag ctagtaggta 1620

aggattcttc attttaatta cgaatttacc caatacatct aattacataa aatctctcaa 1680

attaggagtt gtagagtaga tcaatttcac tgcagatact agagactgaa gttccattag 1740

ttctcaaacg acatccaaca tgtgttatat agtagcccta gtagaaagtc ataagagctt 1800

gttattttcc actagagatt gcgaaagcac aagctaaacg atctggattg taaaagacta 1860

gattgtttta gcattctgga ttgtaggatt gtttgatcgt gtcattggtt atgcattttc 1920

tatagtaaca caagtgttat gagtgtataa taatgtcttt ttatccattt tgtaacatta 1980

tttggagtat gttgaattgg aaaacaaaaa taaaatttta aattatctca tgatcataaa 2040

gttacttaca aatgatacat gattcgatga acaaagtgaa tctagtctaa tataaaaaat 2100

acattcaagc atcaaccgat ataattcatc caagaagctg aaggcctgac cctctaatac 2160

tagggttgca gtaattgaaa gaaggctagg taaacaaatg aataccactg gtggtctgca 2220

atgatacaac taacattgca accaaactta aacatgctcc tataaaggtt gtgtgcttac 2280

atgaaaagca tccatctatt caaacatgca ctagaactta ggtgtggata aacaaggatg 2340

aatggttgta attcaataaa aaaaatacac aaaaccttga atatgttacc atggggatag 2400

tgaaattgag gtggattcat aatgtctcat ttaagtagta ggtgtctagc aaaacaaact 2460

tc 2462

<210> 5230
<211> 1748
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_313661_G1, chr9:99367835..99369582, Cluster 32

<400> 5230
caactagatc atattacatt ataaaggtat ggtagttcaa aaacattgcc ctagacttag 60

ttcataactc atagtttata gtcatccatc ttaaccaaca aagttagagt agcagaagtc 120

tttcattaac ataatttttg aaataacaat gtgcaggttg tgccacatcc tacacatcta 180

tgaaacaagg ttctctatac cactcttggt tctcattaaa cctgggtgca tataagaaac 240

cataggttgg gtggtattac ctacaaaaat tcaataatta tagggtgagt actcaattat 300

actatgcagg atttaccaaa tataataatc aagggtaatg catttggatt ttcatcaaat 360

cattttatac aagaatgtaa ataagaatct tatactaagc attgataacc atagaatggt 420

tcaagtaatt gtatgcaact ttgcaatttg gatctcaatc ttccacgagt ccttatttca 480

ttccaactct agtctctatc taaaagtaca aaatttgtaa cattaaaaag atagactttg 540

aagaggggta cacattaaca ccaccaaata caaaaggata tcacccatat gacctatcgg 600

tacataaggg atacctcgat gtctctacca ttccctaatc caatcataaa tgataataaa 660

tagtttgaaa ggtgtcaagt taatgacatc tcatcttctc acttcacccc gatgccaaat 720

ccattggaaa acatgttgta atcaagtact tgacttgtca cacccatata tgacaagttg 780

tttgtatgat tatgttcatg acttgctacc acagatacat ggtccttaat cacttaatga 840

gctacaccat tcaagacatc tcatgtctag ccatgtttta accctcacta actattcact 900

ttcattgtcg tattgttggt caagttttag atcataactt gttaaggttg ctagtgaaca 960

aacatgacct agaacatgtg agtgttgaga aacccacgat aatcttaact tctaacatct 1020

aagaaaacaa agcatgaatt attaaaggaa caaaagtaaa caactagcac ttgagtggtg 1080

taggaataaa tcaagggatg ataacccaat taggagacga gagatcatat gctttctaat 1140

catgttgtaa cacaatagtg caataattaa ccataatcat attattcaat ttgcaaagaa 1200

aggcatgcat agggcatgcc atgggtaagt ttaggtttcc tctaagggta gaggtttact 1260

cggcaatgac ctcctcgatt gttgcatcac ctaataatgc atgattggga tgaatacaat 1320

acataaaagt agatgacatg aaatgatatg caacaatgta taacatatgg gatgcactta 1380

tataacacat atgtcaatag tgtacagaca tttggttaca tcgatgtcct aacaaatgat 1440

actatagagc atcaaacaat ccatgagata gtttattaga ttaactttaa aattaggagt 1500

tgaaccacgc aaatactaca tgtgttttgt gaatgctttg ctcaaataga ttacccttgg 1560

gttttgggaa aataggactt gagtattatt ttggtcactc caaaaatcta gtgaacaatc 1620

cttagaacaa gtctatatgt tctaagtgtt tgaagtgtgt agatgttctc ttagatggtt 1680

catggtgtgg gcatacgatc tgcaaaaata gcaatatatg taatataagt gcaagctctc 1740

taagtgac 1748

<210> 5231
<211> 1716
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_3147_G1, chr1:16042644..16044359, Cluster 32

<400> 5231
aattaatatg cgtacataca aatgaagtat tacgccagta caaacaactg acaagatagt 60

ttttttttct cagttccttc ttcgatccta ttttttcgtc tcggtacctt cttctctgtg 120

tttgttcttt ttttacccta ctttttttcga ggcagttact tctttgtctt tggtctaggg 180

tgaagatgcc ctttcgccaa ctagtactga tgcttgtatc agtaccagtt ttaaaacaag 240

cgaaacaaat attgacggat atggaagacc cgttctccag tagtgctagt gctagctttg 300

aaacattatg ctcatctcag actgccagtc ttgcgcttgt gcattgcaaa aaaagaaaaa 360

gaaaaaaagc ggtactaaca cgcacggtgc gttgcacaat tccagattat gaaatagact 420

atggcaatat tattattagg ttggaggtag attttacctc aaaatctacc tctaacttac 480

taataatatg agattatttt tcaaccaata ataaagccag catctgctat aatccaatgt 540

ttccaaacta agaaaaccat tgtgttcctc aatccaatat atactgaaat cgtaagtcat 600

actcaaggtt acgataatct aatgtggtcc atacagggcc taacatatgc atatcatatt 660

atcatgtgag cttaatattc ctgcccttat ttttccgtgt gtaggggtcc cccgtcttgc 720

tttcctctga agatctttgt ccttctatat ctatagtatg gaaatagaag acctgcatat 780

gctaagctag gatggcaatg atactagcta cccccatttc tagggacact aggaagagag 840

cctatactag acgggggggaa aagcatggca tatgcaatat agaagtgtgc atttgaggag 900

attagagaat gtgtgcaggg tacagaacag tgcagccact ctgagctgga agtgctggct 960

tatctttatt ccatgatgct tatgcttatc ggcctcgctc taatagcgtc gcatcgcatg 1020

tgtgtgcgtg cgtgtggtcc ataaagcata gtcgttgtag tacaatgcag cccaccaatt 1080

ggttcagtta agtcctaatc aactttgaag tagctgtctg tgtctccacg catgtccaaa 1140

ccggccggcc ggccccggtc agttgctaac cctgaccccg agttggttgc attgcatcat 1200

cgatcggcag ctagctttgc ctttgcgtgc tcgatcaggt ttggcctagg tacactgcgg 1260

tccttgtaat tgcagtcatt tcatataagc gtcctgaact catcttgcac aaaaggttca 1320

tcgagtgtgc gcccacagcg gtgttgtcgt ttagcttgca gcaggtgtta gggtattaat 1380

tatctagtgg tggatacatc cttagacaag aagtgagatc ttttttctca taattttatt 1440

ttacttttat cggatgatgg atggccggga caccacgttt ggagtggccc aacgacagag 1500

ctatctggag gtttgattat tacgctgaag ctggatcgca tgaaccttac cgacaattac 1560

tccaaacgcg ttatcgtttt acaccggtgc aatcccgttg ttcaggcttc catttcaaag 1620

gtgtttccag ccttccagga gacgttatta ttttacaaac cattggagat gtctagctcg 1680

tctggctgcg gactacaaat gcatcacact aactag 1716

<210> 5232
<211> 1947
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322067_G1, chr9:143898058..143900004, Cluster 32

<400> 5232
agctggcagc aaggagggaa caaagtgttg ttagttcagg aacagtctgc tgtccagtta 60

cacatcattc aaaaggaaca gaattaccat taccatgcaa tcacgcactt gcacaaacta 120

tatttggatc atataatact gaggagattg tccagtggaa tgattttgca ttagctgttg 180

ctatgtggga aaaatattca gaagagttaa agaaacagtt gttgacattt ttgccatatt 240

ggttgtccaa tgaaaccatt tatgttgttg atacctctga gctgcaggta tgtaagaagc 300

tgaacaagga tctgatgaat tggaattaaa taatctatat cacatttcaa gctgctttac 360

cttgaccttt ccttttttagc catgaatgtt tttgatttag attgtcgctg ttggattaaa 420

tgcagctctc aaagagttct gttccatttg aataatctct cttaaaaatg gggtactcca 480

tctgaccccc aataaaagtc cataagtcca tagagctttc ttccaaatgc accaaatata 540

agtcaatgac atgcgacctt ttgatttatt ctttcatcct caaatgcatc ataaatgcaa 600

taaacctgac tatagcaata tttgatgggc aatagtgtca ttgtacgttt taccttcatt 660

tgtgtgctca agtccacatg gacttgtatt tggggtccgt aggagtataa gacaccatgg 720

taaccagttt gtgctaattg catttagata atttcatttg gcatgatcaa gaatctttta 780

cagcacccag tgtatcaaaa ggcactaggc gctatttagg tggttgggct ctgcgcctct 840

gcctagagac tagactttgc taggcgttta tacttttgc gcacagttag aataatgcta 900

tgatacatag aggaaaagtt gcatatcaga ataaaaatat gattttgtta tgcatccctg 960

agtaataatc gtaattcatc cttttccctc tctaattttg ccccatttct atgcatgcat 1020

caagccaaaa tacctccaca cggaaaaagc ctagagcaaa acacctaggt tctaggcgag 1080

gtggtacaac acctatcgcc aggggtcgct ttattgtgca tgcagtttga agcttcatca 1140

tggaattgtc ctgttgtgtg taattttcat gcttgaggca cccaaattta ctaggaagaa 1200

ccaccctgtg gcctgaagca ttggcaggcc agtggttggg cgaggagatc ctctgccgta 1260

acatgggcag acgtagctgc gcacatctgg ctgacacgtg ggcccggcca cggcctggcc 1320

ccgcctggca gctgccgggc gttacggcag aggagctgct tgccattggt tggttattcc 1380

tggaaataat atcagctgac aaagttacca cgctgtcttt tgctcccata ccaacaccag 1440

ggccacatgg ttcataattt gttgaatttg tagaaagtat tcttaaggtc taatcctata 1500

ttgcataaat agttcccggt ggttggacct gcttgcacat cagcgcatac acattacaac 1560

tcctgtagtc gctccatgtt tctttggcag ttaaaccata cacatacacc acattacatc 1620

cttgcatttt ttaactttct aatgccactt accacaatgt ctcattcaaa tttgatacag 1680

agagccgaac caatctaact ctccaatggt gatttggact gcctcattct tatgcgacat 1740

agctgtggcg tagatatgtt tctctcaagc tccactggga atactggtac aatatatttc 1800

catcagcatc gtagaaggtg aattcagctt ggtcctggta tagctggatg gacatgaccc 1860

ttgcccatca taaaagaact tgagcttgtt ttcatttggc tggaagaatc ctctccatgc 1920

tcttgaacgg tctctgcttg tgaagta 1947

<210> 5233
<211> 2504
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_322622_G1, chr9:146689836..146692339, Cluster 32

<400> 5233
ctcttaagaa ttgctcacct tgggaaatga gggggatccc aatgggataa ggtttataaa 60

ctaaccctaa ccggtgataa gcagggactc ggtcctttcc cttccatagt cttaggatag 120

ctttgttgac ccttgttcat ctatatttta gtttcttgtg tcatcgttga ggtggtggca 180

tgatttttta gcttctcact acctcgatgg cgttcgatct agcatcaaca aaggacccat 240

gcaatgtgag agttttgtca tatctgttgt ttcacttccg agtttagcat ttcacgtgct 300

tatcagatga agtttggtta gtacaaaaat gatgttaaag cactataatt gatgtatcca 360

ttgcatgatt gttacaatgg atatgatgat ttaccatgat caaggtttgg taatctgatt 420

aacactaggg tgttacaata tctcatacca aacacatatt agtccatatg tcactcaatt 480

gacaaaaaac aaattatggc ctttcatatg gccttgacca tcaccaccac tatactctac 540

tcttccttga gtgctgccat catccctgca ttgtctaccc ccattcaaag ccctatatca 600

tcttgattcc tactcgagga gctttgctga catccacaca gtgagaggac ctaacacctc 660

tccattgcgt caaatgacct aaccagcttt taatatagtg gactacacat gtactttgtt 720

cctcttgata attatgtaac ttatggatta aagggcattg tcatctaagt gagggtgagt 780

taggcttcat tcttaaaaac tacctggcct ctattttcta ctcaacaaaa tatatgcaag 840

atttctatct aaaagtggtt ttgctaggag ctactatttc tacaattaaa aatgcatctt 900

ggttacaatc ctaccactga ccaagcaaac cagagtagaa atgtgctaag gtgtgtggag 960

caagagaggc ttaatgcatt tgttgattta tttaaattgt gtgctcgact acaaaaatgg 1020

tacgtttaga tgtaaatatt taagggattg aaattgcatc agatacatat acaaaacatg 1080

ctttgattga aaatgtctaa caataccaaa tctattgttt ggatttatct agaactggca 1140

catcttctcc caactactcc tatcaatgac atcaaccaca tctctagagc tagggaagga 1200

acttgctgaa gccaaagaag gagctgcctg agctggggaa gaaggagctt catgaacttg 1260

gaaaggacta atcgaagcta aaaagagtcc acaatagcca gacctataaa tatgggggaa 1320

gaaaaaagct tactatagct ggggaaggag gtgaccaacc acacatgaat tgagaggttt 1380

gtgctttctc atgaatgatg aattggggct atcatgaagg gaagtgtcaa aggttaagat 1440

gacaacataa gaagagatga attcattggg ccaatgatag agattcgttg ggagccaaaa 1500

agcatcgatc aagtgtggca ttagggtagg ccacatatga gagaggtgtc aagatcagaa 1560

gaatccaatt tcacccaaca tagaggggtg aggcgttata tttgatagcc cacttctagt 1620

tatagtacat ttacaaggcg ttggagttgt agttccaaat ctcaatacca tggacatcca 1680

aatagttttt aggaatccta atttcaattt ctaattctag gctccaatat ataaatccaa 1740

acaaggtata tgaaatattt gttacataaa gtatgtcatg aatcataata aactagagta 1800

ctaggtgttc tccacttgtt ttgtagtaac aaaactatca tgtgtagtta cgtttgttct 1860

gatgttggtt agtaatgact acatctctac ctattaggta tggttttcct aattgtgata 1920

tgtgatgtat taataatacc aaatataaaa tactagaaat tagcctctat ttaaatgtga 1980

taataaaata cataaaatgt tggttagtaa tgccagttga atccactaaa ttgagagtga 2040

gtatgacaat atcactcgat agagacctag gaagtgaacc tcatgatatt agtgagaggt 2100

atagtgtcct atagtgatag gcatgctcta tcactgctaa ttgacctctg ccacttccat 2160

atttaattat ggcagtgatg ttgggtttgg atccaatagt taccttagat atggaatatg 2220

gtcatcctcg actgtgctgc tctcatgctt tctccacctc aacattacca caaatgaatg 2280

ttgcttgcat gagctccctg ttaggttttt ctcttgccac gacatccacg acacatcaaa 2340

cgttagacta tggaggatat catctcgtcg acttacaact tttggcttct tcttcagtca 2400

cattttgcaa tatccaagga agctactaat cattgtgatg gtcctcggtc taatgattgg 2460

tatagctcca agtgcatgaa aggctagagt tctcctattc atgt 2504

<210> 5234
<211> 2195
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_323382_G1, chr9:150489168..150491362, Cluster 32

<400> 5234
tgtattgtta tcgatgatac acgaggatgt atgactactt tcactatgtc accgtgctcg 60

ttttccgtta tgttgtgcgt ctagtaaaaa cgacatatga ttctctactc atatgttatc 120

ttgattaaac atgatagatg tgctagtgca tatatagtgt actcgttttt cctacatttt 180

tattagattt gttcttatct gctggcctcc aaggaaagct tcactacttt gctactggtt 240

ctttaaccac aagaggagta cgattcacga agtcaacttt actgaaaaat aaataaactt 300

tgtgaaccat ctgtcttata tattaaaaaa aaactgttcg aaggcaagcc tgctactgac 360

tggaaactac tcttgatgtt gaactaatag ttgttgattg gttgaaggag atgctgacct 420

tcaatgattt tgttgggctt aatggagtga gtaccaatca tgcatggcta ttgtctgtga 480

ctgtgatgtt caccttcacg tgcgccaaat tgagcacaat caggatccgt gatttcttcc 540

gcaatttttt tcgtcgcgcg tccgacatga agaatccatt cctgtgattt tagccaggat 600

tcagggctct ggtccgtcca acgaattttc agacagcgat cgctgtcaca tatacacata 660

cacaggcaat tcataaactg ccggatcata cgcactaatt ttgtcggcgt acgtgttttt 720

aaacttcacg cgatttcatg gtttgcttca taaacatcta tgtcttgctg cgggcacgca 780

cgcattagtt ctcttcataa cttcatacta cgacacagca ttcagttcga aatttgacgc 840

tgaaataaaa ttcggcgtct ctgttgctgg cggtcagact tgatgacagc gctgacgaag 900

ccgaatcttc catgcgcgac gtaaacatcg atcgccttct tcatggagca ctagaccagt 960

gcaccaatgg cgtggaggtc atgctgtggc caccaattac catccttttc ccccggtttt 1020

aaaacacaat tcggtactag tttttgtctt gaccagggaa tttttcttat aggctagttc 1080

cgtcaggaac ctggaccact ggattagaac taattaatat atgtgtagct ttctatgata 1140

ccatgcaaag atctttcctg cgcatagtgt tcccggcata ttcgcccctc atggtgacct 1200

gccttcattt ttttttaaa aaaacaaagg aacatattat gatgactcgg tggctcattt 1260

gtcaggtttt gggattacta gcagcctatt cggctccgca ctgctgctcc atagagacga 1320

aatattatag aagttgcagc cgcagttgga ttaaagccac aacaagccgc atcgaacatc 1380

atagtgtgag ctaatgcgct ggccgcactg gacactttca ccacttagct gttgtttagc 1440

atctttctta tgatgatctt agctgtttgc ttagtatttg agtgctactt tggtcatggg 1500

cttactcagt actagtattg tgatattcta ttttcgcaaa aggcgtcgtt atatactagc 1560

aagcaatcaa gccaataatc tgaattttgt tgggagcctg gaatgttcca gaatatgccg 1620

tggctggtta attatgaaaa ggaagccaat ggtcattgtg cacaagcgtg cttttcctgg 1680

cgaggagaga aagcaaccgt tagctctggt agttagcttt actagggcat ttactgattg 1740

tttggcttgc ttttgctgag gaacacaaac tgtgttctgg caataaacca ttaatctgaa 1800

tgtacagcga atgttccaaa tgtgctgtgt ttcataaatt gcacagacca caaatgaaaa 1860

tgtcgtgatc attgttcaca agtgttgttt tcctgaatca ttgatgtgca tatataagat 1920

cgagctgcac tgaaatgtca tgttttggca acttgccaag ttgcttgata atttttgtt 1980

aatccggtca gtcactgatt agacaacccc ctcactcctt ggggaacaat gtctgggaat 2040

ttgttatggg catcatctgc agcataatag ccttgatcag gacatgttgt atggtagtat 2100

taccatggat ggtgcagggc atgtctttct ttagatcttt acaactttga cagtttttt 2160

gtgtttttaa gagaagctgc tgcccgttta tgtat 2195

<210> 5235
<211> 1931
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32383_G1, chr1:198745221..198747151, Cluster 32

<400> 5235
ccttgtagcc tctgtgtcct tttcttgttc ttgtattgaa aagtttactg atggtactta 60

ggtattgttg catttccatt ttacctagaa gatcatgtga tttttgccaa acctgggcac 120

tcttgttaga agggatacaa ctatattgta ctacttgcaa attctagttt atgtttgaca 180

gttctatgcg ttggcgaaac tgctttgtga tgcagtgaat cattcctgca acctacatcc 240

tgcacaacct ttccgttcct gcatttgttt tcggaaaaat gtgaatagag atatttattt 300

ttggacaaca aagttcgatt gcagctgatc ttcactttgg catgctgtga acccagtact 360

tcgacttgct aattgaactg ttgtgaatta gtttaagttg tccaattctg aatttcgttg 420

catgatctat gttggagaga agttttctgc ccgaaggtcc tggataacca aaacaatttc 480

ttattgttat atcaggagaa agggattgac atggtttgaa ggaccacgac cactaaaaat 540

agaaattgta tatgaacttg atcaccataa atagaaggcc cccggataat caaaacaatt 600

tctaattgta tatgaacttg accactataa atagaaagac agtgcgaccg ccagaatagt 660

tagtcattct cgtgaaatct gtaatcgaca ttgccgagga ttgttcggta gtgaatttat 720

ggggtttcac gagaccgaga actaaaagta aaggcgcagg agactcgaag atttacacaa 780

gttcgagctc tcagtgtgag ataacatcct acgtcatgtt tgtggtggta tctattggct 840

atgcaatgtg attagatgat ccgttgtctt agggcgttta ggtcctcctt ttgtagttca 900

agtaggggcg tcatttacaa aatatggatc tagcccggtt acaagatatg aataataacc 960

aaacctagct gattccaccc tttttattgg gtacctaatc tctatctgtg tatgttttca 1020

ctcttatcaa caaccgggtg ttgtcatatg tacatggata tcaatattat tatctcctaa 1080

tctcgtagga tctctagaat atttatcttt ctagagcttc cttgcggatg agatcttact 1140

ctgattgtgt gtgccgagtt actagacact cgattgagcc cataaaccca cctgttatgg 1200

cctttcacgt tggatatctc taatatatat ctttaacagt agcccccgag gcttatttgg 1260

tcgagttata gggtcaggaa gagaatactc ggctcttgaa tcttcttgta taggtgagcc 1320

ttgctgtgcc taagttgtta tctcctttgt cctactaatc tctggccctg ttattcataa 1380

ggatgacaac gcgggatagg ttcgggacgg gcagtgggtt ttttggattc ggcgaggatg 1440

ggaacgggtc tacattttct ctcggagacg agactagacg aaatcatgag acaaagggag 1500

gcgagccctt atagtacaag gtaaacacca tatgatcaat gttcatgggt tcaaaaaaga 1560

aggcatcact gtttatgggt tcttcgaaaa aaaacaccac gcgcgctgca tgtagaccaa 1620

actcagcttt tggattattg gatgagatgg acgtaacaac ttgcattgct ctatttgatc 1680

gcatatgcga acatcgagat ccagttgctt attatgctgc ttcccatgtt agctacacgc 1740

tgcatacgta cgcaagcgca gtatatccac caatagattg ggagtatcga cgcagtccac 1800

aggcgagatc tctcctagct ctttctttag ttaggataaa tacaaaccca tcatccaatc 1860

ggcaaccgcg gcacgtacga ctaaacgttg tttaagggca tatataatga gtatcttaag 1920

ttgtatctta t 1931

<210> 5236
<211> 1718
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_32979_G1, chr1:202154339..202156056, Cluster 32

<400> 5236
ccatataata atcgaataag gtcttagagg cttagatgga agagtgaaat ggattgatcg 60

agctccagct gaagctagag caatatgtct ttgtacttac ggctagccct tggttggctt 120

gaggctgagg agaccgttgg gtaatacgat tgtagaaatt ctttaaatgt agctaaaatt 180

gcataaaaaa cttatcaacg cttgtatctc ctaatatatt tcactgttga tccaaaatat 240

ttattgtaca tcataaatat tactgtttta tatatttaat tgaatttaaa aacaacttct 300

tagaaaacga gatattgcta tctcggtagc acctggatcg acaggaatgc cagcaatctg 360

gcagggaaat gaaatgaaca tattcctccc tgttctgctc tgctctttgt tgttgcgtgt 420

atgcatccgc tgttgtgatt gtcagcctct gctacagcaa gttcaggcag ctcagctagg 480

ctttggccag gcaatctggc aacgacaggt cgacagcaag caagcaaagc ggagctgtga 540

aggcgtggag gtggaatggg actggtgccg tgcctggtgg agtagcactc acgtcgccac 600

catgcacaac cctgcagctg gaagctgcag ctgaagttga aagaagagaa tgcagcgcat 660

gccatgccac ctttctgcag accggagtca gtccagtcct cgtctgcatc tgcaaaagaa 720

tcaaactgct gttcctgaag cagcaagcca gcaacagcga aaaagatctc cacgccttcc 780

actgattcac ttgtgtactc tggattgtga aatgaattat gggatttgaa gacatcgagt 840

gataagactg gtctaatggt cttgtggttt gtttggattc taactggtcc tggaagctag 900

cttgtaaagc tagattataa aacccgagtt tgtggaggtt tggaacttgg aagcatagat 960

tctaaaattt agaattggta aagttttaaa gtaaaaatat ccacaatacc ttcatttttt 1020

agcatgggta aatacggaga gatatgggaa ggcaaaatgt gaagggcata atcgtgtttt 1080

caaatctaga agatggaaga agctaacttg catcagctta tgagcttaca aaaatttgaa 1140

gctctctgaa ttctacatcc agtgtaaaag ctaggcctct ttagatccct aactgaattt 1200

tggaagtcgg cttccataat ctgctagaaa tcaacaagga attttggaag tcggcttcca 1260

taatctgttt ggttggcttc taattctctt ccaaccaaaa tcatagaaag ccaataatta 1320

ggcttgcaaa gatggctttg ccaaagttag ggcaaaaaac atagatgttc atttggccaa 1380

gtgtcatatc aataatagaa agtacttttt ctctcgggca atttaagaag tttctagaga 1440

cttgtccaag ctttggccat aaattggtgt gctaatcctt tggcaatgaa ccaattgatg 1500

actacaaatt ttggctagct atgatttgag ttgggaaata gttgcaagct aactagaaat 1560

tatctatgga tggctagagg gggagggtga atagcctaat aacatttttt agaaactcaa 1620

aaacattaga caagagtgtt agtaaaagag atgatcttaa tagccactag cccagcctac 1680

acaacacaaa gcaagccata tacacaagtc tagttgca 1718

<210> 5237
<211> 1545
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_33362_G1, chr1:204061627..204063171, Cluster 32

<400> 5237
ccacgacctg ggtatgtata tatagctagg tatgaacttg cattgatgca aaccttgaat 60

tcatatctaa cacgaaattt tacttggcca tcgtcaccct catgataaaa aacagagtga 120

ggaggcaaag cagaatgaaa ccgacgcgtt agaactattc tttttaacaa aaggttggaa 180

ttatatatag gctggagtgc tagctagcta ggtcagcaac attgaacaaa tcgatctgaa 240

accacaataa agaaggcatt tatatgaaca tacgattatt atacacagta tatatatata 300

tatatatccg ttgaacgtca acgcgatatt atgatagcat ttgactatcg tacaatatat 360

atatcgccgc ctcgccgggc atatgacgac gacagttctt cccggccggt gtagttttgt 420

ttgtgacgat gggttgacaa acttgtgttt gtgtgtagtg tatatatatg tacagataga 480

tgataggaat tacgggtgca cccatcaacg ccacgaaatg tacgtacgta taataattcc 540

ggagcgccct atactcgatt atcatgcatc tagcgttgta gctagctagg tagctaggtc 600

tcatgtatta tatatatatt gccccaatat agtaatagta taaaccaaaa caagcatgac 660

gtacctgatg tgtatgtaca tacatacaaa tatatgcatg catctcgtga agcaatttgc 720

gggctagctg ggtgcatgca atgtaccaac gacgtaagca aggttgacaa tcagggcggg 780

tcaactgtac atgcacagtc agcacgcacg catgtcaaca ctacgtacgt ttattcattc 840

atttttttat taataccaat tatctataca aagtccagac aggttttgtc ttatcagggg 900

cggcggcctc gccagtgatg atttaaaaaa aaactctaga tttgggtata taaaaaatca 960

gatagttgga tatgctcaag ttctgagttc actactcgat gagtttggtg aaggaaaaaa 1020

tagctcacga cgcagacgct gcttgtgcaa ctactctgtt atagtaacca tgtgtgtgat 1080

ttagatttct ggaaacttcg atttgattcg tgtagacagt gatgatgata aaacgaagaa 1140

tcagtctggt ttggcaggca ggcagcagaa agtgggggac gatggcccat gggctgcctt 1200

tcctctaagg caggacaaga aggcccatat gctgtctttt ctccgttacg tggaagacac 1260

taatctatag gccatgaagg aacgaactgg gccagcggcg gcggcggccc tgaactaagg 1320

aaagaggaat cgcgacatcc acgtcacgat gtggacgtgt tagaattcat tcatcatcat 1380

gcattcatgc gtgtattatt gcacgttgga cctggggacc acagcaaagc acgctgtcac 1440

tgctaatcag cgctgccata gacgatgaca aaattcgcat ggccttgacc gtccggagac 1500

cgatgctcgc ttactccgta gtacaaatcc acaaatgccc cggcg 1545

<210> 5238
<211> 1497
<212> DNA

<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_337519_G1, chr10:79679052..79680548, Cluster 32

<400> 5238
ttttatact ctagatttat ataataaaat agcatcattt attatatcaa gtaagtgtta 60

ttagattttt cgtttattat atttttatag tatgaacatt taatgtcata aatcttataa 120

ttctctctct atgattttgg ttaaacttga gatgcttgct ttgactacca aaggaagtaa 180

taatgtaatg atttaggatt tggaatagag ggggtaccgg ggtagtactc tgtccatccc 240

agaatagtaa gtgcattttg atcattaaaa tgtcaaatat ggtagatttt agccattact 300

ttctaatact gtacattatc atttacttct ataaaatcaa tatcatcata caagcgccat 360

acaaaaggct aatgatacaa gttttgtgtc ttaaatttat gtataattta aataattgtt 420

ggttaaaagt ttatattaaa ttagactttt tgaggacaaa atatgattat catttctggc 480

cagagggagt gctagtattc aagaataaat attgagtcaa aagaacctgg ttccacttaa 540

agataaatgt cttttaacat tatggatcaa tgctaattaa acaattggtc atattagggt 600

agatgctagg gctgcgtatc ctgtgcacaa gaacttcttc atgcatatgc acaaaatctg 660

tctgaacctt cgttcaatat aatgttctac gattgatgtg tttttagaaa aaaaaaacac 720

cttccacgct tcactctcca cgcctagctg tatatttgta aaaaaaatgc gagctcaaac 780

caaataaaga tcgttcatag aagaaggatc tagattattg attttgtaca tatatatatg 840

catgaagaga atcttgtgca taggatatat gtttctacct agggcctcca accagctggt 900

agtttctaat ttggtgaata tacagaccag attaccttaa gctagctact tatacttacg 960

actactgtag aagcatgctc cattgaaggg agagttaatg tgctaatggt ctcattggac 1020

agtcttggtg gaagcaggac tagtggcaac tgctccagta gtagctaggg ttttgaaaac 1080

gagtcacctt gggaacgttg gagccaatag ctacgccgcg gccccccttg acccccttgct 1140

ggcgacatgt atggccagca ccagcaccag cattgcatgt ttccgctgcc gcagtcagag 1200

gtgtaagact gtacggagta gagtagtgca gagaaggagg tagcagctag ctaggactga 1260

caactcgcaa gttaagaatg tcctgacttc catgaaattg cacttccccg agatagagca 1320

cctataccgc ctatgctttt gctagcctga tcaaggcagc tagctccagg tctcagcact 1380

cagcaggttg aattgttgac cttacaagca tgtttaagca gatgttatac ttgggggaaa 1440

agattgagat cgtgtttggt atatgtagag cctgggtagc tttgacctat tttctta 1497

<210> 5239
<211> 1531
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(100)
<223> optimal_loci_34266_G1, chr1:208728514..208730044, Cluster 32

<400> 5239
tcaggtaagg gaggagtgac ccaccatgat ataacaaatt ttcatactat gatttagcca 60

ttccttgggt tccatctcta atccctacaa ctatgccatg tgaagccaat tgttagtcat 120

tgccaccttt agctcggaag ccaaagtgtc aatagcaggc acatgtcatg tatgcatcct 180

ttaacaagat gagacattcc tcaagccaag aatccaataa ttaaataagt ggaactttaa 240

ttaccactga ctttttagtt ggacaattaa tatagtaata cttataaatt gtgagtgaga 300

gctcaggccc taagcgtgca tgataaagcc atctcatcgc atacagcgag aaccttgcct 360

gtaatcatcg ttgtgtctag atagtttctc ctgcatttat gtcatgtctc acatcttgcc 420

tttttatgca ggtcgtgtca tgctttaggt tcctcaccca gtaaatacac acacatagag 480

agagagcgag agaggagaaa aagctttaaa taggcctcta cacgaatatt tacctttca 540

tatgaacttg caatattttt ccttttgctt tcttccactc agtttccctc atgatcttct 600

ttgcaatctt tactaactgt gatggccaca tcttcctctc ttgaccatct tcctcatgcg 660

tgtatgttga acaaggaagt cttggataag gtctaggaga ttcttggatg ggttttgctt 720

ctactctcca cccaagtccc tctagtaacc ttcctagtgt ggactccttg gaaggagact 780

aatgagtaca tcatattcta gctccatatc atggttgatg tccatttttc tctttctggc 840

ttttttccat catagccttg attactacga cctctagctt aggcacctca ggaaaatgtt 900

tttatttccc tatccacctc tgcatgtctc tatgaggcat ttgtctatgt aaagccatgt 960

gttgcctatt tttgccactt cttcaagaag ttttactttt agatccatag tgagccttag 1020

tgtcagtctt cataaatcat cactaacctc tcaaggaagt gggagctaga gaaagttttg 1080

agtgtatgta ttggtttgcc tgaactcata tttggagatg gaagcggtcg accaggatcg 1140

atggaaagac atccacggct tggatgaaac ctaggagcta gtgctgcaga aaatcaaagt 1200

gcttactagg gtagtgctca ccatgatgac ccttctgata catttcttat ctcttcacat 1260

tgcgcgctct agaggcacat caatgatatg tggcattaag ctggtgaatg cgatgagatg 1320

catgctagga tacaacatga gtcgatcttc caccttagca cccttagtga tctagttatg 1380

ctctacgtcg ggtcgatgaa atgctatcga gccctttag tgtctacact ctattcaacg 1440

acgataaaac atttgagcaa taagtggtgg tgatgcctat ttgtgtctca aatggtattg 1500

tggccctaac atcaagacat taaccatggg t 1531

<210> 5240
<211> 1678
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_343298_G1, chr10:112301324..112303001, Cluster 32

<400> 5240
ccatcaagag ggtggtggtg gacaaccaat tgggcggatc caataatacg gatgaggagt 60

catcagaatt tttgtccatt aggataagag aaggacaagg gagaatgagg tgggctatag 120

gtagtgaggt cattgataag gtcgatggta tattgggtag catgcaaggt tggtgggagt 180

gggttcttca aggacgagga agccatgata acgaaaaaat tgtgcaccag tacctatacc 240

aatgcgggtc aatgatgtgg actcatgagt gtacatgtgg ttattgtaga ccatgtcacc 300

tagtagtgga ggtgtgaaat tacagtggta acaagcgtta tgatatatta cattcatcat 360

cgatgagaaa tacatgggtg caaacatggt gggatgatgt gtcaatttgg accatgtgtt 420

aattgataaa atgctttggt ctttactgta tatttgtata ttgttgggtg tgataggaga 480

actgtacttt cctctctaga attgtcagtc ttatcctata tcgggcacat ctagtgatga 540

ggtgtagtgt atatgtttca taagagtaca atatccactt gagtattcta tatcattgtc 600

ttcatgtcat tgatttgaac acatagaaat aactatggct tgaatgattt gaaacatcca 660

atatggttgt tttagatctt ctttgaaaga ttttgtttca taaaaattcc attctaaatc 720

gtattaaata ttattatgat cgagatttgt cccttgatat tagacattct cttgcttatt 780

cacttttct ttggtctctt ggtgtaagac cttgcttgcc cttatgcatt gagatgcttg 840

acttacataa agccttgaat ctataattaa gtattatttg aattttatat aattagtatc 900

aataatatat atccagtcca tggcaattcc tacaagaact tggacaaata atcattagtt 960

gtttaaatgt tgtcttattt tcaccaaaat ctcatatatg tgtttattgc agtcatagat 1020

tacacattca aagtatggtg ggaggctatt agttaggtcc tttttgtcaa tgaaaggaga 1080

acaaaggaga gaaaatgggt ggcaagaggt tattgttagg acaagaaagg agtggaatga 1140

agtagtccat gatagaaaat ataggaagag tggaaagggt tgtgtctgaa cccaaaacca 1200

aaggggatgg tgatattgga tatcaaaata atttatcata gaaatttggt tgaaaattgg 1260

acttggattt gaaaatttgg agagttgtgc tacccaatgg gttcccaccc caaaagcata 1320

gtagcacaca aaagataaaa aaaagttgtg ccatgtttcg tttaggtttt gttcatattt 1380

ttataaaaaa tgatttgatt catgtttcca ttagttttgg attctattca tgtcaaattc 1440

attcattttt gtaaaaataa aaattcaaaa tgttagtgtt tttaacacat gtaaaataca 1500

agatatttta gtaataaact caacatccac tagcatataa ttcctaattt tattacaaat 1560

ggttcttaaa ataagattaa cttacatatg tactacaaat gatcaacaaa tagtaatagg 1620

tccattatgg tttgttttat caacttcatg aaacccatat aggtattgat tacgcaaa 1678

<210> 5241
<211> 2909
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3451_G1, chr1:17849900..17852808, Cluster 32

<220>
<221> modified_base
<222> (249)..(249)
<223> a, c, g, or t

<220>
<221> misc_feature
<222> (249)..(348)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (250)..(250)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (251)..(251)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (252)..(252)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (253)..(253)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (254)..(254)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (255)..(255)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (256)..(256)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (257)..(257)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (258)..(258)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (259)..(259)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (260)..(260)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (261)..(261)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (262)..(262)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (263)..(263)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (264)..(264)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (265)..(265)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (266)..(266)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (267)..(267)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (268)..(268)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (269)..(269)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (270)..(270)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (271)..(271)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (272)..(272)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (273)..(273)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (274)..(274)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (275)..(275)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (276)..(276)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (277)..(277)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (278)..(278)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (279)..(279)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (280)..(280)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (281)..(281)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (282)..(282)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (283)..(283)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (284)..(284)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (285)..(285)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (286)..(286)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (287)..(287)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (288)..(288)

<223> a, c, g, or t

<220>
<221> modified_base
<222> (289)..(289)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (290)..(290)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (291)..(291)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (292)..(292)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (293)..(293)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (294)..(294)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (295)..(295)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (296)..(296)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (297)..(297)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (298)..(298)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (299)..(299)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (300)..(300)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (301)..(301)
<223> a, c, g, or t

<220>

<221> modified_base
<222> (302)..(302)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (303)..(303)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (304)..(304)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (305)..(305)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (306)..(306)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (307)..(307)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (308)..(308)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (309)..(309)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (310)..(310)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (311)..(311)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (312)..(312)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (313)..(313)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (314)..(314)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (315)..(315)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (316)..(316)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (317)..(317)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (318)..(318)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (319)..(319)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (320)..(320)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (321)..(321)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (322)..(322)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (323)..(323)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (324)..(324)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (325)..(325)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (326)..(326)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (327)..(327)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (328)..(328)
<223> a, c, g, or t

<220>
<221> modified_base

<222> (329)..(329)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (330)..(330)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (331)..(331)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (332)..(332)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (333)..(333)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (334)..(334)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (335)..(335)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (336)..(336)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (337)..(337)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (338)..(338)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (339)..(339)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (340)..(340)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (341)..(341)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (342)..(342)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (343)..(343)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (344)..(344)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (345)..(345)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (346)..(346)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (347)..(347)
<223> a, c, g, or t

<220>
<221> modified_base
<222> (348)..(348)
<223> a, c, g, or t

<400> 5241
gaatttaatt agtgaaactg catactatgg agctacaaca gattattgcc attcataatg 60

tacacatgtg cttcgtcgtt tgtttcttct ttttttttt tgcttcgttt gcttcactga 120

tgatgtattg tcctatatgc aatagaagat aaatttctct tcaacgcgtg ccatgtgtgg 180

ttcctgctgt tttgccagaa ctggagtctc agccagctgg tagcagccag gtaatagtat 240

atgggatann nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnntt ttagacgatc 360

tagagattcg tctctacgtg atgattacac tacgatgacg cccgtggaat aataaaaaaa 420

agcaagtaac ggctaattaa gcagctacta gtagtagctt ggttgaactg tacgcttgtt 480

gtgttaggat gcatgcaccc tgatggtgtg tggctgtgta cgacgacaac aagacgtact 540

gctgctgtgc ctgtattata ttatacttat ataatagatg gaaacaatgc gtgttaatta 600

gtgctcgatt atgctagcta gcttttggta acgtgcgccg gagaccaaaa aaacgttttg 660

ctattccctg tcacctttt tcgtcaaaaa aaatctctct cgatagtaac cagttgattc 720

ttgattggac gccaaatcct gcccgttgcg cccaaatgaa gaccaatcac tgcaaagttg 780

cgcccgcgcg cccgcgagtg gcctgtgcct gtgcacttgg tagttggtgg tgctctagta 840

taatagcgcg ttggtcgtca gttggtgcga tctaactgaa atgccttctc cttctggctt 900

ctgctatatt gagagtgcgg ctgactaatg tcctcccgta aaaattcaaa caatgttgct 960

gtggttggta gcattatcac tttcctgttt cgatacatgc atgcatgtgt atcggtcact 1020

attaactgta cagctgcacg ctcacatatc cggaacagca cttttgaata caagtgccac 1080

atttcacaca gcctgcagta cgcctgaatt tcaggtgaaa gttcacaccc gccgttatta 1140

tggaaaaagt acgtagcaaa tatgcaaagt aaacaaaaac actcgatatt caaactcgtt 1200

ttgtagaaca aaaaatagag ggagagagac catggttcat ctatatatat gtatcttgtt 1260

gggaaaacct gatactcaaa ctcaatgtat aaaaaaaatc atgccaaact ggcaaatctt 1320

agttgcatgt atacttttt tttaaaaaaa aagatccgac cctgacataa gaaataagcg 1380

ttttacagct atacatgcaa aacgcacaag gaccacctca gcacgataaa gagaatgtga 1440

ttacatcaaa gtgggtcact ctatgagttg cacaatcttt aaaaatgaaa ggattttgcc 1500

cccgctagat tccacatttt acgctcacat ccaccaacat caacaataag gcatgtacta 1560

tcatctgaca tcgttcaaaa atttgatcat tcctttgccg ccaatggtcc atagtattag 1620

aatcaccaag ctatgtacac tctagcttgt ctcaagaacc acaaccctat gttcttctcc 1680

gccacttttc cagttggctg gtctttgcta ttgtttgttg ctctctcttg ctggttgctc 1740

ccatggtgct ctagggttgt aagatatatg ttcatagttt gatgccgatt tggcaatagt 1800

agaaaaaaga agaatttgca cctaagtggt gcccacgatt tgcgggaagg tgggttggat 1860

ttgtctttta aattgtatct tatacatcga aggttgccaa gtaattgtcg tctgattcta 1920

gtgttcattt tctcatcatc aatgtttccc tggttgcaat tatattgttg tacaagatcc 1980

cacttgttgt gtttgaaaag aaggggataa tattgttgtt gattgttgcc ccattctagt 2040

aagattgcta agaggtggcc ctttcccgtt atgaacctcc actttcatag cagacacaga 2100

gcgctttgtc aaccccgtct attggtagtt tcattcctat ccacattcat tctagatttt 2160

tccatgagaa ccacaactgc cacagtcaaa gcgctatgct aaatttgtga aagtcgatga 2220

ttcctagccc ccatactcaa atggctttga gacttgtcca accaaccttt cttttctctt 2280

gttagtatac tagctatatc caacccgtaa caagtgacac catgcattgt caaagtatgc 2340

taatatcaca cctgatttta aggacaataa gcatgatatt tcttcttctt cttcttcttg 2400

aatgtcatct tttttccatc tttgtcttcc ttactttctt tcctctcttc attattttgt 2460

gaacacttag caataagatg ctccttgctc ccacatttgt aacatcttct ttattctttt 2520

ctcttcgaac aagattttct ccttcttgca caacaaactt tattcttcat gaactttcca 2580

aaatgaagca caaaaagaga catctcttca tcttcatcat ttgaacttga gttttcttct 2640

tcacttgatt cttcttcttc ttattactct tgcctttgga tgaggtggtg gctttgagtg 2700

ccacactttt attcttctta atctcaactt cattttcttt ctcgtccctt ttcacatggt 2760

atgtgtctta tgtgaaaatg tcacaggtac ttggtttggg gtcactccat tgagaccgta 2820

tctcacaaca ataatgacca atatatcaaa ttgtgagggt aagcatctta gaaaccaatg 2880

agagaaatta tcatcgccca ctttgtgtc 2909

<210> 5242
<211> 2082
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_34621_G1, chr1:210669489..210671570, Cluster 32

<400> 5242
gattttacga tgtatatatt aacactgcaa gaaaatcatg tcaaactagc aaactaccta 60

gtatggcaac ttacttttt ctctcgtggt gggtaataga tgacaaacta acaaatttag 120

ataaagccaa attcaccgct cttgggtatc ttgatccttt tacctctccg tgtgataata 180

tttacaaatg aaaaaaatac actaacatat aaacataggt ttctagctta aaagagaact 240

aaacacacat atattagcac cttatttta accataccga gttttattac aacctggccc 300

aatattctac acaaaaggaa aactttgtcc aacatttaag aggaacaaag tgcaacacaa 360

agaaggatca agttctggtt tgcatgagtt gcaaggtgtc catataaatg tctccataga 420

gtggaatggg ttaccacaac aaaatatgga tttatgcaac tatcctcaca ttgtggaacg 480

agcccaataa gacatgcacc aagttttcct ttgattcacc atgttcttat tttcctcctc 540

tcttttacat atcactgaat gaattttatt ttaccagatt ttttatgttt tctttttgt 600

gtcggggcca gggctaggtt tgcctaatga gaggcatatt tgtgtgtagt ggcattgaac 660

aactcatgaa acattttata ttatgtacaa ttttaagaca ccttaaaata tggtatatgt 720

ttaatataga aaaagttatt tttagtggta acatagctat gtagtcaatg ctcaagttat 780

cctcagaaca ttgtgtaagg atgaatatat atttggatag tgtagagtac atttgaaagg 840

cgtgatgttg gtacaaactt ggtgctatat aggcatgtgt gttctcatat gacacaaacc 900

atgtaatggt atatctactt tttatgcctt ctttagcatt attacaatac atggccaaca 960

aacacctcta tacaaatatg ggtaataaca aagcaaacca cgtgaggggt tagtatatta 1020

tcgaagttcc atgtgtatta tcccttctca atcggttata atttagaatt gttcccccaa 1080

aataaactac tggtatgaca aatttacatc cctctctttg tgaaaaatat tcacaaacca 1140

aaaaataata cactaatgta tcattttagg tttctaacct aaaagagaaa aacatgcata 1200

tgttagtacc ttatttttat acatattaag ttttattgat acaactctgc ccaacgttct 1260

tcgcaaatgg aaaactttat caaactttta aaaggagcaa agtgcaatcc aaaggaccaa 1320

ttcctggttt tgcatcagtt ttagggtgtg tatataattt cctctagaga atgcaatgga 1380

ttatccacaa taaaatatgg atatacgcaa ctacccttga actatggaac aagctcaata 1440

agacaaacac ccacttttcc ttcaatgcca aatagtttta tgatgttttt attttatttc 1500

tattttgtgt gggatgaggg acacggctag gtttgcctga cgtgagacag tttgcatgta 1560

gtaccattga acaactcgtg taaacatttt gtgttatgtg tagtttcatg gcaccttaaa 1620

aatatggcac atgtttaatg tagaaacaaa gtcatttta gtggtaactt atctatatag 1680

tcaatgctta catcactcgt agaacatttt ataaggatac atttatatct ggatattgta 1740

tggtacattt gaaaggtgtg atgttggtac aatcttggtg ctacataggt atgtatgttc 1800

tcatatgaca caaccatgta atgctatgtc tctattttat gccttctact aacattatta 1860

aaatacatgg ccgacgaact cctctgcatg aacatgtggg aactaatgaa gcaagtctca 1920

ttagaggata atagatgatt gaattttggt atgcgtcatc acttgtattt tcaaattgtt 1980

acaattaaaa actattccct cataataaac ttctagtgtg acaaatttac atccctctct 2040

atggtacaat atttttaaag caaaagttat cacactgaca ta 2082

<210> 5243
<211> 1422
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35280_G1, chr1:213915175..213916596, Cluster 32

<400> 5243
gtgcatagac cttcacgtgt taggtgtctt ttgtcacttc tcatcttatt catctttctc 60

ttagagtttt ggttgactat ttagtttgtc tattttgcat ggactattag ctgacaattt 120

atatttcagc caagtgtact ttcttaaaaa aagtgggtcg catggtgatc aattgaagga 180

actttctttt atgctttgaa tttttcttaa catatacatt gggtataatc ctgcccttct 240

gtttcagtac actcggacat gtacttccaa attcgtgcaa attaccctta aacccttttg 300

atactattgc aagttaacct atgtacttct gtaatgttgc tcagctgtac aatgcattgg 360

acacgttgag tatctgattg atcatagaaa acatgtgctg tactgagttt catgtcttat 420

gtaatttgtg atttcattgt ggctacatta gtatgttttc acttgctttg aaattataga 480

tgatcagttt gcaaacttag aagtacagat ggtatttgtt ttttgcaaat aaggtaagct 540

aaatcatctc aattaaaggc actgcttgaa atctggactg tggaattctg aacgtaatgt 600

ttccttgagg cacatggcag ttcgcagaat tactatgacc actaaagttt tcttttcagg 660

gatgcaacaa gctgtcaaac taagtggtgc tgtcttccac tagcactagg ggttgatctg 720

ttttgaaaag gccatgtgcc gagggaagga cctgtactat ggtctcaata atgcaatgtt 780

gcatagttat tccattgggt catggttgtc atttcttcct tcgctgcgag gtcagtgttt 840

tgtcttttgc cttcctgttc aattggtgcg tccacttgtt ttgaaattta catgacccca 900

taacaaatca acagtgtcaa tactcaatat atcacaatgt ttcttttcag tctctcatga 960

gacaatttca atatcttttt tcatgcccct gtagtcaagg tacttttgtg tcatataatt 1020

tttctggtta aaaatacctg ttctctcgaa taacatttac ctttatctgt tttttctgac 1080

atgcttctgt taactgttca tcttttggta ctgctttgta gttactaaag atcataatct 1140

ttttaatttt tctggacagt gtaatggatg ctatctacat ttttattggc attctaaatg 1200

gatgataact ttgtatctgc tgttgagtca ctatagattt ctttattgga aagttgcaaa 1260

gccaccaaag tatcacttga gttttgagat tccaccccat aacacttttt attccaaaaa 1320

ccaccccaac atatatgcac tgagttgatt tcacgcattt ttgccatcct gaagcaactg 1380

gtgtattcgt tattgaagtt agatactcta aaagtacaag cc 1422

<210> 5244
<211> 1879
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_35343_G1, chr1:214304672..214306550, Cluster 32

<400> 5244
tatagttgaa acggcagata gacacaacta atcatagaga tctgatgcca tacatcggtt 60

tcgcacaagg agaggaggaa gttttcttta gtaccttcgt cggttcactt aaaaatctgg 120

ggcttgtcct agatgttcag gcaacaccga catcccccgt acaagcttca gaagatccaa 180

tctacacttc gactcgtttt aactgttagc taactaaaaa ttaggtaaaa tgagttctaa 240

tacatctaaa taaggggagc tagtttttat gctatgtcat taccccagtt tgttatatta 300

ttagccaact tcagtaaatt tagatttatt tctagtctct aataactagc aagtgtatca 360

aacaggttct aagaatggcc tatcgatcag cattcagcac gcgtttccca caagagcaat 420

caggaagcga acgcgccaac gacagctcgg caagagagag acgagagtcc tcgctgtcgc 480

tggacacatg gctgtccagt caagtaaaga agcggagccc tctaatgaaa ggccgggtgt 540

actgtagcta ggtctgcagg ttgtttcggc tcgtgctggc tggaatggat gcatgctgcg 600

gtaactctgc ctctttcttc tcctctcgct cggaagttgc gtgtgccata ccgctatcat 660

ggccctacca cacctttaga aaaatagcac acatgcagca gcagagcatg gctacaatgt 720

cgtccgaagc cgctgttata tatcccatcg aggatatggc ctggcaaatc cactcccaga 780

tgcatactac gctttccagc agatagctag ctagatactc ggggcgtgca tgcagagagc 840

ggaatatata tagctcaaat gctggtatgt tatctctccc agctctttct gtatatacat 900

acatacatat atacacatgt taccatatgt gtgcatgctt cttgtagtat actctcaccg 960

tcctcccaca aaaaaaaata cagctcttac atctcaaaga atcaagcaca cacagtttaa 1020

tattcgacta gaattatata gtgaaatgtc aacatttagg acataaaata taaatattac 1080

taaactactt atagacctaa gttagtttgt ccatcagaaa tctcatatgt tgttgcattt 1140

ttttggggcg cgcggtggga gaatgatgtt gttacatcgt catatcgagc ctttattgtg 1200

tgcttgtata tttgaagaga acatataaca agtcactgtt ctgctacgac taataatcat 1260

ctagtattgt ttccagctgg tttgctagtg tgtcttgcca taatataaat atatttgagt 1320

gtttttagga tggtttattt tcgaggcgac ctcattgcat aggcaataga cattgccaaa 1380

tatatgatgt agggtgttat ctcgcatcga gatcccaaag ctatctaaat tcatgagttt 1440

accttgaatt cttagtctca tgacctgtcc catagtttca ttatcaaaca atactcgata 1500

gttggcacgc caagtatata gttgaaacgg cagatagaca caatcacact aatcatagag 1560

atctgatgtc atacatcggt ttcgcacaag gagaggagga agttttcttt agtaccttcg 1620

tcggttcaca taaaaatctg gggattgtcc tagatgttca ggaaacatcg acgtccccca 1680

tccaagcttc agaagatcca atctacactt cgacttgttt taactgttag ctaactaaaa 1740

attaggtaaa attagttcta atacatctaa ataaggggag ctagttttta tgctatgtca 1800

ttaccccagt ttgttatatt attaaccaac ttcagtaaat ttagatttat ttctagtcac 1860

tcataactag caagtgtat 1879

<210> 5245
<211> 1560
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_3649_G1, chr1:18894018..18895577, Cluster 32

<400> 5245
ctagaattaa aaatgtctca ctcttagtga ggggtaaaac tggccatcga tactaaacta 60

gttacacaaa acttgtacta tttctcatgg caataaatgc taatgaagct tcaacatgta 120

ctcttcttgg acgtttgact cgtgagtcct agtattgatt ttagagtaac taggactcaa 180

acgaccgaaa agagtgcaag ctcaacagtg agtgcaagct caacagttgt gcgtataaaa 240

tagaacgagt gcacaatcgt cttactacct ttttcatatt ttttgagttt taagcttcaa 300

ccataggacc agttttacta gttcttagct cagcggaatc atgaggtaca atcacattta 360

aaaaattagg aagggccgtg cgtccaaata tgtgagagat ctggctccaa taccctacat 420

acctacttta gcttgctagt gcataggaaa gttacaaact ctaactagga atataaacaa 480

aatctaaaca aacaaatttc tcatgcgtga gttcctaaat gttcttgaat aaagtacggc 540

ttgtgctaag atctcgagac atggattgga tggcatcata tggctggctt caatcaagta 600

tctaactgaa ttgtgatcaa acacactcca ttgccagaca tgtcagcgct cctaccatca 660

aagcgtcttt caacagacct acgttaccat ggttaggatt atactccagt agcatccctg 720

attatgaaac catagctcac atagattgtg cgttcagata tacaccatct atagtaggac 780

taaaccaacc ttttgctcag gcggtcttga acattgtgtc ccgatgatta caagacagtt 840

atgttgcaga gctttctttc gcctctcttc agccatcata atcaccagtt gtataatctc 900

ctagctcggt tgcatgcatc aactctcccg tgttaacttg tgtaatctcc tagatccatt 960

tcaagtatcc caccactttc aaagaaagaa gaacagattt gagacacaaa tttcatatgc 1020

agagtcatgg tagcctgcac aaaaggtctt ggatgagctc tcatcttcaa cggacttatg 1080

tgtgatttcc tccatctgta gatatctcca acaatggtga acatatttac atttcaacaa 1140

acaaggacca acatcttcat cgaactggtt gcataaggga catcttgtgc ctaaatcaat 1200

cttgcagctt ttgatcttca tctatagagg aagactatat cgtgtgtcac tctccatatg 1260

aagagtctta attttggcgc acatgagagc cttagtatcc tctctccatt ccatcttcta 1320

gttctagcac atggtacgca gatctcacaa tgaaaactcc attttgtgtt gaaatggtag 1380

gcagtcgcat cttcctgtcc tagctagccg aattggaatt gccaaaatct tcaccgcgtc 1440

ctcctccgag aaaatgtcta taattggttt tacatcctaa cttccaaagt gctggattaa 1500

ttaactcagt cacttttgac actccgcccg gcacctcttg gtgttcgaga cttcggaagg 1560

<210> 5246
<211> 1550
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_38651_G1, chr1:231189524..231191073, Cluster 32

<400> 5246
tagaatagaa aacatatcac gtgaaattgt atgacatgca actatatcta ttagtaaaat 60

tgtataacaa aagtataagg atagaggtaa gagtatcttt taagaaaaat gaggggaatg 120

tgggagggct gttttgtttg atacataatg tttttaaaat atcttcccac ttcaatactt 180

gtgctttagt tgtattattg taagaaagga tacgattgta cctgatttcc ctactggctt 240

ctgacaggtg ggaaccaaat aactggagtg gctaaggcaa aacaccgaga caaacacaaa 300

acaattactc tcaatatgtc ttatcaaatg tgtcatcttc tcatctaggt gggggtattt 360

atacggtaac caagaggcag gatcctaaag tacgtgtcta cccttggtta ccttcgcatt 420

ctcgcaatat aatgtacaac aacataaata gagaatggtc caaattttaa ctgtgttcct 480

tactataccc tcatctagga taacaatgta ctcagggccg acatgtgcgc ttgtcacgtt 540

tgatggaagg ccccccatgt ccatgctacc caaacttggc tcttcggccc cacatgctaa 600

aggtcttcgc ttcaggctct ccattagtgt cccccagctc gcccttcggc cttgcgccat 660

aggcgaggcg aggacttcgc ttgtgatggg gccttcatgt ggaccttcac ggtcgacact 720

aaagacaacg atcgtcgtag acatctgagc cctttgaagg gctcggttct tgataggtga 780

agtccctatt gttgttctaa ccttcgacga gtcttccact tccaacaggg tacgtcgggg 840

ttggctccca agctcatctt gatctttgat cagaggggac aactatgcag tcatcatccg 900

atgctggagg gggcgaccct agtgaagccc ctgtcaggtc atgtcggggt cctcagactc 960

tgtgttcgca aacatgaatt agtgtgtggt tagttgtagc tgatttggag aatgattgag 1020

gtatgtttgt tcttctccct aatagtagcc cccgagggtg atgttcaacc tgatggacca 1080

atcttgaagt ctaagggaaa tgatatgaac actgccctcg atcatcgatt gagcttcttc 1140

gggggcggtt acattttgac tgttagtttt tattgatttt actttatctt tatttctatc 1200

atgtgggtgt gacctatata aggcatttcc tgataggatt ttgtttttta ctctcttcct 1260

tctagacgac ctgctcaaga ttatattgtc cttttcttgt tcataagtca tacagaagtt 1320

gccgaacgct tcagatcttc cttggattca acaatattag ccgagagatc gaacaacact 1380

tccaaatgtt agaccatagg cacatggaca agtaattcac catgatcgag gtatccactt 1440

caaccgctat ggtggaaagt tgataaactc cgggccagtt cgatgggtag gagcgacccc 1500

tcttatgact caaccggaga gtcttgaaat tcttgggcta gctgacatgg 1550

<210> 5247
<211> 1619
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_39923_G1, chr1:237839767..237841385, Cluster 32

<400> 5247
tccataggtc gtaaaagccc taccaataca ttgatgagcc caaccactcg acttcactgt 60

ccataagccc tctaaggcca caagttaagc acctagaagc aagaagagcc atgagctctc 120

ctctttttaa atgcatatac acccaattta ccaaatgtca tatgcacaag cataatggca 180

actagtctac catgaaccaa gccttgagtc caccatgagc tagaacccta tccaccatag 240

accggcctcc atgaactaat aagcctagtg gcggcccaaa ccattaaatg gtagcataga 300

aagccaatat gtgtctgagc caaccaggta gataggcaca tgacccatcc tactaagccc 360

atttagtcct agtccatgtt gatcattgac cattgccatg accccaccta tcaatgacca 420

ttgaccacta gatccacttt attagtgatt tttgaaccat tagccaatta gaatacacca 480

catgttaccc tatttttta tctaatttct ctttttttag aaaatgaatt aaacttagaa 540

attttatact accataagaa aatataaaac aagtgttcac ttttttaaaa aagtgagcta 600

tgtgtcatag gattgtgttt gagttcattt agatcttttg aatttccctt ggacctttgt 660

gaatgtctat aagagtagct tatcatgatt atatgtctca ttttacgact agaggagtcc 720

cagactaaca aggactatgg ctacatcaag gaactctgag ataacctaat cacaggtacc 780

acatcccacc tagctttgta gaattgcatt aggcatgcaa tagattgctt ggcctttact 840

ttctacaatg ttcttatgat aggctgcatg gtataaatca tttgattttg taccatgtca 900

tattctagct cctacatacc cattgttagg aatagatgct cgccttacaa acacttgata 960

tttacttcta ataatatgca cgatatattg ggatgtgatg catagggtgt gtattaggca 1020

catggtgaca ctactataag atttatacca tatggataag aaaatctagt gtgcgtgtct 1080

tgggtttgtg gtgagggtcg agtcaattag aaagggcaac ataatgagtc tttgaaaggg 1140

tcttgctagg agagtgtgac ctgagcctcc ctaggactgt atctatggtg attttatgtg 1200

agttgagtag ttcctaaggg tgagacactt catgagacga gtccctaaga aggaggtgcc 1260

atatagggca tgagaggtag agcttcccac ttgaggacat gtcttgtctt aacctttaaa 1320

ggatggagct aggagaaact attcatagga accatttgta catgccacta actttgaaag 1380

ggcaggacaa atgtgatcta gctagagtaa taccactact acataggatg taggttatat 1440

tgtacaaagg taatggcata tcctaccctc ttgagaccac ttatgaccac ttagagtcat 1500

gttactatga tttagtcttc gtttgtctat ggtactctag ggtgactcag ggttgagttg 1560

tggggtggta tcataccagt taggttacaa cctcatatga acctagatgg gttattgtc 1619

<210> 5248
<211> 1455
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40073_G1, chr1:238746014..238747468, Cluster 32

<400> 5248
tgacaaaccc aacctagcta ggatgggaac ttgggttggt tgagttttca aacgatacta 60

gatattagag aaaggtaccc tagtaactcg gcctagccag gtttgagtag aggataggaa 120

aggatgtgtt ttctaccact ttcttccttc tcacgcactt ctaggttttc ttgagcatca 180

ctacttgtct taaactttag tgaatcgttc ctcttgatag tatgacaaca ctcaactcaa 240

aataaatata gaaaatattt gaacctccaa ttgggaaggt tgtcctatct acaagaggat 300

tctagaagga taaatatcgc aaatatctta tcaggttaga agatgggatc atgaaccaag 360

caaataagaa agaaacacat gtaaagatat atatcgattc cctaataggc ttggatgcaa 420

cccatatctt gtaattgacc cagatacata tcctataaac atcgcccctc cttggacaat 480

aaaaggagag caataagctc caagagggta gatcactaga tcgcattgca tagcaattga 540

caccaccaca aatagaacat agggtattat ctcactccaa gagctcaaac ctatacaaat 600

cttcattact cctgtgcatt tacctttagt tcttgattac atgaccaatc ccataaattc 660

actatcgaaa aatctttgat agttggaacg ccagagagtt gatggcaacc atgggttttg 720

catcaggaga agaagtcgtc ttcaacactc tcagattcat cattgatttg tttgggaatt 780

ttgggcttat cctagacact agtggttcta gtgtccctca atcaagtttc tgaagatcca 840

atctacacta cagcgaattt tggtcgatcc aatcttatgg catcgactca gacttgaatt 900

caaccttgac actgacttag acttataatc aggtctggtt tggaatctga ctctaactaa 960

aatttagacc catatgatct tgaagaccgt ttcgtattca tggaaaactc tagacaccaa 1020

gatggtcacc tcccaaacca tgcaaatgac aatgttgatg cattaactag gatccagagg 1080

aactaataag acctaggagc acatctagtt tttccatgac tatattcaga tggttgattt 1140

tcatgcataa gtctatgcaa caccaaccca aaatatcatg acagtgaagc tccttcttgg 1200

taaactcaca ccactgcttc ctaacgacaa catgtaggct tacaaagacc tagaaagatc 1260

aataacatga tgacgtatga cgtacatggt tgtgttctaa ggcccctaca attccaatgc 1320

cgattcatga cgttgttgag tcctcagatg atctaacttt aaatgtgcaa gagtaaccca 1380

aggagcgtta gagtagtcag tagactgagt cctagatctc tccatttgtg atcatcacaa 1440

agggactcgg ctacc 1455

<210> 5249

<211> 2003
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_40607_G1, chr1:241367645..241369647, Cluster 32

<400> 5249
ggtttagaca ggatatccat atcctcatta ttaagcttgg tcgattatcc caaaagttgt 60

cactcaactt catgtgacag ttgcattcgg cccaaacaga cttttgtaaa aacccacaat 120

atgggacatc agctccttct gctattgcca ccctaagttt ttcctcggct ttgaaggcat 180

ctatttgatc atattggtca agcacaatac ctaaattttt catgacaaga gctaggtttt 240

catttttttc ttgattcaga acagtaaacg ggttcgtgat tgtggtacct tgtggagcgt 300

ccttctcttg agctctttta gtagctttct ccagaataga aatgccatct ctaggaattc 360

tagaacttgc cctcatcacg gggtatttcc ttttgctttt tttcttcttc agtttcttac 420

ttgcagcaat gttccacctt tgctccacat ctcccatcga aaaatcacta tcccaatcag 480

ttagactctc cagaccatct tcatccactc ccttatcaaa actgacctct gtaacctcac 540

tttgctgccc caaggagcct cgattcttat ctgttcctgc agcgatcttc agccctccct 600

tgtttttaag ttgtttactt aacatcaacc catcttttat gccctgttgg ttcccctccc 660

ggaccattct ggattccatt cccacattgt gatcaggggg ctcaccctct aaagtttttt 720

taatcttttc aaaaatcata gagccatcat ctggaatttt acacacttcc tccaggtcga 780

ccacttcaga cagttgactg tccagcaaaa tctgcacatt agcgaactta tcctgtgaga 840

taatttattc attcacccca tccacgcgaa cctgatcctg ccgaggctct tcgaccactt 900

tctgaagcat tgaaatcttg tgatcaatag aaaatagtcc tacctttggg tgaaatctag 960

caatagggag atttggtata gaaccttcca agtccaaacc caaactctcg atgttttcca 1020

tgtcctcttg agactcacca tgacttgagt catgtttcat ttcagcctcc ttccctttcc 1080

tgtcaaatct tcctcctccc ttcctttctt cctttcttct agaatttcct ctgtcccttg 1140

aagagtcctt atcatcagag tttccagcag ctgatgagcc tgctaaaact gacccttgct 1200

gttggggccc ttcagcagtg aacttcagct cataccctac attgttaaag aagacctcca 1260

caaagccttt aacactagaa gggttacgac attctacttt gactctcact gggccatctt 1320

taatcaaact cacctcatca acagacaaca gcaatgggtt taccaaccaa actagcaact 1380

tctttgacta tgctttaatc cctagctcta ttcggatgat cggaaatttt cacccagaca 1440

ttttccaaca tagccgatga ctttggattc acgttagttt ttgatatctt cactctgaat 1500

ctatagatgg gcatttataa gctactcagt ttggcaaaag tttccaagga gatcttgtca 1560

ggaaatgtgg caatgaagtc aaaattgtcc atctttctaa cctcgaagtc ccatttgtct 1620

tggaccaaat tctgaagccc tccctcacca cctgagcgta agatcttttc aacagagggg 1680

agatctctgc actggagacg atcctgacaa ggtgccatag ccgccgtatt tcgtcaggcg 1740

tagcaggtat tttctttcca ccatctgttc tgcacttgga cacccacatc catgtggtgc 1800

tagcaggcct ccaggaatga ccaaaaactt gggctgagga aaagcctttt ttttcccagc 1860

ccaacatccc cttggtcatc atcatcttcc tccctagaag catccgccat tagtggcccc 1920

tccgccccac ctgccagaag gccatcagaa gtttgtgaga actggagtcc ttcagtgaac 1980

acaccgaaaa caaatcgctc acc 2003

<210> 5250
<211> 2713
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_41309_G1, chr1:244765430..244768142, Cluster 32

<400> 5250
gccaatgtca tagggaggaa gagagacgcc atgataggga gagttcgtcc ttcatatgag 60

agagaaatgt ggggaacaca gaggatagag agaaggtggt atgaccaagg atctacatgc 120

ttcacacaca tacattttca atgtgacacg caagcgcttg cacatgtttc acccccctatt 180

agccacctaa agagaacaca gacattgagg ggagatacat acacatgctt ctttgagcac 240

atcttttcat tgtaaactct tttcatgaac tagattttga tgactgattg tattccaaac 300

aagtgatcat atattattaa aatgttttta taaaacaacg gtgaaaatgc tattaaagaa 360

atactattta tgtagtagtg tttgtagaag ttagaagaaa ataagcattg gtgtacatat 420

ctttgcaaga ggtatgaggc agaagttaga aaatgatggg cttgcaagag aaccacacat 480

gtcgaacttc tttatcgagt gcttcttatg gaagtaaatg ttatcctttg ttgttatgta 540

tatatgtctt gccttataaa acacgtgagc atttaaccat cttaatttat gcttggcctt 600

gtcgtgggga tgtgtcaaca agatacacat cacgacattc tcatgggcct agtttgtgag 660

ggtgcatgaa gcccactttt atcattggac acttaccaca acatgagacc aacaaaatta 720

tgatatactt aacaaggctc ccatcatggg ataagaaacc ataaaatatt atggccactt 780

tgtatatatt tagtgatctc gattaattta ctatgttgac caaacataga cttatgcaca 840

aaacctaact attaacccag ccgctagata gttaagtaga aaacatttgc gaaataggga 900

gaaataatat tagtaaatga aattagattt aaaatgacgc ggaactggat ttggtggagt 960

atgaattgtt gtactcaaaa ttaggacgga aggaggggtg gaataggaat aatctcatga 1020

attttagatt actaatgctt cctatatata aaaaaatgga aaagagatca tgtctataaa 1080

cttatggtca aaggtgatat caatcaagaa tttgaaatag ttgcattaat agatctaatt 1140

tacattttgt tgaatttcaa tctatcactt attactttag atgagctcct gccatcgatt 1200

ctgaaagaaa attttatttt cgtccatata aagtgtgtgg aatcaaattt tgaccaataa 1260

gctagaatca ttgaagccta ctttgatgca tcgttcgatg gcgattcaga aaactttgct 1320

ccatgtacat gtctgcttgt agtatcaaga tgaactattt gtttttttctc ttgccatttt 1380

aaatgttaat acttttattt cactttacat cacatgttct tggcattaac aatttaatgg 1440

aaggtgttaa catatcaacc tacttcagat gtagcttgcc tataccattc tttgagaaga 1500

tacccataat atccattgat aatttagcag tttatttact taatagggct atgttttctt 1560

tattctaatg ggttctacct tctagacaac aaagaagatc ctccaaatac aatgagggaa 1620

tgacaataca taattttaaa aatggaacat ttttgtgttt tattaatgac atatttttga 1680

ttactttgaa agcacattat taattgtgca acataatcat aacacactcc ttgttgctct 1740

tgcttttatc aagttcaagg aagcattagt aaataatatg ttacaccaag gcaccctaat 1800

gaggacaata ttcgctcata agtttgtgga aagaggtggg gattatgttg atatagttcc 1860

tccaatccac tataagtata caaattgggg tatttcattc atcaagaata acccaaaaat 1920

aagttattaa atactcttga tagcacatga gcacgatgtc cattaatcgt caacgcaata 1980

agaattcgag tgacaatgtt gcttatgtgg actcgagtat aacctattta cactaagtta 2040

actatttact gatttagtac ttttaattct ggtctacgcc aagcctcgat acataatatg 2100

atatacttag acaactgtgt aagatgttgt acaagcatat gtacaattcc agtagtagtg 2160

ttatgtgtaa gggaggctct aggacacaca tattgagtat gttttactcc taggtgtgtg 2220

tgtgtgtgtg gaagttgtag aaaaagagat ctcttatatt agacgacacc aacaaaccaa 2280

tattgtatgt ggtatgtgat gacacaagca ttatatctac aaaatagggt gtttttcttt 2340

ccttgactag caaaagaatg ctaataataa gccaccaaac aaatatattg ctttgttcat 2400

aatgaaaata aaggatacca taaatttgcc aacattgtat tccttctagt aagcaatatt 2460

gttcataatt aaccttgaat gtaaatttgg aaattccttt caacatttag agtgtagcta 2520

ctcctttgtc tatatctcaa attttaggtt gcatgtaacc agatgaaatg tatacataag 2580

gactatgtga caatactaga tcattgatgg tgcatgtata tatactacta tgacaacact 2640

ataacaataa actaaaacaa tatagtctcc attatttttt cacatagtaa gattaatttg 2700

gagtatcaca aaa 2713

<210> 5251
<211> 1740
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42557_G1, chr1:251152150..251153889, Cluster 32

<400> 5251
gaaattatgg aaagataaaa agcaaagtac ttgatatttt gtacaaagac aagatcaatt 60

ataaatatat aataccgagt gtgtcgtgat caaatcatac ggagtaaata atgattgcaa 120

caataatcgt catgcggatt tgacactata atgcatgttc acattatcag accaagtagg 180

aagttcacac tgtgatgcat gttcgcacaa tctgatcaac cgctagaaca caatcgaaca 240

tgttcaagct ctccgttgtg gatagtaatt tcagtttttc aggttcatta agaaatttca 300

gaaatagcat cagggctgtt acattggtaa cagttttaca gctacagttc agataggcac 360

atatctgaac gaaaaccagg tagctaacag agagtcacat atctgaataa aatcgcaagt 420

gattaagcat agacaaatat tttgcgtagt cacatatcgg agcagcaacg tatgtagagt 480

ttgttcttca gcccgttttc atatctatca ttggcaacaa ctcttgcaat catatgtcca 540

aaacatccat ttgtatctcg gacatgaagt tctccagaac attattttca tgatatttga 600

atctgctcca tcatctacaa aatcaaaaga taatttgttt tcttagatgg atataaacct 660

tatcattttg ttcatggctt tctttcatgc gcatatttta ttttaggctt tttcttcaca 720

tagtttagtt gattctatta tatagtataa tctctttact ttctcggtta ctttcactaa 780

attggcacat cattttttt gggaaaatga gattttatct actagtacct agctaaaagt 840

atgagttaat tttgttggct ttaaggtttt cagatctttt agggtttgtt tgggtcatcg 900

atcttcattt gtggcttgga tcatcgtggc cttctagttc taggccaaag caggatgtcc 960

ttagagattg ggtggtctag tgcaaaattc aaaacaaggc ccatttttaa gaaagccact 1020

tatttaaaca ggtttctttg ttaattatag cactgaaaca atcttacgaa agggagtatc 1080

cgaagaccct ttaactgcta ataaactaaa catatgactt tggaattgag gaagtatttt 1140

tttacatgaa aactgtcatt ctagtagttt tatttgcaaa taatattcaa ttcaaacttt 1200

ctgcaaaata tcatttctaa gtgccagtgt agctagtgca atgtttttt tgggtgtgtt 1260

aatgtaaaac gcatgtagta ctttttttaac aactttaatt tgaaattcta ctttgacacc 1320

acattgatcg gaatagtgaa caaaatttta catgctaagc gttcttacgt ttttatctta 1380

aaggaaacaa tggagtaacc taaagttcat atacaagtgt acggaccgaa tatggcctaa 1440

gagtgaagtg atttgggctc tggttatatt ctacgcatgt ccaagaggct gtgtttctct 1500

ccccaaccaa cctttatggg cgattgtagg atcgattcac tttaaaatag aaaatcagaa 1560

tggagtaaat gattacaaaa gctaaacata aaattaaaga cttcatctta agcacaaaat 1620

ataattagct ttgtcatatt aaactagatg atattagtga attaacccaa ctagaatcac 1680

atcaattgaa gtctagaact caagatatga aaataacaag catgttatgt tagaatatga 1740

<210> 5252
<211> 2071
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_42746_G1, chr1:251990505..251992575, Cluster 32

<400> 5252
gacctgcgag tagatgaaga cagaggggat ttggggagta gaggtggtat gctagagaca 60

gatgtgagat ctaaccctaa atttactaat gtcatgacct tggtgatctt actattaaga 120

tgattcaaat tgacatgggc acgtattttg gattgattta gctagccttg attttgccga 180

ttccaactac catagttgaa agagtctttt tagcaaaaaa aaaaaccaag ttgatgaata 240

agatatgcaa tgattggtta aatcatagaa ctgtttgtta tattgtgcga gatatttttg 300

caagcataaa aggtaaagat atttaatact attttcaaga attaaaagtc atttgaaaaa 360

agctaccttc gttaccaccg tctacaccaa tgcaagtggt atgttgtgta ctttttttct 420

aaattatttt ttctctaatt aataacatct ttagttcaca tttctaatat gcttgaaacg 480

tttacctacg cgtgtatgat tacattcaca tcctagcgtt gatcaagata tgagcgacat 540

cggtggtggt tgggatcatc cgtagttagg tatttttttt tattgtgccc cattttatga 600

agtacgttgt ttgactatta agaaagtttt tttaaaaaaa cactattaag aatgttgttt 660

atataaggcg catggttatc atttggttct aaaatttagt aatacatatg acttgatatg 720

agttacatat gcacttagat agtggaccta ggcataaaaa aaccatttgc tcccaaaccg 780

acccataacg gattcagata tgcgcggtta ttagtttgct tccaaaagaa aattggtttt 840

cagctaaaga ttattgcaga tatgtgagag gaacgatgtt gaaggttatt ataccaagga 900

tccaactcga agatgacgct agctagaatg tggattctgc ccttttttgt aaaaaaataa 960

attgttcaga atttcatgac caagtcctct ggcatacttt tttttaaaaa aaacggtagt 1020

acatgtgtga gaataagtta atggagcgta ggagcgaagt gcttagcaca tggcgaaatg 1080

ccgctgttat cttggttggc cgagacggag caatagtttg acgatcacgc acgctagcta 1140

tgagtgggaa atcatggcag gcacccactg gaatcgttgg agctcatctc tgcgacaaaa 1200

atgctccggc atatccggat gcggtgatca ttggatcgga gttggggaac atgcatgcat 1260

gcggacgaag cgacgcagca cagcagtgga cttggcctgg ccggttggtg gtggtcctcg 1320

cgggcgcgcg gaggcgccgg caggcaggag caggacgcgc gttgcccagc tgatttcggc 1380

agaacctcgc ggcgcgaatc acgggcgaag ggaatttggc actagtttga ctgacgagag 1440

catggggccg atcgtataac gagtgggaaa tcatgcgtgg caaagcaccc actggaatca 1500

ttggagcaca gctcagctca gccgagcgac aagaatattc cgacagattc gggtacggcg 1560

tgatcattgg ataaggagct ggggaacatg cggagttggc cagttgggtt cgtgggtcgc 1620

ctcaccacgc ggtggcgcct ccactccaag tgcggacgaa ctgagtccag ccggcggcac 1680

tcctgctggt tggcgccggc agccgtgagc aggacacgcg ttgcgataat cacggtccga 1740

ggcgggaaga agaagaagaa gaagaaaagg cccgcgccgc gcctgccgca caaattgctt 1800

gccattcgcg cccgtgcgca cgcgcgttga tcaaaccgct agcgctaggc gatgggctcc 1860

tgcctccagc tgtgcagatg agggtaggat gagttctaac ctctgcagct gcagtgtagg 1920

agctccatgt acgtcaactc ctgctagcta ctggtgccaa atggcataca gccttggttt 1980

tcatttactg tatttttag aatagatctt gaagaaaaca atttttgata ttttagccat 2040

aattcagtgc ccatataata taactgccat g 2071

<210> 5253

<211> 1528
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_43223_G1, chr1:254526476..254528003, Cluster 32

<400> 5253
attctcacca agacaaggca tgaacgtaga ttttgatact atatttacca tcattgagtg 60

gagttgcttt tggcatcttg ttaaagatct agggagtaga cttatcactt tagatttttt 120

taagcacttt acatgtttcc catgatgaag tatattctac atgttcaacc aagagtacag 180

tcttacttgg agtgaactaa atattgctct tggctttgat gaaaattgtt tcttgatctt 240

gaatatgcca ctcgttggtc caatagtctt gaaatttttt tcatgcaatg accaatctta 300

atgattgtga gtacccccga acaaatgaaa ttcccaattc cactttgtgt ttcctccatc 360

attggatggg caaaaccttg tttcttcgtg atgatgtacg gattgtaaga aatgattatt 420

taagaccacc ttatgctatg gctcacaaaa atcttgtctc tcataggaaa gccatggttg 480

cacaatggaa aggtgtttct aaaagaattg gaccagttta atttacttca acaatttcta 540

gacttgatga tactttatgt tcgctcaata gcgctacata atttatttcc atgcctcaaa 600

accttgttac aatagaatac tctatacaag atcatattct agcaagaaat atgcggctct 660

atggtaatgg tttatcatga gttcatgacc atacaacaaa gccccctacc ttgtgagaga 720

cttcatatgt atagggtcca ccatcgtttg atttggacca agagactaga cataggagcc 780

ttgcatatat tagcacaaag cgacgagtga catgtagcat ggtacaaacc acacaacttg 840

aataaagcga cacatcatga ggcattaatt ataacaataa taaggaggag aatacatcaa 900

atgctatgta catttcatgt tcaagtggga tgcctccgct aagaccacca cacaccttaa 960

gtgtgatttt ctttctcgtc cataagagcg aaatattgtg gcttgcggaa agacataaac 1020

aatctcacca atcaattgag tgagatgcat gtggaataat gggccatatg aggcacagtg 1080

gaaccaacca ttagcttctc ctagccatgc aagaagagaa cacacgtcaa tggaaggcat 1140

tttgggcact aagaggcgcc tacccaccac cactacacca tgaaatggca agcttaaagg 1200

aggttccctt ccccaccaag gtaggttcta tttttcttgt gtttatttta gattattttt 1260

atttgcactc aataaaatct gaataaaatg caaaaaaaat ctttgtttta catatgcttc 1320

atgtatgttt atctcttccc atcttggaaa tgatgaataa ttgttctgct agtgcttctc 1380

tagtgtctag tttacaagtt agtatttttc tattttagag ttatttagct cacgtgaaac 1440

aatatgaacc taaaactata tgggatgcaa gtgttgtaac ttagtctaag tagttgtgag 1500

atttgatata gaaaagacaa gaacagtt 1528

<210> 5254
<211> 1872
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_44062_G1, chr1:258643259..258645130, Cluster 32

<400> 5254
atgccgtggg gttggtgcgt gcgtgggtct gggaattgcc gctgtgcagt gctgcgggac 60

tactactgtc tactaccatt tacctctctg tttgatatct gtacttgcga tcgcattctt 120

aaagctgtgg atactcctac attttagcgc ccagtacaac gcgctggggt agcgtgcgga 180

gtactcggag gtaccgtacg tgatcgacgt agtaggccag ccggagccag gagtgtataa 240

atgatttcac gaaataagga tgtacgtgta cattacagaa tgtatgtgta tatacatgaa 300

tacacagccg gctccgccga ctgcaaactg cgttatttag agcatgtcta gcggtgccgt 360

acgtacgccc gtggctttcg aaaaaaagaa tggcacgctg ctctgctgga gtgctgggcc 420

acacgctagc tagctagtac cctggacaac gtcgtccttc cgagttccga ccggccggcc 480

accgggaacc gctggttacg cgtggtggac agcagtcaaa gtaccacggg taaggggtcg 540

ttaatatata cgtgcatcca cgttattttc ttcttatatt gtcgtattca ctttaattca 600

catacgctaa catagattaa agtaaaatta agtttacttt cattcacctc aacgtatata 660

gattaataag aatttggcta catcaaaata aaggacatgt ttggtttcta tatagggcac 720

cacaaccagc caaatcttac tcgctcgaat taaagaacta aacttatgta taaaagttag 780

tcacaatgtg acatcttaga caacgaacta aacaatccta aagtctcctg gctcgatgag 840

aacatgcgta gcgtgttttc atttatctct tcattcattc cctaaagaag gtagagcgct 900

ggaaatggct cggttatgtg agcgtagtag cctcaactct aaaactataa ttcctccgta 960

aaaatgtaaa tccggcttta caaaataaaa catctaatat ccaagggcgg atccaaaatt 1020

agtcagtcgt cacgccctag accattctat tgaatctagt attcttctga tttattttaa 1080

tctatagatg gaaaatataa ttagagacat atggatcatg tcccaggcca cggaccaggt 1140

ggcccggggc ttatatatgt ctattgatat cggactaaat atatatagaa aattatctaa 1200

acatattata agtaatacat gtcactaaat tgattataat tttttataat taacatattt 1260

gatgataccg atattgatga tactaaatgt tataaacttt taggtcatat tgttaatata 1320

tgtgttctac aacttttga cgcttgcatt ctcaatgggt gtttcatact tattaaatat 1380

ggttacacat atcatcgtgc ctggcacatg acattgcaat aaagaggaga gatatagaga 1440

gaatttcata ggagatggta gtgtttcaag ggaataaaac tctgattaca cagttatcta 1500

gtttaaacct gatgtgatat tattgcaaac agtacgttga aactcaacga tgagaatgac 1560

cttagagcta gctgatcctt aaccttctca cctatccttt gaaaaacaat gatggatgtc 1620

tcaattataa taatcttgca ttgcattaag catcaaaacc caactagaga cctagatatg 1680

ttcgtgaggc cttctaccaa gatcaagaaa gaaaggggaa acaaagagag aaatgagaaa 1740

aagaaaaggt ggtaggactg gtatgttagt cggcttggca tcgagctcta tgccaatctt 1800

agctccaaaa aaacatgacg atgagccaga caccaagtta tcgatcatgg atgacgccac 1860

attggctaga gc 1872

<210> 5255
<211> 1418
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46197_G1, chr1:270729510..270730927, Cluster 32

<400> 5255
gaatgactat catgtataaa tattaatttt catacgagta agtccttttg tttagcttca 60

gcaagaggaa aaagaaatga aagcaagcat gctaaatcgt aggcttggag acttaccaat 120

gaaatacctg gggatacatg tgtcttataa tgtgttaggc atacgggcct tttagggtat 180

gtctgacaag ataatgaaaa gattggatcc atagaaaggg aagtggatga cttctggagg 240

taactgcatc ctcacaaatt cttgtccaag caatcttcca aagtatatcg ttaggaagga 300

cttgggagat tcctctaaga cgaagtttgc aagggaaaga tattttggaa tgagaggaac 360

tgctggatct gttaagtaat gtccagttaa atgttttgga acaggaggta cttgaatgtt 420

catccttgta tatgtgctaa tctgcaaatg caaaattcct ctgaagatta aattattctt 480

atggcatgtt ttccataata aactacaaat agttgccacc ctaaaaataa atggggtggg 540

agcactttat gttgtgtata agcctgaaaa cggttaagca tatcctttcc aagtgcgttt 600

ttgctcaata tgtttggtgt tgtaccaggg atgcttttga tttacagggc tttccaacat 660

ctacctgaga tattcttgta tgcctactca tctagcctct ctaaaaactt tgacctcatt 720

aatctcatga ttgtcatcat cagcatttaa agaaacagac gtcgtatcat gaccattata 780

gatgtacttg taaaggtatt tctttaaatg gtgctaatga caactatgag attaatgaga 840

tcctagatga gtaggcctac aagaggcttt aaggagaatc tatgggtttg gtcttaatgg 900

tatcttaccc tagtgcagca actacaactt caccttccag gtgtagcgtt ttgaatgcgc 960

agggagtgga aaaggcgatg ttaactgagt ttttaaggca aatttttaag atgcacaagg 1020

agtttggaat cctgcgtcga aaaatgaaca cctaaaacac acaagttggt cggatcatct 1080

tagtatatcc tatcaaaggg gagacattat ctaagagtgg taataaacca cgtgtgaggt 1140

ccacctcata tgagtatcta aggacagttg aaggaaccaa ggtcatatca tctagaccta 1200

agtatgggcc acccgatccg gtcgacccac ccgaaaaata ccttacctag tcgggccggg 1260

ccaatgtgtt gggcgggctc gggcttgggg caaaaattaa acctgtgggc cttacctggt 1320

cctcttctct ttgatcccga ctcggcagcc gccacgcgac tcacgccgcc gcaagtgtag 1380

atccccccat gccccagccg tcaacatcct ccaggagc 1418

<210> 5256
<211> 2043

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_46549_G1, chr1:272459620..272461662, Cluster 32

<400> 5256
gtaggcggaa ttagctaggt ggtcgtgtgg tccacggacc aacctaaaat ttggtttacg 60

gttatagtag ataagctctt taaaataaaa aaaaagcatg tagaccactt gataatttga 120

ttttacatat aagagagacc acccttgctc tagatcctag ctacaccact gcccaggatc 180

tcttgcctgg caatcatgcc agacctccaa ccaaacaggc catataactg cccctaactg 240

ctagctatga gaacatgtcc ttgcttgaat ctgcacttca aggtcaaatt tagagattca 300

gattttcacc attgagttga ccccccttatc agcagttttt agtgtaacat attgtccact 360

gcacccttta cagcgagaca tgcggccttc ctgggttcta agtggcatgt gttggactgc 420

cggtcttaga ttgggagggg ggctcggtcc cacgaacaat aaacttcatc ctagcacaac 480

accgtggtga ggtctcccaa cggggccaag ttttttagta catcaatcag caatatcaca 540

attgctgcac caacaaatct agacgcaaca tgcaaactag aggtcagaga aatctaacca 600

catagaccta aattatgcca acaaattacc tagagcatcc aaatctagct tgggaggtct 660

aacacatgct gatatgatta tatttctaga caaataaaaa acaaccaatt tgacatgact 720

agctcctcag aagtatgtgc aaaaatgcat attacatata gcttgaagga agcttatcta 780

ctactcactg taaaagatag atgaagcaat ctcatatatt gctgcaacat gtaggcacac 840

acatgcagcc atgcaggtac gaaggatctg atatggctag gtatggctgc cgccatacct 900

tgacttccta gtagatctcc ccaatgactt gctggacaca caccctgtcc tttgattggc 960

catgaacatc gaagcaagct ttgaacagag tctgcccagt agacagaaga aggaacgaac 1020

gaatagtttt ctagattgtg gctatgagcc ttgcgtatgg tatgggccat cactgtgtgc 1080

tctgcctcta ttgtttggac acctgctcat acatattctg tttccatccg gcagtctgcc 1140

tatagtatcc cagtccaaga caattcgtcg attcgagttc tagggtgcta ctgattttgc 1200

agatgtagat gcctagggct tagcactgat gcggagacag actcggtgag ccggcgaggt 1260

ggttacgcta agacagcggt gctatgccac acactgatac aggggaacag gcgcacaaac 1320

aacggacgtg cactgatcag gtatgggagt aaggcccaat ttgcagccgt agaagttttt 1380

tttttcaatt gttgtttact tatttattta attttaattt gttgtttaaa tttaatacta 1440

atttatgaag aacactgcaa ataattaagt acagatggac atggactcaa cagtgcataa 1500

tctcttcatt ggcaaataga aaatcattca atcttgcatg tgtactgtgt agaaaacaat 1560

tcaaatttca atcttactca actatgttgc ctactttggc acttcattat atcttaattt 1620

aatcccttcc tctgccatta gacacatgta gaagtaatga tgttcatact ttgacgtgtt 1680

gttctctgtc tcacattgct accatttatg tctaagtaca taaactatgt atttttcctt 1740

ttatggacac ttaacgtggg acaagttggt catctgccat gaaaattcta gatttgatca 1800

caatatgtgt ttatgatcaa aatatgcctg gcactatgga agagacaaca taattgtagt 1860

tgctagcttc aagagaagtt agatgaagat tatttcagct tccttcatca gaccactaaa 1920

tagcatagca tgtttagttt gtatggtgca tttgaaccaa caactcttat gcctagtagt 1980

tgagatttga gaatgaaact ggaaatgtgc taacgcacat gttgaactaa atcgacatct 2040

ctt 2043

<210> 5257
<211> 1896
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_47108_G1, chr1:275587472..275589367, Cluster 32

<400> 5257
cccgagccat acggtctcag gagtctattc ccgagacacc catgagtctt tgcgctcttc 60

ttaacggagg gaacccactt tcctgcctgg atctccaagc ttttgcactg tctttgggtc 120

tgagttggcc gttcggccta tgaaatcagt tgtgaggtcc acttagggcc ctcaatagcc 180

catgcaccag atccgcgtca tgagtatcca ggggatatat atcccccaca cctacatgga 240

cacaaccaag tttttcgagt tggtttatag gctattagat aattgaggtc taagtcaaat 300

cgaactctct cttggactca agaatatcgc ttctatatac tagaagacag tatcaagact 360

tatcacatcc actcttgtga caaataacga gaaaaagagg aagacgtcca actaacaggc 420

gcctaacaaa gcctaattct taccaccatg tcagaaggaa gtattattca tgagcaagag 480

cctgcctact taggaacaca tctacttctt ccccacatag ttgccttcat tgatcaattg 540

tcataccaag ttagagtcat agtcttagat accttgacca ccaagaccaa caccccacaa 600

acatgagcat ctttgatcat ggtcgtgagg tcttttgttt tggaaagaga catcaaccct 660

aatgataaag aattttgcga catctccaat gaccaccaaa gtgtagtcga aaaacaaaag 720

acaagggtgc taggcggaca tgcaagaata gacaatgcac tcaatgatgc cttcacatcc 780

aaattggcca tgacacaatc gaccggtgac agaccaaaga tcaacgtcac gaagaggcaa 840

gacaacaact caaccacaac catctggatg gatccatagt aggcaatctc gattttgatt 900

tataggaagt tgggggacac ataatttata atgcttctaa agctaatgta atactcatag 960

cagatatagt acatcaggac ccgaatttgg accctcaata caagtgcctc agtgttatgg 1020

tagaatctat agttttgatg cttcaaagat catgatagac ttcatcctgt ggaacaccac 1080

ctgagcacat cagagtagac aactaaacct aggaagacca aggaacatga ccaaaataaa 1140

atatgcttag tcaacactca aggtggtcag catcaaaata ggggaagcct aggccaccct 1200

cagcccaatt agcccagggt gacttgtgta actcacttgc gctcgcggcc tctattgaga 1260

ctaaactcca tacatgagga ccacgatcac ataaagtctt ccaatgtagc taaacactaa 1320

atgacgggat ataatggttt accctgcttt ttctagcaag ctaaactcaa tctagtaccc 1380

atggaaattc aagtccatca acatggacat atatgatgga aagaaagacc caaattagtg 1440

gatccgatgt tactcgtcca ccatcaatct tgtggaggag acgatgatat caaggtagcc 1500

tagttcctaa tggtacacga ggctaatcca ttgacctaag ttgaatatat caaaatgaac 1560

tctatataca cttagccctt gctcatcaaa aaaatgtgga gaacttatgg gacacatggg 1620

cttgttcagt taattatcat gatctctact gctgagaaag atggtgaaag catacacgac 1680

tattatagtc actttgtcta cattttgtgc acattggtag atgtatccaa tagagacatt 1740

attgtctact tcagcaattg acatagataa gtacctctac caagatttca tcagaaattg 1800

gccaagaact acacacaagt tccaatacat ggtcgatagg tggacaatca caaaagaaaa 1860

aataaattac aagtatggca tttgaaatca cctaga 1896

<210> 5258
<211> 1544
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_48242_G1, chr1:281711782..281713325, Cluster 32

<400> 5258
actttacaaa gtcaagcact tttcctgtct ctattaatat cgttaatgca tgcaatctcc 60

ttataacaac tgtctacatt aataaccatt aacttaggtg gtcgtctcaa ggggcttgcc 120

cctgttaaat ggttaataga ggagatagtg ctacgtcacc ttccttagat agtatattaa 180

tgaaggtggc ccatcttaat atgtctgtct ctgttaatca ttttctagtt tacagtttcc 240

aaacatttaa ttgaatttca atttgattgc tatttttgtg agttaaacat agacaatata 300

tattgagtgc acaatatatg tatgcataga acacacatgt acatatgttc tatttgtgac 360

tcatcattat tgtagcatga atgatacatg ttacatgtta tatacatatt acttgtagta 420

ttttatagtc tgctactttc taataaaaat atttgatatc ttgtataatc acctaactgt 480

agcttctcat aatttttgat cttgttatac ttcttgtcca acatagtcca ctcttatggt 540

tgaagaactt tccatttgga tgcacacatt tgcgcaagag gaattcacat atgtccgcta 600

tggttctcat tatttgcatc ttggtgactc attctatttt caccaatctt gtatattctt 660

tagctactag tactggtgtt gaatttgtgg actctttgag gtactcacaa gcgtagtatc 720

catataatgg agttcatggt gattgttttg tgcactacat gatatataat acacaataaa 780

acatatagac aacatgcacg atataatacc acatatgaat tttaatatgt atcaggaagt 840

catgcctgat ggttaagtgt tgccctacct tttcttattc ttagttcaca gatcgaggga 900

tttgggatcc tccatgtgca tcttgtaagt attgtacaaa accataggag tcaatggtaa 960

atttagtgca tatgttaaat gtaaaagaat aagaataatc acttacaagc tcaatatgct 1020

tcaaagttgt tgtacccttc tcttggagta tctaaaaagt tgaatgcaac gatatgtgcc 1080

tattgaagat atattagacg tgtaatctag tggcccatgg tgcctaggct gcaccattca 1140

aacaacacaa tttttaaata ttgaaatatg aaaagagtga tcctagtaca taaatgactt 1200

agatgcaata taatttttt aaactataag ttagaaagaa tgacttagat ttgactctac 1260

aatagcagaa atgacttaat tgtaaataac atatcttaaa tactagaatg acttaggtac 1320

aacgtataat atcttaaaat attgttagtt tcaaaatatc ttagattcaa tcctgtaatg 1380

catgaataac ttagatacaa tataaaacac cttagaaaat gtaagtggaa aagaataact 1440

tagattcaaa actctgtaag ttattcatct aagtattctc taagtattat acaatataaa 1500

acaccttaga aaatgaggag ataaccaagt attctctaag tatt 1544

<210> 5259
<211> 1872
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_50590_G1, chr1:293947282..293949153, Cluster 32

<400> 5259
cgcggtggtc agcggtttca cagtgctagc ggctgccggc tgctcctgaa tgtggatgta 60

ttcattcgta cgacgtaccc tcgctctctt tcctgcttgc tgtacgtgtt ggaaaatcca 120

ttgccggatt ctgtgcctgc ctgtccccaa caatgattga ttaccattat acgtgttctg 180

ctgtaagaac aaaactggac gaccaagaac tagctgctag ctagtgtgct gtgcaaggaa 240

cagcacacta gcagctatgt catcagtatc tgtcaaaaag aatcgatggc atcaaaacta 300

gcatatttgc tgaaaatttg tatctgcaca cacacacaca cacaaaaaca aacaagtgtc 360

cgtttccgga tccggacact ctggattgtt tccatccatg attcatgggt aggtgtccta 420

gcttggatga acaaacaaga acatgcataa agtattatcc aacgacgcgc ggtacggtcc 480

cgttccccac caggacgcaa tatgggccag atgcgtcagg aatctagata tataagccat 540

tctcgtcacc acacccgtcc cgaataaagt atctataaac gctgatctca tggacgagct 600

taaccaacgc tccataatac gtaagcgatc cagtactaaa tgtggtggtg gtcagacttc 660

cattacctgc cacgttgctg tttgatgagc tccttcattg tgatacccaa aatgacaaaa 720

tgggtgcata tctacaacta caagtagtat tctgtttgct gaatgcagtg tccggcccaa 780

caaggtacat ggagatgaaa acatgcttaa ttagttctgc acgcgcgtat taaaggaaaa 840

aaaaaggtcc aaccaaaaaa aatttaaaaa tcaaagcgac gacgtacaag ttggctcgac 900

aaaaagttca aaaaagggaa gtaccaaatg cacttgattg tatcactgct taattagttc 960

tgcacgcgcg agatgcttta cgcagcatga agagaatacg gtggtggact cgtggtgtaa 1020

aaactcaagg acccatggat aattaatgct ctcccttacc acaataccct tcgtctacac 1080

tagtttcaca tattttgcca atggtagttt ctacaatact ctttctctat tgtctagaac 1140

taactgacaa ttattcttct tcctgttttt acttcttttt tttttggtct ttacaacgtt 1200

ctagcgaaat tgactatccg tttgattagt gggctgtatg ctcttatctt agaccactgt 1260

atgcgttgac ttcgtctaaa cttatgtttg tttgattgtc tacatgtgga aggtacggat 1320

tgtatgagtg gacataaaac aaattacttt attgtcgttt agctgcatcc actctatgcc 1380

taaaatgcgc gtatctggcc ggccacgctt gccacgtgca tagcttggac ttttaggatg 1440

ctatcgcatg gaaggatttt tttttgttct ttcagcacgt gcgcagacag atggcttttc 1500

gtggaattta ttttggttat tcgatgcacg tacctattaa aaatgcgcat taattctgct 1560

gtgaaatgct cgcttaattc tgctgtgaag atacttagta aaactatgtt atctgtcggt 1620

ttgatacata ataccaagct gagctgtatt tgggccagaa ccacagctgg gcactgaacc 1680

gcaccagcac acaggcgagg tcctgcagaa acacagcagc atttactagt gacacatgca 1740

gattacagca tggagaagaa cactgaggtt acttacaggc agcagcaggg gtgtgattat 1800

gactcaagca tgctcagaaa tattaattac tccaggagaa agattgcgaa gctttacact 1860

gagacgtgtc at 1872

<210> 5260
<211> 1535
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_51589_G1, chr1:300037148..300038682, Cluster 32

<400> 5260
tcggaattcc gtgacgtgtc aatacgctgc ggcacacagg ttagttagag catgacttac 60

gatggctaat taacctcatt gtttcgtgat tcgaccagat atatggaaaa cgataaatag 120

cttgttacag tggcactggg tgagctgaag cagttaagtt tgagcgagaa aggagcagga 180

caagcaagtt ccgagaaagc tggccttttg agggaggaag gtccaaggat gcaggtgcag 240

gttcatgcac cacctgtatt tgaggatggc tgaccgggga tgccctgcac tggccgcggt 300

cactctcact ctagatcact tggcttggct tgcagctcat gatgtacatt ggtttgcttc 360

ttgagcactg tcatgtacct atgcatacat acaatacaat gcaatttgtt gctggaagga 420

tttgtttgtt tattattcgg ttgtctacgc attgcctggt agctagagtg catgcatctg 480

catcaaccat ggccggccat ggtggactgc tgcttctcac tcactcactc accacgtgac 540

cattctatta tccatcctat tgtagtattt ctgctctact agtcttctat tttagtgtag 600

agaaattggt agtagcttgc tgcatccaag aaaaactact aacaagtgaa gttaattgca 660

tctggtcact gcacttggca tctatctacc gggtgaatag ccatgaacga cgaccacgac 720

ggcggcggaa tagaaaatac gtggaaaagt aggtggatcg gggtagcaag cagattcatt 780

gcaccttaat taacaacttg ccatcgccag cacgtgtctg aatctaacgc acttctatgt 840

tttcttggct ggctagctga cggcttgacc aggtcatgcc tgctctattt tttttccttg 900

ggattttccg tacaaacatt catctctctc cacatcatgc atgccacggt ggatttcaaa 960

ttggttccaa tgcagaaagt ctcctttatc tgtattagcg tttcattgca cagctcttag 1020

catcggttgc cacatcagtt ttttatagac ttttagttaa tataaaacac atcatttta 1080

ttaaaattaa aacacgtctg attacataat tgagcaaata cagttaaaga ttgcatagtt 1140

cataaatata attaataaac tgctattact cttccacctc ttctgttagc ttctttctcc 1200

tcaaatttaa gttgctttgt caatatttct aaggccagct tataggccct tttttgtgtc 1260

ttggtccata tcggcggtgg aacgatctag caatttatta aattactcaa atactttagt 1320

ttggacaatc ctctcactat catcgcatag cttccttaat attcctttct gcttagatga 1380

cgactcaata ttatttattg ttggcccttt cctcttccgt taagctattg gtctattaca 1440

accaataggg catggtgcgt ccataccttt ttatgtgatg tggagtcata atcgttgttc 1500

aagttaagac gagatctttt gctcctacca ttgga 1535

<210> 5261
<211> 2217
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_5284_G1, chr1:27105842..27108058, Cluster 32

<400> 5261
taagtgaact aaaaacacac agggaaaaaa aatgtgaagt aataaactat gtaatttttt 60

cgcaaaggaa aagaaagaaa aaacactacc tatctgacac cactaaccga tcgtcctatt 120

agtgctggca tgatattaat ccactagcag tttggagcaa ccacggatgt aaatcattgc 180

aatatgataa ggaagttagt ggtaactctc cttgtcgatg tgattggcga tggaacacct 240

tgctgatcta ggataaatat atatataact gggattggac atcgaattat tgagtggaat 300

gatcatatat ggtgctaatg atgttttgac cctagtcagg aaaaaaaata acaacaagag 360

cagtacgacc gacgtgcatg catggtgcga agagcaatca atcggaaggt tgcatcacgg 420

tttgtgtaac actgcaaaat ataattaccg tttggtgtgt ctcttatttg catgcaactt 480

taaaaaaaac atgcaaacaa taatattcca cgcggcgcca aagcccaaag gtgtggtttg 540

ctaatgatgt tttgacccta tctgcagtgc aaatattact ccgagaggtt tgagtgattg 600

gacagttatc agataagata tgcacgtaca tgaattagca tcttatatat aaatataaaa 660

aaggtattgc atctgtgtcc ccggcattta agagacatat cggagaccga gaggtttgag 720

tgaatggaca attattagat aagctataat atacggagta gtattagaga tgatccttga 780

acgcattacc agattattat tacggagtac ctatctccag cgacctgtcc agactccctt 840

gttttagttt ccgccatata ttttttttcc cacattatat ttttaatttt tatttaaaaa 900

tgaacaatta cgacaagtta attaacacaa ttaatccgcc ggagtttaca cggtttggat 960

gcaaaagctg gttttctcta ttttagtata cggaatctgt atatttggaa cacggttttg 1020

catctccatt attgtgctga caacattgtc catctatata tatagacgcg accaatgtgt 1080

ggtttgtaga caatatgttg ccgtaatctg acacgtaccc cttcctcaaa gatccgatca 1140

aaatgcatgc agctagcgca aatgagtgtt ccactcgatc ctaggctggc tggctttctg 1200

gcctagcttt gatctaggtt tgccgaatgg acgcttaact gtttatatag cagctctcta 1260

gaagcataaa agcaggggggg aaagagtagc aatccggtcc gtgtatccaa caaaagctcc 1320

aaaatgcgag ctgcgtcatg accaacagtt aagcagcttt tagaaagaaa aaaaaactat 1380

aaacatcggc ttttggacgt gtggttgcaa ggaaacgaac aaaagggcgt tgacgccggg 1440

ccacattttt tacgtacatt tgcgtggcgt ctagagccta ctagcccgcc gatcatcggt 1500

tgcttctaag ttctaactaa caacaccgac ctgacgtgct ttcgatttgt ggcaaacggt 1560

gcgtcgtcgt cgtctccaga aaactgaact gcatgtgagc cgcgcgcgcc acttgttgta 1620

tactagcagc gtttggagtt tggacgtgtg ccgagaaaac atatatgtgc tacatagtgt 1680

aatgttatga gtggagtatt tgagacgacg tacgacgtgg tgcctgacga tgaatggccc 1740

cggacactac agctgaaact gaaaggggag aacaacaacg ccaagagagg aacaacgacg 1800

acacgcagct acgacgcacg caaagcaaag caaagccatg catgtagcca gttattagct 1860

cacaccgccc accacgcacg cacgttgaat ggtaatctat tgcatgcatt gcacgcatat 1920

atattagccc gtgtttaagg tttcgtactc ggcgcgaggt acgtaagtac atgcatagga 1980

gtgactccag actagtagta gccacgtaaa tgacgatgtc gcccagcgag accggtcgct 2040

actaccgttc acctctacta actccgtacg tttcactggc ccgaggctaa gaagccgaga 2100

acagaaaacg cgcacggcag gctgatgaat ggtgatgatg gattggtcga aagctcaacg 2160

aacgtaactg gaagcagagg tgggcatatg gggggggggg gggggggggg cacgtac 2217

<210> 5262
<211> 1716
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_53765_G1, chr2:10660080..10661795, Cluster 32

<400> 5262
ccttttatca cccgctactt tgagaggcga acaaaataat gctgcttgca cacaaaaaaa 60

cattaaaatg accgggagaa gcccgtgatc gagcgggcct tttctttttt ttaaaaaaaa 120

agcggtacca aaggaagatg ctgtctcaac tgaatgcttt ttttttgtct tcccttctgc 180

gaagttcttc ttttcttttt ttcactaggt tgttgtcttc cggtgatagt ttgatgtagg 240

atctctagtt tacctgtaag aaactgaaag gatgtttgtc atgaccacat cgaccgatct 300

tttgtagagc ctcccctcac gtggacgtac ggtgtgcgat gcaaatattg atacttcata 360

cttgtagggt gctaaaaatg ctgacgttta ttatggcctc atgggtttag aacaccgttg 420

tcggcagtca ctagtgactt gattataaaa agctggcaat taaagcaccg tctcagagtc 480

tatttagcat acactaatta accaatgaga caaaaaaaaa acatatccaa gtttgcttcc 540

ggccggtgac gcgcgcaacc aaaaaaacac tagctagtta tatataaata aatatcgcaa 600

cttgactgct agtggctgtc accagttgcc cagctcataa tgatgcagct gaggctgagc 660

ttacggaggc catcagacac ctcagtggag gtggaccggg tcaacgtttt ggaacaacac 720

cacaaataga aagcaaggag agctctgttt ctgttctggc tggcggctgg cttcttccac 780

ttttaggcag ccctatatct agctgacagg ctggccatgc atgtataggc ttggaagcca 840

tcttaatttc ctttgcttgg aagccaaaaa aaacccacgg ctgcagtgca gatgcttgag 900

ttgtattgta tctaaaaagt tgtgctttgg gcgcacaggc aaaaggctgc gaaaccttat 960

cactctcgtt gggaaatcat atctcagtta tgattataaa ggccatctgc tttgggtggc 1020

acggccaatg atttcccccg gcccccatca tcgtgcaatg ctgctagctt tttctaaaca 1080

agataaatga aacacggctg ttcttttgta acttggtgtg ttatttctcg tttctataca 1140

ttattcttag cttcttagac aagacatata tacactatat aatataaacc tagtgagggc 1200

aattaacggc aaaaagtttg ctcactttct acagagaaag gtaaagtttg tatgtgtata 1260

tctctgtata tatagcttgc tagagctctt tggcgtggtt ttattaatta gtgtgggttt 1320

taaaactagg ttctacactt aaaacaccag aacggatatg aattgagtgc aacgtcatca 1380

gtcagcaaca tctgctctag ctatttggtc taaagagaga cagacacaga gacggataca 1440

gagaggtccc atgcatgctt gtgtgaaccg gaccggacaa aggctacgct gcaacaactc 1500

gcgatcgcca tgccgcagcc atgcaactcg ctcgcgacga tctttttttt ttttttggt 1560

ctgggaagtg gcaacgcaca cacacattgg ggtgcagcag cagcatgcag tgcagctctg 1620

taaagtgtaa agtgagataa gagtcgtctc tatacggcaa cacacacaca acctagtgaa 1680

tggatgtacg catggagtag aagctcccca catttt 1716

<210> 5263
<211> 1469
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55415_G1, chr2:19356242..19357710, Cluster 32

<400> 5263
cctaccgaac atttgggtcg ggcctagctt ttagtatctg ggcacggcat ggcgcaacga 60

gagtggtgta ttcttctctt cccctagttt ggataaagat ctagaggaat gcaatcgagg 120

aaaggatgag agggtcctta tcaacccaaa gagcgtatca gtgagatgtg agagtgtggc 180

atgttgtgtt ggatatggga tgggatgaca ccttgcgaat attgatacat tgattgtgag 240

gtatgtatag gaaatccaaa gccaaataat aggttctctt ccctatcatt gcatatcgct 300

aaccatataa caaatcgtaa tgaaaattgt tgacaaaggt gaggaacctg actatgacaa 360

caacaacgga tgttaggagg attgtatggt ctcattatat gctcaatatg tctaaggatt 420

gagggttata tagtcttcaa cttgttgtcg tgctatgctc tactccaata ttgttgtatg 480

tgtgtttccg ctagtgcgac attgtactaa aatagaaaaa actatggatt gtaatccctt 540

ttaaatatat aatcatgttg tatatatcgt ggtaccacat gaataatgat actgtgaagg 600

cttggtcttc catgggacta tcacattata ttgtaatatg tggatttctc ttcatggata 660

ttatgaatcg ttctagtatc aacacgtgtg gggataaaat actataacga tggtgttcta 720

acacggcaca catagtaaaa ggaaagacgg agagagagtt tgggtgcccg cagtcatata 780

cattttgatt ttgttttgtt tcagcagcct cacaaagacg ccagaagagt gatgtacttg 840

ctctctatct actgtgtttt ggtgtactca ctgacttcgt gtcacatgaa tcctcctttc 900

gcgtgtacag ccacctacga atgaaaaata tctgaacaac aatttaatag cctaataaag 960

gccacatttc ttggcgatga tttcaaatgt tttcttttat ttgtattgaa agcgctagat 1020

tggctggaga tccttgattt gatttacagg ctggttggct ggtttcaaat ttcaatcaaa 1080

cataggctca aaatagtcga tgataaacgt ggtgcctgct acgtgcttgc ttgcttgctt 1140

gcatcgtgat aggctgcgca gggccacggg acaaaggcta ccggtaccgg tacaagtaat 1200

tttctttggt agctgtagac ggccagtgcg acgaccggtc caaagcgagc atcggagcga 1260

gaagtttctc acgcccgcgg acccggagga cgggtctcgg cgagctcgtc acgaaagtct 1320

cgcgttcagt gactccgaca ccggcaaaag ttaaagccag acgacaatgc tacatgctgt 1380

gcctgtgctg tttgctgcac tgcactgcac tgcagcccgc gccgtatgtt tcttgtcact 1440

agtactagtg gtcgagcata ctttttata 1469

<210> 5264
<211> 1483
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_55524_G1, chr2:20099003..20100485, Cluster 32

<400> 5264
agtggctgtg gcgatggagt gagagacaaa ccggggacgt gacagaagcc aagagccaga 60

aggacgaacg agaaacgcca ttgaaatgac tcgatcgcgc gcgagcgcca gttgaaggga 120

ctccgacgcg tgctcaacgg cggccaatgg acgacagcgg ttagtacgtc aactaacccc 180

aacgtattat tagctacgta aagagtggtt aatactaacc catccgcata taacttccat 240

acgagtggtc attttcttac accaaccgga gaacggatag cctctcaaaa ataattggtg 300

gcgccccaca tgtatctaaa ctatattaca ttacattcaa tatataggtg catggctcat 360

attaaattaa atttagctat atatattgtt tgtctaaaca gtcgtttagt ctgtttaagc 420

accatgcata taatcttaat actacatagt gctatatata ttgtttgtct aaacggtcgt 480

ttagtccgtt tagcccgttt aattaatcct gtaacctgat taatggttct agcctaaata 540

atggttaaac tgtaggtgtg tgtggctgtt tatagtttag cgtttaggaa aaaaacattg 600

gttatacatt aaatgtgtcc agctcttgtc gtggtcattg gggcgaggct ccttaatggt 660

tgtccagatg ttccagaggc tccaatggtt tttttggcac gccatccctg aacgaaatac 720

tcgtgactcg taccgactgt aatccactac tttgaacaac acaagatatt ggctcatgta 780

aatgaagaca ctagtttctt gaggttgggt ctctctgcta gacataattc actatctagc 840

tttattaaat ttaatataat tttagttata gtgtttacat atatcattat aaatttgcta 900

gattattttt ttttaaaaaa ataaacatga aaatggctaa acaaatgggc gagcgaaaat 960

atacatgggt aacaccgtga gttgagggac ggatgcgtac gtgattattg tcacatggcg 1020

cgcgcgttgg agagcagtac tacgtacatc tgtatattgt acagttactt tgacgaattt 1080

ttgggccctt tgatcctaat agaaaaggac tgttgaccaa ttatagatgg tgggctccgt 1140

catcgctctt cgaatcgggg ctttcccttg gttttgcagt ttgctttcgc gctgcgaatc 1200

tggcgcgaat gaaaccggct gtgtgctttc aaccttcaat ataagaggca aaagcagcag 1260

ttgattgatt gggtcgatac tcgttgctgt cctgacggca acggcgacgg tagggaaatc 1320

ttcagagcaa gagtggcttg ttctcgtctt cattcattgg attcagtctg tattagctgc 1380

caattccacg acagctgtga gtactctcgc tcgctgccgc atgtgcaaaa tccatgcttt 1440

aagctgtgcc accctgcagc gtccatccat ggattccttt ggt 1483

<210> 5265
<211> 1590
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_58912_G1, chr2:39756860..39758449, Cluster 32

<400> 5265
agtacaactt gtatatctac cataatgttt tgtagtttcg gcagtatcta ttttgtcaaa 60

taattatttt cactgaaatc attaggggac atgtcctctt ggaggccatg tcaagttcct 120

gaataactta tattttataa ttggggtatt ttttcttaag gtatcttatt ttattaataa 180

tacgcaatgg gggttggtaa tattcctttt cttatgagtg ttagaaaaac agagaaatcg 240

gctcagtttt taaaggaccg attgtctcta tgctctgtat ttaatgttga atgctgaact 300

ctagggttct gtatttaatg tccattgtct ctatgctcaa aaataatttg acttcggact 360

tggttttaat gactgggata aaagtattta ctccctcatc gagatgtaca cttggataat 420

ttacacattc agtttagagc acacgattca taggctaata cctgtgtaac tatgcagaga 480

cacaacagaa gatttgatgc ttgtcatggg atctctttac gcggcatgcc tgtttcttgg 540

tgtaaataac gcctcatccg tgcagcctgt agtatcaact gagaggactg tctactaccg 600

ggaacgtgct gctaaaatgt actcatcgtt cccatatgct gcagcacagg ttagccaagc 660

tcacatctat ttttttctct agagattcca gtttctaata tttcttaaaa ccaatagggt 720

cttgtagaga ttccttacat tgcagttcag acactgatat ttggcctcat cacgtacttc 780

atgatcaact acgagaggaa cataggcaag tcacatgtca tcaaggaaaa ccattcttca 840

tcaaaggact tcatgctttc tacacatgat gttgtttctt gtgtgttcgc tgtattctga 900

tagactaaac atttttgtca caggaaagct gcttctgtat cttcttttca tgttccttac 960

tttcacctac ttcacgttct acgggatggt ggcggtaggc ttgaccccaa cacaacaagt 1020

tgcagcagta gtgtcatctg ctttttactc cttgtggaat cttctctccg ggttcctcat 1080

cccccagtct gtaagttact gaatagccca aagaagcaga gtatattaca tcattatgct 1140

tccaattgtt ccaagttttg aacatacaaa tcttgctgaa cctattcttg tatttgtaaa 1200

catgatgata tatagtttac atgttaaagt agctttcaag taaaaaaaga aacaattttt 1260

catagttatt gaacgtaacc agatttttta tttcacacat cagttttgag tcaatccaga 1320

gagcgtttca gtatgatgct gtttatctgt ttctaaacgt cgtgcttgtc attcgtgatg 1380

cagaggatcc ctggctggtg gatctggttc tattacatct gtccagtggc ctggaccctg 1440

cgaggcatca ttacatctca gctgggcgat gtgcaggcca ggatagtcgg ccctggtttc 1500

gatgggaccg tgcaggagtt ccttgaggaa agcctggggt tccaacaggg gatggctggt 1560

gtcacggttg cggtgctcat tggcttctcc 1590

<210> 5266
<211> 2310
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59034_G1, chr2:40489516..40491825, Cluster 32

<400> 5266
aaattggtgc aaagtagatg cctagatggc gcgcggtcgg acactactct agatgtgcaa 60

ttacgtggct aaagtagtag cgacgaaatc aaattccaca gtcgttcacg tcaattaatt 120

cattttcttg tttgggcttg catttttttt ttcttttctg cctcaaaagt gactgacaaa 180

agcgacaaga tgtacatgct gctgccagag ttacaaaaat agtaataaaa gaaagctata 240

atgatctttc gcttttgttg tcttgaggct catgccaagc ctcttaatta tatcccattt 300

tctatctcat tcttcatttc aagatctaca aacagtgtct tccacgtcta tctccacgtg 360

agagatggcc tcagtggaag atgggcaaac cggtgttccc tcgtcctcaa acgttccaag 420

ctaggagctt gtactagtta acatttttaa atttagctaa atttacaaac aaaaaatact 480

ataaatattt gtatgtttaa acaaaatagg tacagaaata tatttaaaga actacctaat 540

aatactaatt gtacatcata aatattaaca ttttctaata tatatatata taaggttaaa 600

aatatttaac ttgttaaaat gtggtaatga cacagtgcag gtggtcaaac tcatttattt 660

ttttatcaaa tttacataaa ttatataaaa cgtacatcga cggttttatt tcttaatagt 720

tattactata actttatatt tttttagact ggtcaacaaa gttggaaaag tttgactgaa 780

acttaaacga ccaacctttt ggaacaaagg ggtgctattt aaatcaagca ggaaaacaac 840

tacagtgatg ttctccaagc aaacccttttt taattagtaa taaaaaggtt tggcgtgatc 900

aataatgctt aattacatga tgatggcttt ctaaaaacat taccactgca gggcgaaccg 960

taatattcca gtgatgttct ccaagcaaat tcactaggga acaattgcaa atcaccacta 1020

acaaatattc catatgtttc tcgctttagt aatttgcgtt acatatcaaa ctttgctaac 1080

tttttataag aaaatatagt aacatccaga agctcaaata agtgcacatg gagattttag 1140

tttaattatt tttgatactg tgaatattgc aaaattggag aagtttgact taggaagaag 1200

caaggtgaca tataaatttg gaatggacga gggacatcat ctcgtatctg atagaaattg 1260

aaatccactg gattgcttaa gacactaata tgccaatcgg ctagccttaa tgatgatagt 1320

ggtcgcgttg atcattattg tcgtgcccat caccggtggt acatagatca agacctctag 1380

gattgtggcg gctagggttt tcgagcgcac ggatgcacat ctatgttggc tcttgtctct 1440

atttatgttg tgtctatcgt gacagggtgt cacaactaag ggttggtttg tgtccctgat 1500

taggacgtgt gaagaccata cacacacgat gaagatttgg tgcttatccc aactcggttt 1560

atgttaccaa gtcagagaac accctaatag catcctcacg gcccaagatt atcttagctc 1620

ggcctccttt tatctatagg aagaaatgtg caccatttgt accagtgcca ataatcatgc 1680

atccttaagc cctaagcagt gagtcctaaa gatgagatat gctgcaatcc gttcttcaaa 1740

actctatgta tccgtgtgta atgtgtatac acacaacaac tggcagatgt gctgttgcaa 1800

tcacaaaagg gcagaggccg ttgtattgtc tctgtccagc cctctgcacc ttagcccctg 1860

cggtgaacgc ctctcgctct tgatcccgac gacgaggctt gtaacgcaat ctggatttgc 1920

atctcccagc tggttgctca tcggttgttt tgcttggagc cgtgtgcgat ccagctaatc 1980

aacctggaag ggttattaat gtcagcatga ctgcatgatg acacgacaca cgaaatagcg 2040

ggacgtctta tgtaaacacg aaatagcttg gagccggcct ccagacttgg ccgtgtgcat 2100

gatgactgca taatgtcaca aacacaaaga agtggccgaa attaagtaat ttataattta 2160

taaggcatta tagaagaagt tataaagatt tataacatca aacggacata ctacataaat 2220

gttattattt tattatataa ctttatttaa actagattac ggttttcaga tgacttctta 2280

tgaagtttca ttatcgcata tgattggcta 2310

<210> 5267
<211> 1795
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_59249_G1, chr2:41754758..41756552, Cluster 32

<400> 5267
acaactttta attctaggtt ttcttattct gggtaaggca ctagggtcga tattatctta 60

gttgacctat tcgtttcctt agcgctgagt aggacagggt ggagtttgac taggttctaa 120

gttctatggg ttaagacttt tcttcactcg ccgatatata tgttcaaagg ccttacacta 180

catttatcaa gtccccctaa ctagatttta ctgtggaata cttaaaatat tgggtaactt 240

attagtttga ctatattcca gtggtttcta ttgggatcta tttatacaat gcatacttag 300

gtctcctaga ttgaactcat gacaatttgg attaggaatg gggacatgag tgttgtggtt 360

ggctatatta ttgcctttga ctatgatagt ctaggtcact atgccaatga agaatcatcc 420

gttcattggt aagattgttt ggcattctag tcggtgaaat gcaagattca tatcaagact 480

taaaagaaaa gttggcaagg atggagagga cttataattt ttaattcaac ttggttaact 540

agattttaga gtataatact tagtgaattg cttaccttaa gggttcaact acctcatgtt 600

ggtcagacaa gatgtatatg attaaaaact gatggcagtc tagttagggt gatcagtatg 660

actcatatag taggttgctc gatacttcag ttgacaagca gagaggataa cacctattct 720

tcaatgttta atctcgttaa gaggacaaaa gcttataata tctatttata aggcatggta 780

gtcgacaagg ctggttgcaa tgtacttgat ctttcagtgg ttgcagtagt tctctagtga 840

acgtgcaagc acattagttc cactaaggat tcttggtgaa gctagatcta aggtgtccga 900

aaaacgggca gggtatgaat agggttggta gcatatgtac acaacaaaat gacacataag 960

cataagttgc ttacctatgt cttggttatg gtgaagctaa atagtaactc caagatccga 1020

tagtcctaga atggatcctt caacttgtgt agcttgcggt catgtactat tatagagaga 1080

atgaccctaa gactctaaca aaggtcacaa ccaccaccaa gattatgcaa gtttaagcga 1140

ccaaggatta tgatggaaca agcaagattg taaagggaaa agcataggac gacggagcta 1200

tactagatgg actcaagcac taacactaat ggtggccaac cattcaaggg tccactaggg 1260

aaggtcttca ctcatggaaa attctaatgt ggtttggttg gttgtgaaac acaatgctag 1320

gtgaaacaat ggctatgagg gcttgaacta cgatagagaa attggcatgc gttctctcta 1380

tgaatgatag caagaagaat ggaggaagaa gacaagttct aggaggaaat aatggtgtgg 1440

tacaattaca taactaaagc agtggggtgt catacacgac gacaacacat gatatgaagc 1500

atttccttgt gcacatgggc acaacatggc aaagaggaag gatatgtgac aacatgtggc 1560

actaaagttc cgagtatgtc gagcatctag ttgggtgaac aactaaccta gttaaatgac 1620

caaatgattg aatcattttt attatggttc cagacttcac aacttctcta ttcttctcat 1680

gatcaagaat aaaattttat cgatatgtct aaacgaaagt tttaaatttg aacaactcca 1740

actaaattaa gttgggatac ctttgtatgc catttgtacc taaagctcta taaat 1795

<210> 5268
<211> 1482
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_59251_G1, chr2:41762770..41764251, Cluster 32

<400> 5268
gtatggcctt agagctatca tatgctaaat aatgggagac gagggaacat tctataaaat 60

cttccttttc tcgagactaa aaggggggaaa agatcttcct cttattgcaa ggctaataaa 120

agtagaaatc cagttgtcca taaatgcaaa atccatagag aaagtaatcg acaactcgaa 180

tctccaacat gtggtttatt caattcatac ttatttatgt tatcttcctt atcgcaccca 240

gtagaaggca catgacaaca attataattt gaaagacttc ccttcaacaa caacttgttg 300

gtcatgagtg gttgagtggt ggttcaaagt ccgagcttat ctccacctat aaaactcaca 360

ctatgtgtct ctatttgatt gatagggtta ctttaaatat atcggagatc aaacgataac 420

taaatgctta tagtattaac catgccatga tgacttattt aagttgtgaa tatgttctgc 480

ttgcttgtgc ctttctctca agaaccaaga gcgccacaaa ggaaaatgga attcaaacat 540

aggaaaacaa aaggtatggt attcatagtt gtgctttgta actagagcct aataactata 600

tcaattgatg gcttatgttg aacaagatct tgcttttgcc ctatggtagg tggagaatga 660

gtgacacatg gtatccatga gactttactg tgctcaaaag ctaatgactc cttgaaaagc 720

catttcgtgc ttggatgacc acgctaccat gtgtaccaat tatcacattg ggaagtctgc 780

atcataagca tgtccatcaa tgtttcacat tatgatatct ttagaccatt gtgcaaaatg 840

ttactgattt ctagtgttta ggttcaagag ttgtttagtt gatgctacca cattgatcct 900

atgtgctatt atcagaatat ggtcatcaac atcttcctat gtgtggatgc aattcctaaa 960

ccagccaaac cttgtctcta tctacttcat catcagattt ggttagtatc ggtggtccaa 1020

ctaaaataac ccataggcac tataatcact ctatttaact attgagctag ctacacacaa 1080

ttaggtgcat acttcattct acatctgact acaaaaaagg ttaatttcca aataaatgca 1140

tatgattagg taataaaaga agcgtactag gtctattatg ctacatagcc aatgatatca 1200

agacaacaaa tagaaacatc gttttctagc acagtagatc ccatatttgc atcagatgct 1260

cttgattagc caagtggatc tagaaaacat cgagagacat aagagtgtca tttaattgat 1320

gcttgcctcg taagcggtcc catatttgca ttggatgttg ttgattagcc aagtggtcct 1380

agaactcatc gggagacatc aaagtgatca tttaattgat gcttgcctcg taagcaatca 1440

ctactataga aaataatgct atctaggaca taatatatgt ta 1482

<210> 5269
<211> 1585
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)

<223> optimal_loci_75336_G1, chr2:143253828..143255412, Cluster 32

<400> 5269
ccaactagtg atgaggaact cacactatta ggaactacta aacaaaacaa gatataacaa 60

gtataacaaa agctcaaagc tagtatataa aacaagtaga gttgaaagac tacttgaaaa 120

gatagcaatg tattgtgata acactagtct tacaaaaagg atataagaac attaccaaag 180

attctaaaga ccacttctga actatgagta gagctcaact tactctcact cccactacta 240

gcctaactaa agaagtgatt aatagtggat acttcttatc ttttggactt ggtactctac 300

ttgtctattt tacaaatgag ctaaacacca ctatttatag tacataagag tgggtgtatt 360

tgtagttaaa atggaggcaa ttcagctaac aaggggggtca ggtgataccc tatggcatca 420

atgacccttg aatttcttcg ataaagcgtc taaggtcttt aatgactcat ccatgttggt 480

gtggcactat cctaagtcag ttatatggag gttgtgggat tctttcatcg acctgtggag 540

tcattgatcc ttggatccct ccatggaggc ccttggatca aaccaacaag gaatcaacaa 600

gtagatatat tccatttttt gtttcttcgc caaacacatg gatcattgat gtggagctga 660

caggggacat tgagcgacat ggggttgacc gacctaacca gttagaccgt ggggcttatg 720

cctccttttt ctagactccc ggtgcttcat ttcttcataa tttatgaagt tcttcctcca 780

ttcaaatatt ttcaagtaca agtggaacca tattagttta aaaaatcatg ttatgttgat 840

ttatcccttt ctttgttgca ttattgatgg ataagattgg catttagtat tcatcaatag 900

tagtcccatg gaggtccatc atgttgagtt ctagcttcat cctaagttct tccttcgagc 960

ttctctagaa agaaccctat tttgggagaa agtcttccac ataccctata ataatcatgt 1020

accctagtta aggtttagtg atttggtggt tgatcaacaa gataaccaat gaaaccaaca 1080

atattttcta ctacataagt tcttagttat agcgatgtaa acgatagact tatcctagtc 1140

taaggtatag tgattaagcg ctcaacaccc taaaggaata ttaaagatga gtattgaaga 1200

tcatagaaga catgagataa gctaaagaca ttacgaaaca taaatctaga caaaagagcg 1260

aaggattcaa catagaaggg cattgaaaga agcactagag gttttcgatg gtcattggag 1320

ttatctgttg tgaacaataa ggaagcagtg catgatgtat ttttgtgtgg ttattggagt 1380

ttagcaccaa agttatacca tagagccaat gcataggtga ttgagaagag cacaaagagc 1440

atcaaagccc tccaacttgt gcacgaagta ctgaggtgtg tctagagagg gcctagtcct 1500

ctagatagta cattataact ctctattgtg gcaccaaaca aaccacctaa taaaagatcc 1560

agtggttggc aacacctagt tctta 1585

<210> 5270
<211> 1449
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_7580_G1, chr1:39781194..39782642, Cluster 32

<400> 5270
gccatattag gacttgtaat attatgacgt tagaaaagca gtgtaggtgg tactgcatcc 60

ttttaagaaa gattttcaat atggctaagt ttcaaggact cgacattcat gagctcgtat 120

agggacttga gataatagga cgtcagtaga actatgtagt tgatactaca ttattaatga 180

tctcttgaag ataaagtgac aattatgtag gggtttatgt gaatcattga gctgcatgag 240

cttggcttct agatgaccga gttaattgaa ctcaacattt gattcctgta gaagatatat 300

aacaaagggt cgagccttga ggactcagat attgtgtact catatagaga gttataattt 360

ttagacataa aagaagccat gtaggcaata taggcaccct cccaaaggat ttgtcgttta 420

gagtcttgta gacttggtgc cctattgatg ggctttaaag caacaacata gtcgtatagg 480

tgatactgct accttctcta atgggaactt aagactacct aactcgacat ctaagaaaat 540

gttttaatgg aggtgaccta atcccctcaa aatcccttgg gctagataga agtaaggaat 600

gaatctttta gcgaggtgtc agtttatgac tcatgttgtg tagacaacaa tagagccata 660

taggtaatac ttccaccctc ctcgagggga ccttagagtc tccctaggtc gacgtccagg 720

tacatagagt catggggcta gcatctagta catttatagg actaattaaa caagttgaga 780

tctaatggtc aattcatctc caccaacctt tcaagaaaat atcaaggaaa agatcaacgt 840

aaactcattt tttgaggtac tcaatacgaa catgtaggta tatgatacta gcccccaaca 900

ttttggtcgt agtatgatgg ccaaaatgtt caagatatcg aagttcactc atagacgtcc 960

tttttgaaaa agagaataat atataacaat atagaaaatg ttcaatggtt ccatacataa 1020

ataatggtag accccaacat ctctgatgtg aacaacaacc gagatgttga gagaaacttc 1080

actttgggga tctttactta tcaatccaaa atactctact aatgacatgt caattcttcg 1140

atggcttatt agtcatagca gttaaagata ataagttcta tatggcaacc tattggtaat 1200

tgtcggtagt attgtacttc catatggttc ttcatggaat acattaaaca aattgcttat 1260

aacagtgtcg tcgcagaaaa tctattgggg attgtctagc aattgacaca tgaggagctg 1320

agaggtgagc tattgttgtg gtcgtccctc ctaattgtga ctctagatgt ggggtgctaa 1380

tatttgtgaa ttgctctaca aaggcataat aacaaattaa gcatcaaatt ctggtcaaat 1440

cacgtggat 1449

<210> 5271
<211> 1437
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_76728_G1, chr2:151680440..151681876, Cluster 32

<400> 5271
tcgaatgtgg actggaagca tgatatcacg agcctttagt gcgacttcta agatcttgcc 60

ctcataggac ataagatcaa gatggaggct agaaaaatta gggggtcgaa tgggccaaga 120

ttatggatcg ataaggtccc aatacaaaat gggttaccaa cgcaaacttc cttttagcct 180

tgcaactgta aacccccctac gtggggaagg acaaggcgca ttatgccacc atgtctggtc 240

cacaagacca catagagacc aaagaagaat aattaatgca ccgaaggcaa aagaccagcc 300

atcggtagta ctgcaaccag ccctcaacct ataatagaac aactaatcca gcaattacat 360

gttacaaaga tatcatcaag aaagatatag gttagtcgta ggggcaacca catatcaaag 420

ggcaaccctc atgttagaac atgtgatcga agttaggcat caacttgcaa tactctaagt 480

agaaatccaa agtattacct tagctcaacc aagccaaaca ttagccacaa tcacatagcc 540

aagacaaccc atatagtaaa atttaaaacc ctagcaagtc atcgtaattc aaccaaagcc 600

aatagacaac aagtcacccc tatgcaaaag tctacaaacc ctcatgttgt attagtgctt 660

ccacttttgc cccatgattt gccaccaatg acccataaat atgtcttatg caattgtatc 720

tcatgccgaa ggttgcatgg gcatgataaa aaagccatgt ttgcatcttc ttcacatgtg 780

actcggtatt ttgcgttgct tctagtagga tgcacaagtt ttaaggacca ccataagctt 840

gattctgctt tcctccatat catgcatctc atcaatacat agaccttggt gttctttata 900

gaagtaaaaa aagataatta caaacttata gtttgggatg atcaacggat gtgacctaat 960

aagcgatgcc caaaactttg ttgctaatcg agtcgctttg aggcaaccag cgagtcgtct 1020

agctacatta gtaatgtgtt cgttgcaatg ctagatatcc aagacaaaag gaaggaaatt 1080

tggttgtgga gcaaacaatt ctttaagaaa aaaagttgga gattttgtaa tcaaagtgga 1140

gatgaaggtg agcaaagagt tgtggtctaa agtaggtctc gatgggagag agagagagag 1200

ctagatggta aggccaaatt tagattattg ttcatgaata cttgattaga ctatgtaaaa 1260

caacaatcaa gaaggggggag ctcgtcgaca cccggatcta gaattgtgtc actgaatgca 1320

gccacaagga aggcagaggc attgccattg cttttattgt ttaccaaacg aaccaagtta 1380

aaatccctaa ccaacttcta ggggctagag atctaaggaa gatgccctat ggggtcc 1437

<210> 5272
<211> 1424
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_81629_G1, chr2:179983714..179985137, Cluster 32

<400> 5272
ctgactaatt ctagaaaaca aaccaaaacc tcagatattg tatacttgtt tctcacaata 60

atcatatgca agtataattt taaaaaataa tcatatgcaa gtagctgcac aatagaacat 120

acgacactac ttaaaaaagg cacagctgta aagatgagtg cgcacatatg ccttttgact 180

aggaatctct ctcactctct gaggcatatg catgattttc acttggtata tttgcttttg 240

cctttgttat gtttttggta taccagatgc aaatggaacg cattttctat agaaggagct 300

agctagaggc gcagcagcat atagtgttct gttgcagcta cttcatgcat tctccagtta 360

ttaattcatg tagggtaaca aagatcgatg atagatgcat gtagcatcat gcactttcta 420

tgaacttgca tttcggatgg gatgtctacg actccttttg agagagctgc aggcaggtat 480

acaatgacga acttgtaccg tacgcaagaa caaaccgcgc tagtatagca tggaatatat 540

ataatgactt gatgaattta aatttattta atttacagta taatacacgt acgactggtc 600

tcatcatcag tagatgcatc atgtgcatgc atgcatggac gcgtagcatg catgagcggt 660

gaatgtcgct acacagagca atgcatgcat catccatcct cggatccatc catcacatga 720

gaatctgtca ctagctagct agctagcagc taggtatagc tatacctctg ctagatactt 780

ctaatatact aatggttgtg gcatcgagag ggtcacctta ttattcgttg gtttacacga 840

atttggtggc gcgcgcgcat gcacgcggta tagcacaccg gatttgatgc acgcacgtca 900

cgcaacggcc aacagtggtg acactcccag cacactagct aagctaggtg gtgcgttgtt 960

gcatatatat aatgtagcta gcctctggta ctacgacgta cgtacgtacg acgacaagcc 1020

aagagattct gtatgcgagt acaagactac tggtagctag gtgtgcgtgt gtgtgtgcag 1080

tgtactcagc tatacaagat gtttattttt gatctgtttg cgccggccaa agttagtacg 1140

tactactgct gcagtgtata gcgcacgcat actgcgtata tccattgcga tctcgaccgg 1200

gcaaattcaa ctgtcgtcgt cgtcgcactg ttccaacatc atcaccacac tgcgcgcccg 1260

gccgctttcc tccacgacgg cggaggaaag cacagctagc agttttcttg attcgtggcc 1320

aggcaggtgg tatggactcc gactacatca tcatcaccac agttgcagtg atttccgcat 1380

gcgtggtgac ttgggccaaa accctaaact ctttgaatac ttgg 1424

<210> 5273
<211> 1611
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82184_G1, chr2:182875426..182877036, Cluster 32

<400> 5273
tactcataat aacaaaacct aaatacttcc gagagacggc cgccgatcta gctaatcctc 60

gatcggtgca gagaaaggta gcgtttggtt tcgttagatt ctaatgagta tctgtatcaa 120

catctctcta tccgagaagt cctcattaat ggaagataac cgaacgaggg gcatcattac 180

aaaaagacaa aagttactat ctgactcgtg acttccttag gttaggtagc acaaaatcca 240

acgtattagc tgtgaatcca aacagtttac aagtattaga taatgctacc agagtataca 300

ctatctgaat tctaaaaatt cttcgagaac caaacacagc caaagctagc catgcgtgcg 360

tacgtgcatg atagctgcaa atcagctggt cctgtctgcc aaggaggccc aggagccaat 420

cacgtgggcc tgtttggttg gcttctttcc ttagccttgc tgcgtgacct ggatctgctg 480

aagatacgat caatttcctg cagagcctga tctaagttgt tttgaatatc gtgcaagcct 540

agctccacat ttatacatag acaactaaac acacacctca catgtgtaga gtctaattaa 600

taacagccaa acaacagcat attgtatccc acgatgtaaa cccagtaaat atatgcaagc 660

aaacgcacag cagggcatgg tggagcggag agaggggtgg tggcgctgac ggtgctacga 720

cgagaccagc tagagcgtgg gtgaggcggt gccagtgcca gaccaccgcc agcgccatgg 780

gcgacactaa tgccgcctgt ggctgcggtc ggggccagtg gccagtggcc agtgcacgga 840

ggcgggaggc gctggaagcg aggagcccaa tgcggtgagg ggacgggagc gggacagtcg 900

ataaagagaa tagaatctgt gaacggttta tttttcacta gtgatatggt cgctaatttt 960

agtcaacttc agaaatttta ggtaaatcta gagtatttac tgtatatagg gctctgctaa 1020

acatgcatga ccgtatatgc ttgcatgcat gcggccccgg ccgtgtggat cggagtcgga 1080

gcactagaaa gtacgtgtgt tccgtttcgt tgttaccata tgtcccttgc ctttgacttt 1140

gagagcagtc tgcgattcac aacaggcgtg cgtggccagg caaaacgata ctaatagtga 1200

cgcgcttccg ttagaatcta ttataaaaaa tagatttaaa gatatctatc aaaatgatac 1260

taattatata ctaaaaacat taacattttc ttatatatat ttggtaaaaa atttaaaata 1320

gttgacttct cgaatgatga taatatcaac tattttagga tgcatggaga tggtatgctg 1380

tacttaaaaa cgttatatca ttacttcaca ttcgattttt aaaacactac tacatatttc 1440

atgtgccgag aggcgactta cataagcagg taacctagtc gtctctaatt tttcgtttct 1500

ataaaatcgg tgattcatag agagacggat gtcaaactgc ctctagaaat tttatttaca 1560

aagtgatttg tacaggcgga tgggctctag aactgccttt atatataagt t 1611

<210> 5274
<211> 1802
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82185_G1, chr2:182877281..182879082, Cluster 32

<400> 5274
gcaaccattt gtggagatgc cgttgttttc aagtgcctct atataacttc ttcgttaatt 60

ttgtgaaaat ttccttgtca aaacttaaac tcaatttatg atttctgact ttctgtgcac 120

acatatatat acgcaataaa tagtacttta tcagactttg ggtcatatgg aaatagatgt 180

tcatgtgtac tggagtgtat ttcatcgaca gagctccaac atgttgtcat cttccagttt 240

cttgttctca atacttaact tcttacacca atataacgca tgaaacaaaa tccaaaatat 300

ttttttgtg tataacacat acatgtatat atatcttcta attaatacga cgaaataaag 360

tatatacaat tccttacccc tggtcgaata atgtctctgg tatcttcatt ttaccttcat 420

atactcgcag atataataat atcatccata ttgtccactt ccactacgtt ccttaattat 480

gacactacat atatattgat gcatcgtgta ttatatatga acatacaatc tactaggtca 540

gaaacatata tcatctaaaa taacttaatt agtatataga aatttgccat gtattatgtt 600

ttgattataa tgcatggttt catttaggat tatgtttccc tccaattaca ttaatatagt 660

gcttgtacga cctgtttgag tgtattaaac aatccaaatt aatattcaaa gttgttcttc 720

gcaaccatat attaatacct tttaaataag gaagattcag ttgtatatat atacatgttg 780

agaatagtta ataagtcttt gtagattttc ttgttcttat atactggacc aaggatccaa 840

gctatacctt ccctgacatc aatgaatatc aaaatgtaat gaacgctaca ttgaccagag 900

catacaaata catttatttt agtgtgaaac acaataagta tttagtaacc atgattgagg 960

tacatgttaa atccaaatgt actcaaagtt gtagaggcag taaatgagac ctttgtcttc 1020

aaatttcttg aactctagca caatgtataa gccaacctca agcatcccat cacatatgtc 1080

cctctgacat attgtctctt tcttgtcact agtttcctag tgactagctc tttactgtct 1140

agtgaccact tgttcacgaa atgcaaaggt ggtttgagct attctttatg ggtagaggaa 1200

cccaaactca tgtcccttta actttctgca tcttatcttg gatgtttcaa ataaagtctt 1260

aggtgaatac ataaacatat gtacacacaa ccctaagaaa tataaataca actttattgt 1320

acatagaggc cccacacatg aattagatta attttcattc aaccaagatg aaaaattgtt 1380

tgcatgtcat caaacttgaa ggcaattgtt ctatcaccct gtgctccaaa taccttctcc 1440

tcgaatcttg tgcttatgct attaacatcg gtctaaggtg cacacaagta ccaatcatgg 1500

aacatcctca ttgtgcatgg atacacttga agacactaat tatttaggaa atgtgttcct 1560

cttttattga cctctaggca atctgtggat catttgatgg tctccatgtt agcatacttc 1620

ctctaaaatt cttgtttatg tatgctggtg atgttggcgc ctgggttcta gggtttcttc 1680

cttcaaccat ggcttatcat gagccaacca tatggatact cttggggcat ttgtgtgatt 1740

aaaagacctc actagcattg ttatttttt cgtgcttcac tttgaggtgt gggctctatc 1800

aa 1802

<210> 5275
<211> 1548
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82335_G1, chr2:183614981..183616528, Cluster 32

<400> 5275
tttgccccta cccttgtcac tagactcgaa catcttcatc tcatcatata ttcctaataa 60

ggtatacaag gaatgcaacc aaaaacacat gacatgtggt gttgcttatt cataaggcat 120

atagaggact tgtttggtgc catatgtgat gaatgccacc tcatgtgtgg atacctgatc 180

cttcactagg tccttcacag aactatgtta taccttattt ctcttgtgag ccattgagaa 240

ctcaagcaac cactacaatg ggtctatcat gtgttctgcg tcattgctta tgcgagctac 300

caagaactca aacaatggaa tgtgagtggt agtttctact cagctattgc ctagccatgt 360

gattggtctg ggtgcgatag atctaggaga aaaaatttaa ttgattgtgt ataaaatcga 420

agatggtgtc cttcatatca tgtacctccc tcaatcatag ttagtaggat agaactaagc 480

atcaaactac ttaagatagt tgcaccgcca ctcggtgcaa ttttaaatat actgatatat 540

ttagctaaaa cagaaaaata atttatagct cagtggtgac aactcttctc accaagaggc 600

atgtttaggt cttggaccta tttgttgcac tttcccctct taggttcact attatacaag 660

atagtccacc cacatttgtt ttccaatagt ccattgcctg aatttttagt ggttttccaa 720

aaaatcagtt catccaatgt tctagtcggg ttgcacatct aatcttttat ctaaattaga 780

ttggctgagg ccccggttct agtttttatt gtgaaaccac caacctattt tggtcctaat 840

aactatgctc tagttacatt gtagtagtaa tctccatata ccaatgaaat acctctaggt 900

gaaggccctt tattttgatt ccaccacacg agcgacaaaa acatgtttaa tgttgcattg 960

tacttgtagg tgcgccttat gaaggtcatc ctttgtaatg gctaggttga ttgtatgttc 1020

attgaaattg tgtgatattg tgtttcattt gtgattcttg cacaatttgt acctcatgcc 1080

aggtaggtgt tattgttatt catggttatg gcacatgaaa ttttagcccc atgcccaaca 1140

tggtgttgga tgatatataa tttaggtagg tagtttgtca taattttacc atggtgtttg 1200

aaattaacca gttgccatgt gtttgtaact aggacaataa ttgggttgtt caacatgagt 1260

gatgcatata cctctagtag cttaagcact caaaatgcaa ggggtttatc attagtgttc 1320

ttcatgttag gaatgttcaa tcgagttctt acaacagaga aatcaagaga gagagagaga 1380

gattgatggg atagcgctat gctaatctta ggttcgatct ggtcatgttt gaaccggccg 1440

agttgtccct tctactagaa cacatacatt cccttatgta ctgggtggtg atgggaatat 1500

agatcataga atatctaagg ctttcctaag gttcctagcc caatgctt 1548

<210> 5276
<211> 2486
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_82739_G1, chr2:185773884..185776369, Cluster 32

<400> 5276
tgtcagatac tcagacgtac tcgtgtacgt acgccatata tgcattgatt gcgtgcaaag 60

gttcagcatc cgagcggagg gagggtcgcg ccgtagtggt tccatcggcg cctcggtctc 120

acgcggtcgg cgccgtagtg cccaggattc agaaagcttg ggcggtctgg tgaaggagcg 180

ggatcatggt gagctttgta aacgacgtgg ctcgacatgc ttctagacat gccgctcgca 240

gtcagcatgc tcctctgccc tgctctgtaa aactttgcac gcaaaacctt gtgctttcca 300

gatatactgt ccgtcaatga tcactcgcag cccagcaggt acccgctccc tggtatgtcc 360

cttatatata cgcacgactt ccatcagcaa ttcagcagtg tactccaaag tcaaaagcct 420

aacctctttg tctttgcccc ggcctgggga gtatttgcac cggaatacgt agaatcagaa 480

tgtgcggtag gtatatatgg ggcgcggtaa taaaatttag gtcagaatgc tagttaggct 540

agttcagtaa cgatcatact cttgttattc ttcatcaggt tctatgtaac ttgtccgacc 600

cagacgaatc tgttcaaaag aagaaataca aatcaacgta gctagggaca agcaatgcgt 660

cgccagctga gaaggtggat caaaataaca tgaacttcac ctgagcaaat gtatagattg 720

cctggacaat catagcataa tccgtgccca gcgtttgaat caaaatatca gccaagagtg 780

tccccccccc cccccccccc ccacaatctg agcaaagtta agtgcacaag gaaggatatt 840

ttaattagta ataagcacga tataccactc cctgaaggga ttctgattta tacggtttgt 900

ggcccaaggt cgatactaac ggcctgtttg aagacactgt ttttcaaacc atggtttata 960

atgccttact ttaccaggta taatgatgca attatgatat aatttatatg attgtagagc 1020

agcagaggag agggcaagat tgtggttgtc gcttccctgt cgccagtaaa aaactttgat 1080

ccacaccaaa gctttttaga ccccaaaaaa ttatagtatt ggtgaaacca tggtttatag 1140

cacttagtct ctaaatatgc tacgtactaa acgtctctat aaatagagct aacgcctcta 1200

aaattttagt agctattttg agatatgcta aggatttctt atcattgtta acaagatttc 1260

ttgtcgccta aaatctattt gtttatgtag tagtgtactt ggtgaagcct tctttcggtg 1320

ggtctatacg ccagaagttt aattagtata cttttgtaaa tttaattgtt gtagctacat 1380

tttaattgag gatcttgaaa ttgaaaatta gtatatctta gttacttcta cactacattg 1440

tactcgttct atttaaaatt ttaagttgtt ttagttttaa cagaatggat acaaaaaata 1500

tcaaaacctg tacaaaacca aataagattc attatatata tacacatgaa atatgttttg 1560

atagtgcatt tattcgatat tatagattat agcatacctt ttttgtaatt ttgatgaaaa 1620

gtaaacaagt tgactcagga taaaactaaa ccaattatag ctcaaaaatg taggagtaat 1680

aaccgttcaa aaggtcagta aaagctttac aaggttgcag ccttgcagtt gcagggcaac 1740

ttccacgggg agcagttaca tgcaataatg cataaacaaa gagctactat tcatgaaaga 1800

acgacgtact gaccgaatgc cattcgacac caaatcaaat caatccttag ccttaaaaat 1860

atactggtag tacataaatc attagacctg ttttctcaaa agaagatgaa aagttgacgc 1920

atgcactcga tcttgcccat ccagtcgact tggtccactc tagattgcta aatggttcat 1980

atagtacctt gccttgagtg aacaacacat cgcttttat cctggcacgt tttgatgcta 2040

ttgaaatcat attatctgtc tattatatta atacaatagg cttaaataag tcgacatatt 2100

tacccagagg atcaaaaaat tacaagatta ataaaaaaaa ctaaagaaca tgcaatattg 2160

atttttatag cctaaattta accaacgagt tcatataccc aaaacaatta gtatatcgct 2220

aaattcggaa tcaaaaaaaa gccaacttga attgtttaca acttgagaaa caaaatatat 2280

gtacgaatat catagtgatt cctattctga gacgggagaa gtacgcaatt tgtgcaggtt 2340

accttgctag ttcgtggttg ttgtttttt accatgttat ttgggacgat atgtaaggcc 2400

aagattcagc agctagcgga tgcagagcta gggttggcag aaagcgagaa agctctctca 2460

gaatctcact ccagggatga tccgta 2486

<210> 5277
<211> 1469
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83402_G1, chr2:189573676..189575144, Cluster 32

<400> 5277
caactgcaac gttaaggcca ggcagtgagg aggcgggtgc atcgtaataa tcgcctcgga 60

tgatcattcg tttggcgtgg aagcaagcgt ctccatatgg tgaagcgtcc acctatcaga 120

tcccaccaac gatgaacacc tcgtgttact atttggatgg attagaaaat aaaaaggaga 180

ggaaaaaaaa taaagggaac atgcggtcct cttctatcta caagtttcga aacccatccg 240

cacgagtgtc atgtaactgt gttgccactg ttgcgcccgg aaacagttga gttttgagcc 300

ccgacttcac ctgctcaggt tttgttcggt gaaattggat gcctggcatc ctctcgctcg 360

cgagcacgtg ctgccaccgg aaaacaacgc gctaacgtag cagtccacaa tgacgcaacg 420

ttgggccacg acctgttttt tttttcctat tttgtttcgg tccaactagc gaccacggag 480

cggacctatt tctctcttgg tcctgtctac tttcggccca tctagagagg gcacagcgga 540

tcgatttccc tagcgcagcc tttttctctg tgctccgccc ctttctccta tctatgtcca 600

tatgtctggg tccaaaaata cttctagtgc gcctgttact tctcctttag aacagctcag 660

atggaaaaaa aaagagatct agatagctaa gacggtagag tgagataaat agcgtatacc 720

ttttttata aattttacaa cactatggca agtacactag ttagttatta ataaggtgat 780

tctaatagca gctacactag ttcaccacaa gcgcgcaagt ctagtagttt aatttctatt 840

ctagttcata atgacaaaca agccaccact actatttgag gacagaaaat atccaaacac 900

agtatataaa aagaataaca ttgtatcgta caaaattcca catatccata aacatcacat 960

gccatcctcg taattcatat gaaaagtctt tcctcactct atattaaaat atcacagtca 1020

cgagtttaca cgagggtact gtggtcatta tccttctctt ttaaccggtg cttgtgaacg 1080

attagtattc cgcgagcaca tccgtgcacc tagcaagggt tctttgactt ttgtccttta 1140

cggcttagag taatttatac ttctcattga gtcttcgtag gataaccgac agcatgtcca 1200

tatatagcct tcctaggtga aggcttcgta gataattggt ttcatgctca tagccttcta 1260

ggtaaggctt cacatgtctc ccctttttta cttttgagct ttgattgctt tatctatcac 1320

gaagccaatt cctgttgatg agaaatgtac gttagttaac tctaaattat tgaggggcat 1380

gtttgcctat ggcaaaatcc tccacagtta cccctcatgg acaaagaact actgggaagg 1440

tctaaatccc gtgatgtctt gatttcttg 1469

<210> 5278
<211> 3351

<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_83838_G1, chr2:192129353..192132703, Cluster 32

<400> 5278
cgtctataca tatgcgtttg gttatgggac aacttggttg cgggagagct gagaacatat 60

agatagaagc gtcacttcca attttaatgg ataactgaga acaatactgg aataattctg 120

tttcaacttg taaccctaaa ccaaacaacc ttacttaatt gatcgtccta tcccattgtt 180

tttgtcatta caaccaaatg catctacaag tacttggtga gcgcattatc gtcgtccgat 240

tccaatgcag tagcagtgaa gcagtaggcc aaagccgcta gctcgatcgt tcggctgtgc 300

tgtggggtag gatctttgct caaactttca aaaccaagta cggacacagt tgtacggggt 360

ttttttgggg gtaaaactga aaacatttgt ttctcttatc ttattctcta tcacctttt 420

tctgagaacc ttatcctact aaatgtttat gaaaccagat ttaactgtac acctgatttt 480

acctgagctg taaaaaaact gaaatgccaa cagcagccgc ctgtctcctg cacagtggga 540

agcaagcaat ccaactgccc gctcaatcgc tcattgatga gttgggatcc cactcggcgc 600

cactcgccgc cgcagtaata agcagcagcc ccatttctat ttccctcgca ctcccatcgc 660

tgcaggctgc agcgcatcat gcatatatat gcttccacgt atcattcgct gttgctcgta 720

ctgtatggtg gcagtggcat gcattgatgc atatgctaac gctatgcatg cttttctgat 780

tactgttacg tgttgcccac ccccccctcca tctcatatag gccatagcgc cagcagggaa 840

ccacgcacca atgctctcag attactgtta cctactgcag tagccagtag gcagtagcta 900

ggcgctagca ataaatatcg aggtcgatcg acagtcgaca cgagaaaaaa agttcacgct 960

gattaattac cactctacta ctgtactact actagtagtc aacaaaggaa ttcatgcaca 1020

tgatgcattg gccaagccat gataaattaa tcactcataa tcatatagat atattcatgg 1080

ttggttggca acaaattaaa gaaaccgacc atatggtggt ctctaacaat taacatctga 1140

tccacgtacg tacagcattc ctcatgcttt gacagtcagc ttcacacgca tggcaataat 1200

aattagcagc ccccttatgg tagcacgcta gcttttctgt ggacacgact agagcctgct 1260

agctcgcttg ttcttcgcaa tcaggccggt gacgacccga caaccctaac cactgtatat 1320

ggtatatgac ctgatcgaag ccgcgcgcac ctgttacaga ccacatttta ctgtcacact 1380

actgtactag cttgttgtgt tgtttggtca aggtcaaaga cgtctctccc atcgatctgt 1440

atggtcggca tttgtcaaag ttgaaagaag actggcctct tgcgttcggt tagcagaaaa 1500

tgcatgatga tttcacgtgg ttgacatgca tgatgggaac acttgttcca agcgtaacta 1560

gcacggttaa cttgcgtcga tcgttgggga cctgatttcc gtggcacgtg catcgttgca 1620

tataaatact gttctcatat atataccagt tatatatgac gtagcaacaa gacgagcacc 1680

ccaaaaaaaa gggacaaaac caaccagccc catgcccctg aagccaggcc acaaaccaga 1740

ctgacacgta cgattattcc cttctcgaca tctccctctc tctctctccc atgcacccga 1800

aacttcggtg ctcaaaacca tcacacaccc aggaaggttt ggagccacac gtggcgacaa 1860

tacgcaagct gatgccttaa taacgttaat taaaaaatgt acttgttgtg ttggagaaat 1920

ggaccatgga ccagcaaact gtctctctct ctcttttcct cggagaaaag aacatgcatg 1980

catgctggta tcttggattt ggggagactg aagaagtatt caggtgcaag cttgcttgct 2040

tagctcaggg agttctttat gggatcagac tctgtgtgtg tgtgtgtgat gggtgcaccc 2100

atgttgttaa ttagtttagc tttgtctata agatactgct aactgtactc ttccctaatc 2160

tcaaaaaaag aaaagaaact gtactcttcc ctaatctcag aaaaaaataa actgtacact 2220

tccctggcaa gggggagcag tgtcaaaggc aattgaatat tcttgtcgat gcagaccgag 2280

tatttatgca tacactatcc cttttagatg aagcacgtgc atttcttcat gttgaacaag 2340

gggagtcgct ttatatatat atgaacacaa tctaattaag taattaatta accatcaccg 2400

tacggtacgg tactgtgtta gcacagcagc cttgttgaac agaagcgaag cgtgtgatgt 2460

tgttctctta ggagataaat tagttttcaa accatatata taatattaat atgcaacttc 2520

gcaaaaacta ctgtagcaca gcaaccctca catggtcagc aaacatgagc gtgcatgcat 2580

ccacgaaaaa gtgtctgcgg cgcacgcgca cctcgccggc agagcaggca acggcaatca 2640

ccgtccacgg taggagccac agtaaagcgc tgtttttttt ttcaagggaa aagcactact 2700

acttcggttc cccccactca accaaccaac ctctctcgct aacaagaagc caagaaaagt 2760

aatgctcccc tctcctcttc tccccccctgc aaaccaggta gcgagaccca aaccaaccgg 2820

ccccttccca ataattgcac gcaacaagca caagggttct ccatgctggt gttaaaggat 2880

gaacatggcc ccctcacctt tagaatccct gacagggatt gatggcctga tgaatagcaa 2940

caaacaaaaa tccatatgga aaaaacagaa aatagttttt ttattgtcat aatacaataa 3000

gtggatgcat atcatccaca ccctcaaatt agtataatat ggccatgcat atcatccaca 3060

ccctcaggtg aggcttaggc taattccaac tatttccccc ctcttttata tccctattca 3120

tactttatat ttatttttta aatacccccct ctttcatttc tccactattt cttctcctct 3180

ccaacaattc tttctattaa gcttcgcttt acactttaat taagctattt aacttttttgt 3240

acgtatgtgt ttttgggttt ttaaaaatat gcaatattta tagtaccgtg atacacattt 3300

ttatctaata attaaactta atatcattga ttggtgaaga ggtgagatta g 3351

<210> 5279
<211> 2350
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_857_G1, chr1:4550323..4552672, Cluster 32

<400> 5279
tcagtttttt cccgctcggt cacagtaaga gaggaagata tatagaagaa tctcagcatg 60

catgctcaca ttgcgtgtgt cgttgcacag tgcatatact atagctagca gcattgcaaa 120

aggcaataca aagaactcgt taacatgtgg ggccggccgg ggaacaagag ctcgtcatca 180

catcacacaa tgcaagtgtt actgtacagt gtactgagta agtagtatat atgctttgaa 240

gaaccatgtt aatctgggtc tgacttcgac tcatttcggt acccgtacgt atatatatac 300

atagctagtg tcatgcgtag agttcatggc tcccagtcct gagagggctc cgtgcattgc 360

atgacagcat gagcaggctc tggcattgct cagtgtcact cattattagg ccttaattag 420

tgcaggggcc gtacgctagc tgttccgtcc ctagatgatg taagattttt gctggtaatt 480

acggttctct ccttggtttt agcagtccag tcccaacacg ggatcatgag ctcgtagttt 540

tattagcact tggacactcg ctgcatatat atactcagcc attttccgtc acatataatc 600

tgaggcatag tggtttcctt ccgatccttc ctatccttcc cggccgggca ttctttattt 660

gttattccag gagagcgtca atatttttag cacatataca tgtgcattat tattctttgt 720

ttttttaaaa agcttccagt actagtatat atgttgcctg aaaaaactac cagcacataa 780

cgatggttag ttacgaccca cacgtgcatg cgtgtgagat atagatcgac ttgcgagatg 840

atcttgtcaa tttggtatat gatgtgcaca aaaatacaaa cgtgtcctgg cttggaaccg 900

ttttgagtgt gtaatctctc atgtttttg cattagaaag atgaggagtt gaggacgcat 960

gtatggtgat ttatatcttg cattcatatc caagcagact ctatgtggta aactctcatg 1020

gttcgatcgg ctgcaaatat taattcaaat agcctcctgc tttctgagcc ttattagttg 1080

ttttctattt taataaacag aaaaaaataa tgctgttact gttagcagct ggagtttgtt 1140

tatgtacatg agttcttgag tcctctaagt ctagtgatct cttttcaagg gaacaaaata 1200

gtctgattat tatatactct gaacattgta tctgcattta ttcacaaaaa caacgatgct 1260

attttacttc cagtgccaca aactagtagc tgctgcctgc tggtactaaa aacgaaatgg 1320

cattgatata ctatatagta gtttgctact gccttgtaat atagtgcacg atgacaacta 1380

gtgcttagta aatcttttaa ttaattaagg tagcaatgtg ttttcttgtc aactgttaat 1440

gcttatttgt tcacagtaag cattttcatt aagaagatca ttccatgaat acatagttca 1500

tttgccttaa atgtagacca tcaaattatt atttttgat tgatcacatg aacttgttgc 1560

cataacagaa gtaaacatat ggaagaaata ctgacagtca gcacacgtgg gattgggtta 1620

tctttgattt ggtggcgtgg ggagatcatg taccacactt cataagaata atctatatat 1680

taagaatatt tttcgtttta catatcaaat tgagtcaccg ttactgaagt actaggctaa 1740

tttgttgcat atacatgttg gaaaatatta aagtaatcac tttaagggta taattatagg 1800

gaattgcaat tggaaagaat taagagggac tatcatccat agctacggtg tatatgtgta 1860

gctagcgatc ggatcagtgc actgcttctc attccaagct tattagcatg agattttctt 1920

tatcaacctt caaaagtaac cactgaatat aaccaaagac tagagagcct ataaaatttg 1980

gtacctccgg tatatatatt tatcaaactc aattattact tatgtttctt ttcaaagacc 2040

ataaataatc tctctttcat cacaaaataa ataaacatct ctattggaaa tgaagcaaag 2100

agggcaataa taatatatta tgctgttcca agtatatatg tagttctcat gaaaaacatg 2160

aagaacttaa atgggaaacc agaaacgtcc tcttcatgtg agttgggatc ttcttccctc 2220

aaagtttcca tcaatgtcat gaaagtgaag tgtgaatata taggtgagta tagataccta 2280

gctagctagc caatgtccac gagcaagaca acgacatgct gatcatcttg cccttcttcc 2340

tttaatttgc 2350

<210> 5280
<211> 1701
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_87839_G1, chr2:215996014..215997714, Cluster 32

<400> 5280
agcaggttca tgttatatta ttactcgacg ggcgagaaaa gcccgcgttg atctttcaca 60

tatagtttgg agcatatttt gtaaattaag gctgttcttg gagtgtacaa attaacgacg 120

ggcgagaaaa gcgcgcgttg atctttcaca tatagtttga agcatctttt gtaaattaag 180

gctgttcttg gagtgtacaa attaaagcct tgactttccg gccgtcctca cgaaaacaaa 240

aggcaagctt ggatccttat gaaaacaaaa caaaaggatc ggagctgcat gcttttggtg 300

caactctatc gaggagtcga ggatggatgc atgcatgcat gtagaggtag ctagtgcacg 360

atcttgtctc tgctggtgac cttgacttct ttcccctacc ccggccggcc ggccggccag 420

gccatctcgt acgtgtgtgg aattcggcat gtgcatatga tagcatgtca agccctagct 480

cgaattaata catctggaaa ggcgtgaggt tggagaaggg tggtctttca actgaagagg 540

ggaggaacga aaacaatcaa gtttgttaat ttgcagagag accagaagta gtagaggagt 600

agtaattatg atgggggagg agcacggcac acaaggcaca tgcatgttgt tgtccatttc 660

accgggtttt gtgggtggtc tctgcactac tttgacttta gggtttagtg caaaagacaa 720

gctcactaaa ttaacaaaat ggtagaagaa aaaggtagag aaagaccacc ttgcattggg 780

gcatgcatgc atggtggttt gaataaagca gtgcagtgtc aggaagacga cagatgcatg 840

agatgagagt ttgtgttatt taaaccctga tagcgaaaaa agagcgatca tcgctcacgt 900

acgaaactaa tattattaat aattagcaag caagctcccc agacttaagc tcgctttaat 960

catttcaaat ttgaactgtc agttcagttt gtaggatctt caattattca ttcgttctgg 1020

cccgggaact tgaacgtttt gtgtgattgt tttctcgcgt gttaggacat ataaacctag 1080

ctaagacgcc aagaccgacc ggaaattaac tagctagcta ggcacacacg gtaggttctt 1140

tgtattggtc aaagtggtct cgagacgttt gtgtatgtgg ccgaccaatg caagtaaaac 1200

cgacgaggac tgtgttacgt caaacacctc gtcaagtcgt cgtcatttaa gcatcagcta 1260

gcagacaaga ggcaacggat gttttgttga gaaacgtttc attaatatac aaggggagaa 1320

caagaagcct cctgtgtagt gccgggcaca tgttttgtcg gagcagaaac tgacaagagt 1380

tcccctgaga cctagctagc gatagcaaat aagcatggtc atggatgccc gtgcatagtg 1440

ctacccccag tacatatacc caccaactac tacgtaccac tattccttgg cgcgtggaaa 1500

aacgcaggca ggcaagggtc gtcgtagcta ccttaattat attagctgca tcatatccat 1560

gagtacacgt gactagtagc tagacgggca agaatcgaat cagggtttaa aaaaaatcat 1620

gcatccttgt taatataagg agaggttcaa gcttaaaaag cacatttaca aataagtaat 1680

ttccactgaa aaagaccgct t 1701

<210> 5281
<211> 1915
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_89953_G1, chr2:226417850..226419764, Cluster 32

<400> 5281
aaagatatat ctcttaattg cttgcatgta ttaatggatg gttataaaat gacttcaccc 60

actcttcttc ttctccatga cctcacccac ttgatccctt caagtgcggt gagccggtga 120

ccaagtcttc aggagaattc catttttcga gtgcaaggtt ttgatcttgt ttcttgtgga 180

gttgttcata ggaggttatc atgtgccagc atataacatt ttcgtgctat ttttcaagtt 240

ttaatcttgt ttctaggtct agatctaatt aactggtgga aaacgacagg aagagaacct 300

gtgtgtcaag tgcttaaaaa atataaaaaa tcatggtacc aagttaaatg ctgcattgac 360

atgtcttgga gggtttcaat atggcttcta gtatcaaaca tttctttgcc taagtccaag 420

aactacacta tatattgcat ccatttgaaa aataccttgc atactagcaa acaacattat 480

tagttcatat agtcatatta ttcaccaaac actaaaatcc aaaatccaaa cgtaataggc 540

catagagctc attttccttg caccgcgcgt gttcatcctc tctctagcta gccaccataa 600

aaaaaatggc tctgcactgt gatgacgatg cctacatgta aacaaaactg atgttagcaa 660

tgagttcaaa aaattctgag caagttcttt atgattttaa aaacctacca ctggttttag 720

caaactacaa cttttgggtc tatttaagaa gcatacaact atttttttac acatcacaat 780

cacgttgaaa aaaaataaac aaaaataaaa ctatattttt tcccttgctt tagtgatgat 840

cgaagcagta gtaggccctt gagcaattta ttgtttcttg caacaagatg tcaaatatgc 900

catgaattac tccttttttcc gacatgagat ggaagctgaa aattggaacc aatttacagt 960

cgaccacttt cactacatta taacaacaac ataagattag atatgcagga tcaagccgag 1020

agagtcacaa ctacaccacc tgcctgtata cacgcctcct accaaaatct tatgtaccca 1080

ataaaaaaaa accttcgccc aaaaatgaag aaatatttgc cctcagcatc caatttcccc 1140

cctgacaact gagtttcccc cctgacaata taaattcctt ttcctccctt ttttgggctg 1200

ctcctctcac accatgaggc caggccagct aattagaaat ttcaattgta aattttgacc 1260

ggcttctcgt acgagtgacg gttctgcagg tagttaaaat caccggaagg aagttagaat 1320

tacacagcct aacctgaata cagaacatga tacgaatgct acacattgaa gtgcataaaa 1380

agccagtgaa gacatgaaac cgtgcatgcc acaattcgaa aaaatggtct cagaaaatat 1440

atgaataaat ttcatttcaa atgcctttct tgggtggcag cggttaagaa accattctag 1500

gcaccagagc tcaagcatag attcatataa aatggattga aaaacagtcc ctacattatc 1560

aagcagactg aaggatactt taactcattc actcaaaatg gcaaatggct acagcagacc 1620

tcataaagat gaagctatta agatcataaa gcactgcatg tttgccacag gcgccggtct 1680

ggagatcccc aacgagcagc gccgcggcgg caccccggcg gacgccgagg ccaacaacgc 1740

tccggacacg gcgcgggacg ttgtccaagc gctccgcgag ccccaacaaa ttccagagcc 1800

cgacccaaac ggcagcgcag ttccttcggc ttggcttctg tcacaaggta agggaaacat 1860

caaagactct agggaacggg gacaagtgac ggactatctc caccaactta cattc 1915

<210> 5282
<211> 1460
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_92974_G1, chr3:4750227..4751686, Cluster 32

<400> 5282
tggtaacgta gttctcaaca ctttggaccc gtttgttgga gcttttagac gtgaagttca 60

aacaaaccgt taggtatcta gtttagcttt cataaagtca aaggtaaaaa atctaaattt 120

atatagaagt ctataaaatc tgattttaca agtttttta gttctataag ttagaaagct 180

aataatatta tcaaaaaata ttgttgattt tttaataaaa aaaccaacga cttttctagt 240

aaagctccaa aattgcaact caaacagaca tgatctttat ctcatgaggc tggttctatc 300

ctgtagggtt atatctacca ccacatcaac tatcaatcat attatcgatt ctgctccacc 360

gcacttcacc tcaacgttac gtcggctttt ttatatactt ttagttaaca taaagcacat 420

tattttatta atatatagat atatctaatt atataattaa acaaataaaa tgtacataat 480

ttattcaatc aaataaaaat tacataagtt aagaaaataa atatatacat ataattcata 540

aaaataaaaa taactctttc tcatctttct ctcctaggac ttccgcatca tctaagttta 600

attattttgt caacctttta aggttagctt gtagaatatt tttattgcct tttttctatt 660

ataaagatag ccattccttt agatgactag aggttggttg gcttgtcaag gaaatcacgt 720

caccttattc cggtgccttc ctggtgatct aggggctggc tcatcttctt gtagggtagt 780

cgatccatac aaaatcgtta ggttctcgat ctgtcatttg tgcattttga aaatcctatg 840

ttgccaatga gccaggtagt tcccgaagga taggtacgtc cagccaacgc actccgtacg 900

tgtagaattt ccctggcacc tgcctttggc taccatgcgt tttataccgt acgtaggcac 960

atagtcagta ttgcgtgacc accttgtgca tgcagatgca gcatccctga tgcccaaacc 1020

taagaactat atattggagc caagaaaaat tcgattttca aattcgagaa aggggtgtat 1080

gcatgcatgc ttcgaaattg aaattgaacg agcgtaatac atggacgcgg ggcggcgtta 1140

aacatgtctc aggccacgag cccacggctg actgaaagcc atatatacca aggaggtcgg 1200

gtaccaatgc tcacccgcca actcagcact ggggacgaga tctcggcgcg gtctatattg 1260

atgttgaaac gtgtaacctt gatgccaatg ccaatgatat ataatggcgt cgagataaag 1320

atttattttt aaattcaaat cagaaaggac gtagttgtaa aaatctttcg caaaaatgat 1380

caaaaagcaa aaaaaaaaaa gacggacaaa tggatatgtt tctacttctg ctaacgcatg 1440

gttaatgaaa attgatattg 1460

<210> 5283
<211> 1953
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_94089_G1, chr3:10006057..10008009, Cluster 32

<400> 5283
catactgccc taagtcccct atgggctatg ggctcagacc tagtctccta attaatatat 60

aagttcatta catttatatc atccacatca tcgtcacatg cagctgcagc agtttcatca 120

tttgtagcaa gagcttggct atagtaatct ttaacatgta gattatgagg agcaataaag 180

tcaattttag cttcttcctc ttttcctaat ccagtcaagg tctctcagct gctctagatt 240

ctacttaatg gtcgtggcta caatgcttca atagcgcgtc cttgatctaa aaagtagttg 300

ataggcgagg tacccaagag agtttccagc caaggtctct cagctgctct agaaattagt 360

gcatggctcg tccgtgtggg ctttgagact tgatgttcca ctaacctagg ccttcaagaa 420

aatcagagat aatctatggt ctaactgata tataaccatt agtagccttc caacatctcg 480

agtgtaacaa atacaatcaa ggtgttggag gaaaaagctt aaacataaaa aaacaacttg 540

gatatttatg agttgagtat gatcatgtca tcttcgagat gtagtcaata atcattgggt 600

taggtggcaa tccaaattga tggccatagc ctcggctagt tgggtggtag ggaacttagg 660

tttgactcgc ataatgattc ggcctgtgga ggaatagata tcatcctctc caagatggtt 720

caaccacata atatttgtag aaaaatcttg atggaatcat cttgtcatag ctacacatcc 780

acttctagtt tacttgattg attaccagaa agtccacaag gactccaatc catcgtatgt 840

atccaatcca tcgtatgtga aacacaatac ctatccccat gccaagtagt aatgccttgt 900

attctttaaa attgttggag ctaagaaagt acatctacag gcagtaattg tatcttgatc 960

ctctagtagt tcggtcaaaa atcgagcccg ggtcaaaata gagactaggt tcggatccta 1020

gtttgagttg aagtcgatat tagggtcgaa tctgagtcta atttaatgtc aaagtcaaat 1080

atgagtctat gtcgaggttg agatcgaatc taagtcaagt caaagtcata cttggagtca 1140

agtccaattc gatgttgagg ttgaggttga acctgaaccc aagtcgaagt tgaggttgga 1200

gtcgagtctg gttccaagac tccaattcat agtagaggct agagtcaagt ttgagtccaa 1260

accaaagttg aggctaaatc caagtccaag tcggcatagt caaagttgga gtcgattgtg 1320

agtccaagtc aatatcgaag ctggagtcaa gtttgactcc aatctatgtc gaagttggag 1380

ttaagtcaaa gtccaagttg aagtcgagac tgaatttgag tccaagttgt atcaaagctg 1440

gagttgagtc agagtccaag tcaatttcaa agctggagtc aagttcgagt caaagttgaa 1500

gccgagacta aatctgaatc caagtgaata tcaaagctgg agtcgattct gagtccaagt 1560

caatgtcaaa gctgcagccg agaccaattc caagtcaatg tcaaagttgg agtccaattc 1620

aagtccaagt cgaggtcaag gttcaatttg agcccaagtc aatattgaag ttggagtcga 1680

gtcaaattcc aaatcaatgt cgaagttgga gtcaagtttg agtccaagtc tatgtcgaag 1740

ttggagtcga gtcgaagtcc taaatcaaag ttgatatcaa atccgagtct aagtcgatat 1800

cgaagctaga gtcaagtttg agtccaagac aatgttgaag atgcagtcga gtttaagtcc 1860

aagtcgatgt caaagtcgga gtcgagtttg agtcctaagt cgaagttgga gtcgagattg 1920

gaattgaatc ctagtccaag ttggtgtcga aga 1953

<210> 5284
<211> 1516
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96444_G1, chr3:23005795..23007310, Cluster 32

<400> 5284
atcgccatgg caaaccaacc acgatgatat aacagcaaca aacaaaagcg gtgcttagtg 60

gagtcccatg tggaccctat aattgtatgg acctttttaat catcttttt tttcgtcctc 120

tgcatggcgc tgctgcatgc tgcttgcaca cacttattgc aaagtaccga agtggcgata 180

gttacatact tctagtgtat tcaaattgct gtcacgaagg caatggcccg tattggtttc 240

ctcgagctag cacattttct ggtgaaaaaa aaactagcta gcgttttggt agaaaacacg 300

tgaattacga agaactttga tgctgtaatg aatggcgtaa cagtgcacat catacagtaa 360

ttacaactta gaaaatacag aactgaagta tagaacaaaa catagcttct aaaaagagaa 420

aaatcaagaa ataccagtgc tataattaat gatcgaaaca agtgcatatc atactttcat 480

attgaactcg atcagaaact catgaattgc agtacgtagt atagatcaaa acataattat 540

caaacagaca aaagcaaaag aacattgatg ctaatgaaat aattgcagat tgtaccatat 600

ccgtgactat cagctataaa aaataacccc aacaaacatc gttctgctac agtattaagt 660

gcaagcaaaa ccctacagtt tcaactcaca ctatatatcg tatgcattgc aacatcgcgc 720

gcggcgcagc aaattgtaag tattaaatag aaatgtagtt gcaaaataat aataaaaaat 780

agttcgatag caacctccat gcatgcatgt ttgcacgaat tctgtctcga gaaagtagtc 840

ttaatcagag tagagtaaga cttagagtga agcgtagtta aaaaaaaaca gtccagtaac 900

tgcatgtgct tacgtaccct agttcgttcg ttgttccaga ctggaaggcg tttcggttga 960

agcctagcta gtctcggtct tgtcgtggac acggtcgagg gcatctatgc gggaacgttc 1020

cttttgagct tgacgacaat cacaaggcga cgtcgtcgct tggacaagtc caatcgcgct 1080

actgccactc tgttggcata aataaatata tacaaacgaa cgacaacaac tgttttggcc 1140

ttcgtttcaa acgaaggaag aagaagaaag tttttggcct gctctgcctg tgatgatcca 1200

cgtacgtacg tagtacacag cacgccctct gatgattcac gtttcgtgct ggtaaaagat 1260

gctaggagtc aaggactgat ccgtataaaa tactgaaagc tttcatgcag ctggactatt 1320

cagccatgga aacgtgtatt gctgagtgca cgaagtcctg atacgtactt atcgtcccgt 1380

tgctttgcaa caaagtatag ttaatgtgac ttcagaaaaa aaaactttac tcgcgctcgt 1440

attccctcta acctcacatt agggcgtccg caatgactat ctcaactagc tagctgatgt 1500

agagcgagag tggatc 1516

<210> 5285
<211> 2092
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_96999_G1, chr3:26090114..26092205, Cluster 32

<400> 5285
tttaagaacc gatacgaaag gtctttttc ggcttccatc caaaatcttt actgattctt 60

tataagaatc ggtactaaag tacccatata actttggttt ctgcccaaaa ttttcagtta 120

gcttgtggat ctgaacaaat ttggatctac aagctgctaa aagttagccg aggtcttgtt 180

tgggtcccaa gctaatagtt tggctattat cttaccacca cctagctaat aattagcaat 240

tattattttt tatgttttgc tattaatact gctaatgtta gctgagagga tcccgttagc 300

cacctgcttg tcgatcgaac tatcgaagca acggaaggat atgtttgctc acatcgcccc 360

aagcccaaac ctaactttgc catctccaac atcacagggg atcggaagtc aacagtgatt 420

tcggcaaatt atttaatacg cctgtggaaa tcaggtaggt cgacgtgcgg atccgatgga 480

cgaccggcaa aagctttgtt tgtgctcgtt caatatataa ttcttttagg ctttttaac 540

tataactttg atcactcgtc ttatttaaat tatagacatg caaaatttga agccaaatgt 600

aaacaaaacc acaatgtttt ttgtttgttt tctataaatt ttttaataag acaggtggtt 660

aaagttagaa ttaaagaagc caaatcaatt ataaattgga aaggggagag tacatataat 720

aatttctgat ccgggttgag ttgacaaaag ctttttttggg tcaaacattg tcgtaggggt 780

gcgtgttaac tgcattctct ctctgctact gtatgttact gatctagtat cagagaaccg 840

tatagccatg catttgatta attagcttcc agctggctgt agcacgataa tcatacacag 900

gagattttag agataagcta gtcgtagtat acgtttctaa ttgatagttc catgtacgtg 960

acgaccactc ggtgcccatg atgacggtgc atgtagaatg gcactaccac acttggagtc 1020

gaagcatcct ccaactccaa accacacatt ctggccgtgg atctatgtga tgatgaattc 1080

atctccactc cttcaataat aacaacagtt attagatcca agaaccagaa aaaagaggtc 1140

gttgcaaaaa ggcagggctg actatatatt actggaagct catgcaagca agcatgacat 1200

gcatgtaatg aatatctgaa tatatagttg gcaccacgtt ggtcgtcaaa tcgataaatg 1260

attagatatg gggacgaaca tgcctggcga gaggtcctca cgtccggact tcattgactc 1320

cagaagctaa cgttatcggt tggttgtgtt ctagctagct agctagtcga cgacgaaacc 1380

atggcatgca tgagctgttc agatccgatc tgcttcgatc ttcaccgaaa tcgacgtgcg 1440

tgtttgcgtc gaccatgaag gacagcctga catgtttgat ggtacacaca ttaggagaca 1500

atatttcata tttgtgtcga atgctatttt aggataaaat tttagatctt agaaatttgt 1560

tcatttgaag atggtgggag tacatgcata attcctccgt ccgtactaga attcaaagga 1620

atttgtgtgg cctagggaaa aaaatcatag cgagtttggc catgtttatt agaaaaaaga 1680

gataattttt atgatctcat cagtttcatc agctgcatta tgaaacagtt tttataattt 1740

acatcttcga tagatatcag tatatatttt tgtatcaatt ttgtcagaat ttaaattatt 1800

tgatattaga acacaacatg cagctggccc gttcatagat tgtactaata acaaaaagga 1860

ccccccttacc taacagaata gtatggagca actctatgta ctttgctggt ccgttcatag 1920

attgtgtgct aataagcaag gtatgtgtac caaatacaac ccttgtctcc atgaagcgaa 1980

caaaaagact agactattaa caaaaagtta aagttgctac atttttaat atcaaaataa 2040

ggtgaacgct tttttctttt caaaatcatt tctgtatagg gtaagataca tg 2092

<210> 5286
<211> 2284
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(100)
<223> optimal_loci_98842_G1, chr3:36690988..36693271, Cluster 32

<400> 5286
atatatattg atgatgtggg cgccgggtag atgtgacatg tatgcatgga ggagacatac 60

atgtatatat gttacgtacg ttaatagcta gctaattaag gggggcacta gataccatga 120

tgccgatata tagaagacaa atcaaaggta gcaagagatc agagaacata tgtcttggtt 180

tgcatgcagt agtagtagtg tgcagtgggg tcgcacagtt aggttggtta ggtcacacca 240

aagatgctgt ttttattctg aacatcgaaa ttaattaaac aagagagaag gaacagaggg 300

attaaacttg agtctacaca ccggagagag atcggagaat atatgcgtat gtatctctct 360

ctacacactg tgtaacagtt gttagttaag gattctccca ttcgatcccc ggcccaatgc 420

aatgtgcttg ataagctacc tggaatatat ttgcgaaaag aaataaacga aagatcccca 480

cagcccgaca ctgtagtaga aaagtgtgtg cgataatgtg cagtgcatcc gacatacatc 540

gtccatatat aattgcaccg tcgtacggag gcctaaaaca aaatatggca atttgtaagg 600

acaagcacta taatatcaga gtagggacat ctaaattgga ctgagcagag aaaattagga 660

tgaaaattta gactctagta ctacttagaa caaagaaatg agcggggcct gtgctgtacg 720

tgagtgtccg ccggaaacaa ataatcgttg catggaatat tggaacctgg ctactgccat 780

attttatgtc cggactgaat tcgggcgaca gagcagtttc gcgcgcgatt ccaccacgtg 840

tcggtgcacc atcgatcgcg gcacgtacgt tgcataccgc caaaaaaaag tttctgcatg 900

ctttgatgat gcgggatcgg atgcacggtg gagcggaaat gtttttctgc ttaattatct 960

atttaatctt agctacgaaa ttgtcgtgca cgcattattt tgcatatata tacttaataa 1020

tataaagcta ataatcaccc tgcctgtgca agttagataa ggattcgatc ggctgtcgag 1080

cgcgcgatcg agagaaaata tatataatat atacgttgtg tgtcgaatcc tactaccagc 1140

tatagccttt tcccccgaaa agaaaacaaa aaggaccgga gcggctagcc ggctaaaatt 1200

aattctcact caacaaggga atacgattca cacgctctag tttactatag ctctccttta 1260

cttagccatc acgcacgcaa gagagctgta cgtgctcatc ctcagatcga ttcttctttt 1320

ttttagcgaa agggaattcg atcgtcgaga tcagccgtgc ggcggcctgc ttttatcggg 1380

aacaaaactg atatatgccc gctccttgtc aagtatatat tttgatgtac ggcaggaata 1440

acatgcggga cgtaggcagg caagccatct gcaaagagag attttggctt atatatcctg 1500

gttgcctagt atttgatgta cgtgacctgc ttgcattggt acgtatttgc taaaccatcc 1560

tgctggagag aataatttgt gatagtatgt atgtatatgt atatgtatgt gcggctatct 1620

aattcagtac cgtattataa ttaagagtat atataccatg cactgctagc tagttgttct 1680

agaagcagtg acgtacacct taagaacaga attcatgcaa attaaacaca gcgcaataag 1740

tttgaatcta tcactagatc caagtacaga gaacatttgc acgctaaata tggagcagaa 1800

cagcgaggtt atgtgcgctc tctcccggcc ggcctcccgc gcgctgttct gatccctttt 1860

ccgcgtccgt gtgcgcagtg gccgccgccg ccgccgccgc cgccgccgcc gccgccgccg 1920

ccgcgccccg catccatgtc cagcaggccg ccgcttgctc cctgcccaac ggcggcggct 1980

gtggaaaccg gcgtcgtcgc ggagagtgct ctcgtttccc agatgtatgc attcttcata 2040

tcttgataaa ttatttttca atcgtcataa tccagtagta atttcagatt gatgaattgt 2100

atctttacgc tagctaactg tcctaagagt gctgctgctg tccgtaacat tcaaagagat 2160

ttttcattgt ctttgctttt gtgtccttca agtgaatacc gaccaaaaga atgatcgtat 2220

ctattttaat tcacatgtga ctcacacaca ttttcaagaa cttctcattc gaattgaatt 2280

gatt 2284

<210> 5287
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5287
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5288
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5288
Arg Lys Asp Gln Leu Val Ala
1 5

<210> 5289
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5289
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5290
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5290
Thr Ser Ser Asn Arg Lys Thr
1 5

<210> 5291
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5291
Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 5292
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5292
Ala Arg Ser Thr Arg Thr Asn
1 5

<210> 5293
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5293
Arg Ser Asp Ser Leu Ser Val
1 5

<210> 5294
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5294
Asp Arg Ser Asn Arg Lys Thr
1 5

<210> 5295
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5295
Gln Ser Ser His Leu Thr Arg
1 5

<210> 5296
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5296
Arg Ser Asp Ala Leu Ala Arg
1 5

<210> 5297
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5297
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5298
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5298
Asp Pro Ser Ala Leu Arg Lys
1 5

<210> 5299
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5299
Arg Ser Asp Asn Leu Ser Gln
1 5

<210> 5300
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5300
Ala Ser Asn Asp Arg Lys Lys
1 5

<210> 5301
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5301
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 5302
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5302
Arg Ser Asp His Leu Ser Arg
1 5

<210> 5303
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5303
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 5304
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5304
Gln Ser Gly His Leu Ser Arg
1 5

<210> 5305
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5305
Arg Ser Ala Asn Leu Ala Arg
1 5

<210> 5306
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5306
Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 5307
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5307
Arg Ser Asp Thr Leu Ser Gln
1 5

<210> 5308
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5308
Arg Ser Ala Asp Leu Ser Arg
1 5

<210> 5309
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5309
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5310
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5310
Asn Ser Arg Asn Leu Arg Asn
1 5

<210> 5311
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5311
Arg Ser Asp Ser Leu Ser Val
1 5

<210> 5312
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5312
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5313
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5313
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5314
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5314
Arg Arg Ser Asp Leu Lys Arg
1 5

<210> 5315
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5315
Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 5316
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5316
Gln Asn Ala Thr Arg Ile Asn
1 5

<210> 5317
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5317
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5318
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5318
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5319
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5319
Arg Ser Asp Val Leu Ser Glu
1 5

<210> 5320
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5320
Thr Arg Asn Gly Leu Lys Tyr
1 5

<210> 5321
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5321
Arg Ser Asp Asn Leu Ser Arg
1 5

<210> 5322
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5322
Asp Asn Ser Asn Arg Lys Thr
1 5

<210> 5323
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5323
Gln Asn Ala His Arg Lys Thr
1 5

<210> 5324
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5324
Gln Lys Ala Thr Arg Ile Thr
1 5

<210> 5325
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5325
Asp Arg Ser His Leu Thr Arg
1 5

<210> 5326
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5326
Arg Ser Asp Asp Arg Lys Lys
1 5

<210> 5327
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5327
Ala Ser Lys Thr Arg Thr Asn
1 5

<210> 5328
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5328
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5329
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5329
Leu Arg His His Leu Thr Arg
1 5

<210> 5330
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5330
Gln Ser Ala His Leu Lys Ala
1 5

<210> 5331
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5331
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5332
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5332
Ala Ser His Asn Leu Arg Thr
1 5

<210> 5333
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5333
Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 5334
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5334
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5335
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5335
Asp Ala Gly Asn Arg Asn Lys
1 5

<210> 5336
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5336
Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 5337
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5337
Arg Ser Asp Asn Leu Thr Arg
1 5

<210> 5338
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5338
Asp Arg Ser His Leu Ser Arg
1 5

<210> 5339
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5339
Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 5340
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5340
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5341
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5341
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5342
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5342
His Arg Ser Thr Arg Asn Arg
1 5

<210> 5343
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5343
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5344
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5344
Asp Arg Ser Asn Leu Lys Ala
1 5

<210> 5345
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5345
Asp Arg Ser His Leu Thr Arg
1 5

<210> 5346
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5346
Gln Arg Ser Thr Leu Lys Ser
1 5

<210> 5347
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5347
Arg Ser Asp Ala Leu Ser Arg
1 5

<210> 5348
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5348
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5349
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5349
Asp Arg Ser His Leu Thr Arg
1 5

<210> 5350
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5350
Thr Ser Ser Asn Arg Lys Thr
1 5

<210> 5351
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5351
Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 5352
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5352
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5353
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5353
Asp Arg Ser Ala Arg Thr Arg
1 5

<210> 5354
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5354
Gln Ser Gly His Leu Ser Arg
1 5

<210> 5355
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5355
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 5356
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5356
Arg Ser Asp Val Leu Ser Thr
1 5

<210> 5357
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5357
Arg Tyr Ala Tyr Leu Thr Ser
1 5

<210> 5358
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5358
Arg Arg Trp Thr Leu Val Gly
1 5

<210> 5359
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5359
Arg Ser Asp Asn Leu Ser Gln
1 5

<210> 5360
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5360
Ala Ser Asn Asp Arg Lys Lys
1 5

<210> 5361
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5361
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5362
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5362
Leu Lys Asp Thr Leu Arg Arg
1 5

<210> 5363
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5363
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 5364
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5364
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5365
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5365
Met Gln Asn Tyr Leu Ser Arg
1 5

<210> 5366
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5366
Arg Ser Asp His Leu Ser Glu
1 5

<210> 5367
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5367
Gln Asn Ala Asn Arg Lys Thr
1 5

<210> 5368
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5368
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 5369
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5369
Arg Ser Asp Asn Leu Ser Glu
1 5

<210> 5370
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5370
Gln Ser Ala Asn Arg Thr Lys
1 5

<210> 5371
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5371
Arg Ser Asp Ala Leu Ser Arg
1 5

<210> 5372
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5372
Asp Arg Ser Ala Leu Ala Arg
1 5

<210> 5373
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5373
Arg Ser Asp His Leu Ser Glu
1 5

<210> 5374
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5374
Asp Ser Gln Asn Arg Ile Lys
1 5

<210> 5375
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5375
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5376
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5376
Asp Lys Gly Asn Leu Thr Lys
1 5

<210> 5377
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5377
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 5378
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5378
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5379
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5379
Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 5380
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5380
Asp Arg Ser Asn Arg Lys Thr
1 5

<210> 5381
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5381
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5382
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5382
Leu Arg Gln Asp Leu Lys Arg
1 5

<210> 5383
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5383
Arg Ser Asp His Leu Ser Glu
1 5

<210> 5384
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5384
Asp Arg Ser Ala Leu Ala Arg
1 5

<210> 5385
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5385
Asp Arg Ser Ala Leu Ser Arg
1 5

<210> 5386
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5386
Asn Arg Arg Gly Arg Trp Ser
1 5

<210> 5387
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5387
Arg Pro Tyr Thr Leu Arg Leu
1 5

<210> 5388
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5388
His Arg Ser Ser Leu Arg Arg
1 5

<210> 5389
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5389
Arg Ser Asp Ser Leu Leu Arg
1 5

<210> 5390
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5390
Trp Leu Ser Ser Leu Ser Ala
1 5

<210> 5391
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5391
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5392
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5392
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5393
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5393
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5394
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5394
Leu Lys Gln His Leu Asn Glu
1 5

<210> 5395
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5395
Leu Arg His His Leu Thr Arg
1 5

<210> 5396
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5396
Gln Ser Gly Asn Leu His Val
1 5

<210> 5397
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5397
Thr Ser Gly His Leu Ser Arg
1 5

<210> 5398
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5398
ctactccgta tgcgaaggca cg 22

<210> 5399
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5399
tattcgcggt gggacacttg at 22

<210> 5400
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5400
ccggagccgg ggcctcccag gc 22

<210> 5401
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5401
atcgcgacgc gacgcgacga gac 23

<210> 5402
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5402
tgcatgcgca gta 13

<210> 5403
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5403
acaccggcgc acggcacg 18

<210> 5404
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5404
agaggtgtaa cc 12

<210> 5405
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5405
tcgggcacaa gaaacgag 18

<210> 5406
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5406
tacgctgaca atgca 15

<210> 5407
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5407
ccagctgatg gagaggac 18

<210> 5408
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5408
agagcaggcg ag 12

<210> 5409
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5409
agcaaagtga gtagtt 16

<210> 5410
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5410
tggatggaag gaatc 15

<210> 5411
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5411
gaagctacat cccag 15

<210> 5412
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5412
tacgcgcaac ggaacgca 18

<210> 5413
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5413
caccggtgtc gtgtaacag 19

<210> 5414
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5414
cccggacgac gccgag 16

<210> 5415
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5415
gacatggcac gcgcatcgag 20

<210> 5416
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5416
gcatgtgtgg ttttg 15

<210> 5417
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Zinc Finger Binding Sequences

<400> 5417
ggtcaaggta gtgac 15

<210> 5418
<211> 2378
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> universal polynucleotide donor cassette sequence

<400> 5418
aagttggtga tacatgaacc aacacgaaga acccgccagt cctactacca ctctccttcg 60

tttgacctag ctggctggtt aagaaactga tgttgatacc agccactact ccgagctagt 120

agtaaaagat ttttacagcc aggggagcca caggttagta gagtggtagg agcagtgttg 180

gactgatggc tcgcttacat aagcagttct gtcccatgga gccaatgtcc tgatacggta 240

ggacacatat cccttaatga atcggccaac gcgcggggag aggcggtttg cgtattgggc 300

gctcttccgc ttcctcgctc actgactcgc tgcgctcggt cgttcggctg cggcgagcgg 360

tatcagctca ctcaaaggcg gtaatacggt tatccacaga atcaggggat aacgcaggaa 420

agaacatgtg agcaaaaggc cagcaaaagg ccaggaaccg taaaaaggcc gcgttgctgg 480

cgtttttcca taggctccgc ccccctgacg agcatcacaa aaatcgacgc tcaagtcaga 540

ggtggcgaaa cccgacagga ctataaagat accaggcgtt tccccctgga agctccctcg 600

tgcgctctcc tgttccgacc ctgccgctta ccggatacct gtccgccttt ctcccttcgg 660

gaagcgtggc gctttctcat agctcacgct gtaggtatct cagttcggtg taggtcgttc 720

gctccaagct gggctgtgtg cacgaacccc ccgttcagcc cgaccgctgc gccttatccg 780

gtaactatcg tcttgagtcc aacccggtaa gacacgactt atcgccactg gcagcagcca 840

ctggtaacag gattagcaga gcgaggtatg taggcggtgc tacagagttc ttgaagtggt 900

ggcctaacta cggctacact agaagaacag tatttggtat ctgcgctctg ctgaagccag 960

ttaccttcgg aaaaagagtt ggtagctctt gatccggcaa acaaaccacc gctggtagcg 1020

gtggtttttt tgtttgcaag cagcagatta cgcgcagaaa aaaaggatct caagaagatc 1080

ctttgatctt ttctacgggg tctgacgctc agtggaacga aaactcacgt taagggattt 1140

tggtcatggc gttcggaacc gtgctgaccc gcaagtggca acctcccgtg cctctgctca 1200

cctttaccgc ctggcaactg gcggccacct gcagggcgat cgcaccgagc gcttagtggg 1260

aatttgtacc ccttatcgaa ccgggagcac aggatgacgc ctaacaattc attcaagccg 1320

acaccgcttc gcggcgcggc ttaattcagg agttaaacat catgagggaa gcggtgatcg 1380

ccgaagtatc gactcaacta tcagaggtag ttggcgtcat cgagcgccat ctcgaaccga 1440

cgttgctggc cgtacatttg tacggctccg cagtggatgg cggcctgaag ccacacagtg 1500

atattgattt gctggttacg gtgaccgtaa ggcttgatga aacaacgcgg cgagctttga 1560

tcaacgacct tttggaaact tcggcttccc ctggagagag cgagattctc cgcgctgtag 1620

aagtcaccat tgttgtgcac gacgacatca ttccgtggcg ttatccagct aagcgcgaac 1680

tgcaatttgg agaatggcag cgcaatgaca ttcttgcagg tatcttcgag ccagccacga 1740

tcgacattga tctggctatc ttgctgacaa aagcaagaga acatagcgtt gccttggtag 1800

gtccagcggc ggaggaactc tttgatccgg ttcctgaaca ggatctattt gaggcgctaa 1860

atgaaacctt aacgctatgg aactcgccgc ccgactgggc tggcgatgag cgaaatgtag 1920

tgcttacgtt gtcccgcatt tggtacagcg cagtaaccgg caaaatcgcg ccgaaggatg 1980

tcgctgccga ctgggcaatg gagcgcctgc cggcccagta tcagcccgtc atacttgaag 2040

ctaggcaggc ttatcttgga caagaagatc gcttggcctc gcgcgcagat cagttggaag 2100

aatttgttca ctacgtgaaa ggcgagatca ccaaggtagt cggcaaataa tgtctaacaa 2160

ttcgttcaag ccgacgccgc ttcgcggcgc ggcttaactc aagcgttaga gagctgggga 2220

agactatgcg cgatcgcctg cagctacgtg ccttcgcata cggagtagtt tattcgcggt 2280

gggacacttg atagaaaggt taagaggaca cgcctaaaca gttgtgaata catacataca 2340

caccgataca cagatgctaa agcactaaag cccctaaa 2378

<210> 5419
<211> 2424
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> universal polynucleotide donor cassette sequence

<400> 5419
tttgcgggat ctggatgggc tgttttcgcg cgcggcgtca ctttccctta acttctcgcg 60

ctggaagagg cagctgcctg cttttgcttg gccgctgacc atgacacctg gccccgcttt 120

gcagcccgtg gaggactctt ggcgagccac aggttagtag agtggtagga gcagtgttgg 180

actgatggct cgcttacata agcagttctg tcccatggag ccaatgtcct gatacggtag 240

gacacatatc ccttaatgaa tcggccaacg cgcggggaga ggcggtttgc gtattgggcg 300

ctcttccgct tcctcgctca ctgactcgct gcgctcggtc gttcggctgc ggcgagcggt 360

atcagctcac tcaaaggcgg taatacggtt atccacagaa tcaggggata acgcaggaaa 420

gaacatgtga gcaaaaggcc agcaaaaggc caggaaccgt aaaaaggccg cgttgctggc 480

gtttttccat aggctccgcc cccctgacga gcatcacaaa aatcgacgct caagtcagag 540

gtggcgaaac ccgacaggac tataaagata ccaggcgttt ccccctggaa gctccctcgt 600

gcgctctcct gttccgaccc tgccgcttac cggatacctg tccgcctttc tcccttcggg 660

aagcgtggcg ctttctcata gctcacgctg taggtatctc agttcggtgt aggtcgttcg 720

ctccaagctg ggctgtgtgc acgaaccccc cgttcagccc gaccgctgcg ccttatccgg 780

taactatcgt cttgagtcca acccggtaag acacgactta tcgccactgg cagcagccac 840

tggtaacagg attagcagag cgaggtatgt aggcggtgct acagagttct tgaagtggtg 900

gcctaactac ggctacacta gaagaacagt atttggtatc tgcgctctgc tgaagccagt 960

taccttcgga aaaagagttg gtagctcttg atccggcaaa caaaccaccg ctggtagcgg 1020

tggtttttt gtttgcaagc agcagattac gcgcagaaaa aaaggatctc aagaagatcc 1080

tttgatcttt tctacggggt ctgacgctca gtggaacgaa aactcacgtt aagggatttt 1140

ggtcatggcg ttcggaaccg tgctgacccg caagtggcaa cctcccgtgc ctctgctcac 1200

ctttaccgcc tggcaactgg cggccacctg cagggcgatc gcaccgagcg cttagtggga 1260

atttgtaccc cttatcgaac cgggagcaca ggatgacgcc taacaattca ttcaagccga 1320

caccgcttcg cggcgcggct taattcagga gttaaacatc atgagggaag cggtgatcgc 1380

cgaagtatcg actcaactat cagaggtagt tggcgtcatc gagcgccatc tcgaaccgac 1440

gttgctggcc gtacatttgt acggctccgc agtggatggc ggcctgaagc cacacagtga 1500

tattgatttg ctggttacgg tgaccgtaag gcttgatgaa acaacgcggc gagctttgat 1560

caacgacctt ttggaaactt cggcttcccc tggagagagc gagattctcc gcgctgtaga 1620

agtcaccatt gttgtgcacg acgacatcat tccgtggcgt tatccagcta agcgcgaact 1680

gcaatttgga gaatggcagc gcaatgacat tcttgcaggt atcttcgagc cagccacgat 1740

cgacattgat ctggctatct tgctgacaaa agcaagagaa catagcgttg ccttggtagg 1800

tccagcggcg gaggaactct ttgatccggt tcctgaacag gatctatttg aggcgctaaa 1860

tgaaacctta acgctatgga actcgccgcc cgactgggct ggcgatgagc gaaatgtagt 1920

gcttacgttg tcccgcattt ggtacagcgc agtaaccggc aaaatcgcgc cgaaggatgt 1980

cgctgccgac tgggcaatgg agcgcctgcc ggcccagtat cagcccgtca tacttgaagc 2040

taggcaggct tatcttggac aagaagatcg cttggcctcg cgcgcagatc agttggaaga 2100

atttgttcac tacgtgaaag gcgagatcac caaggtagtc ggcaaataat gtctaacaat 2160

tcgttcaagc cgacgccgct tcgcggcgcg gcttaactca agcgttagag agctggggaa 2220

gactatgcgc gatcgcctgc aggtggttgc ctgggaggcc ccggctccgg gcatcgcgac 2280

gcgacgcgac gagacgcgta aaagtcaccc gtcgcggtct cgcatgcgcg agggaggcag 2340

gcaggcagcg aacaaaatcg cacgcgcgtc gtcgactgcc tggcctggcc tggtccagct 2400

gaaaaccgcc ccggtttgcc tccg 2424

<210> 5420
<211> 2225
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> universal polynucleotide donor cassette sequence

<400> 5420
gcgtattggg cgctcttccg cttcctcgct cactgactcg ctgcgctcgg tcgttcggct 60

gcggcgagcg gtatcagctc actcaaaggc ggtaatacgg ttatccacag aatcagggga 120

taacgcagga aagaacatgt gagcaaaagg ccagcaaaag gccaggaacc gtaaaaaggc 180

cgcgttgctg gcgtttttcc ataggctccg ccccccctgac gagcatcaca aaaatcgacg 240

ctcaagtcag aggtggcgaa acccgacagg actataaaga taccaggcgt ttcccccctgg 300

aagctccctc gtgcgctctc ctgttccgac cctgccgctt accggatacc tgtccgcctt 360

tctcccttcg ggaagcgtgg cgctttctca tagctcacgc tgtaggtatc tcagttcggt 420

gtaggtcgtt cgctccaagc tgggctgtgt gcacgaaccc cccgttcagc ccgaccgctg 480

cgccttatcc ggtaactatc gtcttgagtc caacccggta agacacgact tatcgccact 540

ggcagcagcc actggtaaca ggattagcag agcgaggtat gtaggcggtg ctacagagtt 600

cttgaagtgg tggcctaact acggctacac tagaagaaca gtatttggta tctgcgctct 660

gctgaagcca gttaccttcg gaaaaagagt tggtagctct tgatccggca aacaaaccac 720

cgctggtagc ggtggttttt ttgtttgcaa gcagcagatt acgcgcagaa aaaaaggatc 780

tcaagaagat cctttgatct tttctacggg gtctgacgct cagtggaacg aaaactcacg 840

ttaagggatt ttggtcatgg cgttcggaac cgtgctgacc cgcaagtggc aacctcccgt 900

gcctctgctc acctttaccg cctggcaact ggcggccacc tgcagggcga tcgcaccgag 960

cgcttagtgg gaatttgtac cccttatcga accgggagca caggatgacg cctaacaatt 1020

cattcaagcc gacaccgctt cgcggcgcgg cttaattcag gagttaaaca tcatgaggga 1080

agcggtgatc gccgaagtat cgactcaact atcagaggta gttggcgtca tcgagcgcca 1140

tctcgaaccg acgttgctgg ccgtacattt gtacggctcc gcagtggatg gcggcctgaa 1200

gccacacagt gatattgatt tgctggttac ggtgaccgta aggcttgatg aaacaacgcg 1260

gcgagctttg atcaacgacc ttttggaaac ttcggcttcc cctggagaga gcgagattct 1320

ccgcgctgta gaagtcacca ttgttgtgca cgacgacatc attccgtggc gttatccagc 1380

taagcgcgaa ctgcaatttg gagaatggca gcgcaatgac attcttgcag gtatcttcga 1440

gccagccacg atcgacattg atctggctat cttgctgaca aaagcaagag aacatagcgt 1500

tgccttggta ggtccagcgg cggaggaact ctttgatccg gttcctgaac aggatctatt 1560

tgaggcgcta aatgaaacct taacgctatg gaactcgccg cccgactggg ctggcgatga 1620

gcgaaatgta gtgcttacgt tgtcccgcat ttggtacagc gcagtaaccg gcaaaatcgc 1680

gccgaaggat gtcgctgccg actgggcaat ggagcgcctg ccggcccagt atcagcccgt 1740

catacttgaa gctaggcagg cttatcttgg acaagaagat cgcttggcct cgcgcgcaga 1800

tcagttggaa gaatttgttc actacgtgaa aggcgagatc accaaggtag tcggcaaata 1860

atgtctaaca attcgttcaa gccgacgccg cttcgcggcg cggcttaact caagcgttag 1920

agagctgggg aagactatgc gcgatcgcct gcagtccgca gttaccttcc ccatcatgaa 1980

cttggagacc gaaaggtgtg gtgcctagtt accccgaaga aatgaaacat ctgcattgtc 2040

agcgtagtat cccagctgat ggagaggaca tacccatgag gagccacagg ttagtagagt 2100

ggtaggagca gtgttggact gatggctcgc ttacataagc agttctgtcc catggagcca 2160

atgtcctgat acggtaggac acatatccct taatgaatcg gccaacgcgc ggggagaggc 2220

ggttt 2225

<210> 5421
<211> 2234
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> universal polynucleotide donor cassette sequence

<400> 5421
gagagctggg gaagactatg cgcgatcgcc tgcagtgtcg cgaggcaggg agcagccgcg 60

tgtccgcctg ctgctgctgg aatggcgcgg tggccgcgcg cggtgacgtc ggcaaggctg 120

gtctcgcctg ctcttggcaa gcaaagtgag tagttacacg gcgctggctg gagccacagg 180

ttagtagagt ggtaggagca gtgttggact gatggctcgc ttacataagc agttctgtcc 240

catggagcca atgtcctgat acggtaggac acatatccct taatgaatcg gccaacgcgc 300

ggggagaggc ggtttgcgta ttgggcgctc ttccgcttcc tcgctcactg actcgctgcg 360

ctcggtcgtt cggctgcggc gagcggtatc agctcactca aaggcggtaa tacggttatc 420

cacagaatca ggggataacg caggaaagaa catgtgagca aaaggccagc aaaaggccag 480

gaaccgtaaa aaggccgcgt tgctggcgtt tttccatagg ctccgccccc ctgacgagca 540

tcacaaaaat cgacgctcaa gtcagaggtg gcgaaacccg acaggactat aaagatacca 600

ggcgtttccc cctggaagct ccctcgtgcg ctctcctgtt ccgaccctgc cgcttaccgg 660

atacctgtcc gcctttctcc cttcgggaag cgtggcgctt tctcatagct cacgctgtag 720

gtatctcagt tcggtgtagg tcgttcgctc caagctgggc tgtgtgcacg aacccccgt 780

tcagcccgac cgctgcgcct tatccggtaa ctatcgtctt gagtccaacc cggtaagaca 840

cgacttatcg ccactggcag cagccactgg taacaggatt agcagagcga ggtatgtagg 900

cggtgctaca gagttcttga agtggtggcc taactacggc tacactagaa gaacagtatt 960

tggtatctgc gctctgctga agccagttac cttcggaaaa agagttggta gctcttgatc 1020

cggcaaacaa accaccgctg gtagcggtgg ttttttgtt tgcaagcagc agattacgcg 1080

cagaaaaaaa ggatctcaag aagatccttt gatcttttct acggggtctg acgctcagtg 1140

gaacgaaaac tcacgttaag ggattttggt catggcgttc ggaaccgtgc tgacccgcaa 1200

gtggcaacct cccgtgcctc tgctcacctt taccgcctgg caactggcgg ccacctgcag 1260

ggcgatcgca ccgagcgctt agtgggaatt tgtacccctt atcgaaccgg gagcacagga 1320

tgacgcctaa caattcattc aagccgacac cgcttcgcgg cgcggcttaa ttcaggagtt 1380

aaacatcatg agggaagcgg tgatcgccga agtatcgact caactatcag aggtagttgg 1440

cgtcatcgag cgccatctcg aaccgacgtt gctggccgta catttgtacg gctccgcagt 1500

ggatggcggc ctgaagccac acagtgatat tgatttgctg gttacggtga ccgtaaggct 1560

tgatgaaaca acgcggcgag ctttgatcaa cgacctttg gaaacttcgg cttcccctgg 1620

agagagcgag attctccgcg ctgtagaagt caccattgtt gtgcacgacg acatcattcc 1680

gtggcgttat ccagctaagc gcgaactgca atttggagaa tggcagcgca atgacattct 1740

tgcaggtatc ttcgagccag ccacgatcga cattgatctg gctatcttgc tgacaaaagc 1800

aagagaacat agcgttgcct tggtaggtcc agcggcggag gaactctttg atccggttcc 1860

tgaacaggat ctatttgagg cgctaaatga aaccttaacg ctatggaact cgccgcccga 1920

ctgggctggc gatgagcgaa atgtagtgct tacgttgtcc cgcatttggt acagcgcagt 1980

aaccggcaaa atcgcgccga aggatgtcgc tgccgactgg gcaatggagc gcctgccggc 2040

ccagtatcag cccgtcatac ttgaagctag gcaggcttat cttggacaag aagatcgctt 2100

ggcctcgcgc gcagatcagt tggaagaatt tgttcactac gtgaaaggcg agatcaccaa 2160

ggtagtcggc aaataatgtc taacaattcg ttcaagccga cgccgcttcg cggcgcggct 2220

taactcaagc gtta 2234

<210> 5422
<211> 2165
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>

<223> universal polynucleotide donor cassette sequence

<400> 5422
gagagctggg gaagactatg cgcgatcgcc tgcagtgttg tgcagccgta cgtgccgtgc 60

gccggtgtat gtctgcatgc gcagtactta ttttctgaag cgagccacag gttagtagag 120

tggtaggagc agtgttggac tgatggctcg cttacataag cagttctgtc ccatggagcc 180

aatgtcctga tacggtagga cacatatccc ttaatgaatc ggccaacgcg cggggagagg 240

cggtttgcgt attgggcgct cttccgcttc ctcgctcact gactcgctgc gctcggtcgt 300

tcggctgcgg cgagcggtat cagctcactc aaaggcggta atacggttat ccacagaatc 360

aggggataac gcaggaaaga acatgtgagc aaaaggccag caaaaggcca ggaaccgtaa 420

aaaggccgcg ttgctggcgt ttttccatag gctccgcccc cctgacgagc atcacaaaaa 480

tcgacgctca agtcagaggt ggcgaaaccc gacaggacta taaagatacc aggcgtttcc 540

ccctggaagc tccctcgtgc gctctcctgt tccgaccctg ccgcttaccg gatacctgtc 600

cgcctttctc ccttcgggaa gcgtggcgct ttctcatagc tcacgctgta ggtatctcag 660

ttcggtgtag gtcgttcgct ccaagctggg ctgtgtgcac gaacccccg ttcagcccga 720

ccgctgcgcc ttatccggta actatcgtct tgagtccaac ccggtaagac acgacttatc 780

gccactggca gcagccactg gtaacaggat tagcagagcg aggtatgtag gcggtgctac 840

agagttcttg aagtggtggc ctaactacgg ctacactaga agaacagtat ttggtatctg 900

cgctctgctg aagccagtta ccttcggaaa aagagttggt agctcttgat ccggcaaaca 960

aaccaccgct ggtagcggtg gttttttgt ttgcaagcag cagattacgc gcagaaaaaa 1020

aggatctcaa gaagatcctt tgatcttttc tacggggtct gacgctcagt ggaacgaaaa 1080

ctcacgttaa gggattttgg tcatggcgtt cggaaccgtg ctgacccgca agtggcaacc 1140

tcccgtgcct ctgctcacct ttaccgcctg gcaactggcg gccacctgca gggcgatcgc 1200

accgagcgct tagtgggaat ttgtacccct tatcgaaccg ggagcacagg atgacgccta 1260

acaattcatt caagccgaca ccgcttcgcg gcgcggctta attcaggagt taaacatcat 1320

gagggaagcg gtgatcgccg aagtatcgac tcaactatca gaggtagttg gcgtcatcga 1380

gcgccatctc gaaccgacgt tgctggccgt acatttgtac ggctccgcag tggatggcgg 1440

cctgaagcca cacagtgata ttgatttgct ggttacggtg accgtaaggc ttgatgaaac 1500

aacgcggcga gctttgatca acgacctttt ggaaacttcg gcttcccctg gagagagcga 1560

gattctccgc gctgtagaag tcaccattgt tgtgcacgac gacatcattc cgtggcgtta 1620

tccagctaag cgcgaactgc aatttggaga atggcagcgc aatgacattc ttgcaggtat 1680

cttcgagcca gccacgatcg acattgatct ggctatcttg ctgacaaaag caagagaaca 1740

tagcgttgcc ttggtaggtc cagcggcgga ggaactcttt gatccggttc ctgaacagga 1800

tctatttgag gcgctaaatg aaaccttaac gctatggaac tcgccgcccg actgggctgg 1860

cgatgagcga aatgtagtgc ttacgttgtc ccgcatttgg tacagcgcag taaccggcaa 1920

aatcgcgccg aaggatgtcg ctgccgactg ggcaatggag cgcctgccgg cccagtatca 1980

gcccgtcata cttgaagcta ggcaggctta tcttggacaa gaagatcgct tggcctcgcg 2040

cgcagatcag ttggaagaat ttgttcacta cgtgaaaggc gagatcacca aggtagtcgg 2100

caaataatgt ctaacaattc gttcaagccg acgccgcttc gcggcgcggc ttaactcaag 2160

cgtta 2165

<210> 5423
<211> 2264
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> universal polynucleotide donor cassette sequence

<400> 5423
gagagctggg gaagactatg cgcgatcgcc tgcagtaacg atttattttc ctcgtttctt 60

gtgcccgaaa gagagaggtg taacccatcc tctataacag tgtggctttg acaacggttc 120

aatatgtatg tttggcaaat gtagatttgt gccaattctt ggtcataatc agcgcggaca 180

aaccggctac ccaaatttgg gagccacagg ttagtagagt ggtaggagca gtgttggact 240

gatggctcgc ttacataagc agttctgtcc catggagcca atgtcctgat acggtaggac 300

acatatccct taatgaatcg gccaacgcgc ggggagaggc ggtttgcgta ttgggcgctc 360

ttccgcttcc tcgctcactg actcgctgcg ctcggtcgtt cggctgcggc gagcggtatc 420

agctcactca aaggcggtaa tacggttatc cacagaatca ggggataacg caggaaagaa 480

catgtgagca aaaggccagc aaaaggccag gaaccgtaaa aaggccgcgt tgctggcgtt 540

tttccatagg ctccgccccc ctgacgagca tcacaaaaat cgacgctcaa gtcagaggtg 600

gcgaaacccg acaggactat aaagatacca ggcgtttccc cctggaagct ccctcgtgcg 660

ctctcctgtt ccgaccctgc cgcttaccgg atacctgtcc gcctttctcc cttcgggaag 720

cgtggcgctt tctcatagct cacgctgtag gtatctcagt tcggtgtagg tcgttcgctc 780

caagctgggc tgtgtgcacg aaccccccgt tcagcccgac cgctgcgcct tatccggtaa 840

ctatcgtctt gagtccaacc cggtaagaca cgacttatcg ccactggcag cagccactgg 900

taacaggatt agcagagcga ggtatgtagg cggtgctaca gagttcttga agtggtggcc 960

taactacggc tacactagaa gaacagtatt tggtatctgc gctctgctga agccagttac 1020

cttcggaaaa agagttggta gctcttgatc cggcaaacaa accaccgctg gtagcggtgg 1080

ttttttgtt tgcaagcagc agattacgcg cagaaaaaaa ggatctcaag aagatccttt 1140

gatcttttct acggggtctg acgctcagtg gaacgaaaac tcacgttaag ggattttggt 1200

catggcgttc ggaaccgtgc tgacccgcaa gtggcaacct cccgtgcctc tgctcacctt 1260

taccgcctgg caactggcgg ccacctgcag ggcgatcgca ccgagcgctt agtgggaatt 1320

tgtacccctt atcgaaccgg gagcacagga tgacgcctaa caattcattc aagccgacac 1380

cgcttcgcgg cgcggcttaa ttcaggagtt aaacatcatg agggaagcgg tgatcgccga 1440

agtatcgact caactatcag aggtagttgg cgtcatcgag cgccatctcg aaccgacgtt 1500

gctggccgta catttgtacg gctccgcagt ggatggcggc ctgaagccac acagtgatat 1560

tgatttgctg gttacggtga ccgtaaggct tgatgaaaca acgcggcgag ctttgatcaa 1620

cgacctttg gaaacttcgg cttcccctgg agagagcgag attctccgcg ctgtagaagt 1680

caccattgtt gtgcacgacg acatcattcc gtggcgttat ccagctaagc gcgaactgca 1740

atttggagaa tggcagcgca atgacattct tgcaggtatc ttcgagccag ccacgatcga 1800

cattgatctg gctatcttgc tgacaaaagc aagagaacat agcgttgcct tggtaggtcc 1860

agcggcggag gaactctttg atccggttcc tgaacaggat ctatttgagg cgctaaatga 1920

aaccttaacg ctatggaact cgccgcccga ctgggctggc gatgagcgaa atgtagtgct 1980

tacgttgtcc cgcatttggt acagcgcagt aaccggcaaa atcgcgccga aggatgtcgc 2040

tgccgactgg gcaatggagc gcctgccggc ccagtatcag cccgtcatac ttgaagctag 2100

gcaggcttat cttggacaag aagatcgctt ggcctcgcgc gcagatcagt tggaagaatt 2160

tgttcactac gtgaaaggcg agatcaccaa ggtagtcggc aaataatgtc taacaattcg 2220

ttcaagccga cgccgcttcg cggcgcggct taactcaagc gtta 2264

<210> 5424
<211> 2373
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> universal polynucleotide donor cassette sequence

<400> 5424
gcgtattggg cgctcttccg cttcctcgct cactgactcg ctgcgctcgg tcgttcggct 60

gcggcgagcg gtatcagctc actcaaaggc ggtaatacgg ttatccacag aatcagggga 120

taacgcagga aagaacatgt gagcaaaagg ccagcaaaag gccaggaacc gtaaaaaggc 180

cgcgttgctg gcgtttttcc ataggctccg ccccccctgac gagcatcaca aaaatcgacg 240

ctcaagtcag aggtggcgaa acccgacagg actataaaga taccaggcgt ttcccccctgg 300

aagctccctc gtgcgctctc ctgttccgac cctgccgctt accggatacc tgtccgcctt 360

tctcccttcg ggaagcgtgg cgctttctca tagctcacgc tgtaggtatc tcagttcggt 420

gtaggtcgtt cgctccaagc tgggctgtgt gcacgaaccc cccgttcagc ccgaccgctg 480

cgccttatcc ggtaactatc gtcttgagtc caacccggta agacacgact tatcgccact 540

ggcagcagcc actggtaaca ggattagcag agcgaggtat gtaggcggtg ctacagagtt 600

cttgaagtgg tggcctaact acggctacac tagaagaaca gtatttggta tctgcgctct 660

gctgaagcca gttaccttcg gaaaaagagt tggtagctct tgatccggca aacaaaccac 720

cgctggtagc ggtggttttt ttgtttgcaa gcagcagatt acgcgcagaa aaaaaggatc 780

tcaagaagat cctttgatct tttctacggg gtctgacgct cagtggaacg aaaactcacg 840

ttaagggatt ttggtcatgg cgttcggaac cgtgctgacc cgcaagtggc aacctcccgt 900

gcctctgctc acctttaccg cctggcaact ggcggccacc tgcagggcga tcgcaccgag 960

cgcttagtgg gaatttgtac cccttatcga accgggagca caggatgacg cctaacaatt 1020

cattcaagcc gacaccgctt cgcggcgcgg cttaattcag gagttaaaca tcatgaggga 1080

agcggtgatc gccgaagtat cgactcaact atcagaggta gttggcgtca tcgagcgcca 1140

tctcgaaccg acgttgctgg ccgtacattt gtacggctcc gcagtggatg gcggcctgaa 1200

gccacacagt gatattgatt tgctggttac ggtgaccgta aggcttgatg aaacaacgcg 1260

gcgagctttg atcaacgacc ttttggaaac ttcggcttcc cctggagaga gcgagattct 1320

ccgcgctgta gaagtcacca ttgttgtgca cgacgacatc attccgtggc gttatccagc 1380

taagcgcgaa ctgcaatttg gagaatggca gcgcaatgac attcttgcag gtatcttcga 1440

gccagccacg atcgacattg atctggctat cttgctgaca aaagcaagag aacatagcgt 1500

tgccttggta ggtccagcgg cggaggaact ctttgatccg gttcctgaac aggatctatt 1560

tgaggcgcta aatgaaacct taacgctatg gaactcgccg cccgactggg ctggcgatga 1620

gcgaaatgta gtgcttacgt tgtcccgcat ttggtacagc gcagtaaccg gcaaaatcgc 1680

gccgaaggat gtcgctgccg actgggcaat ggagcgcctg ccggcccagt atcagcccgt 1740

catacttgaa gctaggcagg cttatcttgg acaagaagat cgcttggcct cgcgcgcaga 1800

tcagttggaa gaatttgttc actacgtgaa aggcgagatc accaaggtag tcggcaaata 1860

atgtctaaca attcgttcaa gccgacgccg cttcgcggcg cggcttaact caagcgttag 1920

agagctgggg aagactatgc gcgatcgcct gcagataagg aactatatac aaaaccacac 1980

atgcacacgt ggtcaaggta gtgactaatc tcgcctaata cacggcgctg gctgatgcat 2040

gcgtgacacg gtggctagct agctgttgat cccggccggc ccgtgatgac agcgctcggc 2100

gtcttcaggc ttcagaaccg ttgatcaagg acgatgagct tgagagctga atccgcggtt 2160

cgtggtgttc atctcagcgt gtctcgtcgt cggcccggtc ggcagcggca gaatttcatt 2220

tcagactgga gccacaggtt agtagagtgg taggagcagt gttggactga tggctcgctt 2280

acataagcag ttctgtccca tggagccaat gtcctgatac ggtaggacac atatccctta 2340

atgaatcggc caacgcgcgg ggagaggcgg ttt 2373

<210> 5425
<211> 2241
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>

<223> universal polynucleotide donor cassette sequence

<400> 5425
gagagctggg gaagactatg cgcgatcgcc tgcaggagct tgcattaact agcaaagtga 60

ttccttccat ccatgcaaga agctacatcc cagtgggtgc ggcaaaagct gtatgaaaag 120

gttggagact tccatacaac tgttgtgtgt cgagtagtag aaaccaacaa caaagtcgag 180

ccacaggtta gtagagtggt aggagcagtg ttggactgat ggctcgctta cataagcagt 240

tctgtcccat ggagccaatg tcctgatacg gtaggacaca tatcccttaa tgaatcggcc 300

aacgcgcggg gagaggcggt ttgcgtattg ggcgctcttc cgcttcctcg ctcactgact 360

cgctgcgctc ggtcgttcgg ctgcggcgag cggtatcagc tcactcaaag gcggtaatac 420

ggttatccac agaatcaggg gataacgcag gaaagaacat gtgagcaaaa ggccagcaaa 480

aggccaggaa ccgtaaaaag gccgcgttgc tggcgttttt ccataggctc cgccccctg 540

acgagcatca caaaaatcga cgctcaagtc agaggtggcg aaacccgaca ggactataaa 600

gataccaggc gtttcccccc ggaagctccc tcgtgcgctc tcctgttccg accctgccgc 660

ttaccggata cctgtccgcc tttctccctt cgggaagcgt ggcgctttct catagctcac 720

gctgtaggta tctcagttcg gtgtaggtcg ttcgctccaa gctgggctgt gtgcacgaac 780

cccccgttca gcccgaccgc tgcgccttat ccggtaacta tcgtcttgag tccaacccgg 840

taagacacga cttatcgcca ctggcagcag ccactggtaa caggattagc agagcgaggt 900

atgtaggcgg tgctacagag ttcttgaagt ggtggcctaa ctacggctac actagaagaa 960

cagtatttgg tatctgcgct ctgctgaagc cagttacctt cggaaaaaga gttggtagct 1020

cttgatccgg caaacaaacc accgctggta gcggtggttt ttttgtttgc aagcagcaga 1080

ttacgcgcag aaaaaaagga tctcaagaag atcctttgat cttttctacg gggtctgacg 1140

ctcagtggaa cgaaaactca cgttaaggga ttttggtcat ggcgttcgga accgtgctga 1200

cccgcaagtg gcaacctccc gtgcctctgc tcacctttac cgcctggcaa ctggcggcca 1260

cctgcagggc gatcgcaccg agcgcttagt gggaatttgt acccccttatc gaaccgggag 1320

cacaggatga cgcctaacaa ttcattcaag ccgacaccgc ttcgcggcgc ggcttaattc 1380

aggagttaaa catcatgagg gaagcggtga tcgccgaagt atcgactcaa ctatcagagg 1440

tagttggcgt catcgagcgc catctcgaac cgacgttgct ggccgtacat ttgtacggct 1500

ccgcagtgga tggcggcctg aagccacaca gtgatattga tttgctggtt acggtgaccg 1560

taaggcttga tgaaacaacg cggcgagctt tgatcaacga ccttttggaa acttcggctt 1620

cccctggaga gagcgagatt ctccgcgctg tagaagtcac cattgttgtg cacgacgaca 1680

tcattccgtg gcgttatcca gctaagcgcg aactgcaatt tggagaatgg cagcgcaatg 1740

acattcttgc aggtatcttc gagccagcca cgatcgacat tgatctggct atcttgctga 1800

caaaagcaag agaacatagc gttgccttgg taggtccagc ggcggaggaa ctctttgatc 1860

cggttcctga acaggatcta tttgaggcgc taaatgaaac cttaacgcta tggaactcgc 1920

cgcccgactg ggctggcgat gagcgaaatg tagtgcttac gttgtcccgc atttggtaca 1980

gcgcagtaac cggcaaaatc gcgccgaagg atgtcgctgc cgactgggca atggagcgcc 2040

tgccggccca gtatcagccc gtcatacttg aagctaggca ggcttatctt ggacaagaag 2100

atcgcttggc ctcgcgcgca gatcagttgg aagaatttgt tcactacgtg aaaggcgaga 2160

tcaccaaggt agtcggcaaa taatgtctaa caattcgttc aagccgacgc cgcttcgcgg 2220

cgcggcttaa ctcaagcgtt a 2241

<210> 5426
<211> 2195
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> universal polynucleotide donor cassette sequence

<400> 5426
gagagctggg gaagactatg cgcgatcgcc tgcagggacc ccgtcgccgt cggcacagcg 60

tcagggcggt aacatgcgtt ccgttgcgcg tacggaccac cggtgtcgtg taacaggaag 120

agctgtcagt ggagccacag gttagtagag tggtaggagc agtgttggac tgatggctcg 180

cttacataag cagttctgtc ccatggagcc aatgtcctga tacggtagga cacatatccc 240

ttaatgaatc ggccaacgcg cggggagagg cggtttgcgt attgggcgct cttccgcttc 300

ctcgctcact gactcgctgc gctcggtcgt tcggctgcgg cgagcggtat cagctcactc 360

aaaggcggta atacggttat ccacagaatc aggggataac gcaggaaaga acatgtgagc 420

aaaaggccag caaaaggcca ggaaccgtaa aaaggccgcg ttgctggcgt ttttccatag 480

gctccgcccc cctgacgagc atcacaaaaa tcgacgctca agtcagaggt ggcgaaaccc 540

gacaggacta taaagatacc aggcgtttcc ccctggaagc tccctcgtgc gctctcctgt 600

tccgaccctg ccgcttaccg gatacctgtc cgcctttctc ccttcgggaa gcgtggcgct 660

ttctcatagc tcacgctgta ggtatctcag ttcggtgtag gtcgttcgct ccaagctggg 720

ctgtgtgcac gaaccccccg ttcagcccga ccgctgcgcc ttatccggta actatcgtct 780

tgagtccaac ccggtaagac acgacttatc gccactggca gcagccactg gtaacaggat 840

tagcagagcg aggtatgtag gcggtgctac agagttcttg aagtggtggc ctaactacgg 900

ctacactaga agaacagtat ttggtatctg cgctctgctg aagccagtta ccttcggaaa 960

aagagttggt agctcttgat ccggcaaaca aaccaccgct ggtagcggtg gttttttgt 1020

ttgcaagcag cagattacgc gcagaaaaaa aggatctcaa gaagatcctt tgatctttc 1080

tacggggtct gacgctcagt ggaacgaaaa ctcacgttaa gggattttgg tcatggcgtt 1140

cggaaccgtg ctgacccgca agtggcaacc tcccgtgcct ctgctcacct ttaccgcctg 1200

gcaactggcg gccacctgca gggcgatcgc accgagcgct tagtgggaat ttgtacccct 1260

tatcgaaccg ggagcacagg atgacgccta acaattcatt caagccgaca ccgcttcgcg 1320

gcgcggctta attcaggagt taaacatcat gagggaagcg gtgatcgccg aagtatcgac 1380

tcaactatca gaggtagttg gcgtcatcga gcgccatctc gaaccgacgt tgctggccgt 1440

acatttgtac ggctccgcag tggatggcgg cctgaagcca cacagtgata ttgatttgct 1500

ggttacggtg accgtaaggc ttgatgaaac aacgcggcga gctttgatca acgacctttt 1560

ggaaacttcg gcttcccctg gagagagcga gattctccgc gctgtagaag tcaccattgt 1620

tgtgcacgac gacatcattc cgtggcgtta tccagctaag cgcgaactgc aatttggaga 1680

atggcagcgc aatgacattc ttgcaggtat cttcgagcca gccacgatcg acattgatct 1740

ggctatcttg ctgacaaaag caagagaaca tagcgttgcc ttggtaggtc cagcggcgga 1800

ggaactcttt gatccggttc ctgaacagga tctatttgag gcgctaaatg aaaccttaac 1860

gctatggaac tcgccgcccg actgggctgg cgatgagcga aatgtagtgc ttacgttgtc 1920

ccgcatttgg tacagcgcag taaccggcaa aatcgcgccg aaggatgtcg ctgccgactg 1980

ggcaatggag cgcctgccgg cccagtatca gcccgtcata cttgaagcta ggcaggctta 2040

tcttggacaa gaagatcgct tggcctcgcg cgcagatcag ttggaagaat ttgttcacta 2100

cgtgaaaggc gagatcacca aggtagtcgg caaataatgt ctaacaattc gttcaagccg 2160

acgccgcttc gcggcgcggc ttaactcaag cgtta 2195

<210> 5427
<211> 2222
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> universal polynucleotide donor cassette sequence

<400> 5427
gagagctggg gaagactatg cgcgatcgcc tgcaggctcg tcgctgatca ccagtatcta 60

ctcgtacagt actccatgga tgcgtacgcg cccgggaact cctcggcgtc gtccgggctg 120

accgacatgg cacgcgcatc gaggatgtag atgcacgtga gccacaggtt agtagagtgg 180

taggagcagt gttggactga tggctcgctt acataagcag ttctgtccca tggagccaat 240

gtcctgatac ggtaggacac atatccctta atgaatcggc caacgcgcgg ggagaggcgg 300

tttgcgtatt gggcgctctt ccgcttcctc gctcactgac tcgctgcgct cggtcgttcg 360

gctgcggcga gcggtatcag ctcactcaaa ggcggtaata cggttatcca cagaatcagg 420

ggataacgca ggaaagaaca tgtgagcaaa aggccagcaa aaggccagga accgtaaaaa 480

ggccgcgttg ctggcgtttt tccataggct ccgcccccct gacgagcatc acaaaaatcg 540

acgctcaagt cagaggtggc gaaacccgac aggactataa agataccagg cgtttccccc 600

tggaagctcc ctcgtgcgct ctcctgttcc gaccctgccg cttaccggat acctgtccgc 660

ctttctccct tcgggaagcg tggcgctttc tcatagctca cgctgtaggt atctcagttc 720

ggtgtaggtc gttcgctcca agctgggctg tgtgcacgaa ccccccgttc agcccgaccg 780

ctgcgcctta tccggtaact atcgtcttga gtccaacccg gtaagacacg acttatcgcc 840

actggcagca gccactggta acaggattag cagagcgagg tatgtaggcg gtgctacaga 900

gttcttgaag tggtggccta actacggcta cactagaaga acagtatttg gtatctgcgc 960

tctgctgaag ccagttacct tcggaaaaag agttggtagc tcttgatccg gcaaacaaac 1020

caccgctggt agcggtggtt tttttgtttg caagcagcag attacgcgca gaaaaaaagg 1080

atctcaagaa gatcctttga tcttttctac ggggtctgac gctcagtgga acgaaaactc 1140

acgttaaggg attttggtca tggcgttcgg aaccgtgctg acccgcaagt ggcaacctcc 1200

cgtgcctctg ctcaccttta ccgcctggca actggcggcc acctgcaggg cgatcgcacc 1260

gagcgcttag tgggaatttg taccccttat cgaaccggga gcacaggatg acgcctaaca 1320

attcattcaa gccgacaccg cttcgcggcg cggcttaatt caggagttaa acatcatgag 1380

ggaagcggtg atcgccgaag tatcgactca actatcagag gtagttggcg tcatcgagcg 1440

ccatctcgaa ccgacgttgc tggccgtaca tttgtacggc tccgcagtgg atggcggcct 1500

gaagccacac agtgatattg atttgctggt tacggtgacc gtaaggcttg atgaaacaac 1560

gcggcgagct ttgatcaacg acctttttgga aacttcggct tcccctggag agagcgagat 1620

tctccgcgct gtagaagtca ccattgttgt gcacgacgac atcattccgt ggcgttatcc 1680

agctaagcgc gaactgcaat ttggagaatg gcagcgcaat gacattcttg caggtatctt 1740

cgagccagcc acgatcgaca ttgatctggc tatcttgctg acaaaagcaa gagaacatag 1800

cgttgccttg gtaggtccag cggcggagga actctttgat ccggttcctg aacaggatct 1860

atttgaggcg ctaaatgaaa ccttaacgct atggaactcg ccgcccgact gggctggcga 1920

tgagcgaaat gtagtgctta cgttgtcccg catttggtac agcgcagtaa ccggcaaaat 1980

cgcgccgaag gatgtcgctg ccgactgggc aatggagcgc ctgccggccc agtatcagcc 2040

cgtcatactt gaagctaggc aggcttatct tggacaagaa gatcgcttgg cctcgcgcgc 2100

agatcagttg gaagaatttg ttcactacgt gaaaggcgag atcaccaagg tagtcggcaa 2160

ataatgtcta acaattcgtt caagccgacg ccgcttcgcg gcgcggctta actcaagcgt 2220

ta 2222

<210> 5428
<211> 110
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> Analytical Domain

<400> 5428
gagccacagg ttagtagagt ggtaggagca gtgttggact gatggctcgc ttacataagc 60

agttctgtcc catggagcca atgtcctgat acggtaggac acatatccct 110

<210> 5429
<211> 118
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> Analytical Domain

<400> 5429
actagttttc atagggatat gtgaggacta accttggcca aaggagctgg aactgcctgc 60

agttatgtaa gggccttagt ccaaattgct ccaccctctg ggaagctaat ggactagt 118

<210> 5430
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Primer

<400> 5430
cgccacaaat ctgaaccagc a 21

<210> 5431
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Primer

<400> 5431
ccacgatcga cattgatctg gcta 24

<210> 5432
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Primer

<400> 5432
gcgacatatc aggccaacag g 21

<210> 5433
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5433
gggatatgtg tcctaccgta tcagg 25

<210> 5434
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5434
ccagcataca gttagggccc a 21

<210> 5435
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5435
gttgccttgg taggtccagc 20

<210> 5436
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5436
cgaaaactca gcatgcggga a 21

<210> 5437
<211> 21

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5437
gagccatcag tccaacactg c 21

<210> 5438
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5438
acaggcgtac agcaacacca 20

<210> 5439
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5439
gaccctatgg tgttggatcc ca 22

<210> 5440
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5440
cgggagctag gcaacaaatc g 21

<210> 5441
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5441
tctgactaaa cgggtggatg ctg 23

<210> 5442
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5442
cggatcagtt gattcgctca ctttca 26

<210> 5443
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5443
gccgaaaagc agcaactgga a 21

<210> 5444
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5444
cactattcct ccggcatgca g 21

<210> 5445
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>

<223> Primer

<400> 5445
tgacctattg atcggtcggc tc 22

<210> 5446
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Primer

<400> 5446
tgccttgaat ctcagggatg ca 22

<210> 5447
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Primer

<400> 5447
gccgaagcta actagcggac a 21

<210> 5448
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Primer

<400> 5448
catggagtag cagctgtgct g 21

<210> 5449
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
<223> Primer

<400> 5449
gaaaagcagt caccggctct g 21

<210> 5450
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5450
ccatggacat gaattcggca cg 22

<210> 5451
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5451
cttttgcacc acggagcaga c 21

<210> 5452
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5452
gctagcaaaa ctttgaagct cgctc 25

<210> 5453
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5453
gaggtccctt acgggtcatc g 21

<210> 5454
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5454
accaggtcta tcttgcgcag ac 22

<210> 5455
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5455
aatagcgtgg tcgggtccta g 21

<210> 5456
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5456
acgaacgatc caaggtgcag t 21

<210> 5457
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5457
tagagacgag gactctgggc t 21

<210> 5458
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5458
aagtccaaca tgggcacaac c 21

<210> 5459
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5459
cctcgttaag ggtgcaggtt g 21

<210> 5460
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5460
ccaagtcagc ttctaagcca tcaaac 26

<210> 5461
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5461
aaccctagac ttctgcctgg tg 22

<210> 5462
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>

<223> Primer

<400> 5462
gctcacttac gagcagatcc ca 22

<210> 5463
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5463
ggtgcacgca tgttctcatg t 21

<210> 5464
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5464
tgtttaccgc agccatgctt g 21

<210> 5465
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5465
gttgtatacg gcatccatcc gct 23

<210> 5466
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5466
gaatgaaact ggtggtctgc tcc 23

<210> 5467
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5467
ccgacgaggt acaagtagca gg 22

<210> 5468
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5468
cccgtagtcc agattcttgt ggt 23

<210> 5469
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5469
gtcgtttgtt cggaagggga g 21

<210> 5470
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5470
cgtagttgtc cggcatgtcc t 21

<210> 5471
<211> 21

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer sequence

<400> 5471
tgtatccctt cggtgagcac g 21

<210> 5472
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5472
tgaatcgact cgctgacagg tg 22

<210> 5473
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5473
ccacgatcga cattgatctg gcta 24

<210> 5474
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5474
gggatatgtg tcctaccgta tcagg 25

<210> 5475
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5475
gttgccttgg taggtccagc 20

<210> 5476
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5476
gagccatcag tccaacactg c 21

<210> 5477
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5477
tggcactaat ctcaccggct 20

<210> 5478
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5478
agtcttagaa gtacgctacc gt 22

<210> 5479
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>

<223> primer

<400> 5479
tacttggctt cggcggcga 19

<210> 5480
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5480
gggtgacttt tacgcgtctc g 21

<210> 5481
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5481
ggtcacgacg catggcctaa 20

<210> 5482
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> primer

<400> 5482
aggatgcatg gatcaccgtc 20

<210> 5483
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5483
gctctgttgt gcagccgtac 20

<210> 5484
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5484
cgttgcagat accacagtgt ac 22

<210> 5485
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5485
gctagtagct gtttacacgg cgtct 25

<210> 5486
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5486
aggtcgagac aaccaagtag ag 22

<210> 5487
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5487
acaggacatc gagcttgcat 20

<210> 5488
<211> 23

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5488
cagaagaaag gcatcaactc atg 23

<210> 5489
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5489
ctctttcacc tctactttta cttcag 26

<210> 5490
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5490
attgaaccgt tgtcaaagcc a 21

<210> 5491
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5491
cacagcgtca gggcggtaac 20

<210> 5492
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5492
ggcacgcacc tgtcactgac 20

<210> 5493
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5493
gtacgcgccc gggaactcct 20

<210> 5494
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> Primer

<400> 5494
cctgcggccc acgtgcatct 20

<210> 5495
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5495
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5496
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5496
Gln Ser Gly Asn Leu Ala Arg
1   5

<210> 5497
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5497
Asp Arg Ser Asn Arg Thr Thr
1   5

<210> 5498
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5498
Asp Asn Ser Asn Arg Ile Lys
1   5

<210> 5499
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5499
Gln Ser Ser Asp Leu Ser Arg
1   5

<210> 5500
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5500
Arg Thr Asp Ala Leu Arg Gly
1   5

<210> 5501
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5501
Arg Ser Asp His Leu Ser Glu
1   5

<210> 5502
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5502
Ser Tyr Arg Ser Arg Trp Gly
1   5

<210> 5503
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Binding Motifs Domain

<400> 5503
Asp Arg Ser Ala Leu Ala Arg
1   5

<210> 5504
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5504
Arg Ser Asp Thr Leu Ser Glu
1   5

<210> 5505
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5505
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5506
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5506
Thr Ser Gly Asn Leu Thr Arg
1   5

<210> 5507
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5507
Asp Arg Ser Ala Leu Ala Arg
1   5

<210> 5508
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5508
Arg Ser Asp Ser Leu Ser Val
1   5

<210> 5509
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5509
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5510
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5510
Asp Arg Ser Asn Leu Ser Arg
1   5

<210> 5511
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5511
Arg Gln Asp Ser Arg Ser Gln
1   5

<210> 5512
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5512
Arg Ser Asp His Leu Ser Ala
1   5

<210> 5513
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5513
Gln His Gly Ser Leu Ala Ser
1   5

<210> 5514
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5514
Arg Ser Ala Asn Leu Ala Arg
1   5

<210> 5515
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5515
Arg Ser Asp His Leu Thr Thr
1   5

<210> 5516
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5516
Arg Ser Ala Asn Leu Ala Arg
1   5

<210> 5517
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5517
Thr Asn Gln Asn Arg Ile Thr
1   5

<210> 5518
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5518
Gln Ser Gly Asn Leu Ala Arg
1   5

<210> 5519
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5519
Gln Ser Asn Gln Leu Ala Val
1   5

<210> 5520
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5520
Gln Asn Ala His Arg Lys Thr
1   5

<210> 5521
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5521
Arg Ser Asp Asp Leu Ser Lys
1   5

<210> 5522
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5522
Arg Ser Asp Thr Arg Lys Thr
1   5

<210> 5523
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5523
Gln Ser Ser His Leu Thr Arg
1   5

<210> 5524
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5524
Gln Ser Ser Asp Leu Thr Arg
1   5

<210> 5525
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5525
Arg Ser Asp Asp Leu Thr Arg
1   5

<210> 5526
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5526
Gln Ser Ser Asp Leu Arg Arg
1   5

<210> 5527
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5527
Thr Ser Gly Ser Leu Ser Arg
1   5

<210> 5528
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5528
Thr Ser Ser Asn Arg Ala Val
1   5

<210> 5529
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5529
Arg Ser Asp His Leu Ser Arg
1   5

<210> 5530
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5530
Asp Arg Ser Ala Arg Asn Ser
1   5

<210> 5531
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5531
Arg Ser Asp Thr Leu Ser Glu
1   5

<210> 5532
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5532
Ser Arg Cys Trp Arg Arg Lys
1   5

<210> 5533
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5533
Thr Ser Gly Asn Leu Thr Arg
1   5

<210> 5534
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5534
Leu Lys Gln Met Leu Ala Val
1   5

<210> 5535
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5535
Gln Ser Ser Asn Leu Ala Arg
1   5

<210> 5536
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5536
Arg Ser Asp Asn Leu Thr Arg
1   5

<210> 5537
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5537
Arg Ser Asp Asn Leu Ser Thr
1   5

<210> 5538
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5538
Gln Ser Gly His Leu Ser Arg
1   5

<210> 5539
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5539
Arg Ser Asp Asn Leu Ala Arg
1   5

<210> 5540
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5540
Gln Lys Lys Asp Arg Ser Tyr
1   5

<210> 5541
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5541
Arg Ser Asp Val Leu Ser Arg
1   5

<210> 5542
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5542
Asp Ser Arg Asp Arg Lys Asn
1   5

<210> 5543
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5543
Arg Ser Ala His Leu Ser Arg
1   5

<210> 5544
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5544
Gln Ser Ala Asn Arg Thr Lys
1   5

<210> 5545
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5545
Gln Ser Ser Asp Leu Ser Arg
1   5

<210> 5546
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5546
Gln Ser Ser Asp Leu Ser Arg
1   5

<210> 5547
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5547
Gln Trp Ser Thr Arg Lys Arg
1   5

<210> 5548
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5548
Gln Ser Ser Asp Leu Ser Arg
1   5

<210> 5549
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5549
Gln Ser Ala His Arg Lys Asn
1   5

<210> 5550
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5550
Arg Ser Asp Asn Leu Ser Thr
1   5

<210> 5551
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5551
Asp Ser Ser Thr Arg Lys Thr
1   5

<210> 5552
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5552
Arg Ser Asp His Leu Ser Arg
1   5

<210> 5553
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5553
Asp Arg Ser Asn Arg Lys Thr
1   5

<210> 5554
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5554
Gln Ser Ser Asp Leu Ser Arg
1   5

<210> 5555
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5555
Gln Ala Gly Asn Leu Ser Lys
1   5

<210> 5556
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5556
Asp Arg Ser Asn Leu Ser Arg
1   5

<210> 5557
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5557
Leu Lys Gln His Leu Thr Arg
1   5

<210> 5558
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5558
Asp Arg Ser Asn Leu Ser Arg
1   5

<210> 5559
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5559
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5560
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5560
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5561
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5561
Gln Ala Gly Asn Leu Ser Lys
1 5

<210> 5562
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5562
Gln Asn Ala His Arg Lys Thr
1 5

<210> 5563
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5563
Arg Ser Asp His Leu Ser Gln
1 5

<210> 5564
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5564
Gln Asn Ala His Arg Ile Thr
1   5

<210> 5565
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5565
Arg Ser Asp Asp Leu Thr Arg
1   5

<210> 5566
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5566
Gln Arg Ser Thr Leu Ser Ser
1   5

<210> 5567
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5567
Thr Ser Gly Asn Leu Thr Arg
1   5

<210> 5568
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5568
Asp Arg Ser Asn Leu Thr Arg
1   5

<210> 5569
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5569
Thr Ser Gly Asn Leu Thr Arg
1   5

<210> 5570
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5570
Arg Ser Asp Asp Leu Thr Arg
1   5

<210> 5571
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5571
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5572
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5572
Met Gln Asn Tyr Leu Ser Arg
1   5

<210> 5573
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5573
Gln Ser Gly Asn Leu Ala Arg
1   5

<210> 5574
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5574
Asp Gln Ser Gly Leu Ala His
1   5

<210> 5575
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5575
Arg Ser Asp Asn Leu Ser Thr
1   5

<210> 5576
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5576
Asp Arg Ser Ala Leu Ala Arg
1   5

<210> 5577
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5577
Leu Lys Gln His Leu Thr Arg
1   5

<210> 5578
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5578
Arg Arg Asp Asp Leu Arg Asn
1   5

<210> 5579
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5579
Arg Ser Asp Asp Leu Thr Arg
1   5

<210> 5580
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5580
Asp Arg Ser Asn Leu Lys Ala
1   5

<210> 5581
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5581
Arg Ser Asp Thr Leu Ser Glu
1   5

<210> 5582
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5582
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5583
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5583
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5584
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5584
Asp Arg Ser Val Leu Arg Arg
1   5

<210> 5585
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5585
Arg Ser Asp Asn Leu Ala Arg
1   5

<210> 5586
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5586
Asp Arg Ser Asn Leu Thr Arg
1   5

<210> 5587
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5587
Asp Arg Ser His Leu Thr Arg
1   5

<210> 5588
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5588
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5589
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5589
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5590
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5590
Arg Ser Asp Asn Leu Ser Glu
1   5

<210> 5591
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5591
Lys Arg Gly Asn Arg Ala Lys
1   5

<210> 5592
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5592
Glu Arg Gly Thr Leu Ala Arg
1   5

<210> 5593
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5593
Arg Ser Asp Ala Leu Ala Arg
1   5

<210> 5594
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5594
Arg Ser Asp Ala Leu Ser Arg
1   5

<210> 5595
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5595
Asp Arg Ser Ala Leu Ala Arg
1   5

<210> 5596
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5596
Glu Arg Gly Thr Leu Ala Arg
1   5

<210> 5597
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5597
Asp Arg Ser Ala Leu Ala Arg
1   5

<210> 5598
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5598
Gln Ser Ser Asp Leu Ser Arg
1   5

<210> 5599
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5599
Arg Ser Asp His Leu Ser Arg
1   5

<210> 5600
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5600
Arg Ser Asp Thr Leu Ser Gln
1   5

<210> 5601
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5601
Gln Lys Ala Thr Arg Ile Thr
1   5

<210> 5602
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5602
Arg Ser Asp Ala Leu Ala Arg
1   5

<210> 5603
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5603
Arg Ser Asp Asn Leu Ser Val
1   5

<210> 5604
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5604
Asp Arg Ser His Leu Ala Arg
1   5

<210> 5605
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5605
Arg Ser Asp Thr Leu Ser Arg
1   5

<210> 5606
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5606
Gln Ser Ala Asp Arg Thr Lys
1   5

<210> 5607
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5607
Thr Ser Gly His Leu Ser Arg
1   5

<210> 5608
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5608
Gln Arg Ser Asn Leu Val Arg
1   5

<210> 5609
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5609
Asp Arg Ser His Leu Ala Arg
1   5

<210> 5610
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5610
Arg Ser Asp Thr Leu Ser Glu
1   5

<210> 5611
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5611
Arg Met Tyr Thr Leu Ser Lys
1   5

<210> 5612
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5612
Asp Arg Ser Ala Leu Ser Arg
1   5

<210> 5613
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5613
Arg Ser Asp Asp Leu Thr Arg
1   5

<210> 5614
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5614
Arg Ser Asp Ala Leu Thr Gln
1   5

<210> 5615
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5615
Asp Arg Ser Asp Leu Ser Arg
1   5

<210> 5616
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5616
Arg Arg Thr Asp Leu Arg Arg
1   5

<210> 5617
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5617
Arg Ser Asp Asn Leu Ala Arg
1   5

<210> 5618
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5618
Gln Arg Ser Pro Leu Pro Ala
1   5

<210> 5619
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5619
Arg Ser Asp Ser Leu Ser Ala
1   5

<210> 5620
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5620
Gln Asn Ala His Arg Lys Thr
1   5

<210> 5621
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5621
Glu Arg Gly Thr Leu Ala Arg
1   5

<210> 5622
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5622
Arg Ser Asp Asn Leu Thr Arg
1   5

<210> 5623
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5623
Thr Ser Gly Asn Leu Thr Arg
1   5

<210> 5624
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5624
Gln Arg Ser His Leu Ser Asp
1   5

<210> 5625
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5625
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5626
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5626
Gln Arg Ser Asn Leu Asn Ile
1   5

<210> 5627
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5627
Arg Ser Asp Asn Leu Ala Arg
1   5

<210> 5628
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5628
Asp Arg Ser Val Leu His Arg
1   5

<210> 5629
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5629
Asp Arg Ser Asp Leu Ser Arg
1   5

<210> 5630
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5630
Arg Gln Asp Thr Leu Arg Ser
1   5

<210> 5631
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5631
Arg Ser Asp Ala Leu Ser Arg
1   5

<210> 5632
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5632
Gln Ser Gly Ser Leu Thr Arg
1   5

<210> 5633
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5633
Arg Ser Asp Ala Leu Ser Val
1   5

<210> 5634
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5634
Asp Ser Ser His Arg Thr Arg
1   5

<210> 5635
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5635
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5636
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5636
Gln Ser Gly His Leu Ser Arg
1   5

<210> 5637
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5637
Arg Ser Asp Asn Leu Ala Arg
1   5

<210> 5638
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5638
His Arg Asn Thr Leu Leu Gly
1   5

<210> 5639
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5639
Thr Ser Gly Ser Leu Ser Arg
1   5

<210> 5640
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5640
Arg Ser Asp His Leu Thr Thr
1 5

<210> 5641
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5641
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5642
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<223> Zinc Finger Protein Recognition Helices

<400> 5642
Arg Pro Tyr Thr Leu Arg Leu
1 5

<210> 5643
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5643
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 5644
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5644
Arg Ser Asp Ala Leu Ala Arg
1 5

<210> 5645
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5645
Arg Ser Asp Thr Leu Ser Gln
1 5

<210> 5646
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5646
Arg Ser Asp Asp Arg Lys Lys
1 5

<210> 5647
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5647
Thr Ser Gly Ser Leu Ser Arg
1 5

<210> 5648
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5648
Arg Ser Asp Thr Leu Ser Ala
1 5

<210> 5649
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5649

Arg Ser Ala Asp Arg Lys Lys
1 5

<210> 5650
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5650
Gln Arg Ser Asn Leu Val Arg
1 5

<210> 5651
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5651
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5652
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5652
Arg Ser Asp Ala Leu Ser Val
1 5

<210> 5653
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5653
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5654
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5654
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 5655
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5655
Arg Ser Asp His Leu Thr Gln
1 5

<210> 5656
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5656
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5657
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5657
Leu Arg His Gln Leu Lys Ser
1 5

<210> 5658
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5658
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 5659
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5659
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5660
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5660
Asp Arg Ser His Leu Ser Arg
1 5

<210> 5661
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5661
Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 5662
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5662
Arg Ser Asp His Leu Ser Ala
1 5

<210> 5663
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5663
Thr Thr Arg Tyr Arg Asn Arg
1 5

<210> 5664
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5664
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5665
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5665
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5666
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5666
Gln Ser Gly His Leu Ser Arg
1 5

<210> 5667
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5667
Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 5668
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5668
Gln Ser Gly His Leu Ser Arg
1 5

<210> 5669
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5669
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 5670
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5670
Asp Ile Ser Asn Arg Ser Lys
1 5

<210> 5671
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5671
Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 5672
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5672
Arg Arg Thr Asp Leu Arg Arg
1 5

<210> 5673
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5673
Thr Ser Gly Ser Leu Thr Arg
1 5

<210> 5674
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5674
Asp Arg Ser His Leu Ser Arg
1 5

<210> 5675
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5675
Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 5676
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5676
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5677
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5677
Phe Pro Gly Ser Arg Thr Arg
1 5

<210> 5678
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5678
Arg Asn Asp Asp Arg Lys Lys
1 5

<210> 5679
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5679
Thr Ser Gly Ser Leu Ser Arg
1 5

<210> 5680
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5680
Gln Leu Asn Asn Leu Lys Thr
1 5

<210> 5681
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5681
Arg Ser Asp Val Leu Ser Thr
1 5

<210> 5682
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5682
Ala Ser Gly Asn Leu Leu Asn
1 5

<210> 5683
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5683

Arg Ser Asp Asn Leu Ser Arg
1 5

<210> 5684
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5684
Asp Asn Ser Asn Arg Lys Thr
1 5

<210> 5685
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5685
Arg Ser Asp Thr Leu Ser Gln
1 5

<210> 5686
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5686
Ala Ser Ala Asn Arg Thr Lys
1 5

<210> 5687
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5687
Gln Ser Ser Asn Leu Ala Arg
1 5

<210> 5688
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5688
Asp Ser Ser Asp Arg Lys Lys
1   5

<210> 5689
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5689
Arg Ser Asp His Leu Ser Thr
1   5

<210> 5690
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5690
Gln Ser Gly His Leu Ser Arg
1   5

<210> 5691
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5691
Arg Ser Asp His Leu Ser Ala
1   5

<210> 5692
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5692
Ser Tyr Trp Ser Arg Thr Val
1   5

<210> 5693
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5693
Asp Arg Ser Ala Leu Ser Arg
1 5

<210> 5694
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5694
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5695
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5695
Arg Ser Asp Asn Leu Thr Arg
1 5

<210> 5696
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5696
Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 5697
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5697
Asp Arg Ser Asn Arg Asn Lys
1 5

<210> 5698
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5698
Arg Ser Asp Val Leu Ser Glu
1 5

<210> 5699
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5699
Arg Asn Phe Ser Leu Thr Met
1 5

<210> 5700
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5700
Arg Ser Asp Ala Leu Ala Arg
1 5

<210> 5701
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5701
Gln Ser Gly Ala Leu Ala Arg
1 5

<210> 5702
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5702
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5703
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5703
Arg Arg Asp Ile Leu His Gln
1 5

<210> 5704
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5704
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 5705
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5705
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5706
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5706
Gln Ser Gly Ala Leu Ala Arg
1 5

<210> 5707
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5707
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5708
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5708
Leu Lys Gln His Leu Thr Arg
1 5

<210> 5709
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5709
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 5710
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5710
Arg Ser Asp His Leu Ser Arg
1 5

<210> 5711
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5711
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5712
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5712
His Arg Ser Asn Leu Asn Lys
1 5

<210> 5713
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5713
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5714
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5714
Asp Ala Ser Asn Leu Arg Gln
1 5

<210> 5715
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5715
Thr Ser Ser Asn Leu Ser Arg
1 5

<210> 5716
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5716
Arg Ser Asp Ser Leu Leu Arg
1 5

<210> 5717
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5717

Cys Arg Glu Tyr Arg Gly Lys
1 5

<210> 5718
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5718
Thr Ser Gly His Leu Ser Arg
1 5

<210> 5719
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5719
Arg Ser Asp Val Leu Ser Ala
1 5

<210> 5720
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5720
Arg Asn Asp His Arg Ile Asn
1 5

<210> 5721
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5721
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5722
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5722
Arg Ser Asp Asn Leu Arg Glu
1 5

<210> 5723
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5723
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5724
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5724
Arg Leu Asp Asn Arg Thr Ala
1 5

<210> 5725
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5725
Arg Ser Asp Val Leu Ser Asn
1 5

<210> 5726
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5726
Asp Arg Ser Thr Arg Ile Thr
1 5

<210> 5727
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5727
Arg Ser Asp Ser Leu Leu Arg
1 5

<210> 5728
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5728
Trp Leu Ser Ser Leu Ser Ala
1 5

<210> 5729
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5729
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 5730
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5730
Thr Ser Gly Ser Leu Thr Arg
1 5

<210> 5731
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5731
Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 5732
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5732
Gln Ser Gly His Leu Ser Arg
1 5

<210> 5733
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5733
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 5734
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5734
Asp Ile Ser Asn Arg Ser Lys
1 5

<210> 5735
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5735
Arg Ser Asp His Leu Ser Arg
1 5

<210> 5736
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5736
His Arg Tyr His Arg Leu Ser
1 5

<210> 5737
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5737
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5738
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5738
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5739
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5739
Asp Arg Ser Ala Leu Ser Arg
1 5

<210> 5740
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5740
Arg Ser Asp Ala Leu Ala Arg
1 5

<210> 5741
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5741
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5742
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5742
His Lys Tyr His Leu Arg Ser
1 5

<210> 5743
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5743
Arg Ser Asp His Leu Ser Glu
1 5

<210> 5744
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5744
Arg Lys Asp Ala Arg Ile Thr
1 5

<210> 5745
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5745
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 5746
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5746
Arg Ser Asp Ala Leu Thr Gln
1 5

<210> 5747
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5747
Asp Arg Ser His Leu Thr Arg
1 5

<210> 5748
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5748
Arg Ser Asp His Leu Thr Thr
1 5

<210> 5749
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5749
Thr Ser Gly Ser Leu Ser Arg
1 5

<210> 5750
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5750
Gln Met His His Leu Lys Thr
1 5

<210> 5751
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5751

Thr Ser Ser Asn Leu Ser Arg
1 5

<210> 5752
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5752
Gln Ser Gly Ala Leu Ala Arg
1 5

<210> 5753
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5753
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5754
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5754
Asp Arg Ser Ala Leu Ser Arg
1 5

<210> 5755
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5755
Arg Ser Asp His Leu Ser Arg
1 5

<210> 5756
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5756
Asp Arg Ser Ala Arg Thr Arg
1 5

<210> 5757
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5757
Gln Ser Gly His Leu Ser Arg
1 5

<210> 5758
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5758
Arg Ser Asp His Leu Ser Glu
1 5

<210> 5759
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5759
Ala Arg Ser Thr Arg Thr Asn
1 5

<210> 5760
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5760
Arg Ser Ala Asn Leu Ala Arg
1 5

<210> 5761
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5761
Arg Asn Asp Asp Arg Lys Lys
1 5

<210> 5762
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5762
Asp Arg Ser His Leu Thr Arg
1 5

<210> 5763
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5763
Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 5764
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5764
Thr Ser Gly Ser Leu Ser Arg
1 5

<210> 5765
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5765
Asp Ser Ser Asp Arg Lys Lys
1 5

<210> 5766
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5766
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5767
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5767
Asp Arg Ser His Leu Thr Arg
1 5

<210> 5768
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5768
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5769
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5769
Arg Ser Asp His Leu Ser Ala
1 5

<210> 5770
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5770
Thr Lys Ser Asn Arg Thr Lys
1 5

<210> 5771
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5771
Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 5772
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5772
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5773
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5773
Gln Lys Ser Ser Leu Arg Thr
1 5

<210> 5774
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5774
Arg Arg Glu Asp Leu Ile Thr
1 5

<210> 5775
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5775
Thr Ser Ser Asn Leu Ser Arg
1 5

<210> 5776
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5776
Asp Arg Ser Ala Leu Ser Arg
1 5

<210> 5777
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5777
Arg Ser Asp Asp Arg Lys Thr
1 5

<210> 5778
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5778
Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 5779
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5779
His Arg Arg Ser Arg Trp Gly
1 5

<210> 5780
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5780
Arg Ser Asp Asn Leu Ser Ala
1 5

<210> 5781
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5781
Arg Asn Asn Asp Arg Lys Thr
1 5

<210> 5782
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5782
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5783
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5783
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5784
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5784
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5785
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5785

His Lys Tyr His Leu Arg Ser
1   5

<210> 5786
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5786
Thr Asn Gln Asn Arg Ile Thr
1   5

<210> 5787
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5787
His Arg Ser Ser Leu Arg Arg
1   5

<210> 5788
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5788
Asp Ser Ser Thr Arg Lys Thr
1   5

<210> 5789
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5789
Gln Ser Ala Thr Arg Thr Lys
1   5

<210> 5790
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5790
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5791
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5791
His Arg Lys Ser Leu Ser Arg
1 5

<210> 5792
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5792
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5793
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5793
Gln Ser Thr His Arg Asn Ala
1 5

<210> 5794
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5794
Arg Ser Asp His Leu Thr Gln
1 5

<210> 5795
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5795
Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 5796
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5796
Arg Ser Asp Asn Leu Thr Arg
1 5

<210> 5797
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5797
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5798
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5798
Asp Arg Ser His Leu Thr Arg
1 5

<210> 5799
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5799
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5800
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5800
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5801
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5801
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 5802
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5802
Asp Arg Ser Ala Leu Ser Arg
1 5

<210> 5803
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5803
Arg Ser Asp Ala Leu Thr Gln
1 5

<210> 5804
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5804
Arg Ser Asp Ser Leu Leu Arg
1 5

<210> 5805
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5805
Arg Ser Asp Ala Leu Thr Gln
1 5

<210> 5806
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5806
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 5807
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5807
Asp Asn Ser Asn Arg Ile Asn
1 5

<210> 5808
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5808
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 5809
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5809
Arg Ser Asp Asn Arg Thr Lys
1 5

<210> 5810
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5810
Arg Ser Asp Val Leu Ser Thr
1 5

<210> 5811
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5811
Trp Ser Ser Ser Arg Ala Ala
1 5

<210> 5812
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5812
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5813
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5813
Thr Ser Ser Asn Arg Lys Thr
1 5

<210> 5814
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5814
Gln Ser Ser His Leu Thr Arg
1 5

<210> 5815
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5815
Arg Ser Asp Ala Leu Thr Gln
1 5

<210> 5816
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5816
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 5817
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5817
Arg Asn Asp Asp Arg Lys Lys
1 5

<210> 5818
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5818
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5819
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5819

Thr Ser Ser Asn Arg Lys Thr
1 5

<210> 5820
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5820
Arg Ser Asp Asn Leu Ser Val
1 5

<210> 5821
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5821
Gln Asn Ala Asn Arg Ile Thr
1 5

<210> 5822
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5822
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 5823
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5823
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5824
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5824
Arg Ser Asp Asn Leu Ser Glu
1 5

<210> 5825
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5825
Arg His Ser Ala Leu Ser Ala
1 5

<210> 5826
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5826
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5827
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5827
Gln Ser Tyr Asn Arg Phe Val
1 5

<210> 5828
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5828
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 5829
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5829
Thr Ser Gly Ser Leu Thr Arg
1 5

<210> 5830
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5830
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 5831
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5831
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5832
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5832
Arg Ser Asp His Leu Ser Glu
1 5

<210> 5833
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5833
Arg Asn Gln His Arg Lys Asn
1 5

<210> 5834
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5834
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5835
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5835
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 5836
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5836
Gln Gly Ala Asn Leu Ile Lys
1 5

<210> 5837
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5837
Arg Ser Asp Ser Leu Ser Val
1 5

<210> 5838
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5838
Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 5839
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5839
Gln Ser Gly His Leu Ser Arg
1 5

<210> 5840
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5840
Thr Ser Gly Ser Leu Ser Arg
1 5

<210> 5841
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5841
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5842
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5842
Arg Ser Ala His Leu Ser Arg
1 5

<210> 5843
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5843
Arg Ser Asp Ala Leu Ser Thr
1 5

<210> 5844
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5844
Asp Arg Ser Thr Arg Thr Lys
1 5

<210> 5845
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5845
Arg Ser Asp Asp Leu Ser Lys
1 5

<210> 5846
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5846
Gln Ser Ala Thr Arg Thr Lys
1 5

<210> 5847
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5847
Arg Ser Asp Ala Leu Thr Gln
1 5

<210> 5848
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5848
Asp Arg Ser His Leu Thr Arg
1 5

<210> 5849
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5849
Thr Ser Ser Asn Arg Lys Thr
1 5

<210> 5850
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5850
Asp Arg Ser Ala Leu Ser Arg
1 5

<210> 5851
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5851
Thr Ser Ser Asn Arg Lys Thr
1 5

<210> 5852
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5852
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 5853
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5853

Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5854
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5854
Arg Ser Asp Val Leu Ser Thr
1 5

<210> 5855
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5855
Asp Cys Arg Asn Arg Trp Arg
1 5

<210> 5856
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5856
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5857
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5857
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 5858
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5858
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5859
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5859
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 5860
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5860
Arg Ser Asp Asn Arg Thr Lys
1 5

<210> 5861
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5861
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5862
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5862
Ala Ala Ser Asn Arg Ser Lys
1 5

<210> 5863
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5863
Asp Arg Ser His Leu Ser Arg
1 5

<210> 5864
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5864
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5865
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5865
Arg Ser Asp Thr Leu Ser Ala
1 5

<210> 5866
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5866
Arg Ser Ala Asp Arg Lys Lys
1 5

<210> 5867
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5867
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 5868
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5868
Asp Arg Ser Asn Arg Lys Thr
1 5

<210> 5869
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5869
Arg Ser Asp Ala Leu Ala Arg
1 5

<210> 5870
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5870
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 5871
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5871
Asp Arg Ser Ala Leu Ala Arg
1 5

<210> 5872
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5872
Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 5873
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5873
Asp Arg Ser Asn Arg Asn Lys
1 5

<210> 5874
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5874
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5875
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5875
Trp Arg Ser Ser Leu Arg Gln
1 5

<210> 5876
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5876
Arg Ser Asp His Leu Ser Gln
1 5

<210> 5877
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5877
Thr Arg Ser Pro Leu Thr Thr
1 5

<210> 5878
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5878
Thr Arg Asp His Leu Ser Thr
1 5

<210> 5879
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5879
Arg Ser Asp Ala Arg Thr Asn
1 5

<210> 5880
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5880
Arg Ser Asp His Leu Ser Glu
1 5

<210> 5881
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5881
Gln Ser Asn His Arg Lys Thr
1 5

<210> 5882
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5882
Arg Ser Asp Ala Leu Ala Arg
1 5

<210> 5883
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5883
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 5884
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5884
Arg Ser Asp Ala Leu Thr Gln
1 5

<210> 5885
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5885
Arg Ser Asp Ser Leu Ser Val
1 5

<210> 5886
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5886
Asp Arg Ser Ala Leu Ala Arg
1 5

<210> 5887
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5887

Gln Ser Ser Asn Leu Ala Arg
1 5

<210> 5888
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5888
Gln Ser Ala Asp Arg Thr Lys
1 5

<210> 5889
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5889
Arg Ser Asp His Leu Ser Ala
1 5

<210> 5890
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5890
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5891
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5891
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5892
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5892
Arg Ser Asp Asn Leu Ala Arg
1 5

<210> 5893
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5893
Phe Arg Glu Gly Leu Tyr Lys
1 5

<210> 5894
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5894
Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 5895
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5895
Leu Lys Gln Met Leu Ala Val
1 5

<210> 5896
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5896
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 5897
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 5897
Arg Ser Asp His Leu Ser Arg
1 5

<210> 5898
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5898
Gln Ser Ser His Leu Thr Arg
1 5

<210> 5899
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5899
Gln Ser Ser Asp Leu Thr Arg
1 5

<210> 5900
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5900
Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 5901
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5901
His Arg Arg Ser Arg Trp Gly
1 5

<210> 5902
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5902
Arg Ser Asp Asp Leu Ser Val
1 5

<210> 5903
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5903
Thr Ser Ser Asn Arg Thr Lys
1 5

<210> 5904
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5904
Arg Ser Asp Thr Leu Ser Gln
1 5

<210> 5905
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5905
Gln Arg Asp His Arg Ile Lys
1 5

<210> 5906
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5906
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5907
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5907
Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 5908
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5908
Arg Ser Asp Ser Leu Leu Arg
1 5

<210> 5909
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5909
Trp Leu Ser Ser Leu Ser Ala
1 5

<210> 5910
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5910
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5911
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5911
Leu Arg Gln Asn Leu Ile Met
1 5

<210> 5912
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5912
Gln Asn Ala His Arg Lys Thr
1 5

<210> 5913
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5913
Gln Ser Gly Ala Leu Ala Arg
1 5

<210> 5914
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5914
Gln Ser Gly His Leu Ser Arg
1 5

<210> 5915
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5915
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 5916
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5916
Leu Ala Tyr Asp Arg Arg Lys
1 5

<210> 5917
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5917
Arg Ser Asp Val Leu Ser Glu
1 5

<210> 5918
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5918
Arg Asn Phe Ser Leu Thr Met
1 5

<210> 5919
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5919
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 5920
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5920
Asp Ser Ser Asp Arg Lys Lys
1 5

<210> 5921
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5921

Arg Ser Asp Asn Leu Ala Arg
1 5

<210> 5922
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5922
Asp Gln Ser Tyr Arg Arg Thr
1 5

<210> 5923
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5923
Arg Ser Asp Asn Leu Ser Glu
1 5

<210> 5924
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5924
Thr Ser Ser Asn Arg Lys Thr
1 5

<210> 5925
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5925
Thr Ser Gly Ser Leu Ser Arg
1 5

<210> 5926
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5926
Arg Lys Glu Leu Leu Arg Ser
1 5

<210> 5927
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5927
Arg Pro Tyr Thr Leu Arg Leu
1 5

<210> 5928
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5928
His Arg Ser Ser Leu Arg Arg
1 5

<210> 5929
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5929
Asp Arg Ser Thr Arg Thr Lys
1 5

<210> 5930
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5930
Arg Ser Asp Tyr Leu Ala Lys
1 5

<210> 5931
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5931
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5932
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5932
Gln Ser Thr His Arg Asn Ala
1 5

<210> 5933
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5933
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 5934
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5934
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5935
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5935
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 5936
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5936
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 5937
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5937
Gln Ser Gly His Leu Ala Arg
1 5

<210> 5938
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5938
Asp Arg Ser His Leu Ala Arg
1 5

<210> 5939
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5939
Arg Ser Ala Asn Leu Ala Arg
1 5

<210> 5940
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5940
Gln Ser Ala Asn Arg Thr Lys
1 5

<210> 5941
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5941
Arg Ser Asp His Leu Thr Gln
1 5

<210> 5942
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5942
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 5943
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5943
Arg Ser Asp His Leu Thr Gln
1 5

<210> 5944
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5944
Asp Arg Ser Ala Leu Ala Arg
1 5

<210> 5945
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5945
Arg Ser Asp Tyr Leu Ala Lys
1 5

<210> 5946
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5946
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5947
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5947
Arg Ser Asp Asn Leu Ser Gln
1 5

<210> 5948
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5948
Gln Arg Gln His Arg Lys Thr
1 5

<210> 5949
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5949
Asp Gln Ser Asn Leu Arg Ala
1 5

<210> 5950
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5950
Arg Pro Tyr Thr Leu Arg Leu
1 5

<210> 5951
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5951
Gln Ser Ser Asn Leu Ala Arg
1 5

<210> 5952
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5952
Arg Ser Asp Asn Leu Thr Thr
1 5

<210> 5953
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5953
Gln Ser Gly His Leu Ala Arg
1 5

<210> 5954
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5954
Gln Arg Val Ala Leu Gln Ala
1 5

<210> 5955
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5955

Glu Arg Gly Thr Leu Ala Arg
1   5

<210> 5956
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5956
Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5957
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5957
Arg Ser Asp Asp Leu Thr Arg
1   5

<210> 5958
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5958
Gln Ser Ser Asp Leu Ser Arg
1   5

<210> 5959
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5959
His Arg Ser Asn Leu Asn Lys
1   5

<210> 5960
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5960
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 5961
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5961
Thr Asn Gln Asn Arg Ile Thr
1 5

<210> 5962
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5962
Arg Ser Asp Ala Leu Ala Arg
1 5

<210> 5963
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5963
Asp Ser Ser Ala Leu Ile Asn
1 5

<210> 5964
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5964
Thr Ser Ser Asn Leu Ser Arg
1 5

<210> 5965
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5965
Arg Ser Asp His Leu Ser Arg
1 5

<210> 5966
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5966
Tyr Gly Trp Tyr Arg His Lys
1 5

<210> 5967
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5967
Thr Ser Gly His Leu Ser Arg
1 5

<210> 5968
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5968
Arg Ser Asp Asn Leu Thr Arg
1 5

<210> 5969
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5969
Gln Ser Gly His Leu Ala Arg
1 5

<210> 5970
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5970
Gln Arg Thr Asn Leu Val Glu
1 5

<210> 5971
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5971
Asp Arg Ser Thr Arg Thr Lys
1 5

<210> 5972
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5972
Gln Ser Gly Asn Leu His Val
1 5

<210> 5973
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5973
Arg Ser Asp His Leu Thr Gln
1 5

<210> 5974
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5974
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 5975
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5975
Arg Ser Asp Asn Arg Thr Lys
1 5

<210> 5976
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5976
Arg Ser Asp Asn Leu Ala Arg
1 5

<210> 5977
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5977
Gln Lys Val Asn Leu Met Ser
1 5

<210> 5978
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5978
Gln Ser Gly Ala Leu Ala Arg
1 5

<210> 5979
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5979
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 5980
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5980
Thr Gln Gly Tyr Leu Arg Lys
1 5

<210> 5981
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5981
Arg Ser Asp Asn Leu Ala Arg
1 5

<210> 5982
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5982
Asp Ser Ser Gly Leu Thr His
1 5

<210> 5983
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5983
Arg Asn Asp Asp Arg Lys Lys
1 5

<210> 5984
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5984
Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 5985
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5985
Arg Arg Asp Tyr Leu Arg Thr
1 5

<210> 5986
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5986
Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 5987
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5987
Asn Asn Arg Asp Arg Thr Lys
1 5

<210> 5988
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5988
Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 5989
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5989

Gln Ser Gly Asp Leu Thr Arg
1   5

<210> 5990
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5990
Gln Ser Ser Asp Leu Ser Arg
1   5

<210> 5991
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5991
Gln Ser Thr His Arg Asn Ala
1   5

<210> 5992
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5992
Arg Ser Asp Asp Leu Ser Lys
1   5

<210> 5993
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5993
Arg Ser Asp Ala Leu Ala Arg
1   5

<210> 5994
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 5994
Arg Ser Ala Asn Leu Ala Arg
1 5

<210> 5995
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5995
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 5996
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5996
Arg Ser Asp Ala Leu Ser Thr
1 5

<210> 5997
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5997
Asp Arg Ser Thr Arg Thr Lys
1 5

<210> 5998
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5998
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 5999
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 5999
Gln Ser Thr Pro Leu Phe Ala
1 5

<210> 6000
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6000
Gln Ser Gly His Leu Ala Arg
1 5

<210> 6001
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6001
Glu Arg Ile Ala Leu Val Arg
1 5

<210> 6002
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6002
Arg Ser Asp His Leu Ser Glu
1 5

<210> 6003
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6003
Arg Ser Ala His Leu Ser Arg
1 5

<210> 6004
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6004
Arg Ser Asp Asn Leu Ser Val
1 5

<210> 6005
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6005
Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 6006
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6006
Gln Ser His Asn Arg Thr Lys
1 5

<210> 6007
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6007
Asp Arg Ser His Leu Thr Arg
1 5

<210> 6008
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6008
Asp Arg Ser Ala Leu Ala Arg
1 5

<210> 6009
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6009
Thr Ser Gly Ser Leu Thr Arg
1 5

<210> 6010
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6010
Leu Arg His His Leu Thr Arg
1 5

<210> 6011
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6011
Gln Ser Tyr Ala Arg Thr Leu
1 5

<210> 6012
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6012
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 6013
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6013
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 6014
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6014
Arg Ser Ala His Leu Ser Arg
1 5

<210> 6015
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6015
Arg Ser Asp Asn Leu Thr Arg
1 5

<210> 6016
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6016
Arg Ser Asp Asp Leu Ser Lys
1 5

<210> 6017
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6017
Asp Arg Ser Asn Arg Lys Thr
1 5

<210> 6018
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6018
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 6019
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6019
Gln Arg Thr His Leu Arg Asp
1 5

<210> 6020
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6020
Gln Ser Gly His Leu Ser Arg
1 5

<210> 6021
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6021
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6022
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6022
Gln Ser Gly Asn Arg Thr Thr
1 5

<210> 6023
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6023

Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 6024
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6024
Gln Ser Gly His Leu Ala Arg
1 5

<210> 6025
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6025
Gln Arg Thr Asn Leu Val Glu
1 5

<210> 6026
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6026
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 6027
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6027
Arg Arg Asp Pro Leu Ile Asn
1 5

<210> 6028
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6028
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 6029
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6029
Arg Ser Asp Ser Leu Ser Arg
1 5

<210> 6030
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6030
Asp Lys Ser Asn Arg Ile Lys
1 5

<210> 6031
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6031
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6032
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6032
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 6033
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 6033
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6034
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6034
Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 6035
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6035
Gln Thr Ser Asp Arg Asn Lys
1 5

<210> 6036
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6036
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 6037
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6037
Arg Asn Asp Asp Arg Lys Lys
1 5

<210> 6038
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6038
Arg Ser Asp Ser Leu Ser Ala
1 5

<210> 6039
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6039
Gln Asn Ala His Arg Lys Thr
1 5

<210> 6040
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6040
Gln Asn Ala His Arg Lys Thr
1 5

<210> 6041
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6041
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 6042
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6042
Asp Lys Gly Asn Leu Thr Lys
1 5

<210> 6043
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6043
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6044
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6044
Gln Ser Ala His Arg Lys Asn
1 5

<210> 6045
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6045
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6046
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6046
Arg Ser Asp Ala Leu Ser Arg
1 5

<210> 6047
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6047
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 6048
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6048
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 6049
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6049
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 6050
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6050
Thr Ser Gly His Leu Ser Arg
1 5

<210> 6051
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6051
Asp Arg Ser His Leu Ala Arg
1 5

<210> 6052
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6052
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 6053
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6053
Arg Ser Asp His Leu Ser Arg
1 5

<210> 6054
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6054
Arg Ser Asp His Leu Ser Thr
1 5

<210> 6055
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6055
Arg Ser Asp His Leu Ser Arg
1 5

<210> 6056
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6056
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6057
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6057

Arg Ser Asp Tyr Leu Arg Lys
1 5

<210> 6058
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6058
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 6059
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6059
Leu Arg Gln Thr Leu Asn Ser
1 5

<210> 6060
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6060
Gln Ser Gly His Leu Ser Arg
1 5

<210> 6061
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6061
Arg Ser Asp Thr Leu Ser Val
1 5

<210> 6062
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6062
Asp Asn Ser Thr Arg Ile Lys
1 5

<210> 6063
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6063
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 6064
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6064
Asp Asn Ser Asn Arg Ile Asn
1 5

<210> 6065
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6065
Thr Ser Ser Asn Leu Ser Arg
1 5

<210> 6066
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6066
Arg Ser Asp Val Leu Ser Ala
1 5

<210> 6067
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6067
Gln Asn Ala Thr Arg Ile Asn
1 5

<210> 6068
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6068
Arg Ser Asp Val Leu Ser Glu
1 5

<210> 6069
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6069
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 6070
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6070
Arg Ser Asp Asn Leu Ser Val
1 5

<210> 6071
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6071
Gln Ser Ala Asp Arg Thr Lys
1 5

<210> 6072
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6072
Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 6073
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6073
Arg Ser Asp Asn Leu Ser Glu
1 5

<210> 6074
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6074
Lys Arg Cys Asn Leu Arg Cys
1 5

<210> 6075
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6075
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 6076
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6076
Asp Ser Ser Ala Arg Asn Thr
1 5

<210> 6077
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6077
Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 6078
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6078
Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 6079
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6079
Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 6080
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6080
Gln Arg Ser Asn Leu Asp Ser
1 5

<210> 6081
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6081
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 6082
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6082
Gln Lys Val Asn Arg Ala Gly
1 5

<210> 6083
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6083
Arg Ser Asp Asn Leu Ser Val
1 5

<210> 6084
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6084
Gln Arg Asn His Arg Thr Thr
1 5

<210> 6085
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6085
Gln Lys Ala Thr Arg Ile Thr
1 5

<210> 6086
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6086
Gln Ser Gly Ala Leu Ala Arg
1 5

<210> 6087
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6087
Leu Arg His Asn Leu Arg Ala
1 5

<210> 6088
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6088
Asp Arg Ser Thr Arg Thr Lys
1 5

<210> 6089
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6089
His Arg Ser Ala Arg Lys Arg
1 5

<210> 6090
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6090
Arg Ser Asp His Leu Ser Glu
1 5

<210> 6091
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6091

Thr Ser Ser Asp Arg Thr Lys
1 5

<210> 6092
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6092
Arg Ser Asp Ser Leu Ser Arg
1 5

<210> 6093
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6093
Asp Lys Ser Asn Arg Ile Lys
1 5

<210> 6094
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6094
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 6095
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6095
Asp Arg Ser His Leu Thr Arg
1 5

<210> 6096
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6096
Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 6097
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6097
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 6098
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6098
Arg Gln Trp Ser Leu Arg Ile
1 5

<210> 6099
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6099
Thr Ser Gly His Leu Ser Arg
1 5

<210> 6100
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6100
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6101
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6101
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 6102
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6102
Arg Ser Ala Asn Leu Ala Arg
1 5

<210> 6103
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6103
Arg Leu Asp Asn Arg Thr Ala
1 5

<210> 6104
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6104
Gln Ser Gly His Leu Ala Arg
1 5

<210> 6105
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6105
Asp Ser Ser Asn Arg Glu Ala
1 5

<210> 6106
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6106
Arg Ser Asp Ala Leu Ser Arg
1 5

<210> 6107
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6107
Arg Ser Asp Asn Leu Thr Arg
1 5

<210> 6108
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6108
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 6109
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6109
Arg Ser Asp Asn Leu Thr Arg
1 5

<210> 6110
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6110
Arg Ser Asp Asn Leu Ser Val
1 5

<210> 6111
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6111
Arg Ser Asp Thr Arg Thr Glu
1 5

<210> 6112
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6112
Thr Ser Gly Ser Leu Ser Arg
1 5

<210> 6113
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6113
Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 6114
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6114
Arg Ser Ala Asp Leu Thr Arg
1 5

<210> 6115
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6115
Thr Ser Gly Ser Leu Ser Arg
1 5

<210> 6116
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6116
Arg Ser Asp His Leu Thr Thr
1 5

<210> 6117
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6117
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 6118
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6118
Gln Arg Ser Thr Leu Ser Ser
1 5

<210> 6119
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6119
Glu Arg Gly Thr Leu Ala Arg
1 5

<210> 6120
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6120
Gln Ser Gly His Leu Ser Arg
1 5

<210> 6121
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6121
Arg Ser Asp His Leu Ser Gln
1 5

<210> 6122
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6122
Asp Asn Ala Ser Arg Ile Arg
1 5

<210> 6123
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6123
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 6124
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6124
Ala Gln Trp Thr Arg Ala Cys
1 5

<210> 6125
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6125

Arg Ser Asp His Leu Ser Glu
1 5

<210> 6126
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6126
Asp Lys Ala Asn Arg Thr Arg
1 5

<210> 6127
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6127
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6128
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6128
Leu Arg His Asn Leu Arg Ala
1 5

<210> 6129
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6129
Arg Ser Asp Thr Leu Ser Thr
1 5

<210> 6130
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6130
Asp Arg Ser Ser Arg Ile Lys
1 5

<210> 6131
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6131
Gln Ser Gly Ala Leu Ala Arg
1 5

<210> 6132
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6132
Arg Ser Asp Asn Leu Thr Arg
1 5

<210> 6133
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6133
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 6134
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6134
Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 6135
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6135
Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 6136
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6136
Asp Ser Ser Thr Arg Arg Arg
1 5

<210> 6137
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6137
Asp Arg Ser Ala Leu Ala Arg
1 5

<210> 6138
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6138
Asp Arg Ser Ala Leu Ser Arg
1 5

<210> 6139
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6139
Asp Arg Ser His Leu Ala Arg
1 5

<210> 6140
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6140
Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 6141
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6141
Arg Ser Asp Ala Arg Ala Asn
1 5

<210> 6142
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6142
Arg Ser Asp His Leu Ser Thr
1 5

<210> 6143
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6143
Asp Ser Ser Asn Arg Ile Lys
1 5

<210> 6144
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6144
Gln Ser Gly Ala Leu Ala Arg
1 5

<210> 6145
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6145
Arg Ser Asp Asp Leu Thr Arg
1 5

<210> 6146
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6146
Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 6147
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6147
Asp Arg Ser His Leu Ser Arg
1 5

<210> 6148
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6148
Asp Arg Ser His Leu Ala Arg
1 5

<210> 6149
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6149
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6150
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6150
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 6151
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6151
Arg Ser Asp Asn Leu Ser Glu
1 5

<210> 6152
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6152
His Ser Asn Ala Arg Lys Thr
1 5

<210> 6153
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6153
Arg Ser Asp Ala Leu Ser Val
1 5

<210> 6154
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6154
Asp Ser Ser His Arg Thr Arg
1 5

<210> 6155
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6155
Gln Ser Gly Asp Leu Thr Arg
1 5

<210> 6156
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6156
Ala Ser His Asn Leu Arg Thr
1 5

<210> 6157
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6157
Arg Ser Asp His Leu Ser Thr
1 5

<210> 6158
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6158
Thr Ser Ala Asn Leu Ser Arg
1 5

<210> 6159
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6159

Asp Arg Ser Asp Leu Ser Arg
1   5

<210> 6160
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 6160
Asp Arg Ser Asn Leu Thr Arg
1   5

<210> 6161
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 6161
Arg Ser Asp Ser Leu Leu Arg
1   5

<210> 6162
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 6162
Arg Leu Asp Trp Leu Pro Met
1   5

<210> 6163
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 6163
Arg Ser Ala Asp Leu Thr Arg
1   5

<210> 6164
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<400> 6164
Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 6165
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6165
Arg Ser Asp Asn Leu Ser Gln
1 5

<210> 6166
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6166
Asp Arg Ser Asn Arg Thr Lys
1 5

<210> 6167
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6167
Asp Ser Ser Asp Arg Lys Lys
1 5

<210> 6168
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6168
Arg Ser Asp His Leu Ser Glu
1 5

<210> 6169
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6169
Gln Ser Ala Ser Arg Lys Asn
1 5

<210> 6170
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6170
Arg Ser Asp Val Leu Ser Thr
1 5

<210> 6171
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6171
Ser Thr Ala Ala Leu Ser Tyr
1 5

<210> 6172
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6172
Gln Ser Ala Asn Arg Thr Thr
1 5

<210> 6173
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6173
Gln Asn Ala His Arg Lys Thr
1 5

<210> 6174
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6174
Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6175
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6175
Gln Arg Asn His Arg Thr Thr
1 5

<210> 6176
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6176
Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 6177
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6177
Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 6178
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6178
Gln Ser Asn Gln Leu Arg Gln
1 5

<210> 6179
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6179
Arg Ser Asp Ala Leu Thr Gln
1 5

<210> 6180
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6180
agcttcaata gta 13

<210> 6181
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6181
gtcttccggt tggct 15

<210> 6182
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6182
gtcgatgcac cg 12

<210> 6183
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6183
ctaaggatgg acgcagtg 18

<210> 6184
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6184
catgagaggg at 12

<210> 6185
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6185
atgtcgtaga aaagaa 16

<210> 6186
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6186
catgttcgct gcggctgga 19

<210> 6187
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6187
agtccgctcg gg 12

<210> 6188
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6188
gacgatctag cgagaagg 18

<210> 6189
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

oligonucleotide

<400> 6189
atcgaagaac gcagcggat 19

<210> 6190
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6190
cacgcgccgg gtgtctag 18

<210> 6191
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6191
gacgagcacc gccccaccg 19

<210> 6192
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6192
cgggtactgg gaaaggag 18

<210> 6193
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6193
gagcgtcctg attgacatg 19

<210> 6194
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6194

acggtgcatc aagcttaag 19

<210> 6195
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6195
caagggacct agtgagct 18

<210> 6196
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6196
ggtgactaag ct 12

<210> 6197
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6197
agataagctg cagac 15

<210> 6198
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6198
gagcaggcag gcaggc 16

<210> 6199
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6199
gtcgtcgtcg tgcgtggcc 19

<210> 6200
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6200
gtggcaacgg gggct 15

<210> 6201
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6201
ggttcagcgg gctag 15

<210> 6202
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6202
gcggtcttgc cgggcgaa 18

<210> 6203
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6203
ctagaggcgc ccatg 15

<210> 6204
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6204
acggacagcc gagaaagca 19

<210> 6205
<211> 19
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6205
cgagatcgag gccagatcg 19

<210> 6206
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6206
ttgccatggg ttattgag 18

<210> 6207
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6207
ggagcatggc caggtagtg 19

<210> 6208
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6208
ccagttccga cgagtggcg 19

<210> 6209
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6209
ggcctgggcg aacgccgccg 20

<210> 6210
<211> 15
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6210
agtgcaaggg aagac 15

<210> 6211
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6211
aggagggatg gagcagcg 18

<210> 6212
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6212
ggagatagga gtagct 16

<210> 6213
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6213
gttgcgccct acgaa 15

<210> 6214
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6214
tcggttgacc gatggc 16

<210> 6215
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6215
aacgagccat atgcaagtt 19

<210> 6216
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6216
ggatggctcc gaatgatatg 20

<210> 6217
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6217
gagggcgtct tgagg 15

<210> 6218
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6218
gtgttgctgt acgac 15

<210> 6219
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6219
gcagcgaacg gctgta 16

<210> 6220
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6220
gggtaggggt gacgta 16

<210> 6221
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6221
gatcacgaca tatcca 16

<210> 6222
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6222
tgggtgggtt tgcgtg 16

<210> 6223
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6223
cccatgcagg taaaggta 18

<210> 6224
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6224
ggactgggtg cctgtgtg 18

<210> 6225
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6225
cgtgggtacg aa 12

<210> 6226
<211> 19

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6226
cgtgctgtgg tctggcgta 19

<210> 6227
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6227
tggggctatg gccatgggg 19

<210> 6228
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6228
gcggtacgat agtgtt 16

<210> 6229
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6229
actcggggag tcggggtc 18

<210> 6230
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6230
gacggatcgg ag 12

<210> 6231
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6231
ggcggatgca tccgtt 16

<210> 6232
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6232
atagcggacc gatcgg 16

<210> 6233
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6233
atcccggccg gtcgattcg 19

<210> 6234
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6234
cgtgcttgcg gcaccgcag 19

<210> 6235
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6235
gccgctgcac ccgttcat 18

<210> 6236
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6236
gaggacaggc gagct 15

<210> 6237
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6237
gaagacgtag gcgca 15

<210> 6238
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6238
cacaagatgg tgatggtc 18

<210> 6239
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6239
catgtatgta tgtagtag 18

<210> 6240
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6240
tcggccatgg ga 12

<210> 6241
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6241
gcggccaaaa agcatgta 18

<210> 6242
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6242
ggtgccaaag ccatgcag 18

<210> 6243
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6243
ggctggcggg cggcc 15

<210> 6244
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6244
ggagactcga taagaa 16

<210> 6245
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6245
gccatgtggg gtagtt 16

<210> 6246
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6246
catggcatgg catcg 15

<210> 6247

<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6247
cacatgcgcg gcgcatgtc 19

<210> 6248
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6248
tagtaggcta gtagct 16

<210> 6249
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6249
acgccgcggc ggcttgcgct 20

<210> 6250
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6250
atctaggtgc aactag 16

<210> 6251
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6251
gtgaaacgga tgtgt 15

<210> 6252
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6252
tcagaatatc atgatggcc 19

<210> 6253
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6253
tgcgagcgct gcatgg 16

<210> 6254
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6254
gctggagggg ccaatgat 18

<210> 6255
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6255
tatccgatcc cg 12

<210> 6256
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6256
tgtgtggatg acgaaacg 18

<210> 6257
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

oligonucleotide

<400> 6257
ggagtaagaa atgac 15

<210> 6258
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6258
tccgcgttgc tgtctgaa 18

<210> 6259
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6259
tatcagctcg ag 12

<210> 6260
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6260
tagacctgtt ttgatggtt 19

<210> 6261
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6261
gaagacggcg gcgagagct 19

<210> 6262
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6262

agggaagaga ggagga 16

<210> 6263
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6263
gcacagatca gggct 15

<210> 6264
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6264
aaggatttgc acagacag 18

<210> 6265
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6265
gcggcagcca tagga 15

<210> 6266
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6266
gtgcatgcgt atcca 15

<210> 6267
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6267
gagggtcttg gggtgatatc 20

<210> 6268
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6268
aggaaagccc aagga 15

<210> 6269
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6269
gtacaagagt agtag 15

<210> 6270
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6270
tcgatcgagg gcgca 15

<210> 6271
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6271
ccaccgtctc cgtaggcc 18

<210> 6272
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6272
gtgtcgagag ct 12

<210> 6273
<211> 19
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6273
atagaaaacc atggcggag 19

<210> 6274
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6274
aaggggcggc aacgga 16

<210> 6275
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6275
gttgtcggat aaccg 15

<210> 6276
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6276
gaggggagt agctaggt 18

<210> 6277
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6277
ggacgagacc aaatcg 16

<210> 6278
<211> 15
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6278
caaggagaca aagct 15

<210> 6279
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6279
tacgtggcaa ttggca 16

<210> 6280
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6280
tcagatgctg cagct 15

<210> 6281
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6281
agaagatcga tcggta 16

<210> 6282
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6282
gcttgagctc acgca 15

<210> 6283
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6283
cactactact actaccgcc 19

<210> 6284
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6284
gggtgggggg ca 12

<210> 6285
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6285
ggacctacaa taggca 16

<210> 6286
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6286
gatcacaaga ccaag 15

<210> 6287
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6287
cattgtcagt tcctt 15

<210> 6288
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6288
cagcaggact ct 12

<210> 6289
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6289
aagacagacg atgtc 15

<210> 6290
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6290
acaaaaaagc aagaa 15

<210> 6291
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6291
tcacggtgtt acccatgta 19

<210> 6292
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6292
gacggatgcg tacgtg 16

<210> 6293
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6293
gttgttattc aaaca 15

<210> 6294
<211> 15

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6294
cacaagtaat gtgga 15

<210> 6295
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6295
gcggctggtt tgcag 15

<210> 6296
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6296
cacggacagg ag 12

<210> 6297
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6297
gaggcggagg tg 12

<210> 6298
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6298
agggcggaag ttacggag 18

<210> 6299
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6299
ggagccccca gcgtgggtt 19

<210> 6300
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6300
gaccggtcag taggtcaag 19

<210> 6301
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6301
ttcacgtcat gct 13

<210> 6302
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6302
gccgacgact aggaggta 18

<210> 6303
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6303
ctgtagggcg tcgtc 15

<210> 6304
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 6304
gtagcggtac tactgg 16

<210> 6305
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6305
atccaggcag ctggcggc 18

<210> 6306
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6306
gattggaatg caggcccg 18

<210> 6307
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6307
gatgcgtctg gtgtgacgac 20

<210> 6308
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6308
acacagtcct actag 15

<210> 6309
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6309
gctcgaaaac ttatg 15

<210> 6310
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 6310
atgaaagatg accga 15

<210> 6311
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6311
caaccagaaa cgtcctgcac tg 22

<210> 6312
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6312
ccacgatcga cattgatctg gcta 24

<210> 6313
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6313
aaatccaagc cacgtacgca c 21

<210> 6314
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6314
gtttcatcaa gccttacggt cacc 24

<210> 6315

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6315
acaccaattg cccatttggc a 21

<210> 6316
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6316
gctggcgatg agcgaaatgt ag 22

<210> 6317
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6317
ttggttagca gcacggatgg a 21

<210> 6318
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6318
cagcaacgtc ggttcgagat g 21

<210> 6319
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6319
atgccacttt cgaagagagg acg 23

<210> 6320
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6320
catctccaac gtcatcggca c 21

<210> 6321
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6321
gggaaacaga ttcgtcagct tgc 23

<210> 6322
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6322
gcctatccag tggcggatac a 21

<210> 6323
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6323
cttgctctac aactctgccc ca 22

<210> 6324
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6324
ccacgatcga cattgatctg gcta 24

<210> 6325
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

primer

<400> 6325
agtcggtacc tgcaagctac g 21

<210> 6326
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6326
gtttcatcaa gccttacggt cacc 24

<210> 6327
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6327
tggatttgag gccaactgca c 21

<210> 6328
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6328
gctggcgatg agcgaaatgt ag 22

<210> 6329
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6329
tctgcattgt tgggatcgac ca 22

<210> 6330
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6330

cagcaacgtc ggttcgagat g 21

<210> 6331
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6331
acgatcgcag gttatcctcg c 21

<210> 6332
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6332
cttgtcggtt gctgtgtgga c 21

<210> 6333
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6333
aacacggatg gcctgcaatg 20

<210> 6334
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6334
gcatgggcgt acgtcacttg 20

<210> 6335
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6335
acccagaatc tctggttccg t 21

<210> 6336
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6336
caggaagctc tgcatctgcg 20

<210> 6337
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6337
agtctttgat gtaaacgtct tgcct 25

<210> 6338
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6338
gcatggaaac accaggtcga 20

<210> 6339
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6339
gcagcgaata ggaatgcgag ac 22

<210> 6340
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6340
taaccttgtt tcgctgactc cc 22

<210> 6341
<211> 23
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6341
cttcttctac ctacacgcac cag 23

<210> 6342
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6342
gatccgtttc ctcactctcg c 21

<210> 6343
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6343
aggtgaatct tccgtggctg t 21

<210> 6344
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6344
ccataatcag tgtgactggt ggct 24

<210> 6345
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6345
cggatctaag gtgccctgtc t 21

<210> 6346
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 6346
gtctagctca tggaagtggg agg 23

<210> 6347
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6347
gacttctaag ccccaaggcc ta 22

<210> 6348
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6348
agatcttttg gctccctctc acc 23

<210> 6349
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6349
gtgcttcgag ggctcaaggt a 21

<210> 6350
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6350
attgctcacc ccatcccctt 20

<210> 6351
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6351
ggctatgacc cggacactac c 21

<210> 6352
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6352
cagttgggcg tcaagttagt tcag 24

<210> 6353
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6353
aagtccacaa ggatctgacc acg 23

<210> 6354
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6354
tgaaactttg gttcagtctg ctcg 24

<210> 6355
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6355
tatgtccaag ccacgagaag c 21

<210> 6356
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6356
actgcaggta ctactggtac gc 22

<210> 6357
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6357
gctacagtat agcaggagca gc 22

<210> 6358
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6358
gtcctactat acgctgccgc 20

<210> 6359
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6359
caatccttct gagctgcacc g 21

<210> 6360
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6360
ggtgtcaatg acctcacgag c 21

<210> 6361
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6361
ccgtaccaaa caggcaagca g 21

<210> 6362
<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6362
gatcgcccat atgcttggat tcac 24

<210> 6363
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6363
ggattaggac ggctgactgg t 21

<210> 6364
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6364
gttgctttgt ttgcgtgctc c 21

<210> 6365
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6365
ttaaagtgct agctgactga ccga 24

<210> 6366
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6366
ggcccatgcc ttaggttgac 20

<210> 6367
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6367
actgagactg ggagtctggg a 21

<210> 6368
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6368
cgccgtccga ctgttattac c 21

<210> 6369
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6369
cttcggcctt ggattggatc ac 22

<210> 6370
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6370
acaacgcaga tccctagaat cca 23

<210> 6371
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6371
gggatctctt gtcaccaaat cagc 24

<210> 6372
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6372
ttgacagtga gacatgggag tacc 24

<210> 6373
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6373
tgcctgcatt gcatcgatct g 21

<210> 6374
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6374
agtacccact gtcactgcac g 21

<210> 6375
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6375
atcttcacca agtatcccac acct 24

<210> 6376
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6376
gctgtgttag tatcgtcgaa ggct 24

<210> 6377
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6377
tcaaacctca cctgatgtat cgct 24

<210> 6378
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6378
cgaacctcca atttatcggc aatcg 25

<210> 6379
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6379
aagtccctag agccctcatg c 21

<210> 6380
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6380
gagagttagg agggagcatg gc 22

<210> 6381
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6381
gtgtccgaga taggtcgtgt cc 22

<210> 6382
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6382
ttgaacttgg gcatgagtgg ga 22

<210> 6383

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6383
gtcggctgtg cgttatgaga c 21

<210> 6384
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6384
gattaatcgg ttatcggtgg acgc 24

<210> 6385
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6385
acggacagat cacagatcgg g 21

<210> 6386
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6386
ccttaatccg gtttggtgaa ccc 23

<210> 6387
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6387
gcttacaccg atgcaggggt a 21

<210> 6388
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6388
ggttgacatc ggaattcgtg cc 22

<210> 6389
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6389
tgaaagagag cggcccaact ac 22

<210> 6390
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6390
ttaatgctgg cctctcctgc a 21

<210> 6391
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6391
atgaagagca ccagctaccc c 21

<210> 6392
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6392
ggaagatgga accacatgcc c 21

<210> 6393
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

primer

<400> 6393
ggctacaaaa cccaagaggg g 21

<210> 6394
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6394
cccttcatg caacgatcag gc 22

<210> 6395
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6395
tgttcagttg gtaagtcgtc gct 23

<210> 6396
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6396
gttcttggag agtgattgtc ggc 23

<210> 6397
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6397
cttcacctca agggaagcaa gc 22

<210> 6398
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6398

ggtgaaactg agctgggaat tgg 23

<210> 6399
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6399
gatccacaac cacattcaac aaggt 25

<210> 6400
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6400
tgatcaaact agaggcctga tgacg 25

<210> 6401
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6401
ggacaaatga catgtaaccc actcc 25

<210> 6402
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6402
atgacgacag cgtgtttgtg g 21

<210> 6403
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6403
agctccactt ccagtagtcc tg 22

<210> 6404
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6404
cggatagcgt ccacaaacga g 21

<210> 6405
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6405
aatcatgcgg ctgtcgaaag g 21

<210> 6406
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6406
gcgataagaa agcatcctgc gg 22

<210> 6407
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6407
actgtaccac cgaaagacga cc 22

<210> 6408
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6408
cccgtctcac tgtggatcta tgtc 24

<210> 6409
<211> 22
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6409
aaagacgacc aaacagtcct gc 22

<210> 6410
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6410
gagtcaacgt gtcagtgtca cc 22

<210> 6411
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6411
aggtgtagtc ctgctctgtc tg 22

<210> 6412
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6412
aactgaagac actgacgaca tcca 24

<210> 6413
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6413
tagggcgcta ggcatgtact c 21

<210> 6414
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 6414
gtggccttct aggtacacta ggg 23

<210> 6415
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6415
gcaaccaact ttgtcggatg ct 22

<210> 6416
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6416
aaagctcacc tcacagcacg a 21

<210> 6417
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6417
tcatagattt cgcgtggttg aactg 25

<210> 6418
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6418
actctgcagc catgaattcc ac 22

<210> 6419
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6419
gagaaaccga gggatcggaa ca 22

<210> 6420
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6420
acatgtacgt gtgcgagagt cg 22

<210> 6421
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6421
agtacgactg gaatccaacg cg 22

<210> 6422
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6422
ctctccctag ctcgacgctt g 21

<210> 6423
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6423
gtagcactgc accgttcatg c 21

<210> 6424
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6424
actctccttc cctcgacggt a 21

<210> 6425
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6425
aggagatgaa ggctttgtcc cc 22

<210> 6426
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6426
gcaaacctgc atggttgatg c 21

<210> 6427
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6427
ttgggtttgt gcaccacact c 21

<210> 6428
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6428
gcttctggaa aaacgccagc a 21

<210> 6429
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6429
attccttgcg ctccgtacga a 21

<210> 6430
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6430
ctttgcattg caggcacggt ta 22

<210> 6431
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6431
ccgaggttaa atccacaggc g 21

<210> 6432
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6432
gcgcatttcc ttgccctcaa a 21

<210> 6433
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6433
gttcacaggt acgacagcag c 21

<210> 6434
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6434
tacgttgcca ccaaaagagc c 21

<210> 6435
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6435
agcaggctac tgtggtcagg 20

<210> 6436
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6436
cgattgcata cagcaggtgc c 21

<210> 6437
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6437
ggcaggtttt gaaggacccc 20

<210> 6438
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6438
acgagcaatg cagtgaaggg t 21

<210> 6439
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6439
tgagaacgaa acccgtcaag ca 22

<210> 6440
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6440
cacgtcgatc aaacggcgag 20

<210> 6441
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6441
cgtcaagcat gcagaaaggc t 21

<210> 6442
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6442
cccctaatcc gcaccgtgta 20

<210> 6443
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6443
cctgttcctt ctcccgaatg c 21

<210> 6444
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6444
ggtacaaagt gaaaagggcc gg 22

<210> 6445
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6445
gtgcaatcaa gccttgccca t 21

<210> 6446
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6446
gaagtgatgg tccctgccac 20

<210> 6447
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6447
ggctctaaca catggtgagg c 21

<210> 6448
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6448
aatcatggtc ctagttgtag cccc 24

<210> 6449
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6449
actaggatga gggagccaat gg 22

<210> 6450
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6450
ctatggagat gcctcccacc at 22

<210> 6451

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6451
gaagagctcg gcatcggaga t 21

<210> 6452
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6452
tcccaaaacg aactgtgtgc g 21

<210> 6453
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6453
tggctagagc gaccttgttc g 21

<210> 6454
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6454
tcgagatcag gcatccacac c 21

<210> 6455
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6455
ccaaagtatt tggtgggatt ctcgc 25

<210> 6456
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6456
ctgcaacaag tgaaaagcgc c 21

<210> 6457
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6457
ggattctcgc tttttcccac caag 24

<210> 6458
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6458
tacatcgatc cagctcgtgc tg 22

<210> 6459
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6459
cggaacacta aaacggggac atg 23

<210> 6460
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6460
ccacgatcga cattgatctg gcta 24

<210> 6461
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

primer

<400> 6461
tcttcctggc aagcactagg aac 23

<210> 6462
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6462
gtttcatcaa gccttacggt cacc 24

<210> 6463
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6463
accgagtaag ggcttgttcg g 21

<210> 6464
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6464
gctggcgatg agcgaaatgt ag 22

<210> 6465
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6465
tctccagcaa cccctagatg c 21

<210> 6466
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6466

cagcaacgtc ggttcgagat g 21

<210> 6467
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6467
gcagtgacac tatagccacg tgt 23

<210> 6468
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6468
gcccaatcaa ttgtccctgg ac 22

<210> 6469
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6469
tgctacccaa tggtgtggac tt 22

<210> 6470
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6470
aatgcccatt cggttgaacc c 21

<210> 6471
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6471
tctgatgatc gggttgaggc c 21

<210> 6472
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6472
cctccggaat catttcccgt tg 22

<210> 6473
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6473
gtgctgatct ggttgtgggt c 21

<210> 6474
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6474
cggaacaatt cctgggcaca a 21

<210> 6475
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6475
agctatggtt aacgggaatg cca 23

<210> 6476
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6476
ccacgatcga cattgatctg gcta 24

<210> 6477
<211> 21
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6477
tctagcgaga ggtggtcagg t 21

<210> 6478
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6478
gtttcatcaa gccttacggt cacc 24

<210> 6479
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6479
gctgaaattg ctgcatcatg gc 22

<210> 6480
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6480
gttgccttgg taggtccagc 20

<210> 6481
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6481
agctgctaca tctgtggtcg g 21

<210> 6482
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 6482
cagcaacgtc ggttcgagat g 21

<210> 6483
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6483
ccttcacagt acttgaactg ctgca 25

<210> 6484
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6484
cactcacatg gtgcgttccg 20

<210> 6485
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6485
tgtatgcctc gtcatcgagg g 21

<210> 6486
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6486
aggggaatga ccaggagcag 20

<210> 6487
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6487
tcacgtactg accacagaac acc 23

<210> 6488
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6488
gaatatgctc cacgcgcatc tc 22

<210> 6489
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6489
gctgactcta aaaccgcctt gtg 23

<210> 6490
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6490
gatccggctt gttcgcttga c 21

<210> 6491
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6491
aaccatagtg gctcgccagt 20

<210> 6492
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6492
aatcgcacta ggtcagcatg gt 22

<210> 6493
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6493
gatcatgtcg ttagcctcca acca 24

<210> 6494
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6494
gtgaagactc gagcttggcc t 21

<210> 6495
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6495
caacaagctg gtttgcaggg t 21

<210> 6496
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6496
taacccccct agagatgcac atgc 24

<210> 6497
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6497
accccagcaa attggacgat ct 22

<210> 6498
<211> 25

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6498
tagatcgatg aaaccggtcg atgtg 25

<210> 6499
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6499
gaccaaccat ttgttgcccc t 21

<210> 6500
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6500
cacgtctttg tagcgactgt cca 23

<210> 6501
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6501
tccgaaaact caagcatgcc c 21

<210> 6502
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6502
gtggtgaact tccctctaga ccc 23

<210> 6503
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6503
tggaaaaacg tagatgtgct tgcc 24

<210> 6504
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6504
caagctcttt gatcgtggtt gacg 24

<210> 6505
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6505
gcagtaaacc tagtgatgct gcct 24

<210> 6506
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6506
atgcttggtc aacgtgccac 20

<210> 6507
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6507
cggtgaatgc aagctggatc ac 22

<210> 6508
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6508
gcacttgtgc tatccgccag 20

<210> 6509
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6509
cttttggtgg cggagatcag g 21

<210> 6510
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6510
tggaggagga aatctctgct attcgt 26

<210> 6511
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6511
acagtggact ccctcgcaag 20

<210> 6512
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6512
gtaagcttcc tcgacacctc ca 22

<210> 6513
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6513
tctgaagcac agtttagccg ca 22

<210> 6514
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6514
gtggttatct gtagcttgag cactga 26

<210> 6515
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6515
tgtgttcctt ctccatgcac ct 22

<210> 6516
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6516
ccttgtcacg gagactctcg g 21

<210> 6517
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6517
tcacatgcct caactggagc a 21

<210> 6518
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6518
tggaagggca aaactgagcc 20

<210> 6519

<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6519
gcgacctttt cattgttgga gtagg 25

<210> 6520
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6520
taccacacca tcgagccgtc 20

<210> 6521
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6521
acgattcagt aggtagggtg cct 23

<210> 6522
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6522
acccatttcg agctgcctgt 20

<210> 6523
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6523
ccatgcagat gtcgaggcaa c 21

<210> 6524
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6524
tactgccttc tgaaccgtcg g 21

<210> 6525
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6525
tgtttagcta catccacggg cat 23

<210> 6526
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6526
actgcaatga caaggcacat cc 22

<210> 6527
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6527
gcacgtcgtt agtgatcgag ct 22

<210> 6528
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6528
gttgtcaacg aagcccgtct aattg 25

<210> 6529
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

primer

<400> 6529
cctgcagtta acgcagacgt g 21

<210> 6530
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6530
ctagaccgta ctattgtgct gtgaag 26

<210> 6531
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6531
tccttactgg cccctagtcc a 21

<210> 6532
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6532
ctcccacgag cgactagcta c 21

<210> 6533
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6533
tgcaactatg gacttggcca ca 22

<210> 6534
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6534

cctcacgaat aaaagcaccc cc 22

<210> 6535
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6535
agtctacgtg gcatacaacc cc 22

<210> 6536
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6536
gaaacttgga ccttgctgtc gg 22

<210> 6537
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6537
aggtctcgaa caaactccct atgc 24

<210> 6538
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6538
ccattccatg aagaccgact cca 23

<210> 6539
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6539
accaaatccg tttgctttca ccg 23

<210> 6540
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6540
ctctgacaga taccacgttc gct 23

<210> 6541
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6541
caccgtttca cgaagctgca 20

<210> 6542
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6542
accgaaatct gcgcgctagt t 21

<210> 6543
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6543
acagaagagg ttgcggagta acg 23

<210> 6544
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6544
aaacaaaatc gtatcgccga gcag 24

<210> 6545
<211> 21
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6545
tacttggacc ggcctctacc t 21

<210> 6546
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6546
aaccttgcaa cagccccaaa t 21

<210> 6547
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6547
aggtaatacc agtgagccga c 21

<210> 6548
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6548
ccacgatcga cattgatctg gcta 24

<210> 6549
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6549
cactctgtac tgggagaggg 20

<210> 6550
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 6550
gtttcatcaa gccttacggt cacc 24

<210> 6551
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6551
ataatgcagc gcttgcagat 20

<210> 6552
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6552
gctggcgatg agcgaaatgt ag 22

<210> 6553
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6553
ctcaattcca tgtgcaacca aac 23

<210> 6554
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6554
cagcaacgtc ggttcgagat g 21

<210> 6555
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6555
gtggtgatac cgtcgtctct cc 22

<210> 6556
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6556
cactttgtcc ctgctcggtt c 21

<210> 6557
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6557
gaaacaagcc attgattgtg ccca 24

<210> 6558
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6558
gtcgactcac aacgcttccc 20

<210> 6559
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6559
agtacaacac tgagacgtgg gc 22

<210> 6560
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6560
actaggattg ctagggagca cgaa 24

<210> 6561
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6561
agattgcagg gcacttgagg t 21

<210> 6562
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6562
acaggattac aagcccaaac cca 23

<210> 6563
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6563
ttcttcaggc ggcatcgcat a 21

<210> 6564
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6564
ccacgatcga cattgatctg gcta 24

<210> 6565
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6565
tagtagccga caatgtggcc c 21

<210> 6566
<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6566
gtttcatcaa gccttacggt cacc 24

<210> 6567
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6567
cgctcaggaa atccttgatg cc 22

<210> 6568
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6568
gctggcgatg agcgaaatgt ag 22

<210> 6569
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6569
gtgaacgacg gcaacaagct 20

<210> 6570
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6570
cagcaacgtc ggttcgagat g 21

<210> 6571
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6571
gaggtccctt acgggtcatc g 21

<210> 6572
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6572
accaggtcta tcttgcgcag ac 22

<210> 6573
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6573
aatagcgtgg tcgggtccta g 21

<210> 6574
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6574
acgaacgatc caaggtgcag t 21

<210> 6575
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6575
ccaatggacg acagcggtta g 21

<210> 6576
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6576
acgagaacaa gccactcttg ct 22

<210> 6577
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6577
caaccggaga acggatagcc t 21

<210> 6578
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6578
tgaagatttc cctaccgtcg cc 22

<210> 6579
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6579
agtactgggg acgttcaccg 20

<210> 6580
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6580
cgacaagaac ccggtacatg c 21

<210> 6581
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6581
agagctgaaa ctgatcgcgg t 21

<210> 6582
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6582
gacagagtcc gatccctgct 20

<210> 6583
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6583
gccacacgga ttttgcgtat ca 22

<210> 6584
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6584
cttttgtcgg tcctgccact g 21

<210> 6585
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6585
agcaacgtag ggtcacggac 20

<210> 6586
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6586
gaggagtctt cgatgccacg a 21

<210> 6587

<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6587
gaaagcacca ggtcgtatct tgc 23

<210> 6588
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6588
cgcacaatct tcgcttcaaa cca 23

<210> 6589
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6589
gcattgctct tcaggaggta cgt 23

<210> 6590
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6590
cagctgtgca agtccgactg 20

<210> 6591
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6591
tctccatacc tgcactgggt g 21

<210> 6592
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6592
acgtgctctc agcaacatcc a 21

<210> 6593
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6593
cgtccaaaca ggctagacag c 21

<210> 6594
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6594
tgcctttgc gtcaacggtg 20

<210> 6595
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6595
ccatccagat cgcggttgtc 20

<210> 6596
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6596
tacgagttca cgccattgcg t 21

<210> 6597
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

primer

<400> 6597
gtctcctctt tgacggttgc g 21

<210> 6598
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6598
tcgatccaca ctcgcatgca 20

<210> 6599
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6599
gtggaccagt gtaaagcccg 20

<210> 6600
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6600
tccctagtgc caggacctga 20

<210> 6601
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6601
acaccaaatg tccggtagcg a 21

<210> 6602
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6602

cgacgattct ccattggccg 20

<210> 6603
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6603
gctagaaacg ctgaacagca gc 22

<210> 6604
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6604
cgggtttaga atccacaagc cg 22

<210> 6605
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6605
gacaaaagct gccatcaacg ct 22

<210> 6606
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6606
cccgatatgg acaggtcagc t 21

<210> 6607
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6607
aaaggcgaca cacacctttg c 21

<210> 6608
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6608
agacagccat cctcactcgc 20

<210> 6609
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6609
tttggtgcag aggccgagaa 20

<210> 6610
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6610
aagtagccag gcagacaacc a 21

<210> 6611
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6611
ctaggcaggg tggcatgaaa g 21

<210> 6612
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6612
ccacgatcga cattgatctg gcta 24

<210> 6613
<211> 22
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6613
accatcagag gttgtgaagg ca 22

<210> 6614
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6614
caaattccca ctaagcgctc gg 22

<210> 6615
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6615
aagggcaact tcatggttca acc 23

<210> 6616
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6616
gttgccttgg taggtccagc 20

<210> 6617
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 6617
accagtaaat ccacaaccca tggt 24

<210> 6618
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 6618
gtaaaggtga gcagaggcac g 21

<210> 6619
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6619
gattgctacg cagaccgcct a 21

<210> 6620
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6620

Asp Arg Ser Ala Leu Ala Arg
1 5

<210> 6621
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6621

Asp Tyr Tyr Gly Arg His Gly
1 5

<210> 6622
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6622

Asp Arg Ser His Leu Ala Arg
1 5

<210> 6623
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6623

Tyr Arg Ser Ser Leu Lys Glu
1 5

<210> 6624
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6624

Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 6625
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6625

His His His Val Leu Val Gln
1 5

<210> 6626
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6626

Gln Asn Ala Thr Arg Thr Lys
1 5

<210> 6627
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6627

Asp Arg Ser Thr Arg Thr Lys
1 5

<210> 6628
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6628

Arg Arg Asp Asn Leu His Ser
1 5

<210> 6629
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6629

Arg Arg Asp Asn Leu His Ser
1 5

<210> 6630
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6630

His Arg Ser Ser Leu Arg Arg
1 5

<210> 6631
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6631

Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6632
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6632

Gln Trp Ser Thr Arg Lys Arg
1 5

<210> 6633
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6633

Arg Ser Asp Val Leu Ser Glu
1 5

<210> 6634
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6634

Gln Thr Val His Arg Asn Ser
1 5

<210> 6635
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6635

Arg Ser Asp Thr Leu Ser Glu
1 5

<210> 6636
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6636

Phe Arg Gly Ser Leu Thr Trp

1 5

<210> 6637
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6637

Arg Ser Asp Asn Leu Ser Thr
1 5

<210> 6638
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6638

Arg Ser Thr His Arg Thr Gln
1 5

<210> 6639
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6639

Arg Ser Asp Asn Leu Ser Val
1 5

<210> 6640
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6640

Gln Lys Ala Thr Arg Ile Asn
1 5

<210> 6641
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6641

Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 6642
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6642

Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 6643
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6643

Cys Arg Gln Asn Leu Ala Asn
1 5

<210> 6644
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6644

Asp Arg Ser Asn Leu Ser Arg
1 5

<210> 6645
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 6645

Asp Gly Arg Asn Leu Arg His
1 5

<210> 6646
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6646

Arg Ser Asp His Leu Ser Thr
1 5

<210> 6647
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6647

Arg Ser Asp Asn Leu Thr Arg
1 5

<210> 6648
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6648

Asp Arg Ser Asn Arg Thr Thr
1 5

<210> 6649
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6649

Gln Asn Ala Thr Arg Ile Asn
1 5

<210> 6650
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 6650

Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 6651
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6651

His Lys Leu Ser Leu Ser Ile
1 5

<210> 6652
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6652

Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 6653
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6653

Tyr Arg Ser Asn Leu Val Arg
1 5

<210> 6654
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6654

Asp Arg Ser Ala Leu Ser Arg
1 5

<210> 6655
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6655

Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 6656
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6656

Arg Ser Asp Asn Leu Thr Arg
1 5

<210> 6657
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6657

Arg Gln Asp Cys Leu Ser Leu
1 5

<210> 6658
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6658

Arg Asn Asp Asn Arg Lys Thr
1 5

<210> 6659
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

peptide

<400> 6659

Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 6660
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6660

Asp Gln Ser Gly Leu Ala His
1 5

<210> 6661
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6661

Gln Ser Ala Asn Arg Thr Lys
1 5

<210> 6662
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6662

Asp Arg Ser Asp Leu Ser Arg
1 5

<210> 6663
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6663

Arg Ser His His Leu Lys Ala
1 5

<210> 6664
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6664

Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 6665
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6665

Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 6666
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6666

Asp Arg Ser Ala Leu Ser Arg
1 5

<210> 6667
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6667

Gln Ser Gly Ser Leu Thr Arg
1 5

<210> 6668
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6668

Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 6669
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6669

Gln Ser Gly Asn Leu Ala Arg
1 5

<210> 6670
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6670

Trp Arg Ile Ser Leu Ala Ala
1 5

<210> 6671
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6671

Arg Ser Asp Asn Leu Ser Glu
1 5

<210> 6672
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6672

Arg Ser Gln His Arg Lys Thr
1 5

<210> 6673

<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6673

Gln Ser Ser Asp Leu Ser Arg
1 5

<210> 6674
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6674

Arg Ser Ala Asn Leu Ala Arg
1 5

<210> 6675
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6675

Arg Ser Asp His Leu Thr Thr
1 5

<210> 6676
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6676

Arg Ser Asp Asn Leu Ser Glu
1 5

<210> 6677
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6677

Asp Arg Ser His Leu Ala Arg
1 5

<210> 6678
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6678

Gln Ser Ala His Arg Lys Asn
1 5

<210> 6679
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6679

Leu Lys His His Leu Thr Asp
1 5

<210> 6680
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6680

Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 6681
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6681

Asp Arg Ser Asn Leu Thr Arg
1 5

<210> 6682
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6682

Arg Ser Asp Asn Leu Ser Gln
1 5

<210> 6683
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6683

Arg Lys Ala Asp Arg Thr Lys
1 5

<210> 6684
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6684

Thr Ser Gly Asn Leu Thr Arg
1 5

<210> 6685
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6685

Asp Ser Ser Asn Leu Ala Thr
1 5

<210> 6686
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>

<221> misc_feature
<222> (22)..(24)
<223> n is a, c, g, or t

<400> 6686
ttcatggttg ttaccactca tnnnatgatc cctttgaagt aaac 44

<210> 6687
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> misc_feature
<222> (18)..(19)
<223> n is a, c, g, or t

<400> 6687
ttctacgatt acttctannc tgctagtcag attgaa 36

<210> 6688
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> misc_feature
<222> (22)..(23)
<223> n is a, c, g, or t

<400> 6688
tgatgcaagg tggcgtaaag gnngggacat aaagaggcag 40

<210> 6689
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> misc_feature
<222> (18)..(19)
<223> n is a, c, g, or t

<400> 6689
gattacctcc acctttnnc taggccctaa tatcgaa 37

<210> 6690
<211> 43
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<220>
<221> misc_feature
<222> (21)..(22)
<223> n is a, c, g, or t

<400> 6690
atccctctat ccttcacgaa nngaaacgat ctcgaaggac gat 43

<210> 6691
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6691
tatatggtgg ccaatggacg atgg 24

<210> 6692
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6692
ccacaggagc aagcagtgac 20

<210> 6693
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6693
cgcatctttg ggggtagtgg 20

<210> 6694
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 6694
agtacccagt tggtctcgcc 20